



Service Manual

Zusätzlich
erforderliche
Unterlagen:

Additionally
required
Service Manuals:

Sach-Nr./Part No.
72010-014.00

Service Manual

Sach-Nr./Part No.
72010-800.00

Tubes cathodiques:

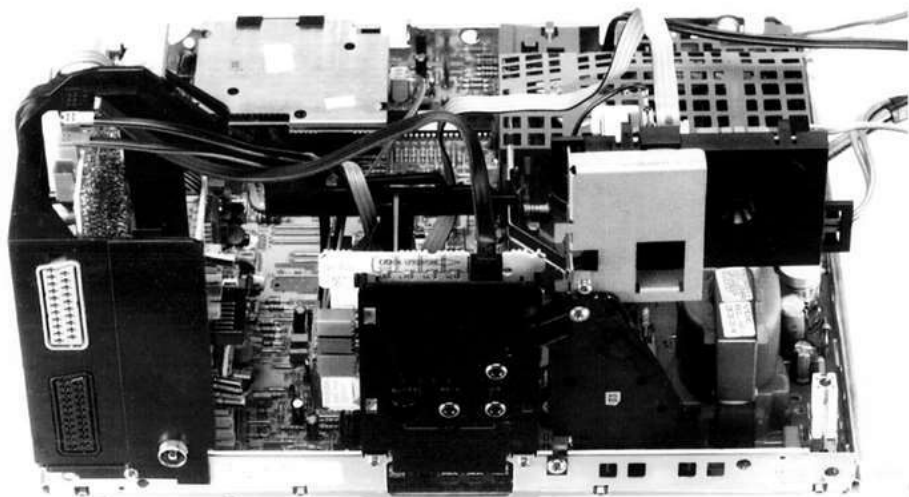
63cm: A 59 LCG 696 X01

72cm Philips: A 68 ESF 002 X11

72 cm Toshiba: A 68 KZN 696 X01 (focus dynamique)

ⓓ Btx * 32700 #

CUC 5365



TP 720

29622-059.06



TP 760

29622-059.01



M 63 - 775 TOP

M 63 - 775/8 TOP

SE 7286 TOP

ST 63 - 760 TOP

ST 63 - 760/8 TOP

ST 72 - 760 TOP

ST 72 - 760/8 TOP

Sydney ST 72 - 772 TOP

Sydney ST 72 - 772/8 TOP

(9.21170-90, GCY 4190)

(9.21170-02, GCY 3490)

(9.21188-01, GCX 9092)

(9.21172-01, GCY 3069)

(9.21172-34, GCY 3169)

(9.21137-01, GCX 6969)

(9.21137-34, GCX 8569)

(9.21171-01, GCX 8991)

(9.21171-34, GCZ 9791)

Technische Daten / Technical Data

	M 63-775 TOP	M 63-775/8 TOP	SE 7286 TOP	ST 63-760 TOP	ST 63-760/8 TOP	ST 72-760 TOP	ST 72-760/8 TOP	ST 72-772 TOP Sydney	ST 72-772/8 TOP Sydney
Bildröhre / Picture Tube									
- Sichtbares Bild Visible picture	59 cm	59 cm	68 cm	59 cm	59 cm	68 cm	68 cm	68 cm	68 cm
- Bildschirmdiagonale Screen diagonal	63 cm (25") Super Flat Black Matrix, CCS	63 cm (25") Super Flat Black Matrix, CCS	72cm (29") Super Flat Black Line S, linear	63 cm (25") Super Flat Black Matrix, CCS	63 cm (25") Super Flat Black Matrix, CCS	72cm (29") Super Flat Black Matrix, CCS	72cm (29") Super Flat Black Line S, linear	72cm (29") Super Flat Black Line S, linear	72cm (29") Super Flat Black Line S, linear
- Ablenkwinkel Deflection angle	108°	108°	110°	108°	108°	108°	108°	110°	110°
- Bildwechselfrequenz Vertical frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Elektronik / Electronic									
- Programmspeicherplätze Programme positions	49 + 3 AV	49 + 3 AV	49 + 3 AV	49 + 3 AV	49 + 3 AV	49 + 3 AV	49 + 3 AV	49 + 3 AV	49 + 3 AV
- AV-Auswertung AV evaluation	auf jeden Programmplatz programmierbar / programmable for every programme position								
- Tuner	Kabeltuner-Raster 8MHz für Hyperband / cable tuner - 8MHz spacing for hyperband								
- TV-Normen TV standards	Multinorm 8 Systeme	Multinorm 8 Systeme	PAL/SECAM- BG	PAL/SECAM- BG	Multinorm 8 Systeme	PAL/SECAM- BG	Multinorm 8 Systeme	PAL/SECAM- BG	Multinorm 8 Systeme
- Musikleistung Music power	2 x 25W	2 x 25W	2 x 25W	2 x 20W	2 x 20W	2 x 20W	2 x 20W	2 x 25W	2 x 25W
Anschlüsse / Connections	Mono 3,5 mm Klinkebuchse, Lautstärke regelbar Mono 3,5 mm jack socket, volume variable								
- Kopfhörer Headphones	voll belegt fully wired								
- Euro AV-Buchse schwarz Euro AV socket black	voll belegt fully wired								
- Euro AV-Buchse blau Euro AV socket blue	voll belegt fully wired								
- 1 Cinch-FBAS-Buchse 1 Cinch-CCVS-socket	mit VCR Belegung only for VCR use								
- S-Video-Buchse S-Video socket	Video IN								
- 2 x Catch-Buchsensteckel 2 x Catch-Buchsensteckel	4-pol./4-terminal Y-Chroma/IN NF/AF-IN								
Netzteil / Mains Stage	190 ... 264V								
- Netzspannung (Regelbereich) Mains voltage (variable)	190 ... 264V								
- Netzfrequenz Mains frequency	50 / 60Hz								
- Leistungsaufnahme ca. Power consumption ca.	110W								
- Leistungsaufnahme Standby Power consumption standby	5W								

"Multinorm 8 Systeme" beinhaltet die Normen:

Farbbild: PAL/SECAM BG, NTSC 4,343MHz bzw. 3,58MHz bei AV-Betrieb.

US Ton-Norm: ZF 4,5MHz

CCIR Ton-Norm: ZF 5,5MHz

GB Ton-Norm: ZF 6,0MHz

OIRT Ton-Norm: ZF 6,5MHz

Frankr. Ton-Norm: ZF 6,5MHz AM

NICAM Ton-Norm: GB und Skandinavien

CCS-Folie der Toshiba Bildröhre

Die CCS-Beschichtung besteht aus einer Folie die sehr empfindlich ist. Zum Reinigen nur Wasser und ein weiches Tuch verwenden.

The "Multi-Norm 8 Systems" contains the following standards:

Colour picture: PAL/SECAM BG, NTSC 4.343MHz or 3.58MHz on AV-operation

US audio standard: IF 4.5MHz

CCIR audio standard: IF 5.5MHz

GB audio standard: IF 6.0MHz

OIRT audio standard: IF 6.5MHz

France audio standard: IF 6.5MHz AM

NICAM audio standard: GB and Scandinavia

CCS-film on the Toshiba picture tube

The CCS-coating is a very sensitive film. Clean it only with water and a soft cloth.

Modulübersicht / Module List

	Bildrohrplatte CRT panel	Bedieneinheit Control Unit	Netzteilplatte Mains Board	Tuner	ZF-Verstärker IF Amplifier	Videotext Teletext
M 63-775 TOP	29305-022.22	29501-080.51	-	29504-101.22	29504-102.30	29504-108.86
M 63-775/8 TOP	29305-022.22	29501-080.51	-	29504-101.22	29504-162.41	29504-108.76
SE 7286 TOP	29305-022.24	29501-080.62	29304-050.27	29504-101.22	29504-102.30	29504-108.86
ST 63-760 TOP	29305-022.22	29501-080.39	29304-050.27	29504-101.22	29504-102.30	29504-108.86
ST 63-760/8 TOP	29305-022.22	29501-080.39	29304-050.27	29504-101.22	29504-162.41	29504-108.76
ST 72-760 TOP	29305-022.25	29501-080.39	29304-050.27	29504-101.22	29504-102.30	29504-108.86
ST 72-760/8 TOP	29305-022.25	29501-080.39	29304-050.27	29504-101.22	29504-162.41	29504-108.76
Sydney ST 72-772 TOP	29305-022.24	29501-080.47	29304-050.27	29504-101.22	29504-102.30	29504-108.86
Sydney ST 72-772/8 TOP	29305-022.24	29501-080.47	29304-050.27	29504-101.22	29504-162.41	29504-108.76

	Farb/RGB Colour/RGB	S-Buchsenpl. S-Socket B.	S-Videoplatte S-Video Board	LS-Weichenpl. LS-Cross-Over Netw.	Telepilot	Chassis
M 63-775 TOP	29504-105.54	29305-160.07	-	-	TP 760	29701-082.45
M 63-775/8 TOP	29504-165.54	29305-160.07	-	-	TP 760	29701-082.46
SE 7286 TOP	29504-105.54	29305-160.07	-	-	TP 720	29701-082.44
ST 63-760 TOP	29504-105.54	-	29304-060.91	-	TP 720	29701-082.49
ST 63-760/8 TOP	29504-165.54	-	29304-060.91	-	TP 720	29701-082.50
ST 72-760 TOP	29504-105.54	-	29304-060.91	29304-018.06	TP 720	29701-082.24
ST 72-760/8 TOP	29504-165.54	-	29304-060.91	29304-018.06	TP 720	29701-082.27
Sydney ST 72-772 TOP	29504-105.54	29305-160.07	-	-	TP 720	29701-082.44
Sydney ST 72-772/8 TOP	29504-165.54	-	29304-060.91	-	TP 720	29701-082.54



Alignment



All adjustment controls not mentioned in this description are pre-set at the factory and must not be re-adjusted in the case of repairs.

1. Chassis Board

Measuring instruments: Oscilloscope with 10:1 test probe.

