GRUNDIG electronic

OSCILLOSCOPE MO 53

S.Nr. 9.40011-1101

40011-942.11

Datum/Date
04.84

Deutsch
English

Schaltbild/Circuit diagram

INHALT Contents	**Baustein** Modul	**Schaltbild** Circuit diagram	**Nr./No.**
Blockschaltbild Block diagram		40011-921.00	1
Gesamtschaltbild Full connection diagram		40011-906.00 Bl.1	2
Leiterplatte unten Circuit panel lower		40011-906.00 Bl. 2	3
Leiterplatte unten Printed circuit board lower	**40011-700.00**		4
Leiterplatte oben Circuit panel upper		40011-906.00 Bl. 3	5
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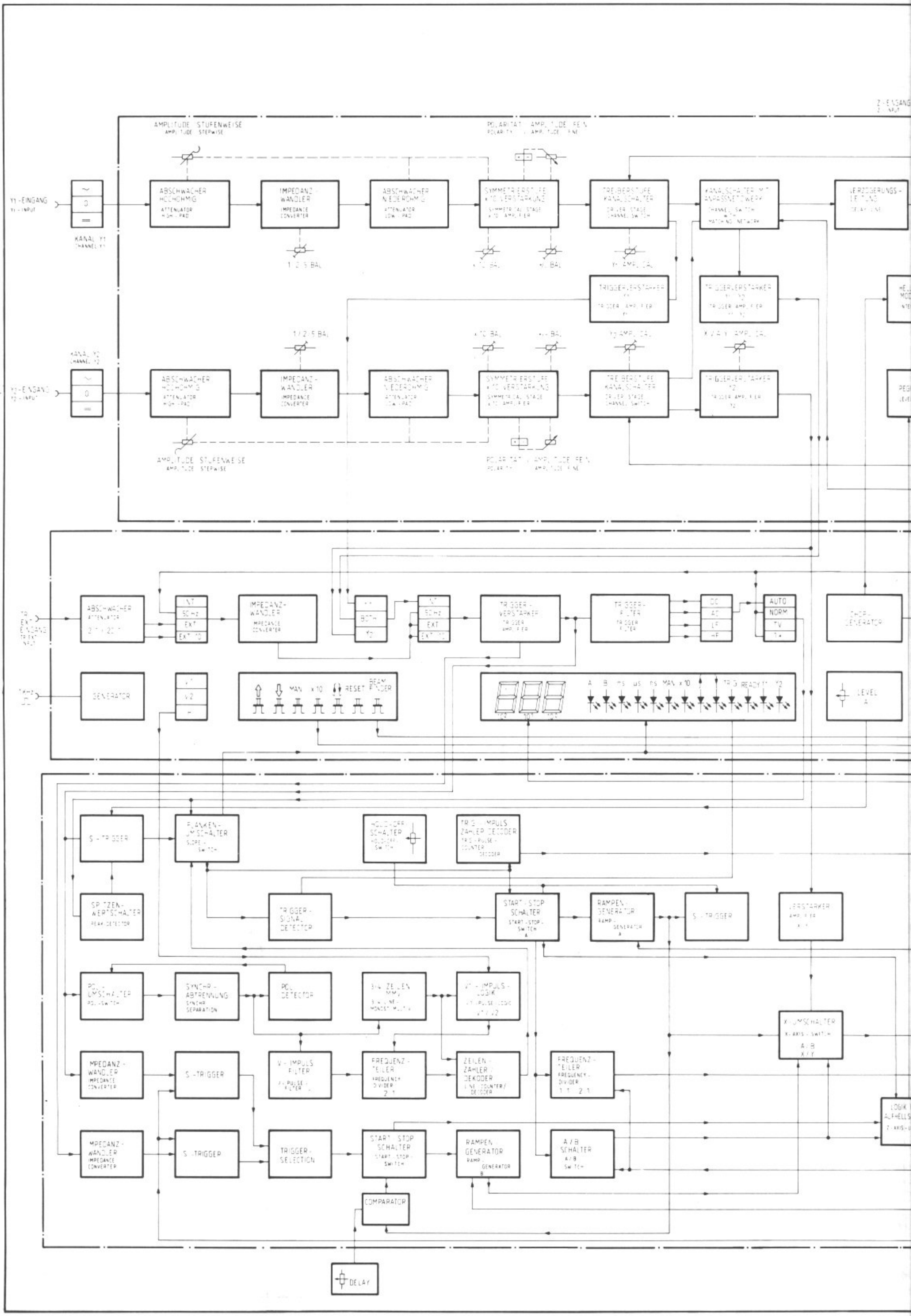
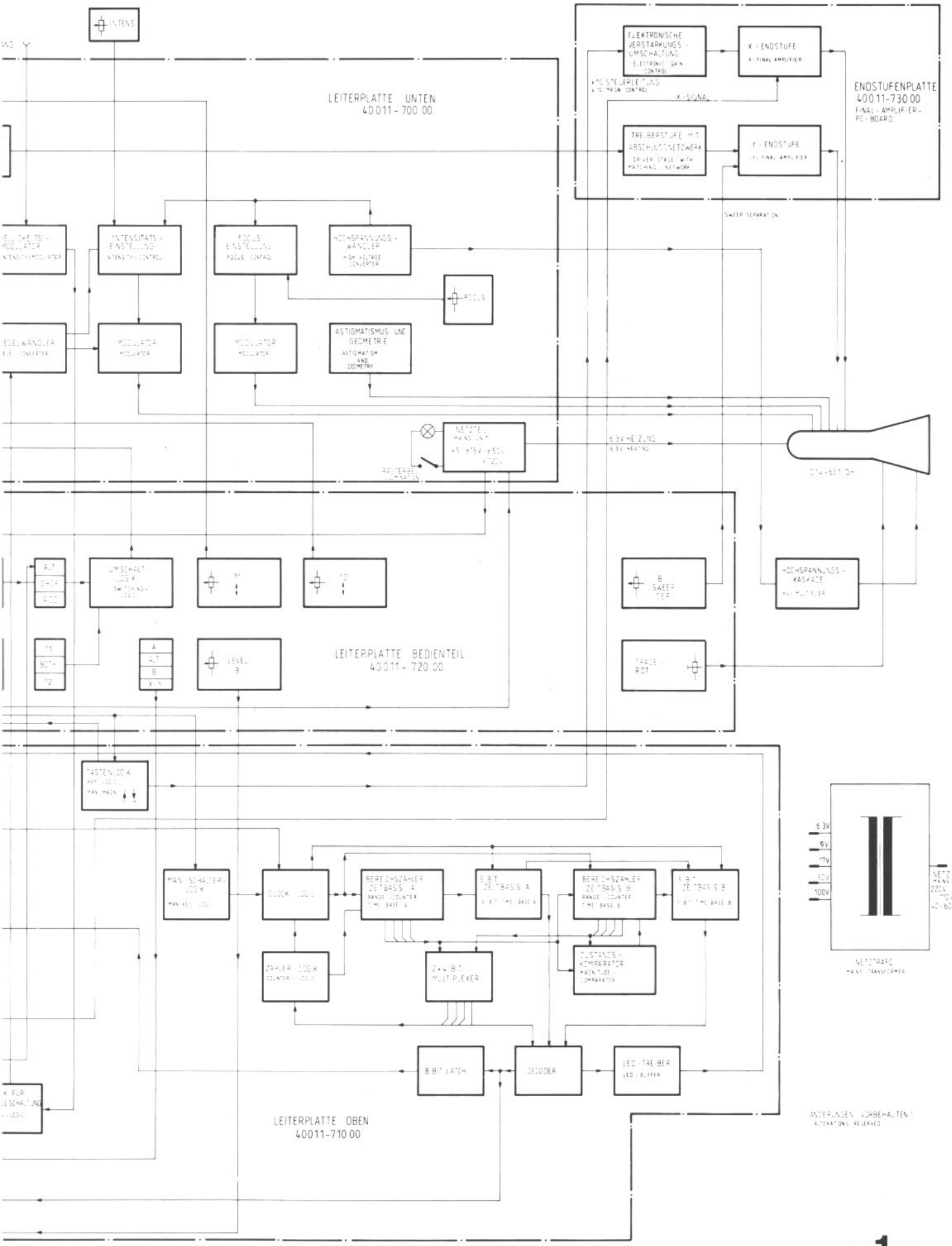
Bedienplatte Front panel	**40011-720.00**	40011-906.00 Bl. 4	7
Endstufenplatte Final amplifier panel	**40011-730.00**	40011-906-00 Bl. 5	8
Lämpchenplatte +) Printed circuit board lamp	**40011-740.00**		

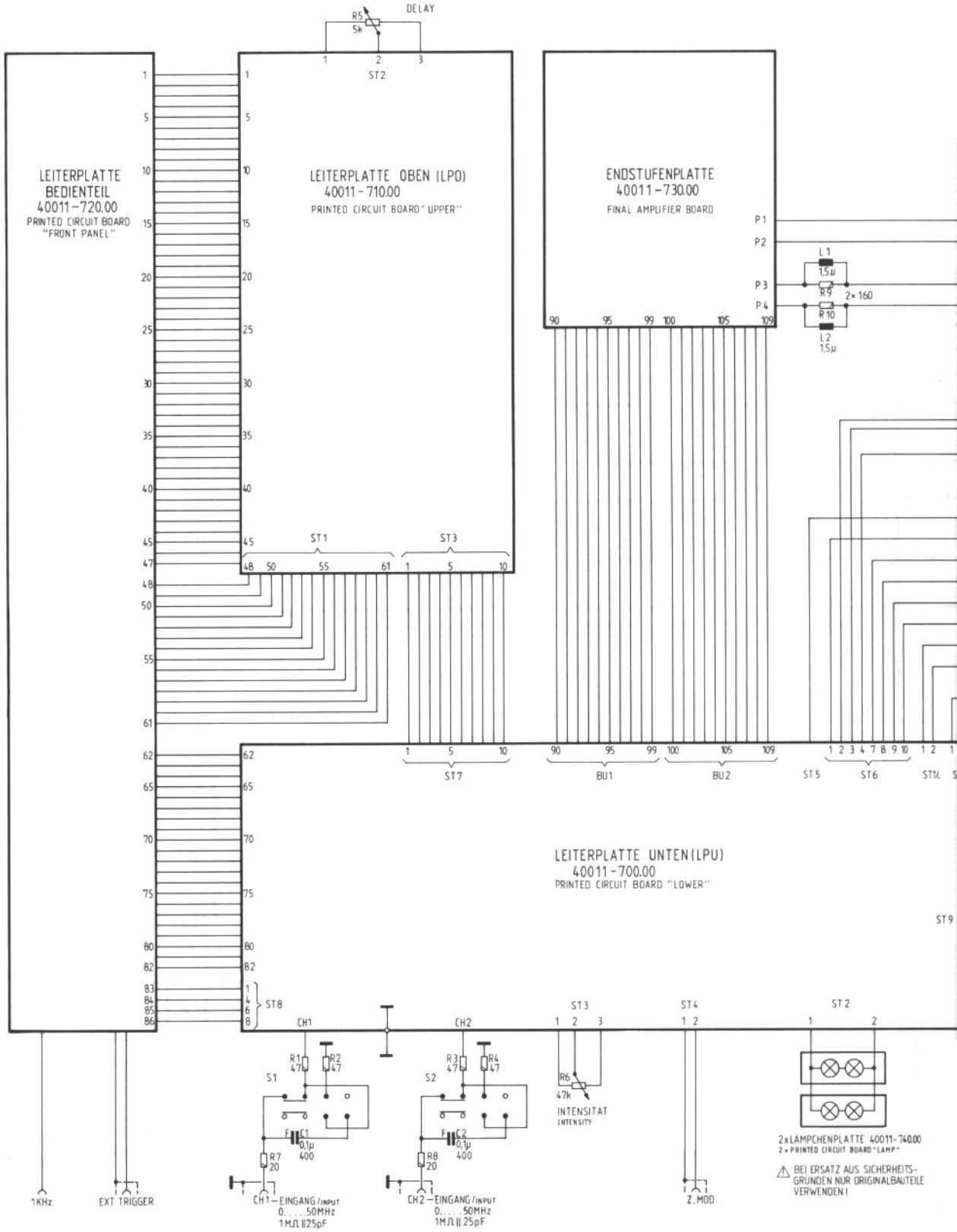
+) Im Gesamtschaltbild enthalten
Contained in full connection diagram

