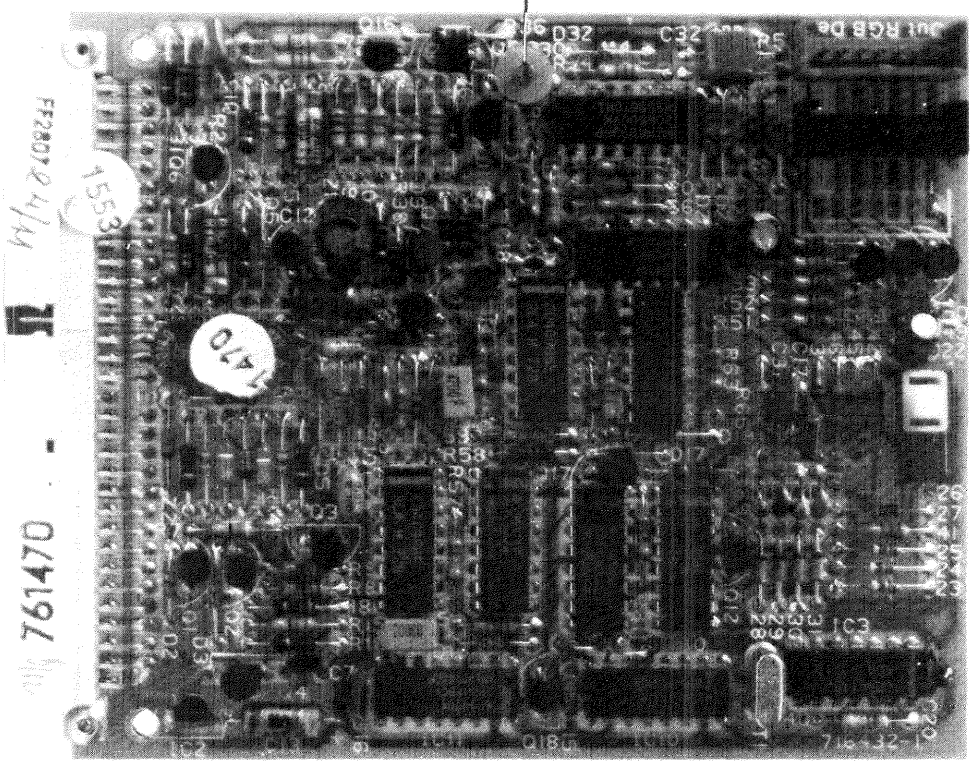
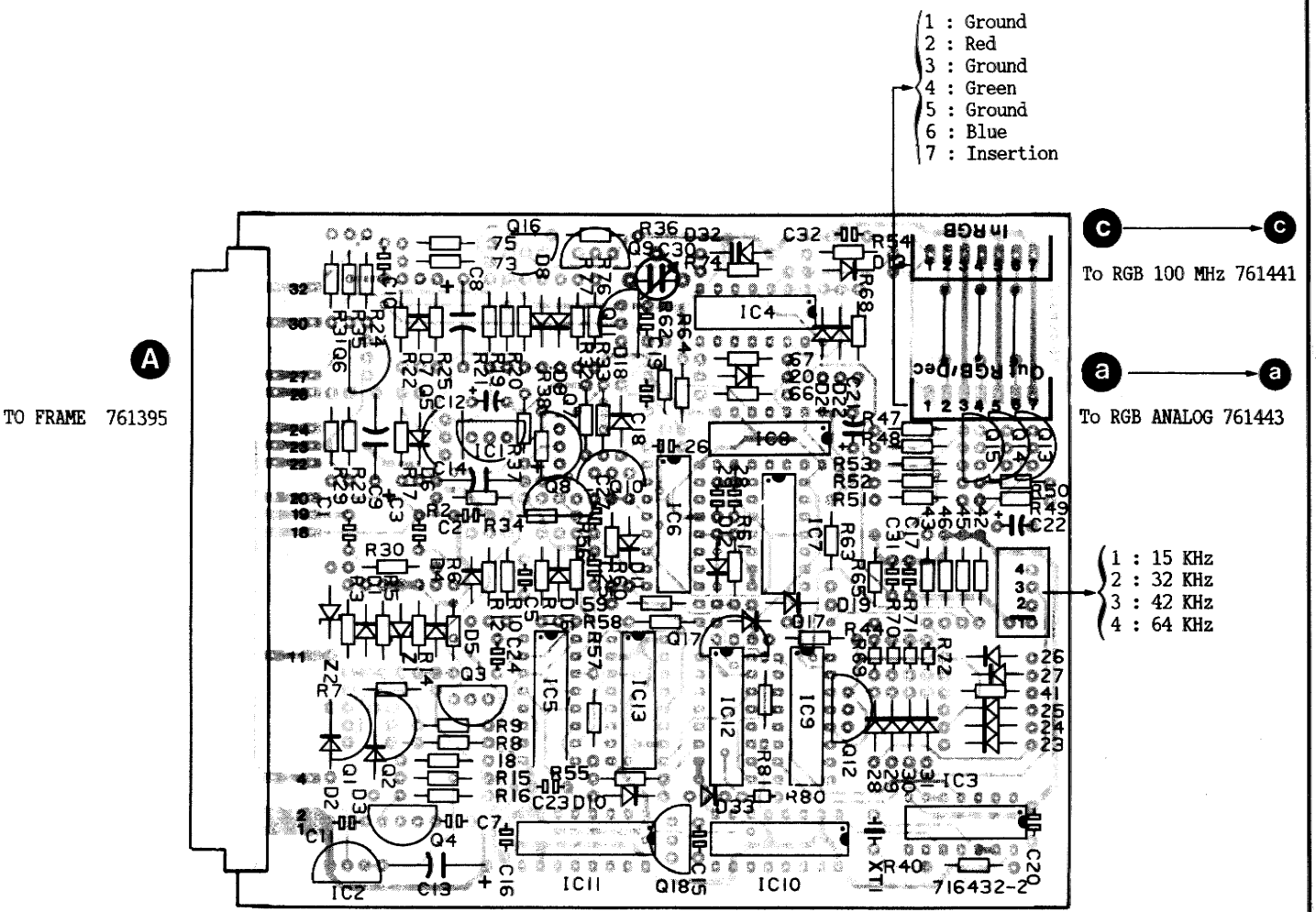
THICKNESS OF VERTICAL LINES





