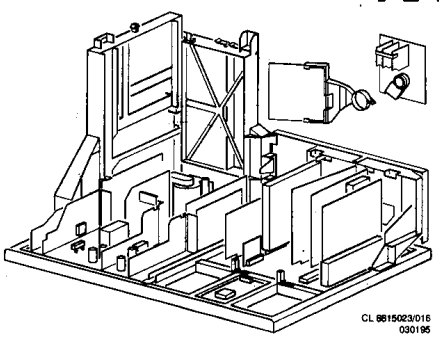
Colour television Chassis

Service
Service
Service

GFL2.20 E

AA



Service Manual

Contents

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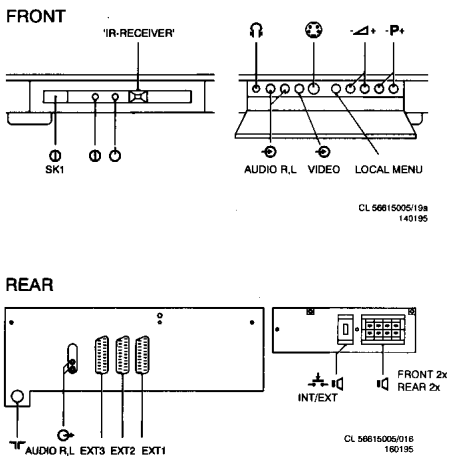
1. Technical data

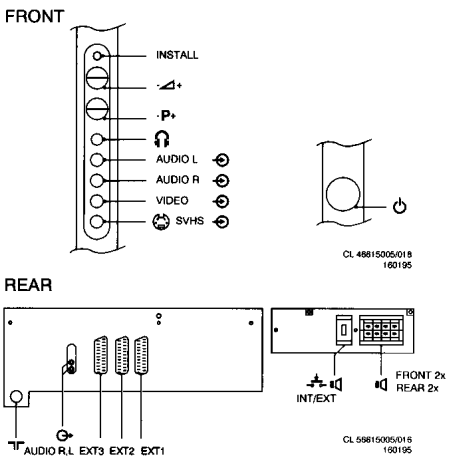
Mains voltage	: 220 - 240 V (± 10%)
	: 50 Hz - 60 Hz (± 5%)
Aerial input impedance	: 75 Ω - koaxial
Minimum aerial voltage	: 30 µV (VHF), 40 µV (UHF)
Maximum aerial voltage VHF/S/UHF	: 180 mV
Programmes	: 0 - 99
VCR programmes	: 0, 50 - 99

2. Connection facilities and Chassis overview

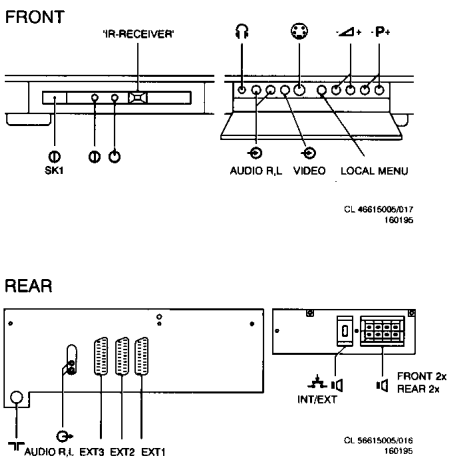
FL 5



FL 2



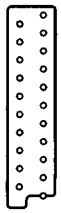
FL 4



Specification of the connectors

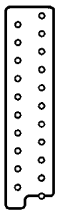
CL 56615005/19c
160195

EXT 1 (AUX): RGB+CVBS+Y/C



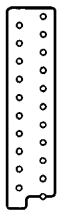
1	-Audio ⊖ R (0,5VRMS ≤ 1kΩ)	
2	-Audio ⊕ R (0,2-2VRMS ≥ 10kΩ)	
3	-Audio ⊖ L (0,5VRMS ≤ 1kΩ)	
4	-Audio ⊥	
5	-Blue ⊥	
6	-Audio ⊕ L (0,2-2VRMS ≥ 10kΩ)	
7	-Blue (0,7Vpp/75Ω)	
8	-CVBS-status ⊕	0-2V: INT 4,5-7V: EXT 16:9 9,5-12V: EXT 4:3
9	-Green ⊥	
10	--	
11	-Green (0,7Vpp/75Ω)	
12	--	
13	-Red ⊥	
14	-RGB-status ⊥	
15	-Red (0,7Vpp/75Ω)	
16	-RGB-status	(0-0,4V: INT) (1-3V: EXT/75Ω)
17	-CVBS ⊥	
18	-CVBS ⊥	
19	-CVBS ⊖ (1Vpp/75Ω)	
20	-CVBS ⊕ (1Vpp/75Ω)	
21	-Earthscreen	

EXT2 (VCR): Y/C+CVBS+RGB



1	-Audio ⊖ R (0,5VRMS ≤ 1kΩ)	
2	-Audio ⊕ R (0,2-2VRMS ≥ 10kΩ)	
3	-Audio ⊖ L (0,5VRMS ≤ 1kΩ)	
4	-Audio ⊥	
5	-Blue ⊥	
6	-Audio ⊕ L (0,2-2VRMS ≥ 10kΩ)	
7	-Blue (0,7Vpp/75Ω)	
8	-CVBS-status ⊕	0-2V: int 4,5-7V: EXT 16:9 9,5-12V: EXT 4:3
9	-Green ⊥	
10	--	
11	-Green (0,7Vpp/75Ω)	
12	--	
13	-Red ⊥	
14	-RGB-status ⊥	
15	-Red (0,7Vpp/75Ω)	
16	-RGB-status	(0-0,4V: INT) (1-3V: EXT/75Ω)
17	-CVBS ⊥	
18	-CVBS ⊥	
19	-CVBS ⊖ (1Vpp/75Ω)	
20	-CVBS/Y ⊕ (1Vpp/75Ω)	
21	-Earthscreen	

EXT3: CVBS+RGB



1	--	
2	-Audio ⊕ R (0,2-2VRMS ≥ 10kΩ)	
3	--	
4	-Audio ⊥	
5	-Blue ⊥	(Euro only)
6	-Audio ⊕ L (0,2-2VRMS ≥ 10kΩ)	
7	-Blue (0,7Vpp/75Ω)	
8	--	
9	-Green ⊕	
10	--	
11	-Green (0,7Vpp/75Ω)	
12	--	
13	-Red ⊥	
14	-RGB-status ⊥	
15	-Red (0,7Vpp/75Ω)	
16	--	
17	-CVBS ⊥	
18	-CVBS ⊥	
19	--	
20	-CVBS ⊕ (1Vpp/75Ω)	
21	-Earthscreen	

EXT3 (front)

◎ CINCH Video ⊕ 300mVpp/75Ω
◎ CINCH Audio ⊕ L (0,5VRMS; ≥ 10kΩ)
◎ CINCH Audio ⊕ R (0,5VRMS; ≥ 10kΩ)

3.5mm 32-2000Ω ≥ 10mW

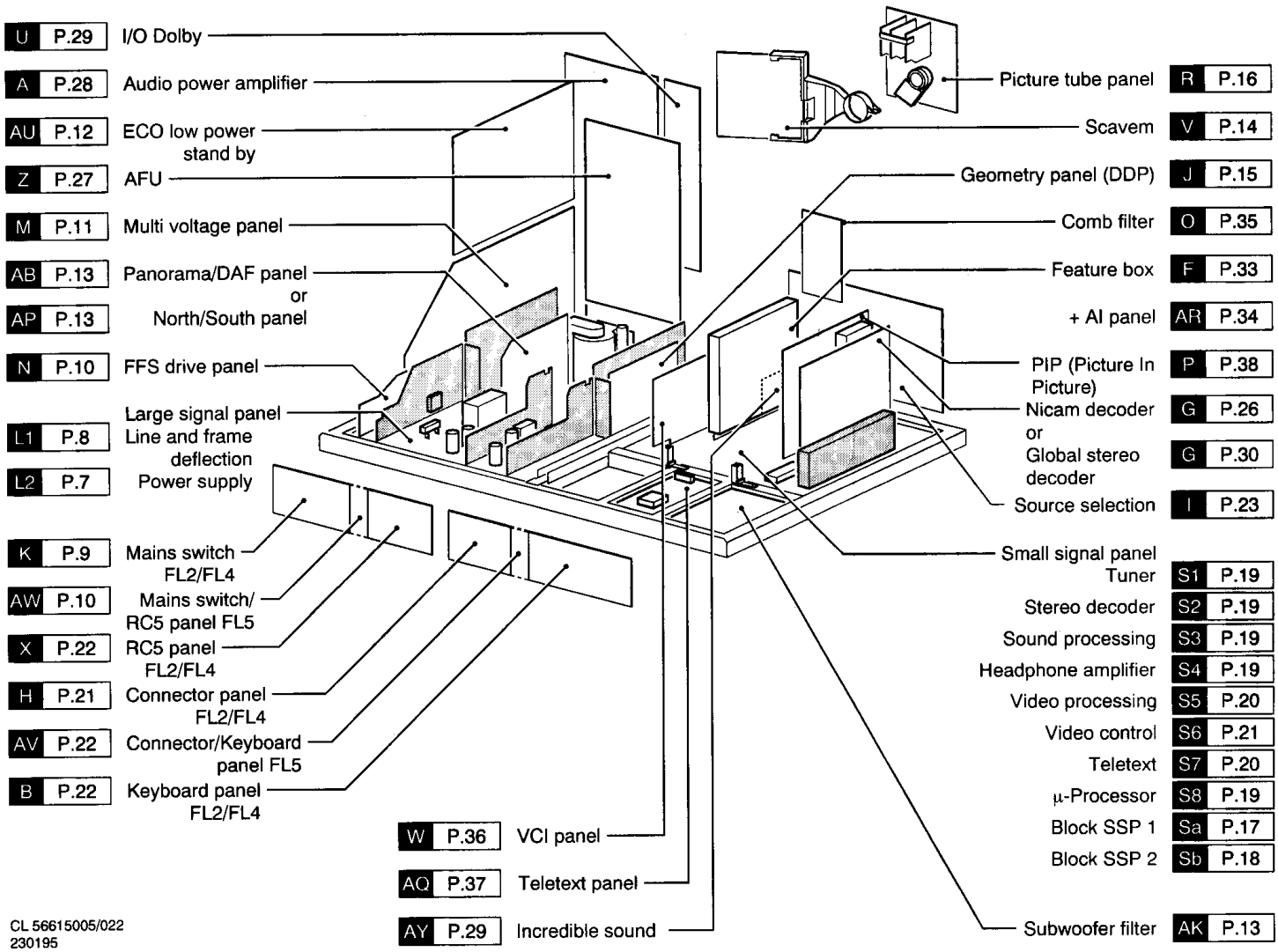
SVHS

1 -	⊥
2 -	⊥
3 - Y	⊕ (1Vpp; 75Ω)
4 - C	⊕ (0,3Vpp; 75Ω)

Audio out (rear)

◎ CINCH Audio ⊖ L (0,5VRMS; ≤ 1kΩ)
◎ CINCH Audio ⊖ R (0,5VRMS; ≤ 1kΩ)

Chassis overview



CL 56615005/022
230195

3. Safety instructions, maintenance instruction, Warnings and Notes

Safety instructions for repairs

1. Safety regulations require that during a repair:
   - the set should be connected to the mains via an isolating transformer
   - safety components, indicated by the symbol ⚠, should be replaced by components identical to the original ones
   - when replacing the CRT, safety goggles must be worn

2. Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points:
   - As a strict precaution, we advise you to resolder the solder joints through which the horizontal deflection current is flowing, in particular:
     - all pins of the line output transformer (LOT);
     - fly-back capacitor(s);
     - S-correction capacitor(s);
     - line output transistor;
     - pins of the connector with wires to the deflection coil;
     - other components through which the deflection current flows.

Note:
This resoldering is advised to prevent bad connections due to metal fatigue in solder joints and is therefore only necessary for television sets older than 2 years.

- The wire trees and EHT cable should be routed correctly and fixed with the mounted cable clamps.
- The insulation of the mains lead should be checked for external damage.
- The mains lead strain relief should be checked for its function in order to avoid touching the CRT, hot components or heat sinks.
- The electrical DC resistance between the mains plug and the secondary side should be checked (only for sets which have a mains isolated power supply). This check can be done as follows:
  - unplug the mains cord and connect a wire between the two pins of the mains plug;
  - set the mains switch to the on position (keep the mains cord unplugged !);
  - measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 MΩ and 12 MΩ
  - switch off the TV and remove the wire between the two pins of the mains plug.
- The cabinet should be checked for defects to avoid touching of any inner parts by the customer.

Maintenance instruction

It is recommended to have a maintenance inspection carried out by a qualified service employee. The interval depends on the usage conditions:

- when the set is used under normal circumstances, for example in a living room, the recommended interval is 3 to 5 years;
- when the set is used in circumstances with higher dust, grease or moisture levels, for example in a kitchen, the recommended interval is 1 year.

The maintenance inspection contains the following actions:

- execute the above mentioned 'general repair instruction';
- clean the power supply and deflection circuitry on the chassis;
- clean the picture tube panel and the neck of the picture tube.

Warnings

1. In order to prevent damage to ICs and transistors, all high-voltage flashovers must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx. 30s).

2. **ESD**

All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth ot the unit. Keep components and tools also at this same potential.

3. Together with the deflection unit and any multipole unit, the flat square picture tubes used form an integrated unit. The deflection and the multipole units are set optimally at the factory. Adjustment of this unit during repair is therefore not recommended.

4. Be careful when taking measurements in the high-voltage section and on the picture tube.

5. Never replace modules or other components while the unit is switched on.

6. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

7. On this unit the 141 volt supply voltage is not supplied via an interconnection on the deflection yoke to the line output transformer. Whenthe deflection cable is detached, the + 141 volt supply remeins loaded. In orderto unload the + 141 volts, coil 5136 should be removed.

Notes

1. The direct voltages and oscillograms should be measured with regard to the tuner earth (⊥), or hot earth (⊥ϟ) as this is called.

2. The direct voltages and oscillograms shown in the diagrams should be measured in the **Service Default Mode** (see chapter 8) with a colour bar signal and stereo sound (L:3 kHz, R:1 kHz unless stated otherwise) and picture carrier at 475.25 MHz.

3. Where necessary, the oscillograms and direct voltages are measured with (⊓⊓) and without aerial signal (⊁). Voltages in the power supply section are measured both for normal operation (⏻) and in standby (⏻). These values are indicated by means of the appropriate symbols.

4. The picture tube PWB has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.

5. The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

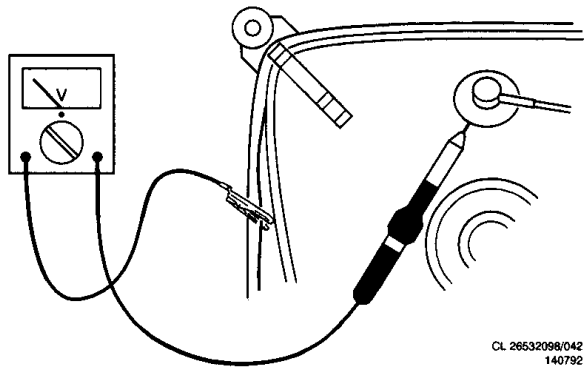


Fig. 3.1

6. DOLBY SURROUND PRO • LOGIC

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4. Mechanical instructions

The GFL chassis has predefined service positions for different panels (Fig. 1 + 2).
To get access to the chassis, do the following steps:

a remove the sub woofer grill;
b disconnect the cable from the subwoofer;
c remove the screws from the back cover and the two chassis cover plates;
d remove the back cover.

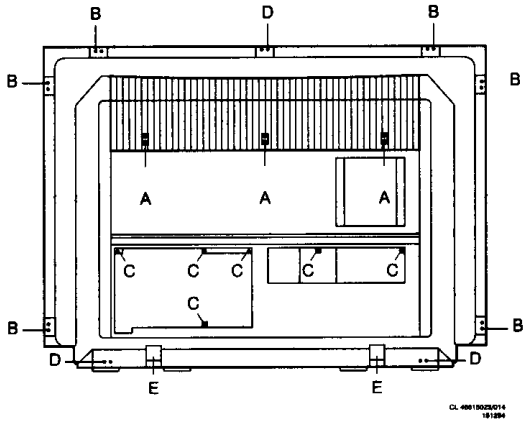


Fig. 1

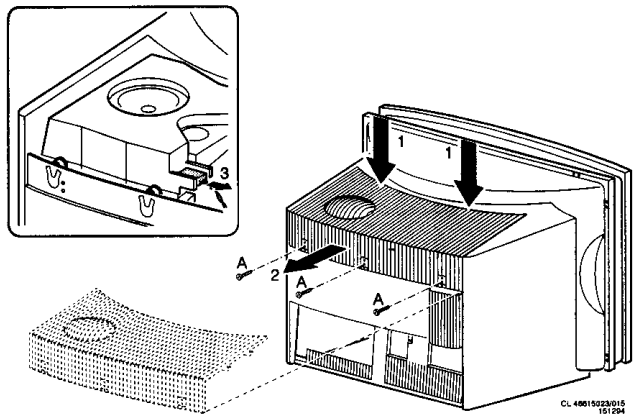


Fig. 2

4.1 The overview position (Fig. 3)

To get a better overview over the chassis, the whole chassis can be put one step backwards by lifting the whole bracket out of the holes and locating it again in the holes next to them. While doing this loosen cables from clips.

4.2 The service position of the Large Signal Panel (LSP) and the Small Signal Panel (SSP) (Fig. 3)

To get access to the solder sides of the SSP and the LSP, do the following steps:

a disconnect the cables from the loudspeakers;
b disconnect the cable from the degaussing coil;
c eventually also the cables to the front inputs and the headphone output can be disconnected (do not disconnect the wires to the local control knobs and the remote control LED's, otherwise communication between the Dealer Service Tool and the chassis is impossible);
d pay attention to the cable routing in order safeguard the original routing;
e loosen the cables from clips at SSP side and from the mains filter bracket;
f loosen the cables from clips above the line output transformer;
g take the mains lead out of the strain relief and remove the whole relief by turning it over 90 degrees before it can be taken out;
h lift the whole chassis bracket while turning it over 90 degrees and put the bracket in the holes of the bottom plate. Fix the bracket to the hook on top of the cabinet.

This service position is designed to perform service at the customers home without the use of a table or workbench.

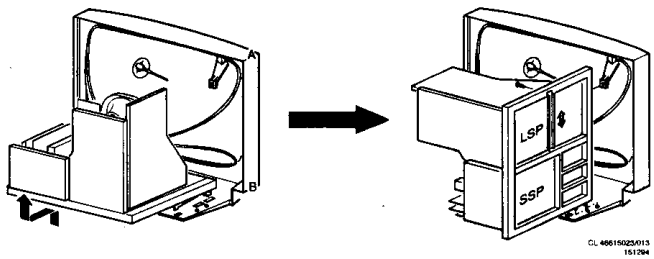


Fig. 3

4.3 The service position of the other panels (Fig. 4)

The three vertical brackets can be turned down when the chassis is in the overview position. The stand-by supply bracket and the audio amplifier bracket can be turned down after removing the screws and the two fixing brackets. Before turning the brackets have to be lifted. The I/O bracket can be turned down the same way. Be careful not to forget the screw and the clip near the front-end.

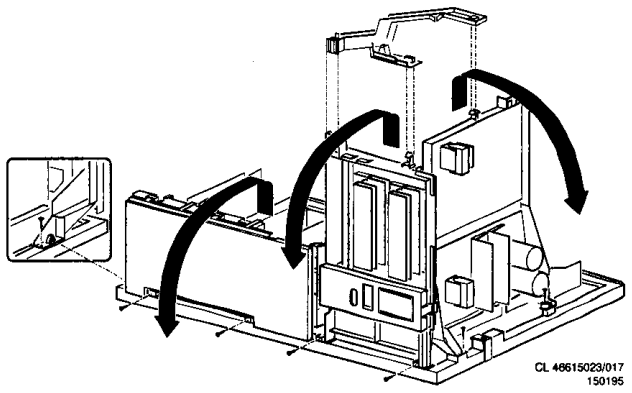


Fig. 4

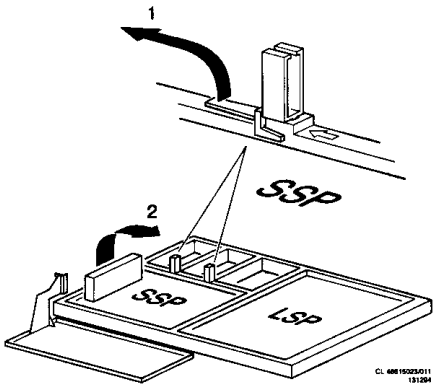


Fig. 5

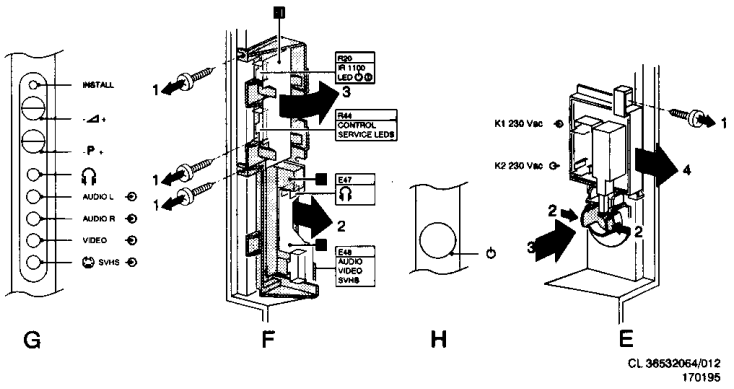


Fig. 8

4.4 Removing the Small Signal Panel (Fig. 5)

To remove the SSP, first turn the I/O bracket down. After that remove all cables from their connectors, followed by the removal of the two red coloured clips by lifting the lip and moving to the left.
Now the SSP can be taken out of the bracket.

4.5 Removing the Large Signal Panel (Fig. 4)

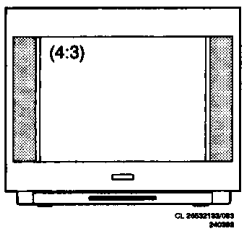
To remove the LSP first the stand-by bracket and the audio bracket have to be turned down. After that the metal line output transformer support bracket has to be shifted by loosing the screw at the right hand side. Now the metal bracket can be shifted to the right until it stops. The chassis lock between the SSP and the LSP becomes free then and can be pulled back en bend away from the LSP. Finally loosen the red clamps at the front side of the LSP and the wires from their connectors. The LSP can then be taken out of the bracket.

4.6 Removing panels located under the picture tube

The fixation of the panels located under the picture tube depends on the cabinet type.

FL2 cabinets (Fig. 6 + 7 + 8)
For FL2 cabinets the knobs are located at the side of the cabinet, the LED's are located under the picture tube. These panels can be taken out by loosen the clicks.

FL 2



FL 2

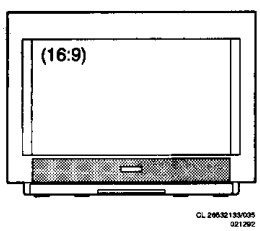


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Fig. 6 + Fig. 7

FL4 cabinets (Fig. 9)
In FL4 cabinets both knobs and LED's are located under the picture tube. Before they can be taken out, first their screws have to be removed. Access to the screws can be created by taking the whole chassis away from the bottom plate.

The centre speakers of FL4 are mounted via the front side of the cabinet. To get access first the grill has to be removed. The centre grill is fixed with clicks and also screws are used. The screws are located at the inner side of the cabinet, under the picture tube. After the screws have been removed, open the door and carefully put a screwdriver between the grill and the cabinet. by turning the screwdriver the right click will loose. To loose the left click, put the whole set at the edge of a table first. Then put the screwdriver at the underside of the set between the grill and the cabinet.

FL 4

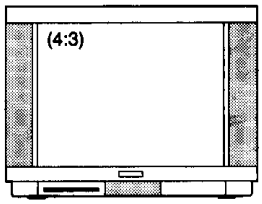


Fig. 9

FL5 cabinets (Fig. 10)
In FL5 cabinets both knobs and LED's are located under the picture tube. All front panels and centre loudspeakers are mounted in a plastic bracket which can be removed as a whole.
To remove the bracket, the screws between the picture tube and the bottom plate have to be removed, but also the screws which are located at the underside of the cabinet.
To remove these screws the set has to be turned. Before turning preferably the backcover of the set is mounted. Turn the set with the picture tube face downwards and put it carefully on a soft and clean surface. After the screws have been removed the set can be put back in the normal position.

After removing the screws at the inner side, the bracket can be taken away from the underside.

FL 5

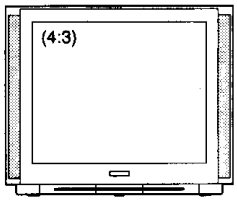
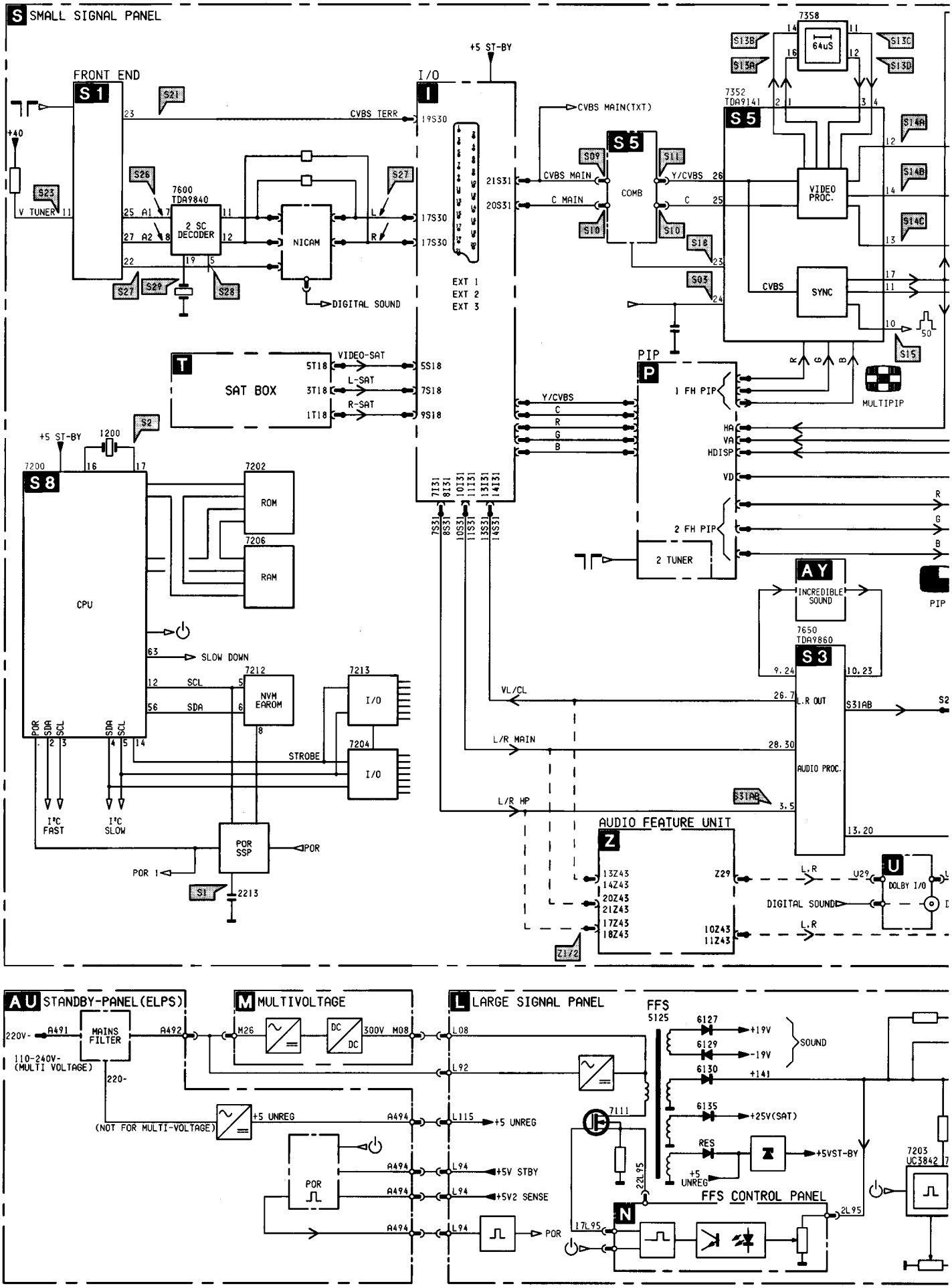
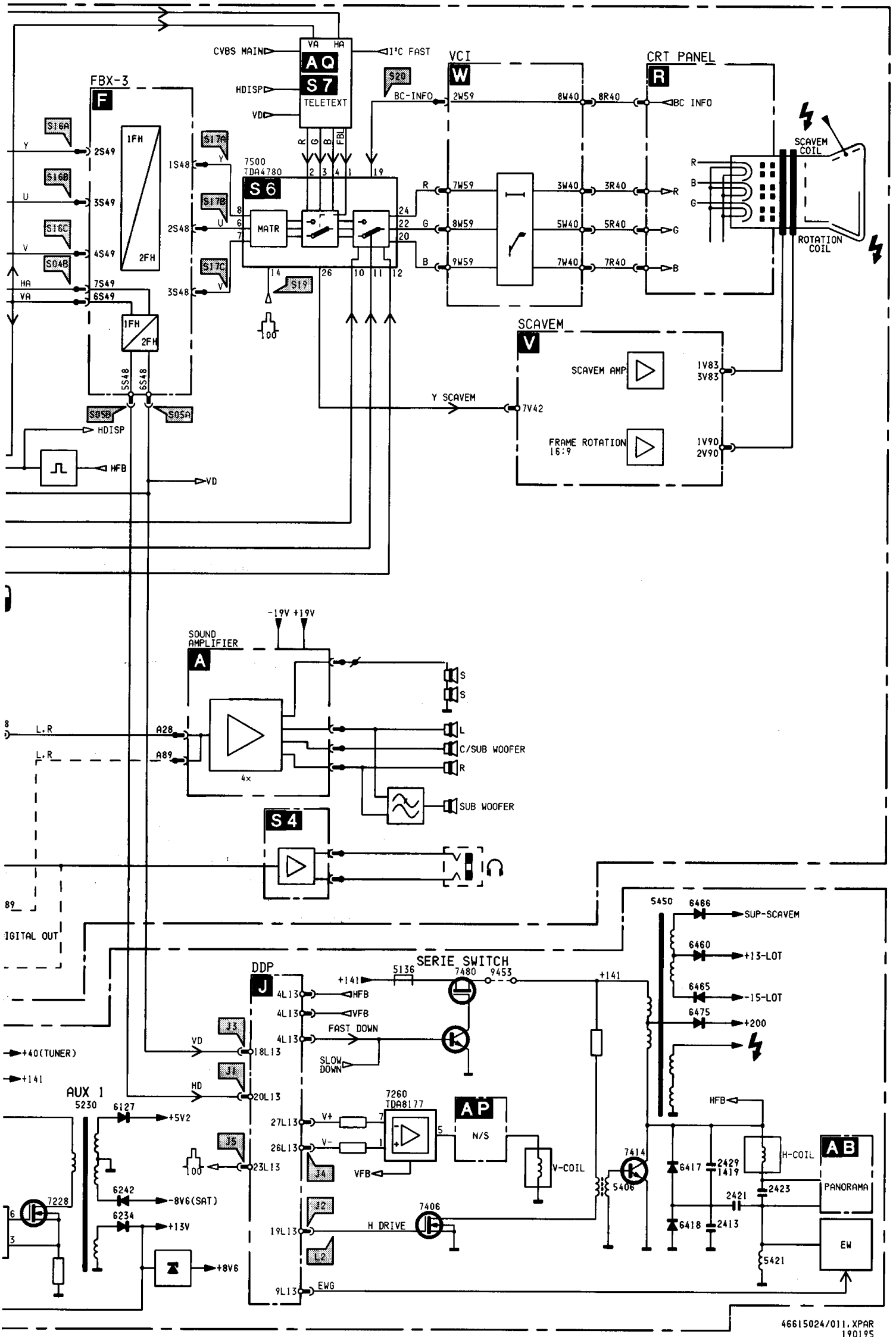


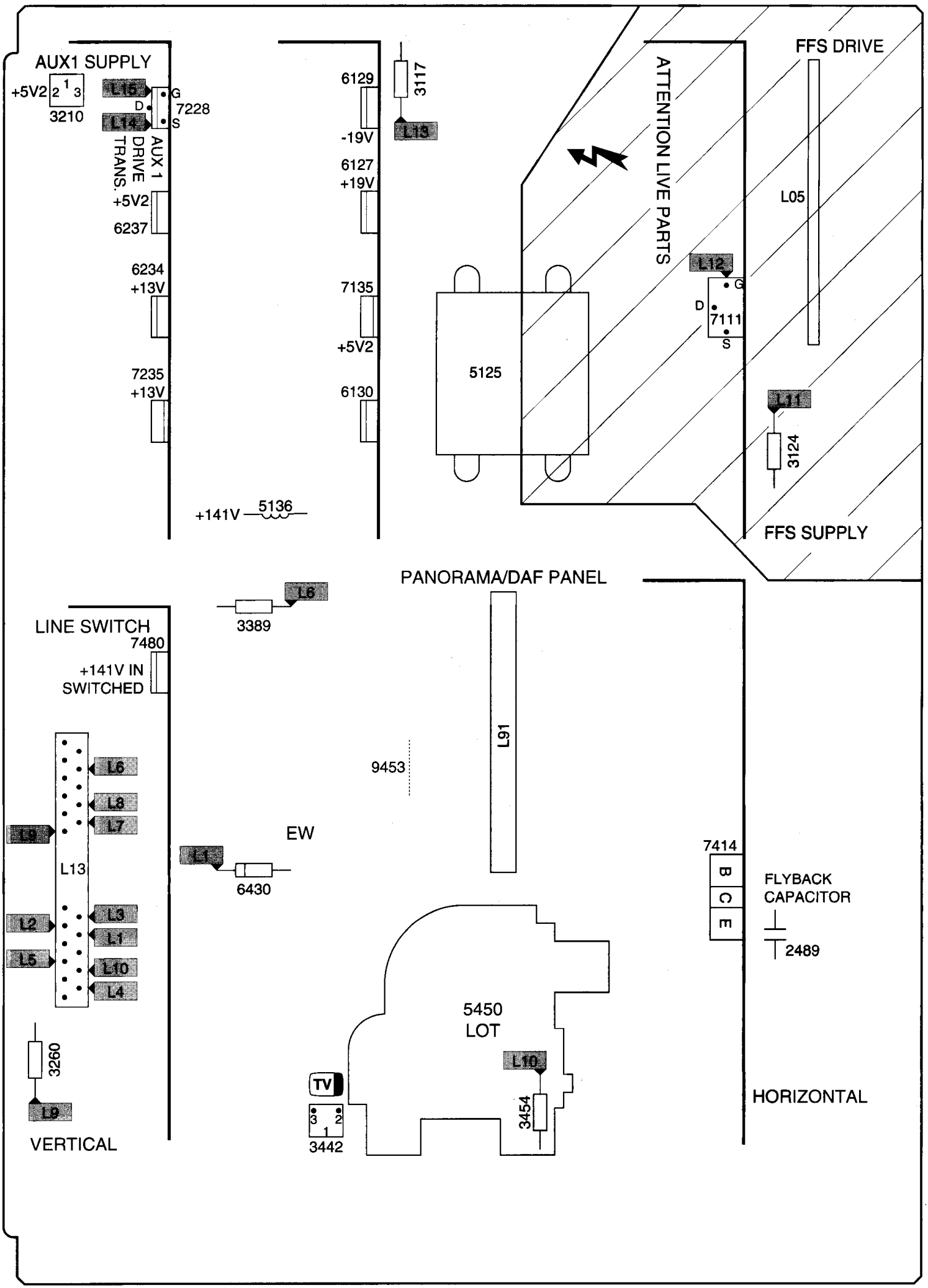
Fig. 10

5. Blockdiagram / Blockschaltbild / Schéma bloc

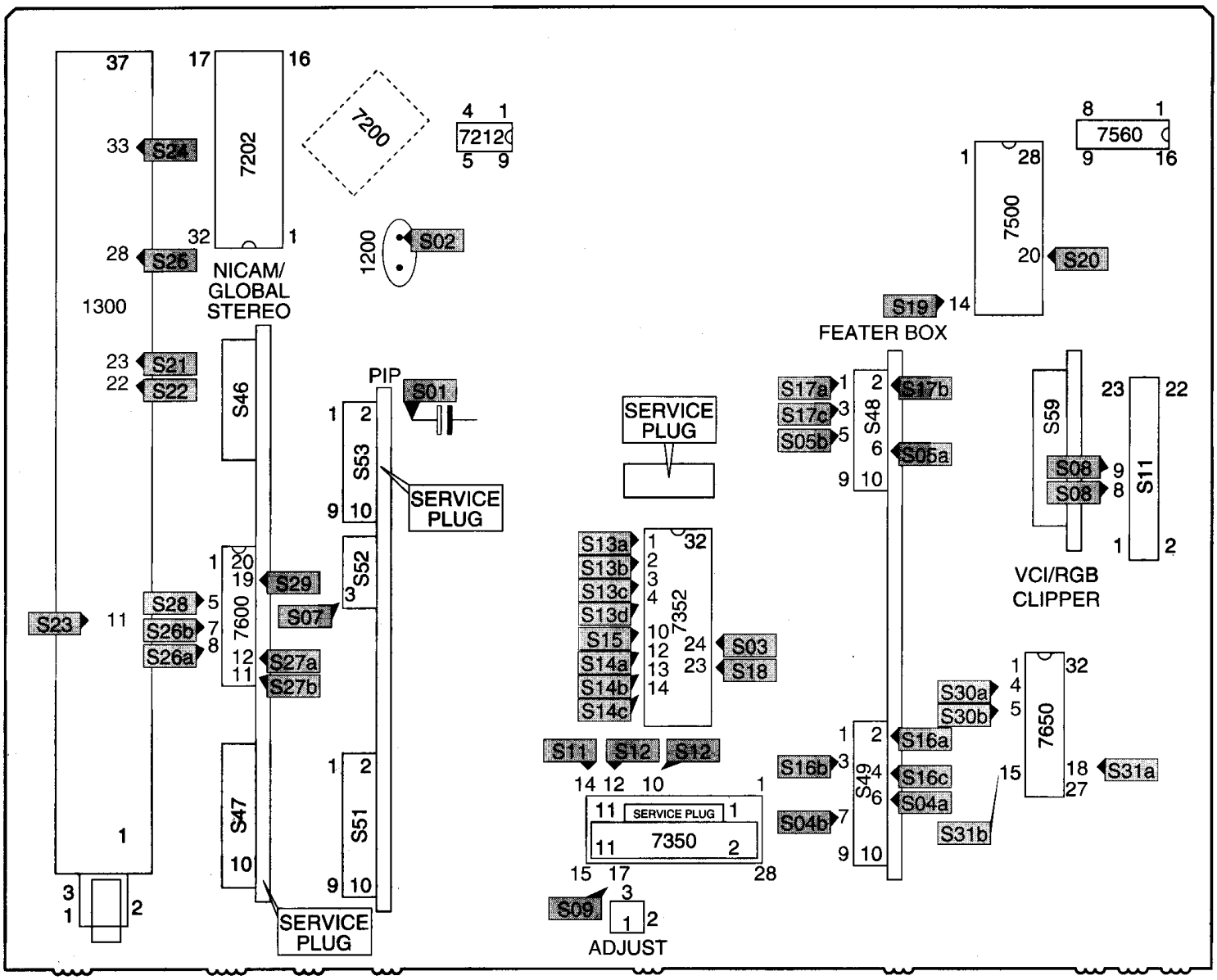



FBX-3
F
CVBS MAIN
AQ
S7
TELETEXT
I²C FAST
HDISP
VD
VA
HA
R
G
B
FBL
VCI
W
CRT PANEL
R
BC-INFO
BC INFO
SCAVEM COIL
ROTATION COIL
7500
TDA4780
S6
MATR
SCAVEM
V
SCAVEM AMP
FRAME ROTATION 16:9
Y SCAVEM
HFB
SOUND AMPLIFIER
A
SUB WOOFER
S4
DDP
J
SERIE SWITCH
AUX 1
5230
AP
N/S
V-COIL
H-COIL
AB
PANORAMA
EW
H DRIVE
SUP-SCAVEM
+13-LOT
-15-LOT
+200
+5V2
-8V6(SAT)
+13V
+8V6
+40(TUNER)
+141
FAST DOWN
SLOW DOWN
VFB
EWG
46615024/011.XPAR
190195

Large signalpanel / Groß-Signal Platte / Platine forts signeaux



Small signal panel / Klein-signal Platte / Platine à petites signeaux



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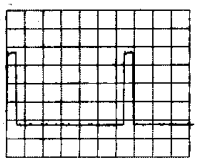
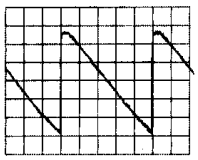
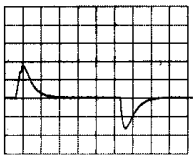
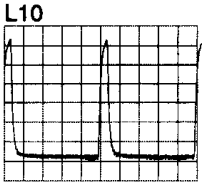
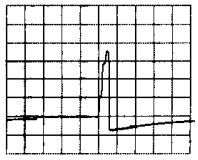
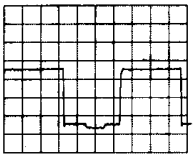
L1

1V/div
5µs/div

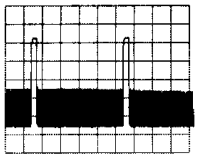
L4

100mV/div
2ms/div

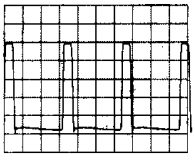
L7

500mV/div
0.5s/div

L10

2V/div
2ms/div

L13

1V/div
50ms/div

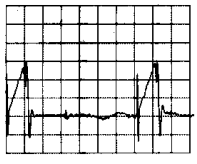
L2

500mV/div
5µs/div

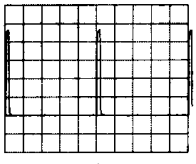
L5

500mV/div
2ms/div

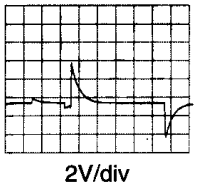
L8

1V/div
10µs/div

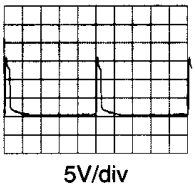
L11

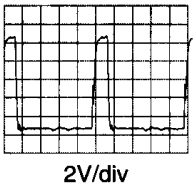
200mV/div
5µs/div

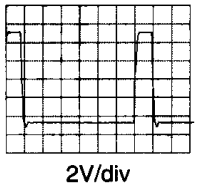
L14

200mV/div
2µs/div

L3

1V/div
2ms/div

L6

2V/div
0.5s/div

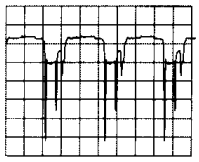
L9

5V/div
2ms/div

L12

2V/div
5µs/div

L15

2V/div
2µs/div

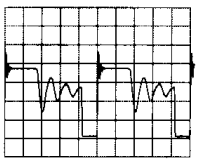
Oscillograms / Oscillogrammen / Oscillogrammes

TS7414b



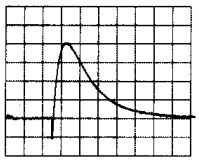
2V/div
10µs/div

TS7111d



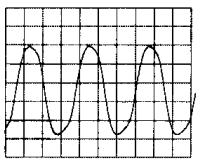
100V/div
5µs/div

S1



200mV/div
0.5s/div

S2

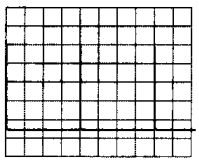


1V/div
0.2mV/div

S3

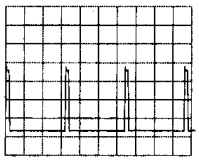
50mV/div
20µs/div

S4a



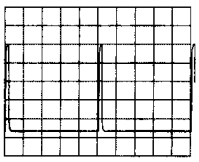
1V/div
5ms/div

S4b



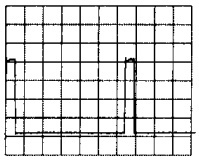
1V/div
20µs/div

S5a



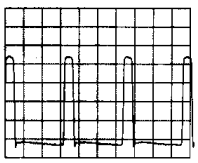
1V/div
2ms/div

S5b



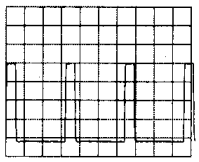
1V/div
5µs/div

S6



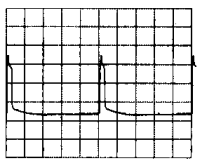
1V/div
10µs/div

S7



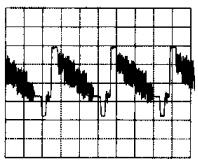
1V/div
10µs/div

S8



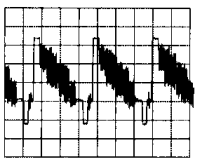
5V/div
2ms/div

S9



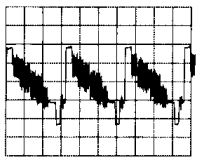
500mV/div
20µs/div

S10



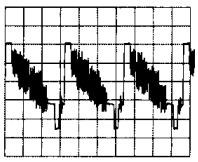
200mV/div
20µs/div

S11



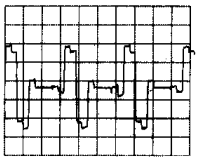
200mV/div
20µs/div

S12



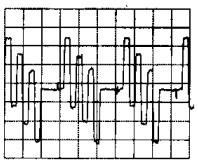
200mV/div
20µs/div

S13a



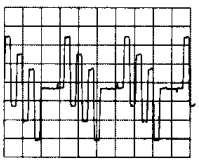
100mV/div
20µs/div

S13b



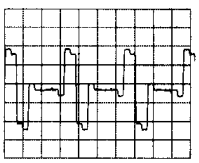
100mV/div
20µs/div

S13c



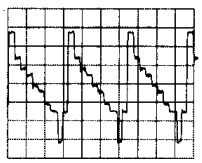
200mV/div
20µs/div

S13d



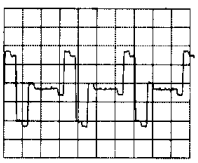
200mV/div
20µs/div

S14a



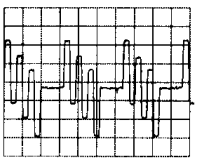
200mV/div
20µs/div

S14b



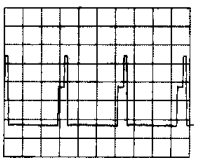
200mV/div
20µs/div

S14c



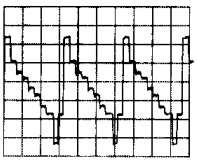
200mV/div
20µs/div

S15



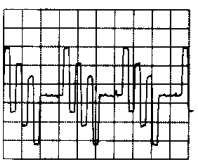
1mV/div
20µs/div

S16a



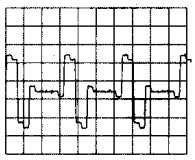
200mV/div
20µs/div

S16b



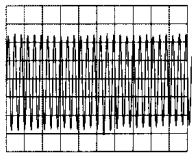
200mV/div
20µs/div

S16c



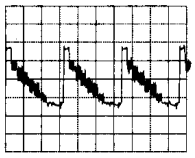
200mV/div
20µs/div

S22



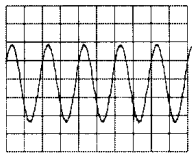
50mV/div
0.5µs/div

S17a



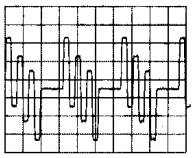
100mV/div
10µs/div

S26



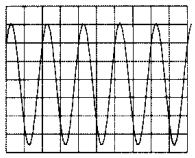
200mV/div
0.5µs/div

S17b



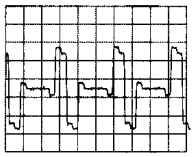
200mV/div
10µs/div

S27



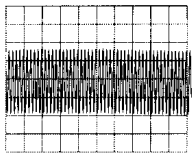
200mV/div
0.5µs/div

S17c



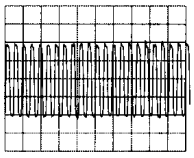
200mV/div
10µs/div

S29



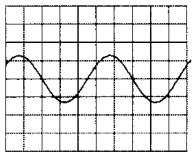
100mV/div
0.5µs/div

S18



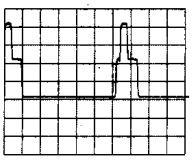
50mV/div+4DC
0.5µs/div

S30a



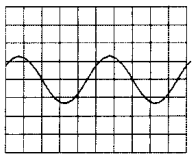
500mV/div
0.2ms/div

S19



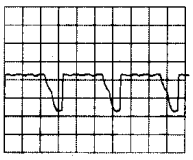
1V/div
5µs/div

S30b



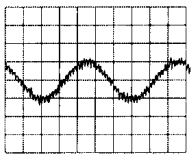
500mV/div
0.2ms/div

S20



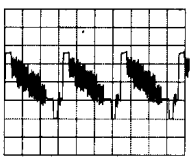
2V/div
10µs/div

S31a



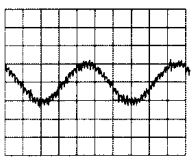
500mV/div
0.2ms/div

S21



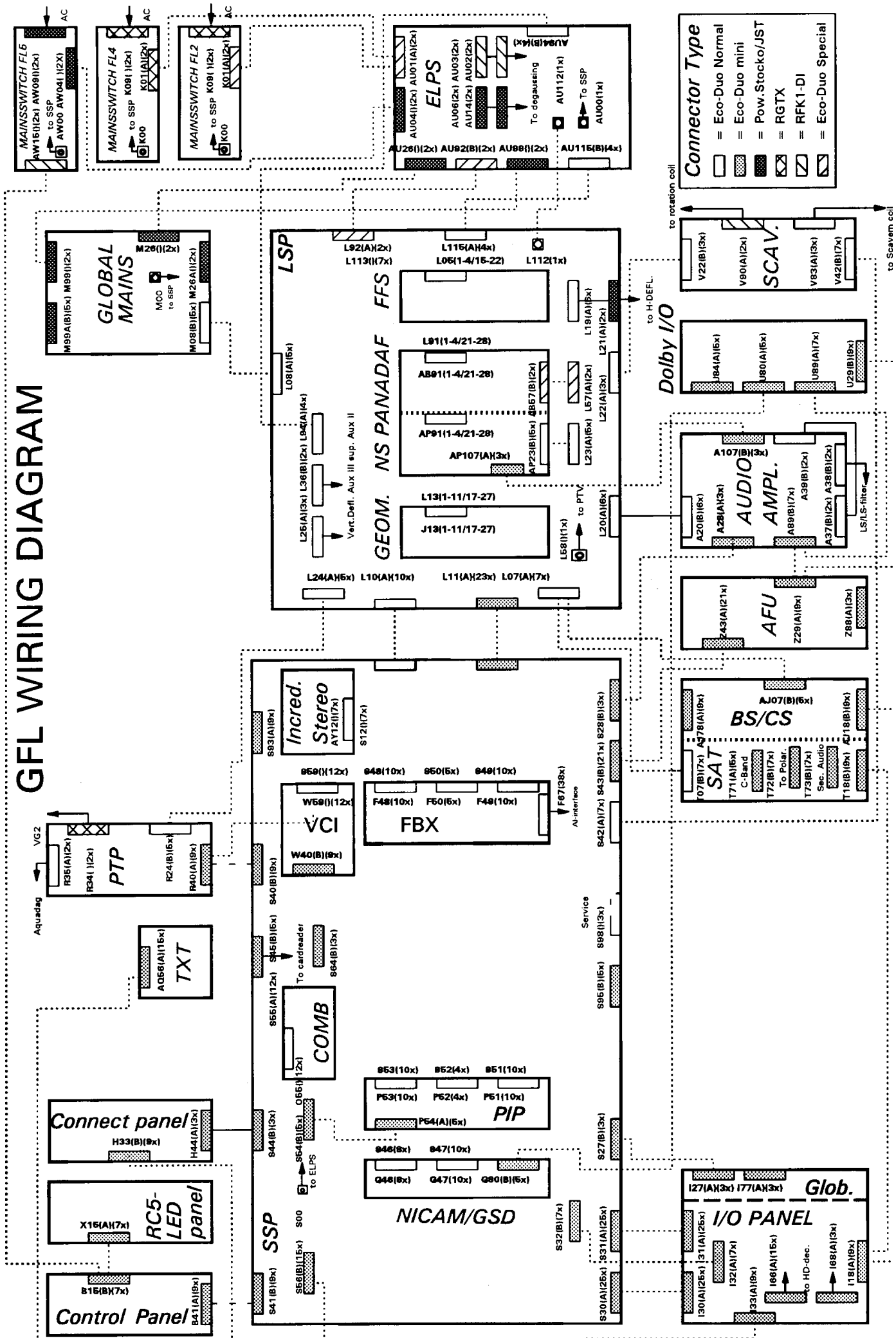
500mV/div
20µs/div

S31b

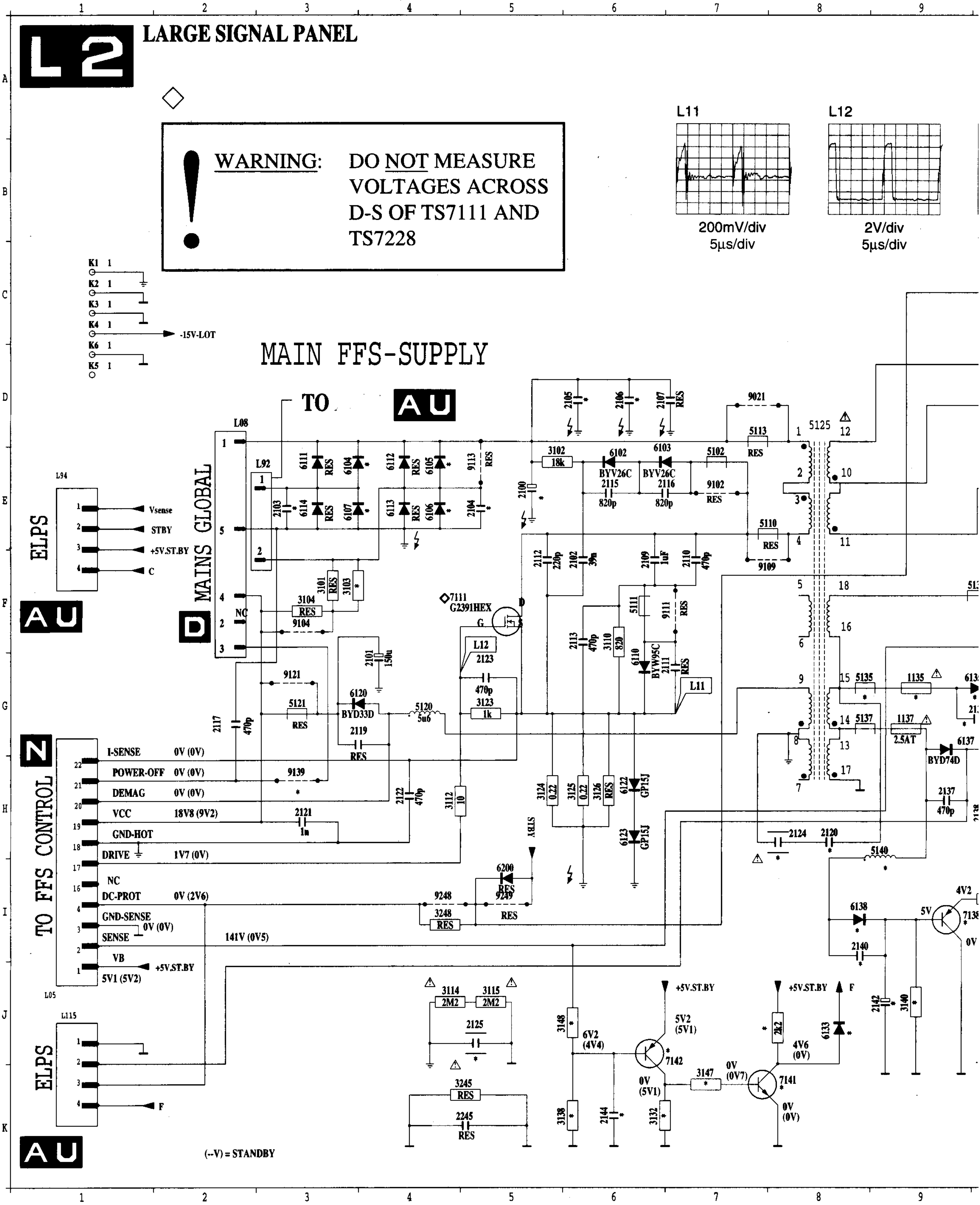


500mV/div
0.2ms/div

Wiring diagram / Verdratungsschema / Schema de câblage

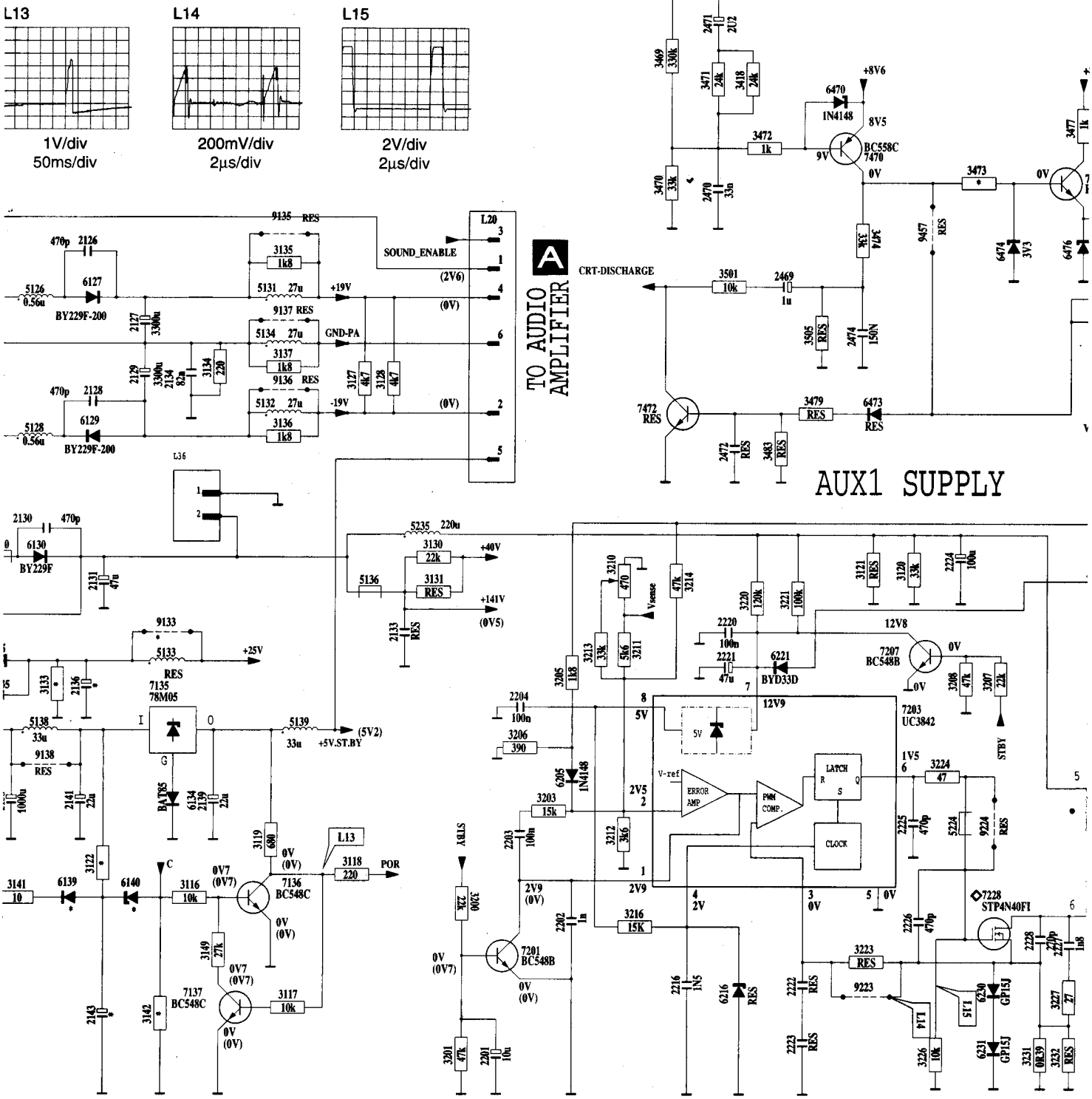


* J 8	2105 D 6	2115 E 6	2124 H 8	2133 G13	2141 H10	2216 J15	2227 I19	2242 J20	2264 D24	2473 D20	3114 J 4	3122 I10	3131 F13	3140
1135 G 9	2106 D 6	2116 E 7	2125 J 5	2134 D11	2142 J 9	2220 G16	2228 I18	2243 J21	2266 E23	2474 D17	3115 J 5	3123 G 5	3132 K 6	3141
1137 G 9	2107 D 6	2117 G 2	2126 C10	2135 G10	2143 J10	2221 G16	2234 F21	2245 K 5	2267 D24	3101 F 3	3116 I11	3124 H 5	3133 G10	3142
2100 E 5	2109 F 6	2119 G 4	2127 D11	2136 G10	2144 K 6	2222 J16	2235 H21	2259 B22	2268 D25	3102 E 5	3117 J12	3125 H 6	3134 D11	3147
2101 G 4	2110 F 7	2120 H 8	2128 E10	2137 H 9	2201 J14	2223 J16	2236 H22	2260 A23	2469 D16	3103 F 3	3118 I13	3126 H 6	3135 C12	3148
2102 F 6	2111 G 7	2121 H 3	2129 D11	2138 H10	2202 I14	2224 F18	2237 I20	2261 A23	2470 C16	3104 F 3	3119 H12	3127 D13	3136 E12	3149
2103 E 3	2112 F 5	2122 H 4	2130 F10	2139 H11	2203 H14	2225 H17	2238 I21	2262 C21	2471 A16	3110 F 6	3120 F17	3128 D13	3137 D12	3200
2104 E 5	2113 F 6	2123 G 5	2131 F10	2140 I 8	2204 G14	2226 I17	2240 I22	2263 C22	2472 E16	3112 H 4	3121 F17	3130 F13	3138 K 6	3201



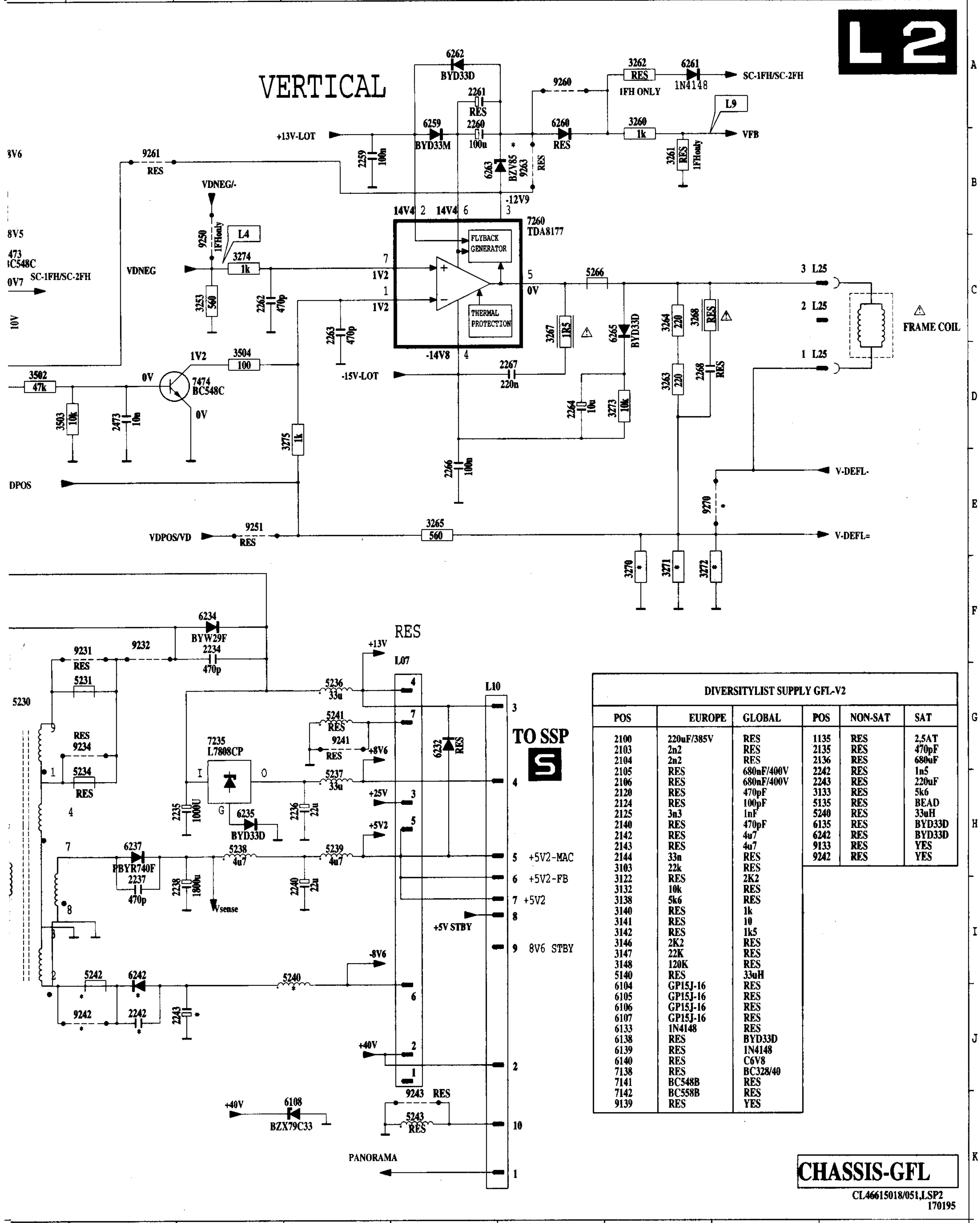
Alimentation

J 9	3203 H14	3213 G15	3227 J19	3262 A25	3272 F25	3472 B16	3503 D19	5121 G 3	5134 D12	5231 G20	5241 G22	6106 E 4	6120 G 4	6135 G1(
I10	3205 G14	3214 F16	3231 J18	3263 D25	3273 D25	3473 C18	3504 D21	5125 J24	5135 G 8	5234 H20	5242 I20	6107 E 3	6122 H 6	6137 G (
J11	3206 H14	3216 I15	3232 J19	3264 C25	3274 C21	3474 C17	3505 D17	5126 D10	5136 F13	5235 F13	5243 K23	6108 K22	6123 H 6	6138 I (
K 7	3207 G18	3220 F16	3245 K 5	3265 E23	3275 D22	3477 B19	5102 E 7	5128 E10	5137 G 8	5236 G22	5266 C24	6110 G 6	6127 D10	6139 I1(
J 6	3208 G18	3221 F16	3248 I 4	3267 C24	3418 B16	3479 E17	5110 E 8	5130 F10	5138 G10	5237 H22	6102 E 6	6111 E 3	6129 E10	6140 I1(
I11	3210 F15	3223 I17	3253 C21	3268 C25	3469 B15	3483 E16	5111 F 6	5131 D12	5139 G12	5238 H21	6103 E 6	6112 E 4	6130 F10	6200 I 5
I14	3211 G15	3224 H18	3260 A25	3270 F25	3470 C15	3501 D16	5113 D 7	5132 E12	5140 H 9	5239 H22	6104 E 3	6113 E 4	6133 J 8	6205 H1(
J13	3212 H15	3226 J18	3261 B25	3271 F25	3471 B16	3502 D19	5120 G 4	5133 G11	5224 H18	5240 I22	6105 E 4	6114 E 3	6134 H11	6216 J1(



6221 G16	6259 A23	6474 C18	7142 J 7	7472 E15	9113 E 5	9223 J17	9248 I 4	9457 C18	L07 F23	L36 E11
6230 J18	6260 A24	6476 C19	7201 I14	7473 C19	9121 G 3	9224 H18	9249 I 5	K1 C 1	L08 D 2	L92 E 3
6231 J18	6261 A25	7111 F 4	7203 G17	7474 D21	9133 G11	9231 F20	9250 B21	K2 C 1	L10 G23	L94 E 1
6232 G23	6262 A23	7135 G11	7207 G17	9021 D 7	9135 C12	9232 F20	9251 E21	K3 C 1	L115 J 1	
6234 F21	6263 B23	7136 I12	7228 I18	9102 E 7	9136 D12	9234 G20	9260 A24	K4 C 1	L20 C14	
6235 H21	6265 C25	7137 J11	7235 G21	9104 F 3	9137 D12	9241 G22	9261 B20	K5 D 1	L25 D26	
6237 H20	6470 B17	7138 I 9	7260 B24	9109 F 8	9138 H10	9242 J20	9263 B24	K6 D 1	L25 C26	
6242 I20	6473 E17	7141 K 8	7470 B17	9111 F 7	9139 H 3	9243 K23	9270 E25	L05 J 1	L25 C26	

19 20 21 22 23 24 25 26 27



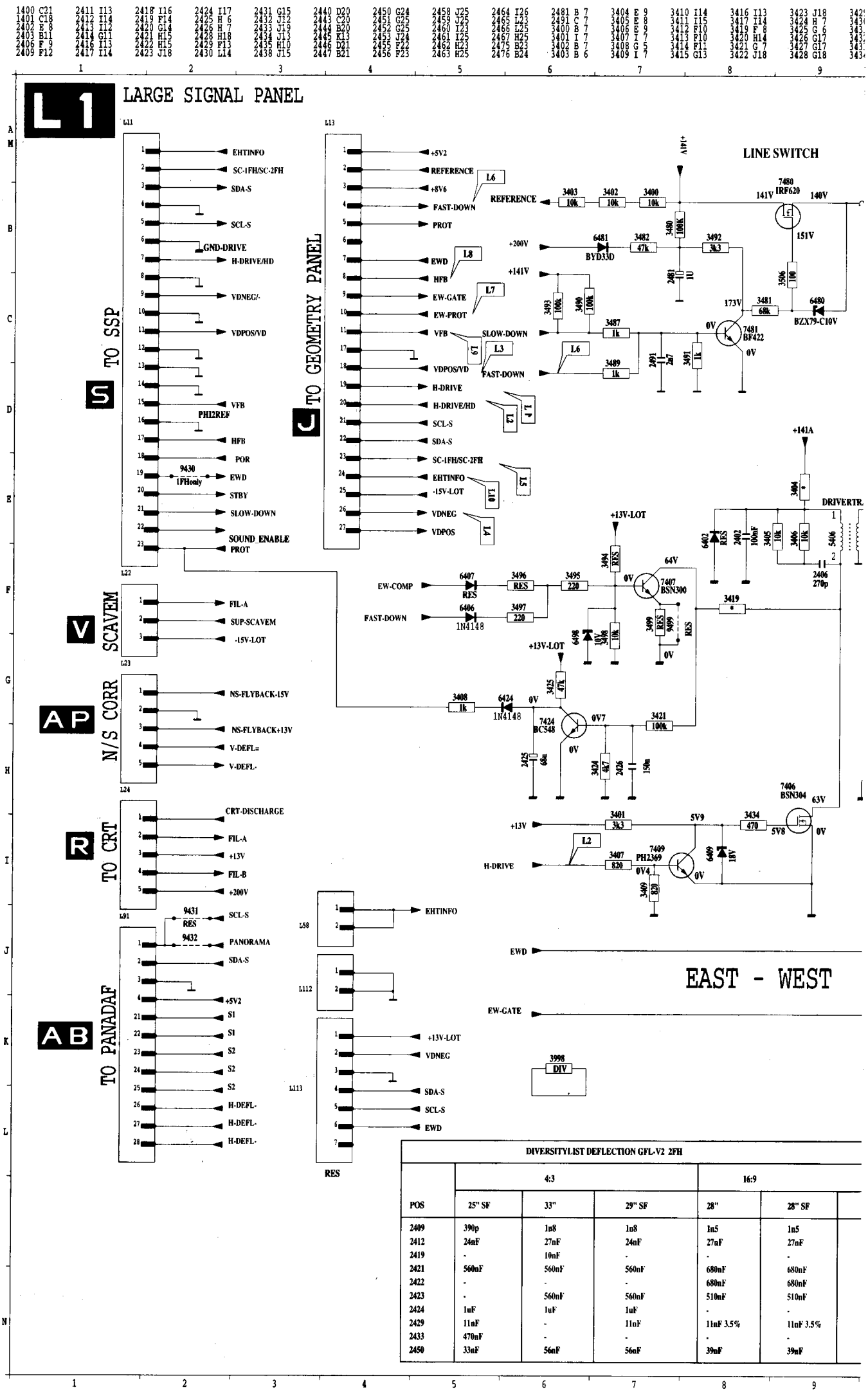
DIVERSITYLIST SUPPLY GFL-V2					
POS	EUROPE	GLOBAL	POS	NON-SAT	SAT
2100	220uF/385V	RES	1135	RES	2,5AT
2103	2n2	RES	2135	RES	470pF
2104	2n2	RES	2136	RES	680uF
2105	RES	680nF/400V	2242	RES	1n5
2106	RES	680nF/400V	2243	RES	220uF
2120	RES	470pF	3133	RES	5k6
2124	RES	100pF	5135	RES	BEAD
2125	3n3	1nF	5240	RES	33uH
2140	RES	470pF	6135	RES	BYD33D
2142	RES	4u7	6242	RES	BYD33D
2143	RES	4u7	9133	RES	YES
2144	33n	RES	9242	RES	YES
3103	22k	RES			
3122	RES	2K2			
3132	10k	RES			
3138	5k6	RES			
3140	RES	1k			
3141	RES	10			
3142	RES	1k5			
3146	2K2	RES			
3147	22K	RES			
3148	120K	RES			
5140	RES	33uH			
6104	GP15J-16	RES			
6105	GP15J-16	RES			
6106	GP15J-16	RES			
6107	GP15J-16	RES			
6133	1N4148	RES			
6138	RES	BYD33D			
6139	RES	1N4148			
6140	RES	C6V8			
7138	RES	BC328/40			
7141	BC548B	RES			
7142	BC558B	RES			
9139	RES	YES			

CHASSIS-GFL

CL46615018/051,LSP2
170195

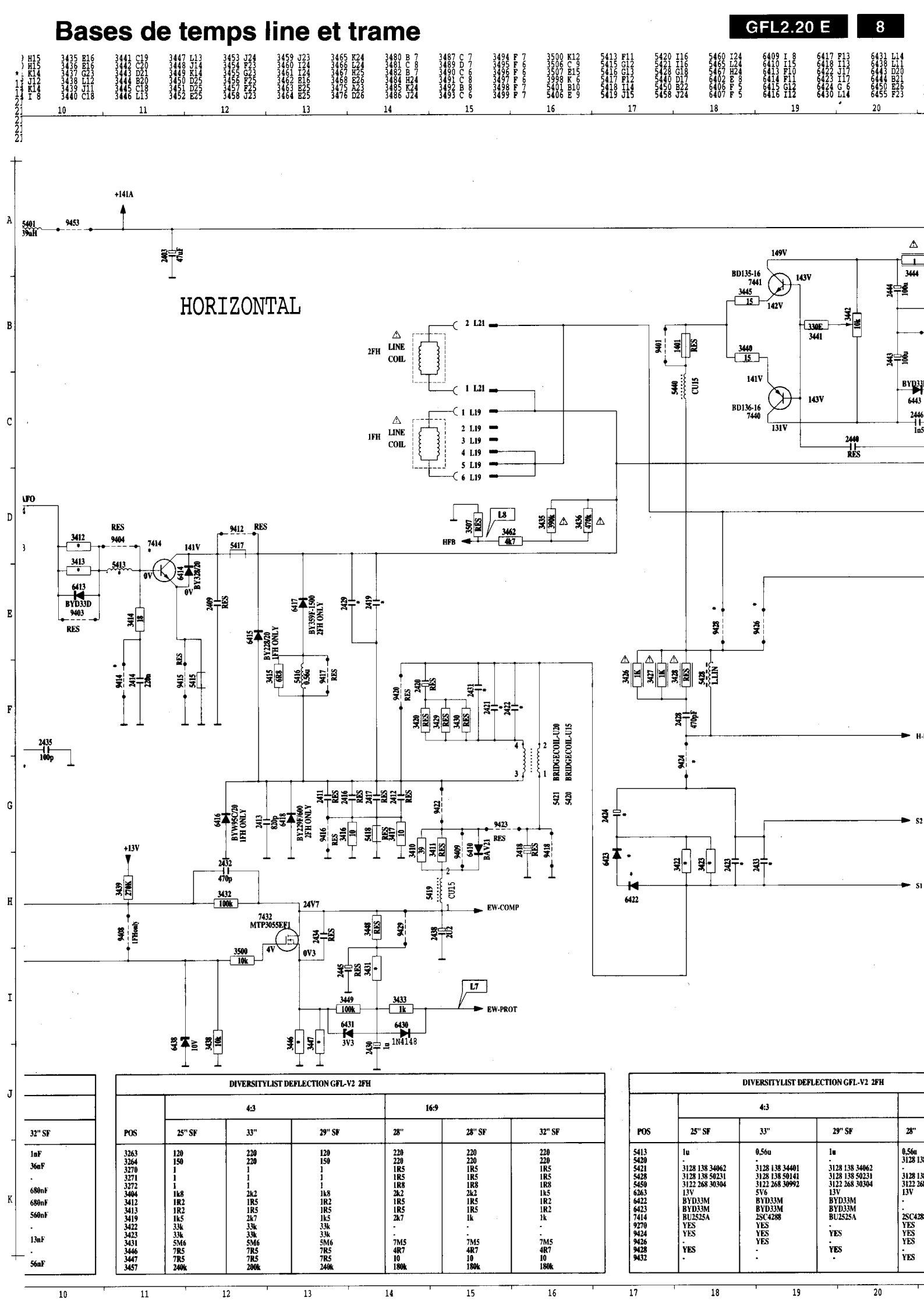
19 20 21 22 23 24 25 26 27

Line and frame deflection / Raster- und Leitungsausgangsstufe /



DIVERSITYLIST DEFLECTION GFL-V2 2FH					
	4:3			16:9	
POS	25" SF	33"	29" SF	28"	28" SF
2409	390p	1n8	1n8	1n5	1n5
2412	24nF	27nF	24nF	27nF	27nF
2419	-	10nF	-	-	-
2421	560nF	560nF	560nF	680nF	680nF
2422	-	-	-	680nF	680nF
2423	-	560nF	560nF	510nF	510nF
2424	1uF	1uF	1uF	-	-
2429	11nF	-	11nF	11nF 3.5%	11nF 3.5%
2433	470nF	-	-	-	-
2450	33nF	56nF	56nF	39nF	39nF

