ORION TV-3880

MODEL

SERVICE MANUAL

Service Notes

After a repair the cables must be laid out as originally fitted to save compliance with original approval and to avoid failures or disturbances.
The mains cable prevents interference from the mains supply and is part of the product approval. For replacement the original spare part only must be used.

Note di servizio

Dopo una riparazione i cavi devono essere disposti come posizionati all'origine per mantenere la corrispondenza con le approvazioni originali ed evitare guasti o disturbi.
Il cavo di alimentazione previene interferenze provenienti dalla rete elettrica ed è parte delle approvazioni del prodotto. Per la sostituzione deve essere utilizzato esclusivamente il ricambio originale.

Professional 4400 Chassis service procedure

Power module

Use PP1 to select 154V ± 0.5V for 4:3 tubes and 151V ± 0.5V for 16:9 tubes at the CP28 terminals.

Activating service mode

1. Switch on the appliance while holding down the **MENU key at the cabinet controls** until the red LED lights up.

2. Release the MENU button at the cabinet and press the **standby** button on the remote control; the appliance will default to programme 1 or to AV1 if pin 8 of SCART 1 is connected to a voltage of +12 V. It is therefore important to make certain that the test signal needed to make the adjustments is available either on programme 1 or on the SCART 1 input, as selection of the sources is not possible thereafter in service mode.

3. The functions that can be adjusted (listed below) are selected using the **P+** and **P-** buttons of the remote control and the adjustments then made with the **Volume ±** buttons. It is advisable to make a note of initial values before making any changes so that these can be restored if necessary.

In the event of replacing the NVM memory or the microprocessor, it is essential to make all the adjustments accessible in service mode, since the replacement memory is supplied without any prior programming and a new microprocessor requires a new initialization.

Option bytes (Opx)

The correct values to set for each appliance are given on the label at the back cover alongside the letters **Op1**, **Op2**, **Op3**.

Initialization (INIT CTV 831 x.x)

The initialization procedure, which also indicates the software version for the microprocessor, is enabled with the **Volume +** button and **must be carried out whenever the NVM memory or the microprocessor is replaced. Bear in mind that initialization has the effect of erasing all data from the memory except for the bytes option.**

Control bytes (Cox)

These are control registers that **must be set** as follows:

Co2 96
Co3 27
Co4 00

Screen grid voltage (Vg2 Test)

Having selected the function, press the Volume+ button: a luminous horizontal line appears in the middle of the screen. Adjust potentiometer G2 on the EHT transformer so that the line is just visible (in a dimly lit room). Then press Volume- and **wait for a few seconds** until service mode is restored.

IF video setting (Ifxx AFCxx)

This adjustment requires special equipment and will be needed only for the ICC2 N1 version, which is also recognizable by the presence of the LC7 coil. If the coil is present, adjust IF and IFP to the values given on the label affixed to the left side of main PCB so that a suitable approximation is achieved.

If the coil is not present, adjust as follows:

IF 50
IFP 50 (this item is accessible **for multistandard appliances only**, provided that a France/AM/VHF-L mode signal is memorized in the programme 1 position).

AGC tuner setting (AG)
With a signal of 1 mV applied to the aerial input on a UHF channel, adjust to 4 Vdc at pin 1 of the tuner.

Setting the luminance/chrominance delay (Yx)
The delay must be adjusted to the following values:

Yp	18	(PAL)
Ys	30	(SECAM)
Yn	20	(NTSC)
Yo	22	(SCART)

The Yn function is only accessible if the signal is NTSC coded (**standard accepted only by SCART**).

Audio stereo A2 decoder (SA/LA)
The **SA** and **LA** functions allow adjustment of the separation between the right and left audio channels and of the respective levels. An RF stereo generator is therefore required. Disconnect modulation to the left hand channel and adjust LA to give 1.4 Vpp at pin 1 of the SCART 1 connector. Then adjust SA for the minimum residual signal at pin 3 of SCART 1. If a stereo generator is not available, set LA to 01 and SA to 0B to obtain a fair approximation.

Horizontal geometry (HSH/EW/PW/CP/TC)
There are two groups of these functions, one for 4:3 format (suffix 4) and one for 16:9 format (suffix 16), both of which must be adjusted because they are used in the zoom function (4:3 tubes included). The functions of the single parameters are as follows:

HSH	Horizontal shift
EW	Horizontal amplitude
PW	Parabola correction
CP	Corner parabola correction
TC	Trapezium correction

In the case of 4:3 format picture tubes, enter **EW16** = 3F to ensure proper zooming.