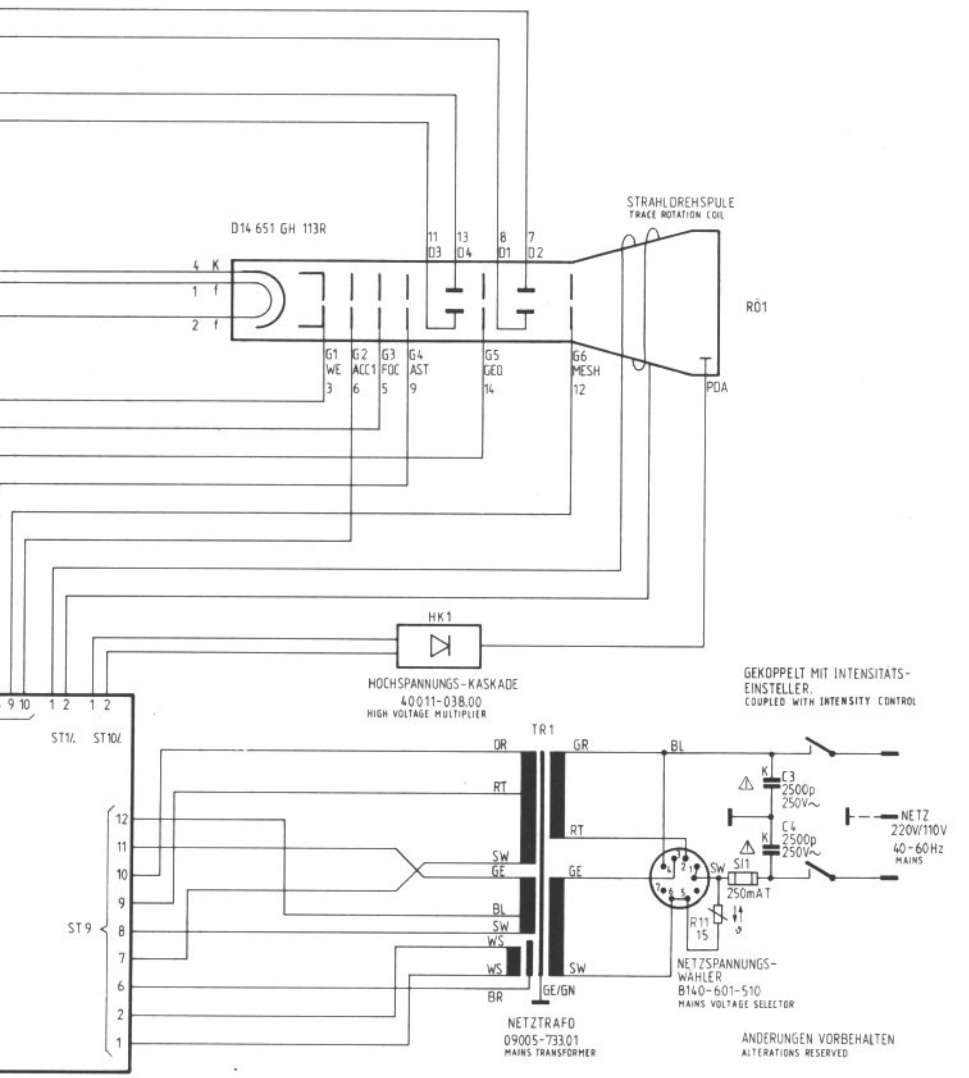
Änderungen vorbehalten/Alterations reserved

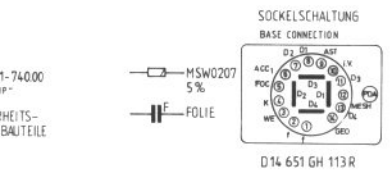


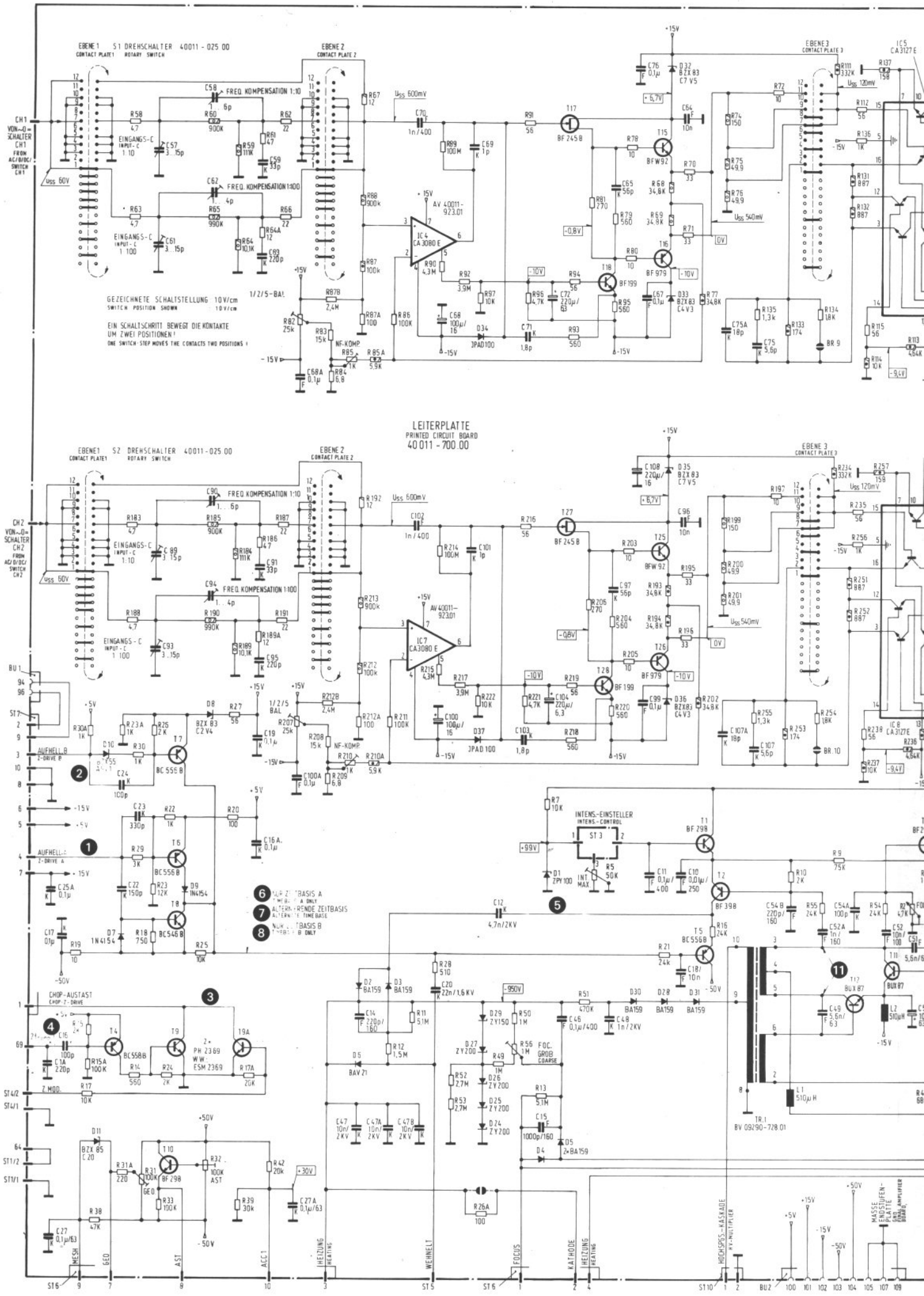
Y1-EINGANG
Y1-INPUT
KANAL Y1
CHANNEL Y1
AMPLITUDE STUFENWEISE
AMPLITUDE STEPWISE
ABSCHWÄCHER HOCHOHMIG
ATTENUATOR HIGH-PAD
IMPEDANZ-WANDLER
IMPEDANCE CONVERTER
ABSCHWÄCHER NIEDEROHMIG
ATTENUATOR LOW-PAD
SYMMETRIERSTUFE x10 VERSTÄRKUNG
SYMMETRICAL STAGE x10 AMPLIFIER
TREIBERSTUFE KANALSCHALTER
DRIVER STAGE CHANNEL SWITCH
KANALSCHALTER MIT ANPASSNETZWERK
CHANNEL SWITCH WITH MATCHING NETWORK
VERZÖGERUNGS-LEITUNG
DELAY LINE
POLARITÄT AMPLITUDE FEIN
POLARITY AMPLITUDE FINE
TRIGGERVERSTÄRKER
TRIGGER AMPLIFIER
1/2/5 BAL
Y1 AMPL CAL
KANAL Y2
CHANNEL Y2
Y2-EINGANG
Y2-INPUT
Y2 AMPL CAL
X/A Y1 AMPL CAL
Z-EINGANG
Z-INPUT
TR. EXT. EINGANG
TR. EXT. INPUT
ABSCHWÄCHER
ATTENUATOR
INT
50Hz
EXT
EXT :10
BOTH
TRIGGER-VERSTÄRKER
TRIGGER AMPLIFIER
TRIGGER-FILTER
TRIGGER FILTER
DC
AC
LF
HF
AUTO
NORM
TV
CHOP-GENERATOR
GENERATOR
1kHz
MAN
x10
RESET
BEAM FINDER
A
B
ms
µs
ns
TRIG
READY
LEVEL
S-TRIGGER
FLANKEN-UMSCHALTER
SLOPE-SWITCH
HOLD-OFF SCHALTER
HOLD-OFF SWITCH
TRIG-IMPULS ZÄHLER DECODER
TRIG-PULSE-COUNTER DECODER
SPITZEN-WERTSCHALTER
PEAK DETECTOR
TRIGGER-SIGNAL DETECTOR
START-STOP SCHALTER
START-STOP-SWITCH
RAMPEN-GENERATOR
RAMP-GENERATOR
VERSTÄRKER
POL-UMSCHALTER
POL-SWITCH
SYNCHR-ABTRENNUNG
SYNCHR SEPARATION
POL DETECTOR
3/4 ZEILEN MMV
V1-IMPULS-LOGIK
V1/V2
X-UMSCHALTER
X-AXIS-SWITCH
A/B
X/Y
IMPEDANZ-WANDLER
IMPEDANCE CONVERTER
S-TRIGGER
V-IMPULS FILTER
FREQUENZ-TEILER
FREQUENCY DIVIDER
2:1
ZEILEN-ZÄHLER DEKODER
LINE COUNTER/DECODER
1:1 2:1
LOGIK
TRIGGER-SELECTION
A/B SCHALTER
A/B SWITCH
COMPARATOR
DELAY