Name Video input & convergence generator		Article nr. 761470
Date 16/12/87	Drawn LDW	Checked LDW

BARCO Electronic Noordlaan, 5 8720 Kuurne Belgium

DC - VOLTAGES

- Employed meter : FLUKE 8010-A

- ALL MEASURED VALUES ARE EXPRESSED IN VOLT (DC).

1. Supply voltages

+B : +12 V.
-B : -12 V.
(internal convergence grid is selected :) +C : +11.8 V.
(external video signal is selected :) +V : +12 V.

2. IC's

- supplied signal : internal convergence signal on 15 kHz

GLEICHSPANNUNGSMESSUNGEN

- Verwandtes Messgerät : FLUKE 8010-A

- ALLE MESSWERTE SIND AUSGEDRÜCKT IN VOLT (DC)

1. Speisungsspannungen

+B : +12 V.
-B : -12 V.
(das innere Konvergenzsignal ist gewählt) +C : +11.8 V.
(ein externes Videosignal ist gewählt) +V : +12 V.

2. IC's

- Gespeistes Signal : das innere Konvergenzsignal auf 15 KHz.

pin	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9
1	12.0	0.0	5.9	0.4	0.0	0.0	5.3	0.0	1.2
2	0.0	-17.0	5.9	0.4	11.7	10.6	6.6	1.2	0.0
3	17.0	-12.0	6.6	11.1	1.9	11.8	1.0	1.0	0.0
4	-	-	1.2	0.4	1.9	5.8	5.9	10.6	11.3
5	-	-	10.7	11.4	11.6	10.8	11.8	1.2	0.0
6	-	-	10.7	11.4	0.2	1.0	0.0	11.8	6.2
7	-	-	0.0	0.0	11.6	10.8	0.0	0.0	10.7
8	-	-	6.6	0.3	0.0	0.0	0.0	0.0	0.0
9	-	-	6.6	1.2	11.7	11.5	11.8	0.0	0.0
10	-	-	6.1	11.4	0.1	0.3	6.6	0.0	0.0
11	-	-	5.9	10.6	11.7	11.5	1.0	0.9	6.3
12	-	-	5.8	10.6	1.9	5.8	7.5	5.3	11.6
13	-	-	5.8	0.0	1.8	11.8	4.3	4.3	11.3
14	-	-	11.8	11.8	11.8	11.4	11.8	11.8	6.4
15	-	-	-	-	0.0	0.0	-	-	6.4
16	-	-	-	-	11.8	11.8	-	-	11.8

pin	IC10	IC11	IC12	IC13
1	6.1	0.0	0.0	6.0
2	11.8	2.3	2.4	11.8
3	5.7	6.0	5.9	6.0
4	4.6	4.7	4.7	5.9
5	4.6	4.7	4.7	5.9
6	2.3	2.4	2.4	5.9
7	0.1	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0
9	2.3	2.4	1.2	2.4
10	11.8	11.8	11.8	11.8
11	5.9	6.0	5.9	5.9
12	4.7	4.8	4.7	5.9
13	4.8	4.7	4.7	5.9
14	2.3	2.4	2.4	5.9
15	0.0	0.0	0.0	0.0
16	11.8	11.8	11.8	11.8

