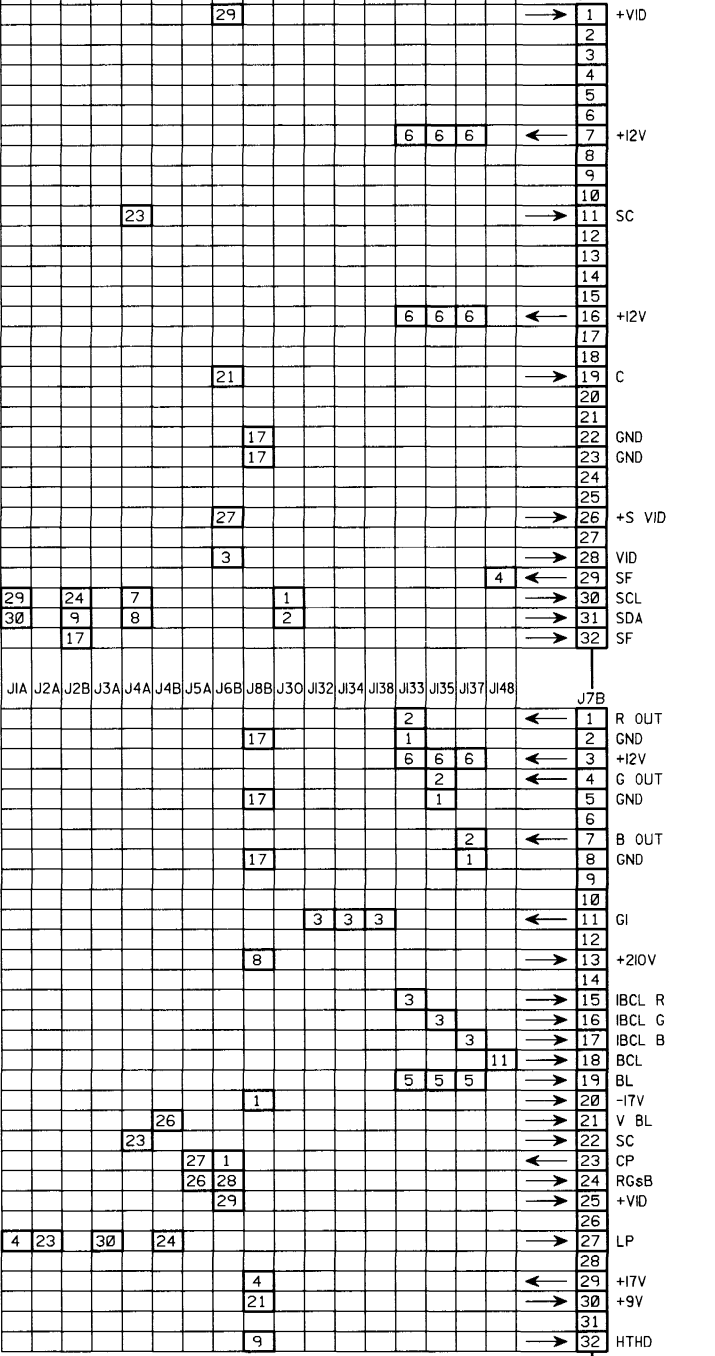
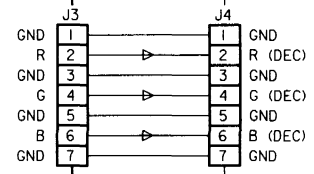


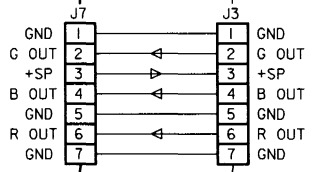
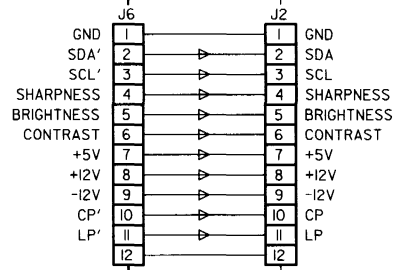
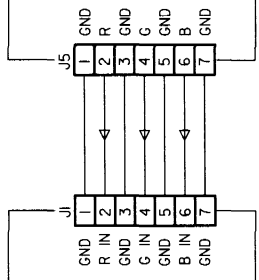
CONVERGENCE MODULE
HORIZONTAL SHIFT MODULE
HORIZONTAL SHIFT MODULE
HORIZONTAL DEFLECTION MODULE
VERTICAL DEFLECTION MODULE
SECOND RGB ANALOG MODULE
RGB ANALOG INPUT MODULE
SWITCH MODE INPUT + INPUT MODULE
CONTROLLER MODULE
CRT SOCKET MODULE
CRT SOCKET MODULE (RED)
RGB OUTPUT MODULE (GREEN)
RGB OUTPUT MODULE (BLUE)
RGB OUTPUT MODULE (RED)
EHT MODULE



DECODER



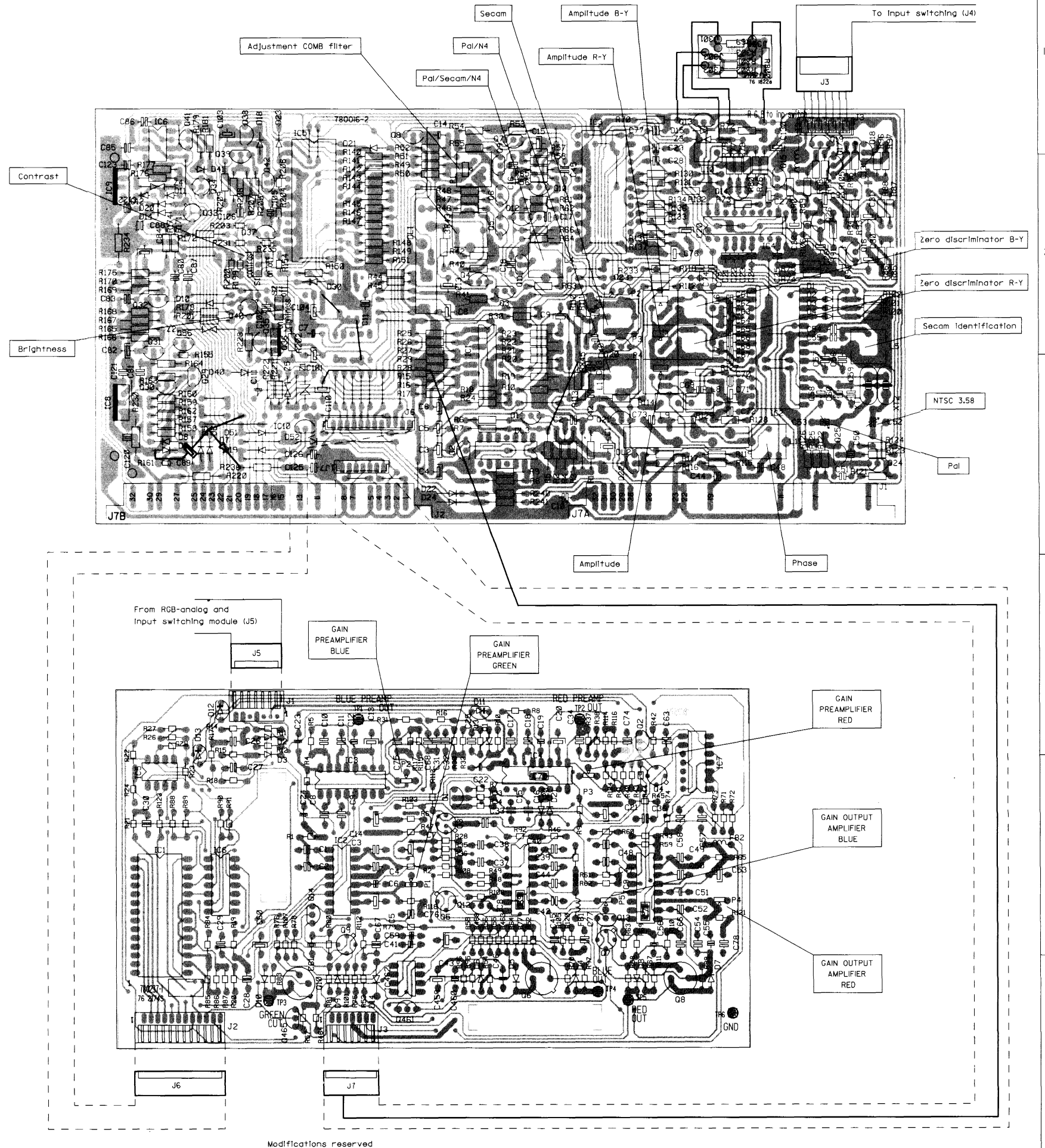
RGB ANALOG INPUT AND INPUT SWITCHING MODULE



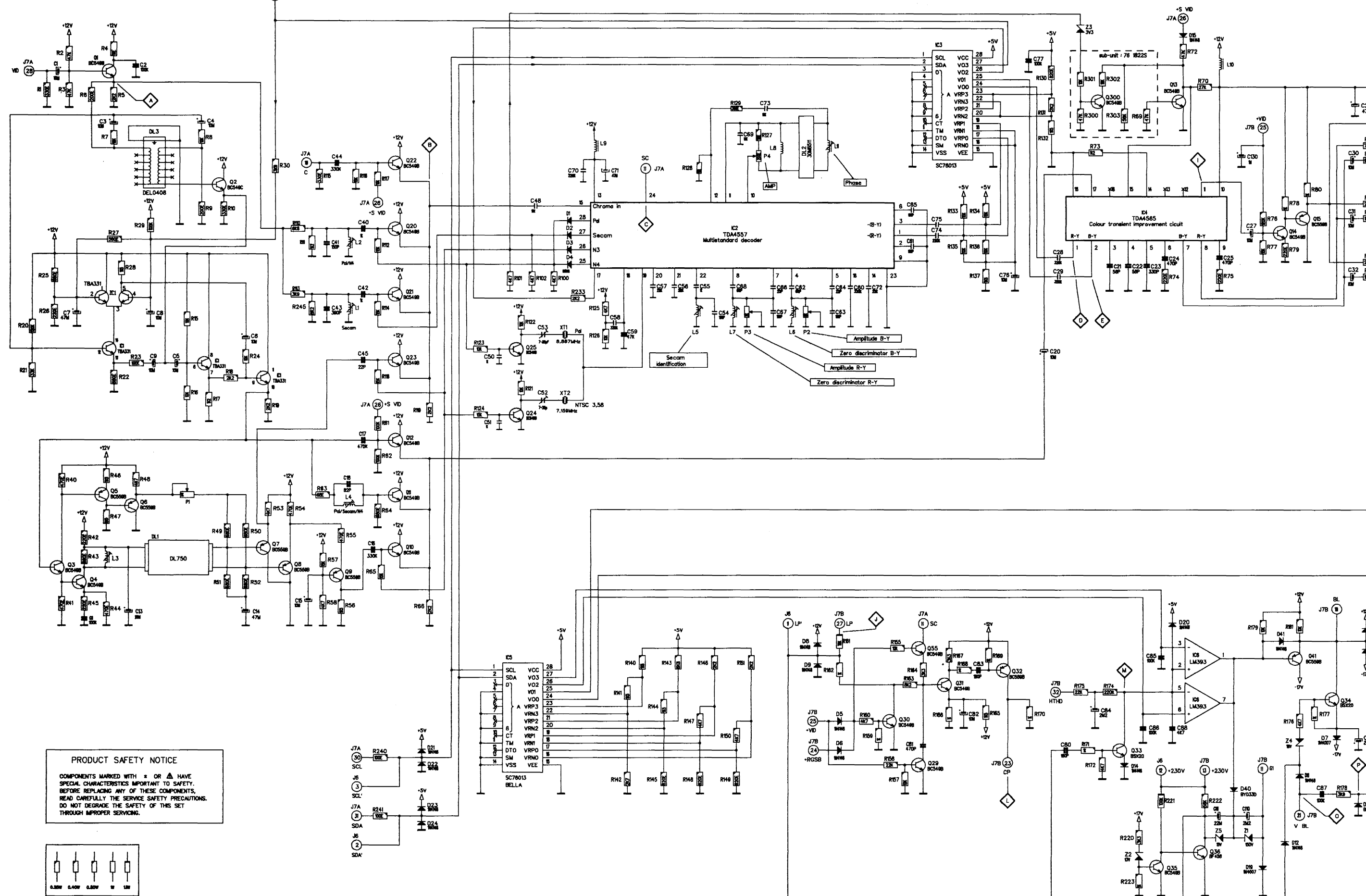
RGB DRIVER

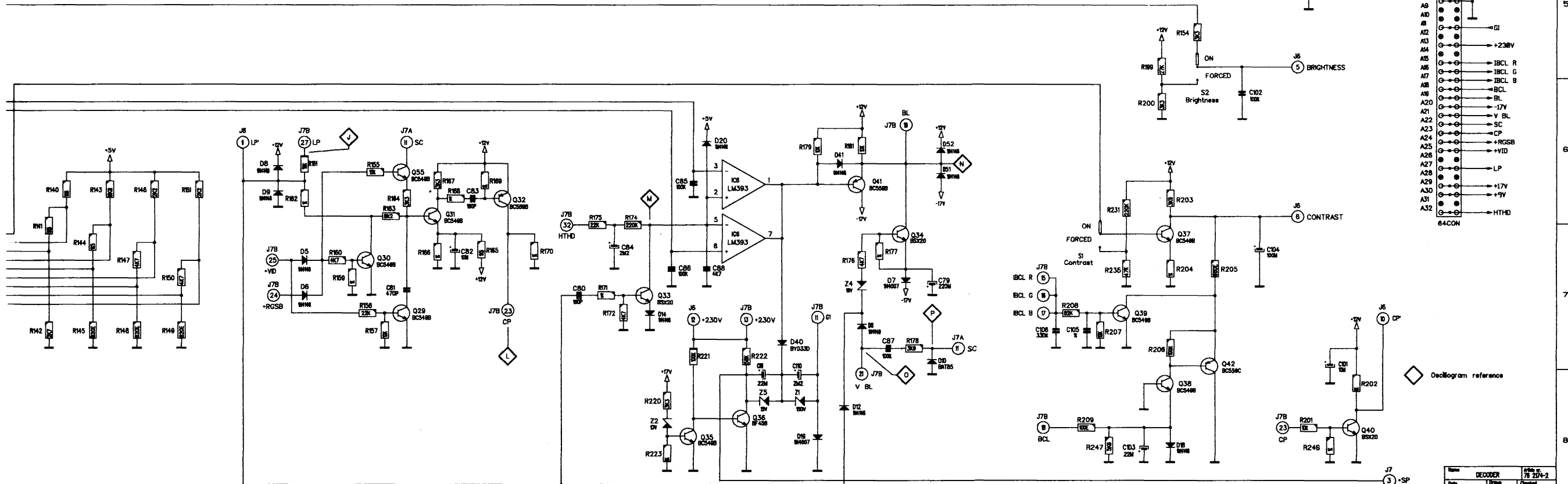
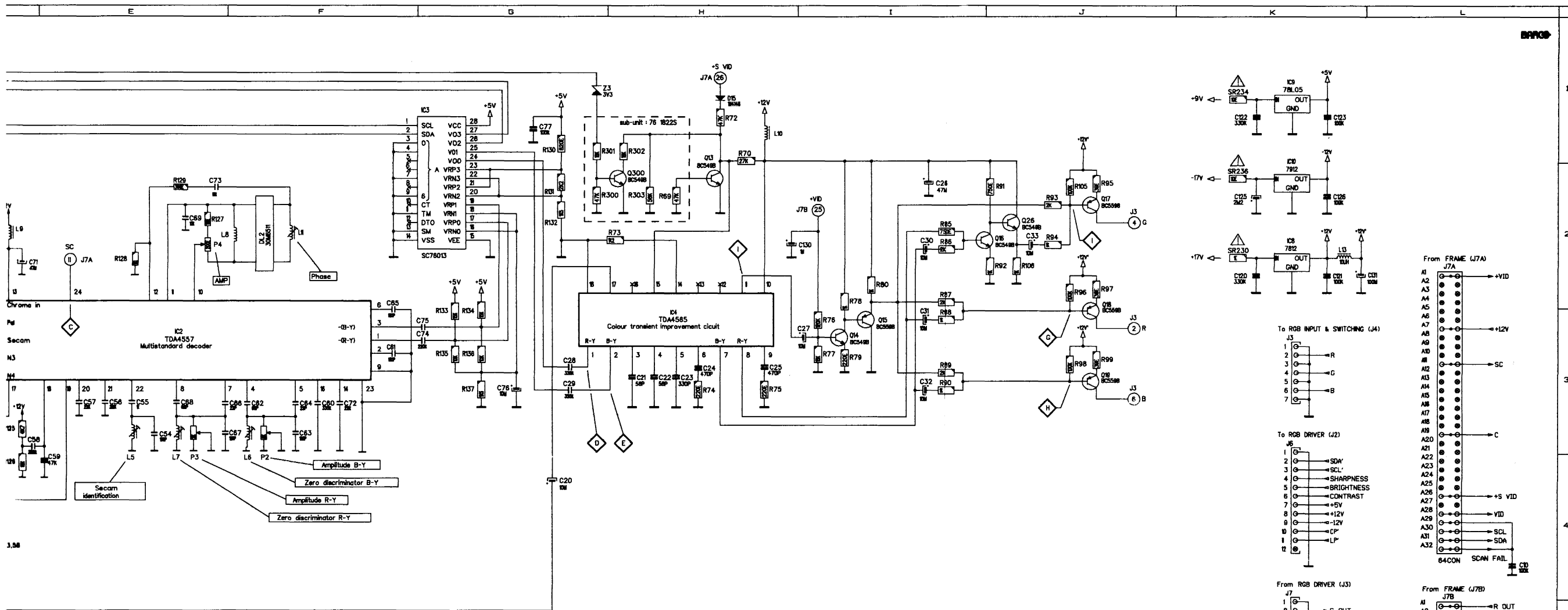
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Date 06-09-1993	Drawn JV DY	Checked JV ST
BARCO PROJECTION SYSTEMS		