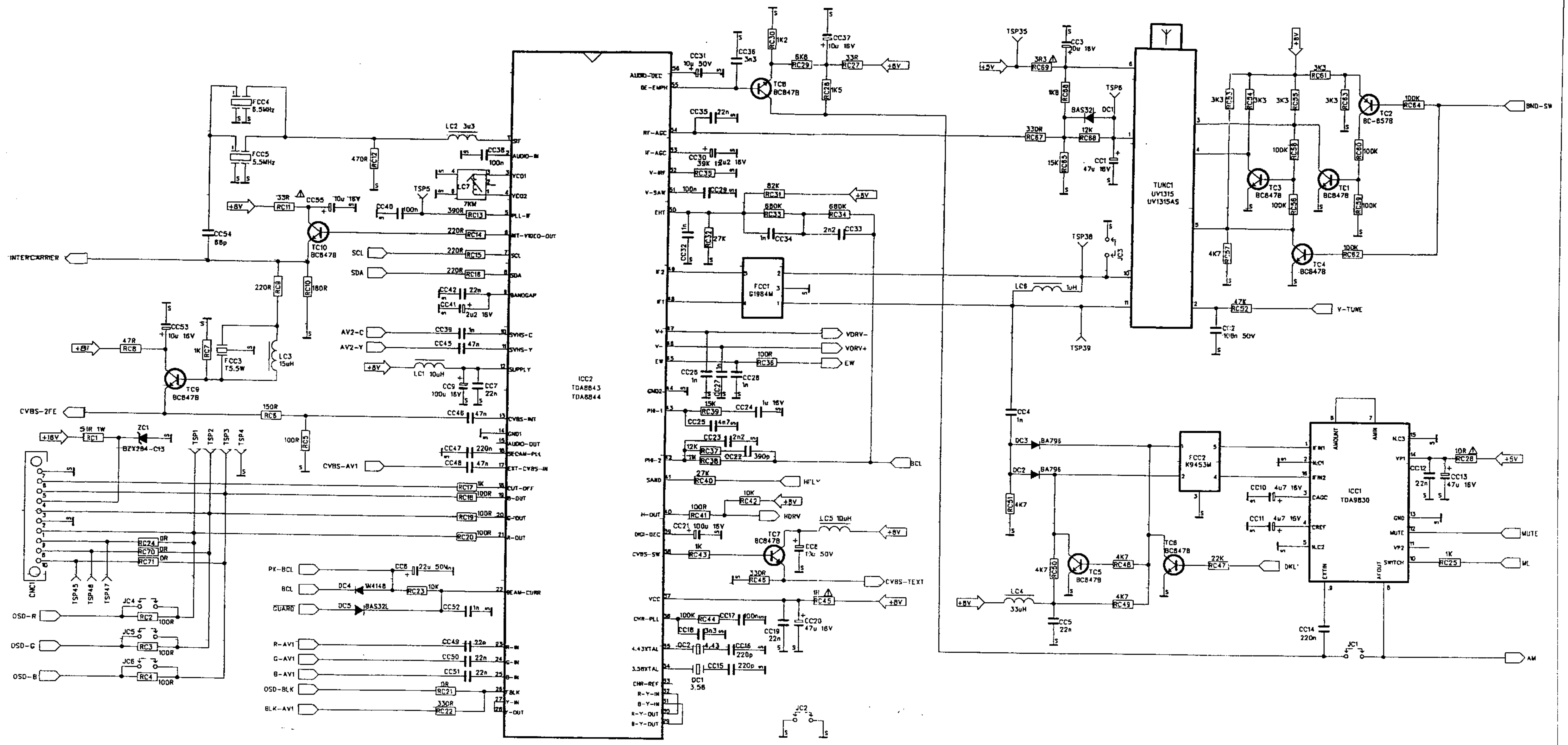
Vertical geometry (VS/VA/VSH/SC)
Vertical geometry is adjusted starting with the **VS** (vertical slope) function, which is set so that the central horizontal line of the test signal is exactly at the boundary between the visible image and the black part below and **must not then be changed again**. The functions of the single parameters are as follows:

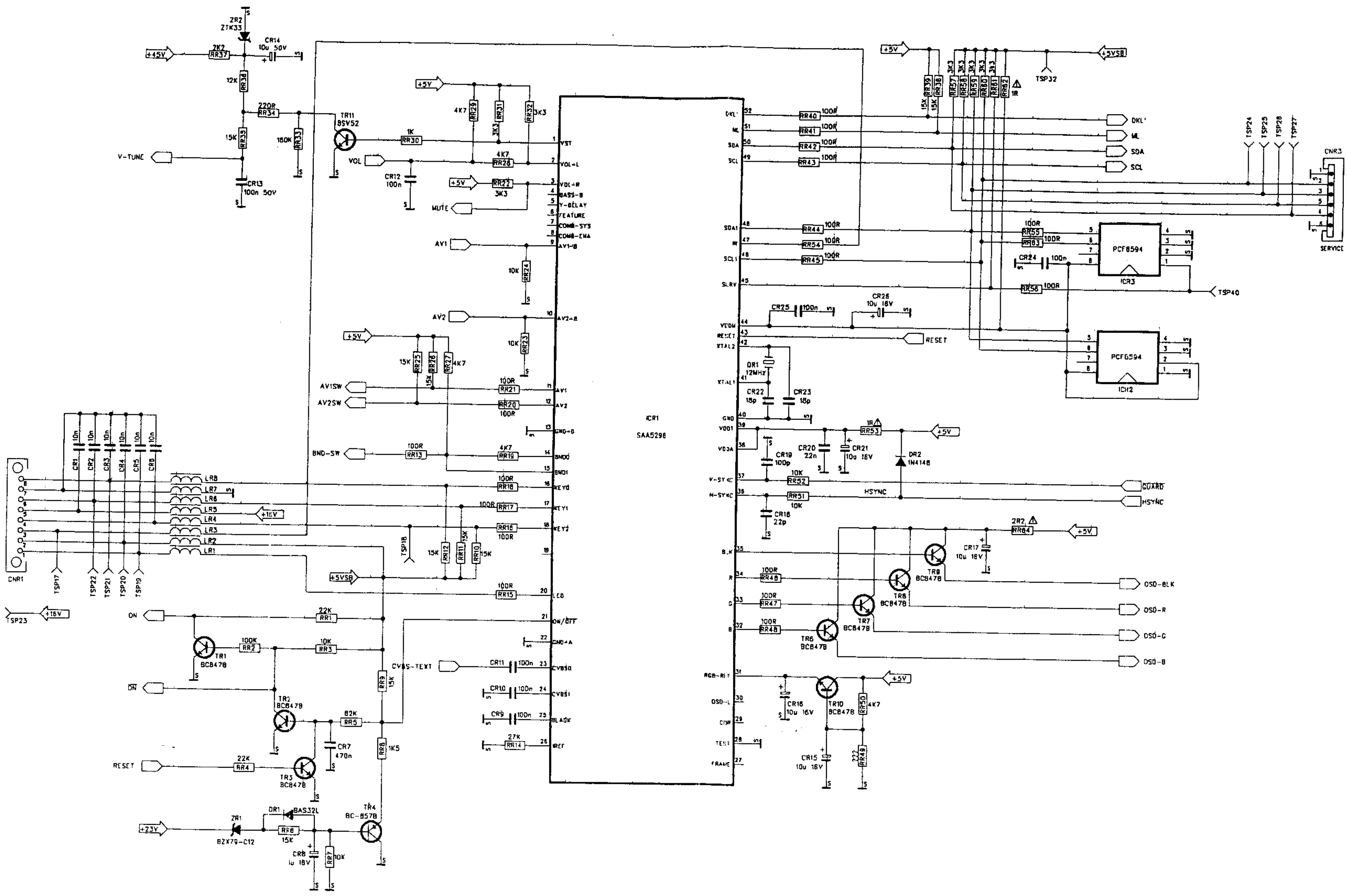
VS	Vertical slope
VA	Vertical amplitude
VSH	Vertical shift
SC	Vertical S-correction (linearity)