Service works after replacement or repair of:

- Chassis alignment 1.1
- Tuner, alignment 1.2
- IF-amplifier, alignment 1.2
- IC520, alignment 1.3, 1.4
- Videotext (teletext), alignment 1.5
- Focusing board or CRT panel, alignment 1.6
- Vertical or horizontal deflection, alignment 1.7

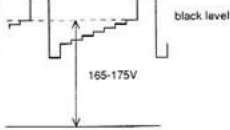
Alignment	Preparations	Alignment Process
1.1 +A Voltage	This voltage must be checked after every repair and before every adjustment. Brightness: minimum	Set the control R654 to obtain the value specified in the general circuit diagram.
1.2 Tuner AGC	Feed in a standard test pattern in the upper range of the UHF band; the RF should be 1.5mV (64dB μ V, noise-free picture) at least.	Turn control R341 (contact 14, IF-amplifier) so that noise just starts to appear in the picture, then turn in reverse direction so that the noise just disappears from the picture.
1.3 Line phase	With control R412 set the horizontal amplitude to minimum.	With control R525 set the grey picture edges to be symmetrical within the right and left picture frame. With R412 reset the picture width to conform with the test pattern.
1.4 Line frequency	Connect the CCVS signal at capacitor C518 to ground.	Set the control R506 so that the picture moves slowly across the screen. Remove the short circuit.
1.5 Videotext matching adjustment	The control R242 is pre-set at the factory to minimum high-frequency emphasis. During this adjustment page 199 must always be selected anew so that the page is read in anew making it possible to evaluate the error rate.	Turn R242 slowly until the faults disappear. Do not turn any further as the error rate may increase again.
1.6 Line sharpness	Select the convergence test pattern; Maximum contrast Set the brightness so that the black background of the test pattern is just brightening.	With the focus control  on the CRT panel adjust the horizontal lines for maximum sharpness. TV receivers with focusing panel: Subsequently, with the focus control  on the focusing panel, adjust the vertical lines for maximum sharpness. Repeat if necessary. Attention! For measurements on the focusing panel use only sufficiently insulated measuring cables and test probes with adequate electric strength (eg. 100 : 1).
1.7 Picture geometry	After repair of the vertical or horizontal deflection the picture geometry must be checked and re-adjusted if necessary according to the test pattern.	Vertical deflection: Vertical amplitude: R561 Vertical frequency: R506 Vertical linearity: R549 Vertical Shift: R431 Horizontal deflection: Horizontal amplitude: R412 East/West amplitude: R422 Keystone distortion: R441

2. Picture Tube Panel

Measuring instruments: Oscilloscope with 10:1 test probe, high-resistance voltmeter

Service works after replacement or repair of:

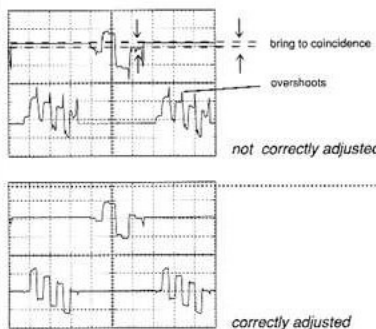
the picture tube panel, alignment 1.1 and 1.2

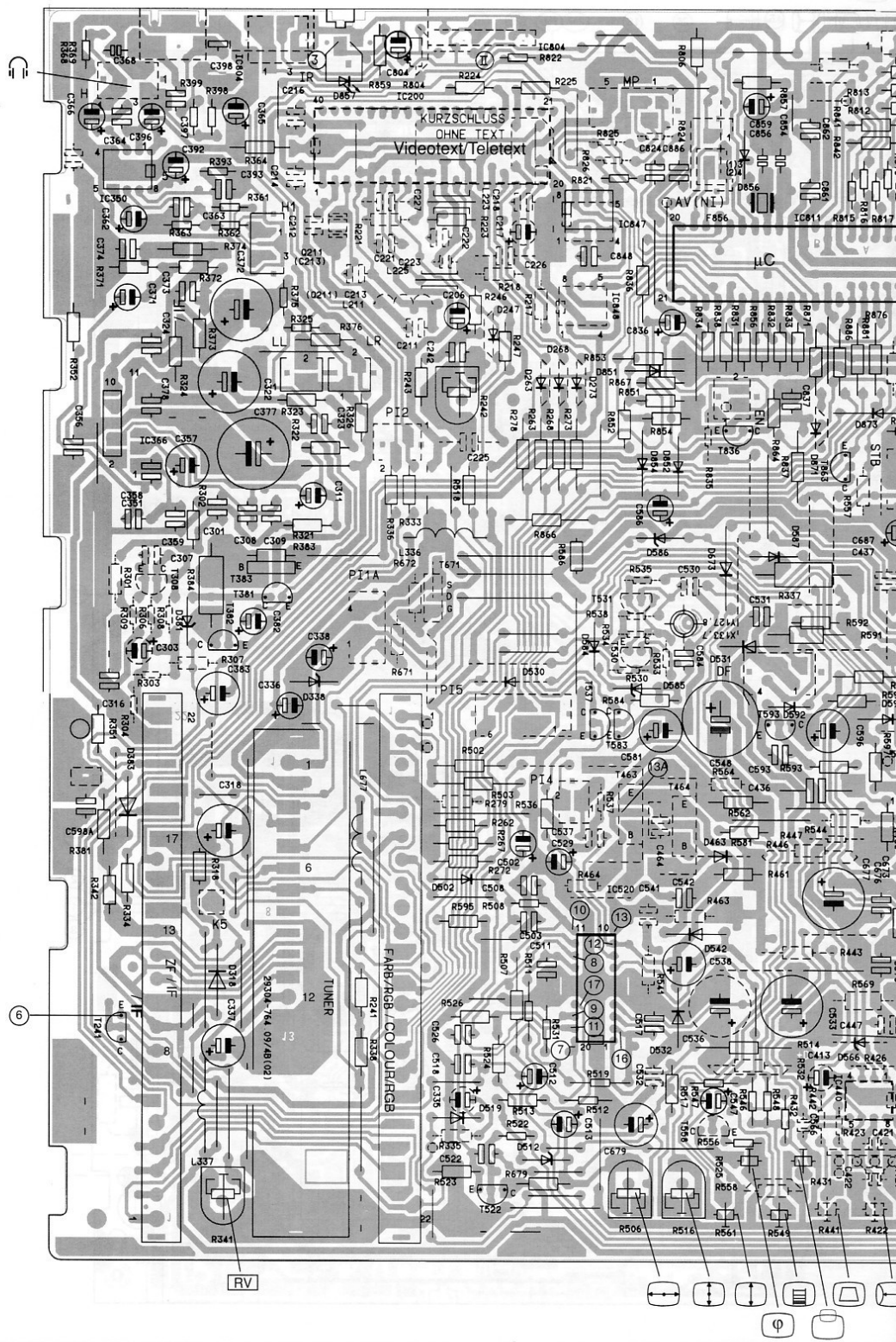
Alignment	Preparations	Alignment Process
1.1 White balance	Feed in a FuBK test pattern. ● minimum, ○ nominal value, ● maximum	Set the controls VG and VB so that no discolouration is visible in the grey scale.
1.2 Screen grid voltage	- Feed in a test pattern. - Adjust the screen brightness with the remote control handset so that the grey areas just become dark. - Switch the TV receiver to AV mode. - Connect a voltmeter (200 k Ω series resistance) to the test points R, G, B to determine the test point with the highest voltage level.	- With the control SG on the picture tube panel set the voltage to 175V. - If flyback lines are visible on the screen, reduce the voltage by 10V approximately. 

2. Colour-RGB

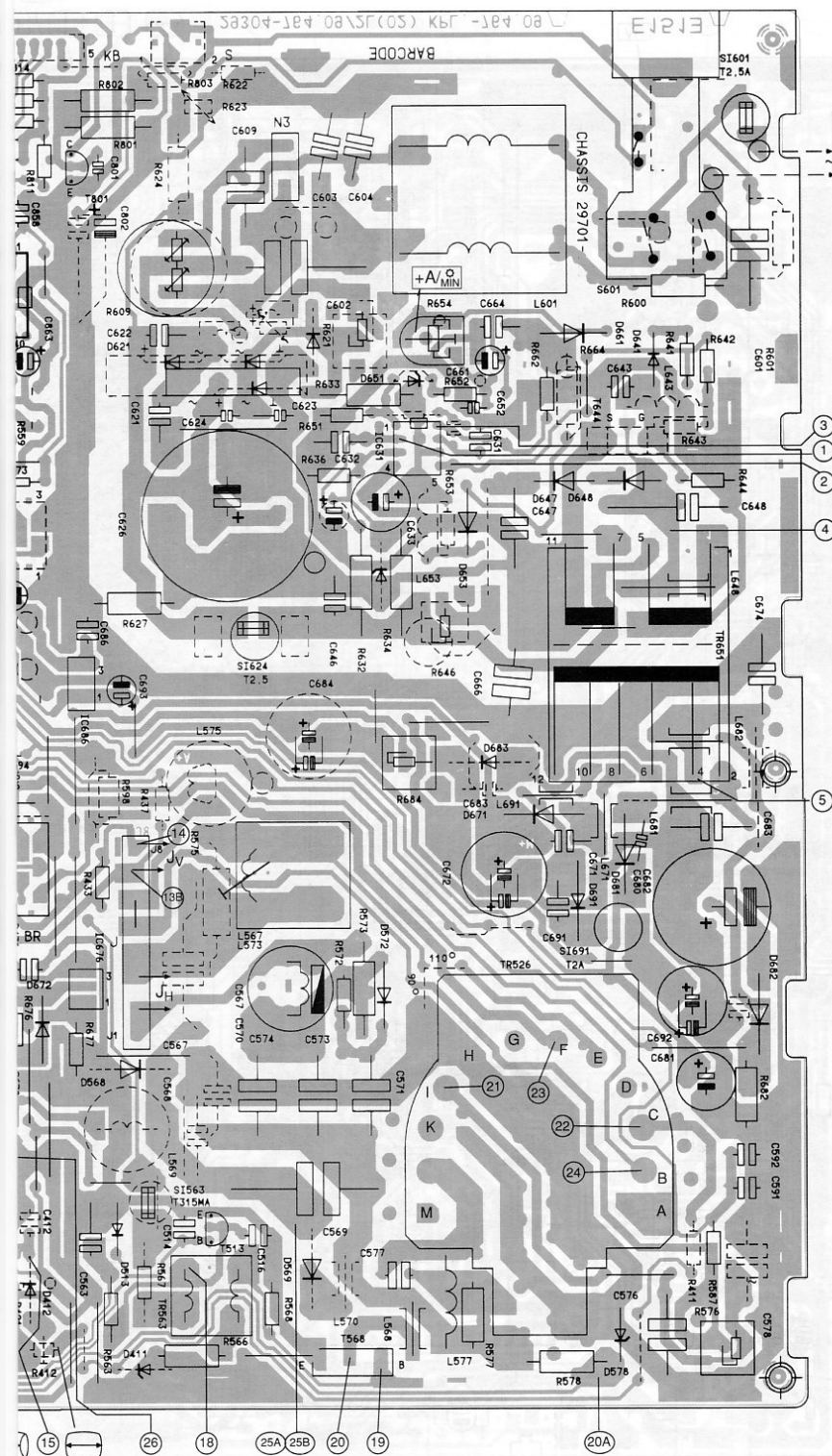
Measuring instruments: Dual-beam oscilloscope with 10:1 test probe.

