

CONNECTION
WITH IRIS

TO RGB ANALOG INPUT (J6)

FROM
FRAME
(J31)

TO LOCAL
CONTROL (J7)
ONLY FOR *808

FROM
FRAME
(J28)

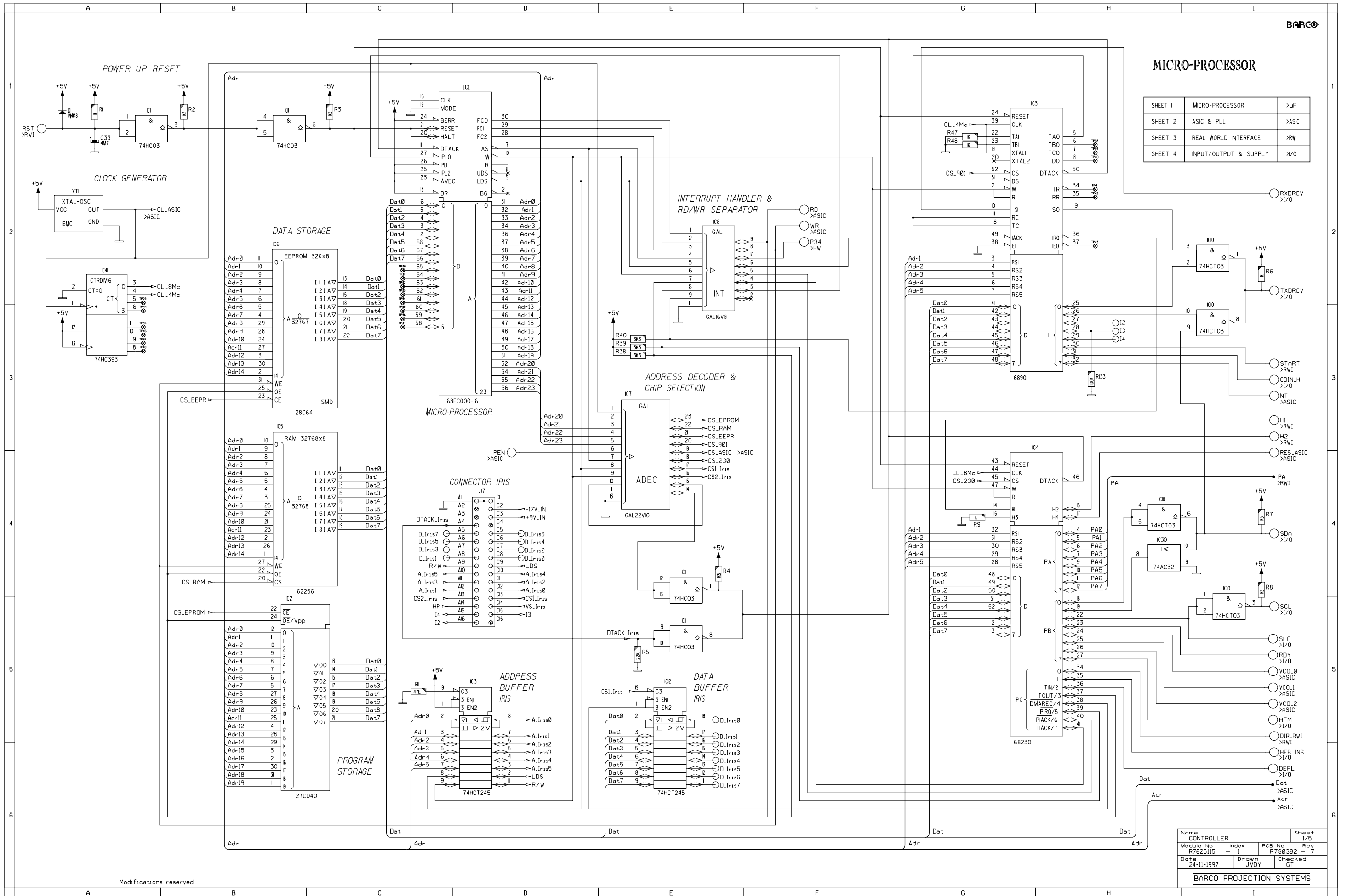
FROM FRAME (J29)

TO FRAME (J30)