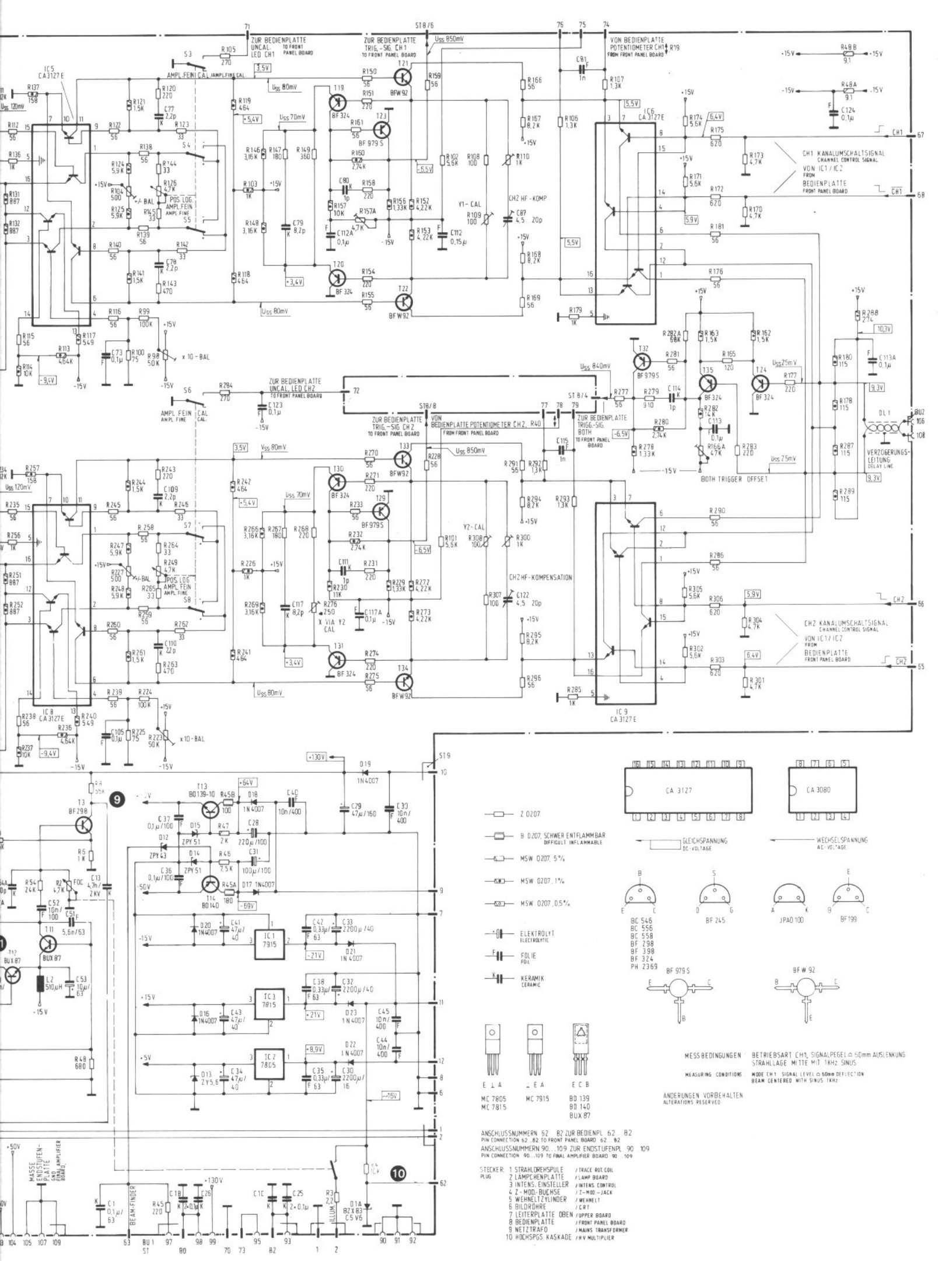

INTENS.
LEITERPLATTE UNTEN
40011-700 00
ELEKTRONISCHE VERSTÄRKUNGS-UMSCHALTUNG
ELECTRONIC GAIN-CONTROL
X-ENDSTUFE
X-FINAL AMPLIFIER
X-STEUERLEITUNG
X-MAGN. CONTROL
X-SIGNAL
TREIBERSTUFE MIT ABSCHLUSSNETZWERK
DRIVER STAGE WITH MATCHING NETWORK
Y-ENDSTUFE
Y-FINAL AMPLIFIER
ENDSTUFENPLATTE
40011-730 00
FINAL-AMPLIFIER-PC-BOARD
SWEEP SEPARATION
INTENSITÄTS-EINSTELLUNG
INTENSITY CONTROL
FOCUS-EINSTELLUNG
FOCUS CONTROL
HOCHSPANNUNGS-WANDLER
HIGH VOLTAGE CONVERTER
FOCUS
MODULATOR
MODULATOR
ASTIGMATISMUS UND GEOMETRIE
ASTIGMATISM AND GEOMETRY
NETZTEIL
MAINS UNIT
+5V ±15V +50V +12V
RASTERFEL-KORREKTUR
6,3V HEIZUNG
6,3V HEATING
CRT-ASSY
A/T
UMSCHALTUNG
SWITCHING
Y1
Y2
B SWEEP
HOCHSPANNUNGS-KASKADE
HIGH VOLTAGE MULTIPLIER
X1
B/T
X2
A
A/T
B
X/Y
LEVEL B
LEITERPLATTE BEDIENTEIL
40011-720 00
TRACE-ROT
TASTENBLOCK
KEY BOARD
MAN. MAIN
MANUELSCHALTER
MAN. KEY
CLOCK
BEREICHSZÄHLER ZEITBASIS A
RANGE COUNTER TIME BASE A
8 BIT ZEITBASIS A
8 BIT TIME BASE A
BEREICHSZÄHLER ZEITBASIS B
RANGE COUNTER TIME BASE B
8 BIT ZEITBAS S B
8 BIT TIME BASE B
ZÄHLER
COUNTER
8+1 BIT MULTIPLEXER
ZUSTANDS-KOMPARATOR
MAGNITUDE COMPARATOR
8 BIT LATCH
DECODER
LED-TREIBER
LED-BUFFER
LEITERPLATTE OBEN
40011-710 00
6,3V
6V
17V
55V
100V
NETZ MAINS 220V 110V 50-60Hz
NETZTRAFO
MAINS TRANSFORMER
ÄNDERUNGEN VORBEHALTEN!
ALTERATIONS RESERVED


DELAY
R5
5k
ST2
LEITERPLATTE BEDIENTEIL
40011-720.00
PRINTED CIRCUIT BOARD "FRONT PANEL"
LEITERPLATTE OBEN (LPO)
40011-710.00
PRINTED CIRCUIT BOARD "UPPER"
ENDSTUFENPLATTE
40011-730.00
FINAL AMPLIFIER BOARD
P1
P2
P3
P4
L1
1,5µ
R9
2×160
R10
L2
1,5µ
ST1
ST3
ST7
BU1
BU2
ST5
ST6
LEITERPLATTE UNTEN (LPU)
40011-700.00
PRINTED CIRCUIT BOARD "LOWER"
ST8
CH1
CH2
ST3
ST4
ST2
R1 47
R2 47
R3 47
R4 47
S1
S2
C1 0,1µ 400
C2 0,1µ 400
R7 20
R8 20
R6 47k
INTENSITÄT
INTENSITY
1KHz
EXT TRIGGER
CH1 – EINGANG / INPUT
0.....50MHz
1MΩ ‖ 25pF
CH2 – EINGANG / INPUT
0.....50MHz
1MΩ ‖ 25pF
Z.MOD.
2 x LÄMPCHENPLATTE 40011-740.00
2 × PRINTED CIRCUIT BOARD "LAMP"
⚠ BEI ERSATZ AUS SICHERHEITS-GRÜNDEN NUR ORIGINALBAUTEILE VERWENDEN!


D14 651 GH 113R
STRAHLDREHSPULE
TRACE ROTATION COIL
RÖ1
PDA
G1 WE 3
G2 ACC1 6
G3 FOC 5
G4 AST 9
G5 GEO 14
G6 MESH 12
11 D3
13 D4
8 D1
7 D2
4 K
1 f
2 f
HK1
HOCHSPANNUNGS-KASKADE
40011-038.00
HIGH VOLTAGE MULTIPLIER
GEKOPPELT MIT INTENSITÄTS-EINSTELLER.
COUPLED WITH INTENSITY CONTROL
TR1
ST1/. ST10/.
ST9
OR
RT
SW
GE
BL
WS
BR
GR
GE/GN
C3 2500p 250V~
C4 2500p 250V~
NETZ 220V/110V 40-60Hz
MAINS
SI1 250mAT
R11 15
NETZSPANNUNGS-WÄHLER
B140-601-510
MAINS VOLTAGE SELECTOR
NETZTRAFO
09005-733.01
MAINS TRANSFORMER
ÄNDERUNGEN VORBEHALTEN
ALTERATIONS RESERVED


SOCKELSCHALTUNG
BASE CONNECTION
MSW0207
5%
FOLIE
D14 651 GH 113R


LEITERPLATTE
PRINTED CIRCUIT BOARD
40 011 - 700.00
EBENE 1 S1 DREHSCHALTER 40011 - 025 00
CONTACT PLATE 1 ROTARY SWITCH
EBENE 2
CONTACT PLATE 2
EBENE 3
CONTACT PLATE 3
EBENE 1 S2 DREHSCHALTER 40011 - 025 00
CONTACT PLATE 1 ROTARY SWITCH
CH1 VON ~0= SCHALTER CH1 FROM AC/DC/ SWITCH CH1
CH2 VON ~0= SCHALTER CH2 FROM AC/DC/ SWITCH CH2
FREQ. KOMPENSATION 1:10
FREQ. KOMPENSATION 1:100
EINGANGS-C INPUT-C 1:10
EINGANGS-C INPUT-C 1:100
GEZEICHNETE SCHALTSTELLUNG 10V/cm
SWITCH POSITION SHOWN 10V/cm
EIN SCHALTSCHRITT BEWEGT DIE KONTAKTE UM ZWEI POSITIONEN!
ONE SWITCH-STEP MOVES THE CONTACTS TWO POSITIONS!
1/2/S-BAL
NF-KOMP.
AV 40011-923.01
IC4 CA 3080 E
IC7 CA3080 E
IC5 CA 3127 E
IC8 CA 3127 E
INTENS.-EINSTELLER
INTENS.-CONTROL
CHOP-AUSTAST
CHOP-Z-DRIVE
Z-MOD.
AUFHELL.B Z-DRIVE B
AUFHELL.A Z-DRIVE A
HAUPTZEITBASIS A TIME BASE A ONLY
ALTERNIERENDE ZEITBASIS ALTERNATE TIME BASE
NUR ZEITBASIS B TIME BASE B ONLY
FOC. GROB COARSE
TR.1 BV 09290-728.01
HOCHSPANNS-KASKADE HV-MULTIPLIER
MASSE ENDSTUFEN-PLATTE FINAL AMPLIFIER BOARD
HEIZUNG HEATING
WEHNELT
FOCUS
KATHODE
GEO
AST
ACC
MESH


ZUR BEDIENPLATTE UNCAL. LED CH1 TO FRONT PANEL BOARD
ZUR BEDIENPLATTE TRIG.-SIG. CH1 TO FRONT PANEL BOARD
VON BEDIENPLATTE POTENTIOMETER CH1 FROM FRONT PANEL BOARD
AMPL. FEIN CAL
POS. LOG AMPL. FEIN AMPL. FINE
A-BAL
x 10 - BAL
CH1 KANALUMSCHALTSIGNAL CHANNEL CONTROL SIGNAL VON IC1 / IC2 FROM BEDIENPLATTE FRONT PANEL BOARD
CH2 HF-KOMP
Y1- CAL
ZUR BEDIENPLATTE UNCAL. LED CH2 TO FRONT PANEL BOARD
ZUR BEDIENPLATTE TRIG.-SIG. CH2 TO FRONT PANEL BOARD
VON BEDIENPLATTE POTENTIOMETER CH2, R40 FROM FRONT PANEL BOARD
ZUR BEDIENPLATTE TRIG.-SIG. BOTH TO FRONT PANEL BOARD
BOTH TRIGGER OFFSET
VERZÖGERUNGS-LEITUNG DELAY LINE
CH2 HF-KOMPENSATION
Y2-CAL
X VIA Y2 CAL
CH2 KANALUMSCHALTSIGNAL CHANNEL CONTROL SIGNAL VON IC1 / IC2 FROM BEDIENPLATTE FRONT PANEL BOARD
IC5 CA3127E
IC6 CA3127E
IC8 CA3127E
IC9 CA3127E
CA 3127
CA 3080
Z 0207
B 0207, SCHWER ENTFLAMMBAR DIFFICULT INFLAMMABLE
MSW 0207, 5%
MSW 0207, 1%
MSW 0207, 0.5%
ELEKTROLYT ELECTROLYTIC
FOLIE FOIL
KERAMIK CERAMIC
GLEICHSPANNUNG DC-VOLTAGE
WECHSELSPANNUNG AC-VOLTAGE
BC 546
BC 556
BC 558
BF 298
BF 398
BF 324
PH 2369
BF 245
JPAD 100
BF 199
BF 979 S
BFW 92
MC 7805
MC 7815
MC 7915
BD 139
BD 140
BUX 87
MESSBEDINGUNGEN: BETRIEBSART CH1, SIGNALPEGEL ≙ 50mm AUSLENKUNG STRAHLLAGE MITTE MIT 1KHz SINUS
MEASURING CONDITIONS: MODE CH1 SIGNAL LEVEL ≙ 50mm DEFLECTION BEAM CENTERED WITH SINUS 1KHz
ÄNDERUNGEN VORBEHALTEN ALTERATIONS RESERVED
ANSCHLUSSNUMMERN 62...82 ZUR BEDIENPL. 62...82
PIN CONNECTION 62...82 TO FRONT PANEL BOARD 62...82
ANSCHLUSSNUMMERN 90...109 ZUR ENDSTUFENPL. 90...109
PIN CONNECTION 90...109 TO FINAL AMPLIFIER BOARD 90...109
STECKER: 1 STRAHLDREHSPULE / TRACE ROT.COIL
2 LAMPCHENPLATTE / LAMP BOARD
3 INTENS. EINSTELLER / INTENS. CONTROL
4 Z-MOD-BUCHSE / Z-MOD-JACK
5 WEHNELTZYLINDER / WEHNELT
6 BILDRÖHRE / CRT
7 LEITERPLATTE OBEN / UPPER BOARD
8 BEDIENPLATTE / FRONT PANEL BOARD
9 NETZTRAFO / MAINS TRANSFORMER
10 HOCHSPGS KASKADE / HV MULTIPLIER

Meßbedingungen zu den Oszillogrammen Leiterplatte „UNTEN“

Measuring conditions to the oscillograms “BOTTOM” Circuit Board

Sinussignal an CH 1, ca. 1 kHz, 6 cm Auslenkung
Sine-wave signal to CH 1, 1 kHz approx., deflection 6 cm

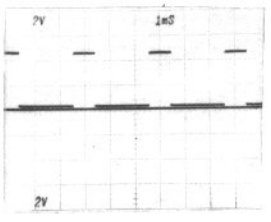
Triggerflanke :
Trigger edge :