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C3	E 5	C77	G 1	P4	F 3	R44	G 5	322	G 3
C3	F 3	C78	G 5	P5	G 5	R44	E 2	323	D 5
C4	E 5	C80	D 2			R45	G 5	323	H 3
C4	F 3	C81	D 3	Q1	F 5	R45	E 2	324	H 3
C5	E 5	C82	D 3	Q1	F 3	R46	F 2	325	G 3
C5	F 3	C83	D 2	Q2	G 4	R46	F 2	326	G 3
C6	E 5	C84	D 2	Q2	F 3	R47	F 5	327	G 3
C6	F 3	C85	D 2	Q3	F 5	R47	F 2	328	G 3
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C11	E 4	C106	E 2	Q7	F 1	R52	E 2	337	G 2
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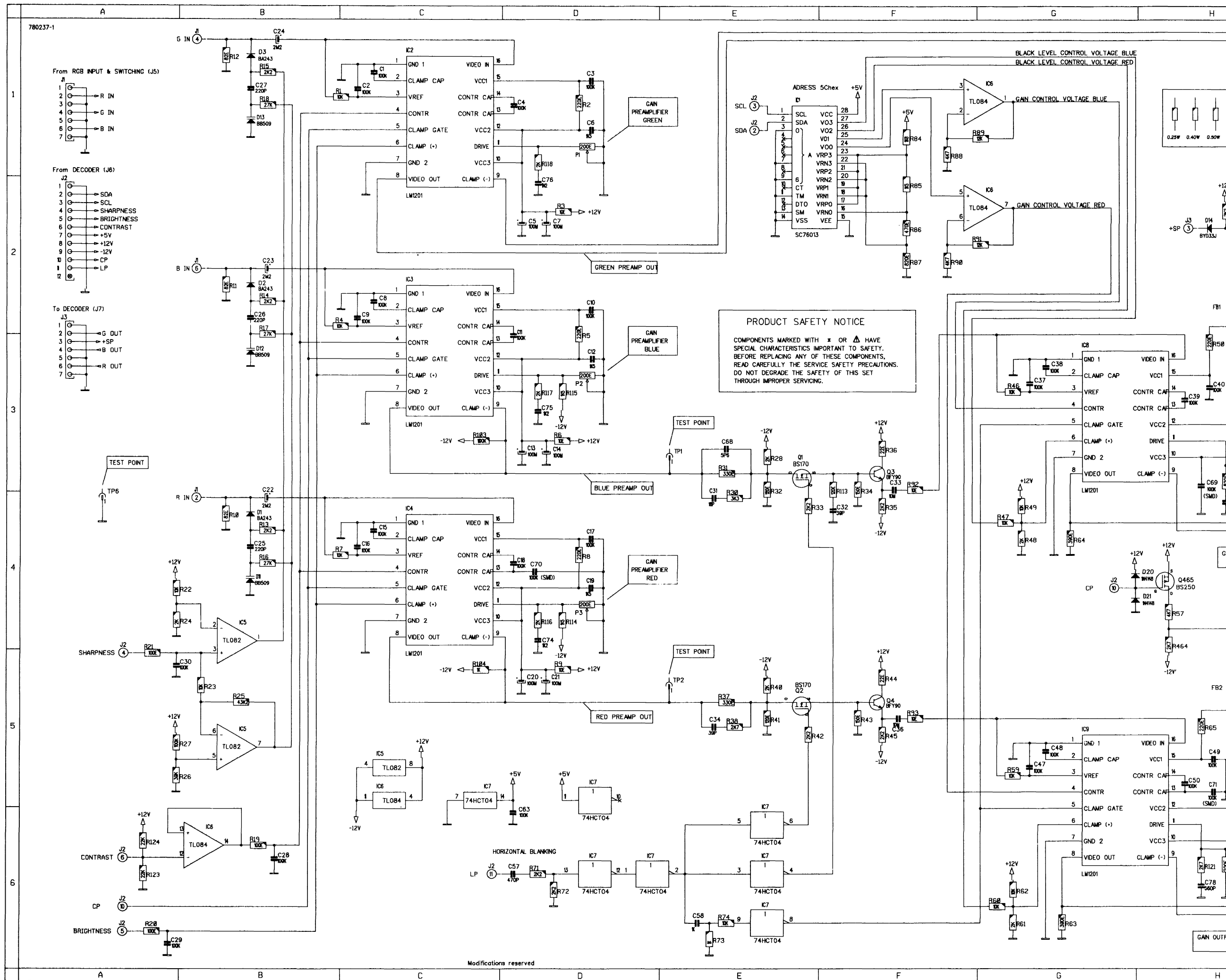
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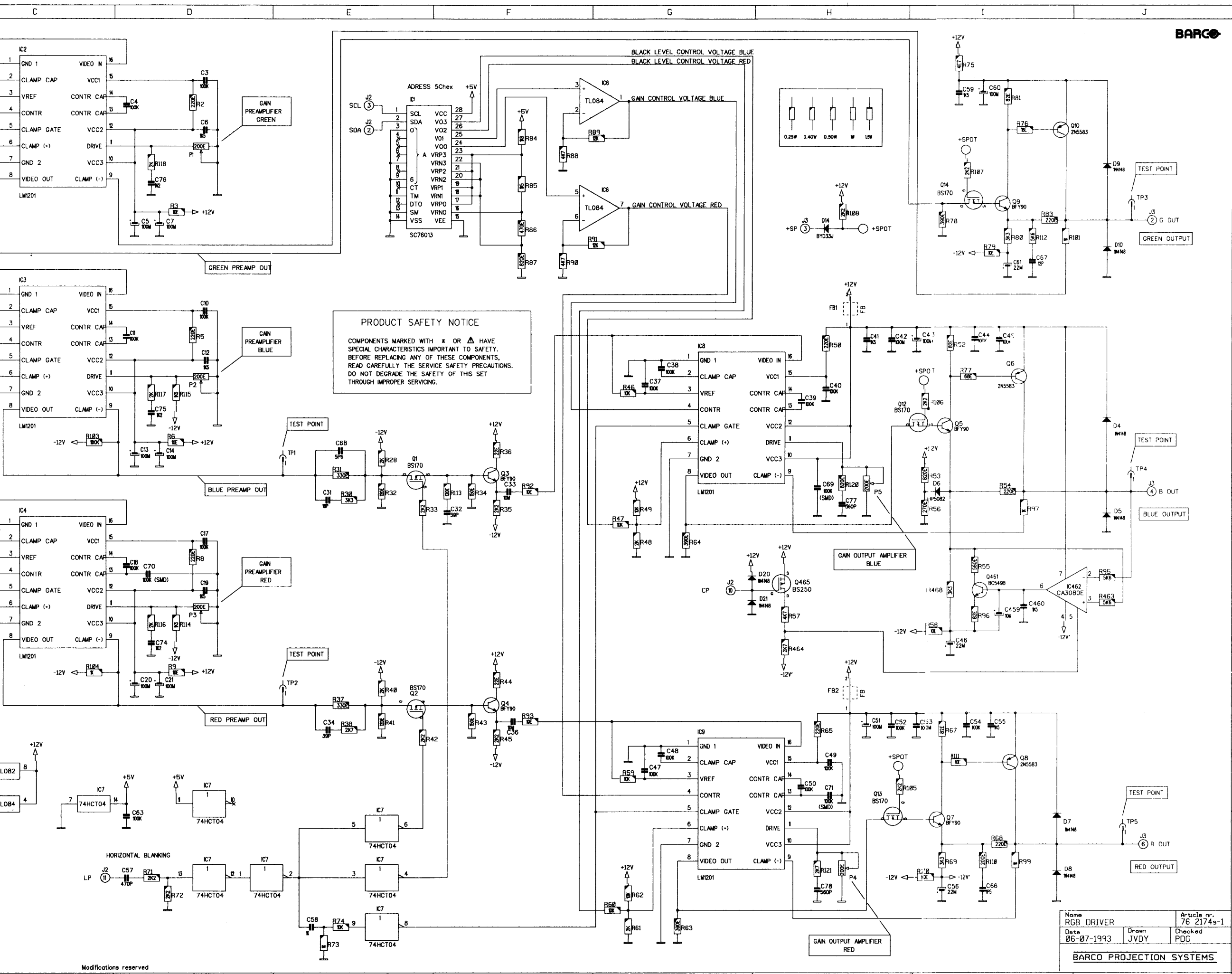




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Modifications reserved





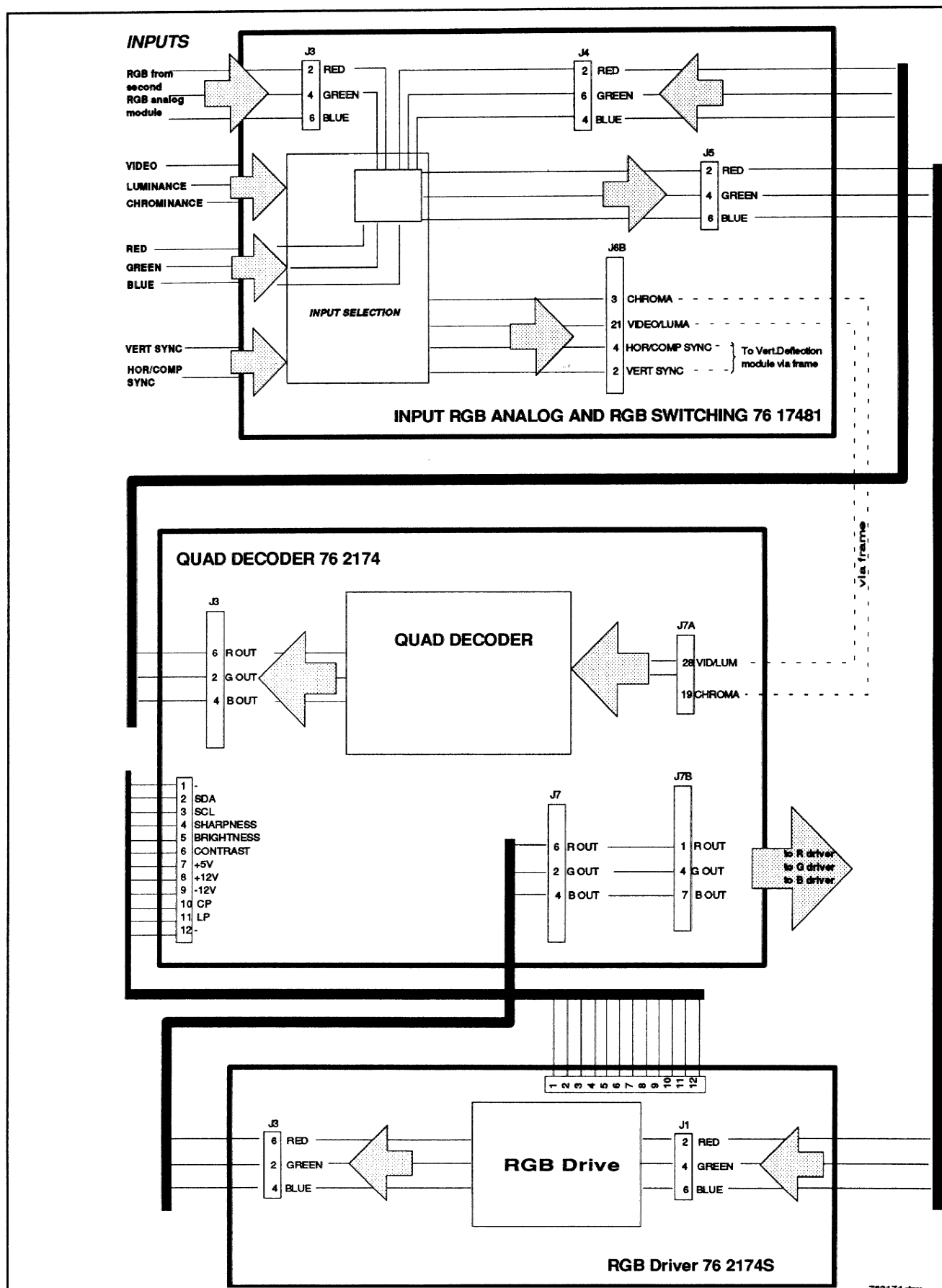
PRODUCT SAFETY NOTICE

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.

