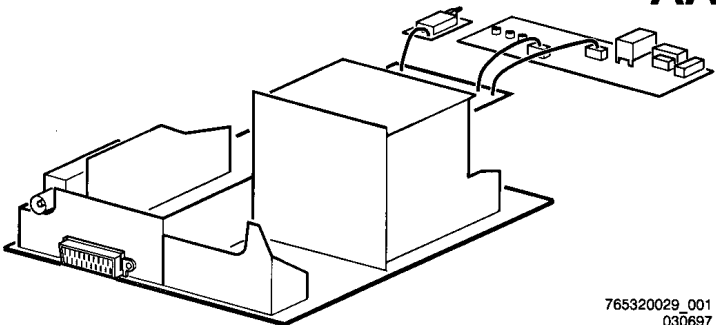


Service
Service
Service

L6.2
AA

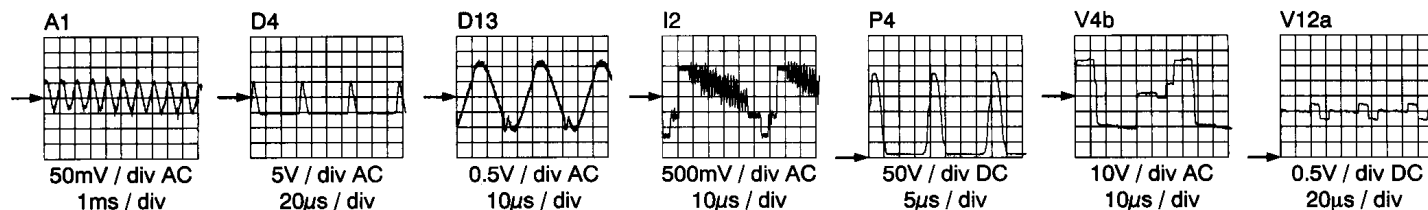


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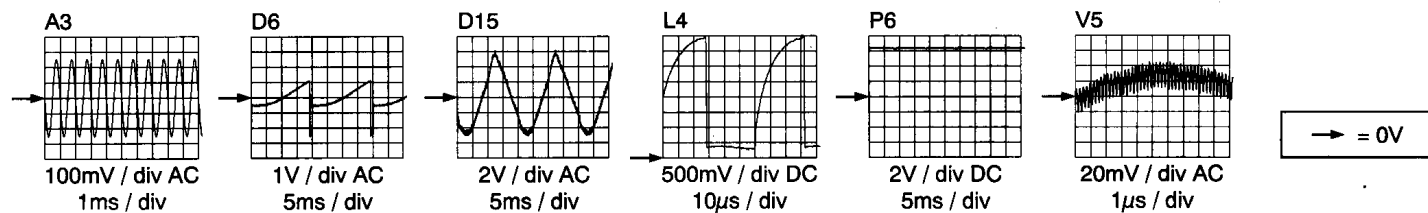
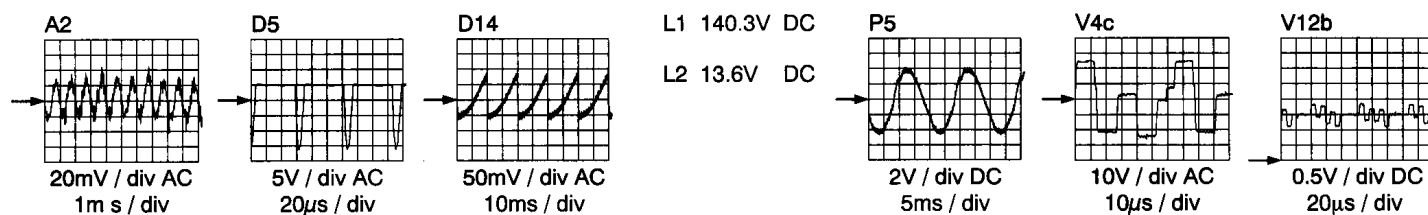
Service Manual

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5. Overview oscillograms / Übersicht Oszillogramme / Vue d'ensemble des oscillogrammes

S
1

2



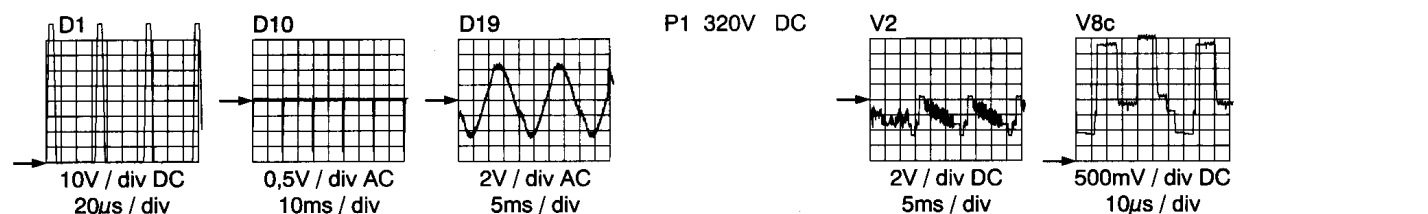
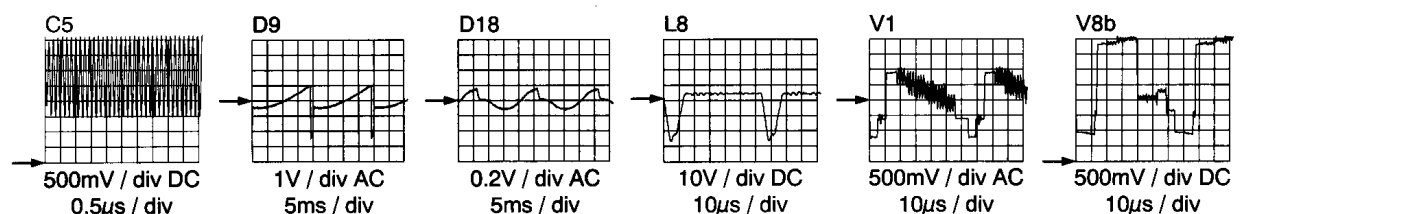
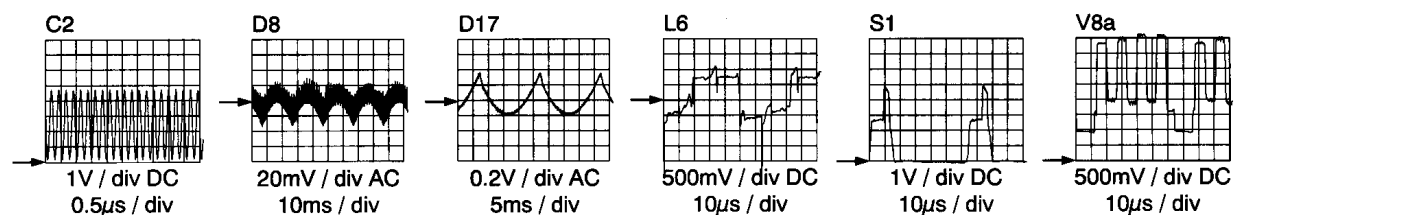
→ = 0V

A4 Not present

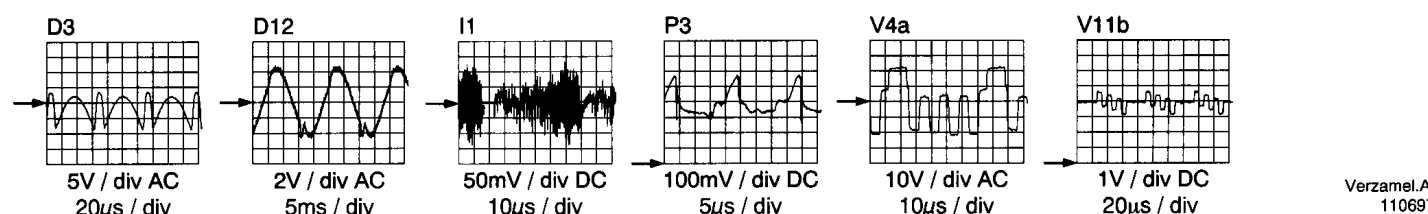
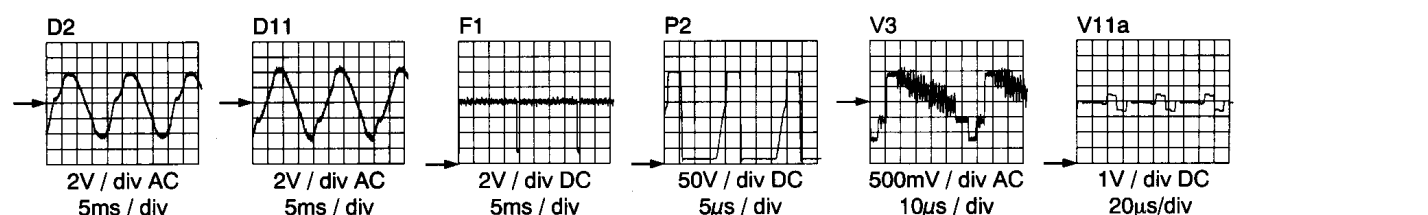
C1 5V DC

C3 5V DC

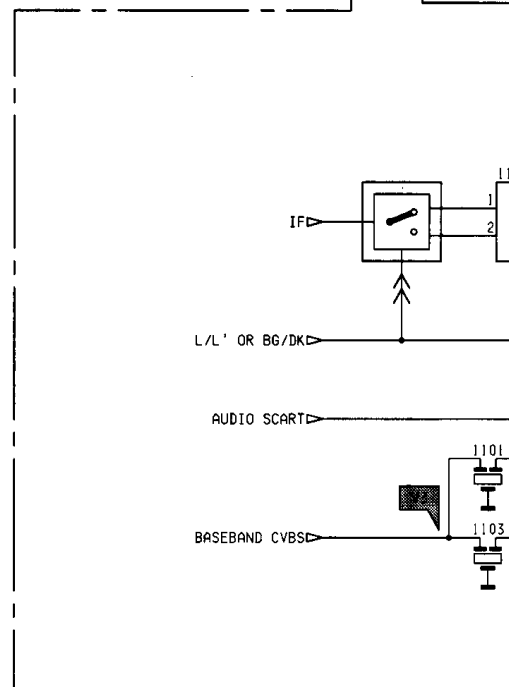
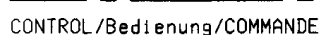
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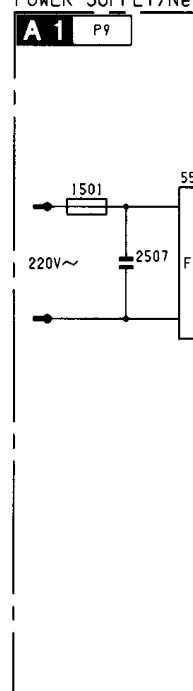
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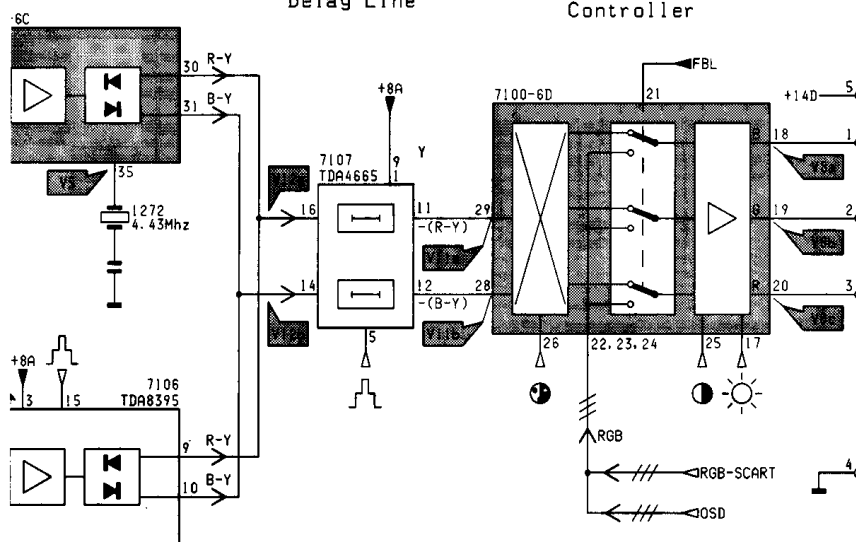


VIDEO + SOUND.

