

Serviceanwei Service manual

Zusatz Chass

AKAI TELEVISION TV2835-TUK MULTI SERVICE MANUAL

TV

Grundchassis PAL- und Multi-Standard
Main chassis PAL and multi standard

Version III
Version III

Dieser Zusatz zur Serviceanweisung TV 9 beinhaltet ausschließlich neue Informationen über das Chassis TV 9. Für alle anderen Informationen bitte die Serviceanweisung TV 9 (Best.-Nr. 0105303) verwenden.

This appendix for Service manual TV 9 includes only new informations about TV 9 chassis. Please use the Service manual TV 9 (part no. 0105303) for all other informations.

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Hinweise zur Ersatzteilbestellung

Hints for ordering spare parts

Bestellhinweise:

Bitte bei Ersatzteilbestellung die genaue Bezeichnung und **Ident-Nr.** des Gerätes (siehe Typenschild auf der Geräterückseite), sowie Bestell-Nummer und Positions-Nummer des Ersatzteils angeben.

Bei Ersatzteilen ohne Bestellnummern ist zusätzlich eine **konkrete Ersatzteilbezeichnung** erforderlich.

Diese Service-Unterlage wurde ausschließlich für autorisiertes Fachpersonal erstellt.

Für Eingriffe durch nicht autorisierte Personen übernimmt der Hersteller keine Haftung.

Hints for ordering:

For ordering of spare parts please state the exact description and **ident no.** of unit (see rating label on the backside of unit) as well as part no. and position no. of the required spare part.

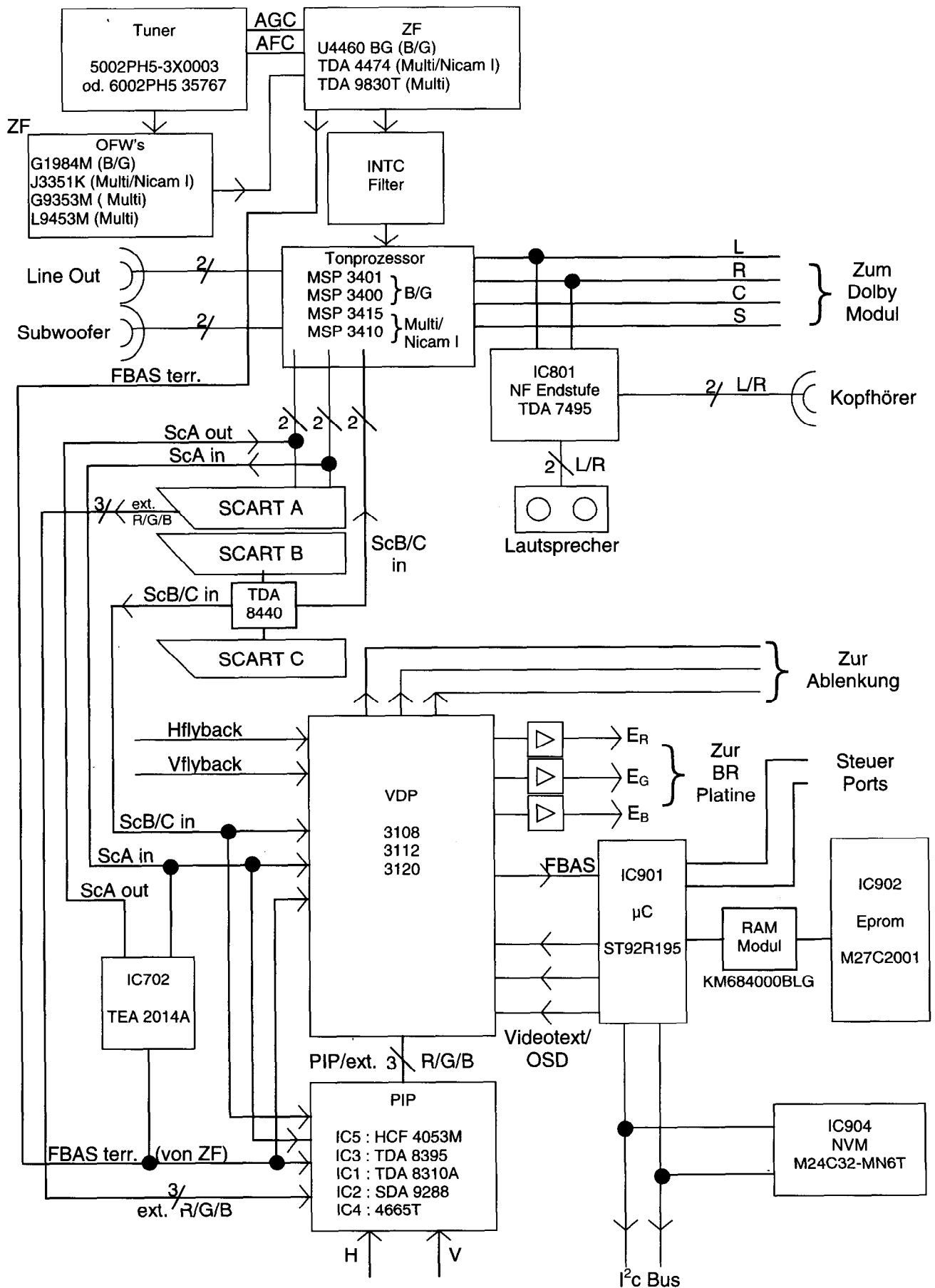
For spare parts without part number a **detailed description** is absolutely necessary, too.

This service manual was only made for authorized specialists.

For interventions by not authorized persons producer doesn't take possession of liability.

Blockschaltbild HF / ZF / INTC / NF / SCART / VIDEO / μ C Vers. III

Block diagram HF / IF / INTC / VLF / SCART / VIDEO / μ C Vers. III



Bestückungs- und Typ-Varianten Mounting and model versions

Als **Bestückungsvarianten** werden Bauteile bezeichnet, die nur in einer Variante erscheinen. Als **Typvarianten** werden Bauteile bezeichnet, die in den verschiedenen Varianten unterschiedliche Werte haben.