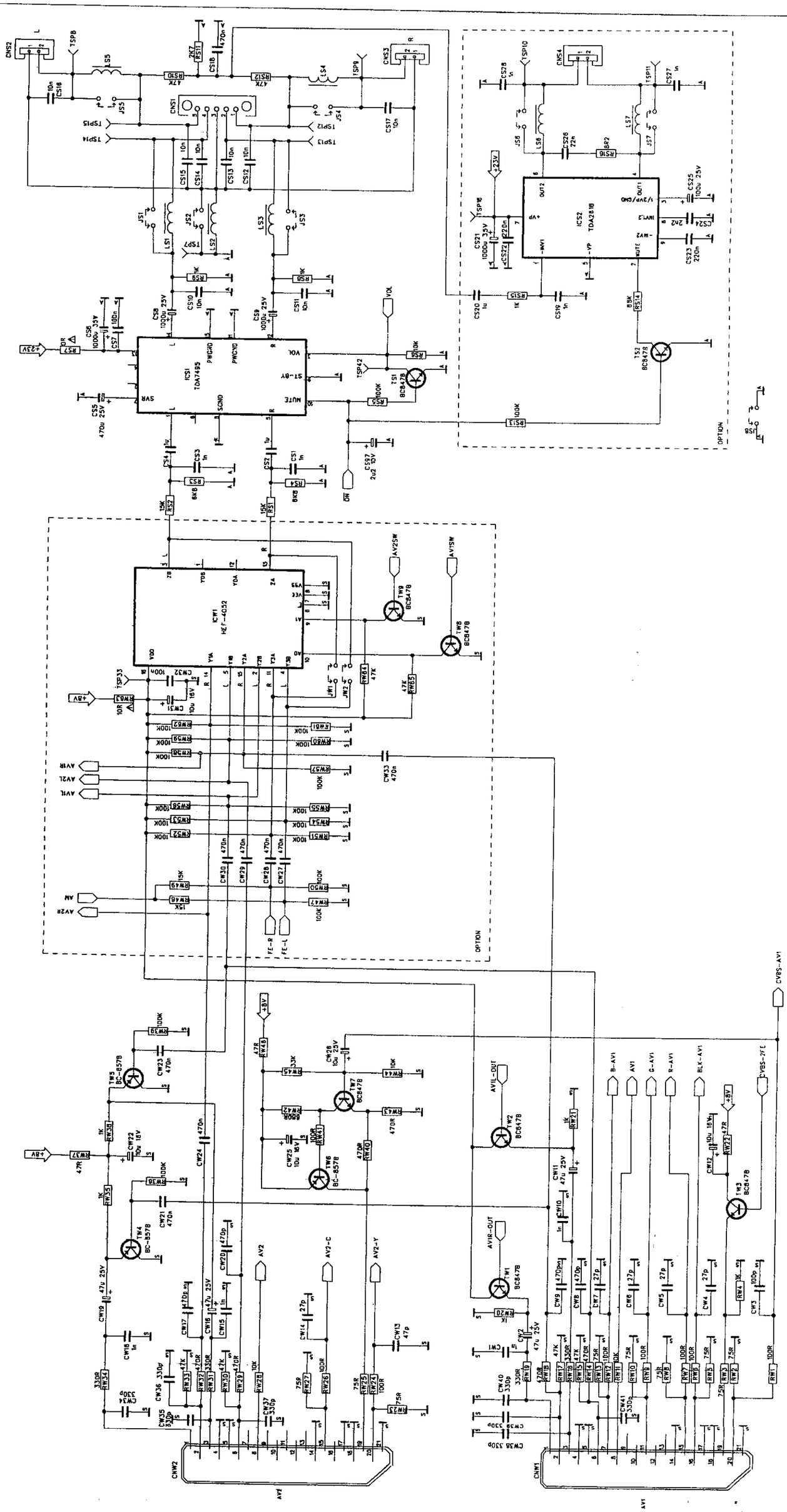
White control (WB/WG/WR)
Using a black and white bar signal, adjust to obtain a grey image.