- pin is not used or not existing

3. Transistors

- Supplied signal (see table with measured values) :
  a) external video signal
  b) internal convergence pattern
  c) external RGB signal (RGsB or RGB/s)

- Dieser Anschluß ist nicht verwendet oder besteht nicht

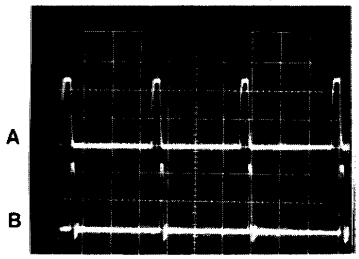
3. Transistors

- Gespeistes Signal (siehe Tabelle mit Meßwerten) :
  a) externes Videosignal
  b) inneres Konvergenzsignal
  c) externes RGB-Signal (RGsB oder RGB/s)

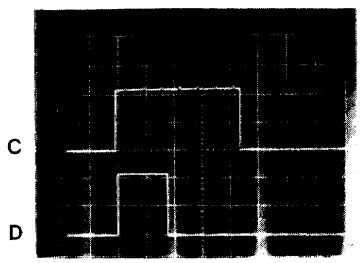
Q..	c	b	e	supplied signal / gespeistes Signal
Q1	9.7	-0.6	-1.2	(a)
Q2	12.1	-0.6	1.3	(a)
Q3	-2.3	-10.1	-10.8	(a)
Q4	5.1	9.7	10.4	(a)
Q5	16.9	4.5	3.9	(a)
Q6	17.5	16.9	17.6	(a)
Q7	0.0	12.1	12.2	(a)
	11.9	11.3	12.2	(b)
Q8	12.1	11.4	12.2	(a)
	11.4	12.2	12.2	(b)
Q9	12.2	0.0	0.0	(a)
	0.0	0.7	0.8	(b)
Q10	0.0	0.7	0.0	(a)
	12.2	0.0	0.0	(b)
Q11	0.7	0.0	0.0	(a)
	0.0	0.0	0.0	(b)
	0.0	0.7	0.0	(c)
Q12	0.0	0.7	0.0	**
Q13	1.3	6.8	7.5	(b)
Q14	1.3	6.8	7.5	(b)
Q15	1.3	6.8	7.5	(b)
Q16	7.8	3.0	2.5	(b)
Q17	1.7	11.2	12.0	**
Q18	0.1	0.1	0.1	(b)

** Remark : Q12 and Q17 conduct only when the internal convergence pattern is selected.

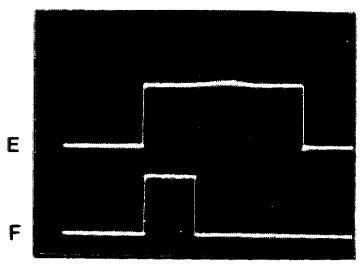
** Bemerkung : Q12 und Q17 leiten nur als das das innere Konvergenzsignal auf 64 KHz gewählt ist.



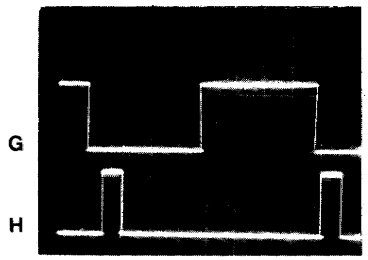
A. 12 Vpp (600 kHz)
B. 12 Vpp (600 kHz)



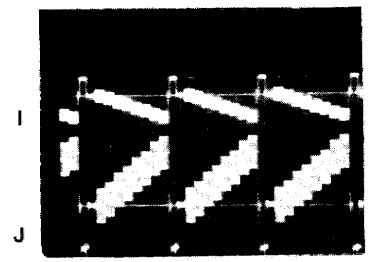
C. 12 Vpp (Vf)
D. 12 Vpp (Vf)



