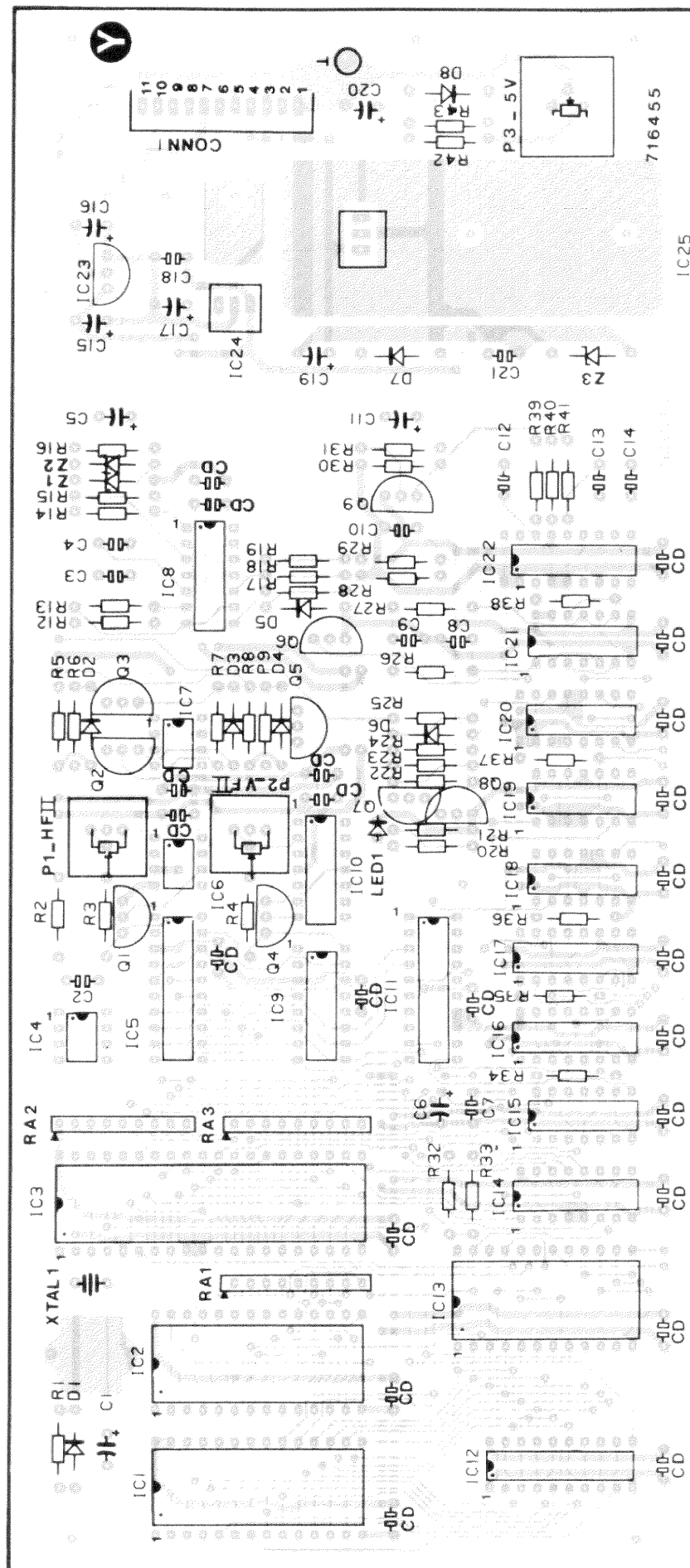


- 1 GND
- 2 VIDEO
- 3 GND
- 4 + 14 V
- 5 GND
- 6 + 17 V
- 7 - 17 V
- 8 VERT. RAMP
- 9 AUTOBLANKING
- 10 Fv AUTO
- 11 Fv AUTO

Y TO AUTOLOCKING ADAPTER 761479S **Y** MOUNTED ON 761274



Name		Article nr.	
AUTOLOCKING		76 1479	
Date	Drawn	Checked	
25/06/87	JVH	JVH	
BARCO Electronic		Noordlaan 5 8720 Kuurne Belgium	

MODIFICATIONS RESERVED

DC - MEASUREMENTS

- Employed meter : FLUKE 75 multimeter
- ALL MEASURED VALUES ARE EXPRESSED IN VOLT (DC)

a) Supply voltages

+A : 5.0 V
+B : 12.15 V
-B : -12.14 V

b) Output part

b.1) Measurements, independent from the frequency

- Supplied signal : internal convergence signal on 15 kHz
- Projector is synchronised (autoblanking is not active, LED1 doesn't light up) :

GLEICHSPANNUNGSMESSUNGEN

- Verwandtes Meßgerät : FLUKE 75 multimeter
- ALLE MESSWERTE SIND AUSGEDRÜCKT IN VOLT (DC)

a) Speisungsspannungen

b) "Output" - Teil

b.1) Messungen, unabhängig von der Frequenz :

