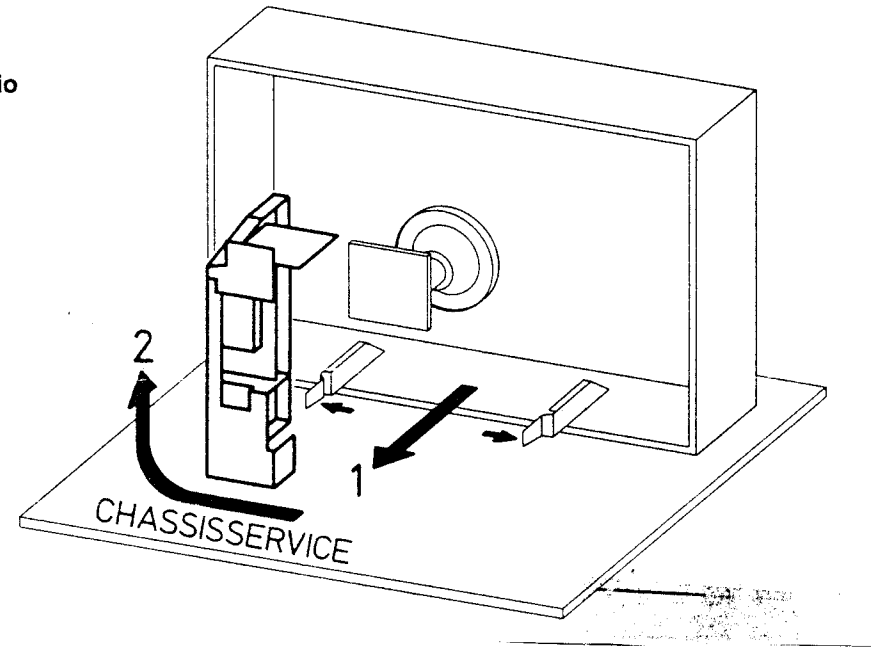
43

Servicestellung
Service position
Posizione di servizio



GRUNDIG

Ⓓ Btx ★ 32700 #

SERVICE MANUAL

CUC 3490

P 37 - 342 / 90	(9.25414 - 01)
T 55 - 340 / 90	(9.25436 - 01)
T 55 - 340 / 90	(9.25436 - 63)

Service Manual CUC 3490 Sach. - Nr. 72010 - 001.30
Service Manual CUC 3490 Order - No. 72010 - 001.30

(D)

(GB)

(I)

Symbole und ihre Bedeutung
Symbols and their meaning
Simboli e loro significati

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P — PROGR.

P1 — PROGR. TASTE / PROGR. BUTTON / TASTO PROGR. / TOUCHE PROGR. / PULS. PROGR.

M — SPEICHERTASTE / MEMORY BUTTON / TASTO DI MEMORIA / TOUCHE MEMOIRE / PULS. MEMORIA

NORM — NORMTASTE / TV STANDARD SELECT. BUTTON / COMMUT. DI NORMA / TOUCHE DE NORME / PULS. DE NORMA

▷▷+ — FEINABST. + / FINE TUNING + / SINT. FINE + / REGLAGE FIN + / SINT. FINA +

-◁◁ — FEINABST.- / FINE TUNING - / SINT. FINE - / REGLAGE FIN - / SINT. FINA -

I — SUCHLAUF BD I / SELF-SEEK BAND I / SINT. AUTOM. BANDA I / RECHERCHE AUTOM. BANDE I / SINT. AUTOM. BANDA-I

III — SUCHLAUF BANDWAHL III / SELF-SEEK BAND III / SINT. AUTOM. BANDA III / RECHERCHE AUTOM. BANDE III / SINT. AUTOM. BANDA-III

UHF — SUCHLAUF UHF / SELF-SEEK UHF / SINT. AUTOM. UHF / RECHERCHE AUTOM. UHF / SINT. AUTOM. UHF

LAUTSTAERKE / VOLUME / VOLUME SONORE / VOLUMEN

FT — FEINABST. / FINE TUNING / SINT. FINE / REGLAGE FIN / SINT. FINA

C — KANALWAHL / CHANNEL SEL. / SELEZ. CANALE / SELECT. DE CANAUX / SELECCION CANAL

BALANCE / BILANCIAM. / BALANCE / BALANCE

SUCHLAUF / SELF-SEEK / SINT. AUTOM. / RECHERCHE AUTOM. / SINTONIA AUTOMATICA

U I/III — SCHALTSP. BANDWAHL / BAND SEL. SWITCHING VOLTAGE / TENS. DI COMMUT. SELEZ. BANDA / TENS. DE COMMUT. SELECT. BANDE / TENS. CONMUT. SELEC. BANDA

U VHF — SCHALTSP. VHF / SWITCHING VOLT. VHF / TENS. DI COMMUT. VHF / TENS. DE COMMUT. VHF / TENS. CONMUT. VHF

U UHF — SCHALTSP. UHF / SWITCHING VOLT. UHF / TENS. DI COMMUT. UHF / TENS. DE COMMUT. UHF / TENS. CONMUT. UHF

U AFC — SCHALTSP. AFC / SWITCHING VOLT. AFC / TENS. DI COMMUT. AFC / TENS. DE COMMUT. AFC / TENS. CONMUT. CAF

U AV — SCHALTSP. AV / AV SWITCHING VOLT. / TENS. DI COMMUT. AV / TENS. DE COMMUT. AV / TENS. CONMUT. AV

U NORM — SCHALTSP. NORM / SWITCHING VOLT. STANDARD / TENS. DI COMMUT. NORMA / TENS. DE COMMUT. STANDARD / TENS. CONMUT. NORMA

U KOINC. 50/60HZ — SCHALTSP. KOINZ. / SWITCHING VOLT. COINC. / TENS. DI COMMUT. COINC. / TENS. DE COMMUT. COINC. / TENS. CONMUT. COINCIDENCIA

U EURO-AV — SCHALTSP. EURO-AV / SWITCHING VOLT. EURO-AV / TENS. DI COMMUT. EURO-AV / TENS. DE COMMUT. NORME FR / TENS. CONMUT. EURO-AV

U VQ — SCHALTSP. VIDEO QUELLE / SWITCHING VOLT. VIDEO SOURCE / TENS. DI COMMUT. SORG. VIDEO / TENS. DE COMMUT. SOURCE VIDEO / TENS. CONMUT. VIDEO

U DATA — SCHALTSP. DATENBETR. / SWITCHING VOLT. DATA MODE / TENS. DI COMMUT. DATI / TENS. DE COMMUT. FONCT. DONNEES / TENS. CONMUT. DATOS

U 4,5MHZ — SCHALTSP. 4,5 MHZ / SWITCHING VOLT. 4,5 MHZ / TENS. DI COMMUT. 4,5 MHZ / TENS. DE COMMUT. 4,5 MHZ / TENS. CONMUT. 4,5MHZ

U τ — REGELSP. VERZOEGERT / DELAYED CONTR. VOLTAGE / TENS. DI CONTR. RITARD. / TENS. DE REGUL. RETARDEE / TENS. REGUL. RETARDADA

U TUN. — ABSTIMMSP. TUNER / TUNING VOLT. TUNER / TENS. DI SINTONIA TUNER / TENS. D'ACCORD TUNER / TENS. SINTONIA AL TUNER

U AFC — REGELSP. AFC / AFC CONTROL VOLT. / TENS. DI CONTR. AFC / TENS. DE REGUL. AFC / TENS. REGUL. CAF

U MUTE — STUMMSCHALTUNG / MUTING / SILENZIAMENTO / SILENCIEUX / MUTING

TASTIMPULS / GATING PULSE / IMPULSO A CADENZA / IMPULS. DE DECLENCHEMENT / IMP. PUERTA

VERT. — VERT. TASTIMPULS / VERT. GATING PULSE / IMP. A CADENZA VERT. / IMP. TRAME / IMP. CUADRO

VERT. — VERT. PARABEL / VERT. PARABOLA / PARABOLA VERT. / SIGNAL PARABOLIQUE / SENAL PARABOL. VERT.

VERT. — VERT. SAEGEZAHN / VERT. SAW TOOTH / DENTE DI SEGA VERT. / SIGNAL DENT DE SCIE / DIENTE DE SIERRA VERT.

HOR. — HOR. ANSTEUERUNG / HORIZ. DRIVE / PILOTAGGIO ORIZZ. / SYNCHR. LIGNES / EXCITACION HORIZ.

REF. — REF. IMPULS / REFERENCE PULSE / IMP. DI RIFER. / IMP. DE REFER. / IMP. REFERENCIA HORIZ.

SCHUTZSCHALTUNG / CIRCUIT PROTECTION / CIRCUITO DI PROTEZIONE / CIRCUIT DE SECURITE / CIRCUITO DE PROTECCION

FARBTON / TINT / TINTA / TEINTE / TINTE

REF. — REF. LAUTSTAERKE / VOLUME REF. VOLT. / TENS. DI RIF. VOLUME / TENS. DE REF. VOL. SONORE / TENS. REF. VOLUMEN

HELLIGKEIT / BRIGHTNESS / LUMINOSITA' / LUMINOSITE / BRILLO

KONTRAST / CONTRAST / CONTRASTO / CONTRASTE / CONTRASTE

FARBKONTRAST / CONTRAST COLOUR / CONTRASTO COLORE / CONTRASTE COULEUR / SATUR. COLOR

FBAS — FBAS-SIGNAL / CCVS SIGNAL / SEGNALE SVCC / SIGNAL VIDEO COMPOSITE / SENAL VIDEO COMPUESTA

SSC — SUPERSANDCASTLE

SB — STRAHLSTR. BEGR. / BEAM CURRENT LIM. / CORRENTE CATODICA MEDIA / LIM. COUR. DE FAISCEAU / CORRIENTE MEDIA DE HAZ

SSB — SPITZ. STRAHLSTR. BEGR. / PEAK BEAM CURRENT LIMITING / CORR. CATODICA DI PICCO / LIM. DE FAISCEAU CRETE / CORRIENTE PICO DE HAZ

R — ROT-SIGNAL / RED SIGNAL / SEGNALE ROSSO / SIGNAL ROUGE / SENAL ROJA

G — GRUEN-SIGNAL / GREEN SIGNAL / SEGNALE VERDE / SIGNAL VERT / SENAL VERDE

B — BLAU-SIGNAL / BLUE SIGNAL / SEGNALE BLU / SIGNAL BLEU / SENAL AZUL

Y — Y-SIGNAL / SEGNALE Y / SIGNAL Y / SENAL Y

F — F-SIGNAL / CHROMA SIGNAL / SEGNALE F / SIGNAL CHROMA / SENAL CROMA

SW — SCHWARZWERT / BLACK LEVEL / LIVELLO DEL NERO / NIVEAU DU NOIR / NIVEL DE NEGRO

AUDIO — AUDIO-SIGNAL / SEGNALE AUDIO / SIGNAL AUDIO / SENAL AUDIO

AUDIO-L — AUDIO SIGNAL LINKS / AUDIO SIGNAL LEFT / SEGNALE AUDIO SINISTRA / SIGNAL AUDIO GAUCHE / SENAL AUDIO IZQUIERDA

AUDIO-R — AUDIO SIGNAL RECHTS / AUDIO SIGNAL RIGHT / SEGNALE AUDIO DESTRA / SIGNAL AUDIO DROIT / SENAL AUDIO DERECHA

EURO-AV VIDEO — VIDEO SIGNAL EURO-AV / SEGNALE VIDEO EURO-AV / SIGNAL VIDEO NORME FR / SENAL VIDEO EURO-AV

EURO-AV AUDIO-R — AUDIO SIGNAL EURO-AV RECHTS / AUDIO SIGNAL EURO-AV RIGHT / SEGNALE AUDIO EURO-AV DESTRA / SIGNAL AUDIO NORME FR DROIT / SENAL AUDIO DERECHA EURO-AV

EURO-AV AUDIO-L — AUDIO SIGNAL EURO-AV LINKS / AUDIO SIGNAL EURO-AV LEFT / SEGNALE VIDEO EURO-AV SINISTRA / SIGNAL AUDIO NORME FR GAUCHE / SENAL AUDIO IZQUIERDA EURO-AV

IR — IR-SIGNAL / SEGNALE IR / SIGNAL IR / SENAL IR

U_{G1} — SPG. GITTER 1 / VOLTAGE GRID 1 / TENS. GRIGLIA 1 / TENS. GRILLE G1 / TENS. REJILLAS G-1

$U_{FOC.}$ — FOKUSSP. / FOCUSSING VOLTAGE / TENS. DI FOCALIZZ. / TENS. DE FOCALIS. / TENS. FOCALIZACION

U_H — HOCHSPANNUNG / EHT VOLTAGE / ALTA TENS. / HAUTE TENS. / MAT

U_{SG} — SCHIRMGITTERSP. / SCREEN-GRID VOLT. / TENS. GRIGLIA SCHERMO / TENS. GRILLE-ECRAN / TENS. ACELERADORES

TE — TEXT ENABLE

SCL — I^2C-CLOCK / I^2C-BUS

VCL — VCR-CLOCK

ICL — I-BUS-CLOCK

Wichtige Schaltzeichen
Important circuit simbols
Segni circuitali importanti

SDA
DATEN
DATA
DATI
DONNEES
DATA

ZF
ZF-SIGNAL
IF SIGNAL
SEGNALE FI
SIGNAL FI
SENAL DE FI

PP
PAL PRIORITAET
PAL PRIORITY
PRIORITA' PAL
PRIORITE PAL
PRIORIDAD PAL

F-DIR.
F-SIGNAL DIREKT
F SIGNAL DIRECT
SEGNALE F DIRETTO
SIGNAL CHROMA DIRECT
SENAL CROMA DIRECTA

F_V
FV-SIGNAL
FV SIGNAL
SEGNALE FV
SIGNAL FY
SENAL FV

F_U
FU-SIGNAL
FU SIGNAL
SEGNALE FU
SIGNAL FX
SENAL FU

F-VERZ
F-SIGNAL VERZOEGERT
F SIGNAL DELAYED
SEGNALE F RITARD.
SIGNAL CHROMA RETARDE
SENAL CROMA RETARDADA

DL
VERZOEGERUNGSLEITUNG
DELAY LINE
LINEA DI RITARDO
LIGNE A RETARD
LINEA DE RETARDO

U SCHUTZ
SCHALTSP./SCHUTZFUNKTION
SWITCHING VOLT. /PROTECTIVE FUNC.
TENS. DI COMMUT. /FUNZ.DI PROTEZ.
TENS. DE COMMUT. / SECURITE
TENS. CONMUT./PROTECCION

FBAS SYNC.
FBAS/SYNC.-SIGNAL
CCVS/SYNC. SIGNAL
SEGNALE SINCR. /VIDEO COL. COMP.
SIGNAL SYNC./VIDEO COMPOSITE
SENAL SINCR./VIDEO COMPUESTA

SYNC.
SYNC.-SIGNAL
SYNC. SIGNAL
SEGNALE SINCR.
SIGNAL SYNC.
SENAL DE SINCRONISMOS

U 50/60 HZ
SCHALTSP. 50/60HZ
SWITCHING VOLT.50/60HZ
TENS. DI COMMUT. 50/60HZ
TENS. DE COMMUT. 50/60HZ
TENS. CONMUT. 50/60HZ

U BTX
SCHALTSP. BTX
SWITCHING VOLT. BTX (VIEWDATA)
TENS. COMMUT. VIDEOTEL
TENS. COMMUT. VIDEOTEXTE
TENS. CONMUT. VIDEOTEXTO

SYNC. VT
SYNC. VT
SYNC. VT (TELETEXT)
SINCR. TELEVIDEO
SYNC. TELETEXTE
SINCR. TELETEXTO

SYNC. BTX
SYNC. BTX
SYNC. BTX (VIEWDATA)
SINCR. VIDEOTEL
SYNC. VIDEOTEXTE
SINCR. VIDEOTEXTO

U RESET
SCHALTSP. RESET
SWITCHING VOLT. RESET
TENS. COMMUT.,RESET
TENS. CONMUT. RESET

U STAND BY
SCHALTSP. STAND BY
SWITCHING VOLT. STAND BY
TENS. COMMUT.,VEILLE
TENS. CONMUT. STAND BY

U HUB
SCHALTSP. HUB
SWITCHING VOLT. DEVIATION
TENS. COMMUT. DEVIAZIONE
TENS. COMMUT.,DEVIATION
TENS. CONMUT. DESVIACION

U DEEM
SCHALTSP. DEEM
SWITCHING VOLT. DEEMPHASIS
TENS. COMMUT. DEENFASI
TENS. COMMUT.,DESACCENT.
TENS. CONMUT. DEENFASIS

U CAM. AV
SCHALTSP. KAMERA WIEDERG.
SWITCHING VOLT. CAMERA PLAYBACK
TENS. COMMUT. RIPRODUZ. TELECAM.
TENS. COMMUT. REPROD. CAMERA
TENS. CONMUT. REPROD. CAMARA

U LED
SCHALTSP. LED
LED SWITCHING VOLT.
LED TENS. DI COMMUT.
TENS. DE COMMUT. LED
TENS. CONMUT. LED

ZEILENBREITE
LINE WIDTH
LARGHEZZA DI RIGA
AMPLITUDE HORIZONTALE
AMPLITUD HORIZONTAL

OST / WEST AMPLITUDE
EAST / WEST AMPLITUDE
AMPIEZZA EST / OVEST
AMPLITUDE EST / OUEST
AMPLITUD E/O

HOR. LINEARITAET
HORIZ. LINEARITY
LINEAR. ORIZZ.
LINEAR. HORIZONT.
LINEAL. HORIZONTAL

BILDLAGE HOR.
HORIZ. PICTURE POSITION
POSIZIONE ORIZZ. D'IMMAGINE
CADRAGE HORIZONT.
CENTRADO HORIZONTAL

FOKUSREGLER
FOCUS CONTROL
REGOLAT. DI FOCALIZZ.
REGLAGE DE FOCALISATION
CONTROL DE FOCO

BILDLAGE VERT.
VERT. PICTURE POSITION
POSIZ. VERT. D'IMMAGINE
CADRAGE VERTICAL
CENTRADO VERTICAL

BILDAMPLITUDE
FIELD AMPLITUDE
AMPIEZZA D'IMMAGINE
AMPLITUDE VERTICALE
AMPLITUD VERTICAL

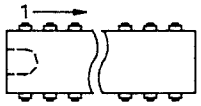
TRAPEZ
TRAPEZIUM
TRAPEZIO
TRAPEZE
TRAPECIO

HOR. FREQUENZ
HOR. FREQUENCY
FREQ. ORIZZ.
FREQ. HORIZ.
FRECUENCIA HORIZONTAL

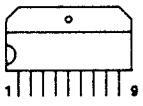
VERT. FREQUENZ
VERT. FREQUENCY
FREQ. VERT.
FRECUENCIA VERTICAL

VERT. LINEARITAET
VERT. LINEARITY
LINEAR. VERT.
LINEAR. VERT.
LINEALIDAD VERTICAL

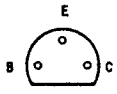
OST/WEST SYMMETRIE
EAST/WEST SYMMETRY
SIMMETRIA EST/OVEST
SYMMETRIE EST/OUEST
SIMETRIA E/O



IC'S VON UNTEN GESEHEN
IC'S SEEN FROM BOTTOM
IC'S VISTI DI SOTTO
IC'S VUS DU DESSOUS

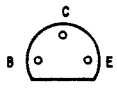


TDA 4601



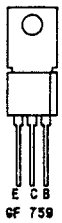
BF 199

78 L05 CP

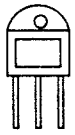


BF 421 / BF 422
BC 637 / BF 423

BC 548 / BC 558
BC 337/25
PH 2222
BC 338 / BC 324
BF 414
BC 308 / BC 248
BC 547

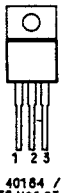


CF 759

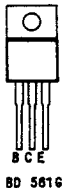


BU 508A / BU 903
BU 508D / BU 908

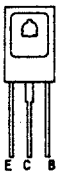
BU 208A
BU 546



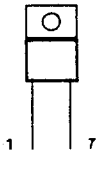
TY 40184 / MC 7505
MC78 MOSCT
7812



BD 561G
BU 908
BU 903
S 666T
BUT 11A
BUT 56A



BD 561 G
BD 139



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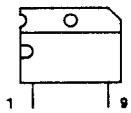

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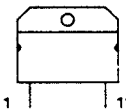
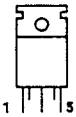
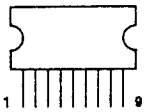


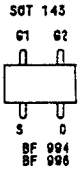
DL 80292



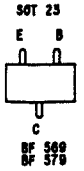
TDA 2040



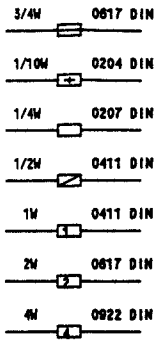
TDA 3654
TDA 3653A

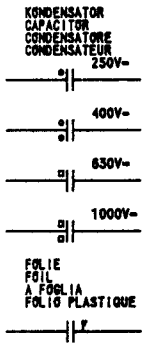


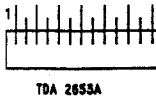
BF 994
BF 996



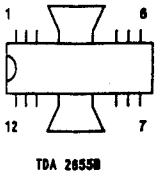
BF 569
BF 579





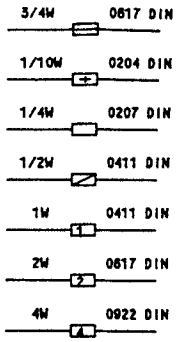


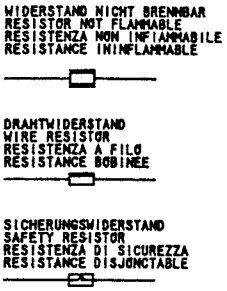
TDA 2653A

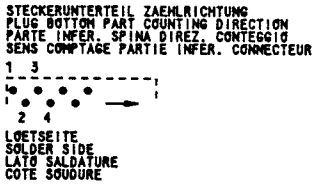


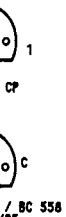
TDA 2655B

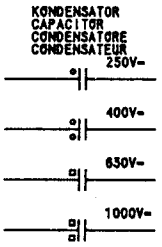
zeichen
t simbols
mportanti

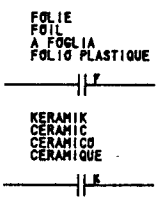


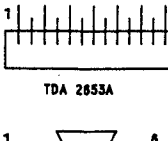


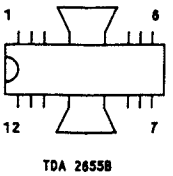


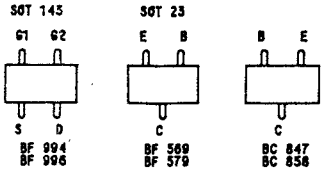












ACHTUNG: (D) **BEI EINGRIFFEN INS GERÄT SIND DIE SICHERHEITSVORSCHRIFTEN NACH VDE701(REPARATURBEZOGEN) BZW.VDE0860/IEC65 (GERÄTEBEZOGEN) ZU BEACHTEN.**

⚠ IM REPARATURFALL DÜRFEN NUR ORIGINALBAUTEILE VERWENDET WERDEN !

ACHTUNG! (D) VORSCHRIFTEN BEIM UMGANG MIT MOS - BAUTEILEN BEACHTEN !

ATTENTION: (GB) **PLEASE OBSERVE THE APPLICABLE SAFETY REQUIREMENTS ACCORDING TO VDE 701 (CONCERNING REPAIRS) AND VDE 0860/IEC 65 (CONCERNING TYPE OF PRODUCT).**

⚠ ONLY USE COMPONENTS WITH THE SAME SPECIFICATION FOR REPLACEMENT !

ATTENTION! (GB) OBSERVE MOS COMPONENTS HANDLING INSTRUCTIONS WHEN SERVICING !

ATTENTION: (F) **PRIERE D'OBSERVER LES PRESCRIPTIONS DE SECURITE VDE 701 (CONCERNANT LES REPARATIONS) ET VDE 0860/IEC 65 (CONCERNANT LE TYPE DE PRODUIT).**

⚠ EN CAS DE REMPLACEMENT N' UTILISER QUE DES COMPOSANTS DES MEMES SPECIFICATIONS !

ATTENTION! (F) LORS DE LA MANIPULATION DES CIRCUITS MOS , RESPECTER LES PESCRIPTIONS MOS !

ATTENZIONE: (I) **OSSERVARNE LE CORRISPONDENTI PRESCRIZIONI DI SICUREZZA VDE 701 (CONCERNENTE SERVIZIO) E VDE 0860/IEC 65 (CONCERNENTE IL TIPO DI PRODOTTO).**

⚠ IN CASO DI SOSTITUZIONE IMPIEGARE SOLO COMPONENTI CON LE STESSE CARATTERISTICHE !

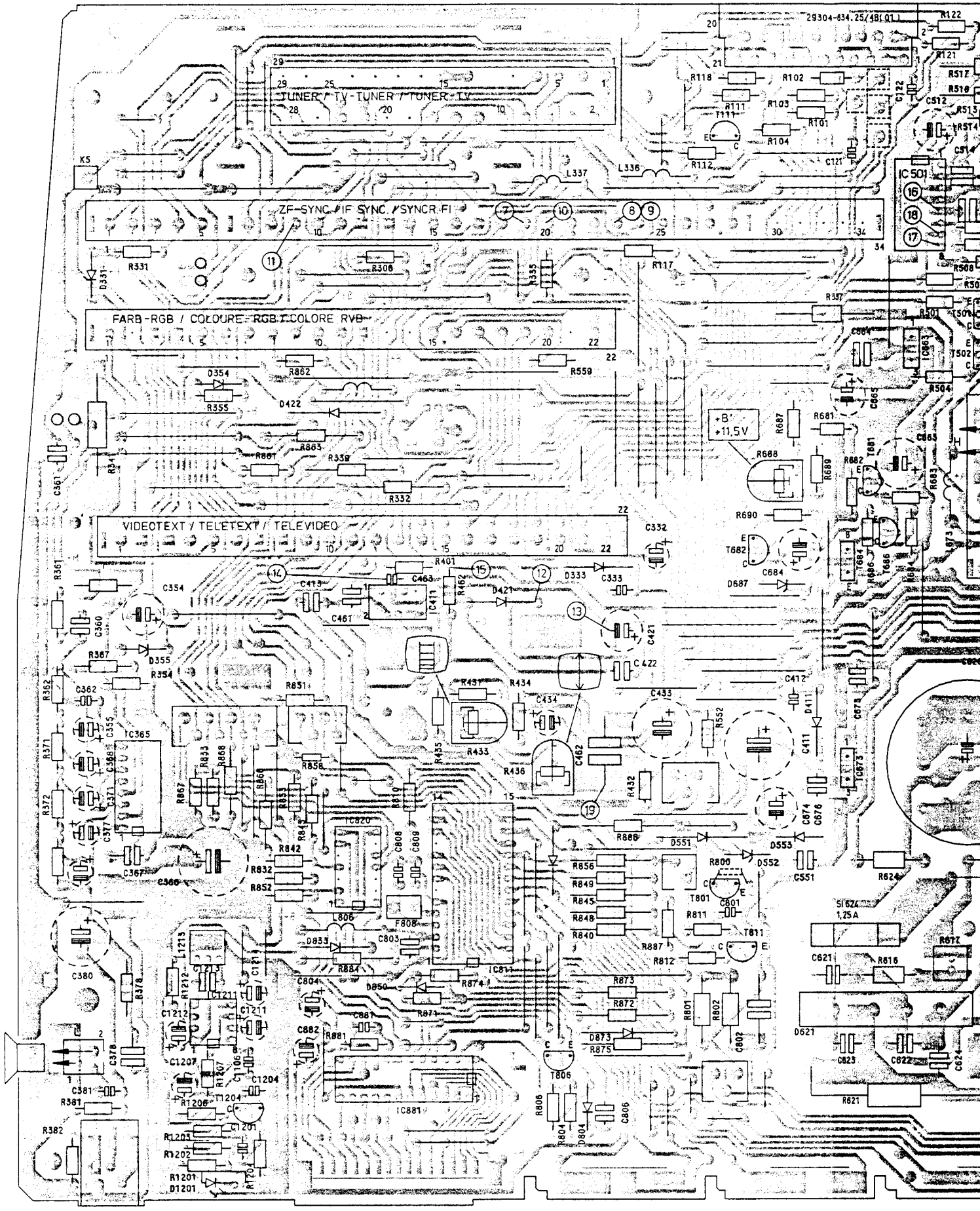
ATTENZIONE! (I) OSSERVARE LE RELATIVE PRESCRIZIONI DURANTE, LAVORI CON COMPONENTI MOS !