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

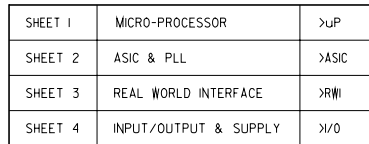
SHEET 1	MICRO-PROCESSOR	>UP
SHEET 2	ASIC & PLL	>ASIC
SHEET 3	REAL WORLD INTERFACE	>RWI
SHEET 4	INPUT/OUTPUT & SUPPLY	>I/O




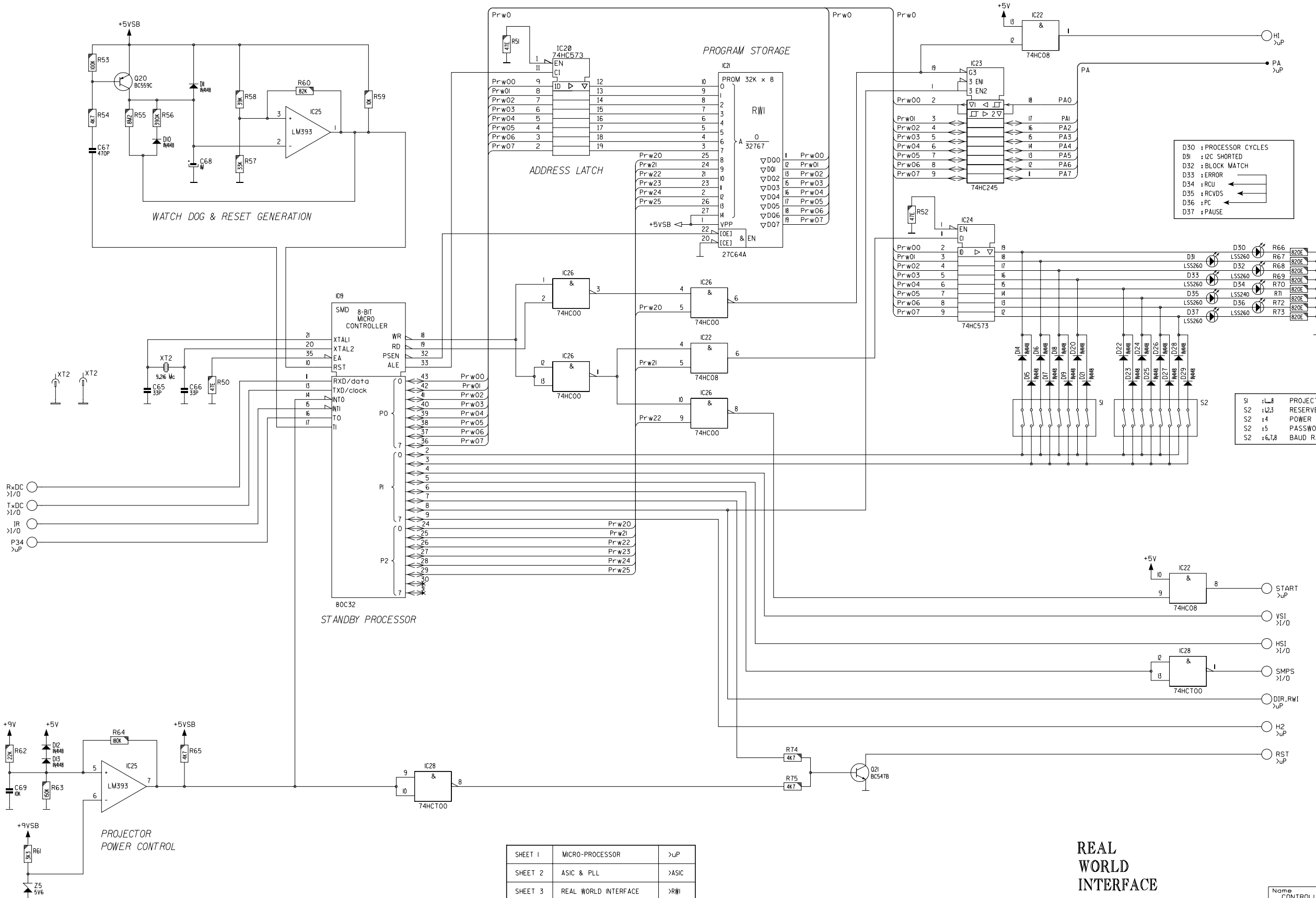
Modifications reserved

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

BARCO PROJECTION SYSTEMS



Name CONTROLLER		Sheet 2/
Module No R7625115	Index - 1	PCB No R780382 -
Date 24-11-1997	Drawn JVDY	Checked GT
		