- Gespeistes Signal : das innere Konvergenz-signal auf 15 KHz
- Projektor ist synchronisiert ("Autoblanking" ist nicht aktiv, LED1 leuchtet nicht auf) :

	b	c	e
Q7	12.2	0.0	12.2
Q8	0.1	12.1	0.0

- Projector isn't synchronised (autoblanking is active, LED1 lights up) :

- Projektor ist nicht synchronisiert ("Auto-blanking" ist aktiv, LED1 leuchtet auf) :

	b	c	e
Q7	11.4	12.1	12.2
Q8	0.7	0.0	0.0

b.2) Measurements on variable horizontal and vertical frequencies :

- Input signal : internal convergence signal

b.2) Messungen bei variablen horizontalen und vertikalen Frequenzen :

- Eingangssignal : das innere Konvergenz-signal

Hor. freq. (KHz.)	b(Q1)	e(Q1)	g(Q2)	b(Q3)	e(Q3)	c(Q4)	FH auto
15	10.4	0.0	-10.9	0.0	0.0	9.8	9.8
32	-1.8	-1.2	-2.7	0.6	0.0	7.9	7.9
42	-2.6	-2.0	-2.7	0.6	0.0	6.5	6.6
64	-4.3	-3.6	-2.6	0.6	0.0	3.8	3.9

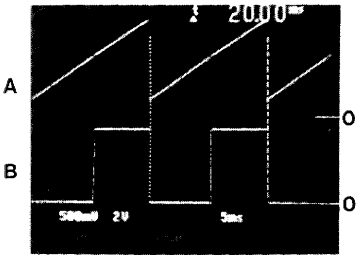
- Input signal : RGB - signal on 15 kHz (hor.freq.), coming from a BARCO Multifrequency Cross Hatch Pattern Generator (art.nr.9825790 (220V) or 9825791 (110V))

- Eingangssignal : RGB - Signal auf 15 KHz (hor.Freq.) aus einem BARCO Multifrequency Cross Hatch Pattern Generator (n° 9825790 (220V) oder 9825791 (110V)).

Vert. freq. (Hz.)	b(Q4)	e(Q4)	b(Q5)	e(Q5)	c(Q5)	FV AUTO
50	10.9	0.0	-9.5	0.0	22.5	22.5
60	-1.3	-0.7	0.6	0.0	19.3	19.3
100	-4.1	-3.5	0.6	0.0	6.1	6.3

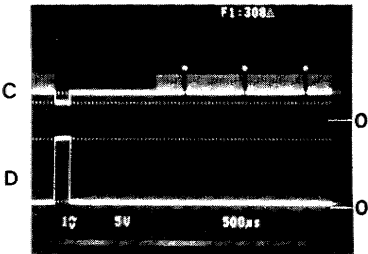
Input signal : Barco Multifrequency Cross Hatch Pattern Generator
on 15 kHz. (RGB signal).

Processing the vertical sawtooth



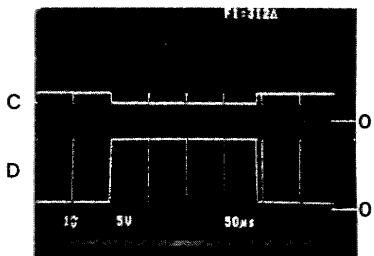
A : 1.2 Vpp
B : 5 Vpp

Synchro pulse amplitude filter (global)

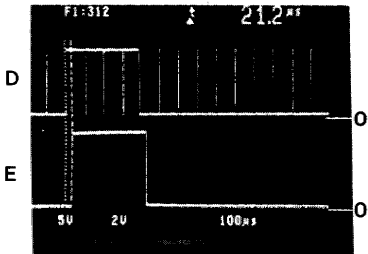


C : 1.1 Vpp
D : 10 Vpp

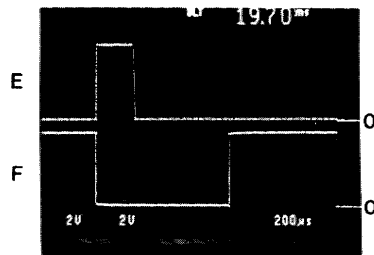
Synchro pulse amplitude filter (in detail)



C : 1.1 Vpp
D : 10 Vpp



D : 10 Vpp
E : 5 Vpp



E : 5 Vpp
F : 5 Vpp

AFREGELPROCEDURES

Voor de afregeling van P1 (HFII) en P2 (VFII), zie de afregelprocedures van de print "Vertical Deflection + Sync".

ADJUSTMENT PROCEDURES

For the adjustment of P1 (HFII) and P2 (VFII), please refer to the adjustment procedures of the "Vertical Deflection + Sync" board.

