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BARCO

BARCO PROJECTION SYSTEMS



BARCO **GRAPHICS**
1209S

90 00972 (230V AC)

90 00977 (120V AC)

SERVICE MANUAL

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BARCO GRAPHICS
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SAFETY NOTICE

PRODUCT SAFETY NOTICE

Components identified by \triangle or * have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.

DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

SAFETY NOTICE

Components having special safety characteristics are identified by \triangle on schematics and on the parts list in this SERVICE MANUAL and its supplements and bulletins. Before servicing this apparatus, it is important that the service technician read and follow the "*SAFETY PRECAUTIONS*" and "*PRODUCT SAFETY NOTICES*" in this Service Manual.

SAFETY PRECAUTIONS

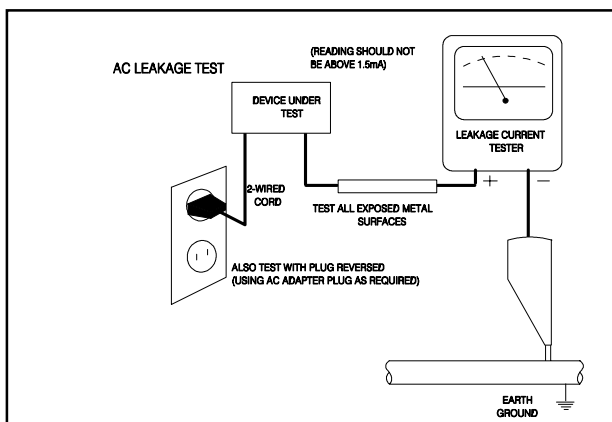
1. **Before returning an instrument to the customer**, always make a safety check of the entire instrument, including, but not limited to, the following items :

a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, insulating materials, barriers, covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) excessively wide cabinet ventilation slots, and (2) an improperly fitted and/or incorrectly secured cover panels.

c. **Leakage Current Hot Check** - With the instrument completely reassembled, plug the AC line cord directly into a 220 V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.0 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 1.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test.

ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING ACCESSORIES.



WARNING: RISK OF ELECTRIC SHOCK DURING THIS TEST. THE PROJECTOR IS NOT CONNECTED TO GROUND. DO NOT TOUCH THE PROJECTOR AND USE WELL INSULATED TEST PROBES.

d. **X-Radiation and High Voltage** - Because the picture tubes are the primary potential source of X-radiation in solid-state projectors, they are specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place.

After replacement of any X-ray radiation related safety components (marked in this manual with an *), the EHT voltage board must be checked.

2. Read and comply with all caution and safety-related notes on or inside the projector cabinet or on the projector chassis, or on the picture tube.

3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this apparatus. Design alterations and additions, including, but not limited to, circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this apparatus and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you, the servicer responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning** - The picture tube in this projector encloses a high vacuum. Do **not** remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck.

For continued implosion protection, replace the picture tube only with one of the same type number.

5. **Hot Chassis Warning** - This projector chassis has two ground systems: the primary ground system is formed by the negative voltage of the rectified mains (power) and is only used as a reference in primary circuits; the secondary ground system is connected to earth ground via the earth conductor in the mains (power) lead.

Separation between primary and secondary circuits is performed by the safety isolation transformers. Components bridging this transformers are also safety components and must never be defeated or altered.

All user-accessible conductive parts must be connected to earth ground, or are kept at SELV (Safety Extra Low Voltage).

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas:

- near sharp edges,
- near thermally hot parts - be sure that leads and components do not touch thermally hot parts,
- the AC supply,
- high voltage.

Always inspect in all areas for pinched, out-of-face, or frayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. **PRODUCT SAFETY NOTICE** - Many electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in BARCO service data by \triangle on schematics and in the parts list. Use of a substitute replacement that does not have the same safety

characteristics as the recommended replacement part in BARCO service data parts list might create shock, fire, and/or other hazards. Product Safety is under review continuously and new instructions are issued whenever appropriate. For the latest information, always consult the appropriate current BARCO service literature.

SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this service data and its supplements and addendums, read and follow the SAFETY PRECAUTIONS of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 2 of this publication, always follow the safety precautions.

Remember: Safety First.

General Servicing Precautions

1. Always unplug the instrument AC power cord from the AC power source before:
 - a. Removing or reinstalling any component, circuit board, module, or any other instrument assembly.
 - b. Disconnecting or reconnecting any instrument electrical plug or other electrical connection.
 - c. Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

Caution: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
2. Do not spray chemical on or near this instrument or any of its assemblies.
3. Unless specified otherwise in this service data, clean electrical contacts by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength). **Caution:** *This is a flammable mixture.*

Unless specified otherwise in this service data, lubrication of contacts is not required.
4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service data might be equipped.
5. Do not apply AC power to this apparatus and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
6. Always connect the test instrument ground lead to the appropriate instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.
7. Use with this instrument only the test fixtures specified in this service data.

CAUTION: Do not connect the test fixture ground strap to any heatsink in this instrument.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Wear a commercially available high impedance discharging wrist strap device.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a static dissipative surface such as a 3M No 8210 table mat, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range 260°C to 315°C.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch, or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique:
 - a. Allow the soldering iron tip to reach normal temperature (260°C to 315°C).
 - b. Heat the component lead until the solder melts.
 - c. Quickly draw away the melted solder with an anti-static, suction-type solder removal device or with solder braid.

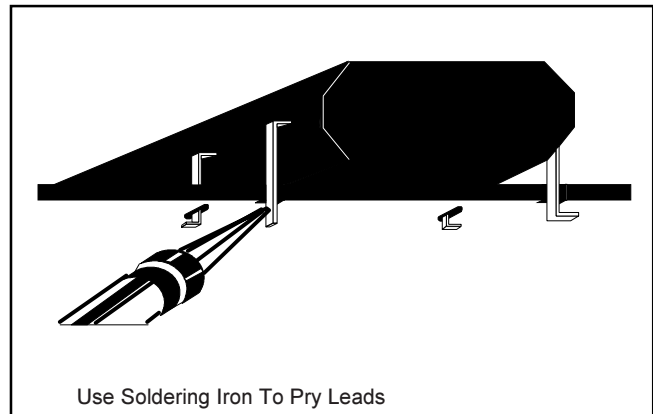
CAUTION: Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique:
 - a. Allow the soldering iron tip to reach normal temperature (260°C to 315°C).

b. First, hold the soldering iron tip and solder strand against the component lead until the solder melts.

c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

CAUTION: Work quickly to avoid overheating the circuit board printed foil or components.

d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



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BARCO PROJECTION SYSTEMS



BARCO GRAPHICS
1209S

90 00972 (230V AC)

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GENERAL INFORMATION

BARCOGRAPHICS 1209s

Ultra-High Resolution Graphics Projector

The BARCOGRAPHICS 1209s is a new ultra-high resolution graphics projector designed to provide superlative performance, not only by today's standards, but by tomorrow's as well. Its unequalled flexibility, combined with an almost limitless display compatibility, promote the BARCOGRAPHICS 1209s as the ideal solution for demanding applications such as: industrial design, simulation, process control and traffic management centres, as well as military command & control centres (C³I) and other applications where image quality can not be compromised.

Ultra wide compatibility

The BARCOGRAPHICS 1209s features a display compatibility from VHS video up to 2,500 by 2,000 pixel workstations.

- Horizontal autolock scan frequency range of 15-135 kHz
- 120 MHz RGB amplifiers
- Universal signal connection facilities

Very high resolution images

The BARCOGRAPHICS 1209s renders high resolution large screen images with unprecedented visual fidelity.

- Improved, ultra-high definition, liquid cooled 9" electromagnetic focus CRTs with digitally controlled dynamic astigmatism guarantee razor sharp images
- Super-high definition liquid coupled F1.15 lenses provide outstanding image contrast
- State-of-the-art electronic circuitry result in better geometry, unequalled sharpness and true colour projection
- Optional high quality Line Doubler for improved Video image quality

Unequaled flexibility

- Built-in Scheimpflug optical correction, with stepless adjustment, for optimal optical focus for projection under non-standard angles
- A series of options for multi-screen applications, non-standard projection angles,...
- Different lens options are available, optimised for a wide range of screen sizes from 2 m (6.6 ft.) to 8.8 m (29 ft.) wide
- Built-in IRIS² automatic convergence system aligns on-screen convergence in less than 2.5 minutes



New!

Now with Built-in
IRIS² Auto-Convergence

High precision graphics projection system

Ultra-high resolution, highly flexible optical system

Improved resolution

The BARCOGRAPHICS 1209s is equipped with improved, ultra-high definition, liquid cooled 9" CRTs with an advanced electromagnetic focus system and digitally controlled dynamic astigmatism, which guarantees razor sharp projected images, even at maximum contrast levels.

Super-high definition, fully colour corrected, liquid coupled F1.15 lenses provide outstanding image contrast. Several types of lenses are available, optimised for a wide range of screen sizes.

Optical Scheimpflug correction

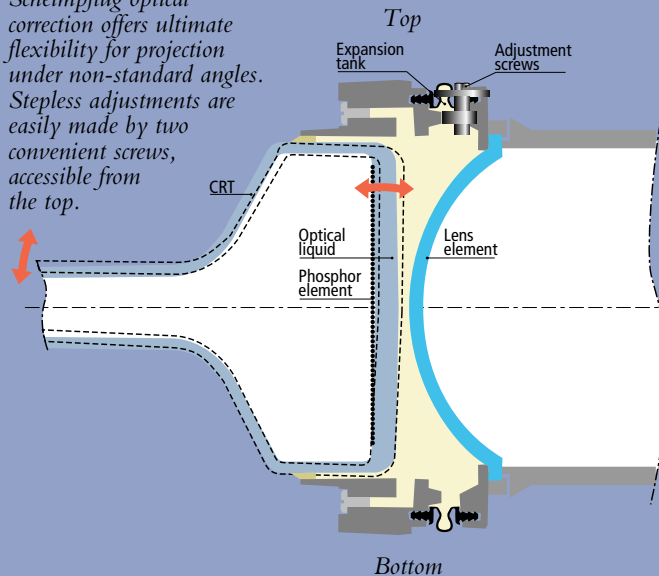
The BARCOGRAPHICS 1209s features a new, precision Scheimpflug optical correction system with stepless adjustments for both horizontal and vertical axes. Unlike conventional projectors, these adjustments can easily be made while looking at the projected image.

This results in a highly effective means of achieving near perfect focus uniformity from left to right and top to bottom, even under non-standard angles.

BARCO's built-in Scheimpflug optical correction offers ultimate flexibility for projection under non-standard angles. Stepless adjustments are easily made by two convenient screws, accessible from the top.

Built-in IRIS² auto-convergence system

A built-in IRIS² automatic convergence system automatically aligns the three projected images faster and with more accuracy than ever before possible through the conventional manual process.



Secure design

The BARCOGRAPHICS 1209s has been designed for extremely low RFI/EMI emissions (FCC Rules & Regulations part 15 Class B for 120 V version and CE EN55022 Class B for 230 V version) for demanding military and industrial applications where unwanted interference could compromise critical communications lines.

Flexible installation possibilities

BARCO offers a series of special options for non-standard applications (multi-screen applications, non-standard projection angles,...). For specialised applications, BARCO can provide unique projector configurations, which are custom tailored to specific application requirements.

The 100 % modular construction of the BARCOGRAPHICS 1209s allows easy access to all controls and facilitates quick servicing.



Technical specifications

Lens types	HD120	HD180	HD300
F number	F1.15	F1.15	F1.15
Screen width meter	2-3	3-4.2	2-8.8
feet	6.6-10	10-14	6.6-29
Optical resolution	12 lp/mm	12 lp/mm	10 lp/mm
Standard/optional	Standard	Optional	Optional

The BARCOGRAPHICS 1209s can be equipped with different lenses, optimised for particular screen sizes.

Light output

At 10 % peak white: 1,250 lumens

ANSI lumen⁽¹⁾

Economy mode: 195 lumens

Normal mode: 240 lumens

Boost mode: 270 lumens

CRTs

New, improved, high brightness, high definition liquid cooled 9" CRTs with electromagnetic focus

Lenses

Super high definition, liquid coupled, fully colour corrected F1.15 lenses, optimised for particular screen sizes (see table)

Scan frequencies

Horizontal: 15-135 kHz autolock

Vertical: 37-200 Hz autolock

Minimal retrace time

Horizontal:

< 2.5 µs in range 15-90 kHz

< 1.25 µs in range 64-135 kHz

(switching point adjustable between 64 and 94 kHz)

Vertical: < 200 µs

Max. compatible display resolution

2,500 x 2,000

RGB bandwidth

120 MHz [-3 dB]

Horizontal linearity

< ±1.5 % distortion throughout the full horizontal frequency range

Inputs

- RGB or (Y, R-Y, B-Y) input on 5 BNC-connectors, with automatic sync detection and sync polarity, with sync on green or separate sync

- RGB analog input on D9-connector, with automatic sync detection and polarity (optional D9-BNC adapter available)
- Video (PAL, SECAM, NTSC 3.58, NTSC 4.43), loop-through (2xBNC) with 75 Ohm termination switch
- S-Video input (4-pin mini-DIN), loop through with 75 Ohm termination switch (can also be programmed as a second Video input)

Remote control

A backlit user-friendly infrared remote control for control of:

- Source switching
- User settings per source (brightness, contrast, colour, hue, sharpness)
- Geometry per source (password protectable)
- Convergence per source (password protectable)

An optional executive remote control unit is available for control of source switching and user settings per source.

Special features

- CRT drive in 3 modes: normal mode, economy mode for longer life time of the CRTs, and boost mode for high performance applications
- Optional high quality Line Doubler for improved Video image quality
- On-screen menus selectable between English, French, German and Spanish
- 32 frequency-related memory banks
- LDI (Linear Digital Interpolation)
- Effective on-screen display: installation screens, barscale display of user settings, on-screen display of source frequencies

- Automatic storing of all adjustments
- Ability to set parameters to midposition
- Colour temperature adjustment (3200 K, 4900 K, 6500 K, 9300 K or custom)
- D.D.A. (Digital Dynamic Astigmatism) guarantees superb focus quality from centre to corners of projected image
- 100 % modular construction: allows easy access to all controls and facilitates quick servicing
- 'Seagull' correction to improve corner geometry
- Separate East-West corrections for left and right side
- Built-in projection distance calculator
- Built-in IRIS² automatic convergence unit
- A built-in Scheimpflug optical correction, with stepless adjustments for both horizontal and vertical axis guarantees optimal optical focus from left to right and top to bottom for projection under non-standard angles.

AC power consumption

590 W max [230 VAC +15%/-10%]

Safety regulations

The BARCOGRAPHICS 1209s complies with UL 1950 and EN60950.

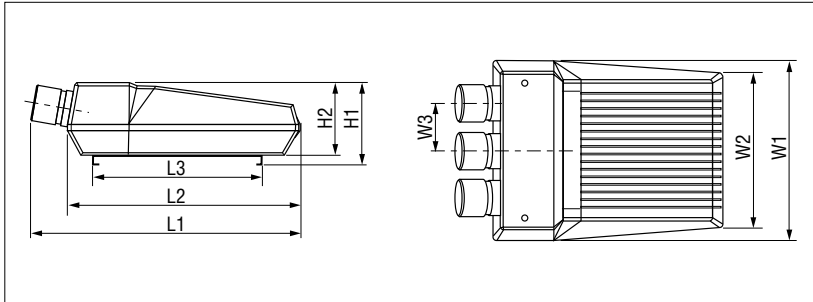
Electromagnetic interference

The BARCOGRAPHICS 1209s complies with FCC Rules & Regulations, part 15 Class B (120 V version) and CE EN55022 Class B (230 V version).

Radiation regulations

The BARCOGRAPHICS 1209s complies with DHHS radiation emission standards 21 CFR Subchapter J.

(1) Measurement method conforms to ANSI IT7.215 standard.



Dimensions	mm	inch
L1	1,174	46.2
L2	1,014	39.9
L3	735	28.9
H1	355	13.9
H2	315	12.4
W1	782	30.8
W2	665	26.2
W3	208	8.2

Weight

Net weight 82 kg (181 lbs)
Shipping weight: 112 kg (247 lbs)

Order information

BARCOGRAPHICS 1209s

230 V: R9000972

120 V: R9000977

RCVDS 05 source selector

230 V R9827880

120 V R9827889

Projector Control software

R9827530

Video line doubler R9828161

Executive remote control

R9827970

Remote infrared receiver

R9827515

D9-BNC cable adapter R9827840

Communication cables

5 m (16 ft.) R9827770

15 m (50 ft.) R9827560

30 m (100 ft.) R9827570

Ceiling mount 808/1200

• With pulley system R9827341

• Without pulley system R9827342

Sturdy, transportable flight case

R9827650

Special add-in boards

• Contrast modulation kit

R9828145

• Orbiting kit

R9827781

• BCL link

R9827862

• Convergence on green R9828080

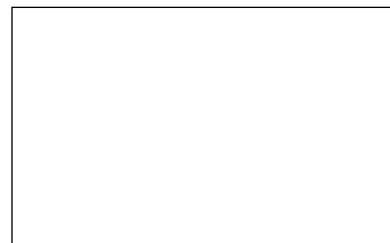
• Tri-level sync input

R9828040

BARCO Projection Systems is an ISO 9001 registered company.

The information and data given are typical for the equipment described. However any individual item is subject to change without any notice.

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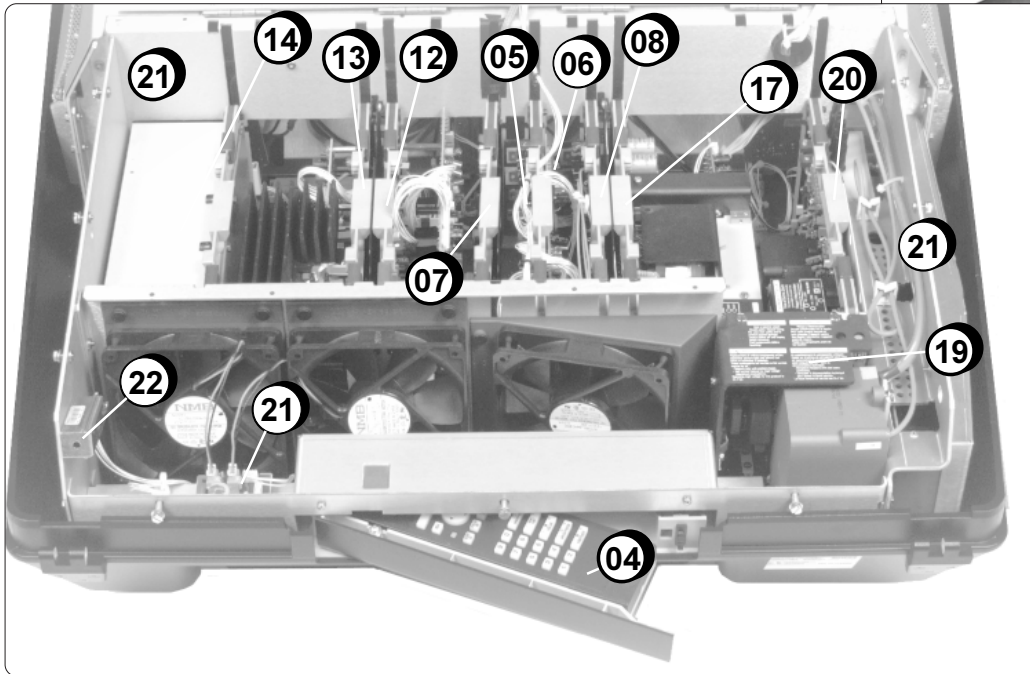
BARCO GRAPHICS
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PARTS LIST ON BOARD LEVEL
PARTS LIST ON COMPONENT LEVEL

Projector (Module Rack)

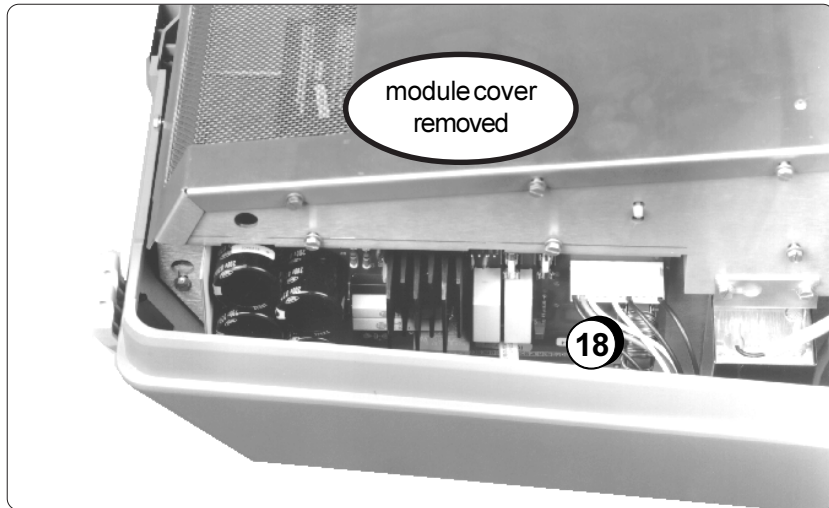


SHEET REFERENCE^o

- | | |
|--|---|
| 04 R791666 INTERNAL CONTROL UNIT
R791664 TRANSMITTER | 14 R762271 MAGNETIC FOCUS & HOR. SHIFT
R762271S SUB UNIT VH/P |
| 05 R762719 RGB INPUT & SWITCH | 15 R762518 CONVERGENCE DRIVER
R7625128 GREEN CONVERGENCE DRIVER |
| 06 R762745 QUAD DECODER | 15 R762519 CONVERGENCE OUTPUT |
| 07 R7621055 RGB ANALOG AUTO SYNC INPUT | 16 R762514 DYNAMIC ASTIGMATISM |
| 08 R762720 RGB GAIN CONTROL | 17 R7621065 SM MODE POWER SUPPLY
R762106S SUB UNIT STBY |
| 09 R762839 RGB OUTPUT AMPLIFIER
R762721S RGB OUTPUT SOCKET
R7628162 CRT UNIT RED
R7628165 CRT UNIT GREEN
R7628166 CRT UNIT BLUE | 18 R762284 POWER INPUT |
| 10 R7625115 CONTROLLER (ASIC) | 19 R762716 EHT
R762833 QUADRUPLER
R762718 SPLITTER |
| 11 R762457 DEFLECTION SWITCHING | 20 R762120 SM POWER SUPPLY 2 + G2
R762120S FOCUS VOLTAGE STABILIZER |
| 12 R7621127 SYNC & VERTICAL DEFLECTION
R7621127S SUB UNIT V HOLD
R762268U ORBITING | 21 R7627591 FRAME
R762285 FAN CNN
R762286 FAN CNN |
| 13 R7621085 HORIZONTAL DEFLECTION
R7621085S | 22 R761781 IR RECEIVER |
| | 23 R762510 RS232 COMM INTERFACE |

Projector (Power Input Module Rack)

Projector (Power Input Module)



SHEET REFERENCE N°

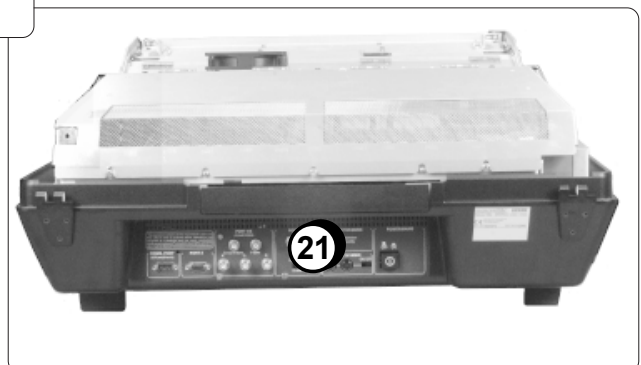
18 R762284 POWER INPUT

Projector (Rear View)

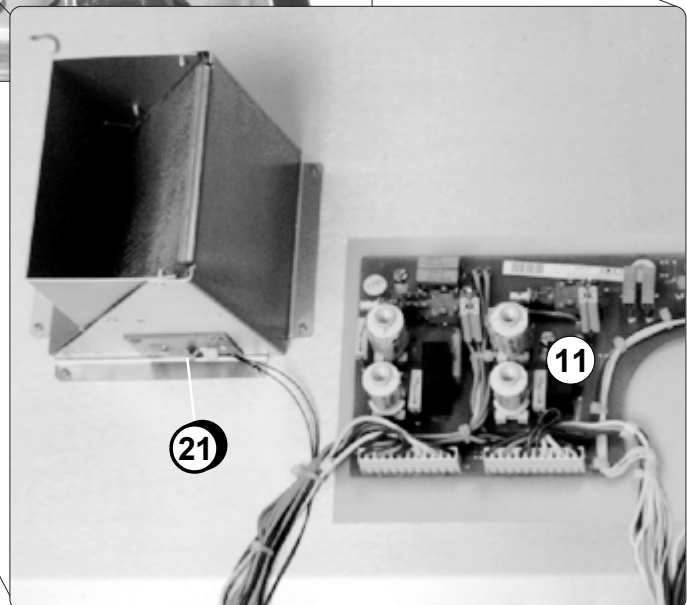
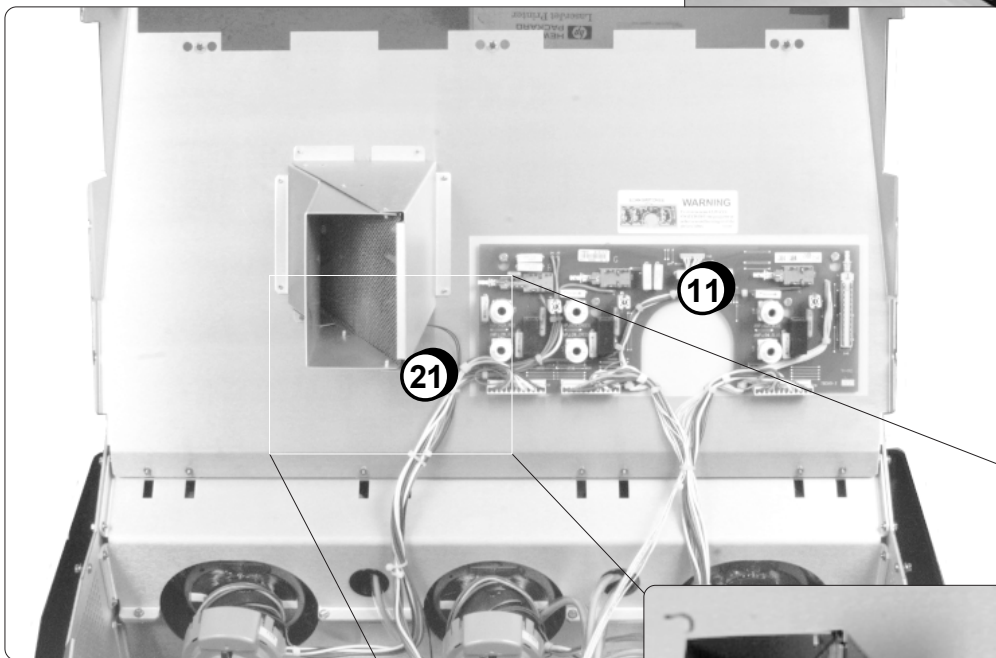
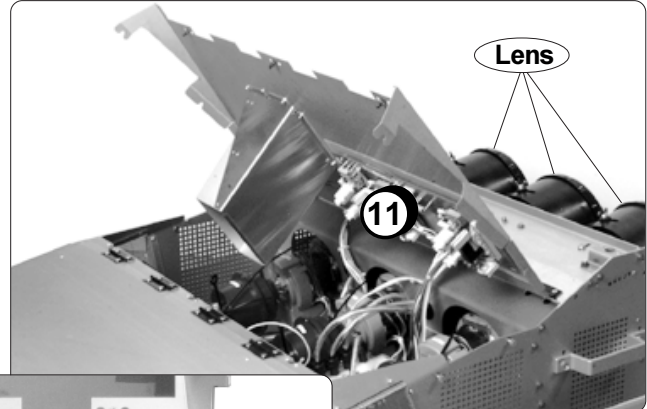


SHEET REFERENCE N°

21 R7627591 Input Module (part of the module rack)



Projector (Fan Conn-Deflection switching)

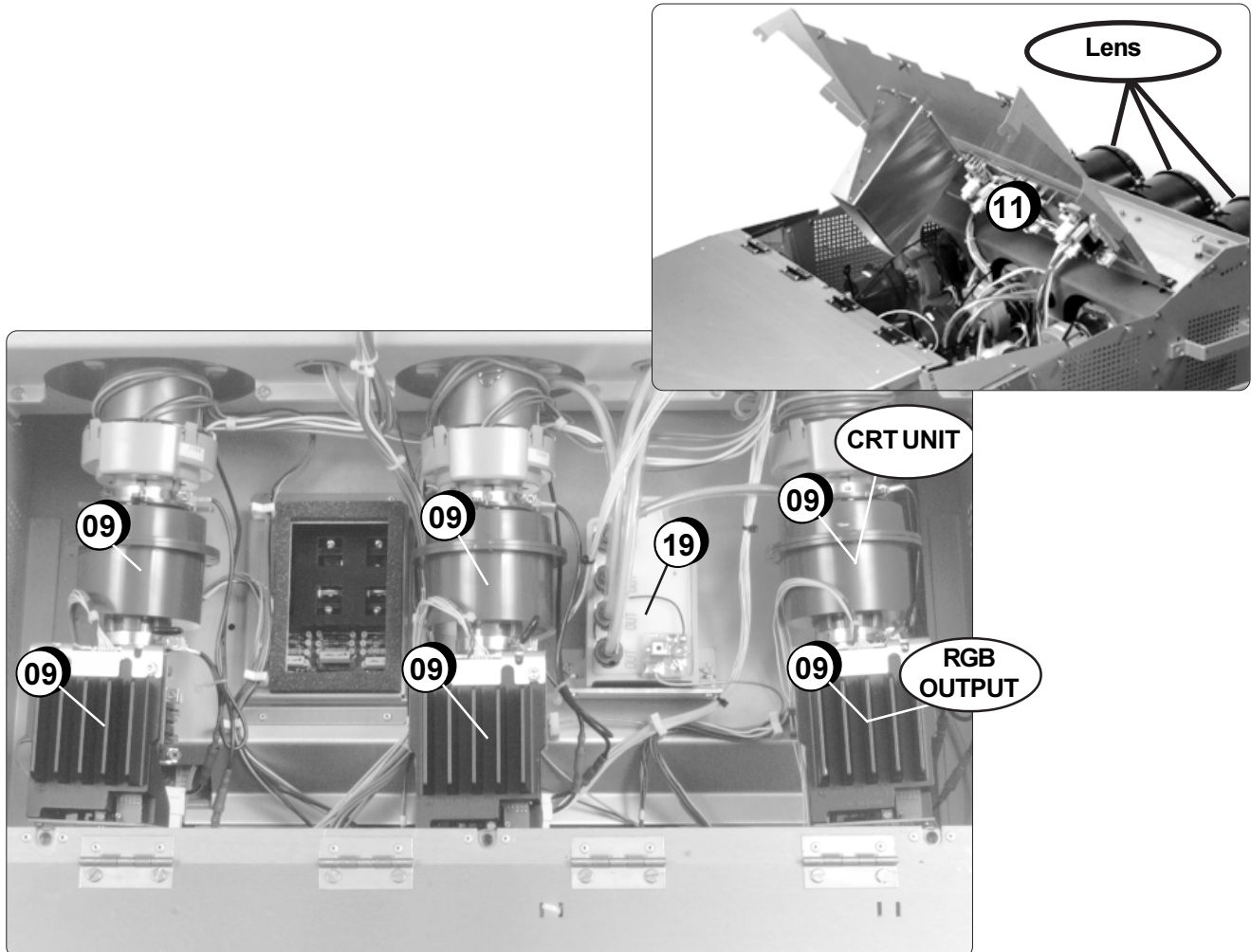


SHEET REFERENCE N°

11 R762457 DEFLECTION SWITCHING

21 R762285 FAN CNN
R762286 FAN CNN

Projector (CRT Units)



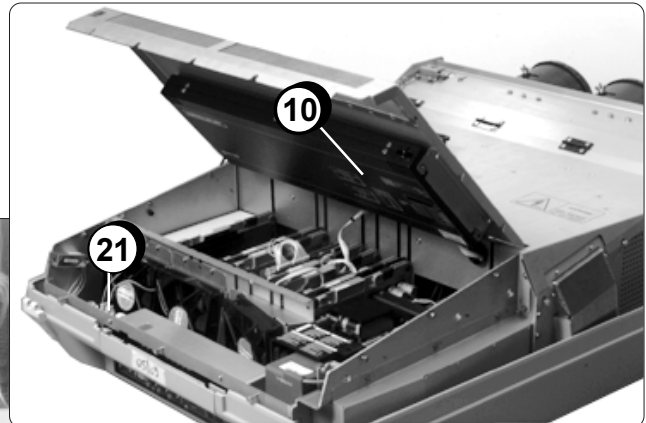
SHEET REFERENCE N°

- ⑨ R762839 RGB OUTPUT AMPLIFIER
- R762721S RGB OUTPUT SOCKET
- R7628162 CRT UNIT RED
- R7628165 CRT UNIT GREEN
- R7628166 CRT UNIT BLUE

- ⑪ R762457 DEFLECTION SWITCHING

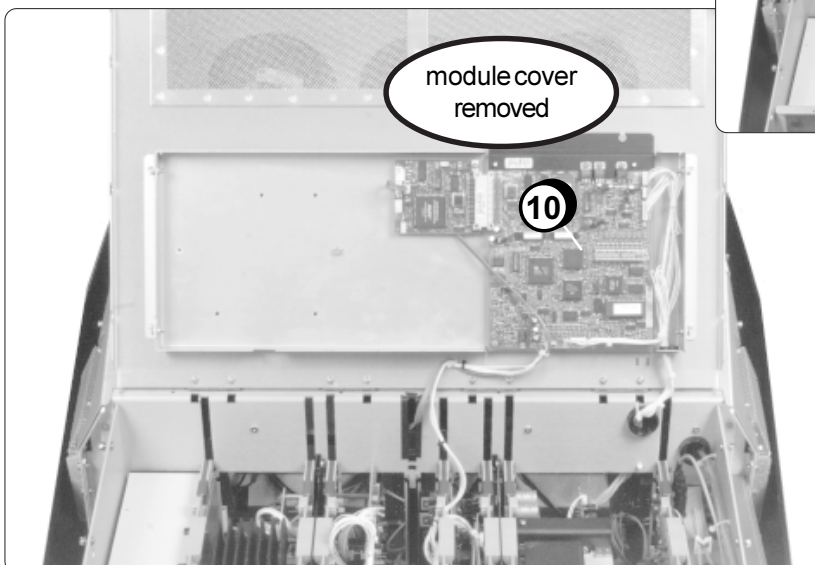
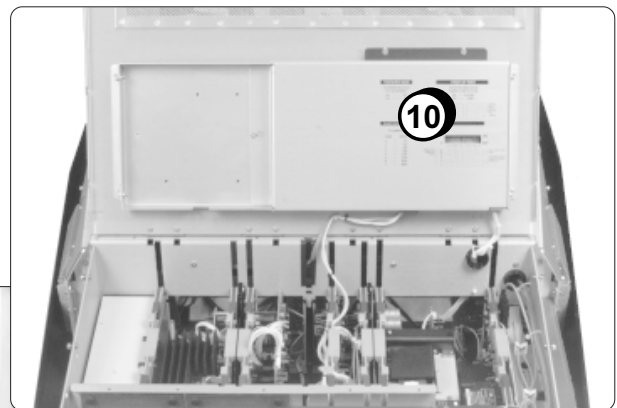
- ⑲ R762718 EHT SPLITTER

Projector (Controller Module- Fan Conn)

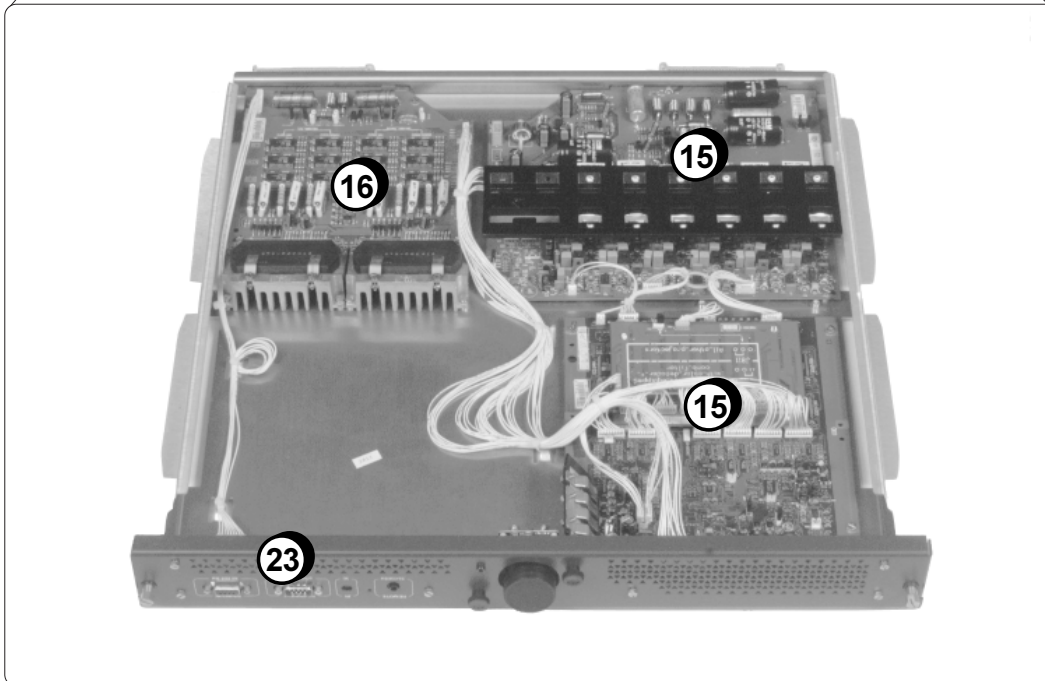


SHEET REFERENCE N°

- 10** R7625115 CONTROLLER (ASIC)
- 21** R7627591 FRAME
 - R762285 FAN CNN
 - R762286 FAN CNN



**Projector (Convergence-Dynamic Astigmatism)
Projector (Front View)**



SHEET REFERENCE N°

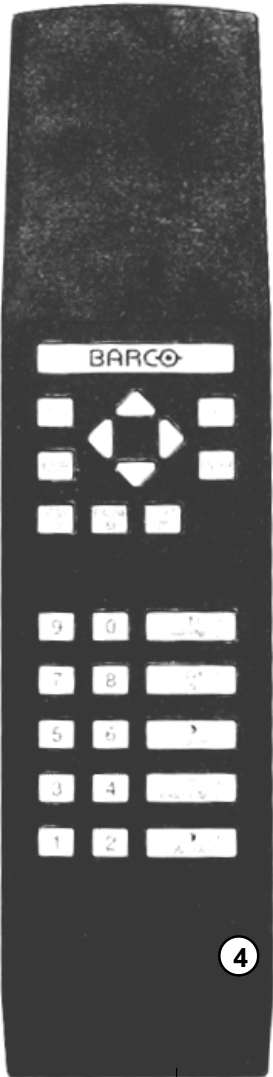
15 R762518 CONVERGENCE DRIVER
R7625128 GREEN CONVERGENCE DRIVER

23 R762510 RS232 COMM INTERFACE

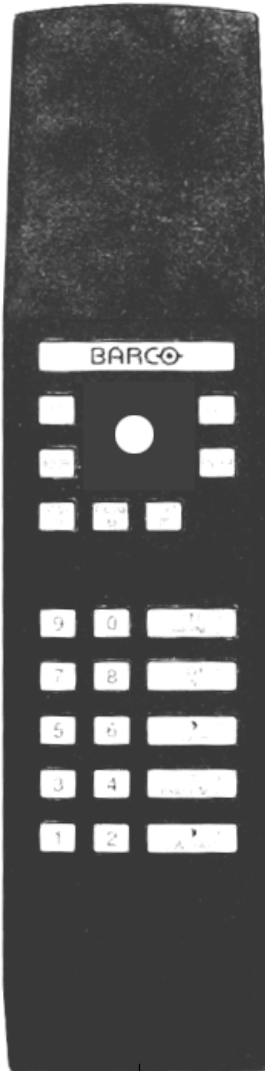
15 R762519 CONVERGENCE OUTPUT

16 R762514 DYNAMIC ASTIGMATISM

RCU with
arrow keys



RCU with
Control Stick



RCU with
Control Button



Sheet reference

④ R791664 Transmitter (Infra Red)

Spare parts BARCOGRAPHICS1209S

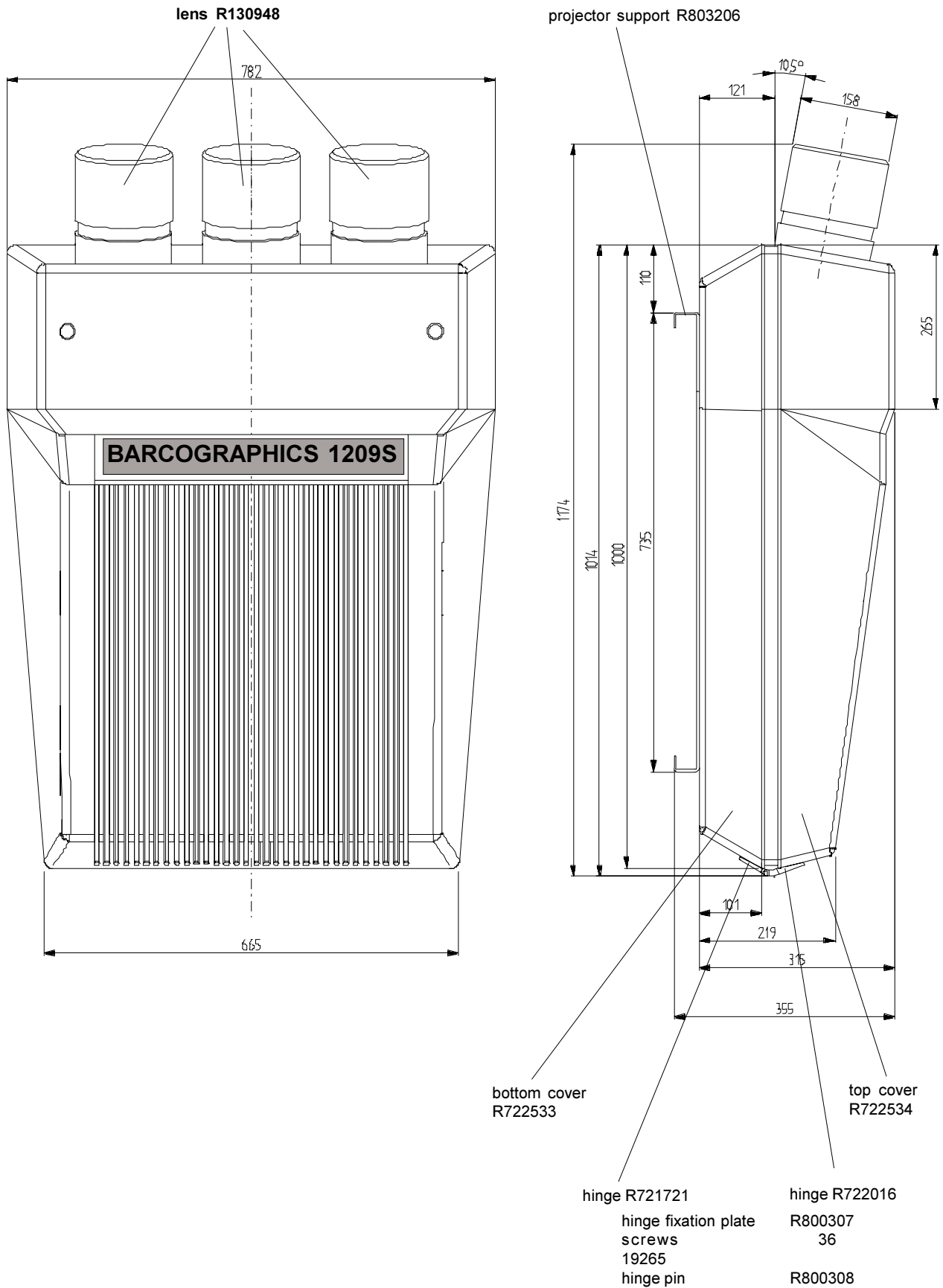
ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY
B360824	SCR \$464 M3 X25 STZN	2	R367092	FSTN 1/4D9 STUD L17 SLOT	2	R762724	UN IRIS2 CAM CCD	1
B360834	NUT D980V M3 LOCK SS	3	R367094	FSTN 1/4D9 RTNR WSHR PL	2	R762745	UN *808S DEC COMB_F	1
R130942	LENS HD10/A+BGT17 (HD120)	3	R367322	CLPS D6799 D4 STPH	2	R7627591	UN G1209S FRM -UN NEW EHT	1
R305915	FLTR MNS 250V 10A T6	1	R3673481	SPR D126 D5,5D10 STZN	1	R7628162	UN G1209S CRT M9M HD10 R	1
R3066461	YOKE@DEF DAV7667	3	R3673796	SPR D125A D5,3D10 BR	2	R7628165	UN G1209S CRT M9M HD10 G	1
R306661	YOKE@ACC MAGN 2P/4P SH	3	R367382	SPR D125B D8,4D17 STZN	4	R7628166	UN G1209S CRT M9M HD10 B	1
R306665	YOKE@FOC KF3205	2	R3673823	SPR \$125 D8,2D22,2 STZN	4	R762833	UN G1208S/2 EHT QDR	1
R3066651	YOKE@FOC KF3205G GN	1	R367435	RVT BLND_R2,4C6,4ALAL	8	R762839	UN G1209S RGB O+S	3
R312011	EMC@FGR CU,H6,6W27,7L500	3	R367435	RVT BLND_R2,4C6,4ALAL	8	R791664	UN RCU700 IR+LGT	1
R313070	J HV F ACC SLV	3	R367435	RVT BLND_R2,4C6,4ALAL	6	R791666	UN *1200 RCU W	1
R3130941	FLTR MNS 250V 10A T6	1	R367435	RVT BLND_R2,4C6,4ALAL	2	R800307	HNG43 PLT FIX	2
R313326	BSHG SN MIN D19/16 P1,6UL	1	R3674391	RVT BLND_R3,2C3,2WSTAL	7	R800307	HNG43 PLT FIX	2
R313326	BSHG SN MIN D19/16 P1,6UL	2	R3674391	RVT BLND_R3,2C3,2WSTAL	8	R800308	HNG43 PIN	2
R313329	BSHG SN D30 /24 P3,2UL	4	R3674411	RVT BLND_R3,2C6,4WSTAL	2	R802635	SCR CUST_RM 4 X 9,9SS	2
R326103	CD MNS 3G1 CEE7 C13 2500	1	R3674411	RVT BLND_R3,2C6,4WSTAL	3	R802745	FRM49 HD8 FIX SPL	1
R3270005	BAT 9V ,5AH A 6LR61	1	R3674411	RVT BLND_R3,2C6,4WSTAL	4	R802959	SPRCL 4,5D7,0D13 STZB	2
R32843504	U_S G1209S CTRLV704GBFE	1	R3674411	RVT BLND_R3,2C6,4WSTAL	14	R803206	FRM G1200 HSG BASE PLT	1
R3420004	CD RECSO 1015G18BK 100	3	R3674411	RVT BLND_R3,2C6,4WSTAL	4	R803317	BOXF SPEC STANDCOR PEF	6
R34200050	CD RNG4RNG41015G18BK25	3	R3674411	RVT BLND_R3,2C6,4WSTAL	4	R803679	FRM G1200 SMP FRM1 SCRN	1
R347965	FAN A FIX RUB L37 BK	4	R367491	FSTN 1/4D4 RCPT PLT RVT	4	R803830	LBL B BARCOGRAPH. 200X25	1
R347968	CBLA SAD SNLWS 11X8 P3,2	3	R367502	SPR D6798AD 3,2D 6 STZN	1	R803836	BOXKIT BOX BV1200 9DB	1
R347968	CBLA SAD SNLWS 11X8 P3,2	4	R367502	SPR D6798AD 3,2D 6 STZN	8	R804638	BOXKIT BOX MANUAL BPS	1
R347972	CBLA EDG EH18U	1	R367502	SPR D6798AD 3,2D 6 STZN	1	R804792	LBL I UNPACKING 400X60	1
R348003	GRMT P1,5 D9,5/8	1	R367503	SPR D6798AD 4,3D 8 STZN	3	R804993	FRM G1200 RC SCR N	1
R348005	CBLA TIE TWIST D7,6/10	3	R367611	SPR D137A D5,3D10 STZN	1	R805012	FRM G1200 CNV SCR N	1
R348019	CBLA TIE BL100 W2,4 -	2	R367611	SPR D137A D5,3D10 STZN	1	R805013	FRM G1200 CNV PIPE R	1
R348019	CBLA TIE BL100 W2,4 -	11	R367612	FSTN 1/4D4 STUD L10 SLOT	3	R805017	FRM G1200 SCR N DN	1
R348019	CBLA TIE BL100 W2,4 -	9	R367613	FSTN 1/4D4 RTNR WSHR ST	3	R805031	FRM G1200 CNV SCR N DN	1
R348019	CBLA TIE BL100 W2,4 -	3	R3953261	TAPE MASK2-S W25,4		R805037	FRM G1200 FIX CNTR	2
R348023	CBLA SAD ADH 4X3	4	R3953261	TAPE MASK2-S W25,4		R805039	FRM G1200 PIPE FE GRID	1
R348024	CBLA SAD SNLWS 1,6	9	R590234	LBL S CEBEC 23 X23 BK	1	R805071	FRM G1200 SCR N UP CPL	1
R348063	CBLA CLP FLT CBL	6	R590252	LBL N 60 X45 AG	2	R805076	SPRCL20,25D3,3D10 BR	1
R348085	FSTN LATCH TOUCH 4,6-6,5	1	R590262	LBL P J LENS B-HD120	3	R805080	FRM G1200 CD-MNS FIX	1
R3485046	CD CT \$FTFT P 4 200	1	R590269	LBL S NO BAT INSTALLED	1	R805081	FRM G1200 CD-MNS DPL	1
R3485056	CD CT FTFT P 5 520	2	R590279	LBL IRIS2 INT. TUNING MK1	1	R805082	TAPE FOAM 30W30X230	4
R3485083	CD CT FTFT P 8 360	1	R593001	BAG PE 200X250X0,06 WL	1	R805083	FRM G1200 PMF BRKT	1
R3485086	CD CT FTFT P 8 520	1	R593430	ROL PEF 1600X500MX1	1	R805084	FRM G1200 PMF SCR N5	1
R3485087	CD CT FTFT P 8 600	1	R593600	CORD STRAP BUCKLE 16MM	2	R805089	FRM G1200 CD-MNS FIX	1
R3485094	CD CT FTFT P 9 480	1	R593601	CORD STRAP W16 PE CC50/2	1	R805090	FRM G1200 WSHR CRT	1
R3495085	CD CT FTFT P 8 450	1	R5975477	MAN ADJ IRIS2	1	R805096	FRM51 PMF SCR N CPL1	1
R3615075	SCR HILO_R 3,2X 7,9STZB	1	R5975628	MAN OVN G1209S	1	R805616	FRM G1208 CNV PIPE L	1
R3619265	SCR D965 M4 X16 STZB	2	R5975638	MAN INS G1209S	1	R805617	FRM G1200 PMF PIPE FR	1
R3619265	SCR D965 M4 X16 STZB	6	R721721	HNG D**43 HSG BASE	2	R805618	FRM G1208 CNV PIPE FR	1
R3619285	SCR D965 M4 X20 STZB	4	R722016	HNG V1600 HSG BASE DN	2	R805619	FRM G1208 DEF SW SCR N	1
R3621229	SCR Z7985 M3 X8 SS	2	R722268	HSG G800 UP IR CAP	1	R805677	HSG G1200 RC WCAP	1
R3621229	SCR Z7985 M3 X8 SS	4	R722296	HSG G800 CSB BRKT	1	R805764	FRM G1208 CNV SLD	1
R3621229	SCR Z7985 M3 X8 SS	2	R722411	FSTNR PJ53 RGB OUT	3	R806078	FRM G1200 CTRL DN	1
R3621235	SCR D7985 M3 X10 STZB	2	R722533	HSG G1200 BR DN	1	R806079	FRM G1209 CTRL UP	1
R362129	SCR D7985 M3 X25 STZN	1	R722534	HSG G1200 BR UP	1	R807301	FRM G1209 HNG	7
R3623285	SCR Z933 M4 X16 STZN	3	R722544	HSG G1200 RC BR BASE	1	R808869	FRM G1209 SF CRT CVR	1
R3623438	SCR D933 M6 X16 SS	3	R722768	FRM G1209 FAN C	3	R809001	SPG COMPR20 D5,5D0,8SS	1
R3623438	SCR D933 M6 X16 SS	4	R723031	NPL G1209S BR	1	R809153	SPG COMPR 14 D5,5D0,8SS	1
R3623772	SCR D933 M8 X30 STBK	3	R732193	BOARD 15MM 1206X811	1	R809163	FRMC G1209S CRT	1
R3626696	SCR D921 M3 X8 SS	2	R732219	PALLET 1350X955X140 WD	1	R809931	FRMC G1209S FRM R	1
R3626696	SCR D921 M3 X8 SS	2	R761740	CDS FAN PJ49 G800 L100	3	R809932	FRMC G1209S FRM L	1
R3626696	SCR D921 M3 X8 SS	6	R761741	CDS FAN PJ49 G800 L100	1	R810305	FRM G1208 CNV FR /3	1
R3626696	SCR D921 M3 X8 SS	14	R761781	UN G800 RX IR RR	1	R810392	FRM G1209S BRKT RGB OUT	3
R3626696	SCR D921 M3 X8 SS	8	R762100D	CDS G1200 FRM CPL	1	V362682	SCR D921 M5 X10 STZN	1
R3626696	SCR D921 M3 X8 SS	3	R7621042D	CDS G1200 CRT 09MX	3	Z348502	CD CT FTFT P 2 110	1
R3631049	SCR Z933 M3 X6 SS	2	R7621055	UN *1200 INP RGB S_TRACK	1	Z3485067	CD CT FTFT P 6 100	2
R3631059	SCR Z933 M3 X8 SS	25	R7621065	UN G1200 SMP CPL MK2	1	Z3486036	CD SHLD P 3 CTF CTF 1900	1
R3631079	SCR Z933 M3 X12 SS	3	R7621085	UN G1200 HOR 09MI MK2	1	Z3624175	SCR D912 M3 X10 STZB	1
R3631089	SCR Z933 M3 X16 SS	2	R7621127	UN G1200 VER+S MK3	1	Z367383	SPRD125AD10,5D21 STZN	2
R3631239	SCR Z933 M4 X10 SS	10	R762120	UN G1200 G2+CHK CPL	1			
R3631239	SCR Z933 M4 X10 SS	1	R762271	UN G1200 M_F+SH MK2	1			
R3631239	SCR Z933 M4 X10 SS	6	R762284	UN G1200/2 MNS CPL	1	A503159	J MD2 C MBS P100E1AU 6,7	2
R3631239	SCR Z933 M4 X10 SS	6	R762285	UN G1200 FAN CNN FRM	1	A503437	J MD2 C FBT P10E1AU 7,0	1
R3631239	SCR Z933 M4 X10 SS	2	R762286	UN G1200/2 FAN CNN C	1	A509022	D TVS 33V 1500WU CB429	1
R3631239	SCR Z933 M4 X10 SS	3	R762457	UN G1200 DEF SW_W_LG	1	A551674	R MF H430K F 0W6 E4	1
R3631239	SCR Z933 M4 X10 SS	2	R762510	UN G808 RS232	1	A552528	C PPMERA 100NM162E11 HV	1
R3631239	SCR Z933 M4 X10 SS	2	R7625115	UN G808 CTRL 68000	1	A573058	XO 16M000000 TN-10DIP 8M	1
R3631239	SCR Z933 M4 X10 SS	4	R762514	UN G808 AST DYN	1	A573379	QBD242B P P TO220	2
R3631239	SCR Z933 M4 X10 SS	6	R762518	UN G1200 CNV DVR	1	B133165	QAPT12082LNRFPN TO264	1
R3631249	SCR Z933 M4 X12 SS	2	R762519	UN G1208 CHN OUT	1	B133338	U2631 HCPL DIP8 P	1
R3631449	SCR Z933 M5 X10 SS	12	R7625214	UN G1209S FRMC	1	B134308	U08B VPJ	2
R3631449	SCR Z933 M5 X10 SS	4	R762716	UN G808S EHT	1	B3060172	CH RA ES 7 T 16,71 UH Q70	1
R3631459	SCR Z933 M5 X12 SS	12	R762718	UN G808S EHT SPL	1	B3060192	CH RA ES 7 T 2,91 UH Q54	1
R3631469	SCR Z933 M5 X16 SS	8	R762719	UN G808S RGB INP	1	B338800	J PHN FBS D 3.5MON P	2
R3631469	SCR Z933 M5 X16 SS	9	R762720	UN G808S RGB DVR	1			
R366102	NUT D934 M3 STZN	8	R762722	UN IRIS2 CTRL	1	K3060242	CH RA ES 10 UH S7 T	1
R3661026	NUT D934 M3 SS	1						
R366103	NUT D934 M4 STZN	2						
R3661036	NUT D934 M4 SS	6						
R3661575	NUT TRAD_LM 5 STZN	8						
R366245	NUT D985 M8 STZN	4						
R367080	FSTN CLMP HS 35-50 M4 SS	3						

ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY
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P200361	R# CE H 8E2 F 0W25 1206	1	P201083	R# CE H680E F 0W12 0805	21	P210070	C# COG MU 680P J 50 0805	2
P200363	R# CE H 10E F 0W25 1206	20	P201084	R# CE H750E F 0W12 0805	7	P210073	C# COG MU 82P J 50 1206	10
P200371	R# CE H 22E F 0W25 1206	1	P201085	R# CE H820E F 0W12 0805	8	P210076	C# COG MU 220P J 50 1206	1
P200377	R# CE H 39E F 0W25 1206	4	P201086	R# CE H910E F 0W12 0805	4	P210081	C# COG MU 180P J 50 0805	8
P200379	R# CE H 47E F 0W25 1206	7	P201087	R# CE H 1K F 0W12 0805	78	P210091	C# COG MU 1P D 50 0805	2
P200381	R# CE H 56E F 0W25 1206	2	P201088	R# CE H 1K1 F 0W12 0805	4	P210092	C# X7R MU 10N K 50 1206	4
P200385	R# CE H 82E F 0W25 1206	2	P201089	R# CE H 1K2 F 0W12 0805	6	P210095	C# X7R MU 330N M 50 1812	13
P200386	R# CE H 91E F 0W25 1206	1	P201090	R# CE H 1K3 F 0W12 0805	1	P210097	C# X7R MU 33N K 50 1206	4
P200387	R# CE H100E F 0W25 1206	87	P201091	R# CE H 1K5 F 0W12 0805	10	P210102	C# COG MU 470P J 50 1206	2
P200389	R# CE H120E F 0W25 1206	4	P201092	R# CE H 1K6 F 0W12 0805	1	P210106	C# X7R MU 3N9J 50 1206	1
P200391	R# CE H150E F 0W25 1206	3	P201093	R# CE H 1K8 F 0W12 0805	8	P210111	C# X7R MU 47N K 50 0805	3
P200395	R# CE H220E F 0W25 1206	7	P201095	R# CE H 2K2 F 0W12 0805	46	P210112	C# COG MU 1N2J 50 1206	1
P200397	R# CE H270E F 0W25 1206	8	P201096	R# CE H 2K4 F 0W12 0805	4	P210115	C# COG MU 6P8D 50 0805	6
P200399	R# CE H330E F 0W25 1206	2	P201097	R# CE H 2K7 F 0W12 0805	2	P210121	C# COG MU 330P J 50 1206	3
P200401	R# CE H390E F 0W25 1206	15	P201099	R# CE H 3K3 F 0W12 0805	18	P210122	C# X7R MU 100N K 50 1206	294
P200403	R# CE H470E F 0W25 1206	65	P201101	R# CE H 3K9 F 0W12 0805	10	P210124	C# X7R MU 100N K 50 0805	1
P200405	R# CE H560E F 0W25 1206	3	P201102	R# CE H 4K3 F 0W12 0805	1	P210130	C# COG MU 2P2D 50 0805	5
P200407	R# CE H680E F 0W25 1206	14	P201103	R# CE H 4K7 F 0W12 0805	60	P210131	C# COG MU 2P7D 50 0805	3
P200409	R# CE H820E F 0W25 1206	9	P201104	R# CE H 5K1 F 0W12 0805	1	P210133	C# COG MU 3P9D 50 0805	3
P200411	R# CE H 1K F 0W25 1206	95	P201105	R# CE H 5K6 F 0W12 0805	19	P210134	C# COG MU 5P6D 50 0805	6
P200412	R# CE H 1K1 F 0W25 1206	1	P201106	R# CE H 6K2 F 0W12 0805	2	P210135	C# COG MU 8P2D 50 0805	3
P200413	R# CE H 1K2 F 0W25 1206	11	P201107	R# CE H 6K8 F 0W12 0805	14	P210136	C# Y5V MU 330N Z 50 1206	7
P200415	R# CE H 1K5 F 0W25 1206	23	P201108	R# CE H 7K5 F 0W12 0805	4	P210137	C# COG MU 100P J 50 1206	19
P200416	R# CE H 1K6 F 0W25 1206	2	P201109	R# CE H 8K2 F 0W12 0805	5	P210138	C# COG MU 10P J 50 1206	9
P200417	R# CE H 1K8 F 0W25 1206	20	P201110	R# CE H 9K1 F 0W12 0805	1	P210139	C# COG MU 33P J 50 1206	3
P200419	R# CE H 2K2 F 0W25 1206	79	P201111	R# CE H 10K F 0W12 0805	96	P210140	C# X7R MU 4N7K 50 1206	5
P200421	R# CE H 2K7 F 0W25 1206	10	P201112	R# CE H 11K F 0W12 0805	6	P210141	C# COG MU 27P J 50 1206	3
P200423	R# CE H 3K3 F 0W25 1206	46	P201113	R# CE H 12K F 0W12 0805	9	P210148	C# Y5V MU 470N Z 25 1206	9
P200425	R# CE H 3K9 F 0W25 1206	15	P201114	R# CE H 13K F 0W12 0805	7	P210150	C# X7R MU 3N3K 50 1206	1
P200426	R# CE H 4K3 F 0W25 1206	1	P201115	R# CE H 15K F 0W12 0805	21	P210151	C# X7R MU 18N K 50 1206	1
P200427	R# CE H 4K7 F 0W25 1206	61	P201116	R# CE H 16K F 0W12 0805	1	P210153	C# Z5U MU 1M M 63 1812	2
P200429	R# CE H 5K6 F 0W25 1206	26	P201117	R# CE H 18K F 0W12 0805	4	P210158	C# COG MU 150P J 50 1206	3
P200431	R# CE H 6K8 F 0W25 1206	5	P201118	R# CE H 20K F 0W12 0805	7	P210169	C# X7R MU 220N K 50 1210	8
P200433	R# CE H 8K2 F 0W25 1206	18	P201119	R# CE H 22K F 0W12 0805	32	P210178	C# Y5V MU 1M Z 16 1206	45
P200435	R# CE H 10K F 0W25 1206	156	P201120	R# CE H 24K F 0W12 0805	2	P210182	C# COG MU 12P J 50 0805	5
P200437	R# CE H 12K F 0W25 1206	38	P201121	R# CE H 27K F 0W12 0805	4	P210185	C# COG MU 390P J 50 1206	2
P200439	R# CE H 15K F 0W25 1206	69	P201122	R# CE H 30K F 0W12 0805	3	P210213	C# Y5V MU 100N Z 25 0805	158
P200441	R# CE H 18K F 0W25 1206	42	P201123	R# CE H 33K F 0W12 0805	12	P210217	C# COG MU 82P J 50 0805	1
P200442	R# CE H 20K F 0W25 1206	2	P201124	R# CE H 36K F 0W12 0805	3	P210220	C# X7R MU 10N K500 1210	4
P200443	R# CE H 22K F 0W25 1206	39	P201125	R# CE H 39K F 0W12 0805	4	P210227	C# Z5U MU 100N Z 50 0805	150
P200445	R# CE H 27K F 0W25 1206	1	P201127	R# CE H 47K F 0W12 0805	35	P212001	C# TA 2M2M 20 3528	3
P200447	R# CE H 33K F 0W25 1206	4	P201129	R# CE H 56K F 0W12 0805	14	P212005	C# TA 47M M 10 7343	7
P200449	R# CE H 39K F 0W25 1206	5	P201130	R# CE H 62K F 0W12 0805	1	P212006	C# TA 4M7M 16 3528	3
P200451	R# CE H 47K F 0W25 1206	8	P201131	R# CE H 68K F 0W12 0805	2	P212009	C# TA 1M M 16 3216	2
P200453	R# CE H 56K F 0W25 1206	1	P201133	R# CE H 82K F 0W12 0805	5	P212015	C# TA 33M K 16 7343	3
P200457	R# CE H 82K F 0W25 1206	1	P201135	R# CE H100K F 0W12 0805	48	P212018	C# TA 10M M 16 6032	10
P200459	R# CE H100K F 0W25 1206	18	P201137	R# CE H120K F 0W12 0805	3	P212024	C# TA 10M M 35 7343	10
P200461	R# CE H130K F 0W25 1206	4	P201138	R# CE H130K F 0W12 0805	3	P212031	C# TA 22M M 16 7343	7
P200463	R# CE H150K F 0W25 1206	3	P201139	R# CE H150K F 0W12 0805	19	P212040	C# TA 100M M6V3 7343	1
P200465	R# CE H180K F 0W25 1206	2	P201141	R# CE H180K F 0W12 0805	1	P212067	C# TA 1M M 50 6032	2
P200469	R# CE H270K F 0W25 1206	8	P201143	R# CE H220K F 0W12 0805	30	P230006	U#062 TL S08 P	9
P200470	R# CE H300K F 0W25 1206	1	P201146	R# CE H300K F 0W12 0805	3	P2300090	U#14046B MC SOL16 I	1
P200471	R# CE H330K F 0W25 1206	4	P201149	R# CE H390K F 0W12 0805	1	P230021	U#74HC04 SO14 I	3
P200473	R# CE H390K F 0W25 1206	1	P201151	R# CE H470K F 0W12 0805	12	P230025	U#74HC123 SO16 I	2
P200475	R# CE H470K F 0W25 1206	6	P201155	R# CE H680K F 0W12 0805	2	P230028	U#393 LM S08 P	8
P200483	R# CE H 1M F 0W25 1206	1	P201157	R# CE H820K F 0W12 0805	7	P230030	U#4053 SO16 I	5
P200499	R# CE H 4M7 F 0W25 1206	3	P201158	R# CE H910K F 0W12 0805	1	P230034	U#4013 SO14 I	1
P200505	R# CE H 8M2 F 0W25 1206	1	P201159	R# CE H 1M F 0W12 0805	9	P230046	U#74HC393 SO14 I	1
P200507	R# CE H 10M F 0W25 1206	2	P201352	R# CE H 10M K 0W12 0805	3	P230051	U#74HCT245 SO120 I	3
P200577	R# CE H 1E J 0W12 0805	21	P201354	R# CE H 0E J 0W12 0805	7	P230062	U#78L05A LM S08 P	1
P200593	R# CE H 4E7 J 0W12 0805	23	P201370	R#TCE H 10K M 0W1 S4 TS	1	P230064	U#4052 SO16 I	2
P201015	R# CE H 1E F 0W12 0805	1	P201390	R#TCE H 2K M 0W25 S4 TS	6	P230072	U#74HC00 SO14 I	2
P201031	R# CE H 4E7 F 0W12 0805	8	P201392	R#TCE H200E M 0W25 S4 TS	3	P230073	U#74HC123 SO16 I	5
P201039	R# CE H 10E F 0W12 0805	37	P201393	R#TCE H 50K M 0W25 S4 TS	15	P230096	U#74HCT02 SO14 I	1
P201047	R# CE H 22E F 0W12 0805	1	P202220	R# MF H 47E F 0W25 MMELF	6	P230100	U#3080 CA S08 P	7
P201052	R# CE H 36E F 0W12 0805	2	P202228	R# MF H100E F 0W25 MMELF	1	P230102	U#74HCT00 SO14 I	1
P201055	R# CE H 47E F 0W12 0805	17				P230153	U#74HC32 SO14 I	1
P201056	R# CE H 51E F 0W12 0805	3	P210001	C# COG MU 10P C 50 0805	6	P230164	U#74HC573 SOL20 I	2
P201057	R# CE H 56E F 0W12 0805	11	P210005	C# X7R MU 39N K 50 1206	2	P230173	U#74HC14 SO14 I	1
P201059	R# CE H 68E F 0W12 0805	3	P210010	C# COG MU 68P J 50 1206	7	P230203	U#084 TL SO14 P	19
P201060	R# CE H 75E F 0W12 0805	8	P210013	C# COG MU 1N J 50 1206	2	P230206	U#74HC30 SO14 I	1
P201061	R# CE H 82E F 0W12 0805	9	P210016	C# COG MU 15P J 50 0805	1	P230218	U#74HC86 SO14 I	1
P201063	R# CE H100E F 0W12 0805	53	P210018	C# COG MU 33P J 50 0805	3	P230220	U#74HC4538 SO16 I	2
P201065	R# CE H120E F 0W12 0805	6	P210019	C# COG MU 47P J 50 0805	6	P230222	U#74HC03 SO14 I	1
P201066	R# CE H130E F 0W12 0805	3	P210020	C# COG MU 68P J 50 0805	2	P230231	U#74HC08 SO14 I	2
P201067	R# CE H150E F 0W12 0805	4	P210021	C# COG MU 100P J 50 0805	14	P230266	U#353 LF S08 P	1
P201068	R# CE H160E F 0W12 0805	1	P210022	C# COG MU 150P J 50 0805	5	P230287	U#74HC20 SO14 I	2
P201069	R# CE H180E F 0W12 0805	2	P210023	C# COG MU 220P J 50 0805	5	P230293	U#082 TL S08 P	14
P201070	R# CE H200E F 0W12 0805	1	P210024	C# COG MU 330P J 50 0805	1	P230318	U#74HCT245 SOL20 I	1
P201071	R# CE H220E F 0W12 0805	11	P210025	C# COG MU 470P J 63 0805	3	P230328	U#064 TL SO14 I	5
P201072	R# CE H240E F 0W12 0805	3	P210029	C# COG MU 2N2J 50 1206	7	P230343	U#74AC02 SO14 I	1
P201073	R# CE H270E F 0W12 0805	8	P210035	C# X7R MU 1N K 50 0805	19	P230344	U#74AC08 SO14 I	1
P201075	R# CE H330E F 0W12 0805	13	P210039	C# X7R MU 4N7K 50 0805	1	P230372	U#80C32 PLCC44 P	1
P201076	R# CE H360E F 0W12 0805	3	P210041	C# X7R MU 10N K 50 0805	23	P230384	U#74AC00 SO14 I	1
P201077	R# CE H390E F 0W12 0805	3	P210043	C# X7R MU 22N K 50 0805	2	P230451	U#4098 HCF SO16 I	1
P201078	R# CE H430E F 0W12 0805	15	P210045	C# X7R MU 47N K 50 1206	4	P230453	U#34081 MC S08 P	1
P201079	R# CE H470E F 0W12 0805	63	P210061	C# COG MU 4P7D 50 0805	6	P230498	U#74HCT03 SO14 I	1
P201080	R# CE H510E F 0W12 0805	5	P210064	C# COG MU 22P J 50 1206	1			

ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY
P230499	U#74HCT14 SO14 I	1	P250533	CH# 330.00NH L1210	1	R101571	R MF H820K F 0W4 E3	4
P230506	U#68901 MK PLCC52 P	1	P252512	X# 9M216000 30 MG3A	1	R101572	R MF H 1M F 0W4 E3	6
P230526	U#74AC32 SO14 I	1				R101573	R MF H 43K2 F 0W4 E3	1
P230543	U#8574 PCF SOL16 P	3	R100124	R MF V100E J 0W6 E2	2	R102038	R CC H 1K5 K 0W5 E6	3
P230561	U#14C88 MC SO14 P	1	R100136	R MF V 1K J 0W6 E2	2	R102148	R CC H 10K K 1W E8	1
P230625	U#68230-8 TS PLCC52 P	1	R100137	R MF V 1K2 J 0W6 E2	1	R102498	R MF H E47J 0W6	1
P230628	U#74HCT153 SO16 I	3	R100145	R MF V 5K6 J 0W6 E2	1	R103158	R MO H 68K J 1W	1
P230652	U#75C189A SN SO14 P	1	R1001909	R CFFV E1 K 0W4 E1	4	R103224	R MO H100E J 2W	1
P230653	U#BELLA 4 SOL28 P	54	R1003009	R CFFV 1E J 0W25 E1	2	R103226	R MO H150E J2W E10	15
P230677	U#121GB TLP MINISO4P	1	R1003169	R CFFV 22E J 0W25 E1	1	R103248	R MO H 10K J 2W E10	3
P230705	U#34084 MC SOL16 P	11	R1011008	R CFFH 1E J 0W25	13	R103254	R MO H 33K J 2W E10	3
P230713	U#74HC4052 SO16 I	1	R1011046	R CFFH 2E2 J 0W35	1	R103341	R MO H 2K7 J 4W E10	1
P230754	U#74AC541 SOL20 I	1	R1011059	R CFFH 2E7 J 0W25	3	R103600	R WWH E1 K 4W	10
P230756	U#SRAM 32KX8 70FP28 P	1	R1011129	R CFFH 10E J 0W25	5	R103612	R WWH 1E K 4W E10	1
P230768	U#5534 NE SO8 P	6	R1011169	R CFFH 22E J 0W25	3	R103616	R WWH 2E2 K 4W E10	3
P230886	U#74HC4051 SO16 I	1	R1011209	R CFFH 47E J 0W25	4	R103620	R WWH 4E7 K 4W E10	15
P230911	U#8574A PCF SOL16 P	1	R1011246	R CFFH100E J 0W35	2	R103640	R WWH220E J 4W E10	1
P230912	U#04 MLT SOL18 I	2	R1011369	R CFFH 1K J 0W25	1	R103660	R WWH 1K K 4W	6
P230936	U#8444A TDA SOL20 P	1	R1011907	R CFFH 1E K 0W35	13	R103742	R WWH 1K5 K 5W	3
P230969	U#1881 LM SO8 P	2	R1011917	R CFFH E22K 0W35	2	R1040101	R WWH 5E1 K11W	2
P2309910	U#68EC000-16MC PLCC68P	1	R1012009	R CFFH 1E J 0W5	1	R1041698	R WWH 1K5 K 2W	1
P231013	U#3046 CA SO14 I	2	R1012997	R CFFH E1 K 0W7	4	R1041988	R WWHV270E K2W	3
P231025	U#8709A TDA SOL28 P	1	R101300	R MF H 1E J 1W E6	12	R104212	R WWHV 4E7 K7W	3
P231055	U#28C64B -15PLCC32 P	1	R101346	R MF H 6K8 J 1W E6	2	R104446	R WWHV82E K17W	2
P231121	U#8282A-4EPF PLCC84 P	1	R101358	R MF H 68K J 2W E7	1	R104654	R HV H 1M J 0W5 3500	6
P231230	U#2-20 MSWA SO8 I	3	R101359	R MF H 82K J 2W E7	1	R104656	R HV H 1M2 J 0W5 3500	1
P231233	U#1100 HFA SO8 I	6	R101404	R MF H 2E2 J 2W E7	3	R104658	R HV H 1M5 J 0W5 3500	2
P231268	U#SRAM 32KX8 15SOJ28 P	2	R101460	R MF H100K J 2W E7	2	R104668	R HV H 3M9 J 0W5 3500	3
P231280	U#1686M CXA SOL30 P	1	R101462	R MF H10E F 0W4 E3	5	R104672	R HV H 5M6 J 0W5 3500	2
P231281	U#2024AQ CXD QFP80 P	1	R101500	R MF H 1E F 0W4 E3	11	R104678	R HV H 10M J 0W5 3500	1
P231329	U#4665 TDA SO16 P	1	R101504	R MF H 2E2 F 0W4 E3	2	R104690	R HV H 33M J 0W5 3500	2
P231479	U#542 DG SO16 I	6	R101505	R MF H 2E7 F 0W4 E3	1	R105016	R NTC 2K7 0W25	4
P231489	U#835 AD SO8 I	7	R101508	R MF H 4E7 F 0W4 E3	1	R105211	R PTCR 5K 14MA	2
P231526	U#541 DG SO16 I	3	R101512	R MF H10E F 0W4 E3	8	R106727	R TCE H 2K K 0W5 S10TS	2
P231527	U#360 LM SO8 P	1	R101514	R MF H 15E F 0W4 E3	11	R106732	R TCE H 50K K 0W5 S10TS	1
P232004	Q#BC849C NSS SOT23	40	R101515	R MF H 18E F 0W4 E3	4	R106733	RTCEH100K K 0W5 S10TS	1
P232026	Q#BC817-40 NSS SOT23	8	R101516	R MF H 22E F 0W4 E3	2	R106827	RTCEV 2K K 0W5 S10SS	3
P232033	Q#BSV52 NSS SOT23	6	R101519	R MF H 39E F 0W4 E3	4	R106828	RTCEV 5K K 0W5 S10SS	2
P232042	Q#BC807-25 PSS SOT23	7	R101520	R MF H 10E F 0W4 E3	3	R106829	RTCEV 10K K 0W5 S10SS	1
P232043	Q#BC849B NSS SOT23	54	R1015231	R MF H 75E F 0W4 E3	5	R106832	RTCEV 50K K 0W5 S10SS	1
P232044	Q#BC859B PSS SOT23	52	R101524	R MF H100E F 0W4 E3	45	R106833	RTCEV100K K 0W5 S10SS	2
P232046	Q#BSS123 F SS SOT23	24	R101525	R MF H120E F 0W4 E3	3	R107005	RTCEH500E K 0W5 S 7TS	11
P232050	Q#BC857B PSS SOT23	7	R101526	R MF H150E F 0W4 E3	9	R107007	RTCEH 2K K 0W5 S 7TS	2
P232051	Q#BC847B NSS SOT23	13	R101527	R MF H180E F 0W4 E3	7	R107009	RTCEH 10K K 0W5 S 7TS	3
P232054	Q#BCV27 DN SS SOT23	4	R101528	R MF H220E F 0W4 E3	10	R107010	RTCEH 20K K 0W5 S 7TS	1
P232066	Q#BSR14 NSS SOT23	2	R1015281	R MF H200E F 0W4 E3	2	R107012	RTCEH 50K K 0W5 S 7TS	2
P232076	Q#BFS17 NSS SOT23	11	R101529	R MF H270E F 0W4 E3	9	R1075301	RMCEH100K K 0W5 M10SS	2
P232079	Q#BSS84 F SS SOT23	10	R101530	R MF H330E F 0W4 E3	5	R107534	RMCEH100K K 0W75 M20SS	2
P232090	Q#BFR92A NSS SOT23	6	R101531	R MF H390E F 0W4 E3	4	R1076136	R THV 5M M 0W5 1000	3
P232092	Q#BF623 PSS SOT89	2	R101532	R MF H470E F 0W4 E3	17			
P232101	Q#BC859C PSS SOT23	26	R101533	R MF H660E F 0W4 E3	8	R1111355	C EL AX1000MM 10E10 85	1
P232109	Q#BFG31 PSS SOT223	10	R101534	R MF H680E F 0W4 E3	5	R1111565	C EL AX 10M T 25E6 85	3
P232122	Q#BCX56 NP SOT89	3	R101535	R MF H820E F 0W4 E3	15	R111164	C EL AX1000MT 25E14 85	6
P232149	Q#BF821 PSS SOT23	4	R101536	R MF H 1K F 0W4 E3	70	R111193	C EL AX1000MT 40E18 85	2
P232150	Q#BF822 NSS SOT23	2	R101537	R MF H 1K2 F 0W4 E3	22	R111223	C EL AX 470M T100E10 85	4
P232158	Q#BF824 PSS SOT23	4	R101538	R MF H 1K5 F 0W4 E3	19	R1113889	C EL RA 47M M100E2 85	6
P234004	D#BAV70 C-C SOT23	7	R101539	R MF H 1K8 F 0W4 E3	6	R1114169	C EL RA 10M M350E2 105	1
P234014	D#ZEN 5V6 0W3 C SOT23	1	R101540	R MF H 2K2 F 0W4 E3	32	R111453	C EL RA1000M M 6E2 85	1
P234018	D#ZEN 6V2 0W5 C DMMELF	3	R1015401	R MF H 2K F 0W4 E3	3	R111458	C EL RA 470M M 10E2 85	1
P234029	D#BAW56 C-A SOT23	3	R101541	R MF H 2K7 F 0W4 E3	17	R111466	C EL RA 100M M 16E2 85	9
P234040	D#LED LSS260 RED SOT23	11	R101542	R MF H 3K3 F 0W4 E3	15	R111467	C EL RA 220M Z 16E2 85	3
P234046	D#ZEN 12V 0W5 C DMMELF	4	R101543	R MF H 3K9 F 0W4 E3	8	R111468	C EL RA 470M M 16E2 85	12
P234047	D#BAV99 SER SOT23	5	R101544	R MF H 4K7 F 0W4 E3	39	R1114689	C EL RA 470M M 16E2 105	1
P234055	D#BAT54 SCH SOT23	54	R101545	R MF H 5K6 F 0W4 E3	11	R111469	C EL RA1000M M 16E2 85	1
P234056	D#4002 R DMELF	1	R101546	R MF H 6K8 F 0W4 E3	16	R1114708	C EL RA2200M M 16E3 SM	4
P234057	D#ZEN 8V2 0W5 C DMMELF	1	R101547	R MF H 8K2 F 0W4 E3	12	R1114729	C EL RA4700M M 16E3 105	1
P234062	D#LED LYS260 YEL SOT23	36	R101548	R MF H 10K F 0W4 E3	72	R111476	C EL RA 47M M 25E2 85	37
P234063	D#LED LGS260 GRE SOT23	8	R101549	R MF H 12K F 0W4 E3	22	R111477	C EL RA 100M M 25E2 85	31
P234089	D#ZEN 13V 0W5 C DMMELF	1	R101550	R MF H 15K F 0W4 E3	13	R111478	C EL RA 220M M 25E2 85	4
P234094	D#ZEN 6V8 0W3 C SOT23	3	R101551	R MF H 18K F 0W4 E3	15	R111479	C EL RA 470M M 25E2 85	12
P234099	D#4148 R DMMELF	269	R101552	R MF H 22K F 0W4 E3	42	R111486	C EL RA 47M M 50E2 85	6
P234124	D#ZEN 16V 0W3 C SOT23	2	R101553	R MF H 27K F 0W4 E3	2	R1114879	C EL RA 100M M 35E2 85	2
P234127	D#ZEN 5V1 0W5 C DMMELF	2	R101554	R MF H 33K F 0W4 E3	14	R111488	C EL RA 220M M 50E2 85	5
P234135	D#ZEN 11V 0W3 C SOT23	2	R101555	R MF H 39K F 0W4 E3	12	R111489	C EL RA 470M M 35E2 85	7
P234164	D#ZEN 5V6 0W5 C DMMELF	7	R101556	R MF H 47K F 0W4 E3	17	R1114909	C EL RA1000M M 50E3 SM	4
P234179	D#ZEN 20V 0W5 C DMMELF	2	R101557	R MF H 56K F 0W4 E3	9	R111510	C EL RA 22M M 25E2 85	13
P234185	D#ZEN 27V 0W5 C DMMELF	1	R101558	R MF H 68K F 0W4 E3	7	R111531	C EL RA 10M M 35E2 85	78
P234195	D#BAS21 SW SOT23	8	R101559	R MF H 82K F 0W4 E3	8	R111532	REPLACED BY V1114855	21
P234196	D#BYD37J AWA SOD87	7	R101560	R MF H100K F 0W4 E3	30	R111546	C EL RA 1M M 50E2 85	19
P234205	D#BAT54C SCH SOT23	10	R101561	R MF H120K F 0W4 E3	6	R111548	C EL RA 2M2M 50E2 85	4
P234213	D#ZEN 3V3 0W5 C DMMELF	3	R101562	R MF H150K F 0W4 E3	4	R111549	C EL RA 3M3M 50E2 85	1
P234219	D#BZV87-1V4 STA DMMELF	1	R101563	R MF H180K F 0W4 E3	3	R111550	C EL RA 4M7M 50E2 85	16
P234259	D#BA682 S035A1 DMMELF	41	R101564	R MF H200K F 0W4 E3	7	R111556	C EL RA 470M M100E3 85	3
P234268	D#ZEN 6V8 0W5 C DMMELF	2	R1015641	R MF H220K F 0W4 E3	2	R111564	C EL RA 220M M200E4 105	1
P234289	D#HSM52814 SCH SOT23	1	R101565	R MF H270K F 0W4 E3	2	R111568	C EL RA 2M2M250E2 85	1
			R101566	R MF H330K F 0W4 E3	6	R1115695	C EL RA 10M M250E2 85	2
P250005	L# FFECH 0.47MM160	6	R101567	R MF H390K F 0W4 E3	1	R111575	C EL RA 100M M315E4 105	2
P250509	CH# 1.5 UHL1210	3	R101568	R MF H470K F 0W4 E3	13	R111578	C EL RA 100M M400E4 105	3
P250516	CH# 3.3 UHL1210	5	R1015691	R MF H510K F 0W4 E3	1	R1115915	C EL RA 4M7M 35E2 85	10

ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY
R1115935	C EL5 RA 10MM 35E2 85	10				R1329105	QBS170 FN SS TO92	3
R1116491	C EL RA 47M T385SKT 85	3	R1312651	SURGE ARRESTER 300V RA	3	R132916	QBS250 FP SS TO92	4
R111678	C EL BRA 10MM 25E2 85	21	R1314071	QBC547B N SS TO92	8	R132917	Q2SK511 FNP TO126	6
R111714	C PPMERA 8N2J162E9 HV	1	R1314072	QBC547A N SS TO92	7	R132918	QIXTH12N100 FNP TO247	11
R111716	C CE DI 680P M20E3 HV	2	R131411	QBC549C N SS TO92	63	R132941	QIRF632 FNP TO220	7
R111718	C CE DI 1N K302E3 HV	1	R131413	QBC557 P SS TO92	3	R132942	QIRF9630 FPP TO220	7
R1117201	C PPMERA 6N8J202E9 HV	1	R1314131	QBC557B P SS TO92	7	R132944	QBCY87 2N SS TO71	1
R1117674	C PPMERA 2N7J162E6 HV	1	R1314181	QBC559B P SS TO92	19	R132948	QBF459 NP TO126	2
R111773	C PPMERA 4N7J162E9 HV	1	R1314182	QBC559C P SS TO92	19	R132951	QIXTH11N100 FNP TO247	1
R1120902	C CE DI 100P K20E3 HV	1	R131424	QBC338 N SS TO92	1	R132968	QBC640 P SS TO92	1
R112222	C NP0MI 2P2C100E2	6	R1314245	QBC338-40 N SS TO92	1	R132972	QBF421 P SS TO92	2
R112230	C NP0MI 10P G100E2	3	R1314295	QBC549B N SS TO92	11	R132973	QBF200 N SS TO92	2
R112231	C NP0MI 12P G100E2	1	R1314311	QBC327 P SS TO92	5	R132974	QAPT5025BN FNP TO247	1
R112232	C NP0MI 15P G100E2	2	R1314446	QBD237 NP TO126	2	R133206	D LED D5 S GN HLDR	1
R112234	C NP0MI 22P G100E2	1	R1314451	QBD238 P P TO126	2	R134001	U7805 TO220 P	7
R112235	C NP0MI 27P G100E2	5	R1314651	QBF245B FN SS TO92	4	R134002	U7812 TO220 P	7
R112237	C NP0MI 39P G100E2	1	R131471	QBF458 NP TO126	1	R134010	U7815 TO220 P	3
R112238	C NP0MI 47P G100E2	4	R131621	DS1N4148 075150DO35	181	R134011	U7905C TO220 P	3
R112239	C NP0MI 56P G100E2	9	R131628	DSBAW62 075200DO35	14	R134016	U7912 TO220 P	7
R112240	C NP0MI 68P G100E2	1	R1316361	DYBAT85 030200DO34	43	R134025	U78L24AC TO92 P	1
R1122415	C NP0MI 82P G100E2	1	R131637	DRBA158 600400DO7	70	R134026	U317T LM TO220 P	1
R112242	C NP0MI 100P G100E2	8	R131646	DR1N4007 10201A DO41	16	R134027	U337T TO220 P	1
R112362	C N750MI 100P G100E2	1	R131662	D LED D3 TRD	8	R134028	U317LZ LM TO92 P	5
R112364	C N750MI 150P G100E2	4	R1316666	DO TSUS5202 TIR	6	R134029	U337LZ TO92 P	5
R112366	C N750MI 220P G100E2	1	R131667	D LED D3 T GN	16	R134030	U2940CT05LM TO220 P	2
R112681	C N750MI 15P G500E2	1	R131681	DO BPW41N PIN	2	R134031	U431C TL TO92 P	8
R112692	C N750MI 120P G500E2	1	R131683	U2601 HCPL DIP8 P	1	R134032	U78L05AC TO92 P	6
R112735	C CE MI 470P K100E2	8	R131691	U601-3 SFH DIP6 P	6	R134033	U78L12AC TO92 P	4
R112737	C CE MI 680P K100E2	12	R131701	DZEN 6V2 2W5 C SOD81	1	R134034	U79L12 TO92 P	1
R112739	C CE MI 1N K100E2	25	R131706	DZEN 9V1 1W3 C DO41	4	R134035	U79L05A TO92 P	2
R112740	C CE MI 1N2K100E2	7	R131716	DZEN 5V1 0W5 C DO35	2	R134113	U084 TL DIP14 P	8
R112741	C CE MI 1N5K100E2	3	R131720	DZEN 6V2 0W5 C DO35	5	R134114	U393 LM DIP8 P	12
R112743	C CE MI 2N2K100E2	10	R131721	DZEN 13V 0W5 C DO35	1	R134116	U353 LF DIP8 P	2
R112744	C CE MI 2N7K100E2	2	R131728	DZEN 11V 0W5 C DO35	2	R134124	U082 TL DIP8 P	5
R112747	C CE MI 4N7K100E2 85	13	R131729	DZEN 4V7 0W5 C DO35	1	R134125	U34084 DIP14 P	1
R112760	C CE MI 3N3K100E2	2	R131730	DZEN 20V 0W5 C DO35	7	R134146	U34082 MC DIP8 P	5
R112763	C CE MI 10N Z 63E2 85	8	R131733	D STB 2V 0W33 DO35	1	R134222	U1495 MC DIP14 P	2
R1127741	C Z5U MU 100N Z 50E2 85	1	R131734	DZEN 5V6 0W5 B DO35	8	R134224	U582 TLP 1119A1P	2
R112797	C CE DI 2N7K500E2	1	R131740	DZEN 12V 0W5 C DO35	4	R134303	U392-040 STK PACK	2
R1128111	C N750DI 68P K102E3 HV	2	R131742	DZEN 6V8 0W5 C DO35	2	R137098	U74HCT4538 DIP16 P	1
R112830	C CE DI 2N7S400E3	2	R131743	DZEN 8V2 0W5 C DO35	7	R1373325	U4098B DIP16 P	2
R112833	C CE DI 4N7S400E3	1	R131744	DZEN 5V6 0W5 C DO35	1	R137378	U4538B DIP16 P	2
R112837	C CE DI 10N S500E3 85	4	R131745	DZEN 18V 1W3 C DO41	1	R137391	U4053B DIP16 P	1
R1137121	C POMERA 10N K250E2 85	16	R131754	DZEN 3V3 0W5 C DO35	6	R137392	U4070B DIP14 P	1
R1137131	C POMERA 12N K100E2 85	3	R131756	DZEN 7V5 0W5 C DO35	5	R1373945	U4093B DIP14 P	1
R1137141	C POMERA 15N K100E2 85	3	R131767	DZEN 6V8 0W5 B DO35	2	R137534	U74HCT00 DIP14 P	2
R1137151	C POMERA 18N K100E2 85	2	R131771	DZEN 150V 3W25C SOD57	1	R137548	U74HCT74 DIP14 P	2
R1137161	C POMERA 22N K100E2 85	2	R131786	DZEN 16V 0W5 B DO35	1	R137552	U74HCT123 DIP16 P	5
R1137171	C POMERA 27N K100E2 85	3	R131787	DZEN 51V 0W5 C DO35	2	R137556	U74HCT72 DIP14 P	1
R1137181	C POMERA 33N K100E2 85	2	R131788	DZEN 15V 0W5 C DO35	24	R137602	U4046B DIP16 P	1
R113720	C POMERA 47N K 63E2 85	8	R131790	DZEN 33V 1W3 C DO41	2	R137625	U34063 DIP8 P	3
R113722	C POMERA 68N K 63E2 85	1	R131791	DZEN 6V2 0W5 B DO35	5			
R113724	C POMERA 100N K63E2 85	199	R131865	DZEN 4V7 0W5 B DO35	1	R302102	CORE TUBE 4,95/1,3 X40,5	1
R113726	C POMERA 150N K63E2 85	3	R1319025	DRBY255 1323A0DO201	2	R302108	CORE TUBE 3,5/1,3 X3	6
R113728	C POMERA 220N K63E2 85	15	R131906	DRBYV96E 1021A5 SOD57	9	R305909	CH TOR V 1200 UH 2A	2
R113729	C POMERA 270N K63E2 85	3	R131907	DRBY584 182085 SOD61A	3	R305913	CH MNS AX NS 12 UH 3A	18
R113730	C POMERA 330N K63E2 85	8	R131913	DRBY329 10208A TO220C	4	R305916	CH MNS 17 MH 2X-10APMF	1
R113732	C POMERA 470N K63E2 85	16	R131927	DRBY229 60007A TO220C	12	R3061222	CH AX NS 1.5 UH	6
R113829	C POMERA 22N J 63E2 85	2	R131950	DRBYV27 1502A0 SOD57	3	R3061322	CH AX NS 10 UH	13
R113841	C POMERA 220N K63E2 85	1	R131952	DRBYV96E 10203A SOD64	7	R3061341	CH AX NS 100 UH	5
R114068	C POMERA 10N M 63E2 85	2	R131954	DRBYV29 20008A TO220	2	R3061582	CH AX NS 1.5 MH	3
R114085	C POMERA 330N K63E2 85	4	R131958	DRBY329 12208A TO220C	2	R306222	CH TOR V 80 UH 2A	3
R114087	C POMERA 470N K63E2 85	5	R132028	DBKBPC2508W	1	R306718	T SMPS STAND-BY	2
R114090	C POMERA 1M K63E2 85	20	R132102	U33B ZTK DO35	1	R306816	X 8M867238 20 HC49	1
R114132	C POMERA 100N K250E4 85	1	R1322101	Q TIC106D TH P TO66	1	R306819	RSN CE 0M429 P 2	3
R114144	C POMERA 1M K250E9 85	1	R1325096	QBU508A NP SOT93	1	R306849	X 7M159090 20 HC49	1
R114154	C POMERA 22N K400E4 85	4	R132515	QBF470 P P TO126	12	R307122	XO 32M000000 CN-10DIP8M	1
R114166	C POMERA 220N K400E9 85	3	R132516	QBF422 N SS TO92	3	R3071231	X 17M734475 16 HC49	1
R114603	C POMERA 100N M102E9 HV	2	R132552	QBF423 P SS TO92	1	R307133	RSN CE 0M505	1
R114685	C PO RA 6N8K100E2 85	1	R132557	QBC635 N SS TO92	3			
R1147009	C CE DI 4N7M250E5 Y1	1	R132591	QBUZ42 FNP TO220	1	R311046	J CRT FBT T180 SKT	1
R114716	C PO RA 1M K250E11 X2	2	R132593	QBUZ74A FNP TO220	1	R313196	BAT ACC SNAP-ON CLP 6LR6	2
R114722	C CE DI 2N2M250E5 Y1	2	R132751	U2030V TDA TO220 P	7	R313249	JU0.3 FBT P18 E1SN SPG	1
R114799	C PPMERA 30M J220BS 85	1	R132762	U2595 TDA DIP18 P	1	R313286	JMO1 C MBT P 3 R1SN 7.5	3
R1150051	C PPMERA 2N2J162E9 HV	3	R132765	U1496 LM DIP14 P	4	R3132862	JMD1 C MBT P 2 E1SN 6.7	14
R1150564	C PPMERA 2N7J202E9 HV	3	R132773	U4565 TDA DIP18 P	1	R313454	JTAB1 MBT H4,8S0,5 N 9	4
R1159081	C PP RA 470P J100E2 85	4	R132787	U4601-5 TDA SIP9 P	3	R3134685	JMTA MBT P12 M3,96 FL RO	5
R1159141	C PP RA 820P J100E2 85	3	R132817	U1881 LM DIP8 P	1	R3135005	JDE P8 MBS P 9 FUMBLPGDB	2
R1159161	C PP RA 1N J100E2 85	7	R132824	U2800 TBA DIP14 P	2	R3135015	JDE P8 FBS P 9 FUMBLPGDB	2
R1159181	C PP RA 1N2J100E2 85	1	R132827	U8172 TDA H_W P	3	R313525	JEUR2C MBS P64 E1C2S 1,6	13
R1159201	C PP RA 1N5J100E2 85	2	R132828	U4650 TDA DIP28 P	1	R313526	JEUR2C FBT P64 E1C2S 1,6	15
R115922	C PP RA 1N8J100E2 85	2	R132833	U BELLA 4 DIP28 P	7	R313530	J*EUR2R FBS P64 E1C3S 1,6	3
R115926	C PP RA 2N7J100E2 85	1	R132874	U2579A TDA DIP18 P	1	R313531	JEUR2C MBS P64 E1C3S 1,6	4
R115928	C PP RA 3N3J63E2 85	3	R132882	U#1 TG PLCC68 P	1	R3135722	JMT MBT P 3 R1 FL RD	6
R115932	C PP RA 4N7J 63E2 85	5	R132900	QBUZ310 FNP TO218	3	R313607	JMTA MBT P 3 M3,96 FL RO	2
R115934	C PP RA 5N6J 63E2 85	2	R132904	Q2N2905A P SS TO39	3	R3136078	JMTA MBT P 8 M3,96 FL RO	1
R115936	C PP RA 6N8J 63E2 85	2	R132905	Q2SA1406E P P TO126	6	R313724	JMTA MBT P 4 M3,96 FL RO	3
R115940	C PP RA 10N J 63E2 85	4	R132909	QBD652 DP P TO220	2	R3137241	JMTA MBT P 4 M3,96 SN RO	1
R117001	C T 7 -35P 160	4	R132910	QBS170 FN SS TO92	13	R313727	JMTA MBT P 5 M3,96 FL RO	2

ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY	ART.NO	DESCRIPTION	QUANTITY
R313729	J TESTEYE D2.1 H3.1 SN BK	23	V101253	REPLACEDBYV1026427	1	V132527	Q2SC3600E NP TO126	6
R313851	J CIRC A FBS P 4 MDIN MS	2	V102024	R CCH100E K 0W5 E6	1	V1325851	Q BUT11AF NP SOT186	4
R313922	J C T H MBT P 2 M2SN WH	15	V102353	R MF H 27K J 3W E10	1	V132599	Q BU2525A NP SOT93	2
R313923	J C T H MBT P 3 M2SN WH	4	V1026000	R MF H 10M F 0W6 E4	5			
R313924	J C T H MBT P 4 M2SN WH	5	V1026004	R MF H 10E F 0W6 E4	11	V3060961	FLTR 6M750000	3
R313925	J C T H MBT P 5 M2SN WH	9	V1026005	R MF H100E F 0W6 E4	22	V306541	DL 180NS 1K	2
R313926	J C T H MBT P 6 M2SN WH	9	V1026006	R MF H 1K F 0W6 E4	27	V3068581	X 14M318180 16 HC49	1
R313927	J C T H MBT P 7 M2SN WH	8	V1026007	R MF H 10K F 0W6 E4	42			
R313928	J C T H MBT P 8 M2SN WH	22	V1026008	R MF H100K F 0W6 E4	11	V3135931	J EUR2R2FBSP32E1C2S1,6	1
R313929	J C T H MBT P 9 M2SN WH	4	V1026009	R MF H 1M F 0W6 E4	1	V3136372	J MD1 C FBT P 2 E1SN 8,5	3
R313930	J C T H MBT P10 M2SN WH	1	V1026085	R MF H121E F 0W6 E4	7			
R313932	J C T H MBT P12 M2SN WH	3	V1026086	R MF H 1K21F 0W6 E4	4	Z34217210	WU UL1007 AWG24 ST RD 10	1
R313942	J C T H MBS P 2 M2SN WH	1	V1026087	R MF H 12K1 F 0W6 E4	6	Z34501104	WU CUSN 0,60 MM 40	4
R313943	J C T H MBS P 3 M2SN WH	6	V1026088	R MF H121K F 0W6 E4	4	Z3484025	CD CT \$FTMT P 2 800	1
R313944	J C T H MBS P 4 M2SN WH	4	V1026089	R MF H 1M21F 0W6 E4	4	Z3484033	CD CT FTMT P 3 190	2
R313946	J C T H MBS P 6 M2SN WH	2	V1026174	R MF H 15E F 0W6 E4	2	Z3484042	CD CT FTMT P 4 190	1
R313947	J C T H MBS P 7 M2SN WH	2	V1026175	R MF H150E F 0W6 E4	3	Z3484056	CD CT FTMT P 5 630	1
R313949	J C T H MBS P 9 M2SN WH	3	V1026176	R MF H 1K5 F 0W6 E4	9	Z3484066	CD CT \$FTMT P 6 400	1
R313950	J C T H MBS P10 M2SN WH	2	V1026177	R MF H15K F 0W6 E4	8	Z3484068	CD CT FTMT P 6 720	1
R313952	J C T H MBS P12 M2SN WH	2	V1026178	R MF H150K F 0W6 E4	6	Z3484085	CD CT FTMT P 8 520	1
R313955	J C T H MBS P15 M2SN WH	3	V1026179	R MF H 1M5 F 0W6 E4	1	Z3484120	CD CT FTFT P12 120	1
R314007	J C T C FWT P 7 M2SN	2	V1026207	R MF H 16K2 F 0W6 E4	3	Z348490	CD CT FTMT P 7 520	1
R314068	J EUR3C MBS P96 E1C2S 1,6	1	V1026255	R MF H182E F 0W6 E4	5	Z3495082	CD CT FTFT P 8 150	2
R314069	J EUR3C FBT P96 E1C2S 2,5	1	V1026256	R MF H 1K82F 0W6 E4	3			
R314071	J EUR2C2MBS P32 E1C2S 1,6	1	V1026257	R MF H 18K2 F 0W6 E4	3			
R314079	J SP MBT P 9 R1	3	V1026258	R MF H182K F 0W6 E4	2			
R314104	F 5X20 T 5A H UL	2	V1026277	R MF H 19K1 F 0W6 E4	1			
R314116	F 5X20 T 2A H UL	1	V1026296	R MF H 2K F 0W6 E4	1			
R314142	F 5X20 T 0A125L UL	2	V1026334	R MF H 22E1 F 0W6 E4	1			
R314143	F 5X20 F 2A H UL	1	V1026335	R MF H221E F 0W6 E4	7			
R314147	F 5X20 F 3A15 H UL	1	V1026336	R MF H 2K21F 0W6 E4	10			
R314186	F TR5 T 2A L UL	2	V1026337	R MF H 22K1 F 0W6 E4	10			
R314187	F TR5 T 3A15 L UL	1	V1026338	R MF H221K F 0W6 E4	3			
R314188	F TR5 T 4A L UL	7	V1026387	R MF H 24K9 F 0W6 E4	2			
R314189	F TR5 T 6A3 L UL	2	V1026423	R MF H 2E74F 0W6 E4	1			
R314516	F A H+C 6A 5X20 BV B	2	V1026424	R MF H 27E4 F 0W6 E4	2			
R314519	F A HLD 10A 5X20 BOD	4	V1026425	R MF H274E F 0W6 E4	9			
R315302	J PINPRD1,3L 5,5+3	8	V1026426	R MF H 2K74F 0W6 E4	6			
R315310	J TAB1 MBT H2,8S0,5 F1	6	V1026427	R MF H 27K4 F 0W6 E4	5			
			V1026428	R MF H274K F 0W6 E4	6			
R324147	SW SLD L102 1C BS H 8.5	1	V1026467	R MF H 30K1 F 0W6 E4	2			
R324148	SW SLD L202 2C BS H 8.5	1	V1026505	R MF H332E F 0W6 E4	7			
R324182	SW DIP SLD 1A P 1 BT SN	2	V1026506	R MF H 3K32F 0W6 E4	13			
R324184	SW DIP SLD 1A P 8 BT SN	2	V1026507	R MF H 33K2 F 0W6 E4	11			
R324360	RLY 12V 2C BV MNS M UL	6	V1026508	R MF H332K F 0W6 E4	2			
R324361	RLY 139V 1A BV MNS M UL	1	V1026574	R MF H 39E2 F 0W6 E4	2			
R3247155	SW MNS NE18 2C	2	V1026575	R MF H392E F 0W6 E4	4			
R324791	SW F 8C	1	V1026576	R MF H 3K92F 0W6 E4	6			
R324792	SW MNS JPZ 2A TV 5 BS	1	V1026578	R MF H392K F 0W6 E4	1			
R324793	SW MNS NE18 2C/2C	1	V1026587	R MF H 39K F 0W6 E4	13			
R32831308	U_S G1208 RWI V508	1	V1026654	R MF H 47E5 F 0W6 E4	2			
R32833001	U_S G 808 ADEC V301 GB	1	V1026655	R MF H475E F 0W6 E4	13			
R328331	U_S G 808 INT V100	1	V1026656	R MF H 4K75F 0W6 E4	27			
R32841402	U_S G 808S DEC V102	1	V1026657	R MF H 47K5 F 0W6 E4	8			
R32850701	U_S ***** RCU V101	3	V1026658	R MF H475K F 0W6 E4	6			
			V1026684	R MF H 51E1 F 0W6 E4	1			
R3421902	CD SO 1015AWG18BK 90	1	V1026686	R MF H 5K11F 0W6 E4	2			
R3421903	CD PIN 1015AWG18BK 90	1	V1026724	R MF H 56E2 F 0W6 E4	4			
R34699302	SLVU SHR D 9,6/4,8 BK 20	1	V1026726	R MF H 5K62F 0W6 E4	11			
R34700802	SLVU GLCL OIL D 1,5RD 20	1	V1026727	R MF H 56K2 F 0W6 E4	2			
R348101	WU JUMP 0,6 5	5	V1026728	R MF H562K F 0W6 E4	3			
R348102	WU JUMP 0,6 7,5	5	V1026805	R MF H681E F 0W6 E4	1			
R348105	WU JUMP 0,6 15	2	V1026806	R MF H 6K81F 0W6 E4	1			
R348110	WU JUMP 0,6 27,5	2	V1026807	R MF H 68K1 F 0W6 E4	3			
R3484022	CD CT FTMT P 2 240	1	V1026844	R MF H 75E F 0W6 E4	11			
R3484058	CD CT FTMT P 5 220	1	V1026884	R MF H 82E5 F 0W6 E4	4			
R34840710	CD CT FTFT P 7 120	1	V1026885	R MF H825E F 0W6 E4	6			
R3484074	CD CT FTMT P 7 170	1	V1026886	R MF H 8K25F 0W6 E4	6			
R3484081	CD CT FTMT P 8 80	2	V1026888	R MF H825K F 0W6 E4	4			
R3484082	CD CT FTMT P 8 150	1	V1026926	R MF H 9K09F 0W6 E4	2			
R34840931	CD CT \$FTMT P 9 340	3	V102913	R MF H 12E J 2W E7	2			
R3484125	CD CT FTMT P12 160	1	V103420	R MO H 47E J 6W	1			
R34841541	CD CT FTMT P15 150	1	V1034342	R MO H820E J10W E14	4			
R3485044	CD CT FTMS P 4 220	1	V1034362	R MO H 1K J10W E14	4			
R774151	COIL AMP PJ45 HOR DATA	3	V1114718	C EL RA1000M M 25E2 SM	1			
R774154	CH D**HR HOR	3	V1114874	C EL RA 100M M 50M3 105	1			
R774163	COIL AMP PJ45 HOR GR	3	V111598	C EL RA1000M M200E4 85	4			
R774226	COIL LINP J51 HOR G1200	1	V1122842	C N220MI 150P G100E2	1			
R774306	T G800 LIN CTRL	1	V1127830	C X7R MU 100N K 50E2 125	11			
R774310	T D800 HOR DEF	1	V1140424	C POMERA 100N K400E6 85	1			
R774312	COIL SHIFIT PJ49 G800	3	V1140426	C POMERA 100N K250E2 85	27			
R7743227	T G1200 SMP FIX	1	V114098	C POMERA 2M2M 50E2 85	2			
R774323	T G1200 SMP VAR	1	V115026	C PPMERA 220P J202E6 HV	6			
R774350	T G801 HOR DVR	1	V1151612	C PP RA 1N H100E2 85	2			
R774356	T G808 SMP VAR	1	V1151672	C PP RA 4N7H 63E2 85	2			
R775164	CH AXNS 0,5 51	9						
V1011984	R MF H E22J 0W6 E4	1	V131711	D ZEN 56V 1W3 C DO41	1			
			V132504	Q 2N2369A N S S TO18	11			



BARCO

BARCO PROJECTION SYSTEMS



BARCO GRAPHICS
1209S

90 00972 (230V AC)

90 00977 (120V AC)

SERVICE SHEETS

Nomenclature :

Schematics

Linking signals on a sheet.



Those symbols represent a signal (name) which is generated on another place of the same sheet.



Those symbols represent a signal (name) which is generated on this place and used further on the same sheet.



Those symbols represent a signal (name) which is bidirectional and used on the same sheet only.

Linking signals across sheets.



Those symbols represent a signal (name) which is generated on another sheet.



Those symbols represent a signal (name) which is generated on this place and used further on other sheets always and possible on the same.

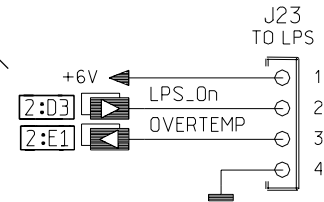


Those symbols represent a signal (name) which is bidirectional and used on other sheets.

Explanation about sheet pointer text.

The sheet pointer text gives us the sheet number and the coordinates from where or to where a signal flows. It contains two parts separated by ":". The first part is a digit which represent the sheet number. The second part contains a character followed by a digit, those are respectively horizontal and vertical coordinates.

Sheet pointer text



Nomenclature about voltage supplies

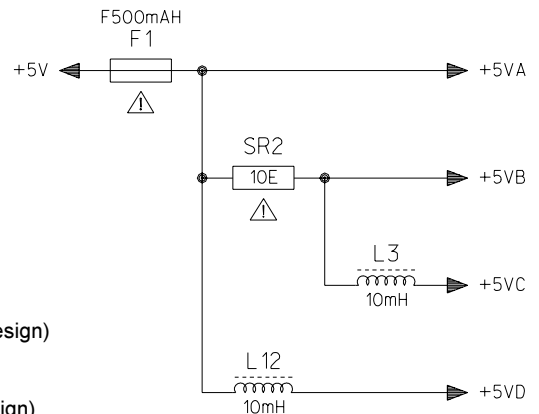
	Supply voltage	-12VB	+12V	+380VMA
	Ground	+19VB	--13V	++22VMA
	Mains ground			
	Protected earth			

PREFIX

- + Positive supply voltage
- Negative supply voltage
- ++ Positive standby voltage
- Negative standby voltage

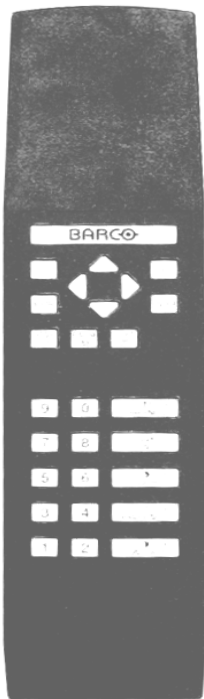
SUFFIX

- A Part "A" or Analog (depends on design)
- B Part "B"
- C Part "C"
- D Part "D" or Digital (depends on design)
- M Mains
- V Volt



**Infra Red Remote Control Unit
R791664**

RCU with arrow keys



RCU with Control stick



RCU with Control button



BARCO

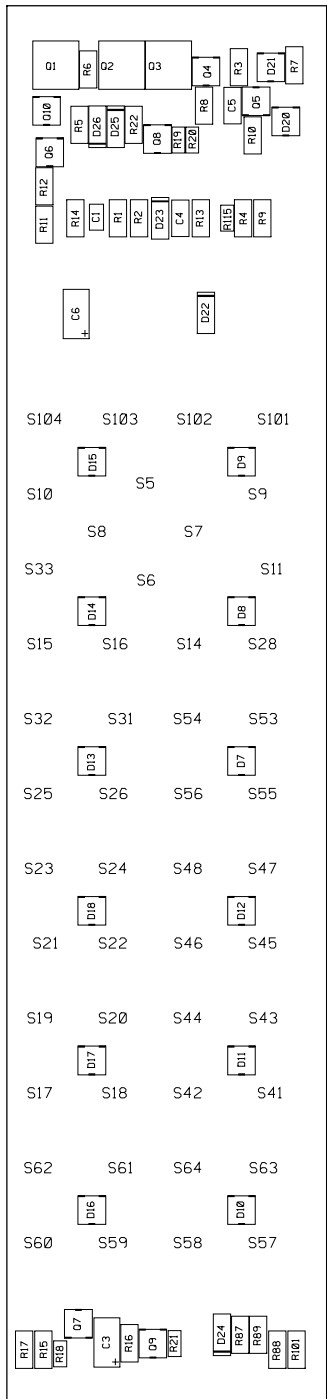
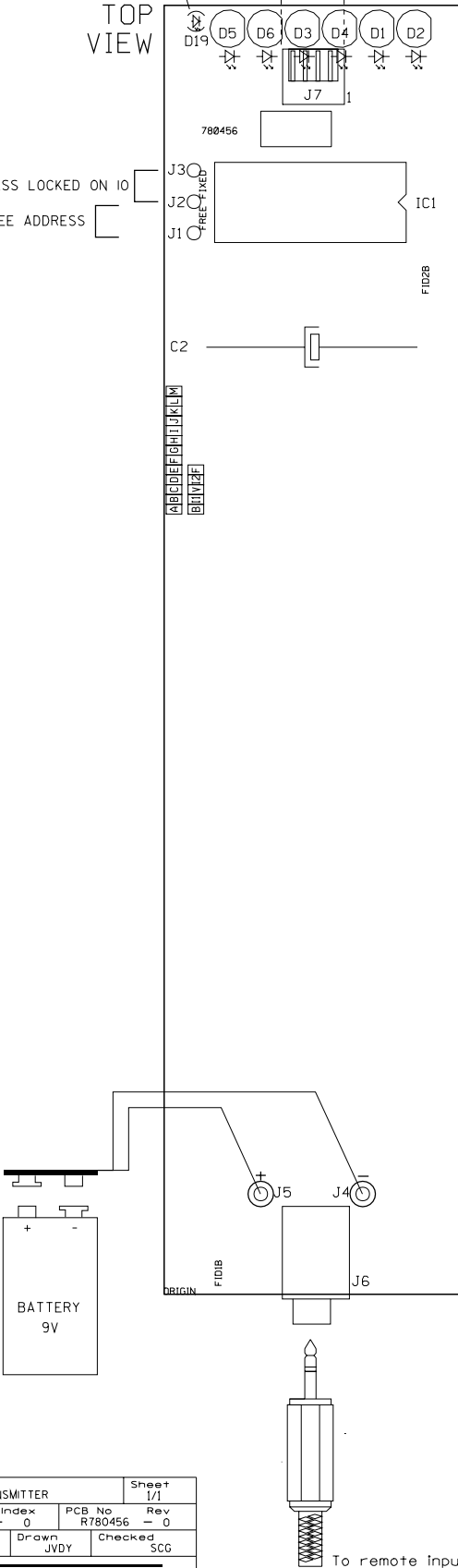
GREEN LED : transmit

CONNECTION WITH PROJECTOR
ONLY FOR LOCAL CONTROL

TOP VIEW

BOTTOM VIEW

ADDRESS LOCKED ON IO
FREE ADDRESS



Name		TRANSMITTER		Sheet	
				1/1	
Module No.	Index	PCB No.	Rev.		
(See *)	0	R780456	0		
Date	Drawn	Checked			
02-07-1996	JVDY	SCG			

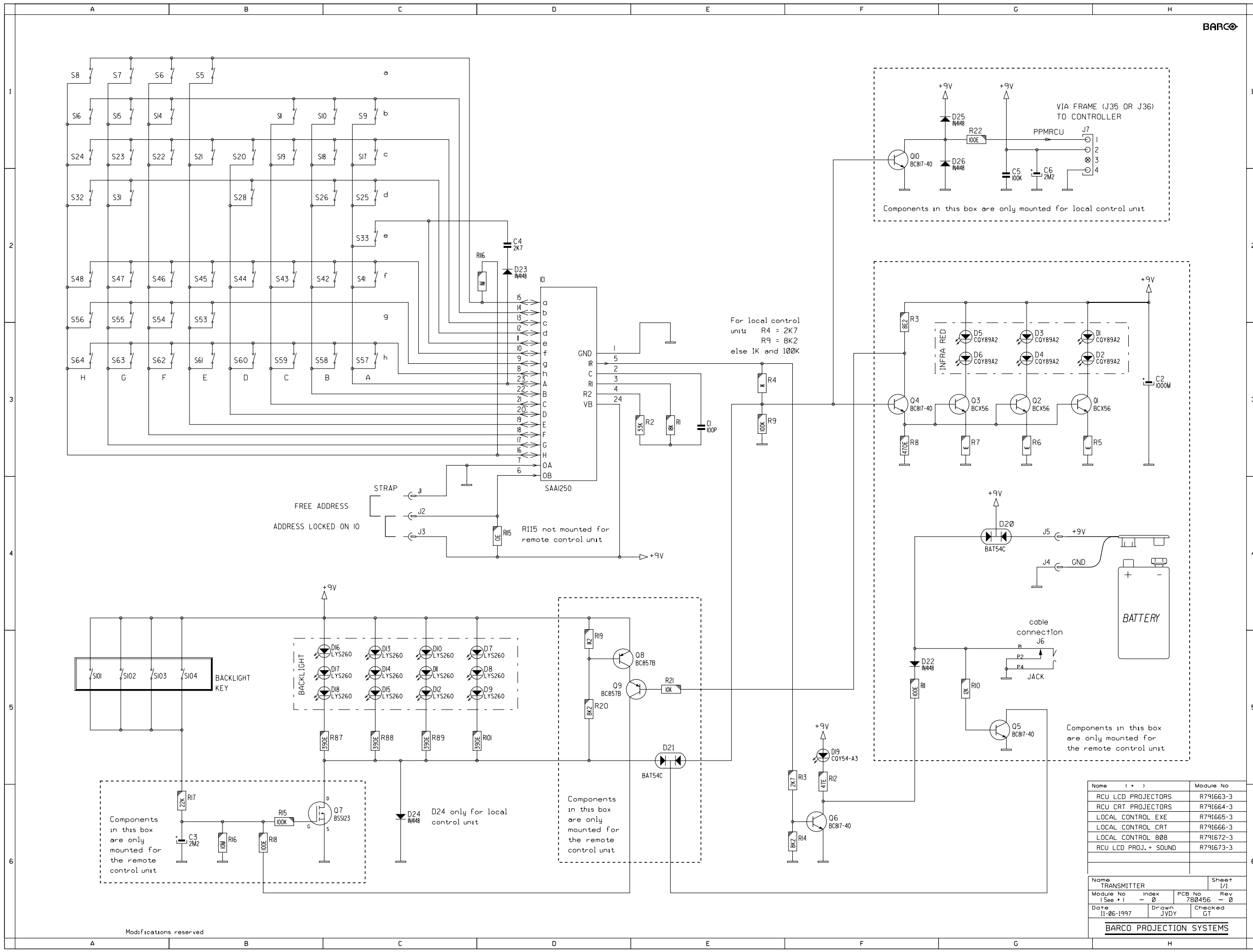
BARCO PROJECTION SYSTEMS

*	Module No.
RCU LCD PROJECTOR	79 1663-3
RCU CRT PROJECTOR	79 1664-3
LOCAL CONTROL EXE	79 1665-3
LOCAL CONTROL CRT	79 1666-3
LOCAL CONTROL 808	79 1672-3
LOCAL CONTR. RBL808S	79 16721-3
RCU LCD PROJ. + SOUND	79 1673-3

Modifications reserved

1
2
3
4
5
6

1
2
3
4
5
6



COMP.	LOC.	COMP.	LOC.
C1	E 3	S57	C 3
C2	H 3	S58	B 3
C3	B 6	S59	B 3
C4	D 2	S60	B 3
C5	G 2	S61	B 3
C6	F 1	S62	A 3
		S63	A 3
		S64	A 3
D1	H 3	S101	A 5
D2	H 3	S102	A 5
D3	G 3	S103	A 5
D4	G 3	S104	B 5
D5	G 3		
D6	G 3		
D7	D 5		
D8	D 5		
D9	D 5		
D10	D 5		
D11	C 5		
D12	C 5		
D13	C 5		
D14	C 5		
D15	C 5		
D16	C 5		
D17	C 5		
D18	C 5		
D19	F 5		
D20	G 4		
D21	F 5		
D22	F 5		
D23	D 6		
D24	C 6		
D25	C 6		
D26	F 1		
I0	D 2		
J1	C 4		
J2	C 4		
J3	C 4		
J4	C 4		
J5	C 4		
J6	C 5		
J7	F 1		
Q1	H 3		
Q2	G 3		
Q3	F 3		
Q4	F 3		
Q5	F 5		
Q6	F 5		
Q7	F 5		
Q8	F 5		
Q9	F 5		
Q10	F 5		
R1	F 5		
R2	F 5		
R3	F 5		
R4	H 3		
R5	G 3		
R6	F 3		
R7	G 3		
R8	F 3		
R9	F 3		
R10	F 3		
R11	F 5		
R12	F 5		
R13	F 5		
R14	F 5		
R15	F 5		
R16	D 5		
R17	D 5		
R18	D 5		
R19	D 5		
R20	D 5		
R21	E 5		
R22	G 1		
R23	C 5		
R24	C 5		
R25	C 5		
R26	C 5		
R27	D 4		
R28	D 4		
R29	D 4		
R30	D 4		
R31	D 4		
R32	D 4		
R33	D 4		
R34	D 4		
R35	D 4		
R36	D 4		
S5	B 1		
S6	A 1		
S7	A 1		
S8	A 1		
S9	C 1		
S10	B 1		
S11	B 1		
S12	A 1		
S13	A 1		
S14	A 1		
S15	A 1		
S16	A 1		
S17	C 1		
S18	B 1		
S19	B 1		
S20	B 1		
S21	B 1		
S22	A 1		
S23	A 1		
S24	A 1		
S25	C 2		
S26	B 2		
S27	B 2		
S28	A 2		
S29	A 2		
S30	A 2		
S31	A 2		
S32	A 2		
S33	C 2		
S34	C 2		
S35	C 2		
S36	B 2		
S37	B 2		
S38	B 2		
S39	B 2		
S40	B 2		
S41	B 2		
S42	B 2		
S43	B 2		
S44	B 2		
S45	B 2		
S46	B 2		
S47	B 2		
S48	B 2		
S49	B 2		
S50	B 2		
S51	B 2		
S52	B 2		
S53	B 2		
S54	A 2		
S55	A 2		
S56	A 2		

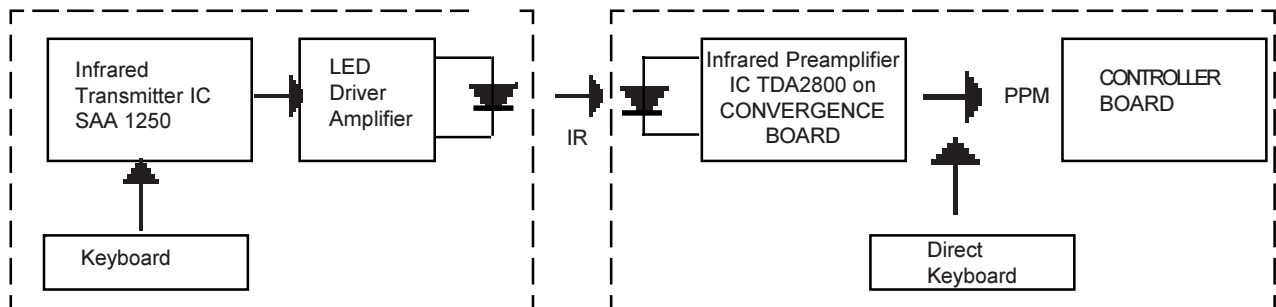
Name (*)	Module No
RCU LCD PROJECTORS	R791663-3
RCU CRT PROJECTORS	R791664-3
LOCAL CONTROL EXE	R791665-3
LOCAL CONTROL CRT	R791666-3
LOCAL CONTROL 808	R791672-3
RCU LCD PROJ. + SOUND	R791673-3

Name	Sheet		
TRANSMITTER	1/1		
Module No (See *)	Index	PCB No	Rev
	- 0	780456	- 0
Date	Drawn	Checked	
11-06-1997	JVDY	GT	

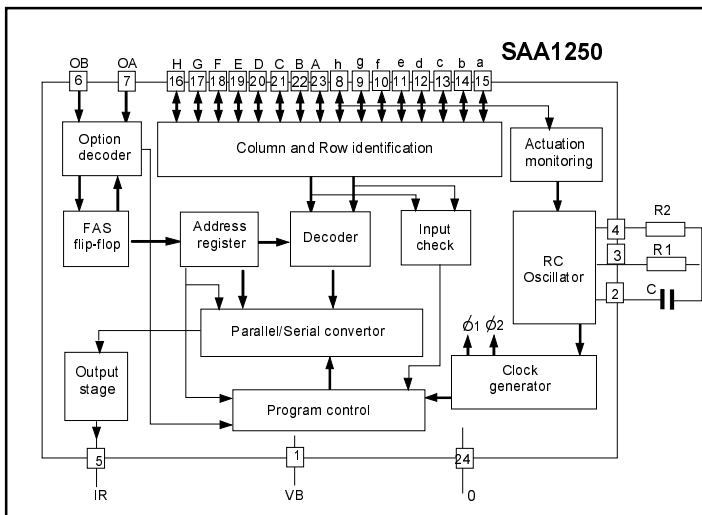
BARCO PROJECTION SYSTEMS

Modifications reserved

BLOCK DIAGRAM



BLOCK DIAGRAM IC SAA1250



Code for the OA and OB address inputs

Input	OA	OB
Option I	H	H
Option II	H	L
Option III	L	H
Free address selection	L*	L*

* L impulse (min.30us)

Used options:

- Option III: alle commands are sent with address 10
- Option: free address selection

Command table of the infrared transmitter IC SAA 1250

Command		Input code								Option III	Free Address Selection								
No		a	b	c	d	e	f	g	h	A	B	C	D	E	F	G	H	Address 10	OA and OB to L potential
S5	Up	x																|	
S6	Down	x																	
S7	Right	x																	
S8	Left	x																	
S9	Exit		x							x								|	
S10	Adjust		x								x								
S11	Enter		x									x							
S14	Text		x																
S15	Stdbby		x																
S16	Pause		x																

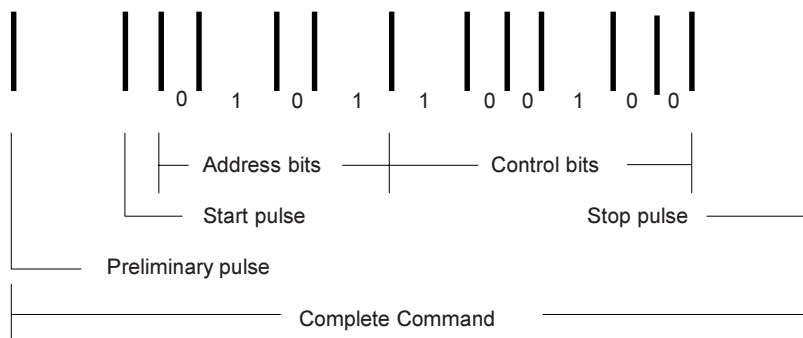
Command table of the infrared transmitter IC SAA 1250 (continua)

Command		Input code																Option III	Free Address Selection
No		a	b	c	d	e	f	g	h	A	B	C	D	E	F	G	H	Address 10	OA and OB to L potential
S17	1			x						x									Address 1
S18	2			x							x								Address 2
S19	3			x								x							Address 3
S20	4			x									x						Address 4
S21	5			x										x					Address 5
S22	6			x											x				Address 6
S23	7			x												x			Address 7
S24	8			x													x		Address 8
S25	9				x					x									Address 9
S26	0					x					x								Address 10
S27																			
S33	Address					x				x									FAS OFF
S41	Contr+						x			x									
S42	Contr -							x			x								
S43	Bright+								x										
S44	Bright -											x							
S45	Sat+												x						
S46	Sat -													x					
S47	Tint+														x				
S48	Tint -																x		
S55	Sharp+								x						x				
S56	Sharp -																x		

Operational mode

According to Table above, the SAA 1250 operates in two modes, which are determined via the OA and OB address input (see table on preceding page).

The first command is given about 20ms after contact actuation. All following commands are sent periodically every 130 ms.



The signals are transmitted by means of infrared light in the shape of packages pulses. For the transmission of a 10-bit word, 14 pulses are required. The binary information of a bit is contained in the time interval between two pulses. We define the time T (approx. 100us) as the basis for the code to be employed.

Duration T = binary digit "0"

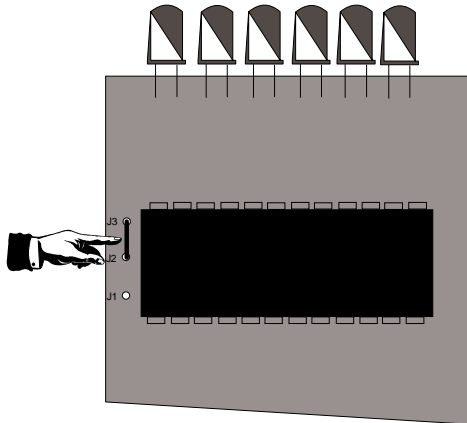
Duration 2T = binary digit "1"

Spacing between preliminary pulse and start pulse 3T. This is followed after a 1T by the 11 data pulses and terminated after a 3T interval by the stop pulse.

Only for the Infra Red Remote control

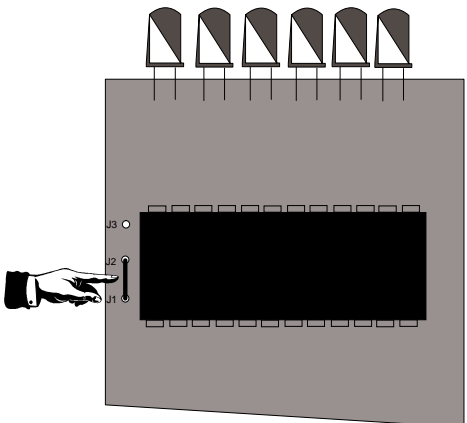
The OPTION III and the FREE ADDRESS SELECTION (FAS) are defined in the remote control RCU800 by means of an inserted jumper on the printed circuit board, see PCB lay-out.

FIXED ADDRESS SELECTION MODE



First signal is transmitted 20ms after key depression, further signals periodically in a distance of 130ms with Address 10.

FREE ADDRESS SELECTION MODE



First signal is transmitted 20ms after key depression, further signals every 130ms.

The commands can be transmitted consecutively to various addresses with free address selection.

In this mode the required address must be initially entered into the address register of the transmitter IC SAA1250, using one of the commands 17 to 32. Then all following commands are transmitted together with the stored address, including commands 17 to 32.

The command 33 (FAS off) clear, under the conditions of a L signal permanently applied to both address inputs, only the address register.

311.DRW

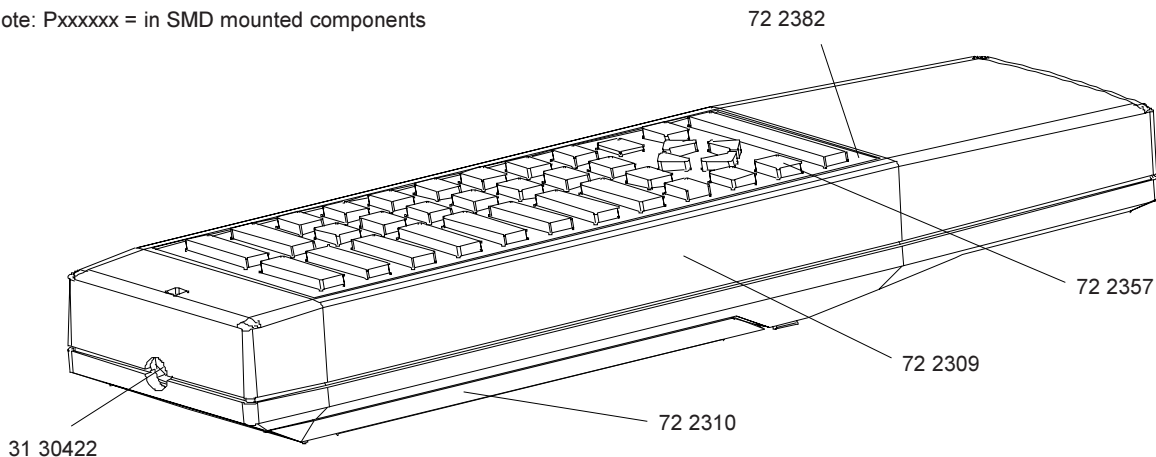
Transmitter RCU (Remote Control Unit)

R791664

Parts listing Transmitter RCU R791664 (RCU with arrow keys)

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION
P210137	C..1	C(S)CEC1CH1206COG101J 50	P232122	Q..1	SMC(S)TRNPN BCX56 SOT89
11 11355	C..2	C EL AX1000M T 10E14 85	P232122	Q..2	SMC(S)TRNPN BCX56 SOT89
11 15915	C..3	C EL5 RA 4M7M 35E2 85	P232122	Q..3	SMC(S)TRNPN BCX56 SOT89
P210147	C..4	C(S)CEC1CH1206COG272J 50	P232026	Q..4	SMC(S)TRA BC817-40
13 16666	D..1	D LED D5 T IR 89A2	P232026	Q..5	SMC(S)TRA BC817-40
13 16666	D..2	D LED D5 T IR 89A2	P232026	Q..6	SMC(S)TRA BC817-40
13 16666	D..3	D LED D5 T IR 89A2	13 2910	Q..7	Q BS170 FN SS TO92 060A5
13 16666	D..4	D LED D5 T IR 89A2	P200103	R..1	R# CE H 18K J 0W12 1206
13 16666	D..5	D LED D5 T IR 89A2	P200109	R..2	R# CE H 33K J 0W12 1206
13 16666	D..6	D LED D5 T IR 89A2	P200023	R..3	R# CE H 8E2 J 0W12 1206
P234063	D..7	SMC(S)DIOLED LGS260	P200073	R..4	R# CE H 1K J 0W12 1206
P234063	D..8	SMC(S)DIOLED LGS260	P200001	R..5	R# CE H 1E J 0W12 1206
P234063	D..9	SMC(S)DIOLED LGS260	P200001	R..6	R# CE H 1E J 0W12 1206
P234063	D..10	SMC(S)DIOLED LGS260	P200001	R..7	R# CE H 1E J 0W12 1206
P234063	D..11	SMC(S)DIOLED LGS260	P200065	R..8	R# CE H470E J 0W12 1206
P234063	D..12	SMC(S)DIOLED LGS260	P200121	R..9	R# CE H100K J 0W12 1206
P234063	D..13	SMC(S)DIOLED LGS260	P200099	R.10	R# CE H 12K J 0W12 1206
P234063	D..14	SMC(S)DIOLED LGS260	P200049	R.11	R# CE H100E J 0W12 1206
P234063	D..15	SMC(S)DIOLED LGS260	P200041	R.12	R# CE H 47E J 0W12 1206
P234063	D..16	SMC(S)DIOLED LGS260	P200083	R.13	R# CE H 2K7 J 0W12 1206
P234063	D..17	SMC(S)DIOLED LGS260	P200095	R.14	R# CE H 8K2 J 0W12 1206
P234063	D..18	SMC(S)DIOLED LGS260	P200121	R.15	R# CE H100K J 0W12 1206
P234063	D..19	SMC(S)DIOLED LGS260	P200161	R.16	R# CE H 4M7 J 0W12 1206
P234205	D.20	SMC(S)DISCH BAT54C SOT23	P200105	R.17	R# CE H 22K J 0W12 1206
P234205	D.21	SMC(S)DISCH BAT54C SOT23	P200063	R.87	R# CE H390E J 0W12 1206
P234099	D.22	SMC(S)DIO 4148	P200063	R.88	R# CE H390E J 0W12 1206
P234099	D.23	SMC(S)DIO 4148	P200063	R.89	R# CE H390E J 0W12 1206
13 7371	I..1	U 1250 SAA DIP24 PIRTRA	P200063	R101	R# CE H390E J 0W12 1206
31 30422	J...	J PHN FBS D 2.5MON P			
31 3196	J...	J BAT NWS P 2 9V			
78 0222	PC..	PCD#PJ52 D5000 TX			

Note: Pxxxxxx = in SMD mounted components



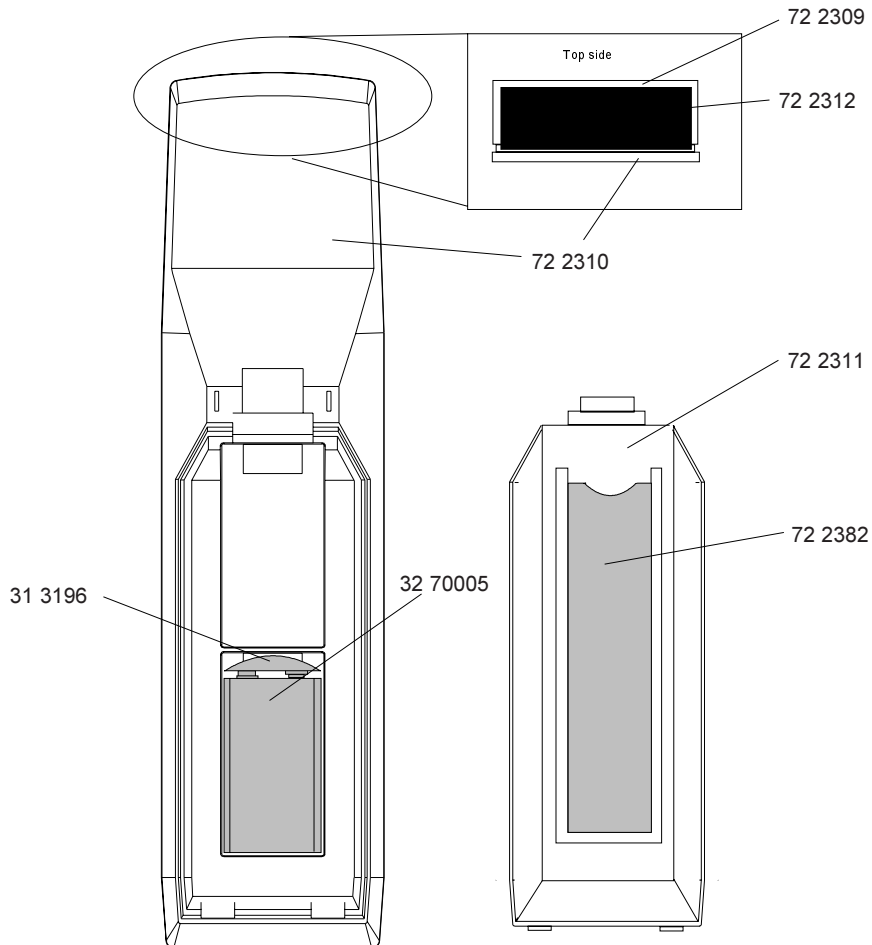
Transmitter RCU (Remote Control Unit)

R791664

Spare parts Transmitter RCU R791664 (RCU with arrow keys)

ART.NO.	DESCRIPTION	QUANTITY	ART.NO.	DESCRIPTION	QUANTITY
13 16666	D LED D5 T IR 89A2	6	72 2309	HSG PJ49 TX2 CVR UP	1
13 2910	Q BS170 FN SS TO92 060A5	1	72 2310	HSG PJ49 TX2 CVR DN	1
13 7371	U 1250 SAA DIP24 PIRTRA	1	72 2311	HSG PJ49 TX2 CVR BAT	1
31 30422	J PHN FBS D 2.5MON P	1	72 2312	HSG PJ49 TX2 WDW IR	1
31 3196	J BAT NWS P 2 9V	1	72 2353	HSG PJ53 TX2 FOIL V700	1
32 70005	BAT 9V 6F22 ALK 0A525	1	72 2357	SW KYBD RUB PJ53 TX V700	1
36 15075	SCR HILO_P 3.2X 8,5HS B	1	72 2382	HSG PJ49 TX2 LFLT WDW	1
59 75045	LFLT RCU700 TX	1	78 0222	PCD#PJ52 D5000 TX	1

Note: Pxxxxxx = in SMD mounted components



Transmitter RCU (Remote Control Unit)

R791664

Parts listing Transmitter RCU R791664 (RCU with Joy stick)

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1000	R3615075	SCR HILO_P 3.2X 8.5HS B	1	J 6	B338800J	PHN FBS D 3.5MON P	1
9000	R593540	BAG PE 85X270	1	PC	R780456	PCD#PJ53 V701 TX	1
7000	R5975045	LFLT RCU700 TX	1	Q 1	P232122Q#BCX56	N P SOT89	1
5010	R722310	HSG PJ49 TX2 CVR DN	1	Q 2	P232122Q#BCX56	N P SOT89	1
5020	R722311	HSG PJ49 TX2 CVR BAT	1	Q 3	P232122Q#BCX56	N P SOT89	1
5030	R722312	HSG PJ49 TX2 WDW IR	1	Q 4	P232026Q#BC817-40	N SS SOT23	1
5021	R722382	HSG PJ49 TX2 LFLT WDW	1	Q 5	P232026Q#BC817-40	N SS SOT23	1
5000	R722686	HSG PJ49 TX2 JOY CVR UP	1	Q 6	P232026Q#BC817-40	N SS SOT23	1
4000	R722689	SW KYBD PJ53 TX JOY V700	1	Q 7	P232046Q#BSS123	F SS SOT23	1
4010	R722690	HSG PJ53 TX2 JOY FOIL	1	Q 8	P232050Q#BC857B	P SS SOT23	1
				Q 9	P232050Q#BC857B	P SS SOT23	1
C 1	P210056C#	COG MU 100P F 50 0805	1	R 1	P200103R#	CE H 18K J 0W12 1206	1
C 2	R1111355C	EL AX1000M M 10E9 85	1	R 2	P200109R#	CE H 33K J 0W12 1206	1
C 3	P212001C#	TA 2M2M 20 3528	1	R 3	P200023R#	CE H 8E2 J 0W12 1206	1
C 4	P210147C#	COG MU 2N7J 50 1206	1	R 4	P200073R#	CE H 1K J 0W12 1206	1
D 1	R1316666D	O LTE5208C T IR	1	R 5	P200001R#	CE H 1E J 0W12 1206	1
D 2	R1316666D	O LTE5208C T IR	1	R 6	P200001R#	CE H 1E J 0W12 1206	1
D 3	R1316666D	O LTE5208C T IR	1	R 7	P200001R#	CE H 1E J 0W12 1206	1
D 4	R1316666D	O LTE5208C T IR	1	R 8	P200065R#	CE H470E J 0W12 1206	1
D 5	R1316666D	O LTE5208C T IR	1	R 9	P200121R#	CE H100K J 0W12 1206	1
D 6	R1316666D	O LTE5208C T IR	1	R 10	P200099R#	CE H 12K J 0W12 1206	1
D 7	P234062D#	LED LYS260 YEL SOT23	1	R 11	P200049R#	CE H100E J 0W12 1206	1
D 8	P234062D#	LED LYS260 YEL SOT23	1	R 12	P200041R#	CE H 47E J 0W12 1206	1
D 9	P234062D#	LED LYS260 YEL SOT23	1	R 13	P200083R#	CE H 2K7 J 0W12 1206	1
D 10	P234062D#	LED LYS260 YEL SOT23	1	R 14	P200095R#	CE H 8K2 J 0W12 1206	1
D 11	P234062D#	LED LYS260 YEL SOT23	1	R 15	P200121R#	CE H100K J 0W12 1206	1
D 12	P234062D#	LED LYS260 YEL SOT23	1	R 16	P200676R#	CE H 10M K 0W12 1206	1
D 13	P234062D#	LED LYS260 YEL SOT23	1	R 17	P200105R#	CE H 22K J 0W12 1206	1
D 14	P234062D#	LED LYS260 YEL SOT23	1	R 18	P201063R#	CE H100E F 0W1 0805	1
D 15	P234062D#	LED LYS260 YEL SOT23	1	R 19	P201089R#	CE H 1K2 F 0W1 0805	1
D 16	P234062D#	LED LYS260 YEL SOT23	1	R 20	P201109R#	CE H 8K2 F 0W1 0805	1
D 17	P234062D#	LED LYS260 YEL SOT23	1	R 21	P201111R#	CE H 10K F 0W1 0805	1
D 18	P234062D#	LED LYS260 YEL SOT23	1	R 87	P200063R#	CE H390E J 0W12 1206	1
D 19	R131662D	LED D3 T RD	1	R 88	P200063R#	CE H390E J 0W12 1206	1
D 20	P234205D#	BAT54C SCH SOT23	1	R 89	P200063R#	CE H390E J 0W12 1206	1
D 21	P234205D#	BAT54C SCH SOT23	1	R101	P200063R#	CE H390E J 0W12 1206	1
D 22	P234099D#	4148 R DMMELF	1				
D 23	P234099D#	4148 R DMMELF	1	W	R348100WU	JUMP 0,6	1
I 1	R137371U	1250 SAA DIP24 P	1				
J	R313196J	BAT WS P 2 T-TYPE 9V	1				

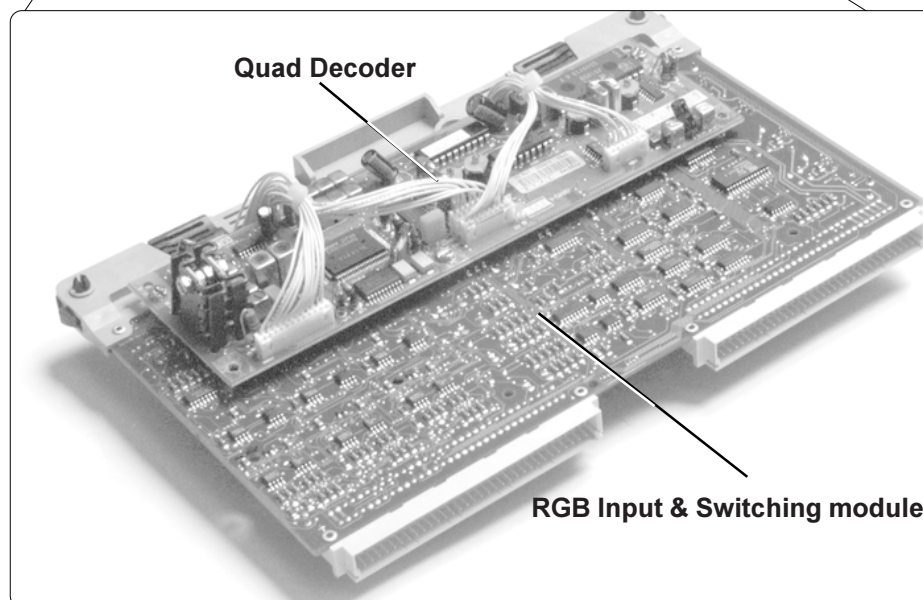
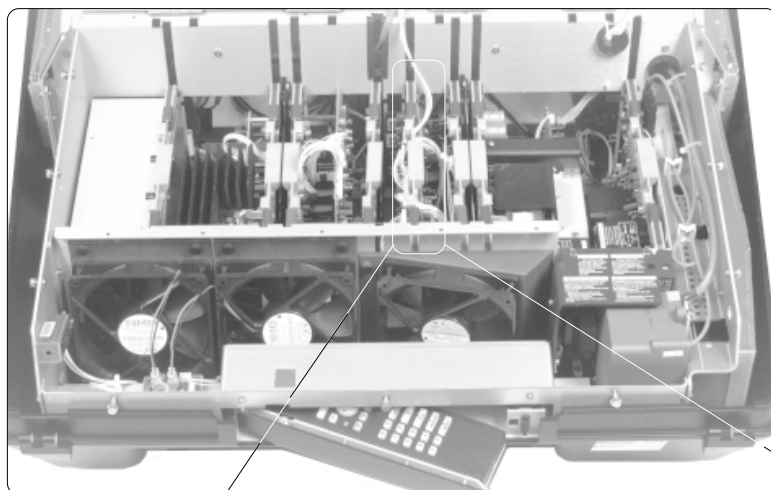
Transmitter RCU (Remote Control Unit)

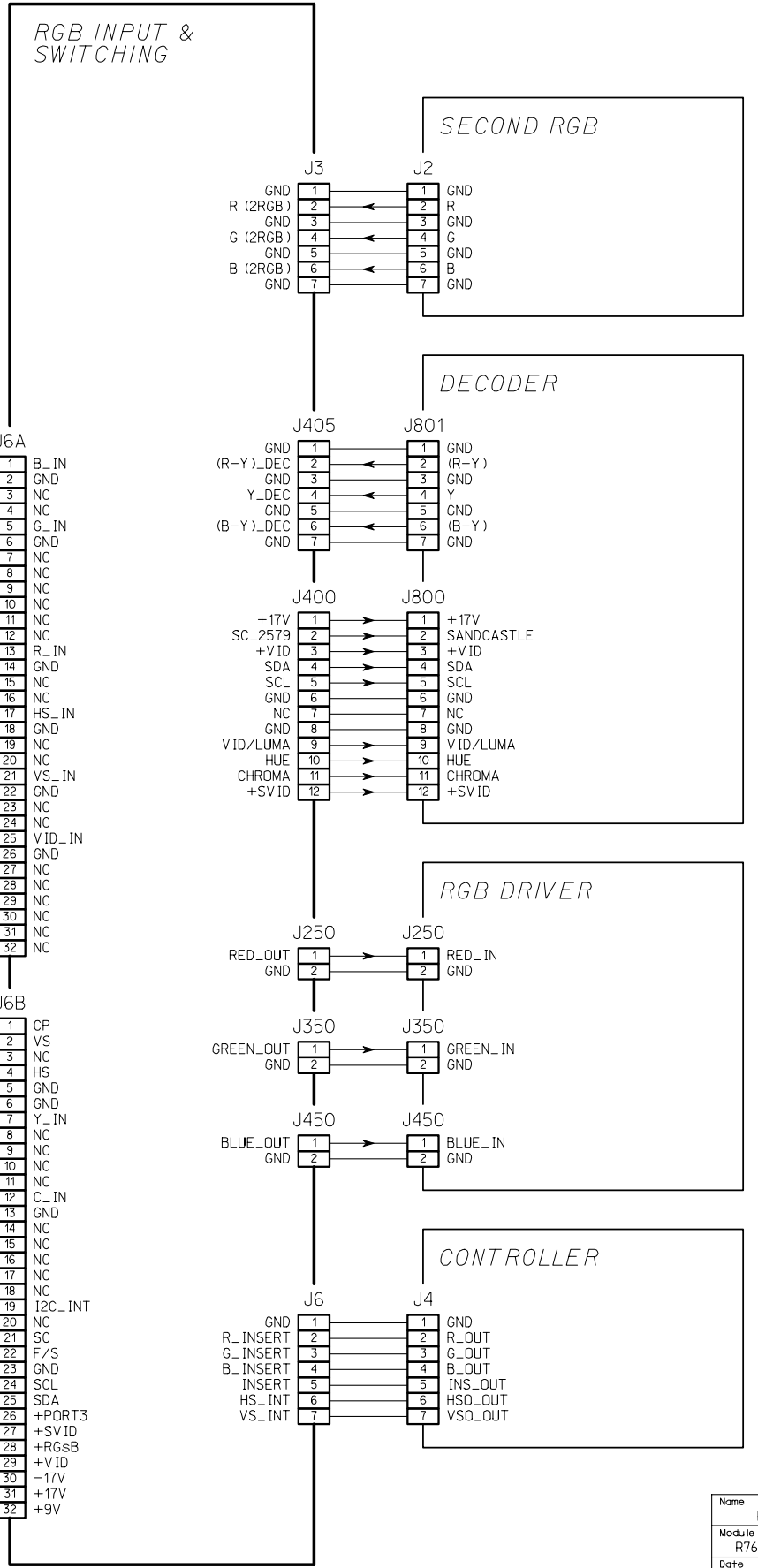
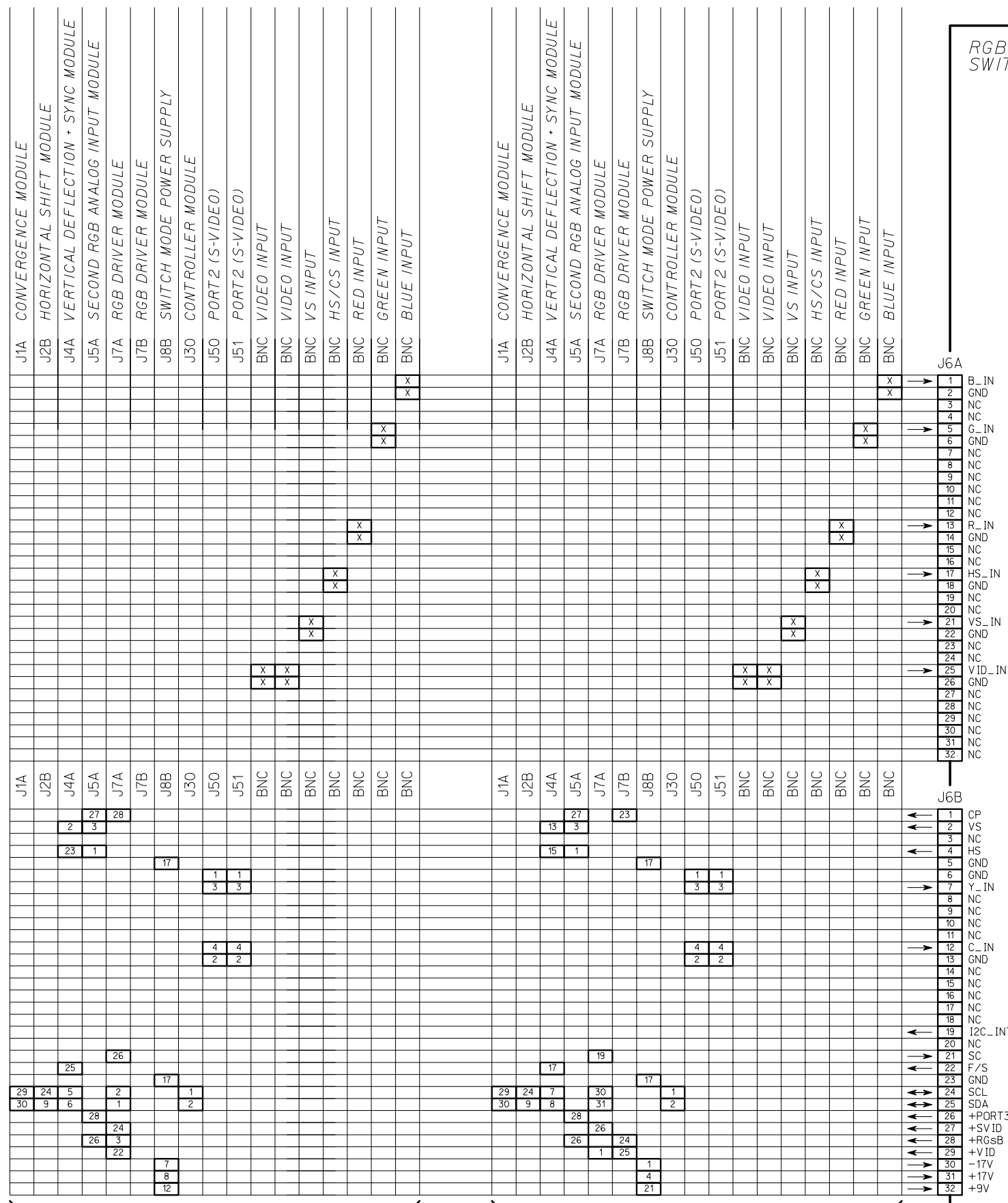
R791664

Parts listing Transmitter RCU R791664 (RCU with Control button)

SIT	ITEMNO	DESCRIPTION	QUANTITY	SIT	ITEMNO	DESCRIPTION	QUANTITY
	R3615075	SCR HILO_R 3.2X 8.5STZB	1				
	R722873	SW KYBD RUB PJ52 TX ROUND	1	I 1	R137371	U 1250 SAA DIP24 P	1
	R722877	FRM V701S TX2 FOIL3	1	J	R313196	BAT ACC SNAP-ON CLP 6LR61	1
	R722872	HSG49 TX2 CVR UP ROUND	1	J 6	B338800	J PHN FBS D 3.5MON P	1
	R722310	HSG49 TX2 CVR DN	1				
	R722311	HSG49 TX2 CVR BAT	1	PC	R780222	PCD#PJ52 D50 TX	1
	R722382	HSG49 TX2 LFLT WDW	1				
	R722312	HSG49 TX2 WDW IR	1	Q 1	P232122	Q#BCX56 N P SOT89	1
				Q 2	P232122	Q#BCX56 N P SOT89	1
	R5975045	LFLT RCU700 TX	1	Q 3	P232122	Q#BCX56 N P SOT89	1
	R593540	BAG PE 85X 270X0.07	1	Q 4	P232026	Q#BC817-40 N SS SOT23	1
				Q 5	P232026	Q#BC817-40 N SS SOT23	1
C 1	P210137	C# COG MU 100P J 50 1206	1	Q 6	P232026	Q#BC817-40 N SS SOT23	1
C 2	R1111355	C EL AX1000M M 10E10 85	1				
C 4	P210147	C# COG MU 2N7J 50 1206	1	R 1	P200441	R# CE H 18K F 0W12 1206	1
				R 2	P200447	R# CE H 33K F 0W12 1206	1
D 1	R1316666	D O TSUS5202 T IR	1	R 3	P200361	R# CE H 8E2 F 0W12 1206	1
D 2	R1316666	D O TSUS5202 T IR	1	R 4	P200411	R# CE H 1K F 0W12 1206	1
D 3	R1316666	D O TSUS5202 T IR	1	R 5	P200339	R# CE H 1E F 0W12 1206	1
D 4	R1316666	D O TSUS5202 T IR	1	R 6	P200339	R# CE H 1E F 0W12 1206	1
D 5	R1316666	D O TSUS5202 T IR	1	R 7	P200339	R# CE H 1E F 0W12 1206	1
D 6	R1316666	D O TSUS5202 T IR	1	R 8	P200403	R# CE H470E F 0W12 1206	1
D 7	P234063	D#LED LGS260 GRE SOT23	1	R 9	P200459	R# CE H100K F 0W12 1206	1
D 8	P234063	D#LED LGS260 GRE SOT23	1	R 10	P200437	R# CE H 12K F 0W12 1206	1
D 9	P234063	D#LED LGS260 GRE SOT23	1	R 11	P200387	R# CE H100E F 0W12 1206	1
D 10	P234063	D#LED LGS260 GRE SOT23	1	R 12	P200379	R# CE H 47E F 0W12 1206	1
D 11	P234063	D#LED LGS260 GRE SOT23	1	R 13	P200421	R# CE H 2K7 F 0W12 1206	1
D 12	P234063	D#LED LGS260 GRE SOT23	1	R 14	P200433	R# CE H 8K2 F 0W12 1206	1
D 13	P234063	D#LED LGS260 GRE SOT23	1	R 15	P200459	R# CE H100K F 0W12 1206	1
D 14	P234063	D#LED LGS260 GRE SOT23	1	R 16	P200499	R# CE H 4M7 F 0W12 1206	1
D 15	P234063	D#LED LGS260 GRE SOT23	1	R 17	P200443	R# CE H 22K F 0W12 1206	1
D 16	P234063	D#LED LGS260 GRE SOT23	1	R 87	P200401	R# CE H390E F 0W12 1206	1
D 17	P234063	D#LED LGS260 GRE SOT23	1	R 88	P200401	R# CE H390E F 0W12 1206	1
D 18	P234063	D#LED LGS260 GRE SOT23	1	R 89	P200401	R# CE H390E F 0W12 1206	1
D 19	R131662	D LED D3 T RD	1	R101	P200401	R# CE H390E F 0W12 1206	1
D 19	P234063	D#LED LGS260 GRE SOT23	1				
D 20	P234205	D#BAT54C SCH SOT23	1	W	R348101	WU JUMP 0.6 5	1
D 21	P234205	D#BAT54C SCH SOT23	1				
D 22	P234099	D#4148 R DMMELF	1				
D 23	P234099	D#4148 R DMMELF	1				

RGB Input & Switching module + Quad Decoder





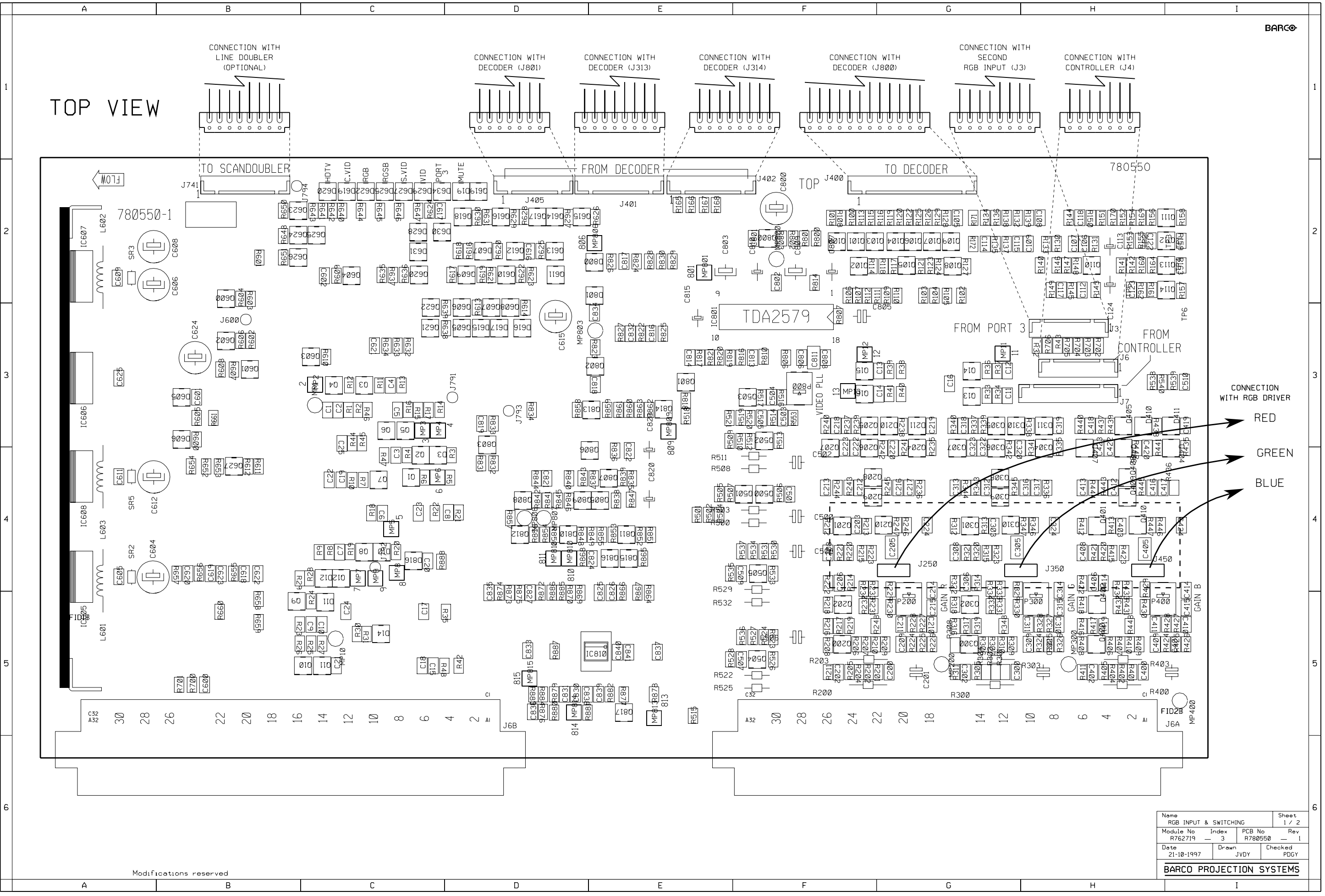
1200 SERIES

800 SERIES

Modifications reserved

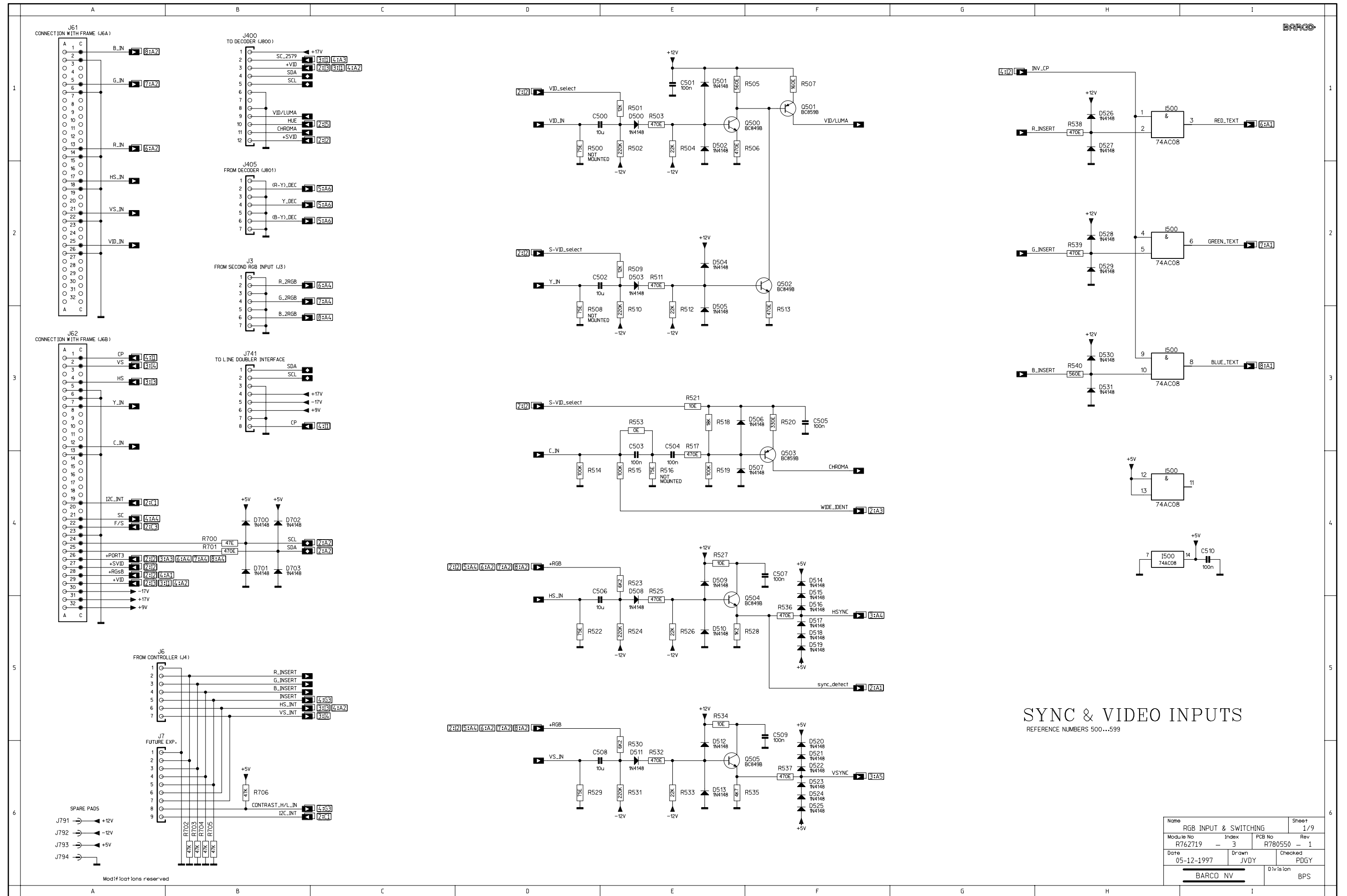
Name		Sheet	
RGB INPUT & DECODER		1/1	
Module No	Index	PCB No	Rev
R762719	- 3	R780550	- 1
Date	Drawn	Checked	
04-12-1997	JVDY	PDGY	
BARCO NV		Diversity BPS	

TOP VIEW



Name RGB INPUT & SWITCHING		Sheet 1 / 2	
Module No R762719	Index 3	PCB No R780550	Rev 1
Date 21-10-1997	Drawn JVDY	Checked PDGY	
BARCO PROJECTION SYSTEMS			

Modifications reserved

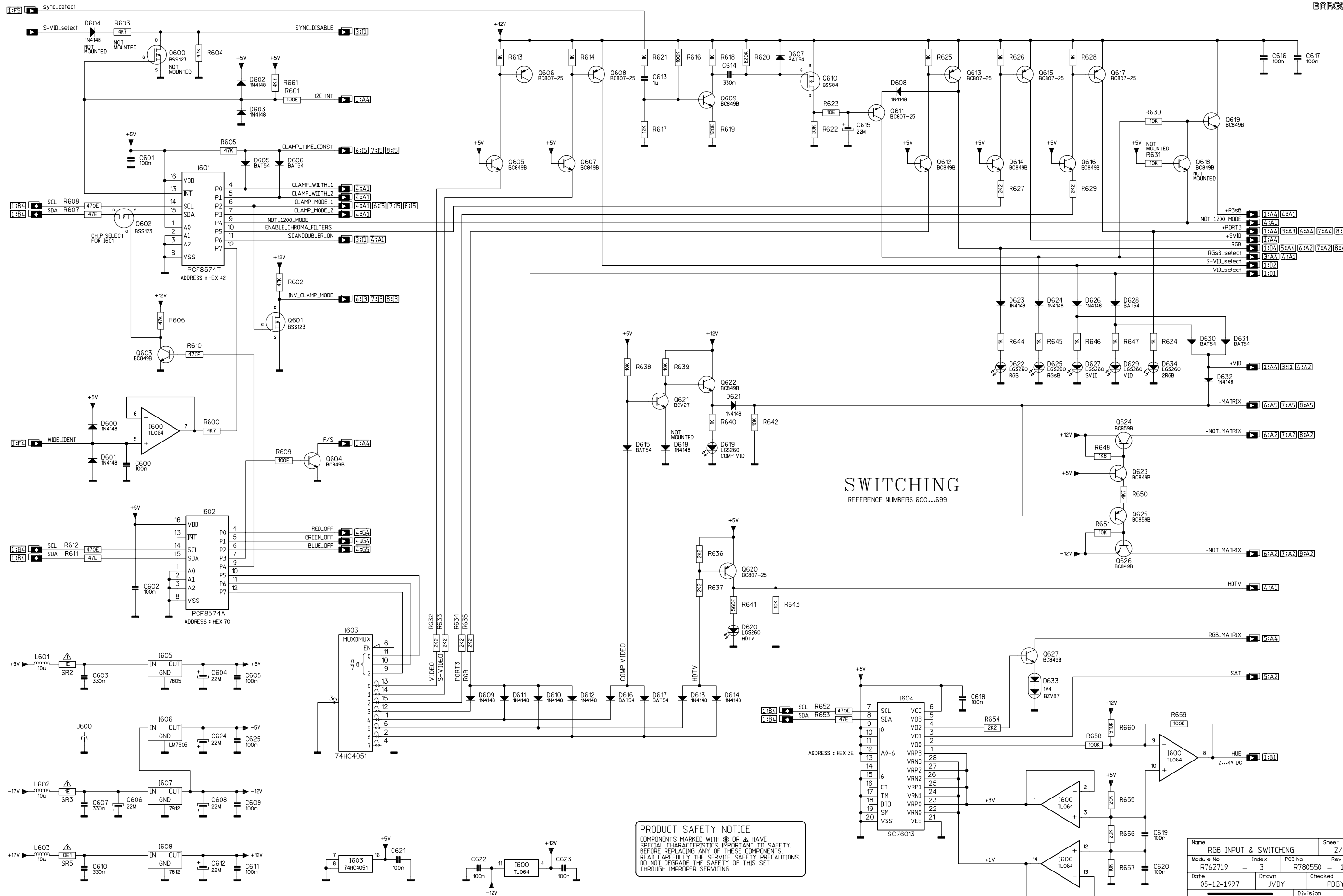


SYNC & VIDEO INPUTS

REFERENCE NUMBERS 500...599

Name		Sheet	
RGB INPUT & SWITCHING		1/9	
Module No	Index	PCB No	Rev
R762719	3	R780550	1
Date	Drawn	Checked	
05-12-1997	JVDY	PDGY	
BARCO NV		D'v is ion	
		BPS	

Modifications reserved



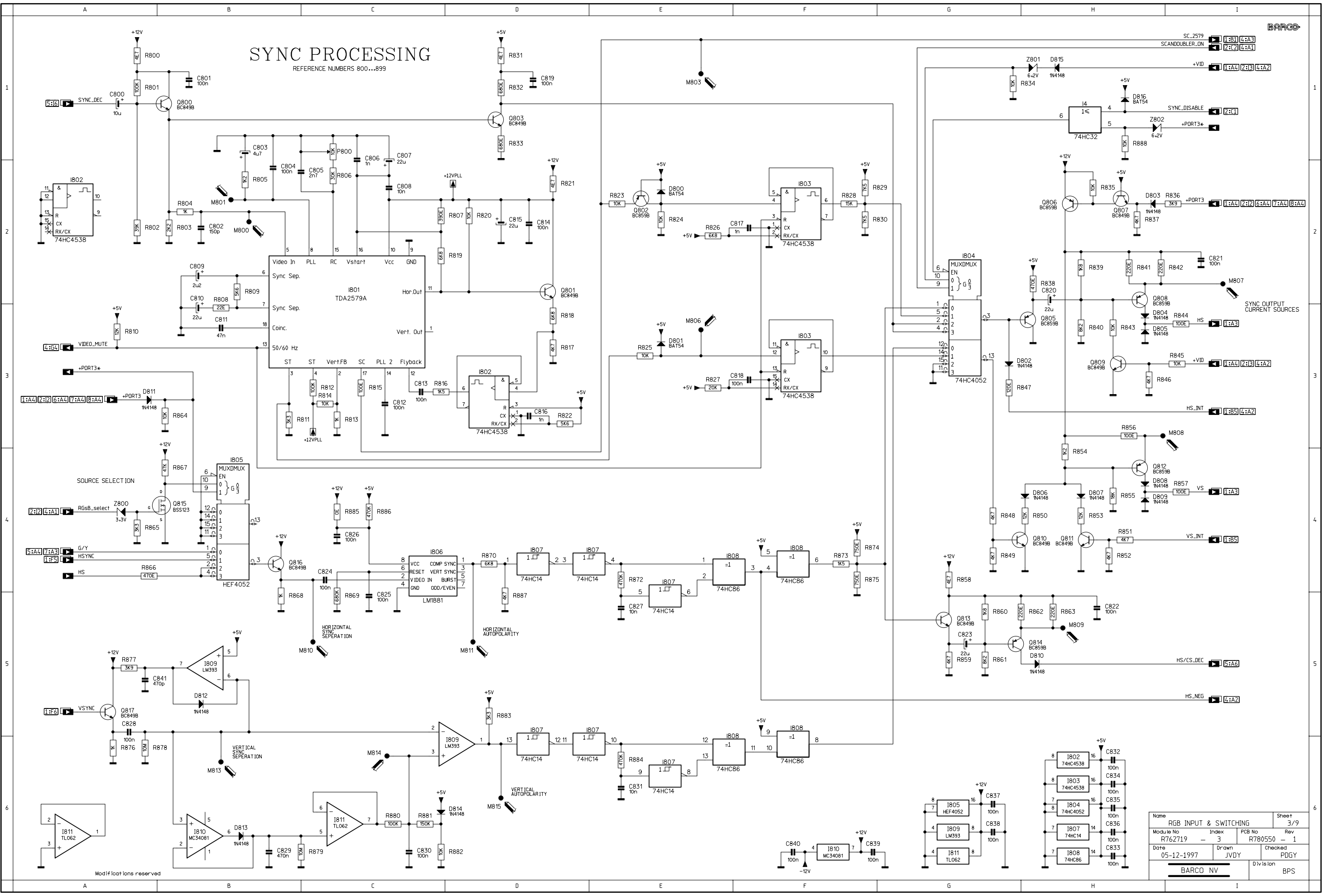
PRODUCT SAFETY NOTICE
 COMPONENTS MARKED WITH * OR & HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

Modifications reserved

Name		Sheet	
RGB INPUT & SWITCHING		2/9	
Module No	Index	PCB No	Rev
R762719	3	R780550	1
Date	Drawn	Checked	
05-12-1997	JVDY	PDGY	
BARCO NV		BPS	

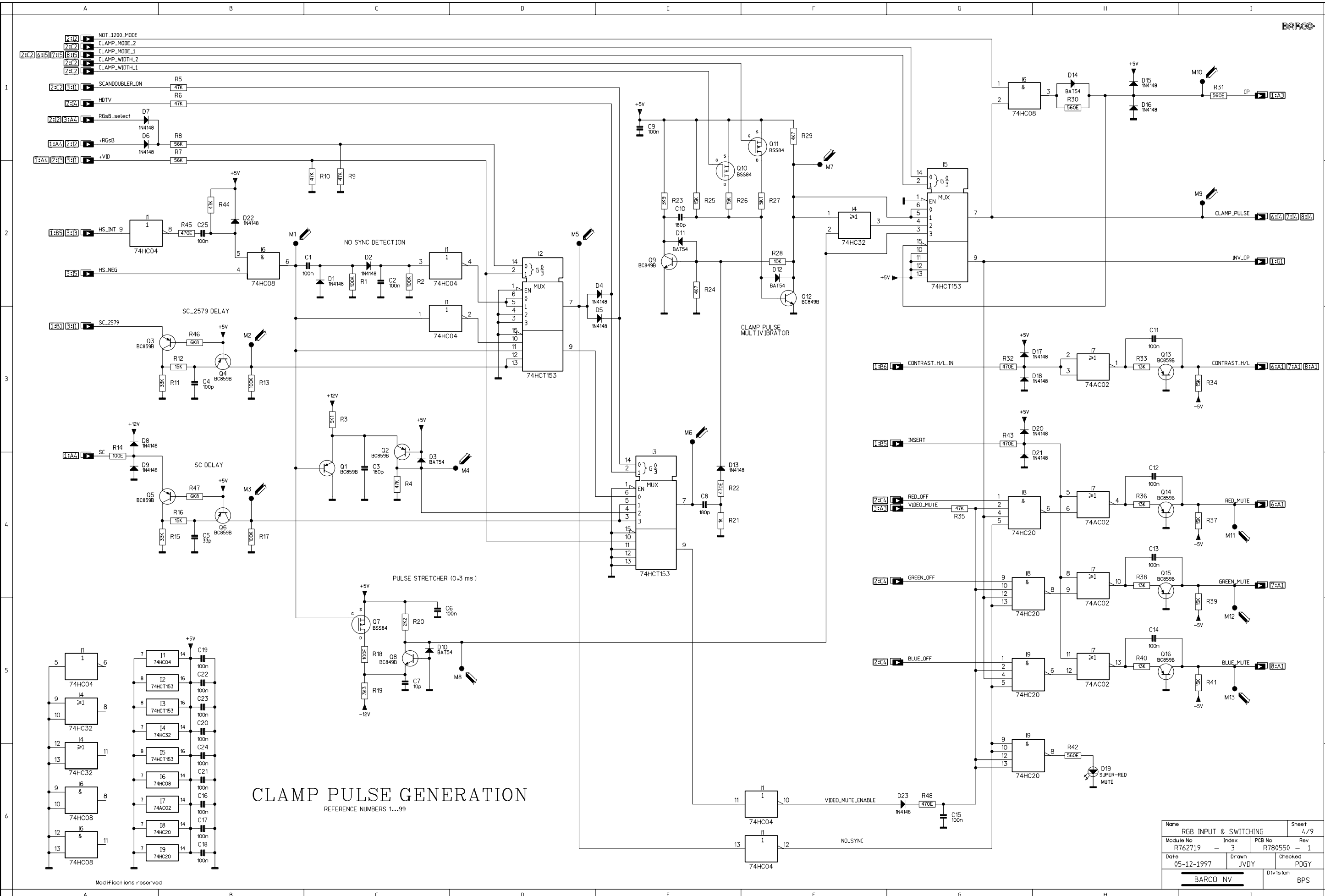
SYNC PROCESSING

REFERENCE NUMBERS 800...899



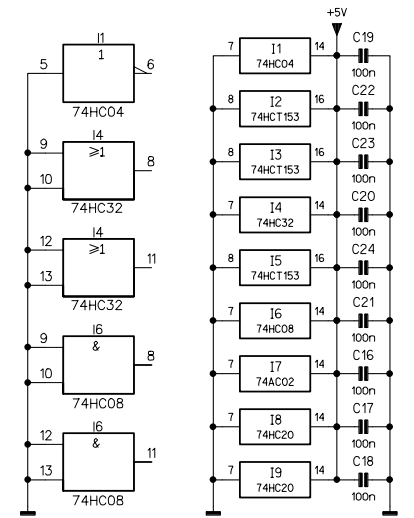
Name	RGB INPUT & SWITCHING	Sheet	3/9
Module No	R762719	Index	3
Date	05-12-1997	PCB No	R780550 - 1
Drawn	JVDY	Checked	PDGY
BARCO NV		D iv is ion BPS	

Modifications reserved



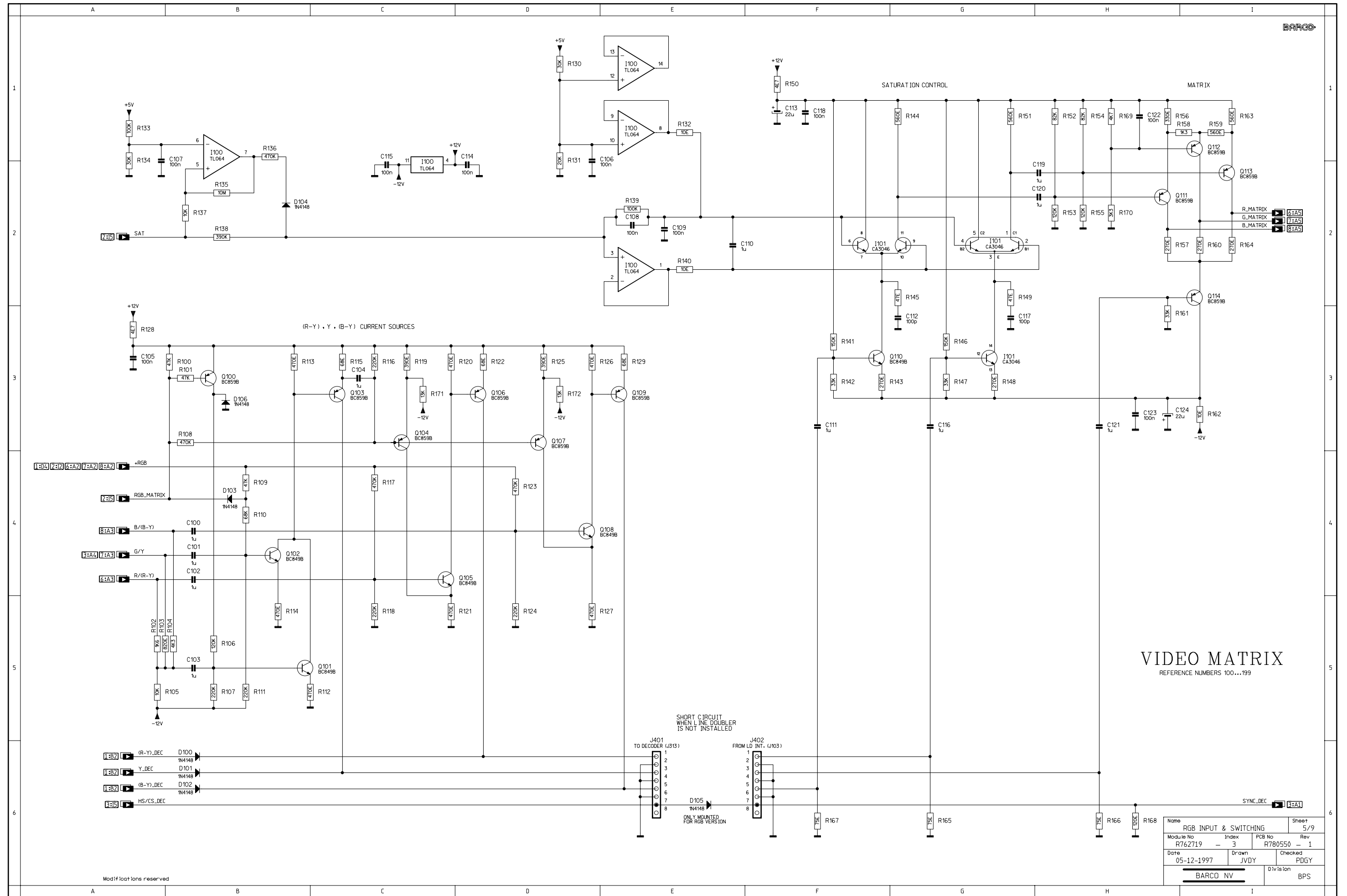
CLAMP PULSE GENERATION

REFERENCE NUMBERS 1...99



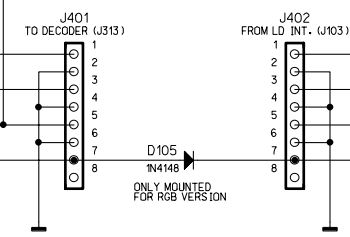
Modifications reserved

Name	RGB INPUT & SWITCHING	Sheet	4/9
Module No	R762719	Index	3
PCB No	R780550	Rev	1
Date	05-12-1997	Drawn	JVDY
Checked	PDGY		
BARCO NV		Division BPS	



VIDEO MATRIX
REFERENCE NUMBERS 100...199

SHORT CIRCUIT
WHEN LINE DOUBLER
IS NOT INSTALLED



- 1-B27 (R-Y)_DEC D100 N4148
- 1-B27 Y_DEC D101 N4148
- 1-B27 (B-Y)_DEC D102 N4148
- 1-B27 HS/CS_DEC

Name	RGB INPUT & SWITCHING	Sheet	5/9
Module No	R762719 - 3	PCB No	R780550 - 1
Date	05-12-1997	Drawn	JVDY
		Checked	PDGY
BARCO NV		Division	BPS

Modifications reserved

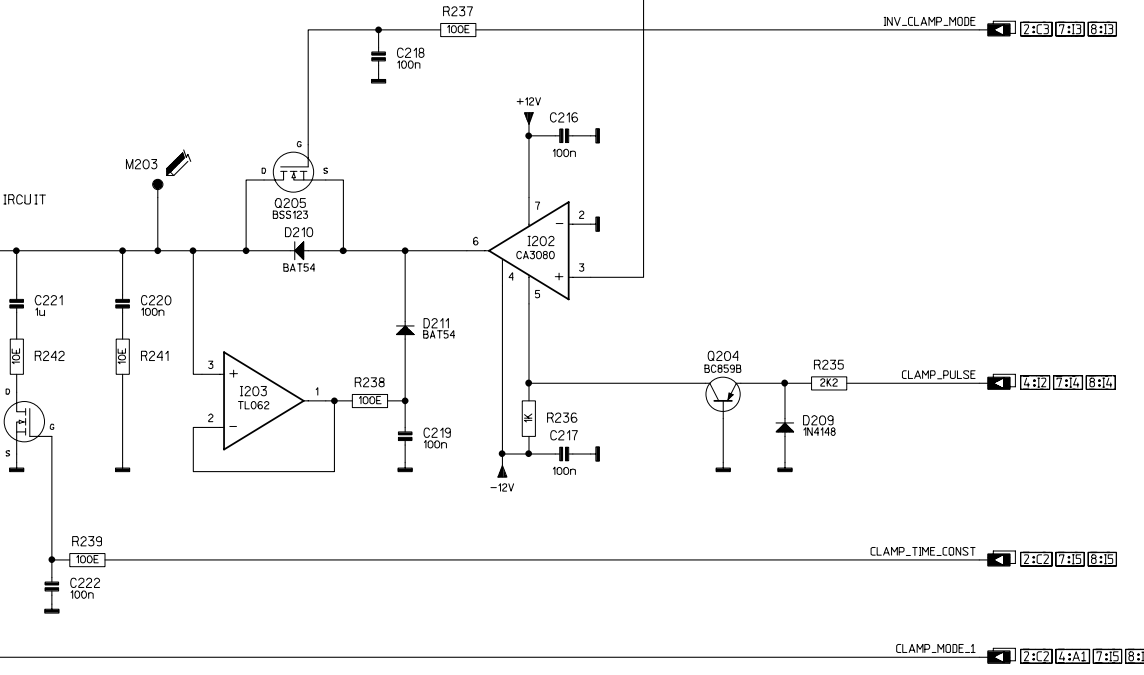
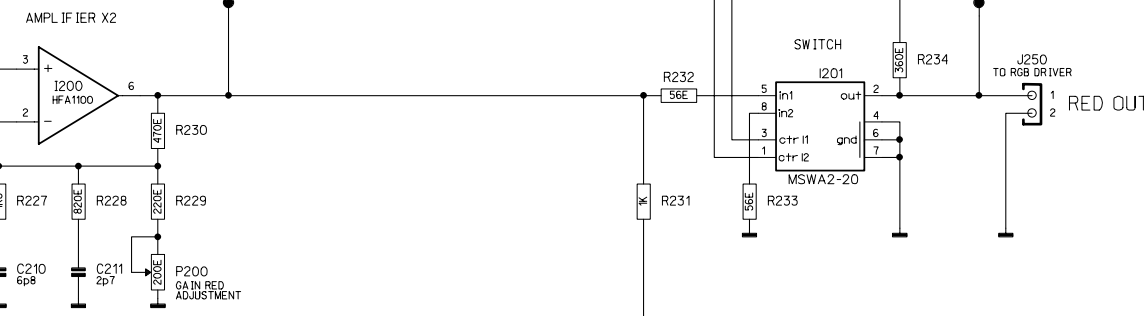
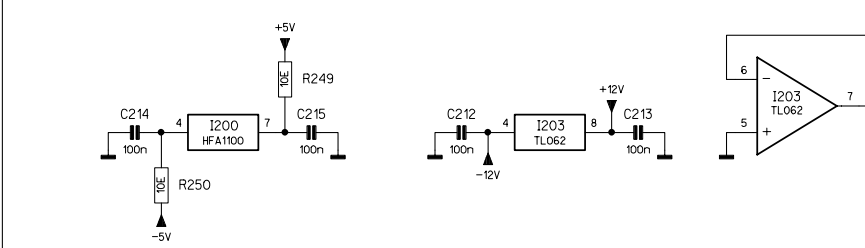
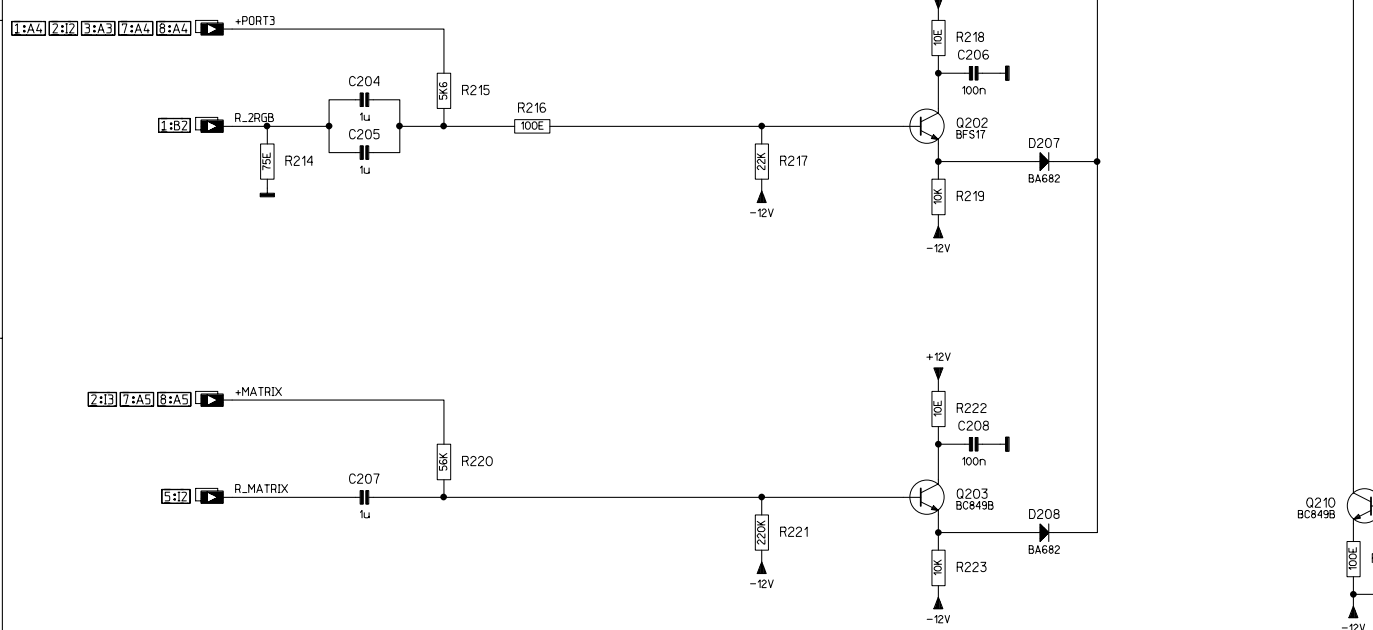
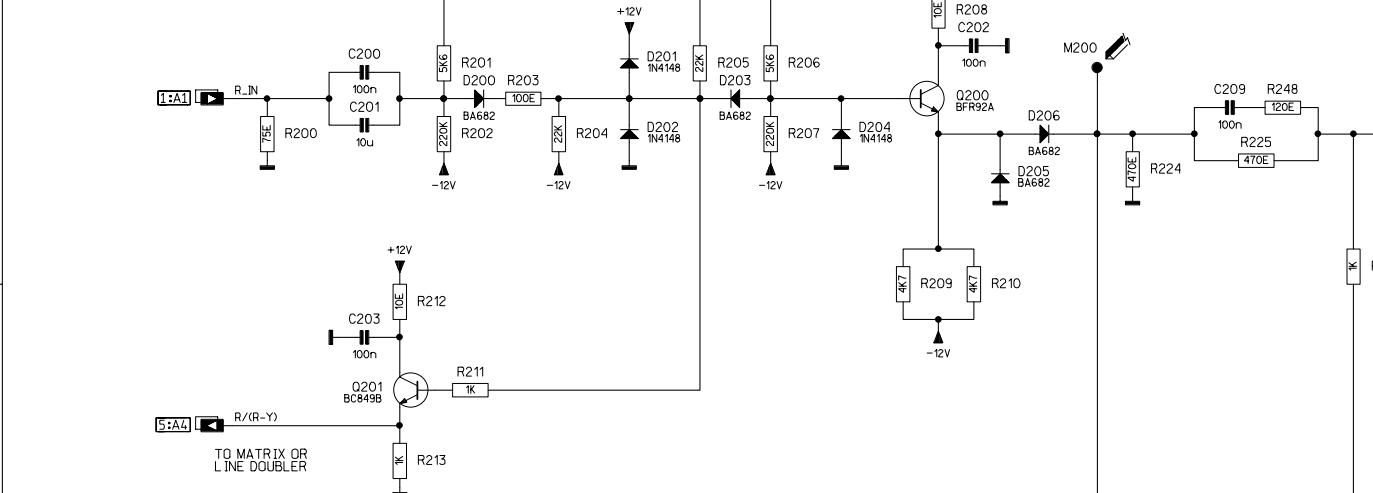
1:3:11 RED_TEXT
 4:3:4 RED_MUTE
 4:3:3 7:2:1 8:2:1 CONTRAST_H/L

RED INPUTS & CLAMPING

REFERENCE NUMBERS 200...299

INPUT SELECTION

2:3:3 7:2:2 8:2:2 +NOT_MATRIX
 2:3:4 7:2:2 8:2:2 -NOT_MATRIX
 4:3:4 2:3:2 5:2:1 7:2:2 8:2:2 +RGB

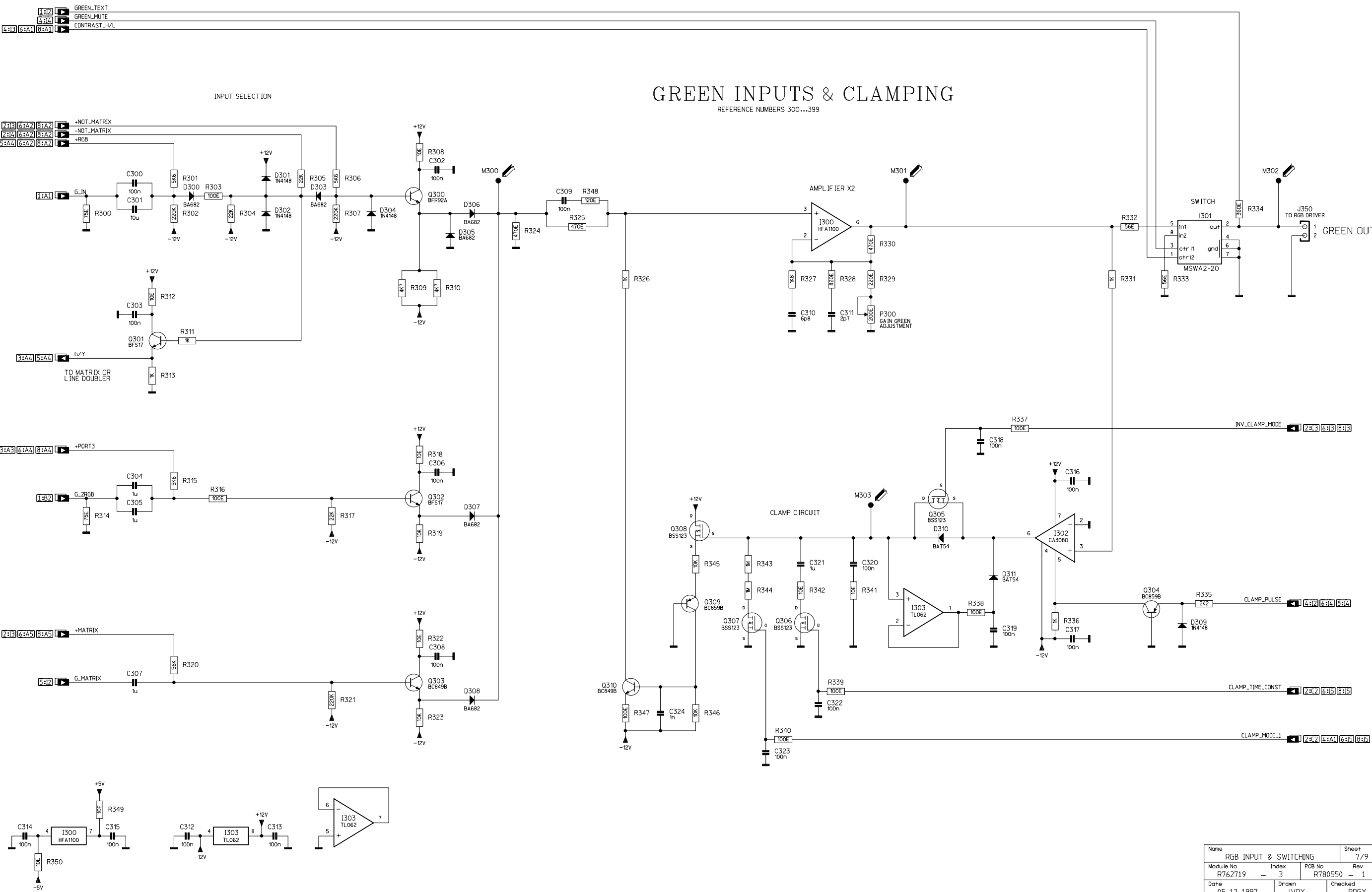


Name	RGB INPUT & SWITCHING	Sheet	6/9
Module No	R762719	Index	3
PCB No	R780550	Rev	1
Date	05-12-1997	Drawn	JVDY
Checked	PDGY		
BARCO NV		Division	BPS

Modifications reserved

GREEN INPUTS & CLAMPING

REFERENCE NUMBERS 300...399



- 1:37 GREEN_TEXT
- 4:34 GREEN_MUTE
- 4:13 6:2A1 8:2A1 CONTRAST_H/L

- 2:13 6:2A7 8:2A7 +NOT_MATRIX
- 2:14 6:2A7 8:2A7 -NOT_MATRIX
- 1:30A 2:17 5:5A4 6:2A7 8:2A7 +RGB

- 4:1A4 2:12 3:1A3 6:2A4 8:2A4 +PORT3

- 2:13 6:2A5 8:2A5 +MATRIX

Name		Sheet	
RGB INPUT & SWITCHING		7/9	
Module No	Index	PCB No	Rev
R762719	- 3	R780550	- 1
Date	Drawn	Checked	
05-12-1997	JVDY	PDGY	
BARCO NV		Division	
		BPS	

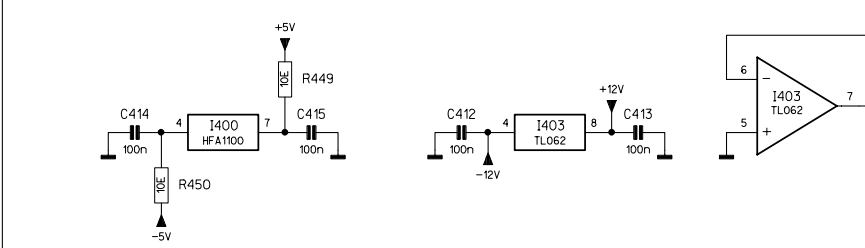
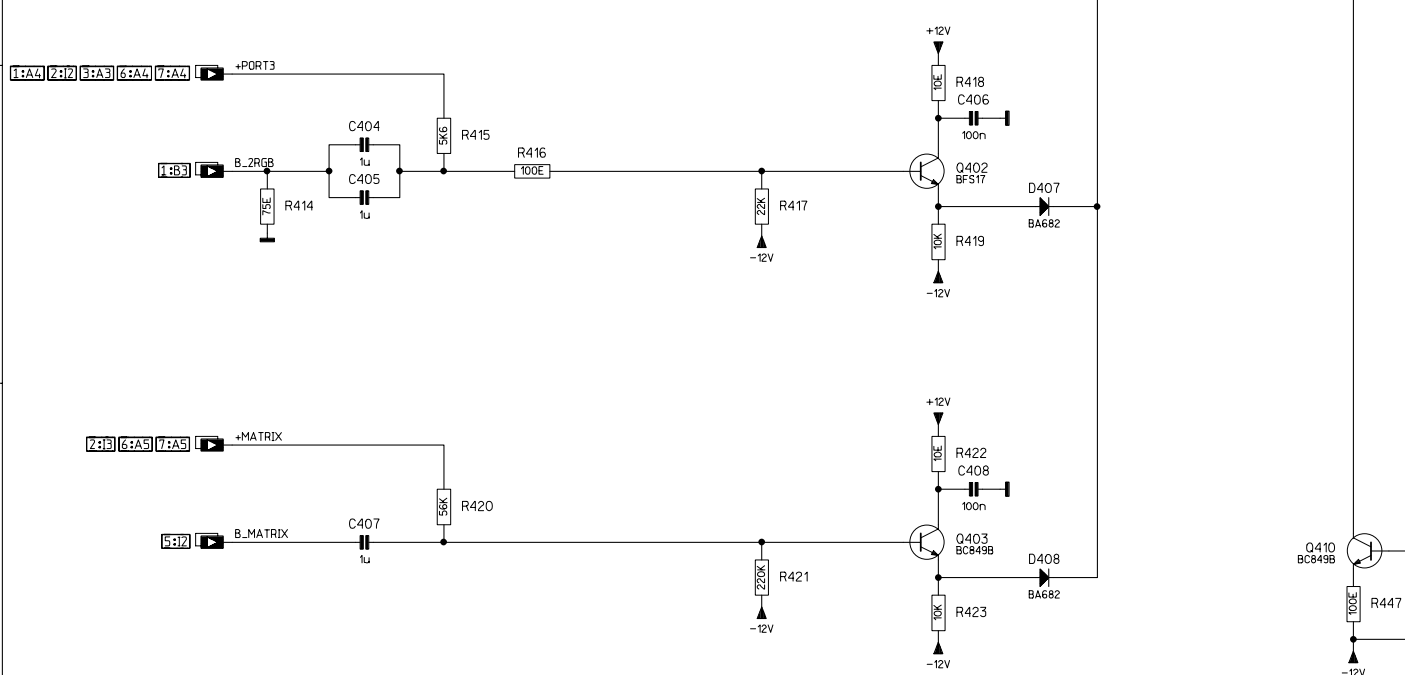
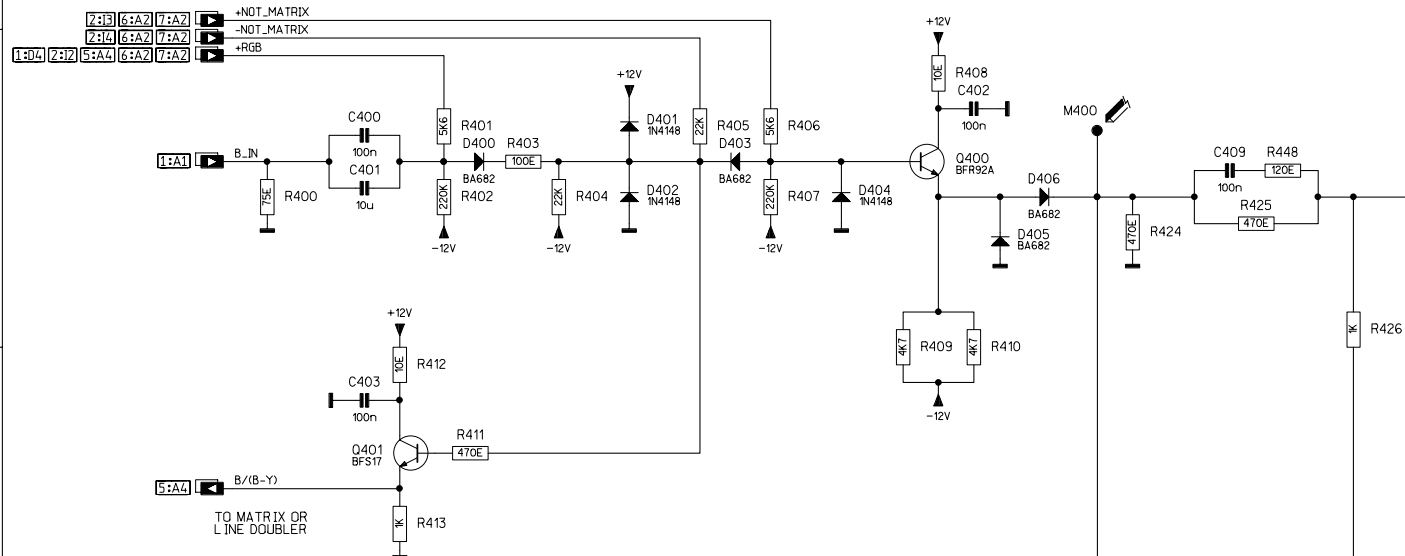
Modifications reserved

- 1:3:1 BLUE_TEXT
- 4:3:5 BLUE_MUTE
- 4:3:1 6:3:1 7:3:1 CONTRAST_H/L

BLUE INPUTS & CLAMPING

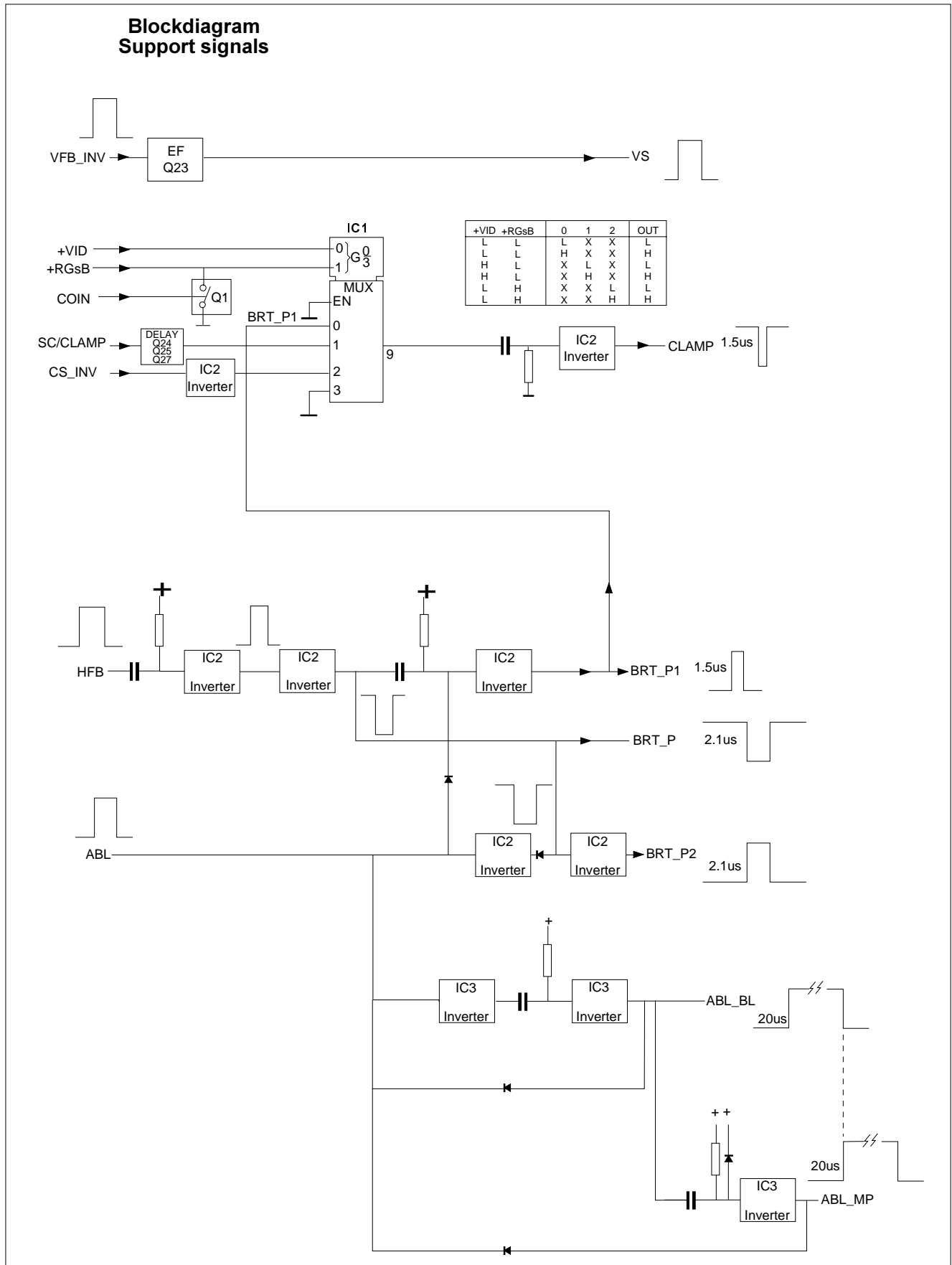
REFERENCE NUMBERS 400...499

INPUT SELECTION

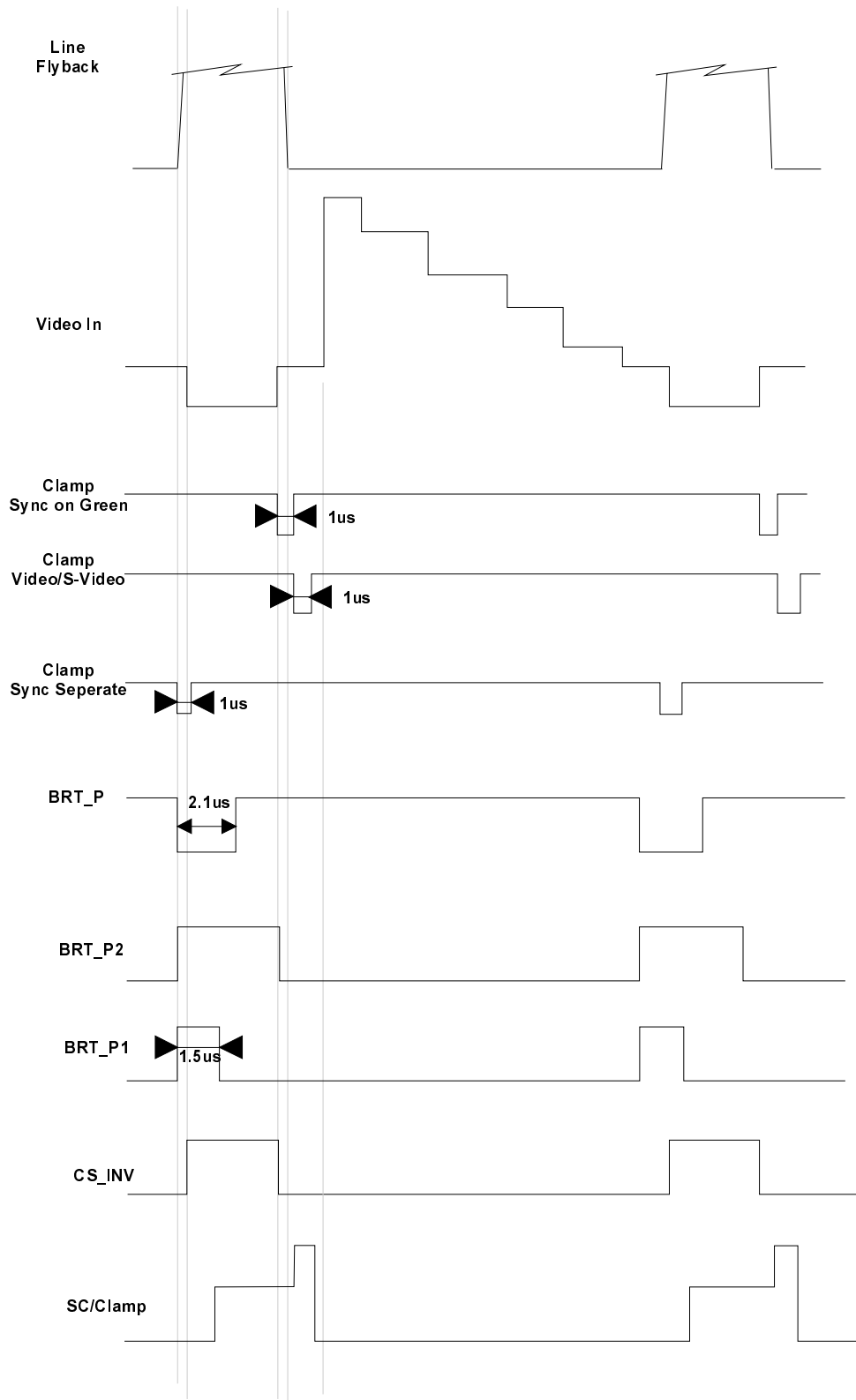


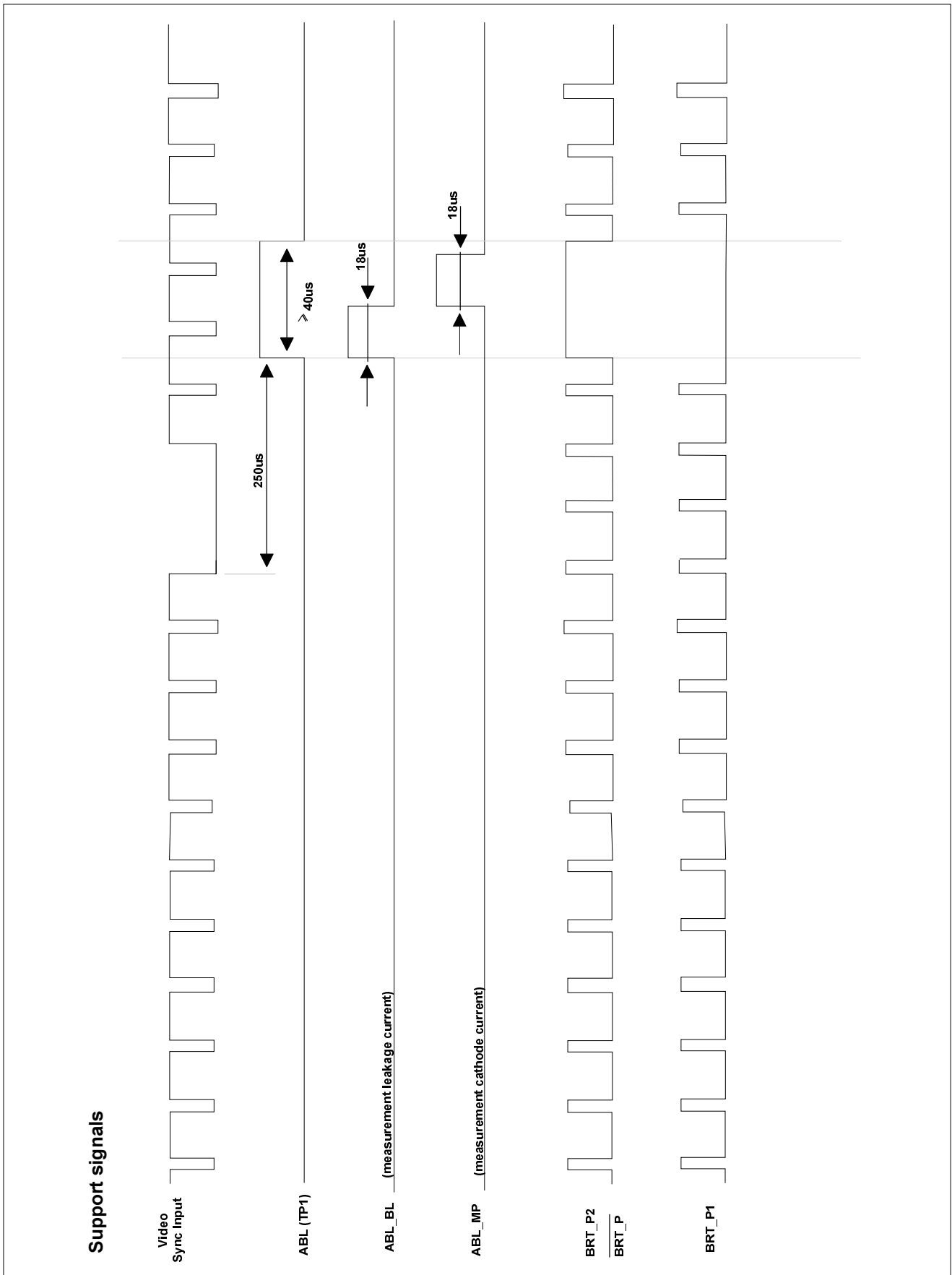
Name		Sheet	
RGB INPUT & SWITCHING		8/9	
Module No	Index	PCB No	Rev
R762719	- 3	R780550	- 1
Date	Drawn	Checked	
05-12-1997	JVDY	PDGY	
BARCO NV		Division	
		BPS	

Modifications reserved



Support signals





3. Adjustments

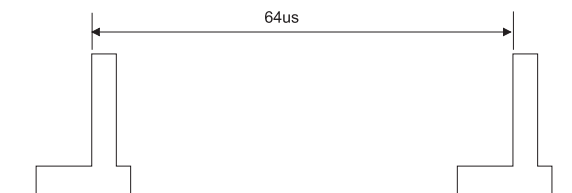
A. Adjustment of the Duty Cycle of the Oscillator P800

A1. Signal input:

No input selected (no signal)

A2. Adjustment of the duty cycle of the Oscillator in the IC 801 TDA2579A

- Connect an oscilloscope to pin 2 of the connector J400.
- Adjust the potentiometer P800 for a duty cycle of the Sandcastle pulse of 64us.