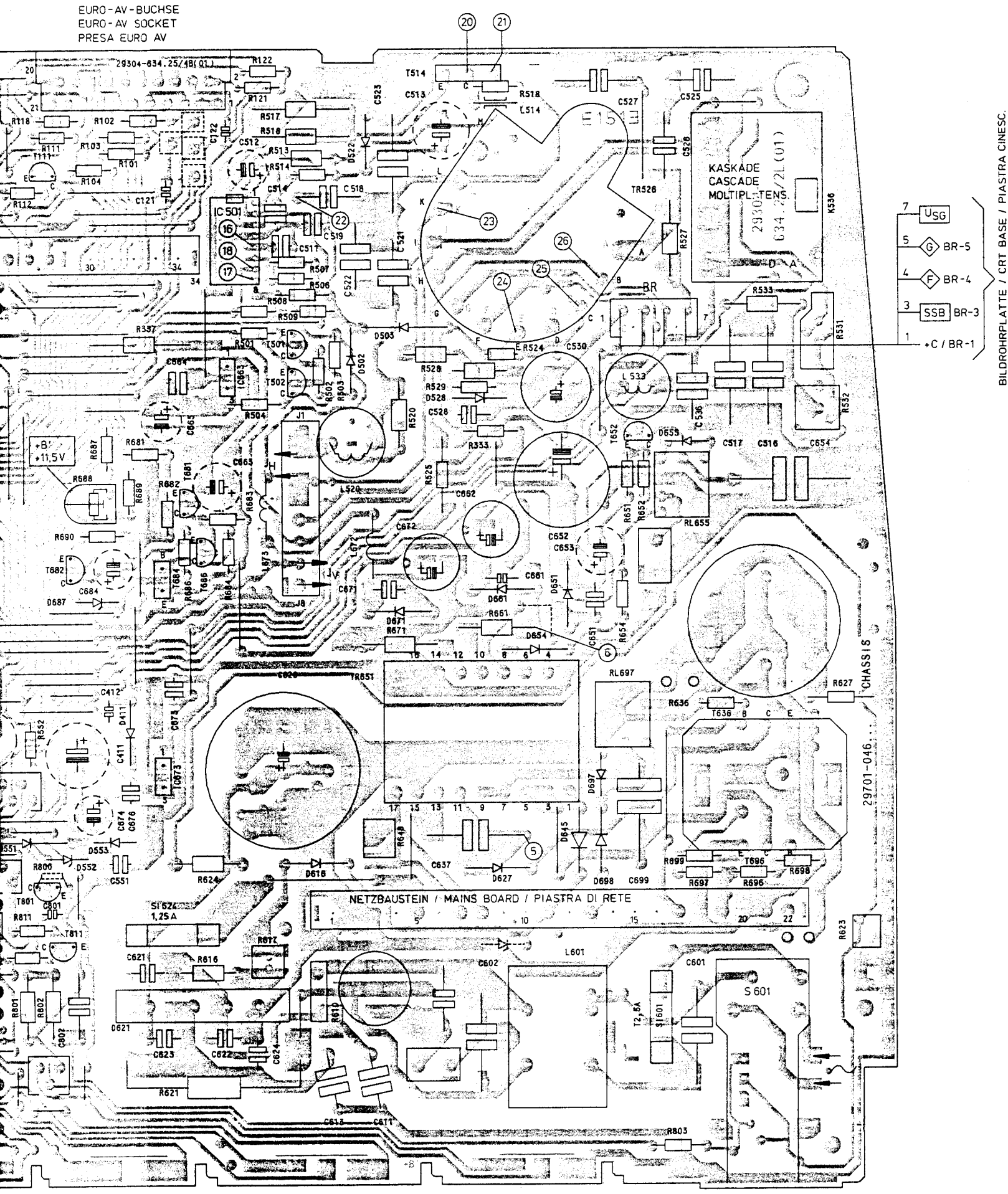
ATENCION: (E) **RECOMENDAMOS LAS NORMAS DE SEGURIDAD VDE U OTRAS NORMAS EQUIVALENTES. POR EJEMPLO : VDE 701 PARA REPARACIONES, VDE 0860/IEC 65 PARA APARATOS.**

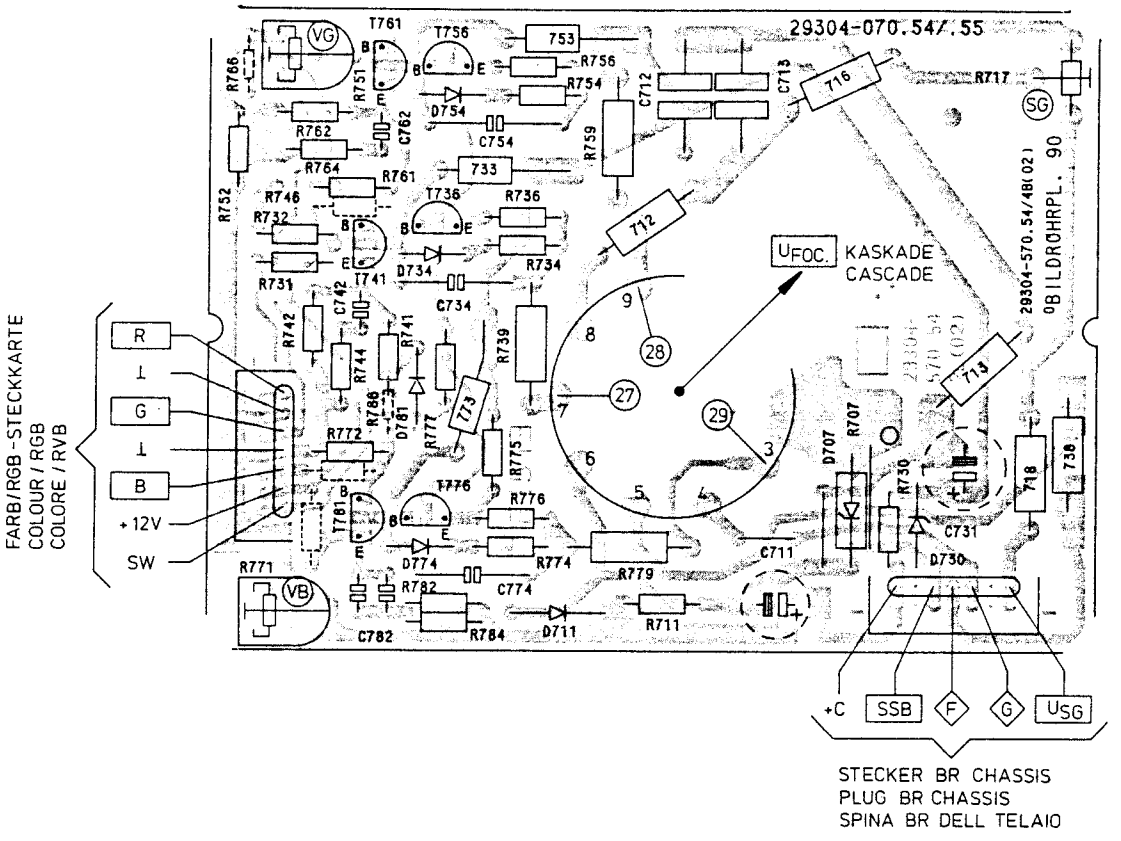
⚠ EN CASO DE REPARACION UTILIZAR UNICAMENTE REPUESTOS ORIGINALES.

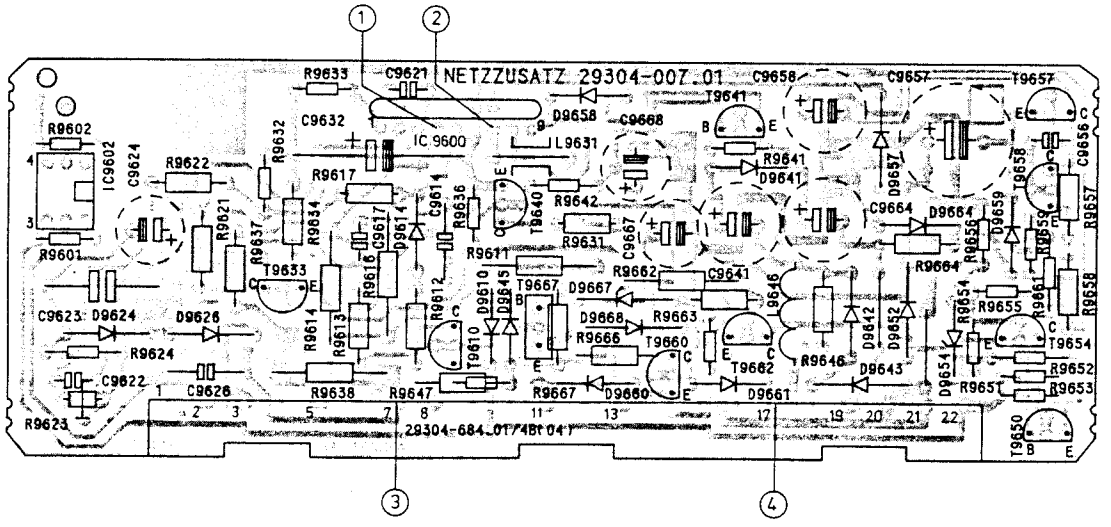
ATENCION! (E) DURANTE LA REPARACION OBSERVAR LAS NORMAS SOBRE COMPONENTES MOS !

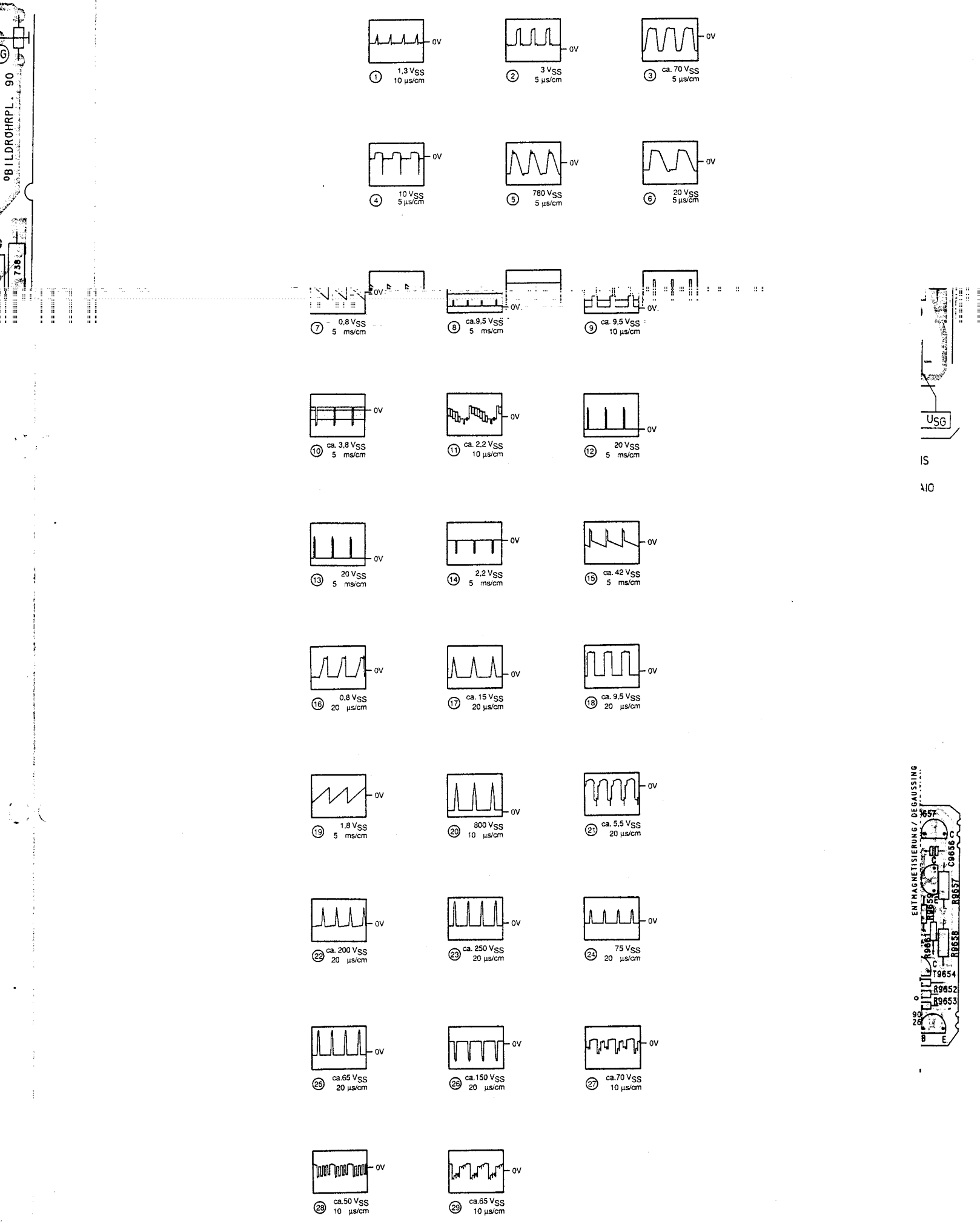
EURO-AV-BUCHSE
EURO-AV SOCKET
PRESA EURO AV

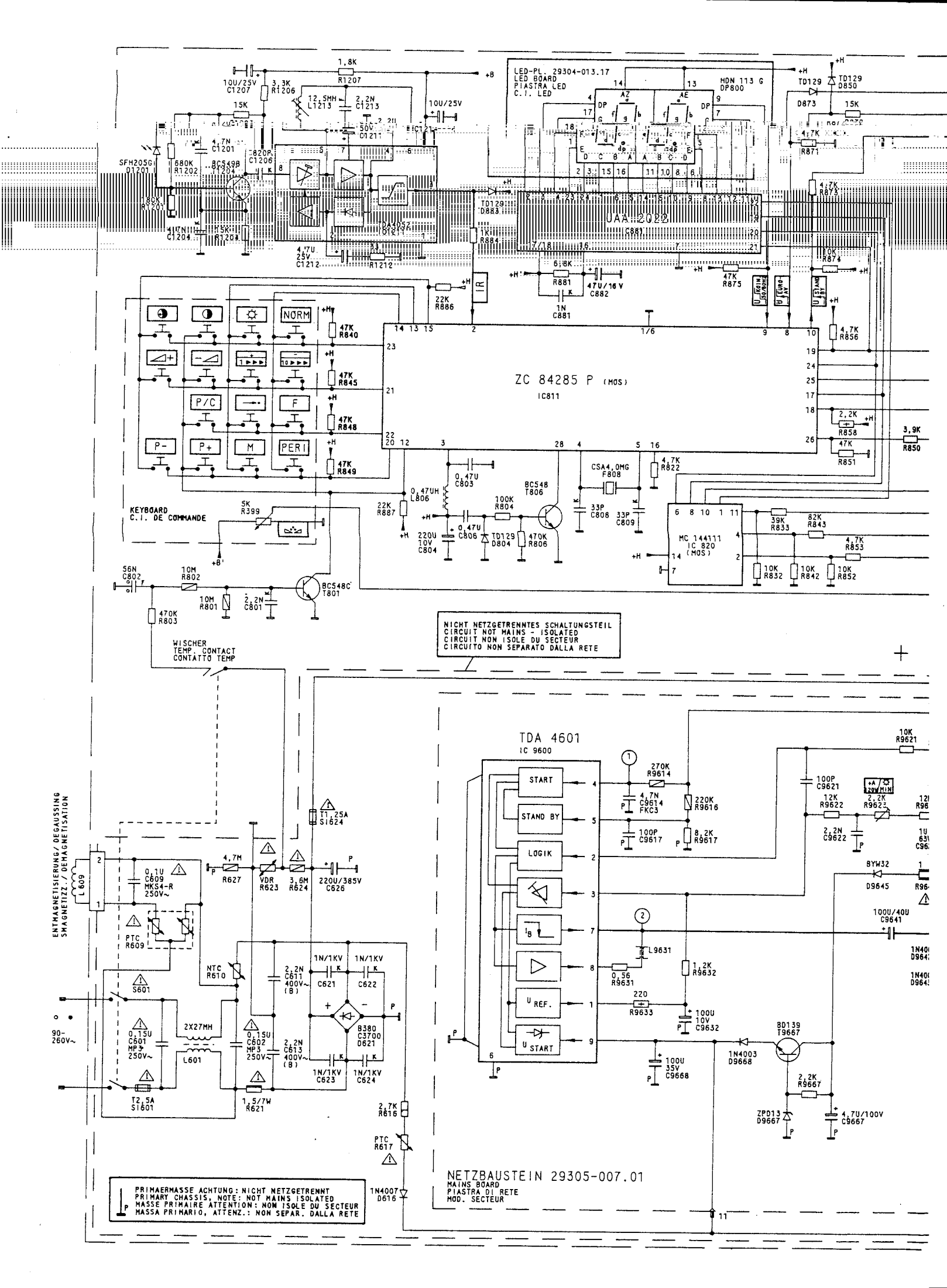


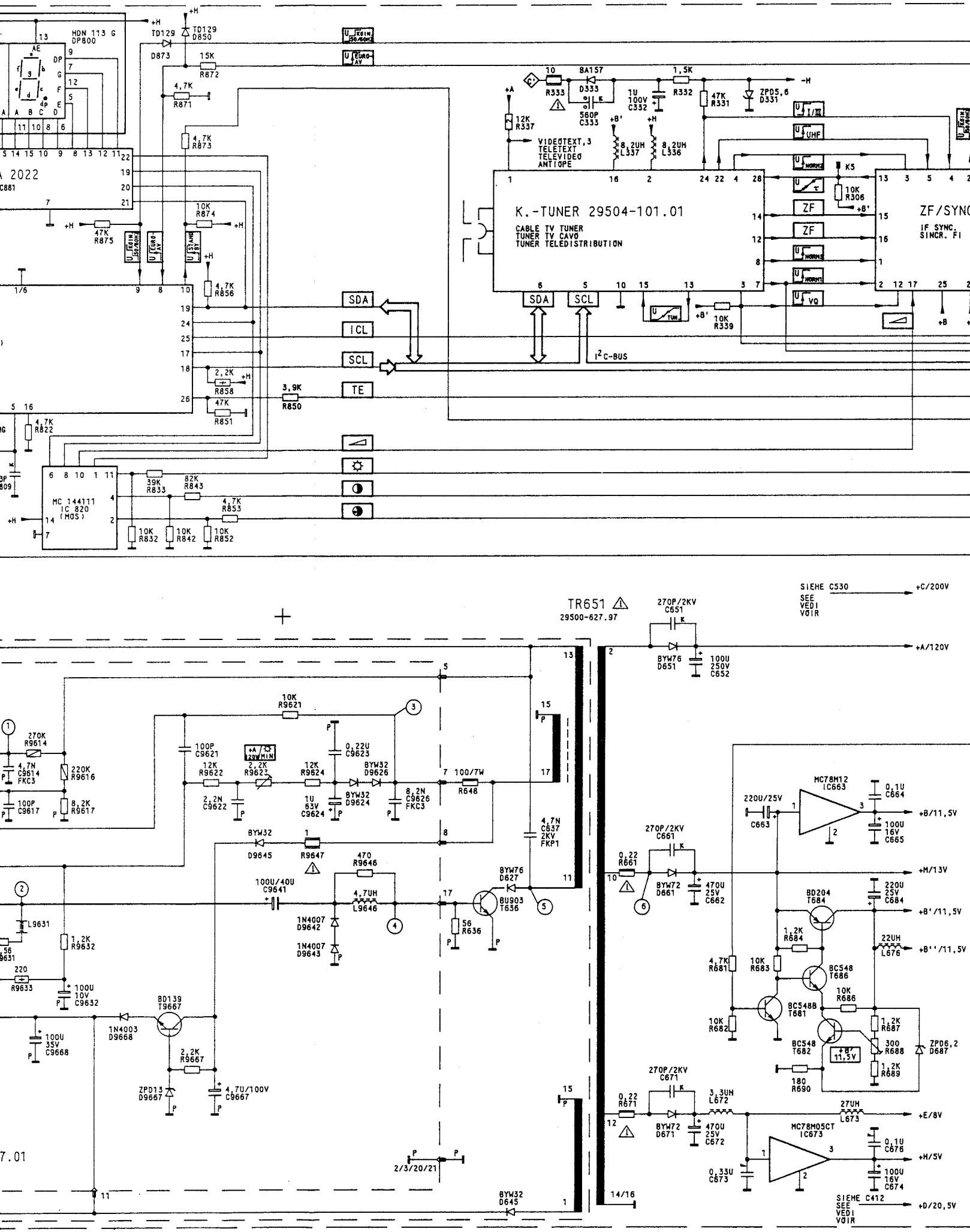

EURO-AV-BUCHSE
EURO-AV SOCKET
PRESA EURO AV
29304-634.25/48(01)
KASKADE
CASCADE
MOLTIPL. TENS.
29304-634.25/2L(01)
IC 501
+B
+11,5V
NETZBAUSTEIN / MAINS BOARD / PIASTRA DI RETE
CHASSIS
29701-046...
S 601
L 601
TR526
TR851
RL655
RL697
USG
G
BR-5
F
BR-4
SSB
BR-3
+C / BR-1
BILDROHRPLATTE / CRT BASE / PIASTRA CINESC.

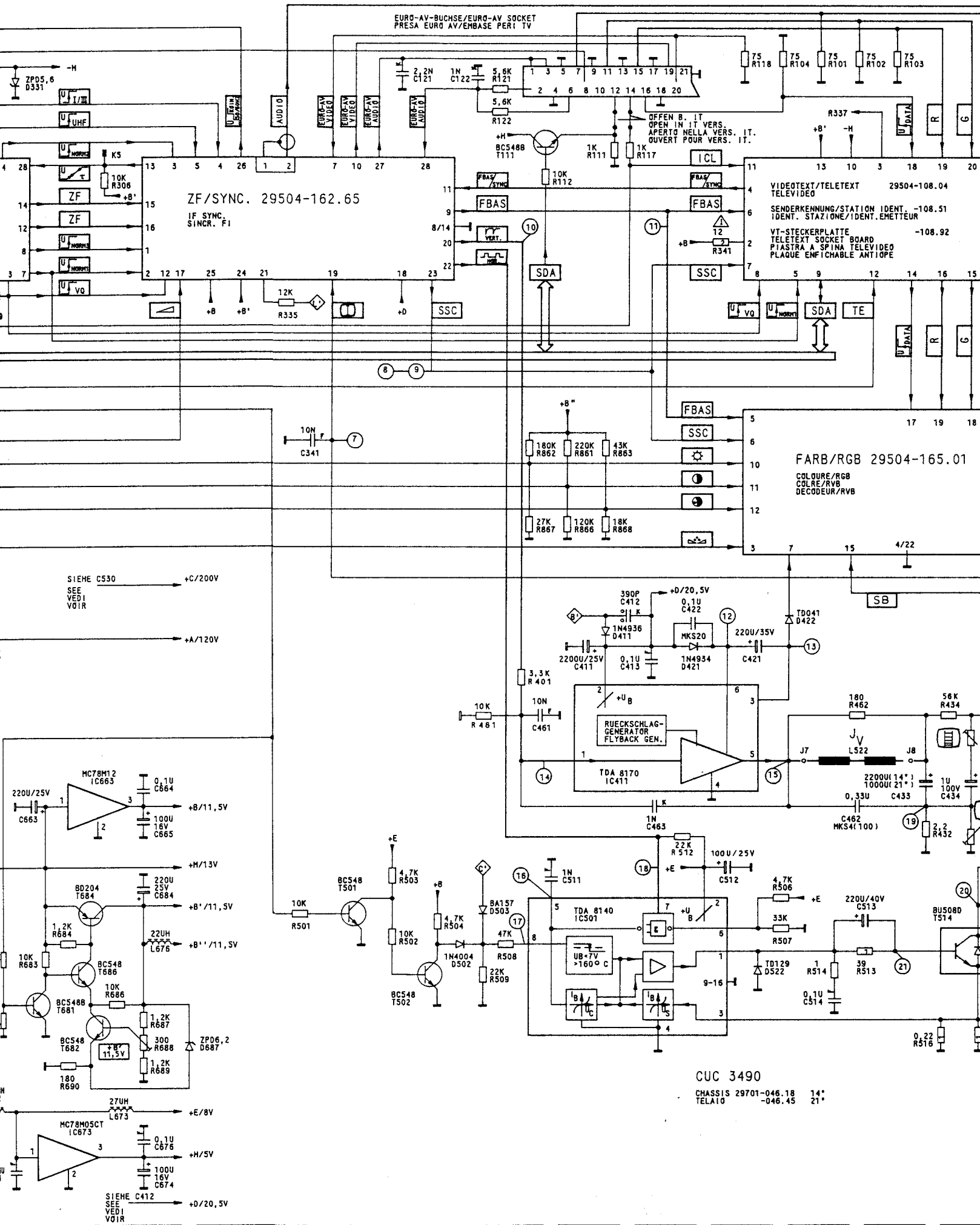

29304-070.547.55
FARB/RGB-STECKKARTE
COLOUR/RGB
COLORE/RVB
R
G
B
+12V
SW
UFOC.
KASKADE
CASCADE
29304-570.54/4BI02)
BILDRÖHRPL. 90
+C
SSB
F
G
USG
STECKER BR CHASSIS
PLUG BR CHASSIS
SPINA BR DELL TELAIO

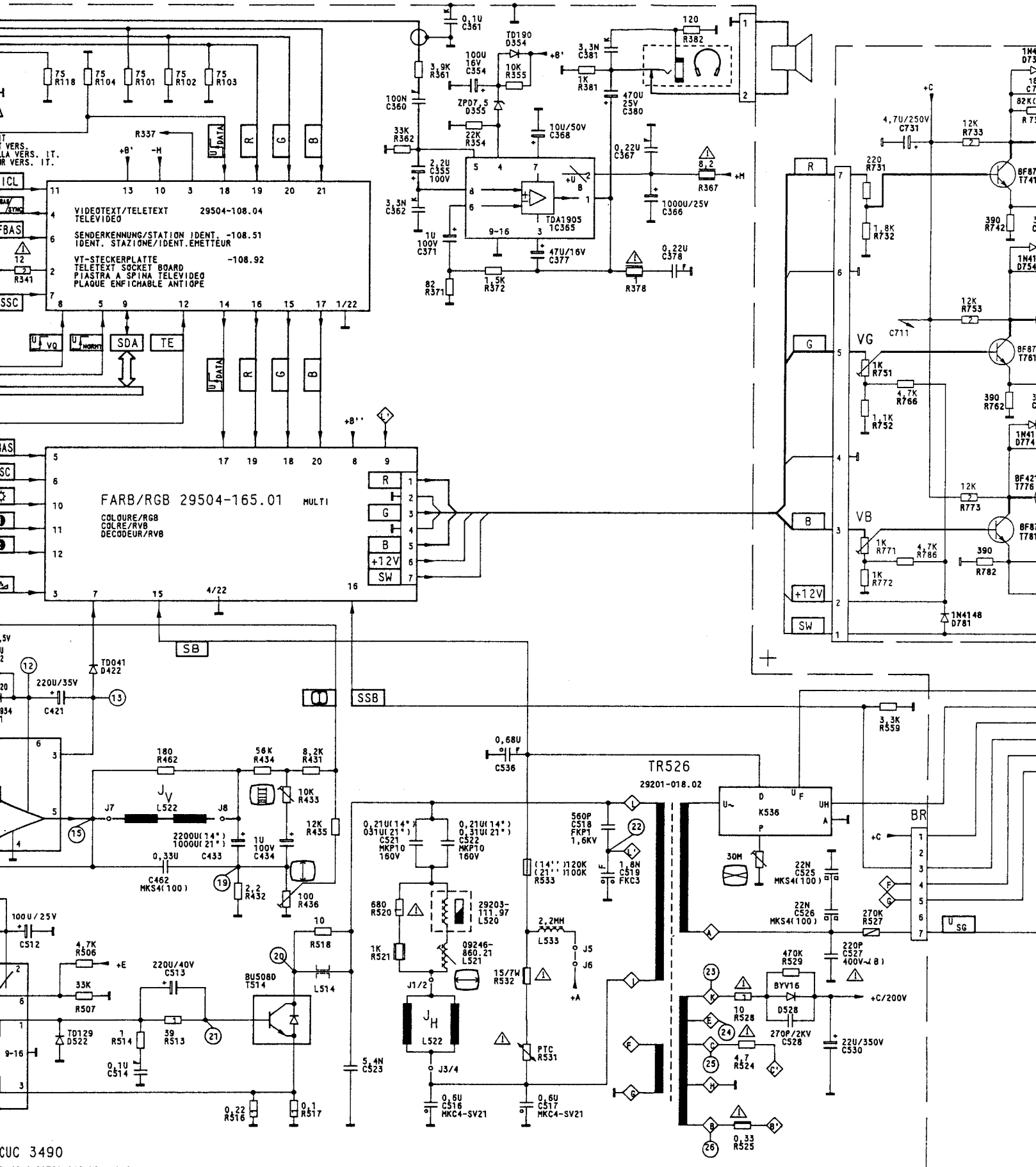

NETZZUSATZ 29304-007.01
IC 9600
29304-684.01/4BI04)


