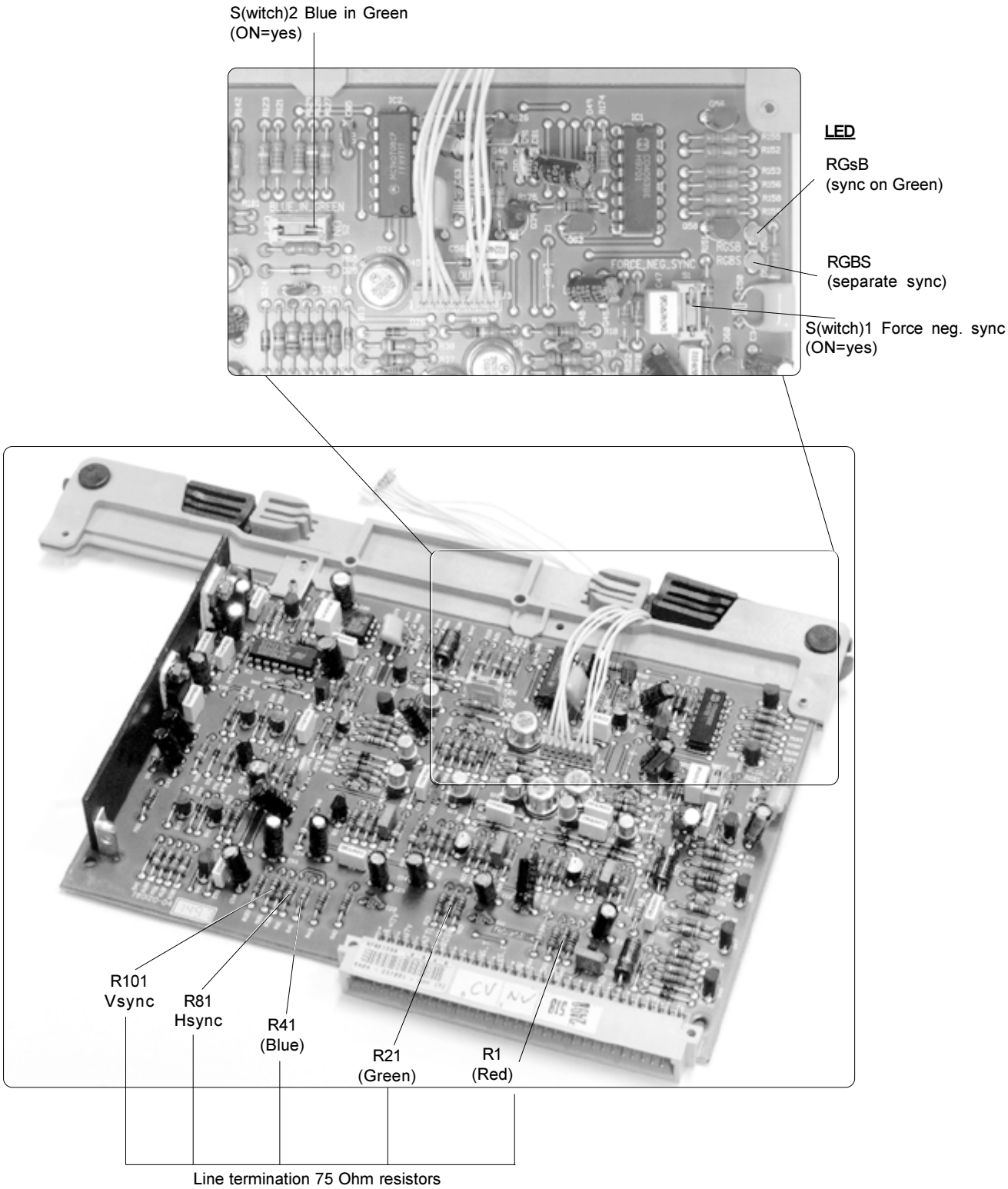
BARCO

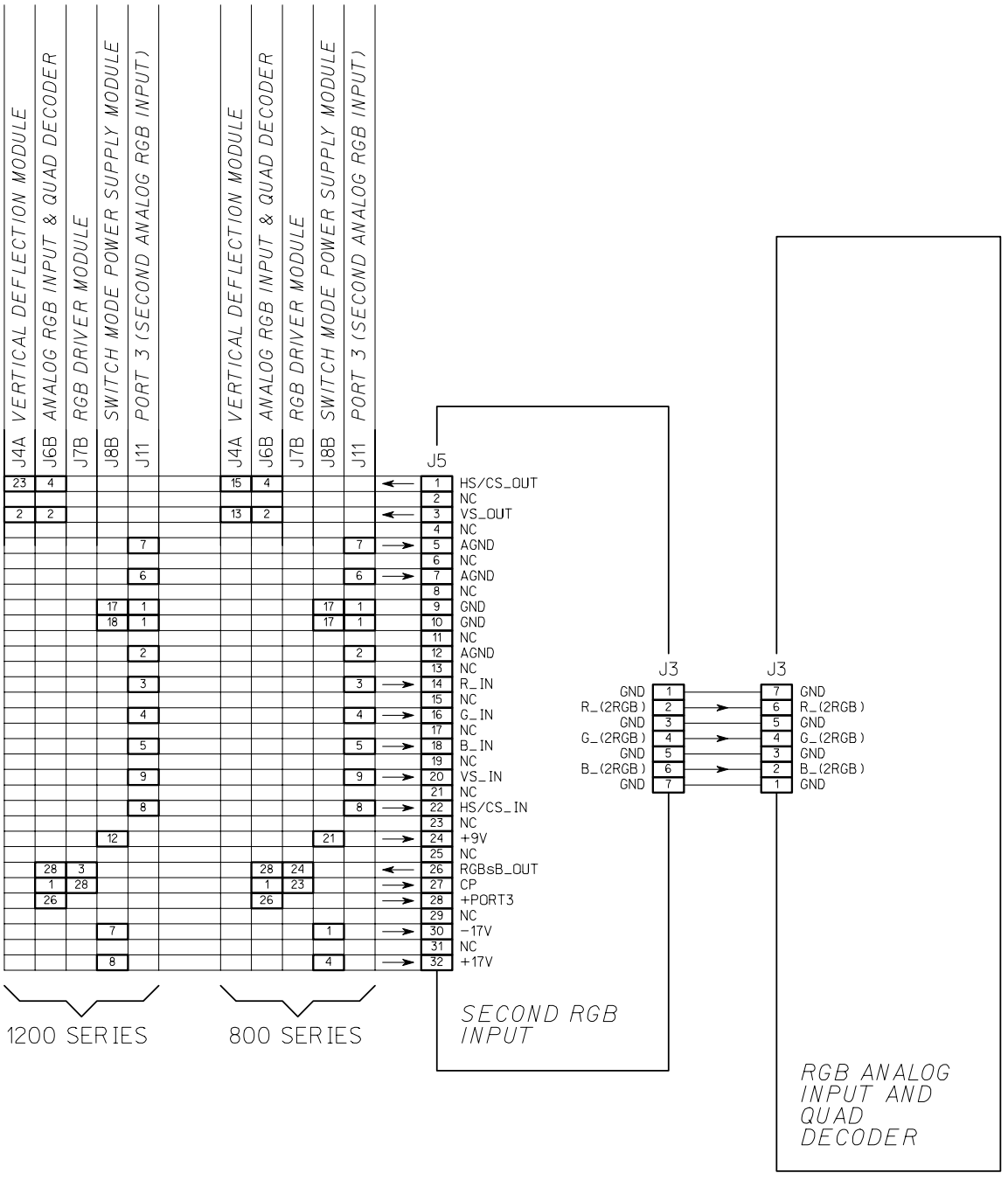
BARCO Projection Systems

SECTION H

service sheet

RGB Input Aut Sync Track R7621055





BARCO

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

Modifications reserved

CONNECTION WITH
RGB INPUT (J3)

BLUE IN GREEN

SYNC ON GREEN

SEPARATE SYNC

FORCED NEGATIVE SYNC

780120-04

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

BARCO PROJECTION SYSTEMS

Modifications reserved

BARCO

POLARITY DETECTION VERTICAL SYNC

POLARITY DETECTION HORIZONTAL SYNC

BOARD SELECTION

FORCED NEGATIVE SYNC

COMPOSITE SYNC

1/13 DUTY-CYCLE CONTROL SYSTEM

SHAPED HORIZONTAL SYNC

VERTICAL SYNC

RGBS/RGsB DETECTION

RGBS

RGsB

SYNC ON GREEN

SEPARATE SYNC

VS_OUT >J5[3] +3V / 330 ohm

RGsB_OUT >J5[26]

HS/CS_OUT >J5[1] -1V / 100 ohm

To RGB INPUT (J3)

J3[6] R_OUT

J3[4] G_OUT

J3[2] B_OUT

BLUE IN GREEN

To FRAME (J5A)