B. Input GAIN adjustment For Red (P200), Green (P300) and Blue (P400)

B1. Input GAIN adjustment Red (P200) channel

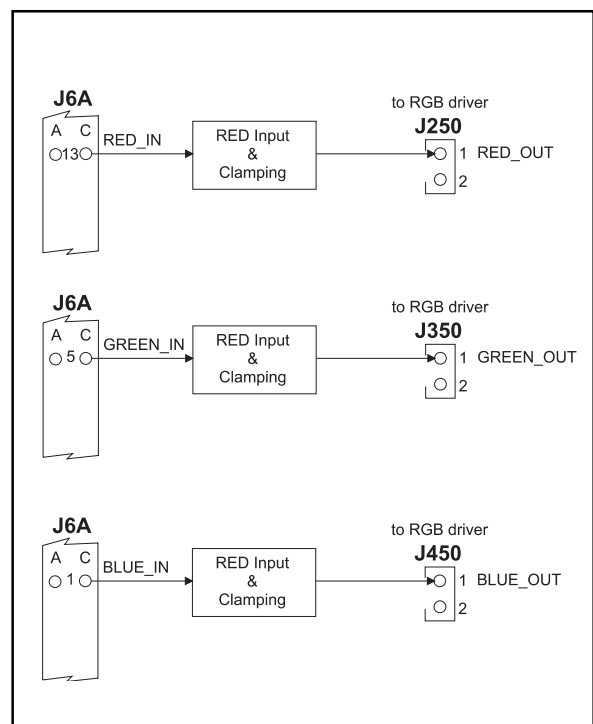
- Connect a RGB/S signal to the RGB-HS/CS inputs and select RGB/S.
- Connect one probe of the double beam oscilloscope to the RED_IN signal and the other to RED_OUT, pin 1 of the board connector J250.
- Adjust the potentiometer P200 for a signal aspect ratio In/Out of 1.

B2. Input GAIN adjustment Green (P300) channel

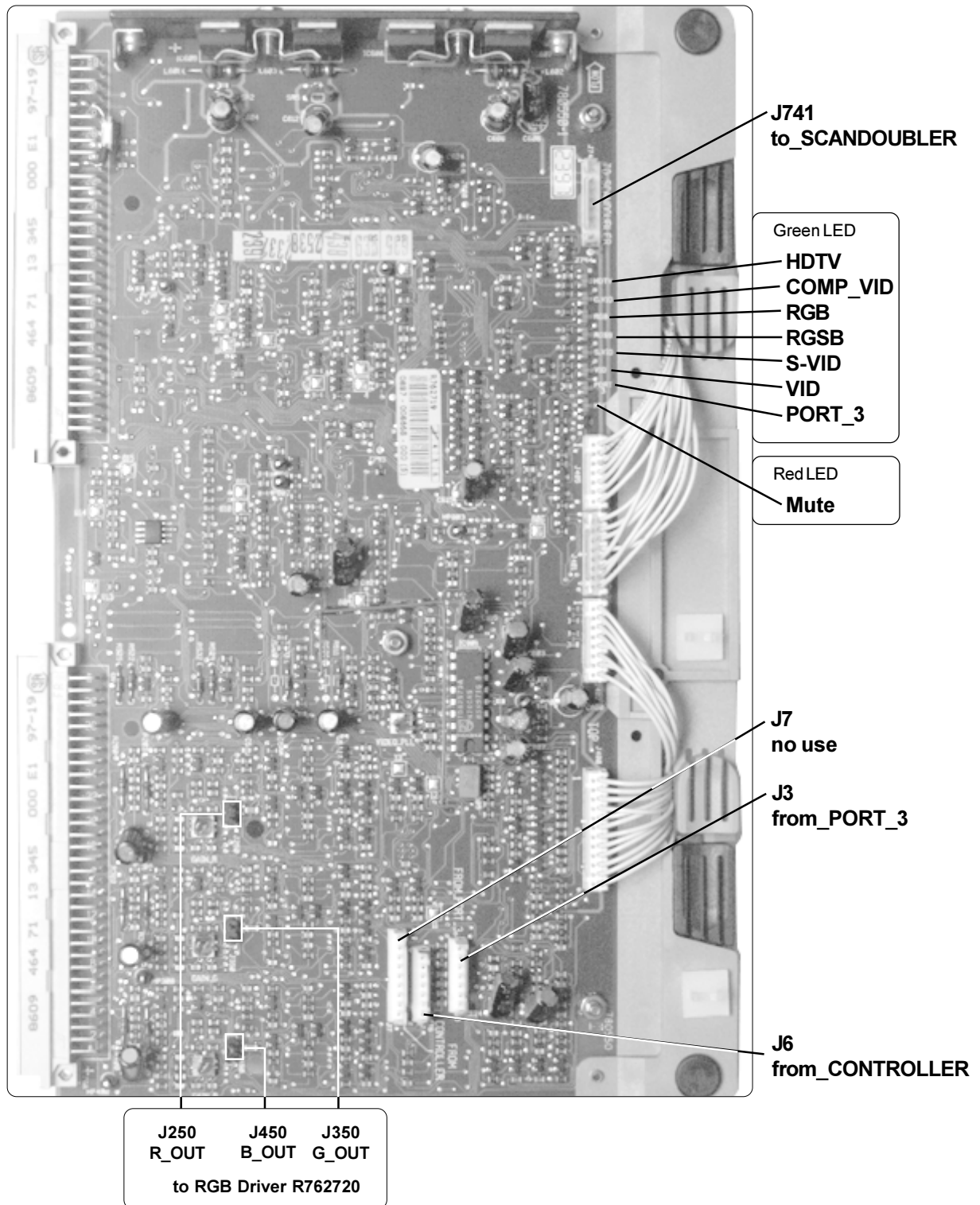
- Connect a RGB/S signal to the RGB-HS/CS inputs and select RGB/S.
- Connect one probe of the double beam oscilloscope to the GREEN_IN signal and the other to GREEN_OUT, pin 1 of the board connector J350.
- Adjust the potentiometer P300 for a signal aspect ratio In/Out of 1.

B3. Input GAIN adjustment Blue (P400) channel

- Connect a RGB/S signal to the RGB-HS/CS inputs and select RGB/S.
- Connect one probe of the double beam oscilloscope to the BLUE_IN signal and the other to BLUE_OUT, pin 1 of the board connector J450.
- Adjust the potentiometer P400 for a signal aspect ratio In/Out of 1.



Connections /Control LED's on the module



Connections

Connector J3 (from second RGB input)

pin 1	GND		GROUND
pin 2	R(2RGB)	1Vpp	RED Video input signal from second RGB analog input
pin 3	GND		GROUND
pin 4	G(2RGB)	1Vpp	GREEN Video input signal from second RGB analog input
pin 5	GND		GROUND
pin 6	B(2RGB)	1Vpp	BLUE Video input signal from second RGB analog input
pin 7	GND		GROUND

Connector J6A (frame connection)

pin 1	B IN	1Vpp	BLUE Video input (BNC) signal (Source 4,5)
pin 5	G IN	1Vpp	GREEN Video input (BNC) signal (Source 4,5)
pin 13	R IN	1Vpp	RED Video input (BNC) signal (Source 4,5)
pin 17	HS IN	0.3..5Vpp	Ext. Horizontal/composite Sync input (Source 4,5)
pin 21	VS IN	0.3..5Vpp	Ext. Vertical Sync input (Source 4,5)
pin 25	VID IN	1Vpp	Video composite input signal (Source 1)
pin 2/6/14/18/22/26	GND		GROUND

Connector J6B (frame connection)

pin 1	CP	TTL	Output Clamp pulses to RGB driver
pin 2	VS	1Vpp	Output Vertical Sync Pulses to Vert. Deflection
pin 4	HS	1Vpp	Output Hor./Composite Sync Pulses to Vert. Deflection
pin 7	Y IN	1Vpp	Ext. Luma signal input (Source 2)
pin 12	C IN	0.3Vpp	Ext. Chroma signal input
pin 19	I2CINT	TTL	Open collector I2C Interrupt line
pin 21	SC	2 level	Input Sandcastle from TDA2595
pin 22	F/S	Hi Z	Output Fast/Slow (open collector)
pin 24	SCL	TTL	I2C Clock
pin 25	SDA	TTL	I2C Data
pin 26	+PORT3		Selection Port 3 (+12V for source 3)
pin 27	+S VID		Selection S-Video (+12V for source 2)
pin 28	+RGsB		Selection RGsB (+12V for source RGsB)
pin 29	+VID		Selection Video (+12V for source 1 & 2)
pin 30	-17V		Power Supply -17V DC
pin 31	+17V		Power Supply +17V DC
pin 32	+9V		Power Supply +9V DC
pin 5/6/13/23	GND		GROUND

Connector J6 (from controller)

pin 1	GND		GROUND
pin 2	R Insert	TTL	Input RED Text from Controller
pin 3	R Insert	TTL	Input GREEN Text from Controller
pin 4	R Insert	TTL	Input BLUE Text from Controller
pin 5	Insert	TTL	Input Insert from Controller
pin 6	HSINT	TTL	Input Hor. Sync Pulses from Controller
pin 7	VSINT	TTL	Input Vert. Sync Pulses from Controller

Connections

Connector J400 (to decoder)

pin 1	+17V		Output Power Supply +17V
pin 2	SC_2579		Output 3-level Sandcastle pulse from TDA2579
pin 3	+VID		Output Selection Voltage Video (+12V for Video)
pin 4	SDA	TTL	I ² C bus
pin 5	SCL	TTL	I ² C bus
pin 6/8	GND		GROUND
pin 9	VID/LUMA	TTL	Output Video/Luminance signal
pin 10	HUE	2..4V DC	Output control voltage Hue
pin 11	CHROMA	150Ω	Output CHROMA Signal
pin 12	+S VID		Output Selection Voltage S-Video (+12V for S-Video)

Connector J401 (to decoder)

pin 1	(R-Y)	75Ω	Output (R-Y) to Line Doubler
pin 2	GND		GROUND
pin 3	Y	75Ω	Output Y to Line Doubler
pin 4	GND		GROUND
pin 5	(B-Y)	75Ω	Output (B-Y) to Line Doubler
pin 6	GND		GROUND
pin 7	SYNC	75Ω	Output SYNC to Line Doubler

Connector J402 (from line doubler interface)

pin 1	(R-Y)	75Ω	Input (R-Y) from Line Doubler
pin 2	GND		GROUND
pin 3	Y	75Ω	Input Y from Line Doubler
pin 4	GND		GROUND
pin 5	(B-Y)	75Ω	Input (B-Y) from Line Doubler
pin 6	GND		GROUND
pin 7	SYNC	75Ω	Input SYNC from Line Doubler

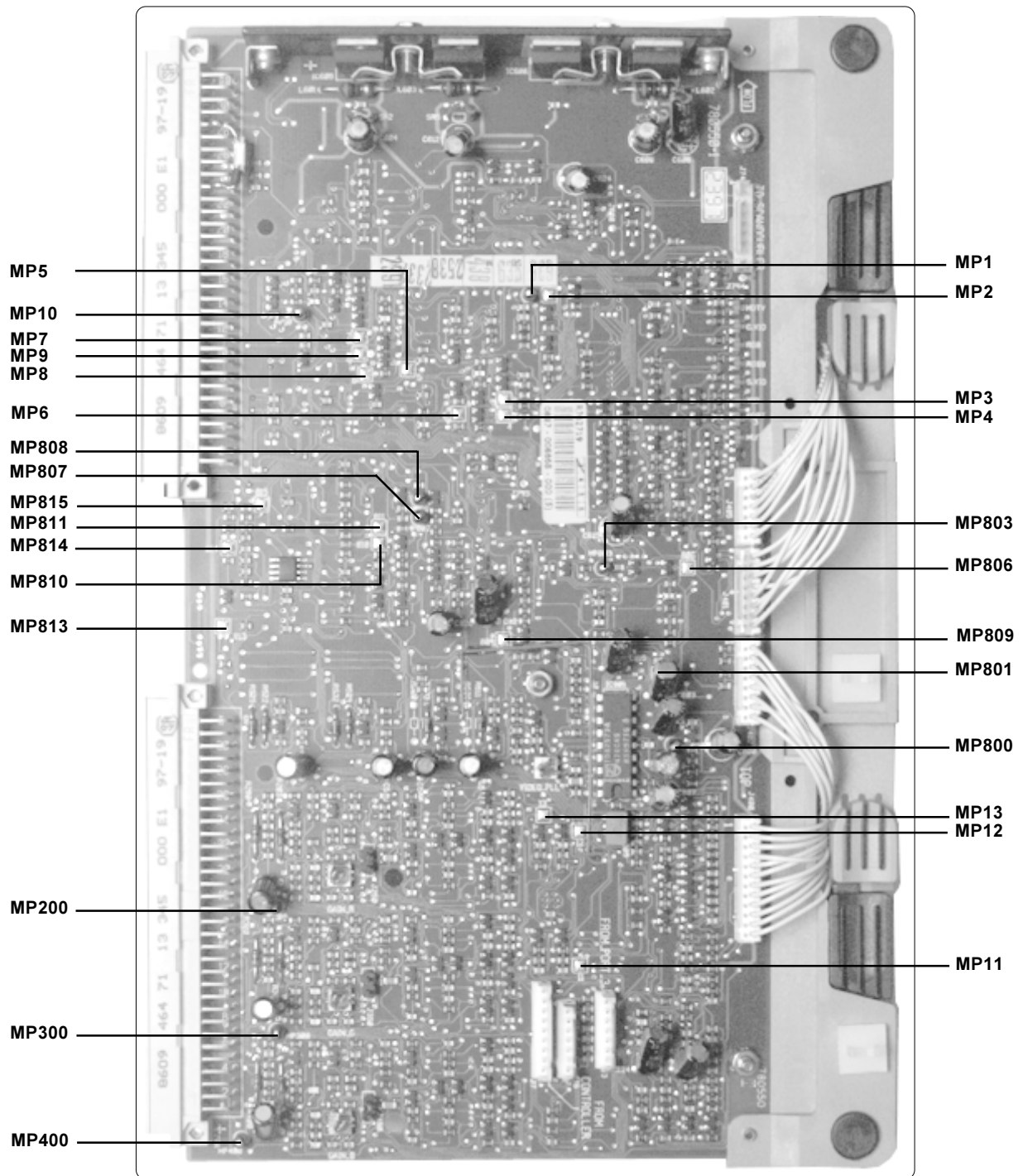
Connector J405 (from decoder)

pin 1	GND		GROUND
pin 2	(R-Y)_DEC	75Ω	Input (R-Y) from Decoder
pin 3	GND		GROUND
pin 4	Y_DEC	75Ω	Input Y from Decoder
pin 5	GND		GROUND
pin 6	(B-Y)_DEC	75Ω	Input (B-Y) from Decoder
pin 7	GND		GROUND

Connector J741 (to line doubler interface)

pin 1	SDA		I ² C bus
pin 2	SCL		I ² C bus
pin 3	GND		GROUND
pin 4	+17V		Power Supply -17V (±0.5V)
pin 5	-17V		Power Supply +17V (±0.5V)
pin 6	+9V		Power Supply +9V (±0.5V)
pin 7	GND		GROUND
pin 8	CP		Clamp Pulse

Measurement contacts



RGB input+Switching module

R762719

Parts listing R762719

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
150	A576297	SPRL 6 M3 H5 NBRNI	3	C120	P210178	C# Y5V MU 1M Z 16 1206	1
200	R133076	HTSN@A TO5 MNT PAD 3P	2	C121	P210178	C# Y5V MU 1M Z 16 1206	1
80	R133085	HTSN@A GEN I_SHT CRA 30 0,0003		C122	P210213	C# Y5V MU 100N Z 25 0805	1
180	R3631049	SCR Z933 M3 X 6 SS	3	C123	P210213	C# Y5V MU 100N Z 25 0805	1
60	R3631059	SCR Z933 M3 X 8 SS	2	C124	R111510	C EL RA 22M M 25E2 85	1
170	R3661026	NUT D934 M3 SS	3	C200	P210213	C# Y5V MU 100N Z 25 0805	1
50	R3674391	RVT BLND_R3,2C 3,2WSTAL	2	C201	R111678	C EL BRA 10M M 25E2 85	
160	R367502	SPR D6798AD 3,2D 6 STZN	3	C202	P210213	C# Y5V MU 100N Z 25 0805	1
10	R367699	RVT AVTRON2,5L 8,1 AL	4	C203	P210213	C# Y5V MU 100N Z 25 0805	1
110	R367699	RVT AVTRON2,5L 8,1 AL	2	C204	P210178	C# Y5V MU 1M Z 16 1206	1
100	R722276	LOCK49 PCBUNCPL	1	C205	P210178	C# Y5V MU 1M Z 16 1206	1
30	R802629	HTSNG800 RGB PR-AMP	1	C206	P210213	C# Y5V MU 100N Z 25 0805	1
40	R802692	HTSNG800 FIXHTSN	2	C207	P210178	C# Y5V MU 1M Z 16 1206	1
70	V1330681	HTSN@A TO220 SPG DUAL	2	C208	P210213	C# Y5V MU 100N Z 25 0805	1
C 1	P210213	C# Y5V MU 100N Z 25 0805	1	C209	P210213	C# Y5V MU 100N Z 25 0805	1
C 2	P210213	C# Y5V MU 100N Z 25 0805	1	C210	P210115	C# COG MU 6P8D 50 0805	1
C 3	P210081	C# COG MU 180P J 50 0805	1	C211	P210131	C# COG MU 2P7D 50 0805	1
C 4	P210021	C# COG MU 100P J 50 0805	1	C212	P210213	C# Y5V MU 100N Z 25 0805	1
C 5	P210018	C# COG MU 33P J 50 0805	1	C213	P210213	C# Y5V MU 100N Z 25 0805	1
C 6	P210213	C# Y5V MU 100N Z 25 0805	1	C214	P210213	C# Y5V MU 100N Z 25 0805	1
C 7	P210001	C# COG MU 10P C 50 0805	1	C215	P210213	C# Y5V MU 100N Z 25 0805	1
C 8	P210081	C# COG MU 180P J 50 0805	1	C216	P210213	C# Y5V MU 100N Z 25 0805	1
C 9	P210213	C# Y5V MU 100N Z 25 0805	1	C217	P210213	C# Y5V MU 100N Z 25 0805	1
C 10	P210081	C# COG MU 180P J 50 0805	1	C218	P210213	C# Y5V MU 100N Z 25 0805	1
C 11	P210213	C# Y5V MU 100N Z 25 0805	1	C219	P210213	C# Y5V MU 100N Z 25 0805	1
C 12	P210213	C# Y5V MU 100N Z 25 0805	1	C220	P210213	C# Y5V MU 100N Z 25 0805	1
C 13	P210213	C# Y5V MU 100N Z 25 0805	1	C221	P210178	C# Y5V MU 1M Z 16 1206	1
C 14	P210213	C# Y5V MU 100N Z 25 0805	1	C222	P210213	C# Y5V MU 100N Z 25 0805	1
C 15	P210213	C# Y5V MU 100N Z 25 0805	1	C223	P210213	C# Y5V MU 100N Z 25 0805	1
C 16	P210213	C# Y5V MU 100N Z 25 0805	1	C224	P210035	C# X7R MU 1N K 50 0805	1
C 17	P210213	C# Y5V MU 100N Z 25 0805	1	C300	P210213	C# Y5V MU 100N Z 25 0805	1
C 18	P210213	C# Y5V MU 100N Z 25 0805	1	C301	R111678	C EL BRA 10M M 25E2 85	
C 19	P210213	C# Y5V MU 100N Z 25 0805	1	C302	P210213	C# Y5V MU 100N Z 25 0805	1
C 20	P210213	C# Y5V MU 100N Z 25 0805	1	C303	P210213	C# Y5V MU 100N Z 25 0805	1
C 21	P210213	C# Y5V MU 100N Z 25 0805	1	C304	P210178	C# Y5V MU 1M Z 16 1206	1
C 22	P210213	C# Y5V MU 100N Z 25 0805	1	C305	P210178	C# Y5V MU 1M Z 16 1206	1
C 23	P210213	C# Y5V MU 100N Z 25 0805	1	C306	P210213	C# Y5V MU 100N Z 25 0805	1
C 24	P210213	C# Y5V MU 100N Z 25 0805	1	C307	P210178	C# Y5V MU 1M Z 16 1206	1
C 25	P210213	C# Y5V MU 100N Z 25 0805	1	C308	P210213	C# Y5V MU 100N Z 25 0805	1
C100	P210178	C# Y5V MU 1M Z 16 1206	1	C309	P210213	C# Y5V MU 100N Z 25 0805	1
C101	P210178	C# Y5V MU 1M Z 16 1206	1	C310	P210115	C# COG MU 6P8D 50 0805	1
C102	P210178	C# Y5V MU 1M Z 16 1206	1	C311	P210131	C# COG MU 2P7D 50 0805	1
C103	P210178	C# Y5V MU 1M Z 16 1206	1	C312	P210213	C# Y5V MU 100N Z 25 0805	1
C104	P210178	C# Y5V MU 1M Z 16 1206	1	C313	P210213	C# Y5V MU 100N Z 25 0805	1
C105	P210213	C# Y5V MU 100N Z 25 0805	1	C314	P210213	C# Y5V MU 100N Z 25 0805	1
C106	P210213	C# Y5V MU 100N Z 25 0805	1	C315	P210213	C# Y5V MU 100N Z 25 0805	1
C107	P210213	C# Y5V MU 100N Z 25 0805	1	C316	P210213	C# Y5V MU 100N Z 25 0805	1
C108	P210213	C# Y5V MU 100N Z 25 0805	1	C317	P210213	C# Y5V MU 100N Z 25 0805	1
C109	P210213	C# Y5V MU 100N Z 25 0805	1	C318	P210213	C# Y5V MU 100N Z 25 0805	1
C110	P210178	C# Y5V MU 1M Z 16 1206	1	C319	P210213	C# Y5V MU 100N Z 25 0805	1
C111	P210178	C# Y5V MU 1M Z 16 1206	1	C320	P210213	C# Y5V MU 100N Z 25 0805	1
C112	P210021	C# COG MU 100P J 50 0805	1	C321	P210178	C# Y5V MU 1M Z 16 1206	1
C113	R111510	C EL RA 22M M 25E2 85	1	C322	P210213	C# Y5V MU 100N Z 25 0805	1
C114	P210213	C# Y5V MU 100N Z 25 0805	1	C323	P210213	C# Y5V MU 100N Z 25 0805	1
C115	P210213	C# Y5V MU 100N Z 25 0805	1	C324	P210035	C# X7R MU 1N K 50 0805	1
C116	P210178	C# Y5V MU 1M Z 16 1206	1	C400	P210213	C# Y5V MU 100N Z 25 0805	1
C117	P210021	C# COG MU 100P J 50 0805	1	C401	R111678	C EL BRA 10M M 25E2 85	
C118	P210213	C# Y5V MU 100N Z 25 0805	1	C402	P210213	C# Y5V MU 100N Z 25 0805	1
C119	P210178	C# Y5V MU 1M Z 16 1206	1	C403	P210213	C# Y5V MU 100N Z 25 0805	1
				C404	P210178	C# Y5V MU 1M Z 16 1206	1
				C405	P210178	C# Y5V MU 1M Z 16 1206	1
				C406	P210213	C# Y5V MU 100N Z 25 0805	1
				C407	P210178	C# Y5V MU 1M Z 16 1206	1
				C408	P210213	C# Y5V MU 100N Z 25 0805	1
				C409	P210213	C# Y5V MU 100N Z 25 0805	1

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
C410	P210115	C# COG MU 6P8D 50 0805	1	C814	P210213	C# Y5V MU 100N Z 25 0805	1
C411	P210131	C# COG MU 2P7D 50 0805	1	C815	R111510	C EL RA 22M M 25E2 85	
C412	P210213	C# Y5V MU 100N Z 25 0805	1	C816	P210035	C# X7R MU 1N K 50 0805	1
C413	P210213	C# Y5V MU 100N Z 25 0805	1	C817	P210035	C# X7R MU 1N K 50 0805	1
C414	P210213	C# Y5V MU 100N Z 25 0805	1	C818	P210124	C# X7R MU 100N K 50 0805	1
C415	P210213	C# Y5V MU 100N Z 25 0805	1	C819	P210213	C# Y5V MU 100N Z 25 0805	1
C416	P210213	C# Y5V MU 100N Z 25 0805	1	C820	R111510	C EL RA 22M M 25E2 85	
C417	P210213	C# Y5V MU 100N Z 25 0805	1	C821	P210213	C# Y5V MU 100N Z 25 0805	1
C418	P210213	C# Y5V MU 100N Z 25 0805	1	C822	P210213	C# Y5V MU 100N Z 25 0805	1
C419	P210213	C# Y5V MU 100N Z 25 0805	1	C823	R111510	C EL RA 22M M 25E2 85	
C420	P210213	C# Y5V MU 100N Z 25 0805	1	C824	P210213	C# Y5V MU 100N Z 25 0805	1
C421	P210178	C# Y5V MU 1M Z 16 1206	1	C825	P210213	C# Y5V MU 100N Z 25 0805	1
C422	P210213	C# Y5V MU 100N Z 25 0805	1	C826	P210213	C# Y5V MU 100N Z 25 0805	1
C423	P210213	C# Y5V MU 100N Z 25 0805	1	C827	P210041	C# X7R MU 10N K 50 0805	1
C424	P210035	C# X7R MU 1N K 50 0805	1	C828	P210122	C# X7R MU 100N K 50 1206	1
C500	R111678	C EL BRA 10M M 25E2 85		C829	P210148	C# Y5V MU 470N Z 25 1206	1
C501	P210213	C# Y5V MU 100N Z 25 0805	1	C830	P210213	C# Y5V MU 100N Z 25 0805	1
C502	R111678	C EL BRA 10M M 25E2 85		C831	P210041	C# X7R MU 10N K 50 0805	1
C503	P210213	C# Y5V MU 100N Z 25 0805	1	C832	P210213	C# Y5V MU 100N Z 25 0805	1
C504	P210213	C# Y5V MU 100N Z 25 0805	1	C833	P210213	C# Y5V MU 100N Z 25 0805	1
C505	P210213	C# Y5V MU 100N Z 25 0805	1	C834	P210213	C# Y5V MU 100N Z 25 0805	1
C506	R111678	C EL BRA 10M M 25E2 85		C835	P210213	C# Y5V MU 100N Z 25 0805	1
C507	P210213	C# Y5V MU 100N Z 25 0805	1	C836	P210213	C# Y5V MU 100N Z 25 0805	1
C508	R111678	C EL BRA 10M M 25E2 85		C837	P210213	C# Y5V MU 100N Z 25 0805	1
C509	P210213	C# Y5V MU 100N Z 25 0805	1	C838	P210213	C# Y5V MU 100N Z 25 0805	1
C510	P210213	C# Y5V MU 100N Z 25 0805	1	C839	P210213	C# Y5V MU 100N Z 25 0805	1
C600	P210213	C# Y5V MU 100N Z 25 0805	1	C840	P210213	C# Y5V MU 100N Z 25 0805	1
C601	P210213	C# Y5V MU 100N Z 25 0805	1	C841	P210025	C# COG MU 470P J 63 0805	1
C602	P210213	C# Y5V MU 100N Z 25 0805	1				
C603	P210136	C# Y5V MU 330N Z 50 1206	1	D 1	P234099	D#4148 R DMMELF	1
C604	R111532	REPLACED BY V1114855		D 2	P234099	D#4148 R DMMELF	1
C605	P210213	C# Y5V MU 100N Z 25 0805	1	D 3	P234055	D#BAT54 SCH SOT23	1
C606	R111532	REPLACED BY V1114855		D 4	P234099	D#4148 R DMMELF	1
C607	P210136	C# Y5V MU 330N Z 50 1206	1	D 5	P234099	D#4148 R DMMELF	1
C608	R111532	REPLACED BY V1114855		D 6	P234099	D#4148 R DMMELF	1
C609	P210213	C# Y5V MU 100N Z 25 0805	1	D 7	P234099	D#4148 R DMMELF	1
C610	P210136	C# Y5V MU 330N Z 50 1206	1	D 8	P234099	D#4148 R DMMELF	1
C611	P210213	C# Y5V MU 100N Z 25 0805	1	D 9	P234099	D#4148 R DMMELF	1
C612	R111532	REPLACED BY V1114855		D 10	P234055	D#BAT54 SCH SOT23	1
C613	P210178	C# Y5V MU 1M Z 16 1206	1	D 11	P234055	D#BAT54 SCH SOT23	1
C614	P210136	C# Y5V MU 330N Z 50 1206	1	D 12	P234055	D#BAT54 SCH SOT23	1
C615	R111532	REPLACED BY V1114855		D 13	P234099	D#4148 R DMMELF	1
C616	P210213	C# Y5V MU 100N Z 25 0805	1	D 14	P234055	D#BAT54 SCH SOT23	1
C617	P210213	C# Y5V MU 100N Z 25 0805	1	D 15	P234099	D#4148 R DMMELF	1
C618	P210213	C# Y5V MU 100N Z 25 0805	1	D 16	P234099	D#4148 R DMMELF	1
C619	P210213	C# Y5V MU 100N Z 25 0805	1	D 17	P234099	D#4148 R DMMELF	1
C620	P210213	C# Y5V MU 100N Z 25 0805	1	D 18	P234099	D#4148 R DMMELF	1
C621	P210213	C# Y5V MU 100N Z 25 0805	1	D 19	P234040	D#LED LSS260 RED SOT23	1
C622	P210213	C# Y5V MU 100N Z 25 0805	1	D 20	P234099	D#4148 R DMMELF	1
C623	P210213	C# Y5V MU 100N Z 25 0805	1	D 21	P234099	D#4148 R DMMELF	1
C624	R111532	REPLACED BY V1114855		D 22	P234099	D#4148 R DMMELF	1
C625	P210213	C# Y5V MU 100N Z 25 0805	1	D 23	P234099	D#4148 R DMMELF	1
C700	R113724	C POMERA 100N K 63E2 85	1	D100	P234099	D#4148 R DMMELF	1
C800	R111531	C EL RA 10M M 35E2 85		D101	P234099	D#4148 R DMMELF	1
C801	P210213	C# Y5V MU 100N Z 25 0805	1	D102	P234099	D#4148 R DMMELF	1
C802	P210022	C# COG MU 150P J 50 0805	1	D103	P234099	D#4148 R DMMELF	1
C803	R111550	C EL RA 4M7M 50E2 85		D104	P234099	D#4148 R DMMELF	1
C804	P210122	C# X7R MU 100N K 50 1206	1	D106	P234099	D#4148 R DMMELF	1
C805	R115926	C PP RA 2N7J100E2 85		D200	P234259	D#BA682 S035A1 DMMELF	1
C806	P210035	C# X7R MU 1N K 50 0805	1	D201	P234099	D#4148 R DMMELF	1
C807	R111510	C EL RA 22M M 25E2 85		D202	P234099	D#4148 R DMMELF	1
C808	P210041	C# X7R MU 10N K 50 0805	1	D203	P234259	D#BA682 S035A1 DMMELF	1
C809	R111548	C EL RA 2M2M 50E2 85		D204	P234099	D#4148 R DMMELF	1
C810	R111510	C EL RA 22M M 25E2 85		D205	P234259	D#BA682 S035A1 DMMELF	1
C811	P210045	C# X7R MU 47N K 50 1206	1	D206	P234259	D#BA682 S035A1 DMMELF	1
C812	P210122	C# X7R MU 100N K 50 1206	1	D207	P234259	D#BA682 S035A1 DMMELF	1
C813	P210213	C# Y5V MU 100N Z 25 0805	1	D208	P234259	D#BA682 S035A1 DMMELF	1

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
D209	P234099	D#4148 R DMMELF	1	D609	P234099	D#4148 R DMMELF	1
D210	P234055	D#BAT54 SCH SOT23	1	D610	P234099	D#4148 R DMMELF	1
D211	P234055	D#BAT54 SCH SOT23	1	D611	P234099	D#4148 R DMMELF	1
D300	P234259	D#BA682 S035A1 DMMELF	1	D612	P234099	D#4148 R DMMELF	1
D301	P234099	D#4148 R DMMELF	1	D613	P234099	D#4148 R DMMELF	1
D302	P234099	D#4148 R DMMELF	1	D614	P234099	D#4148 R DMMELF	1
D303	P234259	D#BA682 S035A1 DMMELF	1	D615	P234055	D#BAT54 SCH SOT23	1
D304	P234099	D#4148 R DMMELF	1	D616	P234055	D#BAT54 SCH SOT23	1
D305	P234259	D#BA682 S035A1 DMMELF	1	D617	P234055	D#BAT54 SCH SOT23	1
D306	P234259	D#BA682 S035A1 DMMELF	1	D619	P234063	D#LED LGS260 GRE SOT23	1
D307	P234259	D#BA682 S035A1 DMMELF	1	D620	P234063	D#LED LGS260 GRE SOT23	1
D308	P234259	D#BA682 S035A1 DMMELF	1	D621	P234099	D#4148 R DMMELF	1
D309	P234099	D#4148 R DMMELF	1	D622	P234063	D#LED LGS260 GRE SOT23	1
D310	P234055	D#BAT54 SCH SOT23	1	D623	P234099	D#4148 R DMMELF	1
D311	P234055	D#BAT54 SCH SOT23	1	D624	P234099	D#4148 R DMMELF	1
D400	P234259	D#BA682 S035A1 DMMELF	1	D625	P234063	D#LED LGS260 GRE SOT23	1
D401	P234099	D#4148 R DMMELF	1	D626	P234099	D#4148 R DMMELF	1
D402	P234099	D#4148 R DMMELF	1	D627	P234063	D#LED LGS260 GRE SOT23	1
D403	P234259	D#BA682 S035A1 DMMELF	1	D628	P234055	D#BAT54 SCH SOT23	1
D404	P234099	D#4148 R DMMELF	1	D629	P234063	D#LED LGS260 GRE SOT23	1
D405	P234259	D#BA682 S035A1 DMMELF	1	D630	P234055	D#BAT54 SCH SOT23	1
D406	P234259	D#BA682 S035A1 DMMELF	1	D631	P234055	D#BAT54 SCH SOT23	1
D407	P234259	D#BA682 S035A1 DMMELF	1	D632	P234099	D#4148 R DMMELF	1
D408	P234259	D#BA682 S035A1 DMMELF	1	D633	P234219	D#BZV87-1V4 STA DMMELF	1
D409	P234099	D#4148 R DMMELF	1	D634	P234063	D#LED LGS260 GRE SOT23	1
D410	P234055	D#BAT54 SCH SOT23	1	D700	P234099	D#4148 R DMMELF	1
D411	P234055	D#BAT54 SCH SOT23	1	D701	P234099	D#4148 R DMMELF	1
D500	P234099	D#4148 R DMMELF	1	D702	P234099	D#4148 R DMMELF	1
D501	P234099	D#4148 R DMMELF	1	D703	P234099	D#4148 R DMMELF	1
D502	P234099	D#4148 R DMMELF	1	D800	P234055	D#BAT54 SCH SOT23	1
D503	P234099	D#4148 R DMMELF	1	D801	P234055	D#BAT54 SCH SOT23	1
D504	P234099	D#4148 R DMMELF	1	D802	P234099	D#4148 R DMMELF	1
D505	P234099	D#4148 R DMMELF	1	D803	P234099	D#4148 R DMMELF	1
D506	P234099	D#4148 R DMMELF	1	D804	P234099	D#4148 R DMMELF	1
D507	P234099	D#4148 R DMMELF	1	D805	P234099	D#4148 R DMMELF	1
D508	P234099	D#4148 R DMMELF	1	D806	P234099	D#4148 R DMMELF	1
D509	P234099	D#4148 R DMMELF	1	D807	P234099	D#4148 R DMMELF	1
D510	P234099	D#4148 R DMMELF	1	D808	P234099	D#4148 R DMMELF	1
D511	P234099	D#4148 R DMMELF	1	D809	P234099	D#4148 R DMMELF	1
D512	P234099	D#4148 R DMMELF	1	D810	P234099	D#4148 R DMMELF	1
D513	P234099	D#4148 R DMMELF	1	D811	P234099	D#4148 R DMMELF	1
D514	P234099	D#4148 R DMMELF	1	D812	P234099	D#4148 R DMMELF	1
D515	P234099	D#4148 R DMMELF	1	D813	P234099	D#4148 R DMMELF	1
D516	P234099	D#4148 R DMMELF	1	D814	P234099	D#4148 R DMMELF	1
D517	P234099	D#4148 R DMMELF	1	D815	P234099	D#4148 R DMMELF	1
D518	P234099	D#4148 R DMMELF	1	D816	P234055	D#BAT54 SCH SOT23	1
D519	P234099	D#4148 R DMMELF	1	I 1	P230021	U#74HC04 SO14 I	1
D520	P234099	D#4148 R DMMELF	1	I 2	P230628	U#74HCT153 SO16 I	1
D521	P234099	D#4148 R DMMELF	1	I 3	P230628	U#74HCT153 SO16 I	1
D522	P234099	D#4148 R DMMELF	1	I 4	P230153	U#74HC32 SO14 I	1
D523	P234099	D#4148 R DMMELF	1	I 5	P230628	U#74HCT153 SO16 I	1
D524	P234099	D#4148 R DMMELF	1	I 6	P230231	U#74HC08 SO14 I	1
D525	P234099	D#4148 R DMMELF	1	I 7	P230343	U#74AC02 SO14 I	1
D526	P234099	D#4148 R DMMELF	1	I 8	P230287	U#74HC20 SO14 I	1
D527	P234099	D#4148 R DMMELF	1	I 9	P230287	U#74HC20 SO14 I	1
D528	P234099	D#4148 R DMMELF	1	I100	P230328	U#064 TL SO14 I	1
D529	P234099	D#4148 R DMMELF	1	I101	P231013	U#3046 CA SO14 I	1
D530	P234099	D#4148 R DMMELF	1	I200	P231233	U#1100 HFA SO8 I	1
D531	P234099	D#4148 R DMMELF	1	I201	P231230	U#2-20 MSWA SO8 I	1
D600	P234099	D#4148 R DMMELF	1	I202	P230100	U#3080 CA SO8 P	1
D601	P234099	D#4148 R DMMELF	1	I203	P230006	U#062 TL SO8 P	1
D602	P234099	D#4148 R DMMELF	1	I300	P231233	U#1100 HFA SO8 I	1
D603	P234099	D#4148 R DMMELF	1	I301	P231230	U#2-20 MSWA SO8 I	1
D605	P234055	D#BAT54 SCH SOT23	1	I302	P230100	U#3080 CA SO8 P	1
D606	P234055	D#BAT54 SCH SOT23	1	I303	P230006	U#062 TL SO8 P	1
D607	P234055	D#BAT54 SCH SOT23	1	I400	P231233	U#1100 HFA SO8 I	1
D608	P234099	D#4148 R DMMELF	1				

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
I401	P231230	U#2-20 MSWA SO8 I	1	Q 3	P232044	Q#BC859B P SS SOT23	1
I402	P230100	U#3080 CA SO8 P	1	Q 4	P232044	Q#BC859B P SS SOT23	1
I403	P230006	U#062 TL SO8 P	1	Q 5	P232044	Q#BC859B P SS SOT23	1
I500	P230344	U#74AC08 SO14 I	1	Q 6	P232044	Q#BC859B P SS SOT23	1
I600	P230328	U#064 TL SO14 I	1	Q 7	P232079	Q#BSS84 F SS SOT23	1
I601	P230543	U#8574 PCF SOL16 P	1	Q 8	P232043	Q#BC849B N SS SOT23	1
I602	P230911	U#8574A PCF SOL16 P	1	Q 9	P232043	Q#BC849B N SS SOT23	1
I603	P230886	U#74HC4051 SO16 I	1	Q 10	P232079	Q#BSS84 F SS SOT23	1
I604	P230653	U#BELLA 4 SOL28 P	1	Q 11	P232079	Q#BSS84 F SS SOT23	1
I605	R134001	U 7805 TO220 P	1	Q 12	P232043	Q#BC849B N SS SOT23	1
I606	R134011	U 7905C TO220 P	1	Q 13	P232044	Q#BC859B P SS SOT23	1
I607	R134016	U 7912 TO220 P	1	Q 14	P232044	Q#BC859B P SS SOT23	1
I608	R134002	U 7812 TO220 P	1	Q 15	P232044	Q#BC859B P SS SOT23	1
I801	R132874	U 2579A TDA DIP18 P	1	Q 16	P232044	Q#BC859B P SS SOT23	1
I802	P230220	U#74HC4538 SO16 I	1	Q100	P232044	Q#BC859B P SS SOT23	1
I803	P230220	U#74HC4538 SO16 I	1	Q101	P232043	Q#BC849B N SS SOT23	1
I804	P230713	U#74HC4052 SO16 I	1	Q102	P232043	Q#BC849B N SS SOT23	1
I805	P230064	U#4052 SO16 I	1	Q103	P232044	Q#BC859B P SS SOT23	1
I806	P230969	U#1881 LM SO8 P	1	Q104	P232044	Q#BC859B P SS SOT23	1
I807	P230173	U#74HC14 SO14 I	1	Q105	P232043	Q#BC849B N SS SOT23	1
I808	P230218	U#74HC86 SO14 I	1	Q106	P232044	Q#BC859B P SS SOT23	1
I809	P230028	U#393 LM SO8 P	1	Q107	P232044	Q#BC859B P SS SOT23	1
I810	P230453	U#34081 MC SO8 P	1	Q108	P232043	Q#BC849B N SS SOT23	1
I811	P230006	U#062 TL SO8 P	1	Q109	P232044	Q#BC859B P SS SOT23	1
J 3	R313927	J C T H MBT P 7 M2SN WH	1	Q110	P232043	Q#BC849B N SS SOT23	1
J 6	R313927	J C T H MBT P 7 M2SN WH	1	Q111	P232044	Q#BC859B P SS SOT23	1
J 7	R313929	J C T H MBT P 9 M2SN WH	1	Q112	P232044	Q#BC859B P SS SOT23	1
J 6A	R313531	J EUR2C MBS P64 E1C3S 1,6	1	Q113	P232044	Q#BC859B P SS SOT23	1
J 6B	R313531	J EUR2C MBS P64 E1C3S 1,6	1	Q114	P232044	Q#BC859B P SS SOT23	1
J250	R3132862	J MD1 C MBT P 2 E1SN 6,7	1	Q200	P232090	Q#BFR92A N SS SOT23	1
J350	R3132862	J MD1 C MBT P 2 E1SN 6,7	1	Q201	P232043	Q#BC849B N SS SOT23	1
J400	R313932	J C T H MBT P12 M2SN WH	1	Q202	P232076	Q#BFS17 N SS SOT23	1
J400	Z3484120	CD CT FTFT P12 120	1	Q203	P232043	Q#BC849B N SS SOT23	1
J401	R313928	J C T H MBT P 8 M2SN WH	1	Q204	P232044	Q#BC859B P SS SOT23	1
J401	Z3495082	CD CT FTFT P 8 150	1	Q205	P232046	Q#BSS123 F SS SOT23	1
J402	R313928	J C T H MBT P 8 M2SN WH	1	Q206	P232046	Q#BSS123 F SS SOT23	1
J402	Z3495082	CD CT FTFT P 8 150	1	Q207	P232046	Q#BSS123 F SS SOT23	1
J405	R313927	J C T H MBT P 7 M2SN WH	1	Q208	P232046	Q#BSS123 F SS SOT23	1
J405	R34840710	CD CT FTFT P 7 120	1	Q209	P232044	Q#BC859B P SS SOT23	1
J450	R3132862	J MD1 C MBT P 2 E1SN 6,7	1	Q210	P232043	Q#BC849B N SS SOT23	1
J741	R313928	J C T H MBT P 8 M2SN WH	1	Q300	P232090	Q#BFR92A N SS SOT23	1
L601	R348105	WU JUMP 0,6 15	1	Q301	P232076	Q#BFS17 N SS SOT23	1
L602	R3061322	CH AX NS 10 UH	1	Q302	P232076	Q#BFS17 N SS SOT23	1
L603	R348105	WU JUMP 0,6 15	1	Q303	P232043	Q#BC849B N SS SOT23	1
M200	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q304	P232044	Q#BC859B P SS SOT23	1
M300	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q305	P232046	Q#BSS123 F SS SOT23	1
M400	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q306	P232046	Q#BSS123 F SS SOT23	1
M800	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q307	P232046	Q#BSS123 F SS SOT23	1
M803	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q308	P232046	Q#BSS123 F SS SOT23	1
M807	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q309	P232044	Q#BC859B P SS SOT23	1
M808	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q310	P232043	Q#BC849B N SS SOT23	1
MP 1	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q400	P232090	Q#BFR92A N SS SOT23	1
MP10	R313729	J TESTEYE D2.1 H3.1 SNBK	1	Q401	P232076	Q#BFS17 N SS SOT23	1
P200	P201392	R#TCE H200E M0W25 S4 TS	1	Q402	P232076	Q#BFS17 N SS SOT23	1
P300	P201392	R#TCE H200E M0W25 S4 TS	1	Q403	P232043	Q#BC849B N SS SOT23	1
P400	P201392	R#TCE H200E M0W25 S4 TS	1	Q404	P232044	Q#BC859B P SS SOT23	1
P800	P201370	R#TCE H 10K M0W1 S4 TS	1	Q405	P232046	Q#BSS123 F SS SOT23	1
PC	R780550	PCBG808SRGBI+DEC	1	Q406	P232046	Q#BSS123 F SS SOT23	1
Q 1	P232044	Q#BC859B P SS SOT23	1	Q407	P232046	Q#BSS123 F SS SOT23	1
Q 2	P232044	Q#BC859B P SS SOT23	1	Q408	P232046	Q#BSS123 F SS SOT23	1
				Q409	P232044	Q#BC859B P SS SOT23	1
				Q410	P232043	Q#BC849B N SS SOT23	1
				Q500	P232043	Q#BC849B N SS SOT23	1
				Q501	P232044	Q#BC859B P SS SOT23	1
				Q502	P232043	Q#BC849B N SS SOT23	1
				Q503	P232044	Q#BC859B P SS SOT23	1
				Q504	P232043	Q#BC849B N SS SOT23	1

RGB input+Switching module

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
Q505	P232043	Q#BC849B N SS SOT23	1	R 23	P201101	R# CE H 3K9 F 0W12 0805	1
Q601	P232046	Q#BSS123 F SS SOT23	1	R 24	P201103	R# CE H 4K7 F 0W12 0805	1
Q602	P232046	Q#BSS123 F SS SOT23	1	R 25	P201115	R# CE H 15K F 0W12 0805	1
Q603	P232043	Q#BC849B N SS SOT23	1	R 26	P201115	R# CE H 15K F 0W12 0805	1
Q604	P232043	Q#BC849B N SS SOT23	1	R 27	P201104	R# CE H 5K1 F 0W12 0805	1
Q605	P232043	Q#BC849B N SS SOT23	1	R 28	P201111	R# CE H 10K F 0W12 0805	1
Q606	P232042	Q#BC807-25 P SS SOT23	1	R 29	P201103	R# CE H 4K7 F 0W12 0805	1
Q607	P232043	Q#BC849B N SS SOT23	1	R 30	P201081	R# CE H560E F 0W12 0805	1
Q608	P232042	Q#BC807-25 P SS SOT23	1	R 31	P201081	R# CE H560E F 0W12 0805	1
Q609	P232043	Q#BC849B N SS SOT23	1	R 32	P201079	R# CE H470E F 0W12 0805	1
Q610	P232079	Q#BSS84 F SS SOT23	1	R 33	P201114	R# CE H 13K F 0W12 0805	1
Q611	P232042	Q#BC807-25 P SS SOT23	1	R 34	P201115	R# CE H 15K F 0W12 0805	1
Q612	P232043	Q#BC849B N SS SOT23	1	R 35	P201127	R# CE H 47K F 0W12 0805	1
Q613	P232042	Q#BC807-25 P SS SOT23	1	R 36	P201114	R# CE H 13K F 0W12 0805	1
Q614	P232043	Q#BC849B N SS SOT23	1	R 37	P201115	R# CE H 15K F 0W12 0805	1
Q615	P232042	Q#BC807-25 P SS SOT23	1	R 38	P201114	R# CE H 13K F 0W12 0805	1
Q616	P232043	Q#BC849B N SS SOT23	1	R 39	P201115	R# CE H 15K F 0W12 0805	1
Q617	P232042	Q#BC807-25 P SS SOT23	1	R 40	P201114	R# CE H 13K F 0W12 0805	1
Q619	P232043	Q#BC849B N SS SOT23	1	R 41	P201115	R# CE H 15K F 0W12 0805	1
Q620	P232042	Q#BC807-25 P SS SOT23	1	R 42	P201081	R# CE H560E F 0W12 0805	1
Q621	P232054	Q#BCV27 DN SS SOT23	1	R 43	P201079	R# CE H470E F 0W12 0805	1
Q622	P232043	Q#BC849B N SS SOT23	1	R 44	P201127	R# CE H 47K F 0W12 0805	1
Q623	P232043	Q#BC849B N SS SOT23	1	R 45	P201079	R# CE H470E F 0W12 0805	1
Q624	P232044	Q#BC859B P SS SOT23	1	R 46	P201107	R# CE H 6K8 F 0W12 0805	1
Q625	P232044	Q#BC859B P SS SOT23	1	R 47	P201107	R# CE H 6K8 F 0W12 0805	1
Q626	P232043	Q#BC849B N SS SOT23	1	R 48	P201079	R# CE H470E F 0W12 0805	1
Q627	P232043	Q#BC849B N SS SOT23	1	R100	P201127	R# CE H 47K F 0W12 0805	1
Q800	P232043	Q#BC849B N SS SOT23	1	R101	P201127	R# CE H 47K F 0W12 0805	1
Q801	P232043	Q#BC849B N SS SOT23	1	R102	P201092	R# CE H 1K6 F 0W12 0805	1
Q802	P232044	Q#BC859B P SS SOT23	1	R103	P201085	R# CE H820E F 0W12 0805	1
Q803	P232043	Q#BC849B N SS SOT23	1	R104	P201102	R# CE H 4K3 F 0W12 0805	1
Q805	P232044	Q#BC859B P SS SOT23	1	R105	P201111	R# CE H 10K F 0W12 0805	1
Q806	P232044	Q#BC859B P SS SOT23	1	R106	P201137	R# CE H120K F 0W12 0805	1
Q807	P232043	Q#BC849B N SS SOT23	1	R107	P201143	R# CE H220K F 0W12 0805	1
Q808	P232044	Q#BC859B P SS SOT23	1	R108	P201151	R# CE H470K F 0W12 0805	1
Q809	P232043	Q#BC849B N SS SOT23	1	R109	P201127	R# CE H 47K F 0W12 0805	1
Q810	P232043	Q#BC849B N SS SOT23	1	R110	P201131	R# CE H 68K F 0W12 0805	1
Q811	P232043	Q#BC849B N SS SOT23	1	R111	P201143	R# CE H220K F 0W12 0805	1
Q812	P232044	Q#BC859B P SS SOT23	1	R112	P201079	R# CE H470E F 0W12 0805	1
Q813	P232043	Q#BC849B N SS SOT23	1	R113	P201079	R# CE H470E F 0W12 0805	1
Q814	P232044	Q#BC859B P SS SOT23	1	R114	P201079	R# CE H470E F 0W12 0805	1
Q815	P232046	Q#BSS123 F SS SOT23	1	R115	P201059	R# CE H 68E F 0W12 0805	1
Q816	P232043	Q#BC849B N SS SOT23	1	R116	P201143	R# CE H220K F 0W12 0805	1
Q817	P232043	Q#BC849B N SS SOT23	1	R117	P201151	R# CE H470K F 0W12 0805	1
				R118	P201143	R# CE H220K F 0W12 0805	1
				R119	P201077	R# CE H390E F 0W12 0805	1
R 1	P201135	R# CE H100K F 0W12 0805	1	R120	P201079	R# CE H470E F 0W12 0805	1
R 2	P201135	R# CE H100K F 0W12 0805	1	R121	P201079	R# CE H470E F 0W12 0805	1
R 3	P201110	R# CE H 9K1 F 0W12 0805	1	R122	P201059	R# CE H 68E F 0W12 0805	1
R 4	P201127	R# CE H 47K F 0W12 0805	1	R123	P201151	R# CE H470K F 0W12 0805	1
R 5	P201127	R# CE H 47K F 0W12 0805	1	R124	P201143	R# CE H220K F 0W12 0805	1
R 6	P201127	R# CE H 47K F 0W12 0805	1	R125	P201077	R# CE H390E F 0W12 0805	1
R 7	P201129	R# CE H 56K F 0W12 0805	1	R126	P201079	R# CE H470E F 0W12 0805	1
R 8	P201129	R# CE H 56K F 0W12 0805	1	R127	P201079	R# CE H470E F 0W12 0805	1
R 9	P201127	R# CE H 47K F 0W12 0805	1	R128	P200693	R# CE H 4E7 J 0W12 0805	1
R 10	P201127	R# CE H 47K F 0W12 0805	1	R129	P201059	R# CE H 68E F 0W12 0805	1
R 11	P201123	R# CE H 33K F 0W12 0805	1	R130	P201122	R# CE H 30K F 0W12 0805	1
R 12	P201115	R# CE H 15K F 0W12 0805	1	R131	P201118	R# CE H 20K F 0W12 0805	1
R 13	P201135	R# CE H100K F 0W12 0805	1	R132	P201039	R# CE H 10E F 0W12 0805	1
R 14	P201063	R# CE H100E F 0W12 0805	1	R133	P201135	R# CE H100K F 0W12 0805	1
R 15	P201123	R# CE H 33K F 0W12 0805	1	R134	P201122	R# CE H 30K F 0W12 0805	1
R 16	P201115	R# CE H 15K F 0W12 0805	1	R135	P201352	R# CE H 10M K 0W12 0805	1
R 17	P201135	R# CE H100K F 0W12 0805	1	R136	P201151	R# CE H470K F 0W12 0805	1
R 18	P201063	R# CE H100E F 0W12 0805	1	R137	P201111	R# CE H 10K F 0W12 0805	1
R 19	P201099	R# CE H 3K3 F 0W12 0805	1	R138	P201149	R# CE H390K F 0W12 0805	1
R 20	P201095	R# CE H 2K2 F 0W12 0805	1	R139	P201135	R# CE H100K F 0W12 0805	1
R 21	P201087	R# CE H 1K F 0W12 0805	1	R140	P201039	R# CE H 10E F 0W12 0805	1
R 22	P201079	R# CE H470E F 0W12 0805	1				

RGB input+Switching module

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R141	P201139	R# CE H150K F 0W12 0805	1	R235	P201095	R# CE H 2K2 F 0W12 0805	1
R142	P201123	R# CE H 33K F 0W12 0805	1	R236	P201087	R# CE H 1K F 0W12 0805	1
R143	P201073	R# CE H270E F 0W12 0805	1	R237	P201063	R# CE H100E F 0W12 0805	1
R144	P201081	R# CE H560E F 0W12 0805	1	R238	P201063	R# CE H100E F 0W12 0805	1
R145	P201055	R# CE H 47E F 0W12 0805	1	R239	P201063	R# CE H100E F 0W12 0805	1
R146	P201139	R# CE H150K F 0W12 0805	1	R240	P201063	R# CE H100E F 0W12 0805	1
R147	P201123	R# CE H 33K F 0W12 0805	1	R241	P201039	R# CE H 10E F 0W12 0805	1
R148	P201073	R# CE H270E F 0W12 0805	1	R242	P201039	R# CE H 10E F 0W12 0805	1
R149	P201055	R# CE H 47E F 0W12 0805	1	R243	P201159	R# CE H 1M F 0W12 0805	1
R150	P200693	R# CE H 4E7 J 0W12 0805	1	R244	P201159	R# CE H 1M F 0W12 0805	1
R151	P201081	R# CE H560E F 0W12 0805	1	R245	P201111	R# CE H 10K F 0W12 0805	1
R152	P201133	R# CE H 82K F 0W12 0805	1	R246	P201111	R# CE H 10K F 0W12 0805	1
R153	P201137	R# CE H120K F 0W12 0805	1	R247	P201063	R# CE H100E F 0W12 0805	1
R154	P201133	R# CE H 82K F 0W12 0805	1	R248	P201065	R# CE H120E F 0W12 0805	1
R155	P201137	R# CE H120K F 0W12 0805	1	R249	P200363	R# CE H 10E F 0W25 1206	1
R156	P201075	R# CE H330E F 0W12 0805	1	R250	P200363	R# CE H 10E F 0W25 1206	1
R157	P201073	R# CE H270E F 0W12 0805	1	R300	R1015231	R MF H 75E F 0W4 E3	1
R158	P201090	R# CE H 1K3 F 0W12 0805	1	R301	P201105	R# CE H 5K6 F 0W12 0805	1
R159	P201081	R# CE H560E F 0W12 0805	1	R302	P201143	R# CE H220K F 0W12 0805	1
R160	P201073	R# CE H270E F 0W12 0805	1	R303	R101524	R MF H100E F 0W4 E3	1
R161	P201123	R# CE H 33K F 0W12 0805	1	R304	P201119	R# CE H 22K F 0W12 0805	1
R162	P201039	R# CE H 10E F 0W12 0805	1	R305	P201119	R# CE H 22K F 0W12 0805	1
R163	P201081	R# CE H560E F 0W12 0805	1	R306	P201105	R# CE H 5K6 F 0W12 0805	1
R164	P201073	R# CE H270E F 0W12 0805	1	R307	P201143	R# CE H220K F 0W12 0805	1
R165	P201060	R# CE H 75E F 0W12 0805	1	R308	P201039	R# CE H 10E F 0W12 0805	1
R166	P201060	R# CE H 75E F 0W12 0805	1	R309	P201103	R# CE H 4K7 F 0W12 0805	1
R167	P201060	R# CE H 75E F 0W12 0805	1	R310	P201103	R# CE H 4K7 F 0W12 0805	1
R168	P201065	R# CE H120E F 0W12 0805	1	R311	P201087	R# CE H 1K F 0W12 0805	1
R169	P201103	R# CE H 4K7 F 0W12 0805	1	R312	P201039	R# CE H 10E F 0W12 0805	1
R170	P201099	R# CE H 3K3 F 0W12 0805	1	R313	P201087	R# CE H 1K F 0W12 0805	1
R171	P201114	R# CE H 13K F 0W12 0805	1	R314	P201060	R# CE H 75E F 0W12 0805	1
R172	P201114	R# CE H 13K F 0W12 0805	1	R315	P201105	R# CE H 5K6 F 0W12 0805	1
R200	R1015231	R MF H 75E F 0W4 E3	1	R316	P201063	R# CE H100E F 0W12 0805	1
R201	P201105	R# CE H 5K6 F 0W12 0805	1	R317	P201119	R# CE H 22K F 0W12 0805	1
R202	P201143	R# CE H220K F 0W12 0805	1	R318	P201039	R# CE H 10E F 0W12 0805	1
R203	R101524	R MF H100E F 0W4 E3	1	R319	P201111	R# CE H 10K F 0W12 0805	1
R204	P201119	R# CE H 22K F 0W12 0805	1	R320	P201129	R# CE H 56K F 0W12 0805	1
R205	P201119	R# CE H 22K F 0W12 0805	1	R321	P201143	R# CE H220K F 0W12 0805	1
R206	P201105	R# CE H 5K6 F 0W12 0805	1	R322	P201039	R# CE H 10E F 0W12 0805	1
R207	P201143	R# CE H220K F 0W12 0805	1	R323	P201111	R# CE H 10K F 0W12 0805	1
R208	P201039	R# CE H 10E F 0W12 0805	1	R324	P201079	R# CE H470E F 0W12 0805	1
R209	P201103	R# CE H 4K7 F 0W12 0805	1	R325	P201079	R# CE H470E F 0W12 0805	1
R210	P201103	R# CE H 4K7 F 0W12 0805	1	R326	P201087	R# CE H 1K F 0W12 0805	1
R211	P201087	R# CE H 1K F 0W12 0805	1	R327	P201093	R# CE H 1K8 F 0W12 0805	1
R212	P201039	R# CE H 10E F 0W12 0805	1	R328	P201085	R# CE H820E F 0W12 0805	1
R213	P201087	R# CE H 1K F 0W12 0805	1	R329	P201071	R# CE H220E F 0W12 0805	1
R214	P201060	R# CE H 75E F 0W12 0805	1	R330	P201079	R# CE H470E F 0W12 0805	1
R215	P201105	R# CE H 5K6 F 0W12 0805	1	R331	P201087	R# CE H 1K F 0W12 0805	1
R216	P201063	R# CE H100E F 0W12 0805	1	R332	P201057	R# CE H 56E F 0W12 0805	1
R217	P201119	R# CE H 22K F 0W12 0805	1	R333	P201057	R# CE H 56E F 0W12 0805	1
R218	P201039	R# CE H 10E F 0W12 0805	1	R334	P201076	R# CE H360E F 0W12 0805	1
R219	P201111	R# CE H 10K F 0W12 0805	1	R335	P201095	R# CE H 2K2 F 0W12 0805	1
R220	P201129	R# CE H 56K F 0W12 0805	1	R336	P201087	R# CE H 1K F 0W12 0805	1
R221	P201143	R# CE H220K F 0W12 0805	1	R337	P201063	R# CE H100E F 0W12 0805	1
R222	P201039	R# CE H 10E F 0W12 0805	1	R338	P201063	R# CE H100E F 0W12 0805	1
R223	P201111	R# CE H 10K F 0W12 0805	1	R339	P201063	R# CE H100E F 0W12 0805	1
R224	P201079	R# CE H470E F 0W12 0805	1	R340	P201063	R# CE H100E F 0W12 0805	1
R225	P201079	R# CE H470E F 0W12 0805	1	R341	P201039	R# CE H 10E F 0W12 0805	1
R226	P201087	R# CE H 1K F 0W12 0805	1	R342	P201039	R# CE H 10E F 0W12 0805	1
R227	P201093	R# CE H 1K8 F 0W12 0805	1	R343	P201159	R# CE H 1M F 0W12 0805	1
R228	P201085	R# CE H820E F 0W12 0805	1	R344	P201159	R# CE H 1M F 0W12 0805	1
R229	P201071	R# CE H220E F 0W12 0805	1	R345	P201111	R# CE H 10K F 0W12 0805	1
R230	P201079	R# CE H470E F 0W12 0805	1	R346	P201111	R# CE H 10K F 0W12 0805	1
R231	P201087	R# CE H 1K F 0W12 0805	1	R347	P201063	R# CE H100E F 0W12 0805	1
R232	P201057	R# CE H 56E F 0W12 0805	1	R348	P201065	R# CE H120E F 0W12 0805	1
R233	P201057	R# CE H 56E F 0W12 0805	1	R349	P200363	R# CE H 10E F 0W25 1206	1
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RGB input+Switching module

R762719

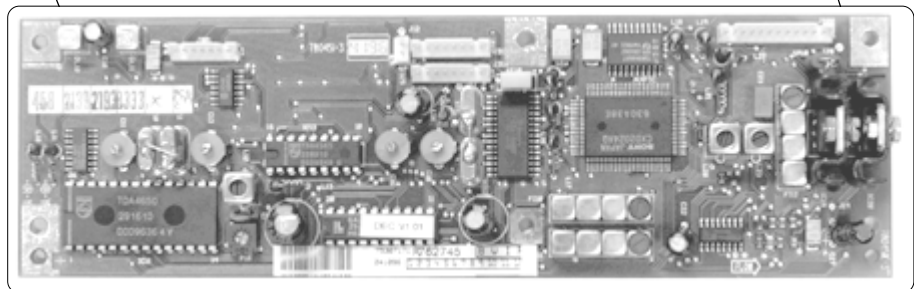
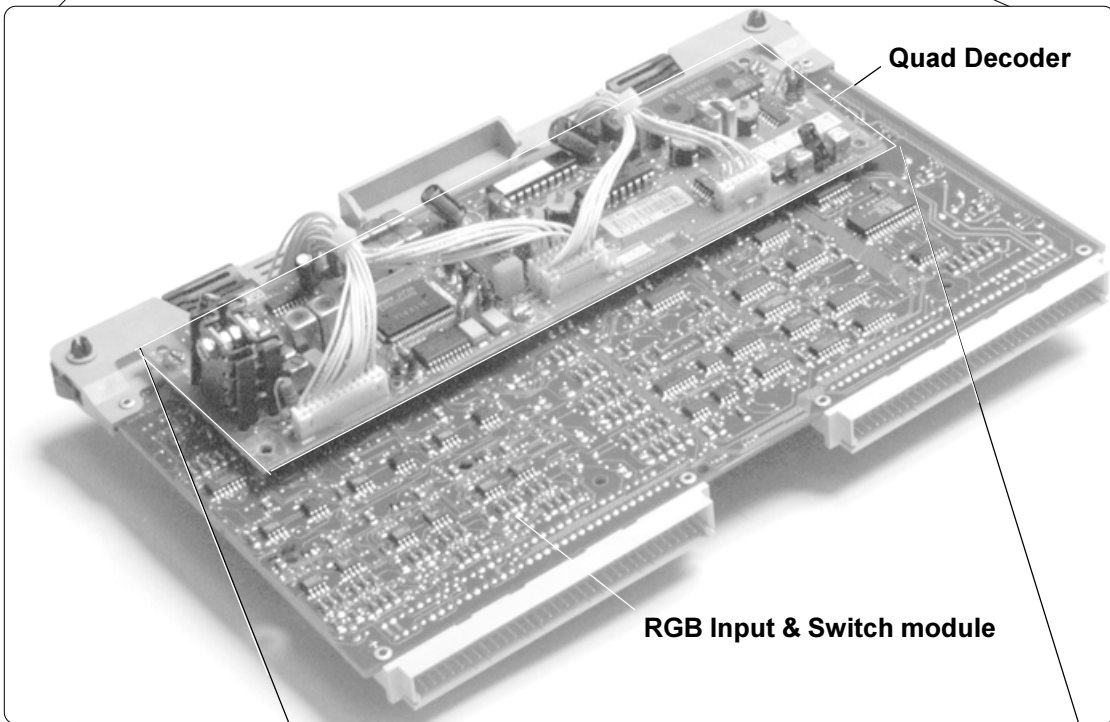
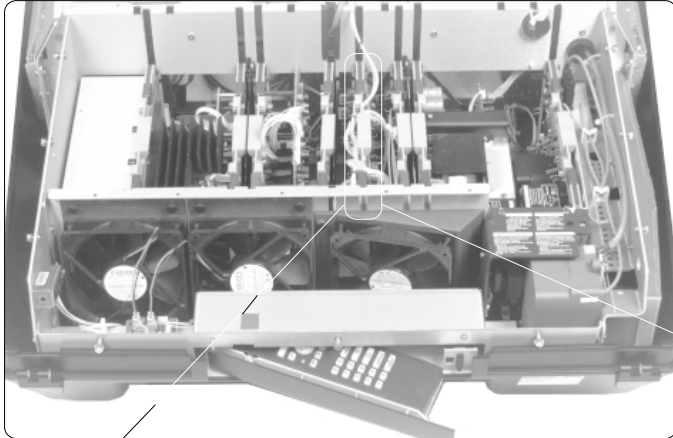
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R402	P201143	R# CE H220K F 0W12 0805	1	R521	P201039	R# CE H 10E F 0W12 0805	1
R403	R101524	R MF H100E F 0W4 E3	1	R522	R1015231	R MF H 75E F 0W4 E3	1
R404	P201119	R# CE H 22K F 0W12 0805	1	R523	P201106	R# CE H 6K2 F 0W12 0805	1
R405	P201119	R# CE H 22K F 0W12 0805	1	R524	P201143	R# CE H220K F 0W12 0805	1
R406	P201105	R# CE H 5K6 F 0W12 0805	1	R525	R101532	R MF H470E F 0W4 E3	1
R407	P201143	R# CE H220K F 0W12 0805	1	R526	P201119	R# CE H 22K F 0W12 0805	1
R408	P201039	R# CE H 10E F 0W12 0805	1	R527	P201039	R# CE H 10E F 0W12 0805	1
R409	P201103	R# CE H 4K7 F 0W12 0805	1	R528	P201089	R# CE H 1K2 F 0W12 0805	1
R410	P201103	R# CE H 4K7 F 0W12 0805	1	R529	R1015231	R MF H 75E F 0W4 E3	1
R411	P201079	R# CE H470E F 0W12 0805	1	R530	P201106	R# CE H 6K2 F 0W12 0805	1
R412	P201039	R# CE H 10E F 0W12 0805	1	R531	P201143	R# CE H220K F 0W12 0805	1
R413	P201087	R# CE H 1K F 0W12 0805	1	R532	R101532	R MF H470E F 0W4 E3	1
R414	P201060	R# CE H 75E F 0W12 0805	1	R533	P201119	R# CE H 22K F 0W12 0805	1
R415	P201105	R# CE H 5K6 F 0W12 0805	1	R534	P201039	R# CE H 10E F 0W12 0805	1
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R417	P201119	R# CE H 22K F 0W12 0805	1	R536	P201079	R# CE H470E F 0W12 0805	1
R418	P201039	R# CE H 10E F 0W12 0805	1	R537	P201079	R# CE H470E F 0W12 0805	1
R419	P201111	R# CE H 10K F 0W12 0805	1	R538	P201079	R# CE H470E F 0W12 0805	1
R420	P201129	R# CE H 56K F 0W12 0805	1	R539	P201079	R# CE H470E F 0W12 0805	1
R421	P201143	R# CE H220K F 0W12 0805	1	R540	P201081	R# CE H560E F 0W12 0805	1
R422	P201039	R# CE H 10E F 0W12 0805	1	R553	P201354	R# CE H 0E J 0W12 0805	1
R423	P201111	R# CE H 10K F 0W12 0805	1	R600	P201103	R# CE H 4K7 F 0W12 0805	1
R424	P201079	R# CE H470E F 0W12 0805	1	R601	P201063	R# CE H100E F 0W12 0805	1
R425	P201079	R# CE H470E F 0W12 0805	1	R602	P201127	R# CE H 47K F 0W12 0805	1
R426	P201087	R# CE H 1K F 0W12 0805	1	R604	P201127	R# CE H 47K F 0W12 0805	1
R427	P201093	R# CE H 1K8 F 0W12 0805	1	R605	P201127	R# CE H 47K F 0W12 0805	1
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R429	P201071	R# CE H220E F 0W12 0805	1	R607	P201055	R# CE H 47E F 0W12 0805	1
R430	P201079	R# CE H470E F 0W12 0805	1	R608	P201079	R# CE H470E F 0W12 0805	1
R431	P201087	R# CE H 1K F 0W12 0805	1	R609	P201063	R# CE H100E F 0W12 0805	1
R432	P201057	R# CE H 56E F 0W12 0805	1	R610	P201079	R# CE H470E F 0W12 0805	1
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R434	P201076	R# CE H360E F 0W12 0805	1	R612	P201079	R# CE H470E F 0W12 0805	1
R435	P201095	R# CE H 2K2 F 0W12 0805	1	R613	P201087	R# CE H 1K F 0W12 0805	1
R436	P201087	R# CE H 1K F 0W12 0805	1	R614	P201087	R# CE H 1K F 0W12 0805	1
R437	P201063	R# CE H100E F 0W12 0805	1	R616	P201135	R# CE H100K F 0W12 0805	1
R438	P201063	R# CE H100E F 0W12 0805	1	R617	P201113	R# CE H 12K F 0W12 0805	1
R439	P201063	R# CE H100E F 0W12 0805	1	R618	P201087	R# CE H 1K F 0W12 0805	1
R440	P201063	R# CE H100E F 0W12 0805	1	R619	P201065	R# CE H120E F 0W12 0805	1
R441	P201039	R# CE H 10E F 0W12 0805	1	R620	P201157	R# CE H820K F 0W12 0805	1
R442	P201039	R# CE H 10E F 0W12 0805	1	R621	P201087	R# CE H 1K F 0W12 0805	1
R443	P201159	R# CE H 1M F 0W12 0805	1	R622	P201123	R# CE H 33K F 0W12 0805	1
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R445	P201111	R# CE H 10K F 0W12 0805	1	R624	P201087	R# CE H 1K F 0W12 0805	1
R446	P201111	R# CE H 10K F 0W12 0805	1	R625	P201087	R# CE H 1K F 0W12 0805	1
R447	P201063	R# CE H100E F 0W12 0805	1	R626	P201087	R# CE H 1K F 0W12 0805	1
R448	P201065	R# CE H120E F 0W12 0805	1	R627	P201095	R# CE H 2K2 F 0W12 0805	1
R449	P200363	R# CE H 10E F 0W25 1206	1	R628	P201087	R# CE H 1K F 0W12 0805	1
R450	P200363	R# CE H 10E F 0W25 1206	1	R629	P201095	R# CE H 2K2 F 0W12 0805	1
R501	P201113	R# CE H 12K F 0W12 0805	1	R630	P201111	R# CE H 10K F 0W12 0805	1
R502	P201143	R# CE H220K F 0W12 0805	1	R632	P201095	R# CE H 2K2 F 0W12 0805	1
R503	R101532	R MF H470E F 0W4 E3	1	R633	P201095	R# CE H 2K2 F 0W12 0805	1
R504	P201119	R# CE H 22K F 0W12 0805	1	R634	P201095	R# CE H 2K2 F 0W12 0805	1
R505	P201081	R# CE H560E F 0W12 0805	1	R635	P201095	R# CE H 2K2 F 0W12 0805	1
R506	P201079	R# CE H470E F 0W12 0805	1	R636	P201095	R# CE H 2K2 F 0W12 0805	1
R507	P201068	R# CE H160E F 0W12 0805	1	R637	P201095	R# CE H 2K2 F 0W12 0805	1
R509	P201113	R# CE H 12K F 0W12 0805	1	R638	P201111	R# CE H 10K F 0W12 0805	1
R510	P201143	R# CE H220K F 0W12 0805	1	R639	P201111	R# CE H 10K F 0W12 0805	1
R511	R101532	R MF H470E F 0W4 E3	1	R640	P201087	R# CE H 1K F 0W12 0805	1
R512	P201119	R# CE H 22K F 0W12 0805	1	R641	P201081	R# CE H560E F 0W12 0805	1
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R514	P201135	R# CE H100K F 0W12 0805	1	R643	P201111	R# CE H 10K F 0W12 0805	1
R515	P201135	R# CE H100K F 0W12 0805	1	R644	P201087	R# CE H 1K F 0W12 0805	1
R517	P201079	R# CE H470E F 0W12 0805	1	R645	P201087	R# CE H 1K F 0W12 0805	1
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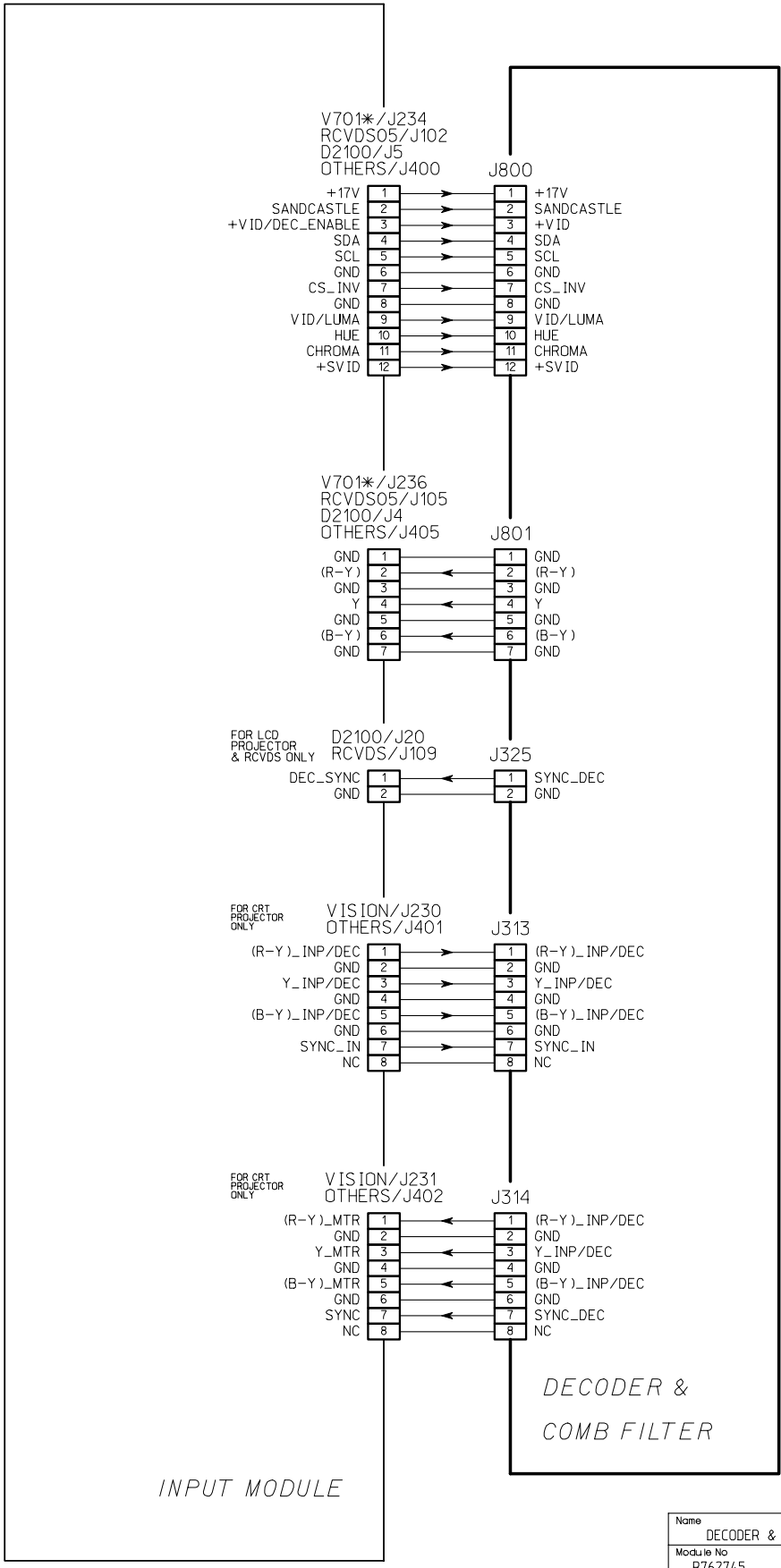
RGB input+Switching module

R762719

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R648	P201093	R# CE H 1K8 F 0W12 0805	1	R847	P201065	R# CE H120E F 0W12 0805	1
R650	P201103	R# CE H 4K7 F 0W12 0805	1	R848	P201103	R# CE H 4K7 F 0W12 0805	1
R651	P201111	R# CE H 10K F 0W12 0805	1	R849	P201103	R# CE H 4K7 F 0W12 0805	1
R652	P201079	R# CE H470E F 0W12 0805	1	R850	P201113	R# CE H 12K F 0W12 0805	1
R653	P201055	R# CE H 47E F 0W12 0805	1	R851	P201103	R# CE H 4K7 F 0W12 0805	1
R654	P201095	R# CE H 2K2 F 0W12 0805	1	R852	P201103	R# CE H 4K7 F 0W12 0805	1
R655	P201118	R# CE H 20K F 0W12 0805	1	R853	P201113	R# CE H 12K F 0W12 0805	1
R656	P201118	R# CE H 20K F 0W12 0805	1	R854	P201089	R# CE H 1K2 F 0W12 0805	1
R657	P201111	R# CE H 10K F 0W12 0805	1	R855	P201117	R# CE H 18K F 0W12 0805	1
R658	P201135	R# CE H100K F 0W12 0805	1	R856	P201063	R# CE H100E F 0W12 0805	1
R659	P201135	R# CE H100K F 0W12 0805	1	R857	P201063	R# CE H100E F 0W12 0805	1
R660	P201158	R# CE H910K F 0W12 0805	1	R858	P200693	R# CE H 4E7 J 0W12 0805	1
R661	P201103	R# CE H 4K7 F 0W12 0805	1	R859	P201103	R# CE H 4K7 F 0W12 0805	1
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R701	P201079	R# CE H470E F 0W12 0805	1	R861	P201109	R# CE H 8K2 F 0W12 0805	1
R702	P201127	R# CE H 47K F 0W12 0805	1	R862	P201071	R# CE H220E F 0W12 0805	1
R703	P201127	R# CE H 47K F 0W12 0805	1	R863	P201071	R# CE H220E F 0W12 0805	1
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R706	P201127	R# CE H 47K F 0W12 0805	1	R866	P201079	R# CE H470E F 0W12 0805	1
R800	P200693	R# CE H 4E7 J 0W12 0805	1	R867	P201127	R# CE H 47K F 0W12 0805	1
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R802	P201125	R# CE H 39K F 0W12 0805	1	R869	P201155	R# CE H680K F 0W12 0805	1
R803	P201095	R# CE H 2K2 F 0W12 0805	1	R870	P201107	R# CE H 6K8 F 0W12 0805	1
R804	P200411	R# CE H 1K F 0W25 1206	1	R872	P201151	R# CE H470K F 0W12 0805	1
R805	P200413	R# CE H 1K2 F 0W25 1206	1	R873	P201091	R# CE H 1K5 F 0W12 0805	1
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R807	P201077	R# CE H390E F 0W12 0805	1	R875	P201084	R# CE H750E F 0W12 0805	1
R808	P200371	R# CE H 22E F 0W25 1206	1	R876	P201087	R# CE H 1K F 0W12 0805	1
R809	P200429	R# CE H 5K6 F 0W25 1206	1	R877	P201101	R# CE H 3K9 F 0W12 0805	1
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R814	P201111	R# CE H 10K F 0W12 0805	1	R882	P201111	R# CE H 10K F 0W12 0805	1
R815	P200387	R# CE H100E F 0W25 1206	1	R883	P201099	R# CE H 3K3 F 0W12 0805	1
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R817	P201103	R# CE H 4K7 F 0W12 0805	1	R885	P201354	R# CE H 0E J 0W12 0805	1
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R819	P201107	R# CE H 6K8 F 0W12 0805	1	R887	P201103	R# CE H 4K7 F 0W12 0805	1
R820	P201111	R# CE H 10K F 0W12 0805	1	R888	P201111	R# CE H 10K F 0W12 0805	1
R821	P200693	R# CE H 4E7 J 0W12 0805	1				
R822	P201105	R# CE H 5K6 F 0W12 0805	1	SR 2	R1011008	R CFFH 1E J 0W25	1
R823	P201111	R# CE H 10K F 0W12 0805	1	SR 3	R1011008	R CFFH 1E J 0W25	1
R824	P201111	R# CE H 10K F 0W12 0805	1	SR 5	R1011907	R CFFH E1 K 0W35	1
R825	P201111	R# CE H 10K F 0W12 0805	1				
R826	P201107	R# CE H 6K8 F 0W12 0805	1	Z800	P234213	D#ZEN 3V3 0W5 C DMMELF	1
R827	P201118	R# CE H 20K F 0W12 0805	1	Z801	P234018	D#ZEN 6V2 0W5 C DMMELF	1
R828	P201115	R# CE H 15K F 0W12 0805	1	Z802	P234018	D#ZEN 6V2 0W5 C DMMELF	1
R829	P201108	R# CE H 7K5 F 0W12 0805	1				
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R831	P200693	R# CE H 4E7 J 0W12 0805	1				
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R837	P201103	R# CE H 4K7 F 0W12 0805	1				
R838	P201079	R# CE H470E F 0W12 0805	1				
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R840	P201109	R# CE H 8K2 F 0W12 0805	1				
R841	P201071	R# CE H220E F 0W12 0805	1				
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RGB Input & Switch module +Quad Decoder

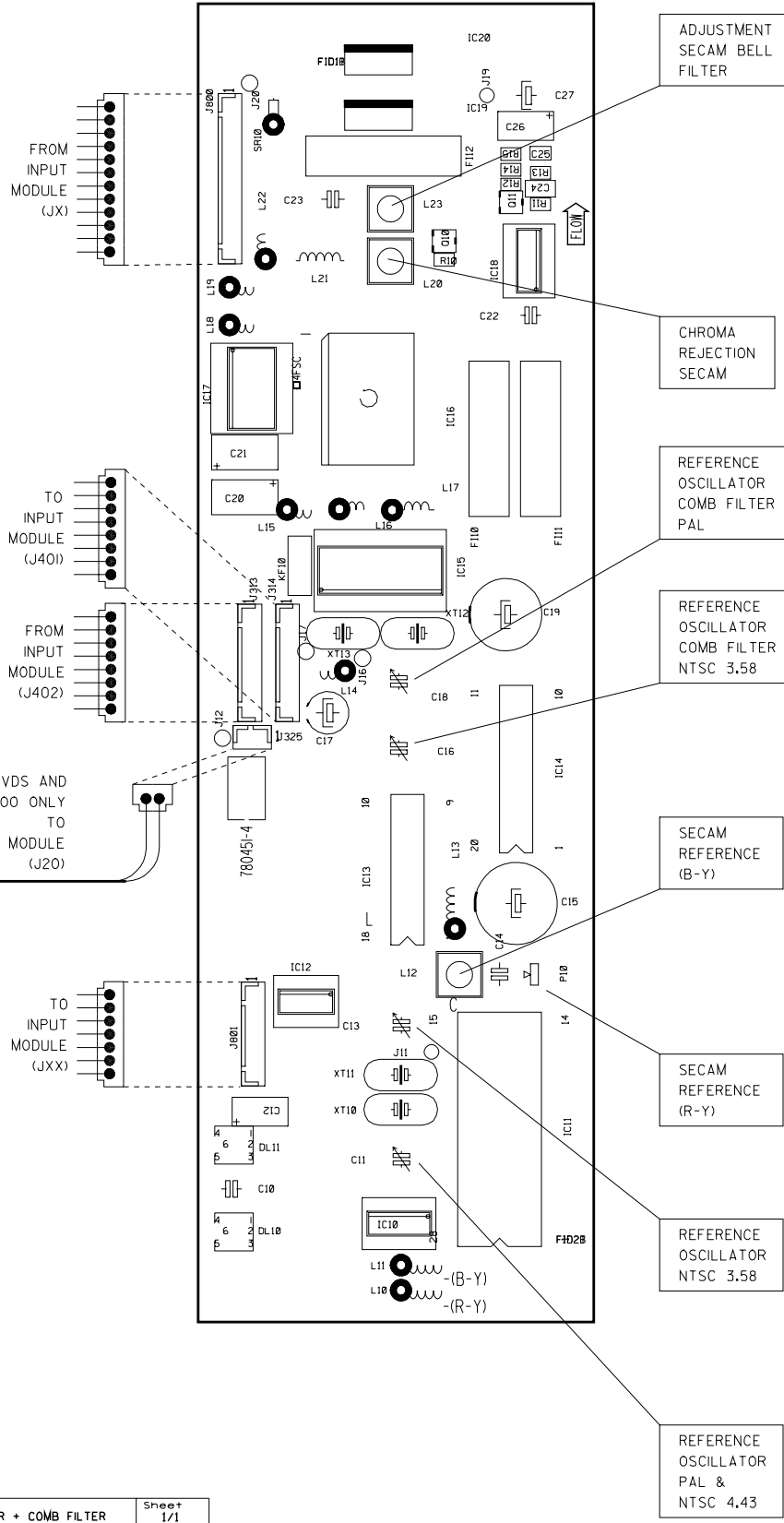




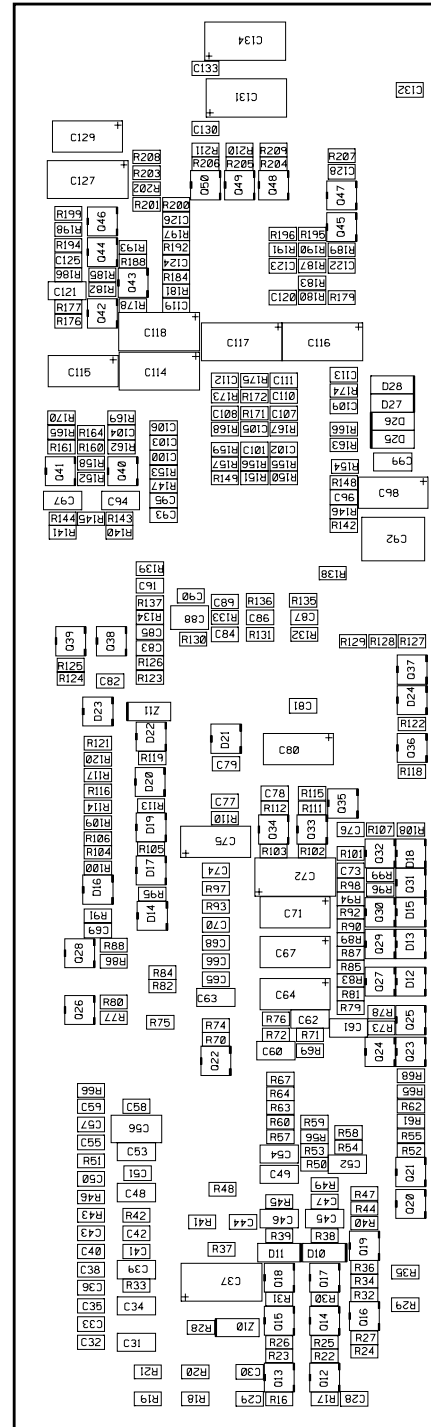
Modifications reserved

Name DECODER & COMB FILTER		Sheet 1/1	
Module No R762745	Index - 1	PCB No R780451	Rev - 4
Date 20-03-1997	Drawn JV	Checked JVST	
BARCO NV		Division BPS	

TOP VIEW

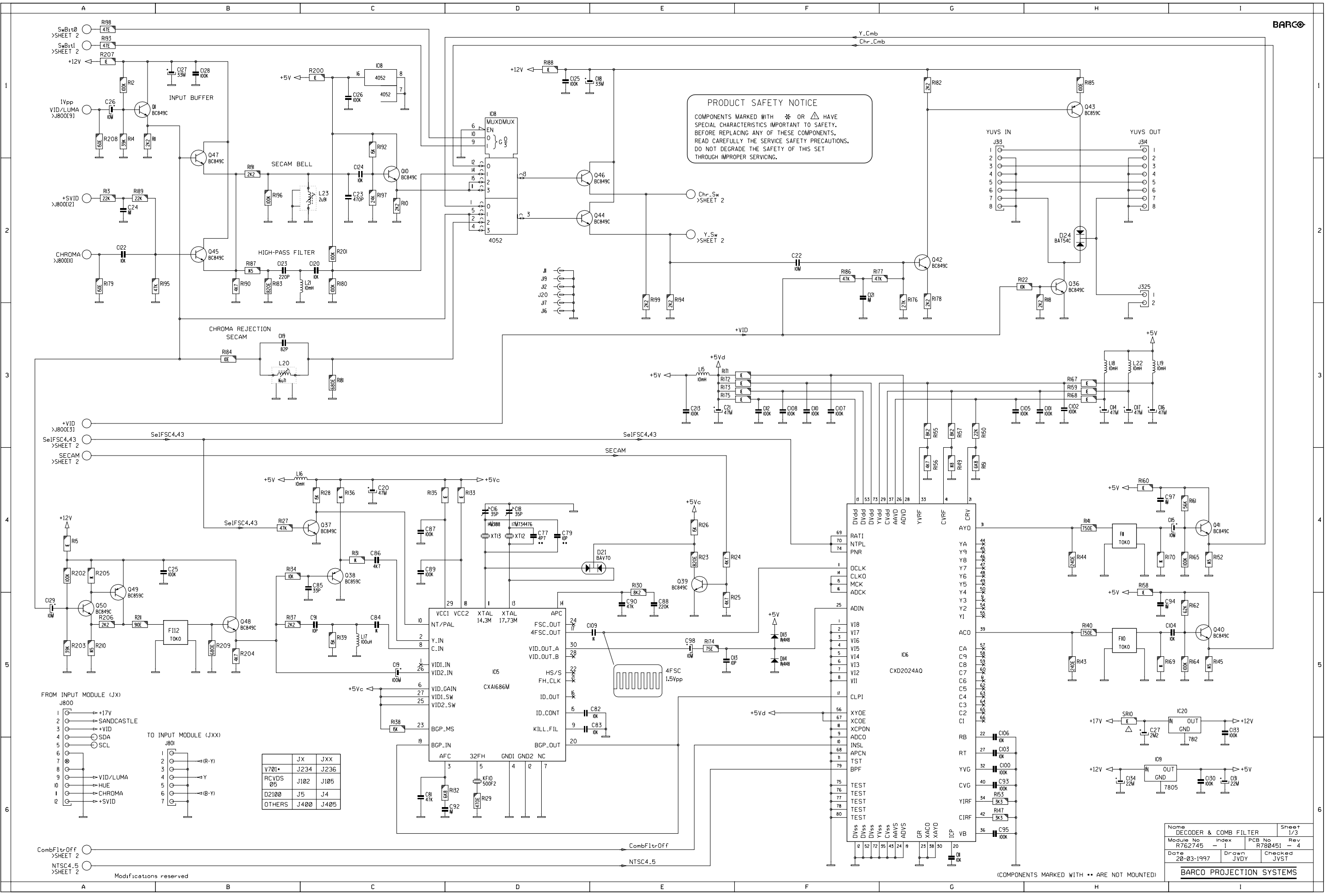


BOTTOM VIEW



COMP.	LOC.	COMP.	LOC.	COMP.	LOC.	COMP.	LOC.
C10	B 5	C127	E 2	O45	E 2	R188	F 3
C11	B 5	C128	F 1	O44	E 2	R189	E 3
C12	B 5	C129	E 1	O45	F 2	R190	E 3
C13	B 4	C130	E 1	O46	E 2	R191	E 3
C14	C 4	C131	E 1	O47	F 2	R192	F 3
C15	C 4	C132	F 1	O48	E 2	R193	E 3
C16	B 4	C133	E 1	O49	E 2	R194	E 3
C17	B 4	C134	E 1	O50	E 2	R195	E 3
C18	B 3					R196	E 3
C19	C 3	D10	F 5	R10	B 2	R197	F 3
C20	B 3	D11	E 5	R11	C 2	R198	F 3
C21	B 3	D12	F 4	R12	C 2	R199	F 3
C22	B 2	D13	F 4	R13	C 2	R200	E 3
C23	B 2	D14	E 4	R14	C 2	R201	E 3
C24	C 2	D15	F 4	R15	C 1	R202	F 3
C25	C 1	D16	E 4	R16	E 5	R203	E 2
C26	C 1	D17	E 4	R17	F 5	R204	E 1
C27	C 1	D18	F 4	R18	E 5	R205	E 1
C28	F 5	D19	E 4	R19	E 5	R206	E 1
C29	E 5	D20	E 3	R20	E 5	R207	F 1
C30	E 5	D21	E 3	R21	E 5	R208	E 1
C31	E 5	D22	E 3	R22	F 5	R209	E 1
C32	E 5	D23	E 3	R23	E 5	R210	E 1
C33	E 5	D24	F 3	R24	F 5	R211	E 1
C34	E 5	D25	F 2	R25	F 5	R212	B 3
C35	E 5	D26	F 2	R26	E 5	R213	B 3
C36	E 5	D27	F 2	R27	F 5	R214	B 3
C37	E 5	D28	F 2	R28	E 5	R215	B 3
C38	E 5	D29	F 2	R29	F 5	R216	B 3
C39	E 5	D30	F 2	R30	F 5	R217	B 3
C40	E 5	D31	F 2	R31	E 5	R218	B 3
C41	E 5	D32	F 2	R32	F 5	R219	B 3
C42	E 5	D33	F 2	R33	E 5	R220	B 3
C43	E 5	D34	F 2	R34	E 5	R221	B 3
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C56	E 5	D47	F 2	R47	E 5	R234	B 3
C57	E 5	D48	F 2	R48	E 5	R235	B 3
C58	E 4	D49	F 2	R49	E 5	R236	B 3
C59	E 4	D50	F 2	R50	E 5	R237	B 3
C60	E 4	D51	F 2	R51	E 5	R238	B 3
C61	E 4	D52	F 2	R52	E 5	R239	B 3
C62	E 4	D53	F 2	R53	E 5	R240	B 3
C63	E 4	D54	F 2	R54	E 5	R241	B 3
C64	E 4	D55	F 2	R55	E 5	R242	B 3
C65	E 4	D56	F 2	R56	E 5	R243	B 3
C66	E 4	D57	F 2	R57	E 5	R244	B 3
C67	E 4	D58	F 2	R58	E 5	R245	B 3
C68	E 4	D59	F 2	R59	E 5	R246	B 3
C69	E 4	D60	F 2	R60	E 5	R247	B 3
C70	E 4	D61	F 2	R61	E 5	R248	B 3
C71	E 4	D62	F 2	R62	E 5	R249	B 3
C72	E 4	D63	F 2	R63	E 5	R250	B 3
C73	E 4	D64	F 2	R64	E 5	R251	B 3
C74	E 4	D65	F 2	R65	E 5	R252	B 3
C75	E 4	D66	F 2	R66	E 5	R253	B 3
C76	E 4	D67	F 2	R67	E 5	R254	B 3
C77	E 4	D68	F 2	R68	E 5	R255	B 3
C78	E 4	D69	F 2	R69	E 5	R256	B 3
C79	E 4	D70	F 2	R70	E 5	R257	B 3
C80	E 4	D71	F 2	R71	E 5	R258	B 3
C81	E 4	D72	F 2	R72	E 5	R259	B 3
C82	E 4	D73	F 2	R73	E 5	R260	B 3
C83	E 4	D74	F 2	R74	E 5	R261	B 3
C84	E 4	D75	F 2	R75	E 5	R262	B 3
C85	E 4	D76	F 2	R76	E 5	R263	B 3
C86	E 4	D77	F 2	R77	E 5	R264	B 3
C87	E 4	D78	F 2	R78	E 5	R265	B 3
C88	E 4	D79	F 2	R79	E 5	R266	B 3
C89	E 4	D80	F 2	R80	E 5	R267	B 3
C90	E 4	D81	F 2	R81	E 5	R268	B 3
C91	E 4	D82	F 2	R82	E 5	R269	B 3
C92	E 4	D83	F 2	R83	E 5	R270	B 3
C93	E 4	D84	F 2	R84	E 5	R271	B 3
C94	E 4	D85	F 2	R85	E 5	R272	B 3
C95	E 4	D86	F 2	R86	E 5	R273	B 3
C96	E 4	D87	F 2	R87	E 5	R274	B 3
C97	E 4	D88	F 2	R88	E 5	R275	B 3
C98	E 4	D89	F 2	R89	E 5	R276	B 3
C99	E 4	D90	F 2	R90	E 5	R277	B 3
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C102	E 4	D93	F 2	R93	E 5	R280	B 3
C103	E 4	D94	F 2	R94	E 5	R281	B 3
C104	E 4	D95	F 2	R95	E 5	R282	B 3
C105	E 4	D96	F 2	R96	E 5	R283	B 3
C106	E 4	D97	F 2	R97	E 5	R284	B 3
C107	E 4	D98	F 2	R98	E 5	R285	B 3
C108	E 4	D99	F 2	R99	E 5	R286	B 3
C109	E 4	D100	F 2	R100	E 5	R287	B 3
C110	E 4	D101	F 2	R101	E 5	R288	B 3
C111	E 4	D102	F 2	R102	E 5	R289	B 3
C112	E 4	D103	F 2	R103	E 5	R290	B 3
C113	E 4	D104	F 2	R104	E 5	R291	B 3
C114	E 4	D105	F 2	R105	E 5	R292	B 3
C115	E 4	D106	F 2	R106	E 5	R293	B 3
C116	E 4	D107	F 2	R107	E 5	R294	B 3
C117	E 4	D108	F 2	R108	E 5	R295	B 3
C118	E 4	D109	F 2	R109	E 5	R296	B 3
C119	E 4	D110	F 2	R110	E 5	R297	B 3
C120	E 4	D111	F 2	R111	E 5	R298	B 3
C121	E 4	D112	F 2	R112	E 5	R299	B 3
C122	E 4	D113	F 2	R113	E 5	R300	B 3
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C124	E 4	D115	F 2	R115	E 5	R302	B 3
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C134	E 4	D125	F 2	R125	E 5	R312	B 3
C135	E 4	D126	F 2	R126	E 5	R313	B 3
C136	E 4	D127	F 2	R127	E 5	R314	B 3
C137	E 4	D128	F 2	R128	E 5	R315	B 3
C138	E 4	D129	F 2	R129	E 5	R316	B 3
C139	E 4	D130	F 2	R130	E 5	R317	B 3
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C141	E 4	D132	F 2	R132	E 5	R319	B 3
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C158	E 4	D149	F 2	R149	E 5	R336	B 3
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C160	E 4	D151	F 2	R151	E 5	R338	B 3
C161	E 4	D152	F 2	R152	E 5	R339	B 3
C162	E 4	D153	F 2	R153	E 5	R340	B 3
C163	E 4	D154	F 2	R154	E 5	R341	B 3
C164	E 4	D155	F 2	R155	E 5	R342	B 3
C165	E 4	D156	F 2	R156	E 5	R343	B 3
C166	E 4	D157	F 2	R157	E 5	R344	B 3
C167	E 4	D158	F 2	R158	E 5	R345	B 3
C168	E 4	D159	F 2	R159	E 5	R346	B 3
C169	E 4	D160	F 2	R160	E 5	R347	B 3
C170	E 4	D161	F 2	R161	E 5	R348	B 3
C171	E 4	D162	F 2	R162	E 5	R349	B 3
C172	E 4	D163	F 2	R163	E 5	R350	B 3
C173	E 4	D164	F 2	R164	E 5	R351	B 3
C174	E 4	D165	F 2	R165	E 5	R352	B 3
C175	E 4	D166	F 2	R166	E 5	R353	B 3
C176	E 4	D167	F 2	R167	E 5	R354	B 3
C177	E 4	D168	F 2	R168	E 5	R355	B 3
C178	E 4	D169	F 2	R169	E 5	R356	B 3
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C182	E 4	D173	F 2	R173	E 5	R360	B 3
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C188	E 4	D179	F 2	R179	E 5	R366	B 3
C189	E 4	D180	F 2	R180	E 5	R367	B 3
C190	E 4	D181	F 2	R181	E 5	R368	B 3
C191	E 4	D182	F 2	R182	E 5	R369	B 3
C192	E 4	D183	F 2	R183	E 5	R370	B 3
C193	E 4	D184	F 2	R184	E 5	R371	B 3
C194	E 4	D185	F 2	R185	E 5	R372	B 3
C195	E 4	D186	F 2	R186	E 5	R	

PRODUCT SAFETY NOTICE
COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.



SwB1t0 >SHEET 2
SwB1t1 >SHEET 2
+12V

1Vpp VID/LUMA >J800E191

+SVID >J800E121

CHROMA >J800E11

+VID >J800E31
SeIFSC4,43 >SHEET 2
SECAM >SHEET 2

FROM INPUT MODULE (JX) J800
1 +17V
2 SANDCASTLE
3 +VID
4 SDA
5 SCL
6
7
8
9 VID/LUMA
10 HUE
11 CHROMA
12 +SVID

TO INPUT MODULE (JXX) J801
1 (R-Y)
2
3
4 Y
5
6 (B-Y)
7

	JX	JXX
V701*	J234	J236
RCVDS 05	J102	J105
D2100	J5	J4
OTHERS	J400	J405

CombF1tr-Off >SHEET 2
NTSC4_5 >SHEET 2

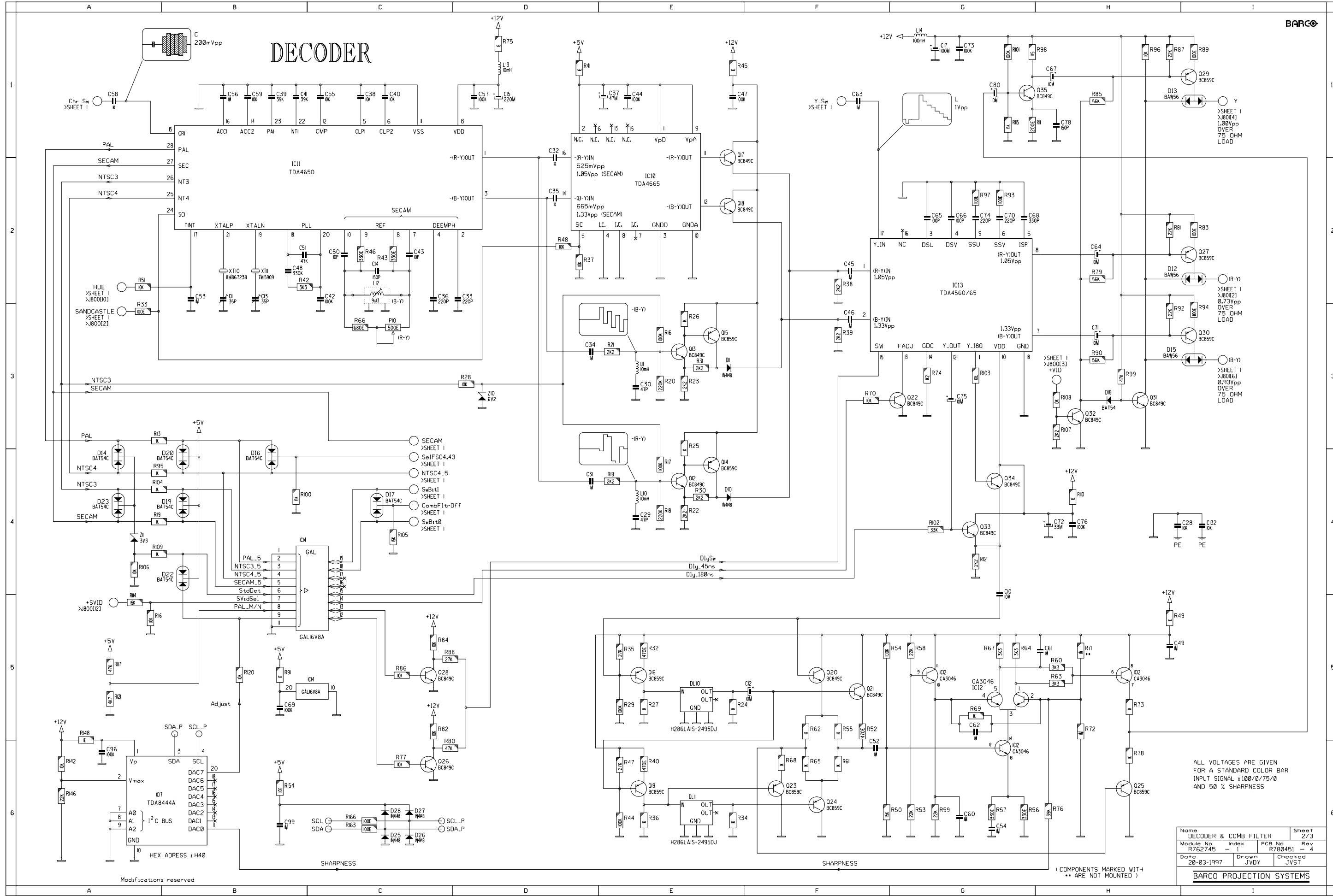
Modifications reserved

Name DECODER & COMB FILTER		Sheet 1/3	
Module No R762745	Index - 1	PCB No R760451	Rev - 4
Date 20-03-1997	Drawn JVDY	Checked	JVST

(COMPONENTS MARKED WITH ** ARE NOT MOUNTED)

BARCO PROJECTION SYSTEMS

DECODER



ALL VOLTAGES ARE GIVEN FOR A STANDARD COLOR BAR INPUT SIGNAL: 100/0/75/0 AND 50% SHARPNESS

Name	DECODER & COMB FILTER	Sheet	2/3
Module No	R762745	index	- 1
Date	20-03-1997	PCB No	R780451
		Rev	- 4
Drawn	JVDY	Checked	JVST

BARCO PROJECTION SYSTEMS

Modifications reserved

(COMPONENTS MARKED WITH * ARE NOT MOUNTED)

A			B			C			D		
COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C10		4	D26	C	6	R49	H	6	R192	C	1
C11	B	4	D27	C	6	R50	G	6	R193	A	1
C12	B	4	D28	C	6	R51	F	6	R194	F	1
C13	B	4	D29	C	6	R52	F	6	R195	B	1
C14	B	4	D30	C	6	R53	G	6	R196	B	1
C15	B	4	D31	C	6	R54	G	6	R197	C	1
C16	B	4	D32	C	6	R55	F	6	R198	F	1
C17	B	4	D33	C	6	R56	F	6	R199	F	1
C18	B	4	D34	C	6	R57	G	6	R200	R	1
C19	B	4	D35	C	6	R58	G	6	R201	C	1
C20	B	4	D36	C	6	R59	H	6	R202	A	1
C21	B	4	D37	C	6	R60	H	6	R203	C	1
C22	B	4	D38	C	6	R61	F	6	R204	A	1
C23	B	4	D39	C	6	R62	F	6	R205	A	1
C24	B	4	D40	C	6	R63	H	6	R206	A	1
C25	B	4	D41	C	6	R64	G	6	R207	R	1
C26	B	4	D42	C	6	R65	G	6	R208	A	1
C27	B	4	D43	C	6	R66	C	6	R209	B	1
C28	B	4	D44	C	6	R67	G	6	R210	A	1
C29	B	4	D45	C	6	R68	F	6	R211	A	1
C30	B	4	D46	C	6	R69	G	6			
C31	B	4	D47	C	6	R70	F	6	SR10	H	5
C32	B	4	D48	C	6	R71	H	6			
C33	B	4	D49	C	6	R72	H	6	XT10	B	2
C34	B	4	D50	C	6	R73	H	6	XT11	B	2
C35	B	4	D51	C	6	R74	G	6	XT12	C	4
C36	B	4	D52	C	6	R75	G	6	XT13	D	4
C37	B	4	D53	C	6	R76	H	6			
C38	B	4	D54	C	6	R77	C	6	Z10	D	3
C39	B	4	D55	C	6	R78	H	6	Z11	A	4
C40	B	4	D56	C	6	R79	H	6			
C41	B	4	D57	C	6	R80	C	6			
C42	B	4	D58	C	6	R81	H	6			
C43	B	4	D59	C	6	R82	C	6			
C44	B	4	D60	C	6	R83	I	2			
C45	B	4	D61	C	6	R84	C	5			
C46	B	4	D62	C	6	R85	H	6			
C47	B	4	D63	C	6	R86	C	5			
C48	B	4	D64	C	6	R87	H	1			
C49	B	4	D65	C	6	R88	C	5			
C50	B	4	D66	C	6	R89	I	1			
C51	B	4	D67	C	6	R90	H	3			
C52	B	4	D68	C	6	R91	B	5			
C53	B	4	D69	C	6	R92	H	3			
C54	B	4	D70	C	6	R93	G	2			
C55	B	4	D71	C	6	R94	I	2			
C56	B	4	D72	C	6	R95	A	4			
C57	B	4	D73	C	6	R96	H	1			
C58	B	4	D74	C	6	R97	G	2			
C59	B	4	D75	C	6	R98	H	1			
C60	B	4	D76	C	6	R99	H	3			
C61	B	4	D77	C	6	R100	B	4			
C62	B	4	D78	C	6	R101	G	1			
C63	B	4	D79	C	6	R102	G	4			
C64	B	4	D80	C	6	R103	C	4			
C65	B	4	D81	C	6	R104	L	2			
C66	B	4	D82	C	6	R105	C	4			
C67	B	4	D83	C	6	R106	A	4			
C68	B	4	D84	C	6	R107	H	3			
C69	B	4	D85	C	6	R108	H	3			
C70	B	4	D86	C	6	R109	A	4			
C71	B	4	D87	C	6	R110	H	4			
C72	B	4	D88	C	6	R111	H	1			
C73	B	4	D89	C	6	R112	G	4			
C74	B	4	D90	C	6	R113	A	5			
C75	B	4	D91	C	6	R114	A	5			
C76	B	4	D92	C	6	R115	G	1			
C77	B	4	D93	C	6	R116	A	5			
C78	B	4	D94	C	6	R117	A	5			
C79	B	4	D95	C	6	R118	B	4			
C80	B	4	D96	C	6	R119	A	4			
C81	B	4	D97	C	6	R120	B	5			
C82	B	4	D98	C	6	R121	A	5			
C83	B	4	D99	C	6	R122	A	5			
C84	B	4	D100	C	6	R123	C	4			
C85	B	4	D101	C	6	R124	E	4			
C86	B	4	D102	C	6	R125	E	5			
C87	B	4	D103	C	6	R126	E	4			
C88	B	4	D104	C	6	R127	A	4			
C89	B	4	D105	C	6	R128	C	4			
C90	B	4	D106	C	6	R129	D	6			
C91	B	4	D107	C	6	R130	E	4			
C92	B	4	D108	C	6	R131	C	4			
C93	B	4	D109	C	6	R132	H	3			
C94	B	4	D110	C	6	R133	D	4			
C95	B	4	D111	C	6	R134	B	4			
C96	B	4	D112	C	6	R135	C	4			
C97	B	4	D113	C	6	R136	C	4			
C98	B	4	D114	C	6	R137	B	5			
C99	B	4	D115	C	6	R138	C	5			
C100	B	4	D116	C	6	R139	C	5			
C101	B	4	D117	C	6	R140	H	5			
C102	B	4	D118	C	6	R141	H	4			
C103	B	4	D119	C	6	R142	A	6			
C104	B	4	D120	C	6	R143	H	5			
C105	B	4	D121	C	6	R144	H	4			
C106	B	4	D122	C	6	R145	I	5			
C107	B	4	D123	C	6	R146	A	6			
C108	B	4	D124	C	6	R147	G	6			
C109	B	4	D125	C	6	R148	A	5			
C110	B	4	D126	C	6	R149	G	4			
C111	B	4	D127	C	6	R150	G	4			
C112	B	4	D128	C	6	R151	G	4			
C113	B	4	D129	C	6	R152	I	4			
C114	B	4	D130	C	6	R153	O	6			
C115	B	4	D131	C	6	R154	B	6			
C116	B	4	D132	C	6	R155	C	4			
C117	B	4	D133	C	6	R156	C	4			
C118	B	4	D134	C	6	R157	G	3			
C119	B	4	D135	C	6	R158	H	4			
C120	B	4	D136	C	6	R159	H	3			
C121	B	4	D137	C	6	R160	H	4			
C122	B	4	D138	C	6	R161	I	4			
C123	B	4	D139	C	6	R162	I	5			
C124	B	4	D140	C	6	R163	C	6			
C125	B	4	D141	C	6	R164	I	5			
C126	B	4	D142	C	6	R165	I	4			
C127	B	4	D143	C	6	R166	C	6			
C128	B	4	D144	C	6	R167	H	3			
C129	B	4	D145	C	6	R168	H	3			
C130	B	4	D146	C	6	R169	H	6			
C131	B	4	D147	C	6	R170	H	6			
C132	B	4	D148	C	6	R171	E	3			
C133	B	4	D149	C	6	R172	E	3			
C134	B	4	D150	C	6	R173	E	3			
C213	B	4	D151	C	6	R174	F	3			
			D152	C	6	R175	F	3			
			D153	C	6	R176	O	2			
D10	E	4	D154	C	6	R177	F	2			
D11	E	4	D155	C	6	R178	G	2			
D12	H	2	D156	C	6	R179	A	3			
D13	A	4	D157	C	6	R180	C	2			
D14	A	4	D158	C	6	R181	C	3			
D15	H	3	D159	C	6	R182	O	1			
D16	B	4	D160	C	6	R183	B	2			
D17	E	4	D161	C	6	R184	B	4			
D18	B	4	D162	C	6	R185	H	1			
D19	B	4	D163	C	6	R186	F	2			
D20	B	4	D164	C	6	R187	B	2			
D21	B	4	D165	C	6	R188	D	1			
D22	B	4	D166	C	6	R189	B	2			
D23	B	4	D167	C	6	R190	B	2			
D24	H	2	D168	C	6	R191	B	2			
D25	C	6	D169	C	6						

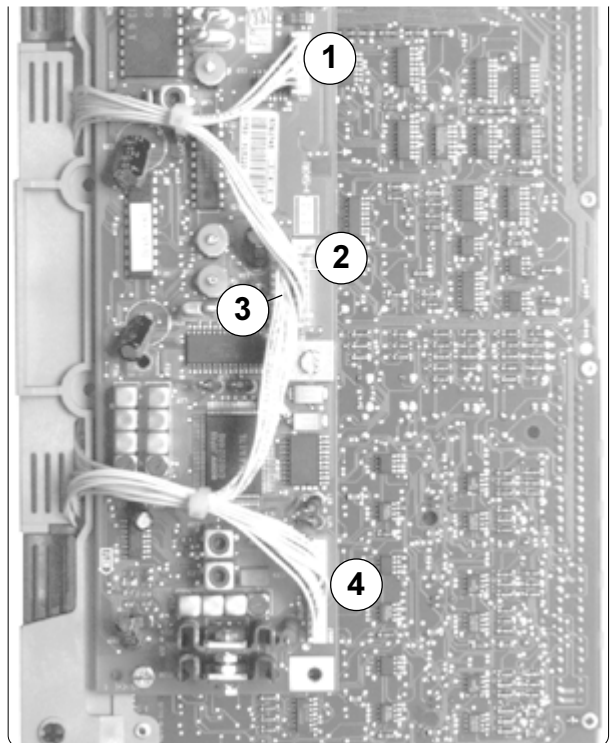
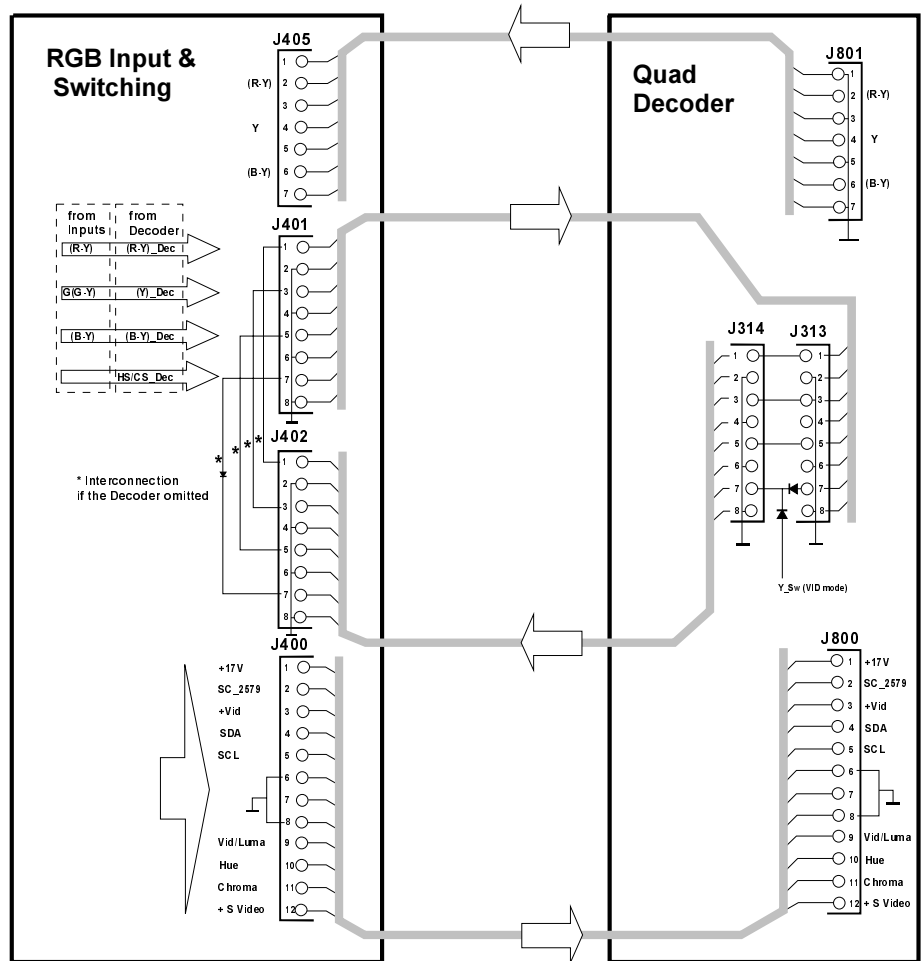


Name		Decoder & Comb Filter		Sheet 3/3	
Module No	Index	PCB No	Rev		
R762745	- 1	R780451	- 4		
Date	Drawn	Checked			
22-11-1996	JVDY	JVST			

BARCO PROJECTION SYSTEMS

Modifications reserved

Interconnection RGB Input & Switch and Quad Decoder



CIRCUIT DESCRIPTION "DECODER+ COMB FILTER" (R762745).

General.

The decoder section of this board with comb filtering uses the decoder chips TDA4650 / TDA4665 / TDA 4565.

The implementation of the *adaptive digital comb filter* for PAL and NTSC 3.58 (not for SECAM and NTSC 4.43) has changed the input switching circuit and obviously two ICs for the digital comb filtering have been added. The first IC generates sync and sampling pulses. The second IC is performing the adaptive digital comb filtering. We'll concentrate mainly on this section in the next pages.

Filter Switching

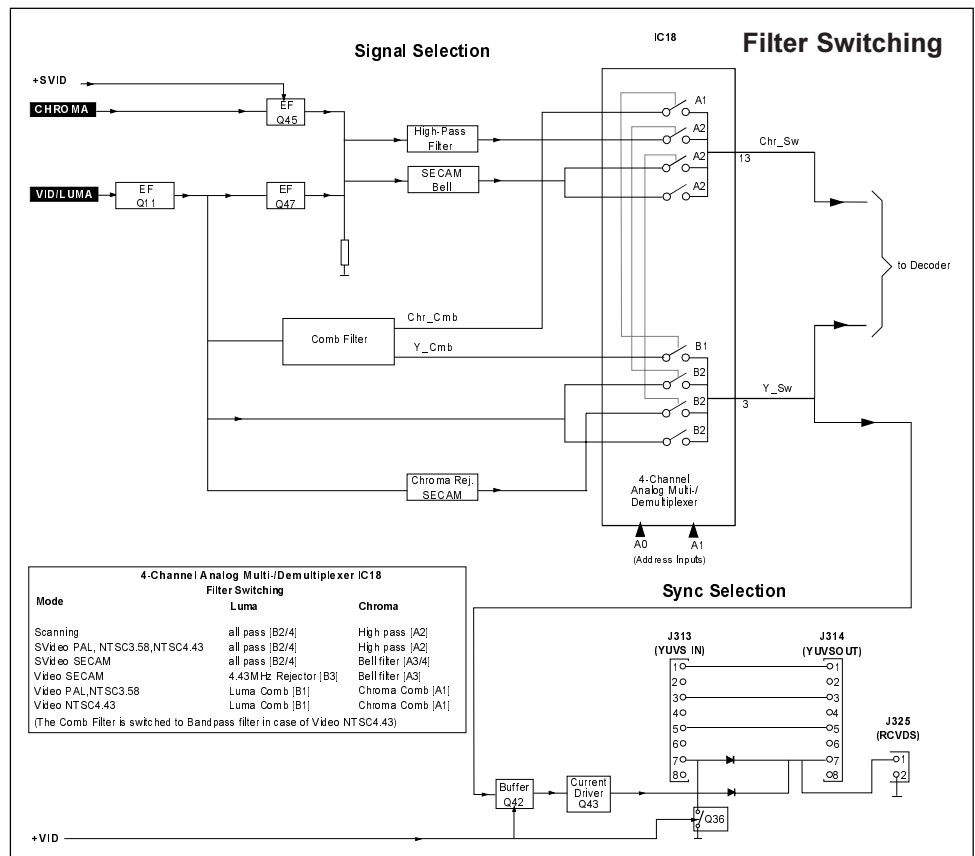
The decoder IC TDA4650 The VID/ LUM input signal is passing an emitter follower in order to supply the provided filters.

The multistandard Decoder chip IC 11 is checking sequentially the information on the backporch of the horizontal sync.

As soon the right system is identified, the appropriate output PAL/SECAM/NTSC4.43 or NTSC3.58 is put at a high level. The filters for the Luma signal are an all pass, a rejector around 4.43 MHz and a Luma Comb filter (via Q41). The filters for the Chroma signal are a High Pass 2.5MHz, a Chroma Comb filter (via Q40) and a SECAM BELL filter (via Q10).

The switching outputs of TDA4650 are supplied to a GAL (IC14), where the decoder mode will be recognized. The programmed GAL IC14 takes care, using the two outputs SwBit0 and SwBit1 as address inputs for the IC18, that the correct signal on the 4-channel Analog Multi-/Demultiplexer IC18 is switched through.

The filters are switched in the following way:



The two output signals of the 4-channel Analog Multi-/Demultiplexer IC18, respectively Chr_Sw and Y_Sw, are the supply signals for the Decoder IC's.

Next, the composite video is split into luminance and chrominance. This split depends on the colour system.

For PAL and NTSC 3.58 this is done by an adaptive digital comb filter. For SECAM this is done by passive filtering (like in the former decoder). For NTSC4 digital bandpass and band reject filters are used.

The chrominance is now applied to the decoder IC in order to furnish the colour difference signals -(R-Y) and -(B-Y).

These signals are then applied to the "baseband delay line" IC to add the chroma information of two subsequent lines.

However, when it is NTSC3.58 the digital comb filter has already done a similar action, this delay line IC is bypassed for NTSC3.58.

The CTI IC is supplied in any case with the colour difference signals and the luminance. The same CTI chip is also responsible for the luminance delay in order to correct the phase difference between the two signals amongst others due to the color decoding process.

Finally, the luminance passes a "sharpness control" and the three signals leave the decoder via current sources.

Sync Processor CXA1686M. The bloc schematic shows that the sync processor has three inputs : *VID IN*, *C IN* and *Y IN*.

There are two PLL's in the IC. The first one generates a stable **Burst Gate Pulse**. The second one generates a sampling frequency of $4 \times F_{sc}$ (4 times the colour subcarrier) required by the digital comb filter IC.

Note that the colour subcarrier is 3.58Mhz in NTSC3 and 4.43Mhz in PAL. The required frequencies are consequently :

For NTSC : $4 \times 3.58\text{Mhz} = 14.318 \text{ Mhz}$ (VCO1 in the bloc diagram)

For PAL : $4 \times 4.43\text{Mhz} = 17.734 \text{ Mhz}$ (VCO2 in the bloc diagram).

In order to generate these stable frequencies the second PLL is used. This PLL consists of an **APC** (Automatic Phase Control), a **VCO** (Voltage Controlled Oscillator) and a **divider** by 4 ($1/4$).

The *APC* receives the oscillator frequency divided by 4 , and, the burst which must be gated out of the chrominance. Therefore, very stable burst gate pulses "**BGP**" are generated by the aid of the first PLL running at approximately $32 \times F_h$ (32 times the line frequency) or approx. 500khz.

The BGP pulses, besides internal use in the sync processor itself, are also used by the comb filter (pin 17).

The reference frequency for the first PLL is provided by the ceramic filter KF100 connected at pin 5.

The videosignal first passes a "*sync separator*" which is further used in the IC itself to lock the first PLL (500khz).

Pin 10 accepts information concerning the colour system to the sync processor. The colour decoder IC 11 delivers this information. This pin is at a high level in NTSC3.58 and low level for PAL and NTSC4.43.

This switching voltage activates either the oscillator around XT11 ($4 \times 3.58\text{Mhz} = 14.318\text{Mhz}$) in NTSC3.58 or the oscillator around XT10 ($4 \times 4.43\text{Mhz} = 17.734\text{Mhz}$).

The videosignal from input 26 is amplified by 6db and via the pin 30 output capacitively coupled to the AD input pin 25 of the comb filter chip IC16.

The VID/LUMA undergoes a frequency limiting to 6Mhz with FI12 driven by Q49. This frequency limiting will avoid (sampling) aliasing later in the AD and DA convertors of the Comb Filter IC16.

Comb Filter CXD2024AQ.

The above IC can be supplied either with digital or analog signals. In our application the analog inputs and outputs are used. As pin 10 INSL is here at ground level for Video PAL, N3 and N4, we use (=activate) the analog inputs and outputs. For the other modes (see table 'Filter switching') pin 10 is at high level, setting the outputs at a DC level.

Anyhow, the processing for filtering the chrominance out of the luminance happens with digital circuits.

Therefore, the analog video is first converted to digital using the sampling clock generated in the sync processor.

It is worthwhile to note that the signal passing through this IC undergoes a delay of approximately 1 and 2 lines in NTSC and in PAL. This can cause synchronization and clamping problems if not taken care of. (see later : Input switching - synchronization).

The AYO (luminance) output at pin 31 passes through a low pass filter FI11 and is then buffered with Q41 to feed the 4-channel Analog Multi-/Demultiplexer IC18, pin 1 Y_Comb.

This filter prevent the clock frequencies of the DA converter to pass through.

The ACO (Chrominance) output undergoes also a frequency limitation with the filter FI10 for the same reason, before supplying the pin 12 Chr_Comb of the 4-channel Analog Multi-/Demultiplexer IC18.

The voltage at pin 21 determine the DC clamping level of the ADC.

The voltage at pin 41 (CVRF) is the gain of the chrominance output and pin 33 (YVRF) of the luminance output.

Pin 70 tells the IC whether the colour system is PAL or NTSC3.58; This determines amongst others the number of line delays for the adaptive digital filtering.

Synchronisation.

The first selection of the sync signal is done in the source input selection. The result of this selection is the SYNC-EX which is available at pin 7 of the J313 connector.

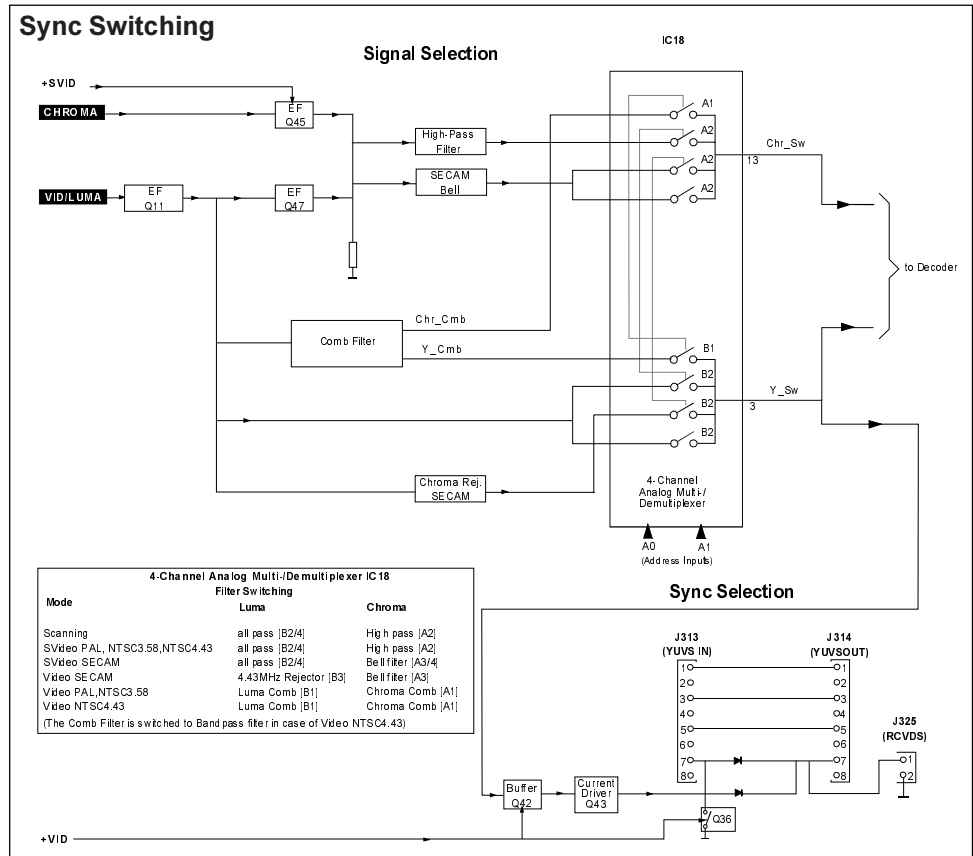
a) Video / S-Video :

When a video composite or S-Video source is selected the +VID voltage is high and the transistor Q42 gets forward biased just like Q43. Pin 7 of the connector J314 receives then the signal via these transistors. This signal has maybe undergone some delays depending on the standard.

To ensure that the SYNC-EX does not get through, Q36 is saturated to short the SYNC-EX line to ground. The collector DC voltage of Q43 is blocked with D24.

b) RGB .

The selection of an RGB source simply means that the SYNC-EX signal is passed through D24 and feeds the SYNC board.



Decoder - Sharpness.

We'll limit the discussion to the differences with the former version.

a) Comb filtering in NTSC3.58

As for the NTSC3.58 comb filtering is done by the digital comb filter, the dual baseband CCD delay IC may be bypassed. This happens with Q13-Q15 and Q12-Q14 when NT3 is at a high level.

b) Sharpness control.

In this version, sharpness is done with discrete components. A DAC TDA8444 provides the adjustable voltage: *SHARPNESS*.

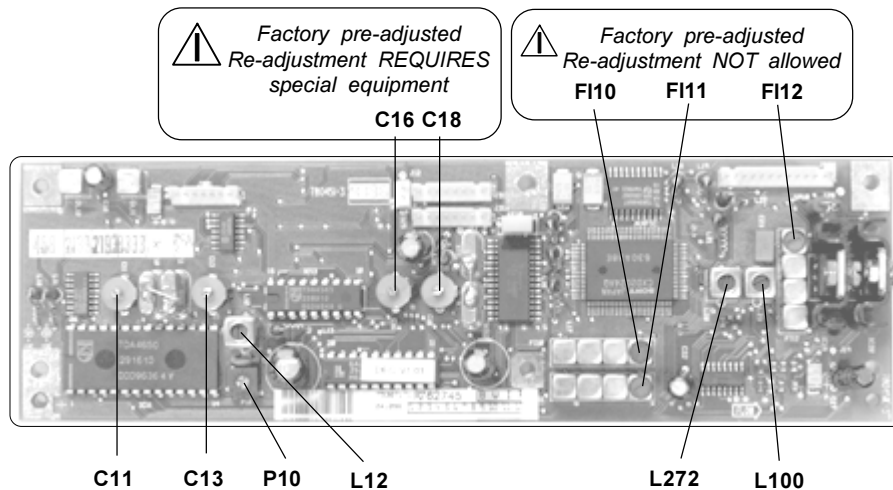
The sharpness control is based on the principle of combining two signals, one with a 'max negative' sharpness together with an amplitude adjusted sharpness signal.

The signal is delayed twice by means of two delay lines of 180ns. A combination of signals produce on the junction R62, R65 and R68 the max. neg. sharpness signal whereas on the junction R52, R55 and R61 the sharpness correction signal. The latter signal is amplitude adjusted in IC12 by the sharpness voltage. The two formed signals are combined on the junction R73/R78 and this signal is further used as Luma signal.

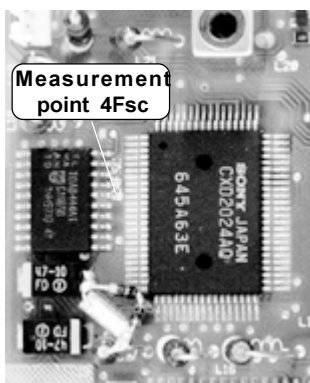
ADJUSTMENT PROCEDURE QUAD DECODER R762745

Location of controls

Measurement point 4Fsc



A. Adjustment Comb Filter



1. Quick adjustment for Color display

- Connect to the VIDEO input e.g. an electronic **PAL** color test video signal.
- Switch the projector in the VIDEO MODE. Select source 1.
- if there is no colour, adjust trimming capacitor C11 for color display.
- Connect to the VIDEO input e.g. an electronic **NTSC3.58** test video signal.
- if there is no colour, adjust trimming capacitor C13 for color display.

Final adjustment of the trimming capacitors C11 and C13 is explained in the 'adjustment of the decoder' (see further).

2. Oscillator adjustments

- No input signal connected to the VID/LUMA and CHROMA inputs.
- Connect pin 28 of IC11 to L13 (forcing decoder into PAL mode).
- Connect a Frequency meter (Range 20MHz-accuracy of 10Hz) to the 4Fsc line (pin 17 IC15).
- Adjust the trimming capacitor C18 for a frequency read out of 17.734476 MHz with an accuracy of 80Hz.
- Connect pin 26 of IC11 to L13 (forcing decoder into NTSC mode).
- Connect a Frequency meter (Range 20MHz-accuracy of 10Hz) to the 4Fsc line (pin 17 IC15).
- Adjust the trimming capacitor C16 for a frequency read out of 14.318180 MHz with an accuracy of 80Hz.

B. Adjustment Decoder

1. Reference Oscillator NTSC3.58

- Connect to the VIDEO input e.g. an electronic **NTSC3.58** test video signal.
- short circuit pin 17 of IC11 to ground.
- adjust trimming capacitor C13 for a colour zero beat.
- remove the short-circuit.

2. Reference Oscillator PAL

- Connect to the VIDEO input e.g. an electronic **PAL** test video signal.
- short circuit pin 17 of IC11 to ground.
- adjust trimming capacitor C11 for a colour zero beat.
- remove the short-circuit.

3. Chroma rejector Secam L20

- Connect to the VIDEO input e.g. an electronic **SECAM** test video signal.
- connect an oscilloscope to the capacitor C22.
- adjust the core of coil L20 for a minimum of chroma in the video signal.

4. SECAM BELL Filter L23 (photo 5)

- Connect to the VIDEO input e.g. an electronic **SECAM** test video signal.
- connect an oscilloscope to the provided **Measurement point C** (Chr_Sw pin 15 IC11).
- adjust L23 for a flat amplitude of the signal during two successive lines.

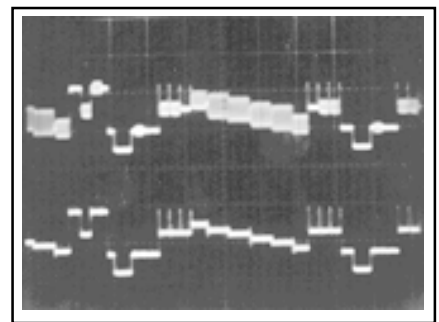


Foto 1
Alignment chroma rejector L20
Upper track: viewed video line
Lower track: Y signal

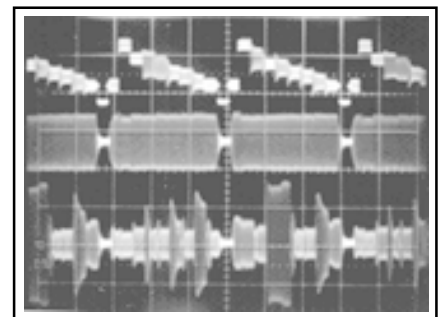
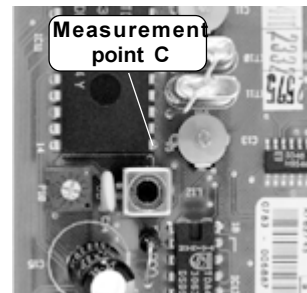


Foto 5
BELL FILTER L23
Upper track: viewed video line
Lower track:
1: correct setting
2: incorrect setting

5. Secam Reference circuit (L12 - P10) (photo 3 & 4)

- Connect to the VIDEO input e.g. an electronic **SECAM** test video signal.
- connect the oscilloscope to the coil L11 (B-Y).
- adjust L12 so that the level of the (B-Y) signal without colour information is the same as the level during blanking.
- connect the oscilloscope to the coil L10 (R-Y).
- adjust P10 so that the level of the (R-Y) signal without colour information is the same as the level during blanking.
- If necessary the level in (B-Y) channel has to readjust to zero with the coil L12.

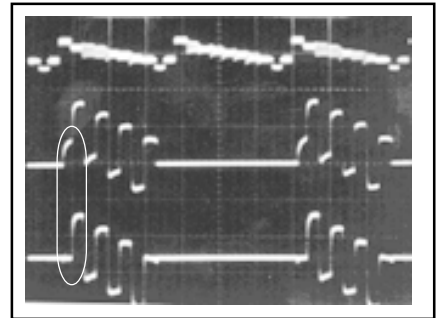


Foto 3
Alignment SECAM Ref circuit L12 (B-Y)
Upper track: viewed video line
Lower track:
1: incorrect setting
2: correct setting

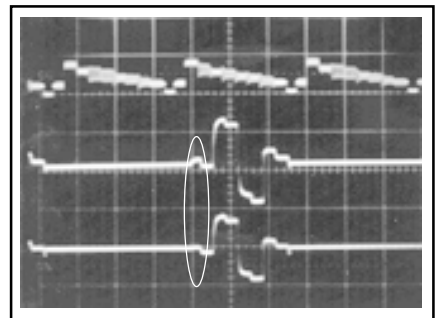


Foto 4
Alignment SECAM Ref circuit P10 (R-Y)
Upper track: viewed video line
Lower track:
1: incorrect setting
2: correct setting

Parts listing R762745

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
10	R133072	HTSN@ Q TO220 24X 7 L 20	2	C 67	P212018	C# TA 10M M 16 6032	1
20	R3631049	SCR Z933 M 3 X 6 SSWX	2	C 68	P210024	C# COG MU 330P J 50 0805	1
30	R3661026	NUT D934 M 3 SS	2	C 69	P210213	C# Y5V MU 100N Z 25 0805	1
40	V306800	X ACC INSUL HC49	2	C 70	P210023	C# COG MU 220P J 50 0805	1
C 10	R111678	C EL BRA 10M M 25E2 85	1	C 71	P212018	C# TA 10M M 16 6032	1
C 11	R117001	C T 7 -35P 160	1	C 72	P212015	C# TA 33M K 16 7343	1
C 12	P212018	C# TA 10M M 16 6032	1	C 73	P210213	C# Y5V MU 100N Z 25 0805	1
C 13	R117001	C T 7 -35P 160	1	C 74	P210023	C# COG MU 220P J 50 0805	1
C 14	R112363	C N750MI 120P G100E2	1	C 75	P212018	C# TA 10M M 16 6032	1
C 14	V1122842	C N220MI 150P G100E2	1	C 76	P210213	C# Y5V MU 100N Z 25 0805	1
C 15	R111478	C EL RA 220M M 25E2 85	1	C 78	P210022	C# COG MU 150P J 50 0805	1
C 16	R117001	C T 7 -35P 160	1	C 80	P212018	C# TA 10M M 16 6032	1
C 17	R111477	C EL RA 100M M 25E2 85	1	C 81	P210111	C# X7R MU 47N K 50 0805	1
C 18	R117001	C T 7 -35P 160	1	C 82	P210041	C# X7R MU 10N K 50 0805	1
C 19	R111477	C EL RA 100M M 25E2 85	1	C 83	P210041	C# X7R MU 10N K 50 0805	1
C 20	P212005	C# TA 47M M 10 7343	1	C 84	P210035	C# X7R MU 1N K 50 0805	1
C 21	P212005	C# TA 47M M 10 7343	1	C 85	P210018	C# COG MU 33P J 50 0805	1
C 22	R111678	C EL BRA 10M M 25E2 85	1	C 86	P210039	C# X7R MU 4N7K 50 0805	1
C 23	R1159081	C PP RA 470P J100E2 85	1	C 87	P210213	C# Y5V MU 100N Z 25 0805	1
C 24	P210178	C# Y5V MU 1M Z 16 1206	1	C 88	P210169	C# X7R MU 220N K 50 1210	1
C 25	P210213	C# Y5V MU 100N Z 25 0805	1	C 89	P210213	C# Y5V MU 100N Z 25 0805	1
C 26	P212018	C# TA 10M M 16 6032	1	C 90	P210111	C# X7R MU 47N K 50 0805	1
C 27	R111548	C EL RA 2M2M 50E2 85	1	C 91	P210001	C# COG MU 10P C 50 0805	1
C 28	P210041	C# X7R MU 10N K 50 0805	1	C 92	P210067	C# X7R MU 1M M 50 2220	1
C 29	P210019	C# COG MU 47P J 50 0805	1	C 93	P210213	C# Y5V MU 100N Z 25 0805	1
C 30	P210019	C# COG MU 47P J 50 0805	1	C 94	P210178	C# Y5V MU 1M Z 16 1206	1
C 31	P210178	C# Y5V MU 1M Z 16 1206	1	C 95	P210213	C# Y5V MU 100N Z 25 0805	1
C 32	P210035	C# X7R MU 1N K 50 0805	1	C 96	P210213	C# Y5V MU 100N Z 25 0805	1
C 33	P210023	C# COG MU 220P J 50 0805	1	C 97	P210178	C# Y5V MU 1M Z 16 1206	1
C 34	P210178	C# Y5V MU 1M Z 16 1206	1	C 98	P212018	C# TA 10M M 16 6032	1
C 35	P210035	C# X7R MU 1N K 50 0805	1	C 99	P210178	C# Y5V MU 1M Z 16 1206	1
C 36	P210023	C# COG MU 220P J 50 0805	1	C100	P210213	C# Y5V MU 100N Z 25 0805	1
C 37	P212005	C# TA 47M M 10 7343	1	C101	P210213	C# Y5V MU 100N Z 25 0805	1
C 38	P210041	C# X7R MU 10N K 50 0805	1	C102	P210213	C# Y5V MU 100N Z 25 0805	1
C 39	P210005	C# X7R MU 39N K 50 1206	1	C103	P210041	C# X7R MU 10N K 50 0805	1
C 40	P210041	C# X7R MU 10N K 50 0805	1	C104	P210041	C# X7R MU 10N K 50 0805	1
C 41	P210005	C# X7R MU 39N K 50 1206	1	C105	P210213	C# Y5V MU 100N Z 25 0805	1
C 42	P210213	C# Y5V MU 100N Z 25 0805	1	C106	P210041	C# X7R MU 10N K 50 0805	1
C 43	P210001	C# COG MU 10P C 50 0805	1	C107	P210213	C# Y5V MU 100N Z 25 0805	1
C 44	P210213	C# Y5V MU 100N Z 25 0805	1	C108	P210213	C# Y5V MU 100N Z 25 0805	1
C 45	P210178	C# Y5V MU 1M Z 16 1206	1	C109	P210035	C# X7R MU 1N K 50 0805	1
C 46	P210178	C# Y5V MU 1M Z 16 1206	1	C110	P210213	C# Y5V MU 100N Z 25 0805	1
C 47	P210213	C# Y5V MU 100N Z 25 0805	1	C111	P210041	C# X7R MU 10N K 50 0805	1
C 48	P210136	C# Y5V MU 330N Z 50 1206	1	C112	P210213	C# Y5V MU 100N Z 25 0805	1
C 49	P210178	C# Y5V MU 1M Z 16 1206	1	C113	P210001	C# COG MU 10P C 50 0805	1
C 50	P210001	C# COG MU 10P C 50 0805	1	C114	P212005	C# TA 47M M 10 7343	1
C 51	P210111	C# X7R MU 47N K 50 0805	1	C115	P212018	C# TA 10M M 16 6032	1
C 52	P210178	C# Y5V MU 1M Z 16 1206	1	C116	P212005	C# TA 47M M 10 7343	1
C 53	P210178	C# Y5V MU 1M Z 16 1206	1	C117	P212005	C# TA 47M M 10 7343	1
C 54	P210178	C# Y5V MU 1M Z 16 1206	1	C118	P212015	C# TA 33M K 16 7343	1
C 55	P210041	C# X7R MU 10N K 50 0805	1	C119	P210217	C# COG MU 82P J 50 0805	1
C 56	P210153	C# Z5U MU 1M M 63 1812	1	C120	P210041	C# X7R MU 10N K 50 0805	1
C 57	P210213	C# Y5V MU 100N Z 25 0805	1	C121	P210178	C# Y5V MU 1M Z 16 1206	1
C 58	P210035	C# X7R MU 1N K 50 0805	1	C122	P210041	C# X7R MU 10N K 50 0805	1
C 59	P210041	C# X7R MU 10N K 50 0805	1	C123	P210023	C# COG MU 220P J 50 0805	1
C 60	P210178	C# Y5V MU 1M Z 16 1206	1	C124	P210041	C# X7R MU 10N K 50 0805	1
C 61	P210178	C# Y5V MU 1M Z 16 1206	1	C125	P210213	C# Y5V MU 100N Z 25 0805	1
C 62	P210178	C# Y5V MU 1M Z 16 1206	1	C126	P210213	C# Y5V MU 100N Z 25 0805	1
C 63	P210178	C# Y5V MU 1M Z 16 1206	1	C127	P212015	C# TA 33M K 16 7343	1
C 64	P212018	C# TA 10M M 16 6032	1	C128	P210213	C# Y5V MU 100N Z 25 0805	1
C 65	P210021	C# COG MU 100P J 50 0805	1	C129	P212018	C# TA 10M M 16 6032	1
C 66	P210021	C# COG MU 100P J 50 0805	1	C130	P210213	C# Y5V MU 100N Z 25 0805	1
				C131	P212031	C# TA 22M M 16 7343	1
				C132	P210041	C# X7R MU 10N K 50 0805	1
				C133	P210213	C# Y5V MU 100N Z 25 0805	1

QUAD Decoder+Comb_Filter

R762745

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
C134	P212031	C# TA 22M M 16 7343	1	L 23	B3060192	CH RA ES 7 T 2.91 UH Q54	1
C213	R113724	C POMERA 100N K 63E2 85	1	P 10	R107005	R TCE H500E K 0W5 S 7TS	1
				PC	R780451	PCD#PJ53G701DEC_COMB	1
D 10	P234099	D#4148 R DMMELF	1	Q 10	P232004	Q#BC849C N SS SOT23	1
D 11	P234099	D#4148 R DMMELF	1	Q 11	P232004	Q#BC849C N SS SOT23	1
D 12	P234029	D#BAW56 C-A SOT23	1	Q 12	P232004	Q#BC849C N SS SOT23	1
D 13	P234029	D#BAW56 C-A SOT23	1	Q 13	P232004	Q#BC849C N SS SOT23	1
D 14	P234205	D#BAT54C SCH SOT23	1	Q 14	P232101	Q#BC859C P SS SOT23	1
D 15	P234029	D#BAW56 C-A SOT23	1	Q 15	P232101	Q#BC859C P SS SOT23	1
D 16	P234205	D#BAT54C SCH SOT23	1	Q 16	P232101	Q#BC859C P SS SOT23	1
D 17	P234205	D#BAT54C SCH SOT23	1	Q 17	P232004	Q#BC849C N SS SOT23	1
D 18	P234055	D#BAT54 SCH SOT23	1	Q 18	P232004	Q#BC849C N SS SOT23	1
D 19	P234205	D#BAT54C SCH SOT23	1	Q 19	P232101	Q#BC859C P SS SOT23	1
D 20	P234205	D#BAT54C SCH SOT23	1	Q 20	P232004	Q#BC849C N SS SOT23	1
D 21	P234004	D#BAV70 C-C SOT23	1	Q 21	P232004	Q#BC849C N SS SOT23	1
D 22	P234205	D#BAT54C SCH SOT23	1	Q 22	P232004	Q#BC849C N SS SOT23	1
D 23	P234205	D#BAT54C SCH SOT23	1	Q 23	P232101	Q#BC859C P SS SOT23	1
D 24	P234205	D#BAT54C SCH SOT23	1	Q 24	P232101	Q#BC859C P SS SOT23	1
D 25	P234099	D#4148 R DMMELF	1	Q 25	P232101	Q#BC859C P SS SOT23	1
D 26	P234099	D#4148 R DMMELF	1	Q 26	P232004	Q#BC849C N SS SOT23	1
D 27	P234099	D#4148 R DMMELF	1	Q 27	P232101	Q#BC859C P SS SOT23	1
D 28	P234099	D#4148 R DMMELF	1	Q 28	P232004	Q#BC849C N SS SOT23	1
D113	R131621	D S 1N4148 075150 DO35	1	Q 29	P232101	Q#BC859C P SS SOT23	1
D114	R131621	D S 1N4148 075150 DO35	1	Q 30	P232101	Q#BC859C P SS SOT23	1
				Q 31	P232004	Q#BC849C N SS SOT23	1
DL10	V306541	DL 180NS 1K	1	Q 32	P232004	Q#BC849C N SS SOT23	1
DL11	V306541	DL 180NS 1K	1	Q 33	P232004	Q#BC849C N SS SOT23	1
				Q 34	P232004	Q#BC849C N SS SOT23	1
FI10	V3060961	FLTR 6M750000	1	Q 35	P232004	Q#BC849C N SS SOT23	1
FI11	V3060961	FLTR 6M750000	1	Q 36	P232004	Q#BC849C N SS SOT23	1
FI12	V3060961	FLTR 6M750000	1	Q 37	P232004	Q#BC849C N SS SOT23	1
				Q 38	P232101	Q#BC859C P SS SOT23	1
I 10	P231329	U#4665 TDA SO16 P	1	Q 39	P232004	Q#BC849C N SS SOT23	1
I 11	R132828	U 4650 TDA DIP28 P	1	Q 40	P232004	Q#BC849C N SS SOT23	1
I 12	P231013	U#3046 CA SO14 I	1	Q 41	P232004	Q#BC849C N SS SOT23	1
I 13	R132773	U 4565 TDA DIP18 P	1	Q 42	P232004	Q#BC849C N SS SOT23	1
I 14	R32841402	U_S G 808S DEC V102	1	Q 43	P232101	Q#BC859C P SS SOT23	1
I 15	P231280	U#1686M CXA SOL30 P	1	Q 44	P232004	Q#BC849C N SS SOT23	1
I 16	P231281	U#2024AQ CXD QFP80 P	1	Q 45	P232004	Q#BC849C N SS SOT23	1
I 17	P230936	U#8444A TDA SOL20 P	1	Q 46	P232004	Q#BC849C N SS SOT23	1
I 18	P230064	U#4052 SO16 I	1	Q 47	P232004	Q#BC849C N SS SOT23	1
I 19	R134001	U 7805 TO220 P	1	Q 48	P232004	Q#BC849C N SS SOT23	1
I 20	R134002	U 7812 TO220 P	1	Q 49	P232101	Q#BC859C P SS SOT23	1
				Q 50	P232004	Q#BC849C N SS SOT23	1
J 11	R348110	WU JUMP 0.6 27.5	1	R 10	P201095	R# CE H 2K2 F 0W1 0805	1
J 16	R348110	WU JUMP 0.6 27.5	1	R 11	P201095	R# CE H 2K2 F 0W1 0805	1
J313	R313928	J C T H MBT P 8 M2SN WH	1	R 12	P201135	R# CE H100K F 0W1 0805	1
J314	R313928	J C T H MBT P 8 M2SN WH	1	R 13	P201119	R# CE H 22K F 0W1 0805	1
J325	R313922	J C T H MBT P 2 M2SN WH	1	R 14	P201125	R# CE H 39K F 0W1 0805	1
J800	R313932	J C T H MBT P12 M2SN WH	1	R 15	P200677	R# CE H 1E J 0W1 0805	1
J801	R313927	J C T H MBT P 7 M2SN WH	1	R 16	P201135	R# CE H100K F 0W1 0805	1
				R 17	P201135	R# CE H100K F 0W1 0805	1
KF10	R307133	RSN CE 0M505	1	R 18	P201143	R# CE H220K F 0W1 0805	1
				R 19	P201095	R# CE H 2K2 F 0W1 0805	1
L 10	R3061322	CH AX NS 10 UH	1	R 20	P201143	R# CE H220K F 0W1 0805	1
L 11	R3061322	CH AX NS 10 UH	1	R 21	P201095	R# CE H 2K2 F 0W1 0805	1
L 12	K3060242	CH RA ES 10 UH S7 T	1	R 22	P201095	R# CE H 2K2 F 0W1 0805	1
L 13	R3061322	CH AX NS 10 UH	1	R 23	P201095	R# CE H 2K2 F 0W1 0805	1
L 14	R3061341	CH AX NS 100 UH	1	R 24	P201087	R# CE H 1K F 0W1 0805	1
L 15	R3061322	CH AX NS 10 UH	1	R 25	P201087	R# CE H 1K F 0W1 0805	1
L 16	R3061322	CH AX NS 10 UH	1	R 26	P201087	R# CE H 1K F 0W1 0805	1
L 17	R3061341	CH AX NS 100 UH	1	R 27	P201087	R# CE H 1K F 0W1 0805	1
L 18	R3061322	CH AX NS 10 UH	1	R 28	P201111	R# CE H 10K F 0W1 0805	1
L 19	R3061322	CH AX NS 10 UH	1	R 29	P201135	R# CE H100K F 0W1 0805	1
L 20	B3060172	CH RA ES 7 T 16.71 UH Q70	1	R 30	P201095	R# CE H 2K2 F 0W1 0805	1
L 21	R3061322	CH AX NS 10 UH	1	R 31	P201095	R# CE H 2K2 F 0W1 0805	1
L 22	R3061322	CH AX NS 10 UH	1				


QUAD Decoder+Comb_Filter

R762745


SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R 32	P201079	R# CE H470E F 0W1 0805	1	R100	P201115	R# CE H 15K F 0W1 0805	1
R 33	P201063	R# CE H100E F 0W1 0805	1	R101	P201135	R# CE H100K F 0W1 0805	1
R 34	P201087	R# CE H 1K F 0W1 0805	1	R102	P201123	R# CE H 33K F 0W1 0805	1
R 35	P201121	R# CE H 27K F 0W1 0805	1	R103	P201039	R# CE H 10E F 0W1 0805	1
R 36	P201087	R# CE H 1K F 0W1 0805	1	R104	P201087	R# CE H 1K F 0W1 0805	1
R 37	P201111	R# CE H 10K F 0W1 0805	1	R105	P201115	R# CE H 15K F 0W1 0805	1
R 38	P201095	R# CE H 2K2 F 0W1 0805	1	R106	P201111	R# CE H 10K F 0W1 0805	1
R 39	P201095	R# CE H 2K2 F 0W1 0805	1	R107	P201095	R# CE H 2K2 F 0W1 0805	1
R 40	P201079	R# CE H470E F 0W1 0805	1	R108	P201111	R# CE H 10K F 0W1 0805	1
R 41	P200677	R# CE H 1E J 0W1 0805	1	R109	P201087	R# CE H 1K F 0W1 0805	1
R 42	P201099	R# CE H 3K3 F 0W1 0805	1	R110	P200677	R# CE H 1E J 0W1 0805	1
R 43	P201075	R# CE H330E F 0W1 0805	1	R111	P201070	R# CE H200E F 0W1 0805	1
R 44	P201135	R# CE H100K F 0W1 0805	1	R112	P201095	R# CE H 2K2 F 0W1 0805	1
R 45	P201015	R# CE H 1E F 0W1 0805	1	R113	P201087	R# CE H 1K F 0W1 0805	1
R 46	P201075	R# CE H330E F 0W1 0805	1	R114	P201115	R# CE H 15K F 0W1 0805	1
R 47	P201121	R# CE H 27K F 0W1 0805	1	R115	P201115	R# CE H 15K F 0W1 0805	1
R 48	P201111	R# CE H 10K F 0W1 0805	1	R116	P201111	R# CE H 10K F 0W1 0805	1
R 49	P200677	R# CE H 1E J 0W1 0805	1	R117	P201127	R# CE H 47K F 0W1 0805	1
R 50	P201115	R# CE H 15K F 0W1 0805	1	R118	P201095	R# CE H 2K2 F 0W1 0805	1
R 51	P201111	R# CE H 10K F 0W1 0805	1	R119	P201087	R# CE H 1K F 0W1 0805	1
R 52	P201079	R# CE H470E F 0W1 0805	1	R120	P201111	R# CE H 10K F 0W1 0805	1
R 53	P201119	R# CE H 22K F 0W1 0805	1	R121	P201103	R# CE H 4K7 F 0W1 0805	1
R 54	P201135	R# CE H100K F 0W1 0805	1	R122	P201111	R# CE H 10K F 0W1 0805	1
R 55	P201087	R# CE H 1K F 0W1 0805	1	R123	P201085	R# CE H820E F 0W1 0805	1
R 56	P201075	R# CE H330E F 0W1 0805	1	R124	P201103	R# CE H 4K7 F 0W1 0805	1
R 57	P201075	R# CE H330E F 0W1 0805	1	R125	P201103	R# CE H 4K7 F 0W1 0805	1
R 58	P201119	R# CE H 22K F 0W1 0805	1	R126	P201115	R# CE H 15K F 0W1 0805	1
R 59	P201119	R# CE H 22K F 0W1 0805	1	R127	P201127	R# CE H 47K F 0W1 0805	1
R 60	P201099	R# CE H 3K3 F 0W1 0805	1	R128	P201115	R# CE H 15K F 0W1 0805	1
R 61	P201087	R# CE H 1K F 0W1 0805	1	R129	P201079	R# CE H470E F 0W1 0805	1
R 62	P201087	R# CE H 1K F 0W1 0805	1	R130	P201109	R# CE H 8K2 F 0W1 0805	1
R 63	P201099	R# CE H 3K3 F 0W1 0805	1	R131	P201087	R# CE H 1K F 0W1 0805	1
R 64	P201099	R# CE H 3K3 F 0W1 0805	1	R132	P201107	R# CE H 6K8 F 0W1 0805	1
R 65	P201087	R# CE H 1K F 0W1 0805	1	R133	P200677	R# CE H 1E J 0W1 0805	1
R 66	P201083	R# CE H680E F 0W1 0805	1	R134	P201111	R# CE H 10K F 0W1 0805	1
R 67	P201099	R# CE H 3K3 F 0W1 0805	1	R135	P200677	R# CE H 1E J 0W1 0805	1
R 68	P201087	R# CE H 1K F 0W1 0805	1	R136	P201087	R# CE H 1K F 0W1 0805	1
R 69	P201087	R# CE H 1K F 0W1 0805	1	R137	P201095	R# CE H 2K2 F 0W1 0805	1
R 70	P201111	R# CE H 10K F 0W1 0805	1	R138	P201115	R# CE H 15K F 0W1 0805	1
R 72	P201159	R# CE H 1M F 0W1 0805	1	R139	P201115	R# CE H 15K F 0W1 0805	1
R 73	P201087	R# CE H 1K F 0W1 0805	1	R140	P201084	R# CE H750E F 0W1 0805	1
R 74	P201089	R# CE H 1K2 F 0W1 0805	1	R141	P201084	R# CE H750E F 0W1 0805	1
R 75	P200677	R# CE H 1E J 0W1 0805	1	R142	P201111	R# CE H 10K F 0W1 0805	1
R 76	P201125	R# CE H 39K F 0W1 0805	1	R143	P201072	R# CE H240E F 0W1 0805	1
R 77	P201111	R# CE H 10K F 0W1 0805	1	R144	P201072	R# CE H240E F 0W1 0805	1
R 78	P201087	R# CE H 1K F 0W1 0805	1	R145	P201091	R# CE H 1K5 F 0W1 0805	1
R 79	P201129	R# CE H 56K F 0W1 0805	1	R146	P201119	R# CE H 22K F 0W1 0805	1
R 80	P201127	R# CE H 47K F 0W1 0805	1	R147	P201099	R# CE H 3K3 F 0W1 0805	1
R 81	P201119	R# CE H 22K F 0W1 0805	1	R148	P200677	R# CE H 1E J 0W1 0805	1
R 82	P201111	R# CE H 10K F 0W1 0805	1	R149	P201093	R# CE H 1K8 F 0W1 0805	1
R 83	P201063	R# CE H100E F 0W1 0805	1	R150	P201119	R# CE H 22K F 0W1 0805	1
R 84	P201111	R# CE H 10K F 0W1 0805	1	R151	P201107	R# CE H 6K8 F 0W1 0805	1
R 85	P201129	R# CE H 56K F 0W1 0805	1	R152	P201091	R# CE H 1K5 F 0W1 0805	1
R 86	P201111	R# CE H 10K F 0W1 0805	1	R153	P201099	R# CE H 3K3 F 0W1 0805	1
R 87	P201119	R# CE H 22K F 0W1 0805	1	R154	P201039	R# CE H 10E F 0W1 0805	1
R 88	P201121	R# CE H 27K F 0W1 0805	1	R155	P201109	R# CE H 8K2 F 0W1 0805	1
R 89	P201063	R# CE H100E F 0W1 0805	1	R156	P201103	R# CE H 4K7 F 0W1 0805	1
R 90	P201129	R# CE H 56K F 0W1 0805	1	R157	P201109	R# CE H 8K2 F 0W1 0805	1
R 91	P200677	R# CE H 1E J 0W1 0805	1	R158	P200677	R# CE H 1E J 0W1 0805	1
R 92	P201119	R# CE H 22K F 0W1 0805	1	R159	P200677	R# CE H 1E J 0W1 0805	1
R 93	P201063	R# CE H100E F 0W1 0805	1	R160	P200677	R# CE H 1E J 0W1 0805	1
R 94	P201063	R# CE H100E F 0W1 0805	1	R161	P201129	R# CE H 56K F 0W1 0805	1
R 95	P201087	R# CE H 1K F 0W1 0805	1	R162	P201130	R# CE H 62K F 0W1 0805	1
R 96	P201111	R# CE H 10K F 0W1 0805	1	R163	P201063	R# CE H100E F 0W1 0805	1
R 97	P201063	R# CE H100E F 0W1 0805	1	R164	P201135	R# CE H100K F 0W1 0805	1
R 98	P201091	R# CE H 1K5 F 0W1 0805	1	R165	P201135	R# CE H100K F 0W1 0805	1
R 99	P201127	R# CE H 47K F 0W1 0805	1	R166	P201063	R# CE H100E F 0W1 0805	1

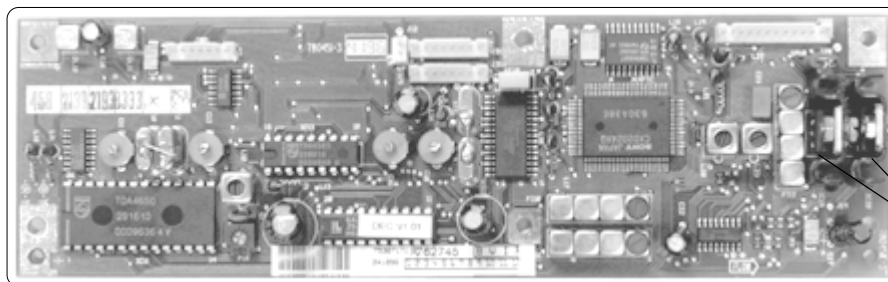
QUAD Decoder+Comb_Filter

R762745

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R167	P200677	R# CE H 1E J 0W1 0805	1	R198	P201055	R# CE H 47E F 0W1 0805	1
R168	P200677	R# CE H 1E J 0W1 0805	1	R199	P201095	R# CE H 2K2 F 0W1 0805	1
R169	P201087	R# CE H 1K F 0W1 0805	1	R200	P200677	R# CE H 1E J 0W1 0805	1
R170	P201087	R# CE H 1K F 0W1 0805	1	R201	P201135	R# CE H100K F 0W1 0805	1
R171	P200677	R# CE H 1E J 0W1 0805	1	R202	P201135	R# CE H100K F 0W1 0805	1
R172	P200677	R# CE H 1E J 0W1 0805	1	R203	P201125	R# CE H 39K F 0W1 0805	1
R173	P200677	R# CE H 1E J 0W1 0805	1	R204	P201103	R# CE H 4K7 F 0W1 0805	1
R174	P201060	R# CE H 75E F 0W1 0805	1	R205	P201087	R# CE H 1K F 0W1 0805	1
R175	P200677	R# CE H 1E J 0W1 0805	1	R206	P201095	R# CE H 2K2 F 0W1 0805	1
R176	P201121	R# CE H 27K F 0W1 0805	1	R207	P200677	R# CE H 1E J 0W1 0805	1
R177	P201127	R# CE H 47K F 0W1 0805	1	R208	P201067	R# CE H150E F 0W1 0805	1
R178	P201095	R# CE H 2K2 F 0W1 0805	1	R209	P201083	R# CE H680E F 0W1 0805	1
R179	P201067	R# CE H150E F 0W1 0805	1	R210	P201091	R# CE H 1K5 F 0W1 0805	1
R180	P201135	R# CE H100K F 0W1 0805	1	R211	P201086	R# CE H910E F 0W1 0805	1
R181	P201083	R# CE H680E F 0W1 0805	1				
R182	P201095	R# CE H 2K2 F 0W1 0805	1	SR10	R1012009	R CFFH 1E J 0W5	1 
R183	P201085	R# CE H820E F 0W1 0805	1				
R184	P201039	R# CE H 10E F 0W1 0805	1	XT10	R306816	X 8M867238 20 HC49	1
R185	P201063	R# CE H100E F 0W1 0805	1	XT11	R306849	X 7M159090 20 HC49	1
R186	P201127	R# CE H 47K F 0W1 0805	1	XT12	R3071231	X 17M734475 16 HC49	1
R187	P201091	R# CE H 1K5 F 0W1 0805	1	XT13	V3068581	X 14M318180 16 HC49	1
R188	P200677	R# CE H 1E J 0W1 0805	1				
R189	P201119	R# CE H 22K F 0W1 0805	1	Z 10	P234018	D#ZEN 6V2 0W5 C DMMELF	1
R190	P201103	R# CE H 4K7 F 0W1 0805	1	Z 11	P234213	D#ZEN 3V3 0W5 C DMMELF	1
R191	P201095	R# CE H 2K2 F 0W1 0805	1				
R192	P201115	R# CE H 15K F 0W1 0805	1				
R193	P201055	R# CE H 47E F 0W1 0805	1				
R194	P201095	R# CE H 2K2 F 0W1 0805	1				
R195	P201127	R# CE H 47K F 0W1 0805	1				
R196	P201135	R# CE H100K F 0W1 0805	1				
R197	P201120	R# CE H 24K F 0W1 0805	1				

PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.

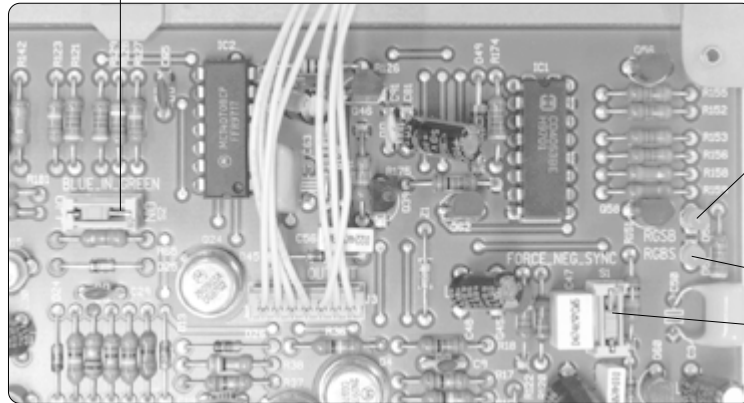


R133072

RGB Input Aut Sync Track

R7621055

S(witch)2 Blue in Green
(ON=yes)

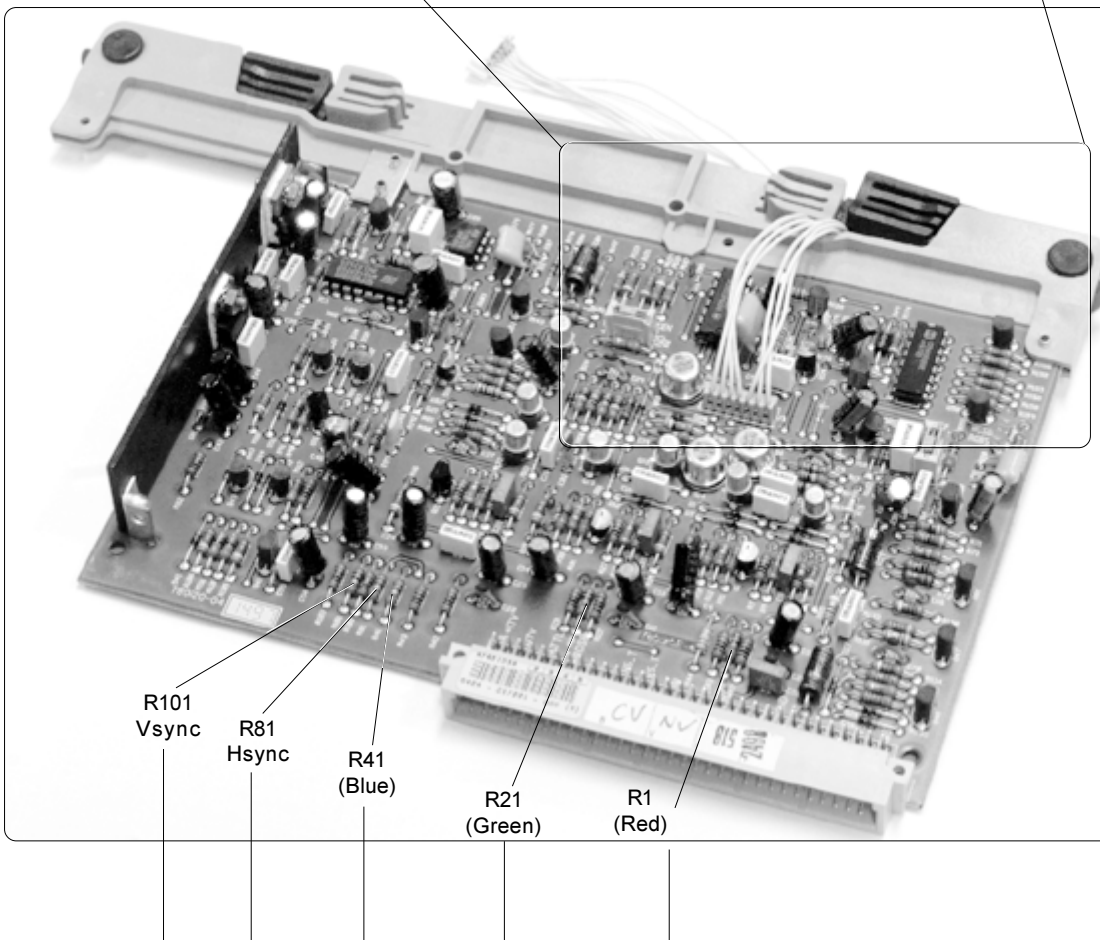


LED

RGSB
(sync on Green)

RGSB
(separate sync)

S(witch)1 Force neg. sync
(ON=yes)



R101
Vsync

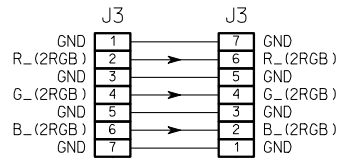
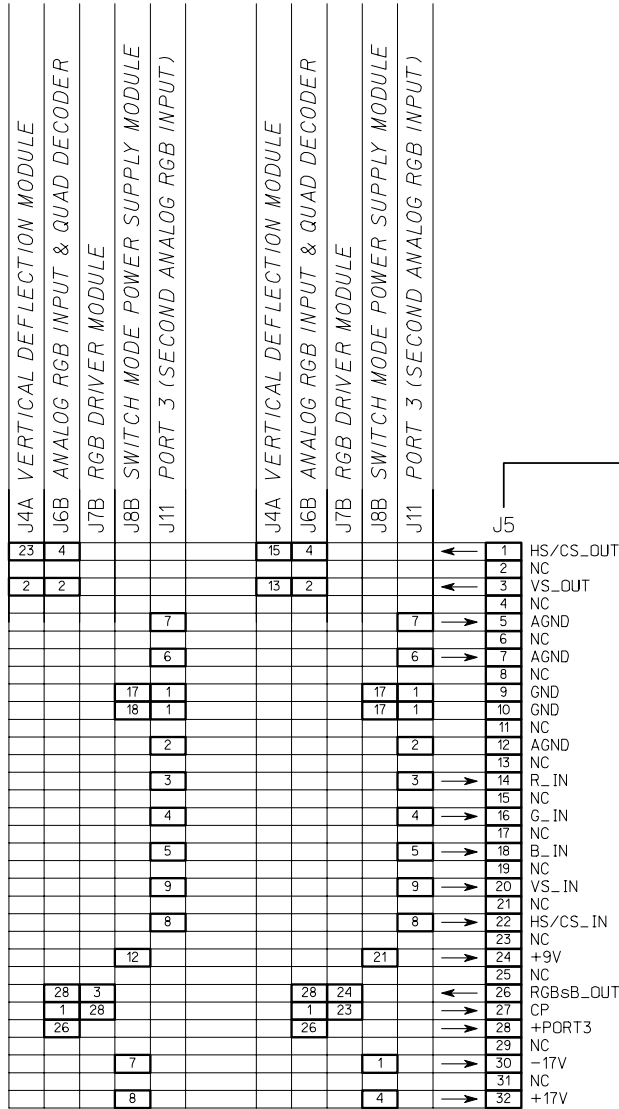
R81
Hsync

R41
(Blue)

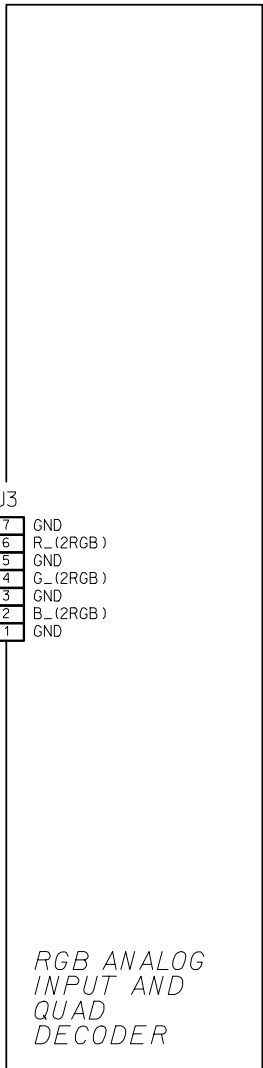
R21
(Green)

R1
(Red)

Line termination 75 Ohm resistors



SECOND RGB INPUT



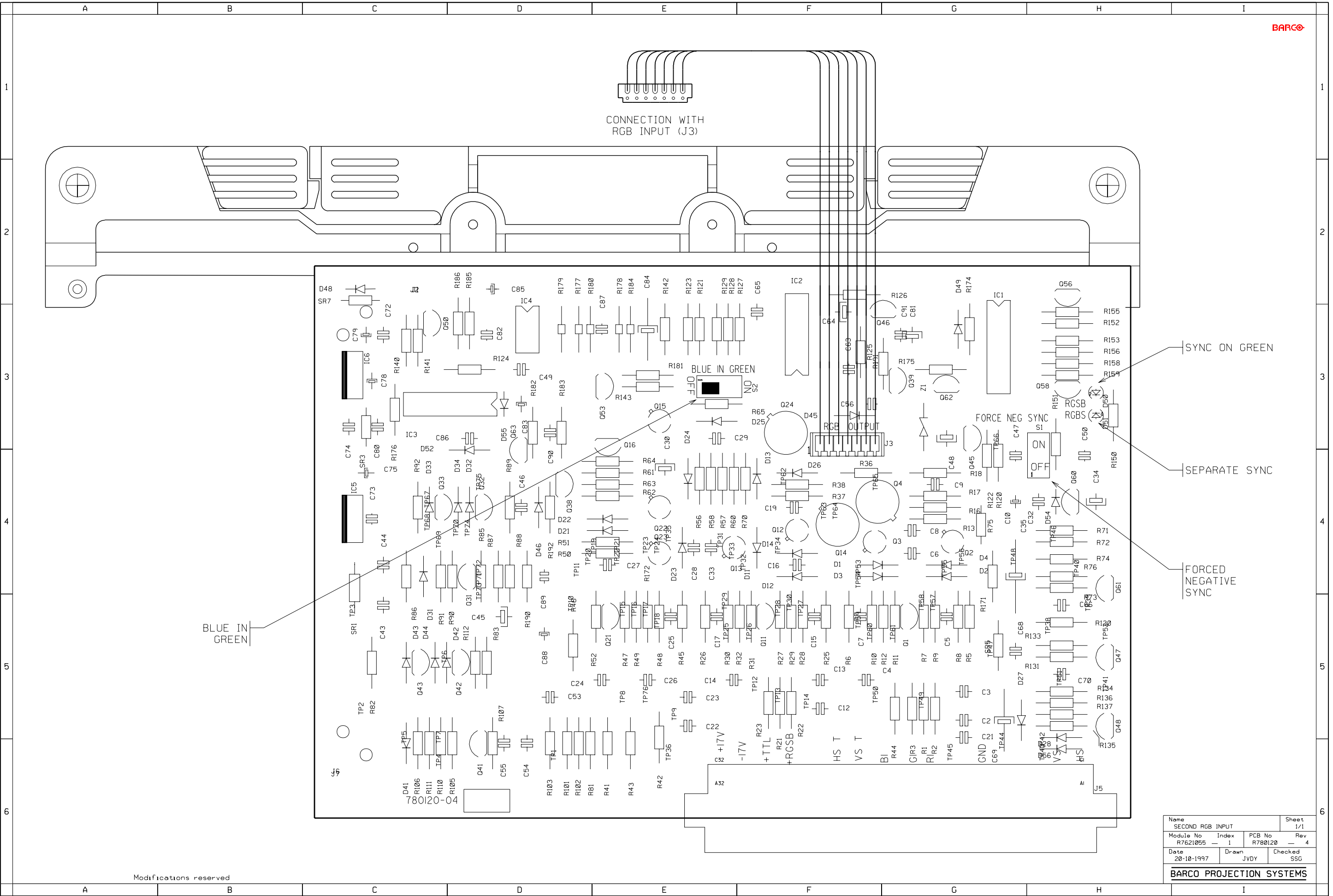
1200 SERIES

800 SERIES

RGB ANALOG INPUT AND QUAD DECODER

Name SECOND RGB INPUT		Sheet 1/1	
Module No R7621055	Index - 1	PCB No R780120	Rev - 4
Date 20-10-1997	Drawn JVDY	Checked SSG	
BARCO NV		Division BPS	

Modifications reserved



BLUE IN GREEN

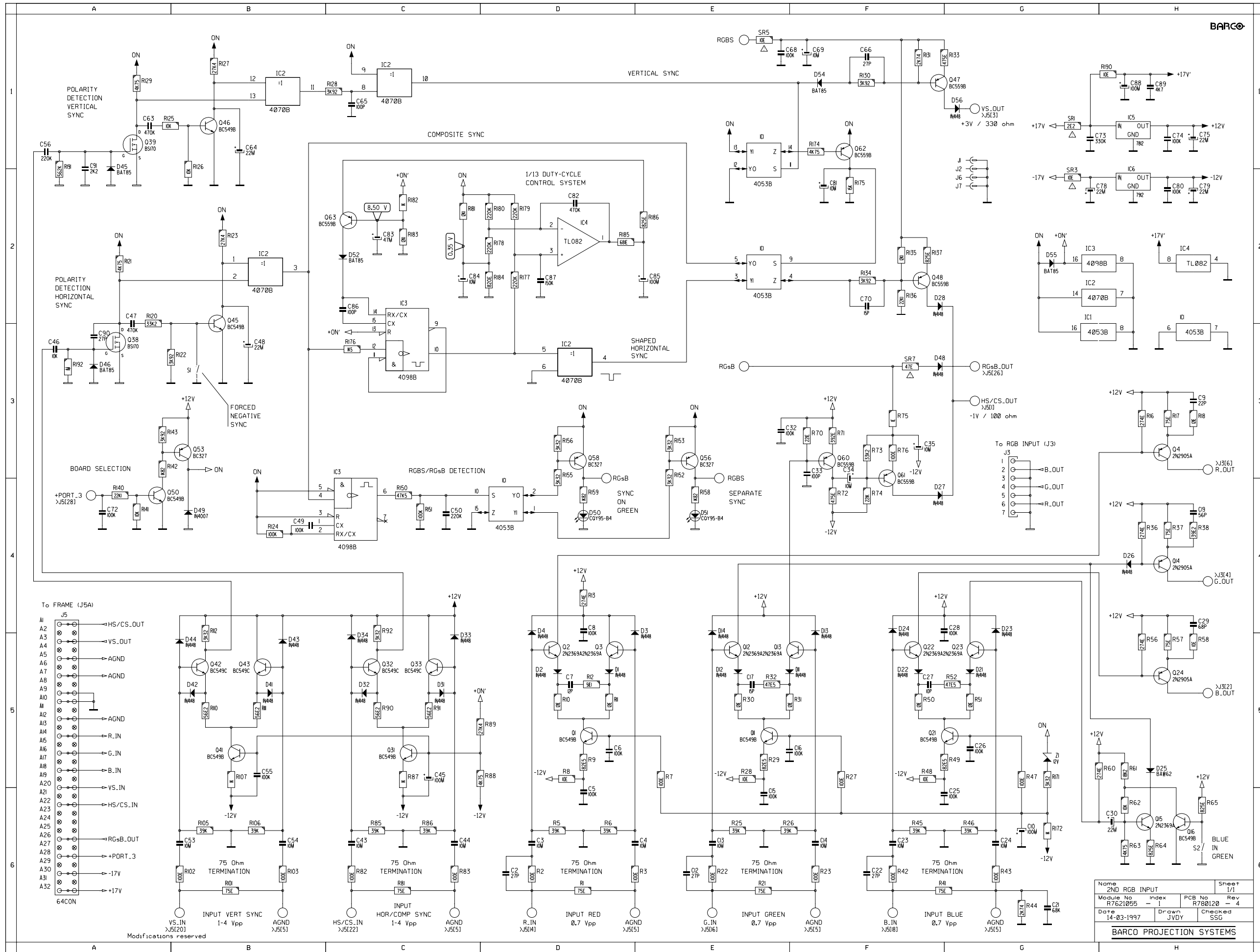
SYNC ON GREEN

SEPARATE SYNC

FORCED NEGATIVE SYNC

Modifications reserved

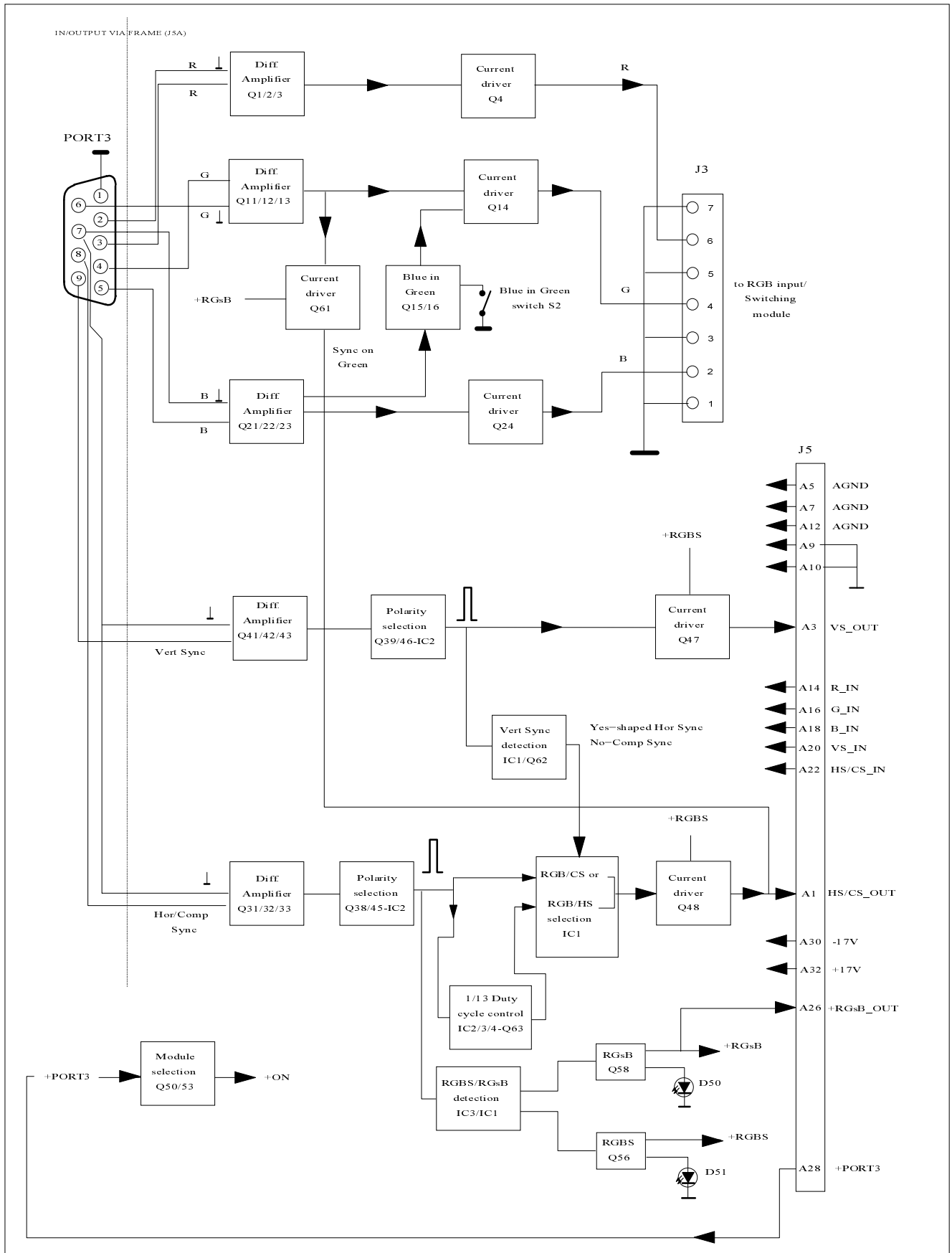
Name		Sheet	
SECOND RGB INPUT		1/1	
Module No	Index	PCB No	Rev
R7621055	1	R780120	4
Date	Drawn	Checked	
20-10-1997	JVDY	SSG	
BARCO PROJECTION SYSTEMS			



COMP.	LOC.	COMP.	LOC.	COMP.	LOC.
C2	D 6	Q21	F 5	R184	D 2
C3	D 6	Q22	F 5	R185	D 2
C4	D 6	Q23	F 5	R186	E 2
C5	D 6	Q24	F 5	R190	H 1
C6	D 6	Q31	F 5	R191	A 3
C7	D 6	Q32	F 5	R192	A 3
C8	D 6	Q33	F 5		
C9	D 6	Q38	F 5	S1	B 3
C10	D 6	Q39	F 5	S2	H 6
C11	D 6	Q41	F 5	SR1	G 1
C12	D 6	Q42	F 5	SR3	G 1
C13	D 6	Q43	F 5	SR5	F 3
C14	D 6	Q45	F 5	SR7	F 3
C15	D 6	Q46	F 5	Z1	G 5
C16	D 6	Q47	F 5		
C17	D 6	Q48	F 5		
C18	D 6	Q49	F 5		
C19	D 6	Q50	F 5		
C20	D 6	Q51	F 5		
C21	D 6	Q52	F 5		
C22	D 6	Q53	F 5		
C23	D 6	Q54	F 5		
C24	D 6	Q55	F 5		
C25	D 6	Q56	F 5		
C26	D 6	Q57	F 5		
C27	D 6	Q58	F 5		
C28	D 6	Q59	F 5		
C29	D 6	Q60	F 5		
C30	D 6	Q61	F 5		
C31	D 6	Q62	F 5		
C32	D 6	Q63	F 5		
C33	D 6	R1	D 6		
C34	D 6	R2	D 6		
C35	D 6	R3	D 6		
C36	D 6	R4	D 6		
C37	D 6	R5	D 6		
C38	D 6	R6	D 6		
C39	D 6	R7	D 6		
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C72	D 6	R40	D 6		
C73	D 6	R41	D 6		
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C102	D 6	R70	D 6		
C103	D 6	R71	D 6		
C104	D 6	R72	D 6		
C105	D 6	R73	D 6		
C106	D 6	R74	D 6		
C107	D 6	R75	D 6		
C108	D 6	R76	D 6		
C109	D 6	R77	D 6		
C110	D 6	R78	D 6		
C111	D 6	R79	D 6		
C112	D 6	R80	D 6		
C113	D 6	R81	D 6		
C114	D 6	R82	D 6		
C115	D 6	R83	D 6		
C116	D 6	R84	D 6		
C117	D 6	R85	D 6		
C118	D 6	R86	D 6		
C119	D 6	R87	D 6		
C120	D 6	R88	D 6		
C121	D 6	R89	D 6		
C122	D 6	R90	D 6		
C123	D 6	R91	D 6		
C124	D 6	R92	D 6		
C125	D 6	R93	D 6		
C126	D 6	R94	D 6		
C127	D 6	R95	D 6		
C128	D 6	R96	D 6		
C129	D 6	R97	D 6		
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C132	D 6	R100	D 6		
C133	D 6	R101	D 6		
C134	D 6	R102	D 6		
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C142	D 6	R110	D 6		
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C144	D 6	R112	D 6		
C145	D 6	R113	D 6		
C146	D 6	R114	D 6		
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C148	D 6	R116	D 6		
C149	D 6	R117	D 6		
C150	D 6	R118	D 6		
C151	D 6	R119	D 6		
C152	D 6	R120	D 6		
C153	D 6	R121	D 6		
C154	D 6	R122	D 6		
C155	D 6	R123	D 6		
C156	D 6	R124	D 6		
C157	D 6	R125	D 6		
C158	D 6	R126	D 6		
C159	D 6	R127	D 6		
C160	D 6	R128	D 6		
C161	D 6	R129	D 6		
C162	D 6	R130	D 6		
C163	D 6	R131	D 6		
C164	D 6	R132	D 6		
C165	D 6	R133	D 6		
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C168	D 6	R136	D 6		
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C172	D 6	R140	D 6		
C173	D 6	R141	D 6		
C174	D 6	R142	D 6		
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C180	D 6	R148	D 6		
C181	D 6	R149	D 6		
C182	D 6	R150	D 6		
C183	D 6	R151	D 6		
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C188	D 6	R156	D 6		
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C199	D 6	R167	D 6		
C200	D 6	R168	D 6		
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C202	D 6	R170	D 6		
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C227	D 6	R195	D 6		
C228	D 6	R196	D 6		
C229	D 6	R197	D 6		
C230	D 6	R198	D 6		
C231	D 6	R199	D 6		
C232	D 6	R200	D 6		

Name	2ND RGB INPUT	Sheet	1/1
Module No	R7621055	PCB No	R760120
Index	- 1	Rev	- 4
Date	14-03-1997	Drawn	JVDY
		Checked	SSG
BARCO PROJECTION SYSTEMS			

Modifications reserved



TECHNICAL DESCRIPTION SECOND RGB INPUT 76 21055

Introduction.

