

7. Electrical adjustments

CHASSIS GR2.4**28**

Setting conditions

All electrical settings should be made under the following conditions:

- * supply voltage: 220 - 240 V $\pm$ 10%;
50 Hz $\pm$ 5%
- * warming-up time $\approx$ 10 minutes
- * the voltages and oscillograms have been measured with regard to tuner earth.
- * measuring probe: Ri > 10 M Ω ; Ci < 2.5 pF.

1. Settings on the carrier board

1.1 +148V/+95V supply voltage

Connect a voltmeter over C2631. Using R3635, set the supply voltage to +148V $\pm$ 0.5V for 25" and 28" units or to 95V $\pm$ 0.5V for 21" units.

1.2 Focusing

This is set using the focusing potentiometer (on the top of the line output transformer).

1.3 Vg2 setting

Connect a pattern generator and supply a blanking frame signal (black picture). Switch the unit to the service default mode (see section 9).

Connect an oscilloscope to the emitters of transistors 7304 and 7364 on the picture tube module. Set the oscilloscope to frame frequency. Measure the DC voltage level of the measuring pulses (see Fig. 7.2). Using the Vg2 potentiometer on the line output transformer, set the measuring pulse with the lowest DC voltage level to:

- * +130V $\pm$ 5V for all sets.

1.4 Horizontal synchronization

Connect pin 5-IC7470 to pin 9-IC7470.

Supply an aerial signal and tune the set.

Adjust in service menu (see section 9), sync.freq. by means of the menu +/- button until the picture is straight. Remove the interconnection.

1.5 Horizontal centring

Set using potentiometer 3461.

1.6 Vertical centring

Set using potentiometer 3516.

1.7 Picture height

Set using potentiometer 3504.

1.8 Picture width

Set using potentiometer 3525.

1.9 East/west correction

Is adjusted with potentiometer 3521

1.10 Chroma bandpass filter

a. Setting for PAL/SECAM sets (TDA4657)

Connect a signal generator (e.g. PM 5138) to pin 20 of the euroconnector (EXT1) and set its frequency to 4.286 MHz/0.5 Vpp. Switch the unit to EXT1. Connect pin 18-IC7306 to +12V. Connect an oscilloscope to pin 9-IC7306. Set 5301 to maximum amplitude. Remove the interconnection.

b. Setting for PAL sets (TDA4510)

Connect a signal generator (e.g. PM 5138) to pin 20 of the euroconnector (EXT1) and set its frequency to 4.436 MHz/0.5Vpp. Connect the unit to EXT1. Connect an oscilloscope to pin 9-IC7305 (TDA4510). Set 5301 to maximum amplitude

1.11 Chroma auxiliary oscillator

Connect a pattern generator and supply a PAL colour bar pattern. Connect pin 11-IC7305 (TDA4510) to earth. Set 2313 so that the colour on the screen has practically stopped. Remove the interconnection.

1.12 White balance

Connect a pattern generator and select a white picture. Switch on the service menu (see section 9) and select "WHITE BALANCE". Set the value of "Green" to 50(G/AMP), and the Value of "Blue" to 45(B/AMP). Value of "Red" to 57(R/AMP). In most cases no further adjustments are required.

1.13 Peak white limiter

Switch on the service menu (see section 9) and select "WHITE BALANCE".

Set "WH/LIM" to the value:

- 35 for blackline units
- 51 for non-blackline units
- 63 for 21" 110 degree sets.
- 45 for 29" sets

1.14 Cut-off points of the picture tube

Connect a pattern generator and select a black picture. Switch on the service menu (see section 9) and select "CUT OFF". Set the value of "Red" to 30, and fore "Green" to 30, and for "Blue" to 30. In most cases no further adjustments are required.

1.15 Options

Switch on the service menu and select "OPTIONS" or "OPTION 1". Switch the options "ON" and "OFF" according to whether the following options are present:

- "THIRD SCART" on a set with third scart.
- "TELETEXT" on a teletext set
- "MULTI SYSTEM" for multisystem sets
- "UHF ONLY" for a tuner which can only be tuned to the UHF band
- "NICAM" for stereo sets which can also receive NICAM sound.

2.1 RF-AGC

If the picture from a strong local transmitter is distorted, adjust 3016 until the picture is not distorted.

2.2a

MF-AFC For multi system sets (PAL-BG/SECAM-DK). Connect a pattern generator to pin 8 of connector G29 (IF-module) and select a frequency of 38.9 MHz. Connect a voltmeter to pin 11 of connector G29. Adjust with 5001 the DC voltage to 1.9 V.

2.2b

MF-AFC For all other sets.

Connect a pattern generator to pin 8 of connector G29 (IF-module) and select a frequency of 38.9 MHz. Connect a voltmeter to pin 11 of connector G29. Adjust with 5001 the DC voltage to 2.3 V.

2.3 Stereo matrix

Connect a pattern generator and supply a PAL BG signal with stereo sound. Select only the right-hand channel sound. Go into service mode. Choose SND stereo and pull out the right connector (seen from the front side of the set). Put volume maximum with volume button. Align with menu-button so that the sound is just not hearable at the left loudspeaker. Leave now the service mode by putting the set in standby.