64CON

INPUT VERT SYNC 1-4 Vpp

INPUT HOR/COMP SYNC 1-4 Vpp

INPUT RED 0.7 Vpp

INPUT GREEN 0.7 Vpp

INPUT BLUE 0.7 Vpp

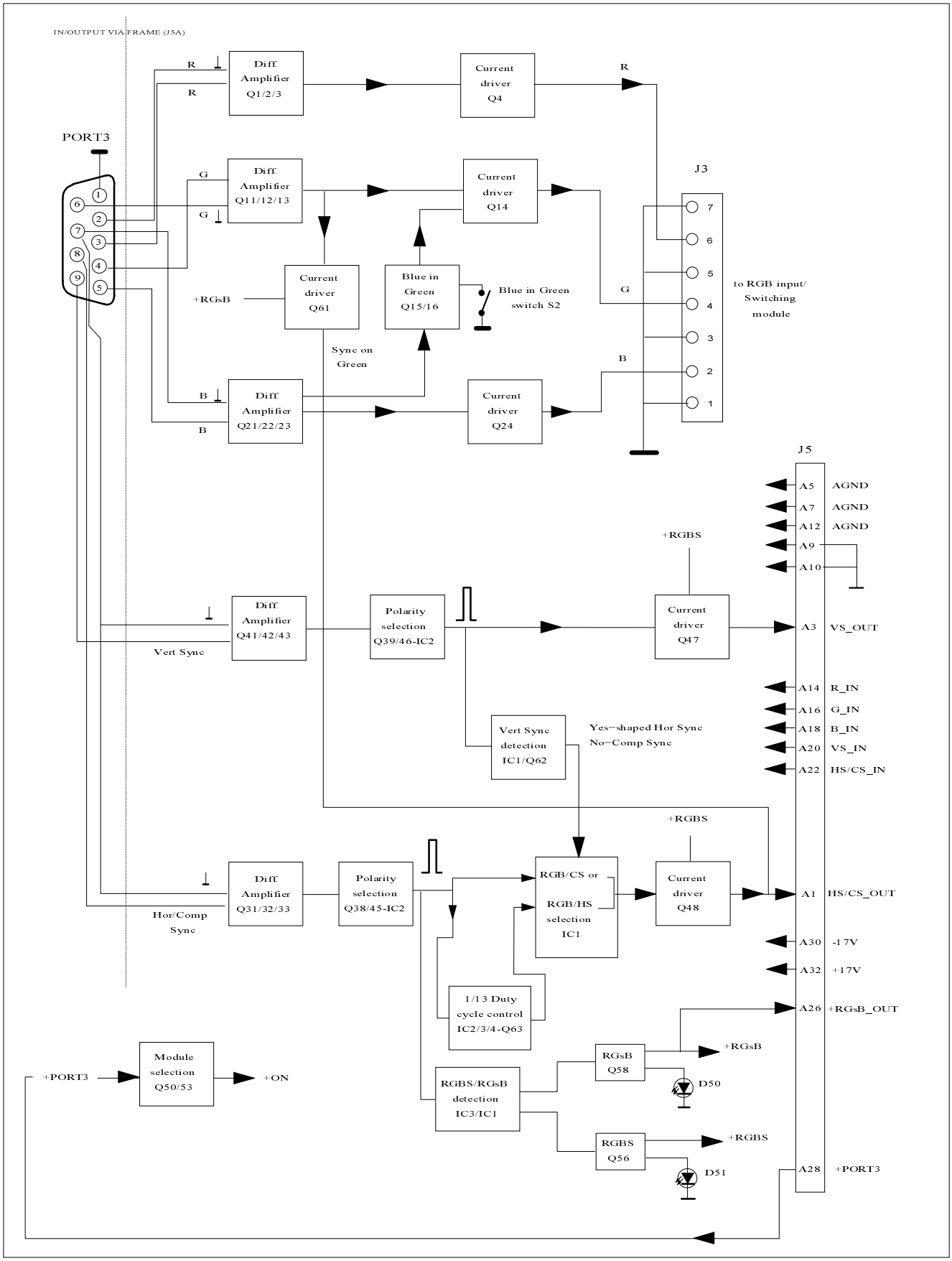
75 Ohm TERMINATION

Modifications reserved

Name	2ND RGB INPUT
Sheet	1/1
Module No	R76210S5 – 1
Index	
PCB No	R780120 – 4
Rev	
Date	14-03-1997
Drawn	JVDY
Checked	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	E 6	Q23	G 5	R186	E 2
C5	D 5	Q24	H 5	R190	H 1
C6	D 5	Q31	C 5	R191	A 1
C7	D 5	Q32	C 5	R192	A 3
C8	D 4	Q33	C 5		
C9	D 3	Q38	A 3	S1	B 3
C10	G 6	Q39	A 1	S2	H 6
C12	E 6	Q41	B 5		
C13	E 6	Q42	B 5	SR1	G 1
C14	F 6	Q43	B 5	SR3	G 1
C15	E 6	Q45	B 2	SR5	E 1
C16	F 5	Q46	B 1	SR7	F 3
C17	E 5	Q47	G 1		
C19	H 4	Q48	F 2	Z1	G 5
C21	G 6	Q50	A 4		
C22	F 6	Q53	B 3		
C23	F 6	Q56	E 3		
C24	G 6	Q58	D 3		
C25	G 6	Q60	E 3		
C26	G 5	Q61	F 3		
C27	F 5	Q62	F 1		
C28	G 4	Q63	B 2		
C29	H 4				
C30	H 6	R1	D 6		
C32	E 3	R2	D 6		
C33	F 3	R3	E 6		
C34	F 3	R5	E 6		
C35	F 3	R6	D 6		
C43	C 6	R7	E 5		
C44	C 6	R8	D 5		
C45	C 5	R9	D 5		
C46	A 2	R10	D 5		
C47	A 2	R11	D 5		
C48	B 3	R12	D 5		
C49	B 4	R13	D 4		
C50	C 4	R16	H 3		
C53	B 6	R17	H 3		
C54	B 6	R18	H 3		
C55	B 5	R21	E 6		
C56	A 1	R22	E 6		
C63	A 1	R23	F 6		
C64	B 1	R25	E 6		
C65	C 1	R26	E 6		
C66	F 1	R27	E 5		
C68	E 1	R28	E 5		
C69	F 1	R29	E 5		
C70	F 2	R30	E 5		
C72	A 4	R31	E 5		
C73	G 1	R32	E 5		
C74	H 1	R36	H 4		
C75	H 1	R37	H 4		
C78	G 2	R38	H 4		
C79	H 2	R41	E 6		
C80	H 2	R42	F 6		
C81	F 2	R43	G 6		
C82	D 2	R44	G 6		
C83	C 2	R45	F 6		
C84	C 2	R46	G 6		
C85	E 2	R47	G 5		