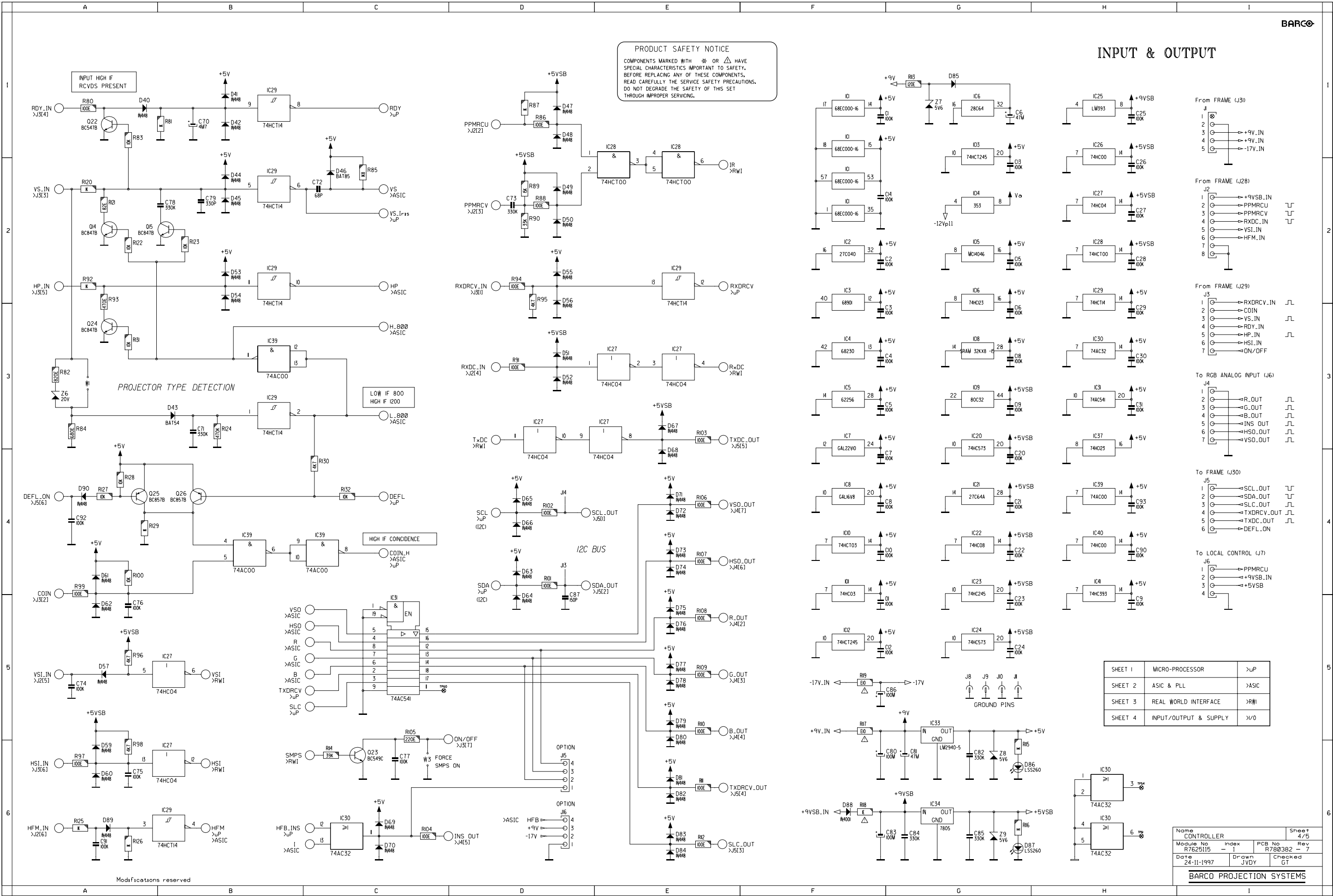
Modifications reserved

REAL
WORLD
INTERFACE

Name	CONTROLLER	Sheet	3/5
Module No.	R7625115	index	1
Date	24-11-1997	PCB No.	R760382
	JVDY	Rev	7
		checked	GT
BARCO PROJECTION SYSTEMS			