Bases de temps line et trame



32" SF
1nF
36nF
-
680nF
680nF
560nF
-
13nF
-
56nF

DIVERSITYLIST DEFLECTION GFL-V2 2FH

POS	4:3			16:9		
	25" SF	33"	29" SF	28"	28" SF	32" SF
3263	120	220	120	220	220	220
3264	150	220	150	220	220	220
3270	1	1	1	1R5	1R5	1R5
3271	1	1	1	1R5	1R5	1R5
3272	1	1	1	1R8	1R8	1R8
3404	1k8	2k2	1k8	2k2	2k2	1k5
3412	1R2	1R5	1R2	1R5	1R5	1R2
3413	1R2	1R5	1R5	1R5	1R5	1R2
3419	1k5	2k7	1k5	2k7	1k	1k
3422	33k	33k	33k	-	-	-
3423	33k	33k	33k	-	-	-
3431	5M6	5M6	5M6	7M5	7M5	7M5
3446	7R5	7R5	7R5	4R7	4R7	4R7
3447	7R5	7R5	7R5	10	10	10
3457	240k	200k	240k	180k	180k	180k

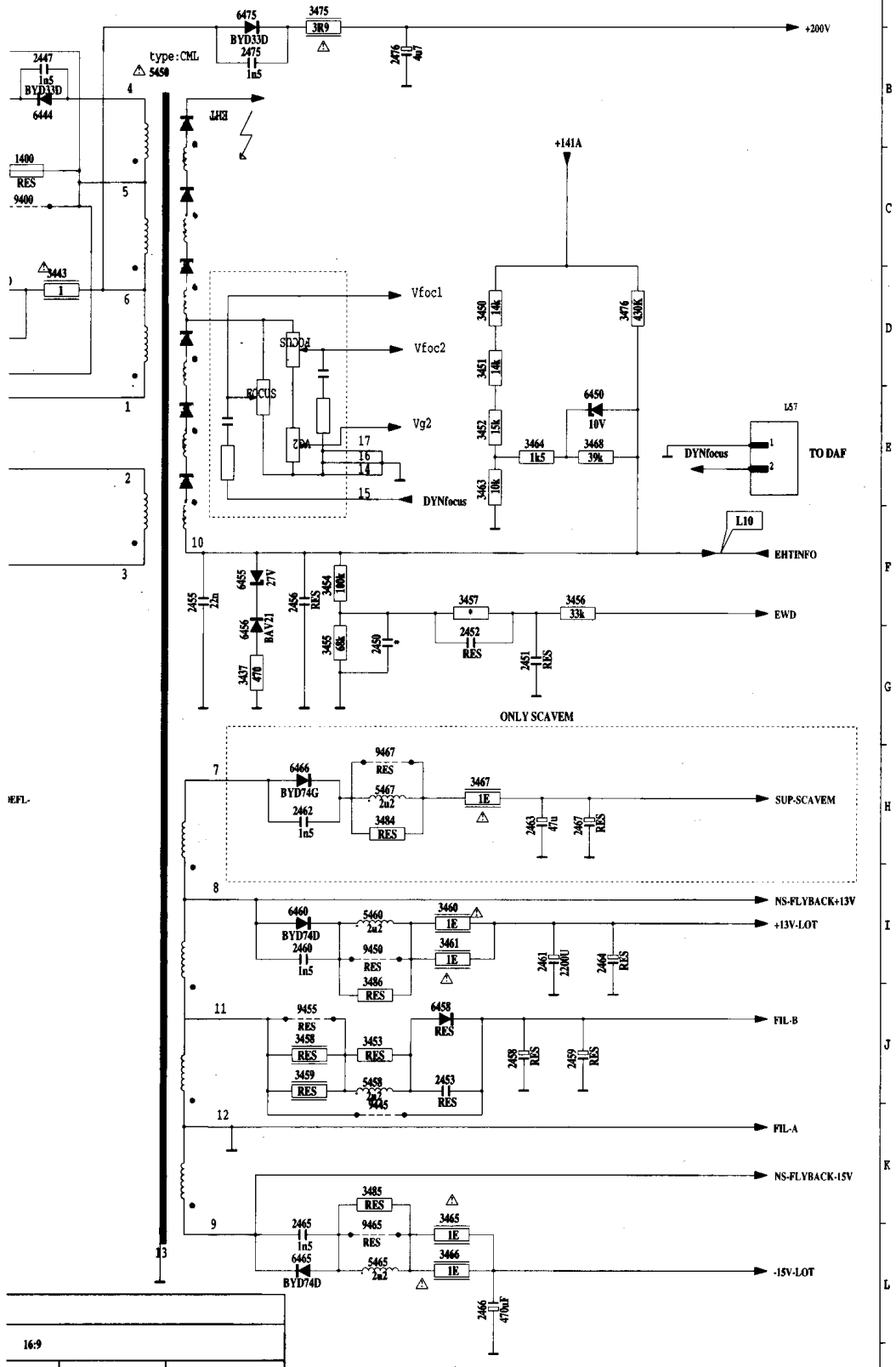
DIVERSITYLIST DEFLECTION GFL-V2 2FH

POS	4:3			
	25" SF	33"	29" SF	28"
5413	1u	0,56u	1u	0,56u
5420	-	-	-	3128 13
5421	3128 138 34062	3128 138 34401	3128 138 34062	-
5428	3128 138 50231	3128 138 50141	3128 138 50231	3128 13
5450	3122 268 30304	3122 268 30992	3122 268 30304	3122 26
6263	13V	5V6	13V	13V
6422	BYD33M	BYD33M	BYD33M	-
6423	BYD33M	BYD33M	BYD33M	-
7414	BU2525A	2SC4288	BU2525A	2SC428
9270	YES	YES	-	YES
9424	YES	YES	YES	YES
9426	-	YES	-	YES
9428	YES	-	YES	-
9432	-	-	-	YES

3456 G23	6480 C 9	7414 F11	7481 C 8	9409 I15	9418 I16	9428 G18	9450 I24	L11 A 1	L19 D15	L22 F 1
3458 J24	6481 B 7	7424 G 6	9400 C21	9412 B12	9420 G14	9429 I14	9453 B10	L112 J 3	L19 D15	L23 G 1
3460 I23	6498 F 6	7432 J12	9401 C17	9414 G11	9422 I15	9430 B 2	9455 J23	L113 L 3	L19 E15	L24 H 1
3465 L23	7406 H 9	7440 D19	9403 F10	9415 G11	9423 I15	9431 I 2	9465 L24	L13 A 3	L19 E15	L57 E27
3466 H23	7407 F 7	7441 B19	9404 F11	9416 I13	9424 H18	9432 J 2	9467 H24	L19 D15	L21 D15	L58 J 3
3475 A23	7409 I 7	7480 A 9	9408 J11	9417 G13	9426 G19	9445 K24	9499 F 7	L19 D15	L21 C15	L91 J 1

21 22 23 24 25 26 27

L 1



L1
1V/div
5µs/div

L6
2V/div
0.5s/div

L2
500mV/div
5µs/div

L7
500mV/div
0.5s/div

L3
1V/div
2ms/div

L8
1V/div
10µs/div

L4
100mV/div
2ms/div

L9
5V/div
2ms/div

L5
500mV/div
2ms/div

L10
2V/div
2ms/div

16:9

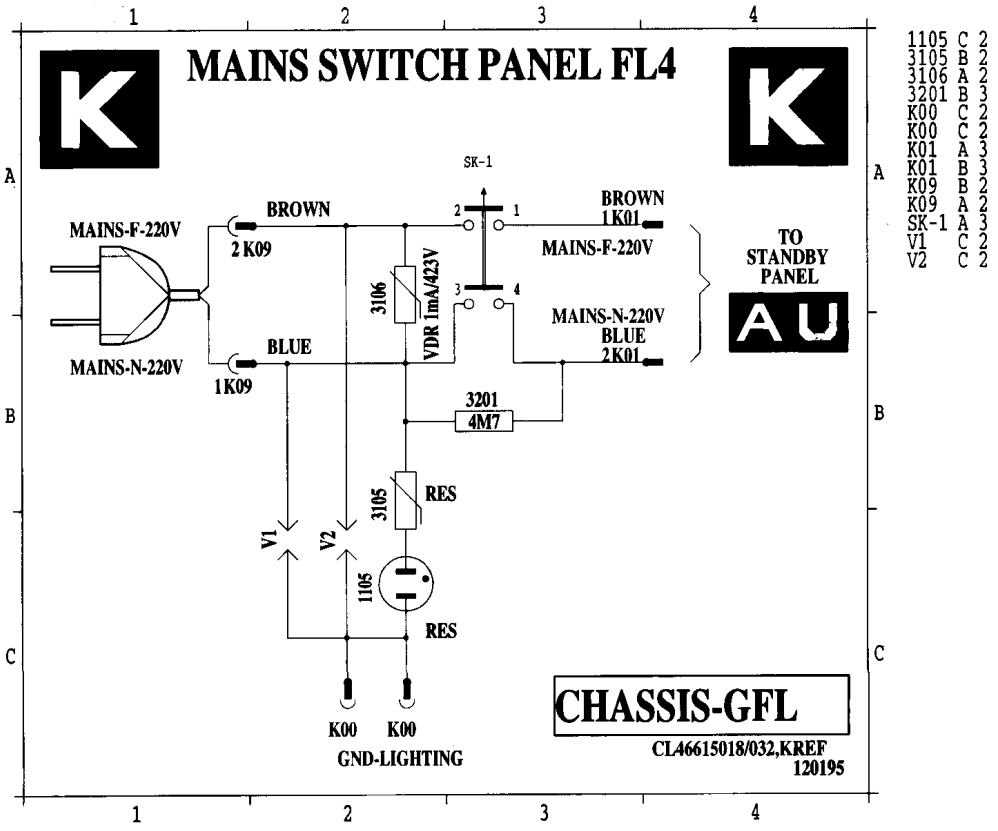
	28" SF	32" SF
33311	0,56u 3128 138 33311	0,56u -
50251	- 3128 138 50251	8228 001 14292 3128 138 50561
30304	3122 268 30304	3122 268 30483
	13V -	10V -
	- 2SC4288	- 2SC4288
	YES YES	YES -
	YES -	YES -
	YES	YES

CHASSIS-GFL

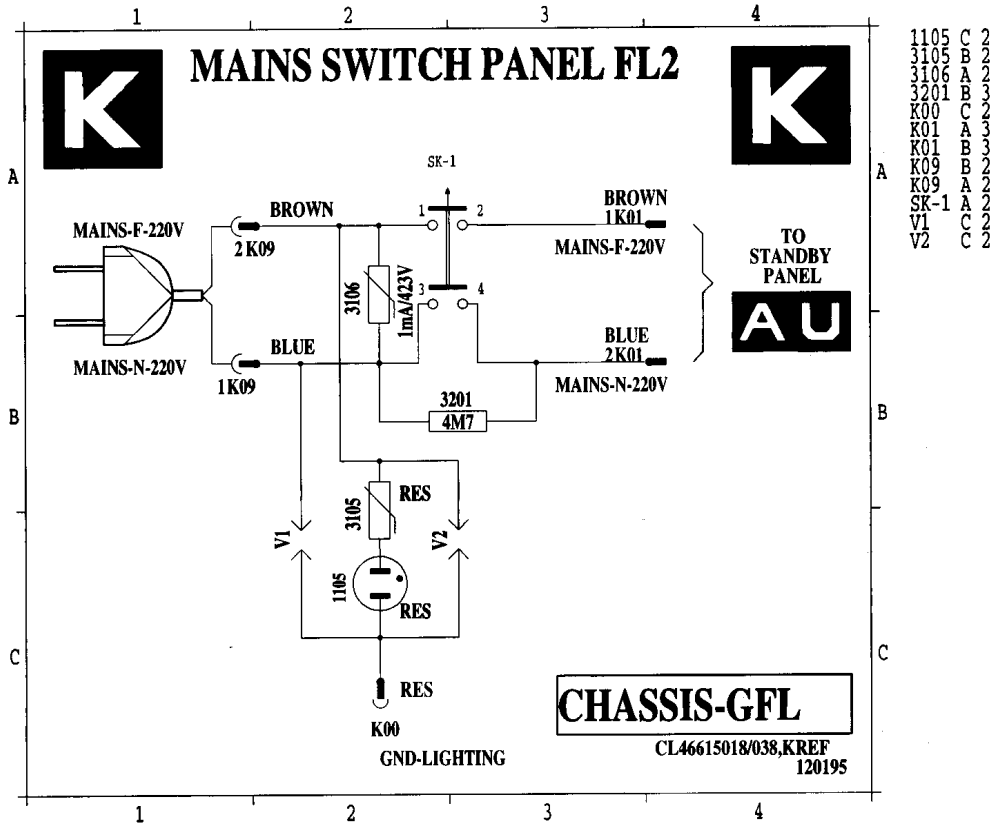
CL46615018/050,LSP1
170195

21 22 23 24 25 26 27

Mains switch FL2, FL4

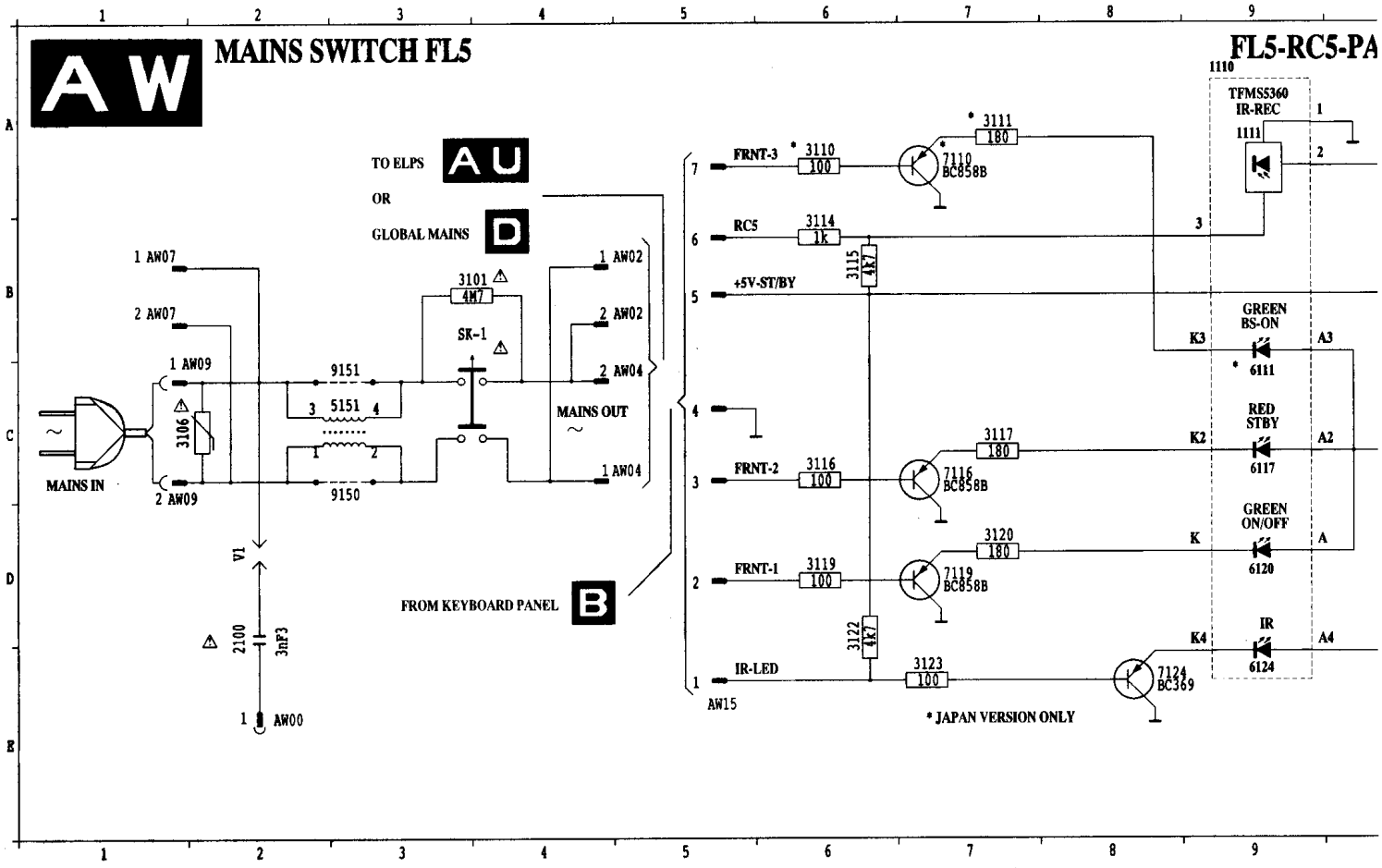


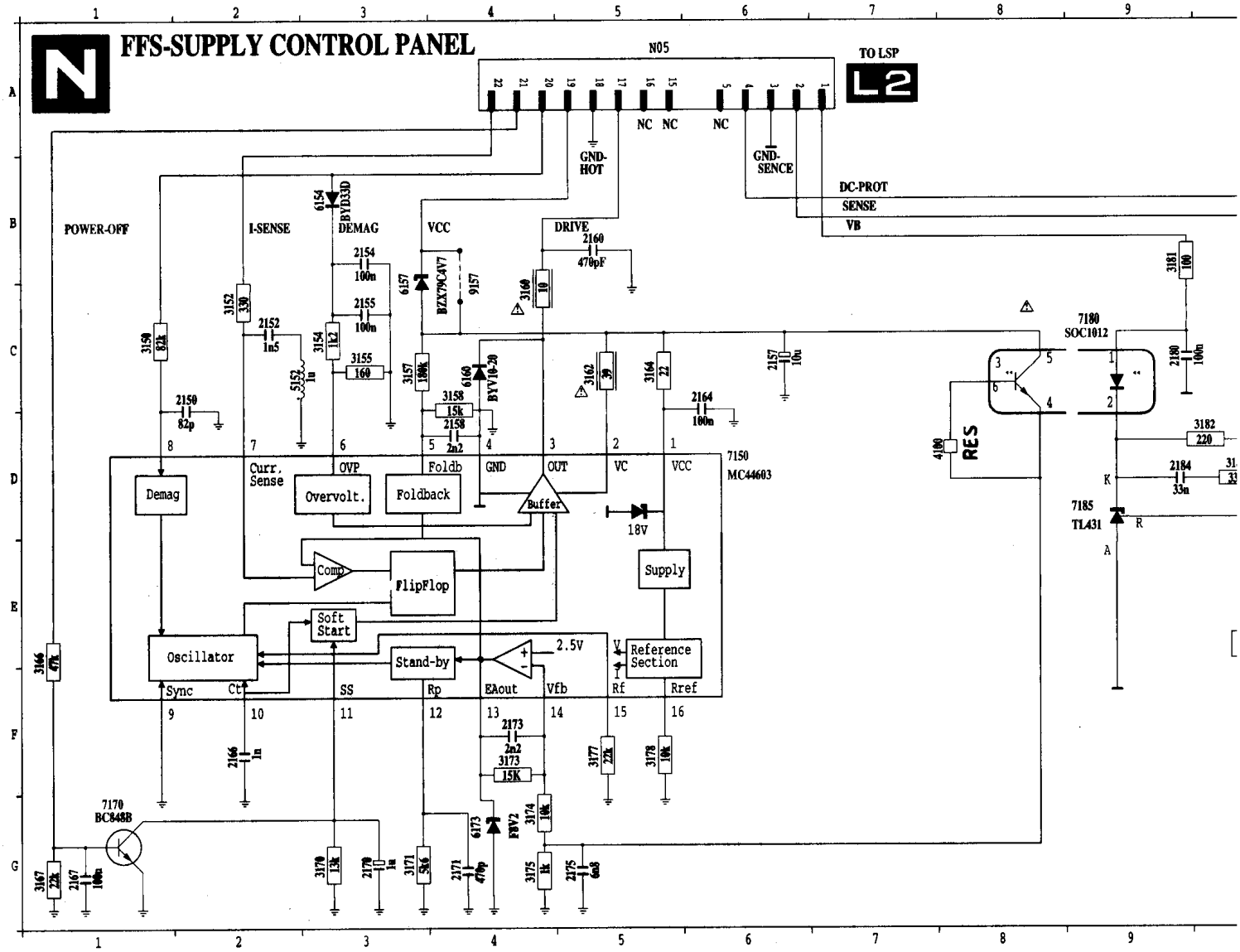
1105 C 2
3105 B 2
3106 A 2
3201 B 3
K00 C 2
K00 C 2
K01 A 3
K01 B 3
K09 B 2
K09 A 2
SK-1 A 3
V1 C 2
V2 C 2



1105 C 2
3105 B 2
3106 A 2
3201 B 3
K00 C 2
K01 A 3
K01 B 3
K09 B 2
K09 A 2
SK-1 A 2
V1 C 2
V2 C 2

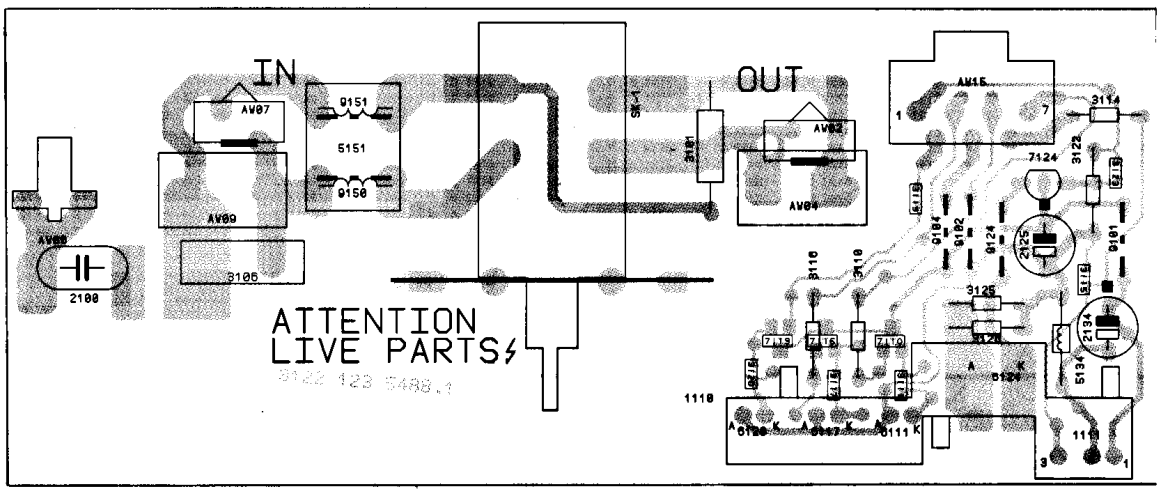
Mains switch FL5 / FFS drive panel /

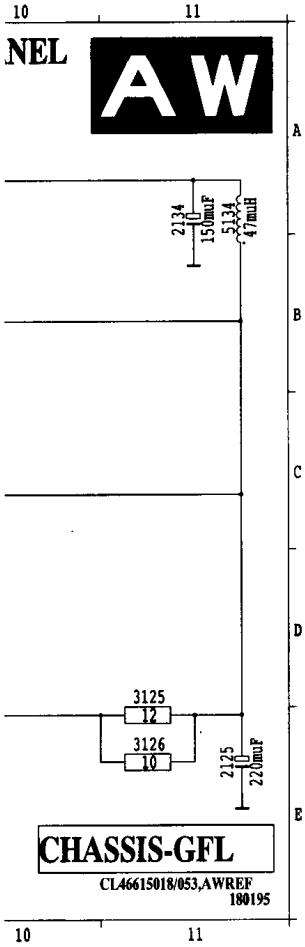




FFS Drive Platte / Platine FFS drive

Mains switch FL5

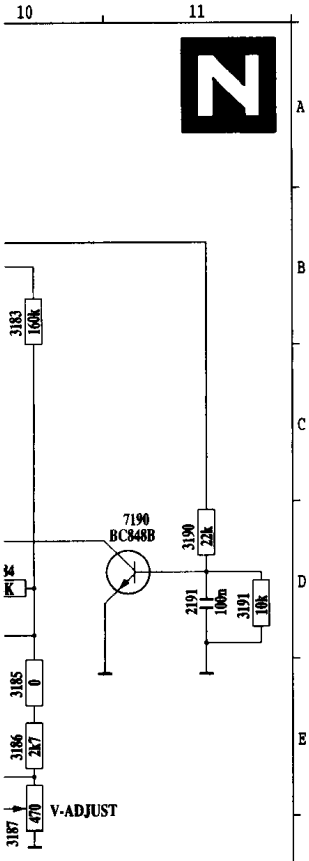




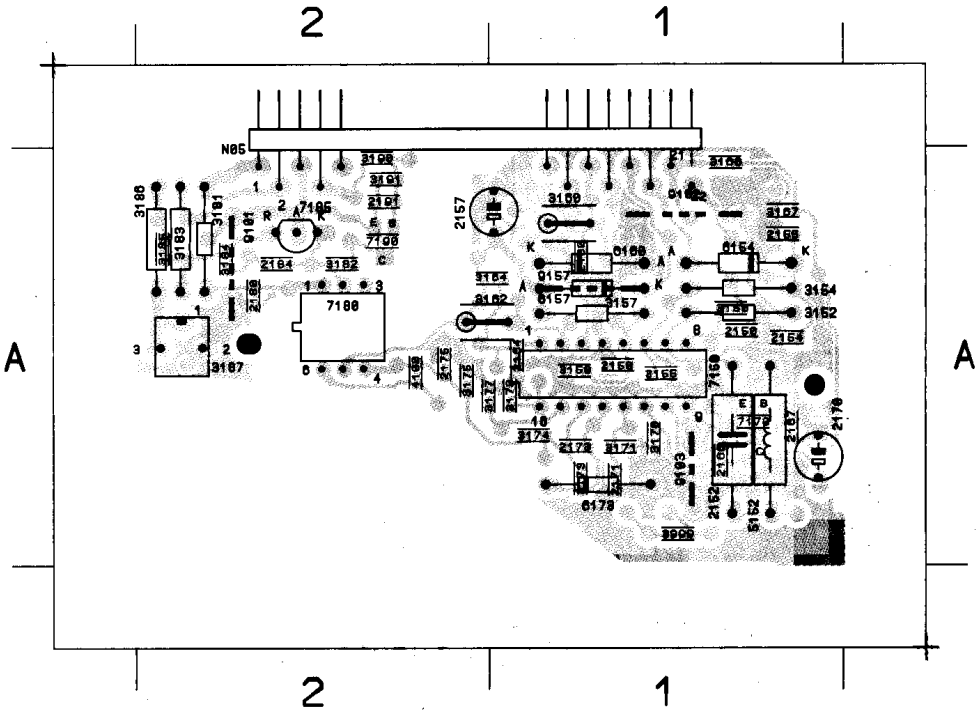
1110 A 9
2100 D 2
2125 E11
2134 A11
3101 B 4
3106 C 1
3110 A 6
3111 A 7
3114 B 6
3115 B 6
3116 C 6
3117 C 7
3119 D 6
3120 D 7
3122 D 6
3123 E 7
3125 D11
3126 E11
5134 A11
5151 C 3
7110 A 7
7116 C 7
7119 D 7
7124 E 8
9150 C 3
9151 C 3
AW00 E 2
AW02 B 4
AW02 B 4
AW04 C 4
AW04 C 4
AW07 B 1
AW07 B 1
AW09 C 2
AW09 C 2
AW15 E 5
SK-1 B 3
V1 D 2

FFS drive panel

2150 A 1 2164 A 1 2180 A 2 3157 A 1 3170 A 1 3181 A 2 3190 A 2 6160 A 1 9101 A 2
2152 A 1 2166 A 1 2184 A 2 3158 A 1 3171 A 1 3182 A 2 3191 A 2 6173 A 1 9102 A 1
2154 A 1 2167 A 1 2191 A 2 3160 A 1 3173 A 1 3183 A 2 3999 A 1 7150 A 1 9103 A 1
2155 A 1 2170 A 1 3150 A 1 3162 A 2 3174 A 1 3184 A 2 4100 A 2 7170 A 1 9157 A 1
2157 A 1 2171 A 1 3152 A 1 3164 A 1 3175 A 2 3185 A 2 5152 A 1 7180 A 2 N05 A 2
2158 A 1 2173 A 1 3154 A 1 3166 A 1 3177 A 2 3186 A 2 6154 A 1 7185 A 2
2160 A 1 2175 A 2 3155 A 1 3167 A 1 3178 A 1 3187 A 2 6157 A 1 7190 A 2

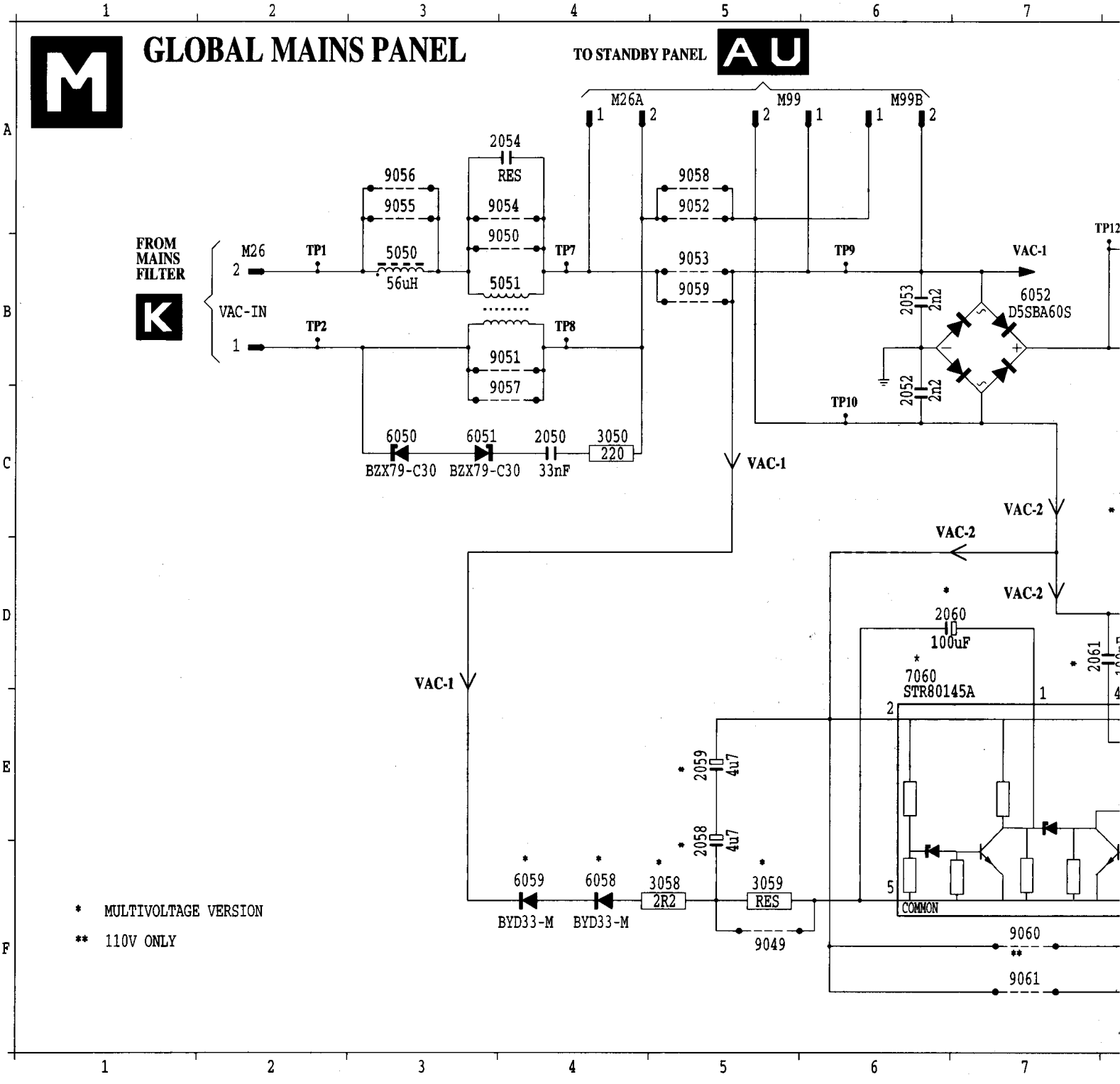


2150 C 2
2152 C 2
2154 B 3
2155 C 3
2157 C 6
2158 D 4
2160 B 5
2164 C 6
2166 F 2
2167 G 1
2170 G 3
2171 G 4
2173 F 4
2175 G 5
2180 C 9
2184 D 9
2191 D11
3150 C 1
3152 C 2
3154 B 3
3155 C 3
3157 C 3
3158 C 4
3160 C 4
3162 C 5
3164 C 5
3166 E 1
3167 G 1
3170 G 3
3171 G 3
3173 F 4
3174 G 4
3175 G 4
3177 F 5
3178 F 5
3181 B 9
3182 D10
3183 B10
3184 D10
3185 E10
3186 E10
3187 F10
3190 D11
3191 D11
3999 G 7
4100 D 8
5152 C 2
6154 B 3
6157 B 3
6160 C 4
6173 G 4
7150 D 6
7170 G 1
7180 C 9
7185 D 9
7190 D11
9157 B 4
N05 A 5



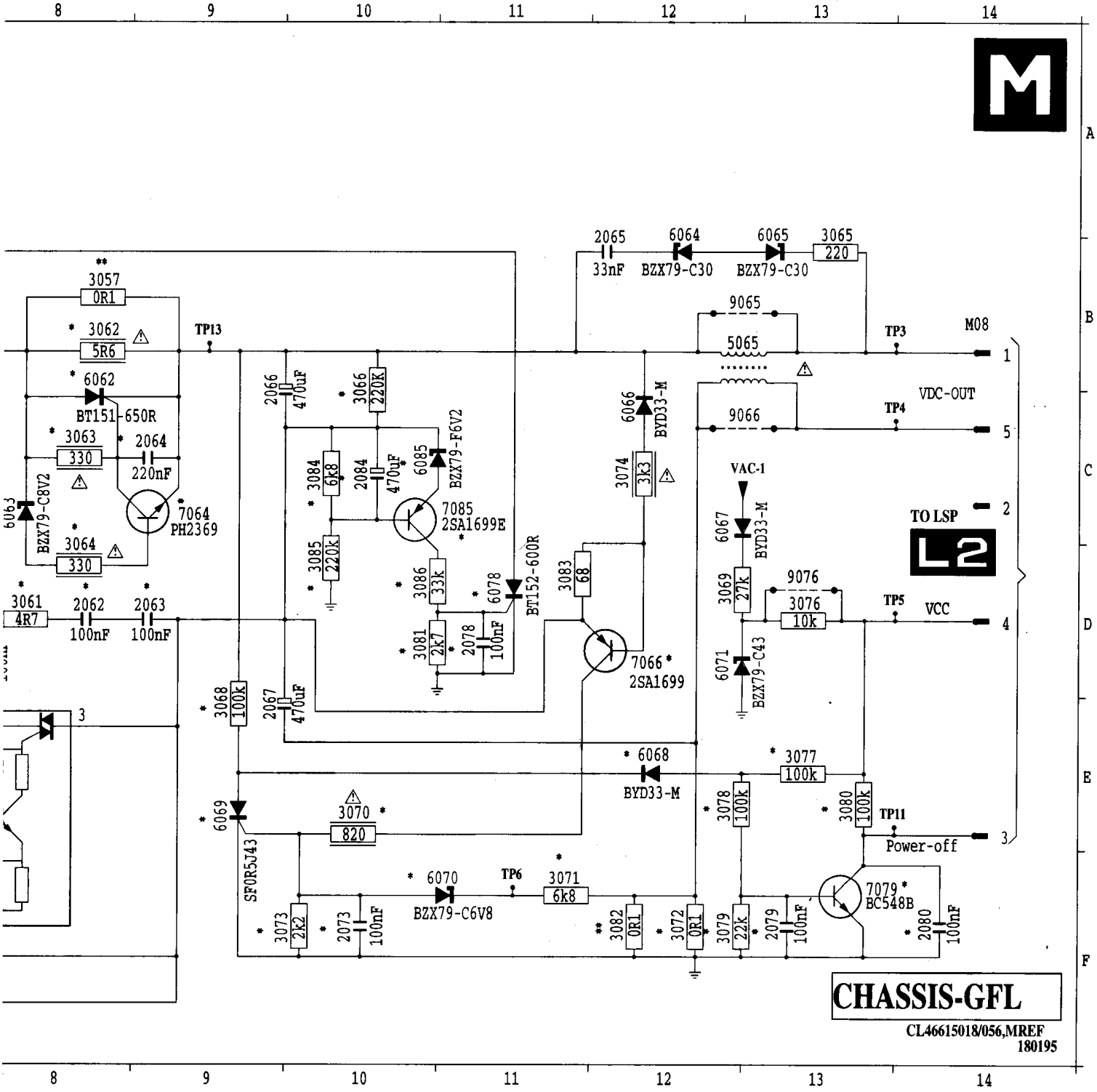
Multi voltage panel / Multi Voltage Platte /

2050 C 4	2059 E 5	2064 C 9	2078 D11	3057 B 8	3063 C 8	3069 D12	3074 C12	3080 E13	3085 D10	6050 C 3
2052 C 6	2060 D 6	2065 B12	2079 F13	3058 F 5	3064 D 8	3070 E10	3076 D13	3081 D10	3086 D10	6051 C 3
2053 B 6	2061 D 7	2066 B 9	2080 F14	3059 F 5	3065 B13	3071 F11	3077 E13	3082 F12	5050 B 3	6052 B 7
2054 A 4	2062 D 8	2067 E 9	2084 C10	3061 D 8	3066 B10	3072 F12	3078 E12	3083 D11	5051 B 4	6058 F 4
2058 F 5	2063 D 9	2073 F10	3050 C 4	3062 B 8	3068 E 9	3073 F10	3079 F12	3084 C10	5065 B12	6059 F 4



Platine Multi Voltage

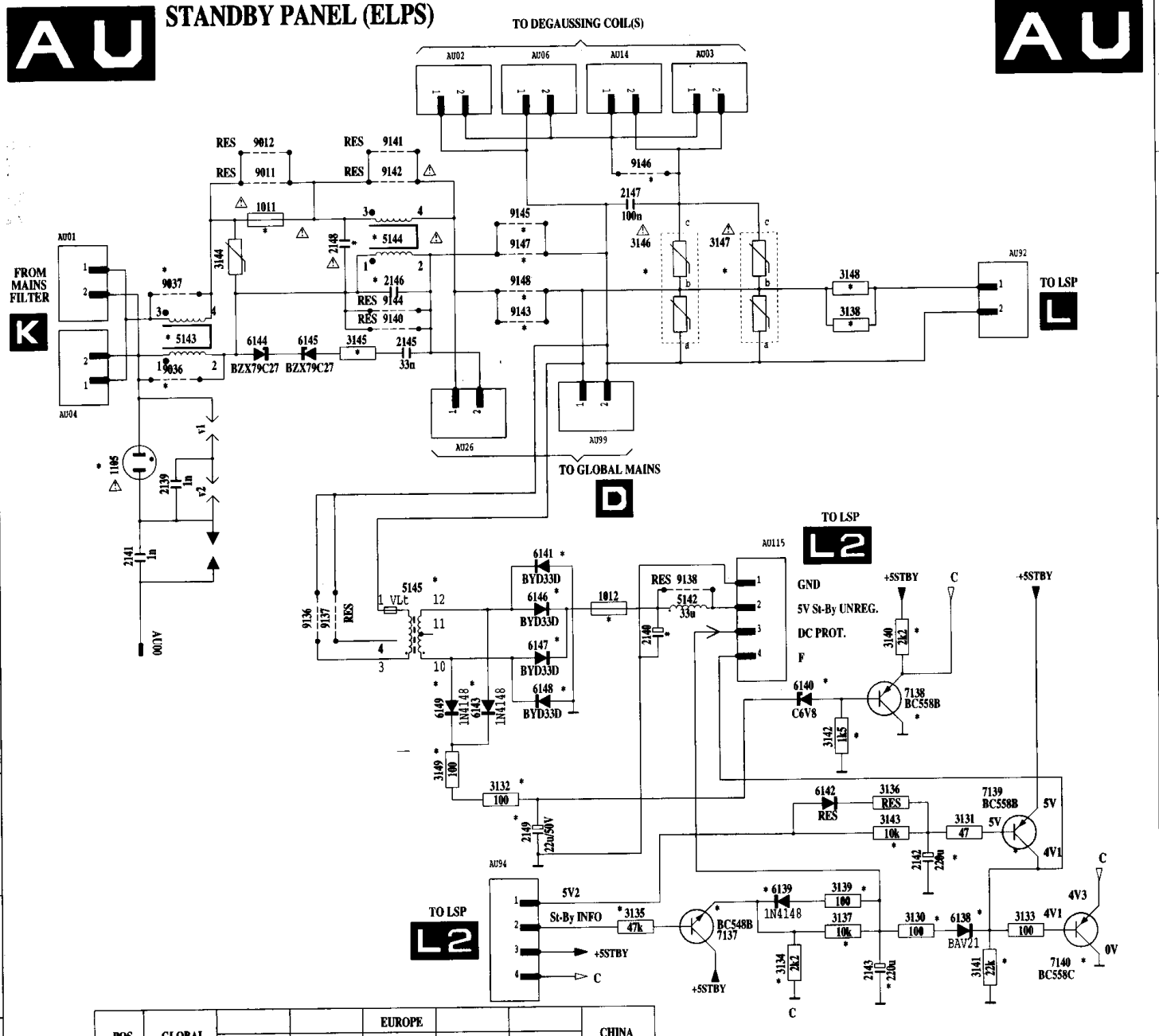
6062 B 8	6067 C12	6078 D11	7079 F13	9052 A 5	9057 C 4	9065 B13	M26A A 4
6063 C 8	6068 E12	6085 C10	7085 C11	9053 B 5	9058 A 5	9066 C13	M99 A 5
6064 B12	6069 E 9	7060 D 6	9049 F 5	9054 A 4	9059 B 5	9076 D13	M99B A 6
6065 B13	6070 F11	7064 C 9	9050 B 4	9055 A 3	9060 F 7	M08 B14	
6066 C12	6071 D12	7066 D12	9051 B 4	9056 A 3	9061 F 7	M26 B 2	



STANDBY PANEL (ELPS)

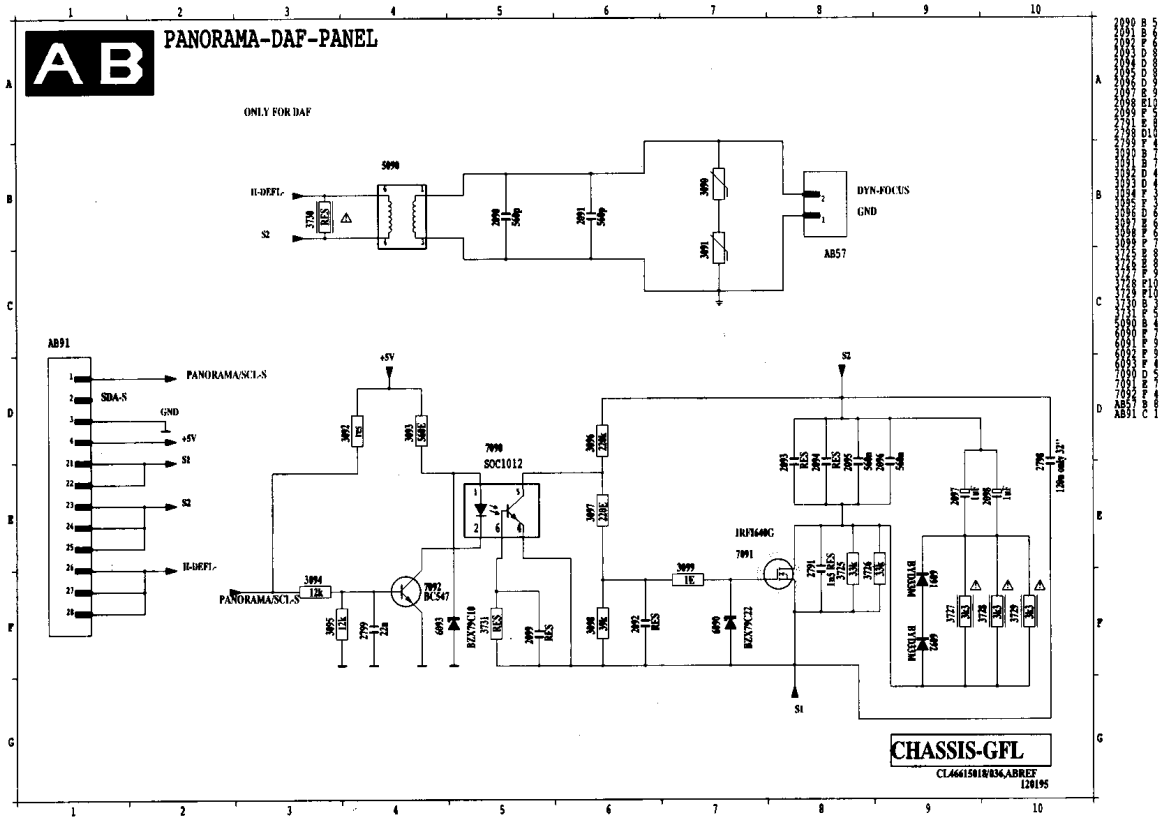
AU

AU

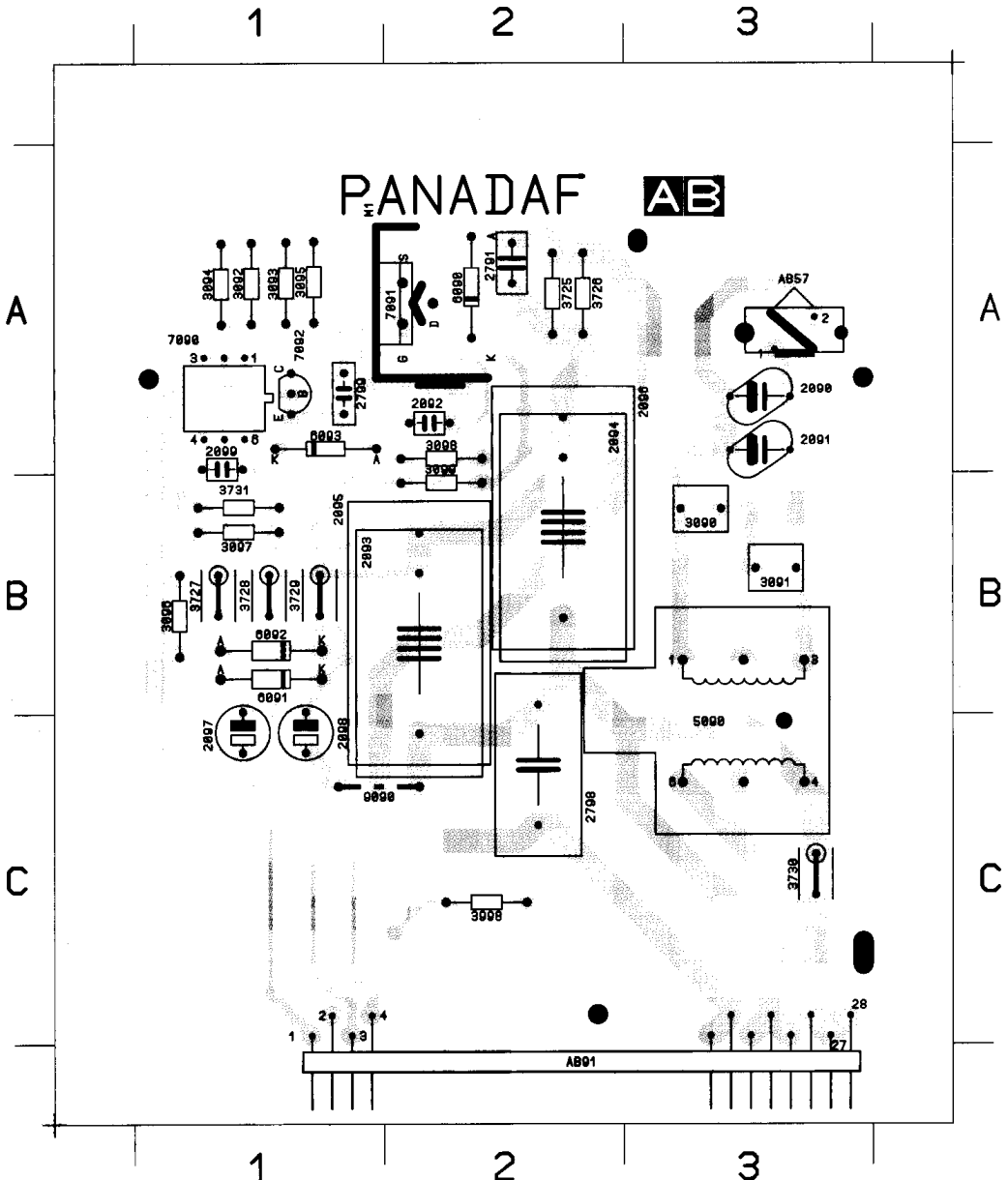


POS	GLOBAL	25" SF	29" 4:3	EUROPE 28" 16:9	32" 16:9	33"	CHINA
1011	H 6.3A T	H 6.3A T T 315mA	H 6.3A T T 315mA	H 6.3A T T 315mA	H 6.3A T T 315mA	H 6.3A T T 315mA	H 6.3A T T 315mA
1012	-	-	-	-	-	-	-
1105	*	-	-	-	-	-	-
2139	*	-	-	-	-	-	-
2140	-	2200u	2200u	2200u	2200u	2200u	3300u
2141	*	-	-	-	-	-	-
2142	-	*	*	*	*	*	*
2143	-	*	*	*	*	*	*
2146	27p	-	-	-	-	-	-
2148	470n	680n	680n	680n	680n	680n	680n
2149	-	22u	22u	22u	22u	22u	22u
3130	-	*	*	*	*	*	*
3131	-	*	*	*	*	*	*
3132	-	*	*	*	*	*	*
3133	-	*	*	*	*	*	*
3134	-	*	*	*	*	*	*
3135	-	*	*	*	*	*	*
3137	-	*	*	*	2R7	2R7	1R5
3138	-	-	-	-	*	*	*
3139	-	*	*	*	*	*	*
3140	-	*	*	*	*	*	*
3141	-	*	*	*	*	*	*
3142	-	*	*	*	*	*	*
3143	-	*	*	*	*	*	*
3145	220	470	470	470	470	470	470
3146	-	-	-	-	*	*	*
3147	-	*	*	*	*	*	*
3148	-	1R5	1R5	1R5	-	-	-
3149	-	*	*	*	*	*	*
5143	-	*	*	*	*	*	*
5144	CU28D3	CU28D5	CU28D5	CU28D5	CU28D5	CU28D5	CU28D5
5145	-	*	*	*	*	*	*
6138	-	*	*	*	*	*	*
6139	-	*	*	*	*	*	*
6140	-	*	*	*	*	*	*
6141	-	*	*	*	*	*	*
6143	-	*	*	*	*	*	*
6146	-	*	*	*	*	*	*
6147	-	*	*	*	*	*	*
6148	-	*	*	*	*	*	*
6149	-	*	*	*	*	*	*
7138	-	*	*	*	*	*	*
7139	-	*	*	*	*	*	*
7140	-	*	*	*	*	*	*
7141	-	*	*	*	*	*	*
9036	*	-	-	-	-	-	-
9037	*	-	-	-	-	-	-

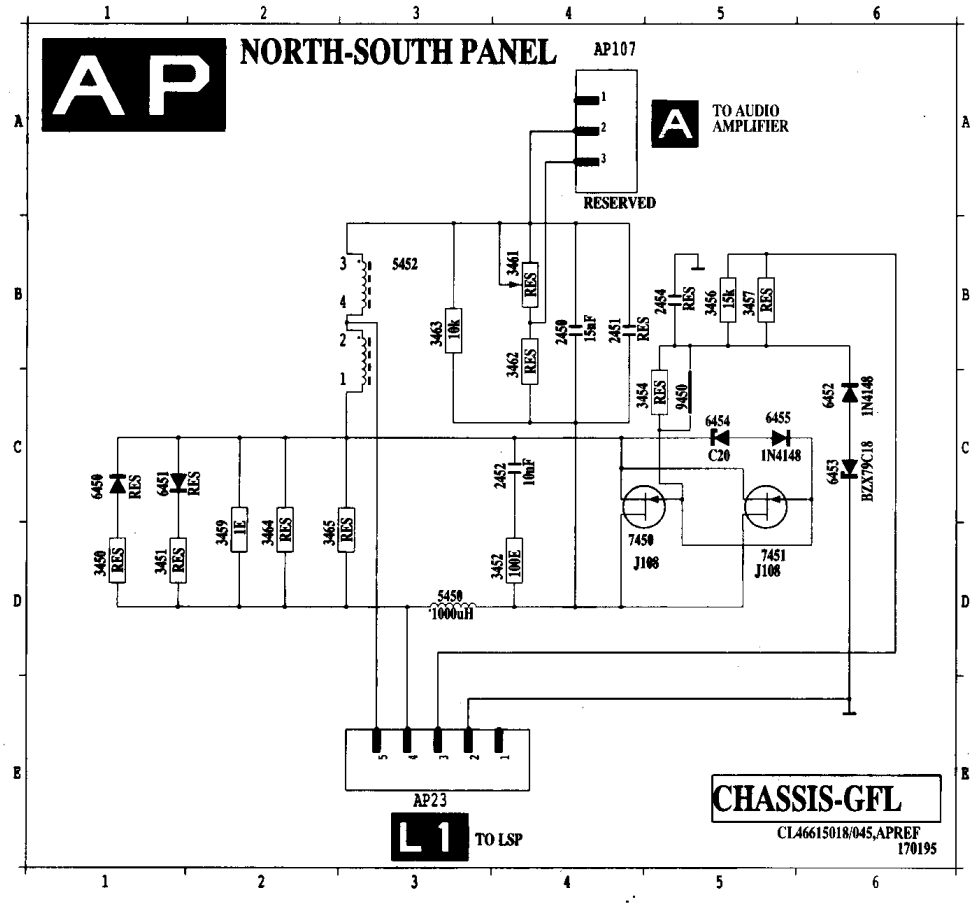
PANA-DAF panel/PANA-DAF Platte/Platine PANA-DAF



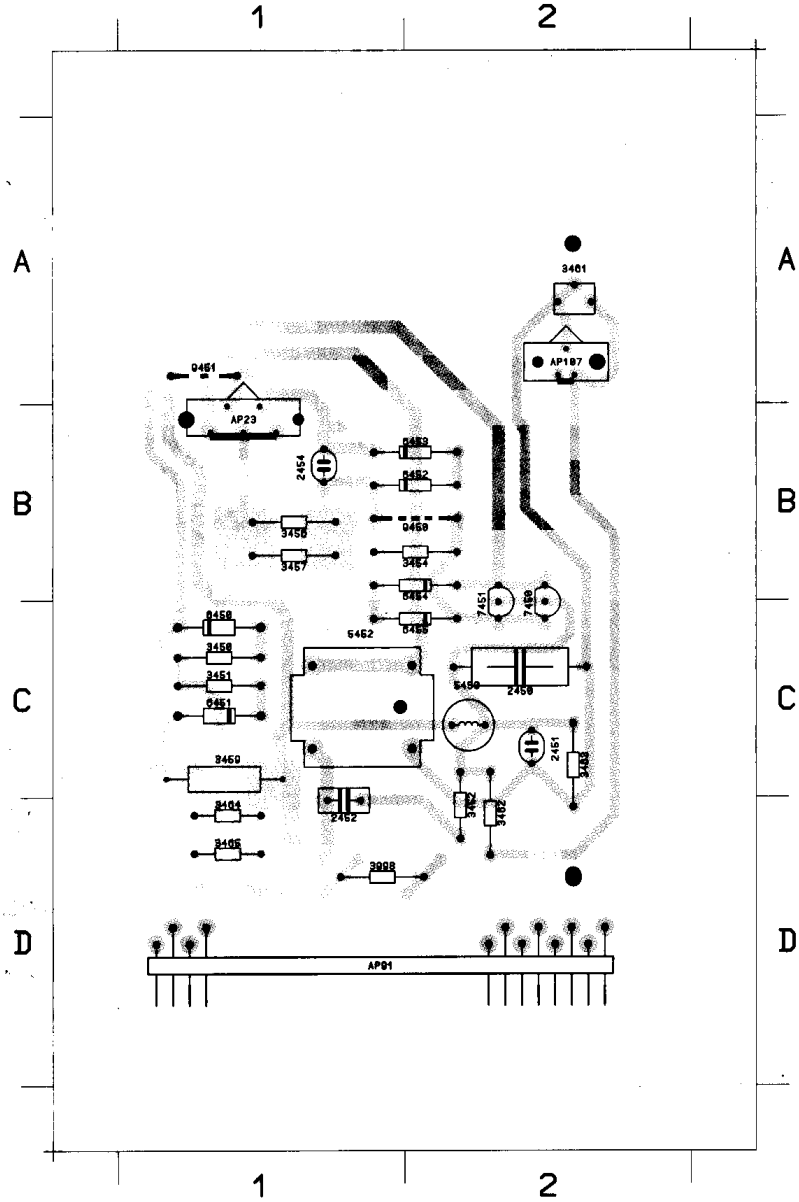
2000 A 3	2004 A 2	2008 C 1	2799 A 1	3093 A 1	3097 B 1	3728 A 2	3730 C 3	6090 A 2	7090 A 1	AB57 A 3
2001 A 3	2005 B 2	2009 A 1	3090 B 3	3094 A 1	3098 A 2	3727 B 1	3731 B 1	6091 B 1	7091 A 2	AB91 C 1
2002 A 2	2006 A 2	2791 A 2	3091 B 3	3095 A 1	3099 B 2	3728 B 1	3900 C 2	6092 B 1	7092 A 1	M1 A 2
2003 B 2	2007 C 1	2798 C 2	3092 A 1	3096 B 1	3725 A 2	3729 B 1	5090 C 3	6093 A 1	9090 C 1	



North-South correction/Nord-Süd Correction/Correction Nord-Sud

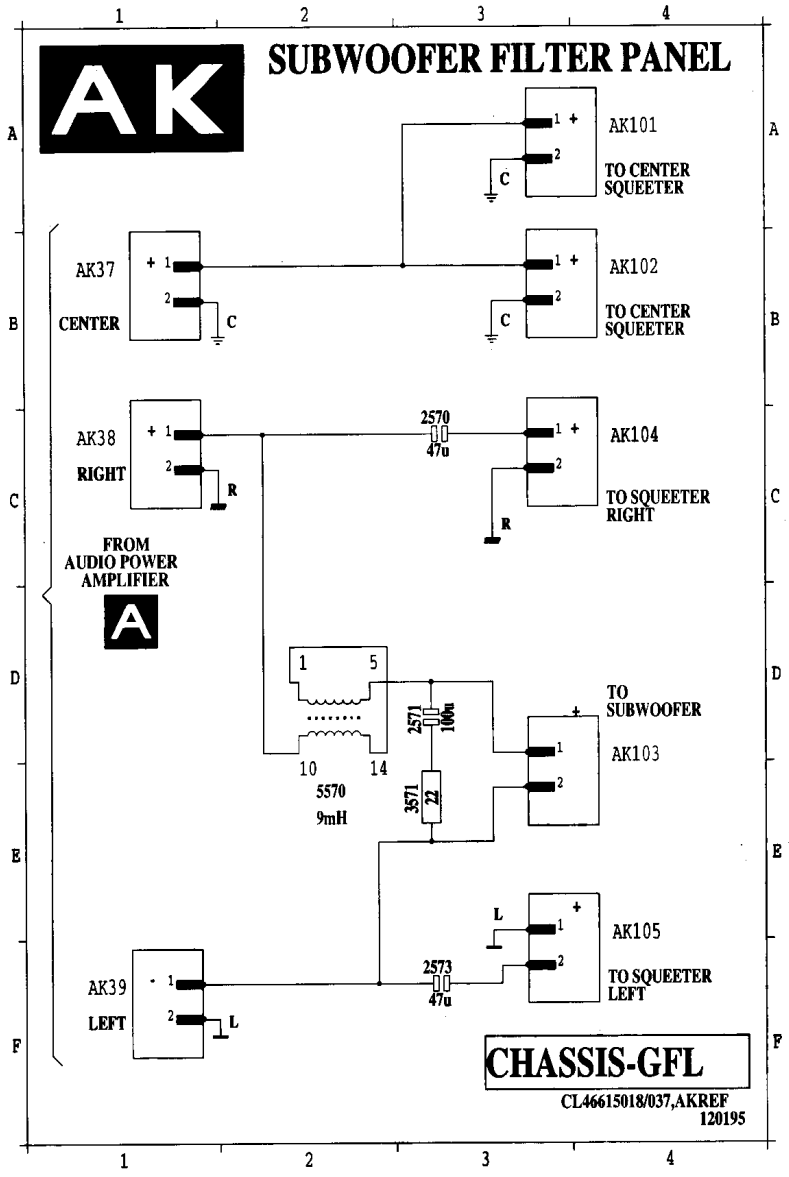


2450 B 4
2451 B 4
2452 C 4
2454 B 5
3450 D 1
3451 D 1
3452 D 4
3454 C 5
3456 B 5
3457 B 5
3459 D 2
3461 B 4
3462 B 4
3463 B 3
3464 D 2
3465 D 2
5450 D 3
5452 B 3
6450 C 1
6451 C 1
6452 C 6
6453 C 6
6454 C 5
6455 C 5
7450 D 5
7451 D 5
9450 C 5
AP107 A 4
AP23 B 3



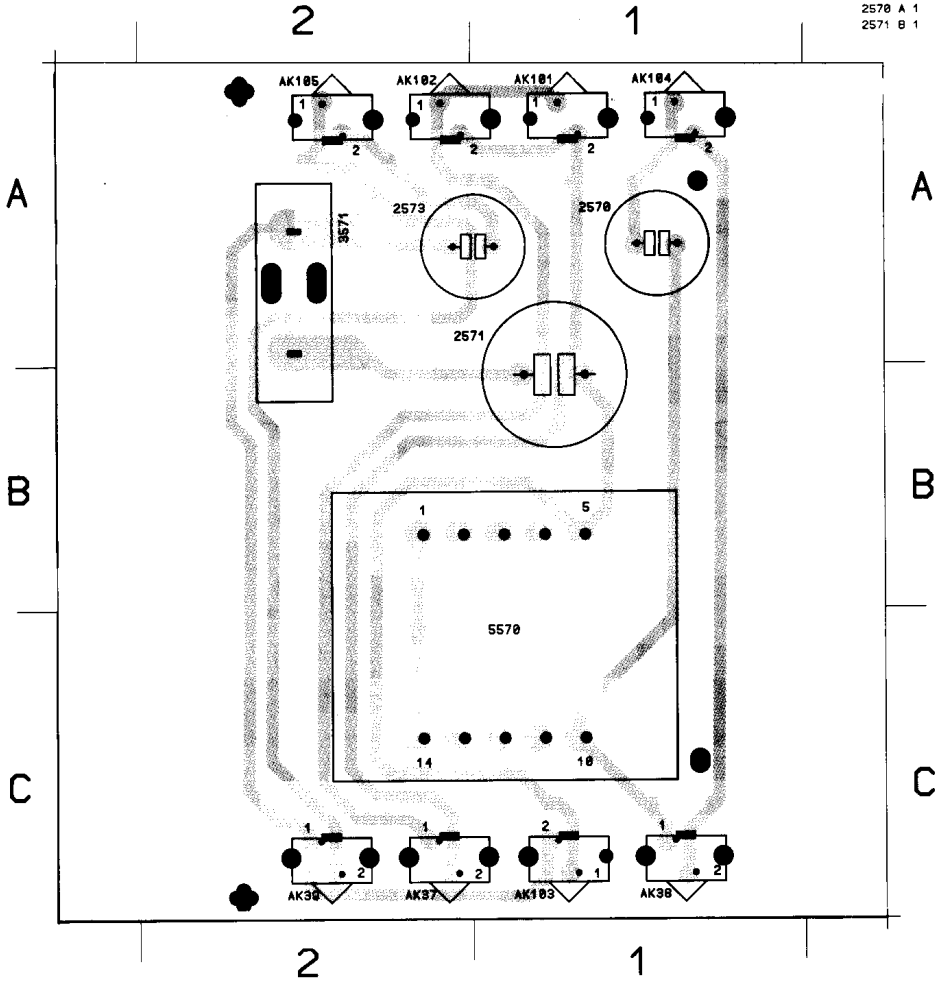
2458 C 2 3458 C 1 3458 B 1 3462 C 2 3998 D 1 6451 C 1 6455 C 1 9451 A 1
2451 C 2 3451 C 1 3457 B 1 3463 C 2 5458 C 2 6452 B 2 7458 C 2 AP23 B 1
2452 D 1 3452 D 2 3459 C 1 3454 D 1 5452 C 1 6453 B 2 7451 C 2 AP91 D 1
2454 B 1 3454 B 2 3461 A 2 3465 D 1 6458 C 1 6454 B 1 9458 B 2 AP107 A 2

Subwoofer filter / Subwoofer-Filter / Filtre en subwoofer

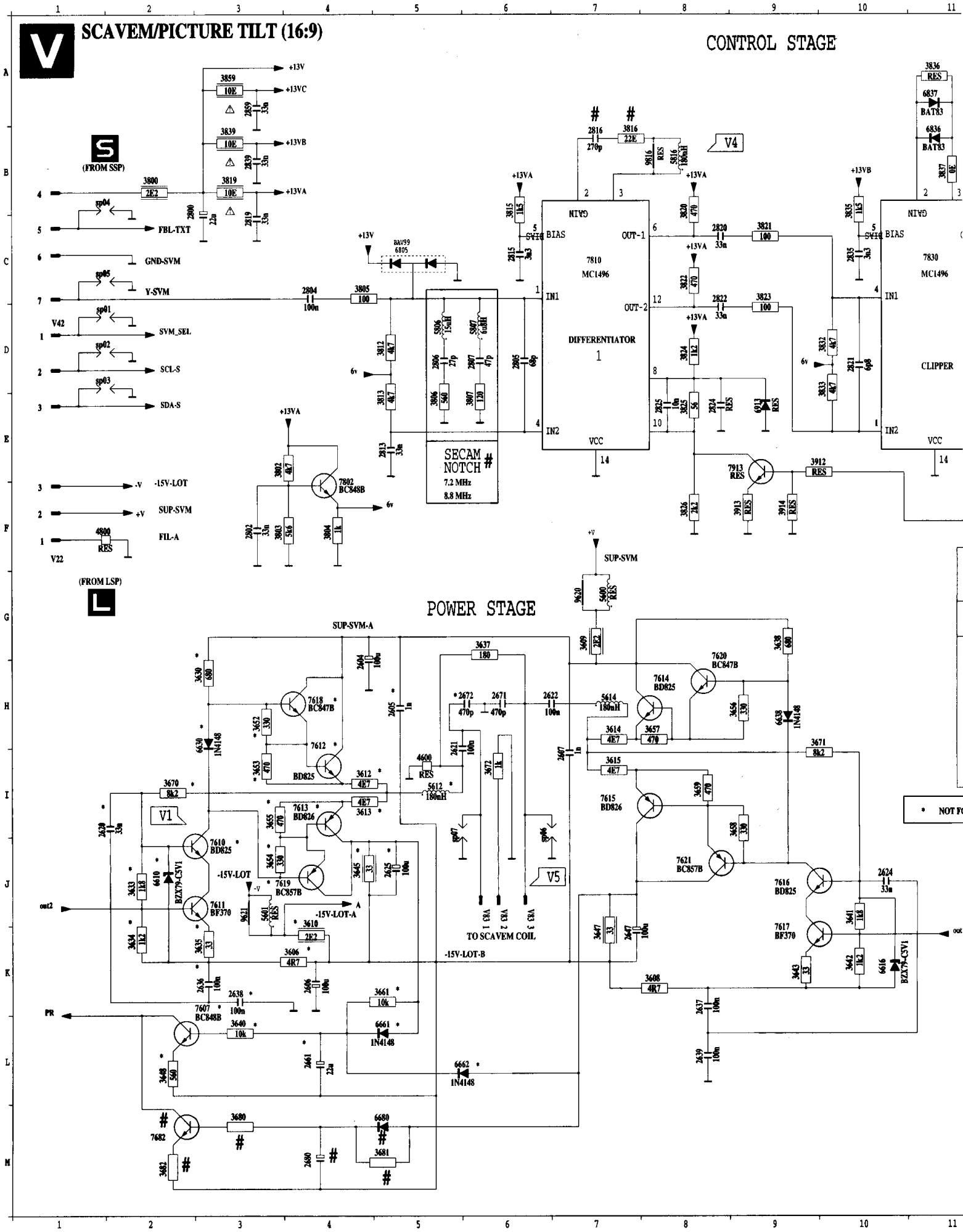


2570 C 3
2571 D 3
2573 F 3
3571 E 3
5570 E 2
AK101A 4
AK102B 4
AK103D 4
AK104C 4
AK105E 4
AK37 B 1
AK38 C 1
AK39 F 1

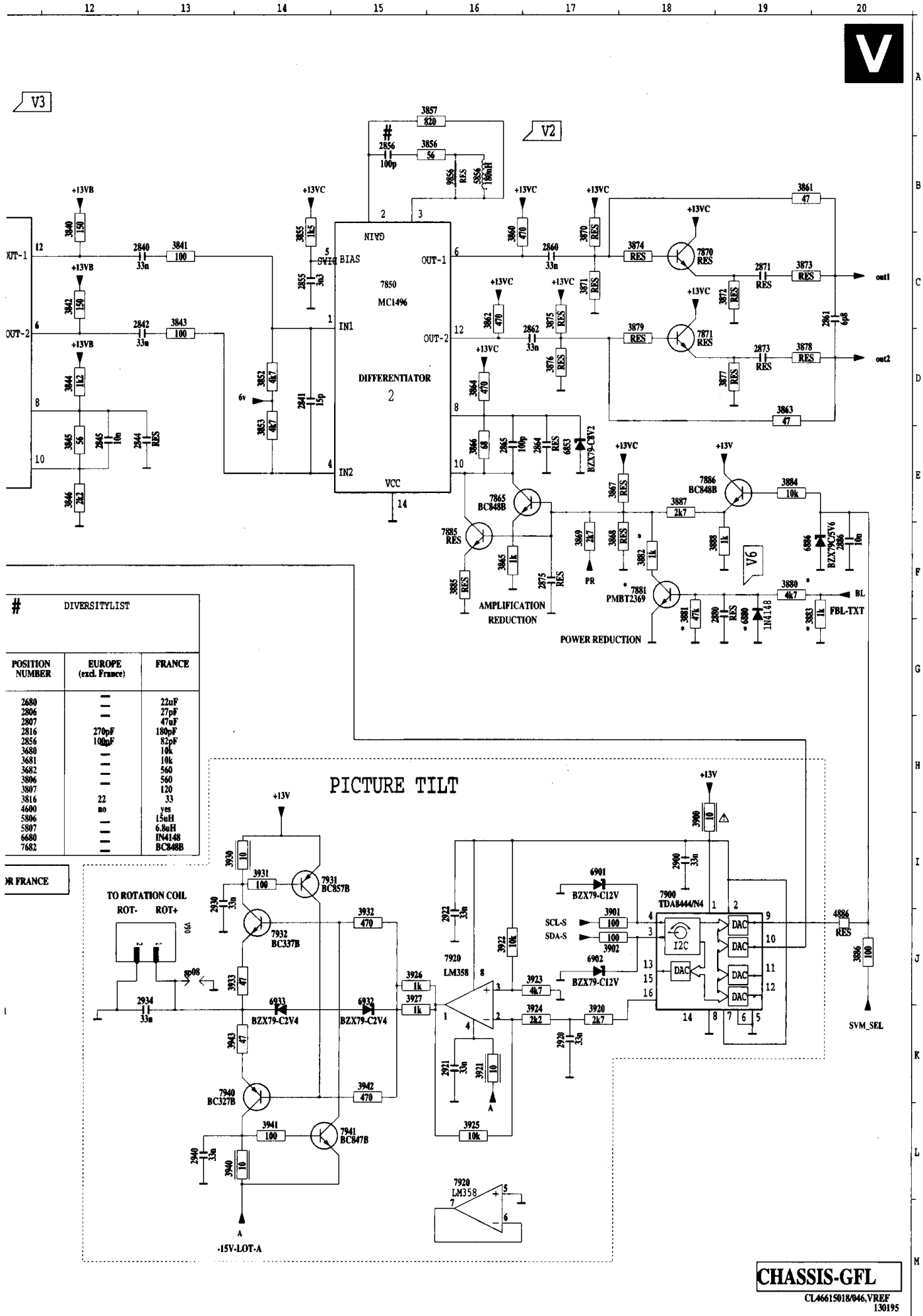
2570 A 1 2573 A 2 5570 B 2 AK38 C 1 AK101 A 1 AK103 C 1 AK105 A 2
2571 B 1 3571 A 2 AK37 C 2 AK39 C 2 AK102 A 2 AK104 A 1



PCS 80 684


SCAVEM/PICTURE TILT (16:9)
CONTROL STAGE
POWER STAGE
(FROM SSP)
FBL-TXT
GND-SVM
Y-SVM
SVM_SEL
SCL-S
SDA-S
-15V-LOT
SUP-SVM
FIL-A
(FROM LSP)
SECAM NOTCH #
7.2 MHz
8.8 MHz
7810 MC1496
DIFFERENTIATOR
7830 MC1496
CLIPPER
SUP-SVM-A
TO SCAVEM COIL
-15V-LOT-A
-15V-LOT-B
V1
V4
V5

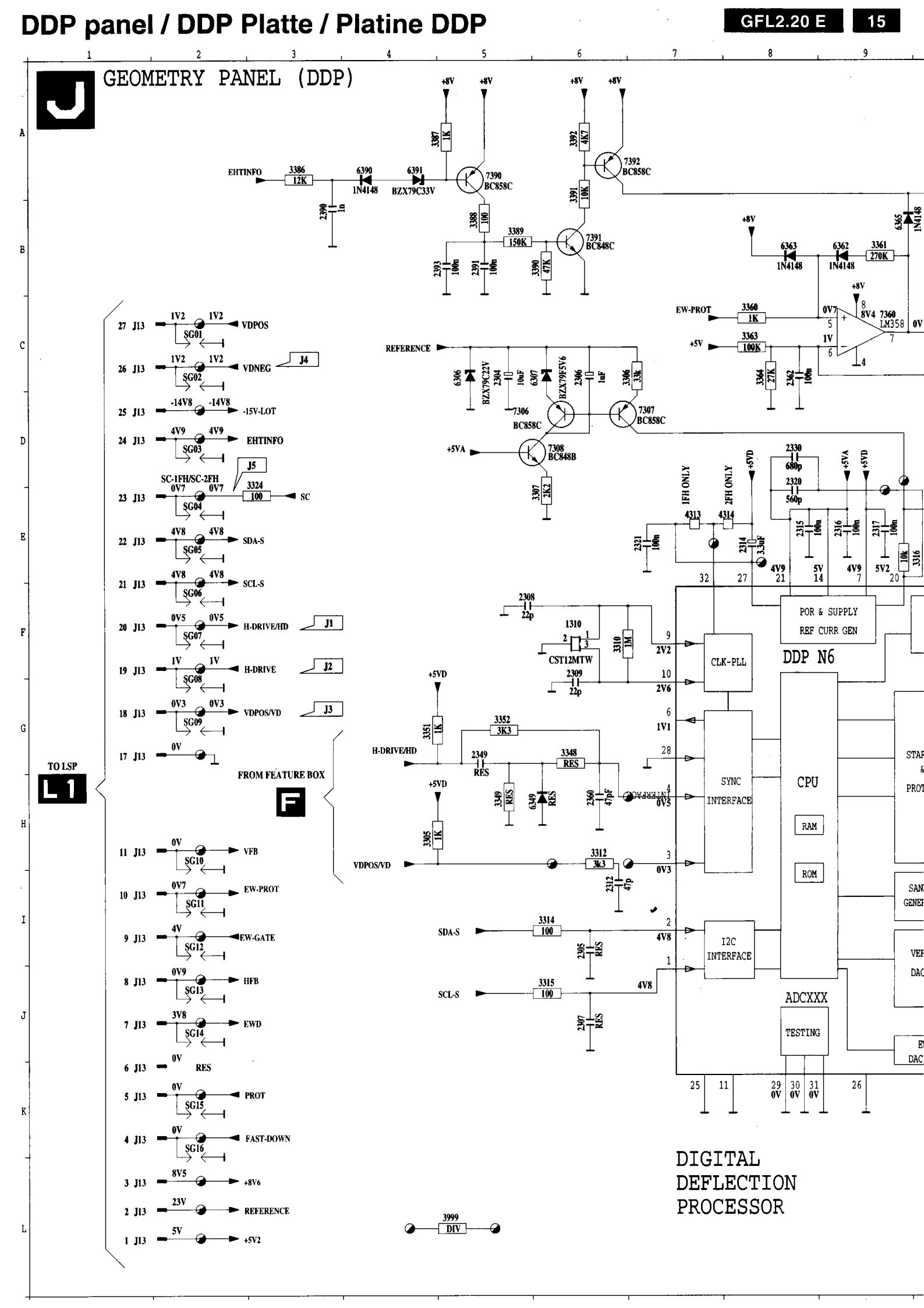
SCAVEM amplifier (+ picture rotation 16:9)