A-Trigger : AUTO
DC
CH 1
INT

VERTICAL MODE: CH 1 bei/at ❶ ... ⓫ außer/excepted ❸, ❹
BOTH, CHOP bei/at ❸, ❹

TIME BASE : nur/only A : 200 µs/cm bei/at ❶, ❸ ... ❻, ❾ ... ⓬
ALT A : 200 µs/cm
B : 10 µs/cm
bei/at ❼, ❷
nur/only B : 10 µs/cm bei/at ❽

B-Trigger : START AFTER DELAY



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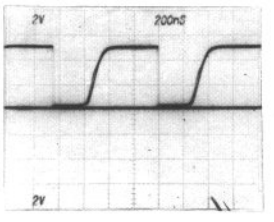

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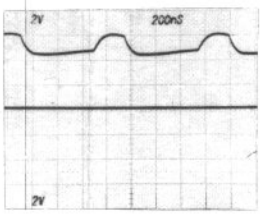

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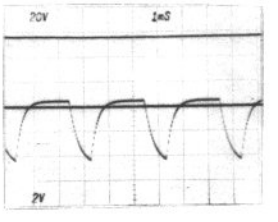

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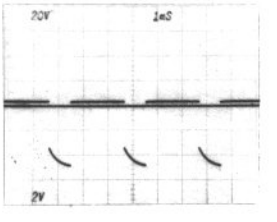

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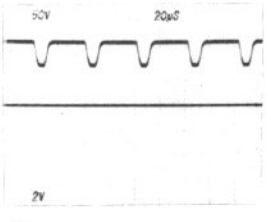

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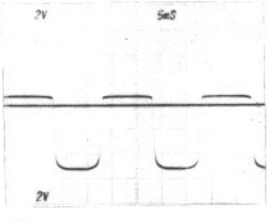

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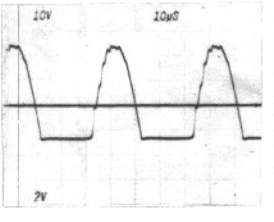

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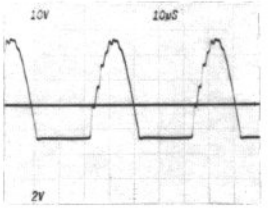

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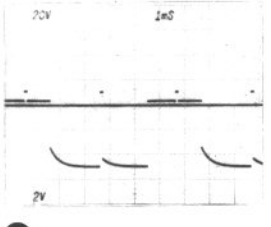

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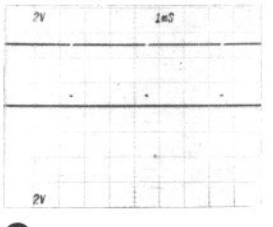

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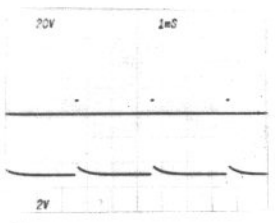

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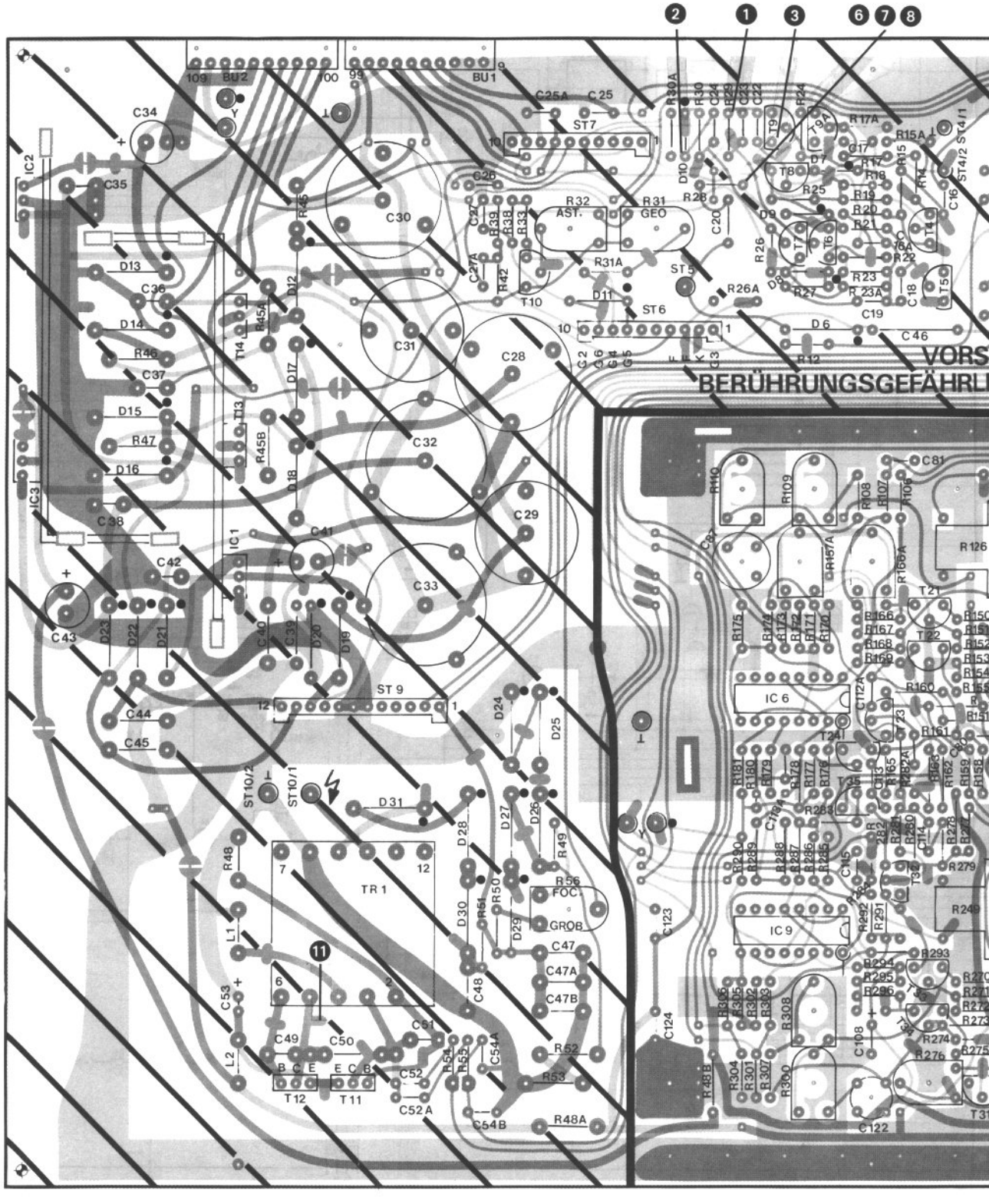
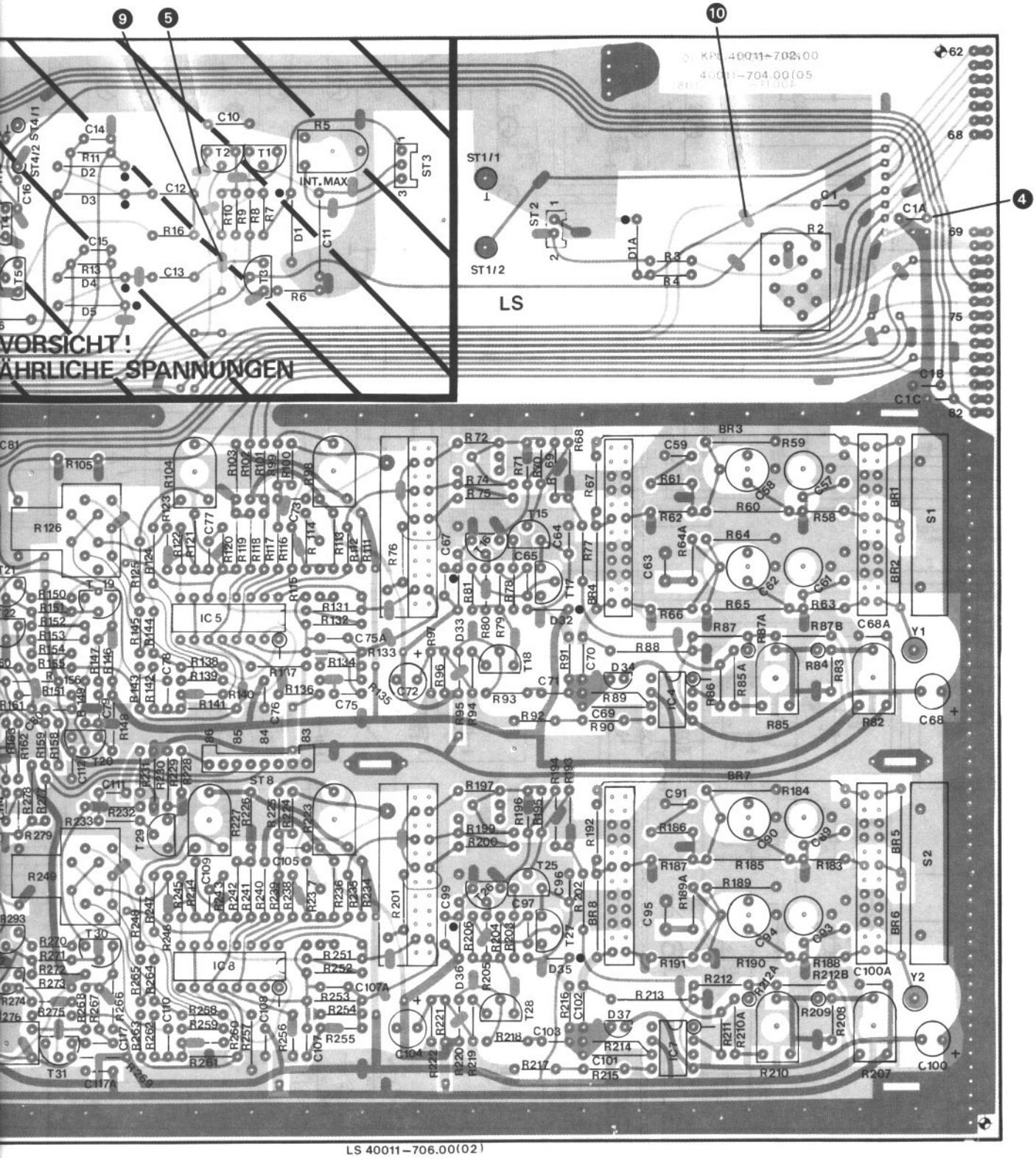
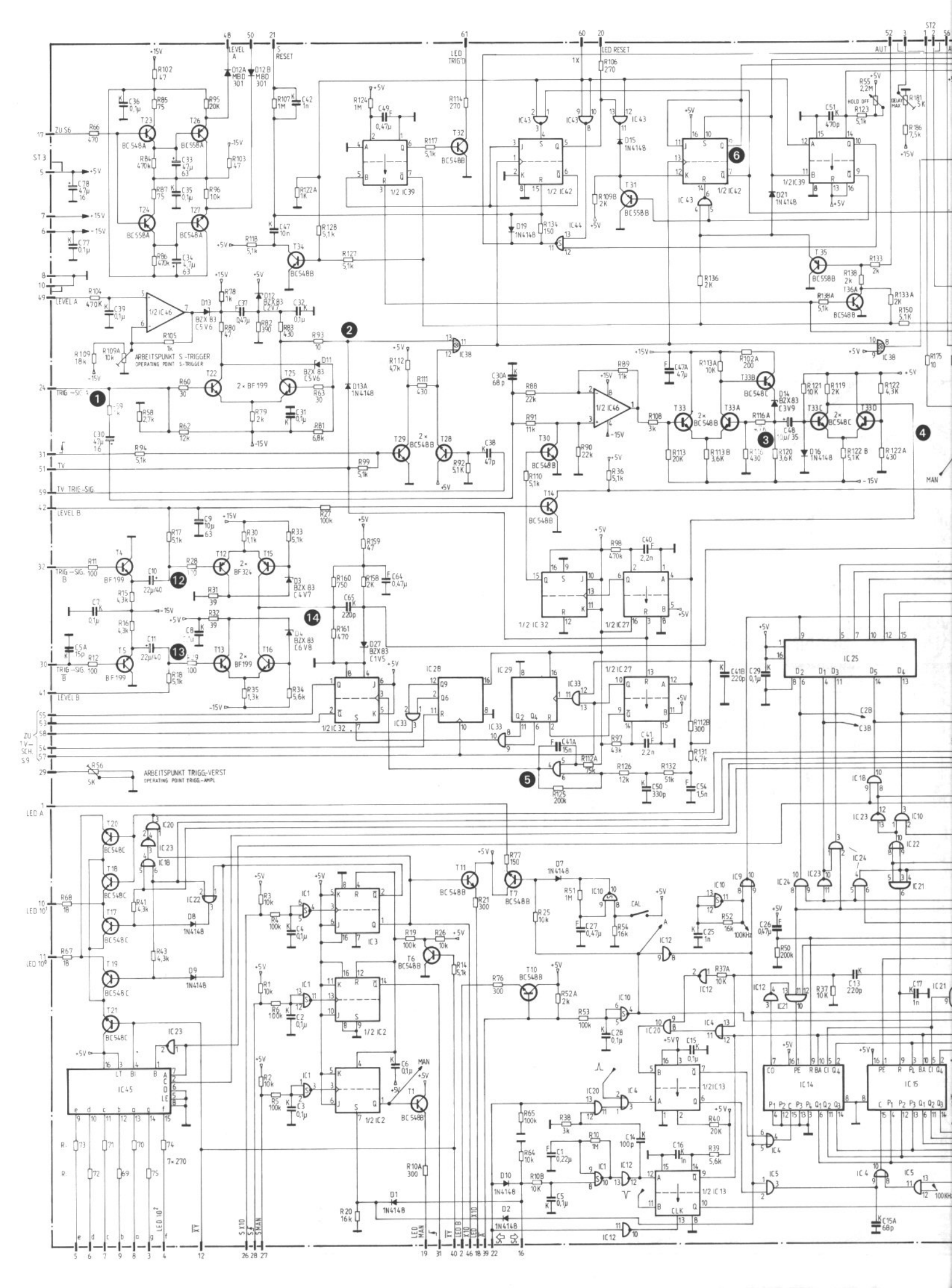
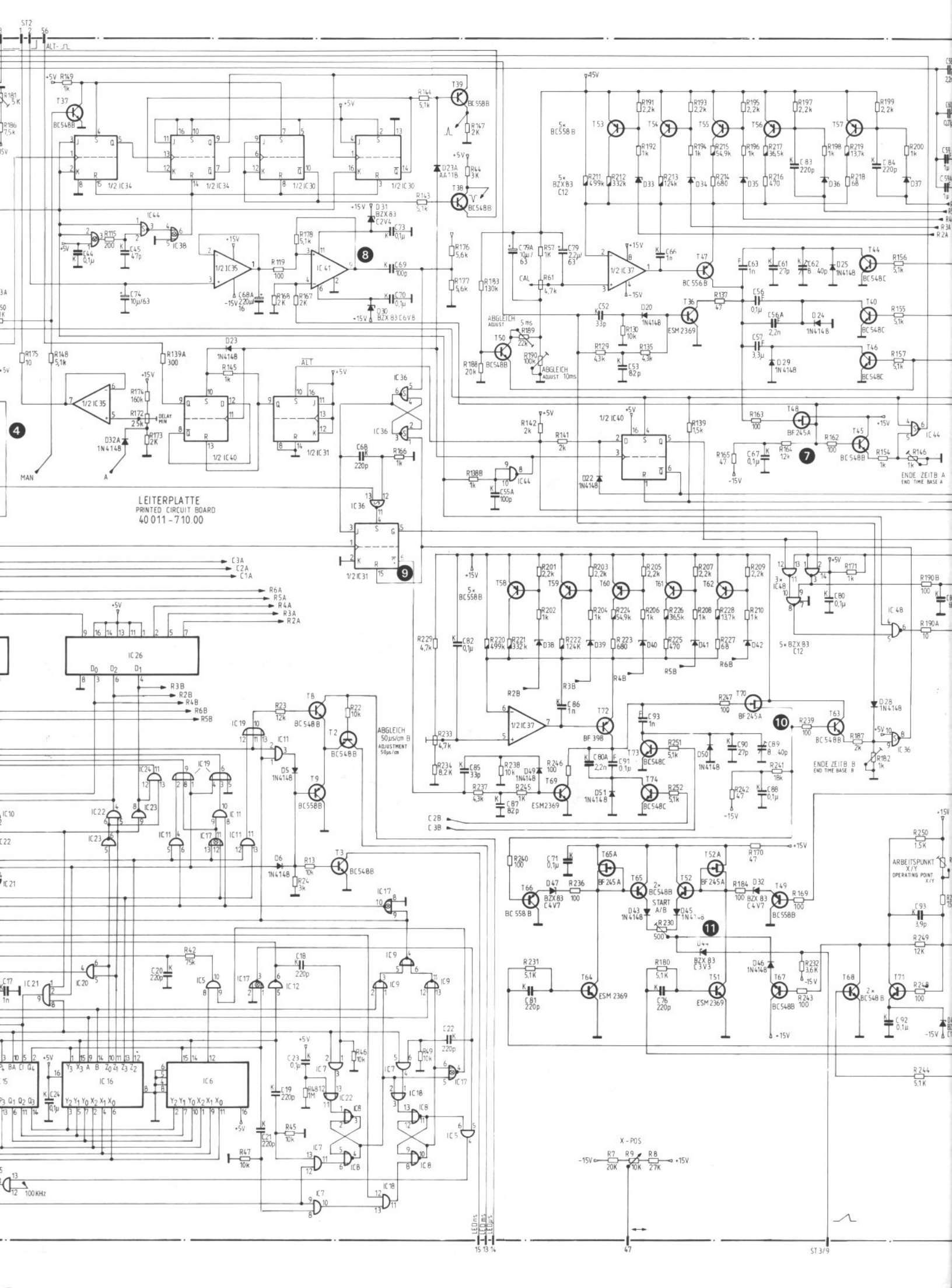
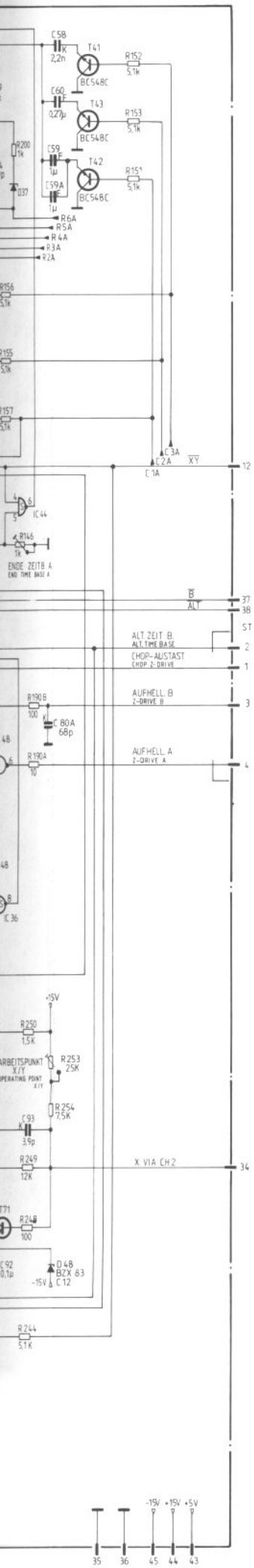