PROCEDURES D' ALIGNEMENT

Pour l'alignement de P1 (HFII) et de P2 (VFII), voir les procedures d'alignement de la platine "Vertical Deflection + Sync".

EINSTELLANWEISUNGEN

Für die Einstellungen von P1 (HFII) und P2 (VFII), siehe die Einstellanweisungen der Modul "Vertical Deflection + Sync".

FAILURE DIAGNOSIS

LED1 lights up => the correct phase correlation between VFB and VS is upset

Possible causes :

- transitional phase after having changed the horizontal or vertical frequency of the input signal
- invalid sync-input at the Vertical deflection + sync Board
- e.g. - the position of the switches on the CSB, the Video input & convergence generator Board or the convergence module, does not correspond to the character of the input signal
- the horizontal and/or vertical frequency of the input signal fall beyond the locking range
- wrong adjustments
- failure on the Vertical deflection + sync. Board
- failure in the connection between the Vertical deflection + sync Board and the Autolock Board
- failure in the input - part of the Autolock Board
- failure in the microprocessor - part of the Autolock Board (which is repairable in the factory only!)

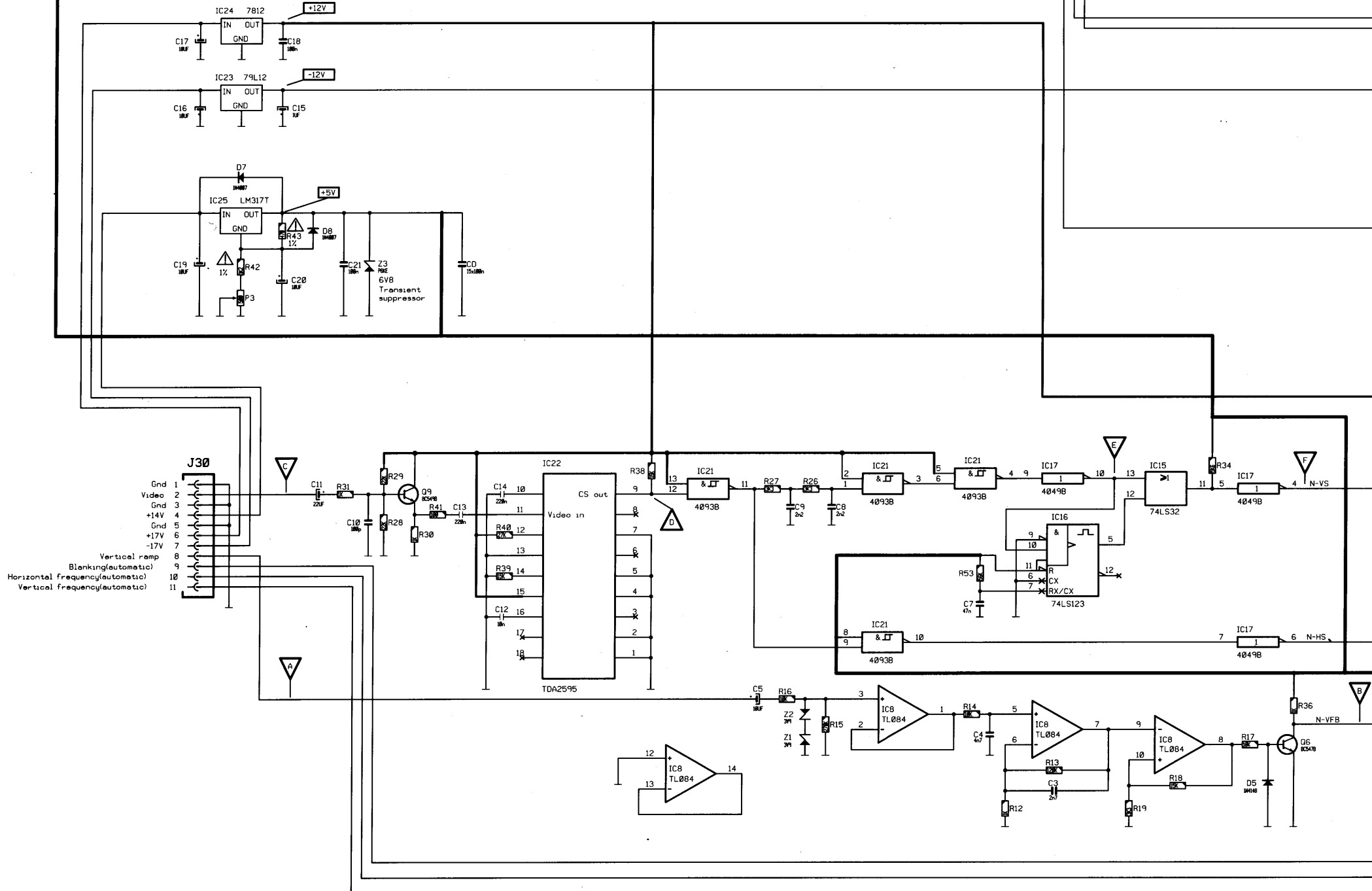
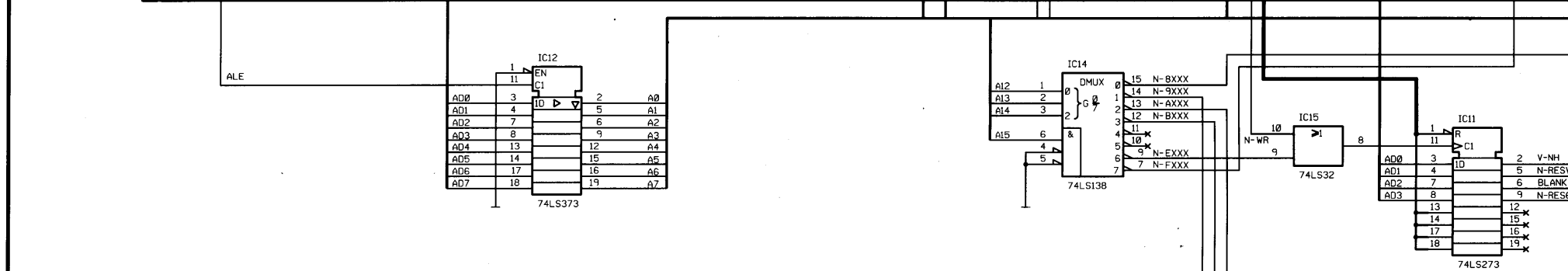
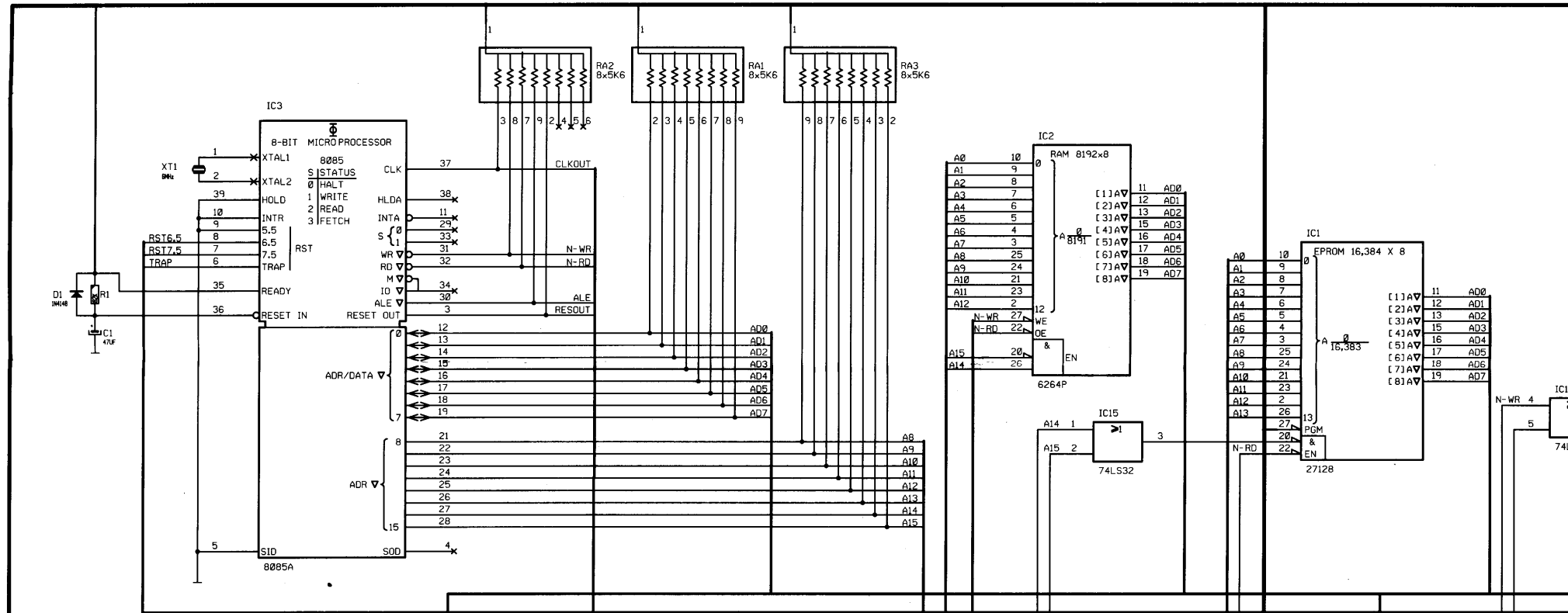
FEHLERDIAGNOSE