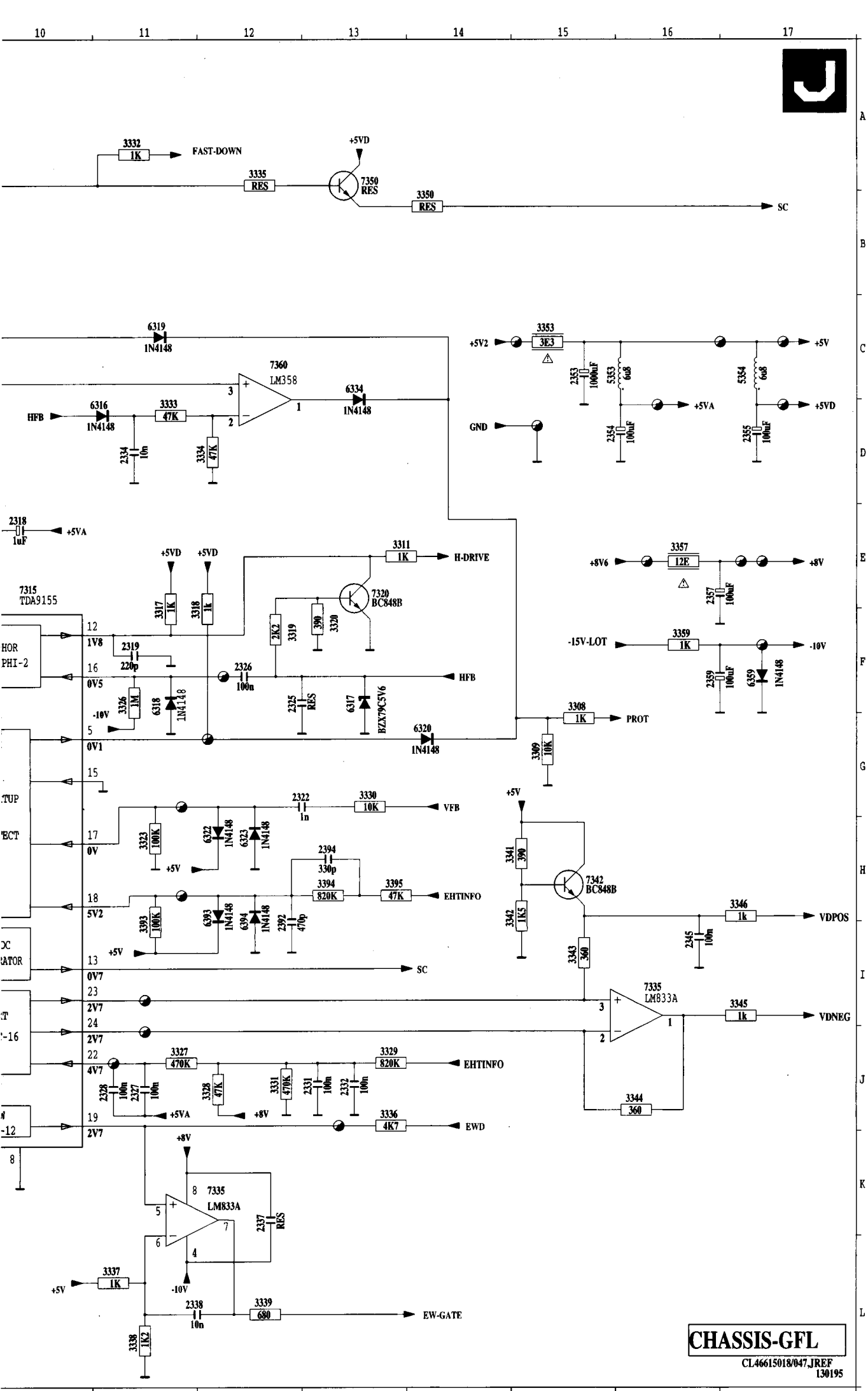


#	DIVERSITYLIST	
POSITION NUMBER	EUROPE (excl. France)	FRANCE
2680	—	22uF
2806	—	27pF
2807	—	47uF
2816	270pF	180pF
2856	100pF	82pF
3680	—	10k
3681	—	10k
3682	—	560
3806	—	560
3807	—	120
3816	22	33
4600	no	yes
5806	—	15uH
5807	—	6.8uH
6680	—	IN4148
7682	—	BC848B

OR FRANCE

GEOMETRY PANEL (DDP)



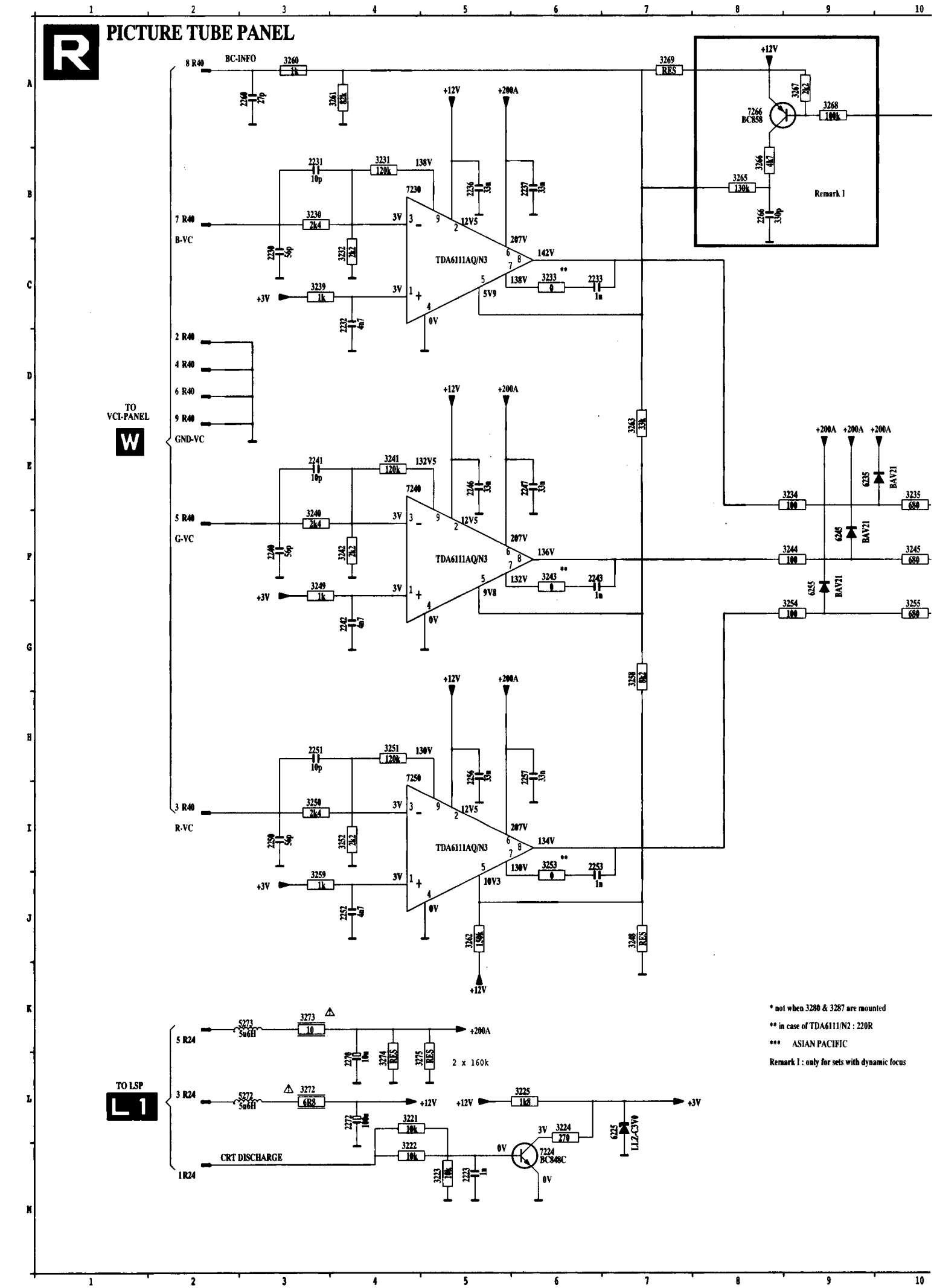


1310 F 6
2304 C 5
2307 J 6
2308 F 5
2309 F 6
2312 I 6
2314 E 8
2315 E 8
2316 E 9
2317 E 9
2318 E10
2319 F11
2320 D 8
2321 E 7
2322 G13
2325 F12
2326 F12
2327 J11
2328 J11
2330 D 8
2331 J13
2332 J13
2334 D11
2337 K12
2338 L11
2345 I16
2349 G 5
2353 C15
2354 D15
2355 D17
2357 E16
2359 F16
2360 H 6
2362 C 8
2390 B 3
2391 B 5
2392 H12
2393 B 5
2394 H13
3305 H 4
3306 C 7
3307 E 6
3308 F15
3309 G15
3310 F 6
3311 B13
3312 H 6
3314 I 6
3315 J 6
3316 E10
3317 E11
3318 E12
3319 F12
3320 F13
3323 H11
3324 E 3
3326 F11
3327 J11
3328 J12
3329 J13
3330 G13
3331 J12
3332 A11
3333 D11
3334 D12
3335 A12
3336 J13
3337 L11
3338 L11
3339 L12
3341 H15
3342 H15
3343 I15
3344 J16
3345 I17
3346 H17
3348 G 6
3349 H 5
3350 B14
3321 G 4
3352 G 5
3353 C15
3357 E16
3359 F16
3360 C 8
3361 B 9
3363 C 8
3364 C 8
3386 A 3
3387 A 5
3388 B 5
3389 B 5
3390 B 6
3391 A 6
3392 A 6
3393 H11
3394 H13
3395 H13
3999 I 5
4313 E 7
4314 E 8
5353 C15
5354 C17
6306 C 5
6307 C 5
6316 D11
6317 F13
6318 F11
6319 C11
6320 G14
6322 H12
6323 H12
6334 C13
6349 H 6
6359 F17
6362 B 9
6363 B 8
6365 B 9
6390 A 4
6391 A 4

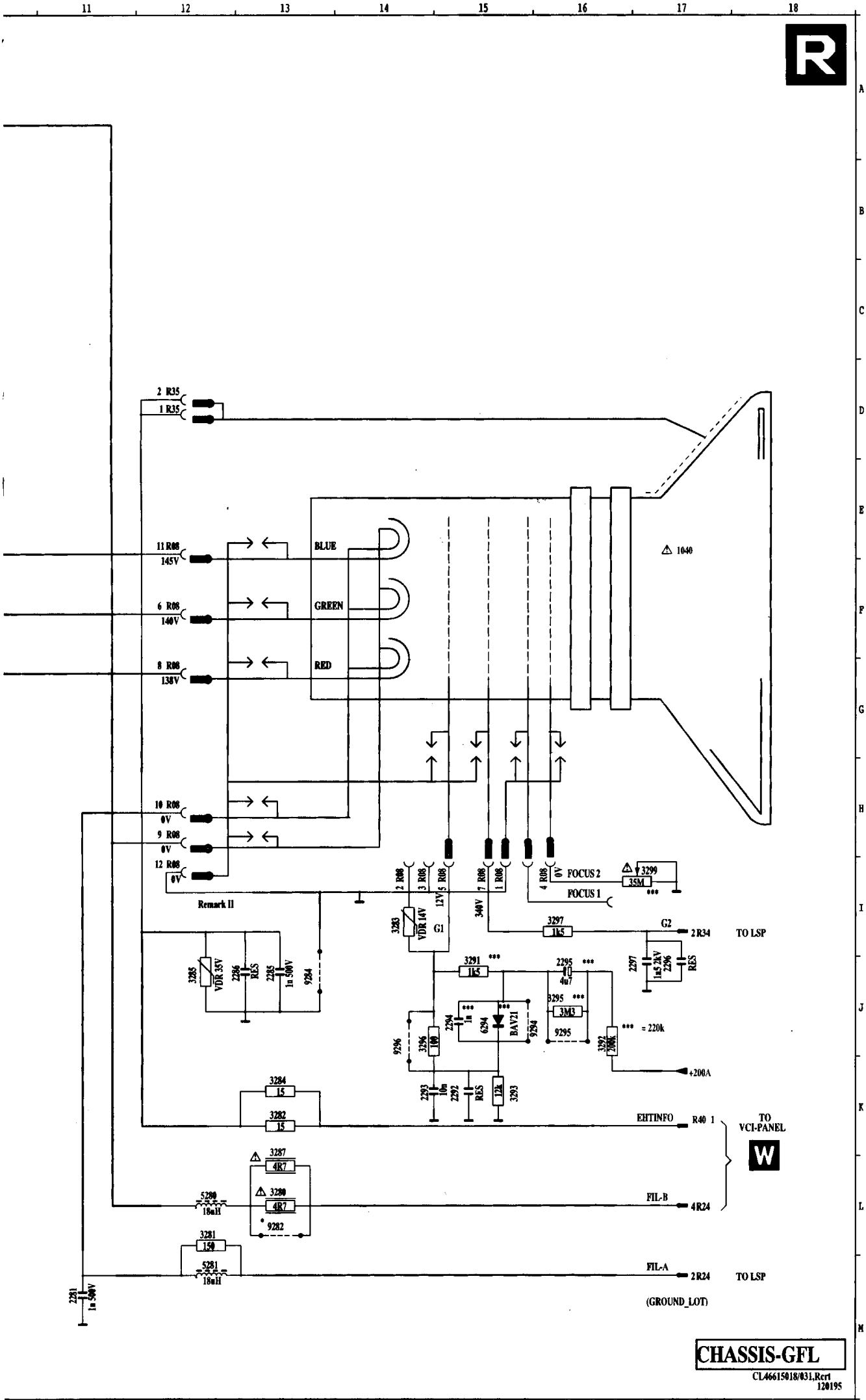
7306 D 5
7307 D 7
7308 D 6
7315 E10
7320 E13
7335 I16
7335 K12
7342 H15
7350 A13
7360 C12
7360 C 9
7390 A 5
7391 B 6
7392 A 6

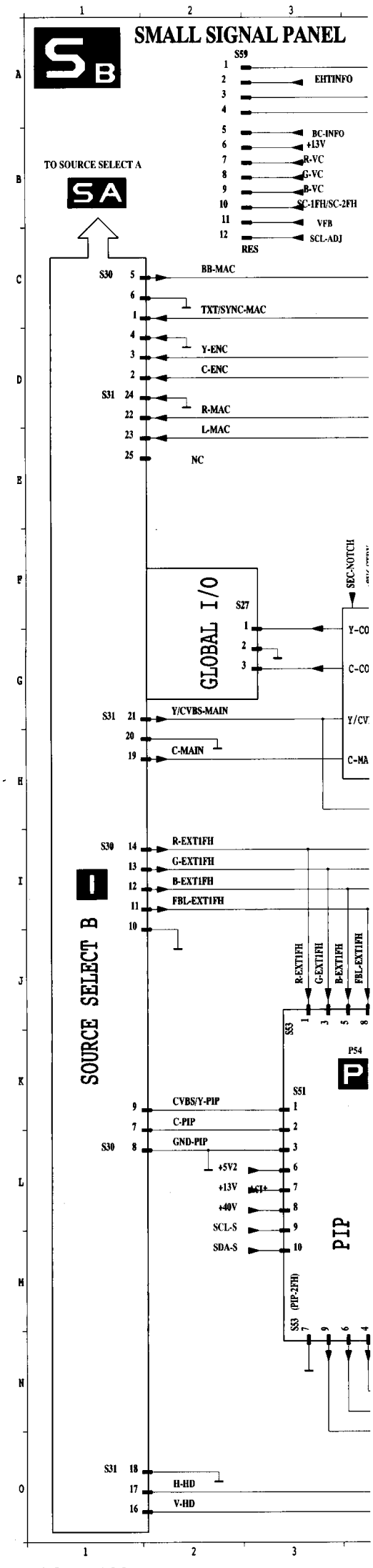
J13 L 1
J13 L 1
J13 L 1
J13 K 1
J13 K 1
J13 J 1
J13 J 1
J13 I 1
J13 I 1
J13 H 1
J13 G 1
J13 G 1
J13 F 1
J13 F 1
J13 E 1
J13 E 1
J13 D 1
J13 D 1
J13 C 1
J13 C 1
SG01 C 2
SG02 C 2
SG03 D 2
SG04 E 2
SG05 E 2
SG06 F 2
SG07 F 2
SG08 G 2
SG09 G 2
SG10 H 2
SG11 I 2
SG12 I 2
SG13 J 2
SG14 J 2
SG15 K 2
SG16 K 2

Picture tube panel / Bildröhren-Platte /



Platine de tube image




SB
SMALL SIGNAL PANEL
S59
1
2 EHTINFO
3
4
5 BC-INFO
6 +13V
7 R-VC
8 G-VC
9 B-VC
10 SC-1FH/SC-2FH
11 VFB
12 SCL-ADJ
RES
TO SOURCE SELECT A
SA
S30 5 BB-MAC
6
1 TXT/SYNC-MAC
4
3 Y-ENC
2 C-ENC
S31 24
22 R-MAC
23 L-MAC
25 NC
GLOBAL I/O
S27
1
2
3
SEC-NOTCH
Y-CO
C-CO
S31 21 Y/CVBS-MAIN
20
19 C-MAIN
Y/CV
C-MA
S30 14 R-EXT1FH
13 G-EXT1FH
12 B-EXT1FH
11 FBL-EXT1FH
10
I
SOURCE SELECT B
R-EXT1FH
G-EXT1FH
B-EXT1FH
FBL-EXT1FH
S53
1
3
5
8
P54
P
S51
9 CVBS/Y-PIP
7 C-PIP
S30 8 GND-PIP
+5V2
+13V
+40V
SCL-S
SDA-S
PIP
S53 (PIP-2FH)
7
9
6
4
S31 18
17 H-HD
16 V-HD

PCS 80 689

Block diagram SSP / Blockschaltbild SSP /

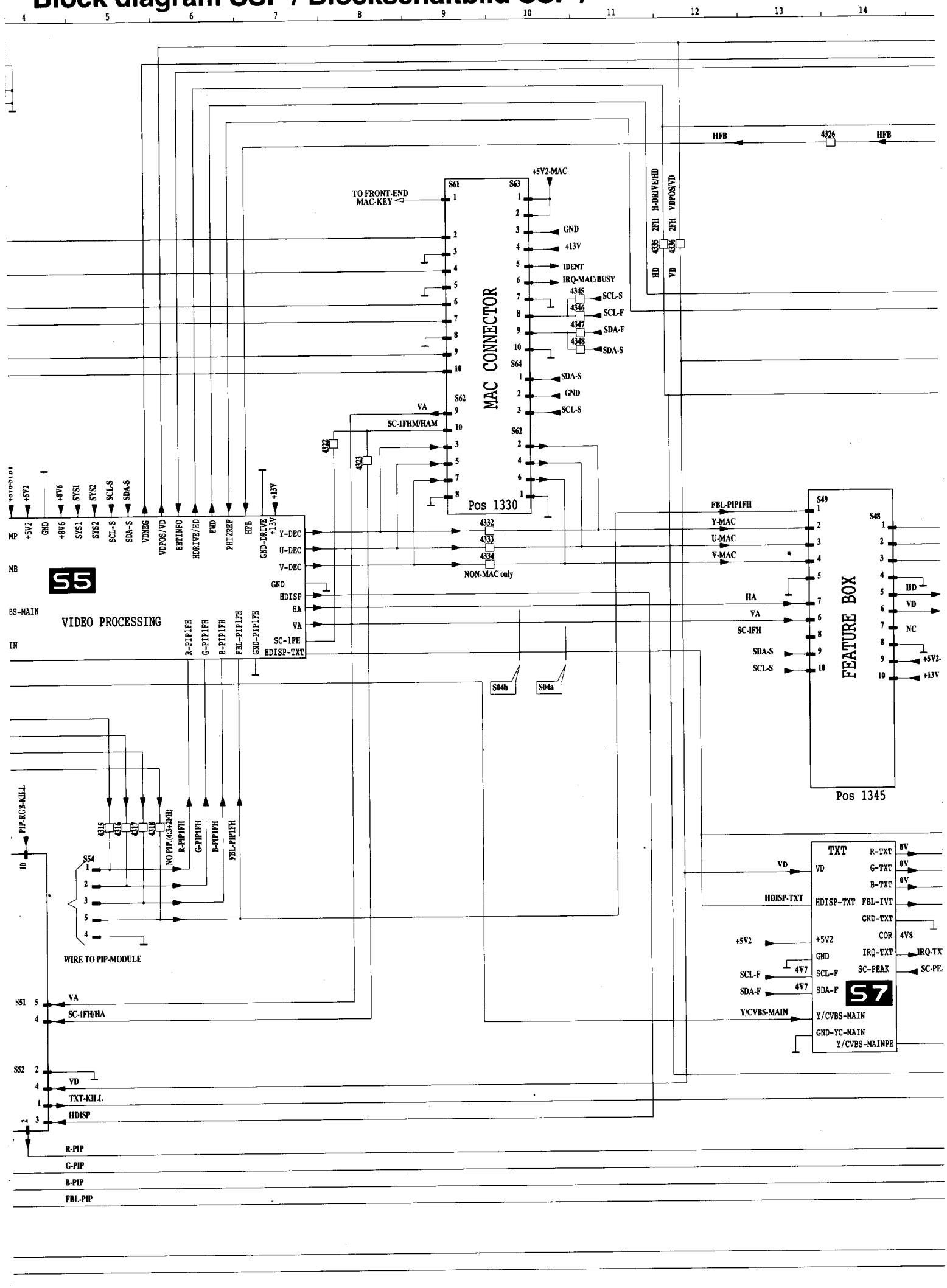
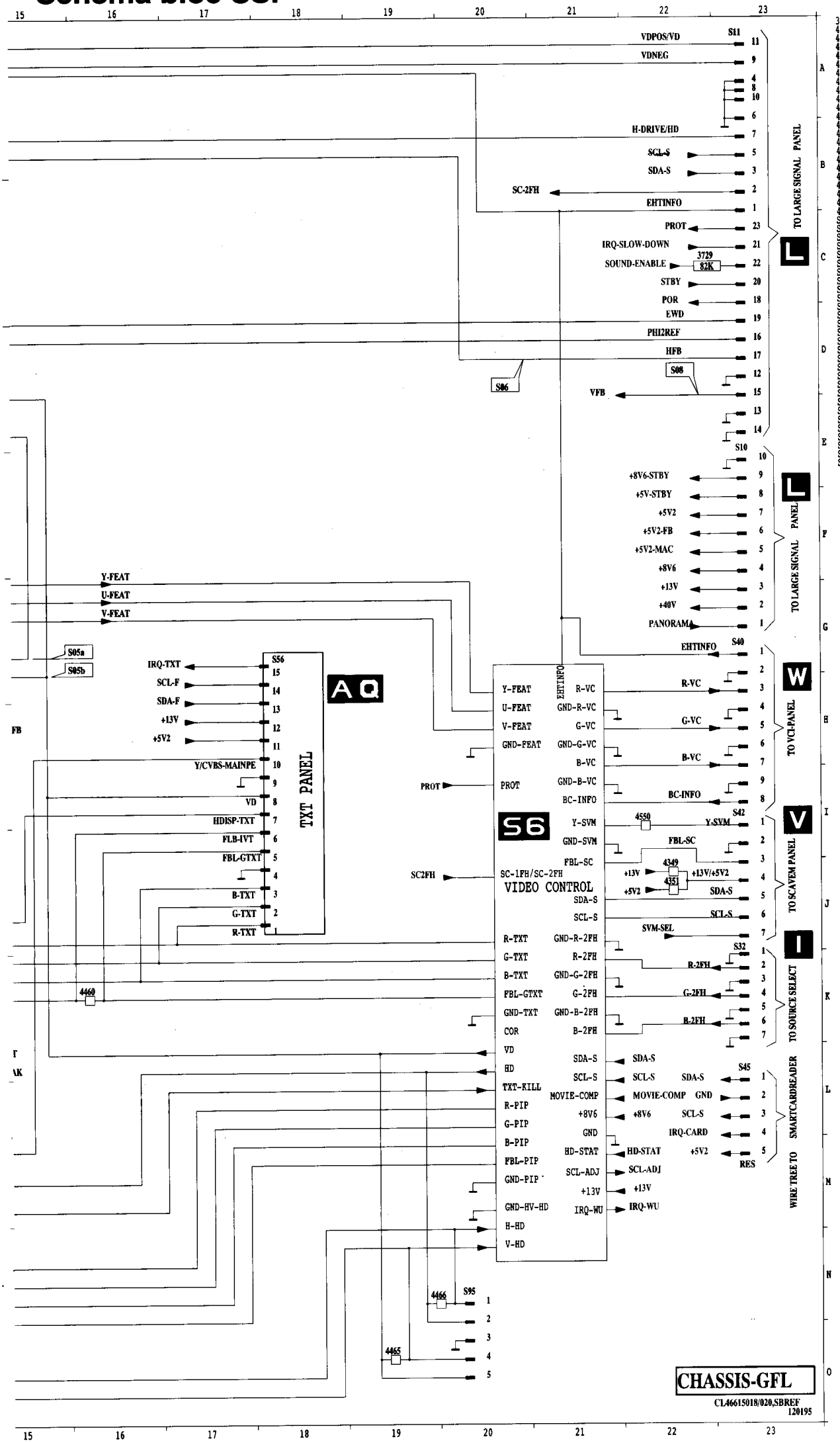
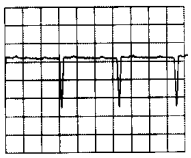


Schéma bloc SSP

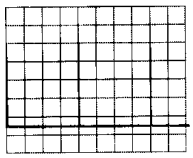


S3



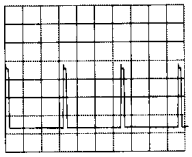
50mV/div
20µs/div

S4a



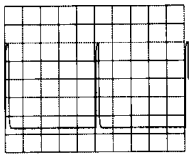
1V/div
5ms/div

S4b



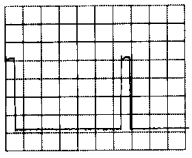
1V/div
20µs/div

S5a



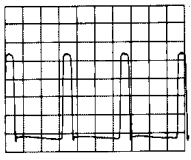
1V/div
2ms/div

S5b



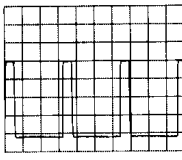
1V/div
5µs/div

S6



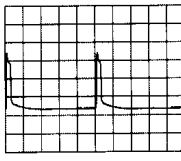
1V/div
10µs/div

S7

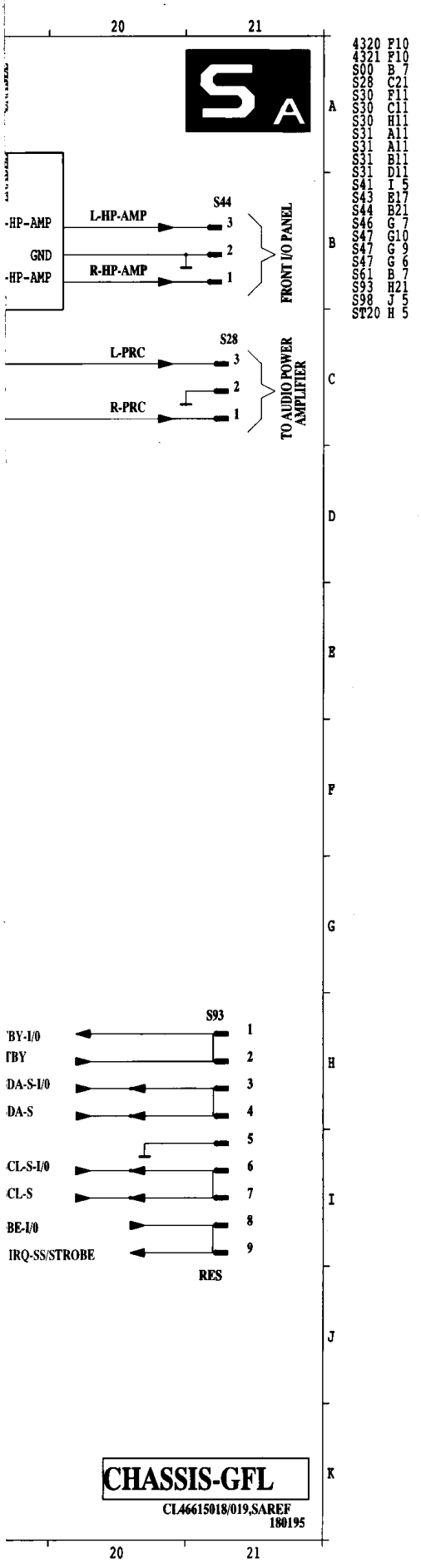


1V/div
10µs/div

S8



5V/div
2ms/div


20
21
SA
A
B
C
D
E
F
G
H
I
J
K
-HP-AMP
L-HP-AMP
GND
-HP-AMP
R-HP-AMP
S44
3
2
1
FRONT I/O PANEL
L-PRC
R-PRC
S28
3
2
1
TO AUDIO POWER AMPLIFIER
S93
'BY-I/0
'BY
DA-S-I/0
DA-S
CL-S-I/0
CL-S
BE-I/0
IRQ-SS/STROBE
1
2
3
4
5
6
7
8
9
RES
4320 F10
4321 F10
S00 B 7
S28 C21
S30 F11
S30 C11
S30 H11
S31 A11
S31 A11
S31 B11
S31 D11
S41 I 5
S43 E17
S44 B21
S46 G 7
S47 G10
S47 G 9
S47 G 6
S61 B 7
S93 H21
S98 J 5
ST20 H 5
CHASSIS-GFL
CL46615018/019,SAREF
180195
20
21

Block diagram SSP / Blockschaltbild SSP /

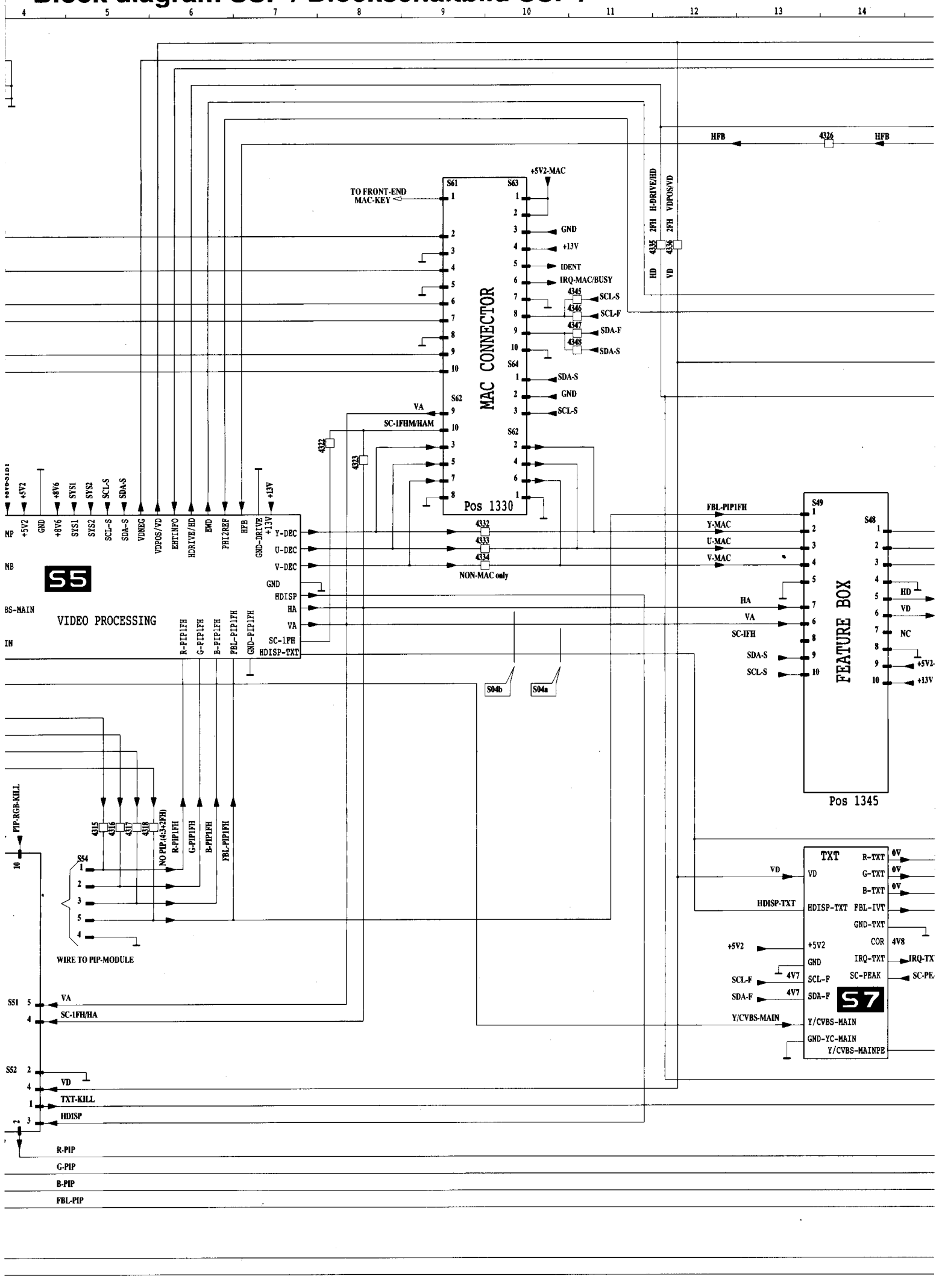
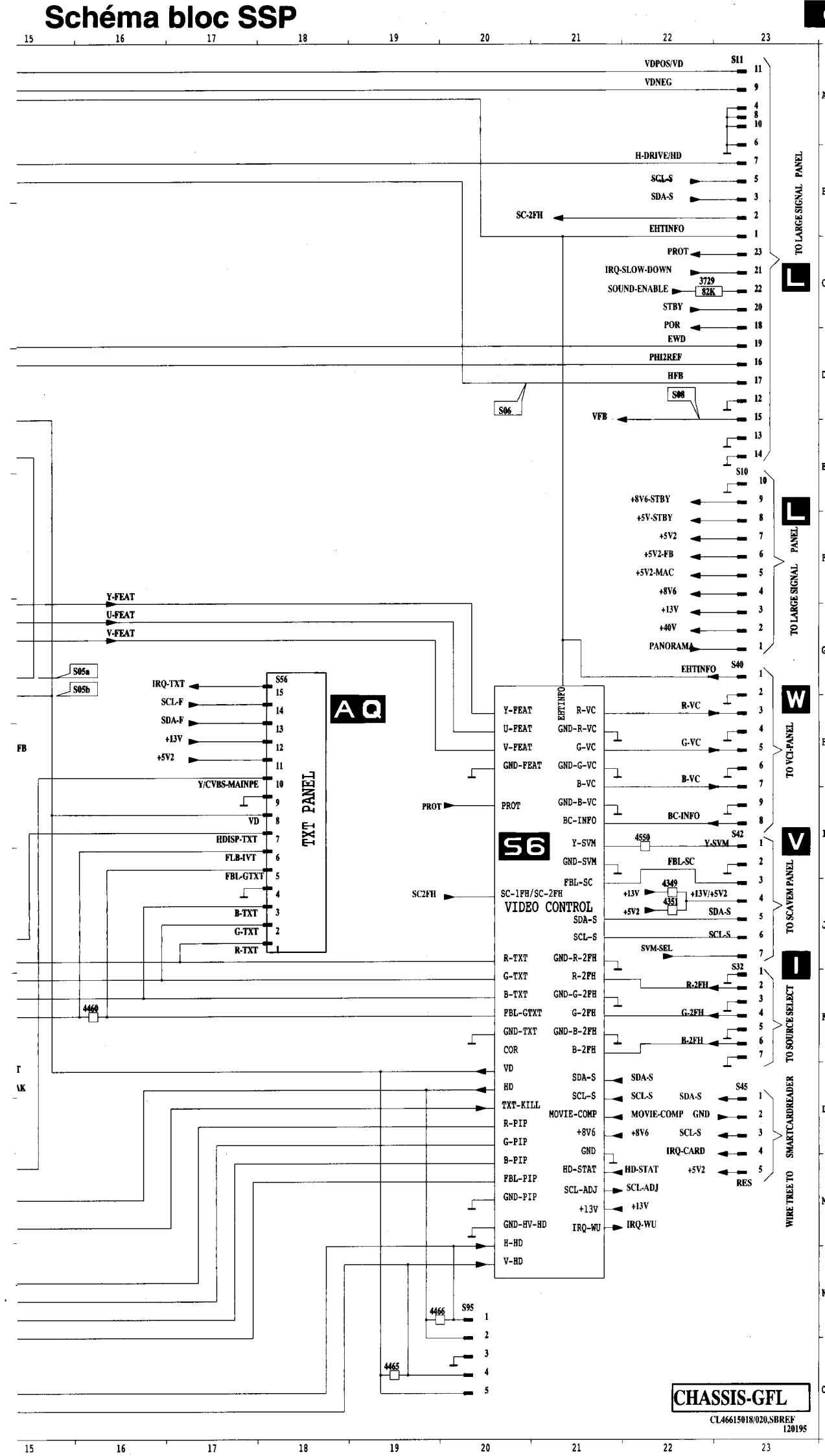
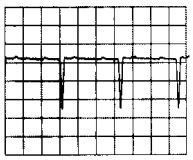


Schéma bloc SSP

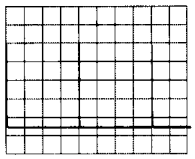


S3



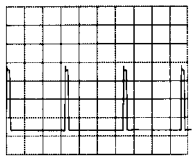
50mV/div
20µs/div

S4a



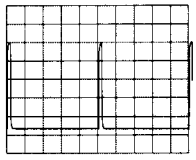
1V/div
5ms/div

S4b



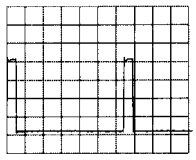
1V/div
20µs/div

S5a



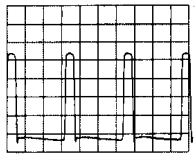
1V/div
2ms/div

S5b



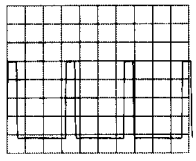
1V/div
5µs/div

S6



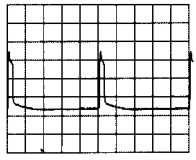
1V/div
10µs/div

S7

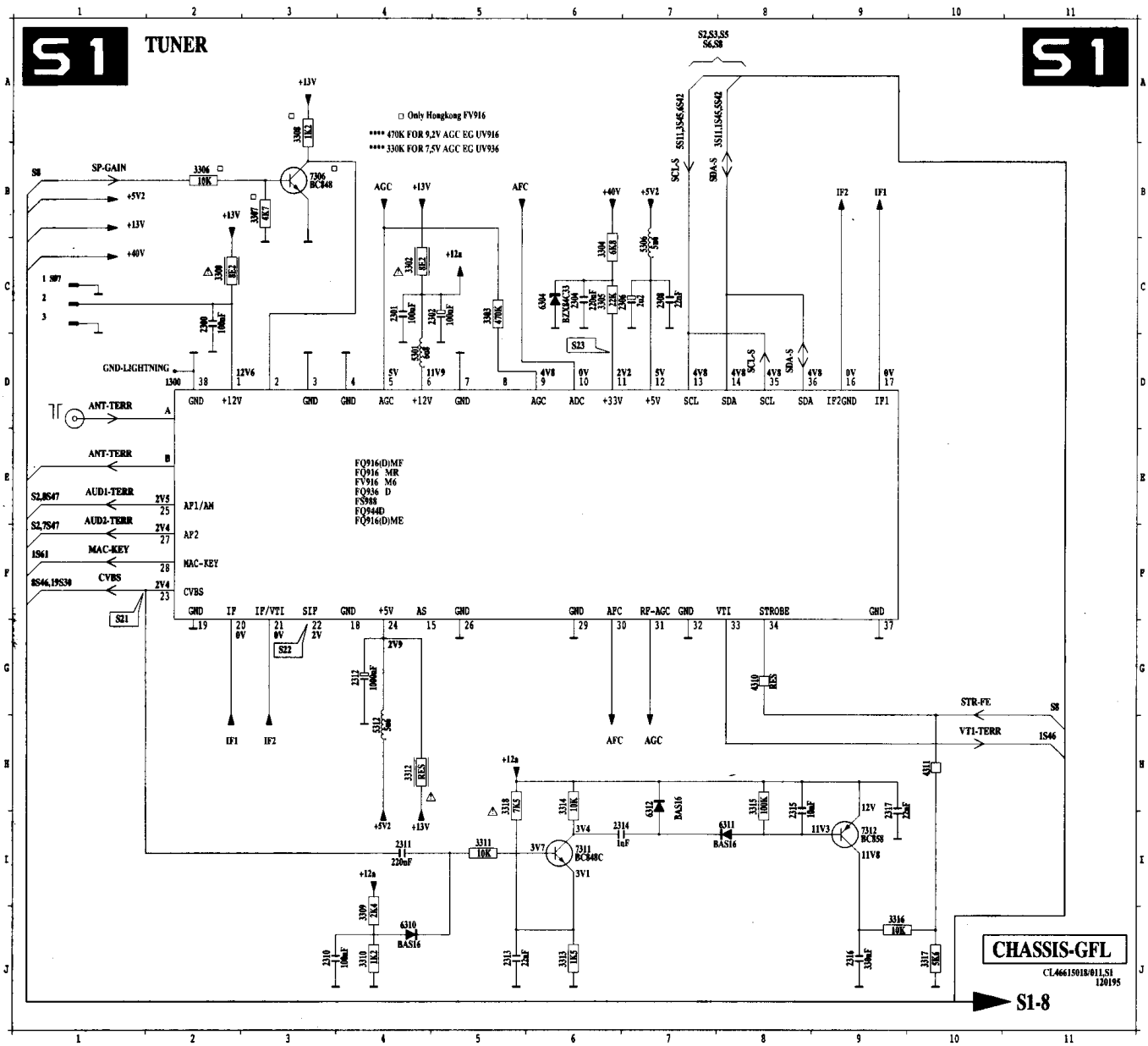


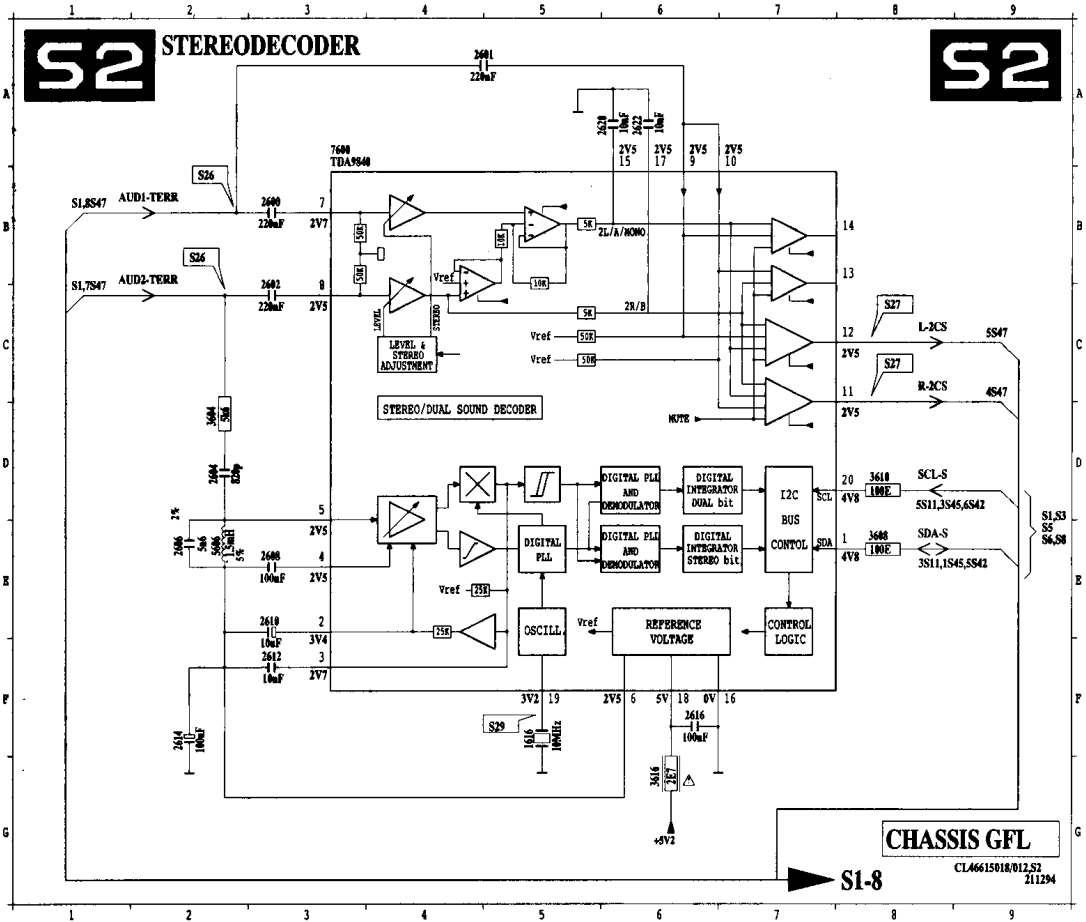
1V/div
10µs/div

S8

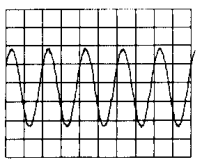


5V/div
2ms/div



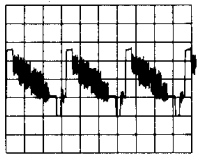


S26



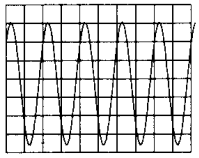
200mV/div
0.5ms/div

S21



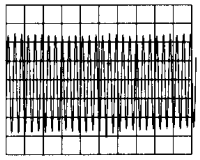
500mV/div
20µs/div

S27



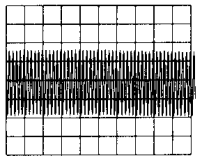
200mV/div
0.5ms/div

S22



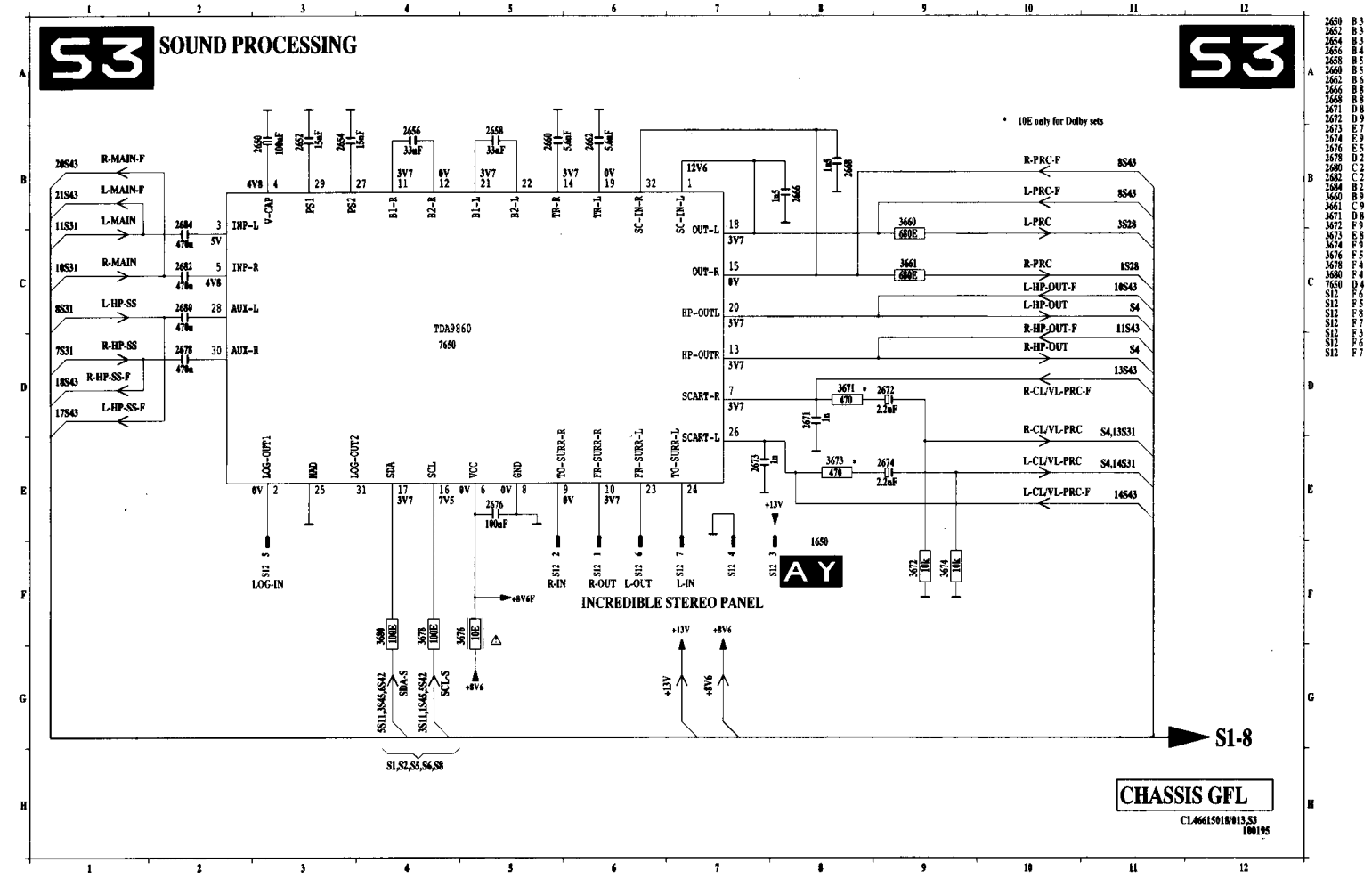
50mV/div
0.5µs/div

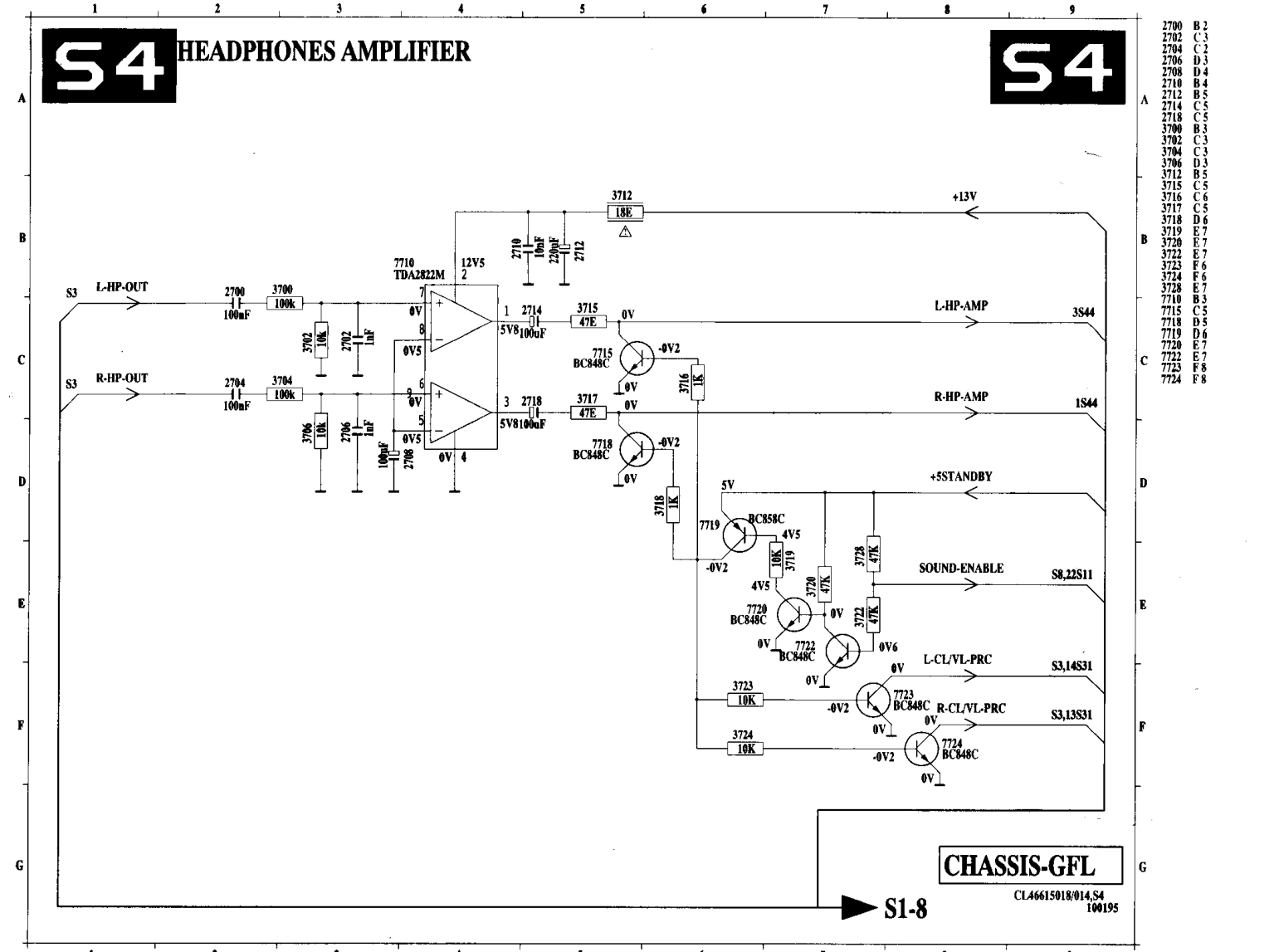
S29



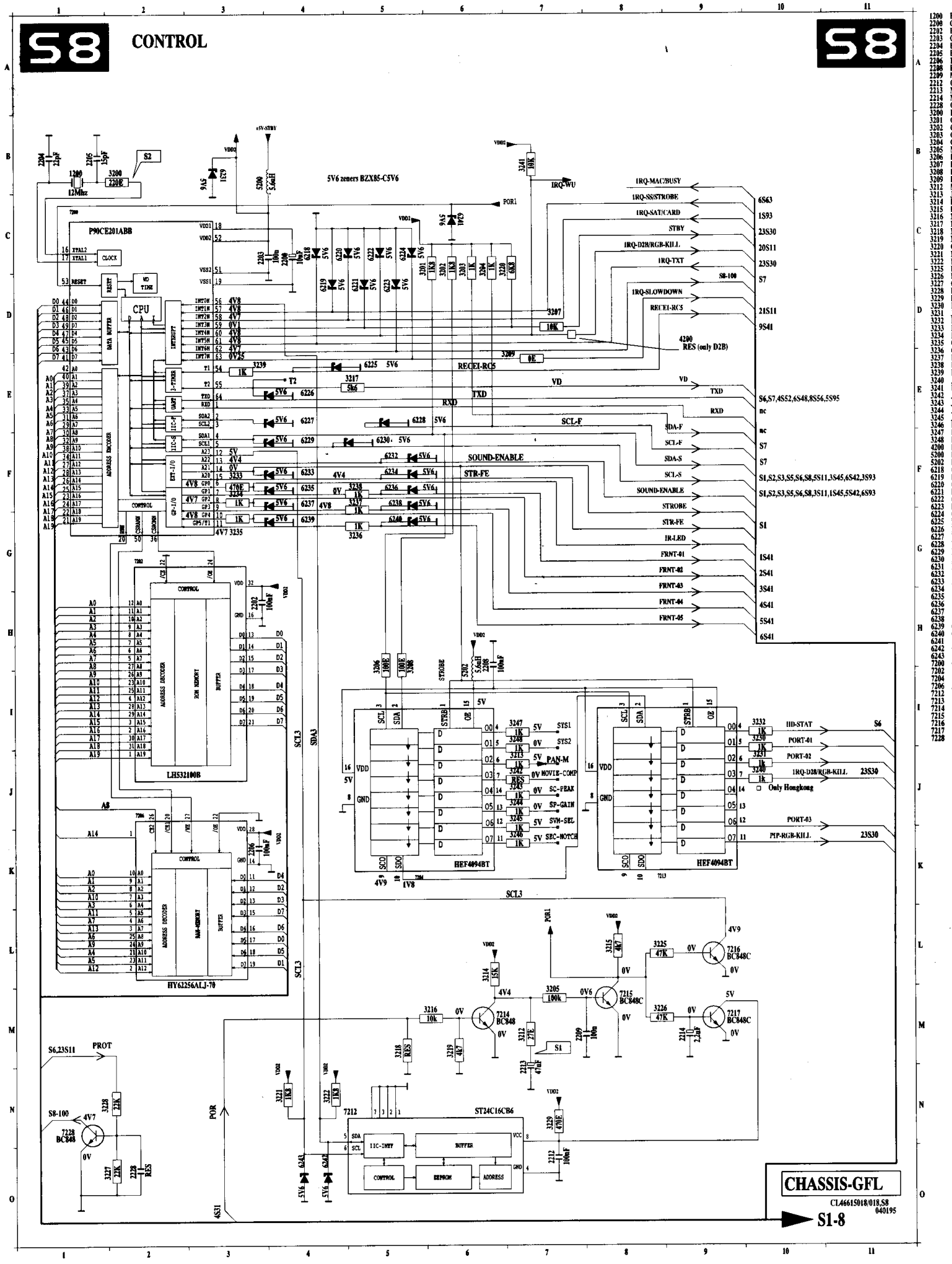
100mV/div
0.5µs/div

Sound processing / Tonsignal-Verarbeitung / Traitement audio

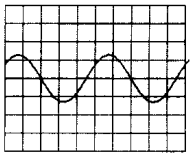




S8 CONTROL

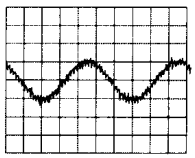

P90CE201ABB
CPU
CLOCK
RESET
WD TIME
DATA BUFFER
ADDRESS DECODER
INTERRUPT
3-TIMER
UART
IIC-F
IIC-S
EXT-I/O
GP-I/O
CONTROL
12Mhz
5V6 zeners BZX85-C5V6
IRQ-MAC/BUSY
IRQ-SS/STROBE
IRQ-SAT/CARD
STBY
IRQ-D2B/RGB-KILL
IRQ-TXT
S8-100
IRQ-SLOWDOWN
RECEI-RC5
RES (only D2B)
TXD
RXD
SCL-F
SDA-F
SCL-S
SDA-S
SOUND-ENABLE
STR-FE
STROBE
IR-LED
FRNT-01
FRNT-02
FRNT-03
FRNT-04
FRNT-05
LH532100B
HV62256ALJ-70
HEF4094BT
HD-STAT
PORT-01
PORT-02
PORT-03
1RQ-D2B/RGB-KILL
PIP-RGB-KILL
Only Hongkong
SCL3
SDA3
PROT
POR
ST24C16CB6
CHASSIS-GFL
CLA6615018/018.S8
040195
S1-8

S30



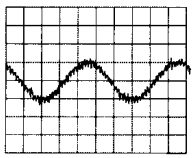
500mV/div
0.2ms/div

S31a



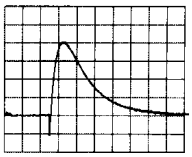
500mV/div
0.2ms/div

S31b



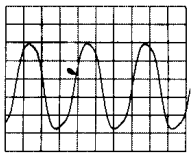
500mV/div
0.2ms/div

S1



200mV/div
0.5s/div

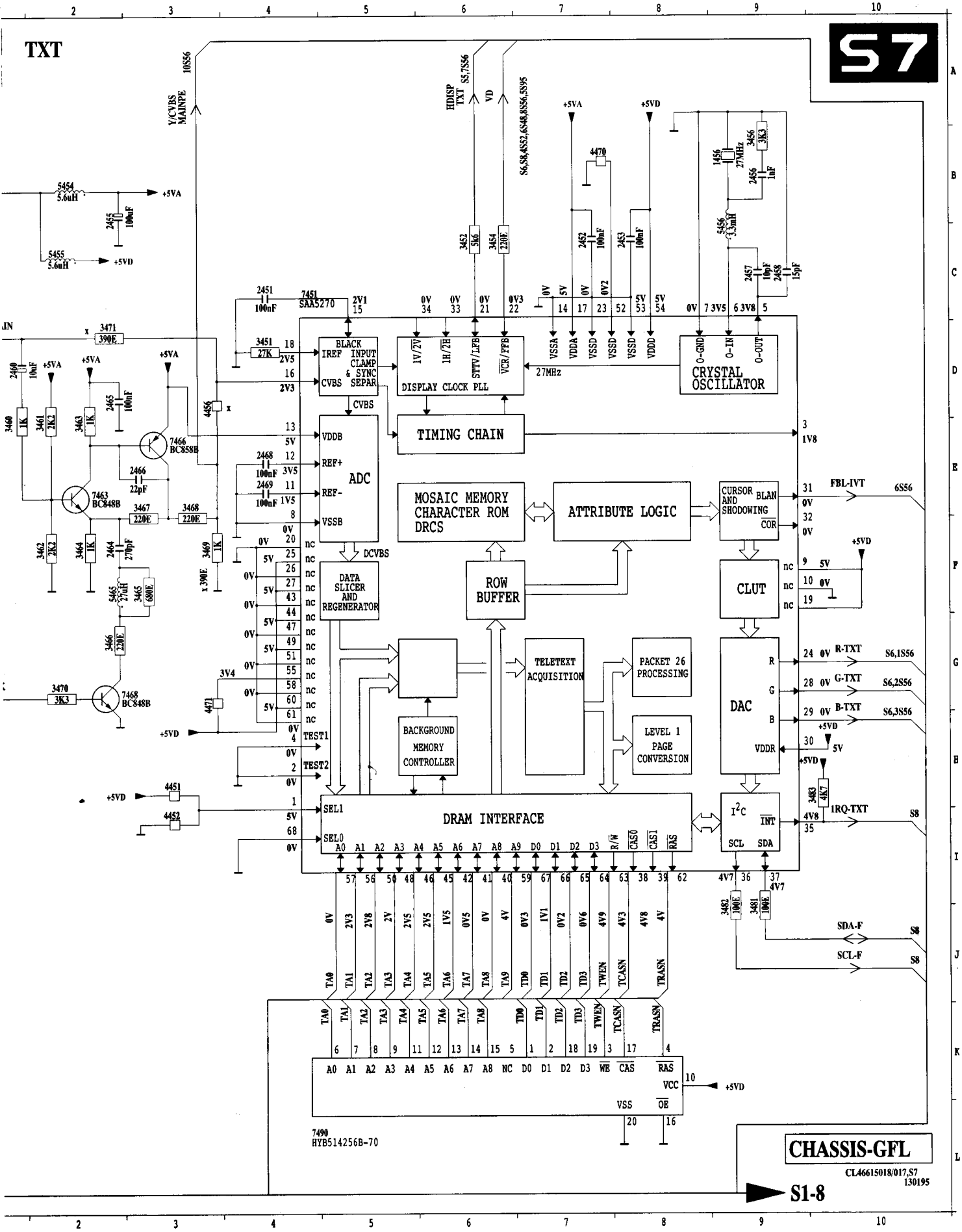
S2



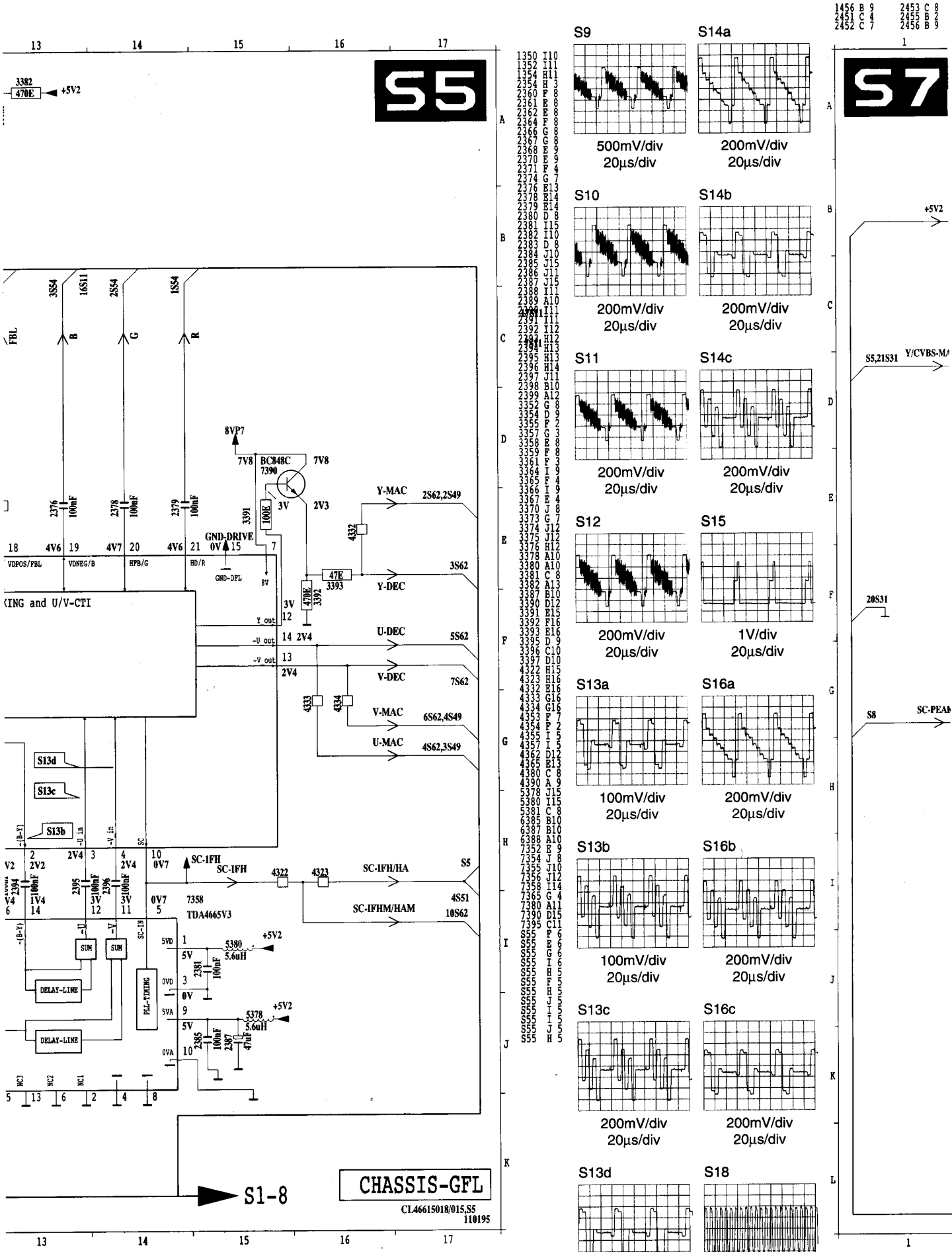
1V/div
0.2ms/div

Teletext (SSP) / Videotext Dekoder (SSP) / Decodeur Teletexte (SSP)

2457 C 9 2458 C 9 2460 D 1 | 2464 F 2 2465 D 2 2466 E 3 | 2468 E 4 2469 E 4 3451 D 4 | 3452 C 6 3454 C 6 3456 B 9 | 3460 D 1 3461 D 2 3462 F 2 | 3463 D 2 3464 F 2 3465 F 3 | 3466 G 2 3467 E 3 3468 E 3 | 3469 F 3 3470 G 2 3471 D 2 | 3481 I 9 3482 I 9 3483 H10 | 4451 H 3 4452 I 3 4456 D 3 | 4470 B 7 4471 G 3 5454 B 2 | 5455 C 2 5456 B 9 5465 F 2 | 7451 C 4 7463 E 2 7466 E 3 | 7468 G 2 7490 L 4



Traitement vidéo



S9
500mV/div
20µs/div

S14a
200mV/div
20µs/div

S10
200mV/div
20µs/div

S14b
200mV/div
20µs/div

S11
200mV/div
20µs/div

S14c
200mV/div
20µs/div

S12
200mV/div
20µs/div

S15
1V/div
20µs/div

S13a
100mV/div
20µs/div

S16a
200mV/div
20µs/div

S13b
100mV/div
20µs/div

S16b
200mV/div
20µs/div

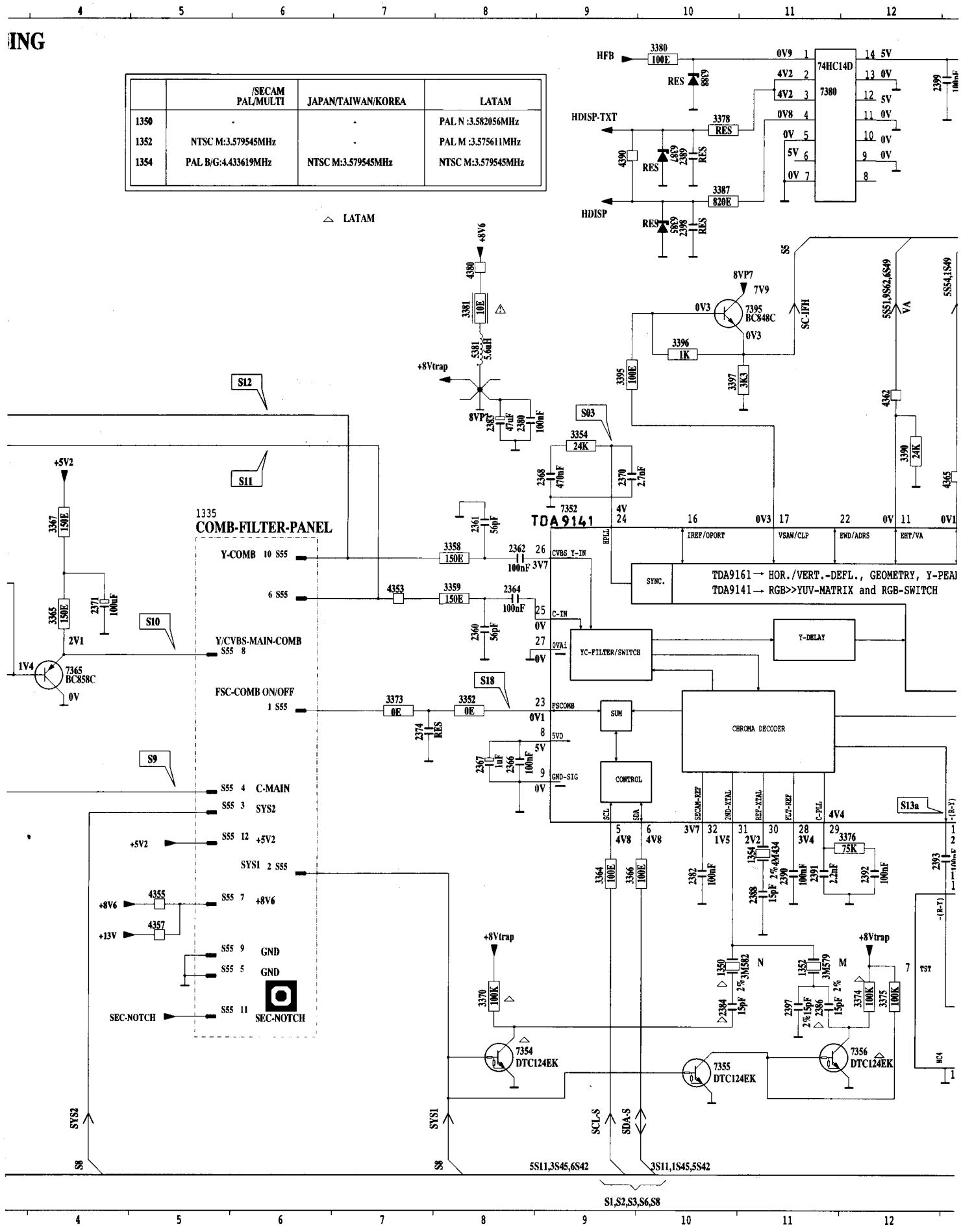
S13c
200mV/div
20µs/div

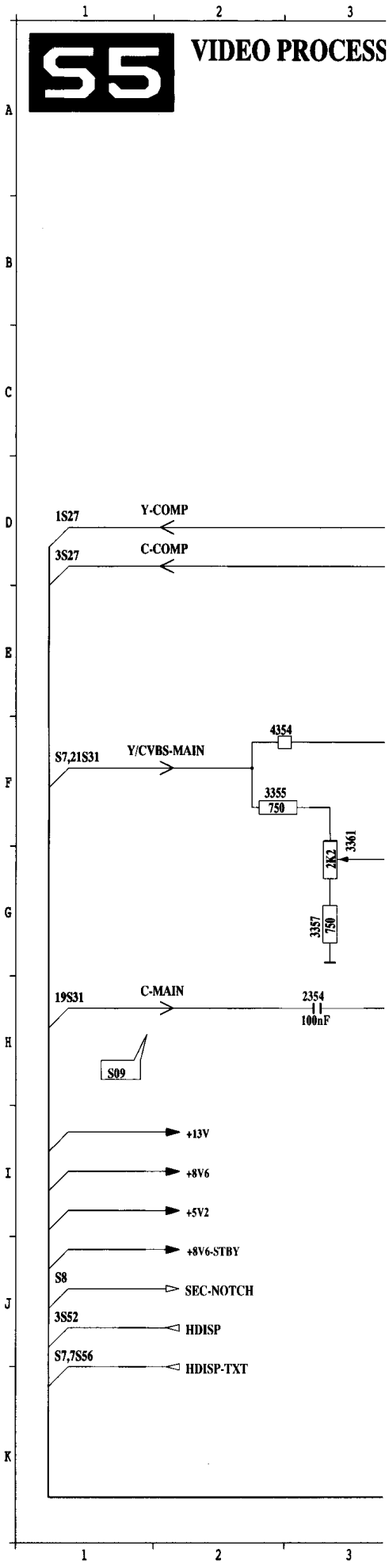
S16c
200mV/div
20µs/div

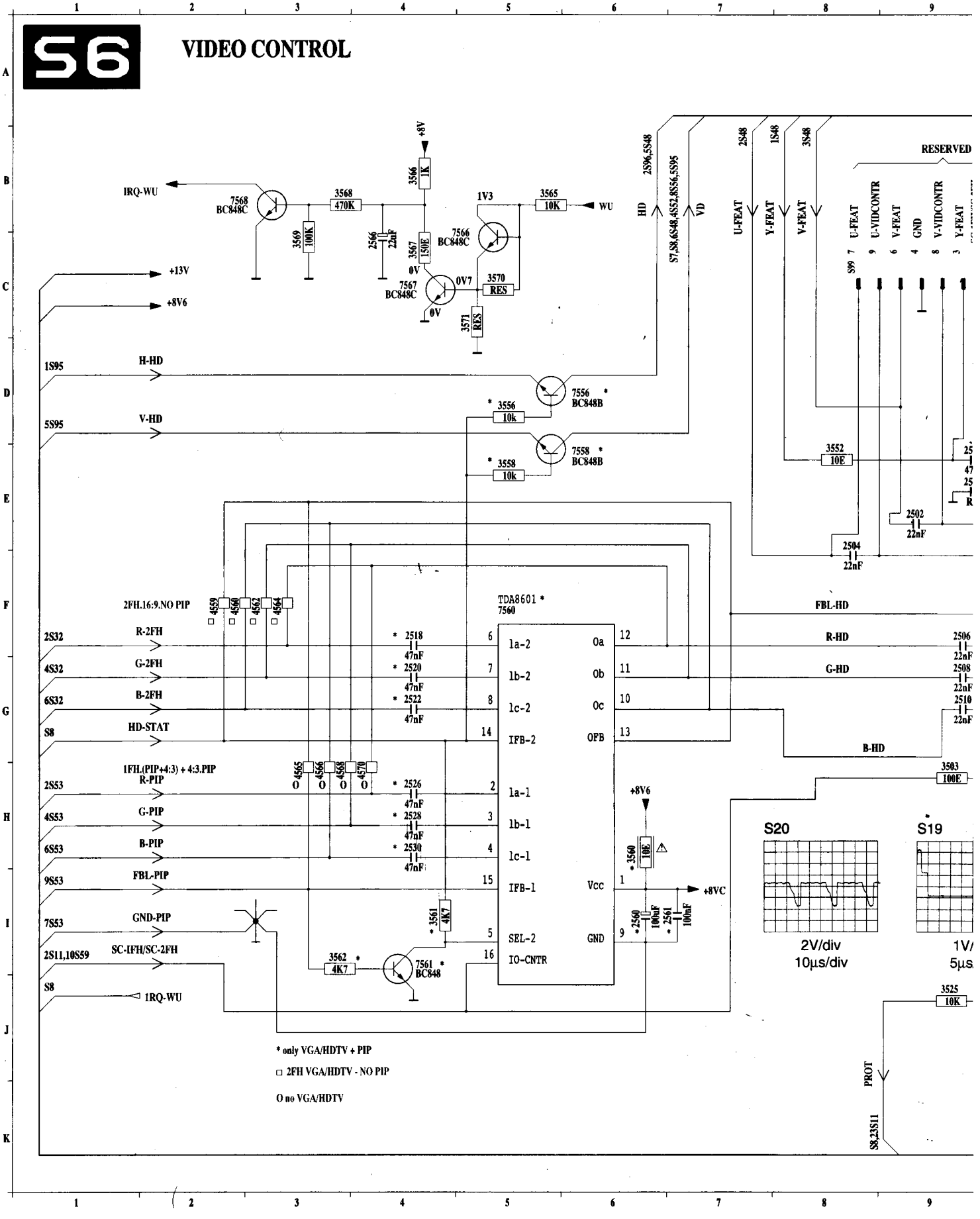
S13d
200mV/div
20µs/div

S18
50mV/div+4VDC
0.5µs/div

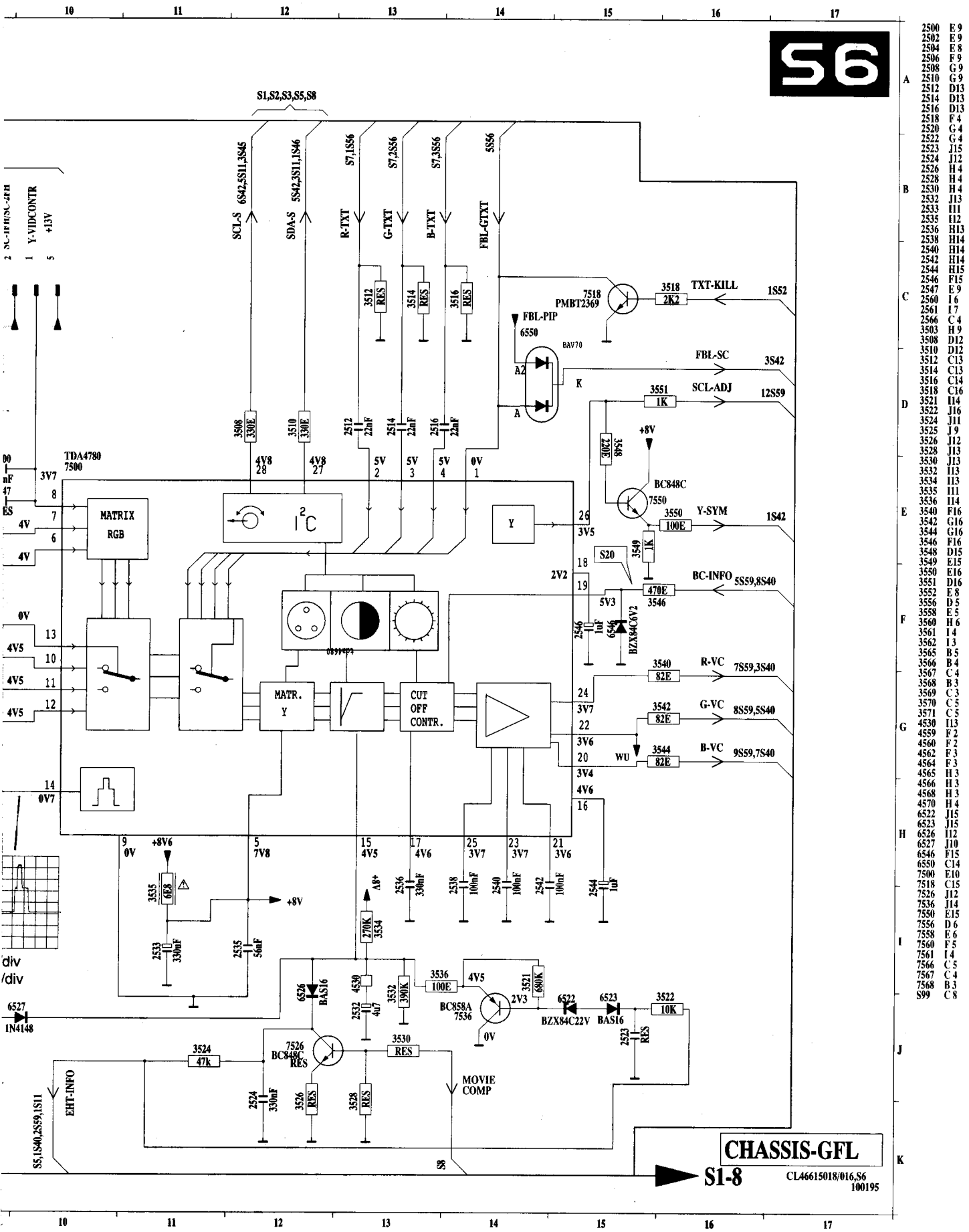
Video processing / Videosignal-Verarbeitung /