8. Survey of error messages on the screen

Message on screen	Description	Possible fault
PIP	I ² C error PIP module	+5 on PIP module, IC7406
NICA	I ² C error IC7305 (NICAM sets)	IC7305, +5 on IF module
9860	I ² C error IC7204	+5/+8 on IF module, IC7305
9840	I ² C error IC7205	+5/+8 on IF module, IC7205
TXT	I ² C error teletext module	IC7910/IC7920, +5 on TEXT module
EPROM	I ² C error IC7710	IC7708/IC7710, +5 on IC's
TUNE	I ² C error tuner	+5/+14 on tuner, TS7003
CHR1	I ² C error IC7308	+14 on IC7308
CHR2	I ² C error IC7309	+14 on IC7309
6415	I ² C error IC7820	
BUS + blinking LED	I ² C bus blocked	I ² C bus check on all IC's

Error messages

Internal microcomputer errors and external errors will be signalled by displaying the error number (by OSD) and by continuous blinking the LED (video related errors only).

The last five errors will be remembered in the non volatile memory (if possible), this is called the error buffer. After a startup of the system (on by main switch or on from standby) only one error will be added to the buffer (first in, first out procedure), only errors different from the last error in the buffer, will be added to this buffer. The error will be cleared when the "standby" command is given while the system is in service menu mode. An active error is displayed continuously in service default mode. The buffer is shown in the service menu mode (Service main menu).