E. 12 Vpp (Hf)
F. 12 Vpp (Hf)



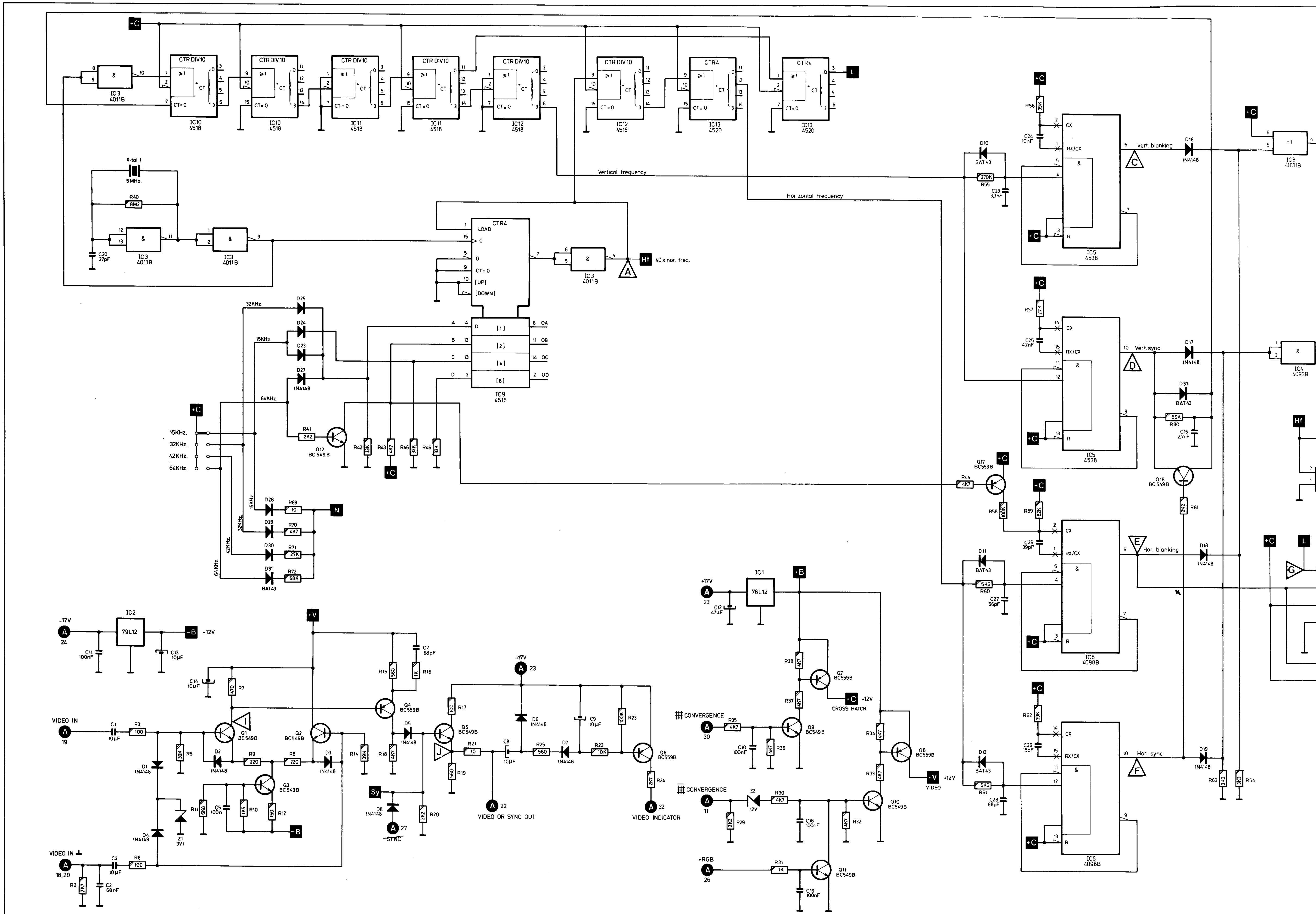
G. 12 Vpp (125 Hz)
H. 12 Vpp (125 Hz)