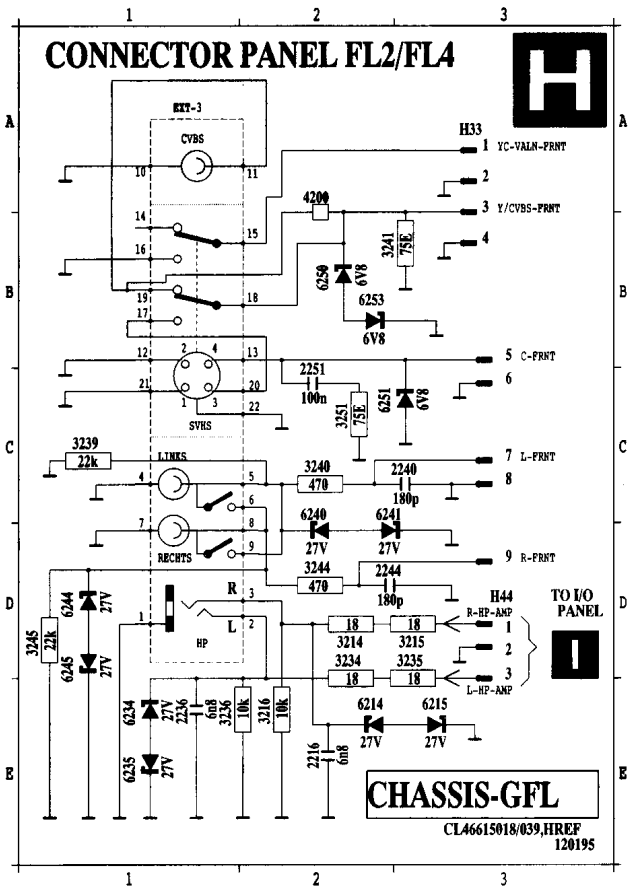

1
2
3
S5
VIDEO PROCESS
A
B
C
D
E
F
G
H
I
J
K
1S27
Y-COMP
3S27
C-COMP
4354
S7,21S31
Y/CVBS-MAIN
3355
750
2K2
3361
3357
750
19S31
C-MAIN
2354
100nF
S09
+13V
+8V6
+5V2
+8V6-STBY
S8
SEC-NOTCH
3S52
HDISP
S7,7S56
HDISP-TXT
1
2
3


S6
VIDEO CONTROL
IRQ-WU
7568 BC848C
3568 470K
3569 100K
2566 22nF
3567 150E
3566 1K
+8V
1V3
3565 10K
WU
7566 BC848C
7567 BC848C
3570 RES
3571 RES
0V
0V7
+13V
+8V6
HD 2S96,5S48
VD S7,S8,6S48,4S52,4S56,5S95
U-FEAT 2S48
V-FEAT 1S48
V-FEAT 3S48
RESERVED
S99 7 U-FEAT
9 U-VIDCONTR
6 V-FEAT
4 GND
8 V-VIDCONTR
3 Y-FEAT
1S95 H-HD
5S95 V-HD
7556 BC848B
7558 BC848B
3556 10k
3558 10k
3552 10E
2502 22nF
2504 22nF
2FH.16:9.NO PIP
4559 4560 4562 4564
TDA8601 * 7560
2S32 R-2FH
4S32 G-2FH
6S32 B-2FH
S8 HD-STAT
2518 47nF
2520 47nF
2522 47nF
la-2 Oa
lb-2 Ob
lc-2 Oc
IFB-2 OFB
la-1
lb-1
lc-1
IFB-1 Vcc
SEL-2 GND
IO-CNTR
FBL-HD
R-HD
G-HD
B-HD
2506 22nF
2508 22nF
2510 22nF
1FH.(PIP+4:3) + 4:3.PIP
2S53 R-PIP
4S53 G-PIP
6S53 B-PIP
9S53 FBL-PIP
7S53 GND-PIP
2S11,10S59 SC-IFH/SC-2FH
S8 1RQ-WU
4565 4566 4568 4570
2526 47nF
2528 47nF
2530 47nF
3561 4K7
3562 4K7
7561 BC848
3560 10E
2560 100nF
2561 100nF
+8VC
3503 100E
S20
S19
2V/div
10µs/div
1V/
5µs
3525 10K
PROT
S8,23S11
* only VGA/HDTV + PIP
□ 2FH VGA/HDTV - NO PIP
O no VGA/HDTV

Traitement Vidéo RGB



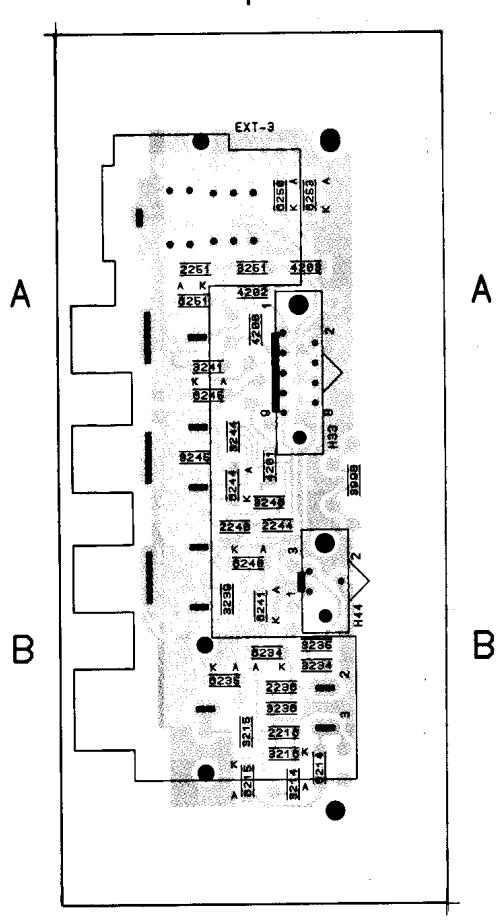
Connector panel / Connector Platte / Platine connector



2216 E 2
2236 E 1
2240 C 3
2244 D 2
2251 C 2
3214 D 2
3215 D 3
3216 E 2
3234 D 2
3235 D 3
3236 E 1
3239 C 1
3240 C 2
3241 B 2
3244 D 2
3245 D 1
3251 C 2
4200 A 2
6214 E 2
6215 E 3
6234 E 1
6235 E 1
6240 C 2
6241 C 2
6244 D 1
6245 D 1
6250 B 2
6251 C 2
6253 B 2
EXT-3A 1
H33 A 3
H44 E 3

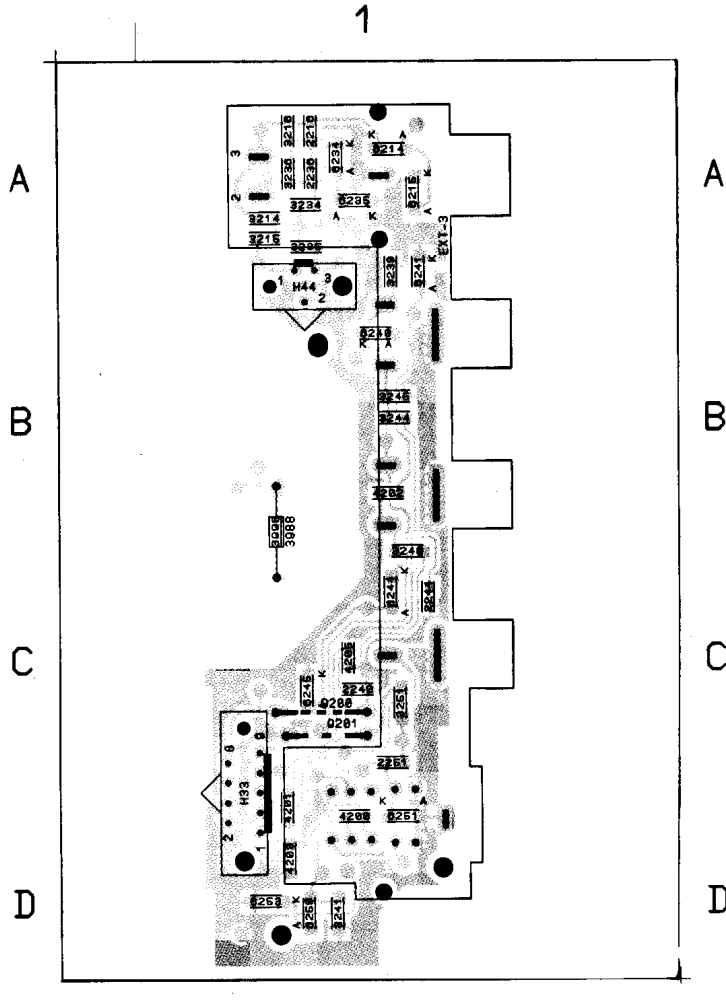
Connector panel FL4

2216 B 1
2236 B 1
2240 B 1
2244 B 1
2251 A 1
3214 B 1
3215 B 1
3216 B 1
3234 B 1
3235 B 1
3236 B 1
3239 B 1
3240 B 1
3241 A 1
3244 A 1
3245 A 1
3251 A 1
3988 B 1
4200 A 1
4201 A 1
4202 A 1
4203 A 1
6214 B 1
6215 B 1
6234 B 1
6235 B 1
6240 B 1
6241 B 1
6244 B 1
6245 A 1
6250 A 1
6251 A 1
6253 A 1
EXT-3 B 1
H33 A 1
H44 B 1



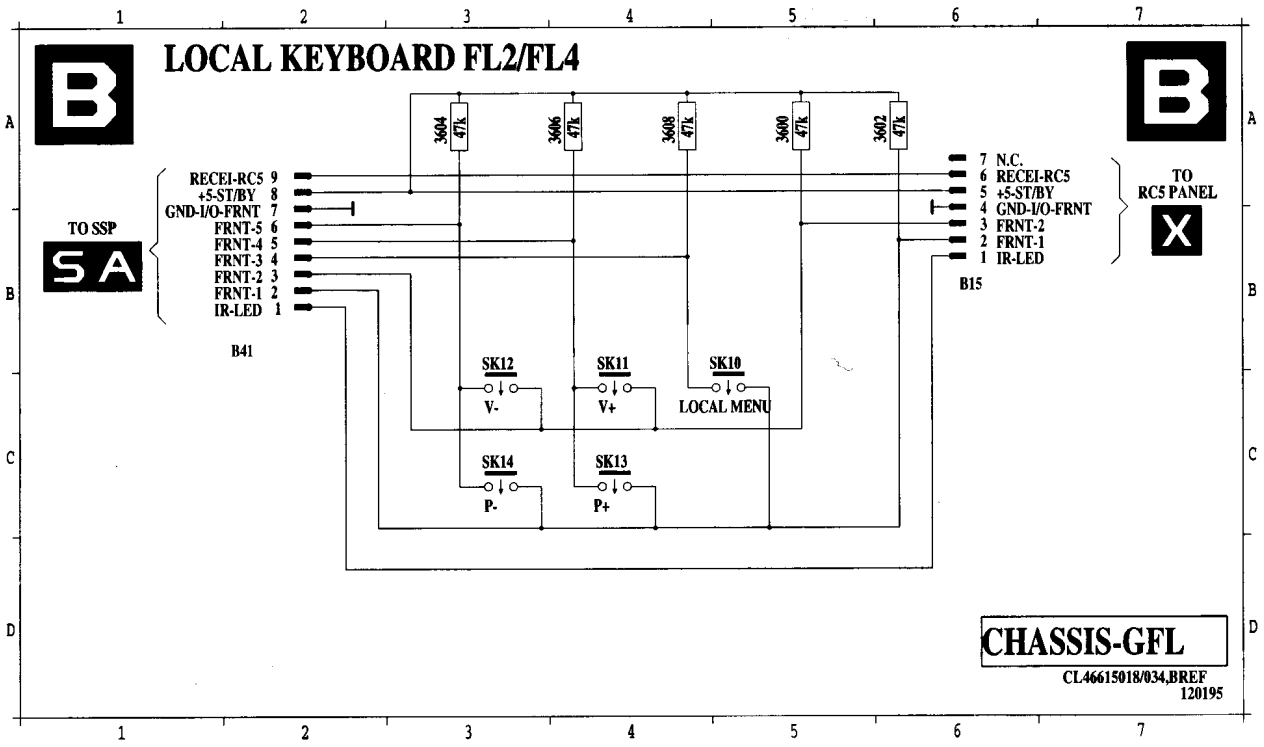
Connector panel FL2

2216 A 1
2236 A 1
2240 C 1
2244 C 1
2251 C 1
3214 A 1
3215 A 1
3216 A 1
3234 A 1
3235 A 1
3236 A 1
3239 A 1
3240 C 1
3241 D 1
3244 B 1
3245 B 1
3251 C 1
3988 B 1
4200 D 1
4201 D 1
4202 B 1
4203 D 1
6214 A 1
6215 A 1
6234 A 1
6235 A 1
6240 B 1
6241 A 1
6244 C 1
6245 C 1
6250 D 1
6251 D 1
6253 D 1
9200 C 1
9201 C 1
EXT-3 A 1
H33 C 1
H44 A 1

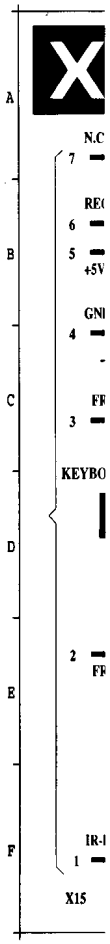


Keyboard panel / Keyboard Platte / Platine keyboard

3600 A 5 3602 A 6 | 3604 A 3 3606 A 4 | 3608 A 4 B15 B 6 | B41 B 2 SK10 B 5 | SK11 B 4 SK12 B 3 | SK13 C 4 SK14 C 3

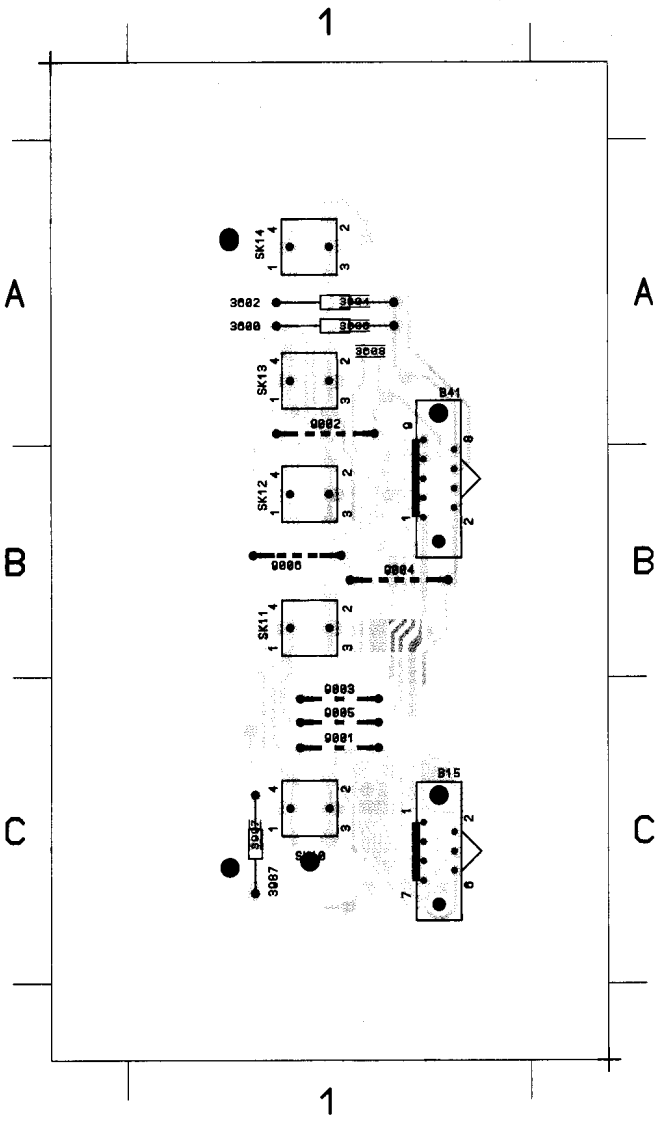


0022 D 3
1100 A 6
1101 A 6



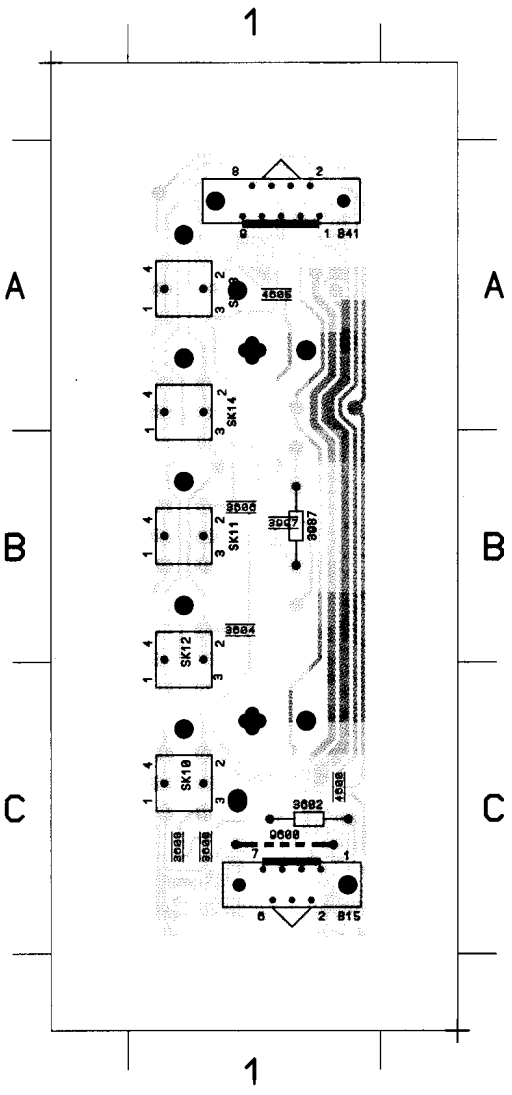
Keyboard FL2

3600 A 1 3602 A 1 3604 A 1 | 3606 A 1 3608 A 1 3607 C 1 | 3997 C 1 9001 C 1 9002 A 1 | 9003 C 1 9004 B 1 9005 C 1 | 9006 B 1 B15 C 1 B41 B 1 | SK10 C 1 SK11 B 1 SK12 B 1 | SK13 A 1 SK14 A 1



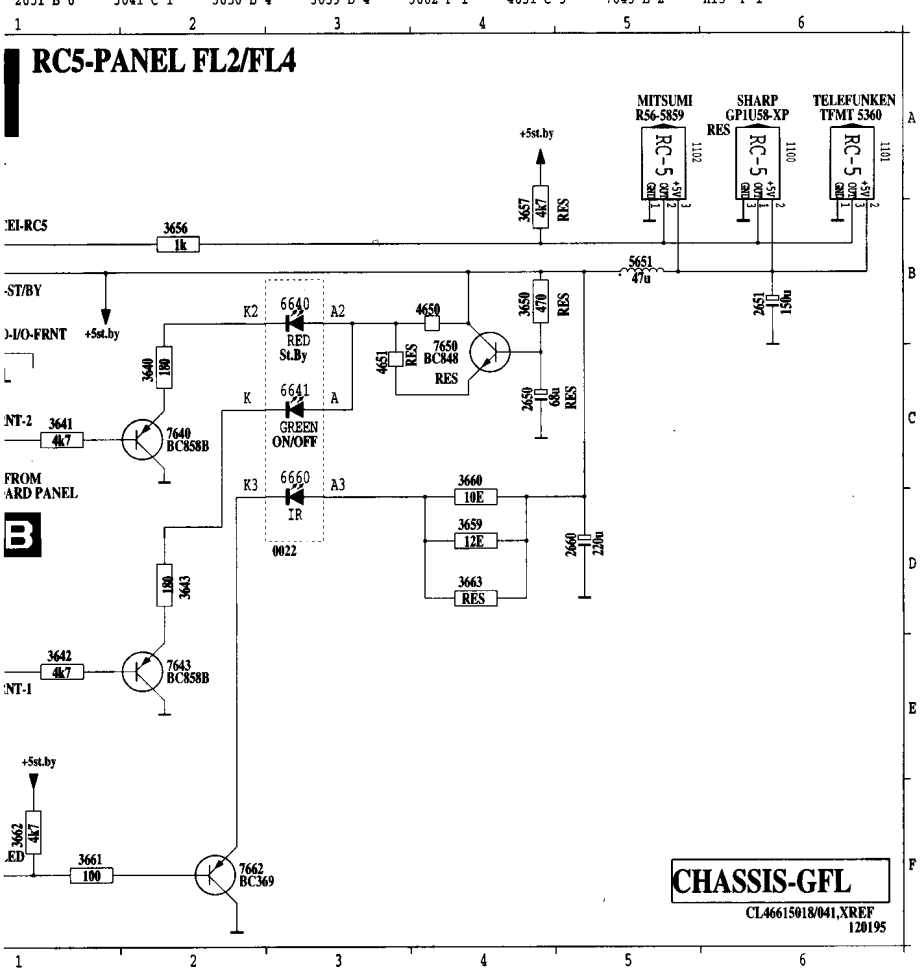
Keyboard FL4

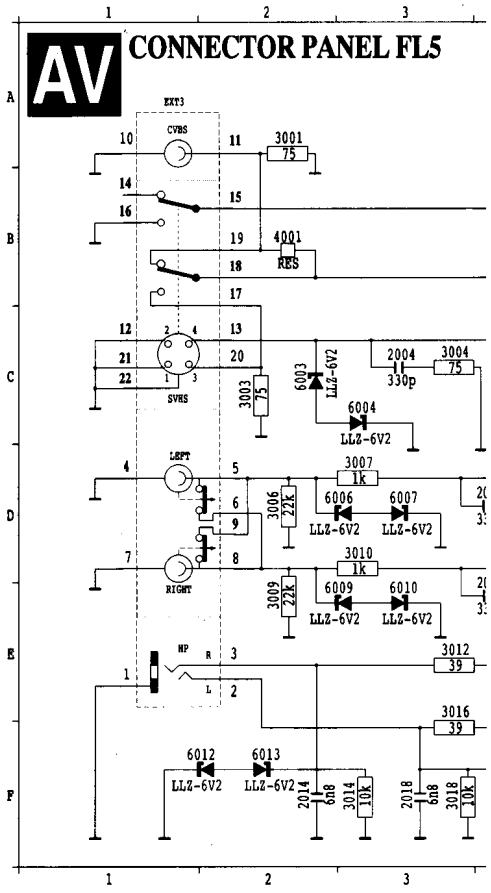
3600 C 1 3602 C 1 3604 B 1 3606 B 1 | 3608 C 1 3987 B 1 3997 B 1 4608 C 1 | 4605 A 1 9000 C 1 B15 C 1 B41 A 1 | SK10 C 1 SK11 B 1 SK12 C 1 SK13 A 1 | SK14 B 1



LED panel / LED Platte / Platine LED

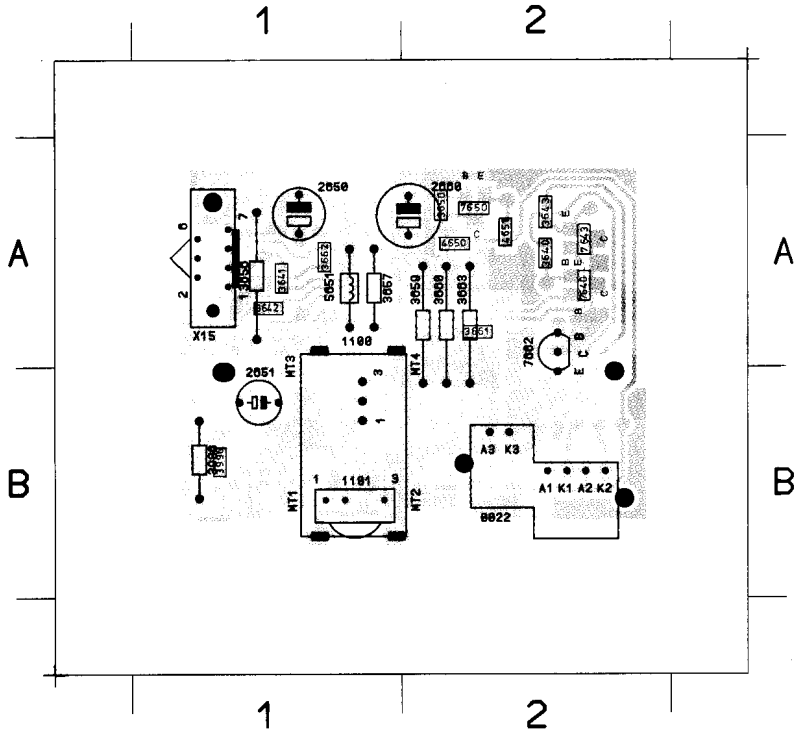
1102 A 5 2660 D 5 3642 E 1 3656 B 2 3660 C 4 3663 D 4 5651 B 5 7650 C 4
2650 C 4 3640 C 2 3643 D 2 3657 B 4 3661 F 1 4650 B 4 7640 C 2 7662 F 2
2651 B 6 3641 C 1 3650 B 4 3659 D 4 3662 F 1 4651 C 3 7643 E 2 X15 F 1





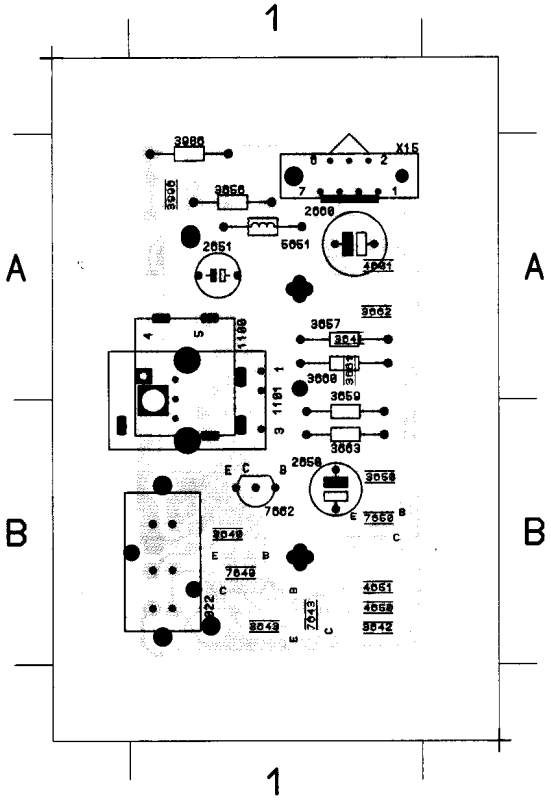
LED-RC5 panel FL2

0022 B 2 1101 B 1 2651 B 1 3656 A 1 3659 A 2 3663 A 2 5651 A 1
1100 B 1 2650 A 1 2660 A 2 3657 A 1 3660 A 2 3986 B 1 7662 A 2

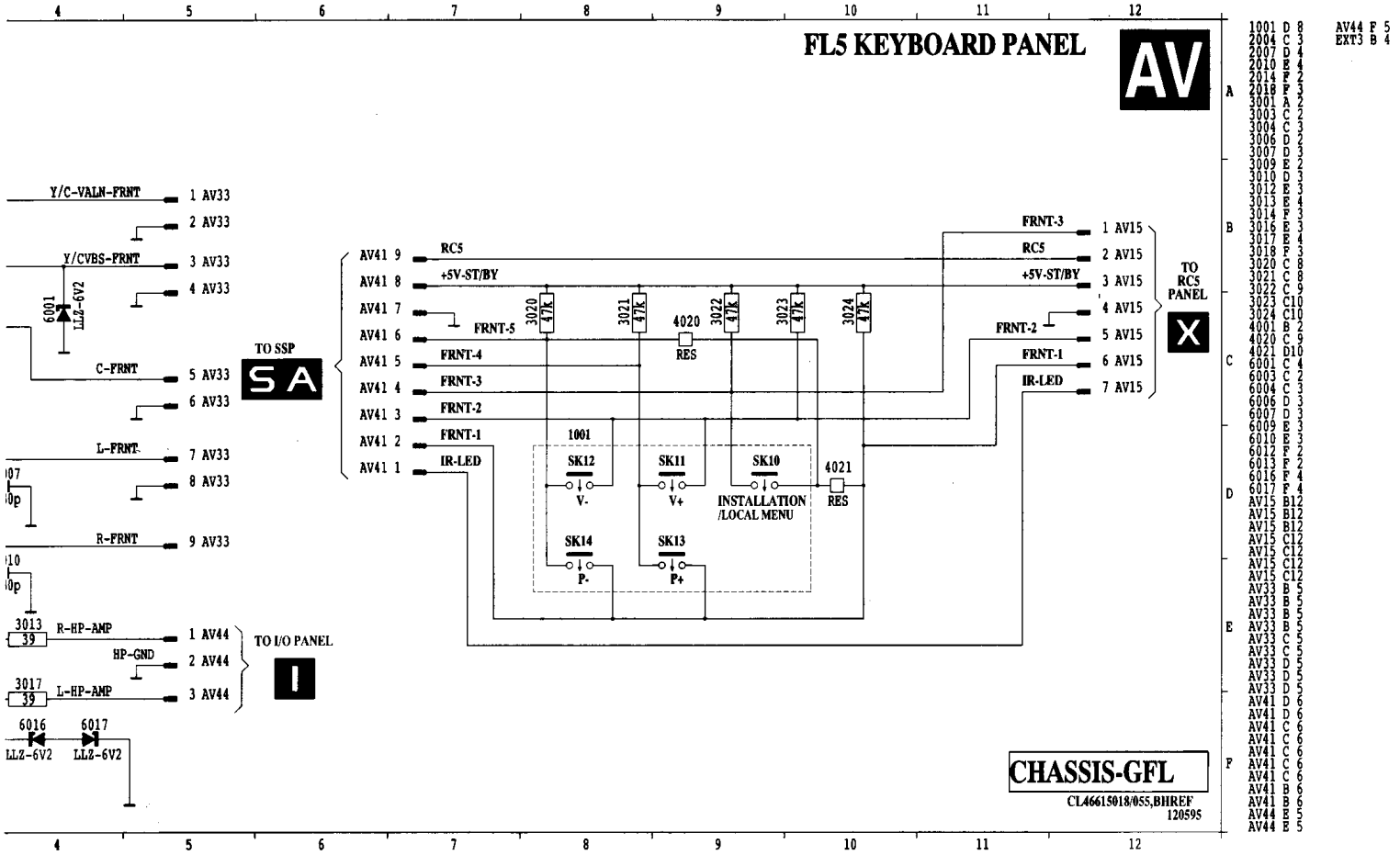


LED-RC5 panel FL4

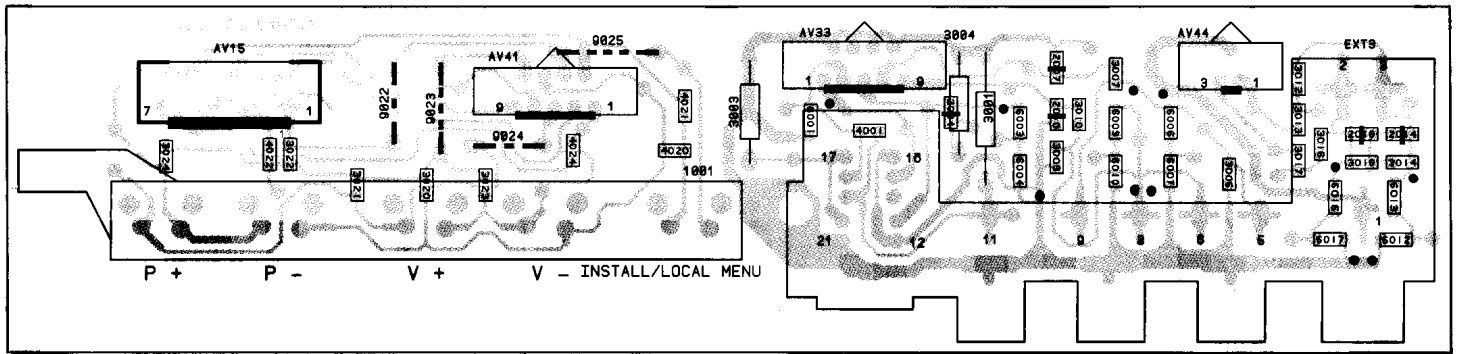
0022 B 1 2660 A 1 3650 B 1 3661 A 1 4601 A 1 7643 B 1
1100 A 1 3640 B 1 3656 A 1 3662 A 1 4650 B 1 7650 B 1
1101 A 1 3641 A 1 3657 A 1 3663 B 1 4651 B 1 7662 B 1
2650 B 1 3642 B 1 3659 B 1 3986 A 1 5651 A 1
2651 A 1 3643 B 1 3660 A 1 3996 A 1 7640 B 1



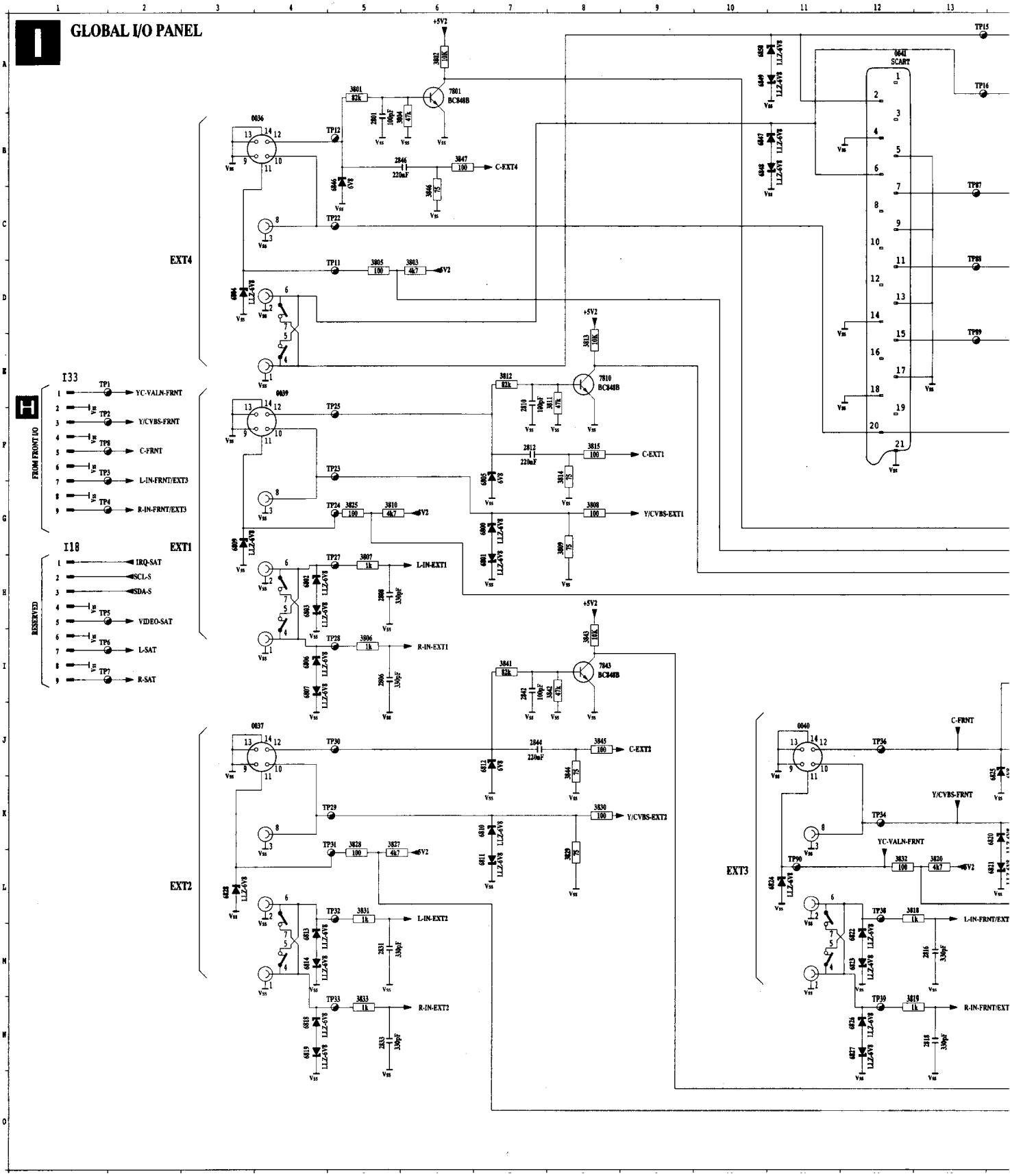
Connector panel FL5 / Connector Platte FL5 / Platine connector FL5



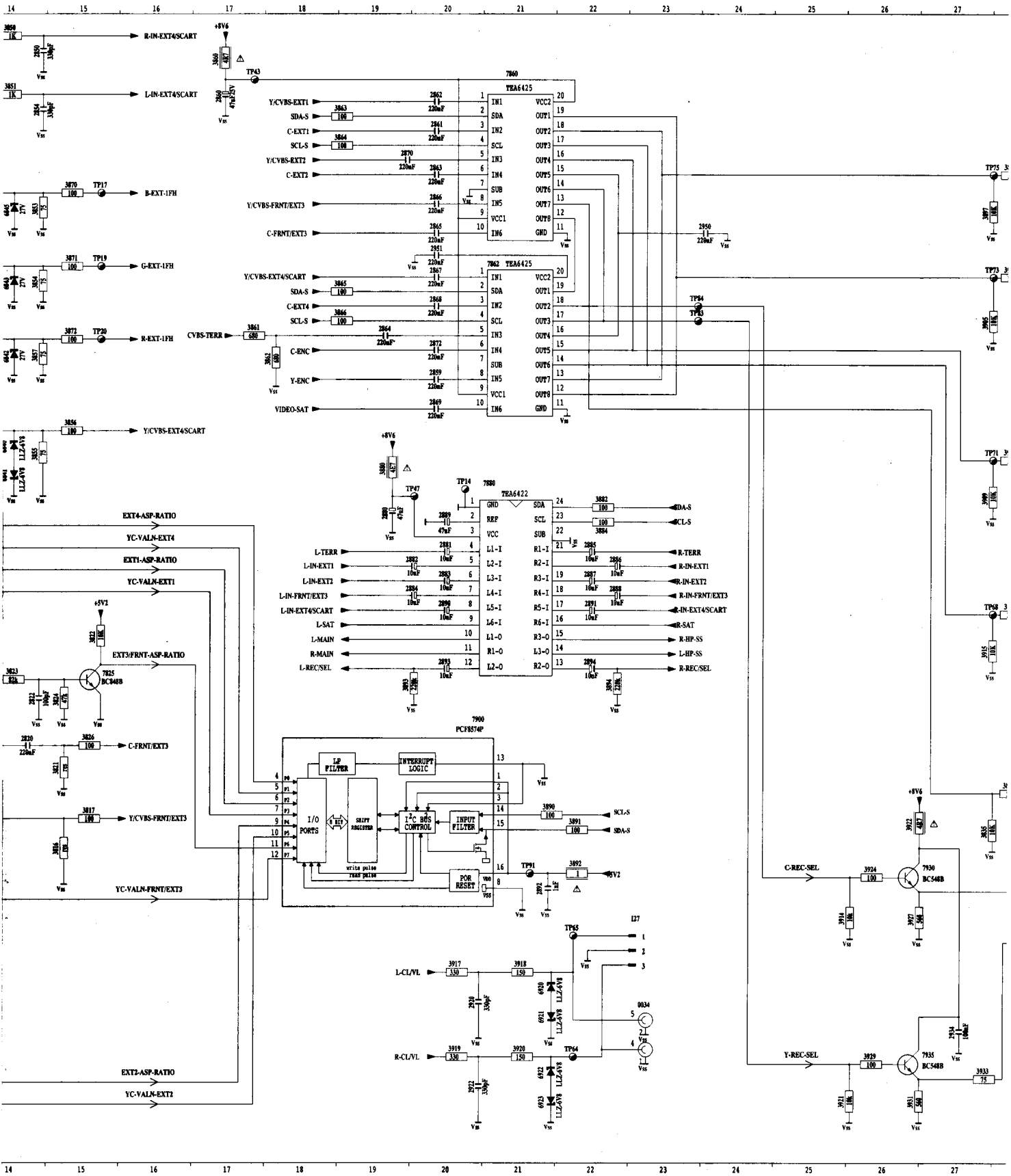
Connector panel FL5



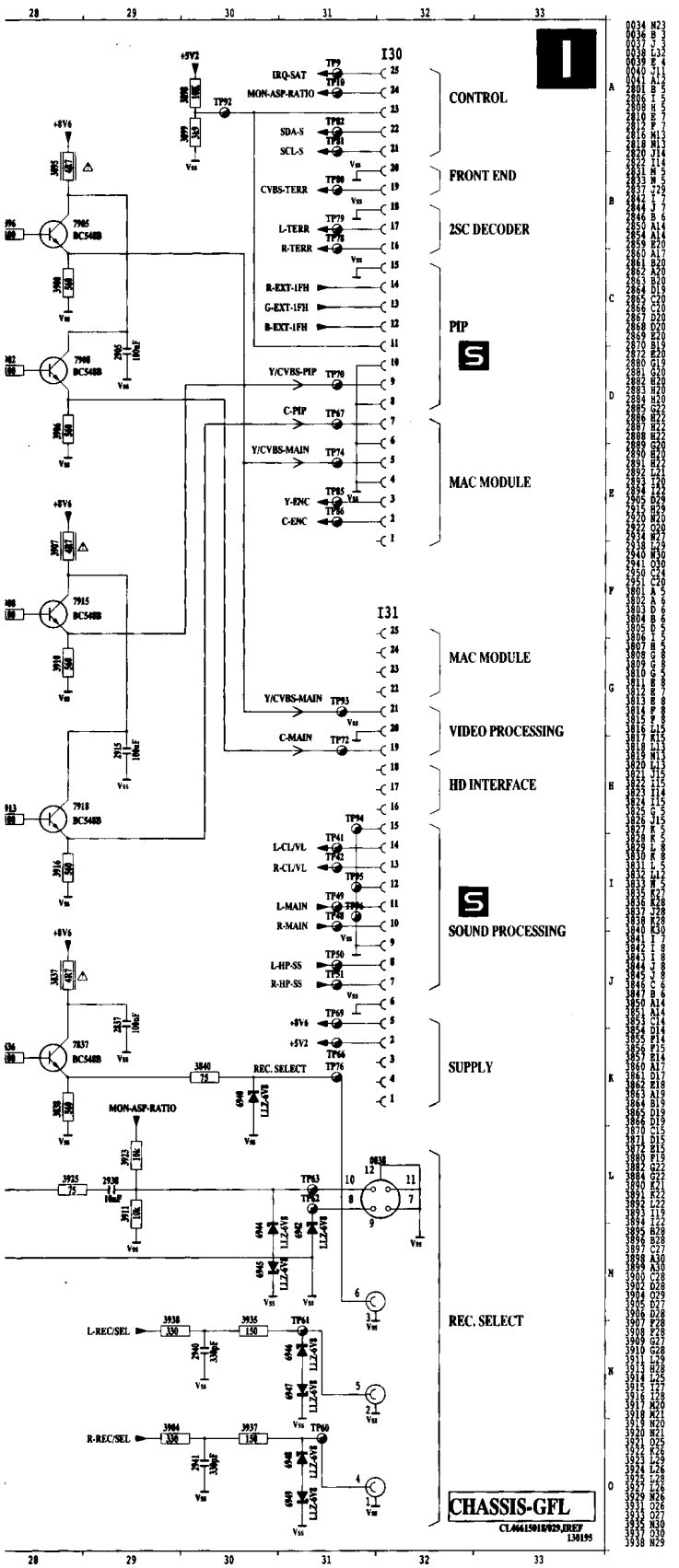
Source selection CINCH / Signalquellewahl CINCH /

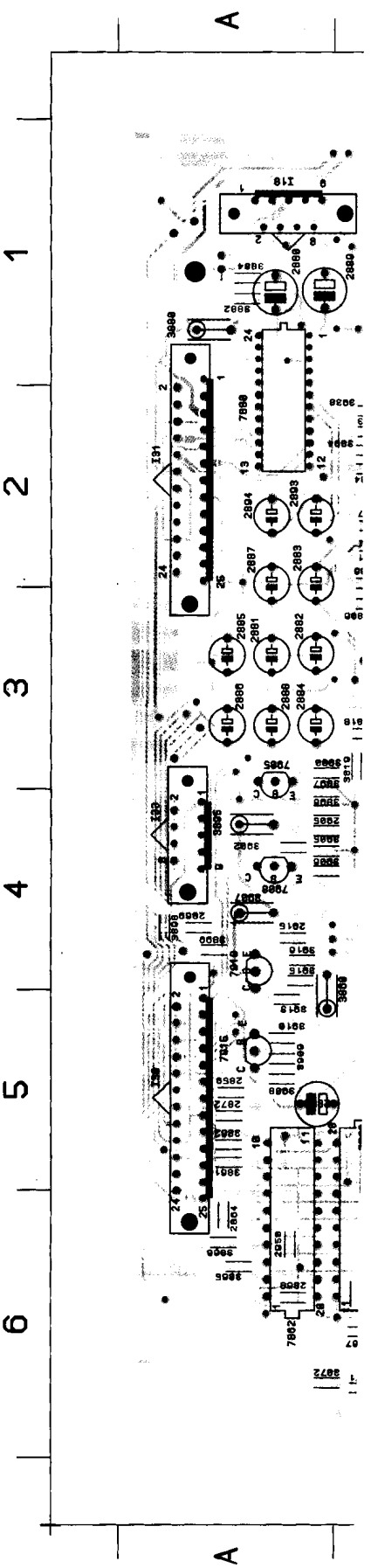


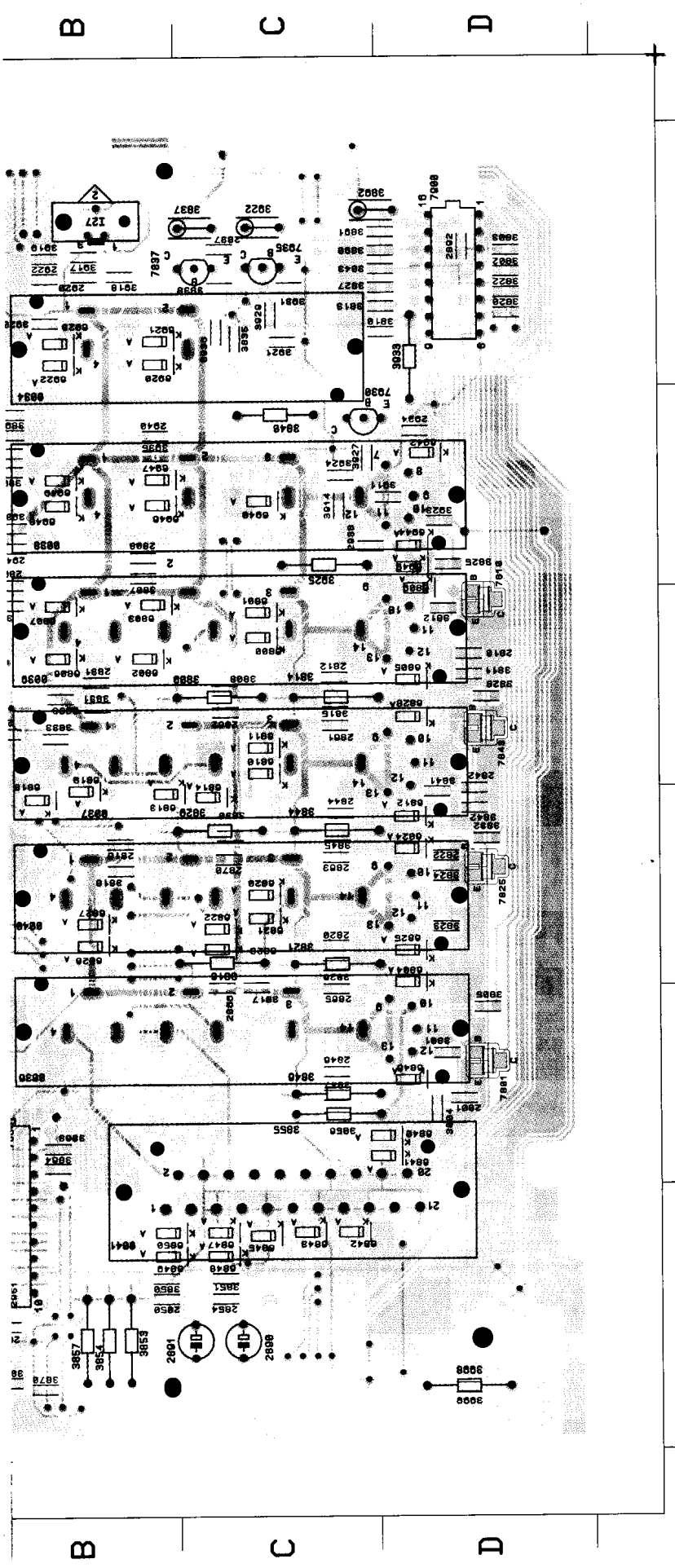
Sélection source CINCH

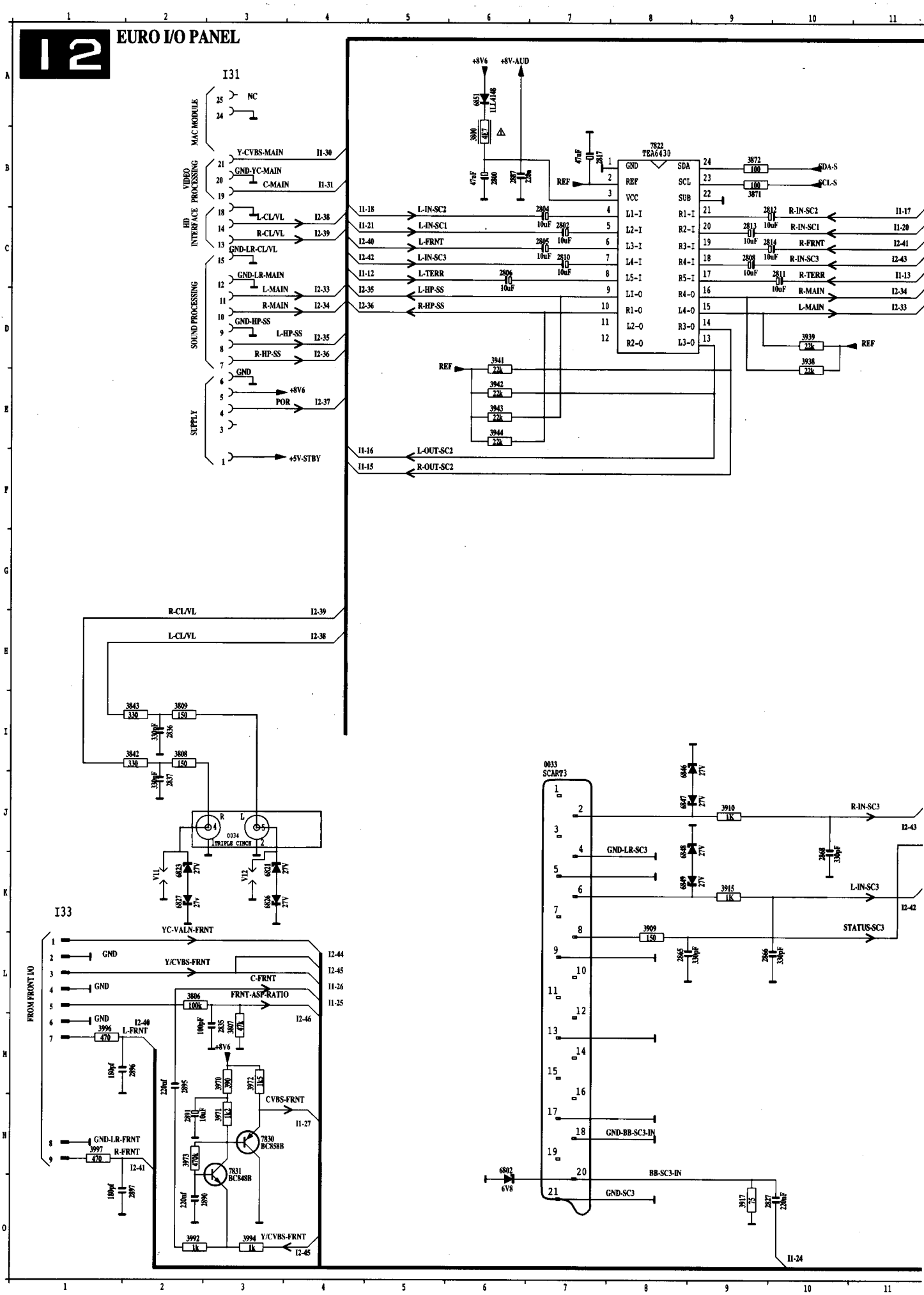


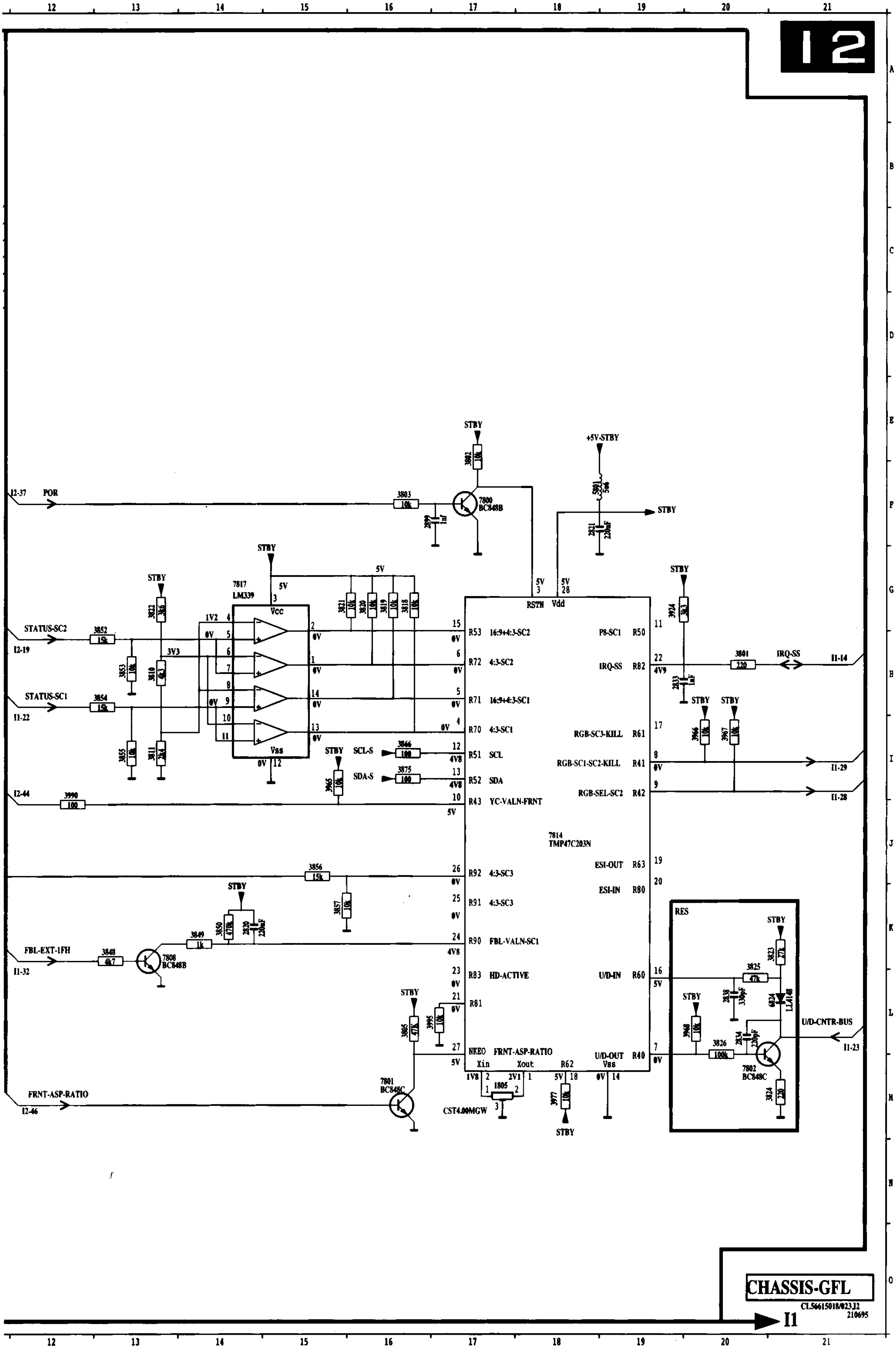
Source selection CINCH / Signalquellewahl CINCH / Sélection source



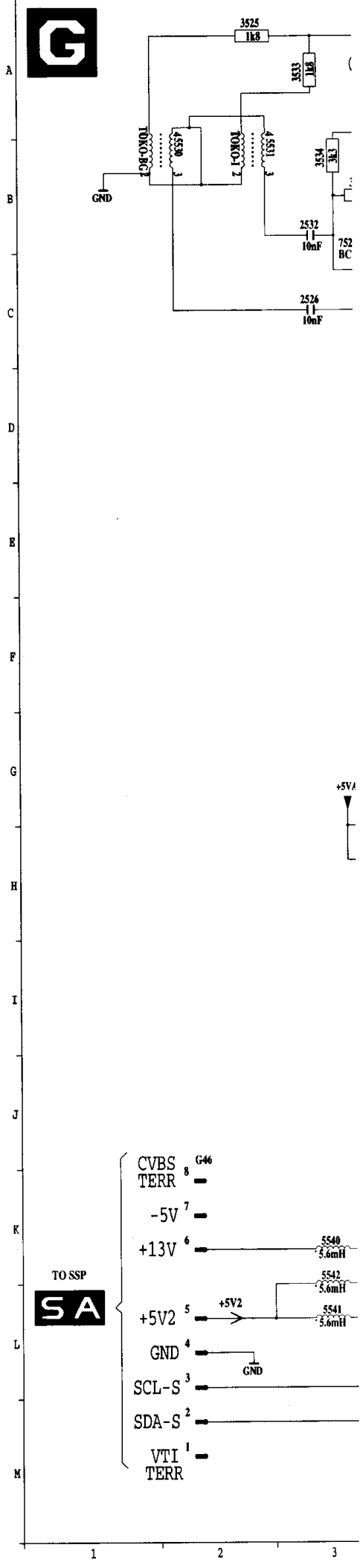



B
C
D
1
2
3
4
5
6

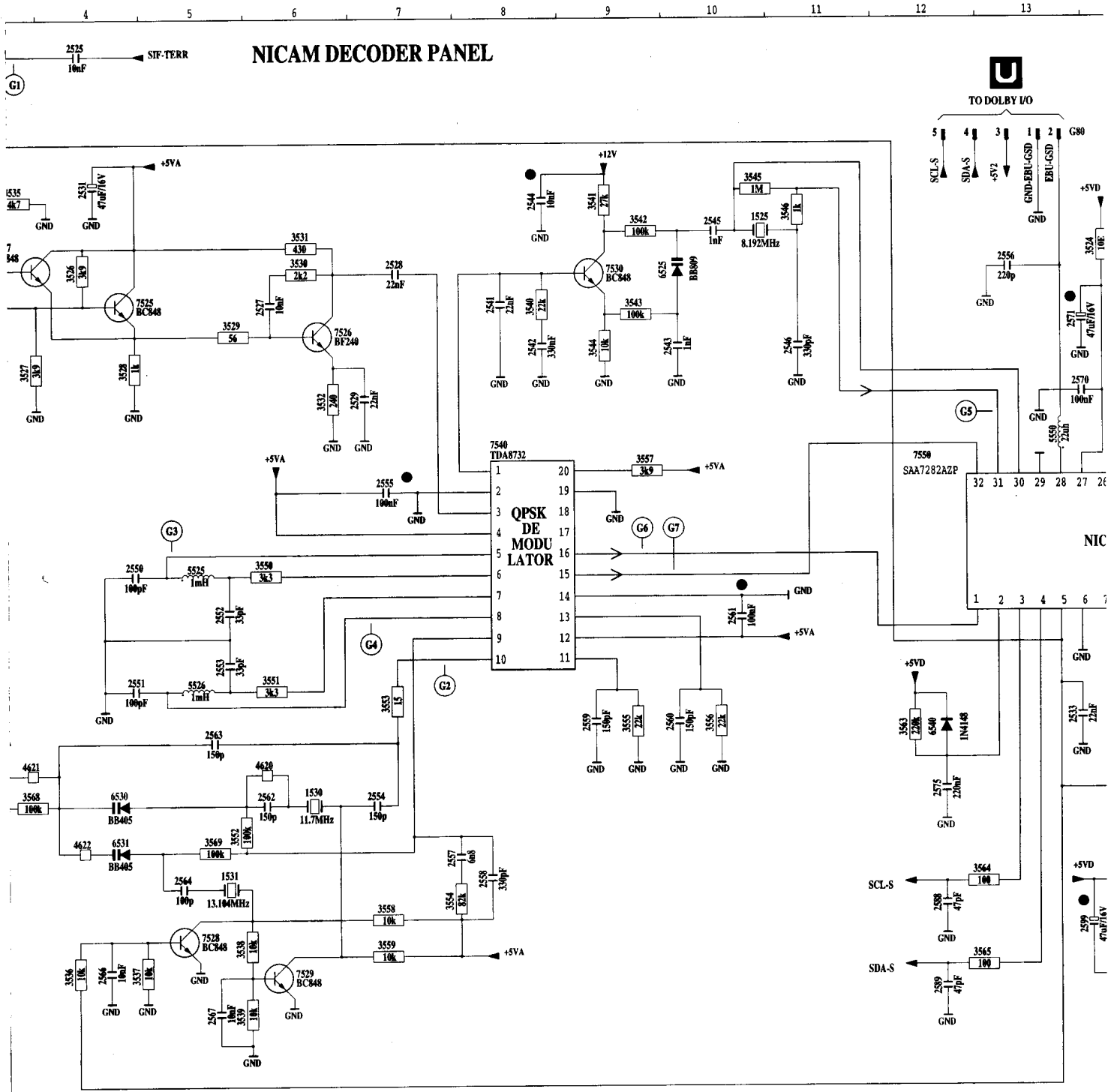

I2
EURO I/O PANEL
I31
MAC MODULE
VIDEO PROCESSING
HD INTERFACE
SOUND PROCESSING
SUPPLY
NC
Y-CVBS-MAIN
GND-YC-MAIN
C-MAIN
L-CL/VL
R-CL/VL
GND-LR-CL/VL
GND-LR-MAIN
L-MAIN
R-MAIN
GND-HP-SS
L-HP-SS
R-HP-SS
GND
+8V6
POR
+5V-STBY
+8V-AUD
7822 TEA6430
SDA-S
SCL-S
L-IN-SC2
L-IN-SC1
L-FRNT
L-IN-SC3
L-TERR
L-HP-SS
R-HP-SS
R-IN-SC2
R-IN-SC1
R-FRNT
R-IN-SC3
R-TERR
R-MAIN
L-MAIN
L-OUT-SC2
R-OUT-SC2
REF
I33
FROM FRONT I/O
YC-VALN-FRNT
Y/CVBS-FRNT
C-FRNT
FRNT-ASP-RATIO
L-FRNT
R-FRNT
CVBS-FRNT
Y/CVBS-FRNT
7830 BC858B
7831 BC848B
0033 SCART3
R-IN-SC3
GND-LR-SC3
L-IN-SC3
STATUS-SC3
GND-BB-SC3-IN
BB-SC3-IN
GND-SC3



0033	I 7
0034	J 3
1805	M17
2800	B 6
2802	C 7
2804	C 7
2805	C 7
2806	C 6
2808	C 9
2810	C 7
2811	C10
2812	C 9
2813	C 9
2814	C 9
2817	B 7
2820	K14
2821	F18
2827	O10
2833	H19
2834	L20
2835	M 3
2836	I 2
2837	J 2
2838	L20
2865	L 8
2866	L 9
2868	J10
2887	B 6
2890	O 2
2891	N 2
2895	M 2
2896	M 2
2897	O 2
2899	F16
3800	B 6
3801	H20
3802	E17
3803	F16
3805	L16
3806	L 2
3807	M 3
3808	I 2
3809	I 2
3810	H13
3811	I13
3818	G16
3819	G16
3820	G16
3821	G15
3822	G13
3823	K21
3824	M21
3825	K20
3826	L20
3842	I 2
3843	I 2
3848	K13
3849	K14
3850	K14
3852	H13
3853	H13
3854	H13
3855	I13
3856	J15
3857	K15
3866	I16
3871	B 9
3872	B 9
3875	I16
3909	K 8
3910	J 9
3915	K 9
3917	O 9
3924	G19
3938	D10
3939	D10
3941	D 6
3942	E 6
3943	E 6
3944	E 6
3965	I15
3966	I20
3967	I20
3968	L20
3970	M 3
3971	N 3
3972	M 3
3973	N 2
3977	M18
3990	I12
3992	O 2
3994	O 3
3995	L17
3996	M 1
3997	N 1
5801	F18
6802	N 6
6821	K 3
6823	K 2
6824	L21
6826	K 3
6827	K 2
6846	I 8
6847	J 8
6848	J 8
6849	K 8
6851	A 6
7800	F17
7801	M16
7802	M20
7808	K13
7814	J18
7817	G14
7822	B 8
7830	N 3
7831	N 3
I31	A 3
I33	K 1
V11	K 2
V12	K 3


G
3525
1k8
3533
1k8
TOKO-BC1
4550
3
TOKO-1
4551
3
3534
3k3
GND
2532
10nF
752
BC
2526
10nF
+5V4
TO SSP
S A
CVBS
TERR
8
G46
-5V
7
+13V
6
5540
5.6mH
5542
5.6mH
+5V2
5
+5V2
5541
5.6mH
GND
4
GND
SCL-S
3
SDA-S
2
VTI
TERR
1
A
B
C
D
E
F
G
H
I
J
K
L
M
1
2
3

NICAM decoder / NICAM-Dekoder /

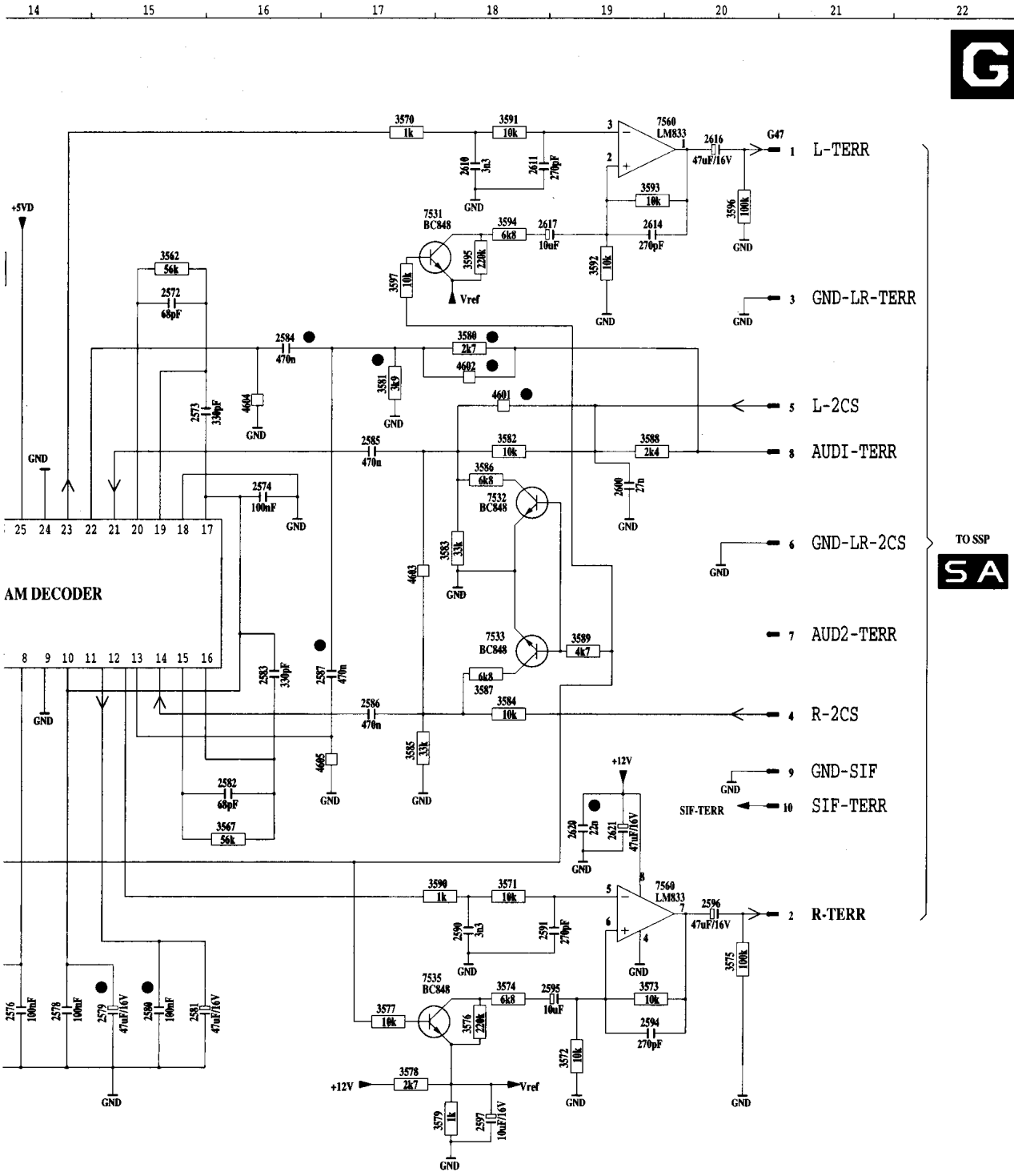


item	NICAM BG	NICAM I	BI-NICAM
1530	11.7 MHz	13.104 MHz	11.7 MHz
1531	--	--	13.104 MHz
2532	--	--	10n
2554	150p	100p	
2562	--	--	150p
2563	--	--	150p
2564	--	--	100p
2566	--	--	10n
2567	--	--	10n
2595	--	--	10uF/25V
2597	--	--	10uF/25V
2600	--	27n	--
2617	--	--	10uF/25V

item	NICAM BG	NICAM I	BI-NICAM
3526	3k9	3k9	4k7
3527	3k9	3k9	3k3
3533	--	--	1k8
3534	--	--	3k3
3535	--	--	4k7
3536	--	--	10k
3537	--	--	10k
3538	--	--	10k
3539	--	--	10k
3558	--	--	10k
3559	--	--	10k
3568	--	--	100k
3569	--	--	100k

item	NICAM BG	NICAM I	BI-NICAM
3572	10k	4k7	10k
3574	--	--	6k8
3576	--	--	220k
3577	--	--	10k
3578	--	--	2k7
3579	--	--	1k
3582	10k	2k2	10k
3583	33k	68k	33k
3584	10k	--	10k
3585	33k	--	33k
3586	--	--	6k8
3587	--	--	6k8
3588	--	2k4	--

Decodeur NICAM



item	NICAM BG	NICAM I	BI-NICAM
3592	10k	4k7	10k
3594	--	--	6k8
3595	--	--	220k
3597	--	--	10k
4603	--	jmp	--
4620	jmp	jmp	--
4621	jmp	jmp	--
4622	--	--	jmp
5530	BPF	BPF	BPF (6.552Mhz) (5.85Mhz)
5531	--	--	BPF (6.552Mhz)
6531	--	--	BB405
7527	--	--	BC848
7528	--	--	BC848

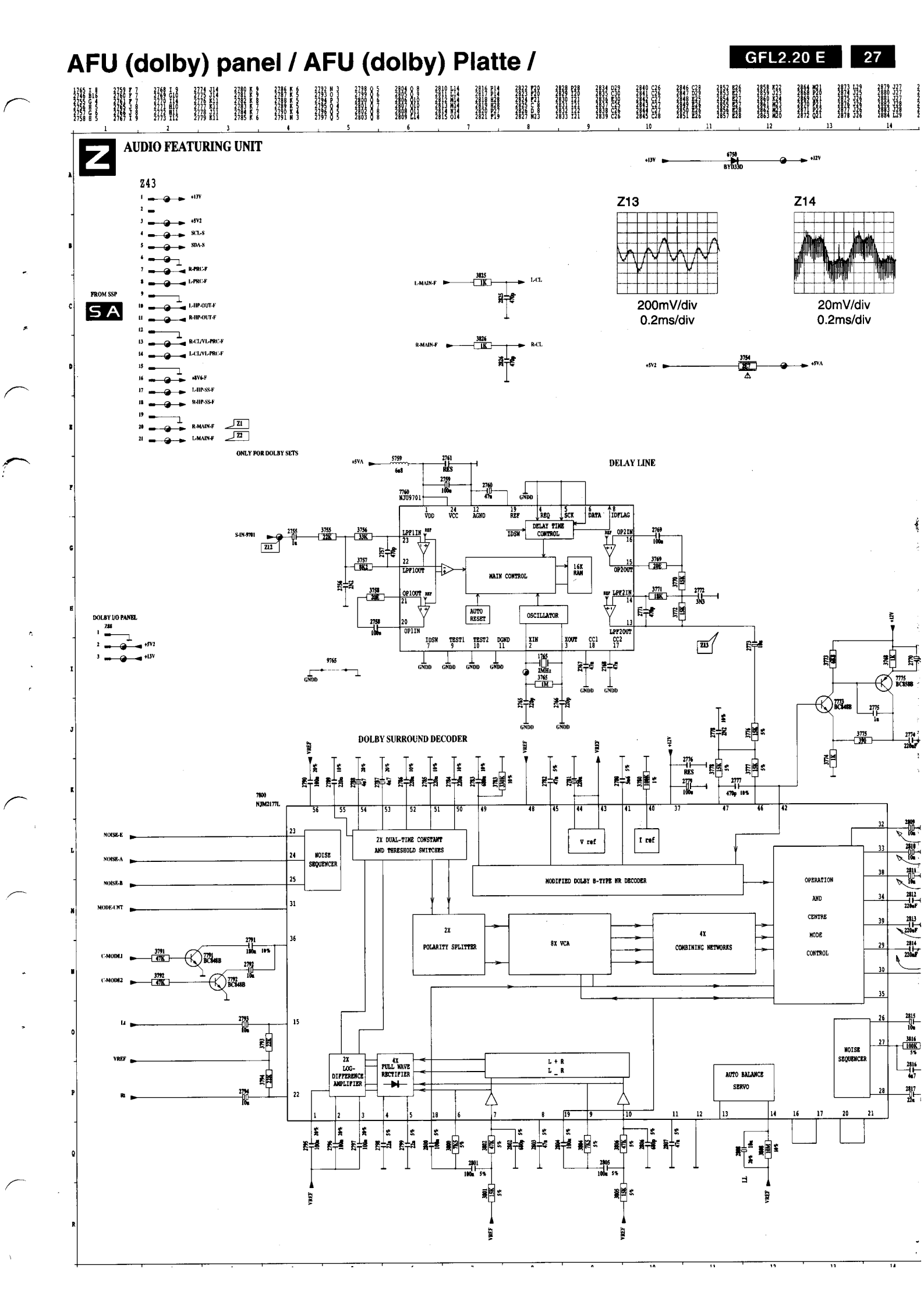
item	NICAM BG	NICAM I	BI-NICAM
3589	--	--	4k7
7529	--	--	BC848
7531	--	--	BC848
7532	--	--	BC848
7533	--	--	BC848
7535	--	--	BC848