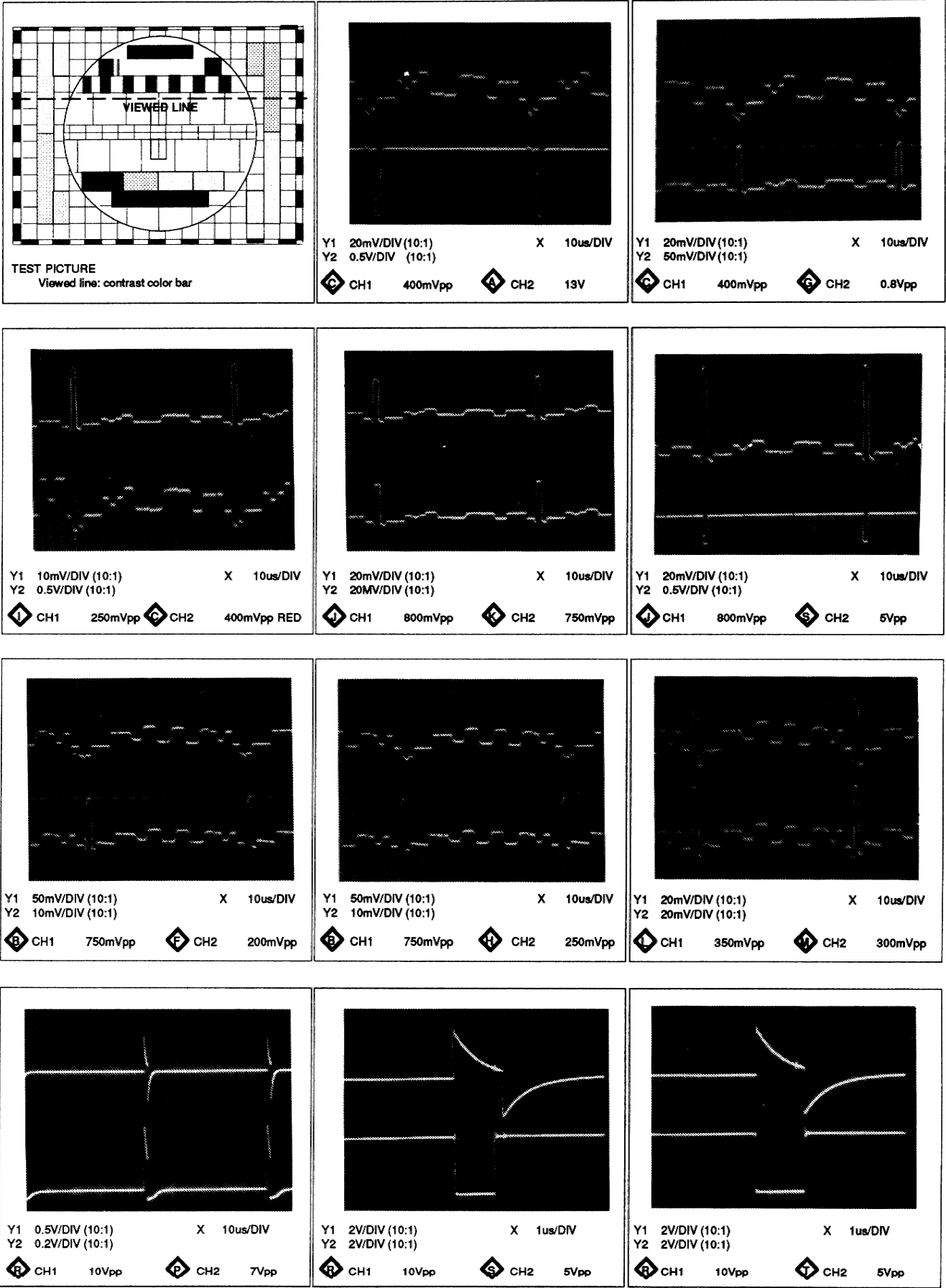
BARCO

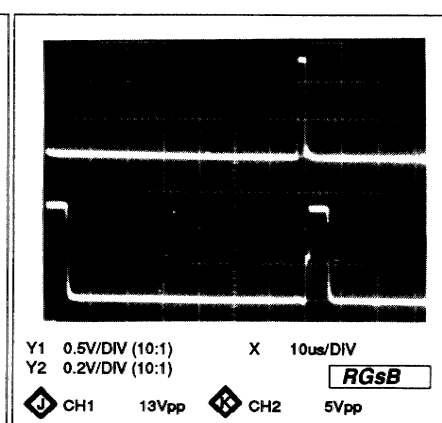
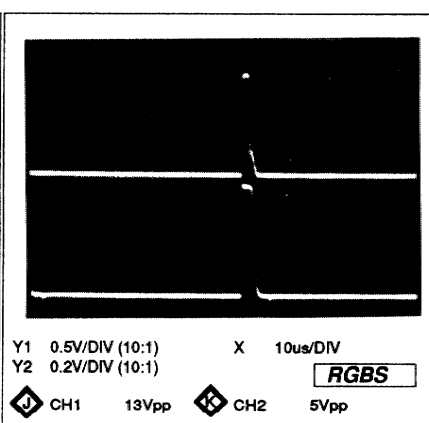
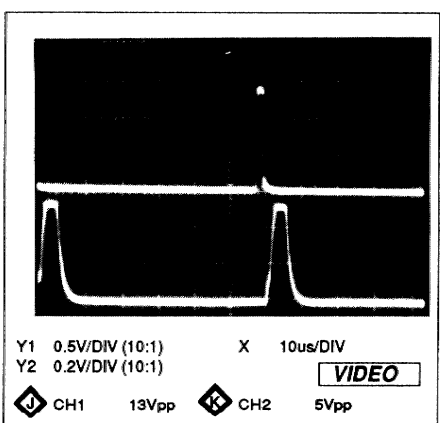
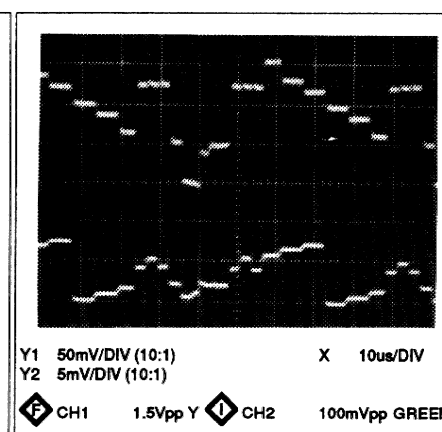
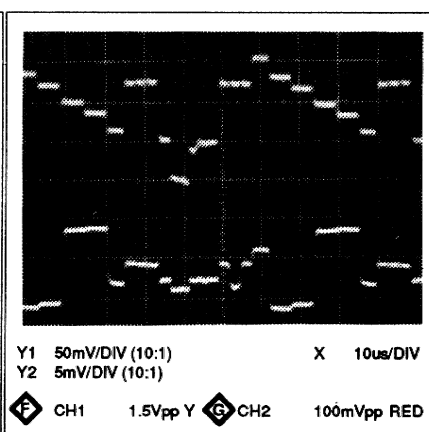
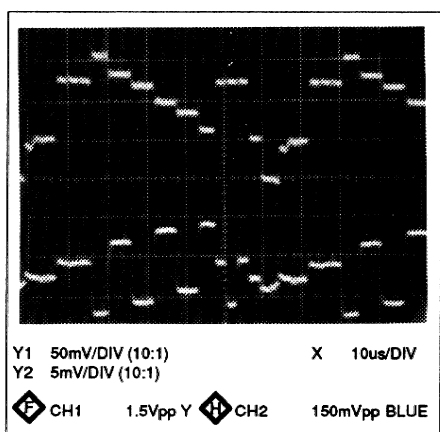
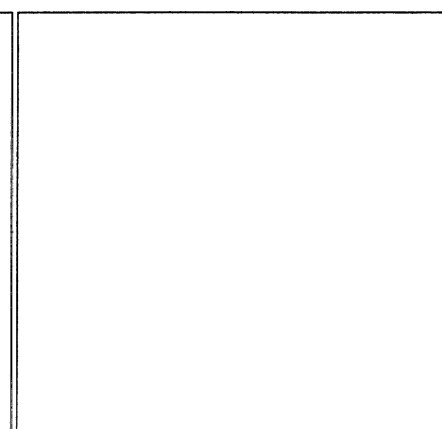
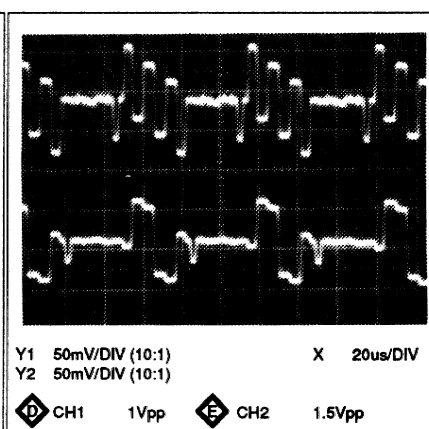
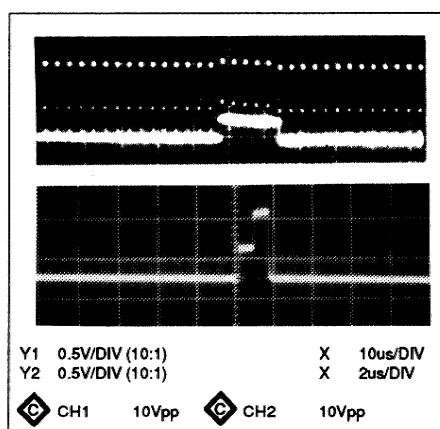
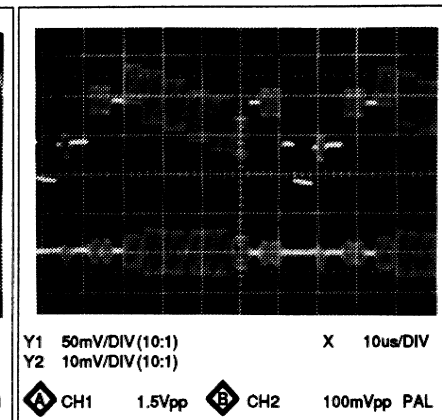
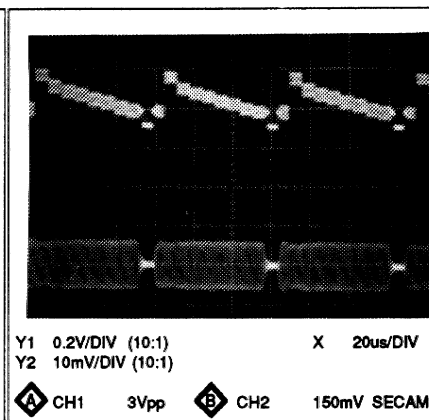
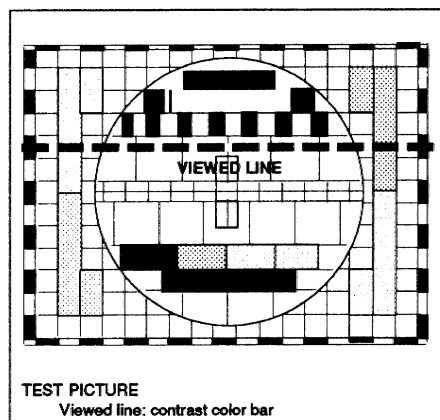
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RGB DRIVER		76 2174s-1	
Date	06-07-1993	Drawn	JVDY
		Checked	PDG
BARCO PROJECTION SYSTEMS			