C86	C 2	R48	F 5		
C87	D 2	R49	G 5		
C88	H 1	R50	F 5		
C89	H 1	R51	G 5		
C90	A 3	R52	G 5		
C91	A 1	R56	H 5		
		R57	H 5		
D1	D 5	R58	H 5		
D2	D 5	R60	H 5		
D3	E 4	R61	H 5		
D4	D 4	R62	H 6		
D11	F 5	R63	H 6		
D12	E 5	R64	H 6		
D13	F 4	R65	H 6		
D14	E 4	R70	F 3		
D21	G 5	R71	F 3		
D22	F 5	R72	F 4		
D23	G 4	R73	F 3		
D24	F 4	R74	F 4		
D25	H 5	R75	F 3		
D26	H 4	R76	F 3		
D27	F 4	R81	C 6		
D28	F 2	R82	C 6		
D31	C 5	R83	C 6		
D32	C 5	R85	C 6		
D33	C 5	R86	C 6		
D34	C 5	R87	C 5		
D41	B 5	R88	D 5		
D42	B 5	R89	D 5		
D43	B 5	R90	C 5		
D44	B 5	R91	C 5		
D45	A 1	R92	C 4		
D46	A 3	R101	B 6		
D48	F 3	R102	B 6		
D49	B 4	R103	B 6		
D50	D 4	R105	B 6		
D51	E 4	R106	B 6		
D52	C 2	R107	B 5		
D54	F 1	R110	B 5		
D55	G 2	R111	B 5		
D56	G 1	R112	B 4		
		R120	A 2		
IC1	D 4	R121	A 2		
IC1	E 2	R122	B 3		
IC1	H 2	R123	B 2		
IC1	G 2	R124	B 4		
IC1	H 2	R125	A 1		
IC1	H 2	R126	B 1		
IC1	E 1	R127	B 1		
IC2	D 3	R128	C 1		
IC2	B 2	R129	A 1		
IC2	B 1	R130	F 1		
IC2	C 1	R131	F 1		
IC2	H 2	R133	H 1		
IC2	G 2	R134	F 2		
IC3	C 2	R135	F 2		
IC3	C 3	R136	F 2		
IC3	G 2	R137	F 2		
IC3	H 2	R140	A 4		
IC4	D 2	R141	A 4		
IC4	H 2	R142	A 3		
IC4	H 2	R143	A 3		
IC5	H 1	R150	C 4		
IC6	H 1	R151	C 4		
		R152	E 3		
J1	G 1	R153	D 3		
J2	G 1	R155	D 3		
J3	G 3	R156	D 3		
J5	A 4	R158	E 4		
J6	G 2	R159	D 4		
J7	G 2	R171	G 5		
		R172	G 6		
Q1	D 5	R174	F 1		
Q2	D 5	R175	F 2		
Q3	D 5	R176	C 3		
Q4	H 3	R177	D 2		
Q11	E 5	R178	D 2		
Q12	E 5	R179	D 2		
Q13	E 5	R180	D 2		
Q14	H 4	R181	C 2		
Q15	H 6	R182	C 2		
Q16	H 6	R183	C 2		