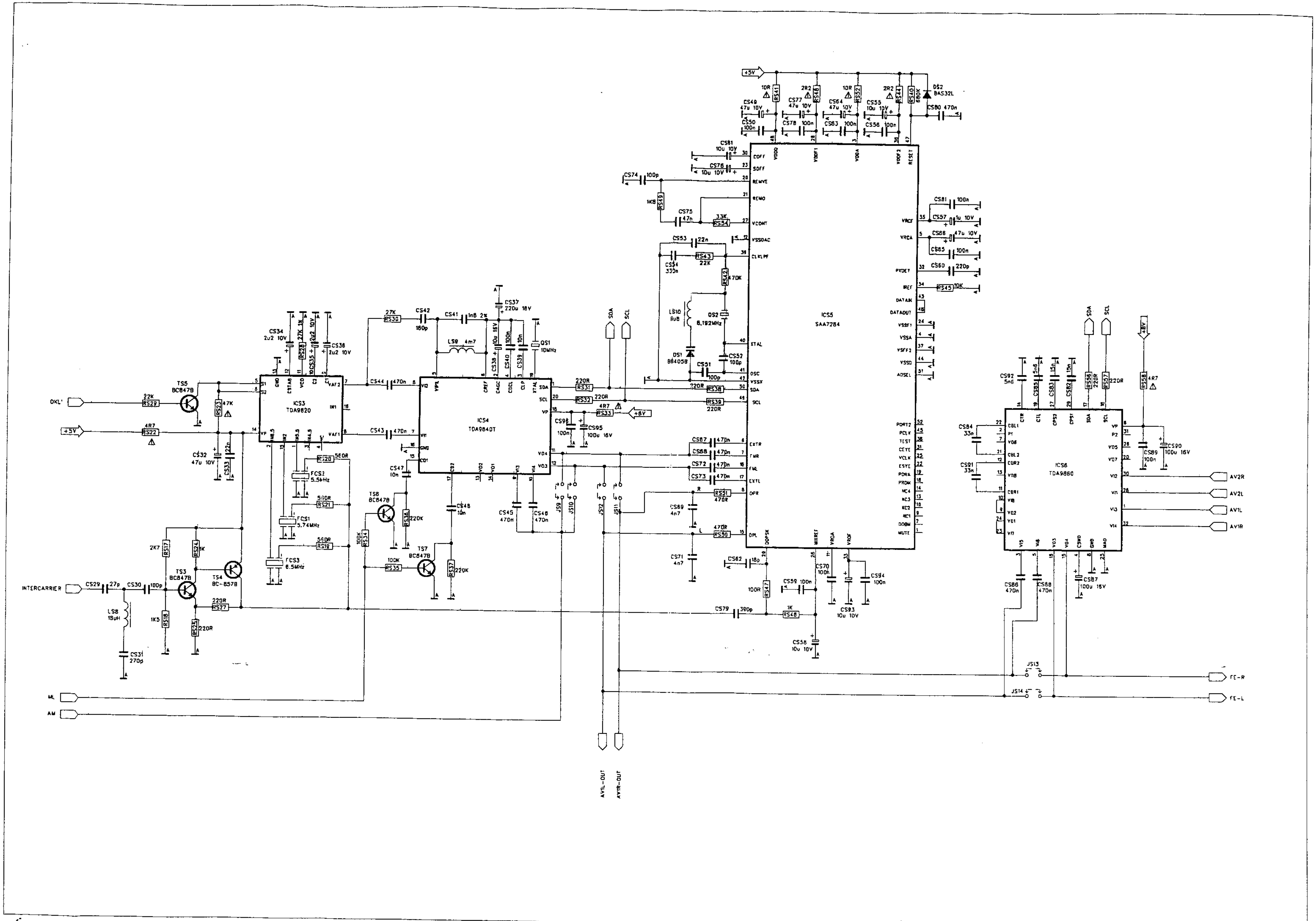
On screen (OSD)
Load the fixed value 3F.

Deactivating service mode
Once all the necessary adjustments have been made, press TV or MENU OFF on the remote control to save all the changes and return the appliance to normal operating mode.