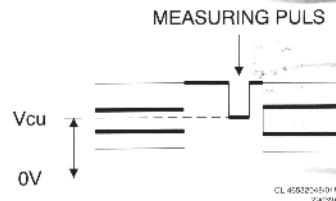
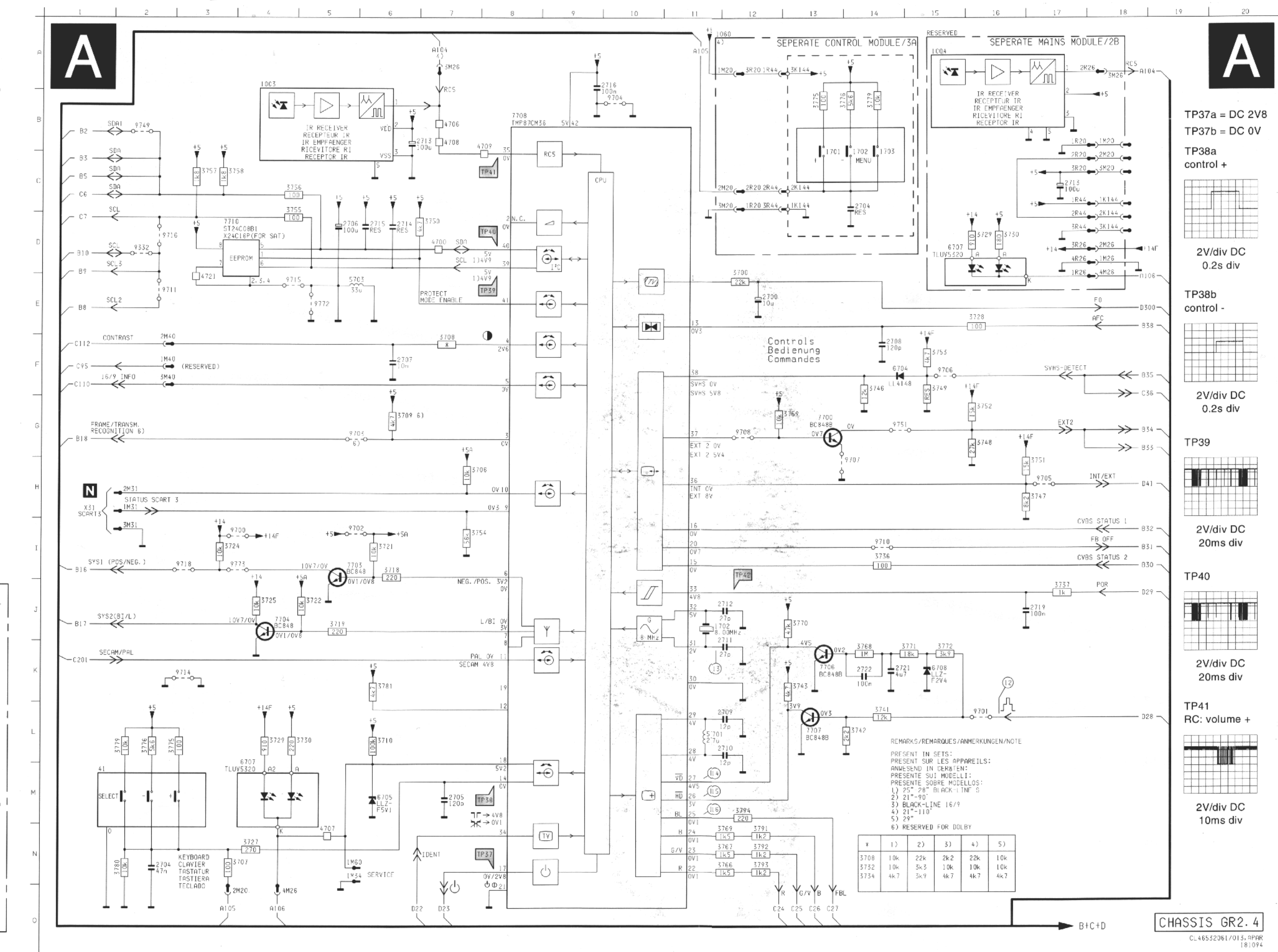