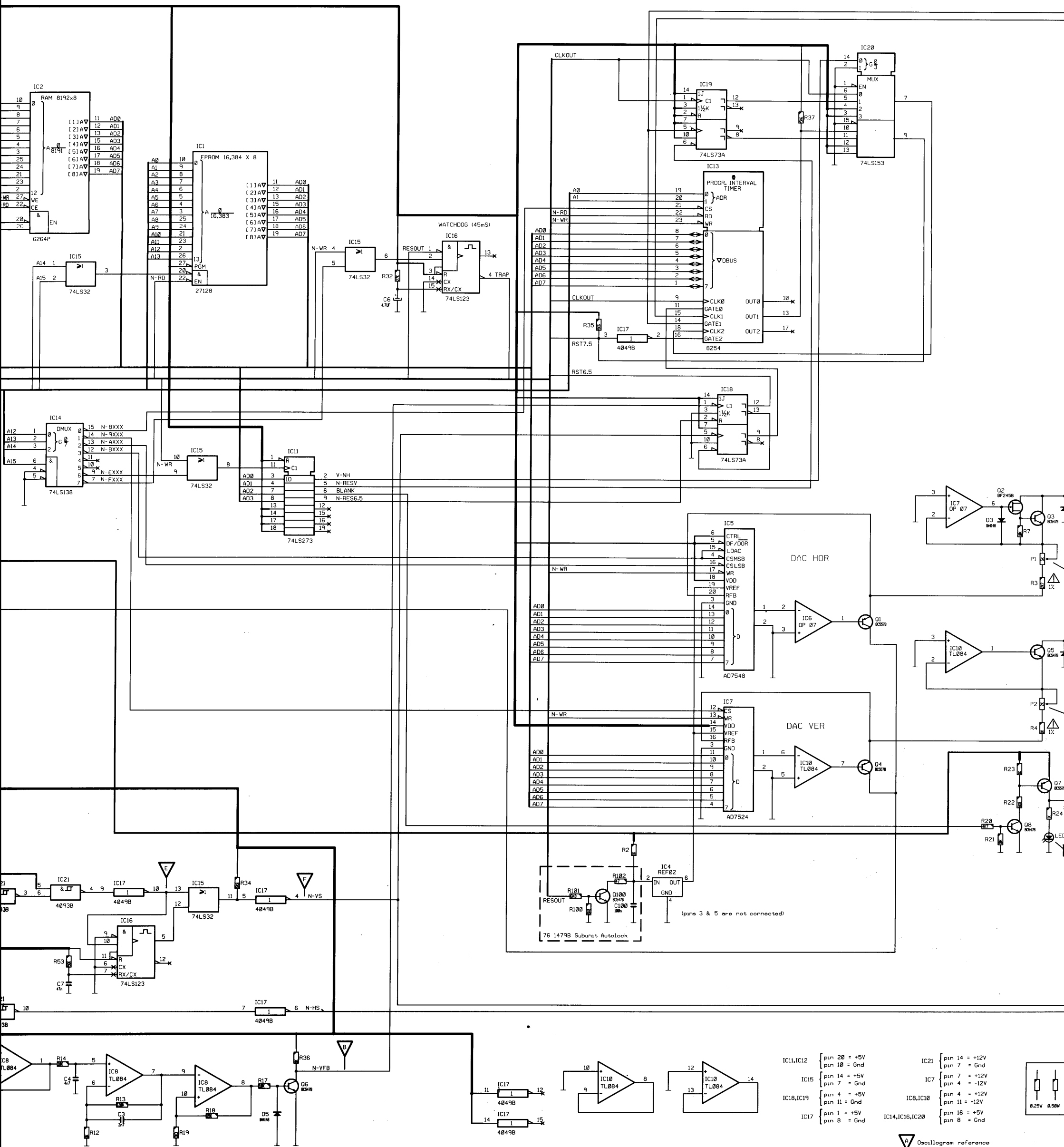
LED1 leuchtet auf => der richtige Phasezusammenhang zwischen VFB und VS ist gestört.