Außer diesen Tabellen gelten die Bestückungsoptionen in den im **Schaltbild** markierten **Bereichen**!

Component parts called **mounting versions**, appear in only one version. Component parts called **model versions** have different values in the different versions. Apart this table, the mounting options in the **marked areas** in the **circuit diagram** are valide.

Bereich Tuner/ZF - Sector tuner/IF

Pos.	PAL	Multi/Nicam I
IC 601	U 4460	TDA 4474
Q 601	BC 848 C	n.b.
C 604	n.b.	2,2 μ F
C 605	22 μ F	47 μ F
C 607	n.b.	100 nF
C 610	n.b.	47 uF
C 612	n.b.	100 nF

Pos.	PAL	Multi/Nicam I
C 613	n.b.	8,2 pF
C 617	100 n	n.b.
C 641	47 pF	82 pF
D 601	0 Ω	LS 4148
R 608	0 Ω	3,3 k Ω
R 611	100 Ω	0 Ω
R 614	n.b.	0 Ω

Pos.	PAL	Multi/Nicam I
R 621	220 Ω	n.b.
R 622	4,7 Ω	n.b.
R 624	0 Ω	n.b.
R 631	n.b.	0 Ω
Z 601	G 1984	J 3351
Z 603	292GCS-A835HM	292XNS-4051Z
Z 607	TPS 5,5	TPW 02 B

Bereich MSP 34xx (IC 501) - Sector MSP 34xx (IC 501)

Position	Dolby (PAL)	Dolby (Multi/Nicam I)	ohne/without Dolby (PAL)	ohne/without Dolby (Multi/Nicam I)
X 501	Messerl. 26-p.	Messerl. 26-p.	n.b.	n.b.
IC 501	MSP 3400	MSP 3410	MSP 3401	MSP 3415
R 505 / R 506	n.b.	0 Ω	n.b.	0 Ω
R 507 / R 508	0 Ω	n.b.	0 Ω	n.b.
C 531	10 μ F	10 μ F	n.b.	n.b.

Bereich VDP 31xxB (IC 701) - Sector VDP 31xxB (IC 701)

Position	mit/ with PIP	ohne/ without PIP	PAL	Multi/ Nicam I
R 739	n.b.	0 Ω		
R 778	n.b.	100 Ω		
R 779	n.b.	100 Ω		
R 780	n.b.	100 Ω		
C 744	n.b.	47 pF		
C 745	n.b.	47 pF		

Position	mit/ with PIP	ohne/ without PIP	PAL/Nicam I	Multi
C 746	n.b.	47 pF		
R 701			n. b.	22 k Ω
R 736			n. b.	4,7 k Ω
Q 701			n. b.	BC 848 C
R 774			n. b.	4,7 k Ω

* n.b. = nicht bestückt - not mounted

Abgleichanweisung Ergänzung TV 9.1 NICAM I Alignment instructions supplement TV 9.1 NICAM I

AFC-Spannung:

Im Band III (Kanal 8) ein Pal-B/G oder Pal-I Testbild mit einem Antenneneingangspegel von 70 dB μ V an 75 Ω einspeisen. An Pin 8 (AFC) und Pin 3 (GND) des Tuners ein Voltmeter anschließen und mit der Spule Z 603 eine Spannung von 2,5 V (\pm 0,1V) DC einstellen.

AGC-Spannung:

Im Band III (Kanal 8) ein Pal-I Testbild mit 65 dB μ V Antenneneingangspegel an 75 Ω einspeisen und Gerät per direkter Kanalwahl auf diesen Kanal einstellen. An Pin 1 (AGC) und Pin 3 (GND) des Tuners ein Volt-meter anschließen und mit dem Poti R 616 eine Spannung lt. nach-folgender Tabelle einstellen.

Chassis-Version:	AGC-Spannung:
TV 9.1 Nicam I mit Tuner Type 6002 PH5	3,00 V (\pm 0,15V)

AFC-voltage:

In range III (channel 8) feed in a B/G-PAL-test pattern with an antenna input level of 70 dB μ V at 75 Ω and set television per direct channel selection to this channel. At tuner pin8 (AFC) and pin3 (GND) connect a voltmeter and set with coil Z 603 a voltage of 2.5V (\pm 0.1 V) DC.

AGC-voltage:

In range III (channel 8) feed in a Pal-I test pattern with an antenna input level of 65 dB μ V at 75 Ω and set television per direct channel selection to this channel. At tuner pin1 (AGC) and pin3 (GND) connect a voltmeter and set with resistor R 616 a voltage like following table.

Chassis version:	AGC voltage:
TV 9.1 Nicam I with tuner type 6002 PH5	3,00 V (\pm 0,15V)

Alignment instructions Chassis TV 9.7 und TV 9.8

General information:

When servicing, the set should be connected to an isolation transformer and observe valid safety precautions! **Precautions against static discharge** should be taken.

X-ray regulations: The HT voltage is in the permissible range if the operating voltage is 145V with minimum beam current. When a set has been serviced check that the HT voltage is correct. The "basic values" given in the adjustment procedures may differ due to circuit amendments, revised specification and tolerances.

Subject to changes!

Operating voltage +145V:

Set contrast and brightness to minimum (minimum beam current!). Check point: Cathode diode D 202 against secondary ground. Set with R 215 the measured voltage to 145V ($\pm 0.5V$).

Alignment IF module:

Note:

Please at first carry out the settings for AFC and then for AGC, for offset compensation and for L'-frequency offset.

AFC-voltage:

In range III (channel 8) feed in a B/G-PAL-test pattern with an antenna input level of 70 dB μ V at 75 Ω and set television per direct channel selection to this channel. At tuner pin8 (AFC) and pin3 (GND) connect a voltmeter and set with coil Z 603 a voltage of 2.5V (± 0.1 V) DC.

AGC-voltage:

In range III (channel 8) feed in a B/G-PAL-test pattern with an antenna input level of 65 dB μ V at 75 Ω and set television per direct channel selection to this channel. At tuner pin1 (AGC) and pin3 (GND) connect a voltmeter and set with resistor R 616 a voltage like following table.