Service works after replacement of IC5080, F5013, F5046, F5051, F5083.

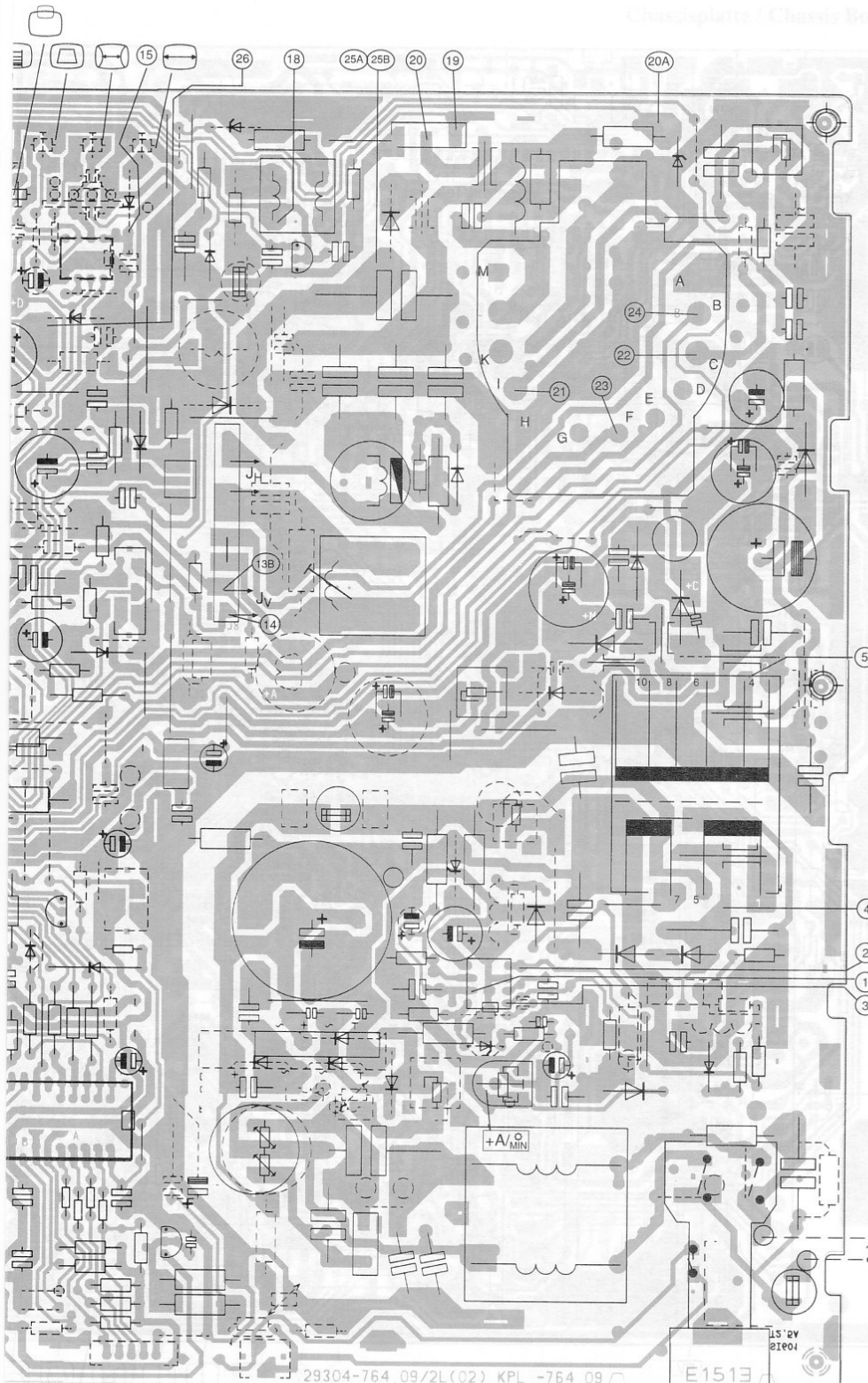
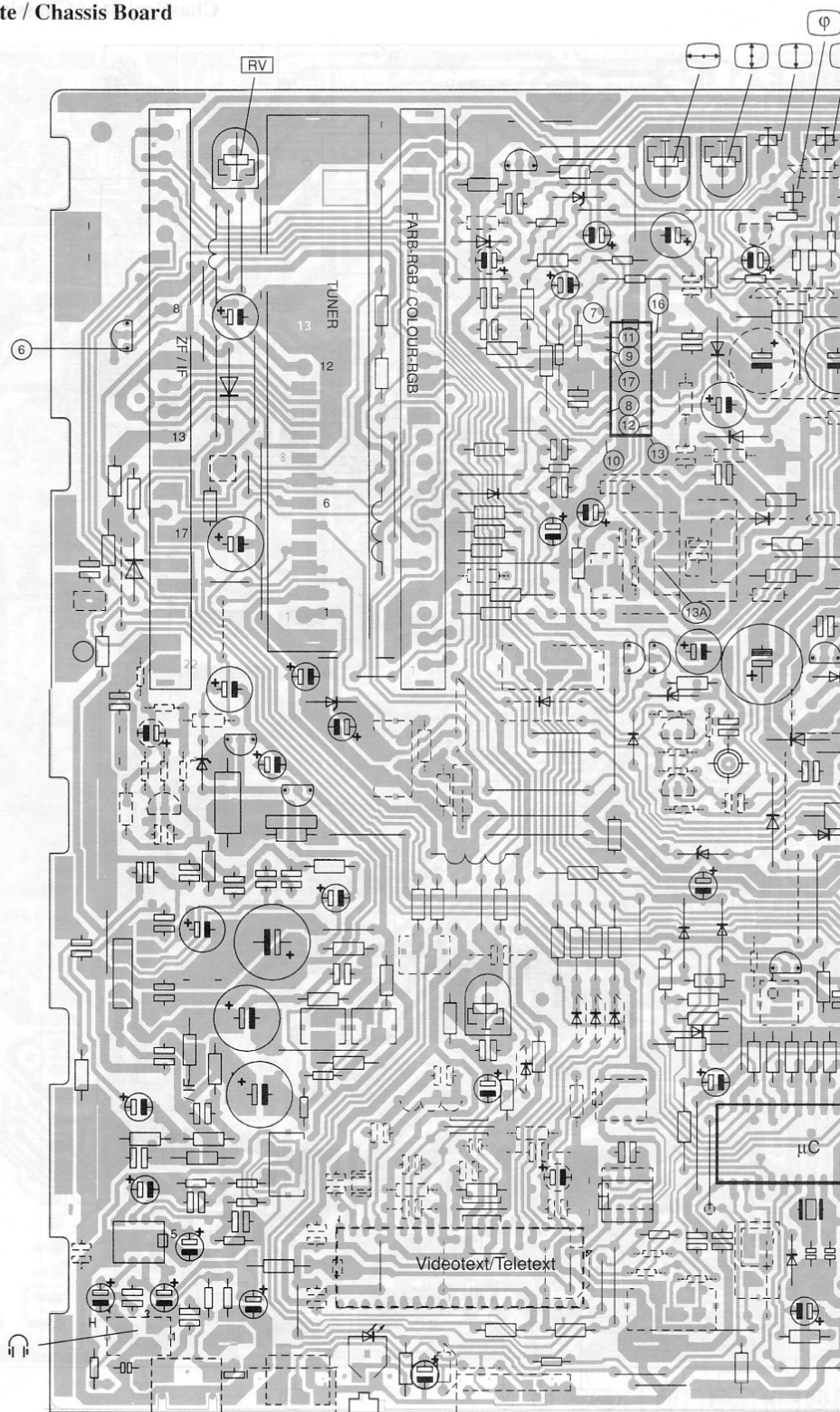
Alignment	Preparations	Alignment Process
2.1 PAL colour trap	Feed in a PAL test pattern. Oscilloscope to IC5120-(17).	Adjust the filter F5013 for minimum colour carrier of the Y-signal.
2.2 Colour synchronization	Connect IC5080-(28) TDA4650 to +12V. Connect IC5080-(17) TDA4650 to ground.	Adjust the trimmer C5073 to stop the colour bars moving across the screen. Remove the connections.
2.3 Colour decoupling	Oscilloscope to emitter of the transistor T5048.	Adjust the filter F5046 to obtain the maximum colour carrier.
2.4 SECAM demodulator	Feed in a SECAM test pattern: Oscilloscope channel 1 to IC5100-(11) Oscilloscope channel 2 to IC5100-(12)	By adjusting the filter F5083 and the control R5083 alternately, set the zero lines of the (B-Y)-signal and the (R-Y)-signal to the line blanking level. Note: Start with F5083 . 
2.5 SECAM gaussian filter	Oscilloscope to IC5100-(12).	With F5051 adjust the (B-Y)-signal of a colour staircase for symmetrical and minimum overshoots.
2.6 NTSC synchronization only multi-module	Feed in a NTSC test pattern. IC5080-(26) to +12V. IC5080-(17) to ground.	Adjust the trimmer C5071 to stop the colour bars moving across the screen. Remove the connections.