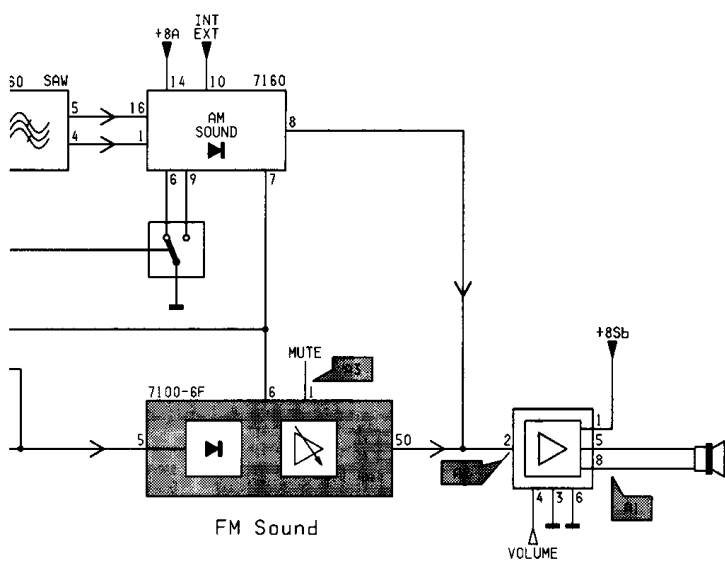


POWER SUPPLY/Ne

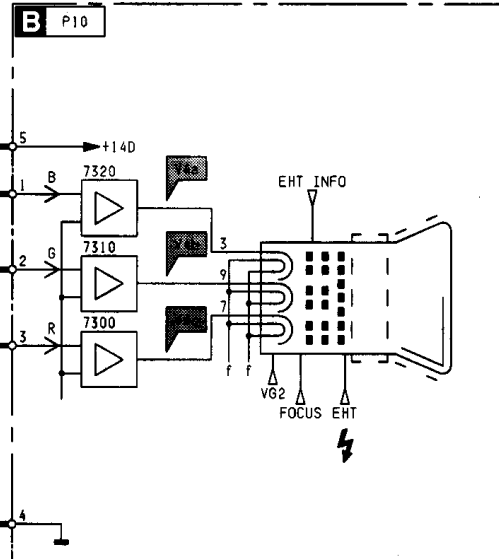
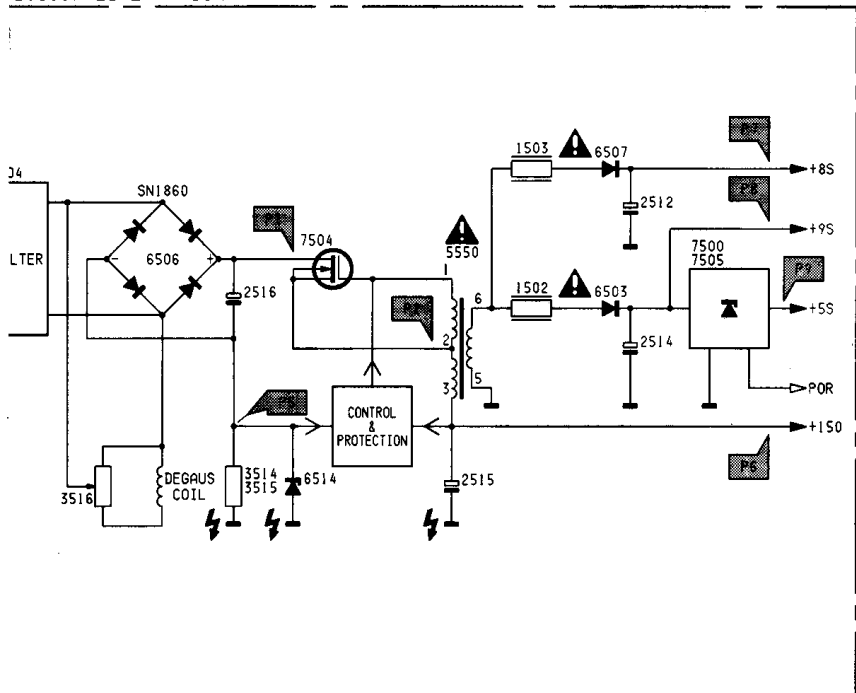




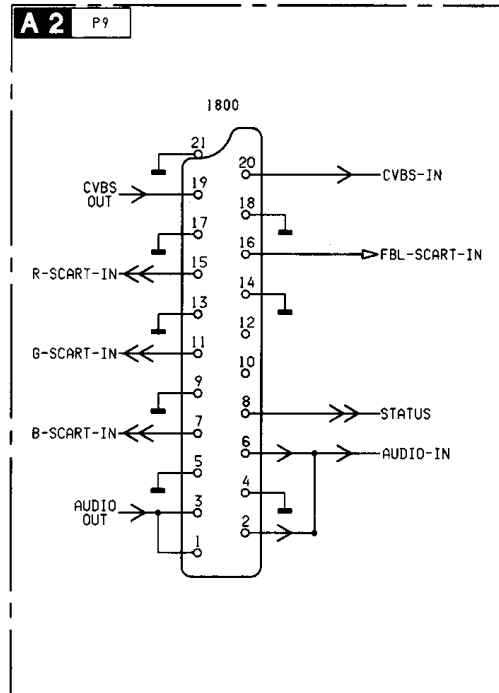
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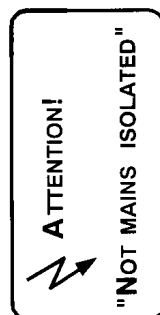


zteil / ALIMENTATION

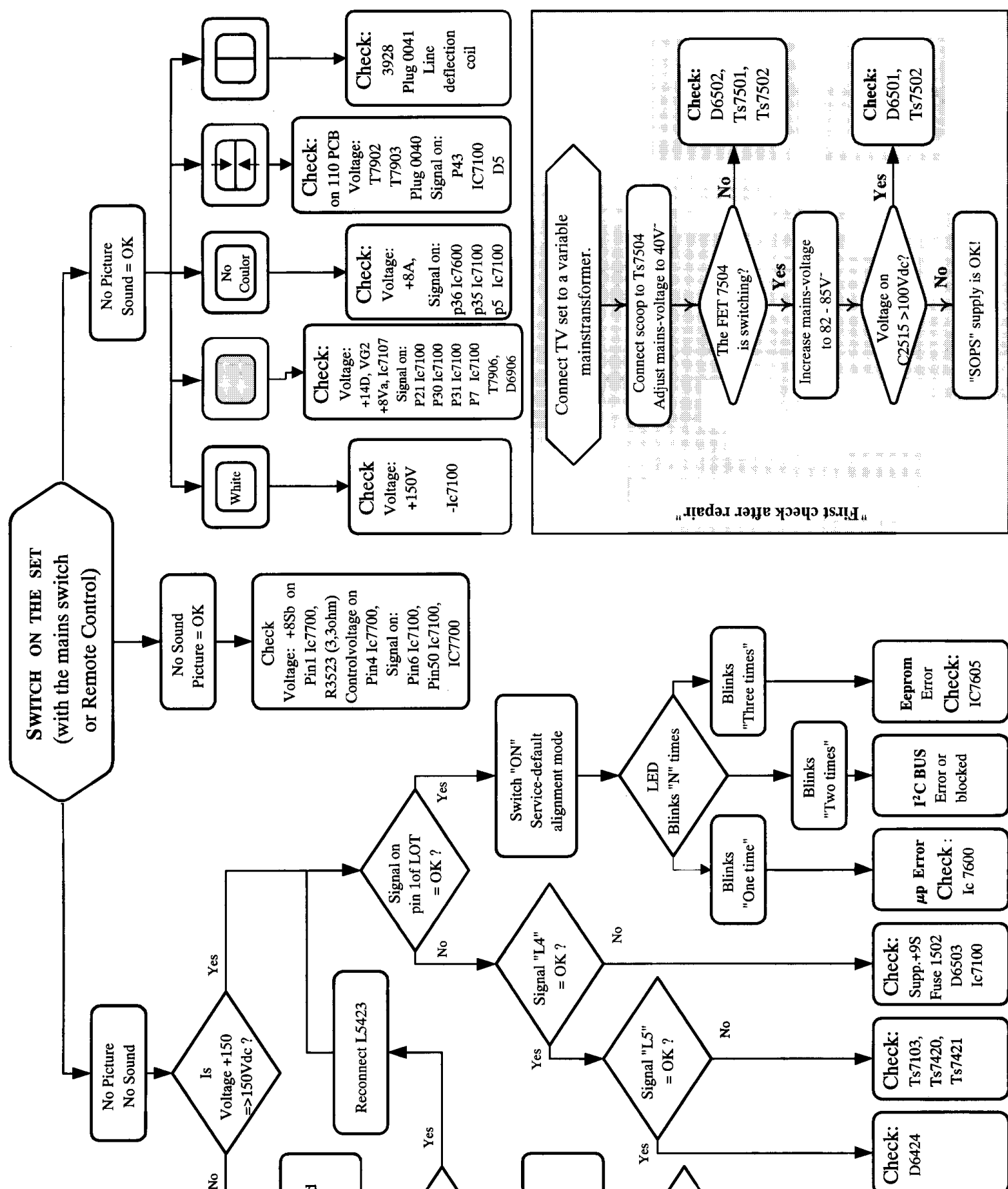


SCART





**Fault finding tree & Repair facilities /
Fehlersuchbaum & Reparaturhinweise /
Aide au depannage & Conseils pour la réparations**



6. Repair facilities

1. Functional blocks

On both the service printing on the copper and the component side, functional blocks are indicated by lines and text.