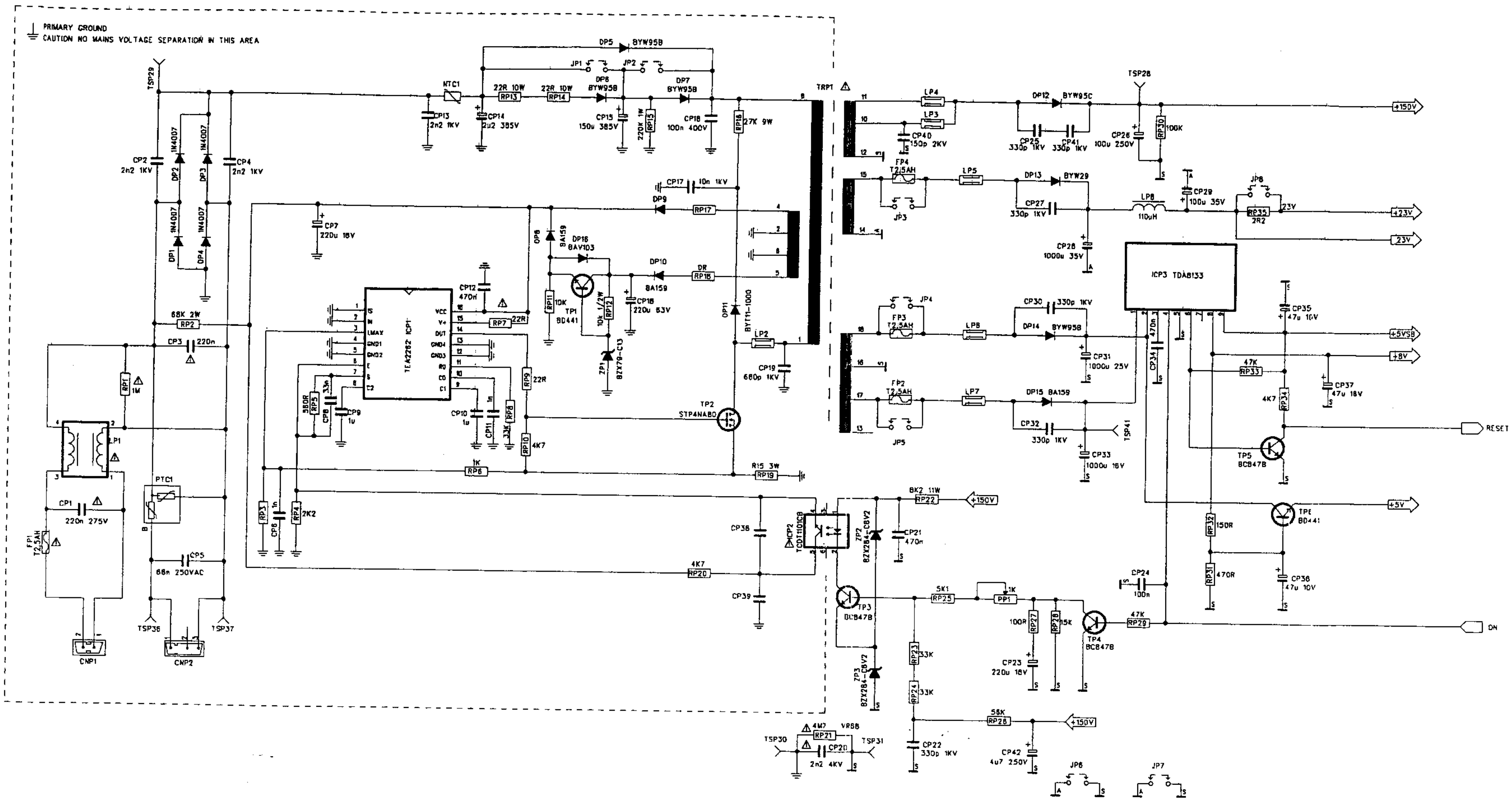

ICC2
TDA8843
TDA8844
ICC1
TDA9830
TUKC1
UV1315
UV1315AS
FCC1
G1984M
FCC2
K9453M
INTERCARRIER
CVBS-2FE
CVBS-AV1
CVBS-TEXT
OSD-R
OSD-G
OSD-B
OSD-BLK
BLK-AV1
R-AV1
G-AV1
B-AV1
PX-BCL
BCL
GUARD
AV2-C
AV2-Y
SCL
SDA
V-TUNE
SND-SW
MUTE
AM
HDRV
VDRV-
VDRV+
EW
CNC1


ICR1
SAA5298
PCF8594
ICR3
ICH2
CNR1
CNR3
SERVICE
TR1 BC847B
TR2 BC847B
TR3 BC847B
TR4 BC-857B
TR6 BC847B
TR7 BC847B
TR8 BC847B
TR9 BC847B
TR10 BC847B
TR11 BSV52
DR1 BAS32L
DR2 1N4148
ZR1 BZX79-C12
ZR2 ZTK33
QR1 12MHz
+5V
+5VSB
+15V
+16V
+23V
V-TUNE
VOL
MUTE
AV1
AV2
AV1SW
AV2SW
BND-SW
ON
RESET
CVBS-TEXT
DKL'
ML
SDA
SCL
TSP40
GUARD
HSYNC
OSD-BLK
OSD-R
OSD-G
OSD-B
4


CNS2
CNS3
CNS1
CNS4
TSP8
TSP9
TSP10
TSP11
TSP12
TSP13
TSP14
TSP15
TSP16
TSP17
TSP33
TSP42
LS1
LS2
LS3
LS4
LS5
LS6
LS7
LS8
JS1
JS2
JS3
JS4
JS5
JS6
JS7
JS8
JS9
ICS1 TDA7495
ICS2 TDA2818
ICW1 HEF4052
TS1 BC848
TS2 BC848
TW1 BC847B
TW2 BC847B
TW3 BC847B
TW4 BC-857B
TW5 BC-857B
TW6 BC-857B
TW7 BC847B
TW8 BC847B
TW9 BC847B
+23V
+8V
+5V
+12V
+9V
+4V
+2V
+1V
+0V
AV1
AV2
AV1R-OUT
AV1L-OUT
AV2R
AV2L
AV2-C
AV2-Y
CVBS-AV1
CVBS-AV2
B-AV1
G-AV1
R-AV1
BLK-AV1
FE-R
FE-L
OPTION
OPTION