With this board a second RGB analog input can be selected through the D9 (former TTL input) connector next to the first input . Since this board occupies the former TTL connector, the sync polarity must be corrected automatically and the board must also select automatically between “Sync on Green” and “Separate Sync”.

In case of a separate sync input HS the sync width pulse is also set to 1/13th of the line period.

The R, G and B output signals are sent to the “RGB INPUT + SW “ module. The sync outputs VS OUT (if any) and / or the HS / Comp Sync are sent to the VERT DEFL board for further processing.

Red, Green and Blue Inputs.

Three identical differential amplifiers are switched to “active” with the ON voltage. This ON voltage is obtained from the +PORT 3 voltage arriving at contact 28 (=former +TTL voltage) and the transistors Q50 and Q53. Note that the 75 Ohm termination is not switchable.

The **Red** signal is taken from the collector of Q2 and fed to the current driver Q4. The collector resistor of the latter is on the RGB SW + Input board. G OUT and B OUT are got in a similar way.

The green signal is also sent to Q60 and used for synchronisation if “Sync on Green” has been detected (see further).

The blue output at Q23 is also supplying Q15. When the Blue in Green switch S2 is in a closed position, Q16 is blocked and Q15 adds some amount of blue into the green channel via D25 . If however S2 is open Q16 is saturated and Q15 does not get enough base voltage and is consequently blocked.

Note : The “Blue in Green” of the first analog input is switchable via the remote control, thus via software control. Here, the blue in green is switched with S2 and is not affected by the software.

Vertical Sync Input - Automatic Polarity.

If separate vertical sync pulses are available and applied to the Q41 / Q43 input they arrive on the Q39 amplifier / inverter. The inverted pulses are now inverted or not inverted depending on the voltage level of pin 12.

Assume the pulses at the drain are positive. Then Q46 is regularly switched on by these pulses and the average voltage at the collector or at pin 12 is low. In such case the output pin 11 follows the input pin 13 , which means that the pulses are positive at pin 11.

If the pulses are of a negative polarity at the drain, Q39 never gets in conduction and the level at pin 12 is “high” through R127. The input pulses are inverted by the exclusive OR gate.

The polarity of the pulses at pin 11 is thus always positive irrelevant of the input polarity. These pulses are proceeding to the base of Q47 via D54 and to the multiplexer / demultiplexer 4053B, pin 11. The +RGS voltage provides the necessary biasing for Q47.

The 4053B is triple two-channel multiplexer, having three separate digital control inputs. One of these control inputs is pin 11.

If VS pulses are applied to the input, then the HS/CS output must be the HS input. The selection between HS or CS happens in the second multiplexer. On other words, as soon VS pulses are applied, the HS pulses must also be selected.

The presence of the VS pulses determine the correct voltage at pin 9 in order to select the pin 3 input (Shaped Horizontal Sync).

Horizontal Sync/Composite Sync. The HS / CS signal, taken from the collector of Q32 , is passing a similar automatic polarity circuit as the VS pulses.

When no pulses at all are applied to this circuit, the monoflop IC3 is never re-triggered and the output remains all the time "low". This output is filtered and is the control voltage of the multiplexer.

The "0" output is then connected to pin 15 which is at ground level. This all means that Q58 is saturated and the **+RGsB** voltage becomes available for further switching. The LED D50 comes on to indicate the RGsB mode.

When the monoflop is constantly triggered with pulses the output is switched "high" and then the "1" output of the multiplexer is connected to the grounded input (pin 15). This now provides the +RGSB voltage instead.

When no VS pulses are available, the "0" input pin 5 of the multiplexer is chosen. The "1/13 DUTY-CYCLE Control System " circuit cannot be used in this case due to the presence of the VS pulses in the composite sync.

1/13 Duty-Cycle Control System.

When separate HS pulses are used for synchronisation, the width of the pulses is all the time adjusted to 1/13th of the line period.

Positive horizontal pulses are applied to the leading edge input pin 12.

The output pulses are integrated by R177/C87 and applied to the non-inverting input pin 3 of the (Miller-integrating) OPAMP IC4. The other input is installed at a voltage set by R180/R178 (6 volts).

This integrated voltage is proportional with the width of the pulses and inversely proportional with the line period. The output of the Miller-integrator (=OPAMP) determines the current flowing in Q63.

This all means that the width of the sync pulse depends on the line period and the feedback systems provides a setting to 1/13th of the line period.

These SHAPED HORIZONTAL SYNC pulses proceed now to the multiplexer and if VS is available, these pulses are selected and Q48 brings them to the output.

Parts listing R7621055

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	ITEM NO.	SIT.	DESCRIPTION
31	R1330291	HTSN@A TO220I_MICA°15X19	1	C 64	R111532	REPLACED BY V1114855
30	R1330292	HTSN@A TO220I_BUSHREC	1	C 65	R112242	C NP0 MI 100P G100E2
60	R133076	HTSN@A TO5 MNT PAD 3P	3	C 66	R112235	C NP0 MI 27P G100E2
10	R302108	CORE TUBE 3,5 /1,3 X 3	7	C 68	R113724	C POMERA 100N K 63E2 85
	R3484074	CD CT FTMT P 7 170	1	C 69	R1111565	C EL AX 10M T 25E6 85
32	R3620226	SCR D84 M 3 X 8 SS	1	C 70	R112232	C NP0 MI 15P G100E2
40	R3620226	SCR D84 M 3 X 8 SS	1	C 72	R113724	C POMERA 100N K 63E2 85
34	R3661026	NUT D934 M 3 SS	2	C 73	R113730	C POMERA 330N K 63E2 85
42	R3661026	NUT D934 M 3 SS	2	C 74	R113724	C POMERA 100N K 63E2 85
33	R367502	SPR D6798AD 3,2D 6 STZN	1	C 75	R111510	C EL RA 22M M 25E2 85
41	R367502	SPR D6798AD 3,2D 6 STZN	1	C 78	R111510	C EL RA 22M M 25E2 85
50	R367699	RVT AVTRON2,5L 8,1 AL	2	C 79	R111510	C EL RA 22M M 25E2 85
1000	R722276	LOCK49 PCB UNCPL	1	C 80	R113724	C POMERA 100N K 63E2 85
20	R802629	HTSNCPJ49 RGB PR-AMP	1	C 81	R111531	C EL RA 10M M 35E2 85
22	R802692	HTSNCPJ49 FIX HTSN	2	C 82	R113732	C POMERA 470N K 63E2 85
1010	R803238	LOCK51 PCB RGB_A AUT	1	C 83	R111476	C EL RA 47M M 25E2 85
C 2	R112235	C NP0 MI 27P G100E2		C 84	R1111565	C EL AX 10M T 25E6 85
C 3	R111678	C EL BRA 10M M 25E2 85		C 85	R111477	C EL RA 100M M 25E2 85
C 4	R111678	C EL BRA 10M M 25E2 85		C 86	R112242	C NP0 MI 100P G100E2
C 5	R113724	C POMERA 100N K 63E2 85	1	C 87	R113726	C POMERA 150N K 63E2 85
C 6	R113724	C POMERA 100N K 63E2 85		C 88	R111477	C EL RA 100M M 25E2 85
C 7	R112231	C NP0 MI 12P G100E2	1	C 89	R112747	C CE MI 4N7K100E2 85
C 8	R113724	C POMERA 100N K 63E2 85		C 90	R112235	C NP0 MI 27P G100E2
C 9	R112234	C NP0 MI 22P G100E2	1	C 91	R112743	C CE MI 2N2K100E2
C 10	R111477	C EL RA 100M M 25E2 85		D 1	R131621	D S 1N4148 075150 DO35
C 12	R112235	C NP0 MI 27P G100E2		D 2	R131621	D S 1N4148 075150 DO35
C 13	R111678	C EL BRA 10M M 25E2 85		D 3	R131621	D S 1N4148 075150 DO35
C 14	R111678	C EL BRA 10M M 25E2 85		D 4	R131621	D S 1N4148 075150 DO35
C 15	R113724	C POMERA 100N K 63E2 85	1	D 11	R131621	D S 1N4148 075150 DO35
C 16	R113724	C POMERA 100N K 63E2 85		D 12	R131621	D S 1N4148 075150 DO35
C 17	R112232	C NP0 MI 15P G100E2	1	D 13	R131621	D S 1N4148 075150 DO35
C 19	R112239	C NP0 MI 56P G100E2	1	D 14	R131621	D S 1N4148 075150 DO35
C 21	R113722	C POMERA 68N K 63E2 85		D 21	R131621	D S 1N4148 075150 DO35
C 22	R112235	C NP0 MI 27P G100E2		D 22	R131621	D S 1N4148 075150 DO35
C 23	R111678	C EL BRA 10M M 25E2 85		D 23	R131621	D S 1N4148 075150 DO35
C 24	R111678	C EL BRA 10M M 25E2 85		D 24	R131621	D S 1N4148 075150 DO35
C 25	R113724	C POMERA 100N K 63E2 85	1	D 25	R131628	D S BAW62 075200 DO35
C 26	R113724	C POMERA 100N K 63E2 85		D 26	R131621	D S 1N4148 075150 DO35
C 27	R112230	C NP0 MI 10P G100E2	1	D 27	R131621	D S 1N4148 075150 DO35
C 28	R113724	C POMERA 100N K 63E2 85		D 28	R131621	D S 1N4148 075150 DO35
C 29	R112240	C NP0 MI 68P G100E2		D 31	R131621	D S 1N4148 075150 DO35
C 30	R111532	REPLACED BY V1114855		D 32	R131621	D S 1N4148 075150 DO35
C 32	R113724	C POMERA 100N K 63E2 85		D 33	R131621	D S 1N4148 075150 DO35
C 33	R112242	C NP0 MI 100P G100E2		D 34	R131621	D S 1N4148 075150 DO35
C 34	R111531	C EL RA 10M M 35E2 85		D 41	R131621	D S 1N4148 075150 DO35
C 35	R1111565	C EL AX 10M T 25E6 85	1	D 42	R131621	D S 1N4148 075150 DO35
C 43	R111678	C EL BRA 10M M 25E2 85		D 43	R131621	D S 1N4148 075150 DO35
C 44	R111678	C EL BRA 10M M 25E2 85		D 44	R131621	D S 1N4148 075150 DO35
C 45	R111466	C EL RA 100M M 16E2 85		D 45	R1316361	D Y BAT85 030200 DO34
C 46	R1137121	C POMERA 10N K250E2 85		D 46	R1316361	D Y BAT85 030200 DO34
C 47	R113732	C POMERA 470N K 63E2 85		D 48	R131621	D S 1N4148 075150 DO35
C 48	R111532	REPLACED BY V1114855		D 49	R131646	D R 1N4007 10201A DO41
C 49	R113724	C POMERA 100N K 63E2 85		D 50	R131667	D LED D3 T GN
C 50	R113728	C POMERA 220N K 63E2 85	1	D 51	R131667	D LED D3 T GN
C 53	R111678	C EL BRA 10M M 25E2 85		D 52	R1316361	D Y BAT85 030200 DO34
C 54	R111678	C EL BRA 10M M 25E2 85		D 54	R1316361	D Y BAT85 030200 DO34
C 55	R113724	C POMERA 100N K 63E2 85		D 55	R1316361	D Y BAT85 030200 DO34
C 56	R113728	C POMERA 220N K 63E2 85		D 56	R131621	D S 1N4148 075150 DO35
C 63	R113732	C POMERA 470N K 63E2 85	1	I 1	R137391	U 4053B DIP16 P
				I 2	R137392	U 4070B DIP14 P
				I 3	R1373325	U 4098B DIP16 P
				I 4	R134124	U 082 TL DIP8 P
				I 5	R134002	U 7812 TO220 P

RGB Input Aut Sync Track

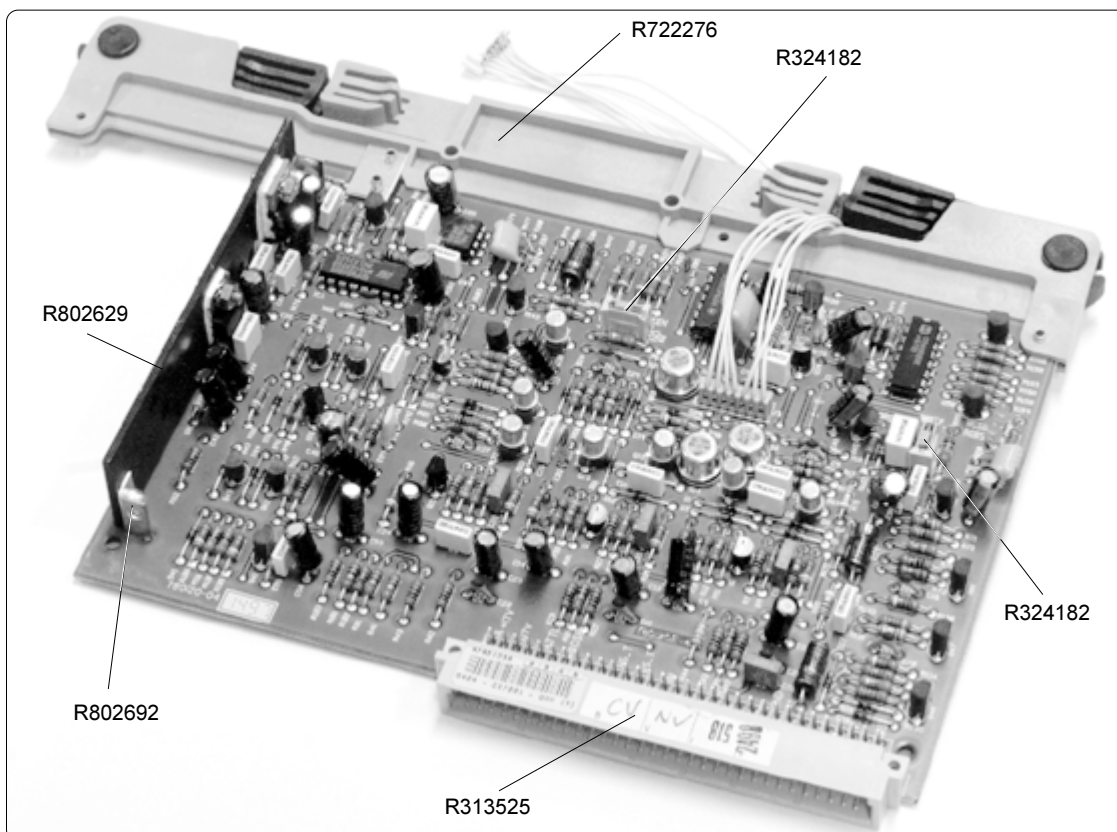
R7621055

I 6	R134016	U 7912	TO220 P	1	R 37	V1026844	R MF H 75E F 0W6 E4
J 5	R313525	JEUR2CMBS	P64 E1C2S 1,6	1	R 38	V1026574	R MF H 39E2 F 0W6 E4
PC	R780120	PCBG1200	INPRGBPS2	1	R 41	V1026844	R MF H 75E F 0W6 E4
Q 1	R1314295	Q BC549B	N SS TO92	1	R 42	V1026005	R MF H100E F 0W6 E4
Q 2	V132504	Q 2N2369A	N SS TO18	1	R 43	V1026005	R MF H100E F 0W6 E4
Q 3	V132504	Q 2N2369A	N SS TO18	1	R 44	V1026426	R MF H 2K74F 0W6 E4
Q 4	R132904	Q 2N2905A	P SS TO39	1	R 45	V1026587	R MF H 39K F 0W6 E4
Q 11	R1314295	Q BC549B	N SS TO92	1	R 46	V1026587	R MF H 39K F 0W6 E4
Q 12	V132504	Q 2N2369A	N SS TO18	1	R 47	V1026005	R MF H100E F 0W6 E4
Q 13	V132504	Q 2N2369A	N SS TO18	1	R 48	V1026004	R MF H 10E F 0W6 E4
Q 14	R132904	Q 2N2905A	P SS TO39	1	R 49	V1026884	R MF H 82E5 F 0W6 E4
Q 15	V132504	Q 2N2369A	N SS TO18	1	R 50	V1026085	R MF H121E F 0W6 E4
Q 16	R1314295	Q BC549B	N SS TO92	1	R 51	V1026085	R MF H121E F 0W6 E4
Q 21	R1314295	Q BC549B	N SS TO92	1	R 52	V1026654	R MF H 47E5 F 0W6 E4
Q 22	V132504	Q 2N2369A	N SS TO18	1	R 56	V1026425	R MF H274E F 0W6 E4
Q 23	V132504	Q 2N2369A	N SS TO18	1	R 57	V1026844	R MF H 75E F 0W6 E4
Q 24	R132904	Q 2N2905A	P SS TO39	1	R 58	V1026004	R MF H 10E F 0W6 E4
Q 31	R1314295	Q BC549B	N SS TO92	1	R 60	V1026425	R MF H274E F 0W6 E4
Q 32	R131411	Q BC549C	N SS TO92	1	R 61	V1026257	R MF H 18K2 F 0W6 E4
Q 33	R131411	Q BC549C	N SS TO92	1	R 62	V1026007	R MF H 10K F 0W6 E4
Q 38	R1329105	Q BS170	FN SS TO92	1	R 63	V1026656	R MF H 4K75F 0W6 E4
Q 39	R132910	Q BS170	FN SS TO92	1	R 64	V1026885	R MF H825E F 0W6 E4
Q 41	R1314295	Q BC549B	N SS TO92	1	R 65	V1026885	R MF H825E F 0W6 E4
Q 42	R131411	Q BC549C	N SS TO92	1	R 70	V1026335	R MF H221E F 0W6 E4
Q 43	R131411	Q BC549C	N SS TO92	1	R 71	V1026575	R MF H392E F 0W6 E4
Q 45	R1314295	Q BC549B	N SS TO92	1	R 72	V1026655	R MF H475E F 0W6 E4
Q 46	R1314295	Q BC549B	N SS TO92	1	R 73	V1026507	R MF H 33K2 F 0W6 E4
Q 47	R1314181	Q BC559B	P SS TO92	1	R 74	V1026338	R MF H221K F 0W6 E4
Q 48	R1314181	Q BC559B	P SS TO92	1	R 75	R1011008	R CFFH 1E J 0W25
Q 50	R1314295	Q BC549B	N SS TO92	1	R 76	V1026005	R MF H100E F 0W6 E4
Q 53	R1314311	Q BC327	P SS TO92	1	R 81	V1026844	R MF H 75E F 0W6 E4
Q 56	R1314311	Q BC327	P SS TO92	1	R 82	V1026005	R MF H100E F 0W6 E4
Q 58	R1314311	Q BC327	P SS TO92	1	R 83	V1026005	R MF H100E F 0W6 E4
Q 60	R1314181	Q BC559B	P SS TO92	1	R 85	V1026587	R MF H 39K F 0W6 E4
Q 61	R1314181	Q BC559B	P SS TO92	1	R 86	V1026587	R MF H 39K F 0W6 E4
Q 62	R1314181	Q BC559B	P SS TO92	1	R 87	V1026006	R MF H 1K F 0W6 E4
Q 63	R1314181	Q BC559B	P SS TO92	1	R 88	V1026656	R MF H 4K75F 0W6 E4
R 1	V1026844	R MF H 75E F 0W6 E4			R 89	V1026427	R MF H 27K4 F 0W6 E4
R 2	V1026005	R MF H100E F 0W6 E4			R 90	V1026724	R MF H 56E2 F 0W6 E4
R 3	V1026005	R MF H100E F 0W6 E4			R 91	V1026724	R MF H 56E2 F 0W6 E4
R 5	V1026587	R MF H 39K F 0W6 E4			R 92	V1026506	R MF H 3K32F 0W6 E4
R 6	V1026587	R MF H 39K F 0W6 E4			R101	V1026844	R MF H 75E F 0W6 E4
R 7	V1026005	R MF H100E F 0W6 E4			R102	V1026005	R MF H100E F 0W6 E4
R 8	V1026004	R MF H 10E F 0W6 E4			R103	V1026005	R MF H100E F 0W6 E4
R 9	V1026884	R MF H 82E5 F 0W6 E4			R105	V1026587	R MF H 39K F 0W6 E4
R 10	V1026085	R MF H121E F 0W6 E4			R106	V1026587	R MF H 39K F 0W6 E4
R 11	V1026085	R MF H121E F 0W6 E4			R107	V1026006	R MF H 1K F 0W6 E4
R 12	V1026684	R MF H 51E1 F 0W6 E4	1		R110	V1026724	R MF H 56E2 F 0W6 E4
R 13	V1026425	R MF H274E F 0W6 E4			R111	V1026724	R MF H 56E2 F 0W6 E4
R 16	V1026425	R MF H274E F 0W6 E4			R112	V1026506	R MF H 3K32F 0W6 E4
R 17	V1026844	R MF H 75E F 0W6 E4			R120	V1026507	R MF H 33K2 F 0W6 E4
R 18	V1026085	R MF H121E F 0W6 E4			R121	V1026656	R MF H 4K75F 0W6 E4
R 21	V1026844	R MF H 75E F 0W6 E4			R122	V1026576	R MF H 3K92F 0W6 E4
R 22	V1026005	R MF H100E F 0W6 E4			R123	V1026427	R MF H 27K4 F 0W6 E4
R 23	V1026005	R MF H100E F 0W6 E4			R124	V1026008	R MF H100K F 0W6 E4
R 25	V1026587	R MF H 39K F 0W6 E4			R125	V1026007	R MF H 10K F 0W6 E4
R 26	V1026587	R MF H 39K F 0W6 E4			R126	V1026007	R MF H 10K F 0W6 E4
R 27	V1026005	R MF H100E F 0W6 E4			R127	V1026427	R MF H 27K4 F 0W6 E4
R 28	V1026004	R MF H 10E F 0W6 E4			R128	V1026576	R MF H 3K92F 0W6 E4
R 29	V1026884	R MF H 82E5 F 0W6 E4			R129	V1026656	R MF H 4K75F 0W6 E4
R 30	V1026085	R MF H121E F 0W6 E4			R130	V1026576	R MF H 3K92F 0W6 E4
R 31	V1026085	R MF H121E F 0W6 E4			R131	V1026426	R MF H 2K74F 0W6 E4
R 32	V1026654	R MF H 47E5 F 0W6 E4			R133	V1026655	R MF H475E F 0W6 E4
R 36	V1026425	R MF H274E F 0W6 E4			R134	V1026576	R MF H 3K92F 0W6 E4
					R135	V1026087	R MF H 12K1 F 0W6 E4
					R136	V1026337	R MF H 22K1 F 0W6 E4
					R137	V1026885	R MF H825E F 0W6 E4
					R140	V1026337	R MF H 22K1 F 0W6 E4

RGB Input Aut Sync Track

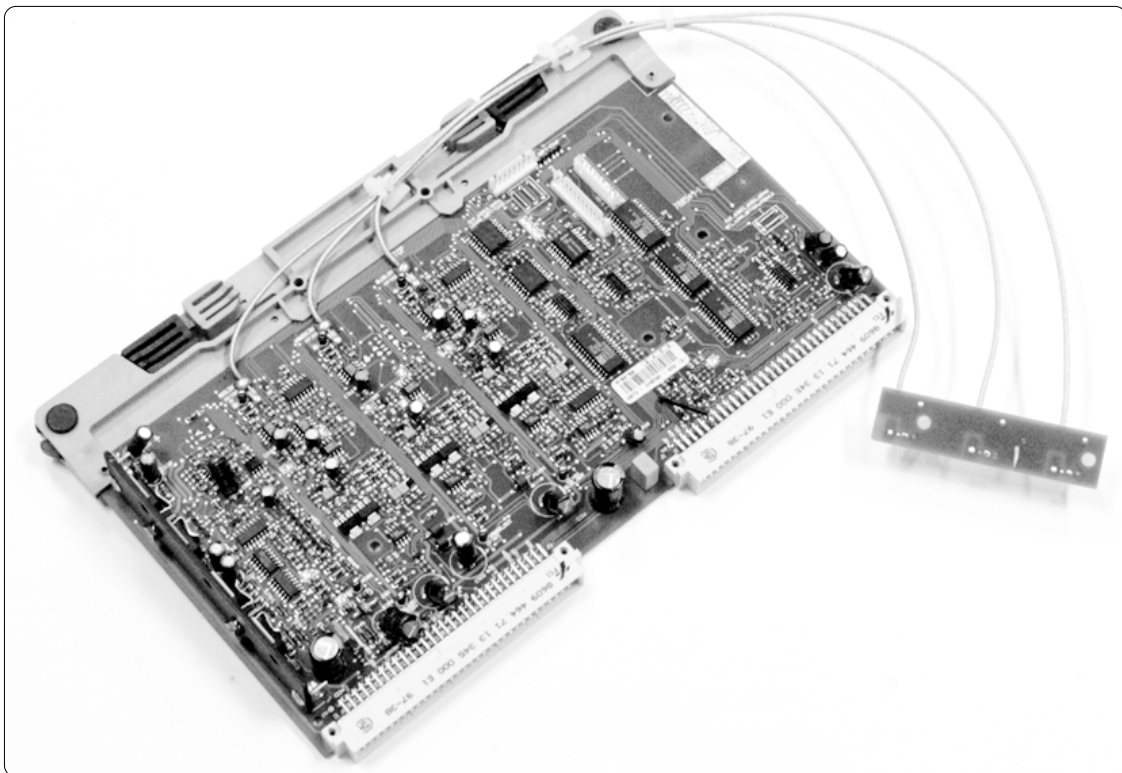
R7621055

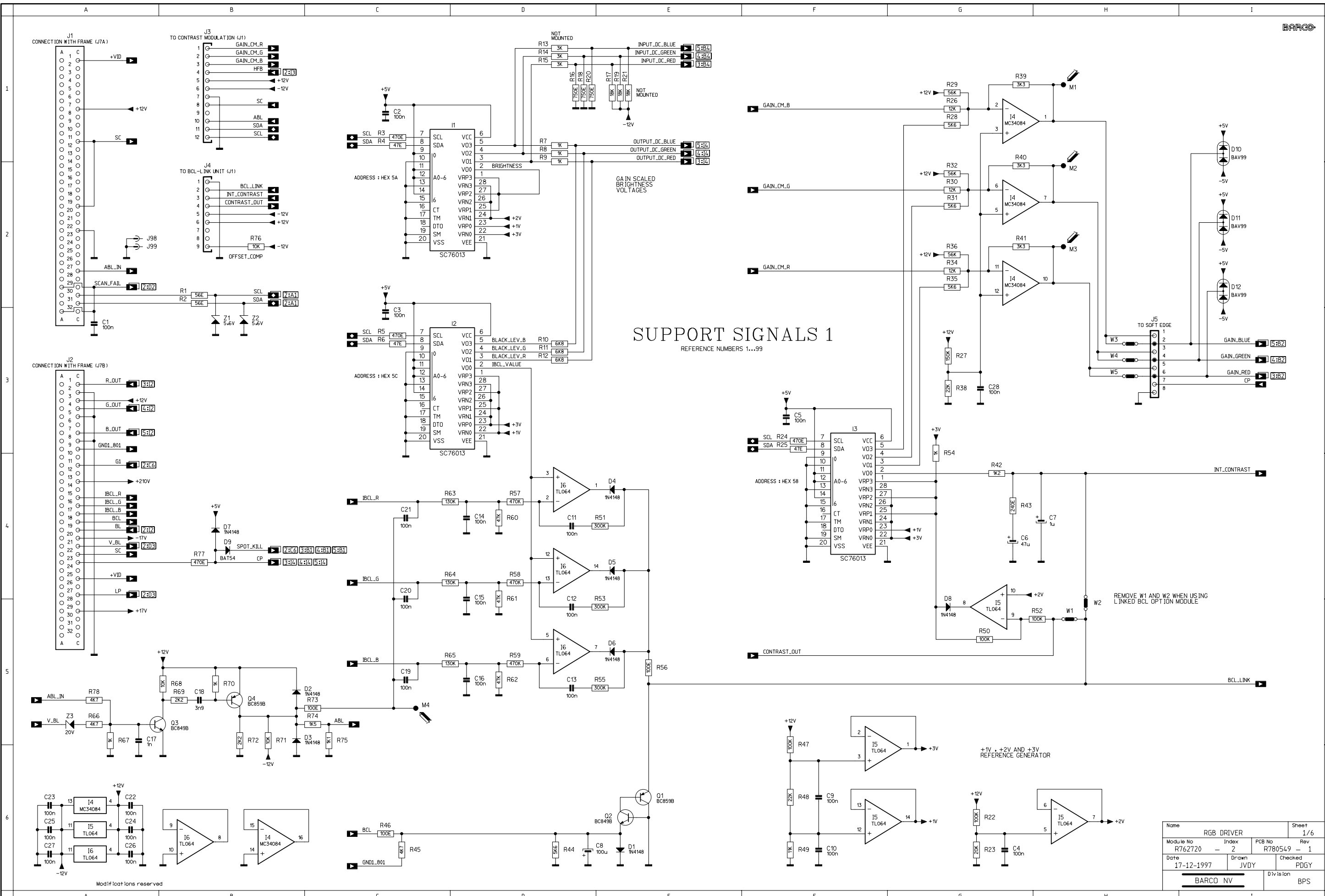
R141	V1026007	R	MF H 10K F 0W6 E4	R181	V1026087	R	MF H 12K1 F 0W6 E4	1
R142	V1026256	R	MF H 1K82F 0W6 E4	R182	V1026006	R	MF H 1K F 0W6 E4	
R143	V1026576	R	MF H 3K92F 0W6 E4	R183	V1026087	R	MF H 12K1 F 0W6 E4	
R150	V1026657	R	MF H 47K5 F 0W6 E4	R184	R101535	R	MF H820E F 0W4 E3	
R151	V1026008	R	MF H100K F 0W6 E4	R185	V1026805	R	MF H681E F 0W6 E4	
R152	V1026506	R	MF H 3K32F 0W6 E4	R186	V1026885	R	MF H825E F 0W6 E4	
R153	V1026506	R	MF H 3K32F 0W6 E4	R190	V1026004	R	MF H 10E F 0W6 E4	
R155	V1026506	R	MF H 3K32F 0W6 E4	R191	V1026728	R	MF H562K F 0W6 E4	
R156	V1026506	R	MF H 3K32F 0W6 E4	R192	V1026009	R	MF H 1M F 0W6 E4	
R158	V1026256	R	MF H 1K82F 0W6 E4	S 1	R324182	SW DIP SLD	1A P 1 BT SN	1
R159	V1026256	R	MF H 1K82F 0W6 E4	S 2	R324182	SW DIP SLD	1A P 1 BT SN	1
R171	V1026506	R	MF H 3K32F 0W6 E4	SR 1	R1011046	R	CFFH 2E2 J 0W35	1 ⚠
R172	V1026006	R	MF H 1K F 0W6 E4	SR 3	R1011129	R	CFFH 10E J 0W25	1 ⚠
R174	V1026656	R	MF H 4K75F 0W6 E4	SR 5	R1011129	R	CFFH 10E J 0W25	1 ⚠
R175	V1026177	R	MF H 15K F 0W6 E4	SR 7	R1011209	R	CFFH 47E J 0W25	1 ⚠
R176	V1026176	R	MF H 1K5 F 0W6 E4	Z 1	R131740	D	ZEN 12V 0W5 C DO35	
R177	R101564	R	MF H220K F 0W4 E3					
R178	R101564	R	MF H220K F 0W4 E3					
R179	R101564	R	MF H220K F 0W4 E3					
R180	R101564	R	MF H220K F 0W4 E3					



PRODUCT SAFETY NOTICE

Components identified by ⚠ have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.





SUPPORT SIGNALS 1

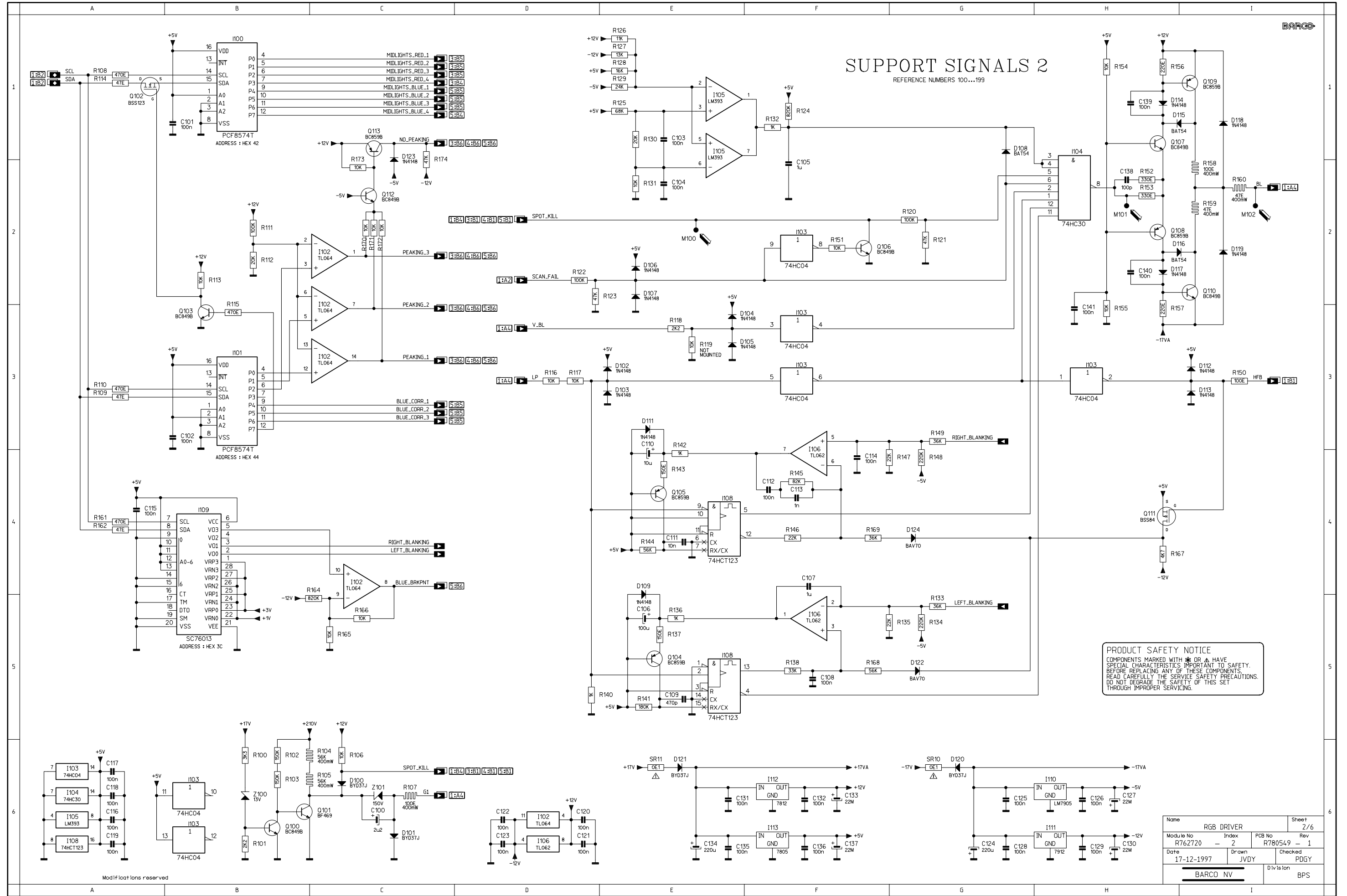
REFERENCE NUMBERS 1...99

Name		RGB DRIVER		Sheet		1/6	
Module No	Index	PCB No	Rev				
R762720	- 2	R780549	- 1				
Date	Drawn	Checked	PDGY				
17-12-1997	JVDY						
BARCO NV			Division	BPS			

Modifications reserved

SUPPORT SIGNALS 2

REFERENCE NUMBERS 100...199



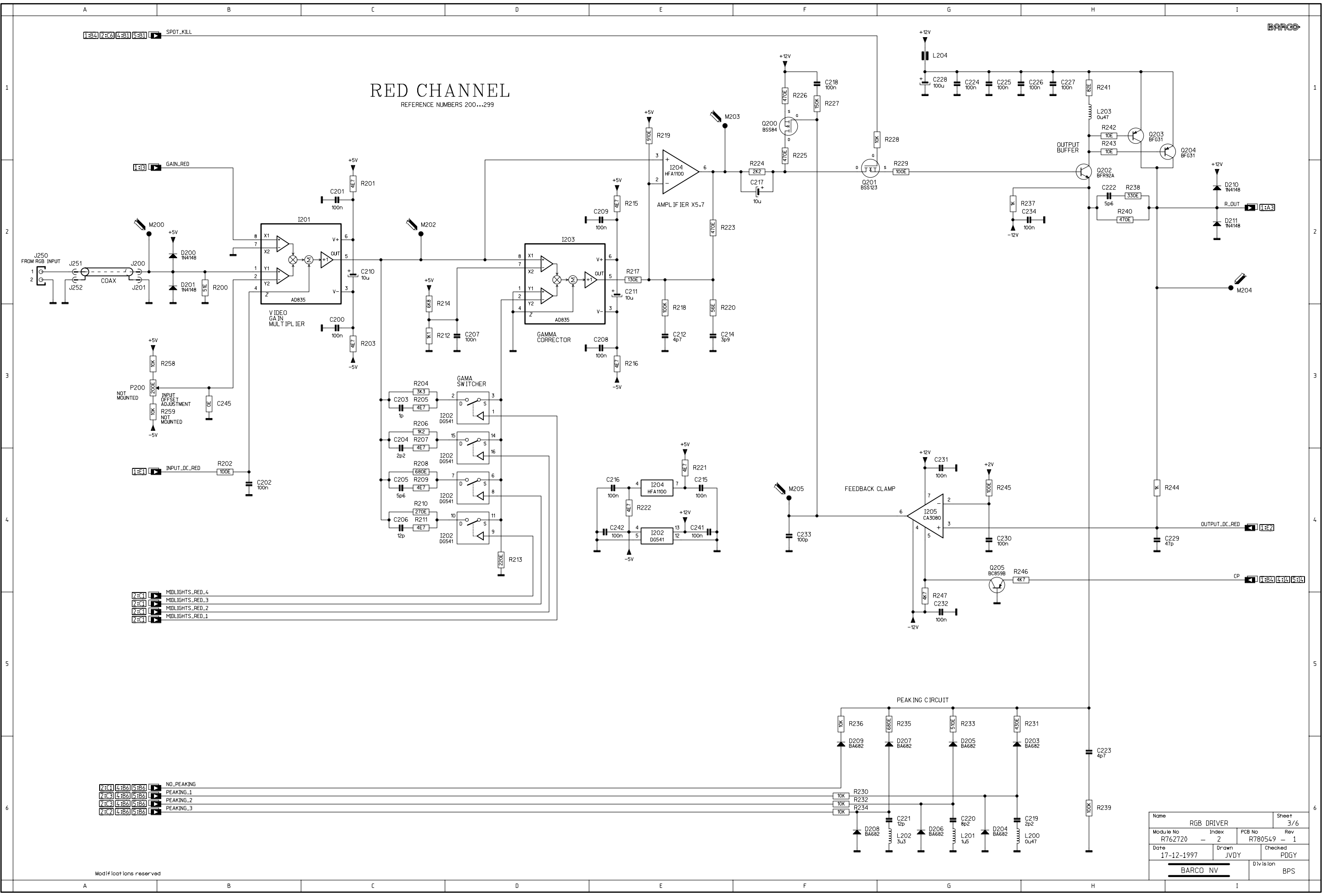
PRODUCT SAFETY NOTICE
 COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

Name	RGB DRIVER	Sheet	2/6
Module No	R762720	Index	2
Date	17-12-1997	PCB No	R780549 - 1
	Drawn	Checked	PDGY
	JVDY		
BARCO NV		Division BPS	

Modifications reserved

RED CHANNEL

REFERENCE NUMBERS 200...299



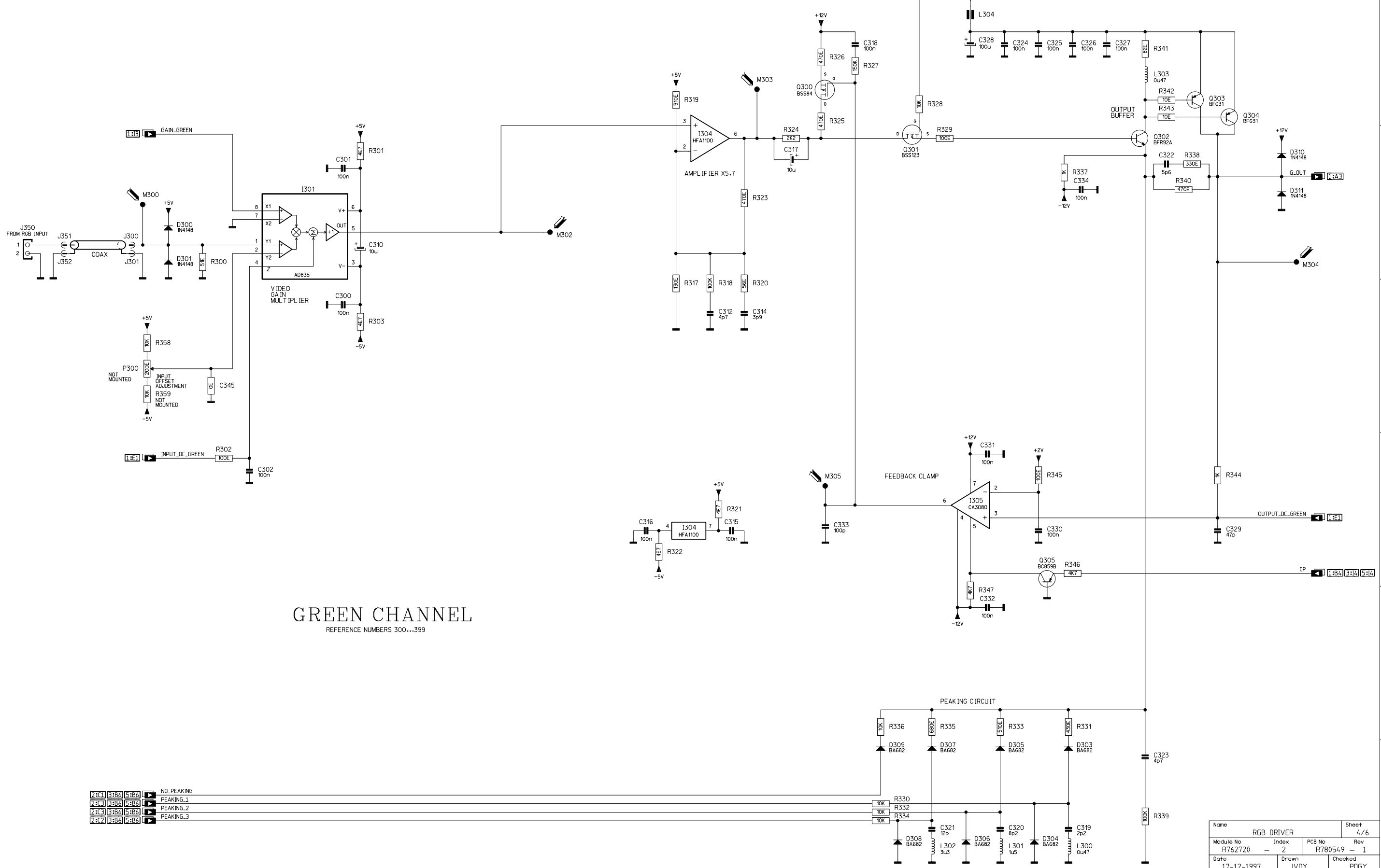
- MIDLIGHTS_RED_4
- MIDLIGHTS_RED_3
- MIDLIGHTS_RED_2
- MIDLIGHTS_RED_1

- NO_PEAKING
- PEAKING_1
- PEAKING_2
- PEAKING_3

Name		RGB DRIVER		Sheet	
				3/6	
Module No	Index	PCB No	Rev		
R762720	- 2	R780549	- 1		
Date	Drawn	Checked			
17-12-1997	JVDY	PDGY			
BARCO NV			Division BPS		

Modifications reserved

1:84 2:6 3:81 5:81 SPOT_KILL



GREEN CHANNEL

REFERENCE NUMBERS 300...399

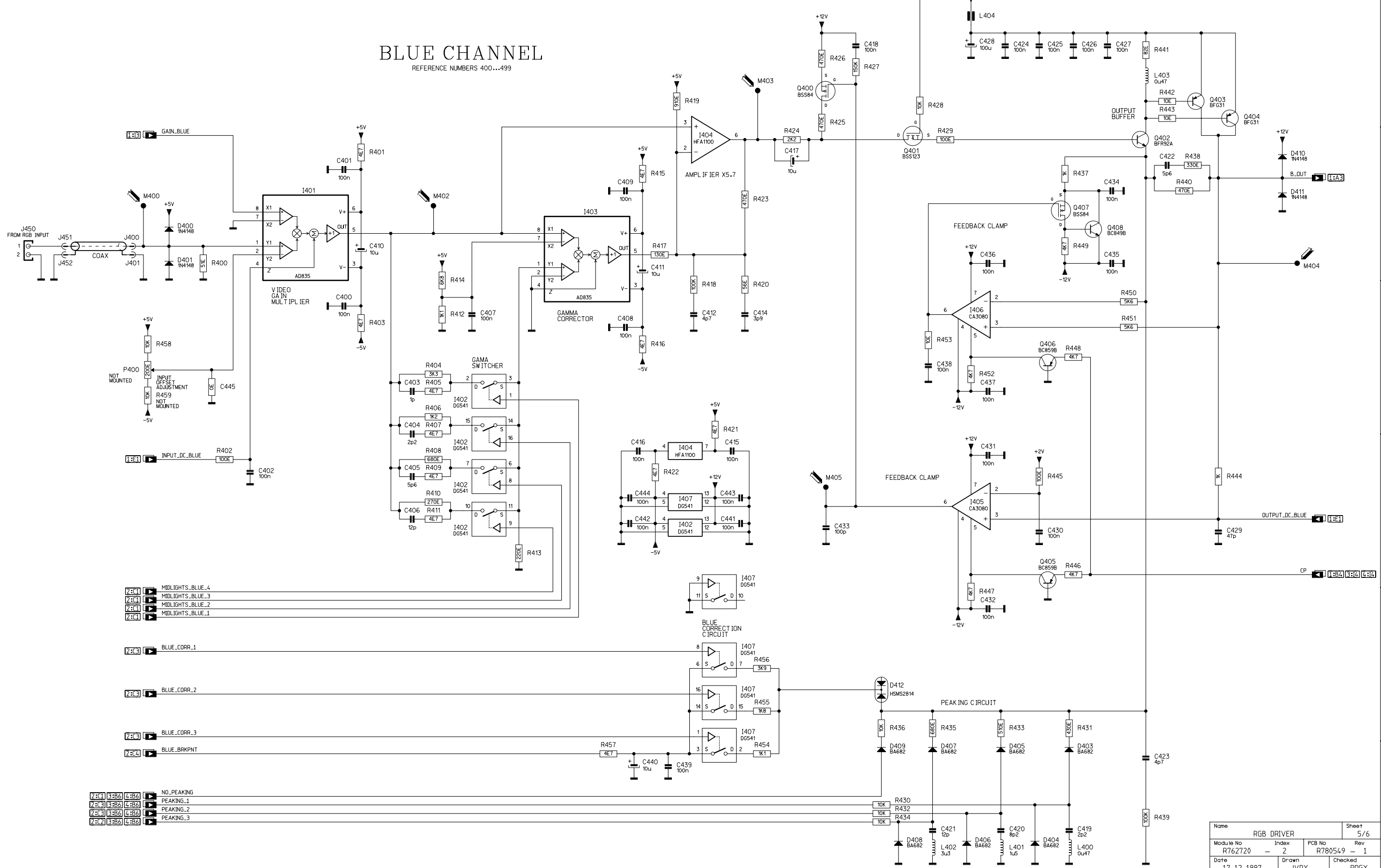
2:1 NO_PEAKING
 2:2 PEAKING_1
 2:3 PEAKING_2
 2:4 PEAKING_3

Name		Sheet	
RGB DRIVER		4/6	
Module No	Index	PCB No	Rev
R762720	- 2	R780549	- 1
Date	Drawn	Checked	PDGY
17-12-1997	JVDY		
BARCO NV		Division BPS	

Modifications reserved

BLUE CHANNEL

REFERENCE NUMBERS 400...499



- NO_PEAKING
- PEAKING_1
- PEAKING_2
- PEAKING_3

- MIDLIGHTS_BLUE_4
- MIDLIGHTS_BLUE_3
- MIDLIGHTS_BLUE_2
- MIDLIGHTS_BLUE_1

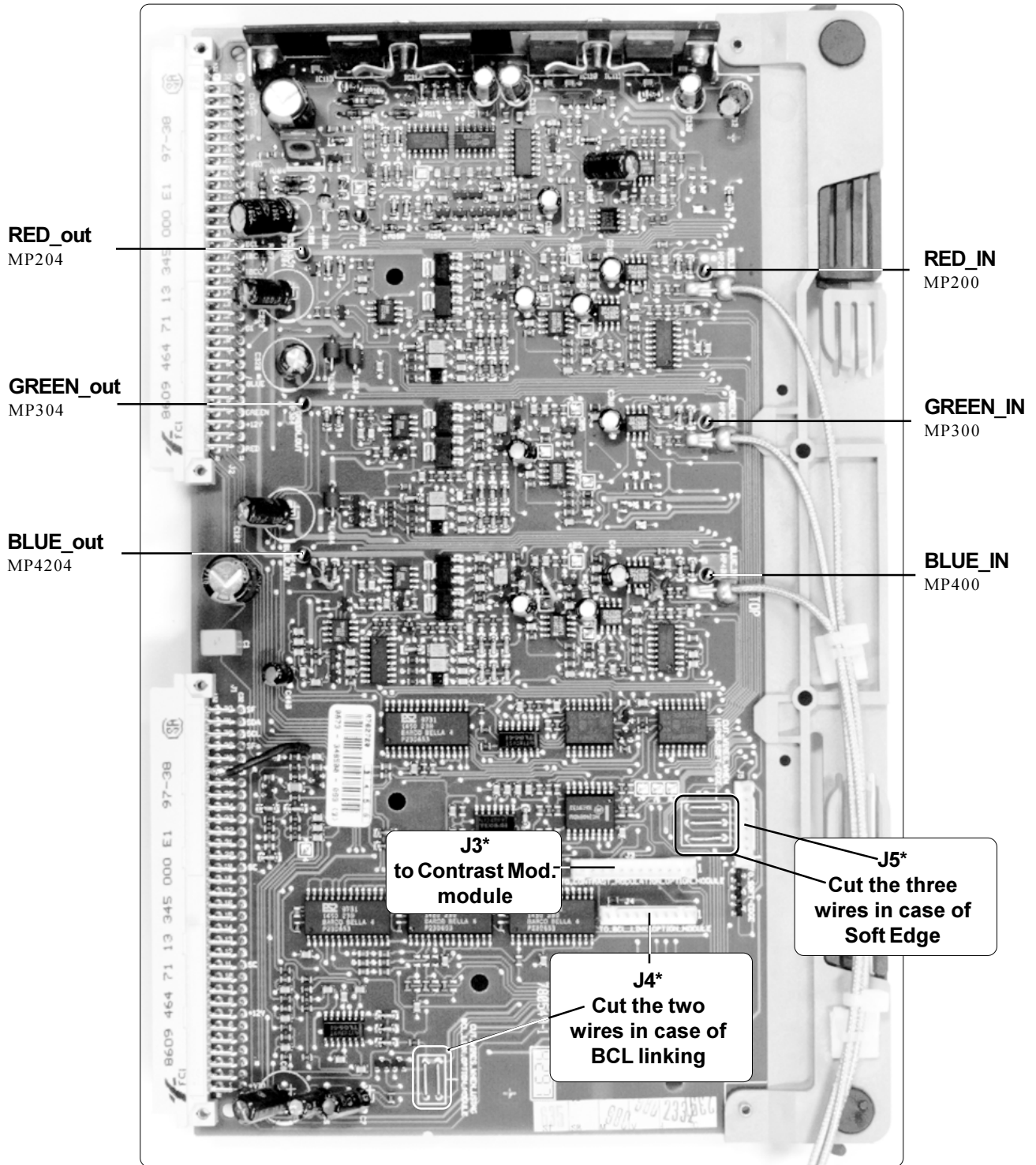
- BLUE_CORR_1
- BLUE_CORR_2
- BLUE_CORR_3
- BLUE_BRKPT

- INPUT_DC_BLUE
- INPUT_OFFSET_ADJUSTMENT
- GAIN_BLUE

Name		RGB DRIVER		Sheet	
Module No		Index		5/6	
R762720		- 2		Rev	
Date		PCB No		R780549 - 1	
17-12-1997		Drawn		Checked	
JVDY		PDGY		D'v is ion	
BARCO NV		BPS			

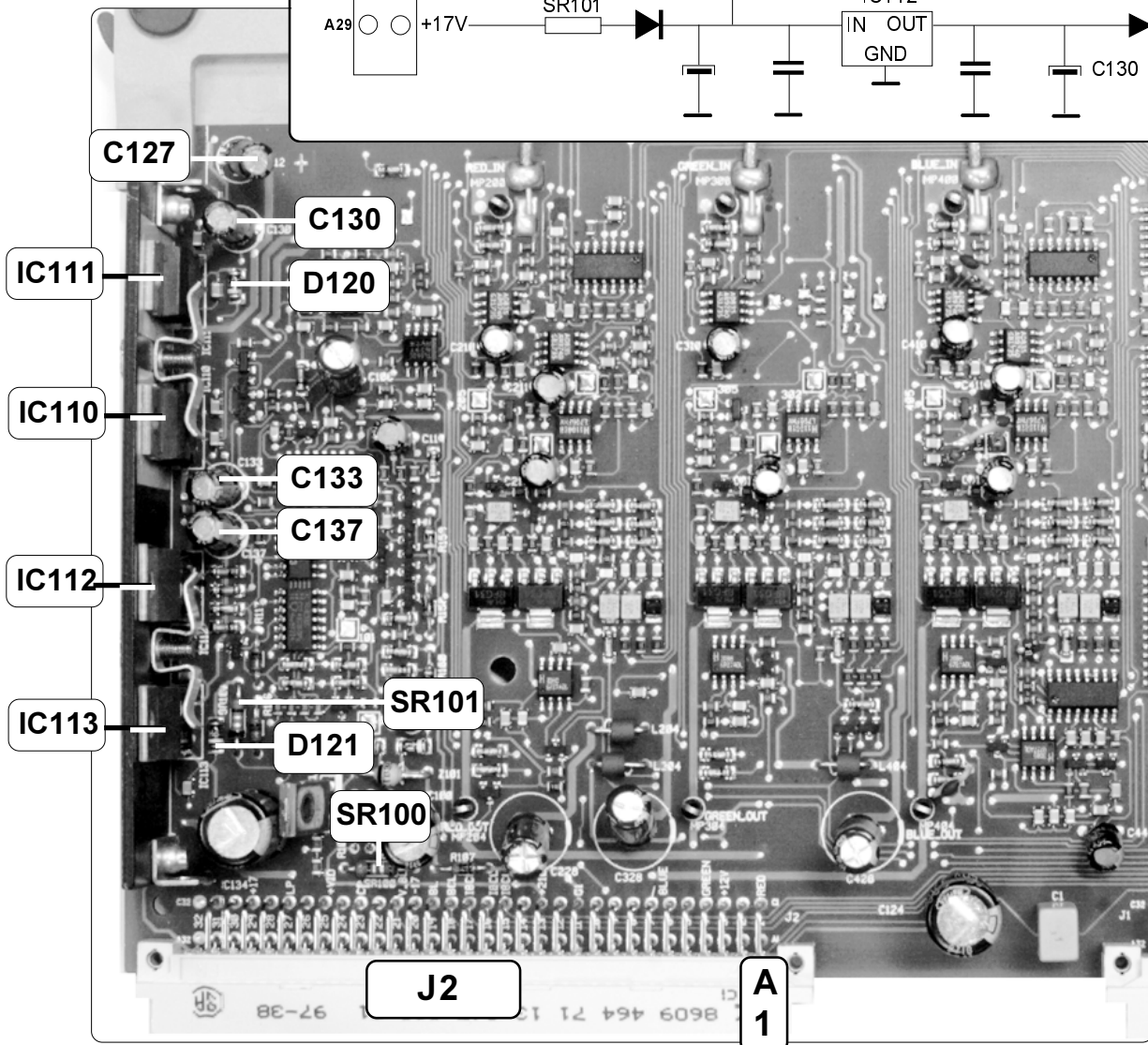
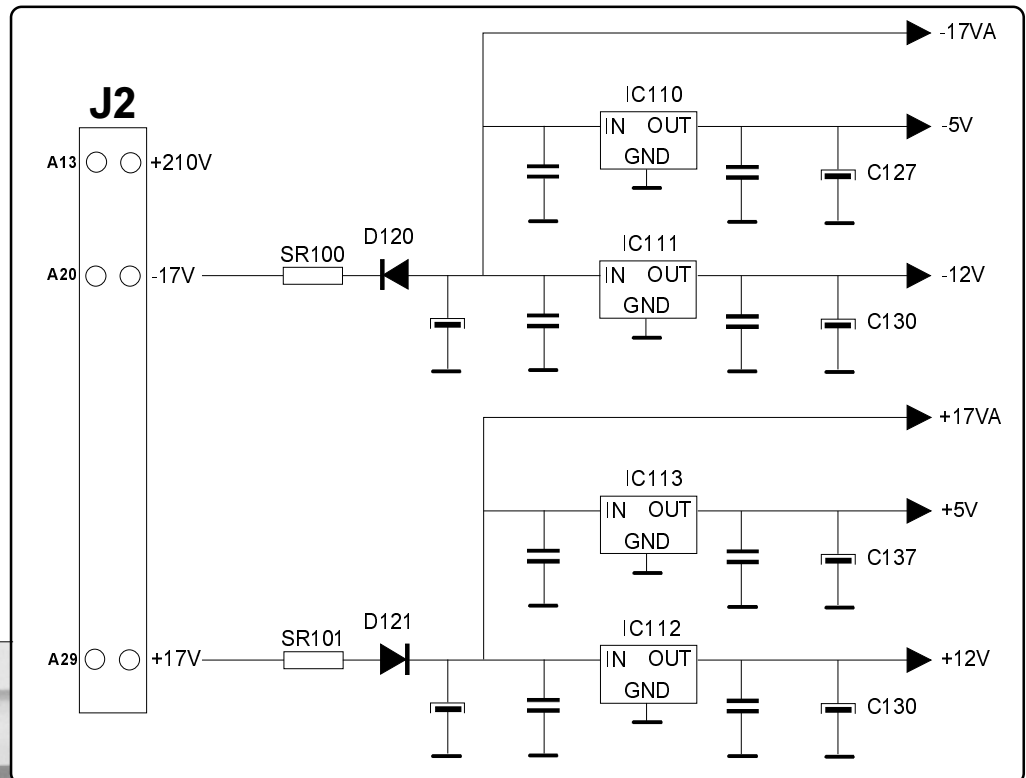
Modifications reserved

Measurement contacts and Connector location



J3*: interconnection with the optional Contrast modulation module
J4*: interconnection with the optional BCL Linking module
J5*: interconnection with the optional Soft Edge module

Power Supply



Technical description of the R-G-B driver R762720**Introduction**

The RGB Driver module contains the following parts:

- Red Video driver channel
- Green Video driver channel
- Blue Video driver channel
- Generation of support signals

General.

The black level of the Red, Green and Blue signals have been clamped at zero volt and the amplitude adjusted to 0.7V on the Input board. The signal is now ready to undergo the Brightness and Contrast controls before reaching the video power amplifiers. The optional contrast modulation can also be added to the contrast voltages if implemented.

Furthermore, as a colour temperature adjustment is also possible, the gain and black levels are controllable per colour and tracked in some way to maintain the colour temperature over the full range.

The red, green and blue colours are passing through identical circuits, but, as a gamma correction is implemented, the red and blue channels are a bit different from the green (master) channel. We'll discuss first the green channel and limit the discussion of the red and blue to the differences with the green.

Green video channel.a) Contrast / Green Gain / Contrast Modulation.

The videosignal is terminated at 50 Ohm with R300 (coax cable is 50 Ohm) , clamped at 0V and has an amplitude of 0.7V on the input board. IC301 is an analog multiplier and its output $W = (X1-X2) \times (Y1-Y2) + Z$.

The videosignal at pin Y1 is thus multiplied with the voltage at pin X1, since X2 and Y2 are both at zero level.

The Z input is at this moment connected to ground level, consequently, the black level at the output is also 0V.

The *GAIN_GREEN* voltage changes from 0.05V ---> 1.2V. This voltage is the result of the general contrast, the individual gain adjustment of the green channel and the contrast modulation board. IC304 (HF A100) amplifies this signal 5.7 times.

b) Brightness / Black level offset controls.

The positive bias voltage obtained by R319/R317 installs a negative black level output in order to use the full output swing if this amplifier. This black level is then again pulled up with R324 and the current generator Q300. C317 means a bypass for the video frequencies.

Via Q301 and R329 the green video is applied to the base of Q302. The latter is, together with Q303/Q304, an non-inverting amplifier with a low impedance drive output, necessary to match the 75 Ohm cable impedance realising the connection with the video output amplifier.

The required biasing current is obtained with R337, which determines together with R340 the gain of this amplifier.

The output signal *G_OUT* and the current from the *DC_GREEN* voltage (= black level offset voltage) is compared with the reference of +2V in IC305(2,3,6) during the *CP* pulse time window.

If, for example, the output voltage is too high, the output of the comparator increases and the current generator Q300 draws less current through R324. The voltage drop across this resistor decreases and compensates the too high DC output level.

c) Peaking adjustment.

By adding an overshoot and undershoot to the video transitions, the picture looks sharper. If these over/undershoots are adjustable in amplitude and width, we can adjust an overshoot matching the bandwidth and the scanning frequency of the signal. If for example the *PEAKING_1* line is high, there is a current flowing in R330/D303/R331 towards the emitter of Q302. The RLC circuit L33/C319/R331 is then in parallel across the emitter resistor. A critically damped sinus peak is seen at the output. *PEAKING_1* gives the smallest peak and must be selected for the highest scanning frequencies.

Three selections are possible related to the scanning frequencies : low / mid and high range.

If no peaking is wanted, R336 means a compensation, in order not to change the gain of this stage.

d) Spot killer.

During operation, the gate of Q301 is at +12V and the latter is fully conducting (5 Ohm resistance). At switching off the projector, the *SPOT_KILL* line is dropped very quickly to 0V and Q301 is immediately blocked. This avoids any undesired voltage peaks that could cause a spot on the CRT.

Red video channel.

The in- and output circuits are identical to the green channel. In between the contrast adjustment and the x 5.7 amplifier, a gamma correction network is incorporated. This gamma correction is based on the red CRT characteristic which is different from the green one.

The relation light output / drive voltage for the red CRT is more linear for the red CRT phosphor than for the green phosphor.

With IC202/IC203 a non-linear correction in the mid-grey zones is now possible.

The (original) video signal is applied to the X1 (pin 8) input of the multiplier IC203. Pin 7 (X2) is fixed at 0.7V with R212/R214.

The same videosignal is, on the other hand, sent through a step attenuator. By switching on one of the switchers of IC202 the video signal is divided with R204, R206, R208, R210 and the common R213. With the *MIDLIGHTS_1, 2, 3, 4* lines one can select between 15 possible steps. The attenuated signal is then applied to the Y2 input whereas the Y1 is at 0V.

The output W, pin 5, is $(X1-X2) \times (Y1-Y2)$.

Assume the input is a linear ramp from 0 -100% or from 0 - 0.7V. The output of the multiplier is then a positive parabola with a maximum at 50% of the ramp and zero at 0 and 100% of the ramp. The amplitude of this parabola is determined by the step attenuator. This parabola is sent to the inverting input of IC204 via R217 and subtracted from the original ramp.

As a result, we obtain a new non-linear ramp where the 50% zone has a decreased amplitude and the 0 and 100% zones are not affected. With this step attenuator, the light output / drive voltage of the red CRT tube can be adjusted to match the green one.

Blue video channel.

a) Gamma correction.

The light output / drive voltage of the blue CRT is less linear than the green one. We can obtain a matching when the polarity of the parabola is inverted compared to the red

one. This is got by swapping the Y1 and Y2 inputs of the multiplier IC403. If we assume again a linear ramp input, the parabola of the output W of IC403 is negative. The final result at output pin 6 of IC404 is a non-linear ramp with an increased amplitude in the grey zones.

b) Blue correction circuit.

The blue phosphor saturates from some drive voltage onwards. This saturation point depends on the CRT phosphor, the spot size, frequency of scanning, temperature, etc...

To resolve this problem, the blue signal undergoes an increased gain from some level onwards (the breakpoint level) .

This level can be adjusted by software and is the *BLUE_BRKPNT* voltage. As soon the emitter voltage of Q402 exceeds the *BLUE_BRKPNT* level with 0.3V diode voltage drop), the diode D412 gets forward biased and R456 is added to the emitter load. The slope of the correction is further adjusted by means of the *BLUE_CORR 1,2,3* voltages. This will add to the emitter load one of the feedback resistor(s) R454, R455, R456 or a combination of these.

c) DC stabilisation, additional clamping.

Without further measures, the DC level of the emitter voltage would not be very stable. It is very much temperature dependent and it varies with the bias current through the stage. An additional clamping is required.

This clamper compares the output voltage with the emitter voltage during the *CP* timing window. The output voltage drives Q407 which is part of the biasing resistor (drain connected to -12V).

Q408 provides a lower impedance for the source of Q407, as the current flow through R437 and Q407 depends also on the video signal.

Blanking.

The composite blanking pulses are the result of the sum of different individual blanking informations added together in the NAND IC104 after modelling to the correct TTL amplitude.

If there is no blanking necessary, the output pin 8 of the NAND is low level and this forward biases Q107 and Q109. The current flowing through the latter installs around +11V at the *BL* output.

In case of blanking, the TTL high level output of IC104 forward biases Q108 now and through Q110 the *BL* output is at around -16V.

D114 - D117 avoid saturation of the transistors and hence improve the switching. Following blanking informations are an input to the NAND gate IC104 :

- *LP* (line pulses) :

are dropped in amplitude with R116/R117/R140 limited with D102/D103, inverted by IC103 (5,6) and input to pin 1.

(note : the same negative line pulses are inverted again with IC103(1,2) and then referred to as *HFB* to be used in the optional Contrast modulation board.

- *V BL* (Vertical Blanking) :

these pulses are also dropped to TTL level, inverted and applied to pin 2.

- *SPOT_KILL* (pin 5) :

The line *SPOT_KILL* is +12V during operation and drops to zero level at switching off the projector to blank the picture.

- *SCAN FAIL* (pin 6):

This line is high when there is no scan fail and drops to zero when scan fail has been detected.

(note : The scan fail condition also drops the SPOT_KILL line to an active low level and hence switches off the video output stages of the UN DRIVE board.

- Supply voltages controls (pin 3,4) :

The +/- 12V and +/-5V supply voltages are checked with the window detector IC105. If one voltage fails or is not within the desired window, the output switches low and the same pins 3, 4 are pulled low level. Note that this will mean a scan fail condition and the SPOT_KILL line will be active as well.

- *LEFT/RIGHT* blanking :

The blanking pulses for the beginning of the scan (left blanking) are generated by IC108 (output 4) by triggering the monoflop on the positive transition of the *LP* pulses. The output pulse train of pin 13 is integrated with R138/C108 and compared with the *LEFT_BLANKING* voltage. The output of the Miller integrator drives the current source Q104 which determines the pulse width of the blanking pulses.

The pulses for the end of the scan are generated by the other monoflop in IC108. Here, the monoflop is triggered by the negative transition and the positive pulses at pin 5 output are used. Consequently, the low level of these pulses is the blanking time. It is obvious that, in this case, the negative pulses at pin 12 are integrated and the obtained voltage is used to adapt the pulse width in conjunction with the *RIGHT_BLANKING* voltage.

The integration of the pulses (average voltage) means a tracking of the range with the line frequency. The absolute value of the required blanking is much smaller for the higher scanning than for the lower scanning signals.

Another tracking is also got by a correction current via D122 and D124 by switching on Q111 with *HFB* pulses.

I²C Interfacing.

IC100 : the *MIDLIGHTS_RED* and *_BLUE* switching on/off voltages.

IC101 : 3 outputs are the *PEAKING* adjustments.

If no peaking is needed, the three outputs are at approx. -11V and hence Q112 and Q113 are both conducting. The output *NO_PEAKING* is then at about +12V.

As soon one output of a comparator switches to a positive high, due to the resistive dividers R171/R172/R173, the emitter of Q112 jumps at -3.5V and the latter gets blocked. The *NO_PEAKING* line is then at about -5V and D123 is forward biased to keep the impedance of the *NO_PEAKING* line low and avoid distortions in the RGB DRIVE stages.

IC100 uses the same address of IC601 on the INPUT board. The data line *SDA* of either one of these I²C interfaces can be disconnected via a switching Mosfet. To select this IC100, output port P7 of IC101 must be low level, blocking Q103 and via R113, Q102 is forward biased.

IC109 :

two outputs are used for the Left/Right blankings and VO3 is the Blue breakpoint output. The DC range is corrected with IC102 (8, 9, 10).

7. Spot suppression

There are two actions at switching off the projector :

- via the **G1 grid** :

The G1 grid voltage is at approximately 0V via D101. During normal operation and on condition the +17V is correct (sufficiently high) Q100 is saturated and Q101 is off as its base is lower than 0.6V. The collector of Q101 is then at 150V or the voltage drop across Z101. C100 is consequently charged up to 150V.

At switching off, the +17V drops very quickly to zero and the +210V rather decays slowly. The moment Q100 shuts off and Q101 gets forward biased, the collector of the latter drops to zero and the - of the capacitor C100 drops also instantly with the same amplitude to -150V. The G1's are dropped to -150V and the CRT's are blanked.

- via the **cathodes** (drive voltage) :

The *SPOT_KILL* line is in normal operation at +12V via R106. When the projector is switched off, the line is dropped to 0V via D100. This zero level cuts the output via the mosfets Q201, Q301, Q401.

Contrast, brightness and gain adjustments

Contrast / Gain.

The general (common) contrast and the individual gain controls are first combined with the (optional) contrast modulation waveforms and as such used in a multiplier (a variable gain amplifier) to adjust the amplitudes.

The contrast voltage is generated by the IC3 *VO0* output and ranges from +1V (minimum) to +3V (maximum). The multiplier requires just the opposite, hence, the contrast voltage is inverted by IC5 (8,9,10). R54 and D8 avoid this contrast voltage from exceeding the +3V as this would mean that the multiplier inverts the polarity of the video signal. This contrast voltage is now three times multiplied with the gain control of each colour. This is realised by using the contrast voltage as the *VRP3*, *VRP2* and *VRP1* supply for the potentiometers 1, 2 and 3 of the Bella IC3 and the other end of the potentiometers (*VRN**) is connected to the +3V, or the minimum contrast.

The outputs *VO1,2,3* are thus the result of the general contrast and the individual gain controls.

The output range of the Bella's is not what is needed by the multipliers. Therefore the OPAMP's / inverters in IC4 adapt the range to 0.05V <---> 1.19V which is the needed range of the multipliers.

BCL / IBCL / Drive modes.

The contrast voltage can be reduced by the *BCL* and *IBCL* informations. The negative *BCL* voltage from the EHT board drives Q2 on from the -0.6V level onwards and this will turn on Q1. The *INTERNAL CONTRAST* voltage or the *BCL_LINK* voltage cannot further increase in this case.

The *IBCL* voltages are slightly smoothed and compared to an adjustable voltage (*IBCL_VALUE*) from the potentiometer "0" of IC2. This value depends on the Eco / Normal / Boost mode drive, set by software.

As soon as an *IBCL_** voltage reaches the *IBCL_VALUE* the corresponding comparator drops the contrast through one or more of the conducting diodes D4, D5, D6.

ABL trigger generator.

The ABL circuits of the RGB video amplifiers are triggered by a pulse of 20 μ S and an

amplitude of 12V. This pulse is added to the *IBCL* lines as these lines are not carrying any valid information during this time. The *ABL* pulse is here ac coupled to the lines through C19, C20 and C21.

As the *ABL* trigger pulse is generated on the *UN SYNC+ VERT DEFL* board and superposed on the *V BL* (has an amplitude from 17V - 34V), the *V BL* is dropped by 20V with Z3 and Q3 will conduct during this *V BL* pulse time.

The differentiator C18/R70 drives Q4 into conduction for 20µS and via R73/C19, C20, C21 they are AC coupled into the *IBCL* lines.

Brightness / Black Level.

Introduction.

The brightness control is about identical to the contrast. The general brightness is combined with the individual *BLACK_LEVEL_** and the resulting *OUTPUT_DC_** voltage is an offset of the reference black level of +2V.

At 50% brightness setting, the black level of the output signal of the *RGB DRIVE* board must be clamped at +2V. This condition is translated into a 2V output for the potentiometers *VO1*, *VO2*, *VO3* of IC1 **and** IC2. Only then, there is no current flow in R7, R8, R9, R10, R11 and R12. The +2V *OUTPUT_DC* is now the same as the reference voltage of the inverters/sommaters (=comparators) IC205, IC305, IC405.

Circuit Implementation.

As *VRN0* = +3V and *VRP0* = +1V the brightness voltage at *VO0* of IC1 changes from +3V (min. brightness) to +1V(max. brightness). This brightness voltage is applied again to the *VRP1,2,3* of three potentiometers in IC1. The other end *VRN1,2,3* of these potentiometers is the reference voltage **+2V**.

These three potentiometers in IC1 obtain the same settings of the gain controls in IC3. If now the brightness voltage is +2V (50%) the outputs *VO1,2,3* of IC1 are ALWAYS at +2V, irrelevant the gain setting.

Any change of the brightness and gain settings change the output voltage(s). With above **“gain scaled brightness voltages”** the black level is tracked with the gain adjustment in order not to deteriorate the colour temperature with contrast.

We can however add to these “gain scaled brightness voltages” an extra offset via R10, R11, R12 to adjust the low lights.

Parts listing RGB Driver R762720

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
150	A556392	SPR PCB L12,6D3,8D3,8DUAL	2	C116	P210227	C# Z5U MU 100N Z 50 0805	1
80	R133085	HTSN@A GEN I_SHT CRA 30	0,00014	C117	P210227	C# Z5U MU 100N Z 50 0805	1
160	R34698902	SLVU SHR D 1,2/0,6 BK 20	1	C118	P210227	C# Z5U MU 100N Z 50 0805	1
60	R3631059	SCR Z933 M 3 X 8 SS	2	C119	P210227	C# Z5U MU 100N Z 50 0805	1
50	R3674391	RVT BLND_R3,2C 3,2WSTAL	2	C120	P210227	C# Z5U MU 100N Z 50 0805	1
10	R367699	RVT AVTRON2,5L 8,1 AL	4	C121	P210227	C# Z5U MU 100N Z 50 0805	1
110	R367699	RVT AVTRON2,5L 8,1 AL	2	C122	P210227	C# Z5U MU 100N Z 50 0805	1
100	R722276	LOCK49 PCB UNCPL	1	C123	P210227	C# Z5U MU 100N Z 50 0805	1
30	R802629	HTSNG800 RGB PR-AMP	1	C124	R111488	C EL RA 220M M 50E2 85	1
40	R802692	HTSNG800 FIX HTSN	1	C125	P210227	C# Z5U MU 100N Z 50 0805	1
70	V1330681	HTSN@A TO220 SPG DUAL	2	C126	P210227	C# Z5U MU 100N Z 50 0805	1
151	Z3495427	CBLU COA RG178 BU 50E 400	3	C127	R111532	REPLACED BY V1114855	1
C 1	V1140426	C POMERA 100N K250E2 85		C128	P210227	C# Z5U MU 100N Z 50 0805	1
C 2	P210227	C# Z5U MU 100N Z 50 0805	1	C129	P210227	C# Z5U MU 100N Z 50 0805	1
C 3	P210227	C# Z5U MU 100N Z 50 0805	1	C130	R111532	REPLACED BY V1114855	1
C 4	P210227	C# Z5U MU 100N Z 50 0805	1	C131	P210227	C# Z5U MU 100N Z 50 0805	1
C 5	P210227	C# Z5U MU 100N Z 50 0805	1	C132	P210227	C# Z5U MU 100N Z 50 0805	1
C 6	R111476	C EL RA 47M M 25E2 85		C133	R111532	REPLACED BY V1114855	1
C 7	R111546	C EL RA 1M M 50E2 85		C134	R111488	C EL RA 220M M 50E2 85	1
C 8	R111477	C EL RA 100M M 25E2 85		C135	P210227	C# Z5U MU 100N Z 50 0805	1
C 9	P210227	C# Z5U MU 100N Z 50 0805	1	C136	P210227	C# Z5U MU 100N Z 50 0805	1
C 10	P210227	C# Z5U MU 100N Z 50 0805	1	C137	R111532	REPLACED BY V1114855	1
C 11	P210227	C# Z5U MU 100N Z 50 0805	1	C138	P210021	C# COG MU 100P J 50 0805	1
C 12	P210227	C# Z5U MU 100N Z 50 0805	1	C139	P210227	C# Z5U MU 100N Z 50 0805	1
C 13	P210227	C# Z5U MU 100N Z 50 0805	1	C140	P210227	C# Z5U MU 100N Z 50 0805	1
C 14	P210227	C# Z5U MU 100N Z 50 0805	1	C141	P210227	C# Z5U MU 100N Z 50 0805	1
C 15	P210227	C# Z5U MU 100N Z 50 0805	1	C200	P210227	C# Z5U MU 100N Z 50 0805	1
C 16	P210227	C# Z5U MU 100N Z 50 0805	1	C201	P210227	C# Z5U MU 100N Z 50 0805	1
C 17	P210035	C# X7R MU 1N K 50 0805	1	C202	P210227	C# Z5U MU 100N Z 50 0805	1
C 18	P210106	C# X7R MU 3N9J 50 1206	1	C203	P210091	C# COG MU 1P D 50 0805	1
C 19	P210227	C# Z5U MU 100N Z 50 0805	1	C204	P210130	C# COG MU 2P2D 50 0805	1
C 20	P210227	C# Z5U MU 100N Z 50 0805	1	C205	P210134	C# COG MU 5P6D 50 0805	1
C 21	P210227	C# Z5U MU 100N Z 50 0805	1	C206	P210182	C# COG MU 12P J 50 0805	1
C 22	P210227	C# Z5U MU 100N Z 50 0805	1	C207	P210227	C# Z5U MU 100N Z 50 0805	1
C 23	P210227	C# Z5U MU 100N Z 50 0805	1	C208	P210227	C# Z5U MU 100N Z 50 0805	1
C 24	P210227	C# Z5U MU 100N Z 50 0805	1	C209	P210227	C# Z5U MU 100N Z 50 0805	1
C 25	P210227	C# Z5U MU 100N Z 50 0805	1	C210	R1115935	C EL5 RA 10M M 35E2 85	1
C 26	P210227	C# Z5U MU 100N Z 50 0805	1	C211	R1115935	C EL5 RA 10M M 35E2 85	1
C 27	P210227	C# Z5U MU 100N Z 50 0805	1	C212	P210061	C# COG MU 4P7D 50 0805	1
C 28	P210227	C# Z5U MU 100N Z 50 0805	1	C214	P210133	C# COG MU 3P9D 50 0805	1
C100	R111568	C EL RA 2M2M250E2 85	1	C215	P210227	C# Z5U MU 100N Z 50 0805	1
C101	P210227	C# Z5U MU 100N Z 50 0805	1	C216	P210227	C# Z5U MU 100N Z 50 0805	1
C102	P210227	C# Z5U MU 100N Z 50 0805	1	C217	R1115935	C EL5 RA 10M M 35E2 85	1
C103	P210227	C# Z5U MU 100N Z 50 0805	1	C218	P210227	C# Z5U MU 100N Z 50 0805	1
C104	P210227	C# Z5U MU 100N Z 50 0805	1	C219	P210130	C# COG MU 2P2D 50 0805	1
C105	P210178	C# Y5V MU 1M Z 16 1206	1	C220	P210135	C# COG MU 8P2D 50 0805	1
C106	R111466	C EL RA 100M M 16E2 85	1	C221	P210182	C# COG MU 12P J 50 0805	1
C107	P210178	C# Y5V MU 1M Z 16 1206	1	C222	P210134	C# COG MU 5P6D 50 0805	1
C108	P210227	C# Z5U MU 100N Z 50 0805	1	C223	P210061	C# COG MU 4P7D 50 0805	1
C109	P210025	C# COG MU 470P J 63 0805	1	C224	P210227	C# Z5U MU 100N Z 50 0805	1
C110	R1115935	C EL5 RA 10M M 35E2 85	1	C225	P210227	C# Z5U MU 100N Z 50 0805	1
C111	P210041	C# X7R MU 10N K 50 0805	1	C226	P210227	C# Z5U MU 100N Z 50 0805	1
C112	P210227	C# Z5U MU 100N Z 50 0805	1	C227	P210227	C# Z5U MU 100N Z 50 0805	1
C113	P210035	C# X7R MU 1N K 50 0805	1	C228	R111466	C EL RA 100M M 16E2 85	1
C114	P210227	C# Z5U MU 100N Z 50 0805	1	C229	P210019	C# COG MU 47P J 50 0805	1
C115	P210227	C# Z5U MU 100N Z 50 0805	1	C230	P210227	C# Z5U MU 100N Z 50 0805	1
				C231	P210227	C# Z5U MU 100N Z 50 0805	1
				C232	P210227	C# Z5U MU 100N Z 50 0805	1
				C233	P210021	C# COG MU 100P J 50 0805	1
				C234	P210227	C# Z5U MU 100N Z 50 0805	1
				C241	P210227	C# Z5U MU 100N Z 50 0805	1
				C242	P210227	C# Z5U MU 100N Z 50 0805	1
				C245	P201354	R# CE H OE J OW12 0805	1
				C247	P210227	C# Z5U MU 100N Z 50 0805	1
				C247	P210227	C# Z5U MU 100N Z 50 0805	1

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
C300	P210227	C# Z5U MU 100N Z 50 0805	1	C441	P210227	C# Z5U MU 100N Z 50 0805	1
C301	P210227	C# Z5U MU 100N Z 50 0805	1	C442	P210227	C# Z5U MU 100N Z 50 0805	1
C302	P210227	C# Z5U MU 100N Z 50 0805	1	C443	P210227	C# Z5U MU 100N Z 50 0805	1
C310	R1115935	C EL5 RA 10M M 35E2 85		C444	P210227	C# Z5U MU 100N Z 50 0805	1
C312	P210061	C# COG MU 4P7D 50 0805	1	C445	P201354	R# CE H 0E J 0W12 0805	1
C314	P210133	C# COG MU 3P9D 50 0805	1	C446	R112238	C NP0 MI 47P G100E2	1
C315	P210227	C# Z5U MU 100N Z 50 0805	1	C447	P210227	C# Z5U MU 100N Z 50 0805	1
C316	P210227	C# Z5U MU 100N Z 50 0805	1	C447	P210227	C# Z5U MU 100N Z 50 0805	1
C317	R1115935	C EL5 RA 10M M 35E2 85		C448	R112230	C NP0 MI 10P G100E2	1
C318	P210227	C# Z5U MU 100N Z 50 0805	1	C448	R112230	C NP0 MI 10P G100E2	1
C319	P210130	C# COG MU 2P2D 50 0805	1	C449	R112238	C NP0 MI 47P G100E2	1
C320	P210135	C# COG MU 8P2D 50 0805	1				
C321	P210182	C# COG MU 12P J 50 0805	1	D 1	P234099	D#4148 R DMMELF	1
C322	P210134	C# COG MU 5P6D 50 0805	1	D 2	P234099	D#4148 R DMMELF	1
C323	P210061	C# COG MU 4P7D 50 0805	1	D 3	P234099	D#4148 R DMMELF	1
C324	P210227	C# Z5U MU 100N Z 50 0805	1	D 4	P234099	D#4148 R DMMELF	1
C325	P210227	C# Z5U MU 100N Z 50 0805	1	D 5	P234099	D#4148 R DMMELF	1
C326	P210227	C# Z5U MU 100N Z 50 0805	1	D 6	P234099	D#4148 R DMMELF	1
C327	P210227	C# Z5U MU 100N Z 50 0805	1	D 7	P234099	D#4148 R DMMELF	1
C328	R111466	C EL RA 100M M 16E2 85		D 8	P234099	D#4148 R DMMELF	1
C329	P210019	C# COG MU 47P J 50 0805	1	D 9	P234055	D#BAT54 SCH SOT23	1
C330	P210227	C# Z5U MU 100N Z 50 0805	1	D 10	P234047	D#BAV99 SER SOT23	1
C331	P210227	C# Z5U MU 100N Z 50 0805	1	D 11	P234047	D#BAV99 SER SOT23	1
C332	P210227	C# Z5U MU 100N Z 50 0805	1	D 12	P234047	D#BAV99 SER SOT23	1
C333	P210021	C# COG MU 100P J 50 0805	1	D100	P234196	D#BYD37J AVA SOD87	1
C334	P210227	C# Z5U MU 100N Z 50 0805	1	D101	P234196	D#BYD37J AVA SOD87	1
C345	P201354	R# CE H 0E J 0W12 0805	1	D102	P234099	D#4148 R DMMELF	1
C400	P210227	C# Z5U MU 100N Z 50 0805	1	D103	P234099	D#4148 R DMMELF	1
C401	P210227	C# Z5U MU 100N Z 50 0805	1	D104	P234099	D#4148 R DMMELF	1
C402	P210227	C# Z5U MU 100N Z 50 0805	1	D105	P234099	D#4148 R DMMELF	1
C403	P210091	C# COG MU 1P D 50 0805	1	D106	P234099	D#4148 R DMMELF	1
C404	P210130	C# COG MU 2P2D 50 0805	1	D107	P234099	D#4148 R DMMELF	1
C405	P210134	C# COG MU 5P6D 50 0805	1	D108	P234055	D#BAT54 SCH SOT23	1
C406	P210182	C# COG MU 12P J 50 0805	1	D109	P234099	D#4148 R DMMELF	1
C407	P210227	C# Z5U MU 100N Z 50 0805	1	D111	P234099	D#4148 R DMMELF	1
C408	P210227	C# Z5U MU 100N Z 50 0805	1	D112	P234099	D#4148 R DMMELF	1
C409	P210227	C# Z5U MU 100N Z 50 0805	1	D113	P234099	D#4148 R DMMELF	1
C410	R1115935	C EL5 RA 10M M 35E2 85		D114	P234099	D#4148 R DMMELF	1
C411	R1115935	C EL5 RA 10M M 35E2 85		D115	P234055	D#BAT54 SCH SOT23	1
C412	P210061	C# COG MU 4P7D 50 0805	1	D116	P234055	D#BAT54 SCH SOT23	1
C414	P210133	C# COG MU 3P9D 50 0805	1	D117	P234099	D#4148 R DMMELF	1
C415	P210227	C# Z5U MU 100N Z 50 0805	1	D118	P234099	D#4148 R DMMELF	1
C416	P210227	C# Z5U MU 100N Z 50 0805	1	D119	P234099	D#4148 R DMMELF	1
C417	R1115935	C EL5 RA 10M M 35E2 85		D120	P234196	D#BYD37J AVA SOD87	1
C418	P210227	C# Z5U MU 100N Z 50 0805	1	D121	P234196	D#BYD37J AVA SOD87	1
C419	P210130	C# COG MU 2P2D 50 0805	1	D122	P234004	D#BAV70 C-C SOT23	1
C420	P210135	C# COG MU 8P2D 50 0805	1	D123	P234099	D#4148 R DMMELF	1
C421	P210182	C# COG MU 12P J 50 0805	1	D124	P234004	D#BAV70 C-C SOT23	1
C422	P210134	C# COG MU 5P6D 50 0805	1	D200	P234099	D#4148 R DMMELF	1
C423	P210061	C# COG MU 4P7D 50 0805	1	D201	P234099	D#4148 R DMMELF	1
C424	P210227	C# Z5U MU 100N Z 50 0805	1	D203	P234259	D#BA682 S035A1 DMMELF	1
C425	P210227	C# Z5U MU 100N Z 50 0805	1	D204	P234259	D#BA682 S035A1 DMMELF	1
C426	P210227	C# Z5U MU 100N Z 50 0805	1	D205	P234259	D#BA682 S035A1 DMMELF	1
C427	P210227	C# Z5U MU 100N Z 50 0805	1	D206	P234259	D#BA682 S035A1 DMMELF	1
C428	R111466	C EL RA 100M M 16E2 85		D207	P234259	D#BA682 S035A1 DMMELF	1
C429	P210019	C# COG MU 47P J 50 0805	1	D208	P234259	D#BA682 S035A1 DMMELF	1
C430	P210227	C# Z5U MU 100N Z 50 0805	1	D209	P234259	D#BA682 S035A1 DMMELF	1
C431	P210227	C# Z5U MU 100N Z 50 0805	1	D210	P234099	D#4148 R DMMELF	1
C432	P210227	C# Z5U MU 100N Z 50 0805	1	D211	P234099	D#4148 R DMMELF	1
C433	P210021	C# COG MU 100P J 50 0805	1	D300	P234099	D#4148 R DMMELF	1
C434	P210227	C# Z5U MU 100N Z 50 0805	1	D301	P234099	D#4148 R DMMELF	1
C435	P210227	C# Z5U MU 100N Z 50 0805	1	D303	P234259	D#BA682 S035A1 DMMELF	1
C436	P210227	C# Z5U MU 100N Z 50 0805	1	D304	P234259	D#BA682 S035A1 DMMELF	1
C437	P210227	C# Z5U MU 100N Z 50 0805	1	D305	P234259	D#BA682 S035A1 DMMELF	1
C438	P210227	C# Z5U MU 100N Z 50 0805	1	D306	P234259	D#BA682 S035A1 DMMELF	1
C439	P210227	C# Z5U MU 100N Z 50 0805	1	D307	P234259	D#BA682 S035A1 DMMELF	1
C440	R1115935	C EL5 RA 10M M 35E2 85		D308	P234259	D#BA682 S035A1 DMMELF	1

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
D309	P234259	D#BA682 S035A1 DMMELF	1	L301	P250509	CH# 1.5 UH L1210	1
D310	P234099	D#4148 R DMMELF	1	L302	P250516	CH# 3.3 UH L1210	1
D311	P234099	D#4148 R DMMELF	1	L303	P250005	L# FFECH 0,47MM160	1
D400	P234099	D#4148 R DMMELF	1	L304	R302108	CORE TUBE 3,5/1,3 X 3	1
D401	P234099	D#4148 R DMMELF	1	L304	Z34501104	WU CUSN 0,60 MM 40	1
D403	P234259	D#BA682 S035A1 DMMELF	1	L400	P250005	L# FFECH 0,47MM160	1
D404	P234259	D#BA682 S035A1 DMMELF	1	L401	P250509	CH# 1.5 UH L1210	1
D405	P234259	D#BA682 S035A1 DMMELF	1	L402	P250516	CH# 3.3 UH L1210	1
D406	P234259	D#BA682 S035A1 DMMELF	1	L403	P250005	L# FFECH 0,47MM160	1
D407	P234259	D#BA682 S035A1 DMMELF	1	L404	R302108	CORE TUBE 3,5/1,3 X 3	1
D408	P234259	D#BA682 S035A1 DMMELF	1	L404	Z34501104	WU CUSN 0,60 MM 40	1
D409	P234259	D#BA682 S035A1 DMMELF	1				
D410	P234099	D#4148 R DMMELF	1	M102	R313729	J TESTEYE D2.1 H3.1 SNBK	1
D411	P234099	D#4148 R DMMELF	1	M200	R313729	J TESTEYE D2.1 H3.1 SNBK	1
D412	P234289	D#HSMS2814 SCH SOT23	1	M204	R313729	J TESTEYE D2.1 H3.1 SNBK	1
I 1	P230653	U#BELLA 4 SOL28 P	1	M300	R313729	J TESTEYE D2.1 H3.1 SNBK	1
I 2	P230653	U#BELLA 4 SOL28 P	1	M304	R313729	J TESTEYE D2.1 H3.1 SNBK	1
I 3	P230653	U#BELLA 4 SOL28 P	1	M400	R313729	J TESTEYE D2.1 H3.1 SNBK	1
I 4	P230705	U#34084 MC SOL16 P	1	M404	R313729	J TESTEYE D2.1 H3.1 SNBK	1
I 5	P230328	U#064 TL SO14 I	1	PC	R780549	PCB G808S RGB DVR	1
I 6	P230328	U#064 TL SO14 I	1				
I100	P230543	U#8574 PCF SOL16 P	1	Q 1	P232044	Q#BC859B P SS SOT23	1
I101	P230543	U#8574 PCF SOL16 P	1	Q 2	P232043	Q#BC849B N SS SOT23	1
I102	P230328	U#064 TL SO14 I	1	Q 3	P232043	Q#BC849B N SS SOT23	1
I103	P230021	U#74HC04 SO14 I	1	Q 4	P232044	Q#BC859B P SS SOT23	1
I104	P230206	U#74HC30 SO14 I	1	Q100	P232043	Q#BC849B N SS SOT23	1
I105	P230028	U#393 LM SO8 P	1	Q101	R131471	Q BF458 N P TO126	1
I106	P230006	U#062 TL SO8 P	1	Q102	P232046	Q#BSS123 F SS SOT23	1
I108	P230073	U#74HCT123 SO16 I	1	Q103	P232043	Q#BC849B N SS SOT23	1
I109	P230653	U#BELLA 4 SOL28 P	1	Q104	P232044	Q#BC859B P SS SOT23	1
I110	R134011	U 7905C TO220 P	1	Q105	P232044	Q#BC859B P SS SOT23	1
I111	R134016	U 7912 TO220 P	1	Q106	P232043	Q#BC849B N SS SOT23	1
I112	R134002	U 7812 TO220 P	1	Q107	P232043	Q#BC849B N SS SOT23	1
I113	R134001	U 7805 TO220 P	1	Q108	P232044	Q#BC859B P SS SOT23	1
I201	P231489	U#835 AD SO8 I	1	Q109	P232044	Q#BC859B P SS SOT23	1
I202	P231526	U#541 DG SO16 I	1	Q110	P232043	Q#BC849B N SS SOT23	1
I203	P231489	U#835 AD SO8 I	1	Q111	P232079	Q#BSS84 F SS SOT23	1
I204	P231233	U#1100 HFA SO8 I	1	Q112	P232043	Q#BC849B N SS SOT23	1
I205	P230100	U#3080 CA SO8 P	1	Q113	P232044	Q#BC859B P SS SOT23	1
I301	P231489	U#835 AD SO8 I	1	Q200	P232079	Q#BSS84 F SS SOT23	1
I304	P231233	U#1100 HFA SO8 I	1	Q201	P232046	Q#BSS123 F SS SOT23	1
I305	P230100	U#3080 CA SO8 P	1	Q202	P232090	Q#BFR92A N SS SOT23	1
I401	P231489	U#835 AD SO8 I	1	Q203	P232109	Q#BFG31 P SS SOT223	1
I402	P231526	U#541 DG SO16 I	1	Q204	P232109	Q#BFG31 P SS SOT223	1
I403	P231489	U#835 AD SO8 I	1	Q205	P232044	Q#BC859B P SS SOT23	1
I404	P231233	U#1100 HFA SO8 I	1	Q300	P232079	Q#BSS84 F SS SOT23	1
I405	P230100	U#3080 CA SO8 P	1	Q301	P232046	Q#BSS123 F SS SOT23	1
I406	P230100	U#3080 CA SO8 P	1	Q302	P232090	Q#BFR92A N SS SOT23	1
I407	P231526	U#541 DG SO16 I	1	Q303	P232109	Q#BFG31 P SS SOT223	1
J 1	R313531	JEUR2C MBS P64 E1C3S 1,6	1	Q304	P232109	Q#BFG31 P SS SOT223	1
J 2	R313531	JEUR2C MBS P64 E1C3S 1,6	1	Q305	P232044	Q#BC859B P SS SOT23	1
J 3	R313932	J C T H MBT P12 M2SN WH	1	Q400	P232079	Q#BSS84 F SS SOT23	1
J 4	R313929	J C T H MBT P 9 M2SN WH	1	Q401	P232046	Q#BSS123 F SS SOT23	1
J 5	R313928	J C T H MBT P 8 M2SN WH	1	Q402	P232090	Q#BFR92A N SS SOT23	1
J250	V3136372	JMD1 C FBT P 2 E1SN 8,5	1	Q403	P232109	Q#BFG31 P SS SOT223	1
J350	V3136372	JMD1 C FBT P 2 E1SN 8,5	1	Q404	P232109	Q#BFG31 P SS SOT223	1
J450	V3136372	JMD1 C FBT P 2 E1SN 8,5	1	Q405	P232044	Q#BC859B P SS SOT23	1
L200	P250005	L# FFECH 0,47MM160	1	Q406	P232044	Q#BC859B P SS SOT23	1
L201	P250509	CH# 1.5 UH L1210	1	Q407	P232079	Q#BSS84 F SS SOT23	1
L202	P250516	CH# 3.3 UH L1210	1	Q408	P232043	Q#BC849B N SS SOT23	1
L203	P250005	L# FFECH 0,47MM160	1	R 1	P201057	R# CE H 56E F 0W12 0805	1
L204	R302108	CORE TUBE 3,5/1,3 X 3	1	R 2	P201057	R# CE H 56E F 0W12 0805	1
L204	Z34501104	WU CUSN 0,60 MM 40	1	R 3	P201079	R# CE H470E F 0W12 0805	1
L300	P250005	L# FFECH 0,47MM160	1	R 4	P201055	R# CE H 47E F 0W12 0805	1
				R 5	P201079	R# CE H470E F 0W12 0805	1

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R 6	P201055	R# CE H 47E F 0W12 0805	1	R102	P201139	R# CE H150K F 0W12 0805	1
R 7	P201087	R# CE H 1K F 0W12 0805	1	R103	P201139	R# CE H150K F 0W12 0805	1
R 8	P201087	R# CE H 1K F 0W12 0805	1	R104	R101557	R MF H 56K F 0W4 E3	1
R 9	P201087	R# CE H 1K F 0W12 0805	1	R105	R101557	R MF H 56K F 0W4 E3	1
R 10	P201107	R# CE H 6K8 F 0W12 0805	1	R106	P201111	R# CE H 10K F 0W12 0805	1
R 11	P201107	R# CE H 6K8 F 0W12 0805	1	R107	R101524	R MF H100E F 0W4 E3	1
R 12	P201107	R# CE H 6K8 F 0W12 0805	1	R108	P201079	R# CE H470E F 0W12 0805	1
R 16	P201084	R# CE H750E F 0W12 0805	1	R109	P201055	R# CE H 47E F 0W12 0805	1
R 18	P201084	R# CE H750E F 0W12 0805	1	R110	P201079	R# CE H470E F 0W12 0805	1
R 20	P201084	R# CE H750E F 0W12 0805	1	R111	P201135	R# CE H100K F 0W12 0805	1
R 22	P201135	R# CE H100K F 0W12 0805	1	R112	P201118	R# CE H 20K F 0W12 0805	1
R 23	P201118	R# CE H 20K F 0W12 0805	1	R113	P201111	R# CE H 10K F 0W12 0805	1
R 24	P201079	R# CE H470E F 0W12 0805	1	R114	P201055	R# CE H 47E F 0W12 0805	1
R 25	P201055	R# CE H 47E F 0W12 0805	1	R115	P201079	R# CE H470E F 0W12 0805	1
R 26	P201113	R# CE H 12K F 0W12 0805	1	R116	R101548	R MF H 10K F 0W4 E3	1
R 27	P201139	R# CE H150K F 0W12 0805	1	R117	R101548	R MF H 10K F 0W4 E3	1
R 28	P201105	R# CE H 5K6 F 0W12 0805	1	R118	P201095	R# CE H 2K2 F 0W12 0805	1
R 29	P201129	R# CE H 56K F 0W12 0805	1	R120	P201135	R# CE H100K F 0W12 0805	1
R 30	P201113	R# CE H 12K F 0W12 0805	1	R121	P201127	R# CE H 47K F 0W12 0805	1
R 31	P201105	R# CE H 5K6 F 0W12 0805	1	R122	P201135	R# CE H100K F 0W12 0805	1
R 32	P201129	R# CE H 56K F 0W12 0805	1	R123	P201127	R# CE H 47K F 0W12 0805	1
R 34	P201113	R# CE H 12K F 0W12 0805	1	R124	P201157	R# CE H820K F 0W12 0805	1
R 35	P201105	R# CE H 5K6 F 0W12 0805	1	R125	P201131	R# CE H 68K F 0W12 0805	1
R 36	P201129	R# CE H 56K F 0W12 0805	1	R126	P201112	R# CE H 11K F 0W12 0805	1
R 38	P201119	R# CE H 22K F 0W12 0805	1	R127	P201114	R# CE H 13K F 0W12 0805	1
R 39	P201099	R# CE H 3K3 F 0W12 0805	1	R128	P201116	R# CE H 16K F 0W12 0805	1
R 40	P201099	R# CE H 3K3 F 0W12 0805	1	R129	P201120	R# CE H 24K F 0W12 0805	1
R 41	P201099	R# CE H 3K3 F 0W12 0805	1	R130	P201118	R# CE H 20K F 0W12 0805	1
R 42	P201089	R# CE H 1K2 F 0W12 0805	1	R131	P201111	R# CE H 10K F 0W12 0805	1
R 43	P201072	R# CE H240E F 0W12 0805	1	R132	P201087	R# CE H 1K F 0W12 0805	1
R 44	P201105	R# CE H 5K6 F 0W12 0805	1	R133	P201124	R# CE H 36K F 0W12 0805	1
R 45	P201103	R# CE H 4K7 F 0W12 0805	1	R134	P201143	R# CE H220K F 0W12 0805	1
R 46	P201063	R# CE H100E F 0W12 0805	1	R135	P201119	R# CE H 22K F 0W12 0805	1
R 47	P201135	R# CE H100K F 0W12 0805	1	R136	P201087	R# CE H 1K F 0W12 0805	1
R 48	P201119	R# CE H 22K F 0W12 0805	1	R137	P201067	R# CE H150E F 0W12 0805	1
R 49	P201112	R# CE H 11K F 0W12 0805	1	R138	P201123	R# CE H 33K F 0W12 0805	1
R 50	P201135	R# CE H100K F 0W12 0805	1	R140	P201087	R# CE H 1K F 0W12 0805	1
R 51	P201146	R# CE H300K F 0W12 0805	1	R141	P201141	R# CE H180K F 0W12 0805	1
R 52	P201135	R# CE H100K F 0W12 0805	1	R142	P201087	R# CE H 1K F 0W12 0805	1
R 53	P201146	R# CE H300K F 0W12 0805	1	R143	P201067	R# CE H150E F 0W12 0805	1
R 54	P201087	R# CE H 1K F 0W12 0805	1	R144	P201129	R# CE H 56K F 0W12 0805	1
R 55	P201146	R# CE H300K F 0W12 0805	1	R145	P201133	R# CE H 82K F 0W12 0805	1
R 56	P201063	R# CE H100E F 0W12 0805	1	R146	P201119	R# CE H 22K F 0W12 0805	1
R 57	P201151	R# CE H470K F 0W12 0805	1	R147	P201119	R# CE H 22K F 0W12 0805	1
R 58	P201151	R# CE H470K F 0W12 0805	1	R148	P201143	R# CE H220K F 0W12 0805	1
R 59	P201151	R# CE H470K F 0W12 0805	1	R149	P201124	R# CE H 36K F 0W12 0805	1
R 60	P201127	R# CE H 47K F 0W12 0805	1	R150	P201063	R# CE H100E F 0W12 0805	1
R 61	P201127	R# CE H 47K F 0W12 0805	1	R151	P201111	R# CE H 10K F 0W12 0805	1
R 62	P201127	R# CE H 47K F 0W12 0805	1	R152	P201075	R# CE H330E F 0W12 0805	1
R 63	P201138	R# CE H130K F 0W12 0805	1	R153	P201075	R# CE H330E F 0W12 0805	1
R 64	P201138	R# CE H130K F 0W12 0805	1	R154	P201111	R# CE H 10K F 0W12 0805	1
R 65	P201138	R# CE H130K F 0W12 0805	1	R155	P201111	R# CE H 10K F 0W12 0805	1
R 66	P201103	R# CE H 4K7 F 0W12 0805	1	R156	P201071	R# CE H220E F 0W12 0805	1
R 67	P201087	R# CE H 1K F 0W12 0805	1	R157	P201071	R# CE H220E F 0W12 0805	1
R 68	P201111	R# CE H 10K F 0W12 0805	1	R158	R101524	R MF H100E F 0W4 E3	1
R 69	P201095	R# CE H 2K2 F 0W12 0805	1	R159	R101520	R MF H 47E F 0W4 E3	1
R 70	P201087	R# CE H 1K F 0W12 0805	1	R160	R101520	R MF H 47E F 0W4 E3	1
R 71	P201111	R# CE H 10K F 0W12 0805	1	R161	P201079	R# CE H470E F 0W12 0805	1
R 72	P201095	R# CE H 2K2 F 0W12 0805	1	R162	P201055	R# CE H 47E F 0W12 0805	1
R 73	P201063	R# CE H100E F 0W12 0805	1	R164	P201157	R# CE H820K F 0W12 0805	1
R 74	P201091	R# CE H 1K5 F 0W12 0805	1	R165	P201111	R# CE H 10K F 0W12 0805	1
R 75	P201088	R# CE H 1K1 F 0W12 0805	1	R166	P201111	R# CE H 10K F 0W12 0805	1
R 76	P201111	R# CE H 10K F 0W12 0805	1	R167	P201103	R# CE H 4K7 F 0W12 0805	1
R 77	P201079	R# CE H470E F 0W12 0805	1	R168	P201129	R# CE H 56K F 0W12 0805	1
R 78	R101544	R MF H 4K7 F 0W4 E3	1	R169	P201124	R# CE H 36K F 0W12 0805	1
R100	P201099	R# CE H 3K3 F 0W12 0805	1	R170	P201111	R# CE H 10K F 0W12 0805	1
R101	P201095	R# CE H 2K2 F 0W12 0805	1	R171	P201111	R# CE H 10K F 0W12 0805	1

R-G-B Driver

R762720


SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R172	P201111	R# CE H 10K F 0W12 0805	1	R329	P201063	R# CE H100E F 0W12 0805	1
R173	P201111	R# CE H 10K F 0W12 0805	1	R330	P201111	R# CE H 10K F 0W12 0805	1
R174	P201127	R# CE H 47K F 0W12 0805	1	R331	P201078	R# CE H430E F 0W12 0805	1
R200	P201056	R# CE H 51E F 0W12 0805	1	R332	P201111	R# CE H 10K F 0W12 0805	1
R201	P200693	R# CE H 4E7 J 0W12 0805	1	R333	P201080	R# CE H510E F 0W12 0805	1
R202	P201063	R# CE H100E F 0W12 0805	1	R334	P201111	R# CE H 10K F 0W12 0805	1
R203	P200693	R# CE H 4E7 J 0W12 0805	1	R335	P201083	R# CE H680E F 0W12 0805	1
R204	P201099	R# CE H 3K3 F 0W12 0805	1	R336	P201111	R# CE H 10K F 0W12 0805	1
R205	P201031	R# CE H 4E7 F 0W12 0805	1	R337	P201087	R# CE H 1K F 0W12 0805	1
R206	P201089	R# CE H 1K2 F 0W12 0805	1	R338	P201075	R# CE H330E F 0W12 0805	1
R207	P201031	R# CE H 4E7 F 0W12 0805	1	R339	P201135	R# CE H100K F 0W12 0805	1
R208	P201083	R# CE H680E F 0W12 0805	1	R340	P201079	R# CE H470E F 0W12 0805	1
R209	P201031	R# CE H 4E7 F 0W12 0805	1	R341	P201061	R# CE H 82E F 0W12 0805	1
R210	P201073	R# CE H270E F 0W12 0805	1	R342	P201039	R# CE H 10E F 0W12 0805	1
R211	P201031	R# CE H 4E7 F 0W12 0805	1	R343	P201039	R# CE H 10E F 0W12 0805	1
R212	P201088	R# CE H 1K1 F 0W12 0805	1	R344	P201087	R# CE H 1K F 0W12 0805	1
R213	P201071	R# CE H220E F 0W12 0805	1	R345	P201063	R# CE H100E F 0W12 0805	1
R214	P201107	R# CE H 6K8 F 0W12 0805	1	R346	P201103	R# CE H 4K7 F 0W12 0805	1
R215	P200693	R# CE H 4E7 J 0W12 0805	1	R347	P201103	R# CE H 4K7 F 0W12 0805	1
R216	P200693	R# CE H 4E7 J 0W12 0805	1	R400	P201056	R# CE H 51E F 0W12 0805	1
R217	P201066	R# CE H130E F 0W12 0805	1	R401	P200693	R# CE H 4E7 J 0W12 0805	1
R218	P201135	R# CE H100K F 0W12 0805	1	R402	P201063	R# CE H100E F 0W12 0805	1
R219	P201086	R# CE H910E F 0W12 0805	1	R403	P200693	R# CE H 4E7 J 0W12 0805	1
R220	P201057	R# CE H 56E F 0W12 0805	1	R404	P201099	R# CE H 3K3 F 0W12 0805	1
R221	P200693	R# CE H 4E7 J 0W12 0805	1	R405	P201031	R# CE H 4E7 F 0W12 0805	1
R222	P200693	R# CE H 4E7 J 0W12 0805	1	R406	P201089	R# CE H 1K2 F 0W12 0805	1
R223	P201079	R# CE H470E F 0W12 0805	1	R407	P201031	R# CE H 4E7 F 0W12 0805	1
R224	P201095	R# CE H 2K2 F 0W12 0805	1	R408	P201083	R# CE H680E F 0W12 0805	1
R225	P201079	R# CE H470E F 0W12 0805	1	R409	P201031	R# CE H 4E7 F 0W12 0805	1
R226	P201079	R# CE H470E F 0W12 0805	1	R410	P201073	R# CE H270E F 0W12 0805	1
R227	P201139	R# CE H150K F 0W12 0805	1	R411	P201031	R# CE H 4E7 F 0W12 0805	1
R228	P201111	R# CE H 10K F 0W12 0805	1	R412	P201088	R# CE H 1K1 F 0W12 0805	1
R229	P201063	R# CE H100E F 0W12 0805	1	R413	P201071	R# CE H220E F 0W12 0805	1
R230	P201111	R# CE H 10K F 0W12 0805	1	R414	P201107	R# CE H 6K8 F 0W12 0805	1
R231	P201078	R# CE H430E F 0W12 0805	1	R415	P200693	R# CE H 4E7 J 0W12 0805	1
R232	P201111	R# CE H 10K F 0W12 0805	1	R416	P200693	R# CE H 4E7 J 0W12 0805	1
R233	P201080	R# CE H510E F 0W12 0805	1	R417	P201066	R# CE H130E F 0W12 0805	1
R234	P201111	R# CE H 10K F 0W12 0805	1	R418	P201135	R# CE H100K F 0W12 0805	1
R235	P201083	R# CE H680E F 0W12 0805	1	R419	P201086	R# CE H910E F 0W12 0805	1
R236	P201111	R# CE H 10K F 0W12 0805	1	R420	P201057	R# CE H 56E F 0W12 0805	1
R237	P201087	R# CE H 1K F 0W12 0805	1	R421	P200693	R# CE H 4E7 J 0W12 0805	1
R238	P201075	R# CE H330E F 0W12 0805	1	R422	P200693	R# CE H 4E7 J 0W12 0805	1
R239	P201135	R# CE H100K F 0W12 0805	1	R423	P201079	R# CE H470E F 0W12 0805	1
R240	P201079	R# CE H470E F 0W12 0805	1	R424	P201095	R# CE H 2K2 F 0W12 0805	1
R241	P201061	R# CE H 82E F 0W12 0805	1	R425	P201079	R# CE H470E F 0W12 0805	1
R242	P201039	R# CE H 10E F 0W12 0805	1	R426	P201079	R# CE H470E F 0W12 0805	1
R243	P201039	R# CE H 10E F 0W12 0805	1	R427	P201139	R# CE H150K F 0W12 0805	1
R244	P201087	R# CE H 1K F 0W12 0805	1	R428	P201111	R# CE H 10K F 0W12 0805	1
R245	P201063	R# CE H100E F 0W12 0805	1	R429	P201063	R# CE H100E F 0W12 0805	1
R246	P201103	R# CE H 4K7 F 0W12 0805	1	R430	P201111	R# CE H 10K F 0W12 0805	1
R247	P201103	R# CE H 4K7 F 0W12 0805	1	R431	P201078	R# CE H430E F 0W12 0805	1
R300	P201056	R# CE H 51E F 0W12 0805	1	R432	P201111	R# CE H 10K F 0W12 0805	1
R301	P200693	R# CE H 4E7 J 0W12 0805	1	R433	P201080	R# CE H510E F 0W12 0805	1
R302	P201063	R# CE H100E F 0W12 0805	1	R434	P201111	R# CE H 10K F 0W12 0805	1
R303	P200693	R# CE H 4E7 J 0W12 0805	1	R435	P201083	R# CE H680E F 0W12 0805	1
R317	P201066	R# CE H130E F 0W12 0805	1	R436	P201111	R# CE H 10K F 0W12 0805	1
R318	P201135	R# CE H100K F 0W12 0805	1	R437	P201087	R# CE H 1K F 0W12 0805	1
R319	P201086	R# CE H910E F 0W12 0805	1	R438	P201075	R# CE H330E F 0W12 0805	1
R320	P201057	R# CE H 56E F 0W12 0805	1	R439	P201135	R# CE H100K F 0W12 0805	1
R321	P200693	R# CE H 4E7 J 0W12 0805	1	R440	P201079	R# CE H470E F 0W12 0805	1
R322	P200693	R# CE H 4E7 J 0W12 0805	1	R441	P201061	R# CE H 82E F 0W12 0805	1
R323	P201079	R# CE H470E F 0W12 0805	1	R442	P201039	R# CE H 10E F 0W12 0805	1
R324	P201095	R# CE H 2K2 F 0W12 0805	1	R443	P201039	R# CE H 10E F 0W12 0805	1
R325	P201079	R# CE H470E F 0W12 0805	1	R444	P201087	R# CE H 1K F 0W12 0805	1
R326	P201079	R# CE H470E F 0W12 0805	1	R445	P201063	R# CE H100E F 0W12 0805	1
R327	P201139	R# CE H150K F 0W12 0805	1	R446	P201103	R# CE H 4K7 F 0W12 0805	1
R328	P201111	R# CE H 10K F 0W12 0805	1	R447	P201103	R# CE H 4K7 F 0W12 0805	1

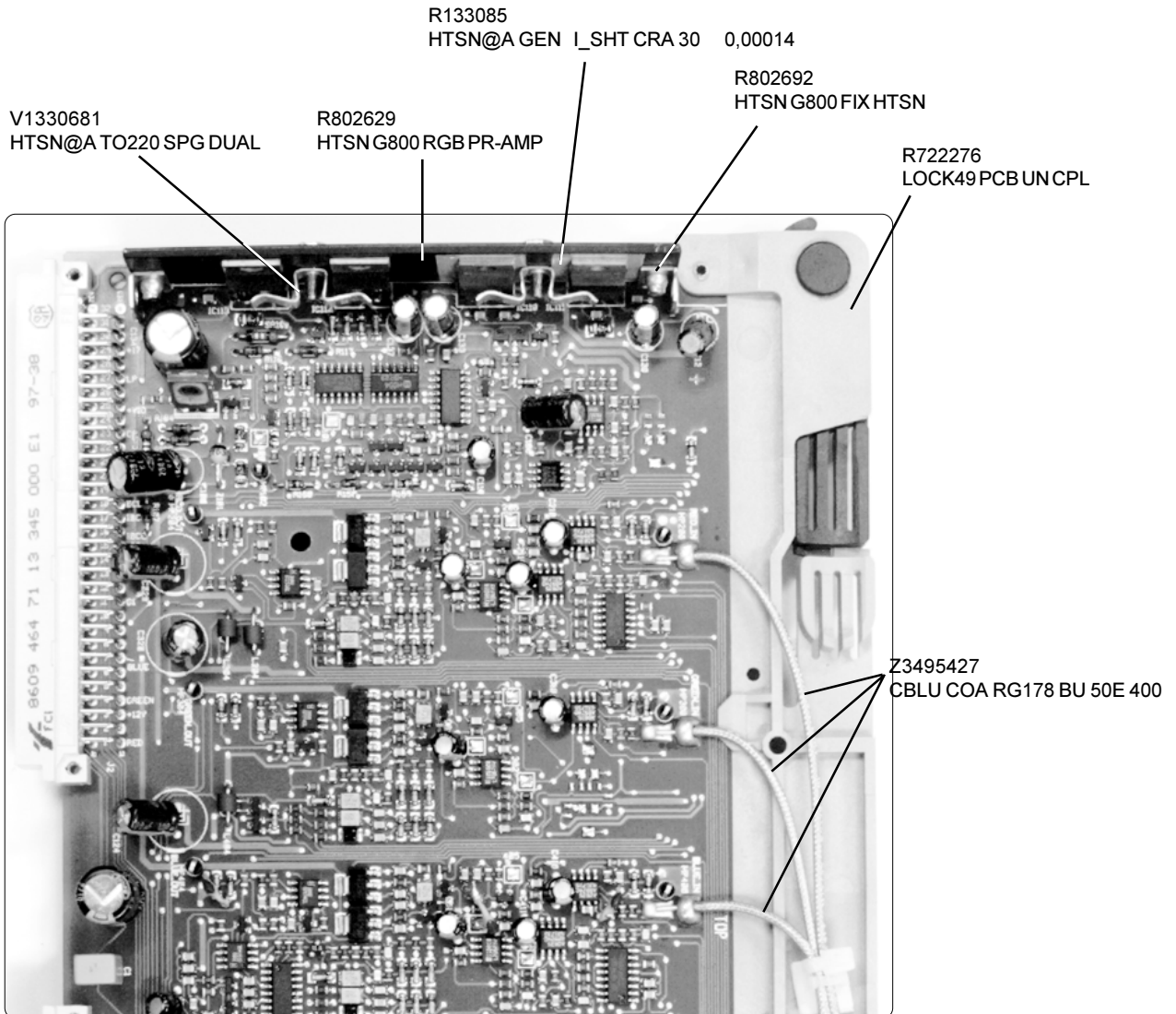
R-G-B Driver

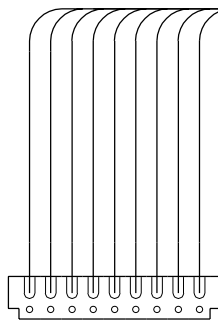
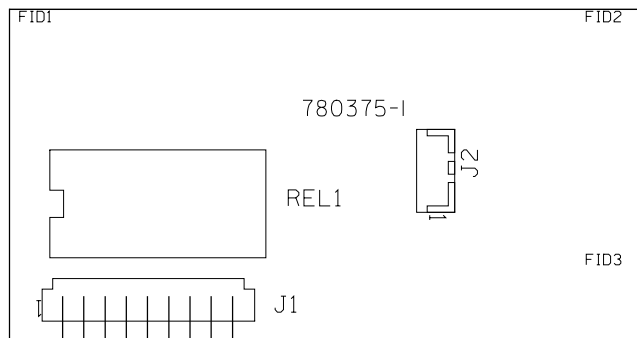
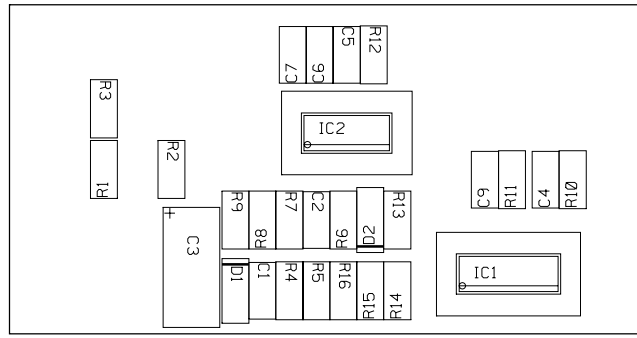
R762720

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R448	P201103	R# CE H 4K7 F 0W12 0805	1	SR10	R1011907	R CFFH E1 K 0W35	⚠ 1
R449	P201103	R# CE H 4K7 F 0W12 0805	1	SR11	R1011907	R CFFH E1 K 0W35	⚠ 1
R450	P201105	R# CE H 5K6 F 0W12 0805	1				
R451	P201105	R# CE H 5K6 F 0W12 0805	1	Z 1	P234164	D#ZEN 5V6 0W5 C DMMELF	1
R452	P201103	R# CE H 4K7 F 0W12 0805	1	Z 2	P234164	D#ZEN 5V6 0W5 C DMMELF	1
R453	P201039	R# CE H 10E F 0W12 0805	1	Z 3	P234179	D#ZEN 20V 0W5 C DMMELF	1
R454	P201088	R# CE H 1K1 F 0W12 0805	1	Z100	P234089	D#ZEN 13V 0W5 C DMMELF	1
R455	P201093	R# CE H 1K8 F 0W12 0805	1	Z101	R131771	D ZEN 150V 3W25 C SOD57	1
R456	P201101	R# CE H 3K9 F 0W12 0805	1				
R457	P200693	R# CE H 4E7 J 0W12 0805	1				
R458	R101519	R MF H 39E F 0W4 E3	1				
R458	R101519	R MF H 39E F 0W4 E3	1				

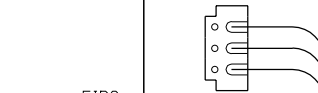
PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.





CONNECTION WITH
RGB DRIVER
700 SERIES : J778
OTHERS : J4

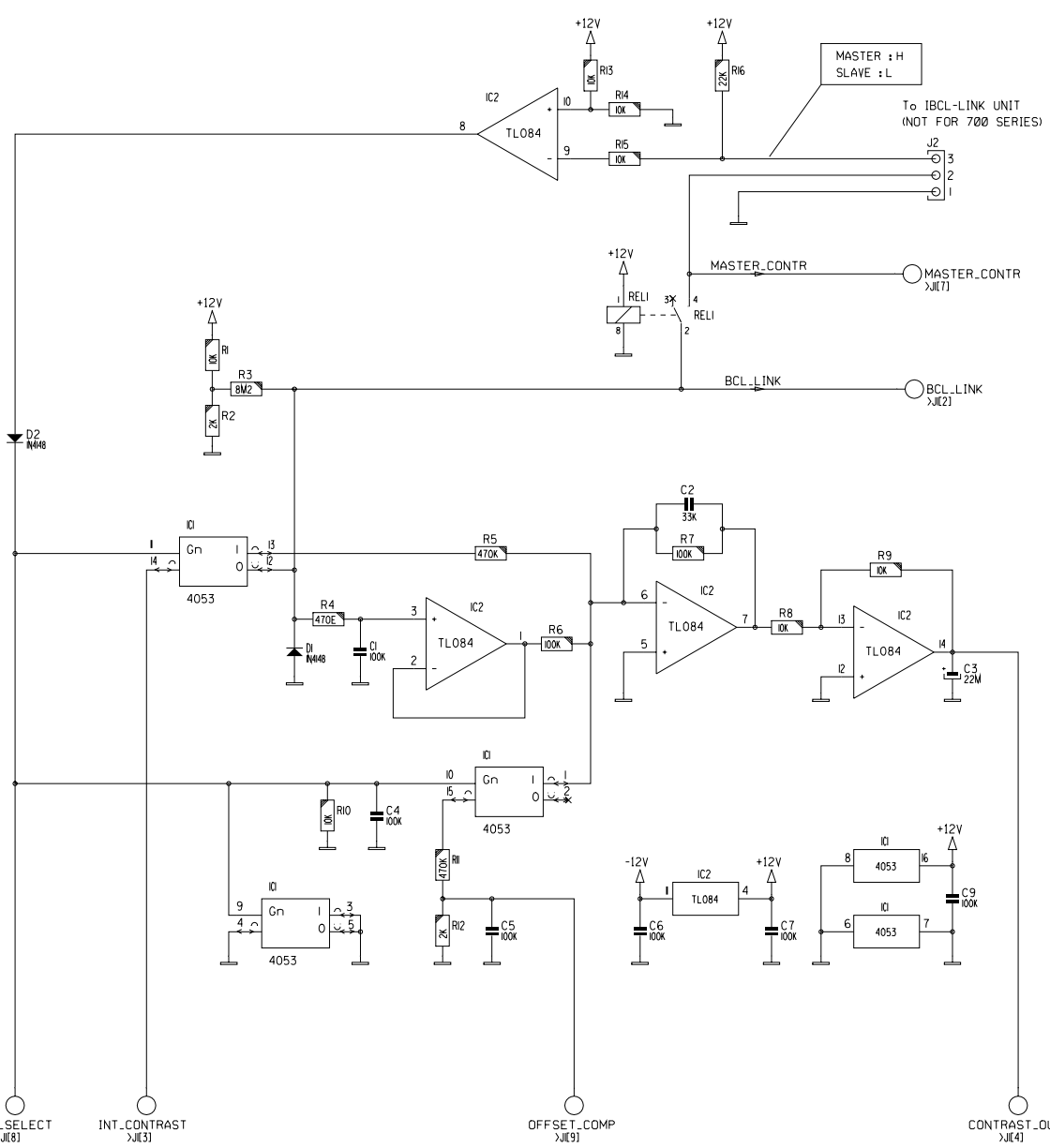


CONNECTION WITH
IBCL-LINK UNIT
(NOT FOR 700 SERIES)



Modifications reserved

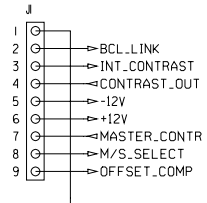
Name LINKED BCL UNIT			Sheet 1 / 1
Module No R762485	Index — 0	PCB No R780375	Rev — 1
Date 26-11-1997	Drawn JVJY	Checked PDGY	
BARCO PROJECTION SYSTEMS			



M/S_SELECT >J1(8)
INT_CONTRAST >J1(3)
(FOR 700 SERIES ONLY)

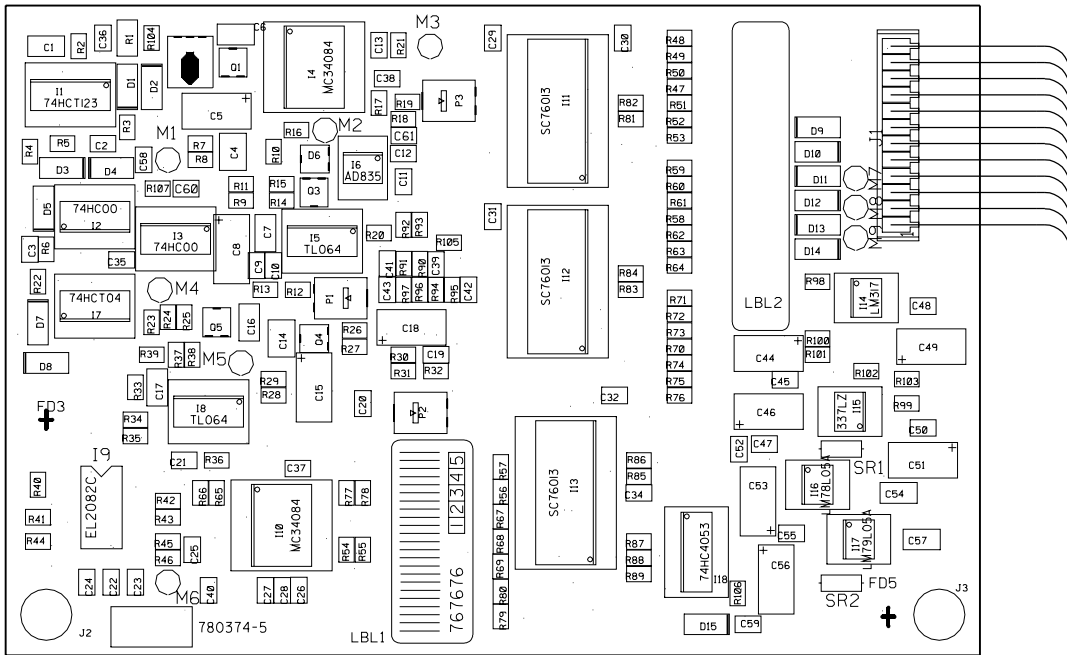
MASTER = L
SLAVE = H

700 SERIES : From INPUT DRIVER (J778)
OTHERS : FROM RGB DRIVER (J4)

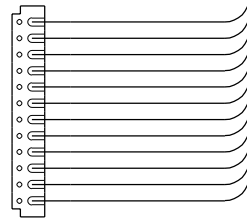


Name IBCL LINK UNIT			Sheet 1/1
Module No R762485	Index - 0	PCB No R780375	Rev - 1
Date 26-11-1997	Drawn JVDY	Checked PCDY	
BARCO PROJECTION SYSTEMS			

Modifications reserved

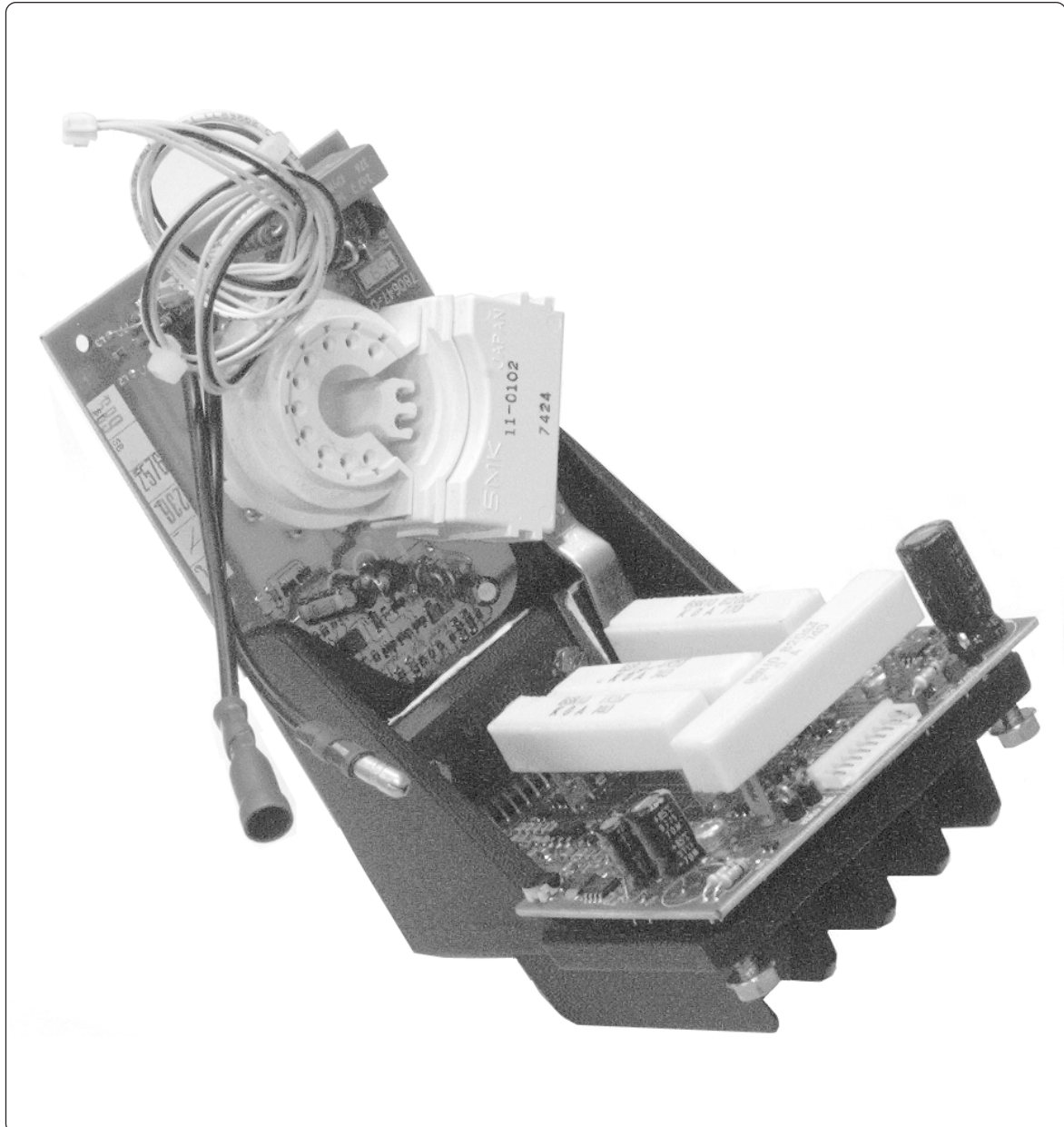


CONNECTION WITH
RGB DRIVER
(700 SERIES : J575)
(OTHERS : J3)



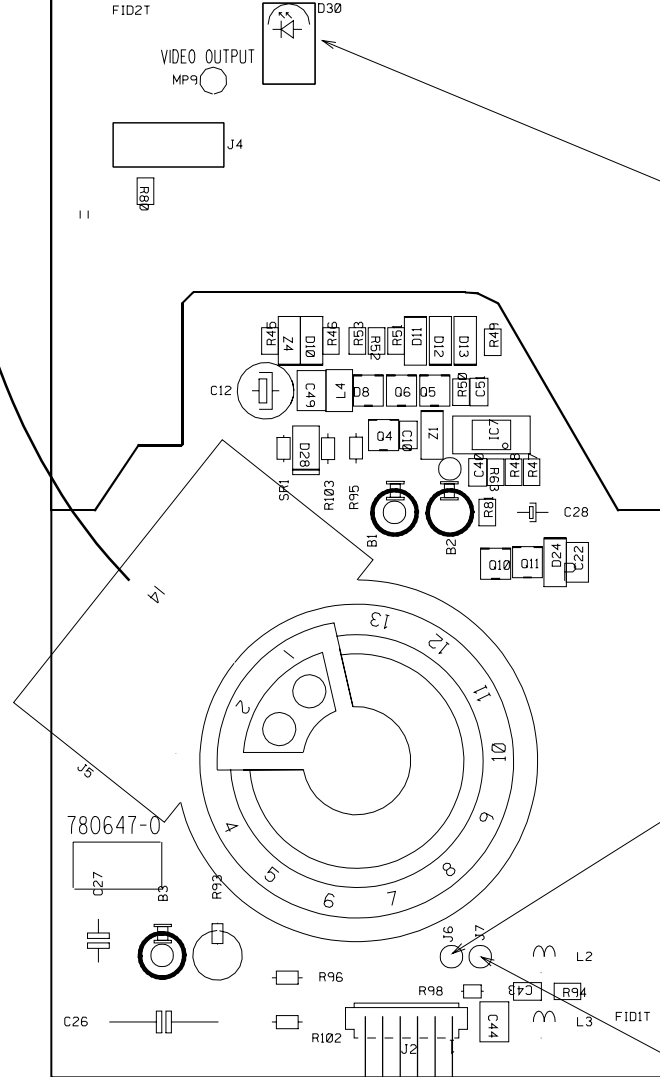
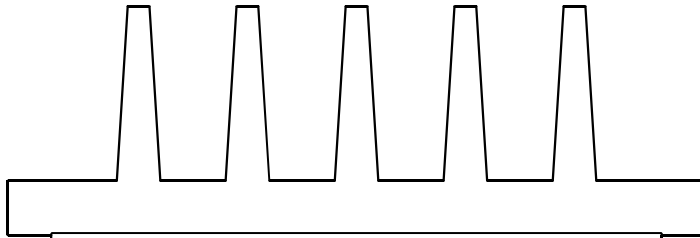
Modifications reserved

Name CONTRAST MODULATION			Sheet 1 / 1
Module No R7624845	Index 0	PCB No R780374	Rev 5
Date 24-11-1997	Drawn JVJY	Checked PDGY	
BARCO PROJECTION SYSTEMS			



RGB SOCKET

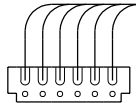
FOCUS



ABL-LED
LED MUST BE OFF
AT CORRECT G2 SETTING
IN G2 ADJUST MENU

GND TO
COIL BRACKET

GND TO
X-RAY SHIELD

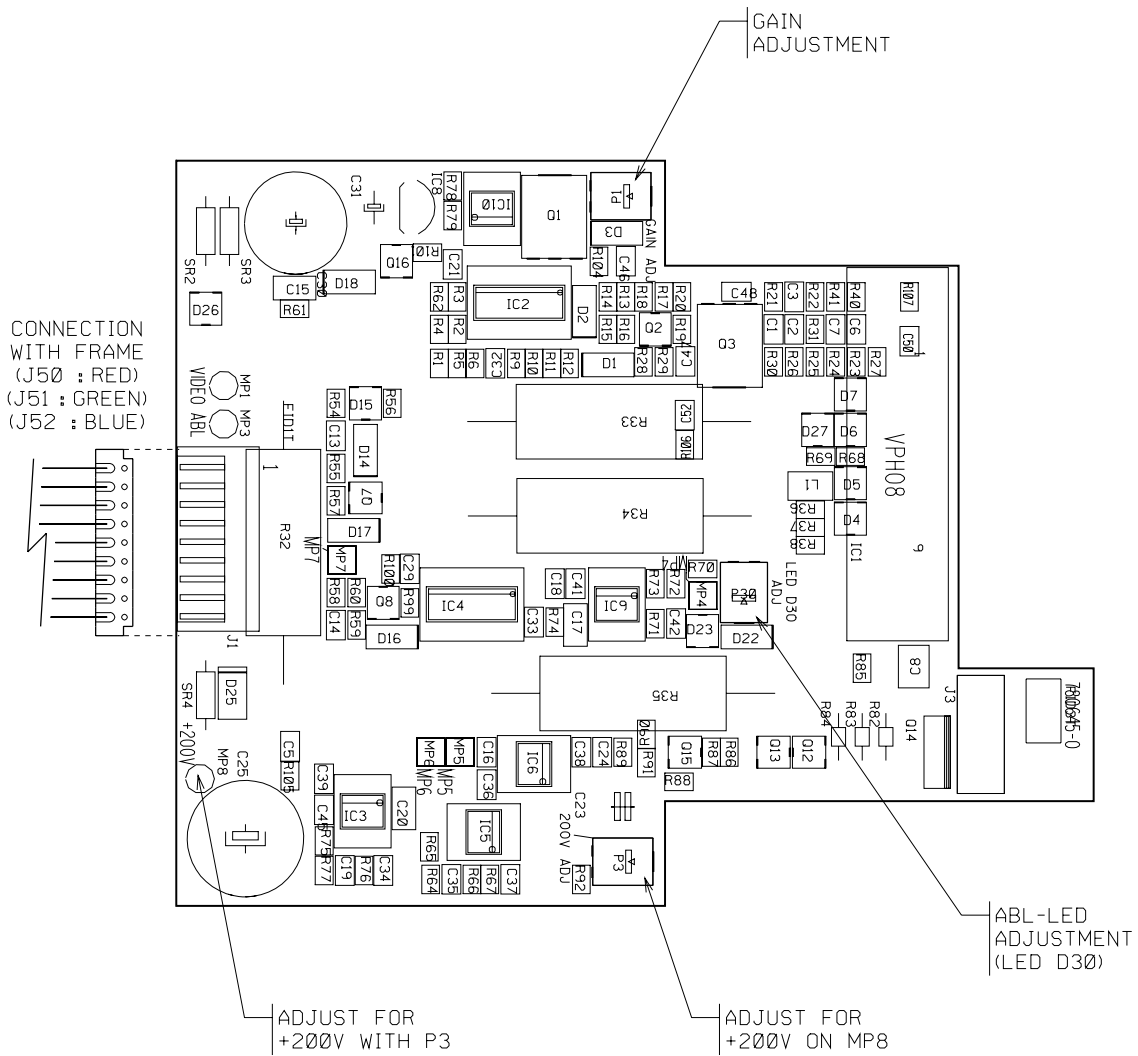


CONNECTION
WITH FRAME
(J56 : RED)
(J57 : GREEN)
(J58 : BLUE)

Modifications reserved

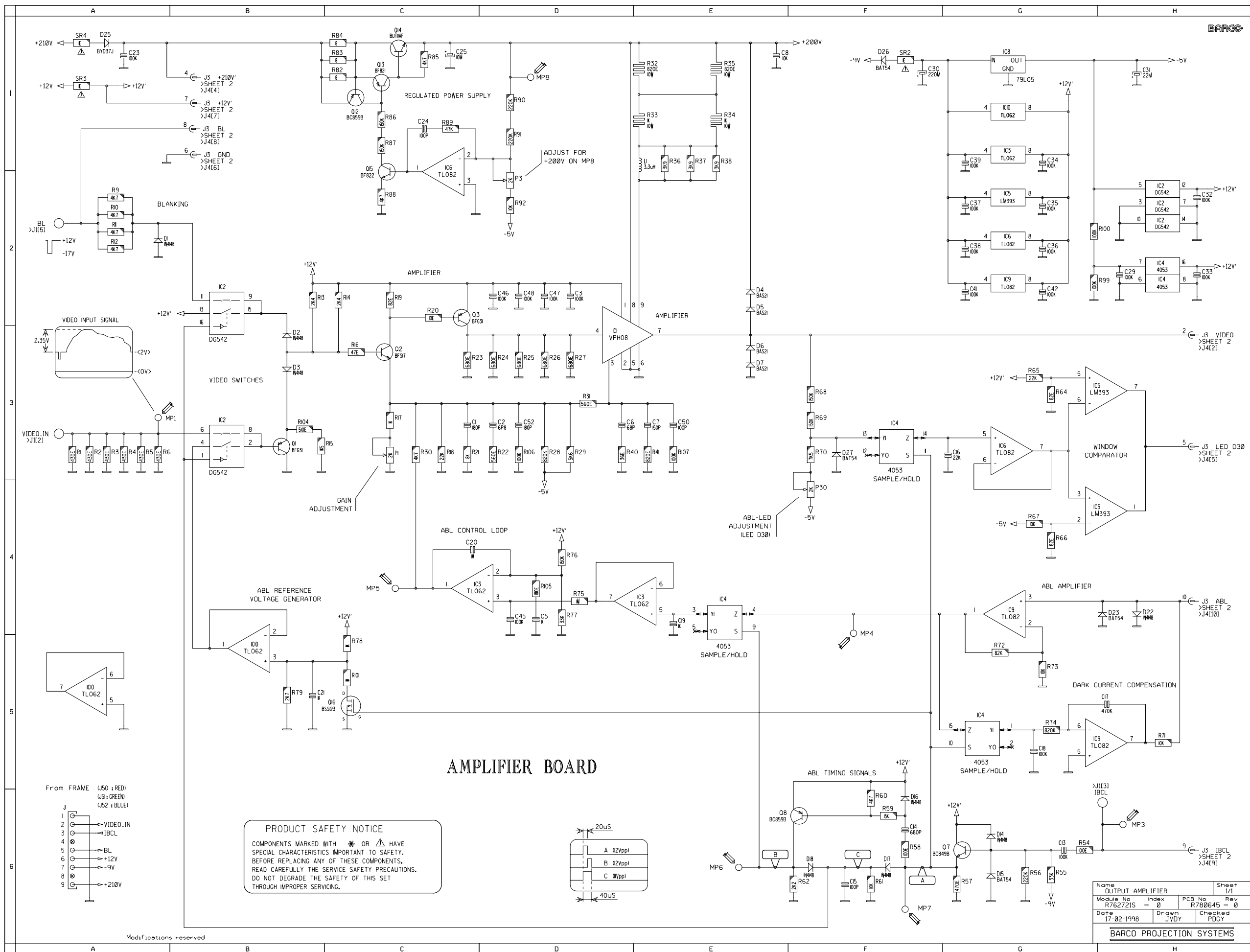
Name RGB SOCKET		Sheet 1 / 1	
Module No R762839	Index — 0	PCB No R780647	Rev — 0
Date 02-03-1998	Drawn JVJY	Checked PDGY	
BARCO PROJECTION SYSTEMS			

RGB OUTPUT AMPLIFIER



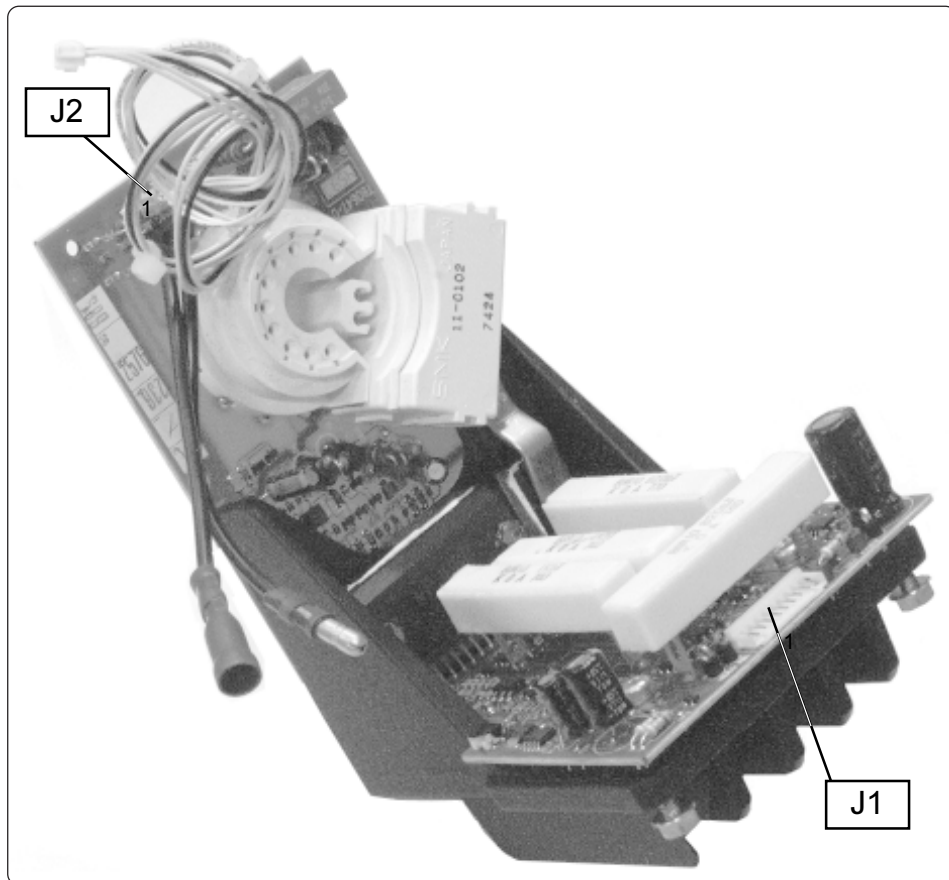
Modifications reserved

Name RGB OUTPUT AMPLIFIER		Sheet 1 / 1	
Module No R762721S	Index 0	PCB No R780645	Rev 0
Date 02-03-1998	Drawn JVJDY	Checked PDGY	
BARCO PROJECTION SYSTEMS			



COMP.	LOC.	COMP.	LOC.
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C2	D 3	R27	D 3
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C4	D 3	R29	D 3
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C6	D 3	R31	D 3
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D290	B 3	R367	D 3
D291	B 3	R368	D 3

Interconnections



Connector J1

Pin naming	Pin NR	In/Output	Description	Signal specifications
VIDEO_IN	2	IN	Video input signal from RGB driver	Black:2V Video: 4Vpp
IBCL	3	OUT	IBCL info to driver	0.7V DC
BL	5	IN	ABL trigger Pulse (AC coupled)	12Vpp/20us
		IN	Composite Blanking pulses	12V: no Blanking -17V: Blanking
+12V	6		Power Voltage +12V	+12V DC
-9V	7		Power Voltage -9V	-9V DC
+210V	9		Power Voltage +210V	+210V DC

Connector J2

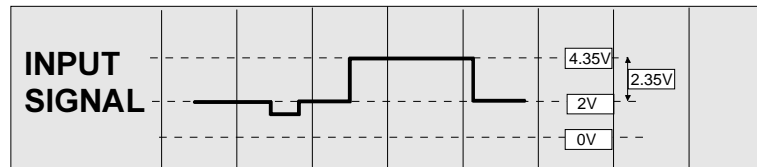
Pin naming	Pin NR	In/Output	Description	Signal specifications
-FIL	2	IN	Heater voltage floating on the 100V	6.3V
+FIL	3	IN	Heater voltage floating on the 100V	6.3V
G1	4	IN	G1 Voltage	+0.7V normal -150V when power down
G2	6		G2 Voltage	+500...1000V DC

Adjustment procedure

Preparation

Supply an external signal to the projector (e.g. a color bar signal)

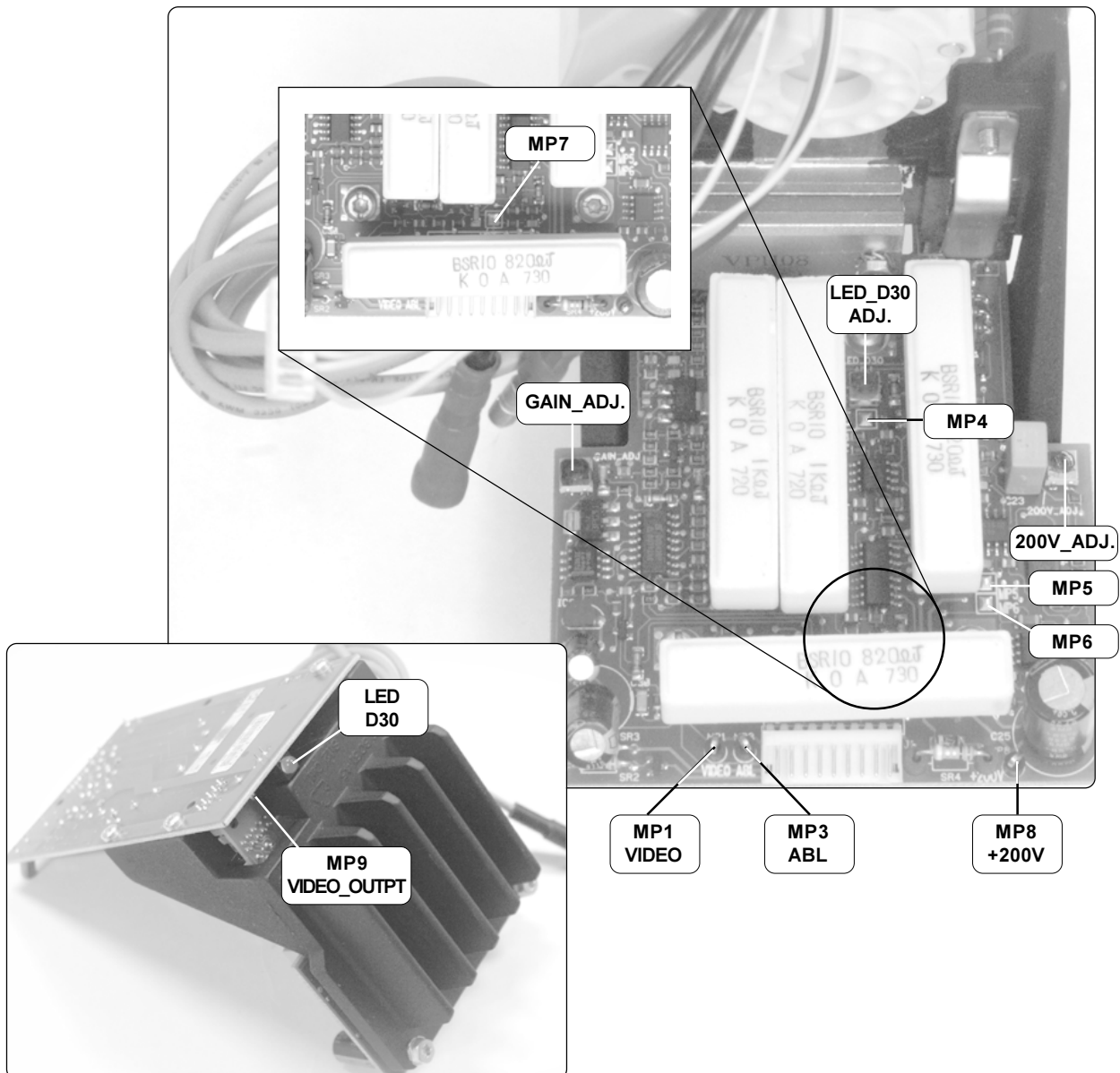
Connect the first measuring probe to the video input signal, testpoint TP1 'VIDEO_IN'.



Adjust the projector brightness control until the DC blacklevel of the video input signal reaches 2V.

Location of controls

Adjust the contrast control until the video input signal information reaches an amplitude of 2.35V.



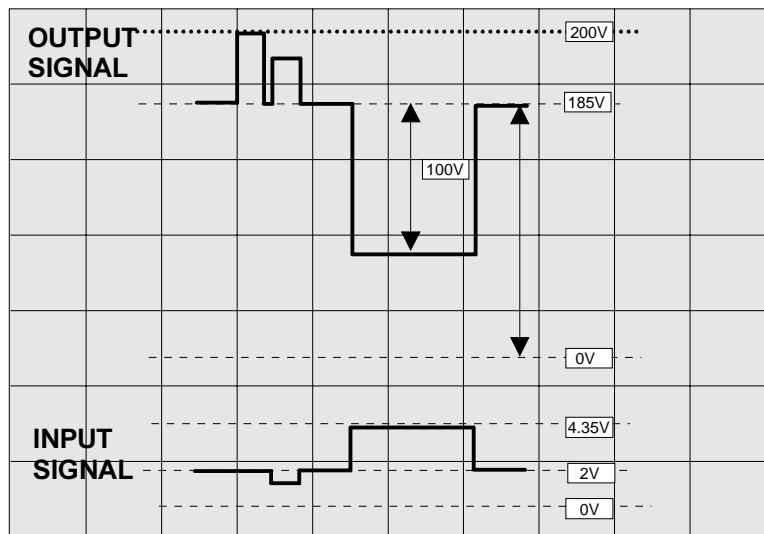
Adjustments

Adjustment of the +200V (Regulated Power Supply)

- Connect a voltmeter to the measurement Eye contact MP8.
- Adjust the potentiometer P3 for +200V on MP8.

Adjustment of the signal GAIN for each output Amplifier

- Connect the oscilloscope probe to the measurement Eye contact MP9 'VIDEO OUT'
- Adjust the potentiometer P1 for an amplitude of the output signal of 100Vpp



UPPERTRACK:
e.g. Green output signal

LOWERTRACK:
e.g. Green input signal

Adjustment of the ABL_LED

IMPORTANT: No oscilloscope probe connected to the Eye contact of the respective picture tube.

Adjust the potentiometer P30 until the LED D30 'ABL_LED' just stops lighting up.

Technical description Video Amplifier R762839**Video Amplifier**

The video signal arrives at pin 2 of J1 and is terminated into 75Ω the resistors R1...6. The first half of IC2 switches the base of Q2 between this video signal (no ABL-Automatic Black Level) and the reference voltage on pin 1 of IC10 (during ABL).

Via buffer Q1 and D3, the signal is fed to the input of a non-inverting amplifier formed by Q2 and Q3. The diode D3 serves as protection for Q1 against high inverse V_{be} voltage during blanking. The resistors R13, R14 form together with R15 and R104 a divider that is chosen to limit the voltage at the emitter of the transistor Q1 during overdrive conditions of the input. This prevents saturation of the amplifier.

The amplified signal arrives at pin 4 of the VPH08. Feedback for the previous amplifier is taken from pin 3 of the VPH08. The potentiometer P1 determines the GAIN and C1/ R21 improve the frequency response.

IC1 (VPH08) is a cascode class A amplifier with built in buffer stage and external load resistor, formed by R32...35.

Via pin 2 of J3 and J4, the signal goes to the IBCL (Individual Beam Current Limiting) and ABL measurements stages and finally arrives at the cathode of the CRT. The components D4..D7, C49, R103, D28, B1, B2 and R95 protect the amplifier against arcing.

IBCL measurement

With the transistor Q4, the mean cathode current is measured. The current flows via D12, D13 and Q5 and through Q4 to R45. There, the current is converted into a voltage and is sent to the RGB driver module. The capacitor C10 prevents high frequency currents to flow through Q4. The resistor R46 and zener Z4 form a protection network.

ABL measurement+ Switch

During the non-ABL period, the base-emitter junction of the transistor Q6 is shorted by the transistor Q5. The cathode current flows through R51 and Q5 to the IBCL measurement stage. If the cathode current is high, the voltage drop across the resistor R51 increases and D12/D13 also come into conduction. The gate of Q5 is held at +5.6V with Z1 and R49/R50.

During the ABL interval, the optocoupler IC7 comes into conduction and shorts the gate-source of Q5. Now the cathode current can flow through the transistor Q6, R52 and R53 to the ABL control loop. By shorting the transistor Q6 outside the ABL interval, smearing is prevented.

The optocoupler is controlled by the circuit around the transistors Q10 and Q11. During the blanking, the BL-signal (Blanking) is negative (-15V). The pulse is integrated by R80/C22. During the blanking, the BL-signal is wide enough to get Q10, Q11 and IC7 into conduction until some time after the vertical blanking.

ABL Control Loop

This circuit has to keep the cathode current just above the black level constant. The ABL measurement is performed at the end of the vertical flyback, when the electron beam is moved outside the phosphor screen of the CRT in order not to see these measurements lines.

The ABL interval is initiated by a 12V pulse of $20\mu s$, which is AC coupled on the IBCL line. The pulse is coupled via R54 and C13 to the base of Q7. The resistor R55 keeps the diode D15 into conduction if there is no pulse to prevent false triggering. The pulse at the emitter of Q7 and MP7 is used to perform the leakage current measurement and is now called leakage pulse. With the trailing edge of this pulse, the transistor Q8 starts to conduct through the network C14, R59 and R60 for about $20\mu s$. This pulse at MP6 is now called the measurement pulse. The total ABL interval is $40\mu s$ wide and is electrically formed by D17, D18 on R61 and C15.

This pulse is used to inhibit the blanking and to switch Q1 to the reference voltage. This voltage is formed by R78 and R79 during the measurement pulse and is then +2.4V.

During the leakage measurement is transistor Q16 in conduction and lowers this reference with R101 to +2.0V. IC10 buffers this voltage and can sink the base current of Q1.

The leakage current enters the control loop through pin 10 of J3/J4 and is converted to a voltage with R71. This voltage is first amplified with IC9 pins 1, 2 and 3 with a factor 90. The diodes D22 and D23 limit the input levels.

During the leakage measurement the emitter of the transistor Q7 is high and pins 1, 10 of the switch IC4 are closed. The amplified voltage comes on C18 and is compared with ground by IC9, pins 5, 6 and 7 which adjusts the bottom of R71 until steady state. This system compensates for leakage currents that might flow out of the cathode.

During the measurement pulse is the level at MP6 high and the switch IC4 pin 3, 4 and 9 is closed. The input reference is now 2.4V at the base of the transistor Q1 and this should give a cathode current of about 20 μ s.

The amplified voltage that corresponds to this current comes on capacitor C19 and is buffered by IC3 pin 5, 6 and 7. The voltage is compared by IC3 pin 1, 2 and 3 with a reference and adjusts the output DC level at the collector of Q3 through R30.

During the leakage measurement the input voltage at Q1 is equal to 2V, and the output voltage should be 185V. This voltage is divided with R68, R69, R70 and P30 to 0V. This voltage is buffered by IC6 pins 5, 6, 7, and compared by the comparators IC5 with 2 references. The potentiometer P30 is aligned so that the LED D30 is turned off at an output black level of +185V. The G2 potentiometers can then easily be adjusted (if the LED D30 turns off, the G2 is at the correct level because the cathode is at 185V black level).

Regulated Power Supply

The Power Supply had to be regulated to guarantee the performance of the VPH08 and to eliminate variations on the +210V Power Supply. The +200V is divided by R90, R91, R92 and P3 to 0V and compared with ground by IC6 pins 1, 2 and 3. If the output voltage is too low, pin 1 goes higher and more current is flowing through Q15, Q13 and Q14 as to raise the output until steady state. The transistor Q12 limits the peak current.

RGB Output/ABL+CRT

R762839

Parts listing RGB Out/ABL+CRT R762839

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
31	R348019	CBLA TIE B L100 W2,4 -	3	L 4	P250533	CH# 330.00NH L1210	1
110	R721632	DACC SPR D5 LED	3	L 2	R3061222	CH AX NS 1.5 UH	1
	R762721S	UN G808S RGB AMP	1	L 3	R3061222	CH AX NS 1.5 UH	1
	R762839P	UN G1209S RGB O+S	1	MP9	R313729	JTESTEYE D2.1 H3.1 SN BK	1
B 1	R1312651	SURGE ARRESTER 300V R	1	PC	R780647	PCB G1209S RGB O+S	1
B 2	R1312651	SURGE ARRESTER 300V R	1	Q 10	P232043	Q#BC849B N SS SOT23	1
B 3	R1312651	SURGE ARRESTER 300V R	1	Q 11	P232044	Q#BC859B P SS SOT23	1
C 51	P210021	C# COG MU 100P J 50 0805	1	Q 5	P232046	Q#BSS123 F SS SOT23	1
C 10	P210041	C# X7R MU 10N K 50 0805	1	Q 4	P232149	Q#BF821 P SS SOT23	1
C 22	P210045	C# X7R MU 47N K 50 1206	1	Q 6	P232149	Q#BF821 P SS SOT23	1
C 44	P210220	C# X7R MU 10N K500 1210	1	R 51	P201055	R# CE H 47E F 0W12 0805	1
C 49	P210220	C# X7R MU 10N K500 1210	1	R 46	P201063	R# CE H100E F 0W12 0805	1
C 40	P210227	C# Z5U MU 100N Z 50 0805	1	R 94	P201073	R# CE H270E F 0W12 0805	1
C 43	P210227	C# Z5U MU 100N Z 50 0805	1	R 47	P201095	R# CE H 2K2 F 0W12 0805	1
C 28	R111510	C EL RA 22M M 25E2 85	1	R 48	P201095	R# CE H 2K2 F 0W12 0805	1
C 12	R111531	C EL RA 10M M 35E2 85	1	R 63	P201099	R# CE H 3K3 F 0W12 0805	1
C 26	R1117674	C PPMERA 2N7J162E6 HV	1	R 81	P201103	R# CE H 4K7 F 0W12 0805	1
C 27	R1120902	C CE DI 100P K202E3 HV	1	R 45	P201105	R# CE H 5K6 F 0W12 0805	1
D 8	P234055	D#BAT54 SCH SOT23	1	R 80	P201111	R# CE H 10K F 0W12 0805	1
D 10	P234099	D#4148 R DMMELF	1	R 52	P201143	R# CE H220K F 0W12 0805	1
D 11	P234099	D#4148 R DMMELF	1	R 53	P201143	R# CE H220K F 0W12 0805	1
D 12	P234099	D#4148 R DMMELF	1	R 49	P201151	R# CE H470K F 0W12 0805	1
D 13	P234099	D#4148 R DMMELF	1	R 50	P201151	R# CE H470K F 0W12 0805	1
D 24	P234099	D#4148 R DMMELF	1	R 98	R101572	R MF H 1M F 0W4 E3	1
D 28	P234196	D#BYD37J AVA SOD87	1	R 96	R102038	R CC H 1K5 K 0W5 E6	1
D 30	R133206	D LED D5 S GN HLDR	1	R102	R102038	R CC H 1K5 K 0W5 E6	1
I 7	P230677	U#121GB TLP MINISO4P	1	R103	R102038	R CC H 1K5 K 0W5 E6	1
J 4	A503437	JMD2 C FBT P10 E1AU 7,0	1	R 93	R102148	R CC H 10K K 1W E8	1
J 5	R311046	J CRT FBT T180 SKT	1	R 95	V102024	R CC H100E K 0W5 E6	1
J 7	R3421902	CD SO 1015AWG18BK 90	1	SR 1	R1011369	R CFFH 1K J 0W25	1
J 6	R3421903	CD PIN 1015AWG18BK 90	1	Z 1	P234164	D#ZEN 5V6 0W5 C DMMELF	1
J 2	Z3484066	CD CT \$FTMT P 6 400	1	Z 4	P234185	D#ZEN 27V 0W5 C DMMELF	1

Parts listing RGB Out/ABL+CRT R762721S

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
50	R808145	HTSNG808S RGBOUT	1	C 1	P210081	C# COG MU 180P J 50 0805	1
55	R804674	HTSNA GEN SPG 1XM3 SH	1	C 2	P210115	C# COG MU 6P8D 50 0805	1
56	R3631079	SCR Z933 M 3 X 12 SS	1	C 3	P210227	C# Z5U MU 100N Z 50 0805	1
60	V3621227	SCR \$7500CM 3 X 8 STZN	6	C 5	P210035	C# X7R MU 1N K 50 0805	1
65	R3661026	NUT D934 M 3 SS	2	C 6	P210020	C# COG MU 68P J 50 0805	1
80	R3631089	SCR Z933 M 3 X 16 SS	2	C 7	P210022	C# COG MU 150P J 50 0805	1
81	V3673761	SPR D9021 D 3,2D 9 STZN	2	C 8	P210220	C# X7R MU 10N K500 1210	1
90	V3623197	SCR \$7500DM 4 X 8 STZN	2	C 13	P210227	C# Z5U MU 100N Z 50 0805	1
100	R302108	CORE TUBE 3,5 /1,3 X 3	2	C 14	P210070	C# COG MU 680P J 50 0805	1
	R762721S	UN G808S RGB AMP	1	C 15	P210137	C# COG MU 100P J 50 1206	1
				C 16	P210043	C# X7R MU 22N K 50 0805	1
				C 17	P210148	C# Y5V MU 470N Z 25 1206	1

RGB Output/ABL+CRT

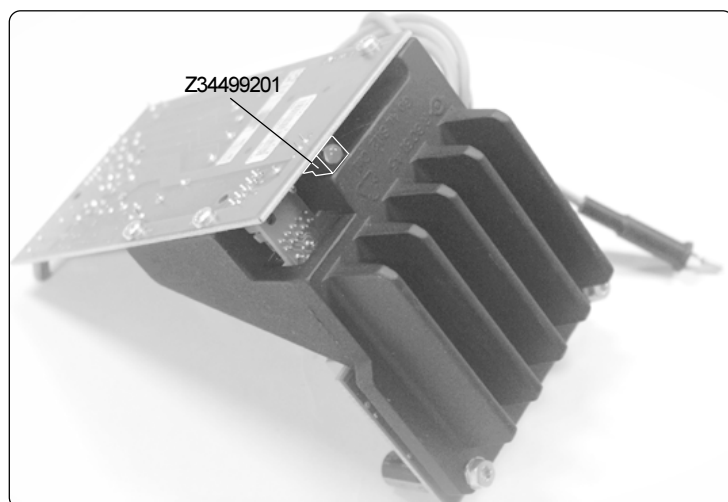
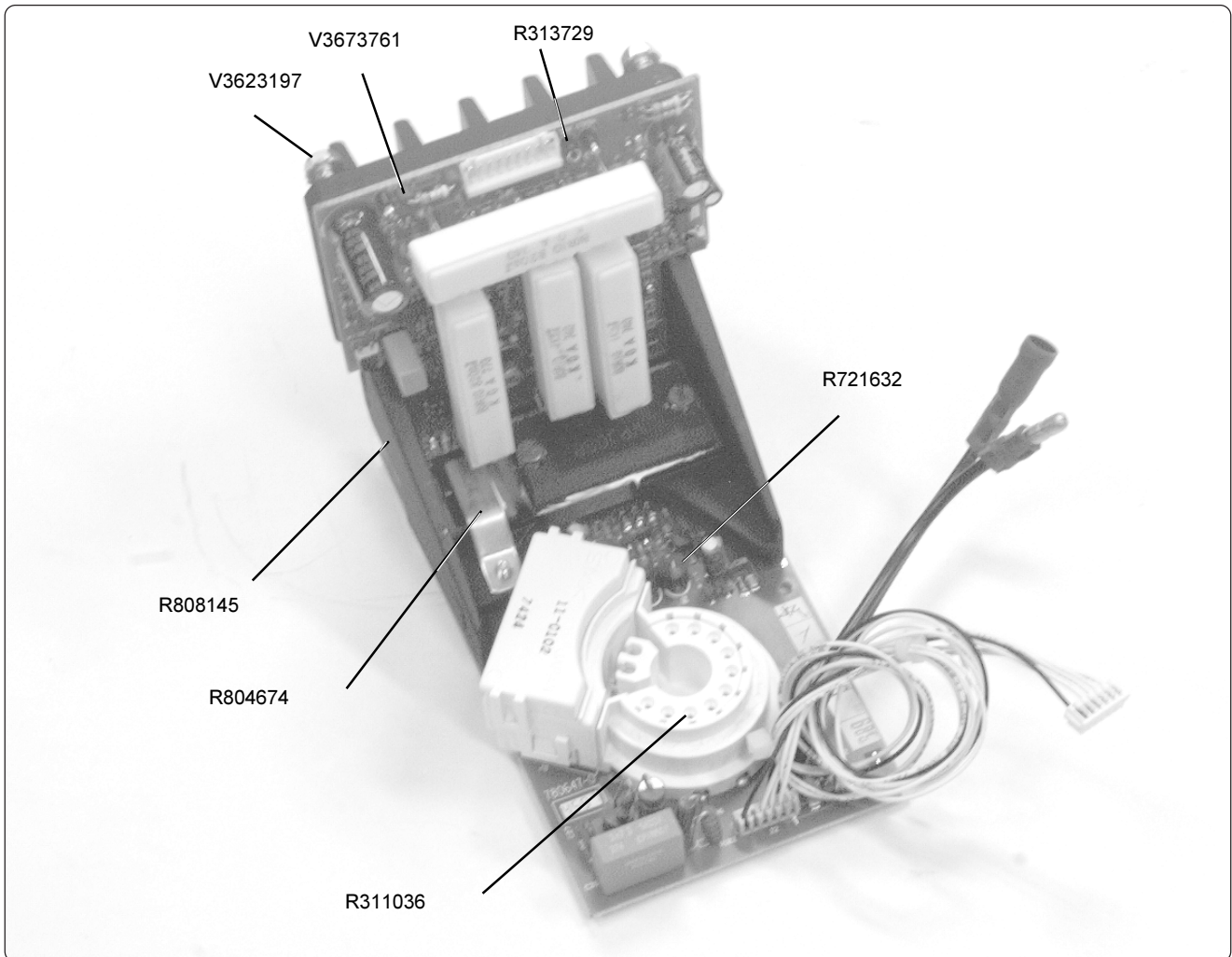
R762839

C 18	P210227	C# Z5U MU 100N Z 50 0805	1	L 1	P250516	CH#	3.3 UH L1210	1
C 19	P210035	C# X7R MU 1N K 50 0805	1					
C 20	P210178	C# Y5V MU 1M Z 16 1206	1	MP 1	R313729	JTESTEYE D2.1 H3.1 SN BK		1
C 21	P210035	C# X7R MU 1N K 50 0805	1	MP 3	R313729	JTESTEYE D2.1 H3.1 SN BK		1
C 23	V1140426	C POMERA 100N K250E2 85	1	MP 8	R313729	JTESTEYE D2.1 H3.1 SN BK		1
C 24	P210021	C# COG MU 100P J 50 0805	1					
C 25	R1115695	C EL RA 10M M250E2 85	1	P 1	P201390	R#TCE H 2K M 0W25 S4 TS		1
C 29	P210227	C# Z5U MU 100N Z 50 0805	1	P 3	P201390	R#TCE H 2K M 0W25 S4 TS		1
C 30	R111467	C EL RA 220M Z 16E2 85	1	P 30	P201390	R#TCE H 2K M 0W25 S4 TS		1
C 31	R111510	C EL RA 22M M 25E2 85	1					
C 32	P210227	C# Z5U MU 100N Z 50 0805	1	PC	R780645	PCB G808S RGB AMPL		1
C 33	P210227	C# Z5U MU 100N Z 50 0805	1					
C 34	P210227	C# Z5U MU 100N Z 50 0805	1	Q 1	P232109	Q#BFG31 P SS SOT223		1
C 35	P210227	C# Z5U MU 100N Z 50 0805	1	Q 2	P232076	Q#BFS17 N SS SOT23		1
C 36	P210227	C# Z5U MU 100N Z 50 0805	1	Q 3	P232109	Q#BFG31 P SS SOT223		1
C 37	P210227	C# Z5U MU 100N Z 50 0805	1	Q 7	P232043	Q#BC849B N SS SOT23		1
C 38	P210227	C# Z5U MU 100N Z 50 0805	1	Q 8	P232044	Q#BC859B P SS SOT23		1
C 39	P210227	C# Z5U MU 100N Z 50 0805	1	Q 12	P232044	Q#BC859B P SS SOT23		1
C 41	P210227	C# Z5U MU 100N Z 50 0805	1	Q 13	P232149	Q#BF821 P SS SOT23		1
C 42	P210227	C# Z5U MU 100N Z 50 0805	1	Q 14	V1325851	Q BUT11AF N P SOT186		1
C 45	P210227	C# Z5U MU 100N Z 50 0805	1	Q 15	P232150	Q#BF822 N SS SOT23		1
C 46	P210227	C# Z5U MU 100N Z 50 0805	1	Q 16	P232046	Q#BSS123 F SS SOT23		1
C 47	P210227	C# Z5U MU 100N Z 50 0805	1					
C 48	P210227	C# Z5U MU 100N Z 50 0805	1	R 1	P201078	R# CE H430E F 0W12 0805		1
C 50	P210021	C# COG MU 100P J 50 0805	1	R 2	P201078	R# CE H430E F 0W12 0805		1
C 52	P210081	C# COG MU 180P J 50 0805	1	R 3	P201078	R# CE H430E F 0W12 0805		1
				R 4	P201078	R# CE H430E F 0W12 0805		1
D 1	P234099	D#4148 R DMMELF	1	R 5	P201078	R# CE H430E F 0W12 0805		1
D 2	P234099	D#4148 R DMMELF	1	R 6	P201078	R# CE H430E F 0W12 0805		1
D 3	P234099	D#4148 R DMMELF	1	R 9	P201103	R# CE H 4K7 F 0W12 0805		1
D 4	P234195	D#BAS21 SW SOT23	1	R 10	P201103	R# CE H 4K7 F 0W12 0805		1
D 5	P234195	D#BAS21 SW SOT23	1	R 11	P201103	R# CE H 4K7 F 0W12 0805		1
D 6	P234195	D#BAS21 SW SOT23	1	R 12	P201103	R# CE H 4K7 F 0W12 0805		1
D 7	P234195	D#BAS21 SW SOT23	1	R 13	P201096	R# CE H 2K4 F 0W12 0805		1
D 14	P234099	D#4148 R DMMELF	1	R 14	P201096	R# CE H 2K4 F 0W12 0805		1
D 15	P234055	D#BAT54 SCH SOT23	1	R 15	P201091	R# CE H 1K5 F 0W12 0805		1
D 16	P234099	D#4148 R DMMELF	1	R 16	P201055	R# CE H 47E F 0W12 0805		1
D 17	P234099	D#4148 R DMMELF	1	R 17	P201087	R# CE H 1K F 0W12 0805		1
D 18	P234099	D#4148 R DMMELF	1	R 18	P201119	R# CE H 22K F 0W12 0805		1
D 22	P234099	D#4148 R DMMELF	1	R 19	P201061	R# CE H 82E F 0W12 0805		1
D 23	P234055	D#BAT54 SCH SOT23	1	R 20	P201039	R# CE H 10E F 0W12 0805		1
D 25	P234196	D#BYD37J AVA SOD87	1	R 21	P201117	R# CE H 18K F 0W12 0805		1
D 26	P234055	D#BAT54 SCH SOT23	1	R 22	P201081	R# CE H560E F 0W12 0805		1
D 27	P234055	D#BAT54 SCH SOT23	1	R 23	P201083	R# CE H680E F 0W12 0805		1
				R 24	P201083	R# CE H680E F 0W12 0805		1
I 1	B134308	U 08B VPJ	1	R 25	P201083	R# CE H680E F 0W12 0805		1
I 2	P231479	U#542 DG SO16 I	1	R 26	P201083	R# CE H680E F 0W12 0805		1
I 3	P230006	U#062 TL SO8 P	1	R 27	P201083	R# CE H680E F 0W12 0805		1
I 4	P230030	U#4053 SO16 I	1	R 28	P201157	R# CE H820K F 0W12 0805		1
I 5	P230028	U#393 LM SO8 P	1	R 29	P201105	R# CE H 5K6 F 0W12 0805		1
I 6	P230293	U#082 TL SO8 P	1	R 30	P201103	R# CE H 4K7 F 0W12 0805		1
I 8	R134035	U 79L05A TO92 P	1	R 31	P201081	R# CE H560E F 0W12 0805		1
I 9	P230293	U#082 TL SO8 P	1	R 32	V1034342	R MO H820E J10W E14		1
I 10	P230006	U#062 TL SO8 P	1	R 33	V1034362	R MO H 1K J10W E14		1
				R 34	V1034362	R MO H 1K J10W E14		1
J 1	R313949	J CT H MBS P 9 M2SN WH	1	R 35	V1034342	R MO H820E J10W E14		1
J 3	A503159	J MD2 C MBS P100E1AU 6,7	1	R 36	P201101	R# CE H 3K9 F 0W12 0805		1
				R 37	P201101	R# CE H 3K9 F 0W12 0805		1

RGB Output/ABL+CRT

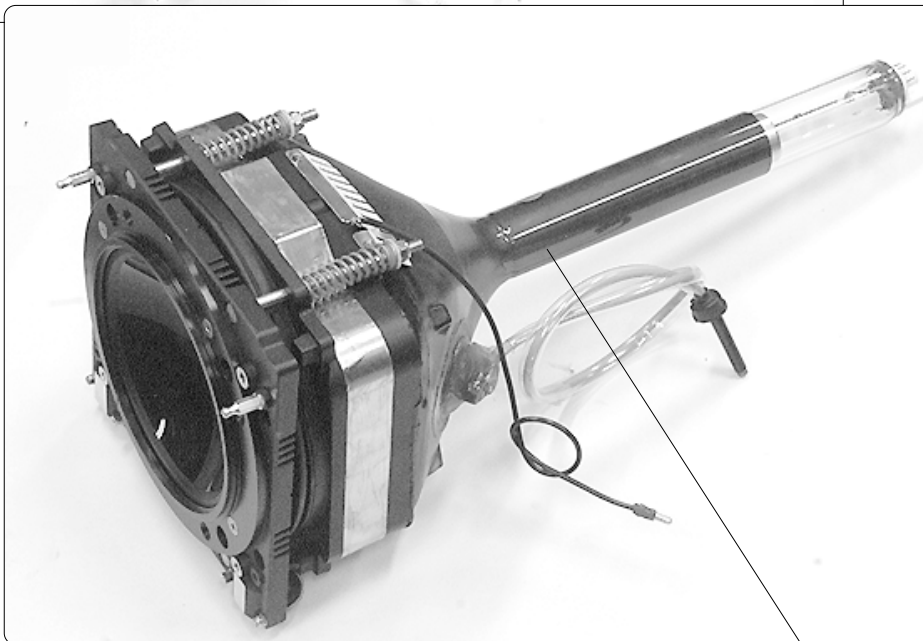
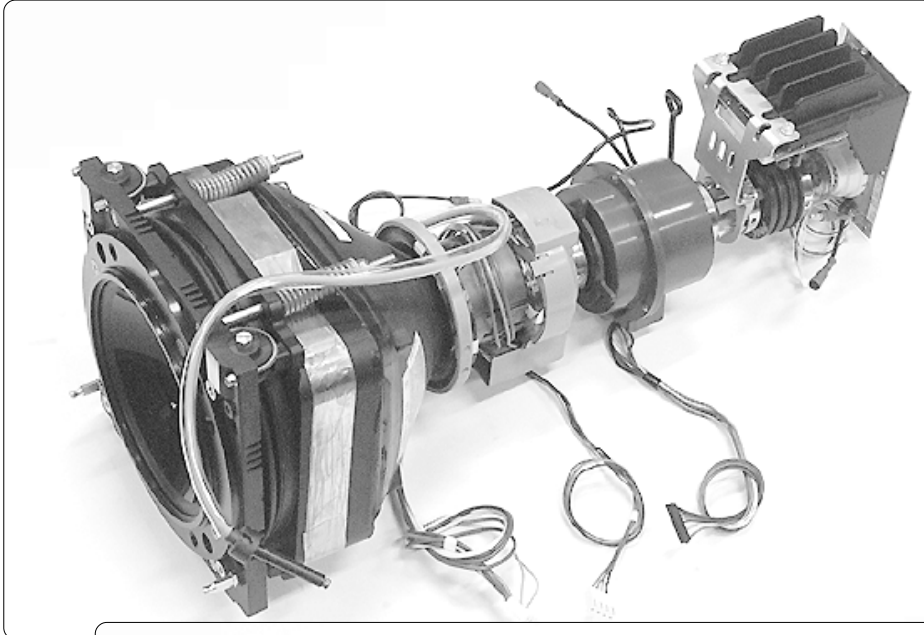
R762839

R 38	P201101	R# CE H 3K9 F 0W12 0805	1	R 77	P201123	R# CE H 33K F 0W12 0805	1
R 40	P201052	R# CE H 36E F 0W12 0805	1	R 78	P201112	R# CE H 11K F 0W12 0805	1
R 41	P201085	R# CE H820E F 0W12 0805	1	R 79	P201097	R# CE H 2K7 F 0W12 0805	1
R 54	P201063	R# CE H100E F 0W12 0805	1	R 82	R101500	R MF H 1E F 0W4 E3	1
R 55	P201123	R# CE H 33K F 0W12 0805	1	R 83	R101500	R MF H 1E F 0W4 E3	1
R 56	P201143	R# CE H220K F 0W12 0805	1	R 84	R101500	R MF H 1E F 0W4 E3	1
R 57	P201079	R# CE H470E F 0W12 0805	1	R 85	P201103	R# CE H 4K7 F 0W12 0805	1
R 58	P201063	R# CE H100E F 0W12 0805	1	R 86	P201139	R# CE H150K F 0W12 0805	1
R 59	P201115	R# CE H 15K F 0W12 0805	1	R 87	P201139	R# CE H150K F 0W12 0805	1
R 60	P201103	R# CE H 4K7 F 0W12 0805	1	R 88	P201103	R# CE H 4K7 F 0W12 0805	1
R 61	P201111	R# CE H 10K F 0W12 0805	1	R 89	P201127	R# CE H 47K F 0W12 0805	1
R 62	P201095	R# CE H 2K2 F 0W12 0805	1	R 90	P201143	R# CE H220K F 0W12 0805	1
R 64	P201061	R# CE H 82E F 0W12 0805	1	R 91	P201143	R# CE H220K F 0W12 0805	1
R 65	P201119	R# CE H 22K F 0W12 0805	1	R 92	P201111	R# CE H 10K F 0W12 0805	1
R 66	P201061	R# CE H 82E F 0W12 0805	1	R 99	P201135	R# CE H100K F 0W12 0805	1
R 67	P201111	R# CE H 10K F 0W12 0805	1	R100	P201135	R# CE H100K F 0W12 0805	1
R 68	P201139	R# CE H150K F 0W12 0805	1	R101	P201112	R# CE H 11K F 0W12 0805	1
R 69	P201139	R# CE H150K F 0W12 0805	1	R104	P201080	R# CE H510E F 0W12 0805	1
R 70	P201108	R# CE H 7K5 F 0W12 0805	1	R105	P201069	R# CE H180E F 0W12 0805	1
R 71	P201111	R# CE H 10K F 0W12 0805	1	R106	P201135	R# CE H100K F 0W12 0805	1
R 72	P201133	R# CE H 82K F 0W12 0805	1	R107	P201135	R# CE H100K F 0W12 0805	1
R 73	P201111	R# CE H 10K F 0W12 0805	1				
R 74	P201157	R# CE H820K F 0W12 0805	1	SR 2	R1011008	R CFFH 1E J 0W25	1
R 75	P201159	R# CE H 1M F 0W12 0805	1	SR 3	R1011008	R CFFH 1E J 0W25	1
R 76	P201139	R# CE H150K F 0W12 0805	1	SR 4	R1011008	R CFFH 1E J 0W25	1



CRT UNIT M9M HD10 R

RED	R7628162
GREEN	R7628165
BLUE	R7628166



Order NO CRT	
Red CRT	R7628162
Green CRT	R7628165
Blue CRT	R7628166

CRT UNIT M9M HD10 R

RED R7628162
GREEN R7628165
BLUE R7628166

Parts listing R7628162

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1034	B360134	NUT D985 M 3 SS	2	1093	R3137092	J HV HO ACC SLEEVE	1
1042	B360636	SCR D931 M 6 X100 SS	2	1094	R3137093	J HV HO ACC SEAL	1
1045	B360638	SPR INSUL D 6,2D15 PL	4	1081	R3420003	CD PIN 1015AWG18BK 350	1
1061	B360639	SCR D7985 M 5 X 10 SS	2	1050	R347995	FTGO-RING139,37X2,62NBR	1
1062	B360640	FTG O-RING 5,1 X1,6 NBR	2	1082	R3631049	SCR Z933 M 3 X 6 SS	1
1043	B360731	SCR D931 M 6 X110 SS	2	1013	R3951371	GLUE KE1802A ?	
1100	B360840	FSTN SPG-CLIP STUD R6486	2	1014	R3951381	GLUE KE1802B	
1101	B360873	NUT D439B M 5 STZN	2	1015	R3951391	GLUE KE1802C ??	
1053	G115230	SCR D7991 M 5 X 12 SS	4	1070	R395353	TAPE LEAD W25,4X0,15	1
1012	R130756	CRT M09M PT22-22R RD	1	1060	R512334	CHEM KOELVLOEISTOF80/20	1
1051	R1309725	LENSHD10/CCR	1	1030	R722843	FRMG1209 CPLG SF CTRL	2
1090	R132080	CD HV CRT/ HOBSON1 700	1	1022	R722844	FRMG1209 CPLG SF FTG	1
1092	R3137091	J HV HO MWT P 1 CUP	1	1021	R722845	FRMG1209 CPLG SF BRG1	4
1093	R3137092	J HV HO ACC SLEEVE	1	1011	R722846	FRMG1209S CRT SPR 3,75	4
1094	R3137093	J HV HO ACC SEAL	1	1091	R762430D	SLVU PVC D 7 HV C 470	1
1081	R3420003	CD PIN 1015AWG18BK 350	1	1080	R800996	FRM43 CRT AKWADAG SON	1
1050	R347995	FTGO-RING139,37X2,62NBR	1	1095	R806552	J HV HO ACC COVER D6,1	1
1082	R3631049	SCR Z933 M 3 X 6 SS	1	1000	R807330	FRMG1209 CPLG SF CRT 9	1
1013	R3951371	GLUE KE1802A ?		1040	R809164	SPG COMPR 80 D15 D2,5 SS	2
1014	R3951381	GLUE KE1802B		1041	R809165	SPG COMPR 65 D14 D2 SS	2
1015	R3951391	GLUE KE1802C ??		1031	R809928	SCR U-BOLTM 3 D29X36SS	2
1070	R395353	TAPE LEAD W25,4X0,15	1	1052	R811277	FRMG1209S CRT HD10	1
1060	R512334	CHEM KOELVLOEISTOF80/20	1	1020	R811284	FRMG1209 CPLG SF LNS	1
1030	R722843	FRMG1209 CPLG SF CTRL	2	1047	V3661346	NUT D985 M 6 SS	4
1022	R722844	FRMG1209 CPLG SF FTG	1	1033	V3673766	SPR D125A D 3,2D 7 SS	4
1021	R722845	FRMG1209 CPLG SF BRG1	4	1046	V3673806	SPR D125A D 6,4D12,5 SS	4
1011	R722846	FRMG1209S CRT SPR 3,75	4	1032	V368404	SPR L 5 M 3 H 5 IBRNI	2
1091	R762432D	SLVU PVC D 7 HV C 610	1				
1080	R800996	FRM43 CRT AKWADAG SON	1				
1095	R806552	J HV HO ACC COVER D6,1	1				
1000	R807330	FRMG1209 CPLG SF CRT 9	1				
1040	R809164	SPG COMPR 80 D15 D2,5 SS	2				
1041	R809165	SPG COMPR 65 D14 D2 SS	2				
1031	R809928	SCR U-BOLTM 3 D29X36SS	2				
1052	R811277	FRMG1209S CRT HD10	1				
1020	R811284	FRMG1209 CPLG SF LNS	1				
1047	V3661346	NUT D985 M 6 SS	4				
1033	V3673766	SPR D125A D 3,2D 7 SS	4				
1046	V3673806	SPR D125A D 6,4D12,5 SS	4				
1032	V368404	SPR L 5 M 3 H 5 IBRNI	2				

Parts listing R7628165

SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1034	B360134	NUT D985 M 3 SS	2
1042	B360636	SCR D931 M 6 X100 SS	2
1045	B360638	SPR INSUL D 6,2D15 PL	4
1061	B360639	SCR D7985 M 5 X 10 SS	2
1062	B360640	FTG O-RING 5,1 X1,6 NBR	2
1043	B360731	SCR D931 M 6 X110 SS	2
1100	B360840	FSTN SPG-CLIP STUD R6486	2
1101	B360873	NUT D439B M 5 STZN	2
1053	G115230	SCR D7991 M 5 X 12 SS	4
1012	R130757	CRT M09M PT22-22G GN	1
1051	R1309725	LENSHD10/CCR	1
1090	R132081	CD HV CRT/ HOBSON1 560	1
1092	R3137091	J HV HO MWT P 1 CUP	1

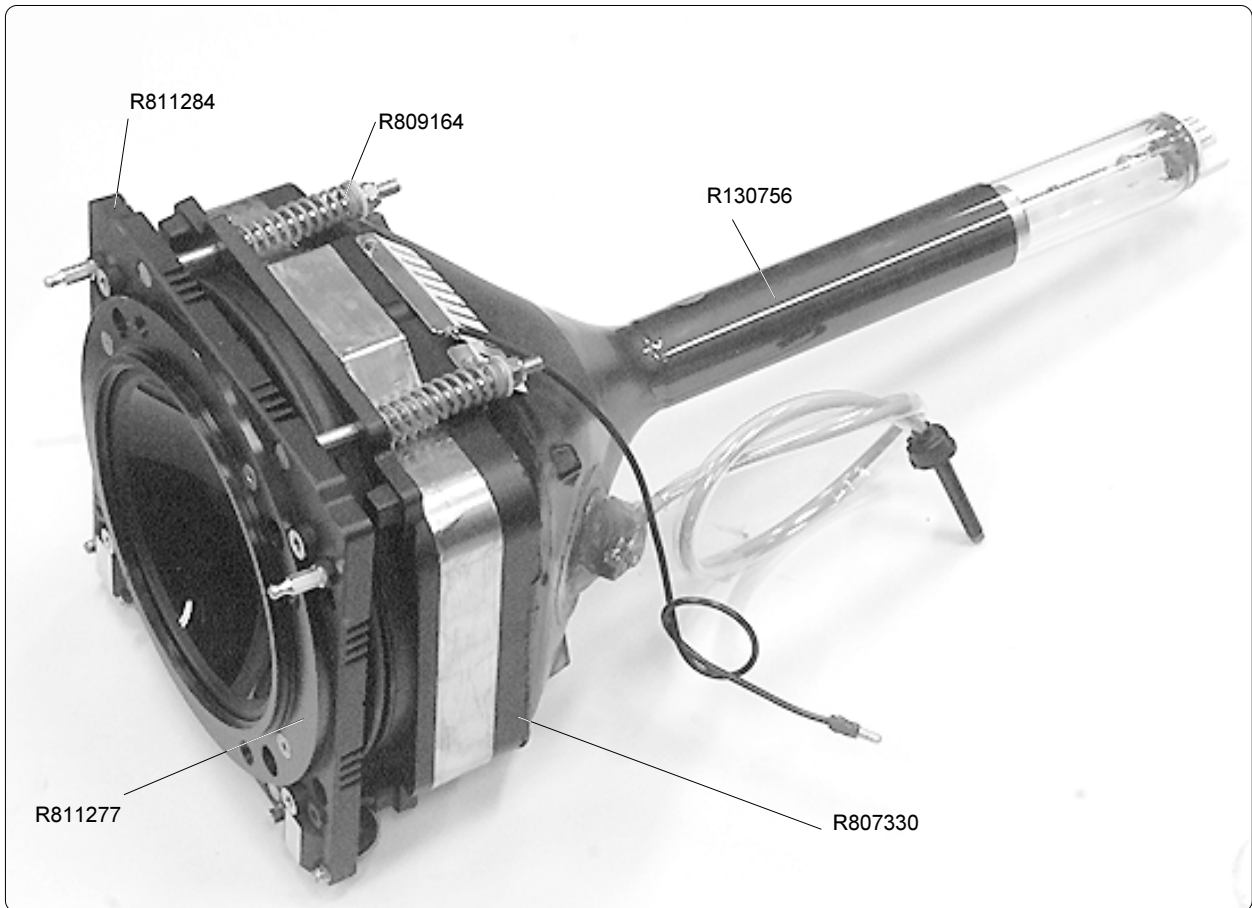
Parts listing R7628166

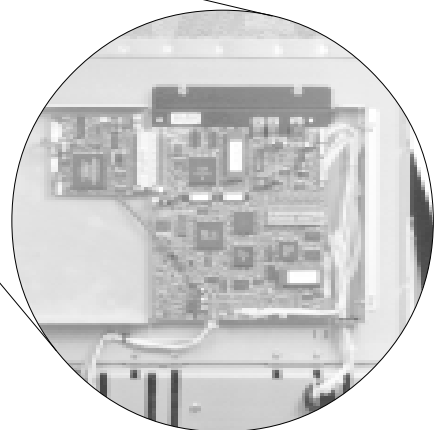
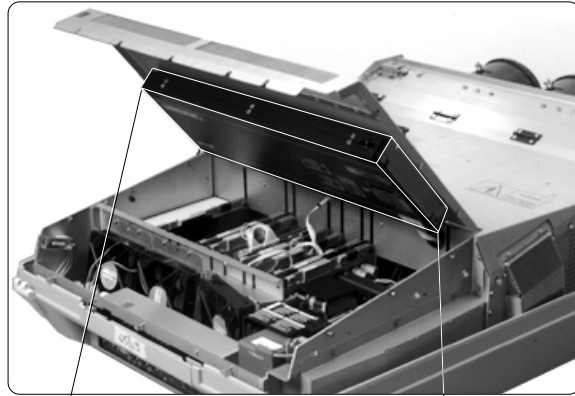
SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1034	B360134	NUT D985 M 3 SS	2
1042	B360636	SCR D931 M 6 X100 SS	2
1045	B360638	SPR INSUL D 6,2D15 PL	4
1061	B360639	SCR D7985 M 5 X 10 SS	2
1062	B360640	FTG O-RING 5,1 X1,6 NBR	2
1043	B360731	SCR D931 M 6 X110 SS	2
1100	B360840	FSTN SPG-CLIP STUD R6486	2
1101	B360873	NUT D439B M 5 STZN	2
1053	G115230	SCR D7991 M 5 X 12 SS	4
1012	R130758	CRT M09M PT22-22B BL	1
1051	R1309725	LENSHD10/CCR	1
1090	R132081	CD HV CRT/ HOBSON1 560	1
1092	R3137091	J HV HO MWT P 1 CUP	1
1093	R3137092	J HV HO ACC SLEEVE	1
1094	R3137093	J HV HO ACC SEAL	1
1081	R3420003	CD PIN 1015AWG18BK 350	1
1050	R347995	FTGO-RING139,37X2,62NBR	1
1082	R3631049	SCR Z933 M 3 X 6 SS	1
1013	R3951371	GLUE KE1802A ?	
1014	R3951381	GLUE KE1802B	
1015	R3951391	GLUE KE1802C ??	
1070	R395353	TAPE LEAD W25,4X0,15	1
1060	R512334	CHEM KOELVLOEISTOF80/20	1
1030	R722843	FRMG1209 CPLG SF CTRL	2
1022	R722844	FRMG1209 CPLG SF FTG	1