2. Test points

The L6 chassis is equipped with test points in the service printing on both sides of mono-board. These test points are referring to the functional blocks as mentioned above:

- * P1-P2-P3, etc: Test points for the power supply
- * L1-L2-L3, etc: Test points for the line drive and line output circuitry
- * F1-F2-F3, etc: Test points for the frame drive and frame output circuitry
- * S1-S2-S3, etc: Test points for the synchronisation circuitry
- * V1-V2-V3, etc: Test points for the video processing circuitry
- * A1-A2-A3, etc: Test points for the audio processing circuitry
- * C1-C2-C3, etc: Test points for the control circuitry
- * T1-T2-T3, etc: Test points for the teletext processing circuitry

The numbering is done in a for diagnostics logical sequence; always start diagnosing within a functional block, in the sequence of the relevant test points, for that functional block.

3. Service default-alignment mode (SDAM)

The service default-alignment mode is a pre-defined mode which can be used for faultfinding (especially when the TV gives no picture at all). All oscillograms and DC voltages in this service manual are measured in the service default-alignment mode.

Activate the service default-alignment mode can be done in 2 ways:

1. By short-circuiting the service pins S1 and S2 of the microcomputer (pin 14 of IC7600).
2. From normal operation mode by pressing the button "DEFAULT" or "ALIGN" on the DST (Dealer Service Tool) RC7150.

Leaving the service default-alignment mode to normal operation can only be done by the stand-by on the remote control or by pressing diagnose 99 followed by the OK-button on the DST (so not via mains switch "off"; after mains switch "off" and then "on" again the set will start up in the service default-alignment mode again to enable easy faultfinding).

Functions of the service default-alignment mode:

1. All analogue settings (volume, contrast, brightness and saturation) are in the mid position.
2. Set is tuned to program number 1
3. Delta volume settings are not used (delta volume setting = a delta on the volume setting)
4. OSD error message (present available error code) is displayed continuously
5. The OSD-key will act as search and auto store on the maximum program number.
6. Automatic switch off function (set switches "off" after 15 minutes no IDENT) will be switched off
7. Hotel mode will be disabled
8. All other functions remain normal controllable

Service default-alignment menu:

New option settings are activated immediately.

1. Software version of the microprocessor used in that typical set is displayed in the right top corner
2. A counter in the middle of the screen indicate the normal operation hours of the set in a hexadecimal code (every time the set is switched "on" the counter is incremented by 1 hour, so +1 at the counter).
3. The "S" in the middle of the screen next to the counter indicate that the set is in the service default-alignment mode
4. Option code
This code indicates the Options setting of the set.
5. Error code history:
The 5 last different error codes occurred are stored in the EEPROM memory; last error code detected will be displayed on the left side (see for an overview of all possible error codes Fig. 6.3), so e.g.:

0 0 0 0 0	means no error codes present in the buffer
3 0 0 0 0	means one error code present in the buffer; error code 3
2 3 0 0 0	means two error codes present in the buffer; last detected error code is error code 2, previous detected error code is error code 3

The error code history buffer is cleared when the Service Menu is left by the stand-by command or by diagnose 99 command. In case the Service Menu is left by the mains switch "off" the error code history buffer will not be cleared.

Option code + Counter + "S" for
Service Menu active + software version →

Error code history →

Option setting row →

001	0023S	1.0
23000		
-	SYSTEM BG+I	+

Fig. 6.1

6. Option setting:

In the bottom line the options are given.
Control of the options is with the following keys on the remote control:

- * PROGRAM +/- Select the option to be changed:
Via the "PROGRAM +/-" button the option to be changed can be selected. The selected option is implemented immediately.
- * CONTROL up/down Changes the setting of the option.

* MENU +/-

Changes to a submenu: via "MENU +/-" buttons a submenu is selected in which in a stereo version the sound/sync alignment can be done.

The options are stored immediately in the EEPROM. The following table indicates the possible hardware and software options and their technical consequences:

Text displayed in the option row in the Service Menu	The technical consequence for the selected option
SINGLE	→ For a PAL BG only or PAL BG/SECAM BGDK set
SYSTEM I:UK	→ For a PAL I only set
SYSTEM BG+LL'	→ For a PAL BG/SECAM LL' set
SYSTEM BG+DK	→ For a PAL BGI/SECAM LL' set
NATIONAL BRAND MAxxxxx→	Selects MENU-Layout National Brand styling

Fig. 6.2

4. Error messages

The microcomputer also detects errors in circuits connected to the I²C (Inter IC) bus. These error messages are communicated via OSD (On Screen Display) and a flashing LED in the service default-alignment mode. (error code history buffer):

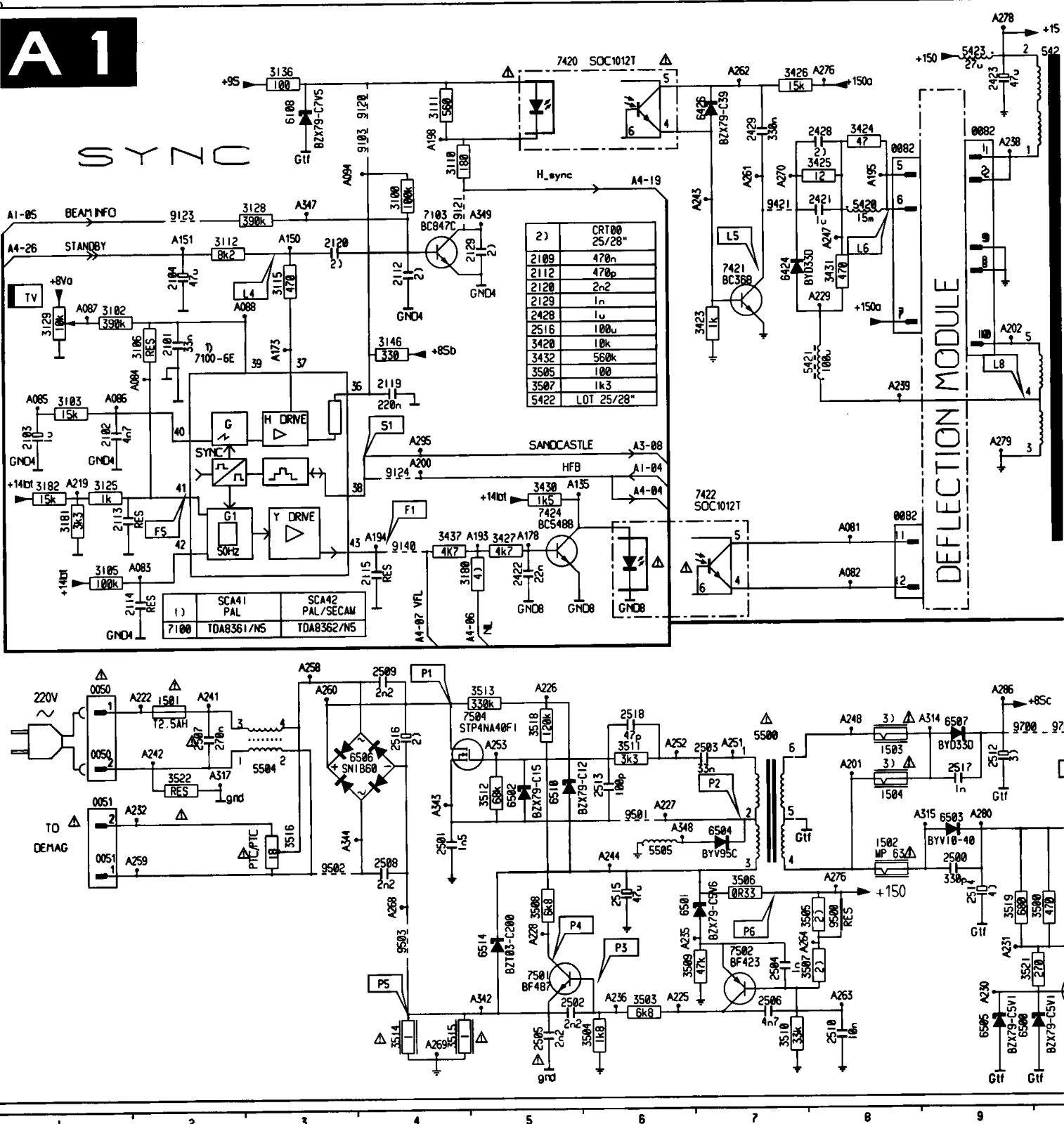
1. In normal operation:
In normal operation no errors are indicated.
2. In the service default-alignment mode:
In the service default-alignment mode both the "OSD error **message**" and the "LED error" indication will display the present detected error continuously.

"OSD error number" (Service Menu)	"LED behaviour"	Error description	Possible defective component
0	No blinking LED	No error	—
1	LED blinks once	μC error	IC76002
2	LED blinks twice	General I ² C	I ² C bus is blocked
3	LED blinks three times	EEPROM error	IC7605

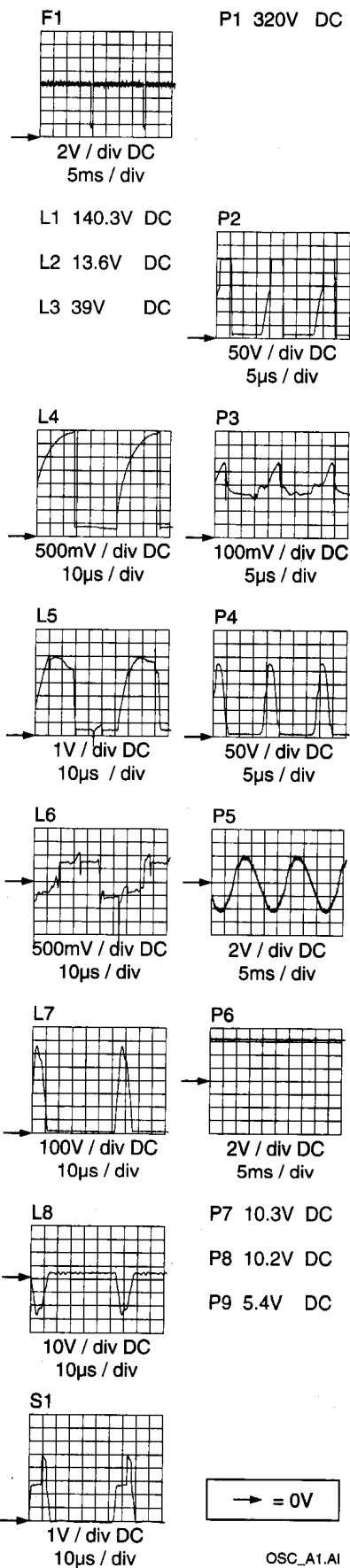
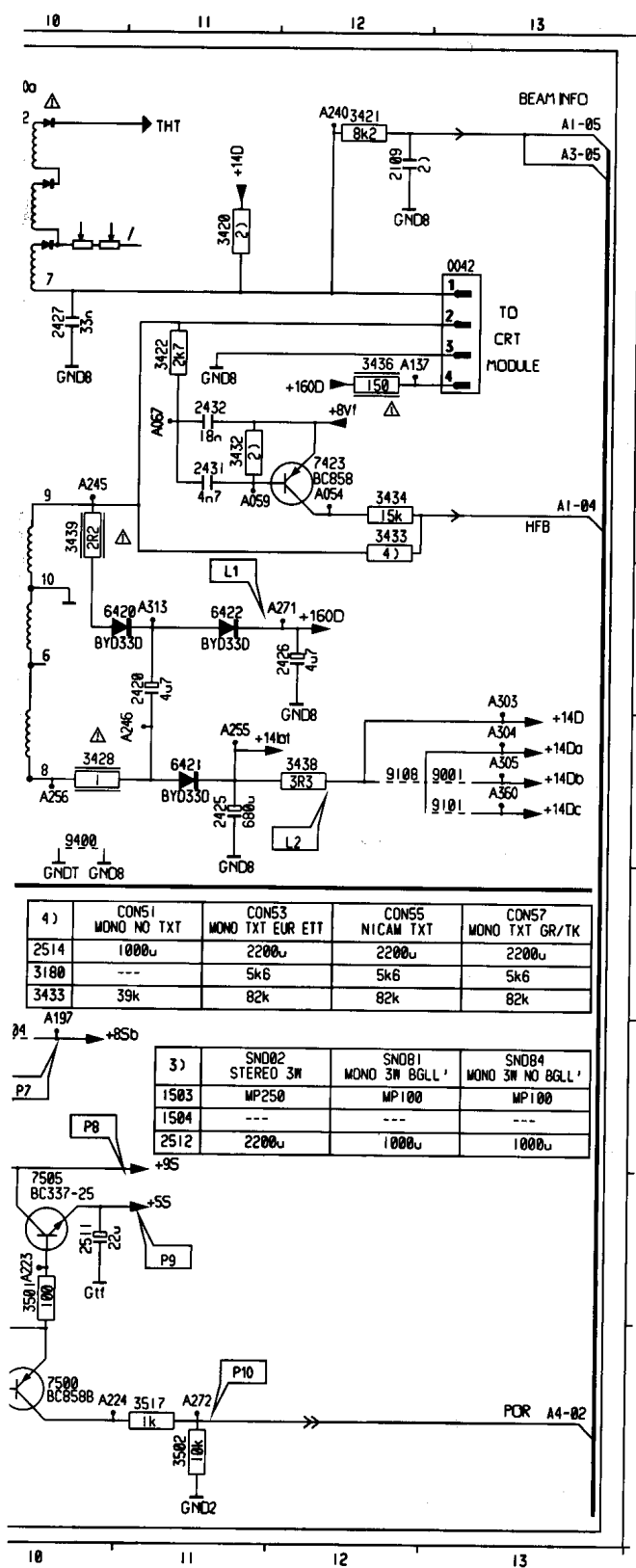
Fig. 6.3