VORS
BERÜHRUNGSGEFÄHRL



LS 40011–706.00(02)


LEVEL A
S RESET
LED TRIG'D
LED RESET
AUT
ZU S6
ST3
LEVEL A
TRIG -SIG. A
ARBEITSPUNKT S-TRIGGER
OPERATING POINT S-TRIGGER
TV
TV TRIG-SIG
LEVEL B
TRIG -SIG. B
ARBEITSPUNKT TRIGG-VERST
OPERATING POINT TRIGG-AMPL
ZU TV-SCH. S9
LED A
LED 10¹
LED 10²
HOLD OFF
DELAY MAX
MAN
1/2 IC 46
1/2 IC 39
1/2 IC 42
1/2 IC 32
1/2 IC 27
1/2 IC 2
1/2 IC 13
2 × BF 199
2 × BF 324
2 × BC548B
2 × BC548C
BC548A
BC548B
BC548C
BC558A
BC558B
BF 199
IC 45
IC 14
IC 15
7 × 270


LEITERPLATTE
PRINTED CIRCUIT BOARD
40 011 - 710.00
ABGLEICH 50µs/cm B
ADJUSTMENT 50µs/cm
ENDE ZEITB A
END TIME BASE A
ENDE ZEITB B
END TIME BASE B
ARBEITSPUNKT X/Y
OPERATING POINT X/Y
START A/B
X - POS
MAN
ALT
100 KHz



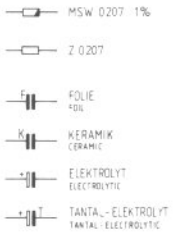
TYPE DER IC
TYPES OF IC

1	HEF 4093 BP
2	HEF 4027 BP
3	HEF 4027 BP
4	HEF 4071 BP
5	HEF 4081 BP
6	HEF 4585 BP
7	HEF 4081 BP
8	HEF 4001 BP
9	HEF 4001 BP
10	HEF 4093 BP
11	HEF 4081 BP
12	HEF 4069 UBP
13	HEF 4528 BP
14	HEF 4516 BP
15	HEF 4516 BP
16	HEF 4519 BP
17	HEF 4077 BP
18	HEF 4071 BP
19	HEF 4075 BP
20	HEF 4081 BP
21	HEF 4073 BP
22	HEF 4071 BP
23	HEF 4069 BP
24	HEF 4081 BP
25	HEF 40174 BP
26	HEF 40174 BP
27	HEF 4528 BP
28	HEF 4040 BP
29	HEF 4024 BP
30	74 LS 76
31	SN 74 LS 112 N
32	HEF 4027 BP
33	HEF 4081 BP
34	SN 74 S 112 N
35	TL 082 CP
36	74 LS 132
37	TL 082 CP
38	SN 74 S 86 N
39	HEF 4528 BP
40	74 LS 74
41	MC 1710
42	74 S 112 N
43	74 LS 00
44	74 LS 132
45	HEF 4511 BP
46	TL 082 CP
47	TL 082 CP
48	SN 74 LS 00 N

ANSCHLUSSNUMMERN 1...61 ZUR BEDIENPLATTE 1...61
PIN CONNECTION 1...61 TO FRONT PANEL BOARD 1...61

ST3: ZUR LEITERPLATTE, UNTEN
TO PRINTED CIRCUIT BOARD, LOWER

ST2: ZUM DELAY-POT
TO DELAY-POT.



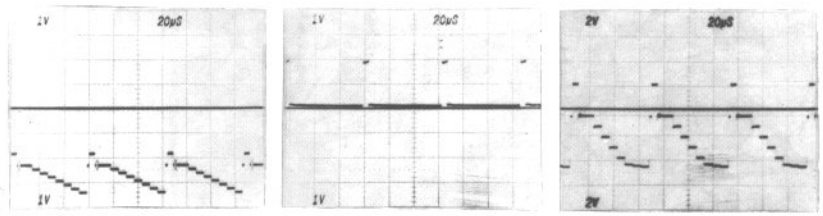
ÄNDERUNGEN VORBEHALTEN!
ALTERATIONS RESERVED!

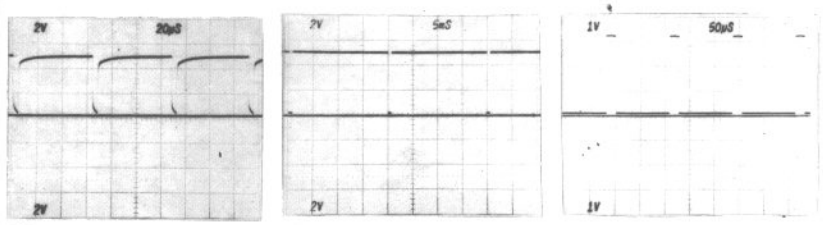
Meßbedingungen zu den Oszillogrammen Leiterplatte „OBEN“

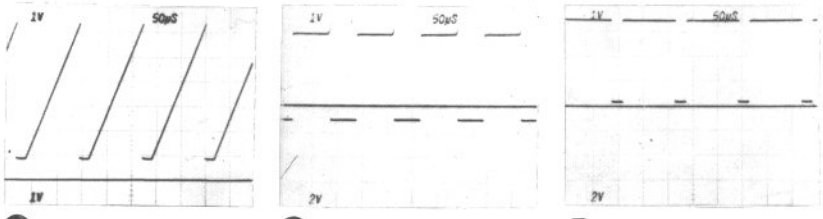
Measuring conditions to the oscillograms “TOP” Circuit Board

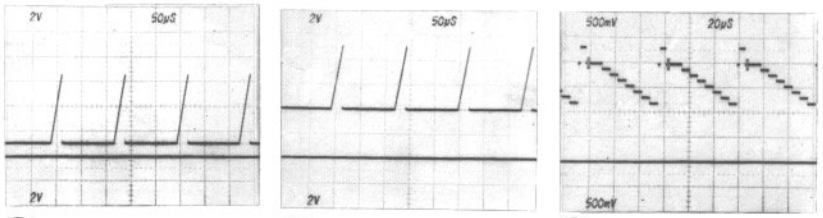
TV-Signal an CH 1, Auslenkung 5 cm
TV-Signal to CH 1, deflection 5 cm
Der zweite Kanal bildet die Null-Linie
The second channel represents the zero line