I. video
J. video

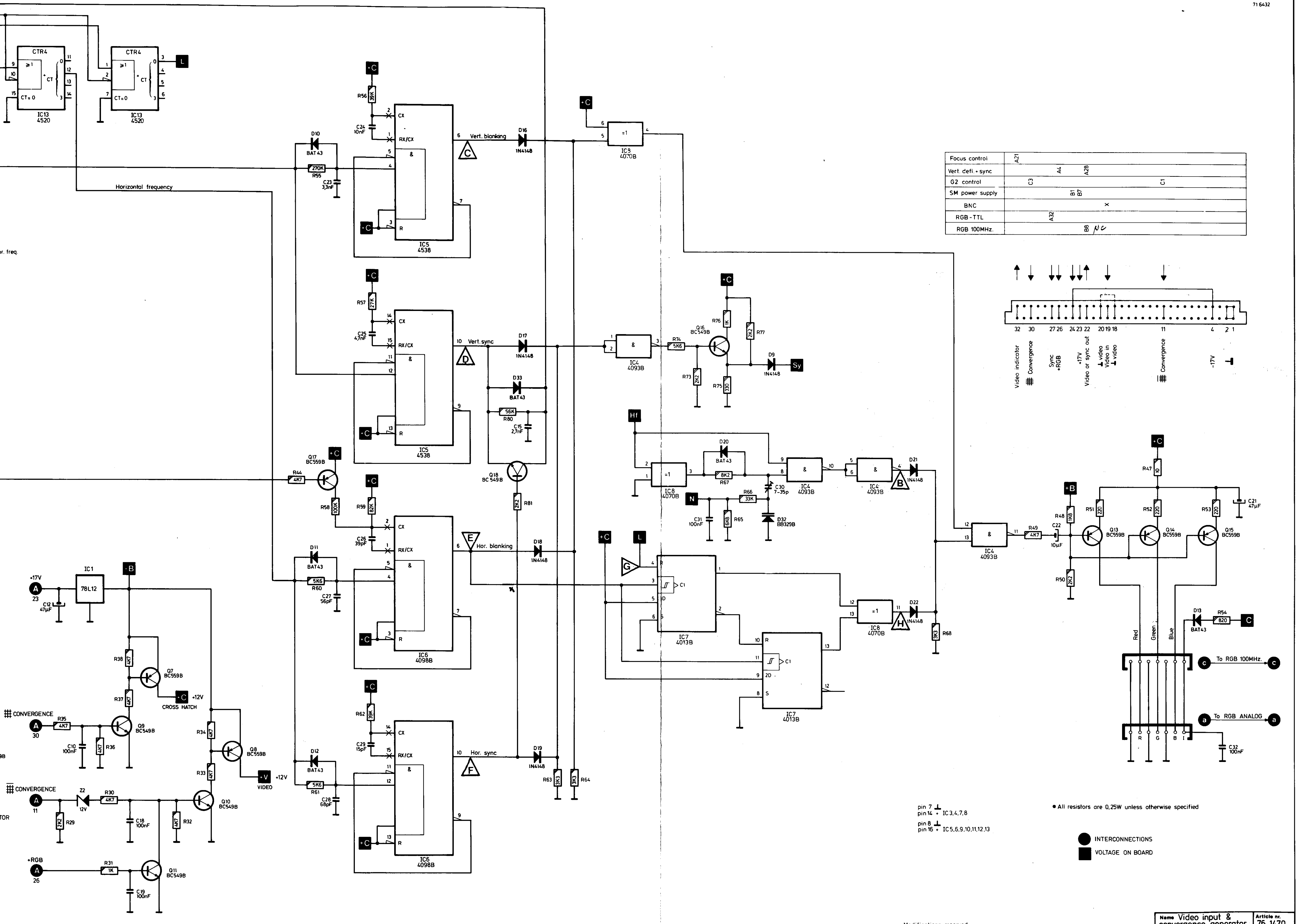
ITEM NO.	SIT.	DESCRIPTION
11 1680	C..1	CAPACITOR ELRABI 10M V 40
11 3722	C..2	CAPACITOR POME 68K K5 63
11 1680	C..3	CAPACITOR ELRABI 10M V 40
11 2774	C..5	CAPACITOR CE MI 100K U5 63
11 2240	C..7	CAPACITOR NPO MI 68P J5 63
11 11565	C..8	CAPACITOR ELAX 10M Z 25
11 11565	C..9	CAPACITOR ELAX 10M Z 25
11 2774	C.10	CAPACITOR CE MI 100K U5 63
11 2774	C.11	CAPACITOR CE MI 100K U5 63
11 1476	C.12	CAPACITOR ELPR 47M Z5 25
11 11565	C.13	CAPACITOR ELAX 10M Z 25
11 11565	C.14	CAPACITOR ELAX 10M Z 25
11 5928	C.15	CAPACITOR PP RA 3K3 J5 63
11 2774	C.16	CAPACITOR CE MI 100K U5 63
11 2774	C.17	CAPACITOR CE MI 100K U5 63
11 2774	C.18	CAPACITOR CE MI 100K U5 63
11 2774	C.19	CAPACITOR CE MI 100K U5 63
11 2235	C.20	CAPACITOR NPO MI 27P G5 63
11 1476	C.21	CAPACITOR ELPR 47M Z5 25
11 1531	C.22	CAPACITOR ELPRMI 10M M5 35
11 37121	C.24	CAPACITOR POME 10K K5 100
11 5932	C.25	CAPACITOR PP RA 4K7 J5 63
11 2237	C.26	CAPACITOR NPO MI 39P G5 63
11 22395	C.27	CAPACITOR NPO MI 56P G5 63
11 2240	C.28	CAPACITOR NPO MI 68P J5 63
11 2235	C.29	CAPACITOR NPO MI 27P G5 63
11 7001	C.30	CAPACITOR TRIM 7 -35P 160
11 2774	C.31	CAPACITOR CE MI 100K U5 63
11 2774	C.32	CAPACITOR CE MI 100K U5 63
13 1621	D..1	DIODE 1N4148 SWITCH
13 1621	D..2	DIODE 1N4148 SWITCH
13 1621	D..3	DIODE 1N4148 SWITCH
13 1621	D..4	DIODE 1N4148 SWITCH
13 1621	D..5	DIODE 1N4148 SWITCH
13 1621	D..6	DIODE 1N4148 SWITCH
13 1621	D..7	DIODE 1N4148 SWITCH
13 1621	D..8	DIODE 1N4148 SWITCH
13 1621	D..9	DIODE 1N4148 SWITCH
13 1636	D.11	DIODE BAT43 SD101 SCHOTTKY
13 1636	D.12	DIODE BAT43 SD101 SCHOTTKY
13 1636	D.13	DIODE BAT43 SD101 SCHOTTKY
13 1621	D.16	DIODE 1N4148 SWITCH
13 1621	D.17	DIODE 1N4148 SWITCH
13 1621	D.18	DIODE 1N4148 SWITCH
13 1621	D.19	DIODE 1N4148 SWITCH
13 1636	D.20	DIODE BAT43 SD101 SCHOTTKY
13 1621	D.21	DIODE 1N4148 SWITCH
13 1621	D.22	DIODE 1N4148 SWITCH
13 1621	D.23	DIODE 1N4148 SWITCH
13 1621	D.24	DIODE 1N4148 SWITCH
13 1621	D.25	DIODE 1N4148 SWITCH
13 1621	D.27	DIODE 1N4148 SWITCH
13 1636	D.28	DIODE BAT43 SD101 SCHOTTKY
13 1636	D.29	DIODE BAT43 SD101 SCHOTTKY
13 1636	D.30	DIODE BAT43 SD101 SCHOTTKY
13 1636	D.31	DIODE BAT43 SD101 SCHOTTKY
13 1827	D.32	DIODE BB329B VARICAP
13 1636	D.33	DIODE BAT43 SD101 SCHOTTKY
13 4033	I..1	INTEGRATED CIRCUIT 78L12
13 4034	I..2	INTEGRATED CIRCUIT 79L12
13 7302	I..3	INTEGRATED CIRCUIT 4011B
13 73945	I..4	INTEGRATED CIRCUIT 4093B HEF
13 7378	I..5	INTEGRATED CIRCUIT 4538B
13 73325	I..6	INTEGRATED CIRCUIT 4098B HCF
13 7397	I..7	INTEGRATED CIRCUIT 4013B