A 1

SYNCO

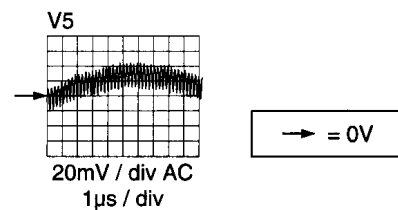
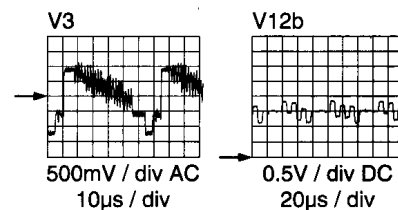
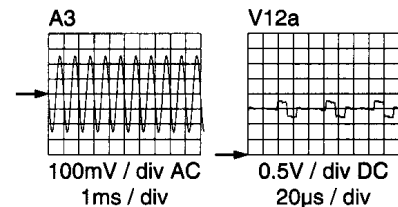
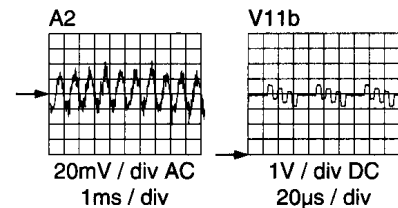
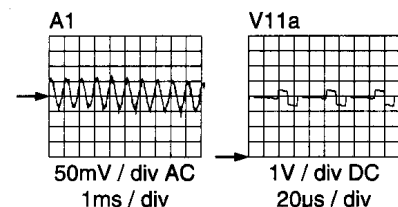
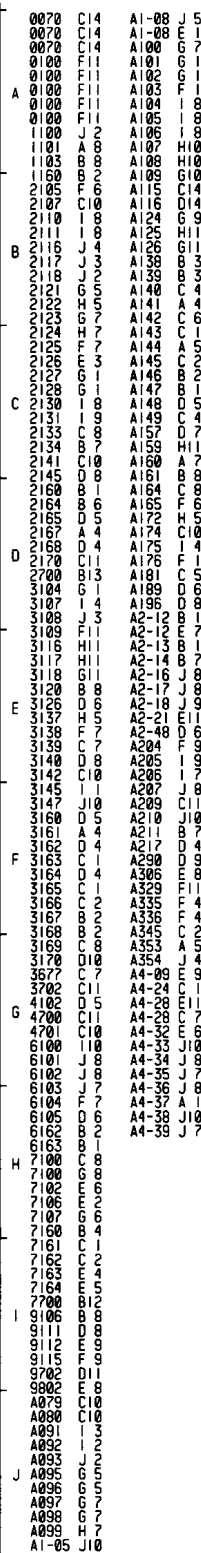
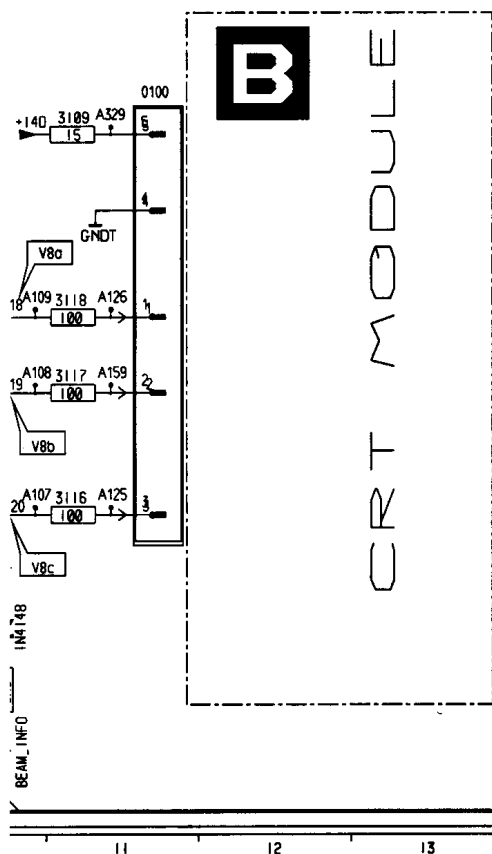
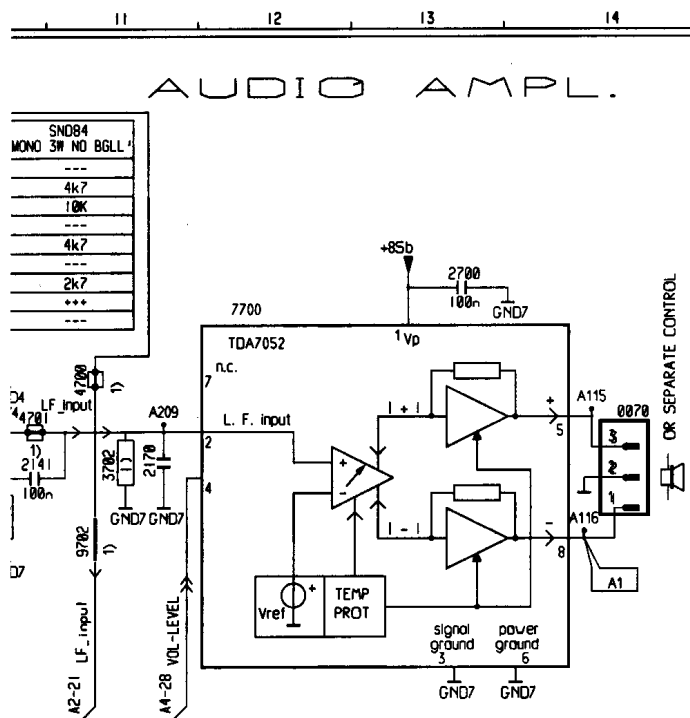


Module secteur & Étage de lignes





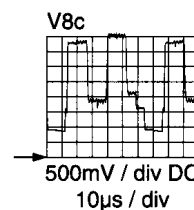
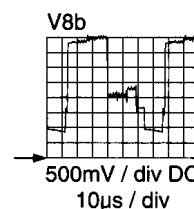
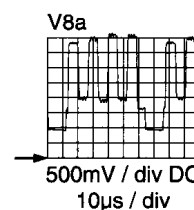
Son & Chrominance



$\rightarrow = 0V$

V7 Secam (Only)