0V
① 1,3 V_{SS} 10 µs/cm
② 3 V_{SS} 5 µs/cm
③ ca. 70 V_{SS} 5 µs/cm
④ 10 V_{SS} 5 µs/cm
⑤ 780 V_{SS} 5 µs/cm
⑥ 20 V_{SS} 5 µs/cm
⑦ 0,8 V_{SS} 5 ms/cm
⑧ ca.9,5 V_{SS} 5 ms/cm
⑨ ca. 9,5 V_{SS} 10 µs/cm
⑩ ca. 3,8 V_{SS} 5 ms/cm
⑪ ca. 2,2 V_{SS} 10 µs/cm
⑫ 20 V_{SS} 5 ms/cm
⑬ 20 V_{SS} 5 ms/cm
⑭ 2,2 V_{SS} 5 ms/cm
⑮ ca. 42 V_{SS} 5 ms/cm
⑯ 0,8 V_{SS} 20 µs/cm
⑰ ca. 15 V_{SS} 20 µs/cm
⑱ ca. 9,5 V_{SS} 20 µs/cm
⑲ 1,8 V_{SS} 5 ms/cm
⑳ 800 V_{SS} 10 µs/cm
㉑ ca. 5,5 V_{SS} 20 µs/cm
㉒ ca. 200 V_{SS} 20 µs/cm
㉓ ca. 250 V_{SS} 20 µs/cm
㉔ 75 V_{SS} 20 µs/cm
㉕ ca.65 V_{SS} 20 µs/cm
㉖ ca.150 V_{SS} 20 µs/cm
㉗ ca.70 V_{SS} 10 µs/cm
㉘ ca.50 V_{SS} 10 µs/cm
㉙ ca.65 V_{SS} 10 µs/cm


LED-PL. 29304-013.17
LED BOARD
PIASTRA LED
C.I. LED
HDN 113 G
DP800
UAA 2022
IC881
ZC 84285 P (MOS)
IC811
KEYBOARD
C.I. DE COMMANDE
MC 144111
IC 820
(MOS)
NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS - ISOLATED
CIRCUIT NON ISOLE DU SECTEUR
CIRCUITO NON SEPARATO DALLA RETE
WISCHER
TEMP. CONTACT
CONTATTO TEMP
ENTMAGNETISIERUNG/ DEGAUSSING
SMAGNETIZZ./ DEMAGNETISATION
TDA 4601
IC 9600
START
STAND BY
LOGIK
U REF.
U START
NETZBAUSTEIN 29305-007.01
MAINS BOARD
PIASTRA DI RETE
MOD. SECTEUR
PRIMAERMASSE ACHTUNG: NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE: NOT MAINS ISOLATED
MASSE PRIMAIRE ATTENTION: NON ISOLE DU SECTEUR
MASSA PRIMARIO, ATTENZ.: NON SEPAR. DALLA RETE


HDN 113 G
DP800
TD129
D850
D873
15K
R872
4,7K
R871
4,7K
R873
10K
R874
47K
R875
4,7K
R856
2,2K
R858
3,9K
R850
47K
R851
4,7K
R822
MC 144111
IC 820
(MOS)
39K
R833
82K
R843
4,7K
R853
10K
R832
10K
R842
10K
R852
SDA
ICL
SCL
TE
8A157
D333
560P
C333
1U
100V
C332
1,5K
R332
47K
R331
ZPD5,6
D331
12K
R337
VIDEOTEXT,3
TELETEXT
TELEVIDEO
ANTIOPE
8,2UH
L337
8,2UH
L336
K.-TUNER 29504-101.01
CABLE TV TUNER
TUNER TV CAVO
TUNER TELEDISTRIBUTION
10K
R306
10K
R339
I²C-BUS
ZF/SYNC
IF SYNC.
SINCR. FI
TR651
29500-627.97
270P/2KV
C651
BYW76
D651
100U
250V
C652
SIEHE C530
SEE
VEDI
VOIR
+C/200V
+A/120V
270K
R9614
4,7N
C9614
FKC3
220K
R9616
100P
C9617
8,2K
R9617
10K
R9621
100P
C9621
12K
R9622
2,2N
C9622
2,2K
R9623
12K
R9624
1U
63V
C9624
0,22U
C9623
BYW32
D9626
BYW32
D9624
8,2N
C9626
FKC3
100/7W
R648
4,7N
C637
2KV
FKP1
BYW32
D9645
R9647
470
R9646
100U/40U
C9641
4,7UH
L9646
BYW76
D627
BU903
T636
56
R636
1N4007
D9642
1N4007
D9643
L9631
1,2K
R9632
220
R9633
100U
10V
C9632
BD139
T9667
1N4003
D9668
100U
35V
C9668
2,2K
R9667
ZPD13
D9667
4,7U/100V
C9667
BYW32
D9645
2/3/20/21
270P/2KV
C661
0,22
R661
BYW72
D661
470U
25V
C662
MC78M12
IC663
220U/25V
C663
0,1U
C664
100U
16V
C665
+B/11,5V
+M/13V
BD204
T684
220U
25V
C684
+B'/11,5V
1,2K
R684
22UH
L676
+B''/11,5V
4,7K
R681
10K
R683
BC548
T686
10K
R686
BC548B
T681
10K
R682
1,2K
R687
BC548
T682
300
R688
ZPD6,2
D687
+B'
11,5V
180
R690
1,2K
R689
270P/2KV
C671
0,22
R671
BYW72
D671
3,3UH
L672
470U
25V
C672
27UH
L673
MC78M05CT
IC673
0,33U
C673
0,1U
C676
100U
16V
C674
+E/8V
+H/5V
SIEHE C412
SEE
VEDI
VOIR
+D/20,5V
14/16

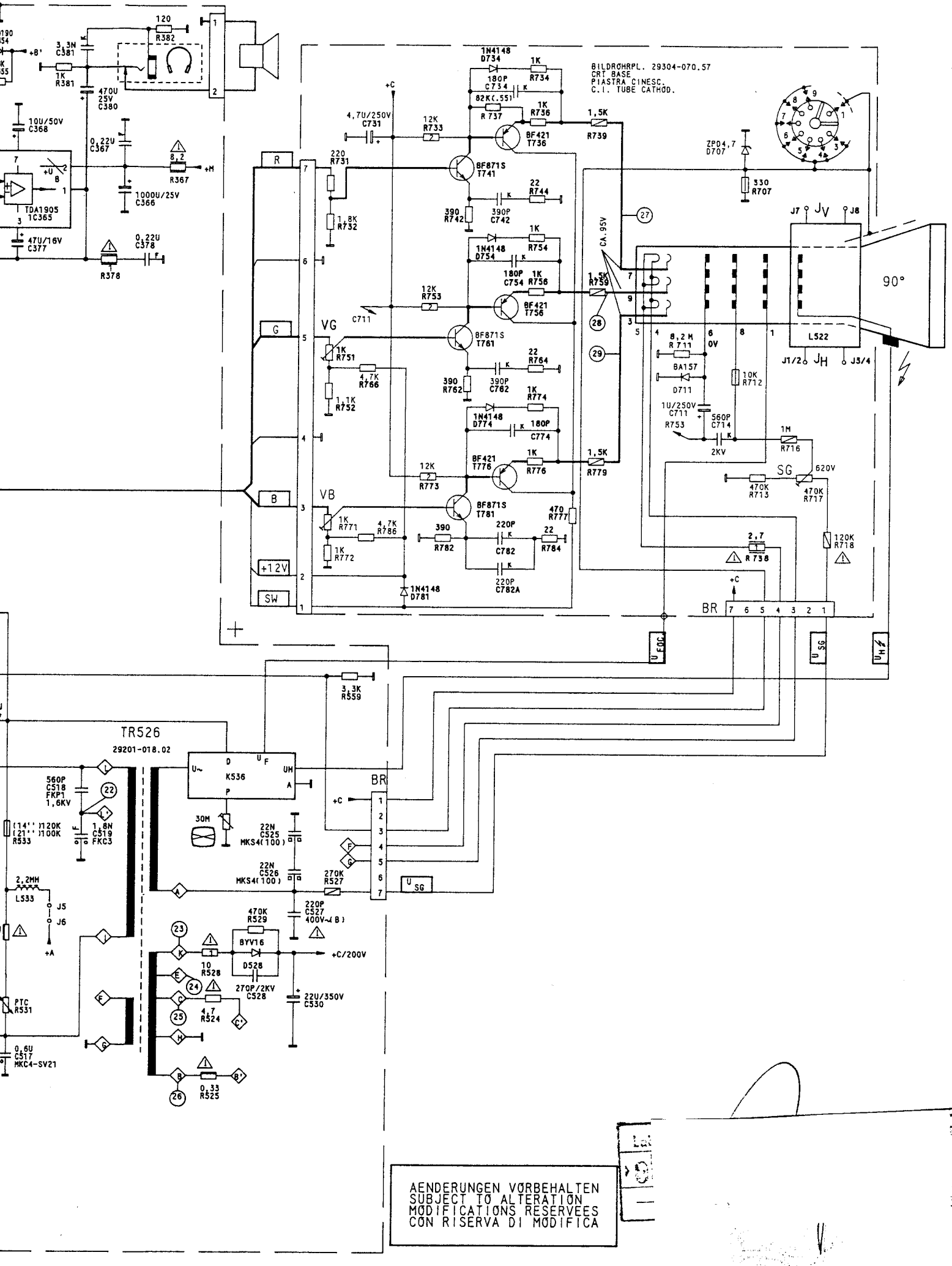

EURO-AV-BUCHSE/EURO-AV SOCKET
PRESA EURO AV/EMBASE PERI TV
ZF/SYNC. 29504-162.65
IF SYNC.
SINCR. FI
FARB/RGB 29504-165.01
COLOURE/RGB
COLRE/RVB
DECODEUR/RVB
VIDEOTEXT/TELETEXT 29504-108.04
TELEVIDEO
SENDERKENNUNG/STATION IDENT. -108.51
IDENT. STAZIONE/IDENT.EMETTEUR
VT-STECKERPLATTE -108.92
TELETEXT SOCKET BOARD
PIASTRA A SPINA TELEVIDEO
PLAQUE ENFICHABLE ANTIOPE
OFFEN B. IT
OPEN IN IT VERS.
APERTO NELLA VERS. IT.
OUVERT POUR VERS. IT.
RUECKSCHLAG-
GENERATOR
FLYBACK GEN.
TDA 8170
IC411
TDA 8140
IC501
UB<7V
>160° C
SIEHE C530
SEE
VEDI
VOIR
+C/200V
+A/120V
+M/13V
+B/11,5V
+B'/11,5V
+B''/11,5V
+E/8V
+H/5V
+D/20,5V
SIEHE C412
SEE
VEDI
VOIR
MC78M12
IC663
MC78M05CT
IC673
BD204
T684
BC548
T686
BC548B
T681
BC548
T682
BC548
T501
BC548
T502
BA157
D503
1N4004
D502
TD041
D422
TD129
D522
MKS20
1N4936
D411
1N4934
D421
BU508D
T514
L522
L676
L673
CUC 3490
CHASSIS 29701-046.18 14"
TELAIO -046.45 21"

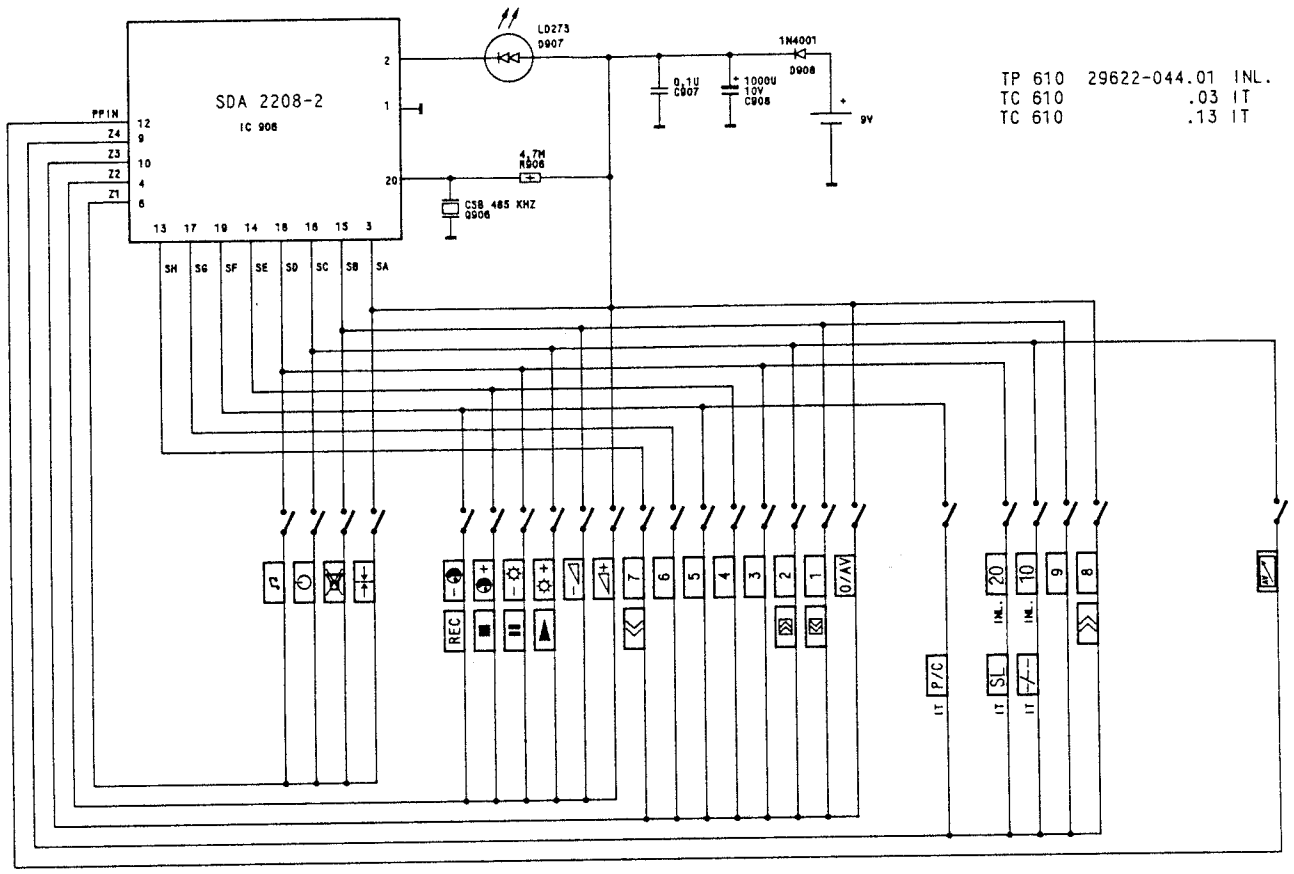


CUC 3490

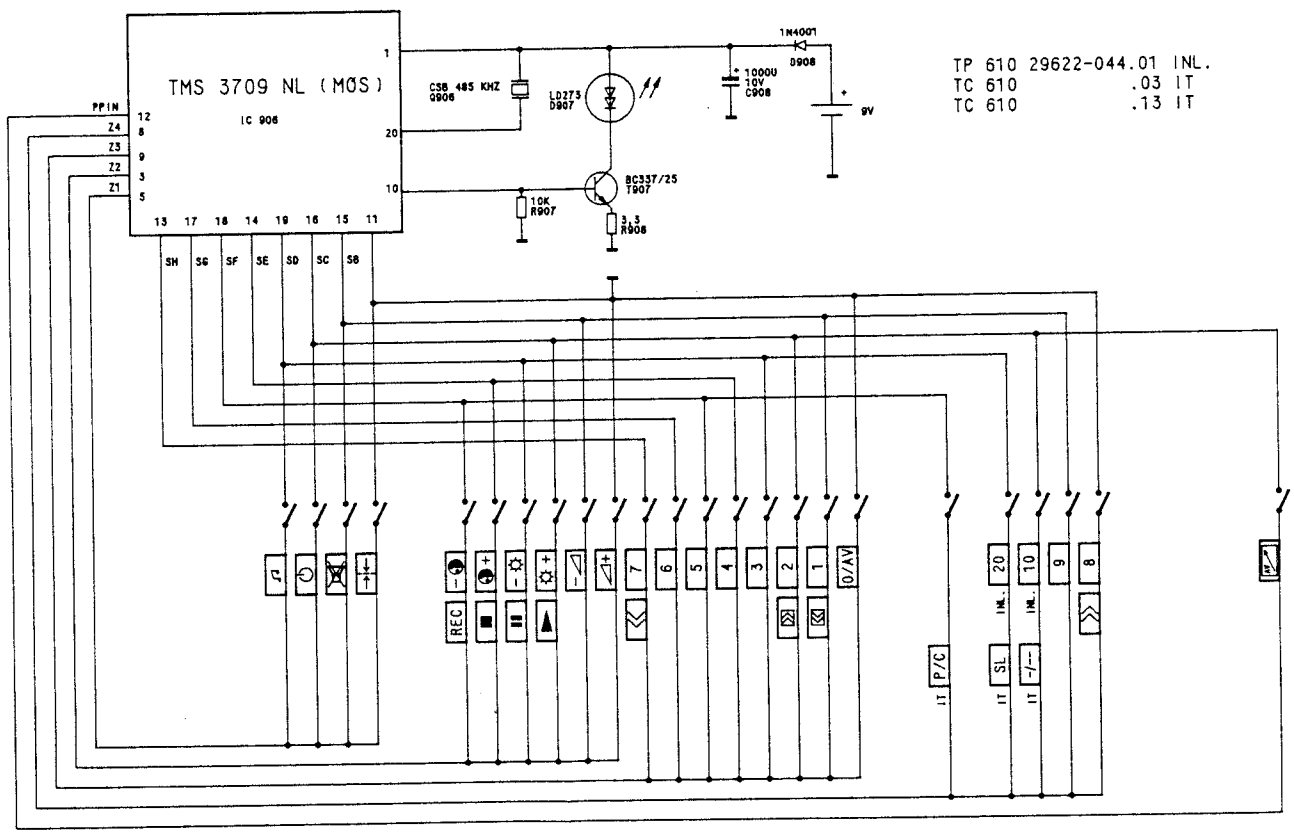
CHASSIS 29701-046.18 14"
TELAIO -046.45 21"

AENDERUNGE
SUBJECT TO
MODIFICATI
CON RISERV


BILDRØHRPL. 29304-070.57
CRT BASE
PIASTRA CINESC.
C.I. TUBE CATHOD.
TDA1905 1C365
TR526
29201-018.02
K536
BR
VG
VB
SG
90°
L522
AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
MODIFICATIONS RESERVEES
CON RISERVA DI MODIFICA

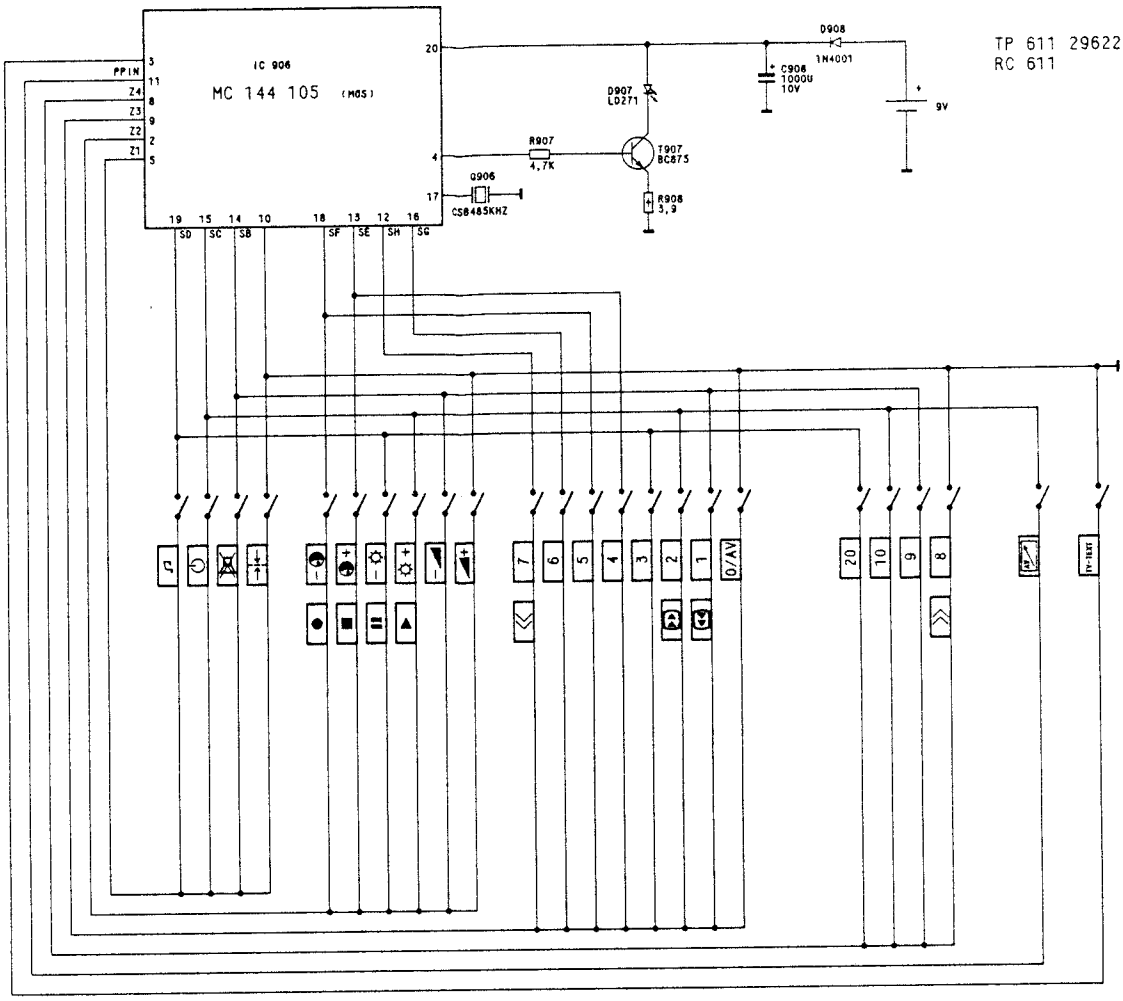


TP 610 29622-044.01 INL.
TC 610 .03 IT
TC 610 .13 IT

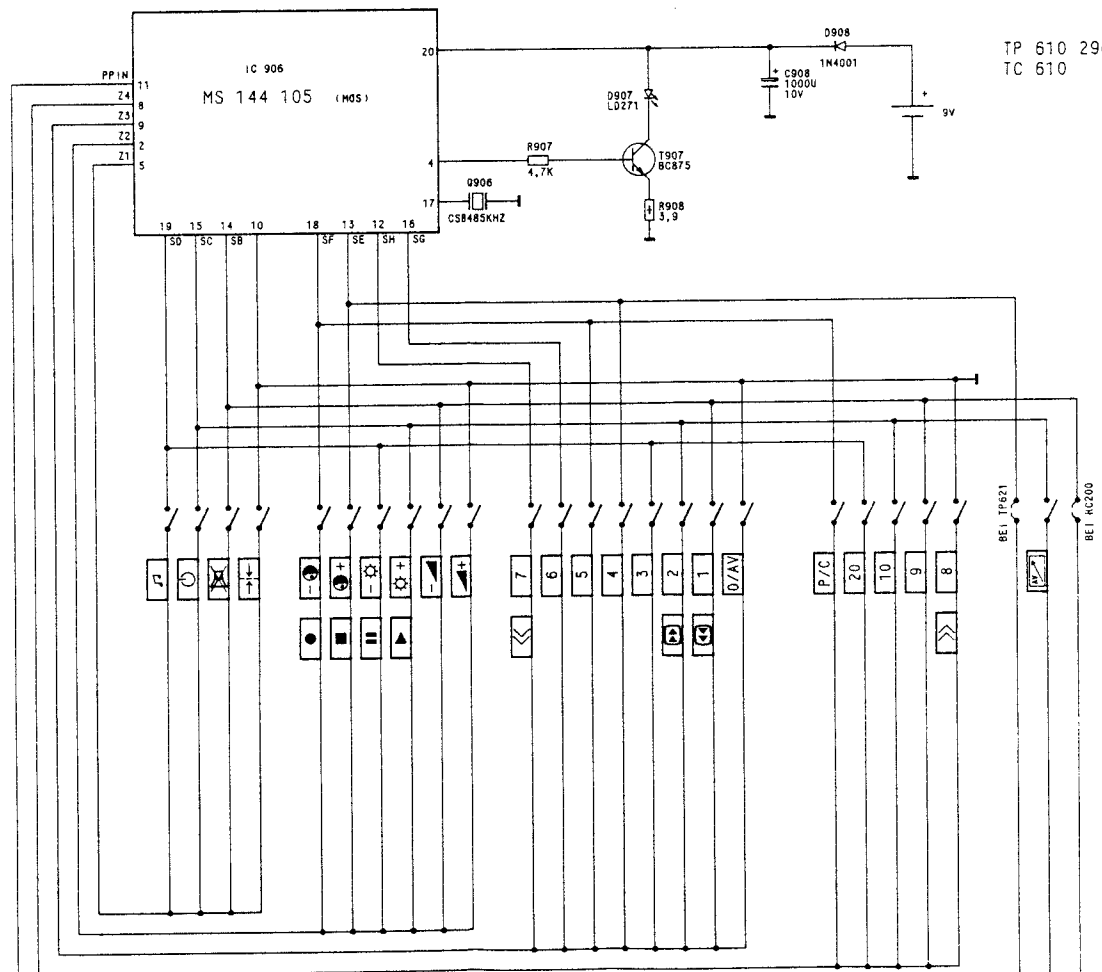


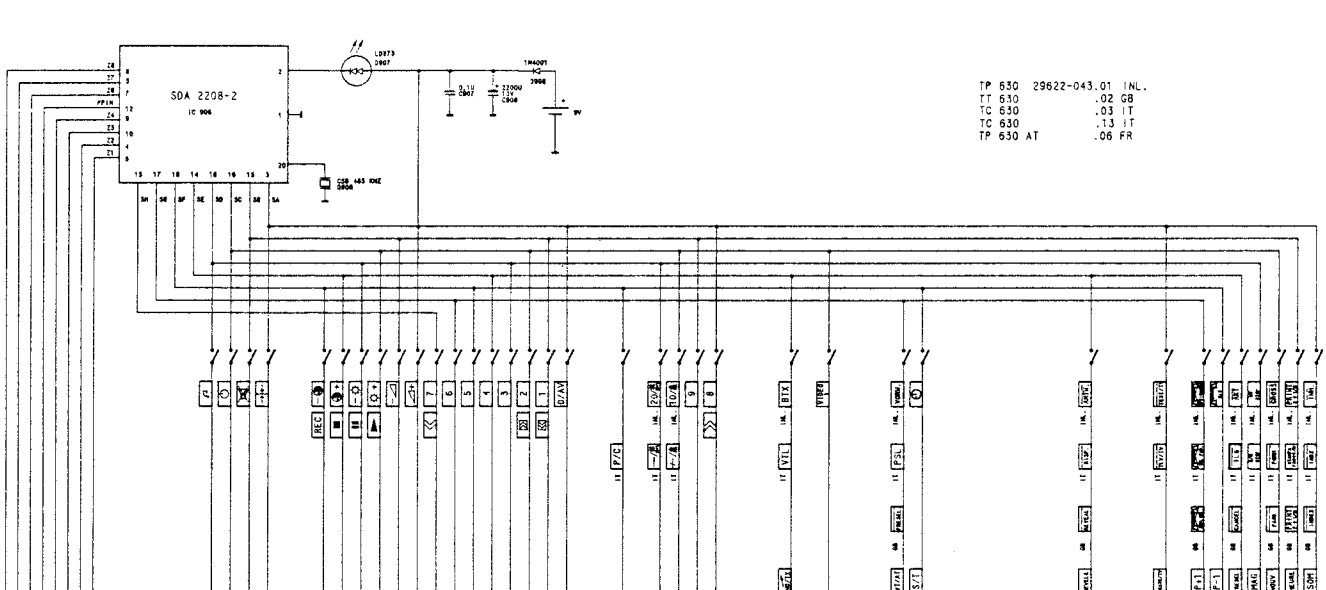
TP 610 29622-044.01 INL.
TC 610 .03 IT
TC 610 .13 IT