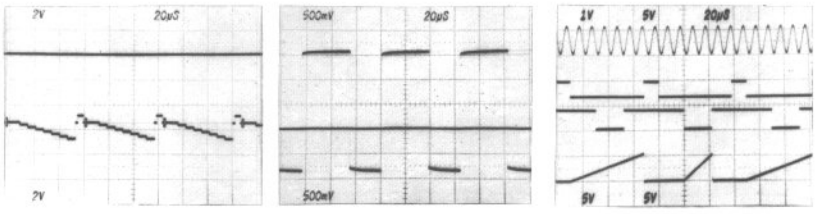
Triggerflanke :
Trigger edge :
A-Trigger : Auto bei/at ❶, ❷, ❻ ... ⓫
TV, H bei/at ❸, ❹ und/and ❺
DC
CH 1
INT
TIME BASE : ALT
A : 10 µs/cm
B : 2 µ/cm
LEVEL POT. : linker Anschlag/anticlockwise limit position
DELAY-POT. : Mittelstellung/mid-position
TIME BASE B : START AFTER DELAY bei/at ❶ ... ⓫
TIME BASE B getriggert auf Flanke bei/at ⓬ ... ⓮
TIME BASE B triggered to edge bei/at ⓬ ... ⓮
Oszillogramm ⓯ : **Sinussignal 100 kHz $U_{ss} \approx 3$ V**
CH 1 : Signal an/to ❶ CH 3 : Signal an/to ❾
CH 2 : Signal an/to ❻ CH 4 : Signal an/to ⓫