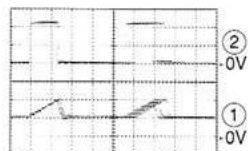
Chassisplatte / Chassis Board



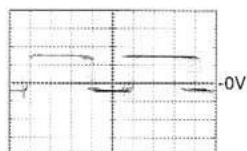
Chassisplatte / Chassis Board



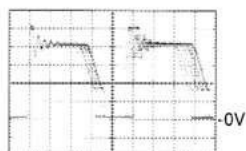
Chassisplatte / Chassis Board



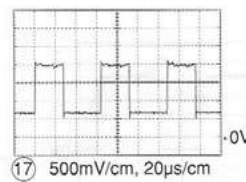
① 1V/cm, 2 μ s/cm
② 5V/cm, 2 μ s/cm



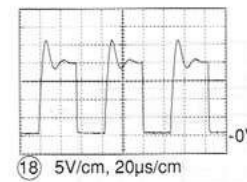
③ 500mV/cm, 2 μ s/cm



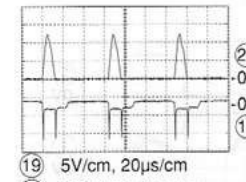
④ 100V/cm, 2 μ s/cm



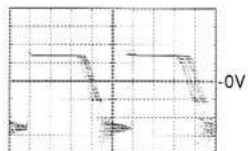
①7 500mV/cm, 20 μ s/cm



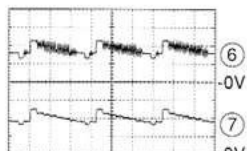
①8 5V/cm, 20 μ s/cm



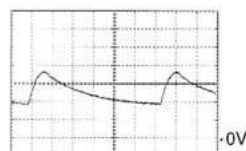
①9 5V/cm, 20 μ s/cm
②0 500V/cm, 20 μ s/cm



⑤ 100V/cm, 2 μ s/cm



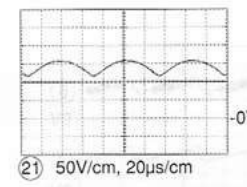
⑥ 2V/cm, 20 μ s/cm
⑦ 1V/cm, 20 μ s/cm



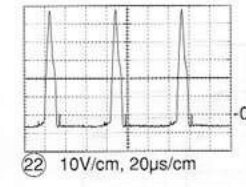
⑧ 1V/cm, 10 μ s/cm



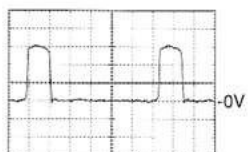
②0A 5V/cm, 20 μ s/cm



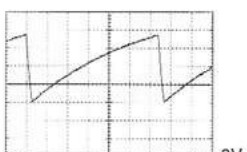
②1 50V/cm, 20 μ s/cm



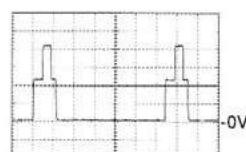
②2 10V/cm, 20 μ s/cm



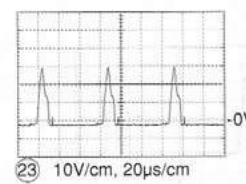
⑨ 1V/cm, 10 μ s/cm



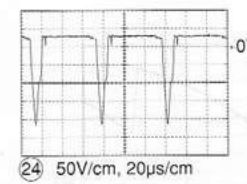
⑩ 1V/cm, 10 μ s/cm



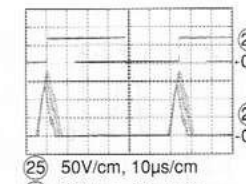
⑪ 2V/cm, 10 μ s/cm



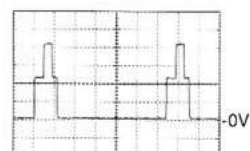
②3 10V/cm, 20 μ s/cm



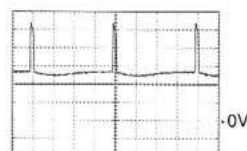
②4 50V/cm, 20 μ s/cm



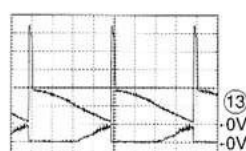
②5 50V/cm, 10 μ s/cm
②6 20V/cm, 10 μ s/cm



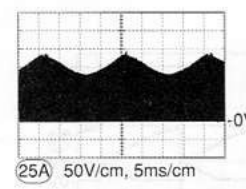
⑪ 2V/cm, 10 μ s/cm



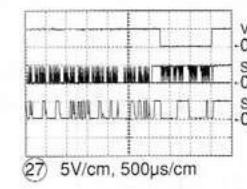
⑫ 10V/cm, 5ms/cm



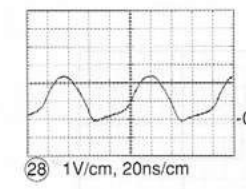
⑬ 10V/cm, 5ms/cm
⑬A 1V/cm, 5ms/cm



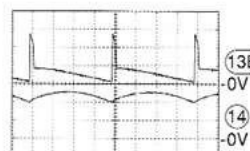
②5A 50V/cm, 5ms/cm



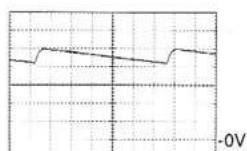
②7 5V/cm, 500 μ s/cm



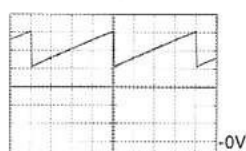
②8 1V/cm, 20ns/cm



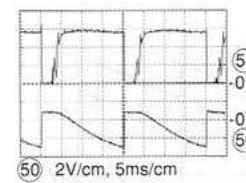
⑬B 20V/cm, 5ms/cm
⑭ 5V/cm, 5ms/cm



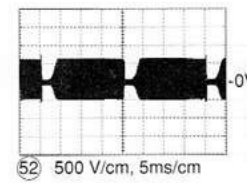
⑮ 2V/cm, 10 μ s/cm



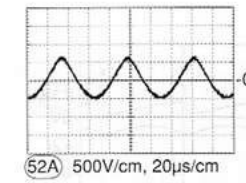
⑯ 500mV/cm, 5ms/cm



⑤0 2V/cm, 5ms/cm
⑤1 20V/cm, 5ms/cm

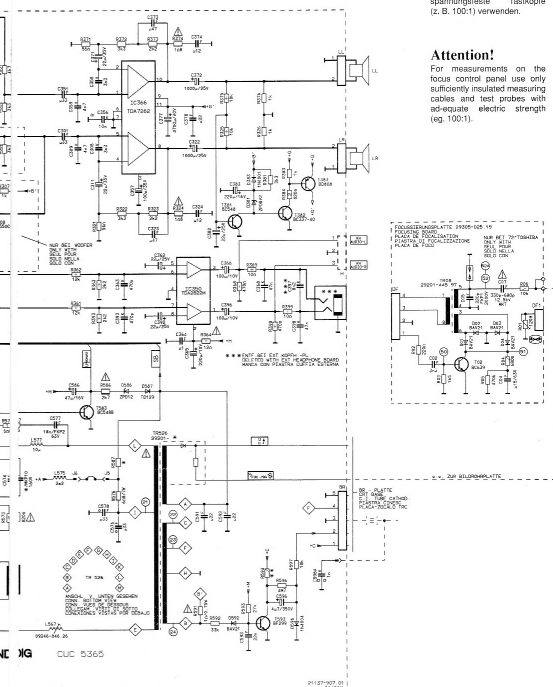
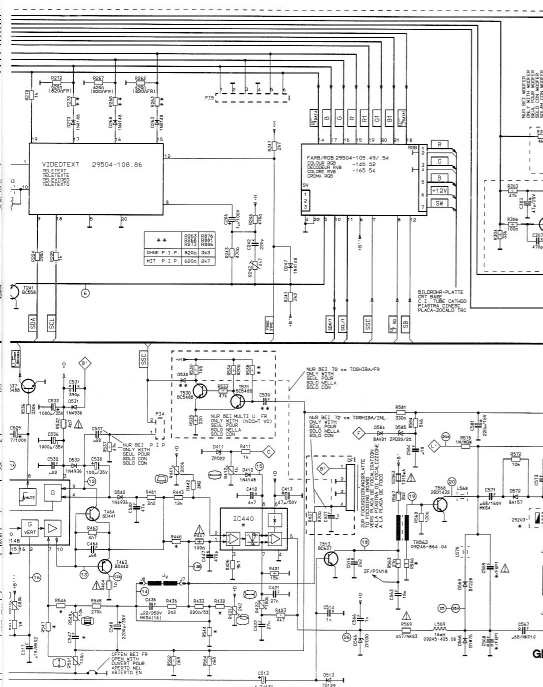
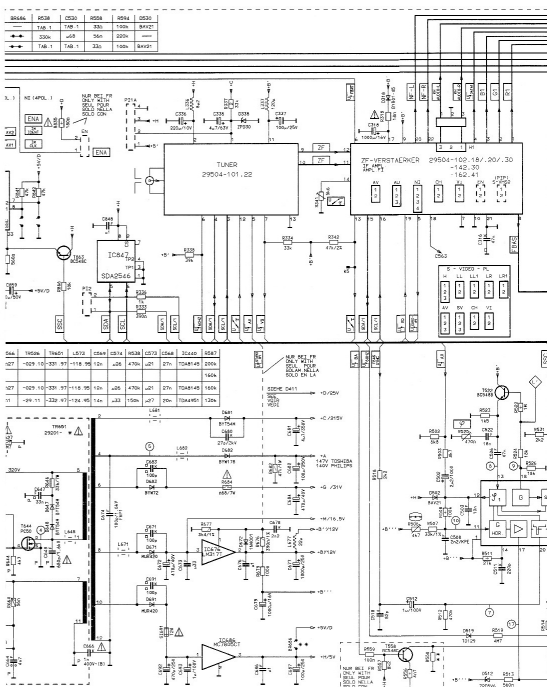
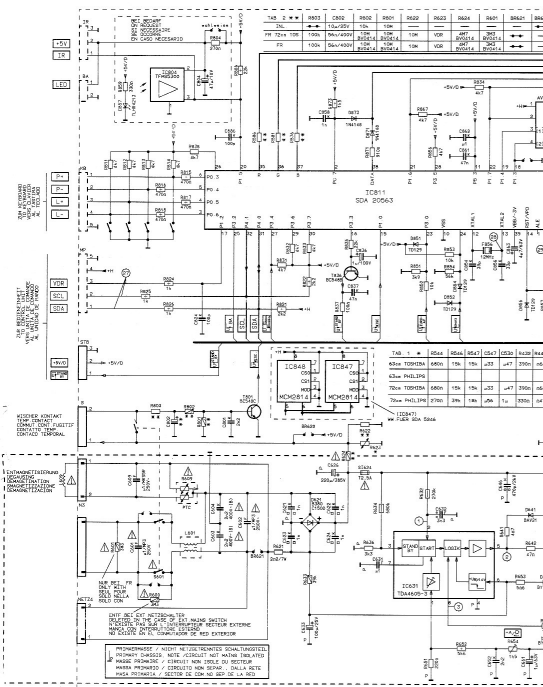


⑤2 500 V/cm, 5ms/cm



⑤2A 500V/cm, 20 μ s/cm

Gesamtschaltplan / General Circuit Diagram

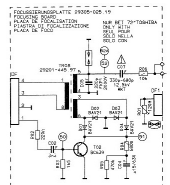


Achtung!

Bei Messungen auf der Fokussierungsplatte nur ausreichend isolierte Meßleitungen und spannungsfeste Tastköpfe (z. B. 100:1) verwenden.