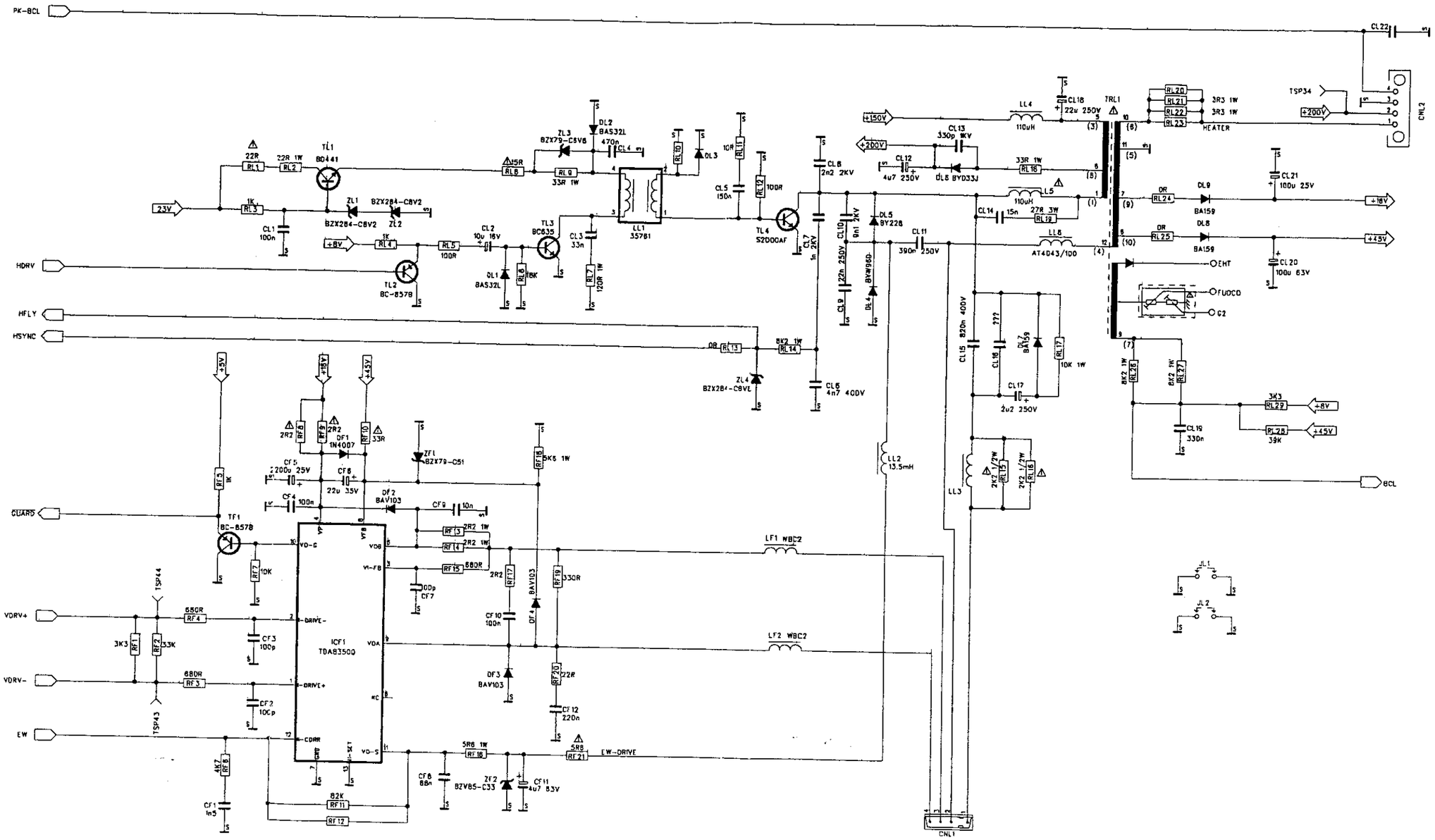


+5V
ICS3
TDA9820
ICS4
TDA9840T
ICS5
SAA7284
ICS6
TDA9860
TS5
BC847B
TS3
BC847B
TS4
BC-857B
TS6
BC847B
TS7
BC847B
QS1
10MHz
QS2
6,192MHz
DS1
BB405B
DS2
BAS32L
FCS1
5,74MHz
FCS2
5.5MHz
FCS3
6.5MHz
LS8
18uH
LS9
4m7
LS10
6u8
OKL'
INTERCARRIER
ML
AM
SDA
SCL
+8V
AV2R
AV2L
AV1L
AV1R
FE-R
FE-L
AV1L-OUT
AV1R-OUT
JS9
JS10
JS11
JS12
JS13
JS14



PRIMARY GROUND
CAUTION NO MAINS VOLTAGE SEPARATION IN THIS AREA
TSP29
DP5 BYW95B
JP1
JP2
NTC1
22R 10W
RP13
22R 10W
RP14
DP8 BYW95B
DP7 BYW95B
TRP1
CP13 2n2 1KV
CP14 2u2 385V
CP15 150u 385V
220K 1W
RP15
CP16 100n 400V
RP18
27K 9W
CP2 2n2 1KV
1N4007
DP2
DP3
CP4 2n2 1KV
DP1
DP4
CP17 10n 1KV
DP9
RP17
CP7 220u 16V
DP6 BA159
DP16 BAV103
DP10
DR
RP16
BA159
CP12 470n
TEA2262 ICP1
RP7
22R
RP11 10K
TP1 BD441
10k 1/2W
RP12
CP18 220u 63V
DP11 BYT11-1000
LP2
ZP1 BZX79-C13
CP19 680p 1KV
68K 2W
RP2
CP3 220n
RP1 1M
LP1
RP9 22R
RP6
TP2 STP4NA80
RP5 680R
CP6 3n3
CP9 1u
CP10 1u
CP11 1n
RP8 33K
RP10 4K7
1K
RP6
R15 3W
RP19
PTC1
CP1 220n 275V
FP1 T2,5AH
RP3
CP8 1n
RP4 2K2
CP5 68n 250VAC
TSP36
TSP37
CNP1
CNP2
CP38
CP39
4K7
RP20
ICP2 TCDT1101CB
8K2 11W
RP22
+150V
ZP2 BZX284-C6V2
CP21 470n
TP3 BC847B
5K1
RP25
1K
PP1
100R
RP27
RP26 15K
TP4 BC847B
47K
RP29
ON
ZP3 BZX284-C6V2
RP23 33K
RP24 33K
56K
RP28
+150V
CP22 330p 1KV
CP42 4u7 250V
JP6
JP7
4M7
VR68
RP21
TSP30
TSP31
CP20
2n2 4KV
LP4
LP3
CP40 150p 2KV
DP12 BYW95C
TSP28
CP25 330p 1KV
CP41 330p 1KV
CP26 100u 250V
RP30 100K
+150V
FP4 T2,5AH
LP5
DP13 BYW29
JP3
CP27 330p 1KV
CP29 100u 35V
LP8 110uH
JP8
RP35 2R2
23V
+23V
23V
CP28 1000u 35V
ICP3 TDA8133
CP35 47u 16V
JP4
FP3 T2,5AH
LP6
CP30 330p 1KV
DP14 BYW95B
CP31 1000u 25V
CP34 470n
+5VSB
+8V
47K
RP33
CP37 47u 16V
4K7
RP34
RESET
FP2 T2,5AH
LP7
DP15 BA159
JP5
CP32 330p 1KV
TSP41
CP33 1000u 16V
TP5 BC847B
+5V
TP6 BD441
RP32 150R
CP24 100n
RP31 470R
CP36 47u 10V