TP 611 29622-051.01
RC 611 -051.02

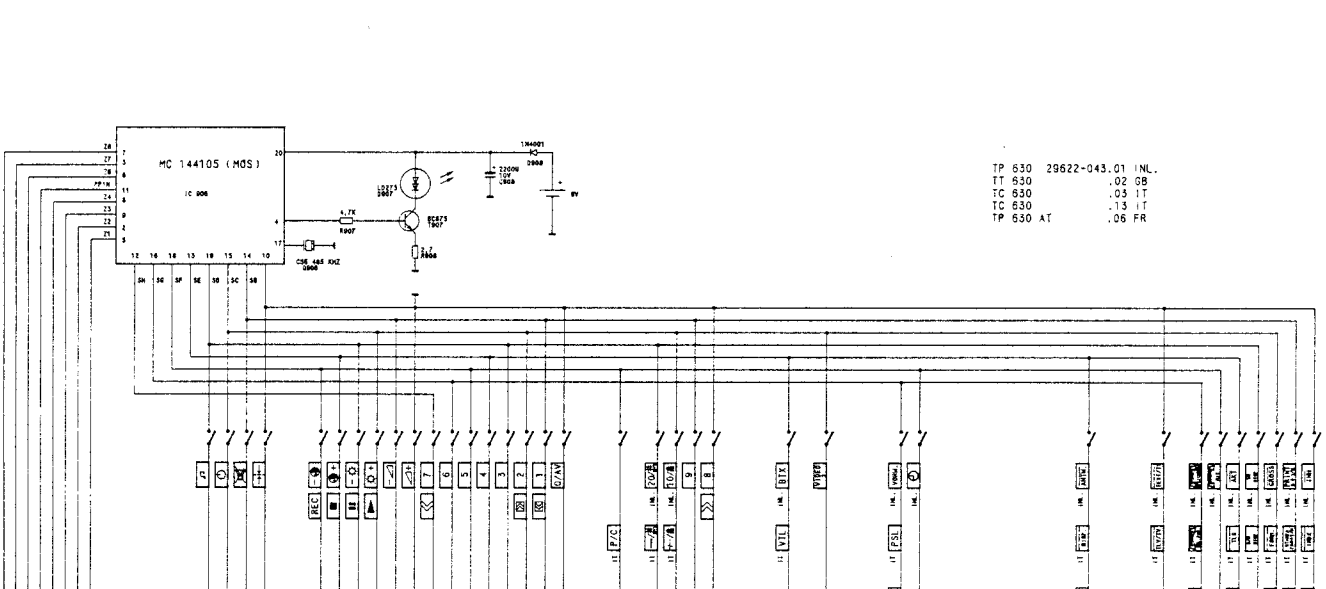


TP 610 29622-044.21
TC 610 -044.08 SIEMEN

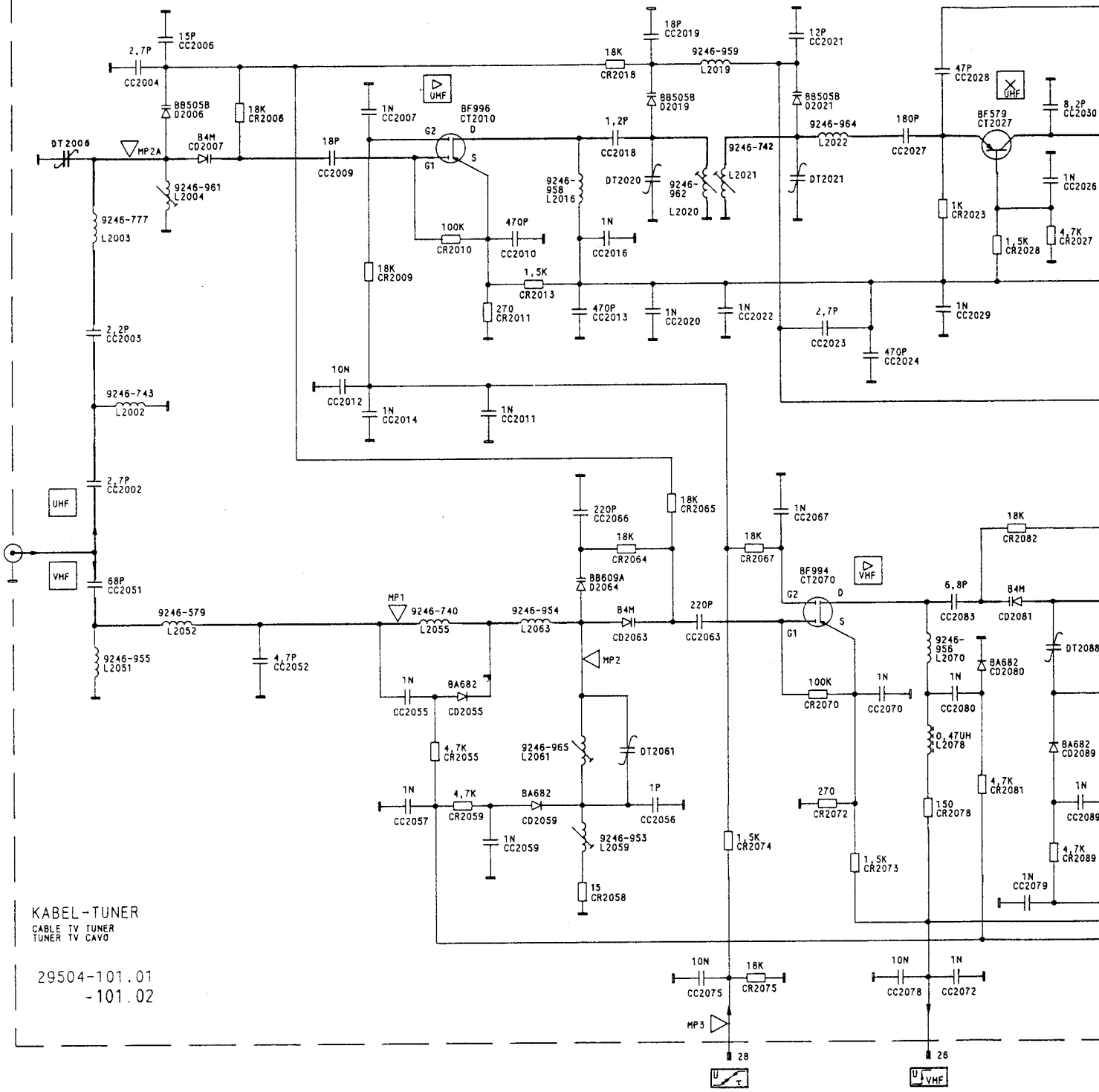




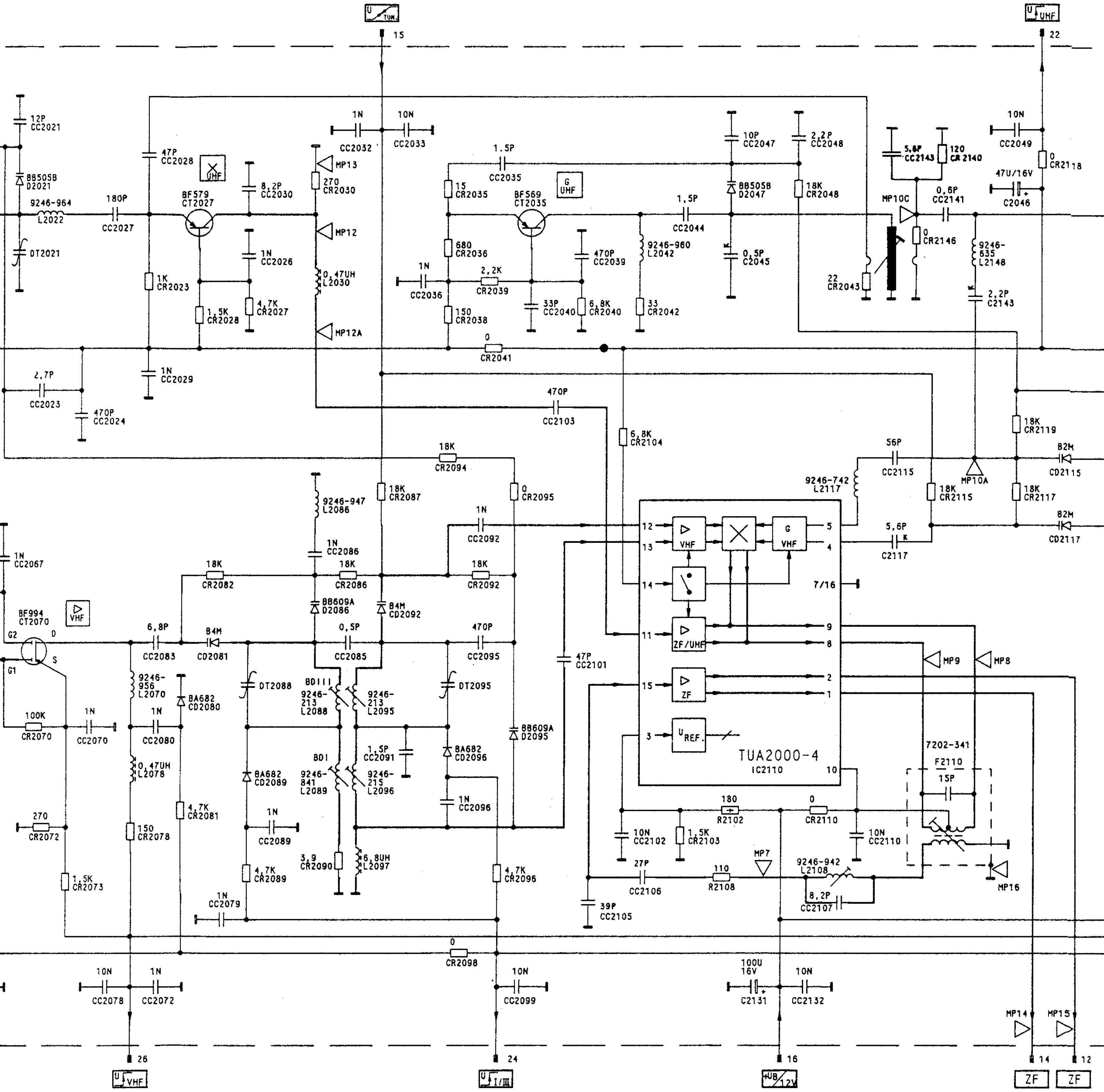
29304-064.41 KEYBOARD



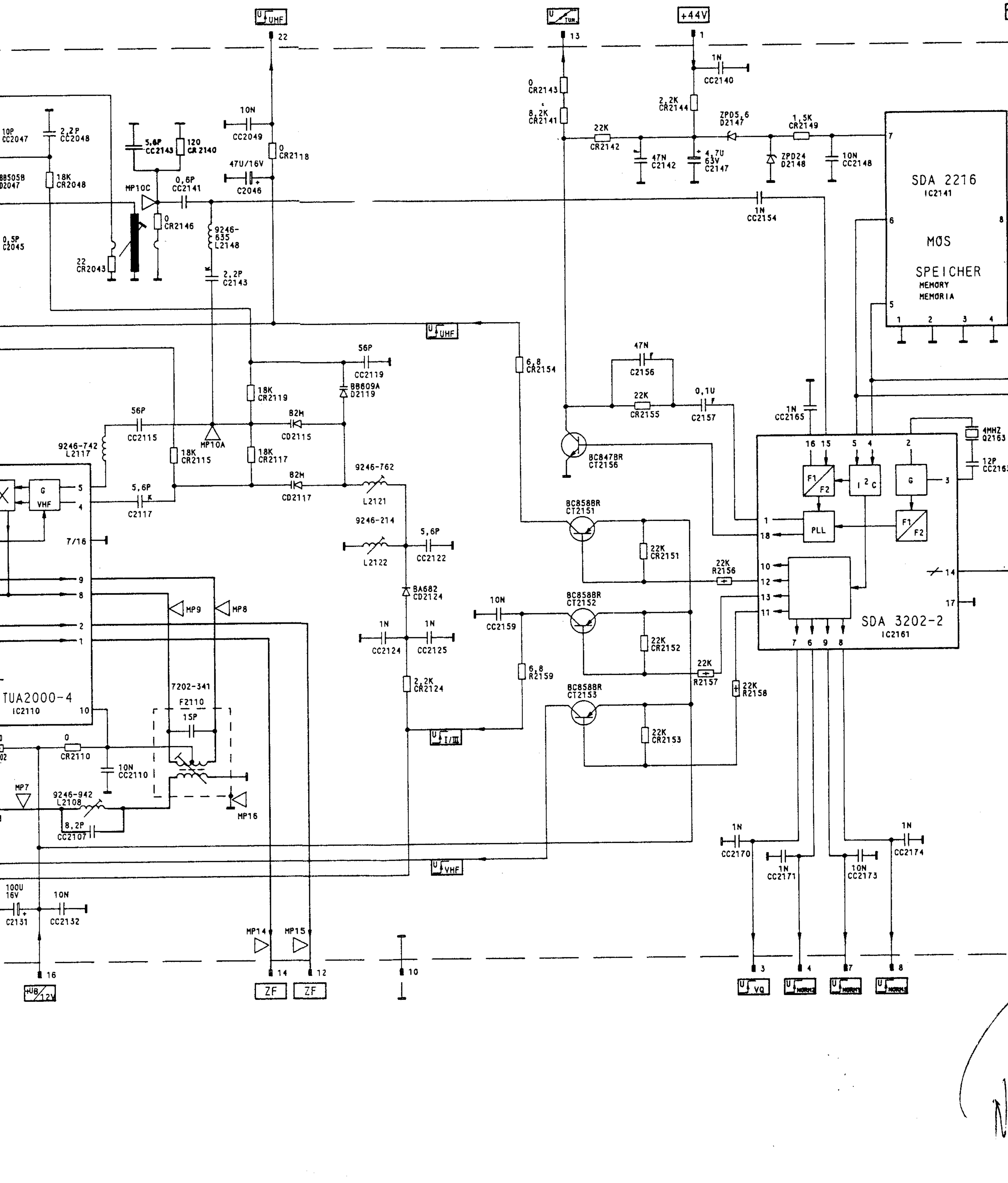
29304-064.42 KEYBOARD



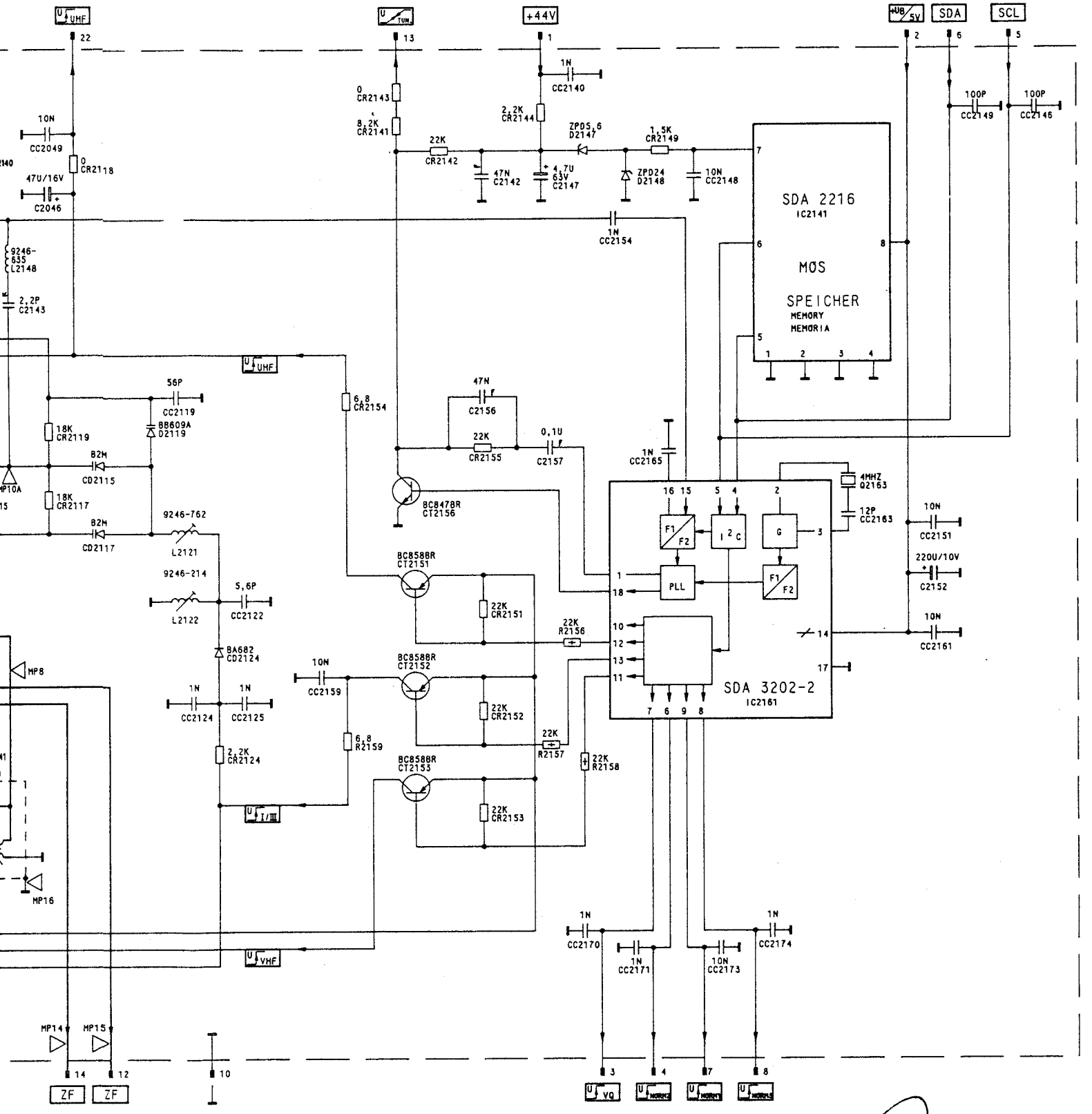
Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto

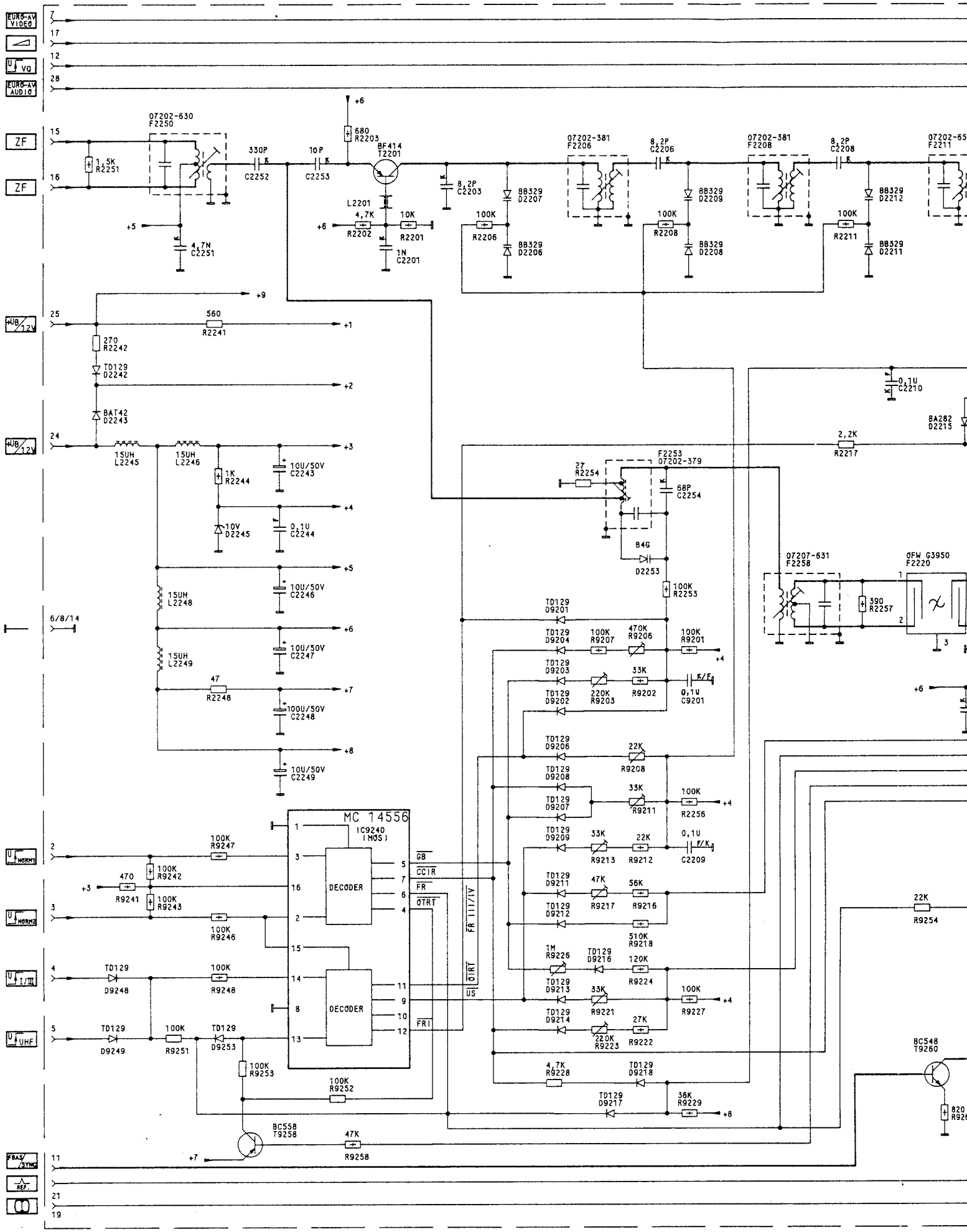


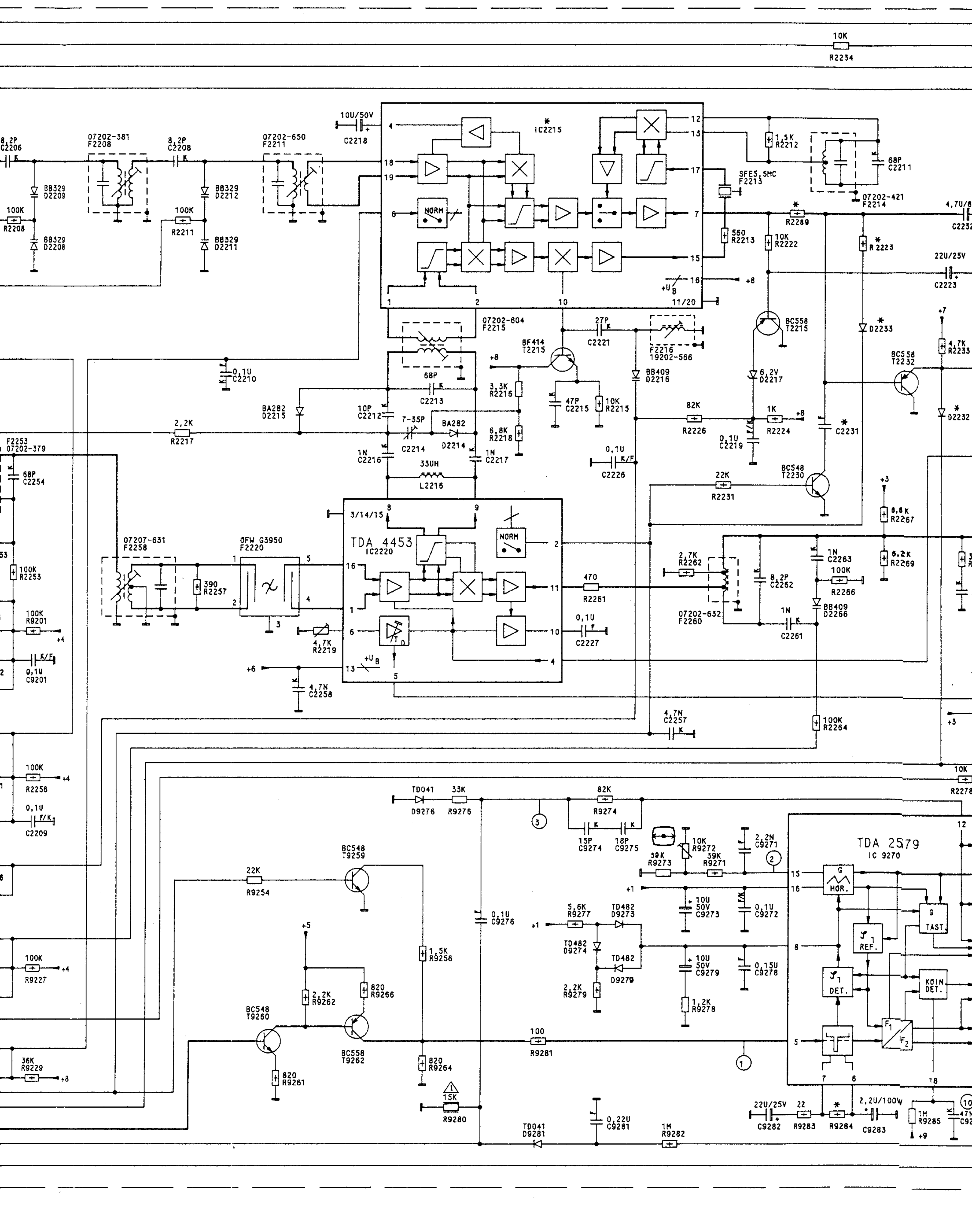
15
22
12P CC2021
BB505B D2021
9246-964 L2022
DT2021
180P CC2027
47P CC2028
UHF
BF579 CT2027
8,2P CC2030
1N CC2026
1K CR2023
1,5K CR2028
4,7K CR2027
1N CC2029
2,7P CC2023
470P CC2024
1N CC2032
10N CC2033
MP13
270 CR2030
MP12
0,47UH L2030
MP12A
1.5P CC2035
15 CR2035
G UHF
BF569 CT2035
680 CR2036
1N CC2036
2,2K CR2039
150 CR2038
33P CC2040
470P CC2039
6,8K CR2040
0 CR2041
1,5P CC2044
9246-960 L2042
33 CR2042
10P CC2047
BB505B D2047
0,5P C2045
2,2P CC2048
18K CR2048
MP10C
22 CR2043
5,6P CC2143
120 CR2140
0,6P CC2141
0 CR2146
9246-635 L2148
2,2P C2143
10N CC2049
0 CR2118
47U/16V C2046
470P CC2103
6,8K CR2104
18K CR2094
18K CR2087
0 CR2095
9246-947 L2086
1N CC2086
1N CC2092
18K CR2082
18K CR2086
18K CR2092
BB609A D2086
B4M CD2092
1N CC2067
BF994 CT2070
VHF
G2
D
S
G1
6,8P CC2083
B4M CD2081
0,5P CC2085
470P CC2095
47P CC2101
9246-956 L2070
BA682 CD2080
DT2088
BD111
9246-213 L2088
9246-213 L2095
DT2095
BB609A D2095
100K CR2070
1N CC2070
1N CC2080
BD1
9246-841 L2089
9246-215 L2096
1,5P CC2091
BA682 CD2096
BA682 CD2089
0,47UH L2078
1N CC2096
270 CR2072
150 CR2078
4,7K CR2081
1N CC2089
3,9 CR2090
6,8UH L2097
4,7K CR2089
4,7K CR2096
1,5K CR2073
1N CC2079
0 CR2098
10N CC2078
1N CC2072
10N CC2099
26
24
56P CC2115
9246-742 L2117
18K CR2115
MP10A
18K CR2119
18K CR2117
B2M CD2115
B2M CD2117
5,6P C2117
12
13
14
11
15
3
5
4
7/16
9
8
2
1
10
VHF
G VHF
ZF/UHF
ZF
UREF.
TUA2000-4
IC2110
MP9
MP8
7202-341 F2110
15P
180 R2102
0 CR2110
10N CC2102
1,5K CR2103
10N CC2110
MP7
27P CC2106
110 R2108
9246-942 L2108
8,2P CC2107
39P CC2105
MP16
100U 16V C2131
10N CC2132
16
MP14
MP15
14
12
ZF
ZF