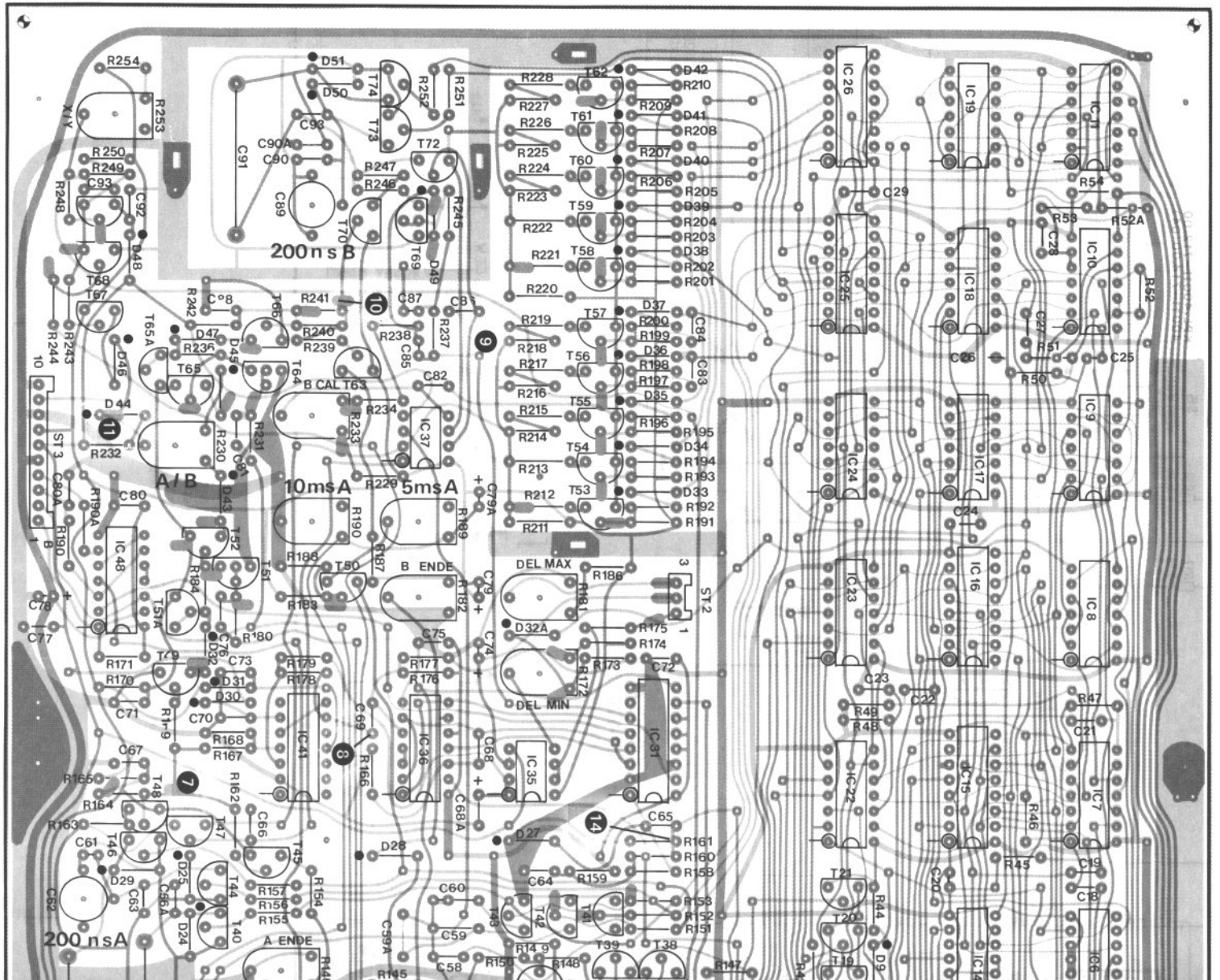


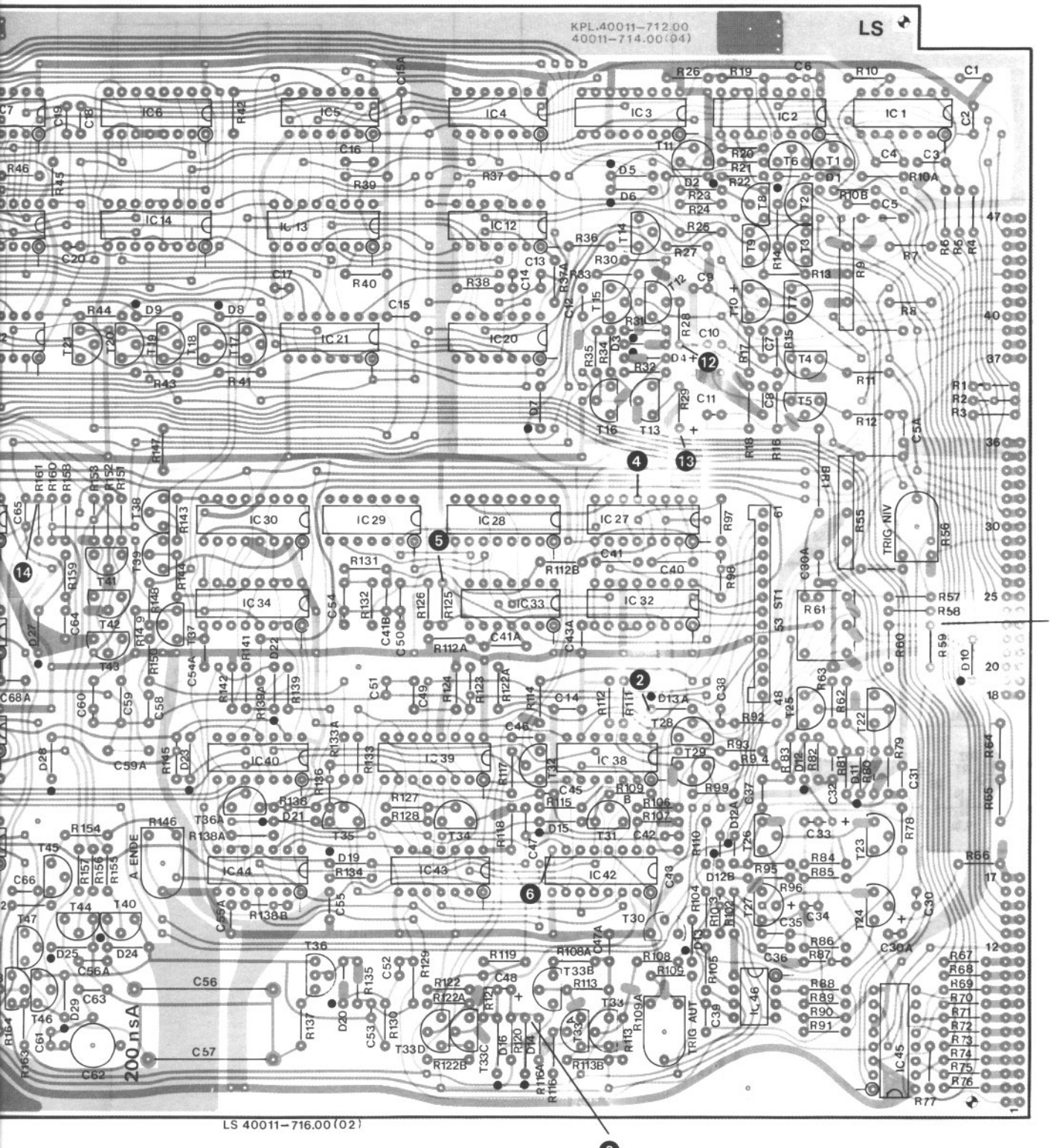


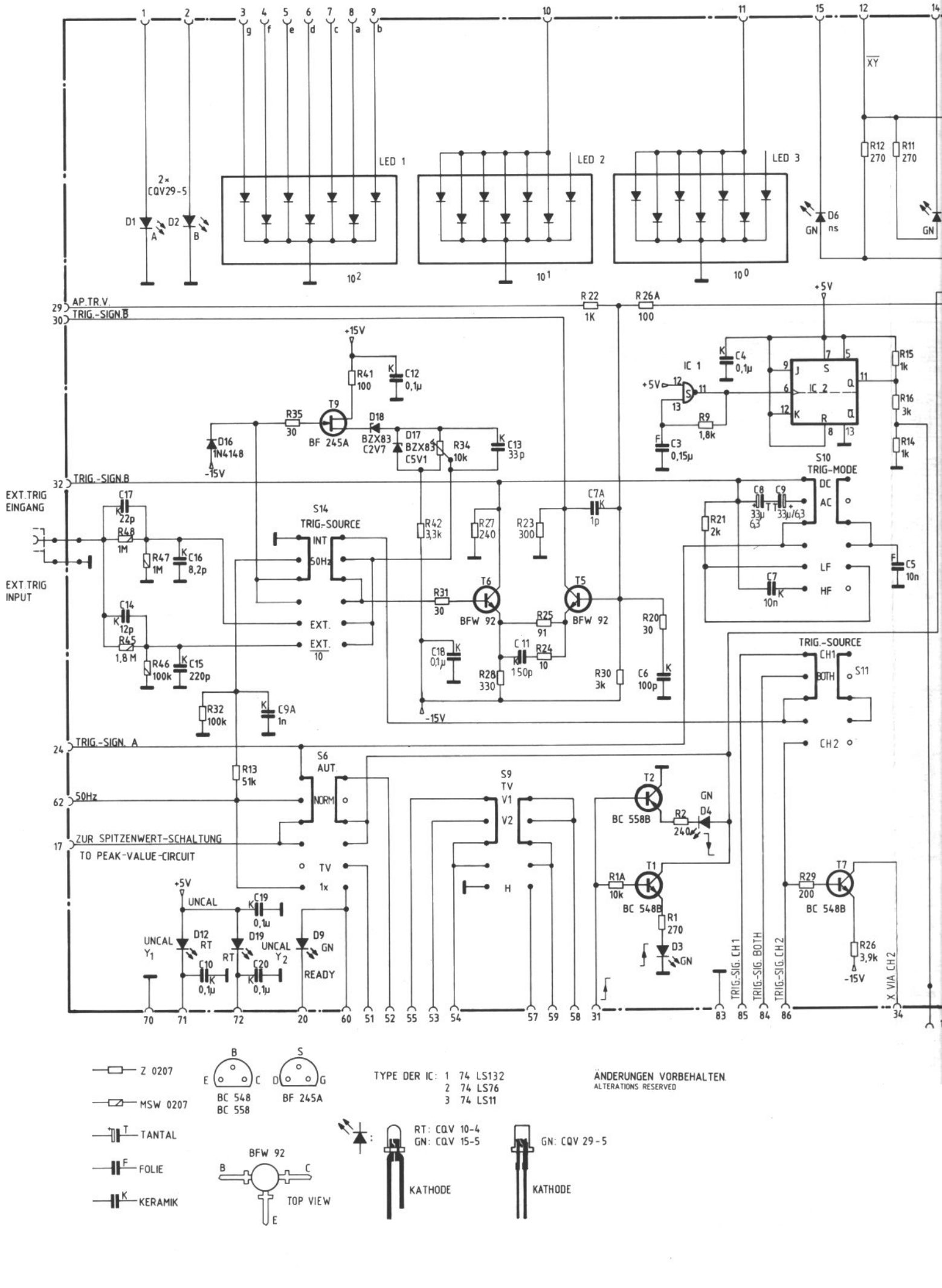


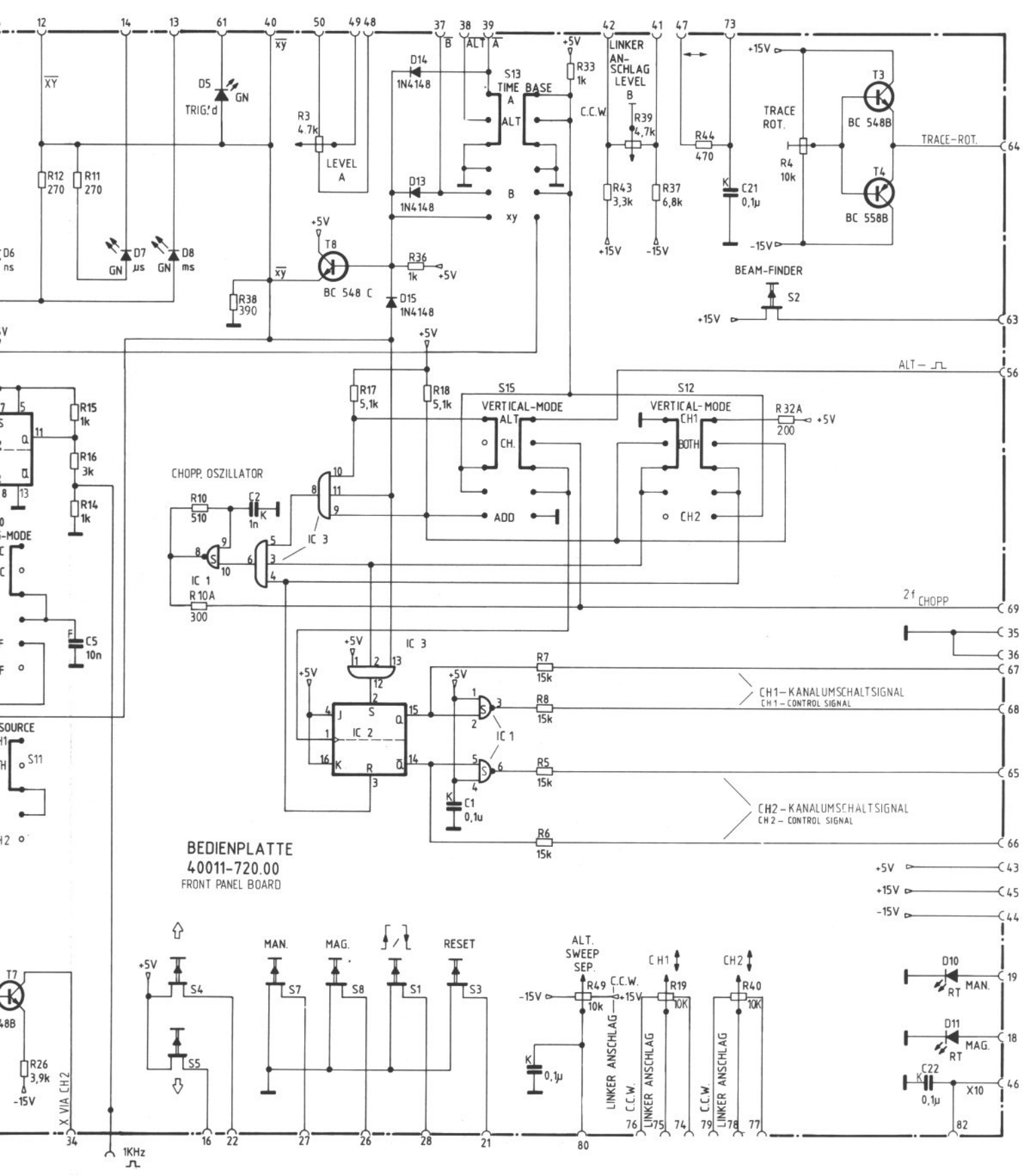





200 n s B
200 n s A
A / B
10 m s A
5 m s A
B CAL
A ENDE
B ENDE
DEL MAX
DEL MIN
ST 2
ST 3
IC 26
IC 19
IC 27
IC 25
IC 18
IC 10
IC 24
IC 17
IC 9
IC 23
IC 16
IC 8
IC 22
IC 15
IC 7
IC 48
IC 41
IC 36
IC 35
IC 31
IC 37

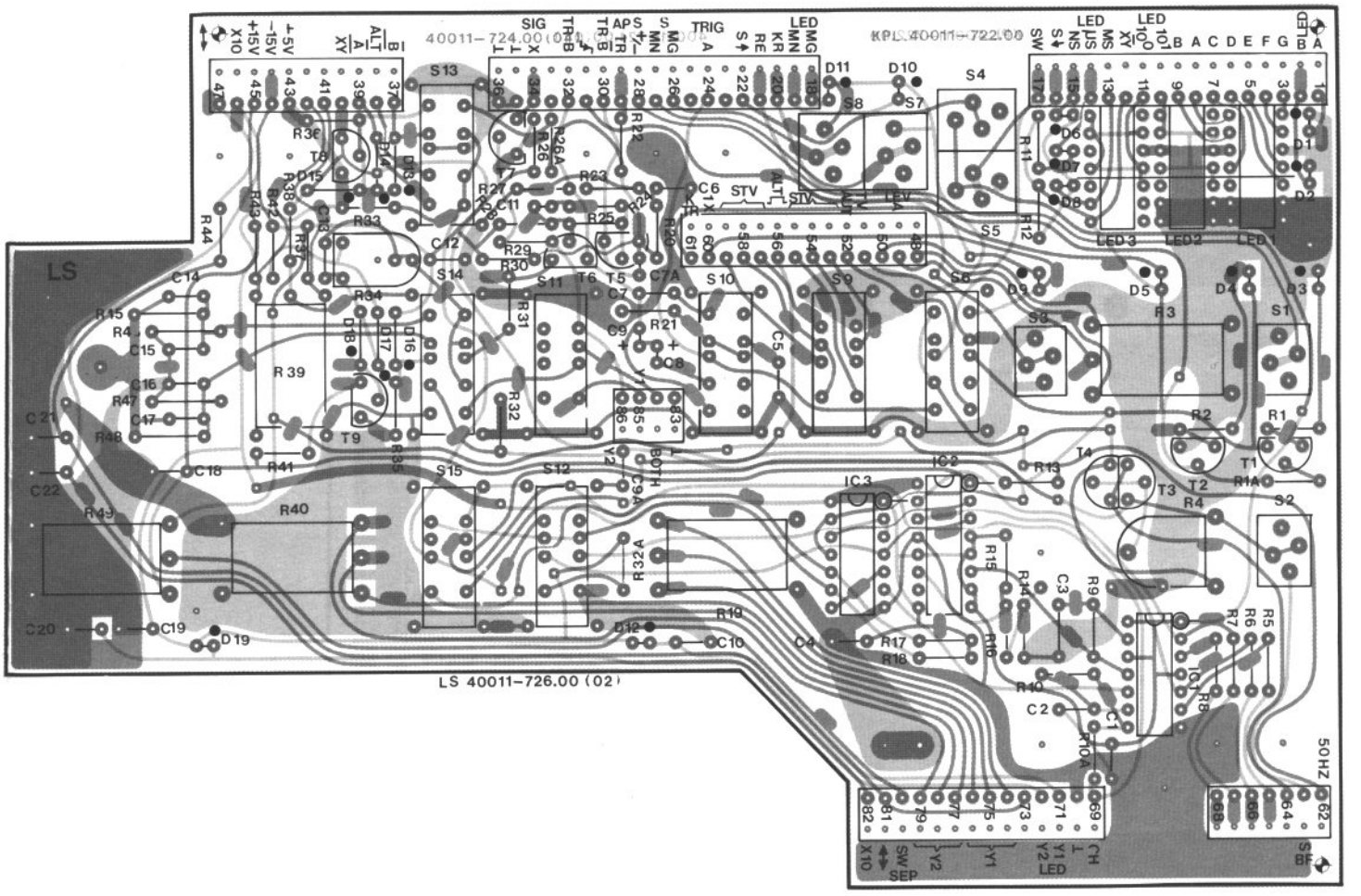

KPL.40011-712.00
40011-714.00(04)
LS
IC1
IC2
IC3
IC4
IC5
IC6
IC12
IC13
IC14
IC20
IC21
IC27
IC28
IC29
IC30
IC32
IC33
IC34
IC38
IC39
IC40
IC42
IC43
IC44
IC45
IC46
TRIG-NIV
TRIG AUT
A ENDE
200nsA
LS 40011-716.00(02)