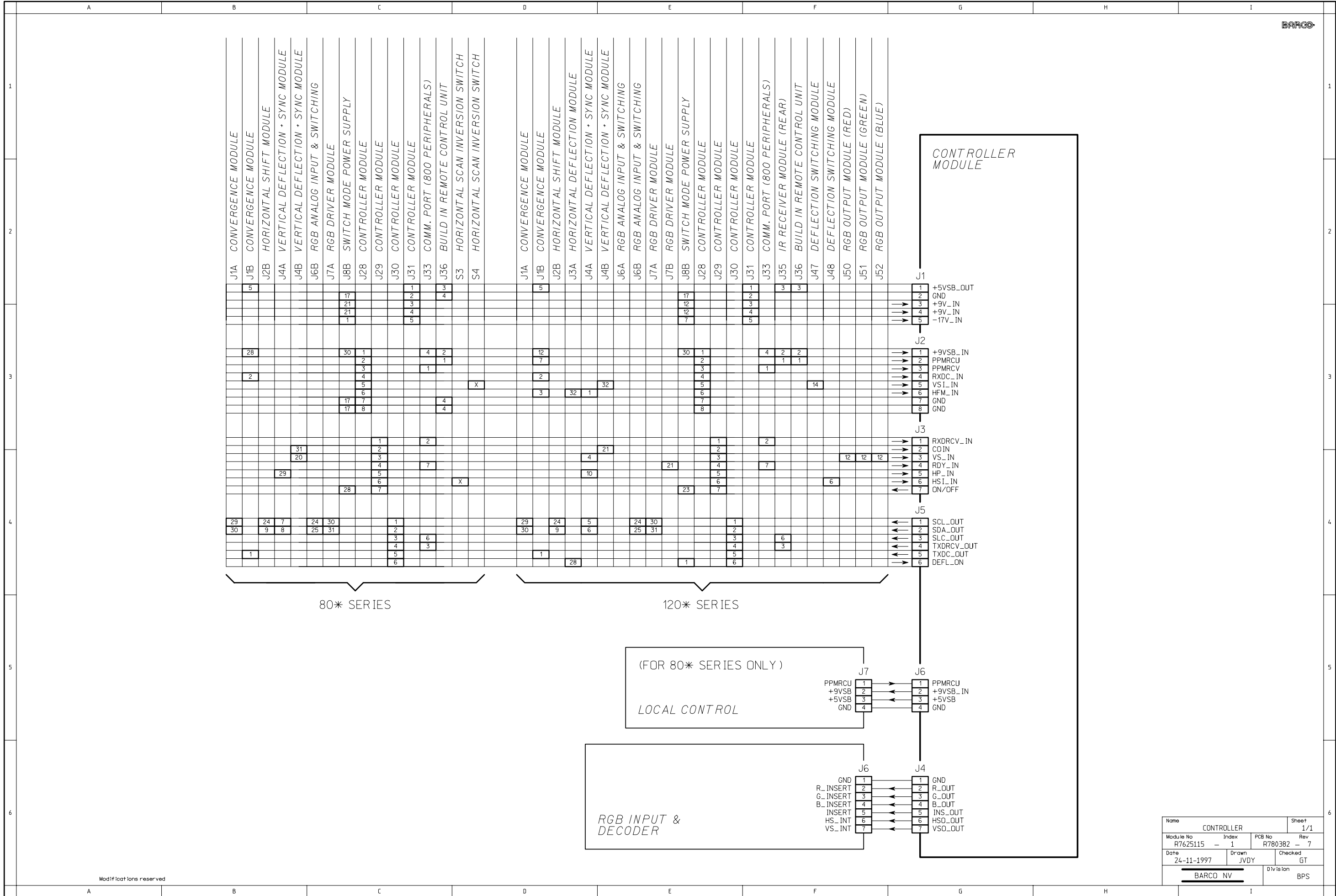
CRT UNIT M9M HD10 R

RED R7628162
 GREEN R7628165
 BLUE R7628166

SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1021	R722845	FRMG1209CPLGSFBRG1	4
1011	R722846	FRMG1209SCRTSPR3,75	4
1091	R762430D	SLVU PVC D 7 HV C 470	1
1080	R800996	FRM43 CRT AKWADAG SON	1
1095	R806552	J HV HO ACC COVER D6,1	1
1000	R807330	FRMG1209CPLGSFCRT9	1
1040	R809164	SPG COMPR 80 D15 D2,5 SS	2
1041	R809165	SPG COMPR 65 D14 D2 SS	2
1031	R809928	SCR U-BOLTM 3 D29X36SS	2
1052	R811277	FRMG1209SCRTHD10	1
1020	R811284	FRMG1209CPLGSFLNS	1
1047	V3661346	NUT D985 M 6 SS	4
1033	V3673766	SPR D125A D 3,2D 7 SS	4
1046	V3673806	SPR D125A D 6,4D12,5 SS	4
1032	V368404	SPRL 5 M 3 H 5 IBRNI	2

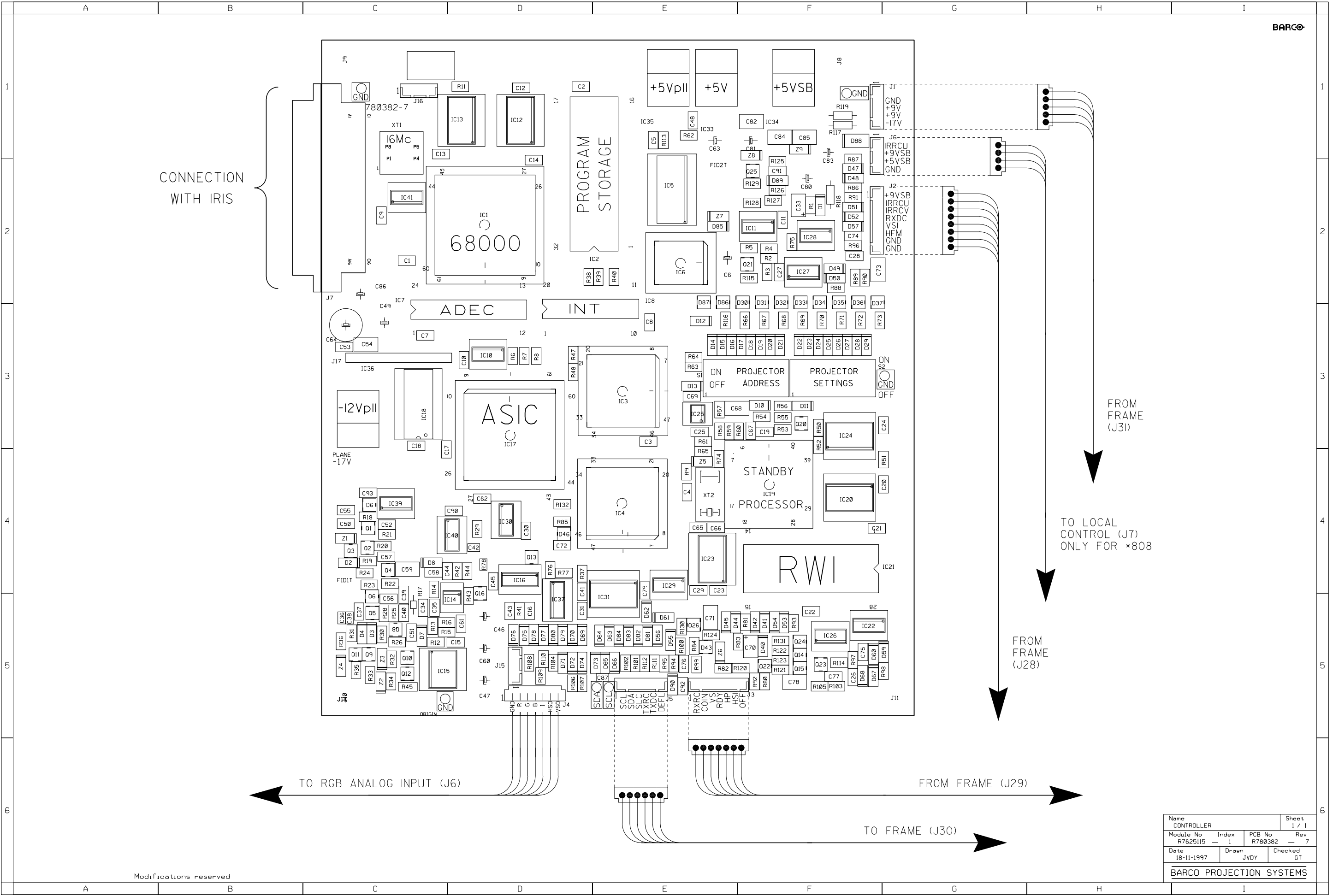






Modifications reserved

Name		CONTROLLER		Sheet	1/1
Module No	Index	PCB No	Rev		
R7625115	- 1	R780382	- 7		
Date	Drawn	Checked			
24-11-1997	JVDY	GT			
BARCO NV			Division	BPS	



CONNECTION WITH IRIS

TO RGB ANALOG INPUT (J6)

TO FRAME (J30)

FROM FRAME (J29)

TO LOCAL CONTROL (J7) ONLY FOR *808

FROM FRAME (J31)

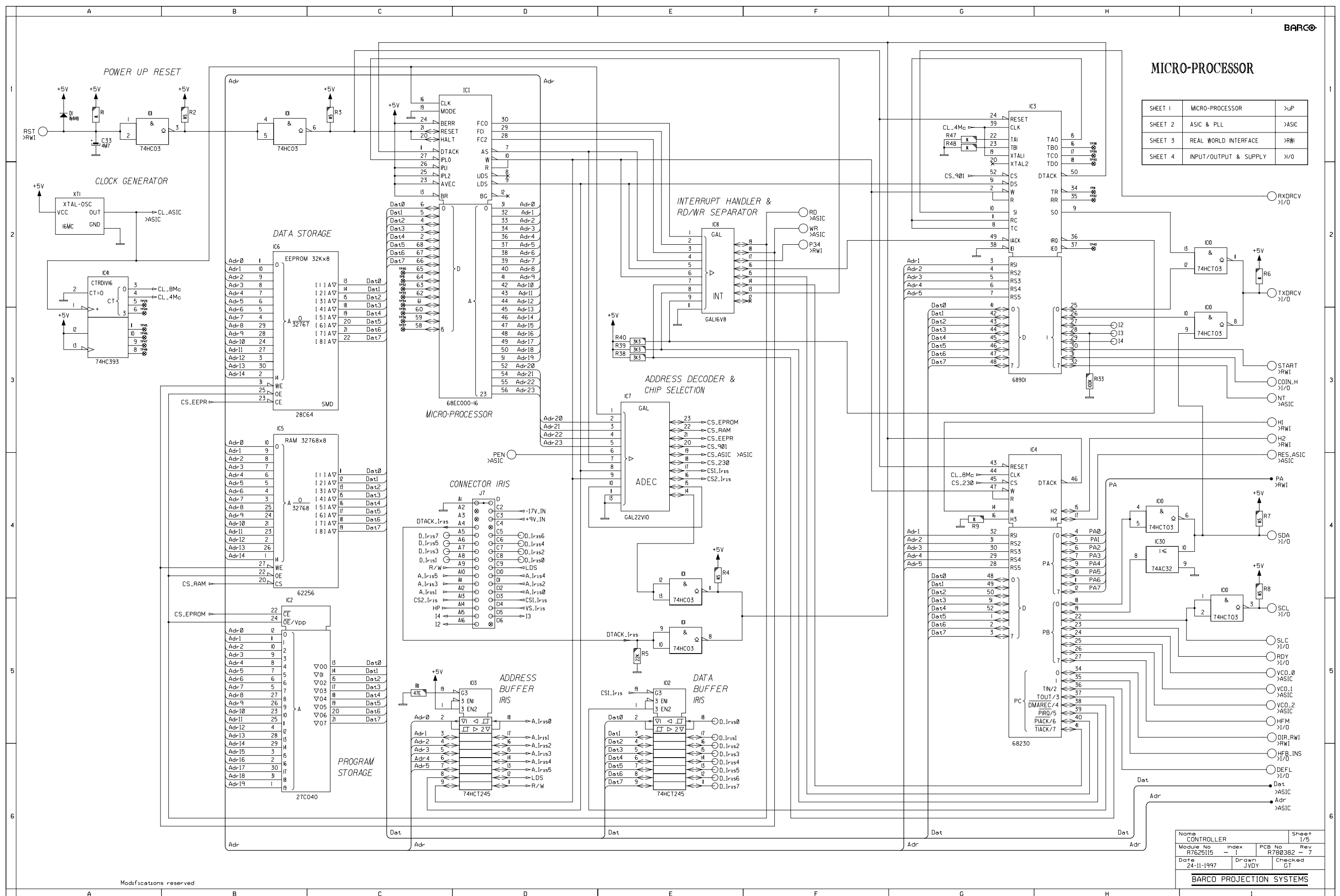
FROM FRAME (J28)

Modifications reserved

Name CONTROLLER		Sheet 1 / 1	
Module No R7625115	Index - 1	PCB No R780382	Rev - 7
Date 18-11-1997	Drawn JVDY	Checked GT	
BARCO PROJECTION SYSTEMS			

MICRO-PROCESSOR

SHEET 1	MICRO-PROCESSOR	>uP
SHEET 2	ASIC & PLL	>ASIC
SHEET 3	REAL WORLD INTERFACE	>RWI
SHEET 4	INPUT/OUTPUT & SUPPLY	>I/O

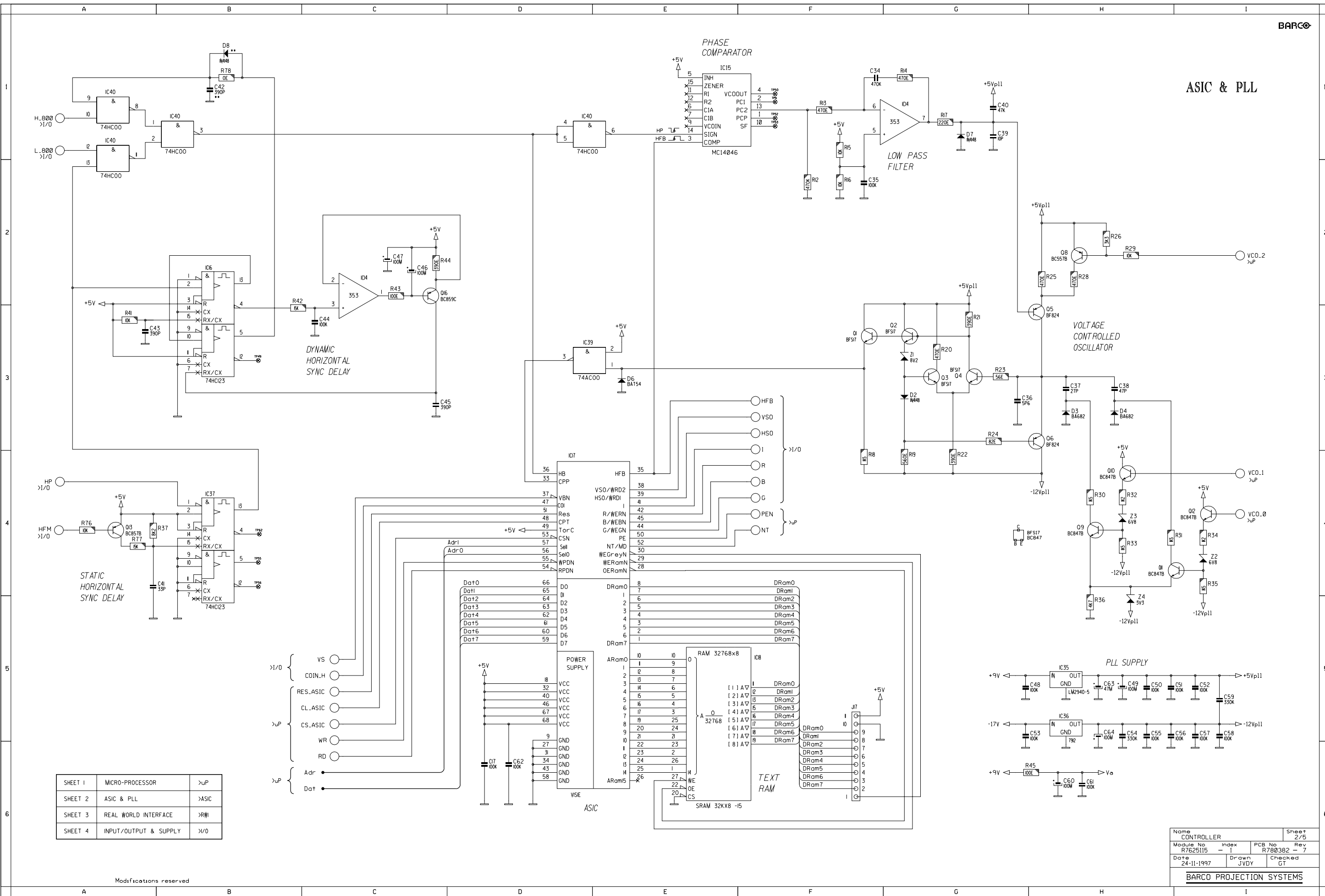


Name	CONTROLLER		Sheet	1/5			
Module No	R7625115	index	1	PCB No	R780382	Rev	7
Date	24-11-1997	Drawn	JVDY	Checked	GT		

BARCO PROJECTION SYSTEMS

Modifications reserved

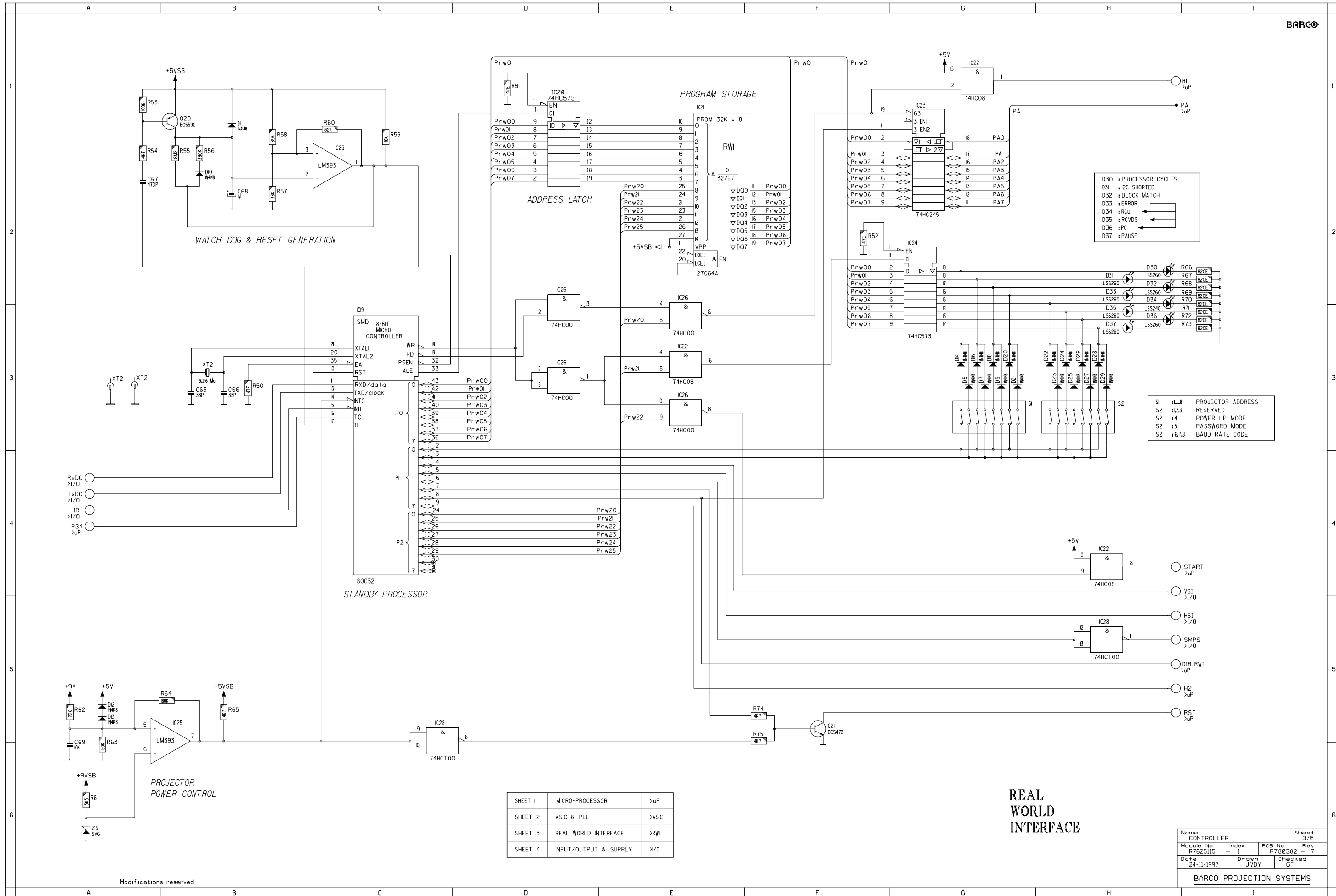
ASIC & PLL



SHEET 1	MICRO-PROCESSOR	>uP
SHEET 2	ASIC & PLL	>ASIC
SHEET 3	REAL WORLD INTERFACE	>RWI
SHEET 4	INPUT/OUTPUT & SUPPLY	>I/O

Modifications reserved

Name		Sheet 2/5	
Module No	Index	PCB No	Rev
R7625115	1	R760382	7
Date	Drawn	Checked	
24-11-1997	JVDY	GT	
BARCO PROJECTION SYSTEMS			



D30 : PROCESSOR CYCLES
 D31 : I2C SHORTED
 D32 : BLOCK MATCH
 D33 : ERROR
 D34 : RCU
 D35 : RCVDS
 D36 : PC
 D37 : PAUSE

S1 :L8 PROJECTOR ADDRESS
 S2 :L23 RESERVED
 S2 :4 POWER UP MODE
 S2 :5 PASSWORD MODE
 S2 :6,7,8 BAUD RATE CODE

SHEET 1	MICRO-PROCESSOR	>uP
SHEET 2	ASIC & PLL	>ASIC
SHEET 3	REAL WORLD INTERFACE	>RWI
SHEET 4	INPUT/OUTPUT & SUPPLY	>I/O

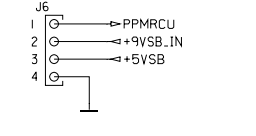
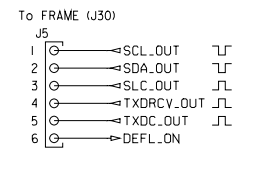
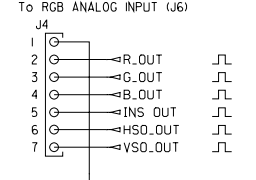
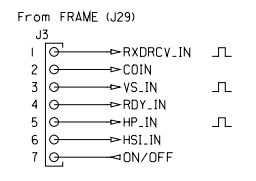
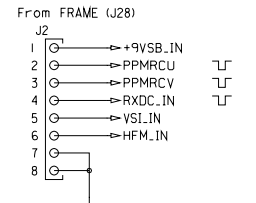
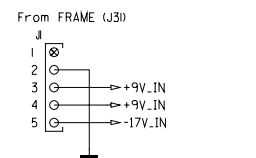
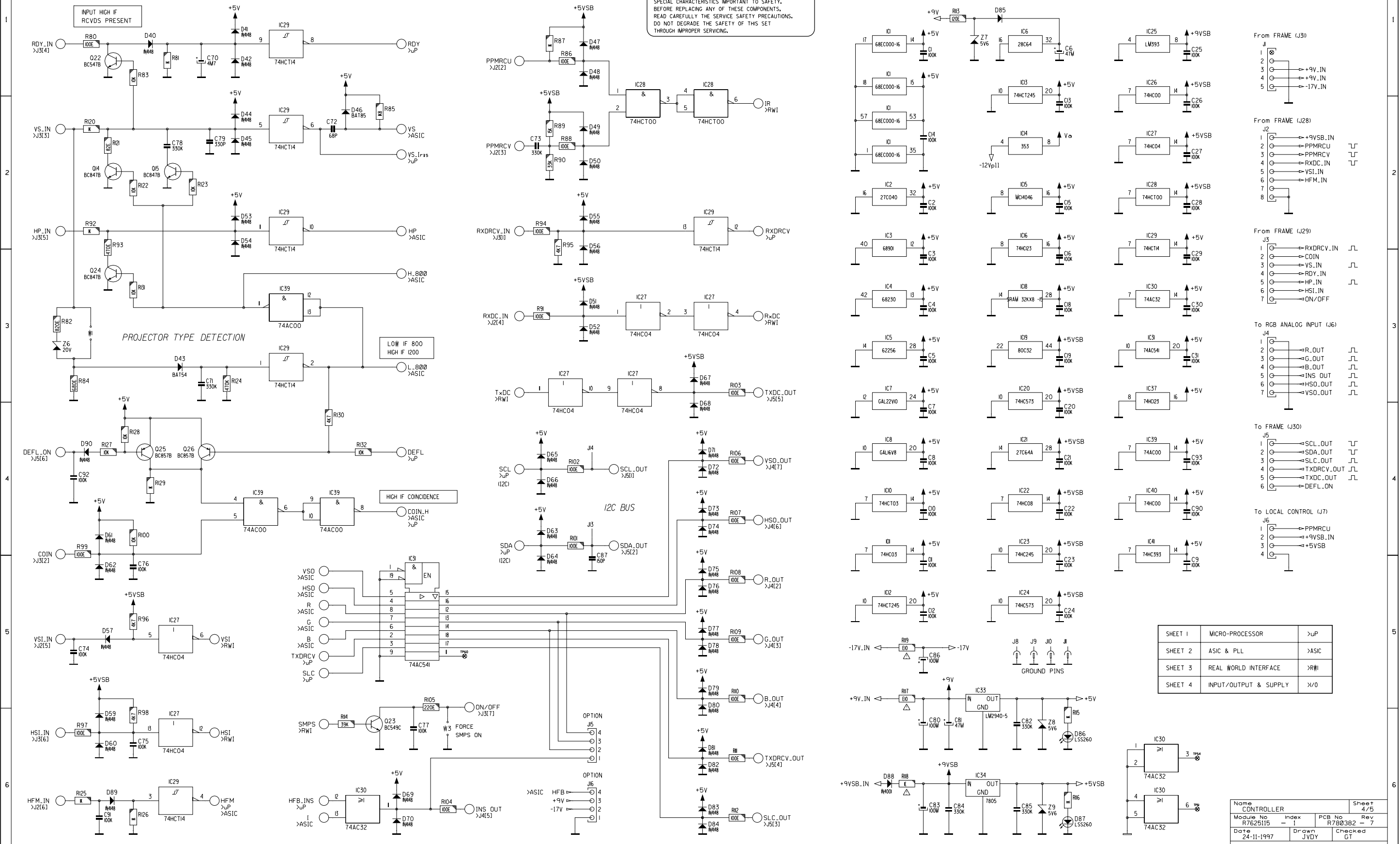
REAL
 WORLD
 INTERFACE

Name		Sheet	
CONTROLLER		3/5	
Module No	index	PCB No	Rev
R7625115	1	R789382	7
Date	Drawn	Checked	
24-11-1997	JVDY	GT	
BARCO PROJECTION SYSTEMS			

Modifications reserved

PRODUCT SAFETY NOTICE
 COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

INPUT & OUTPUT



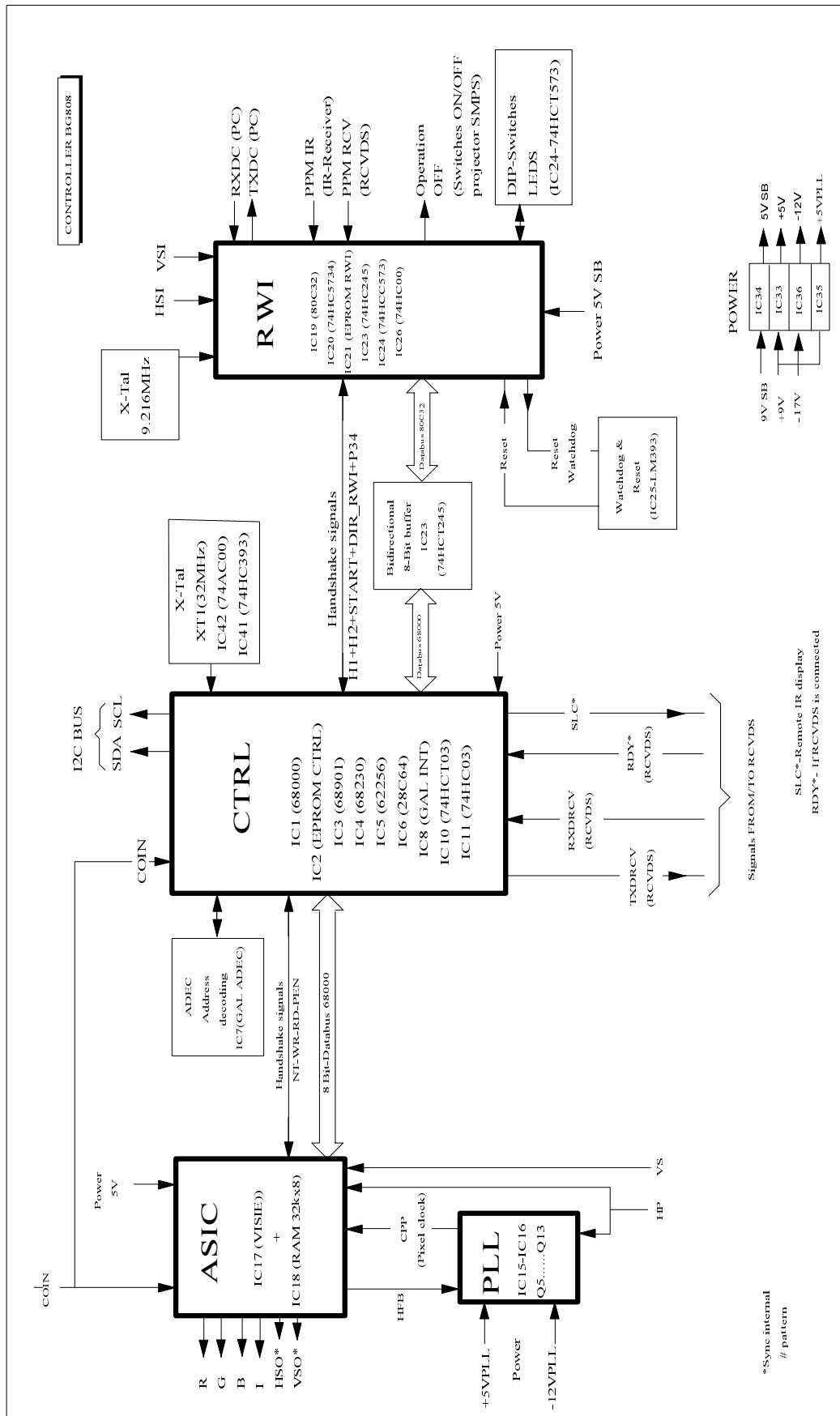
SHEET 1	MICRO-PROCESSOR	>UP
SHEET 2	ASIC & PLL	>ASIC
SHEET 3	REAL WORLD INTERFACE	>RWI
SHEET 4	INPUT/OUTPUT & SUPPLY	>I/O

Name		Sheet	
CONTROLLER		4/5	
Module No	Index	PCB No	Rev
R7625115	- 1	R760382	7
Date	Drawn	Checked	
24-11-1997	JVDY	GT	

BARCO PROJECTION SYSTEMS

Modifications reserved

A			B			C			D			
COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	BARCO
C1	G 1	4	D57	A 5	4	J1	I 1	4	R109	E	4	1
C2	G 2	4	D59	A 6	4	J2	I 2	4	R110	E	4	1
C3	G 3	4	D60	A 6	4	J3	I 2	4	R111	E	4	1
C4	G 4	4	D61	A 4	4	J4	I 3	4	R112	E	4	1
C5	G 5	4	D62	A 5	4	J5	I 4	4	R113	C	4	1
C6	G 6	4	D63	D 4	4	J6	I 4	4	R114	C	4	1
C7	G 7	4	D64	D 5	4	J7	D 4	4	R115	C	4	1
C8	H 8	4	D65	D 4	4	J8	G 8	4	R116	F	4	1
C9	H 9	4	D66	D 4	4	J9	G 8	4	R117	F	4	1
C10	G 4	4	D67	E 3	4	J10	G 5	4	R118	F	4	1
C11	G 5	4	D68	E 4	4	J11	G 5	4	R119	F	4	1
C12	G 6	4	D69	E 4	4	J13	D 4	4	R120	A	4	1
C13	G 7	4	D70	E 4	4	J14	D 4	4	R121	A	4	1
C14	G 8	4	D71	E 4	4	J15	D 6	4	R122	A	4	1
C15	G 2	4	D72	E 4	4	J16	D 6	4	R123	B	4	1
C16	G 3	4	D73	E 4	4	J17	F 5	2	R124	B	4	1
C17	G 4	4	D74	E 4	4				R125	A	4	1
C18	G 5	4	D75	E 4	4	O1	F 3	2	R126	A	4	1
C19	G 6	4	D76	E 5	4	O2	G 3	2	R127	A	4	1
C20	G 7	4	D77	E 5	4	O3	G 3	2	R128	A	4	1
C21	G 8	4	D78	E 5	4	O4	G 3	2	R129	A	4	1
C22	G 9	4	D79	E 5	4	O5	H 3	2	R130	A	4	1
C23	G 10	4	D80	E 5	4	O6	H 3	2	R131	A	4	1
C24	G 11	4	D81	E 6	4	O8	H 2	2	R132	C	4	1
C25	H 1	4	D82	E 6	4	O9	H 4	4	R133	H	3	1
C26	H 2	4	D83	E 6	4	O10	H 4	4				
C27	H 3	4	D84	E 6	4	O11	H 4	4	SI	G 3	3	
C28	H 4	4	D85	G 1	4	O12	I 4	4	S2	H 3	3	
C29	H 5	4	D86	G 6	4	O13	A 4	4				
C30	H 6	4	D87	G 6	4	O14	A 2	4	TP29	A	2	1
C31	H 7	4	D88	G 6	4	O15	A 2	4	TP30	C	2	1
C32	H 8	4	D89	A 6	4	O16	A 2	4	TP31	C	2	1
C33	I 1	4	D90	A 4	4	O20	B 1	3	TP32	C	2	1
C34	F 1	1				O21	F 5	3	TP33	C	2	1
C35	F 2	1				O22	A 1	4	TP34	C	2	1
C36	F 3	1	IC1	D 1	1	O23	C 6	4	TP35	H	1	1
C37	H 1	1	IC1	F 2	4	O24	A 4	4	TP36	C	3	1
C38	H 2	4	IC1	F 2	4	O25	A 4	4	TP37	C	3	1
C39	G 1	1	IC1	F 1	4	O26	B 4	4	TP38	H	1	1
C40	I 1	4	IC2	B 3	1				TP39	H	1	1
C41	A 1	4	IC2	B 3	1	R1	A 1	1	TP40	H	2	1
C42	A 2	4	IC3	G 1	1	R2	B 1	1	TP41	H	2	1
C43	A 3	4	IC3	G 1	1	R3	C 1	1	TP42	H	2	1
C44	A 4	4	IC4	F 2	4	R4	E 4	4	TP43	H	2	1
C45	A 5	4	IC4	F 2	4	R5	E 5	4	TP44	A	3	1
C46	A 6	4	IC5	B 3	1	R6	B 3	1	TP45	A	3	1
C47	A 7	4	IC5	B 3	1	R7	I 4	4	TP46	A	3	1
C48	H 8	4	IC6	F 3	4	R8	I 4	4	TP47	A	3	1
C49	H 9	4	IC6	B 2	1	R9	G 4	4	TP48	A	3	1
C50	H 10	4	IC6	B 2	1	R10	I 1	1	TP49	B	3	2
C51	H 11	4	IC7	F 3	4	R12	F 2	2	TP50	F	1	1
C52	H 12	4	IC7	F 3	4	R13	F 1	1	TP51	F	1	1
C53	H 13	4	IC8	E 2	1	R14	G 1	1	TP52	F	1	1
C54	H 14	4	IC8	F 4	4	R15	F 1	1	TP53	F	1	1
C55	H 15	4	IC10	H 4	1	R16	F 2	1	TP54	H	6	4
C56	H 16	4	IC10	H 4	1	R17	G 1	1	TP55	B	4	2
C57	H 17	4	IC10	I 2	1	R18	F 4	4	TP56	B	4	2
C58	H 18	4	IC10	I 4	4	R19	G 4	4	TP60	C	3	4
C59	H 19	4	IC10	F 4	4	R20	G 4	4	TP61	B	4	4
C60	H 20	4	IC11	E 5	1	R21	C 3	3	TP62	B	4	2
C61	H 21	4	IC11	B 1	1	R22	G 4	4				
C62	D 0	0	IC11	B 1	1	R23	G 3	3	W1	A 3	4	
C63	H 0	0	IC11	A 1	1	R24	C 3	3	W3	C 6	4	
C64	H 1	1	IC12	F 4	1	R25	H 1	1				
C65	B 2	2	IC12	F 5	4	R26	H 2	2	XT1	A 2	1	
C66	B 3	3	IC12	F 5	4	R28	H 2	2	XT2	B 3	3	
C67	A 4	4	IC13	D 5	1	R29	H 4	4	XT2	A 3	3	
C68	B 5	5	IC13	G 1	4	R30	H 4	4	XT2	A 3	3	
C69	B 6	6	IC14	I 1	1	R31	I 4	4				
C70	B 7	7	IC14	G 2	4	R32	H 4	4	Z1	G 3	2	
C71	B 8	8	IC14	G 2	4	R33	H 4	4	Z2	I 4	4	
C72	C 9	9	IC15	E 1	1	R34	I 4	4	Z3	H 4	4	
C73	D 0	0	IC15	G 2	4	R35	I 4	4	Z4	H 4	4	
C74	D 1	1	IC16	G 2	4	R36	H 5	4	Z5	A 6	6	
C75	A 2	2	IC16	G 2	4	R37	B 4	4	Z6	A 3	4	
C76	A 3	3	IC17	D 4	2	R38	E 3	1	Z7	C 1	4	
C77	A 4	4	IC18	F 5	2	R39	E 3	1	Z8	G 6	6	
C78	A 5	5	IC18	F 5	2	R40	E 3	1	Z9	G 6	6	
C79	A 6	6	IC19	G 3	4	R41	A 3	3				
C80	A 7	7	IC19	G 3	4	R42	B 2	2				
C81	A 8	8	IC20	D 1	3	R43	C 2	2				
C82	A 9	9	IC20	G 3	4	R44	C 2	2				
C83	G 0	0	IC21	G 1	1	R45	C 6	6				
C84	G 1	1	IC21	G 4	4	R47	G 1	1				
C85	G 2	2	IC22	G 1	3	R48	G 1	1				
C86	G 3	3	IC22	F 3	4	R50	B 3	3				
C87	D 4	4	IC22	G 1	4	R51	D 1	1				
C88	D 5	5	IC22	G 1	4	R52	F 2	2				
C89	A 6	6	IC23	G 1	3	R53	A 1	1				
C90	A 7	7	IC23	G 4	4	R54	A 1	1				
C91	A 8	8	IC24	G 2	4	R55	B 1	1				
C92	A 9	9	IC24	G 2	4	R56	B 1	1				
C93	H 4	4	IC25	C 1	1	R57	B 2	2				
D1	A 1	1	IC25	B 5	3	R58	B 1	1				
D2	G 3	3	IC25	B 5	3	R59	C 1	1				
D3	H 5	5	IC25	H 1	4	R60	B 1	1				
D4	H 6	6	IC26	D 3	3	R61	A 6	6				
D5	H 7	7	IC26	D 3	3	R62	A 5	5				
D6	G 8	8	IC26	E 2	3	R63	A 5	5				
D7	G 9	9	IC26	E 2	3	R64	H 5	4				
D8	B 1	1	IC26	F 3	3	R65	H 5	4				
D9	B 2	2	IC26	H 1	4	R66	I 2	2				
D10	B 3	3	IC27	B 6	4	R67	I 2	2				
D11	A 4	4	IC27	B 6	4	R68	I 2	2				
D12	A 5	5	IC27	B 6	4	R69	I 2	2				
D13	A 6	6	IC27	F 3	4	R70	I 2	2				
D14	A 7	7	IC27	F 3	4	R71	I 3	3				
D15	A 8	8	IC27	F 3	4	R72	I 3	3				
D16	A 9	9	IC27	D 3	4	R73	I 3	3				
D17	G 0	0	IC27	D 3	4	R74	F 5	5				
D18	G 1	1	IC28	H 2	4	R75	F 5	5				
D19	G 2	2	IC28	C 5	3	R76	A 4	4				
D20	G 3	3	IC28	H 5	3	R77	A 4	4				
D21	G 4	4	IC28	E 1	4	R78	B 1	1				
D22	G 5	5	IC28	E 1	4	R80	B 1	1				
D23	H 6	6	IC28	H 2	4	R81	B 1	1				
D24	H 7	7	IC29	B 6	4	R82	A 3	4				
D25	H 8	8	IC29	B 2	4	R83	A 1	4				
D26	H 9	9	IC29	B 2	4	R84	A 3	4				
D27	H 10	10	IC29	B 2	4	R85	C 2	4				
D28	H 11	11	IC29	B 3	4	R86	D 1	4				
D29	H 12	12	IC29	H 2	4	R87	D 1	4				
D30	H 13	13	IC29	H 2	4	R88	D 2	4				
D31	H 14	14	IC30	C 6	4	R89	D 2	4				
D32	H 15	15	IC30	H 6	4	R90	D 2	4				
D33	H 16	16	IC30	H 6	4	R91	D 3	4				
D34	H 17	17	IC30	H 6	4	R92	A 2	4				
D35	H 18	18	IC31	C 5	4	R93	A 2	4				
D36	H 19	19	IC31	H 3	4	R94	D 2	4				
D37	H 20	20	IC31	H 3	4	R95	D 2	4				
D40	A 1	1	IC33	G 5	4	R96	D 2	4				
D41	B 1	1	IC34	C 6	4	R97	A 5	4				
D42	B 1	1	IC36	H 5	2	R98	A 6	4				
D43	B 3	3	IC37	B 4	2	R99	A 4	4				
D44	B 3	3	IC37	H 3	4	R100	A 4	4				
D45	B 3	3	IC39	H 3	4	R101	D 4	4				
D46	C 4	4	IC39	B 4	4	R102	D 4	4				
D47	D 1	1	IC39	C 4	4	R103	E 3	4				
D48	D 1	1	IC39	B 3	4	R104	C 6	4				
D49	D 2	2	IC39	H 4	4	R105	C 5	4				
D50	D 3	3	IC40	D 1	2	R106	E 4	4				
D51	D 3	3	IC40	B 1	2	R107	E 4	4				
D52												



TECHNICAL DESCRIPTION "CONTROLLER"

Introduction.

The controller module can be divided into four blocks : the RWI (Real World Interface), CTRL (Controller), ASIC and PLL.

Each block has a typical function, but, needs information from the other blocks. These connections are realised by the address / data bus or by "handshake" signals. Address and data are split by a GAL - ADEC (**A**ddress **D**ECode**r**).

The schematic diagram consists of 4 sheets : Sheet 1=Controller , Sheet 2=ASIC+PLL, Sheet 3=RWI and Sheet 4=I/O + Power Supplies.

Real World Interface

The RWI is responsible for the communication with the peripheral circuitry of the projector, more in particular the PPM (Pulse Position Modulated) commands. These commands can come in via the IR receiver, coming straight from the attached keypad, via the PC communication (RS232) port or the RCVDS port.

This electronic part must be supplied from the +9V**SB** supply line, as it must be ready in stand-by to respond to an ON command. The state of the switching transistor Q23 (on the I/O) is determined by the "SMPS" line. This is the output pin 11 of IC28, which is supplied from the micro-controller IC19. Whether this line is high or low at the moment the mains is supplied, depends on the DIP switch position "Power ON/OFF" (S2, switch 4).

The data bus of the RWI micro-controller IC19 is connected with the main controller IC2 via a bi-directional buffer IC23.

The multiplexed address/data bus P0 of the microcontroller drives the LEDs D30 - D37 and the DIP switches via the buffer IC24 (74HCT573).

Watchdog - 9 Volt Watch

The watchdog is built around IC25 pins 1 - 2 - 3 and Q20 transistor. At switching on the projector, the +5VSB is supplied to this circuit. As C68 is not charged at switching on, the output pin 1 is high for a moment in order to reset the microcontroller at pin 10 of IC19 (RST). Pin 3 of IC25 is set at half the supply voltage. The microcontroller triggers the watchdog via C67 in order to keep charged the capacitor C68 by conduction of Q20. If the processor gets blocked for any reason, the level detector output pin 1 comes high and resets the controller as described before. The watchdog has as task to restart the controller when it gets blocked for some reason.

When, during an arcing in a CRT the +5V supply is temporarily shorted, the microprocessor can get in trouble. For that reason, the other level detector in IC25 monitors the 9V (9VWATCH). The output of this detector is connected to the **INT0** of the processor.

Controller(CTRL)

The Controller is built around the chipset 68000=microprocessor, 68230 and 68901. The chip 68230 and 68901 provide the in-/output bit (e.g. PLL-drive, I²C coincidence...), the bus connection with the RWI, the serial communication with the RCVDS and the interrupt-inputs.

The Gal IC7 is the address decoder; all I/O are memory mapped. At the same time IC7 provides the DTACK (data acknowledge) of the other components to the 68000.

The Gal IC8 provides for the interrupt management and separates RD and WR from RD/WR.

The information adjusted by the user regarding the settings of the different blocks (memory blocks) are stocked in the E²PROM IC6.

The clockgenerator is built around IC1/XT1. The buffered TXDRCV and RXDRCV are

the communication lines with the switcher / selector RCVDS800 or RCVDS05. The RDY line (Ready line) informs the microprocessor on the status of the switcher (powered up or powered down).

ASIC

The ASIC IC17 integrates different functions and is custom made for this application. This chip is amongst others responsible for the generation and synchronisation of the text that must be projected on request. The text or pixel information is loaded by the controller into the RAM IC18. Eight bytes are loaded into the RAM via the ASIC during the HFB time. (For that reason, the controller cannot start up when there are no HFB pulses available from the ASIC).

When an external source is selected, the ASIC measures 'frequently' the line and vertical frequencies and informs the main processor if there are changes (change of resolution mode or change of source....).

The pixelclock, generated by the VCO of the PLL, is sent to the ASIC where it is divided down to *HFB* and returned to the phase comparator of the PLL.

When an internal pattern is selected, required by the user or automatically at starting up, the ASIC generates sync signals HSO and VSO.

The R, G and B together with the INSERT are buffered with IC31 and further proceed to the RGB INPUT + SW module.

PLL

The PLL consists of the digitally edge controlled phase comparator IC15, the low pass filter around IC14, the VCO (Q1 - Q12) and the internal divider in the ASIC. The VCO is a sawtooth generator. C36 is charged up via Q5, driven in the base with the low pass filter output. Note that 0 volts on the base means the maximum frequency. The VCO_0/1/2 lines can turn on transistors and then additional current is available for the generator.

Via the emitterfollower Q1 and the buffer in IC39, the pixelclock is applied to the CPP input of the ASIC. The PLL phase comparator has a double task. Tune the frequency of the VCO to a multiple of the line frequency and lock the position of the text to the deflection.

The active line period is divided into 256 pixels to position 32 characters on a line in the low frequency range and into 512 pixels (64 characters) in the high freq. range (see Hor defl module).

The *HFM* line informs the processor and thus the PLL on the flyback time, this information is needed to determine the pixel frequency of the PLL.

Coincidence

The coincidence of the line oscillator is an important information for the controller. At starting up, the controller always generates first internal sync, which must lead to a coincidence situation.

If an external source is selected then, the controller waits for coincidence and the timings of the selected source. These timings are needed to choose the memory block corresponding with the source. If the coincidence is not active, the projector remains blanked (black screen).

Spare parts Controller module

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
70	R3132539	JU0.6 FBT P28 E1AU TLP	1	C 57	P210122	C# X7R MU 100N K 50 1206	1
60	R313487	JU0.6 FBT P32 E1AU TLP	1	C 58	P210122	C# X7R MU 100N K 50 1206	1
31	R3631069	SCR Z933 M 3 X 10 SS	4	C 59	P210095	C# X7R MU 330N M 50 1812	1
40	R3661026	NUT D934 M 3 SS	4	C 60	R111477	C EL RA 100M M 25E2 85	1
50	R3674391	RVT BLND_R3,2C 3,2WSTAL	2	C 61	P210122	C# X7R MU 100N K 50 1206	1
20	R367502	SPR D6798AD 3,2D 6 STZN	4	C 62	P210148	C# Y5V MU 470N Z 25 1206	1
	R367699	RVT AVTRON2,5L 8,1 AL	2	C 63	R111476	C EL RA 47M M 25E2 85	1
10	R805856	HTSNC PJ56 G808 CTRL	1	C 64	R111477	C EL RA 100M M 25E2 85	1
C 1	P210122	C# X7R MU 100N K 50 1206	1	C 65	P210139	C# COG MU 33P J 50 1206	1
C 2	P210122	C# X7R MU 100N K 50 1206	1	C 66	P210139	C# COG MU 33P J 50 1206	1
C 3	P210122	C# X7R MU 100N K 50 1206	1	C 67	P210102	C# COG MU 470P J 50 1206	1
C 4	P210122	C# X7R MU 100N K 50 1206	1	C 68	P210153	C# Z5U MU 1M M 63 1812	1
C 5	P210122	C# X7R MU 100N K 50 1206	1	C 69	P210092	C# X7R MU 10N K 50 1206	1
C 6	R111476	C EL RA 47M M 25E2 85	1	C 70	P212006	C# TA 4M7M 16 3528	1
C 7	P210122	C# X7R MU 100N K 50 1206	1	C 71	P210095	C# X7R MU 330N M 50 1812	1
C 8	P210122	C# X7R MU 100N K 50 1206	1	C 72	P210010	C# COG MU 68P J 50 1206	1
C 9	P210122	C# X7R MU 100N K 50 1206	1	C 73	P210095	C# X7R MU 330N M 50 1812	1
C 10	P210122	C# X7R MU 100N K 50 1206	1	C 74	P210122	C# X7R MU 100N K 50 1206	1
C 11	P210122	C# X7R MU 100N K 50 1206	1	C 75	P210122	C# X7R MU 100N K 50 1206	1
C 12	P210122	C# X7R MU 100N K 50 1206	1	C 76	P210122	C# X7R MU 100N K 50 1206	1
C 13	P210122	C# X7R MU 100N K 50 1206	1	C 77	P210122	C# X7R MU 100N K 50 1206	1
C 14	P210122	C# X7R MU 100N K 50 1206	1	C 78	P210095	C# X7R MU 330N M 50 1812	1
C 15	P210122	C# X7R MU 100N K 50 1206	1	C 79	P210121	C# COG MU 330P J 50 1206	1
C 16	P210122	C# X7R MU 100N K 50 1206	1	C 80	R111477	C EL RA 100M M 25E2 85	1
C 17	P210122	C# X7R MU 100N K 50 1206	1	C 81	R111476	C EL RA 47M M 25E2 85	1
C 18	P210122	C# X7R MU 100N K 50 1206	1	C 82	P210095	C# X7R MU 330N M 50 1812	1
C 19	P210122	C# X7R MU 100N K 50 1206	1	C 83	R111477	C EL RA 100M M 25E2 85	1
C 20	P210122	C# X7R MU 100N K 50 1206	1	C 84	P210095	C# X7R MU 330N M 50 1812	1
C 21	P210122	C# X7R MU 100N K 50 1206	1	C 85	P210095	C# X7R MU 330N M 50 1812	1
C 22	P210122	C# X7R MU 100N K 50 1206	1	C 86	R111477	C EL RA 100M M 25E2 85	1
C 23	P210122	C# X7R MU 100N K 50 1206	1	C 87	P210022	C# COG MU 150P J 50 0805	1
C 24	P210122	C# X7R MU 100N K 50 1206	1	C 90	P210122	C# X7R MU 100N K 50 1206	1
C 25	P210122	C# X7R MU 100N K 50 1206	1	C 91	P210122	C# X7R MU 100N K 50 1206	1
C 26	P210122	C# X7R MU 100N K 50 1206	1	C 92	P210122	C# X7R MU 100N K 50 1206	1
C 27	P210122	C# X7R MU 100N K 50 1206	1	C 93	P210122	C# X7R MU 100N K 50 1206	1
C 28	P210122	C# X7R MU 100N K 50 1206	1	C 94	P210122	C# X7R MU 100N K 50 1206	1
C 29	P210122	C# X7R MU 100N K 50 1206	1	D 1	P234099	D#4148 R DMMELF	1
C 30	P210122	C# X7R MU 100N K 50 1206	1	D 2	P234099	D#4148 R DMMELF	1
C 31	P210122	C# X7R MU 100N K 50 1206	1	D 3	P234259	D#BA682 S035A1 DMMELF	1
C 33	P212006	C# TA 4M7M 16 3528	1	D 4	P234259	D#BA682 S035A1 DMMELF	1
C 34	P210148	C# Y5V MU 470N Z 25 1206	1	D 6	P234055	D#BAT54 SCH SOT23	1
C 35	P210122	C# X7R MU 100N K 50 1206	1	D 7	P234099	D#4148 R DMMELF	1
C 36	P210134	C# COG MU 5P6D 50 0805	1	D 10	P234099	D#4148 R DMMELF	1
C 37	P210141	C# COG MU 27P J 50 1206	1	D 11	P234099	D#4148 R DMMELF	1
C 38	P210019	C# COG MU 47P J 50 0805	1	D 12	P234099	D#4148 R DMMELF	1
C 39	P210138	C# COG MU 10P J 50 1206	1	D 13	P234099	D#4148 R DMMELF	1
C 40	P210045	C# X7R MU 47N K 50 1206	1	D 14	P234099	D#4148 R DMMELF	1
C 41	P210139	C# COG MU 33P J 50 1206	1	D 15	P234099	D#4148 R DMMELF	1
C 43	P210185	C# COG MU 390P J 50 1206	1	D 16	P234099	D#4148 R DMMELF	1
C 44	P210122	C# X7R MU 100N K 50 1206	1	D 17	P234099	D#4148 R DMMELF	1
C 45	P210185	C# COG MU 390P J 50 1206	1	D 18	P234099	D#4148 R DMMELF	1
C 46	R111477	C EL RA 100M M 25E2 85	1	D 19	P234099	D#4148 R DMMELF	1
C 47	R111477	C EL RA 100M M 25E2 85	1	D 20	P234099	D#4148 R DMMELF	1
C 48	P210122	C# X7R MU 100N K 50 1206	1	D 21	P234099	D#4148 R DMMELF	1
C 49	R111477	C EL RA 100M M 25E2 85	1	D 22	P234099	D#4148 R DMMELF	1
C 50	P210122	C# X7R MU 100N K 50 1206	1	D 23	P234099	D#4148 R DMMELF	1
C 51	P210122	C# X7R MU 100N K 50 1206	1	D 24	P234099	D#4148 R DMMELF	1
C 52	P210122	C# X7R MU 100N K 50 1206	1	D 25	P234099	D#4148 R DMMELF	1
C 53	P210122	C# X7R MU 100N K 50 1206	1	D 26	P234099	D#4148 R DMMELF	1
C 54	P210095	C# X7R MU 330N M 50 1812	1	D 27	P234099	D#4148 R DMMELF	1
C 55	P210122	C# X7R MU 100N K 50 1206	1	D 28	P234099	D#4148 R DMMELF	1
C 56	P210122	C# X7R MU 100N K 50 1206	1	D 29	P234099	D#4148 R DMMELF	1
				D 30	P234040	D#LED LSS260 RED SOT23	1
				D 31	P234040	D#LED LSS260 RED SOT23	1

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
D 32	P234040	D#LEDLSS260 RED SOT23	1	I 13	P230051	U#74HCT245 SOL20 I	1
D 33	P234040	D#LEDLSS260 RED SOT23	1	I 14	P230266	U#353 LF SO8 P	1
D 34	P234040	D#LEDLSS260 RED SOT23	1	I 15	P2300090	U#14046B MC SOL16 I	1
D 35	P234040	D#LEDLSS260 RED SOT23	1	I 16	P230025	U#74HC123 SO16 I	1
D 36	P234040	D#LEDLSS260 RED SOT23	1	I 17	R132882	U#1 TG PLCC68 P	1
D 37	P234040	D#LEDLSS260 RED SOT23	1	I 18	P231268	U#SRAM 32KX8 15SOJ28 P	1
D 40	P234099	D#4148 R DMMELF	1	I 19	P230372	U#80C32 PLCC44 P	1
D 41	P234099	D#4148 R DMMELF	1	I 20	P230164	U#74HC573 SOL20 I	1
D 42	P234099	D#4148 R DMMELF	1	I 21	R32831308	U_S G1208 RWI V508	1
D 43	P234055	D#BAT54 SCH SOT23	1	I 22	P230231	U#74HC08 SO14 I	1
D 44	P234099	D#4148 R DMMELF	1	I 23	P230318	U#74HC245 SOL20 I	1
D 45	P234099	D#4148 R DMMELF	1	I 24	P230164	U#74HC573 SOL20 I	1
D 46	P234055	D#BAT54 SCH SOT23	1	I 25	P230028	U#393 LM SO8 P	1
D 47	P234099	D#4148 R DMMELF	1	I 26	P230072	U#74HC00 SO14 I	1
D 48	P234099	D#4148 R DMMELF	1	I 27	P230021	U#74HC04 SO14 I	1
D 49	P234099	D#4148 R DMMELF	1	I 28	P230102	U#74HCT00 SO14 I	1
D 50	P234099	D#4148 R DMMELF	1	I 29	P230499	U#74HCT14 SO14 I	1
D 51	P234099	D#4148 R DMMELF	1	I 30	P230526	U#74AC32 SO14 I	1
D 52	P234099	D#4148 R DMMELF	1	I 31	P230754	U#74AC541 SOL20 I	1
D 53	P234099	D#4148 R DMMELF	1	I 33	R134030	U 2940CT05LM TO220 P	1
D 54	P234099	D#4148 R DMMELF	1	I 34	R134001	U 7805 TO220 P	1
D 55	P234099	D#4148 R DMMELF	1	I 35	R134030	U 2940CT05LM TO220 P	1
D 56	P234099	D#4148 R DMMELF	1	I 36	R134016	U 7912 TO220 P	1
D 57	P234099	D#4148 R DMMELF	1	I 37	P230025	U#74HC123 SO16 I	1
D 59	P234099	D#4148 R DMMELF	1	I 39	P230384	U#74AC00 SO14 I	1
D 60	P234099	D#4148 R DMMELF	1	I 40	P230072	U#74HC00 SO14 I	1
D 61	P234099	D#4148 R DMMELF	1	I 41	P230046	U#74HC393 SO14 I	1
D 62	P234099	D#4148 R DMMELF	1	J 1	R313925	JCT H MBT P 5 M2SN WH	1
D 63	P234099	D#4148 R DMMELF	1	J 2	R313928	JCT H MBT P 8 M2SN WH	1
D 64	P234099	D#4148 R DMMELF	1	J 3	R313927	JCT H MBT P 7 M2SN WH	1
D 65	P234099	D#4148 R DMMELF	1	J 5	R313926	JCT H MBT P 6 M2SN WH	1
D 66	P234099	D#4148 R DMMELF	1	J 6	R313924	JCT H MBT P 4 M2SN WH	1
D 67	P234099	D#4148 R DMMELF	1	J 7	V3135931	JEUR2R2FBS P32 E1C2S 1,6	1
D 68	P234099	D#4148 R DMMELF	1	J 8	R315302	JPINPRD1,3L 5,5+3	1
D 69	P234099	D#4148 R DMMELF	1	J 9	R315302	JPINPRD1,3L 5,5+3	1
D 70	P234099	D#4148 R DMMELF	1	J 10	R315302	JPINPRD1,3L 5,5+3	1
D 71	P234099	D#4148 R DMMELF	1	J 11	R315302	JPINPRD1,3L 5,5+3	1
D 72	P234099	D#4148 R DMMELF	1	J 13	R315302	JPINPRD1,3L 5,5+3	1
D 73	P234099	D#4148 R DMMELF	1	J 14	R315302	JPINPRD1,3L 5,5+3	1
D 74	P234099	D#4148 R DMMELF	1	PC	R780382	PCB *800 CTRL 68000	1
D 75	P234099	D#4148 R DMMELF	1	Q 1	P232076	Q#BFS17 N SS SOT23	1
D 76	P234099	D#4148 R DMMELF	1	Q 2	P232076	Q#BFS17 N SS SOT23	1
D 77	P234099	D#4148 R DMMELF	1	Q 3	P232076	Q#BFS17 N SS SOT23	1
D 78	P234099	D#4148 R DMMELF	1	Q 4	P232076	Q#BFS17 N SS SOT23	1
D 79	P234099	D#4148 R DMMELF	1	Q 5	P232158	Q#BF824 P SS SOT23	1
D 80	P234099	D#4148 R DMMELF	1	Q 6	P232158	Q#BF824 P SS SOT23	1
D 81	P234099	D#4148 R DMMELF	1	Q 8	P232050	Q#BC857B P SS SOT23	1
D 82	P234099	D#4148 R DMMELF	1	Q 9	P232051	Q#BC847B N SS SOT23	1
D 83	P234099	D#4148 R DMMELF	1	Q 10	P232051	Q#BC847B N SS SOT23	1
D 84	P234099	D#4148 R DMMELF	1	Q 11	P232051	Q#BC847B N SS SOT23	1
D 85	P234099	D#4148 R DMMELF	1	Q 12	P232051	Q#BC847B N SS SOT23	1
D 86	P234040	D#LEDLSS260 RED SOT23	1	Q 13	P232050	Q#BC857B P SS SOT23	1
D 87	P234040	D#LEDLSS260 RED SOT23	1	Q 14	P232051	Q#BC847B N SS SOT23	1
D 88	P234056	D#4002 R DMELF	1	Q 15	P232051	Q#BC847B N SS SOT23	1
D 89	P234099	D#4148 R DMMELF	1	Q 16	P232101	Q#BC859C P SS SOT23	1
D 90	P234099	D#4148 R DMMELF	1	Q 20	P232101	Q#BC859C P SS SOT23	1
I 1	P2309910	U#68EC000-16 MC PLCC68P	1	Q 21	P232051	Q#BC847B N SS SOT23	1
I 3	P230506	U#68901 MK PLCC52 P	1	Q 22	P232051	Q#BC847B N SS SOT23	1
I 4	P230625	U#68230-8 TS PLCC52 P	1	Q 23	P232004	Q#BC849C N SS SOT23	1
I 5	P230756	U#SRAM 32KX8 70FP28 P	1	Q 24	P232051	Q#BC847B N SS SOT23	1
I 6	P231055	U#28C64B -15PLCC32 P	1	Q 25	P232051	Q#BC847B N SS SOT23	1
I 7	R32833001	U_S G 808 ADEC V301 GB	1	Q 26	P232050	Q#BC857B P SS SOT23	1
I 8	R328331	U_S G 808 INT V100	1	Q 26	P232050	Q#BC857B P SS SOT23	1
I 10	P230498	U#74HCT03 SO14 I	1	R 1	P200411	R# CE H 1K F 0W12 1206	1
I 11	P230222	U#74HC03 SO14 I	1				
I 12	P230051	U#74HCT245 SOL20 I	1				


Controller module

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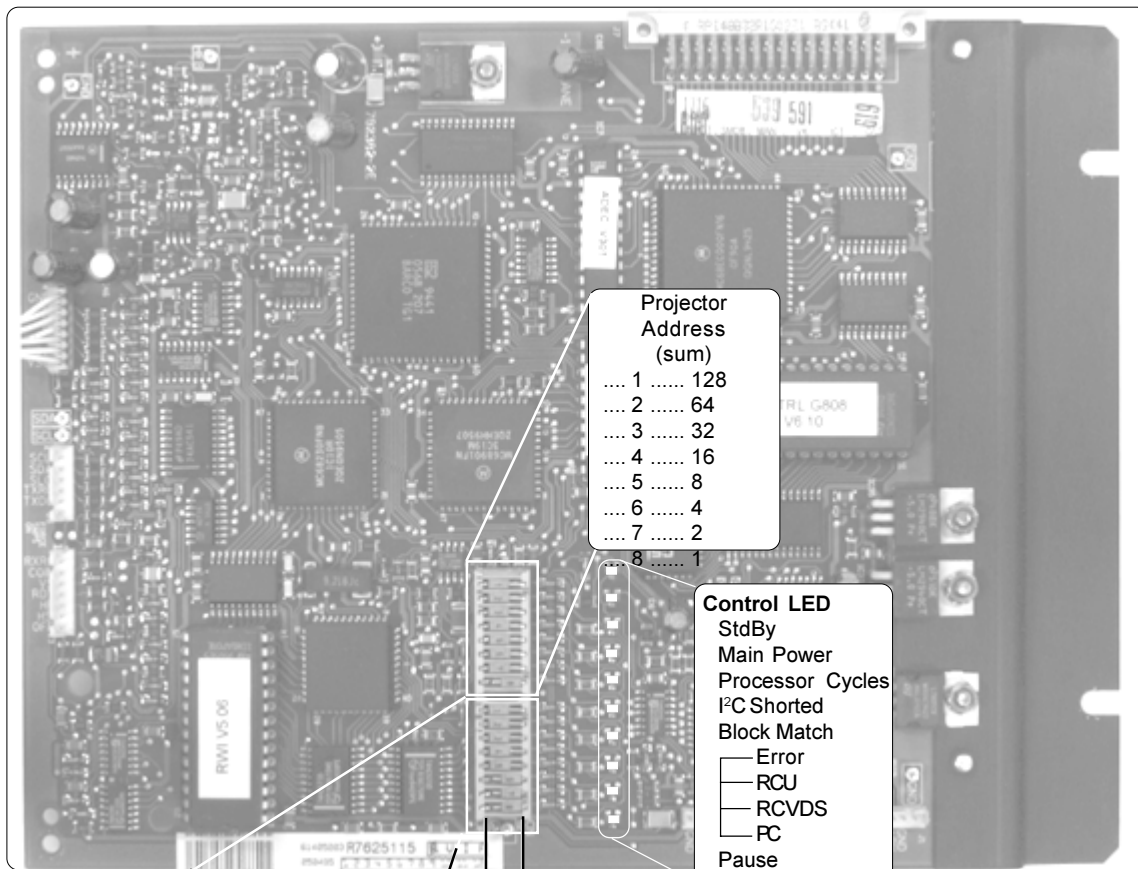
SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R 2	P200415	R# CE H 1K5 F 0W12 1206	1	R 74	P200427	R# CE H 4K7 F 0W12 1206	1
R 3	P200415	R# CE H 1K5 F 0W12 1206	1	R 75	P200427	R# CE H 4K7 F 0W12 1206	1
R 4	P200415	R# CE H 1K5 F 0W12 1206	1	R 76	P200435	R# CE H 10K F 0W12 1206	1
R 5	P200443	R# CE H 22K F 0W12 1206	1	R 77	P200439	R# CE H 15K F 0W12 1206	1
R 6	P200411	R# CE H 1K F 0W12 1206	1	R 78	P201354	R# CE H 0E J 0W1 0805	1
R 7	P200415	R# CE H 1K5 F 0W12 1206	1	R 80	P200387	R# CE H100E F 0W12 1206	1
R 8	P200415	R# CE H 1K5 F 0W12 1206	1	R 81	P200411	R# CE H 1K F 0W12 1206	1
R 9	P200411	R# CE H 1K F 0W12 1206	1	R 82	P200409	R# CE H820E F 0W12 1206	1
R 11	P200379	R# CE H 47E F 0W12 1206	1	R 83	P200435	R# CE H 10K F 0W12 1206	1
R 12	P200475	R# CE H470K F 0W12 1206	1	R 84	P200407	R# CE H680E F 0W12 1206	1
R 13	P200403	R# CE H470E F 0W12 1206	1	R 85	P200417	R# CE H 1K8 F 0W12 1206	1
R 14	P200403	R# CE H470E F 0W12 1206	1	R 86	P200387	R# CE H100E F 0W12 1206	1
R 15	P200435	R# CE H 10K F 0W12 1206	1	R 87	P200411	R# CE H 1K F 0W12 1206	1
R 16	P200435	R# CE H 10K F 0W12 1206	1	R 88	P200387	R# CE H100E F 0W12 1206	1
R 17	R101528	R MF H220E F 0W4 E3	1	R 89	P200439	R# CE H 15K F 0W12 1206	1
R 18	P200415	R# CE H 1K5 F 0W12 1206	1	R 90	P200447	R# CE H 33K F 0W12 1206	1
R 19	P200405	R# CE H560E F 0W12 1206	1	R 91	P200387	R# CE H100E F 0W12 1206	1
R 20	P200403	R# CE H470E F 0W12 1206	1	R 92	P200411	R# CE H 1K F 0W12 1206	1
R 21	P200401	R# CE H390E F 0W12 1206	1	R 93	P200403	R# CE H470E F 0W12 1206	1
R 22	P200401	R# CE H390E F 0W12 1206	1	R 94	P200387	R# CE H100E F 0W12 1206	1
R 23	P200381	R# CE H 56E F 0W12 1206	1	R 95	P200427	R# CE H 4K7 F 0W12 1206	1
R 24	P200385	R# CE H 82E F 0W12 1206	1	R 96	P200427	R# CE H 4K7 F 0W12 1206	1
R 25	P200403	R# CE H470E F 0W12 1206	1	R 97	P200387	R# CE H100E F 0W12 1206	1
R 26	P200423	R# CE H 3K3 F 0W12 1206	1	R 98	P200427	R# CE H 4K7 F 0W12 1206	1
R 28	P200403	R# CE H470E F 0W12 1206	1	R 99	P200387	R# CE H100E F 0W12 1206	1
R 29	P200435	R# CE H 10K F 0W12 1206	1	R100	P200435	R# CE H 10K F 0W12 1206	1
R 30	P200415	R# CE H 1K5 F 0W12 1206	1	R101	P200387	R# CE H100E F 0W12 1206	1
R 31	P200415	R# CE H 1K5 F 0W12 1206	1	R102	P200387	R# CE H100E F 0W12 1206	1
R 32	P200413	R# CE H 1K2 F 0W12 1206	1	R103	P200387	R# CE H100E F 0W12 1206	1
R 33	P200415	R# CE H 1K5 F 0W12 1206	1	R104	P200387	R# CE H100E F 0W12 1206	1
R 34	P200413	R# CE H 1K2 F 0W12 1206	1	R105	P200395	R# CE H220E F 0W12 1206	1
R 35	P200415	R# CE H 1K5 F 0W12 1206	1	R106	P200387	R# CE H100E F 0W12 1206	1
R 36	P200427	R# CE H 4K7 F 0W12 1206	1	R107	P200387	R# CE H100E F 0W12 1206	1
R 37	P200433	R# CE H 8K2 F 0W12 1206	1	R108	P200387	R# CE H100E F 0W12 1206	1
R 38	P200423	R# CE H 3K3 F 0W12 1206	1	R109	P200387	R# CE H100E F 0W12 1206	1
R 39	P200423	R# CE H 3K3 F 0W12 1206	1	R110	P200387	R# CE H100E F 0W12 1206	1
R 40	P200423	R# CE H 3K3 F 0W12 1206	1	R111	P200387	R# CE H100E F 0W12 1206	1
R 41	P200435	R# CE H 10K F 0W12 1206	1	R112	P200387	R# CE H100E F 0W12 1206	1
R 42	P200439	R# CE H 15K F 0W12 1206	1	R113	P200389	R# CE H120E F 0W12 1206	1
R 43	P200387	R# CE H100E F 0W12 1206	1	R114	P200449	R# CE H 39K F 0W12 1206	1
R 44	P200401	R# CE H390E F 0W12 1206	1	R115	P200411	R# CE H 1K F 0W12 1206	1
R 45	P202228	R#MF H100E F 0W25 MMELF	1	R116	P200411	R# CE H 1K F 0W12 1206	1
R 47	P200411	R# CE H 1K F 0W12 1206	1	R117	R1011907	R CFFH E1 K 0W35	1
R 48	P200411	R# CE H 1K F 0W12 1206	1	R118	R1011008	R CFFH 1E J 0W25	1
R 50	P200379	R# CE H 47E F 0W12 1206	1	R119	R1011907	R CFFH E1 K 0W35	1
R 51	P200379	R# CE H 47E F 0W12 1206	1	R120	P200411	R# CE H 1K F 0W12 1206	1
R 52	P200379	R# CE H 47E F 0W12 1206	1	R121	P200385	R# CE H 82E F 0W12 1206	1
R 53	P200459	R# CE H100K F 0W12 1206	1	R122	P200435	R# CE H 10K F 0W12 1206	1
R 54	P200427	R# CE H 4K7 F 0W12 1206	1	R123	P200435	R# CE H 10K F 0W12 1206	1
R 55	P200505	R# CE H 8M2 F 0W12 1206	1	R124	P200475	R# CE H470K F 0W12 1206	1
R 56	P200473	R# CE H390K F 0W12 1206	1	R125	P200411	R# CE H 1K F 0W12 1206	1
R 57	P200447	R# CE H 33K F 0W12 1206	1	R126	P200411	R# CE H 1K F 0W12 1206	1
R 58	P200449	R# CE H 39K F 0W12 1206	1	R127	P200435	R# CE H 10K F 0W12 1206	1
R 59	P200435	R# CE H 10K F 0W12 1206	1	R128	P200435	R# CE H 10K F 0W12 1206	1
R 60	P200457	R# CE H 82K F 0W12 1206	1	R129	P200411	R# CE H 1K F 0W12 1206	1
R 61	P200423	R# CE H 3K3 F 0W12 1206	1	R130	P200427	R# CE H 4K7 F 0W12 1206	1
R 62	P200443	R# CE H 22K F 0W12 1206	1	R131	P200435	R# CE H 10K F 0W12 1206	1
R 63	P200463	R# CE H150K F 0W12 1206	1	R132	P200435	R# CE H 10K F 0W12 1206	1
R 64	P200465	R# CE H180K F 0W12 1206	1	R133	R101560	R MF H100K F 0W4 E3	1
R 65	P200427	R# CE H 4K7 F 0W12 1206	1				
R 66	P200409	R# CE H820E F 0W12 1206	1	S 1	R324184	SW DIP SLD 1A P 8 BT SN	1
R 67	P200409	R# CE H820E F 0W12 1206	1	S 2	R324184	SW DIP SLD 1A P 8 BT SN	1
R 68	P200409	R# CE H820E F 0W12 1206	1				
R 69	P200409	R# CE H820E F 0W12 1206	1	XT 1	A573058	XO 16M000000 TN-10DIP 8M	1
R 70	P200409	R# CE H820E F 0W12 1206	1	XT 2	P252512	X# 9,216 MHZ MG3A	1
R 71	P200409	R# CE H820E F 0W12 1206	1				
R 72	P200409	R# CE H820E F 0W12 1206	1				
R 73	P200409	R# CE H820E F 0W12 1206	1				

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
Z 1	P234057	D#ZEN 8V2 0W5 C DMMELF	1	Z 6	P234179	D#ZEN 20V 0W5 C DMMELF	1
Z 2	P234268	D#ZEN 6V8 0W5 C DMMELF	1	Z 7	P234164	D#ZEN 5V6 0W5 C DMMELF	1
Z 3	P234268	D#ZEN 6V8 0W5 C DMMELF	1	Z 8	P234164	D#ZEN 5V6 0W5 C DMMELF	1
Z 4	P234213	D#ZEN 3V3 0W5 C DMMELF	1	Z 9	P234164	D#ZEN 5V6 0W5 C DMMELF	1
Z 5	P234164	D#ZEN 5V6 0W5 C DMMELF	1				

PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.

Module SET-UP and Controls



Projector Address (sum)

.... 1	..... 128
.... 2	..... 64
.... 3	..... 32
.... 4	..... 16
.... 5	..... 8
.... 6	..... 4
.... 7	..... 2
.... 8	..... 1

- Control LED**
- StdBy
 - Main Power
 - Processor Cycles
 - I²C Shorted
 - Block Match
 - Error
 - RCU
 - RCVDS
 - PC
 - Pause

0 Off 1 On

Reserved

.... 1	..... 1
.... 2	..... 2
.... 3	..... 3

Power Up mode
.... 4

Password mode
.... 5

Baud Rate Code (sum)

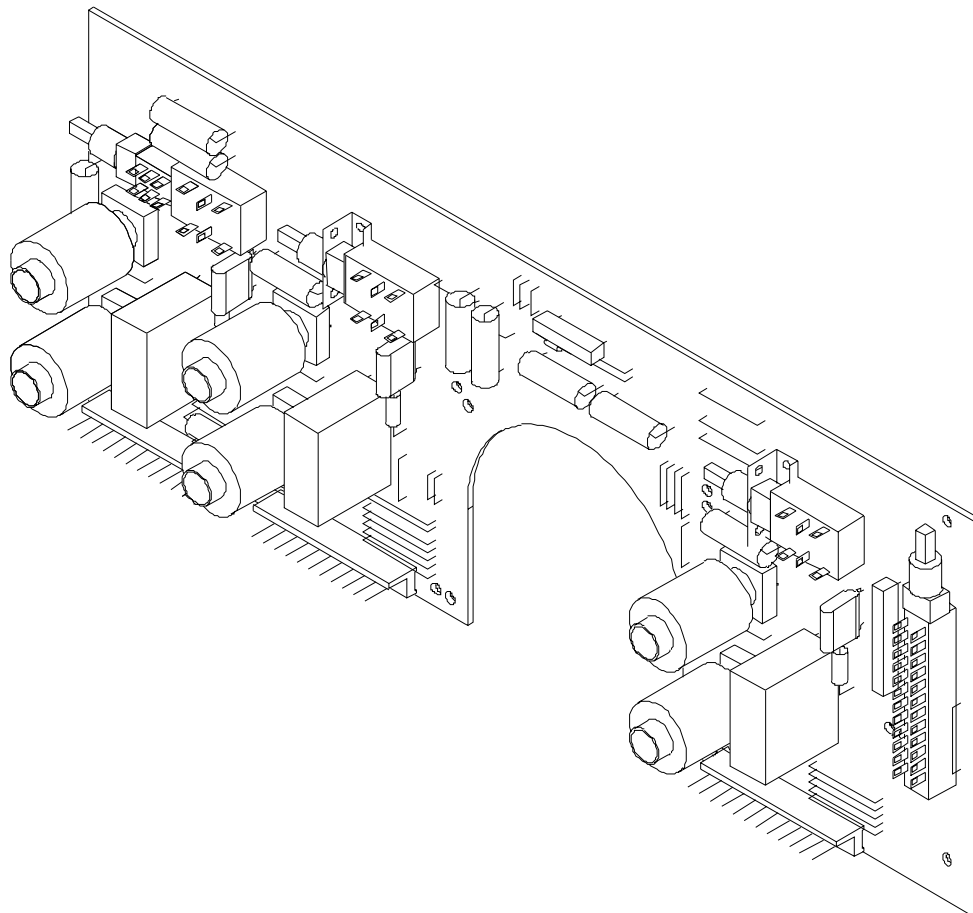
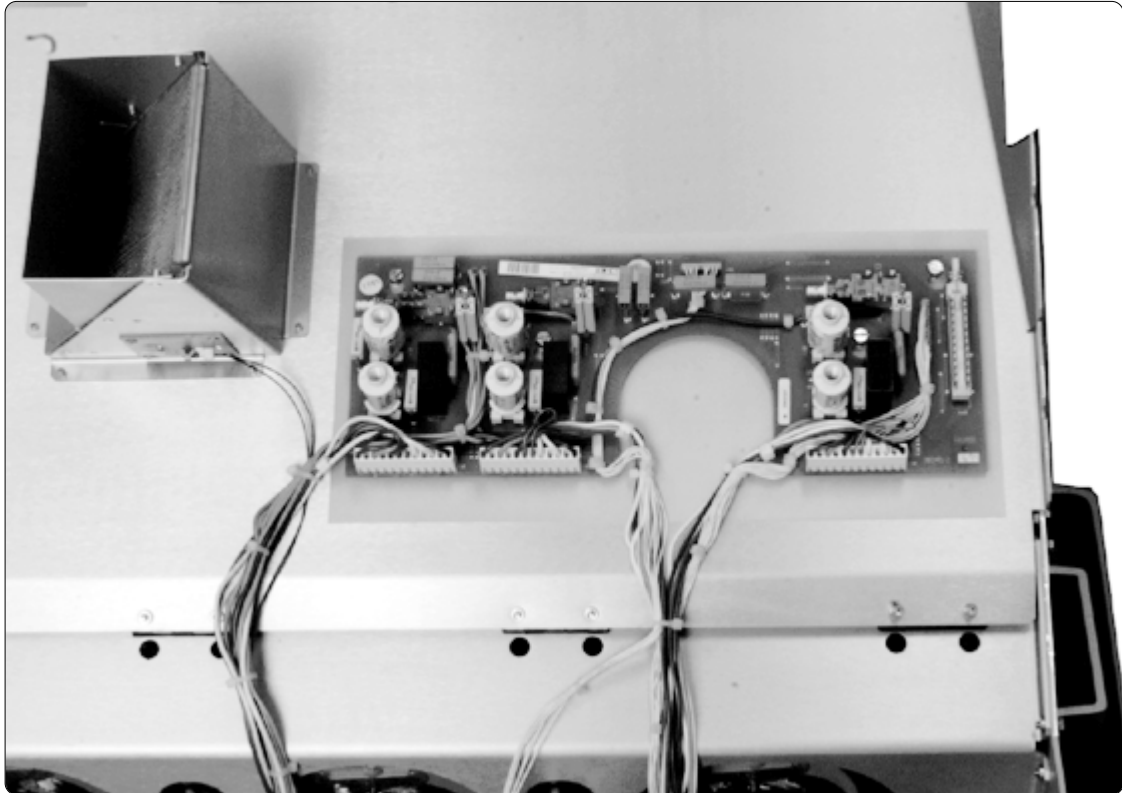
.... 6	..... 4
.... 7	..... 2
.... 8	..... 1

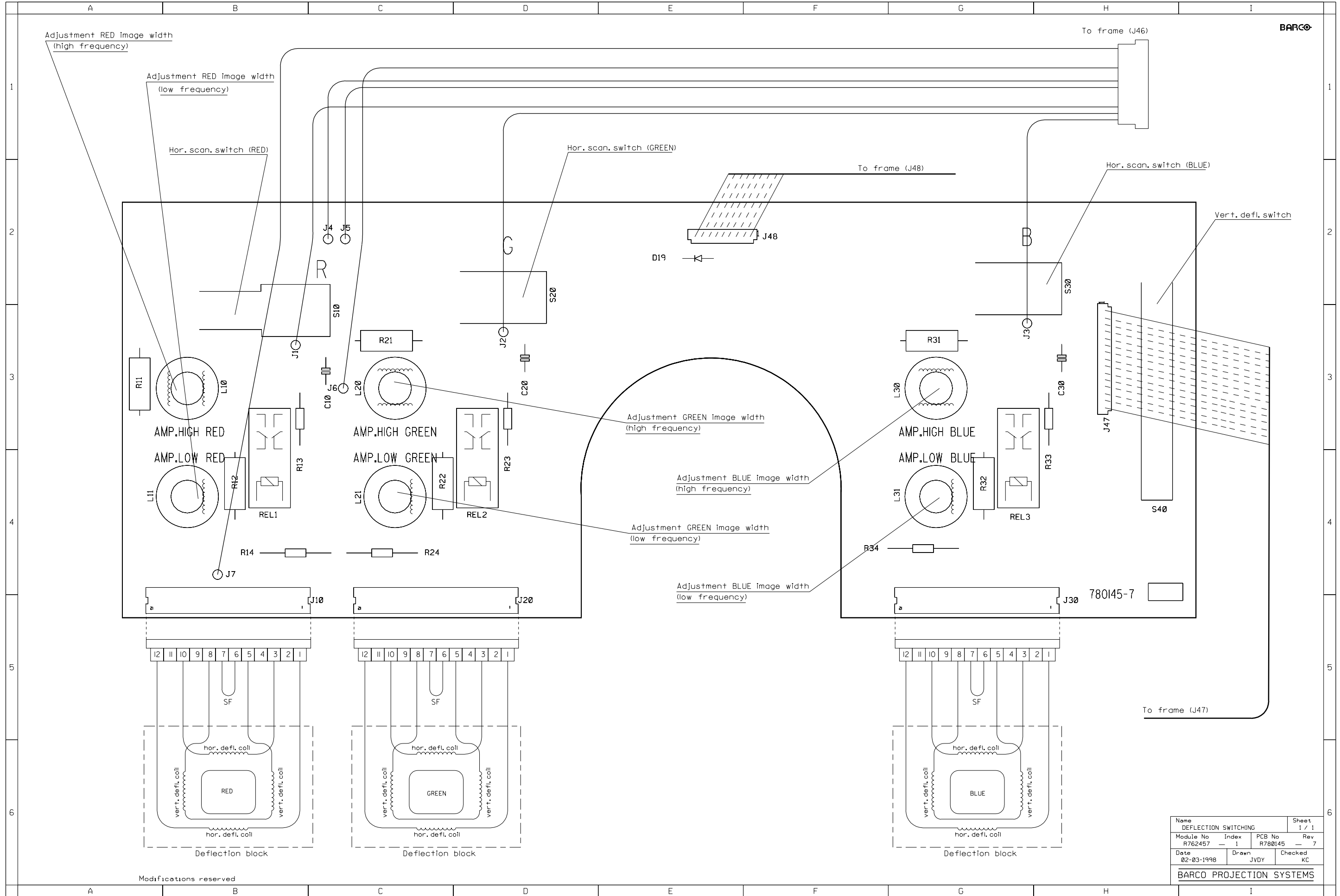
BAUD RATE TABLE

.... 0	..... 110
.... 1	..... 150
.... 2	..... 300
.... 3	..... 600
.... 4	..... 1200
.... 5	..... 2400
.... 6	..... 4800
.... 7	..... 9600

Password Mode On/Off
Password required for adjustment ON=YES / OFF=NO

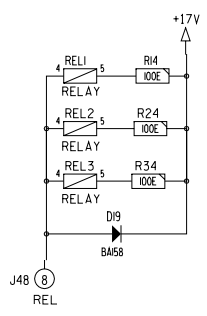
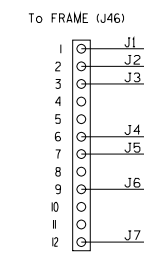
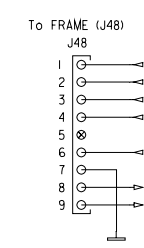
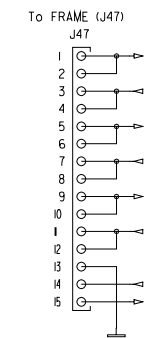
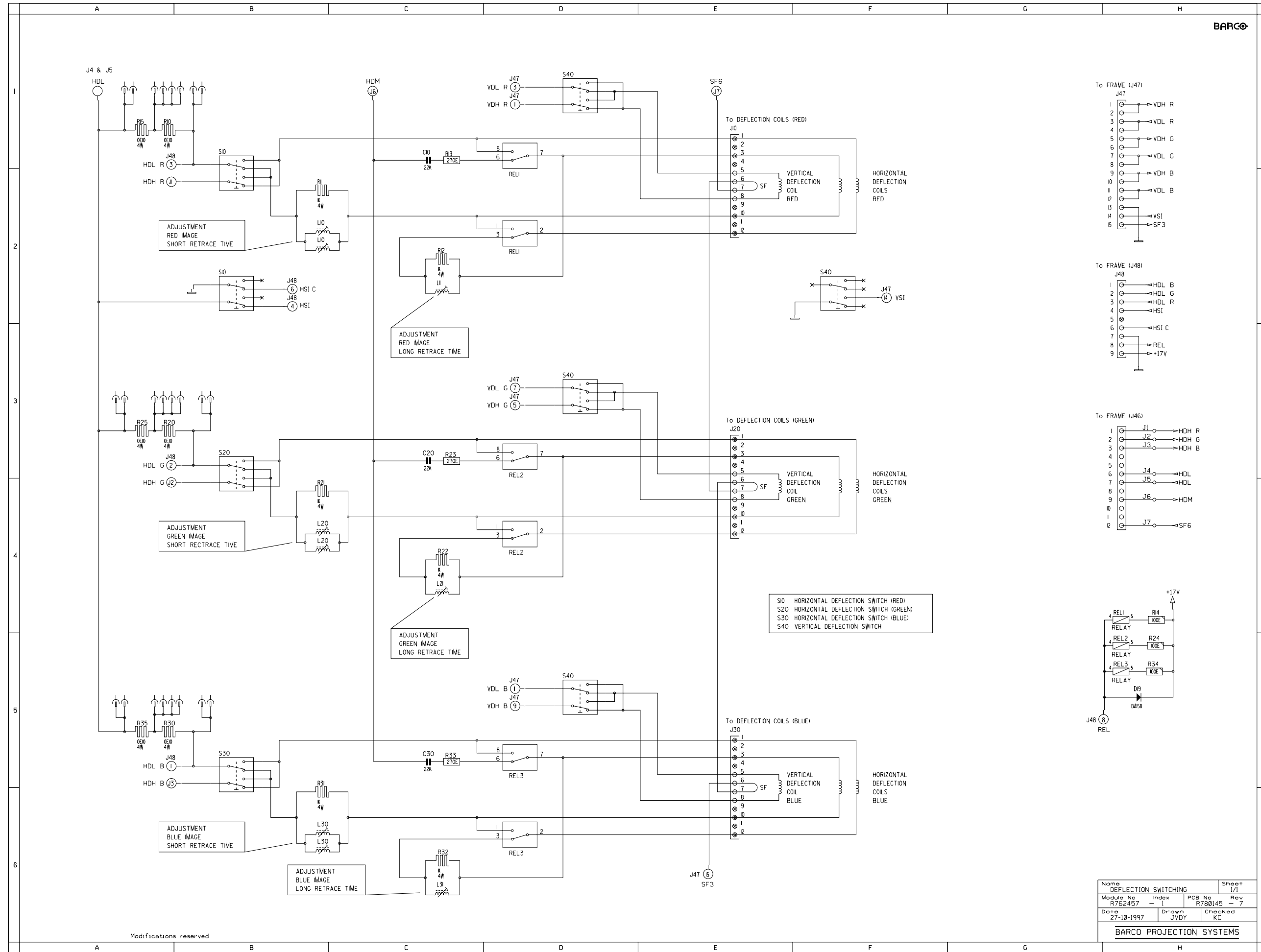
Power Up Mode On/Off
Operation mode when Power is switched On ON=PLAYING / OFF=STDBY





Name DEFLECTION SWITCHING			Sheet 1 / 1
Module No R762457	Index - 1	PCB No R780145	Rev - 7
Date 02-03-1998	Drawn JVDY	Checked KC	
BARCO PROJECTION SYSTEMS			

Modifications reserved



COMP. LOC.

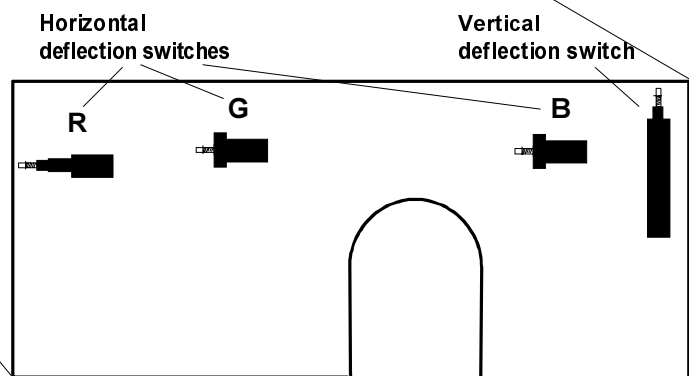
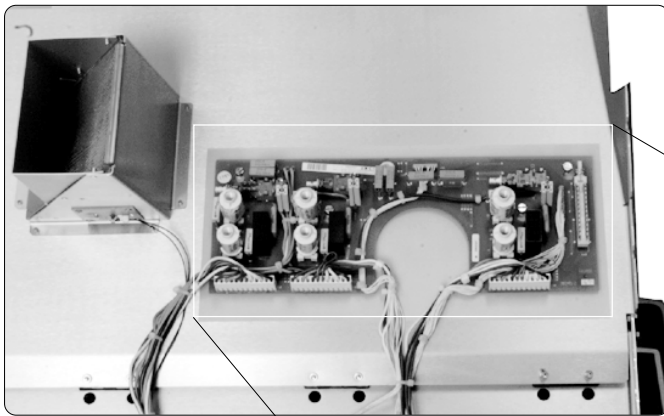
C10	C 1
C20	C 3
C30	C 5
D19	H 5
J1	H 3
J2	H 3
J3	H 3
J4	H 3
J5	H 3
J6	H 4
J7	H 4
J10	E 1
J20	E 3
J30	E 5
J47	H 1
J48	H 2
J148	A 5
J149	A 5
J150	A 5
J151	A 5
J152	B 5
J153	B 5
J154	B 5
J155	B 5
J156	A 3
J157	A 3
J158	A 3
J159	A 3
J160	B 3
J161	B 3
J162	B 3
J163	B 3
J164	A 1
J165	A 1
J166	A 1
J168	A 1
J169	B 1
J170	B 1
J171	B 1
J172	B 1
L10	B 2
L11	C 2
L12	F 2
L13	F 2
L20	B 4
L21	C 4
L22	F 4
L23	F 4
L30	B 6
L31	C 6
L32	F 6
L33	F 6
R10	A 1
R11	C 2
R12	C 2
R13	C 1
R14	H 4
R15	A 1
R20	A 3
R21	B 4
R22	C 4
R23	C 4
R24	H 5
R25	A 3
R30	A 5
R31	B 5
R32	C 6
R33	C 5
R34	H 5
R35	A 5
REL1	D 2
REL1	D 2
REL1	H 4
REL2	D 3
REL2	H 5
REL2	H 5
REL3	H 5
REL3	D 6
REL3	D 5
S10	B 1
S10	B 2
S20	B 3
S30	B 5
S40	D 1
S40	D 2
S40	D 3
S40	D 5

Name	DEFLECTION SWITCHING	Sheet	1/1
Module No	R752457	Index	- 1
PCB No	R750145	Rev	- 7
Date	27-10-1997	Drawn	JVDY
		Checked	KC

BARCO PROJECTION SYSTEMS

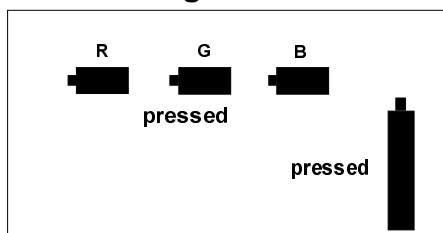
Modifications reserved

Projector configuration: deflection switches set up

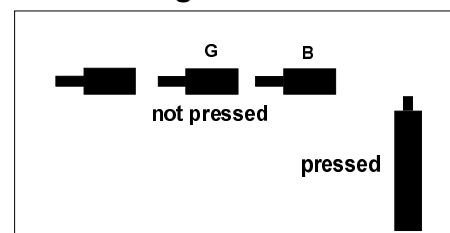


Projector configurations (Switch settings)

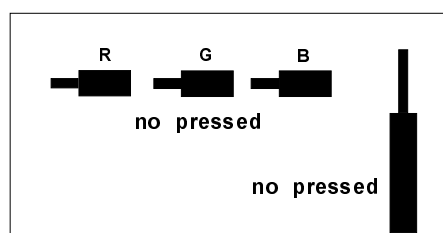
Front-ceiling



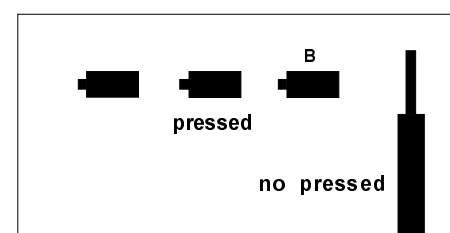
Rear-ceiling



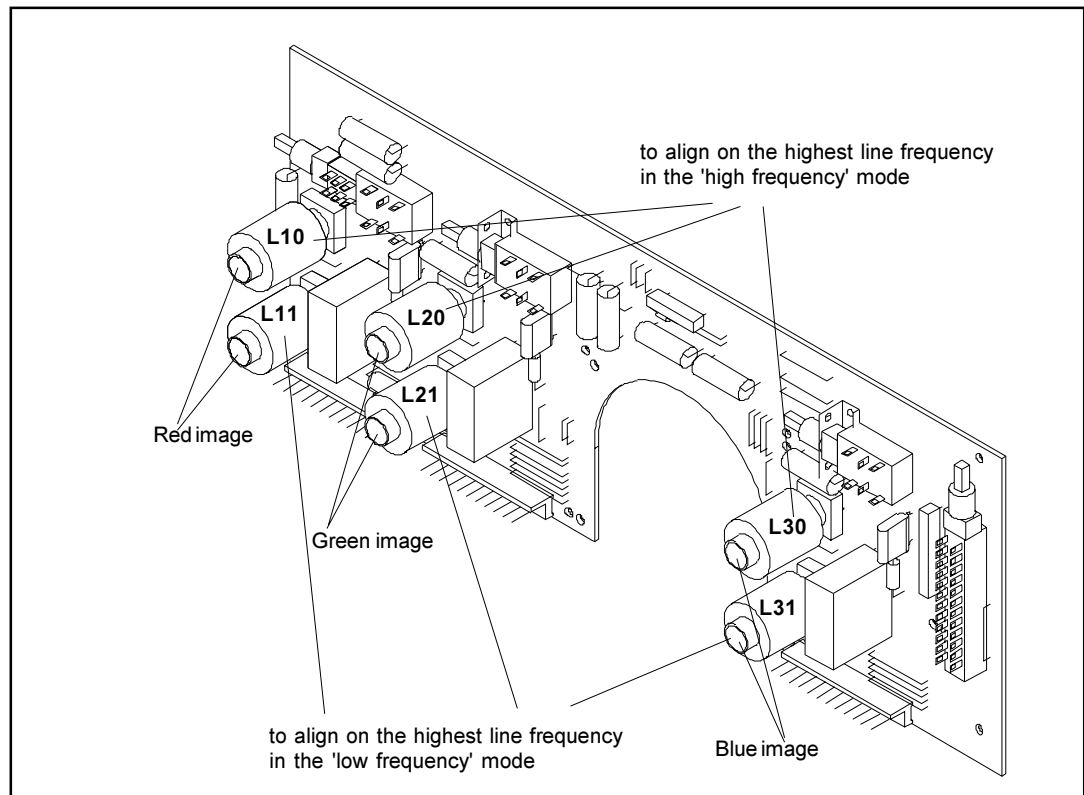
Front-table



Rear-table



Adjustment procedure for the image width coils



Adjustment procedure

- Decrease the contrast and increase the brightness to reveal the (background) raster.

Highest frequency 134 kHz

- Provide either an internally or externally generated source of **134kHz** to the projector.
- Disable the convergence by entering the Geometry mode and select the Raster Shift adjustment (refer to owner's manual).
- Gently turn the cores of **L10**, **L20** and **L30** in a clockwise direction until there is no more adjustment, i.e. core is fully turned into PCB.
- Identify which raster (R, G or B) has the smallest raster width and adjust the remaining raster via **L10**, **L20** or **L30** in a counter clockwise manner to match the raster with the smallest width. In order to facilitate these adjustments, you may wish to use the horizontal shift control for the raster (R, G or B) that you are adjusting. Disregard any horizontal static convergence errors at this time, they will be corrected later.

Lowest frequency 60 kHz

- Provide either an internally or externally generated source of **60kHz** to the projector.
- Disable the convergence by entering the Geometry mode and select the Raster Shift adjustment (refer to owner's manual).
- Gently turn the cores of **L11**, **L21** and **L31** in a clockwise direction until there is no more adjustment, i.e. core is fully turned into PCB.
- Identify which raster (R,G or B) has the smallest raster width and adjust the

remaining raster via **L11**, **L21** or **L31** in a counter clockwise manner to match the raster with the smallest width. In order to facilitate these adjustments, you may wish to use the horizontal shift control for the raster (R, G or B) that you are adjusting. Disregard any horizontal static convergence errors at this time, they will be corrected later.

Scan coil switching (762457)

Each horizontal deflection yoke consists of two horizontal windings which may be connected in either a series or parallel configuration. The inductance of the parallel connection is obviously lower than the series configuration (parallel and series inductance uses the same formula as resistance) therefore they are connected in parallel for the "high" frequency mode.

The lower inductance in the parallel configuration causes the resonant frequency of the flyback pulse to increase, thereby producing a more rapid horizontal retrace.

Note: HDM is the mid-point of the two series connected deflection MOSFETS. HDL is the common connection to the three horizontal yoke windings, that supplies the yokes with the +HTHD voltage, after passing through Q3 and the linearity coil.

The DC horizontal shift voltage from the "Focus and Shift Board (762271) is applied between HDHX and HDLX (X stands for R, G or B or the Red, Green or Blue) of the red, green and blue deflection yokes. The HDLX is in fact a feedback to the "Focus + SHIFT" board in order to to stabilise the horizontal width.

In the LOWFREQ mode, the two horizontal width alignment coils are in series. When switched to the "High Freq." mode only one coil is in the circuit, (see schematics).

S10, S20 and S30 allow the horizontal scan to be inverted to adapt the projector for a front or rear projection. S10 is also used to provide the HSIC information to the controller board, so that the controller board will know the configuration of the horizontal scan switches.

The HSI also goes to the "HOR SHIFT+FOCUS" board and is used by Q1 and Q2 to invert the shift voltages on P1 and P2 (horizontal shift Red and Blue).

Note that this board also contains the switch for the inversion of the vertical scan. Here the same VSI info can be used for both, the controller and the Vert Defl board (similar to Hor Defl).

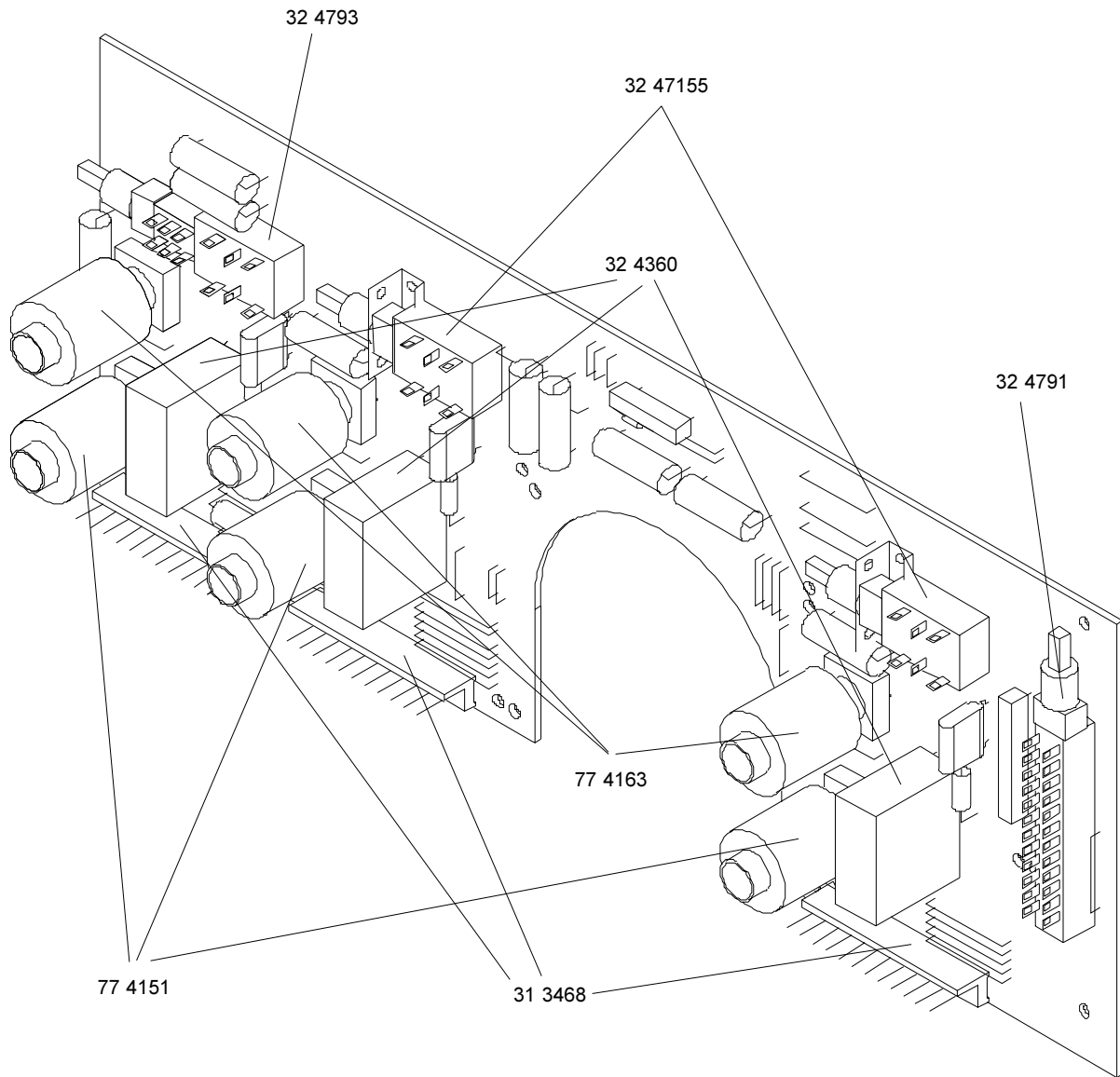
The Scan Fail loop (SF3-SF4-SF5-SF6) passes through two contacts of the deflection connectors. In the event that one of these yoke connectors is disconnected, the projector will go into scan fail, terminating the EHT.

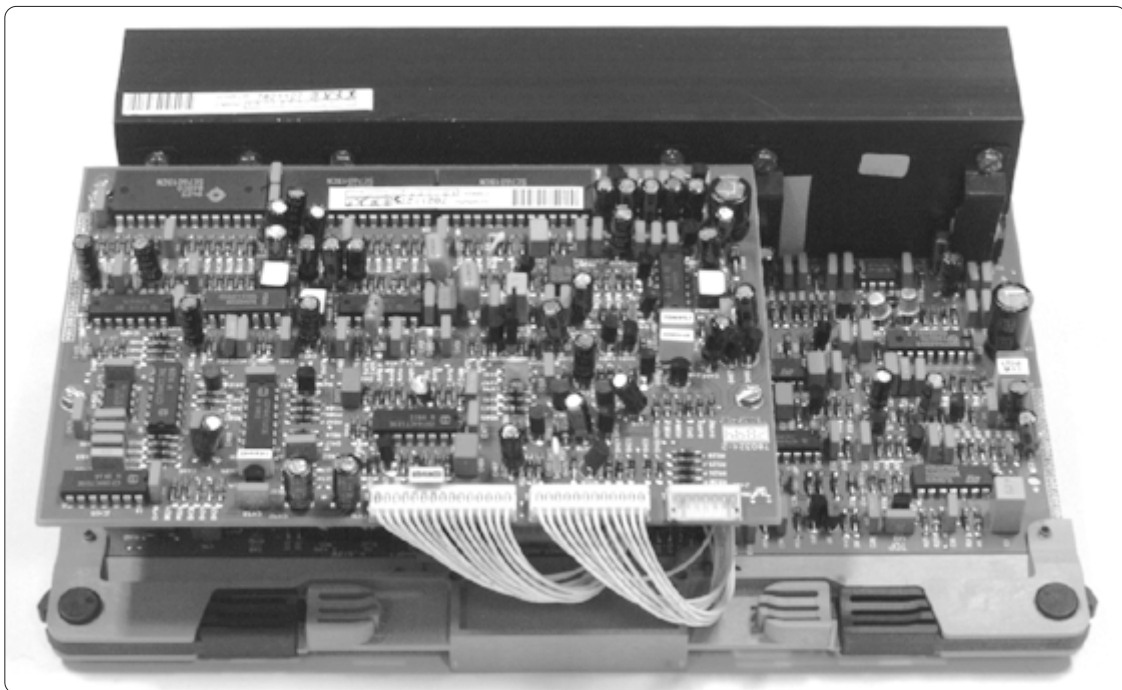
Deflection Switching Module

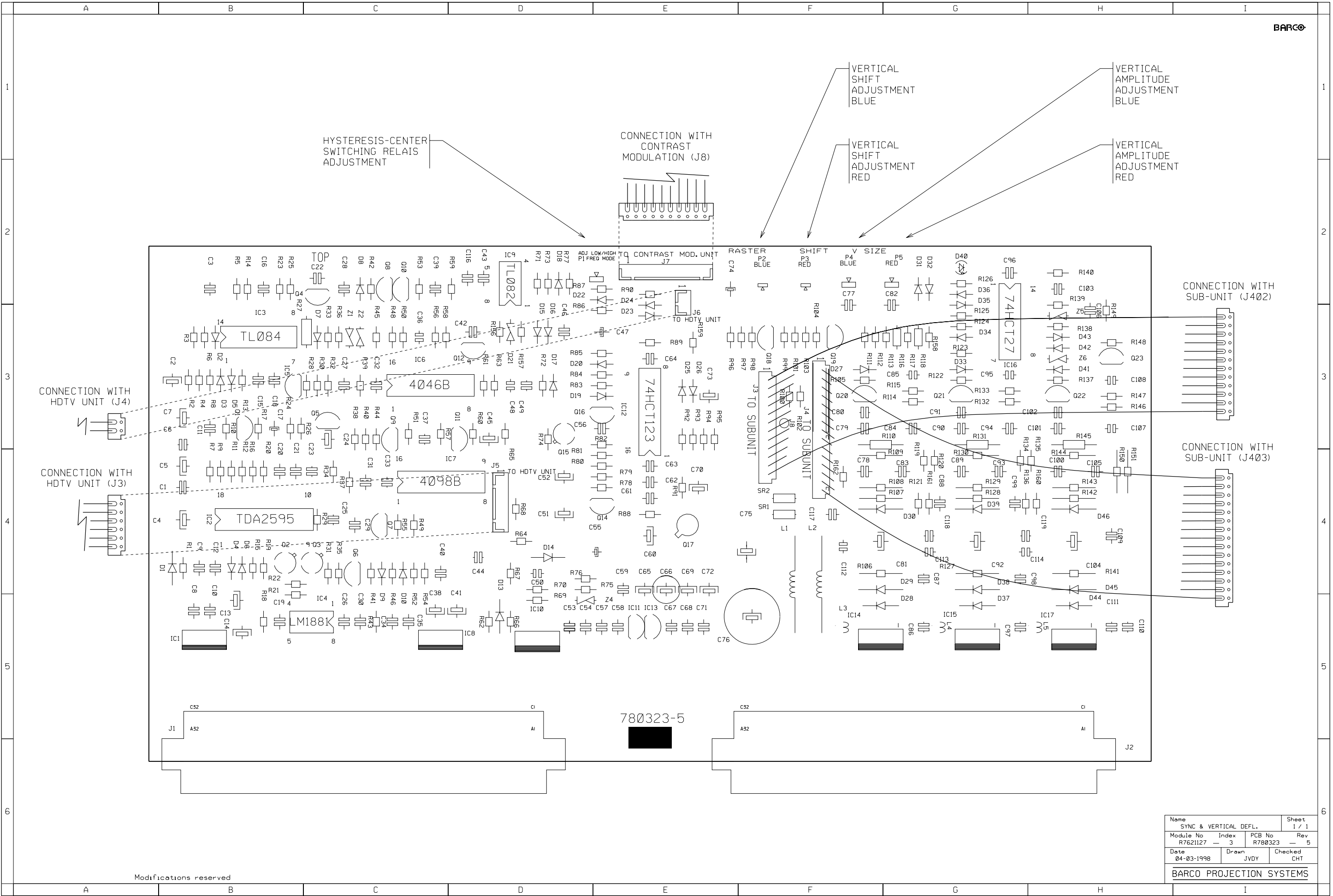
762457

PARTS LISTING

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION		
20	R133039	SPR L 8 D 1,2D 4 CE	9	R 10	R103600	R WW H E1 K 4W	1
10	R3153151	J RVT MBT D 2.3L12.7	24	R 15	R103600	R WW H E1 K 4W	1
30	R348019	CBLA TIE B L 100W2,4 -	7	R 20	R103600	R WW H E1 K 4W	1
	R3421991	WU UL1015 AWG18 ST GY 1	1	R 25	R103600	R WW H E1 K 4W	1
	R348314	CD SL \$FT P12 650	1	R 30	R103600	R WW H E1 K 4W	1
	R3484094	CD CT \$FTMT P 9 820	1	R 35	R103600	R WW H E1 K 4W	1
	R3484159	CD CT \$FTMT P15 850	1	R 11	R103660	R WW H 1K K 4W	1
C 10	R1041988	R WWFV270E K 2W	1	R 12	R103660	R WW H 1K K 4W	1
C 20	R1041988	R WWFV270E K 2W	1	R 21	R103660	R WW H 1K K 4W	1
C 30	R1041988	R WWFV270E K 2W	1	R 22	R103660	R WW H 1K K 4W	1
C 1	R114132	C POMERA 100N K250E4 85	1	R 31	R103660	R WW H 1K K 4W	1
D 19	R131637	D R BA158 600400 DO7	1	R 32	R103660	R WW H 1K K 4W	1
J 10	R3134685	J MTA MBT P12 M3,96 FL RO	1	R 13	R114166	C POMERA 220N K400E9 85	1
J 20	R3134685	J MTA MBT P12 M3,96 FL RO	1	R 23	R114166	C POMERA 220N K400E9 85	1
J 30	R3134685	J MTA MBT P12 M3,96 FL RO	1	R 33	R114166	C POMERA 220N K400E9 85	1
L 11	R774151	COILAMP PJ45 HOR DATA	1	R 14	V1026005	R MF H100E F 0W6 E4	1
L 21	R774151	COILAMP PJ45 HOR DATA	1	R 24	V1026005	R MF H100E F 0W6 E4	1
L 31	R774151	COILAMP PJ45 HOR DATA	1	R 34	V1026005	R MF H100E F 0W6 E4	1
L 10	R774163	COILAMP PJ45 HOR GR	1	REL1	R324360	RLY 12V 2C BV MNS M UL	1
L 20	R774163	COILAMP PJ45 HOR GR	1	REL2	R324360	RLY 12V 2C BV MNS M UL	1
L 30	R774163	COILAMP PJ45 HOR GR	1	REL3	R324360	RLY 12V 2C BV MNS M UL	1
PC	R780145	PCB G1200 DEF SW	1	S 20	R3247155	SW MNS NE18 2C	1
				S 30	R3247155	SW MNS NE18 2C	1
				S 40	R324791	SW F 8C	1
				S 10	R324793	SW MNS NE18 2C/2C	1







HYSTERESIS-CENTER SWITCHING RELAIS ADJUSTMENT

CONNECTION WITH CONTRAST MODULATION (J8)

VERTICAL SHIF T ADJUSTMENT BLUE

VERTICAL AMPLITUDE ADJUSTMENT BLUE

VERTICAL SHIF T ADJUSTMENT RED

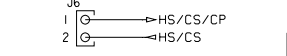
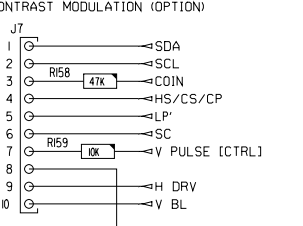
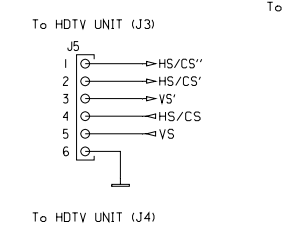
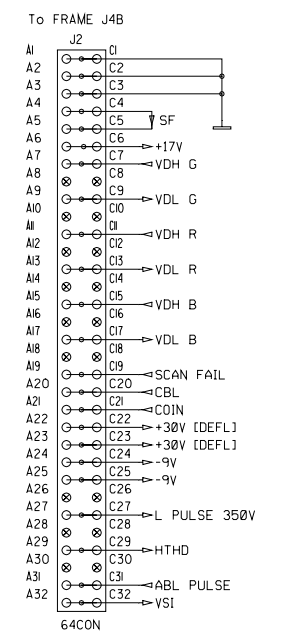
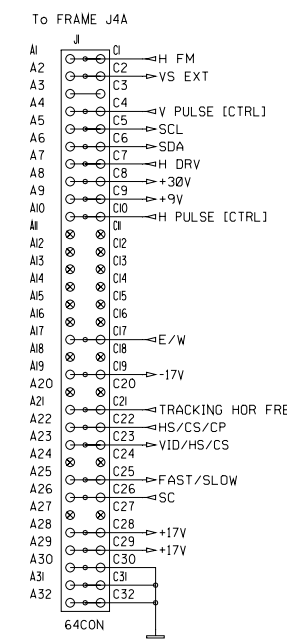
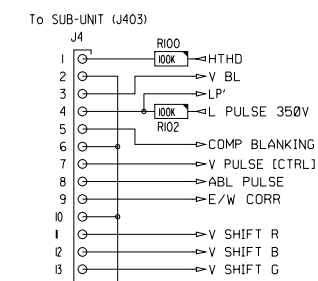
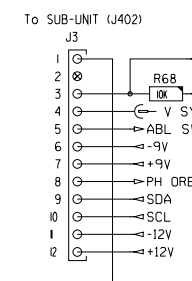
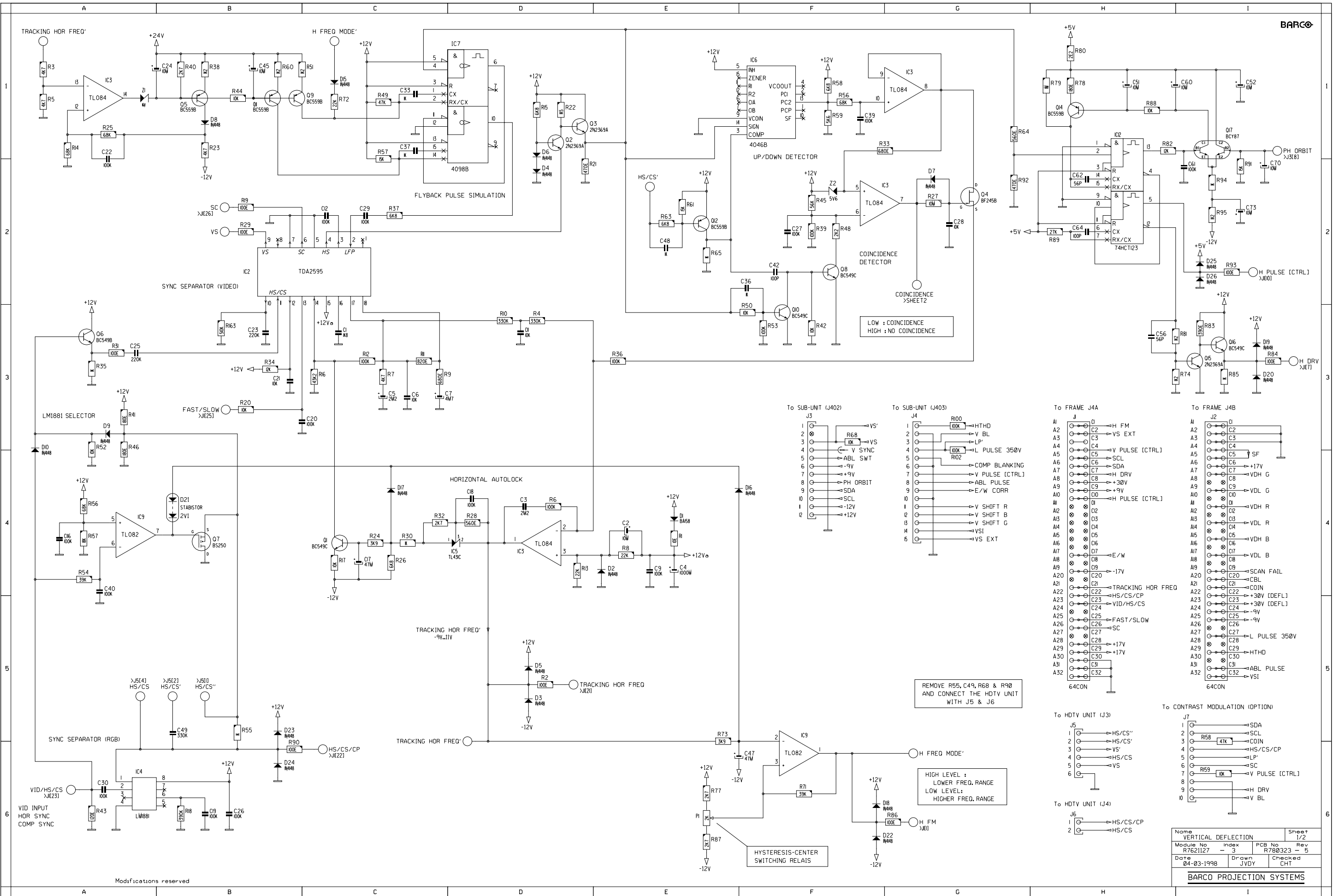
VERTICAL AMPLITUDE ADJUSTMENT RED

CONNECTION WITH SUB-UNIT (J402)

CONNECTION WITH SUB-UNIT (J403)

780323-5

Name		Sheet	
SYNC & VERTICAL DEFL.		1 / 1	
Module No	Index	PCB No	Rev
R7621127	3	R780323	5
Date	Drawn	Checked	
04-03-1998	JVDY	CHT	
BARCO PROJECTION SYSTEMS			



REMOVE R55, C49, R68 & R90 AND CONNECT THE HDTV UNIT WITH J5 & J6

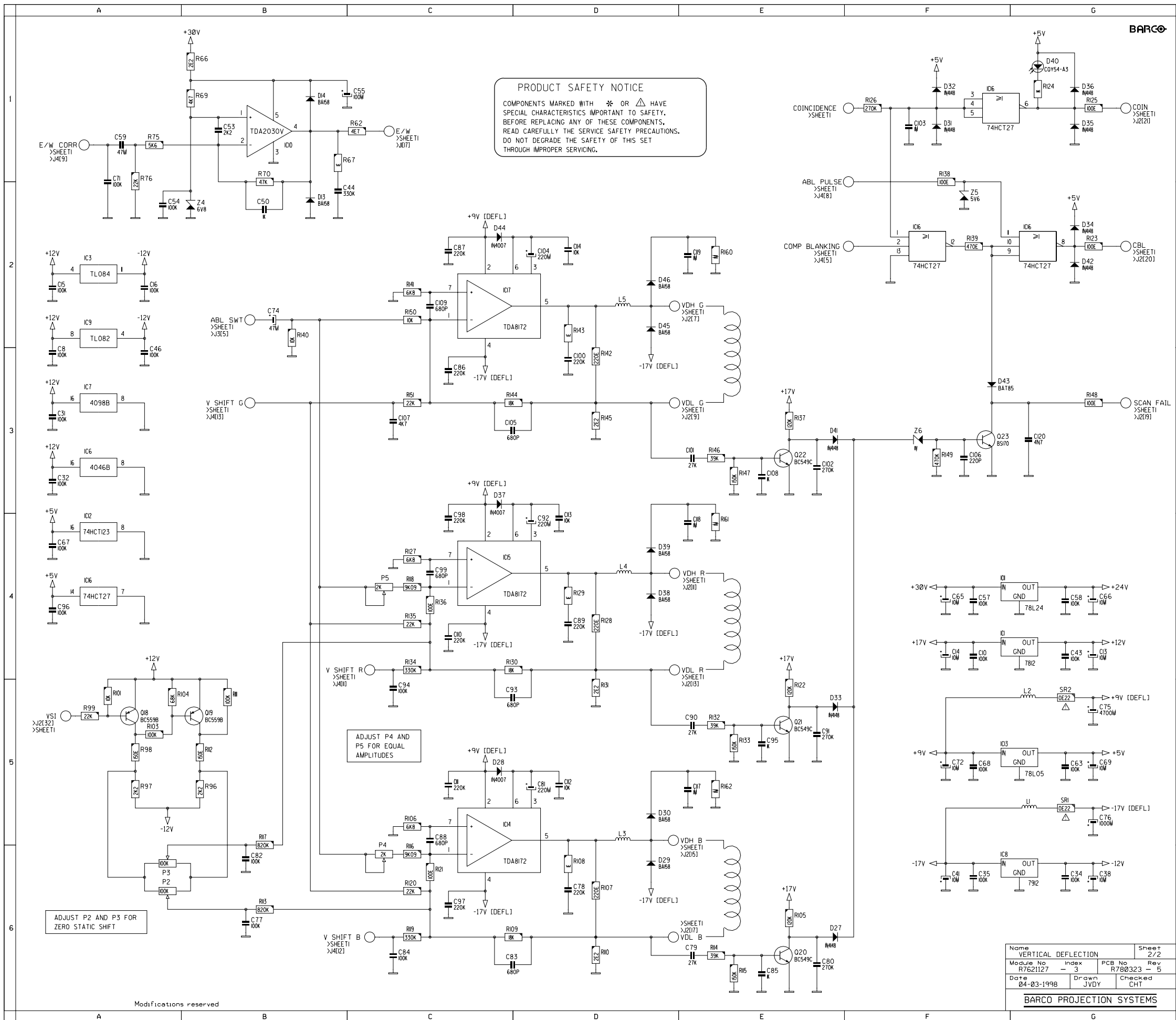
HIGH LEVEL : LOWER FREQ. RANGE
LOW LEVEL : HIGHER FREQ. RANGE

HYSTERESIS-CENTER SWITCHING RELAYS

Name	VERTICAL DEFLECTION	Sheet	1/2
Module No.	R7621127	Index	3
PCB No.	R760323	Rev	5
Date	04-03-1998	Drawn	JVDY
		Checked	CHT

BARCO PROJECTION SYSTEMS

Modifications reserved



COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C1	R42	F 3	C26	R12	I 1	C103	R18	B 6
C2	R43	A 6	C27	R13	B 3	C104	R19	B 3
C3	R44	B 1	C28	R14	B 3	C105	R20	B 3
C4	R45	F 2	C29	R15	A 1	C106	R21	B 3
C5	R46	A 4	C30	R16	A 1	C107	R22	B 3
C6	R48	A 2	C31	R17	A 1	C108	R23	B 1
C7	R49	C 1	C32	R18	A 1	C109	R24	C 4
C8	R50	F 1	C33	R19	A 1	C110	R25	A 4
C9	R51	C 1	C34	R20	A 1	C111	R26	A 4
C10	R52	A 3	C35	R21	A 1	C112	R27	A 4
C11	R53	F 3	C36	R22	A 1	C113	R28	A 4
C12	R54	A 4	C37	R23	A 1	C114	R29	A 4
C13	R55	A 4	C38	R24	A 1	C115	R30	A 4
C14	R56	F 1	C39	R25	A 1	C116	R31	A 4
C15	R57	C 1	C40	R26	A 1	C117	R32	C 4
C16	R58	F 1	C41	R27	A 1	C118	R33	C 4
C17	R59	A 1	C42	R28	A 1	C119	R34	A 1
C18	R60	B 1	C43	R29	A 1	C120	R35	B 3
C19	R61	E 2	C44	R30	A 1			
C20	R62	C 1	C45	R31	A 1			
C21	R63	F 1	C46	R32	A 1			
C22	R64	A 1	C47	R33	A 1			
C23	R65	E 2	C48	R34	A 1			
C24	R66	B 1	C49	R35	A 1			
C25	R67	B 1	C50	R36	E 6			
C26	R68	F 3	C51	R37	A 1			
C27	R69	B 1	C52	R38	A 1			
C28	R70	B 1	C53	R39	A 1			
C29	R71	F 6	C54	R40	A 1			
C30	R72	F 3	C55	R41	A 1			
C31	R73	E 5	C56	R42	A 1			
C32	R74	I 3	C57	R43	A 1			
C33	R75	A 1	C58	R44	A 1			
C34	R76	A 1	C59	R45	A 1			
C35	R77	E 6	C60	R46	A 1			
C36	R78	H 1	C61	R47	A 1			
C37	R79	H 1	C62	R48	A 1			
C38	R80	H 1	C63	R49	A 1			
C39	R81	I 3	C64	R50	A 1			
C40	R82	H 1	C65	R51	A 1			
C41	R83	I 3	C66	R52	A 1			
C42	R84	I 3	C67	R53	A 1			
C43	R85	I 3	C68	R54	A 1			
C44	R86	I 3	C69	R55	A 1			
C45	R87	E 6	C70	R56	A 1			
C46	R88	H 1	C71	R57	A 1			
C47	R89	H 1	C72	R58	A 1			
C48	R90	B 5	C73	R59	A 1			
C49	R91	I 2	C74	R60	A 1			
C50	R92	O 2	C75	R61	A 1			
C51	R93	I 2	C76	R62	A 1			
C52	R94	I 2	C77	R63	A 1			
C53	R95	I 2	C78	R64	A 1			
C54	R96	B 5	C79	R65	A 1			
C55	R97	A 5	C80	R66	A 1			
C56	R98	A 5	C81	R67	A 1			
C57	R99	A 5	C82	R68	A 1			
C58	R100	A 5	C83	R69	A 1			
C59	R101	A 5	C84	R70	A 1			
C60	R102	G 4	C85	R71	A 1			
C61	R103	I 3	C86	R72	A 1			
C62	R104	A 5	C87	R73	A 1			
C63	R105	E 6	C88	R74	A 1			
C64	R106	E 6	C89	R75	A 1			
C65	R107	E 6	C90	R76	A 1			
C66	R108	E 6	C91	R77	A 1			
C67	R109	E 6	C92	R78	A 1			
C68	R110	E 6	C93	R79	A 1			
C69	R111	E 6	C94	R80	A 1			
C70	R112	L 3	C95	R81	A 1			
C71	R113	E 6	C96	R82	A 1			
C72	R114	E 6	C97	R83	A 1			
C73	R115	E 6	C98	R84	A 1			
C74	R116	E 6	C99	R85	A 1			
C75	R117	E 6	C100	R86	A 1			
C76	R118	E 6	C101	R87	A 1			
C77	R119	E 6	C102	R88	A 1			
C78	R120	E 6	C103	R89	A 1			
C79	R121	E 6	C104	R90	A 1			
C80	R122	E 6	C105	R91	A 1			
C81	R123	E 6	C106	R92	A 1			
C82	R124	E 6	C107	R93	A 1			
C83	R125	E 6	C108	R94	A 1			
C84	R126	E 6	C109	R95	A 1			
C85	R127	C 4	C110	R96	A 1			
C86	R128	O 4	C111	R97	A 1			
C87	R129	O 4	C112	R98	A 1			
C88	R130	O 4	C113	R99	A 1			
C89	R131	A 1	C114	R100	A 1			
C90	R132	E 6	C115	R101	A 1			
C91	R133	E 6	C116	R102	A 1			
C92	R134	H 1	C117	R103	A 1			
C93	R135	C 4	C118	R104	A 1			
C94	R136	C 4	C119	R105	A 1			
C95	R137	E 3	C120	R106	A 1			
C96	R138	E 6						
C97	R139	E 6						
C98	R140	E 6						
C99	R141	E 6						
C100	R142	O 3						
C101	R143	O 3						
C102	R144	O 3						
C103	R145	O 3						
C104	R146	E 3						
C105	R147	E 3						
C106	R148	E 3						
C107	R149	F 3						
C108	R150	C 2						
C109	R151	C 2						
C110	R152	C 2						
C111	R153	C 2						
C112	R154	A 4						
C113	R155	A 4						
C114	R156	A 4						
C115	R157	A 4						
C116	R158	A 5						
C117	R159	A 6						
C118	R160	A 6						
C119	R161	A 6						
C120	R162	A 6						
	R163	B 3						
	R164	B 3						
	R165	B 3						
	R166	B 3						
	R167	B 3						
	R168	B 3						
	R169	B 3						
	R170	B 3						
	R171	B 3						
	R172	B 3						
	R173	B 3						
	R174	B 3						
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	R234	A 1						
	R235	A 1						
	R236	A 1						
	R237	A 1						
	R238	A 1						
	R239	A 1						
	R240	A 1						
	R241	A 3						

CONNECTION WITH
HDTV UNIT (J2) OR
ORBITING UNIT (J1)

CONNECTION WITH
VERTICAL DEFLECTION
AND SYNC UNIT (J3)

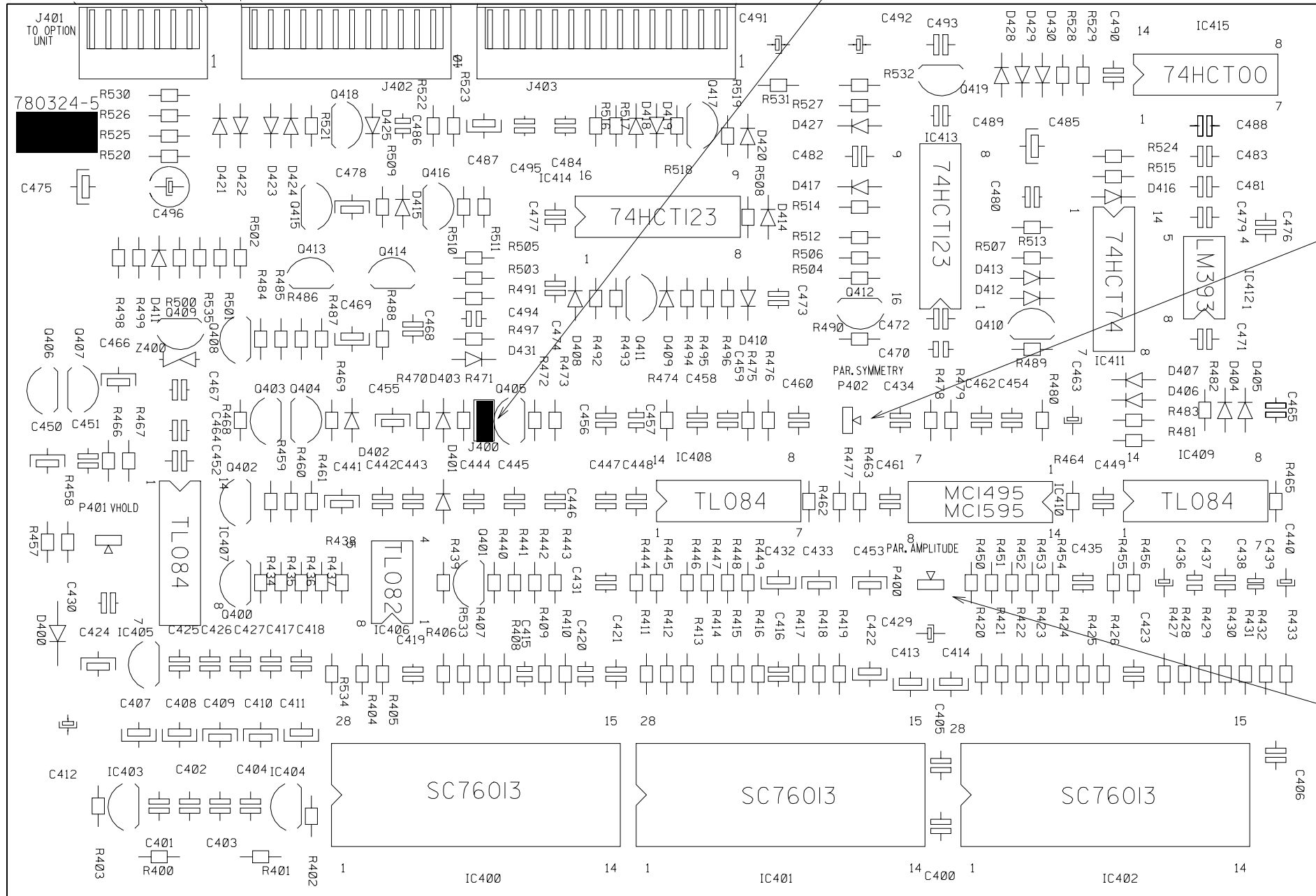
CONNECTION WITH
VERTICAL DEFLECTION
AND SYNC UNIT (J4)

REMOVE FOR
ON AXIS
PROJECTION

ADJUSTMENT
SYMMETRY OF
THE PARABOLA

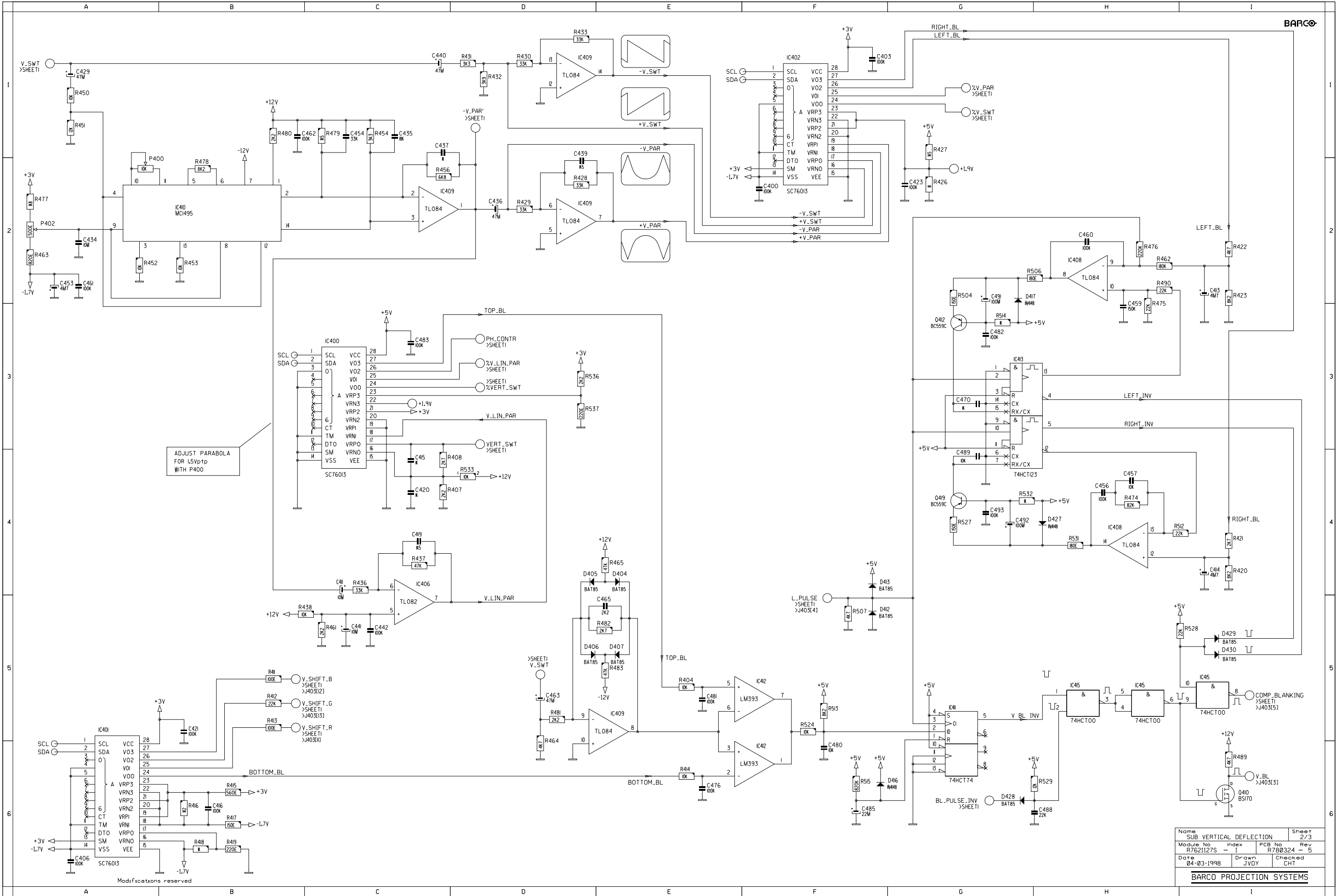
ADJUSTMENT
VERTICAL HOLD

ADJUSTMENT
AMPLITUDE OF
THE PARABOLA



Modifications reserved

Name SUB-UNIT VERTICAL DEFL.			Sheet 1 / 1
Module No R7621127S	Index 1	PCB No R780324	Rev 5
Date 04-03-1998	Drawn JVDY	Checked CHT	
BARCO PROJECTION SYSTEMS			



ADJUST PARABOLA
FOR 1.5Vp-p
WITH P400

Modifications reserved

Name		SUB VERTICAL DEFLECTION		Sheet
Module No		R7621127S		2/3
Index	1	PCB No	R760324	Rev
Date	04-03-1998	Drawn	JVDY	Checked
				CHT

BARCO PROJECTION SYSTEMS

A			B			C			D		
COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C400	F 2	2	C488	H 6	2	IC415	H 5	2	R453	B 2	2
C401	C 5	1	C489	G 4	2	IC415	H 5	2	R454	C 1	2
C402	D 5	1	C490	B 1	1	IC415	I 5	2	R455	G 4	1
C403	F 1	2	C491	G 2	2				R456	C 2	2
C404	C 5	1	C492	G 4	2	J400	G 4	1	R457	E 2	1
C405	D 5	1	C493	G 4	2	J401	A 4	1	R458	E 2	1
C406	A 6	2	C494	C 3	1	J402	A 5	1	R459	G 1	1
C407	C 5	1	C495	I 2	1	J403	A 1	1	R460	G 2	1
C408	D 5	1	C496	C 2	1				R461	C 5	2
C409	D 5	1				P400	A 1	2	R462	H 2	2
C410	C 5	1	D400	C 4	1	P401	F 1	1	R463	A 2	2
C411	C 4	2	D401	G 5	1	P402	A 2	2	R464	D 5	2
C412	D 4	1	D402	C 4	1				R465	E 4	2
C413	I 2	2	D403	F 5	1	Q400	G 1	1	R466	F 1	1
C414	I 4	2	D404	E 4	2	Q401	G 4	1	R467	F 2	1
C415	C 4	2	D405	D 4	2	Q402	H 2	1	R468	D 3	1
C416	B 6	2	D406	D 5	2	Q403	D 3	1	R469	C 3	1
C417	E 4	1	D407	E 5	2	Q404	D 4	1	R470	F 5	1
C418	B 2	1	D408	F 2	1	Q405	G 4	1	R471	G 5	1
C419	C 4	2	D409	H 3	1	Q406	E 2	1	R472	G 4	1
C420	C 4	2	D410	H 3	1	Q407	D 2	1	R473	F 4	1
C421	B 5	2	D411	D 2	1	Q408	D 2	1	R474	H 4	2
C422	G 4	1	D412	F 5	2	Q409	C 2	1	R475	H 2	2
C423	G 2	2	D413	F 4	2	Q410	I 6	2	R476	H 2	2
C424	D 4	1	D414	H 2	1	Q411	H 3	1	R477	A 2	2
C425	F 5	1	D415	B 3	1	Q412	G 3	2	R478	B 2	2
C426	C 4	1	D416	G 6	2	Q413	C 3	1	R479	C 1	2
C427	D 4	1	D417	G 2	2	Q414	C 4	1	R480	B 1	2
C429	A 1	2	D418	H 2	1	Q415	B 3	1	R481	D 5	2
C430	E 2	1	D419	H 2	1	Q416	B 4	1	R482	E 5	2
C431	H 5	1	D420	G 2	1	Q417	H 2	1	R483	E 5	2
C432	H 5	1	D421	B 5	1	Q418	B 3	1	R484	C 2	1
C433	I 5	1	D422	B 5	1	Q419	G 4	2	R485	D 2	1
C434	A 2	2	D423	B 5	1				R486	D 3	1
C435	C 1	2	D424	B 5	1	R400	D 5	1	R487	D 4	1
C436	D 2	2	D425	B 3	1	R401	D 5	1	R488	C 3	1
C437	C 1	2	D427	H 4	2	R402	D 5	1	R489	I 6	2
C438	E 6	1	D428	G 6	2	R403	D 5	1	R490	H 2	2
C439	D 1	2	D429	I 5	2	R404	E 5	2	R491	C 3	1
C440	C 1	2	D430	I 5	2	R405	B 5	1	R492	F 2	1
C441	C 5	2	D431	C 3	1	R406	E 4	1	R493	F 2	1
C442	C 5	2				R407	C 4	2	R494	H 3	1
C443	F 4	1	IC400	C 3	2	R408	C 4	2	R495	H 3	1
C444	G 5	1	IC401	A 5	2	R409	F 4	1	R496	H 3	1
C445	G 5	1	IC402	F 1	2	R410	F 3	1	R497	C 3	1
C446	G 4	1	IC403	D 6	1	R411	B 5	2	R498	E 2	1
C447	H 4	1	IC404	D 5	1	R412	B 5	2	R499	E 2	1
C448	E 5	1	IC405	D 4	1	R413	B 5	2	R500	C 2	1
C449	F 6	1	IC406	E 4	1	R414	E 6	2	R501	D 2	1
C450	F 2	1	IC406	E 4	1	R415	B 6	2	R502	D 2	1
C451	F 2	1	IC406	E 4	1	R416	B 6	2	R503	C 4	1
C452	E 5	1	IC406	C 4	2	R417	B 6	2	R504	G 2	2
C453	A 2	2	IC407	D 2	1	R418	B 6	2	R505	C 3	1
C454	C 1	2	IC407	E 3	1	R419	B 6	2	R506	G 2	2
C455	F 5	1	IC407	E 1	1	R420	I 4	2	R507	F 5	2
C456	H 4	2	IC407	H 1	1	R421	I 4	2	R508	F 3	1
C457	H 4	2	IC407	E 5	1	R422	I 2	2	R509	B 3	1
C458	F 5	1	IC407	E 5	1	R423	I 2	2	R510	B 4	1
C459	H 2	2	IC408	H 5	1	R424	G 4	1	R511	B 4	1
C460	H 2	2	IC408	H 4	1	R425	G 4	1	R512	H 4	2
C461	A 2	2	IC408	E 5	1	R426	G 2	2	R513	F 5	2
C462	B 1	2	IC408	E 5	1	R427	G 1	2	R514	G 3	2
C463	D 5	2	IC408	H 2	2	R428	D 2	2	R515	F 6	2
C464	D 3	1	IC408	H 4	2	R429	D 2	2	R516	F 3	1
C465	E 5	2	IC409	E 5	1	R430	D 1	2	R517	H 2	1
C466	D 2	1	IC409	E 5	1	R431	D 1	2	R518	H 2	1
C467	C 3	1	IC409	D 1	2	R432	D 1	2	R519	H 2	1
C468	C 4	1	IC409	D 2	2	R433	D 1	2	R520	D 2	1
C469	C 3	1	IC409	C 2	2	R434	G 2	1	R521	B 2	1
C470	G 3	2	IC409	E 5	2	R435	G 1	1	R522	B 3	1
C471	E 5	1	IC410	B 2	2	R436	C 4	2	R523	A 4	1
C472	B 2	1	IC411	B 2	1	R437	C 4	2	R524	F 5	2
C473	F 3	1	IC411	B 2	1	R438	B 5	2	R525	C 1	1
C474	F 2	1	IC411	G 5	2	R439	E 3	1	R526	B 5	1
C475	D 2	1	IC412	E 5	1	R440	G 5	1	R527	G 4	2
C476	E 6	2	IC412	E 5	1	R441	G 5	1	R528	I 5	2
C477	B 2	1	IC412	F 5	2	R442	G 4	1	R529	H 6	2
C478	B 3	1	IC412	F 6	2	R443	G 5	1	R530	B 5	1
C479	F 5	1	IC413	B 2	1	R444	H 5	1	R531	H 4	2
C480	F 6	2	IC413	B 2	1	R445	H 4	1	R532	G 4	2
C481	E 5	2	IC413	G 3	2	R446	G 4	1	R533	D 4	2
C482	G 3	2	IC414	B 1	1	R447	G 4	1	R534	G 1	1
C483	C 3	2	IC414	B 1	1	R448	H 5	1	R535	C 2	1
C484	F 2	1	IC414	G 2	1	R449	H 5	1	R536	D 3	2
C485	F 6	2	IC415	B 1	1	R450	A 1	2	R537	D 3	2
C486	A 3	1	IC415	B 1	1	R451	A 1	2			
C487	A 4	1	IC415	C 3	1	R452	A 2	2	Z400	D 3	1

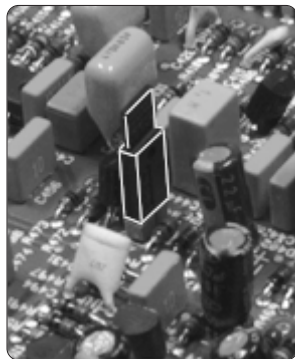
Modifications reserved

Name SUB VERTICAL DEFLECTION			Sheet 3/3
Module No R7621127S	Index - 1	PCB No R780324	Rev - 5
Date 04-03-1998	Drawn JVY	Checked CHT	
BARCO PROJECTION SYSTEMS			

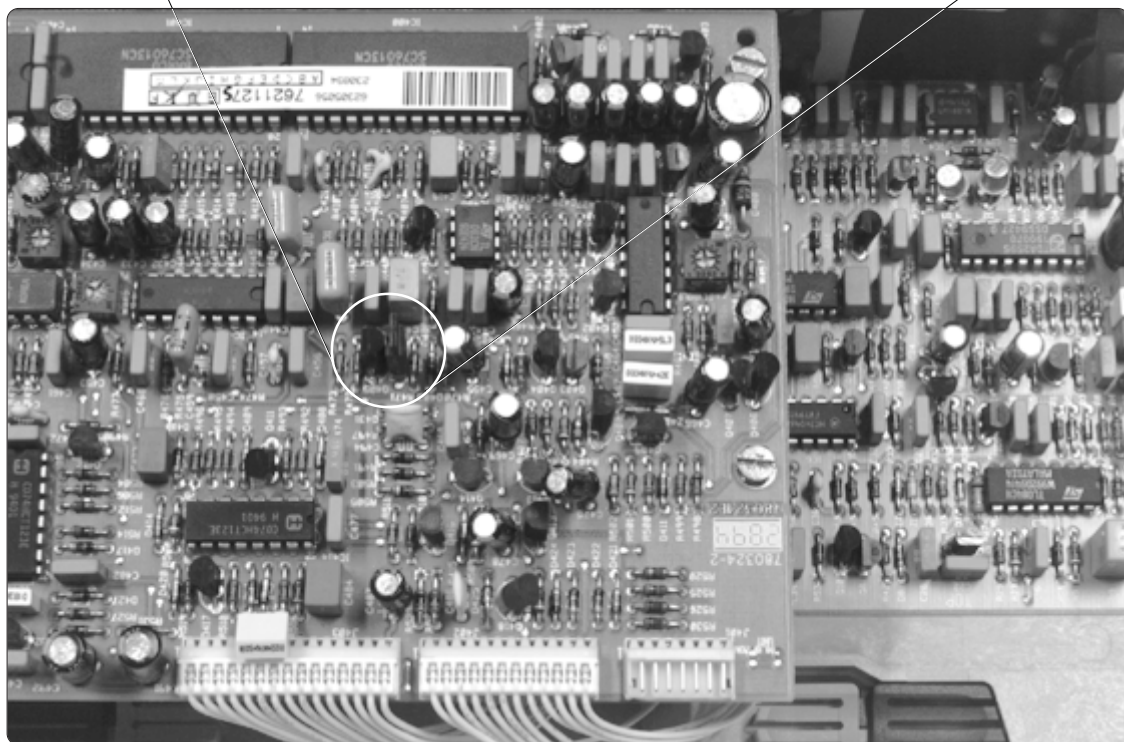
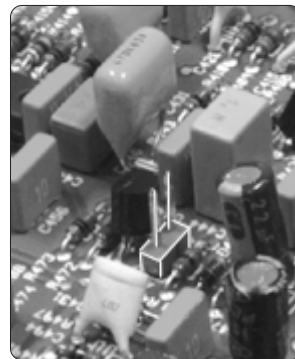
Adaptation of the E-W correction

when changing the projector configuration to ON AXIS PROJECTION

Normal projection configuration
(Strap J400 plugged in)



ON AXIS projection configuration
(Strap J400 removed)



Adjustment procedure 'VERTICAL DEFLECTION+SYNC MODULE'

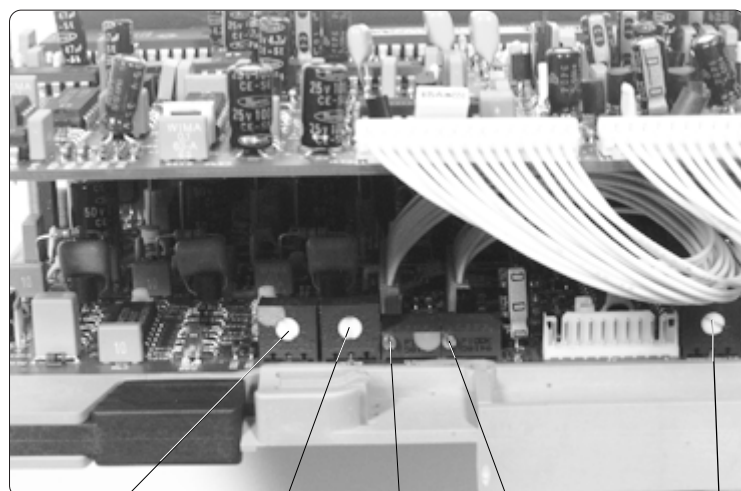
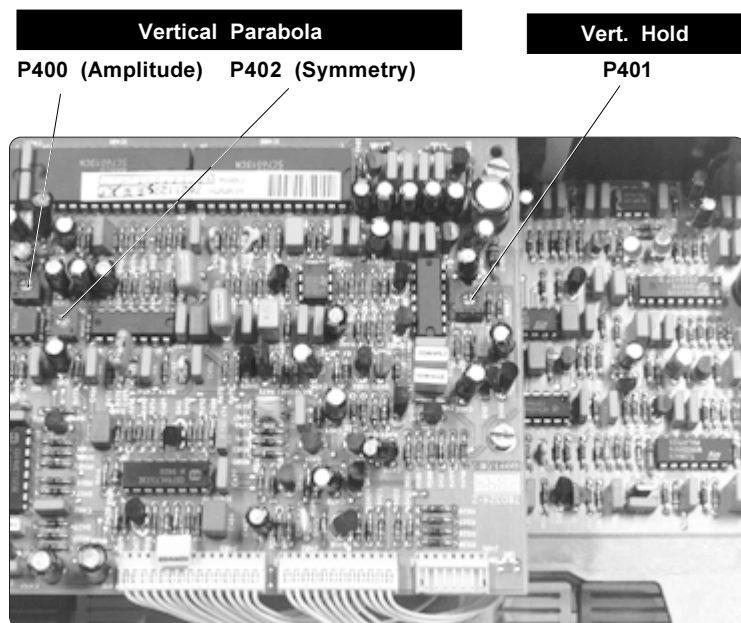
Introduction

The following adjustments are provided on the **main module**:

- a. Vertical SHIFT adjustment for RED - P3 and BLUE - P2 image
- b. Vertical amplitude correction for RED - P4 and BLUE - P5 image

The following adjustments are provided on the **sub module**:

- a. Vertical Hold P401
- b. Vertical Parabola: Amplitude P400
Symmetry P402



Vert. Size **Raster Shift** **Hysteresis-cente**

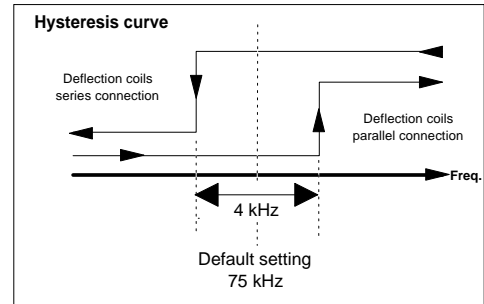
Adjustments on the main module

a. Hysteresis-center adjustment for deflection switching relay P1

This control adjusts the switching point of the relay to adapt the deflection coils for low and high line input frequencies.

Factory default adjustment: mid position of the potentiometer (switching point of the relay at approx. 75 kHz with a hysteresis of 4 kHz).

Adjustment range: the potentiometer P1 adjusts the switchover point of the relay between 60 and 90 kHz.



b. Main Vertical SHIFT adjustment for RED and BLUE image

Note: the mentioned adjustments are provided on the main module in order to correct the Vert. Shift range and the Vert. Amplitude of the red and blue picture after replacement of the respective picture tubes.

Preparation

Adjust the vertical raster centering controls for Red and Blue in their mid position. The numeric indicator under the respective bar scale indicates 50. (Refer to the Owner's manual of the projector - Guided or Random adjustment mode).

Alignment

Use the vertical shift controls P3 for RED and P2 for BLUE to shift vertically the Red and Blue image until the center coincides with the center of the Green image.

c. Vertical amplitude correction for RED and BLUE image

Adjust potentiometer P4 for the Red image and P5 for the Blue image to obtain the same vertical amplitude as the Green image.

Adjustments on the sub module

a. Vertical Hold P401

- The projector has to operate on a signal (the frequency is not relevant)
- Adjust the potentiometer P401 for synchronisation of the picture (Vertical lock)

b. Vertical Parabola P400-P402

Adjustment of the **Symmetry** of the vertical parabola P402

- The projector has to operate on a signal with standard frequency.
- Connect the oscilloscope to the resistor R456 (side: output pin 1 of IC409).
- Adjust the potentiometer P402 for a symmetrical curve of the parabola signal.

Adjustment of the **Amplitude** of the vertical parabola P400

- The projector has to operate on a signal with standard frequency.
- Connect the oscilloscope to the resistor R456 (side: output pin 1 of IC409).
- Adjust the potentiometer P400 for an amplitude of the parabola signal of 1.5V.

TECHNICAL DESCRIPTION "UN SYNC + VERT DEFL " (7621127)

Introduction.

On this board and its sub-unit we find the sync separator, the horizontal autolock circuit, the vertical oscillator and the vertical output stages. The generation of the waveforms for the east-west correction signals, the left / right and top / bottom blanking and the composite blanking.

The horizontal drive pulses, with its phase adjustment, for the MOSFET switchers on the HOR DEFL module are also prepared on this board.

A Barco designed IC, called the "BELLA" , comprising four digitally controlled potentiometers, is utilised for the adjustment of the amplitude of the waveforms, or for the adjustment of some DC control voltages. This IC, custom made for Barco, is driven by an I²C (serial data) bus from the microprocessor on the controller board.

1. Vertical oscillator - Vertical pulses (on the Subunit)

a) Vertical Sawtooth Generator

The vertical sawtooth relaxation oscillator is built around the darlington Q403 / Q404 , C464 and the current generator Q408 (all on the subunit of the Vert Sync module). The current that charges up C464 is simulated by another vertical relaxation oscillator built around Q413 / C467 / Q409. The amplitude of the sawtooth of this oscillator is maintained stable, irrelevant the vertical frequency. In order to stabilize the amplitude regardless of the vertical frequency, the charging current must increase with increasing vertical frequencies. The obtained current is then 'mirrored' to the real oscillator.

The initial (minimum) charging current of C467 is taken from the +12V via R525. Additional current is provided by the OPAMP output through the diode D411. This output voltage is determined by the voltage difference between the pins 5 and 6. Pin 5 voltage is adjusted with P401 and determines the "gain" of the loop system. This is the current versus frequency behaviour. P401 is adjusted to obtain locking for the full range of vertical frequencies (see Service manual).

The other input , pin 6, is a reference for the 'average' amplitude of the simulated sawtooth. Therefore, the sawtooth across C467 is buffered and the average amplitude is measured by the Miller integrator of IC407.

The output voltage changes as long both inputs have different potential, and settles down as soon this condition is fulfilled.

The voltage adjusted by P401 determines consequently the average current of the generators for one typical vertical frequency.

In free run (no sync applied), the ramp voltage is limited by Z400. The OPAMP would then go into saturation (in the free running mode) and the output drops to approx. - 10V. As soon "V drive" is applied the voltage now must increase from - 10V to around +6 volts before D411 gets forward biased, as from that moment onwards the current 'follows' the frequency. That would take too long and therefore the output voltage of the OPAMP is limited because Q407 gets in conduction as soon the OPAMP output is around +6 volts. Q406 is turned on then and the input current is deviated via this transistor to avoid saturation of the output.

b) Synchronisation of the vertical oscillator

The TDA2595 performs well as sync stripper for videosegments because of its noise integrating input. Such a (delaying) input circuit however has a bad performance for computer signals. The LM1881 is better suited for computer sync signals and

consequently the latter is used as sync stripper for all modes except Video / SVID. An automatic detection circuit drives two gating diodes in order to guide the sync from the LM1881 to the TDA2595 or to bypass this one.

1. By means of the "V sync" stripped from the composite sync

The "VID/HS/CS" from the "RGB INP + SW" module is capacitively applied to pin 2 of the sync stripper IC4, and to the emitterfollower Q6 on condition D10 is forward biased.

The separated sync pulses at pin 1 go through R55 and D9 to the same emitterfollower on condition D9 is forward biased.

Whether the TDA2595 is used or the LM1881 as sync separator, depends on the condition of the gating diodes D9 / D10.

The composite video mode is detected as follows. The OPAMP 5 - 6 - 7 in IC9 acts as a level detector (no feedback). The video is integrated at the pin 6 input and pin 5 is fixed at a threshold level with R156/R157. For composite video the output pin 7 switches low which results in a saturation of Q7 and thus a blocking of D9.

D16 and D17 are then both forward biased via the stabistor D21. Consequently, the line oscillator is forced at the minimum (15 khz) and the "Freq Mode" is also forced to the lowest range.

The HS/CS' output of the sync stripper goes to the base of Q8 of the coincidence detector and the COMP input of the PPL IC6.

The vertical positive pulses from IC2 pin 9 (VS) leave the main unit and arrive on the subunit at the base of Q418. In order to find these pulses at the collector, Q415 must be conducting to form a ground return for the emitter.

As long no vertical pulses arrive on Q416's base, the latter is not conducting and Q415 is turned on via the R509 resistor connected to the +5V line.

2. By the vertical external sync

The vertical oscillator can also be synchronised by VS EXT pulses, separate vertical sync pulses injected into the projector at the VS input. Such pulses can also be delivered by the optional "HDTV Sync interface" if mounted on this unit. The "VS EXT" pulses are inverted by Q416 and trigger the oscillator via D425. The same negative pulses at the collector also charge up C478 to an average low level cutting off Q402 in this case.

c) "Bella", a Barco customer made IC

The voltage or waveform, applied between VRP and VRN is adjustable in 128 steps and becomes available at the corresponding VO output. The corresponding pins of such a potentiometer are :

VRP1 : "positive side" of the potentiometer "1".

VRN1 : "negative side" of the potentiometer "2".

VO1 : variable out (slider) of potentiometer "1".

Notes :

1. If the signals applied to above inputs are negative and positive with respect to the supply, then, the VSS pin (14) must be supplied with a negative voltage.

2. The amplitude of the input signals is limited to + 3.2V and -1.7V. Measures must be taken to avoid saturation of the input.

The control of these IC's is accomplished with a **SCL** (serial clock) and **SDA** (serial Data) which come from the controller. The address of the IC is determined by the address pins which are grounded or left open (=high).

Obviously, as one IC contains four potentiometers, the address of the IC is followed by a "slave" address selecting the correct potentiometer "0", "1", "2", or "3".

d) Vertical linearity control

Vertical Linearity control is obtained by adding an adjustable vertical parabola to the sawtooth waveform. That adjusted parabola is in fact the sum of a parabola with fixed amplitude and a parabola with variable amplitude.

The sawtooth is buffered with OPAMP (12 - 13 - 14 of IC407). Behind the buffer we have two outputs for further processing :

a) the *V SWT* , sent to the multiplier, to generate a vertical parabola, and for the keystone correction (E/W correction).

b) the *VERT SWT* , sent to the Bella IC400, for the vertical amplitude control.

The *V LIN PAR* (pin 7 output of IC406) is applied to :

- the Bella IC400 to adjust the amplitude, the output is labelled "*%V LIN PAR*."
- the OPAMP IC406 input pin 2 (to be added to the adjusted *V LIN PAR*).

The OPAMP 1 - 2 - 3 adds the *V LIN PAR* to the *%V LIN PAR* and the output is added to the *V SWT* by R409 / R410.

e) Generation of vertical pulses from the vertical sawtooth.

1. Pulse for overshoot in the deflection

The "black" cathode currents are measured during a small time at the end of the vertical retrace time (top of the picture). To allow a correct measurement, the three beams may not be blanked during that time.

This means that the spot can be visible at the top of the picture.

An extra movement of the electron beam in the vertical deflection at the moment of unblanking can move the "visible beam" to a point beyond the screen. For this extra excursion (or "overshoot" in the scanning) a pulse is generated as follows.

The "*V SWT*" is capacitively coupled to the trigger input (negative going transient) of IC 414. R492 / R493 installs a DC offset at this input.

The pin 13 (positive polarity) output pulse drives the Mosfet Q402 into saturation at the end of the vertical flyback to produce a maximum excursion of the spot.

The other opposite polarity output of this one-shot , "*BL PULSE INV*", is used for blanking (see later).

Due to the integrating behaviour of the scan coils, the current is delayed with respect to the voltage.

The ABL pulse to be used in the "RGB - DRIVER " module for the black current measurement has to be delayed with respect to the above "overshoot-pulse".

This is realised by triggering the second one - shot by the trailing edge of the former "overshoot" pulse. The width of this pulse is also a lot smaller compared to the former one.

2. Generation of the blanking and unblanking pulses

As mentioned earlier the opposite polarity output pin 4 (*BL PULSE INV*) of the double one-shot IC414 is used for blanking (see sheet 2) during the vertical retrace time.

To unblank the video during the ABL time (see composite blanking), the "*ABL PULSE INV*" from pin 12 of the double one-shot is used.

3. Pulses for the controller and the RGB DRIVER (ABL measurement)

V pulse (for the controller)

The two outputs at the pins 13 and 5 are added with D420 and D414 and then buffered with Q417. The "*VPULSE*" is protected by the diodes hooked to the +5V and ground with D419/D418 and sent to the microprocessor-controller board via the main board.

ABL pulse (for the RGB DRIVER):

The shorter pulse and delayed with respect to the overshoot generated by the second one-shot is buffered with Q411 before leaving this module. It is used on the RGB DRIVER board to determine the time for the 'black current' measurement.

2. Vertical output stages, vertical shift and amplitude control

a. Power amplifiers

The *VERT SWT* at the node R410 / R409 is sent to the BELLA IC406 (VRP0, pin 17) for adjustment. The output VO0 (% VERT SWT) is then passed through the 'ABL overshoot' as described above.

It is now capacitively coupled to the inverting inputs of the power amplifiers IC14- IC15- IC17. At the same inputs we find :

- a DC voltage coming from P2 and P3, these are factory set coarse alignments. These coarse alignments also reduce the range of the BELLA potentiometers, thus increasing the resolution of the digital control.
- the vertical shift voltages controlled by the BELLA IC401 on the subunit, G shift, R shift and B shift. The red and blue beam will follow the green shift, because a portion of the green shift voltage is fed to the red and blue shift lines.
- a sawtooth which is proportional with the deflection currents. This is the voltage across the feedback resistors R145, R131 and R110. These are used to stabilise the vertical amplitudes.

The TDA8172 allows for a short vertical retrace time by doubling the supply voltage during retrace.

b. Vertical scan fail detection

The vertical scan fail circuit is the same for the three deflection output circuits. We limit the discussion to the green output.

The feedback across the feedback resistor R145 is capacitively coupled to the base-emitter of Q22. The conduction time of this transistor is only during the positive portion of the ramp and is determined by the amplitude of the vertical ramp. By the capacitor the shift voltage is removed and does not play a role in the scan fail detection. The (integrated) collector voltage across C102 is thus inversely proportional with the amplitude of the sawtooth. As long as the amplitude is acceptable, the collector voltage is sufficiently low to block Q23.

Either one of the scan fail circuits can saturate Q23 to "cause" the scan fail condition.

3. EAST-WEST CORRECTION

a. Trapezoidal distortion (sheet 2 of the Subunit schematic).

The DC is removed from the

V_{SWT} signal with C440, the amplitude is reduced to match the Bella specifications. The OPAMP inverts the ramp and the output produces a sawtooth that is symmetrical around the zero level, since the non-inverting input is at ground level. Two ramps labelled $\pm V_{SWT}$ are available for adjustment by the "0" potentiometer in the Bella IC402. The output is labelled " $\%V_{SWT}$ " (*adjusted Vertical Sawtooth*).

b) Pincushion distortion.

For the pincushion correction a vertical parabola is required. This parabola is generated by the multiplier IC410. The $-V_{PAR}$ output pin 1 of the OPAMP together with the inverted $+V_{PAR}$ feed the potentiometer "1" in the Bella IC402. The output is labelled " $\%V_{PAR}$ " (*adjusted Vertical Parabola*).

c) Line frequency dependent correction - Power Amplifier (sheet 1).

The adjusted waveforms are added with R424 / R425 and then passing the capacitor C422. A small DC voltage obtained from R446/R447 is added to the signal. This small DC voltage undergoes the same gain of the E/W waveform.

The output is passed on to a Miller integrator to remove the waveform and check the gain of the OPAMP. On the other input we apply a portion of the line frequency dependent +HTHD voltage.

The gain of the OPAMP depends on the feedback ratio R445 / Q401. The gate bias of the latter is the output voltage of the integrator. As this voltage is line frequency dependent the gain of the OPAMP follows the value of the HTHD voltage. Note that the +HTHD voltage is not exactly proportional with the line frequency. However, the East / West correction always must be related to (a certain percentage of) the horizontal scan voltage.

Depending on the ceiling / table position, the maximum E/W correction is at the top or the bottom of the screen. The feedback time constant between gate and source is adapted accordingly. In table position V_{SI} is low level and Q405 is on. R471/C444 is added to the R442/C446 time constant.

If the projector is mounted ON-AXIS, J400 link must be removed as in this case there is no E/W correction needed.

The output of the OPAMP, pin 1 (E/W CORR) is sent to the main unit via J403(9) where it is amplified with IC10, a TDA2030 power amplifier. It reaches finally the "UNHORIZONTAL DEFL" to modulate the scan voltage +HTHD.

4. Horizontal oscillator Autolock Phase alignment

(on the main board)

a) Horizontal oscillator + Autolock

The oscillator in the TDA2595 is locked to the centre frequency by a PLL system in

the IC itself, but the latter has only a limited range of approx. 1.2 kHz. Therefore, it serves as a fine lock for the frequency. An additional PLL (4046B), IC6, is used to coarse lock the frequency first.

The 4046B consists of two digitally controlled phase comparators. For this application only the second one is used. The **SIGN** input, pin 14, is the line oscillator "HOSC" of the TDA2595, and the **COMP** input is the comp. sync HS/CS'. The corresponding output is **PC2**, pin 13, a three-level state output.

If the output is open (high impedance), the voltage is set at 6 volts with R58/R59. This voltage can increase or decrease by the push-pull output of the IC. The voltage is buffered and reaches pin 5 of a voltage comparator in IC3. The other input, pin 6, is fixed by R45/R39. The output of the comparator switches on or off the fet Q4 which allows the transfer of the regulating voltage to the TDA2595 when on (shorted).

b) Coincidence detector

The HOSC (squarewave) switches on and off the transistor Q10. When switched on, any pulse arriving at the base of Q8 is clamped at ground and cannot switch on the latter. When the frequency and/or phase of the line oscillator is different from the composite sync, these pulses arrive on the base of Q8 at the moment Q10 is off. These pulses then switch on and off Q8 and discharge C27 which decreases the voltage at pin 6. The voltage at the other input cannot drop lower than 6 volts due to the zener diode Z4.

Consequently, the output pin 7 switches "high" to forward biases Q10. The latter connects the buffer-output with the integrating OPAMP (1-2-3 of IC3).

c) Locking of the oscillator

The regulating voltage at pin 1 of IC3 drives Q1 via an adjustable zener IC5. The efficiency of the circuit is thus automatically adapted to the line frequency. The collector-emitter current of Q1 determines the frequency of the line oscillator in the TDA2595.

The line oscillator is corrected until it is locked to the comp. sync frequency. The PLL output is now disconnected from the OPAMP input since the coincidence circuit turns off the fet Q4.

From this point on, the fine frequency lock in the TDA2595 takes over and adjusts the line oscillator until the exact frequency and phase is reached.

As the coarse tuning voltage is lost now, the PLL output pin 17 of the TDA2595, feeds now pin 2 of the integrating OPAMP IC3 to establish and maintain the fine tuning loop.

In the locked state, this PLL output is 6 volts. As pin 3 of the OPAMP is set at 6 volts with R8 / R13, the action of the OPAMP continues up to the moment the oscillator is locked to the centre of the hold range of the PLL.

d) Frequency mode switching - Tracking Hor Freq.

The horizontal frequency tracked voltage "TRACKING HOR FREQ" is smoothed with R73/C47 and compared with an adjustable voltage from the slider of P1 (*Hysteresis centre switching relays*).

The "H FREQ MODE" output is high or low depending on :

- the TRACKING HOR FREQ voltage, thus on the tuned frequency

- the slider voltage of P1.

The slider voltage is limited both sides with R77 / R87. The user / service engineer can only determine the "high" or "low freq. mode" in some window, the mid range of frequencies.

As is discussed in the "UN HOR DEFL" board the two parts of the scan coil windings are in series in the "lower freq mode" range and in parallel in the "higher freq mod". The "H FREQ MODE" voltage is obviously sent to the deflection circuits to activate the relays.

Since the flyback time in the second range is half the flyback time of the lower range the microprocessor must be informed on the actual range the projector is running. The "H FM" is consequently sent to the microprocessor - controller board.

The "TRACKING HOR FREQ" in the schematics, is proportional with the line frequency and will be used to track some waveforms with the line frequency.

e) Line flyback pulse simulation

The phase of the HS squarewave output, pin 4 of the TDA2595, is determined by the position of the pulse applied to pin 2 (LFP). Delaying this pulse with respect to the drive pulse of pin 4 will mean that the drive pulse will be shifted back in the time for about the same amount of the delay.

The width of this pulse also is the width of the SC (Sandcastle) which exits at pin 6. This pulse is generated by means of two one-shots in IC7. The first one generates a pulse starting at the end of the scan (= positive transition of the squarewave) and with a duration determined by the time constant of the one-shot. This duration is relevant for the delay.

The second one-shot is triggered at the negative transient of the first pulse thus the output pulse starts with the end of the first pulse. The duration of this pulse will be the duration of the SC pulse.

As the TRACKING HOR FREQ voltage is not at the correct dc level, nor has the correct range (efficiency), the voltage is put to a suitable range with an OPAMP and Q5 in the feedback loop. The output is dropped with Z1 and drives simultaneously Q11 and Q9. The delay, this is the width of the output pulse at pin 6 of the one shot in IC4, is regulated by Q9.
The width of the pulse at output pin 10 is regulated with Q11.

f) Phase alignment :

The HOSC squarewave is not suitable for driving the MOSFETs in the horizontal deflection. Two one shots will derive a drive pulse with the correct width and position by means of an adjustable delay (=phase) with respect to the (reference) input sync signal.

The adjustment range over the entire frequency range must be proportional with the line period.

The range in *absolute* value must be much lower for the higher frequencies than for the lower frequencies. The *relative* value (percentage) must be the same. This is obtained by tracking the phase range with the line frequency by means of an automatic system (feedback) as described hereafter.

The "PH CONTR" voltage from the BELLA IC401 on the subunit is sent via R405 to contact 8 of the J402 connector. The optional ORBITING module can here overrule the PH CONTR if the projector is switched as a SLAVE.

Anyhow, the phase controlling voltage arrives at one base of the differential amplifier Q17. The other transistor in Q17 receives the integrated pulses of pin 13. This DC voltage is proportional with the width of the output pulses and the line period. Assume we have set the phase voltage at 2 volts. The comparator will now adjust the width of the output pulses at pin 13 until both bases of Q2 carry the same 2 volts. Therefore, the width of the pulses will be narrower when the line period decreases, thus for the higher frequencies. Note that the width of this pulse here is the phase delay time.

Indeed, the other one-shot now is triggered with the negative pulse of pin 4 on the positive going transient.

The width of the horizontal drive pulse is tuned by R89 / C64.

The positive drive pulses at pin 5 are sent to the controller to lock the PLL of the text generator. By using locking pulses which have undergone the phase shift, the text on the screen is not affected by the phase control but fixed to the scanning.

The negative going pulses at pin 12 are slightly amplified and buffered with Q15, buffered with Q16 and sent to the "UN HOR DEFL" module.

5. Adjustable blankings

a) Left / right blanking

The Left/Right Blanking pulses are generated by two one-shots in IC413 which are triggered with "L PULSE" (FlyBack pulses from the Hor Defl board).

The available range of the

BELLA potentiometers of IC402 is 0 -1.5 volts. This range should allow the same relative blanking irrelevant the line period. Therefore, the absolute value must be smaller at higher frequencies. A feedback system is used that automatically adapts the width of the pulse to the line period (compare this with the phase alignment where a similar problem is solved in a similar way).

Pulses, coinciding with the start of the flyback time, and, having a width set by C470/ Q412, exit at pin 13 of IC413. These pulses are integrated and the resulting voltage is sent to pin 10 of IC408 to be compared with the voltage at pin 9 (=LEFT BL). The OPAMP's output is fed back to the input pin 2 with a Miller capacitor. The current of Q412 is adapted until both voltages at the pins 2 and 3 are identical.

The "LEFT INV" is connected to the gating (adding) diode D430 or pin 1 of the NAND gate IC415.

To generate the blanking pulse for the end of the scan, the inverted output at pin 12 is integrated and compared with the BELLA voltage RIGHT BL.

The pulses RIGHT INV are applied to the same NAND-gate input via D429.

b) Top / Bottom blanking

To achieve a high accuracy, or, in other words, to dispose of a steep ramp, the sawtooth is sent into a "dead band response amplifier" built around the OPAMP 9 - 10 - 8 in IC409.

The sawtooth V_{SWT} enters pin 9 capacitively. The output is inverted and the clipping levels are set by clamping circuits : R465/D404/D405 and R483/D407/D406.

The modified waveform is now sent to two level detectors of IC412, on the inverting and the non-inverting inputs. A potentiometer of the BELLA IC400 and another one in IC401 adjust the DC levels of the other inputs.

The outputs are added and applied to the "Data" input of an RS-flipflop of IC411. The clock input of this RS-FF are line pulses, the output is in this case always a multiple

of a line period to avoid the half line offset with interlaced signals.

c) Composite blanking

The user controlled blankings are added with gating diodes to the same input of IC415. The other input of this NAND gate are the vertical blanking pulses during the retrace time "*BL PULSE INV*". The output is now combined with the UNBLANKING ABL pulse "*ABL PULSE INV*". The output is inverted with another NAND gate of the IC415 and the COMP BLANKING is finally leaving to the RGB DRIVER module.