Chassis version:	AGC voltage:
TV 9.7 till TV 9.8 BG with tuner type 6002 PH5	3,15 V ($\pm 0,15V$)
TV 9.7 till TV 9.8 Multi with tuner type 6002 PH5	3,00 V ($\pm 0,15V$)

Frequency offset image carrier circuit for L':

»This information obtain only units with Multi standard!«
On channel 4 feed in an L'-Secam-test pattern with an antenna input level of 60 (± 5) dB μ V and set the television per direct channel selection to the respective channel (standard conversion to L' !). At tuner pin8 (AFC) and pin3 (GND) connect a voltmeter and set with resistor R 633 a voltage of 2.5V (± 0.1 V) DC.

Service mode:

Before activating service mode set suited test pattern. Set medium brightness, colour, contrast and sharpness. Setting geometry values in the wide mode requires a standard 16:9 test picture (e.g. Pal Plus decoder or DVD player).

In succession press and then release the »  « button, the »red« » OK « button and » TV « button on the transmitter. On Screen appear **menu Service mode**.

- | | |
|-------------------------------|--------------------|
| yellow »VISION« button | select menu line |
| Buttons »▲ / ▼« | select parameters |
| Buttons »◀ / ▶« | change parameters |
| red » OK « button | store the changes |
| » TV « button | leave Service Mode |

Settings in service mode menu:

The following settings can be carried out in the **service mode menu**. To select the menu line press the »yellow« button. Principle each change must be stored separately by pressing the red » OK « button.

- ♦ **New initialisation of the NVM values**, without adjusting the geometry settings.

In order to do so, the version number must be changed and stored. Subsequently the TV has to be switched off and on again using the mains switch.

- ♦ **Setting the NVM reset to on**, storing and switching on/off initialises the NVM values with geometry values.

The following settings should be checked after each initialization and, where necessary, set properly again:

- | | |
|----------------------|--|
| ♦ Picturetube | 4:3 or 16:9 |
| ♦ TV-Type | B/G or multi |
| ♦ Tuner-Type | 6002 (Multi), 4046 (Multi),
4002 (BG) or 5002 (Multi) |
| ♦ Front AV | On/Off |

The following settings are also possible:

- ♦ **Forced PAL** switch to »enforced PAL« (only in tuner playback mode)
- ♦ **Test mode - Data** is only relevant for internal factory production.
- ♦ **VPS/PDC - Display** On/Off
By pressing the yellow button, the pure number code will be displayed (for testing purposes).
- ♦ **Auto. format** On/Off
For 16:9 units the effect of switching voltage or WSS conversion can be switched on or off.

Additional service mode settings:

Select the following service mode setting points with the »▲ / ▼« buttons

<u>Format</u>	Adjust viewing screen format
<u>Vertical Amplitude</u>	Adjust vertical image height
<u>Vertical Position</u>	Adjust vertical image position
<u>S-Correction</u>	Adjust vertical linearity
<u>Vertical Symmetry</u>	Set vertical symmetry (S-Correction and Vertical Symmetry must be optimised either way)
<u>Horizontal Pos. RGB</u>	Adjust horizontal image orientation of a RGB source
<u>Horizontal Position</u>	Adjust horizontal image position
<u>Horizontal Amplitude</u>	Adjust image width
<u>Cushion</u>	Compensate E/W-negative distortion
<u>Trapeze</u>	Set the vertical lines of the test pattern parallel to each other
<u>Corner</u>	Adjust vertical lines in the corners
<u>Horizontal Symmetry</u>	Set horizontal symmetry
<u>Blanking Phase Left</u>	Adjust the scanning of the horizontal rewind (left) (def. value 340)
<u>Blanking Phase Right</u>	Adjust the scanning of the horizontal rewind (right) (def. value 250)
<u>Chroma Delay</u>	Register Chroma-Signal with Luma-Signal
<u>Luma Delay</u>	Register Luma-Signal with Chroma-Signal. Note: Only one parameter (Chroma or Luma Delay) needs to be balanced.
<u>Newline</u>	Additional option for changing the horizontal image orientation. When balancing this parameter set odd numerical values only. (Def. value 61)
<u>DVCO</u>	The auxiliary colour carrier frequency automatically adjusts to its reference value
<u>G2</u>	see G2 adjustment
<u>Cutoff</u>	see black-white adjustment
<u>White Drive</u>	see black-white adjustment
<u>Vert. Pos OSD</u>	Adjust vertical OSD position.
<u>Hor. Pos OSD</u>	Adjust horizontal OSD position.
<u>Vert. Pos OSD (NTSC)</u>	Adjust vertical OSD position in NTSC-playback mode.
<u>Hor. Pos OSD (NTSC)</u>	Adjust horizontal OSD position in NTSC-playback mode.
<u>Vert. Pos VT</u>	Adjust vertical position of teletext.
<u>Hor. Pos VT</u>	Adjust horizontal position of teletext.

NVM addr.

Press the »**yellow**« button on the remote control to select the various setting positions of the NVM address and the NVM data and press the volume buttons to »◀ / ▶« change them. Each change of address must be stored **separately** by pressing the button » **OK** «.

Attention: Changing other addresses may cause fault in the set.

New initialisation:

New initialisation of the channel positions: This function enables you to delete all the basic settings of the operating functions. Call up service mode and select the parameter "**NVM addr.**". The NVM data (def. value 72) of the NVM address "**0001**" can now be changed to any value at all. Then store by pressing the button » **OK** « and exit the service mode by pressing the button » **TV** «. Switch the set off via the mains switch and restart.

G2 balancing:

After an operating time of approx. 30 min. actuate the G2 controller to set the cathode with the largest value (measured) in such a way that the measured value only just changes from a single digit numerical value to a two digit value.