● reserved item

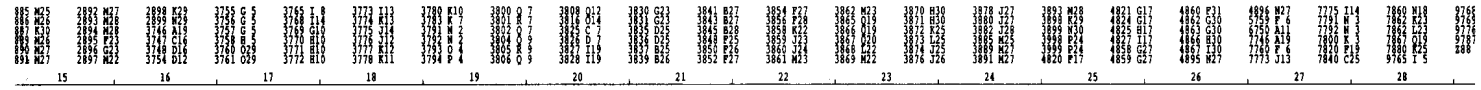
CHASSIS-GFL

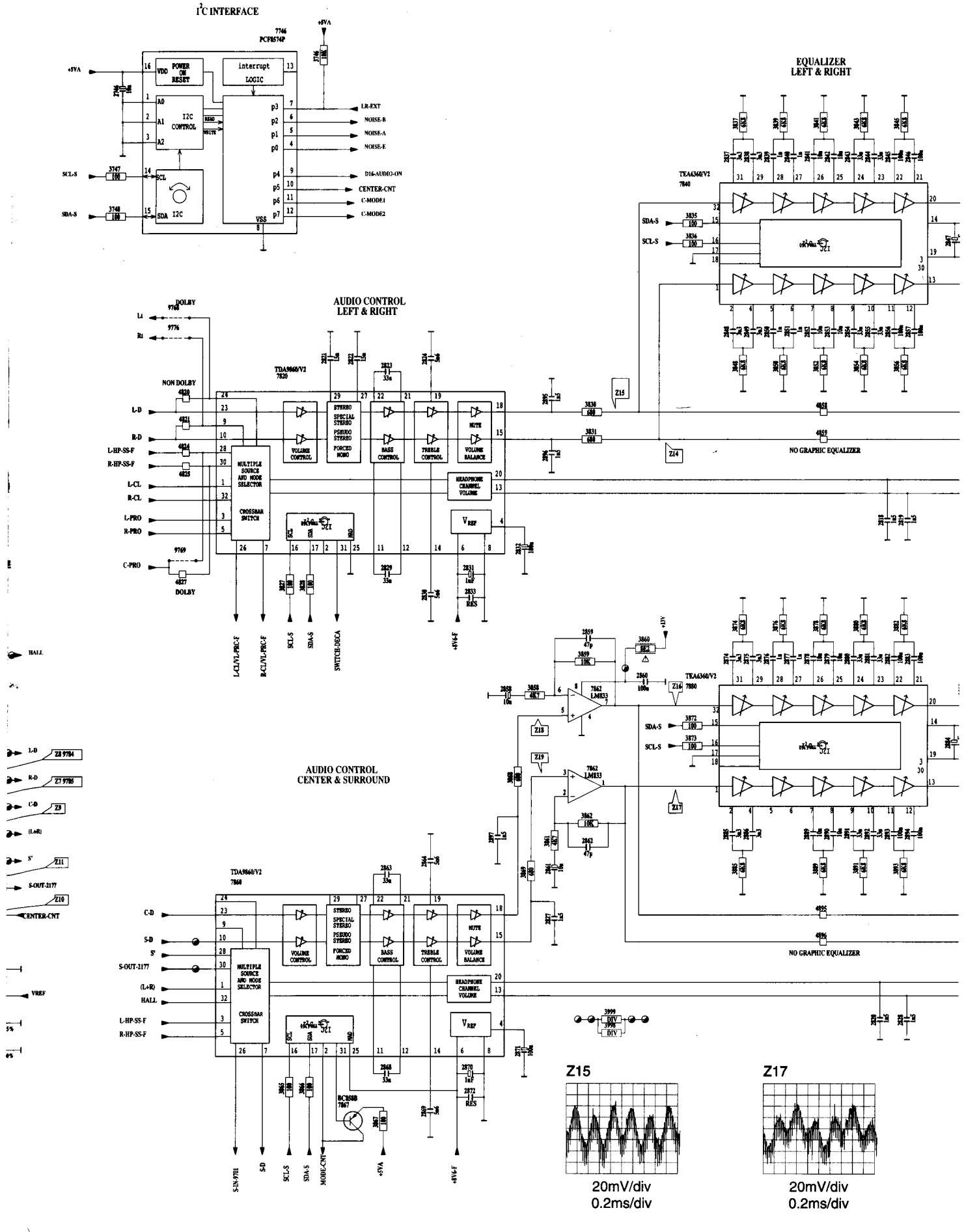
CL46615018/028,GREF
110195

AFU (dolby) panel / AFU (dolby) Platte /

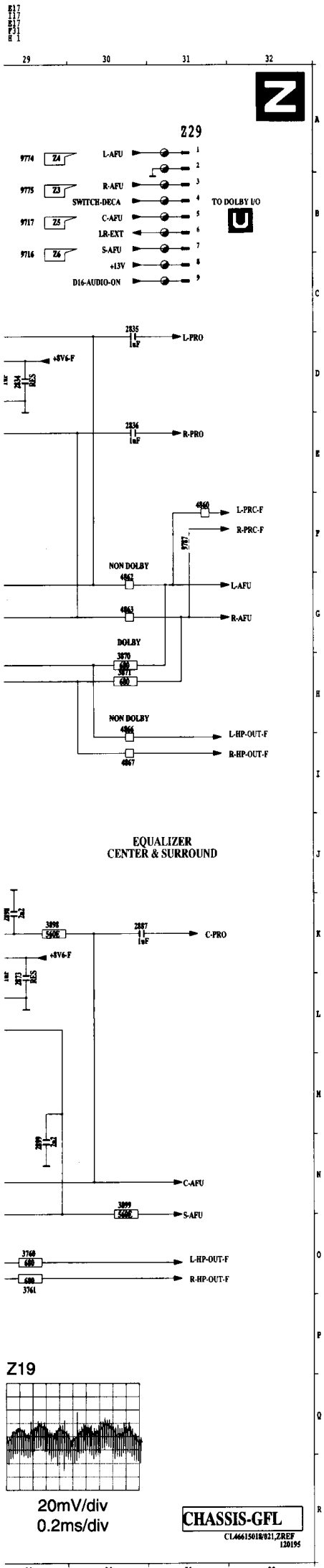


Platine AFU (dolby)

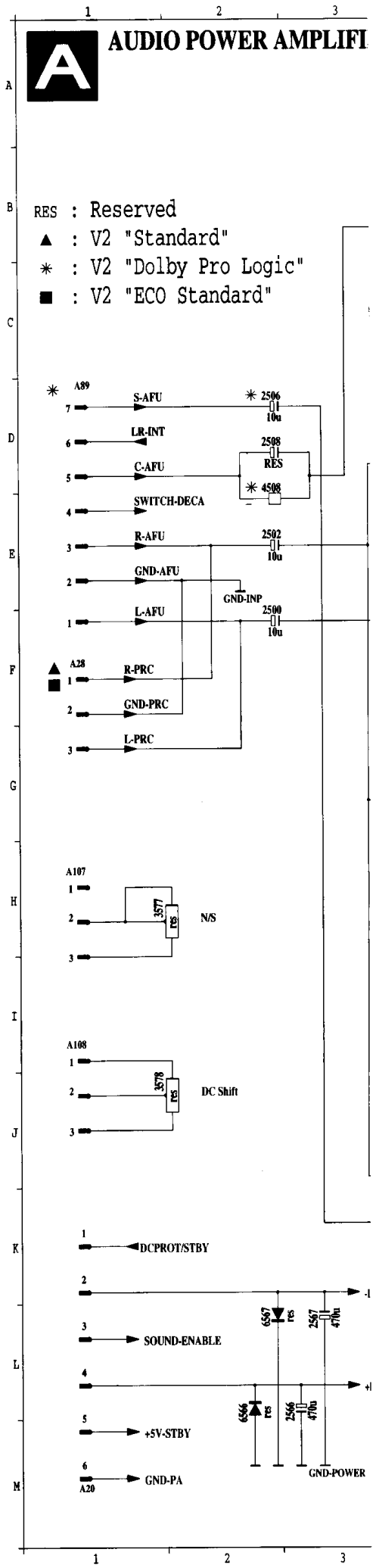




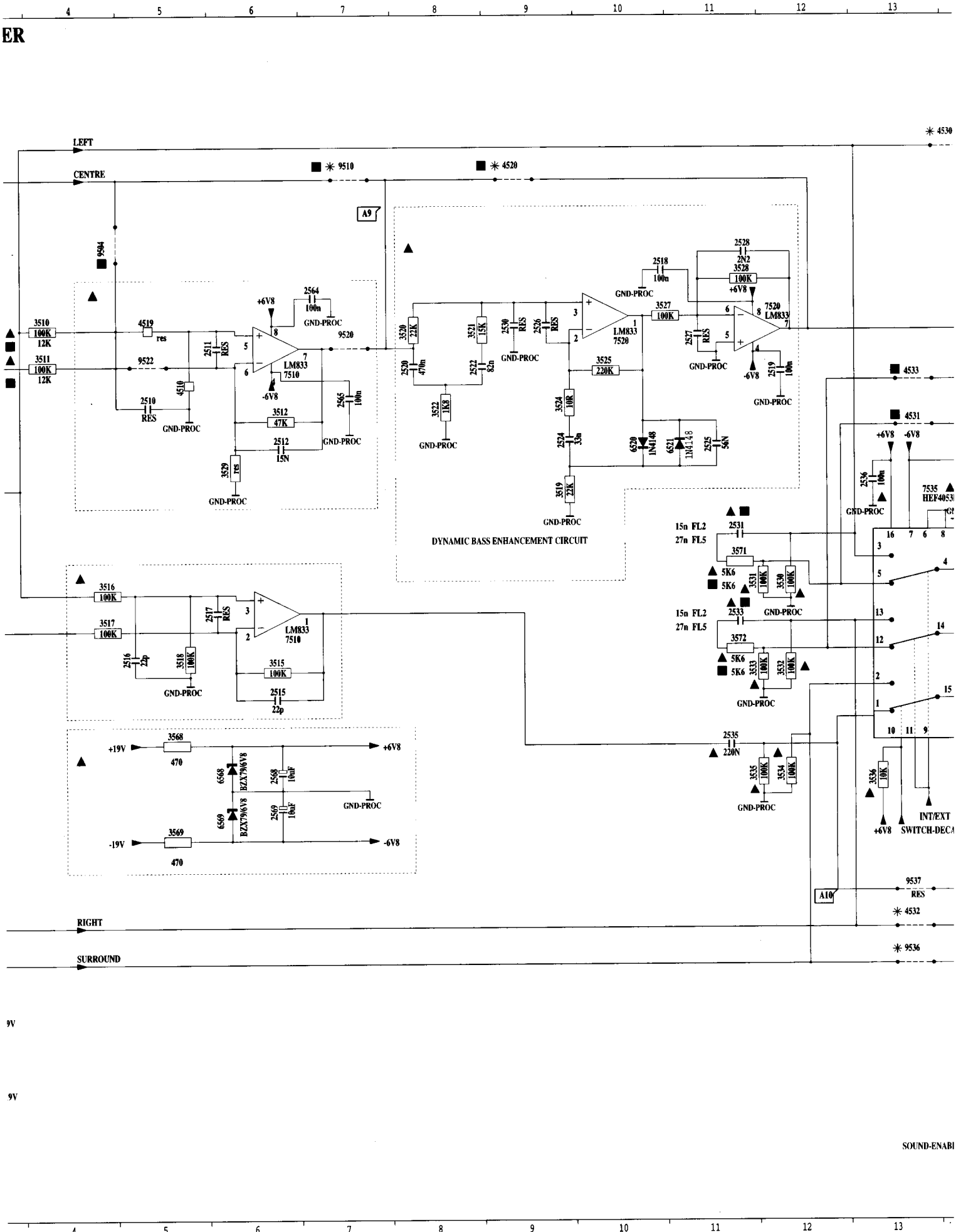
AFU (dolby) panel

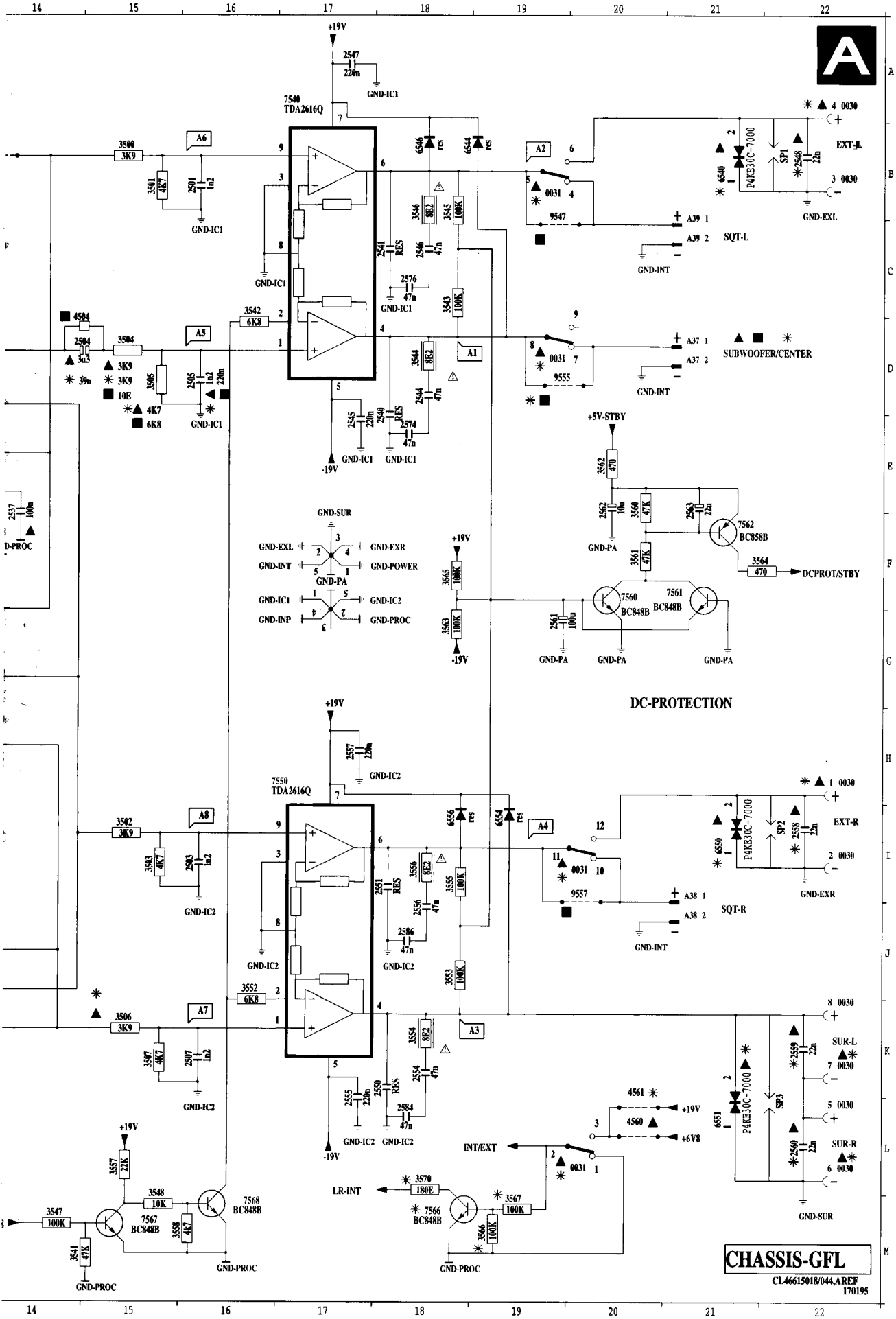


er /


AUDIO POWER AMPLIFI
RES : Reserved
▲ : V2 "Standard"
✳ : V2 "Dolby Pro Logic"
■ : V2 "ECO Standard"
A89
S-AFU
LR-INT
C-AFU
SWITCH-DECA
R-AFU
GND-AFU
L-AFU
2506
2508
RES
4508
2502
2500
10u
GND-INP
A28
R-PRC
GND-PRC
L-PRC
A107
3577
N/S
A108
3578
DC Shift
DCPROT/STBY
SOUND-ENABLE
+5V-STBY
GND-PA
A20
6567
6566
2567
2566
4700u
GND-POWER

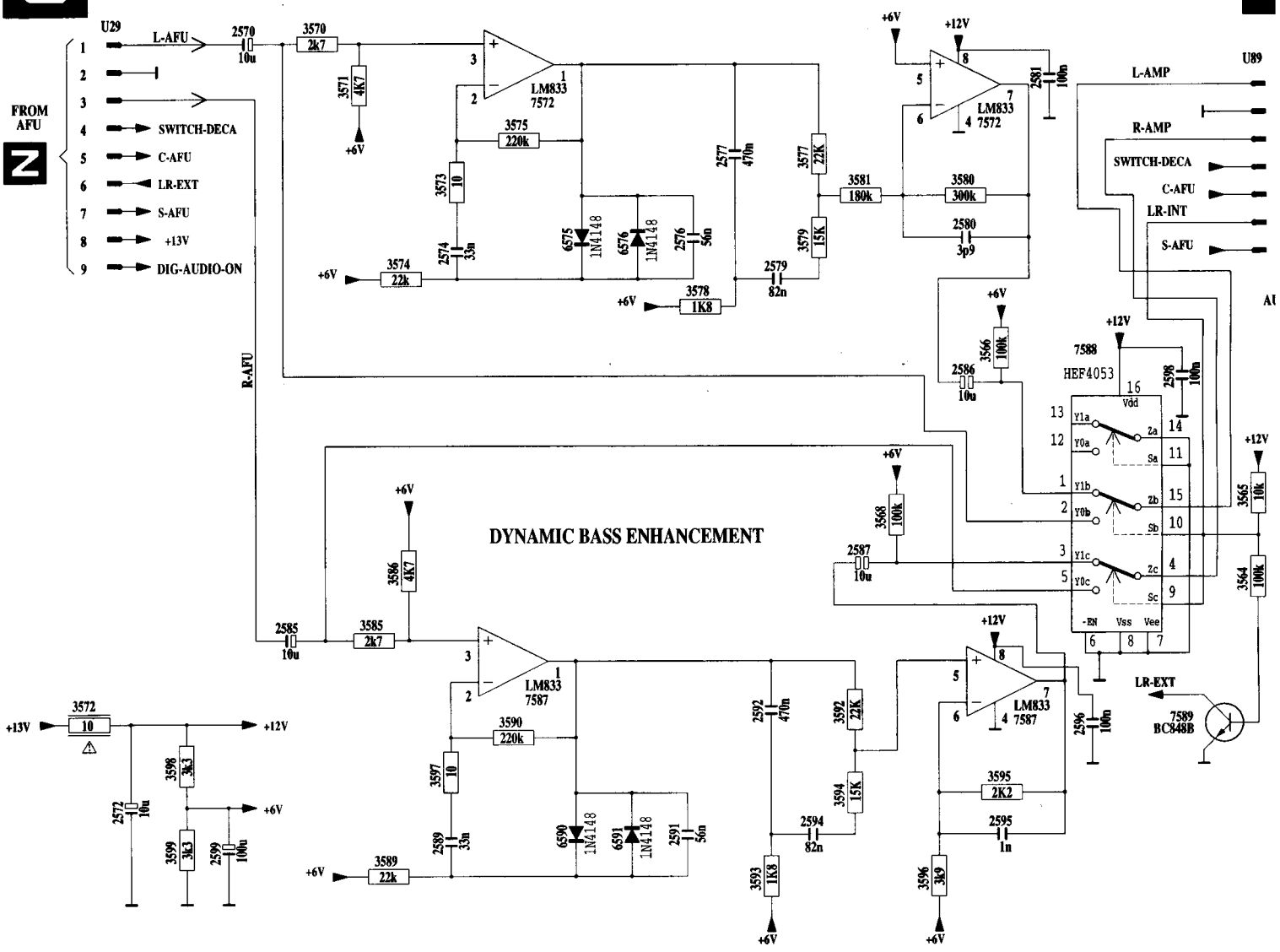
Amplificateur final audio

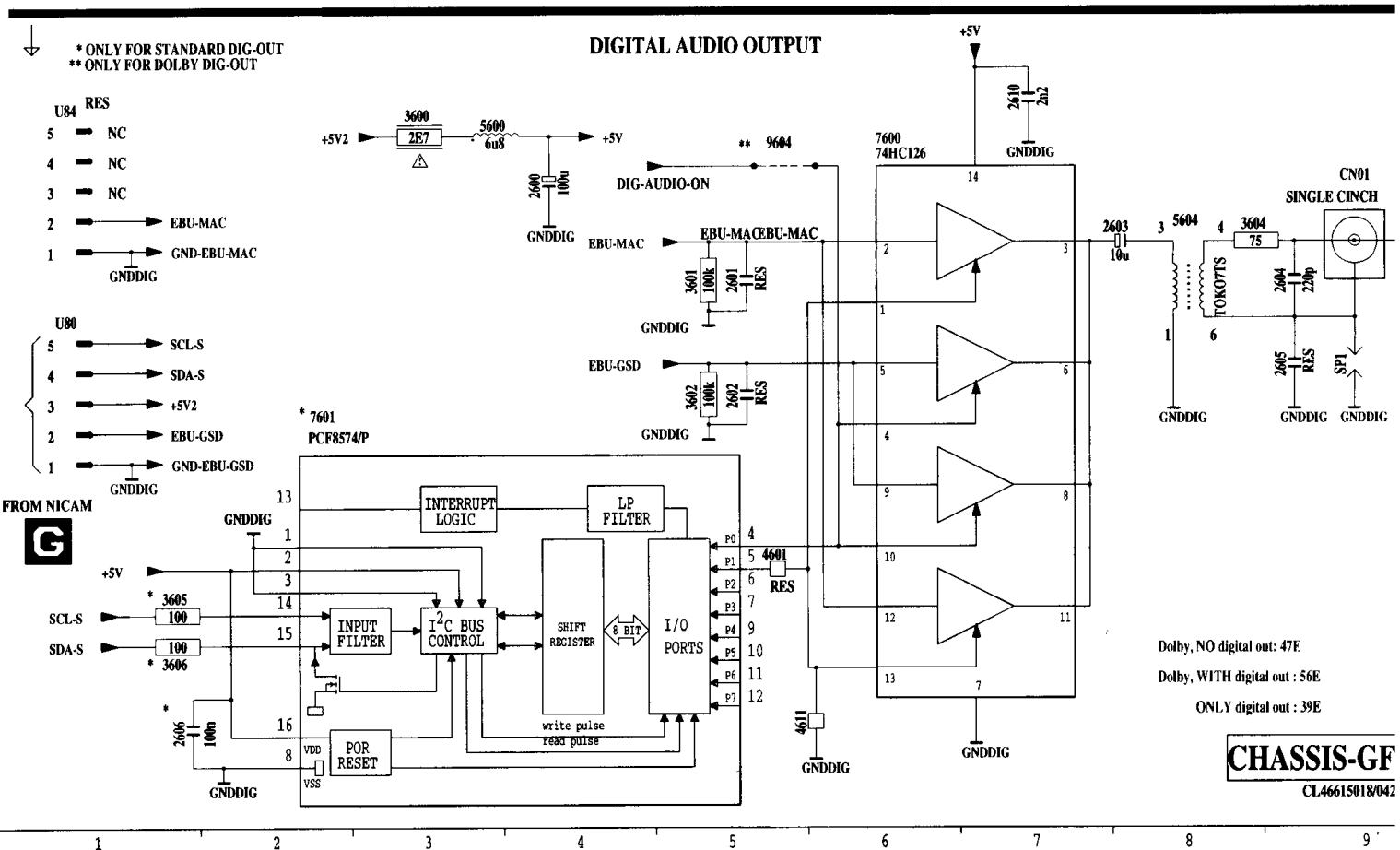



A
DC-PROTECTION
CHASSIS-GFL
C1.46615018/044,AREF
170195
7540
TDA2616Q
7550
TDA2616Q
EXT-L
EXT-R
SUR-L
SUR-R
SQT-L
SQT-R
SUBWOOFER/CENTER
DCPROT/STBY
LR-INT
INT/EXT
+19V
-19V
+5V-STBY
+6V8
GND-IC1
GND-IC2
GND-PA
GND-EXL
GND-EXR
GND-INT
GND-POWER
GND-SUR
GND-INP
GND-PROC
P4KE30C-7000
BC858B
BC848B

DOLBY I/O PANEL

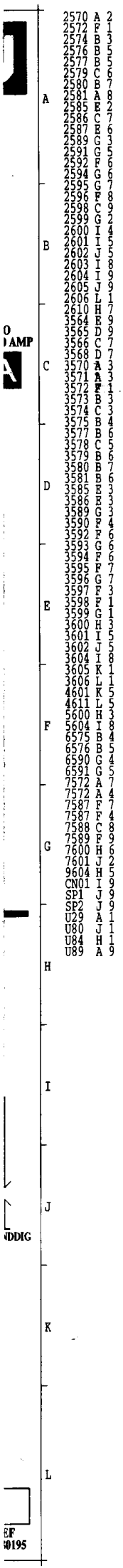
DYNAMIC BASS ENHANCEMENT





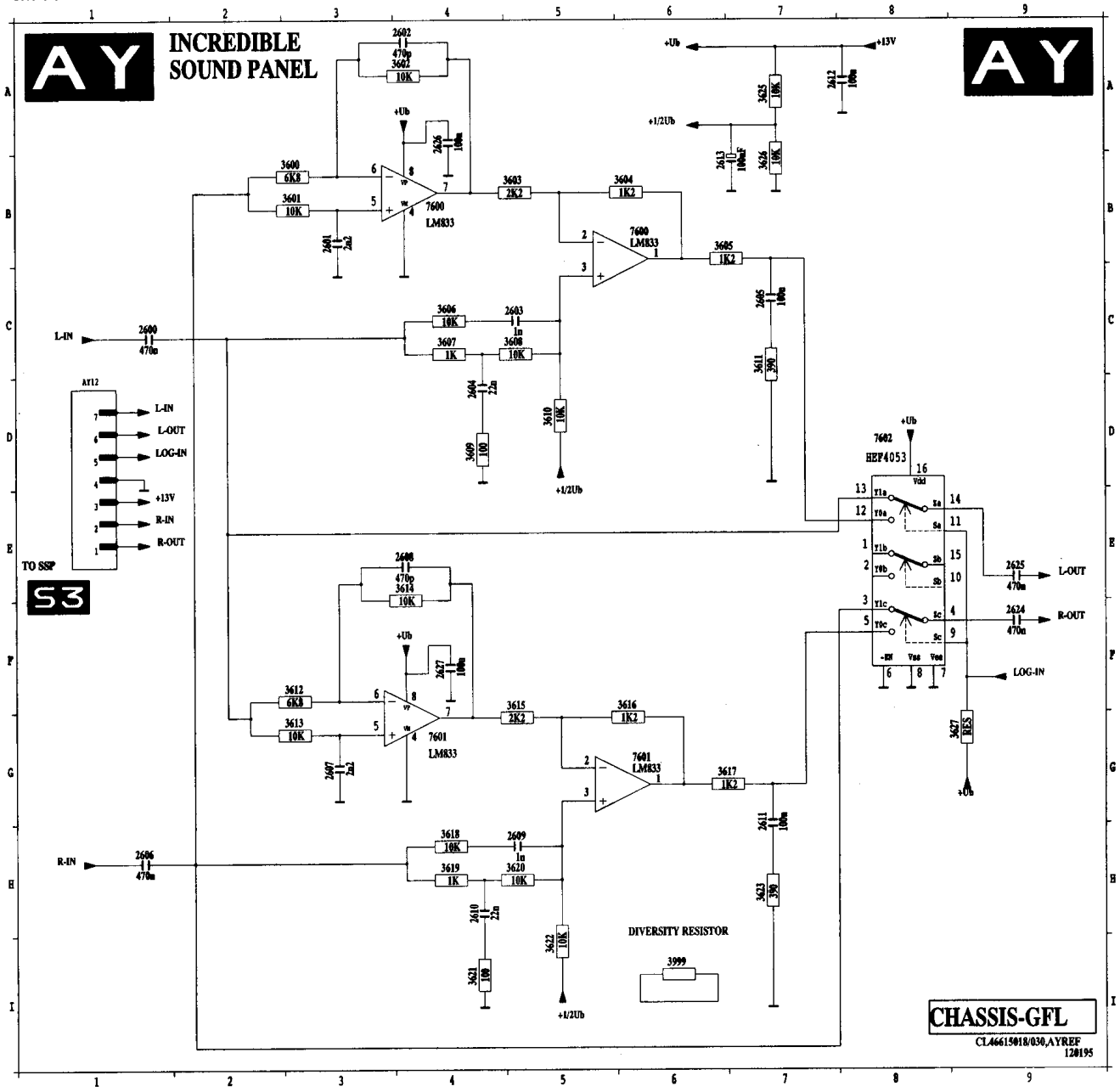
CHASSIS-GF

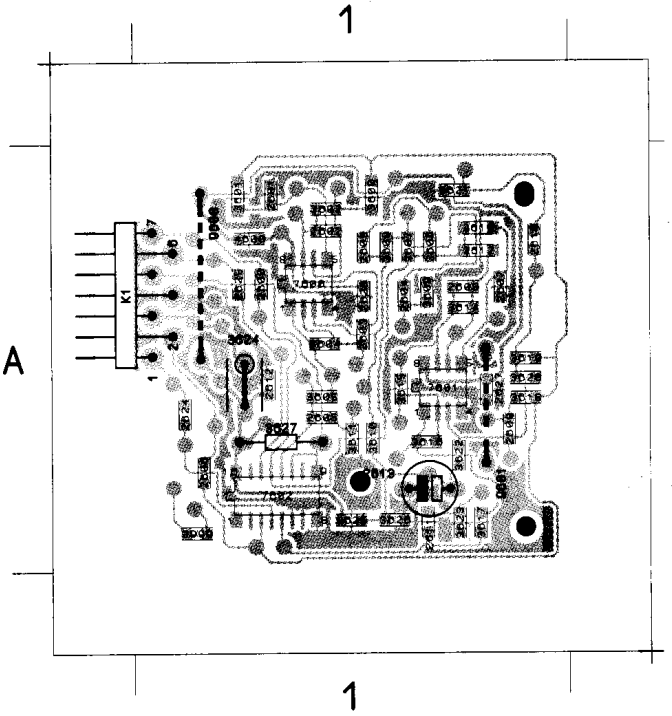
CL46615018/042


2570 A 2
2572 F 1
2574 B 3
2576 B 5
2577 B 5
2579 C 6
2580 B 7
2581 A 8
2585 E 2
2586 C 7
2587 E 6
2589 G 3
2591 G 5
2592 F 6
2594 G 6
2595 G 7
2596 F 8
2598 C 9
2599 G 2
2600 I 4
2601 I 5
2602 J 5
2603 I 8
2604 I 9
2605 J 9
2606 L 1
2610 H 7
3564 E 9
3565 D 9
3566 C 7
3568 D 7
3570 A 3
3571 A 3
3572 F 1
3573 B 3
3574 C 3
3575 B 4
3577 B 6
3578 C 5
3579 B 6
3580 B 7
3581 B 6
3585 E 3
3586 E 3
3589 G 3
3590 F 4
3592 F 6
3593 G 6
3594 F 6
3595 F 7
3596 G 7
3597 F 3
3598 F 1
3599 G 1
3600 H 3
3601 I 5
3602 J 5
3604 I 8
3605 K 1
3606 L 1
4601 K 5
4611 L 5
5600 H 3
5604 I 8
6575 B 4
6576 B 5
6590 G 4
6591 G 5
7572 A 7
7572 A 4
7587 F 7
7587 F 4
7588 C 8
7589 F 9
7600 H 6
7601 J 2
9604 H 5
CN01 I 9
SP1 J 9
SP2 J 9
U29 A 1
U80 J 1
U84 H 1
U89 A 9
A
B
C
D
E
F
G
H
I
J
K
L
O
AMP
DDIG
EF
0195

Incredible sound

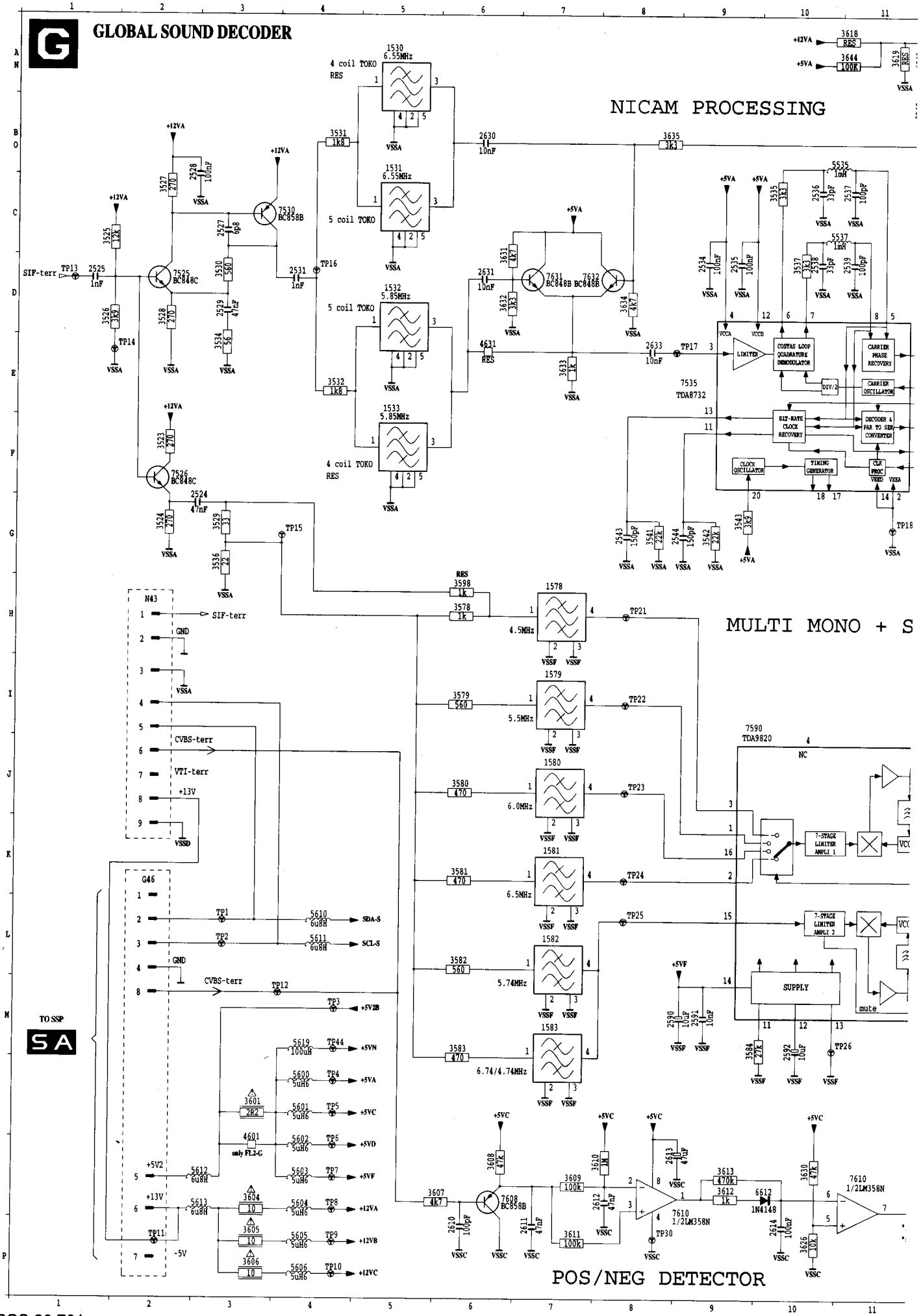
2600 C 1
2601 B 3
2602 A 4
2603 C 5
2604 D 4
2605 C 7
2606 H 1
2607 G 3
2608 E 4
2609 H 5
2610 H 4
2611 G 7
2612 A 7
2613 B 6
2624 F 9
2625 E 9
2626 A 4
2627 F 4
3600 B 3
3601 B 3
3602 A 4
3603 B 5
3604 B 6
3605 B 7
3606 C 4
3607 C 4
3608 C 5
3609 D 4
3610 D 5
3611 C 7
3612 F 3
3613 G 3
3614 E 4
3615 F 5
3616 F 6
3617 G 7
3618 H 4
3619 H 4
3620 H 5
3621 I 4
3622 I 5
3623 H 7
3624 A 7
3625 A 7
3626 B 7
3627 G 9
3999 I 6
7600 B 4
AY12 E 1
7601 G 4
7601 G 6
7602 D 8
K1 E 1



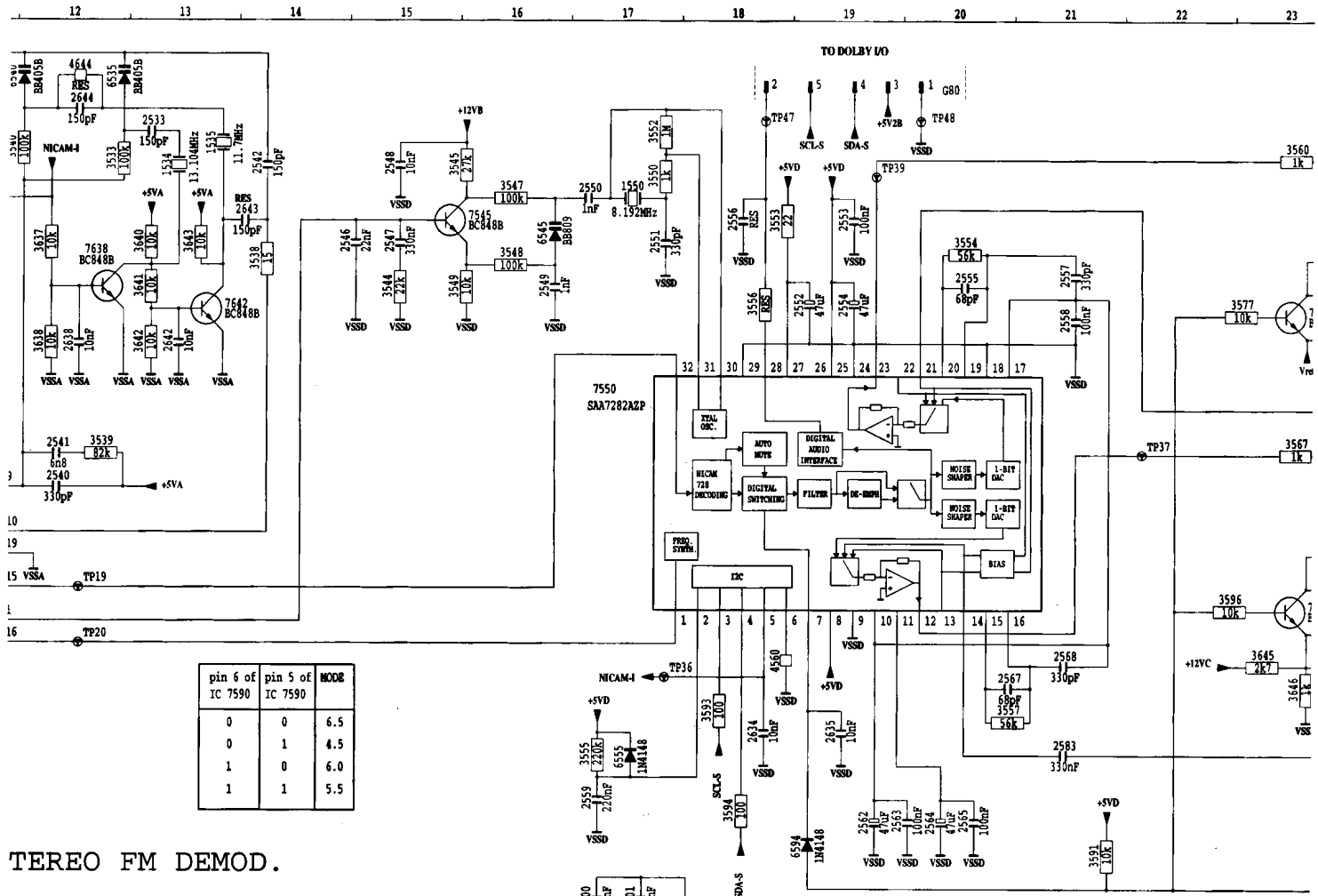


2600 A 1
2601 A 1
2602 A 1
2603 A 1
2604 A 1
2605 A 1
2606 A 1
2607 A 1
2608 A 1
2609 A 1
2610 A 1
2611 A 1
2612 A 1
2613 A 1
2624 A 1
2625 A 1
2626 A 1
2627 A 1
3600 A 1
3601 A 1
3602 A 1
3603 A 1
3604 A 1
3605 A 1
3606 A 1
3607 A 1
3608 A 1
3609 A 1
3610 A 1
3611 A 1
3612 A 1
3613 A 1
3614 A 1
3615 A 1
3616 A 1
3617 A 1
3618 A 1
3619 A 1
3620 A 1
3621 A 1
3622 A 1
3623 A 1
3624 A 1
3625 A 1
3626 A 1
3627 A 1
3999 A 1
4600 A 1
7600 A 1
7601 A 1
7602 A 1
9600 A 1
9601 A 1
K1 A 1

Global sound decoder / Global Sound Dekoder /

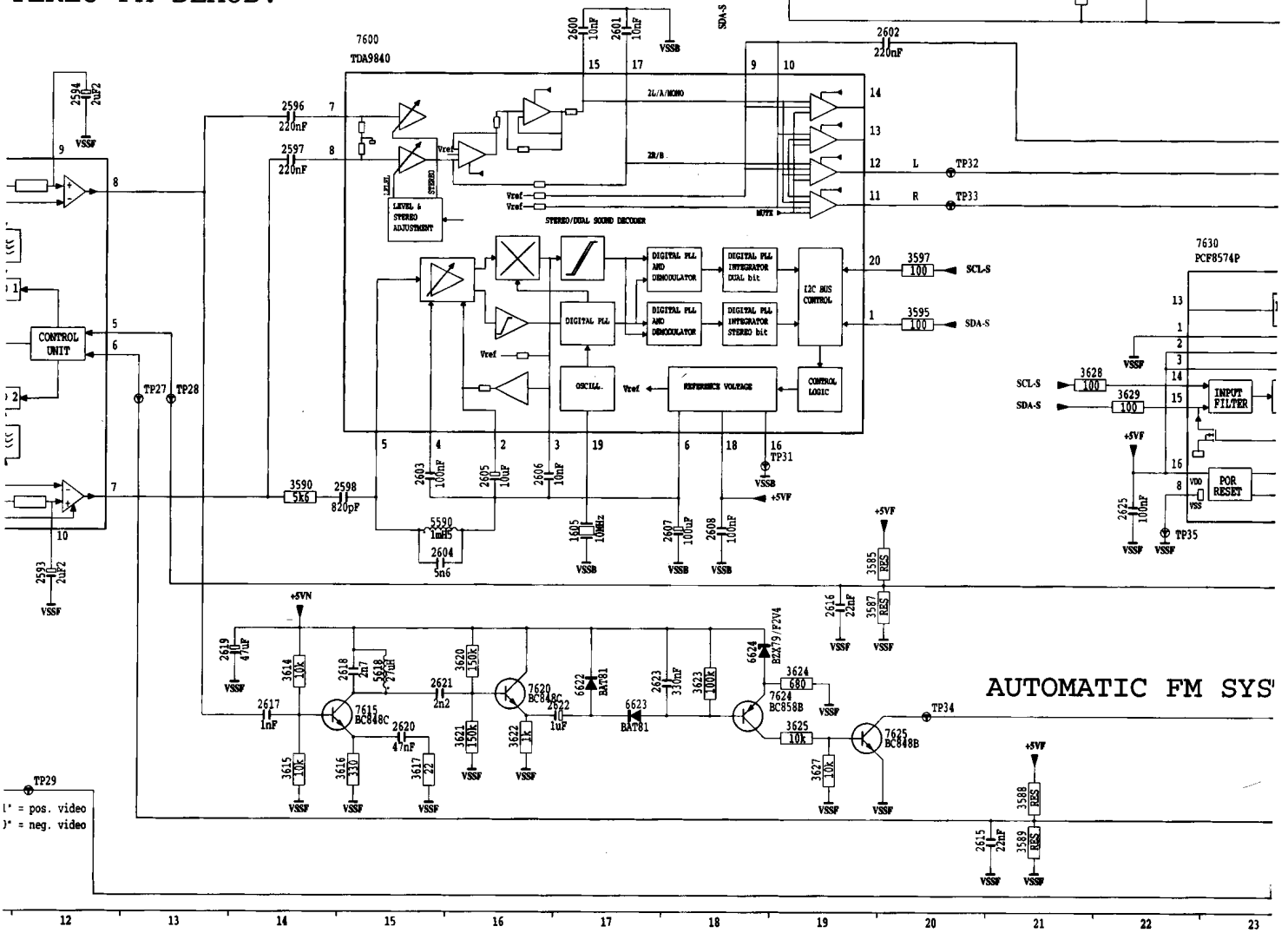


Decodeur global sound

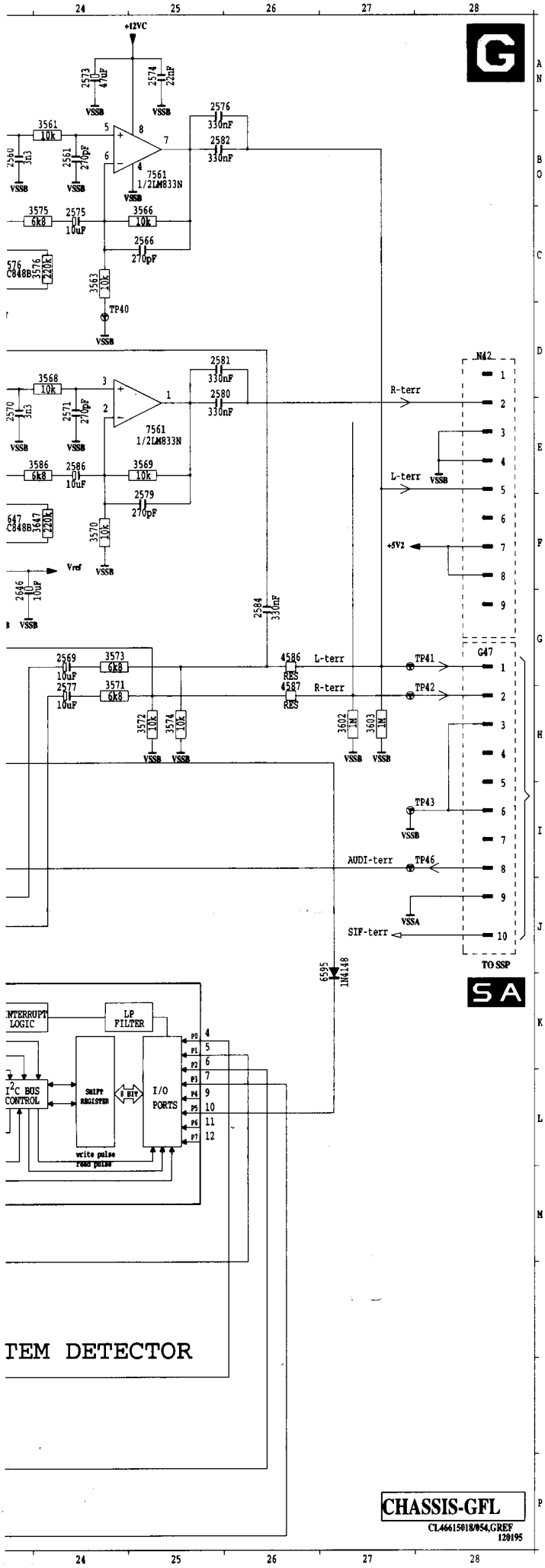


pin 6 of IC 7590	pin 5 of IC 7590	MODE
0	0	6.5
0	1	4.5
1	0	6.0
1	1	5.5

TEREO FM DEMOD.

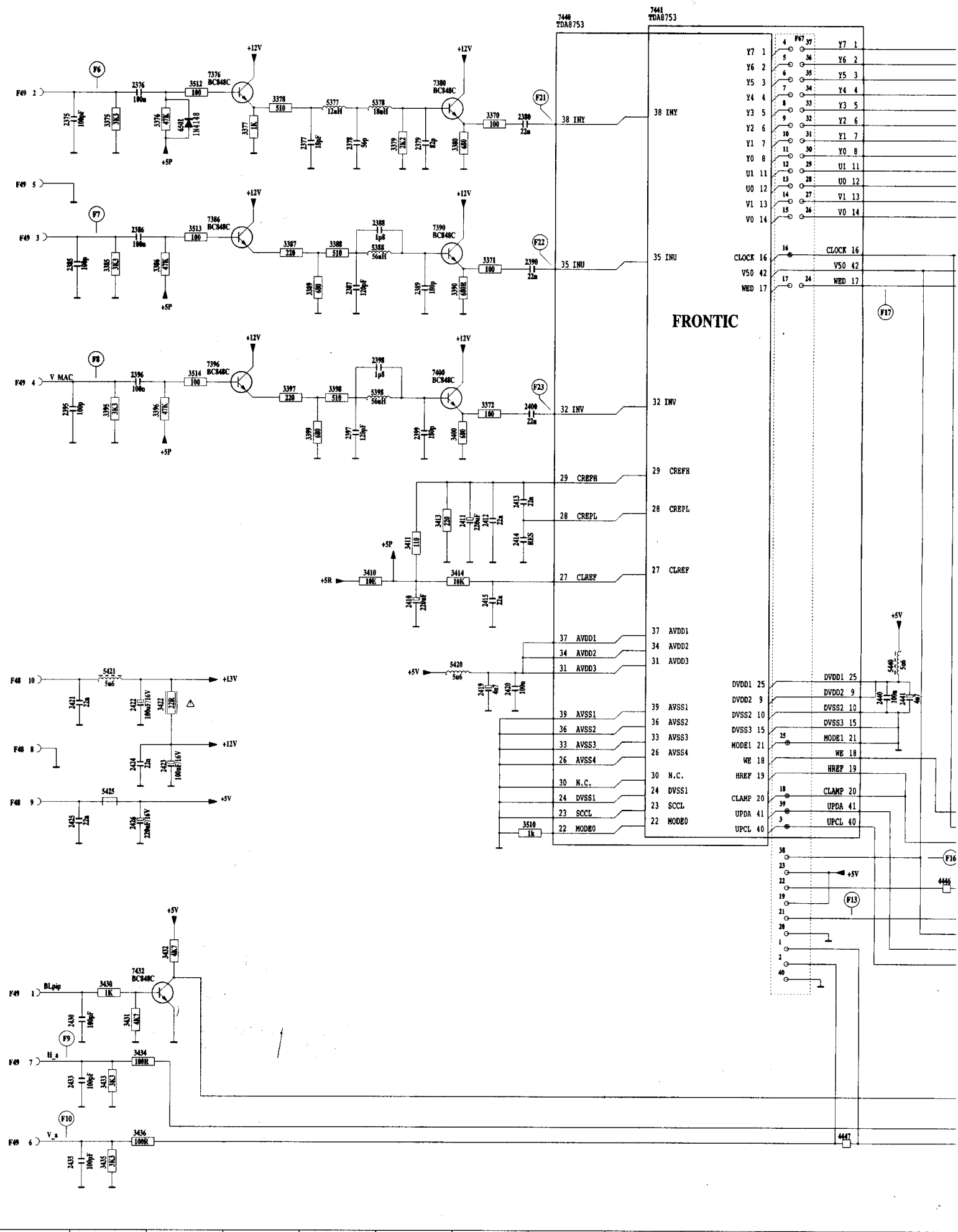


AUTOMATIC FM SYS

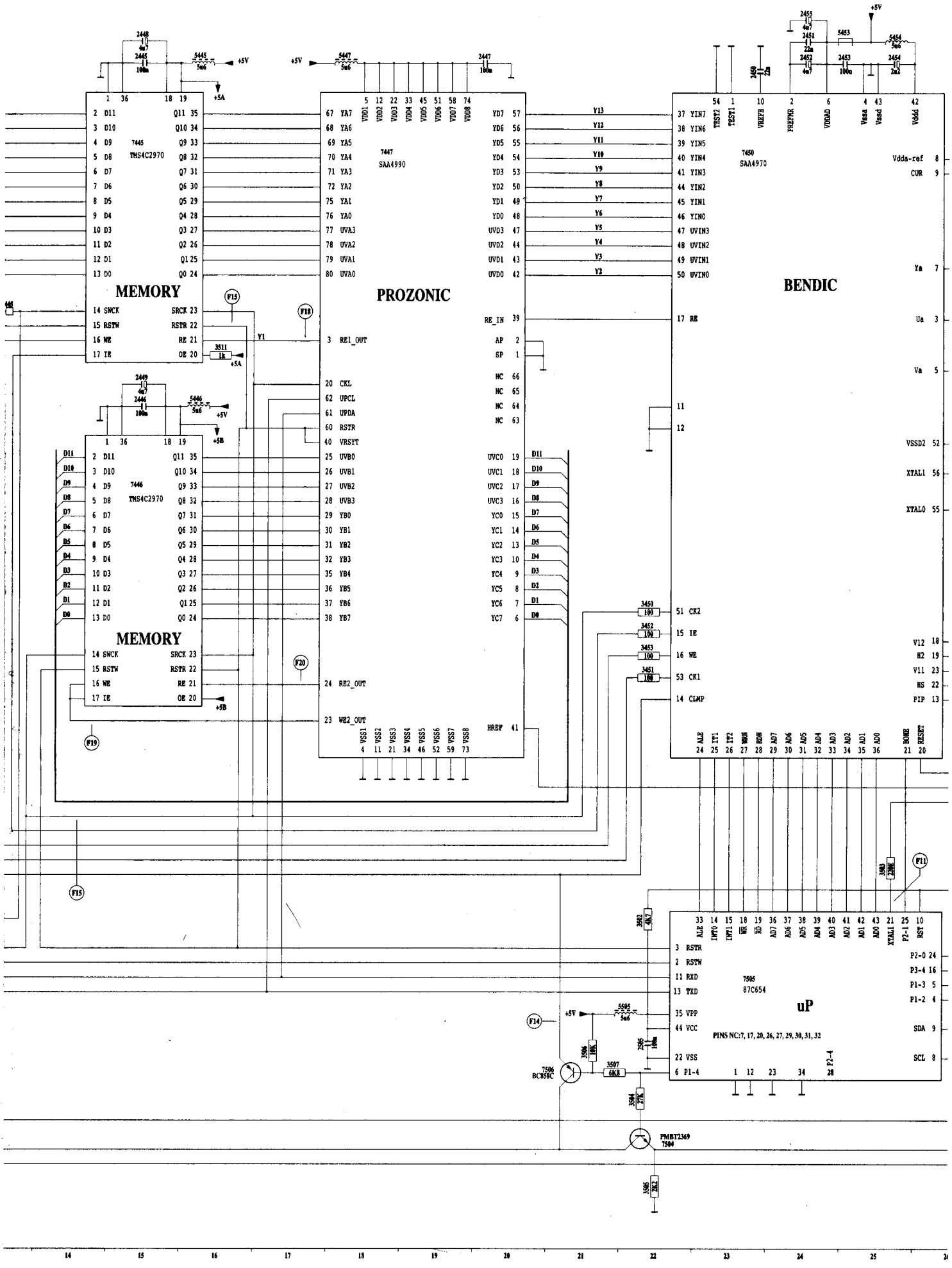


1530 A 5
1531 B 5
1532 E 4
1533 E 5
1534 B13
1535 B13
1536 B24
1578 H 7
1579 I 7
1580 J 7
1581 K 7
1582 L 7
1583 M 7
1605 M17
2524 G 3
2525 D 1
2527 H23
2528 B 2
2529 D 3
2531 D 4
2533 A13
2534 D 9
2535 D 9
2536 C10
2537 C11
2538 D10
2539 G24
2540 E12
2541 D12
2542 B14
2543 G 8
2544 G 8
2546 B14
2547 B15
2548 B15
2549 C16
2550 B27
2551 B17
2552 C19
2553 B19
2554 C19
2555 C20
2556 B18
2557 C21
2558 C21
2559 G17
2560 E23
2561 B24
2562 H19
2563 H19
2564 H20
2565 H20
2566 C25
2567 F20
2568 F21
2569 G24
2570 E23
2571 E24
2573 A24
2574 A25
2575 C24
2576 A25
2577 H24
2579 F25
2580 D25
2581 D25
2582 B25
2583 G21
2584 G26
2585 E24
2590 M 8
2591 M 9
2592 M10
2593 M12
2594 I12
2596 I14
2597 J14
2598 M15
2600 H17
2601 H17
2602 H20
2603 L15
2604 M15
2605 L16
2606 L16
2607 M18
2608 M18
2610 P 6
2611 P 7
2612 O 8
2613 O 8
2614 P10
2615 P20
2616 N19
2617 O14
2618 N15
2619 N13
2620 O15
2621 N15
2622 O17
2623 N17
2625 M22
2630 B 6
2631 D 6
2633 E 8
2634 G18
2635 G19
2638 C12
2642 C13
2643 B14
2644 A12
2646 F23
3523 F 2
3524 G 2
3525 C 1
3526 D 1
3527 C 2
3528 D 2
3529 G 3
3530 D 3
3531 B 4
3532 F 4
3533 B12
3534 E 3
3535 C10
3536 G 3
3537 D10
3538 C14
3539 D12
3540 B11
3541 G 8
3542 G 9
3543 G 9
3544 C15
3545 B15
3547 B16
3548 C16
3549 C15
3550 B17
3552 A17
3553 B18
3554 C20
3555 G17
3556 C18
3557 G20
3560 B23
3561 B24
3563 C24
3566 C25
3567 D23
3568 D24
3569 E25
3571 H24
3575 C24
3576 C24
3577 C23
3578 H 6
3579 I 6
3580 J 6
3581 K 6
3582 L 6
3583 M 6
3584 M 9
3585 M19
3587 N19
3588 O21
3589 P21
3590 M22
3591 H21
3593 G18
3594 H18
3595 M22
3596 P22
3597 K20
3598 H 6
3601 N 3
3602 H27
3603 H27
3604 O 3
3605 P 3
3606 P 3
3607 G26
3608 O 6
3609 O 7
3610 O 8
3611 P 7
3612 O 9
3613 O 9
3614 N14
3615 O14
3616 O15
3617 G18
3618 A11
3619 A11
3620 N16
3621 O16
3622 O16
3623 N18
3624 N19
3625 O19
3626 P10
3627 O25
3628 L21
3629 L22
3630 O10
3631 C 6
3632 D 6
3633 E 7
3634 D 8
3635 B 8
3637 B12
3638 C12
3640 B13
3641 C13
3642 C13
3643 B13
3644 A11
3645 F23
3646 F23
3647 F24
4560 F18
4586 G26
4587 H26
4601 O 3
4631 E 6
4644 A12
5535 B10
5537 C10
5590 M15
5600 N 4
5601 N 4
5602 O 4
5603 O 4
5604 O 4
5605 P 4
5606 P 4
5610 L 4
5611 L 4
5612 O 3
5613 O 3
5618 N15
5619 M 4
6535 A12
6540 A11
6545 B16
6555 G17
6584 H19
6595 J27
6612 O10
6622 N17
6623 O17
6624 N18
7525 D 2
7526 F 2
7530 C 3
7535 E 8
7545 B16
7550 D17
7561 E25
7561 B25
7576 C23
7590 I 9
7600 I15
7608 O 6
7610 O 8
7610 O11
7615 O15
7620 N16
7624 O18
7625 O20
7630 J22
7631 D 7
7632 D 7
7638 C12
7642 C13
7647 F23
G46 K 2
G47 G28
G80 A20
N42 D28
N43 H 2
TP1 L 3
TP10 P 4
TP11 P 2
TP12 M 3
TP13 D 1
TP14 E 1
TP15 G 4
TP16 D 4
TP17 E 8
TP18 G11
TP19 F12
TP2 L 3
TP20 F12
TP21 H 8
TP22 I 8
TP23 J 8
TP24 K 8
TP25 L 8
TP26 M10
TP27 L13
TP28 L13
TP29 O12
TP3 M 4
TP30 P 8
TP31 L18
TP32 J20
TP33 J20
TP34 O20
TP35 M22
TP36 F17
TP37 D22
TP39 B19
TP4 N 4
TP40 D24
TP41 G27
TP42 H27
TP5 N 4
TP6 O 4
TP7 O 4
TP8 O 4
TP9 P 4

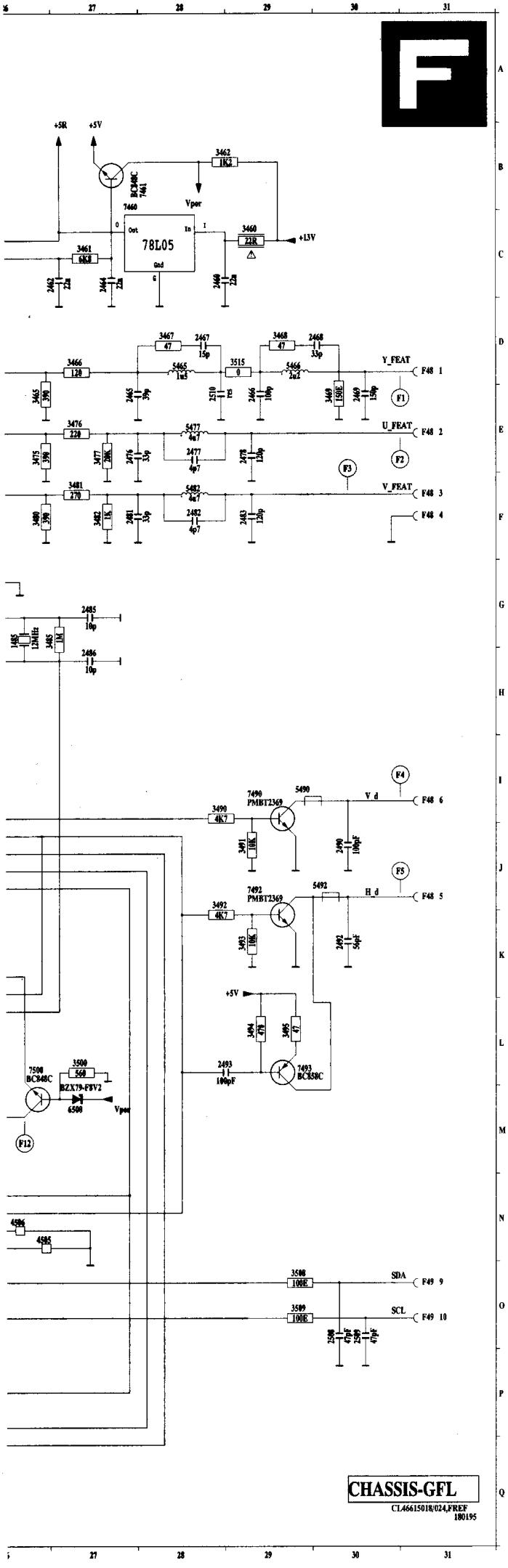
FEATURE BOX 3



Feature box (100Hz digital scan) Platte /



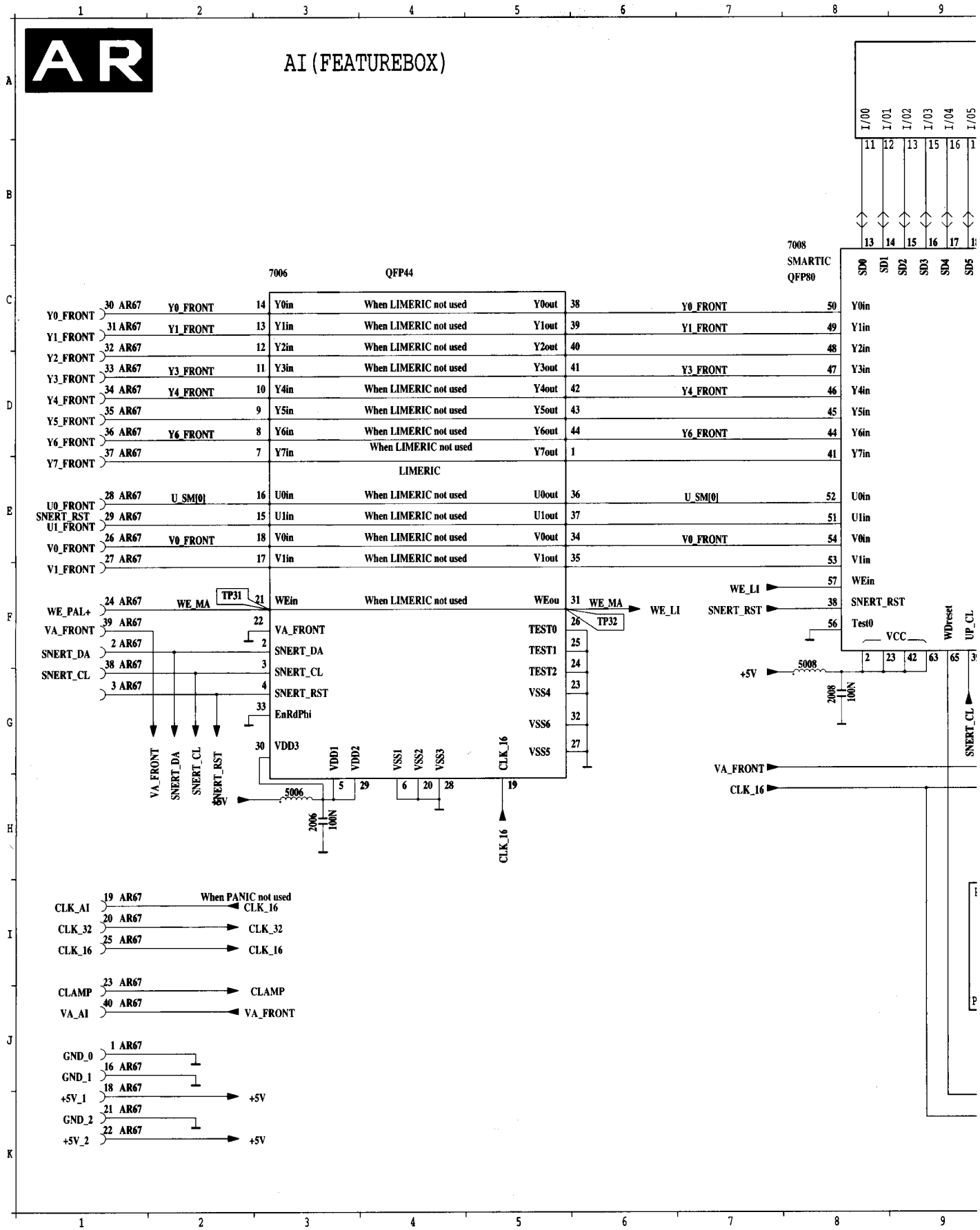
Platine feature box (100Hz digital scan)



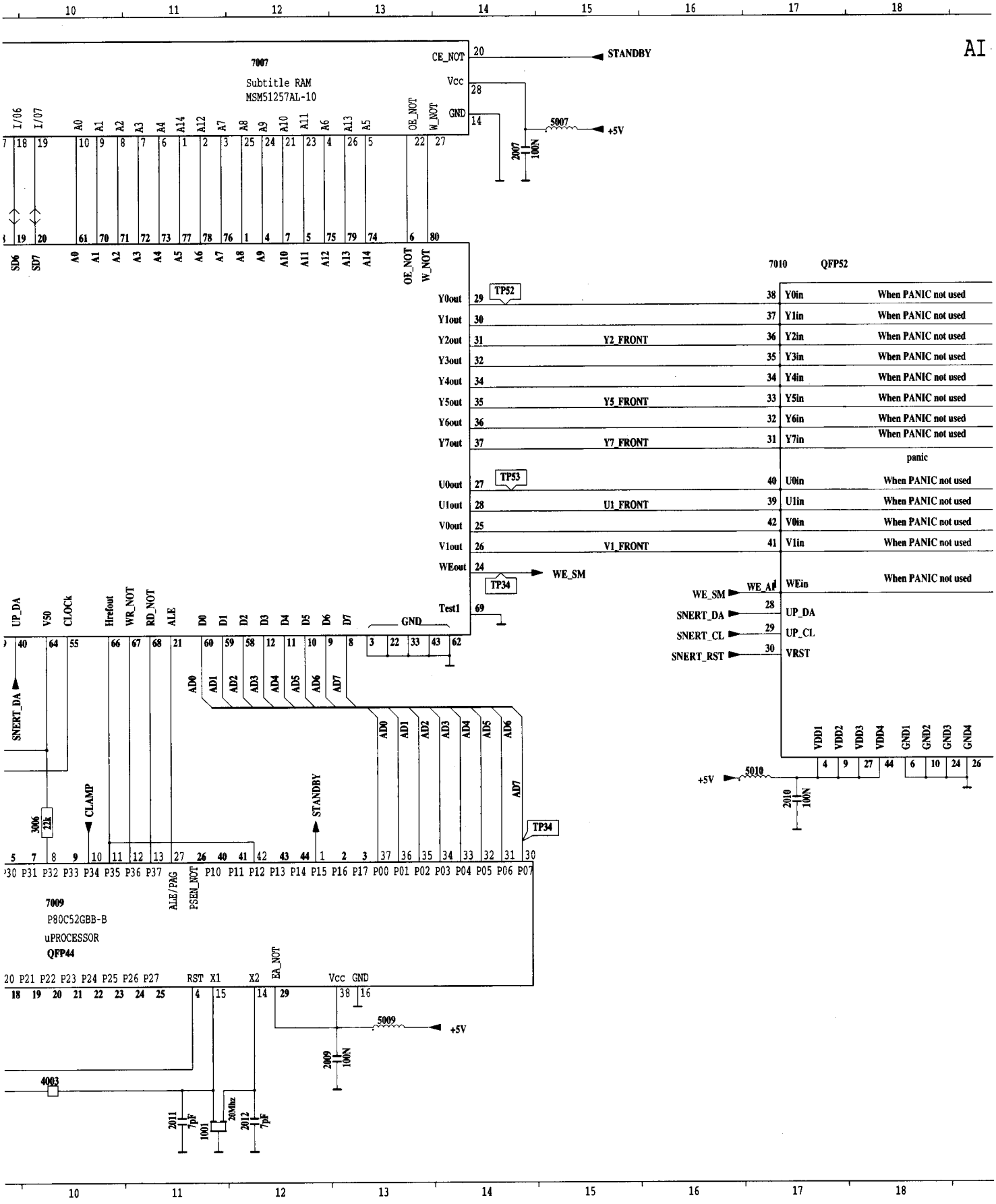
1485 G26
2375 C 1
2376 C 2
2377 C 5
2378 C 5
2379 C 6
2380 C 7
2385 E 1
2386 E 2
2387 E 5
2388 E 6
2389 E 6
2390 E 8
2395 G 1
2396 G 2
2397 G 5
2398 F 6
2399 G 6
2400 G 8
2410 I 6
2411 H 7
2412 H 7
2413 H 7
2414 I 7
2415 I 7
2419 K 7
2420 K 7
2421 K 2
2422 K 2
2423 L 3
2424 L 2
2425 L 2
2426 L 2
2430 O 2
2433 P 2
2435 Q 2
2440 K12
2441 K12
2445 A15
2446 F15
2447 A20
2448 A15
2449 F15
2450 B23
2451 A24
2452 A24
2453 A25
2454 A25
2455 A24
2460 C28
2462 C27
2464 C27
2465 E27
2466 E29
2467 D28
2468 D30
2469 E30
2476 E27
2477 E28
2478 E29
2481 F27
2482 F28
2483 F29
2485 G27
2486 H27
2490 I30
2492 K30
2493 L29
2505 Q22
2508 O30
2509 O30
2510 E28
3370 C 7
3371 E 7
3372 G 7
3375 C 2
3376 C 3
3377 C 4
3378 C 4
3379 C 6
3380 C 7
3385 E 2
3386 E 3
3387 E 4
3388 E 5
3389 E 5
3390 E 7
3395 G 2
3396 G 3
3397 G 4
3398 G 5
3399 G 5
3400 G 7
3410 I 5
3411 I 6
3413 H 6
3414 I 7
3422 K 3
3430 O 2
3431 O 2
3432 N 3
3433 P 2
3434 Q 2
3435 Q 2
3436 Q 2
3450 D22
3451 J22
3452 I22
3453 J22
3460 C29
3461 C27
3462 B29
3465 E26
3466 D27
3467 D28
3468 D29
3469 E30
3475 E26
3476 E27
3477 E27
3480 F26
3481 F27
3482 F27
3485 G27
3490 I28
3491 J29
3492 J28
3493 K29
3494 L29
3495 L29
3500 L27
3502 M22
3503 M25
3504 P22
3505 Q22
3506 Q21
3507 Q21
3508 Q29
3509 O29
3510 L 8
3511 E16
3512 C 3
3513 E 3
3514 G 3
3515 D29
3998 M 5
3999 N 5
4445 E13
4446 M13
4447 Q12
4505 N26
4506 N26
5377 C 5
5378 C 6
5388 E 6
5398 G 6
5420 J 7
5421 J 2
5425 L 2
5440 I12
5445 A16
5446 F16
5447 A18
5453 A25
5454 A25
5465 D28
5466 D29
5477 E28
5482 F28
5490 I29
5492 J30
5505 N22
6500 M27
6501 C 3
7376 C 3
7380 C 6
7386 E 3
7390 E 6
7396 F 3
7400 G 6
7432 N 2
7440 B 8
7441 B 9
7445 C15
7446 G15
7447 C18

7450 C23
7460 B27
7461 B28
7490 I29
7492 J29
7493 L29
7500 L26
7504 P22
7505 N23
7506 O21
F48 D31
F48 E31
F48 F31
F48 F31
F48 J31
F48 I31
F48 K 1
F48 L 1
F48 K 1
F49 O 1
F49 C 1
F49 E 1
F49 G 1
F49 D 1
F49 Q 1
F49 F 1
F49 O31
F49 O31
F67 B11

Feature box AI panel / Feature Box AI Platte /

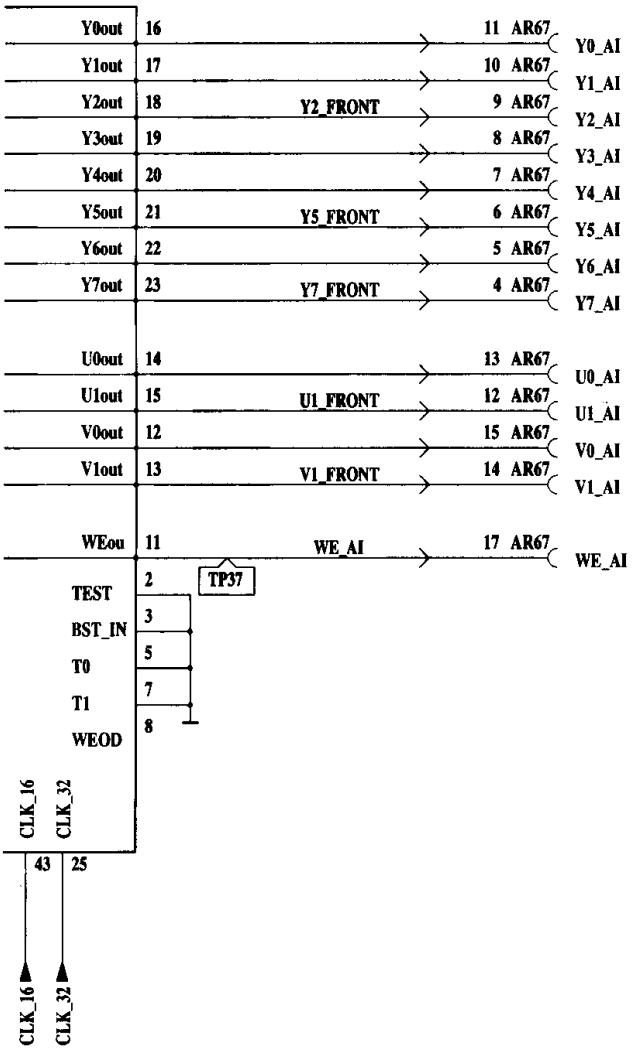


Platine AI feature box



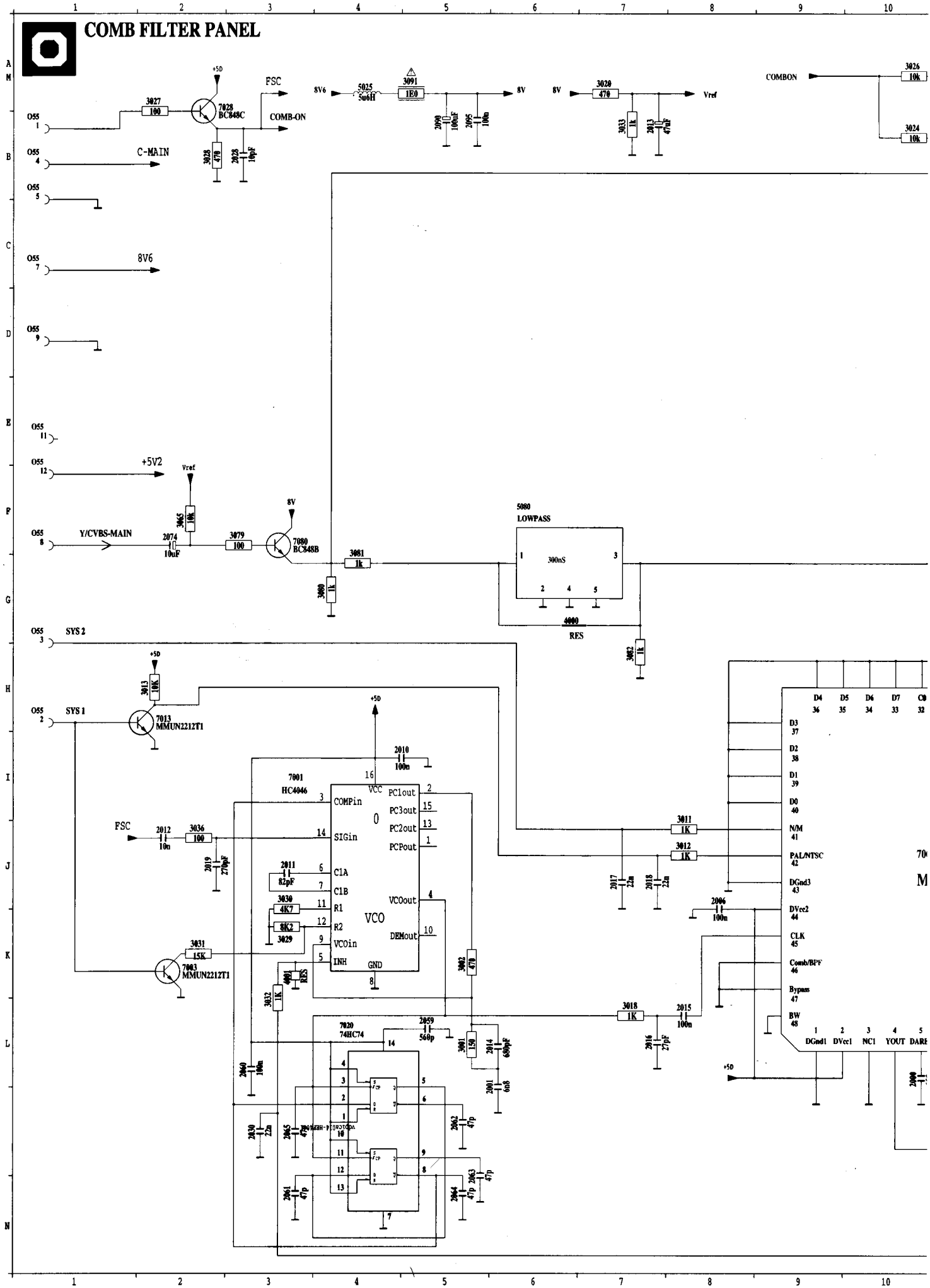
(FEATUREBOX)