Parts listing R7621127 CPL

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
10	R133039	SPR L 8 D 1,2D 4 CE	2	C112	R112763	C CE MI 10N Z 63E2 85	1
2000	R133039	SPR L 8 D 1,2D 4 CE	5	C113	R112763	C CE MI 10N Z 63E2 85	
1040	R133074	HTSN@A I_SIL W30		C114	R112763	C CE MI 10N Z 63E2 85	
1050	R133074	HTSN@A I_SIL W30		C 11	R1137121	C POMERA 10N K250E2 85	
1030	R3631049	SCR Z933 M 3 X 6 SS	8	C 21	R1137121	C POMERA 10N K250E2 85	
1070	R3631059	SCR Z933 M 3 X 8 SS	3	C 28	R1137121	C POMERA 10N K250E2 85	
1090	R367699	RVT AVTRON2,5L 8,1 AL	6	C 79	R1137171	C POMERA 27N K100E2 85	
1080	R722276	LOCK49PCBUNCPL	1	C 90	R1137171	C POMERA 27N K100E2 85	
1020	R802628	HTSNA GEN SPG 1X 3.1	6	C101	R1137171	C POMERA 27N K100E2 85	
1010	R802645	HTSND800 FIX LATH	1	C 8	R113724	C POMERA 100N K 63E2 85	
1000	R803217	HTSNG1200 VER	1	C 9	R113724	C POMERA 100N K 63E2 85	
1011	R805147	FRM49VERSCRNFIX	1	C 10	R113724	C POMERA 100N K 63E2 85	
1021	V3621217	SCR \$7500CM 3 X 6 STZN	6	C 12	R113724	C POMERA 100N K 63E2 85	
1060	Z3676041	SPR L37 M 3 H 5,5IBRNI	4	C 15	R113724	C POMERA 100N K 63E2 85	
				C 16	R113724	C POMERA 100N K 63E2 85	
C 4	R111469	C EL RA1000M M 16E2 85	1	C 18	R113724	C POMERA 100N K 63E2 85	
C 75	R1114729	C EL RA4700M M 16E3 105	1	C 19	R113724	C POMERA 100N K 63E2 85	
C 17	R111476	C EL RA 47M M 25E2 85		C 20	R113724	C POMERA 100N K 63E2 85	
C 47	R111476	C EL RA 47M M 25E2 85		C 22	R113724	C POMERA 100N K 63E2 85	
C 59	R111476	C EL RA 47M M 25E2 85		C 26	R113724	C POMERA 100N K 63E2 85	
C 74	R111476	C EL RA 47M M 25E2 85		C 27	R113724	C POMERA 100N K 63E2 85	
C 55	R1114879	C EL RA 100M M 35E2 85	1	C 29	R113724	C POMERA 100N K 63E2 85	
C 81	R111488	C EL RA 220M M 50E2 85	1	C 30	R113724	C POMERA 100N K 63E2 85	
C 92	R111488	C EL RA 220M M 50E2 85	1	C 31	R113724	C POMERA 100N K 63E2 85	
C104	R111488	C EL RA 220M M 50E2 85	1	C 32	R113724	C POMERA 100N K 63E2 85	
C 2	R111531	C EL RA 10M M 35E2 85		C 34	R113724	C POMERA 100N K 63E2 85	
C 13	R111531	C EL RA 10M M 35E2 85		C 35	R113724	C POMERA 100N K 63E2 85	
C 14	R111531	C EL RA 10M M 35E2 85		C 39	R113724	C POMERA 100N K 63E2 85	
C 24	R111531	C EL RA 10M M 35E2 85		C 40	R113724	C POMERA 100N K 63E2 85	
C 38	R111531	C EL RA 10M M 35E2 85		C 43	R113724	C POMERA 100N K 63E2 85	
C 41	R111531	C EL RA 10M M 35E2 85		C 46	R113724	C POMERA 100N K 63E2 85	
C 45	R111531	C EL RA 10M M 35E2 85		C 54	R113724	C POMERA 100N K 63E2 85	
C 51	R111531	C EL RA 10M M 35E2 85		C 57	R113724	C POMERA 100N K 63E2 85	
C 52	R111531	C EL RA 10M M 35E2 85		C 58	R113724	C POMERA 100N K 63E2 85	
C 60	R111531	C EL RA 10M M 35E2 85		C 61	R113724	C POMERA 100N K 63E2 85	
C 65	R111531	C EL RA 10M M 35E2 85		C 63	R113724	C POMERA 100N K 63E2 85	
C 66	R111531	C EL RA 10M M 35E2 85	1	C 67	R113724	C POMERA 100N K 63E2 85	
C 69	R111531	C EL RA 10M M 35E2 85		C 68	R113724	C POMERA 100N K 63E2 85	
C 70	R111531	C EL RA 10M M 35E2 85		C 71	R113724	C POMERA 100N K 63E2 85	
C 72	R111531	C EL RA 10M M 35E2 85		C 77	R113724	C POMERA 100N K 63E2 85	
C 73	R111531	C EL RA 10M M 35E2 85		C 82	R113724	C POMERA 100N K 63E2 85	
C 5	R111548	C EL RA 2M2M 50E2 85		C 84	R113724	C POMERA 100N K 63E2 85	
C 7	R111550	C EL RA 4M7M 50E2 85		C 94	R113724	C POMERA 100N K 63E2 85	
C 56	R112239	C NP0 MI 56P G100E2	1	C 96	R113724	C POMERA 100N K 63E2 85	
C 62	R112239	C NP0 MI 56P G100E2		C116	R113724	C POMERA 100N K 63E2 85	
C 42	R112242	C NP0 MI 100P G100E2		C 23	R113728	C POMERA 220N K 63E2 85	
C 64	R112242	C NP0 MI 100P G100E2		C 25	R113728	C POMERA 220N K 63E2 85	
C106	R112366	C N750MI 220P G100E2	1	C 78	R113728	C POMERA 220N K 63E2 85	1
C 83	R112737	C CE MI 680P K100E2	1	C 86	R113728	C POMERA 220N K 63E2 85	
C 88	R112737	C CE MI 680P K100E2	1	C 87	R113728	C POMERA 220N K 63E2 85	
C 93	R112737	C CE MI 680P K100E2	1	C 89	R113728	C POMERA 220N K 63E2 85	1
C 99	R112737	C CE MI 680P K100E2	1	C 97	R113728	C POMERA 220N K 63E2 85	
C105	R112737	C CE MI 680P K100E2	1	C 98	R113728	C POMERA 220N K 63E2 85	
C109	R112737	C CE MI 680P K100E2		C100	R113728	C POMERA 220N K 63E2 85	1
C 36	R112739	C CE MI 1N K100E2		C110	R113728	C POMERA 220N K 63E2 85	
C 48	R112739	C CE MI 1N K100E2		C111	R113728	C POMERA 220N K 63E2 85	
C 50	R112739	C CE MI 1N K100E2		C 80	R113729	C POMERA 270N K 63E2 85	
C 85	R112739	C CE MI 1N K100E2		C 91	R113729	C POMERA 270N K 63E2 85	
C 95	R112739	C CE MI 1N K100E2		C102	R113729	C POMERA 270N K 63E2 85	
C108	R112739	C CE MI 1N K100E2		C 44	R113730	C POMERA 330N K 63E2 85	
C 53	R112743	C CE MI 2N2K100E2		C 49	R113730	C POMERA 330N K 63E2 85	
C107	R112747	C CE MI 4N7K100E2 85		C103	R114090	C POMERA 1M K 63E2 85	1
C120	R112747	C CE MI 4N7K100E2 85	1	C117	R114090	C POMERA 1M K 63E2 85	1

Sync+Vertical Deflection

R7621127

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
C118	R114090	C POMERA 1MK63E2 85	1	I 9	R134124	U 082 TL DIP8 P	1
C119	R114090	C POMERA 1MK63E2 85	1	I 7	R1373325	U 4098B DIP16 P	1
C 33	R1159161	C PP RA 1N J100E2 85		I12	R137552	U 74HCT123 DIP16 P	1
C 37	R1159161	C PP RA 1N J100E2 85		I16	R137556	U 74HCT27 DIP14 P	1
C 1	R115922	C PP RA 1N8J100E2 85	1	I 6	R137602	U 4046B DIP16 I	1
C 6	R115940	C PP RA 10N J63E2 85		I 2	R313249	JU0.3 FBT P18 E1SN SPG	1
C 76	V1114718	C EL RA1000M M25E2 SM	1				
C 3	V114098	C POMERA 2M2M50E2 85	1	J 1	R313525	JEUR2C MBS P64 E1C2S 1,6	1
				J 2	R313525	JEUR2C MBS P64 E1C2S 1,6	1
D 2	R131621	D S 1N4148 075150 DO35		J 6	R313922	JCTH MBT P2 M2SN WH	1
D 3	R131621	D S 1N4148 075150 DO35		J 5	R313926	JCTH MBT P6 M2SN WH	1
D 4	R131621	D S 1N4148 075150 DO35		J 7	R313930	JCTH MBT P10 M2SN WH	1
D 5	R131621	D S 1N4148 075150 DO35		J 3	R3484125	CD CT FTMT P12 160	1
D 6	R131621	D S 1N4148 075150 DO35		J 4	R3484154	CD CT FTMT P15 150	1
D 7	R131621	D S 1N4148 075150 DO35					
D 8	R131621	D S 1N4148 075150 DO35		L 1	R305913	CH MNS AX NS 12 UH 3A	1
D 9	R131621	D S 1N4148 075150 DO35		L 2	R305913	CH MNS AX NS 12 UH 3A	1
D 10	R131621	D S 1N4148 075150 DO35		L 3	R3061222	CH AX NS 1.5 UH	1
D 15	R131621	D S 1N4148 075150 DO35		L 4	R3061222	CH AX NS 1.5 UH	1
D 16	R131621	D S 1N4148 075150 DO35		L 5	R3061222	CH AX NS 1.5 UH	1
D 17	R131621	D S 1N4148 075150 DO35					
D 18	R131621	D S 1N4148 075150 DO35		P 1	R106827	R TCE V 2K K 0W5 S10SS	1
D 19	R131621	D S 1N4148 075150 DO35		P 4	R106827	R TCE V 2K K 0W5 S10SS	1
D 20	R131621	D S 1N4148 075150 DO35		P 5	R106827	R TCE V 2K K 0W5 S10SS	1
D 22	R131621	D S 1N4148 075150 DO35		P 2	R1075301	R MCE H100K K 0W5 M10SS	1
D 23	R131621	D S 1N4148 075150 DO35		P 3	R1075301	R MCE H100K K 0W5 M10SS	1
D 24	R131621	D S 1N4148 075150 DO35					
D 25	R131621	D S 1N4148 075150 DO35		PC	R780323	PCBG1200 VER	1
D 26	R131621	D S 1N4148 075150 DO35					
D 27	R131621	D S 1N4148 075150 DO35		Q 1	R131411	Q BC549C N SS TO92	
D 31	R131621	D S 1N4148 075150 DO35		Q 8	R131411	Q BC549C N SS TO92	
D 32	R131621	D S 1N4148 075150 DO35		Q 10	R131411	Q BC549C N SS TO92	1
D 33	R131621	D S 1N4148 075150 DO35		Q 16	R131411	Q BC549C N SS TO92	
D 34	R131621	D S 1N4148 075150 DO35		Q 20	R131411	Q BC549C N SS TO92	
D 35	R131621	D S 1N4148 075150 DO35		Q 21	R131411	Q BC549C N SS TO92	
D 36	R131621	D S 1N4148 075150 DO35		Q 22	R131411	Q BC549C N SS TO92	
D 41	R131621	D S 1N4148 075150 DO35		Q 5	R1314181	Q BC559B P SS TO92	
D 42	R131621	D S 1N4148 075150 DO35		Q 9	R1314181	Q BC559B P SS TO92	
D 43	R1316361	D Y BAT85 030200 DO34		Q 11	R1314181	Q BC559B P SS TO92	
D 1	R131637	D R BA158 600400 DO7	1	Q 12	R1314181	Q BC559B P SS TO92	
D 13	R131637	D R BA158 600400 DO7	1	Q 14	R1314181	Q BC559B P SS TO92	
D 14	R131637	D R BA158 600400 DO7	1	Q 18	R1314181	Q BC559B P SS TO92	
D 29	R131637	D R BA158 600400 DO7		Q 19	R1314181	Q BC559B P SS TO92	
D 30	R131637	D R BA158 600400 DO7		Q 6	R1314295	Q BC549B N SS TO92	
D 38	R131637	D R BA158 600400 DO7		Q 4	R1314651	Q BF245B FN SS TO92	
D 39	R131637	D R BA158 600400 DO7		Q 23	R132910	Q BS170 FN SS TO92	
D 45	R131637	D R BA158 600400 DO7		Q 7	R132916	Q BS250 FP SS TO92	1
D 46	R131637	D R BA158 600400 DO7		Q 17	R132944	Q BCY87 2N SS TO71	1
D 28	R131646	D R 1N4007 10201A DO41		Q 2	V132504	Q 2N2369A N SS TO18	1
D 37	R131646	D R 1N4007 10201A DO41		Q 3	V132504	Q 2N2369A N SS TO18	1
D 44	R131646	D R 1N4007 10201A DO41		Q 15	V132504	Q 2N2369A N SS TO18	1
D 40	R131662	D LED D3 TRD	1				
D 21	R131733	D STB 2V 0W33 DO35		R110	R101404	R MF H 2E2 J2W E7	1
I 10	R132751	U 2030V TDA TO220T P	1	R131	R101404	R MF H 2E2 J2W E7	1
I 2	R132762	U 2595 TDA DIP18 P	1	R145	R101404	R MF H 2E2 J2W E7	1
I 4	R132817	U 1881 LM DIP8 P	1	R 67	R101500	R MF H 1E F 0W4 E3	
I 14	R132827	U 8172 TDA H_W P	1	R108	R101500	R MF H 1E F 0W4 E3	
I 15	R132827	U 8172 TDA H_W P	1	R129	R101500	R MF H 1E F 0W4 E3	
I 17	R132827	U 8172 TDA H_W P	1	R143	R101500	R MF H 1E F 0W4 E3	
I 1	R134002	U 7812 TO220 P	1	R 66	R101504	R MF H 2E2 F 0W4 E3	
I 8	R134016	U 7912 TO220 P	1	R 80	R101504	R MF H 2E2 F 0W4 E3	
I 11	R134025	U 78L24AC TO92 P	1	R 62	R101508	R MF H 4E7 F 0W4 E3	
I 5	R134031	U 431C TL TO92 P	1	R 1	R101512	R MF H 10E F 0W4 E3	
I 13	R134032	U 78L05AC TO92 P	1	R 2	R101524	R MF H100E F 0W4 E3	
I 3	R134113	U 084 TL DIP14 P	1	R 19	R101524	R MF H100E F 0W4 E3	
				R 29	R101524	R MF H100E F 0W4 E3	

Sync+Vertical Deflection

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R 31	R101524	R MF H100E F 0W4 E3		R141	R101546	R MF H 6K8 F 0W4 E3	
R 84	R101524	R MF H100E F 0W4 E3		R 17	R101548	R MF H 10K F 0W4 E3	
R 86	R101524	R MF H100E F 0W4 E3		R 20	R101548	R MF H 10K F 0W4 E3	
R 90	R101524	R MF H100E F 0W4 E3		R 42	R101548	R MF H 10K F 0W4 E3	
R 93	R101524	R MF H100E F 0W4 E3		R 44	R101548	R MF H 10K F 0W4 E3	
R121	R101524	R MF H100E F 0W4 E3		R 50	R101548	R MF H 10K F 0W4 E3	
R123	R101524	R MF H100E F 0W4 E3		R 52	R101548	R MF H 10K F 0W4 E3	
R125	R101524	R MF H100E F 0W4 E3		R 68	R101548	R MF H 10K F 0W4 E3	
R136	R101524	R MF H100E F 0W4 E3		R 88	R101548	R MF H 10K F 0W4 E3	
R138	R101524	R MF H100E F 0W4 E3		R101	R101548	R MF H 10K F 0W4 E3	
R148	R101524	R MF H100E F 0W4 E3		R140	R101548	R MF H 10K F 0W4 E3	
R 43	R101525	R MF H120E F 0W4 E3		R150	R101548	R MF H 10K F 0W4 E3	
R 98	R101526	R MF H150E F 0W4 E3		R159	R101548	R MF H 10K F 0W4 E3	
R112	R101526	R MF H150E F 0W4 E3		R 34	R101549	R MF H 12K F 0W4 E3	
R 41	R101527	R MF H180E F 0W4 E3		R 82	R101549	R MF H 12K F 0W4 E3	
R 46	R101527	R MF H180E F 0W4 E3		R 57	R101550	R MF H 15K F 0W4 E3	
R 78	R101527	R MF H180E F 0W4 E3		R 61	R101550	R MF H 15K F 0W4 E3	
R107	R101528	R MF H220E F 0W4 E3		R 91	R101550	R MF H 15K F 0W4 E3	
R128	R101528	R MF H220E F 0W4 E3		R109	R101551	R MF H 18K F 0W4 E3	
R142	R101528	R MF H220E F 0W4 E3		R130	R101551	R MF H 18K F 0W4 E3	
R 83	R101531	R MF H390E F 0W4 E3		R144	R101551	R MF H 18K F 0W4 E3	
R 21	R101532	R MF H470E F 0W4 E3		R157	R101551	R MF H 18K F 0W4 E3	
R 92	R101532	R MF H470E F 0W4 E3		R 8	R101552	R MF H 22K F 0W4 E3	
R139	R101532	R MF H470E F 0W4 E3		R 13	R101552	R MF H 22K F 0W4 E3	
R 28	R101533	R MF H560E F 0W4 E3		R 72	R101552	R MF H 22K F 0W4 E3	
R 64	R101533	R MF H560E F 0W4 E3		R 76	R101552	R MF H 22K F 0W4 E3	
R 9	R101534	R MF H680E F 0W4 E3		R 99	R101552	R MF H 22K F 0W4 E3	
R 33	R101534	R MF H680E F 0W4 E3		R120	R101552	R MF H 22K F 0W4 E3	
R 11	R101535	R MF H820E F 0W4 E3		R135	R101552	R MF H 22K F 0W4 E3	
R 30	R101536	R MF H 1K F 0W4 E3		R151	R101552	R MF H 22K F 0W4 E3	
R 35	R101536	R MF H 1K F 0W4 E3		R 89	R101553	R MF H 27K F 0W4 E3	
R 55	R101536	R MF H 1K F 0W4 E3		R 54	R101555	R MF H 39K F 0W4 E3	
R 65	R101536	R MF H 1K F 0W4 E3		R 71	R101555	R MF H 39K F 0W4 E3	
R 85	R101536	R MF H 1K F 0W4 E3		R114	R101555	R MF H 39K F 0W4 E3	
R 94	R101536	R MF H 1K F 0W4 E3		R132	R101555	R MF H 39K F 0W4 E3	
R124	R101536	R MF H 1K F 0W4 E3		R146	R101555	R MF H 39K F 0W4 E3	
R 38	R101537	R MF H 1K2 F 0W4 E3		R 49	R101556	R MF H 47K F 0W4 E3	
R 51	R101537	R MF H 1K2 F 0W4 E3		R 70	R101556	R MF H 47K F 0W4 E3	
R 60	R101537	R MF H 1K2 F 0W4 E3		R158	R101556	R MF H 47K F 0W4 E3	
R 74	R101537	R MF H 1K2 F 0W4 E3		R 45	R101557	R MF H 56K F 0W4 E3	
R 81	R101537	R MF H 1K2 F 0W4 E3		R 14	R101558	R MF H 68K F 0W4 E3	
R 95	R101537	R MF H 1K2 F 0W4 E3		R 25	R101558	R MF H 68K F 0W4 E3	
R 22	R101538	R MF H 1K5 F 0W4 E3		R 56	R101558	R MF H 68K F 0W4 E3	
R 48	R101540	R MF H 2K2 F 0W4 E3		R104	R101558	R MF H 68K F 0W4 E3	
R 96	R101540	R MF H 2K2 F 0W4 E3		R156	R101558	R MF H 68K F 0W4 E3	
R 97	R101540	R MF H 2K2 F 0W4 E3		R 6	R101560	R MF H100K F 0W4 E3	
R 32	R101541	R MF H 2K7 F 0W4 E3		R 12	R101560	R MF H100K F 0W4 E3	
R 40	R101541	R MF H 2K7 F 0W4 E3		R 36	R101560	R MF H100K F 0W4 E3	
R 77	R101541	R MF H 2K7 F 0W4 E3		R 39	R101560	R MF H100K F 0W4 E3	
R 87	R101541	R MF H 2K7 F 0W4 E3		R 53	R101560	R MF H100K F 0W4 E3	
R 24	R101543	R MF H 3K9 F 0W4 E3	1	R100	R101560	R MF H100K F 0W4 E3	
R 73	R101543	R MF H 3K9 F 0W4 E3		R102	R101560	R MF H100K F 0W4 E3	
R 3	R101544	R MF H 4K7 F 0W4 E3		R103	R101560	R MF H100K F 0W4 E3	
R 5	R101544	R MF H 4K7 F 0W4 E3		R111	R101560	R MF H100K F 0W4 E3	
R 7	R101544	R MF H 4K7 F 0W4 E3		R105	R101561	R MF H120K F 0W4 E3	
R 23	R101544	R MF H 4K7 F 0W4 E3		R122	R101561	R MF H120K F 0W4 E3	
R 69	R101544	R MF H 4K7 F 0W4 E3		R137	R101561	R MF H120K F 0W4 E3	
R 59	R101545	R MF H 5K6 F 0W4 E3		R115	R101562	R MF H150K F 0W4 E3	
R 75	R101545	R MF H 5K6 F 0W4 E3		R133	R101562	R MF H150K F 0W4 E3	
R 15	R101546	R MF H 6K8 F 0W4 E3		R147	R101562	R MF H150K F 0W4 E3	
R 26	R101546	R MF H 6K8 F 0W4 E3		R126	R101565	R MF H270K F 0W4 E3	
R 37	R101546	R MF H 6K8 F 0W4 E3		R 4	R101566	R MF H330K F 0W4 E3	
R 58	R101546	R MF H 6K8 F 0W4 E3		R 10	R101566	R MF H330K F 0W4 E3	
R 63	R101546	R MF H 6K8 F 0W4 E3		R119	R101566	R MF H330K F 0W4 E3	
R106	R101546	R MF H 6K8 F 0W4 E3		R134	R101566	R MF H330K F 0W4 E3	
R127	R101546	R MF H 6K8 F 0W4 E3		R 18	R101567	R MF H390K F 0W4 E3	

Sync+Vertical Deflection

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R149	R101568	R MF H470K F 0W4 E3	1				
R163	R1015691	R MF H510K F 0W4 E3	1				
R113	R101571	R MF H820K F 0W4 E3					
R117	R101571	R MF H820K F 0W4 E3					
R 79	R101572	R MF H 1M F 0W4 E3					
R160	R101572	R MF H 1M F 0W4 E3					
R161	R101572	R MF H 1M F 0W4 E3					
R162	R101572	R MF H 1M F 0W4 E3					
R 16	R101573	R MF H 43K2 F 0W4 E3	1				
R 27	V1026000	R MF H 10M F 0W6 E4	1				
R116	V1026926	R MF H 9K09F 0W6 E4	1				
R118	V1026926	R MF H 9K09F 0W6 E4	1				
SR 1	R1011917	R CFFH E22K 0W35	1				
SR 2	R1011917	R CFFH E22K 0W35	1				
Z 6	R131728	D ZEN 11V 0W5 C DO35					
Z 2	R131734	D ZEN 5V6 0W5 B DO35					
Z 5	R131734	D ZEN 5V6 0W5 B DO35					
Z 4	R131767	D ZEN 6V8 0W5 B DO35					
Z 1	R131786	D ZEN 16V 0W5 B DO35	1				

Parts listing R7621127S CPL

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1000	R3133921	JMDSHUNTF P2E1SNIRD	1	C457	R112763	C CE MI 10N Z 63E2 85	
C412	R111468	C EL RA 470M M 16E2 85	1	C474	R1137141	C POMERA 15N K100E2 85	
C429	R111476	C EL RA 47M M 25E2 85		C435	R1137151	C POMERA 18N K100E2 85	
C436	R111476	C EL RA 47M M 25E2 85		C454	R1137181	C POMERA 33N K100E2 85	1
C440	R111476	C EL RA 47M M 25E2 85		C400	R113724	C POMERA 100N K 63E2 85	
C463	R111476	C EL RA 47M M 25E2 85		C401	R113724	C POMERA 100N K 63E2 85	
C496	R111476	C EL RA 47M M 25E2 85		C402	R113724	C POMERA 100N K 63E2 85	
C491	R111477	C EL RA 100M M 25E2 85		C403	R113724	C POMERA 100N K 63E2 85	
C492	R111477	C EL RA 100M M 25E2 85		C404	R113724	C POMERA 100N K 63E2 85	
C407	R111531	C EL RA 10M M 35E2 85		C405	R113724	C POMERA 100N K 63E2 85	
C408	R111531	C EL RA 10M M 35E2 85		C406	R113724	C POMERA 100N K 63E2 85	
C409	R111531	C EL RA 10M M 35E2 85	1	C416	R113724	C POMERA 100N K 63E2 85	1
C410	R111531	C EL RA 10M M 35E2 85		C417	R113724	C POMERA 100N K 63E2 85	
C411	R111531	C EL RA 10M M 35E2 85		C418	R113724	C POMERA 100N K 63E2 85	
C422	R111531	C EL RA 10M M 35E2 85		C421	R113724	C POMERA 100N K 63E2 85	
C424	R111531	C EL RA 10M M 35E2 85		C423	R113724	C POMERA 100N K 63E2 85	
C432	R111531	C EL RA 10M M 35E2 85		C425	R113724	C POMERA 100N K 63E2 85	
C441	R111531	C EL RA 10M M 35E2 85		C426	R113724	C POMERA 100N K 63E2 85	
C450	R111531	C EL RA 10M M 35E2 85		C427	R113724	C POMERA 100N K 63E2 85	
C466	R111531	C EL RA 10M M 35E2 85		C438	R113724	C POMERA 100N K 63E2 85	
C475	R111531	C EL RA 10M M 35E2 85		C442	R113724	C POMERA 100N K 63E2 85	
C487	R111531	C EL RA 10M M 35E2 85		C443	R113724	C POMERA 100N K 63E2 85	
C433	R111532	REPLACED BY V1114855		C445	R113724	C POMERA 100N K 63E2 85	
C455	R111532	REPLACED BY V1114855		C448	R113724	C POMERA 100N K 63E2 85	
C485	R111532	REPLACED BY V1114855		C449	R113724	C POMERA 100N K 63E2 85	
C413	R111550	C EL RA 4M7M 50E2 85	1	C451	R113724	C POMERA 100N K 63E2 85	1
C414	R111550	C EL RA 4M7M 50E2 85		C452	R113724	C POMERA 100N K 63E2 85	
C453	R111550	C EL RA 4M7M 50E2 85		C456	R113724	C POMERA 100N K 63E2 85	
C469	R111550	C EL RA 4M7M 50E2 85		C458	R113724	C POMERA 100N K 63E2 85	
C478	R111550	C EL RA 4M7M 50E2 85		C460	R113724	C POMERA 100N K 63E2 85	
C434	R111678	C EL BRA 10M M 25E2 85		C461	R113724	C POMERA 100N K 63E2 85	
C415	R112739	C CE MI 1N K100E2	1	C462	R113724	C POMERA 100N K 63E2 85	
C420	R112739	C CE MI 1N K100E2	1	C468	R113724	C POMERA 100N K 63E2 85	
C437	R112739	C CE MI 1N K100E2		C471	R113724	C POMERA 100N K 63E2 85	
C470	R112739	C CE MI 1N K100E2	1	C472	R113724	C POMERA 100N K 63E2 85	
C439	R112741	C CE MI 1N5K100E2		C476	R113724	C POMERA 100N K 63E2 85	
C465	R112743	C CE MI 2N2K100E2		C477	R113724	C POMERA 100N K 63E2 85	
C486	R112747	C CE MI 4N7K100E2 85		C479	R113724	C POMERA 100N K 63E2 85	
C494	R112747	C CE MI 4N7K100E2 85	1	C481	R113724	C POMERA 100N K 63E2 85	
				C482	R113724	C POMERA 100N K 63E2 85	

Sync+Vertical Deflection

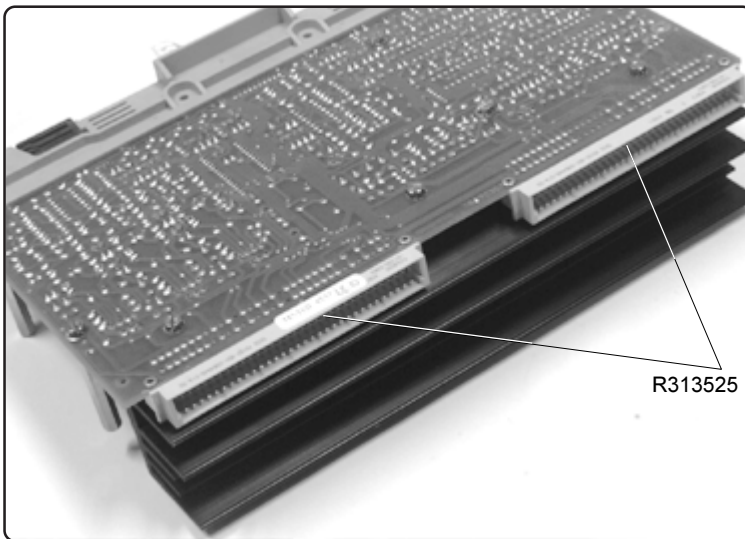
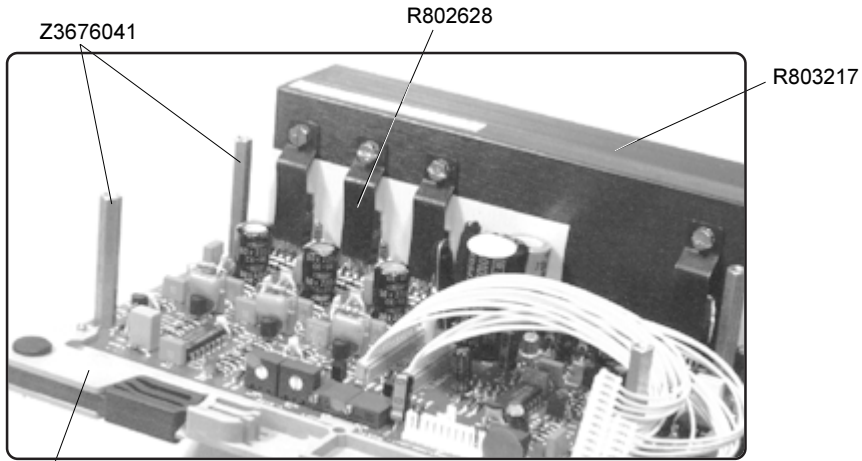
R7621127

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
C483	R113724	C POMERA 100N K 63E2 85		I414	R137552	U 74HCT123 DIP16 P	1
C490	R113724	C POMERA 100N K 63E2 85		J400	R3132862	J MD1 C MBT P 2 E1SN 6,7	1
C493	R113724	C POMERA 100N K 63E2 85		J401	R313947	J CT H MBS P 7 M2SN WH	1
C459	R113726	C POMERA 150N K 63E2 85	1	J402	R313952	J CT H MBS P12 M2SN WH	1
C431	R113732	C POMERA 470N K 63E2 85		J403	R313955	J CT H MBS P15 M2SN WH	1
C446	R113732	C POMERA 470N K 63E2 85		J401	R314007	J CT C FWT P 7 M2SN	1
C488	R113829	C POMERA 22N J 63E2 85	1	P402	R107005	R TCE H500E K 0W5 S 7TS	1
C489	R114068	C POMERA 10N M 63E2 85	1	P401	R107007	R TCE H 2K K 0W5 S 7TS	1
C464	R114085	C POMERA 330N K 63E2 85	1	P400	R107009	R TCE H 10K K 0W5 S 7TS	1
C467	R114085	C POMERA 330N K 63E2 85	1	PC	R780324	PCBG1200 VER SUB	1
C495	R114087	C POMERA 470N K 63E2 85	1	Q404	R1314072	Q BC547A N SS TO92	1
C430	R114090	C POMERA 1M K 63E2 85		Q406	R1314072	Q BC547A N SS TO92	1
C444	R114090	C POMERA 1M K 63E2 85	1	Q400	R131411	Q BC549C N SS TO92	1
C419	R1159201	C PP RA 1N5J100E2 85		Q411	R131411	Q BC549C N SS TO92	1
C447	R115928	C PP RA 3N3J 63E2 85		Q413	R131411	Q BC549C N SS TO92	
C480	R115940	C PP RA 10N J 63E2 85		Q414	R131411	Q BC549C N SS TO92	
C473	V1151612	C PP RA 1N H100E2 85		Q416	R131411	Q BC549C N SS TO92	
C484	V1151672	C PP RA 4N7H 63E2 85		Q417	R131411	Q BC549C N SS TO92	1
D401	R131621	D S 1N4148 075150 DO35		Q418	R131411	Q BC549C N SS TO92	
D402	R131621	D S 1N4148 075150 DO35		Q403	R1314181	Q BC559B P SS TO92	
D403	R131621	D S 1N4148 075150 DO35		Q405	R1314181	Q BC559B P SS TO92	1
D409	R131621	D S 1N4148 075150 DO35		Q407	R1314182	Q BC559C P SS TO92	
D410	R131621	D S 1N4148 075150 DO35		Q408	R1314182	Q BC559C P SS TO92	1
D411	R131621	D S 1N4148 075150 DO35		Q409	R1314182	Q BC559C P SS TO92	
D415	R131621	D S 1N4148 075150 DO35		Q412	R1314182	Q BC559C P SS TO92	
D416	R131621	D S 1N4148 075150 DO35		Q419	R1314182	Q BC559C P SS TO92	
D417	R131621	D S 1N4148 075150 DO35		Q401	R1314651	Q BF245B FN SS TO92	1
D418	R131621	D S 1N4148 075150 DO35		Q402	R132910	Q BS170 FN SS TO92	1
D419	R131621	D S 1N4148 075150 DO35		Q410	R132910	Q BS170 FN SS TO92	1
D421	R131621	D S 1N4148 075150 DO35		Q415	R132910	Q BS170 FN SS TO92	1
D422	R131621	D S 1N4148 075150 DO35		R468	R101515	R MF H 18E F 0W4 E3	
D423	R131621	D S 1N4148 075150 DO35		R484	R101515	R MF H 18E F 0W4 E3	
D424	R131621	D S 1N4148 075150 DO35		R400	R101519	R MF H 39E F 0W4 E3	
D427	R131621	D S 1N4148 075150 DO35		R411	R101524	R MF H100E F 0W4 E3	
D404	R1316361	D Y BAT85 030200 DO34		R413	R101524	R MF H100E F 0W4 E3	
D405	R1316361	D Y BAT85 030200 DO34		R494	R101524	R MF H100E F 0W4 E3	
D406	R1316361	D Y BAT85 030200 DO34		R496	R101524	R MF H100E F 0W4 E3	
D407	R1316361	D Y BAT85 030200 DO34		R517	R101524	R MF H100E F 0W4 E3	
D408	R1316361	D Y BAT85 030200 DO34		R518	R101524	R MF H100E F 0W4 E3	
D412	R1316361	D Y BAT85 030200 DO34		R526	R101524	R MF H100E F 0W4 E3	
D413	R1316361	D Y BAT85 030200 DO34		R530	R101524	R MF H100E F 0W4 E3	
D414	R1316361	D Y BAT85 030200 DO34		R403	R101525	R MF H120E F 0W4 E3	
D420	R1316361	D Y BAT85 030200 DO34		R417	R101526	R MF H150E F 0W4 E3	
D425	R1316361	D Y BAT85 030200 DO34		R504	R101526	R MF H150E F 0W4 E3	
D428	R1316361	D Y BAT85 030200 DO34		R527	R101526	R MF H150E F 0W4 E3	
D429	R1316361	D Y BAT85 030200 DO34		R506	R101527	R MF H180E F 0W4 E3	
D430	R1316361	D Y BAT85 030200 DO34		R531	R101527	R MF H180E F 0W4 E3	
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D400	R131637	D R BA158 600400 DO7	1	R487	R101528	R MF H220E F 0W4 E3	
I400	R132833	U BELLA 4 DIP28 P	1	R537	R101528	R MF H220E F 0W4 E3	1
I401	R132833	U BELLA 4 DIP28 P	1	R402	R1015281	R MF H200E F 0W4 E3	
I402	R132833	U BELLA 4 DIP28 P	1	R401	R101530	R MF H330E F 0W4 E3	
I404	R134028	U 317LZ LM TO92 P	1	R523	R101530	R MF H330E F 0W4 E3	
I403	R134029	U 337LZ LM TO92 P	1	R505	R101531	R MF H390E F 0W4 E3	
I405	R134032	U 78L05AC TO92 P	1	R486	R101532	R MF H470E F 0W4 E3	
I407	R134113	U 084 TL DIP14 P	1	R415	R101533	R MF H560E F 0W4 E3	
I408	R134113	U 084 TL DIP14 P	1	R455	R101533	R MF H560E F 0W4 E3	
I409	R134113	U 084 TL DIP14 P	1	R511	R101533	R MF H560E F 0W4 E3	
I412	R134114	U 393 LM DIP8 P	1	R463	R101535	R MF H820E F 0W4 E3	
I406	R134124	U 082 TL DIP8 P	1	R410	R101536	R MF H 1K F 0W4 E3	
I410	R134222	U 1495 MC DIP14 P	1	R418	R101536	R MF H 1K F 0W4 E3	
I415	R137534	U 74HCT00 DIP14 P	1				
I411	R137548	U 74HCT74 DIP14 P	1				
I413	R137552	U 74HCT123 DIP16 P	1				

Sync+Vertical Deflection

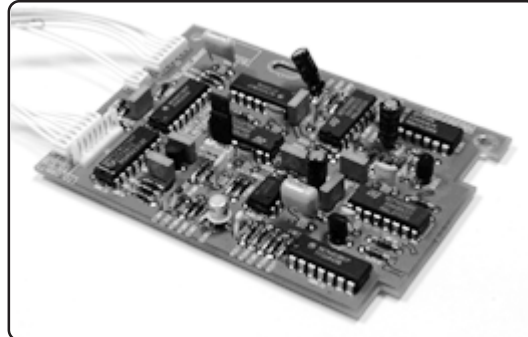
R7621127

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R425	R101536	R MF H 1K F 0W4 E3		R406	R101550	R MF H 15K F 0W4 E3	
R426	R101536	R MF H 1K F 0W4 E3		R434	R101550	R MF H 15K F 0W4 E3	
R458	R101536	R MF H 1K F 0W4 E3		R500	R101550	R MF H 15K F 0W4 E3	
R498	R101536	R MF H 1K F 0W4 E3		R466	R101551	R MF H 18K F 0W4 E3	
R514	R101536	R MF H 1K F 0W4 E3		R412	R101552	R MF H 22K F 0W4 E3	
R532	R101536	R MF H 1K F 0W4 E3		R435	R101552	R MF H 22K F 0W4 E3	
R534	R101536	R MF H 1K F 0W4 E3		R439	R101552	R MF H 22K F 0W4 E3	
R416	R101537	R MF H 1K2 F 0W4 E3		R472	R101552	R MF H 22K F 0W4 E3	
R427	R101538	R MF H 1K5 F 0W4 E3		R475	R101552	R MF H 22K F 0W4 E3	
R459	R101538	R MF H 1K5 F 0W4 E3		R490	R101552	R MF H 22K F 0W4 E3	
R479	R101538	R MF H 1K5 F 0W4 E3		R492	R101552	R MF H 22K F 0W4 E3	
R488	R101538	R MF H 1K5 F 0W4 E3		R493	R101552	R MF H 22K F 0W4 E3	
R477	R101539	R MF H 1K8 F 0W4 E3		R495	R101552	R MF H 22K F 0W4 E3	
R407	R101540	R MF H 2K2 F 0W4 E3		R512	R101552	R MF H 22K F 0W4 E3	
R441	R101540	R MF H 2K2 F 0W4 E3		R519	R101552	R MF H 22K F 0W4 E3	
R461	R101540	R MF H 2K2 F 0W4 E3		R528	R101552	R MF H 22K F 0W4 E3	
R467	R101540	R MF H 2K2 F 0W4 E3		R428	R101554	R MF H 33K F 0W4 E3	
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R481	R101540	R MF H 2K2 F 0W4 E3		R430	R101554	R MF H 33K F 0W4 E3	
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R448	R1015401	R MF H 2K F 0W4 E3		R436	R101554	R MF H 33K F 0W4 E3	
R408	R101541	R MF H 2K7 F 0W4 E3		R522	R101554	R MF H 33K F 0W4 E3	
R421	R101541	R MF H 2K7 F 0W4 E3		R508	R101555	R MF H 39K F 0W4 E3	
R443	R101541	R MF H 2K7 F 0W4 E3		R437	R101556	R MF H 47K F 0W4 E3	
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R482	R101541	R MF H 2K7 F 0W4 E3		R483	R101556	R MF H 47K F 0W4 E3	
R431	R101542	R MF H 3K3 F 0W4 E3		R535	R101557	R MF H 56K F 0W4 E3	
R454	R101542	R MF H 3K3 F 0W4 E3		R474	R101559	R MF H 82K F 0W4 E3	
R432	R101543	R MF H 3K9 F 0W4 E3		R516	R101559	R MF H 82K F 0W4 E3	
R422	R101544	R MF H 4K7 F 0W4 E3		R525	R101559	R MF H 82K F 0W4 E3	
R460	R101544	R MF H 4K7 F 0W4 E3		R440	R101560	R MF H100K F 0W4 E3	
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R469	R101544	R MF H 4K7 F 0W4 E3		R457	R101560	R MF H100K F 0W4 E3	
R485	R101544	R MF H 4K7 F 0W4 E3		R462	R101563	R MF H180K F 0W4 E3	
R489	R101544	R MF H 4K7 F 0W4 E3		R476	R101564	R MF H220K F 0W4 E3	
R501	R101544	R MF H 4K7 F 0W4 E3		R470	R101566	R MF H330K F 0W4 E3	
R507	R101544	R MF H 4K7 F 0W4 E3		R444	R101568	R MF H470K F 0W4 E3	
R521	R101544	R MF H 4K7 F 0W4 E3		R447	R101568	R MF H470K F 0W4 E3	
R409	R101545	R MF H 5K6 F 0W4 E3		R509	R101568	R MF H470K F 0W4 E3	
R456	R101546	R MF H 6K8 F 0W4 E3		R515	R101571	R MF H820K F 0W4 E3	
R520	R101546	R MF H 6K8 F 0W4 E3					
R420	R101547	R MF H 8K2 F 0W4 E3		Z400	R131734	D ZEN 5V6 0W5 B DO35	
R423	R101547	R MF H 8K2 F 0W4 E3					
R478	R101547	R MF H 8K2 F 0W4 E3					
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R513	R101547	R MF H 8K2 F 0W4 E3					
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R446	R101548	R MF H 10K F 0W4 E3					
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R510	R101548	R MF H 10K F 0W4 E3					
R524	R101548	R MF H 10K F 0W4 E3					
R533	R101548	R MF H 10K F 0W4 E3	1				
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R451	R101549	R MF H 12K F 0W4 E3					
R471	R101549	R MF H 12K F 0W4 E3					

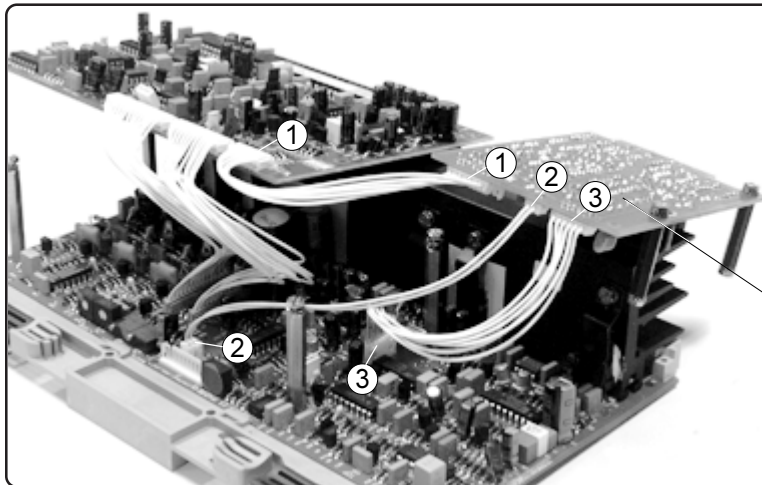


Mounting the HDTV interface R762268T on the Sync+Vertical deflection module

HDTV interface R762268T

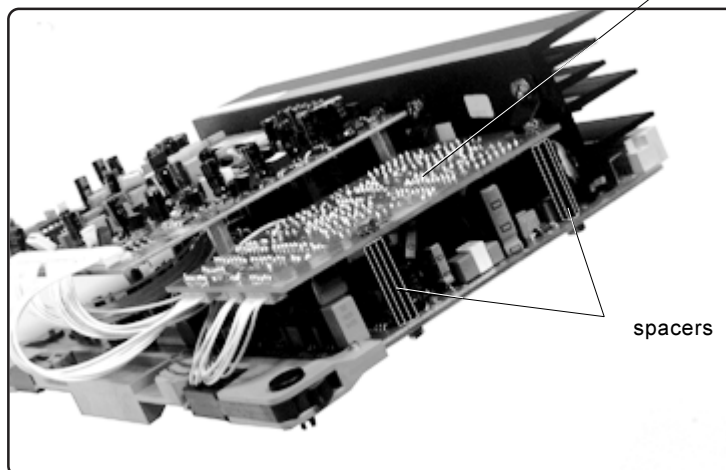


Interconnection



HDTV interface R762268T

Mechanical mounting



spacers

Modifications on the main module for proper HDTV operation

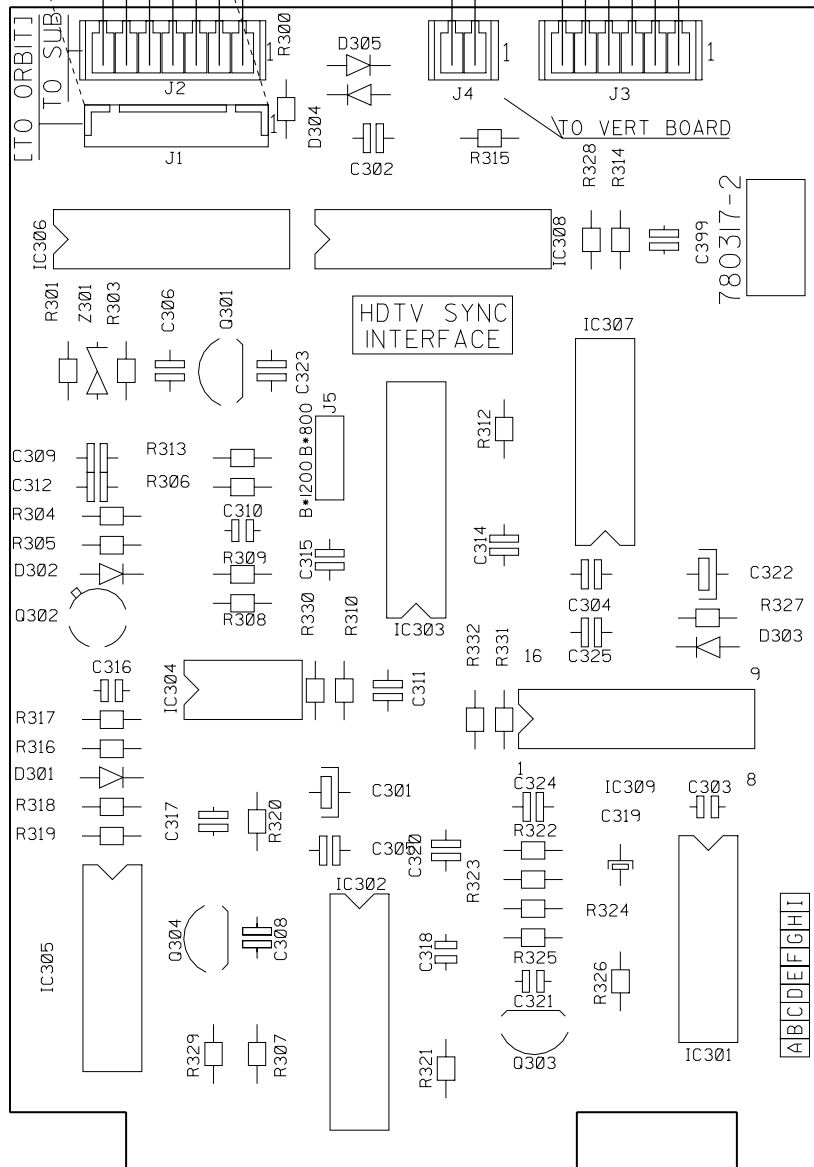
Remove on the main module the resistors R55-R68-R90 and the capacitor C49

CONNECTION WITH ORBITING UNIT (J1) IF INSTALLED

CONNECTION WITH SUB-UNIT SYNC & VERTICAL DEFLECTION (J5 FOR 800 SERIES AND J401 FOR 1200 SERIES)

CONNECTION WITH SYNC & VERTICAL DEFLECTION (J8 FOR 800 SERIES AND J6 FOR 1200 SERIES)

CONNECTION WITH SYNC & VERTICAL DEFLECTION (J7 FOR 800 SERIES AND J5 FOR 1200 SERIES)

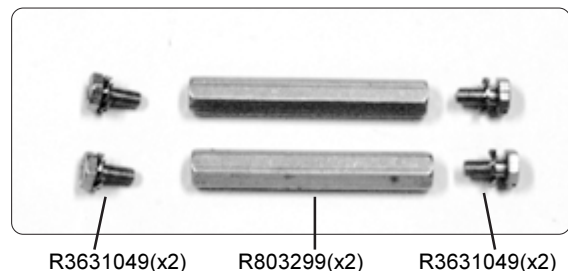


Name HDTV UNIT		Sheet 1 / 1	
Module No R762268T	Index 0	PCB No R780317	Rev 2
Date 04-11-1997	Drawn JVJY	Checked CHT	
BARCO PROJECTION SYSTEMS			

Modifications reserved

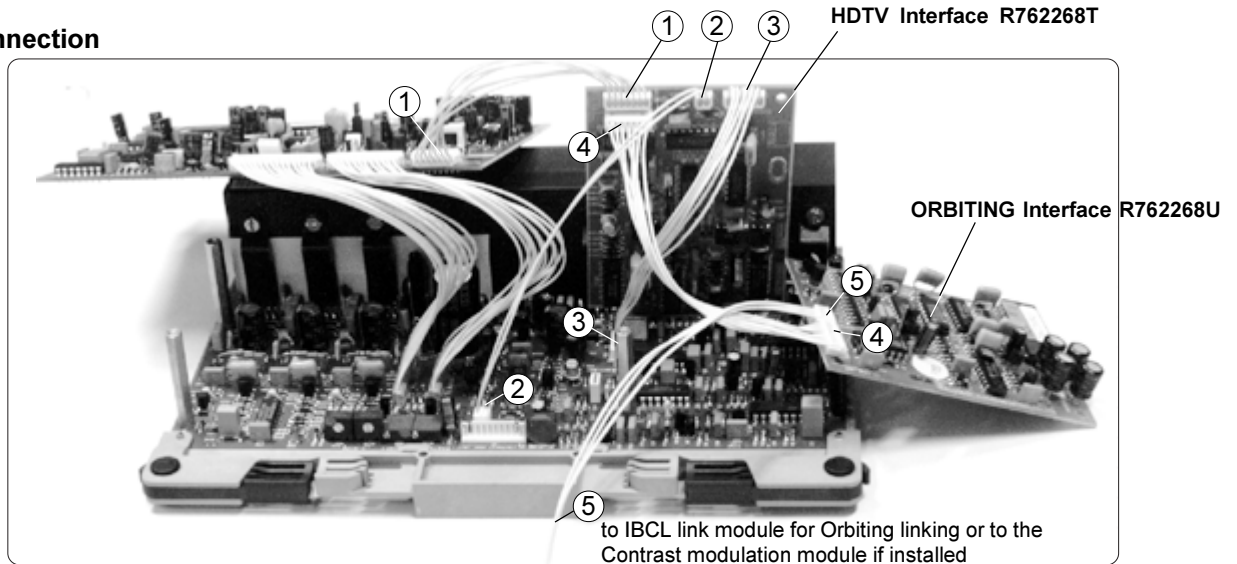
Parts listing R762268U

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
	R34840710	CD CT FTFT P 7 120	1	R 9	R101554	R MF H 33K F 0W4 E3	
	R3485037	CD CT \$FTFT P 3 200	1	R 10	R101542	R MF H 3K3 F 0W4 E3	
1010	R3631049	SCR D933 M 3 X 6 XIC	4	R 11	R101555	R MF H 39K F 0W4 E3	
1000	R803299	SPR L37 H 5.5 M 3 B	2	R 12	R101519	R MF H 39E F 0W4 E3	
C 1	R113728	C POMERA 220N K 63E2	1	R 13	R101525	R MF H120E F 0W4 E3	
C 2	R111531	C EL RA 10M M 35E2 85		R 14	R101548	R MF H 10K F 0W4 E3	
C 3	R111531	C EL RA 10M M 35E2 85		R 15	R101548	R MF H 10K F 0W4 E3	
C 4	R113724	C POMERA 100N K 63E2		R 16	R101544	R MF H 4K7 F 0W4 E3	
C 5	R113724	C POMERA 100N K 63E2		R 17	R101548	R MF H 10K F 0W4 E3	
C 6	R111478	C EL RA 220M M 25E2 85	1	R 18	R101542	R MF H 3K3 F 0W4 E3	
C 7	R113728	C POMERA 220N K 63E2	1	R 19	R101544	R MF H 4K7 F 0W4 E3	
C 8	R113728	C POMERA 220N K 63E2	1	R 20	R101542	R MF H 3K3 F 0W4 E3	
C 9	R113728	C POMERA 220N K 63E2	1	R 21	R101542	R MF H 3K3 F 0W4 E3	
C 10	R113728	C POMERA 220N K 63E2	1	R 22	R101550	R MF H 15K F 0W4 E3	
C 11	R111478	C EL RA 220M M 25E2 85	1	R 23	R101555	R MF H 39K F 0W4 E3	
C 12	R111478	C EL RA 220M M 25E2 85	1	R 24	R101560	R MF H100K F 0W4 E3	
C 13	R111478	C EL RA 220M M 25E2 85	1	R 25	R101567	R MF H390K F 0W4 E3	
C 14	R113728	C POMERA 220N K 63E2	1	R 26	R101567	R MF H390K F 0W4 E3	
C 15	R111531	C EL RA 10M M 35E2 85		R 27	R101550	R MF H 15K F 0W4 E3	
C 16	R111531	C EL RA 10M M 35E2 85		R 28	R101556	R MF H 47K F 0W4 E3	
C 17	R113724	C POMERA 100N K 63E2		R 29	R101556	R MF H 47K F 0W4 E3	
C 18	R113724	C POMERA 100N K 63E2		R 30	R101562	R MF H150K F 0W4 E3	
C 19	R113724	C POMERA 100N K 63E2		R 31	R101560	R MF H100K F 0W4 E3	
C 20	R113724	C POMERA 100N K 63E2		R 32	R101562	R MF H150K F 0W4 E3	
C 21	R113724	C POMERA 100N K 63E2		R 33	R101554	R MF H 33K F 0W4 E3	
D 1	R131621	D S 1N4148 075150 DO35		R 34	R101564	R MF H220K F 0W4 E3	
D 2	R131621	D S 1N4148 075150 DO35		R 35	R101560	R MF H100K F 0W4 E3	
D 3	R131621	D S 1N4148 075150 DO35		R 36	R101560	R MF H100K F 0W4 E3	
D 4	R131621	D S 1N4148 075150 DO35		R 37	R101556	R MF H 47K F 0W4 E3	
D 5	R131621	D S 1N4148 075150 DO35		R 38	R101556	R MF H 47K F 0W4 E3	
D 6	R131621	D S 1N4148 075150 DO35		R 39	R101524	R MF H100E F 0W4 E3	
D 7	R131621	D S 1N4148 075150 DO35		R 40	R101528	R MF H220E F 0W4 E3	
D 8	R131621	D S 1N4148 075150 DO35		R 41	R101530	R MF H330E F 0W4 E3	
I 1	R132833	U 76013 SC DIP28 P	1	R 42	R101548	R MF H 10K F 0W4 E3	
I 2	R132832	U 8574A PCF DIP16 P	1	R 43	R101552	R MF H 22K F 0W4 E3	
I 3	R134113	U 084 TL DIP14 P	1	R 44	R101548	R MF H 10K F 0W4 E3	
I 4	R137600	U 4052B DIP16 P	1	R 45	R101552	R MF H 22K F 0W4 E3	
I 5	R134113	U 084 TL DIP14 P	1	R 46	R101552	R MF H 22K F 0W4 E3	
I 6	R137303	U 4066B DIP14 P	1	R 47	R101548	R MF H 10K F 0W4 E3	
I 9	R134029	U 337LZ TO92 P	1	R 48	R101552	R MF H 22K F 0W4 E3	
I 26	R134028	U 317LZ LM TO92 P	1	R 49	R101552	R MF H 22K F 0W4 E3	
J 1	R313947	J CTH MBS P 7 M2SN	1	R 50	R101548	R MF H 10K F 0W4 E3	
J 2	R313943	J CTH MBS P 3 M2SN	1	R 51	R101536	R MF H 1K F 0W4 E3	
FC	R780351	PCD PJ49 800 ORBIT 2	1	R 52	R101536	R MF H 1K F 0W4 E3	
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Q 2	R1314181	Q BC559B P SS TO92					
Q 3	R1314181	Q BC559B P SS TO92					
Q 4	R132916	Q BS250 FN SS TO92	1				
Q 5	R131411	Q BC549C N SS TO92					
R 1	R101544	R MF H 4K7 F 0W4 E3					
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R 3	R101529	R MF H270E F 0W4 E3					
R 4	R101556	R MF H 47K F 0W4 E3					
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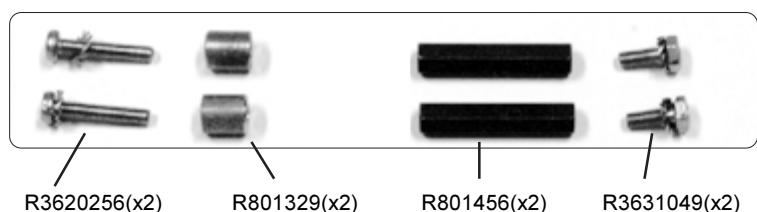
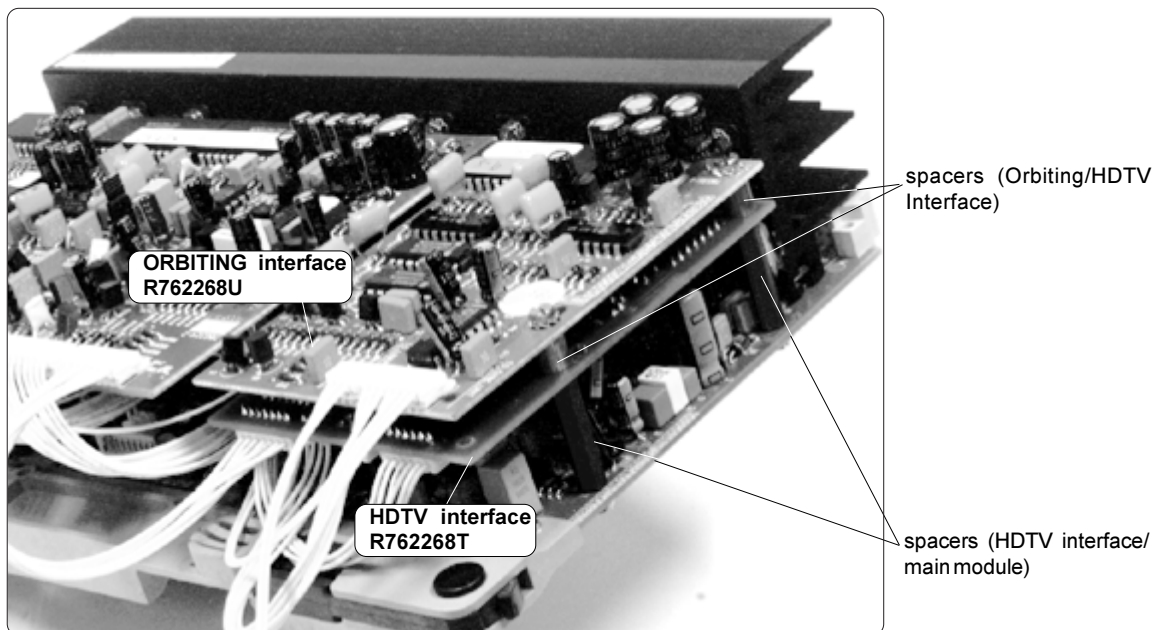


Mounting the HDTV R762268T+ORBITING R762268U Interface on the Sync+Vertical deflection module

Interconnection

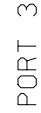
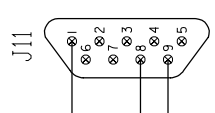
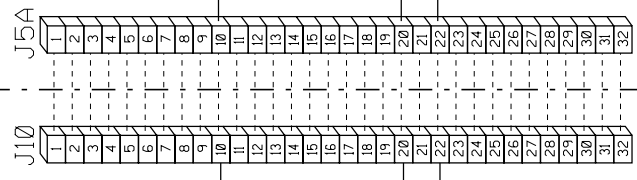
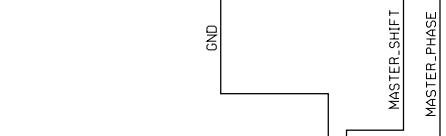
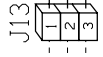
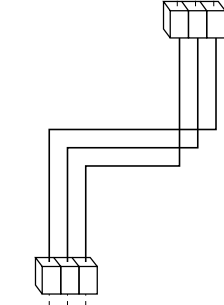
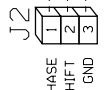
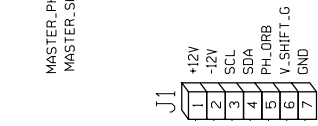
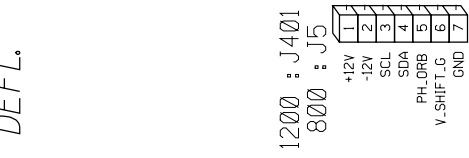


Mechanical mounting



SUB-UNIT VERT. DEFL. | WIRE-UNIT | ORBITING MODULE | WIRE-UNIT | IBC-LINK UNIT OR CONTRAST MODULATION | FRAME

Modifications reserved



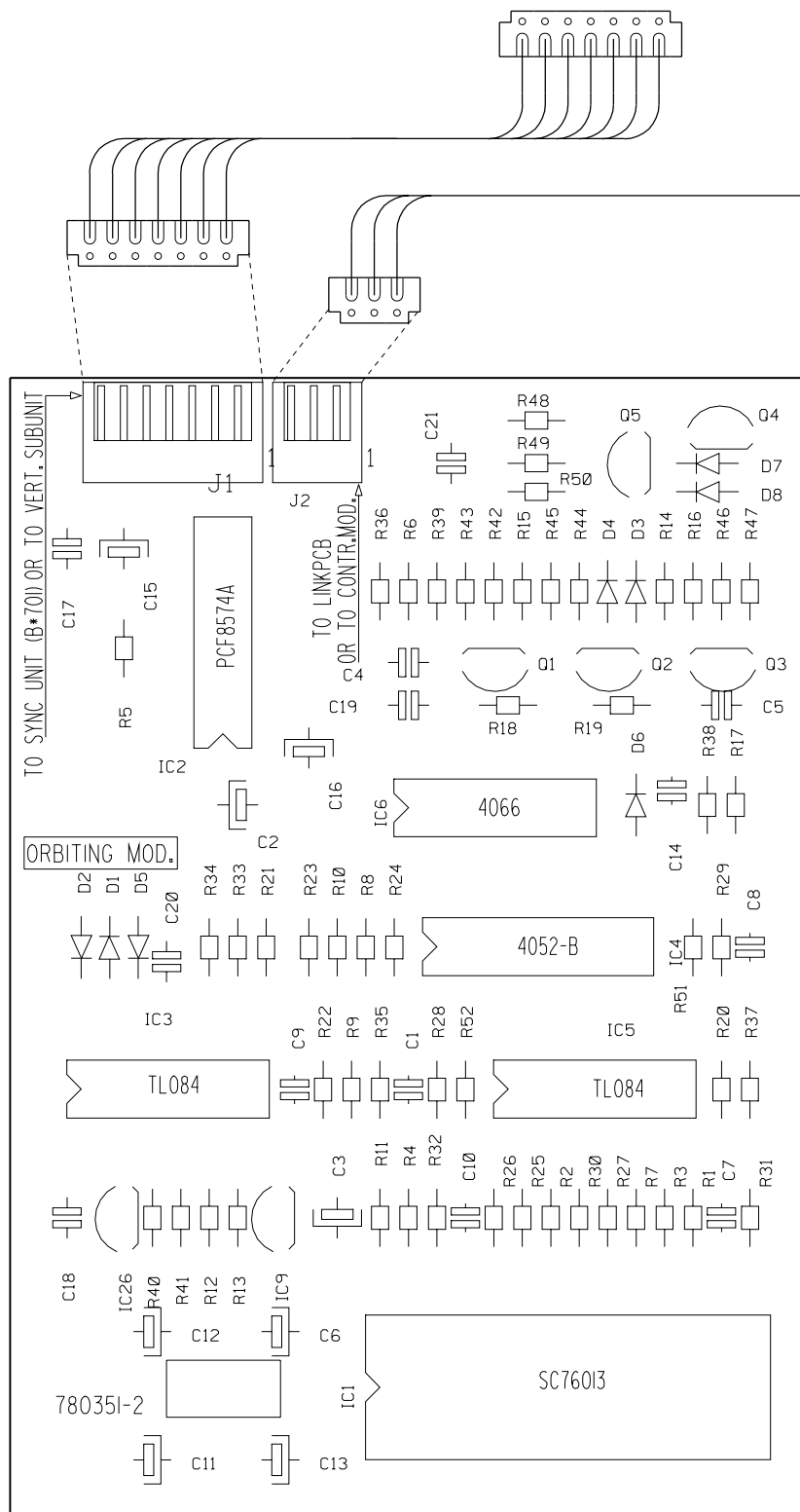
PORT 3

ORBITTING LINK

Name ORBITTING 800 & 1200 SERIES		Sheet 1/1
Module No R762268U	Index 1	PCB No R780351
Date 26-11-1997	Drawn JVJDY	Checked CHT
BARCO PROJECTION SYSTEMS		

CONNECTION WITH SUB-UNIT SYNC &
VERTICAL DEFLECTION (J5 FOR 800 SERIES
AND J401 FOR 1200 SERIES)
OR WITH HDTV UNIT (J1) IF INSTALLED
OR WITH SYNC UNIT (J11) 700 SERIES

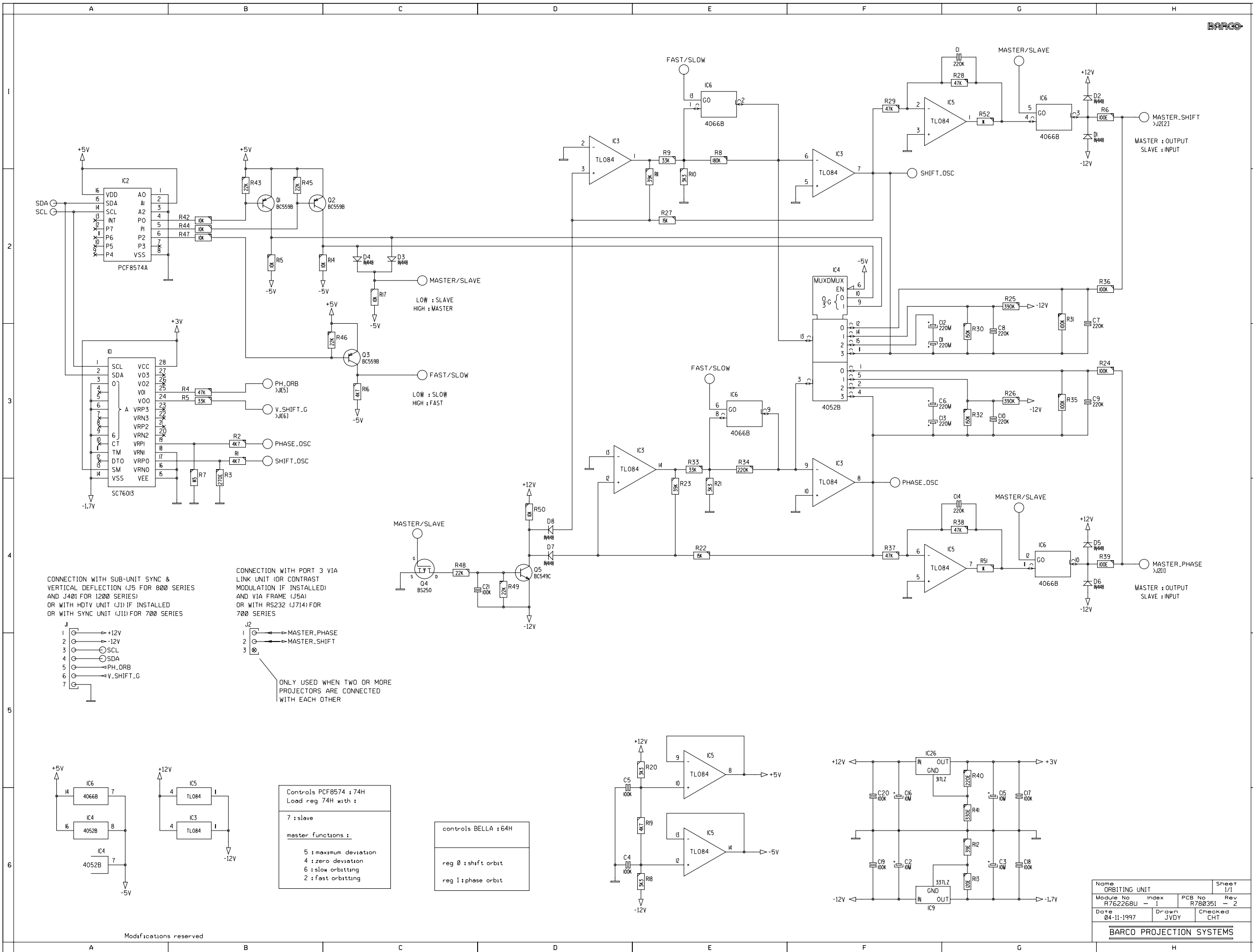
CONNECTION WITH PORT 3 VIA
LINK UNIT (OR CONTRAST
MODULATION IF INSTALLED)
AND VIA FRAME (J5A)
OR WITH RS232 (J714) FOR
700 SERIES



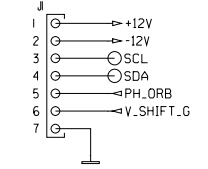
ONLY USED WHEN
TWO OR MORE
PROJECTORS ARE
CONNECTED WITH
EACH OTHER

Name ORBITING UNIT		Sheet 1 / 1	
Module No R762268U	Index 1	PCB No R780351	Rev 2
Date 05-11-1997	Drawn JVYD	Checked CHT	
BARCO PROJECTION SYSTEMS			

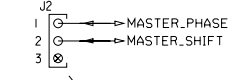
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R51	
R52	



CONNECTION WITH SUB-UNIT SYNC & VERTICAL DEFLECTION (J5 FOR 800 SERIES AND J401 FOR 1200 SERIES) OR WITH HDTV UNIT (J1) IF INSTALLED OR WITH SYNC UNIT (J11) FOR 700 SERIES



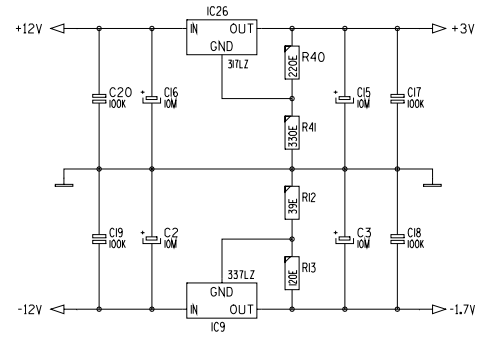
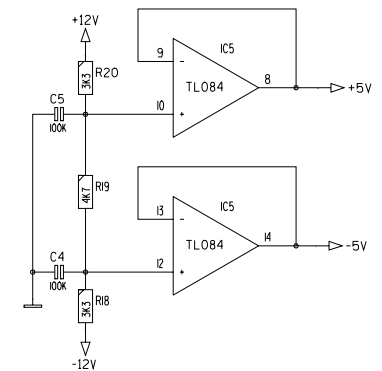
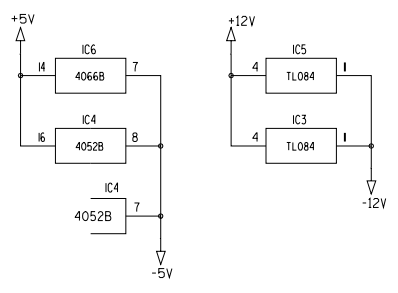
CONNECTION WITH PORT 3 VIA LINK UNIT (OR CONTRAST MODULATION IF INSTALLED) AND VIA FRAME (J5A) OR WITH RS232 (J71A) FOR 700 SERIES



ONLY USED WHEN TWO OR MORE PROJECTORS ARE CONNECTED WITH EACH OTHER

Controls PCF8574 : 74H	
Load reg 74H with :	
7	: slave
master functions :	
5	: maximum deviation
4	: zero deviation
6	: slow orbiting
2	: fast orbiting

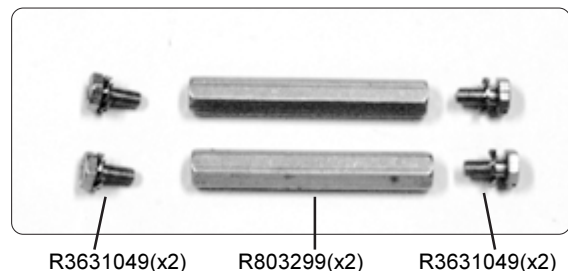
controls BELLA : 64H	
reg 0	: shift orbit
reg 1	: phase orbit



Name		Sheet	
ORBITING UNIT		1/1	
Module No	index	PCB No	Rev
R762268U	1	R780351	2
Date	Drawn	Checked	
04-11-1997	JVDY	CHT	
BARCO PROJECTION SYSTEMS			

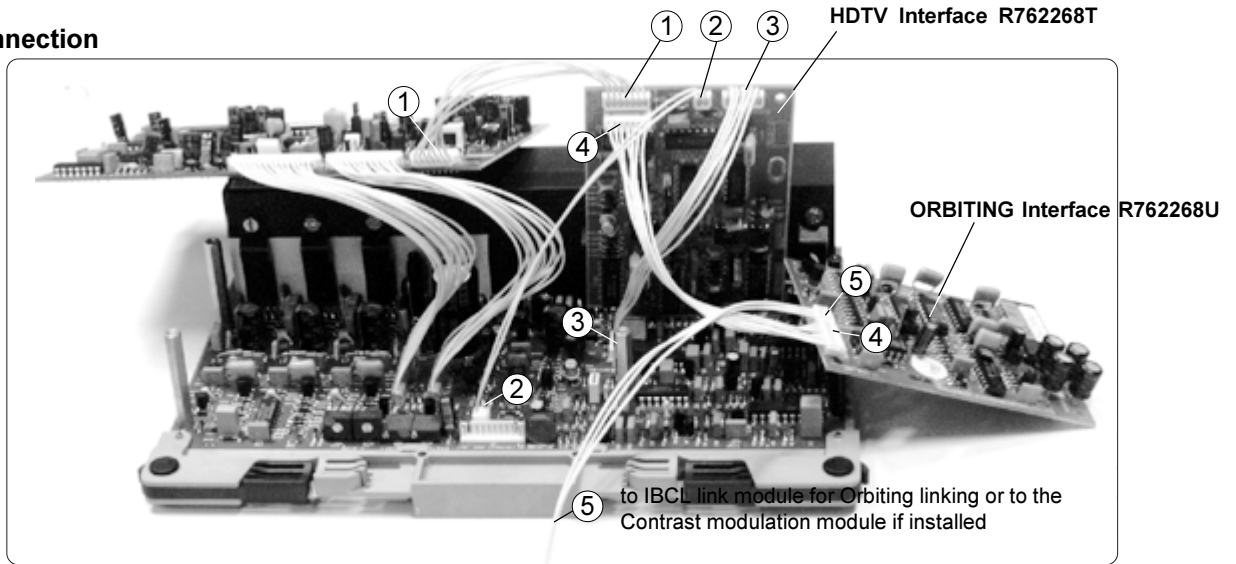
Parts listing R762268U

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
	R34840710	CD CT FTFT P 7 120	1	R 9	R101554	R MF H 33K F 0W4 E3	
	R3485037	CD CT \$FTFT P 3 200	1	R 10	R101542	R MF H 3K3 F 0W4 E3	
1010	R3631049	SCR D933 M 3 X 6 XIC	4	R 11	R101555	R MF H 39K F 0W4 E3	
1000	R803299	SPR L37 H 5.5 M 3 B	2	R 12	R101519	R MF H 39E F 0W4 E3	
C 1	R113728	C POMERA 220N K 63E2	1	R 13	R101525	R MF H120E F 0W4 E3	
C 2	R111531	C EL RA 10M M 35E2 85		R 14	R101548	R MF H 10K F 0W4 E3	
C 3	R111531	C EL RA 10M M 35E2 85		R 15	R101548	R MF H 10K F 0W4 E3	
C 4	R113724	C POMERA 100N K 63E2		R 16	R101544	R MF H 4K7 F 0W4 E3	
C 5	R113724	C POMERA 100N K 63E2		R 17	R101548	R MF H 10K F 0W4 E3	
C 6	R111478	C EL RA 220M M 25E2 85	1	R 18	R101542	R MF H 3K3 F 0W4 E3	
C 7	R113728	C POMERA 220N K 63E2	1	R 19	R101544	R MF H 4K7 F 0W4 E3	
C 8	R113728	C POMERA 220N K 63E2	1	R 20	R101542	R MF H 3K3 F 0W4 E3	
C 9	R113728	C POMERA 220N K 63E2	1	R 21	R101542	R MF H 3K3 F 0W4 E3	
C 10	R113728	C POMERA 220N K 63E2	1	R 22	R101550	R MF H 15K F 0W4 E3	
C 11	R111478	C EL RA 220M M 25E2 85	1	R 23	R101555	R MF H 39K F 0W4 E3	
C 12	R111478	C EL RA 220M M 25E2 85	1	R 24	R101560	R MF H100K F 0W4 E3	
C 13	R111478	C EL RA 220M M 25E2 85	1	R 25	R101567	R MF H390K F 0W4 E3	
C 14	R113728	C POMERA 220N K 63E2	1	R 26	R101567	R MF H390K F 0W4 E3	
C 15	R111531	C EL RA 10M M 35E2 85		R 27	R101550	R MF H 15K F 0W4 E3	
C 16	R111531	C EL RA 10M M 35E2 85		R 28	R101556	R MF H 47K F 0W4 E3	
C 17	R113724	C POMERA 100N K 63E2		R 29	R101556	R MF H 47K F 0W4 E3	
C 18	R113724	C POMERA 100N K 63E2		R 30	R101562	R MF H150K F 0W4 E3	
C 19	R113724	C POMERA 100N K 63E2		R 31	R101560	R MF H100K F 0W4 E3	
C 20	R113724	C POMERA 100N K 63E2		R 32	R101562	R MF H150K F 0W4 E3	
C 21	R113724	C POMERA 100N K 63E2		R 33	R101554	R MF H 33K F 0W4 E3	
D 1	R131621	D S 1N4148 075150 DO35		R 34	R101564	R MF H220K F 0W4 E3	
D 2	R131621	D S 1N4148 075150 DO35		R 35	R101560	R MF H100K F 0W4 E3	
D 3	R131621	D S 1N4148 075150 DO35		R 36	R101560	R MF H100K F 0W4 E3	
D 4	R131621	D S 1N4148 075150 DO35		R 37	R101556	R MF H 47K F 0W4 E3	
D 5	R131621	D S 1N4148 075150 DO35		R 38	R101556	R MF H 47K F 0W4 E3	
D 6	R131621	D S 1N4148 075150 DO35		R 39	R101524	R MF H100E F 0W4 E3	
D 7	R131621	D S 1N4148 075150 DO35		R 40	R101528	R MF H220E F 0W4 E3	
D 8	R131621	D S 1N4148 075150 DO35		R 41	R101530	R MF H330E F 0W4 E3	
I 1	R132833	U 76013 SC DIP28 P	1	R 42	R101548	R MF H 10K F 0W4 E3	
I 2	R132832	U 8574A PCF DIP16 P	1	R 43	R101552	R MF H 22K F 0W4 E3	
I 3	R134113	U 084 TL DIP14 P	1	R 44	R101548	R MF H 10K F 0W4 E3	
I 4	R137600	U 4052B DIP16 P	1	R 45	R101552	R MF H 22K F 0W4 E3	
I 5	R134113	U 084 TL DIP14 P	1	R 46	R101552	R MF H 22K F 0W4 E3	
I 6	R137303	U 4066B DIP14 P	1	R 47	R101548	R MF H 10K F 0W4 E3	
I 9	R134029	U 337LZ TO92 P	1	R 48	R101552	R MF H 22K F 0W4 E3	
I 26	R134028	U 317LZ LM TO92 P	1	R 49	R101552	R MF H 22K F 0W4 E3	
J 1	R313947	J CTH MBS P 7 M2SN	1	R 50	R101548	R MF H 10K F 0W4 E3	
J 2	R313943	J CTH MBS P 3 M2SN	1	R 51	R101536	R MF H 1K F 0W4 E3	
FC	R780351	PCD PJ49 800 ORBIT 2	1	R 52	R101536	R MF H 1K F 0W4 E3	
Q 1	R1314181	Q BC559B P SS TO92					
Q 2	R1314181	Q BC559B P SS TO92					
Q 3	R1314181	Q BC559B P SS TO92					
Q 4	R132916	Q BS250 FN SS TO92	1				
Q 5	R131411	Q BC549C N SS TO92					
R 1	R101544	R MF H 4K7 F 0W4 E3					
R 2	R101544	R MF H 4K7 F 0W4 E3					
R 3	R101529	R MF H270E F 0W4 E3					
R 4	R101556	R MF H 47K F 0W4 E3					
R 5	R101554	R MF H 33K F 0W4 E3					
R 6	R101524	R MF H100E F 0W4 E3					
R 7	R101538	R MF H 1K5 F 0W4 E3					
R 8	R101564	R MF H220K F 0W4 E3					

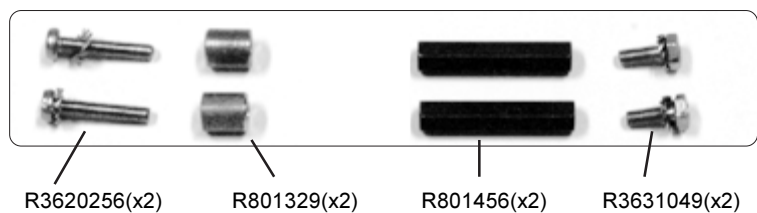
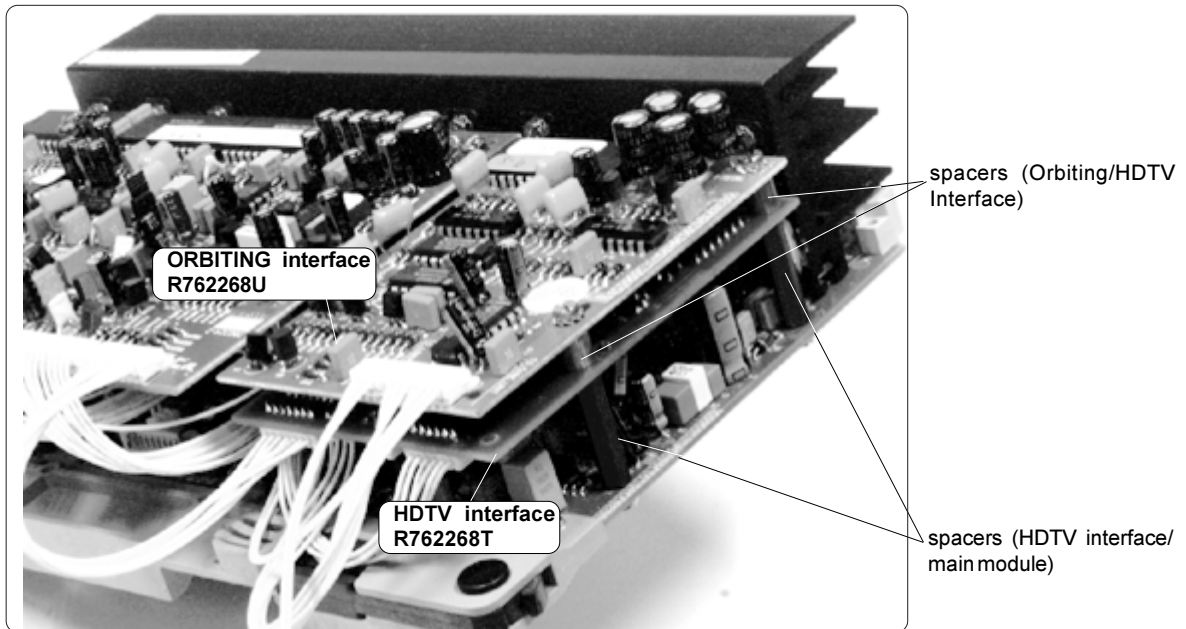


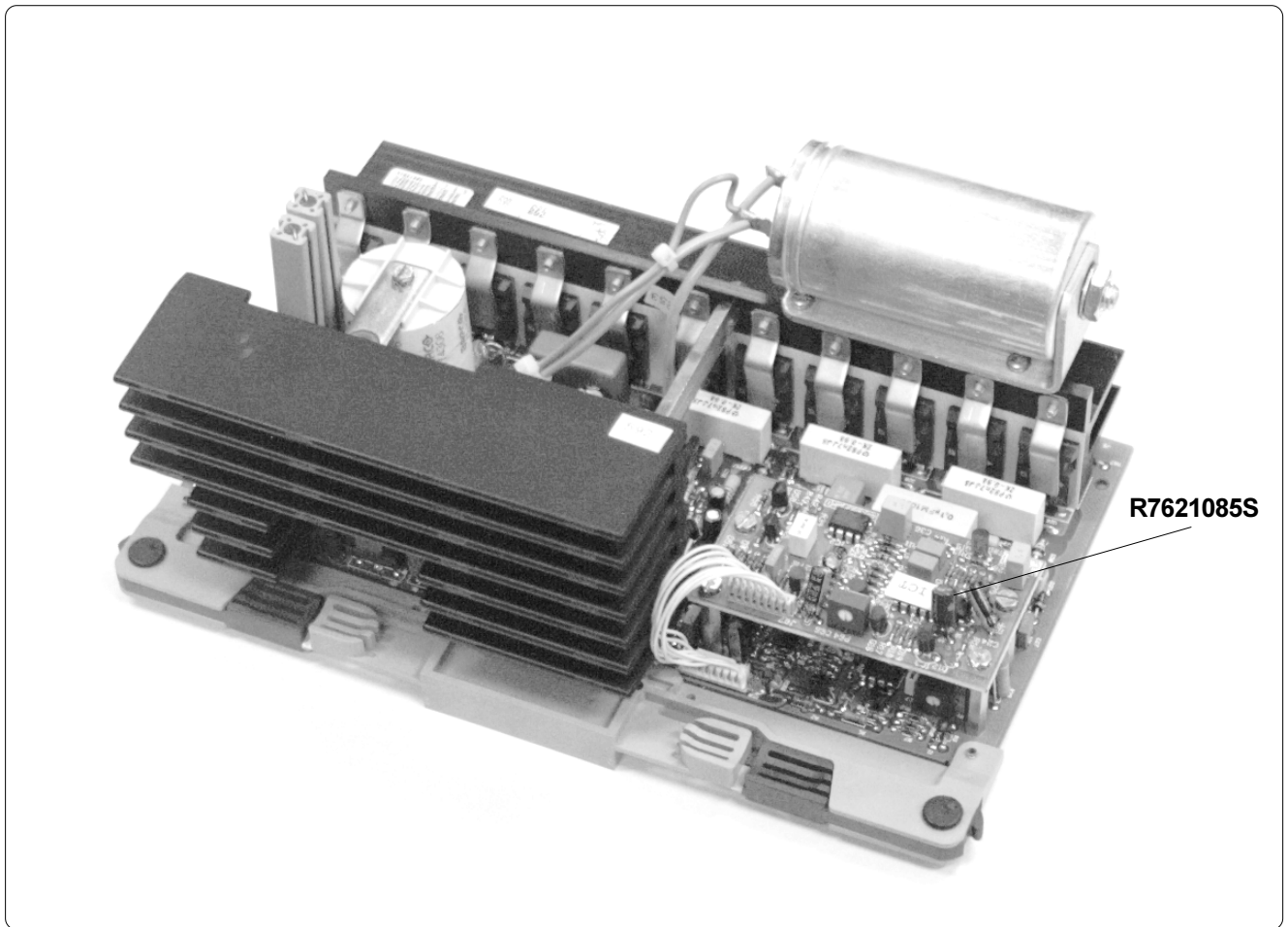
Mounting the HDTV R762268T+ORBITING R762268U Interface on the Sync+Vertical deflection module

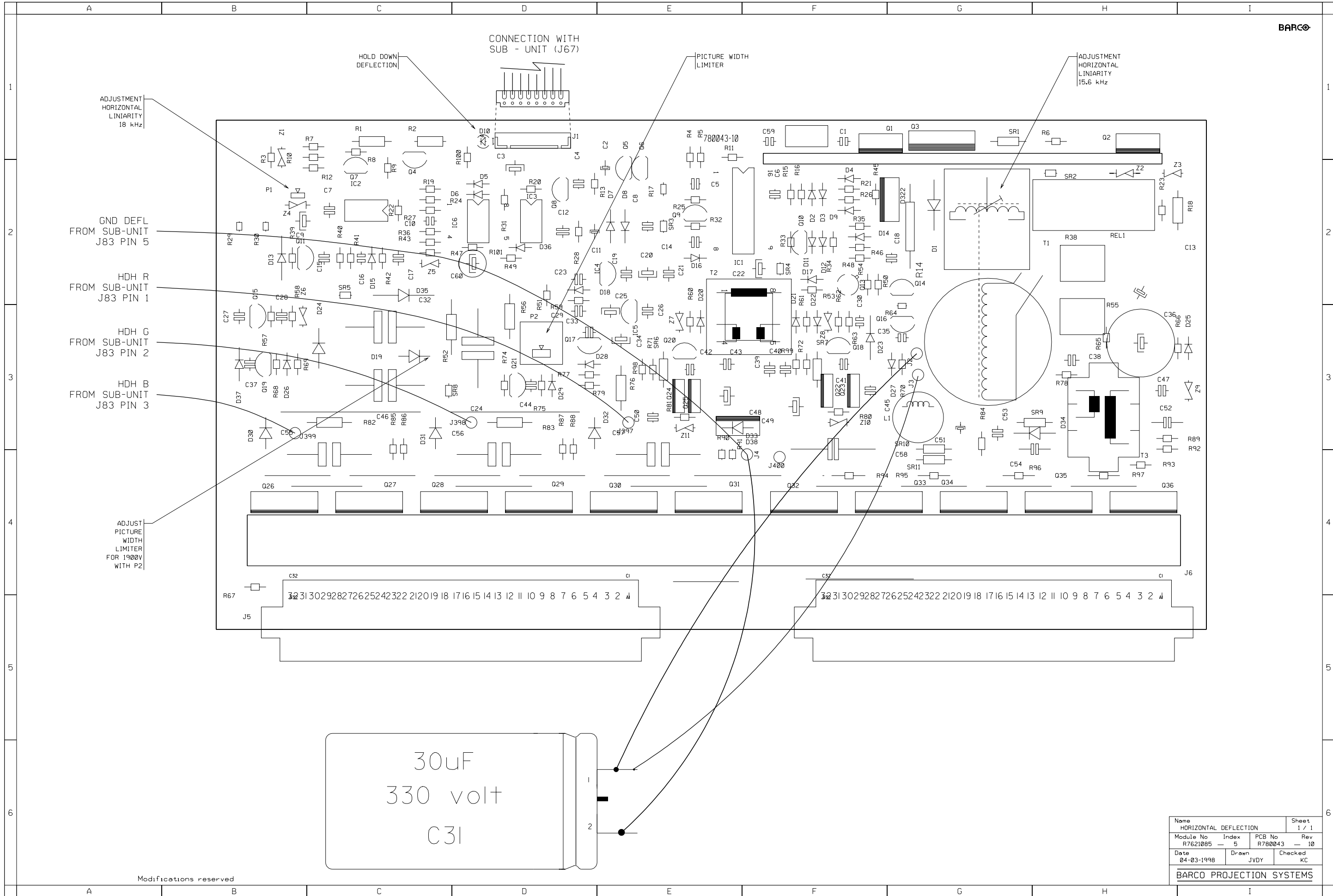
Interconnection



Mechanical mounting

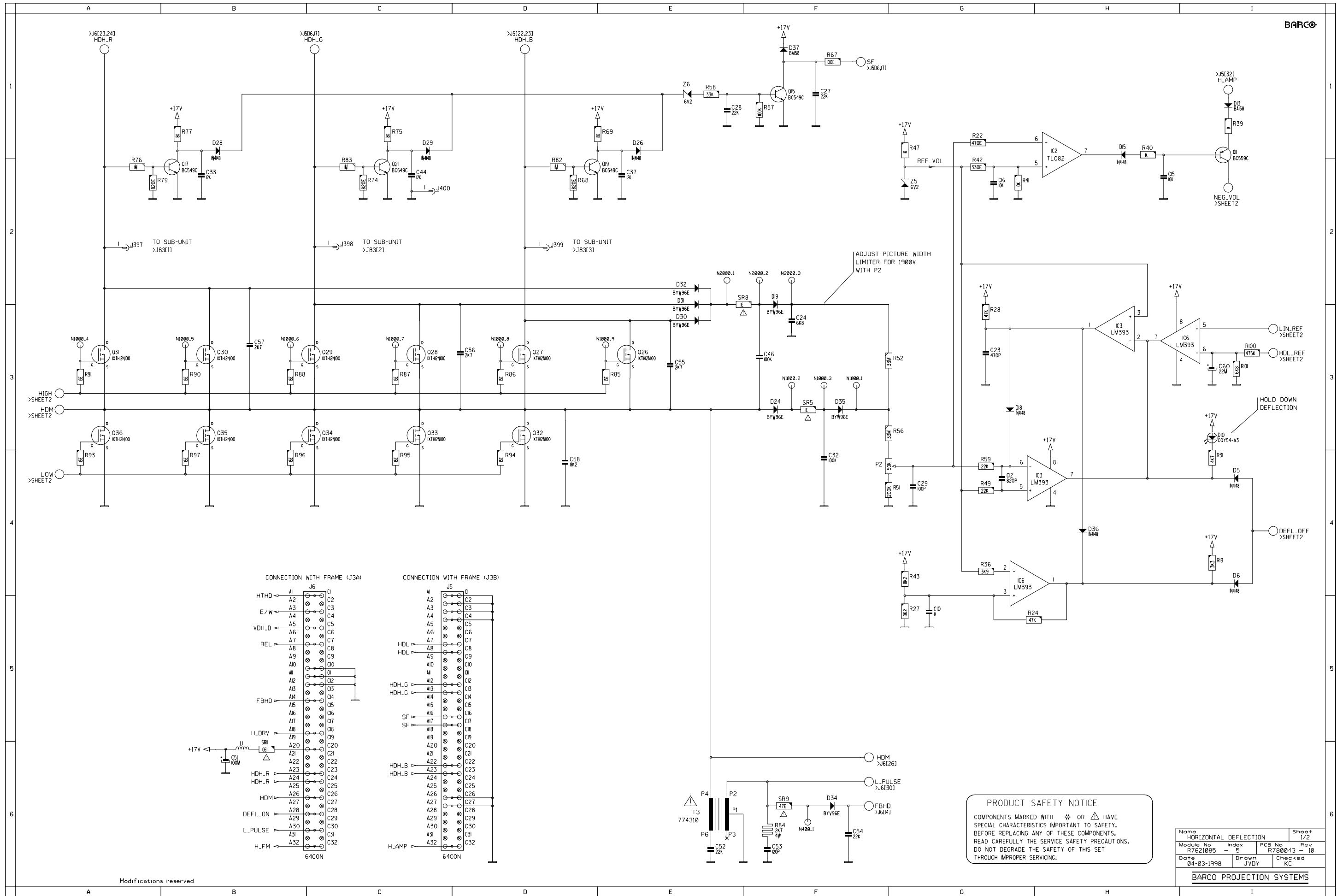




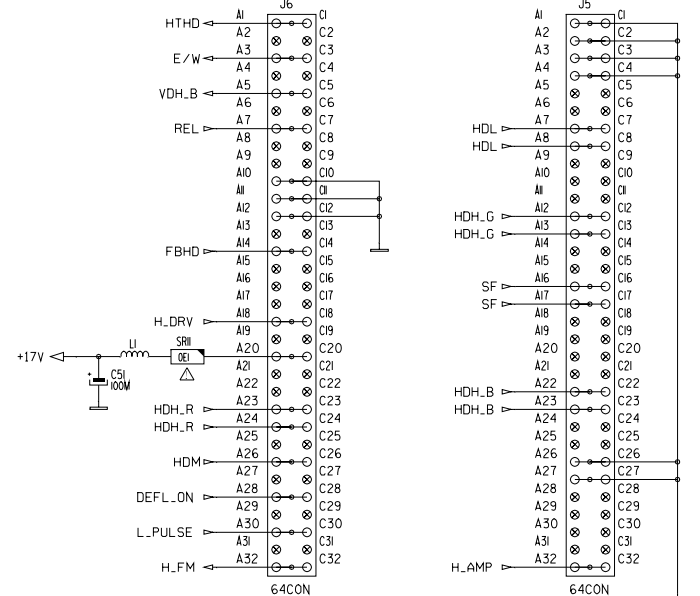


Modifications reserved

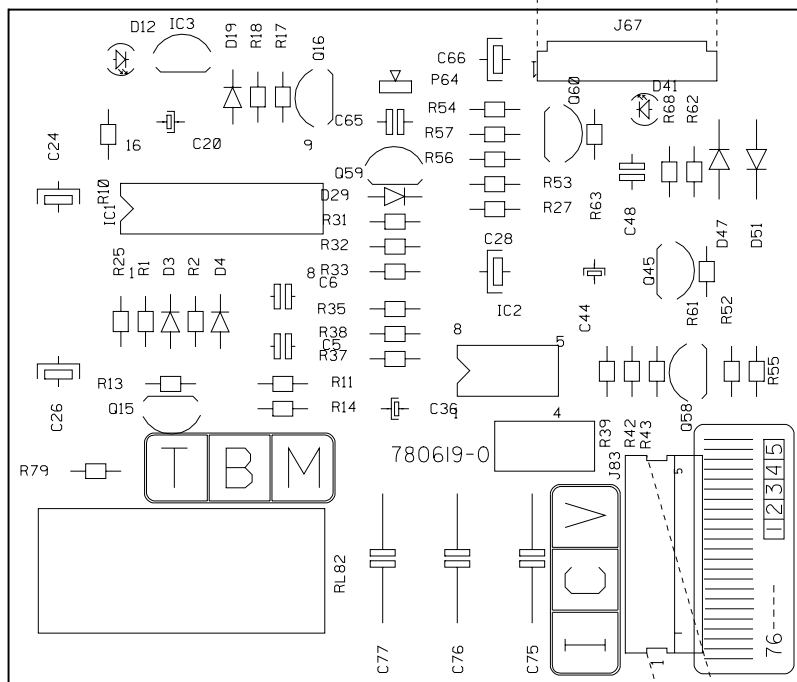
Name HORIZONTAL DEFLECTION		Sheet 1 / 1	
Module No R7621085	Index 5	PCB No R780043	Rev 10
Date 04-03-1998	Drawn JVJY	Checked KC	
BARCO PROJECTION SYSTEMS			



CONNECTION WITH FRAME (J3A) CONNECTION WITH FRAME (J3B)



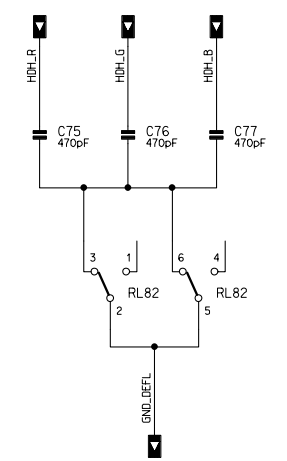
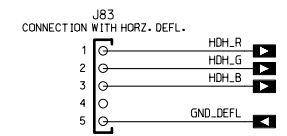
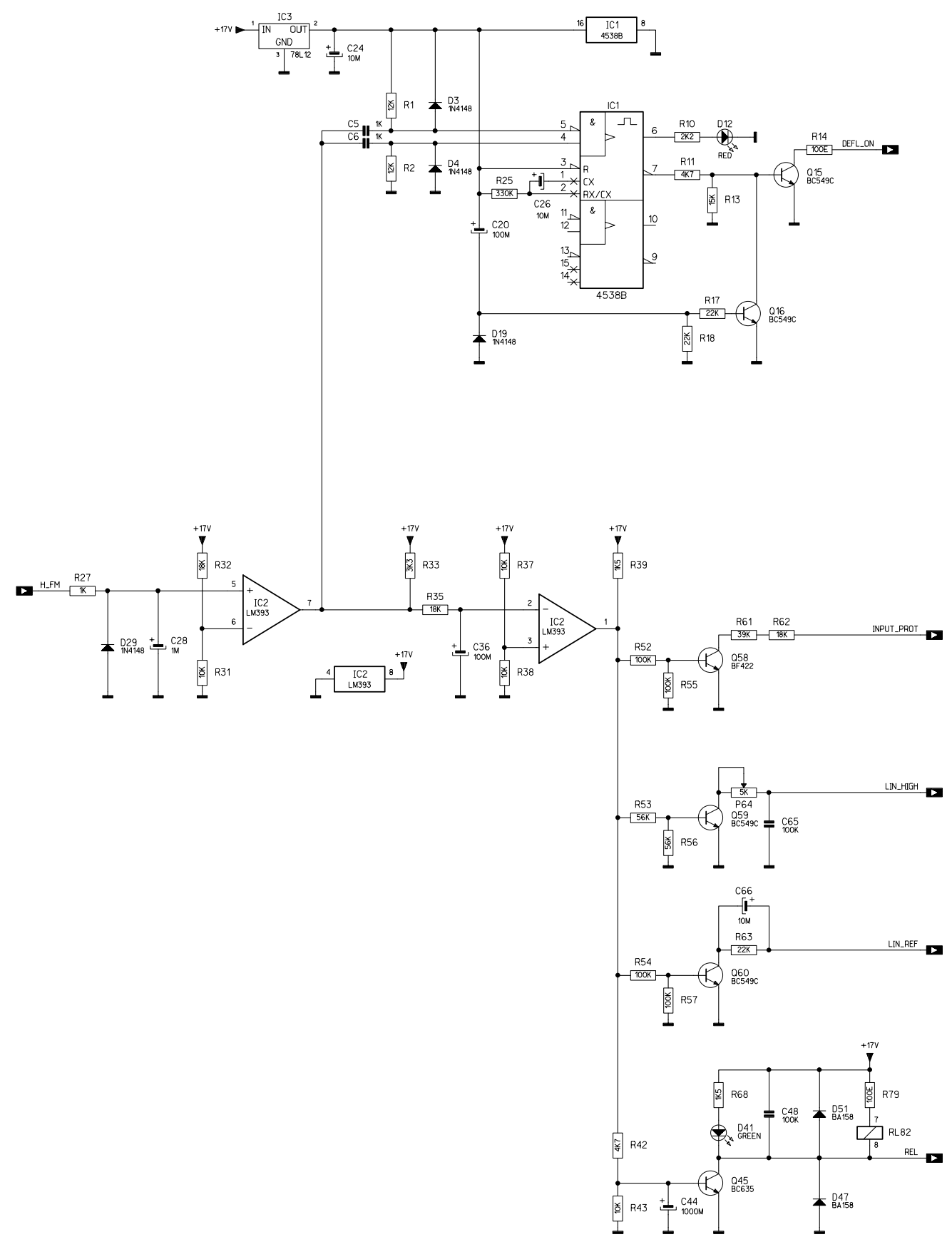
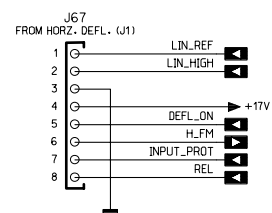
CONNECTION WITH UNIT (JI)



CONNECTION WITH UNIT

Name SUB-UNIT HOR. DEFLECTION			Sheet 1 / 1
Module No R7621085S	Index — 0	PCB No R780619	Rev — 0
Date 04-03-1998	Drawn JV DY	Checked KC	
BARCO PROJECTION SYSTEMS			

Modifications reserved



Modifications reserved

Name SUB-UNIT HOR. DELF.		Sheet 1/1	
Module No R7621085S - 0	Index 0	PCB No R780619 - 0	Rev 0
Date 27-10-1997	Drawn JVDY	Checked KC	
BARCO NV		Division BPS	

COMP.	LOC.
C20	C1
C24	C1
C26	C1
C36	C1
C44	C1
C48	C1
C56	C1
C75	C1
C77	C1
D3	D1
D4	D1
D12	D1
D19	D1
D29	D1
D41	D1
D47	D1
D51	D1
IC1	IC1
IC2	IC1
IC3	IC1
J67	J1
J83	J1
P64	E4
Q15	Q1
Q16	Q1
Q58	Q1
Q59	Q1
Q60	Q1
R1	R1
R2	R1
R3	R1
R4	R1
R5	R1
R6	R1
R7	R1
R8	R1
R9	R1
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C95	C1
C96	C1
C97	C1
C98	C1
C99	C1
C100	C1

Introduction

The following adjustments are provided:

a: Over voltage protection (=scan hold down) P2

b: Horizontal linearity adj.

Linearity coil at 15 kHz

Potentiometer P1 at 18 kHz and

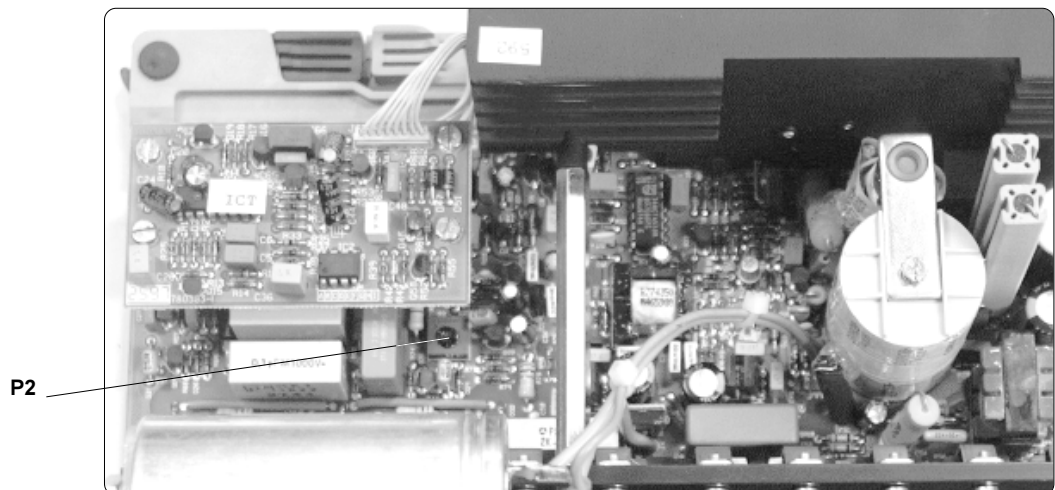
Potentiometer P64 at an input signal with 1.25us flyback time

Overvoltage protection

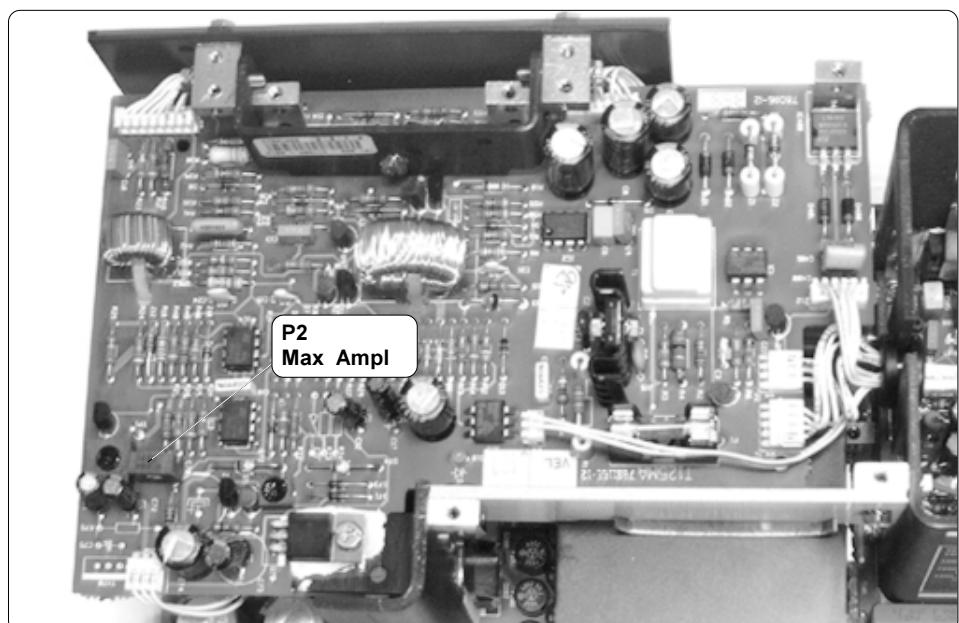
Preparation

Switch **OFF** the projector

Adjust P2 to its physical minimum (turning counter-clockwise)



Adjust P2 "MAX HOR. AMPL." on the **SM Power Supply** to its physical minimum (turning counter-clockwise).



Adjustment

Switch **ON** the projector.

With respect to chassis ground, measure the dc voltage at the cathode of the diode D19.

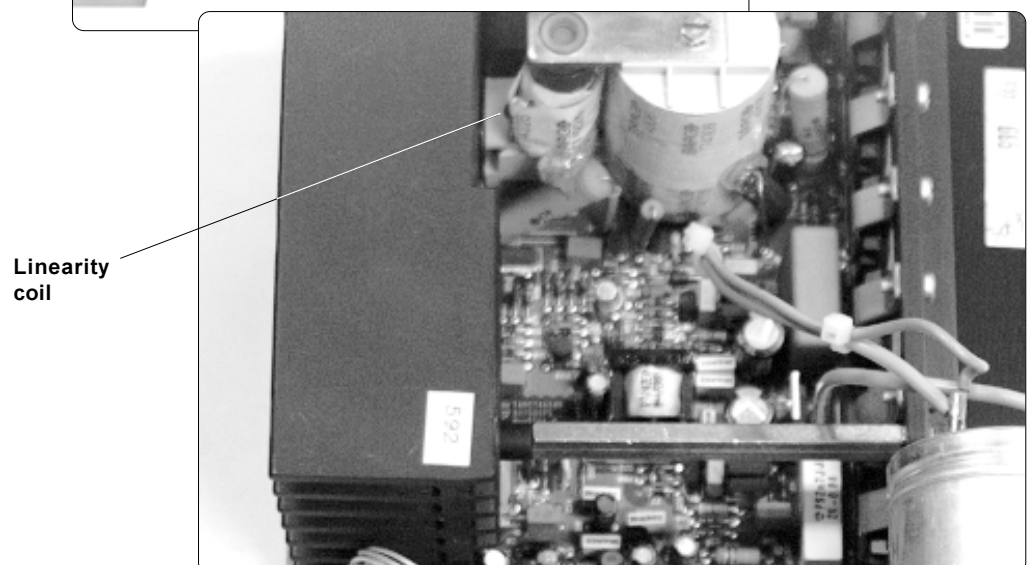
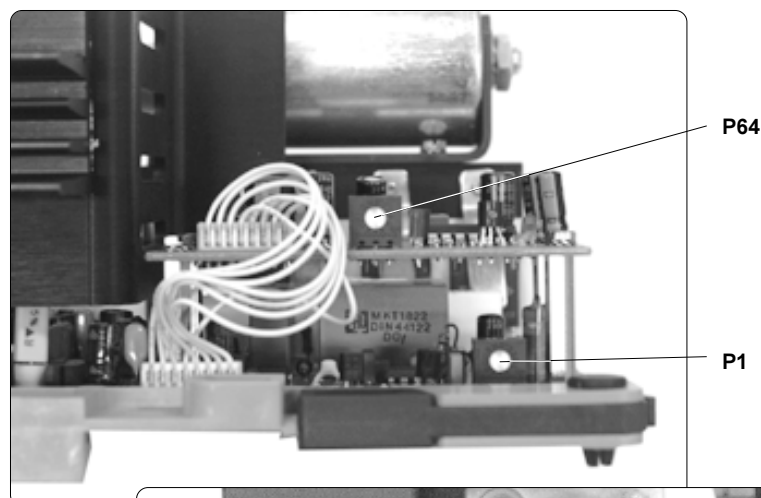
Adjust P2 **on the SM Power Supply module** for 1950V DC.

Adjust P2 **on the Hor. Deflection module** (turning clockwise) until the **Horizontal Amplitude** of the projected picture begins to reduce.

Re-adjust P2 **on the SM Power Supply** as explained in the adjustment procedure of the SM Power Supply (refer to the corresponding service sheet)

Horizontal linearity

1. Adjust the core of the linearity coil using a 15 kHz input source.
2. Adjust P1 using a 18 kHz input source.
3. Adjust P64 using an input source with a retrace time of 1.25us (Green LED on the sub module R7621085S lights up to indicate the high frequency range).



HORIZONTAL DEFLECTION AND SCAN SWITCHING MODULES BG1209S (R7621085 AND R762457)

Introduction.

On this board we find the MOSFET switching transistors, acting as switches to start and stop the currents through the deflection coils. As we need a very short retrace time, the amplitude of the flyback pulse is bigger than the maximum of one Mosfet. Therefore, two Mosfet switches are used in series. On the other hand, the amplitude of the current, especially in the mode where the two half windings are in parallel, is so high that the scan current must be divided over two Mosfets in parallel.

The very high scanning computer sources require a very short retrace time and thus blanking time of the projector. The lower scanning frequencies do not require such a short blanking time.

This is obtained by switching the two horizontal deflection windings of the deflection yoke unit in parallel (we further call this the "**Higher Freq Range**") for the high scanning frequency.

For the lower scanning sources however these same two windings on the yoke are connected in series in order to double the retrace time compared with the parallel connection (further called the "**Lower Freq Range**" range). This switching of the yoke configuration is accomplished with three relays on the "Deflection Switching Module" mounted on the CRT unit cover.

When switching from the low range to the high range, or vice versa, the deflection voltage +HTHD on the SMPS **MUST** be switched off (or at least reduced) the moment the relays are active.

The circuits which inhibit the deflection voltage and the drive circuit which control these relays are located on the Subunit of the Hor Defl. board.

Furthermore, on this board, we find the required protection circuits such as "*scan hold down*" and "*scan failure*".

Preparation of the drive pulses.

The horizontal deflection circuit uses two MOSFETS in series in order to be capable of handling more than 1000 volt pulses. Therefore, two drive pulses on different ground reference levels are required.

The "bottom" MOSFETS are driven by a pulse train referenced to ground or chassis ground, the "top" MOSFETS by drive pulses referenced to the mid-point of the two series connected MOSFETs, the **HDM** point. The Vcc of each opto-coupler must therefore have a different ground reference.

The power supply for generating the "top drive pulses" is taken from the +17 volt via diode D33 to block the pulses, as HDM, the reference ground for the top drive pulses, carries line pulses.

The hor. drive pulses, prepared on the "*UN SYNC+VERT DEFL*" board, are sent to the amplifier Q13. By using a transformer T2, a "floating" drive pulse referred to HDM for the top Mosfets can easily be obtained.

When the flyback pulse is present during retrace, D33 becomes reversed biased and act like an open circuit to the 17VDC line. At that time, the drive circuit receives its voltage supply from the charge stored in C48.

The "high" drive pulses reach the gate-source of the top Mosfets, and the "low" drive pulses drive the bottom Mosfet switches.

Modulation of the scan voltage / East-West correction

The +HTHD voltage from the SMPS board is modulated in Q3 by the East-West correction signal prepared on the "Sync + Vert Defl" board. Z2 protects the transistor and SR2 limits the charging current of this coupling capacitor through the zener. Q2 transistor is used to discharge the boosting capacitor C31 at the start of a vertical scan. A vertical flyback pulse, derived from VDH B (Vertical Deflection High Blue) is sent to the gate. This minimizes keystone problems at the top due to a remaining charge on C31 after the vertical retrace. It causes the charge on C31 to always start from the same amplitude after each vertical retrace, regardless of the voltage that was built up at the end of the vertical scan.

Horizontal linearity tracking control.

The problem we meet with such a big frequency range, is the frequency dependent characteristic of the linearity coil. At a higher scanning frequency, the impedance of the linearity coil would increase.

To overcome this, a second coil T1 is magnetically coupled to the standard linearity coil. This current in this modulating coil is delivered by a Mosfet Q1.

The needed current for tracking is got via the biasing circuit of the gate of Q1 (LIN HIGH) as follows.

The drive pulses trigger a one-shot in IC1 at the positive going transient input. The output pulses are then applied to the gate of a Mosfet Q8 and at the drain split to two circuits :

- the simple integrator R20 / C3, the obtained voltage across the capacitor is consequently a voltage proportional with the line frequency labelled "LIN REF".
- the push-pull Q5 / Q6 and the top/top detector just to obtain a negative voltage to supply amongst others the OPAMP IC2.

The DC level of this LIN REF voltage is not correct to drive the Mosfet Q1 and a level shift is realised with the OPAMP 1-2-3 of IC2.

This OPAMP receives at the inverting input a voltage that is proportional with the line frequency, the amplitude adjustment does not affect this LIN REF voltage.

The other non-inverting input receives a voltage that is proportional with the scan voltage. This voltage is proportional with the line frequency and with the amplitude adjustment. The influence of the amplitude adjustment must be minimized and this done as follows.

For one typical frequency, we obtain one typical LIN REF voltage. The HTHD voltage however depends also on the horizontal amplitude. Any change in the emitter voltage of Q4 is compensated via the feedback Q7 - base Q4.

Corrections in the "Higher Freq. Range". (on the subunit)

In the "High Freq. Range" mode, due to the change of the flyback time and the appropriated scan voltage, adaptations on different line frequency dependent circuits are required.

The HFM (Hor Freq. Mode) voltage, coming from the " UN SYNC + VERT DEFL" is compared to the level set by R31/R32 in the level detector 5-6-7 of IC2.

The output changes from high to low or vice versa are detected by IC1 to turn off the scan voltage (see later).

The output level is further inverted by a similar detector and the output pin 1 is used for different functions :

- a) To switch on and off Q45. When this transistor is "on", the relays on the "Deflection Switching" module are "activated". These relays realize the commutation from series to parallel. The same transistor also "serves" the relay "REL1" on the HOR

- DEFL board. With this relay a correction on the linearity coil is obtained between the high and low frequency ranges.
- b) To switch on and off Q58. This transistor permits a correction on the efficiency of the HTHD voltage for the second range of the input protection circuit (transistor Q9 - IC1) that will be discussed under the paragraph "Protections".
 - c) To switch on and off Q60. When this transistor is 'on' the LIN REF voltage is dropped by the divider R20 / R63 (=on the subunit) as a compensation for the drop of the HTHD voltage.
 - d) To switch on and off Q59 . When "on", P64 is added in parallel to the gate of Q1 and allows a correction on the linearity tracking

Protection circuits.

a) Overcurrent protection.

If the sum of the currents of the three scan coils exceeds a pre-determined level, the drive is inhibited as follows :

The wire J2-J3 in series with the three scan coils , acts as a low value resistor and is connected across the base-emitter of Q16. When a 0.6 volt or greater voltage is dropped across the wire, Q16 starts to conduct and triggers the monoflop Q10/ Q14. As long Q10 is blocked, the drive transistor Q13 remains "on", inhibiting the drive. BY re-applying the drive pulse to the base of Q10 via D9 (a kind of feedback), a faster reaction on the overcurrent can be obtained.

b) Overvoltage protection.

The sum of flyback pulses on each of the series connected Mosfets are checked by a rectifier network consisting of diodes D30, D31 and D32 and common decoupling capacitors. The pulses at the node of the two Mosfets (HDM) are rectified with D24 . This voltage must be half of the total flyback voltage in order to protect the mosfets against overvoltage. This is realised with the circuit R73/C46/ D24/SR5/ R56/C32.

The rectified voltage is dropped with R52 / P3 / R51 and sent to two level detectors. The threshold level is set by a zener at 6.2 volt with Z5. At the moment pin 6 of IC2 exceeds the threshold, the horizontal amplitude is reduced with Q11. This will avoid the action of the "Hold Down Deflection" protection circuit.

If for any reason, the 1950V level is reached the HOLD DOWN DEFLECTION circuit is activated.

- 1) The drive is inhibited through the DEFL OFF.
- 2) The input pin 6 remains "high" as transistor Q12 is blocked and D18 conducts via R28 to keep pin 6 of IC1 high. This requires that the set be powered off to reset this circuit.
- 3) The red LED D10 (HOLD DOWN DEFLECTION) is illuminated in order to show that "scan hold down" has occurred.
- 4) As the deflection is stopped, there is also a horizontal scan failure and the associated circuit will drop the EHT voltage and blank the three CRT's to prevent damage to the CRT phosphorus.

c) Too low drive protection (+17V monitoring).

It is imperative that the Mosfets are fully switched on, so that the internal resistance will be as low as possible. Due to the large deflection current, even a small amount of excess resistance, will cause the Mosfets to generate too much heat.

This Mosfet drive pulse amplitude depends in part on the **+17 volt** supply and the

voltage supplied from the +17VDC line . The drive signals are developed from the 17VDC and to prevent damage, due to insufficient drive, if this voltage becomes too low, IC1 pin 3 gets low and inhibits the drive signal via the 'DEFL OFF'. The DEFL OFF is connected with the R(eset) of the monoflop in IC1. The function of the latter will be explained hereafter.

d) Input protection :

The H DR from the UN SYNC + VERT DEFL has as task to start and stop the conduction of the Mosfets. If however the Mosfets are in conduction and there is a "stop" that does not arrive, there is a risk of damaging the power switchers. In such case, a stop pulse will be automatically generated by the monoflop in IC1, output 7. This output remains low as long the input is retriggered at pin 5. When such a trigger pulse is absent, the output switches high after a time determined by the time constant $R25 / C5$ + current delivered by Q9. This current is tracked with the line frequency by using the scan voltage as emitter supply. Note that a correction on the base voltage occurs in the second range with Q58 on the subunit.

e) Horizontal scan failure.

Horizontal pulses are fed into the transistors Q17, Q21 and Q19. As long as there are horizontal pulses on the base of these transistors, they are conducting for each horizontal period, and the collectors are held "low" by C33, C44 and C37. These smoothed collector voltages keep the gating diodes D28, D29 and D26 blocked. If either one of the pulses or all pulses are missing, Q19 transistor gets in conduction and turns its collector at low level. The SF line will be pulled low and the scan fail condition will be met.

f) Inhibition of the scan at relay switching period.

The **HFM** (=Horizontal Frequency Mode) **voltage** (HIGH in the "low freq." range and LOW in the "high freq." range) comes from the "Sync+Vert Defl" board. This voltage is applied to IC2 pin 5 (on a level detector in IC2).

When HFM switches from HIGH to LOW (when the "high freq. range" is selected), the output follows, and, a negative voltage transition occurs at the output . This negative transition triggers the monoflop on the "active low" pin 5 input of the monoflop IC1.

When on the other hand the freq. mode changes from "Low" to "High", the positive transition triggers now the monoflop at pin 4 ("active high").

The end result is that for either transition, the output pin 6 will go "High". The time that it will remain high is determined by the time constant $C26/R25$.

The "high" at pin 6 turns on the red LED D8 and it will stay on as long as pin 6 is "high".

The second inverted output pin 7 (low pulse) turns off Q15. The collector of this transistor "DEFL ON" is connected with the SMPS and as this an active LOW output, the scan voltage +HTHD is inhibited when this DEFL ON voltage is high (see SMPS).

Therefore, the scan is inhibited, when Q15 is "OFF" during switching of the frequency range.

Starting conditions

When the projector is first turned on, Q16 is forward biased due to the high charging

current of C20 through R18. This causes a "high" on the base of Q16, pulling it's collector "low". During the charging time the HTHD is dropped and the Hor Scan is inhibited.

When C20 is charged, Q16 turns off releasing Q15's base and switching on the scan voltage +HTHD.

This delayed start of the HTHD allows the monoflop circuit in IC2 to reach a "steady state" since the line oscillator first has to lock to the selected input source.

Feedback to the SMPS (to stabilise the horizontal width).

The scan voltage +HTHD has to track the line frequency in order to regulate the horizontal width of the picture. The amplitude of the flyback pulses at the connection of the top and bottom Mosfets (=HDM) is a direct result of the horizontal width and can be taken as a reference. These pulses are coupled and isolated by transformer T3, rectified by D34 and the **FBHD** voltage is sent to the SMPS, to regulate the HTHD.

This voltage is proportional to the width of the raster on the CRT faceplate.

g) Scan coil switching (R762457).

Each horizontal deflection yoke consists of two horizontal windings which may be connected in either a series or parallel configuration. The inductance of the parallel connection is obviously lower than the series configuration (parallel and series inductance uses the same formula as resistance) therefore they are connected in parallel for the "high" frequency mode.

The lower inductance in the parallel configuration causes the resonant frequency of the flyback pulse to increase, thereby producing a more rapid horizontal retrace.

Note: HDM is the mid-point of the two series connected deflection MOSFETS. HDL is the common connection to the three horizontal yoke windings, that supplies the yokes with the +HTHD voltage, after passing through Q3 and the linearity coil.

The DC horizontal shift voltage from the "Focus and Shift Board (76 2271) is applied between HDHX and HDLX (X stands for R, G or B or the Red, Green or Blue) of the red, green and blue deflection yokes. The HDLX is in fact a feedback to the "Focus + SHIFT" board in order to stabilise the horizontal width.

In the LOW FREQ mode, the two horizontal width alignment coils are in series. When switched to the "High Freq." mode only one coil is in the circuit, (see schematics).

S10, S20 and S30 allow the horizontal scan to be inverted to adapt the projector for a front or rear projection. S10 is also used to provide the **HSIC** information to the controller board, so that the controller board will know the configuration of the horizontal scan switches.

The **HSI** also goes to the "HOR SHIFT+FOCUS" board and is used by Q1 and Q2 to invert the shift voltages on P1 and P2 (horizontal shift Red and Blue).

Note that this board also contains the switch for the inversion of the vertical scan. Here the same **VSI** info can be used for both, the controller and the Vert Defl board (similar to Hor Defl).

The Scan Fail loop (SF3-SF4-SF5-SF6) passes through two contacts of the deflection connectors. In the event that one of these yoke connectors is disconnected, the projector will go into scan fail, terminating the EHT.

Horizontal Deflection

R7621085

Parts listing R7621085

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
5	Z345617	CD SL 3AWG20 P5 \$	1	C 59	R112747	C CE MI 4N7K100E2	
50	R133036	SPR L6 D 2,4D 6 CE	1	C 16	R112763	C CE MI 10N Z 63E2 8	1
100	R313220	R ACC HLDR H10 WW	2	C 30	R112763	C CE MI 10N Z 63E2 8	1
110	R133036	SPR L6 D 2,4D 6 CE	1	C 14	R112797	C CE DI 2N7K500E2	1
700	A576211	SPR L25 M3 H5 IBR	4	C 47	R112833	C CE DI 4N7S400E3 8	1
350	R133074	HTSN@A I_SIL W30		C 15	R1137121	C POMERA 10N K250E	1
460	R133074	HTSN@A I_SIL W30		C 33	R1137131	C POMERA 12N K100E	1
470	R133074	HTSN@A I_SIL W30		C 37	R1137131	C POMERA 12N K100E	1
	R3470080	SLVU GLCL OIL D 1,5RD	1	C 44	R1137131	C POMERA 12N K100E	1
240	R362020	SCR D84 M 3 X 4 STZ	2	C 38	R1137141	C POMERA 15N K100E	
230	R3631059	SCR Z933 M 3 X 8 SS	1	C 27	R1137161	C POMERA 22N K100E	
340	R3631059	SCR Z933 M 3 X 8 SS	3	C 28	R1137161	C POMERA 22N K100E	1
420	R3631059	SCR Z933 M 3 X 8 SS	2	C 7	R113724	C POMERA 100N K63E	
710	R3631059	SCR Z933 M 3 X 8 SS	8	C 17	R113724	C POMERA 100N K63E	
430	R3631069	SCR Z933 M 3 X 10 SS	1	C 19	R113724	C POMERA 100N K63E	
412	R3631239	SCR Z933 M 4 X 10 SS	1	C 21	R113724	C POMERA 100N K63E	
241	R367502	SPR D6798AD 3,2D 6 S	2	C 26	R113724	C POMERA 100N K63E	
411	R367608	SPR L70 M 4 H 7 NBR	1	C 39	R113724	C POMERA 100N K63E	
610	R367699	RVT AVTRON2,5L 8,1 A	6	C 40	R113724	C POMERA 100N K63E	
600	R722276	LOCK49 PCB UNCPL	1	C 43	R113724	C POMERA 100N K63E	
210	R802665	FRM49HOR CORELINF	1	C 4	R113732	C POMERA 470N K63E	
300	R802691	HTSN D800 HOR A GRA	1	C 8	R113732	C POMERA 470N K63E	
500	R802741	HTSND800HOR F.CAP	1	C 41	R113732	C POMERA 470N K63E	
220	R802751	COILINPJ49POSITION	1	C 42	R113732	C POMERA 470N K63E	
200	R802827	FRM V700LIN CTRL CPL	1	C 45	R113732	C POMERA 470N K63E	
441	R804525	HTSNA GEN SPG 1X 3	1	C 50	R113732	C POMERA 470N K63E	
320	R804674	HTSNA GEN SPG 1XM	11	C 52	R114154	C POMERA 22N K400E	1
440	R804831	HTSNA GEN SPG 1X 3	2	C 54	R114154	C POMERA 22N K400E	1
221	R805060	SPRCL 1 D 6 D10 FIY	1	C 32	R114603	C POMERA 100N M102	1
410	R805848	HTSND801 HORBG	1	C 46	R114603	C POMERA 100N M102	1
450	V3621217	SCR \$7500CM 3 X 6 ST	3	C 31	R114799	C PPMERA 30M J220B	1
330	V3621227	SCR \$7500CM 3 X 8 ST	11	C 55	R1150564	C PPMERA 2N7J202E9	1
510	V3621227	SCR \$7500CM 3 X 8 ST	2	C 56	R1150564	C PPMERA 2N7J202E9	1
	R133036	SPR L6 D 2,4D 6 CE	1	C 57	R1150564	C PPMERA 2N7J202E9	1
	R3421991	WU UL1015 AWG18 ST	1	C 6	R1159081	C PP RA 470P J100E2	
	R3421991	WU UL1015 AWG18 ST	1	C 18	R1159081	C PP RA 470P J100E2	
	R3421991	WU UL1015 AWG18 ST	1	C 12	R1159141	C PP RA 820P J100E2	1
	R3469930	SLVU SHR D 9,6/4,8 BK	1	C 5	R115922	C PP RA 1N8J100E2	1
	R3481107	WU JUMP 0,51 27,5 ISO	1	D 2	R131621	D S 1N4148 075150 DO3	
	R3481122	WU JUMP 0,51 32,5 ISO	1	D 3	R131621	D S 1N4148 075150 DO3	
	R3481135	WU JUMP 0,51 35 ISO	1	D 4	R131621	D S 1N4148 075150 DO3	
				D 5	R131621	D S 1N4148 075150 DO3	
				D 6	R131621	D S 1N4148 075150 DO3	
C 36	R1114169	C EL RA 10M M350E2	1	D 9	R131621	D S 1N4148 075150 DO3	
C 2	R111476	C EL RA 47M M 25E2	1	D 11	R131621	D S 1N4148 075150 DO3	
C 11	R111476	C EL RA 47M M 25E2		D 12	R131621	D S 1N4148 075150 DO3	
C 51	R111477	C EL RA 100M M 25E2		D 14	R131621	D S 1N4148 075150 DO3	
C 48	R111479	C EL RA 470M M 25E2	1	D 15	R131621	D S 1N4148 075150 DO3	
C 49	R111479	C EL RA 470M M 25E2	1	D 16	R131621	D S 1N4148 075150 DO3	
C 3	R111531	C EL RA 10M M 35E2		D 17	R131621	D S 1N4148 075150 DO3	
C 20	R111531	C EL RA 10M M 35E2		D 18	R131621	D S 1N4148 075150 DO3	
C 22	R111531	C EL RA 10M M 35E2		D 20	R131621	D S 1N4148 075150 DO3	
C 25	R111531	C EL RA 10M M 35E2		D 21	R131621	D S 1N4148 075150 DO3	
C 34	R111531	C EL RA 10M M 35E2		D 22	R131621	D S 1N4148 075150 DO3	
C 60	R111532	REPLACED BY V111485	1	D 25	R131621	D S 1N4148 075150 DO3	
C 9	R111546	C EL RA 1M M 50E2		D 26	R131621	D S 1N4148 075150 DO3	
C 13	R1116491	C EL RA 47M T385SKT	1	D 27	R131621	D S 1N4148 075150 DO3	
C 58	R111714	C PPMERA 8N2J162E9	1	D 28	R131621	D S 1N4148 075150 DO3	
C 24	R1117201	C PPMERA 6N8J202E9	1	D 29	R131621	D S 1N4148 075150 DO3	
C 29	R112242	C NP0 MI 100P G100E2	1	D 36	R131621	D S 1N4148 075150 DO3	
C 53	R112692	C N750MI 120P G500E2	1	D 7	R131637	D R BA158 600400 DO7	1
C 23	R112735	C CE MI 470P K100E2	1	D 8	R131637	D R BA158 600400 DO7	1
C 10	R112739	C CE MI 1N K100E2	1	D 13	R131637	D R BA158 600400 DO7	
C 35	R112739	C CE MI 1N K100E2		D 23	R131637	D R BA158 600400 DO7	
C 1	R112747	C CE MI 4N7K100E2					

Horizontal Deflection

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
D 37	R131637	D R BA158 600400 DO7	1	R 89	R101500	R MF H 1E F 0W4 E3	
D 10	R131662	D LED D3 TRD	1	R 85	R101514	R MF H 15E F 0W4 E3	
D 34	R131906	D R BYV96E 1021A5 SO	1	R 86	R101514	R MF H 15E F 0W4 E3	
D 38	R131913	D R BY329 10208A TO2	1	R 87	R101514	R MF H 15E F 0W4 E3	
D322	R131913	D R BY329 10208A TO2	1	R 88	R101514	R MF H 15E F 0W4 E3	
D 1	R131952	D R BYW96E 10203A S	1	R 90	R101514	R MF H 15E F 0W4 E3	1
D 19	R131952	D R BYW96E 10203A S	1	R 91	R101514	R MF H 15E F 0W4 E3	1
D 24	R131952	D R BYW96E 10203A S	1	R 93	R101514	R MF H 15E F 0W4 E3	
D 30	R131952	D R BYW96E 10203A S	1	R 94	R101514	R MF H 15E F 0W4 E3	1
D 31	R131952	D R BYW96E 10203A S	1	R 95	R101514	R MF H 15E F 0W4 E3	1
D 32	R131952	D R BYW96E 10203A S	1	R 96	R101514	R MF H 15E F 0W4 E3	
D 35	R131952	D R BYW96E 10203A S	1	R 97	R101514	R MF H 15E F 0W4 E3	
				R 25	R101516	R MF H 22E F 0W4 E3	
I 5	R134032	U 78L05AC TO92 P	1	R 65	R101516	R MF H 22E F 0W4 E3	
I 4	R134033	U 78L12AC TO92 P	1	R 7	R101524	R MF H100E F 0W4 E3	
I 3	R134114	U 393 LM DIP8 P	1	R 21	R101524	R MF H100E F 0W4 E3	
I 6	R134114	U 393 LM DIP8 P	1	R 23	R101524	R MF H100E F 0W4 E3	
I 2	R134124	U 082 TL DIP8 P	1	R 67	R101524	R MF H100E F 0W4 E3	
I 1	R137098	U 74HCT4538 DIP16	1	R 42	R101530	R MF H330E F 0W4 E3	
				R 50	R101531	R MF H390E F 0W4 E3	
J 5	R313525	JEUR2C MBSP64 E1C2	1	R 22	R101532	R MF H470E F 0W4 E3	
J 6	R313525	JEUR2C MBSP64 E1C2	1	R 53	R101534	R MF H680E F 0W4 E3	
J 1	R313928	J C T H MBT P 8 M2SN	1	R 68	R101535	R MF H820E F 0W4 E3	1
				R 71	R101535	R MF H820E F 0W4 E3	
L 1	R305913	CH MNS AX NS 12 UH 3	1	R 72	R101535	R MF H820E F 0W4 E3	
				R 74	R101535	R MF H820E F 0W4 E3	1
P 2	R106732	R TCE H 50K K 0W5 S1	1	R 79	R101535	R MF H820E F 0W4 E3	1
P 1	R106832	R TCE V 50K K 0W5 S1	1	R 98	R101535	R MF H820E F 0W4 E3	
				R 99	R101535	R MF H820E F 0W4 E3	
PC	R780043	PCBG800 HOR	1	R 13	R101536	R MF H 1K F 0W4 E3	
				R 35	R101536	R MF H 1K F 0W4 E3	
Q 10	R131411	Q BC549C N SS TO9	1	R 39	R101536	R MF H 1K F 0W4 E3	
Q 15	R131411	Q BC549C N SS TO9	1	R 40	R101536	R MF H 1K F 0W4 E3	
Q 17	R131411	Q BC549C N SS TO9	1	R 47	R101536	R MF H 1K F 0W4 E3	
Q 19	R131411	Q BC549C N SS TO9	1	R 70	R101536	R MF H 1K F 0W4 E3	
Q 21	R131411	Q BC549C N SS TO9	1	R 80	R101536	R MF H 1K F 0W4 E3	
Q 11	R1314182	Q BC559C P SS TO9	1	R 81	R101536	R MF H 1K F 0W4 E3	
Q 6	R131424	Q BC338 N SS TO92	1	R 92	R101536	R MF H 1K F 0W4 E3	
Q 14	R1314295	Q BC549B N SS TO9	1	R 11	R101539	R MF H 1K8 F 0W4 E3	
Q 5	R1314311	Q BC327 P SS TO92	1	R 33	R101539	R MF H 1K8 F 0W4 E3	
Q 22	R1314446	Q BD237 N P TO126	1	R 46	R101539	R MF H 1K8 F 0W4 E3	
Q 24	R1314446	Q BD237 N P TO126	1	R 3	R101541	R MF H 2K7 F 0W4 E3	1
Q 23	R1314451	Q BD238 P P TO126	1	R 10	R101541	R MF H 2K7 F 0W4 E3	
Q 25	R1314451	Q BD238 P P TO126	1	R 19	R101542	R MF H 3K3 F 0W4 E3	
Q 2	R132591	Q BUZ42 FNP TO22	1	R 36	R101543	R MF H 3K9 F 0W4 E3	
Q 1	R132593	Q BUZ74A FNP TO22	1	R 60	R101543	R MF H 3K9 F 0W4 E3	
Q 8	R132910	Q BS170 FN SS TO92	1	R 61	R101543	R MF H 3K9 F 0W4 E3	
Q 18	R132910	Q BS170 FN SS TO92	1	R 31	R101544	R MF H 4K7 F 0W4 E3	
Q 18	R132910	Q BS170 FN SS TO92	1	R 34	R101544	R MF H 4K7 F 0W4 E3	
Q 20	R132910	Q BS170 FN SS TO92	1	R 62	R101544	R MF H 4K7 F 0W4 E3	
Q 26	R132918	Q IXTH12N100 FNP TO2	1	R 63	R101544	R MF H 4K7 F 0W4 E3	
Q 27	R132918	Q IXTH12N100 FNP TO2	1	R101	R101546	R MF H 6K8 F 0W4 E3	1
Q 28	R132918	Q IXTH12N100 FNP TO2	1	R 27	R101547	R MF H 8K2 F 0W4 E3	
Q 29	R132918	Q IXTH12N100 FNP TO2	1	R 43	R101547	R MF H 8K2 F 0W4 E3	
Q 30	R132918	Q IXTH12N100 FNP TO2	1	R 26	R101548	R MF H 10K F 0W4 E3	
Q 31	R132918	Q IXTH12N100 FNP TO2	1	R 41	R101548	R MF H 10K F 0W4 E3	
Q 32	R132918	Q IXTH12N100 FNP TO2	1	R 66	R101548	R MF H 10K F 0W4 E3	
Q 33	R132918	Q IXTH12N100 FNP TO2	1	R 16	R101549	R MF H 12K F 0W4 E3	
Q 34	R132918	Q IXTH12N100 FNP TO2	1	R 45	R101549	R MF H 12K F 0W4 E3	
Q 35	R132918	Q IXTH12N100 FNP TO2	1	R 69	R101551	R MF H 18K F 0W4 E3	
Q 36	R132918	Q IXTH12N100 FNP TO2	1	R 75	R101551	R MF H 18K F 0W4 E3	
Q 9	R132972	Q BF421 P SS TO92	1	R 77	R101551	R MF H 18K F 0W4 E3	
Q 16	R132972	Q BF421 P SS TO92	1	R 20	R101552	R MF H 22K F 0W4 E3	1
Q 4	R132973	Q BF420 N SS TO92	1	R 49	R101552	R MF H 22K F 0W4 E3	
Q 7	R132973	Q BF420 N SS TO92	1	R 59	R101552	R MF H 22K F 0W4 E3	
Q 3	R132974	Q APT5025BN FNP TO	1	R 78	R101552	R MF H 22K F 0W4 E3	
Q 13	V132504	Q 2N2369A N SS TO1	1				

Horizontal Deflection

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R 5	R101554	R MF H 33K F 0W4 E3					
R 58	R101554	R MF H 33K F 0W4 E3		SR 5	R1003009	R CFFV 1E J 0W25 E1	1
R 15	R101556	R MF H 47K F 0W4 E3		SR 8	R1003009	R CFFV 1E J 0W25 E1	1
R 24	R101556	R MF H 47K F 0W4 E3		SR 4	R1003169	R CFFV 22E J 0W25 E1	1
R 28	R101556	R MF H 47K F 0W4 E3		SR 3	R1011169	R CFFH 22E J 0W25	1
R 48	R101556	R MF H 47K F 0W4 E3		SR 6	R1011169	R CFFH 22E J 0W25	1
R 8	R101559	R MF H 82K F 0W4 E3		SR 7	R1011169	R CFFH 22E J 0W25	1
R 12	R101560	R MF H100K F 0W4 E3		SR 9	R1011209	R CFFH 47E J 0W25	1
R 32	R101560	R MF H100K F 0W4 E3		SR10	R1011907	R CFFH E1 K 0W35	
R 54	R101560	R MF H100K F 0W4 E3		SR11	R1011907	R CFFH E1 K 0W35	
R 57	R101560	R MF H100K F 0W4 E3		SR 1	R103224	R MO H100E J 2W	1
R 4	R1015641	R MF H200K F 0W4 E3	1	SR 1	R3469930	SLVU SHR D 9,6/4,8 BK	1
R 51	R1015641	R MF H200K F 0W4 E3	1	SR 2	V1026176	R MF H 1K5 F 0W6 E4	1
R 9	R101568	R MF H470K F 0W4 E3		T 1	R774306	T G800 LIN CTRL	1
R 18	R103158	R MO H 68K J 1W	1	T 3	R774310	T D800 HOR DEF	1
R 29	R103254	R MO H 33K J 2W E10	1	T 2	R774350	T G801 HOR DVR	1
R 30	R103254	R MO H 33K J 2W E10	1				
R 64	R103254	R MO H 33K J 2W E10	1	T 2E	R774226	COILLIN PJ51 HORG12	1
R 84	R103341	R MO H 2K7 J 4W E10	1				
R 17	R103640	R VV H220E J 4W E	1	Z 12	R131701	D ZEN 6V2 2W5 C SO	1
R 38	R104446	R VV V 82E K17W	1	Z 5	R131720	D ZEN 6V2 0W5 C DO3	
R 55	R104446	R VV V 82E K17W	1	Z 6	R131720	D ZEN 6V2 0W5 C DO3	
R 76	R104654	R HV H 1M J 0W5 35	1	Z 1	R131730	D ZEN 20V 0W5 C DO3	1
R 82	R104654	R HV H 1M J 0W5 35	1	Z 3	R131730	D ZEN 20V 0W5 C DO3	1
R 83	R104654	R HV H 1M J 0W5 35	1	Z 7	R131730	D ZEN 20V 0W5 C DO3	
R 52	R104690	R HV H 33M J 0W5 35	1	Z 8	R131730	D ZEN 20V 0W5 C DO3	
R 56	R104690	R HV H 33M J 0W5 35	1	Z 10	R131730	D ZEN 20V 0W5 C DO3	
R 6	V1026007	R MF H 10K F 0W6 E4	1	Z 11	R131730	D ZEN 20V 0W5 C DO3	
R 1	V1026507	R MF H 33K2 F 0W6 E4	1	Z 9	R131740	D ZEN 12V 0W5 C DO3	
R 2	V1026507	R MF H 33K2 F 0W6 E4	1	Z 4	R131767	D ZEN 6V8 0W5 B DO3	1
R100	V1026658	R MF H475K F 0W6 E4	1	Z 2	V131711	D ZEN 56V 1W3 C DO4	1
R 14	V103420	R MO H 47E J 6W	1				
REL1	R324360	RLY 12V 2C BV MNS	1				

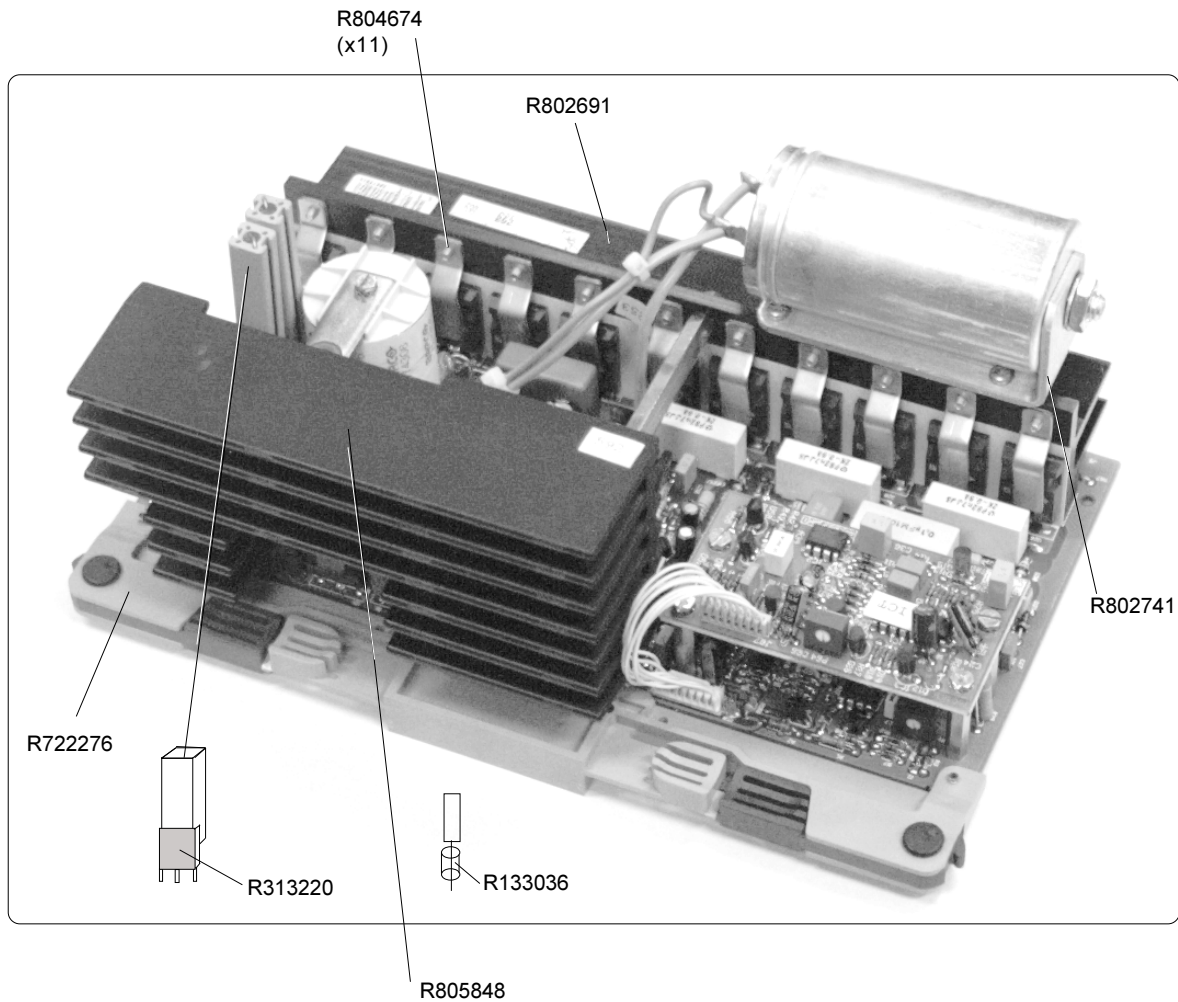
Parts listing R7621085S

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C 20	R111477	C EL RA 100M M 25E2		I 3	R134033	U 78L12AC TO92 P	1
C 24	R111531	C EL RA 10M M 35E2		I 2	R134114	U 393 LM DIP8 P	1
C 66	R111531	C EL RA 10M M 35E2		I 1	R137378	U 4538B DIP16 P	1
C 28	R111546	C EL RA 1M M 50E2					
C 48	R113724	C POMERA 100N K 63E		J 83	R313727	J MTA MBT P 5 M3,96 FL	1
C 65	R113724	C POMERA 100N K 63E		J 67	R3484081	CD CT FTMT P 8 80	1
C 26	R114090	C POMERA 1M K 63E2					
C 36	R114090	C POMERA 1M K 63E2		P 64	R106828	R TCE V 5K K 0W5 S1	1
C 44	R114090	C POMERA 1M K 63E2	1				
C 5	R1159161	C PP RA 1N J100E2 8		PC	R780619	PCBG1200 HOR SUB/2	1
C 6	R1159161	C PP RA 1N J100E2 8					
C 75	V115026	C PPMERA 220P J202E	1	Q 15	R131411	Q BC549C N SS TO9	1
C 76	V115026	C PPMERA 220P J202E	1	Q 16	R131411	Q BC549C N SS TO9	
C 77	V115026	C PPMERA 220P J202E	1	Q 59	R131411	Q BC549C N SS TO9	1
D 3	R131621	D S 1N4148 075150 DO3		Q 60	R131411	Q BC549C N SS TO9	
D 4	R131621	D S 1N4148 075150 DO3		Q 58	R132516	Q BF422 N SS TO92	1
D 19	R131621	D S 1N4148 075150 DO3		Q 45	R132557	Q BC635 N SS TO92	1
D 29	R131621	D S 1N4148 075150 DO3					
D 47	R131637	D R BA158 600400 DO7	1	R 14	R101524	R MF H100E F 0W4 E3	
D 51	R131637	D R BA158 600400 DO7	1	R 79	R101524	R MF H100E F 0W4 E3	
D 12	R131662	D LED D3 TRD	1	R 27	R101536	R MF H 1K F 0W4 E3	

Horizontal Deflection

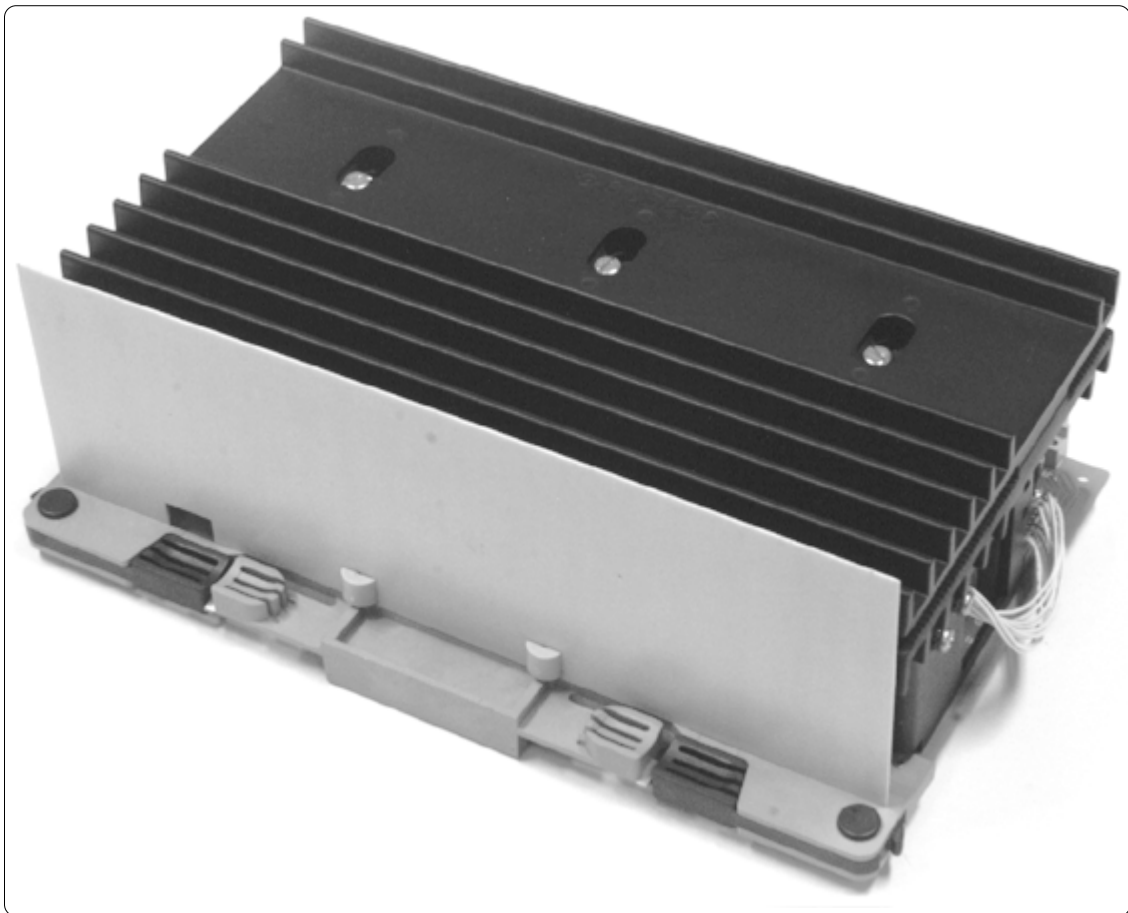
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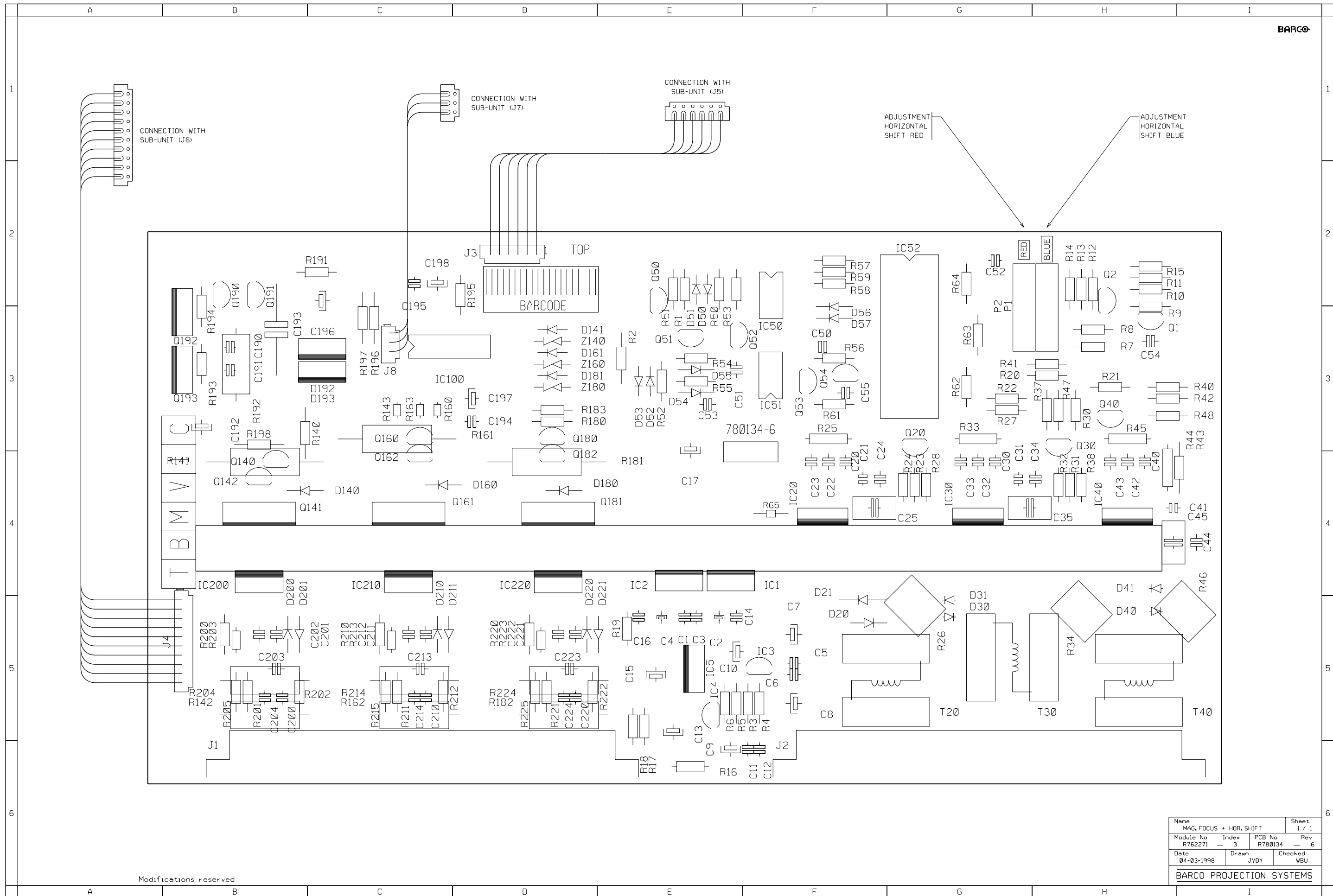
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R 68	R101538	R MF H 1K5 F 0W4 E3		R 32	R101551	R MF H 18K F 0W4 E3	
R 10	R101540	R MF H 2K2 F 0W4 E3		R 62	R101551	R MF H 18K F 0W4 E3	
R 33	R101542	R MF H 3K3 F 0W4 E3		R 17	R101552	R MF H 22K F 0W4 E3	
R 11	R101544	R MF H 4K7 F 0W4 E3		R 18	R101552	R MF H 22K F 0W4 E3	
R 31	R101548	R MF H 10K F 0W4 E3		R 63	R101552	R MF H 22K F 0W4 E3	
R 37	R101548	R MF H 10K F 0W4 E3		R 61	R101555	R MF H 39K F 0W4 E3	
R 38	R101548	R MF H 10K F 0W4 E3		R 53	R101557	R MF H 56K F 0W4 E3	
R 43	R101548	R MF H 10K F 0W4 E3		R 56	R101557	R MF H 56K F 0W4 E3	
R 1	R101549	R MF H 12K F 0W4 E3		R 52	R101560	R MF H100K F 0W4 E3	
R 2	R101549	R MF H 12K F 0W4 E3		R 54	R101560	R MF H100K F 0W4 E3	



Electromagnetic Focus+Hor Shift
Sub module

R762271
R762271S

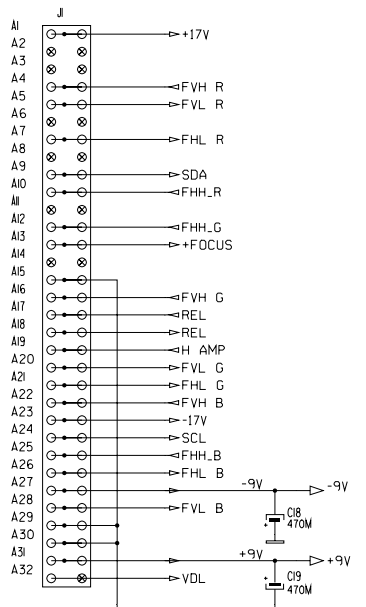




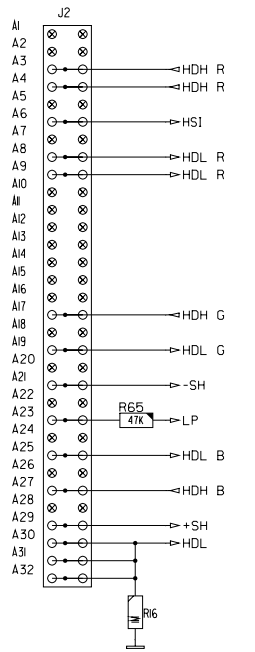
Modifications reserved

Name MAG. FOCUS + HOR. SHIFT		Sheet 1 / 1	
Module No R762271	Index 3	PCB No R780134	Rev 6
Date 04-03-1998	Drawn JVJY	Checked WBU	
BARCO PROJECTION SYSTEMS			

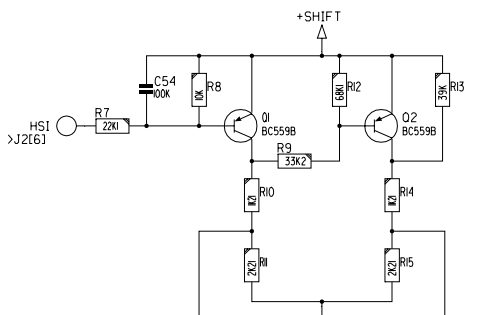
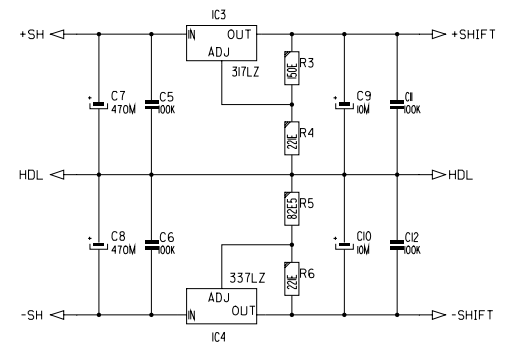
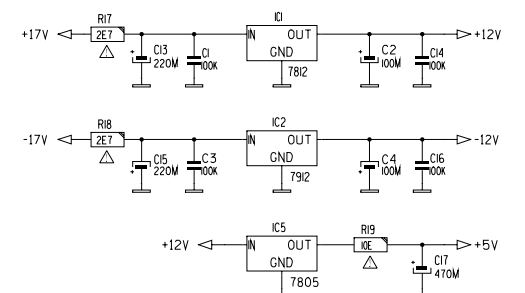
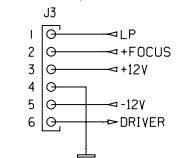
TO FRAME (J2B)



TO FRAME (J2A)

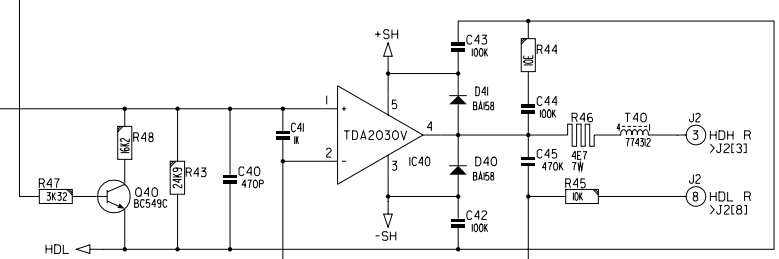
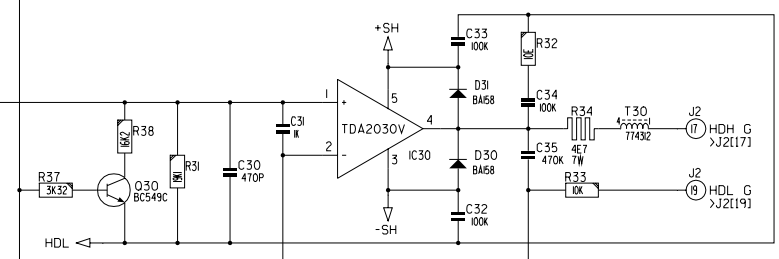
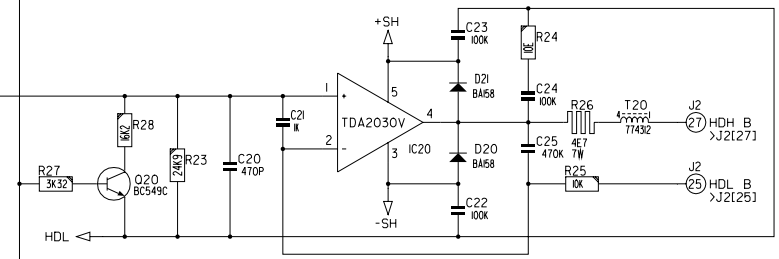
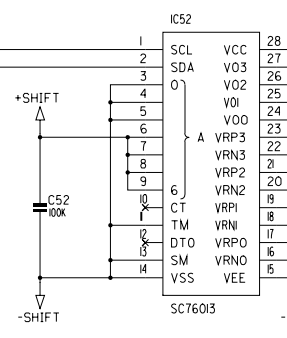
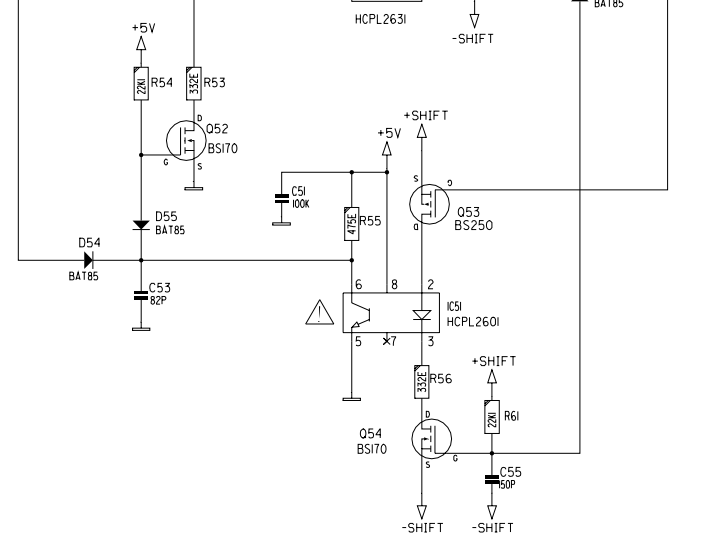
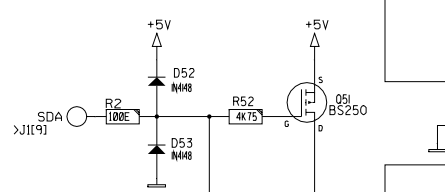
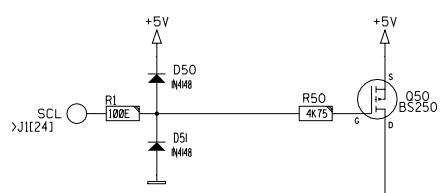


TO SUB-UNIT (J5)



MAIN SHIFT ADJUSTMENT BLUE

MAIN SHIFT ADJUSTMENT RED

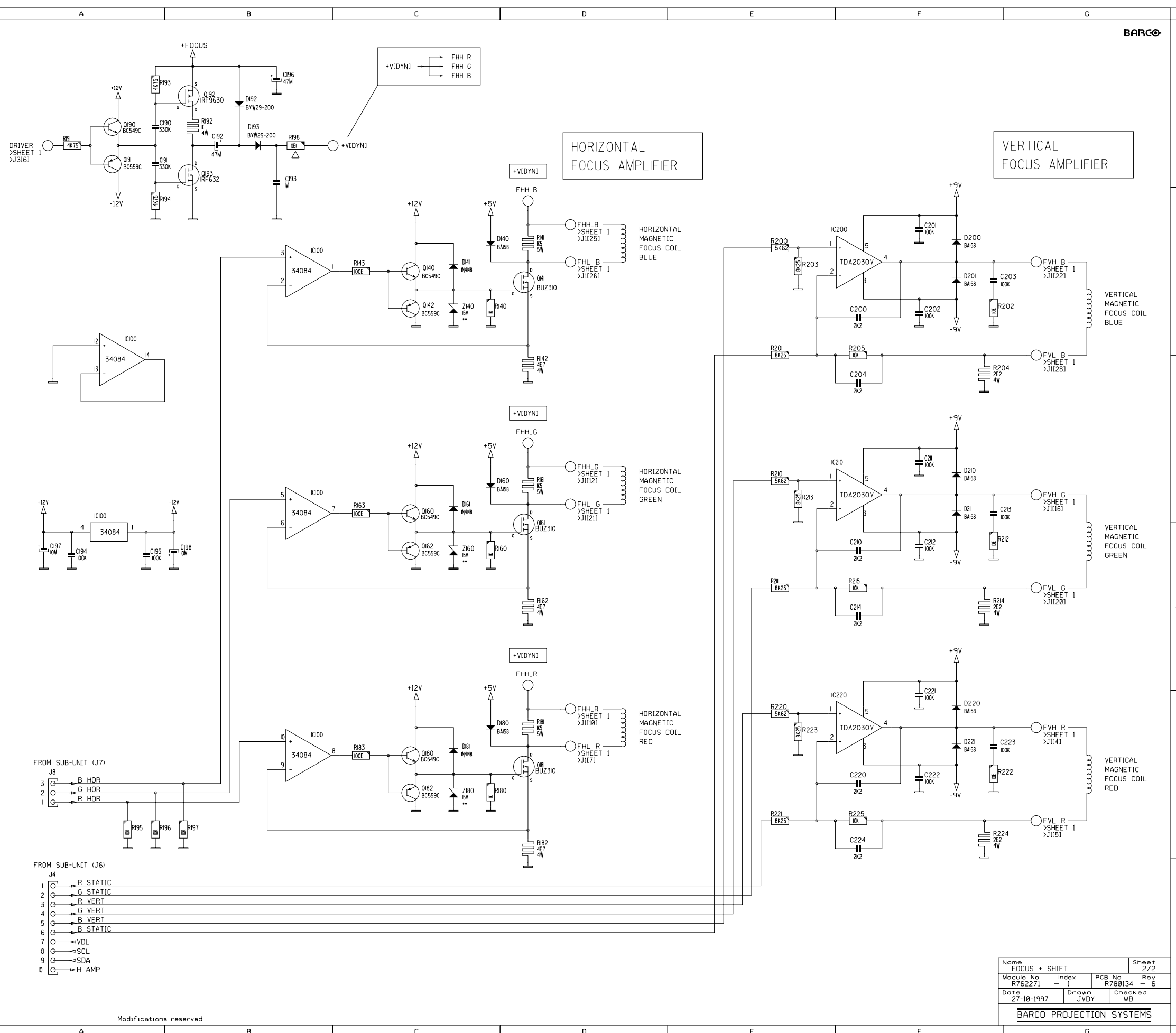


PRODUCT SAFETY NOTICE
 COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

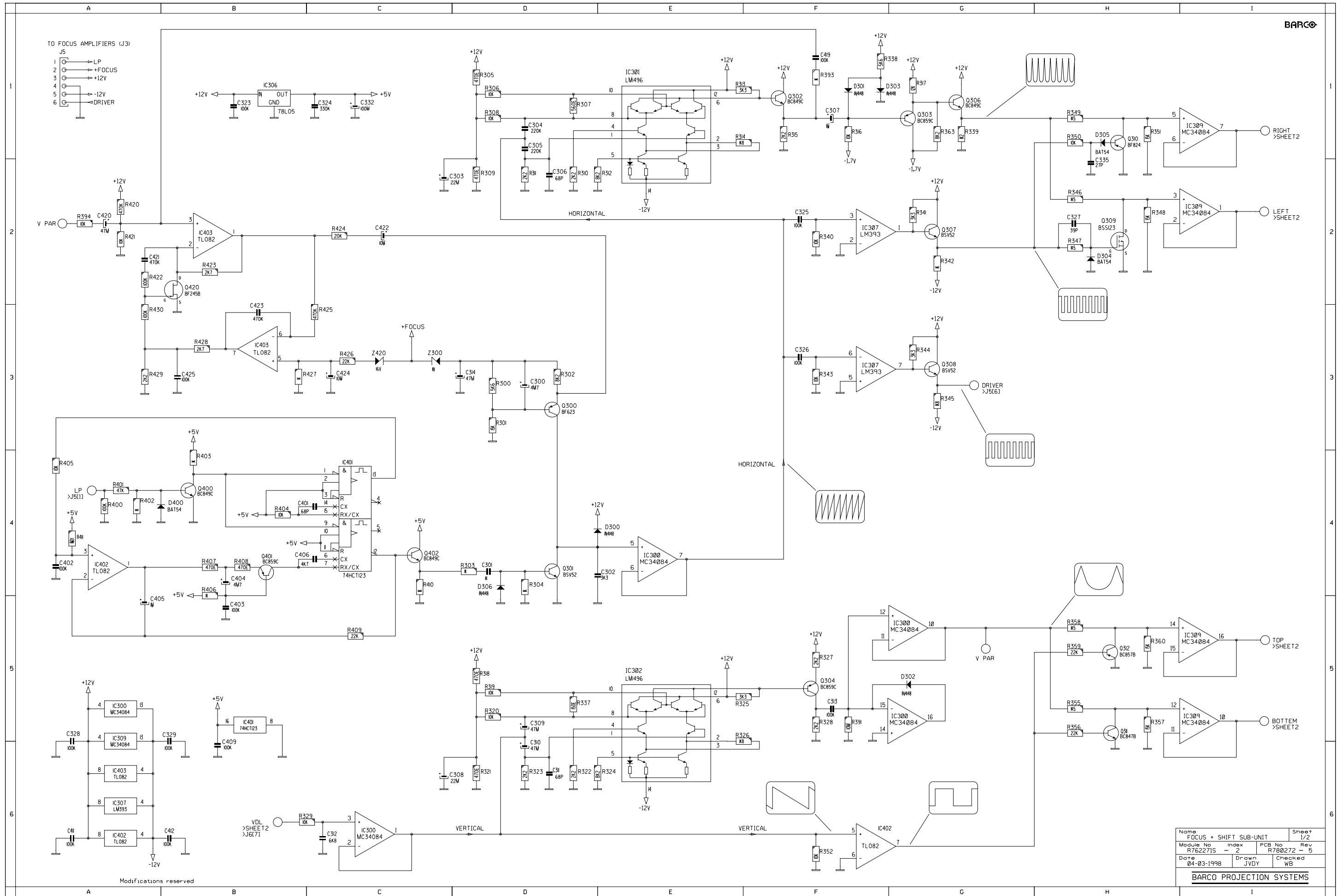
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Module No	R762271	Index	3
PCB No	R780134	Rev	6
Date	27-10-1997	Drawn	JVDY
		Checked	WB

BARCO PROJECTION SYSTEMS

Modifications reserved



COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C1	F 1	1	O180	C 5	2
C2	F 1	1	O181	C 5	2
C3	F 1	1	O182	C 5	2
C4	F 1	1	O183	C 5	2
C5	H 1	1	O191	A 1	1
C6	H 1	2	O192	B 1	2
C7	H 1	2	O193	B 1	2
C8	H 1	2			
C9	H 1	2	R1	A 4	1
C10	I 2		R2	A 4	1
C11	I 2		R3	A 4	1
C12	F 1	1	R4	I 1	1
C13	F 1	1	R5	I 1	1
C14	G 1	1	R6	I 2	1
C15	F 1	1	R7	O 2	2
C16	G 1	1	R8	O 2	2
C17	B 2	2	R9	O 2	2
C18	B 2	2	R10	O 2	2
C19	B 3	3	R11	O 2	2
C20	H 3	3	R12	O 2	2
C21	H 3	3	R13	O 2	2
C22	H 3	3	R14	O 2	2
C23	H 3	3	R15	O 2	2
C24	I 3		R16	O 2	2
C25	I 3		R17	O 2	2
C26	H 4	4	R18	O 2	2
C27	H 4	4	R19	O 2	2
C28	H 4	4	R20	O 2	2
C29	H 4	4	R21	O 2	2
C30	H 4	4	R22	O 2	2
C31	H 4	4	R23	O 2	2
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C35	I 4		R27	O 2	2
C36	I 4		R28	O 2	2
C37	I 4		R29	O 2	2
C38	I 4		R30	O 2	2
C39	I 4		R31	O 2	2
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C41	H 5	5	R33	O 2	2
C42	H 5	5	R34	O 2	2
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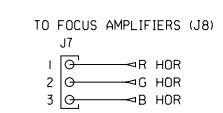
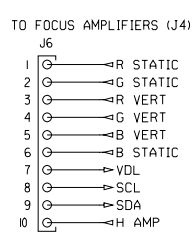
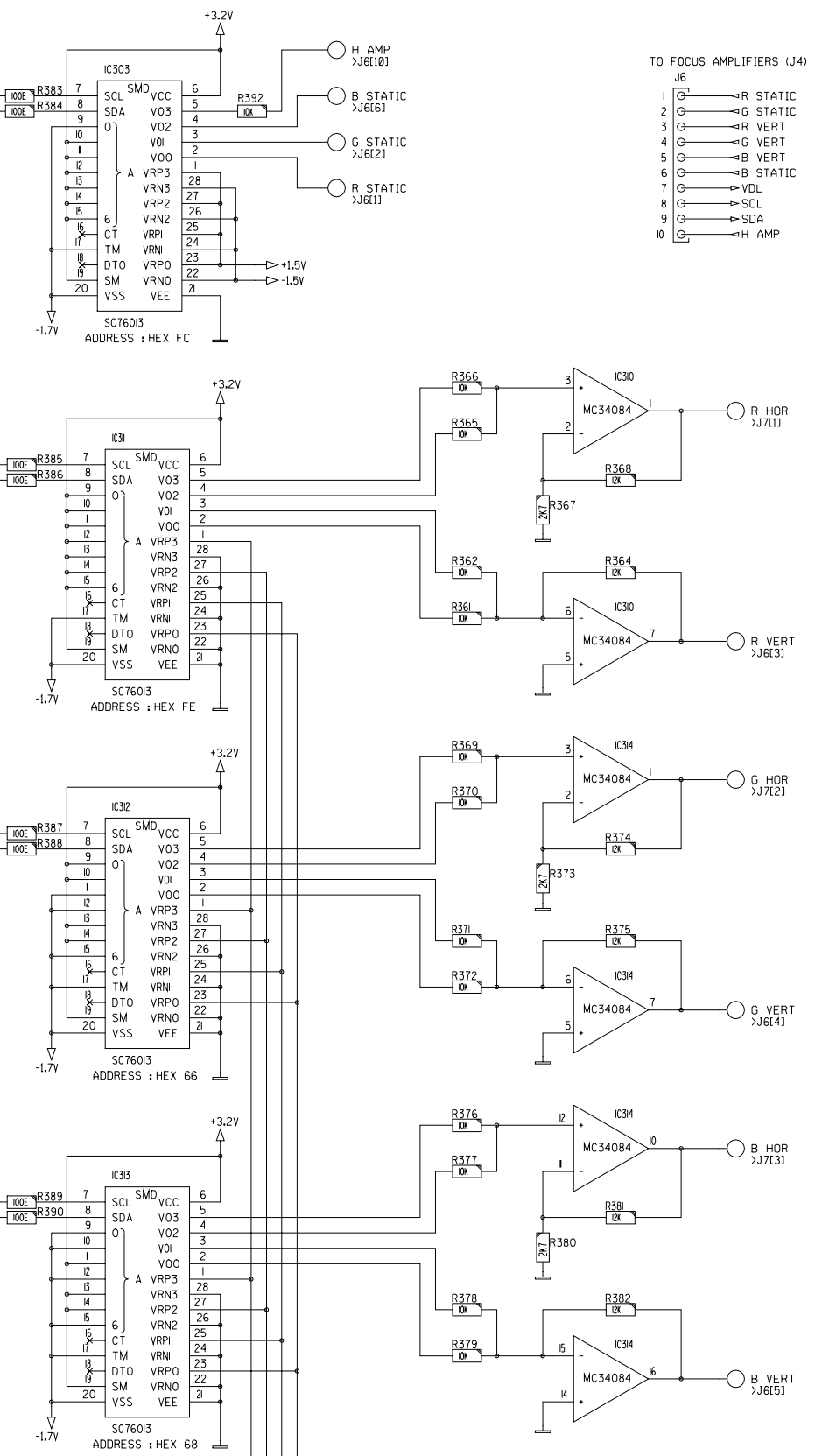
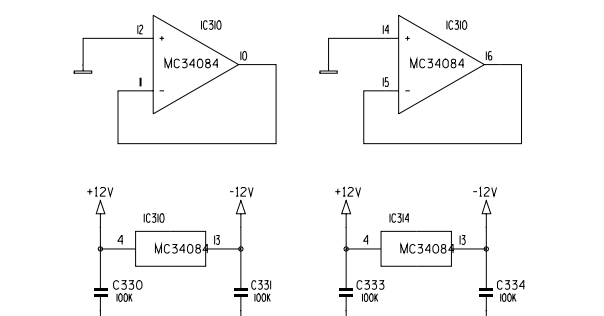
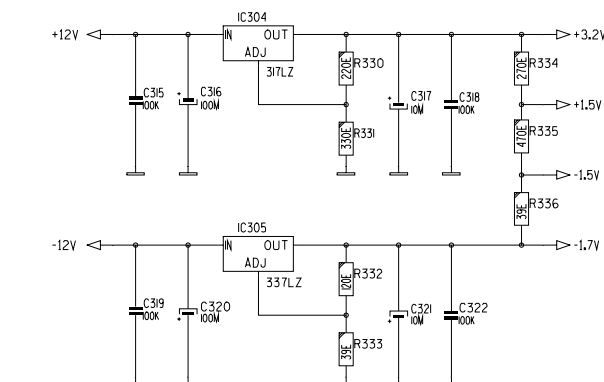
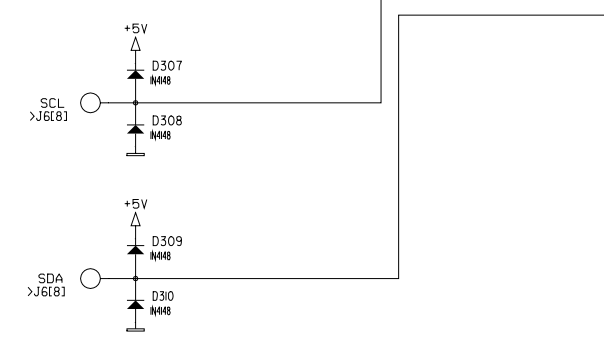


TO FOCUS AMPLIFIERS (J3)
 J5
 1 → LP
 2 → +FOCUS
 3 → +12V
 4 → -12V
 5 → DRIVER

Modifications reserved

Name	FOCUS + SHIFT SUB-UNIT	Sheet	1/2
Module No	R7522715	Index	- 2
PCB No	R700272	Rev	- 5
Date	04-03-1998	Drawn	JVDY
		Checked	WB

BARCO PROJECTION SYSTEMS



RIGHT
>SHEET1
LEFT
>SHEET1
TOP
>SHEET1
BOTTOM
>SHEET1

Modifications reserved

Name FOCUS + SHIFT SUB-UNIT		Sheet 2/2	
Module No R7522715	Index - 2	PCB No R780272	Rev - 5
Date 04-03-1998	Drawn JVDY	Checked WB	
BARCO PROJECTION SYSTEMS			

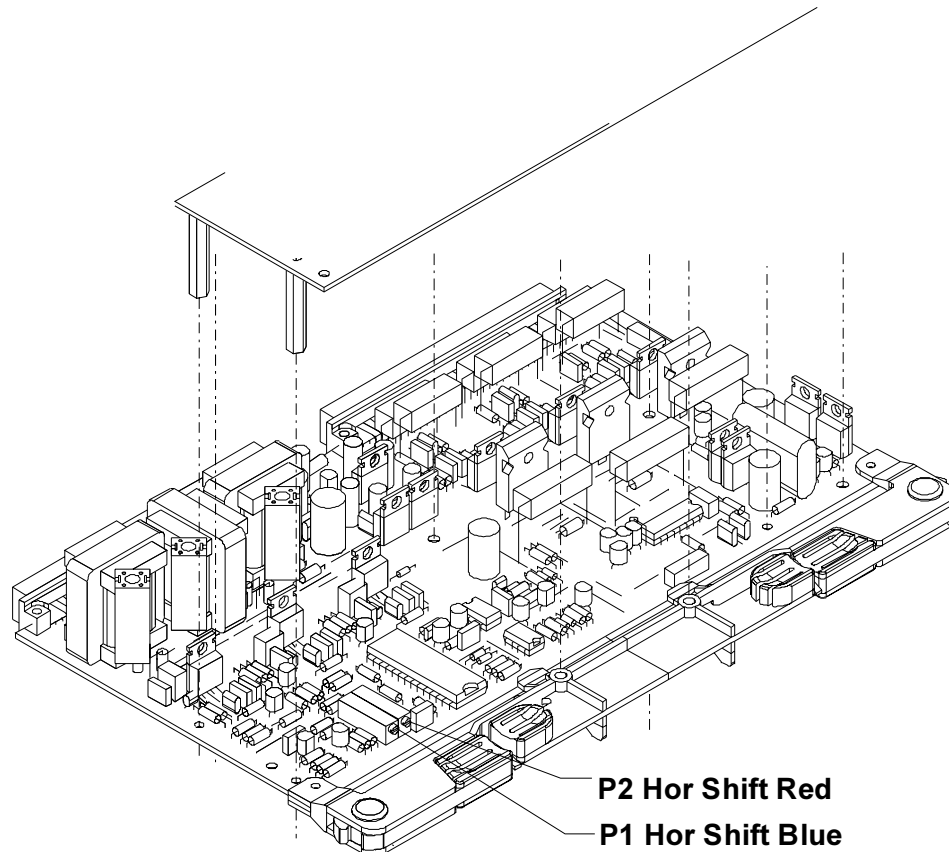
COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C300	D	3	R313	E	1
C301	D	4	R314	F	1
C302	E	4	R315	F	1
C303	C	2	R316	F	1
C304	D	1	R317	G	1
C305	D	1	R318	D	5
C306	D	2	R319	D	5
C307	F	1	R320	F	1
C308	C	6	R321	D	6
C309	D	5	R322	D	6
C310	D	5	R323	D	6
C311	D	6	R324	F	6
C312	A	5	R325	F	6
C313	F	5	R326	E	5
C314	D	3	R327	F	5
C315	A	3	R328	F	5
C316	B	3	R329	B	6
C317	B	3	R330	B	3
C318	B	3	R331	B	3
C319	A	3	R332	B	3
C320	B	3	R333	B	3
C321	B	3	R334	B	3
C322	B	3	R335	C	3
C323	B	1	R336	C	3
C324	C	2	R337	D	5
C325	F	3	R338	F	3
C326	F	3	R339	G	1
C327	H	2	R340	F	2
C328	A	5	R341	F	2
C329	A	5	R342	C	2
C330	A	5	R343	F	3
C331	B	5	R344	G	3
C332	C	1	R345	C	3
C333	B	5	R346	H	5
C334	B	5	R347	H	5
C335	H	1	R348	H	2
C401	B	4	R349	H	1
C402	A	4	R350	H	1
C403	B	5	R351	H	1
C404	B	4	R352	F	6
C405	A	5	R353	D	3
C406	B	4	R354	D	3
C409	B	5	R355	H	5
C411	A	5	R356	H	5
C412	B	6	R357	H	5
C419	F	1	R358	H	5
C420	A	2	R359	H	5
C421	A	2	R360	H	5
C422	C	2	R361	E	3
C423	B	2	R362	E	3
C424	C	3	R363	C	1
C425	B	3	R364	H	5
			R365	E	5
D300	E	4	R366	E	2
D301	F	1	R367	E	2
D302	G	5	R368	F	1
D303	F	1	R369	F	1
D304	H	2	R370	E	3
D305	H	1	R371	E	4
D306	D	4	R372	E	4
D307	A	1	R373	E	4
D308	A	1	R374	F	4
D309	A	2	R375	F	4
D310	A	2	R376	E	5
D400	B	4	R377	E	5
			R378	E	5
			R379	E	5
IC300	E	4	R380	E	5
IC300	G	5	R381	E	5
IC300	C	6	R382	C	1
IC300	C	6	R383	C	1
IC301	E	1	R384	C	1
IC302	E	5	R385	C	2
IC303	D	1	R386	C	2
IC304	B	2	R387	C	2
IC305	B	3	R388	C	4
IC306	B	1	R389	C	5
IC307	F	2	R390	C	5
IC307	A	6	R391	C	5
IC309	1	5	R392	D	1
IC309	1	5	R393	F	1
IC309	A	5	R394	A	2
IC309	A	5	R400	A	4
IC309	1	1	R401	A	4
IC309	1	2	R402	A	4
IC310	B	5	R403	B	4
IC310	A	5	R404	B	4
IC310	A	5	R405	A	4
IC310	F	3	R406	B	4
IC310	B	5	R407	B	4
IC310	F	2	R408	B	4
IC311	D	4	R409	C	5
IC312	D	4	R410	C	4
IC313	D	5	R411	A	4
IC314	B	5	R420	A	2
IC314	B	5	R421	A	2
IC314	B	5	R422	A	2
IC314	F	3	R423	B	2
IC314	F	4	R424	C	2
IC314	F	5	R425	C	3
IC401	C	4	R426	C	4
IC401	B	5	R427	B	3
IC402	F	6	R428	B	3
IC402	A	6	R429	A	3
IC403	B	2	R430	A	3
IC403	B	2	Z300	C	3
IC403	A	6	Z420	C	3
J5	A	1			
J6	F	1			
J7	G	1			
Q300	D	3			
Q301	D	4			
Q302	F	1			
Q303	G	1			
Q304	F	5			
Q306	G	1			
Q307	G	2			
Q308	G	3			
Q309	H	2			
Q310	H	1			
Q311	H	5			
Q312	H	5			
Q400	B	4			
Q401	B	4			
Q402	C	4			
Q420	B	2			
R300	D	3			
R301	D	3			
R302	D	3			
R303	D	4			
R304	D	4			
R305	D	1			
R306	D	1			
R307	D	1			
R308	D	1			
R309	D	1			
R310	D	2			
R311	D	2			
R312	E	2			

Adjustment procedure "MAGNETICAL FOCUS+SHIFT"

Introduction

The following adjustments are provided on the **main module**:

Horizontal SHIFT adjustment for RED - P2 and BLUE - P1 image



Adjustments

Horizontal SHIFT adjustment for RED and BLUE image

Note: the mentioned adjustments are Horizontal shift 'course' adjustments for the Red and Blue picture tube.

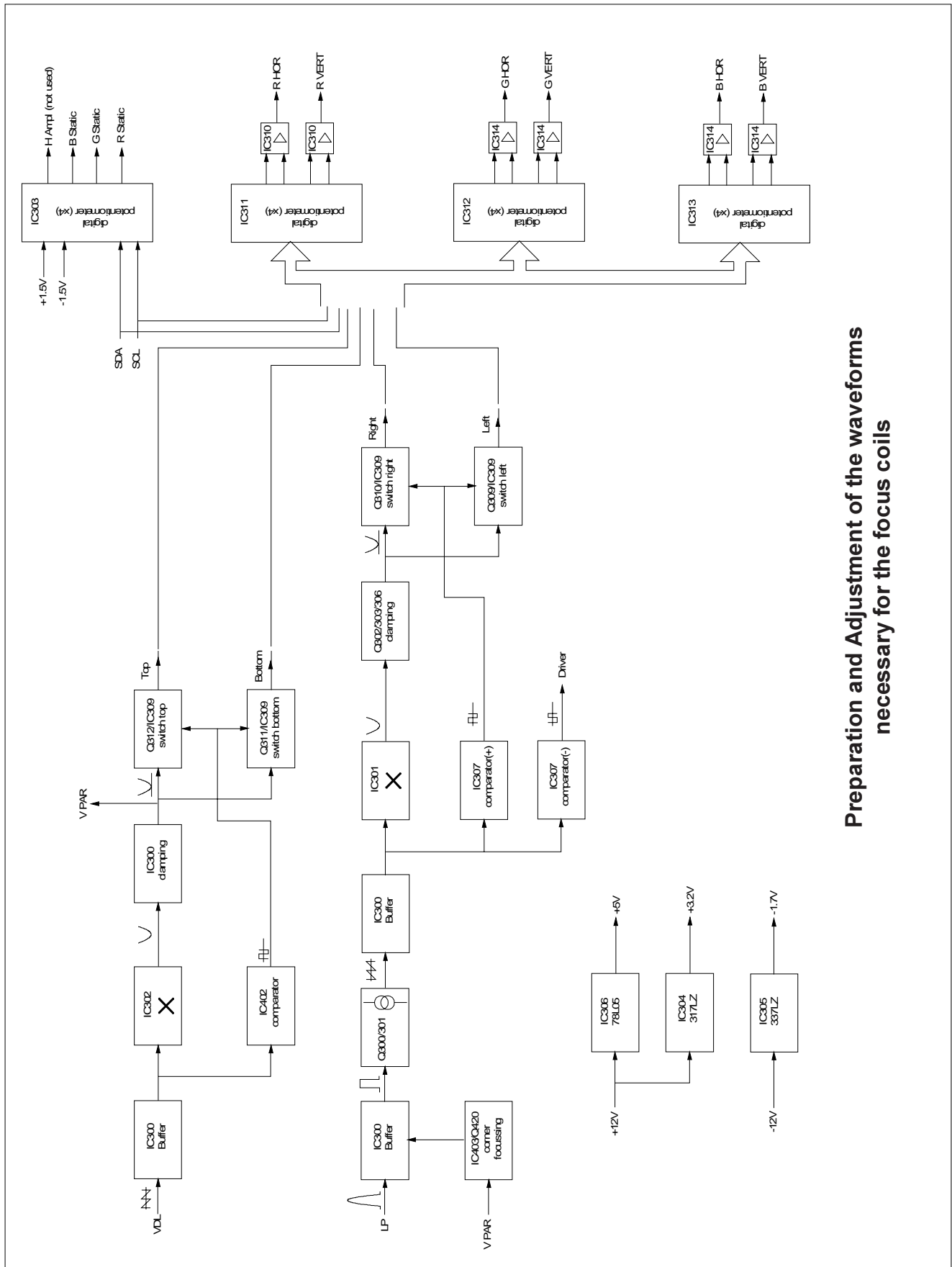
Preparation

Adjust the Horizontal raster centering controls for Red and Blue in their mid position by means of the Remote Control Unit. The numeric indicator under the respective bar scale indicates 50.

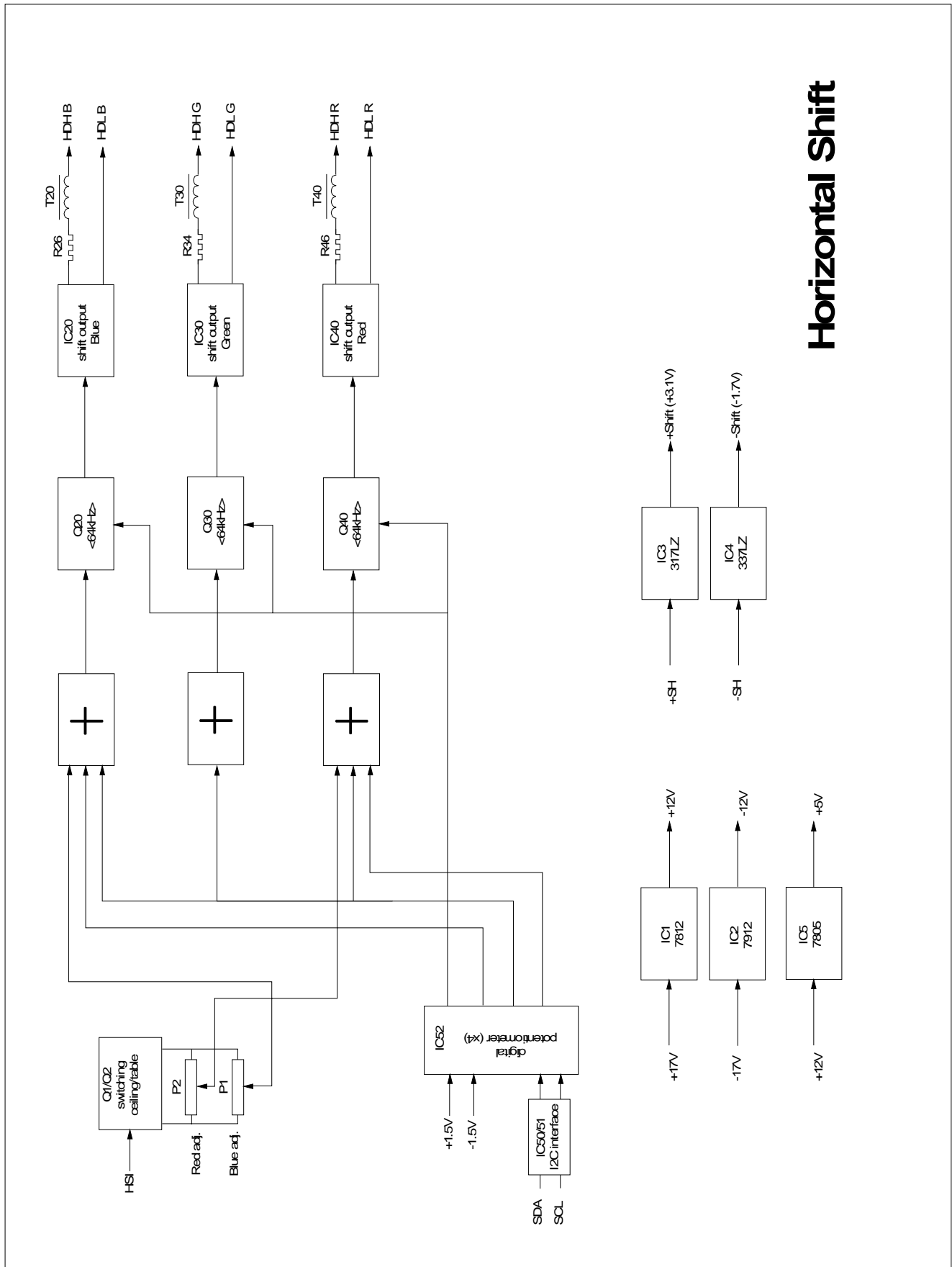
(Refer to the Owner's manual of the projector - Guided or Random adjustment mode).

Alignment

Use the Horizontal shift controls P2 for RED and P1 for BLUE to shift horizontally the Red and Blue image until the center coincides with the center of the Green image.

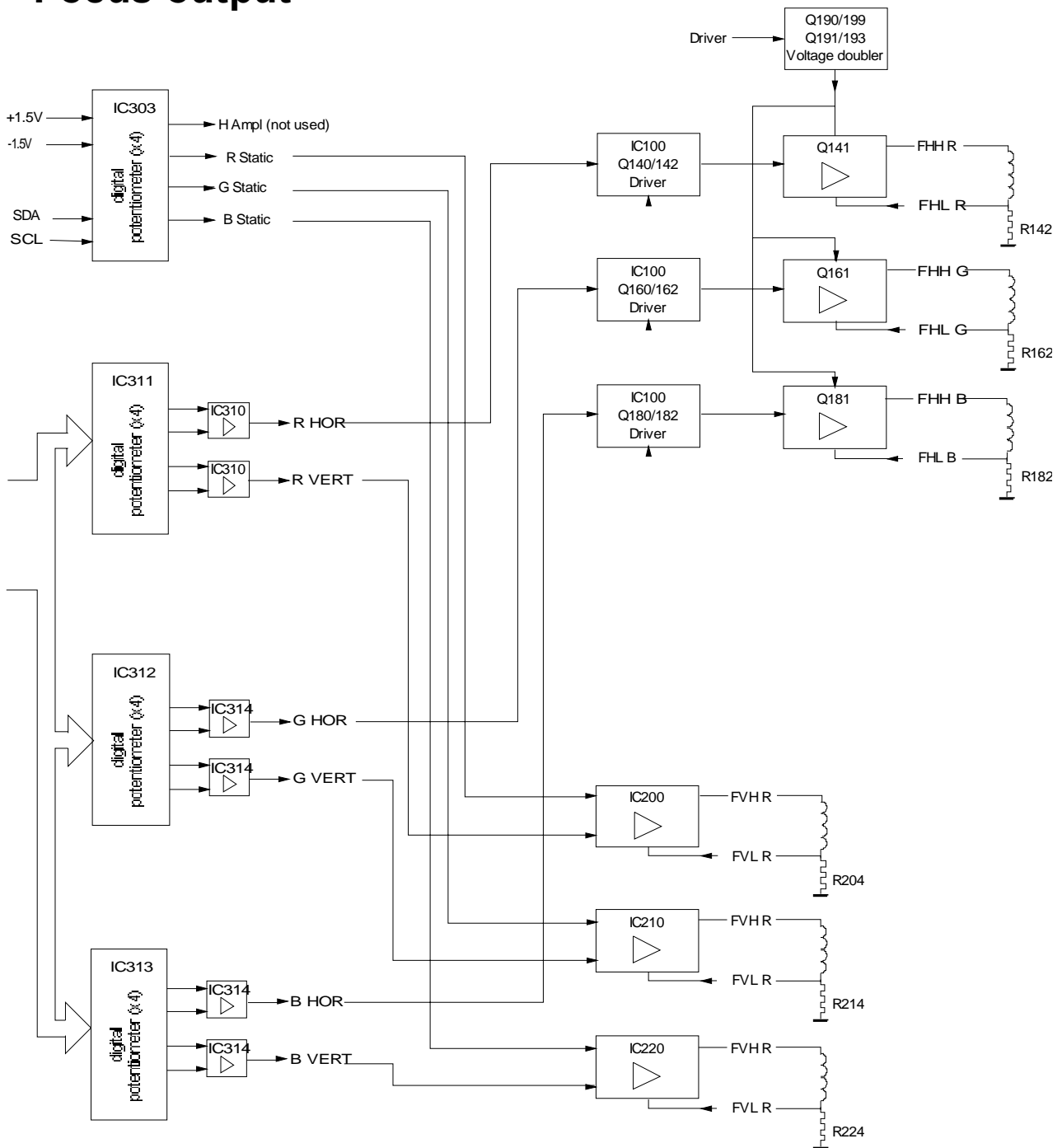


**Preparation and Adjustment of the waveforms
necessary for the focus coils**



Horizontal Shift

Focus output



TECHNICAL DESCRIPTION "FOCUS - SHIFT"

Introduction.

Two completely independent functions are performed on this board and its subunit, the electromagnetic focus and the horizontal shift.

On the main board we find the Horizontal shift circuits and the power stages to drive the focus coils.

The preparation and adjustment of the waveforms necessary for the focus coils are accomplished on the sub-unit.

To obtain an independent left/right and top/bottom adjustment of the electromagnetic focus, the waveforms are clamped during one half of a scan period.

A. Electromagnetic Focus principle.

In this form of focusing, a strong magnetic field produced by an electromagnet or a permanent magnet mounted behind the yoke on the neck of the CRT forces divergent electrons to take a helical (coil-like) path to reach the CRT faceplate. The helical path is usually only one turn long. With the proper magnetic field strength oppositely divergent electrons will move forward along coil-like paths that rotate in opposite directions and meet at the phosphor screen, thereby bringing the electrons together again to form a small spot.

a) At line frequency :

A sawtooth generator is built around Q300/301. C302 charges up via the variable (line tracked) current generator Q300, and discharges via Q301 when a horizontal pulse is sent to its base. This pulse starts slightly before the end of the horizontal scan in order to obtain sufficient energy at the start of the horizontal scanning. The trigger pulse is generated in two steps by the two monoflops of IC401. By an integration (= averaging) of the pulse train at the output pin 13, an automatic tracking of the trigger moment with the line frequency is got.

C302 then charges, and its rate of charge is determined by the condition of the current generator Q300. Q300 is supplied with the + FOCUS voltage from the SMPS, which is in some way proportional to the line frequency. A vertical parabola is added to this charging current via C422.

Because of this, a tracking of the amplitude sawtooth signal with the line and vertical frequencies is developed.

The sawtooth signal is now applied to :

- a multiplier IC301 in order to generate a symmetrical parabolic waveform, regardless of the line frequency.
- a level detector in IC307 pins 3, 2 and 1 to produce a left-right squarewave which is buffered by Q307 and feeds the switchers-clampers Q309 and Q310 with a correct DC level (note that Q307 is supplied with + / - 12 volts).
- the inverting input of another level detector of IC307, pin 6, to produce a left-right squarewave (DRIVER) opposite in phase to the one on pin 1 of IC307. This squarewave is used on the main board to boost up the supply voltage of the line power amplifiers during the second half of the horizontal scan (see further).

The parabolic signal from the multiplier, IC301 is buffered with Q302, clamped and buffered. The signal then goes to the non-inverting inputs of two voltage-followers in IC309 (MC34084).

Obviously, the clamper Q310 shorts to ground the parabolic waveform, during the first half of the horizontal scan, and Q309 shorts the signal during the second half of scan.

The buffered signals are now adjusted in amplitude with IC311, IC312 and IC313 for the three colours. The outputs are summed and sent to the power amplifiers on a suitable level.

b) At vertical frequency :

The vertical sawtooth "VDL" is DC coupled to a buffer IC308 pin 3 and then applied to :

- the multiplier IC302 to generate a vertical parabola.
The parabola is inverted with Q304, clamped, buffered, and feeds two buffers in IC309.
- a level detector IC308 input, pin 5, to produce a top-bottom squarewave. The output is buffered and feeds the clampers Q311 / Q312 with a correct DC level for grounding the input at either the top or bottom half of the raster.

The two remaining potentiometers of IC311, IC312, IC313 are used to adjust the top / bottom waveforms which are again summed and leave the subunit to be amplified by the power amplifiers on the main board.

c) Static or average focus (centre focus).

Three voltages **R STATIC** , **G STATIC** and **B STATIC** , adjustable between + / - 1.5 volts with potentiometers in IC303 are added to the feedback of the vertical focus power amplifiers.

d) Power amplifiers :

1. CORNER - H .

The left / right adjusted waveforms, summed on the subunit IC309 output, are now amplified to generate the required magnetic field for focusing of the beam during the horizontal scan. Because of the high scanning range, a good slew rate of these amplifiers is necessary. This is especially critical during the second part of the horizontal scan. This can be realised by boosting up the supply voltage during this time.

This boosting up of the +FOC voltage is got with the circuit around Q190 - 193. The squarewave drives the push-pull stage Q190 / Q191, which on its turn drives the MOSFETs Q192 - Q193 . The +FOC voltage is boosted up during the second part of the horizontal scan and is now referred to as **+V[DYN]**.

Three identical amplifier stages with feedback to the inverting input of the OPAMPs in IC100, deliver the required current to the horizontal focus coils.

2. CORNER - V / STATIC.

Since the vertical scanning frequencies are much lower than the horizontal frequencies, a TDA2030 may be used. For stability reasons, a similar feedback voltage is applied on the inverting input, together with a DC-voltage (=static, for the centre).

B. Horizontal SHIFT

The +/- SHIFT voltages are not returned to chassis ground, but to the HDL (Horizontal Deflection Low, which is basically HTHD). Therefore, the adjusted shift voltages may not be referenced to chassis ground, but to the same HDL.

The digital potentiometer IC (IC52) has to be supplied with the +/- SHIFT voltages from the SMPS.

The I2C-bus lines SDA and SCL must drive the above-mentioned chip via an isolation circuit, using an opto-coupler.

The opto-coupler IC50 is used to isolate the SDA and SCL lines, referenced to a cold (chassis) ground, from the shift circuits in IC52.

The SCL pulses are sent to pin 1 of IC52 via an opto-coupler in IC50, whereas the SDA data line is connected with pin 2 through the other opto-coupler in IC50.

At the moment an "Acknowledgment" bit is returned to the Controller, another opto-coupler IC51 takes over. To avoid a return to IC52 via the first opto-coupler, MOSFETs are automatically switched on and off.

The HSI (Horizontal Scan Identification) information from one of the horizontal scan switches on the "Scan Switching" module, allows an inversion of the supply voltages for the multiturn potentiometers P1 and P2. These potentiometers are the factory set *coarse alignments* of the shift, to be adjusted prior to the digital control.

The SHIFT voltages control an average DC current through the horizontal yoke windings in order to horizontally shift the rasters.