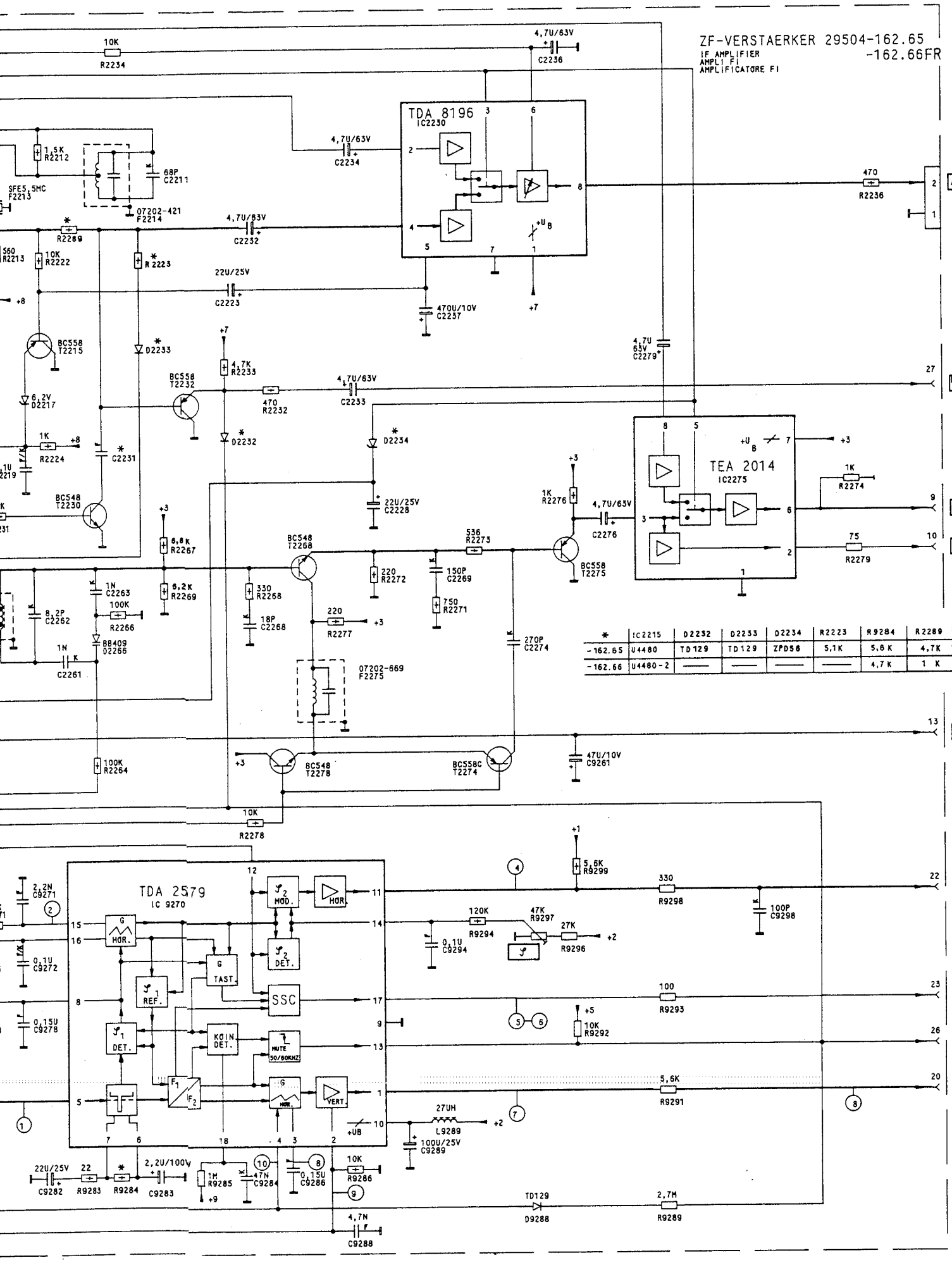
U UHF
22
U TUN
13
+44V
1
1N
CC2140
0
CR2143
8,2K
CR2141
2,2K
CR2144
ZPD5,6
D2147
1,5K
CR2149
22K
CR2142
47N
C2142
4,7U
63V
C2147
ZPD24
D2148
10N
CC2148
SDA 2216
IC2141
MOS
SPEICHER
MEMORY
MEMORIA
1N
CC2154
10N
CC2049
0
CR2118
47U/16V
C2046
10P
CC2047
2,2P
CC2048
18K
CR2048
5,6P
CC2143
120
CR2140
MP10C
0,6P
CC2141
0
CR2146
9246-635
L2148
22
CR2043
0,5P
C2045
2,2P
C2143
BB505B
D2047
U UHF
56P
CC2119
BB609A
D2119
6,8
CR2154
47N
C2156
22K
CR2155
0,1U
C2157
1N
CC2165
BC847BR
CT2156
4MHZ
Q2163
12P
56P
CC2115
MP10A
18K
CR2119
82M
CD2115
18K
CR2115
18K
CR2117
82M
CD2117
9246-742
L2117
5,6P
C2117
9246-762
L2121
9246-214
L2122
5,6P
CC2122
BA682
CD2124
1N
CC2124
1N
CC2125
2,2K
CR2124
G
VHF
7/16
TUA2000-4
IC2110
MP9
MP8
7202-341
F2110
15P
0
CR2110
10N
CC2110
MP7
9246-942
L2108
8,2P
CC2107
MP16
BC858BR
CT2151
22K
CR2151
22K
R2156
BC858BR
CT2152
10N
CC2159
22K
CR2152
22K
R2157
6,8
R2159
BC858BR
CT2153
22K
CR2153
22K
R2158
U I/III
F1 F2
I²C
G
PLL
SDA 3202-2
IC2161
1N
CC2170
1N
CC2171
10N
CC2173
1N
CC2174
U VHF
100U
16V
C2131
10N
CC2132
MP14
MP15
16
14
12
10
UB/12V
ZF
ZF
3
4
7
8
U VQ


U UHF
U TUN
+44V
+U8/5V
SDA
SCL
22
13
1
2
6
5
1N CC2140
0 CR2143
8,2K CR2141
2,2K CR2144
ZPD5,6 D2147
1,5K CR2149
22K CR2142
47N C2142
4,7U 63V C2147
ZPD24 D2148
10N CC2148
100P CC2149
100P CC2146
10N CC2049
0 CR2118
47U/16V C2046
1N CC2154
SDA 2216
IC2141
MOS
SPEICHER
MEMORY
MEMORIA
9246-635 L2148
2,2P C2143
56P CC2119
BB609A D2119
18K CR2119
B2M CD2115
18K CR2117
B2M CD2117
9246-762 L2121
9246-214 L2122
5,6P CC2122
BA682 CD2124
1N CC2124
1N CC2125
2,2K CR2124
6,8 CR2154
47N C2156
22K CR2155
0,1U C2157
1N CC2165
BC847BR CT2156
BC858BR CT2151
22K CR2151
22K R2156
BC858BR CT2152
22K CR2152
22K R2157
22K R2158
BC858BR CT2153
22K CR2153
10N CC2159
6,8 R2159
4MHZ Q2163
12P CC2163
10N CC2151
220U/10V C2152
10N CC2161
F1/F2
I²C
G
PLL
SDA 3202-2
IC2161
MP8
MP16
MP14
MP15
ZF
ZF
1N CC2170
1N CC2171
1N CC2173
1N CC2174
U I/III
U VHF
U VQ

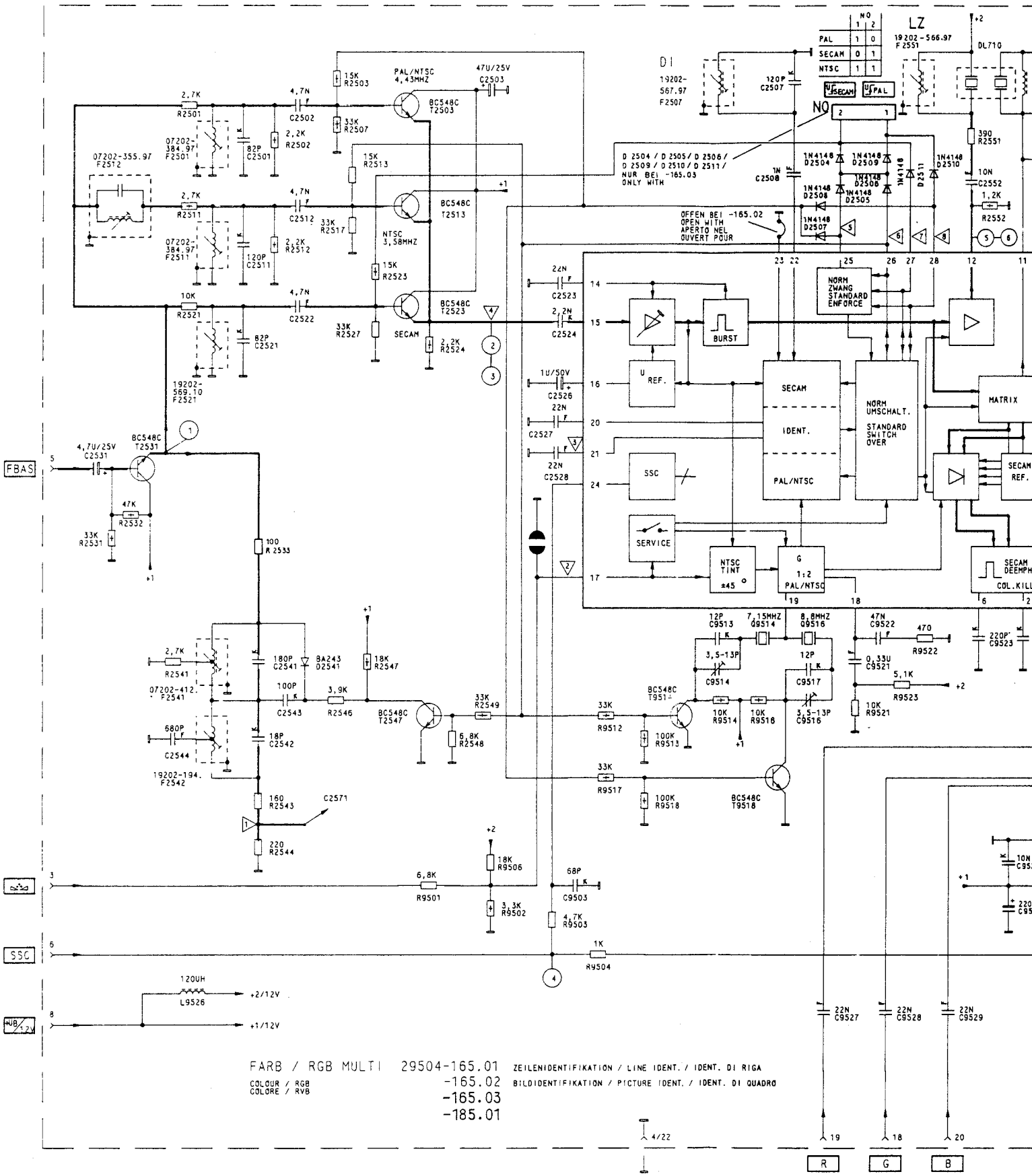

EURO-AV VIDEO
VQ
EURO-AV AUDIO
ZF
ZF
07202-630 F2250
1,5K R2251
330P C2252
10P C2253
680 R2203
BF414 T2201
L2201
4,7K R2202
10K R2201
1N C2201
4,7N C2251
8,2P C2203
100K R2206
BB329 D2207
BB329 D2206
07202-381 F2206
8,2P C2206
100K R2208
BB329 D2209
BB329 D2208
07202-381 F2208
8,2P C2208
100K R2211
BB329 D2212
BB329 D2211
07202-65 F2211
+UB/12V
560 R2241
270 R2242
TD129 D2242
BAT42 D2243
15UH L2245
15UH L2246
1K R2244
10V D2245
10U/50V C2243
0,1U C2244
10U/50V C2246
15UH L2248
10U/50V C2247
15UH L2249
47 R2248
100U/50V C2248
10U/50V C2249
0,1U C2210
BA282 D2215
2,2K R2217
27 R2254
F2253 07202-379
68P C2254
B4G D2253
100K R2253
07207-631 F2258
OFW G3950 F2220
390 R2257
6/8/14
TD129 D9201
TD129 D9204
100K R9207
470K R9206
100K R9201
TD129 D9203
TD129 D9202
220K R9203
33K R9202
K/F
0,1U C9201
TD129 D9206
22K R9208
TD129 D9208
TD129 D9207
33K R9211
100K R2256
TD129 D9209
33K R9213
22K R9212
0,1U C2209
TD129 D9211
47K R9217
56K R9216
TD129 D9212
510K R9218
1M R9226
TD129 D9216
120K R9224
TD129 D9213
33K R9221
100K R9227
TD129 D9214
220K R9223
27K R9222
4,7K R9228
TD129 D9218
TD129 D9217
36K R9229
22K R9254
BC548 T9260
820 R926
MC 14556
IC9240 (MOS)
DECODER
DECODER
GB
CCIR
FR
OTRT
FR III/IV
OTRT
US
FRI
U NORM1
U NORM2
U I/III
U UHF
100K R9247
100K R9242
470 R9241
100K R9243
100K R9246
TD129 D9248
100K R9248
TD129 D9249
100K R9251
TD129 D9253
100K R9253
100K R9252
BC558 T9258
47K R9258
FBAS/SYNC
REF.

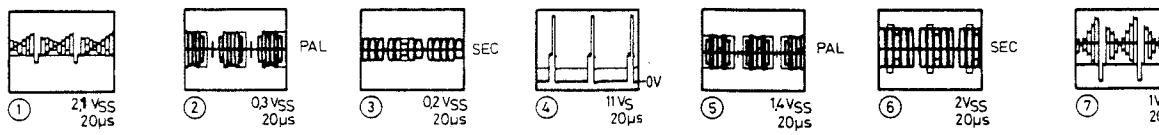


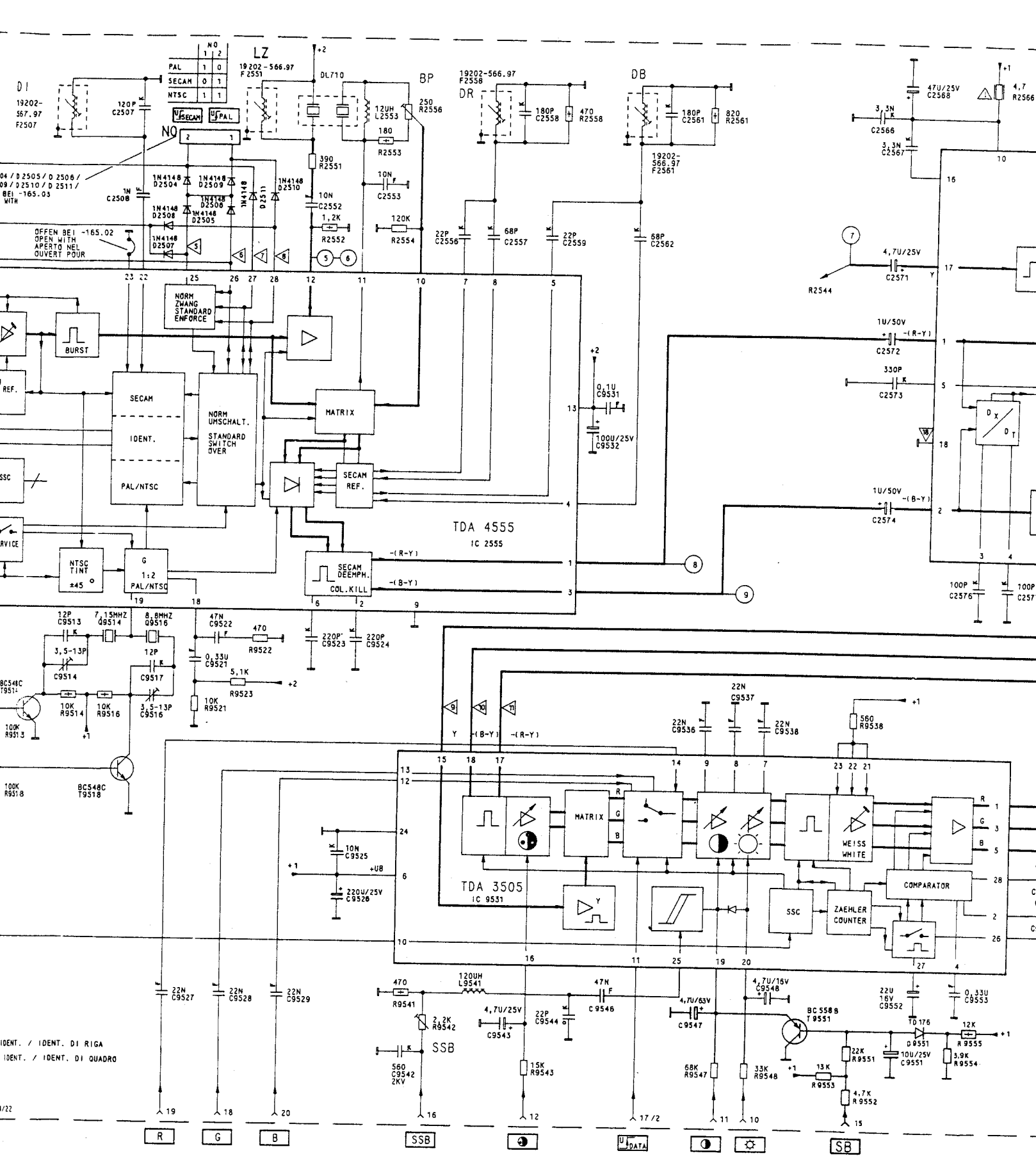
10K
R2234
10U/50V
C2218
IC2215
8,2P
C2206
07202-381
F2208
8,2P
C2208
07202-650
F2211
BB329
D2209
BB329
D2212
100K
R2208
100K
R2211
BB329
D2208
BB329
D2211
NORM
1,5K
R2212
68P
C2211
SFE5,5MC
F2213
07202-421
F2214
R2289
4,7U/
C2232
560
R2213
10K
R2222
R 2223
22U/25V
C2223
+U B
+8
07202-604
F2215
27P
C2221
F2216
19202-566
BC558
T2215
D2233
BF414
T2215
+8
0,1U
C2210
68P
C2213
3,3K
R2216
47P
C2215
10K
R2215
BB409
D2216
6,2V
D2217
BC558
T2232
4,7K
R2233
BA282
D2215
10P
C2212
7-35P
C2214
BA282
D2214
6,8K
R2218
82K
R2226
1K
R2224
0,1U
C2219
C2231
D2232
2,2K
R2217
F2253
07202-379
68P
C2254
1N
C2216
1N
C2217
33UH
L2216
0,1U
C2226
22K
R2231
BC548
T2230
+3
6,8K
R2267
3/14/15
TDA 4453
IC2220
07207-631
F2258
OFW G3950
F2220
100K
R2253
390
R2257
2,7K
R2262
8,2P
C2262
1N
C2263
100K
R2266
6,2K
R2269
470
R2261
07202-632
F2260
1N
C2261
BB409
D2266
100K
R9201
4,7K
R2219
0,1U
C2227
0,1U
C9201
+6
+U B
4,7N
C2258
4,7N
C2257
100K
R2264
100K
R2256
0,1U
C2209
TD041
D9276
33K
R9276
82K
R9274
10K
R2278
15P
C9274
18P
C9275
10K
R9272
2,2N
C9271
TDA 2579
IC 9270
BC548
T9259
39K
R9273
39K
R9271
22K
R9254
HOR.
TAST.
0,1U
C9276
5,6K
R9277
TD482
D9273
10U
50V
C9273
0,1U
C9272
REF.
+5
TD482
D9274
TD482
D9279
10U
50V
C9279
0,15U
C9278
100K
R9227
1,5K
R9256
DET.
KOIN
DET.
2,2K
R9262
820
R9266
2,2K
R9279
1,2K
R9278
BC548
T9260
BC558
T9262
100
R9281
36K
R9229
820
R9261
820
R9264
15K
R9280
0,22U
C9281
TD041
D9281
1M
R9282
22U/25V
C9282
22
R9283
R9284
2,2U/100V
C9283
1M
R9285
47N
C92
+9

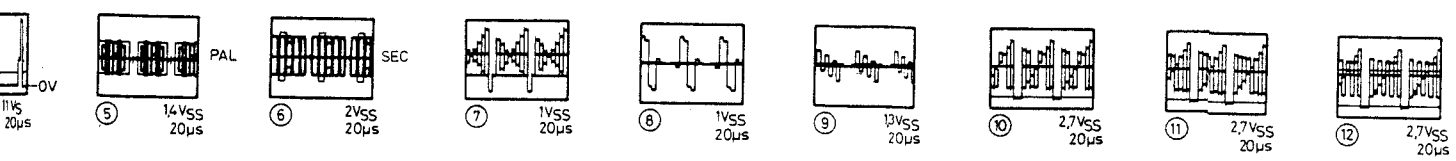


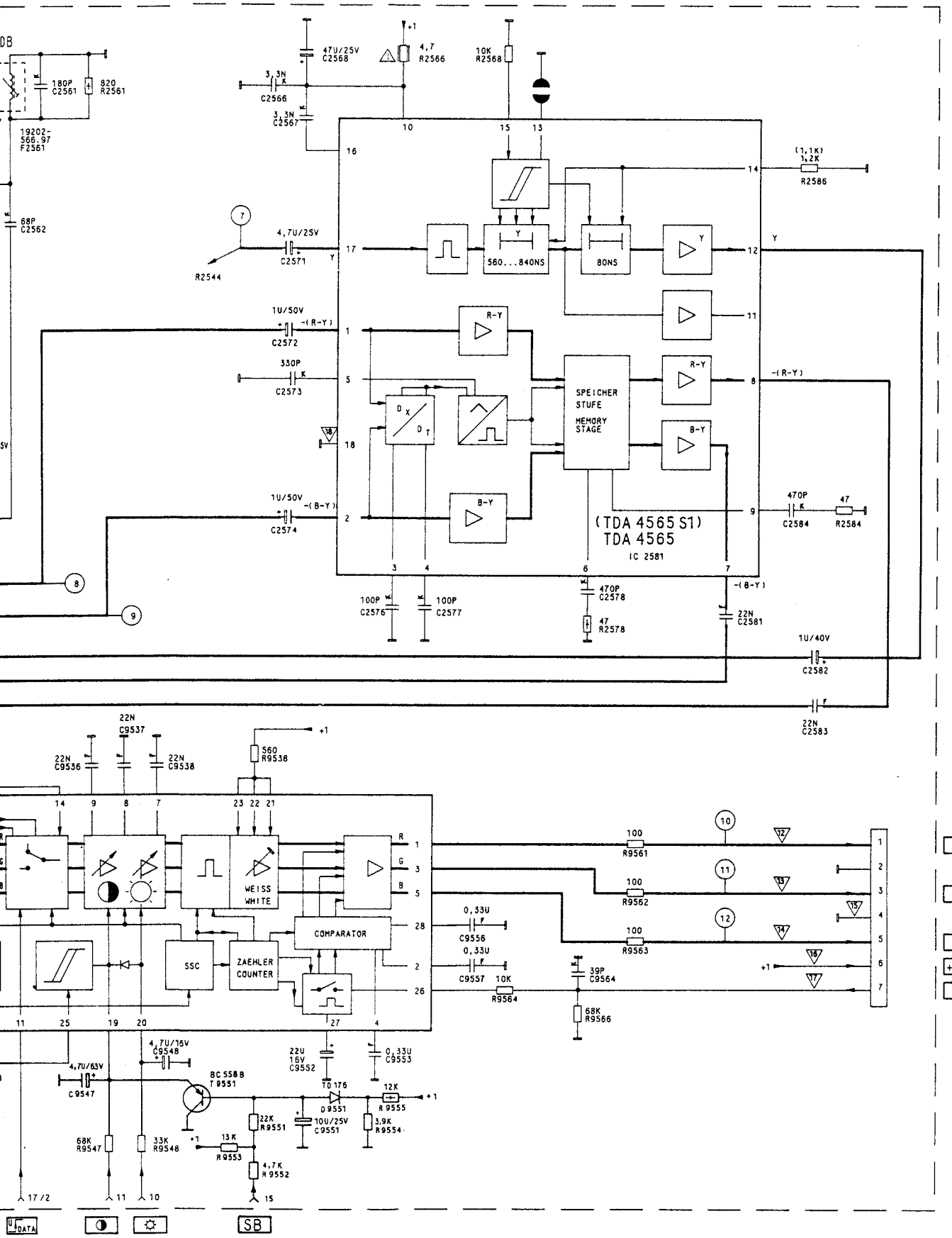
*	IC2215	D2232	D2233	D2234	R2223	R9284	R2289	C2231
-162.65	U4480	TD129	TD129	ZPD56	5,1K	5,6K	4,7K	10N
-162.66	U4480-2	——	——	——	——	4,7K	1 K	47N

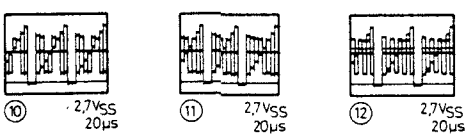

FARB / RGB MULTI 29504-165.01
-165.02
-165.03
-185.01
COLOUR / RGB
COLORE / RVB
ZEILENIDENTIFIKATION / LINE IDENT. / IDENT. DI RIGA
BILDIDENTIFIKATION / PICTURE IDENT. / IDENT. DI QUADRO
FBAS
SSC
SECAM
IDENT.
PAL/NTSC
NORM UMSCHALT.
STANDARD SWITCH OVER
MATRIX
BURST
U REF.
SSC
SERVICE
NTSC TINT
PAL/NTSC
NORM ZWANG STANDARD ENFORCE
R
G
B


① 2,1 VSS 20µs
② 0,3 VSS 20µs
PAL
③ 0,2 VSS 20µs
SEC
④ 11 VS 20µs
0V
⑤ 1,4 VSS 20µs
PAL
⑥ 2 VSS 20µs
SEC
⑦


TDA 4555
IC 2555
TDA 3505
IC 9531
SECAM
IDENT.
PAL/NTSC
NORM UMSCHALT.
STANDARD SWITCH OVER
MATRIX
BURST
NORM ZWANG STANDARD ENFORCE
SECAM REF.
SECAM DEEMPH. COL.KILL
NTSC TINT ±45°
G 1:2 PAL/NTSC
WEISS WHITE
COMPARATOR
SSC
ZAEHLER COUNTER
SSB
R
G
B
SB


PAL
SEC
⑤ 1,4VSS 20µs
⑥ 2VSS 20µs
⑦ 1VSS 20µs
⑧ 1VSS 20µs
⑨ 13VSS 20µs
⑩ 2,7VSS 20µs
⑪ 2,7VSS 20µs
⑫ 2,7VSS 20µs


180P C2561
820 R2561
19202-566.97 F2561
68P C2562
47U/25V C2568
4,7 R2566
10K R2568
3,3N C2566
3,3N C2567
(1,1K) 1,2K R2586
4,7U/25V C2571
R2544
560...840NS
80NS
1U/50V -(R-Y) C2572
330P C2573
SPEICHER STUFE MEMORY STAGE
1U/50V -(B-Y) C2574
(TDA 4565 S1) TDA 4565 IC 2581
470P C2584
47 R2584
100P C2576
100P C2577
470P C2578
47 R2578
22N C2581
1U/40V C2582
22N C2583
22N C9537
22N C9536
22N C9538
560 R9538
WEISS WHITE
COMPARATOR
SSC
ZAEHLER COUNTER
100 R9561
100 R9562
100 R9563
0,33U C9556
0,33U C9557
10K R9564
39P C9564
68K R9566
4,7U/16V C9548
4,7U/63V C9547
BC 558 B T 9551
22U 16V C9552
0,33U C9553
TD 176 D 9551
12K R 9555
22K R9551
10U/25V C9551
3,9K R9554
68K R9547
33K R9548
13K R9553
4,7K R 9552
R
G
B
+12V
SW
BILDROHRLATTE CRT BASE
SB


10 2,7VSS 20µs
11 2,7VSS 20µs
12 2,7VSS 20µs

1. **Weißabgleich**
   - FuBK-Testbild einspeisen.
   - ◑ min., ☼ nom, ◑ max. einstellen.
   - Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

2. **Sperrpunktabgleich**
   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen.
   - ◑ min., ☼ nom., ◑ min., einstellen.
   - Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140-150V.

3. **Einstellungen im Farbkanal**
   - PAL-Testbild einspeisen.
   - FK nom., H nom. K max. einstellen.
   - IC-Pin 28 vom TDA 4555 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4555 mit Masse verbinden.
   - Mit Trimmer C9516 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
   - NTSC-Testbild 3.5 MHz einspeisen.
   - IC-Pin 26 vom TDA 4555 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4555 mit Masse verbinden.
   - Mit Trimmer C9514 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - SECAM-Testbild einspeisen.
   - Tastkopf an Pin 1 vom TDA 4555 anschließen, mit Spule DR Nullinie des (R-Y)-Signals auf Zeilenniveau bringen.
   - Tastkopf an Pin 3 vom TDA 4555 anschließen, mit Spule DB Nullinie des (B-Y)-Signals auf Zeilentastniveau bringen.
   - Spule F 2521 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

4. **Strahlstrom**
   - Der Regler "SSB" wird werkseitig auf Mittelwert eingestellt.
   - Sollte bei vollem Kontrast und normal eingestellter Helligkeit in Spitzenweißfeldern des Sendertestbildes eine Defokussierung (starke Unschärfe bei weißen Schriftzeichen in Bildröhrenmitte) auftreten, so muß mit Regler "SSB" auf scharfe Schriftkonturen eingestellt werden (Reduzierung des Spitzenstrahlstromes).

1. **White level adjustment**
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to max.
   - Adjust presets VG and VB (CRT socket board) so that the picture does not show any colouration.

2. **Adjustment of cut-off point**
   Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.
   To check cut-off point (oscilloscope required), proceed as follows:
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to min.
   - Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).
     The black leves of the three cathode signals should be 140-150V.

3. **Adjustments in chroma channel**
   - Display PAL test pattern.
   - Adjust colour level and brightness to nominal value, contrast to maximum.
   - Connect pin 28 of IC TDA 4555 to +12V supply.
   - Connect pin 17 to IC TDA 4555 to chassis.
   - Adjust trimmer C9516 for stationary pattern in colour bars.
   - Remove wire links.
   - Connect test probe to test point MP 12. LBring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
   - Display 3.5 MHz NTSC test pattern.
   - Connect pin 26 of IC TDA 4555 to +12V supply.
   - Connect pin 17 of IC TDA 4555 to chassis.
   - Adjust trimmer C 9514 for stationary pattern in colour bars.
   - Remove wire links.
   - Display SECAM test pattern.
   - Connect test probe to pin 1 of IC TDA 4555.
   - Use coil DR to align zero level of the (R-Y) signal with the line black level.
   - Connect test probe to pin 3 of IC TDA 4555.
   - Use coil DB to align zero level of the (B-Y) signal with the line black level.
   - Adjust coil F2521 so that the (B-Y) signal is free of overshooting.