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INPUT & OUTPUT

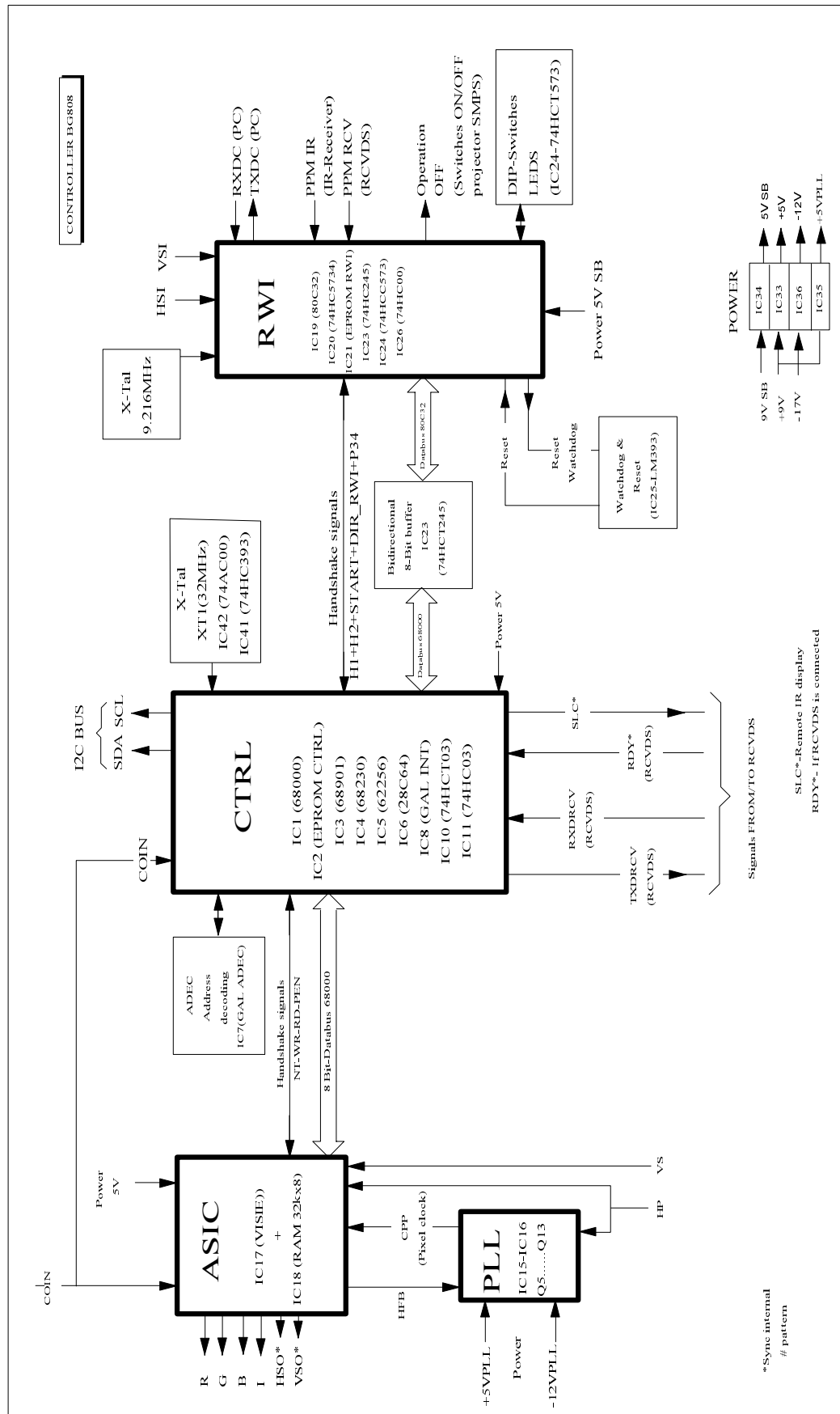


SHEET 1	MICRO-PROCESSOR	>uP
SHEET 2	ASIC & PLL	>ASIC
SHEET 3	REAL WORLD INTERFACE	>RWI
SHEET 4	INPUT/OUTPUT & SUPPLY	>I/O