Electromagnetic Focus+Hor Shift

Sub module

R762271
R762271S

Parts listing 76 2271 CPL

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
	R762271S	UN M_F+SH PJ51 G1200 VH/P	1	C 34	R113724	C POMERA 100N K 63E2	
130	R133039	SPR L 8 D 4 D 1.2 C	28	C 35	R113732	C POMERA 470N K 63E2	
10	R133063	Q ACC ISO MICA SOT93	14	C 40	R112735	C CE MI 470P K100E2	
310	R3153151	J RVT MBT D 2.3L13	6	C 41	R112739	C CE MI 1N K100E2	
	R348320	CD SLDRLUG D3,240	1	C 42	R113724	C POMERA 100N K 63E2	
	R34840313	CD CT FTMT P 3 90	1	C 43	R113724	C POMERA 100N K 63E2	
	R34840612	CD CT FTMT P 6 80	1	C 44	R113724	C POMERA 100N K 63E2	
	R3484100	CD CT FTMT P10 110	1	C 45	R113732	C POMERA 470N K 63E2	
60	R3620127	SCR D84 M 2.5X 6 SI	6	C 50	R113724	C POMERA 100N K 63E2	
70	R3626726	SCR D921 M 3 X 16 SI	3	C 51	R113724	C POMERA 100N K 63E2	
50	R3631049	SCR D933 M 3 X 6 XIC	1	C 52	R112774	C CE MI 100N S 63E2	
80	R3631059	SCR D933 M 3 X 8 XIC	4	C 53	R1122415	C NPO MI 82P J 63E2	
40	R3631089	SCR D933 M 3 X 16 XIC	9	C 54	R113724	C POMERA 100N K 63E2	
45	R3631099	SCR D933 M 3 X 20 XIC	3	C 55	R112364	C N750MI 150P J 63E2	
160	R366988	NUT I SOUTH M 3 X0.5	3	C190	R113730	C POMERA 330N K 63E2	
100	R367528	WSHR D6798 A 2.7 S Z	6	C191	R113730	C POMERA 330N K 63E2	
150	R367699	RVT CHB D2.38L6.35 P A	6	C192	R1113889	C EL RA 47M M100E2 85	1
210	R721620	SPR L 5 D 8 D 3 P	2	C193	R114144	C POMERA 1M K250E9	1
140	R722276	LOCK PJ49 PCB UNCPL	1	C194	R112774	C CE MI 100N S 63E2	
300	R780298	PCDPJ51 G1200M_FOC PROT	1	C195	R112774	C CE MI 100N S 63E2	
120	R801277	SPR L22 D 5 M 2.5 B	3	C196	R1113889	C EL RA 47M M100E2 85	1
25	R804674	Q ACC SPG 1XM3 SHORT	2	C197	R111531	C EL RA 10M M 35E2 85	
30	R804831	Q ACC SPG 1X 3.1 LONG	3	C198	R111531	C EL RA 10M M 35E2 85	
20	R804832	Q ACC SPG 1XM3 LONG	8	C200	R112743	C CE MI 2N2K100E2	
170	R804998	FRMPJ51 G12 FOC SCR N	1	C201	R113724	C POMERA 100N K 63E2	
200	R805835	FRMPJ56 G808 FOC HTSNK 1	1	C202	R113724	C POMERA 100N K 63E2	
190	R805836	FRMPJ56 G808 FOC HTSNK 2	2	C203	R113724	C POMERA 100N K 63E2	
180	R805839	FRMPJ56 G808 E FOC BRKT	1	C204	R112743	C CE MI 2N2K100E2	
C 1	R112774	C CE MI 100N S 63E2		C210	R112743	C CE MI 2N2K100E2	
C 2	R111477	C EL RA 100M Z 25E2 85		C211	R113724	C POMERA 100N K 63E2	
C 3	R112774	C CE MI 100N S 63E2		C212	R113724	C POMERA 100N K 63E2	
C 4	R111477	C EL RA 100M Z 25E2 85		C213	R113724	C POMERA 100N K 63E2	
C 5	R112774	C CE MI 100N S 63E2		C214	R112743	C CE MI 2N2K100E2	
C 6	R112774	C CE MI 100N S 63E2		C220	R112743	C CE MI 2N2K100E2	
C 7	R111479	C EL RA 470M Z 25E2 85	1	C221	R113724	C POMERA 100N K 63E2	
C 8	R111479	C EL RA 470M Z 25E2 85	1	C222	R113724	C POMERA 100N K 63E2	
C 9	R111531	C EL RA 10M M 35E2 85		C223	R113724	C POMERA 100N K 63E2	
C 10	R111531	C EL RA 10M M 35E2 85		C224	R112743	C CE MI 2N2K100E2	
C 11	R112774	C CE MI 100N S 63E2		D 20	R131637	D R BA158 600400 DO7	1
C 12	R112774	C CE MI 100N S 63E2		D 21	R131637	D R BA158 600400 DO7	
C 13	R111478	C EL RA 220M M 25E2 85	1	D 30	R131637	D R BA158 600400 DO7	1
C 14	R112774	C CE MI 100N S 63E2		D 31	R131637	D R BA158 600400 DO7	1
C 15	R111478	C EL RA 220M M 25E2 85	1	D 40	R131637	D R BA158 600400 DO7	1
C 16	R112774	C CE MI 100N S 63E2		D 41	R131637	D R BA158 600400 DO7	1
C 17	R111458	C EL RA 470M Z 10E2 85	1	D 50	R131621	D S 1N4148 075150 DO35	
C 18	R111468	C EL RA 470M Z 16E2 85	1	D 51	R131621	D S 1N4148 075150 DO35	
C 19	R111468	C EL RA 470M Z 16E2 85	1	D 52	R131621	D S 1N4148 075150 DO35	
C 20	R112735	C CE MI 470P K100E2		D 53	R131621	D S 1N4148 075150 DO35	
C 21	R112739	C CE MI 1N K100E2		D 54	R1316361	D Y BAT85 030200 DO35	1
C 22	R113724	C POMERA 100N K 63E2		D 55	R1316361	D Y BAT85 030200 DO35	1
C 23	R113724	C POMERA 100N K 63E2		D 56	R1316361	D Y BAT85 030200 DO35	1
C 24	R113724	C POMERA 100N K 63E2		D 57	R1316361	D Y BAT85 030200 DO35	1
C 25	R113732	C POMERA 470N K 63E2		D140	R131637	D R BA158 600400 DO7	1
C 30	R112735	C CE MI 470P K100E2		D141	R131621	D S 1N4148 075150 DO35	
C 31	R112739	C CE MI 1N K100E2		D160	R131637	D R BA158 600400 DO7	1
C 32	R113724	C POMERA 100N K 63E2		D161	R131621	D S 1N4148 075150 DO35	
C 33	R113724	C POMERA 100N K 63E2		D180	R131637	D R BA158 600400 DO7	1
				D181	R131621	D S 1N4148 075150 DO35	
				D192	R131954	D R BYW29 20008A TO220	1
				D193	R131954	D R BYW29 20008A TO220	1
				D200	R131637	D R BA158 600400 DO7	1
				D201	R131637	D R BA158 600400 DO7	1
				D210	R131637	D R BA158 600400 DO7	1
				D211	R131637	D R BA158 600400 DO7	1

Electromagnetic Focus+Hor Shift

Sub module

R762271
R762271S

D220	R131637	D R BA158 600400 DO7	1	R 18	R1011059	R CFFH 2E7 J 0W25	1
D221	R131637	D R BA158 600400 DO7	1	R 19	R1011129	R CFFH 10E J 0W25	
I 1	R134002	U 7812 TO220 P	1	R 20	R101158	R CF H 68K J 0W25	
I 2	R134016	U 7912 TO220 P	1	R 21	R101160	R CF H100K J 0W25	
I 3	R134028	U 317LZ LM TO92 P	1	R 22	R101168	R CF H470K J 0W25	
I 4	R134029	U 337LZ TO92 P	1	R 23	R101156	R CF H 47K J 0W25	
I 5	R134001	U 7805 TO220 P	1	R 24	R101112	R CF H 10E J 0W25	
I20	R132751	U 2030V TDA TO220T P	1	R 25	R101148	R CF H 10K J 0W25	
I30	R132751	U 2030V TDA TO220T P	1	R 26	R104212	R WW V 4E7 K 7W	1
I40	R132751	U 2030V TDA TO220T P	1	R 27	R101142	R CF H 3K3 J 0W25	
I50	R131684	U 2630 HCPL DIP8 P	1	R 28	R101153	R CF H 27K J 0W25	
I51	R131683	U 2601 HCPL DIP8 P	1	R 30	R101160	R CF H100K J 0W25	
I52	R132833	U 76013 SC DIP28 P	1	R 31	R101156	R CF H 47K J 0W25	
I100	R134125	U 34084 DIP14 P	1	R 32	R101112	R CF H 10E J 0W25	
I200	R132751	U 2030V TDA TO220T P	1	R 33	R101148	R CF H 10K J 0W25	
I210	R132751	U 2030V TDA TO220T P	1	R 34	R104212	R WW V 4E7 K 7W	1
I220	R132751	U 2030V TDA TO220T P	1	R 37	R101142	R CF H 3K3 J 0W25	
J 1	R313525	JEUR2CMBS P64 E1C2S 1,6	1	R 38	R101153	R CF H 27K J 0W25	
J 2	R313525	JEUR2CMBS P64 E1C2S 1,6	1	R 40	R101160	R CF H100K J 0W25	
P 1	R107534	R MCE H100K K 0W75 M20SS	1	R 41	R101158	R CF H 68K J 0W25	
P 2	R107534	R MCE H100K K 0W75 M20SS	1	R 42	R101168	R CF H470K J 0W25	
PC	R780134	PCSPJ51 G1200M_FOC+SHF	1	R 43	R101156	R CF H 47K J 0W25	
Q 1	R1314181	Q BC559B P SS TO92		R 44	R101112	R CF H 10E J 0W25	
Q 2	R1314181	Q BC559B P SS TO92		R 45	R101148	R CF H 10K J 0W25	
Q 20	R131411	Q BC549C N SS TO92		R 46	R104212	R WW V 4E7 K 7W	1
Q 30	R131411	Q BC549C N SS TO92		R 47	R101142	R CF H 3K3 J 0W25	
Q 40	R131411	Q BC549C N SS TO92		R 48	R101153	R CF H 27K J 0W25	
Q 50	R132916	Q BS250 FN SS TO92	1	R 50	R101144	R CF H 4K7 J 0W25	
Q 51	R132916	Q BS250 FN SS TO92	1	R 51	R101130	R CF H330E J 0W25	
Q 52	R1329105	Q BS170 FN SS TO92	1	R 52	R101144	R CF H 4K7 J 0W25	
Q 53	R132916	Q BS250 FN SS TO92	1	R 53	R101130	R CF H330E J 0W25	
Q 54	R1329105	Q BS170 FN SS TO92	1	R 54	R101152	R CF H 22K J 0W25	
Q140	R131411	Q BC549C N SS TO92		R 55	R101132	R CF H470E J 0W25	
Q141	R132900	Q BUZ310 FN P TO218	1	R 56	R101130	R CF H330E J 0W25	
Q142	R1314182	Q BC559C P SS TO92		R 57	R101132	R CF H470E J 0W25	
Q160	R131411	Q BC549C N SS TO92		R 58	R101144	R CF H 4K7 J 0W25	
Q161	R132900	Q BUZ310 FN P TO218	1	R 59	R101132	R CF H470E J 0W25	
Q162	R1314182	Q BC559C P SS TO92		R 61	R101152	R CF H 22K J 0W25	
Q180	R131411	Q BC549C N SS TO92		R 62	R101119	R CF H 39E J 0W25	
Q181	R132900	Q BUZ310 FN P TO218	1	R 63	R101132	R CF H470E J 0W25	
Q182	R1314182	Q BC559C P SS TO92		R 64	R101129	R CF H270E J 0W25	
Q190	R131411	Q BC549C N SS TO92	1	R 65	R101556	R MF H 47K F 0W4 E3	
Q191	R1314182	Q BC559C P SS TO92		R140	R101136	R CF H 1K J 0W25	
Q192	R132942	Q IRF9630 FPP TO220	1	R141	R103742	R WW H 1K5 K 5W	1
Q193	R132941	Q IRF632 FN P TO220	1	R142	R103620	R WW H 4E7 K 4W	1
R 1	R101124	R CF H100E J 0W25		R143	R100124	R CF V100E J 0W25 E2	
R 2	R101124	R CF H100E J 0W25		R160	R100136	R CF V 1K J 0W25 E2	
R 3	R101126	R CF H150E J 0W25		R161	R103742	R WW H 1K5 K 5W	1
R 4	R101128	R CF H220E J 0W25		R162	R103620	R WW H 4E7 K 4W	1
R 5	R101123	R CF H 82E J 0W25		R163	R100124	R CF V100E J 0W25 E2	
R 6	R101128	R CF H220E J 0W25		R180	R101136	R CF H 1K J 0W25	
R 7	R101152	R CF H 22K J 0W25		R181	R103742	R WW H 1K5 K 5W	1
R 8	R101148	R CF H 10K J 0W25		R182	R103620	R WW H 4E7 K 4W	1
R 9	R101154	R CF H 33K J 0W25		R183	R101124	R CF H100E J 0W25	
R 10	R101137	R CF H 1K2 J 0W25		R191	R101144	R CF H 4K7 J 0W25	
R 11	R101140	R CF H 2K2 J 0W25	1	R192	R103612	R WW H 1E K 4W	1
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R 14	R101137	R CF H 1K2 J 0W25		R195	R101148	R CF H 10K J 0W25	
R 15	R101140	R CF H 2K2 J 0W25	1	R196	R101148	R CF H 10K J 0W25	
R 16	R104654	R HV H 1M J 0W5 3500	1	R197	R101148	R CF H 10K J 0W25	
R 17	R1011059	R CFFH 2E7 J 0W25	1	R198	R1011917	R CFFH E22K 0W4	1
				R200	R101141	R CF H 2K7 J 0W25	
				R201	R101145	R CF H 5K6 J 0W25	
				R202	R101112	R CF H 10E J 0W25	
				R204	R103620	R WW H 4E7 K 4W	1
				R205	R101148	R CF H 10K J 0W25	
				R210	R101141	R CF H 2K7 J 0W25	

Electromagnetic Focus+Hor Shift

Sub module

R762271
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R211	R101145	R CF H 5K6 J 0W25		R224	R103620	R WW H 4E7 K 4W	1
R212	R101112	R CF H 10E J 0W25		R225	R101148	R CF H 10K J 0W25	
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R220	R101141	R CF H 2K7 J 0W25		T 30	R774312	COIL SHF PJ49 G800	1
R221	R101145	R CF H 5K6 J 0W25		T 40	R774312	COIL SHF PJ49 G800	1
R222	R101112	R CF H 10E J 0W25					

Parts listing 76 2271S

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
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C302	R115928	C PP RA 3N3J 63E2	1	D305	P234055	D#BAT54 SCH SOT23	1
C303	P212031	C# TA 22M M 16 7343	1	D306	P234099	D#4148 R DMMELF	1
C304	P210049	C# X7R MU 220N K 50 1808	1	D307	P234099	D#4148 R DMMELF	1
C305	P210049	C# X7R MU 220N K 50 1808	1	D308	P234099	D#4148 R DMMELF	1
C306	P210010	C# COG MU 68P J 50 1206	1	D309	P234099	D#4148 R DMMELF	1
C307	R111546	C EL RA 1M M 50E2 85	1	D310	P234099	D#4148 R DMMELF	1
C308	P212031	C# TA 22M M 16 7343	1	D400	P234055	D#BAT54 SCH SOT23	1
C309	R111476	C EL RA 47M M 25E2 85	1				
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C311	P210010	C# COG MU 68P J 50 1206	1	I301	R1327655	U 1496 MC DIP14 P	1
C312	R114685	C PO RA 6N8K100E2 KT	1	I302	R1327655	U 1496 MC DIP14 P	1
C313	P210122	C# X7R MU 100N K 50 1206	1	I303	P230653	U#76013 SC SOL28 P	1
C314	R1113889	C EL RA 47M M100E2 85	1	I304	R134028	U 317LZ LM TO92 P	1
C315	P210122	C# X7R MU 100N K 50 1206	1	I305	R134029	U 337LZ TO92 P	1
C316	R111466	C EL RA 100M Z 16E2 85	1	I306	R134032	U 78L05 TO92 P	1
C317	P212024	C# TA 10M M 35 7343	1	I307	P230028	U#393 LM SO8 P	1
C318	P210122	C# X7R MU 100N K 50 1206	1	I308	P230028	U#393 LM SO8 P	1
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C320	R111466	C EL RA 100M Z 16E2 85	1	I310	P230705	U#34084 MC SOL16 P	1
C321	P212024	C# TA 10M M 35 7343	1	I311	P230653	U#76013 SC SOL28 P	1
C322	P210122	C# X7R MU 100N K 50 1206	1	I312	P230653	U#76013 SC SOL28 P	1
C323	P210122	C# X7R MU 100N K 50 1206	1	I313	P230653	U#76013 SC SOL28 P	1
C324	P210095	C# X7R MU 330N M 50 1812	1	I314	P230705	U#34084 MC SOL16 P	1
C325	P210122	C# X7R MU 100N K 50 1206	1	I401	P230073	U#74HCT123 SO16 I	1
C326	P210122	C# X7R MU 100N K 50 1206	1	I402	P230293	U#082 TL SO8 P	1
C327	R112237	C NPO MI 39P G 63E2	1	I403	P230293	U#082 TL SO8 P	1
C328	P210122	C# X7R MU 100N K 50 1206	1				
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C330	P210122	C# X7R MU 100N K 50 1206	1	J 6	R313950	JCT H MBS P 10 M2SN	1
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C403	P210122	C# X7R MU 100N K 50 1206	1	Q303	P232101	Q#BC859C P SS SOT23	1
C404	R1115915	C EL5 RA 4M7M 35E2 85	1	Q304	P232101	Q#BC859C P SS SOT23	1
C405	R111546	C EL RA 1M M 50E2 85	1	Q306	P232004	Q#BC849C N SS SOT23	1
C406	R115932	C PP RA 4N7J 63E2	1	Q307	P232033	Q#BSV52 N SS SOT23	1
C409	P210122	C# X7R MU 100N K 50 1206	1	Q308	P232033	Q#BSV52 N SS SOT23	1
C411	P210122	C# X7R MU 100N K 50 1206	1	Q309	P232118	Q#BSS87 F SS SOT89	1
C412	P210122	C# X7R MU 100N K 50 1206	1	Q310	P232158	Q#BF824 P SS SOT23	1
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C421	P210148	C# Y5V MU 470N Z 50 1206	1	Q312	P232050	Q#BC857B P SS SOT23	1
C422	P212024	C# TA 10M M 35 7343	1	Q400	P232004	Q#BC849C N SS SOT23	1
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C424	P212024	C# TA 10M M 35 7343	1	Q402	P232004	Q#BC849C N SS SOT23	1
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D302	P234099	D#4148 R DMMELF	1	R302	P200095	R# CE H 8K2 J 0W12 1206	1
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Electromagnetic Focus+Hor Shift

Sub module

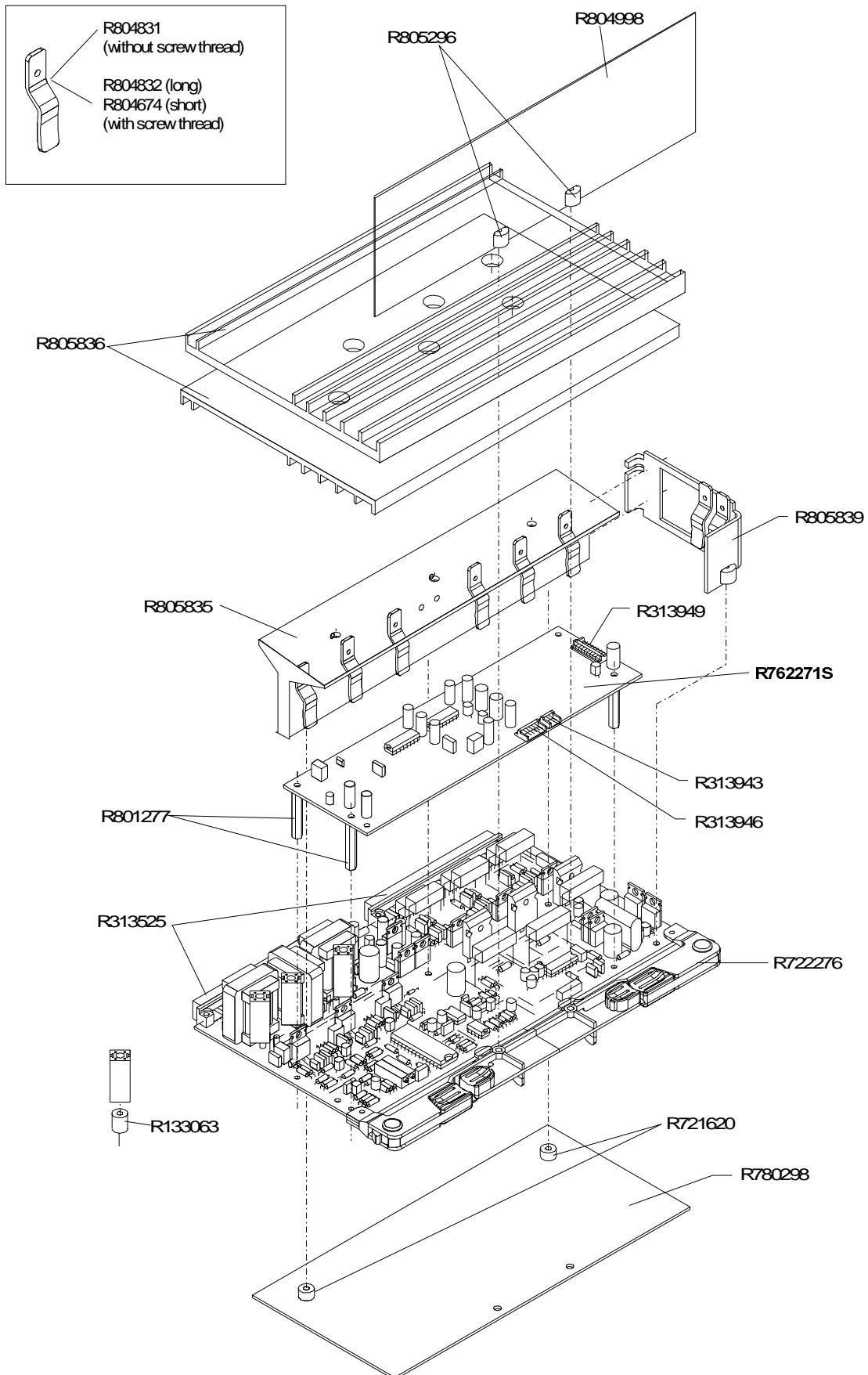
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R762271S

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Electromagnetic Focus+Hor Shift

Sub module

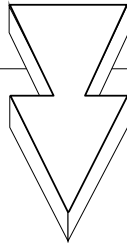
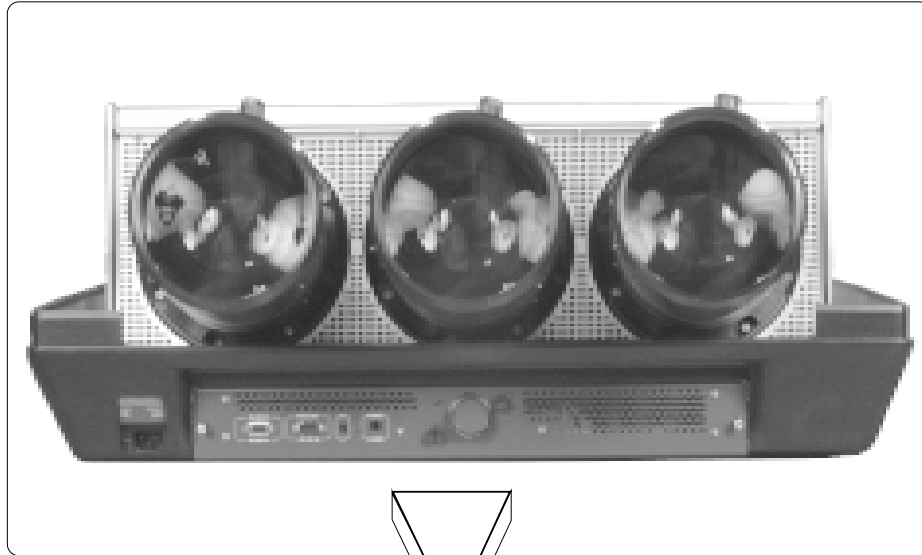
R762271
R762271S



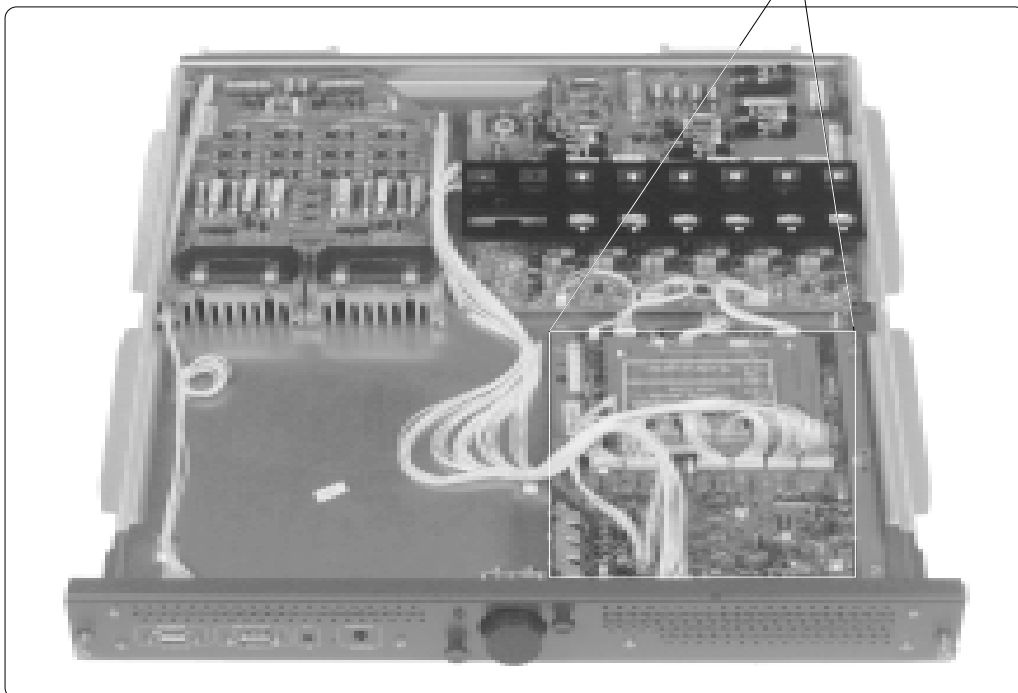
Convergence DRIVER module

GREEN Convergence module

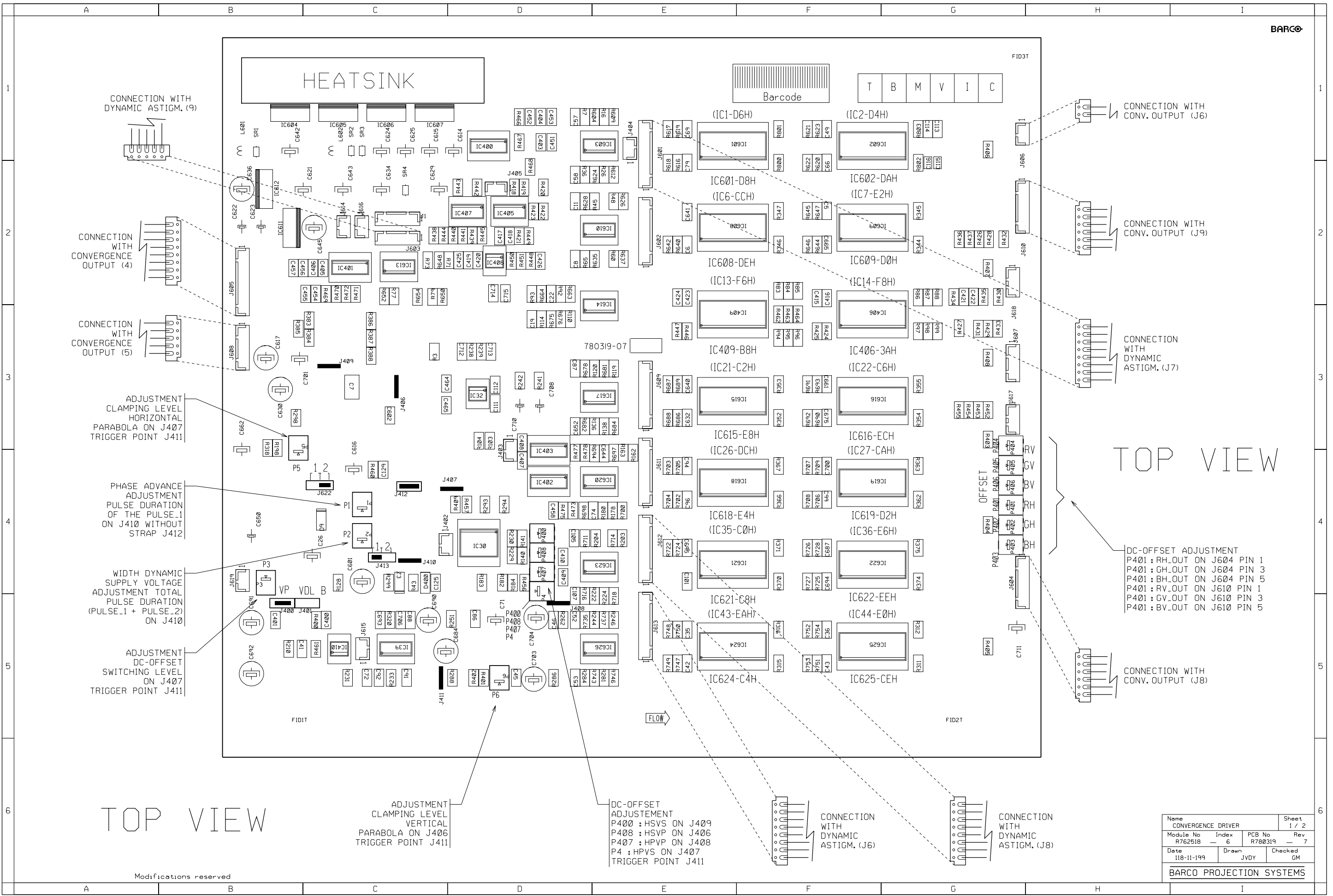
R762518
R7625128



**Convergence Driver
module R762518**



R762518_r00



CONNECTION WITH DYNAMIC ASTIGM. (9)

CONNECTION WITH CONVERGENCE OUTPUT (4)

CONNECTION WITH CONVERGENCE OUTPUT (5)

ADJUSTMENT CLAMPING LEVEL HORIZONTAL PARABOLA ON J407 TRIGGER POINT J411

PHASE ADVANCE ADJUSTMENT PULSE DURATION OF THE PULSE_1 ON J410 WITHOUT STRAP J412

WIDTH DYNAMIC SUPPLY VOLTAGE ADJUSTMENT TOTAL PULSE DURATION (PULSE_1 + PULSE_2) ON J410

ADJUSTMENT DC-OFFSET SWITCHING LEVEL ON J407 TRIGGER POINT J411

ADJUSTMENT CLAMPING LEVEL VERTICAL PARABOLA ON J406 TRIGGER POINT J411

DC-OFFSET ADJUSTMENT P400 : HVS ON J409 P408 : HSPV ON J406 P407 : HPVP ON J408 P4 : HPVS ON J407 TRIGGER POINT J411

CONNECTION WITH DYNAMIC ASTIGM. (J6)

CONNECTION WITH DYNAMIC ASTIGM. (J8)

CONNECTION WITH CONV. OUTPUT (J6)

CONNECTION WITH CONV. OUTPUT (J9)

CONNECTION WITH DYNAMIC ASTIGM. (J7)

DC-OFFSET ADJUSTMENT P401 : RH_OUT ON J604 PIN 1 P401 : GH_OUT ON J604 PIN 3 P401 : BH_OUT ON J604 PIN 5 P401 : RV_OUT ON J610 PIN 1 P401 : GV_OUT ON J610 PIN 3 P401 : BV_OUT ON J610 PIN 5

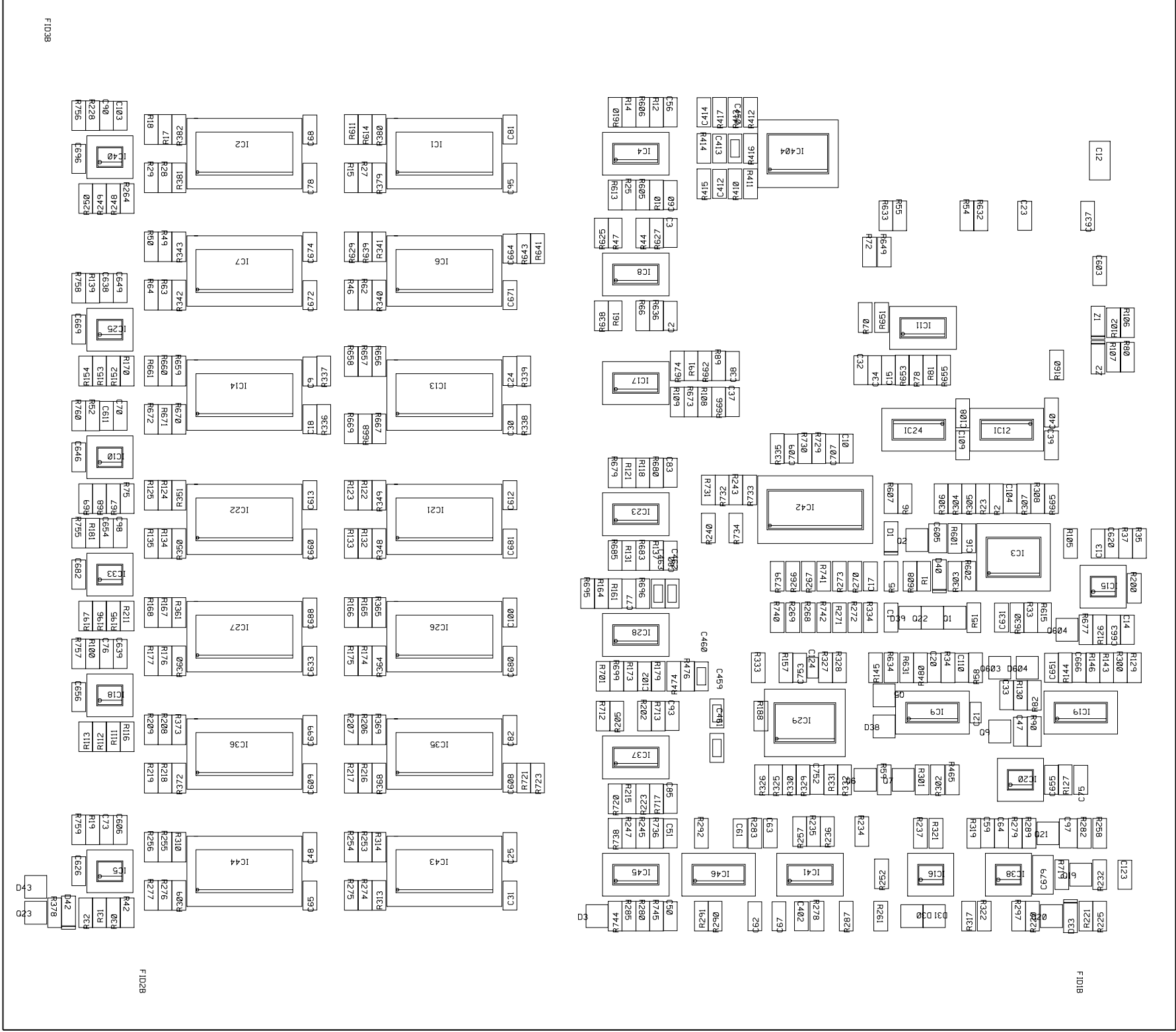
CONNECTION WITH CONV. OUTPUT (J8)

TOP VIEW

TOP VIEW

Modifications reserved

Name		Sheet	
CONVERGENCE DRIVER		1 / 2	
Module No	Index	PCB No	Rev
R762518	6	R780319	7
Date	Drawn	Checked	
118-11-199	JVDY	GM	
BARCO PROJECTION SYSTEMS			



BOTTOM VIEW

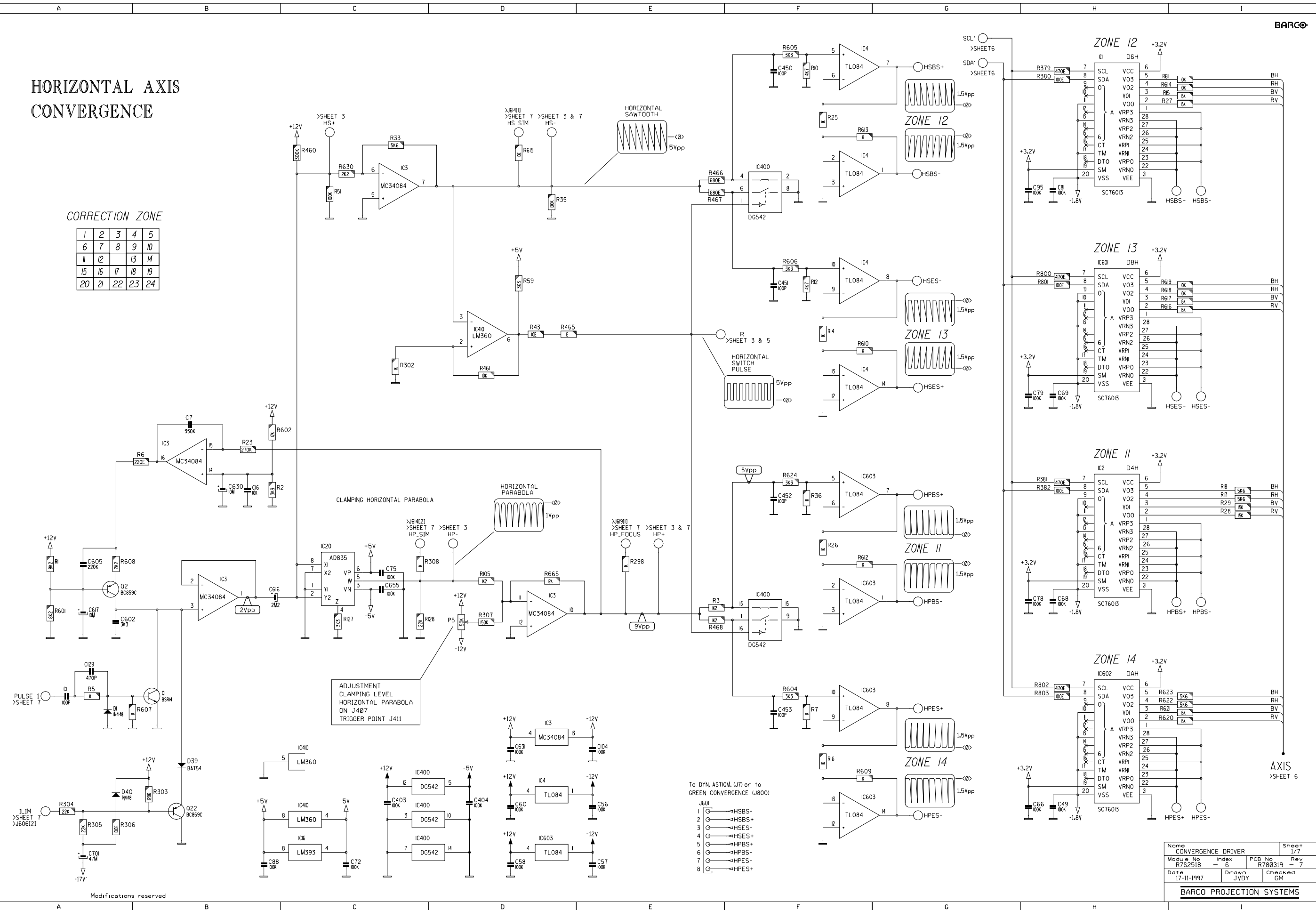
Name CONVERGENCE DRIVER		Sheet 2 / 2	
Module No R762518	Index 6	PCB No R780319	Rev 7
Date 118-11-199	Drawn JVYD	Checked GM	
BARCO PROJECTION SYSTEMS			

Modifications reserved

HORIZONTAL AXIS CONVERGENCE

CORRECTION ZONE

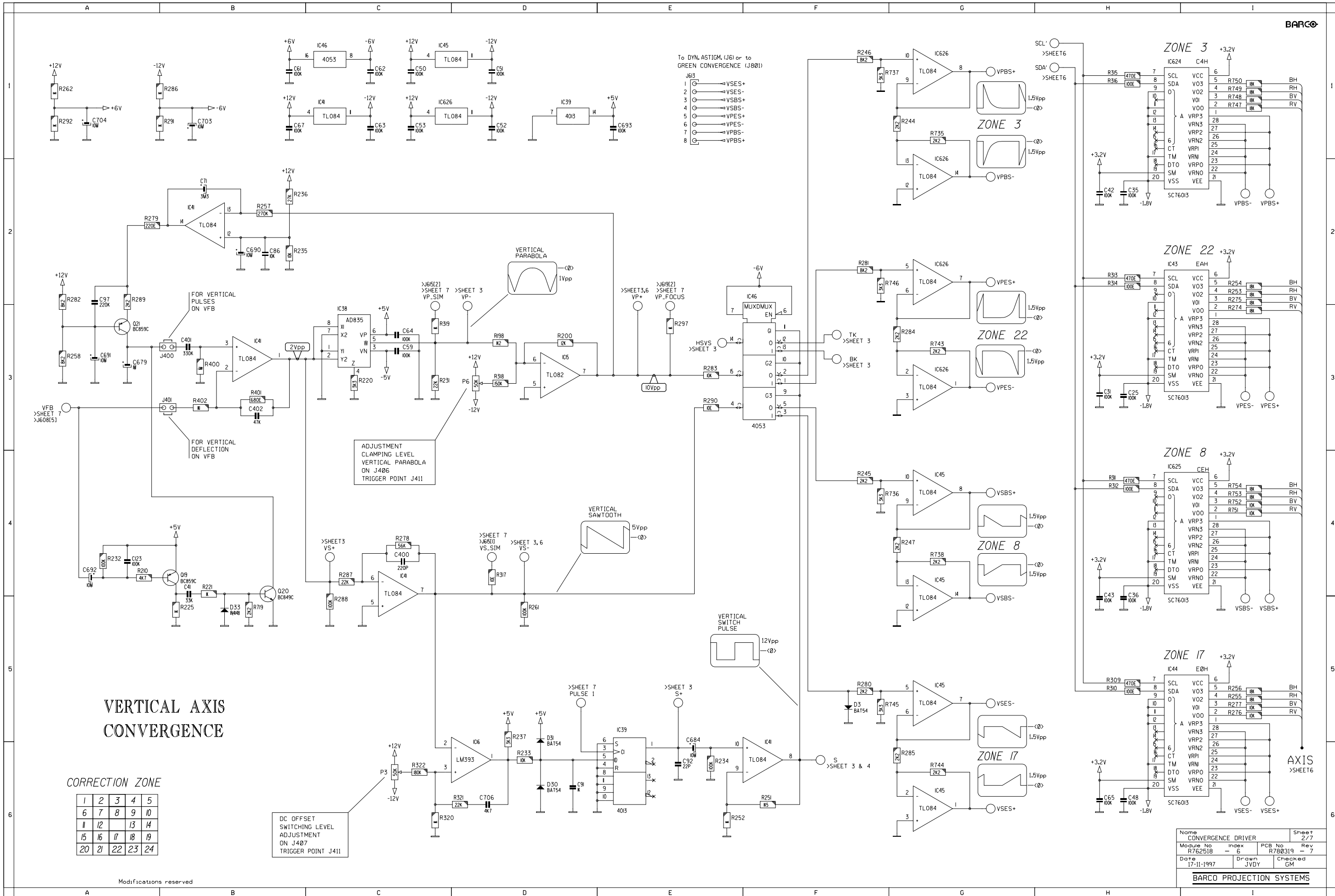
1	2	3	4	5
6	7	8	9	10
11	12	13	14	
15	16	17	18	19
20	21	22	23	24



Name	CONVERGENCE DRIVER	Sheet	1/7
Module No	R762518	index	6
PCB No	R780319	Rev	7
Date	17-11-1997	Drawn	JVDY
		Checked	GM

BARCO PROJECTION SYSTEMS

Modifications reserved



To DYN. ASTIGM. (J6) or to GREEN CONVERGENCE (J801)

- 1 G → VSES+
- 2 G → VSES-
- 3 G → VSBS+
- 4 G → VSBS-
- 5 G → VPES+
- 6 G → VPES-
- 7 G → VPBS-
- 8 G → VPBS+

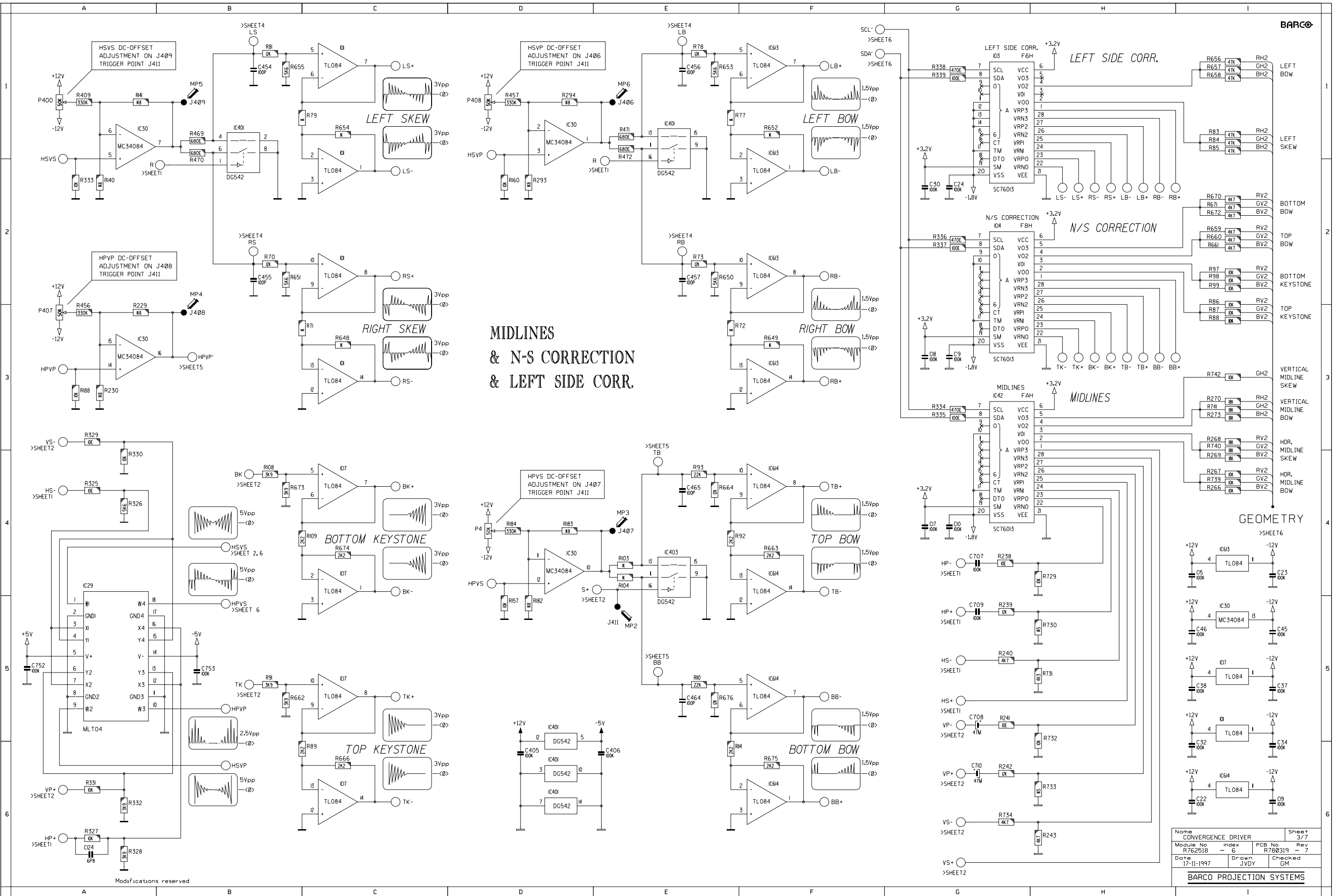
VERTICAL AXIS CONVERGENCE

CORRECTION ZONE

1	2	3	4	5
6	7	8	9	10
11	12	13	14	
15	16	17	18	19
20	21	22	23	24

DC OFFSET SWITCHING LEVEL ADJUSTMENT ON J407 TRIGGER POINT J411

Name	CONVERGENCE DRIVER	Sheet	2/7
Module No	R762518	Index	6
PCB No	R780319	Rev	7
Date	17-11-1997	Dr-own	JVDY
		Checked	GM
BARCO PROJECTION SYSTEMS			



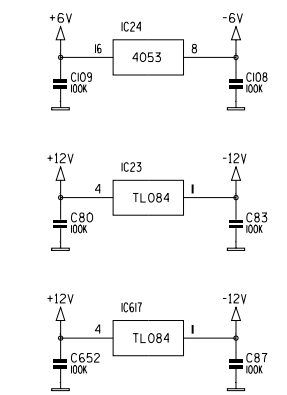
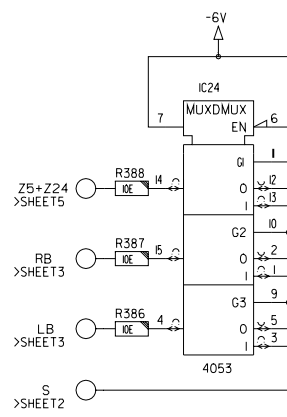
**MIDLINES
& N-S CORRECTION
& LEFT SIDE CORR.**

Name	CONVERGENCE DRIVER	Sheet	3/7
Module No	R762518	Index	6
PCB No	R760319	Rev	7
Date	17-11-1997	Drawn	JVDY
		Checked	GM

BARCO PROJECTION SYSTEMS

Modifications reserved

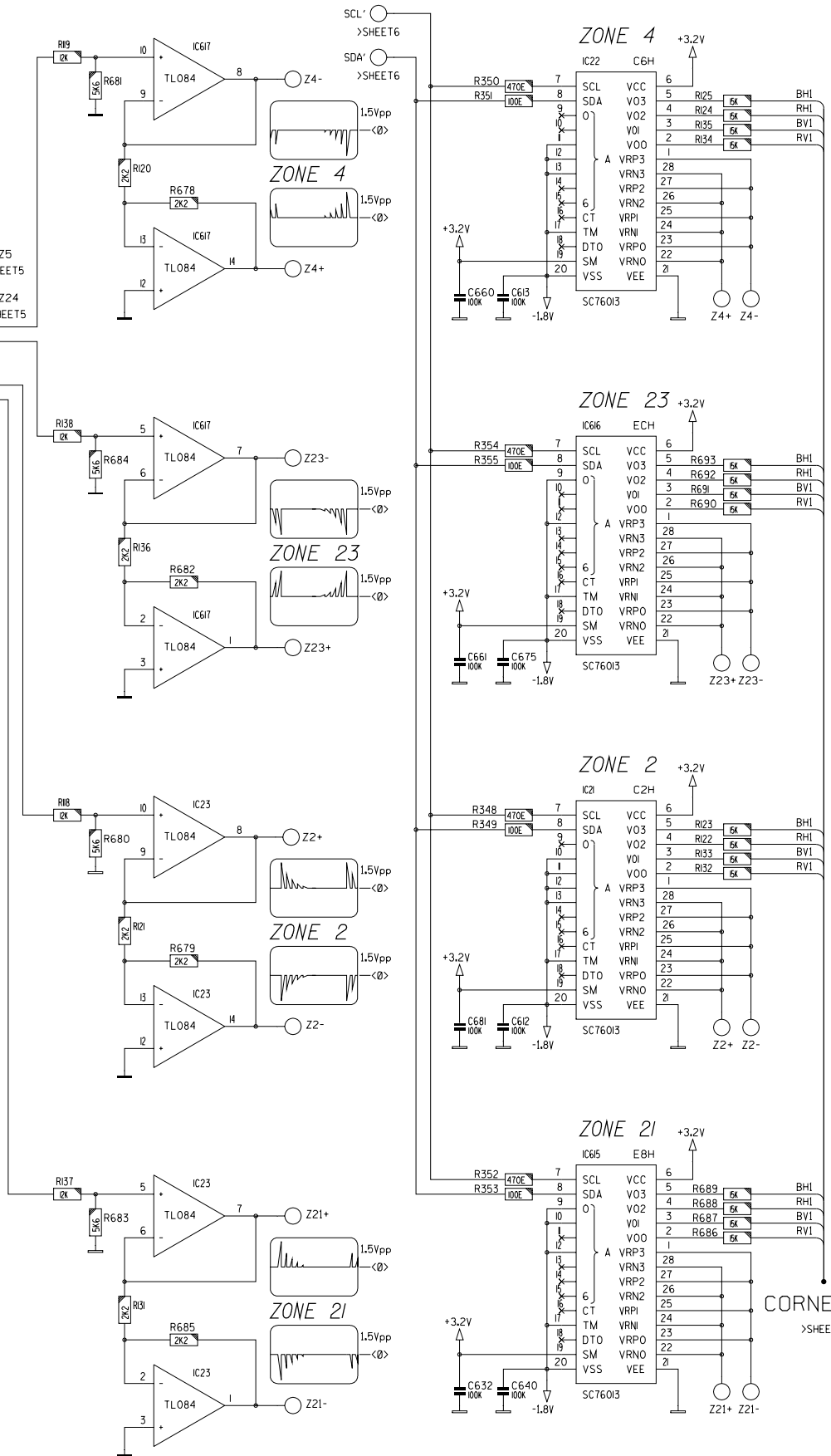
CORNER CONVERGENCE



CORRECTION ZONE

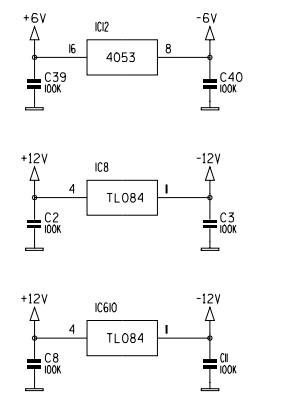
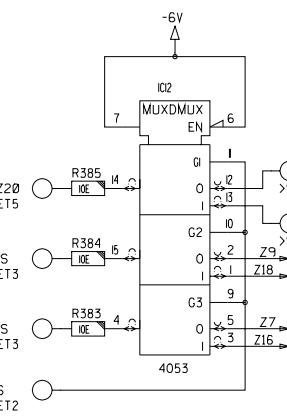
1	2	3	4	5
6	7	8	9	10
11	12	13	14	
15	16	17	18	19
20	21	22	23	24

- To GREEN CONV. (J803)
- 1 ♂ → Z21-
 - 2 ♂ → Z21+
 - 3 ♂ → Z2+
 - 4 ♂ → Z2-
 - 5 ♂ → Z23+
 - 6 ♂ → Z23-
 - 7 ♂ → Z4-
 - 8 ♂ → Z4+



CORNERS

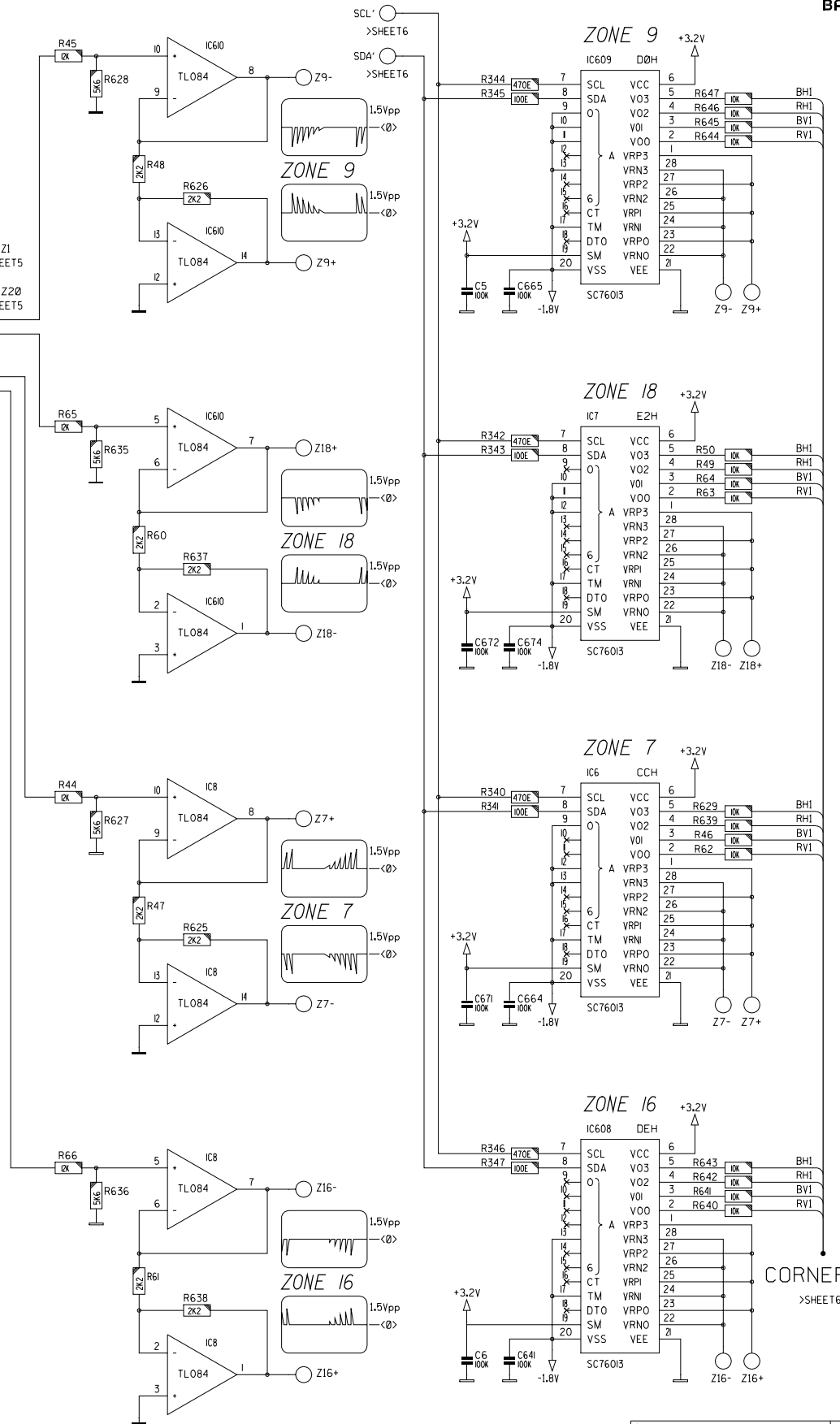
>SHEET6



CORRECTION ZONE

1	2	3	4	5
6	7	8	9	10
11	12	13	14	
15	16	17	18	19
20	21	22	23	24

- To GREEN CONV. (J802)
- 1 ♂ → Z16+
 - 2 ♂ → Z16-
 - 3 ♂ → Z7+
 - 4 ♂ → Z7-
 - 5 ♂ → Z18+
 - 6 ♂ → Z18-
 - 7 ♂ → Z9+
 - 8 ♂ → Z9-



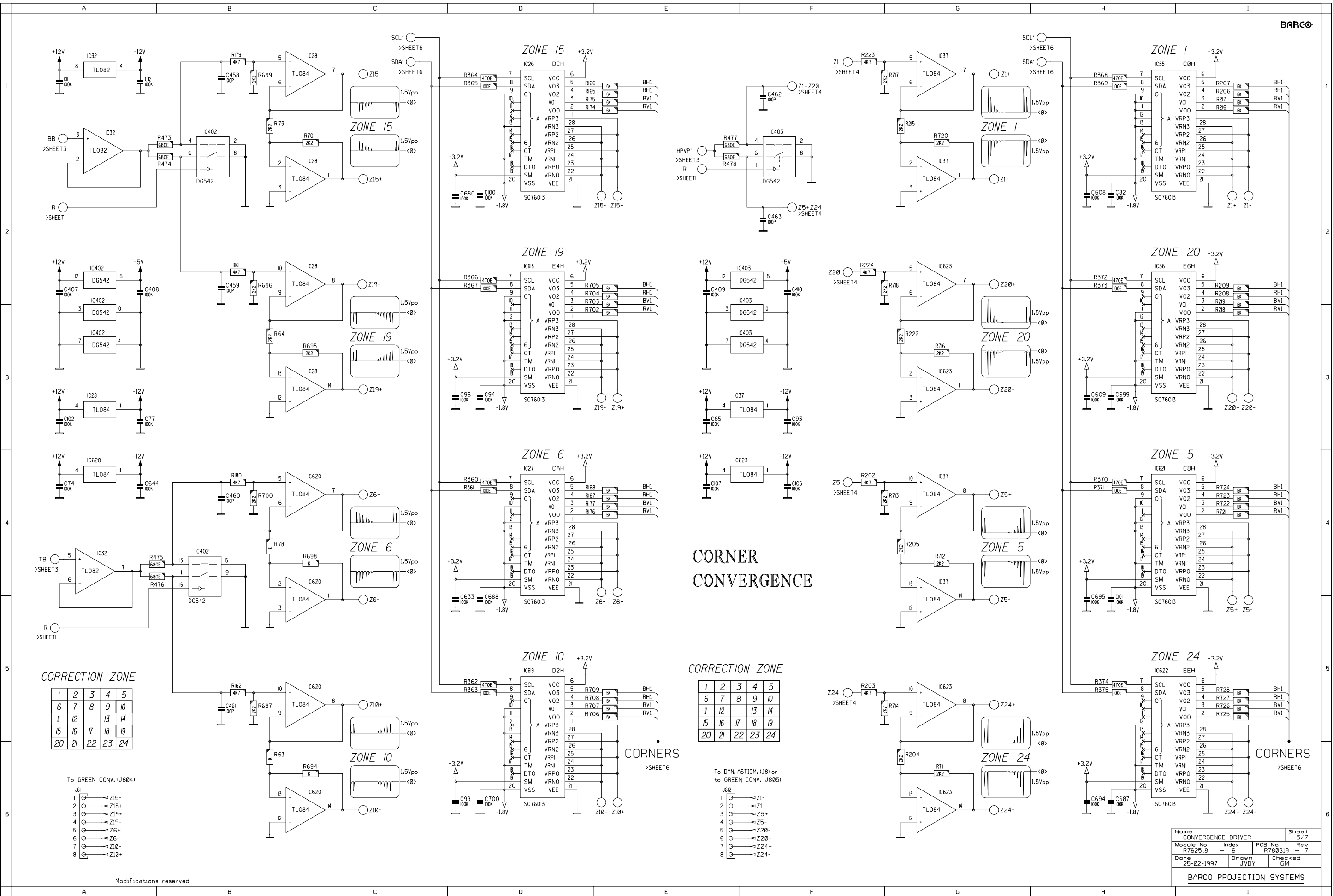
CORNERS

>SHEET6

Name	CONVERGENCE DRIVER	Sheet	4/7
Module No	R752518	Index	6
PCB No	R780319	Rev	7
Date	25-02-1997	Drawn	JVDY
		Checked	GM

BARCO PROJECTION SYSTEMS

Modifications reserved



CORRECTION ZONE

1	2	3	4	5
6	7	8	9	10
11	12	13	14	
15	16	17	18	19
20	21	22	23	24

To GREEN CONV. (J68)

- 1 ○ → Z15-
- 2 ○ → Z15+
- 3 ○ → Z19+
- 4 ○ → Z19-
- 5 ○ → Z6+
- 6 ○ → Z6-
- 7 ○ → Z10-
- 8 ○ → Z10+

CORNER CONVERGENCE

CORRECTION ZONE

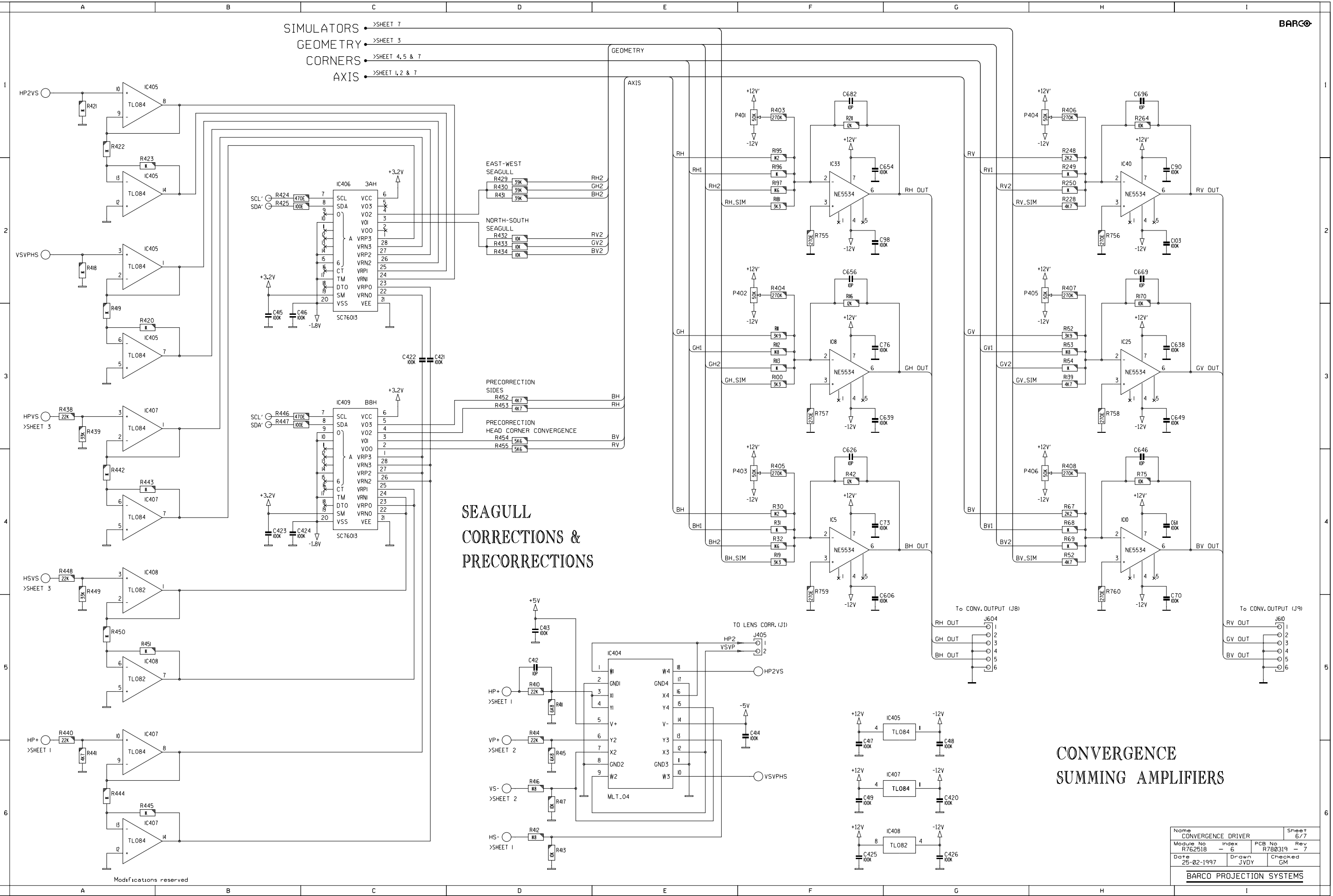
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6	7	8	9	10
11	12	13	14	
15	16	17	18	19
20	21	22	23	24

To DYN. ASTIGM. (J62) or to GREEN CONV. (J68)

- 1 ○ → Z1-
- 2 ○ → Z1+
- 3 ○ → Z5+
- 4 ○ → Z5-
- 5 ○ → Z20-
- 6 ○ → Z20+
- 7 ○ → Z24+
- 8 ○ → Z24-

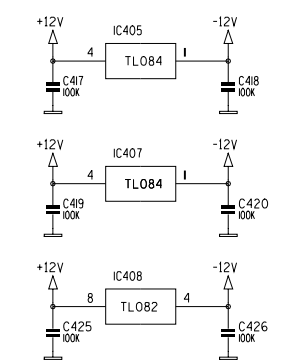
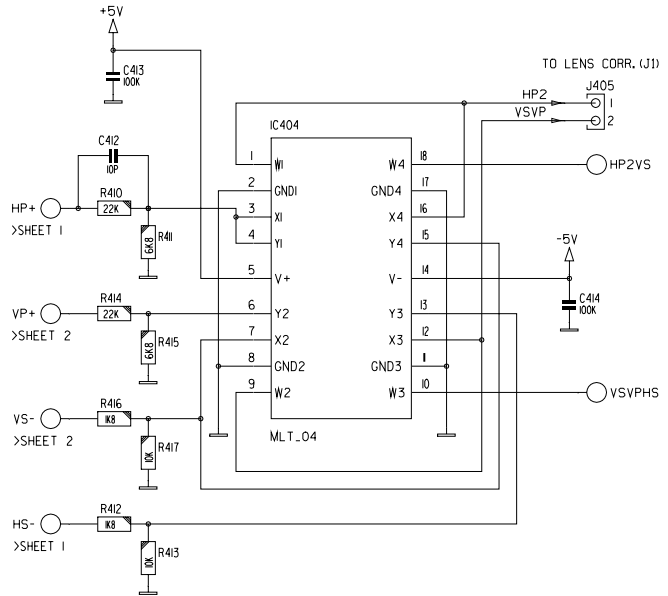
Name		CONVERGENCE DRIVER		Sheet	5/7
Module No	R762518	Index	6	PCB No	R760319
Date	25-02-1997	Drawn	JVDY	Checked	GM
BARCO PROJECTION SYSTEMS					

SIMULATORS >SHEET 7
 GEOMETRY >SHEET 3
 CORNERS >SHEET 4, 5 & 7
 AXIS >SHEET 1, 2 & 7

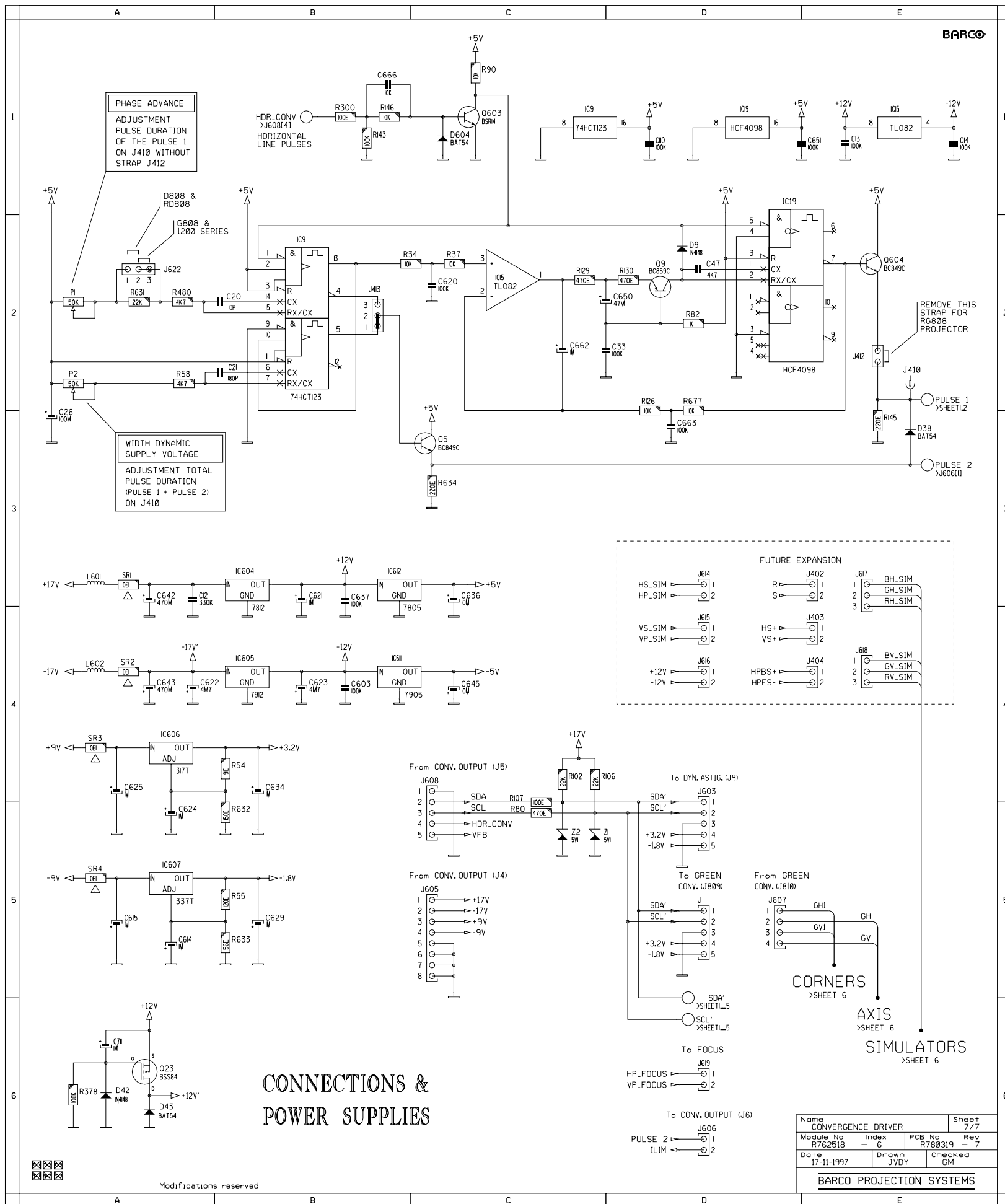


SEAGULL
CORRECTIONS &
PRECORRECTIONS

CONVERGENCE
SUMMING AMPLIFIERS



Name	CONVERGENCE DRIVER	Sheet	6/7
Module No	R752518	Index	6
Date	25-02-1997	PCB No	R780319
		Rev	7
		Drawn	JVDY
		Checked	GM

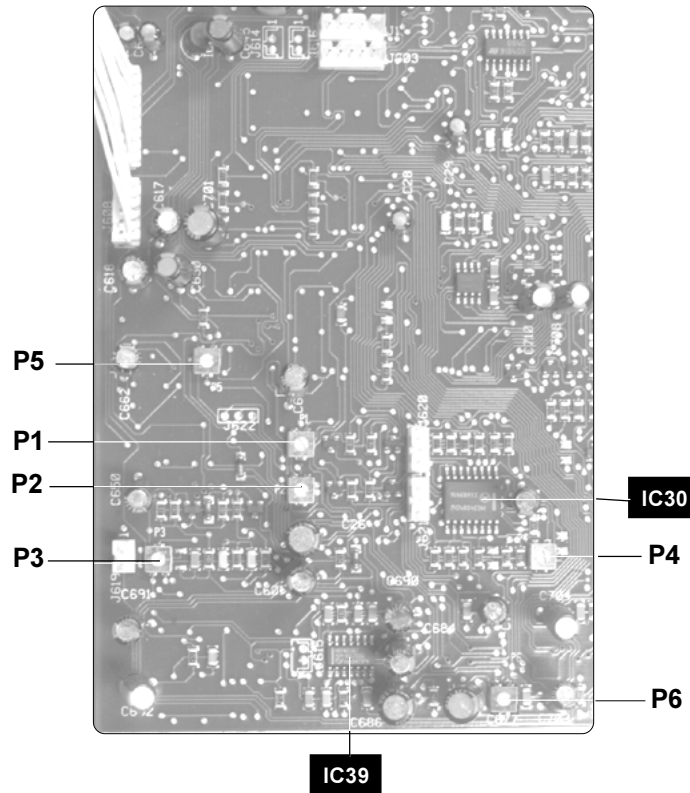


COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C1	A	5	C462	F	1	IC12	F	1	IC603	F	4	COMP.	F	4	COMP.	F	4	COMP.	F	4
C2	E	3	C463	F	2	IC13	G	1	IC603	F	4	R23	B	3	R207	H	4	R370	H	4
C3	F	3	C464	E	5	IC14	G	2	IC603	F	5	R25	F	1	R207	H	4	R371	H	4
C5	H	6	C465	E	4	IC15	D	3	IC603	F	6	R26	H	1	R208	H	2	R372	H	2
C6	H	6	C602	E	5	IC16	D	3	IC603	F	7	R27	H	1	R209	H	2	R373	H	2
C7	B	3	C603	B	4	IC17	F	2	IC603	F	8	R28	H	1	R210	H	2	R374	H	2
C8	E	3	C605	A	4	IC18	F	1	IC605	B	4	R29	H	1	R211	F	1	R375	H	5
C9	G	3	C606	F	4	IC19	D	1	IC607	A	5	R30	F	4	R215	G	1	R378	A	6
C10	H	4	C608	H	5	IC20	F	4	IC608	A	5	R31	F	4	R216	G	1	R379	H	1
C11	F	4	C609	H	5	IC21	D	4	IC608	H	5	R32	F	4	R217	H	1	R380	H	1
C12	A	3	C611	H	4	IC22	D	1	IC609	H	1	R33	F	4	R218	H	1	R381	H	4
C13	E	1	C612	D	4	IC23	A	3	IC610	E	4	R34	B	2	R219	H	2	R382	H	4
C14	D	1	C613	H	4	IC24	A	1	IC610	E	4	R35	B	2	R220	C	3	R383	E	2
C15	I	4	C614	A	5	IC25	H	3	IC610	G	1	R36	F	4	R221	B	4	R384	E	2
C16	B	4	C615	A	5	IC26	D	1	IC610	G	1	R37	C	2	R222	C	3	R385	E	2
C17	G	4	C616	B	4	IC27	D	1	IC610	G	2	R38	F	4	R223	F	1	R386	A	2
C18	G	3	C617	A	5	IC28	C	3	IC611	B	4	R39	D	3	R224	F	2	R387	A	2
C19	I	6	C620	C	2	IC29	A	4	IC611	B	4	R40	B	3	R225	B	5	R388	A	2
C20	B	2	C621	B	3	IC30	C	2	IC612	F	2	R41	F	4	R226	H	2	R400	B	3
C21	B	2	C622	A	4	IC31	D	1	IC613	F	2	R42	F	1	R227	C	3	R401	B	3
C22	I	6	C623	B	4	IC32	C	4	IC613	F	3	R43	G	4	R228	H	2	R402	B	3
C23	I	4	C624	A	4	IC33	D	4	IC613	F	3	R44	F	4	R229	A	2	R403	F	1
C24	G	2	C625	A	4	IC34	D	1	IC613	F	3	R45	G	4	R230	A	3	R403	F	1
C25	H	3	C626	F	3	IC35	A	3	IC613	F	3	R46	G	4	R231	C	3	R404	F	2
C26	A	2	C629	A	3	IC36	A	3	IC614	F	4	R47	G	4	R232	A	4	R405	F	4
C27	H	3	C630	B	4	IC37	D	4	IC614	F	4	R48	G	4	R233	D	6	R405	F	4
C28	C	3	C631	H	4	IC38	C	3	IC614	F	4	R49	H	4	R234	D	6	R406	H	1
C29	I	6	C632	C	6	IC39	A	3	IC614	F	4	R50	H	4	R235	D	6	R407	H	2
C30	I	6	C633	D	2	IC40	A	4	IC614	F	4	R51	C	2	R236	B	2	R407	H	2
C31	H	3	C634	B	4	IC41	A	1	IC614	F	4	R52	H	4	R237	B	5	R408	D	5
C32	I	6	C635	C	3	IC42	A	3	IC614	F	4	R53	H	4	R238	G	6	R409	A	1
C33	D	2	C636	B	4	IC43	A	1	IC614	F	4	R54	B	4	R239	G	6	R410	D	5
C34	I	6	C637	B	3	IC44	A	1	IC614	F	4	R55	B	5	R240	G	6	R411	D	5
C35	H	4	C638	H	3	IC45	H	3	IC614	F	4	R56	B	5	R241	D	5	R412	D	6
C36	H	4	C639	F	3	IC46	H	3	IC614	F	4	R57	B	5	R242	G	6	R413	D	6
C37	I	5	C640	H	2	IC47	B	3	IC614	F	4	R58	A	2	R243	H	6	R414	D	6
C38	I	5	C641	H	2	IC48	C	3	IC614	F	4	R59	D	2	R244	G	1	R415	D	6
C39	H	3	C642	A	3	IC49	A	4	IC614	F	4	R60	H	4	R245	A	4	R416	D	6
C40	F	3	C643	A	4	IC50	C	2	IC614	F	4	R61	G	6	R246	F	1	R417	A	6
C41	B	4	C644	A	4	IC51	C	2	IC614	F	4	R62	H	4	R247	G	4	R418	A	6
C42	H	2	C645	A	4	IC52	A	3	IC614	F	4	R63	I	2	R248	H	1	R419	A	3
C43	H	4	C646	H	3	IC53	A	3	IC614	F	4	R64	H	4	R249	H	2	R420	A	3
C44	H	4	C647	H	3	IC54	A	3	IC614	F	4	R65	H	4	R250	H	2	R421	A	1
C45	I	5	C648	H	3	IC55	H	3	IC614	F	4	R66	F	2	R251	F	6	R422	A	1
C46	I	5	C649	H	3	IC56	H	3	IC614	F	4	R67	F	5	R252	E	6	R423	A	1
C47	D	2	C650	D	2	IC57	H	2	IC614	F	4	R68	H	4	R253	E	6	R424	B	2
C48	H	6	C651	A	4	IC58	C	3	IC614	F	4	R69	H	4	R254	E	6	R425	B	2
C49	H	6	C652	A	4	IC59	D	4	IC614	F	4	R70	H	4	R255	E	6	R426	B	2
C50	C	2	C653	A	4	IC60	C	2	IC614	F	4	R71	C	3	R256	E	6	R427	D	2
C51	D	1	C654	F	2	IC61	C	3	IC614	F	4	R72	E	3	R257	E	6	R428	H	1
C52	D	1	C655	C	4	IC62	H	4	IC614	F	4	R73	E	3	R258	E	6	R429	D	2
C53	C	3	C656	F	2	IC63	D	4	IC614	F	4	R74	E	3	R259	A	3	R430	D	2
C54	C	3	C657	E	6	IC64	C	3	IC614	F	4	R75	H	4	R260	D	5	R431	D	2
C55	E	6	C658	C	2	IC65	C	3	IC614	F	4	R76	H	4	R261	D	5	R432	D	2
C56	B	1	C659	C	2	IC66	C	3	IC614	F	4	R77	E	1	R262	A	1	R433	D	2
C57	E	6	C660	D	2	IC67	H	4	IC614	F	4	R78	E	1	R263	A	1	R434	D	2
C58	D	6	C661	C	3	IC68	H	4	IC614	F	4	R79	E	1	R264	H	1	R435	A	3
C59	C	3	C662	C	2	IC69	H	4	IC614	F	4	R80	C	5	R265	H	1	R436	A	3
C60	B	1	C663	D	3	IC70	H	4	IC614	F	4	R81	B	1	R266	H	1	R437	A	3
C61	B	1	C664	H	2	IC71	H	4	IC614	F	4	R82	D	2	R267	H	1	R438	A	3
C62	C	1	C665	H	2	IC72	H	4	IC614	F	4	R83	I	1	R268	H	1	R439	A	3
C63	C	1	C666	B	1	IC73	F	3	IC614	F	4	R84	I	1	R269	H	1	R440	A	5
C64	C	1	C667	H	2	IC74	F	3	IC614	F	4	R85	I	1	R270	H	1	R441	A	5
C65	C	1	C668	H	2	IC75	F	3	IC614	F	4	R86	I	1	R271	H	1	R442	A	4
C66	B	1	C669	H	2	IC76	F	3	IC614	F	4	R87	I	1	R272	H	1	R443	A	4
C67	B	1	C670	H	2	IC77	F	3	IC614	F	4	R88	I	1	R273	H	1	R444	A	4
C68	H	4	C671	H	4	IC78	F	3	IC614	F	4	R89	I	1	R274	H	1	R445	A	4
C69	H	4	C672	H	4	IC79	F	3	IC614	F	4	R90	C	6	R275	H	1	R446	B	

Adjustment procedure

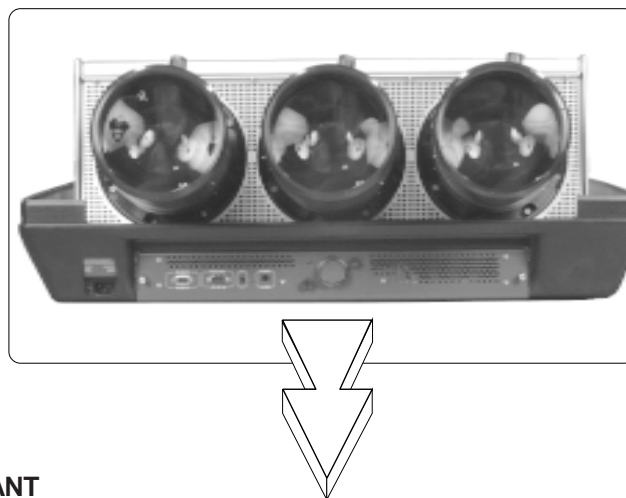
Adjustments

Location of adjustment controls



Preparation

- Remove the unit from the projector housing. Insert the extension board and plug the unit on it. (refer to the sheet 'Service Kit' for installation of it)



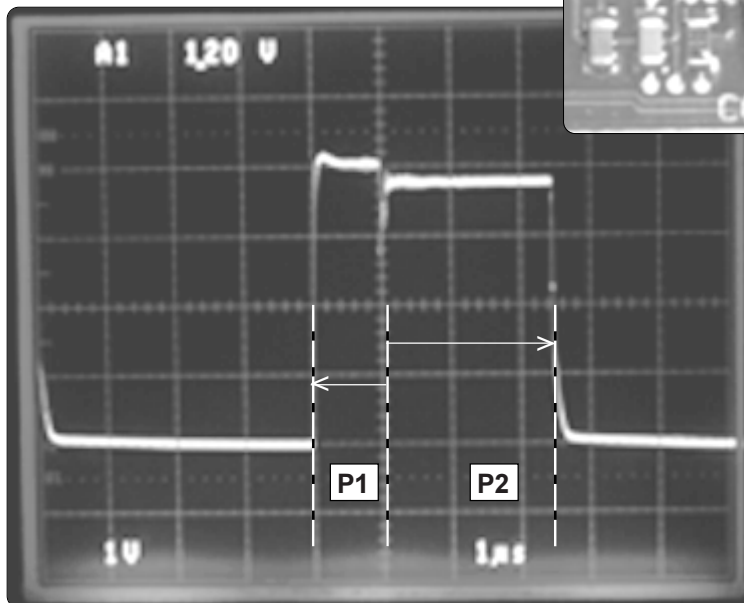
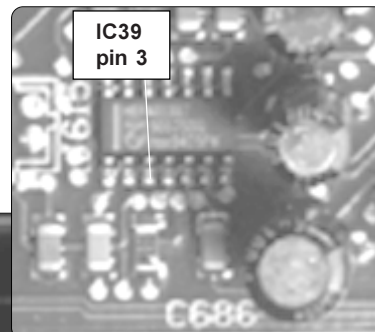
IMPORTANT

- For all the adjustments on the module, the projector has to operate on a signal with the highest **used** line frequency.

Adjustment

Adjustment of the pulse width PULSE 1 and PULSE 2

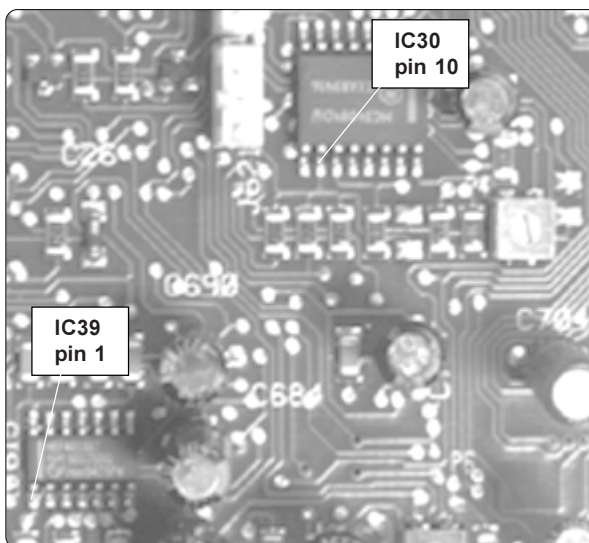
- Connect an oscilloscope to the pin 3 of the IC39.
- Adjust the potentiometer P1 for a pulse 1 duration of 1.0us.
- Adjust the potentiometer P2 for a pulse 2 duration of 2.5us.



Adjustment of the potentiometers

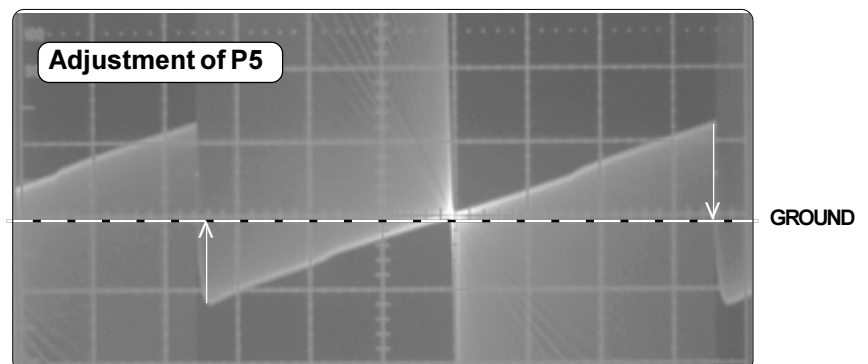
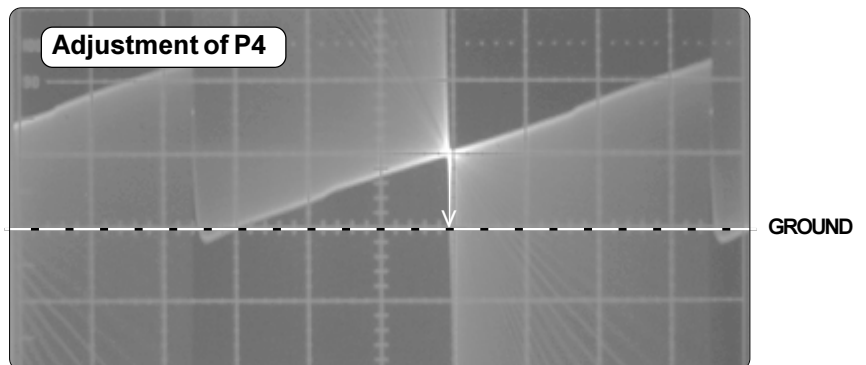
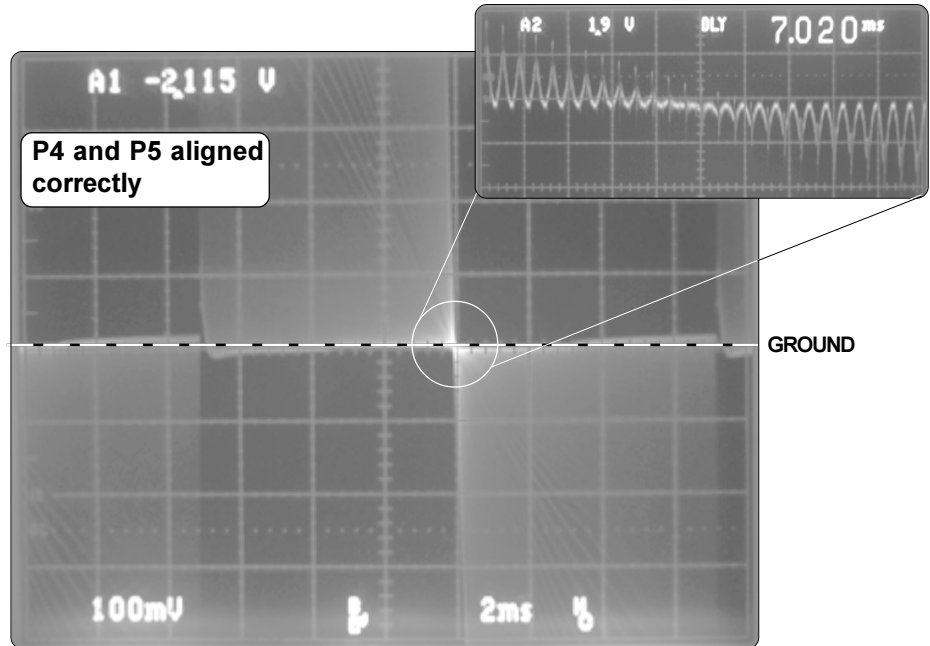
- P3: DC Offset switching level
- P4: Hor-Par/Vert-Sawt DC Offset
- P5: Clamping level Hor Parabola

measurement points for the adjustments



Adjustment of the potentiometer **P4: Hor-Par/Vert-Sawt DC Offset**
P5: Clamping level Hor Parabola

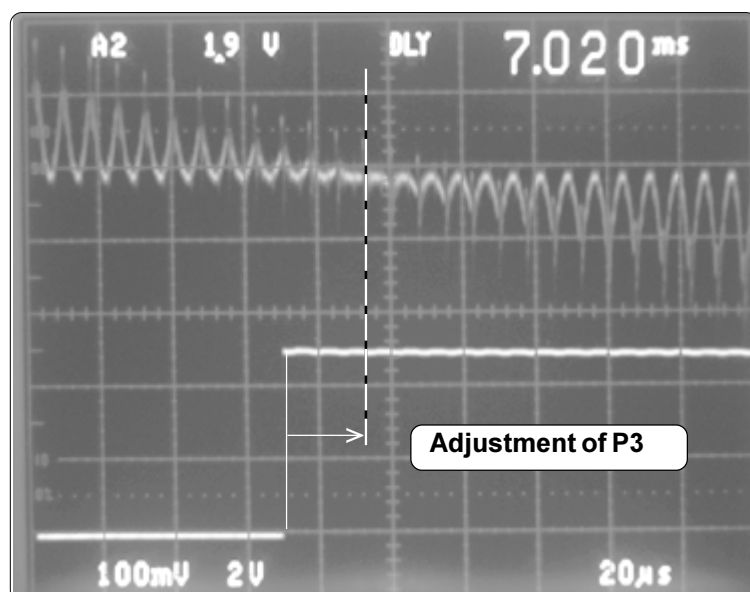
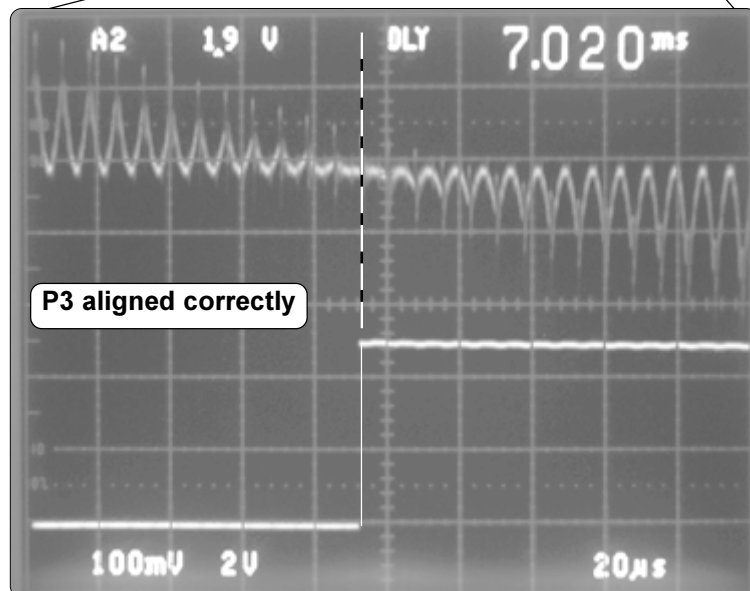
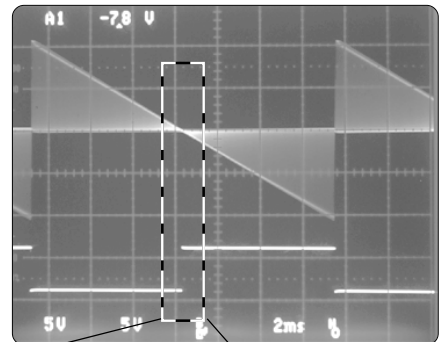
- Connect an oscilloscope to the pin 10 of the IC30.
- Adjust the potentiometer P4 until the DC Offset is at GROUND-level
- Adjust the potentiometer P5 until the clamping level of the Horizontal parabolas are at GROUND-level



Adjustment of the potentiometers P3: DC Offset switching level

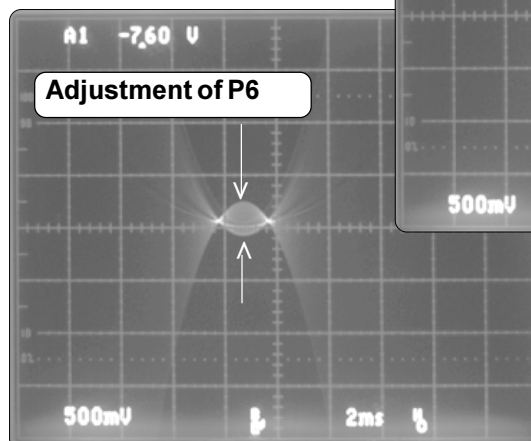
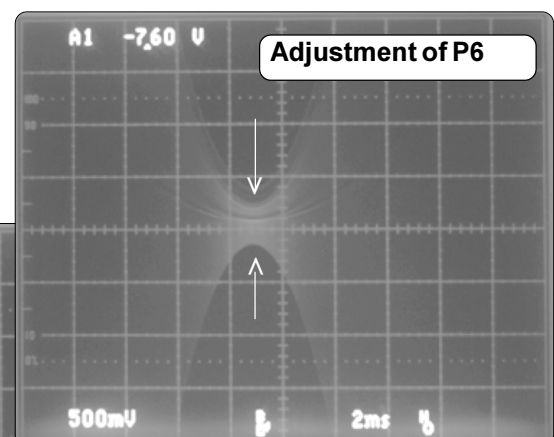
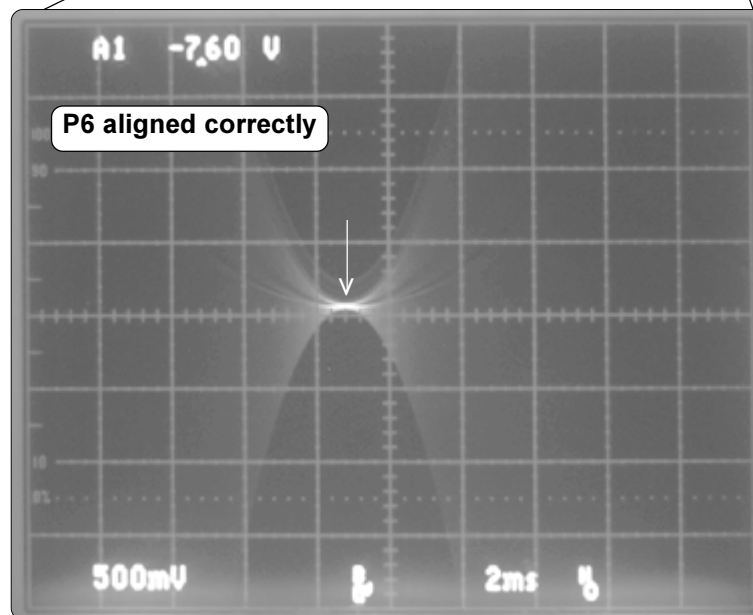
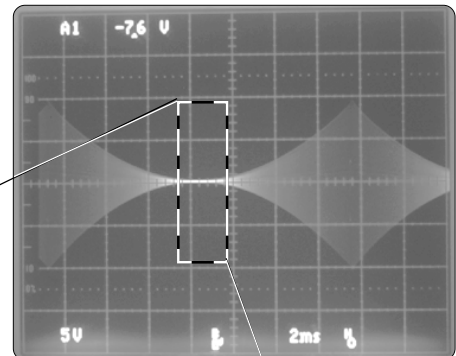
Attention: be sure that the input signal for adjustment operates on the highest used line frequency.

- Connect the second probe of the oscilloscope to the pin 1 of the IC39.
- Adjust the potentiometer P3 until the switching transient matches horizontal parabola inversion point.



Adjustment of the potentiometer P6: Clamping level Vert Parabola

- Connect the probe of the oscilloscope to the pin 1 of the IC30.
- Adjust the potentiometer P6 for a correct clamping level of the Vertical parabola (see fig below).



Technical description 'CONVERGENCE DRIVER' module R762518

Introduction.

The Surface Mounted Devices (SMD) technology applied in the driver module makes servicing of the module not easy and requires the correct tools. The description of the schematics will then also be limited to the essential functions.

Two trigger pulses are generated to trigger the sawtooth generator and the dynamic boosting up of the power supply of the end stages. The sawtooth waveforms are clamped to ground level during one part of the scanning (left/right or top/bottom) and adjusted in amplitude for a linear correction on the scan for red and blue colour (except when the "convergence on green" option is mounted).

Multipliers produce parabolic waveforms which undergo the same kind of flow for the non linear corrections. A combination of the clamped signals, and a modulation on either a sawtooth or parabola is needed for the corner convergence. All the waveforms for one colour are summed with an OPAMP and amplified by a DC amplifier in the OUTPUT module.

Trigger Pulse generation Pulse 1 and 2

The HDR_CONV is speeded up and inverted with Q603. The negative pulse at the collector triggers at its negative going transient the monoflops IC9 and IC19.

Pulse 1 : (trigger of the sawtooth generator).

The width of the positive output pulse at pin 13 of IC9 is adjusted with P1. The pulse train at the output pin 13 is integrated with R34/C620 and applied to one input (+) of the OPAMP IC15. It is obvious that the voltage across C620 is proportional with the width of the pulse and the line frequency. The output of this OPAMP determines the current of the current source Q9. This current adjusts the width of the pulse at the output pin 7 of IC19. The time constant of this one shot is designed to be a little less than the time period. That time constant needs to be tracked with the line frequency and this is realized as follows. The opposite polarity output pin 7 is integrated by R677 / C663 and applied to the inverting input of the same OPAMP.

The pulse at pin 7 (*Pulse 1*) starts consequently just before the end of the scanning and is used to trigger the horizontal sawtooth generator.

Pulse 2 : (dynamic boosting up power supply).

The pulse output at pin 13 triggers on the positive going transient the second monoflop in IC9. The width of the output pulse at pin 5 is adjusted with P2. Through the buffer Q5 the pulse is available for boosting up the supply voltage of the power end stages. Note that this pulse 2 is also added via D38 to pulse 1.

Horizontal axis convergence :

Horizontal sawtooth generator. (Sheet 1)

C602 is charged up by the current source Q2. In order to stabilize the amplitude, irrelevant the line frequency, the charging current is tracked with the line frequency as follows. The sawtooth is buffered and an average value of the amplitude is obtained by integration with IC3 / C7. The resulting output voltage adjusts the charging current of the current source Q2. The amplitude is set by the voltage at the other input of the OPAMP, thus by R2 / R602.

The sawtooth is inhibited by the clamper Q22 when the current consumption of the power end amplifiers is too big (see Power Output stages).

OPAMP IC3 (5-6-7) amplifies the sawtooth in order to supply IC4, IC16 and the multiplier IC20.

Preparation of the waveforms.

The voltage comparator IC16 (5-6-7) transforms the sawtooth into a squared Horizontal 'Switch Pulse' of $24 V_{pp}$ (+ / - 12V). This switch signal is used to clamp either the sawtooth or the parabola during the first or second half of the horizontal scanning. Note that the clipping level is variable with the voltage that drives the current source of the sawtooth generator. The multiplier IC20 (AD633) generates a horizontal parabola **HP+**.

The next OPAMP shifts the DC level by clamping the middle of the parabola to a voltage adjusted by P5 (approx. 0 volts) in order to compensate the tolerances of the multiplier. The convergence at horizontal frequency with the ramp and parabola waveforms in the zones 11 - 14 are adjusted in IC1-IC2-IC601-IC602.

The waveforms are each time clamped with a clamping transistor served by the horizontal switch pulse. Two opposite phased waveform are each time applied to the potentiometers in the Bella's (digital potentiometer or D/A convertors).

Vertical axis convergence The vertical sawtooth generator is generated in a similar way as the horizontal sawtooth generator, discussed above. The much lower frequencies here allow the use of the MUXDMUX IC46 (4053) in stead of the clampers.

The "Vertical Switch Pulse" is passed through the RS flip-flop IC39 which is clocked with the pulse 1 in order to make the transition coincide with the trigger or the start of the horizontal sawtooth. This avoids a jitter for interlaced signals.

North-South / East-West and Midline corrections. For these corrections we need horizontal waveforms with an amplitude depending on the vertical position or vertical scanning. The horizontal waveforms must be modulated on a vertical sawtooth or parabola. This modulation is performed by IC29 (MLT04). The four different waveforms are all applied to the "X" and "Y" inputs and the modulated waveforms are the "W1 - W4" pins.

The corrections, called *GEOMETRY* corrections, are added to the *CORNER* and *AXIS* corrections in the "*Summing Amplifiers*".

East - West corrections :

Two kind of corrections (referred to as "skew" and "bow") are required to correct the projection angle and aberrations of the optical system.

The HSVS (**H**orizontal **S**awtooth modulated on a **V**ertical **S**awtooth) and HSVP are used for this purpose.

The HSVS is first amplified with an OPAMP in IC30 and then clamped with Q11 and Q10 which are 'served' with the "R" and "S" switching signals. The *LS+* and *LS-* (Left Skew) and *RS+* / *RS-* (Right Skew) are fed to two digital potentiometers in IC13 and the adjusted outputs are sent simultaneously to the three convergence coils.

HSVP is first inverted and amplified and then clamped during the first or second half of the scan. The *RB+/-* and *LB+/-* are applied to the digital potentiometers in the same IC13 and the outputs also feed the three convergence coils.

North - South Corrections .

Two type of waveforms are modulated on a vertical sawtooth VS, Horizontal Sawtooth (HS) and Horizontal Parabola (HP). The HSVS from IC29 (sheet 3) is capacitively coupled to the MUX DMUX IC46 (sheet 2) and in stead of clamping, the signal it is

switched with the " vertical switch pulse " for a split of top and bottom.

The TK (Top Keystone) and BK (Bottom Keystone) signals are adjusted in IC14. Since there is a correction per colour the different outputs of the digital potentiometers are gathered per colour and will be added to the other corrections in the "summing amplifiers".

Midline Corrections.

For the vertical and horizontal midline skew and bow corrections, the non-modulated waveforms HP- / + , HS+ / - are adjusted in amplitude with IC42 and simultaneously applied to the vertical and horizontal convergence coils of the three crt's.

Corner convergence.

The four corners are further divided (split) into 4 zones. The generation of the convergence signals for the corners is similar for these four corners. The only difference is the clamping or switching period. A split top / bottom is realised with a MUXDMUX switcher and a left / right split with fast switching clamping transistors.

We limit the explanation to one corner and one zone (**Zone 1**).

Zone 1 is the cross section of the extreme left vertical axis and the extreme top horizontal axis. We need to start with a Horizontal Parabola (=extreme left vertical axis) modulated on Vertical Parabola (= extreme top horizontal axis). This signal is called *HPVP'* in sheet 5. The clamping transistor Q16 clamps this signal during the second half of the horizontal scan and then the signal is called Z1+Z20. This signal is now split into top / bottom (Z1 and Z20) by the MUXDMUX IC12 (see sheet 4). Z1 and Z20 are now prepared for the digital potentiometer IC35 by the buffer - OPAMP IC37 to get Z1+ and Z1- (same signal with opposite polarity). These signals are then adjusted in IC35 and used for red and blue. The outputs are added in the summing amplifier to the rest of the corrections. (*Geometry and Axis*).

Summing amplifiers.

All the corrections for the horizontal convergence coils are added per colour and amplified with an MC34081. These OPAMP's are supplied with + / - 12V and since the non-inverting input is at ground level, the average output of these OPAMPs is around zero volts. This is required by the output power amplifiers for a balanced load of the (complementary) output stage.

Convergence DRIVER module

GREEN Convergence module

R762518

R7625128

Parts listing Convergence module (Driver) 76 2518

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
10	R133085	HTSN@A GEN I_SHT CRA 30	0,00039	C 60	P210122	C# X7R MU 100N K 50 1206	1
				C 61	P210122	C# X7R MU 100N K 50 1206	1
70	R3133921	JMD SHUNT F P2E1SNIRD	4	C 62	P210122	C# X7R MU 100N K 50 1206	1
	R34700802	SLVU GLCL OIL D 1,5RD 20	1	C 63	P210122	C# X7R MU 100N K 50 1206	1
				C 64	P210122	C# X7R MU 100N K 50 1206	1
20	R3631059	SCR Z933 M 3 X 8 SS	3	C 65	P210122	C# X7R MU 100N K 50 1206	1
60	R3631059	SCR Z933 M 3 X 8 SS	2	C 66	P210122	C# X7R MU 100N K 50 1206	1
				C 67	P210122	C# X7R MU 100N K 50 1206	1
40	R804674	HTSNA GEN SPG 1XM3 SH	1	C 68	P210122	C# X7R MU 100N K 50 1206	1
30	R804769	HTSNA GEN SPG 2XM3 SH	1	C 69	P210122	C# X7R MU 100N K 50 1206	1
80	R805954	HTSNC PJ56 G808.CNV DVR	1	C 70	P210122	C# X7R MU 100N K 50 1206	1
				C 71	R111549	C EL RA 3M3M 50E2 85	1
C 1	P210137	C# COG MU 100P J 50 1206	1	C 72	P210122	C# X7R MU 100N K 50 1206	1
C 2	P210122	C# X7R MU 100N K 50 1206	1	C 73	P210122	C# X7R MU 100N K 50 1206	1
C 3	P210122	C# X7R MU 100N K 50 1206	1	C 74	P210122	C# X7R MU 100N K 50 1206	1
C 5	P210122	C# X7R MU 100N K 50 1206	1	C 75	P210122	C# X7R MU 100N K 50 1206	1
C 6	P210122	C# X7R MU 100N K 50 1206	1	C 76	P210122	C# X7R MU 100N K 50 1206	1
C 7	P210095	C# X7R MU 330N M 50 1812	1	C 77	P210122	C# X7R MU 100N K 50 1206	1
C 8	P210122	C# X7R MU 100N K 50 1206	1	C 78	P210122	C# X7R MU 100N K 50 1206	1
C 9	P210122	C# X7R MU 100N K 50 1206	1	C 79	P210122	C# X7R MU 100N K 50 1206	1
C 10	P210122	C# X7R MU 100N K 50 1206	1	C 80	P210122	C# X7R MU 100N K 50 1206	1
C 11	P210122	C# X7R MU 100N K 50 1206	1	C 81	P210122	C# X7R MU 100N K 50 1206	1
C 12	P210095	C# X7R MU 330N M 50 1812	1	C 82	P210122	C# X7R MU 100N K 50 1206	1
C 13	P210122	C# X7R MU 100N K 50 1206	1	C 83	P210122	C# X7R MU 100N K 50 1206	1
C 14	P210122	C# X7R MU 100N K 50 1206	1	C 85	P210122	C# X7R MU 100N K 50 1206	1
C 15	P210122	C# X7R MU 100N K 50 1206	1	C 86	P210092	C# X7R MU 10N K 50 1206	1
C 16	P210092	C# X7R MU 10N K 50 1206	1	C 87	P210122	C# X7R MU 100N K 50 1206	1
C 17	P210122	C# X7R MU 100N K 50 1206	1	C 88	P210122	C# X7R MU 100N K 50 1206	1
C 18	P210122	C# X7R MU 100N K 50 1206	1	C 90	P210122	C# X7R MU 100N K 50 1206	1
C 19	P210122	C# X7R MU 100N K 50 1206	1	C 91	P210013	C# COG MU 1N J 50 1206	1
C 20	P210138	C# COG MU 10P J 50 1206	1	C 92	P210064	C# COG MU 22P J 50 1206	1
C 21	P210081	C# COG MU 180P J 50 0805	1	C 93	P210122	C# X7R MU 100N K 50 1206	1
C 22	P210122	C# X7R MU 100N K 50 1206	1	C 94	P210122	C# X7R MU 100N K 50 1206	1
C 23	P210122	C# X7R MU 100N K 50 1206	1	C 95	P210122	C# X7R MU 100N K 50 1206	1
C 24	P210122	C# X7R MU 100N K 50 1206	1	C 96	P210122	C# X7R MU 100N K 50 1206	1
C 25	P210122	C# X7R MU 100N K 50 1206	1	C 97	P210169	C# X7R MU 220N K 50 1210	1
C 26	R111466	C EL RA 100M M 16E2 85	1	C 98	P210122	C# X7R MU 100N K 50 1206	1
C 30	P210122	C# X7R MU 100N K 50 1206	1	C 99	P210122	C# X7R MU 100N K 50 1206	1
C 31	P210122	C# X7R MU 100N K 50 1206	1	C100	P210122	C# X7R MU 100N K 50 1206	1
C 32	P210122	C# X7R MU 100N K 50 1206	1	C101	P210122	C# X7R MU 100N K 50 1206	1
C 33	P210122	C# X7R MU 100N K 50 1206	1	C102	P210122	C# X7R MU 100N K 50 1206	1
C 34	P210122	C# X7R MU 100N K 50 1206	1	C103	P210122	C# X7R MU 100N K 50 1206	1
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C 39	P210122	C# X7R MU 100N K 50 1206	1	C109	P210122	C# X7R MU 100N K 50 1206	1
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C 46	P210122	C# X7R MU 100N K 50 1206	1	C129	P210102	C# COG MU 470P J 50 1206	1
C 47	P210140	C# X7R MU 4N7K 50 1206	1	C400	P210076	C# COG MU 220P J 50 1206	1
C 48	P210122	C# X7R MU 100N K 50 1206	1	C401	P210136	C# Y5V MU 330N Z 50 1206	1
C 49	P210122	C# X7R MU 100N K 50 1206	1	C402	P210045	C# X7R MU 47N K 50 1206	1
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				C412	P210138	C# COG MU 10P J 50 1206	1

Convergence DRIVER module

GREEN Convergence module

R762518

R7625128

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
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C418	P210122	C# X7R MU 100N K 50 1206	1	C655	P210122	C# X7R MU 100N K 50 1206	1
C419	P210122	C# X7R MU 100N K 50 1206	1	C656	P210138	C# COG MU 10P J 50 1206	1
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C421	P210122	C# X7R MU 100N K 50 1206	1	C661	P210122	C# X7R MU 100N K 50 1206	1
C422	P210122	C# X7R MU 100N K 50 1206	1	C662	R111546	C EL RA 1M M 50E2 85	
C423	P210122	C# X7R MU 100N K 50 1206	1	C663	P210122	C# X7R MU 100N K 50 1206	1
C424	P210122	C# X7R MU 100N K 50 1206	1	C664	P210122	C# X7R MU 100N K 50 1206	1
C425	P210122	C# X7R MU 100N K 50 1206	1	C665	P210122	C# X7R MU 100N K 50 1206	1
C426	P210122	C# X7R MU 100N K 50 1206	1	C666	P210092	C# X7R MU 10N K 50 1206	1
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C455	P210137	C# COG MU 100P J 50 1206	1	C679	P210153	C# Z5U MU 1M M 63 1812	1
C456	P210137	C# COG MU 100P J 50 1206	1	C680	P210122	C# X7R MU 100N K 50 1206	1
C457	P210137	C# COG MU 100P J 50 1206	1	C681	P210122	C# X7R MU 100N K 50 1206	1
C458	P210137	C# COG MU 100P J 50 1206	1	C682	P210138	C# COG MU 10P J 50 1206	1
C459	P210137	C# COG MU 100P J 50 1206	1	C684	R111531	C EL RA 10M M 35E2 85	
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C462	P210137	C# COG MU 100P J 50 1206	1	C690	R111531	C EL RA 10M M 35E2 85	
C463	P210137	C# COG MU 100P J 50 1206	1	C691	R111531	C EL RA 10M M 35E2 85	
C464	P210137	C# COG MU 100P J 50 1206	1	C692	R111531	C EL RA 10M M 35E2 85	
C465	P210137	C# COG MU 100P J 50 1206	1	C693	P210122	C# X7R MU 100N K 50 1206	1
C602	P210150	C# X7R MU 3N3K 50 1206	1	C694	P210122	C# X7R MU 100N K 50 1206	1
C603	P210122	C# X7R MU 100N K 50 1206	1	C695	P210122	C# X7R MU 100N K 50 1206	1
C605	P210169	C# X7R MU 220N K 50 1210	1	C696	P210138	C# COG MU 10P J 50 1206	1
C606	P210122	C# X7R MU 100N K 50 1206	1	C699	P210122	C# X7R MU 100N K 50 1206	1
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C609	P210122	C# X7R MU 100N K 50 1206	1	C701	R111486	C EL RA 47M M 50E2 85	
C611	P210122	C# X7R MU 100N K 50 1206	1	C703	R111531	C EL RA 10M M 35E2 85	
C612	P210122	C# X7R MU 100N K 50 1206	1	C704	R111531	C EL RA 10M M 35E2 85	
C613	P210122	C# X7R MU 100N K 50 1206	1	C706	P210140	C# X7R MU 4N7K 50 1206	1
C614	R111546	C EL RA 1M M 50E2 85		C707	P210122	C# X7R MU 100N K 50 1206	1
C615	R111546	C EL RA 1M M 50E2 85		C708	R111476	C EL RA 47M M 25E2 85	
C616	R111548	C EL RA 2M2M 50E2 85		C709	P210122	C# X7R MU 100N K 50 1206	1
C617	R111531	C EL RA 10M M 35E2 85		C710	R111476	C EL RA 47M M 25E2 85	
C620	P210122	C# X7R MU 100N K 50 1206	1	C711	R111546	C EL RA 1M M 50E2 85	
C621	R111546	C EL RA 1M M 50E2 85		C752	P210122	C# X7R MU 100N K 50 1206	1
C622	R1115915	C EL5 RA 4M7M 35E2 85		C753	P210122	C# X7R MU 100N K 50 1206	1
C623	R1115915	C EL5 RA 4M7M 35E2 85		D 1	P234099	D#4148 R DMMELF	1
C624	R111546	C EL RA 1M M 50E2 85		D 3	P234055	D#BAT54 SCH SOT23	1
C625	R111546	C EL RA 1M M 50E2 85		D 9	P234099	D#4148 R DMMELF	1
C626	P210138	C# COG MU 10P J 50 1206	1	D 30	P234055	D#BAT54 SCH SOT23	1
C629	R111546	C EL RA 1M M 50E2 85		D 31	P234055	D#BAT54 SCH SOT23	1
C630	R111531	C EL RA 10M M 35E2 85		D 33	P234099	D#4148 R DMMELF	1
C631	P210122	C# X7R MU 100N K 50 1206	1	D 38	P234055	D#BAT54 SCH SOT23	1
C632	P210122	C# X7R MU 100N K 50 1206	1	D 39	P234055	D#BAT54 SCH SOT23	1
C633	P210122	C# X7R MU 100N K 50 1206	1	D 40	P234099	D#4148 R DMMELF	1
C634	R111546	C EL RA 1M M 50E2 85		D 42	P234099	D#4148 R DMMELF	1
C636	R111531	C EL RA 10M M 35E2 85		D 43	P234055	D#BAT54 SCH SOT23	1
C637	P210122	C# X7R MU 100N K 50 1206	1	D604	P234055	D#BAT54 SCH SOT23	1
C638	P210122	C# X7R MU 100N K 50 1206	1	I 1	P230653	U#BELLA 4 SOL28 P	1
C639	P210122	C# X7R MU 100N K 50 1206	1	I 2	P230653	U#BELLA 4 SOL28 P	1
C640	P210122	C# X7R MU 100N K 50 1206	1	I 3	P230705	U#34084 MC SOL16 P	1
C641	P210122	C# X7R MU 100N K 50 1206	1	I 4	P230203	U#084 TL SO14 P	1
C642	R111479	C EL RA 470M M 25E2 85	1	I 5	P230768	U#5534 NE SO8 P	1
C643	R111479	C EL RA 470M M 25E2 85	1	I 6	P230653	U#BELLA 4 SOL28 P	1
C644	P210122	C# X7R MU 100N K 50 1206	1	I 7	P230653	U#BELLA 4 SOL28 P	1
C645	R111531	C EL RA 10M M 35E2 85					
C646	P210138	C# COG MU 10P J 50 1206	1				

Convergence DRIVER module

GREEN Convergence module

R762518

R7625128

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
I 8	P230203	U#084 TL SO14 P	1	I620	P230203	U#084 TL SO14 P	1
I 9	P230073	U#74HCT123 SO16 I	1	I621	P230653	U#BELLA 4 SOL28 P	1
I10	P230768	U#5534 NE SO8 P	1	I622	P230653	U#BELLA 4 SOL28 P	1
I11	P230203	U#084 TL SO14 P	1	I623	P230203	U#084 TL SO14 P	1
I12	P230030	U#4053 SO16 I	1	I624	P230653	U#BELLA 4 SOL28 P	1
I13	P230653	U#BELLA 4 SOL28 P	1	I625	P230653	U#BELLA 4 SOL28 P	1
I14	P230653	U#BELLA 4 SOL28 P	1	I626	P230203	U#084 TL SO14 P	1
I15	P230293	U#082 TL SO8 P	1	J 1	R313925	J C T H MBT P 5 M2SN WH	1
I16	P230028	U#393 LM SO8 P	1	J400	R3132862	J MD1 C MBT P 2 E1SN 6,7	1
I17	P230203	U#084 TL SO14 P	1	J401	R3132862	J MD1 C MBT P 2 E1SN 6,7	1
I18	P230768	U#5534 NE SO8 P	1	J402	R313922	J C T H MBT P 2 M2SN WH	1
I19	P230451	U#4098 HCF SO16 I	1	J403	R313922	J C T H MBT P 2 M2SN WH	1
I20	P231489	U#835 AD SO8 I	1	J404	R313922	J C T H MBT P 2 M2SN WH	1
I21	P230653	U#BELLA 4 SOL28 P	1	J405	R313922	J C T H MBT P 2 M2SN WH	1
I22	P230653	U#BELLA 4 SOL28 P	1	J406	R315310	J TAB1 MBT H2,8S0,5 F1	1
I23	P230203	U#084 TL SO14 P	1	J407	R315310	J TAB1 MBT H2,8S0,5 F1	1
I24	P230030	U#4053 SO16 I	1	J408	R315310	J TAB1 MBT H2,8S0,5 F1	1
I25	P230768	U#5534 NE SO8 P	1	J409	R315310	J TAB1 MBT H2,8S0,5 F1	1
I26	P230653	U#BELLA 4 SOL28 P	1	J410	R315310	J TAB1 MBT H2,8S0,5 F1	1
I27	P230653	U#BELLA 4 SOL28 P	1	J411	R315310	J TAB1 MBT H2,8S0,5 F1	1
I28	P230203	U#084 TL SO14 P	1	J412	R3132862	J MD1 C MBT P 2 E1SN 6,7	1
I29	P230912	U#04 MLT SOL18 I	1	J413	R313286	J MO1 C MBT P 3 R1SN 7,5	1
I30	P230705	U#34084 MC SOL16 P	1	J601	R313928	J C T H MBT P 8 M2SN WH	1
I32	P230293	U#082 TL SO8 P	1	J602	R313928	J C T H MBT P 8 M2SN WH	1
I33	P230768	U#5534 NE SO8 P	1	J603	R313925	J C T H MBT P 5 M2SN WH	1
I35	P230653	U#BELLA 4 SOL28 P	1	J604	R313926	J C T H MBT P 6 M2SN WH	1
I36	P230653	U#BELLA 4 SOL28 P	1	J605	R313928	J C T H MBT P 8 M2SN WH	1
I37	P230203	U#084 TL SO14 P	1	J606	R313922	J C T H MBT P 2 M2SN WH	1
I38	P231489	U#835 AD SO8 I	1	J607	R313924	J C T H MBT P 4 M2SN WH	1
I39	P230034	U#4013 SO14 I	1	J608	R313925	J C T H MBT P 5 M2SN WH	1
I40	P230768	U#5534 NE SO8 P	1	J609	R313928	J C T H MBT P 8 M2SN WH	1
I41	P230203	U#084 TL SO14 P	1	J610	R313926	J C T H MBT P 6 M2SN WH	1
I42	P230653	U#BELLA 4 SOL28 P	1	J611	R313928	J C T H MBT P 8 M2SN WH	1
I43	P230653	U#BELLA 4 SOL28 P	1	J612	R313928	J C T H MBT P 8 M2SN WH	1
I44	P230653	U#BELLA 4 SOL28 P	1	J613	R313928	J C T H MBT P 8 M2SN WH	1
I45	P230203	U#084 TL SO14 P	1	J614	R313922	J C T H MBT P 2 M2SN WH	1
I46	P230030	U#4053 SO16 I	1	J615	R313922	J C T H MBT P 2 M2SN WH	1
I400	P231479	U#542 DG SO16 I	1	J616	R313922	J C T H MBT P 2 M2SN WH	1
I401	P231479	U#542 DG SO16 I	1	J617	R313923	J C T H MBT P 3 M2SN WH	1
I402	P231479	U#542 DG SO16 I	1	J618	R313923	J C T H MBT P 3 M2SN WH	1
I403	P231479	U#542 DG SO16 I	1	J619	R313922	J C T H MBT P 2 M2SN WH	1
I404	P230912	U#04 MLT SOL18 I	1	J622	R313286	J MO1 C MBT P 3 R1SN 7,5	1
I405	P230203	U#084 TL SO14 P	1	L601	R34700802	SLVU GLCL OIL D 1,5RD 20	1
I406	P230653	U#BELLA 4 SOL28 P	1	L601	R774154	CHD**HRHOR	1
I407	P230203	U#084 TL SO14 P	1	L602	R774154	CHD**HRHOR	1
I408	P230293	U#082 TL SO8 P	1	P 1	P201393	R#TCE H 50K M 0W25 S4 TS	1
I409	P230653	U#BELLA 4 SOL28 P	1	P 2	P201393	R#TCE H 50K M 0W25 S4 TS	1
I410	P231527	U#360 LM SO8 P	1	P 3	P201393	R#TCE H 50K M 0W25 S4 TS	1
I601	P230653	U#BELLA 4 SOL28 P	1	P 4	P201393	R#TCE H 50K M 0W25 S4 TS	1
I602	P230653	U#BELLA 4 SOL28 P	1	P 5	P201393	R#TCE H 50K M 0W25 S4 TS	1
I603	P230203	U#084 TL SO14 P	1	P 6	P201393	R#TCE H 50K M 0W25 S4 TS	1
I604	R134002	U 7812 TO220 P	1	P400	P201393	R#TCE H 50K M 0W25 S4 TS	1
I605	R134016	U 7912 TO220 P	1	P401	P201393	R#TCE H 50K M 0W25 S4 TS	1
I606	R134026	U 317T LM TO220 P	1	P402	P201393	R#TCE H 50K M 0W25 S4 TS	1
I607	R134027	U 337T TO220 P	1	P403	P201393	R#TCE H 50K M 0W25 S4 TS	1
I608	P230653	U#BELLA 4 SOL28 P	1	P404	P201393	R#TCE H 50K M 0W25 S4 TS	1
I609	P230653	U#BELLA 4 SOL28 P	1	P405	P201393	R#TCE H 50K M 0W25 S4 TS	1
I610	P230203	U#084 TL SO14 P	1	P406	P201393	R#TCE H 50K M 0W25 S4 TS	1
I611	R134011	U 7905C TO220 P	1	P407	P201393	R#TCE H 50K M 0W25 S4 TS	1
I612	R134001	U 7805 TO220 P	1	P408	P201393	R#TCE H 50K M 0W25 S4 TS	1
I613	P230203	U#084 TL SO14 P	1	PC	R780319	PCB D700 CNV DVR	1
I614	P230203	U#084 TL SO14 P	1				
I615	P230653	U#BELLA 4 SOL28 P	1				
I616	P230653	U#BELLA 4 SOL28 P	1				
I617	P230203	U#084 TL SO14 P	1				
I618	P230653	U#BELLA 4 SOL28 P	1				
I619	P230653	U#BELLA 4 SOL28 P	1				

Convergence DRIVER module

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
Q 1	P232066	Q#BSR14 N SS SOT23	1	R 71	P200411	R# CE H 1K F 0W12 1206	1
Q 2	P232101	Q#BC859C P SS SOT23	1	R 72	P200411	R# CE H 1K F 0W12 1206	1
Q 5	P232004	Q#BC849C N SS SOT23	1	R 73	P200437	R# CE H 12K F 0W12 1206	1
Q 9	P232101	Q#BC859C P SS SOT23	1	R 75	P200435	R# CE H 10K F 0W12 1206	1
Q 19	P232101	Q#BC859C P SS SOT23	1	R 77	P200411	R# CE H 1K F 0W12 1206	1
Q 20	P232004	Q#BC849C N SS SOT23	1	R 78	P200437	R# CE H 12K F 0W12 1206	1
Q 21	P232101	Q#BC859C P SS SOT23	1	R 79	P200411	R# CE H 1K F 0W12 1206	1
Q 22	P232101	Q#BC859C P SS SOT23	1	R 80	P200403	R# CE H470E F 0W12 1206	1
Q 23	P232079	Q#BSS84 F SS SOT23	1	R 81	P200437	R# CE H 12K F 0W12 1206	1
Q603	P232066	Q#BSR14 N SS SOT23	1	R 82	P200411	R# CE H 1K F 0W12 1206	1
Q604	P232004	Q#BC849C N SS SOT23	1	R 83	P200451	R# CE H 47K F 0W12 1206	1
R 1	P200433	R# CE H 8K2 F 0W12 1206	1	R 84	P200451	R# CE H 47K F 0W12 1206	1
R 2	P200425	R# CE H 3K9 F 0W12 1206	1	R 85	P200451	R# CE H 47K F 0W12 1206	1
R 3	P200413	R# CE H 1K2 F 0W12 1206	1	R 86	P200435	R# CE H 10K F 0W12 1206	1
R 5	P200411	R# CE H 1K F 0W12 1206	1	R 87	P200435	R# CE H 10K F 0W12 1206	1
R 6	P200395	R# CE H220E F 0W12 1206	1	R 88	P200435	R# CE H 10K F 0W12 1206	1
R 7	P200411	R# CE H 1K F 0W12 1206	1	R 89	P200419	R# CE H 2K2 F 0W12 1206	1
R 10	P200427	R# CE H 4K7 F 0W12 1206	1	R 90	P200435	R# CE H 10K F 0W12 1206	1
R 12	P200427	R# CE H 4K7 F 0W12 1206	1	R 91	P200425	R# CE H 3K9 F 0W12 1206	1
R 14	P200411	R# CE H 1K F 0W12 1206	1	R 92	P200419	R# CE H 2K2 F 0W12 1206	1
R 15	P200439	R# CE H 15K F 0W12 1206	1	R 93	P200443	R# CE H 22K F 0W12 1206	1
R 16	P200411	R# CE H 1K F 0W12 1206	1	R 97	P200435	R# CE H 10K F 0W12 1206	1
R 17	P200429	R# CE H 5K6 F 0W12 1206	1	R 98	P200435	R# CE H 10K F 0W12 1206	1
R 18	P200429	R# CE H 5K6 F 0W12 1206	1	R 99	P200435	R# CE H 10K F 0W12 1206	1
R 19	P200423	R# CE H 3K3 F 0W12 1206	1	R100	P200423	R# CE H 3K3 F 0W12 1206	1
R 23	P200469	R# CE H270K F 0W12 1206	1	R102	P200443	R# CE H 22K F 0W12 1206	1
R 25	P200411	R# CE H 1K F 0W12 1206	1	R103	P200411	R# CE H 1K F 0W12 1206	1
R 26	P200411	R# CE H 1K F 0W12 1206	1	R104	P200411	R# CE H 1K F 0W12 1206	1
R 27	P200439	R# CE H 15K F 0W12 1206	1	R105	P200413	R# CE H 1K2 F 0W12 1206	1
R 28	P200439	R# CE H 15K F 0W12 1206	1	R106	P200443	R# CE H 22K F 0W12 1206	1
R 29	P200439	R# CE H 15K F 0W12 1206	1	R107	P200387	R# CE H100E F 0W12 1206	1
R 30	P200413	R# CE H 1K2 F 0W12 1206	1	R108	P200425	R# CE H 3K9 F 0W12 1206	1
R 31	P200411	R# CE H 1K F 0W12 1206	1	R109	P200419	R# CE H 2K2 F 0W12 1206	1
R 32	P200416	R# CE H 1K6 F 0W12 1206	1	R110	P200443	R# CE H 22K F 0W12 1206	1
R 33	P200429	R# CE H 5K6 F 0W12 1206	1	R111	P200425	R# CE H 3K9 F 0W12 1206	1
R 34	P200435	R# CE H 10K F 0W12 1206	1	R112	P200417	R# CE H 1K8 F 0W12 1206	1
R 35	P200459	R# CE H100K F 0W12 1206	1	R113	P200411	R# CE H 1K F 0W12 1206	1
R 36	P200411	R# CE H 1K F 0W12 1206	1	R114	P200419	R# CE H 2K2 F 0W12 1206	1
R 37	P200435	R# CE H 10K F 0W12 1206	1	R116	P200437	R# CE H 12K F 0W12 1206	1
R 42	P200437	R# CE H 12K F 0W12 1206	1	R118	P200437	R# CE H 12K F 0W12 1206	1
R 43	P200363	R# CE H 10E F 0W12 1206	1	R119	P200437	R# CE H 12K F 0W12 1206	1
R 44	P200437	R# CE H 12K F 0W12 1206	1	R120	P200419	R# CE H 2K2 F 0W12 1206	1
R 45	P200437	R# CE H 12K F 0W12 1206	1	R121	P200419	R# CE H 2K2 F 0W12 1206	1
R 46	P200435	R# CE H 10K F 0W12 1206	1	R122	P200439	R# CE H 15K F 0W12 1206	1
R 47	P200419	R# CE H 2K2 F 0W12 1206	1	R123	P200439	R# CE H 15K F 0W12 1206	1
R 48	P200419	R# CE H 2K2 F 0W12 1206	1	R124	P200439	R# CE H 15K F 0W12 1206	1
R 49	P200435	R# CE H 10K F 0W12 1206	1	R125	P200439	R# CE H 15K F 0W12 1206	1
R 50	P200435	R# CE H 10K F 0W12 1206	1	R126	P200435	R# CE H 10K F 0W12 1206	1
R 51	P200459	R# CE H100K F 0W12 1206	1	R127	P200423	R# CE H 3K3 F 0W12 1206	1
R 52	P200427	R# CE H 4K7 F 0W12 1206	1	R128	P200443	R# CE H 22K F 0W12 1206	1
R 54	P200386	R# CE H 91E F 0W12 1206	1	R129	P200403	R# CE H470E F 0W12 1206	1
R 55	P200389	R# CE H120E F 0W12 1206	1	R130	P200403	R# CE H470E F 0W12 1206	1
R 58	P200427	R# CE H 4K7 F 0W12 1206	1	R131	P200419	R# CE H 2K2 F 0W12 1206	1
R 59	P200423	R# CE H 3K3 F 0W12 1206	1	R132	P200439	R# CE H 15K F 0W12 1206	1
R 60	P200419	R# CE H 2K2 F 0W12 1206	1	R133	P200439	R# CE H 15K F 0W12 1206	1
R 61	P200419	R# CE H 2K2 F 0W12 1206	1	R134	P200439	R# CE H 15K F 0W12 1206	1
R 62	P200435	R# CE H 10K F 0W12 1206	1	R135	P200439	R# CE H 15K F 0W12 1206	1
R 63	P200435	R# CE H 10K F 0W12 1206	1	R136	P200419	R# CE H 2K2 F 0W12 1206	1
R 64	P200435	R# CE H 10K F 0W12 1206	1	R137	P200437	R# CE H 12K F 0W12 1206	1
R 65	P200437	R# CE H 12K F 0W12 1206	1	R138	P200437	R# CE H 12K F 0W12 1206	1
R 66	P200437	R# CE H 12K F 0W12 1206	1	R139	P200427	R# CE H 4K7 F 0W12 1206	1
R 67	P200419	R# CE H 2K2 F 0W12 1206	1	R140	P200417	R# CE H 1K8 F 0W12 1206	1
R 68	P200411	R# CE H 1K F 0W12 1206	1	R141	P200417	R# CE H 1K8 F 0W12 1206	1
R 69	P200411	R# CE H 1K F 0W12 1206	1	R143	P200459	R# CE H100K F 0W12 1206	1
R 70	P200437	R# CE H 12K F 0W12 1206	1	R145	P200395	R# CE H220E F 0W12 1206	1
				R146	P200435	R# CE H 10K F 0W12 1206	1
				R152	P200425	R# CE H 3K9 F 0W12 1206	1

Convergence DRIVER module

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R153	P200417	R# CE H 1K8 F 0W12 1206	1	R243	P200427	R# CE H 4K7 F 0W12 1206	1
R154	P200411	R# CE H 1K F 0W12 1206	1	R244	P200419	R# CE H 2K2 F 0W12 1206	1
R157	P200435	R# CE H 10K F 0W12 1206	1	R245	P200419	R# CE H 2K2 F 0W12 1206	1
R160	P200435	R# CE H 10K F 0W12 1206	1	R246	P200433	R# CE H 8K2 F 0W12 1206	1
R161	P200427	R# CE H 4K7 F 0W12 1206	1	R247	P200419	R# CE H 2K2 F 0W12 1206	1
R162	P200427	R# CE H 4K7 F 0W12 1206	1	R248	P200419	R# CE H 2K2 F 0W12 1206	1
R163	P200411	R# CE H 1K F 0W12 1206	1	R249	P200411	R# CE H 1K F 0W12 1206	1
R164	P200419	R# CE H 2K2 F 0W12 1206	1	R250	P200411	R# CE H 1K F 0W12 1206	1
R165	P200439	R# CE H 15K F 0W12 1206	1	R251	P200415	R# CE H 1K5 F 0W12 1206	1
R166	P200439	R# CE H 15K F 0W12 1206	1	R252	P200411	R# CE H 1K F 0W12 1206	1
R167	P200439	R# CE H 15K F 0W12 1206	1	R253	P200441	R# CE H 18K F 0W12 1206	1
R168	P200439	R# CE H 15K F 0W12 1206	1	R254	P200441	R# CE H 18K F 0W12 1206	1
R170	P200435	R# CE H 10K F 0W12 1206	1	R255	P200441	R# CE H 18K F 0W12 1206	1
R173	P200419	R# CE H 2K2 F 0W12 1206	1	R256	P200441	R# CE H 18K F 0W12 1206	1
R174	P200439	R# CE H 15K F 0W12 1206	1	R257	P200469	R# CE H270K F 0W12 1206	1
R175	P200439	R# CE H 15K F 0W12 1206	1	R258	P200433	R# CE H 8K2 F 0W12 1206	1
R176	P200439	R# CE H 15K F 0W12 1206	1	R261	P200459	R# CE H100K F 0W12 1206	1
R177	P200439	R# CE H 15K F 0W12 1206	1	R262	P200411	R# CE H 1K F 0W12 1206	1
R178	P200411	R# CE H 1K F 0W12 1206	1	R264	P200435	R# CE H 10K F 0W12 1206	1
R179	P200427	R# CE H 4K7 F 0W12 1206	1	R266	P200435	R# CE H 10K F 0W12 1206	1
R180	P200427	R# CE H 4K7 F 0W12 1206	1	R267	P200435	R# CE H 10K F 0W12 1206	1
R181	P200423	R# CE H 3K3 F 0W12 1206	1	R268	P200441	R# CE H 18K F 0W12 1206	1
R182	P200417	R# CE H 1K8 F 0W12 1206	1	R269	P200441	R# CE H 18K F 0W12 1206	1
R183	P200417	R# CE H 1K8 F 0W12 1206	1	R270	P200441	R# CE H 18K F 0W12 1206	1
R184	P200471	R# CE H330K F 0W12 1206	1	R273	P200441	R# CE H 18K F 0W12 1206	1
R188	P200435	R# CE H 10K F 0W12 1206	1	R274	P200441	R# CE H 18K F 0W12 1206	1
R195	P200413	R# CE H 1K2 F 0W12 1206	1	R275	P200441	R# CE H 18K F 0W12 1206	1
R196	P200411	R# CE H 1K F 0W12 1206	1	R276	P200435	R# CE H 10K F 0W12 1206	1
R197	P200416	R# CE H 1K6 F 0W12 1206	1	R277	P200435	R# CE H 10K F 0W12 1206	1
R198	P200413	R# CE H 1K2 F 0W12 1206	1	R278	P200453	R# CE H 56K F 0W12 1206	1
R200	P200437	R# CE H 12K F 0W12 1206	1	R279	P200395	R# CE H220E F 0W12 1206	1
R202	P200427	R# CE H 4K7 F 0W12 1206	1	R280	P200419	R# CE H 2K2 F 0W12 1206	1
R203	P200427	R# CE H 4K7 F 0W12 1206	1	R281	P200433	R# CE H 8K2 F 0W12 1206	1
R204	P200419	R# CE H 2K2 F 0W12 1206	1	R282	P200433	R# CE H 8K2 F 0W12 1206	1
R205	P200419	R# CE H 2K2 F 0W12 1206	1	R283	P200435	R# CE H 10K F 0W12 1206	1
R206	P200439	R# CE H 15K F 0W12 1206	1	R284	P200419	R# CE H 2K2 F 0W12 1206	1
R207	P200439	R# CE H 15K F 0W12 1206	1	R285	P200419	R# CE H 2K2 F 0W12 1206	1
R208	P200439	R# CE H 15K F 0W12 1206	1	R286	P200411	R# CE H 1K F 0W12 1206	1
R209	P200439	R# CE H 15K F 0W12 1206	1	R287	P200443	R# CE H 22K F 0W12 1206	1
R210	P200427	R# CE H 4K7 F 0W12 1206	1	R288	P200459	R# CE H100K F 0W12 1206	1
R211	P200437	R# CE H 12K F 0W12 1206	1	R289	P200419	R# CE H 2K2 F 0W12 1206	1
R215	P200419	R# CE H 2K2 F 0W12 1206	1	R290	P200363	R# CE H 10E F 0W12 1206	1
R216	P200439	R# CE H 15K F 0W12 1206	1	R291	P200411	R# CE H 1K F 0W12 1206	1
R217	P200439	R# CE H 15K F 0W12 1206	1	R292	P200411	R# CE H 1K F 0W12 1206	1
R218	P200439	R# CE H 15K F 0W12 1206	1	R293	P200417	R# CE H 1K8 F 0W12 1206	1
R219	P200439	R# CE H 15K F 0W12 1206	1	R294	P200417	R# CE H 1K8 F 0W12 1206	1
R220	P200423	R# CE H 3K3 F 0W12 1206	1	R297	P200411	R# CE H 1K F 0W12 1206	1
R221	P200411	R# CE H 1K F 0W12 1206	1	R298	P200411	R# CE H 1K F 0W12 1206	1
R222	P200419	R# CE H 2K2 F 0W12 1206	1	R300	P200387	R# CE H100E F 0W12 1206	1
R223	P200427	R# CE H 4K7 F 0W12 1206	1	R302	P200411	R# CE H 1K F 0W12 1206	1
R224	P200427	R# CE H 4K7 F 0W12 1206	1	R303	P200461	R# CE H120K F 0W12 1206	1
R225	P200411	R# CE H 1K F 0W12 1206	1	R304	P200443	R# CE H 22K F 0W12 1206	1
R228	P200427	R# CE H 4K7 F 0W12 1206	1	R305	P200443	R# CE H 22K F 0W12 1206	1
R229	P200417	R# CE H 1K8 F 0W12 1206	1	R306	P200387	R# CE H100E F 0W12 1206	1
R230	P200417	R# CE H 1K8 F 0W12 1206	1	R307	P200463	R# CE H150K F 0W12 1206	1
R231	P200443	R# CE H 22K F 0W12 1206	1	R308	P200411	R# CE H 1K F 0W12 1206	1
R232	P200459	R# CE H100K F 0W12 1206	1	R309	P200403	R# CE H470E F 0W12 1206	1
R233	P200435	R# CE H 10K F 0W12 1206	1	R310	P200387	R# CE H100E F 0W12 1206	1
R234	P200459	R# CE H100K F 0W12 1206	1	R311	P200403	R# CE H470E F 0W12 1206	1
R235	P200435	R# CE H 10K F 0W12 1206	1	R312	P200387	R# CE H100E F 0W12 1206	1
R236	P200445	R# CE H 27K F 0W12 1206	1	R313	P200403	R# CE H470E F 0W12 1206	1
R237	P200423	R# CE H 3K3 F 0W12 1206	1	R314	P200387	R# CE H100E F 0W12 1206	1
R238	P200363	R# CE H 10E F 0W12 1206	1	R315	P200403	R# CE H470E F 0W12 1206	1
R239	P200437	R# CE H 12K F 0W12 1206	1	R316	P200387	R# CE H100E F 0W12 1206	1
R240	P200427	R# CE H 4K7 F 0W12 1206	1	R317	P200363	R# CE H 10E F 0W12 1206	1
R241	P200363	R# CE H 10E F 0W12 1206	1	R318	P200463	R# CE H150K F 0W12 1206	1
R242	P200437	R# CE H 12K F 0W12 1206	1				

Convergence DRIVER module

GREEN Convergence module

R762518

R7625128

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R319	P200411	R# CE H 1K F 0W12 1206	1	R405	P200469	R# CE H270K F 0W12 1206	1
R320	P200411	R# CE H 1K F 0W12 1206	1	R406	P200469	R# CE H270K F 0W12 1206	1
R321	P200443	R# CE H 22K F 0W12 1206	1	R407	P200469	R# CE H270K F 0W12 1206	1
R322	P200465	R# CE H180K F 0W12 1206	1	R408	P200469	R# CE H270K F 0W12 1206	1
R325	P200363	R# CE H 10E F 0W12 1206	1	R409	P200471	R# CE H330K F 0W12 1206	1
R326	P200429	R# CE H 5K6 F 0W12 1206	1	R410	P200443	R# CE H 22K F 0W12 1206	1
R327	P200435	R# CE H 10K F 0W12 1206	1	R411	P200431	R# CE H 6K8 F 0W12 1206	1
R328	P200425	R# CE H 3K9 F 0W12 1206	1	R412	P200417	R# CE H 1K8 F 0W12 1206	1
R329	P200363	R# CE H 10E F 0W12 1206	1	R413	P200435	R# CE H 10K F 0W12 1206	1
R330	P200435	R# CE H 10K F 0W12 1206	1	R414	P200443	R# CE H 22K F 0W12 1206	1
R331	P200435	R# CE H 10K F 0W12 1206	1	R415	P200431	R# CE H 6K8 F 0W12 1206	1
R332	P200425	R# CE H 3K9 F 0W12 1206	1	R416	P200417	R# CE H 1K8 F 0W12 1206	1
R333	P200435	R# CE H 10K F 0W12 1206	1	R417	P200435	R# CE H 10K F 0W12 1206	1
R334	P200403	R# CE H470E F 0W12 1206	1	R418	P200411	R# CE H 1K F 0W12 1206	1
R335	P200387	R# CE H100E F 0W12 1206	1	R419	P200411	R# CE H 1K F 0W12 1206	1
R336	P200403	R# CE H470E F 0W12 1206	1	R420	P200411	R# CE H 1K F 0W12 1206	1
R337	P200387	R# CE H100E F 0W12 1206	1	R421	P200411	R# CE H 1K F 0W12 1206	1
R338	P200403	R# CE H470E F 0W12 1206	1	R422	P200411	R# CE H 1K F 0W12 1206	1
R339	P200387	R# CE H100E F 0W12 1206	1	R423	P200411	R# CE H 1K F 0W12 1206	1
R340	P200403	R# CE H470E F 0W12 1206	1	R424	P200403	R# CE H470E F 0W12 1206	1
R341	P200387	R# CE H100E F 0W12 1206	1	R425	P200387	R# CE H100E F 0W12 1206	1
R342	P200403	R# CE H470E F 0W12 1206	1	R429	P200449	R# CE H 39K F 0W12 1206	1
R343	P200387	R# CE H100E F 0W12 1206	1	R430	P200449	R# CE H 39K F 0W12 1206	1
R344	P200403	R# CE H470E F 0W12 1206	1	R431	P200449	R# CE H 39K F 0W12 1206	1
R345	P200387	R# CE H100E F 0W12 1206	1	R432	P200435	R# CE H 10K F 0W12 1206	1
R346	P200403	R# CE H470E F 0W12 1206	1	R433	P200435	R# CE H 10K F 0W12 1206	1
R347	P200387	R# CE H100E F 0W12 1206	1	R434	P200435	R# CE H 10K F 0W12 1206	1
R348	P200403	R# CE H470E F 0W12 1206	1	R438	P200443	R# CE H 22K F 0W12 1206	1
R349	P200387	R# CE H100E F 0W12 1206	1	R439	P200447	R# CE H 33K F 0W12 1206	1
R350	P200403	R# CE H470E F 0W12 1206	1	R440	P200443	R# CE H 22K F 0W12 1206	1
R351	P200387	R# CE H100E F 0W12 1206	1	R441	P200427	R# CE H 4K7 F 0W12 1206	1
R352	P200403	R# CE H470E F 0W12 1206	1	R442	P200411	R# CE H 1K F 0W12 1206	1
R353	P200387	R# CE H100E F 0W12 1206	1	R443	P200411	R# CE H 1K F 0W12 1206	1
R354	P200403	R# CE H470E F 0W12 1206	1	R444	P200411	R# CE H 1K F 0W12 1206	1
R355	P200387	R# CE H100E F 0W12 1206	1	R445	P200411	R# CE H 1K F 0W12 1206	1
R360	P200403	R# CE H470E F 0W12 1206	1	R446	P200403	R# CE H470E F 0W12 1206	1
R361	P200387	R# CE H100E F 0W12 1206	1	R447	P200387	R# CE H100E F 0W12 1206	1
R362	P200403	R# CE H470E F 0W12 1206	1	R448	P200443	R# CE H 22K F 0W12 1206	1
R363	P200387	R# CE H100E F 0W12 1206	1	R449	P200447	R# CE H 33K F 0W12 1206	1
R364	P200403	R# CE H470E F 0W12 1206	1	R450	P200411	R# CE H 1K F 0W12 1206	1
R365	P200387	R# CE H100E F 0W12 1206	1	R451	P200411	R# CE H 1K F 0W12 1206	1
R366	P200403	R# CE H470E F 0W12 1206	1	R452	P200427	R# CE H 4K7 F 0W12 1206	1
R367	P200387	R# CE H100E F 0W12 1206	1	R453	P200427	R# CE H 4K7 F 0W12 1206	1
R368	P200403	R# CE H470E F 0W12 1206	1	R454	P200429	R# CE H 5K6 F 0W12 1206	1
R369	P200387	R# CE H100E F 0W12 1206	1	R455	P200429	R# CE H 5K6 F 0W12 1206	1
R370	P200403	R# CE H470E F 0W12 1206	1	R456	P200471	R# CE H330K F 0W12 1206	1
R371	P200387	R# CE H100E F 0W12 1206	1	R457	P200471	R# CE H330K F 0W12 1206	1
R372	P200403	R# CE H470E F 0W12 1206	1	R460	P200470	R# CE H300K F 0W12 1206	1
R373	P200387	R# CE H100E F 0W12 1206	1	R461	P200435	R# CE H 10K F 0W12 1206	1
R374	P200403	R# CE H470E F 0W12 1206	1	R465	P200339	R# CE H 1E F 0W12 1206	1
R375	P200387	R# CE H100E F 0W12 1206	1	R466	P200407	R# CE H680E F 0W12 1206	1
R378	P200459	R# CE H100K F 0W12 1206	1	R467	P200407	R# CE H680E F 0W12 1206	1
R379	P200403	R# CE H470E F 0W12 1206	1	R468	P200413	R# CE H 1K2 F 0W12 1206	1
R380	P200387	R# CE H100E F 0W12 1206	1	R469	P200407	R# CE H680E F 0W12 1206	1
R381	P200403	R# CE H470E F 0W12 1206	1	R470	P200407	R# CE H680E F 0W12 1206	1
R382	P200387	R# CE H100E F 0W12 1206	1	R471	P200407	R# CE H680E F 0W12 1206	1
R383	P200363	R# CE H 10E F 0W12 1206	1	R472	P200407	R# CE H680E F 0W12 1206	1
R384	P200363	R# CE H 10E F 0W12 1206	1	R473	P200407	R# CE H680E F 0W12 1206	1
R385	P200363	R# CE H 10E F 0W12 1206	1	R474	P200407	R# CE H680E F 0W12 1206	1
R386	P200363	R# CE H 10E F 0W12 1206	1	R475	P200407	R# CE H680E F 0W12 1206	1
R387	P200363	R# CE H 10E F 0W12 1206	1	R476	P200407	R# CE H680E F 0W12 1206	1
R388	P200363	R# CE H 10E F 0W12 1206	1	R477	P200407	R# CE H680E F 0W12 1206	1
R400	P200483	R# CE H 1M F 0W12 1206	1	R478	P200407	R# CE H680E F 0W12 1206	1
R401	P200407	R# CE H680E F 0W12 1206	1	R480	P200427	R# CE H 4K7 F 0W12 1206	1
R402	P200412	R# CE H 1K1 F 0W12 1206	1	R601	P200433	R# CE H 8K2 F 0W12 1206	1
R403	P200469	R# CE H270K F 0W12 1206	1	R602	P200437	R# CE H 12K F 0W12 1206	1
R404	P200469	R# CE H270K F 0W12 1206	1	R604	P200423	R# CE H 3K3 F 0W12 1206	1

Convergence DRIVER module

GREEN Convergence module

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R605	P200423	R# CE H 3K3 F 0W12 1206	1	R675	P200419	R# CE H 2K2 F 0W12 1206	1
R606	P200423	R# CE H 3K3 F 0W12 1206	1	R676	P200437	R# CE H 12K F 0W12 1206	1
R607	P200411	R# CE H 1K F 0W12 1206	1	R677	P200435	R# CE H 10K F 0W12 1206	1
R608	P200419	R# CE H 2K2 F 0W12 1206	1	R678	P200419	R# CE H 2K2 F 0W12 1206	1
R609	P200411	R# CE H 1K F 0W12 1206	1	R679	P200419	R# CE H 2K2 F 0W12 1206	1
R610	P200411	R# CE H 1K F 0W12 1206	1	R680	P200429	R# CE H 5K6 F 0W12 1206	1
R611	P200435	R# CE H 15K F 0W12 1206	1	R681	P200429	R# CE H 5K6 F 0W12 1206	1
R612	P200411	R# CE H 1K F 0W12 1206	1	R682	P200419	R# CE H 2K2 F 0W12 1206	1
R613	P200411	R# CE H 1K F 0W12 1206	1	R683	P200429	R# CE H 5K6 F 0W12 1206	1
R614	P200435	R# CE H 10K F 0W12 1206	1	R684	P200429	R# CE H 5K6 F 0W12 1206	1
R615	P200363	R# CE H 10E F 0W12 1206	1	R685	P200419	R# CE H 2K2 F 0W12 1206	1
R616	P200439	R# CE H 15K F 0W12 1206	1	R686	P200439	R# CE H 15K F 0W12 1206	1
R617	P200439	R# CE H 15K F 0W12 1206	1	R687	P200439	R# CE H 15K F 0W12 1206	1
R618	P200435	R# CE H 10K F 0W12 1206	1	R688	P200439	R# CE H 15K F 0W12 1206	1
R619	P200435	R# CE H 10K F 0W12 1206	1	R689	P200439	R# CE H 15K F 0W12 1206	1
R620	P200439	R# CE H 15K F 0W12 1206	1	R690	P200439	R# CE H 15K F 0W12 1206	1
R621	P200439	R# CE H 15K F 0W12 1206	1	R691	P200439	R# CE H 15K F 0W12 1206	1
R622	P200429	R# CE H 5K6 F 0W12 1206	1	R692	P200439	R# CE H 15K F 0W12 1206	1
R623	P200429	R# CE H 5K6 F 0W12 1206	1	R693	P200439	R# CE H 15K F 0W12 1206	1
R624	P200423	R# CE H 3K3 F 0W12 1206	1	R694	P200411	R# CE H 1K F 0W12 1206	1
R625	P200419	R# CE H 2K2 F 0W12 1206	1	R695	P200419	R# CE H 2K2 F 0W12 1206	1
R626	P200419	R# CE H 2K2 F 0W12 1206	1	R696	P200419	R# CE H 2K2 F 0W12 1206	1
R627	P200429	R# CE H 5K6 F 0W12 1206	1	R697	P200419	R# CE H 2K2 F 0W12 1206	1
R628	P200429	R# CE H 5K6 F 0W12 1206	1	R698	P200411	R# CE H 1K F 0W12 1206	1
R629	P200435	R# CE H 10K F 0W12 1206	1	R699	P200419	R# CE H 2K2 F 0W12 1206	1
R630	P200419	R# CE H 2K2 F 0W12 1206	1	R700	P200419	R# CE H 2K2 F 0W12 1206	1
R631	P200443	R# CE H 22K F 0W12 1206	1	R701	P200419	R# CE H 2K2 F 0W12 1206	1
R632	P200391	R# CE H150E F 0W12 1206	1	R702	P200439	R# CE H 15K F 0W12 1206	1
R633	P200381	R# CE H 56E F 0W12 1206	1	R703	P200439	R# CE H 15K F 0W12 1206	1
R634	P200395	R# CE H220E F 0W12 1206	1	R704	P200439	R# CE H 15K F 0W12 1206	1
R635	P200429	R# CE H 5K6 F 0W12 1206	1	R705	P200439	R# CE H 15K F 0W12 1206	1
R636	P200429	R# CE H 5K6 F 0W12 1206	1	R706	P200439	R# CE H 15K F 0W12 1206	1
R637	P200419	R# CE H 2K2 F 0W12 1206	1	R707	P200439	R# CE H 15K F 0W12 1206	1
R638	P200419	R# CE H 2K2 F 0W12 1206	1	R708	P200439	R# CE H 15K F 0W12 1206	1
R639	P200435	R# CE H 10K F 0W12 1206	1	R709	P200439	R# CE H 15K F 0W12 1206	1
R640	P200435	R# CE H 10K F 0W12 1206	1	R711	P200419	R# CE H 2K2 F 0W12 1206	1
R641	P200435	R# CE H 10K F 0W12 1206	1	R712	P200419	R# CE H 2K2 F 0W12 1206	1
R642	P200435	R# CE H 10K F 0W12 1206	1	R713	P200419	R# CE H 2K2 F 0W12 1206	1
R643	P200435	R# CE H 10K F 0W12 1206	1	R714	P200419	R# CE H 2K2 F 0W12 1206	1
R644	P200435	R# CE H 10K F 0W12 1206	1	R716	P200419	R# CE H 2K2 F 0W12 1206	1
R645	P200435	R# CE H 10K F 0W12 1206	1	R717	P200419	R# CE H 2K2 F 0W12 1206	1
R646	P200435	R# CE H 10K F 0W12 1206	1	R718	P200419	R# CE H 2K2 F 0W12 1206	1
R647	P200435	R# CE H 10K F 0W12 1206	1	R719	P200419	R# CE H 2K2 F 0W12 1206	1
R648	P200411	R# CE H 1K F 0W12 1206	1	R720	P200419	R# CE H 2K2 F 0W12 1206	1
R649	P200411	R# CE H 1K F 0W12 1206	1	R721	P200439	R# CE H 15K F 0W12 1206	1
R650	P200429	R# CE H 5K6 F 0W12 1206	1	R722	P200439	R# CE H 15K F 0W12 1206	1
R651	P200429	R# CE H 5K6 F 0W12 1206	1	R723	P200439	R# CE H 15K F 0W12 1206	1
R652	P200411	R# CE H 1K F 0W12 1206	1	R724	P200439	R# CE H 15K F 0W12 1206	1
R653	P200429	R# CE H 5K6 F 0W12 1206	1	R725	P200439	R# CE H 15K F 0W12 1206	1
R654	P200411	R# CE H 1K F 0W12 1206	1	R726	P200439	R# CE H 15K F 0W12 1206	1
R655	P200429	R# CE H 5K6 F 0W12 1206	1	R727	P200439	R# CE H 15K F 0W12 1206	1
R656	P200451	R# CE H 47K F 0W12 1206	1	R728	P200439	R# CE H 15K F 0W12 1206	1
R657	P200451	R# CE H 47K F 0W12 1206	1	R729	P200435	R# CE H 10K F 0W12 1206	1
R658	P200451	R# CE H 47K F 0W12 1206	1	R730	P200415	R# CE H 1K5 F 0W12 1206	1
R659	P200427	R# CE H 4K7 F 0W12 1206	1	R731	P200426	R# CE H 4K3 F 0W12 1206	1
R660	P200427	R# CE H 4K7 F 0W12 1206	1	R732	P200435	R# CE H 10K F 0W12 1206	1
R661	P200427	R# CE H 4K7 F 0W12 1206	1	R733	P200415	R# CE H 1K5 F 0W12 1206	1
R662	P200425	R# CE H 3K9 F 0W12 1206	1	R734	P200427	R# CE H 4K7 F 0W12 1206	1
R663	P200419	R# CE H 2K2 F 0W12 1206	1	R735	P200419	R# CE H 2K2 F 0W12 1206	1
R664	P200437	R# CE H 12K F 0W12 1206	1	R736	P200423	R# CE H 3K3 F 0W12 1206	1
R665	P200437	R# CE H 12K F 0W12 1206	1	R737	P200423	R# CE H 3K3 F 0W12 1206	1
R666	P200419	R# CE H 2K2 F 0W12 1206	1	R738	P200419	R# CE H 2K2 F 0W12 1206	1
R670	P200427	R# CE H 4K7 F 0W12 1206	1	R739	P200435	R# CE H 10K F 0W12 1206	1
R671	P200427	R# CE H 4K7 F 0W12 1206	1	R740	P200441	R# CE H 18K F 0W12 1206	1
R672	P200427	R# CE H 4K7 F 0W12 1206	1	R741	P200441	R# CE H 18K F 0W12 1206	1
R673	P200425	R# CE H 3K9 F 0W12 1206	1	R742	P200435	R# CE H 10K F 0W12 1206	1
R674	P200419	R# CE H 2K2 F 0W12 1206	1	R743	P200419	R# CE H 2K2 F 0W12 1206	1


Convergence DRIVER module

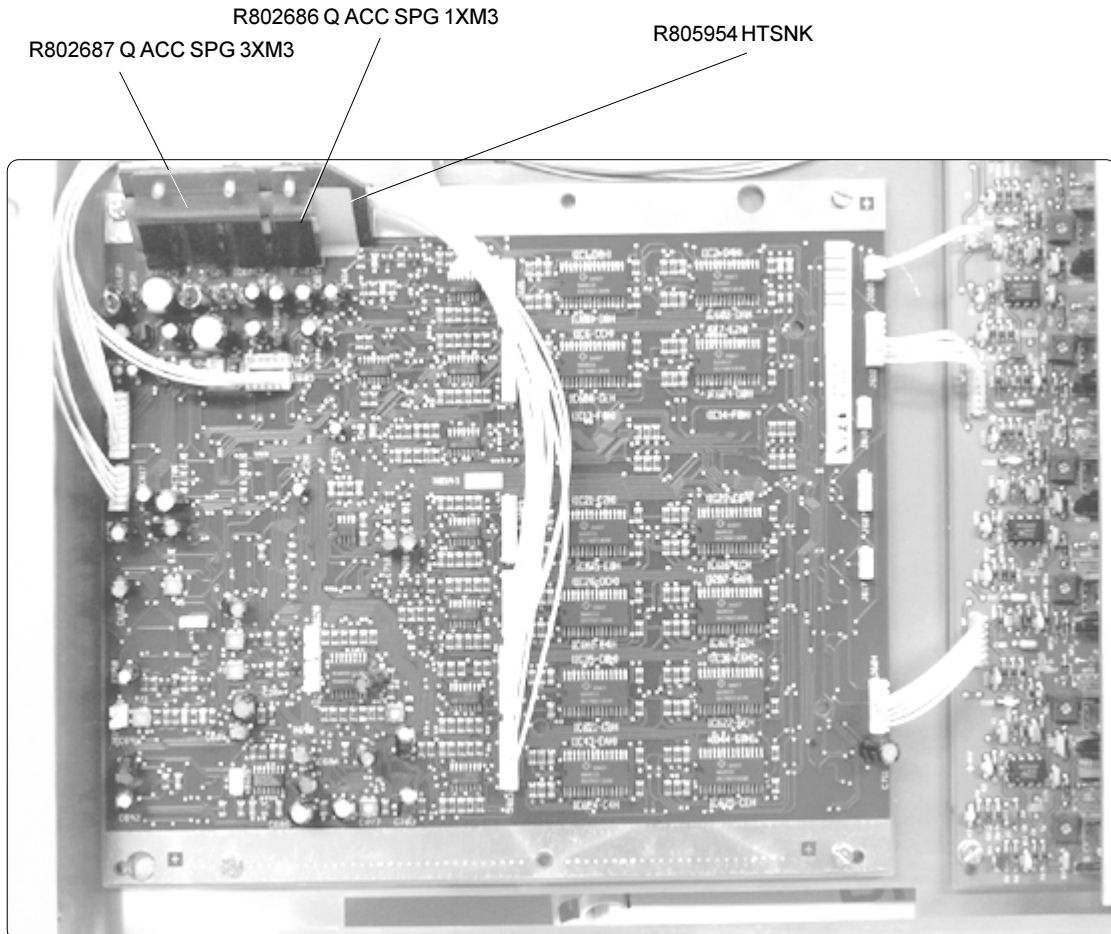
GREEN Convergence module

R762518
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SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R744	P200419	R# CE H 2K2 F 0W12 1206	1
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R746	P200423	R# CE H 3K3 F 0W12 1206	1
R747	P200441	R# CE H 18K F 0W12 1206	1
R748	P200441	R# CE H 18K F 0W12 1206	1
R749	P200441	R# CE H 18K F 0W12 1206	1
R750	P200441	R# CE H 18K F 0W12 1206	1
R751	P200435	R# CE H 10K F 0W12 1206	1
R752	P200435	R# CE H 10K F 0W12 1206	1
R753	P200441	R# CE H 18K F 0W12 1206	1
R754	P200441	R# CE H 18K F 0W12 1206	1
R755	P200397	R# CE H270E F 0W12 1206	1
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R759	P200397	R# CE H270E F 0W12 1206	1
R760	P200397	R# CE H270E F 0W12 1206	1
R800	P200403	R# CE H470E F 0W12 1206	1
R801	P200387	R# CE H100E F 0W12 1206	1
R802	P200403	R# CE H470E F 0W12 1206	1
R803	P200387	R# CE H100E F 0W12 1206	1
SR 1	R1001909	R CFFV E1 K 0W4 E1	1
SR 2	R1001909	R CFFV E1 K 0W4 E1	1
SR 3	R1001909	R CFFV E1 K 0W4 E1	1
SR 4	R1001909	R CFFV E1 K 0W4 E1	1
Z 1	P234127	D#ZEN 5V1 0W5 C DMMELF	1
Z 2	P234127	D#ZEN 5V1 0W5 C DMMELF	1

PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.



Convergence DRIVER module

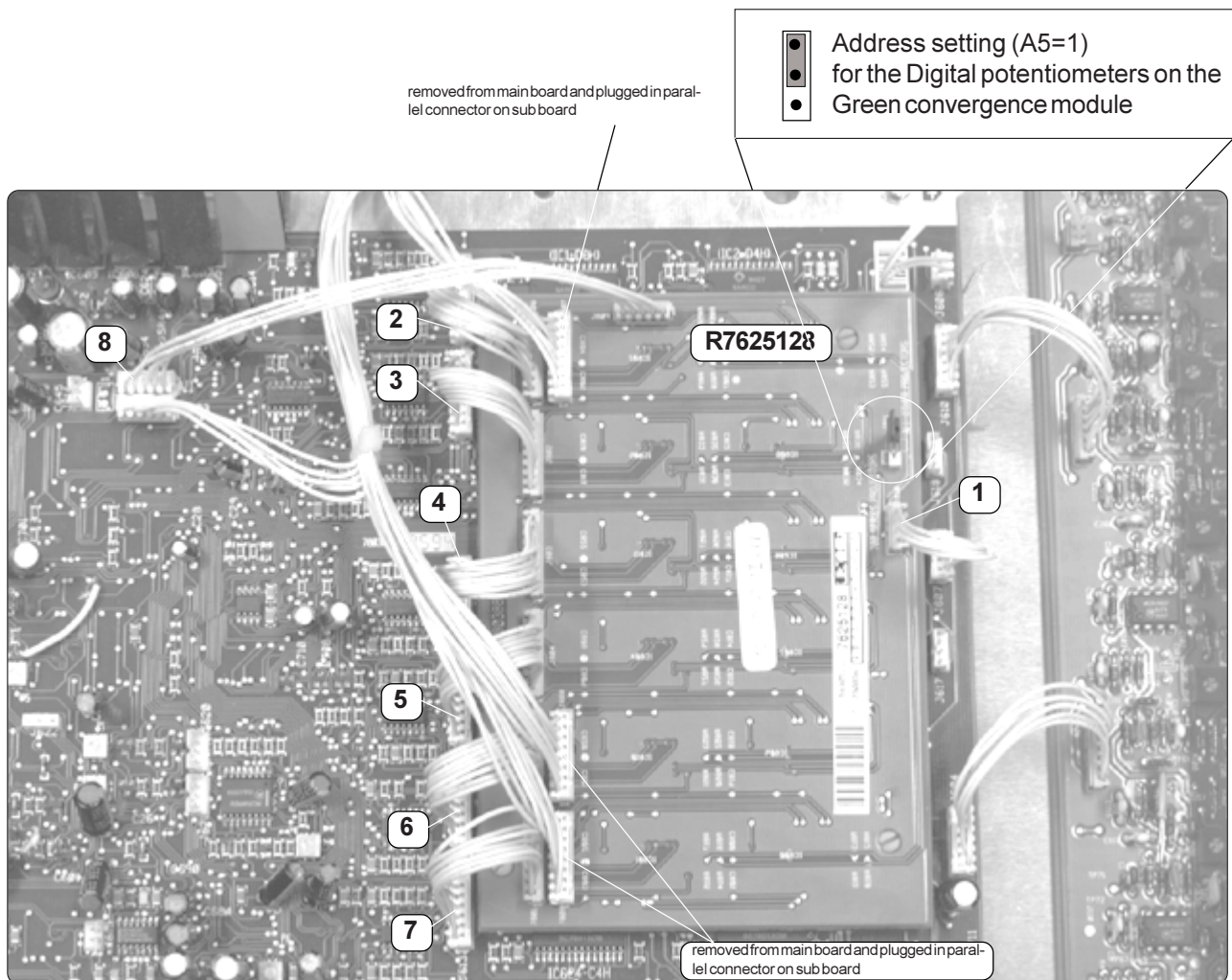
GREEN Convergence module

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Mounting guidelines for the GREEN convergence module R7625128

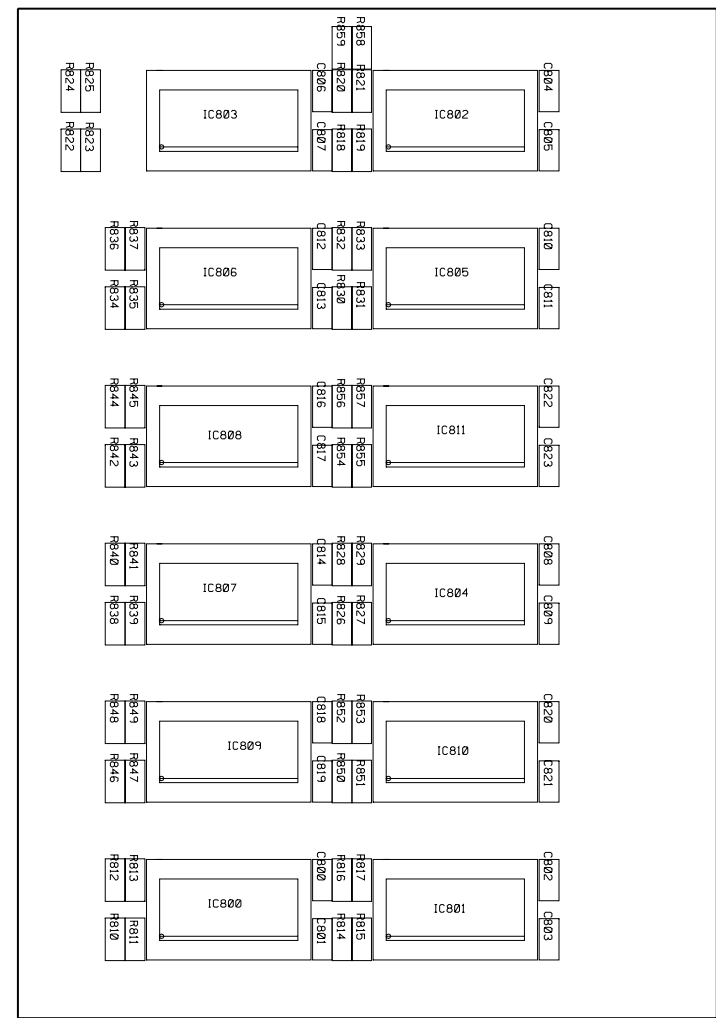
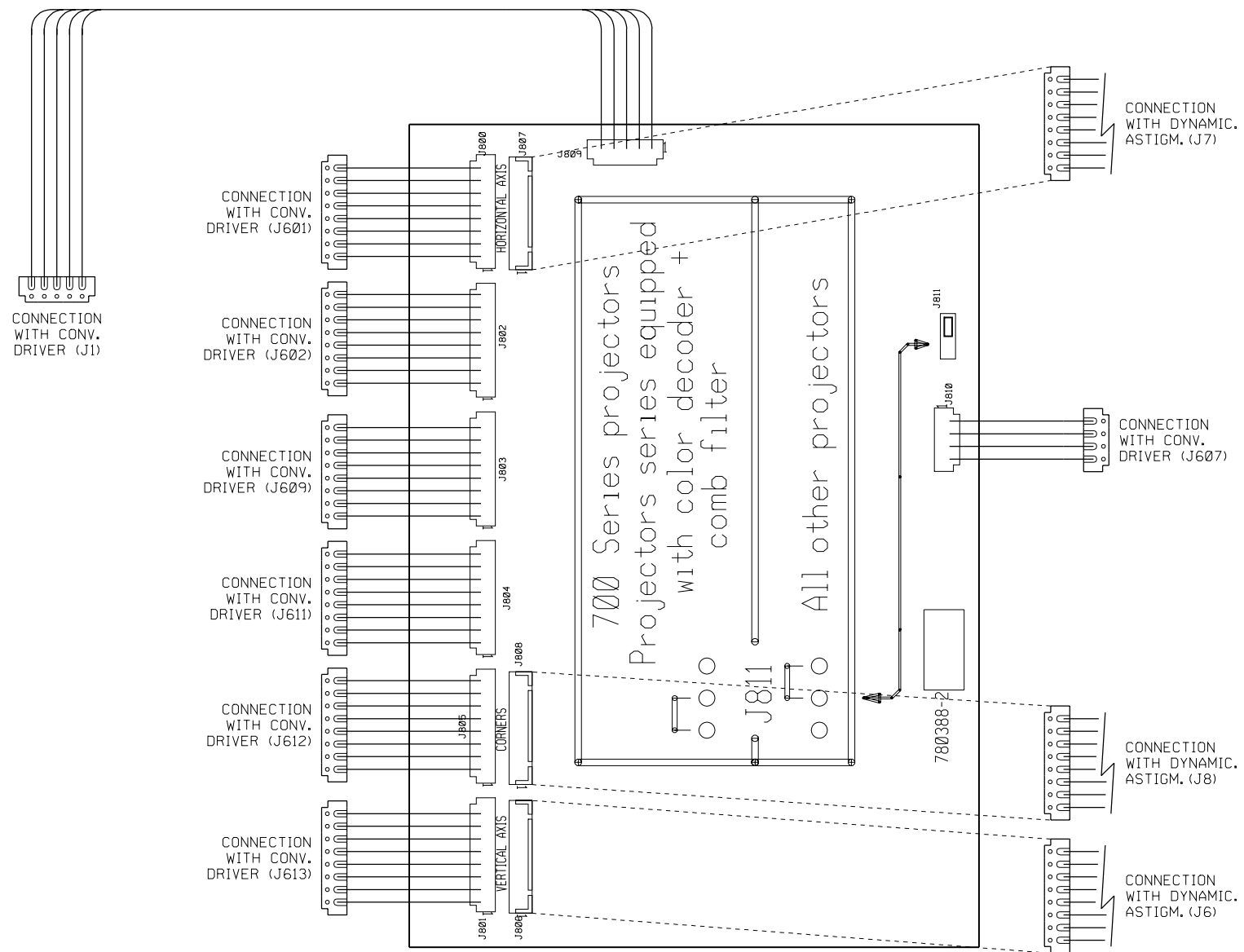


Interconnection Green convergence module

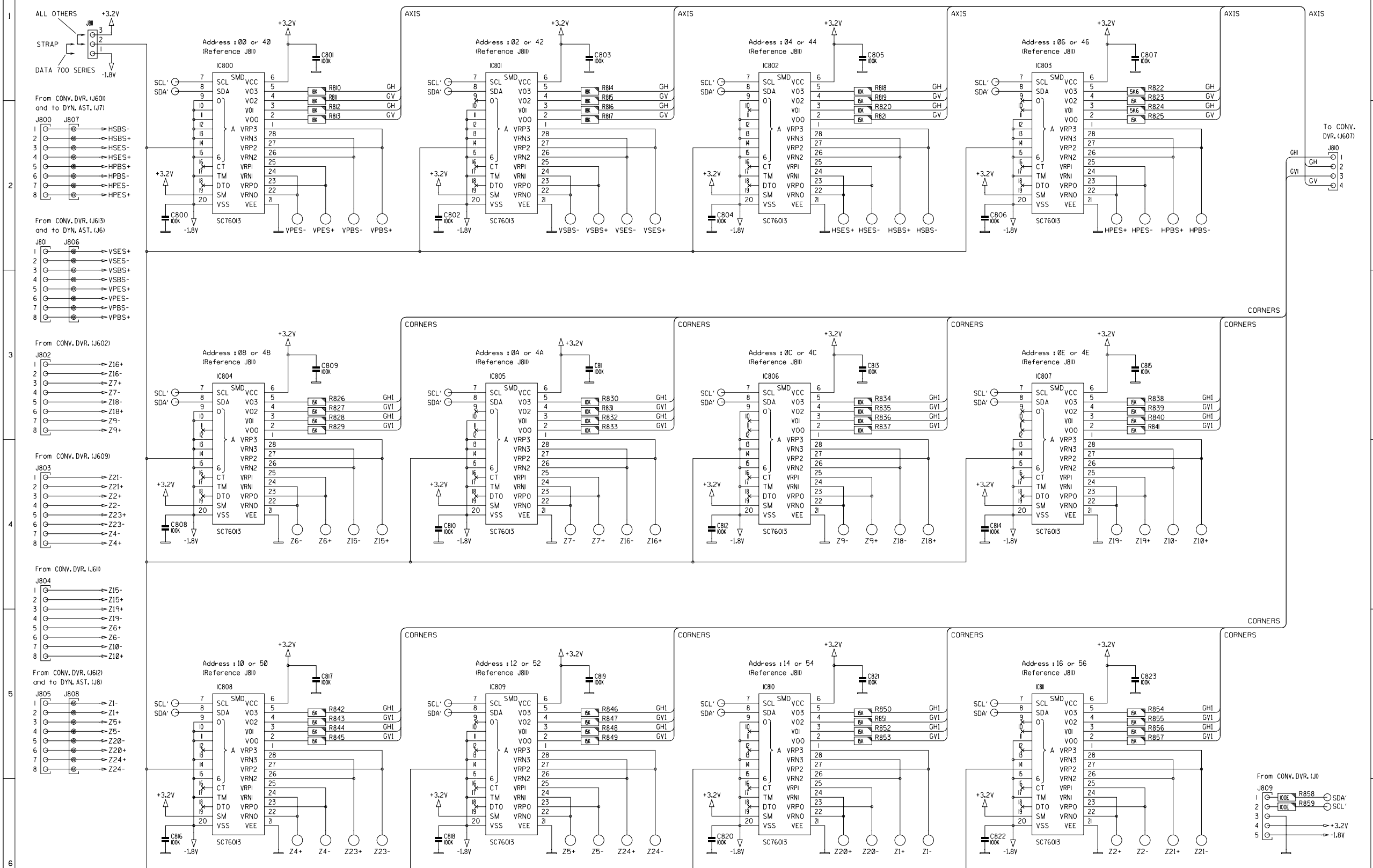


TOP VIEW

BOTTOM VIEW



DATA 700 SERIES : ADDRESS STARTS FROM HEX 00 UNTIL HEX 16
ALL OTHERS : ADDRESS STARTS FROM HEX 40 UNTIL HEX 56



COMP.	LOC.
C800	A 2
C801	B 1
C802	B 1
C803	B 1
C804	B 2
C805	B 2
C806	B 3
C807	B 3
C808	A 4
C809	B 3
C810	B 3
C811	B 3
C812	B 3
C813	B 3
C814	B 3
C815	B 3
C816	B 3
C817	B 3
C818	B 3
C819	B 3
C820	B 3
C821	B 3
C822	B 3
C823	B 3
IC800	B 1
IC801	B 1
IC802	B 1
IC803	B 1
IC804	B 1
IC805	B 1
IC806	B 1
IC807	B 1
IC808	B 1
IC809	B 1
IC810	B 1
IC811	B 1
J800	A 3
J801	A 3
J802	A 3
J803	A 3
J804	A 3
J805	A 3
J806	A 3
J807	A 3
J808	A 3
J809	H 1
J810	H 1
J811	A 1
R810	B 1
R811	B 1
R812	B 2
R813	B 2
R814	D 1
R815	B 2
R816	B 2
R817	D 2
R818	D 2
R819	D 2
R820	B 2
R821	B 2
R822	C 1
R823	C 1
R824	C 1
R825	C 1
R826	B 2
R827	B 2
R828	B 2
R829	B 2
R830	D 1
R831	D 1
R832	D 1
R833	D 1
R834	D 1
R835	D 1
R836	D 1
R837	D 1
R838	D 1
R839	D 1
R840	D 1
R841	D 1
R842	D 1
R843	D 1
R844	D 1
R845	D 1
R846	D 1
R847	D 1
R848	D 1
R849	D 1
R850	D 1
R851	D 1
R852	D 1
R853	D 1
R854	D 1
R855	D 1
R856	D 1
R857	D 1
R858	H 1
R859	H 1

Name GREEN CONVERGENCE		Sheet 1/1	
Module No. R7625128	Index 0	PCB No. R790388	Rev 2
Date 24-11-1997	Drawn JVDY	Checked GM	
BARCO PROJECTION SYSTEMS			

Modifications reserved

Convergence DRIVER module

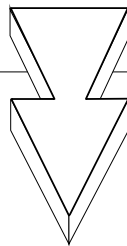
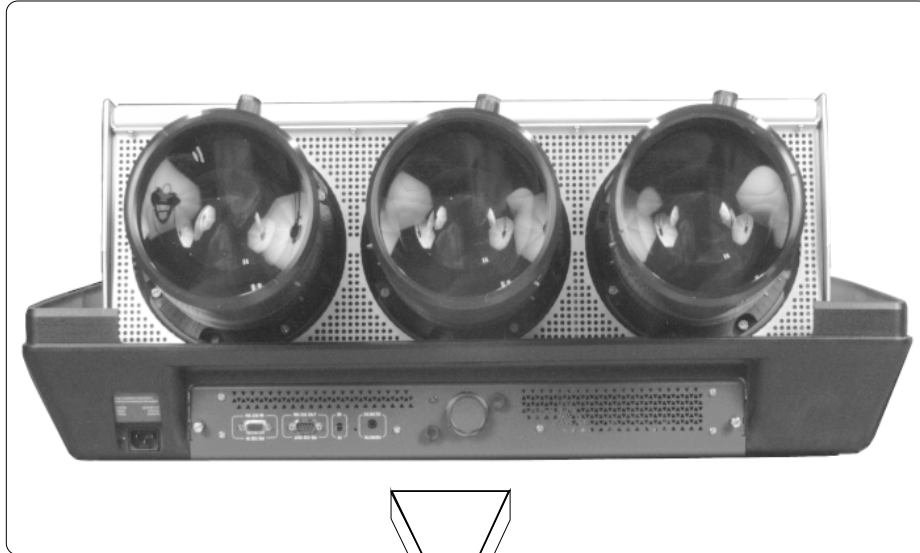
GREEN Convergence module

R762518

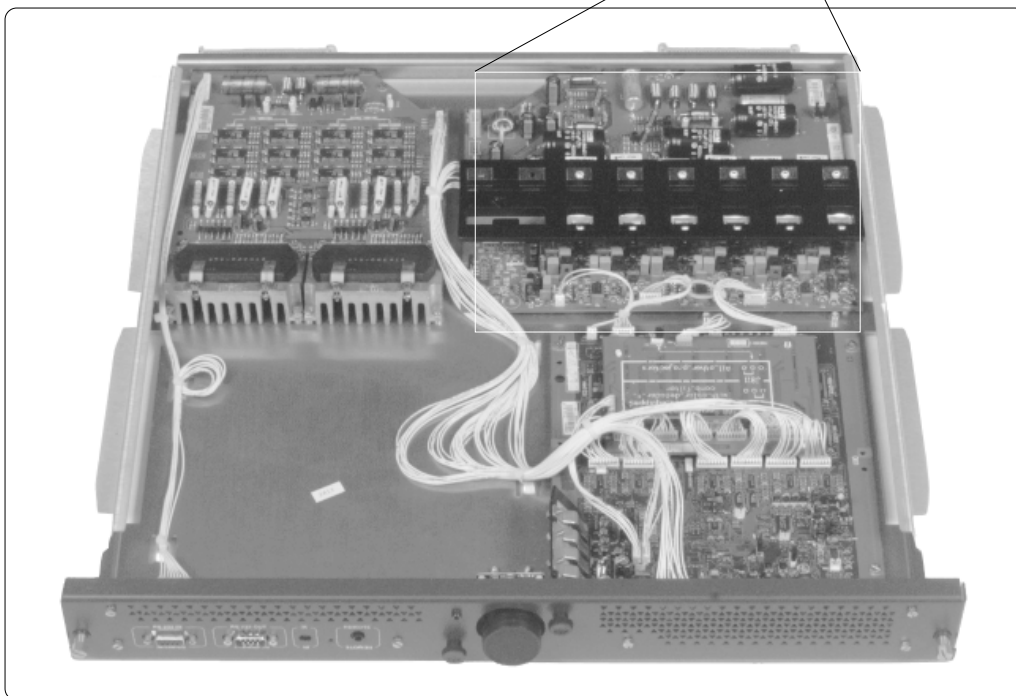
R7625128

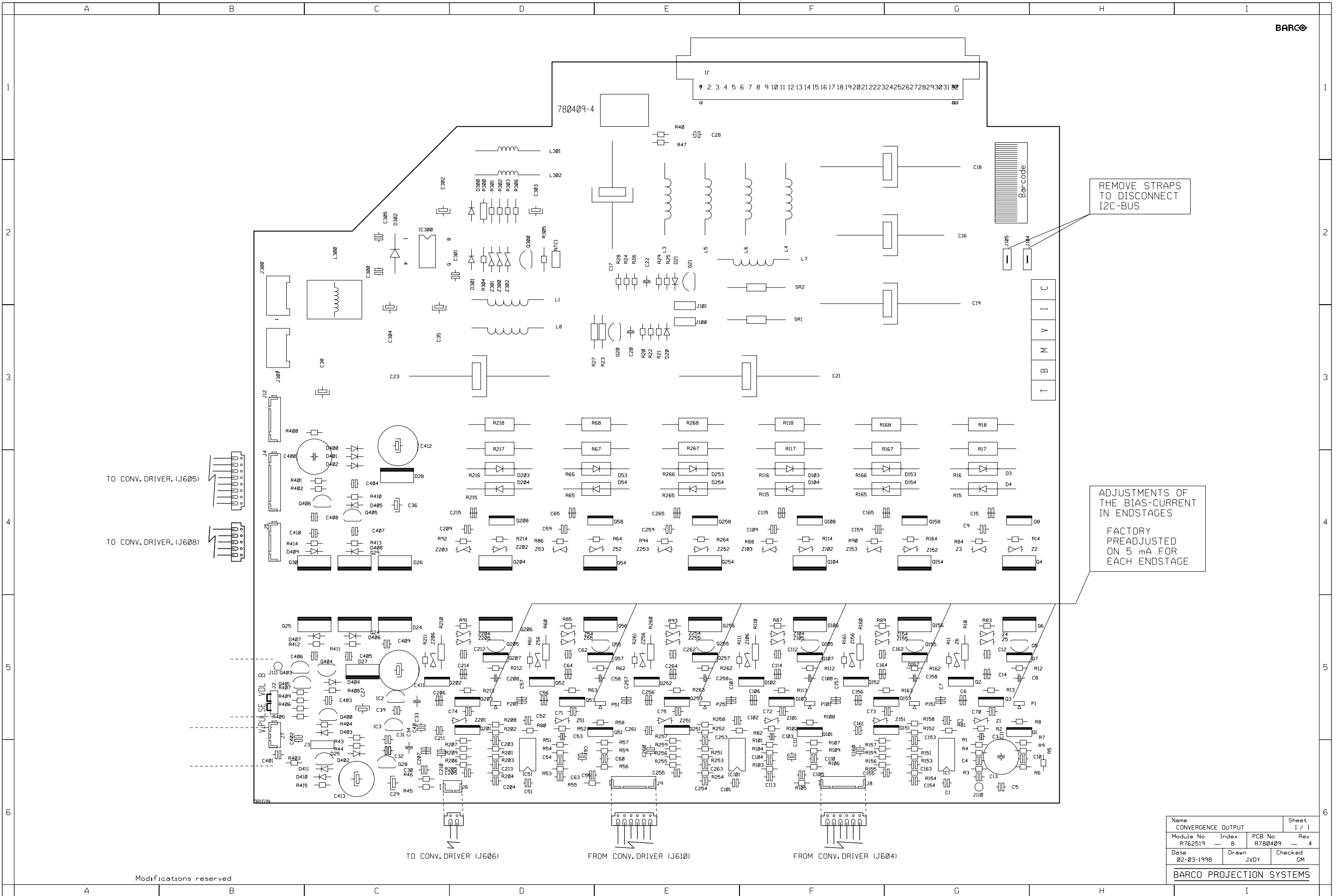
Parts listing Green Convergence module R7625128

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1000	R3133921	JMD JMP P 1 E1SN	1	R819	P200101	R# CE H 15K J 0W12 1206	1
1010	R312868	SPR PCB L 6.35 DLCBS	4	R820	P200097	R# CE H 10K J 0W12 1206	1
				R821	P200101	R# CE H 15K J 0W12 1206	1
C800	P210122	C# X7R MU 100N K 50 1206	1	R822	P200091	R# CE H 5K6 J 0W12 1206	1
C801	P210122	C# X7R MU 100N K 50 1206	1	R823	P200101	R# CE H 15K J 0W12 1206	1
C802	P210122	C# X7R MU 100N K 50 1206	1	R824	P200091	R# CE H 5K6 J 0W12 1206	1
C803	P210122	C# X7R MU 100N K 50 1206	1	R825	P200101	R# CE H 15K J 0W12 1206	1
C804	P210122	C# X7R MU 100N K 50 1206	1	R826	P200101	R# CE H 15K J 0W12 1206	1
C805	P210122	C# X7R MU 100N K 50 1206	1	R827	P200101	R# CE H 15K J 0W12 1206	1
C806	P210122	C# X7R MU 100N K 50 1206	1	R828	P200101	R# CE H 15K J 0W12 1206	1
C807	P210122	C# X7R MU 100N K 50 1206	1	R829	P200101	R# CE H 15K J 0W12 1206	1
C808	P210122	C# X7R MU 100N K 50 1206	1	R830	P200097	R# CE H 10K J 0W12 1206	1
C809	P210122	C# X7R MU 100N K 50 1206	1	R831	P200097	R# CE H 10K J 0W12 1206	1
C810	P210122	C# X7R MU 100N K 50 1206	1	R832	P200097	R# CE H 10K J 0W12 1206	1
C811	P210122	C# X7R MU 100N K 50 1206	1	R833	P200097	R# CE H 10K J 0W12 1206	1
C812	P210122	C# X7R MU 100N K 50 1206	1	R834	P200097	R# CE H 10K J 0W12 1206	1
C813	P210122	C# X7R MU 100N K 50 1206	1	R835	P200097	R# CE H 10K J 0W12 1206	1
C814	P210122	C# X7R MU 100N K 50 1206	1	R836	P200097	R# CE H 10K J 0W12 1206	1
C815	P210122	C# X7R MU 100N K 50 1206	1	R837	P200097	R# CE H 10K J 0W12 1206	1
C816	P210122	C# X7R MU 100N K 50 1206	1	R838	P200101	R# CE H 15K J 0W12 1206	1
C817	P210122	C# X7R MU 100N K 50 1206	1	R839	P200101	R# CE H 15K J 0W12 1206	1
C818	P210122	C# X7R MU 100N K 50 1206	1	R840	P200101	R# CE H 15K J 0W12 1206	1
C819	P210122	C# X7R MU 100N K 50 1206	1	R841	P200101	R# CE H 15K J 0W12 1206	1
C820	P210122	C# X7R MU 100N K 50 1206	1	R842	P200101	R# CE H 15K J 0W12 1206	1
C821	P210122	C# X7R MU 100N K 50 1206	1	R843	P200101	R# CE H 15K J 0W12 1206	1
C822	P210122	C# X7R MU 100N K 50 1206	1	R844	P200101	R# CE H 15K J 0W12 1206	1
C823	P210122	C# X7R MU 100N K 50 1206	1	R845	P200101	R# CE H 15K J 0W12 1206	1
				R846	P200101	R# CE H 15K J 0W12 1206	1
I800	P230653	U#76013 SC SOL28 P	1	R847	P200101	R# CE H 15K J 0W12 1206	1
I801	P230653	U#76013 SC SOL28 P	1	R848	P200101	R# CE H 15K J 0W12 1206	1
I802	P230653	U#76013 SC SOL28 P	1	R849	P200101	R# CE H 15K J 0W12 1206	1
I803	P230653	U#76013 SC SOL28 P	1	R850	P200101	R# CE H 15K J 0W12 1206	1
I804	P230653	U#76013 SC SOL28 P	1	R851	P200101	R# CE H 15K J 0W12 1206	1
I805	P230653	U#76013 SC SOL28 P	1	R852	P200101	R# CE H 15K J 0W12 1206	1
I806	P230653	U#76013 SC SOL28 P	1	R853	P200101	R# CE H 15K J 0W12 1206	1
I807	P230653	U#76013 SC SOL28 P	1	R854	P200101	R# CE H 15K J 0W12 1206	1
I808	P230653	U#76013 SC SOL28 P	1	R855	P200101	R# CE H 15K J 0W12 1206	1
I809	P230653	U#76013 SC SOL28 P	1	R856	P200101	R# CE H 15K J 0W12 1206	1
I810	P230653	U#76013 SC SOL28 P	1	R857	P200101	R# CE H 15K J 0W12 1206	1
I811	P230653	U#76013 SC SOL28 P	1	R858	P200049	R# CE H100E J 0W12 1206	1
				R859	P200049	R# CE H100E J 0W12 1206	1
J800	R348408	CD CT FTMT P 8 60	1				
J801	R348408	CD CT FTMT P 8 60	1				
J802	R348408	CD CT FTMT P 8 60	1				
J803	R348408	CD CT FTMT P 8 60	1				
J804	R348408	CD CT FTMT P 8 60	1				
J805	R348408	CD CT FTMT P 8 60	1				
J806	R313928	J C T H MBT P 8 M2SN	1				
J807	R313928	J C T H MBT P 8 M2SN	1				
J808	R313928	J C T H MBT P 8 M2SN	1				
J809	R3485057	CD CT FTMT P 5 130	1				
J810	R3484048	CD CT FTMT P 4 60	1				
J811	R313286	J MO1 C MBT P 3 R1SN 7,5	1				
PC	R780388	PCD#PJ56G808 CNV GRE	1				
R810	P200103	R# CE H 18K J 0W12 1206	1				
R811	P200103	R# CE H 18K J 0W12 1206	1				
R812	P200103	R# CE H 18K J 0W12 1206	1				
R813	P200103	R# CE H 18K J 0W12 1206	1				
R814	P200103	R# CE H 18K J 0W12 1206	1				
R815	P200103	R# CE H 18K J 0W12 1206	1				
R816	P200103	R# CE H 18K J 0W12 1206	1				
R817	P200103	R# CE H 18K J 0W12 1206	1				
R818	P200097	R# CE H 10K J 0W12 1206	1				



**Convergence Output
module R762519**





TO CONV. DRIVER (J605)

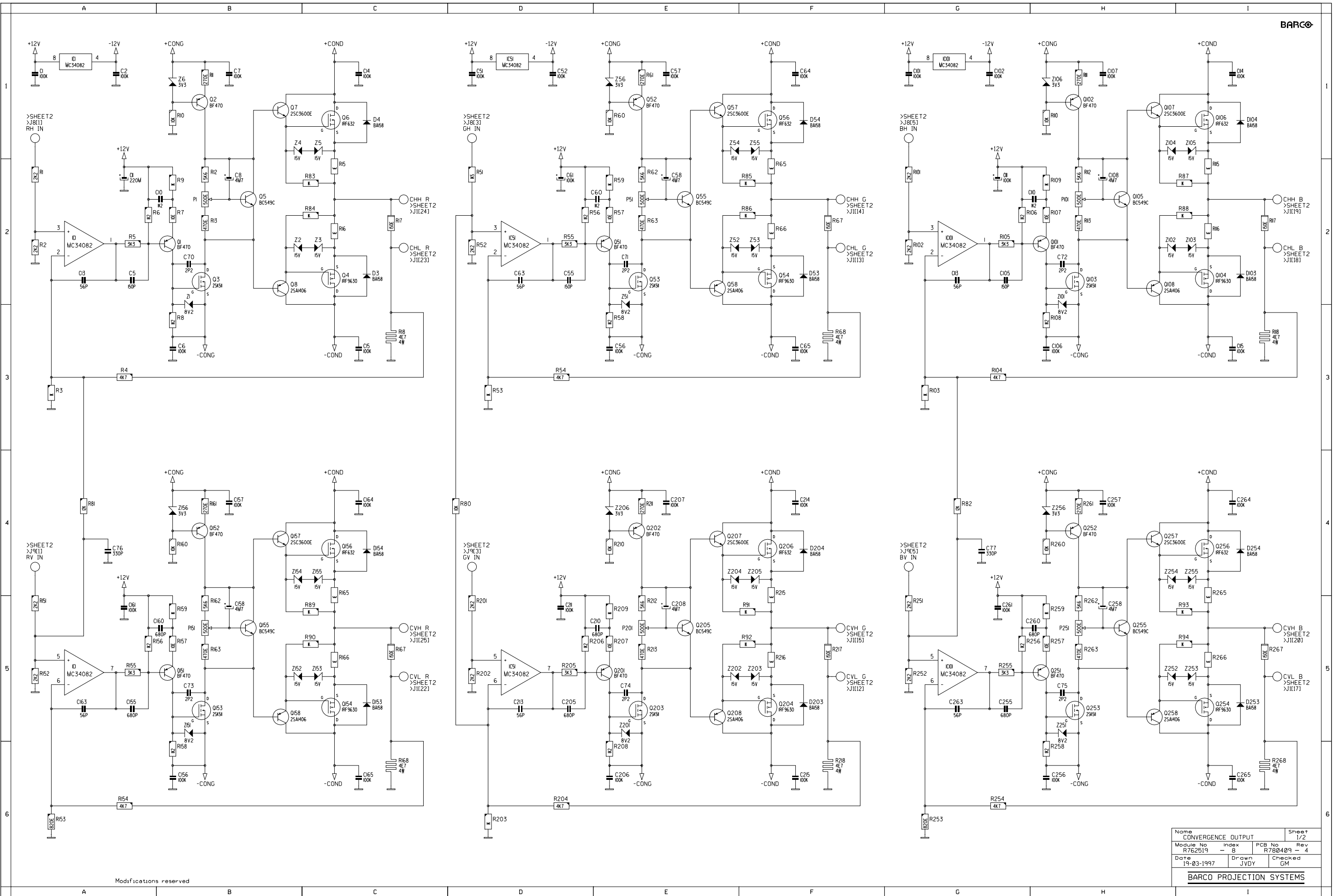
TO CONV. DRIVER (J608)

REMOVE STRAPS TO DISCONNECT I2C-BUS

ADJUSTMENTS OF THE BIAS-CURRENT IN ENDSTAGES
FACTORY PREADJUSTED ON 5 mA FOR EACH ENDSTAGE

Modifications reserved

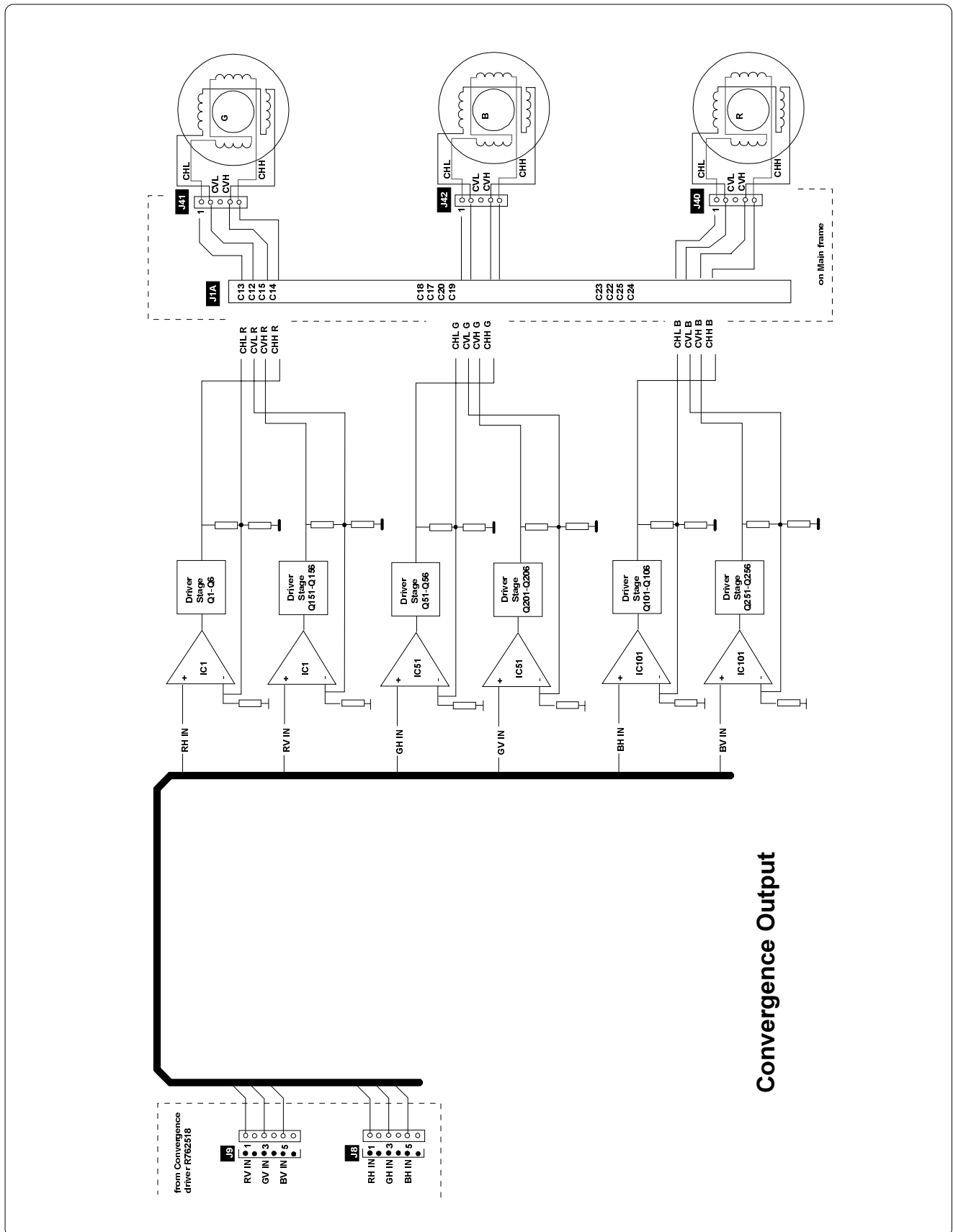
Name CONVERGENCE OUTPUT			Sheet 1 / 1
Module No R762519	Index 8	PCB No R780409	Rev 4
Date 02-03-1998	Drawn JVJY	Checked GM	
BARCO PROJECTION SYSTEMS			

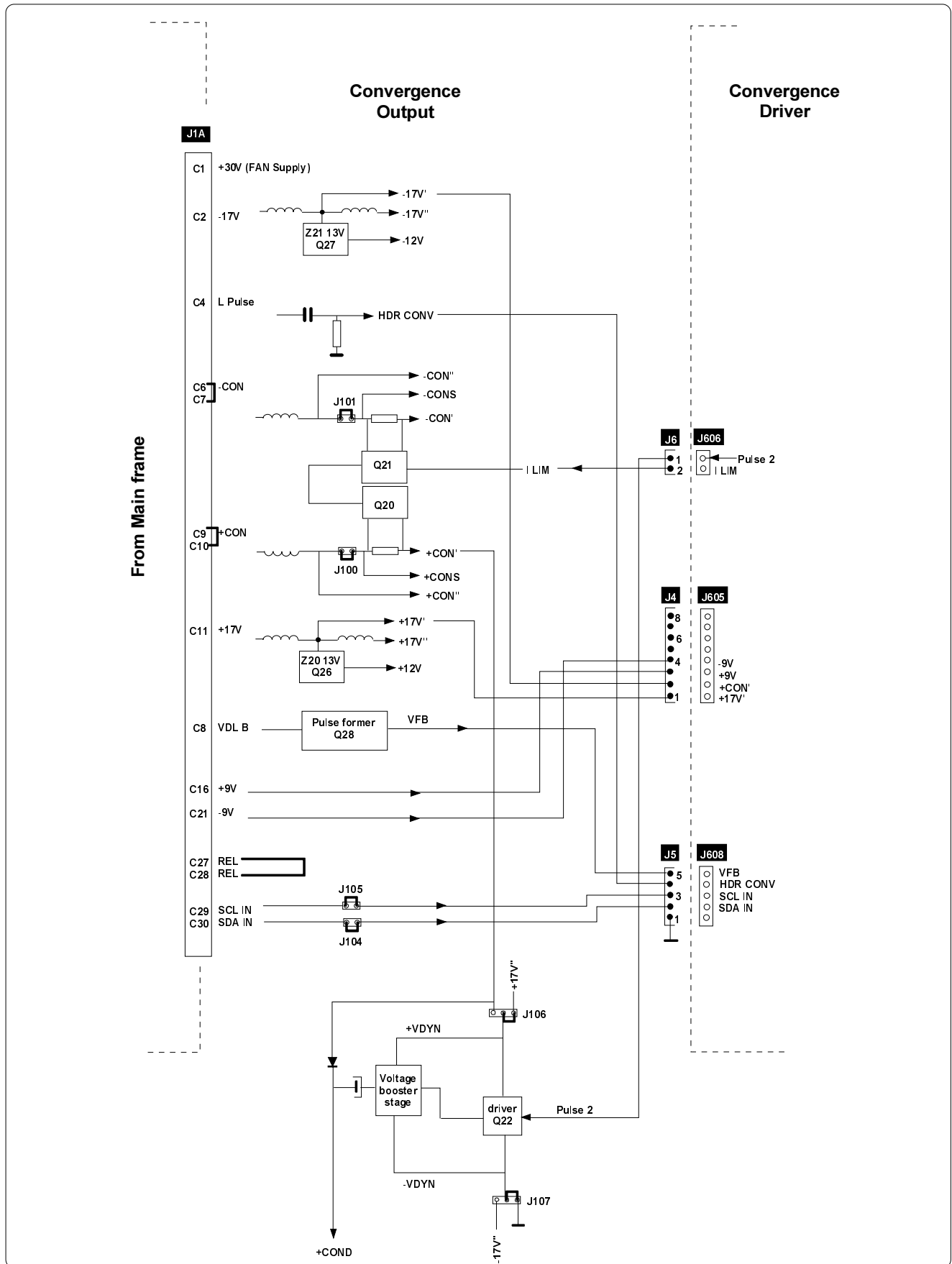


Modifications reserved

Name		CONVERGENCE OUTPUT		Sheet	1/2
Module No	Index	PCB No	Rev		
R752519	- 8	R750409	- 4		
Date	Drawn	Checked			
19-03-1997	JVDY	GM			
BARCO PROJECTION SYSTEMS					

Blockdiagram Power output stage convergences





Technical description " CONVERGENCE OUT" 762519

The purpose of the power amplifiers is to bring the adjusted signals to a sufficient high level that the convergence coils can be fully driven. Important hereby is that the drift must be kept as low as possible and that the signals must be carried to the coils without using coupling capacitors.

It is obvious that the coils react differently on signals at a high (line) frequency than on low frequency signals. Much more power is required for the high scanning than for the low scanning range. The power supply + / - CONV for these power amplifiers is a variable line frequency tracked voltage delivered by the "G2 + Diagnostic" board.

Six identical amplifiers feed the six convergence coils, two for each picture tube. We'll discuss only the amplifier served with "RHin" (Red Horizontal).

Note that "Horizontal " here relates to the moving direction (of lines of a crosshatch pattern) and not to the "horizontal" frequency. The "RHin " signal contains waveforms at line and vertical frequency.

That' s also the reason why the amplifier stages are identical.

The signal is first passed to the non-inverting input of an OPAMP MC34082, the inverting input receives a feedback signal from the output. The purpose of this stage is to stabilise the overall gain (DC and AC) of the amplifier.

The output of the OPAMP drives an inverting amplifier Q1 with high frequency compensation in the emitter.

The input signal to the OPAMP is around zero level, Q1 is therefore supplied with +12V and -CONV. The same applies for the next amplifier Q3.

This next MOSFET is supplied from the dynamic +COND supply line through a variable (line frequency tracked) current generator Q2, and, from the -CONV.

This dynamic voltage is the + / - CON voltage boosted up during the "pulse 2" time. By this increased supply voltage the slew rate during the horizontal retrace time is considerably improved. The end result is a better behaviour of the convergence coils just after the retrace time, thus, in the beginning of the scan.

The dropped voltage across R12 / P1 / R13 is partially applied to the base-emitter multiplier Q5 to provide sufficient voltage to drive Q4 / Q6 push-pull output stage. The zeners just limit the gate - source voltage for protection.

The current flow from the + / - CONV is preferable symmetrical. If for some reason one of the supplies is requiring more current than the other supply, the feedback system can no more correct the situation. It is possible that the problem is caused by a lack of symmetry of a pre- driver stage.

Further heating of an output that could lead to a breakdown might be avoided by inhibiting the sawtooth generator (see schematic "Horizontal Axis Convergence", sheet 1)

The electronic circuit that generates the *Ilim* is represented on sheet 2 of the "CONV OUT" schematic.

The current taken from the + CON' develops a voltage across SR1 that is applied to the base of Q20. The current taken from the - CON' does the same for Q21. As soon Q21 is switched on , the *Ilim* turns on Q22 (See sheet 1 of Horizontal Axis CONV) and the sawtooth generator is inhibited.