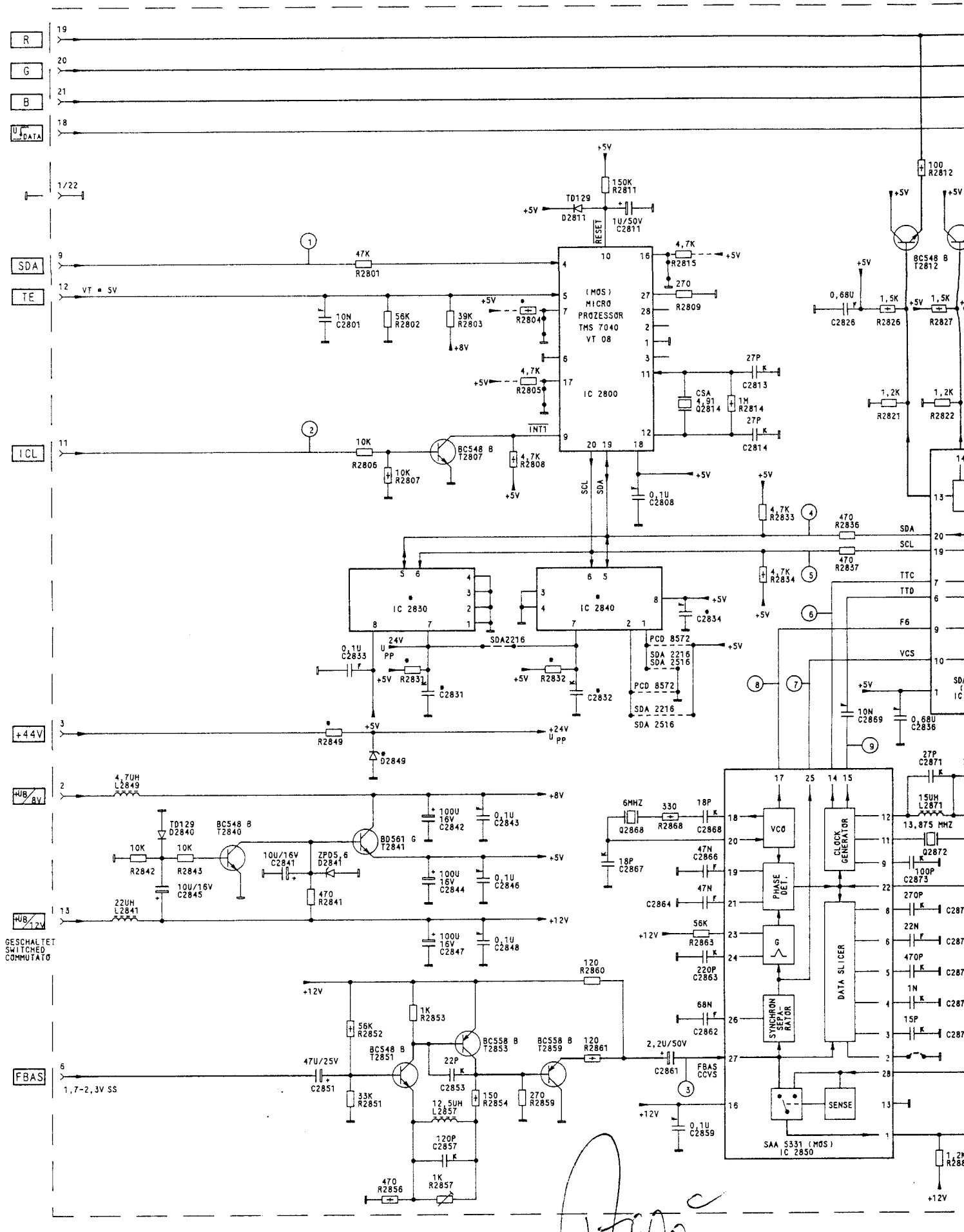
4. **Beam current**
   - During manufacture the control "SSB" is adjusted to middle value.
   - If during max. contrast and normal brightness adjustment the peak-white fields of the test picture should be defocused (in the middle of the screen white letters are very distorted) the contours of the letters must be adjusted using control "SSB" (reducing the peak beam current).

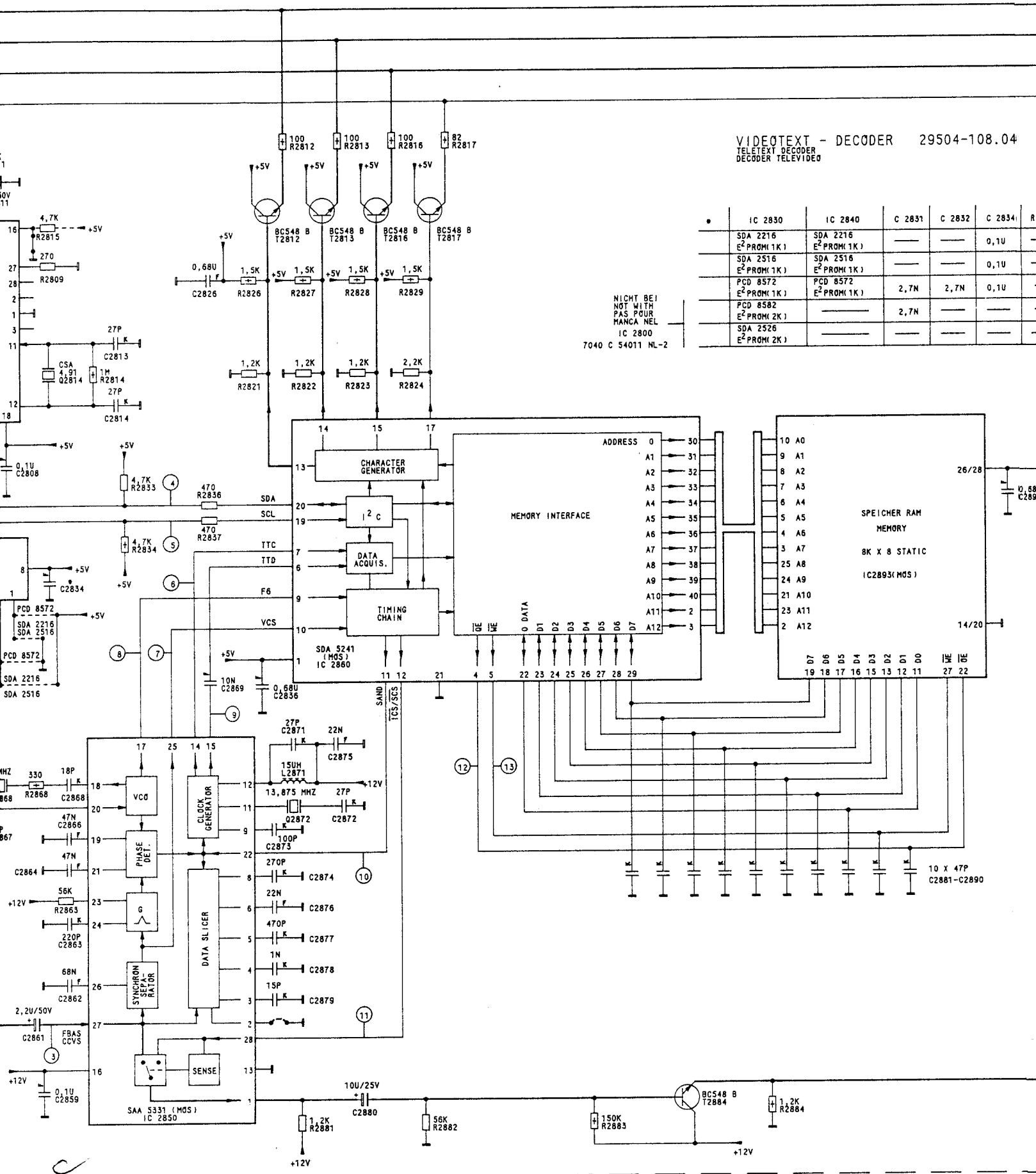
1. **Taratura del bianco**
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al massimo.
   - Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

2. **Taratura del punto di blocco**
   Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.
   Controllo del punto di blocco (é necessario un oscilloscopio):
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al minimo.
   - Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).
     Valore nero dei tre segnali catodici ca. 140-150V.

3. **Regolazione del canale colore**
   - Applicare un monoscopio PAL.
   - Regolare FK e H sul valore nominale, K al massimo.
   - Sull'integrato TDA 4555 collegare pin 28 a +12V.
   - Sull'integrato TDA 4555 collegare pin 17 a massa.
   - Con C9516 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
   - Applicare un monoscopio NTSC 3,5 MHz.
   - Sull'integrato TDA 4555 collegare pin 26 a +12V.
   - Sull'integrato TDA 4555 collegare pin 17 a massa.
   - Con C9514 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Applicare un monoscopio SECAM.
   - Collegare la sonda al pin 1 dell'integrato TDA 4555, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
   - Collegare la sonda al pin 3 dell'integrato TDA 4555, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
   - La bobina F2581 applicarla cosi in modo che il segnale (B-Y) sia chiaro.

4. **Corrente catodica**
   - Il regolatore "SSB" viene regolato già in fabbrica su valori medi.
   - Se con il contrasto al massimo ed una regolazione normale della luminosità dovesse presentarsi una sfocalizzazione nei campi ultrabianchi del cinescopio (le lettere bianche al centro del cinescopio risultano molto sfuocate), agire sul regolatore "SSB" per mettere a fuoco i contorni delle lettere (riducendo la corrente catodica di picco).


R
G
B
U DATA
1/22
SDA
TE
ICL
+44V
+U8/8V
+U8/12V
FBAS
GESCHALTET
SWITCHED
COMMUTATO
1,7-2,3V SS
VT = 5V
(MOS)
MICRO
PROZESSOR
TMS 7040
VT 08
IC 2800
IC 2830
IC 2840
SAA 5231 (MOS)
IC 2850
PCD 8572
SDA 2216
SDA 2516
SDA2216
BC548 B
BC558 B
BD561 G
TD129
ZPD5,6
VCO
PHASE DET.
G
SYNCHRON SEPA-RATOR
DATA SLICER
CLOCK GENERATOR
SENSE
SCL
SDA
INT1
RESET
TTC
TTD
F6
VCS
FBAS CCVS
+5V
+8V
+12V
+24V U PP
6MHZ
13,875 MHZ



*	IC 2830	IC 2840	C 2831	C 2832	C 2834	R
	SDA 2216 E^2PROM(1K)	SDA 2216 E^2PROM(1K)	——	——	0,1U	—
	SDA 2516 E^2PROM(1K)	SDA 2516 E^2PROM(1K)	——	——	0,1U	—
	PCD 8572 E^2PROM(1K)	PCD 8572 E^2PROM(1K)	2,7N	2,7N	0,1U	—
	PCD 8582 E^2PROM(2K)	——	2,7N	——	——	—
	SDA 2526 E^2PROM(2K)	——	——	——	——	—

VIDEOTEXT - DECODER 29504-108.04

TELETEXT DECODER
DECODER TELEVIDEO

*	IC 2830	IC 2840	C 2831	C 2832	C 2834	R 2831	R 2832	R 2849	D 2849	R 2804
	SDA 2216 E^2PROM(1K)	SDA 2216 E^2PROM(1K)	——	——	0,1U	——	——	4,7K	ZPD 24	——
	SDA 2516 E^2PROM(1K)	SDA 2516 E^2PROM(1K)	——	——	0,1U	——	——	——	——	——
	PCD 8572 E^2PROM(1K)	PCD 8572 E^2PROM(1K)	2,7N	2,7N	0,1U	10K	10K	——	——	——
	PCD 8582 E^2PROM(2K)	——	2,7N	——	——	10K	——	——	——	4,7K
	SDA 2526 E^2PROM(2K)	——	——	——	——	——	——	——	——	4,7K

NICHT BEI
NOT WITH
PAS POUR
MANCA NEL
IC 2800
7040 C 54011 NL-2

100 R2812 · 100 R2813 · 100 R2816 · 82 R2817

+5V

BC548 B T2812 · BC548 B T2813 · BC548 B T2816 · BC548 B T2817

1,5K R2827 · 1,5K R2828 · 1,5K R2829

1,2K R2822 · 1,2K R2823 · 2,2K R2824

CHARACTER GENERATOR

I²C

DATA ACQUIS.

TIMING CHAIN

SDA 5241 (MOS) IC 2860

MEMORY INTERFACE

ADDRESS 0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12

SDA · SCL · TTC · TTD · F6 · VCS

SPEICHER RAM MEMORY
8K X 8 STATIC
IC2893(MOS)

0,68U C2893 · 0,68U C2836

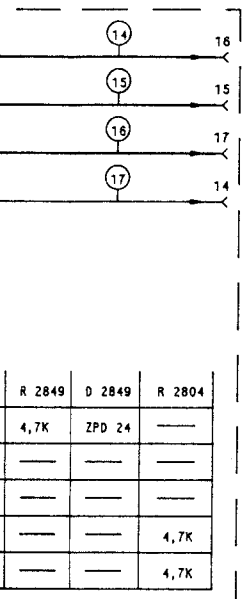
27P C2871 · 22N C2875 · 15UH L2871 · 13,875 MHZ Q2872 · 27P C2872 · 100P C2873

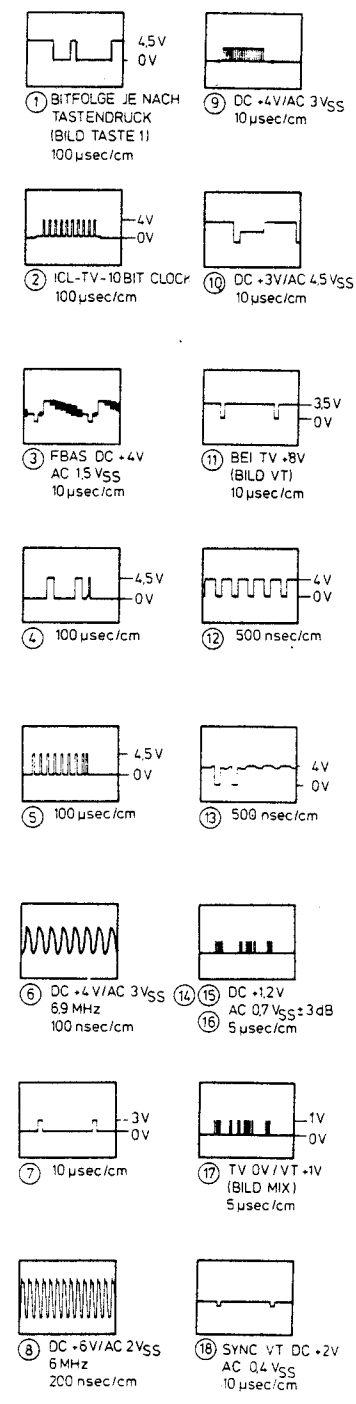
270P C2874 · 22N C2876 · 470P C2877 · 1N C2878 · 15P C2879

10 X 47P C2881-C2890

10U/25V C2880 · 1,2K R2881 · 56K R2882 · 150K R2883 · BC548 B T2884 · 1,2K R2884

+12V





VT-Nachrüstung und Anpassungsabgleich

Beim Nachrüsten der Videotext-Steckkarte muß die Videotext-Steckerplatte entfernt werden

Der Einsteller R 2857 steht bei Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca. 2 dB). Treten trotz einwandfreiem Antennensignal Zeichenfehler auf, R 2857 langsam nach rechts verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da Fehlerhäufigkeit wieder zunehmen kann.

Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

VT (GB: Teletext) instalation and matching adjustment

When fitting the Videotext (GB: Teletext) plug-in board, the Videotext plug plate has to be removed

The control R 2857 is set in the fully anti clockwise position when the unit is delivered (smallest treble boost: approx. 2 dB). If, with a perfect aerial signal character faults occur, turn R 2857 slowly clockwise until the faults disappear. Do not turn R 2875 up any further as error rate may increase again.

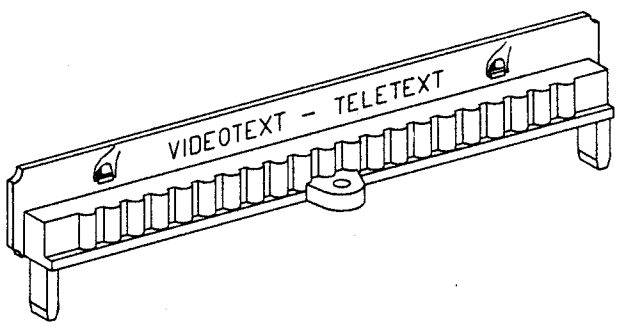
Page 199 must always be selected anew during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

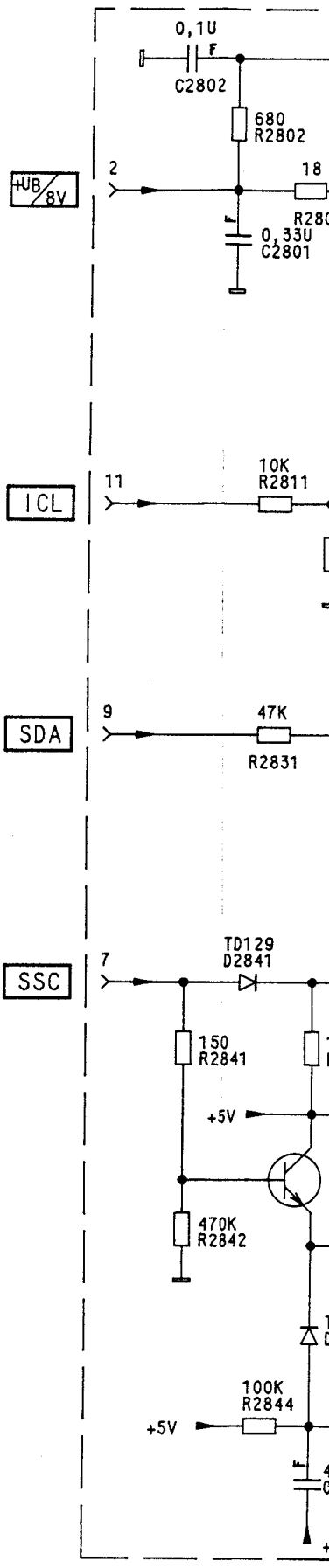
Montaggio e taratura d'addatamento della scheda ad innesto

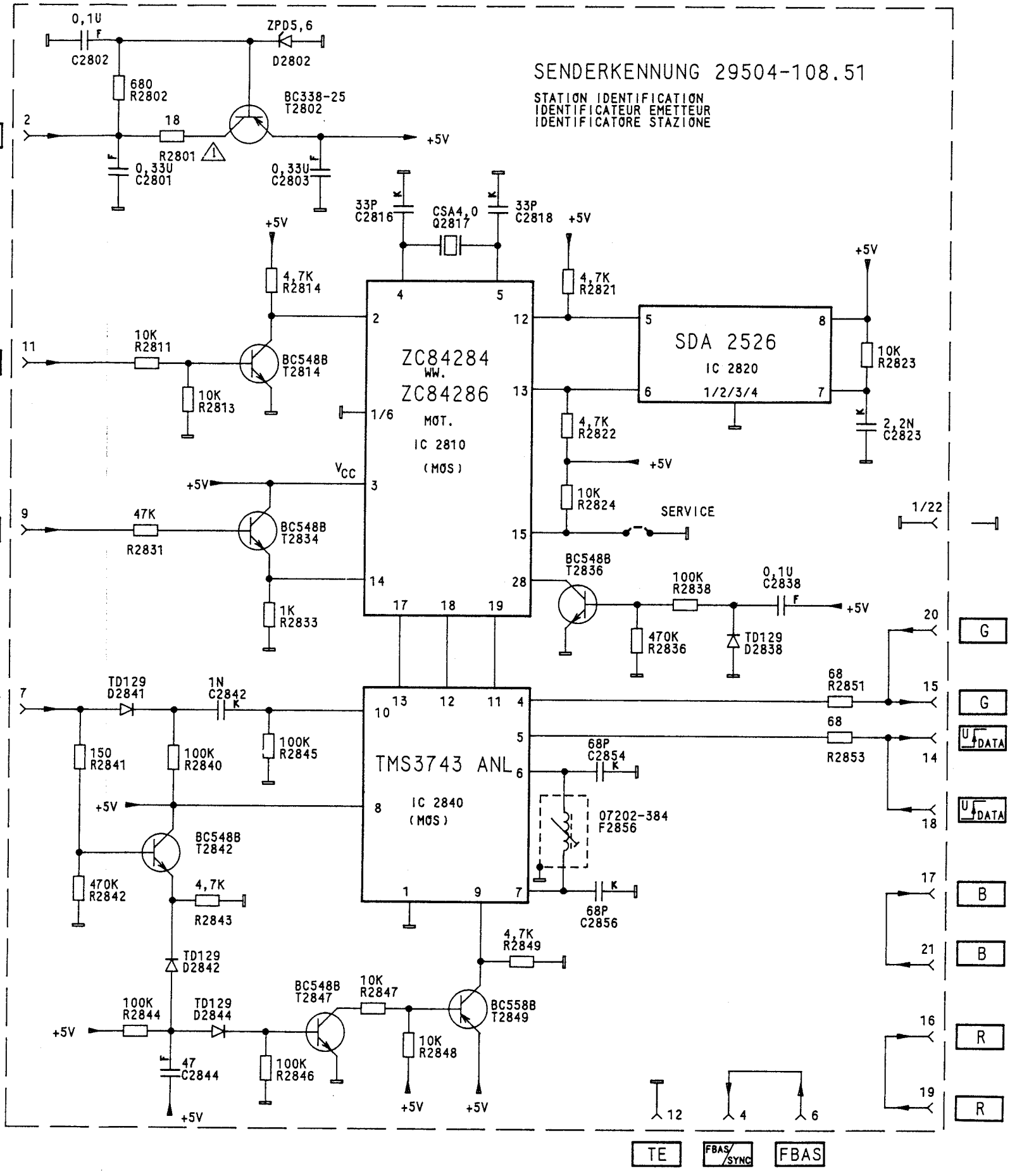
Nel montare la scheda televideo togliere la piastrina televide

Il regolatore R 2857 viene fornito col cursore girato completamente all'estrema sinistra (minima esaltazione delle alte frequenze, ca. 2 dB). Se si manifestano errori di carattere, nonostante un perfetto segnale d'antenna, girare lentamente il cursore di R 2857 verso destra fino ad eliminare gli errori. Non girarlo oltre può riaumentare la presenza degli errori.

Durante la taratura è necessario selezionare ripetutamente la pagina 199, poiché solo così è possibile una nuova immissione della pagina ed una valutazione della soglia degli errori.






SENDERKENNUNG 29504-108.51
STATION IDENTIFICATION
IDENTIFICATEUR EMETTEUR
IDENTIFICATORE STAZIONE
0,1U C2802
ZPD5,6 D2802
680 R2802
BC338-25 T2802
18 R2801
0,33U C2801
0,33U C2803
+5V
33P C2816
CSA4,0 Q2817
33P C2818
4,7K R2814
4,7K R2821
10K R2811
BC548B T2814
10K R2813
ZC84284 WW. ZC84286
MOT. IC 2810 (MOS)
SDA 2526 IC 2820 1/2/3/4
10K R2823
2,2N C2823
4,7K R2822
10K R2824
SERVICE
1/22
47K R2831
BC548B T2834
1K R2833
BC548B T2836
100K R2838
0,1U C2838
470K R2836
TD129 D2838
TD129 D2841
1N C2842
150 R2841
100K R2840
100K R2845
68 R2851
68 R2853
TMS3743 ANL
IC 2840 (MOS)
68P C2854
07202-384 F2856
68P C2856
BC548B T2842
470K R2842
4,7K R2843
TD129 D2842
4,7K R2849
BC548B T2847
10K R2847
BC558B T2849
100K R2844
TD129 D2844
47 C2844
100K R2846
10K R2848
G
U DATA
B
R
TE
FBAS/SYNC
FBAS

Service per I²C-Bus

Se l'apparecchio funziona erroneamente e ció non dipende nè dall'alimentatore, nè dall'alta tensione o dalla deflessione, occorre controllare il bus I²C secondo la tabella ; prima di effettuare altri lavori di assistenza come da tabella 2.

Il microcomputer nell'unitá di comando IC 811 fornisce le istruzioni per tuner, televideo, T 111 (alla presa EURO/SCART) attraverso il bus I²C.

Nota:

Spegnere l'apparecchio durante la sostituzione di un modulo! Non togliere il modulo memmeno con apparecchio in posizione d'attesa! Fare attenzione alle norme MOS.

Tabella 1

Misura	Valore di misura	Punto di misura	Possibili guasti
+ H	5 V	Pin 3, IC 811	D 671, IC 673, IC 811
Cadenza 4 MHz Reset	4 MHz, 3 V_{pp} 4 V_{pp} solo all'atto dell'accensione	Pin 5, IC 811 Pin 28	F 808, IC 811 D 804, T 806, IC 811
Bus I²C	5 V_{pp}	Pin 19, 18, IC 811	I dati nel bus I²C sono presenti anche senza comando da TP o immissione tramite tastiera. Se i dati mancano: interrompere le linee SDA e SCL. Se ora i dati sono presenti, nel bus I²C c'è un sovraccarico. **Possibili cause del guasto:** tuner, televideo, IC 811, T 111

Tabella 2

Possibili guasti nell'apparecchio

Guasto	Possibile causa	Valore de misura	Punto di misura
Non é possibile sintonizzare la frequenza	Tuner (memoria, PLL)	+ 0,2–30 V	Pin 13, 15
	+ B' + H + A	+ 11,5 V + 5 V ca. + 44 V	Tuner Pin 16 Tuner Pin 2 Tuner Pin 1
Nessuna funzione viene accettata	+ H, IC 811	+ 5 V	IC 811 Pin 3
Indicazione LED errata	IC 811		
	F 808	4 MHz, 3 V	IC 811 Pin 5
Manca l'audio	Nessun riconoscimento di coincienza (FI/SYNC)	>3 V	IC 811 Pin 9
	IC 365	+ M/ca. 12 V	IC 365 Pin 2
Non viene commutato il programma con TP	Preamplif. IR	Segnale IR 5 V_{pp}	IC 811 Pin 2
Manca il valore analogico per luminosità contrasto contrasto colore	 IC 811, IC 820 IC 811, IC 820 IC 811, IC 820	 1-3 V 2-4 V 2-4 V	 Colore/RGB Pin 10 Colore/RGB Pin 11 Colore/RGB Pin 12
Accendendo con tasto rete l'apparecchio commuta in posizione d'attesa	T 801	All'atto dell'accensione brevemente «LOW» (collettore).	IC 811 Pin 12
Nessun segnale FBAS	Tuner	ca. 10 V	Tuner Pin 3
	SINCR. FI	ca. 10 V	SYNCR. FI Pin 12
	+ B, + B'	+ 12 V	SYNCR. FI Pin 25, 24
Manca la funzione Televideo	+ B, + B'	+ 11,5 V	VT pin 2, 13
	bus I²C SDA	5V_{pp}	VT pin 9
	ICL	5V_{pp}	VT pin 11

Service checks on the I²C bus

If faluts occur in the set which cannot be attri
deflection system, the I²C bus should be checl
carried out using Table 2.

Via the I²C bus the microcomputer in the con
tuner, videotext (teletext) T 111 (to the EURO-

Note:

When a module is being changed, the set shou
not be unplugged even in the »standby« mode!

Table 1

Test	Test Figures	Test P
+ H	5 V	Pin 3, I
4 MHz clock Reset	4 MHz, 3 V_{pp} 4 V_{pp} only at moment of switch on	Pin 5, I Pin 28
I²C bus	5 V_{pp}	Pin 19,

Table 2

Possible faults which can occur in any part of th

Fault	Possible Cause	T
No frequency tuning	Tuner (memory, PLL)	+
	+ B' + H + A	
No functions appecpted	+ H, IC 811	
Incorrect LED indication	IC 811	
	F 808	
No sound	No coincidence identification (IF/SYNC.)	
	IC 365	
Programme cannot be change with remote control	IR-preamplifier	
No analog signals for Brightness Contrast Colour contrast	 IC 811, IC 820 IC 811, IC 820 IC 811, IC 820	
Set switches to standby mode on operation of power button	T 801	
No CCVS	Tuner	
	IF SYNC.	
	+ B, + B'	
No Videotext (Teletext)	+ B, + B'	
	I²C bus SDA	5
	ICL	5

nde nè dall'alimentatore, nè dall'alta
²C secondo la tabella ; prima di effet-

le istruzioni per tuner, televideo, T

odulo! Non togliere il modulo mem-
zione alle norme MOS.

ra	Possibili guasti
	D 671, IC 673, IC 811
	F 808, IC 811 D 804, T 806, IC 811
1	I dati nel bus I²C sono presenti anche senza comando da TP o immissione tramite tastiera. Se i dati mancano: interrompere le linee SDA e SCL. Se ora i dati sono presenti, nel bus I²C c'è un sovraccarico. **Possibili cause del guasto:** tuner, televideo, IC 811, T 111

misura	Punto di misura
V	Pin 13, 15
V	Tuner Pin 16 Tuner Pin 2 Tuner Pin 1
	IC 811 Pin 3
V	IC 811 Pin 5
	IC 811 Pin 9
2 V	IC 365 Pin 2
R 5 V_{pp}	IC 811 Pin 2
	Colore/RGB Pin 10 Colore/RGB Pin 11 Colore/RGB Pin 12
ll'accensio- ente «LOW» e).	IC 811 Pin 12
	Tuner Pin 3
	SYNCR. FI Pin 12
	SYNCR. FI Pin 25, 24
	VT pin 2, 13
	VT pin 9
	VT pin 11

Service checks on the I²C bus

If faluts occur in the set which cannot be attributed to the power supply unit, the EHT or the deflection system, the I²C bus should be checked using Table 1 before further service work is carried out using Table 2.