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

BARCO PROJECTION SYSTEMS

A				B				C				D				
												BARCO				
COMP. LOC. SHT.				COMP. LOC. SHT.				COMP. LOC. SHT.				COMP. LOC. SHT.				
1	C1	G	1	4	D57	A	5	4	J1	I	1	4	R109	E	5	4
	C2	G	2	4	D59	A	6	4	J2	I	2	4	R110	E	6	4
	C3	G	3	4	D60	A	6	4	J3	I	3	4	R111	E	6	4
	C4	G	3	4	D61	A	4	4	J4	I	3	4	R112	E	6	4
	C5	G	3	4	D62	A	5	4	J5	I	4	4	R113	C	1	4
	C6	G	1	4	D63	D	4	4	J6	I	4	4	R114	C	6	4
	C7	G	4	4	D64	D	5	4	J7	D	4	1	R115	G	6	4
	C8	H	4	4	D65	D	4	4	J8	G	5	4	R116	G	6	4
	C9	H	5	4	D66	E	3	4	J9	G	5	4	R117	F	6	4
	C10	G	4	4	D67	E	3	4	J10	G	5	4	R118	F	6	4
2	C11	G	5	4	D68	E	4	4	J11	G	5	4	R119	F	6	4
	C12	G	5	4	D69	C	6	4	J13	D	4	4	R120	A	3	4
	C13	G	5	4	D70	E	4	4	J14	D	4	4	R121	A	3	4
	C14	G	5	4	D71	E	4	4	J15	D	6	4	R122	A	3	4
	C15	G	5	4	D72	E	4	4	J16	D	6	4	R123	B	3	4
	C16	G	3	4	D73	E	4	4	J17	F	5	2	R124	B	3	4
	C17	D	6	4	D74	E	4	4					R125	A	6	4
	C18	D	6	4	D75	E	5	4	O1	F	3	2	R126	A	6	4
	C19	G	3	4	D76	E	5	4	O2	G	3	2	R127	A	4	4
	C20	G	4	4	D77	E	5	4	O3	G	3	2	R128	A	4	4
3	C21	G	4	4	D78	E	5	4	O4	G	3	2	R129	A	4	4
	C22	H	4	4	D79	E	5	4	O5	H	3	2	R130	C	4	4
	C23	G	5	4	D80	E	5	4	O6	H	3	2	R131	A	3	4
	C24	G	5	4	D81	E	6	4	O8	H	2	2	R132	C	4	4
	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	2	4	D84	E	6	4	O11	H	4	4	S1	G	3	3
	C28	H	2	4	D85	I	1	4	O12	I	4	2	S2	H	3	3
	C29	H	3	4	D86	G	6	4	O13	A	4	2				
	C30	H	3	4	D87	G	6	4	O14	A	2	4	TP29	A	3	1
4	C31	H	3	4	D88	E	6	4	O15	A	2	4	TP30	C	2	1
	C33	A	1	1	D89	A	6	4	O16	C	2	2	TP31	C	2	1
	C34	F	1	2	D90	A	4	4	O20	B	1	3	TP32	C	2	1
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	C36	H	3	3	IC1	D	1	1	O22	A	1	4	TP34	C	2	1
	C37	H	3	3	IC1	D	1	4	O23	C	6	4	TP35	C	3	1
	C38	H	3	3	IC1	F	2	4	O24	A	3	4	TP36	C	3	1
	C39	G	1	1	IC1	F	2	4	O25	A	4	4	TP37	C	3	1
	C40	G	1	1	IC1	F	1	4	O26	B	4	4	TP38	H	1	1
	C41	B	4	4	IC2	B	5	1					TP39	H	1	1
5	C42	B	1	2	IC2	F	2	4	R1	A	1	1	TP40	H	1	1
	C43	A	3	3	IC3	G	1	1	R2	B	1	1	TP41	H	2	1
	C44	C	3	3	IC3	F	2	4	R3	C	1	1	TP42	H	2	1
	C45	C	3	3	IC4	F	2	4	R4	C	1	4	TP43	A	3	1
	C46	C	3	3	IC4	F	2	4	R5	E	5	1	TP44	A	3	1
	C47	C	2	2	IC5	B	3	1	R6	I	2	1	TP45	A	3	1
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	C50	H	5	5	IC6	B	2	1	R9	C	4	1	TP48	A	3	1
	C51	I	5	5	IC7	E	3	1	R11	C	5	1	TP49	B	3	2
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	C53	H	5	5	IC8	E	4	1	R13	F	1	2	TP51	F	1	2