IN/OUTPUT VIA FRAME (J5A)
PORT3
R
R
Diff Amplifier Q1/2/3
Current driver Q4
R
G
G
Diff Amplifier Q11/12/13
Current driver Q14
J3
Current driver Q61
+RGsB
Blue in Green Q15/16
Blue in Green switch S2
G
to RGB input/ Switching module
Sync on Green
B
B
Diff Amplifier Q21/22/23
Current driver Q24
J5
A5 AGND
A7 AGND
A12 AGND
A9
A10
+RGBS
Diff Amplifier Q41/42/43
Vert Sync
Polarity selection Q39/46-IC2
Current driver Q47
A3 VS_OUT
A14 R_IN
A16 G_IN
A18 B_IN
A20 VS_IN
A22 HS/CS_IN
Vert Sync detection IC1/Q62
Yes=shaped Hor Sync
No=Comp Sync
+RGBS
Diff Amplifier Q31/32/33
Hor/Comp Sync
Polarity selection Q38/45-IC2
RGB/CS or
RGB/HS selection IC1
Current driver Q48
A1 HS/CS_OUT
A30 -17V
A32 +17V
1/13 Duty cycle control IC2/3/4-Q63
A26 +RGsB_OUT
+PORT3
Module selection Q50/53
+ON
RGsB Q58
+RGsB
D50
RGBS/RGsB detection IC3/IC1
RGBS Q56
+RGBS
D51
A28 +PORT3

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 +RGBS 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 +RGBS 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
31	R1330291	HTSN@A TO220 I_MICA°15X19	1
30	R1330292	HTSN@A TO220 I_BUSH REC	1
60	R133076	HTSN@A TO5 MNT PAD 3P	3
10	R302108	CORE TUBE 3,5 /1,3 X 3	7
	R3484074	CD CT FTMT P 7 170	1
32	R3620226	SCR D84 M 3 X 8 SS	1
40	R3620226	SCR D84 M 3 X 8 SS	1
34	R3661026	NUT D934 M 3 SS	2
42	R3661026	NUT D934 M 3 SS	2
33	R367502	SPR D6798AD 3,2D 6 STZN	1
41	R367502	SPR D6798AD 3,2D 6 STZN	1
50	R367699	RVT AVTRON2,5L 8,1 AL	2
1000	R722276	LOCK49 PCB UN CPL	1
20	R802629	HTSN C PJ49 RGB PR-AMP	1
22	R802692	HTSN C PJ49 FIX HTSN	2
1010	R803238	LOCK51 PCB RGB_A AUT	1
C 2	R112235	C NP0 MI 27P G100E2	
C 3	R111678	C EL BRA 10M M 25E2 85	
C 4	R111678	C EL BRA 10M M 25E2 85	
C 5	R113724	C POMERA 100N K 63E2 85	1
C 6	R113724	C POMERA 100N K 63E2 85	
C 7	R112231	C NP0 MI 12P G100E2	1
C 8	R113724	C POMERA 100N K 63E2 85	
C 9	R112234	C NP0 MI 22P G100E2	1
C 10	R111477	C EL RA 100M M 25E2 85	
C 12	R112235	C NP0 MI 27P G100E2	
C 13	R111678	C EL BRA 10M M 25E2 85	
C 14	R111678	C EL BRA 10M M 25E2 85	
C 15	R113724	C POMERA 100N K 63E2 85	1
C 16	R113724	C POMERA 100N K 63E2 85	
C 17	R112232	C NP0 MI 15P G100E2	1
C 19	R112239	C NP0 MI 56P G100E2	1
C 21	R113722	C POMERA 68N K 63E2 85	
C 22	R112235	C NP0 MI 27P G100E2	
C 23	R111678	C EL BRA 10M M 25E2 85	
C 24	R111678	C EL BRA 10M M 25E2 85	
C 25	R113724	C POMERA 100N K 63E2 85	1
C 26	R113724	C POMERA 100N K 63E2 85	
C 27	R112230	C NP0 MI 10P G100E2	1
C 28	R113724	C POMERA 100N K 63E2 85	
C 29	R112240	C NP0 MI 68P G100E2	
C 30	R111532	REPLACED BY V1114855	
C 32	R113724	C POMERA 100N K 63E2 85	
C 33	R112242	C NP0 MI 100P G100E2	
C 34	R111531	C EL RA 10M M 35E2 85	
C 35	R1111565	C EL AX 10M T 25E6 85	1
C 43	R111678	C EL BRA 10M M 25E2 85	
C 44	R111678	C EL BRA 10M M 25E2 85	
C 45	R111466	C EL RA 100M M 16E2 85	
C 46	R1137121	C POMERA 10N K250E2 85	
C 47	R113732	C POMERA 470N K 63E2 85	
C 48	R111532	REPLACED BY V1114855	
C 49	R113724	C POMERA 100N K 63E2 85	
C 50	R113728	C POMERA 220N K 63E2 85	1
C 53	R111678	C EL BRA 10M M 25E2 85	
C 54	R111678	C EL BRA 10M M 25E2 85	
C 55	R113724	C POMERA 100N K 63E2 85	
C 56	R113728	C POMERA 220N K 63E2 85	
C 63	R113732	C POMERA 470N K 63E2 85	1