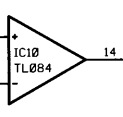
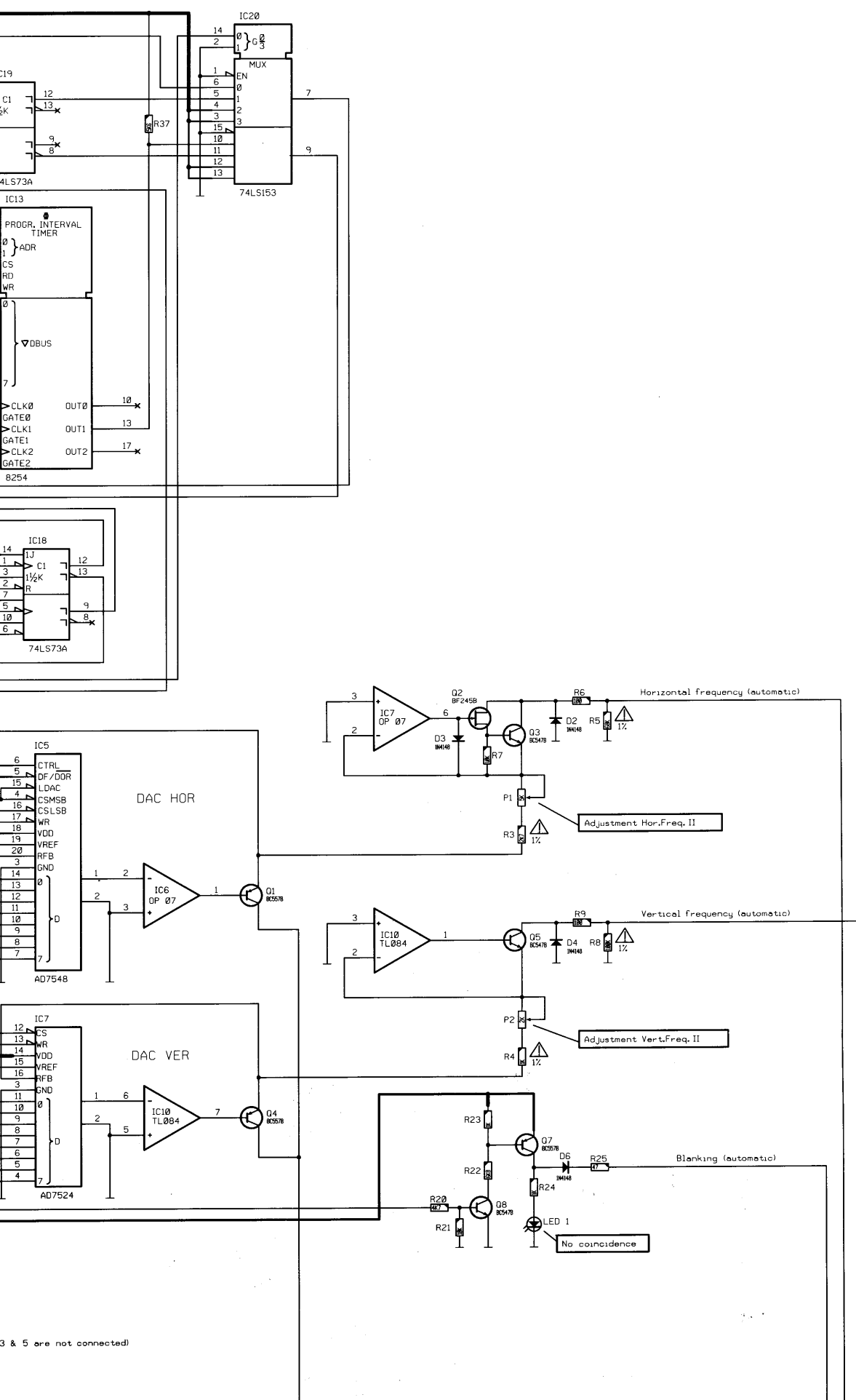
Mögliche Ursachen :

- übergangsphase nach dem Ändern der horizontalen oder vertikalen Frequenz des Eingangssignals
- keine richtige Einfuhr des Synchronisiersignals in den Baustein "Vertical deflection + sync"
- z.B. - die Position der Schalter auf dem CSB, dem Baustein "Video input & convergence generator" oder dem Konvergenzmodul entspricht nicht der Art des Eingangssignals
- die horizontale oder vertikale Frequenz des Eingangssignals fällt außerdem des Synchronisierungsbereich
- unpräzise Einstellungen
- Defekt auf dem Baustein "Vertical deflection + sync"
- Defekt in der Verbindung zwischen dem Baustein "Vert. deflection + sync" und dem "Autolock" Baustein
- Defekt in dem Eingangsteil des "Autolock" Bausteins
- Defekt in dem Mikroprozessorteil des "Autolock" Bausteins (nur reparierbar im Betrieb!)