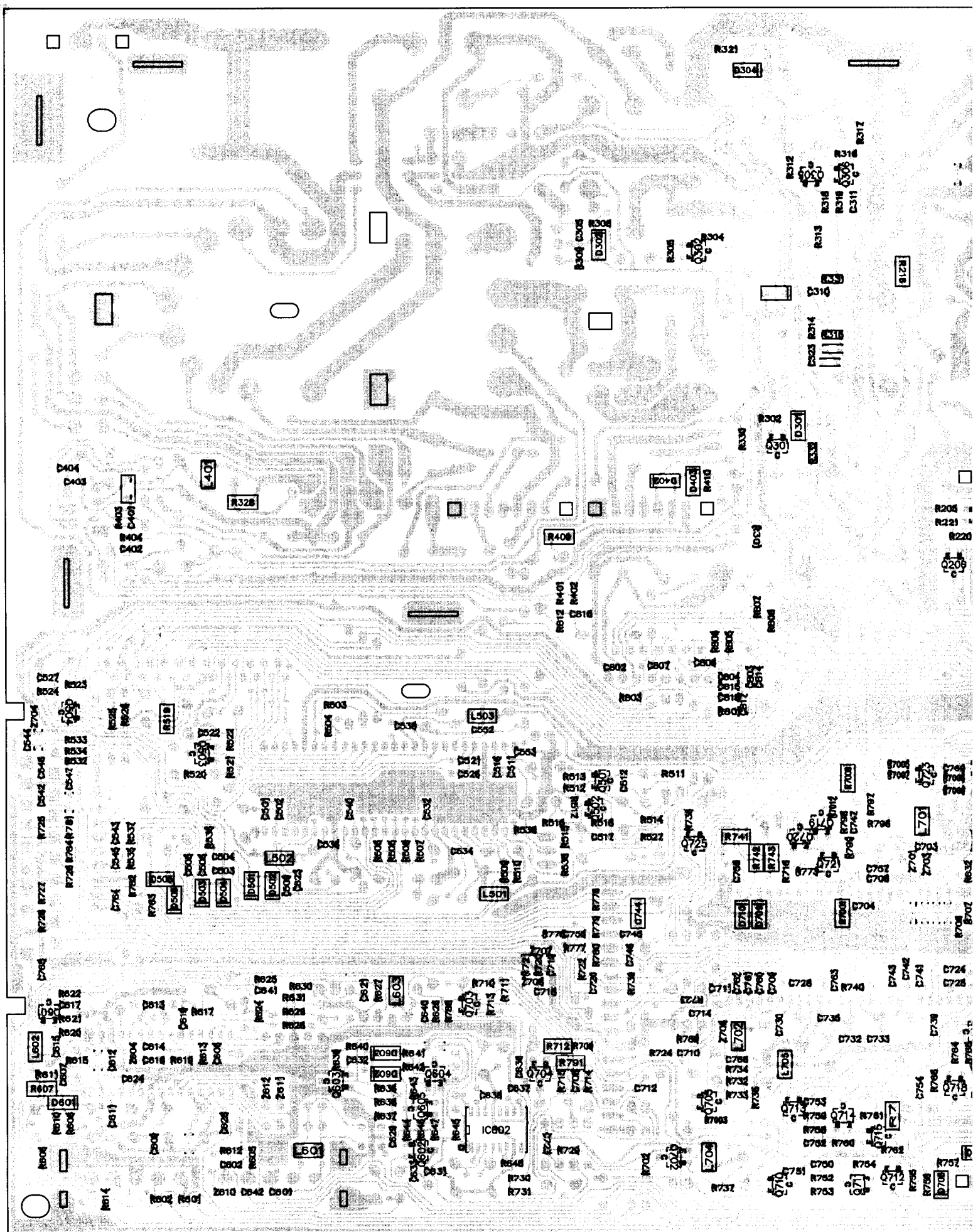
Setting the focus:

Feed in appropriate test picture. Set brightness, colour saturation and contrast to nominal value according to your estimation. Press INFO button once (menu appears). Set picture to an optimal general definition with the focus adjuster (top adjuster of the line output transformer).

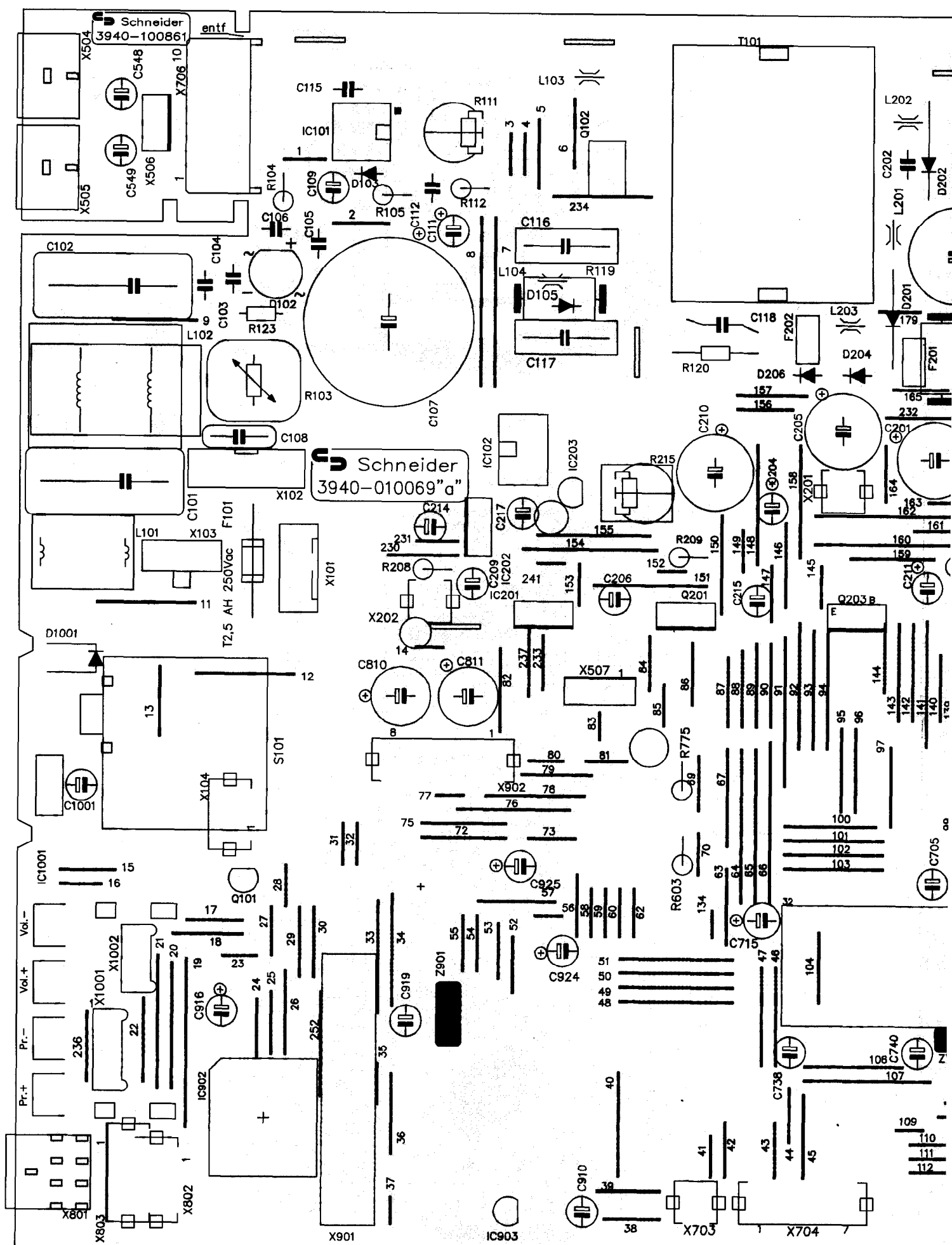
Cutoff / White Drive (black-white balance):