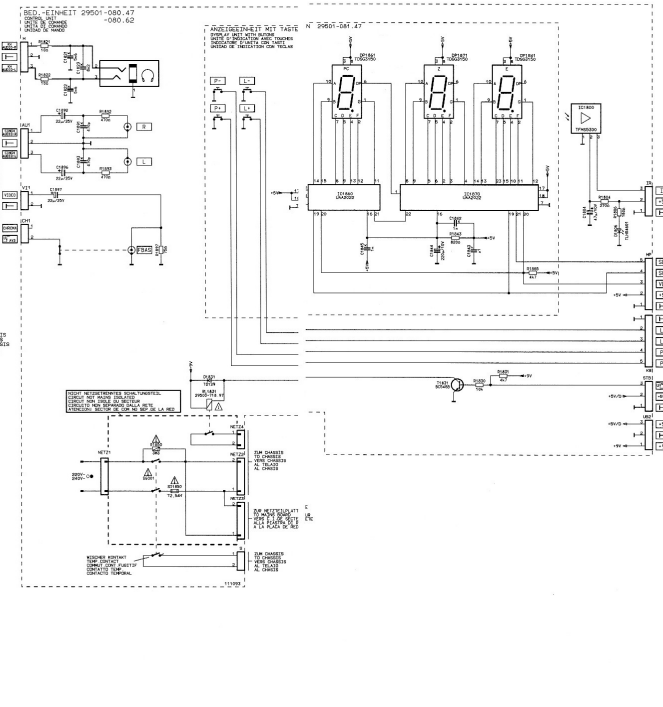
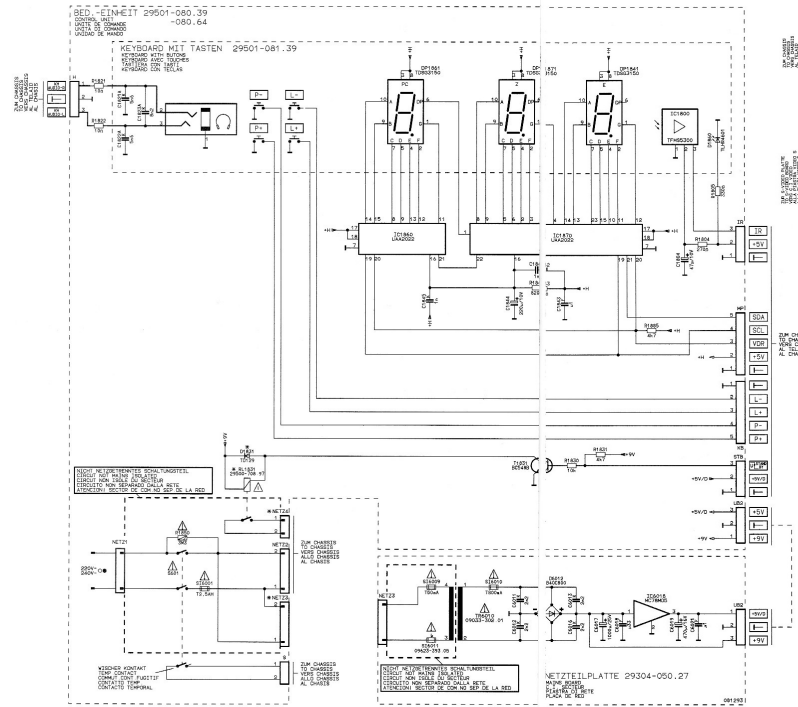
Attention!

For measurements on the focus control panel use only sufficiently insulated measuring cables and test probes with adequate electric strength (eg. 100:1).

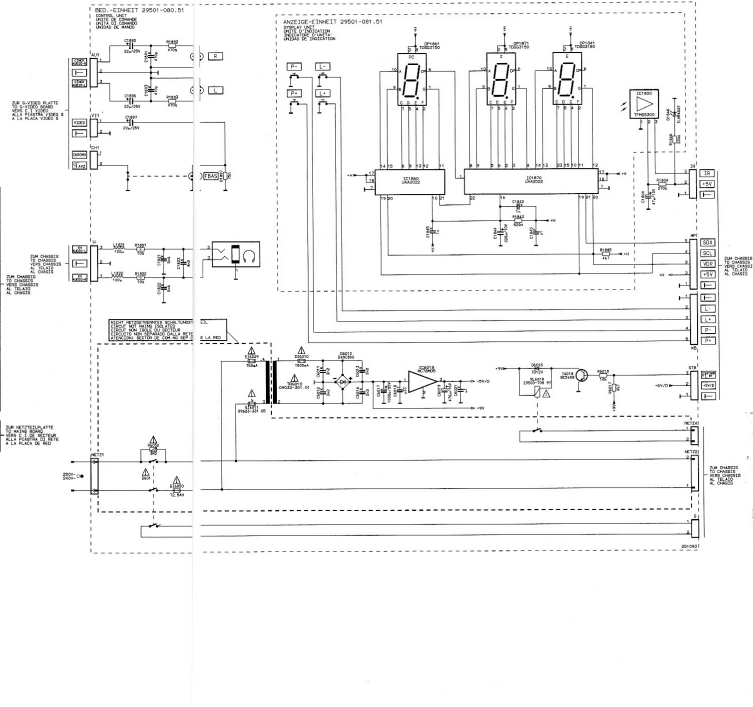


Bedieneinheiten / Control Units

Servicearbeiten nach Bausteinwechsel: Keine
 Servicing work after replacing the module: None