13 7392	I..8	INTEGRATED CIRCUIT 4070B
13 7626	I..9	INTEGRATED CIRCUIT 4516
13 7627	I.10	INTEGRATED CIRCUIT 4518
13 7627	I.11	INTEGRATED CIRCUIT 4518
13 7627	I.12	INTEGRATED CIRCUIT 4518
13 7377	I.13	INTEGRATED CIRCUIT 4520
71 6432	PC..	PC GRAPHICS VID CON 761470
13 14295	Q..1	TRANSISTOR BC549B,
13 14295	Q..2	TRANSISTOR BC549B,
13 14295	Q..3	TRANSISTOR BC549B,
13 14181	Q..4	TRANSISTOR BC559B,BC309B
13 14295	Q..5	TRANSISTOR BC549B,
13 14181	Q..6	TRANSISTOR BC559B,BC309B
13 14181	Q..7	TRANSISTOR BC559B,BC309B
13 14181	Q..8	TRANSISTOR BC559B,BC309B
13 14295	Q..9	TRANSISTOR BC549B,
13 14295	Q.10	TRANSISTOR BC549B,
13 14295	Q.11	TRANSISTOR BC549B,
13 14295	Q.12	TRANSISTOR BC549B,
13 14181	Q.13	TRANSISTOR BC559B,BC309B
13 14181	Q.15	TRANSISTOR BC559B,BC309B
13 14295	Q.16	TRANSISTOR BC549B,
13 14181	Q.17	TRANSISTOR BC559B,BC309B
13 14295	Q.18	TRANSISTOR BC549B,
10 1141	R..2	RESISTOR CF 2K7 J 0W25
10 1124	R..3	RESISTOR CF 100E J 0W25
10 1155	R..5	RESISTOR CF 39K J 0W25
10 1124	R..6	RESISTOR CF 100E J 0W25
10 1132	R..7	RESISTOR CF 470E J 0W25
10 1128	R..8	RESISTOR CF 220E J 0W25
10 1128	R..9	RESISTOR CF 220E J 0W25
10 1138	R.10	RESISTOR CF 1K5 J 0W25
10 1146	R.11	RESISTOR CF 6K8 J 0W25
10 1126	R.12	RESISTOR CF 150E J 0W25
10 1155	R.14	RESISTOR CF 39K J 0W25
10 1133	R.15	RESISTOR CF 560E J 0W25
10 1136	R.16	RESISTOR CF 1K J 0W25
10 1124	R.17	RESISTOR CF 100E J 0W25
10 1144	R.18	RESISTOR CF 4K7 J 0W25
10 1133	R.19	RESISTOR CF 560E J 0W25
10 1140	R.20	RESISTOR CF 2K2 J 0W25
10 1112	R.21	RESISTOR CF 10E J 0W25
10 1148	R.22	RESISTOR CF 10K J 0W25
10 1160	R.23	RESISTOR CF 100K J 0W25
10 1141	R.24	RESISTOR CF 2K7 J 0W25
10 1133	R.25	RESISTOR CF 560E J 0W25
10 1140	R.29	RESISTOR CF 2K2 J 0W25
10 1144	R.30	RESISTOR CF 4K7 J 0W25
10 1136	R.31	RESISTOR CF 1K J 0W25
10 1144	R.32	RESISTOR CF 4K7 J 0W25
10 1144	R.33	RESISTOR CF 4K7 J 0W25
10 1144	R.34	RESISTOR CF 4K7 J 0W25
10 1144	R.35	RESISTOR CF 4K7 J 0W25
10 1144	R.36	RESISTOR CF 4K7 J 0W25
10 1144	R.37	RESISTOR CF 4K7 J 0W25
10 1144	R.38	RESISTOR CF 4K7 J 0W25
10 1183	R.40	RESISTOR CF 8M2 J 0W25
10 1140	R.41	RESISTOR CF 2K2 J 0W25
10 1154	R.42	RESISTOR CF 33K J 0W25
10 1144	R.43	RESISTOR CF 4K7 J 0W25
10 1144	R.44	RESISTOR CF 4K7 J 0W25
10 1154	R.45	RESISTOR CF 33K J 0W25
10 1154	R.46	RESISTOR CF 33K J 0W25
10 1112	R.47	RESISTOR CF 10E J 0W25
10 1139	R.48	RESISTOR CF 1K8 J 0W25
10 1144	R.49	RESISTOR CF 4K7 J 0W25
10 1140	R.50	RESISTOR CF 2K2 J 0W25
10 1128	R.51	RESISTOR CF 220E J 0W25
10 1128	R.52	RESISTOR CF 220E J 0W25
10 1128	R.53	RESISTOR CF 220E J 0W25