ITEM NO.	SIT.	DESCRIPTION	
C 64	R111532	REPLACED BY V1114855	
C 65	R112242	C NP0 MI 100P G100E2	
C 66	R112235	C NP0 MI 27P G100E2	
C 68	R113724	C POMERA 100N K 63E2 85	
C 69	R1111565	C EL AX 10M T 25E6 85	
C 70	R112232	C NP0 MI 15P G100E2	1
C 72	R113724	C POMERA 100N K 63E2 85	
C 73	R113730	C POMERA 330N K 63E2 85	
C 74	R113724	C POMERA 100N K 63E2 85	
C 75	R111510	C EL RA 22M M 25E2 85	
C 78	R111510	C EL RA 22M M 25E2 85	
C 79	R111510	C EL RA 22M M 25E2 85	
C 80	R113724	C POMERA 100N K 63E2 85	
C 81	R111531	C EL RA 10M M 35E2 85	
C 82	R113732	C POMERA 470N K 63E2 85	
C 83	R111476	C EL RA 47M M 25E2 85	
C 84	R1111565	C EL AX 10M T 25E6 85	
C 85	R111477	C EL RA 100M M 25E2 85	
C 86	R112242	C NP0 MI 100P G100E2	
C 87	R113726	C POMERA 150N K 63E2 85	1
C 88	R111477	C EL RA 100M M 25E2 85	
C 89	R112747	C CE MI 4N7K100E2 85	
C 90	R112235	C NP0 MI 27P G100E2	1
C 91	R112743	C CE MI 2N2K100E2	1
D 1	R131621	D S 1N4148 075150 DO35	
D 2	R131621	D S 1N4148 075150 DO35	
D 3	R131621	D S 1N4148 075150 DO35	
D 4	R131621	D S 1N4148 075150 DO35	
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 21	R131621	D S 1N4148 075150 DO35	
D 22	R131621	D S 1N4148 075150 DO35	
D 23	R131621	D S 1N4148 075150 DO35	
D 24	R131621	D S 1N4148 075150 DO35	
D 25	R131628	D S BAW62 075200 DO35	
D 26	R131621	D S 1N4148 075150 DO35	
D 27	R131621	D S 1N4148 075150 DO35	
D 28	R131621	D S 1N4148 075150 DO35	
D 31	R131621	D S 1N4148 075150 DO35	
D 32	R131621	D S 1N4148 075150 DO35	
D 33	R131621	D S 1N4148 075150 DO35	
D 34	R131621	D S 1N4148 075150 DO35	
D 41	R131621	D S 1N4148 075150 DO35	
D 42	R131621	D S 1N4148 075150 DO35	
D 43	R131621	D S 1N4148 075150 DO35	
D 44	R131621	D S 1N4148 075150 DO35	
D 45	R1316361	D Y BAT85 030200 DO34	
D 46	R1316361	D Y BAT85 030200 DO34	
D 48	R131621	D S 1N4148 075150 DO35	1
D 49	R131646	D R 1N4007 10201A DO41	
D 50	R131667	D LED D3 T GN	1
D 51	R131667	D LED D3 T GN	1
D 52	R1316361	D Y BAT85 030200 DO34	
D 54	R1316361	D Y BAT85 030200 DO34	
D 55	R1316361	D Y BAT85 030200 DO34	
D 56	R131621	D S 1N4148 075150 DO35	
I 1	R137391	U 4053B DIP16 P	1
I 2	R137392	U 4070B DIP14 P	1
I 3	R1373325	U 4098B DIP16 P	1
I 4	R134124	U 082 TL DIP8 P	1
I 5	R134002	U 7812 TO220 P	1