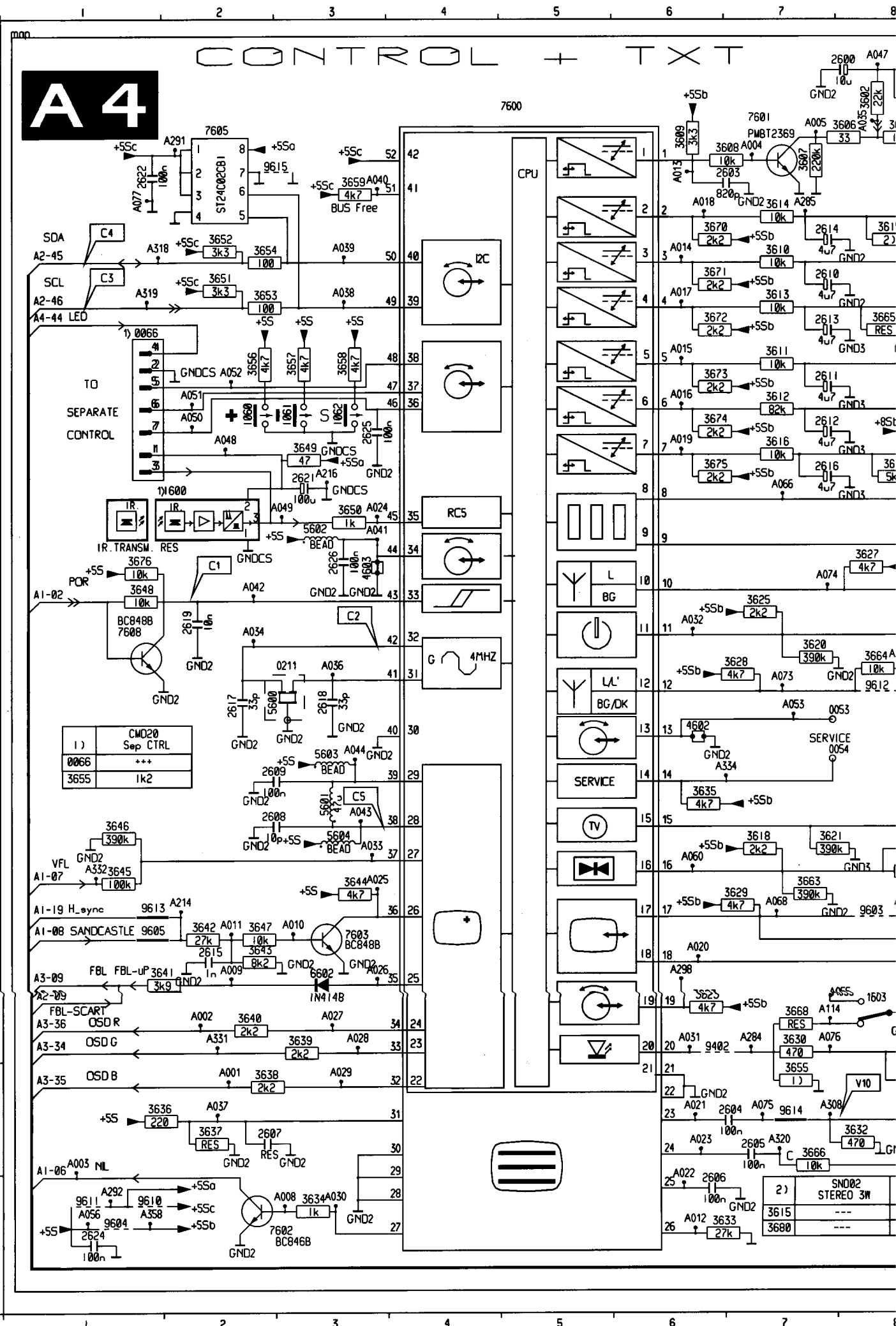
V9 8V6 DC



OSC_A3.AI

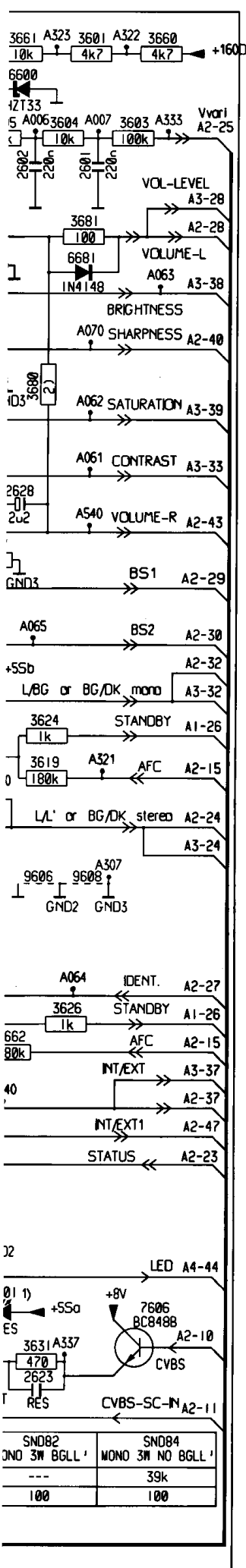
A4

CONTROL + TXT



Commande & Télétex

9



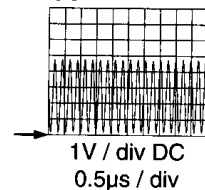
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	0056	C C	6501	J 3	A298	K 1
	0056	C C	6602	A 8	A3-09	I 6
	0056	C C	6681	B 9	A3-24	F 9
	0066	F 1	7500	A 5	A3-28	B 9
	0066	C C	7601	A 7	A3-32	E 9
	0066	C C	7602	K 3	A3-33	D 9
	0211	C F	7603	H 3	A3-34	I 1
	1060	D D	7605	A 2	A3-35	J 1
	1061	D D	7606	F 1	A3-36	I 1
	1062	D D	7608	F 1	A3-37	H 9
	1600	D D	9402	F 1	A3-38	H 9
	1603	I 1	9503	H 8	A3-39	C 9
	2600	A 8	9504	K 1	A307	G 7
	2601	B 8	9505	H 8	A308	J 1
	2602	B 8	9506	G 9	A318	B 1
	2603	B 7	9608	K 1	A319	C 1
	2604	J 7	9610	K 1	A320	J 1
	2605	K 7	9611	K 1	A321	F 9
	2606	J 6	9612	F 8	A322	A 8
	2607	C 3	9613	H 7	A323	A 8
	2608	G 3	9614	J 7	A330	I 1
	2609	G 3	9615	B 3	A331	I 1
	2610	C 7	A001	J 1	A332	H 9
	2611	C 7	A002	J 2	A333	A 9
	2612	C 7	A003	J 1	A334	A 6
	2613	C 1	A004	A 7	A337	J 8
	2614	B 1	A005	A 8	A340	H 1
	2615	D 2	A006	A 8	A358	K 1
	2616	D 7	A007	A 9	A4-44	C 1
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	2628	D 8	A017	D 6		
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	3602	A 9	A019	B 6		
	3603	A 9	A020	I 6		
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	3605	A 8	A022	K 6		
	3606	A 8	A023	K 6		
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	3637	J 2	A056	K 1		
	3638	J 2	A060	H 6		
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	3641	I 2				

C1 5V DC

C3 5V DC

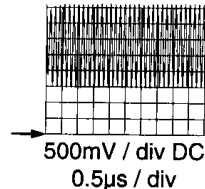
C4 5V DC

C2



1V / div DC
0.5 μ s / div

C5

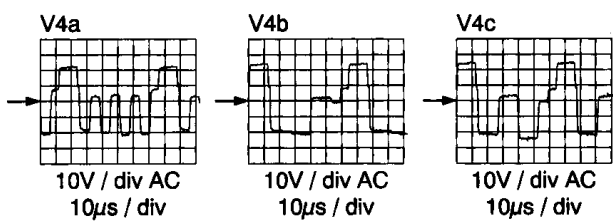


500mV / div DC
0.5μs / div

$\rightarrow = 0V$

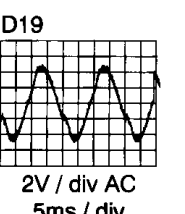
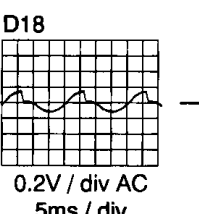
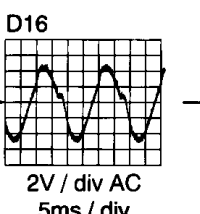
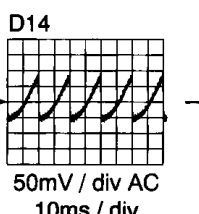
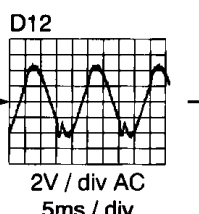
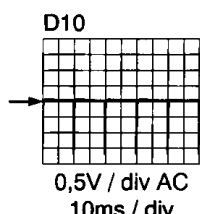
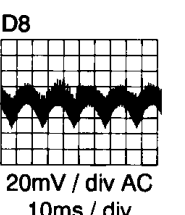
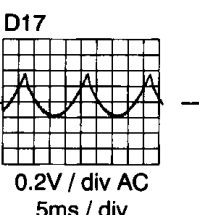
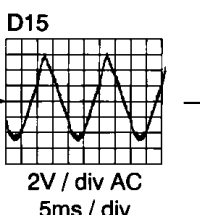
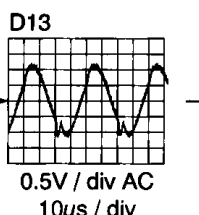
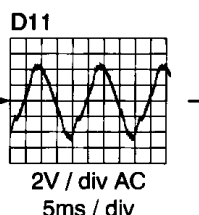
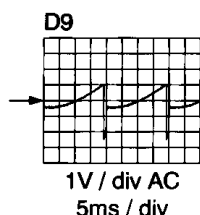
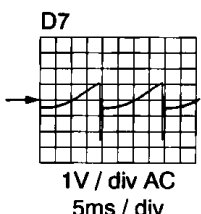
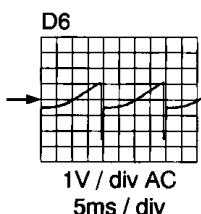
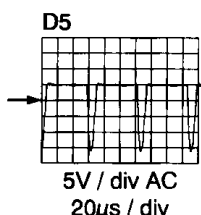
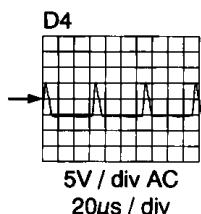
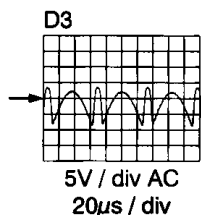
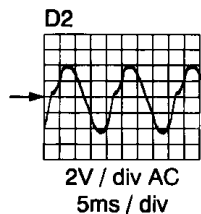
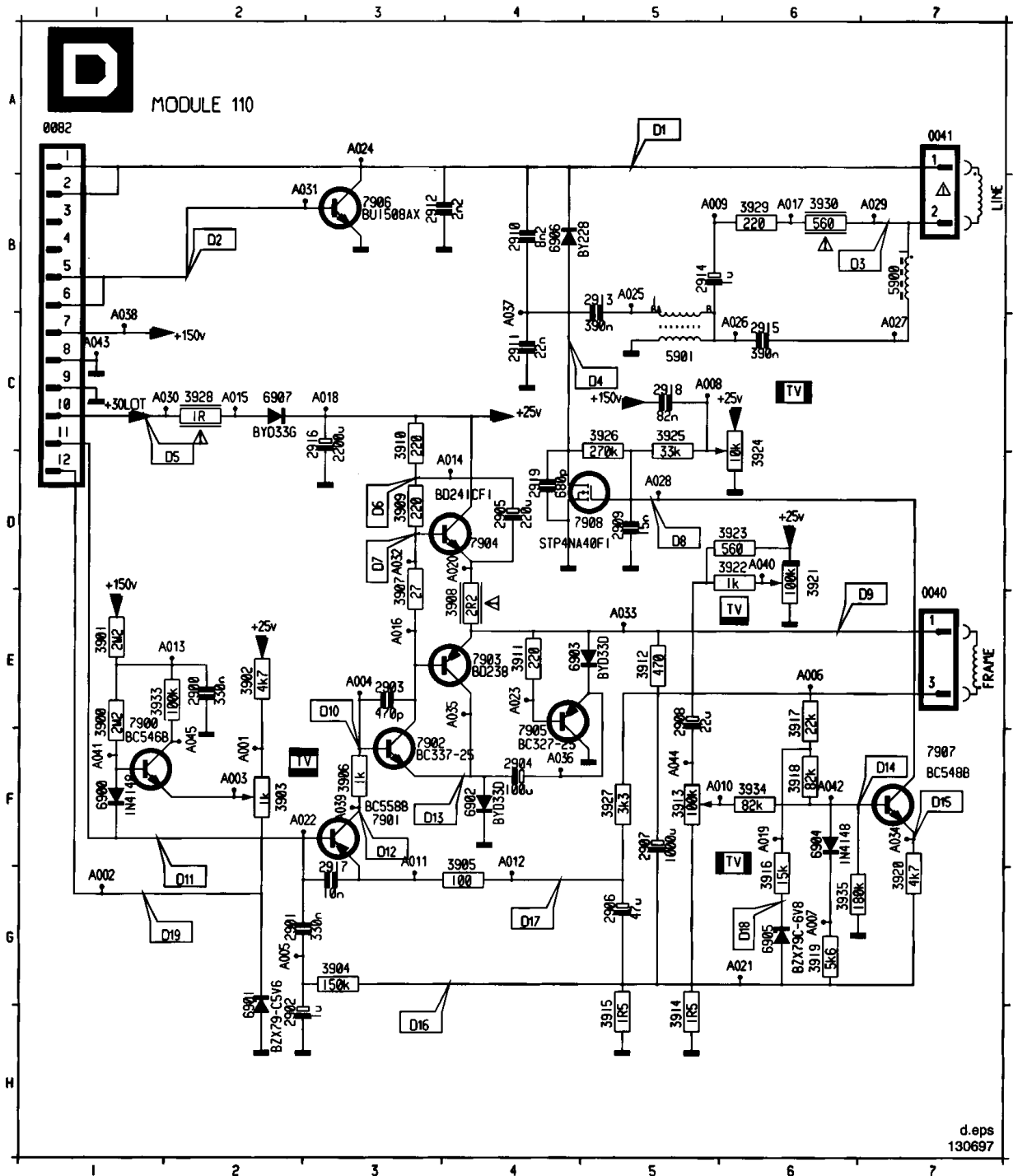
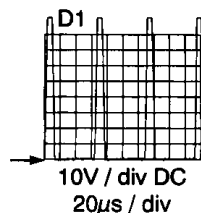
OSC_A4.AI