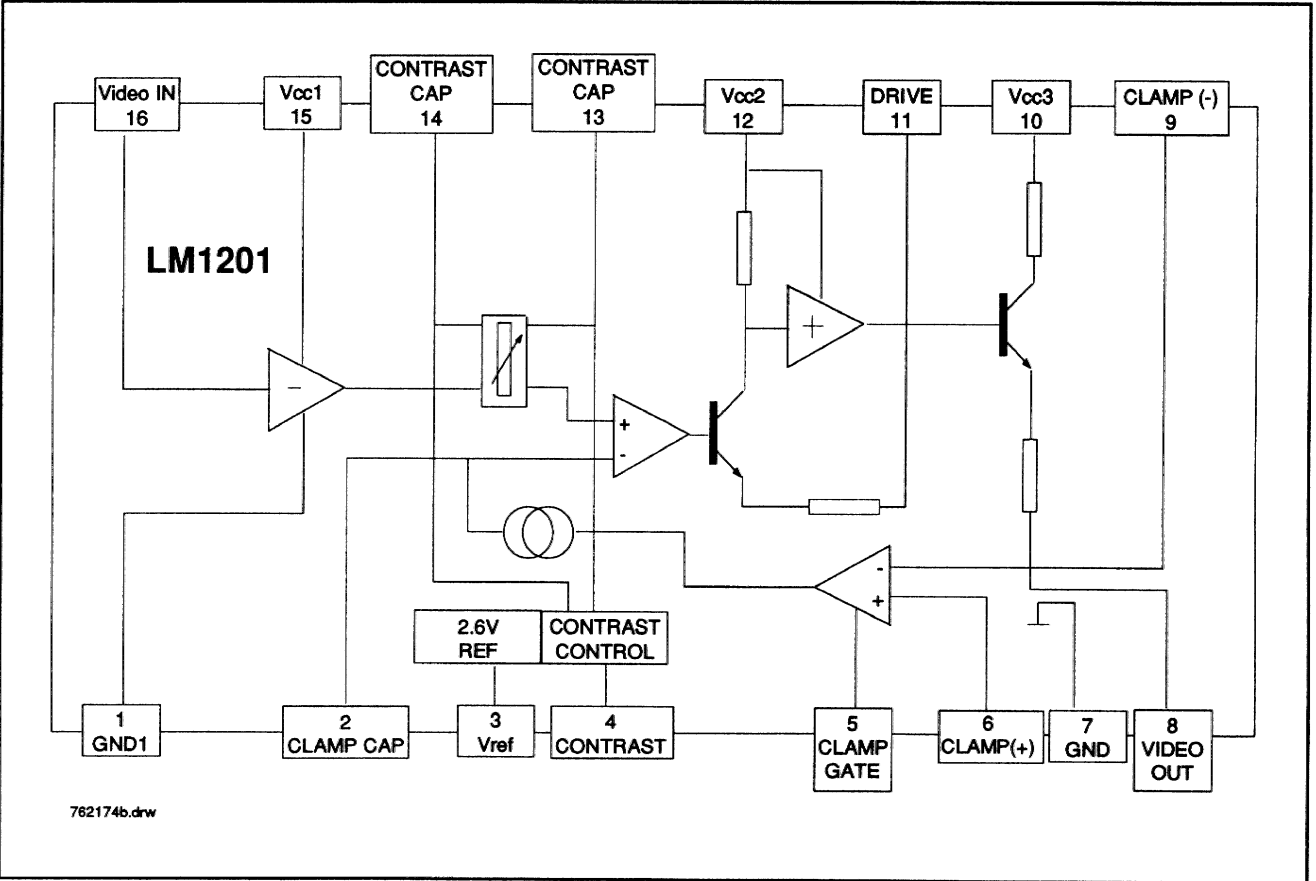
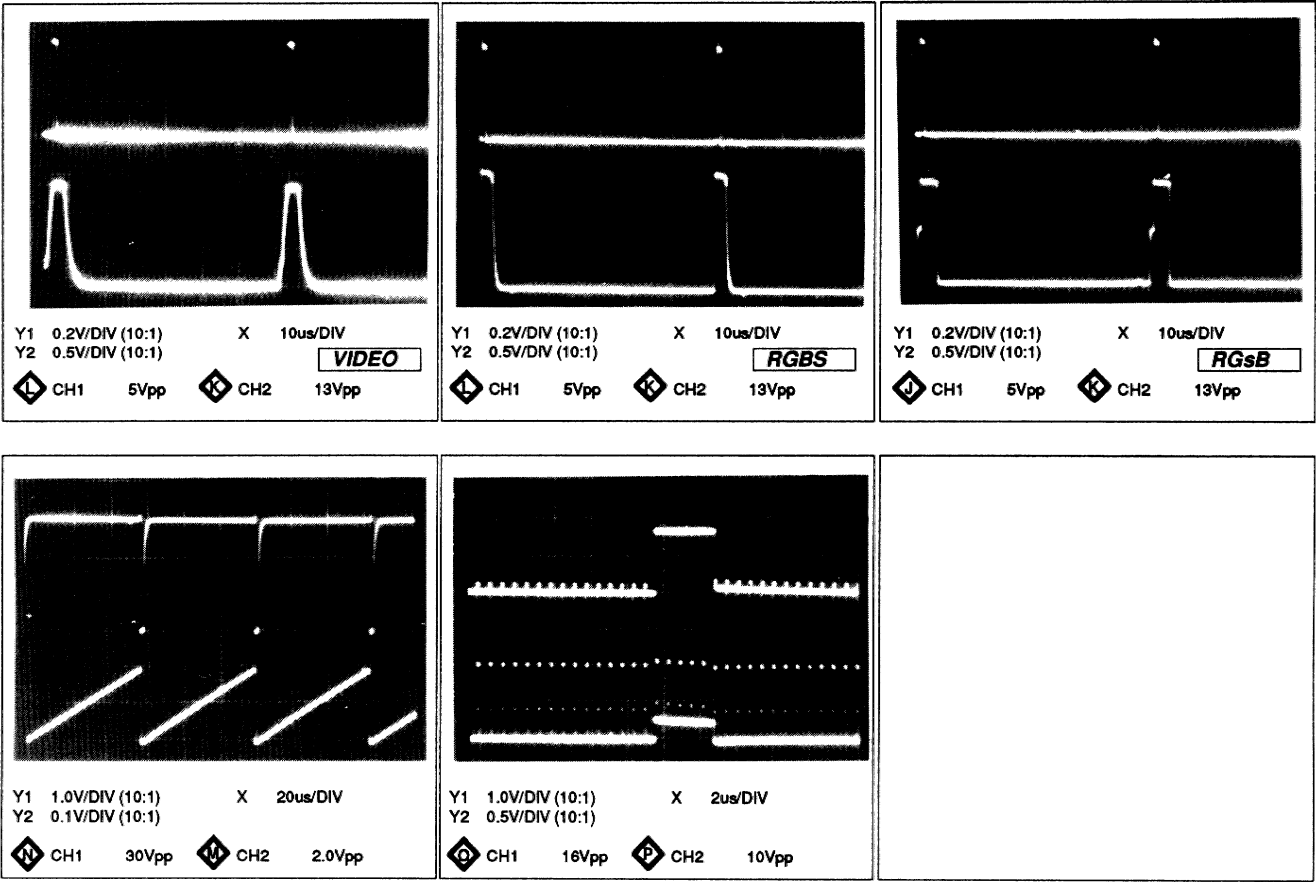
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C9	C2	R18	B 1
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C27	B 1	R36	E 5
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C78	H 6	R90	F 2
C79	H 6	R91	F 2
C80	H 6	R92	F 3
C81	H 6	R93	F 5
C82	H 6	R94	F 5
C83	H 6	R95	F 5
C84	H 6	R96	F 5
C85	H 6	R97	I 4
C86	H 6	R98	I 4
C87	H 6	R99	I 6
C88	H 6	R100	I 6
C89	H 6	R101	C 3
C90	H 6	R102	C 5
C91	H 6	R103	H 5
C92	H 6	R104	I 3
C93	H 6	R105	I 3
C94	H 6	R106	I 3
C95	H 6	R107	I 2
C96	H 6	R108	H 2
C97	H 6	R109	I 6
C98	H 6	R110	I 6
C99	H 6	R111	I 5
C100	H 6	R112	I 2
C101	H 6	R113	F 2
C102	H 6	R114	D 3
C103	H 6	R115	D 3
C104	H 6	R116	D 4
C105	H 6	R117	D 4
C106	H 6	R118	H 3
C107	H 6	R119	H 6
C108	H 6	R120	A 6
C109	H 6	R121	A 6
C110	H 6	R122	A 6
C111	H 6	R123	A 6
C112	H 6	R124	A 6
C113	H 6	R125	J 4
C114	H 6	R126	H 4
C115	H 6	R127	H 4
C116	H 6	R128	H 4
C117	H 6	R129	H 4
C118	H 6	R130	H 4
C119	H 6	R131	H 4
C120	H 6	R132	H 4
C121	H 6	R133	H 4
C122	H 6	R134	H 4
C123	H 6	R135	H 4
C124	H 6	R136	H 4
C125	H 6	R137	H 4
C126	H 6	R138	H 4
C127	H 6	R139	H 4
C128	H 6	R140	H 4
C129	H 6	R141	H 4
C130	H 6	R142	H 4
C131	H 6	R143	H 4
C132	H 6	R144	H 4
C133	H 6	R145	H 4
C134	H 6	R146	H 4
C135	H 6	R147	H 4
C136	H 6	R148	H 4
C137	H 6	R149	H 4
C138	H 6	R150	H 4
C139	H 6	R151	H 4
C140	H 6	R152	H 4
C141	H 6	R153	H 4
C142	H 6	R154	H 4
C143	H 6	R155	H 4
C144	H 6	R156	H 4
C145	H 6	R157	H 4
C146	H 6	R158	H 4
C147	H 6	R159	H 4
C148	H 6	R160	H 4
C149	H 6	R161	H 4
C150	H 6	R162	H 4
C151	H 6	R163	H 4
C152	H 6	R164	H 4
C153	H 6	R165	H 4
C154	H 6	R166	H 4
C155	H 6	R167	H 4
C156	H 6	R168	H 4
C157	H 6	R169	H 4
C158	H 6	R170	H 4
C159	H 6	R171	H 4
C160	H 6	R172	H 4
C161	H 6	R173	H 4
C162	H 6	R174	H 4
C163	H 6	R175	H 4
C164	H 6	R176	H 4
C165	H 6	R177	H 4
C166	H 6	R178	H 4
C167	H 6	R179	H 4
C168	H 6	R180	H 4
C169	H 6	R181	H 4
C170	H 6	R182	H 4
C171	H 6	R183	H 4
C172	H 6	R184	H 4
C173	H 6	R185	H 4
C174	H 6	R186	H 4
C175	H 6	R187	H 4
C176	H 6	R188	H 4
C177	H 6	R189	H 4
C178	H 6	R190	H 4
C179	H 6	R191	H 4
C180	H 6	R192	H 4
C181	H 6	R193	H 4
C182	H 6	R194	H 4
C183	H 6	R195	H 4
C184	H 6	R196	H 4
C185	H 6	R197	H 4
C186	H 6	R198	H 4
C187	H 6	R199	H 4
C188	H 6	R200	H 4
C189	H 6	R201	H 4
C190	H 6	R202	H 4
C191	H 6	R203	H 4
C192	H 6	R204	H 4
C193	H 6	R205	H 4
C194	H 6	R206	H 4
C195	H 6	R207	H 4
C196	H 6	R208	H 4
C197	H 6	R209	H 4
C198	H 6	R210	H 4
C199	H 6	R211	H 4
C200	H 6	R212	H 4
C201	H 6	R213	H 4
C202	H 6	R214	H 4
C203	H 6	R215	H 4
C204	H 6	R216	H 4
C205	H 6	R217	H 4
C206	H 6	R218	H 4
C207	H 6	R219	H 4
C208	H 6	R220	H 4
C209	H 6	R221	H 4
C210	H 6	R222	H 4
C211	H 6	R223	H 4
C212	H 6	R224	H 4
C213	H 6	R225	H 4
C214	H 6	R226	H 4
C215	H 6	R227	H 4
C216	H 6	R228	H 4
C217	H 6	R229	H 4
C218	H 6	R230	H 4
C219	H 6	R231	H 4
C220	H 6	R232	H 4
C221	H 6	R233	H 4
C222	H 6	R234	H 4
C223	H 6	R235	H 4
C224	H 6	R236	H 4
C225	H 6	R237	H 4
C226	H 6	R238	H 4
C227	H 6	R239	H 4
C228	H 6	R240	H 4
C229	H 6	R241	H 4
C230	H 6	R242	H 4
C231	H 6	R243	H 4
C232	H 6	R244	H 4
C233	H 6	R245	H 4
C234	H 6	R246	H 4
C235	H 6	R247	H 4
C236	H 6	R248	H 4
C237	H 6	R249	H 4
C238	H 6	R250	H 4
C239	H 6	R251	H 4
C240	H 6	R252	H 4
C241	H 6	R253	H 4
C242	H 6	R254	H 4
C243	H 6	R255	H 4
C244	H 6	R256	H 4
C245	H 6	R257	H 4
C246	H 6	R258	H 4
C247	H 6	R259	H 4
C248	H 6	R260	H 4
C249	H 6	R261	H 4
C250	H 6	R262	H 4
C251	H 6	R263	H 4
C252	H 6	R264	H 4
C253	H 6	R265	H 4
C254	H 6	R266	H 4
C255	H 6	R267	H 4
C256	H 6	R268	H 4
C257	H 6	R269	H 4
C258	H 6	R270	H 4
C259	H 6	R271	H 4
C260	H 6	R272	H 4
C261	H 6	R273	H 4
C262	H 6	R274	H 4
C263	H 6	R275	H 4
C264	H 6	R276	H 4
C265	H 6	R277	H 4
C266	H 6	R278	H 4
C267	H 6	R279	H 4
C268	H 6	R280	H 4
C269	H 6	R281	H 4
C270	H 6	R282	H 4
C271	H 6	R283	H 4
C272	H 6	R284	H 4
C273	H 6	R285	H 4
C274	H 6	R286	H 4
C275	H 6	R287	H 4
C276	H 6	R288	H 4
C277	H 6	R289	H 4
C278	H 6	R290	H 4
C279	H 6	R291	H 4
C280	H 6	R292	H 4
C281	H 6	R293	H 4
C282	H 6	R294	H 4
C283	H 6	R295	H 4
C284	H 6	R296	H 4
C285	H 6	R297	H 4
C286	H 6	R298	H 4
C287	H 6	R299	H 4
C288	H 6	R300	H 4
C289	H 6	R301	H 4
C290	H 6	R302	H 4
C291	H 6	R303	H 4
C292	H 6	R304	H 4
C293	H 6	R305	H 4
C294	H 6	R306	H 4
C295	H 6	R307	H 4
C296	H 6	R308	H 4
C297	H 6	R309	H 4
C298	H 6	R310	H 4
C299	H 6	R311	H 4
C300	H 6	R312	H 4
C301	H 6	R313	H 4
C302	H 6	R314	H 4
C303	H 6	R315	H 4
C304	H 6	R316	H 4
C305	H 6	R317	H 4
C306	H 6	R318	H 4
C307	H 6	R319	H 4
C308	H 6	R320	H 4
C309	H 6	R321	H 4
C310	H 6	R322	H 4
C311	H 6	R323	H 4
C312	H 6	R324	H 4
C313	H 6	R325	H 4
C314	H 6	R326	H 4
C315	H 6	R327	H 4
C316	H 6	R328	H 4
C317	H 6	R329	H 4
C318	H 6	R330	H 4
C319	H 6	R331	H 4
C320	H 6	R332	H 4
C321	H 6	R333	H 4
C322	H 6	R334	H 4
C323	H 6	R335	H 4
C324	H 6	R336	H 4
C325	H 6	R337	H 4
C326	H 6	R338	H 4
C327	H 6	R339	H 4
C328	H 6	R340	H 4
C329	H 6	R341	H 4
C330	H 6	R342	H 4
C331	H 6	R343	H 4
C332	H 6	R344	H 4
C333	H 6	R345	H 4
C334	H 6	R346	H 4
C335	H 6	R347	H 4
C336	H 6	R348	H 4
C337	H 6	R349	H 4
C338	H 6	R350	H 4
C339	H 6	R351	H 4
C340	H 6	R352	H 4
C341	H 6	R353	H 4
C342	H 6	R354	H 4
C343	H 6	R355	H 4
C344	H 6	R356	H 4
C345	H 6	R357	H 4
C346	H 6	R358	H 4
C347	H 6	R359	H 4
C348	H 6	R360	H 4
C349	H 6	R361	H 4
C350	H 6	R362	H 4
C351	H 6	R363	H 4
C352	H 6	R364	H 4
C353	H 6	R365	H 4
C354	H 6	R366	H 4
C355	H 6	R367	H 4
C356	H 6	R368	H 4
C357	H 6	R369	H 4
C358	H 6	R370	H 4
C359	H 6	R371	H 4
C360	H 6	R372	H 4
C361	H 6	R373	H 4
C362	H 6	R374	H 4
C363	H 6	R375	H 4
C364	H 6	R376	H 4
C365	H 6	R377	H 4
C366	H 6	R378	H 4
C367			



762174.dwg







ADJUSTMENT PROCEDURE "QUAD DECODER "

The alignment of the "QUAD Decoder+RGB GAIN Control " is restricted to the adjustment of :

- alignment of the QUAD decoder (main board)
- alignment of the GAIN CONTROL board (sub board)

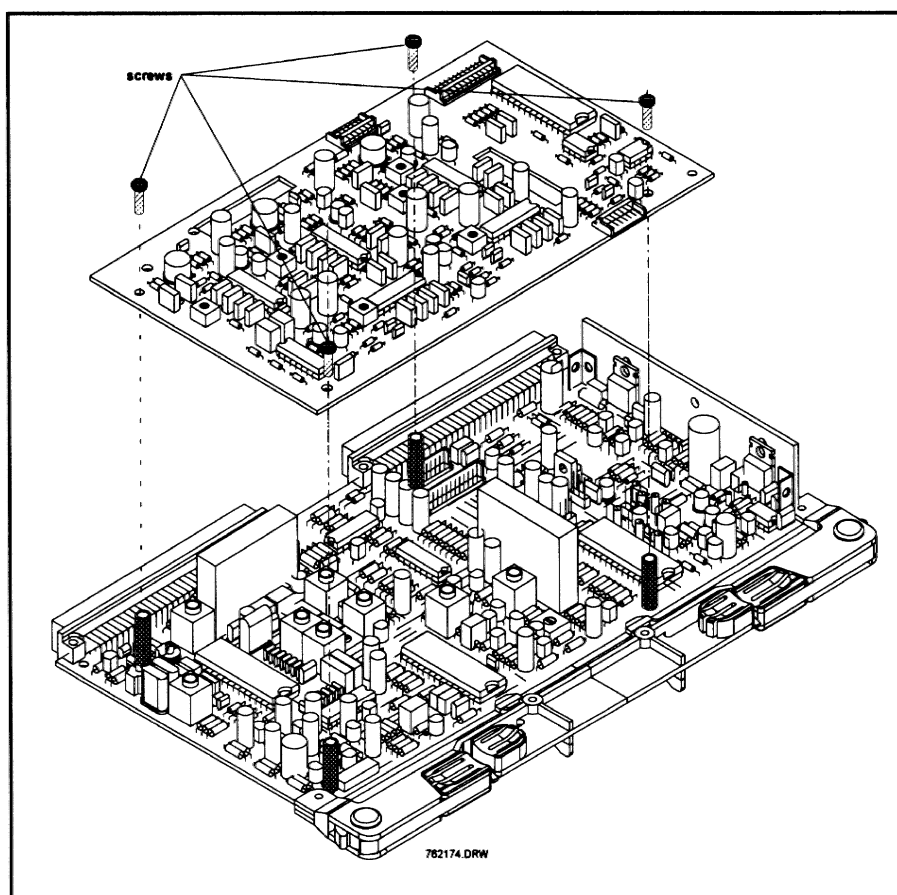
Alignment of the QUAD decoder (main board)

Preparation

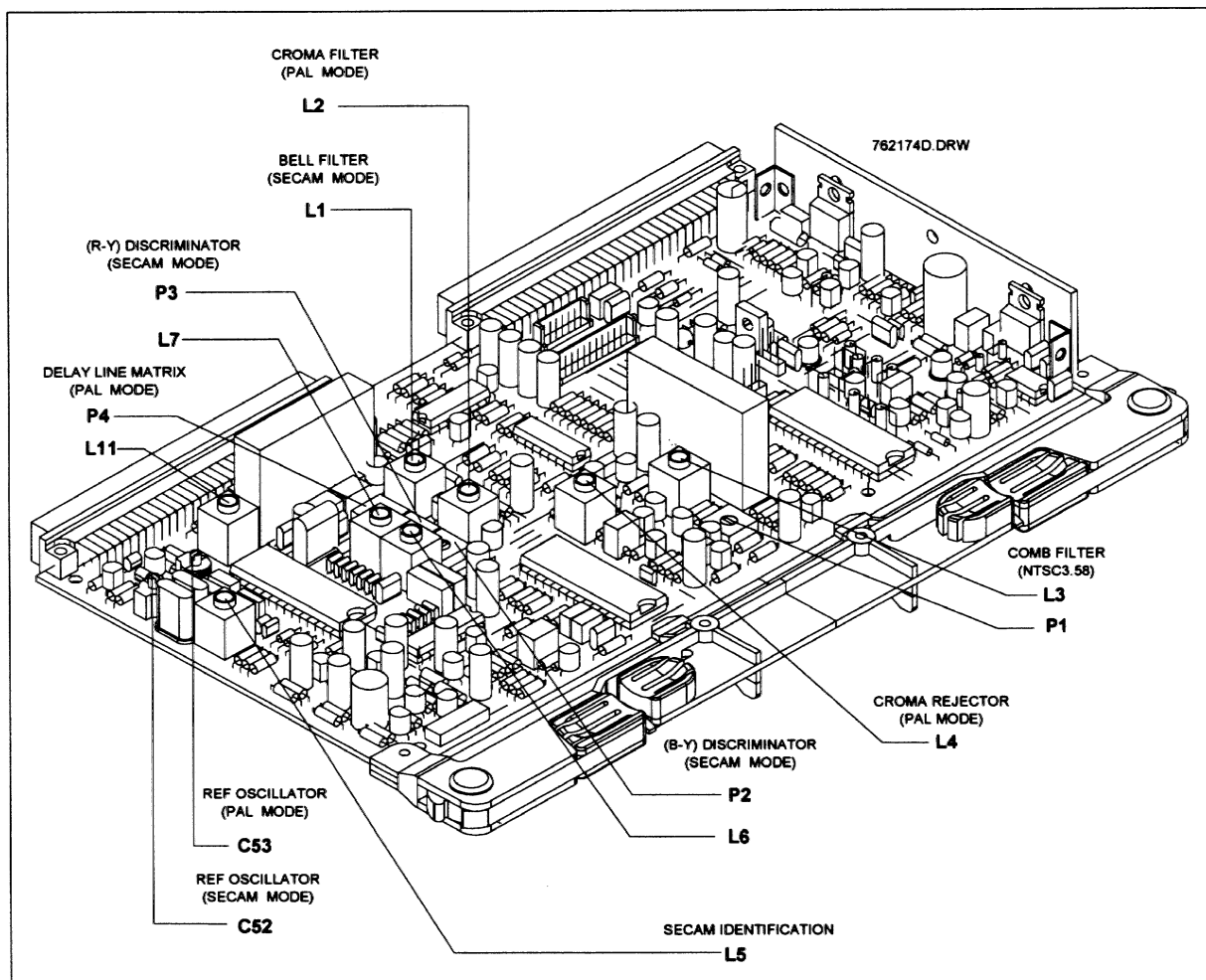
- Turn the projector Off or switch the projector to the stand-by mode.
- Disconnect the module from the RGB-Switch module and put the module in the main frame by means of two extension boards. Reinstall the electrical connections with the RGB-switch module by means of two extension wire cables.
- Connect to the VIDEO input e.g. an electronic colour test video signal (see photo)
- Turn the projector On and switch the projector in the VIDEO MODE. Select source 1.

Access to controls

Remove the four screws holding the RGB driver module to the Decoder module and separate the two modules to have access to the adjustment controls on the decoder module.



Location of controls



A. VIDEO INPUT SIGNAL : PAL COLOUR TEST IMAGE

1. REFERENCE OSCILLATOR (C53)

- if there is no colour, adjust trimming capacitor C53 until colour is being received.
- short-circuit pin 17 of Ic2 to earth.
- adjust the trimming capacitor C53 for colour zero beat.
- remove the short-circuit.

2. CHROMA REJECTOR (L4) (photo 1)

- connect an oscilloscope to the junction R66/C20 (Y signal).
- adjust the core of coil L4 for a minimum of chroma in the video signal.

3. CHROMA FILTER (L2) (photo 2)

- connect the oscilloscope to the emitter of Q20 (or Q23).
- adjust the core of coil L2 for maximum chroma signal.