Via the I²C bus the microcomputer in the control unit IC 811 supplies control signals for the tuner, videotext (teletext) T 111 (to the EURO-AV-socket).

Note:

When a module is being changed, the set should be switched off completely. Modules must not be unplugged even in the »standby« mode! Observe MOS handling precautions.

Table 1

Test	Test Figures	Test Point	Possible faults
+ H	5 V	Pin 3, IC 811	D 671, IC 673, IC 811
4 MHz clock Reset	4 MHz, 3 V_{pp} 4 V_{pp} only at moment of switch on	Pin 5, IC 811 Pin 28	F 808, IC 811 D 804, T 806, IC 811
I²C bus	5 V_{pp}	Pin 19, 18, IC 811	The I²C bus data are present even without input from the remote control or keyboard. If data are absent disconnect the SDA and SCL lines. If data are then present on the I²C bus, the I²C bus is overloaded. Possible faults: Tuner, Videotext, IC 811, (Teletext), T 111

Table 2

Possible faults which can occur in any part of the set

Fault	Possible Cause	Test Figure	Test Point
No frequency tuning	Tuner (memory, PLL)	+ 0,2–30 V	Pin 13, 15
	+ B' + H + A	+ 11.5 V + 5 V ca. + 44 V	Tuner pin 16 Tuner pin 2 Tuner pin 1
No functions appecpted	+ H, IC 811	+ 5 V	IC 811 pin 3
Incorrect LED indication	IC 811		
	F 808	4 MHz, 3 V	IC 811 pin 5
No sound	No coincidence identification (IF/SYNC.)	>3 V	IC 811 pin 9
	IC 365	+ M/about 12 V	IC 365 pin 2
Programme cannot be change with remote control	IR-preamplifier	IR-signal 5 V_{pp}	IC 811 pin 2
No analog signals for Brightness Contrast Colour contrast	IC 811, IC 820 IC 811, IC 820 IC 811, IC 820	1-3 V 2-4 V 2-4 V	Colour/RGB, pin 10 Colour/RGB, pin 11 Colour/RGB, pin 12
Set switches to standby mode on operation of power button	T 801	Short-time "LOW" on switch-on (collector)	IC 811, pin 12
No CCVS	Tuner	approx. 10 V	Tuner, pin 3
	IF SYNC.	approx. 10 V	IF-SYNC., pin 12
	+ B, + B'	+ 11.5 V	IF-SYNC., pin 25, 24
No Videotext (Teletext)	+ B, + B'	+ 11.5 V	VT pin 2, 13
	I²C bus SDA	5 V_{pp}	VT pin 9
	ICL	5 V_{pp}	VT pin 11

Service am I²C-Bus

Bei Fehlfunktionen des
rückzuführen sind, ist de
nach Tabelle 2 durchgefi
Der µComputer in der Be
(zur EURO-AV-BUCHSE)
Hinweis:
Bei Modulwechsel ist da
Auch in Stellung »Bereit

Tabelle 1

Messung	Me
+ H	5 V
4 MHz Takt Reset	4 M 4 V sch
I²C Bus	5 V

Tabelle 2

Mögliche Fehlerarten de

Fehler	M
Keine Frequenzabstimmung	Tu
	+ + +
Keine Bedienfunktion	+
LED falsche Anzeige	IC
	F
Kein Ton	K ke (Z
	IC
Keine Programmschaltung mit TP	IF
Keine Analogwerte für Helligkeit Kontrast Farbkontrast	IC IC IC
Beim Einschalten mit der Netztaste schaltet das Gerät auf Bereitschaft.	Ta
Kein FBAS-Signal	Tu
	ZF
	+
Kein Videotext	+
	I²C
	IC

us

h cannot be attributed to the power supply unit, the EHT or the s should be checked using Table 1 before further service work is

puter in the control unit IC 811 supplies control signals for the 11 (to the EURO-AV-socket).

nged, the set should be switched off completely. Modules must »standby« mode! Observe MOS handling precautions.

gures	Test Point	Possible faults
	Pin 3, IC 811	D 671, IC 673, IC 811
3 V_{pp} ly at mo- switch on	Pin 5, IC 811 Pin 28	F 808, IC 811 D 804, T 806, IC 811
	Pin 19, 18, IC 811	The I^2C bus data are present even without input from the remote control or keyboard. If data are absent disconnect the SDA and SCL lines. If data are then present on the I^2C bus, the I^2C bus is overloaded. Possible faults: Tuner, Videotext, IC 811, (Teletext), T 111

ur in any part of the set

le Cause	Test Figure	Test Point
memory, PLL)	+ 0,2–30 V	Pin 13, 15
	+ 11.5 V + 5 V ca. + 44 V	Tuner pin 16 Tuner pin 2 Tuner pin 1
811	+ 5 V	IC 811 pin 3
	4 MHz, 3 V	IC 811 pin 5
cidence iden- on (IF/SYNC.)	>3 V	IC 811 pin 9
	+ M/about 12 V	IC 365 pin 2
mplifier	IR-signal 5 V_{pp}	IC 811 pin 2
IC 820 IC 820 IC 820	1-3 V 2-4 V 2-4 V	Colour/RGB, pin 10 Colour/RGB, pin 11 Colour/RGB, pin 12
	Short-time "LOW" on switch-on (collector)	IC 811, pin 12
	approx. 10 V	Tuner, pin 3
C.	approx. 10 V	IF-SYNC., pin 12
+ B'	+ 11.5 V	IF-SYNC., pin 25, 24
B'	+ 11.5 V	VT pin 2, 13
SDA	$5V_{pp}$	VT pin 9
	$5V_{pp}$	VT pin 11

Service am I^2C-Bus

Bei Fehlfunktionen des Gerätes, die nicht auf Netzteil, Hochspannung und Ablenkung zurückzuführen sind, ist der I^2C-Bus gemäß Tabelle 1 zu prüfen, bevor weitere Servicearbeiten nach Tabelle 2 durchgeführt werden.
Der µComputer in der Bedieneinheit IC 811 liefert Steuerbefehle für Tuner, Videotext, T 111 (zur EURO-AV-BUCHSE) über den I^2C Bus.
Hinweis:
Bei Modulwechsel ist das Gerät generell auszuschalten!
Auch in Stellung »Bereitschaft« darf kein Modul gezogen werden! MOS-handling beachten.

Tabelle 1

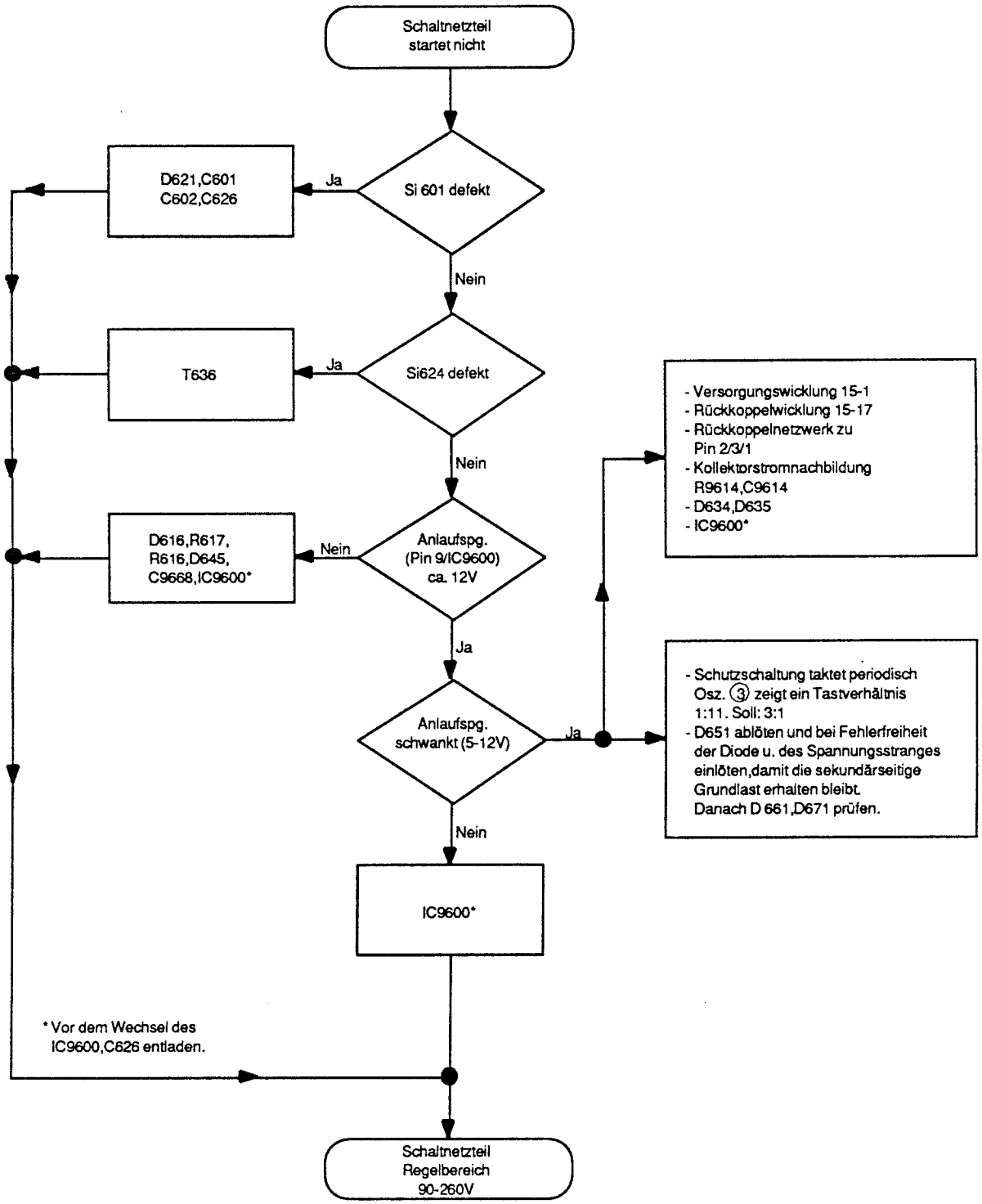
Messung	Meßwert	Meßpunkt	Mögliche Fehler
+ H	5 V	Pin 3, IC 811	D 671, IC 673, IC 811
4 MHz Takt Reset	4 MHz, 3 V_{ss} 4 V_{ss} nur im Einschaltmoment	Pin 5, IC 811 Pin 28	F 808, IC 811 D 804, T 806, IC 811
I^2C Bus	5 V_{ss}	Pin 19, 18, IC 811	Die I^2C-Bus-Daten sind auch ohne TP-Bedienung oder Keyboardeingabe vorhanden. Bei fehlenden Daten: Die Leitungen SDA und SCL auftrennen. Sind dann die I^2C-Bus-Daten vorhanden, liegt eine Überlastung des I^2C-Bus vor. **Fehlerursache:** IC 811, Tuner, Videotext, T 111.

Tabelle 2

Mögliche Fehlerarten des Gesamtgerätes

Fehler	Mögliche Ursache	Meßwert	Meßpunkt
Keine Frequenzabstimmung	Tuner (Speicher, PLL)	+ 0,2–30 V	Pin 13, 15
	+ B' + H + A	+ 11,5 V + 5 V ca. + 44 V	Tuner Pin 16 Tuner Pin 2 Tuner Pin 1
Keine Bedienfunktion	+ H, IC 811	+ 5 V	IC 811 Pin 3
LED falsche Anzeige	IC 811		
	F 808	4 MHz, 3 V	IC 811 Pin 5
Kein Ton	Keine Koinzidenzkennung (ZF/SYNC.)	>3 V	IC 811 Pin 9
	IC 365	+ M/ca. 12 V	IC 365 Pin 2
Keine Programmschaltung mit TP	IR-Vorverstärker	IR-Signal 5 V_{ss}	IC 811 Pin 2
Keine Analogwerte für Helligkeit Kontrast Farbkontrast	IC 811, IC 820 IC 811, IC 820 IC 811, IC 820	1-3 V 2-4V 2-4 V	Farb/RGB Pin 10 Farb/RGB Pin 11 Farb/RGB Pin 12
Beim Einschalten mit der Netztaste schaltet das Gerät auf Bereitschaft.	T 801	beim Einschalten kurzzeitig »LOW« (Kollektor)	IC 811 Pin 12
Kein FBAS-Signal	Tuner	ca. 10 V	Tuner Pin 3
	ZF/SYNC.	ca. 10 V	ZF/SYNC. Pin 12
	+ B, + B'	+ 11,5 V	ZF/SYNC. Pin 25, 24
Kein Videotext	+ B, + B'	+ 11,5 V	VT Pin 2, 13
	I^2C Bus SDA	$5V_{ss}$	VT Pin 9
	ICL	$5V_{ss}$	VT Pin 11

(D) Tips zur Fehlersuche - Primärseite liegt an Netzpotential. Gerät mit Netztrenntransformator betreiben!



Funktionsbeschreibung

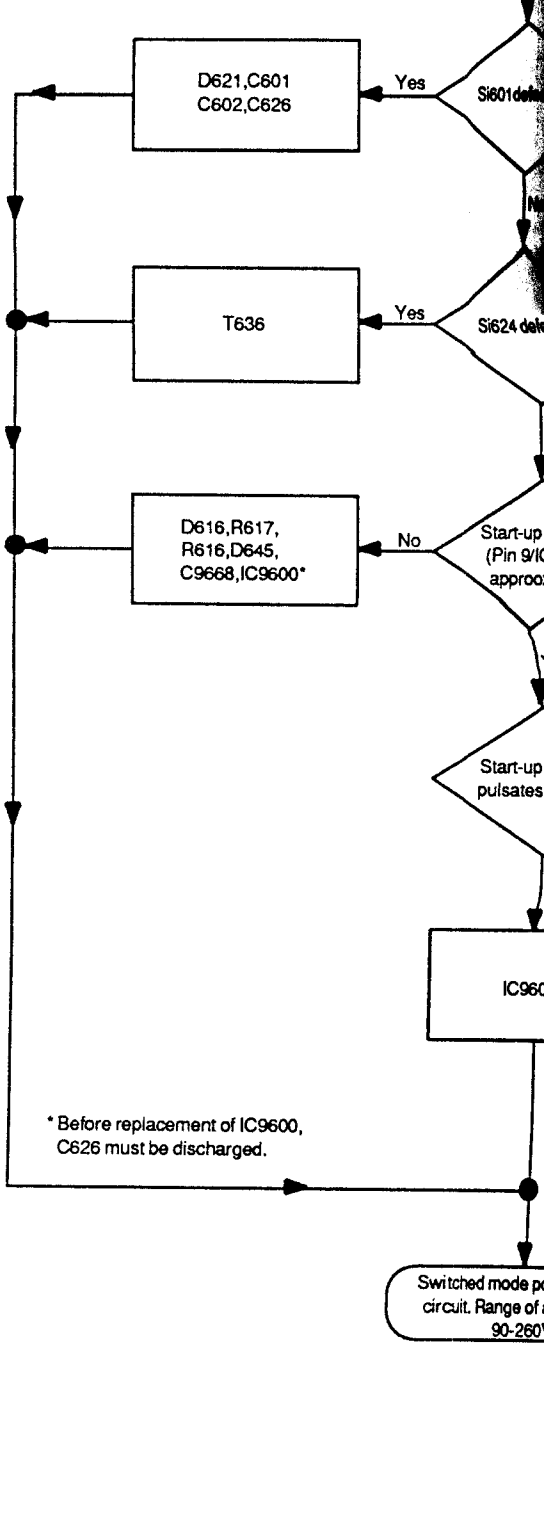
Aus der Netzspannung wird durch den Brückengleichrichter D 621 eine positive Gleichspannung von ca. + 300 V gewonnen. Über die Primärwicklung des Netztrafos TR 651 - Anschlüsse 13 und 11- liegt der Hochvolt-Schalttransistor T 636 - an dieser Gleichspannung. Die integrierte Schaltung IC 9600 (TDA 4601) übernimmt die Ansteuerung, Regelung und Überwachung des Schalt-Transistors T 636. Die Basis von T 636 wird über C 9641 und L 9646 von Pin 7 des IC 9600 mit einer Rechteckspannung von ca. 2,5 V angesteuert.
In der Sperrphase von Transistor T 636, nimmt der magnetische Fluß im Sperrwandlertrafo ab, in den Sekundärwicklungen werden Spannungen induziert, deren Strom über die jetzt leitenden Dioden die Lastkreise mit Energie versorgt. Da nur während der Sperrphase des Transistors T 636 Energie in die Lastkreise übertragen wird, nennt man diese Version Sperrwandler-Nezteil. Die Schaltfrequenz des Transistors liegt je nach Last zwischen 15 und 70 kHz. Die größte Stromflußzeit und damit die höchste Leistungsübertragung wird bei niedriger Frequenz und geringem Tastverhältnis erreicht. Normale Betriebswerte sind etwa 30 kHz bei einem Tastverhältnis 3:1.

Anlaufschaltung:
Über R 616, PTC R 617 und die Diode D 616 erhält der TDA 4601 an Pin 9 eine Anlaufspannung von ca. 12 V. Nach dem Anlaufen des Sperrwandlers wird während der Sperrphase des Transistors T 636, aus der Wicklung 15-1, eine stabile Spannung gewonnen. Diese gelangt über die Diode D 645 an den Pin 9 des IC 9600.
Sollte die Netzspannung < 170 V werden, wird beim Startvorgang aus der Wicklung 15-17 eine Spannung gewonnen und über Transistor T 9667 an Pin 9 eingespeist. Da diese Spannung nicht stabil ist, wird sie durch den Transistor T 9667 und die Diode D 9667 stabilisiert.

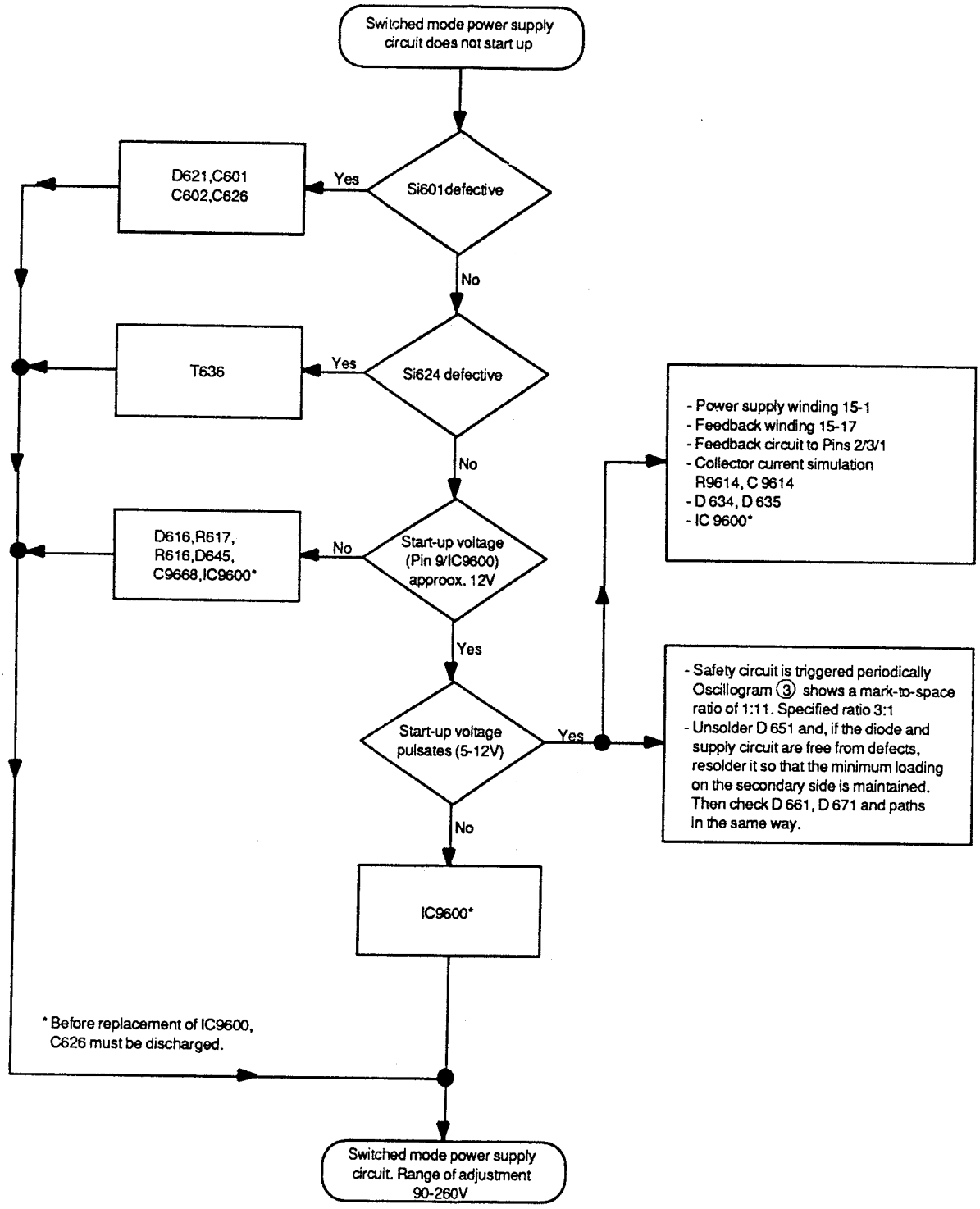
Normalbetrieb:
Am Eingang Pin 2 des TDA 4601 werden die Nulldurchgänge der von der Rückkoppelspule eingespeisten Frequenzen registriert und an eine interne Steuerlogik weitergegeben. Den Pin 3, einem Regeleingang, werden die gleichgerichteten Amplitudenänderungen der Rückkoppelspule (15-17) über den Einsteller R 647 zugeführt.
Das Schaltnetzteil ermöglicht folgende Betriebszustände:

a) Normalbetrieb
alle Versorgungsspannungen stehen zur Verfügung.

b) Stand- by-Betrieb
T 681 sperrt T 684. Dadurch fehlt die + B' Spannung. Außerdem wird der Treiber IC 551 (Zeilenansteuerung) über T 501, T 502 am Pin 8 gesperrt. Der T 514 (Zeilenablenktransistor) erhält an der Basis keine Ansteuerung und sperrt. Dadurch ist keine Hochspannung und keine Zeilenablenkung vorhanden.



(GB) Tips for Fault location - Primary side is normally not isolated. Operate set with mains isolating transformer



Functional D

A positive DC v
bridge rectifier D
switching transi
transformer TR
circuit IC 960
driving,controllin
base of T 636 is
2.5 V from pin 7 c
When the transi
B.O.-type conve
into the second
conducting diod
the energy is
switched off pha
called B.O.-type
frequencyof the
on the load. The
power transfer oc
space ratio. In nc
witha mark-to-spa

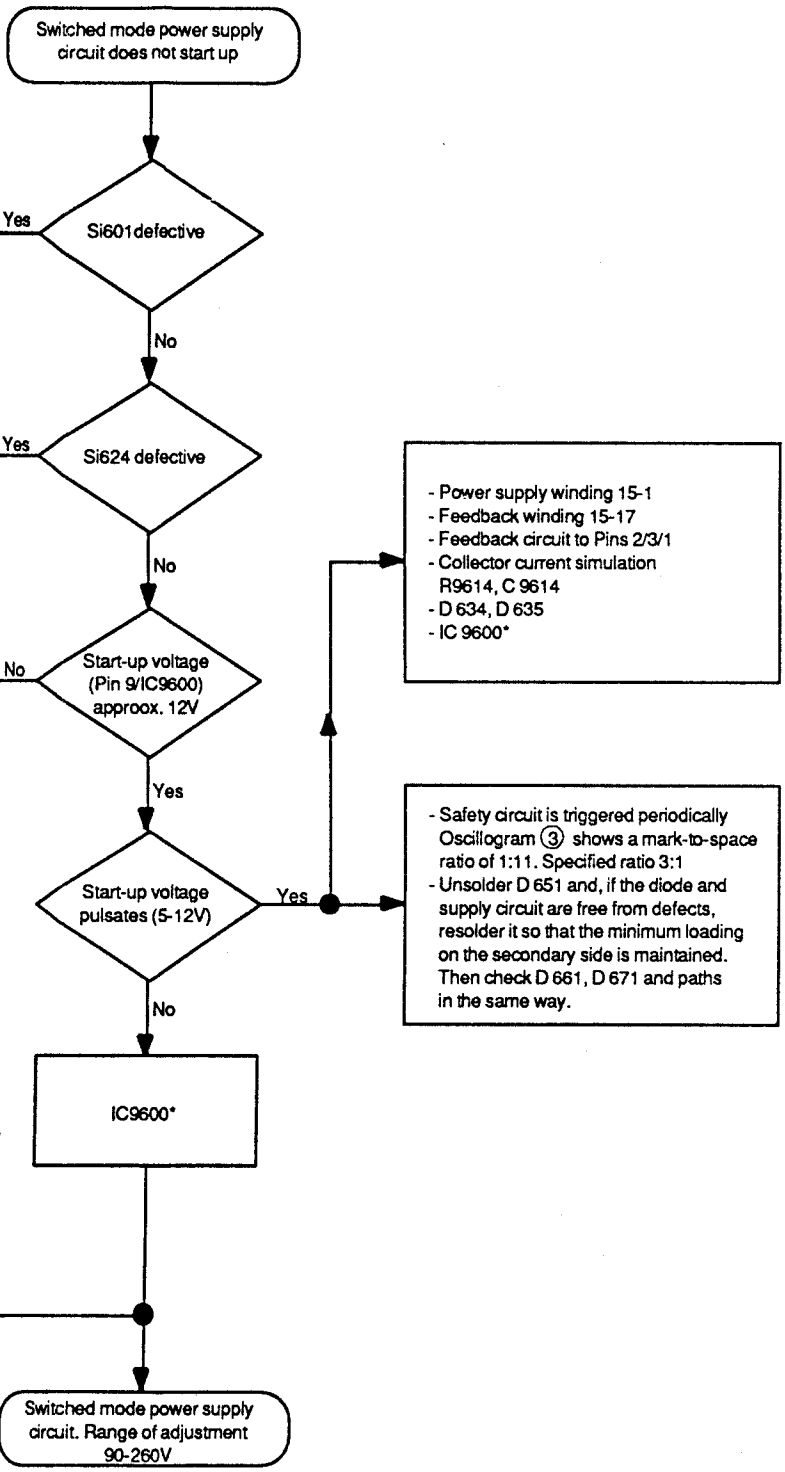
Start-up Circuit
The starting volt
provided via the
pin 9. After the
voltage is obtain
phase of the trans
IC 9600 via the c
a level <170 V a
the start-up proc
this voltage is nc
used to stabilize it

Normal Operatio
On the input pi
frequencies fed i
passed on to a
changes of the fe
input, via the adju
The Switched M
operating modes:

a)Normal operatio
In this mode, all s

b)Standby operat
T 681 switches o
the line driver IC
horizontal deflect
base drive. The
develops.

y side is normally not isolated. Operate set with mains isolating transformer



Functional Description

A positive DC voltage of approximately 300 V is obtained via the bridge rectifier D 621. This DC voltage is applied to the high voltage switching transistor TR 636 via the primarywinding of the mains transformer TR 651 from connections 13 and 11. The integrated circuit IC 9600 (TDA 4601) carries out the functions of driving,controlling and monitoringthe switching transistor T 636. The base of T 636 is supplied with a rectangular voltageof approximately 2.5 V from pin 7 of IC 9600 via C 9641 and L 9646.
When the transistor T 636 is switched off the magnetic flux in the B.O.-type convertertransformer decreases, a voltage is induced into the secondary windings causing currentto flow via the now conducting diodes which supply the load circuits with energy. As the energy is is transferred into the load circuits during the switched off phase of the transistor T 636 thistype of circuit is called B.O.-type Converter Power Supply Stage. The switching frequencyof the transistor lies between 15 and 70 kHz depending on the load. The largest currentflowing time and with it the highest power transfer occurs with the lowest frequency and lowest mark-to-space ratio. In normal operating values this is approximately 30 kHz witha mark-to-space ratio of 3:1.