0042	H 4	0300	D 5	0303	B 4	3302	G 2	3313	E 2	3324	B 2	7320	A 3	A409	E 4	A420	F 2	A431	H 6
0042	H 4	0300		1300		3305		3314		3325	A 2	9300	H 2	A410	B 4	A421	F 1	A432	F 1
0042	H 4	0301	C 5	2300	G 2	3304	G 2	3315	D 2	3326	A 1	9301	H 2	A411	C 4	A422	F 1	A433	F 1
0042	H 4	0301	C 5	2310		3305		3316	C 3	3327	B 3	9302	H 2	A412	D 4	A423	F 1	A434	G 5
0100	D 1	0301	C 4	2320	B 2	3306		3317	C 3	3328	F 4	A401		A413	A 2	A424	A 1	A435	A 1
0300	C 5	0301	D 4	2329	H 5	3307		3318	E 2	3330	F 5	A402		A414	G 3	A425	F 4	A436	F 1
0300	C 4	0301	C 4	2330		3308		3319	A 3	4300	A 1	A403	D 2	A415	D 3	A426	E 4	A437	H 2
0300	C 5	0301	D 5	2331	F 2	3309		3320	A 3	5330	F 4	A404		A416	D 2	A427	F 4	A438	H 5
0300	C 5	0301	D 5	2333		3310		3321	B 3	6330	F 1	A405	G 2	A417	C 2	A428	E 1	A439	
0300	C 5	0301	C 4	3300		3311		3322	A 2	7300	F 3	A406		A418	C 2	A429	C 1		
0300	C 4	0302	H 5	3301	G 3	3312		3323		7310	D 3	A407	G 5	A419	B 2	A430	A 2		



Deflection module 110° / Ablenkung-Modul 110° / Module de déviation 110°

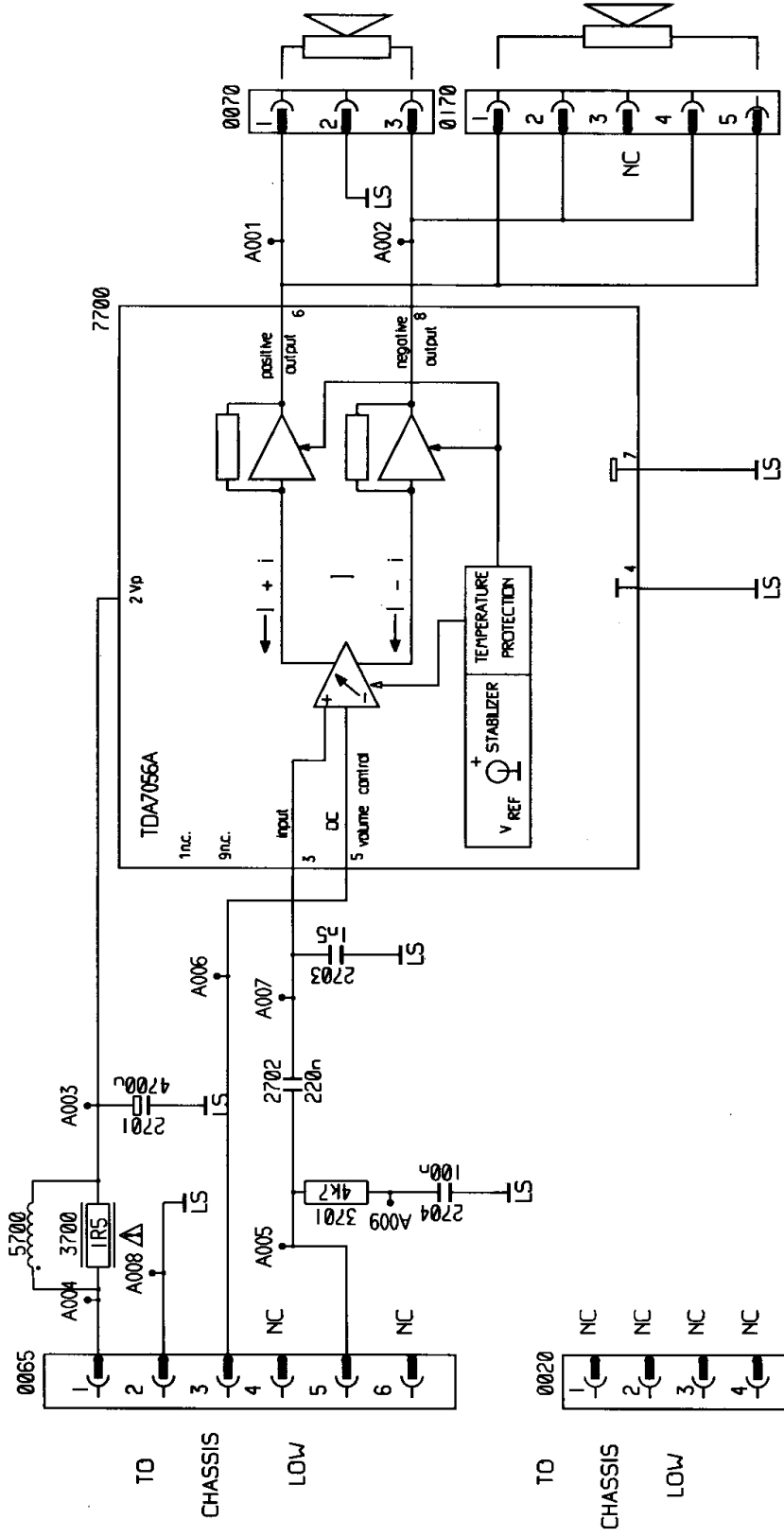
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0041	A 7	2911	8	3904	7	3917	6	3930	8	6907	4	A004	7	A017	3	A030	7	A043	6
0082	A 1	2912	8	3905	7	3918	6	3931	8	7900	4	A005	7	A018	3	A031	7	A044	6
2900	N N N	2913	8	3906	7	3919	6	3932	8	7901	4	A006	7	A019	3	A032	7	A045	6
2901	N N N	2914	8	3907	7	3920	6	3933	8	7902	4	A007	7	A020	3	A033	7		
2902	N N N	2915	8	3908	7	3921	6	3934	8	7903	4	A008	7	A021	3	A034	7		
2903	N N N	2916	8	3909	7	3922	6	3935	8	7904	4	A009	7	A022	3	A035	7		
2904	N N N	2917	8	3910	7	3923	6	3936	8	7905	4	A010	7	A023	3	A036	7		
2905	N N N	2918	8	3911	7	3924	6	3937	8	7906	4	A011	7	A024	3	A037	7		
2906	N N N	2919	8	3912	7	3925	6	3938	8	7907	4	A012	7	A025	3	A038	7		
2907	N N N	2920	8	3913	7	3926	6	3939	8	7908	4	A013	7	A026	3	A039	7		
2908	N N N	2921	8	3914	7	3927	6	3940	8	A001	4	A014	7	A027	3	A040	7		
2909	N N N	2922	8	3915	7	3928	6	3941	8	A002	4	A015	7	A028	3	A041	7		