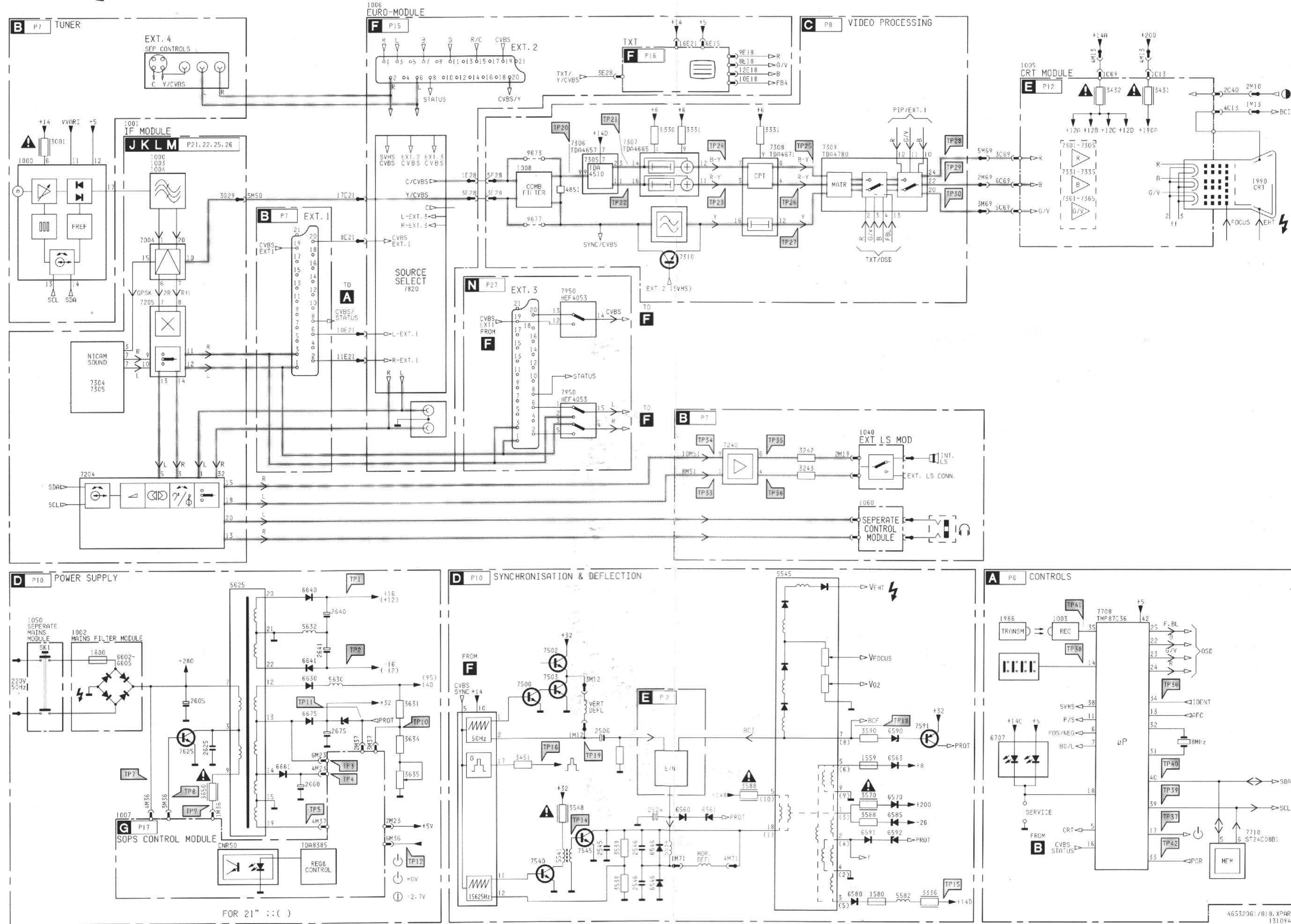
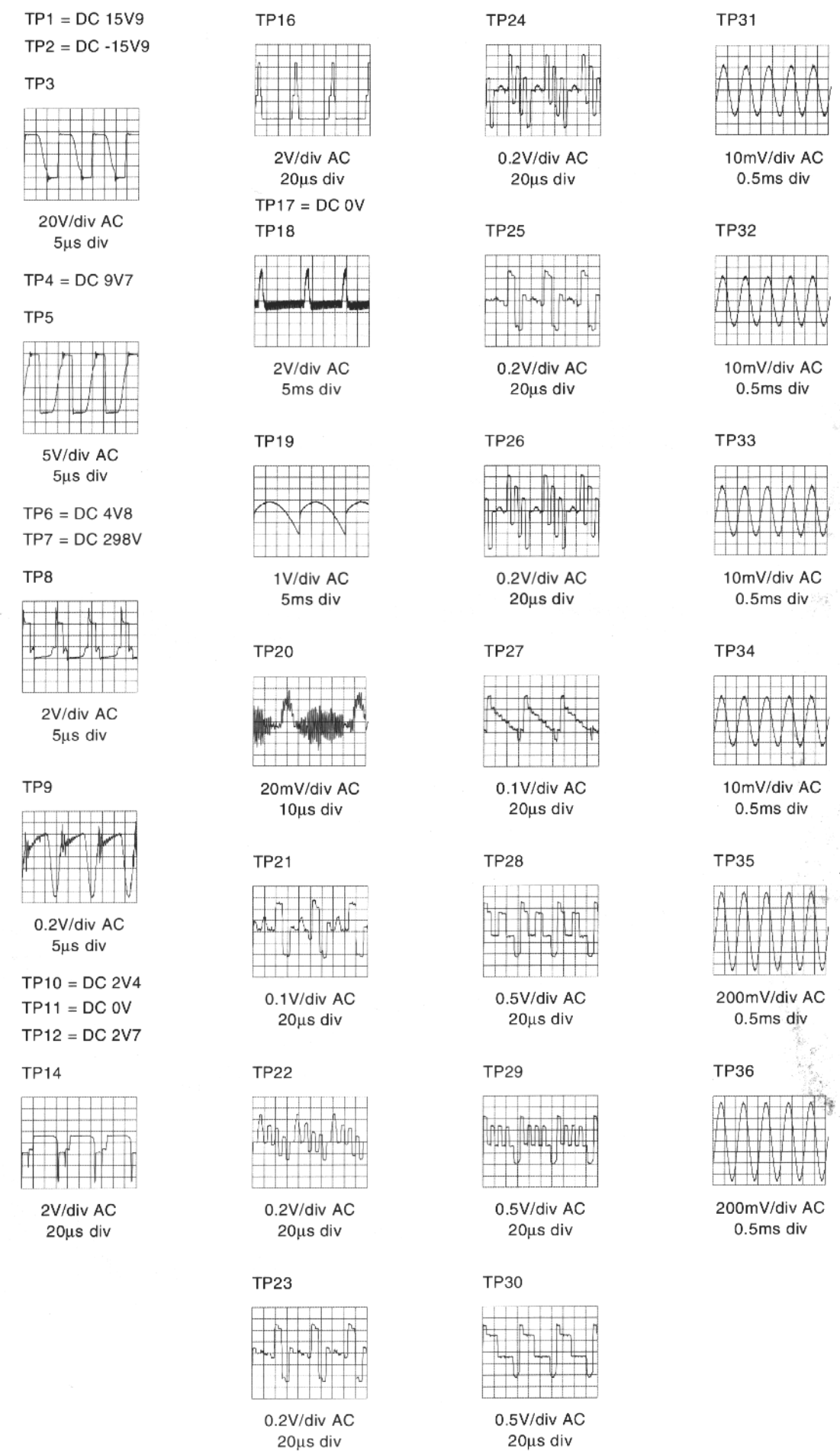