AR

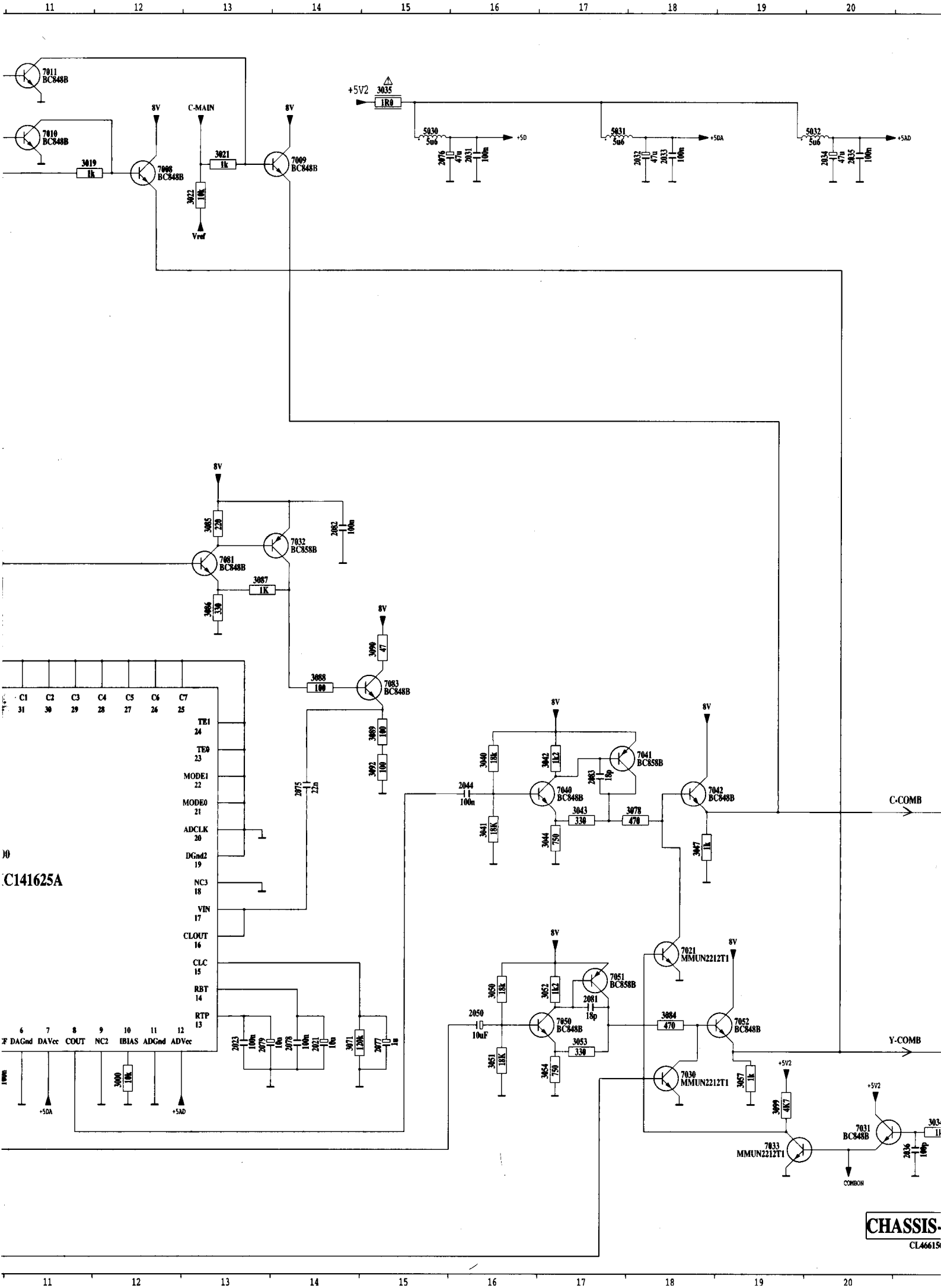


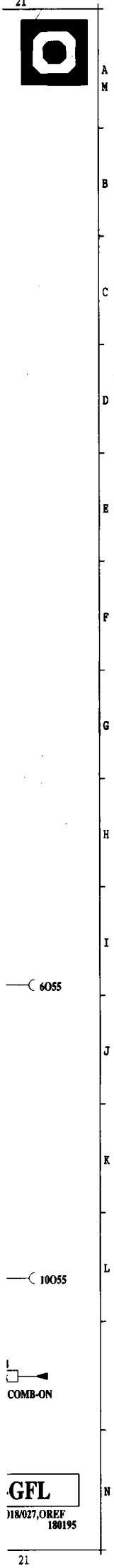
CHASSIS-GFL

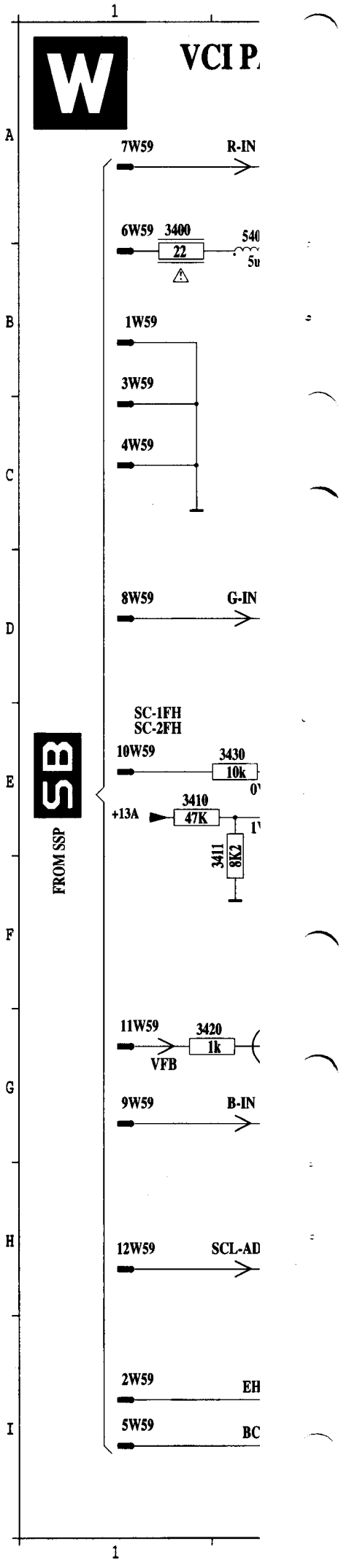
CL46615018/049,ARref
040195

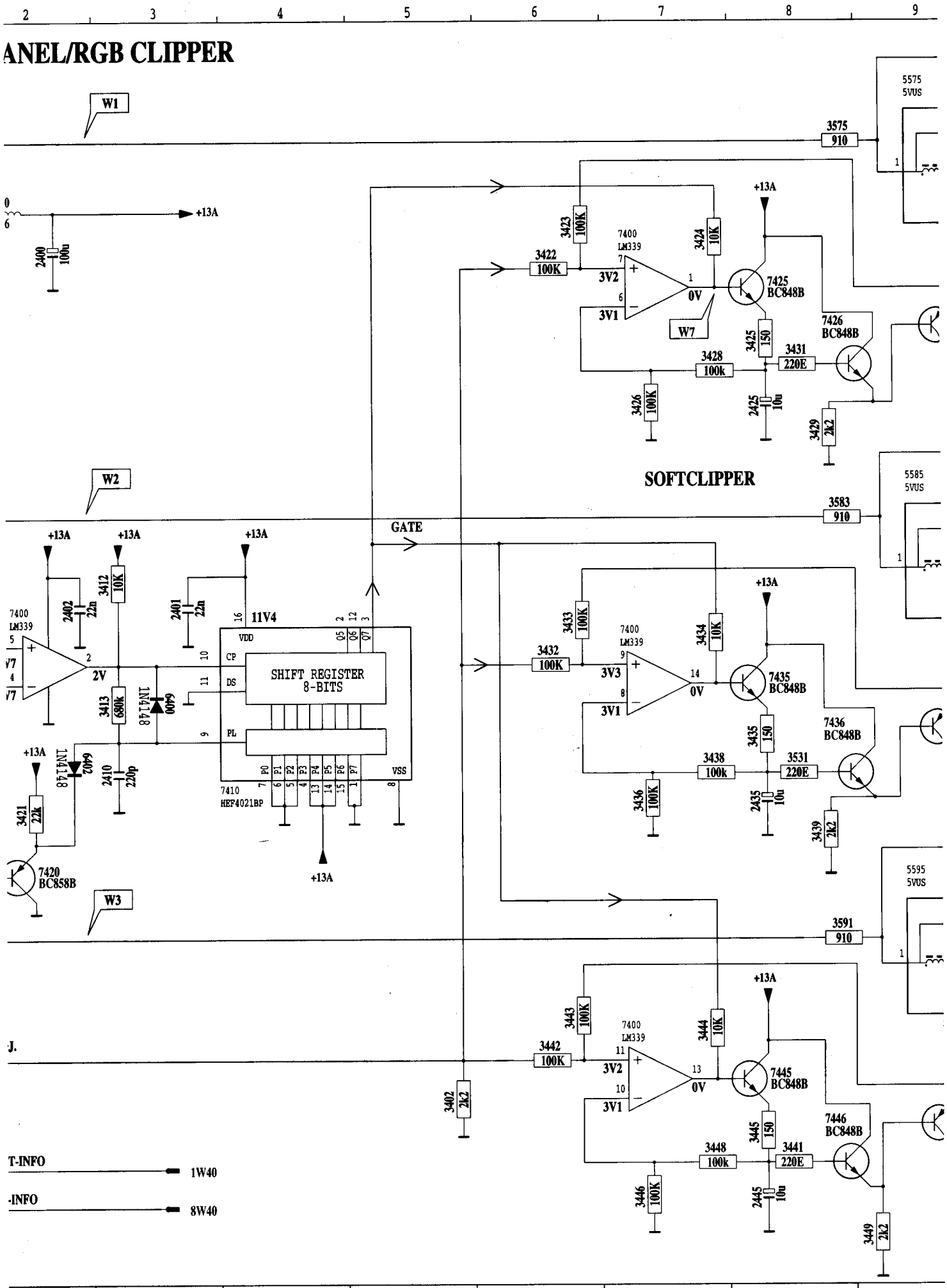

COMB FILTER PANEL
FSC
COMB-ON
C-MAIN
8V6
+5V2
Y/CVBS-MAIN
SYS 2
SYS 1
COMBON
Vref
LOWPASS
RES
7001
HC4046
COMPin
SIGin
C1A
C1B
R1
R2
VCOin
INH
PC1out
PC3out
PC2out
PCPout
VCOout
DEMout
VCO
VCC
GND
7020
74HC74
7013
MMUN2212T1
7003
MMUN2212T1
7028
BC848C
7080
BC848B
D3
D2
D1
D0
N/M
PAL/NTSC
DGnd3
DVcc2
CLK
Comb/BPF
Bypass
BW
DGnd1
DVcc1
NC1
YOUT

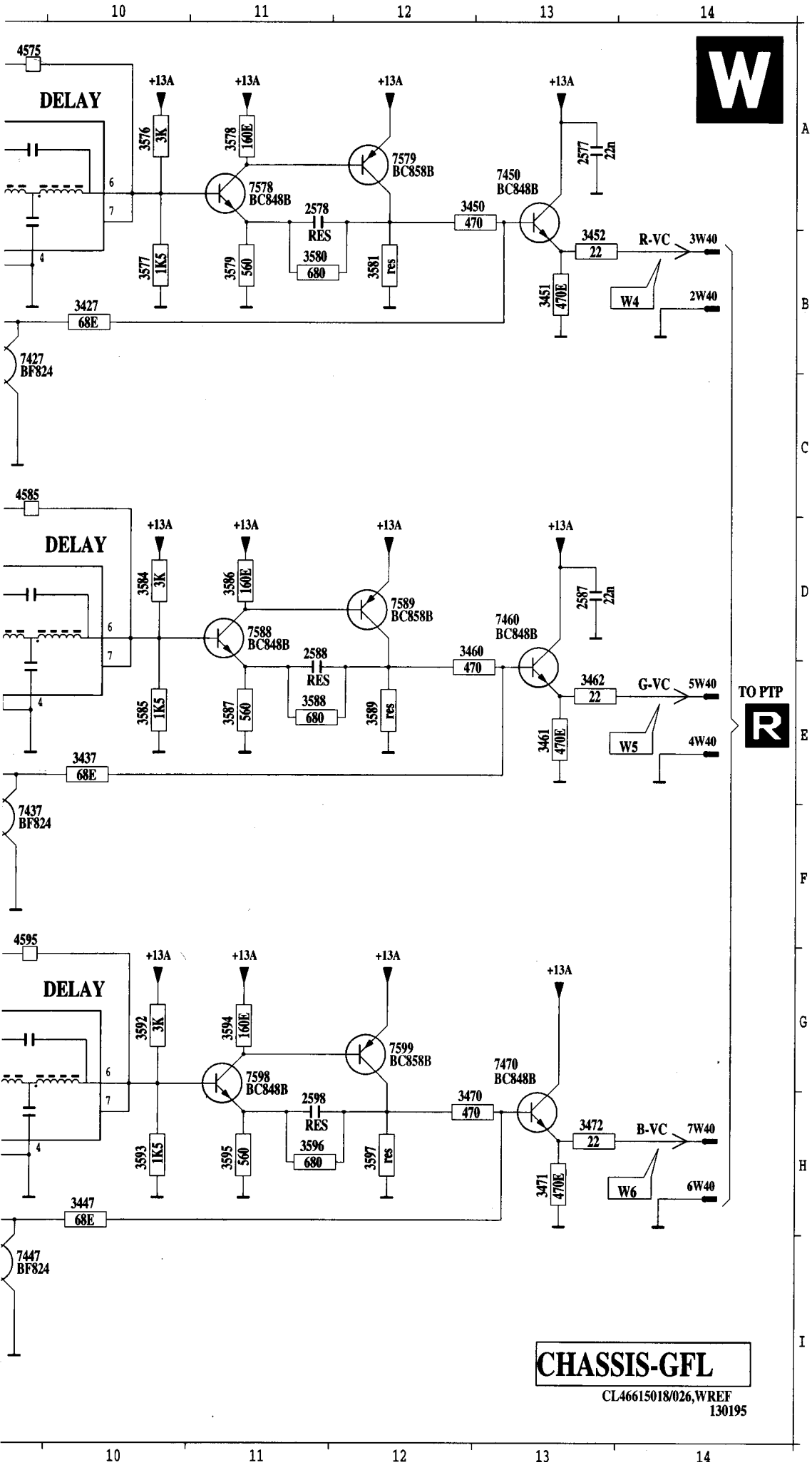
Platine filtre en peigne

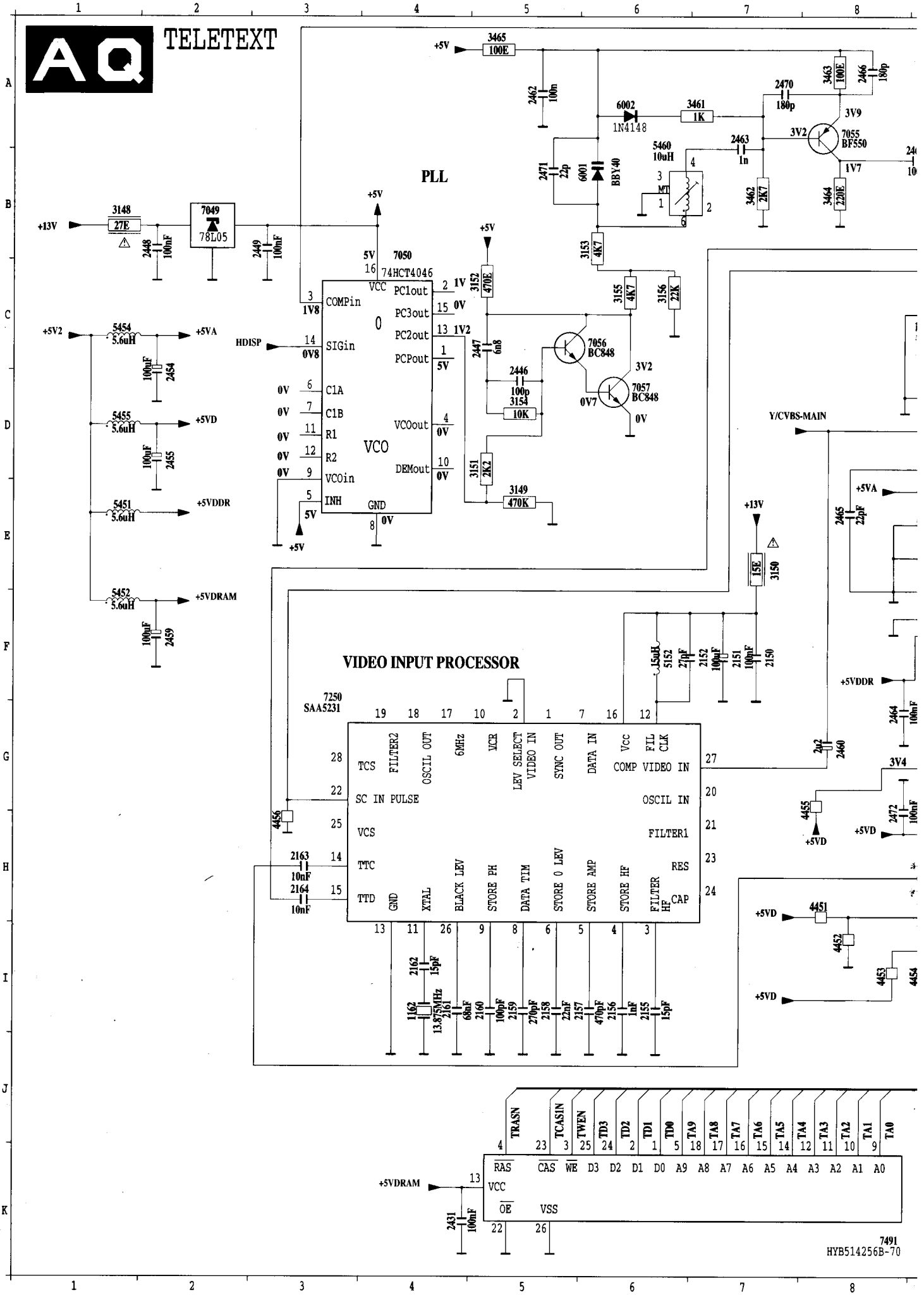



21
A
M
B
C
D
E
F
G
H
I
6O55
J
K
L
10O55
COMB-ON
N
GFL
018/027,OREF
180195
21

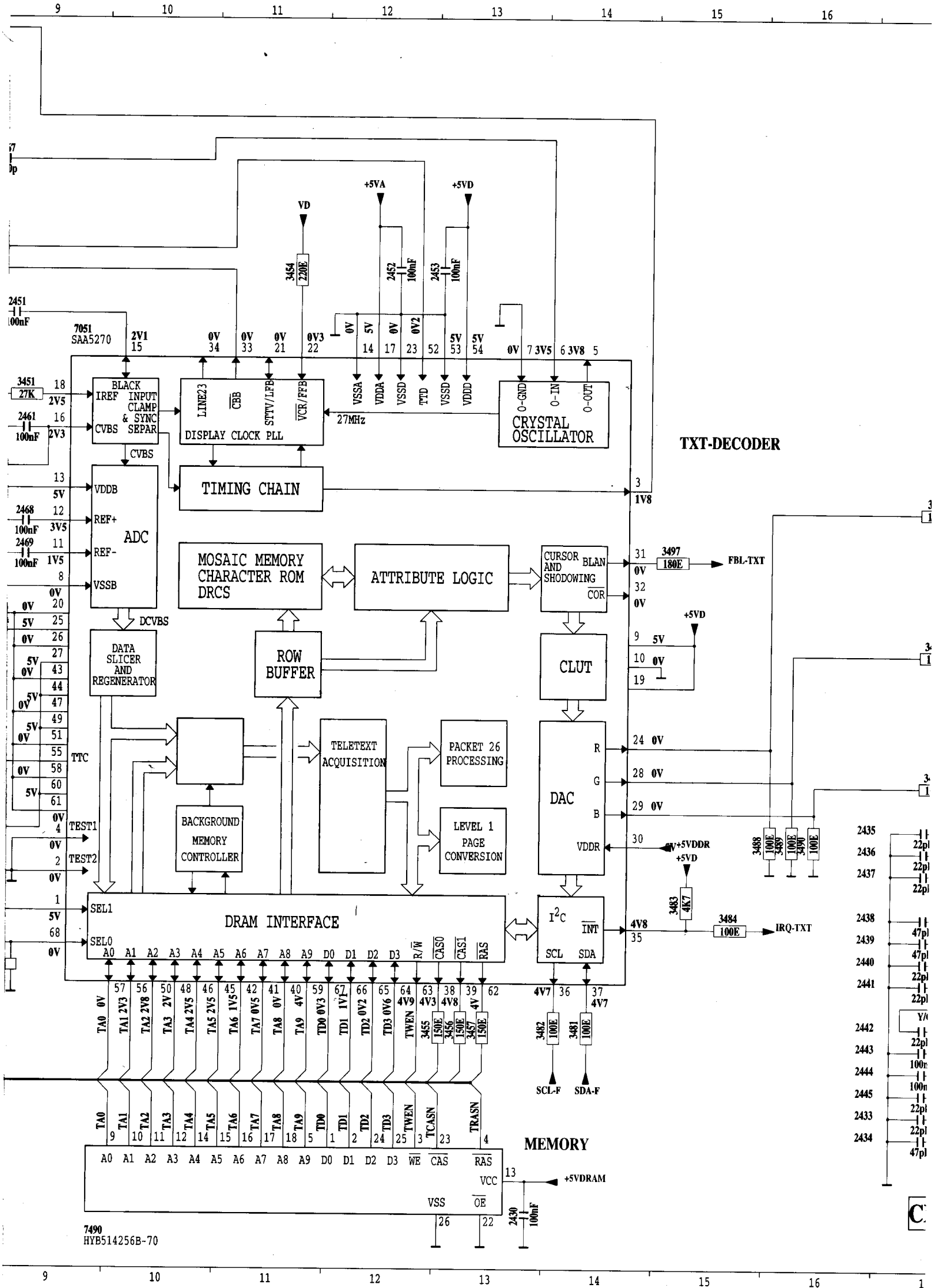

1
W
VCI P
A
7W59
R-IN
6W59
3400
22
540
5u
B
1W59
3W59
C
4W59
8W59
G-IN
D
SC-1FH
SC-2FH
SB
10W59
3430
10k
E
3410
47K
+13A
3411
8K2
FROM SSP
F
11W59
3420
1k
VFB
G
9W59
B-IN
H
12W59
SCL-AD
2W59
EH
I
5W59
BC
1

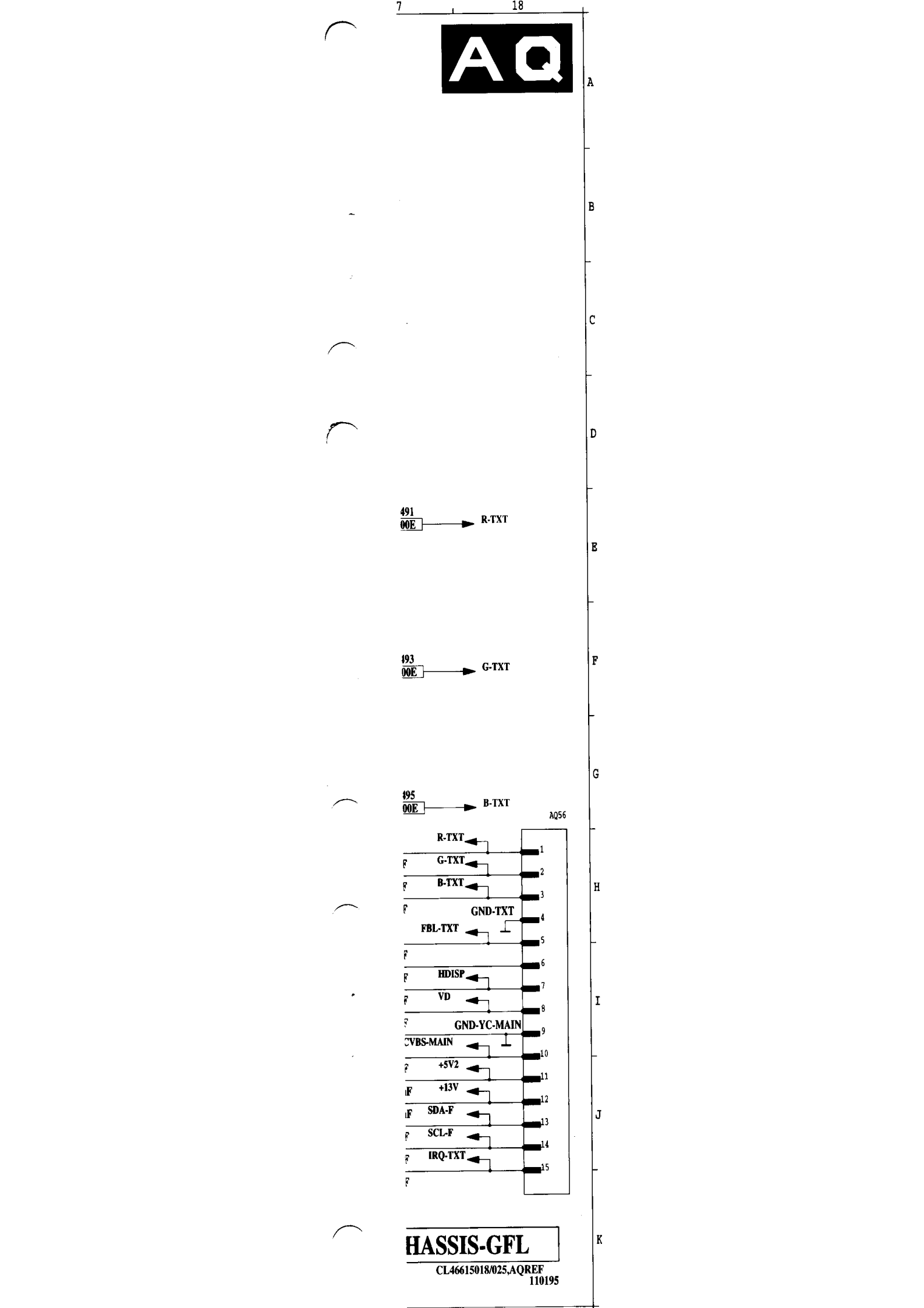

ANEL/RGB CLIPPER
W1
W2
W3
W7
+13A
GATE
SOFTCLIPPER
SHIFT REGISTER
8-BITS
7410
HEF4021BP
7400
LM339
11V4
2V
3V1
3V2
3V3
0V
7425
BC848B
7426
BC848B
7435
BC848B
7436
BC848B
7445
BC848B
7446
BC848B
7420
BC858B
5575
5VUS
5585
5VUS
5595
5VUS
3575
910
3583
910
3591
910
T-INFO
1W40
-INFO
8W40

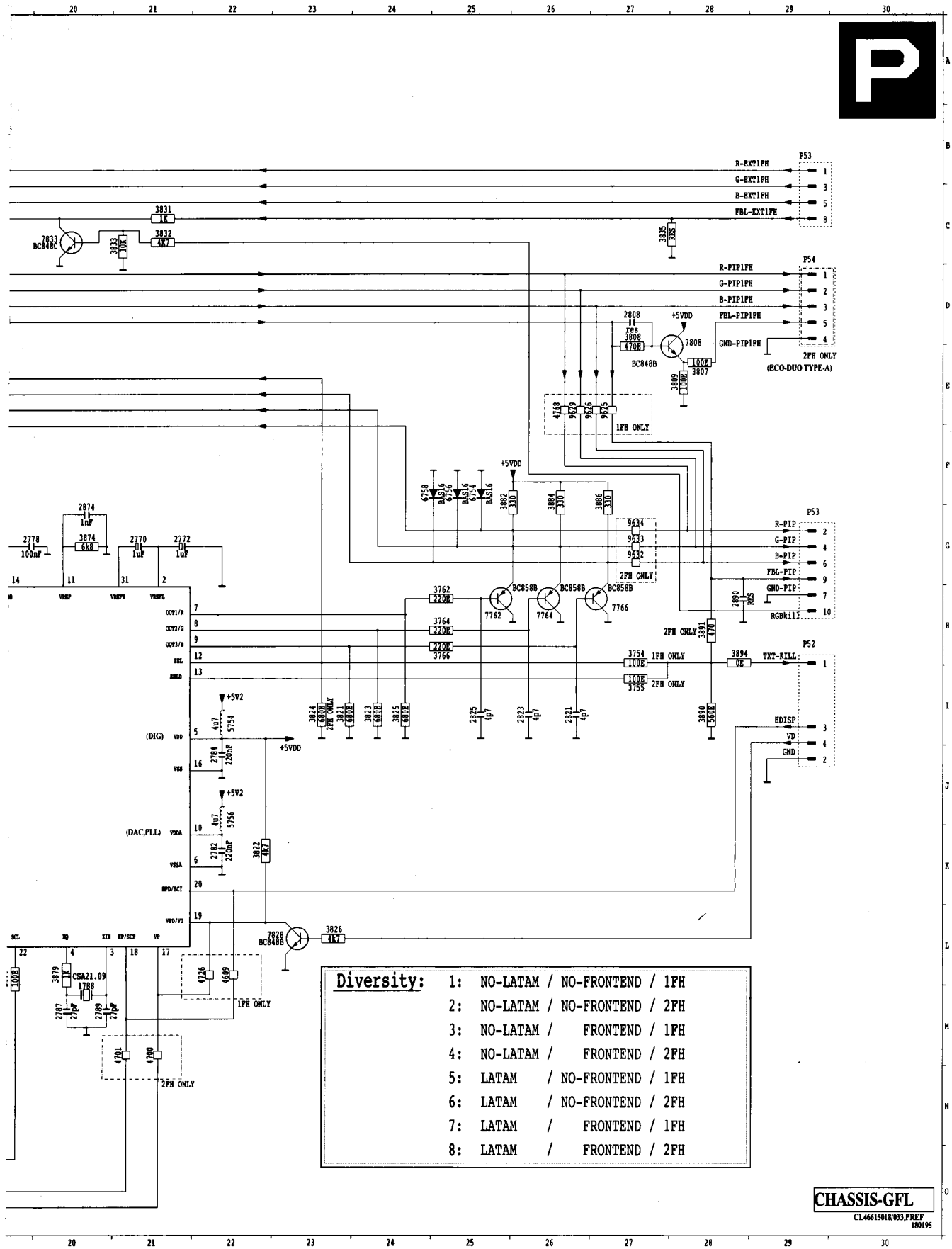



TELETEXT
PLL
VIDEO INPUT PROCESSOR
7250
SAA5231
7050
74HCT4046
VCO
7049
78L05
7055
BF550
7056
BC848
7057
BC848
6002
1N4148
6001
BBY40
+5V
+13V
+5VA
+5VD
+5VDDR
+5VDRAM
+5V2
HDISP
Y/CVBS-MAIN
COMPin
SIGin
PC1out
PC3out
PC2out
PCPout
VCOout
DEMout
VCOin
INH
C1A
C1B
R1
R2
TCS
FILTER2
OSCIL OUT
6MHz
VCR
LEV SELECT VIDEO IN
SYNC OUT
DATA IN
Vcc
FIL CLK
COMP VIDEO IN
SC IN PULSE
OSCIL IN
VCS
FILTER1
TTC
RES
TTD
GND
XTAL
BLACK LEV
STORE PH
DATA TIM
STORE 0 LEV
STORE AMP
STORE HF
FILTER HF CAP
13.375MHz
7491
HYB514256B-70

Platine decodeur teletexte



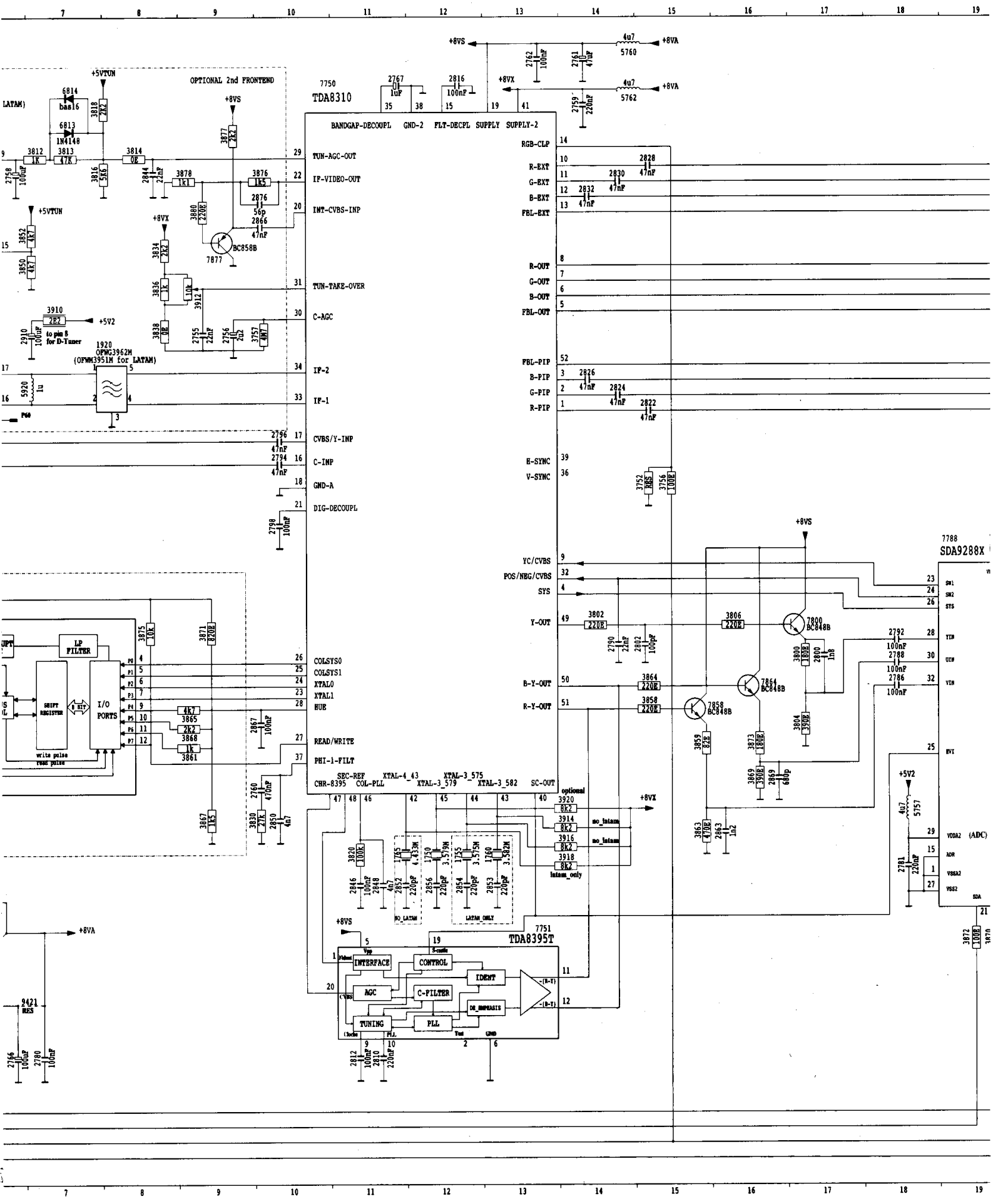

7
18
AQ
A
B
C
D
491
00E
R-TXT
E
493
00E
G-TXT
F
G
495
00E
B-TXT
AQ56
R-TXT
G-TXT
B-TXT
GND-TXT
FBL-TXT
HDISP
VD
GND-YC-MAIN
CVBS-MAIN
+5V2
+13V
SDA-F
SCL-F
IRQ-TXT
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
H
I
J
K
HASSIS-GFL
CL46615018/025,AQREF
110195



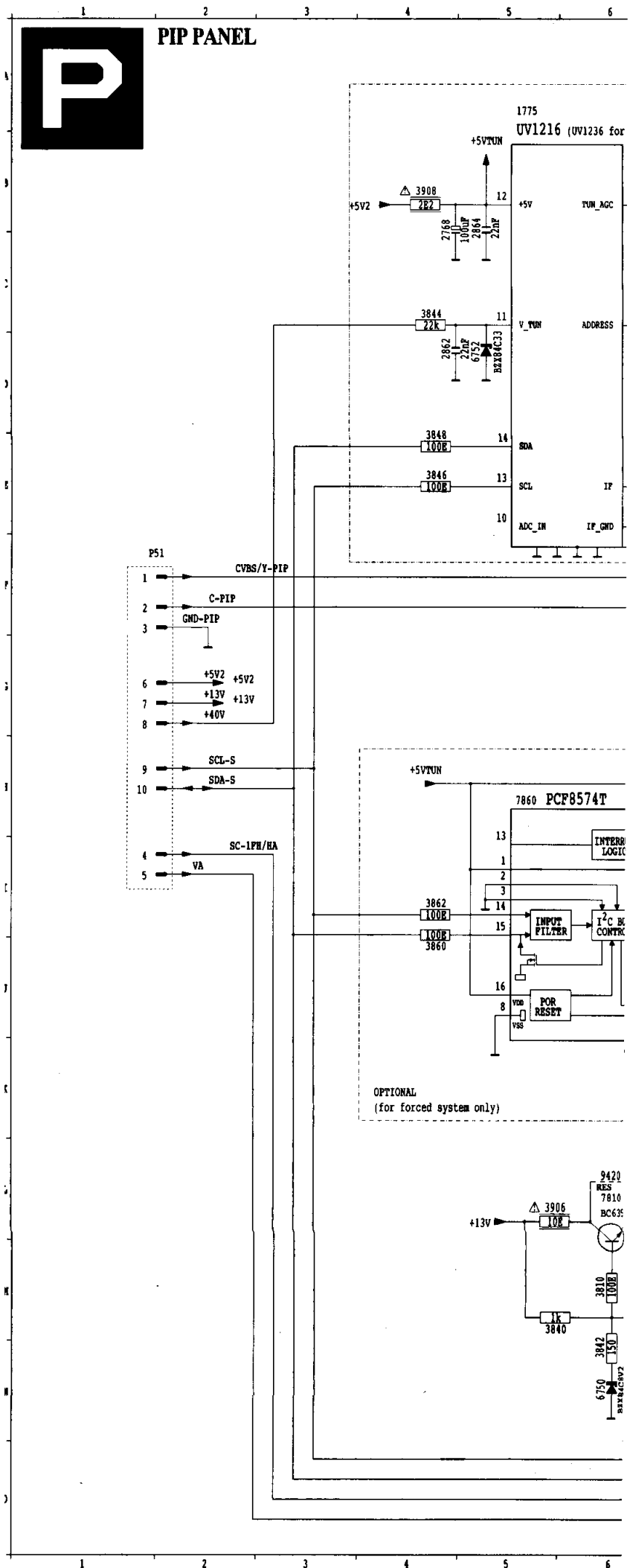
CHASSIS-GFL

CL46615018/033,PREF
180195

Platine image dans image



d Platte /


PIP PANEL
1775
UV1216 (UV1236 for
+5VTUN
+5V2
3908
2E2
2768
100nF
2864
22nF
12
+5V
TUN_AGC
3844
22k
11
V_TUN
ADDRESS
2862
22nF
6752
BZX84C33
3848
100E
14
SDA
3846
100E
13
SCL
IF
10
ADC_IN
IF_GND
P51
1
CVBS/Y-PIP
2
C-PIP
3
GND-PIP
6
+5V2
+5V2
7
+13V
+13V
8
+40V
9
SCL-S
10
SDA-S
4
SC-1FH/HA
5
VA
+5VTUN
7860 PCF8574T
13
INTERR
LOGIC
1
2
3
14
3862
100E
15
100E
3860
INPUT
FILTER
I2C BU
CONTRO
16
8
VDD
VSS
POR
RESET
OPTIONAL
(for forced system only)
9420
RES
7810
BC63
+13V
3906
10E
3810
100E
1k
3840
3842
150
6750
BZX84C8V2

7. Electrical adjustments

Adjustment conditions

All electrical adjustments should be performed under the following conditions:

- Power supply voltage: 220-240V ± 10% 50-60 Hz ± 5%
- Warm-up time ≈ 10 minutes
- The voltages and oscillograms are measured in relation to tuner earth. Never use the heat sinks as earth.
- Test probe: Ri > 10 MΩ; Ci ≤ 20 pF.

1. Adjustments on the large signal panel

1.1 +141V power supply voltage

Connect a voltmeter to L5316.
With the aid of R3187 adjust the power supply voltage on the FFS DRIVE CIRCUIT to +141V ± 0.5V.

1.2 +5V2 power supply voltage

Connect a voltmeter to pin 1 of L13.
With the aid of R3120 adjust the voltage to 5.2V ± 50mV.

1.3 Focusing

This is adjusted with the focus potentiometer (uppermost on the line transformer).

1.4 Vg2 adjustment

Switch on the Vg2 test pattern via the Service Alignment Menu (see 7.3).
With the aid of a DC voltmeter (Ri > 1MΩ) measure the DC voltages on pin 9 of the RGB output amplifiers IC7230, IC7240 and IC7250 on the picture tube panel. Find the highest of the three voltages and with the aid of the Vg2 (SCREEN) potentiometer on the line output transformer adjust it to 158V ± 2V.

1.5 Horizontal centring (DC-offset)

Switch on the geometry test pattern via the Service Alignment Menu (See 7.5).
(For this purpose select in sequence: Alignments, Geometry, Test pattern on, picture width).
Using R3442 adjust the picture in such a manner that the test pattern appears in the middle of the picture tube.

Remarks:
The 'Horizontal Shift' adjustment in the Service Alignment Menu **cannot** be adjusted with the internal test pattern. An external test pattern from a generator or an aerial must be used for this purpose.

2. CVBS level adjustment on the small signal panel

Feed a CVBS colour bar signal with an amplitude of 700mV (between black and white level) to pin 20 of EXT1 and select the display from EXT1.
Using R3161 on the SSP [S5] adjust the amplitude of the signal on pin 8 of IC7500 (TDA4780) on the SSP [S6] to 325mV (between black and white level).

3. Adjustment North-South correction on 4:3 SF picture tubes

With the aid of R3461 on the N/S panel [AP] adjust the North-South geometry until this is optimum.

4 Adjustment of the PIP module [P]

This adjustment is only applicable to PIP modules equipped with a tuner.

Introduction
The AGC adjustment prevents the PIP tuner from being overdriven by a strong aerial signal. Overdriving is visible as a loss of colour and synchronisation in the PIP picture. The amplification must be adjusted to minimum level, but the signal should be as free from noise as possible. At maximum amplification R3912 is fully left, on minimum amplification R3912 is fully right.

Adjustment
Feed in a (strong) aerial signal of 4mV (72dBμV).
Turn R3912 fully right (minimum amplification). Turn R3912 slowly left until the noise no longer decreases.
If an aerial signal is not available as a compromise adjust R3912 to 30% of the total adjustment range (100% is maximum adjustment, fully left).

5. Adjustments in the service alignment menu

Activate by:
- briefly short circuiting the service pins 'ALIGNMENT MODE' on the SSP;

or:
- pressing the ALIGN key on the Dealer Service Tool (DST) (RC7150), followed by entering the password 3140 and pressing the 'OK' key.

The Service Menu will now appear on the screen.
This displays the following information:

1 The software date ('Date') and version ('Ver.') of the ROM.
2 The total number of operation hours ('Operation Hours')
3 The contents of the error buffer ('Errors'). The most recent error is at the top, immediately following the 'ERRORS' indication.
4 The module that generated the error ('Defect. Module'). (If there are more errors in the buffer not caused by one individual module there is probably another error. The message 'UNKNOWN' is then displayed here).
5 Menu item 'Reset Error Buffer'. The error buffer can be erased via the key.
6 Menu item 'Functional Test'. All devices are tested via the key. Eventual errors are displayed at the error buffer location. (The error buffer is not erased; the contents return when the Functional Test is closed).
7 Menu item 'Alignments'. This enables the Alignments sub menu to be called up.

The following adjustments can be selected:
- 'General': Adjustment of 'White Drive', 'Cut-off', 'Soft clipper', 'Peak White Limiter', 'PIP brightness', 'Input level stereo decoder', 'Stereo channel separation'.
- 'Normal Geometry': General geometry adjustments.

- 'Super wide geometry': Geometry adjustments of the 'Panorama' position in 16:9 sets (not for other positions).
- 'Options': Setting of the initialisation codes in the set via text.
- 'Option number': All options together, expressed in two long numbers. The original factory settings of these numbers can be found on a picture tube sticker inside the set.
- 'Store': Preserving all adjustments.

The adjustments
General:
- After all adjustments have been completed the item 'STORE' must be selected to store all values in the permanent memory.
- When the option codes have been modified and stored the set should be switched off and on again with the mains switch in order to activate the new adjustments. (When switching off and on via stand-by the option code settings are NOT read in by the microprocessor).
- If an empty EAROM (permanent memory) is detected all options receive the pre-programmed standard values.
- In various menus a built-in test pattern can be called up. The test pattern generator can be activated with the item 'TEST PATTERN ON/OFF'. The test pattern only appears following the selection of the specific adjustment. The test patterns are generated by the teletext module.

5.1 Picture tube adjustments

White Drive
Before adjusting turn off DNR and 'Contrast Plus'.
Use the internal test pattern (a white picture). Adjust the white level for the three adjustments 'WARM', 'NORMAL' and 'COOL'. Begin in the 'NORMAL' position and take the standard value for green (value 32) as a basis, and then adjust red and blue.

The factory settings of the colour temperatures are:

	Europe	*Hong Kong*
'Warm'	7200K	7200K
'Normal'	8700K	9500K
'Cool'	10200K	12000K

In case no colour analyzer is available the following values can be maintained for 'White Drive':

	Cool	*Normal*	*Warm*
R	25	26	28
G	26	26	25
B	18	16	13

Cut-off
Before adjusting turn off DNR and 'Contrast Plus', set the brightness adjustment to step 37 (brightness:), and contrast to maximum.
Use the internal test pattern (a black picture).
Use a Minolta CA-100 colour analyzer and adjust the light output for the adjustments 'COOL', 'NORMAL' and 'WARM' to 3 NIT with the colour temperatures below:

	Europe	*Hong Kong*
'Warm'	7200K	7200K
'Normal'	8700K	9500K
'Cool'	10200K	12000K

In case no colour analyzer is available the following values can be maintained for 'Cut-off':

	Cool	*Normal*	*Warm*
R	23	24	29
G	20	20	20
B	27	20	14

Soft-clipper
Use a black picture with a small white square in the middle as a test pattern. Adjust contrast to maximum. Adjust 'Peak White Limiter' temporarily to 63. Using a colour analyzer measure at the middle of the white square and with the aid of 'Peak White Limiter' adjust the light output as follows:
29"SF : 520 NIT
32" : 320 NIT
28"WS : 680 NIT

In case no colour analyzer is available the following values can be maintained for 'Soft Clipper':
29"SF : 'Soft Clipper' = 49

Peak White Limiter
Use a black picture with a small white square in the middle as a test pattern. Adjust contrast to maximum. Adjust 'Soft Clipper' temporarily to 63.

Using a colour analyzer measure at the middle of the white square and with the aid of 'Peak White Limiter' adjust the light output as follows:
29"SF : 520 NIT
32" : 320 NIT
28"WS : 780 NIT

In case no colour analyzer is available the following values can be maintained for 'Peak White Limiter':
29"SF : 'Peak White Limiter' = 22

5.2 Small signal adjustments

PIP brightness
Adjust PIP brightness in such a manner that the brightness of the PIP picture is the same as the main picture.

Stereo decoder input level
Feed in an aerial signal with a PAL BG signal and tune the set.
Select audio mode DUAL and modulate both audio channels with a 1kHz signal with equal amplitude. Adjust 'Input Level Stereo Decoder' to equal sound volume levels for language selections I and II.

Stereo channel separation
Feed in an aerial signal with a PAL BG signal and tune the set.
Select audio mode STEREO and modulate the left channel with a 1kHz signal, and the right channel with no signal. Switch off the left loudspeaker or adjust the audio balance fully right. Adjust 'Stereo Channel Separation' to minimum sound reproduction from the right loudspeaker.

Electrical adjustments

5.3 Geometry adjustments

Normal Geometry

1. Vertical amplitude and centring

1a. Select 'Test Pattern on'.
With the aid of 'V amplitude' adjust the vertical amplitude so that the test pattern is fully visible.

1b. With the aid of 'V shift' adjust the vertical centring so that the test pattern is positioned vertically in the middle.
Repeat the adjustment of 'V amplitude'.

2. Vertical linearity
Select 'Test Pattern on'.
With the aid of 'V linearity' adjust the vertical linearity so that the picture has equal amplitude at both the top and the bottom.

3. Vertical S correction
Select 'Test Pattern on'.
With the aid of 'V S-correction' adjust the vertical S correction so that the vertical amplitude at the top of the picture is equal to the amplitude in the middle of the picture.

4. Horizontal centring and amplitude

4a. Select 'Test Pattern on'.
With the aid of 'H-amplitude' adjust the horizontal amplitude so that the entire test pattern is visible.

4b. Feed in an external test signal.
With the aid of 'H-shift' adjust the picture horizontally to the middle.
Repeat 4a if necessary.

5. East/West adjustment
Select 'Test Pattern on'.

5a. With the aid of 'East/West parabola' adjust the vertical lines until straight.

5b. With the aid of 'East/West corner' adjust the vertical lines in the corner until straight.

5c. With the aid of 'East/West trapezium' adjust the picture until rectangular.

5d. If necessary select 'East/West top compensation' and adjust it.
Repeat 5a to 5c if necessary.

Super wide geometry

Only applicable to 16:9 sets

1. Vertical amplitude and centring

1a. Select 'Test Pattern on'.
With the aid of 'V amplitude' adjust the vertical amplitude so that the test pattern is fully visible.

1b. With the aid of 'V shift' adjust the vertical centring so that the test pattern is positioned vertically in the middle.
Repeat the adjustment of 'V amplitude'.

2. Horizontal amplitude
Select 'Test Pattern on'.
With the aid of 'H-amplitude' adjust the horizontal amplitude so that the entire test pattern is visible.

3. S correction
Select 'Test Pattern on'.
With the aid of 'S-correction' adjust the S correction so that the vertical amplitude at the top of the picture is equal to the amplitude in the middle of the picture.

4. East/West parabola
Select 'Test Pattern on'.
With the aid of 'East/West parabola' adjust the vertical lines until straight.

5. Horizontal centring and amplitude
Feed in an external test signal.
With the aid of 'H-shift' adjust the picture horizontally to the middle.

5.4 Options

Introduction

The microprocessor communicates with a great number of IC's in the set. For good communication, and to make digital diagnosis possible, the microprocessor has to know which IC's have to be addressed. The presence of specific IC's or functions is made known with the aid of the option codes. Only correctly set option codes ensure a correctly functioning set, and the correct error message in case of a defect.
The options are divided into different groups. These groups contain the various options for which multiple choices are usually possible.

An overview follows below:
(See table)

5.5 Option number

IF the EAROM has to be replaced all the options have to be set again. In order to be certain that the factory settings can be reproduced exactly the HW Opt No (Hardware option number) and the SW Opt No (software option number) have to be set. These numbers can be found on a sticker on the picture tube.

TV Systems	Tuner Type	FQ916(D)MF FQ916MR FV916MG FQ916MD FQ936D FS988 Chinese Tuner FQ944D	Select tuner type (type number is on the tuner)
Stereo Decoder	Nicam Type	Not Available BG or I BG and I Eco Nicam	No Nicam Nicam with 2 IC's and 1 input filter Nicam with 2 IC's and 2 input filters Nicam with 1 IC
	2 CS	Yes No	TDA9840 present on SSP TDA9840 not present on SSP
	Global	Yes No	Global sound decoder present Global sound decoder not present
Satelite	Sat. Mod. Available	Yes No	Satellite module present Satellite module not present
	Pulse Magnetic	Yes No	Polarizer panel present Polarizer panel not present
PIP	PIP Available	Yes No	PIP module present PIP module not present
	PIP Version	Euro Latam Japan	European PIP module South American PIP module (reserved) Japanese PIP module (reserved)
	PIP Tuner Type	Not Available Euro Latam Japan	no PIP tuner European PIP tuner South American PIP tuner (reserved) Japanese PIP tuner (reserved)
	PIP Processor	PIP1 PIP2	PIP with TDA4650 (no longer used) PIP with TDA8310
	Triple PIP	Yes No	(reserved)
	Forced Colour	Yes No	For PIP 1 yes For PIP 2 yes, if PCF8574 is present
Teletext	TXT	mem-128 mem-512 mem-1M	128 kB teletext memory 512 kB teletext memory (1x514256) 1 MB teletext memory (2x514256)
Communication	D2B	Yes No	D2B connector present D2B connector not present
	ESI	Yes No	reserved
	EACAM	Yes No	reserved
	Project 50	Yes No	reserved
Video	Frame	Digital Scan 100/120 Hz 50/60 Hz	Feature box present Eco feature box present No feature box present
	Combfilter	Not Present SAA4961 MC 141625	No Comb filter present Comb filter with SAA4961 Comb filter with MC 141625
	Scavem	No Yes	SCAVEM without TDA8444 SCAVEM with TDA8444
Source Selection	SS Type	Euro AV1 Euro AV2 Euro AV3 Cinch AV1	Fully populated double-sided EURO I/O panel (EURO) Semi populated double-sided EURO I/O panel (ECO) Single-sided EURO I/O panel CINCH I/O panel
	Euro AV3	None Normal	No 3rd EURO connector (only with EURO I/O) 3rd EURO connector present
	Euro AV4	None Normal	No 4th EURO connector (only with EURO I/O) 4th EURO connector present
	Euro AV	No Yes	No EURO connector (only with CINCH I/O) EURO connector present
CRT Type	4:3 16:9		4:3 picture tube 16:9 picture tube
Audio Repro	Basic Equalizer Eq. + Dolby		TDA9860 present on SSP AFU panel without Dolby AFU panel with Dolby
Digital Output	No Yes		no digital output present digital output present (NICAM also present)

8. Circuit description

8.1 Introduction

The GFL chassis is based on a Large Signal and a Small Signal panel. These panels are called LSP and SSP.
The SSP contains the front-end which is a combination of tuner with IF circuit, the micro processor, the audio/video small signal processing and synchronisation part. The Teletext functions will also be on the SSP in future, but for now it is placed at a small separate panel for the introduction of the chassis. The SSP is based on a double sided printed wiring board with metallized holes and small SMD (surface mount device) components at the underside of the board.
The LSP contains the power supply, line and frame output stages and the Digital Deflection Processor to control the geometry of the picture. The LSP is based on a robust printed wiring board without SMD components. The deflection processor and the power supply control circuit are placed on vertical panels on the LSP.
The audio amplifiers are placed on a separate board.

8.2 The three power supplies

The GFL chassis contains three power supplies:
- the stand-by supply or also called ELPS;
- the main supply or also called FFS;
- the auxiliary supply or also called AUX1.

8.2.1 *The stand by supply ELPS [AU]*

The stand-by supply is placed vertically in a bracket together with the mains filter at the right hand side of the chassis. This supply delivers the +5.2 volt supply for the micro-processor and some parts of the I/O panel during stand-by and normal operation.
In order to limit power to a maximum of 5 watts in stand-by the two power supplies (FFS and AUX1) are switched off. The stand-by voltage (+5V2) is provided by a separate power supply that delivers the +5V2 both during normal operation and in stand-by.
The stand-by power supply is built up around S5145. The secondary voltage of S5145 is rectified by D6141, D6146, D6147 and D6148, and smoothed by C2138 and C2141. Stabilisation is performed by T7135, which is located on the LSP. D6134 provides a voltage increase of 0.2V, so that the stabilised voltage is 5V2.

8.2.2 *The main supply (FFS) [L2] (Fig. 8.1)*

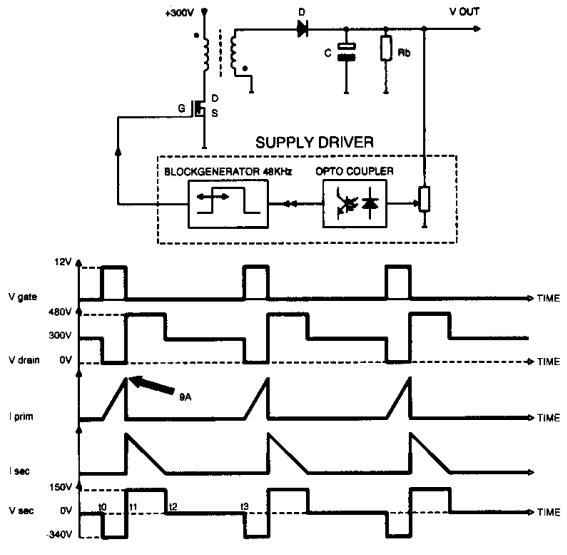


Fig. 8.1

The FFS (Fixed Frequency Supply) is a mains isolated switched power supply. The operational frequency is 40KHz and stabilisation is achieved by adjusting the duty cycle. The feedback of the output voltage is performed through an opto-coupler. The control and stabilisation circuits are located on the FFS-drive panel, which makes service simpler. The FFS can be switched to stand-by by the micro processor after the stand-by command is given or in a situation that the protection mode has to be activated. The power supply is short-circuit resistant and protected against overvoltage and overcurrent.

The FFS provides the following power supply voltages:
- +19V / -19V sound.
- +141V.
- +25V (SAT only).

Principle of the FFS power supply

At t0 a positive voltage arrives on the gate of the switching FET 7111. This starts conducting and 300V is fed to the primary transformer coil, causing a linearly increasing current. The maximum current depends on the time the FET conducts. This conduct duration is regulated by IC 7150 on the FFS drive panel [N]. The duty cycle regulator is controlled via an opto-coupler by part of the output voltage.
On t1 the FET gate becomes negative, this blocks and the DRAIN current increases. The secondary voltage becomes positive, the rectifier diodes start conducting and a current starts flowing through the load. All the energy that was stored in the transformer during t0-t1 is now supplied to the load. During the time the energy is supplied to the load, the voltage on the primary side, at the drain of the FET, increases up to 480 volts.
At t2 the current through the secondary coil becomes zero. The secondary voltage is now also zero, causing the FET drain voltage to drop to 300V.
If the FET is made to conduct once more, the cycle starts again.

Pulses on FFS transformer T5125 (Fig. 8.2)

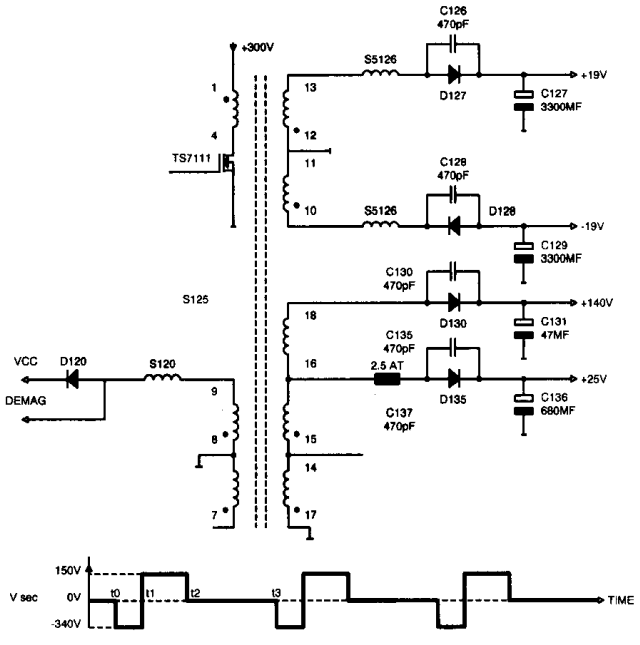


Fig. 8.2

During the time t0-t1 TS7111 becomes saturated. There is 300V over the primary coil. If the mains voltage increases or drops by 10% all secondary voltages will also increase or drop by 10% during this period:

- pin 13, pin 14, pin 16, pin 18 and pin 9 are negative so that diodes D6127, D6130, D6135, D6137 and D6120 block.
- pin 10 is positive so that D6128 blocks.

During the time t1-t2 TS7111 blocks. The voltage on C2131 is stabilised at 140V. All voltages have a fixed relation to this +140V and therefore constant. On overload the +140V therefore also drops with all secondary voltages.

- pin 13, pin 14, pin 16, pin 18 and pin 9 are positive so that the diodes D6127, D6130, D6135, D6137 and D6120 conduct. The capacitors are also charged.
- pin 10 is negative so that D6128 conducts.

The secondary side of the FFS drive circuit is supplied by the +5V ST-BY from the stand-by supply. Pin 9 of the FFS transformer supplies the power supply current for the primary side of FFS drive circuit.

The oscillator

The control of the FFS is done by the MC44603 IC at position 7150 on the FFS drive panel. The oscillator generates a saw-tooth pulse (pin 10, 7150), the frequency is set to 48KHz by C2166 and R3177.

Slow start and maximum duty cycle

The starting voltage for the IC is supplied through R3101/3103 and C2101. Once started, the primary coil of the transformer (pin 9) supplies the power supply current to the IC via S5120 and D6120. At start the power supply output voltage is still 0V, through which the FFS would start with max. duty cycle, which would result in a too high peak current through the switching FET.
To prevent this, C2170 on the FFS drive panel charges slowly after start up. The voltage on pin 11 therefore, increases slowly. As a result the power supply begins with a small duty cycle, avoiding the switching FET to become damaged. This is called the slow start.
The voltage on pin 11 determines the maximum duty cycle and is selected by an external resistor R3170.

Stabilisation

Stabilisation is performed on the 141V so that all secondary voltages are also stabilised, but derived from the 141V. With R3187 on the FFS drive panel the output voltage of 141 volt can be adjusted. The 141V is fed to parallel stabiliser IC7185 via a voltage divider. This is a zener IC (TL431) which current from the cathode (K) to the anode (A) is determined by the voltage on the regulation input (R). This voltage is compared internally with a 2.5 volts internal voltage source. If the voltage on the R input exceeds the 2.5 Volts, the current through the TL431 will increase, causing an increasing current through the opto-coupler. An increasing current through the opto-coupler results in an increasing voltage on pin 14 of the FFS control IC. The larger the voltage on pin 14 the smaller the duty cycle of the output to the switching FET. The smaller duty cycle causes at last a smaller FFS output voltage until the voltage on the R input of the TL431 becomes 2.5 volts again.

If the voltage on pin 14 of IC7150 increases, this results in a drop of the voltage on pin 13, as pin 14 is the inverting input of an op-amp and pin 13 the output. R3173 and C2173 determine the gain of the op-amp. The dropping voltage is compared to the current sense input via a comparator. The comparator output generates an earlier reset of the RS flip-flop so that the FET conducting time is shortened and that the output voltage drops to its set value.

Stand-by and DC protection

After the DC protection line is activated on the FFS drive panel, T7190 conducts and a large current flows through the opto-coupler. This means that the power supply voltage is adjusted back to 0V. This DC prot line can be activated by the stand-by command from the micro processor or from the protection circuit on the audio power amplifier.

Overcurrent protection

The voltage over R3124/3125/3126 is a measure for the current flowing through the primary side of FFS transformer 5125. That voltage is fed to the current sense input pin 7 of IC7150. The maximum current is limited internally in the IC. The max. current through the primary side is 9A.

In case the load of the power supply is increased further, the output voltage will drop. In order to limit dissipation during overload the foldback circuit is activated.

Foldback circuit

In case the load increases to a level the primary current should exceed 9A, the output voltage will drop. This voltage drop will affect the supply of the IC (pin 5 of IC7150) as the IC is supplied via pin 9 of the T5125, D6120, D6157, R3157 and R3158. In case the voltage drops below 1V the maximum current threshold is adjusted automatically.

A reduced primary current also means that the power supply delivers less output current. This causes an avalanche effect so that the power supply is quickly adjusted back.

Overvoltage protection

If the voltage on pin 6 of the IC becomes larger than 2.5V the power supply stops. Then voltage drops out and the power supply will restart, which can cause the voltage become larger than 2.5V again, the supply stops etc, so-called hiccupping or motorboating. The condition arises when the feedback loop is interrupted.

Demagnetisation

In order to avoid TS7111 from being switched on too soon, information is offered to pin 8 of IC7150 that originates from pin 9 of T5125 via S5120 and R3150. As long as this voltage is larger than 65mV TS7111 is prevented from conducting.

The output

Pin 3 of IC7150 controls the switching transistor (MOSFET). Pin 3 has a low output resistance, which benefits the switching speed.

Stand-by

If the power supply only has to supply low power (e.g. stand-by) this is measured via pin 12 of IC7150. The duty cycle becomes smaller and the power supply switches over to a lower oscillator frequency, namely 20kHz. In stand-by the FFS is switched off completely. The FFS is adjusted back fully via TS7190, resulting in the 141V output becoming 0V. The oscillator then also operates at 20kHz.

Switch-off voltage of the FET

The MOSFET switch in the FFS power supply is resistant to a Drain-Source voltage of max. 650V. Due to the short switch-off time, that voltage is actually ± 700V. To protect the switching FET an extra loop has been added. Via D6102, D6103, R3102 and C2102 the switch-off voltage is limited to approximately 600V.

DV/DT limiter

Rapid voltage changes on the FET drain cause interference in the picture (Spook). When the FET is switched off, an extremely steep flank is generated. The steepness is limited by C2110 and D6110.

8.2.3 The auxiliary supply AUX1 [L2]

The AUX1 power supply is a DC/DC-converter that converts the 141V from the FFS to a number of DC voltages necessary to supply all small signal devices and the deflection processor:

- +13V
- +8V6
- +5V2
- -8V6 (for SAT sets only)

These AUX1 voltages are zero in stand-by mode. The AUX1 supply is placed on the LSP on the left hand side from the FFS.

Principal

The AUX1 supply (DC/DC converter) applied in the GFL is based on the Current Mode Controller principle; Regulation occurs through the measurement of a secondary voltage and a primary current. Depending on the voltages measured the switching transistor is driven for a longer or shorter period, resulting in a higher or lower primary voltage.

Pulses on transformer 5230

During the period t0-t1 the switching FET TS7228 becomes saturated. 141V is present over the primary side of the transformer.

- pin 9 and pin 7 are negative so that the diodes 6234 and 6237 block.
- pin 2 is positive so that 6242 blocks.

During the period t1-t2 TS7228 blocks. The voltage on pin 7 is stabilised at +5,2V, and the voltage on pin 9 at +13V.

The regulator IC7203 UC3842

The power supply voltage is connected to pin 7, this voltage must exceed 16V to start-up the IC (this may not drop below 10V during operation).

The oscillator

The IC contains an internal oscillator whose frequency and duty cycle is set by resistor R3216 and a capacitor C2216, connected to pin 8 and pin 4.

Stabilisation

By increasing the load on a secondary voltage, all secondary voltages will drop, resulting in a voltage drop on pin 2 of IC7203. This causes a delay in the MOSFET switch-off time. More energy is stored in the transformer while the MOSFET conducts longer, causing an increase in the secondary voltage.

Overload

During overload the secondary voltages drop rapidly, resulting in a strong drop of the voltage at pin 2. The regulating limit is reached internally, resulting that the maximum power is also being limited.

Short circuit

After short circuiting the power supply all secondary voltages drop, resulting in the supply voltage on pin 7 drops below 10V. Now the IC output is blocked and the MOSFET is no longer driven. Through the RC operation R3220 and C2221 the voltage on pin 7 slowly increases because the FFS 141V supply is still present. If the voltage on pin 7 becomes higher than 16V the IC restarts. If the voltage on pin 7 drops below 10V it will switch off once again.

The circuit

- The start circuit is formed by R3220 and C2221. On starting C2221 is charged via R3220. After start-up the supply is taken over by the AUX1 transformer via pin 9 and D6221.
- The external oscillator frequency is set by R3216 and C2216, the frequency is approximately 70kHz.
- Stabilisation occurs via the +13V and the +5V2 output voltages which are both fed back to pin 2 of the control IC. Voltage changes on the +5V2 are stabilised faster than those on the +13V. Adjustment of the +5V2 is performed through R3210.
- Current measurement is performed by R3231, which voltage is fed back to pin 3.
- To switch the power supply to stand-by TS7201 has been added. In stand-by TS7201 conducts, resulting in the -output of the 2nd internal op-amp of the control IC being connected to earth and causing the smallest of voltages across R3228 to switch off the switching transistor TS7228. All secondary voltages are now absent.

Video recognition

When CVBS is present at the front-end output this is reported to the microprocessor via the circuit built up around TS7311 and TS7312 on the SSP. This information is used to suppress the sound if there is no picture. The emitter of TS7311 is set so that this transistor only blocks during the sync pulse. The collector then becomes high so that positive sync pulses are available. The circuit with C2314, D6312, D6311, R3315 and C2315 detects the pulses, TS7312 conducts and the video recognition becomes high (STR-FE). With noise the average voltage on the CVBS output of the FE is higher than with a video signal. TS7311 conducts continuously and there are no pulses on the collector. TS7312 blocks and the video recognition becomes low.

8.6 The source selection [I]

Just behind the backcover the source select panel is mounted. On this panel the complete source and record selection is done for all signal sources. This panel is also called 'I/O panel'. For Europe there are two versions available: the ECO and the EURO version. For Asian countries we have the Cinch version. The European versions have three 'EURO-AV' or also called 'SCART' connectors. The Cinch version has a large number of cinch connectors. The EURO version has some extra source selection circuitry to be used when the set has a built in satellite mode.

In the ECO version the most important characteristics are:

SCART 1 (VCR or UP-Down)
- no RGB-input
- CVBS and L/R-input
- SVHS in and SVHS out
- all outputs Record Select
- an Up-Down function: the microprocessor selects a priority if multiple signals are connected.

SCART 2 AUX
- RGB-input
- CVBS and L/R-input
- CVBS and L/R-output from front-end

SCART 3 HD
- CVBS and L/R input

Front
- S-VHS and L/R-input

A cinch L,R output that can be switched between constant level and variable level

The EURO Input-Output panel is the most comprehensive and is only applied in sets with a built in satellite module.

In addition to the ECO version, the EURO version has:
- SCART 1: RGB-input
- SCART 3: RGB (100Hz) with V-sync and H-sync
- D2B bus for a smart card reader
- A cinch plug (ESI) with control signals for an audio installation

The video path of the EURO-I/O

To switch all video signals use is made of 2 identical IC's, the TEA6425, which are connected in parallel.

The input signals on one selector are:
- CVBS Tuner
- Y/CVBS Euroconnector 1
- C Euroconnector 1
- CVBS Euroconnector 1
- Y/CVBS Front input
- C Front input

The input signals on the other selector are:
- BB/CVBS Euroconnector 3
- Video Satellite module

The following output signals are available:
- Y/CVBS main picture
- C main picture
- Y/CVBS PIP
- C PIP
- BB/CVBS Euroconnector 3 out
- Y/CVBS Euroconnector 1 out
- C Euroconnector 1 out

The TEA 6425 has an internal Y-C adding circuit to make a CVBS output signal from YC (S-VHS)

Video path ECO-I/O

The ECO I/O panel has less input signals, with the video matrix limited to 1 IC as a result, the TEA6417.

The input signals are the same as those of the first selector of the EURO I/O but:
- The TEA6417 has no internal Y-C adding circuit, so that this is done externally and fed to an extra CVBS (Y+C) input.
- CVBS euroconnector 3 in.

Output signals are the same as those of the selectors of the EURO I/O but:
- BB/CVBS Euroconnector 3 out is not present.

Sound path EURO-I/O

Use is made of the TEA6430 to switch all sound sources. Two switching IC's are applied in the Euro version, one in the ECO version.

Input signals switch 1
- L/R Front-end
- L/R Front input
- L/R Euroconnector 1
- L/R Euroconnector 2
- L/R Euroconnector 3

Input signals switch 2 (not for the ECO version)
- L/R Front-end
- I/II Front-end
- L/R SAT module

8.4 The control part [S8]

The control part of the GFL chassis consists of a micro processor, a 512k ROM with the operating software, 32k RAM as working memory and a 2k bytes non volatile memory to store all preset data and customer settings.
The micro processor of the GFL chassis is placed on the bottom side of the SSP and communicates with all devices via several I/O ports and three I^2C serial busses.

Input signals come from:
- RC5 control;
- Local control;
- Status of IC's and modules via I^2C;
- Direct input from certain circuits;
- Interrupt lines such as stand-by, TXT...

The micro processor, ROM, RAM and EAROM

Operating control is built up around a 16-bit microprocessor with an internal interface for ROM, RAM and direct input and output ports. Speedy interruption of the program can be achieved via the interrupt lines.
There are three I^2C busses:
- The "SLOW" has a clock frequency of 100KHz;
- The "FAST" operates at 400KHz and is used to communicate to the Teletext processor only;
- The third bus is only used for the EAROM (Non Volatile Memory).

The software is located in the 512 kByte ROM, IC7202. In the future a 1 Mbyte ROM can also be used. If the output enable line on pin 24 is low 8 data bits are placed on the data bus.
The working memory consists of a 32 kByte RAM, IC7206. The 8 data bits are read out if pin 20 is low. If pin 27 is low the RAM can be written to. All temporarily changes to parameters in a set in operation are stored in this RAM. The contents are lost when the set is switched off.

The Non Volatile Memory, IC7212, contains the pre-programming of the transmitters, option codes, sound and picture adjustments, etc. The EAROM used has a capacity of 2 kByte (16 kB).

EAROM start-up protection

When the power supply voltage rises the POR (Power On Reset) becomes high making TS7214 on the SSP conduct and TS7215 block. TS7216 and TS7217 conduct. This causes both the EAROM power supply and clock (SCL) to be kept low. When the POR becomes low TS7214 blocks resulting in C2213 being charged via R3214 and R3212. At C2213 the test point S01 is coupled on which the presence of the POR pulse can be seen. Charging of C2213 provides a delay of 100 msec of the POR pulse, following which TS7215 conducts and POR 1 becomes low.

The microprocessor now starts up and TS7216 stops conducting so that the SCL line becomes active. Due to C2214 discharging, TS7217 blocks a little later, following which the EAROM power supply current is also present.

If the power supply voltage is too low the POR will become high again, resulting in POR 1 also becoming high. The SCL line and the power supply for the memory IC are interrupted once again.

8.5 The receiving part [S1]

In the GFL chassis the Tuner and the IF section are combined in one small box, the so called Front-end. This Front-end is placed on the SSP. To simplify removing of the Frond-end from the SSP the holes in the SSP are extra wide. There are different types of Frond-ends for different regions, and there are some types with a built in splitter if the set has an extra tuner for PiP. The Front-end is adjusted in the factory and will therefore be adjustment-free afterwards. The outputs of the Front-end are the CVBS baseband video signal, the LF audio signals to be fed to the stereo decoder and the IF signals for NICAM stereo decoding.
The following five types of front ends are used in the GFL chassis:
- FQ 916 ME/PH MK2 BG/L/M or European Multi
- FQ 916 MF/PH MK2 BG/L/L'/I or French Multi
  Sets for countries with BG-systems only, make use of the European multi front-end.
  UK sets (PAL I) make use of the French multi front-end.

For both types of front-ends, there is a model with a built-in splitter:
- FQ 916 DME/PH MK2 BG/L/M
- FQ 916 DMF/PH MK2 BG/L/L'/I

For sets with DK-system there is the version:
- FQ 916 MR/PH BG/DK/M.

There is no model with splitter in this type.

The following abbreviations are used in the front-end types:
- PH = PHono antenna connection (cinch input).
- D = Version with built in splitter
- MK2 = 2nd generation FQ916

The tuner section of the front-end contains the tuning stage and a combined oscillator-mixer. The tuner is I^2C controlled. The full tuning range is divided into a low, mid and high band.
Tuning is achieved by sending a frequency (divider) to the PLL in the tuner. The tuning voltage of approximately 40V is derived from the 141V FFS and stabilised to 33V by zener D6304 on the SSP. Via R3305 a part of this voltage is fed to pin 11 of the front-end. The voltage at pin 11 changes with the tuning frequency. This voltage should increase during the search operation of the installation menu.

8.3 The Power On Reset pulse (POR) [L and AU] (fig 8.3)

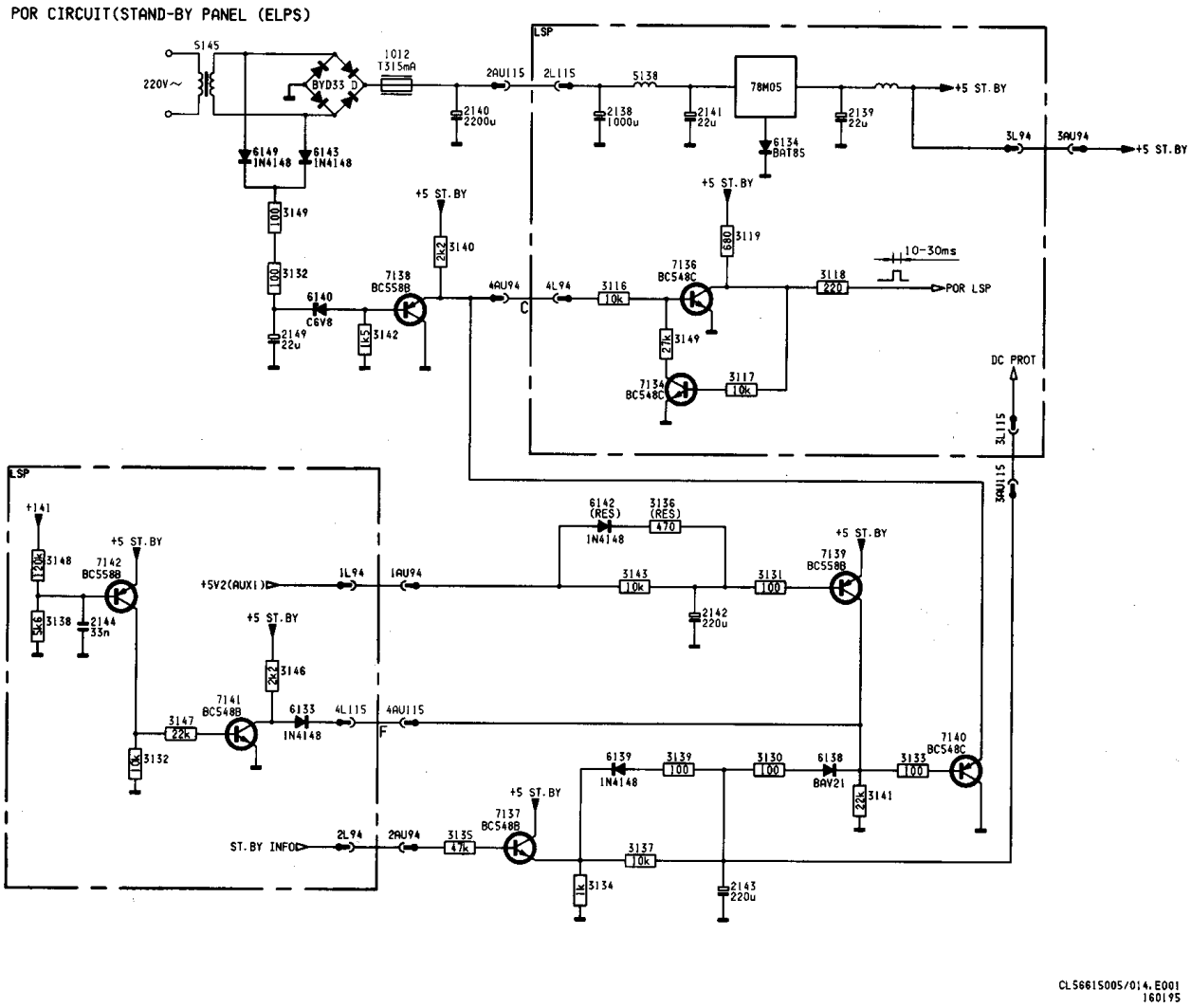


Fig. 8.3

The POR circuit is divided over the LSP and the ELPS panel (stand-by supply). The complete circuit is present in the figure.
The POR pulse is used to initialise the microprocessor and other IC's. After switching on the set via the mains switch, the +5V2 stand-by is available virtually immediately, and as a result, the POR pulse via R3119 and R3118 becomes high immediately. C2149 is however discharged at the moment of switching on, through which D6140 does not conduct. The base of TS3138 is low, TS7134 conducts and TS7136 blocks. The POR pulse remains high.
After a certain time C2149 has charged up enough to make D6140 conduct. TS7138 blocks, TS7136 conducts and the POR becomes low. The length of the POR pulse depends on the mains input voltage, but is between 20 and 60ms.
The initialisation of various IC's starts at the descending flank of the POR pulse. Following this initialisation the set starts up and the stand-by info line originating from the microprocessor becomes low. Once the VCC voltage (the voltage across C2101) of the FFS has reached 18V the power supply starts up. Shortly after the 141V is present, the AUX1 supply starts up generating the 5V2 for the DDP, also causing the line output stage to start up.