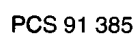


3W amplifier mono/ 3W Verstärker Mono / 3W amplificateur mono

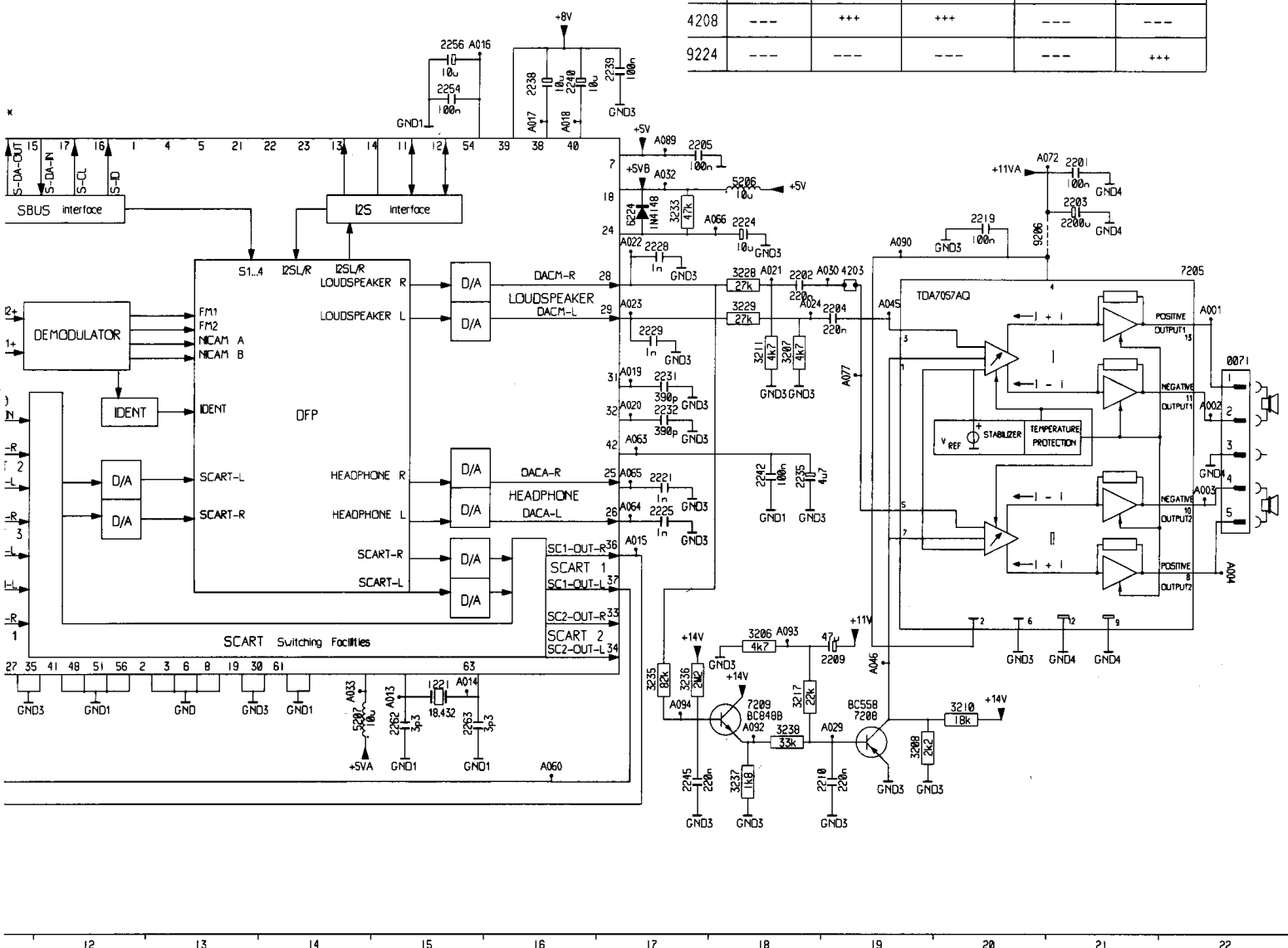


MODULE MONO SOUND 1X3W



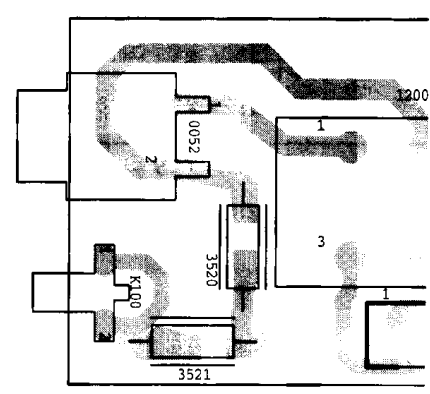


	NIC L	NIC I	NIC BG	NIC BG/DK	ST BG
1200	OPWK9456	OFWK9353	OFWG9353	OPWK9456	-
2211	47p	47p	47p	47p	12p
2258	4n7	4n7	4n7	4n7	4p7
5202	2U2	-	-	-	-
5208	-	-	-	-	39u
6220	1N4148	-	-	-	-
6223	1N4148	-	-	-	-
7221	MPS3410 BF7	MPS3410 BF7	MPS3410 BF7	MSP3410 BF7	MPS3400 TC15
9220	---	---	---	+++	---
9223	---	+++	+++	---	---
4207	---	---	---	+++	---
4208	---	+++	+++	---	---
9224	---	---	---	---	+++

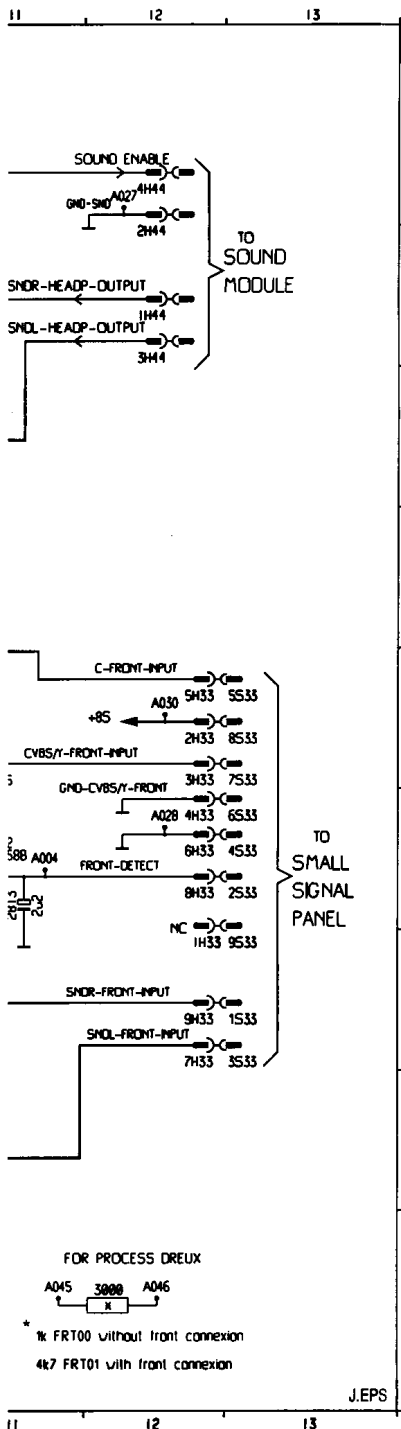




☒ CRT

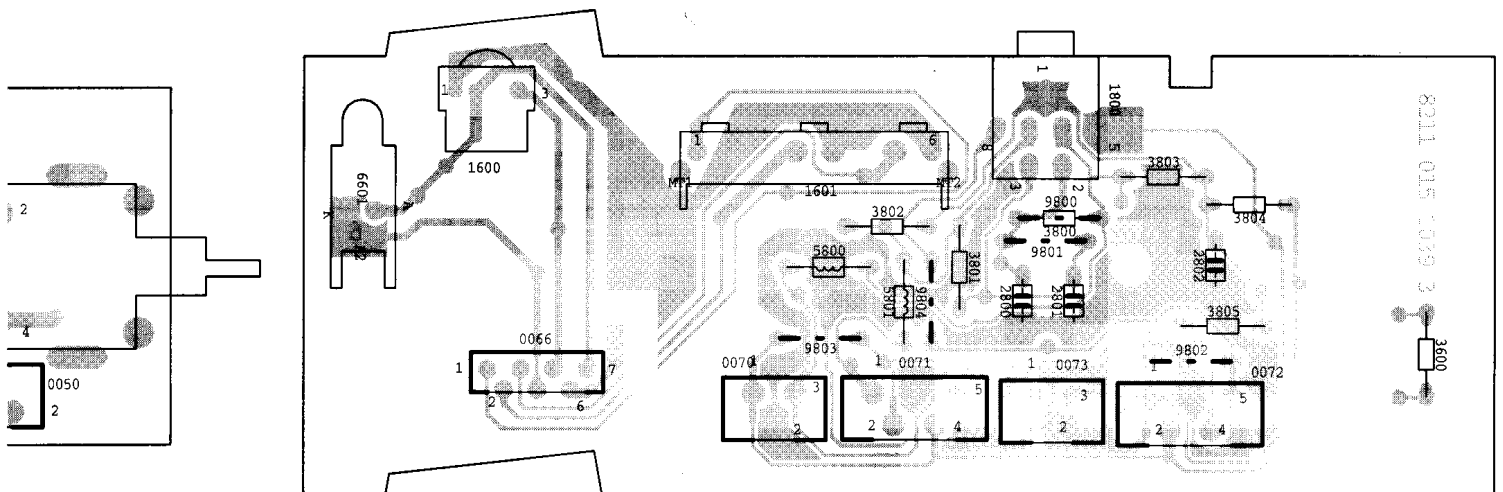
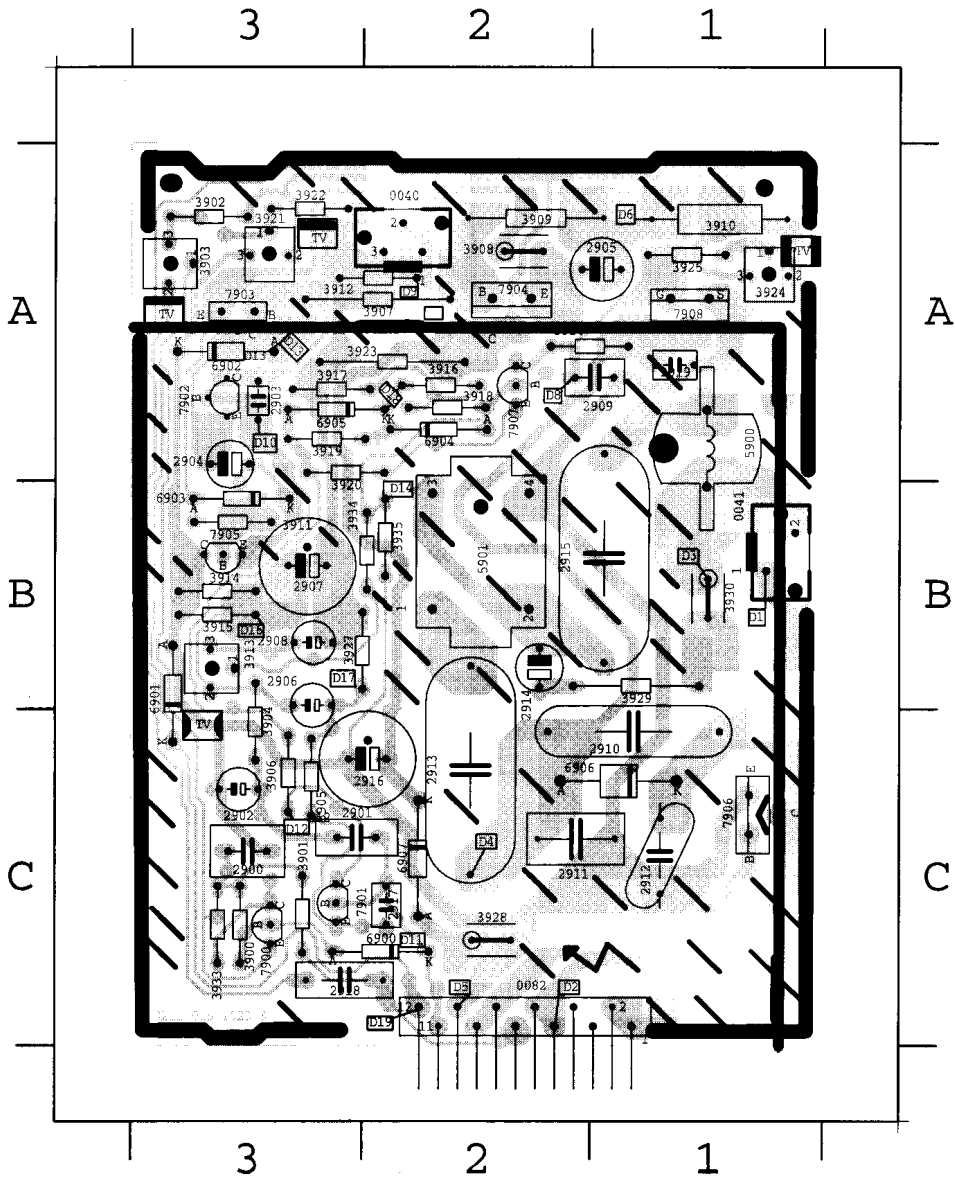


Netz-Modul / Commande & Module du secteur



DEFLECTION MODULE 110°

0040 A 2	2904 A 3	2911 C 2	2918 C 2	3905 C 3	3912 A 3	3919 A 2	3926 A 1	3935 B 2	6904 A 2	7903 A 3
0041 B 1	2905 A 1	2912 C 1	2919 A 1	3906 C 3	3913 B 3	3920 A 2	3927 B 3	5900 B 1	6905 A 3	7904 A 2
0082 C 1	2906 B 3	2913 C 2	3900 C 3	3907 A 2	3914 B 3	3921 A 3	3928 C 2	5901 B 2	6906 C 2	7905 B 3
2900 C 3	2907 B 3	2914 B 2	3901 C 3	3908 A 2	3915 B 3	3922 A 3	3929 B 1	6900 C 3	6907 C 2	7906 C 1
2901 C 3	2908 B 3	2915 B 1	3902 A 3	3909 A 1	3916 A 2	3923 A 2	3930 B 1	6901 B 3	7900 C 3	7907 A 2
2902 C 3	2909 A 1	2916 C 2	3903 A 3	3910 A 1	3917 A 3	3924 A 1	3933 C 3	6902 A 3	7901 C 3	7908 A 1
2903 A 3	2910 C 1	2917 C 2	3904 B 3	3911 B 3	3918 A 2	3925 A 1	3934 B 2	6903 B 3	7902 A 3	



8. Electrical adjustments

8.1 Adjustments on the 110 module panel

8.1.1 Horizontal amplitude

Is adjusted with potentiometer R3924

8.1.2 Vertical centring

Is adjusted with potentiometer R3921

8.1.3 Picture height

Is adjusted with potentiometer R3903

8.1.4 East-west correction

Is adjusted by potentiometer R3913

Note: R3903, R3919, R3921 and R3924 are located on the 110° module pcb.