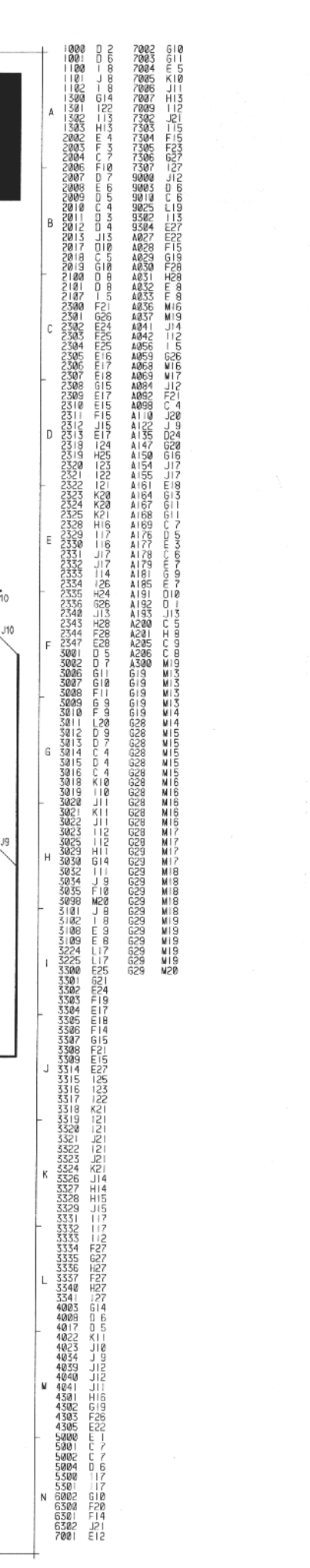