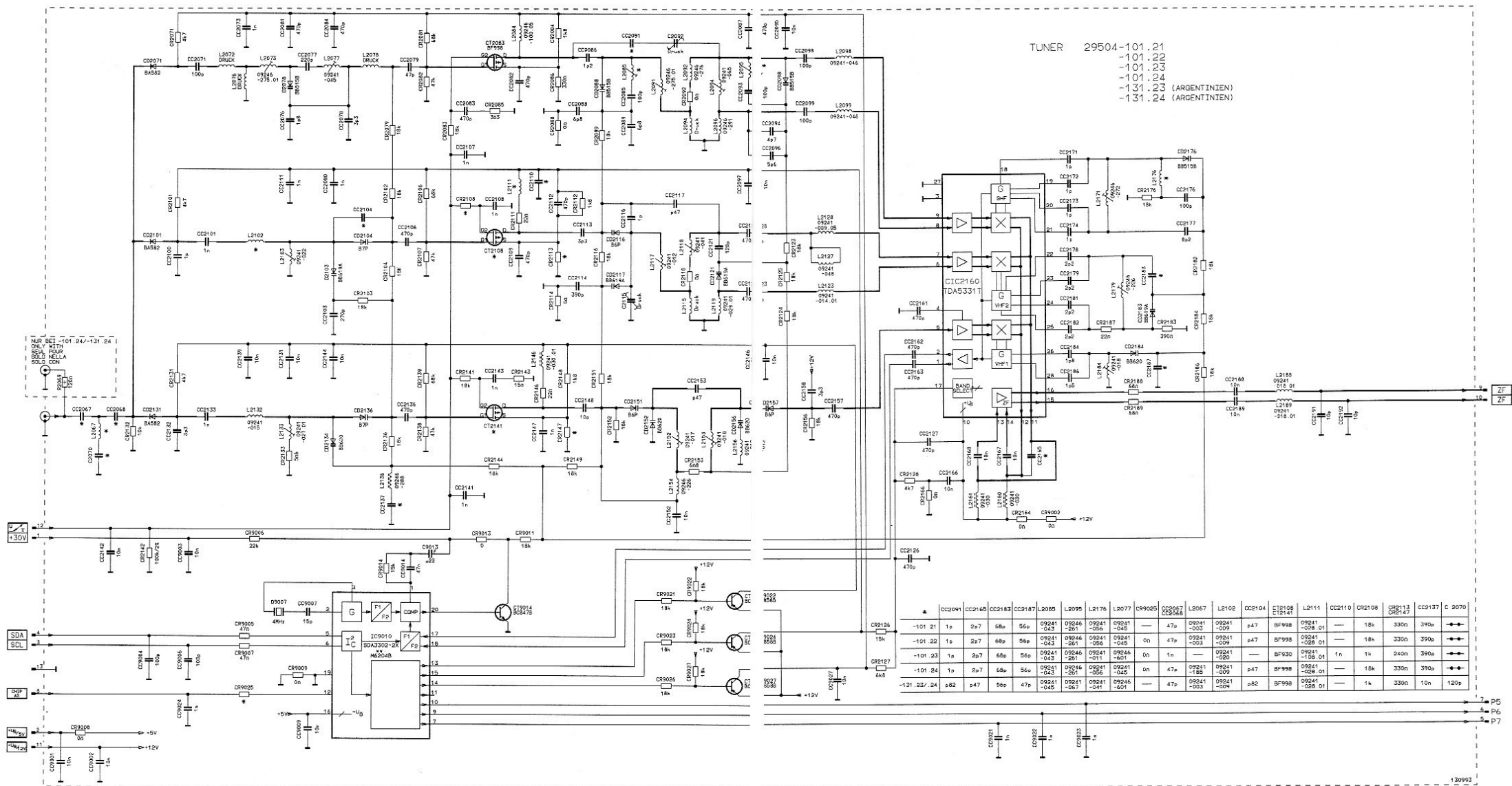


Netzteilplatte / Mains Board



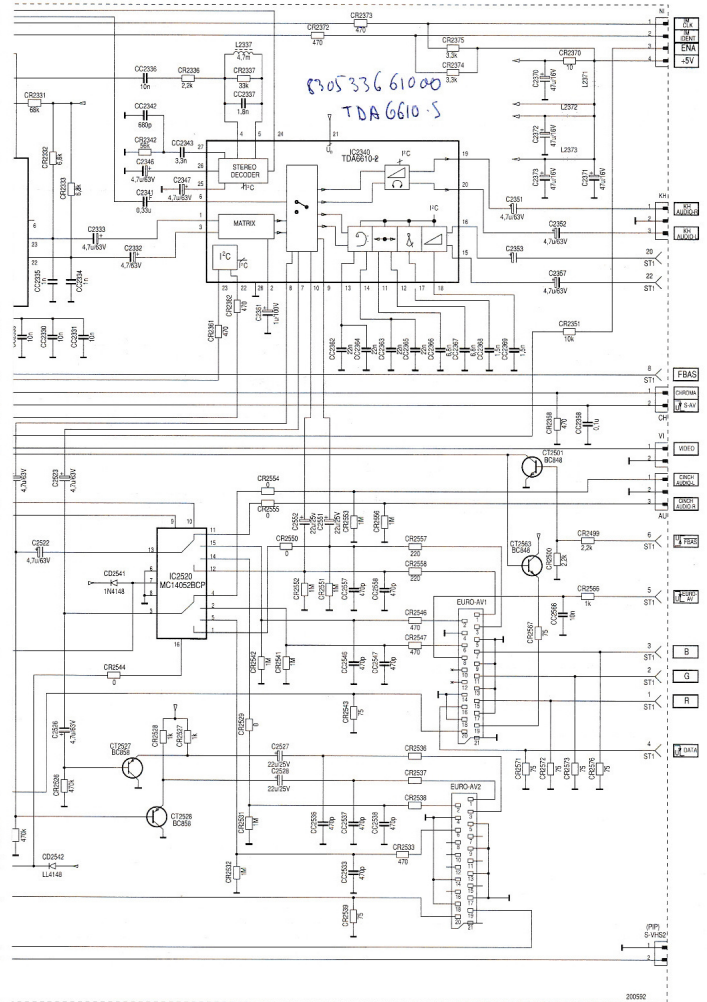
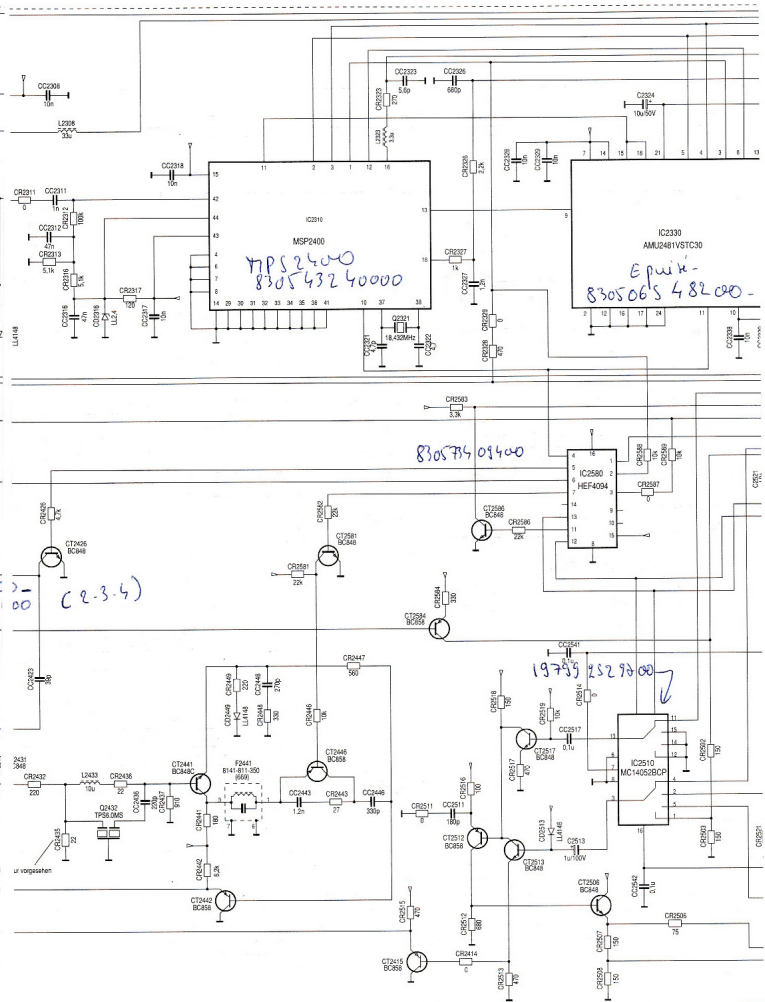
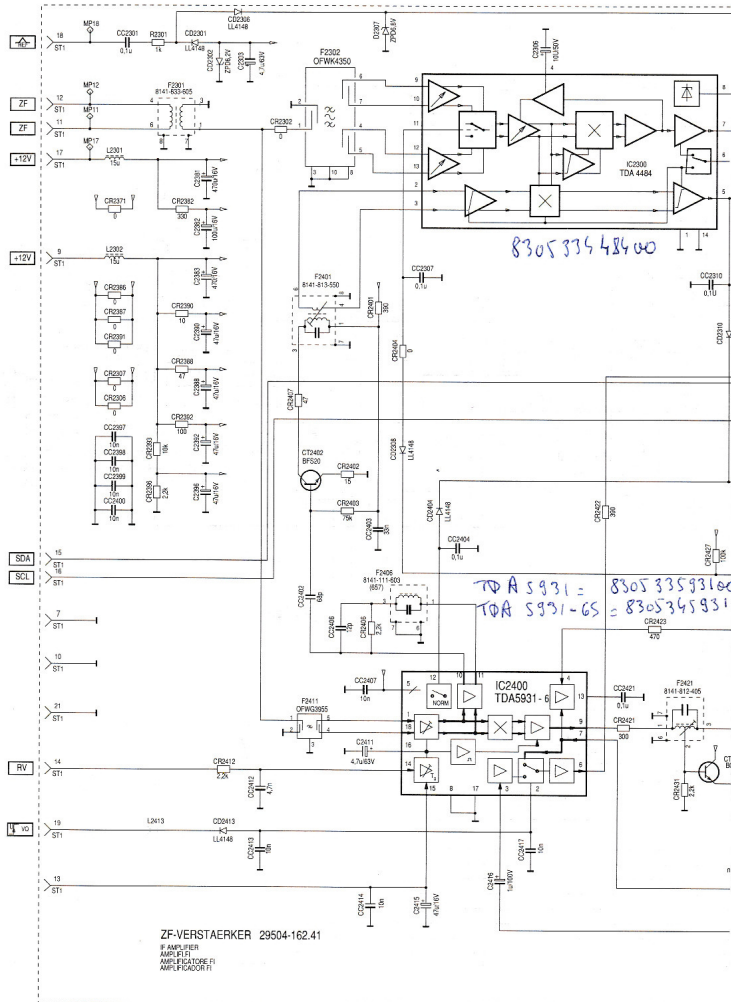
Tuner

Servicearbeiten nach Bausteinwechsel, siehe Abgleich 3-1, Tuner-AGC
Servicing after module replacement, see alignment page 3-2, Tuner AGC



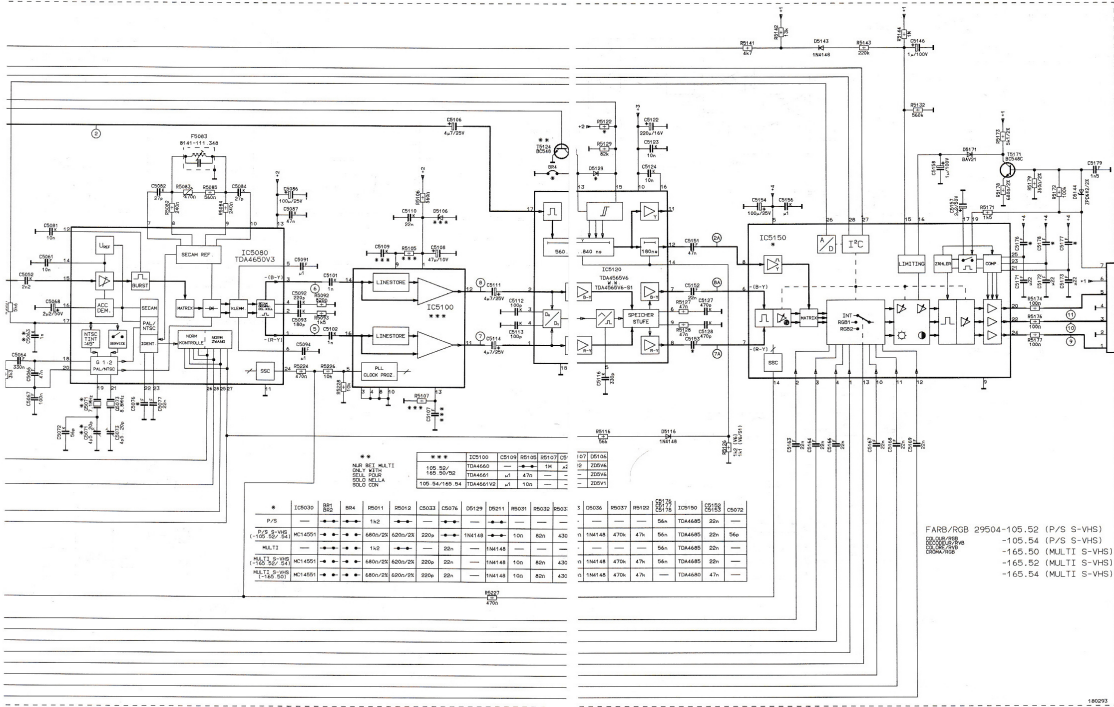
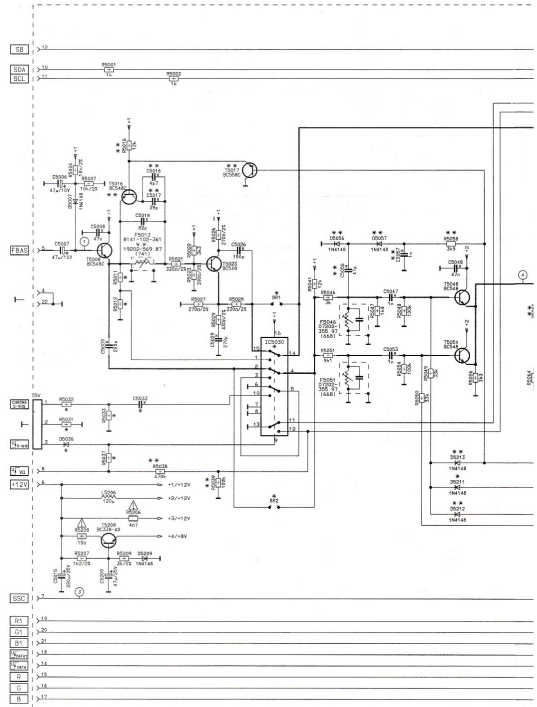
ZF-Verstärker / IF Amplifier

Servicearbeiten nach Bausteinwechsel, siehe Abgleich 3-1, Tuner-AGC
Servicing after module replacement, see alignment page 3-2, Tuner AGC