ITEM NO.	SIT.	DESCRIPTION				ITEM NO.	SIT.	DESCRIPTION			
10 1135	R.54	RESISTOR CF	820E	J	0W25	10 1140	R.73	RESISTOR CF	2K2	J	0W25
10 1155	R.56	RESISTOR CF	39K	J	0W25	10 1145	R.74	RESISTOR CF	5K6	J	0W25
10 1153	R.57	RESISTOR CF	27K	J	0W25	10 1130	R.75	RESISTOR CF	330E	J	0W25
10 1160	R.58	RESISTOR CF	100K	J	0W25	10 1136	R.76	RESISTOR CF	1K	J	0W25
10 1159	R.59	RESISTOR CF	82K	J	0W25	10 1140	R.77	RESISTOR CF	2K2	J	0W25
10 1145	R.60	RESISTOR CF	5K6	J	0W25	10 1157	R.80	RESISTOR CF	56K	J	0W25
10 1145	R.61	RESISTOR CF	5K6	J	0W25	10 1140	R.81	RESISTOR CF	2K2	J	0W25
10 1155	R.62	RESISTOR CF	39K	J	0W25						
10 1142	R.63	RESISTOR CF	3K3	J	0W25	30 6855	XTAL	X-TAL 5.000 000 MHZ			
10 1142	R.64	RESISTOR CF	3K3	J	0W25						
10 1146	R.65	RESISTOR CF	6K8	J	0W25	13 1751	Z..1	DIODE ZENER 9V1 0W5 C			
10 1154	R.66	RESISTOR CF	33K	J	0W25	13 1740	Z..2	DIODE ZENER 12V 0W5 C			
10 1147	R.67	RESISTOR CF	8K2	J	0W25						
10 1142	R.68	RESISTOR CF	3K3	J	0W25	31 3531	001.	CONNECTOR EURO MOBSE P64 KEY			
10 1112	R.69	RESISTOR CF	10E	J	0W25	36 7699	0011	RIVET CHOBERT D2,38 L6,35			
10 1144	R.70	RESISTOR CF	4K7	J	0W25	32 4127	002.	SWITCH SLIDE 4A			
10 1153	R.71	RESISTOR CF	27K	J	0W25	31 3586	003.	CONNECTOR MT MOBTE P 7 2,5			
10 1158	R.72	RESISTOR CF	68K	J	0W25	31 35866	004.	CONNECTOR MT MOBTE P 7 2,5			