Convergence module (OUTPUT)

R762519

Parts listing Convergence module (Output) R762519

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION		
1000	R133039	SPR L 8 D 4 D 1.2 C	42	C110	R112733	C CE MI 330P K100E2	1
1070	R133039	SPR L 8 D 4 D 1.2 C	12	C111	R1127741	C CE MI 100N S 63E1	
1050	R133063	Q ACC ISO MICA SOT93	16	C153	R112386	C N152MI 390P J 63E2	1
1010	R3133921	JMD JMP P 1 E1SN	8	C154	R112365	C N750MI 180P J 63E2	1
1060	R3153151	J RVT MBT D 2.3L13	12	C155	R112737	C CE MI 680P K100E2	1
1021	R3481031	WU JUMP 0.51 10 ISO	2	C156	R1127741	C CE MI 100N S 63E1	1
1020	R348109	WU JUMP 0.6 25	1	C158	R1115915	C EL5 RA 4M7M 35E2 85	
1053	R3620226	SCR D84 M 3 X 8 SI	16	C159	R112242	C NPO MI 100P J 63E2	
1041	R3631059	SCR D933 M 3 X 8 XIC	4	C160	R112733	C CE MI 330P K100E2	1
1051	R803243	FRMPJ51 CNV SPG FIX Q	4	C161	R1127741	C CE MI 100N S 63E1	1
1040	R806124	FRMRODEN CNV OUT HTSNK	1	C162	R1137121	C POMERA 10N K100E2	
1052	R806125	Q ACC SPG	2	C163	R1137161	C POMERA 22N K100E2	
				C203	R112386	C N152MI 390P J 63E2	1
C 1	R1127741	C CE MI 100N S 63E1		C204	R112365	C N750MI 180P J 63E2	1
C 2	R1127741	C CE MI 100N S 63E1		C205	R112737	C CE MI 680P K100E2	1
C 3	R112741	C CE MI 1N5K100E2	1	C206	R1127741	C CE MI 100N S 63E1	1
C 4	R112737	C CE MI 680P K100E2	1	C208	R1115915	C EL5 RA 4M7M 35E2 85	
C 5	R112362	C N750MI 100P J 63E2	1	C209	R112242	C NPO MI 100P J 63E2	
C 6	R1127741	C CE MI 100N S 63E1		C210	R112733	C CE MI 330P K100E2	1
C 8	R1115915	C EL5 RA 4M7M 35E2 85		C211	R1127741	C CE MI 100N S 63E1	1
C 9	R112242	C NPO MI 100P J 63E2		C253	R112386	C N152MI 390P J 63E2	1
C 10	R112733	C CE MI 330P K100E2	1	C254	R112365	C N750MI 180P J 63E2	1
C 11	R1127741	C CE MI 100N S 63E1	1	C255	R112737	C CE MI 680P K100E2	1
C 15	R1137161	C POMERA 22N K100E2		C256	R1127741	C CE MI 100N S 63E1	1
C 16	R111164	C EL AX1000M T 25E14 85	1	C258	R1115915	C EL5 RA 4M7M 35E2 85	
C 17	R111164	C EL AX1000M T 25E14 85	1	C259	R112242	C NPO MI 100P J 63E2	
C 18	R111223	C EL AX 470M T100E10 85	1	C260	R112733	C CE MI 330P K100E2	1
C 19	R111223	C EL AX 470M T100E10 85	1	C261	R1127741	C CE MI 100N S 63E1	1
C 20	R111500	C EL RA 47M M 10E2 85		C300	R1159081	C PP RA 470P J100E2	
C 21	R111223	C EL AX 470M T100E10 85	1	C301	R113720	C POMERA 47N K 63E2	
C 22	R111500	C EL RA 47M M 10E2 85		C302	R111489	C EL RA 470M T 35E2 85	1
C 23	R111223	C EL AX 470M T100E10 85	1	C303	R111531	C EL RA 10M M 35E2 85	
C 24	R113724	C POMERA 100N K 63E2		C304	R111479	C EL RA 470M Z 25E2 85	1
C 25	R112743	C CE MI 2N2K100E2		C305	R112735	C CE MI 470P K100E2	
C 26	R112368	C N750MI 330P J 63E2					
C 27	R1113889	C EL RA 47M M100E2 85	1	D 3	R131637	D R BA158 600400 DO7	
C 28	R112681	C N750MI 15P G500E2		D 4	R131637	D R BA158 600400 DO7	
C 29	R111531	C EL RA 10M M 35E2 85		D 20	R131621	D S 1N4148 075150 DO35	
C 30	R1137121	C POMERA 10N K100E2		D 21	R131621	D S 1N4148 075150 DO35	
C 31	R113724	C POMERA 100N K 63E2		D 23	R131621	D S 1N4148 075150 DO35	
C 32	R112760	C CE MI 3N3K103E2		D 24	R131954	D R BYW29 20008A TO220	1
C 33	R111476	C EL RA 47M M 25E2 85		D 25	R131621	D S 1N4148 075150 DO35	
C 34	R111476	C EL RA 47M M 25E2 85		D 26	R131954	D R BYW29 20008A TO220	1
C 35	R111479	C EL RA 470M Z 25E2 85	1	D 53	R131637	D R BA158 600400 DO7	
C 36	R1113889	C EL RA 47M M100E2 85	1	D 54	R131637	D R BA158 600400 DO7	
C 37	R1137161	C POMERA 22N K100E2		D103	R131637	D R BA158 600400 DO7	
C 38	R111476	C EL RA 47M M 25E2 85		D104	R131637	D R BA158 600400 DO7	
C 51	R1127741	C CE MI 100N S 63E1		D153	R131637	D R BA158 600400 DO7	
C 52	R1127741	C CE MI 100N S 63E1		D154	R131637	D R BA158 600400 DO7	
C 53	R112741	C CE MI 1N5K100E2		D203	R131637	D R BA158 600400 DO7	
C 54	R112737	C CE MI 680P K100E2	1	D204	R131637	D R BA158 600400 DO7	
C 55	R112362	C N750MI 100P J 63E2	1	D253	R131637	D R BA158 600400 DO7	
C 56	R1127741	C CE MI 100N S 63E1		D254	R131637	D R BA158 600400 DO7	
C 58	R1115915	C EL5 RA 4M7M 35E2 85		D300	R131621	D S 1N4148 075150 DO35	
C 59	R112242	C NPO MI 100P J 63E2		D301	R131621	D S 1N4148 075150 DO35	
C 60	R112733	C CE MI 330P K100E2	1	D302	R131950	D R BYV27 15002A SOD57	1
C 61	R1127741	C CE MI 100N S 63E1	1				
C101	R1127741	C CE MI 100N S 63E1		I 1	R134146	U 34082 MC DIP8 P	1
C102	R1127741	C CE MI 100N S 63E1		I 51	R134146	U 34082 MC DIP8 P	1
C103	R112741	C CE MI 1N5K100E2	1	I101	R134146	U 34082 MC DIP8 P	1
C104	R112737	C CE MI 680P K100E2	1	I300	R137625	U 34063 DIP8 P	1
C105	R112362	C N750MI 100P J 63E2	1				
C106	R1127741	C CE MI 100N S 63E1		J 1	R313525	JEUR2C MBSP64 E1C2S 1,6	1
C108	R1115915	C EL5 RA 4M7M 35E2 85		J 4	R313928	JCT H MBT P 8 M2SN	1
C109	R112242	C NPO MI 100P J 63E2		J 5	R313925	JCT H MBT P 5 M2SN	1

Convergence module (OUTPUT)

R762519


J 6	R3485022	CD CT FTMT P 2 60	1	Q153	R132917	Q 2SK511 FN P TO126	1
J 7	R313923	JCT H MBT P 3 M2SN	1	Q154	R132942	Q IRF9630 FP P TO220	1
J 8	R34840611	CD CD FTMT P 6 65	1	Q155	R131411	Q BC549C N SS TO92	
J 9	R34840611	CD CD FTMT P 6 65	1	Q156	R132941	Q IRF632 FN P TO220	1
J 11	R3139626	JCT N NWT P 2 M2SN PC	1	Q201	R1325155	Q BF470 P P TO126	1
J 12	R313926	JCT H MBT P 6 M2SN	1	Q202	R1325155	Q BF470 P P TO126	1
J100	R3132862	JMD1 MBT P 2 E1SN	1	Q203	R132917	Q 2SK511 FN P TO126	1
J101	R3132862	JMD1 MBT P 2 E1SN	1	Q204	R132942	Q IRF9630 FP P TO220	1
J102	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q205	R131411	Q BC549C N SS TO92	
J103	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q206	R132941	Q IRF632 FN P TO220	1
J104	R3132862	JMD1 MBT P 2 E1SN	1	Q251	R1325155	Q BF470 P P TO126	1
J105	R3132862	JMD1 MBT P 2 E1SN	1	Q252	R1325155	Q BF470 P P TO126	1
J106	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q253	R132917	Q 2SK511 FN P TO126	1
J107	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q254	R132942	Q IRF9630 FP P TO220	1
J301	R3135722	JMT MBT P 3 R1 FL RED	1	Q255	R131411	Q BC549C N SS TO92	
				Q256	R132941	Q IRF632 FN P TO220	1
L 1	R775164	COILCHHORDEF	1	Q300	R131413	Q BC557 P SS TO92	
L 3	R775164	COILCHHORDEF	1				
L 4	R775164	COILCHHORDEF	1	R 1	R101540	R MF H 2K2 F 0W4 E3	
L 5	R775164	COILCHHORDEF	1	R 2	R101540	R MF H 2K2 F 0W4 E3	
L 6	R775164	COILCHHORDEF	1	R 3	R101536	R MF H 1K F 0W4 E3	
L 7	R775164	COILCHHORDEF	1	R 4	R101544	R MF H 4K7 F 0W4 E3	
L 8	R775164	COILCHHORDEF	1	R 5	R101542	R MF H 3K3 F 0W4 E3	
L300	R306222	CH TOR V 80 UH 2A	1	R 6	R101537	R MF H 1K2 F 0W4 E3	
L301	R774154	CHHORPJ45DHR	1	R 7	R101532	R MF H470E F 0W4 E3	
				R 8	R101537	R MF H 1K2 F 0W4 E3	
NTC1	R105016	R NTC 2K7 0W25	1	R 9	R101534	R MF H680E F 0W4 E3	
				R 10	R101248	R MF H 10K F 0W6 E4	
P 1	R107005	R TCE H500E M 0W5 S7 TS	1	R 11	R101533	R MF H560E F 0W4 E3	
P 51	R107005	R TCE H500E M 0W5 S7 TS	1	R 12	R101545	R MF H 5K6 F 0W4 E3	
P101	R107005	R TCE H500E M 0W5 S7 TS	1	R 13	R101532	R MF H470E F 0W4 E3	
P151	R107005	R TCE H500E M 0W5 S7 TS	1	R 14	R101524	R MF H100E F 0W4 E3	
P201	R107005	R TCE H500E M 0W5 S7 TS	1	R 15	R101300	R CF H 1E J 1W15	1
P251	R107005	R TCE H500E M 0W5 S7 TS	1	R 16	R101300	R CF H 1E J 1W15	1
				R 17	R103226	R MO H150E J 1W5	1
PC	R780409	PCDPJ51 G1208CNVOUT	1	R 18	R103620	R VVH 4E7 K 4W	1
				R 20	R101548	R MF H 10K F 0W4 E3	
Q 1	R1325155	Q BF470 P P TO126	1	R 21	R101550	R MF H 15K F 0W4 E3	
Q 2	R1325155	Q BF470 P P TO126	1	R 22	R101549	R MF H 12K F 0W4 E3	
Q 3	R132917	Q 2SK511 FN P TO126	1	R 23	R101248	R MF H 10K F 0W6 E4	
Q 4	R132942	Q IRF9630 FP P TO220	1	R 24	R101548	R MF H 10K F 0W4 E3	
Q 5	R131411	Q BC549C N SS TO92		R 25	R101550	R MF H 15K F 0W4 E3	
Q 6	R132941	Q IRF632 FN P TO220	1	R 26	R101548	R MF H 10K F 0W4 E3	
Q 20	R132552	Q BF423 P SS TO92		R 27	R101248	R MF H 10K F 0W6 E4	
Q 21	R132516	Q BF422 N SS TO92		R 28	R101568	R MF H470K F 0W4 E3	
Q 22	R132922	Q BC639 N SS TO92	1	R 29	R101536	R MF H 1K F 0W4 E3	
Q 23	R132968	Q BC640 P SS TO92	1	R 30	R101560	R MF H100K F 0W4 E3	
Q 24	R132941	Q IRF632 FN P TO220	1	R 31	R101524	R MF H100E F 0W4 E3	
Q 25	R132942	Q IRF9630 FP P TO220	1	R 32	R101550	R MF H 15K F 0W4 E3	
Q 26	R131411	Q BC549C N SS TO92	1	R 33	R101536	R MF H 1K F 0W4 E3	
Q 27	R1314182	Q BC559C P SS TO92		R 34	R101336	R CF H 1K J 1W	1
Q 28	R131411	Q BC549C N SS TO92	1	R 35	R101552	R MF H 22K F 0W4 E3	
Q 29	R132941	Q IRF632 FN P TO220	1	R 36	R101548	R MF H 10K F 0W4 E3	
Q 30	R132942	Q IRF9630 FP P TO220	1	R 37	R101336	R CF H 1K J 1W	1
Q 51	R1325155	Q BF470 P P TO126	1	R 40	R101555	R MF H 39K F 0W4 E3	
Q 52	R1325155	Q BF470 P P TO126	1	R 41	R101535	R MF H820E F 0W4 E3	
Q 53	R132917	Q 2SK511 FN P TO126	1	R 42	R101535	R MF H820E F 0W4 E3	
Q 54	R132942	Q IRF9630 FP P TO220	1	R 43	R101542	R MF H 3K3 F 0W4 E3	
Q 55	R131411	Q BC549C N SS TO92		R 44	R101548	R MF H 10K F 0W4 E3	
Q 56	R132941	Q IRF632 FN P TO220	1	R 45	R101512	R MF H 10E F 0W4 E3	
Q101	R1325155	Q BF470 P P TO126	1	R 46	R101536	R MF H 1K F 0W4 E3	
Q102	R1325155	Q BF470 P P TO126	1	R 47	R101549	R MF H 12K F 0W4 E3	
Q103	R132917	Q 2SK511 FN P TO126	1	R 51	R101540	R MF H 2K2 F 0W4 E3	
Q104	R132942	Q IRF9630 FP P TO220	1	R 52	R101540	R MF H 2K2 F 0W4 E3	
Q105	R131411	Q BC549C N SS TO92		R 53	R101536	R MF H 1K F 0W4 E3	
Q106	R132941	Q IRF632 FN P TO220	1	R 54	R101544	R MF H 4K7 F 0W4 E3	
Q151	R1325155	Q BF470 P P TO126	1	R 55	R101542	R MF H 3K3 F 0W4 E3	
Q152	R1325155	Q BF470 P P TO126	1	R 56	R101537	R MF H 1K2 F 0W4 E3	

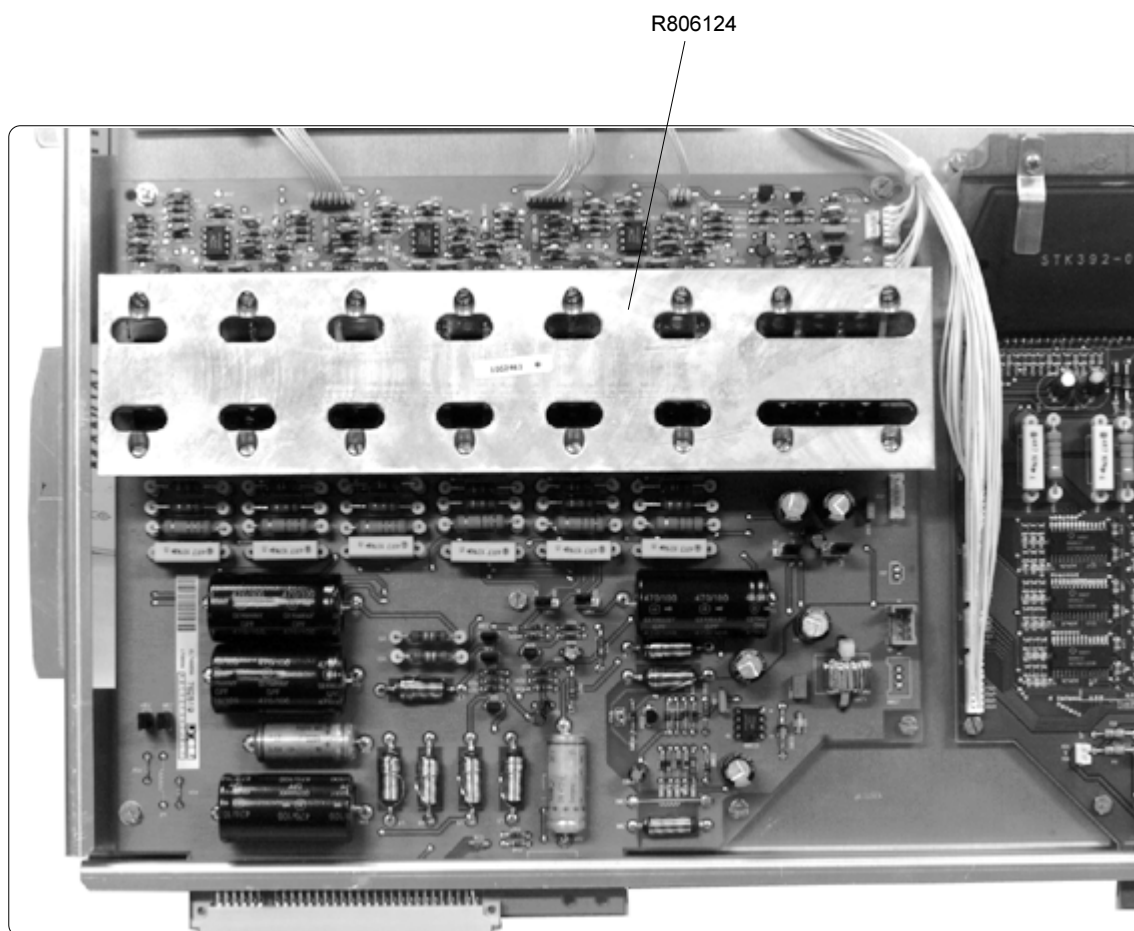
Convergence module (OUTPUT)

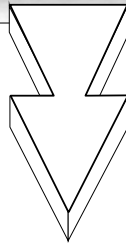
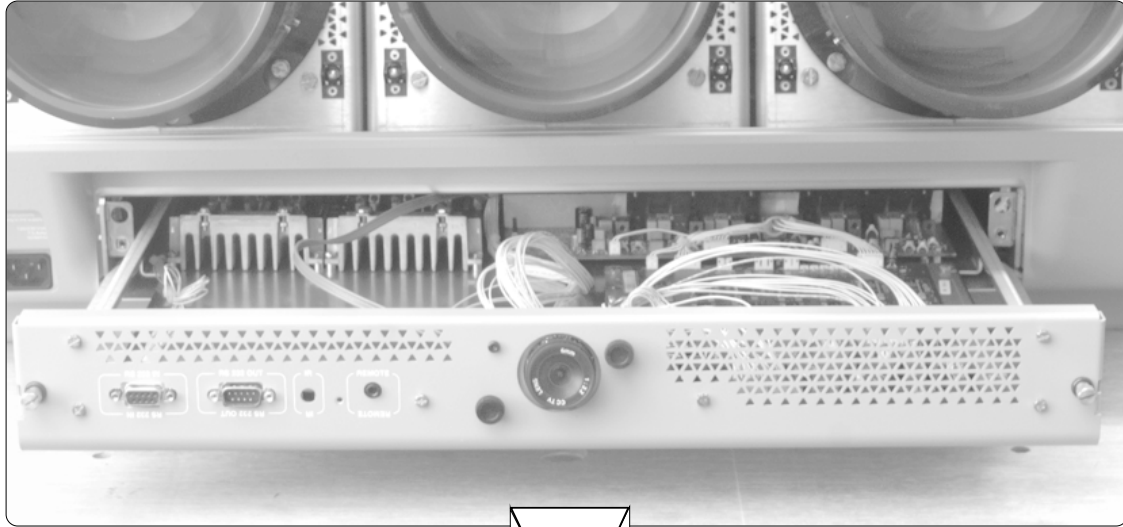
R762519

R 57	R101532	R MF H470E F 0W4 E3		R253	R101536	R MF H 1K F 0W4 E3	
R 58	R101537	R MF H 1K2 F 0W4 E3		R254	R101544	R MF H 4K7 F 0W4 E3	
R 59	R101534	R MF H680E F 0W4 E3		R255	R101542	R MF H 3K3 F 0W4 E3	
R 60	R101248	R MF H 10K F 0W6 E4		R256	R101537	R MF H 1K2 F 0W4 E3	
R 61	R101533	R MF H560E F 0W4 E3		R257	R101532	R MF H470E F 0W4 E3	
R 62	R101545	R MF H 5K6 F 0W4 E3		R258	R101537	R MF H 1K2 F 0W4 E3	
R 63	R101532	R MF H470E F 0W4 E3		R259	R101534	R MF H680E F 0W4 E3	
R 64	R101524	R MF H100E F 0W4 E3		R260	R101248	R MF H 10K F 0W6 E4	
R 65	R101300	R CF H 1E J 1W15		R261	R101533	R MF H560E F 0W4 E3	
R 66	R101300	R CF H 1E J 1W15	1	R262	R101545	R MF H 5K6 F 0W4 E3	
R 67	R103226	R MO H150E J 1W5	1	R263	R101532	R MF H470E F 0W4 E3	
R 68	R103620	R VVH H 4E7 K 4W	1	R264	R101524	R MF H100E F 0W4 E3	
R101	R101540	R MF H 2K2 F 0W4 E3		R265	R101300	R CF H 1E J 1W15	1
R102	R101540	R MF H 2K2 F 0W4 E3		R266	R101300	R CF H 1E J 1W15	1
R103	R101536	R MF H 1K F 0W4 E3		R267	R103226	R MO H150E J 1W5	1
R104	R101544	R MF H 4K7 F 0W4 E3		R268	R103620	R VVH H 4E7 K 4W	1
R105	R101542	R MF H 3K3 F 0W4 E3		R300	R1011907	R CFFH E1 J 0W4	1
R106	R101537	R MF H 1K2 F 0W4 E3		R301	R101555	R MF H 39K F 0W4 E3	
R107	R101532	R MF H470E F 0W4 E3		R302	R101549	R MF H 12K F 0W4 E3	
R108	R101537	R MF H 1K2 F 0W4 E3		R303	R101544	R MF H 4K7 F 0W4 E3	
R109	R101534	R MF H680E F 0W4 E3		R304	R101548	R MF H 10K F 0W4 E3	
R110	R101248	R MF H 10K F 0W6 E4		R305	R101538	R MF H 1K5 F 0W4 E3	
R111	R101533	R MF H560E F 0W4 E3		R306	R101536	R MF H 1K F 0W4 E3	
R112	R101545	R MF H 5K6 F 0W4 E3		SR 1	R1012997	R CFFH E1 K 0W7	△ 1
R113	R101532	R MF H470E F 0W4 E3		SR 2	R1012997	R CFFH E1 K 0W7	△ 1
R114	R101524	R MF H100E F 0W4 E3		Z 1	R131743	D ZEN 8V2 0W5 C DO35	
R115	R101300	R CF H 1E J 1W15	1	Z 2	R131788	D ZEN 15V 0W5 C DO35	
R116	R101300	R CF H 1E J 1W15	1	Z 3	R131788	D ZEN 15V 0W5 C DO35	
R117	R103226	R MO H150E J 1W5	1	Z 4	R131788	D ZEN 15V 0W5 C DO35	
R118	R103620	R VVH H 4E7 K 4W	1	Z 5	R131788	D ZEN 15V 0W5 C DO35	
R151	R101540	R MF H 2K2 F 0W4 E3		Z 6	R131754	D ZEN 3V3 0W5 C DO35	
R152	R101540	R MF H 2K2 F 0W4 E3		Z 20	R131721	D ZEN 13V 0W5 C DO35	
R153	R101536	R MF H 1K F 0W4 E3		Z 21	R131721	D ZEN 13V 0W5 C DO35	
R154	R101544	R MF H 4K7 F 0W4 E3		Z 51	R131743	D ZEN 8V2 0W5 C DO35	
R155	R101542	R MF H 3K3 F 0W4 E3		Z 52	R131788	D ZEN 15V 0W5 C DO35	
R156	R101537	R MF H 1K2 F 0W4 E3		Z 53	R131788	D ZEN 15V 0W5 C DO35	
R157	R101532	R MF H470E F 0W4 E3		Z 54	R131788	D ZEN 15V 0W5 C DO35	
R158	R101537	R MF H 1K2 F 0W4 E3		Z 55	R131788	D ZEN 15V 0W5 C DO35	
R159	R101534	R MF H680E F 0W4 E3		Z 56	R131754	D ZEN 3V3 0W5 C DO35	
R160	R101248	R MF H 10K F 0W6 E4		Z101	R131743	D ZEN 8V2 0W5 C DO35	
R161	R101533	R MF H560E F 0W4 E3		Z102	R131788	D ZEN 15V 0W5 C DO35	
R162	R101545	R MF H 5K6 F 0W4 E3		Z103	R131788	D ZEN 15V 0W5 C DO35	
R163	R101532	R MF H470E F 0W4 E3		Z104	R131788	D ZEN 15V 0W5 C DO35	
R164	R101524	R MF H100E F 0W4 E3		Z105	R131788	D ZEN 15V 0W5 C DO35	
R165	R101300	R CF H 1E J 1W15	1	Z106	R131754	D ZEN 3V3 0W5 C DO35	
R166	R101300	R CF H 1E J 1W15	1	Z151	R131743	D ZEN 8V2 0W5 C DO35	
R167	R103226	R MO H150E J 1W5	1	Z152	R131788	D ZEN 15V 0W5 C DO35	
R168	R103620	R VVH H 4E7 K 4W	1	Z153	R131788	D ZEN 15V 0W5 C DO35	
R201	R101540	R MF H 2K2 F 0W4 E3		Z154	R131788	D ZEN 15V 0W5 C DO35	
R202	R101540	R MF H 2K2 F 0W4 E3		Z155	R131788	D ZEN 15V 0W5 C DO35	
R203	R101536	R MF H 1K F 0W4 E3		Z156	R131754	D ZEN 3V3 0W5 C DO35	
R204	R101544	R MF H 4K7 F 0W4 E3		Z201	R131743	D ZEN 8V2 0W5 C DO35	
R205	R101542	R MF H 3K3 F 0W4 E3		Z202	R131788	D ZEN 15V 0W5 C DO35	
R206	R101537	R MF H 1K2 F 0W4 E3		Z203	R131788	D ZEN 15V 0W5 C DO35	
R207	R101532	R MF H470E F 0W4 E3		Z204	R131788	D ZEN 15V 0W5 C DO35	
R208	R101537	R MF H 1K2 F 0W4 E3		Z205	R131788	D ZEN 15V 0W5 C DO35	
R209	R101534	R MF H680E F 0W4 E3		Z206	R131754	D ZEN 3V3 0W5 C DO35	
R210	R101248	R MF H 10K F 0W6 E4		Z251	R131743	D ZEN 8V2 0W5 C DO35	
R211	R101533	R MF H560E F 0W4 E3		Z252	R131788	D ZEN 15V 0W5 C DO35	
R212	R101545	R MF H 5K6 F 0W4 E3		Z253	R131788	D ZEN 15V 0W5 C DO35	
R213	R101532	R MF H470E F 0W4 E3		Z254	R131788	D ZEN 15V 0W5 C DO35	
R214	R101524	R MF H100E F 0W4 E3		Z255	R131788	D ZEN 15V 0W5 C DO35	
R215	R101300	R CF H 1E J 1W15	1	Z256	R131754	D ZEN 3V3 0W5 C DO35	
R216	R101300	R CF H 1E J 1W15	1	Z300	R131720	D ZEN 6V2 0W5 C DO35	
R217	R103226	R MO H150E J 1W5	1	Z301	R131720	D ZEN 6V2 0W5 C DO35	
R218	R103620	R VVH H 4E7 K 4W	1	Z302	R131720	D ZEN 6V2 0W5 C DO35	
R251	R101540	R MF H 2K2 F 0W4 E3					
R252	R101540	R MF H 2K2 F 0W4 E3					

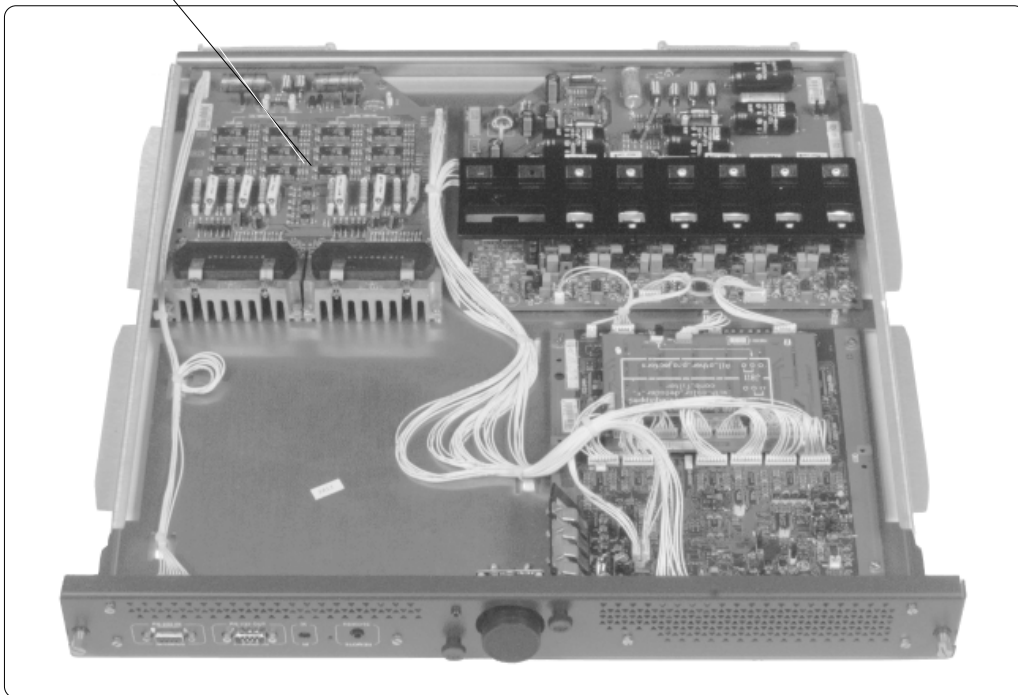
PRODUCT SAFETY NOTICE

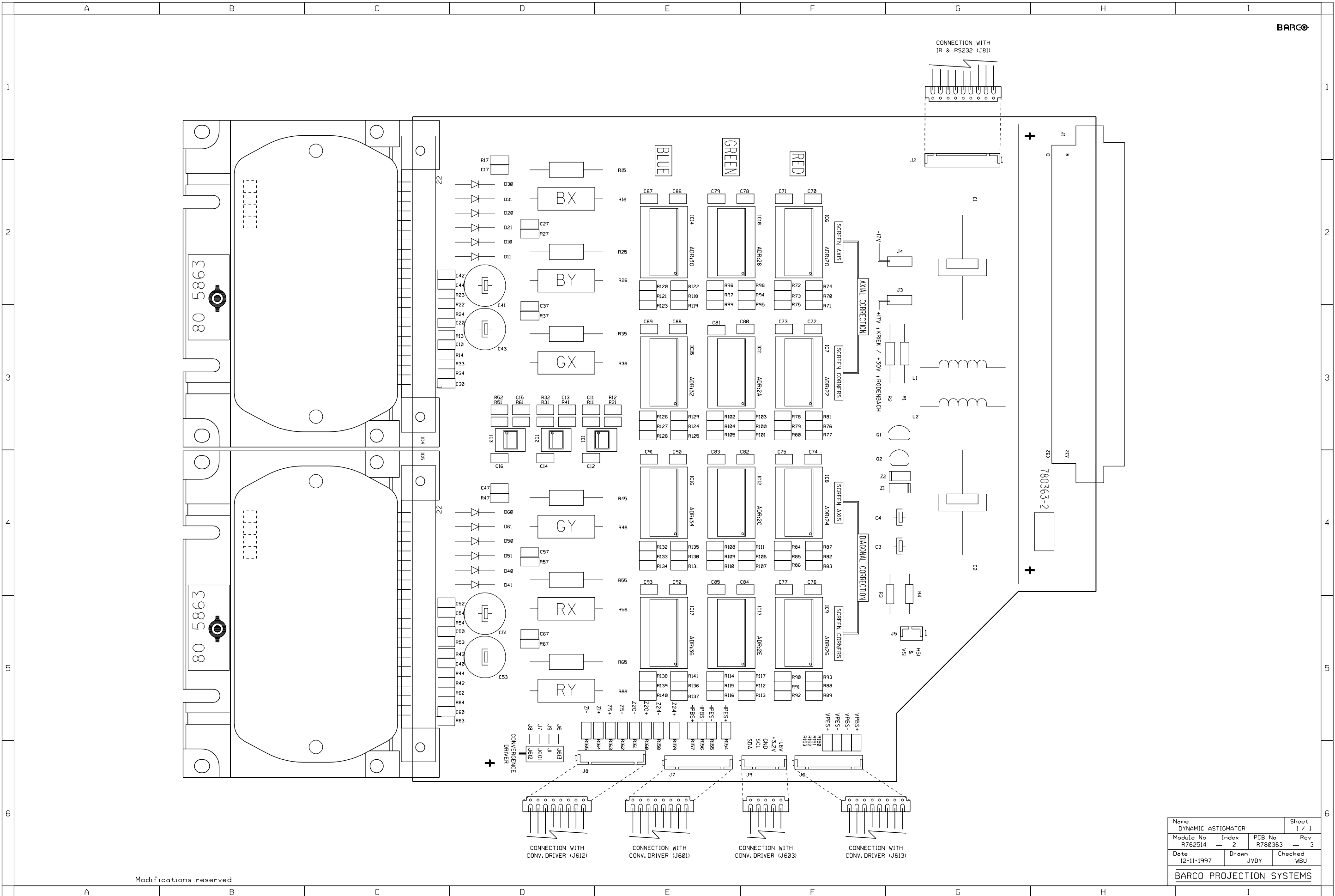
Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.





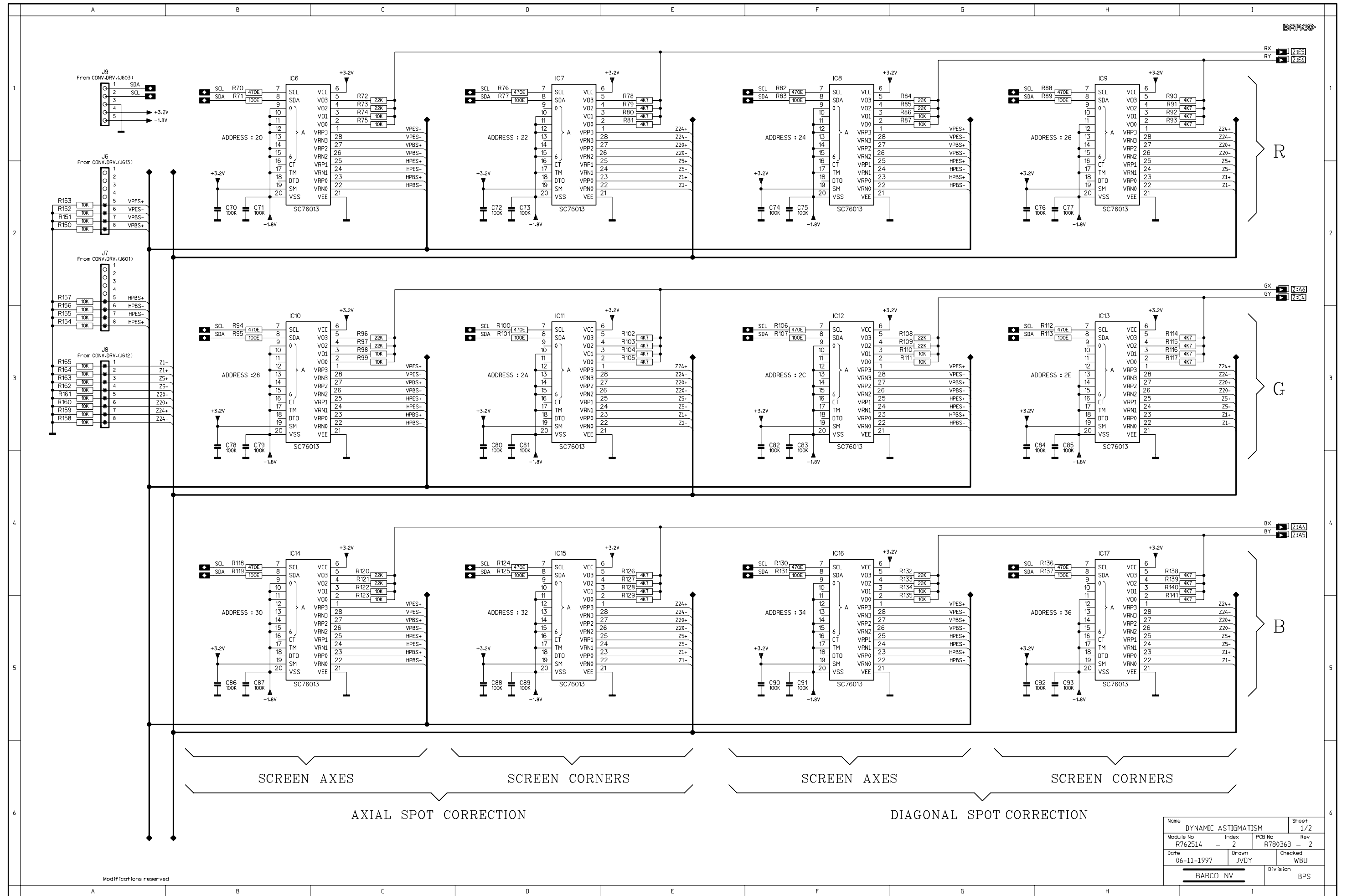
**Dynamic Astigmatism module
R762514**





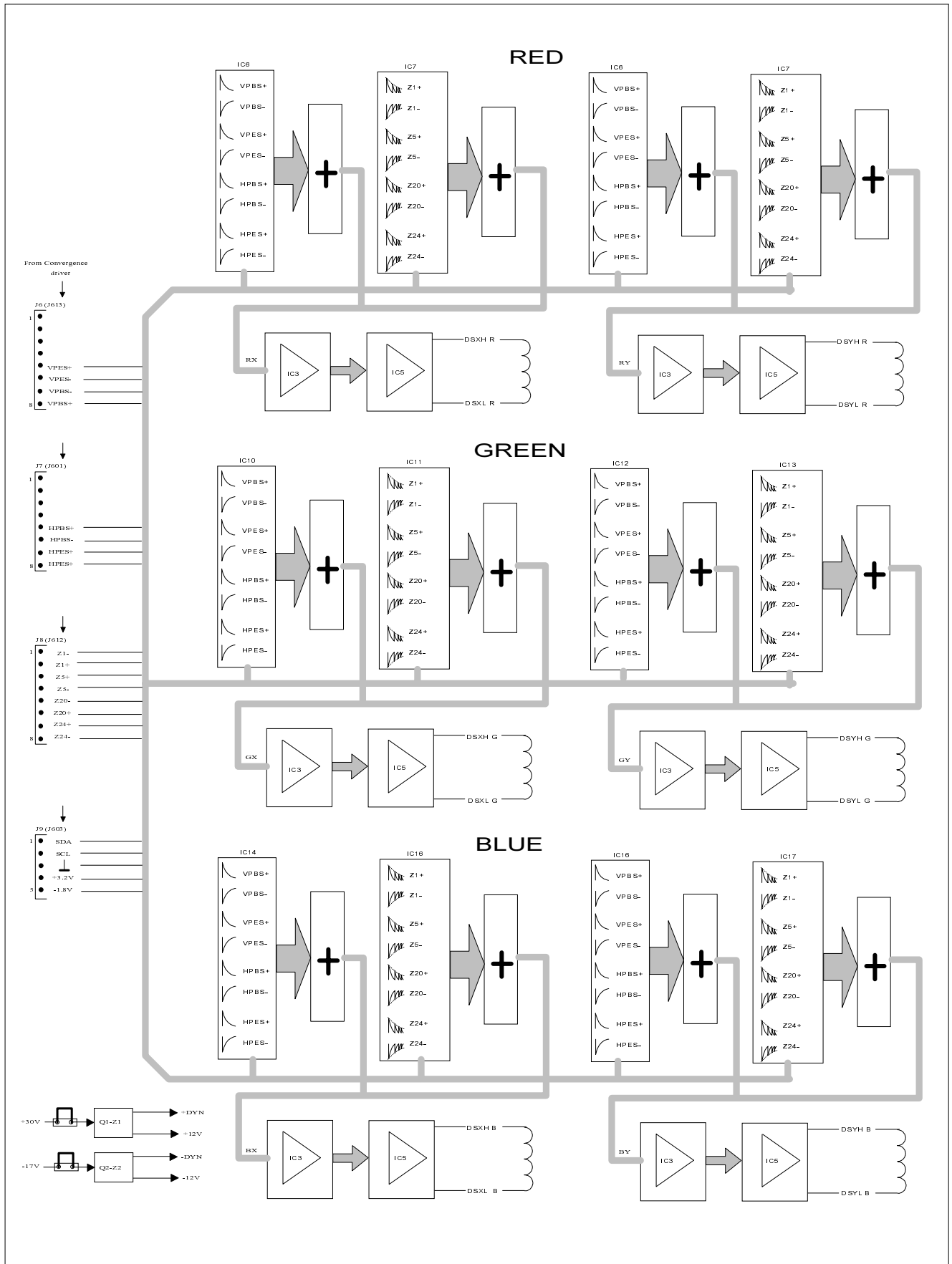
Modifications reserved

Name DYNAMIC ASTIGMATOR		Sheet 1 / 1	
Module No R762514	Index 2	PCB No R780363	Rev 3
Date 12-11-1997	Drawn JVDY	Checked WBU	
BARCO PROJECTION SYSTEMS			



Modifications reserved

Name	DYNAMIC ASTIGMATISM		Sheet	1/2
Module No	R762514	Index	2	Rev
		PCB No	R780363	2
Date	06-11-1997	Drawn	JVDY	Checked
			WBU	
BARCO NV			Division	BPS



Axial and Diagonal Corrections on screen per IC

VO0 IC7 +	VO2 IC6 +	VO1 IC7 +
VO0 IC9 x	VO2 IC8 x	VO1 IC9 x
VO0 IC6 +	RED	VO1 IC6 +
VO0 IC8 x		VO1 IC8 x
VO2 IC7 +	VO3 IC6 +	VO3 IC7 +
VO2 IC9 x	VO3 IC8 x	VO3 IC9 x

VO0 IC11 +	VO2 IC10 +	VO1 IC11 +
VO0 IC13 x	VO2 IC12 x	VO1 IC13 x
VO0 IC10 +	GREEN	VO1 IC10 +
VO0 IC12 x		VO1 IC12 x
VO2 IC11 +	VO3 IC10 +	VO3 IC11 +
VO2 IC13 x	VO3 IC12 x	VO3 IC13 x

VO0 IC15 +	VO2 IC14 +	VO1 IC15 +
VO0 IC17 x	VO2 IC16 x	VO1 IC17 x
VO0 IC14 +	BLUE	VO1 IC14 +
VO0 IC16 x		VO1 IC16 x
VO2 IC15 +	VO3 IC14 +	VO3 IC15 +
VO2 IC17 x	VO3 IC16 x	VO3 IC17 x

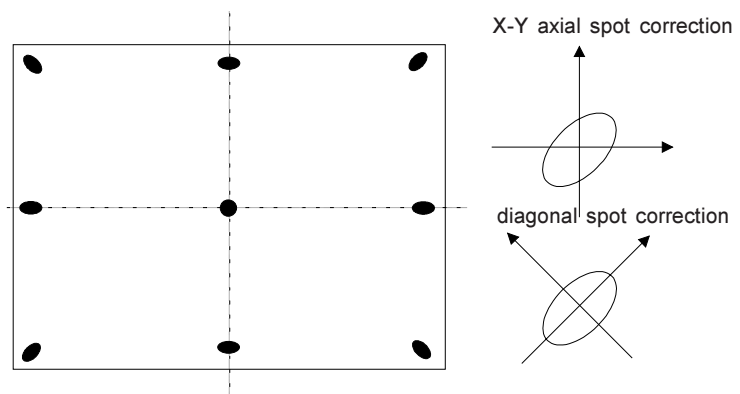
'+' :axial correction
'x' :diagonal correction

TECHNICAL DESCRIPTION " DYNAMIC ASTIGMATISM " 762514

The waveforms for the dynamic astigmatism are parabolic and resemble the waveforms for the convergence corrections. It is then logic that the adjusted waveforms in the Bella's are delivered by, and coming from, the convergence driver board.

These waveforms are carried to the module via the connectors J6 / J7 / J8. These connectors carry the split (clamped) parabolic waveforms at horizontal and vertical frequency and opposite polarity.

Each correction consists of an orthogonal spot correction (*X) and a diagonal spot correction (*Y). To facilitate the correction a separate centre or 'screen axis' and corner 'screen corners' is provided.



In sheet 1 of the schematics you find the 12 Bella's for these corrections. As the waveforms have opposite polarity, the supply voltages for these Bella's is +3.2V and -1.8V taken from the convergence board.

The "corner" and "axis" corrections are added per colour and then passed onto the power amplifiers. These power amplifiers are fully integrated hybrid amplifiers supplied with + / - DYN.

The supply voltage for these amplifiers is **+30V** (+ DYN) and **-17V** (- DYN) .

Each time the output current flows in 150 Ohm damping resistor across the stigmator coils and a series feedback resistor of 4.7 Ohm. The voltage developed across this resistor is sent back to the inverting input of the amplifier for stability reasons.

Note that the jumpers J3 and J4 can be removed in order to isolate the power stages of the astigmatism and thus to investigate whether an excess of load on the supply voltages of the whole convergence board is caused by one of these amplifiers (or caused by another power amplifier of this convergence module).

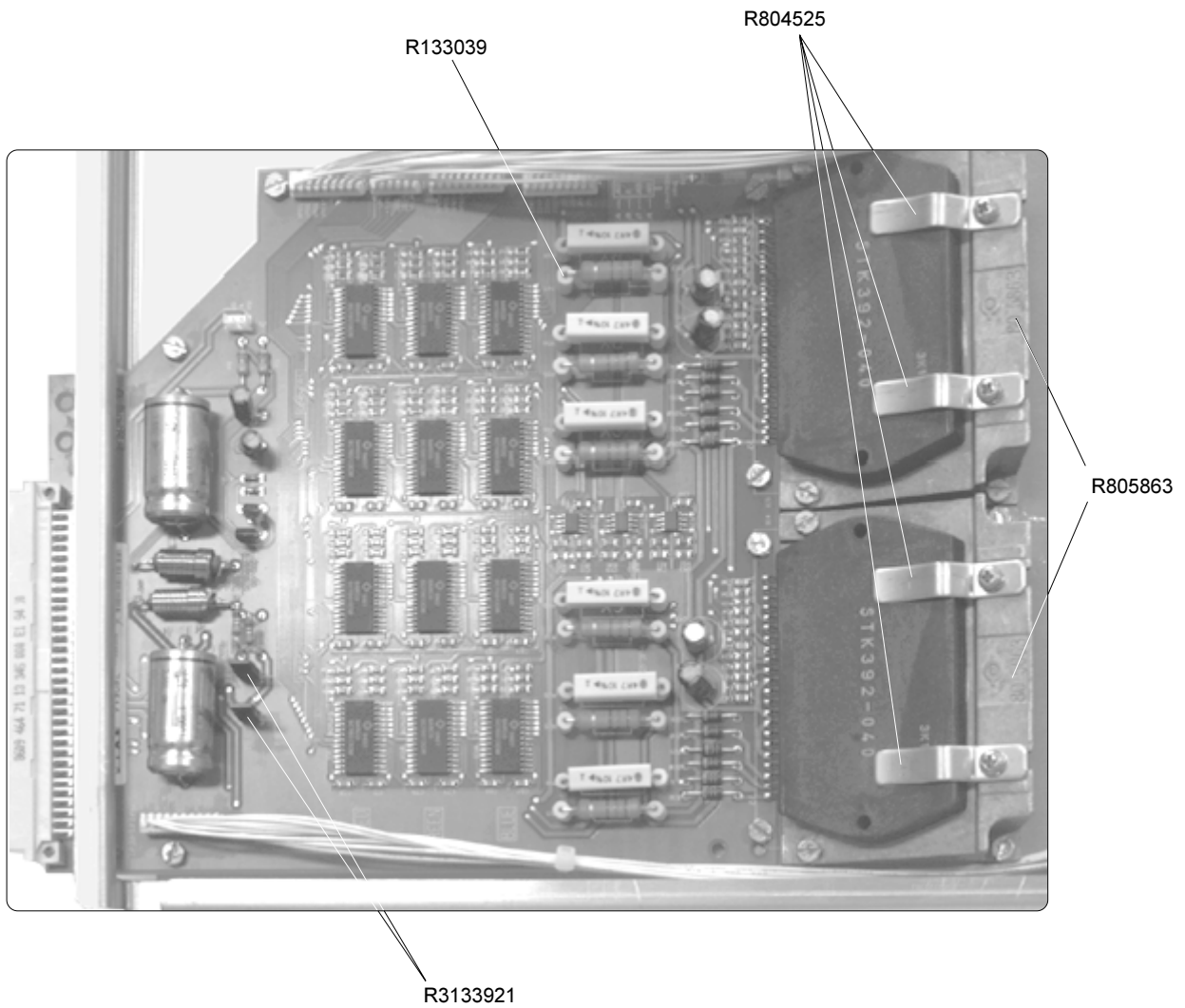
Partslisting Dynamic Astigmatism module R762514

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
60	R133039	SPRL 8 D 1,2D 4 CE	12	C 92	P210122	C# X7R MU 100N K 50 1206	1
80	R133039	SPRL 8 D 1,2D 4 CE	16	C 93	P210122	C# X7R MU 100N K 50 1206	1
50	R3133921	JMDSHUNTFP2E1SNIRD	2	D 10	R131637	D R BA158 600400 DO7	1
20	R3631049	SCR Z933 M 3 X 6 SS	4	D 11	R131637	D R BA158 600400 DO7	1
10	R3631069	SCR Z933 M 3 X 10 SS	4	D 20	R131637	D R BA158 600400 DO7	1
30	R3661026	NUT D934 M 3 SS	4	D 21	R131637	D R BA158 600400 DO7	1
90	R367699	RVT AVTRON2,5L 8,1 AL	2	D 30	R131637	D R BA158 600400 DO7	1
40	R804525	HTSNA GEN SPG 1X 3.1SH	4	D 31	R131637	D R BA158 600400 DO7	1
70	R805863	HTSN C PJ56 G808 CNV 2	2	D 40	R131637	D R BA158 600400 DO7	1
C 1	R111193	C EL AX1000M T 40E18 85	1	D 41	R131637	D R BA158 600400 DO7	1
C 2	R111193	C EL AX1000M T 40E18 85	1	D 50	R131637	D R BA158 600400 DO7	1
C 3	R111531	C EL RA 10M M 35E2 85	1	D 51	R131637	D R BA158 600400 DO7	1
C 4	R111531	C EL RA 10M M 35E2 85	1	D 60	R131637	D R BA158 600400 DO7	1
C 10	P210158	C# COG MU 150P J 50 1206	1	D 61	R131637	D R BA158 600400 DO7	1
C 11	P210122	C# X7R MU 100N K 50 1206	1	I 1	P230293	U#082 TL SO8 P	1
C 12	P210122	C# X7R MU 100N K 50 1206	1	I 2	P230293	U#082 TL SO8 P	1
C 13	P210122	C# X7R MU 100N K 50 1206	1	I 3	P230293	U#082 TL SO8 P	1
C 14	P210122	C# X7R MU 100N K 50 1206	1	I 4	R134303	U 392-040 STK PACK	1
C 15	P210122	C# X7R MU 100N K 50 1206	1	I 5	R134303	U 392-040 STK PACK	1
C 16	P210122	C# X7R MU 100N K 50 1206	1	I 6	P230653	U#BELLA 4 SOL28 P	1
C 17	P210029	C# COG MU 2N2J 50 1206	1	I 7	P230653	U#BELLA 4 SOL28 P	1
C 20	P210073	C# COG MU 82P J 50 1206	1	I 8	P230653	U#BELLA 4 SOL28 P	1
C 27	P210029	C# COG MU 2N2J 50 1206	1	I 9	P230653	U#BELLA 4 SOL28 P	1
C 30	P210158	C# COG MU 150P J 50 1206	1	I 10	P230653	U#BELLA 4 SOL28 P	1
C 37	P210029	C# COG MU 2N2J 50 1206	1	I 11	P230653	U#BELLA 4 SOL28 P	1
C 40	P210073	C# COG MU 82P J 50 1206	1	I 12	P230653	U#BELLA 4 SOL28 P	1
C 41	R111486	C EL RA 47M M 50E2 85	1	I 13	P230653	U#BELLA 4 SOL28 P	1
C 42	P210122	C# X7R MU 100N K 50 1206	1	I 14	P230653	U#BELLA 4 SOL28 P	1
C 43	R111486	C EL RA 47M M 50E2 85	1	I 15	P230653	U#BELLA 4 SOL28 P	1
C 44	P210122	C# X7R MU 100N K 50 1206	1	I 16	P230653	U#BELLA 4 SOL28 P	1
C 47	P210029	C# COG MU 2N2J 50 1206	1	I 17	P230653	U#BELLA 4 SOL28 P	1
C 50	P210158	C# COG MU 150P J 50 1206	1	J 1	R313525	JEUR2CMBSP64E1C2S1,6	1
C 51	R111486	C EL RA 47M M 50E2 85	1	J 2	R313929	JCT H MBT P 9 M2SN WH	1
C 52	P210122	C# X7R MU 100N K 50 1206	1	J 3	R3132862	JMD1 C MBT P 2 E1SN 6,7	1
C 53	R111486	C EL RA 47M M 50E2 85	1	J 4	R3132862	JMD1 C MBT P 2 E1SN 6,7	1
C 54	P210122	C# X7R MU 100N K 50 1206	1	J 5	R313922	JCT H MBT P 2 M2SN WH	1
C 57	P210029	C# COG MU 2N2J 50 1206	1	J 6	R313928	JCT H MBT P 8 M2SN WH	1
C 60	P210073	C# COG MU 82P J 50 1206	1	J 7	R313928	JCT H MBT P 8 M2SN WH	1
C 67	P210029	C# COG MU 2N2J 50 1206	1	J 8	R313928	JCT H MBT P 8 M2SN WH	1
C 70	P210122	C# X7R MU 100N K 50 1206	1	J 9	R313925	JCT H MBT P 5 M2SN WH	1
C 71	P210122	C# X7R MU 100N K 50 1206	1	L 1	R775164	CH AX NS 0,5 51	1
C 72	P210122	C# X7R MU 100N K 50 1206	1	L 2	R775164	CH AX NS 0,5 51	1
C 73	P210122	C# X7R MU 100N K 50 1206	1	PC	R780363	PCBD700ASTIGMATISM	1
C 74	P210122	C# X7R MU 100N K 50 1206	1	Q 1	R132557	Q BC635 N SS TO92	1
C 75	P210122	C# X7R MU 100N K 50 1206	1	Q 2	R132968	Q BC640 P SS TO92	1
C 76	P210122	C# X7R MU 100N K 50 1206	1	R 1	R1012997	R CFFH E1 K 0W7	1
C 77	P210122	C# X7R MU 100N K 50 1206	1	R 2	R1012997	R CFFH E1 K 0W7	1
C 78	P210122	C# X7R MU 100N K 50 1206	1	R 3	V1026176	R MF H 1K5 F 0W6 E4	1
C 79	P210122	C# X7R MU 100N K 50 1206	1	R 4	V1026176	R MF H 1K5 F 0W6 E4	1
C 80	P210122	C# X7R MU 100N K 50 1206	1	R 11	P200425	R# CE H 3K9 F 0W12 1206	1
C 81	P210122	C# X7R MU 100N K 50 1206	1	R 12	P200423	R# CE H 3K3 F 0W12 1206	1
C 82	P210122	C# X7R MU 100N K 50 1206	1	R 13	P200423	R# CE H 3K3 F 0W12 1206	1
C 83	P210122	C# X7R MU 100N K 50 1206	1	R 14	P200423	R# CE H 3K3 F 0W12 1206	1
C 84	P210122	C# X7R MU 100N K 50 1206	1	R 15	R103226	R MO H150E J 2W E10	1
C 85	P210122	C# X7R MU 100N K 50 1206	1	R 16	R103620	R VVW H 4E7 K 4W E10	1
C 86	P210122	C# X7R MU 100N K 50 1206	1	R 17	P202220	R# MF H 47E F 0W25 MMELF	1
C 87	P210122	C# X7R MU 100N K 50 1206	1	R 21	P200425	R# CE H 3K9 F 0W12 1206	1
C 88	P210122	C# X7R MU 100N K 50 1206	1	R 22	P200423	R# CE H 3K3 F 0W12 1206	1
C 89	P210122	C# X7R MU 100N K 50 1206	1				
C 90	P210122	C# X7R MU 100N K 50 1206	1				
C 91	P210122	C# X7R MU 100N K 50 1206	1				

Dynamic Astigmatism module

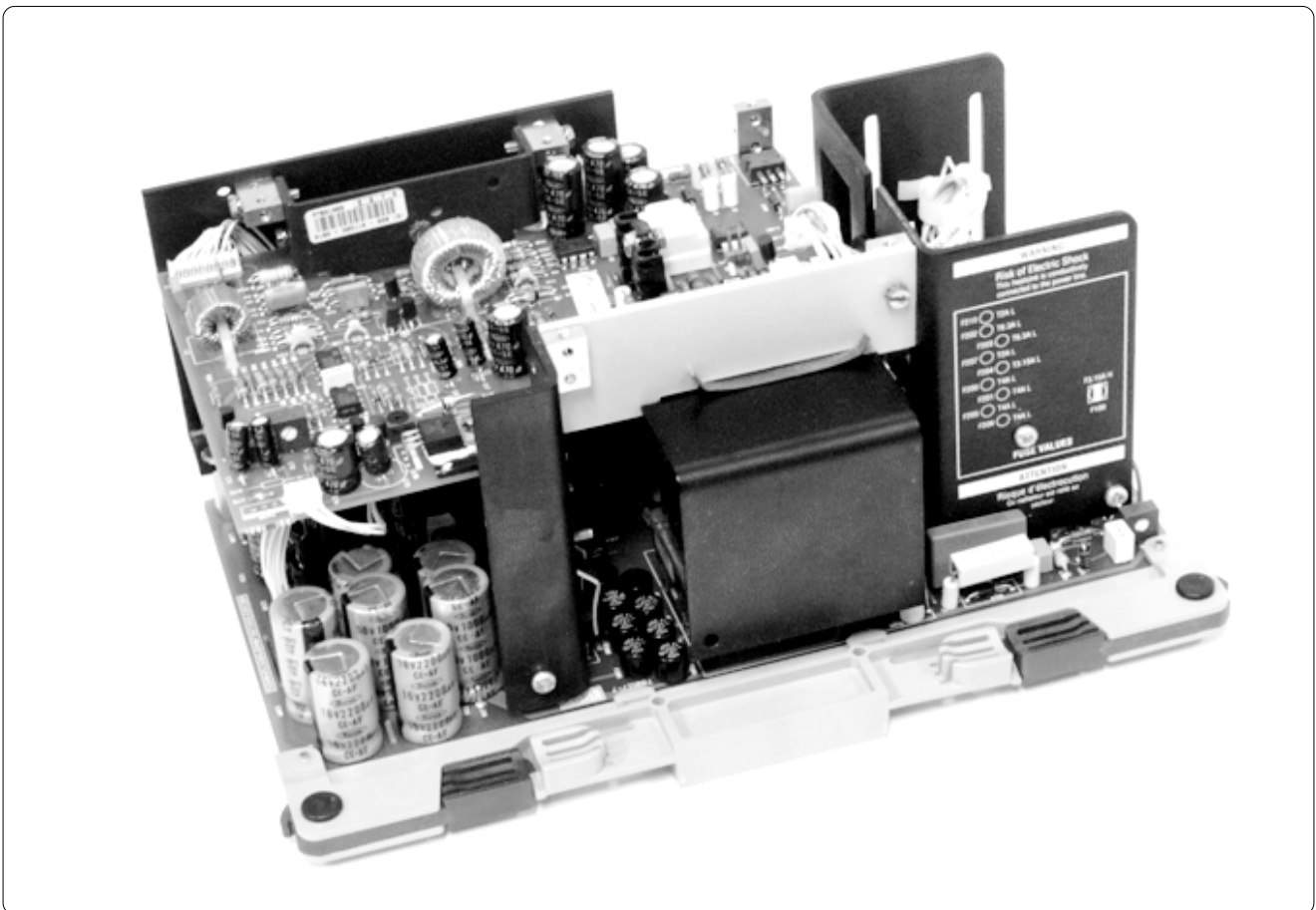
R762514

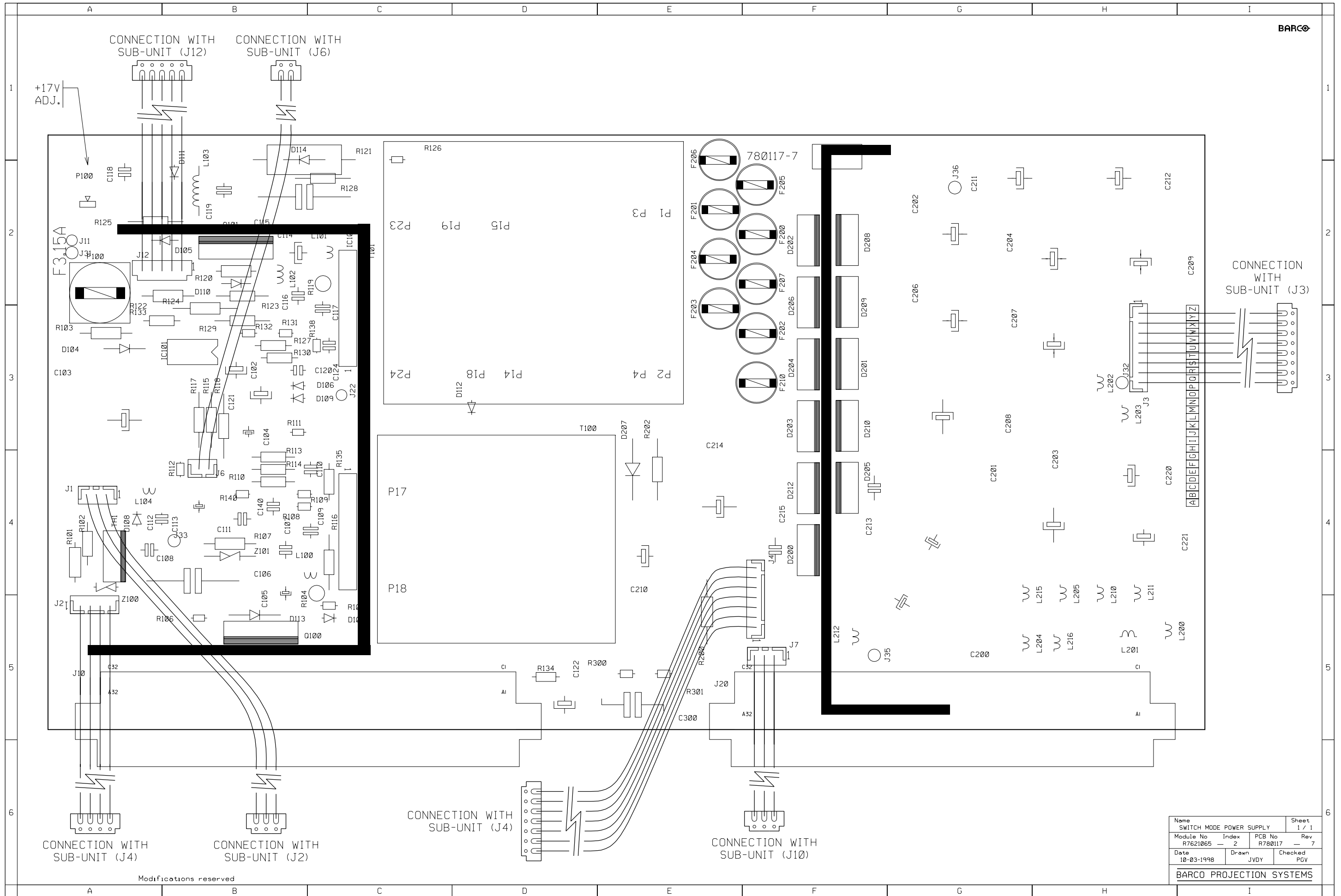
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R 24	P200431	R# CE H 6K8 F 0W12 1206	1	R105	P200427	R# CE H 4K7 F 0W12 1206	1
R 25	R103226	R MO H150E J 2W E10	1	R106	P200403	R# CE H470E F 0W12 1206	1
R 26	R103620	R VVW H 4E7 K 4W E10	1	R107	P200387	R# CE H100E F 0W12 1206	1
R 27	P202220	R# MF H 47E F 0W25 MMELF	1	R108	P200443	R# CE H 22K F 0W12 1206	1
R 31	P200425	R# CE H 3K9 F 0W12 1206	1	R109	P200443	R# CE H 22K F 0W12 1206	1
R 32	P200423	R# CE H 3K3 F 0W12 1206	1	R110	P200435	R# CE H 10K F 0W12 1206	1
R 33	P200423	R# CE H 3K3 F 0W12 1206	1	R111	P200435	R# CE H 10K F 0W12 1206	1
R 34	P200423	R# CE H 3K3 F 0W12 1206	1	R112	P200403	R# CE H470E F 0W12 1206	1
R 35	R103226	R MO H150E J 2W E10	1	R113	P200387	R# CE H100E F 0W12 1206	1
R 36	R103620	R VVW H 4E7 K 4W E10	1	R114	P200427	R# CE H 4K7 F 0W12 1206	1
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R 91	P200427	R# CE H 4K7 F 0W12 1206	1				
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R102	P200427	R# CE H 4K7 F 0W12 1206	1				
R103	P200427	R# CE H 4K7 F 0W12 1206	1				



WARNING

THIS CIRCUIT BOARD IS HOT TO AC. THIS POWER SUPPLY, LIKE THE HIGH VOLTAGE POWER SUPPLY, DOES NOT USE A LINE ISOLATION TRANSFORMER, MEANING A PORTION OF THE CIRCUITRY IS HOT-TO-LINE AND SHOULD BE TREATED WITH CAUTION





CONNECTION WITH SUB-UNIT (J4)

CONNECTION WITH SUB-UNIT (J2)

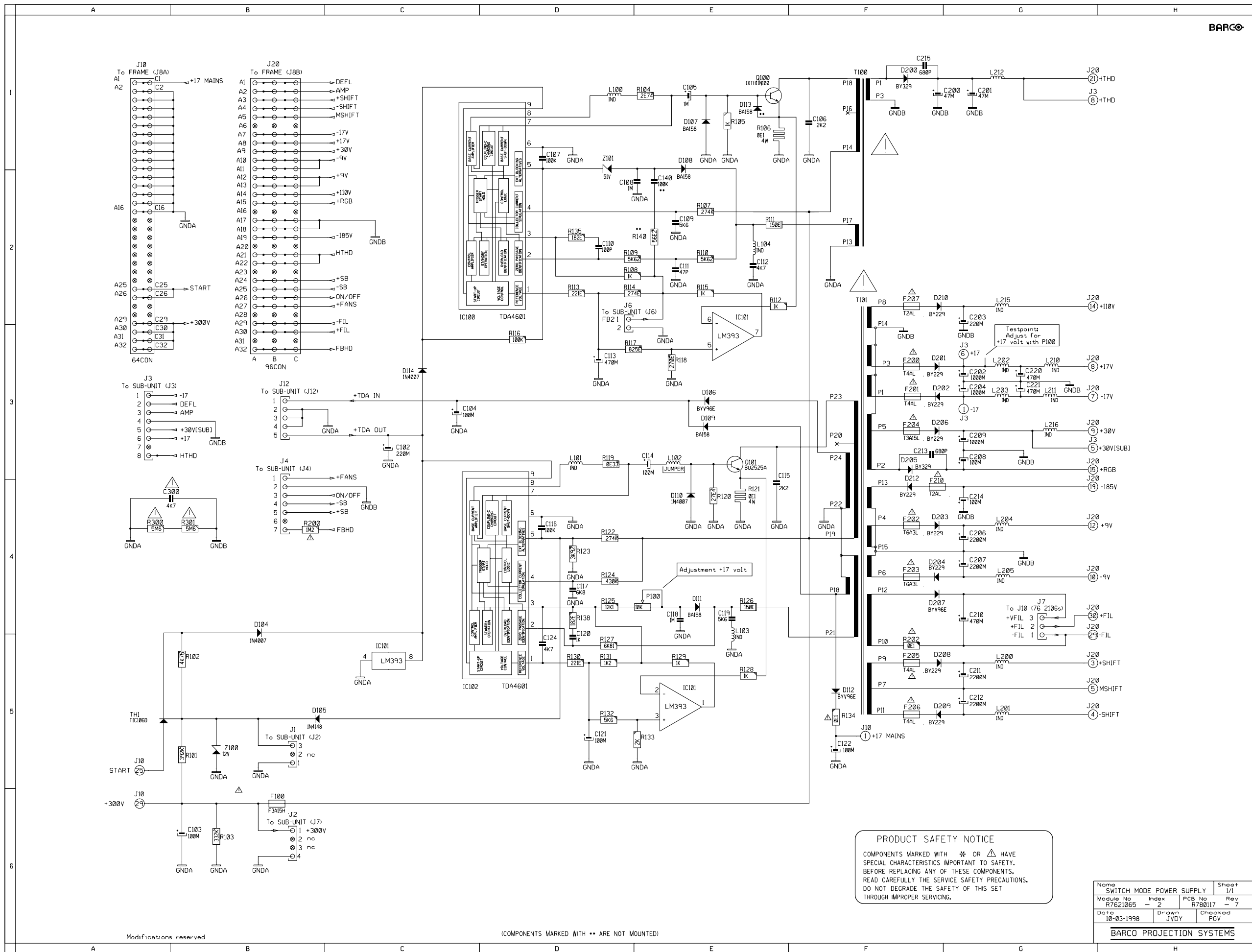
CONNECTION WITH SUB-UNIT (J4)

CONNECTION WITH SUB-UNIT (J10)

CONNECTION WITH SUB-UNIT (J3)

Modifications reserved

Name SWITCH MODE POWER SUPPLY			Sheet 1 / 1
Module No R7621065	Index 2	PCB No R780117	Rev 7
Date 10-03-1998	Drawn JVDY	Checked PGV	
BARCO PROJECTION SYSTEMS			



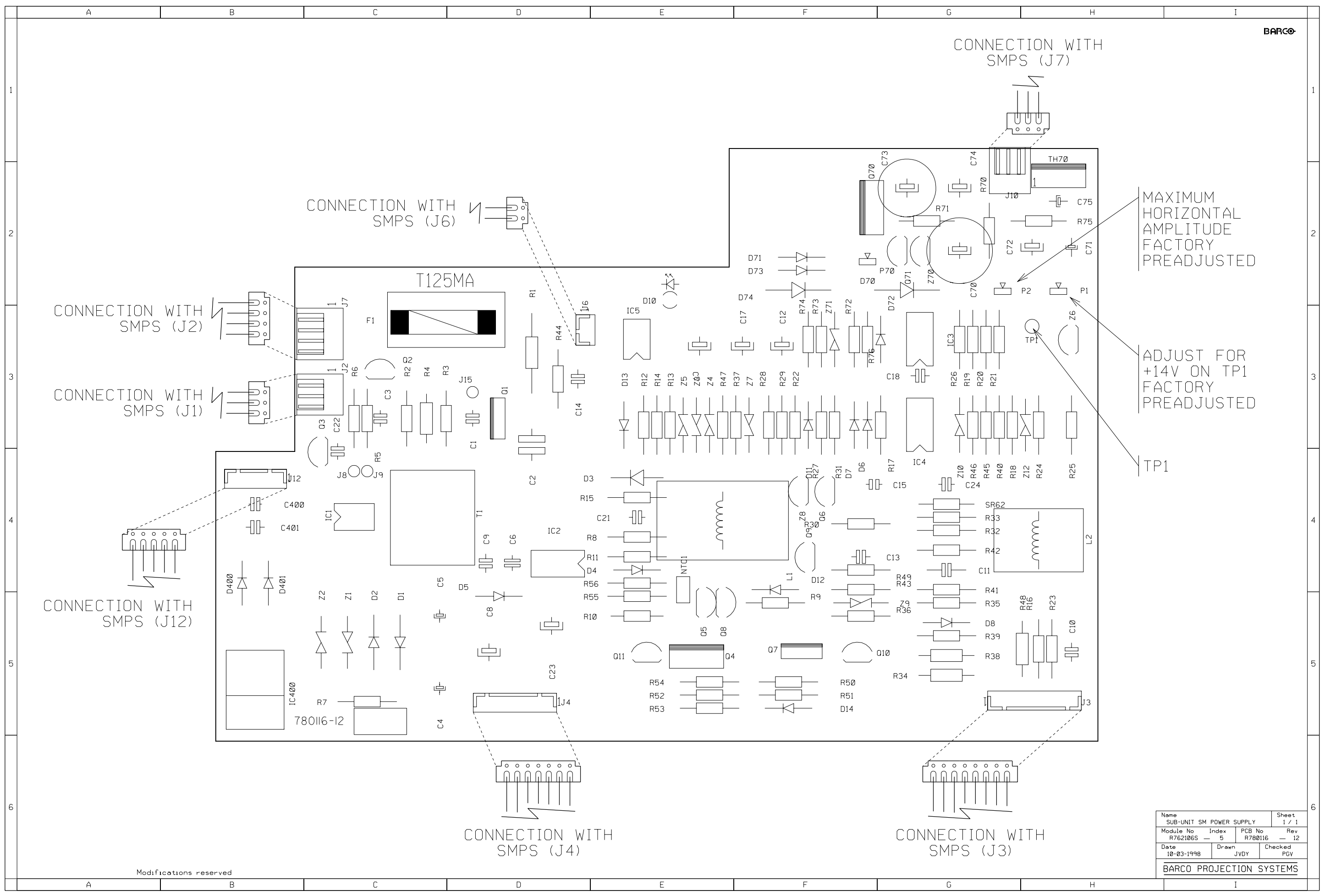
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C102	C 3	R121	E 4
C103	B 6	R122	D 4
C104	C 3	R123	D 4
C105	F 1	R124	D 4
C106	F 1	R125	D 4
C107	D 1	R126	F 4
C108	D 2	R127	D 5
C109	F 2	R128	D 5
C110	F 2	R129	D 5
C111	D 3	R130	D 5
C112	F 3	R131	D 5
C113	D 3	R132	D 5
C114	F 3	R133	D 5
C115	F 3	R134	D 5
C116	D 4	R135	D 4
C117	D 4	R136	D 4
C118	F 4	R140	D 4
C119	D 4	R200	D 5
C120	D 4	R202	D 5
C121	D 5	R300	A 4
C122	F 5	R301	B 4
C123	F 5		
C124	D 5		
C140	G 1		
C200	G 1	T100	F 1
C201	G 1	T101	F 2
C202	G 3		
C203	G 2	TH1	A 5
C204	G 3		
C206	G 4	Z100	B 5
C207	G 4	Z101	D 1
C208	G 3		
C209	G 3		
C210	G 4		
C211	G 5		
C212	G 4		
C213	G 3		
C214	G 4		
C215	F 1		
C220	G 3		
C221	G 3		
C300	A 4		
D104	B 4		
D105	B 5		
D106	B 3		
D107	F 1		
D108	F 1		
D109	F 4		
D110	F 4		
D111	F 4		
D112	F 5		
D113	F 1		
D114	F 1		
D200	F 3		
D201	F 3		
D202	F 3		
D203	F 4		
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D206	F 3		
D207	F 4		
D208	F 4		
D209	F 3		
D210	F 2		
D212	F 3		
F100	B 6		
F200	F 3		
F201	F 3		
F202	F 4		
F203	F 4		
F204	F 3		
F205	F 5		
F206	F 5		
F207	F 3		
IC100	C 2		
IC101	F 5		
IC102	C 5		
IC101	C 5		
IC101	C 5		
IC101	C 5		
IC102	C 5		
J1	B 5		
J2	B 6		
J3	A 3		
J4	B 3		
J6	B 3		
J7	C 4		
J10	A 1		
J11	F 2		
J12	B 3		
J20	B 1		
J22	F 2		
J31	F 2		
J32	A 3		
J33	A 3		
J35	G 1		
J36	G 3		
L100	D 1		
L101	D 3		
L102	E 3		
L103	E 4		
L104	G 5		
L200	G 5		
L201	G 5		
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L204	G 4		
L205	G 4		
L210	G 3		
L211	G 3		
L212	G 1		
L216	G 3		
P100	E 4		
Q100	E 1		
Q101	E 3		
R101	B 5		
R102	B 5		
R103	B 6		
R104	F 1		
R105	F 1		
R106	F 1		
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R134	D 3		
R135	D 3		
R136	D 3		
R137	D 3		
R138	D 3		
R139	D 3		
R140	D 3		
R200	D 5		
R202	D 5		
R300	A 4		
R301	B 4		
Z100	B 5		
Z101	D 1		

PRODUCT SAFETY NOTICE
 COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

Name		Sheet	
SWITCH MODE POWER SUPPLY		1/1	
Module No	Index	PCB No	Rev
R7621065	- 2	R780117	- 7
Date	Drawn	Checked	
10-03-1998	JVDY	PGV	
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Modifications reserved

(COMPONENTS MARKED WITH ** ARE NOT MOUNTED)



MAXIMUM HORIZONTAL AMPLITUDE FACTORY PREADJUSTED

ADJUST FOR +14V ON TP1 FACTORY PREADJUSTED

TP1

CONNECTION WITH SMPS (J12)

CONNECTION WITH SMPS (J2)

CONNECTION WITH SMPS (J1)

CONNECTION WITH SMPS (J6)

CONNECTION WITH SMPS (J7)

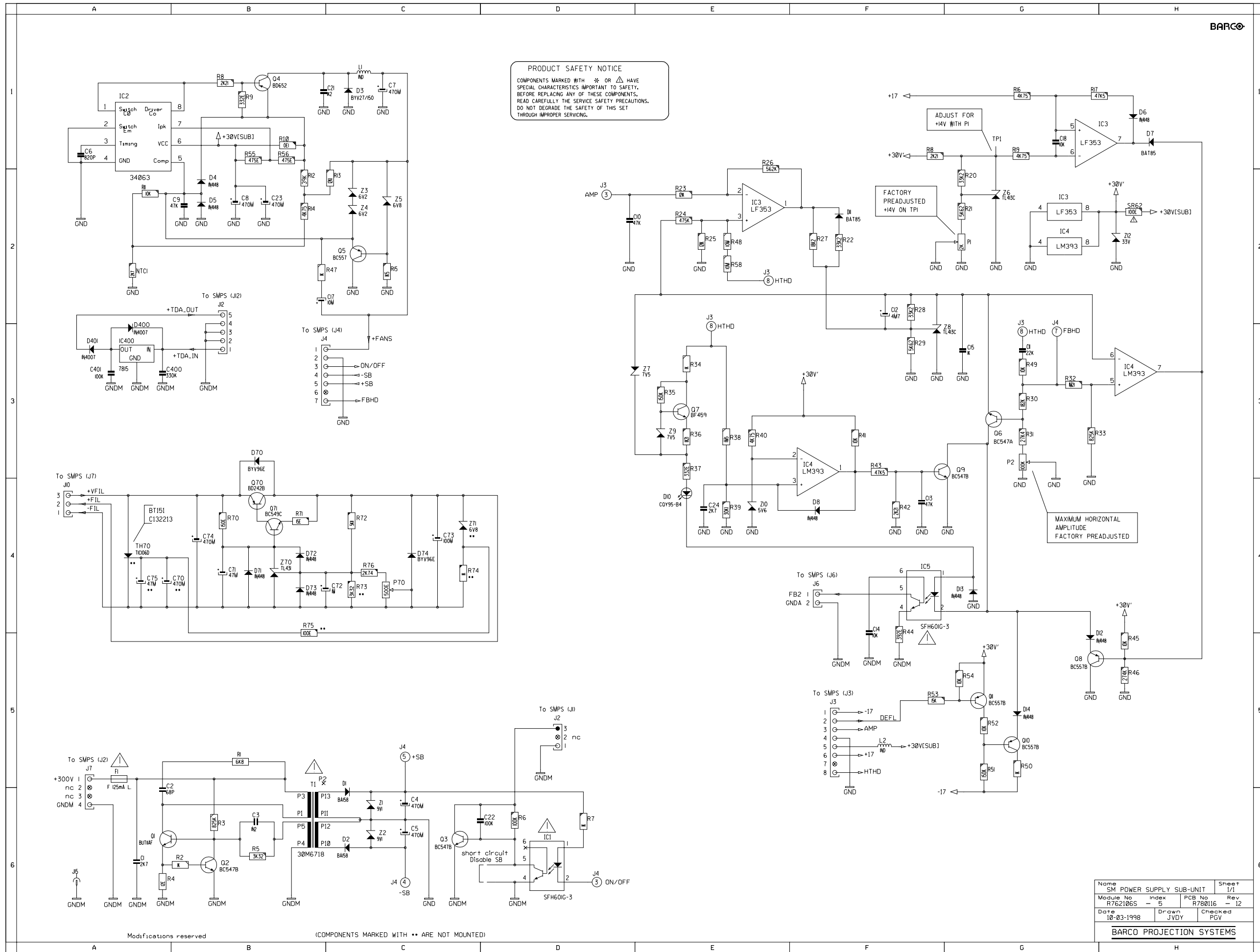
CONNECTION WITH SMPS (J4)

CONNECTION WITH SMPS (J3)

Modifications reserved

Name		SUB-UNIT SM POWER SUPPLY		Sheet	
Module No		Index		1 / 1	
R762106S		5		PCB No	
				R780116	
Date		Drawn		Checked	
10-03-1998		JV DY		PGV	
BARCO PROJECTION SYSTEMS					

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COMP. LOC. COMP. LOC. table listing component locations across columns and rows.

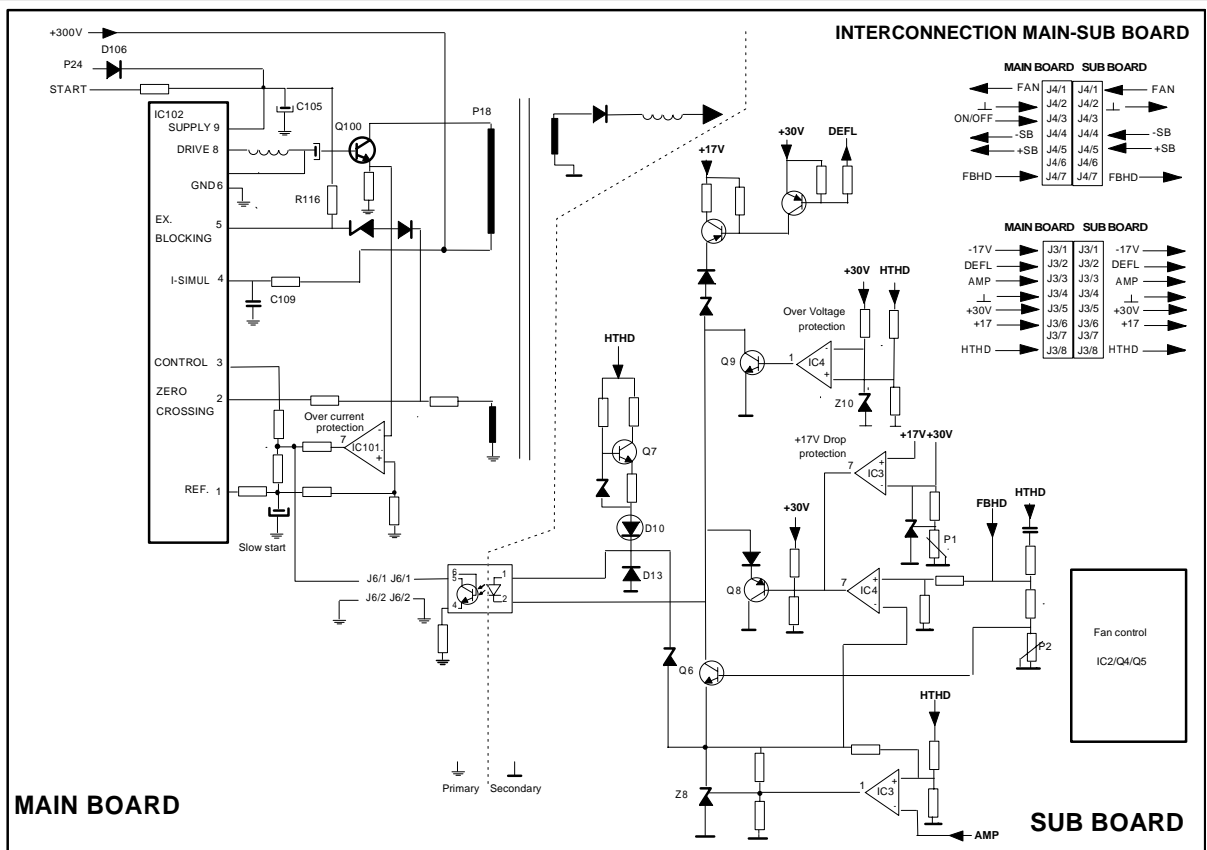
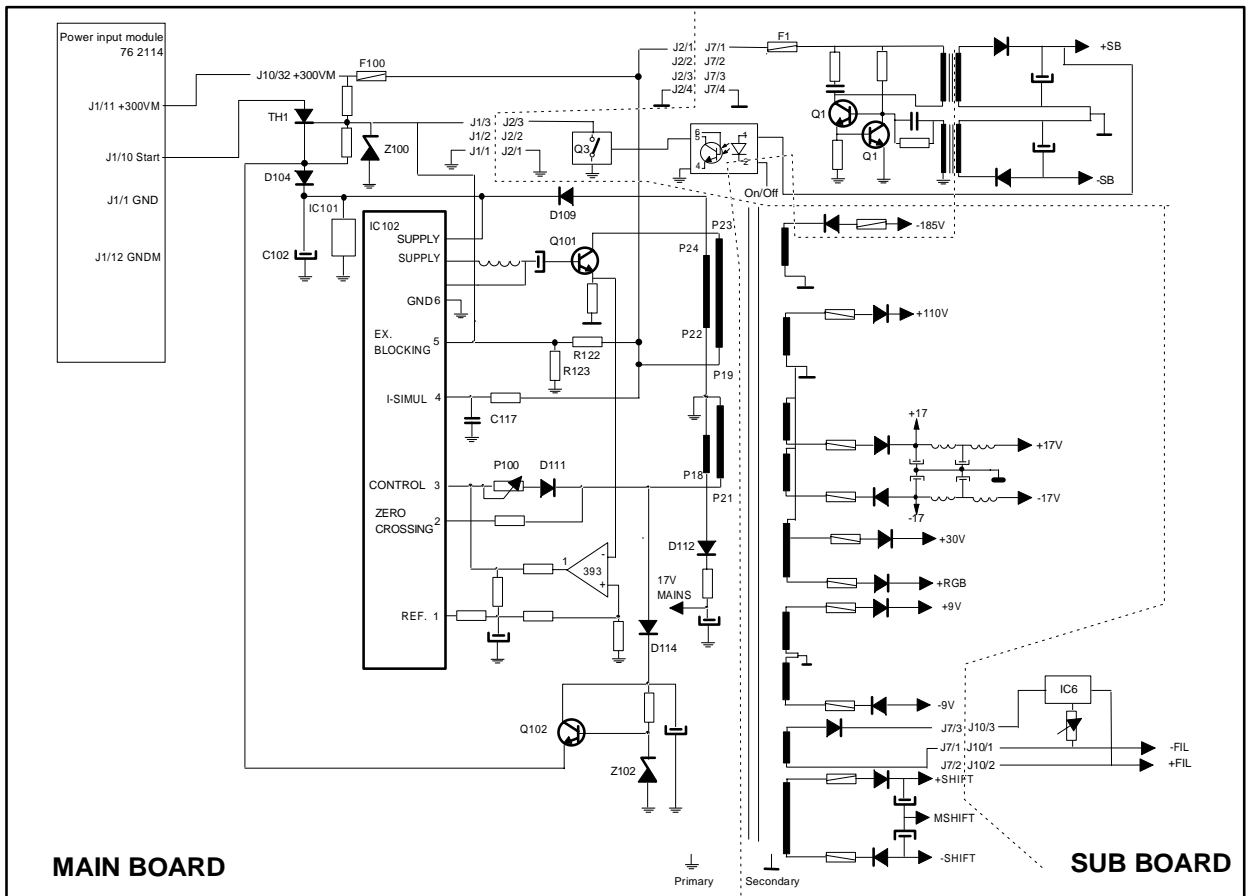
Table with 4 columns: Name, Module No, Date, and other metadata. Name: SM POWER SUPPLY SUB-UNIT. Module No: R7621865 - 5. Date: 10-03-1998.

Modifications reserved (COMPONENTS MARKED WITH ** ARE NOT MOUNTED)

BARCO PROJECTION SYSTEMS

SM POWER SUPPLY+StBy SUB MODULE

7621065
762106S



TECHNICAL DESCRIPTION SWITCHED MODE POWER SUPPLY (7621065).

Introduction.

On the main board of this module we find the generation of all stable voltages , we mean voltages independent on the line frequency, and the variable +HTHD voltage (referred to as the second SMPS).

This second SMPS is linked via the subunit with the horizontal deflection board as the +HTHD voltage (horizontal scan voltage) is linearly proportional with the line frequency.

Because the 'second' SMPS utilizes the rectified voltage from the winding P22-P24, this SMPS totally depends on the 'first' one' , or in other words, if the first SMPS is down , the second one 'follows' .

The ON/OFF voltage delivered by the controller board can stop or start up these Switched Mode Power Supplies.

The subunit comprises the DC-fan control, the regulation circuit for the +HTHD, its Under- and Over voltage protection circuits, the +17volts drop protection and the stand-by power supply.

Generation of the line frequency independent voltages.

The mains voltage is rectified on the Mains Filter unit (76 2114) and the +300 volts is now the supply voltage for the power switches Q100 and Q101 on the main board.

We assume that the thyristor TIC106C is conducting (its gate is not clamped at ground level, see later).

The positive halfwave of the mains voltage (START) charges C102 via D104 . The gate of the thyristor is set at 11 volts with the zener Z100 through R101 from the +300volts.

As soon as the capacitor voltage of C102 reaches approximately 12 volts, the IC can start up by driving the base of the power switch.

The diode D104 stops conducting as its anode is at about $(11 + 0.6)$ volts.

The thyristor gets blocked as well, because its cathode equals the gate voltage.

In the meantime the IC102 has started up and the voltage at pin 9 receives its supply voltage now from the winding 24-22 of the T2 transformer via D109.

The push-pull outputs, pins 7 and 8, drive the Q101 power switch and during the off time of the latter the accumulated energy in the primary winding is transferred to the secondary capacitors via the rectifying diodes (flyback principle).

The feedback winding 21-22 provides two informations for the control IC :

Firstly, the waveform is sent to pin 2 where the **zero passages** are detected, useful to drive the power switch on at the exact moment.

The base drive is delayed until the energy in the transformer has been com-

pletely transferred to the secondary side. By this measure, the current through the power switch is reduced to a minimum.

Secondly, the negative amplitude is rectified by D111 and compared with the reference 4 volts that is available at pin 1.

The error voltage is now sent to pin 3 and serves as a control voltage to adjust the duty cycle and frequency of the switcher.

The same windings also serves as a help at starting up. This windings provides energy the moment the P22-P24 winding does not. The rectified voltage passes to pin 9 up to the moment that pin has reached 12volts.

The current through the power switch is at all times checked and if too high (in the event of a short on the secondary side) the comparator 393 (IC101) output drops the error voltage in order to adapt the duty cycle of the switcher.

Note that a "special" winding is provided, delivering **+17M**, or, a voltage related to the **Mains** ground and not the chassis ground. This voltage is utilized on the EHT board, because the drive circuit for the power switcher is Mains ground and not Chassis ground. (see description EHT board).

Generation of the +HTHD voltage (scan voltage).

This voltage is linked with the horizontal deflection board as it has to be adapted to the scanning frequency. A feedback voltage (FBHD) is for that reason arriving on the subunit.

This feedback voltage, at contact J4(7) of the subunit, is sent to the base of the error amplifier Q6. The potentiometer P2 allows an adjustment of this feedback, or in other words, the horizontal width can be aligned with P2.

The emitter of Q6 is set at a reference zener voltage, adjustable with the voltage at the regulating pin of Z8. This voltage is the result of the output of the DC-amplifier-buffer 353, combined with the +HTHD voltage.

By this measure, we reduce the range of the horizontal width at high scanning frequencies. Indeed, at standard video frequency we need much more range to overscan.

The collector current of the regulating transistor Q6 flows into the opto-coupler IC5 and the phototransistor of this insulating device is now regulating the DC voltage at pin 3 of IC100, in order to stabilize the +HTHD voltage for one typical line frequency and amplitude setting.

Q7 is a 5mA current generator and D10 a **green** LED to visualise the +HTHD voltage.

Overvoltage protection.

Pin 2 of the 393 (IC4) is set at 5.6 volts with Z10 and, the other input, pin 3 is the scan voltage divided by R38/R39.

As soon this input exceeds the zener voltage, the output switches high and saturates transistor Q9. The +HTHD voltage is dropped to a low level.

The original overvoltage protection is now is causing an under voltage protection.

Under voltage protection.

The stabilized zener voltage with Z8 is used as reference voltage for the comparator 393, pin 6. Now, the other pin 5 is the +HTHD voltage.

If the pin 5 drops below the reference voltage, the output switches low, and the transistor Q8 saturates, pulling again pin 2 of IC5 low.

Protection against too low +17 volts.

If, for some reasons, the +17 volts (and all the other voltages as well) are, even temporarily, too low, it is then advised to shut down the +HTHD voltage (coming from the other SMPS).

Pin 6 is preadjusted, ex factory, at approx. 14 volts with P1

This happens with the comparator in IC3 and its output pin 7 saturates again Q8.

Temporary shut down at switching.

The "DEFL" info from the HOR DEFL board can switch on Q10 via Q11 and also pull down pin 2 of IC5. This is necessary the moment the relays switch the two windings of the scan coils from series to parallel or vice versa.

Stand-by / ON-OFF switching.

An oscillator is built up around Q1/Q2 and the transformer T1. Q1 gets its base current via R3. The collector current of the latter flows in the winding 1-3 and induces a voltage in the winding 5-4 'encouraging' the base current.

As soon the emitter voltage of Q1 can drive the Q2 and saturate it, this transistor clamps the base of Q1 at ground level and cuts off Q1. The cycle starts all-over again.

Two opposite polarity SB voltages (+/- 9 volts) are available at the secondary side.

a) Stand-by mode (OFF).

The voltage at contact 3 of the J4 connector ('OFF') is in this case 'high' and this means for the optocoupler IC1 that the phototransistor is not conducting.

Q3 is thus saturated as R6 can provide the required base-emitter current.

The collector of Q3 is 'low'. Furthermore, pin 5 of IC102 is below its "active level" via the diode D105 disabling, the drive output.

As a conclusion, only the standby voltages +/- 9 SB voltages are available.

b) Operational mode (ON).

The I/O block of the controller board (collector of a transistor) pulls now contact 3 of J4 at a low level to light the LED in the opto-coupler IC1.

Now, the phototransistor of the latter is saturated and brings the base of Q3 at nearly

DC Fan control of the fans.

ground level. This means now for this transistor an OFF state.
The zener Z100 on the motherboard can now install +11 volts at the gate of the thyristor allowing the charge of the capacitor C102.

The speed of the fans is regulated by means of a sensor (NTC resistor) mounted close to the heatsink of the SMPS board.

IC2 is an integrated circuit regulating the speed of the fans by adapting the duty cycle of the output drive for the power transistor Q4. L1 and C7 filters the output voltage.

The feedback is applied to pin 5 which is protected against arcing with D4/D5.

MC34063 is a switching regulator. An oscillator trimmed with C6 is applied together with a dc voltage to an RS-flipflop via an AND gate. That DC voltage now is the result of a comparator output receiving an internal reference voltage of 1.25 volts and the feedback voltage at pin 5 (comp). Consequently, the duty cycle depends on the DC voltage that is built up as follows :

- it is determined by the output voltage via R13 / R14 / R11 in order to stabilize the latter for a well-determined value of the NTC resistor.
- it is equally influenced by any change of the NTC resistor itself, sensing the heatsink of the SMPS board.

The minimum voltage is set by Z5 at approximately 7.5 volts and the maximum speed by Z4 + Z4. at 15 volts.

The maximum current output is limited by R10, and an RC feedback straight from the output to pin 5 provides a more regular speed at any time.

Power supply for the EHT generator.

The EHT generator is supplied directly from the rectified mains voltage. The +300M volts is leaving the board at the contacts 31/32 of the J8A connector for the EHT board (see description of that board)

By above measure, we eliminate the influence of the EHT load on the performance of the power supply, and the maximum peak current of the EHT generator is increased.

IMPORTANT

The SM POWER SUPPLY has to be adjusted when the projector displays a picture of the internal generated testpattern or of an input signal at standard line- and frame frequency.

PREPARATION

Select the internal generated test pattern or an input source at standard frequency (refer to owner's and installation manual).

Put the BRIGHTNESS and CONTRAST level in mid-position (refer to owner's manual).

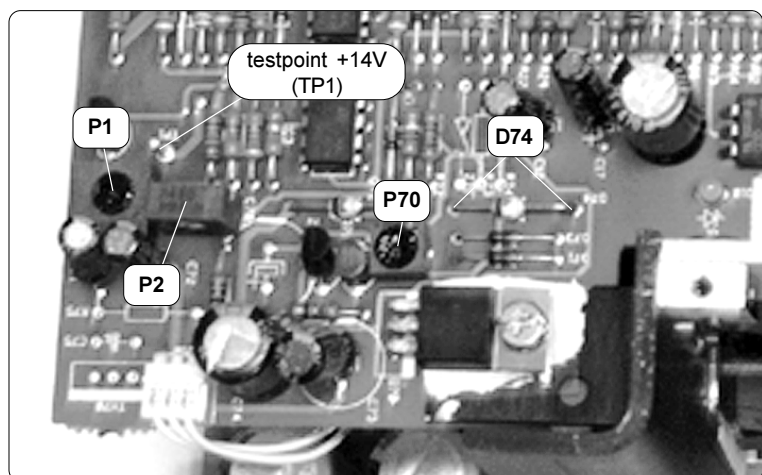
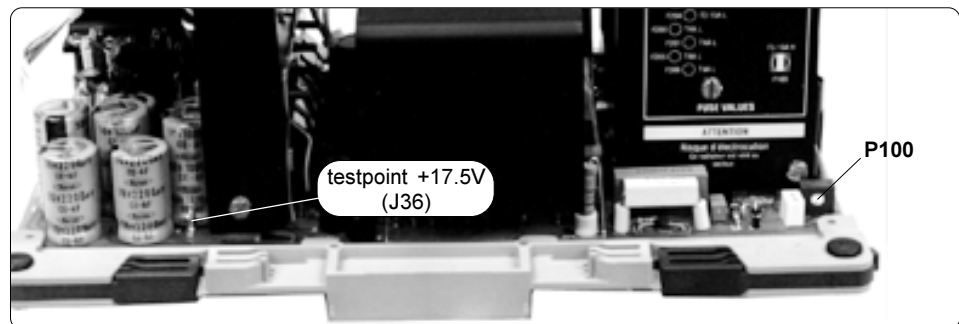
ADJUSTMENTS

Adjustment on main board

a) Adjusting Vout P100

Connect a voltmeter to the provided test point (+17.5V).
Adjust potentiometer P100 for +17.5V on testpoint.

Adjustments on sub-board



b) Adjusting +14V P1

Important: P1 is factory pre-adjusted. A readjustment is only necessary after a replacement of a defective component in the +17V drop circuit.

Adjustment procedure: Connect a voltmeter to the testpoint TP1.
Adjust potentiometer P1 for +14V on that TP1.

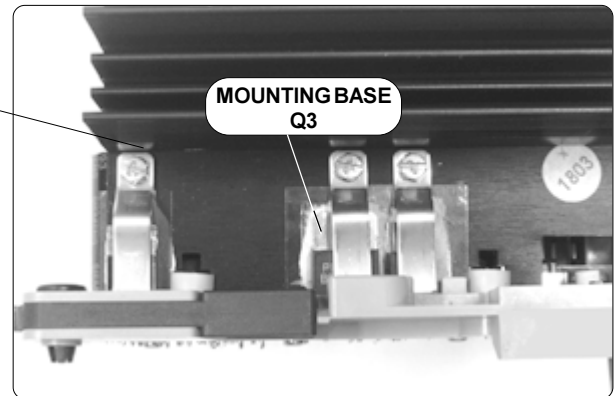
c) Adjusting MAX HOR AMPL P2

Adjust the Horizontal Amplitude of the displayed picture by means of the RCU800 on its maximum (bar scale on screen indicates 99). (Refer to the owner's manual to select the corresponding menu).

Connect a voltmeter to the collector (Collector connected to mounting base) of transistor Q3 (BDV65C) on the Hor. Defl. board.

Adjust potentiometer P2 for +48V (HTHD) on collector.

HORIZONTAL DEFLECTION
MODULE
(Top view)



d) Adjusting picture heater voltage P70

Adjust potentiometer P70 for +6.75V across diode D74.

SM POWER SUPPLY+StBy

SUB MODULE

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PARTS LISTING 7621065 CPL

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	ITEM NO.	SIT.	DESCRIPTION	
30	R133036	SPR L6 D 2,4D6 CE	3	C201	R1116491	C EL RA 47M T385SKT 85	1
50	R133039	SPR L8 D 1,2D4 CE	6	C213	R111716	C CE DI 680P M202E3 HV	1
122	R133063	HTSN@A SOT93I_MICA28X	2	C215	R111716	C CE DI 680P M202E3 HV	1
224	R133074	HTSN@A I_SIL W30	0	C118	R114090	C POMERA 1M K 63E2 85	1
225	R133074	HTSN@A I_SIL W30	0	C300	R1147009	C CE DI 4N7M250E5 Y1	1
70	R314516	F A H+C 6A 5X20 BV B	1	C106	R1150051	C PPMERA 2N2J162E9 HV	1
1050	R315302	JPIN PR D1,3L 5,5+3	1	C115	R1150051	C PPMERA 2N2J162E9 HV	1
1040	R348019	CBLA TIE B L100 W2,4 -	2	C114	V1114874	C EL RA 100M M 50M3 105	1
123	R348069	GRMT P3 W 8 G11	1	D107	R131637	D R BA158 600400 DO7	1
120	R348086	CBLA TWIST LOCK D 8,9	1	D108	R131637	D R BA158 600400 DO7	1
213	R3619125	SCR D965 M 3 X 6 STZB	1	D109	R131637	D R BA158 600400 DO7	1
306	R3619145	SCR D965 M 3 X 10 STZB	1	D111	R131637	D R BA158 600400 DO7	1
22	R3620226	SCR D84 M 3 X 8 SS	1	D106	R131906	D R BYV96E 1021A5 SOD57	1
21	R3626696	SCR D921 M 3 X 8 SS	2	D112	R131906	D R BYV96E 1021A5 SOD57	1
305	R3626696	SCR D921 M 3 X 8 SS	1	D207	R131906	D R BYV96E 1021A5 SOD57	1
130	R3631059	SCR Z933 M 3 X 8 SS	3	D200	R131913	D R BY329 10208A TO220C	1
214	R3631059	SCR Z933 M 3 X 8 SS	4	D205	R131913	D R BY329 10208A TO220C	1
304	R3631059	SCR Z933 M 3 X 8 SS	2	D201	R131927	D R BY229 60007A TO220C	1
215	R3631089	SCR Z933 M 3 X 16 SS	2	D202	R131927	D R BY229 60007A TO220C	1
110	R367600	NUT TRAD M3 BLOCK BRNI	3	D203	R131927	D R BY229 60007A TO220C	1
210	R367600	NUT TRAD M3 BLOCK BRNI	4	D204	R131927	D R BY229 60007A TO220C	1
303	R367600	NUT TRAD M3 BLOCK BRNI	2	D206	R131927	D R BY229 60007A TO220C	1
20	R3676091	SPR L17 M 3 H 5 IBRNI	1	D208	R131927	D R BY229 60007A TO220C	1
1010	R367699	RVT AVTRON2,5L 8,1 AL	6	D209	R131927	D R BY229 60007A TO220C	1
1000	R722276	LOCK49PCB UNCPL	1	D210	R131927	D R BY229 60007A TO220C	1
200	R802631	HTSND800 SMP PART 2	1	D212	R131927	D R BY229 60007A TO220C	1
100	R803214	HTSNG1200 SMP PART 1	1	F100	R314147	F 5X20 F 3A15 H UL	1
121	R804832	HTSNA GEN SPG 1XM3 LG	2	I100	R132787	U 4601-5 TDA SIP9 P	1
220	R804833	HTSNA GEN SPG 2X 3.1LG	2	I102	R132787	U 4601-5 TDA SIP9 P	1
221	R804834	HTSNA GEN SPG 2XM3 LG	2	I101	R134114	U 393 LM DIP8 P	1
300	R805072	HTSNG1200 SMP	1	J 10	R313525	JEUR2C MBS P64E1C2S 1,6	1
302	R805075	HTSNG1200 GEN SPG	1	J 20	R314068	JEUR3C MBS P96E1C2S 1,6	1
301	R805078	HTSNG1200 CPL	1	J 6	R3484022	CD CT FTMT P 2 240	1
111	V3621217	SCR \$7500CM 3 X 6 STZN	5	J 12	R3484058	CD CT FTMT P 5 220	1
124	V3621217	SCR \$7500CM 3 X 6 STZN	2	J 4	R3484074	CD CT FTMT P 7 170	1
211	V3621217	SCR \$7500CM 3 X 6 STZN	1	J 3	R3484082	CD CT FTMT P 8 150	1
223	V3621247	SCR \$7500CM 3 X 12 STZN	4	J	Z3421721	WU UL1007 AWG24 ST RD 1	1
C113	R111468	C EL RA 470M M 16E2 85	1	J 1	Z3484033	CD CT FTMT P 3 190	1
C210	R1114689	C EL RA 470M M 16E2 105	1	J 7	Z3484033	CD CT FTMT P 3 190	1
C206	R1114708	C EL RA2200M M 16E3 SM	1	J 2	Z3484042	CD CT FTMT P 4 190	1
C207	R1114708	C EL RA2200M M 16E3 SM	1	L102	R302102	CORE TUBE 4,95/1,3 X40,5	1
C211	R1114708	C EL RA2200M M 16E3 SM	1	L100	R302108	CORE TUBE 3,5/1,3 X 3	1
C212	R1114708	C EL RA2200M M 16E3 SM	1	L101	R302108	CORE TUBE 3,5/1,3 X 3	1
C121	R111477	C EL RA 100M M 25E2 85	1	L200	R305913	CH MNS AX NS 12 UH 3A	1
C220	R111489	C EL RA 470M M 35E2 85	1	L201	R305913	CH MNS AX NS 12 UH 3A	1
C221	R111489	C EL RA 470M M 35E2 85	1	L202	R305913	CH MNS AX NS 12 UH 3A	1
C202	R1114909	C EL RA1000M M 50E3 SM	1	L203	R305913	CH MNS AX NS 12 UH 3A	1
C204	R1114909	C EL RA1000M M 50E3 SM	1	L204	R305913	CH MNS AX NS 12 UH 3A	1
C209	R1114909	C EL RA1000M M 50E3 SM	1	L205	R305913	CH MNS AX NS 12 UH 3A	1
C203	R111564	C EL RA 220M M200E4 105	1	L210	R305913	CH MNS AX NS 12 UH 3A	1
C208	R111575	C EL RA 100M M315E4 105	1				
C214	R111575	C EL RA 100M M315E4 105	1				
C103	R111578	C EL RA 100M M400E4 105	1				
C200	R1116491	C EL RA 47M T385SKT 85	1				

SM POWER SUPPLY+StBy

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L211	R305913	CH MNS AX NS 12 UH 3A	1	R106	R103600	R WW H E1 K 4W	1
L212	R305913	CH MNS AX NS 12 UH 3A	1	R121	R103600	R WW H E1 K 4W	1
L215	R305913	CH MNS AX NS 12 UH 3A	1	R300	R104672	R HV H 5M6 J 0W5 3500	1
L216	R305913	CH MNS AX NS 12 UH 3A	1	R301	R104672	R HV H 5M6 J 0W5 3500	1
L104	R3061322	CH AX NS 10 UH	1	R119	V1011984	R MF H E22J 0W6 E4	1
L102	R348101	WU JUMP 0,6 5	1	R105	V1026006	R MF H 1K F 0W6 E4	1
				R108	V1026006	R MF H 1K F 0W6 E4	1
P100	R106829	R TCE V 10K K 0W5 S10SS	1	R138	V1026255	R MF H182E F 0W6 E4	1
				R104	V1026423	R MF H 2E74F 0W6 E4	1
Q100	R132951	Q IXTH11N100 FNP TO247	1	R109	V1026726	R MF H 5K62F 0W6 E4	1
Q101	V132599	Q BU2525A N P SOT93	1				
				T100	R774356	T G808 SMP VAR	1
R112	R100136	R MF V 1K J 0W6 E2	1	T101	R7743227	T G1200 SMP FIX	1
R131	R100137	R MF V 1K2 J 0W6 E2	1				
R132	R100145	R MF V 5K6 J 0W6 E2	1	TH1	R1322101	Q TIC106D TH P TO66	1
R134	R1011907	R CFFH E1 K 0W35	1				
R111	R103226	R MO H150E J 2W E10	1	W 11	R348101	WU JUMP 0,6 5	1
R126	R103226	R MO H150E J 2W E10	1				

PARTS LISTING 762106S

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
203	R1330291	HTSN@ATO220I_MICA°15X	1	C 24	R112744	C CE MI 2N7K100E2	1
204	R1330292	HTSN@ATO220I_BUSHREC	1	C 2	R1128111	C N750DI 68P K102E3 HV	1
60	R1330391	SPR L 8 D 1,5D 4 CE	6	C 1	R112830	C CE DI 2N7S400E3 85	1
132	R133063	HTSN@ASOT93I_MICA28X	1	C 14	R1137121	C POMERA 10N K250E2 85	1
20	R133072	HTSN@ Q TO220 24X 7 L 20	1	C 18	R1137121	C POMERA 10N K250E2 85	1
132	R133074	HTSN@A I_SIL W30	1	C 9	R113720	C POMERA 47N K 63E2 85	1
70	R3132862	JMD1 C MBT P 2 E1SN 6,7	1	C 10	R113720	C POMERA 47N K 63E2 85	1
220	R348019	CBLA TIE B L100 W2,4 -	2	C 13	R113720	C POMERA 47N K 63E2 85	1
21	R3631059	SCR Z933 M 3 X 8 SS	1	C 22	R113724	C POMERA 100N K 63E2 85	1
111	R3631059	SCR Z933 M 3 X 8 SS	4	C401	R113724	C POMERA 100N K 63E2 85	1
122	R3631069	SCR Z933 M 3 X 10 SS	1	C400	R113730	C POMERA 330N K 63E2 85	1
201	R3631069	SCR Z933 M 3 X 10 SS	1	C 11	R114154	C POMERA 22N K400E4 85	1
22	R3661026	NUT D934 M 3 SS	1	C 6	R1159141	C PP RA 820P J100E2 85	1
202	R3661026	NUT D934 M 3 SS	1				
123	R367502	SPR D6798AD 3,2D 6 STZN	1	D 10	R131667	D LED D3 T GN	1
110	R367600	NUT TRAD M 3 BLOCK BRNI	3	D 70	R131906	D R BYV96E 1021A5 SOD57	1
100	R803213	HTSN G1200 SMP PART 3	1	D 74	R131906	D R BYV96E 1021A5 SOD57	1
200	R803237	FRM51 SMP FIX	1	D 3	R131950	D R BYV27 1502A0 SOD57	1
130	V1330681	HTSN@A TO220 SPG DUAL	1				
				F 1	R314519	F A HLD 10A 5X20 BOD	1
				F 1F	R314142	F 5X20 T 0A125L UL	1
	R367502	SPR D6798AD 3,2D 6 STZN	2				
C 4	R111468	C EL RA 470M M 16E2 85	1	I 1	R131691	U 601-3 SFH DIP6 P	1
C 5	R111468	C EL RA 470M M 16E2 85	1	I 5	R131691	U 601-3 SFH DIP6 P	1
C 74	R111468	C EL RA 470M M 16E2 85	1	I400	R134010	U 7815 TO220 P	1
C 71	R111476	C EL RA 47M M 25E2 85	1	I 4	R134114	U 393 LM DIP8 P	1
C 73	R111477	C EL RA 100M M 25E2 85	1	I 3	R134116	U 353 LF DIP8 P	1
C 7	R111479	C EL RA 470M M 25E2 85	1	I 2	R137625	U 34063 DIP8 P	1
C 8	R111489	C EL RA 470M M 35E2 85	1				
C 23	R111489	C EL RA 470M M 35E2 85	1	J 6	R313922	J CTH MBT P 2 M2SN WH	1
C 17	R111531	C EL RA 10M M 35E2 85	1	J 12	R313925	J CTH MBT P 5 M2SN WH	1
C 72	R111546	C EL RA 1M M 50E2 85	1	J 4	R313927	J CTH MBT P 7 M2SN WH	1
C 12	R111550	C EL RA 4M7M 50E2 85	1	J 3	R313928	J CTH MBT P 8 M2SN WH	1
C 15	R112739	C CE MI 1N K100E2	1	J 2	R313943	J CTH MBS P 3 M2SN WH	1
C 3	R112740	C CE MI 1N2K100E2	1	J 10	R313943	J CTH MBS P 3 M2SN WH	1
C 21	R112740	C CE MI 1N2K100E2	1	J 7	R313944	J CTH MBS P 4 M2SN WH	1

SM POWER SUPPLY+StBy

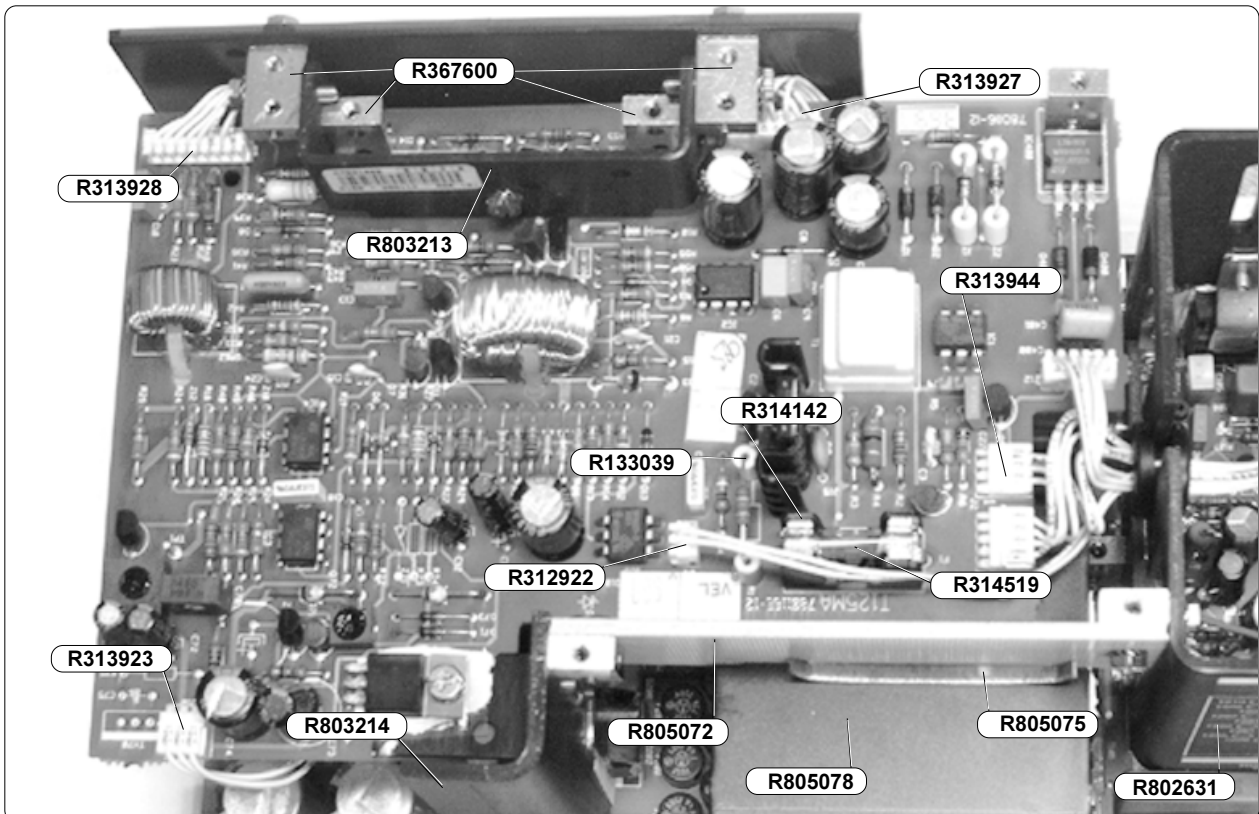
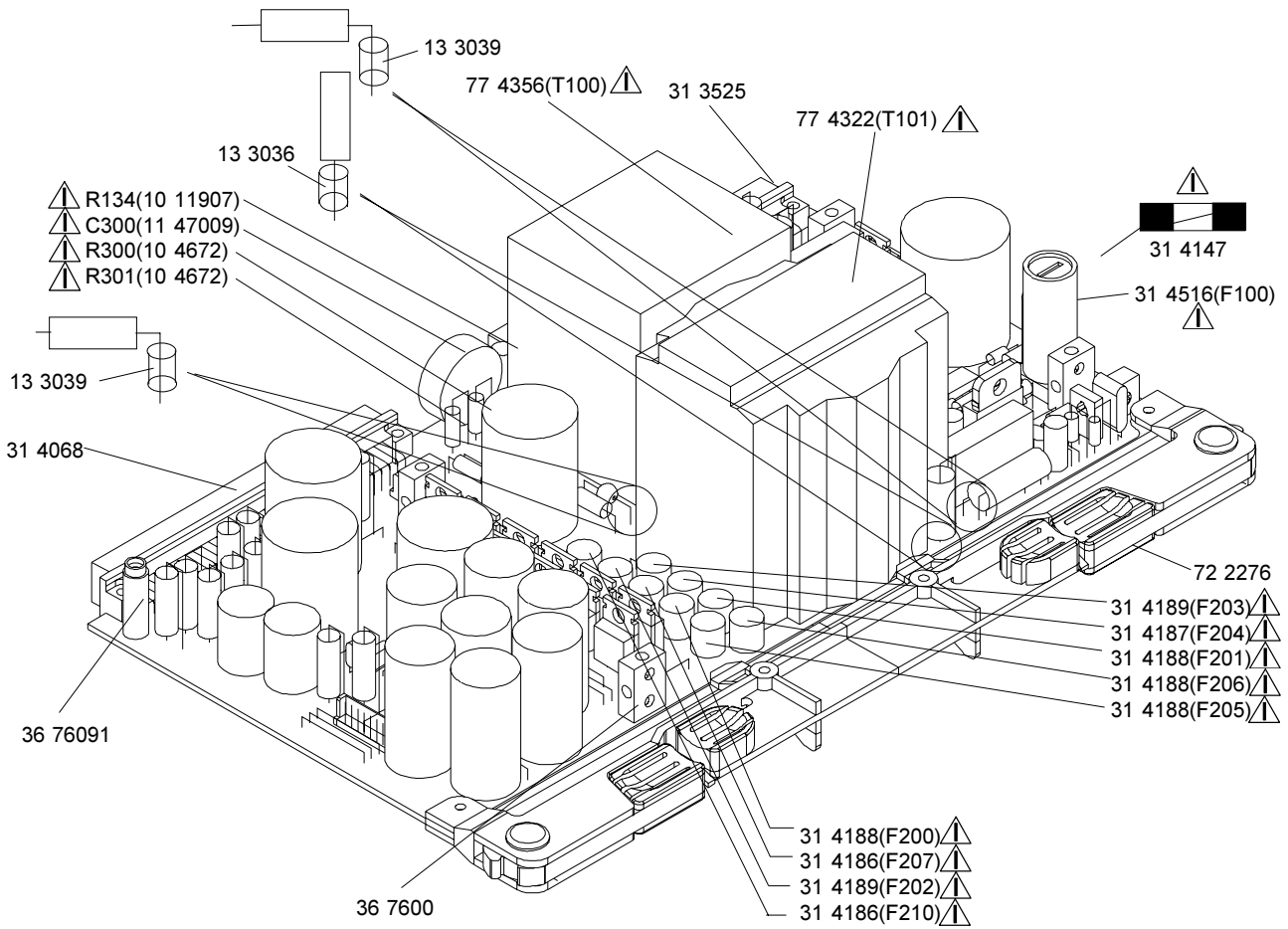
SUB MODULE

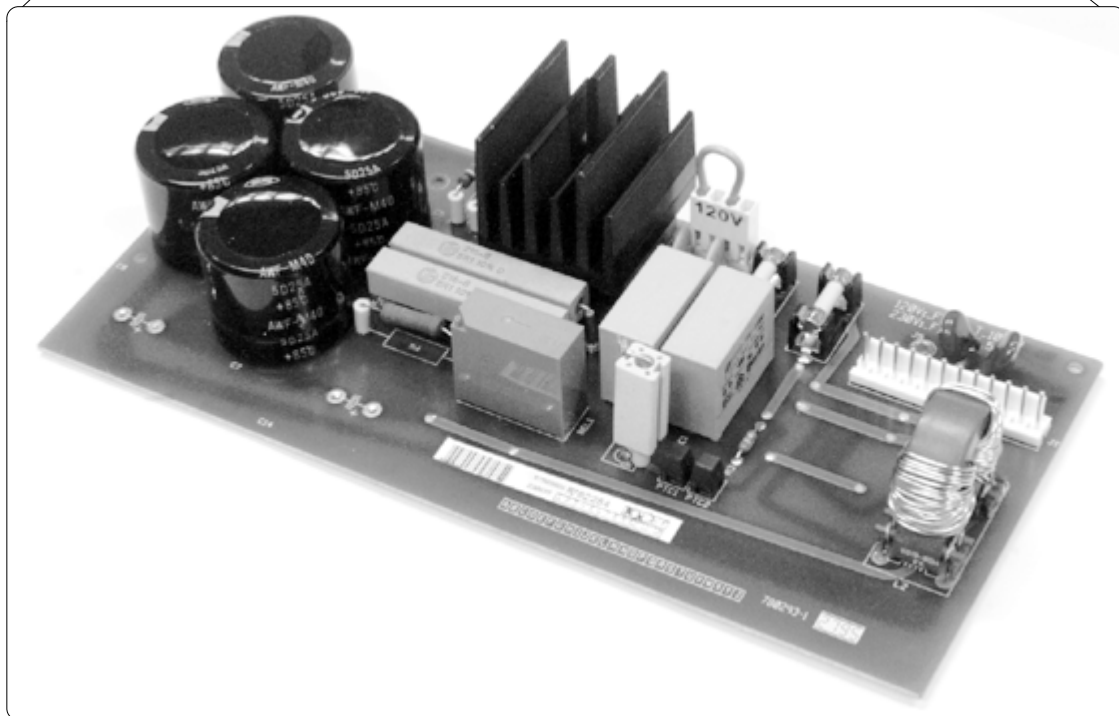
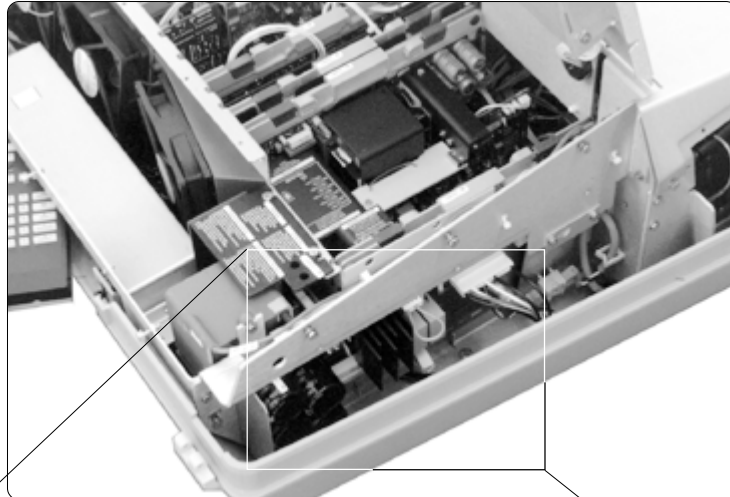
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762106S

L 1	R305909	CH TOR V 1200 UH 2A	1
L 2	R306222	CH TOR V 80 UH 2A	1
NTC1	R105016	R NTC 2K7 0W25	1
P 1	R106727	RTCE H 2K K 0W5 S10TS	1
P 2	R106833	RTCE V100K K 0W5 S10SS	1
P 70	R107005	RTCE H500E K 0W5 S 7TS	1
Q 70	A573379	Q BD242B P P TO220	1
Q 2	R1314071	Q BC547B N SS TO92	1
Q 3	R1314071	Q BC547B N SS TO92	1
Q 9	R1314071	Q BC547B N SS TO92	1
Q 6	R1314072	Q BC547A N SS TO92	1
Q 71	R131411	Q BC549C N SS TO92	1
Q 5	R131413	Q BC557 P SS TO92	1
Q 8	R1314131	Q BC557B P SS TO92	1
Q 10	R1314131	Q BC557B P SS TO92	1
Q 11	R1314131	Q BC557B P SS TO92	1
Q 4	R132909	Q BD652 DP P TO220	1
Q 7	R132948	Q BF459 N P TO126	1
Q 1	V1325851	Q BUT11AF N P SOT186	1
R 1	R101346	R MF H 6K8 J 1W E6	1
R 38	R104658	R HV H 1M5 J 0W5 3500	1
R 48	V1026000	R MF H 10M F 0W6 E4	1
R 58	V1026000	R MF H 10M F 0W6 E4	1
R 39	V1026467	R MF H 30K1 F 0W6 E4	1
R 4	V102913	R MF H 12E J 2W E7	1
SR62	R1011246	R CFFH100E J 0W35	1
T 1	R306718	T SMPS STAND-BY	1
TP1	R315302	JPINPRD1,3L5,5+3	1
Z 1	R131706	D ZEN 9V1 1W3 C DO41	1
Z 2	R131706	D ZEN 9V1 1W3 C DO41	1
Z 12	R131790	D ZEN 33V 1W3 C DO41	1
Z 3	R131791	D ZEN 6V2 0W5 B DO35	1
Z 4	R131791	D ZEN 6V2 0W5 B DO35	1
Z 6	R134031	U 431C TL TO92 P	1
Z 8	R134031	U 431C TL TO92 P	1
Z 70	R134031	U 431C TL TO92 P	1

SM POWER SUPPLY+StBy SUB MODULE

7621065
7621065





Input power (mains) voltage adaptation.

Attention

The BV 1609 - R90002070/R90002071 leaves the factory to operate on a power (mains) input of 230 Vac.

The BV 1609 - R90002079/R90002078 leaves the factory to operate on a power (mains) input of 120 Vac.

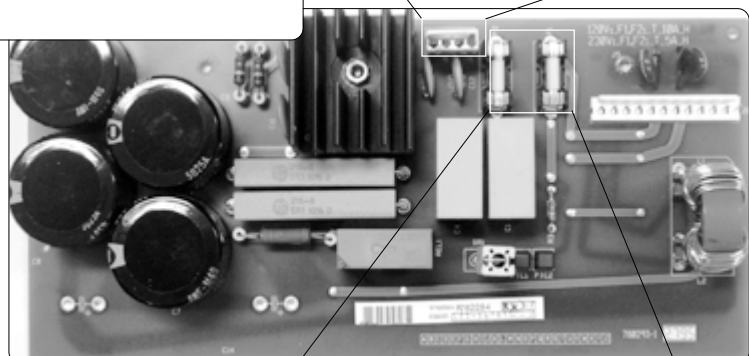
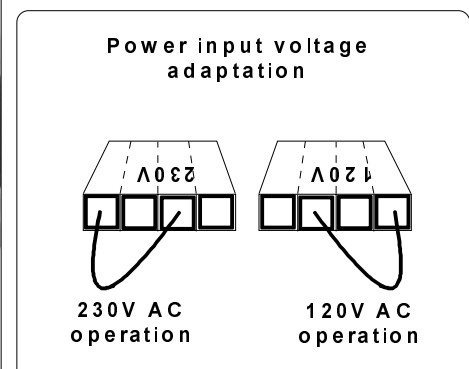
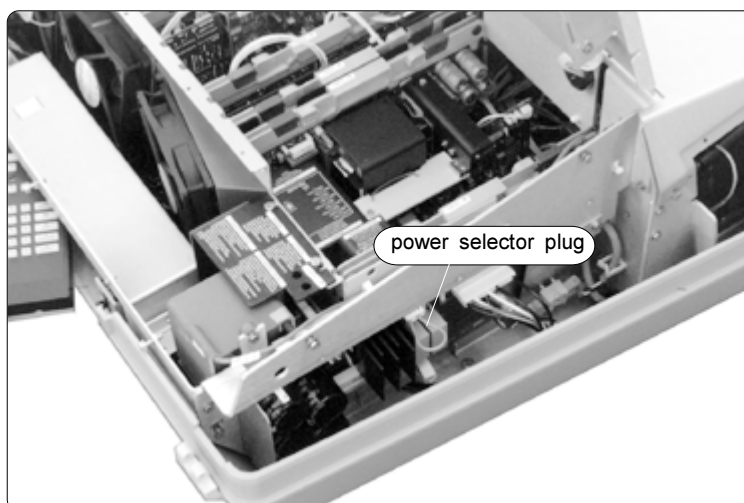
Adaptation of the power input of the projector to the local power source, from 230 VAC to 120 VAC or vice versa, is possible. Follow the procedure as described below.

WARNING

This circuit board is hot to AC. This Power input does not use a line isolation transformer, meaning the circuitry is HOT-TO-LINE and should be treated with caution.

Procedure

1. To be quite on the safety side, make sure the power cord is unplugged;
2. Open the top cover (see § Getting access to the controls of the installation manual).
3. Pull out the 'power selector plug' and re-insert it as illustrated in the drawing below, depending on the power source in the room.



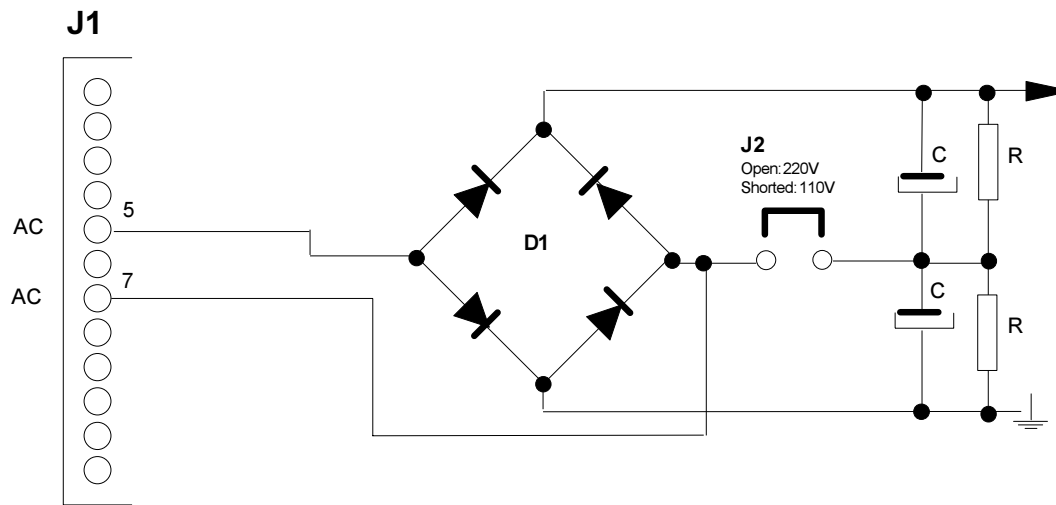
4. Replace the installed fuses. Refer to the table below for the correct fuses regarding the local power source.

Warning

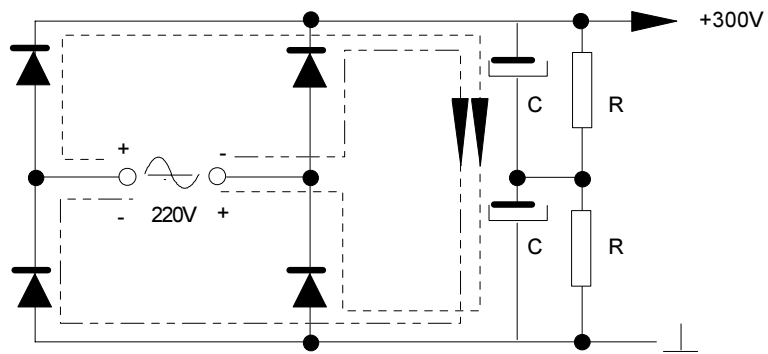
For continued protection against fire hazard :

- replace with the same type of fuse
- refer replacement to qualified service personnel

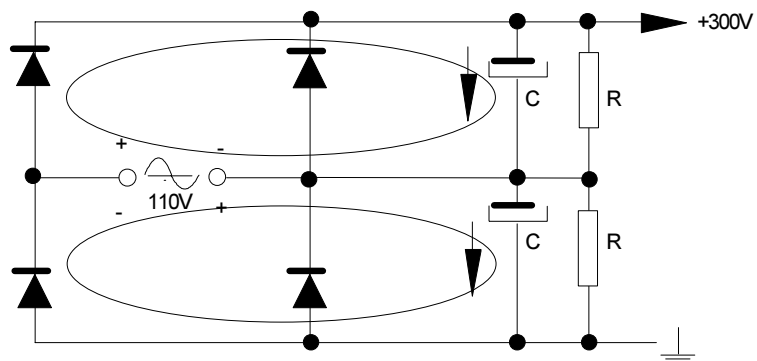
F1, F2	BARCO ord. no.
For 230 Vac (2x) T5A/250V	314104
For 120 Vac (2x) T10A/250V	314154



Power input voltage 230V



Power input voltage 120V

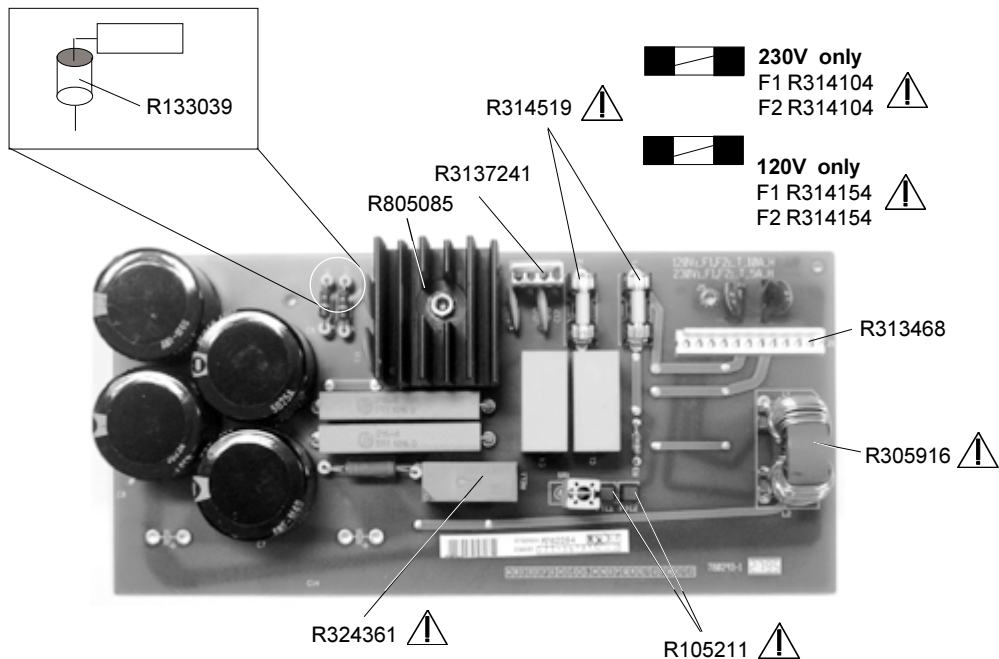


Power (mains) input module


R762284

Parts listing

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
10	R133039	SPRL 8 D 1,2D 4 CE	7	F 1	R314104	F 5X20 T 5A H UL	1
20	R3153151	J RVT MBT D 2.3L12.7	4	F 2	R314104	F 5X20 T 5A H UL	1
30	R3615075	SCR HILO_R 3,2X 7,9STZB	1	F 1	R314519	F A HLD 10A 5X20 BOD	1
201	R3622285	SCR D963 M 4 X 20 STZB	1	F 2	R314519	F A HLD 10A 5X20 BOD	1
203	R366103	NUT D934 M 4 STZN	2	J1	R3134685	J MTA MBT P12 M3,96 FL RO	1
202	R367503	SPR D6798AD 4,3D 8 STZN	1	J2	R3137241	J MTA MBT P 4 M3,96SN RO	1
200	R805085	HTSNG1200PMF	1	L 2	R305916	CH MNS 17 MH 2X-10APMF	1
	R762200T	CD SHUNT SL 2-4P4 230/120	1	PC	R780293	PCBG1200MNS	1
C 9	R112837	C CE DI 10N S500E3 85	1	PTC1	R105211	R PTCR 5K 14MA	1
C 10	R112837	C CE DI 10N S500E3 85	1	PTC2	R105211	R PTCR 5K 14MA	1
C 11	R112837	C CE DI 10N S500E3 85	1	R 1	R101460	R MF H100K J2W E7	1
C 12	R112837	C CE DI 10N S500E3 85	1	R 2	R101460	R MF H100K J2W E7	1
C 1	R114716	C PO RA 1M K250E11 X2	1	R 5	R1040101	R WW H 5E1 K11W	1
C 4	R114716	C PO RA 1M K250E11 X2	1	R 6	R1040101	R WW H 5E1 K11W	1
C 2	R114722	C CE DI 2N2M250E5 Y1	1	R 4	V102353	R MF H27K J3W E10	1
C 3	R114722	C CE DI 2N2M250E5 Y1	1	R 3	V1026428	R MF H274K F0W6 E4	1
C 5	V111598	C EL RA1000M M200E4 85	1	REL1	R324364	RLY 110V 1A BV MNS M UL	1
C 6	V111598	C EL RA1000M M200E4 85	1	SR 1	R1041698	R WWFV 1K5 K 2W	1
C 7	V111598	C EL RA1000M M200E4 85	1				
C 13	V111598	C EL RA1000M M200E4 85	1				
D 1	R132028	DBKBPC2508W	1				

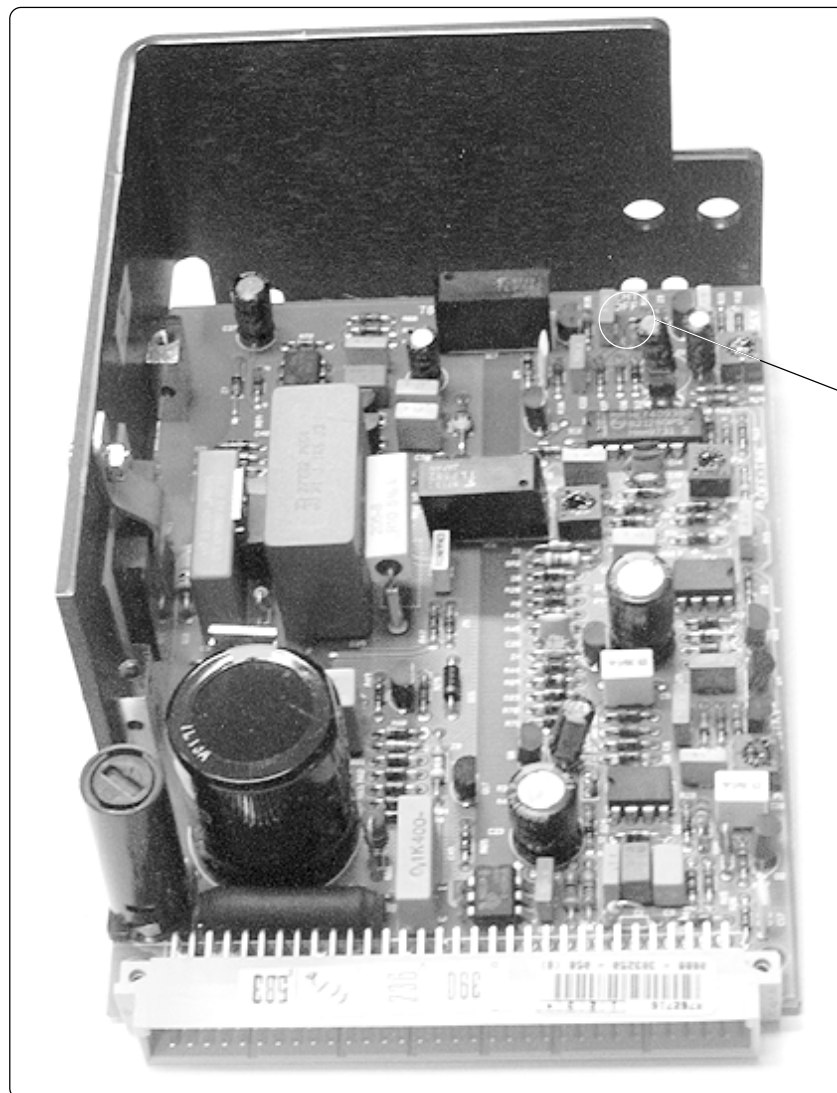


PRODUCT SAFETY NOTICE

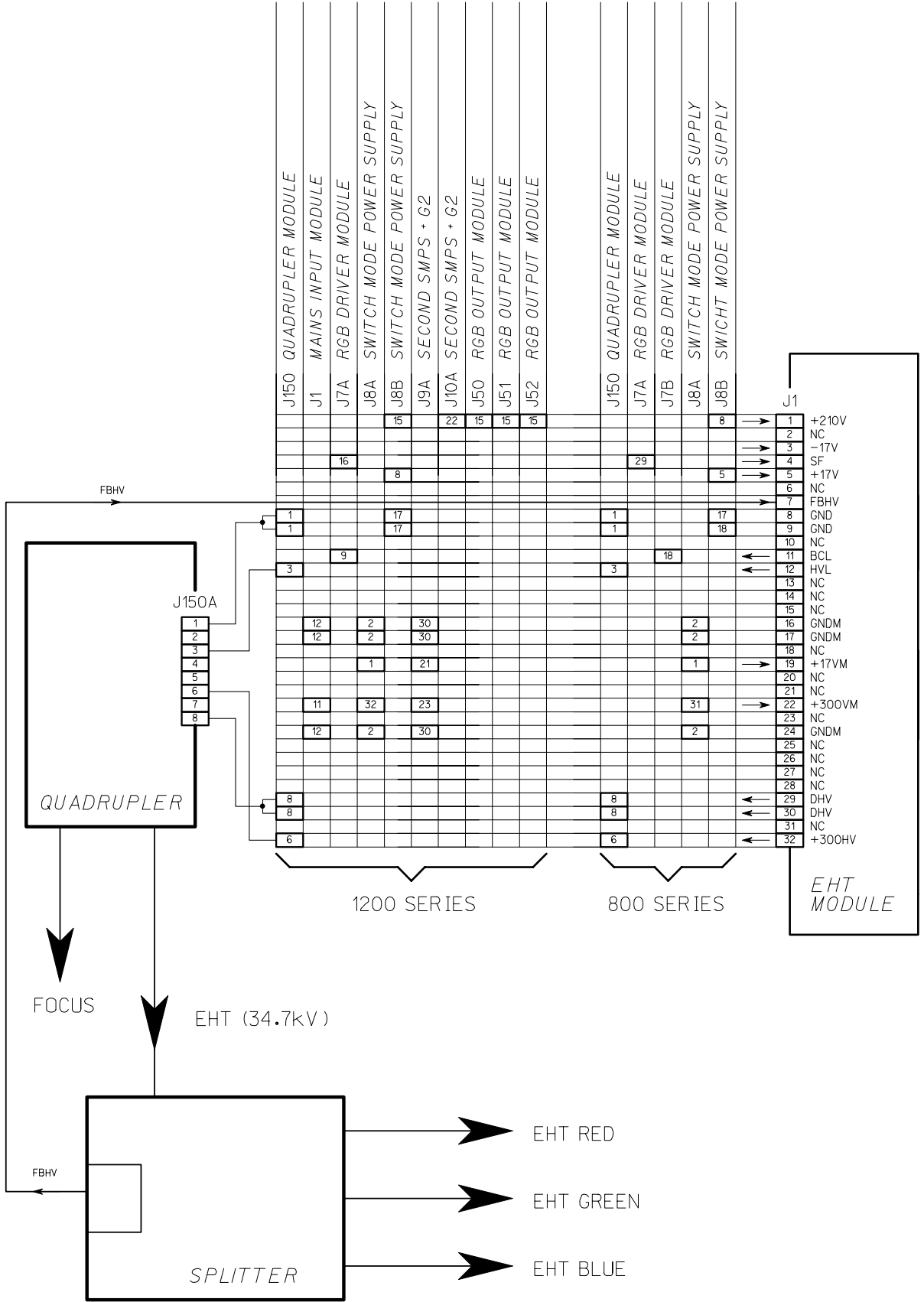
Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.

WARNING

THIS CIRCUIT BOARD IS HOT TO AC. THIS POWER SUPPLY, LIKE THE HIGH VOLTAGE POWER SUPPLY, DOES NOT USE A LINE ISOLATION TRANSFORMER, MEANING A PORTION OF THE CIRCUITRY IS HOT-TO-LINE AND SHOULD BE TREATED WITH CAUTION.

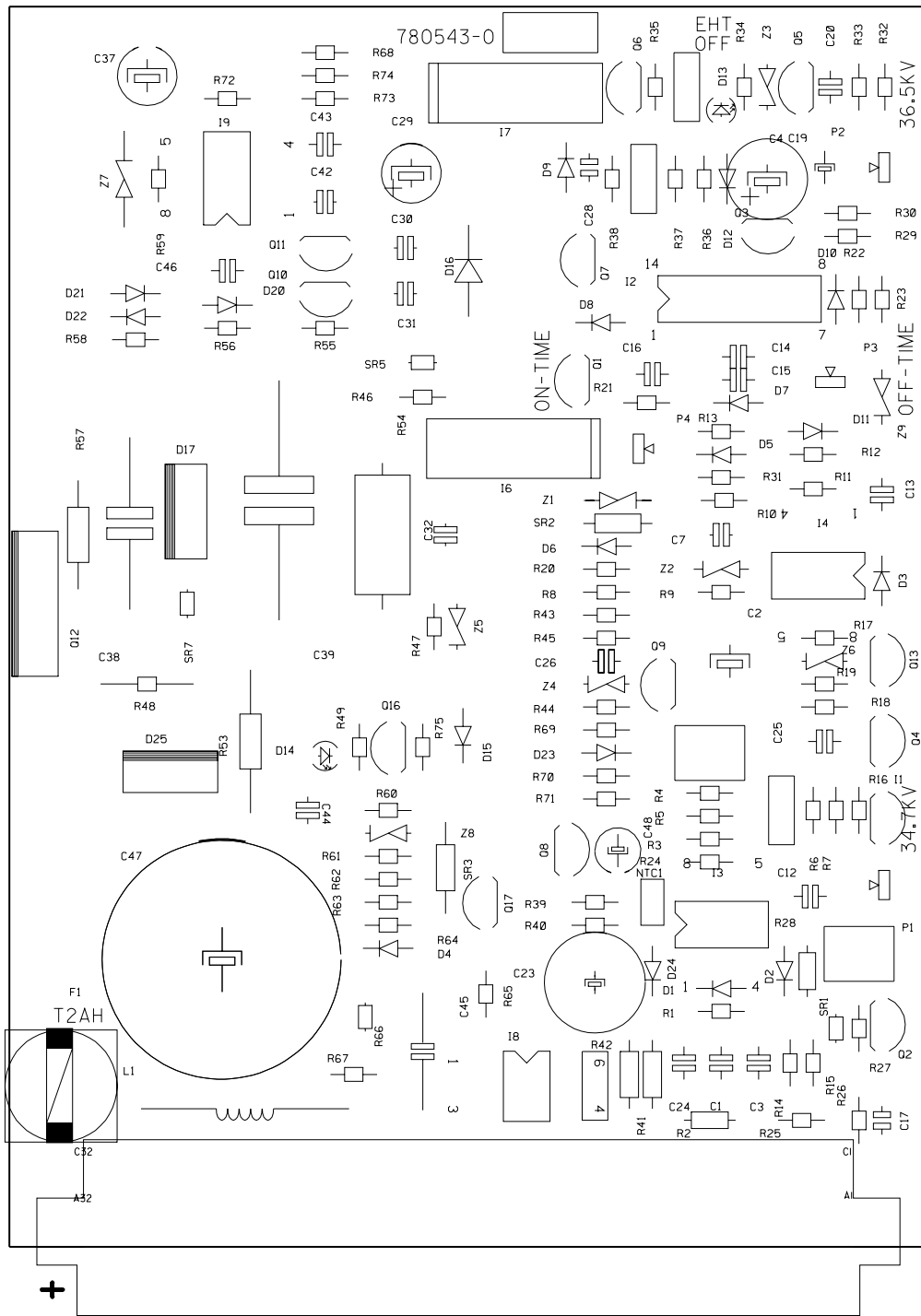


EHT Hold Down



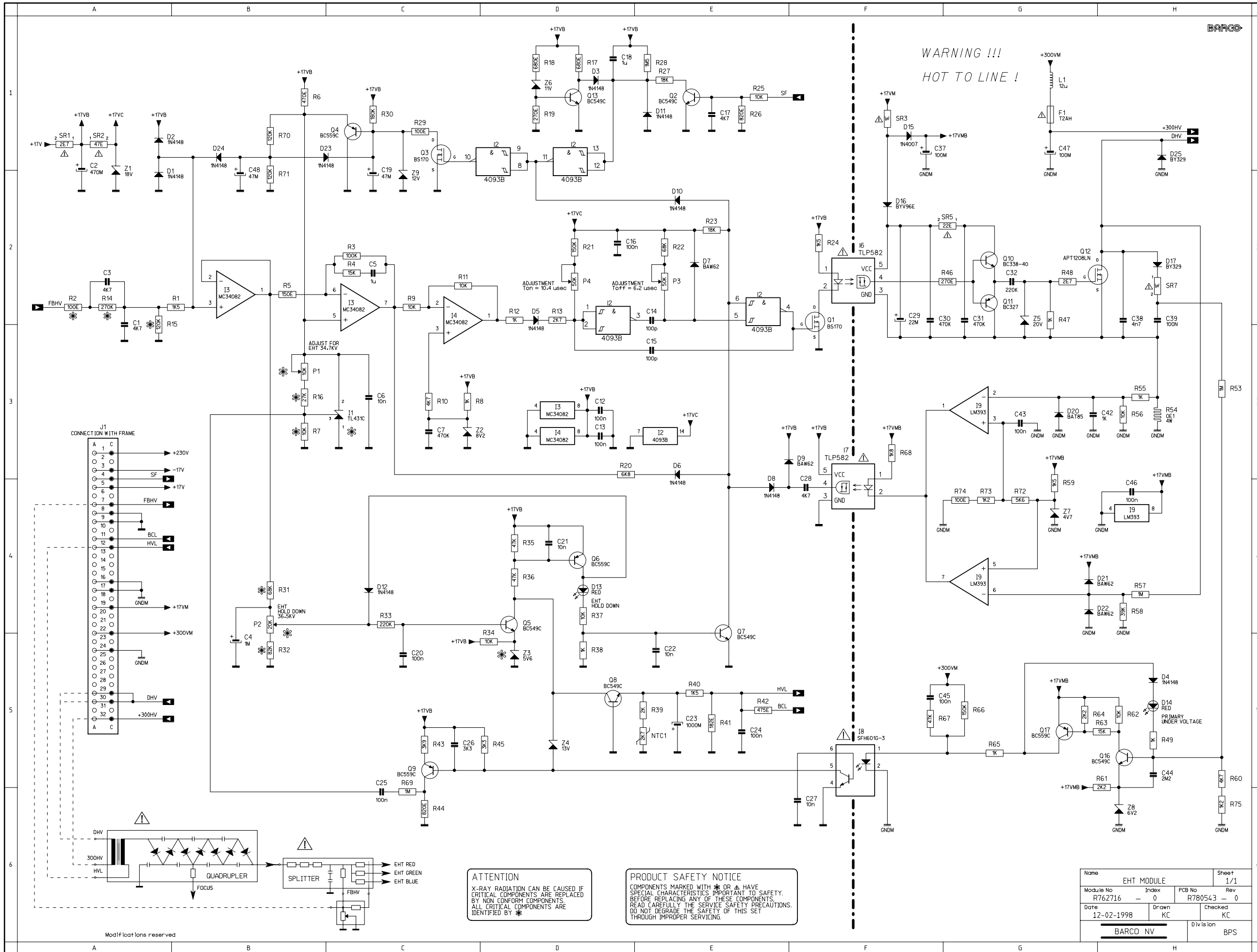
Name		EHT MODULE		Sheet	1/1
Module No	R762716	Index	- 0	PCB No	R780543
Date	12-02-1998	Drawn	JVDY	Rev	- 0
				Checked	KC
BARCO NV				Division	
				BPS	

Modifications reserved



Modifications reserved

Name EHT MODULE			Sheet 1 / 1	
Module No R762716	Index 0	PCB No R780543	Rev 0	
Date 12-02-1998	Drawn JVJY	Checked KC		
BARCO PROJECTION SYSTEMS				



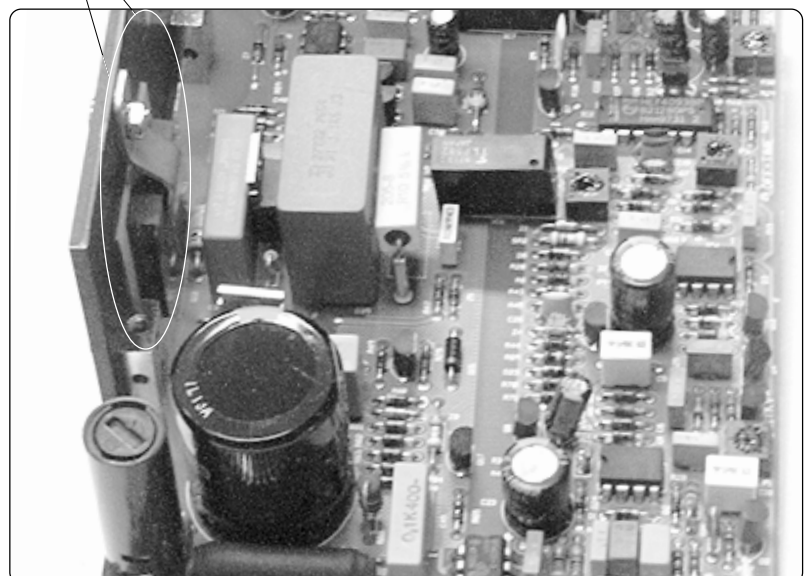
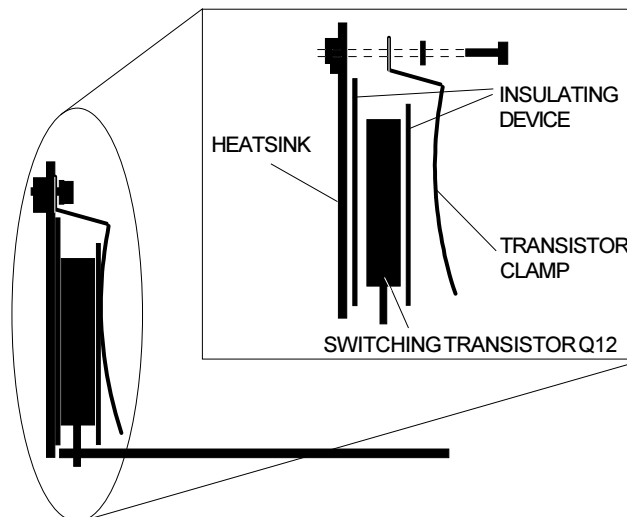
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SAFETY PRECAUTION

SWITCHING TRANSISTOR Q12 REMOVAL/REPLACEMENT

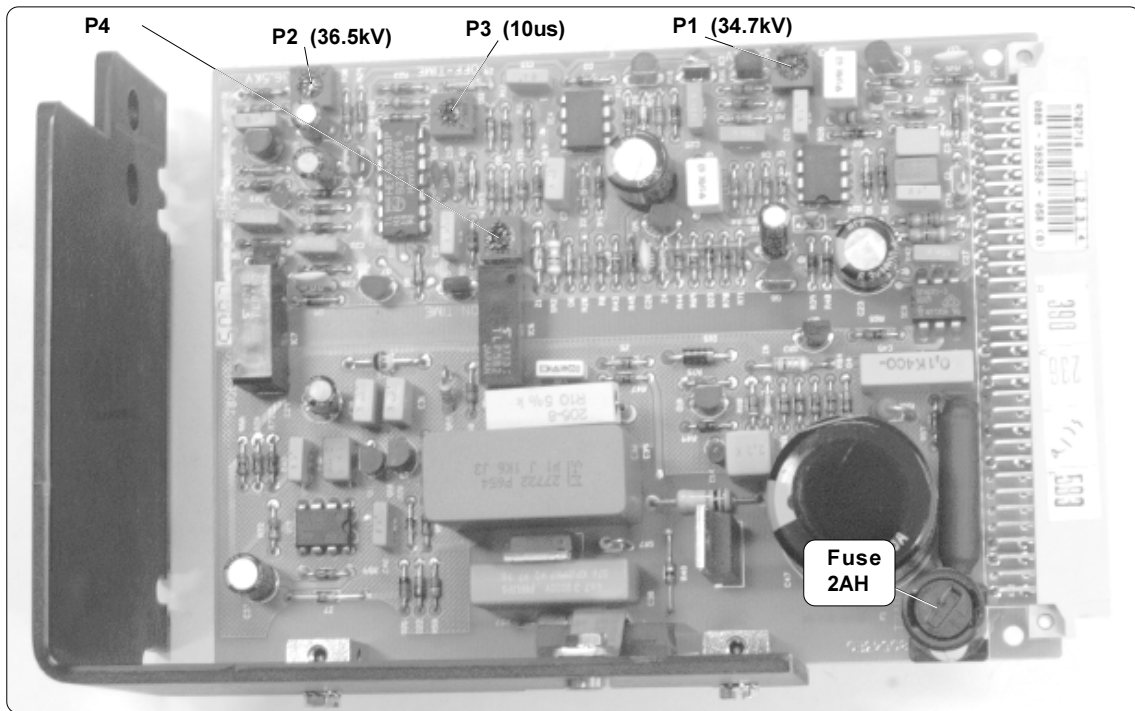
RE-INSTALL ALWAYS THE INSULATING DEVICE BETWEEN THE SWITCHING TRANSISTOR Q12 AND THE HEATSINK AND THE TRANSISTOR CLAMP.

PROCEED TO A LEAKAGE CURRENT HOT CHECK AS DESCRIBED IN THE SAFETY NOTICES



HIGH VOLTAGE WARNING

To avoid DANGER TO LIFE, do not attempt to service the chassis until all precautions necessary for working on HIGH VOLTAGE equipment have been observed. In order to prevent damage to solid state devices, do not arc pix tube anode lead to chassis or earth ground.



Preparation

Warning: The power must be OFF before removing any connector from circuit board or unit. Failure to do so may result in severe damage to the projection unit.

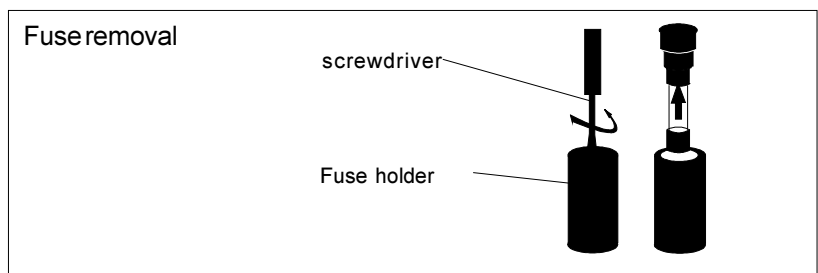
- Turn the projector off.
- Put the potentiometers P1 and P2 in their minimum position (turning clockwise!!)
- Pull out one CRT-EHT cable of the EHT splitter.
- Insert in the free EHT connector the **precision** EHTprobe (ratio 1000/1).

Warning: read carefully all safety instructions, mentioned in the user's manual of the precision high voltage probe

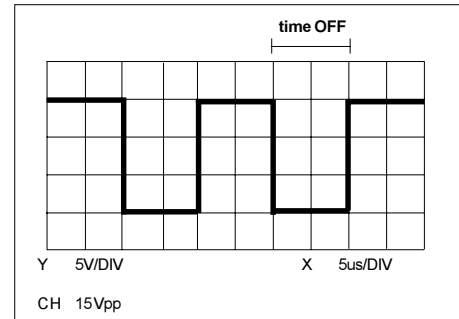
Adjustment

P3 Switching transistor time OFF

- Remove fuse "F-2A" out of fuseholder (see illustration "Fuse removal")



- Connect the oscilloscope to the resistor R47 (=gate switching transistor Q12)
- Switch on the projector.
- Adjust potentiometer P3 for a drive pulse 'time OFF' width of 6.2 us.

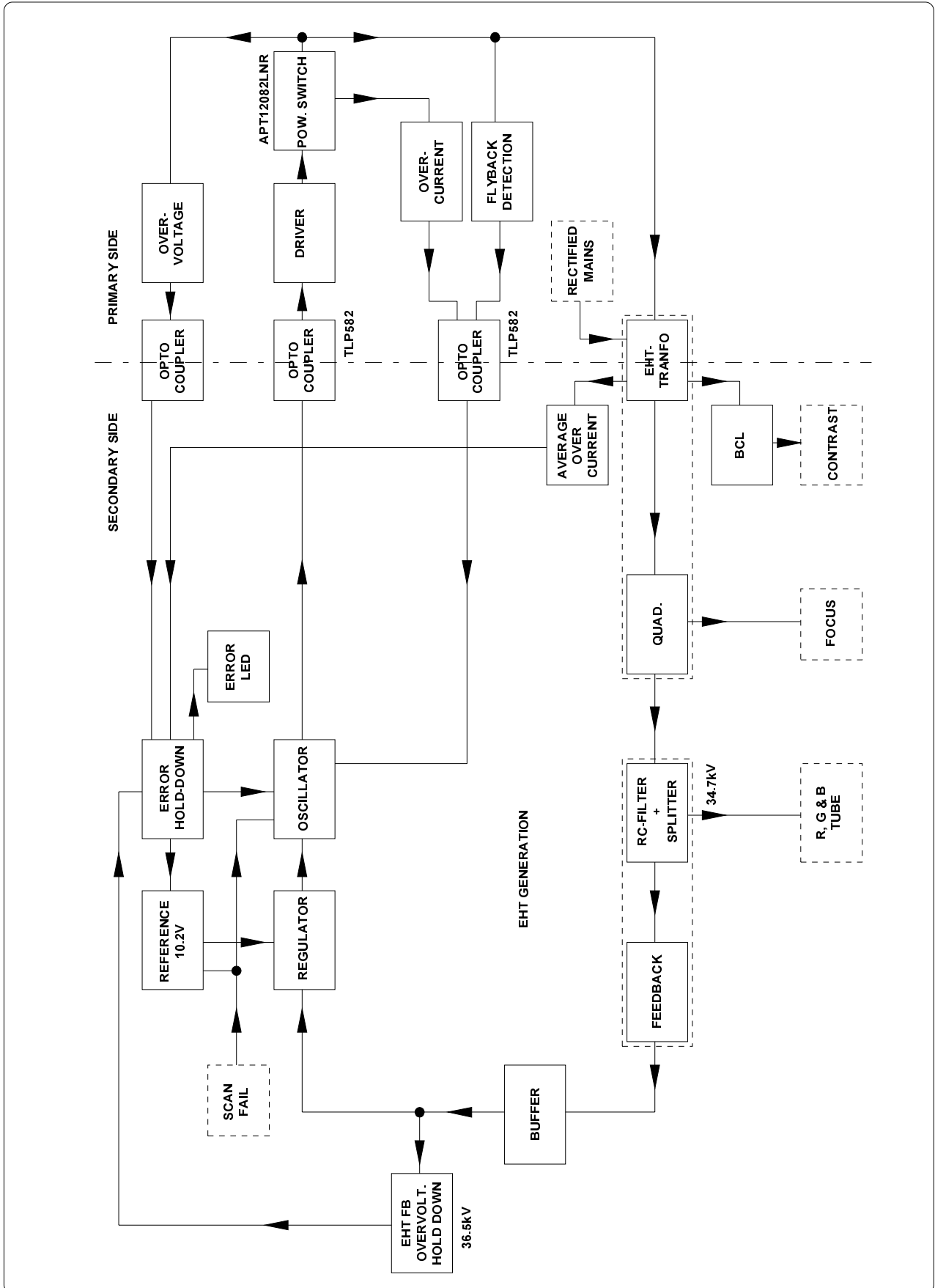


P1 High Voltage Adj. - Switch off the projector

P2 Hold Down - Put the fuse 2A in its place.

- Switch on the projector
- Adjust potentiometer P1 "High Voltage Adj." until the EHT voltage reaches 36.5kV.
- Turn potentiometer P2 "Hold Down" until the Hold Down LED D13 lights up. The projector switches at that moment into the Hold Down mode, picture disappears.
- Put the potentiometer P1 again in its minimum position (turning counter clockwise!!).
- Turn the power switch in its OFF position (not-pressed) and switch on the projector again (press the power switch).
- Adjust the potentiometer P1 for an EHT voltage of 34.7kV.

Important: The EHTsplitter, on which a potentiometer is mounted, leaves the factory as a factory pre-adjusted unit. A readjustment of the mentioned potentiometer is in no case allowed.



Technical Description EHT module R762716

Introduction

On this board, the EHT drive pulses for the EHT power supply are generated. The primary circuit for the EHT power supply receives its 300VDC supply from the Mains. In the event of a failure, either because the EHT is too high, too much current in the EHT circuit or a horizontal or vertical scan failure condition exists, the EHT voltage is discontinued.

We will discuss the generation of the EHT pulses, its regulation, and, the different protection circuits.

DC controlled multivibrator

The EHT multivibrator is set up around two Schmidt Trigger NAND gates in IC2. The frequency of this oscillator is typically around 100 kHz. Two time constants are involved in this circuit : $C14 / P3 + R22$ and in the feedback loop $C15 / (R21 + P4 / (R12+R13))$ voltage regulated.

The first time constant is invariable and determines the OFF time of the power switch Q12 and is tuned with P3 to 6.2 μ S. The second time constant is variable and depends on the voltage level of IC4 (pin1.) By a change of the bias voltage on the base of transistor Q2, this time constant can be regulated.

The buffer receives at its base the FBHV voltage (feedback voltage from the divider). This is the EHT voltage divided by a factor 1000 on the splitter. The pin 5 of IC3 is set at a reference of approximately +10.2 volts by zener IC1. The duty cycle or the on/off time of the power switcher Q12 is consequently regulated by the voltage difference detected by the regulator circuit.

The squared waveform at pin 4 of the NAND gate is, via a fast switching and inverting FET Q1, sent to the opto-coupler IC6. This opto-coupler is necessary because the remainder of the circuit is supplied with the +17M' and the +300M which are not isolated from the Mains. The +17M voltage is obtained from a special winding on the SMPS and the +300M is the rectified mains voltage (GNDM is mains or hot ground).

Caution: Any servicing on a board that uses both a Mains Ground and a Chassis ground should involve the use of an Isolation Transformer, especially when using an oscilloscope, or other equipment connected to the main AC source. Do not connect the Main and Chassis Ground together at any time.

As this board is supplied with the +300M as soon the Mains switch is pushed, it is not recommended to remove this board any more even when the projector is in a stand-by position. This can damage the contacts of the board.

The output of the opto-coupler IC6 drives the push-pull stage Q10/Q11. The pulses are capacitively coupled with C32 to the gate of Q12. The 20 volts zener Z5 has two purposes.

The negative level of the pulses is clamped at -0.6 volt, and on the other hand the gate-source voltage is limited (protected) to 20 volt DC, in order to protect the switcher Q12.

The drain (DHV) of the power switcher is connected with the primary winding of the EHT transformer. Transformer and quadrupler are in the same unit.

The +300M enters the board and is passing a filter L1/C47 and a fuse before it supplies the Transformer / Quadrupler unit.

Protections

a) EHT Hold down:

The EHT of the projector must be switched off in the event of a failure in the regulating circuit or an absence of the feedback voltage. Moreover, when the current in one or more tubes is excessively high (leaking of a tube), the projector must be switched off via the EHT Hold Down rather than via the main switch. As the spot suppression does not work, the CRTs could be damaged when switched off via the main switch.

1. EHT Hold Down due to fault in the regulating circuit (FBHV too high)

The slider voltage of P2 ("hold down adjust" potentiometer) is sent to the base of Q5 and its emitter is set at a threshold of 5.6 volt by Z3. As soon the EHT rises beyond 36.5kV, transistor Q5 starts conducting, turning on Q6. The collector of Q6 starts to drive the base of Q7 and this in turn stops the EHT multivibrator from oscillating, therefore halting the EHT. The collector of Q6 is placing the base of Q5 high hence the combination is locked down until the projector is powered off to reset the circuit.

2. EHT Hold Down due to a feedback loop fault condition

The EHT hold down protection must also operate when there is an "open loop", or no EHT feedback voltage +FBHV from the splitter. If that were the condition, there would be no way to monitor the EHT, and it could go higher than the 36.5kV, since there is no FBHV voltage available. Another reason is that the maximum voltage on the MOSFET switcher is limited to 1150V as well. The detection for "open loop" is built around the EHT "flyback" pulses taken from the drain of Q12.

These pulses are rectified with D17 and the resulting pulsating DC is filtered by C39, divided down with R53/R60+R75 and applied to the base of Q16. A threshold level of 6.2 volt is installed at the emitter with Z8. From 6.8 volt base voltage onwards Q16 starts conducting, turning fully on Q17. In the LED of the opto-coupler there is small current flow from the +300M through R66. When Q17 gets forward biased, this current increases heavily and the output pin 5 drops. Via the forward biased Z4, the collector of Q5 is lowered and Q6 is turned on introducing the EHT HOLD DOWN.

Note that the same opto-coupler and transistor Q9 are used to remove the influence of the hum on the +300M supply via the feedback voltage. The +300M is, via a filter C45+R66/R67, supplying current to the opto-coupler (pin 1 of IC8.) The voltage, containing this mains hum, is taken from the collector of Q9 and capacitively added to the reference voltage.

3. EHT Hold Down in the event of an excessive amount of CRT beam currents

Finally, in the event of an excessive amount of CRT beam current, the negative HVL voltage can charge up C23 to the -0.6V threshold and Q8 conducts to introduce the EHT HOLD DOWN condition. The delay is determined by the time constant $((R40//R39+NTC1)/C23)$ and the amplitude of the HVL voltage.

Note that a beam current proportional voltage (BCL) is also sent to the RGB-Decoder drive board to reduce the contrast and brightness from some level onwards.

As a summary, the EHT Hold Down is active for :

- too high EHT, information coming from the feedback line FBHV
- too high EHT in "open loop" via Q16/Q17 and the opto-coupler IC8.
- too high beam current lasting for some time (short in a crt).

b) Switching off the EHT when a Horizontal or Vertical scan failure occurs.

In the event of a horizontal and/or vertical scan failure, the SF line is dropped to around zero volt. Q2 is blocked generating a low level on pin 11 of IC2 resulting in a switching off of the oscillator (IC2.) The reference will also become zero volts through Q3 and Q4.

When the scan fail line goes high again prior to switching off the projector, C18 has to charge up first. This prevent oscillations and further delays the action of the slow start circuit R30-C19 combination. When Q3 switches off C19 charges up, the resultant is a slow start up of the reference

c) Over current protection of the Q12 switcher.

The drain-source current of Q12 is measured by the resistor R54 in the source. This voltage developed across the sensing resistor is applied to the comparator IC9 (pin 2) via a divider R55/R56.

The purpose of the circuit is to protect Q12 from over current during a arc.

Slow start up of the EHT

When the projector is switched on, the EHT voltage must gradually be built up to prevent mechanical damage of the gun.

The reference voltage grows slowly because of the delay circuit around the base Q4. As soon the feedback voltage would like to rise above the reference voltage, pin 7 (IC3) is falling via R20-D6 and the oscillator is switched off temporary. When pin 5 of IC3 goes higher than the feedback the oscillator restarts, causing a increase in EHT. Consequently, the EHT rises to its maximum in a staircase manner.

When the unit is switched off, C19 is quickly discharged via Q3, taking the EHT reference voltage for IC1 quickly down, and therefore the EHT itself goes down.

Delay of the power switch drive

Fet IC9 the comparator pin 7 is used to keep a drive pulse from driving Q12, until the EHT pulse on the drain of Q12 has not fully dropped to its minimum. The EHT pulse is coupled to the comparator and opto-coupler holding the oscillator down during the flyback pulse, on the drain of Q12. As soon as the flyback pulse is over then a drive pulse is resumed on the gate of Q12. This prevents driving the power switch Q12 the moment the drain has not yet dropped to a minimum.

Parts listing EHT Module R762716


SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
90	R133063	HTSN@ASOT93I_MICA28X	1	D 4	R131621	D S 1N4148 075150 DO35	
70	R133074	HTSN@A I_SIL W30	6E-09	D 5	R131621	D S 1N4148 075150 DO35	
80	R133074	HTSN@A I_SIL W30	6E-09	D 6	R131621	D S 1N4148 075150 DO35	
10	R3153151	J RVT MBT D 2.3L12.7		D 8	R131621	D S 1N4148 075150 DO35	
60	R3631049	SCR Z933 M 3 X 6 SS	1	D 10	R131621	D S 1N4148 075150 DO35	
40	R3631059	SCR Z933 M 3 X 8 SS	4	D 11	R131621	D S 1N4148 075150 DO35	
30	R367600	NUT TRAD M3 BLOCK BRNI	2	D 12	R131621	D S 1N4148 075150 DO35	
10	R367699	RVT AVTRON2,5L 8,1 AL	2	D 23	R131621	D S 1N4148 075150 DO35	
20	R802634	HTSNG800EHT	1	D 24	R131621	D S 1N4148 075150 DO35	
50	R804831	HTSNA GEN SPG 1X 3.1LG	1	D 7	R131628	D S BAW62 075200 DO35	
	R762716A	UNG808SEHT	1	D 9	R131628	D S BAW62 075200 DO35	
				D 21	R131628	D S BAW62 075200 DO35	
				D 22	R131628	D S BAW62 075200 DO35	
C 39	A552528	C PPMERA 100NM162E11H	1	D 20	R1316361	D Y BAT85 030200 DO34	
C 23	R111453	C EL RA1000M M 10E2 85	1	D 15	R131646	D R 1N4007 10201A DO41	
C 19	R111476	C EL RA 47M M 25E2 85		D 13	R131662	D LED D3 T RD	1
C 48	R111476	C EL RA 47M M 25E2 85		D 14	R131662	D LED D3 T RD	1
C 37	R111477	C EL RA 100M M 25E2 85		D 16	R131906	D R BYV96E 1021A5 SOD57	
C 2	R111479	C EL RA 470M M 25E2 85	1	D 17	R131958	D R BY329 12208A TO220C	1
C 29	R111532	REPLACED BY V1114855		D 25	R131958	D R BY329 12208A TO220C	1
C 4	R111546	C EL RA 1M M 50E2 85					
C 47	R111578	C EL RA 100M M400E4 105	1	F 1F	R314116	F 5X20 T 2A H UL	1
C 38	R111773	C PPMERA 4N7J162E9 HV	1	F 1	R314516	F A H+C 6A 5X20 BV B	1
C 14	R112242	C NP0MI 100P G100E2		I 8	R131691	U 601-3 SFH DIP6 P	1
C 15	R112242	C NP0MI 100P G100E2	1	I 1	R134031	U 431C TL TO92 P	1
C 17	R112747	C CE MI 4N7K100E2 85	1	I 9	R134114	U 393 LM DIP8 P	1
C 28	R112747	C CE MI 4N7K100E2 85		I 3	R134146	U 34082 MC DIP8 P	1
C 26	R112760	C CE MI 3N3K100E2		I 4	R134146	U 34082 MC DIP8 P	1
C 6	R1137121	C POMERA 10N K250E2 85		I 6	R134224	U 582 TLP 1119A1 P	1
C 21	R1137121	C POMERA 10N K250E2 85		I 7	R134224	U 582 TLP 1119A1 P	1
C 22	R1137121	C POMERA 10N K250E2 85		I 2	R1373945	U 4093B DIP14 P	1
C 27	R1137121	C POMERA 10N K250E2 85					
C 12	R113724	C POMERA 100N K 63E2 85		J 1	R313525	J EUR2C MBSP64E1C2S 1,6	1
C 13	R113724	C POMERA 100N K 63E2 85					
C 16	R113724	C POMERA 100N K 63E2 85		L 1	R305913	CH MNS AX NS 12 UH 3A	1
C 20	R113724	C POMERA 100N K 63E2 85					
C 24	R113724	C POMERA 100N K 63E2 85		NTC1	R105016	R NTC 2K7 0W25	1
C 25	R113724	C POMERA 100N K 63E2 85	1				
C 43	R113724	C POMERA 100N K 63E2 85		P 1	R107009	R TCE H 10K K 0W5 S 7TS	1
C 46	R113724	C POMERA 100N K 63E2 85		P 2	R107010	R TCE H 20K K 0W5 S 7TS	1
C 32	R113841	C POMERA 220N K 63E2 85		P 3	R107012	R TCE H 50K K 0W5 S 7TS	1
C 7	R114087	C POMERA 470N K 63E2 85		P 4	R107012	R TCE H 50K K 0W5 S 7TS	1
C 30	R114087	C POMERA 470N K 63E2 85					
C 31	R114087	C POMERA 470N K 63E2 85		PC	R780543	PCBG808SEHT	1
C 5	R114090	C POMERA 1M K 63E2 85					
C 18	R114090	C POMERA 1M K 63E2 85					
C 42	R1159161	C PP RA 1N J100E2 85		Q 12	B133165	Q APT12082LNRFP TO264	1
C 1	R115932	C PP RA 4N7J 63E2 85	1	Q 2	R131411	Q BC549C N SS TO92	1
C 3	R115932	C PP RA 4N7J 63E2 85		Q 5	R131411	Q BC549C N SS TO92	
C 45	V1140424	C POMERA 100N K400E6 85	1	Q 7	R131411	Q BC549C N SS TO92	
C 44	V114098	C POMERA 2M2M 50E2 85		Q 8	R131411	Q BC549C N SS TO92	
				Q 13	R131411	Q BC549C N SS TO92	
D 1	R131621	D S 1N4148 075150 DO35		Q 16	R131411	Q BC549C N SS TO92	
D 2	R131621	D S 1N4148 075150 DO35		Q 4	R1314182	Q BC559C P SS TO92	
D 3	R131621	D S 1N4148 075150 DO35		Q 6	R1314182	Q BC559C P SS TO92	

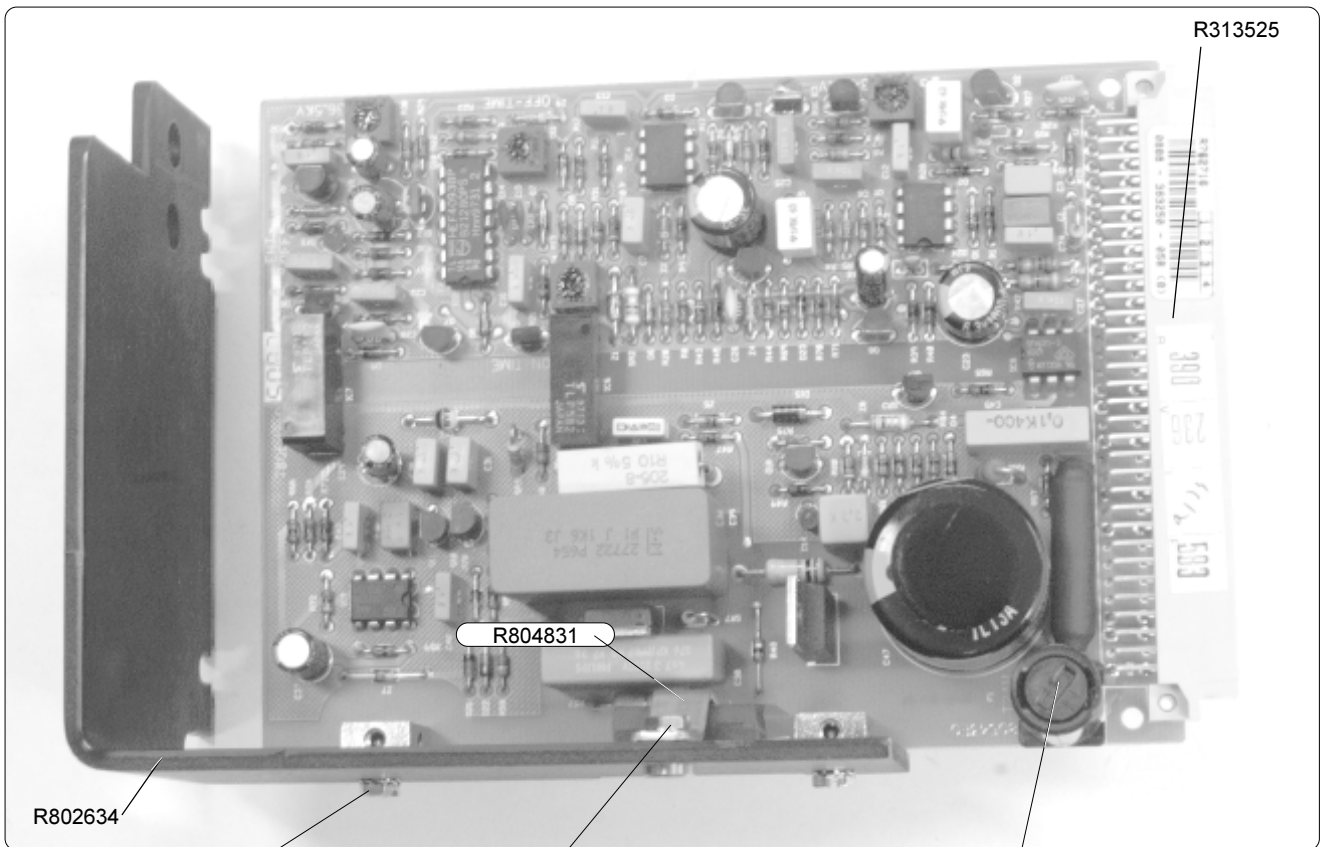
EHT Module

R762716

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
Q 9	R1314182	Q BC559C P SS TO92		R 60	R101544	R MF H 4K7 F 0W4 E3	
Q 17	R1314182	Q BC559C P SS TO92		R 72	R101545	R MF H 5K6 F 0W4 E3	
Q 10	R1314245	Q BC338-40 N SS TO92		R 20	R101546	R MF H 6K8 F 0W4 E3	
Q 11	R1314311	Q BC327 P SS TO92		R 7	R101548	R MF H 10K F 0W4 E3	
Q 1	R132910	Q BS170 FN SS TO92		R 9	R101548	R MF H 10K F 0W4 E3	
Q 3	R132910	Q BS170 FN SS TO92		R 11	R101548	R MF H 10K F 0W4 E3	
R 66	R101462	R MF H150K J 2W E7	1	R 25	R101548	R MF H 10K F 0W4 E3	
R 48	R101505	R MF H 2E7 F 0W4 E3		R 34	R101548	R MF H 10K F 0W4 E3	
R 29	R101524	R MF H100E F 0W4 E3		R 37	R101548	R MF H 10K F 0W4 E3	
R 74	R101524	R MF H100E F 0W4 E3		R 56	R101548	R MF H 10K F 0W4 E3	
R 5	R101526	R MF H150E F 0W4 E3		R 62	R101548	R MF H 10K F 0W4 E3	
R 19	R101529	R MF H270E F 0W4 E3		R 4	R101550	R MF H 15K F 0W4 E3	
R 46	R101529	R MF H270E F 0W4 E3		R 63	R101550	R MF H 15K F 0W4 E3	
R 6	R101532	R MF H470E F 0W4 E3		R 23	R101551	R MF H 18K F 0W4 E3	
R 17	R101534	R MF H680E F 0W4 E3		R 27	R101551	R MF H 18K F 0W4 E3	
R 18	R101534	R MF H680E F 0W4 E3		R 16	R101553	R MF H 27K F 0W4 E3	
R 26	R101535	R MF H820E F 0W4 E3		R 58	R101555	R MF H 39K F 0W4 E3	
R 44	R101535	R MF H820E F 0W4 E3		R 35	R101556	R MF H 47K F 0W4 E3	
R 8	R101536	R MF H 1K F 0W4 E3		R 36	R101556	R MF H 47K F 0W4 E3	
R 12	R101536	R MF H 1K F 0W4 E3		R 67	R101556	R MF H 47K F 0W4 E3	
R 38	R101536	R MF H 1K F 0W4 E3		R 22	R101558	R MF H 68K F 0W4 E3	
R 47	R101536	R MF H 1K F 0W4 E3		R 31	R101558	R MF H 68K F 0W4 E3	
R 49	R101536	R MF H 1K F 0W4 E3		R 32	R101559	R MF H 82K F 0W4 E3	
R 55	R101536	R MF H 1K F 0W4 E3		R 3	R101560	R MF H100K F 0W4 E3	
R 65	R101536	R MF H 1K F 0W4 E3		R 15	R101561	R MF H120K F 0W4 E3	
R 73	R101537	R MF H 1K2 F 0W4 E3		R 70	R101561	R MF H120K F 0W4 E3	
R 75	R101537	R MF H 1K2 F 0W4 E3		R 71	R101561	R MF H120K F 0W4 E3	
R 1	R101538	R MF H 1K5 F 0W4 E3		R 21	R101562	R MF H150K F 0W4 E3	
R 24	R101538	R MF H 1K5 F 0W4 E3		R 30	R101563	R MF H180K F 0W4 E3	
R 40	R101538	R MF H 1K5 F 0W4 E3		R 33	R101564	R MF H220K F 0W4 E3	
R 59	R101538	R MF H 1K5 F 0W4 E3		R 14	R101565	R MF H270K F 0W4 E3	
R 68	R101539	R MF H 1K8 F 0W4 E3		R 69	R101572	R MF H 1M F 0W4 E3	
R 61	R101540	R MF H 2K2 F 0W4 E3		R 54	R103600	R WW H E1 K 4W	1
R 64	R101540	R MF H 2K2 F 0W4 E3		R 53	R104654	R HV H 1M J 0W5 3500	
R 39	R1015401	R MF H 2K F 0W4 E3		R 57	R104654	R HV H 1M J 0W5 3500	
R 13	R101541	R MF H 2K7 F 0W4 E3		R 2	V1026005	R MF H100E F 0W6 E4	1
R 45	R101542	R MF H 3K3 F 0W4 E3		R 28	V1026179	R MF H 1M5 F 0W6 E4	1
R 43	R101543	R MF H 3K9 F 0W4 E3		R 41	V1026255	R MF H182E F 0W6 E4	
R 10	R101544	R MF H 4K7 F 0W4 E3		R 42	V1026655	R MF H475E F 0W6 E4	

PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.



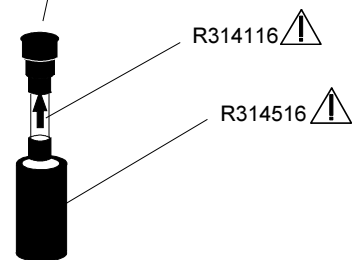
R802634


R3631049


R3631049

R804831

R313525

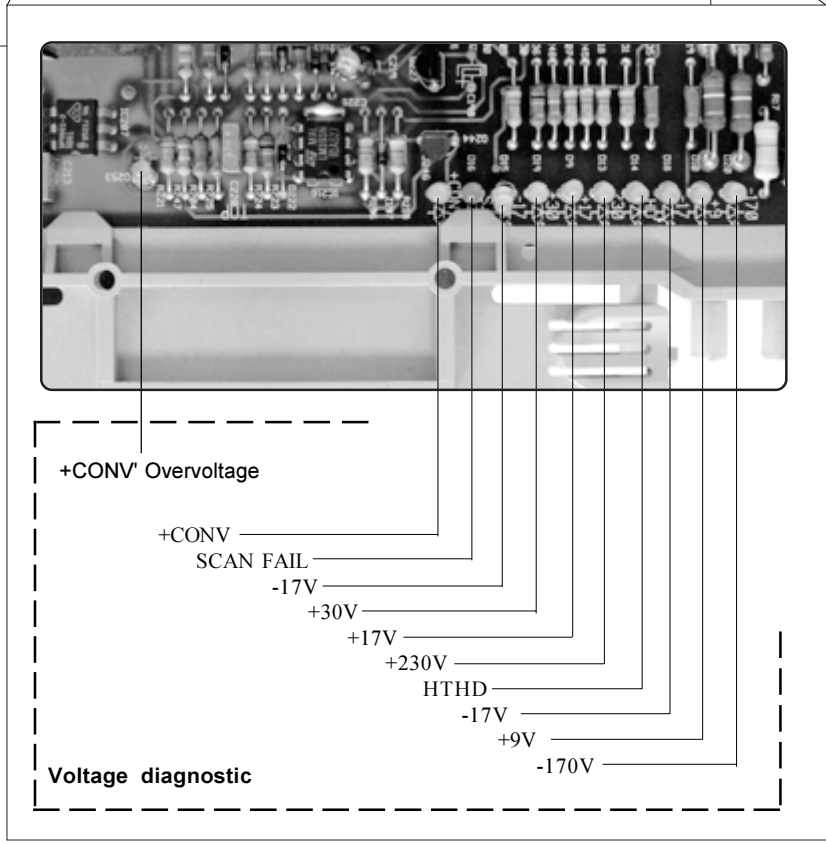
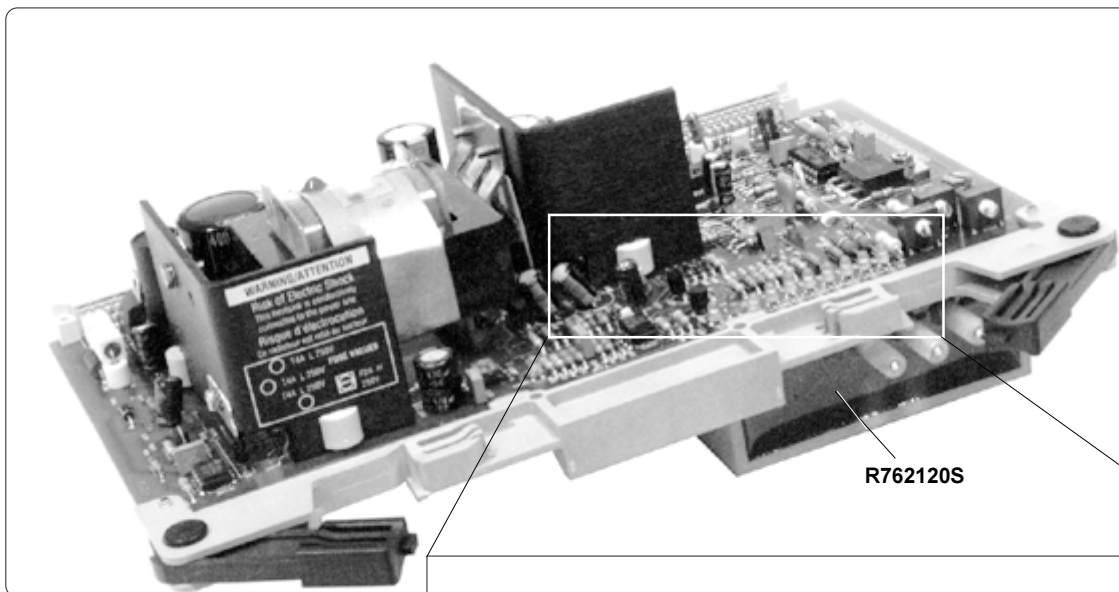


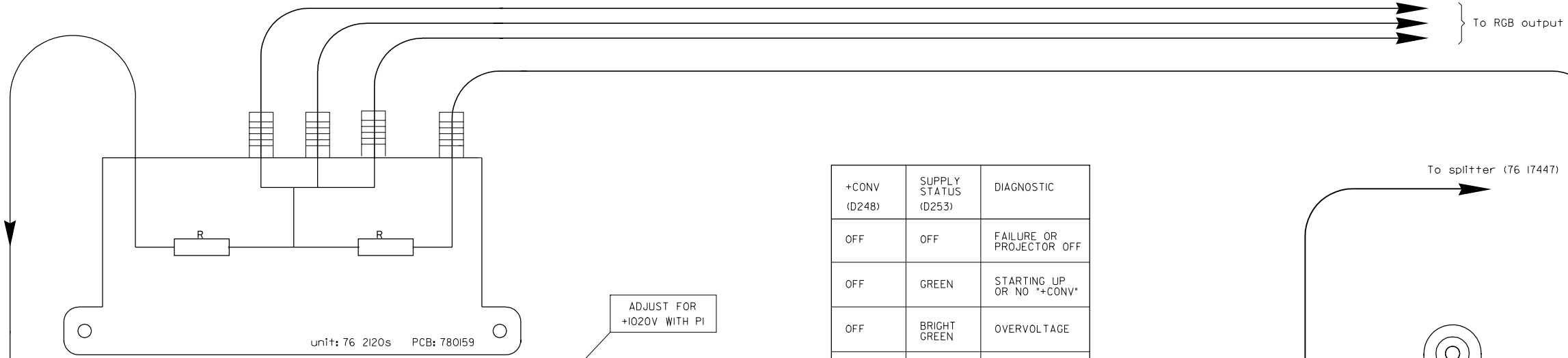
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R314516 

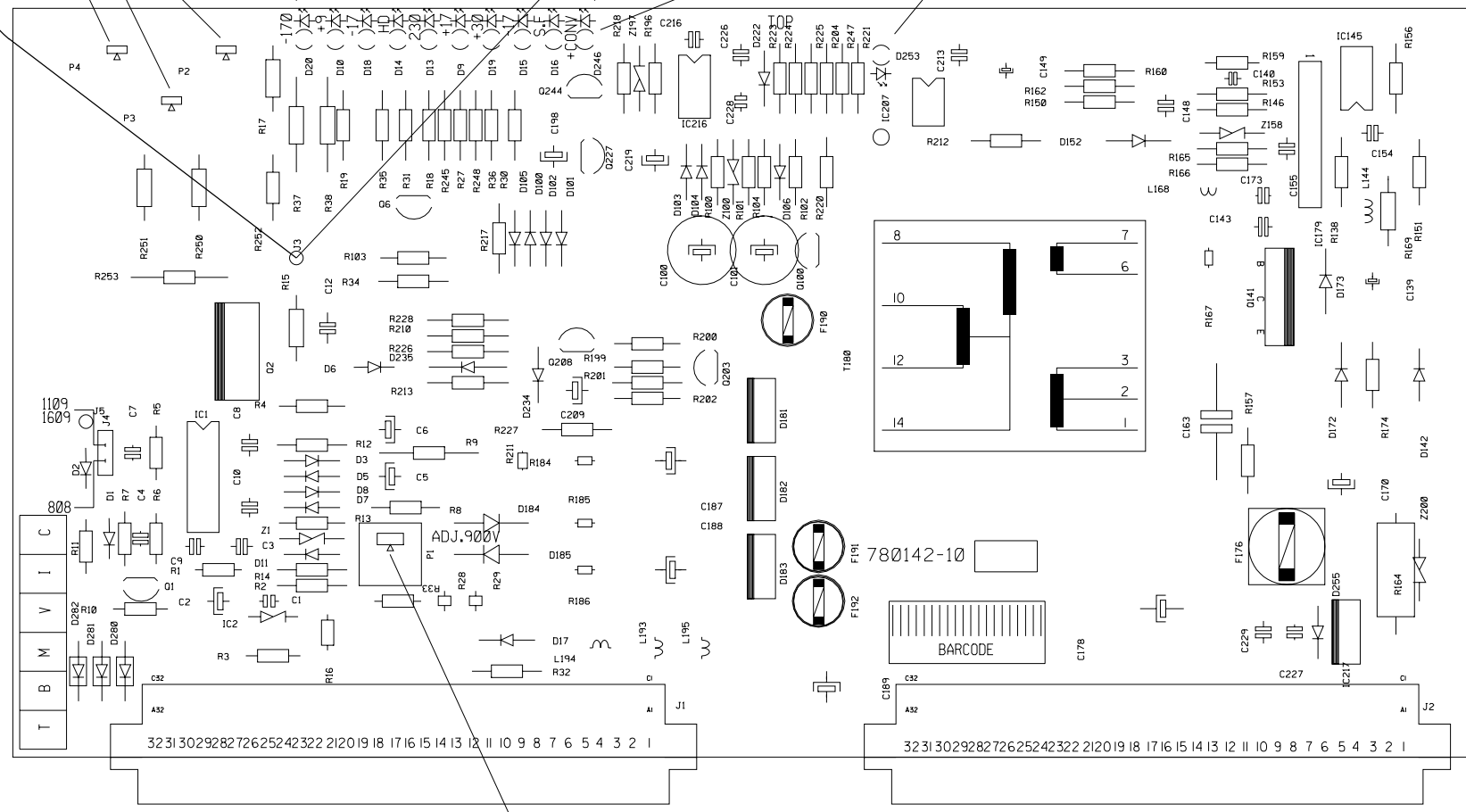
WARNING

THIS CIRCUIT BOARD IS HOT TO AC. THIS POWER SUPPLY, LIKE THE HIGH VOLTAGE POWER SUPPLY, DOES NOT USE A LINE ISOLATION TRANSFORMER, MEANING A PORTION OF THE CIRCUITRY IS HOT-TO-LINE AND SHOULD BE TREATED WITH CAUTION.

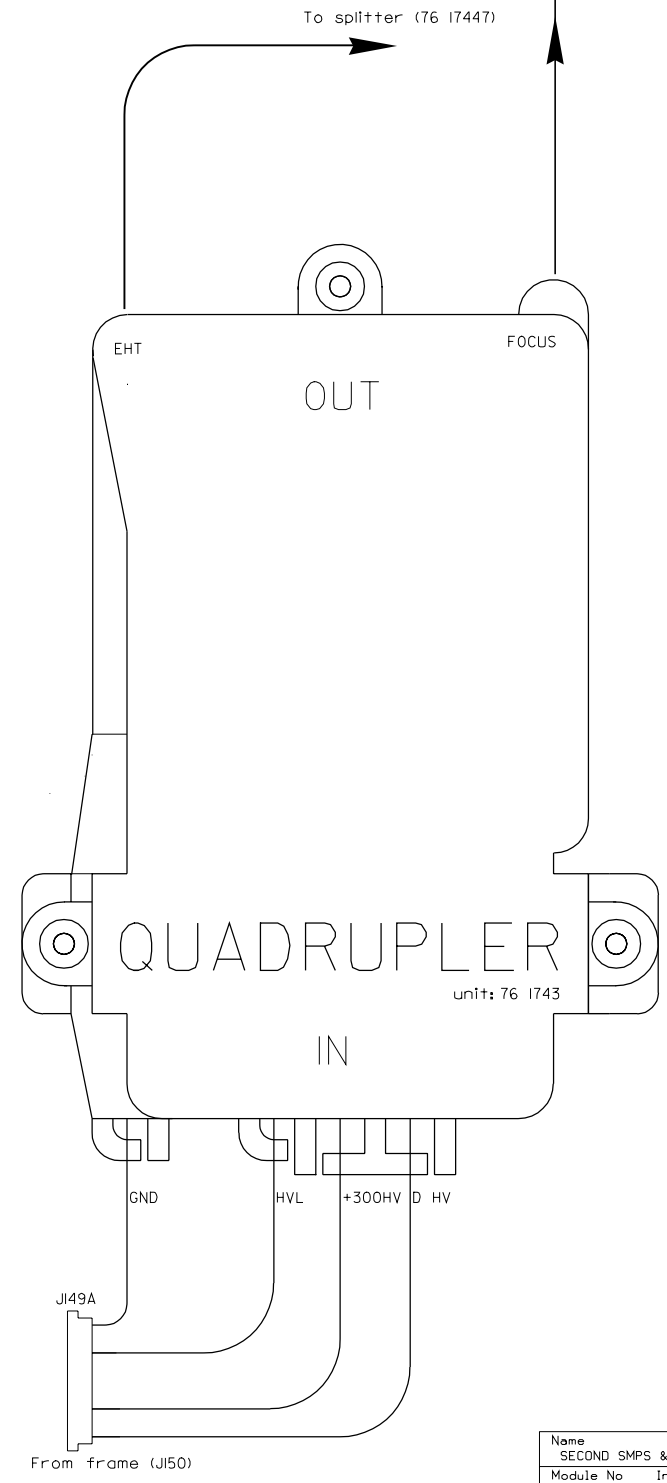




PREADJUSTMENT G2 R
 PREADJUSTMENT G2 G
 PREADJUSTMENT G2 B

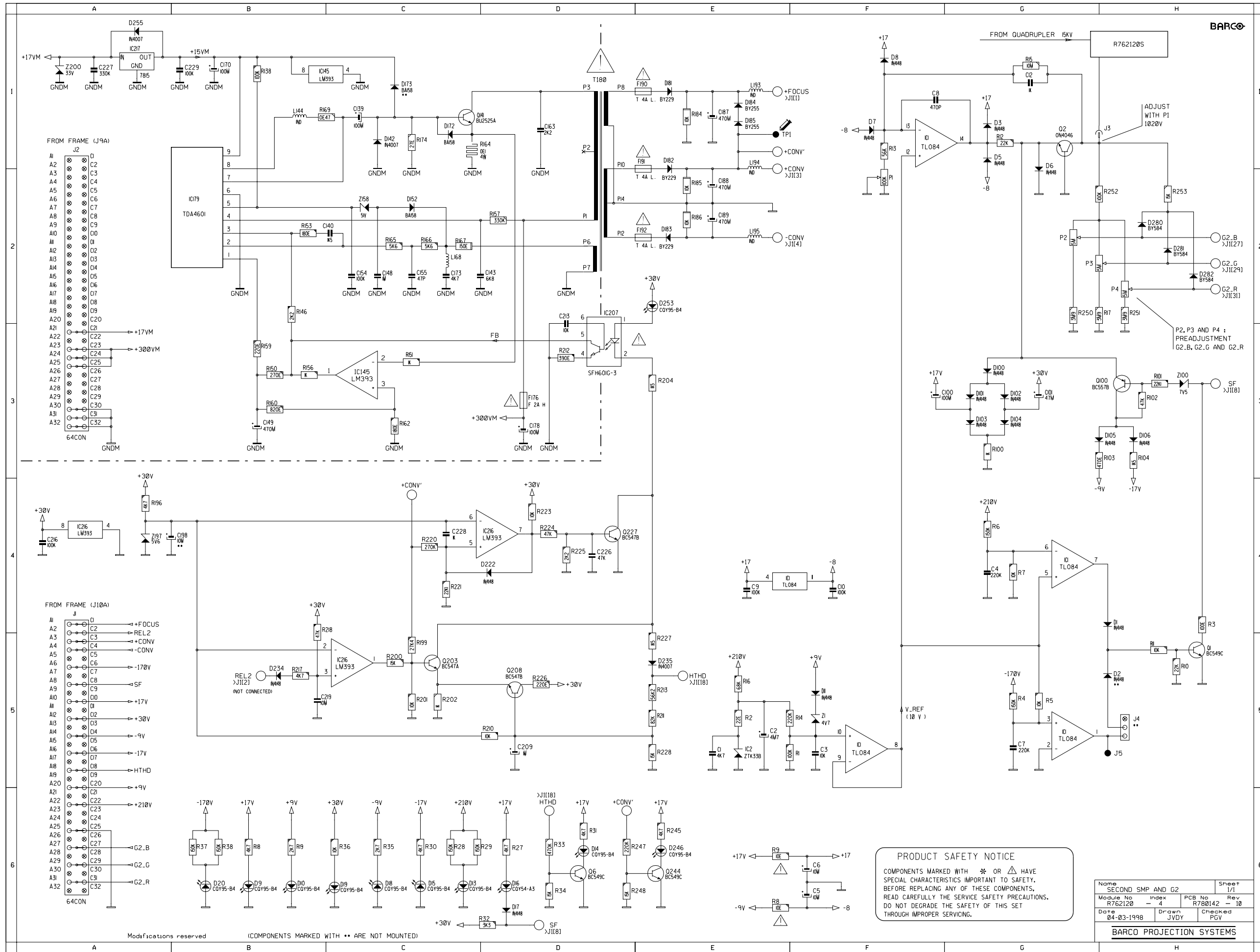


ADJUSTMENT +1020V



Modifications reserved

Name SECOND SMP5 & G2		Sheet 1 / 1	
Module No. R762120	Index 4	PCB No. R780142	Rev. 10
Date 04-03-1998	Drawn JVDY	Checked PGV	
BARCO PROJECTION SYSTEMS			



FROM FRAME (J9A)

A1	C1	
A2	C2	
A3	C3	
A4	C4	
A5	C5	
A6	C6	
A7	C7	
A8	C8	
A9	C9	
A10	C10	
A11	C11	
A12	C12	
A13	C13	
A14	C14	
A15	C15	
A16	C16	
A17	C17	
A18	C18	
A19	C19	
A20	C20	
A21	C21	
A22	C22	+17VM
A23	C23	
A24	C24	+300VM
A25	C25	
A26	C26	
A27	C27	
A28	C28	
A29	C29	
A30	C30	
A31	C31	
A32	C32	

64CON

FROM FRAME (J10A)

A1	C1	+FOCUS
A2	C2	REL2
A3	C3	+CONV
A4	C4	-CONV
A5	C5	
A6	C6	-170V
A7	C7	
A8	C8	SF
A9	C9	
A10	C10	+17V
A11	C11	
A12	C12	+30V
A13	C13	-9V
A14	C14	
A15	C15	
A16	C16	-17V
A17	C17	
A18	C18	HTHD
A19	C19	
A20	C20	+9V
A21	C21	
A22	C22	+210V
A23	C23	
A24	C24	
A25	C25	
A26	C26	
A27	C27	
A28	C28	G2_B
A29	C29	
A30	C30	G2_G
A31	C31	
A32	C32	G2_R

64CON

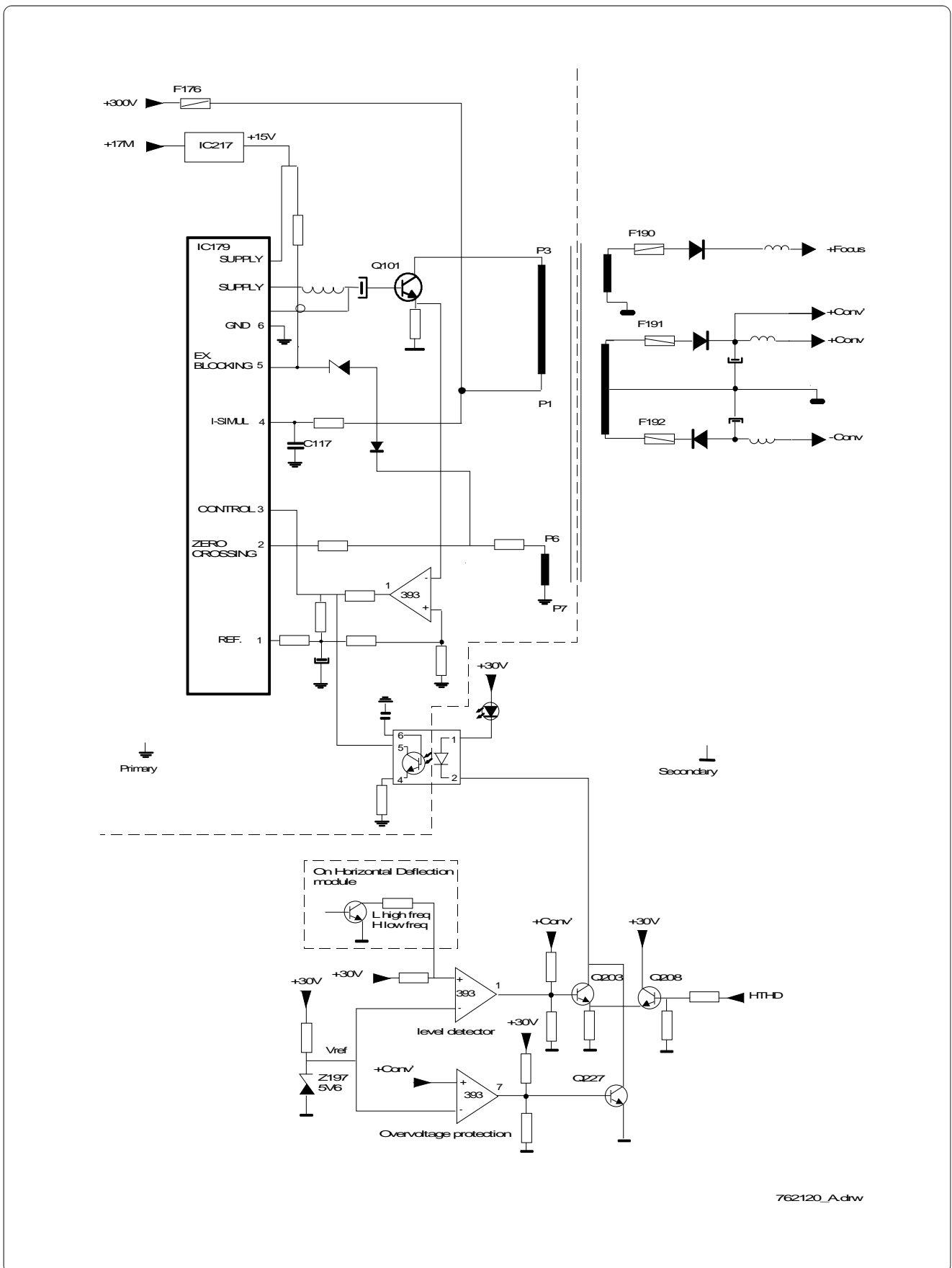
Modifications reserved (COMPONENTS MARKED WITH ** ARE NOT MOUNTED)

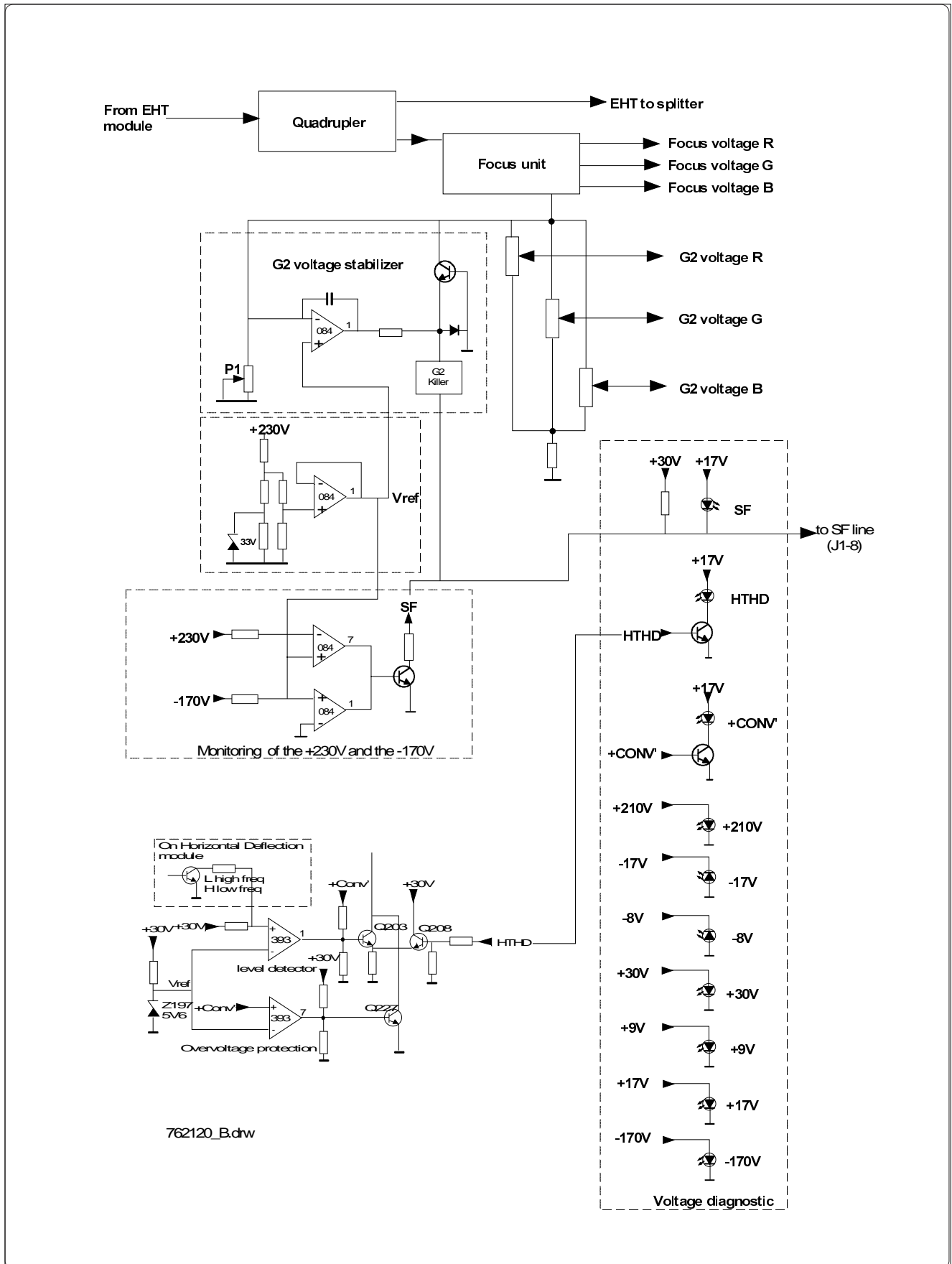
PRODUCT SAFETY NOTICE
 COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

Name	SECOND SMP AND G2	Sheet	1/1
Module No	R762120	PCB No	R760142
Date	04-03-1998	Drawn	JVDY
		Checked	PGV

BARCO PROJECTION SYSTEMS

COMP.	LOC.	COMP.	LOC.
C1	E 5	R16	E 5
C2	F 5	R17	H 2
C3	F 5	R18	H 2
C4	F 5	R19	H 2
C5	F 5	R20	F 1
C6	F 5	R21	F 1
C7	F 5	R22	F 1
C8	F 5	R23	F 1
C9	F 5	R24	F 1
C10	F 5	R25	F 1
C11	F 5	R26	F 1
C12	F 5	R27	F 1
C13	F 5	R28	F 1
C14	F 5	R29	F 1
C15	F 5	R30	F 1
C16	F 5	R31	F 1
C17	F 5	R32	F 1
C18	F 5	R33	F 1
C19	F 5	R34	F 1
C20	F 5	R35	F 1
C21	F 5	R36	F 1
C22	F 5	R37	F 1
C23	F 5	R38	F 1
C24	F 5	R39	F 1
C25	F 5	R40	F 1
C26	F 5	R41	F 1
C27	F 5	R42	F 1
C28	F 5	R43	F 1
C29	F 5	R44	F 1
C30	F 5	R45	F 1
C31	F 5	R46	F 1
C32	F 5	R47	F 1
D1	H 4	R48	F 1
D2	H 4	R49	F 1
D3	H 4	R50	F 1
D4	H 4	R51	F 1
D5	H 4	R52	F 1
D6	H 4	R53	F 1
D7	H 4	R54	F 1
D8	H 4	R55	F 1
D9	H 4	R56	F 1
D10	H 4	R57	F 1
D11	H 4	R58	F 1
D12	H 4	R59	F 1
D13	H 4	R60	F 1
D14	H 4	R61	F 1
D15	H 4	R62	F 1
D16	H 4	R63	F 1
D17	H 4	R64	F 1
D18	H 4	R65	F 1
D19	H 4	R66	F 1
D20	H 4	R67	F 1
D21	H 4	R68	F 1
D22	H 4	R69	F 1
D23	H 4	R70	F 1
D24	H 4	R71	F 1
D25	H 4	R72	F 1
D26	H 4	R73	F 1
D27	H 4	R74	F 1
D28	H 4	R75	F 1
D29	H 4	R76	F 1
D30	H 4	R77	F 1
D31	H 4	R78	F 1
D32	H 4	R79	F 1
D33	H 4	R80	F 1
D34	H 4	R81	F 1
D35	H 4	R82	F 1
D36	H 4	R83	F 1
D37	H 4	R84	F 1
D38	H 4	R85	F 1
D39	H 4	R86	F 1
D40	H 4	R87	F 1
D41	H 4	R88	F 1
D42	H 4	R89	F 1
D43	H 4	R90	F 1
D44	H 4	R91	F 1
D45	H 4	R92	F 1
D46	H 4	R93	F 1
D47	H 4	R94	F 1
D48	H 4	R95	F 1
D49	H 4	R96	F 1
D50	H 4	R97	F 1
D51	H 4	R98	F 1
D52	H 4	R99	F 1
D53	H 4	R100	F 1
D54	H 4	R101	F 1
D55	H 4	R102	F 1
D56	H 4	R103	F 1
D57	H 4	R104	F 1
D58	H 4	R105	F 1
D59	H 4	R106	F 1
D60	H 4	R107	F 1
D61	H 4	R108	F 1
D62	H 4	R109	F 1
D63	H 4	R110	F 1
D64	H 4	R111	F 1
D65	H 4	R112	F 1
D66	H 4	R113	F 1
D67	H 4	R114	F 1
D68	H 4	R115	F 1
D69	H 4	R116	F 1
D70	H 4	R117	F 1
D71	H 4	R118	F 1
D72	H 4	R119	F 1
D73	H 4	R120	F 1
D74	H 4	R121	F 1
D75	H 4	R122	F 1
D76	H 4	R123	F 1
D77	H 4	R124	F 1
D78	H 4	R125	F 1
D79	H 4	R126	F 1
D80	H 4	R127	F 1
D81	H 4	R128	F 1
D82	H 4	R129	F 1
D83	H 4	R130	F 1
D84	H 4	R131	F 1
D85	H 4	R132	F 1
D86	H 4	R133	F 1
D87	H 4	R134	F 1
D88	H 4	R135	F 1
D89	H 4	R136	F 1
D90	H 4	R137	F 1
D91	H 4	R138	F 1
D92	H 4	R139	F 1
D93	H 4	R140	F 1
D94	H 4	R141	F 1
D95	H 4	R142	F 1
D96	H 4	R143	F 1
D97	H 4	R144	F 1
D98	H 4	R145	F 1
D99	H 4	R146	F 1
D100	H 4	R147	F 1
D101	H 4	R148	F 1
D102	H 4	R149	F 1
D103	H 4	R150	F 1
D104	H 4	R151	F 1
D105	H 4	R152	F 1
D106	H 4	R153	F 1
D107	H 4	R154	F 1
D108	H 4	R155	F 1
D109	H 4	R156	F 1
D110	H 4	R157	F 1
D111	H 4	R158	F 1
D112	H 4	R159	F 1
D113	H 4	R160	F 1
D114	H 4	R161	F 1
D115	H 4	R162	F 1
D116	H 4	R163	F 1
D117	H 4	R164	F 1
D118	H 4	R165	F 1
D119	H 4	R166	F 1
D120	H 4	R167	F 1
D121	H 4	R168	F 1
D122	H 4	R169	F 1
D123	H 4	R170	F 1
D124	H 4	R171	F 1
D125	H 4	R172	F 1
D126	H 4	R173	F 1
D127	H 4	R174	F 1
D128	H 4	R175	F 1
D129	H 4	R176	F 1
D130	H 4	R177	F 1
D131	H 4	R178	F 1
D132	H 4	R179	F 1
D133	H 4	R180	F 1
D134	H 4	R181	F 1
D135	H 4	R182	F 1
D136	H 4	R183	F 1
D137	H 4	R184	F 1
D138	H 4	R185	F 1
D139	H 4	R186	F 1
D140	H 4	R187	F 1
D141	H 4	R188	F 1
D142	H 4	R189	F 1
D143	H 4	R190	F 1
D144	H 4	R191	F 1
D145	H 4	R192	F 1
D146	H 4	R193	F 1
D147	H 4	R194	F 1
D148	H 4	R195	F 1
D149	H 4	R196	F 1
D150	H 4	R197	F 1
D151	H 4	R198	F 1
D152	H 4	R199	F 1
D153	H 4	R200	F 1
D154	H 4	R201	F 1
D155	H 4	R202	F 1
D156	H 4	R203	F 1
D157	H 4	R204	F 1
D158	H 4	R205	F 1
D159	H 4	R206	F 1
D160	H 4	R207	F 1
D161	H 4	R208	F 1
D162	H 4	R209	F 1
D163	H 4	R210	F 1
D164	H 4	R211	F 1
D165	H 4	R212	F 1
D166	H 4	R213	F 1
D167	H 4	R214	F 1
D168	H 4	R215	F 1
D169	H 4	R216	F 1
D170	H 4	R217	F 1
D171	H 4	R218	F 1
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D244	H 4	R291	F 1
D245	H 4	R292	F 1
D246	H 4	R293	F 1
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D249	H 4	R296	F 1
D250	H 4	R297	F 1
D251	H 4	R298	F 1
D252	H 4	R299	F 1
D253	H 4	R300	F 1
D254	H 4	R301	F 1
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D258	H 4	R305	F 1
D259	H 4	R306	F 1
D260	H 4	R307	F 1
D261	H 4	R308	F 1
D262	H 4	R309	F 1
D263	H 4	R310	F 1
D264	H 4		





Technical description “G2 + DIAGNOSTIC” (76 2120).**Introduction**

This board comprises :

- the SMPS for the convergence end stages and the Focus power stages.
- the stabilisation and alignment circuits of the G2 voltages.
- monitoring circuits of the +210V / -170V to cause scan fail if absent.
- the LEDs for diagnosis of the supply voltages and scan fail.