4. DELAY LINE MATRIX (L11 - P4) (photos 3,4)

- connect the oscilloscope to the capacitor C74 (Pin 1 of Ic2 R-Y signal).
- adjust L11 (DELAYED PHASE ADJUST) and P4 (DELAYED AMP.ADJUST) as shown in photos 3 and 4
- note the amplitude of the (R-Y) signal.
- connect the oscilloscope to the capacitor C75 (Pin 3 of Ic2 B-Y signal).
- note the amplitude of the (B-Y) signal.

B. VIDEO INPUT SIGNAL:

SECAM COLOUR TEST IMAGE

5. BELL FILTER (L1) (photo 5)

- connect an oscilloscope to the emitter of Q21.(Or Q23)
- adjust L1 for a flat amplitude of the signal during two successive lines.

6. (B-Y) DISCRIMINATOR (L6 - P2) (photo 6)

- connect oscilloscope to the capacitor C75.(pin 3 of Ic2)
- adjust L6 so that the level of the (B-Y) signal without colour information is the same as the level during blanking.
- adjust P2 to obtain the same amplitude of (B-Y) as in point 4.

7. (R-Y) DISCRIMINATOR (L7-P3) (photo 7)

- connect the oscilloscope to the capacitor C74.(pin 1 of Ic2)
- adjust L7 so that the level of the (R-Y) signal without colour information is the same as the level during blanking.
- adjust P3 to obtain the same amplitude of (R-Y) as in point 4.

8. SECAM IDENTIFICATION (L5)

- connect the voltmeter between pins 21 and 20 of IC 2 (TDA 4557).
- adjust the core of coil L5 for a maximum voltage reading with a correct colour reproduction.

C. VIDEO INPUT SIGNAL :

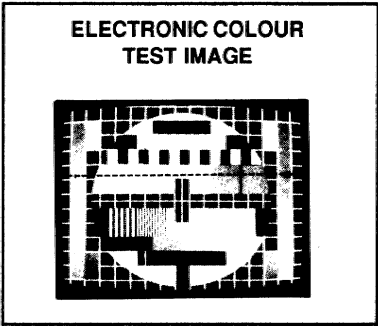
NTSC 3.58 TEST IMAGE

9. REFERENCE OSCILLATOR (C52)

- If there is no colour, adjust trimming capacitor C52 until colour is being received.
- short circuit pin 17 of Ic2 to earth.
- adjust trimming capacitor C52 for a colour zero beat.
- remove the short-circuit.

10. COMB FILTER(L3 ,P1)

- connect the oscilloscope to the emitter junction of Q10.(R66, C20Y signal).
- adjust the core of coil L3 and P1 for a minimum chroma in the video signal.



Viewed VIDEO LINE for the alignment of:

- Pal Delay decoder
- Chroma rejector
- Chroma filter

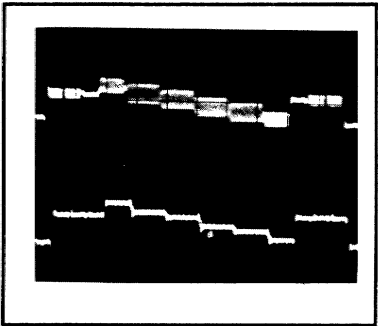


Foto 1
Alignment chroma rejector L4
Upper track: viewed video line
Lower track: Y signal R67 /C60 0.8 V pp

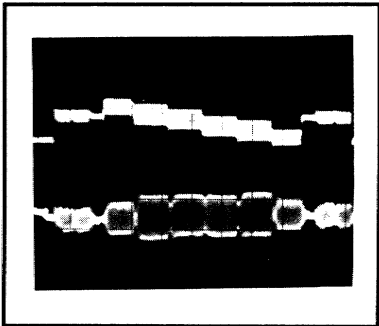
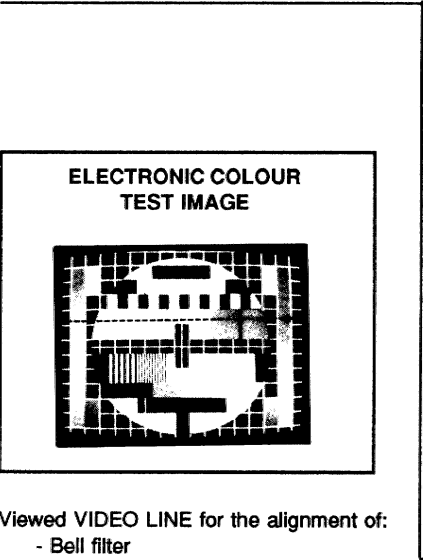


Foto 2
Alignment maximum Chroma L1
Upper track: viewed video line
Lower track: Chroma on E Q2 120 mVpp



Viewed VIDEO LINE for the alignment of:

- Bell filter
- (B-Y) discriminator
- (R-Y) discriminator

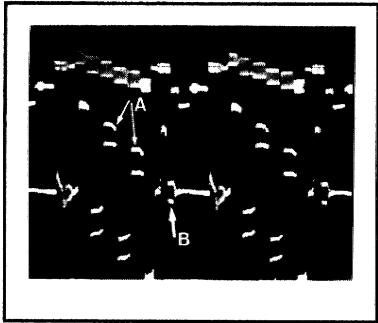


Foto 3:
Alignment of the PAL DELAY
Upper track: viewed video line
Lower track: incorrect PHASE (A) and
AMPLITUDE (B) setting

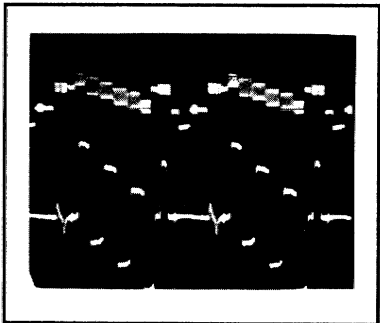


Foto 4:
Alignment of the PAL DELAY
Upper track: viewed video line
Lower track: correctly aligned PAL
DELAY

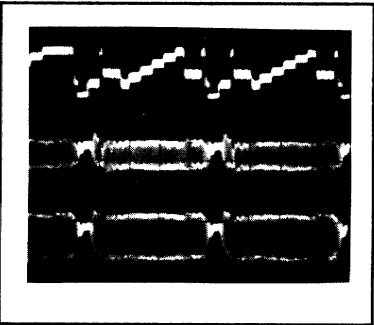


Foto 5
BELL FILTER
Upper track: incorrect setting
Lower track: correct setting

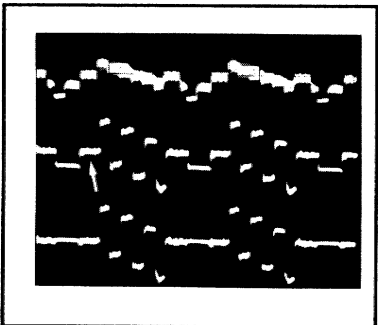


Foto 6
(B-Y) DISCRIMINATOR L6/P2
Upper track: viewed video line
Lower track:
1: incorrect PHASE setting
2: correct PHASE setting

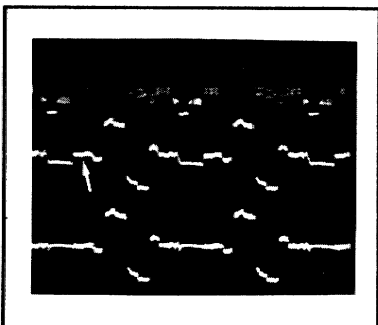


Foto 7
(R-Y) DISCRIMINATOR L7/P3
Upper track: viewed video line
Lower track:
1: incorrect PHASE setting
2: correct PHASE setting

Alignment of the "RGB Gain control 76 2174S"

Preparation

- Access to the module, refer to chapter 'preparation' decoder module, page 9.
- Connect a voltmeter to pin 6 "CONTRAST" of connector J2 .
Adjust the Contrast on the remote control for max. DC level (10.4V).
- Connect a voltmeter to pin 5 "BRIGHTNESS" of connector J2 .
Adjust the Brightness on the remote control for a DC level of 2.0V.
- Connect a voltmeter to pin 4 "SHARPNESS" of connector J2 .
Adjust the Sharpness on the remote control for min. DC level (1.8V).

Pre-adjustment of the White and Black balance (refer to the Owner's manual)

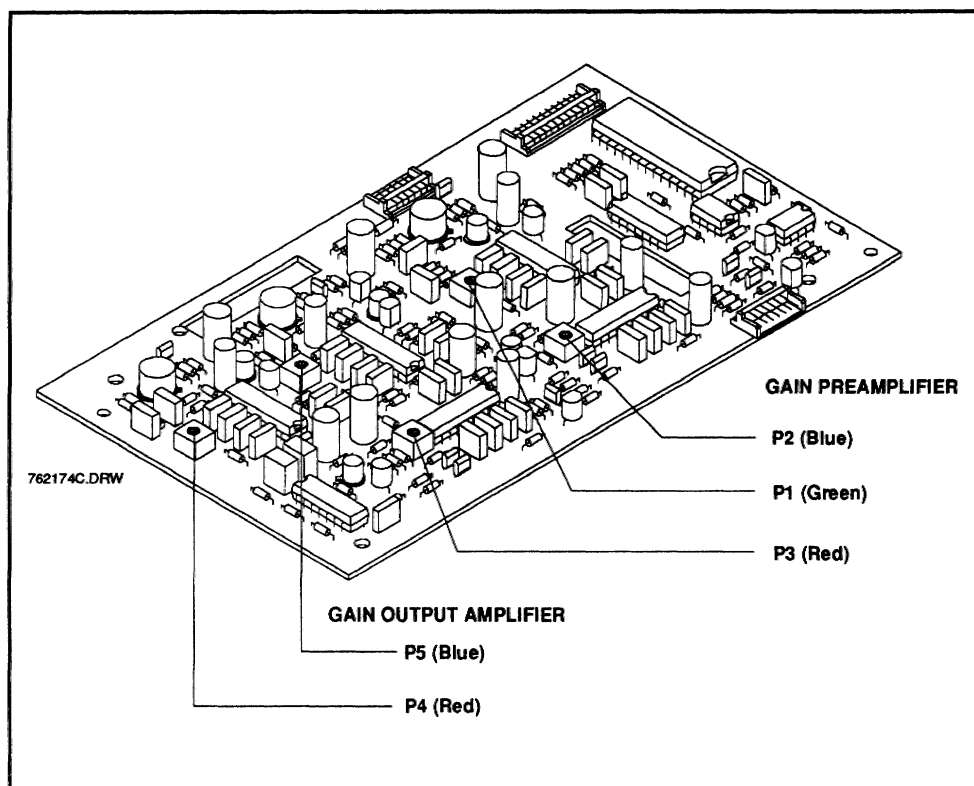
- adjust the white balance as follows: Red gain=34
Blue gain=34
- adjust the black balance as follows: Red cut off=50 (50%)
Blue cut off=50 (50%)

Termination of the outputs

Terminate the outputs, pin 2-4 and 6 of connector J3, with a resistor of 75 Ohm (the termination link must be as short as possible)

- Input signals R, G and B on connector J1 of 0.7Vpp.

Location of controls



Alignment

Gain adjustment of the Pre-Amplifiers	Alignment of P1,P2 and P3
	<div><div>- Connect the oscilloscope successively to the Red, Green and Blue output of IC4 (TP2), IC2 (TP3) and IC3 (TP1), respectively pin 8.</div><div>- Adjust the potentiometers P1, P2 and P3 "gain pre-amplifier" for an amplitude of the corresponding output signal of 4.0V.</div></div>
Gain adjustment of the Output-Amplifiers	Alignment of P5 and P4
	<div><div>- Connect the oscilloscope to the BLUE signal output, pin 4 connector J3 (TP4) . Adjust potentiometer P5 for an amplitude of the Blue signal of 3.3Vpp.</div><div>- Connect the oscilloscope to the RED signal output, pin 6 connector J3 (TP5) . Adjust potentiometer P4 for an amplitude of the Red signal of 2.65Vpp.</div></div>

Operational verification	Operation control of the spot suppression
Connect pin 3 of the connector J3 to ground. The output voltages on pin 2,4 and 6 of connector J3 have to drop on 0... -0.2V DC.	

Default settings	Color Temperature 3200°K	
	White balance (bar scale)	Output voltage
	Blue: 10 Red: 50	G (pin 2 J3): 4.0Vpp B (pin 4 J3): 2.6Vpp R (pin 6 J3): 3.8Vpp
	Color Temperature 6500°K	
	White balance (bar scale)	Output voltage
	Blue: 36 Red: 34	G (pin 2 J3): 4.0Vpp B (pin 4 J3): 3.4Vpp R (pin 6 J3): 3.6Vpp
	Color Temperature 9300°K	
	White balance (bar scale)	Output voltage
	Blue: 45 Red: 32	G (pin 2 J3): 4.0Vpp B (pin 4 J3): 3.8Vpp R (pin 6 J3): 3.6Vpp

(refer to the Owner's manual for the default setting procedure)

INTRODUCTION.

The video composite signal is firstly split into luminance and chrominance to be handled separately.

The luminance undergoes an enhancing or sharpness control, the colour is rejected and proceeds then to the IC4, containing the luminance delay line.

The chrominance is passing the correct bandpass filter and reaching pin 15 of the quad decoder chip TDA4557.

The NTSC 3.58 MHz is passing a comb filter before entering pin 15.

The colour difference signals are then regulated in amplitude by two potentiometers in IC3 and equally reaching IC4.

With Y, R-Y and B-Y the colours R, G and B are matrixed and leave now the decoder for the RGB switching module.

Coming back to this module, the brightness and contrast controls are applied in order to prepare the signals for the RGB power drivers.

Furthermore on this module, the CP clamping pulse is formed to be utilised in the brightness control and on the RGB switching module.

Finally, the blanking pulses for the horizontal retrace time, and the adjusted left / right blankings (by the user) are combined with the vertical blanking pulses produced on the UN SYNC + VERT deflection module to get a total blanking pulse train which is sent to the RGB driver output module.

We analyse now these items more in detail.

I. VIDEO COMPOSITE FLOW.

Enhancing.

The video composite arrives at the base of the buffer Q1 and feeds the delay line DL3. The mid-tap of this delay line supplies the base of the buffer Q2 .

The latter now sends the signal to the chrominance bandpass filters PAL/N4 and Secam, and equally to a buffer in IC1.

The output 13 of the DL3 is delayed twice as much as the pin 8 output, and obviously at the node C3/C4 we obtain the sum of the non delayed and the delayed output.

This signal is now sent to the base (pin 13) of a transistor in IC1 . At the emitter of the same transistor we apply the half delayed video and because this transistor is the common emitter 'resistor' of the differential pair, we get the difference at the collector; or, the pin 5 output of IC1.

Finally, this signal needs now to be added to the half delayed one, and, this happens in the third transistor of IC1. The fourth transistor behaves again as a buffer and supplies the comb filter, and colour rejector in the base of Q11.

The amount of enhancing is made adjustable with the a DC voltage to be applied at the bases of the differential pair.

NTSC 3.58 Mhz comb filter.

This comb filter is based on the principle that the phase of the colour subcarrier is 180° phase shifted each two lines.

So, by adding two subsequent lines, the chrominance subcarrier can be eliminated. On the other hand, by subtracting, the luminance can be eliminated.

To perform above we require a delay line with the right line period of the NTSC 3.58 Mhz, and for a perfect elimination amplitude and phase must be correct as well. These are aligned with P1 and L3 respectively.

As the DL750 has two opposite phase outputs, the buffer Q7 provides the chrominance only and the buffer Q8 the luminance only signals.

The luminance is then proceeding to IC4 via an insulating capacitor C20.

II. CHROMINANCE FLOW.

The multistandard decoder chip IC2 is checking sequentially the information on the back porch of the horizontal sync.

As soon the right system is identified, the appropriated output Pal/Secam/N4 or N3 output is put at a high level.

This output now activates the right chrominance bandpass filter and oscillator (exact crystal).

A detailed description of the flow in the chip would take too long, we therefore limit to the essential items.

The tint control (hue) being adjusted in IC2 is supplying pin 17.

The SC (sandcastle) together with the vertical blanking (VBL) are added and supply the input pin 24 (see blanking for above mixing).

The chrominance delay line is only 'operative' for secam and Pal, and, for the latter the phase and amplitude of delayed / non delayed is aligned with L11 and P4 respectively.

In Secam, the (R-Y) amplitude and Zero point of the frequency discriminators are aligned with P3 and L7. The same is valuable for P2 and L6.

Finally, the -(R-Y) and -(B-Y) signals come available at the pins 3 and 11 and proceed to the digital potentiometers in IC3, where the amplitudes are regulated via the I2C bus information (controller module).

In IC4, the chrominance signals undergoes an improvement of the transitions and leave again at 7 and 8.