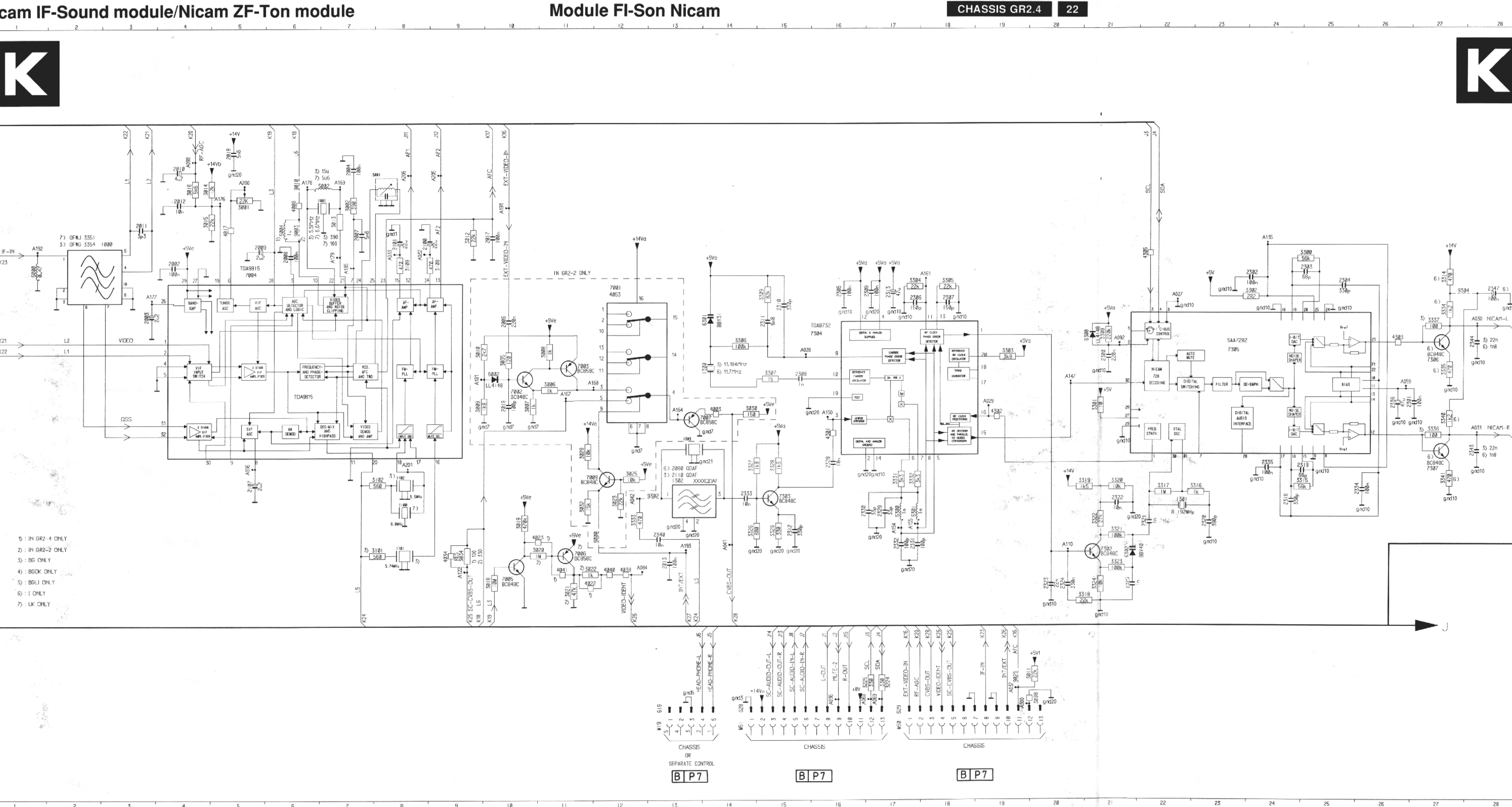
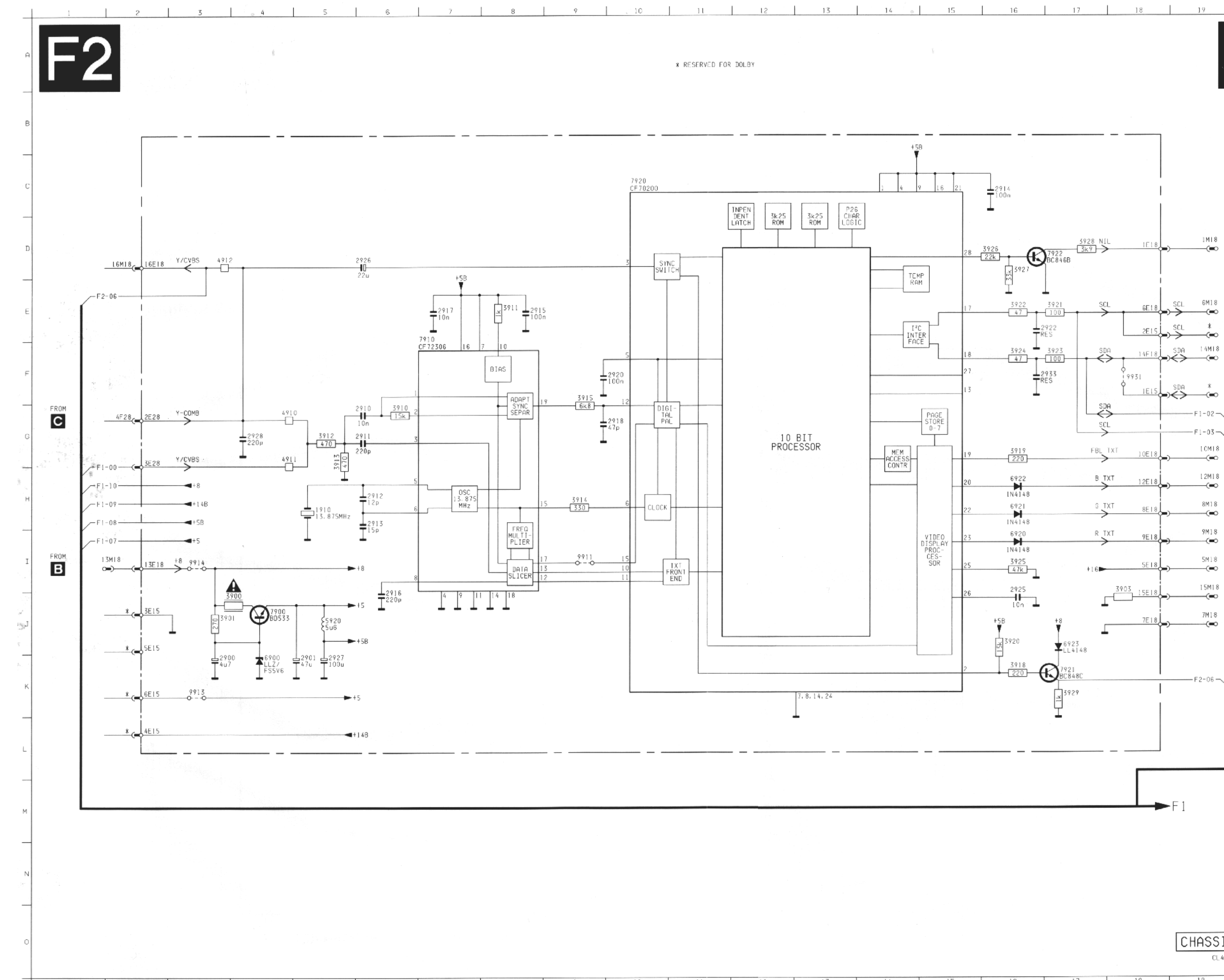