A. SMPS for +/- CONV and +FOC voltages.

This power supply uses the same TDA4601 as the main SMPS. We refer to the description of this board for more details. We just limit here to the differences and the control loop to generate the correct amplitude of these voltages.

Because of the high scanning range of the projector, from 15khz to 135khz, we apply a ‘tracking’ of the power supply with the line frequency. This means the power supply for the power convergence stages increases with the line frequency, but, not in a linear way.

The available information on the line frequency is the +HTHD voltage. However, this voltage is not linearly proportional for the full range of frequencies. Nevertheless, this voltage is used for tracking, but an adaptation of the gain in the feedback will be needed in the second range.

The TDA4601(IC179) totally relies on the +15V(derived from the +17M) delivered by the first or main SMPS and the +300VM.

The transformer and associated rectifier circuits provide the +FOCUS, +/- CONV and the +CONV’ for the feedback control loop discussed hereafter.

B. Control loop / Feedback / Adaptation.

To obtain a tracking with the line frequency, a portion of the +HTHD voltage is applied to the base of Q208.

The main loop is realised by applying the +CONV’ voltage to the base of Q203, the error-amplifier. The amplitude of the feedback depends on the status of the output of the level detector LM393 (IC216) , pin 1. If that pin 1 output is low (=ground), R200 is added in parallel on R201. In the other case R200 is hooked up to the +30V (output of level detector).

Pin 2 of the LM393 is set at 5.6 volt with Z197. “REL2” is connected to the collector of Q8 on the HOR DEFL board. For the second range, this line is low or ground level and pin 3 is then lower than the zener voltage. Pin 1 is then at ground level and consequently R200 is put in parallel with R201. The feedback is changed to compensate for the decrease of the +HTHD voltage.

Via an insulating opto-coupler, the collector current of Q203 is transferred to pin 3 of the regulating TDA4601.

The +CONV’ voltage is also applied to another level detector in IC216, pin 5. The same reference voltage of 5.6 volts is applied to pin 6. When an overvoltage situation occurs, Q227 saturates and the collector of Q203 drops to ground level. The SMPS switches into a safe loop, whereas the output voltage is dropped to a minimum.

If, on the other hand, the HTHD voltage is too , the +CONV voltage drops also via D235/ R227.

C. Monitoring of the +210V and -170V.

A very stable Vref voltage is formed with IC2 (33V) and buffered with an OPAMP. IC2 stabilizes a 33 volts which is then divided by R14/R1 to exactly 10 volt and buffered to provide sufficient current.

If the +210V were absent, the Vref would disappear and the monitoring circuit cannot work. The +9V takes over in this case and installs a reference voltage via Z1 / D11. This Vref of 10 volt is used for the level detectors monitoring the supply voltages of the video power stages : the +210V and -170V.

The absence of one or both of these voltages can damage the picture tubes. The Scan Fail line switches low through Q1 as soon one of the voltages drops below some level.

D. G2 voltages.

1. Stabilisation.

The G2 voltages must be very stable to avoid thermal drift, and, they should be adjustable between 400V and 1020 volt.

The voltage coming from the unit 76 2120S is already very stable since it is coming from a stabilised source, the EHT.

The series output resistor in the unit forms together with P2, P3, P4 and R17 a divider. If we can stabilize the voltage at the node mentioned "Adjust for 1020V with P1" we also have a stable G2 voltage at the sliders.

That 1020 volt point is sensed with the divider R15 / R13/ P1. Since the Vref is 10volt, the output of the OPAMP will change until pin 13 is also at 10 volt.

Any voltage difference due to a change of the 1020 volt is adjusted by Q2 which will feed a current from to the (negative) output of the OPAMP via the "voltage dropping" Q2 transistor. Note that Q2 is needed because the 1020 volts is a too high voltage for the OPAMP. A high voltage transistor such like the ON4046 (BU508A) is therefore required.

2. G2 - Killer.

The G2 voltages must drop very quickly to zero in the event of a scan failure and at switching off the projector. There is a risk that the spot suppression does not sufficiently work when these voltage are too high.

The drop of the G2 voltage is realised with D100-D104 taking the heavy drop of the +17V and +30V at information to cause a heavy conduction of Q2.

In the event of a scan failure, Q110 gets forward biased as its emitter Q2 becomes negative.

E. LEDs for diagnosis.

The presence of the various voltages are all displayed with green LEDs. The variable voltages like the +HTHD and +CONV' drive a LED through a transistor to obtain a constant light output of the LED.

The scan fail diode D16 is red and shows that there is a problem in the horizontal or vertical deflection (see these boards for more explanations).

R762120Rev. 18.06.96

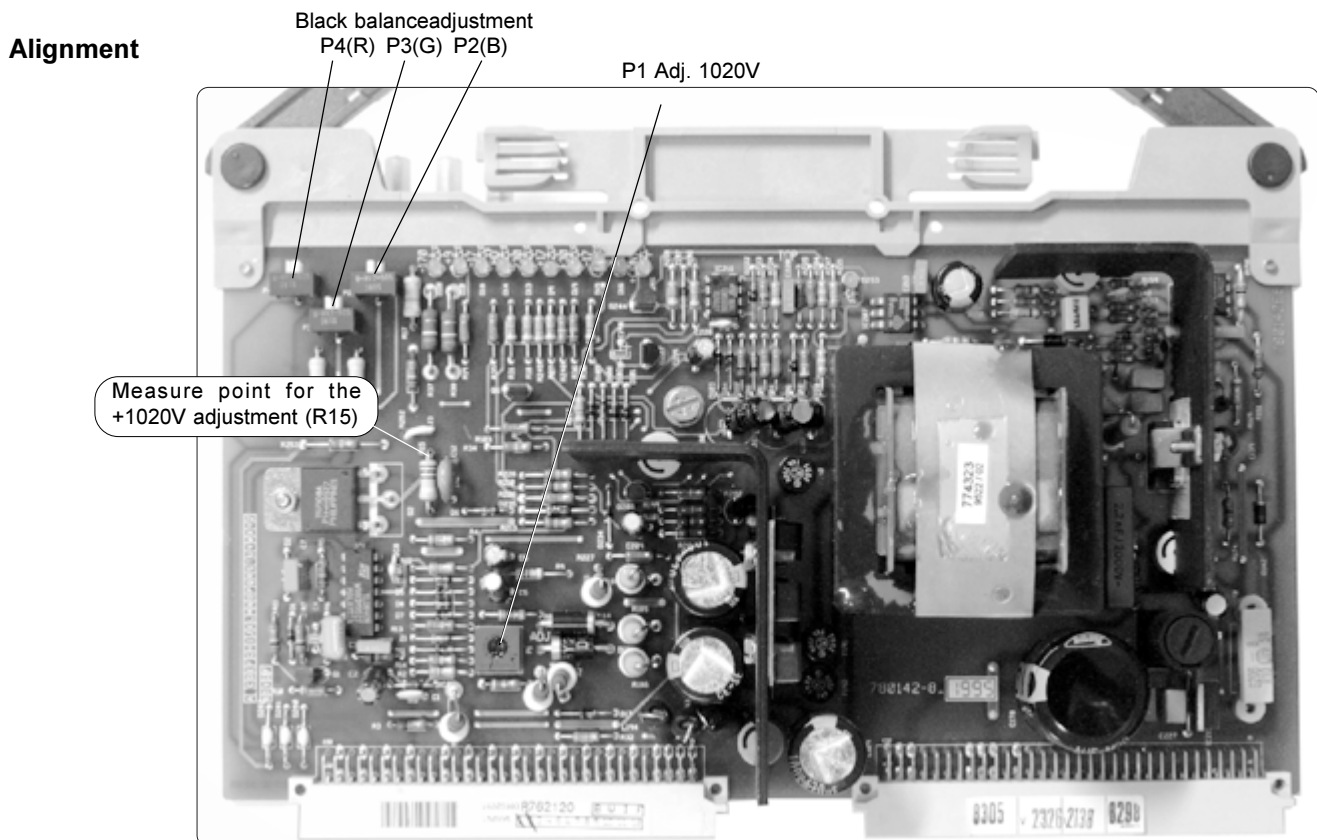
ADJUSTMENT PROCEDURE 'G2 CONTROL+DIAGNOSTIC MODULE'

The alignment is restricted to the adjustment of :

- alignment of the +1020V
- pre-alignment of the BLACK BALANCE

HIGH VOLTAGE WARNING

To avoid **DANGER TO LIFE**, do not attempt to service the chassis until all precautions necessary for working on **HIGH VOLTAGE** equipment have been observed.



Preparation

WARNING: The power must be OFF before removing any connector from circuit board or unit. Failure to do so may result in severe damage to the projection unit.

- Turn the projector off.
- Put the module on the extension boards.
- Connect to the VIDEO input e.g. an electronic colour test video signal.
- Switch the projector in the VIDEO MODE. Select source 1.

Alignment +1020V

- Connect to the resistor R15 (side wire soldering J3) a precision **focus** probe.

CAUTION: read carefully all safety instructions, mentioned in the user's manual of the precision focus probe.

- Switch on the projector.
- Adjust the potentiometer P1 for +1020V read out.

Black balance

- Connect to the video input a colour bar signal.
- Proceed to **Random access adjustment mode** and highlight **color balance**.

Press **ENTER** to display menu R10 (refer to owner's manual of the projector)
Use the arrow keys to select *black balance* and then press **ENTER**.
Adjust the "cut off" for each color for a bar scale level of 50.

- Adjust **CONTRAST** to minimum (number indication below the bar scale of 0) and **COLOUR** until colour is off.
- Adjust **BRIGHTNESS** to mid-position (number indication below the bar scale of 50).

Proceed to the pre-adjustment of the black balance P2(B)-P3(G)-P4(R)
Observe the bars on the screen. If any trace of color appears on the black or white bars then perform the following adjustments in low ambient light.

- Cover the blue and the red lens with the lenscap.

Short-circuit the two pins on the top side of the respective colour driver, see illustration.

Adjust the Green G-2 control P3 until the green raster is just visible on the screen.

Remove short-circuit

- Cover the green and the red lens with the lenscap.

Short-circuit the two pins on the top side of the respective colour driver, see illustration.

Adjust the Blue G-2 control P2 until the blue raster is just visible on the screen.
Remove short-circuit

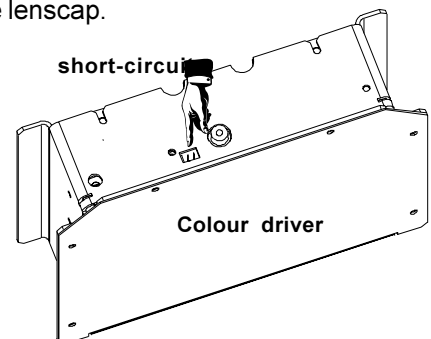
- Cover the blue and the green lens with the lenscap.

Short-circuit the two pins on the top side of the respective colour driver, see illustration.

Adjust the Red G-2 control P4 until the red raster is just visible on the screen.
Remove short-circuit

Remove the lenscaps

The raster on the screen should appear white.



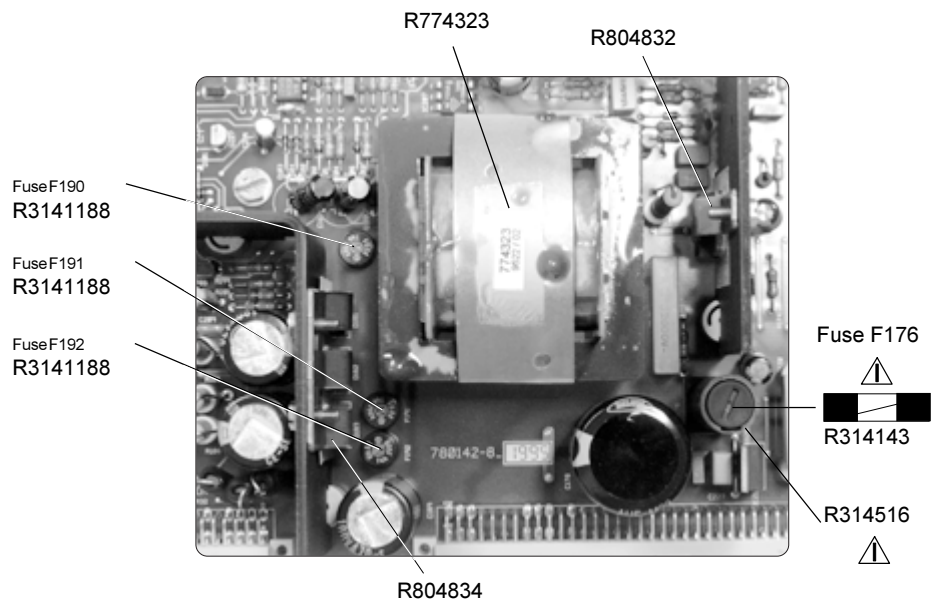
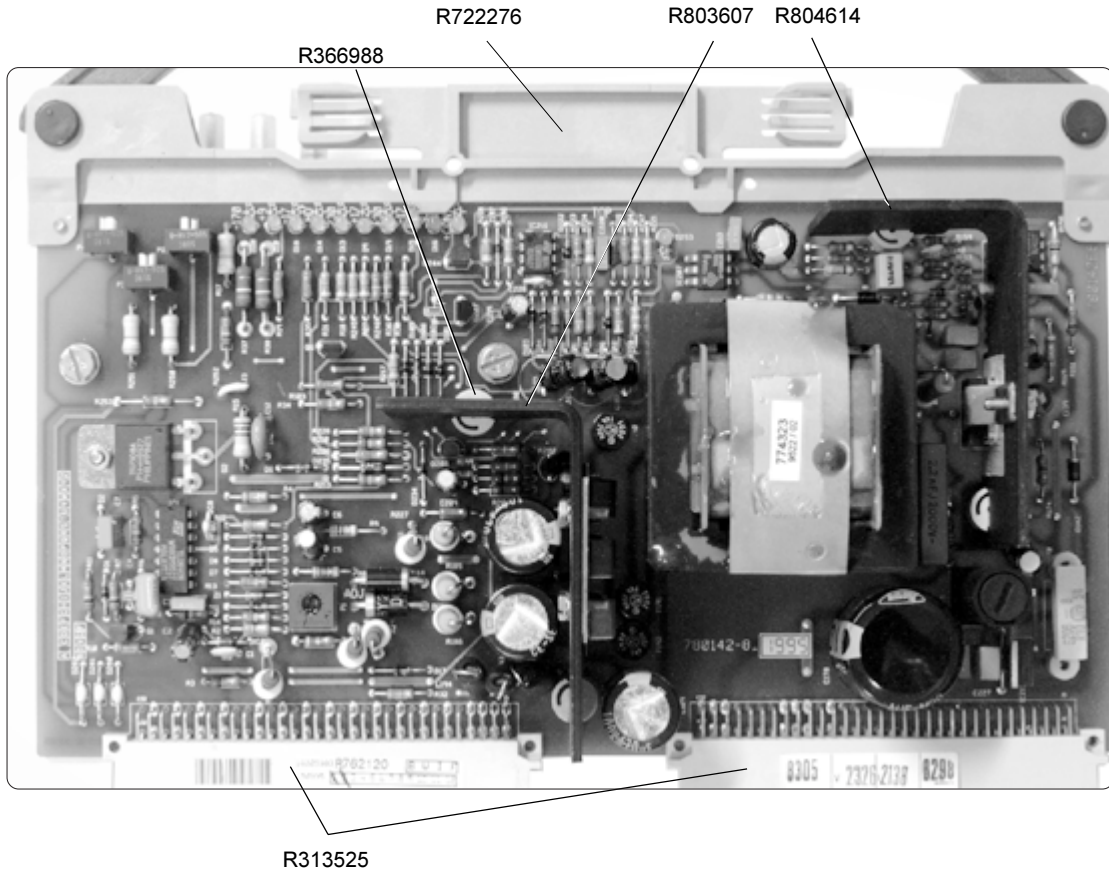
Note: if any coloration is still visible, then adjust the **black balance** (Red cut-off, and Blue cut-off) in the **Random access adjustment mode** slightly to eliminate any trace of colour.

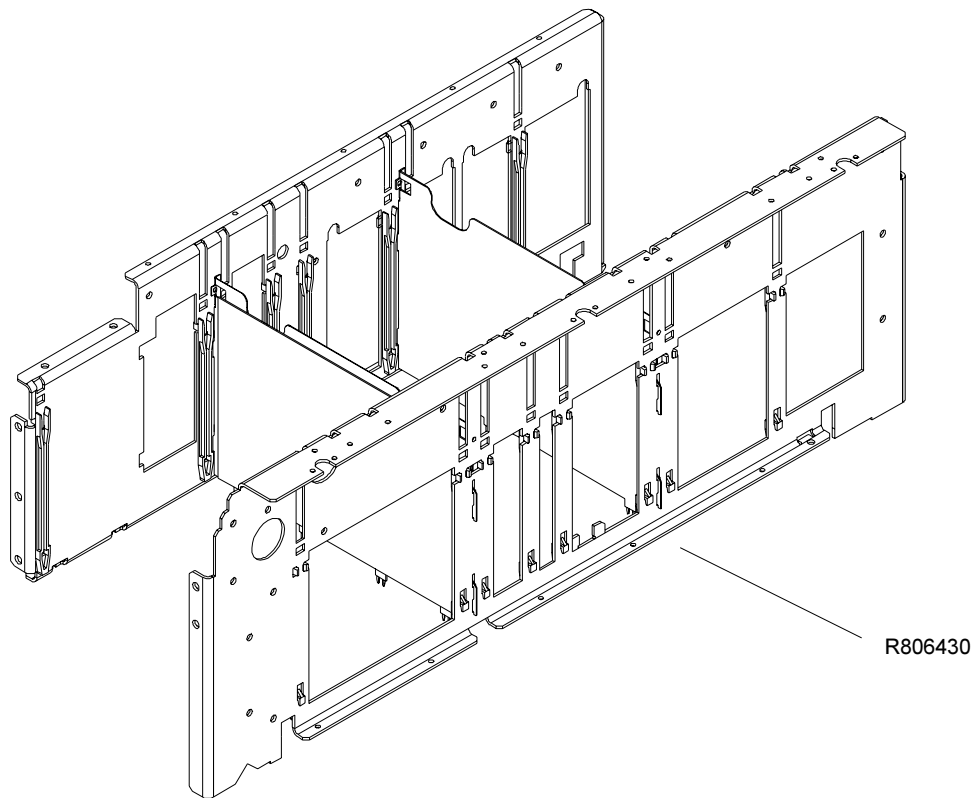
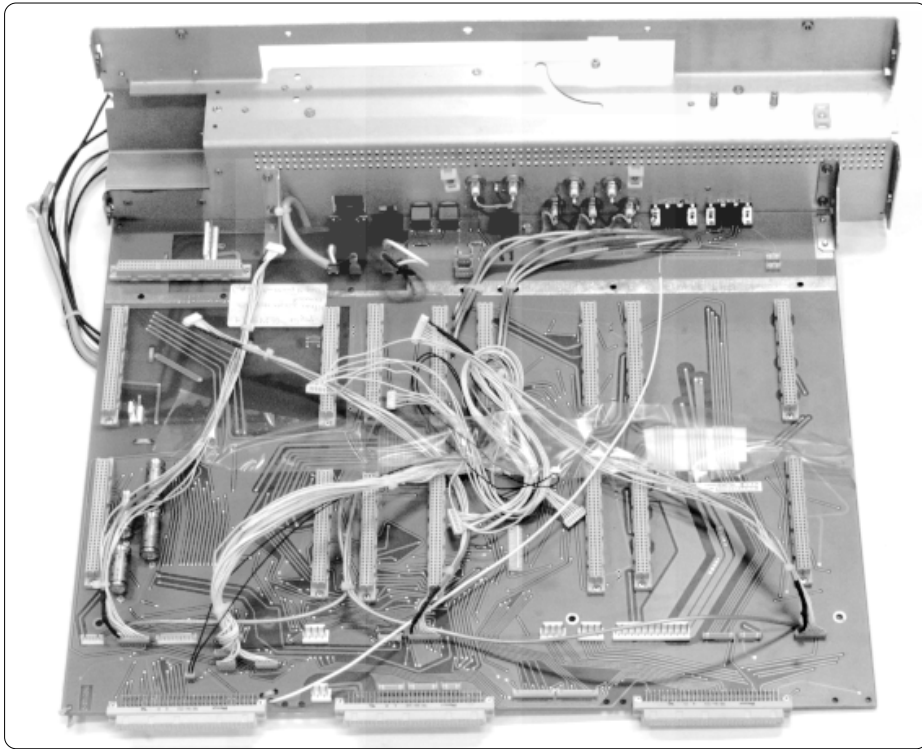
Re-adjust brightness and contrast for optimum picture. There should be no coloration between shades of gray.

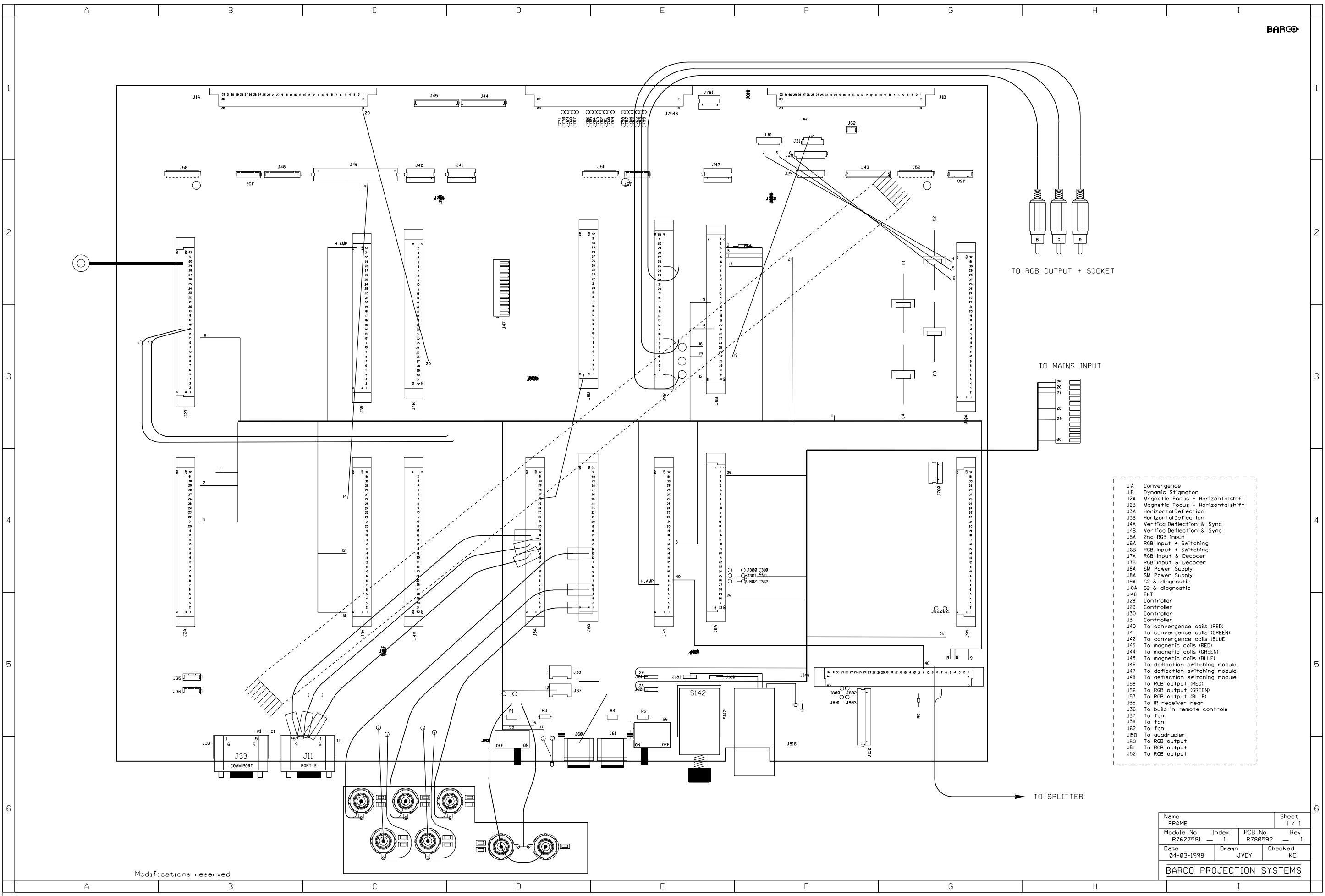
Re-adjust color control at normal.

Parts listing R762120

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
20	R133036	SPRL6 D2,4D6 CE	5	F190	R314188	F TR5 T 4A L UL	1
120	R133063	HTSN@ASOT93I_MICA28X	1	F191	R314188	F TR5 T 4A L UL	1
220	R133074	HTSN@A I_SILW30		F192	R314188	F TR5 T 4A L UL	1
400	R3631049	SCR Z933 M3 X 6 SS	1	F176	R314516	FA H+C 6A 5X20 BV B	1
30	R3631059	SCR Z933 M3 X 8 SS	1				
130	R3631059	SCR Z933 M3 X 8 SS	3	I207	R131691	U 601-3 SFH DIP6 P	1
230	R3631059	SCR Z933 M3 X 8 SS	4	I179	R132787	U 4601-5 TDA SIP9 P	1
500	R3631239	SCR Z933 M4 X 10 SS	2	I217	R134010	U 7815 TO220 P	1
401	R3661026	NUT D934 M3 SS	1	I 1	R134113	U 084 TL DIP14 P	1
140	R366988	NUT TRAD M3 EDGE PLBK	2	I145	R134114	U 393 LM DIP8 P	1
240	R366988	NUT TRAD M3 EDGE PLBK	2	I216	R134114	U 393 LM DIP8 P	1
402	R367502	SPR D6798AD 3,2D6 STZN	1				
10	R367699	RVT AVTRON2,5L 8,1 AL	6	J 1	R313525	JEUR2C MBSP64E1C2S 1,6	1
1010	R367699	RVT AVTRON2,5L 8,1 AL	2	J 2	R313525	JEUR2C MBSP64E1C2S 1,6	1
1000	R722276	LOCK49PCBUNCPL	1				
100	R803607	HTSNG808 SMP2+G2	1	L144	R302108	CORE TUBE 3,5/1,3X3	1
200	R804614	HTSNG808 SMP+G2	1	L193	R305913	CH MNS AX NS 12 UH 3A	1
110	R804832	HTSNA GEN SPG 1XM3 LG	1	L194	R305913	CH MNS AX NS 12 UH 3A	1
210	R804834	HTSNA GEN SPG 2XM3 LG	1	L195	R305913	CH MNS AX NS 12 UH 3A	1
	R762120A	UNG1200G2+CHK	1	L168	R3061322	CH AX NS 10 UH	1
	R762120S	UNG1200G2+CHK SUB	1	L144	Z3450110	WU CUSN 0,60 MM 40	1
	Z3450110	WU CUSN 0,60 MM 40	1	P 1	R106733	R TCE H100K K 0W5 S10TS	1
				P 2	R1076136	R THV V 5M M 0W5 1000	1
				P 3	R1076136	R THV V 5M M 0W5 1000	1
				P 4	R1076136	R THV V 5M M 0W5 1000	1
C149	R111468	C EL RA 470M M 16E2 85	1				
C100	R111477	C EL RA 100M M 25E2 85	1	Q203	R1314072	Q BC547A N SS TO92	1
C170	R111477	C EL RA 100M M 25E2 85	1	Q100	R1314131	Q BC557B P SS TO92	1
C101	R111486	C EL RA 47M M 50E2 85	1	Q 2	R1325096	Q BU508A N P SOT93	1
C187	R111556	C EL RA 470M M100E3 85	1	Q141	V132599	Q BU2525A N P SOT93	1
C188	R111556	C EL RA 470M M100E3 85	1				
C189	R111556	C EL RA 470M M100E3 85	1	R 16	R101358	R MF H 68K J 2W E7	1
C178	R111578	C EL RA 100M M400E4 105	1	R211	R101359	R MF H 82K J 2W E7	1
C 12	R111718	C CE DI 1N K302E3 HV	1	R 28	R101462	R MF H150K J 2W E7	1
C140	R112741	C CE MI 1N5K100E2	1	R 29	R101462	R MF H150K J 2W E7	1
C 1	R112747	C CE MI 4N7K100E2 85	1	R 37	R101462	R MF H150K J 2W E7	1
C226	R113720	C POMERA 47N K 63E2 85	1	R 38	R101462	R MF H150K J 2W E7	1
C154	R113724	C POMERA 100N K 63E2 85	1	R169	R102498	R MF H E47J 0W6	1
C216	R113724	C POMERA 100N K 63E2 85	1	R167	R103226	R MO H150E J 2W E10	1
C229	R113724	C POMERA 100N K 63E2 85	1	R184	R103248	R MO H 10K J 2W E10	1
C 4	R113728	C POMERA 220N K 63E2 85	1	R185	R103248	R MO H 10K J 2W E10	1
C148	R114090	C POMERA 1M K 63E2 85	1	R186	R103248	R MO H 10K J 2W E10	1
C163	R1150051	C PPMERA 2N2J162E9 HV	1	R164	R103600	R VVH E1 K 4W	1
C143	R115936	C PP RA 6N8J 63E2 85	1	R 17	R104668	R HV H 3M9 J 0W5 3500	1
				R250	R104668	R HV H 3M9 J 0W5 3500	1
D 16	R131662	D LED D3 T RD	1	R251	R104668	R HV H 3M9 J 0W5 3500	1
D 9	R131667	D LED D3 T GN	1	R 15	R104678	R HV H 10M J 0W5 3500	1
D 10	R131667	D LED D3 T GN	1	R151	V1026006	R MF H 1K F 0W6 E4	1
D 13	R131667	D LED D3 T GN	1	R156	V1026006	R MF H 1K F 0W6 E4	1
D 14	R131667	D LED D3 T GN	1	R 1	V1026008	R MF H100K F 0W6 E4	1
D 15	R131667	D LED D3 T GN	1	R174	V1026424	R MF H 27E4 F 0W6 E4	1
D 18	R131667	D LED D3 T GN	1	R103	V1026655	R MF H475E F 0W6 E4	1
D 19	R131667	D LED D3 T GN	1	R 13	V1026727	R MF H 56K2 F 0W6 E4	1
D 20	R131667	D LED D3 T GN	1				
D246	R131667	D LED D3 T GN	1	T180	R774323	T G1200 SMP VAR	1
D253	R131667	D LED D3 T GN	1				
D184	R1319025	D R BY255 1323A0 DO201	1	Z200	A509022	D TVS 33V 1500WU CB429	1
D185	R1319025	D R BY255 1323A0 DO201	1				
D280	R131907	D R BY584 182085 SOD61A	1				
D281	R131907	D R BY584 182085 SOD61A	1				
D282	R131907	D R BY584 182085 SOD61A	1				
D181	R131927	D R BY229 60007A TO220C	1				
D182	R131927	D R BY229 60007A TO220C	1				
D183	R131927	D R BY229 60007A TO220C	1				
F176	R314143	F 5X20 F 2A H UL	1				



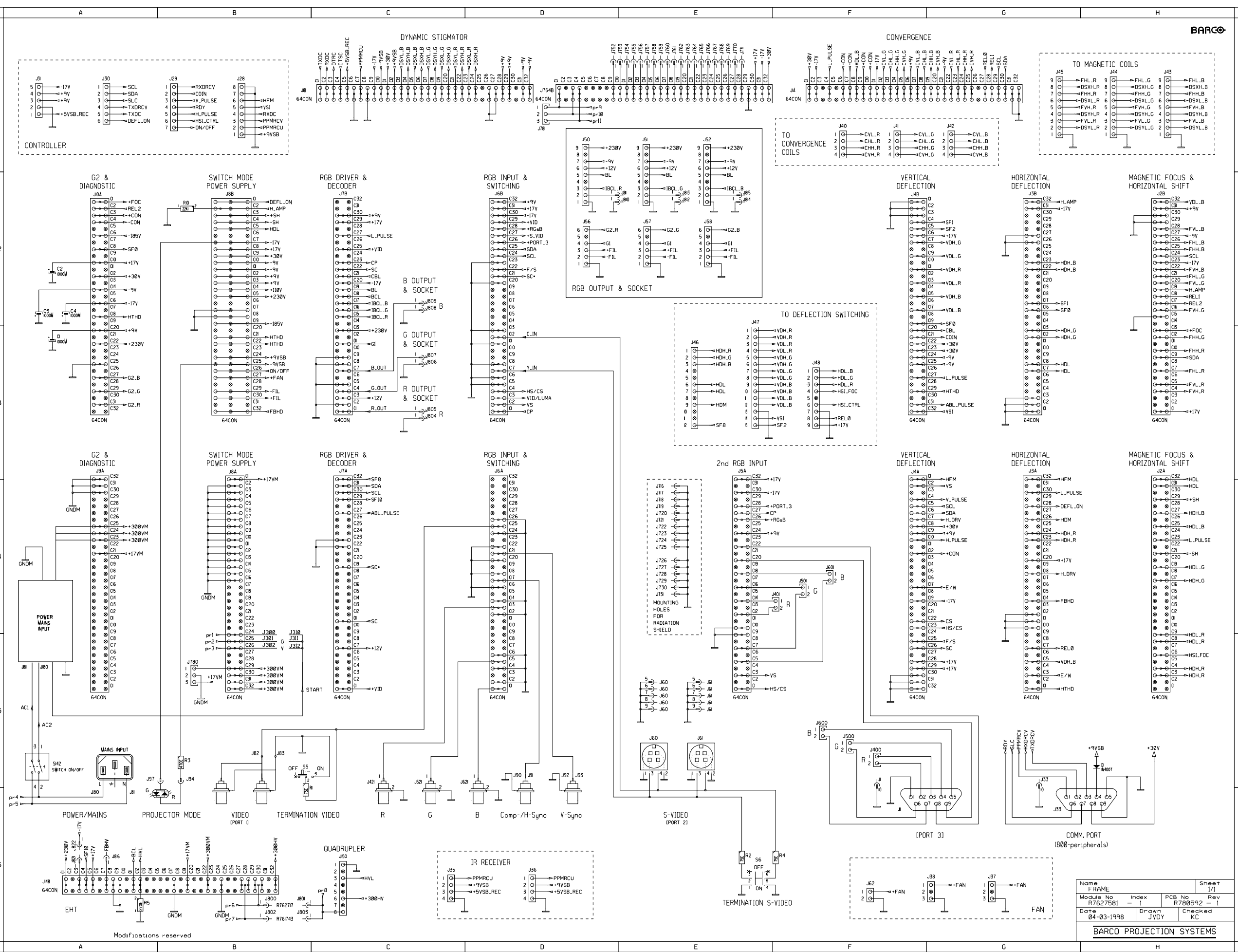




- J1A Convergence
- J1B Dynamic Stigmator
- J2A Magnetic Focus + Horizontal shift
- J2B Magnetic Focus + Horizontal shift
- J3A Horizontal Deflection
- J3B Horizontal Deflection
- J4A Vertical Deflection & Sync
- J4B Vertical Deflection & Sync
- J5A 2nd RGB Input
- J6A RGB Input + Switching
- J6B RGB Input + Switching
- J7A RGB Input & Decoder
- J7B RGB Input & Decoder
- J8A SM Power Supply
- J8B SM Power Supply
- J9A G2 & diagnostic
- J9B G2 & diagnostic
- J48 EHT
- J28 Controller
- J29 Controller
- J30 Controller
- J31 Controller
- J40 To convergence coils (RED)
- J41 To convergence coils (GREEN)
- J42 To convergence coils (BLUE)
- J44 To magnetic coils (RED)
- J44 To magnetic coils (GREEN)
- J43 To magnetic coils (BLUE)
- J46 To deflection switching module
- J47 To deflection switching module
- J48 To deflection switching module
- J58 To RGB output (RED)
- J56 To RGB output (GREEN)
- J57 To RGB output (BLUE)
- J35 To IR receiver rear
- J36 To build in remote controle
- J37 To fan
- J58 To fan
- J62 To fan
- J50 To quadrupler
- J50 To RGB output
- J51 To RGB output
- J52 To RGB output

Name		FRAME		Sheet	1 / 1
Module No	Index	PCB No	Rev		
R7627581	1	R780592	1		
Date	Drawn	Checked			
04-03-1998	JVDY	KC			
BARCO PROJECTION SYSTEMS					

Modifications reserved



Modifications reserved

Name	FRAME	Sheet	1/1
Module No	R7627581	Index	1
PCB No	R788592	Rev	1
Date	04-03-1998	Drawn	JVDY
		Checked	KC

BARCO PROJECTION SYSTEMS

Spare parts Frame R7627591

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
20	R722325	G PCB D800 L	4	1300	Z3496243	CBLU COA RG179 75E BL 16	1
100	R809267	FRMC G1209SELFRM	1	1310	Z3496244	CBLU COA RG179 75E RD 23	1
110	R3480264	CBLA EDG SAD EDS-3	1	1320	Z3496245	CBLU COA RG179 75E GN 24	1
240	R3674411	RVT BLND_R3,2C 6,4WSTAL	10	1330	Z3496246	CBLU COA RG179 75E BL 25	1
241	R3420091	CBLA TIE FIX 5 TM2	2				
242	R348019	CBLA TIE B L100 W2,4 -	2		R3481107	WU JUMP 0,51 27,5 ISO RD	1
250	R3631059	SCR Z933 M 3 X 8 SS	1				
2007	R348019	CBLA TIE B L100 W2,4 -	1	C 1	R1111164	C EL AX1000M T 25E14 85	1
				C 2	R1111164	C EL AX1000M T 25E14 85	1
	R313326	BSHG SN MIN.D19/16P1,6UL	1	C 3	R1111164	C EL AX1000M T 25E14 85	1
	R347968	CBLA SAD SN LWS 11X8 P3,	3	C 4	R1111164	C EL AX1000M T 25E14 85	1
	R7627581	UN G1209S FRMCNN NEWE	1				
				D 1	R131646	D R 1N4007 10201A DO41	1

Spare parts Frame cpl R7627581

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
551	R131649	D ACC HLDR D5 PNL	1	J180	R313454	J TAB1 MBT H4,8S0,5 SN	1
550	R131674	D LED D5 T RD/GN	1	J181	R313454	J TAB1 MBT H4,8S0,5 SN	1
510	R3131401	J BNC PM FCT 50E BHR	7	J80	R313454	J TAB1 MBT H4,8S0,5 SN	1
1390	R342007	CBLU FLEXF.P12 R2,5441	5	J81	R313454	J TAB1 MBT H4,8S0,5 SN	1
600	R3420091	CBLA TIE FIX 5 TM2	1	J46	R3134685	J MTA MBT P12 M3,96 FL RO	1
1340	R3420091	CBLA TIE FIX 5 TM2	2	J33	R3135005	JDE P8 MBSP 9 FUMBLPGDB	1
1100	R3421700	WU UL1007 AWG24 ST BK 5	4	J11	R3135015	JDE P8 FBS P9 FUMBLPGDB	1
1101	R3421700	WU UL1007 AWG24 ST BK 6	2	J10A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1210	R3430241	CBLU COA RG179 BU 75E 18	1	J148	R313526	EUR2C FBT P64 E1C2S 1,6	1
1220	R3430242	CBLU COA RG179 BU 75E 27	1	J2A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1240	R3430368	CBLU COA RG178 BU 50E 80	1	J2B	R313526	EUR2C FBT P64 E1C2S 1,6	1
610	R348019	CBLA TIE B L100 W2,4 -	2	J3A	R313526	EUR2C FBT P64 E1C2S 1,6	1
810	R348019	CBLA TIE B L100 W2,4 -	1	J3B	R313526	EUR2C FBT P64 E1C2S 1,6	1
1120	R348019	CBLA TIE B L100 W2,4 -	2	J4A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1230	R348019	CBLA TIE B L100 W2,4 -	2	J4B	R313526	EUR2C FBT P64 E1C2S 1,6	1
1250	R348019	CBLA TIE B L100 W2,4 -	3	J5A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1380	R348019	CBLA TIE B L100 W2,4 -	2	J6A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1270	R348101	WU JUMP 0,6 5	1	J6B	R313526	EUR2C FBT P64 E1C2S 1,6	1
1260	R348102	WU JUMP 0,6 7,5	2	J7A	R313526	EUR2C FBT P64 E1C2S 1,6	1
531	R3631059	SCR Z933 M 3 X 8 SS	6	J7B	R313526	EUR2C FBT P64 E1C2S 1,6	1
571	R3631059	SCR Z933 M 3 X 8 SS	2	J8A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1350	R3631059	SCR Z933 M 3 X 8 SS	2	J9A	R313526	EUR2C FBT P64 E1C2S 1,6	1
1360	R3661026	NUT D934 M 3 SS	2	J1A	R313530	J*EUR2R FBS P64 E1C3S 1,6	1
10	R367435	RVT BLND_R2,4C 6,4 ALAL	8	J1B	R313530	J*EUR2R FBS P64 E1C3S 1,6	1
1000	R3674391	RVT BLND_R3,2C 3,2WSTAL	12	J754	R313530	J*EUR2R FBS P64 E1C3S 1,6	1
11	R367462	RVT BLND_R2,4C 4,8 STAL	32	J37	R313572	J MT MBT P 3 R1 FL BK	1
1370	R367502	SPR D6798AD 3,2D 6 STZN	2	J38	R313572	J MT MBT P 3 R1 FL BK	1
570	R367600	NUT TRAD M3 BLOCK BRNI	2	J780	R313607	J MTA MBT P 3 M3,96 FL RO	1
630	R721684	J BNC A SPR FR BK	4	J781	R313607	J MTA MBT P 3 M3,96 FL RO	1
640	R7216842	J BNC A SPR FR RD	1	J150	R3136078	J MTA MBT P 8 M3,96 FL RO	1
650	R7216845	J BNC A SPR FR GN	1	J40	R313724	J MTA MBT P 4 M3,96 FL RO	1
660	R7216846	J BNC A SPR FR BL	1	J41	R313724	J MTA MBT P 4 M3,96 FL RO	1
512	R800762	SLDT1 S D9,8 L24	7	J42	R313724	J MTA MBT P 4 M3,96 FL RO	1
530	R802649	DPL D800 FIX BRKT A	1	J60	R313851	J CIRC A FBS P 4 MDIN MS	1
580	R803085	BTNPUSH49R *800 MNS	1	J61	R313851	J CIRC A FBS P 4 MDIN MS	1
500	R805016	FRMG1200 CNN PLT	1	J35	R313924	J CT H MBT P 4 M2SN WH	1
900	R805038	FRMG1200 SCR NQDR	1	J36	R313924	J CT H MBT P 4 M2SN WH	1
540	R805077	FRMG1200 FIX BRKT B	1	J902	R313925	J CT H MBT P 5 M2SN WH	1
800	R805094	FRMG1200-UN SCR N CBL	1	J 56	R313926	J CT H MBT P 6 M2SN WH	1
1200	Z3430244	CBLU COA RG179 BU 75E 44	1	J 57	R313926	J CT H MBT P 6 M2SN WH	1
1110	Z3483143	CD SL 6AWG20P12 \$320	1	J 58	R313926	J CT H MBT P 6 M2SN WH	1
1130	Z3489528	CD MNS 2AWG18 4REC 500	1	J900	R313927	J CT H MBT P 7 M2SN WH	1
1280	Z3496241	CBLU COA RG179 75E RD 23	1	J901	R313928	J CT H MBT P 8 M2SN WH	1
1290	Z3496242	CBLU COA RG179 75E GN 19	1	J48	R313929	J CT H MBT P 9 M2SN WH	1
				J47	R313955	J CT H MBS P15 M2SN WH	1
				J8B	R314069	EUR3C FBT P96 E1C2S 2,5	1
				J43	R314079	J SP MBT P 9 R1	1
				J44	R314079	J SP MBT P 9 R1	1
				J45	R314079	J SP MBT P 9 R1	1

Frame cpl

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SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
J 50	R3484093	CD CT \$FTMT P 9 340	1	2161	R3621229	SCR Z7985 M 3 X 8 SS	2
J 51	R3484093	CD CT \$FTMT P 9 340	1	4131	R3621229	SCR Z7985 M 3 X 8 SS	4
J 52	R3484093	CD CT \$FTMT P 9 340	1	4151	R3621229	SCR Z7985 M 3 X 8 SS	2
J 62	Z3484025	CD CT \$FTMT P 2 800	1	4141	R362129	SCR D7985 M 3 X 25 STZN	1
J 31	Z3484056	CD CT FTMT P 5 630	1	2683	R3623285	SCR Z933 M 4 X 16 STZN	3
J 30	Z3484068	CD CT FTMT P 6 720	1	2505	R3623438	SCR D933 M 6 X 16 SS	3
J 28	Z3484085	CD CT FTMT P 8 520	1	2606	R3623438	SCR D933 M 6 X 16 SS	3
J 29	Z348490	CD CT FTMT P 7 520	1	2081	R3626696	SCR D921 M 3 X 8 SS	2
FC	R780592	PCB G1208S/2FRMCNN	1	2230	R3626696	SCR D921 M 3 X 8 SS	2
R 6	V1026337	R MF H 22K1 F 0W6 E4	1	2671	R3626696	SCR D921 M 3 X 8 SS	6
R 5	V1026425	R MF H274E F 0W6 E4	1	3202	R3626696	SCR D921 M 3 X 8 SS	14
R 3	V1026655	R MF H475E F 0W6 E4	1	3302	R3626696	SCR D921 M 3 X 8 SS	8
R 1	V1026844	R MF H 75E F 0W6 E4	1	3314	R3626696	SCR D921 M 3 X 8 SS	3
R 2	V1026844	R MF H 75E F 0W6 E4	1	2741	R3631049	SCR Z933 M 3 X 6 SS	1
R 4	V1026844	R MF H 75E F 0W6 E4	1	3315	R3631049	SCR Z933 M 3 X 6 SS	2
S 5	R324147	SW SLD L102 1C BS H 8.5	1	2156	R3631059	SCR Z933 M 3 X 8 SS	25
S 6	R324148	SW SLD L202 2C BS H 8.5	1	2154	R3631079	SCR Z933 M 3 X 12 SS	3
S142	R324792	SW MNS JPZ 2A TV5 BS	1	2006	R3631239	SCR Z933 M 4 X 10 SS	10

Spare parts Frame cpl R7625214

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
2733	B360824	SCR \$464 M 3 X 25 STZN	2	3001	R3631239	SCR Z933 M 4 X 10 SS	6
2739	B360834	NUT D980V M 3 LOCK SS	3	3014	R3631239	SCR Z933 M 4 X 10 SS	2
1000	R130942	LENS HD10/A+BGT17 (HD120)	3	3101	R3631239	SCR Z933 M 4 X 10 SS	3
2620	R305915	FLTR MNS 250V 10A T6	1	3241	R3631239	SCR Z933 M 4 X 10 SS	2
1110	R3066461	YOKE@DEF DAV7667	3	3313	R3631239	SCR Z933 M 4 X 10 SS	4
1130	R306661	YOKE@ACC MAGN 2P/4P SHSP	3	3330	R3631239	SCR Z933 M 4 X 10 SS	6
1121	R306665	YOKE@FOC KF3205	2	3011	R3631249	SCR Z933 M 4 X 12 SS	2
1122	R3066651	YOKE@FOC KF3205G GN	1	1013	R3631449	SCR Z933 M 5 X 10 SS	12
2139	R312011	EMC@FGR CU H6,6W27,7 L5002E-06		1231	R3631449	SCR Z933 M 5 X 10 SS	4
2073	R313070	J HV F ACC SLV	3	1001	R3631459	SCR Z933 M 5 X 12 SS	12
3316	R313326	BSHG SN MIN.D19/16P1,6UL	1	5023	R3631469	SCR Z933 M 5 X 16 SS	9
3324	R313326	BSHG SN MIN.D19/16P1,6UL	2	1202	R366102	NUT D934 M 3 STZN	8
2001	R313329	BSHG SN D30 /24 P3,2UL	4	2660	R366103	NUT D934 M 4 STZN	2
3211	R347965	FAN A FIX RUB L37 BK	4	2113	R3661036	NUT D934 M 4 SS	6
2004	R347968	CBLA SAD SN LWS 11X8 P3,2	3	1290	R3661575	NUT TRAD LM 5 STZN	8
2605	R347968	CBLA SAD SN LWS 11X8 P3,2	4	2112	R367080	FSTN CLMP HS 35- 50 M4 SS	3
3325	R347972	CBLA EDGEH18U	1	2710	R367322	CLPS D6799 D 4 STPH	2
4122	R348003	GRMT P1,5 D 9,5/8	1	4144	R3673481	SPR D126 D 5,5D10 STZN	1
2214	R348005	CBLA TIE TWIST D 7,6/10	3	2174	R367435	RVT BLND_R2,4C 6,4 ALAL	8
3205	R348019	CBLA TIE B L100 W2,4 -	2	3225	R367435	RVT BLND_R2,4C 6,4 ALAL	8
3306	R348019	CBLA TIE B L100 W2,4 -	11	3230	R367435	RVT BLND_R2,4C 6,4 ALAL	6
3317	R348019	CBLA TIE B L100 W2,4 -	9	4211	R367435	RVT BLND_R2,4C 6,4 ALAL	2
4121	R348019	CBLA TIE B L100 W2,4 -	3	2138	R3674391	RVT BLND_R3,2C 3,2WSTAL	7
3023	R348024	CBLA SAD SN LWS 1,6	9	2142	R3674391	RVT BLND_R3,2C 3,2WSTAL	2
2740	R348063	CBLA CLP FLT CBL	6	2003	R3674411	RVT BLND_R3,2C 6,4WSTAL	8
4152	R348085	FSTNLATCH TOUCH4,6-6,5	1	2223	R3674411	RVT BLND_R3,2C 6,4WSTAL	2
4120	R3485046	CD CT \$FTFT P 4 200	1	2691	R3674411	RVT BLND_R3,2C 6,4WSTAL	3
2144	R3485056	CD CT FTFT P 5 520	2	3021	R3674411	RVT BLND_R3,2C 6,4WSTAL	4
2145	R3485083	CD CT FTFT P 8 360	1	3207	R3674411	RVT BLND_R3,2C 6,4WSTAL	14
2147	R3485086	CD CT FTFT P 8 520	1	3222	R3674411	RVT BLND_R3,2C 6,4WSTAL	4
2148	R3485087	CD CT FTFT P 8 600	1	3307	R3674411	RVT BLND_R3,2C 6,4WSTAL	4
2149	R3485094	CD CT FTFT P 9 480	1	3312	R3674411	RVT BLND_R3,2C 6,4WSTAL	4
2146	R3495085	CD CT FTFT P 8 450	1	2002	R367491	FSTN 1/4D4 RCPT PLT RVT	4
2203	R3615075	SCR HILO_R 3,2X 7,9STZB	1	1201	R367502	SPR D6798AD 3,2D 6 STZN	8
5012	R3619265	SCR D965 M 4 X 16 STZB	6	4143	R367502	SPR D6798AD 3,2D 6 STZN	1
				2661	R367503	SPR D6798AD 4,3D 8 STZN	3
				2738	R367611	SPR D137A D 5,3D10 STZN	1
				4142	R367611	SPR D137A D 5,3D10 STZN	1
				3102	R367612	FSTN 1/4D4 STUD L10 SLOT	3
				3103	R367613	FSTN 1/4D4 RTNR WSHR ST	3
				2072	R3953261	TAPE MASK 2-S W25,4 5E-08	
				2682	R3953261	TAPE MASK 2-S W25,4 5E-08	
				5020	R722016	HNG V1600 HSG BASE DN	2
				4150	R722296	HSG G800 CSB BRKT	1
				2111	R722411	FSTNR PJ53 RGB OUT	3

Frame cpl

R7627591

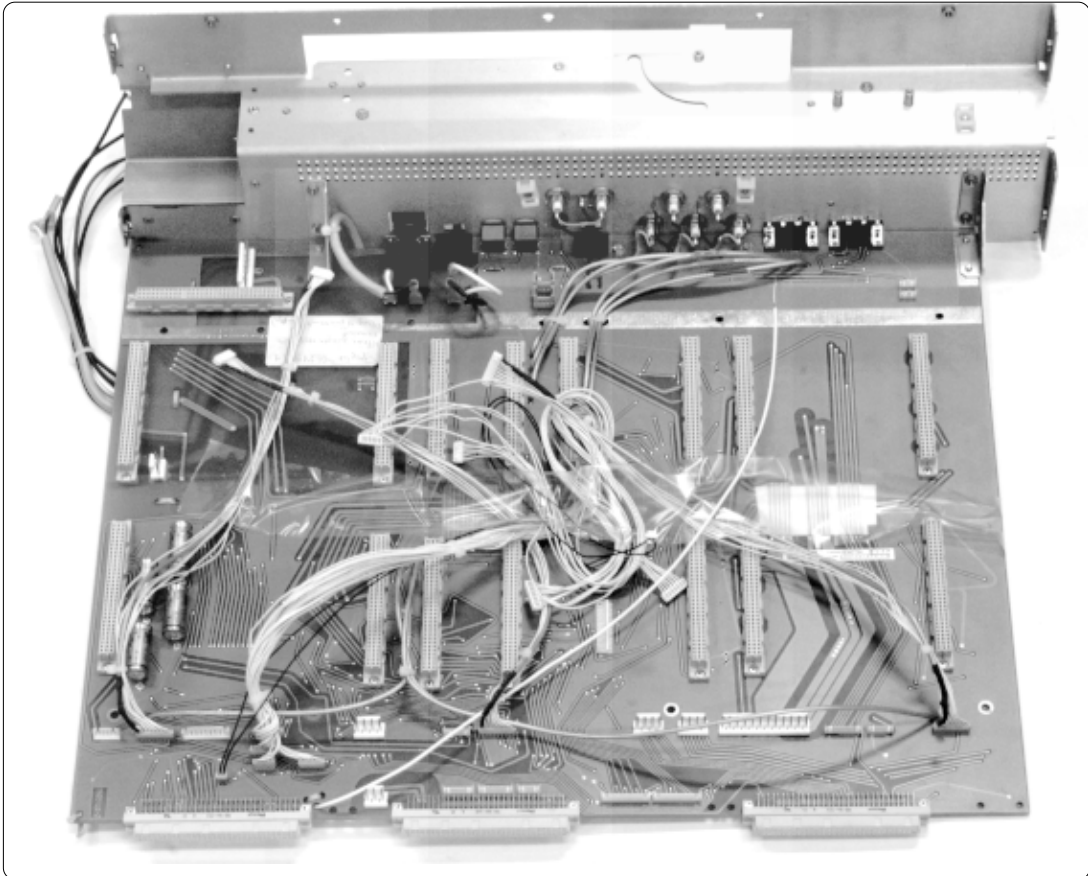
SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
5000	R722533	HSG G1200 BR DN	1	1220	R809163	FRMG1209SCRT	1
4110	R722544	HSG G1200 RC BR BASE	1	1200	R809931	FRMG1209S FRMR	1
2171	R722768	FRM G1209 FIX FAN C	3	1210	R809932	FRMG1209S FRML	1
2170	R761740	CDS FAN PJ49 G800 L100	3	2140	R810305	FRM G1208 CNV FR /3	1
3210	R761740	CDS FAN PJ49 G800 L100	1	2115	R810392	FRMG1209S BRKT RGB OUT	3
4200	R761781	UN G800 RX IR RR	1	5024	V362682	SCR D921 M 5 X 10 STZN	1
1612	R7621042D	CDS G1200 CRT 09MX	3	2157	Z348502	CD CT FTFT P 2 110	1
2100	R7621055	UN *1200 INP RGB S_TRACK	1	2157	Z3485067	CD CT FTFT P 6 100	2
2060	R7621065	UN G1200 SMP CPL MK2	1	2731	Z3486036	CD SHLD P 3 CTF CTF 1900	1
2030	R7621085	UN G1200 HOR 09MI MK2	1	2737	Z3624175	SCR D912 M 3 X 10 STZB	1
2040	R7621127	UN G1200 VER+S MK3	1				
2070	R762120	UN G1200 G2+CHK CPL	1		R3420004	CD REC SO 1015G18BK 100	3
2020	R762271	UN G1200 M_F+SH MK2	1		R34200050	CD RNG4RNG4 1015G18BK 250	3
2670	R762284	UN G1200/2 MNS CPL	1		R348023	CBLA SAD ADH 4X3	4
2160	R762285	UN G1200 FAN CNN FRM	1				
3221	R762286	UN G1200/2 FAN CNN C	1		R3631089	SCR Z933 M 3 X 16 SS	2
2120	R762457	UN G1200 DEF SW W_LG	1		R3631469	SCR Z933 M 5 X 16 SS	8
2153	R762510	UN G808 RS232	1		R3661026	NUT D934 M 3 SS	1
3310	R7625115	UN G808 CTRL 68000	1		R3673796	SPR D125A D 5.3D10 BR	2
2152	R762514	UN G808 AST DYN	1		R367502	SPR D6798AD 3,2D 6 STZN	1
2151	R762518	UN G1200 CNV DVR	1	12AI	R3130941	FLTR MNS 250V 10A T6	1
2150	R762519	UN G1208 CNV OUT	1	12AT	R3621235	SCR D7985 M 3 X 10 STZB	2
2080	R762716	UN G808S EHT	1	12AH	R762100D	CDS G1200 FRM CPL	1
3010	R762718	UN G808S EHT SPL	1	12AP	R805080	FRM G1200 CD-MNS FIX	1
2130	R762719	UN G808S RGB INP	1	12AS	R805081	FRMG1200 CD-MNS DPL	1
2050	R762720	UN G808S RGB DVR	1	12AL	R805089	FRMG1200 CD-MNS FIX	1
2732	R762722	UN IRIS2 CTRL	1	12AZ	R805090	FRMG1200 WSHR CRT	1
2730	R762724	UN IRIS2 CAM CCD	1	12BB	R805083	FRM G1200 PMF BRKT	1
2131	R762745	UN *808S DEC COMB_F	1	12BD	R805084	FRMG1200 PMF SCR N5	1
2000	R7627591	UN G1209S FRM -UN NEW EHT	1				
1010	R7628162	UN G1209S CRT M9M HD10 R	1		R3631239	SCR Z933 M 4 X 10 SS	22
1011	R7628165	UN G1209S CRT M9M HD10 G	1		R3674411	RVT BLND_R3,2C 6,4WSTAL	20
1012	R7628166	UN G1209S CRT M9M HD10 B	1		R802742	NUT CUST M 5 BR	2
2090	R762833	UN G1208S/2 EHT QDR	1		R805003	FRM G1200 CRT PLT DN	1
2110	R762839	UN G1209S RGB O+S	3		R805005	FRMG1200 CRT SCR FR	1
4000	R791664	UN RCU700 IR+LGT	1		R805018	FRMG1200 SCR N RGB	2
4100	R791666	UN *1200 RCU W	1		R805034	FRM G1200 CRT NUT FIX	2
					R805035	FRMG1200 CRT NUT LOCK	2
5011	R800307	HNG43 PLT FIX	2		R805628	FRM G1208 CRT SIDE L	1
2700	R802635	SCR CUST_RM 4 X 9,9SS	2		R805629	FRM G1208 CRT SIDE R	1
3013	R802745	FRM49 HD8 FIX SPL	1				
2720	R802959	SPRCL 4,5 D 7,0D13 STZB	2		R3674411	RVT BLND_R3,2C 6,4WSTAL	4
5020	R803206	FRM G1200 HSG BASE PLT	1		R722605	G PCB56 L130	8
2071	R803679	FRMG1200 SMP FRM1 SCR N	1		R722605	G PCB56 L130	8
4130	R804993	FRMG1200 RC SCR N	1		R805834	FRM G808 E FRM SCR N1	1
3000	R805012	FRM G1200 CNV SCR N	1		R806431	FRM G1209 EL FRM FR	1
3220	R805013	FRMG1200 CNV PIPE R	1		R806432	FRM G1209 EL FRM RR	1
5021	R805017	FRM G1200 SCR N DN	1		R806512	FRM G808 E FRM MDL2	1
5022	R805031	FRM G1200 CNV SCNR DN	1		R806512	FRM G808 E FRM MDL2	1
3311	R805037	FRMG1200 FIX CNTR	2				
3224	R805039	FRMG1200 PIPE FE GRID	1		R347965	FAN A FIX RUB L37 BK	4
3300	R805071	FRMG1200 SCR N UP CPL	1		R3631059	SCR Z933 M 3 X 8 SS	2
4140	R805076	SPRCL20,25D 3,3D10 BR	1		R366808	I NUT ST M3 -2 O SS	1
2680	R805096	FRM51 PMF SCR N CPL1	1		R3668086	I NUT ST M3 -2 O STZN	4
3223	R805616	FRM G1208 CNV PIPE L	1		R366945	I NUT SO M3 X 8 O STZN	4
3020	R805617	FRM G1208 CNV PIPE FR	1		R3669722	I NUT ST M4 -2 O STZN	4
3022	R805618	FRM G1208 CNV PIPE FR	1		R3674411	RVT BLND_R3,2C 6,4WSTAL	12
3240	R805619	FRM G1208 DEF SW SCR N	1		R511470	LAC ME RAL7016 AB W +	2E-07
4111	R805677	HSG G1200 RC W CAP	1		R511487	LAC PL BEIGE 20243 A W §	1E-07
2140	R805764	FRM G1208 CNV SLD	1		R520021	S G PC/ABS GY V0 UNREI +	4E-07
3322	R806078	FRM G1209 CTRL DN	1				
3320	R806079	FRMG1209 CTRL UP	1				
3201	R807301	FRM G1209 HNG	7				
3100	R808869	FRM G1209 SF CRT CVR	1				
2736	R809001	SPG COMPR 20 D5,5D0,8 SS	1				
2735	R809153	SPG COMPR 14 D5,5D0,8 SS	1				

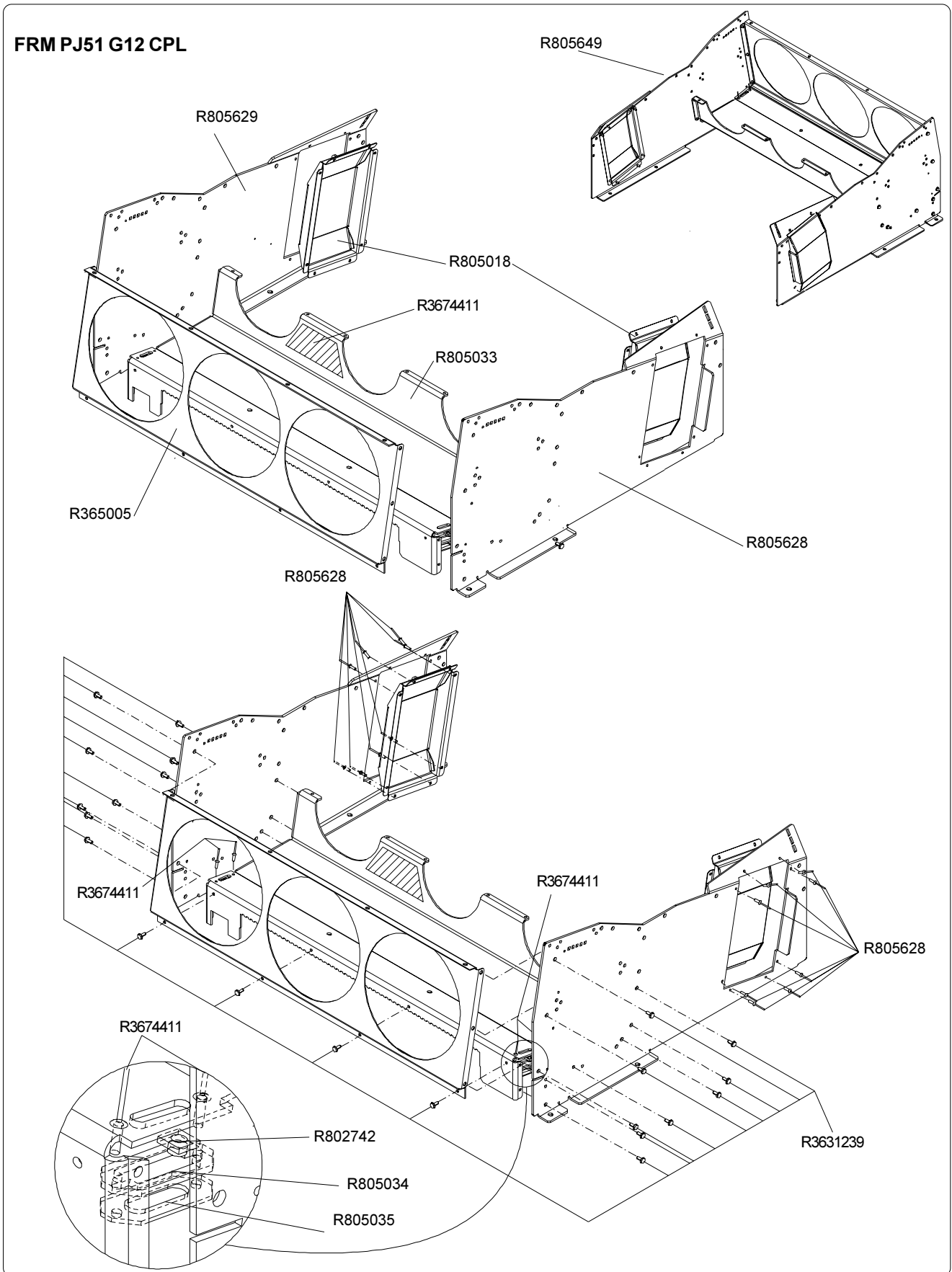
Frame cpl

R7627591

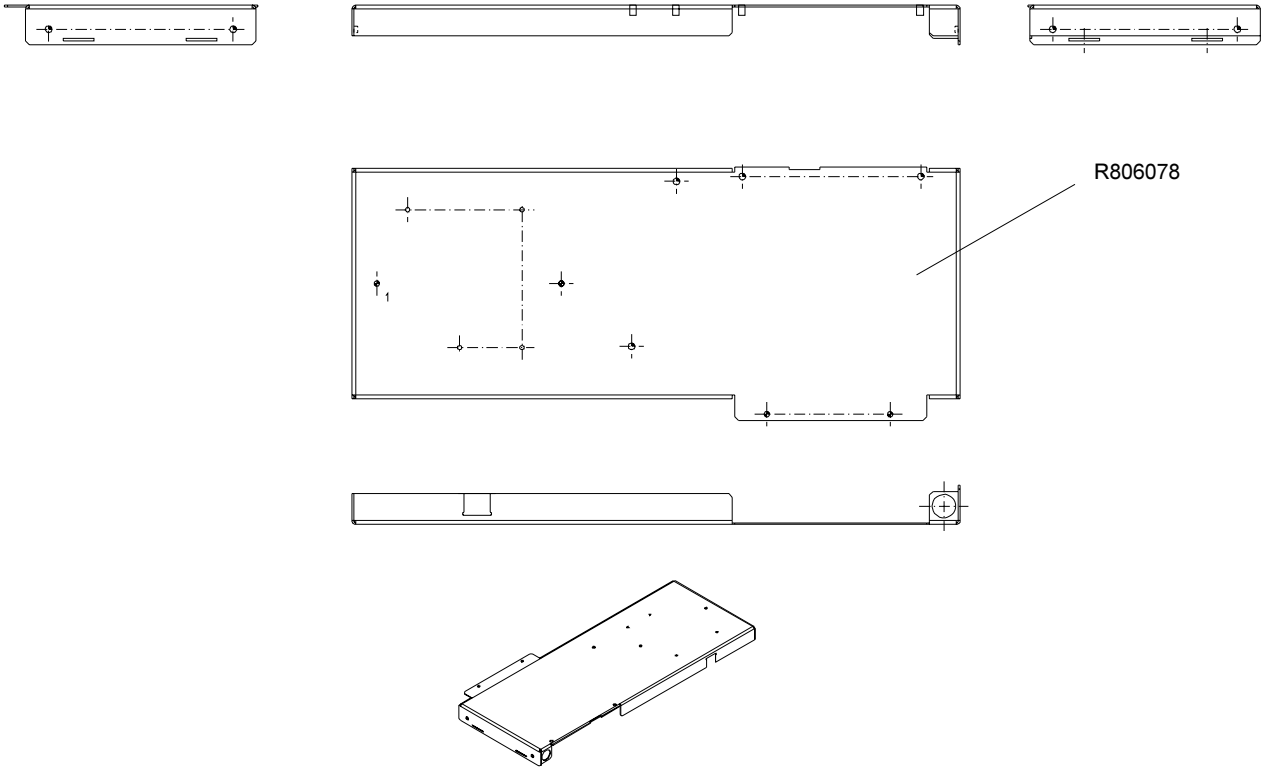
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	R5300501	AL P MG3 1.5 2500X1250	8E-06		R721560	G PCB L 97.5	3
	R5300501	AL P MG3 1.5 2500X1250	7E-06		R722129	NPL D600 BLANK	1
	R5300501	AL P MG3 1.5 2500X1250	4E-06		R722241	G PCB G800 CNV	1
	R534004	CU P BRZ 0.3 1000X 300	6E-07		R722244	FRM G800 PCB UNPIN LOCK	2
	R593459	ROL PEF W533X500MX 1	1E-06		R722759	FRM G1209 FIX FAN	1
	R593459	ROL PEF W533X500MX 1	4E-06		R802675	FRM49 CNV FIX BRKT R	1
	R593459	ROL PEF W533X500MX 1	2E-06		R805008	FRM G1200 SIDE L	1

Frame R7627581

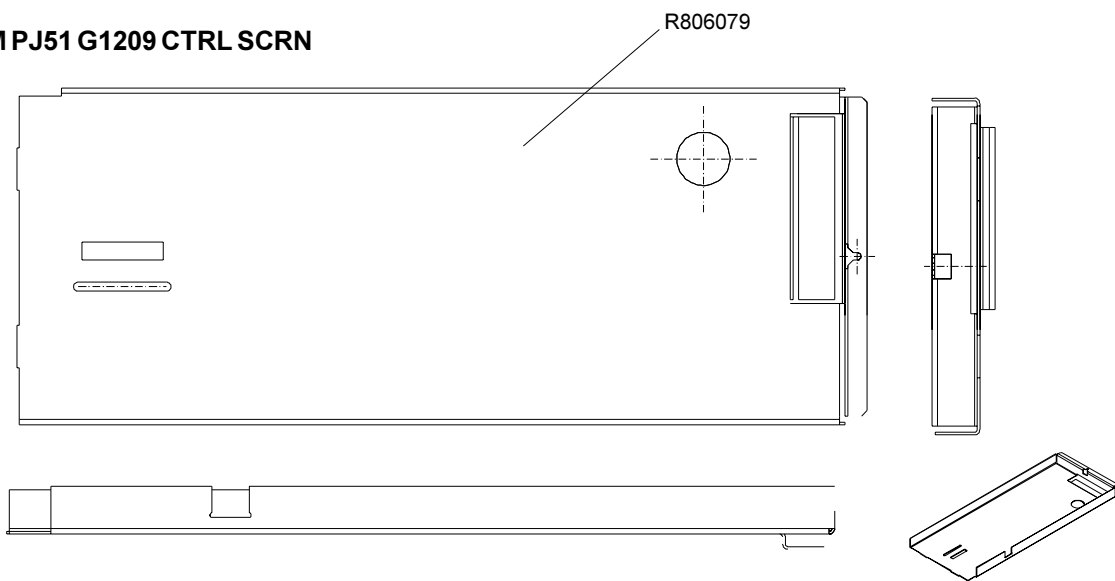


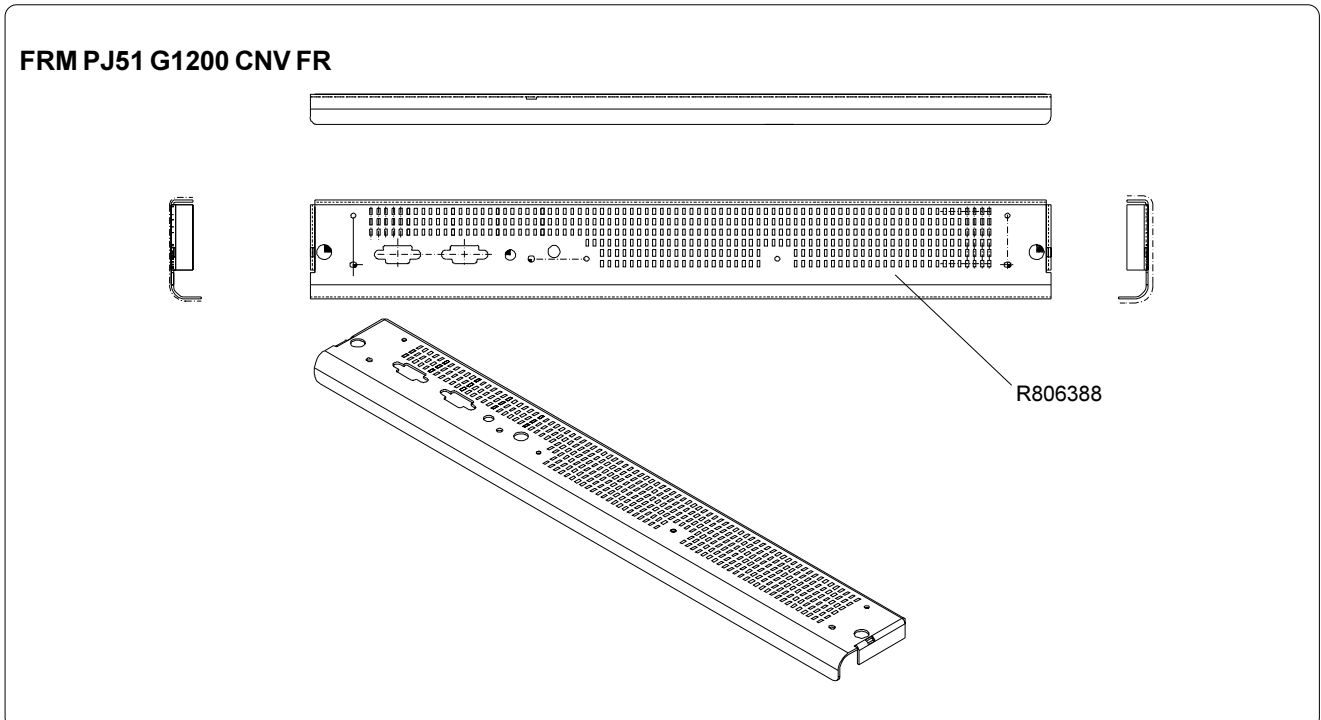
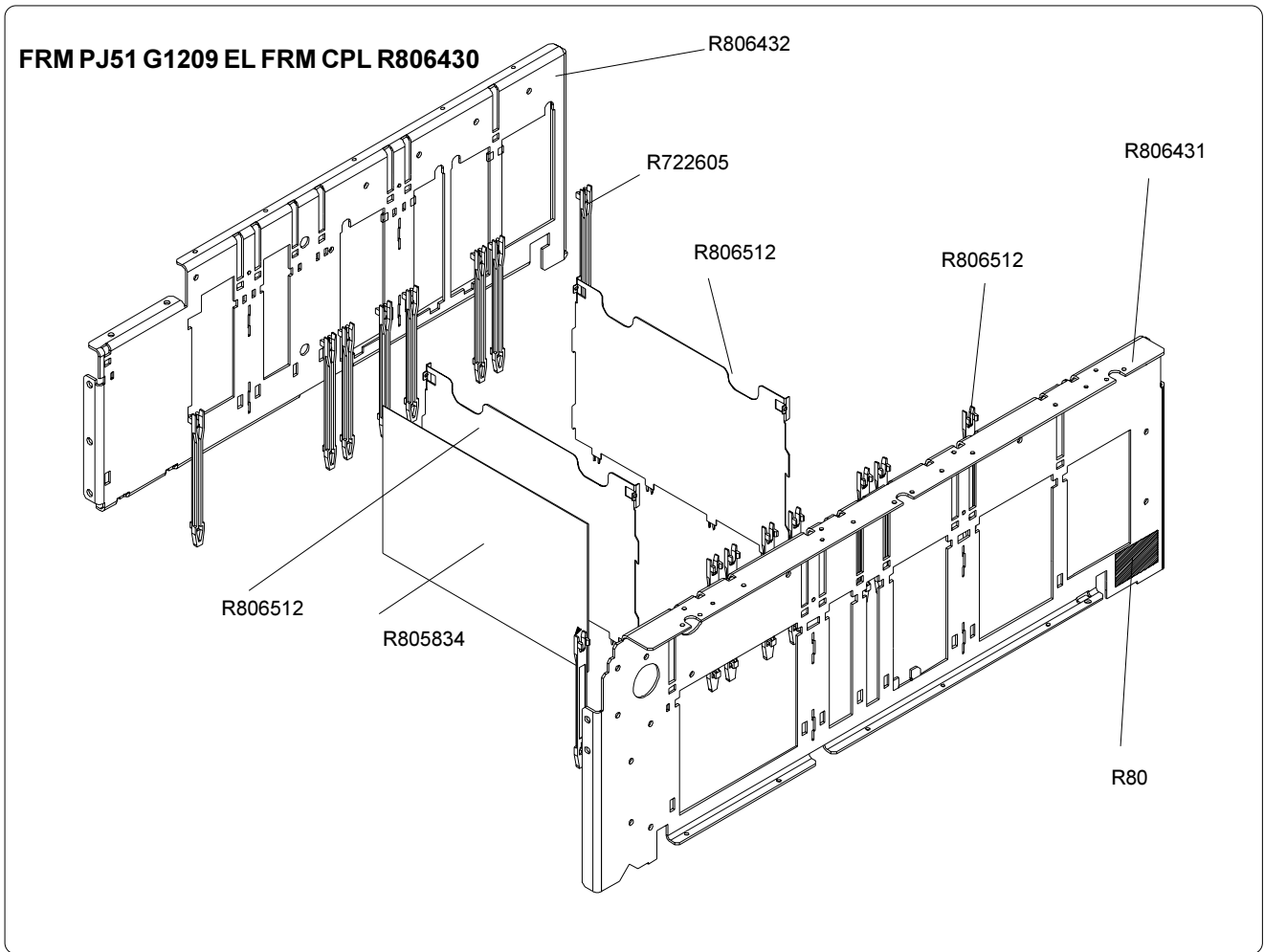


FRM PJ51 G1209 CTRL ON

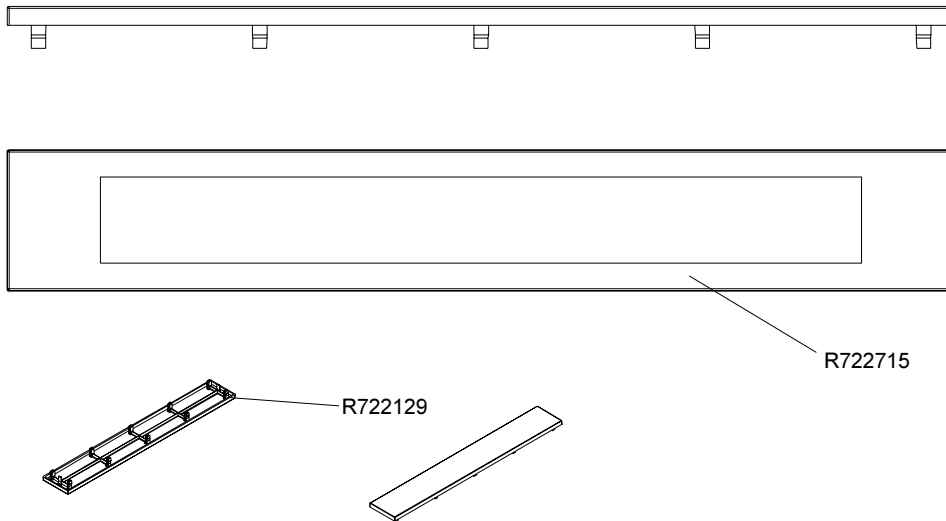


FRM PJ51 G1209 CTRL SCR N

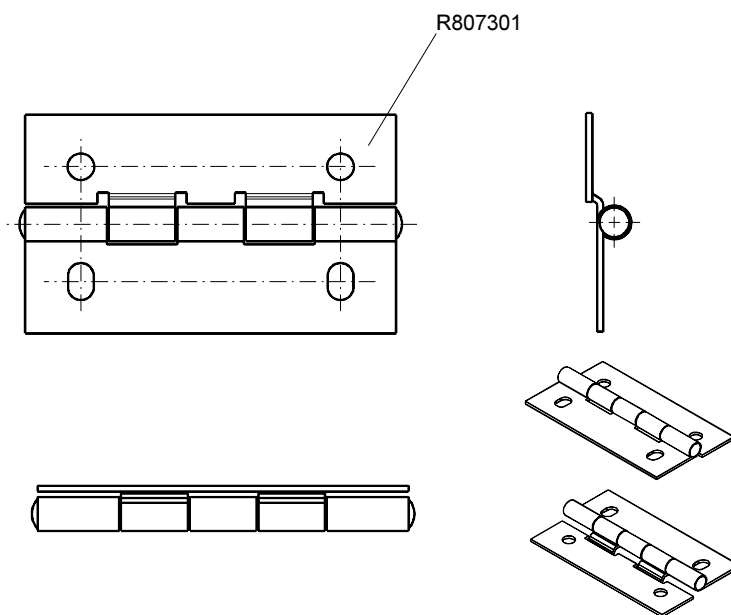




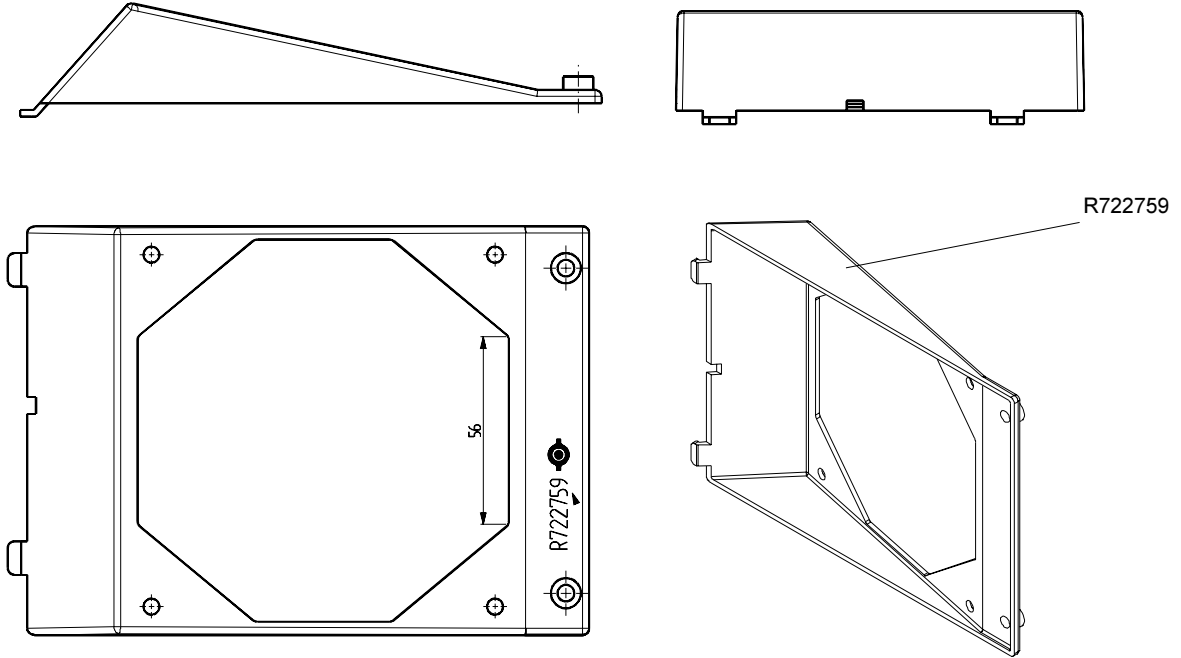
HSG J49 G1209 NPL



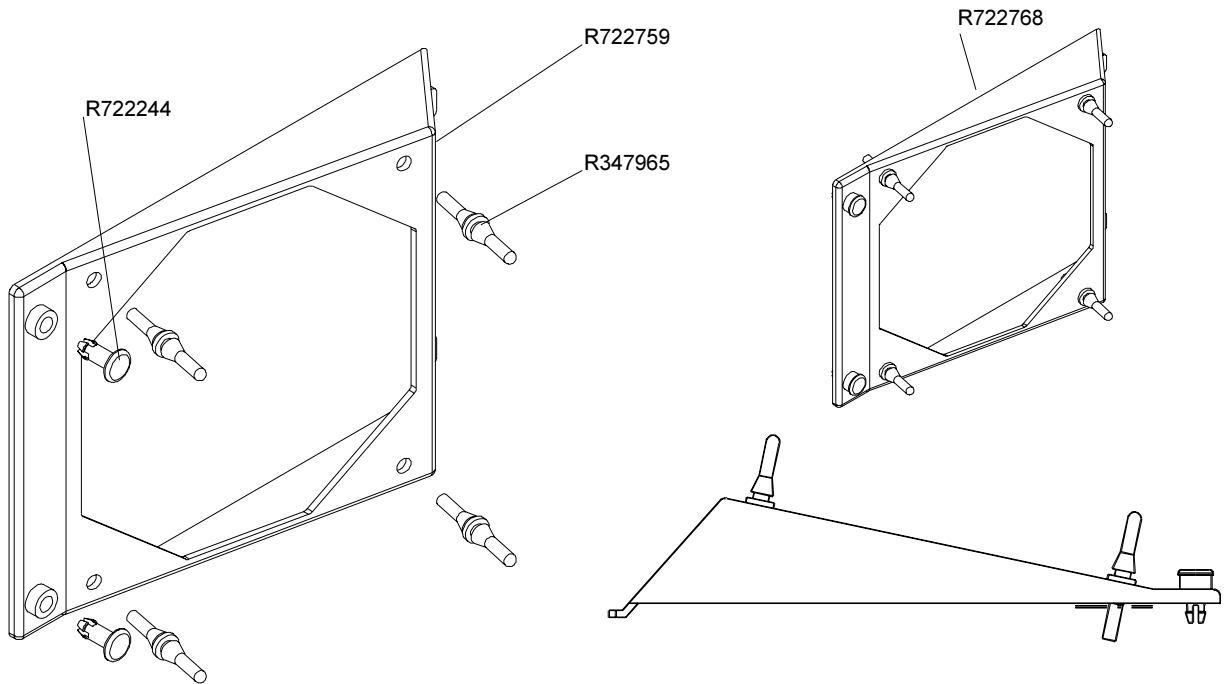
FRMPJ51 G1200 HINGE



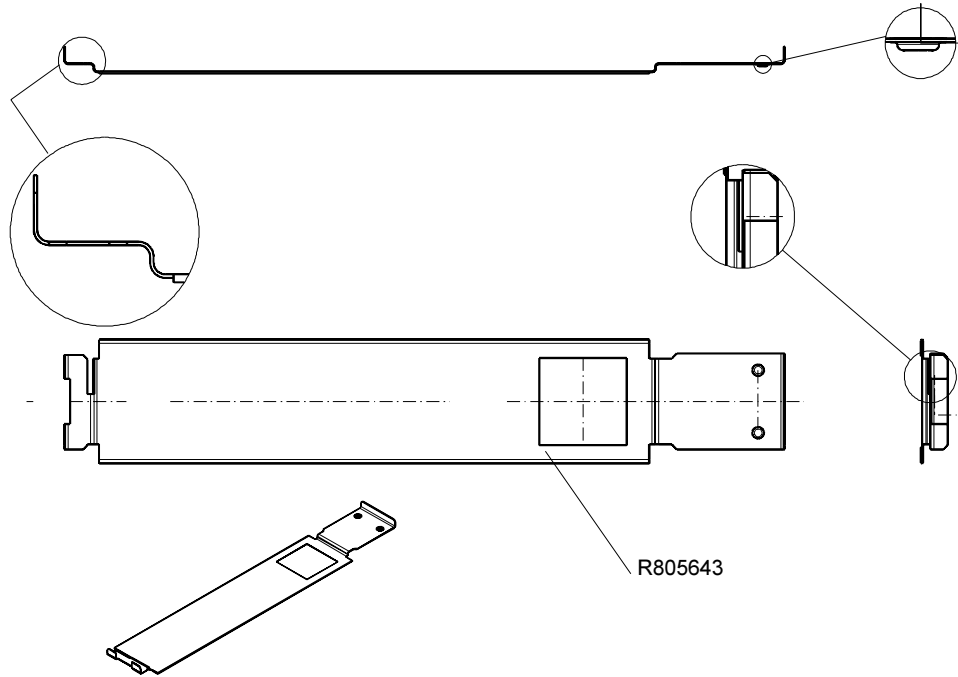
FRM PJ51 G1209 FIX FAN



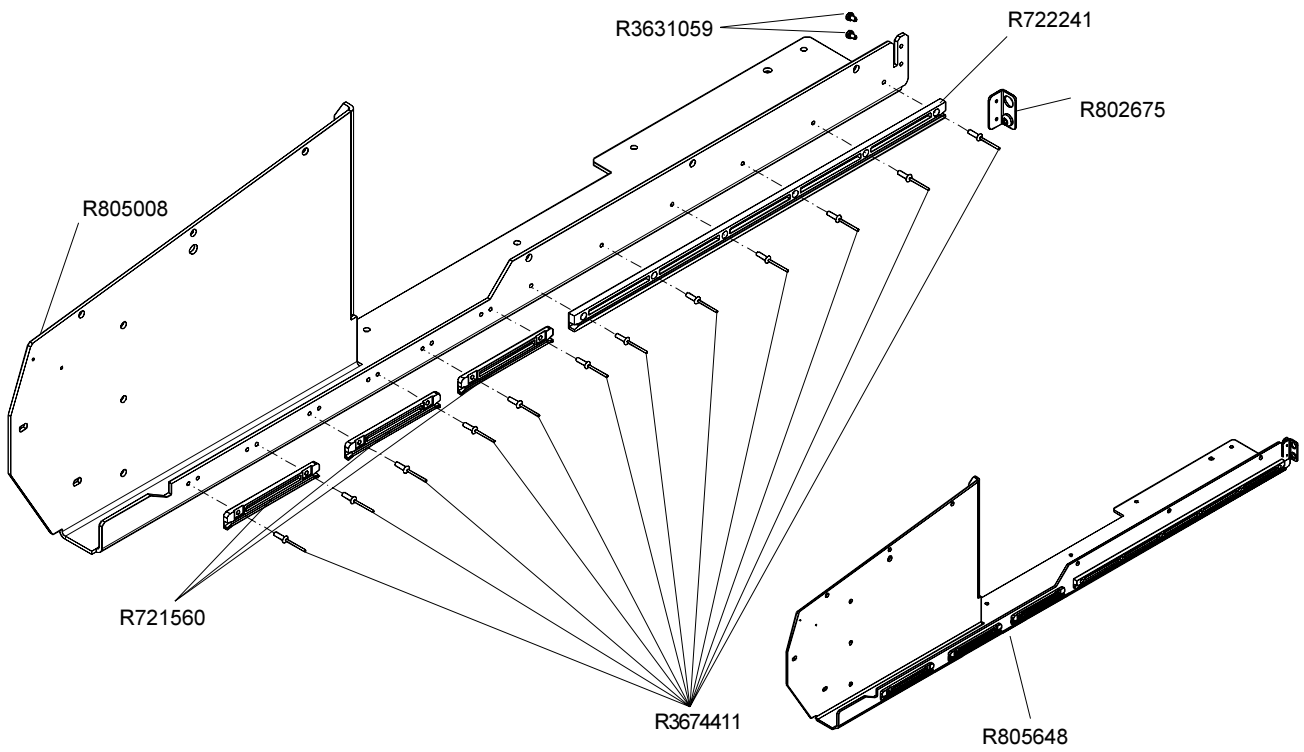
FRM PJ51 G1209 FIX FAN CP



PJ51 G1200 CRT SCRNP UP

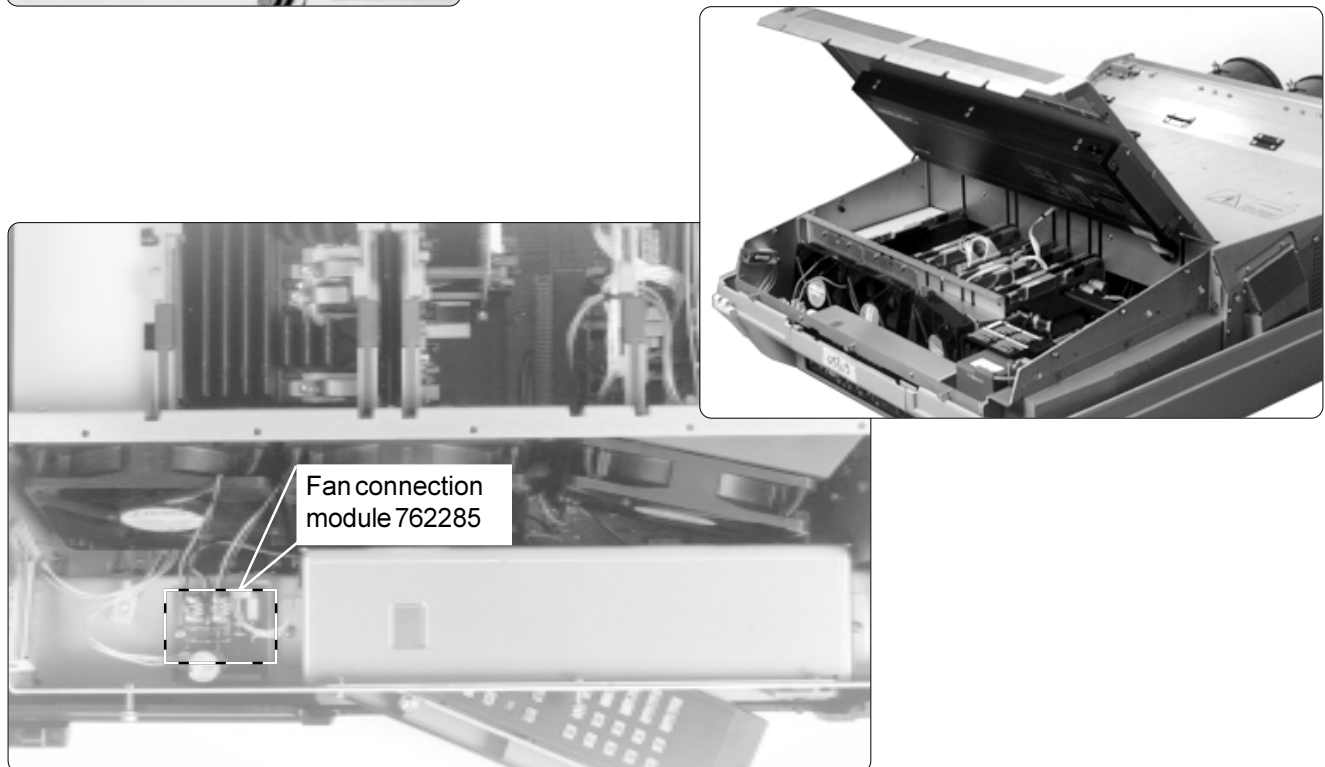
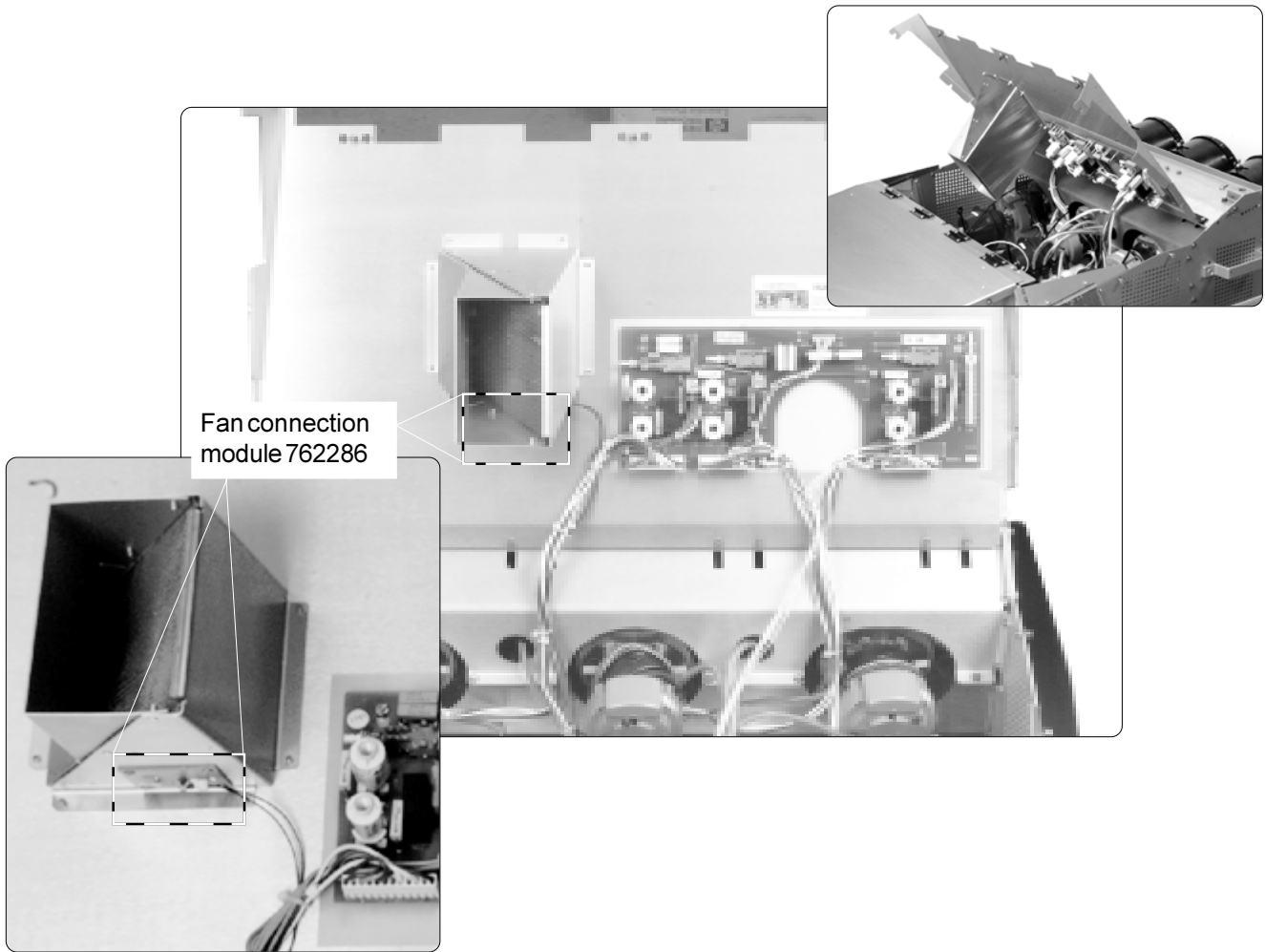


FRM PJ51 G12 L CPL



Fan interconnection module

762285
762286



Fan interconnection module

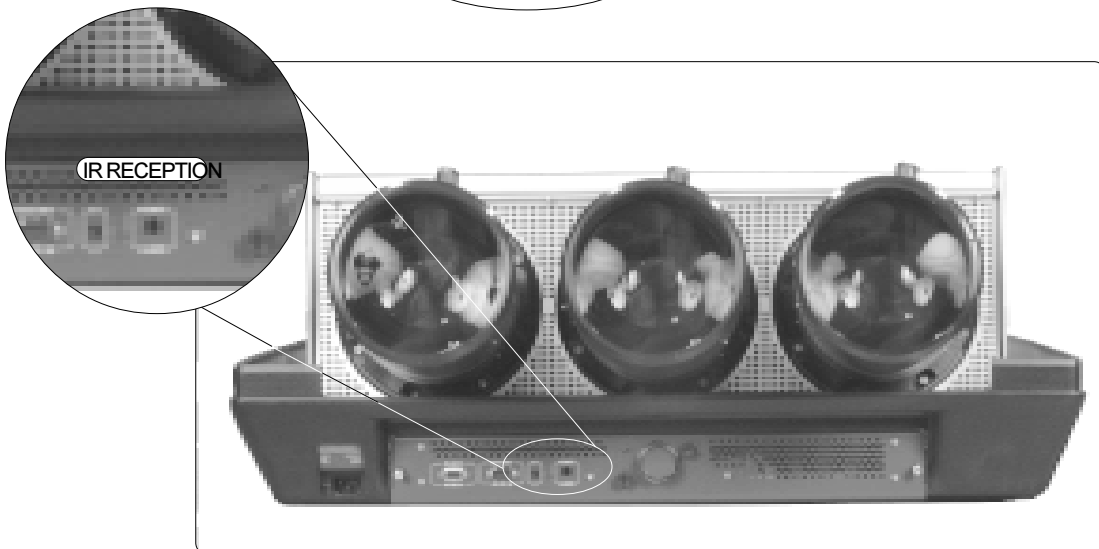
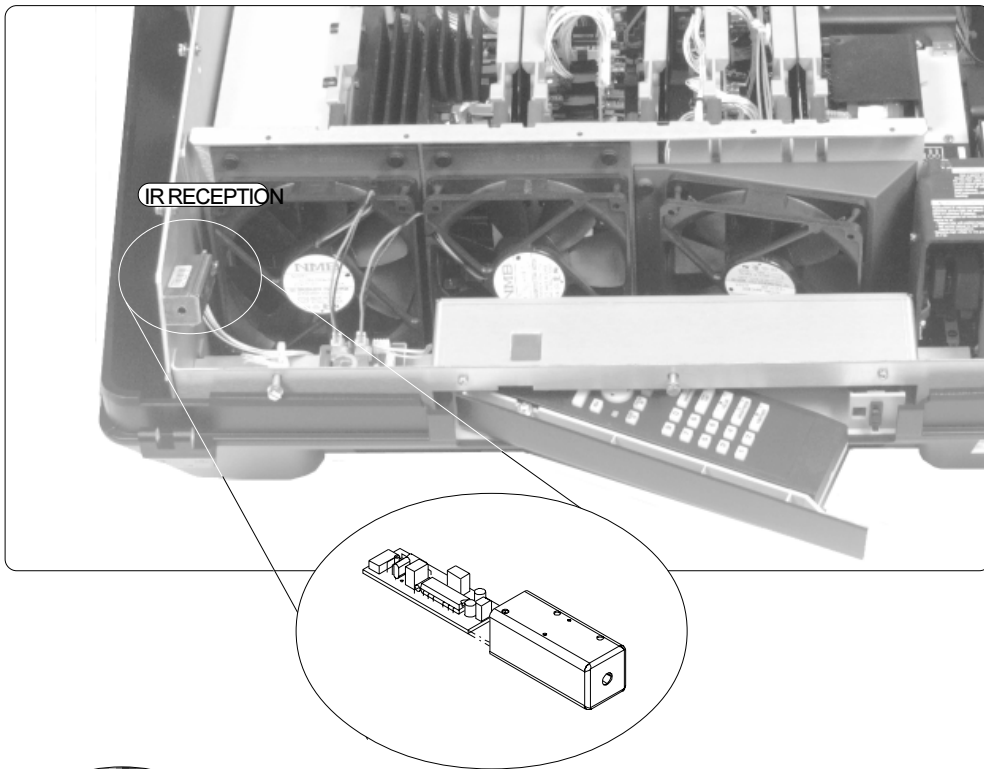
762285
762286

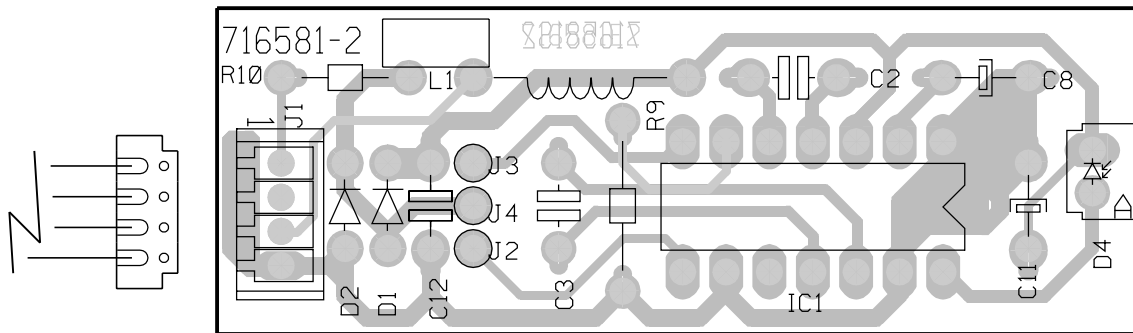
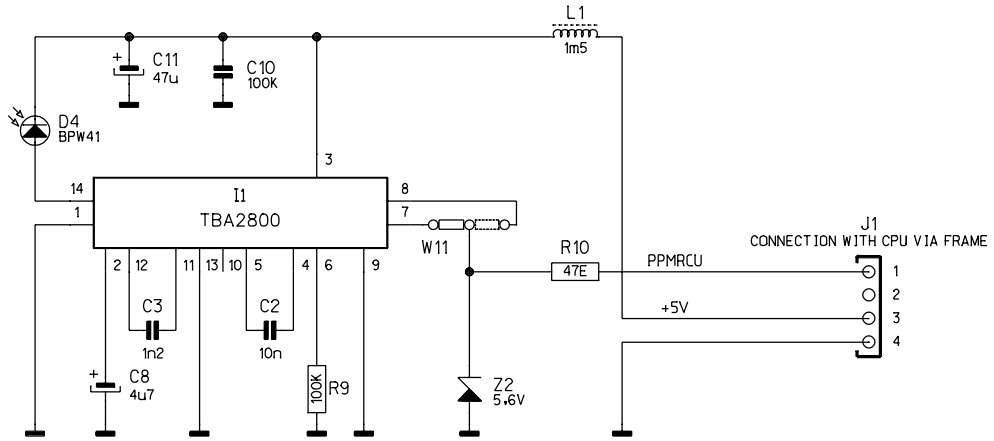
Parts listing 762285

SIT.	ITEM NO.	DESCRIPTION	QUANTITY
	R762285D	CDS G1200 FAN CNN	1
C 1	R112739	C CE MI 1N K100E2	1
C 2	R112739	C CE MI 1N K100E2	1
C 3	R1114909	C EL RA1000M M 50E3 SM	1
J 1	R313572	JMT MBT P 3 R1 FL BK	1
J 2	R313572	JMT MBT P 3 R1 FL BK	1
J 6	R313924	JCT H MBT P 4 M2SN WH	1
L 1	R3061341	CH AX NS 100 UH	1
L 2	R3061341	CH AX NS 100 UH	1
PC	R780299	PCBG1200/2 CNN FRM	1

Parts listing 762286

SIT.	ITEM NO.	DESCRIPTION	QUANTITY
	R762286A	UN G1200/2 FAN CNN C	1
C 1	R112763	C CE MI 10N Z 63E2 85	1
J 1	R313942	JCT H MBS P 2 M2SN WH	1
J 2	R313572	JMT MBT P 3 R1 FL BK	1
L 1	R3061341	CH AX NS 100 UH	1
PC	R780287	PCBG1200/2 CNV CNN	1





Name IR RECEIVER			Sheet 1 / 1
Module No. R761781	Index — 0	PCB No. R716581	Rev — 3
Date 26-11-1997	Drawn JVDY	Checked SCG	
BARCO PROJECTION SYSTEMS			

Modifications reserved

TBA2800 Infrared Preamplifier IC (14-Pin Plastic Package TO-116)

Bipolar integrated circuit intended as a receiver preamplifier for the infrared-remote control systems designed with the SAA1250 integrated circuit.

The TBA2800 preamplifier IC contains four main parts:

- gain-controlled amplifier I
- amplifier II
- pulse-separating amplifier III and
- inverter IV

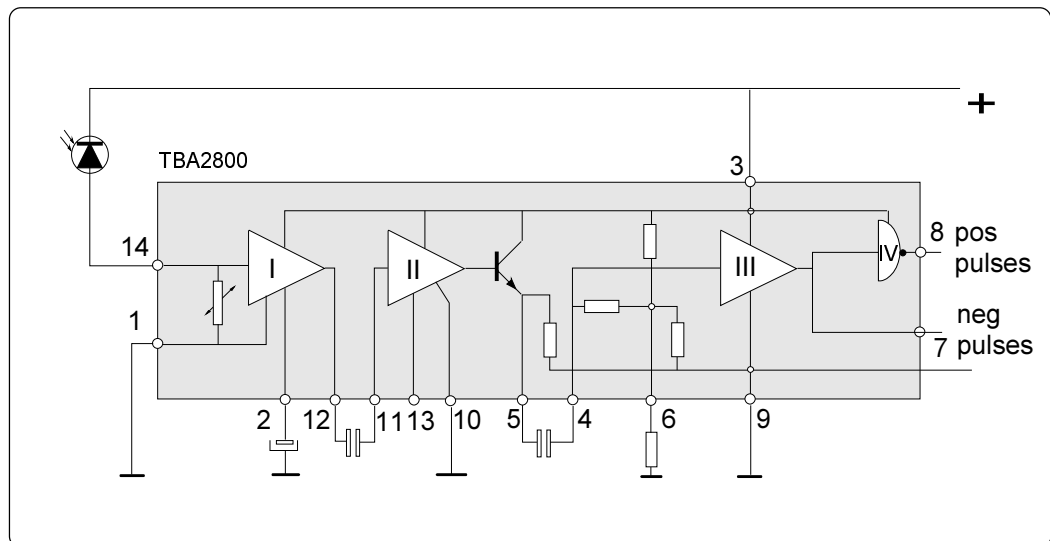
Amplifier I has a wide dynamic range and thus ensures interference-free operation, even at bright ambient light or at intensive infrared light as it comes from infrared sound transmissions or at bright 50 Hz modulated lights as it originates from fluorescent lamps.

It is also possible for the remote-control transmitter to be near the receiver without causing malfunctions by overdriving the receiver.

Amplifier II further amplifies the signal, and amplifier III separates the pulse-shaped intelligence signal from noise and other unwanted parts.

The additional inverter IV inverts the negative output pulses at pin 7 and thus delivers positive output pulses at pin 8.

If an additional resistor is inserted between pin 6 and GND, noise immunity is increased. But this is accompanied by decrease in sensitivity.

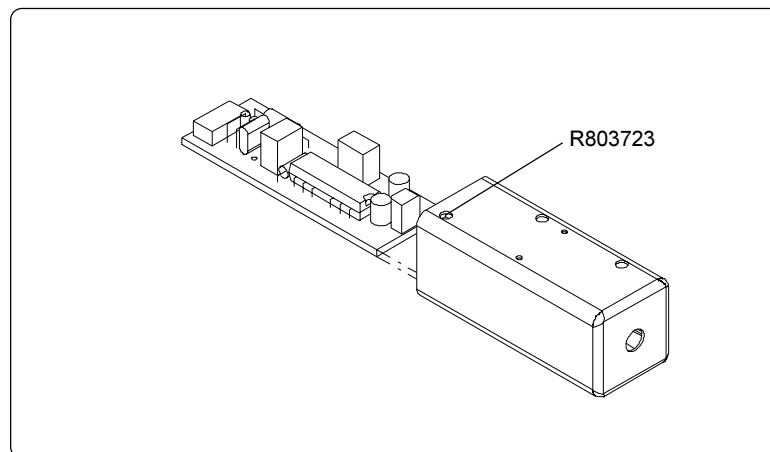


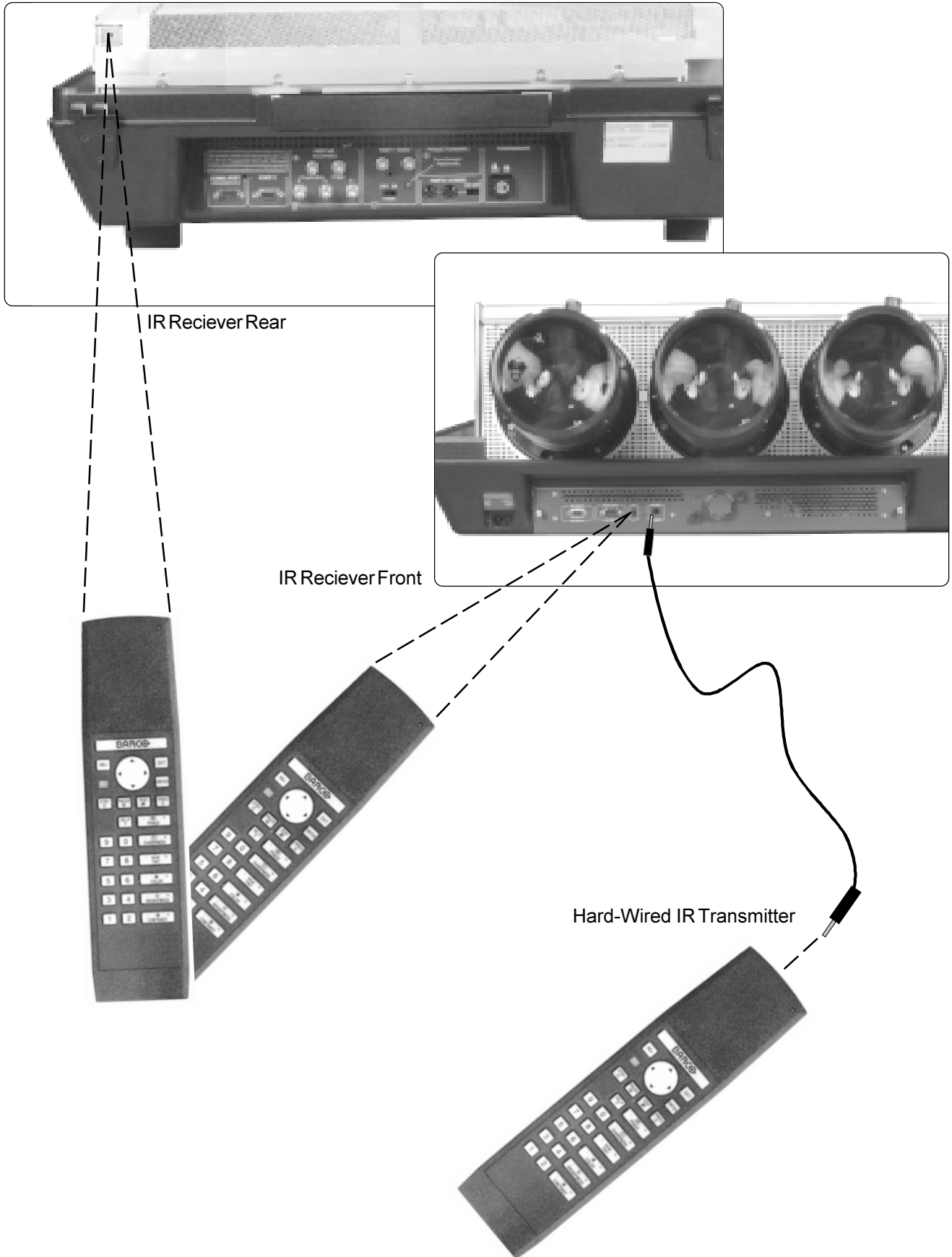
IR Receiver module

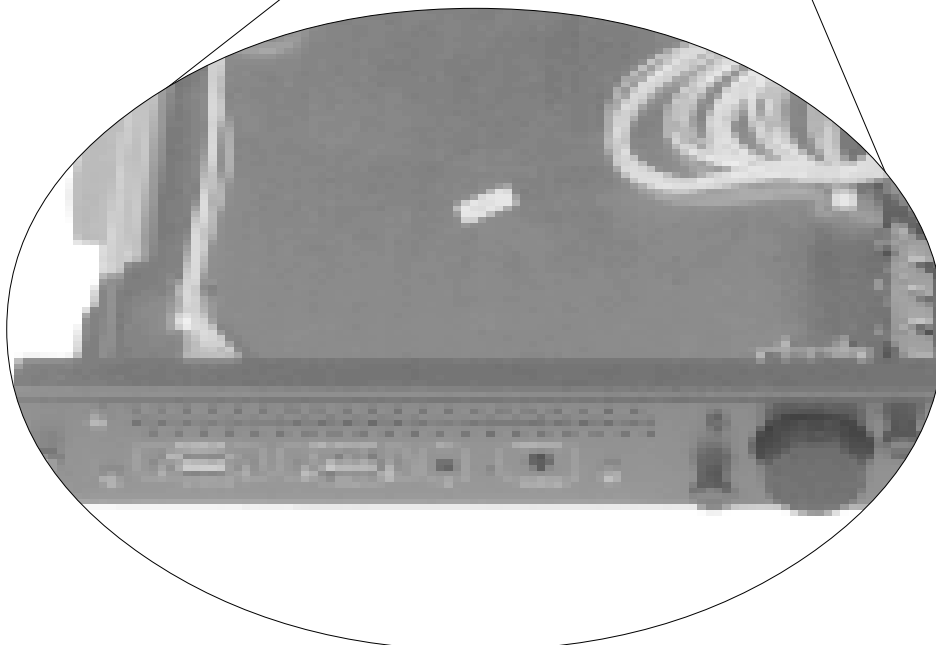
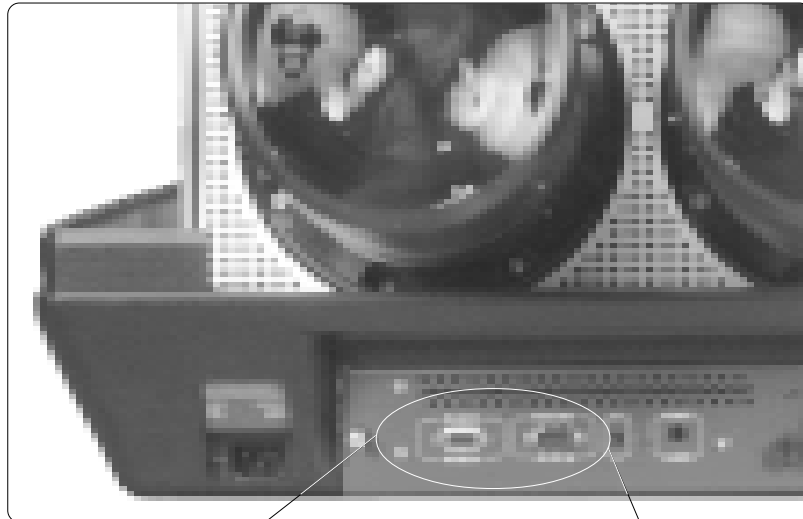
R761781

Parts listing

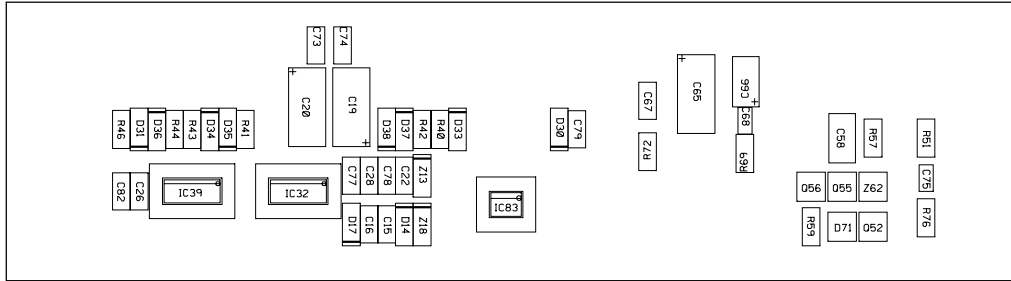
SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
30	R315303	J REC FA T2.8 W0.2-0.35 A	1	I 1	R132824	U 2800 TBA DIP14 P	1
10	R803723	FRM53RXIRSCRN	1	L 1	R3061582	CH AX NS 1.5 MH	1
C 2	R115940	C PP RA 10N J 63E2 100	1	PC	R716581	PCSE P49RCVDS800 RX IR	1
C 3	R1159181	C PP RA 1N2J100E2 85	1	R 9	R101560	R MF H100K F 0W4 E3	1
C 8	R1115915	C EL5 RA 4M7M 35E2 85	1	R 10	R101520	R MF H 47E F 0W4 E3	1
C 11	R111500	C EL RA 47M M 10E2 85	1				
C 12	R1127741	C Z5U MU 100N Z 50E2 85	1				
D 2	R131744	D ZEN 5V6 0W5 C DO35	1				
D 4	R131681	D OBPW41N PIN	1				





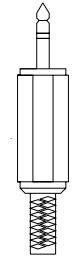
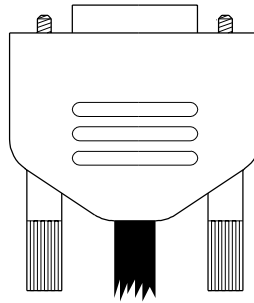
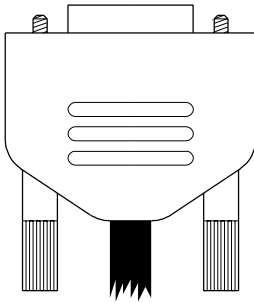
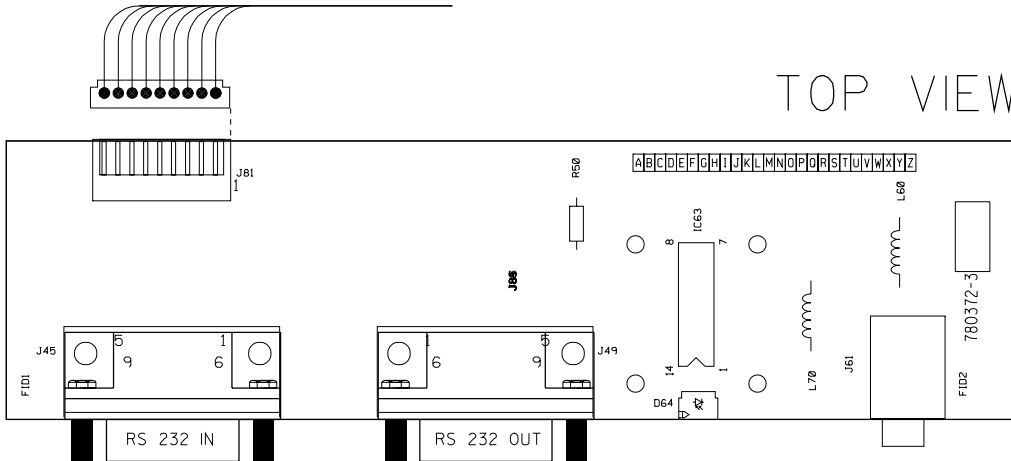


BOTTOM VIEW



G1208 G1209 •808 : TO DYN. AST. (J2)
 G1200 •801S : CONV. OUTPUT (J3)
 VI609 D1109 : TO CONN. BOARD (J2)

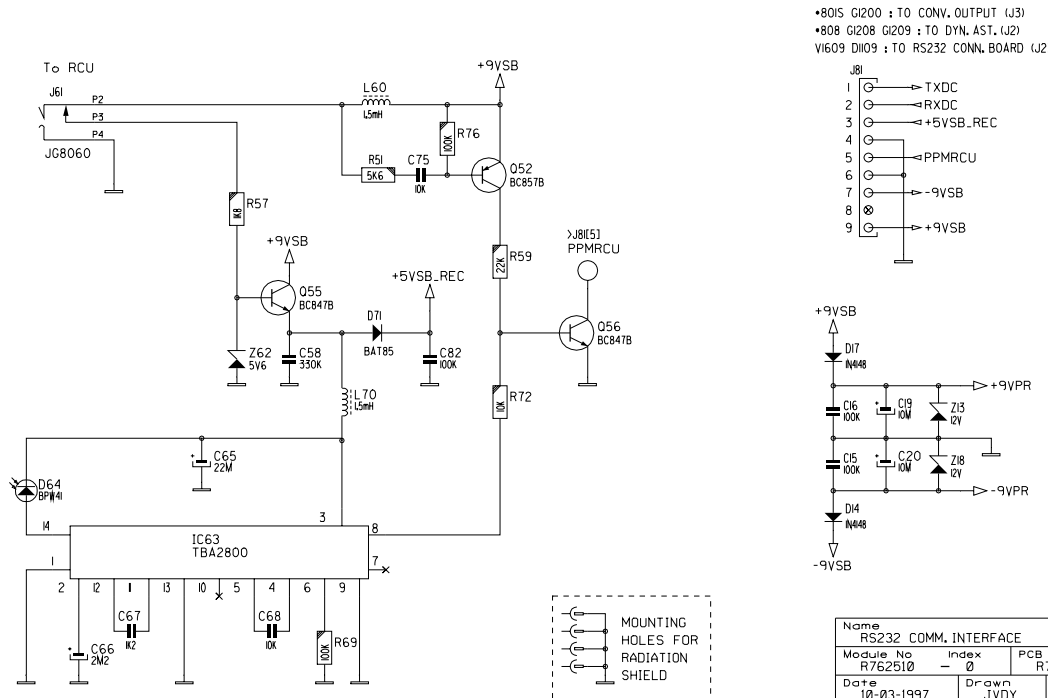
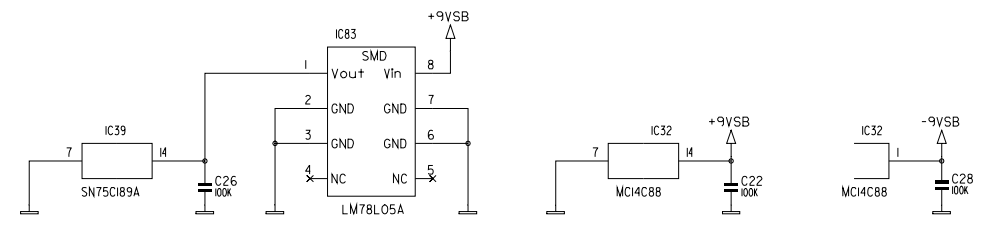
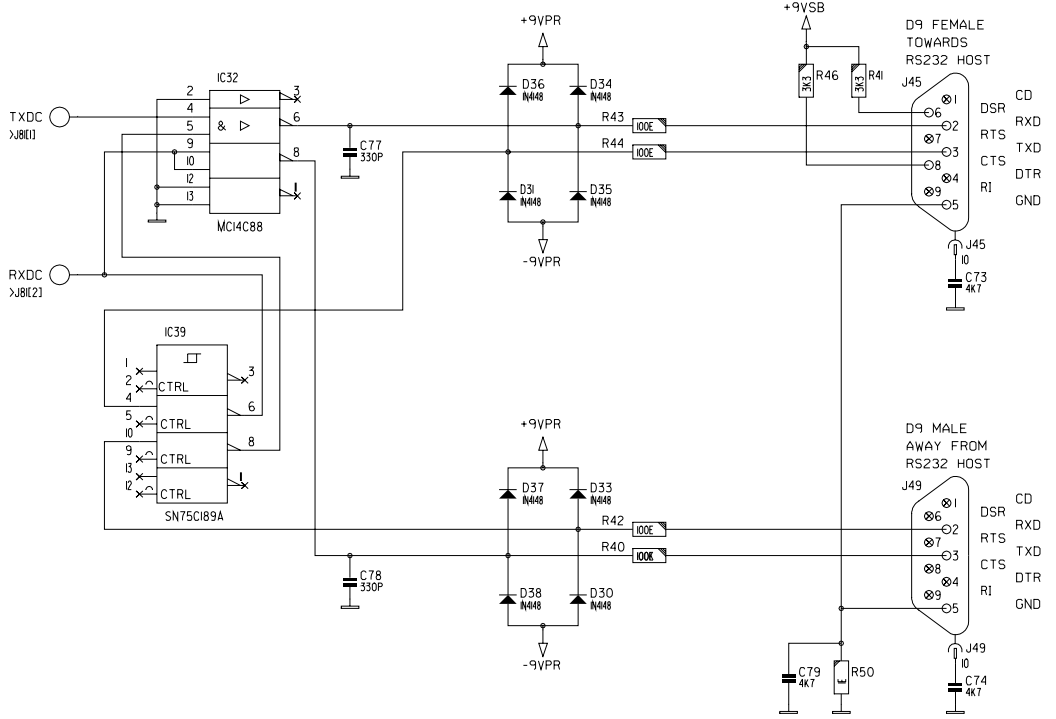
TOP VIEW



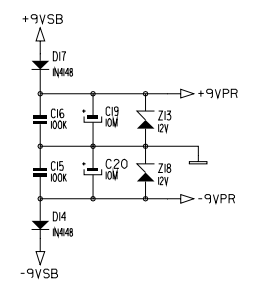
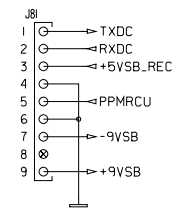
To remote input

Modifications reserved

Name RS232 COMMUNICATION			Sheet
Module No R762510	Index — 0	PCB No R780372	Rev — 2
Date 22-10-1997	Drawn JVJDY	Checked SCG	
BARCO PROJECTION SYSTEMS			

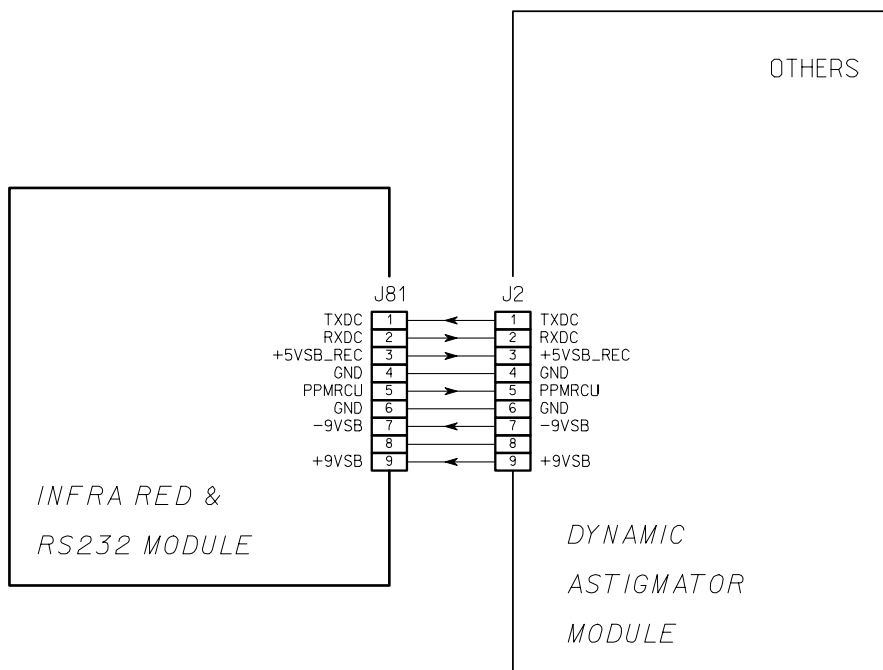
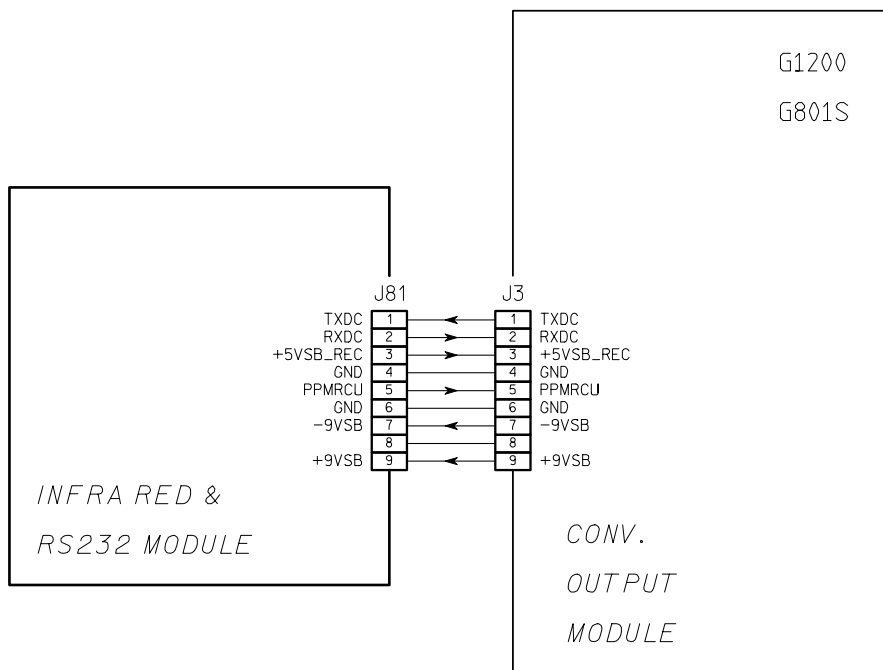


- 8015 GI200 : TO CONV. OUTPUT (J3)
- 808 GI208 GI209 : TO DYN. AST. (J2)
- VI609 DI109 : TO RS232 CONN. BOARD (J2)

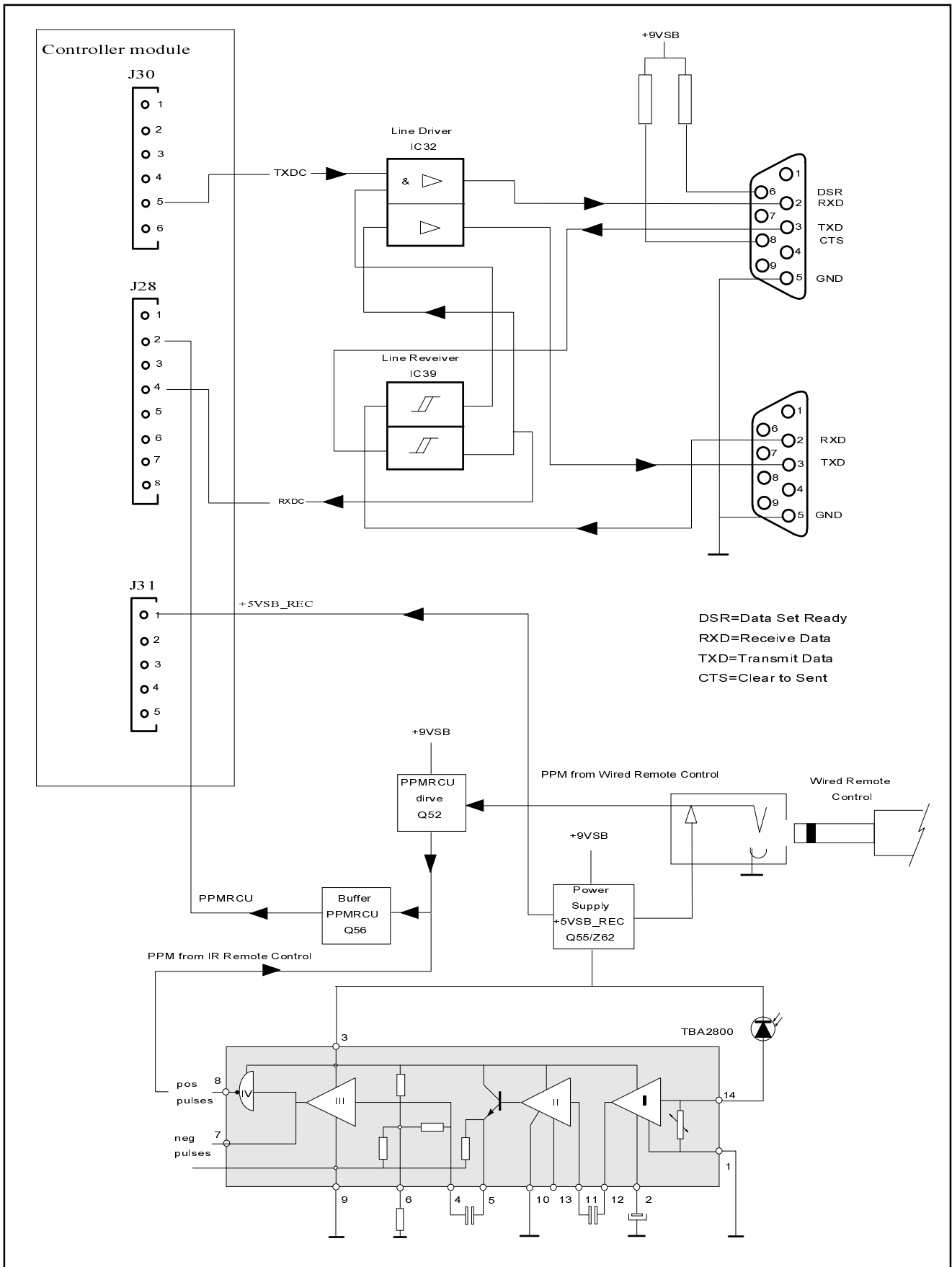


Name RS232 COMM. INTERFACE		Sheet 1/1	
Module No R762510	Index -	PCB No R780372	Rev 2
Date 10-03-1997	Drawn JVDY	Checked SCG	
BARCO PROJECTION SYSTEMS			

Modifications reserved



Name RS232 COMM. INTERFACE			Sheet 1/1
Module No R762510	Index - 0	PCB No R780372	Rev - 2
Date 31-10-1997	Drawn JVDY	Checked SCG	
Division BARCO NV			BPS

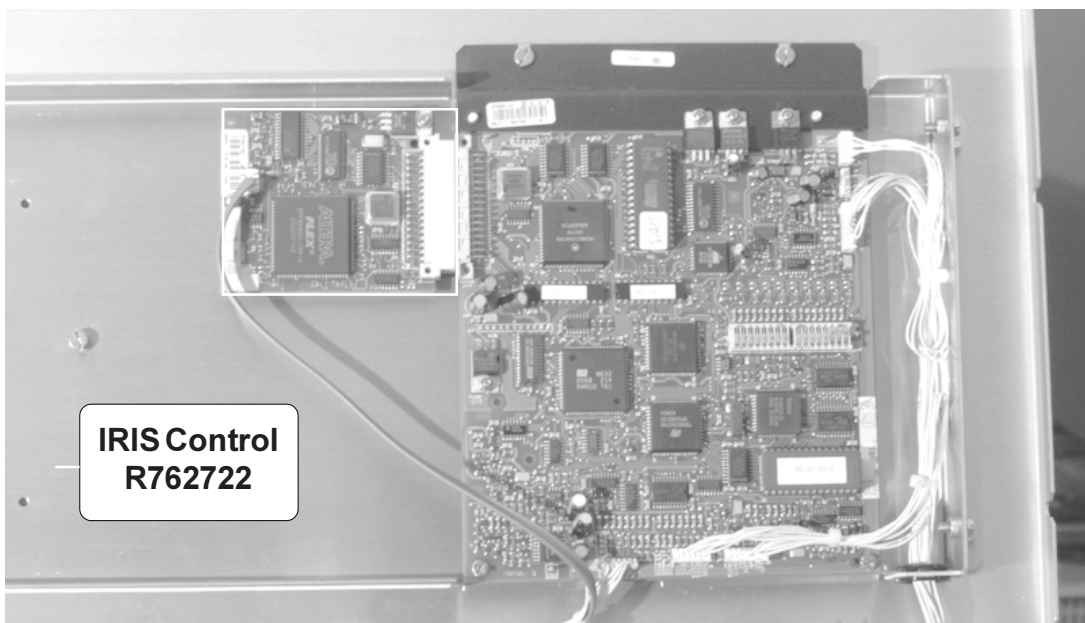


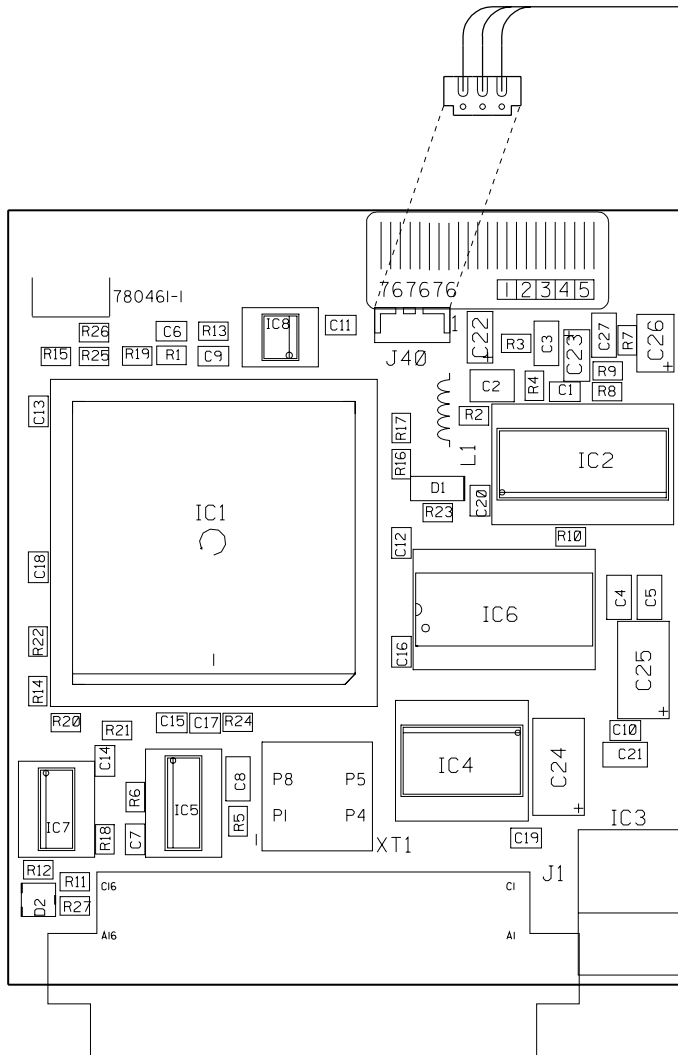
IR+RS 232 Communication module

R762510

Partslisting IR+RS 232 communication module

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
10	R805674	FRMV700RX SCRN	1	I 83	P230062	U#78L05A LM SO8 P	1
	R762510P	UN G808 RS232	1	I 32	P230561	U#14C88 MC SO14 P	1
				I 39	P230652	U#75C189A SN SO14 P	1
				I 63	R132824	U 2800 TBA DIP14 P	1
C 68	P210041	C# X7R MU 10N K 50 0805	1	J 61	B338800	J PHN FBS D 3.5MON P	1
C 75	P210041	C# X7R MU 10N K 50 0805	1	J 49	R3135005	JDE P8MBS P9FUMBLPGDB	1
C 58	P210095	C# X7R MU 330N M 50 1812	1	J 45	R3135015	JDE P8FBS P9FUMBLPGDB	1
C 67	P210112	C# COG MU 1N2J 50 1206	1	J 81	R313949	JCT H MBS P 9M2SN WH	1
C 77	P210121	C# COG MU 330P J 50 1206	1	L 60	R3061582	CH AX NS 1.5 MH	1
C 15	P210122	C# X7R MU 100N K 50 1206	1	L 70	R3061582	CH AX NS 1.5 MH	1
C 16	P210122	C# X7R MU 100N K 50 1206	1	PC	R780372	PCB*800RS232+RX	1
C 22	P210122	C# X7R MU 100N K 50 1206	1	Q 52	P232050	Q#BC857B P SS SOT23	1
C 26	P210122	C# X7R MU 100N K 50 1206	1	Q 55	P232051	Q#BC847B N SS SOT23	1
C 28	P210122	C# X7R MU 100N K 50 1206	1	Q 56	P232051	Q#BC847B N SS SOT23	1
C 82	P210122	C# X7R MU 100N K 50 1206	1	R 40	P200387	R# CE H100E F 0W25 1206	1
C 73	P210140	C# X7R MU 4N7K 50 1206	1	R 42	P200387	R# CE H100E F 0W25 1206	1
C 74	P210140	C# X7R MU 4N7K 50 1206	1	R 43	P200387	R# CE H100E F 0W25 1206	1
C 79	P210140	C# X7R MU 4N7K 50 1206	1	R 44	P200387	R# CE H100E F 0W25 1206	1
C 66	P212001	C# TA 2M2M 20 3528	1	R 57	P200417	R# CE H 1K8 F 0W25 1206	1
C 19	P212024	C# TA 10M M 35 7343	1	R 41	P200423	R# CE H 3K3 F 0W25 1206	1
C 20	P212024	C# TA 10M M 35 7343	1	R 46	P200423	R# CE H 3K3 F 0W25 1206	1
C 65	P212031	C# TA 22M M 16 7343	1	R 51	P200429	R# CE H 5K6 F 0W25 1206	1
D 71	P234055	D#BAT54 SCH SOT23	1	R 72	P200435	R# CE H 10K F 0W25 1206	1
D 14	P234099	D#4148 R DMMELF	1	R 59	P200443	R# CE H 22K F 0W25 1206	1
D 17	P234099	D#4148 R DMMELF	1	R 69	P200459	R# CE H100K F 0W25 1206	1
D 30	P234099	D#4148 R DMMELF	1	R 76	P200459	R# CE H100K F 0W25 1206	1
D 31	P234099	D#4148 R DMMELF	1	R 50	R1011008	R CFFH 1E J 0W25	1
D 33	P234099	D#4148 R DMMELF	1	Z 62	P234014	D#ZEN 5V6 0W3 C SOT23	1
D 34	P234099	D#4148 R DMMELF	1	Z 13	P234046	D#ZEN 12V 0W5 C DMMELF	1
D 35	P234099	D#4148 R DMMELF	1	Z 18	P234046	D#ZEN 12V 0W5 C DMMELF	1
D 36	P234099	D#4148 R DMMELF	1				
D 37	P234099	D#4148 R DMMELF	1				
D 38	P234099	D#4148 R DMMELF	1				
D 64	R131681	D O BPW41N PIN	1				





CONNECTION WITH
IRIS2 CCD CAM

CONNECTION WITH CONTROLLER

Name IRIS 2 MODULE		Sheet 1 / 1	
Module No R762722	Index 0	PCB No R780461	Rev 1
Date 26-11-1997	Drawn JVDY	Checked RTH	
BARCO PROJECTION SYSTEMS			

Modifications reserved

IRIS Control/CAM CCD

R762722
R762724

Parts listing Iris Control R762722


Prf	Itemno	Description	Qty
10	R3631059	SCR Z933 M 3 X 8 SS 1	
	R3661026	NUT D934 M 3 SS 1	
	R367502	SPR D6798AD 3,2D 6 STZN	1
	R367699	RVT AVTRON2,5L 8,1 AL	2
C 1	P210041	C# X7R MU 10N K 50 0805	1
C 2	P210169	C# X7R MU 220N K 50 1210	1
C 3	P210151	C# X7R MU 18N K 50 1206	1
C 4	P210068	C# X7R MU 22N K 50 1206	1
C 5	P210068	C# X7R MU 22N K 50 1206	1
C 6	P210018	C# COG MU 33P J 50 0805	1
C 7	P210016	C# COG MU 15P J 50 0805	1
C 8	P210073	C# COG MU 82P J 50 1206	1
C 9	P210213	C# Y5V MU 100N Z 25 0805	1
C 10	P210213	C# Y5V MU 100N Z 25 0805	1
C 11	P210213	C# Y5V MU 100N Z 25 0805	1
C 12	P210213	C# Y5V MU 100N Z 25 0805	1
C 13	P210213	C# Y5V MU 100N Z 25 0805	1
C 14	P210213	C# Y5V MU 100N Z 25 0805	1
C 15	P210213	C# Y5V MU 100N Z 25 0805	1
C 16	P210213	C# Y5V MU 100N Z 25 0805	1
C 17	P210213	C# Y5V MU 100N Z 25 0805	1
C 18	P210213	C# Y5V MU 100N Z 25 0805	1
C 19	P210213	C# Y5V MU 100N Z 25 0805	1
C 20	P210001	C# COG MU 10P C 50 0805	1
C 21	P210136	C# Y5V MU 330N Z 50 1206	1
C 22	P212009	C# TA 1M M 16 3216 1	
C 23	P212009	C# TA 1M M 16 3216 1	
C 24	P212005	C# TA 47M M 10 7343	1
C 25	P212040	C# TA 100M M6V3 7343	1
C 26	P212006	C# TA 4M7M 16 3528	1
C 27	P210029	C# COG MU 2N2J 50 1206	1
D 1	P234099	D#4148 R DMMELF	1
D 2	P234063	D#LED LGS260 GRE SOT23	1
I 1	P231121	U#8282A-4 EPF PLCC84 P	1
I 2	P231025	U#8709A TDA SOL28 P	1
I 3	R134001	U 7805 TO220 P 1	
I 4	P230051	U#74HCT245 SOL20 I	1
I 5	P230073	U#74HCT123 SO16 I 1	
I 6	P231268	U#SRAM 32KX8 15SOJ28 P	1
I 7	P230096	U#74HCT02 SO14 I 1	
I 8	P230969	U#1881 LM SO8 P 1	
J 1	R314071	J EUR2C2MBS P32 E1C2S 1,6	1
J 40	R313923	J CT H MBT P 3 M2SN WH	1
L 1	R3061222	CH AX NS 1.5 UH	1
PC	R780461	PCB IRIS2 CTRL	1
R 1	P201063	R# CE H100E F 0W12 0805	1
R 2	P201075	R# CE H330E F 0W12 0805	1
R 3	P201107	R# CE H 6K8 F 0W12 0805	1
R 4	P201111	R# CE H 10K F 0W12 0805	1
R 5	P201111	R# CE H 10K F 0W12 0805	1
R 6	P201111	R# CE H 10K F 0W12 0805	1
R 7	P201060	R# CE H 75E F 0W12 0805	1
R 8	P201083	R# CE H680E F 0W12 0805	1
R 9	P201095	R# CE H 2K2 F 0W12 0805	1
R 10	P201047	R# CE H 22E F 0W12 0805	1
R 11	P201111	R# CE H 10K F 0W12 0805	1
R 13	P201155	R# CE H680K F 0W12 0805	1

R 14	P201087	R# CE H 1K F 0W12 0805	1
R 15	P201087	R# CE H 1K F 0W12 0805	1
R 16	P201087	R# CE H 1K F 0W12 0805	1
R 17	P201087	R# CE H 1K F 0W12 0805	1
R 18	P201087	R# CE H 1K F 0W12 0805	1
R 19	P201087	R# CE H 1K F 0W12 0805	1
R 20	P201103	R# CE H 4K7 F 0W12 0805	1
R 21	P201103	R# CE H 4K7 F 0W12 0805	1
R 22	P201103	R# CE H 4K7 F 0W12 0805	1
R 23	P201354	R# CE H 0E J 0W12 0805	1
R 26	P201354	R# CE H 0E J 0W12 0805	1
R 27	P201079	R# CE H470E F 0W12 0805	1
X 1	R307122	XO 32M000000 CN-10DIP 8M	1

Parts listing Iris CAM CCD R762724

Prf	Itemno	Description	Qty
1000	R322175	CAMERA CCD+LENS 6 MM 12V	1
1010	R811328	FRM G808 CNV FR IRISFIX/2	1
1020	B360425	SPR L 7,5 D 2,6D 4 PLWH	1
1030	V362004	SCR D84 M 2 X 10 STZN	1

PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPOR- TANT TO SAFETY. Before replacing any of these components, read carefully the ser-vice safety precautions.

Note: For Graphics 1209S

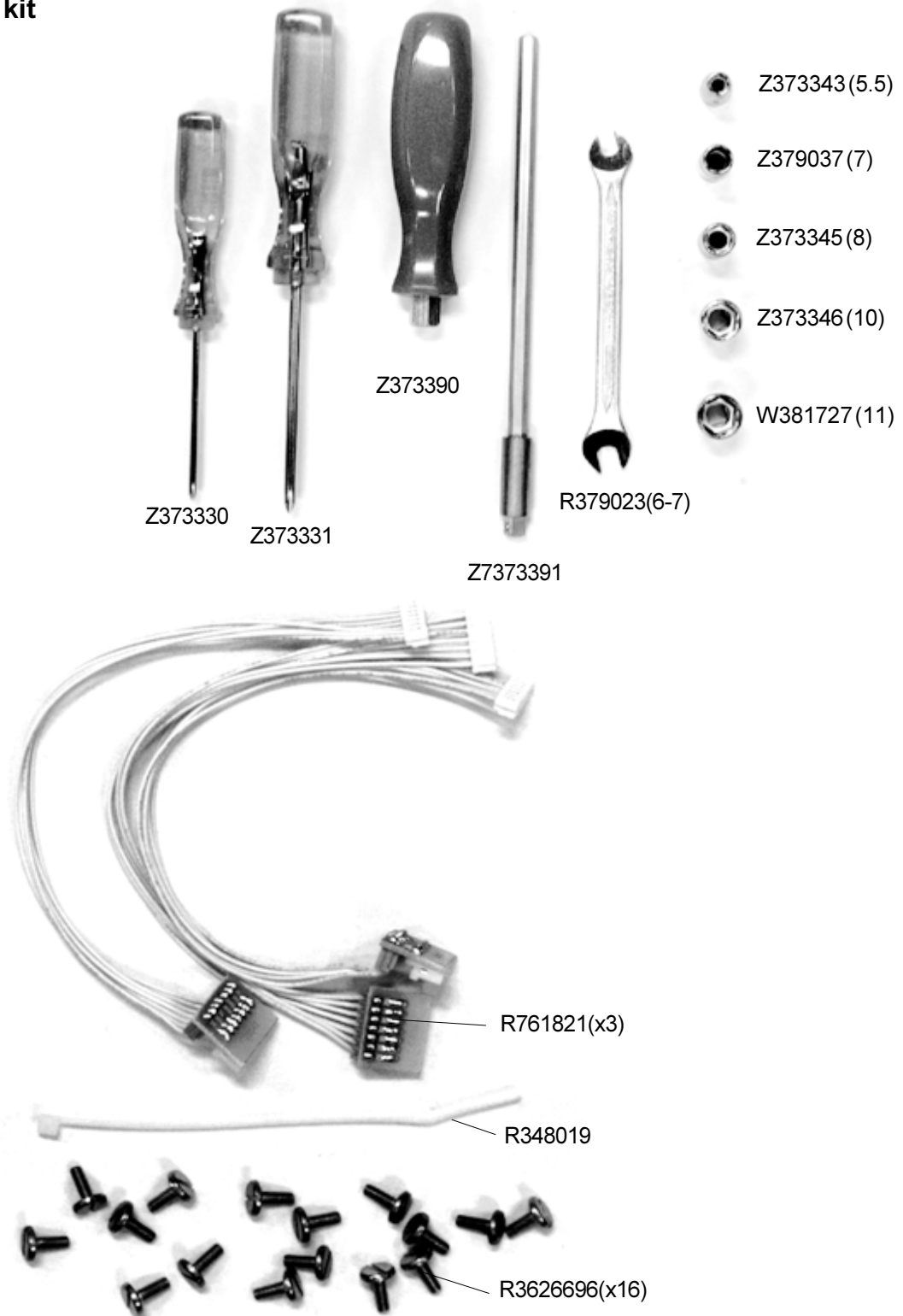
Iris2 Installation & adjustment kit order number R9828270

Iris2 Installation & adjustment manual order number R5975237

SAFETY NOTICE

Before servicing the projector, it is important that the service technician read and follow the 'SAFETY PRECAUTIONS' and 'PRODUCT SAFETY NOTICES' in the service manual.

Contents of the kit



R5975737 Rev. 02

Contents of the kit (continuation)



Parts listing Service Kit R9827605

ITEM NO.	DESCRIPTION	QUANTITY	ITEM NO.	DESCRIPTION	QUANTITY
R348019	CBLA TIE B L100 W2.5	1	R805868	FRM G808 CNV PF EXT1	2
R3626696	SCR D921 M 3 X 8 SS	16	R805869	FRM G808 CNV PF EXT2	2
R379023	SLEUTEL ZESK PLAT 6-7	1	W381727	DOP ZESK 11 2400M	1
R379037	DOP ZESK 7 F32001	1	Z373330	SCHROEVENDR KRUIS PH0 60	1
R5975737	MAN IN SERVICE KIT CRT	1	Z373331	SCHROEVENDR KRUIS PH1 80	1
R761819	UNEXT_BDPJ49*800 EURO	2	Z373343	DOP ZESK 5.5 2400M	1
R761821	CDU EXT_CDPJ49*800 RGB	3	Z373345	DOP ZESK 8 2400M	1
R762806	UNEXT_BD*808 CNV	3	Z373346	DOP ZESK 10 2400M	1
			Z373390	"BITHOUDER 1/4" 281 "	1
			Z373391	"BIT KOPP1/4" ZESK-VIER 175"	1

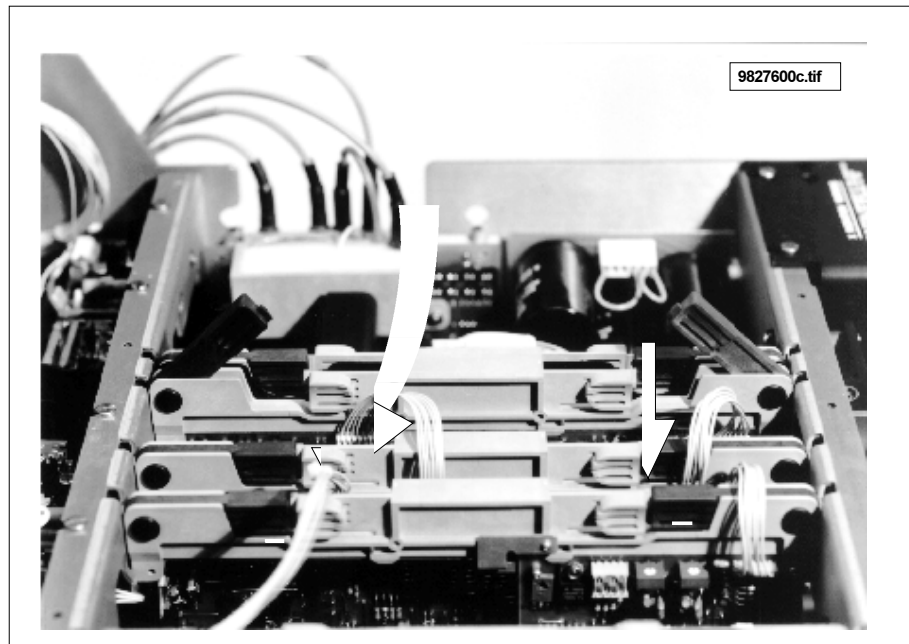
Introduction

Repairing the Barco 800 series projectors on component level is made possible by using the extension boards and the extensions cable units, delivered as **service kit**.

Using the extension boards for Euro cards

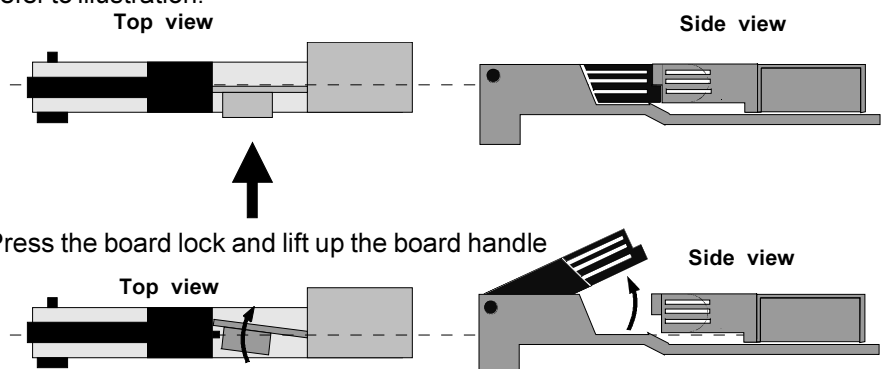
How to extract a module

Each board is locked in the main chassis on both sides.



To unlock the board, proceed as follows:

Refer to illustration:

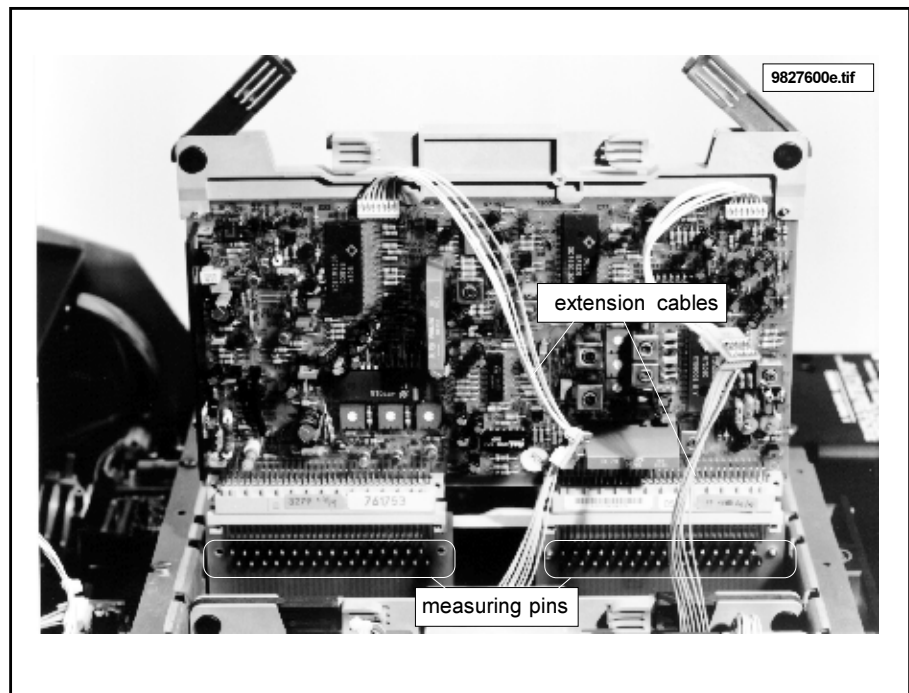


Repeat this action on both sides of the module and extract the module out of the main frame.

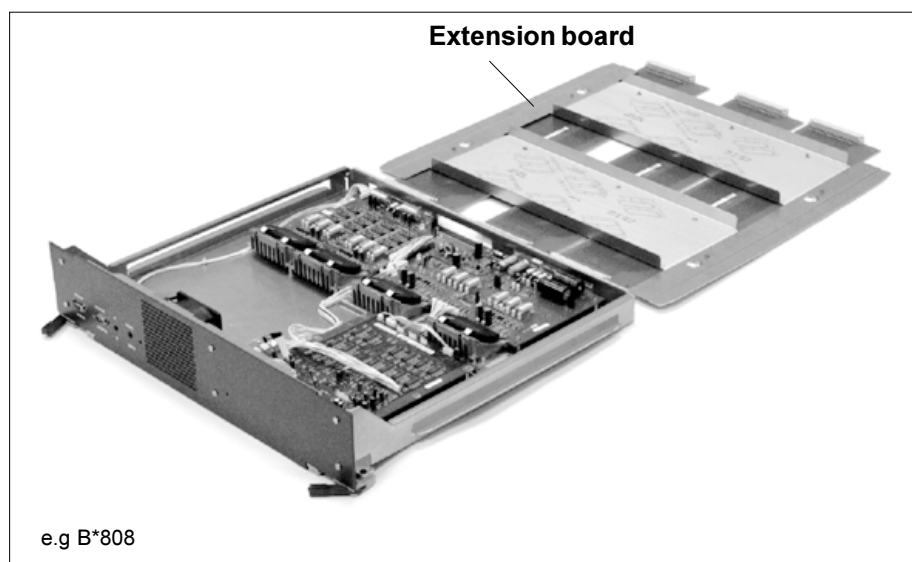
Example: repairing the decoder module

- Unplug the two connection cables to and from the Decoder module.
- Remove the Decoder module out of the main frame as already described.
- Plug the extension boards on the two decoder board connectors on the main frame.
- Put the Decoder module on the extensions boards.
- Re-install the cable connection by inserting the extension cables.

Important: the extension board for Eurocard is provided on each printed circuit foil with measuring pins.



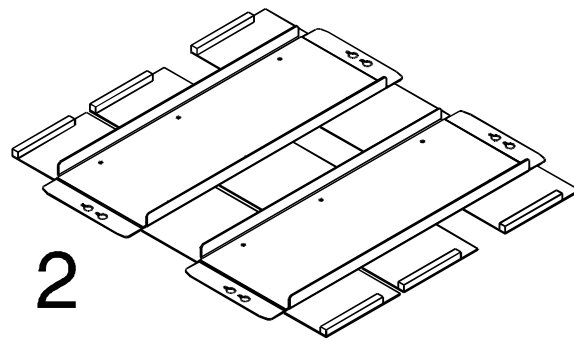
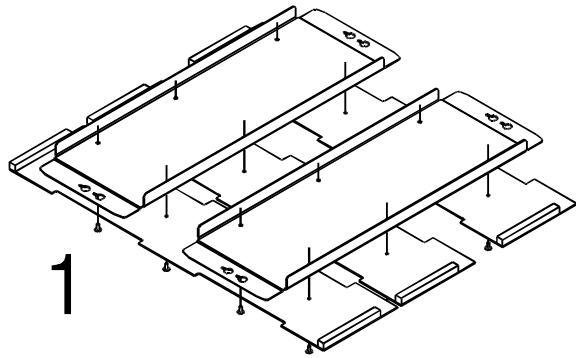
Using the extension board for the Convergence module



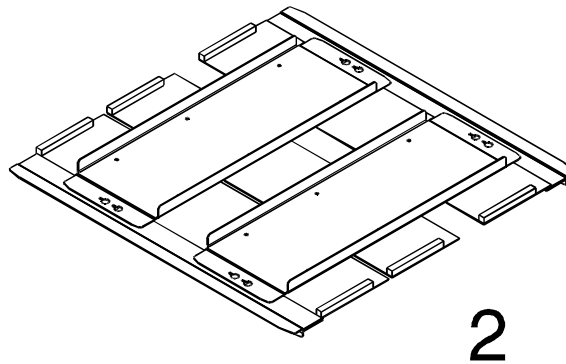
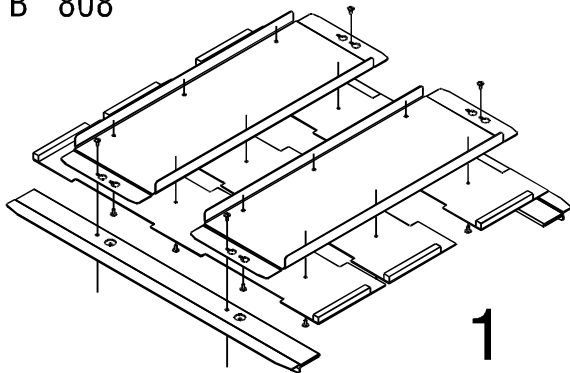
Convergence Extension module assembly for different projector types

B* 80* - B* 110*

B* 120* - B* 160*

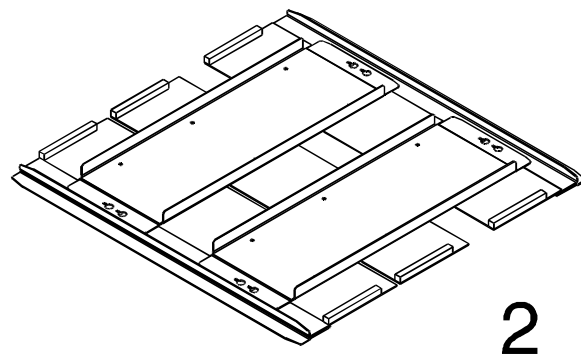
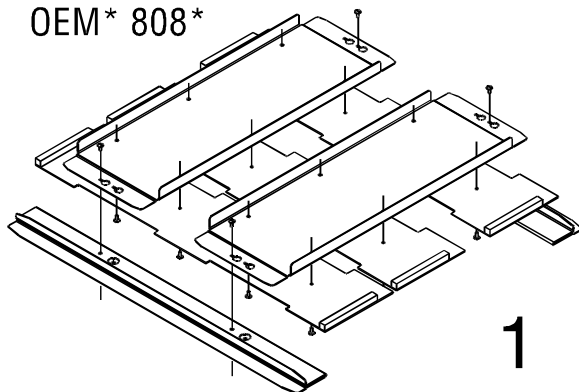


B* 808*



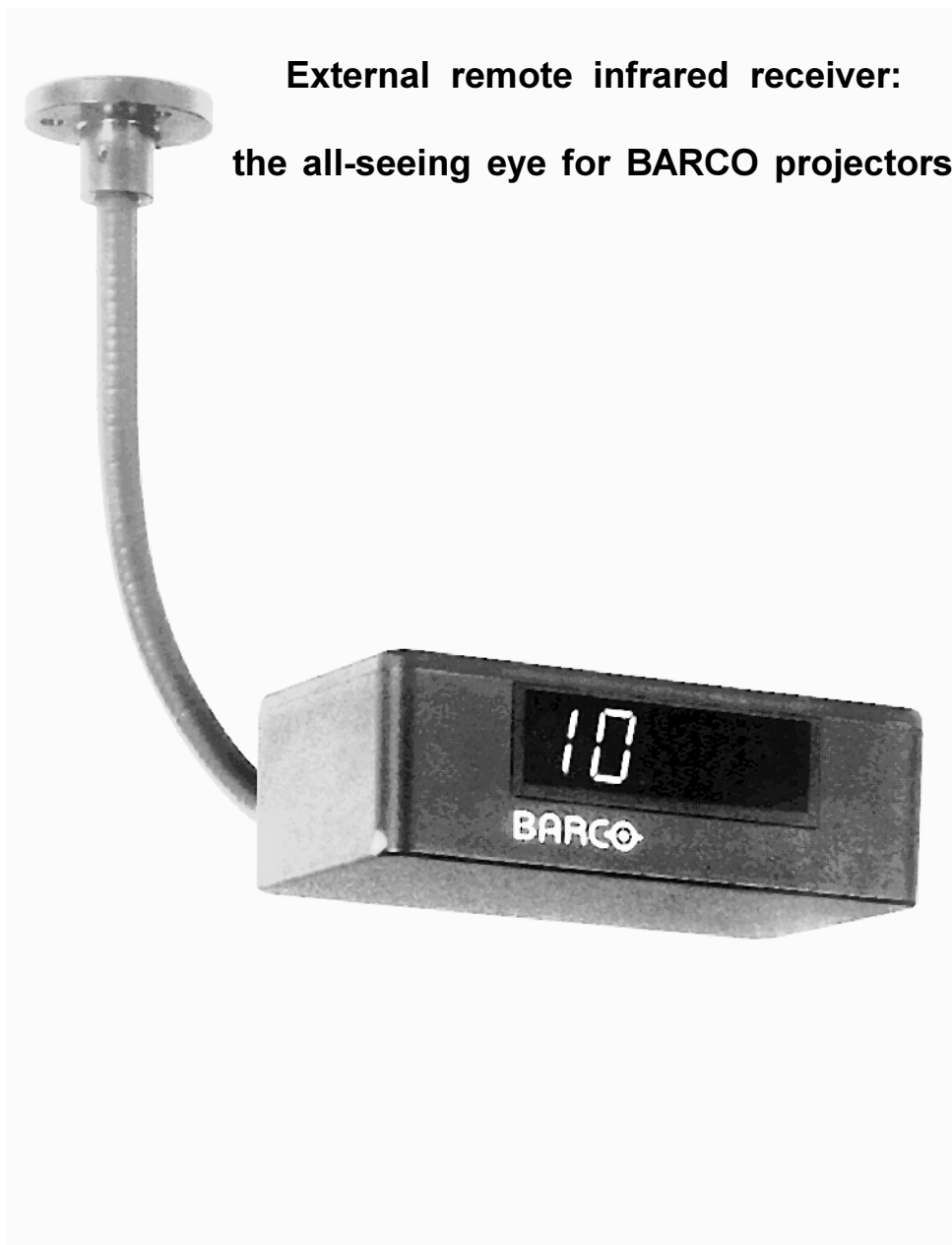
RETRO* 808*

OEM* 808*



B* BARCO-VISION/DATA AND GRAPHICS types

80* Projectors 800 series

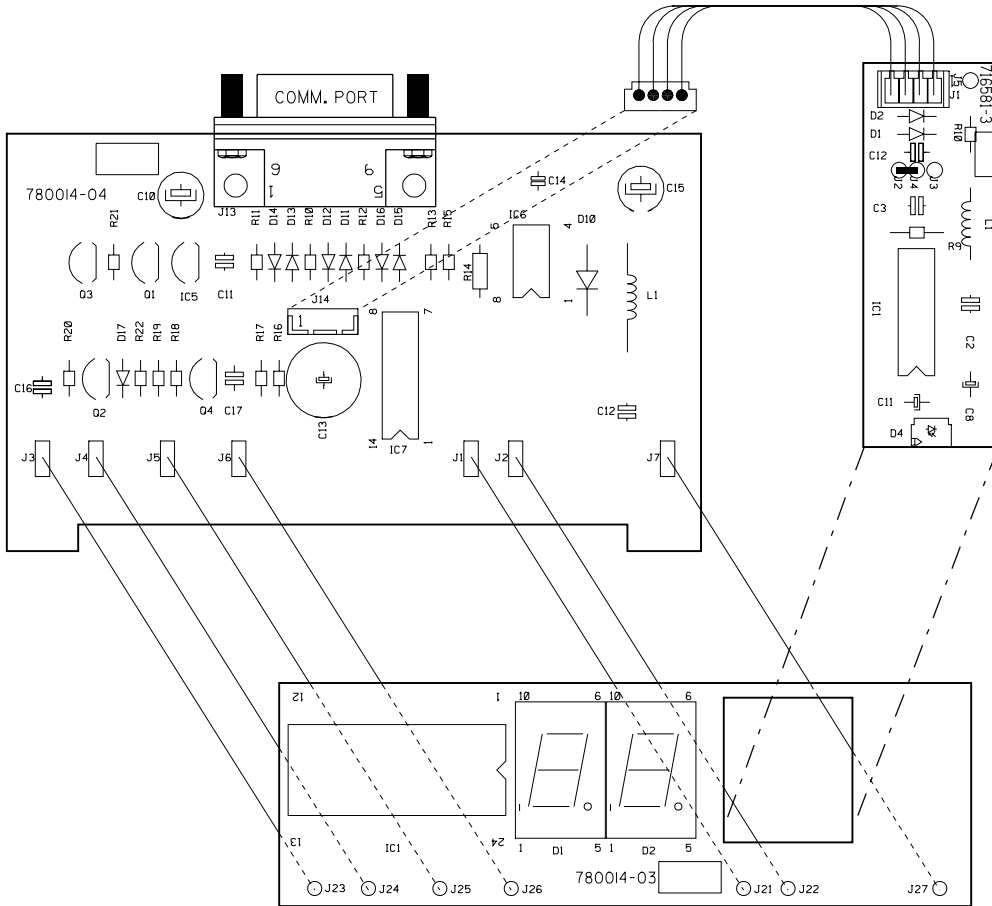
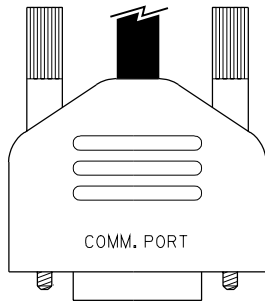


BARCO's external infrared remote receiver facilitates the use of the projector's infrared remote control in difficult installations.

The infrared receiver can be directly hardwired to any digitally controlled BARCO projector or through a switcher. A LED display indicates the selected source number. The special flexible fixation arm of the receiver allows to fix it in almost any position on the ceiling or wall.

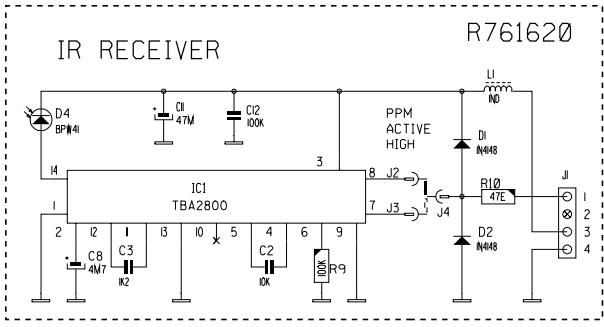
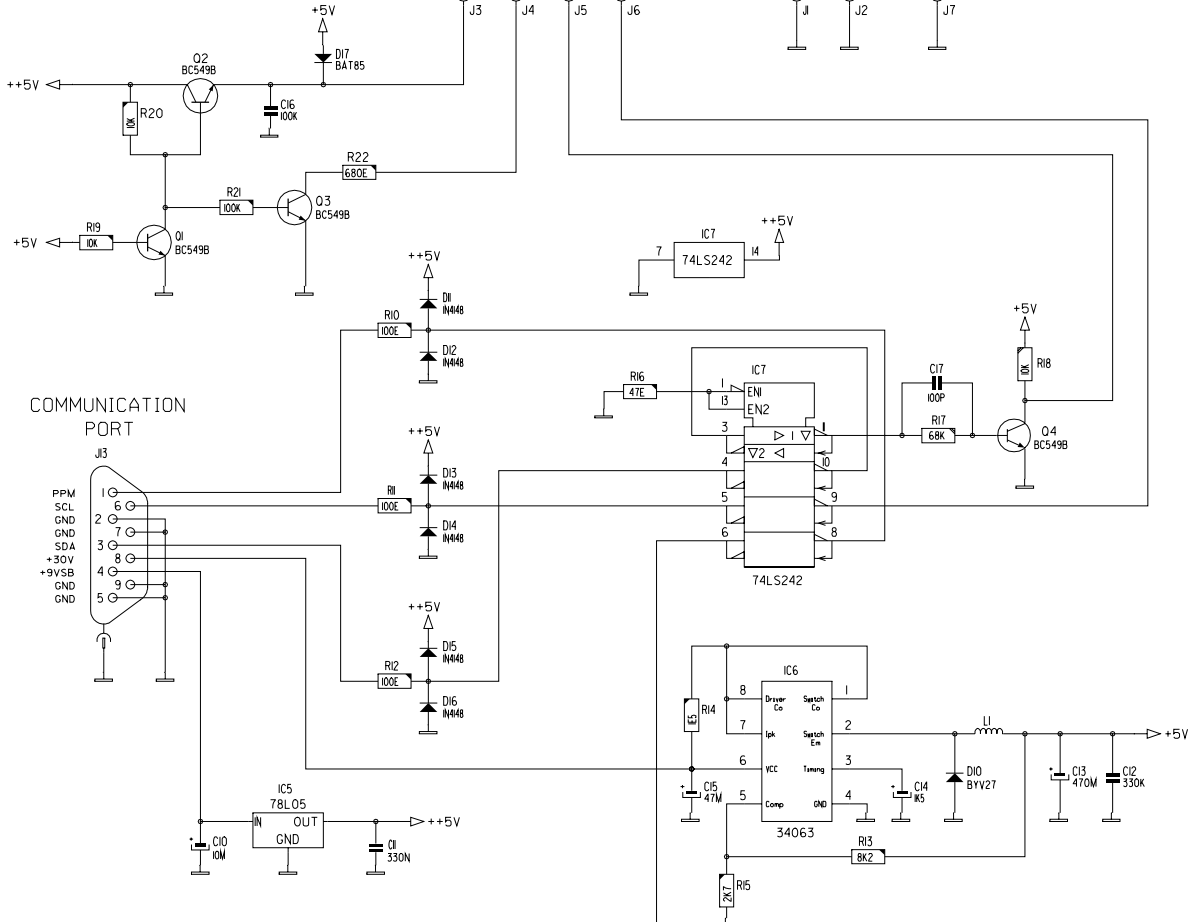
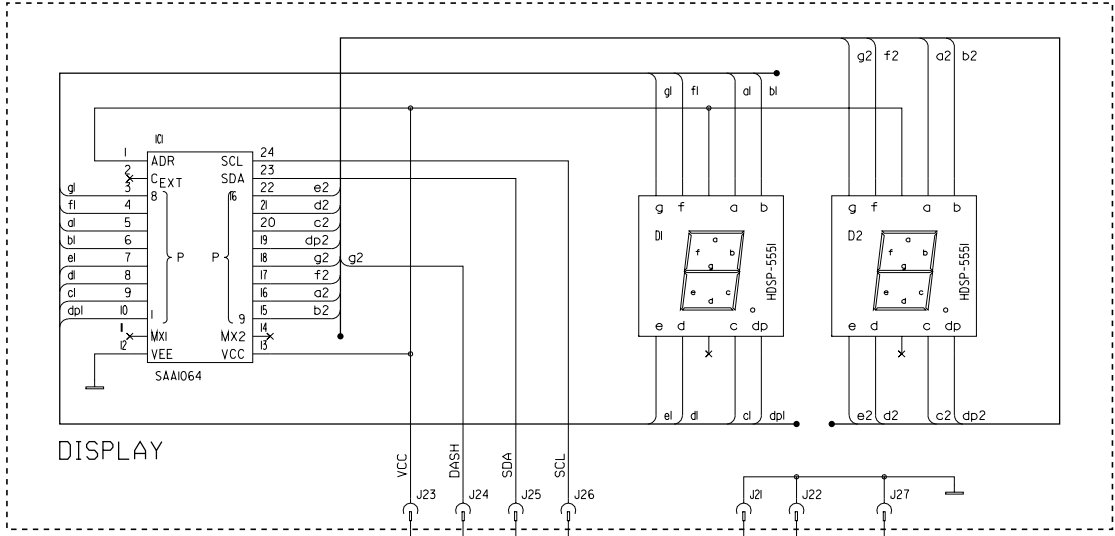
R5975174 r02

IR REMOTE RECEIVER



COMP.	LOC.	COMP.	LOC.	COMP.	LOC.
C10	A 2	IC5	A 3	L1	C 3
C11	B 3	IC6	B 2		
C12	C 3	IC7	B 3	O1	A 3
C13	B 3			O2	A 3
C14	C 2	J1	B 3	O3	A 3
C15	C 2	J2	B 3	O4	A 3
C16	A 3	J3	A 3		
C17	B 3	J4	A 3	R10	B 2
		J5	A 3	R11	B 2
D1	C 4	J6	B 3	R12	B 2
D2	C 4	J7	C 3	R13	B 3
D10	C 2	J3	B 2	R14	B 3
D11	B 2	J14	B 3	R15	B 3
D12	B 2	J21	C 5	R16	B 3
D13	B 2	J22	C 5	R17	B 3
D14	B 2	J23	B 5	R18	A 3
D15	B 2	J24	B 5	R19	A 3
D16	B 2	J25	B 5	R20	A 3
D17	A 3	J26	B 5	R21	A 3
		J27	D 5	R22	A 3
IC1	B 4				

Name		IR REMOTE RECEIVER		Sheet	
Module No		R7617625		1/1	
Index	1	PCB No	R780014	Rev	4
Date	18-07-1996	Drawn	JVDY	Checked	GT
BARCO PROJECTION SYSTEMS					



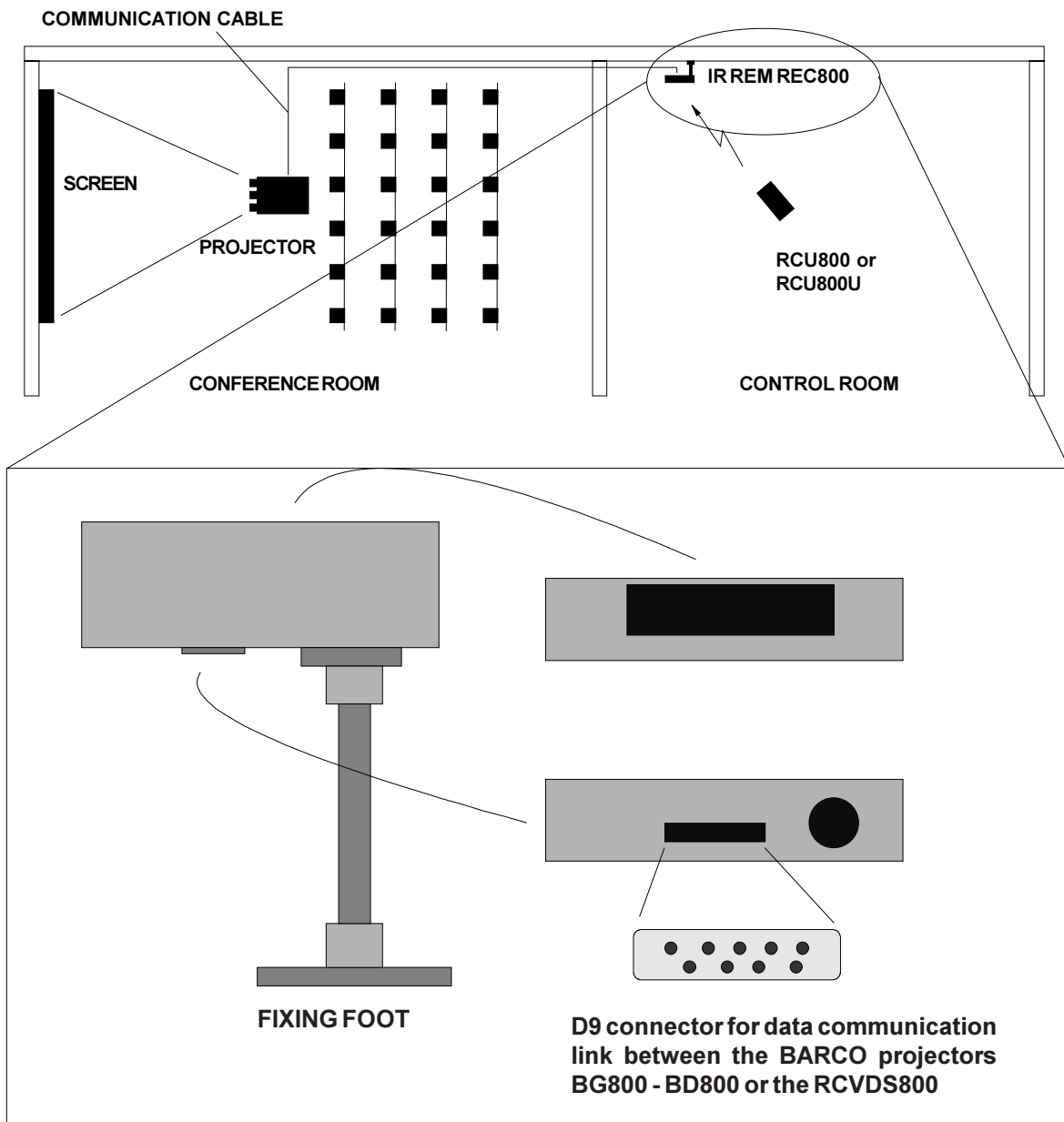
IR REMOTE RECEIVER

Name		Sheet	
IR REMOTE RECEIVER		1/1	
Module No.	Index	PCB No.	Rev
R7617625	- 1	R780014	- 4
Date	Drawn	Checked	
18-07-1996	JVDY	GT	
BARCO PROJECTION SYSTEMS			

Modifications reserved

MOUNTING INSTRUCTIONS for the INFRA RED REMOTE RECEIVER 800 (98 27515)

This stand-alone IR Receiver connected to the BG 800 - BD800 projectors or the RCVDS800 with the available D9-D9 communication cable, refer to info sheet 59 75134, allows to transfer the IR signals from the RCU800 or RCU800U to the projector and displaying the selected input.

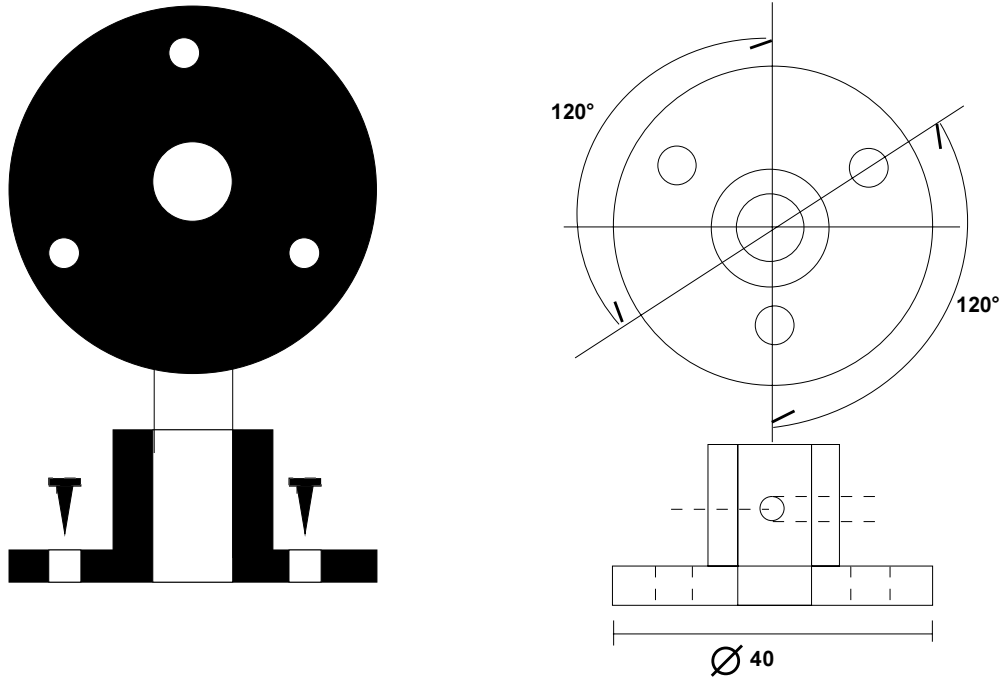


OPERATION

Point the IR transmitter RCU800 or RCU800U at the front side of the IR Remote Receiver 800 (face with window).

Refer to owner's manual of the respective projector or RCVDS800 for further instructions about the use of the IR remote control.

Mounting instructions:



Mount the fixing foot of the IR Remote Receiver on the wall by means of three screws.

Install the communication connection between IR REMOTE RECEIVER and the PROJECTOR 800 serie by means of the D9-D9 communication cable.

IR Remote Receiver 800

R9827515

Parts listing R9827515

ITEM NO.	DESCRIPTION	QUANTITY	L 1	R3061341	CH AX NS 100 UH	1
R593082	BOX201 245X 130X130 4RB	1	PC	R780014	PCB PJ49 800 DSPL IR1	1
R593229	LS FOAM 700X140X15	1	Q 1	R1314295	Q BC549B N SS TO92	
R593545	BAG ASTSH 203X 305	1	Q 2	R1314295	Q BC549B N SS TO92	
R5975174	MAN INS PJ49 IR RX	1	Q 3	R1314295	Q BC549B N SS TO92	
R7617625	UN DSPL PJ49 G800 IR UNV	1	Q 4	R1314295	Q BC549B N SS TO92	

Parts listing 76 17625

SIT.	ITEM NO.	DESCRIPTION	QUANTITY
142	R3621195	SCR D7985 M 2.5X 10 STZB	3
131	R362188	SCR D916 M 3 X 4 STBK	3
141	R362188	SCR D916 M 3 X 4 STBK	3
143	R366110	NUT D934 M 2.5 STZN	3
150	R593526	BAG PE 160X 220X0.06 WL	1
110	R721800	WDW IRREC+DISRCVDS	1
	R761620	UNRX EP49 RCVDS800 IR	1
130	R800738	HSGEPRCVDS3 IR RX FIX	1
140	R800739	HSGEPRCVDS3 IR RX FIX	1
120	R800740	HSGEPRCVDS3 IR RX FLX	1
100	R802926	HSG49C DSPL HSG	1

C 10	R111531	C EL RA 10M M 35E2 85	
C 11	R113730	C POMERA 330N K 63E2 85	
C 12	R113730	C POMERA 330N K 63E2 85	
C 13	R111468	C EL RA 470M Z 16E2 85	1
C 14	R112741	C CE MI 1N5K100E2	
C 15	R111486	C EL RA 47M M 50E2 85	
C 16	V1127830	C X7R MU 100N K 50E2 125	
C 17	R112242	C NP0 MI 100P G100E2	
D 1	R131685	LED 1DIG CA RD H 7.62	1
D 2	R131685	LED 1DIG CA RD H 7.62	1
D 10	R131950	D BYV27-150 AR SOD57	1
D 11	R131621	D S 1N4148 075150 DO35	
D 12	R131621	D S 1N4148 075150 DO35	
D 13	R131621	D S 1N4148 075150 DO35	
D 14	R131621	D S 1N4148 075150 DO35	
D 15	R131621	D S 1N4148 075150 DO35	
D 16	R131621	D S 1N4148 075150 DO35	
D 17	R1316361	D Y BAT85 030200 DO34	
I 1	R132825	U 1064 SAA DIP24 P	1
I 5	R134032	U 78L05AC TO92 P	1
I 6	R137625	U 34063 DIP8 P	1
I 7	R137516	U 74LS242 DIP14 P	1
J 1	R313284	J CIS MBS P 1 L6.2 RL	
J 2	R313284	J CIS MBS P 1 L6.2 RL	
J 3	R313284	J CIS MBS P 1 L6.2 RL	
J 4	R313284	J CIS MBS P 1 L6.2 RL	
J 5	R313284	J CIS MBS P 1 L6.2 RL	
J 6	R313284	J CIS MBS P 1 L6.2 RL	
J 7	R313284	J CIS MBS P 1 L6.2 RL	
J 13	R3135015	J DEP8 FBSP9 FUMBLPGDB	1
J 14	R313924	J CTH MBTP 4 M2SN WH	1

R 10	R101524	R MF H100E F 0W4 E3	
R 11	R101524	R MF H100E F 0W4 E3	
R 12	R101524	R MF H100E F 0W4 E3	
R 13	R101547	R MF H 8K2 F 0W4 E3	
R 14	V1026173	R MF H 1E5 F 0W6 E4	
R 15	R101541	R MF H 2K7 F 0W4 E3	
R 16	R101520	R MF H 47E F 0W4 E3	
R 17	R101558	R MF H 68K F 0W4 E3	
R 18	R101548	R MF H 10K F 0W4 E3	
R 19	R101548	R MF H 10K F 0W4 E3	
R 20	R101548	R MF H 10K F 0W4 E3	
R 21	R101560	R MF H100K F 0W4 E3	
R 22	R101534	R MF H680E F 0W4 E3	

Parts listing 76 1620

SIT.	ITEM NO.	DESCRIPTION	QUANTITY
1	R805067	FRM52 RX IR SCRNFRL	1
	R761620D	CD CT FTMS P 4 130	1
C 2	R115940	C PP RA 10N J 63E2 85	1
C 3	R1159181	C PP RA 1N2J100E2 85	1
C 8	R1115915	C EL5 RA 4M7M 35E2 85	1
C 11	R111476	C EL RA 47M M 25E2 85	1
C 12	R1127741	C Z5U MU 100N Z 50E2 85	1
D 2	R131744	D ZEN 5V6 0W5 C DO35	1
D 4	R131681	D OBPW41N PIN	1
I 1	R132824	U 2800 TBA DIP14 P	1
L 1	R3061582	CH AX NS 1.5 MH	1
PC	R716581	PCDEP49RCVDS800RX IR	1
R 9	R101560	R MF H100K F 0W4 E3	1
R 10	R101520	R MF H 47E F 0W4 E3	1