7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CL22
CNL2
TSP34
+200V
TRL1
LL4
110uH
CL18
22u 250V
+150V
CL13
330p 1KV
CL12
4u7 250V
DL6 BYD33J
33R 1W
RL16
RL20
RL21
RL22
RL23
3R3 1W
3R3 1W
HEATER
CL21
100u 25V
+16V
DL9
BA159
DL8
BA159
+45V
CL20
100u 63V
EHT
FUOCD
G2
CL14
15n
27R 3W
RL19
LL5
110uH
LL6
AT4043/100
CL15 820n 400V
CL16
222
DL7
BA159
RL17
10K 1W
CL17
2u2 250V
8K2 1W
RL26
8K2 1W
RL27
3K3
RL29
RL28
39K
CL19
330n
BCL
LL2
13.5mH
LL3
2K2 1/2W
RL15
2K2 1/2W
RL16
LF1 WBC2
LF2 WBC2
CNL1
HDRV
HFLY
HSYNC
23V
+8V
+5V
+18V
+45V
GUARD
VDRV+
VDRV-
EW
TL1
BD441
22R
RL1
22R 1W
RL2
1K
RL3
ZL1
BZX284-C8V2
ZL2
BZX284-C8V2
CL1
100n
TL2
BC-8578
1K
RL4
100R
RL5
CL2
10u 16V
DL1
BAS32L
18K
RL6
TL3
BC635
CL3
33n
RL7
120R 1W
5R
RL8
ZL3
BZX79-C8V8
RL9
33R 1W
DL2
BAS32L
470n
CL4
LL1
35781
RL10
DL3
10R
RL11
CL5
150n
RL12
100R
TL4
S2D00AF
CL7
1n 2KV
CL8
2n2 2KV
CL10
9n1 2KV
CL9
22n 250V
DL5
BY228
DL4
BYW96D
CL11
390n 250V
DR
RL13
8K2 1W
RL14
ZL4
BZX284-C8V2
CL6
4n7 400V
TF1
BC-8578
RF5
1K
RF7
10K
RF8
2R2
RF9
2R2
RF10
33R
DF1
1N4007
ZF1
BZX79-C51
RF18
5K6 1W
CF5
2200u 25V
CF6
22u 35V
CF4
100n
DF2
BAV103
CF9
10n
RF13
2R2 1W
RF14
2R2 1W
RF15
680R
2R2
RF17
BAV103
RF19
330R
CF7
100p
CF10
100n
DF4
DF3
BAV103
RF20
22R
CF12
220n
ICF1
TDA8350Q
VD-G
VD-S
VI-FB
VDA
VDB
DRIVE-
DRIVE+
CORR
RC
GND
H-SET
TSP44
TSP43
680R
RF4
680R
RF3
3K3
RF1
33K
RF2
CF3
100p
CF2
100p
4K7
RF6
CF1
1n5
82K
RF11
RF12
5R6 1W
RF16
5R6
RF21
EW-DRIVE
CF8
68n
ZF2
BZV85-C33
CF11
4u7 63V
JL1
JL2

Spare parts list
Ersatzteilliste

Chassis Professional 4400

Ref.	Part No.		
Pos.	ET-Nr.	Description	Bezeichnung
	S030242209	Condensator 220 nF 250 VAC	Kondensator 220 nF 250 VAC
	S040590509	Condensator 4,7 UF 250 V	Kondensator 4,7 UF 250 V
	S040601009	Condensator 100 UF 250 V	Kondensator 100 UF 250 V
	S040779229	Condensator 2,2 UF 385 V	Kondensator 2,2 UF 385 V
	S040781509	Condensator 150 UF 385 V	Kondensator 150 UF 385 V
	S044010109	Fusible resistor 1 Ohm	Sicherungswiderstand 1 Ohm
	S044010479	Fusible resistor 4,7 Ohm	Sicherungswiderstand 4,7 Ohm
	S044011009	Fusible resistor 10 Ohm	Sicherungswiderstand 10 Ohm
	S044011509	Fusible resistor 15 Ohm	Sicherungswiderstand 15 Ohm
	S044013309	Fusible resistor 33 Ohm	Sicherungswiderstand 33 Ohm
	S047501009	Fusible resistor 1 Ohm SMD	Sicherungswiderstand 1 Ohm SMD
	S047502209	Fusible resistor 2,2 Ohm SMD	Sicherungswiderstand 2,2 Ohm SMD
	S047504709	Fusible resistor 4,7 Ohm SMD	Sicherungswiderstand 4,7 Ohm SMD
	S047510009	Fusible resistor 10 Ohm SMD	Sicherungswiderstand 10 Ohm SMD
	S048002209	Fusible resistor 2,2 Ohm	Sicherungswiderstand 2,2 Ohm
	S048222009	Fusible resistor 2,2 KOhm	Sicherungswiderstand 2,2 KOhm
VR37	S053051009	Safety resistor 1 MOhm VR37	Sicherheitswiderstand 1 MOhm VR37
	S053210709	Safety resistor 4,7 MOhm VR6B	Sicherheitswiderstand 4,7 MOhm VR6B
	S053910279	Wire wound resistor 27 Ohm 3W	Drahtwiderstand 27 Ohm 3W
	S054000159	Wire wound resistor 0,15 Ohm 3W	Drahtwiderstand 0,15 Ohm 3W
	S054368009	Resistor 68 KOhm 2W	Widerstand 68 KOhm 2W
	S055492279	Wire wound resistor 27 KOhm 9W	Drahtwiderstand 27 KOhm 9W
	S055610829	Wire wound resistor 8,2 KOhm 11W	Drahtwiderstand 8,2 KOhm 11W
	S058590209	NTC resistor 4,7 Ohm	NTC Widerstand 4,7 Ohm
	S058591909	PTC resistor 20 A	PTC Widerstand 20 A
	S061281059	Diode BAV 103-GS18	Diode BAV 103-GS18
	S061284619	Diode BA 159	Diode BA 159
	S061296509	Diode BB 405B,153	Diode BB 405B,153
	S061299009	Diode BYT 11-1000	Diode BYT 11-1000
	S061300509	Diode BYW 29/200	Diode BYW 29/200
	S061302409	Diode BYW 95B	Diode BYW 95B
	S061302609	Diode BYW 95C	Diode BYW 95C
	S061303209	Diode BYW96D	Diode BYW96D
	S061316879	Diode BY228	Diode BY228
	S061401339	Diode BYD33J	Diode BYD33J
	S061517929	Diode BA792/T1	Diode BA792/T1