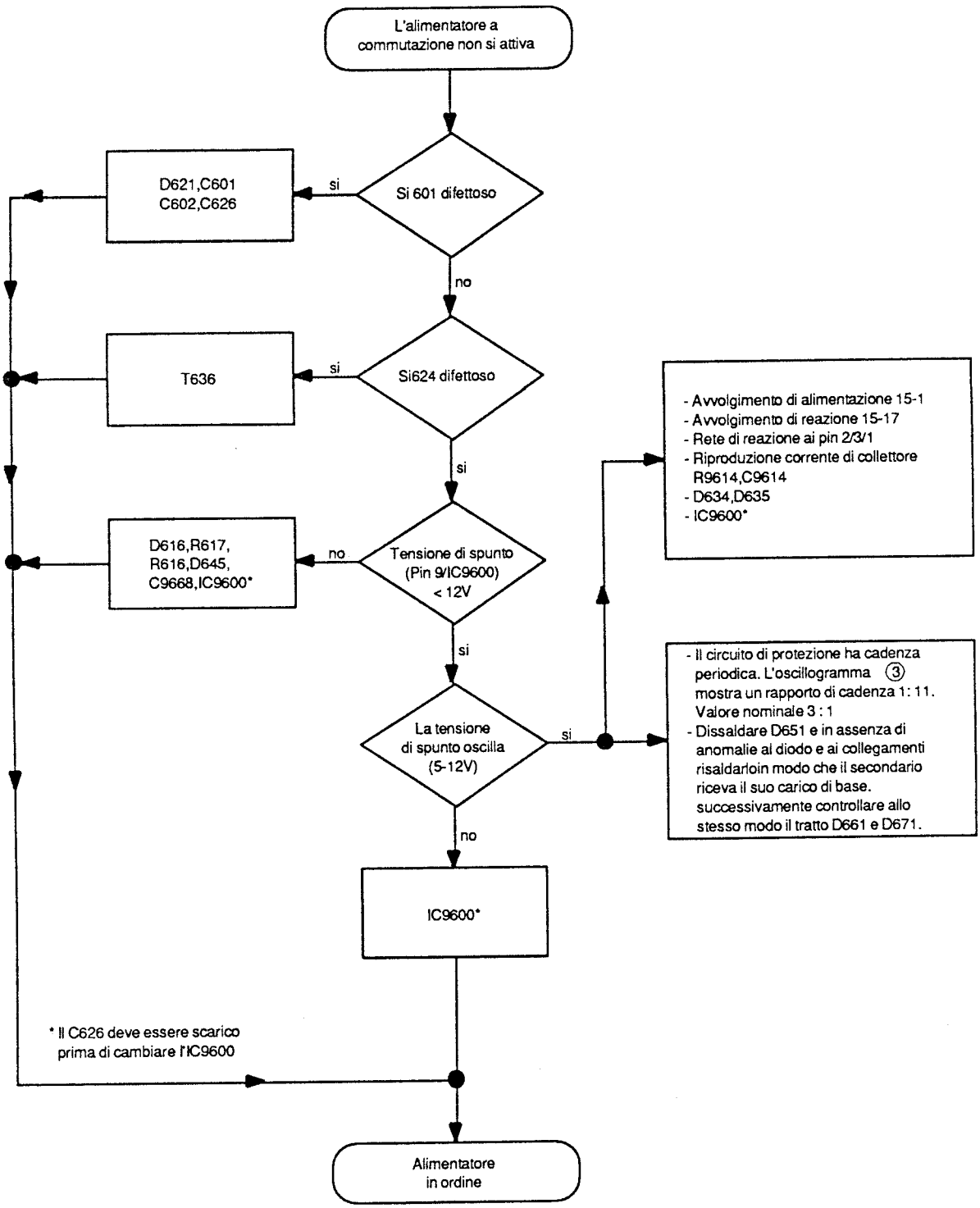
Start-up Circuit
The starting voltage of approximately 12V for the TDA 4601 is provided via the resistors R 616, PTC R 617 and the diode D 616 to pin 9. After the B.O.-type converter has started up a stabilized voltage is obtained from the winding 15-1 during the switched off phase of the transistor T 636. This voltage is applied to pin 9 of IC 9600 via the diode D 645. Should the mains voltage decrease to a level <170 V a voltage is obtained from the winding 15-17 during the start-up process and fed to pin 9 via transistor T 9667. Since this voltage is not stable transistor T 9667 and diode D 9667 are used to stabilize it.

Normal Operation
On the input pin 2 of TDA 4601 the zero transitions of the frequencies fed in from the feedback winding are registered and passed on to an internal control logic. The rectified amplitude changes of the feedback winding (15-17) are fed to pin 3, a control input, via the adjustablepreset R 647.
The Switched Mode Power Supply Circuit produces the following operating modes:

a)Normal operation.
In this mode, all supply voltages are produced.

b)Standby operaton.
T 681 switches off T 684 so that the +B' supply is not present. Also the line driver IC 551is switched off on pin 8 via T 501, T 502. The horizontal deflection transistor T 514 is switched off as there is no base drive. Therefore, no horizontal deflection and no EHT develops.

(I) **Suggerinenti per la ricerca guasti - Lato del primario collegato a potenziale di rete**
- Far funzionare l'apparecchio con un transformatore separatore di rete!



Descrizion

Dalla tensione
di ca. +300V
dell'avvolgime
(collegamenti 1
transisto
4601) p
transisto
una tensione r
L 9646 dal pin 7

Nella fase di
magnetico nel
indotte corren
carico. Poiché
T 636 viene t
denominato "
frequenza di c
del carico tra 1
trasferimento
basso rapport
aggirano attor

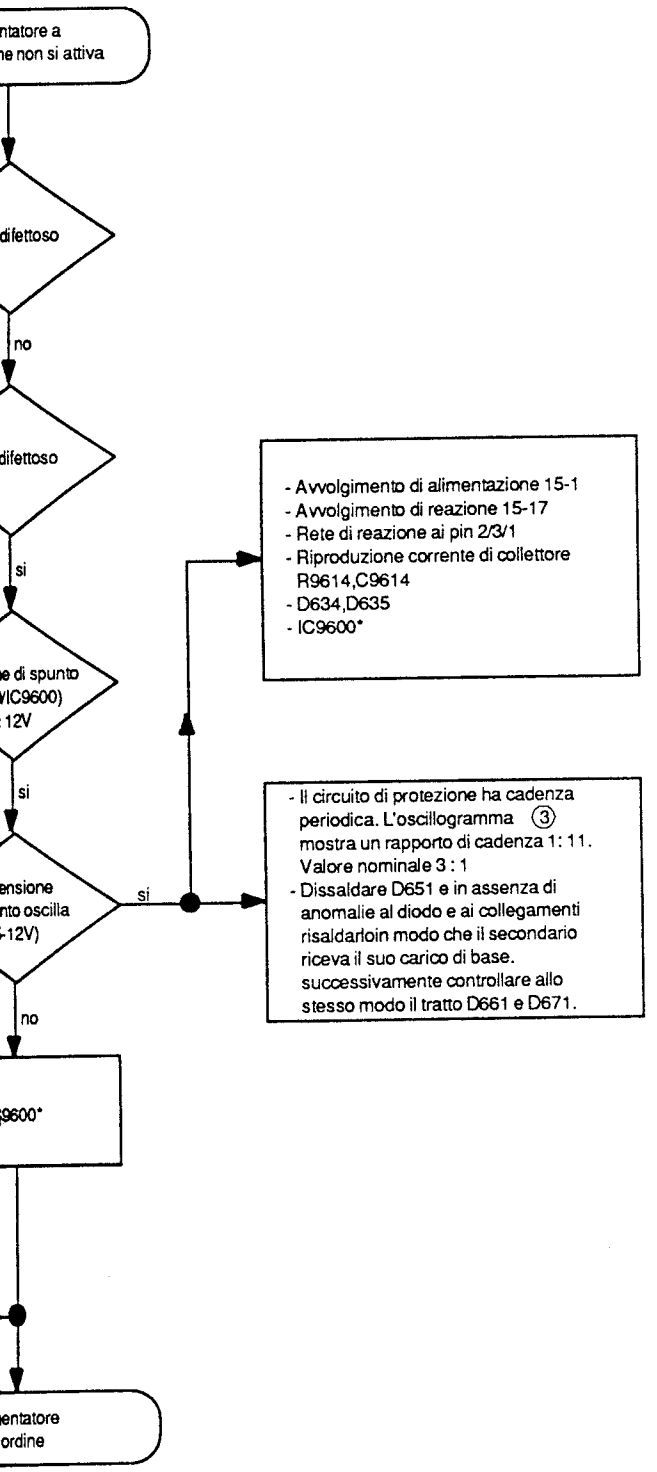
Circuito di sp
Attraverso R 6
pin 9 una tens
durante la
dall'avvolgime
attraverso il d
tensione di
dell'avviamen
17 ed inviata
tensione non
dal diodo D 96

Regime norm
All'ingresso, p
zero delle fun
reazione e tr
ingresso di re
della bobina
R 647.
L'alimentatore

a) normale
Tutte le tensio

b) stand-by (a
T 681 blocco
pilota IC 551
8 attraverso T
non viene pil
l'alta frequenz

primario collegato a potenziale di rete
ionare l'apparecchio con un transformatore separatore di rete!



Descrizione circuitale

Dalla tensione di rete viene ricavata una tensione continua positiva di ca. +300V mediante il raddrizzatore a ponte D 621. Per mezzo dell'avvolgimento primario del trasformatore di rete TR 651 (collegamenti 13 e 11) queste tensione continua viene applicata al transistor di commutazione T 636. Il circuito integrato IC 9600 (TDA 4601) provvede al pilotaggio, alla regolazione ed al controllo des transistor T 636.La base del transistor T 636 vienne comandata da una tensione rettangolare di ca. 2,5V che arriva attraverso C 9641 e L 9646 dal pin 7 dell'integrato IC 9600.

Nella fase di interdizione del transistor T 636 diminuisce il flusso magnetico nel trasformatore; negli avvolgimenti secondari vengono indotte correnti che attraverso i diodi ora conduttivi alimentano il carico. Poiché soltanto durante la fase di interdizione del transistor T 636 viene trasmessa energia nel carico, questo concetto viene denominato " alimentatore con convertitore ad interdizione". La frequenza di commutazione del transistor é compresa a secondo del carico tra 15 e 70 kHz. La maggiore corrente e quindi il massimo trasferimento di potenza si ottengono a bassa frequenza e con basso rapporto di cadenza. I valori normali di funzionamento si aggirano attorno ai 30 kHz con un rapporto di cadenza di 3 : 1.

Circuito di spunto:
Attraverso R 616 il, PTC R 617 ed il diodo D 616, il TDA 4601 riceve pin 9 una tensione di spunto di ca. 12V. Dopo l'innesco trasduttore, durante la fase di interdizione del transistor T 636, dall'avvolgimento 15-1, viene ricavata una tensione stabile che, attraverso il diodo D 645 giunge al pin 9 dell'integrato IC 9600.Se la tensione di rete dovesse scendere sotto i 170V, nella fase dell'avviamento viene generata una tensione dall'avvolgimento 15-17 ed inviata al pin 9 mediante il transistor T 9667. Poiché questa tensione non é stabile, essa viene resa tale dal transistor T9667 e dal diodo D 9667.

Regime normale:
All'ingresso, pin 2 del TDA 4601, vengono registrati i passaggi per lo zero delle funzioni a diversa frequenza accumulate nella bobina di reazione e trasferiti ad una logica di comando interna. Al pin 3, ingresso di regolazione, vengono applicate le variazioni d'ampiezza della bobina di reazione (15-17) raddizzate attraverso il regolatore R 647.
L'alimentatore a commutazione consente i seguenti regimi:

a) normale
Tutte le tensioni di alimentazione sone disponibili.

b) stand-by (attesa)
T 681 blocco T 684 per cui manca la tensione +B'. Inoltre lo stadio pilota IC 551 (pilotaggio della sezione di riga) viene bloccato al pin 8 attraverso T 501 e T 502. T 514 (transistor di deflessione di riga) non viene pilotato alla base e si blocca. Per questo motivo manca l'alta frequenza e la deflrssione di riga.

Ersatzteilliste (Auszug) · List of Spare-Parts (extract) · Lista ricambi (estratto)

CUC 3490

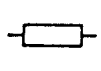
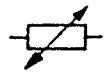
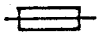
Pos. No.	Bestell-Nr./Part No. Réf./Nr. d'ordinazioni		Benennung	Description	Denominazione
			Steckkarten	Plug-in circuit boards	Schede
1	29504-101.01		Kabeltuner	Cable tuner	Tuner per TV cavo
2	29504-162.65		ZF-Verstärker	IF-amplifier	FI-amplificatore
5	29504-165.01		Farb/RGB (Multi)	Colour RGB (Multi)	Colore RGB (Multi)
7	29504-108.92		Videotext	Videotext	Televideo
8	29305-007.01		Netzbaustein	Mains module	Modulo interr.
			Bedienungseinheit (29501-061.02) (kein E-Teil)	Keyboard unit (29501-061.02) (no spare part)	Unita comandi (29501-061.02) (nessun pezzo di ricambio)
10	29624-415.01		Frontplatte m. Tasten	Front panel w. buttons	Piastra frontale con tasti
12	29303-506.18		Snap-Folie	Elastic foil	Foglia elastica
13	29503-925.41		Keyboardplatte	Keyboard P.C B.	Piastra tastiera
14	29304-013.17		LED-Platte kpl.	LED-Plate cpl.	Piastra LED cpl.
			Mechanische Teile	Mechanical parts	Parti meccaniche
15	29304-070.57		Bildrohrplatte kpl.	Picture tube plate cpl.	Piastra cinescopio cpl.
15	29304-070.55		Bildrohrplatte kpl.	Picture tube plate cpl.	Piastra cinescopio cpl.
15.1	29303-751.97		Bildrohrfassung	Picture tube socket	Zoccolo cinescopio
17	29700-328.01		Bausteinhalter	Module holder	Supporto modulo
18	29703-291.02		Netzschalter	Mains switch	Interruttore di rete
19	29303-452.01		Netzsteckerplatte	Mains plug plate	Interr. di spina piastra
20	09621-113.02	4x	Sicherungshalter	Fuse holder	Portafusibile
21	29303-153.12	3x	Montageclip f. IC	Mounting clip for IC	Clip di montaggio p. IC
22	29303-153.01		Montageclip f. IC	Mounting clip for IC	Clip di montaggio p. IC
23	29303-153.02		Montageclip f. Trans.	Mounting clip f. Trans.	Clip di montaggio p. Trans.
24	29303-156.03		Isolierscheibe für BU 508	Insulating washer for BU 508	Rondella isolante p. BU 508
25	29303-393.01		Kopfhörerbuchse	EAR phone socket	Presa cuffia
26	29303-119.03		Euro-AV-Buchse	Euro-AV-socket	Presa Euro/Scart
27	29500-503.05		Abdeckung (AV)	Cover (AV)	Copertura (AV)
28	29700-324.01		Kabelhalter	Cable clamp	Supporto cavo
29	29700-282.01		Kabelhalter	Cable clamp	Supporto cavo
			Elektrische Teile	Electrical parts	Parti elettriche
K536	8324-801-071		Kaskade B92945-S7154-M 603	Kascade B 92945-S7154-M603	Moltiplic. in cascate B 92945-S 7154-M 603
K536	8324-801-055		Kaskade B 92945-S 8154-M 573	Kascade B 92945-S 8154-M 573	Moltiplic. in cascate B 92945-S 8154-M 573
	72008-090.02		Fokusregler		

Pos. No.	Fig. No.	Bestell-Nr./Part No. Réf./Nr. d'ordinazioni	Benennung Description Désignation Denominazione
TR		29201-018.07	
TR		29500-624.97	
F 808		8602-331-085	4,0 MG
L 336		8140-526-451	
L 337		8140-526-451	
L 511		09246-850.21	
L 518		8140-525-911	
L 533		09240-110.21	
L 601		29500-811.97	
L 672		8140-526-340	
L 673		8140-525-950	
L 676		8140-525-974	
L 806		8140-526-327	
L 1213		07202-370.97	
IC 365		8305-302-241	TDA 1905
IC 411		8305-338-170	TDA 8170
IC 501		8305-338-140	TDA 8140
IC 811		8305-684-285	ZC 84285 P
IC 820		8305-205-910	MC 144111 (MOS)
IC 881		8305-202-242	UAA 2022
IC 1211		8305-334-052	TDA 4052
T 111		8303-205-548	BC 548 B
T 501		8303-201-548	BC 548
T 502		8303-201-548	BC 548
T 681		8303-205-548	BC 548 B
T 682		8303-201-548	BC 548
T 686		8303-201-548	BC 548
T 736		8303-401-421	BF 421
T 741		8303-401-422	BF 422
T 756		8303-401-421	BF 421

Pos. No.	Fig. No.	Bestell-Nr./Part No. Réf./Nr. d'ordinazioni	Benennung Description Désignation Denominazione
T 761		8303-401-422	BF 422
T 776		8303-401-421	BF 421
T 781		8303-401-422	BF 422
T 801		8303-206-548	BC 548 C
T 806		8303-200-548	BC 548
T 1204		8303-204-549	BC 549 B
D 333		8309-201-103	BA 157
D 354		8309-214-018	TD 190
D 411		8309-210-138	1N 4936
D 421		8309-210-401	1N 4934
D 422		8309-214-007	TD 041
D 502		8309-215-020	1N 4004
D 503		8309-201-103	BA 157
D 528		8309-204-268	BYV 16 TFK
D 551		8309-214-007	TD 041
D 553		8309-214-007	TD 041
D 616		8309-215-127	1N 4007
D 621		8308-560-520	B 380/C3700/2200 FAG
D 627		8309-517-077	BYW 76 COD
D 645		8309-517-033	BYW 32 TFK
D 651		8309-517-077	BYW 76 COD
D 661		8309-517-073	BYW 72 COD
D 671		8309-517-074	BYW 72
D 707		8309-707-012	ZPD 4,7
D 711		8309-201-005	BA 157
D 734		8309-215-045	1N 4148
D 754		8309-215-045	1N 4148
D 774		8309-215-045	1N 4148
D 781		8309-215-045	1N 4148
D 804		8309-214-010	TD 129
D 850		8309-214-010	TD 129
D 873		8309-214-010	TD 129
D 883		8309-214-010	TD 129
D 1201		8309-211-705	SFH 205 G
C 366		8415-166-147	1000 uF/25 V
C 411		8452-996-150	2200 uF/25 V
C 433		8452-996-107	2200 uF/16 V
C 433		8452-166-107	1000 uF/16 V
C 462		8563-731-424	0,33 uF/160 V
C 516		8525-040-830	0,6 uF/250 V (!)

Pos. No.	Fig. No.	Bestell-Nr./Part No. Réf./Nr. d'ordinazioni	Benennung Description Désignation Denominazione
C 517		8525-040-830	0,6 uF/250 V (!)
C 518		8515-911-002	560 pF/1600 V (!)
C 519		8523-631-218	1800 pF/400 V
C 521		8515-722-221	0,21 uF/160 V
C 521		8515-722-241	0,31 uF/160 V
C 522		8515-722-221	0,21 uF/160 V
C 522		8515-722-241	0,31 uF/160 V
C 523		8515-911-064	5400 pF/1600 V
C 525		8563-731-622	0,022uF/1000 V (!)
C 526		8563-731-622	0,022uF/1000 V (!)
C 527		8660-097-219	220pF/20% (!)
C 528		8650-090-477	270pF/2 KV
C 536		8531-510-343	0,68uF/160 V
C 601		8599-990-025	0,15uF/250 V (!)
C 602		8599-990-025	0,15uF/250 V (!)
C 609		8563-732-425	0,1uF/250 V (!)
C 611		8660-097-238	2200 pF
C 613		8660-097-238	2200pF
C 621		8650-090-510	1000pF/1 KV
C 622		8650-090-510	1000pF/1 KV
C 623		8650-090-510	1000pF/1 KV
C 624		8650-090-510	1000pF/1 KV
C 626		8443-306-050	150uF/385 V
C 637		8515-911-091	2200pF/2000 V (!)
C 651		8650-090-477	270pF/2 KV
C 661		8650-090-477	270pF/2 KV
C 671		8650-090-477	270pF/2 KV

MOS = Vorschriften beachten
Observe MOS precautions
Rispettare le norme MOS

Pos. No.	Fig. No.	Bestell-Nr./Part No. Réf./Nr. d'ordinazioni	Benennung Description Désignation Denominazione
			
R 333		8700-007-425	10 Ohm (!)
R 337		8705-269-299	12 kOhm
R 341		8705-369-027	12 Ohm
R 367		8700-229-023	8,2 Ohm NB (!)
R 433		8790-047-151	10 Ohm
R 436		8790-047-109	100 Ohm
R 513		8705-329-241	47 Ohm
R 513		8705-329-039	39 Ohm
R 516		8730-018-985	0,22 Ohm
R 524		8766-397-017	4,7 Ohm (!)
R 525		8735-003-033	0,33 Ohm (!)
R 528		8705-221-225	10 Ohm (!)
R 531		8311-201-073	PTC 2 G/P 2390-J 146 (!)
R 532		8730-179-229	15 Ohm
R 533		8765-044-123	120 kOhm
R 533		8765-044-121	100 kOhm
R 609		8311-200-010	DUO-PTC (!)
R 623		8311-400-125	VDR VZA 275 (!)
R 624		8718-250-158	3,6 mOhm VDE (!)
R 627		8718-250-014	4,7 mOhm VDE (!)
R 648		8750-210-049	100 Ohm
R 661		8735-003-022	0,22 Ohm (!)
R 671		8735-003-022	0,22 Ohm (!)
R 688		8790-047-122	300 Ohm
R 738		8705-227-011	2,7 Ohm
R 801		8766-357-169	10 mOhm
R 802		8766-357-169	10 mOhm
			
Si 601		8315-617-006	2,5 A/T (!)
Si 624		8315-618-002	1,25 A/T (!)

Bauteilhinweis
(!) Hinweis:
Bauelemente nach VDE-bzw. IEC-Richtlinien.Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden!
Notes on components (!) Cautions
Components to VDE or IEC quidelines. Only use components with the same specification for replacement!
(!) nota:
Componenti secondo le norme VDE risp. te iec. in caso di sostituzione impiegaresolo componenti con le stesse caratteristiche!

TABELLE UEBER 90° BILDROEHRENTYPEN
TABLE OF 90° PICTURE TUBE TYPES
TABELLA DI TIPI DI TUBI A 90°
TABLEAU DES MODELES DE TUBES CATHOD. 90°

○ - RUNDROEHRE / CIRCULAR PICTURE TUBE / TUBO AD ANGOLI TONDI / TUBE A COINS RONDS

□ - FLAT SQUARE-ROEHRE / FLAT SQUARE TUBE / TUBO FLAT SQUARE / TUBE FLAT SQUARE

⌀	TYPE TYPE TIPO MODELE	HERSTELLER MANUFACTURER DITTA FABRICANT	BEMERKUNG REMARK OSSERVAZIONE REMARQUE	L_V MH	L_H MH	R_V Ω	R_H Ω	U_H KV	$U_{FOC.}$ KV	SACHNUMMER ORDER NO. N.D'ORDINAZ. N. DE PRODUIT
14"/37CM	A 34 JLL 70 X 23	ORION	○ CLEAR GLASS	28	2,47	14,7	3,2	23	5,8-6,5	8300-030-252
14"/37CM	A 34 JLL 90 X 23	ORION	○ TINTED GLASS	28	2,47	14,7	3,2	23	5,8-6,5	8300-020-035
14"/37CM	A 34 EAC 00 X 03	PHILIPS	○ CLEAR GLASS	27,5	2,5	13,75	3,3	23	6-6,9	8300-030-252
14"/37CM	A 34 EAC 01 X 03	PHILIPS	○ TINTED GLASS	27,5	2,5	13,75	3,3	23	6-6,9	8300-020-035
14"/37CM	370 JMB 22-TC 03	MITSUBISHI	○ CLEAR GLASS	28	2,41	14,7	3,2	23	5,3-6	8300-030-252
14"/37CM	A 34 EAC 00 X 06	PHILIPS	○ CLEAR GLASS HOEHERE EMPFINDLICHKEIT / HIGHER SENS. SENS. MAGG. SENSIBILITE SUPERIEURE	27,5	2,5	13,6	3,3	23	6,1-6,9	8300-020-036
14"/37CM	A 34 EAC 01 X 06	PHILIPS	○ TINTED GLASS HOEHERE EMPFINDLICHKEIT / HIGHER SENS. SENS. MAGG. SENSIBILITE SUPERIEURE	27,5	2,5	13,6	3,3	23	6,1-6,9	
15"/40CM	A 36 EAM 00 X 01	PHILIPS	□ CLEAR GLASS	26,2	2,43	12,2	3,2	23	6,7-7,6	8300-020-188
15"/40CM	A 36 EAM 01 X 01	PHILIPS	□ TINTED GLASS	26,2	2,43	12,2	3,2	23	6,7-7,6	8300-020-189
15"/40CM	A 36 JAR 00 X 01(M)	TOSHIBA	□ CLEAR GLASS	28	2,5	14,7	3,2	22	6,7-7,4	8300-020-188
15"/40CM	A 36 JAR 40 X 03(MW)	TOSHIBA	□ TINTED GLASS	28	2,5	14,7	3,2	22	6,7-7,4	8300-020-189
15"/40CM	A 36 JUF 60 X 06	HITACHI	□ TINTED GLASS	28	2,5	15,4	3,7	22	6,7-7,4	
16"/42CM	A 38 EAC 00 X 03	PHILIPS	○ CLEAR GLASS	27,5	2,5	11,8	3,3	23	6,1-6,9	8300-030-364
16"/42CM	A 38 EAC 01 X 03	PHILIPS	○ TINTED GLASS	27,5	2,5	11,6	3,3	23	6,1-6,9	8300-020-190
16"/42CM	420 FSB 22-TC02(PY)	TOSHIBA	○ CLEAR GLASS	28	2,41	14,7	3,1	22	5,8-6,5	8300-030-365
16"/42CM	A 38 JAN 40 X 01(W)	TOSHIBA	○ TINTED GLASS	28	2,41	14,7	3,1	22	5,6-6,5	8300-020-190
16"/42CM	420 GAB 22-TC02	HITACHI	○ CLEAR GLASS	28	2,5	14,7	3,3	23	6,1-6,8	8300-030-365
16"/42CM	420 GUB 22-TC01	MITSUBISHI	○ CLEAR GLASS	28	2,41	14,7	3,2	22	5,9-6,6	8300-030-364
17"/45CM	A 41 EAM 00 X 01	PHILIPS	□ CLEAR GLASS	26	2,43	12,2	3,2	23	6,7-7,6	8300-020-201
17"/45CM	A 41 EAM 01 X 01	PHILIPS	□ TINTED GLASS	26	2,43	12,2	3,2	23	6,7-76	8300-020-202
17"/45CM	A 41 JAR 00 X 01(M)	TOSHIBA	□ CLEAR GLASS	28	2,5	14,7	3,2	22	6,7-7,4	8300-020-201
17"/45CM	A 41 JAR 40 X 02(MW)	TOSHIBA	□ TINTED GLASS	28	2,5	14,7	3,2	22	6,7-7,4	8300-020-202
19"/50CM	A 46 JAR 00 X 01(M)	TOSHIBA	□ CLEAR GLASS	28	2,2	14,7	2,6	25	7,6-8,4	8300-020-308
19"/50CM	A 46 JAR 40 X 01(W)	TOSHIBA	□ TINTED GLASS	28	2,2	14,7	2,6	25	7,6-8,4	8300-020-312
19"/50CM	A 46 JSF 01 X 03	HITACHI	□ CLEAR GLASS	28	2,2	13,8	3	25	7,8-8,8	8300-020-308
19"/50CM	A 46 JSF 61 X 03	HITACHI	□ TINTED GLASS	28	2,2	13,8	3	25	7,8-8,8	8300-020-312
20"/51CM	A 48 EAC 00 X 01	PHILIPS	○ CLEAR GLASS	27,5	2,5	11,8	3,3	25	7,3-8,3	8300-020-310
20"/51CM	A 48 EAC 01 X 01	PHILIPS	○ TINTED GLASS	27,5	2,5	11,8	3,3	25	7,3-8,3	8300-020-311
20"/51CM	510 YXB 22-TC02(SY)	TOSHIBA	○ CLEAR GLASS	28	2,14	14,7	2,7	25	7,6-8,4	8300-030-351
20"/51CM	A 48 JAN 43 X 01(W)	TOSHIBA	○ TINTED GLASS	28	2,14	14,7	2,7	25	7,6-8,4	8300-020.311
20"/51CM	510 ABWB 22-TC02	HITACHI	○ CLEAR GLASS	28,7	2,4	13,8	3,2	25	7,7-8,5	8300-030-351
20"/51CM	A 48 JLL 90 X 01	ORION	○ TINTED GLASS	28	2,14	14,7	2,15	25	7,3-8,3	
21"/55CM	A 51 JAR 00 X 03(M)	TOSHIBA	□ CLEAR GLASS	28	2,11	14,7	2,6	25	7,6-8,4	8300-020-535
21"/55CM	A 51 JAR 43 X 01(MW)	TOSHIBA	□ TINTED GLASS	28	2,11	14,7	2,6	25	7,6-8,4	8300-020-536
21"/55CM	A 51 JSX 01 X 03	HITACHI	□ CLEAR GLASS	28	2,2	13,8	3	25	7,8-8,8	8300-020-535
21"/55CM	A 51 JSX 61 X 03	HITACHI	□ TINTED GLASS	28	2,2	13,8	3	25	7,8-8,8	8300-020-536