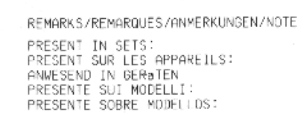
Fig. 7.2







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REMARKS/REMARQUES/ANMERKUNGEN/NOTE
PRESENT IN SETS:
PRESENT SUR LES APPAREILS:
ANWESEND IN GERÄTEN
PRESENTE SUI MODELLI:
PRESENTE SOBRE MODELLIDS:

CHASSIS GR2.4
CL46532061/016.DPAR
181094

TP16



2V/div AC
20µs div

5a = DC 144V
6

100V/div AC

TP18



2V/div AC
5ms div

7



0.5V/div AC
20μs div

1V/div AC
5ms div

① = DC 298V

⑧



1V/div AC
20 μ s div

10V/div AC
5 μ s div

5V/div AC
20 μ s div

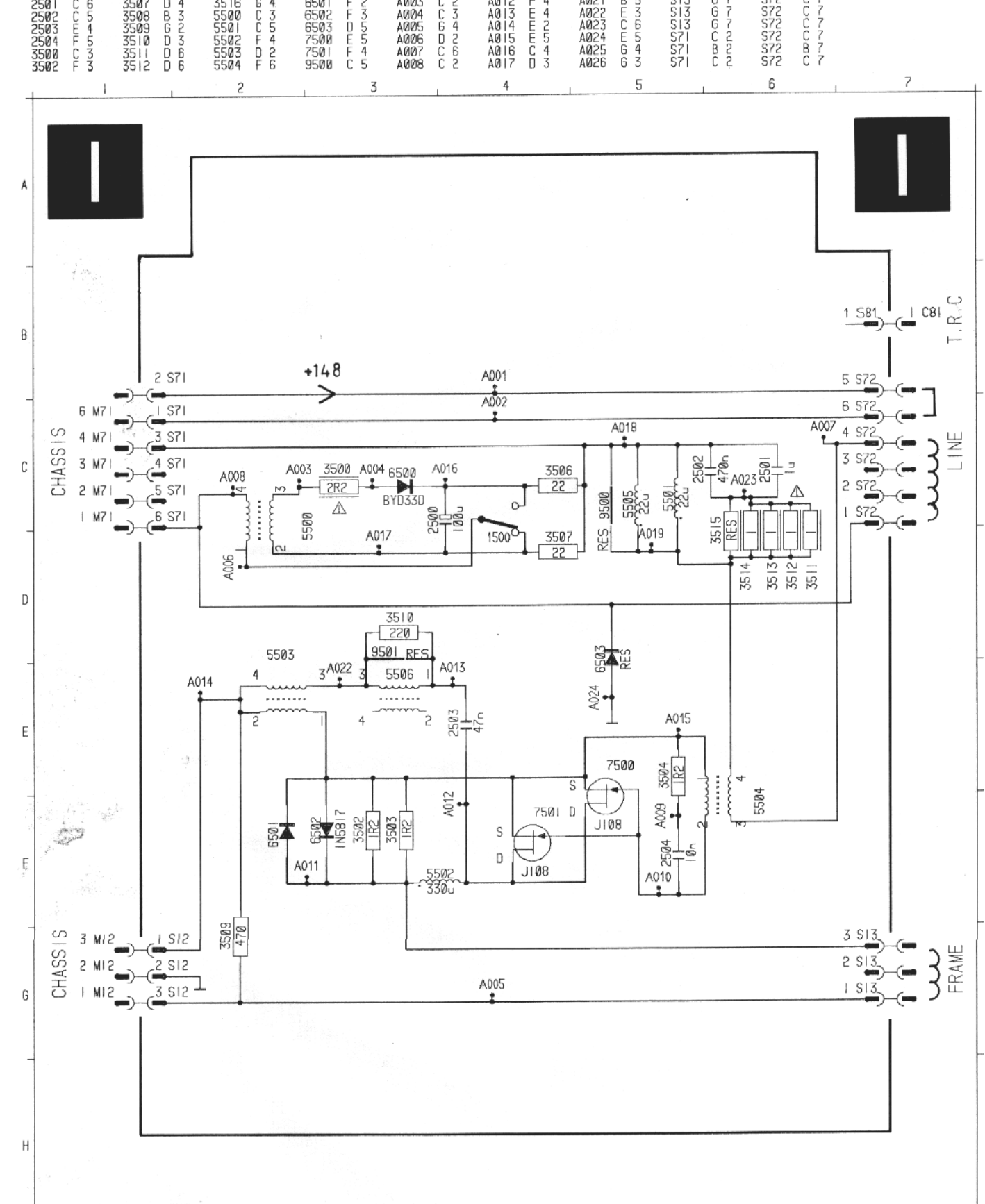
10

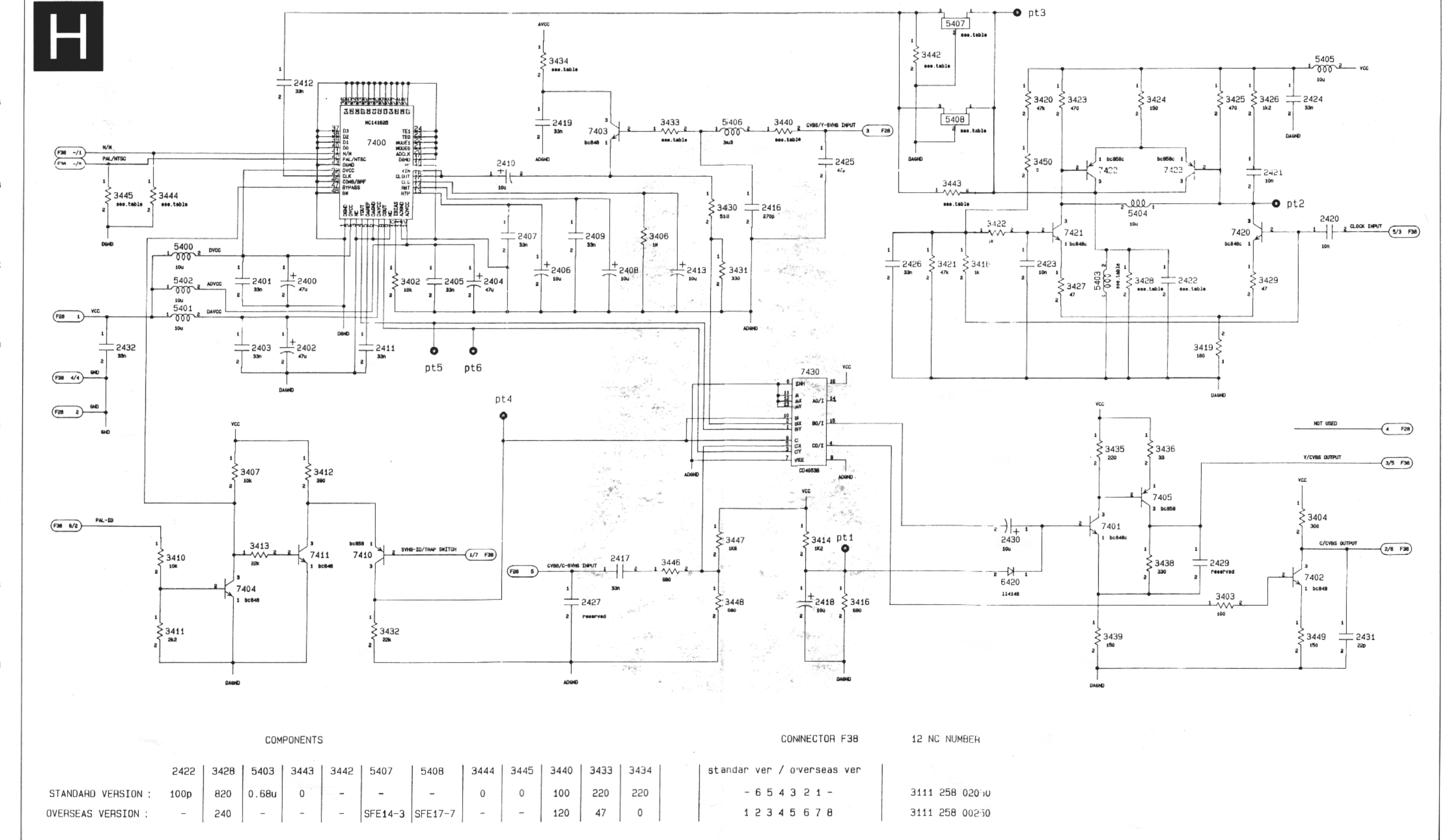
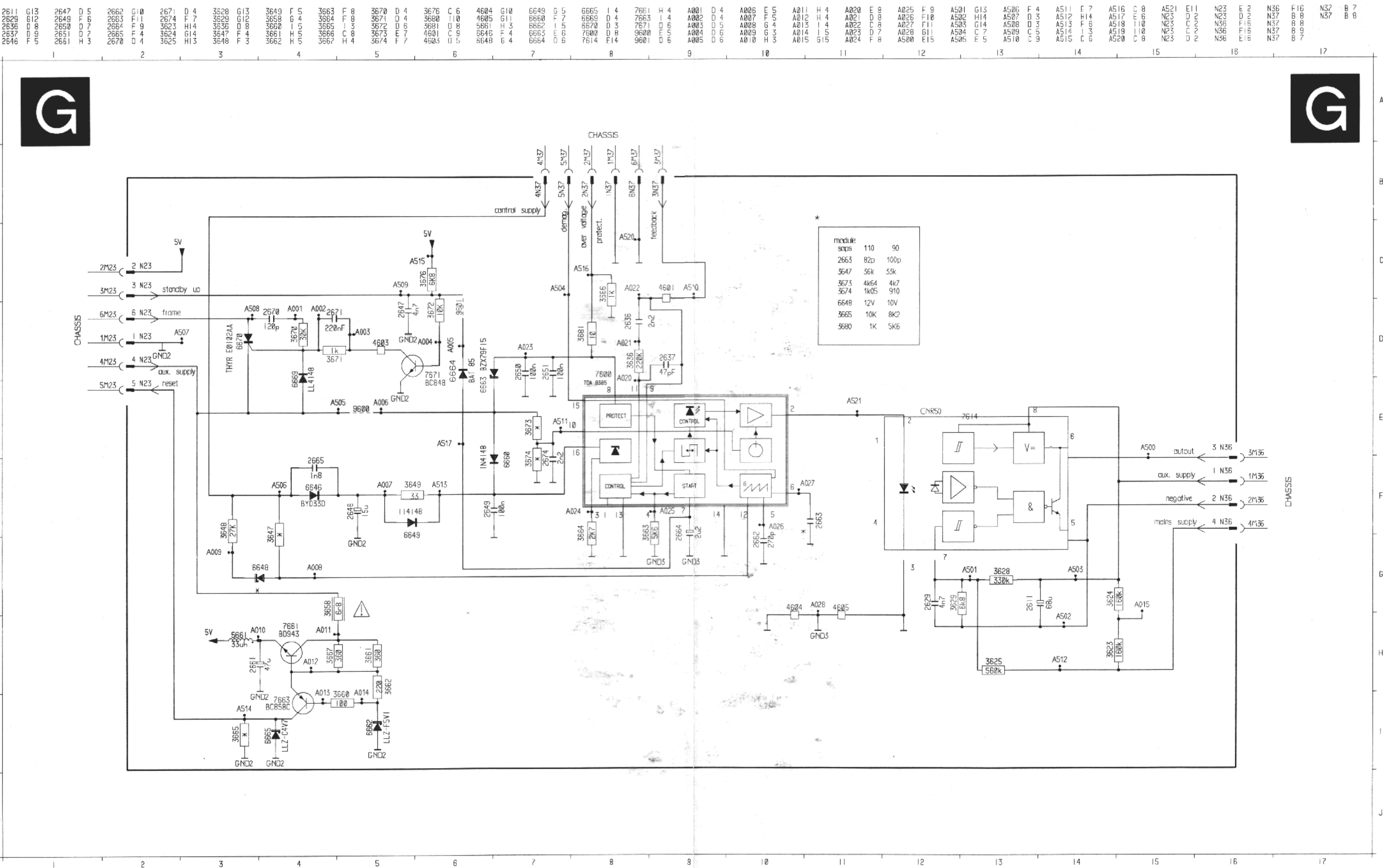
50V/div AC
5 μ s div

4

0.5V/div AC
20 μ s div

5V/div AC
5 μ s div





1: IN GR2-4 ONLY
2: IN GR2-2 ONLY