Additional POR conditions

- Switching from on to stand-by and from stand-by to on: no POR pulse may be generated.
  This is realised via T7137, R3137, D6138 and TS7140. In stand-by the stand-by info line is high preventing TS7140 from conducting and no additional POR pulse can be generated.
- In stand-by the FFS must be switched off.
  The stand-by info line from the microprocessor is lead to the FFS (DC-PROT line) via R3135, resulting in stand-by mode of the FFS.
- On a voltage drop in the 141V below 70V a POR must be generated.
  In normal situations TS7142 will not conduct, through which TS7141 also blocks and the base of TS7140 is kept high via D6133. At a sudden drop in the 141V or on switching off the set the base voltage will drop below 5V, through which TS7142 starts conducting, TS7141 also conducts making the base of TS7140 low. TS7140 conducts and lowers the base of TS7136, resulting in the POR becoming high until TS7140 blocks.
- The POR pulse may not be influenced for as long as the 141V has not been activated. This is prevented by TS7139. This ensures that TS7140 remains blocked for as long as the 141V is absent. The +5V2 voltage at the base of TS7139 originates from the AUX1 supply which indicates that also the 141V is present.

Output signals
- L/R Loudspeakers
- L/R Headphones
- L/R Euroconnector 1 out

Dual languages
An extra feature of the EURO-I/O panel is that a choice can be made between language I and II for both loudspeakers and headphones separately because the front-end sound is supplied to 2 inputs.

RGB Path

ECO I/O
In sets with an ECO-I/O there is only one RGB input located on euroconnector 2. This RGB signal is carried to the PIP panel. The PIP-RGB/EXT-RGB selection is done on the PIP panel. The selected signal is sent to the video processor TDA9141 on the SSP, where it is converted to YUV. This YUV signal is carried via the feature box to the video controller.

EURO I/O
In sets with an EURO I/O there are 3 RGB inputs; on Euroconnectors 1, 2 and 3, whereby EXT3 is a 2Fh (100Hz) input. A RGB-switch IC (TDA8601) is located on the I/O panel at position 7815 that makes a selection between EXT1-RGB, EXT2-RGB or no RGB.
A second RGB-switching IC is located at position 7825 on the I/O panel that can switch through the RGB of EXT3.

If the RGB signals selected on the I/O panel is a 50Hz signal (EXT1 or EXT2) it is sent to the PIP panel. The PIP-RGB/EXT-RGB selection is made on the PIP panel. The selected signal is sent to the video processor where it is converted to YUV. This YUV signal is carried via the feature box to the video controller.
If the RGB signal selected on the I/O panel is a 100Hz signal it also travels to the PIP panel. Here the selection is now made between 100Hz RGB-EXT or 100Hz RGB-PIP. The now selected RGB signal is directly fed to the video controller.

8.7 The video and synchronisation processing [S5]

In the middle of the SSP the TDA9141 is placed. In this IC the video processing and synchronisation functions are integrated.
In the video-processing the CVBS-main from the I/O panel in PAL and NTSC are switched through to the comb filter where Y and C are separated. In SECAM the chrominance and luminance filters are located in the SECAM notch filter. An S-VHS signal with separate Y and C is switched directly to the chrominance decoder. In the decoder Y and C are converted to Y, R-Y and B-Y. The TDA9141 has an internal RGB/YUV switch to create the possibility to insert an external RGB signal into the YUV signal path. The switch is used to insert the RGB signal from the PIP module to create multi-PiP or from a euroconnector.

The synchronisation provides a 50Hz horizontal, vertical and sand castle pulse. The horizontal and vertical outputs of the TDA9141 are called HA and VA respectively.

1Fh and 2Fh in stead of 50Hz and 100Hz
A 50Hz video signal has a horizontal frequency of 15.625 kHz. This basic line frequency is also called 1Fh (one time the horizontal frequency). A 100Hz based video signal will be therefore be called a 2Fh signal.
In line with a 1Fh line frequency, also a 1Fv frame frequency is the base of a normal video signal.

In a conventional 100Hz set both 1Fh and 1Fv are doubled to 2Fh and 2Fv. In case of a 60Hz based signal doubling the frame frequency to 120Hz to improve the picture is less necessary. To make optimal use of the digital scan system however, in case of a 60Hz based signal (eg. NTSC-M), the horizontal frequency 1Fh is doubled to 2Fh, but the vertical frequency is kept 1Fv. This display mode (2Fh, 1Fv) is called progressive scan and it results in a very stable non-interlaced picture. At all 60Hz based video signals, the set switches to progressive scan.

A 2Fh display sync pulse for PIP and TXT is derived from the 100Hz flyback pulse and generated by IC7380.

The Y, R-Y and B-Y signals are converted to 2Fh (100Hz) in the feature box. The synchronisation signals are also doubled in the featurebox. The outgoing sync signals are called HD and VD. These signals are fed to the deflection processor (DDP) on the large signal panel.

In the video-control circuit, the TDA4780 on the SSP, the Y, U and V signals are converted to RGB. With a first switch the 100Hz PIP picture can be mixed with the main picture. With a second switch TXT or OSD can be mixed. The PIP picture can interrupt this, making a PIP picture within TXT. The switched RGB signals undergo the necessary adjustments such as brightness, contrast, saturation,, black-stretch and blue-stretch.

Before the RGB signals are fed to the RGB amplifiers the signals pass the VCI panel. Here R, G and B are delayed for the correct operation of SCAVEM. The soft clipper limits the max. drive of the picture tube.

Synchronisation

The video processor TDA9141 provides vertical and horizontal sync pulses VA and HA that are synchronised with the incoming CVBS signal. These pulses are used in the Feature box, on the PIP panel and on the TXT panel. The frequencies are doubled in the Feature box and are synchronous with the 100Hz picture. The outgoing pulses, HD and VD are fed to the Digital Deflection Processor (DDP) that supplies the horizontal and vertical drive pulse and the 100Hz (2Fh) sandcastle. The vertical pulse VD from the featurebox is also used for PIP and TXT.
The 100Hz flyback pulse is fed to the video processing part and converted there into the 100Hz display pulse (2Fh). This is used by PIP and TXT to determine the location of PIP and TXT.

When no CVBS is offered to the video processor, the VA and HA pulses are then switched off in the video processor. The pulses HD and VD are then generated by the featurebox.

8.8 The feature box [F]

The Feature box has the following functions:
- Digital scan for 50Hz systems (PAL/SECAM BGLL') (100Hz)
- Progressive scan (525 lines per frame) for 60Hz systems NTSC-M) (60Hz non-interlaced)
- Digital CTI
- Digital luminance peaking
- Multi PiP processing
- 1 clock system
- Movie Phase Detection
- DNR Function
- Line Flicker Reduction
- Vertical en Horizontal Zoom function
- AI interface to add extra digital circuits, for example PALplus

The feature box is adjustment free.
At introduction of GFL FBX3 will be supplied, later on FBX4 will be introduced.

8.9 Teletext [AQ and S7]

The Teletext function is situated on a separate panel behind the SSP, but on later versions it will be fitted on the SSP board. The main part of the Teletext function is built in the SAA5270 Teletext processor. In the GFL chassis the teletext memory is 512kB with an extension possibility to 1MB. The Teletext decoding on a 50Hz level is synchronised with the line and frame synchronisation pulses from the video processor. The Teletext display part on 100Hz level is synchronised via the synchronisation signals coming from the featurebox and the horizontal flyback pulses. The OSD information and the user menu's are also generated via the Teletext processor. The RGB and blanking outputs of the SAA5270 are directly fed to the RGB and blanking inputs of the video controller. It will be clear that the Teletext data does not pass the featurebox. If the Teletext function is defective, no OSD or menu's can be generated. Also the service menu's will remain hidden.

8.10 The sound processing [S3 and AY]

The main sound channels left and right, coming from the source selection are fed to the sound processor TDA9860. This sound processor can be present on the small signal panel on the right hand side, but can also be placed on the Audio Featuring Unit in case of sets equipped with the Dolby system. In this case a connector is placed on the SSP at the position of the sound processor.

The Audio Featuring Unit [Z]

The Audio Featuring Unit or also AFU, is an extension to the basic sound processing of the GFL chassis. Besides the normal sound processing features of the TDA9860 which is present on the AFU, the AFU offers a graphic equalizer and Dolby Prologic sound decoding, and surround sound. If Dolby Prologic decoded software is offered, out of the incoming left and right signals, the four Dolby channels are extracted. The four Dolby channels are Left, Right, Centre, and Surround or L, R, C and S.

The surround channel is only one channel but it is played via two loudspeakers, connected in series. The AFU can also be equipped without Dolby Prologic. The equaliser function remains then.
Via the noise generator on the AFU panel (IC7800) which can be switched on via the sound menu, the four sound output channels can be tested easily.

8.11 The Digital Deflection Processor TDA9155 (DDP) [J and L]

The DDP panel is located on separate board on the LSP. This board is also called the Geometry panel.
The DDP has the following functions:
- Synchronisation
- Drive of the frame, line and east/west output stages
- Protection

All geometry adjustments are performed via I^2C and stored in the EAROM on the SSP (except DC shift).

Line drive

The horizontal drive pulses (pin 12 IC7315) for the line output stage are derived from the HD input pulses (pin 4 IC7315) from the feature box. For control the horizontal and vertical flyback pulses are fed back to pins 16 and 17.

The sandcastle generator (2 levels)

The sandcastle generator in the DDP provides line and frame blanking pulses at a level of 2.5V and burst key pulses at 4.7V. The sandcastle is used by the video controller TDA4780.

Frame driver

The DDP supplies a differential current to pin 23 and pin 24 that is converted by IC7335 to a voltage. The DC setting of IC7335A is determined by TS7342. Pin 3 of IC7335 is fixed at 2.5V via a voltage divider (R3341 and R3342) and an emitter follower. VD NEG is the frame drive pulse to drive the +input of the frame output stage (7260) on the LSP.

E/W driver

The DDP provides a full E/W drive signal at pin 19. The signal is fed via op-amp IC7335B to the E/W output stage at the LSP. The E/W output stage is built around FET 7432. Feedback from the E/W output stage is done via 3432 and 3336 (EWD signal).

The following geometry corrections are realised by the east-west drive: Picture width, Trapezium, Parabola (pin-cushion) and Corner correction. These settings can be adjusted in the service menu.

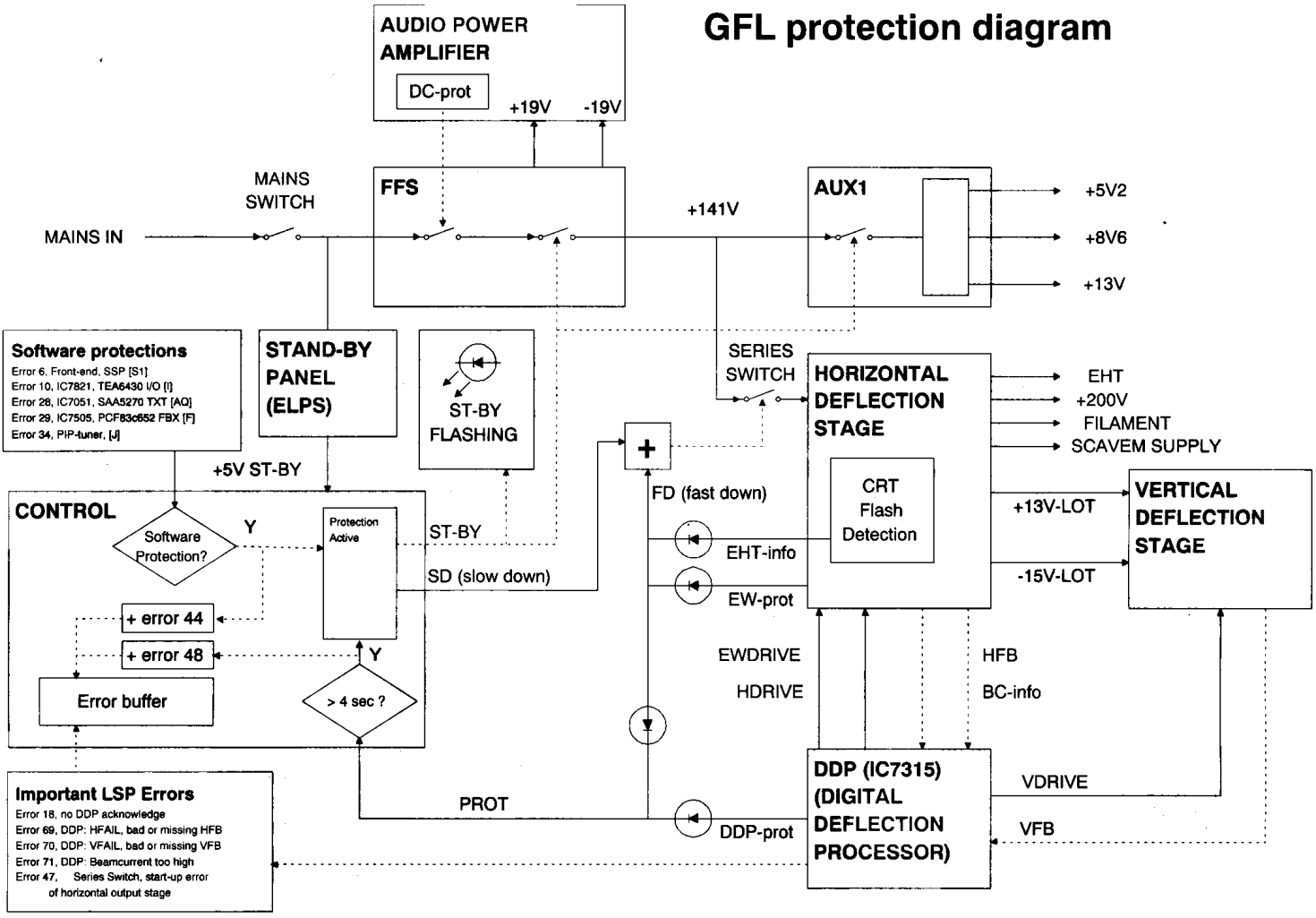


Fig. 8.4

The protection output of the DDP is also connected to this line. If the protection line is active for 4 seconds, the micro processor switches off both supplies via the stand-by signal (ST-BY). At the same time error 48 is placed in the error buffer and the stand-by LED starts flashing. With the DST the error number can be read.

The DDP can detect 3 errors:

- HFAIL bad or missing HFB pulses result in error 69
- VFAIL bad or missing VFB pulses result in error 70
- Overcurrent too much beamcurrent results in error 71

The East-West protection directly switches off the series switch via the Fast Down signal. The PROT line is also pulled high, so that the micro processor can take over the protection handling.

Measuring the E/W protection
Pin 7 of IC7360 on the DDP panel will become approximately 8V for a few seconds if the E/W protection is active.

The E/W protection becomes active when:

- Flyback capacitor C2419/C2429 is open
- Diode D6417 is short circuited
- Linearity corrector L5428 is open
- Horizontal deflection coil is open
- S-correction capacitor C2433 is open
- Capacitors C2421/C2422 are short circuited
- Bad solder connections in the line deflection part

During start-up the series switch is checked with help of the DDP. If the switch does not work properly, error 47 is generated.

Attention: error 47 is also generated at a failing start-up procedure of the horizontal defelection stage. So if error 47 occurs, further investigation is necessary.

A special protection is the EHT-info protection. After a flash in the picture tube, a high beam current peak, this protection switches off the line circuit via the fast-down signal. As this effect is only a temporarely effect, the horizontal circuit is started up again immediately. This protection is not registrated by the micro processor. It takes less than a second to start up again.

8.12 The serial switch [L1]

The serial switch is a switching FET 7480 in the +141V supply line from the FFS to the line output stage.
The purpose of the serial switch is:

To switch off the line output stage:
- on flash detection.
- in stand-by and protection

The serial switch is started via the 141V, R3480 and C2481. After the RC delay the gate of TS7496 becomes positive causing it to conduct. The line output stage can now start. In this condition TS7480 is not yet fully saturated, the gate voltage is still too low. For this reason the +200V from the line output stage is also coupled to the gate via D6481, R3482, R3492 and R3481 resulting in a higher gate voltage and a saturated FET. This causes the dissipation in TS7480 to be reduced to a low level. D6480 limits the GS voltage to ± 10V.

Via R3400, R3402 and R3403, the reference current generator of the DDP is supplied.

The serial switch can be opened externally by two signals:
1. *SLOW-DOWN*: This is the direct line from the microprocessor. The line output stage is switched off to stand-by via this line.
2. *FAST-DOWN*: This line is used to switch off the line circuit in case of an urgent protection, without the help of the microprocessor.

8.13 The line output stage [L1]

The DDP supplies the control pulse for the line output stage via the H-drive signal. When the H-drive pulse is low TS7409 blocks making TS7406 conduct. This results in a linearly increasing current flowing through S5406 and a rectangular voltage across S5406. At this moment the base of transistor TS7414 is negative, causing the transistor to block.

After a certain time the base of TS7409 becomes high (via the DDP), TS7406 blocks. The Drain voltage of TS7406 increases strongly. The voltage on the secondary side of TS5406 reverses causing a base current to the line transistor TS7414. Due to the storage time of TS7414, TS7406 cannot release its energy immediately resulting in a very high peak voltage at the drain of TS7406. This voltage peak is absorbed by C2406, R3405 and R3406. S5413, R3414 and C2414 ensure the rapid switch-off of the line output transistor.

Limiting LOT power

After an urgent protection or a flash, the FAST-DOWN line becomes active. making TS7407 conduct. The result of this is that the primary voltage on the driver transformer S5406 is limited when TS7406 is not conducting. The secondary voltage will become lower, causing a limitation of the base current of the line transistor. The current through the line transistor will drop sequentially. The LOT power drops rapidly.

If the LOT operates at lower power, the power dissipation the line transistor will increase, which would adversely influence operational reliability. For this reason a protection circuit is added, built up around TS7424. During normal operation C2425 is charged via R3425 at the moment that TS7406 conducts. During the blocking of TS7406, TS7424 is conducting, which causes C2425 to discharge. In this situation the voltage in C2425 can never reach the protection level. At the moment that the FAST-DOWN line becomes high, TS7407 conducts causing TS7424 to block. After a certain time C2425 is charged to the protection level, through which the set is switched to protection mode and the power supplies are switched off.

The voltages generated by the LOT

The line output stage supplies various secondary voltages:
- SCAVEM supply via pin 7 of the LOT
- +13V LOT to the picture tube panel via pin 8 of the LOT
- -15V LOT to the DDP and the scavem circuit
- The filament of the picture tube between pins 11 and 12
- The +200V for the RGB output amplifiers is supplied via pin 6
- The DC shift circuit is supplied via pins 4 and 6
- The EHT is produced via a diode split. The focus and the VG2 voltage derived from the EHT. The focus and VG2 potentiometers are integrated in the transformer

The beam current flows through R3476 from the 141V. Components R3468, 3464, 3463, 3452, 3451, 3450, D6450 and C2405 determine the EHT info adjustment characteristics. On an increasing beam current the voltage on transformer pin 10 and across C2455 drops. To improve the focus on a 16:9 picture tube a dynamic focus is applied (DAF). A parabola on line frequency with the correct amplitude is superimposed on the focus voltage.

8.14 Protection structure (Fig. 8.4)

The GFL protection diagram shows the schematics of the protection system.
Via 4 switches the system can be activated.

To protect the loudspeakers de AUDIO amplifier can switch off the FSS main supply.
→ Disconnect this amplifier to determine if the defect is in this audio amplifier.

Two other switches are controlled simultanuously by the micro processor via the stand-by signal. They can switch the FFS and AUX1 to stand-by mode. This is always done in case of protection.

Via the series switch the horizontal defelection stage can be switched on and off, Normally the slow down signal (SD) controls the series switch, but in case of an urgent alarm the fast down signal (FD) switches off the line circuit immediately.
An urgent alarm is reported to the microprocessor via the protection line (PROT).

Software protection is performed on 5 IC's. They are mentioned in the protection diagram. If one of these does not give an acknowledge, the set switches to stand-by and the LED starts flashing. In this case error 44 is placed in the buffer.
If error 44 together with one of the 5 IC's is in the error buffer, this IC might be defective.
If however, a lot of errors are in the error buffer there will probably a supply problem or a general I^2C problem.
After error 44 is in the placed in the buffer, the error logging stops. So error 44 will always be the last error reported.

Note: At start-up the TDA9141 is checked after the DDP is checked for acknowledge. If the SYNC IC TDA9141 on the SSP (IC7352) is not answering, further start-up is useless, the start-up is terminated, and the set switches to stand-by. The TDA9141 error 15 is placed in the error buffer.

The PROT line is a 'wired OR' of a the following protection circuits:

- The DDP PROT output
- The E/W hardware protection
- The series switch test circuit (only active during start -up)

There are three protections which are not generated by the processor, the so called hardware protections.

The first one is the East/West Protection, which detects a too high current through the East/West power stage around TS7432 on the large signal panel. A too high current through the East/West stage can be caused by a defect component in the line deflection circuit, for example a disconnected line deflection coil or an open fly back capacitor. This hardware protection generates the 'Fast Down' signal which switches off the line circuit immediately via the series switch. At the same time the micro-processor is informed about the protection via the PROT line and overrules the hardware protection by the software protection.

The second protection becomes active in case of a very fast beam current peak in the picture tube. This happens during a flash in the picture tube. The so called 'flash protection' prevents the line output stage from too high currents in the primary side and is only active for a very short moment. After a flash the 'Fast-down' signal switches the line circuit off via the series switch and immediately on again. This event is not reported to the micro processor. After a flash the picture will be blanked for less than half a second.

The third protection is the DC protection which is originated at the audio amplifier panel. This protection is connected directly to the stand-by line of the FFS. Via this protection the FFS can be switched off immediately. By disconnecting the audio amplifier this protection can be eliminated easily.

In case the DDP makes the PROT line high the status register of the DDP will then contain information concerning the reason for protection. After the microprocessor has read the status register via I^2C, the PROT line is reset and the status register erased.
In case the error is repeated the PROT line becomes high again and the status register is filled.
The status register of the DDP can report following errors:

- Error 69 HFAIL, HFB pulses missing or in bad shape
- Error 70 VFAIL, VFB pulses missing or in bad shape
- Error 71 Overcurrent, Beamcurrent is too high (=EHT INFO)

E/W-protection

The east-west correction current is measured on the LSP via 2 precision resistors (R3446 and R3447). When an error occurs in the line output stage this current increases. The detected voltage is offered to the DDP panel.
The -input of IC7360 is DC adjusted to 1V. When the voltage on the +input of IC7360 becomes greater than 1V, pin 7 of IC7360 becomes high, and the PROT output becomes high via D6319. The FAST-DOWN becomes high via D6364.
The E/W protection can be measured easily at start up. Pin 7 of IC7360 on the DDP panel becomes 8V in case of protection. The 8V voltage remains for a few seconds.

Flash protection

On a flash (e.g. a flash-over in the picture tube) the EHT info signal becomes low. If the voltage becomes lower than 33V + 0.6 -7.4V = -26V, TS7390 conducts. Via an RC loop consisting of R3388 and C2391, C2391 is rapidly charged and then slowly discharged via R3389 and R3390 (20ms). The RC constant determines the conducting time of TS7391 and TS7392. Via D6364 the FAST-DOWN line becomes high resulting in the line output stage is switched off for a short time.

Serial switch protection

To prevent the line output stage from being supplied by the 141V before the DDP is initialised an extra detection circuit has been added to determine a proper working of the switch.

After the DDP is started, the series switch is kept closed for a while by the microprocessor. During this time measurements for the presence of flyback pulses are made. If there are fly back pulses, there is a short circuit in the switch.

- No flyback pulses: pin 1 of IC7360 becomes high and PROT becomes high via D6334. Via this path the microprocessor is informed that the serial switch is OK.
- Flyback pulses: pin 1 of IC7360 becomes low. PROT remains low. Via this signal the microprocessor is informed that the serial switch is not OK. The set switches into stand-by. Error 47 (series switch) is written in the buffer.

8.15 The dealer service tool (DST)

Together with the GFL chassis a dealer remote control is introduced, the RC7150 which is called the Dealer Service Tool or DST.
The RC7150 is a remote control for the dealer and the servicer.

Installation features for the dealer

The dealer can use this remote control for programming the TV-set with presets, TV-settings, Dish settings and Logo's. Not only the GFL sets can be programmed with it, but also a lot of existing sets like FL, GR2, G90B, G110 and the new Philips VCR series using the so called NORA deck.

One of the innovative features of the Dealer Service Tool is the way in which it is programmed. A complete list of presets can simply be downloaded from the GFL into the Dealer Service Tool.
To make this download possible, a two way communication link, the so called "dealer link", is set up between the RC7150 and the GFL TV-set.
To establish this link, the GFL sets are equipped with an additional Infra-red transmitter LED and the RC7150 has an Infra Red receiver on board.
The Dealer Link however only works on short distance, up to 10 cm or 4 inches.

For explanation of the installation features of the DST, the directions for use are recommended.

Diagnose features for the servicer

Entering the service modes
The GFL sets can be put in the service alignment mode and the service default mode by connecting two pins on the SSP. With the RC7150 this can also be done:

- Press the "ALIGN" key to enter the Service Alignment Mode.
- Enter the password '3-1-4-0' and press OK.
- Press the "DEFAULT" key, to enter the Service Default Mode. In the service default mode the set is put in a default stage regarding tuning frequency, picture settings etceteras.
- Press the "DEALER" key, to enter the Dealer Mode. In the dealer mode some settings can be changed in order to customize the set.

The Service Default Mode can be switched off by switching the set off.

Reading error codes from the error buffer

If an error has been detected by the GFL chassis, protection mode might be activated or the set is put back into stand-by. Without the presence of a picture the errors can be read by the DST, as long as the microprocessor is still active (a LED must light up).

To transmit the errors to the DST:

1 Press the "DIAGNOSE" key.
2 Press "1" to view the last error detected.
3 Hold the DST 5 to 10 cm from in front of the stand-by LED of the set (the IR-sending LED of GFL is located near the stand-by LED).
4 Press the "OK" key.

The error is represented by a 3 digit number.
The 3 digits on the DST are displayed sequentially, with a pause before it is repeated. The digit after the pause is the 1st digit.
If the display reads 2 - 4 - 7, the error code is 247.
To read other error codes, press "DIAGNOSE" and one of the other digit keys.
If the DST cannot communicate to the GFL in a proper way, ERROR 2 is shown in the display. Trying again by changing the DST position a little bit might often help.
If the error buffer of GFL is empty, no errors are displayed by the DST; the display remains blank.

8.16 Faultfinding and repairing the GFL chassis

With most defects the GFL will give no picture and no sound.

Switch on the set via the mains-switch.
If the LED's behave properly it is likely that the microprocessor is OK.

The green LED shows that both FFS and AUX1 supplies are started up. If, after a few seconds, the stand-by LED is illuminated an error is detected. Now both supplies are in stand-by position again.
The stand-by LED can also start flashing. In this case protection became active. Restart is only possible via the mains-switch or the internal service pin's.

Via the DST we can read the error codes of the error buffer.
In case error 48 is displayed, the protection circuit was active and initiated by the PROT-line. Reading the next error code can give other information about the defect.

In the GFL protection diagram the most important errors are indicated. The faultfinding-table can help to find the defective function.

If, for example, the second error is 69, H-FAIL, which is detected by the DDP because the HFB pulses do not have a correct shape, we know that the line circuit is not working properly. By measuring some key components in the line deflection circuit, the defect can be located. With the Line Repair Kit the defect can be repaired.

If the supply is hickuping then it might be short circuited.
To find out if the line output stage generates the short circuit we measure the DC resistance of the series switch. Measure between coil 5126 and bridge wire 9453 between R3440 and R3445.

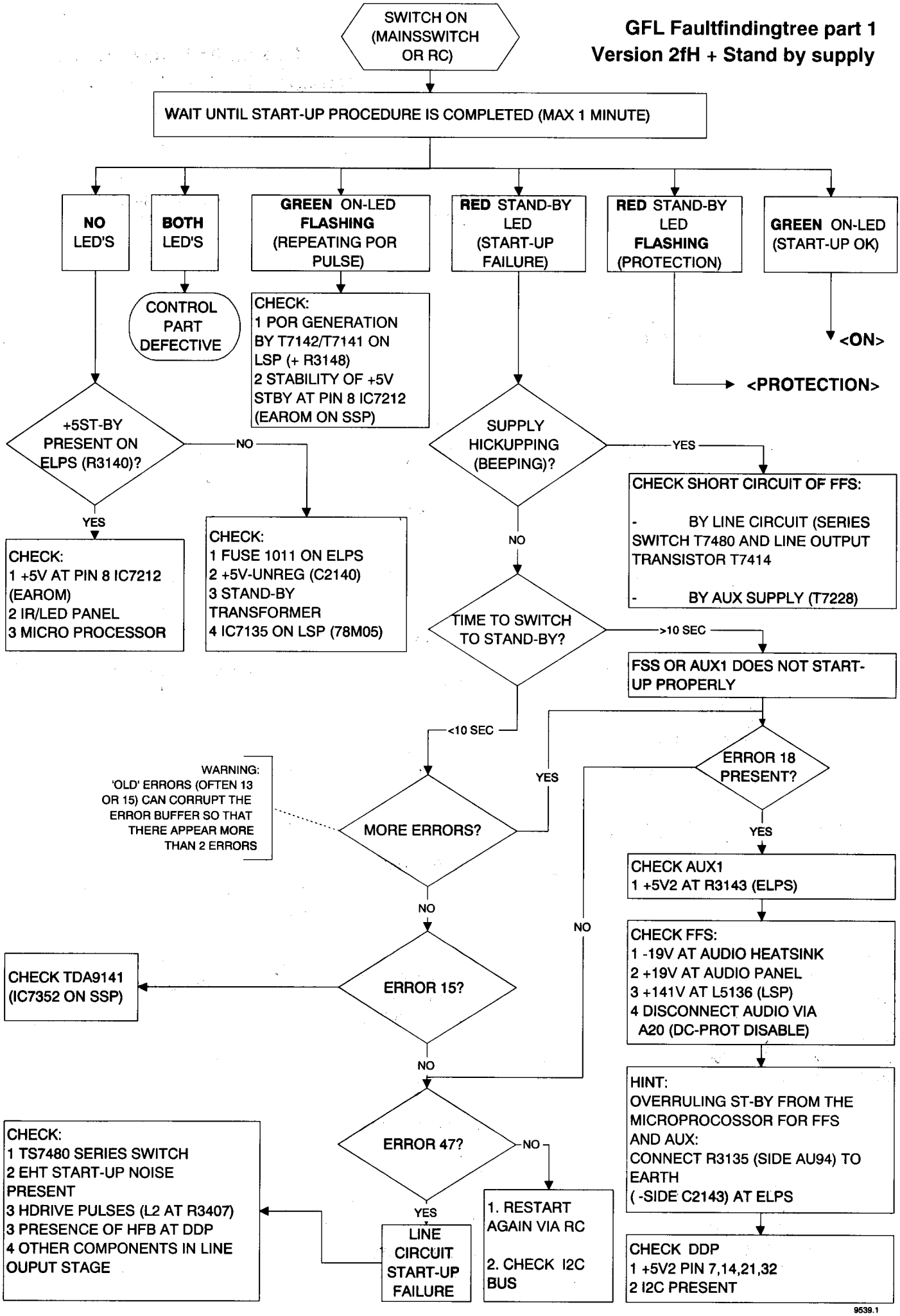
If this is a low resistance we know that the switch is defective. If the switch is defective, there must be another short circuit. Most likely something else caused the defective switch. Via the line repair kit, we can repair most of the line circuit defects.

Note: If the line transistor 7414 goes defective, then also the switch will become defective.

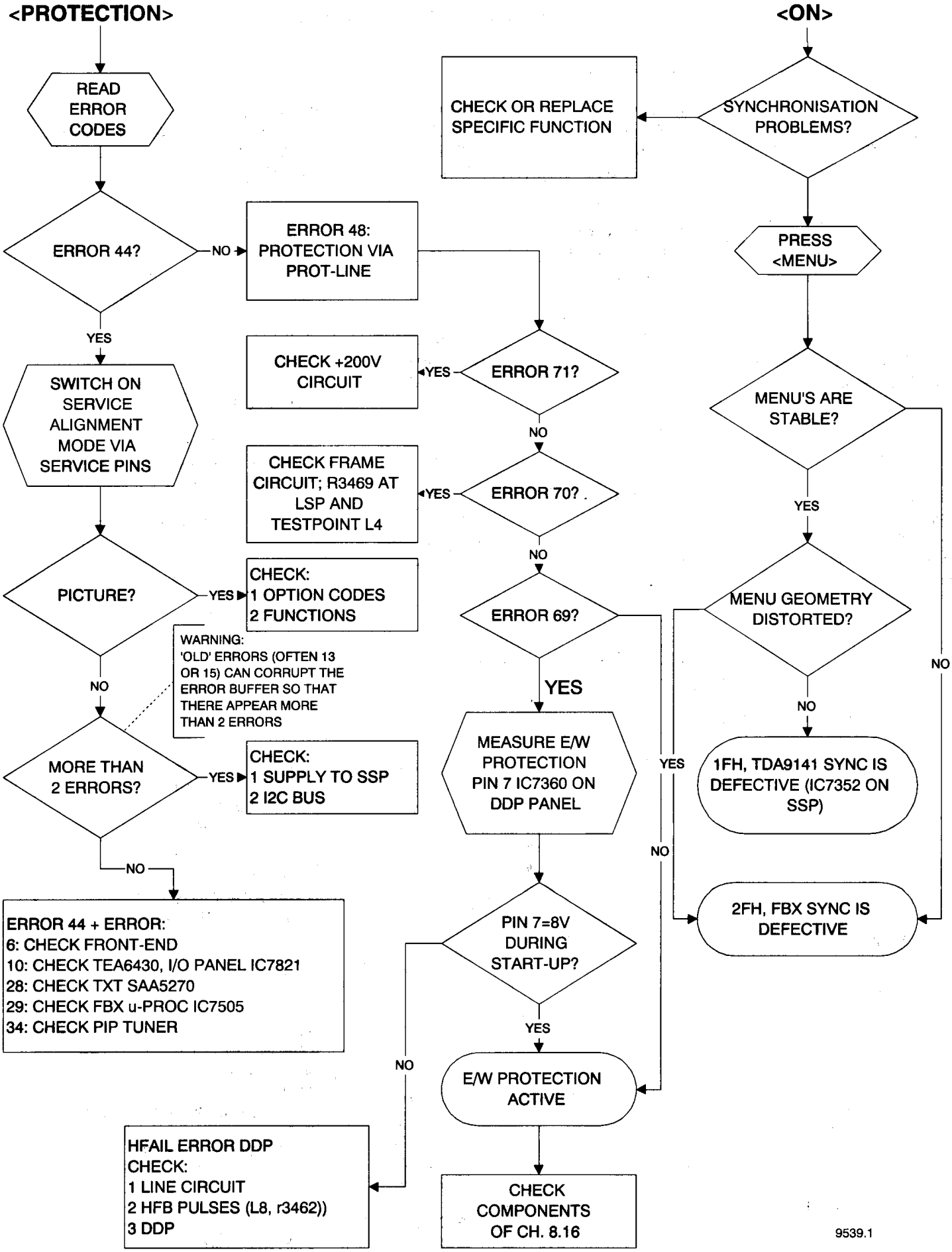
Error 18 indicates that the DDP does not communicate to the microprocessor.
→ Most likely the FFS or AUX1 supply is not working or short circuited.
We can easily check the operation of the FFS is on the audio amplifier panel during start-up.
At the Stand-by panel at resistor 3143 we can check the +5V2 of the AUX1 supply.
If necessary we can repair one of them via the FFS or AUX1 repair kit.

Error number	Description of error
0	No error
1	I^2C, IC7212, SSP [S8] (ST24C02AB1) (not used)
2	I^2C, IC7212, SSP [S8] (ST24C04B1) (not used)
3	I^2C, IC7212, SSP [S8] (ST24C08B1) (not used)
4	I^2C, IC7212, SSP [S8] (ST24C16B1)
5	I^2C, IC7204, SSP [S8] (HEF4094)
6	I^2C, front-end, SSP [S1] (FQ9xx)
7	HEF STROBE, front-end, SSP [S1] (FQ9xx) (not used)
8	I^2C, IC7823, I/O [I] (TEA6425)
9	I^2C, IC7824, I/O [I] (TEA6425)
10	I^2C, IC7821, I/O [I] (TEA6430)
11	I^2C, IC7822, I/O [I] (TEA6430)
12	I^2C, IC7818, I/O [I] (MSM6307)
13	I^2C, IC7814, I/O [I] (TMP47C103N)
14	I^2C, IC7880, I/O [I] (TEA6422)
15	I^2C, IC7352, SSP [S5] (TDA9141/9161)
16	I^2C, IC7500, SSP [S6] (TDA4780)
17	not used
18	I^2C, IC7315, DDP (Geometry) [J] (TDA9155)
19	I^2C, IC7600, SSP [S2] (TDA9840)
20	I^2C, IC7550, NICAM [G] (SAA7282)
21	I^2C, IC7650, SSP [S3] (TDA9860)
22	I^2C, IC7820, AFU [Z] (TDA9860)
23	I^2C, IC7840, AFU [Z] (TEA6360)
24	not used
26	I^2C, IC7746, AFU [Z] (PCF8574)
27	I^2C, IC7601, I/O [U] (PCF8574)
28	I^2C, IC7051, TXT [S or AQ] (SAA5270)
29	I^2C, IC7505, FBX [F] (PCF83C652)
30	PCF8574 (16:9 compressor)
31	TDA8443A (16:9 compressor)
32	I^2C, IC7788, PIP [P] (SDA9288)
33	I^2C, IC7788, PIP [P] (SDA9288)
34	I^2C, PIP tuner [P]
35	not used
36	I^2C, IC7860 PIP [P] (PCF8574)
40	I^2C, PCF83CE652 (cardreader)
41	I^2C, PCF83CE654 (satellite)
42	I^2C, IC7900, I/O [I] (PCF8574P)
43	I^2C, IC , [G] (PCF8574)
44	supply protection error (front-end, IC7051 teletext, IC7505 featurebox, PIP tuner and IC7821 I/O)
45	not used
46	not used
47	+140V series switch protection
48	protection (prot-line)
49	I^2C, IC7823, I/O [I] (TEA6417)
50	I^2C, IC7788, PIP [P] (SDA9288)
60	BSCS microprocessor (satellite)
61	PCF8574 (3D combfilter)
62	PCF8574 (NTSC to Muse)
65	PCF8574 (HDI)
66	TDA4672 (PSI)
67	TDA8444 (Video Improvement Panel)
68	I^2C, AI without FBX, (TDA9170)
69	hfail, horizontal deflection error (DDP protection)
70	vfail, vertical deflection error (DDP protection)
71	overcurrent (DDP protection)
72	overvoltage (DDP protection) (not used)

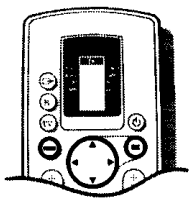
GFL Faultfindingtree part 1
Version 2fH + Stand by supply



GFL Faultfindingtree part 2
Version 2fH + Stand by supply



9. Directions for use

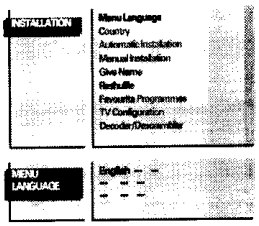


Select the menu language

You can now choose which language the menus are presented in.
When you switch on your set **for the first time**, the **MENU LANGUAGE** automatically appears on the screen.
See the explanation on your screen. Alternately the explanation automatically appears in the different languages.
If the **MENU LANGUAGE** menu does NOT automatically appear on the screen, proceed as follows :

- Press **MENU** on the remote control.
- ▷ The **MAIN MENU** appears on the screen.

- Keep the key pressed and select **INSTALLATION**.
- ▷ **INSTALLATION** lights up.
- Press **OK**.
- ▷ The **INSTALLATION** menu appears and **Menu Language** lights up.
- Press **OK**.
- ▷ The **MENU LANGUAGE** appears.
- Select the language of your choice with the keys , , ▶ or ◀ and press **OK**.
- ▷ The **INSTALLATION** menu reappears.
From this point on, all menus are presented in the language of your choice.



Have you pressed the wrong key ?
Press **OK** *again and make a new choice.*

Select Country

- Press the keys or to select **Country**.
- ▷ **Country** lights up.
- Press **OK**.
- ▷ The menu **COUNTRY** appears.
- Select the country where you are now located with the keys or and press **OK**.
Select **Other** when none of the countries applies.
- ▷ The **INSTALLATION** menu reappears.

Store TV channels

This can be done in two different ways : automatically or manually.

Automatic installation ..... **or** **Manual installation**

All TV channels are searched for and stored automatically. As far as it is transmitted by the cable company or a TV channel a programme number and a name is attributed automatically as well and filled in in the programme list.
If you wish the order of programme numbers and names of stored TV channels can be modified afterwards.
Follow very closely and step by step the instructions of the Automatic Installation.

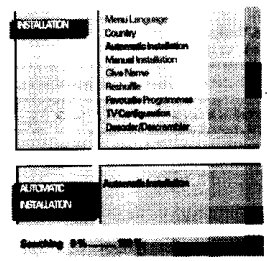
With manual installation it is possible to select whether TV channels are searched by frequency or channel number.

Follow very closely and step by step the instructions of the Manual Installation procedure.
You must go through every step.

Go on to page 7.

Automatic installation

- Select **Automatic Installation** with the keys or and press **OK**.
- ▷ The menu **AUTOMATIC INSTALLATION** appears.
- Press **OK** again.
- Press the keys ◀ or ▶ to select **On**.
- ▷ The message **Searching** appears as the TV searches for all the channels available in your area.



The automatic installation can be interrupted by pressing the **MENU** *key.*

- ▷ Every time a TV channel is found it is automatically stored under the next free programme number in the programme list.
- ▷ The message **Ready** appears on the screen when the automatic installation is complete.
If a cable system or a TV channel transmitting a teletext page with the frequencies and programme names of all the TV channels which can be received, is detected, the search is stopped and a programme list appears.
The programme list is automatically filled with all the programme numbers and names of the TV channels transmitted.

It is possible that the cable company or the TV channel displays a broadcast selection menu. Layout and items are defined by the cable company or the TV channel. Make your choice of the presented possibilities with the keys or and press **OK**.

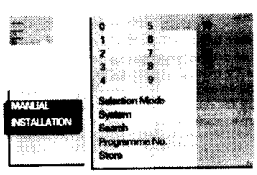
- Press **MENU**.
- ▷ The **INSTALLATION** menu reappears.

Go on to page 9.

Manual installation

- Select **Manual Installation** with the keys or and press **OK**.
- ▷ The menu **MANUAL INSTALLATION** appears.
In the left upper corner of the screen a programme number, a system, a frequency or possibly a channel number are displayed.
- ▷ **Selection Mode** is only present and lights up if the country you selected in the **COUNTRY** menu also offers the channel option.
In this case you can choose either channel or frequency mode.

- Press the keys ◀ or ▶ to select **frequency**, **C-channels** (aerial channels) or **S-channels** (broadcast by a cable company).



1 Select the TV system

Television pictures are not broadcast in the same way in all countries. We speak of different television systems (PAL, SECAM, NTSC,...).

- Select **System** with the keys or .

You have your own aerial ..... **or** **You are connected to a cable system**

- Select the country or part of the world from where you want to receive the TV channel with the keys ▶ or ◀.

- Select the country or part of the world where you now are located.

Go on to **2**.

2 Search for a TV channel

- Select **Search** with the keys or and press **OK**.
- ▷ The TV searches for a channel.
- ▷ The frequency or the channel number increases until a TV channel is found. Dependent on the choice you made in the selection mode the searching stops at a frequency or at a channel number.
- ▷ In the bar, which appears briefly at the bottom of the screen, the broadcaster may transmit its programme name or the programme title being broadcasted or another message.

Is the reception poor ?
You may be able to improve the reception of picture and sound of a TV channel, by adjusting the frequency with the **P** - or + key on the remote control. The frequency is adjusted in the block shown in the upper left corner of the screen.
Go on to **3** if you want to store the channel that has been found.

Do you want a different channel ?
- Press **OK** again to restart the search.

No channel found ?
- Interrupt the searching by pressing the keys or or the **MENU** key.
Check that you have selected the correct TV system or that the aerial is connected properly. See Tips p. 37.

Direct selection of a TV channel

If you know the frequency, or the C- or S-channel number, it can be entered directly with the digit keys on the remote control and in this way call up the TV channel.
Ask for a list from your cable company or dealer, alternatively consult the Table of frequencies on the inside backcover of this handbook.

- Select **Search** with the keys or .
- Enter the 3 digits of the desired frequency or the 2 digits in case of C-or S-channels.
- For frequencies under 100 MHz, first enter a 0. For example : 063.
- ▷ The frequency is automatically finetuned.

Have you entered a wrong number ?
First complete the frequency or the channel number with arbitrary numbers and then start again.

Go on to **3**.

3 Enter the programme number

Now assign a number of your choice to the TV channel you have located. In this way you decide the order of all your TV channels.

- Select **Programme Number** with the keys or .
- Select with the keys ◀ or ▶ or with the digit keys the desired programme number.

Go on to **4**.

4 Store steps 1 to 3

Now the steps 1 to 3 must be stored in the memory.

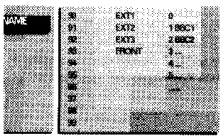
- Select **Store** with the keys or and press **OK**.
- ▷ **Stored** appears briefly at the bottom of the screen.
- ▷ The programme is stored in the programme list after the message has disappeared.

repeat If you want to store another TV channel.
- Repeat 1 to 4

If you are connected to a cable system.
- Begin immediately with 2. You have already selected the TV system in 1 for all channels.

end If you have finished storing TV channels.
- Press **MENU**.
- ▷ The **INSTALLATION MENU** reappears.

Enter or modify a programme name



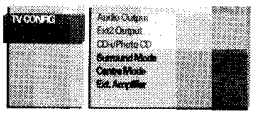
It is possible to change the name stored in the memory or to assign a name to a TV channel which has not yet been entered. A name with a maximum of 5 letters or numbers can be given to the programme numbers 0 to 99. For example SUPER, BBC1,...
Between 99 and 0, you can also name any peripherals that are connected.

- Select **Give Name** with the keys or and press **OK**.
- ▷ The **GIVE NAME** menu appears.
- Select the TV channel to be modified or assigned a name with the keys , , ▶ or ◀ and press **OK**.
- ▷ A block appears on the first position of the name.
- **Select** with the keys ▶ or ◀ the position of the letter or number you want to change or to enter.
- Select with the keys or the letter or number you want to enter or to correct. Spaces or other special characters are located between Z and A.

Did you fill in a wrong letter or number ?
Select with the keys ▶ or ◀ the position of the letter or number you want to modify.
Select with the keys or the correct letter or number.

When the complete name is filled in.
- Press **OK**.
- Select another TV channel to be modified or assigned a name with the keys , , ▶ or ◀ and press **OK**.
- Repeat as described above.

When you have finished entering or modifying programme names.
- Press **MENU**.
- ▷ The **INSTALLATION** menu reappears.



The following items deal with the installation of the Dolby Surround Sound possibilities.

- Select with the keys or the desired menu possibility.
- Select with the keys ◀ or ▶ the desired menu adjustment.

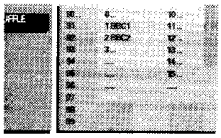
Surround Mode		Loudspeakers active ?		
	Centre Mode	Ext. Amplifier	Front TV L & R	Front TV Centre	Rear L & R
Pro Logic (with Pro Logic broadcasting)	Normal		Yes	Yes	Yes
	Phantom		Yes	No	Yes
	Wide		Yes	Yes	Yes
Dolby 3 (with stereo broadcasting)	Normal		Yes	Yes	No
	Phantom		Yes	No	No
	Wide		Yes	Yes	No
Hall (with mono broadcasting)	Normal		Yes	No	Yes
	Phantom		Yes	No	Yes
	Wide		Yes	No	Yes
Off	Normal		Yes	No	No
	Phantom		Yes	No	No
	Wide		Yes	No	No

(to select in Surr. mode Pro)

You have connected an audio amplifier to **AUDIO L** and **R** at the back of your TV. See Connect Peripheral Equipment, Audio equipment, p. 31.

- Select
  - Surround Mode : **Pro Logic** or Dolby 3
  - Centre Mode : Normal or **Wide**
  - Ext. Amplifier : **Yes**
- Press **MENU**.
- ▷ The **INSTALLATION** menu reappears.

Reshuffle the programme list



According to your preference you can change the order of the stored TV channels.
When you are satisfied with the order of the programme list, go to page 10.

- Select **Reshuffle** with the keys or and press **OK**.
- ▷ The menu **RESHUFFLE** appears.
- Select the TV channel you want to change the programme number of with the keys , , ◀ or ▶ and press **OK**.
- Use the keys ◀ or ▶ to select another column of the programme list.
- ▷ The programme number and the name of the TV channel appear in a black block.
- Use the keys , , ▶ or ◀ to move to the number where you want to locate the TV channel.
- Press **OK**.
- ▷ The TV channel moves to the selected programme number.
  The TV channel which was located on that position automatically moves to the programme number of the TV channel you have modified.
- Repeat this for all the other TV channels you want to swap.

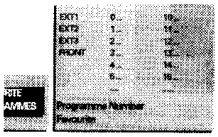
When all the TV channels are allocated as you like.
- Press **MENU**.
- ▷ The **INSTALLATION** menu appears again.

Define Decoder/Descrambler prog. numbers

If you have connected a decoder or a descrambler, see p. 33, you can define one or more programme numbers as decoder programme numbers.

- Select **Decoder/Descrambler** with the keys or and press **OK**.
- ▷ The **DECODER/DESCRAMBLER** menu appears.
- Select **Programme** with the keys or .
- ▷ **Programme** lights up.
- Select the programme number under which you want to store the programme coming from your decoder with the digit keys.
- Select **Decoder Status** with the keys or .
- ▷ **Decoder Status** lights up.
- Press the keys ▶ or ◀ to select **Off**, **EXT1** or **EXT2**, the euroconnector where you connected your decoder.
  Select **Off** if you do not want the selected programme number being activated as a decoder programme number.

Select Favourite TV channels



During the installation all the stored TV channels have automatically been placed into the favourite list.
This will make selection of only your favourite TV channels a lot easier and faster.
In the Favourite Programmes menu you can indicate for each TV channel if you want to keep that TV channel as a favourite.
You can also do this for a programme number reserved for the programmes you receive from your decoder.

After leaving the installation you can quickly run through the TV channels by holding the **P** - or + pressed down, only those TV channels which are in the favourite list will be displayed. The non-favourite TV channels can still be selected with the digit keys.

- Select **Favourite Programmes** with the keys or and press **OK**.
- ▷ The **FAVOURITE PROGRAMMES** menu appears.
- ▷ **Programme Number** lights up.
- Select the programme number of a TV channel with the digit keys.
- Select **Favourite** with the keys or .
- Press the keys ▶ or ◀ to select **Yes** or **No**.
  In this way you decide whether you want to keep the selected TV channel as a favourite TV channel or not.
  Repeat this for every TV channel you like to change into a favourite or a non-favourite TV channel.
- Press **MENU** again if you have finished selecting TV channels in the favourite list.
- ▷ The **INSTALLATION** menu reappears.

Fast exit from the menus

- Keep the **MENU** key pressed to switch off all menus.

Operation

To be operational with the remote control your TV should be in the TV operation position.
If this is not the case, first press the **TV** key left of the display. The letters **TV** in the display of the remote control appear in a black block for a few seconds.

Every time you press a key on the remote control, a green lamp on the front of your TV set blinks.

Switch TV on

- Press ⏻ on the front of your TV.
- ▷ A green lamp lights up and the programme appears.
- ▷ Does a red lamp light up ? Your TV is on standby. Read on.

Switch to standby

- Press the red standby key ⏻ at the top of the remote control to switch the TV off temporarily.
- ▷ A red lamp on the TV lights up.
- Press the digit keys or **P** - or + in order to switch the TV on again.
  If for a period of 10 minutes no aerial signal is received, then your set automatically switches to standby.

Your TV consumes energy in the standby mode. Energy consumption contributes to air and water pollution. We advise to switch off your TV overnight instead of leaving it on standby. You save energy and the picture tube is demagnetised which maintains good picture quality.

Select TV channels

- Select the TV channel with the digit keys or with the key **P** - or + on the remote control.
- For a two digit programme number, enter the second digit within 2 seconds.
- If you want to know which channel you are watching, press ⊡.

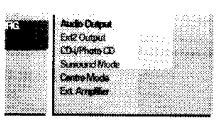
Quickly run through the TV channels from the Favourite list.
- Hold the **P** - or + key pressed down.

Adjust the volume

- Press ◿ - or +.

If you want to store the volume adjustment in the memory, see the Features menu, General PP Store, p. 20, to store the same volume adjustment for all the stored TV channels.

Install TV Configuration



Different options can be selected depending on the different peripheral equipment you may have connected to your TV.

- Select **TV Configuration** with the keys or and press **OK**.
- ▷ The **TV CONFIG.** menu appears and **Audio Output** lights up.

Audio Output

If you have audio equipment or another external sound source connected to your TV, you can select two types of audio output.

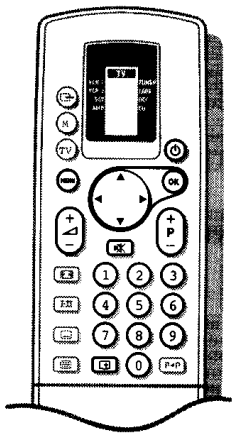
- Select **Variable** with the keys ▶ or ◀ if you want to adjust the volume of your audio equipment via the TV.
  Select **Constant** if you want to adjust the volume with the volume control of your audio equipment.

Ext2 Output

See Record with your video recorder, p. 35.

CD-i/Photo CD

See Connect Peripheral Equipment, TV and a CD-i/Photo CD, p. 31.



Temporarily interrupt the sound

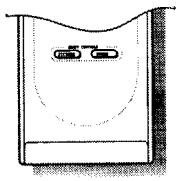
- Press 🔇.
- The sound is temporarily interrupted.
- Press 🔇 again to get the sound back.

Switch menus on and off

- Press **MENU** on the remote control.
- The **MAIN MENU** appears.
- Use the keys and to make a selection of the Main Menu items.
- Your selection lights up.
- Press the **OK** key on the remote control to activate the selected menu.
- Press **MENU** again to return to the previous menu.
- Keep the **MENU** key pressed to switch off all menus.

Main Menu

Select the picture settings



During manufacture four types of picture setting have been pre-defined.
You can choose among these four different settings with the **PICTURE** key of the smart controls on the door of the remote control.

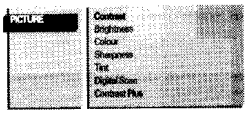
- Press the Smart Controls' key **PICTURE** repeatedly to select : **Soft**, **Natural**, **Rich** or **Personal**.
- The picture setting possibilities are displayed briefly on top of the screen.
  The picture settings correspond with a specific predefined setting of Brightness, Contrast and Colour.
  Personal refers to the personal preference settings of brightness, contrast and colour you can adjust in the **PICTURE** menu and store with **General PP store** in the **FEATURES** menu.

Adjust picture settings

- Press **MENU** on the remote control.
- The **MAIN MENU** appears and **PICTURE** lights up.
- Press **OK**.
- The **PICTURE** menu appears.

- Select with the keys and the adjustments of **Contrast**, **Brightness**, **Colour**, **Sharpness**, **Tint**, **Digital Scan** and **Contrast Plus** you want to change.

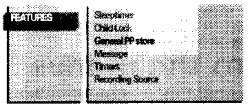
*When you are watching a TV channel in the NTSC-system, the option **Hue** also appears and can be adjusted in the **PICTURE** menu.*



- Press the keys ◀ or ▶ to alter the selected adjustment.
- The **PICTURE** menu disappears and only the selected menu item remains (including its bar) on the screen.
- The **PICTURE** menu reappears after a few moments or by pressing **OK**.
  Now you can select another adjustment with the keys and .

Tint

- Press ◀ or ▶ to select the colour temperature : **Normal**, **Warm** or **Cool**.
- Press **OK**.
- The **PICTURE** menu reappears.



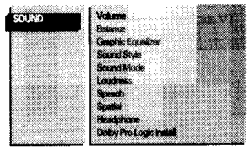
Digital Scan (Line Flicker Reduction)

In certain circumstances while watching TV programmes it may be preferred to switch off the digital scan line flicker reduction.

- Press the keys ◀ or ▶ to select **On** or **Off** and press **OK**.
- The **PICTURE** menu reappears.

If you want to store the modified adjustments for all the TV channels.

- Select **Features** in the Main Menu with the keys or and press **OK**.
- The **FEATURES** menu appears.
- Select **General PP Store** with the keys or and press **OK**.
- The message **Stored** appears briefly on the bottom of the screen.
- You have created and stored a new **Personal** sound style.

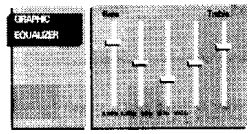


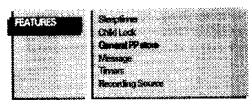
- Press **MENU**.
- The **MAIN MENU** reappears.
- Press **MENU** again to switch off the **MAIN MENU**.

Select the sound settings

During manufacture 6 types of sound style have been pre-defined.
You can choose among these six different styles with the **SOUND** key of the smart controls on the door of the remote control.

- Press the Smart Controls' key **SOUND** repeatedly to select : **In concert**, **Classic**, **Jazz**, **Pop**, **Stadium** or **Personal**.
- The sound styles are displayed briefly on the top of the screen.
  Each sound style corresponds with a specific predefined setting of the graphic equalizer.
  Personal refers to the personal preference settings of volume, balance, treble and bass you can adjust in the sound menu and store with **General PP store** in the **FEATURES** menu.





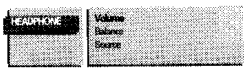
Adjust sound settings

- Press **MENU** on the remote control.
- The **MAIN MENU** appears.
- Select **SOUND** with the keys or and press **OK**.
- The **SOUND** menu appears.
- Select with the keys or the adjustments of **Volume** and **Balance**.
- Press the keys ◀ or ▶ to change the selected adjustment.
- Select **Graphic Equalizer** with the keys or and press **OK**.
- The **GRAPHIC EQUALIZER** menu appears.
- Press the keys ◀ or ▶ to select an equalizer setting.
- Press the keys or to adjust the **Treble** and **Bass** settings.

Select the sound styles with the sound menu

This menu item has the same function as the Smart Controls key **Sound** on the remote control as mentioned above.

- Select **Sound Style** in the menu **SOUND** with the keys or .
- Press the keys ◀ or ▶ to select the preferred sound style : **In concert**, **Classic**, **Jazz**, **Pop**, **Stadium** or **Personal**.



Select the sound mode

Depending on the sound the TV channel transmits and if your set is equipped with Nicam, your TV will choose between stereo or digital sound unless you make a sound choice.
In case of weak stereo or digital sound signals, due to the transmission, select analogue or mono.

- Select **Sound Mode** in the menu **SOUND** with the keys or .
- Press the keys ◀ or ▶ to select the preferred sound mode :
  . **Stereo** or **Mono** if the channel transmits stereo sound
  . **Digital** or **Analogue** if the TV channel transmits *digital* sound.

Switch Loudness on or off

When **Loudness On** is selected, the low and high frequencies are amplified so that the natural balance is restored when listening to low volume sound.

Select Speech

When **Speech On** is selected, the treble settings are revealed and the bass settings are suppressed.

Select Spatial sound

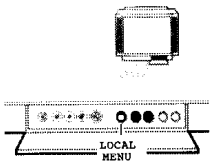
When **Spatial On** is selected, it seems as though the loudspeakers are spreat further apart from one another.
You get a spatial sound effect.

Headphone selection

See Connect Peripheral Equipment, p. 32 for the connection of your headphone if you want to use it.

- Select **Headphone** with the keys or and press **OK**.
- The **HEADPHONE** menu appears.
- First select **Source** with the keys or .
- **Source** lights up.
- Press the keys ◀ or ▶ to select the source you want to listen to with your headphone : **Automatic**, **TV**, **EXT1**, **EXT2**, **EXT3** or **FRONT**.
- Select **Automatic** if you want to listen to the sound of the picture you are watching on the screen.
- Select **TV** when you want to listen to the sound of a TV channel via your TV tuner and watch a programme via your video recorder or other peripheral. E.g. you can watch a film from your video recorder, but listen to the commentary of a broadcasted football match.
- In all other cases select the source where you connected your equipment. The equipment should be switched on, but you don't need to watch it.

- Select with the keys or the adjustments **Volume** or **Balance**.
- The selected adjustment lights up.
- Press the keys ◀ or ▶ to regulate the selected adjustment.
- Press **MENU**.
- The **SOUND** menu reappears.

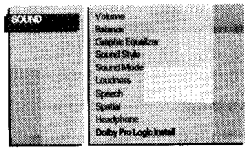


Adjust the basic picture and sound settings with the Local Menu key

Should your remote control be lost or broken you can still change some of th basic picture and sound settings.

- Press the **LOCAL MENU** key at the front of the TV.
- The adjustment **Volume**, including a bar, appears on the screen.
- Press the key **V** - or + behind the door at the front of the TV, to adjust the volume.
- Press the Local Menu key again or repeatedly to select a following adjustment
- The adjustments **Volume**, **Brightness**, **Colour** or **Contrast**, appear on the screen.
- Press the key **V** - or + at the front of the TV to regulate the selected adjustment.
- Press the **Local Menu** key again after you selected the last adjustment.
- The local menu adjustments disappear.

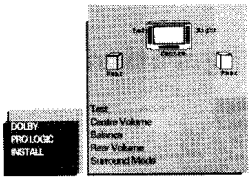
The Local Menu automatically switches off when after 10 sec. no action has been executed.



Dolby* Pro Logic Install

- Select **Dolby Pro Logic Install** with the keys or and press **OK**.
- The **DOLBY PRO LOGIC INSTALL** menu appears and **Test** lights up.

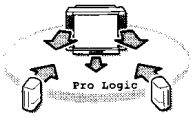
Most programmes will sound good with the volume balance between the centre, left and right and rear loudspeakers in an equally loud position.
However, some programmes may benefit from an adjustment of the level of the respective speakers.
Which loudspeakers are active depends on the selection you have made in th TV-Configuration menu, p. 11.



- Select **Surround Mode** with the keys or .
- Press the keys ◀ or ▶ to select **Pro Logic**.
- Select **Test** again with the keys or .
- Press the keys ◀ or ▶ to switch **Test on**.
- A steady noise tone is switched sequentially through the left, centre, right an rear loudspeakers, for 2 seconds each. This enables you to adjust the volume of the separate loudspeakers.
  The loudspeakers activated light up in the on screen graphic.
- Select with the keys or **Centre Volume**, **Balance** or **Rear Volume**.
- The selected adjustment lights up.
- Press the keys ◀ or ▶ to alter the selected adjustment.
- Select **Test** again with the keys or .
- Press the keys ◀ or ▶ to switch **Test off** again.

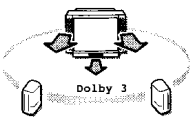
Surround mode

- Select **Surround Mode** with the keys or .
- **Surround Mode** lights up.
- Press the keys ◀ or ▶ to select the preferred surround mode : **Pro Logic**, **Dolby 3**, **Hall** or **Off**.



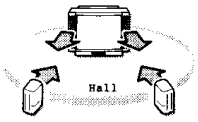
Pro Logic

- In addition to the left and right front speakers, the centre and the rear surround loudspeakers reproduce the Dolby Surround Pro Logic sounds. This 4-channel sound is always recorded when the movie or programme is marked with **Dolby Surround**.
  This mode is especially recommended with Dolby Surround or Dolby Surrou Pro Logic encoded programmes or movies.



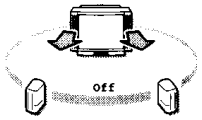
Dolby 3

- The Dolby 3 sound signal is now distributed over the front left, the front rigl and the centre loudspeakers.
- The rear loudspeakers do not produce any signal.



Hall

▷ The centre sound signal is distributed over the rear loudspeakers which creates a hall effect from the rear.
▷ The centre loudspeaker does not produce any signal.
This mode is recommended when you wish to add surround sound to a non Dolby Surround broadcast.

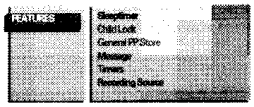


Off

▷ This mode reproduces only the left and right front sound signals.
Dolby is not active. You only hear a stereo sound if the broadcast which you are watching or listening to is transmitted in stereo or digital sound.

○ Press **MENU** twice.
▷ The **MAIN MENU** reappears.

Features



○ Select **FEATURES** in the **MAIN MENU** with the keys or and press **OK**.
▷ The **FEATURES** menu appears.
○ Use the keys and to make your selection in the **FEATURES** menu.
▷ Your selection lights up.

Sleeptimer

With the aid of the sleeptimer you can set a time period after which the TV should switch itself off to standby.
○ Hold the ▶ key pressed down.
▷ The counter runs from **Off** up to **180 min**.
○ Hold the ◀ key pressed down.
▷ The counter runs from **180 min**. down to **Off**.
If you have set a time, then one minute before the TV switches off the remaining minute automatically appears on the screen together with the message **Good Night**. You can always switch off your set earlier or change the set time.

Child Lock

If the child lock is on, the TV can only be switched on with the remote control. The keys on the TV cannot be used. In this way you can prevent unauthorised use of your TV.
If the message **Child Lock ON** appears, the child lock must be switched off before you can use the keys on the TV.
○ Press the keys ◀ or ▶ to select **On** or **Off**.

General PP Store

○ Select **General PP Store** with the keys or .
○ Press **OK**.
▷ **General PP Store** lights up and the message **Stored** appears briefly on the bottom of the screen.
▷ The adjustments of contrast, brightness and colour made in the picture menu and the adjustments of volume and balance made in the sound menu are stored in memory for all the stored TV channels.

Message

With this function you can enter a personal message which will be displayed automatically when the set is switched on from standby.
E.g. *I'll be late this evening. Don't wait for dinner.*

○ Select **Message** with the keys or .
○ Press **OK**.
▷ The **MESSAGE** menu appears and consists of a message part and a selection menu.

○ Select **Change** with the keys or and press **OK**.
▷ A block appears on the first position of the first message line.
○ Select with the or keys the letter or number you want to enter.
○ Select with the ▶ key the next position.
○ Enter the letters or numbers.
You can enter text on 2 lines of 27 characters each.

Did you fill in a wrong letter or number ?
○ *Select with the ◀ or ▶ keys the position of the letter or number you want to modify.*
○ *Select with the or keys the correct letter or number.*

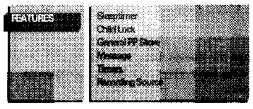
○ Press **OK** when you have entered the complete message.
○ Press the or keys to make a different selection in the message menu.

Remove message
○ Select **Clear** and press **OK** to remove a previous message.
▷ The previous message is removed.

Message type
○ Select **Type**.
▷ **Type** lights up.
○ Press the keys ◀ or ▶ to select the way the message to be displayed : **Wipe**, **Slide**, **Fall** or **Fade**.

Run message
○ Select **Run**.
▷ **Run** lights up.
○ Press the keys ◀ or ▶ to select the displaying frequency : **Continuous**, **Once** or **No**.

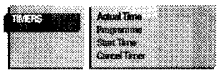
Display message
○ Switch the TV to standby.
▷ The message appears on the screen the moment the TV is switched on again.
When you selected **Once**, the message will disappear from the screen after 30 seconds.
When you selected **Continuous**, the message will appear on the screen continuously until the TV is switched off with the power key ⏻ on the front of the TV.
The message does NOT appear when Continuous Subtitles have been switched **On** and is displayed on the bottom of the screen. See Teletext, p. 29.



Timers

With the Timers menu you can make your TV automatically switch to a specific programme number from standby or switch over to a different programme number at a specific time.

○ Select **Timers** with the keys or in the **FEATURES** menu and press **OK**.
▷ The **TIMERS** menu appears and **Actual Time** lights up.



Actual time

On prog. no 1 you have installed a TV channel which also broadcasts teletext. See Teletext, p. 27.

▷ The time is downloaded from that TV channel.
○ In case you want to enter another time use the digit keys.
▷ The time entered manually is updated every minute and remains until the TV set is switched off with the power key ⏻.

or

On prog. no 1 you have installed a TV channel which does NOT broadcast teletext. See Teletext, p. 27

▷ The time is set to --:-- and should be set manually.
○ Enter the actual time with the digit keys.
▷ The displayed time is updated every minute and remains until the TV set is switched off with the power key ⏻.

If you filled in an incorrect digit.
○ *First complete the actual time with arbitrary numbers and then start again.*

Programme

○ Select **Programme** with the keys or .
▷ **Programme** lights up.
○ Enter with the digit keys the programme number of the TV **channel** you want your TV to switch over to.

Have you entered a wrong number ?
○ *Enter the right digit(s) again.*

Start time

○ Select **Start Time** with the keys or .
▷ **Start Time** lights up.
○ Enter with the digit keys the start time of the selected TV programme you want your TV to switch over to.

▷ At the programmed time your TV will switch over from standby to the selected programme number.

or

▷ At the programmed time your TV will switch over to the selected programme number when you are watching another TV channel.

Cancel timer

○ Select **Cancel Timer** with the keys or and press **OK**.
▷ **Cancel Timer** lights up and the **Start Time** is reset to --:--.

○ Press **MENU**.
▷ The **FEATURES** menu reappears.

Recording Source

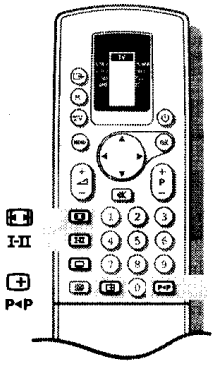
See Peripheral Equipment, Recording with your video recorder, p. 35.

Select Programme list

○ Select **PROGRAMMES** with the keys or in the **MAIN MENU** and press **OK**.
▷ A page with an overview of stored TV channels, together with the names you entered for the connected peripheral equipment appears.
Programme numbers from the favourite list are displayed in white characters.
Programme numbers which are not in the favourite list are displayed in black characters.
The current TV channel on the screen is indicated with a black block.
○ Press the keys or to select a TV channel within the column.
○ Press the keys ◀ or ▶ to select another column of the programme list.
○ Press **OK** to select the desired TV channel.

○ Press **MENU** twice.
▷ The **MAIN MENU** disappears.

Other functions



Vertical Squeeze

Movies and other new programmes may in the future be broadcast in a Wide Screen format.
Satellite programmes in the Wide Screen picture format recorded on a video recorder or prerecorded Wide Screen tapes can be reproduced on a normal TV screen in a conventional picture format.
○ Press .
▷ The picture is compressed.
There are black bars at the top and bottom of the screen.
▷ The message **Vertical Squeeze** appears for a moment in the left upper corner of the screen.
○ Press again to switch off vertical squeeze.
When you have a Wide Screen format video recorder connected with a eurocable, the pictures will be compressed automatically.

Bilingual broadcast

○ Press the key I-II repeatedly to select language I or II when the TV channel broadcasts in 2 languages, dubbed or original language (e.g. Eurosport) or to select analogue or digital when the TV channel broadcasts in digital sound.
▷ **Dual** I or II appears briefly on the screen.
The setting is stored in the memory for the selected TV channel when switching to another TV channel or to standby.

Information on screen

After the selection of a TV channel or a programme from a peripheral or after pressing the key ⊡ the following information may appear briefly or continuously on your screen :

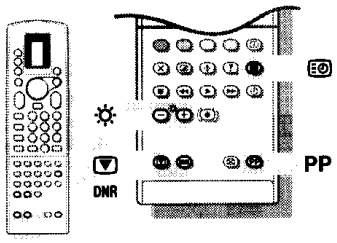
- the programme number and name of the selected TV channel
- information from the broadcaster in a bar at the bottom of the screen (e.g. the programme name or the programme title or another message)
- **Digital Sound available** if the TV channel transmits digital sound
- the currently selected sound mode if the TV channel transmits stereo or digital sound (not with a programme from a peripheral or coming from a decoder)
- **Sound muted** when the sound is temporarily interrupted
- **Dual I** or **II** in case of bilingual broadcast
- the **Ext2 Output** selected in the TV Configuration menu (see p. 11)
- the selected DNR setting (see p. 25).

Permanent Programme Number

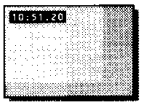
- Press ⊡ for a long time.
- The permanent programme number remains in the upper right corner of the screen when it was off, or disappears when it was on.

Select previous programme

- Press the P↔P key.
- The previous selected TV channel is displayed.



Clock



- Open the door of the remote control.
- Press ⊡.
- The time, downloaded from the TV channel (with teletext) stored on programme number 1, or entered manually in the Timers menu, appears in the upper left hand corner of the screen.
  This is not possible when Continuous Subtitles have been switched on and ▤ is displayed on the bottom of the screen. See Teletext, p. 27.
- Press ⊡ again in order to switch off the clock.

Adjust Brightness

- Open the door of the remote control.
- Press ☼ - or + in order to adjust the brightness.

Freeze the picture

- Open the door of the remote control.
- Press ▼.
- The picture is frozen.
- Press ▼ in order to get moving pictures again.

DNR

With DNR you can reduce the image noise and so improve picture quality when receiving weak signals.

- Open the door of the remote control.
- Press DNR repeatedly to select **DNR Min**, **DNR Med**, **DNR Max** or **DNR Off**.
  DNR Med offers you optimum picture quality and is the usual setting for normal strength signals .
  DNR Max should only be used for poor picture quality.
- Your selection appears for a moment at the top of the screen.

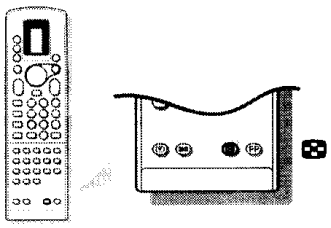
The setting is stored in memory for the selected TV channel after the indication disappeared from the screen.

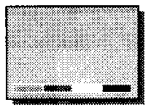
PP key

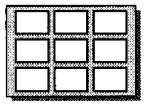
With the green **PP** key you can call up the picture and sound adjustments which have been stored with **General PP Store** in the Features menu, p. 20.

- Open the door of the remote control.
- Press **PP**.

Mosaic screen







- Open the door of the remote control.
- Press ⊞.
- A menu line **MOSAIC** appears on the bottom of the screen. It contains three functions : **Scan**, **Photo Fin.**, **Strobe**.
- Select with the keys ◀ or ▶ the function you want to activate and press **OK**.

Scan

- A scan of the stored TV channels is performed, starting with the favourite programme stored under the lowest programme number.

It is quite normal that during the scan you may notice a slight shaking or distortion of the picture.

Only TV channels placed in the favourite list are displayed. On the last position, a live picture is shown of the programme that was displayed before the mosaic screen was switched on, except when you were watching a picture from a peripheral. In this case the picture of the following favourite TV channel appears in the last position.

- Press **OK** again.
- A following series of stored TV channels from the favourite list or programmes from switched on peripherals is scanned.
  Each mosaic picture will contain its identifying programme number and name.
- Select a TV channel with the digit keys.
- The mosaic screen disappears and the selected TV programme is displayed.
- Press ⊞ to interrupt the scan function and to switch off the mosaic screen.

Never perform a scan while recording a TV programme with a video recorder recording from **EXTERNAL** *1 or 2 since the scan will be recorded on tape.*

Photo Finish

- The main picture is displayed in successive frozen pictures.
  The last picture on the bottom right will remain live.
- Press **OK** again.
- A new photo finish picture is displayed, overwriting the old one.
- Press ⊞ to switch off the photo finish function and the mosaic screen.

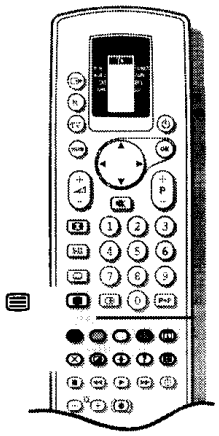
Strobe

- The picture is reproduced image by image. So you get an interrupted movement.
- Press **OK** again.
- The picture is reproduced image by image at a faster speed.
- Press ⊞ to switch off the strobe function and to switch off the mosaic screen.