III. COLOUR MATRIXING.

The (B-Y) and (R-Y) signals are added on the base of Q16. This adding is according a well determined ratio to get the (G-Y) at the collector of Q16 and after a buffering we find it back on the base of Q17.

On the same base is equally applied the Y-signal through R93 as to obtain G at the open collector of Q17.

The same applies to obtain the R (red) and B (blue) signal.

These signals now are sent to the RGB SW module where the INS and pixel informations are added (see this board).

The R, G and B signals are then coming back to the contacts 2, 4 and 6 of the J4 connector on the Gain Control board and are introduced to the LM1203.

IV. BRIGHTNESS AND CONTRAST CONTROLS.

a) Contrast :

The contrast voltage is adjusted in IC5 and delivered to the base of Q37 (the pins 1 and 2 are shorted when leaving the factory). For service reasons, the pins 2 and 3 may be shorted, applying a fixed voltage in stead of the voltage from the digital potentiometer.

The voltage that reaches pin 1-2 can be limited by following :

- the IBCL info, we remind that this voltage is coming from the RGB Output boards and is the result of the beam current of the crt's.
- the BCL info, this is a negative voltage coming from the EHT transformer via the EHT board (HVL). this voltage is the result of the sum of the three crt's as it is proportional with the current generated by the EHT

b) Brightness :

The brightness voltage at the VO1 output of IC5 is reaching pin 5 of connector J2 on main board (Brightness is controlled on the Gain Control module).

Here, the pins 3 and 2 are shorted ex factory, and for service facilities the engineer can short 1-2 in order to apply the fixed voltage from the divider R199/ R200.

The CP pulse, available at the collector of Q32, is inverted and applied via pin 23 of the connector J7B to the RGB Analog+Switching module and amplified with Q40 to leave for the 'Gain control' module at J2 (10).

IV. CLAMPING PULSE CP

This CP pulse, utilised by the brightness control and the DC restoration of the green on the RGB Switching board, is formed as follows:

1. In the VID, S-VHS and RGSB mode (sync pulses in the blanking time) :

Note that in the S-VHS mode, the +VID line is equally 'high'(see RGB SWITCHING module).

Here, the original sandcastle pulse (SC) may be used in order to clamp on the backporch of the sync.

In either case, the transistor Q30 is saturated, 'eliminating' the line pulses to drive the transistor Q31.

The SC, arriving at J7A (11), is divided by R164/R163 and as the emitter is set at a threshold with R165/R166 only the smaller top pulse of the SC is found on the collector Q31.

2. In the TTL and RGBS mode:

The original sandcastle is now fully applied to the base of Q31, because Q30 is blocked.

On the collector of the latter we find now a wider pulse which is differentiated by C83/R169 .

A small pulse, coinciding with the start of the blanking time is available on the collector of Q32.

V.LEFT / RIGHT BLANKING.

Capacitor C88 is charged up from the +HTHD line and discharged through Q33 each time a pulse is sent to its base.

The sawtoothed waveform is the input for two level detectors in IC6.

Two digital potentiometers in IC5 feed the other inputs and determine the duration of the blanking pulses at the parallel connected outputs. The pulses are buffered with Q41 and leave the board on the emitter.

VI. COMPOSITE BLANKING.

The VBL pulses, sum of the top/bottom and vertical retrace blanking pulses, are mixed with the LP pulses taken from the node D8/D9 and both are applied to the base of Q34 via a zener Z4 and the divider R176/R177 where they are amplified and mixed with the previous left/right blanking.

The total composite blanking is then leaving the decoder on board clamp J7B (19) to reach the RGB OUTPUT board.

VII. SPOT SUPPRESSION AT SWITCHING OFF .

At switching off the projector the +17 Volts decreases faster than the +230 volts.

The sudden voltage drop at the collector of Q36 is transferred to :

- the base of Q41 via D40 and C111 to blank via the cathodes (RGB outputs). (note : this voltage is limited to 15 volts with Z5)
- the G1 via the capacitor C110 , this voltage jump is limited to (150+15) volts with Z1 and Z5.

VIII. R-G-B DRIVE

The R, G and B color signals, from the "RGB Switching module", arrive at board connector J1. (R pin 2, G pin 4 and B pin 6)

On the R-G-B driver board, the following circuits are provided:

- IC2-3-4 LM1201 R-G-B Video pre-amplifier

- * Brightness control
- * Contrast control
- * Sharpness control
- * Gain alignment

- RED and BLUE DC restoration

- IC8 - IC9 R-B Video amplifiers

- * Gain control for R & B
- * Black level control for R & B

- Output buffer for RED, GREEN and BLUE

R-G-B Video amplifier e.g. for the **Red** channel

The IC44 receives the color signal from the RGB Analog+Switching module respectively at pin 2 "Red".

On the input a DC controlled capacitive load C25/D11 is connected, which determines the bandwidth of the input (will be used as **sharpness adjustment**). The capacitive load is built around a capacitor C25 in series with a varicap D11. The latter is DC controlled, determining the capacitive value, by the adjustable regulator IC5, pin 7.

The output voltage of the regulator is determined by the applied sharpness control voltage on pin 6 of IC5. The output of the other OPAMP, pin 1 IC5, is used to switch on and off the capacitive load via the diode D1, determining the sharpness control range.

The color signal is in the IC contrast controlled, control voltage applied to pin 4 of IC4, by an attenuator circuit. The brightness adjustment voltage is applied to pin 6. The signal is in brightness controlled by a gated differential input black level clamp comparator

The output voltage is externally aligned, respectively P3 for R, for an signal amplitude of 4.6Vpp.

The color signal leave the IC on pin 8 (G).

The same description can be repeated for the Blue and Green signal.

The 'Green' signal is applied directly to its buffer output Q9/Q10 whereas the 'Red' and 'Blue' signal pass a light pulse former circuit and a separate video amplifier before reaching their buffer output, respectively Q7/Q8 and Q5/Q6.

Brightness ref. pulse/signal restoration

As the IC8 and IC9 may receive a video input signal of max 0.7V amplitude, the applied signal from respectively IC3 and IC4 will be adapted.

e.g. For the **RED** signal flow,

The R output signal from pin 8 of IC4 is applied to the voltage divider R37 in series with R41//R43. The signal voltage across R45 is 0.7Vpp.

The switch Q2, BS170, clamps during every sync pulse the present DC level on ground level via R43. In this way, a pulse is created during the sync time . The amplitude of the created pulse is a reference of the brightness level (Brightness ref. pulse).

Via the emitter follower Q4, the signal is capacitively coupled to the input of the IC9, LM201, pin 16.

Red and Blue signal processing

e.g. for the **RED** channel

The formed Red signal is capacitively fed to pin 16 of the IC9 LM1201. The LM1201 is a wideband videoamplifier.

The gain control in the IC is a DC operated attenuator which varies the AC gain of the amplifier.

The gain control voltage is set by the digital potentiometer in the IC1 and DC amplified in IC6 to reach a voltage range from 0 to 12V for the IC9 on pin 4 'contrast'.

The black level control function requires a 'sample and hold' circuit (black level clamp) which holds the DC bias of the video amplifier constant during the black level reference portion of the video waveform.

The clamp comparator, when gated on 'clamp gate pin 5' during this reference period, will charge or discharge the clamp capacitor 'pin 2' until the non-inverting input 'pin 6' of the clamp comparator, set by the black level control, matches that of the inverting input voltage 'pin 9' .

The Black level control voltage is set by the digital potentiometer in the IC1.

The R-output signal 'pin 8' is applied to its output amplifier Q7/Q8 via the signal switch Q13, and applied on pin 6 of the board connector J3.

When the projector is turned off, the +SPOT on the gate of the signal switch is at ground level via the saturated transistor Q36 on the decoder board, disabling the video signal to the output.

The same description can be repeated for the blue signal flow.

The B-output signal 'pin 8' is applied to its output amplifier Q5/Q6 via the signal switch Q12, and applied on pin 4 of the board connector J3.

Clamp pulse former

The pulses for gate clamping in the two IC's LM1201 and ground clamping of the R and B video signal are created with five Inverters IC7 74HCT04.

Line flyback pulses are applied to pin 13 of the IC7 after small differentiation. The positive pulse on pin 2 is applied to input 3 and 5 and after differentiation to pin 9. The negative pulses on pin 4 and 6 are used for video ground clamping and the pulse on pin 8 for gate clamping in the LM1201.

Parts listing 76 2174 (main board)

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION
76 2174S		UN RGB PJ49 G801 DVR	11 2763	C.73	C CE MI 10N U 63E2
11 1162	C...	C EL AX 220M T 25E10 85	11 4102	C.74	C POMERA 220N K100E4 368
11 1531	C..1	C EL RA 10M M 35E2 85	11 4102	C.75	C POMERA 220N K100E4 368
11 2774	C..2	C CE MI 100N S 63E2	11 1531	C.76	C EL RA 10M M 35E2 85
11 1531	C..3	C EL RA 10M M 35E2 85	11 2774	C.77	C CE MI 100N S 63E2
11 1531	C..4	C EL RA 10M M 35E2 85	11 2365	C.80	C N750MI 180P J 63E2
11 1531	C..5	C EL RA 10M M 35E2 85	11 2387	C.81	C N152MI 470P J 63E2
11 1531	C..6	C EL RA 10M M 35E2 85	11 1531	C.82	C EL RA 10M M 35E2 85
11 1500	C..7	C EL RA 47M M 10E2 85	11 2365	C.83	C N750MI 180P J 63E2
11 1531	C..8	C EL RA 10M M 35E2 85	11 1571	C.84	C EL RA 2M2M350E2 85
11 1531	C..9	C EL RA 10M M 35E2 85	11 2774	C.85	C CE MI 100N S 63E2
11 2774	C.10	C CE MI 100N S 63E2	11 2774	C.86	C CE MI 100N S 63E2
11 2774	C.11	C CE MI 100N S 63E2	11 2774	C.87	C CE MI 100N S 63E2
11 1531	C.13	C EL RA 10M M 35E2 85	11 5932	C.88	C PP RA 4N7J 63E2
11 1500	C.14	C EL RA 47M M 10E2 85	11 1531	C101	C EL RA 10M M 35E2 85
11 1531	C.15	C EL RA 10M M 35E2 85	11 2774	C102	C CE MI 100N S 63E2
11 3730	C.16	C POMERA 330N K 63E2	11 1510	C103	C EL RA 22M M 25E2 85
11 3732	C.17	C POMERA 470N K 63E2	11 1477	C104	C EL RA 100M Z 25E2 85
11 22415	C.18	C NPO MI 82P J 63E2	11 2739	C105	C CE MI 1N K100E2
11 1531	C.20	C EL RA 10M M 35E2 85	11 3730	C106	C POMERA 330N K 63E2
11 22395	C.21	C NPO MI 56P G 63E2	11 1568	C110	C EL RA 2M2M250E2 85
11 22395	C.22	C NPO MI 56P G 63E2	11 1510	C111	C EL RA 22M M 25E2 85
11 2368	C.23	C N750MI 330P J 63E2	11 3730	C120	C POMERA 330N K 63E2
11 2387	C.24	C N152MI 470P J 63E2	11 2774	C121	C CE MI 100N S 63E2
11 2387	C.25	C N152MI 470P J 63E2	11 4085	C122	C POMERA 330N K 63E2
11 1476	C.26	C EL RA 47M M 25E2 85	11 2774	C123	C CE MI 100N S 63E2
11 1531	C.27	C EL RA 10M M 35E2 85	11 1548	C125	C EL RA 2M2M 50E2 85
11 3730	C.28	C POMERA 330N K 63E2	11 2774	C126	C CE MI 100N S 63E2
11 3730	C.29	C POMERA 330N K 63E2	11 1546	C130	C EL RA 1M M 50E2 85
11 1531	C.30	C EL RA 10M M 35E2 85	11 1466	C131	C EL RA 100M Z 16E2 85
11 1531	C.31	C EL RA 10M M 35E2 85	13 1646	D...	D R 1N4007 10201A DO41
11 1531	C.32	C EL RA 10M M 35E2 85	13 1621	D..1	D S 1N4148 075150 DO35
11 1531	C.33	C EL RA 10M M 35E2 85	13 1621	D..2	D S 1N4148 075150 DO35
11 2739	C.40	C CE MI 1N K100E2	13 1621	D..3	D S 1N4148 075150 DO35
11 2364	C.41	C N750MI 150P J 63E2	13 1621	D..4	D S 1N4148 075150 DO35
11 2739	C.42	C CE MI 1N K100E2	13 1621	D..5	D S 1N4148 075150 DO35
11 59061	C.43	C PP RA 390P J100E2 1830	13 1621	D..6	D S 1N4148 075150 DO35
11 3730	C.44	C POMERA 330N K 63E2	13 1621	D..8	D S 1N4148 075150 DO35
11 2234	C.45	C NPO MI 22P G 63E2	13 1621	D..9	D S 1N4148 075150 DO35
11 2763	C.48	C CE MI 10N U 63E2	13 16361	D.10	D Y BAT85 030200 DO35
11 2739	C.50	C CE MI 1N K100E2	13 16217	D.11	D S 1N4148 075150 DO35
11 2739	C.51	C CE MI 1N K100E2	13 16217	D.12	D S 1N4148 075150 DO35
11 7001	C.52	C T 7 -35P 160	13 1621	D.14	D S 1N4148 075150 DO35
11 7001	C.53	C T 7 -35P 160	13 1621	D.15	D S 1N4148 075150 DO35
11 2365	C.54	C N750MI 180P J 63E2	13 1621	D.18	D S 1N4148 075150 DO35
11 2739	C.55	C CE MI 1N K100E2	13 1646	D.19	D R 1N4007 10201A DO41
11 37161	C.56	C POMERA 22N K100E2	13 1621	D.20	D S 1N4148 075150 DO35
11 37161	C.57	C POMERA 22N K100E2	13 1621	D.21	D S 1N4148 075150 DO35
11 3730	C.58	C POMERA 330N K 63E2	13 1621	D.22	D S 1N4148 075150 DO35
11 3720	C.59	C POMERA 47N K 63E2	13 1621	D.23	D S 1N4148 075150 DO35
11 3730	C.60	C POMERA 330N K 63E2	13 1621	D.24	D S 1N4148 075150 DO35
11 2365	C.61	C N750MI 180P J 63E2	13 1948	D.40	D R BYD33D 2001A3 SOD81
11 2240	C.62	C NPO MI 68P J 63E2	13 16217	D.41	D S 1N4148 075150 DO35
11 2243	C.63	C NPO MI 120P J 63E2	13 1621	D.51	D S 1N4148 075150 DO35
11 2234	C.64	C NPO MI 22P G 63E2	13 1621	D.52	D S 1N4148 075150 DO35
11 2365	C.65	C N750MI 180P J 63E2	30 6529	DL.1	DL 63.555US DL750
11 2234	C.66	C NPO MI 22P G 63E2	30 6511	DL.2	DL 63.943US DL711
11 2243	C.67	C NPO MI 120P J 63E2	30 6528	DL.3	DL 400NS 200E DIP14
11 2240	C.68	C NPO MI 68P J 63E2	13 2134	I..1	U 331 TBA DIP14 PARRAY
11 2763	C.69	C CE MI 10N U 63E2	13 2728	I..2	U 4557 TDA DIP28 PDEC
11 3728	C.70	C POMERA 220N K 63E2	13 2833	I..3	U 76013 SC DIP28 PD_POT
11 1476	C.71	C EL RA 47M M 25E2 85			
11 37161	C.72	C POMERA 22N K100E2			