R	2 3,6,40 5 11 7 10 9 12 8,69,70,71,72,41 14,42,15,18,43 46,16 20 45 17,19 21 25 22 23 24 29 35 30,31,36,37,38 32 33,34 44 55,60,61,58 56,57,59,62 80 81 63 64
C	11 20 2 1,3 13 14 5 7 8 9 12 10 18,19 23,27,28 24,25,26,29 15
Q	D1,D4 Z1 D2 1 D28,D29,D30,D31, 3 D23,D24,D25 D27, 2, D3 12 4 D8 D5 5 D6 D7 6 Z2 9 11 7 10 8 D10,D11,D12 17 D33 18,D16,D17,D18,D19

71 6432



Focus control	A21
Vert. defl. + sync	A4 A28
G2 control	C3 C1
SM power supply	B1 B7
BNC	x
RGB-TTL	A32
RGB 100MHz.	B8 Nc

pin 7 ⊥
pin 14 + IC3,4,7,8

pin 8 ⊥
pin 16 + IC5,6,9,10,11,12,13

• All resistors are 0,25W unless otherwise specified

● INTERCONNECTIONS

■ VOLTAGE ON BOARD

Modifications reserved

29 35 30,31,36,37,38 32 33,34 44 55,60,61,58 56,57,59,62 80 81 63 64 74 73 75,76,67,65,66,77 68 49 48,50 51 47,52,53,54

12 10 18,19 23,27,28 24,25,26,29 15 31 30 22 21,32

Z2 9 11 7 10 8 D10,D11,D12 17 D33 18,D16,D17,D18,D19 16,D20 D9,D32 D21,D22 13 14 15

Name	Article nr.
Video input & convergence generator	76 1470

Date	Drawn	Checked
18/01/88	PG	SG

BARCO Electronic Noordlaan, 5 8720 Kuurne-Belgium

66 1470

OSCILLATOR
5 MHZ
IC3

DIVIDER
10^5
IC 10,11,12

DIVIDER
4000
IC 11,13,18

Fv(50 Hz)

25Fv(1250 Hz)

+C

VERT.
BLANKING
PULSE
SHAPER
T=R56xC24
IC5

VERT. BLANKING

VERT.
SYNC.
PULSE
SHAPER
T=R57xC25
IC5

VERT.
SYNC.

VIDEO IN

+V

AMPLIFIER
Q1,2,3,4,5

+12V

+C

+V

+RGB

BUFFER
IC4

VIDEO INDICATION

VIDEO OR SYNC OUT

SYNC LOCKING
R80,D33,C15,Q18

DIVIDER
: N
IC9

40Fh

DIVIDER
: 40
IC12,13

HOR
SYNC.
PULSE
SHAPER
T=R62xC29
IC6

HOR.
SYNC.

HOR
BLANKING
PULSE
SHAPER
T=R59xC26
IC6

HOR. BLANKING

FREQUENCY
SELECTOR

HOR. LINES
SHAPER
IC 7,8

VERT. LINES
SHAPER
IC 4,8

ADDER
IC4

DRIVE
OUTPUT

RED

GREEN

BLUE

FUNCTIONAL BLOCK DIAGRAM

VIDEO INPUT + CONVERGENCE GENERATOR

Name VIDEO INPUT + CONV. PAT. GENER.		Article nr. 76 1470
Date 28/01/88	Drawn JVH	Checked SSG
BARCO ELECTRONIC NV	Noordlaan 5 8720 Kuurne - Belgium	