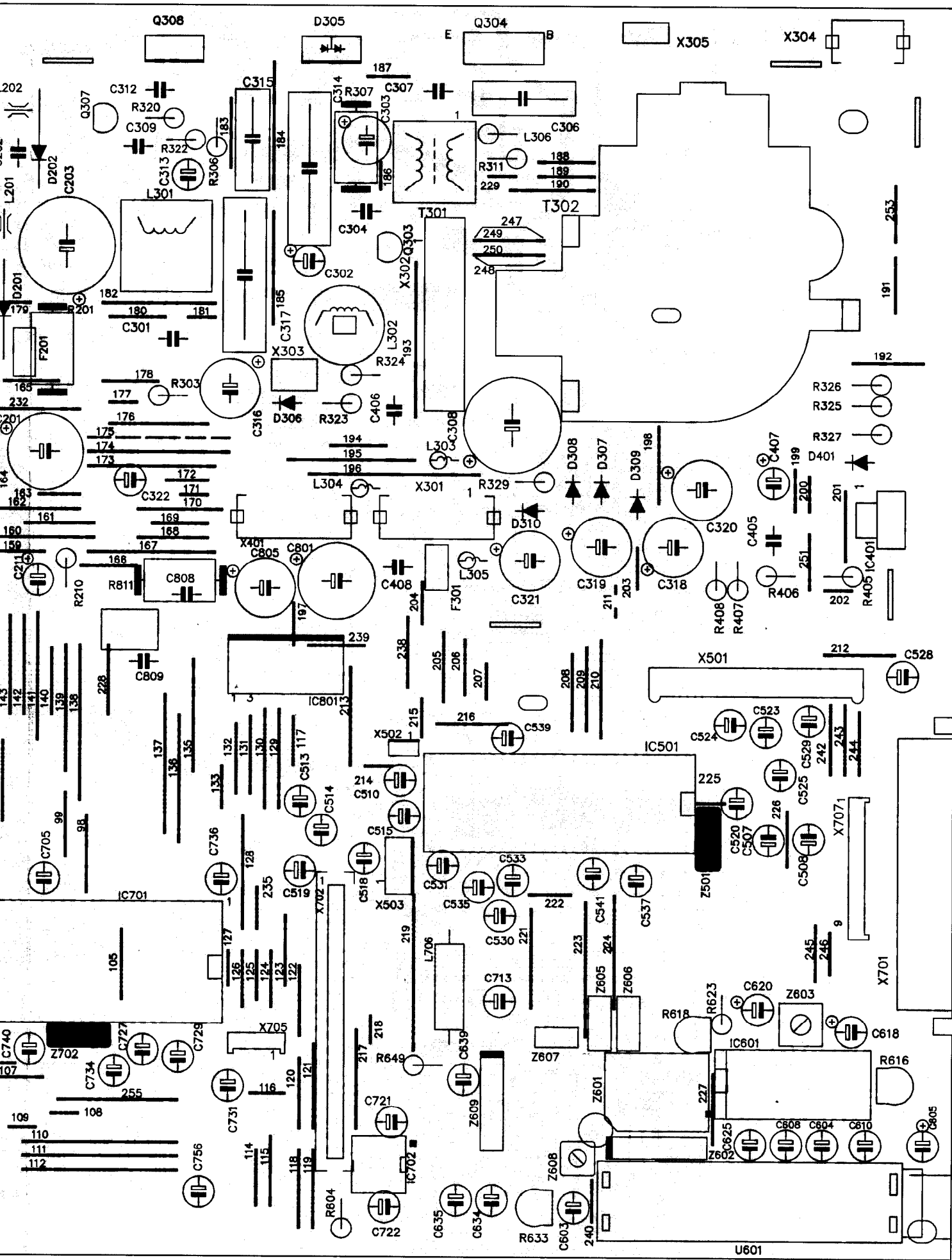
Cut-off: Set the three cutoff values so that the darker grey areas turn achromatic. The basic values of the cutoff setting points are 40. Leave the value of the cathode with the middle controlled value as it is, set the two other cathodes.

White Drive: The basic values of the White Drive setting points are 120. If the picture seems too „cold“ reduce the White Drive Blue setting point. If the picture seems too „warm“ turn the White Drive Red setting point back.