13 2773	I..4	U 4560/65 TDA DIP18 P	13 1491	Q.40	Q BSX20 .2369 N SS TO18 015A2
13 2833	I..5	U 76013 SC DIP28 PD_POT	13 14181	Q.41	Q BC559B P SS TO92 030A1
13 4114	I..6	U 393 LM DIP8 PV_COM	13 14182	Q.42	Q BC559C P SS TO92 030A1
13 4002	I..8	U 7812 TO220 PSTAB	13 14295	Q.55	Q BC549B N SS TO92 030A1
13 4032	I..9	U 78L05 TO92 PSTAB			
13 4016	I..10	U 7912 TO220 PSTAB			
31 3525	J1..	J EUR2C MBS P64 E1 C2S1.6	10 1130	R..1	R CF H330E J 0W25
31 3525	J2..	J EUR2C MBS P64 E1 C2S1.6	10 1156	R..2	R CF H 47K J 0W25
			10 1156	R..3	R CF H 47K J 0W25
77 3310	L..1	COIL IF N27.5 B5 D0.14	10 1112	R..4	R CF H 10E J 0W25
77 4212	L..2	COIL IF N40 C5 D0.12	10 1140	R..5	R CF H 2K2 J 0W25
77 4017	L..3	COIL IF N47 B5 D0.12	10 11284	R..6	R MF H200E F 0W25
77 4211	L..4	COIL IF N56 B5 D0.12	10 1148	R..7	R CF H 10K J 0W25
77 4212	L..5	COIL IF N40 C5 D0.12	10 1148	R..8	R CF H 10K J 0W25
77 4212	L..6	COIL IF N40 C5 D0.12	10 11284	R..9	R MF H200E F 0W25
77 4212	L..7	COIL IF N40 C5 D0.12	10 1147	R..Z	R CF H 8K2 J 0W25
30 6024	L..8	CH RA NS 10 UH	10 1130	R.10	R CF H330E J 0W25
30 6052	L..9	CH RA NS 150 UH	10 1148	R.15	R CF H 10K J 0W25
30 6052	L.10	CH RA NS 150 UH	10 1148	R.16	R CF H 10K J 0W25
77 4212	L.11	COIL IF N40 C5 D0.12	10 1137	R.17	R CF H 1K2 J 0W25
30 61322	L.13	CH AX NS 10 UH	10 1140	R.18	R CF H 2K2 J 0W25
			10 1140	R.19	R CF H 2K2 J 0W25
10 6726	P..1	RTCE H 1K K 0W5 S10TS3386P	10 1161	R.20	R CF H120K J 0W25
10 6728	P..2	RTCE H 5K K 0W5 S10TS3386P	10 1154	R.21	R CF H 33K J 0W25
10 6727	P..3	RTCE H 2K K 0W5 S10TS3386P	10 1134	R.22	R CF H680E J 0W25
10 6724	P..4	RTCE H200E K 0W5 S10TS3386P	10 1124	R.23	R CF H100E J 0W25
			10 1148	R.24	R CF H 10K J 0W25
78 0016	PC..	PCS PJ49 800 DEC 761822	10 1134	R.25	R CF H680E J 0W25
			10 1128	R.26	R CF H220E J 0W25
13 1411	Q...	Q BC549C N SS TO92 030A1	10 1133	R.27	R CF H560E J 0W25
13 14295	Q..1	Q BC549B N SS TO92 030A1	10 1138	R.28	R CF H 1K5 J 0W25
13 1411	Q..2	Q BC549C N SS TO92 030A1	10 1160	R.29	R CF H100K J 0W25
13 14295	Q..3	Q BC549B N SS TO92 030A1	10 1143	R.30	R CF H 3K9 J 0W25
13 14295	Q..4	Q BC549B N SS TO92 030A1	10 1132	R.40	R CF H470E J 0W25
13 14181	Q..5	Q BC559B P SS TO92 030A1	10 1132	R.41	R CF H470E J 0W25
13 14181	Q..6	Q BC559B P SS TO92 030A1	10 1128	R.42	R CF H220E J 0W25
13 14181	Q..7	Q BC559B P SS TO92 030A1	10 1134	R.43	R CF H680E J 0W25
13 14181	Q..8	Q BC559B P SS TO92 030A1	10 1132	R.44	R CF H470E J 0W25
13 14181	Q..9	Q BC559B P SS TO92 030A1	10 1128	R.45	R CF H220E J 0W25
13 14295	Q.10	Q BC549B N SS TO92 030A1	10 1138	R.46	R CF H 1K5 J 0W25
13 14295	Q.11	Q BC549B N SS TO92 030A1	10 1138	R.47	R CF H 1K5 J 0W25
13 14295	Q.12	Q BC549B N SS TO92 030A1	10 1144	R.48	R CF H 4K7 J 0W25
13 14295	Q.13	Q BC549B N SS TO92 030A1	10 1134	R.49	R CF H680E J 0W25
13 14295	Q.14	Q BC549B N SS TO92 030A1	10 1134	R.50	R CF H680E J 0W25
13 14181	Q.15	Q BC559B P SS TO92 030A1	10 1134	R.51	R CF H680E J 0W25
13 14295	Q.16	Q BC549B N SS TO92 030A1	10 1134	R.52	R CF H680E J 0W25
13 14181	Q.17	Q BC559B P SS TO92 030A1	10 1144	R.53	R CF H 4K7 J 0W25
13 14181	Q.18	Q BC559B P SS TO92 030A1	10 1132	R.54	R CF H470E J 0W25
13 14181	Q.19	Q BC559B P SS TO92 030A1	10 1132	R.55	R CF H470E J 0W25
13 14295	Q.20	Q BC549B N SS TO92 030A1	10 1138	R.56	R CF H 1K5 J 0W25
13 14295	Q.21	Q BC549B N SS TO92 030A1	10 1150	R.57	R CF H 15K J 0W25
13 14295	Q.22	Q BC549B N SS TO92 030A1	10 1144	R.58	R CF H 4K7 J 0W25
13 14295	Q.23	Q BC549B N SS TO92 030A1	10 1160	R.61	R CF H100K J 0W25
13 14295	Q.24	Q BC549B N SS TO92 030A1	10 1160	R.62	R CF H100K J 0W25
13 14295	Q.25	Q BC549B N SS TO92 030A1	10 1122	R.63	R CF H 68E J 0W25
13 14295	Q.26	Q BC549B N SS TO92 030A1	10 1134	R.64	R CF H680E J 0W25
13 14295	Q.29	Q BC549B N SS TO92 030A1	10 1150	R.65	R CF H 15K J 0W25
13 14295	Q.30	Q BC549B N SS TO92 030A1	10 1140	R.66	R CF H 2K2 J 0W25
13 14295	Q.31	Q BC549B N SS TO92 030A1	10 1153	R.70	R CF H 27K J 0W25
13 14295	Q.32	Q BC559B P SS TO92 030A1	10 1156	R.72	R CF H 47K J 0W25
13 1491	Q.33	Q BSX20 .2369 N SS TO18 015A2	10 1137	R.73	R CF H 1K2 J 0W25
13 1491	Q.34	Q BSX20 .2369 N SS TO18 015A2	10 1128	R.74	R CF H220E J 0W25
13 14295	Q.35	Q BC549B N SS TO92 030A1	10 1128	R.75	R CF H220E J 0W25
13 1471	Q.36	Q BF458 N P TO126 250A1	10 1161	R.76	R CF H120K J 0W25
13 14295	Q.37	Q BC549B N SS TO92 030A1	10 1150	R.77	R CF H 15K J 0W25
13 14295	Q.38	Q BC549B N SS TO92 030A1	10 1136	R.78	R CF H 1K J 0W25
13 14295	Q.39	Q BC549B N SS TO92 030A1	10 1128	R.79	R CF H220E J 0W25
			10 1136	R.80	R CF H 1K J 0W25
			10 11355	R.85	R MF H750E F 0W25

10 11403	R.86	R MF H 2K F 0W25	10 1138	R165	R CF H 1K5 J 0W25
10 11403	R.87	R MF H 2K F 0W25	10 1136	R166	R CF H 1K J 0W25
10 11364	R.88	R MF H 1K F 0W25	10 1142	R167	R CF H 3K3 J 0W25
10 11403	R.89	R MF H 2K F 0W25	10 1136	R168	R CF H 1K J 0W25
10 11364	R.90	R MF H 1K F 0W25	10 1136	R169	R CF H 1K J 0W25
10 11355	R.91	R MF H750E F 0W25	10 1136	R170	R CF H 1K J 0W25
10 11364	R.92	R MF H 1K F 0W25	10 1136	R171	R CF H 1K J 0W25
10 11403	R.93	R MF H 2K F 0W25	10 1144	R172	R CF H 4K7 J 0W25
10 11364	R.94	R MF H 1K F 0W25	10 1164	R174	R CF H220K J 0W25
10 1119	R.95	R CF H 39E J 0W25	10 1152	R175	R CF H 22K J 0W25
10 1160	R.96	R CF H100K J 0W25	10 1144	R176	R CF H 4K7 J 0W25
10 1119	R.97	R CF H 39E J 0W25	10 1136	R177	R CF H 1K J 0W25
10 1160	R.98	R CF H100K J 0W25	10 1143	R178	R CF H 3K9 J 0W25
10 1119	R.99	R CF H 39E J 0W25	10 1148	R179	R CF H 10K J 0W25
10 1144	R100	R CF H 4K7 J 0W25	10 1148	R181	R CF H 10K J 0W25
10 1144	R101	R CF H 4K7 J 0W25	10 1153	R199	R CF H 27K J 0W25
10 1144	R102	R CF H 4K7 J 0W25	10 1142	R200	R CF H 3K3 J 0W25
10 1160	R105	R CF H100K J 0W25	10 1148	R201	R CF H 10K J 0W25
10 1136	R106	R CF H 1K J 0W25	10 1136	R202	R CF H 1K J 0W25
10 1146	R110	R CF H 6K8 J 0W25	10 1143	R203	R CF H 3K9 J 0W25
10 1137	R111	R CF H 1K2 J 0W25	10 0136	R204	R CF V 1K J 0W25 E2 R25X
10 1150	R112	R CF H 15K J 0W25	10 1134	R205	R CF H680E J 0W25
10 1143	R113	R CF H 3K9 J 0W25	10 0160	R206	R CF V100K J 0W25 E2
10 1150	R114	R CF H 15K J 0W25	10 1148	R207	R CF H 10K J 0W25
10 1130	R115	R CF H330E J 0W25	10 1159	R208	R CF H 82K J 0W25
10 1150	R116	R CF H 15K J 0W25	10 1124	R209	R CF H100E J 0W25
10 1148	R117	R CF H 10K J 0W25	10 14605	R221	R CF H100K J 1W5
10 1150	R118	R CF H 15K J 0W25	10 1157	R222	R CF H 56K J 0W25
10 1140	R119	R CF H 2K2 J 0W25	10 1136	R223	R CF H 1K J 0W25
10 1148	R121	R CF H 10K J 0W25	10 12009	R230	R CFFH 1E J 0W5 SKS4
10 1148	R122	R CF H 10K J 0W25	10 1164	R231	R CF H220K J 0W25
10 1148	R123	R CF H 10K J 0W25	10 1140	R233	R CF H 2K2 J 0W25
10 1148	R124	R CF H 10K J 0W25	10 11129	R234	R CFFH 10E J 0W25
10 1144	R125	R CF H 4K7 J 0W25	10 1156	R235	R CF H 47K J 0W25
10 1148	R126	R CF H 10K J 0W25	10 11129	R236	R CFFH 10E J 0W25
10 1127	R127	R CF H180E J 0W25	10 1124	R240	R CF H100E J 0W25
10 1137	R128	R CF H 1K2 J 0W25	10 1124	R241	R CF H100E J 0W25
10 1131	R129	R CF H390E J 0W25	10 1536	R246	R MF H 1K F 0W4 E2
10 1135	R130	R CF H820E J 0W25	10 1545	R247	R MF H 5K6 F 0W4 E2
10 1140	R131	R CF H 2K2 J 0W25			
10 1138	R132	R CF H 1K5 J 0W25	31 3286	S..1	J MD1 MBT P 3 R1SN
10 1150	R133	R CF H 15K J 0W25	31 3286	S..2	J MD1 MBT P 3 R1SN
10 1150	R134	R CF H 15K J 0W25			
10 1148	R135	R CF H 10K J 0W25	30 6816	XT.1	X 8.867238 MHZ HC49 S20
10 1148	R136	R CF H 10K J 0W25	30 6849	XT.2	X 7.159090 MHZ HC49 S20
10 1138	R137	R CF H 1K5 J 0W25			
10 1139	R140	R CF H 1K8 J 0W25	13 1771	Z..1	D ZEN 150V 0W5 C DO35
10 1138	R141	R CF H 1K5 J 0W25	13 17215	Z..2	D ZEN 13V 0W5 B DO35
10 1141	R142	R CF H 2K7 J 0W25	13 1754	Z..3	D ZEN 3V3 0W5 C DO35
10 1146	R143	R CF H 6K8 J 0W25	13 1766	Z..4	D ZEN 18V 0W5 B DO35
10 1138	R144	R CF H 1K5 J 0W25	13 1788	Z..5	D ZEN 15V BZX79C DO35
10 1135	R145	R CF H820E J 0W25			
10 1140	R146	R CF H 2K2 J 0W25			
10 1144	R147	R CF H 4K7 J 0W25			
10 1135	R148	R CF H820E J 0W25			
10 1135	R149	R CF H820E J 0W25			
10 1144	R150	R CF H 4K7 J 0W25			
10 1140	R151	R CF H 2K2 J 0W25			
10 1142	R154	R CF H 3K3 J 0W25			
10 1148	R155	R CF H 10K J 0W25			
10 1148	R157	R CF H 10K J 0W25			
10 1152	R158	R CF H 22K J 0W25			
10 1136	R159	R CF H 1K J 0W25			
10 1144	R160	R CF H 4K7 J 0W25			
10 3248	R161	R MO H 10K J 1W5			
10 1136	R162	R CF H 1K J 0W25			
10 1147	R163	R CF H 8K2 J 0W25			
10 1142	R164	R CF H 3K3 J 0W25			

Parts listing 76 2174S (sub board)

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION
11 3724	C..1	C POMERA 100N K 63E2	P210122	C.70	C(S)CEC2CH1206X7R104K 50
11 3724	C..2	C POMERA 100N K 63E2	P210122	C.71	C(S)CEC2CH1206X7R104K 50
11 3724	C..3	C POMERA 100N K 63E2	11 59181	C.74	C PP RA 1N2J100E2
11 3724	C..4	C POMERA 100N K 63E2	11 59181	C.75	C PP RA 1N2J100E2
11 1466	C..5	C EL RA 100M Z 16E2 85	11 59181	C.76	C PP RA 1N2J100E2
11 2741	C..6	C CE MI 1N5K 63E2	11 59101	C.77	C PP RA 560P J100E2 1830
11 1466	C..7	C EL RA 100M Z 16E2 85	11 59101	C.78	C PP RA 560P J100E2 1830
11 3724	C..8	C POMERA 100N K 63E2	11 1531	C459	C EL RA 10M M 35E2 85
11 3724	C..9	C POMERA 100N K 63E2	11 2741	C460	C CE MI 1N5K 63E2
11 3724	C.10	C POMERA 100N K 63E2			
11 3724	C.11	C POMERA 100N K 63E2	13 1623	D..1	D S BA243 020100 DO35
11 2741	C.12	C CE MI 1N5K 63E2	13 1623	D..2	D S BA243 020100 DO35
11 1466	C.13	C EL RA 100M Z 16E2 85	13 1623	D..3	D S BA243 020100 DO35
11 1466	C.14	C EL RA 100M Z 16E2 85	13 1621	D..4	D S 1N4148 075150 DO35
11 3724	C.15	C POMERA 100N K 63E2	13 1621	D..5	D S 1N4148 075150 DO35
11 3724	C.16	C POMERA 100N K 63E2	13 1635	D..6	D Y HP5082-2800
11 3724	C.17	C POMERA 100N K 63E2	13 1621	D..7	D S 1N4148 075150 DO35
11 3724	C.18	C POMERA 100N K 63E2	13 1621	D..8	D S 1N4148 075150 DO35
11 2741	C.19	C CE MI 1N5K 63E2	13 1621	D..9	D S 1N4148 075150 DO35
11 1466	C.20	C EL RA 100M Z 16E2 85	13 1621	D.10	D S 1N4148 075150 DO35
11 1466	C.21	C EL RA 100M Z 16E2 85	13 1826	D.11	D V BB112 008 SOD69
11 1548	C.22	C EL RA 2M2M 50E2 85	13 1826	D.12	D V BB112 008 SOD69
11 1548	C.23	C EL RA 2M2M 50E2 85	13 1826	D.13	D V BB112 008 SOD69
11 1548	C.24	C EL RA 2M2M 50E2 85	13 19481	D.14	D R BYD33J 6001A3 SOD81
11 2366	C.25	C N750MI 220P J 63E2	13 1621	D.20	D S 1N4148 075150 DO35
11 2366	C.26	C N750MI 220P J 63E2	13 1621	D.21	D S 1N4148 075150 DO35
11 2366	C.27	C N750MI 220P J 63E2			
11 3724	C.28	C POMERA 100N K 63E2	30 2108	FB.1	CORE TUBE 3.5 /1.3 X 3
11 3724	C.29	C POMERA 100N K 63E2	30 2108	FB.2	CORE TUBE 3.5 /1.3 X 3
11 3724	C.30	C POMERA 100N K 63E2			
11 2233	C.31	C NPO MI 18P G 63E2	13 2833	I..1	U 76013 SC DIP28 PD_POT
11 2237	C.32	C NPO MI 39P G 63E2	13 2851	I..2	U 1201 LM DIP16 PVID_A
11 1678	C.33	C EL BRA 10M M 25E2 85	13 2851	I..3	U 1201 LM DIP16 PVID_A
11 2237	C.34	C NPO MI 39P G 63E2	13 2851	I..4	U 1201 LM DIP16 PVID_A
11 1678	C.36	C EL BRA 10M M 25E2 85	13 4124	I..5	U 082 TL DIP8 POPAMP
11 3724	C.37	C POMERA 100N K 63E2	13 4113	I..6	U 084 TL DIP14 POPAMP
11 3724	C.38	C POMERA 100N K 63E2	13 7536	I..7	U 74HCT04 DIP14 PINV
11 3724	C.39	C POMERA 100N K 63E2	13 2851	I..8	U 1201 LM DIP16 PVID_A
11 3724	C.40	C POMERA 100N K 63E2	13 2851	I..9	U 1201 LM DIP16 PVID_A
11 2741	C.41	C CE MI 1N5K 63E2	13 4145	I462	U 3080E CA DIP8 POPAMP
11 1466	C.42	C EL RA 100M Z 16E2 85			
11 1466	C.43	C EL RA 100M Z 16E2 85	31 3947	J..1	J CT MBS P 7 M2SN
11 3724	C.44	C POMERA 100N K 63E2	31 3952	J..2	J CT MBS P12 M2SN
11 2774	C.45	C CE MI 100N S 63E2	31 3947	J..3	J CT MBS P 7 M2SN
11 1510	C.46	C EL RA 22M M 25E2 85			
11 3724	C.47	C POMERA 100N K 63E2	10 7004	P..1	R TCE H200E M 0W5 S7 TS3362P
11 3724	C.48	C POMERA 100N K 63E2	10 7004	P..2	R TCE H200E M 0W5 S7 TS3362P
11 3724	C.49	C POMERA 100N K 63E2	10 7004	P..3	R TCE H200E M 0W5 S7 TS3362P
11 3724	C.50	C POMERA 100N K 63E2	10 7004	P..4	R TCE H200E M 0W5 S7 TS3362P
11 1477	C.51	C EL RA 100M Z 25E2 85	10 7004	P..5	R TCE H200E M 0W5 S7 TS3362P
11 3724	C.52	C POMERA 100N K 63E2			
11 1466	C.53	C EL RA 100M Z 16E2 85	78 0237	PC..	PCD PJ49 G801 RGB DVR 01
11 3724	C.54	C POMERA 100N K 63E2			
11 2741	C.55	C CE MI 1N5K 63E2	13 2910	Q..1	Q BS170 FN SS TO92 060A5
11 1510	C.56	C EL RA 22M M 25E2 85	13 2910	Q..2	Q BS170 FN SS TO92 060A5
11 59081	C.57	C PP RA 470P J100E2 1830	13 2954	Q..3	Q BFY90 N SS TO72 03025
11 59161	C.58	C PP RA 1N J100E2	13 2954	Q..4	Q BFY90 N SS TO72 03025
11 2741	C.59	C CE MI 1N5K 63E2	13 2954	Q..5	Q BFY90 N SS TO72 03025
11 1466	C.60	C EL RA 100M Z 16E2 85	13 2911	Q..6	Q 2N5583 P SS TO39 030A5
11 1510	C.61	C EL RA 22M M 25E2 85	13 2954	Q..7	Q BFY90 N SS TO72 03025
11 3724	C.63	C POMERA 100N K 63E2	13 2911	Q..8	Q 2N5583 P SS TO39 030A5
11 2205	C.66	C P100MI 1P5C 63E2	13 2954	Q..9	Q BFY90 N SS TO72 03025
11 2231	C.67	C NPO MI 12P G 63E2	13 2911	Q.10	Q 2N5583 P SS TO39 030A5
11 2227	C.68	C NPO MI 5P6C 63E2	13 2910	Q.12	Q BS170 FN SS TO92 060A5
P210122	C.69	C(G)CEC2CH11206X7R104K 50	13 2910	Q.13	Q BS170 FN SS TO92 060A5