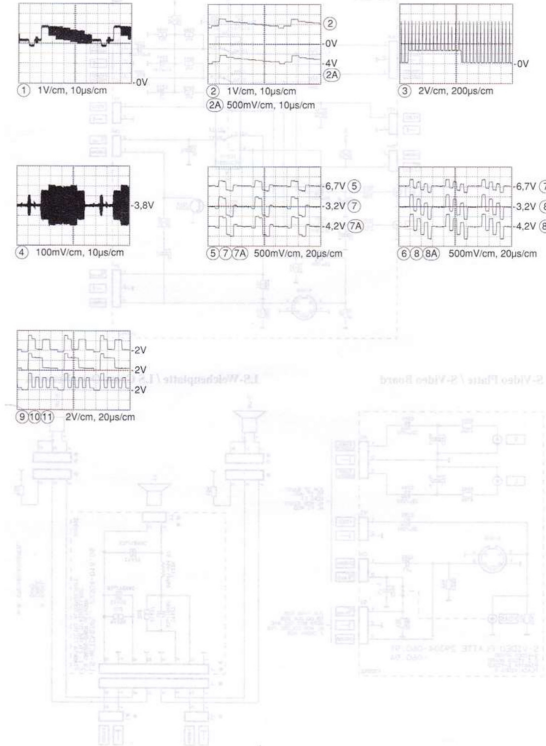


Farb RGB-Baustein / Colour RGB Module

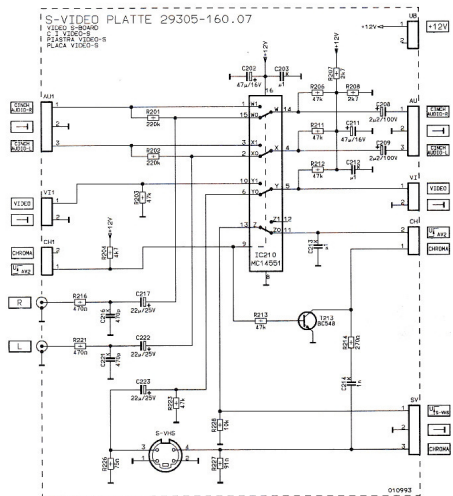
Servicearbeiten nach Bausteinwechsel: Keine
 Servicing work after replacing the module: None



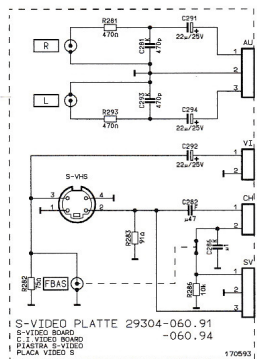
Farb-RGB Baustein / Colour RGB Module



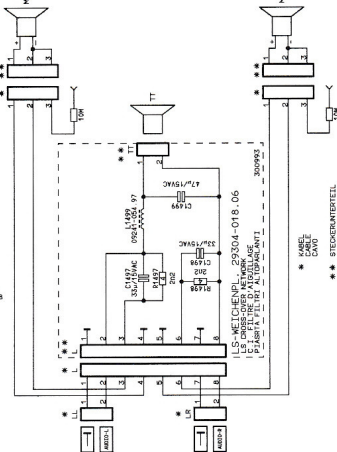
S-Video Platte / S-Video Board



S-Video Platte / S-Video Board

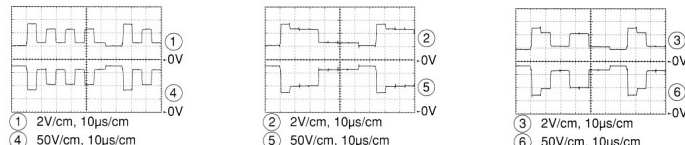
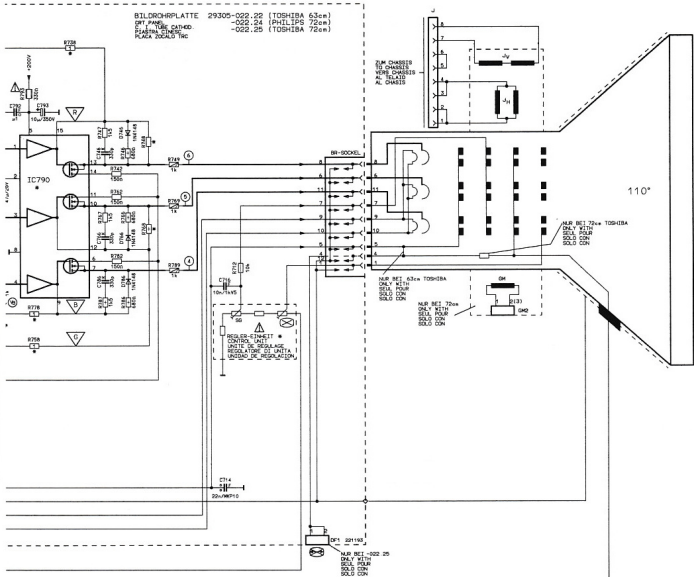
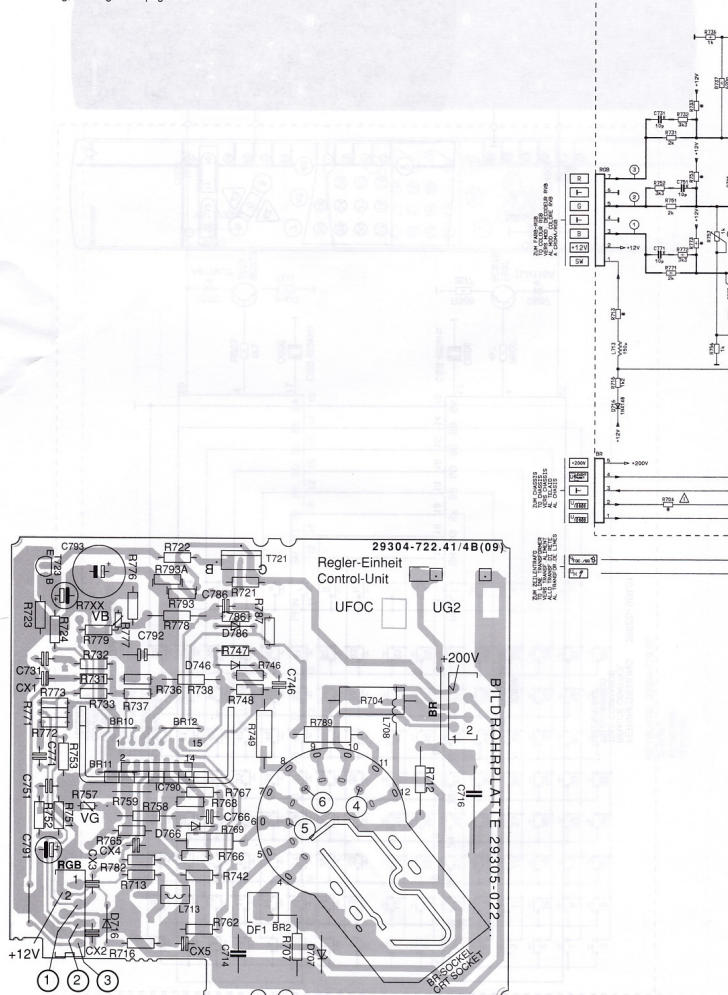


LS-Weichenplatte / LS Cross-Over Network



Bildrohrplatte / CRT Panel

Servicearbeiten, siehe Abgleich Seite 3-1
For servicing, see alignment page 3-2

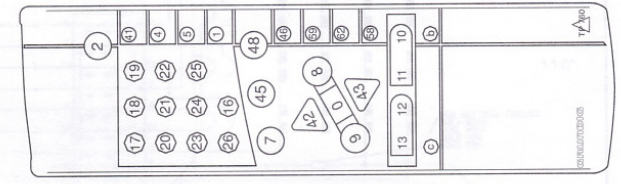
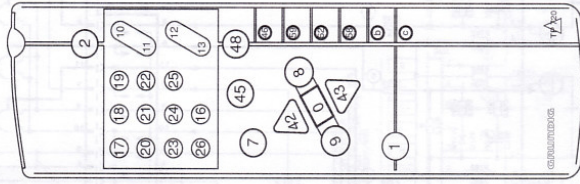
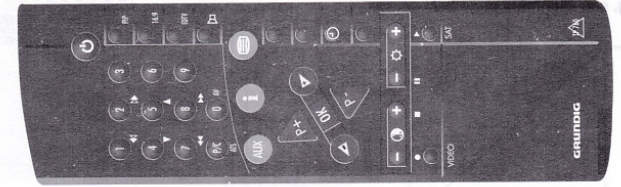
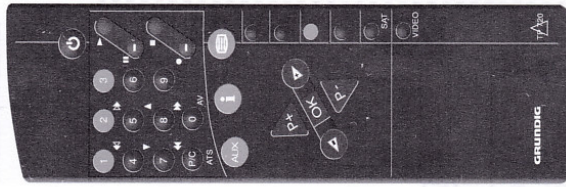