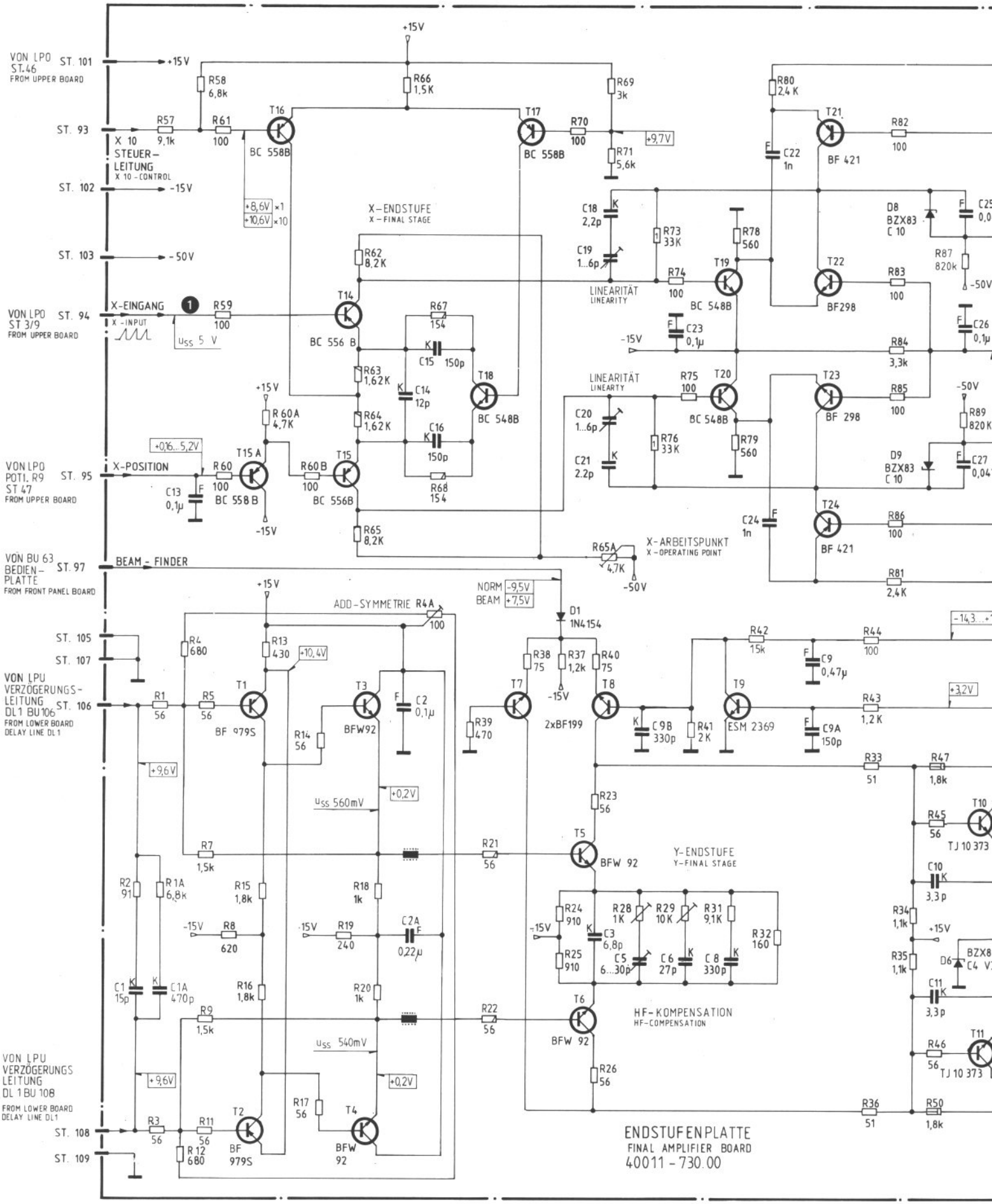

1 2 3 g f e d c a b 10 11 15 12 14
XY
LED 1
LED 2
LED 3
2× CQV29-5
D1 A
D2 B
R12 270
R11 270
D6 ns GN
GN
10 2
10 1
10 0
29 AP.TR.V.
30 TRIG.-SIGN.B
R 22 1K
R 26A 100
+5V
+15V
R41 100
C12 0,1µ
R35 30
T9 BF 245A
D18 BZX83 C2V7
D17 BZX83 C5V1
R34 10k
C13 33p
D16 1N4148
-15V
IC 1
C4 0,1µ
R9 1,8k
C3 0,15µ
IC 2
R15 1k
R16 3k
R14 1k
32 TRIG.-SIGN.B
S10 TRIG-MODE
DC
AC
LF
HF
C8 33µ 6,3
C9 33µ/6,3
R21 2k
C5 10n
C7 10n
EXT.TRIG EINGANG
EXT.TRIG INPUT
C17 22p
R48 1M
R47 1M
C16 8,2p
C14 12p
R45 1,8 M
R46 100k
C15 220p
S14 TRIG-SOURCE
INT
50Hz
EXT.
EXT. / 10
R42 3,3k
R27 240
R23 300
C7A 1p
R31 30
T6 BFW 92
T5 BFW 92
R25 91
C11 150p
R24 10
C18 0,1µ
R28 330
R30 3k
R20 30
C6 100p
R32 100k
C9A 1n
TRIG.-SOURCE
CH1
BOTH
S11
CH2
24 TRIG.-SIGN. A
R13 51k
S6 AUT.
NORM
62 50Hz
17 ZUR SPITZENWERT-SCHALTUNG
TO PEAK-VALUE-CIRCUIT
TV
1x
S9 TV
V1
V2
H
T2 BC 558B
R2 240
D4 GN
T1 BC 548B
R1A 10k
R1 270
D3 GN
T7 BC 548B
R29 200
R26 3,9k
-15V
+5V
UNCAL
C19 0,1µ
UNCAL Y1
D12 RT
C10 0,1µ
RT
D19
UNCAL Y2
C20 0,1µ
D9 GN
READY
70 71 72 20 60 51 52 55 53 54 57 59 58 31 83 85 84 86 34
TRIG.-SIG. CH1
TRIG.-SIG. BOTH
TRIG.-SIG. CH2
X VIA CH2
Z 0207
MSW 0207
TANTAL
FOLIE
KERAMIK
B E C
BC 548
BC 558
S D G
BF 245A
BFW 92
B C E
TOP VIEW
RT: CQV 10-4
GN: CQV 15-5
KATHODE
GN: CQV 29-5
KATHODE
TYPE DER IC: 1 74 LS132
2 74 LS76
3 74 LS11
ÄNDERUNGEN VORBEHALTEN
ALTERATIONS RESERVED



ANSCHLUSSNUMMERN 1. . . . 61 ZUR LEITERPLATTE OBEN 1...61
PIN CONNECTION 1...61 TO PRINTED CIRCUIT BOARD "UPPER" 1...61

ANSCHLUSSNUMMERN 62. . . . 86 ZUR LEITERPLATTE UNTEN 62...86
PIN CONNECTION 62...86 TO PRINTED CIRCUIT BOARD "LOWER" 62...86


LS
LS 40011-726.00 (02)
40011-724.00
SIG
TRIG
LED
STV
ALT
BOTH
50HZ
SEP
LED 1
LED 2
LED 3


VON LPO ST. 46 FROM UPPER BOARD
ST. 101
ST. 93
X 10 STEUER-LEITUNG X 10 - CONTROL
ST. 102
ST. 103
VON LPO ST. 94 ST 3/9 FROM UPPER BOARD
X-EINGANG
X - INPUT
VON LPO POTI. R9 ST 47 FROM UPPER BOARD
ST. 95
X-POSITION
VON BU 63 BEDIEN-PLATTE ST. 97 FROM FRONT PANEL BOARD
BEAM - FINDER
ST. 105
ST. 107
VON LPU VERZÖGERUNGS-LEITUNG DL1 BU106 ST. 106 FROM LOWER BOARD DELAY LINE DL1
VON LPU VERZÖGERUNGS LEITUNG DL 1 BU 108 FROM LOWER BOARD DELAY LINE DL1
ST. 108
ST. 109
+15V
-15V
-50V
+9,7V
+9,6V
+10,4V
+3,2V
+0,2V
+0,16...5,2V
+8,6V ×1
+10,6V ×10
X-ENDSTUFE
X - FINAL STAGE
LINEARITÄT
LINEARITY
X-ARBEITSPUNKT
X - OPERATING POINT
ADD-SYMMETRIE R4A
NORM -9,5V
BEAM +7,5V
Y-ENDSTUFE
Y-FINAL STAGE
HF-KOMPENSATION
HF-COMPENSATION
ENDSTUFENPLATTE
FINAL AMPLIFIER BOARD
40011 - 730.00

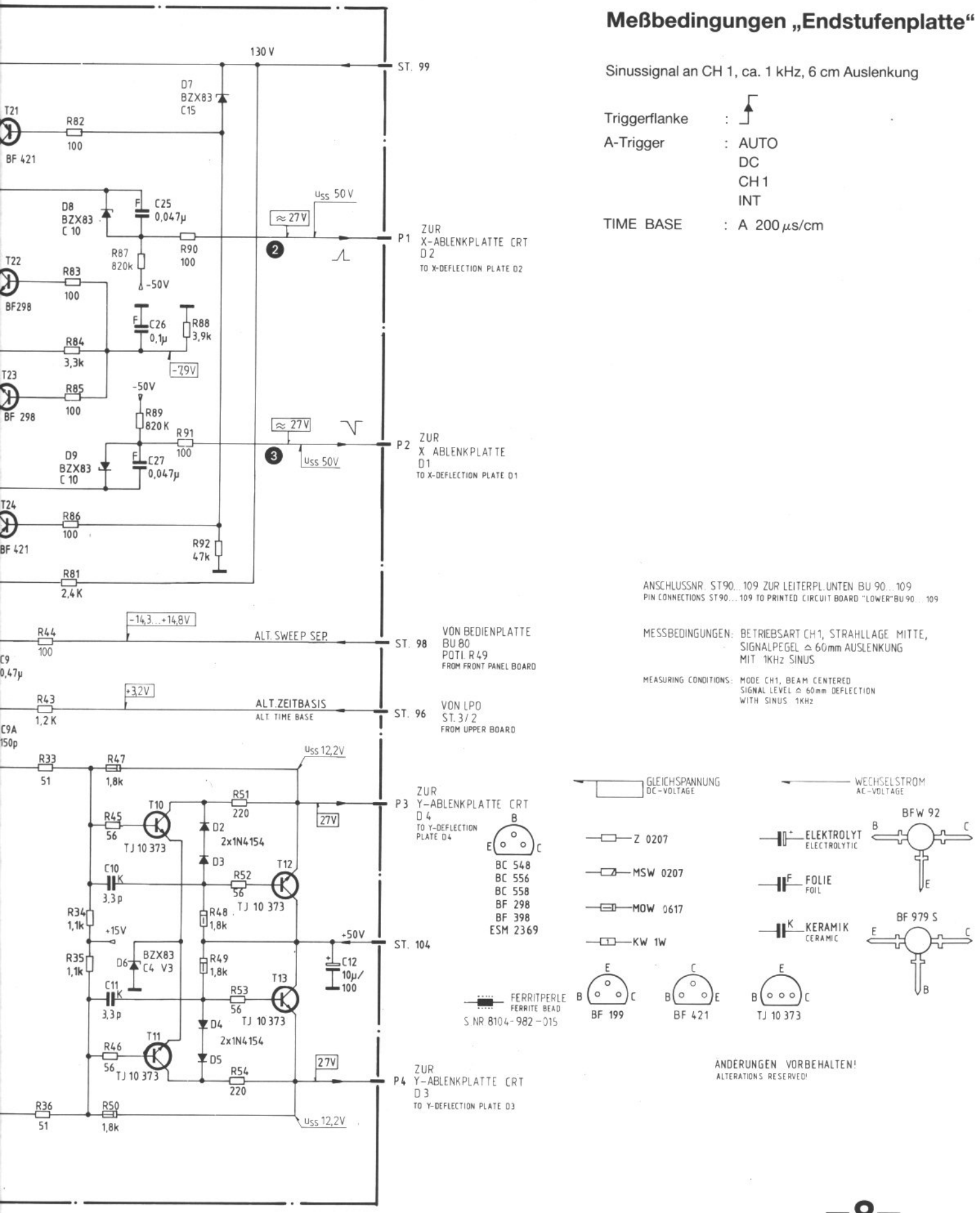
Meßbedingungen „Endstufenplatte“

Sinussignal an CH 1, ca. 1 kHz, 6 cm Auslenkung

Triggerflanke :

A-Trigger : AUTO
DC
CH 1
INT

TIME BASE : A 200 µs/cm

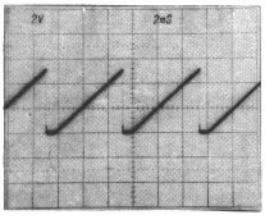


ANSCHLUSSNR. ST90...109 ZUR LEITERPL. UNTEN BU 90...109
PIN CONNECTIONS ST90...109 TO PRINTED CIRCUIT BOARD "LOWER" BU 90...109

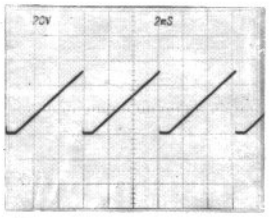
MESSBEDINGUNGEN: BETRIEBSART CH1, STRAHLLAGE MITTE, SIGNALPEGEL ≙ 60mm AUSLENKUNG MIT 1KHz SINUS

MEASURING CONDITIONS: MODE CH1, BEAM CENTERED SIGNAL LEVEL ≙ 60mm DEFLECTION WITH SINUS 1KHz

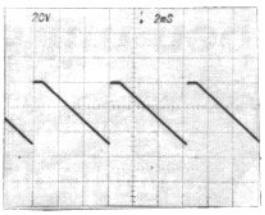
ÄNDERUNGEN VORBEHALTEN!
ALTERATIONS RESERVED!



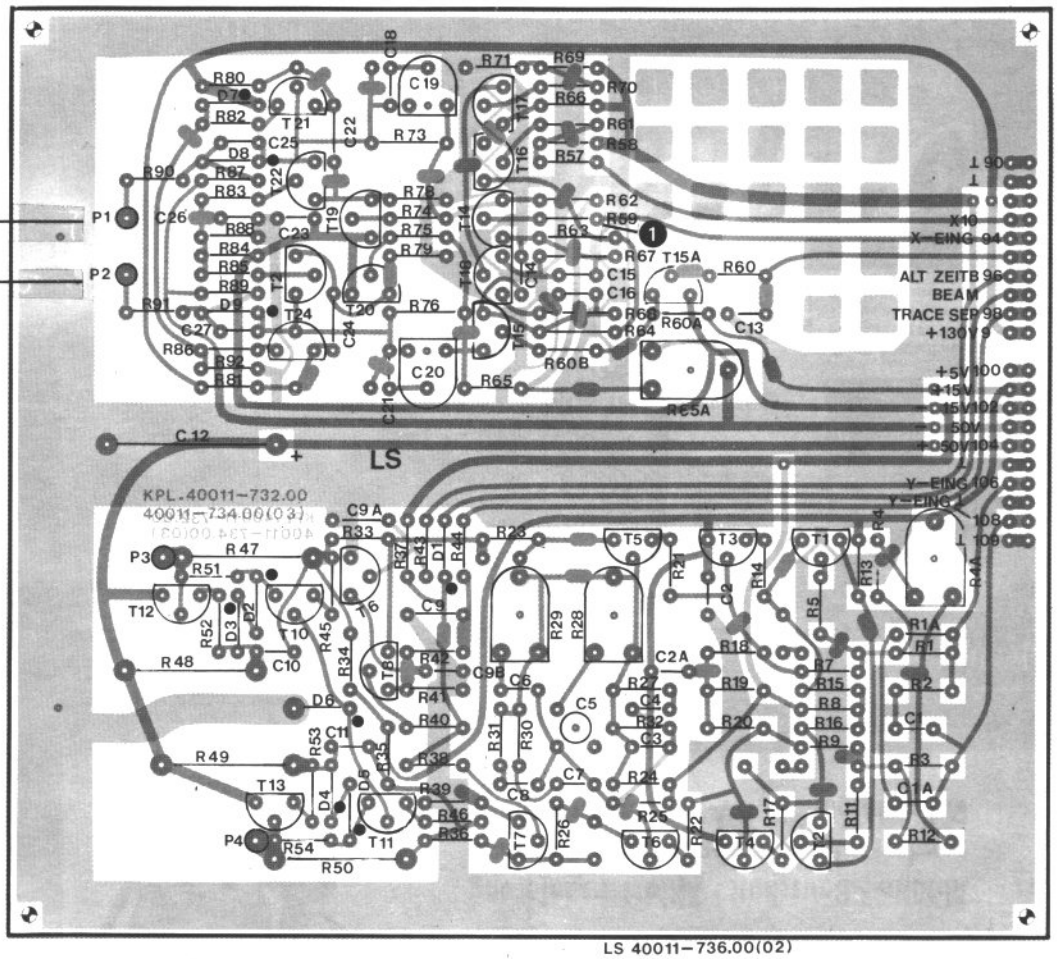
1



2



3



LS 40011-736.00(02)