	C54	H	5	5	IC8	F	4	4	R14	T	1	2	TP52	F	1	2
	C55	H	5	5	IC10	I	2	1	R15	T	1	2	TP53	F	1	2
	C56	I	5	5	IC10	H	4	1	R16	F	2	2	TP54	H	6	4
	C57	I	5	5	IC10	I	2	1	R17	O	1	1	TP55	B	4	2
	C58	I	5	5	IC10	I	4	1	R18	F	4	4	TP56	B	4	2
	C59	I	5	5	IC10	F	4	4	R19	C	4	4	TP60	B	4	2
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	C63	H	5	5	IC11	I	1	1	R23	C	3	3	W3	C	6	4
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	C66	B	3	3	IC12	F	5	4	R26	H	2	2	XT2	B	3	3
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	C80	G	6	4	IC19	G	3	4	R41	A	3	3				
	C81	G	6	4	IC20	G	3	4	R42	C	2	2				
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	C83	G	6	4	IC21	E	1	3	R44	C	2	2				
	C84	G	6	4	IC21	G	4	4	R45	G	6	6				
	C85	G	6	4	IC22	E	1	3	R47	G	1	1				
	C86	G	6	4	IC22	E	1	3	R48	G	1	1				
	C87	D	4	4	IC22	H	4	3	R50	B	3	3				
	C90	H	4	4	IC22	G	4	4	R51	D	1	1				
	C91	A	6	4	IC23	G	1	3	R52	F	2	2				
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	C93	H	4	4	IC24	G	2	3	R54	A	1	1				
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	D2	C	3	3	IC25	C	1	3	R56	B	1	1				
	D3	H	3	3	IC26	B	5	3	R57	B	1	2				
	D4	H	3	3	IC26	D	3	3	R58	B	1	2				
	D6	E	3	3	IC26	D	3	3	R59	C	1	1				
	D7	E	3	3	IC26	D	2	3	R60	C	1	1				
	D8	B	1	1	IC26	E	2	3	R61	A	6	6				
	D9	B	1	1	IC26	H	1	4	R62	A	6	6				
	D10	B	2	3	IC26	H	1	4	R63	A	5	5				
	D11	B	1	3	IC27	B	5	4	R64	B	5	5				
11	D12	A	5	3	IC27	B	6	4	R65	B	5	5				
	D13	A	5	3	IC27	B	6	4	R66	I	2	2				
	D14	C	3	3	IC27	F	3	4	R67	I	2	2				
	D15	G	3	3	IC27	D	3	4	R68	I	2	2				
	D16	G	3	3	IC27	F	3	4	R69	I	2	2				
	D17	G	3	3	IC27	F	3	4	R70	I	2	2				
	D18	G	3	3	IC28	H	5	3	R71	I	3	3				
	D19	G	3	3	IC28	H	5	3	R72	I	3	3				
	D20	G	3	3	IC28	E	1	4	R73	I	3	3				
	D21	G	3	3	IC28	E	1	4	R74	F	5	5				
12	D22	H	3	3	IC28	H	2	4	R75	F	5	5				
	D23	H	3	3	IC29	B	6	4	R76	A	4	4				
	D24	H	3	3	IC29	E	2	4	R77	A	4	4				
	D25	H	3	3	IC29	B	1	4	R78	B	1	4				
	D26	H	3	3	IC29	B	2	4	R80	A	1	4				
	D27	H	3	3	IC29	B	2	4	R81	B	1	4				
	D28	H	3	3	IC29	B	3	4	R82	A	3	4				
	D29	H	3	3	IC29	H	2	4	R83	A	1	4				
	D30	H	2	3	IC30	H	4	1	R84	A	3	4				
	D31	H	2	3	IC30	C	6	4	R85	C	2	4				
13	D32	H	2	3	IC30	H	6	4	R86	D	1	4				
	D33	H	2	3	IC30	H	6	4	R87	D	1	4				
	D34	H	2	3	IC30	H	3	4	R88	D	2	4				
	D35	H	3	3	IC31	C	5	4	R89	D	2	4				
	D36	H	3	3	IC31	H	3	4	R90	D	2	4				