I 6	R134016	U 7912 TO220 P	1
J 5	R313525	J EUR2C MBS P64 E1C2S 1,6	1
PC	R780120	PCB G1200 INP RGB PS2	1
Q 1	R1314295	Q BC549B N SS TO92	1
Q 2	V132504	Q 2N2369A N SS TO18	1
Q 3	V132504	Q 2N2369A N SS TO18	1
Q 4	R132904	Q 2N2905A P SS TO39	1
Q 11	R1314295	Q BC549B N SS TO92	1
Q 12	V132504	Q 2N2369A N SS TO18	1
Q 13	V132504	Q 2N2369A N SS TO18	1
Q 14	R132904	Q 2N2905A P SS TO39	1
Q 15	V132504	Q 2N2369A N SS TO18	1
Q 16	R1314295	Q BC549B N SS TO92	
Q 21	R1314295	Q BC549B N SS TO92	1
Q 22	V132504	Q 2N2369A N SS TO18	1
Q 23	V132504	Q 2N2369A N SS TO18	1
Q 24	R132904	Q 2N2905A P SS TO39	1
Q 31	R1314295	Q BC549B N SS TO92	1
Q 32	R131411	Q BC549C N SS TO92	1
Q 33	R131411	Q BC549C N SS TO92	1
Q 38	R1329105	Q BS170 FN SS TO92	1
Q 39	R132910	Q BS170 FN SS TO92	1
Q 41	R1314295	Q BC549B N SS TO92	
Q 42	R131411	Q BC549C N SS TO92	1
Q 43	R131411	Q BC549C N SS TO92	1
Q 45	R1314295	Q BC549B N SS TO92	
Q 46	R1314295	Q BC549B N SS TO92	
Q 47	R1314181	Q BC559B P SS TO92	
Q 48	R1314181	Q BC559B P SS TO92	
Q 50	R1314295	Q BC549B N SS TO92	
Q 53	R1314311	Q BC327 P SS TO92	
Q 56	R1314311	Q BC327 P SS TO92	
Q 58	R1314311	Q BC327 P SS TO92	
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R 8	V1026004	R MF H 10E F 0W6 E4	
R 9	V1026884	R MF H 82E5 F 0W6 E4	
R 10	V1026085	R MF H121E F 0W6 E4	
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R 12	V1026684	R MF H 51E1 F 0W6 E4	1
R 13	V1026425	R MF H274E F 0W6 E4	
R 16	V1026425	R MF H274E F 0W6 E4	
R 17	V1026844	R MF H 75E F 0W6 E4	
R 18	V1026085	R MF H121E F 0W6 E4	
R 21	V1026844	R MF H 75E F 0W6 E4	
R 22	V1026005	R MF H100E F 0W6 E4	
R 23	V1026005	R MF H100E F 0W6 E4	
R 25	V1026587	R MF H 39K F 0W6 E4	
R 26	V1026587	R MF H 39K F 0W6 E4	
R 27	V1026005	R MF H100E F 0W6 E4	
R 28	V1026004	R MF H 10E F 0W6 E4	
R 29	V1026884	R MF H 82E5 F 0W6 E4	
R 30	V1026085	R MF H121E F 0W6 E4	
R 31	V1026085	R MF H121E F 0W6 E4	
R 32	V1026654	R MF H 47E5 F 0W6 E4	
R 36	V1026425	R MF H274E F 0W6 E4	
R 37	V1026844	R MF H 75E F 0W6 E4	
R 38	V1026574	R MF H 39E2 F 0W6 E4	
R 41	V1026844	R MF H 75E F 0W6 E4	
R 42	V1026005	R MF H100E F 0W6 E4	
R 43	V1026005	R MF H100E F 0W6 E4	
R 44	V1026426	R MF H 2K74F 0W6 E4	
R 45	V1026587	R MF H 39K F 0W6 E4	
R 46	V1026587	R MF H 39K F 0W6 E4	
R 47	V1026005	R MF H100E F 0W6 E4	
R 48	V1026004	R MF H 10E F 0W6 E4	
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R 51	V1026085	R MF H121E F 0W6 E4	
R 52	V1026654	R MF H 47E5 F 0W6 E4	
R 56	V1026425	R MF H274E F 0W6 E4	
R 57	V1026844	R MF H 75E F 0W6 E4	
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R 60	V1026425	R MF H274E F 0W6 E4	