13 2910 Q.14 Q BS170 FN SS TO92 060A5
13 14295 Q461 Q BC549B N SS TO92 030A1
13 2916 Q465 Q BS250 FN SS TO92 045A2

10 1548 R..1 R MF H 10K F 0W4 E2
10 1528 R..2 R MF H220E F 0W4 E2
10 1512 R..3 R MF H 10E F 0W4 E2
10 1548 R..4 R MF H 10K F 0W4 E2
10 1528 R..5 R MF H220E F 0W4 E2
10 1512 R..6 R MF H 10E F 0W4 E2
10 1548 R..7 R MF H 10K F 0W4 E2
10 1528 R..8 R MF H220E F 0W4 E2
10 1512 R..9 R MF H 10E F 0W4 E2
10 1523 R.10 R MF H 82E F 0W4 E2
10 1523 R.11 R MF H 82E F 0W4 E2
10 1523 R.12 R MF H 82E F 0W4 E2
10 1540 R.13 R MF H 2K2 F 0W4 E2
10 1540 R.14 R MF H 2K2 F 0W4 E2
10 1540 R.15 R MF H 2K2 F 0W4 E2
10 1553 R.16 R MF H 27K F 0W4 E2
10 1553 R.17 R MF H 27K F 0W4 E2
10 1553 R.18 R MF H 27K F 0W4 E2
10 1524 R.19 R MF H100E F 0W4 E2
10 1524 R.20 R MF H100E F 0W4 E2
10 1524 R.21 R MF H100E F 0W4 E2
10 1548 R.22 R MF H 10K F 0W4 E2
10 1548 R.23 R MF H 10K F 0W4 E2
10 15401 R.24 R MF H 2K F 0W4 E2
10 1573 R.25 R MF H 43K2 F 0W4 E2
10 1555 R.26 R MF H 39K F 0W4 E2
10 1560 R.27 R MF H100K F 0W4 E2
10 15401 R.28 R MF H 2K F 0W4 E2
10 1542 R.30 R MF H 3K3 F 0W4 E2
10 1530 R.31 R MF H330E F 0W4 E2
10 1525 R.32 R MF H120E F 0W4 E2
10 1540 R.33 R MF H 2K2 F 0W4 E2
10 1526 R.34 R MF H150E F 0W4 E2
10 1540 R.35 R MF H 2K2 F 0W4 E2
10 1516 R.36 R MF H 22E F 0W4 E2
10 1530 R.37 R MF H330E F 0W4 E2
10 1541 R.38 R MF H 2K7 F 0W4 E2
10 15401 R.40 R MF H 2K F 0W4 E2
10 1525 R.41 R MF H120E F 0W4 E2
10 1540 R.42 R MF H 2K2 F 0W4 E2
10 1526 R.43 R MF H150E F 0W4 E2
10 1516 R.44 R MF H 22E F 0W4 E2
10 1540 R.45 R MF H 2K2 F 0W4 E2
10 1548 R.46 R MF H 10K F 0W4 E2
10 1548 R.47 R MF H 10K F 0W4 E2
10 15401 R.48 R MF H 2K F 0W4 E2
10 1548 R.49 R MF H 10K F 0W4 E2
10 1528 R.50 R MF H220E F 0W4 E2
10 1523 R.52 R MF H 82E F 0W4 E2
10 1535 R.53 R MF H820E F 0W4 E2
10 1528 R.54 R MF H220E F 0W4 E2
10 1533 R.55 R MF H560E F 0W4 E2
10 1529 R.56 R MF H270E F 0W4 E2
10 1544 R.57 R MF H 4K7 F 0W4 E2
10 1512 R.58 R MF H 10E F 0W4 E2
10 1548 R.59 R MF H 10K F 0W4 E2
10 1548 R.60 R MF H 10K F 0W4 E2
10 15401 R.61 R MF H 2K F 0W4 E2
10 1548 R.62 R MF H 10K F 0W4 E2
10 1531 R.63 R MF H390E F 0W4 E2
10 1531 R.64 R MF H390E F 0W4 E2
10 1528 R.65 R MF H220E F 0W4 E2
10 1523 R.67 R MF H 82E F 0W4 E2
10 1528 R.68 R MF H220E F 0W4 E2

10 1542 R.69 R MF H 3K3 F 0W4 E2
10 1512 R.70 R MF H 10E F 0W4 E2
10 1540 R.71 R MF H 2K2 F 0W4 E2
10 1540 R.72 R MF H 2K2 F 0W4 E2
10 1536 R.73 R MF H 1K F 0W4 E2
10 1548 R.74 R MF H 10K F 0W4 E2
10 1508 R.75 R MF H 4E7 F 0W4 E2
10 1515 R.76 R MF H 18E F 0W4 E2
10 1522 R.77 R MF H 68E F 0W4 E2
10 1531 R.78 R MF H390E F 0W4 E2
10 1512 R.79 R MF H 10E F 0W4 E2
10 1542 R.80 R MF H 3K3 F 0W4 E2
10 1523 R.81 R MF H 82E F 0W4 E2
10 1528 R.83 R MF H220E F 0W4 E2
10 1539 R.84 R MF H 1K8 F 0W4 E2
10 1538 R.85 R MF H 1K5 F 0W4 E2
10 1532 R.86 R MF H470E F 0W4 E2
10 1535 R.87 R MF H820E F 0W4 E2
10 1544 R.88 R MF H 4K7 F 0W4 E2
10 1549 R.89 R MF H 12K F 0W4 E2
10 1544 R.90 R MF H 4K7 F 0W4 E2
10 1549 R.91 R MF H 12K F 0W4 E2
10 1512 R.92 R MF H 10E F 0W4 E2
10 1512 R.93 R MF H 10E F 0W4 E2
10 1545 R.95 R MF H 5K6 F 0W4 E2
10 1523 R.96 R MF H 82E F 0W4 E2
10 1536 R.97 R MF H 1K F 0W4 E2
10 1536 R.99 R MF H 1K F 0W4 E2
10 1536 R101 R MF H 1K F 0W4 E2
10 1536 R103 R MF H 1K F 0W4 E2
10 1536 R104 R MF H 1K F 0W4 E2
10 1540 R105 R MF H 2K2 F 0W4 E2
10 1540 R106 R MF H 2K2 F 0W4 E2
10 1540 R107 R MF H 2K2 F 0W4 E2
10 1540 R108 R MF H 2K2 F 0W4 E2
10 15281 R110 R MF H200E F 0W4 E2
10 1512 R111 R MF H 10E F 0W4 E2
10 1545 R112 R MF H 5K6 F 0W4 E2
10 1525 R113 R MF H120E F 0W4 E2
10 1538 R114 R MF H 1K5 F 0W4 E2
10 1538 R115 R MF H 1K5 F 0W4 E2
10 15401 R116 R MF H 2K F 0W4 E2
10 15401 R117 R MF H 2K F 0W4 E2
10 15401 R118 R MF H 2K F 0W4 E2
10 1535 R120 R MF H820E F 0W4 E2
10 1541 R121 R MF H 2K7 F 0W4 E2
10 1552 R123 R MF H 22K F 0W4 E2
10 1552 R124 R MF H 22K F 0W4 E2
10 1545 R463 R MF H 5K6 F 0W4 E2
10 1541 R464 R MF H 2K7 F 0W4 E2
10 1542 R468 R MF H 3K3 F 0W4 E2

31 3729 TP.1 J PIN MBT D 2 TESTEYE
31 3729 TP.2 J PIN MBT D 2 TESTEYE
31 3729 TP.3 J PIN MBT D 2 TESTEYE
31 3729 TP.4 J PIN MBT D 2 TESTEYE
31 3729 TP.5 J PIN MBT D 2 TESTEYE
31 3729 TP.6 J PIN MBT D 2 TESTEYE

Spare parts 76 2174 (main board)

ART NO.	DESCRIPTION	QUANTITY	ART NO.	DESCRIPTION	QUANTITY
10 11129	R CFFH 10E J 0W25	2	30 6024	CH RA NS 10 UH	1
10 12009	R CFFH 1E J 0W5 SKS4	1	30 6052	CH RA NS 150 UH	2
10 14605	R CF H100K J 1W5	1	30 61322	CH AX NS 10 UH	1
10 3248	R MO H 10K J 1W5	1	30 6511	DL 63.943US DL711	1
10 6724	RTCE H200E K 0W5 S10TS3386P	1	30 6528	DL 400NS 200E DIP14	1
10 6726	RTCE H 1K K 0W5 S10TS3386P	1	30 6529	DL 63.555US DL750	1
10 6727	RTCE H 2K K 0W5 S10TS3386P	1	30 6816	X 8.867238 MHZ HC49 S20	1
10 6728	RTCE H 5K K 0W5 S10TS3386P	1	30 6849	X 7.159090 MHZ HC49 S20	1
11 1568	C EL RA 2M2M250E2 85	1	31 3286	J MD1 MBT P 3 R1SN	2
11 1571	C EL RA 2M2M350E2 85	1	31 33921	J MD JMP P 1 E1SN	2
11 7001	CT 7 -35P 160	2	31 3525	J EUR2C MBS P64 E1 C2S1.6	2
13 1411	Q BC549C N SS TO92 030A1	2	36 20121	SCR D84 M 2.5X 6 SS Z	1
13 14181	Q BC559B P SS TO92 030A1	11	36 20226	SCR D84 M 3 X 8 SI	1
13 14182	Q BC559C P SS TO92 030A1	1	36 61026	NUT D934 M 3 I	1
13 14295	Q BC549B N SS TO92 030A1	24	36 74391	RVT POP D3.2 L 7.4 P ASW	2
13 1471	Q BF458 N P TO126 250A1	1	36 7502	WSHR D6798 A 3.2 S Z	1
13 1491	Q BSX20 .2369 N SS TO18 015A2	3	36 7699	RVT CHB D2.38L6.35 P A	3
13 1621	D S 1N4148 075150 DO35	18	71 23023	WSHR D 3.25X 7 T0.5 L	1
13 16217	D S 1N4148 075150 DO35	3	72 2276	LOCK PJ49 PCB UN CPL	1
13 16361	D Y BAT85 030200 DO35	1	76 2174S	UN RGB PJ49 G801 DVR	1
13 1646	D R 1N4007 10201A DO41	2	77 3310	COIL IF N27.5 B5 D0.14	1
13 17215	D ZEN 13V 0W5 B DO35	1	77 4017	COIL IF N47 B5 D0.12	1
13 1754	D ZEN 3V3 0W5 C DO35	1	77 4211	COIL IF N56 B5 D0.12	1
13 1766	D ZEN 18V 0W5 B DO35	1	77 4212	COIL IF N40 C5 D0.12	5
13 1771	D ZEN 150V 0W5 C DO35	1	80 2629	HTSNK PJ49 RGB PR AMP 03	1
13 1788	D ZEN 15V BZX79C DO35	1	80 2692	HTSNK PJ49 FIX HTSNK	2
13 1948	D R BYD33D 2001A3 SOD81	1			
13 2134	U 331 TBA DIP14 PARRAY	1			
13 2728	U 4557 TDA DIP28 PDEC	1			
13 2773	U 4560/65 TDA DIP18 P	1			
13 2833	U 76013 SC DIP28 PD POT	2			
13 3036	SPR L 6 D 6 D 2.4 C CER	1			
13 3039	SPR L 8 D 4 D 1.2 C CER	4			
13 4002	U 7812 TO220 PSTAB	1			
13 4016	U 7912 TO220 PSTAB	1			
13 4032	U 78L05 TO92 PSTAB	1			
13 4114	U 393 LM DIP8 PV_COM	1			
30 2061	COIL ACC 10 X10 X12	8			

Spare parts 76 2174S (sub board)

ART NO.	DESCRIPTION	QUANTITY	ART NO.	DESCRIPTION	QUANTITY
10 15401	R MF H 2K F 0W4 E2	8	13 4124	U 082 TL DIP8 POPAMP	1
10 1573	R MF H 43K2 F 0W4 E2	1	13 4145	U 3080E CA DIP8 POPAMP	1
10 7004	RTCE H200E M 0W5 S7 TS3362P	5	13 7536	U 74HCT04 DIP14 PINV	1
13 14295	Q BC549B N SS TO92 030A1	1	30 2108	CORE TUBE 3.5 /1.3 X 3	2
13 1621	D S 1N4148 075150 DO35	8	31 3729	J PIN MBT D 2 TESTEYE	6
13 1623	D S BA243 020100 DO35	3	31 3947	J CT MBS P 7 M2SN	2
13 1635	D Y HP5082-2800	1	31 3952	J CT MBS P12 M2SN	1
13 1826	D V BB112 008 SOD69	3	78 0237	PCD PJ49 G801 RGB DVR 01	1
13 19481	D R BYD33J 6001A3 SOD81	1			
13 2833	U 76013 SC DIP28 PD POT	1			
13 2851	U 1201 LM DIP16 PVID_A	5			
13 2910	Q BS170 FN SS TO92 060A5	5			
13 2911	Q 2N5583 P SS TO39 030A5	3			
13 2916	Q BS250 FN SS TO92 045A2	1			
13 2954	Q BFY90 N SS TO72 03025	5			
13 3013	Q ACC MNTG PAD TO5	4			
13 4113	U 084 TL DIP14 POPAMP	1			