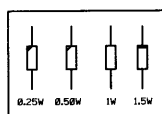
ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION
11 1500	C..1	CAPACITOR ELPRMI 47M M5 10	13 14651	Q..2	TRANSISTOR BF245B
11 2774	C..2	CAPACITOR CE MI 100K U5 63	13 14071	Q..3	TRANSISTOR BC547B,BC237B
11 2744	C..3	CAPACITOR CE MI 2K7 K5 63	13 14131	Q..4	TRANSISTOR BC557B,BC307B
11 2747	C..4	CAPACITOR CE MI 4K7 K5 63	13 14071	Q..5	TRANSISTOR BC547B,BC237B
11 1531	C..5	CAPACITOR ELPRMI 10M M5 35	13 14071	Q..6	TRANSISTOR BC547B,BC237B
11 1550	C..6	CAPACITOR ELPRMI 4M7 M5 50	13 14131	Q..7	TRANSISTOR BC557B,BC307B
11 3720	C..7	CAPACITOR POME 47K K5 63	13 14071	Q..8	TRANSISTOR BC547B,BC237B
11 2743	C..8	CAPACITOR CE MI 2K2 K5 63	13 14295	Q..9	TRANSISTOR BC549B,
11 2743	C..9	CAPACITOR CE MI 2K2 K5 63			
11 2242	C.10	CAPACITOR NPO MI 100P J5 63	10 1159	R..1	RESISTOR CF 82K J 0W25
11 1510	C.11	CAPACITOR ELPRMI 22M M5 25	10 1136	R..2	RESISTOR CF 1K J 0W25
11 37121	C.12	CAPACITOR POME 10K K5 100	10 11412	R..3	RESISTOR MF 2K7 F 0W25
11 3728	C.13	CAPACITOR POME 220K K5 63	10 11364	R..4	RESISTOR MF 1K F 0W25
11 3728	C.14	CAPACITOR POME 220K K5 63	10 11584	R..5	RESISTOR MF 68K F 0W25
11 1546	C.15	CAPACITOR ELPRMI 1M M5 50	10 1124	R..6	RESISTOR CF 100E J 0W25
11 1531	C.16	CAPACITOR ELPRMI 10M M5 35	10 1148	R..7	RESISTOR CF 10K J 0W25
11 1531	C.17	CAPACITOR ELPRMI 10M M5 35	10 11605	R..8	RESISTOR MF 100K F 0W25
11 2774	C.18	CAPACITOR CE MI 100K U5 63	10 1124	R..9	RESISTOR CF 100E J 0W25
11 1531	C.19	CAPACITOR ELPRMI 10M M5 35	10 1136	R.12	RESISTOR CF 1K J 0W25
11 1531	C.20	CAPACITOR ELPRMI 10M M5 35	10 1161	R.13	RESISTOR CF 120K J 0W25
11 2774	C.21	CAPACITOR CE MI 100K U5 63	10 1148	R.14	RESISTOR CF 10K J 0W25
			10 1165	R.15	RESISTOR CF 270K J 0W25
11 2774	CD..	CAPACITOR CE MI 100K U5 63	10 1148	R.16	RESISTOR CF 10K J 0W25
11 2774	CD..	CAPACITOR CE MI 100K U5 63	10 1148	R.17	RESISTOR CF 10K J 0W25
			10 1150	R.18	RESISTOR CF 15K J 0W25
13 1621	D..1	DIODE 1N4148 SWITCH	10 1142	R.19	RESISTOR CF 3K3 J 0W25
13 1621	D..2	DIODE 1N4148 SWITCH	10 1144	R.20	RESISTOR CF 4K7 J 0W25
13 1621	D..3	DIODE 1N4148 SWITCH	10 1148	R.21	RESISTOR CF 10K J 0W25
13 1621	D..4	DIODE 1N4148 SWITCH	10 1146	R.22	RESISTOR CF 6K8 J 0W25
13 1621	D..5	DIODE 1N4148 SWITCH	10 1136	R.23	RESISTOR CF 1K J 0W25
13 1621	D..6	DIODE 1N4148 SWITCH	10 1136	R.24	RESISTOR CF 1K J 0W25
13 1646	D..7	DIODE 1N4007 RECTIFIER	10 1120	R.25	RESISTOR CF 47E J 0W25
13 1646	D..8	DIODE 1N4007 RECTIFIER	10 1142	R.26	RESISTOR CF 3K3 J 0W25
			10 1142	R.27	RESISTOR CF 3K3 J 0W25
13 1662	DLED	DIODE CQY54-A3 LED D3 RED	10 1152	R.28	RESISTOR CF 22K J 0W25
			10 1152	R.29	RESISTOR CF 22K J 0W25
13 8038	I..1	IC SOFT MUPLOCK 1.0 137270	10 1136	R.30	RESISTOR CF 1K J 0W25
13 7271	I..2	INTEGRATED CIRCUIT 6264	10 1136	R.31	RESISTOR CF 1K J 0W25
13 7272	I..3	INTEGRATED CIRCUIT 8085	10 1153	R.32	RESISTOR CF 27K J 0W25
13 4024	I..4	INTEGRATED CIRCUIT 02 REF	10 1157	R.33	RESISTOR CF 56K J 0W25
13 7198	I..5	INTEGRATED CIRCUIT 7548	10 1145	R.34	RESISTOR CF 5K6 J 0W25
13 4117	I..6	INTEGRATED CIRCUIT 77 07 OP	10 1145	R.35	RESISTOR CF 5K6 J 0W25
13 4117	I..7	INTEGRATED CIRCUIT 77 07 OP	10 1136	R.36	RESISTOR CF 1K J 0W25
13 4113	I..8	INTEGRATED CIRCUIT 084	10 1145	R.37	RESISTOR CF 5K6 J 0W25
13 7279	I..9	INTEGRATED CIRCUIT 7524L	10 1150	R.38	RESISTOR CF 15K J 0W25
13 4113	I.10	INTEGRATED CIRCUIT 084	10 1150	R.39	RESISTOR CF 15K J 0W25
13 7483	I.11	INTEGRATED CIRCUIT 74LS273	10 1153	R.40	RESISTOR CF 27K J 0W25
13 7476	I.12	INTEGRATED CIRCUIT 74LS373	10 1124	R.41	RESISTOR CF 100E J 0W25
13 7273	I.13	INTEGRATED CIRCUIT 8254	10 11374	R.42	RESISTOR MF 1K2 F 0W25
13 7490	I.14	INTEGRATED CIRCUIT 74LS138	10 11324	R.43	RESISTOR MF 470E F 0W25
13 7355	I.15	INTEGRATED CIRCUIT 74LS32			
13 7480	I.16	INTEGRATED CIRCUIT 74LS123	10 1007	RA.1	RESISTOR TF COM 5K6X8 G 0W11
13 73241	I.17	INTEGRATED CIRCUIT 4049UB	10 1007	RA.2	RESISTOR TF COM 5K6X8 G 0W11
13 7512	I.18	INTEGRATED CIRCUIT 74LS73A	10 1007	RA.3	RESISTOR TF COM 5K6X8 G 0W11
13 7512	I.19	INTEGRATED CIRCUIT 74LS73A			
13 7504	I.20	INTEGRATED CIRCUIT 74LS153	30 6834	XT.1	X-TAL 6,000 000 MHZ PCM 5MM
13 7394	I.21	INTEGRATED CIRCUIT 4093B			
13 2762	I.22	INTEGRATED CIRCUIT 2595 TDA	13 1757	Z..1	DIODE ZENER 3V9 0W5 C
13 4034	I.23	INTEGRATED CIRCUIT 79L12	13 1757	Z..2	DIODE ZENER 3V9 0W5 C
13 4002	I.24	INTEGRATED CIRCUIT 7812	13 1792	Z..3	DIODE P6KE6V8P TRANSIL
13 4026	I.25	INTEGRATED CIRCUIT 317T			
13 7270		INTEGRATED CIRCUIT 27128	71 6712	001.	HEATSINK TO220
			36 20121	0011	SCREW DIN84 M 2,5X 6 MP-
10 6728	P..1	TRIMPOT CEMH 5K K 0W50	36 7502	0012	WASHER DIN6798 A 3,2
10 6727	P..2	TRIMPOT CEMH 2K K 0W50	36 61106	0013	NUT DIN934 M 2,5 HEXAGONAL
10 6725	P..3	TRIMPOT CEMH 500E K 0W50	31 35882	002.	CONNECTOR MT MOBTE P11 2,5
			31 53101	003.	CONNECTOR TAB MOBTE P 1 2,8
71 6455	PC..	PC GRAPHICS MUPLOCK 761479	36 20147	004.	SCREW DIN84 M 2,5X10 MP-
			36 7502	0041	WASHER DIN6798 A 3,2
13 14131	Q..1	TRANSISTOR BC557B,BC307B	36 61106	0042	NUT DIN934 M 2,5 HEXAGONAL