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 (Address DECoder).

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 +5V^{SB} 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).

Controller module

R7625115

Spare parts Controller module

SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
70	R3132539	J U0.6 FBT P28 E1AU TLP	1	C 57	P210122	C# X7R MU 100N K 50 1206	1
60	R313487	J U0.6 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#LED LSS260 RED SOT23	1	I 13	P230051	U#74HCT245 SOL20 I	1
D 33	P234040	D#LED LSS260 RED SOT23	1	I 14	P230266	U#353 LF SO8 P	1
D 34	P234040	D#LED LSS260 RED SOT23	1	I 15	P2300090	U#14046B MC SOL16 I	1
D 35	P234040	D#LED LSS260 RED SOT23	1	I 16	P230025	U#74HC123 SO16 I	1
D 36	P234040	D#LED LSS260 RED SOT23	1	I 17	R132882	U#1 TG PLCC68 P	1
D 37	P234040	D#LED LSS260 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				
D 63	P234099	D#4148 R DMMELF	1	J 1	R313925	JCT H MBT P 5 M2SN WH	1
D 64	P234099	D#4148 R DMMELF	1	J 2	R313928	JCT H MBT P 8 M2SN WH	1
D 65	P234099	D#4148 R DMMELF	1	J 3	R313927	JCT H MBT P 7 M2SN WH	1
D 66	P234099	D#4148 R DMMELF	1	J 5	R313926	JCT H MBT P 6 M2SN WH	1
D 67	P234099	D#4148 R DMMELF	1	J 6	R313924	JCT H MBT P 4 M2SN WH	1
D 68	P234099	D#4148 R DMMELF	1	J 7	V3135931	JEUR2R2FBSP32E1C2S1,6	1
D 69	P234099	D#4148 R DMMELF	1	J 8	R315302	JPINPRD1,3L 5,5+3	1
D 70	P234099	D#4148 R DMMELF	1	J 9	R315302	JPINPRD1,3L 5,5+3	1
D 71	P234099	D#4148 R DMMELF	1	J 10	R315302	JPINPRD1,3L 5,5+3	1
D 72	P234099	D#4148 R DMMELF	1	J 11	R315302	JPINPRD1,3L 5,5+3	1
D 73	P234099	D#4148 R DMMELF	1	J 13	R315302	JPINPRD1,3L 5,5+3	1
D 74	P234099	D#4148 R DMMELF	1	J 14	R315302	JPINPRD1,3L 5,5+3	1
D 75	P234099	D#4148 R DMMELF	1				
D 76	P234099	D#4148 R DMMELF	1	PC	R780382	PCB *800 CTRL 68000	1
D 77	P234099	D#4148 R DMMELF	1				
D 78	P234099	D#4148 R DMMELF	1	Q 1	P232076	Q#BFS17 N SS SOT23	1
D 79	P234099	D#4148 R DMMELF	1	Q 2	P232076	Q#BFS17 N SS SOT23	1
D 80	P234099	D#4148 R DMMELF	1	Q 3	P232076	Q#BFS17 N SS SOT23	1
D 81	P234099	D#4148 R DMMELF	1	Q 4	P232076	Q#BFS17 N SS SOT23	1
D 82	P234099	D#4148 R DMMELF	1	Q 5	P232158	Q#BF824 P SS SOT23	1
D 83	P234099	D#4148 R DMMELF	1	Q 6	P232158	Q#BF824 P SS SOT23	1
D 84	P234099	D#4148 R DMMELF	1	Q 8	P232050	Q#BC857B P SS SOT23	1
D 85	P234099	D#4148 R DMMELF	1	Q 9	P232051	Q#BC847B N SS SOT23	1
D 86	P234040	D#LED LSS260 RED SOT23	1	Q 10	P232051	Q#BC847B N SS SOT23	1
D 87	P234040	D#LED LSS260 RED SOT23	1	Q 11	P232051	Q#BC847B N SS SOT23	1
D 88	P234056	D#4002 R DMELF	1	Q 12	P232051	Q#BC847B N SS SOT23	1
D 89	P234099	D#4148 R DMMELF	1	Q 13	P232050	Q#BC857B P SS SOT23	1
D 90	P234099	D#4148 R DMMELF	1	Q 14	P232051	Q#BC847B N SS SOT23	1
				Q 15	P232051	Q#BC847B N SS SOT23	1
I 1	P2309910	U#68EC000-16MC PLCC68P	1	Q 16	P232101	Q#BC859C P SS SOT23	1
I 3	P230506	U#68901 MK PLCC52 P	1	Q 20	P232101	Q#BC859C P SS SOT23	1
I 4	P230625	U#68230-8 TS PLCC52 P	1	Q 21	P232051	Q#BC847B N SS SOT23	1
I 5	P230756	U#SRAM 32KX8 70FP28 P	1	Q 22	P232051	Q#BC847B N SS SOT23	1
I 6	P231055	U#28C64B -15PLCC32 P	1	Q 23	P232004	Q#BC849C N SS SOT23	1
I 7	R32833001	U_S G 808 ADEC V301 GB	1	Q 24	P232051	Q#BC847B N SS SOT23	1
I 8	R328331	U_S G 808 INT V100	1	Q 25	P232050	Q#BC857B P SS SOT23	1
I 10	P230498	U#74HCT03 SO14 I	1	Q 26	P232050	Q#BC857B P SS SOT23	1
I 11	P230222	U#74HC03 SO14 I	1				
I 12	P230051	U#74HCT245 SOL20 I	1	R 1	P200411	R# CE H 1K F 0W12 1206	1