Telepilot TP 720

Remote Control TP 720

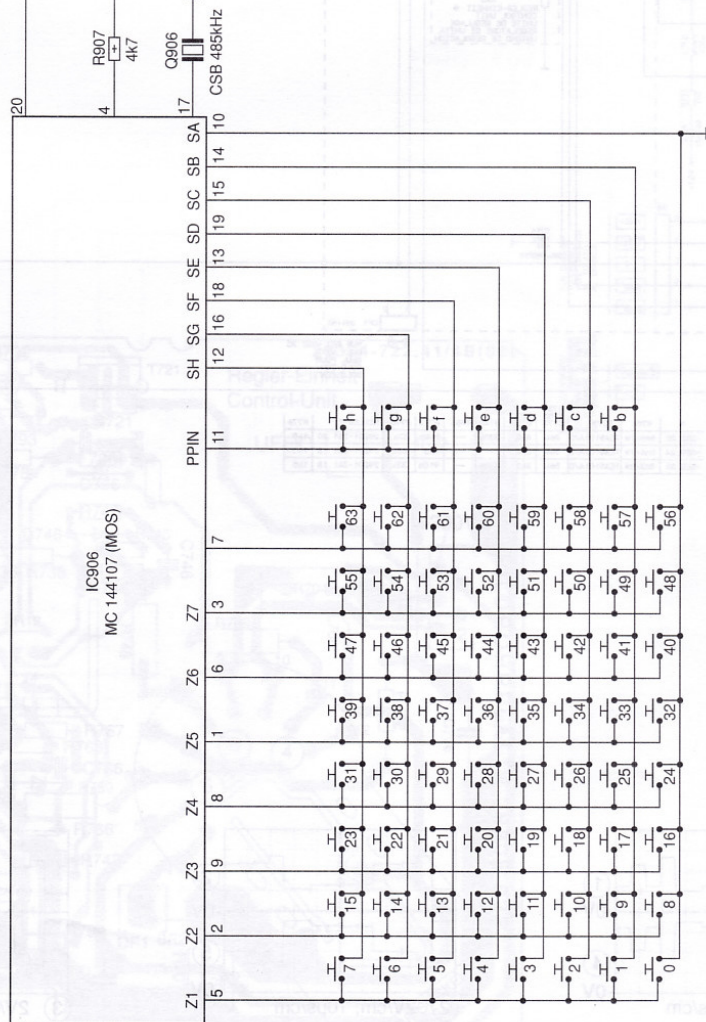
Telepilot TP 760

Remote Control TP 760



FERNBEDIENUNG 29622-059.06
REMOTE CONTROL
TELECOMMANDE
TELECOMANDO

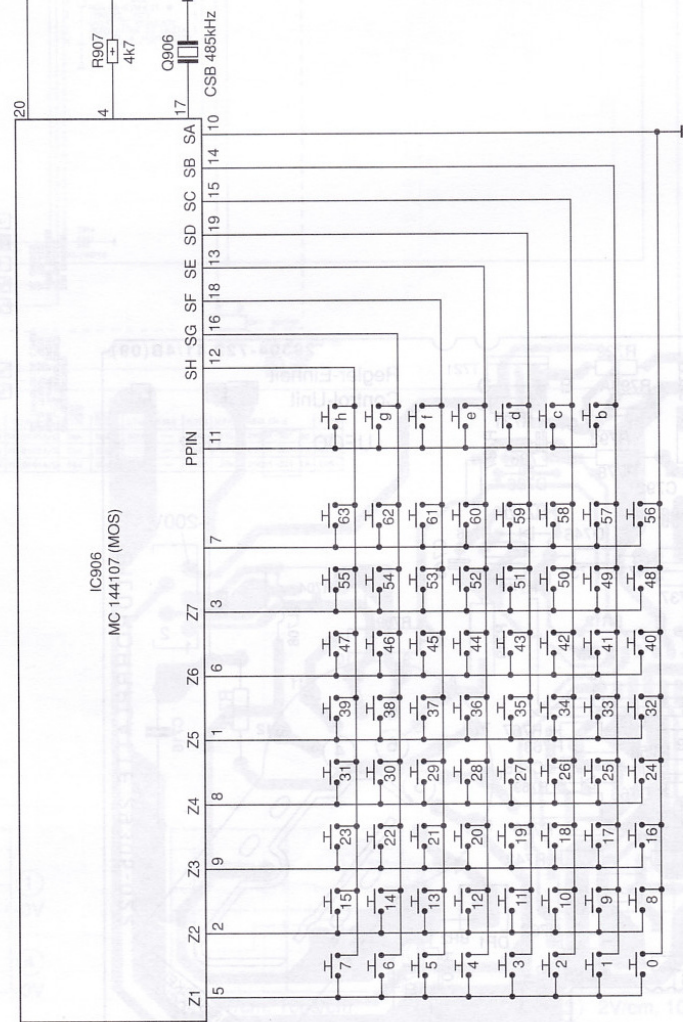
IC906
MC 144107 (MOS)



KEYBOARD 29304-779.02
CLAVIER
KEYBOARD
TECLADO

FERNBEDIENUNG 29622-059.01
REMOTE CONTROL
TELECOMMANDE
TELECOMANDO

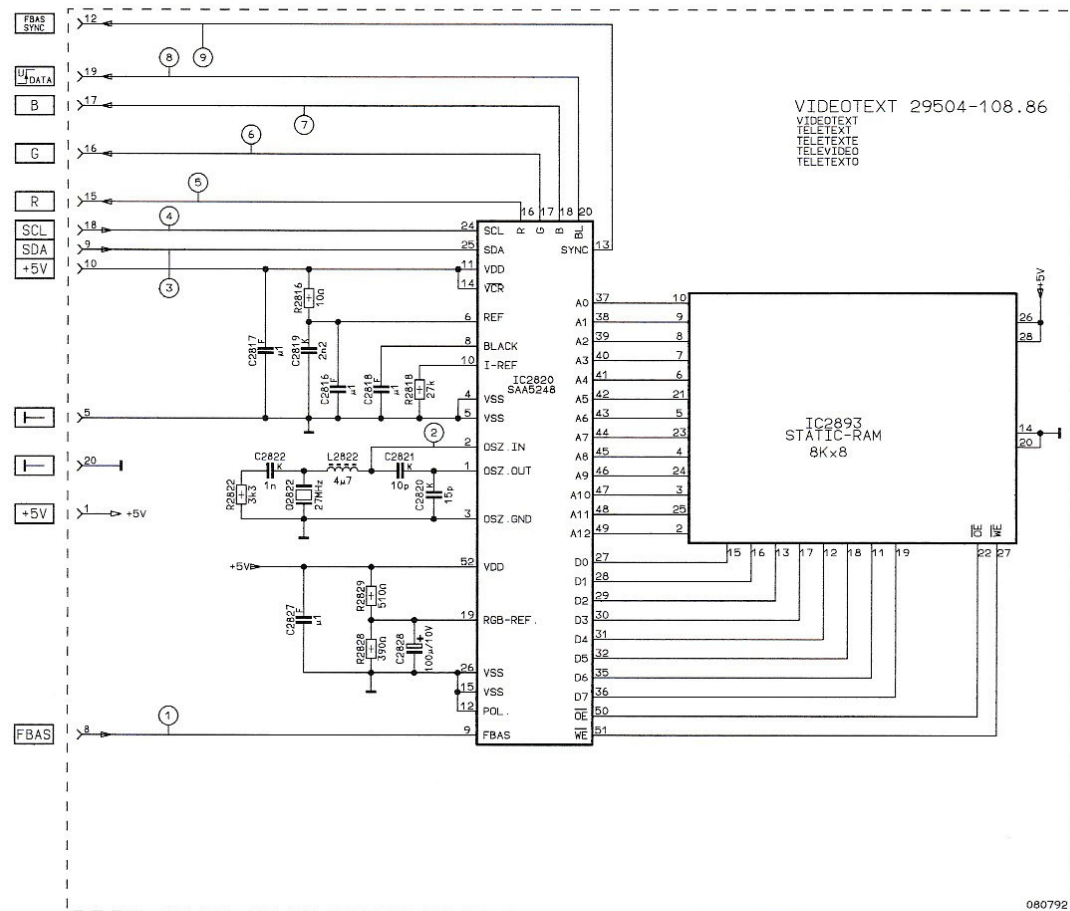
IC906
MC 144107 (MOS)



KEYBOARD 29304-779.01
CLAVIER
KEYBOARD
TECLADO

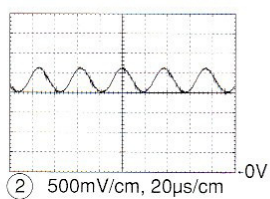
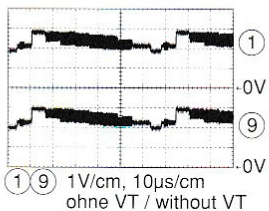
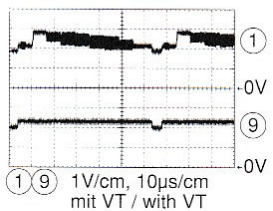
Videotext / Teletext

Servicearbeiten nach Bausteinwechsel, siehe Abgleich 3-1, VT-Anpassungsabgleich
 Servicing after module replacement, see alignment page 3-2, VT matching adjustment



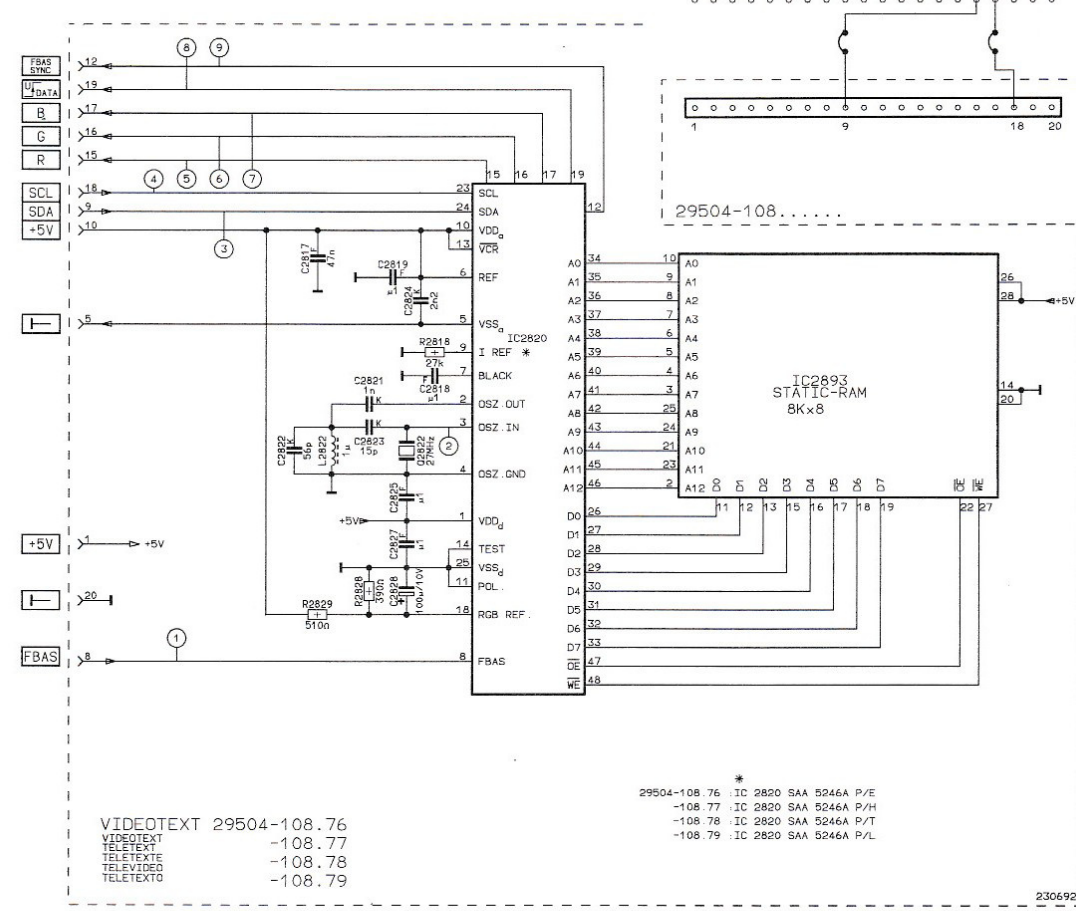
VIDEOTEXT 29504-108.86
 VIDEOTEXT
 TELETEXT
 TELETEXTE
 TELEVIDEO
 TELETEXTO

080792



Videotext / Teletext

Servicearbeiten nach Bausteinwechsel, siehe Abgleich 3-1, VT-Anpassungsabgleich
 Servicing after module replacement, see alignment page 3-2, VT matching adjustment



VIDEOTEXT 29504-108.76
 VIDEOTEXT
 TELETEXT
 TELETEXTE
 TELEVIDEO
 TELETEXTO

230692