- | | | | |
|-----------|--|----------------|---|
| IC11,IC12 | $\begin{cases} \text{pin } 20 = +5\text{V} \\ \text{pin } 10 = \text{Gnd} \end{cases}$ | IC21 | $\begin{cases} \text{pin } 14 = +12\text{V} \\ \text{pin } 7 = \text{Gnd} \end{cases}$ |
| IC15 | $\begin{cases} \text{pin } 14 = +5\text{V} \\ \text{pin } 7 = \text{Gnd} \end{cases}$ | IC7 | $\begin{cases} \text{pin } 7 = +12\text{V} \\ \text{pin } 4 = -12\text{V} \end{cases}$ |
| IC18,IC19 | $\begin{cases} \text{pin } 4 = +5\text{V} \\ \text{pin } 11 = \text{Gnd} \end{cases}$ | IC8,IC10 | $\begin{cases} \text{pin } 4 = +12\text{V} \\ \text{pin } 11 = -12\text{V} \end{cases}$ |
| IC17 | $\begin{cases} \text{pin } 1 = +5\text{V} \\ \text{pin } 8 = \text{Gnd} \end{cases}$ | IC14,IC16,IC20 | $\begin{cases} \text{pin } 16 = +5\text{V} \\ \text{pin } 8 = \text{Gnd} \end{cases}$ |



 Oscillogram reference