8.1.5 Horizontal centring (main pcb)

Is adjusted with potentiometer R3129 on the main PCB

8.1.6 Focusing

Is adjusted with the focusing potentiometer in the line output transformer

8.1.7 AFC

- a) Adjustment of the AFC and picture demodulator (all versions).
Select a non secam L/L' system in the SDAM mode (negative modulation). Switch the tuner to HIGH BAND (pin 11 of tuner 1100 grounded). Connect a pattern generator to pin 17 of the tuner via a capacitor of 4.7nF and put a 82W resistor from the output of the generator to ground. Connect a DC voltmeter to pin 44 of IC7100. Adjust coil 5100 to get 3V5 on pin 44 of IC7100. The signal of the generator has to be 38.9 MHz.
- b) Adjustment of the AFC and picture demodulator. (BAND 1 L. France versions only).
Same story as a) only the frequency of the generator has to be 33.9Mhz with positive modulation.

8.1.8 RF AGC

If the picture of a strong local transmitter is reproduced distorted, adjust potentiometer R3130 until the picture is undistorted.

or: Connect a pattern generator (e.g. PM5518) to the aerial input with RF signal amplitude = 1mV. Connect a multimeter (DC) at pin 5 of the tuner. Adjust R3130 so that voltage at pin 5 of the tuner is 8V5 +/- 0V5 DC.

8.2 Adjustments on the CRT panel

8.2.1 VG2 cut-off points of picture tube

Apply a black CVBS signal at the input pin 20 of scart.
Adjust the brightness in order to have 1.6V during the line at the R,G,B outputs of the BIMOS pin 18,19,20 of IC7100.
Put potentiometers R3326, R3316 and R3306 to the minimum value (maximum voltage on the CRT cathodes). Adjust now VG2 till the colour that luminates first is not visible anymore.
Adjust now the other two potentiometers in such a way that they just don't luminate.
Potentiometer R3308 should always be in the mid-position.

9. Circuit description

- 9.1** For the description of the audio and video processing see the description in the AA5 AA service manual.

For the description of the power supply see the description in the L6.1 AA service manual.

General

The differences between L6.1 and L6.2 are:

- Large 25" and 28" picture tubes for L6.2
- Stereo 2 X 3 Watt/ stereo headphone
- Mono 3 Watt (also present in some L6.1 versions)

Electrical consequences are a new deflection module (110 degrees), a 2 X 3 Watt stereo amplifier panel and some small adaptations on the L6.2 main panel(derived from L6.1).

9.2 110 deflection module

General

For the 25" and 28" sets a 110 module is needed for East/West correction. This panel is allocated on the right hand side of the mainboard (seen from the rear). East/west correction in this module is based on the diode-modulator principle; the current through the horizontal deflection coil is modulated. As this is done by a parabolic-shaped voltage, E/W distortion is corrected. This parabolic-shaped voltage is derived from a saw-tooth-shaped voltage of the frame deflection.

9.3 Frame (time base frame)

Because the raster part is fed by the primary side a galvanic isolator must be applied between IC 7100 (= so called Bimos ic) in the secondary side and the raster amplifier on primary side. This is realised by opto coupler (7422); this opto coupler will be switched and it will block the saw-tooth of the Bimos ic. So we don't use the saw-tooth of the Bimos((pin 42) or the feedback frame input(pin 41). The only information from the Bimos ic (=IC7100) is the flyback command (pin 43). The output of this pin is a pulse of 6 to 0 Volts during 1 mS with a period of 20mS. This signal blocks transistor 7424 and this causes conduction of the opto coupler diode (7422). The internal transistor also conduct and pins 11 and 12 (connector 00820) of the 110 module will be short circuited.

9.4 Raster part

9.4.1 Saw-tooth generator

A saw-tooth must be created because we don't use it from the Bimos ic(see annex 5). Via 150V C2901 will be charged via R3901, R3900 and D6900; the function of D6901 is to determine the lower part of the potential level. After 20mS a signal coming from the Bimos ic will short-circuit pins 11 and 12 of connector 0082 and C2901 will be discharged. It is a must to have an amplitude on the screen independent of the 50Hz or 60Hz frequency of the mains; see circuit diagram annex 6. The emitter voltage of T7900 can be adjusted with potentiometer 3903; this is the top Voltage of the saw-tooth. This is the circuit for adjusting the vertical amplitude independent of the 50/60Hz frequency. The saw-tooth will control T7901 and this transistor controls the amplifier (= T7902, T7903 and T7904).D6902, D6903, T7905 and C2904 determines the flyback. This flyback pulse is negative and is created by an inverted polarity of C2904. During the deflection T7905 is blocked and C2904 charges; during the flyback T7905 conducts and the flyback pulse will be made.

9.5 East-West modulator

The parabola is taken on C2907; R3916 and D6905 determines the shape of the parabola and they corrects the upper and lower parts. The parabola is fed via C2908 to potentiometer 3913; this for adjusting the pin-cushion correction. Via T7904 this signal goes to MosFet 7908; the Vgs command has two functions by changing the Voltage of Vgs by potentiometer 3924: pin-cushion correction and horizontal amplitude adjustment.

9.6 Special components

- D6904 + R3916 : temperature compensation of Vbe (T7904)
- R3935 : trapezium correction
- C2909 : to avoid external radiation
- C2918 : to avoid "twisted or broken" lines

9.7 Line timebase

The control voltage of pin 37 of the Bimos ic (=ic7100) is derived via opto coupler pos 7420 to transistor T7421; then send via C2428 and C2421 to pins 5 and 6 of connector 0082; this is the control of the base of T7906 (=BU1508AX). At the flyback diode between collector and mass there are two parts present to allow the East/west modulation. One part of this modulator consists of D6906, T7908, C2910 and C2911. The second part another diode is not visible in the circuit diagram but it is present in the MosFet 7908.

On pins 1 and 2 of the module the primary side of the LOT is connected. The LOT supplies the following voltages:

- 3-5 : 26 Volts after smoothing
- 10-8 : 14 Volts
- 9 : 160 volts for video amplifiers

9.8 Control and teletext (Diagram A4)

9.8.1 Teletext

Control and teletext are integrated in the same μC . If there is no TXT another μC is used with less pins. In the story below, the numbers mentioned are the numbers mentioned outside the housing of IC7600.

The CVBS-signal is fed to pin 23 or 24 depending on the fact if it is the internal or external CVBS-signal. In this way teletext can be used on the ext- and the int-signal.

The teletext information and OSD-information is present at pin 32-33-34.

9.8.2 Control

μC -connections.

Supply voltage (pin 52);

If this voltage is present and the power-on signal is high the μC will start.

I²C-Bus (pin 50-49);

This bus is used to communicate with the EEPROM in which the settings are stored.

Local keyboard (pin 48-47-46);

These three inputs are present as an input for the local keyboard. The inputs become connected to ground if a key is pressed.

IR-input (pin 45);

Input for the remote-control commands

TXT / no TXT (pin 44);

Depending on the fact if jumper 4600 or 4603 is placed, the μC is told if the set is a TXT or no-TXT set.

POR (pin 43);

If the POR-signal is low the μC will not start. The μC waits until this signal becomes high. In this way the μC knows that the supply-voltage is high enough.

4Mhz oscillator (pin 42-41);

The frequency of the oscillator of the μP is determined by this crystal 5600. In the TXT execution this frequency is 12Mhz.

Ground (pin 40);

Ground of the power-supply.

OSD-Generator (pin 39-38);

The components connected these pins determine the frequency of the OSD-generator. This is 6.5 Mhz.

VFL (pin 37);

This pin is used to tell the μP that vertical flyback takes place. This information is used to determine the location of the OSD.

Horizontal flyback (pin 36);

Pin to inform the μC that horizontal flyback takes place. Also information required for OSD.

Fast-blanking signal (pin 35);

This signal (FBL) is used to indicate the video controller that there is OSD or Teletext information. So this signal blanks the video information.

OSD-signals (pin 34-33-32);

These three signals are used to create OSD information in different colours.

Nil (pin 27);

Signal to generate a DC-current through the deflection coil to create a non interlaced mode during TXT-mode.

CVBS-inputs (pin 24-23);

These pins are used as input for teletext-sources. Pin 24 is input for the CVBS-signal of the scart-input and Pin 23 or the internal CVBS of the set.

LED-drive (pin 20);

Signal to drive the LED when the set is on. With TS7607 it is possible to light the LED with a higher luminance during stand-by.

Functional switch (pin 19);

In the future the switch connected to this pin could be used instead of a mainswitch.

Status (pin 18);

Input-pin to tell the μC that there is an external-signal present. Pin 18 high is external and pin 18 low is internal signal.

Int/Ext (pin17);

Control signal to select between internal and external(scart) signal. If pin 17 is "high" the internal signal is selected, else the external.

Standby/AFC (pin 16);

This pin acts as an input for AFC-control and as an output for standby command. This pin is only used in TXT-versions.

Ident (pin 15);

This signal is high if a CVBS signal is present and low if no CVBS-signal is present. This signal is created by IC7100-6A.

Service (pin 14);

When this pin is connected to ground the service-mode is entered. Use of mains-switch not necessary.

L/L' or BG/DK (pin 12);

In case of a LL' set, selection is made between L and L'. In case of a BGDK set, selection is made between BG and DK. If this pin is "high" then L' or DK is selected.

Standby/AFC (pin 11);

This pin acts as an input for AFC-control and as an output for standby command. This pin is only used in non TXT-versions.

L/BG (pin 10);

To make a selection between AM and FM sound. When this signal is high, than FM sound is selected.

BS1-BS2 (pin 8-9);

Signal lines to select the correct band of the tuner.

	BS1	BS2
VHF1	0	1
VHF2	1	0
UHF	1	1

Control-voltage outputs (pin 7-1);

These pins are used to control volume-right, contrast, saturation, sharpness, brightness, volume-left and the tuning voltage for the VST. In case of a mono BG set, volume is controlled by signal "volume-L" connected to pin 5 of IC7100-6F. In case of a mono multi-france set, volume is controlled by signal "vol-level" connected to pin 4 of IC7700 (output amplifier).