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R 62	V1026007	R MF H 10K F 0W6 E4	
R 63	V1026656	R MF H 4K75F 0W6 E4	
R 64	V1026885	R MF H825E F 0W6 E4	
R 65	V1026885	R MF H825E F 0W6 E4	
R 70	V1026335	R MF H221E F 0W6 E4	
R 71	V1026575	R MF H392E F 0W6 E4	
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R 73	V1026507	R MF H 33K2 F 0W6 E4	
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R 81	V1026844	R MF H 75E F 0W6 E4	
R 82	V1026005	R MF H100E F 0W6 E4	
R 83	V1026005	R MF H100E F 0W6 E4	
R 85	V1026587	R MF H 39K F 0W6 E4	
R 86	V1026587	R MF H 39K F 0W6 E4	
R 87	V1026006	R MF H 1K F 0W6 E4	
R 88	V1026656	R MF H 4K75F 0W6 E4	
R 89	V1026427	R MF H 27K4 F 0W6 E4	
R 90	V1026724	R MF H 56E2 F 0W6 E4	
R 91	V1026724	R MF H 56E2 F 0W6 E4	
R 92	V1026506	R MF H 3K32F 0W6 E4	
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R102	V1026005	R MF H100E F 0W6 E4	
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R122	V1026576	R MF H 3K92F 0W6 E4	
R123	V1026427	R MF H 27K4 F 0W6 E4	
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R125	V1026007	R MF H 10K F 0W6 E4	
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R127	V1026427	R MF H 27K4 F 0W6 E4	
R128	V1026576	R MF H 3K92F 0W6 E4	
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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	
R142	V1026256 R MF H 1K82F 0W6 E4	
R143	V1026576 R MF H 3K92F 0W6 E4	
R150	V1026657 R MF H 47K5 F 0W6 E4	
R151	V1026008 R MF H100K F 0W6 E4	
R152	V1026506 R MF H 3K32F 0W6 E4	
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R155	V1026506 R MF H 3K32F 0W6 E4	
R156	V1026506 R MF H 3K32F 0W6 E4	
R158	V1026256 R MF H 1K82F 0W6 E4	
R159	V1026256 R MF H 1K82F 0W6 E4	
R171	V1026506 R MF H 3K32F 0W6 E4	
R172	V1026006 R MF H 1K F 0W6 E4	
R174	V1026656 R MF H 4K75F 0W6 E4	
R175	V1026177 R MF H 15K F 0W6 E4	
R176	V1026176 R MF H 1K5 F 0W6 E4	
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	
R181	V1026087 R MF H 12K1 F 0W6 E4	1
R182	V1026006 R MF H 1K F 0W6 E4	
R183	V1026087 R MF H 12K1 F 0W6 E4	
R184	R101535 R MF H820E F 0W4 E3	
R185	V1026805 R MF H681E F 0W6 E4	
R186	V1026885 R MF H825E F 0W6 E4	
R190	V1026004 R MF H 10E F 0W6 E4	
R191	V1026728 R MF H562K F 0W6 E4	
R192	V1026009 R MF H 1M F 0W6 E4	
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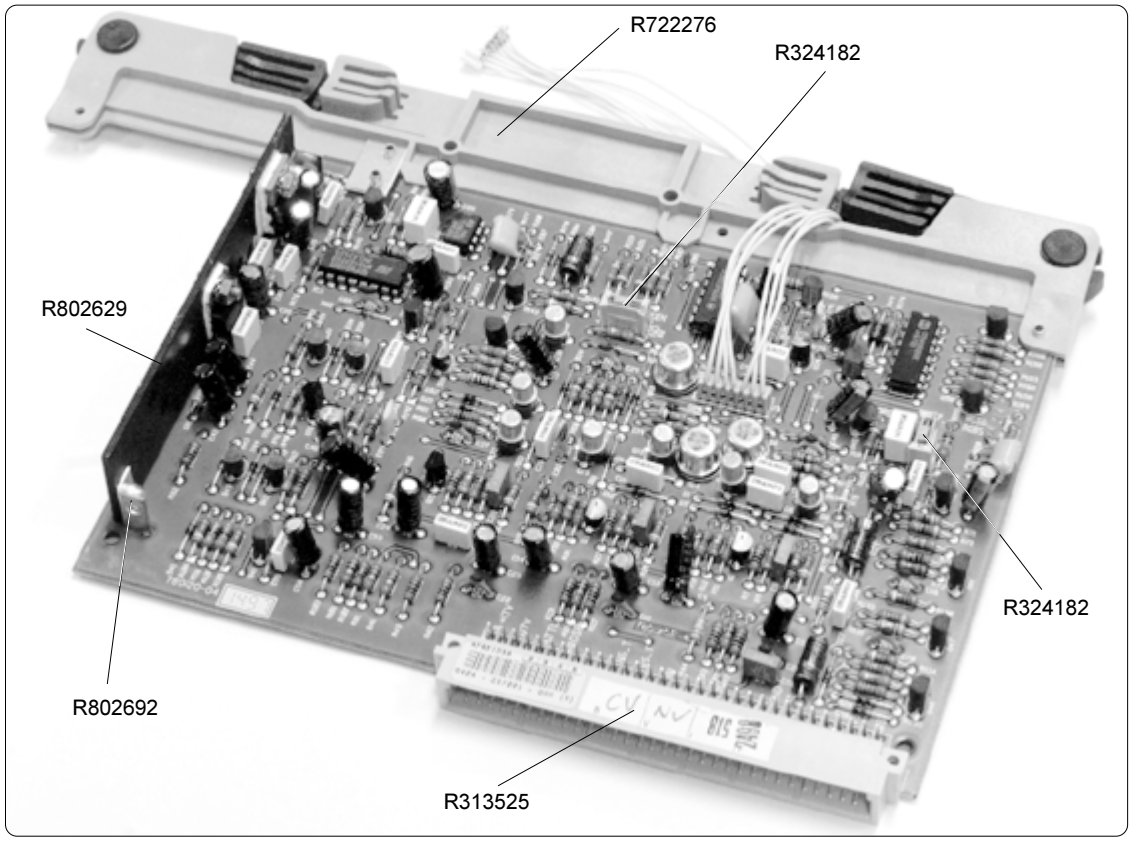
S 2	R324182 SW DIP SLD 1A P 1 BT SN	1
SR 1	R1011046 R CFFH 2E2 J 0W35	1 ⚠
SR 3	R1011129 R CFFH 10E J 0W25	1 ⚠
SR 5	R1011129 R CFFH 10E J 0W25	1 ⚠
SR 7	R1011209 R CFFH 47E J 0W25	1 ⚠
Z 1	R131740 D ZEN 12V 0W5 C DO35	



PRODUCT SAFETY NOTICE

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