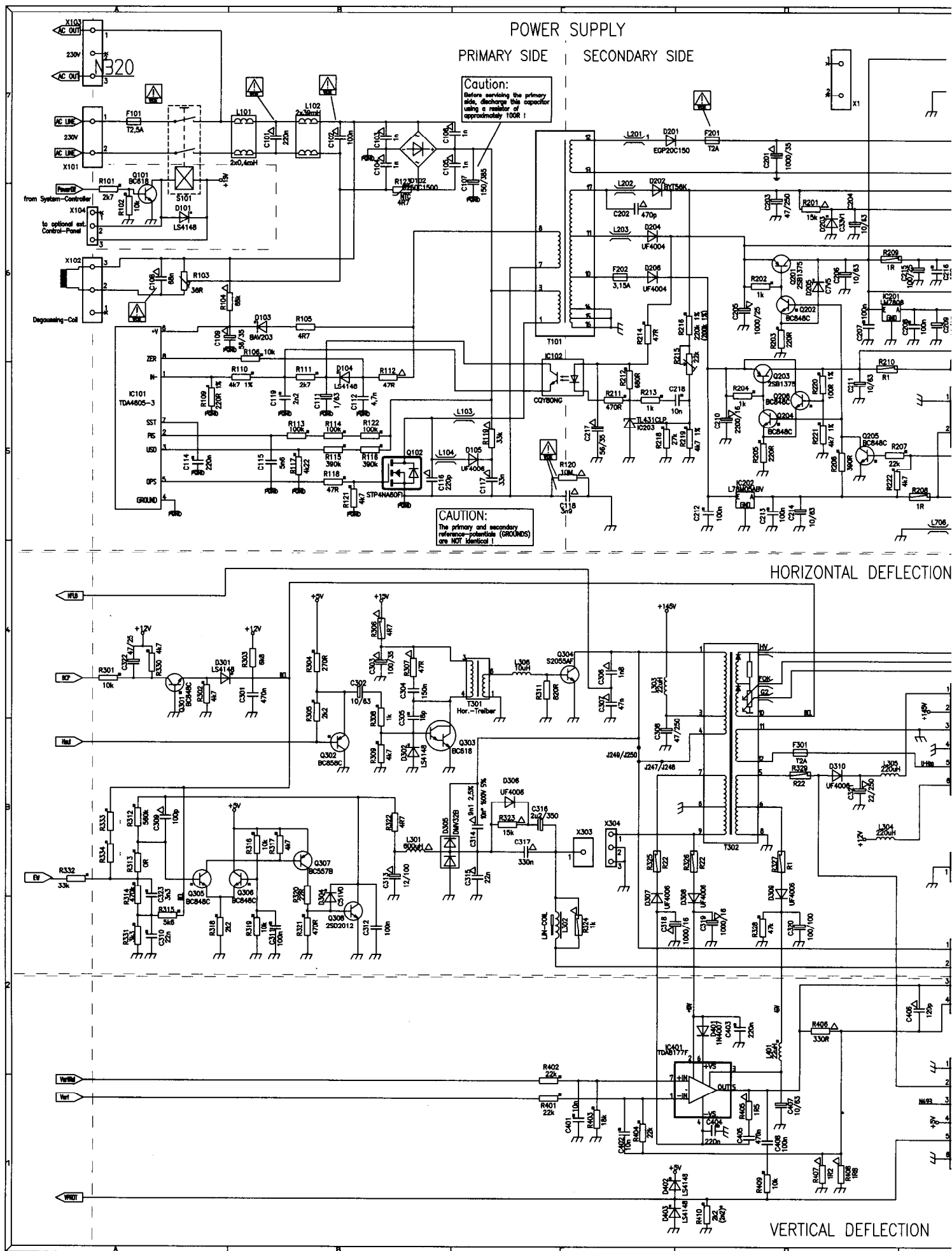






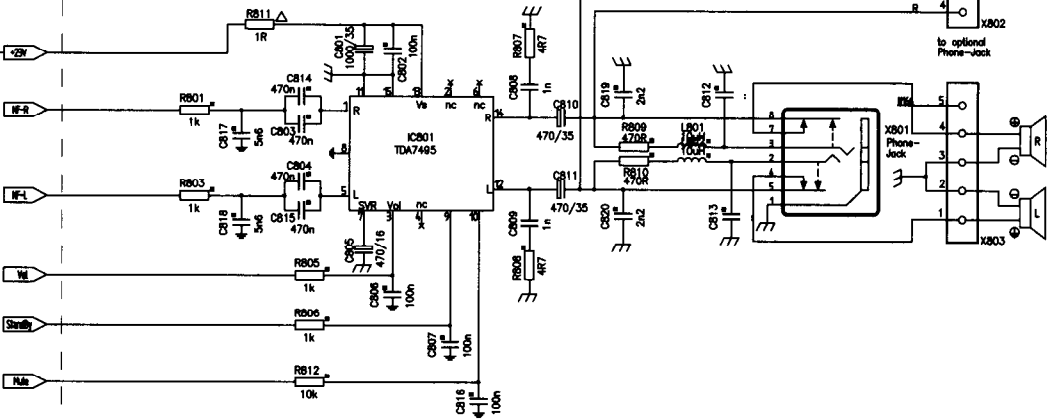


Schematic diagram power components Vers. III

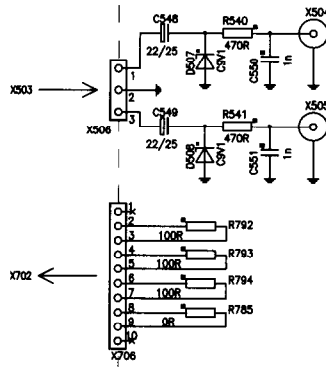


AUDIO-AMPLIFIER

Refer to Signal-Section



Line-Out-PCB

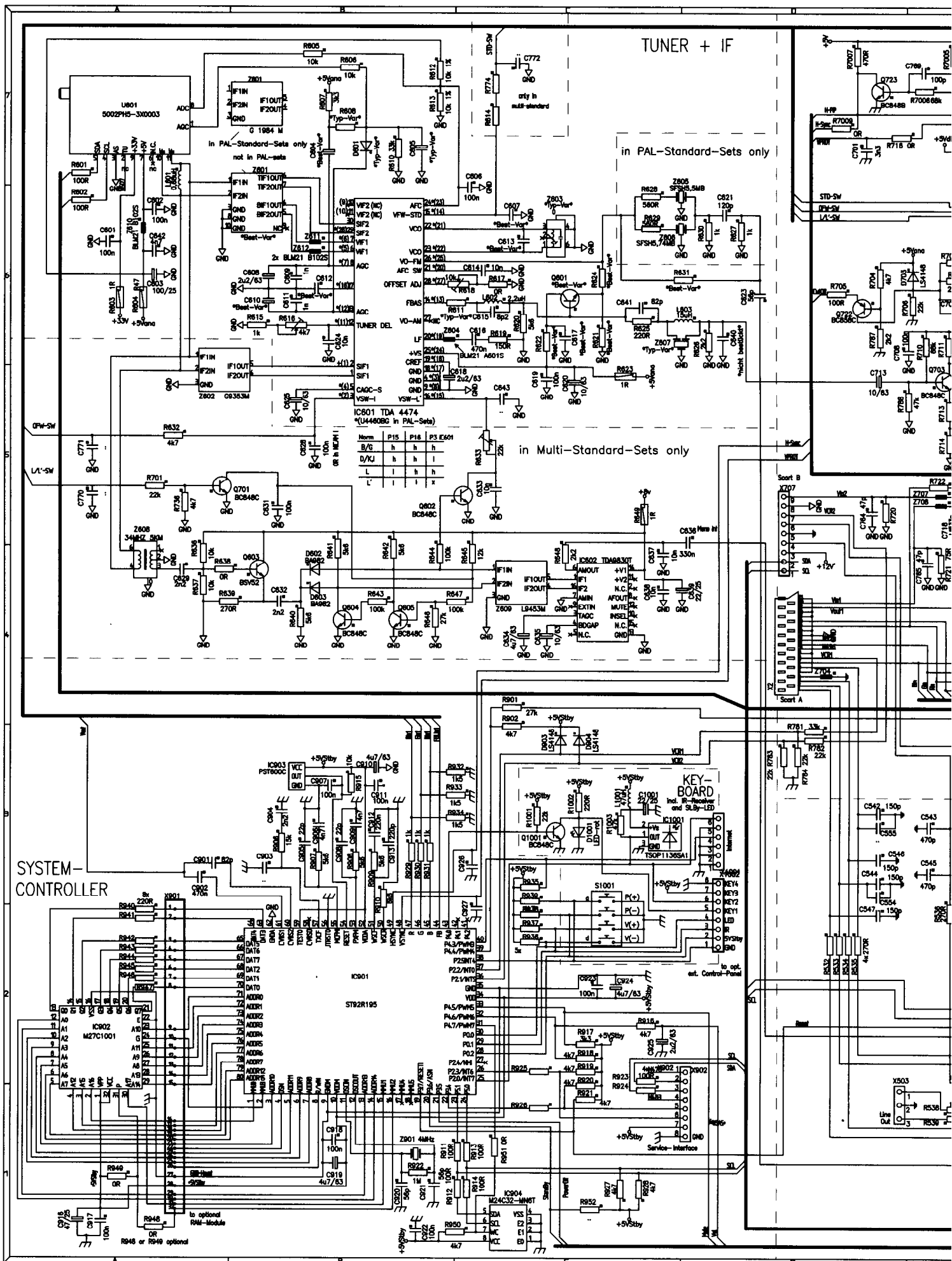


	Standard-Components
	SMD-Components
	Special-Components
	Safety-Components

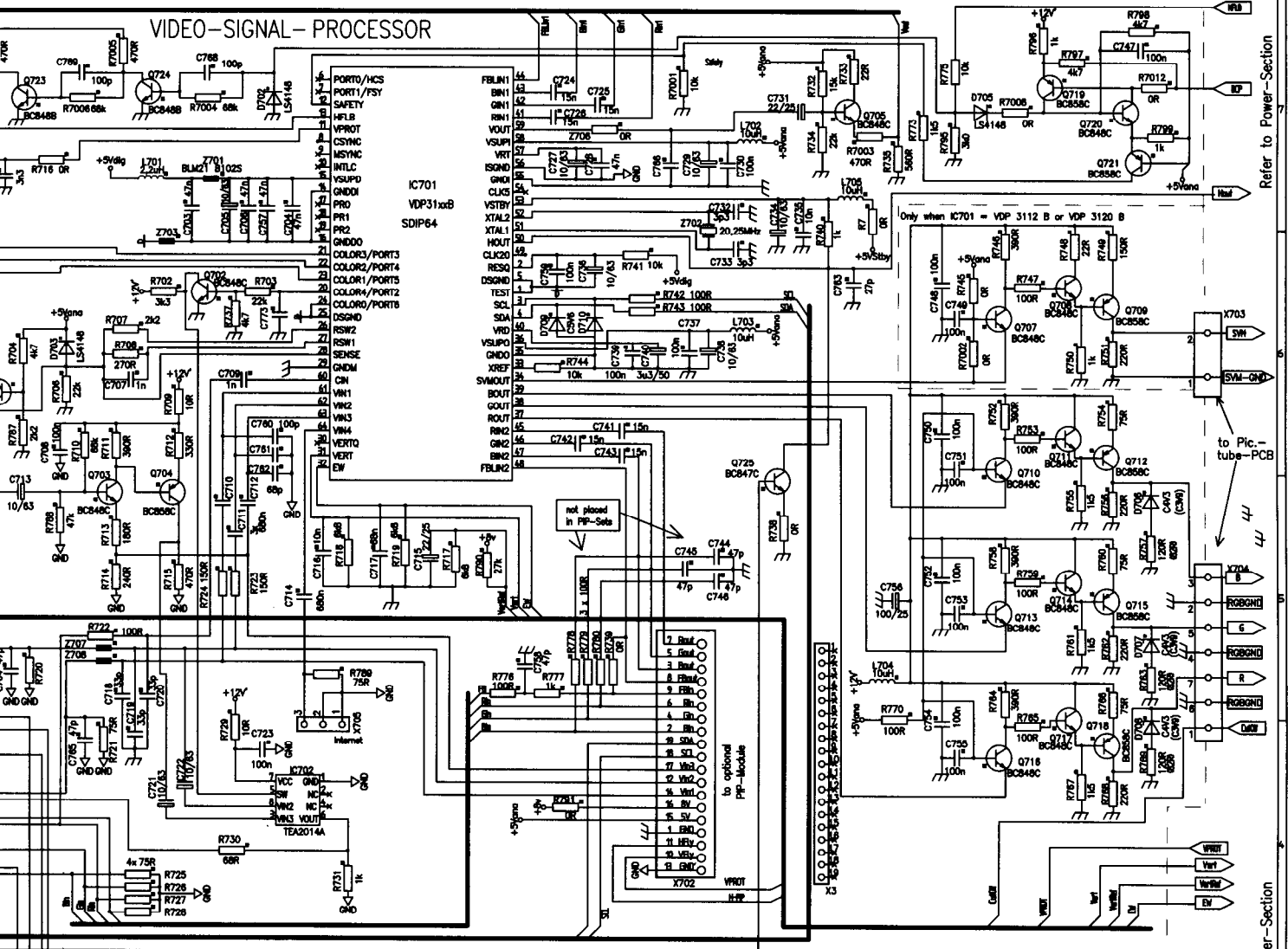