Ref.	Part No.		
Pos.	ET-Nr.	Description	Bezeichnung
	S061706209	Zener diode BZX284-C6V2,115	Zener Diode BZX284-C6V2,115
	S061706809	Zener diode BZX284-C6V8,116	Zener Diode BZX284-C6V8,116
	S061961709	Zener diode BZV85C33	Zener Diode BZV85C33
	S061971619	Zener diode 6,8 V	Zener Diode 6,8 V
	S061972019	Zener diode 12 V	Zener Diode 12 V
	S061972059	Zener diode 13 V	Zener Diode 13 V
	S062520309	Transistor BC635-16	Transistor BC635-16
	S062531009	Transistor BD441	Transistor BD441
	S062620009	Transistor BSV52,215	Transistor BSV52,215
	S062756109	Transistor S2000AF	Transistor S2000AF
	S062756509	Transistor STP4NA80 FI	Transistor STP4NA80 FI
	S063164529	IC TBA2262	IC TBA2262
	S063174959	IC TDA7495	IC TDA7495
	S063181339	IC TDA8133	IC TDA8133
	S063183509	IC TDA8350Q/N5	IC TDA8350Q/N5
	S063188449	IC TDA8844/N1Pal/Secam	IC TDA8844/N1Pal/Secam
	S063188439	IC TDA88431N1 Pal	IC TDA88431N1 Pal
	S063198219	IC TDA9821-V1	IC TDA9821-V1
	S063198309	IC TDA9830-V1	IC TDA9830-V1
	S063198609	IC TDA9860/V2	IC TDA9860/V2
	S063241339	IC ZTK33-8	IC ZTK33-8
	S063285939	IC PCF8594C-2P/02	IC PCF8594C-2P/02
	S063352979	IC SAA5297PS/065	IC SAA5297PS/065
	S063372849	IC SAA7284ZP/M2	IC SAA7284ZP/M2
	S063411019	IC TCDT1101GB	IC TCDT1101GB
	S063598409	IC TDA9840T/V2,118	IC TDA9840T/V2,118
	S065621409	Flyback transformer 110	Zeilentrafo 110
	S065708009	Power switch transformer	Trafo Schaltnetzteil
	S066541709	Line filter	Netzfilter
	S066544009	Line drive transformer	Trafo H-Treiber
	S066900159	Quarz 3,58 MHZ	Quarz 3,58 MHZ
	S066900259	Quarz 4,43 MHZ	Quarz 4,43 MHZ
	S066900369	Quarz 8,192 MHz	Quarz 8,192 MHz
	S066900409	Quarz 10 MHz	Quarz 10 MHz
	S066901209	Quarz 12 MHz	Quarz 12 MHz
	S067071009	E/W Coil	Ost/West Spule
	S067081009	Bridge coil	Brückenspule
	S067081419	Linearity coil	Linearitätsspule
	S069023109	Tuner UV 1315 AS	Tuner UV 1315 AS
	S087170009	Chassis holder side	Chassishalter Seite
	S087170509	Chassis holder front	Chassishalter Front
	S087174409	Chassis rear connector cover	Buchsenplatte

Ref.	Part No.		
Pos.	ET-Nr.	Description	Bezeichnung
	S000674409	CRT PCB CPL.	BR-Platine kpl.
	S035931019	Condensator 10 nF 1000 V	Kondensator 10 nF 1000 V
	S040590229	Condensator 2,2 UF 250 Y	Kondensator 2,2 UF 250 Y
	S047033009	Fusible resistor 33 Ohm	Sicherungswiderstand 33 Ohm
	S062740869	Transistor BF 871	Transistor BF 871
	S063151019	IC TEA5101B	IC TEA5101B
	S070001209	CRT socket	Bildröhrensockel

Spare parts list
Ersatzteilliste

TV 790

Chassis Professional 4400

Ref.	Part No.		
Pos.	ET-Nr.	Description	Bezeichnung
	S000544009	Main PCB 4400 cpL.	Grundchassis 4400
	S000844429	Manuals controls PCB cpl.	Bedienteil kpl.
	S062000409	LED diode red/green	LED rot/grün
	S068055319	Mains switch	Netzschalter
	S068056309	Pusch EKPT 1105 S	Schalter EKPT 1105 S
	S068149109	IR receiver TFMS 5360	IR Empfänger TFMS 5360
	S071015359	Earphone jack	Kopfhörerbuchse
	S078971009	Manuals controls holder	Halter Bedienteil
	S000848019	Door	Door
	S082811459	Door holdor	Halter Door
	S083307109	Mains switch button	Knopf Netzschalter
	S007805719	Cabinet front	Gehäusefront
	S087128009	Cabinet bottom	Gehäuseboden
	S080157009	Back cover	Rückwand
	S060328029	CRT 28" A66EAK071X01	Bildröhre 28" A66EAK071X01
	S067202119	Degauss coil	Entmagnetisierungsspule
	S068244009	Remote control	Fernbedienung
	S073174009	Speaker 8 Ohm	Lautsprecher 8 Ohm