Controller module

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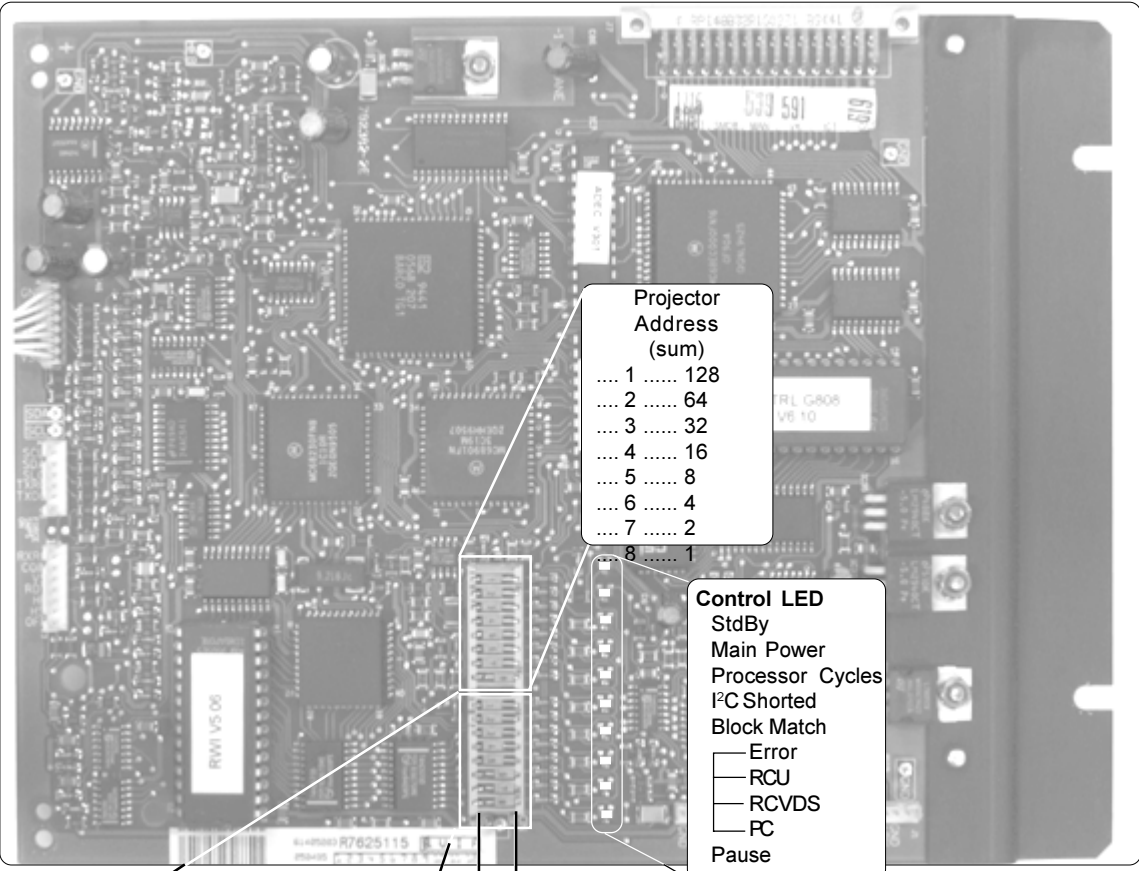
SIT.	ITEM NO.	DESCRIPTION	QUANTITY	SIT.	ITEM NO.	DESCRIPTION	QUANTITY
R 2	P200415	R# CE H 1K5 F 0W12 1206	1	R 74	P200427	R# CE H 4K7 F 0W12 1206	1
R 3	P200415	R# CE H 1K5 F 0W12 1206	1	R 75	P200427	R# CE H 4K7 F 0W12 1206	1
R 4	P200415	R# CE H 1K5 F 0W12 1206	1	R 76	P200435	R# CE H 10K F 0W12 1206	1
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

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

Reserved

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

Power Up mode

.... 4

Password mode

.... 5

Baud Rate Code (sum)

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

0 Off 1 On