Achtung: Nur Original-Ersatzteile gewährleisten die Betriebssicherheit des Gerätes.
Note: Original spare parts only guaranty electrically safe operation of the set.

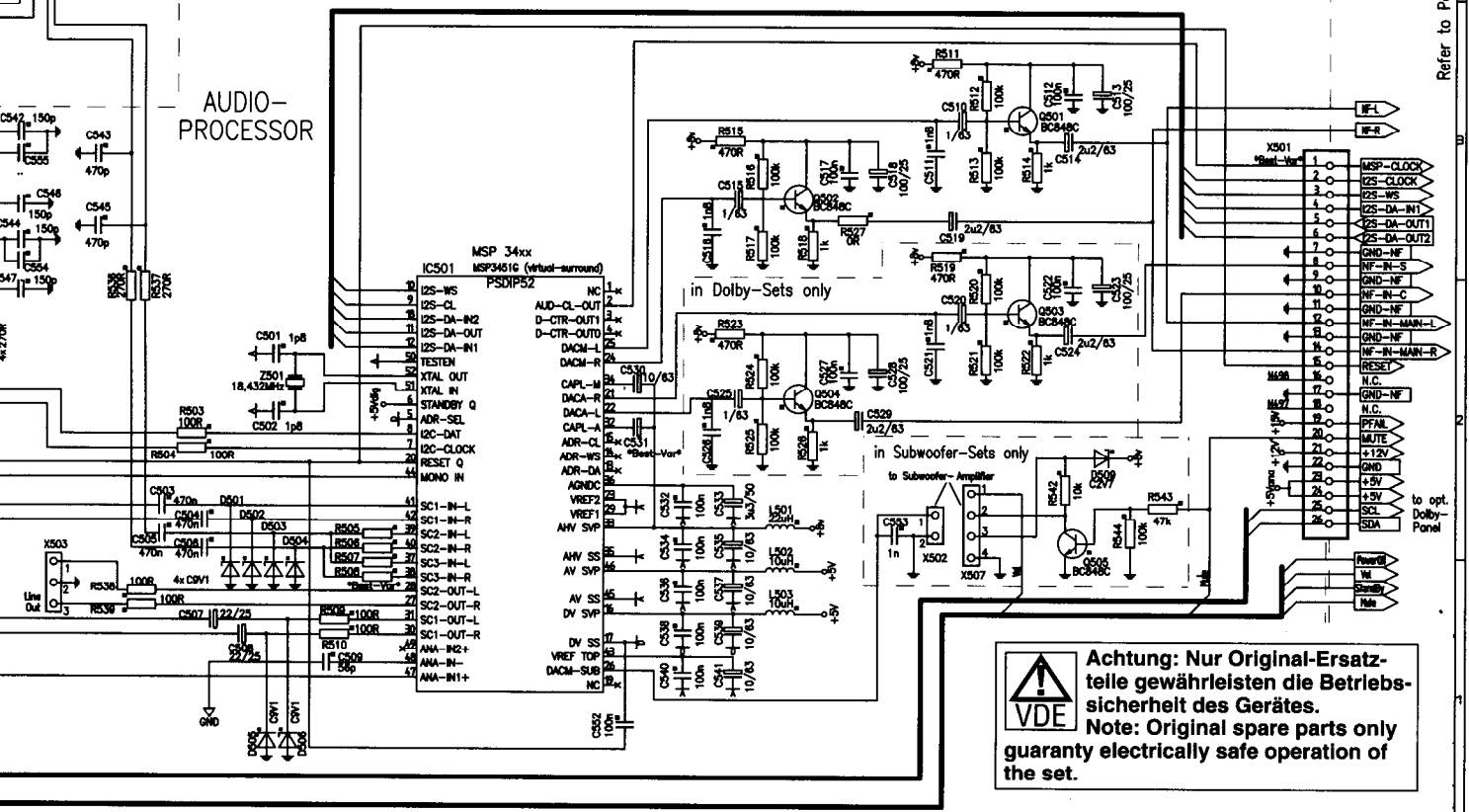
Schematic diagram signal components Vers. III



VIDEO-SIGNAL-PROCESSOR



AUDIO-PROCESSOR



Achtung: Nur Original-Ersatzteile gewährleisten die Betriebssicherheit des Gerätes.
Note: Original spare parts only guaranty electrically safe operation of the set.

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oder

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Der Umwelt zuliebe!



Diese Serviceanweisung
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Working for the environment!



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