Teletext

Most TV channels broadcast information via teletext. Each channel which broadcasts teletext transmits a page with information on how to use its teletext system. Look for the teletext page with the main index (usually page 100).
TV programmes are sometimes subtitled for the hard of hearing.

Depending on the TV channel, teletext is transmitted in different systems.
The system utilised can be recognised by the options line at the bottom of the screen.
The colours used in the options line correspond with the colour keys under the door of your remote control.



About the Easy Text system

The Easy Text system makes use of a memory with a high level of intelligence. By making maximum use of this intelligence it is possible that in most cases the selected page appears on the screen almost immediately.
The only condition is that the teletext broadcast of the particular TV channel is switched on for at least half a minute.

The major advantages of this Easy Text system are :

A considerable **reduced waiting time** by predicting what you will probably select and which results in :

- a fast and direct selection of previous and following pages which are in transmission
- the precapturing of the page numbers referred to in the displayed page
- the direct selection of the pages referred to in the options line
- the creation of a **habit watcher list** : frequently used pages are put in a list of preferred pages so that they are immediately available afterwards.
  The pages are stored in the memory when switching off teletext or when switching to standby.

The precapturing of up to **9 subpages** to be controlled by the teletext user.

Switch Teletext on and off

- Select the TV channel for the desired teletext broadcast.
- Press ▤ in order to switch on the teletext.
  If teletext is switched on when a menu is on the screen, the menu will automatically be removed.
- The main index page appears on the screen together with two information lines at the top and one option line at the bottom of the screen.
- Press ▤ again in order to switch off teletext.
- The TV channel reappears.

Select a Teletext page

With the digit keys ..... **or** **With the option line**

- Enter the desired page number with the digit keys.
- The page counter seeks the page or the page appears immediately when the page number has been stored in the memory.
- A message appears when you have entered a non existent or an incorrect page number. Page numbers beginning with 0 or 9 do not exist.
- Enter the correct page number.

- Select with the colour keys, corresponding to the coloured options at the bottom of the screen and depending on the teletext system the selected TV channel transmits,
  - the previous ←▤ or the following ▤→ pages
  - the 2 previously selected pages
  - another subject

Quickly run through the teletext pages

- Press **P -** to run through the previous pages.
- Press **P +** to run through the following pages.

Select the previously selected teletext page

- Press the **P◂P** key.
- ▷ The previously selected teletext page is displayed.

Select subpages

When a selected teletext page consists of different subpages, one of the subpages appears on the screen.
The coloured number in the first information line refers to the displayed subpage.

The other subpages can be selected in 2 ways :

With the keys ◀ or ▶.

The other subpage numbers appear in white as soon as the transmission has found them and they are stored in the memory so that they are available while the teletext page is on screen.

- Select with the keys ◀ or ▶ the previous or the following subpage.

or

By adding a subcode.

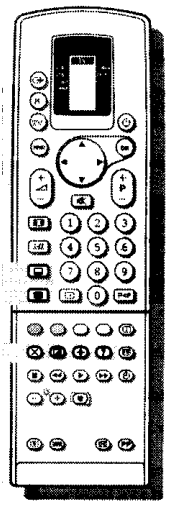
- Open the door of the remote control.
- Press [⊡].
- Enter the desired subpage with the digit keys : e.g. 3 for the third page of seven subpages.
- ▷ The TV searches for the selected subpage.
- Press [⊡] again in order to cancel the subcode.
- Press [⊡] again.
- ▷ The information line with the available subpages appears.

Select the index teletext page

- Open the door of the remote control.
- Press the white colour key [1].
- ▷ The main index, usually p. 100, appears.

or

- Press **MENU**.
- ▷ A T.O.P. overview of the teletext subjects available appears.
  Not all TV channels broadcast the T.O.P. teletext.
  When the teletext system is not T.O.P. teletext, a message appears at the top of the screen.
- Select with the keys ◀, ▶, or the desired subject and pagenumber.
- Press **OK**.
- ▷ The selected page appears.



Select Continuous Subtitles

TV channels which broadcast teletext often transmit certain programmes with subtitling. Sometimes more than one subtitle page is available. For each TV channel you can store a subtitle page which will be displayed continuously if the programme being broadcast is transmitted with subtitles.

- Press [▤] in order to switch on the the teletext.
- Select the proper subtitle page with the digit keys.
- ▷ The selected subtitle page appears and also the subtitles when the programme transmitted is subtitled.
- Press [▭] on the remote control.
- ▷ The message **Subtitle stored** appears.
- Press [▤] in order to switch off the the teletext.
- ▷ Every time a programme of the selected TV channel is subtitled, the subtitles will be available.
  When there are no subtitles available, only [▤] is displayed on the bottom of the screen.
- Press [▭] on the remote control to switch the subtitles on or off.
- ▷ The message **Subtitles On** or **Off** appears.

For every TV channel the subtitle page should be stored separately with the [▭] key on the remote control.

Select Special teletext functions

- Press [▤] in order to switch on the the teletext.
- Open the door of the remote control.

Interrupt

- Press X.
- ▷ The TV programme appears.
- ▷ [▤] at the top of the screen indicates that you are still in the teletext mode.
  Before interrupting teletext, you can select a page number.
  The page number appears on your screen.
- Press X again.
- ▷ Teletext reappears.

Mix

- Press [◪].
- ▷ The teletext page and the TV programme appear on the screen at the same time.
- Press [◪] again.
- ▷ Only the teletext page is displayed.

Enlarge

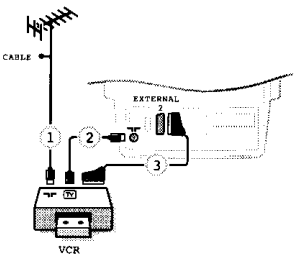
- Press [⊹] to enlarge the top half of the teletext page.
- Press the keys or to scroll the text line per line.
- Press [⊹] again to enlarge the bottom half of the teletext page.
- Press once more to return to normal page size.

Reveal

- Press **?** to call up concealed information, such as solutions to riddles and puzzles.
- Press **?** again in order to switch off the concealed information.

Connect Peripheral Equipment

There is a wide range of audio and video equipment that can be connected to your TV.
The following connection diagrams show you where the different equipment should be connected at the back or the front side of the TV.

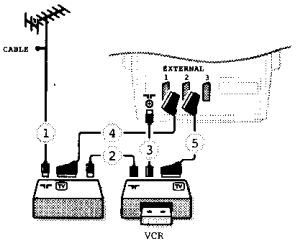


TV and video recorder

- Connect the aerial cables (1) and (2) as shown opposite.
  Better picture quality can be obtained if you also connect a eurocable (3).

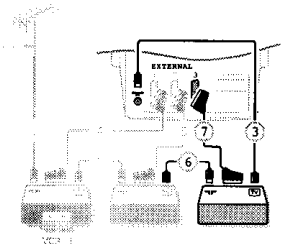
Search for and store the test signal of the video recorder

- Unplug the aerial cable (1) from the aerial socket "IF" of your video recorder.
- Switch on your TV and put the video recorder on the test signal. (See the handbook for your video recorder.)
- Enter the Installation menu via the Main menu.
- Search for the test signal of your video recorder in the same way as you searched for and stored the TV signals. See Installation, Searching for and storing TV channels, Manual Installation, p. 7.
  Store the test signal either under programme number 0 or between 50 and 99.
- Replace the aerial cable in the aerial socket "IF" of your video recorder once you have stored the test signal.



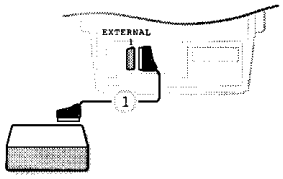
TV, video recorder and other peripherals (except CD-i/Photo CD)

- Connect the aerial cables (1), (2) and (3) as shown opposite. Better picture quality can be obtained if you also connect eurocable (5) to **EXTERNAL 2** and a eurocable (4) to **EXTERNAL 1** or **3**.
- Look for the test signal of your peripheral in the same way as you do for a video recorder.



If you have more peripherals, they can also be connected to each other with an extra aerial cable (6) and an additional eurocable (7).

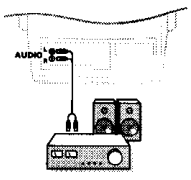
When a video recorder is connected to **EXTERNAL 1** you can only record a programme from your TV.
Only when a video recorder is connected to **EXTERNAL 2** it is possible to record a programme from your TV as well as from other connected equipment. See Record with your video recorder, p. 35.



TV and a CD-i/Photo CD

- Connect eurocable (1) as shown opposite.

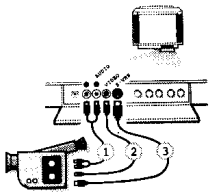
- Press **MENU** on the remote control.
- ▷ The **MAIN MENU** appears on the screen.
- Keep the key pressed and select **INSTALLATION.**
- ▷ **INSTALLATION** lights up.
- Press **OK**.
- ▷ The **INSTALLATION** menu appears.
- Select **TV-Configuration** with the keys or and press **OK**.
- ▷ The **TV-CONFIGURATION** menu appears.
- Select **CD-i/Photo CD** with the keys or .
- ▷ **CD-i/Photo CD** lights up.
- Press the keys ◀ or ▶ to select **Present.**
- ▷ This offers you optimum picture quality for your CD-i or Photo CD.



Audio equipment

You can listen to your TV sound via your audio equipment.

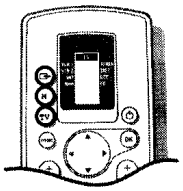
- Connect the audio cables to the audio input of your audio equipment and to **AUDIO L** and **R** at the back of your TV.
- Make your audio output selection in the Install TV Configuration menu.
  See p. 11.

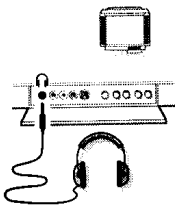


Camera and camcorder

- Connect your camera or camcorder at the front side of your TV.
- Connect the equipment to **VIDEO** (2) and **AUDIO L** (1) for mono equipment.
- Also connect **AUDIO R** (1) for stereo equipment.
- Select stereo sound in the **SOUND** menu.

S-VHS quality with a S-VHS camcorder is obtained by connecting the S-VHS cables with the **S-VHS** input (3) and **AUDIO** inputs (1).



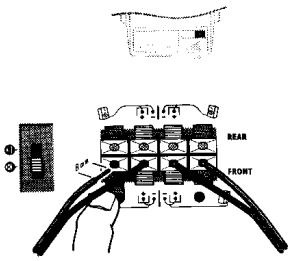


Headphone

- Insert the plug into the headphone socket 🎧 at the front of the TV.
- Press 🔇 on the remote control to switch off the internal loudspeakers of your TV.

The headphone socket has an impedance of between 8 and 4000 Ohm and is of the 3.5 mm jack type.

In the **SOUND** menu select **Headphone** to adjust the headphone volume and balance and to select the audio source for your headphone sound.
See page 17.



Extra loudspeakers

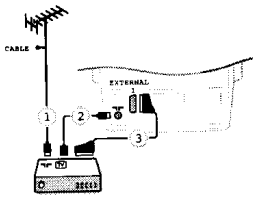
You can replace the left and right internal loudspeakers of your set by two extra loudspeakers, min. 8 Ohm.

- Connect the loudspeakers to the connector clips at the back of the TV.
- Push the connector clip down and insert the ends of the wires into the openings :
  the negative wires to the black connector clips, the positive wires (the one with a black line) to the red connector clips.
  Do not insert the wires too far.
- Connect the front left loudspeaker to **FRONT L** and the front right loudspeaker to **FRONT R**.
- Put the loudspeaker switch on the back in the 🔇 position.

▷ The internal right and left loudspeakers of your TV are now switched off.

Decoder

Cable TV offers you a wide choice of programmes. Most of them are free, others are to be paid for by the viewer. This means that you will need to subscribe to the broadcasting organisation whose programmes you wish to receive. This organisation will supply you a corresponding decoder unit to allow the programmes to be unscrambled.
For further information, ask your dealer. See also the booklet supplied with your decoder.

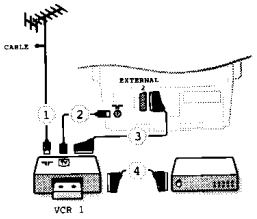


Connect a decoder with an aerial socket to the TV

- Connect the aerial cable (1) as shown alongside.
  When your decoder has a euroconnector you can obtain better picture quality if you connect a eurocable (3) to **EXTERNAL 1**.

Connect a decoder without an aerial socket to the TV

- Connect the decoder to your TV with a eurocable (3) only.

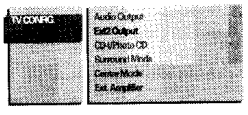


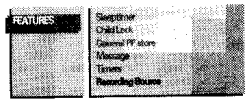
Connect the decoder to the video recorder

Some video recorders have a special euroconnector for decoder.

- Connect a eurocable (4) to the euroconnector of your decoder and to the special euroconnector of your video recorder.
  See also the handbook of your video recorder.
- To connect your video recorder to the TV, see p. 30.

If you want to connect more equipment to your TV, consult your dealer.





Reproduce Picture and Sound of connected peripheral equipment

Most of the audio and video equipment from our range of produ operated with the remote control of your TV.
Press **M** on the remote control repeatedly until the arrow in th indicates the equipment you want to operate with this remote c

To operate your TV again, first press the TV key and en programme number of the TV channel you want to wat digit keys.

a. Reproduce picture and sound from equipment connected only v **cable**

- Switch your TV on.
- Select the programme number under which you have stored the with the digit keys .
- Switch on your equipment.
  (See the handbook for your equipment.)

▷ The picture and/or sound is reproduced.

If you want to watch TV channels again.

- Enter the programme number of the TV channel which you war the digit keys.

b. Reproduce picture and sound from equipment connected with :

- Switch your TV on.
- Switch on your equipment.

▷ Either the picture and/or the sound is reproduced or descramb

If this is not the case :

- Press ⊡▸ repeatedly until the designation **EXT1**, **EXT2**, **EXT3** c appears on the screen, according to where you connected your the back or the front of your TV.

▷ Either the picture and/or the sound is reproduced or descramb

If you want to watch TV channels again.

- Enter the programme number of the TV channel which you wa the digit keys.

c. Reproduce picture and sound from equipment connected to th the TV

- Switch your TV on.
- Press ⊡▸ repeatedly until the indication **FRONT** appears on th
- Switch on your equipment.

▷ The picture is reproduced.

If you want to watch the TV picture again.

- Enter the programme number of the TV channel which you wa the digit keys.

Record with your video recorde

If you have connected a S-VHS video recorder you can only re quality from a S-VHS peripheral connected to the front side of from a S-VHS camcorder). In this case go on as follows :

- Press **MENU**.
- Select **TV-Configuration** in the **INSTALLATION** menu with t and press **OK**.
- Select **Ext2 Output** with the keys or .
- Select **S-VHS Quality** with the keys ◀ or ▶.

In all other cases, whether you record with a VHS or S recorder, select VHS Quality.

- Keep **MENU** pressed for a short while to switch off each menu

1. Record a TV programme

• only using an **aerial cable**

- Select the programme number on your video recorder.
- Set your video recorder to record.
  (See the handbook for your video recorder.)

• using a **eurocable** connected to the euroconnector **EXTERN**

With a video recorder connected to **EXTERNAL 2** *it is possible to r from your TV as well as from other connected equipment.*

- Select the programme number on the TV.
- Press **MENU**.
- Select **FEATURES** with the keys or and press **OK**.
- Select **Recording Source** with the keys or .
- Press ◀ or ▶ to select the source you want to record : **Aut**
- Select **Auto.** if you want to record what you are watching on
- Select **TV** when you want to record a programme from a TV are watching a programme from connected equipment (2nd V
- Press **MENU** twice.

▷ The **FEATURES** menu and the **MAIN MENU** disappear.

- Set your video recorder to record.
  (See the handbook for your video recorder.)

• using a **eurocable** connected to the euroconnector **EXTERN**

With a video recorder connected to **EXTERNAL 1** *you can only re programme from your TV.*

- Select the programme number on the TV.
- Set your video recorder to record.
  (See the handbook for your video recorder.)

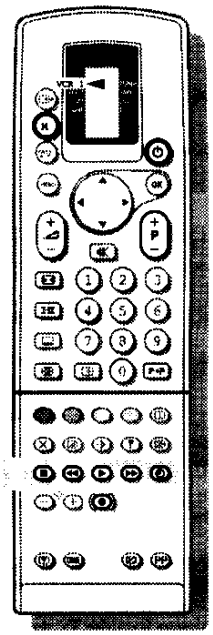
2. Record a programme from Audio/Video equipment c EXTERNAL 1, EXTERNAL 3 or FRONT

- Switch on the equipment.
- Press **MENU**.
- Select **FEATURES** with the keys or and press **OK**.
- Select **Recording Source** with the keys or .
- Select the connection **EXT1**, **EXT3** or **FRONT** from which you with the keys ◀ or ▶.
- Press **MENU** twice.

▷ The **FEATURES** menu and the **MAIN MENU** disappear.

- Set your video recorder to record.
  (See the handbook for your video recorder.)

Operate the video recorder with the TV remote control



Most of the audio and video equipment from our range of products can be operated with the remote control of the TV.

- Press repeatedly on the **M** key of the remote control until the designation **VCR1** or **VCR2** is indicated by the arrow and according to which connected video recorder you want to operate.
- Press one of the video recorder keys of the remote control :

■ for stop

◀◀ for rewind

▶ for play

▶▶ for wind

⏻ for timer

● for record

P +/- to run quickly through the TV channels from your video recorder tuner

The digit keys to select TV channels from your video recorder tuner

The standby key ⏻ to switch off the video recorder temporarily.

Tips

Care of the screen

Clean the TV with a slightly damp soft cloth. Do not use abrasive solvent as it can damage the TV screen coating layer.

Poor Picture

Have you selected the correct TV system ? Is your TV set or house aerial located too close to loudspeakers, non-earthed audio equipment or neon lights, etc. ?
Mountains or high buildings can cause double pictures or ghost images.
Sometimes you can improve the picture quality by changing the direction of the outside aerial.
Is the picture or teletext unrecognisable ? Check if you have entered the correct frequency. See Installation, p. 8.
Are brightness and contrast out of adjustment ? Press the **PP** key.
Switch off your TV overnight with ⏻ on the front of the TV.
Sometimes poor picture quality is possible when having activated a S-VHS camera or camcorder connected to the front of your TV and another peripheral is connected to **EXT1** or **EXT2** at the same time. In this case switch off one of the other peripherals.

No picture

Is the aerial connected properly ? Are the plugs tightly connected in the aerial socket ? Is the aerial cable in good condition and does it have suitable plugs ? Are the connection facilities to a possible second TV in good condition ? If in doubt, consult your dealer.
No picture means that the aerial peripheral equipment is transmitting no picture.
Have you pressed the correct keys on the remote control ? Try once more.
Did you press ▤ again after switching on teletext ?
Has the child lock been switched off ?
See Features, p. 20.

Sound

Did you perhaps interrupt the sound with the 🔇 key ? Were the internal loudspeakers switched off by the switch on the back of your TV set ? See Extra loudspeakers, p. 32. Is the sound coming out of only one loudspeaker ? Is the balance perhaps set to one extreme ? See **SOUND** menu, p. 16.
Select **Spatial On** in the Sound menu if there is no sound coming out of the extra loudspeakers at the back. See Spatial, p. 17.

Remote control

If your TV no longer responds to the remote control. Check whether the remote control is in the TV operation position.
Press the **TV** key once more.
Perhaps the batteries are exhausted. See Preparation, p. 4.
You can still use the Local Menu keys at the front of your TV.

Menu

Have you selected the wrong menu ? Press **MENU** again to exit from the menu.

Connections

Check whether your peripheral equipment is properly connected. See p. 30.
Have you switched on the peripheral equipment ?

No solution

Switch your TV set off and then on again.
Never attempt to repare a defective TV yourself.
Check with your dealer or call a TV technician when in doubt.

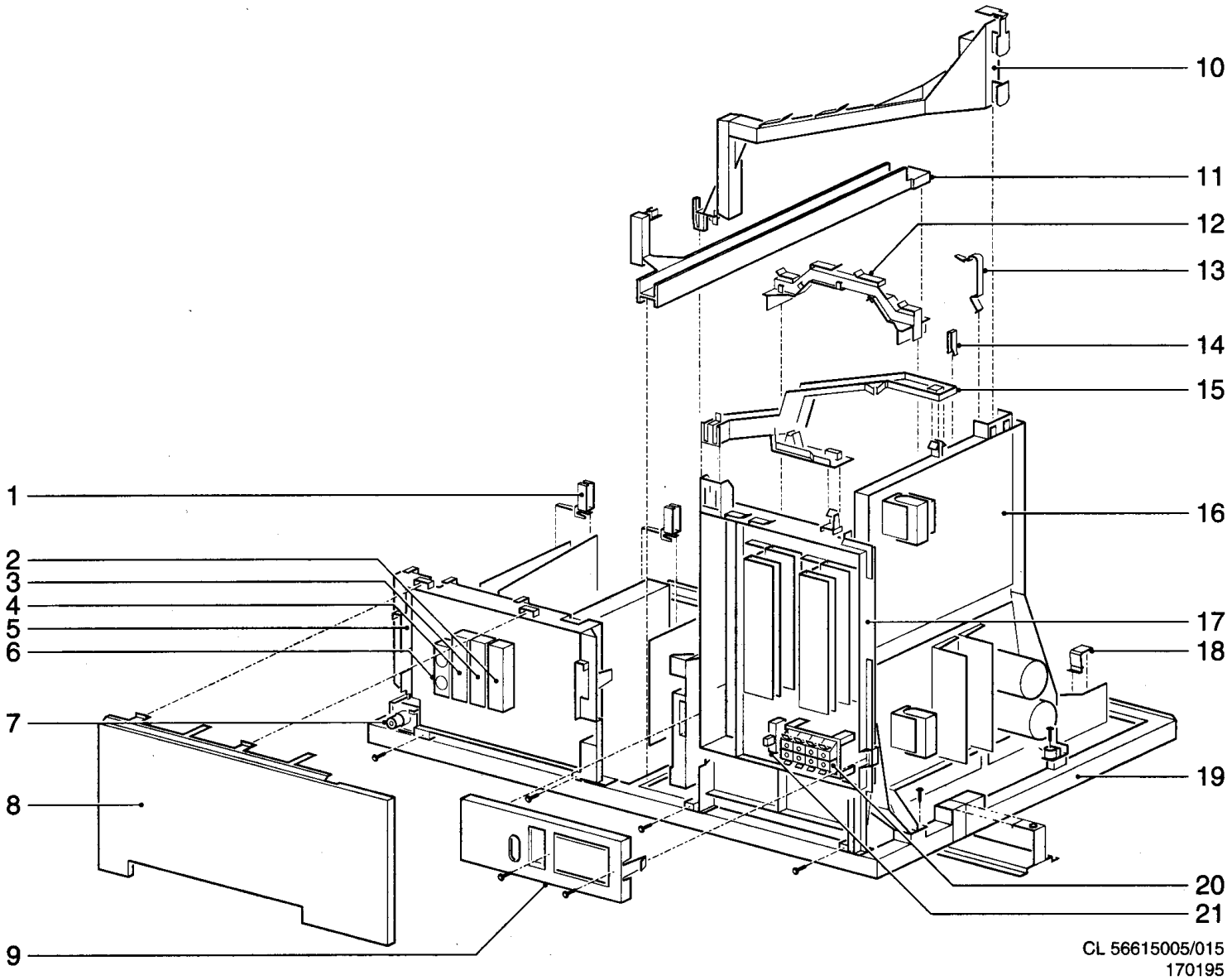
End of life directives

Your new TV contains materials which can be recycled and reused.
At the end of life specialised companies can dismantle the discarded TV to concentrate the reusable materials and to minimise the amount of materials to be disposed of.
Please ensure you dispose of your old TV set in accordance with any local regulations.

How to dispose of exhausted batteries ?

The Philips batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries exhausted batteries may not be disposed of with your household waste. Please ensure you dispose of exhausted batteries according to local regulations.

10. Spare parts list



CL 56615005/015
170195

Mechanical parts list

1	4822 404 31441	Lock for SSP
2	4822 267 60398	Socket SCART black
3	4822 267 60399	Socket SCART blue
4	4822 267 60399	Socket SCART blue
5	4822 464 70657	Frame for source select panel
6	4822 267 31877	socket 2 x cinch
7	4822 320 11113	Cable IEC/Phono
8	4822 432 93334	Cover SSP
9	4822 432 93335	Cover audio
10	4822 404 31438	Bracket for ELPS frame
11	4822 404 31436	Chassis lock
12	4822 404 31445	Bracket for scavem
13	4822 492 70789	Spring for transistor
14	4822 492 71649	Spring for transistor
15	4822 404 31437	Bracket
16	4822 464 70658	Frame for ELPS
17	4822 464 70656	Frame for audio amplifier
18	4822 492 62076	Spring for transistor
19	4822 464 70655	Frame for chassis
20	4822 290 61229	Socket for ext. loudsp.
21	4822 277 30967	Swith loudsp. ON/OFF

Repair kits

FFS DRIVE REPAIR KIT GFL (4822 310 32214)

1011	4822 253 30467	Fuse 6,3A (ELPS)
1015	4822 310 32214	Supply drive panel
1135	4822 071 52502	Fuse 2,5A
1137	4822 071 52502	Fuse 2,5A
2102	4822 121 70586	39nF 1kV 5%
2109	4822 121 70581	1n5F 2kV 5%
2115	4822 126 11503	820pF 2kV 10%
2116	4822 126 11503	820pF 2kV 10%
3138	4822 113 80678	2Ω7 10% 15W (ELPS) 33"
3148	4822 113 80603	1Ω5 10% 7W (ELPS) 29"
6102	4822 130 32343	BYV26C
6103	4822 130 32343	BYV26C
6104	4822 130 33887	GP15J-16
6105	4822 130 33887	GP15J-16
6106	4822 130 33887	GP15J-16
6107	4822 130 33887	GP15J-16
6110	4822 130 41602	BYW95C/20
7111	4822 130 63724	G2391HEX

AUX 1 DRIVE REPAIR KIT GFL (4822 310 32215)

2227	4822 121 70584	1nF8 2kV 5%
2228	4822 122 20054	270pF 2kV 10%
7203	4822 209 83909	UC3842N
7228	4822 130 63725	STP4N40FI

LINE REPAIR KIT GFL 25" SF (4822 310 32216)

2409	4822 121 70594	1nF 2kV 5%
2412	4822 121 70593	24nF 630V 5%
2421	4822 121 51563	560nF 250V 5%
2429	4822 121 70398	11nF 2kV 5%
2433	4822 121 51528	470nF 250V 5%
6414	4822 130 83825	BY328/20
6418	4822 130 33531	BY229F-600
7414	4822 130 63329	BU2525A
7432	4822 130 63726	MTP3055EFI
7480	4822 130 63728	IRF620

LINE REPAIR KIT GFL 29" SF (4822 310 32212)

2409	4822 121 70595	1nF2 2kV 5%
2412	4822 121 70585	27nF 630V 5%
2421	4822 121 51563	560nF 250V 5%
2423	4822 121 51563	560nF 250V 5%
2429	4822 121 70398	11nF 2kV 5%
6414	4822 130 83825	BY328/20
6418	4822 130 33531	BY229F-600
7414	4822 130 63329	BU2525A
7432	4822 130 63726	MTP3055EFI
7480	4822 130 63728	IRF620

LINE REPAIR KIT GFL 33" (4822 310 32213)

2409	4822 121 70581	1nF5 2kV 5%
2412	4822 121 70585	27nF 630V 5%
2419	4822 130 70435	10nF 2kV 5%
2421	4822 121 51563	560nF 250V 5%
2423	4822 121 51563	560nF 250V 5%
6414	4822 130 83825	BY328/20
6418	4822 130 33531	BY229F-600
7414	4822 130 62843	2SC4288A
7432	4822 130 63726	MTP3055EFI
7480	4822 130 63728	IRF620

Spare parts list / Stükliste / Liste des pièces

Large signal panel [L1] [L2]

Various

	4822 265 41448	7P male v 2,5 grey
	4822 265 41461	10P male v 2,5
	4822 265 51382	23P male v 1,25
	4822 265 31245	4P male v 2,5
	4822 265 31246	6P male v 2,5
	4822 265 20697	2P male v yellow
	4822 265 31244	3P male v 2,5
	4822 265 31243	5P male v 2,5
	4822 265 20698	2P male v red
	4822 321 62859	Cable 5P 2,5 28cm AP23-L23
	5322 390 20011	Vet silic.P4 20GR
	4822 492 62076	Spring fix 7111
	4822 492 71649	Spring fix trans.
	4822 492 70789	Spring fix trans.
	4822 466 93462	Insulator 24 X 40
	4822 466 93463	Insulator 20 X 30
	4822 466 93461	Insulator 20 X 25
	4822 466 92954	Spacer 16mm
	4822 404 31305	Support FFS drive
	4822 532 61267	Spacer 17,5mm
	4822 404 31445	Bracket for PANADAF
	4822 320 20233	EHT cable 29"
	4822 320 11108	EHT cable 33"
	4822 320 20216	Focus cable
1135▲	4822 071 52502	Fuse 2.5A
1137▲	4822 071 52502	Fuse 2.5A

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2100	4822 124 23492	220µF 50% 385V
2101	4822 124 40737	150µF 20% 25V
2102	4822 121 70586	39nF 5% 1kV
2103▲	4822 126 11141	2,2nF 10% 1kV
2104▲	4822 126 11141	2,2nF 10% 1kV
2109	4822 121 70581	1,5nF 5% 2kV
2112▲	4822 126 12095	220pF 10% 2kV
2115▲	4822 126 11503	820pF 10% 2kV
2116▲	4822 126 11503	820pF 10% 2kV
2121	4822 122 31175	1nF 10% 500V
2122	4822 126 11157	470pF 10% 500V
2123	4822 126 11157	470pF 10% 500V
2125▲	4822 122 33665	3,3nF 20% 125V
2126	4822 126 11157	470pF 10% 500V
2127	4822 124 40785	3300µF 20% 25V
2128	4822 126 11157	470pF 10% 500V
2129	4822 124 40785	3300µF 20% 25V
2130▲	4822 126 12267	470pF 10% 2kV
2131	4822 124 22583	47µF 160V
2134	4822 121 51379	82nF 5% 63V
2135	4822 126 11157	470pF 10% 500V
2136	4822 124 41747	680µF 20% 35V
2137	4822 126 11157	470pF 10% 500V
2138	4822 124 40214	1000µF 20% 25V
2139	4822 124 41596	22µF 20% 50V
2141	4822 124 41596	22µF 20% 50V
2144	5322 121 42489	33nF 5% 250V
2201	4822 124 81083	10µF 20% 16V
2202	5322 122 32331	1nF 10% 100V
2203	5322 121 42386	100nF 5% 63V
2204	5322 121 42386	100nF 5% 63V
2216	4822 121 70583	1,5nF 5% 100V
2220	5322 121 42386	100nF 5% 63V
2221▲	4822 124 40433	47µF 20% 25V
2224	4822 124 81084	100µF 20% 160V
2225	4822 126 11157	470pF 10% 500V
2226	4822 126 11157	470pF 10% 500V
2227	4822 121 70581	1,5nF 5% 2kV
2228	4822 122 20054	270pF 10% 2kV
2234	4822 126 11157	470pF 10% 500V
2235	4822 124 80215	1000µF 20% 35V
2236	4822 124 41596	22µF 20% 50V
2237	4822 126 11157	470pF 10% 500V
2238	4822 124 80367	1800µF 20% 35V
2240	4822 124 41596	22µF 20% 50V
2242	4822 126 11501	1,5nF 10% 500V
2243	4822 124 22263	220µF 20% 25V
2259	5322 121 42386	100nF 5% 63V
2260	5322 124 21189	100µF 20% 40V
2262	4822 126 10334	470pF 10% 50V
2263	4822 126 10334	470pF 10% 50V
2264	5322 124 40641	10µF 20% 100V
2266	5322 121 42386	100nF 5% 63V
2267	4822 121 42408	220nF 5% 63V
2402	4822 121 41689	100nF 10% 250V
2403	4822 121 43368	47µF 160V
2406	4822 126 11823	270pF 10% 500V
2409	4822 121 70584	1,8nF 5% 2kV
2409	4822 121 70595	1,2nF 5% 2kV
2412	4822 121 70585	27nF 5% 630V
2412	4822 121 70593	24nF 5% 240V
2413▲	4822 126 11503	820pF 10% 2kV
2414	4822 121 42408	220nF 5% 63V
2419	4822 121 70435	10nF 5% 2kV
2421	4822 121 51563	560nF 5% 250V
2423	4822 121 51563	560nF 5% 250V
2424	4822 124 80341	1µF 20% 160V
2425	5322 124 41299	68µF 20% 25V
2426	4822 121 41854	150nF 5% 63V
2428	4822 126 11157	470pF 10% 500V
2429	4822 121 70398	11nF 5% 2kV
2430	4822 124 22466	1µF 20% 50V
2432	4822 126 10334	470pF 10% 50V
2435	4822 126 11966	100pF 10% 500V
2438	4822 124 40763	2,2µF 100V
2443	4822 124 41643	100µF 20% 16V
2444	4822 124 41643	100µF 20% 16V
2446	4822 126 11501	1,5nF 10% 500V
2447	4822 126 11501	1,5nF 10% 500V
2450	4822 121 51243	56nF 5% 50V
2455	4822 121 40516	22nF 10% 250V
2460	4822 126 11501	1,5nF 10% 500V
2461	4822 124 21511	2200µF 20% 25V
2462	4822 126 11501	1,5nF 10% 500V
2463	4822 124 22347	47µF 20% 50V
2465	4822 126 11501	1,5nF 10% 500V
2466	4822 124 41387	470µF 20% 25V
2469	4822 124 40242	1µF 20% 63V
2470	5322 121 42489	33nF 5% 250V
2471	4822 124 81089	2,2µF 20% 160V
2473	4822 121 41857	10nF 5% 250V
2474	4822 121 41854	150nF 5% 63V
2475	4822 126 11501	1,5nF 10% 500V
2476	4822 124 23265	4,7µF 20% 350V
2481	4822 124 81087	1µF 20% 200V
2491	4822 126 12832	2,7nF 10% 100V

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3102	4822 117 11602	18k 10% 5W
3103	4822 117 11592	22k 5% 3W
3110	4822 117 11598	820Ω 10% 5W
3112	4822 116 52176	10Ω 5% 0,5W
3114▲	4822 053 21225	2M2 5% 0,5W
3115▲	4822 053 21225	2M2 5% 0,5W
3116	4822 116 83864	10k 5% 0,5W
3117	4822 116 83864	10k 5% 0,5W
3118	4822 116 52215	220Ω 5% 0,5W
3119	4822 116 52228	680Ω 5% 0,5W
3120	4822 053 11333	33k 5% 2W
3123	4822 050 11002	1k 1% 0,4W
3124	4822 117 11603	OR22 5% 0,5W
3125	4822 117 11603	OR22 5% 0,5W
3127	4822 050 24702	4k7 1% 0,6W
3128	4822 050 24702	4k7 1% 0,6W
3130	4822 053 10223	22k 5% 1W
3132	4822 116 83864	10k 5% 0,5W
3133	4822 116 52289	5k6 5% 0,5W
3134	4822 116 52215	220Ω 5% 0,5W
3135	4822 116 52249	1k8 5% 0,5W
3136	4822 116 52249	1k8 5% 0,5W
3137	4822 116 52249	1k8 5% 0,5W
3138	4822 116 52289	5k6 5% 0,5W
3146	4822 116 52256	2k2 5% 0,5W
3147	4822 116 52257	22k 5% 0,5W
3148	4822 116 52239	120k 5% 0,5W
3149	4822 116 52264	27k 5% 0,5W
3200	4822 116 52284	47k 5% 0,5W
3201	4822 116 52284	47k 5% 0,5W
3203	4822 116 52244	15k 5% 0,5W
3205	4822 116 52249	1k8 5% 0,5W
3206	4822 116 52222	390Ω 5% 0,5W
3207	4822 116 52284	47k 5% 0,5W
3208	4822 116 52284	47k 5% 0,5W
3210	4822 101 11186	470Ω 30% LIN
3211	4822 116 52289	5k6 5% 0,5W
3212	4822 116 52273	3k6 5% 0,5W
3213	4822 116 52271	33k 5% 0,5W
3214	4822 116 52284	47k 5% 0,5W
3216	4822 116 52244	15k 5% 0,5W
3220	4822 117 10177	120k 5%
3221	4822 116 52234	100k 5% 0,5W
3224	4822 116 52195	47Ω 5% 0,5W
3226	4822 116 83864	10k 5% 0,5W
3227	4822 115 10129	27Ω 10% 5W
3231	4822 117 11604	OR39 5% 0,5W
3253▲	4822 050 25601	560Ω 1% 0,6W
3260	4822 050 11002	1k 1% 0,4W
3263	4822 116 52206	120Ω 5% 0,5W
3263	4822 116 52215	220Ω 5% 0,5W
3264	4822 116 52211	150Ω 5% 0,5W
3264	4822 116 52215	220Ω 5% 0,5W
3265▲	4822 050 25601	560Ω 1% 0,6W
3267▲	4822 052 10158	1Ω5 5% 0,33W
3270	4822 116 80176	1Ω 5% 0,5W
3271	4822 116 80176	1Ω 5% 0,5W
3272	4822 116 80176	1Ω 5% 0,5W
3273	4822 116 83864	10k 5% 0,5W
3274	4822 050 11002	1k 1% 0,4W
3275	4822 050 11002	1k 1% 0,4W
3400	4822 116 83864	10k 5% 0,5W
3401	4822 116 52269	3k3 5% 0,5W
3402	4822 116 83864	10k 5% 0,5W
3403	4822 116 83864	10k 5% 0,5W
3404	4822 117 11599	1k8 10% 5W
3404	4822 117 11601	2k2 10% 5W
3405	4822 116 83864	10k 5% 0,5W
3406	4822 116 83864	10k 5% 0,5W
3407	4822 116 52231	820Ω 5% 0,5W
3408	4822 050 11002	1k 1% 0,4W
3409	4822 116 52231	820Ω 5% 0,5W
3410	4822 116 52193	39Ω 5% 0,5W
3412	4822 053 11128	1Ω2 5% 2W
3412	4822 053 11158	1Ω5 5% 2W
3413	4822 053 11128	1Ω2 5% 2W
3413	4822 053 11158	1Ω5 5% 2W
3414	4822 116 52184	18Ω 5% 0,5W
3415	4822 053 10688	6Ω8 5% 1W
3416	4822 116 52176	10Ω 5% 0,5W
3417	4822 116 52176	10Ω 5% 0,5W
3418	4822 116 52261	24k 5% 0,5W
3419	4822 053 10152	1k5 5% 1W
3419▲	4822 053 10272	2k7 5% 1W
3421	4822 116 52234	100k 5% 0,5W
3422	4822 116 52271	33k 5% 0,5W
3423	4822 116 52271	33k 5% 0,5W
3424	4822 116 52283	4k7 5% 0,5W
3425	4822 116 52284	47k 5% 0,5W
3426▲	4822 052 10102	1k 5% 0,33W
3427▲	4822 052 10102	1k 5% 0,33W
3431	4822 050 25605	5M6 1% 0,6W
3432	4822 116 52234	100k 5% 0,5W
3433	4822 050 11002	1k 1% 0,4W
3434	4822 116 52224	470Ω 5% 0,5W
3435	4822 053 21394	390k 5% 0,5W
3436	4822 053 21474	470k 5% 0,5W
3437	4822 116 52224	470Ω 5% 0,5W
3438	4822 116 83864	10k 5% 0,5W
3439	4822 116 83878	270k 5% 0,5W
3440▲	4822 053 10159	15Ω 5% 1W
3441	4822 116 52219	330Ω 5% 0,5W
3442	4822 101 20901	10k 10% LIN
3443▲	4822 052 10108	1Ω 5% 0,33W
3444▲	4822 052 10108	1Ω 5% 0,33W
3445▲	4822 053 10159	15Ω 5% 1W
3446▲	4822 050 24708	4Ω7 1% 0,6W
3447▲	4822 050 24708	4Ω7 1% 0,6W
3449	4822 116 52234	100k 5% 0,5W
3450	4822 050 21403	14k 1% 0,6W
3451	4822 050 21403	14k 1% 0,6W
3452▲	4822 050 21503	15k 1% 0,6W
3454	4822 116 52234	100k 5% 0,5W
3455	4822 116 52297	68k 5% 0,5W
3456	4822 116 52271	33k 5% 0,5W
3457	4822 116 52255	200k 5% 0,5W
3457	4822 116 52262	240k 5% 0,5W
3460▲	4822 052 11108	1Ω 5% 0,5W
3461▲	4822 052 11108	1Ω 5% 0,5W
3462	4822 116 52283	4k7 5% 0,5W
3463▲	4822 050 21003	10k 1% 0,6W
3464	4822 116 52243	1k5 5% 0,5W
3464	4822 116 52263	2k7 5% 0,5W
3465▲	4822 052 11108	1Ω 5% 0,5W
3466▲	4822 052 11108	1Ω 5% 0,5W
3467▲	4822 052 10108	1Ω 5% 0,33W
3468	4822 116 52277	39k 5% 0,5W
3469	4822 116 52272	330k 5% 0,5W
3470	4822 116 52271	33k 5% 0,5W
3471	4822 116 52261	24k 5% 0,5W
3472	4822 050 11002	1k 1% 0,4W
3473	4822 050 11002	1k 1% 0,4W
3474	4822 116 52271	33k 5% 0,5W
3475	4822 052 11398	3Ω9 5% 0,5W
3476	4822 116 52282	430k 5% 0,5W
3477	4822 050 11002	1k 1% 0,4W
3480	4822 116 52234	100k 5% 0,5W
3481	4822 116 52297	68k 5% 0,5W
3482	4822 116 52284	47k 5% 0,5W
3487	4822 050 11002	1k 1% 0,4W
3489	4822 050 11002	1k 1% 0,4W
3490	4822 116 52234	100k 5% 0,5W
3491	4822 050 11002	1k 1% 0,4W
3492	4822 116 52269	3k3 5% 0,5W
3493	4822 116 52234	100k 5% 0,5W
3495	4822 116 52215	220Ω 5% 0,5W
3497	4822 116 52215	220Ω 5% 0,5W
3498	4822 116 83864	10k 5% 0,5W
3500	4822 116 83864	10k 5% 0,5W
3501	4822 116 83864	10k 5% 0,5W
3502	4822 116 52284	47k 5% 0,5W
3503	4822 116 83864	10k 5% 0,5W
3504	4822 116 52175	100Ω 5% 0,5W
3506	4822 116 52175	100Ω 5% 0,5W
9112	4822 116 52176	10Ω 5% 0,5W

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5102	4822 526 10494	Ferrite bead
5111	4822 526 10494	Ferrite bead
5120	4822 157 51216	5,6µH 10%
5125	4822 157 71471	Transf. FF-SUPPLY
5126	4822 157 71097	0,56µH 20%
5128	4822 157 71097	0,56µH 20%
5130	4822 526 10494	Ferrite bead
5131	4822 157 71453	27µH 10%
5132	4822 157 71453	27µH 10%
5134	4822 157 71453	27µH 10%
5135	4822 526 10494	Ferrite bead
5136	4822 526 10494	Ferrite bead
5137	4822 526 10494	Ferrite bead
5138	4822 157 71469	33µH 5%
5139	4822 157 71469	33µH 5%
5224	4822 526 10494	Ferrite bead
5230	4822 157 71474	Transf. AUX-SUPPLY
5231	4822 526 10494	Ferrite bead
5235	4822 157 71468	220µH 10%
5236	4822 157 71457	33µH 10%
5237	4822 157 71469	33µH 5%
5238	5322 157 52826	4,7µH 20%
5239	5322 157 52826	4,7µH 20%
5240	4822 157 60155	33µH 7,5%
5266	4822 157 63506	Ferrite bead
5401	4822 157 71467	39µH 10%
5406▲	4822 157 63252	Line driver transf.
5413	4822 157 71097	0,56µH 20%
5413	4822 157 71465	1µH 20%
5415	4822 157 63506	Ferrite bead
5416	4822 157 71097	0,56µH 20%
5417	4822 157 63506	Ferrite bead
5418	4822 526 10494	Ferrite bead
5419	4822 157 63253	Choke CU15
5421	4822 157 71472	Bridge coil 29"
5421	4822 157 71473	Bridge coil 33"
5428	4822 156 50107	Linearity corr. 33"
5428	4822 156 50112	Linearity corr. 29"
5440▲	4822 157 70006	DC-SHIFT
5450▲	4822 140 10516	L.O.T. 33"
5450▲	4822 140 10518	L.O.T. 25"-28"-29"
5460	4822 157 71466	2,2µH 20%
5465	4822 157 71466	2,2µH 20%
5467▲	4822 157 50963	2,2µH 20%

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6102	4822 130 32343	BYV26C
6103	4822 130 32343	BYV26C
6104	4822 130 33887	GP15J-16
6105	4822 130 33887	GP15J-16
6106	4822 130 33887	GP15J-16
6107	4822 130 33887	GP15J-16
6108	4822 130 34142	BZX79-C33
6110▲	4822 130 41602	BYW95C/20
6120	4822 130 42488	BYD33D
6122	4822 130 33887	GP15J-16
6123	4822 130 33887	GP15J-16
6127	4822 130 33529	BY229F-200
6129	4822 130 33529	BY229F-200
6130	4822 130 81123	BY229F-800
6133▲	4822 130 30621	1N4148
6134▲	4822 130 31983	BAT85
6135	4822 130 42488	BYD33D
6137	4822 130 82035	BYD74D
6205▲	4822 130 30621	1N4148
6221	4822 130 42488	BYD33D
6230	4822 130 33887	GP15J-16
6231	4822 130 33887	GP15J-16
6234	4822 130 80982	BYW29F-100
6235	4822 130 42488	BYD33D
6237	4822 130 83824	PBYR740F
6242	4822 130 42488	BYD33D
6259	4822 130 42488	BYD33D
6262	4822 130 42488	BYD33D
6263	4822 130 32904	BZV85-C5V6
6263	5322 130 32282	BZV85-C13
6265	4822 130 42488	BYD33D
6406▲	4822 130 30621	1N4148
6409	4822 130 31024	BZX79-C18
6410	4822 130 30842	BAV21
6413	4822 130 42488	BYD33D

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6414	4822 130 83825	BY328/20
6417	4822 130 83185	BY359F-1500
6418▲	4822 130 33531	BY229F-600
6422▲	4822 130 32896	BYD33M
6423▲	4822 130 32896	BYD33M
6424▲	4822 130 30621	1N4148
6430▲	4822 130 30621	1N4148
6431	5322 130 31504	BZX79-C3V3
6438▲	4822 130 61219	BZX79-C10
6443	4822 130 42488	BYD33D
6444	4822 130 42488	BYD33D
6450▲	4822 130 61219	BZX79-F10
6455	4822 130 34379	BZX79-C27
6456	4822 130 30842	BAV21
6460	4822 130 82035	BYD74D
6465	4822 130 82035	BYD74D
6466▲	4822 130 81175	BYD74G
6470▲	4822 130 30621	1N4148
6474	5322 130 31504	BZX79-C3V3
6475	4822 130 42488	BYD33D
6476▲	4822 130 61219	BZX79-C10
6480▲	4822 130 61219	BZX79-C10
6481	4822 130 42488	BYD33D

7111	4822 130 63724	G2391HEX
7135	4822 209 90008	L78M05
7136▲	4822 130 44196	BC548C
7137▲	4822 130 44196	BC548C
7141	4822 130 40937	BC548B
7142▲	4822 130 44197	BC558B
7201	4822 130 40937	BC548B
7203	4822 209 83909	UC3842N
7207	4822 130 40937	BC548B
7228	4822 130 63725	STP4N40FI
7235	5322 209 86283	L7808CP
7260	4822 209 90009	TDA8177
7406	4822 130 63316	BSN304
7407	4822 130 41782	BF422
7409	4822 130 41594	PH2369
7414	4822 130 62843	2SC4288A
7414▲	4822 130 63329	BU2525A
7424	4822 130 40938	BC548
7432	4822 130 63726	MTP3055EFI
7440	4822 130 41194	BD136-16
7441	4822 130 41109	BD135-16
7470▲	5322 130 60068	BC558C
7473▲	4822 130 44196	BC548C
7474▲	4822 130 44196	BC548C
7480	4822 130 63728	IRF620
7481	4822 130 41782	BF422

Small signal panel [Sa] [Sb]

Various

	4822 404 31305	Support
	4822 532 61266	Spacer 22mm
	4822 321 62858	Cable 5P 1,25 25cm
	4822 404 31198	Spacer
	4822 267 70255	IC socket 32P
	4822 267 50887	IC socket 8P
	4822 265 41461	10P male v 2,5
	4822 265 51382	23P male v 1,25
	4822 265 31247	3P male v 1,25 black
	4822 265 51385	25P male v 1,25
	4822 265 41451	9P male v 1,25
	4822 265 41448	7P male v 2,5
	4822 265 31248	3P male v 1,25
	4822 265 41465	8P male v BTB
	4822 265 41466	10P male v BTB
	4822 265 31252	4P male v BTB
	4822 265 31251	5P male v 1,25
	4822 265 41467	12P male v BTB
	4822 265 51384	15P male v 1,25
	4822 265 31009	3P strip
1020	4822 212 31802	Service SSP
1200	4822 242 72572	12,000 000 MHz
1300	4822 210 10633	FQ916MF/PH MK2
1300	4822 210 10634	FQ916DMF/PH MK2
1300	4822 210 10636	FQ916ME/PH MK2
1300	4822 210 10637	FQ916DME/PH MK2
1352	4822 242 81967	Crystal 3,579545 MHz
1354	4822 242 81968	Crystal 4,433619 MHz
1616	4822 242 80276	crystal 10 MHz

2200	4822 124 41579	10µF 20% 50V
2202	4822 126 10002	100nF 20% 25V
2203	4822 126 10002	100nF 20% 25V
2204	5322 122 32658	22pF 5% 50V
2205	5322 122 32481	15pF 5% 50V
2206	4822 126 10002	100nF 20% 25V
2208	4822 126 10002	100nF 20% 25V
2209	4822 126 10002	100nF 20% 25V
2212	4822 126 10002	100nF 20% 25V
2213▲	4822 124 40433	47µF 20% 25V
2214	4822 124 40763	2,2µF 20% 100V
2300	4822 126 10002	100nF 20% 25V
2301	4822 126 10002	100nF 20% 25V
2302	4822 124 41643	100µF 20% 16V
2304	4822 126 13473	220nF 20% 50V
2306	4822 124 40763	2,2µF 20% 100V
2308▲	5322 122 32654	22nF 10% 63V
2310	4822 126 10002	100nF 20% 25V
2311	4822 126 13473	220nF 20% 50V
2312	4822 124 41829	1000µF 20% 6,3V
2313▲	5322 122 32654	22nF 10% 63V
2314▲	5322 122 34123	1nF 10% 50V
2315▲	4822 122 33177	10nF 20% 50V
2316	4822 126 11804	330nF 20% 16V
2317▲	5322 122 32654	22nF 10% 63V
2354	4822 126 10002	100nF 20% 25V
2360	5322 122 32661	56pF 5% 50V
2361	5322 122 32661	56pF 5% 50V
2362	4822 126 10002	100nF 20% 25V
2364	4822 126 10002	100nF 20% 25V
2366	4822 126 10002	100nF 20% 25V
2367	4822 124 40756	1µF 20% 100V
2368	4822 121 51252	470nF 5% 63V
2370	4822 122 32627	2,7nF 10% 50V
2371	4822 124 41643	100µF 20% 16V
2376	4822 126 10002	100nF 20% 25V
2378	4822 126 10002	100nF 20% 25V
2379	4822 126 10002	100nF 20% 25V
2380	4822 126 10002	100nF 20% 25V
2381	4822 126 10002	100nF 20% 25V
2382	4822 126 10002	100nF 20% 25V
2383▲	4822 124 40433	47µF 20% 25V
2384	4822 126 13486	15pF 2% 63V
2385	4822 126 10002	100nF 20% 25V
2387▲	4822 124 40433	47µF 20% 25V
2388	4822 126 13486	15pF 2% 63V
2390	4822 126 10002	100nF 20% 25V
2391	4822 122 33175	2,2nF 20% 50V
2392	4822 122 33496	100nF 10% 63V
2393	4822 126 10002	100nF 20% 25V
2394	4822 126 10002	100nF 20% 25V
2395	4822 126 10002	100nF 20% 25V
2396	4822 126 10002	100nF 20% 25V
2397	4822 126 13486	15pF 2% 63V
2399	4822 126 10002	100nF 20% 25V
2455	4822 124 41643	100µF 20% 16V
2460	4822 124 41579	10µF 20% 50V
2464	4822 122 33216	270pF 5% 50V
2465	4822 126 10002	100nF 20% 25V
2466	5322 122 32658	22pF 5% 50V
2500	4822 126 12944	47nF 10% 50V
2502▲	5322 122 32654	22nF 10% 63V
2504▲	5322 122 32654	22nF 10% 63V
2506▲	5322 122 32654	22nF 10% 63V
2508▲	5322 122 32654	22nF 10% 63V
2510▲	5322 122 32654	22nF 10% 63V
2512▲	5322 122 32654	22nF 10% 63V
2514▲	5322 122 32654	22nF 10% 63V
2516▲	5322 122 32654	22nF 10% 63V
2524	5322 121 42661	330nF 5% 63V
2532▲	4822 124 40246	4,7µF 20% 63V
2533	4822 124 40849	330µF 20% 16V
2535	4822 126 13371	56nF 10% 50V
2536	5322 121 42661	330nF 5% 63V
2538	4822 126 10002	100nF 20% 25V
2540	4822 126 10002	100nF 20% 25V
2542	4822 126 10002	100nF 20% 25V
2544	4822 124 22466	1µF 20% 50V
2546	4822 124 22466	1µF 20% 50V
2566	4822 124 41596	22µF 20% 50V
2600	4822 121 42408	220nF 5% 63V
2601	4822 126 13473	220nF 20% 50V
2602	4822 121 42408	220nF 5% 63V
2604	4822 122 33806	820pF 10% 63V
2606	4822 121 51361	5,6nF 2% 160V
2608	4822 126 10002	100nF 20% 25V
2610	4822 124 41579	10µF 20% 50V
2612▲	4822 122 33177	10nF 20% 50V
2614	4822 124 41643	100µF 20% 16V
2616	4822 126 10002	100nF 20% 25V
2620▲	4822 122 33177	10nF 20% 50V
2622▲	4822 122 33177	10nF 20% 50V
2650	4822 124 41643	100µF 20% 16V
2652	4822 122 33128	15nF 10% 63V
2654	4822 122 33128	15nF 10% 63V
2656▲	4822 122 33342	33nF 10% 63V
2658▲	4822 122 33342	33nF 10% 63V
2660	4822 122 32646	5,6nF 10% 50V
2662	4822 122 32646	5,6nF 10% 50V
2666	5322 122 31865	1,5nF 10% 63V
2668	5322 122 31865	1,5nF 10% 63V
2671▲	5322 122 34123	1nF 10% 50V
2672	4822 124 40763	2,2µF 20% 100V
2673▲	5322 122 34123	1nF 10% 50V
2674	4822 124 40763	2,2µF 20% 100V
2676	4822 126 10002	100nF 20% 25V
2678	4822 126 13485	470nF 20% 50V
2680	4822 126 13485	470nF 20% 50V
2682	4822 126 13485	470nF 20% 50V
2684	4822 126 13485	470nF 20% 50V
2700	4822 126 10002	100nF 20% 25V
2702▲	5322 122 34123	1nF 10% 50V
2704	4822 126 10002	100nF 20% 25V
2706▲	5322 122 34123	1nF 10% 50V
2708	4822 124 41643	100µF 20% 16V
2710▲	4822 122 33177	10nF 20% 50V
2712▲	4822 124 40196	220µF 20% 16V
2714	4822 124 41643	100µF 20% 16V
2718	4822 124 41643	100µF 20% 16V

3200	4822 051 20221	220Ω 5% 0,1W
3201	4822 051 20182	1k8 5% 0,1W
3202	4822 051 20182	1k8 5% 0,1W
3203	4822 051 10102	1k 2% 0,25W
3204	4822 051 10102	1k 2% 0,25W
3205	4822 051 20104	100k 5% 0,1W
3206	4822 051 20101	100Ω 5% 0,1W
3207	4822 051 10102	1k 2% 0,25W
3208	4822 051 20101	100Ω 5% 0,1W
3209▲	4822 051 20008	100Ω 5% 0,1W
3212	4822 051 20279	27Ω 5% 0,1W
3213	4822 051 10102	1k 2% 0,25W
3214	4822 051 20153	15k 5% 0,1W
3215▲	4822 051 20472	4k7 5% 0,1W
3216	4822 051 20103	10k 5% 0,1W
3217	4822 051 20562	5k6 5% 0,1W
3219▲	4822 051 20472	4k7 5% 0,1W
3220	4822 051 20682	6k8 5% 0,1W
3221	4822 051 20182	1k8 5% 0,1W
3222	4822 051 20182	1k8 5% 0,1W
3225	4822 051 20473	47k 5% 0,1W
3226	4822 051 20473	47k 5% 0,1W
3227	4822 051 20223	22k 5% 0,1W
3228	4822 051 20223	22k 5% 0,1W
3229	4822 051 20471	470Ω 5% 0,1W
3233	4822 051 20471	470Ω 5% 0,1W
3234	4822 051 10102	1k 2% 0,25W
3235	4822 051 10102	1k 2% 0,25W
3236	4822 051 10102	1k 2% 0,25W
3237	4822 051 10102	1k 2% 0,25W
3238	4822 051 10102	1k 2% 0,25W
3239	4822 051 10102	1k 2% 0,25W
3241	4822 051 20103	10k 5% 0,1W
3243	4822 051 10102	1k 2% 0,25W
3244	4822 051 10102	1k 2% 0,25W
3245	4822 051 10102	1k 2% 0,25W
3246	4822 051 10102	1k 2% 0,25W
3247	4822 051 10102	1k 2% 0,25W
3248	4822 051 10102	1k 2% 0,25W
3300▲	4822 052 10828	8Ω2 5% 0,33W
3302▲	4822 052 10828	8Ω2 5% 0,33W
3303	4822 051 20474	470k 5% 0,1W
3304	4822 051 20682	6k8 5% 0,1W
3305	4822 051 20223	22k 5% 0,1W
3309	4822 051 20242	2k4 5% 0,1W
3310	4822 051 20122	1k2 5% 0,1W
3311	4822 051 20103	10k 5% 0,1W
3313	4822 117 11139	1k5 1% 0,1W
3314	4822 051 20103	10k 5% 0,1W
3315	4822 051 20104	100k 5% 0,1W
3316	4822 051 20103	10k 5% 0,1W
3317	4822 051 20562	5k6 5% 0,1W
3318	4822 051 20752	7k5 5% 0,1W
3352▲	4822 051 20008	0Ω 5% 0,1W
3354	4822 051 20243	24k 5% 0,1W
3355	4822 051 20751	750Ω 5% 0,1W
3357	4822 051 20751	750Ω 5% 0,1W
3358	4822 051 20151	150Ω 5% 0,1W
3359	4822 051 20151	150Ω 5% 0,1W
3361	4822 100 12221	2k2 20% LIN
3364	4822 051 20101	100Ω 5% 0,1W
3365	4822 051 20151	150Ω 5% 0,1W
3366	4822 051 20101	100Ω 5% 0,1W
3367	4822 051 20151	150Ω 5% 0,1W
3373▲	4822 051 20008	0Ω 5% 0,1W
3376	4822 051 20753	75k 5% 0,1W
3380	4822 051 20101	100Ω 5% 0,1W
3381▲	4822 052 10109	10Ω 5% 0,33W
3382	4822 051 20471	470Ω 5% 0,1W
3387	4822 051 20821	820Ω 5% 0,1W
3391	4822 051 20101	100Ω 5% 0,1W
3392	4822 051 20471	470Ω 5% 0,1W
3393	4822 051 20479	47Ω 5% 0,1W
3395	4822 051 20101	100Ω 5% 0,1W
3396	4822 051 10102	1k 2% 0,25W
3397	4822 051 20332	3k3 5% 0,1W
3434	4822 051 10102	1k 2% 0,25W
3435	4822 051 10102	1k 2% 0,25W
3436	4822 051 10102	1k 2% 0,25W
3437	4822 051 10102	1k 2% 0,25W
3438	4822 051 10102	1k 2% 0,25W
3439	4822 051 10102	1k 2% 0,25W
3460	4822 051 10102	1k 2% 0,25W
3461	4822 051 20222	2k2 5% 0,1W
3462	4822 051 20222	2k2 5% 0,1W
3463	4822 051 10102	1k 2% 0,25W
3464	4822 051 10102	1k 2% 0,25W
3465	4822 051 20681	680Ω 5% 0,1W
3466	4822 051 20221	220Ω 5% 0,1W
3467	4822 051 20221	220Ω 5% 0,1W
3468	4822 051 20221	220Ω 5% 0,1W
3469	4822 051 10102	1k 2% 0,25W
3470▲	4822 051 20472	4k7 5% 0,1W
3503	4822 051 20101	100Ω 5% 0,1W
3508	4822 051 20331	330Ω 5% 0,1W
3510	4822 051 20331	330Ω 5% 0,1W
3518	4822 051 20222	2k2 5% 0,1W
3521	4822 051 20684	680k 5% 0,1W
3522	4822 051 20103	10k 5% 0,1W
3524	4822 051 20473	47k 5% 0,1W
3532	4822 051 20394	390k 5% 0,1W
3534	4822 051 20274	270k 5% 0,1W
3535▲	4822 052 10688	6Ω8 5% 0,33W
3536	4822 051 20101	100Ω 5% 0,1W
3540	4822 051 20829	82Ω 5% 0,1W
3542	4822 051 20829	82Ω 5% 0,1W
3544	4822 051 20829	82Ω 5% 0,1W
3546	4822 051 20471	470Ω 5% 0,1W
3548	4822 051 20221	220Ω 5% 0,1W
3549	4822 051 10102	1k 2% 0,25W
3550	4822 051 20101	100Ω 5% 0,1W
3551	4822 051 10102	1k 2% 0,25W
3552▲	4822 051 20109	10Ω 5% 0,1W
3565	4822 051 20103	10k 5% 0,1W
3566	4822 051 10102	1k 2% 0,25W
3567	4822 051 20151	150Ω 5% 0,1W
3568	4822 051 20474	470k 5% 0,1W
3569	4822 051 20104	100k 5% 0,1W
3604	4822 051 20562	5k6 5% 0,1W
3608	4822 051 20101	100Ω 5% 0,1W
3610	4822 051 20101	100Ω 5% 0,1W
3616▲	4822 052 10278	2Ω7 5% 0,33W
3660	4822 051 20681	680Ω 5% 0,1W
3661	4822 051 20681	680Ω 5% 0,1W
3671▲	4822 051 20109	10Ω 5% 0,1W
3671	4822 051 20471	470Ω 5% 0,1W
3672	4822 051 20103	10k 5% 0,1W
3673▲	4822 051 20109	10Ω 5% 0,1W
3673	4822 051 20471	470Ω 5% 0,1W
3674	4822 051 20103	10k 5% 0,1W
3676▲	4822 052 10109	10Ω 5% 0,33W
3678	4822 051 20101	100Ω 5% 0,1W
3680	4822 051 20101	100Ω 5% 0,1W
3700	4822 051 20104	100k 5% 0,1W
3702	4822 051 20103	10k 5% 0,1W
3704	4822 051 20104	100k 5% 0,1W
3706	4822 051 20103	10k 5% 0,1W
3712▲	4822 052 10189	18Ω 5% 0,33W
3715	4822 051 20479	47Ω 5% 0,1W
3716	4822 051 10102	1k 2% 0,25W
3717	4822 051 20479	47Ω 5% 0,1W
3718	4822 051 10102	1k 2% 0,25W
3719	4822 051 20103	10k 5% 0,1W
3720	4822 051 20473	47k 5% 0,1W
3722	4822 051 20473	47k 5% 0,1W
3723	4822 051 20103	10k 5% 0,1W
3724	4822 051 20103	10k 5% 0,1W
3728	4822 051 20473	47k 5% 0,1W
3729	4822 051 20823	82k 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

5200	4822 157 51216	5,6µH 10%
5202	4822 157 51216	5,6µH 10%
5301	4822 157 60123	6,8µH 10%
5306	4822 157 53634	5,6µH 10%
5312	4822 157 53634	5,6µH 10%

Spare parts list / Stükliste / Liste des pièces

5378	4822 157 53634	5,6µH 10%
5380	4822 157 53634	5,6µH 10%
5381	4822 157 51216	5,6µH 10%
5454	4822 157 53634	5,6µH 10%
5465	4822 157 52392	27µH 10%
5606	4822 156 21293	1500µH 5%

6218▲	4822 130 34173	BZX79-C5V6
6219▲	4822 130 34173	BZX79-C5V6
6220	4822 130 80954	LLZ-C5V6
6221▲	4822 130 34173	BZX79-C5V6
6222▲	4822 130 34173	BZX79-C5V6
6223	4822 130 80954	LLZ-C5V6
6224▲	4822 130 34173	BZX79-C5V6
6225▲	4822 130 34173	BZX79-C5V6
6226▲	4822 130 34173	BZX79-C5V6
6227	4822 130 80125	BZX84-C5V6
6228	4822 130 80125	BZX84-C5V6
6229▲	4822 130 34173	BZX79-C5V6
6230▲	4822 130 34173	BZX79-C5V6
6231▲	4822 130 34173	BZX79-C5V6
6232▲	4822 130 34173	BZX79-C5V6
6233	4822 130 80125	BZX84-C5V6
6234▲	4822 130 34173	BZX79-C5V6
6235▲	4822 130 34173	BZX79-C5V6
6236▲	4822 130 34173	BZX79-C5V6
6237▲	4822 130 34173	BZX79-C5V6
6238▲	4822 130 34173	BZX79-C5V6
6239▲	4822 130 34173	BZX79-C5V6
6240▲	4822 130 34173	BZX79-C5V6
6241	4822 130 80125	BZX84-C5V6
6242	4822 130 80954	LLZ-C5V6
6243▲	4822 130 34173	BZX79-C5V6
6304	4822 130 80542	BZX84-C33
6310▲	5322 130 31928	BAS16
6311▲	5322 130 31928	BAS16
6312▲	5322 130 31928	BAS16
6522	5322 130 33725	BZX84-C22
6523▲	5322 130 31928	BAS16
6526▲	5322 130 31928	BAS16
6546	5322 130 33671	BZX84-C6V2
6550▲	5322 130 34331	BAV70

7200	4822 209 90032	P90CE201AEB/00
7202	4822 900 10584	Software
7204	5322 209 11306	HEF4094BT
7206	4822 209 90022	HY62256ALJ-70
7212	4822 209 33251	ST24C16CB1
7214▲	5322 130 41982	BC848B
7215	5322 130 42136	BC848C
7216	5322 130 42136	BC848C
7217	5322 130 42136	BC848C
7228	5322 130 42136	BC848C
7311	5322 130 42136	BC848C
7312	5322 130 41983	BC858B
7352	4822 209 90029	TDA9141/N1
7358	4822 209 12635	TDA4665/V3
7365	4822 130 42513	BC858C
7380	5322 209 11548	74HC14D
7390	5322 130 42136	BC848C
7395	5322 130 42136	BC848C
7463▲	5322 130 41982	BC848B
7466	5322 130 41983	BC858B
7468▲	5322 130 41982	BC848B
7500	4822 209 90035	TDA4780/V3
7518	4822 209 73852	PMBT2369
7536	5322 130 41983	BC858B
7550	5322 130 42136	BC848C
7566	5322 130 42136	BC848C
7567	5322 130 42136	BC848C
7568	5322 130 42136	BC848C
7600	4822 209 32863	TDA9840/V2
7650	4822 209 33293	TDA9860/V2
7710	4822 209 90024	TDA2822M
7715	5322 130 42136	BC848C
7718	5322 130 42136	BC848C
7719	4822 130 42513	BC858C
7720	5322 130 42136	BC848C
7722	5322 130 42136	BC848C
7723	5322 130 42136	BC848C
7724	5322 130 42136	BC848C

FF-Supply drive [N]

Various

1015	4822 310 32214	FFS drive kit

2150	4822 122 33515	82pF 5% 63V
2152	4822 121 42729	1,5nF 1% 250V
2154	4822 126 10002	100nF 20% 25V
2155	4822 126 10002	100nF 20% 25V
2157	4822 124 41579	10µF 20% 50V
2158	4822 122 33175	2,2nF 20% 50V
2160	5322 122 34099	470pF 10% 63V
2164	4822 126 10002	100nF 20% 25V
2166	4822 122 31746	1nF 2% 63V
2167	4822 126 10002	100nF 20% 25V
2170	4822 124 40242	1µF 20% 63V
2171	5322 122 34099	470pF 10% 63V
2173	4822 122 33175	2,2nF 20% 50V
2175	5322 122 31866	6,8nF 10% 63V
2180	4822 126 10002	100nF 20% 25V
2184▲	4822 122 33342	33nF 10% 63V
2191	4822 126 10002	100nF 20% 25V

3150	4822 051 20823	82k 5% 0,1W
3152	4822 116 52219	330Ω 5% 0,5W
3154	4822 116 52207	1k2 5% 0,5W
3155	4822 051 20161	160Ω 5% 0,1W
3157	4822 116 52252	180k 5% 0,5W
3158	4822 051 20153	15k 5% 0,1W
3160▲	4822 052 11109	10Ω 5% 0,5W
3162	4822 052 11399	39Ω 5% 0,5W
3164	4822 051 20229	22Ω 5% 0,1W
3166	4822 051 20473	47k 5% 0,1W
3167	4822 051 20223	22k 5% 0,1W
3170	4822 051 20133	13k 5% 0,1W
3171	4822 051 20562	5k6 5% 0,1W
3173	4822 051 20153	15k 5% 0,1W
3174	4822 051 20103	10k 5% 0,1W
3175	4822 051 10102	1k 2% 0,25W
3177	4822 117 10354	22k 1% 0,1W
3178	4822 117 10833	10k 1% 0,1W
3181	4822 116 52175	100Ω 5% 0,5W
3182	4822 051 20221	220Ω 5% 0,1W
3183	4822 050 21604	160k 1% 0,6W
3184	4822 051 20333	33k 5% 0,1W
3185▲	4822 051 20008	0Ω 5% 0,1W
3186▲	4822 050 22702	2k7 1% 0,6W
3187	4822 101 11186	470Ω 30% LIN
3190	4822 051 20223	22k 5% 0,1W
3191	4822 051 20223	22k 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W

5152	4822 157 51195	1µH 20%

6154	4822 130 42488	BYD33D
6157	4822 130 34174	BZX79-C4V7
6160▲	4822 130 31631	BYV10-20
6173	4822 130 34382	BZX79-F8V2

7150	4822 209 90025	MC44603P
7170▲	5322 130 41982	BC848B
7180▲	4822 209 32126	SOC1012T
7185	4822 209 81397	TL431CLP
7190▲	5322 130 42136	BC848C

Eco Low Power Standby [AU]

Various

1080	4822 212 31862	ELPS 28"-29"
1080	4822 212 31863	ELPS 33"
▲	4822 256 30496	Fuse holder click
	4822 265 20699	2P male v 2,5 yellow
▲	4822 265 30389	2P male
	4822 265 31245	3P male v 2,5
	4822 265 20698	2P male v 2,5 red
1011	4822 253 30467	Fuse T6,3A
1012▲	4822 071 53151	Fuse T0,315A

2139▲	4822 122 40602	1nF 20% 400V
2140	4822 124 21511	2200µF 20% 25V
2141▲	4822 122 40602	1nF 20% 400V
2142▲	4822 124 40196	220µF 20% 16V
2143▲	4822 124 40196	220µF 20% 16V
2145	4822 121 70141	33nF 5% 400V
2147▲	4822 121 40487	100nF 10% 400V
2148	4822 121 70587	680nF 10% 250V
2149	4822 124 41596	22µF 20% 50V

3131	4822 116 52195	47Ω 5% 0,5W
3132	4822 116 52175	100Ω 5% 0,5W
3133	4822 116 52175	100Ω 5% 0,5W
3134	4822 050 11002	1k 1% 0,4W
3135	4822 116 52284	47k 5% 0,5W
3137	4822 116 83864	10k 5% 0,5W
3138	4822 113 80678	2Ω7 10% 15W
3139	4822 116 52175	100Ω 5% 0,5W
3140	4822 116 52215	220Ω 5% 0,5W
3141	4822 116 52257	22k 5% 0,5W
3142	4822 116 52243	1k5 5% 0,5W
3143	4822 116 83864	10k 5% 0,5W
3144▲	4822 116 21217	VDR 1mA/423V 800V
3145	4822 111 20403	470Ω 10%
3146▲	4822 116 40223	P.T.C./P.T.C.
3147▲	4822 116 40223	P.T.C./P.T.C.
3148▲	4822 113 80603	1,5Ω 10% 7W
3149	4822 116 52175	100Ω 5% 0,5W
3998	4822 116 52175	100Ω 5% 0,5W
3998	4822 116 52211	150Ω 5% 0,5W

5143▲	4822 157 63821	Mains filter coil
5144▲	4822 157 10291	Mains filter CU28D5
5145	4822 148 81411	Standby transformer

6138▲	4822 130 30621	1N4148
6139▲	4822 130 30621	1N4148
6140	4822 130 34278	BZX79-C6V8
6141	4822 130 42488	BYD33D
6143▲	4822 130 30621	1N4148
6144	4822 130 34379	BZX79-C27
6145	4822 130 34379	BZX79-C27
6146	4822 130 42488	BYD33D
6147	4822 130 42488	BYD33D
6148	4822 130 42488	BYD33D
6149▲	4822 130 30621	1N4148

7137	4822 130 40937	BC548B
7138▲	4822 130 44197	BC558B
7139▲	4822 130 44197	BC558B
7140▲	5322 130 60068	BC558C

Mains switch panel [K]

Various

	4822 265 20699	2P male v 2,5 yellow
▲	4822 265 40596	2P male
	4822 276 13422	Mains switch GFL2
▲	4822 276 13498	Mains switch GFL4
1002	4822 212 31837	Mains switch panel GFL4
1002	4822 212 31843	Mains switch panel GFL2

3106▲	4822 116 21217	VDR 1mA/423V 800V

Keyboard panel [B]

Various

	4822 265 41462	7P male v 1,25
	4822 265 41451	9P male v 1,25
	4822 276 13396	Tack switch
1001	4822 212 31839	Keyboard panel GFL4
1001	4822 212 31845	Keyboard panel GFL2

Connector panel [H]

Various

	4822 265 41463	Headp+Cinch+SVHS GFL4
	4822 267 20465	Headp+Cinch+SVHS GFL2
	4822 265 41451	9P male v 1,25
	4822 265 31248	3P male v 1,25
1003	4822 212 31838	Connector panel GFL4
1003	4822 212 31844	Connector panel GFL2

2216	5322 122 31866	6,8nF 10% 63V
2236	5322 122 31866	6,8nF 10% 63V
2240	4822 126 10326	180pF 5% 63V
2244	4822 126 10326	180pF 5% 63V
2251	4822 122 33496	100nF 10% 63V
2251	4822 126 10002	100nF 20% 25V

3201▲	4822 053 21475	4M7 5% 0,5W
3214	4822 051 20189	18Ω 5% 0,1W
3215	4822 051 20189	18Ω 5% 0,1W
3216	4822 051 20103	10k 5% 0,1W
3234	4822 051 20189	18Ω 5% 0,1W
3235	4822 051 20189	18Ω 5% 0,1W
3236	4822 051 20103	10k 5% 0,1W
3239	4822 051 20223	22k 5% 0,1W
3240	4822 051 10471	470Ω 2% 0,25W
3240	4822 051 20471	470Ω 5% 0,1W
3241▲	4822 116 83953	75Ω 5% 0,125W
3244	4822 051 20471	470Ω 5% 0,1W
3245	4822 051 20223	22k 5% 0,1W
3251▲	4822 116 83953	75Ω 5% 0,125W

6214	4822 130 82346	LLZ-C27
6215	4822 130 82346	LLZ-C27
6234	4822 130 82346	LLZ-C27
6235	4822 130 82346	LLZ-C27
6250	4822 130 81513	LLZ-C6V8
6251	4822 130 81513	LLZ-C6V8
6253	4822 130 81513	LLZ-C6V8

RC5 panel [X]

Various

	4822 265 41462	7P male v 1,25
	4822 256 92275	LED holder 3-FOLD GFL2
	4822 256 92276	LED holder 3-FOLD GFL4
1004	4822 212 31841	RC5 panel GFL4
1004	4822 212 31846	RC5 panel GFL2
1100	4822 212 23281	IR receiver
1101	4822 212 31399	IR receiver

2651	4822 124 41715	220µF 20% 6,3V
2660▲	4822 124 40196	220µF 20% 16V

3600	4822 051 20473	47k 5% 0,1W
3600	4822 116 52284	47k 5% 0,5W
3602	4822 116 52284	47k 5% 0,5W
3604	4822 051 20473	47k 5% 0,1W
3606	4822 051 20473	47k 5% 0,1W
3608	4822 051 20473	47k 5% 0,1W
3640	4822 051 20181	180Ω 5% 0,1W

Spare parts list / Stükliste / Liste des pièces

3641▲	4822 051 20472	4k7 5% 0,1W
3642▲	4822 051 20472	4k7 5% 0,1W
3643	4822 051 20181	180Ω 5% 0,1W
3656	4822 050 11002	1k 1% 0,4W
3659	4822 116 52176	10Ω 5% 0,5W
3659	4822 116 52195	47Ω 5% 0,5W
3660	4822 116 52179	12Ω 5% 0,5W
3660	4822 116 52195	47Ω 5% 0,5W
3661	4822 051 20101	100Ω 5% 0,1W
3662▲	4822 051 20472	4k7 5% 0,1W
4xxx	4822 051 10008	0Ω 5% 0,25W

5651	4822 157 53906	47µH

6640	4822 130 83414	TLHR4405
6641	4822 130 80313	TLHG4400

7640	5322 130 41983	BC858B
7643	5322 130 41983	BC858B
7662	5322 130 44593	BC369

North/South panel [AP]

Various

1028	4822 212 31853	North/South panel
	4822 265 31243	5P male v 2,5
	4822 265 41468	28P strip

2450	4822 121 51049	15nF 1% 63V
2452	4822 121 41857	10nF 5% 250V

3452	4822 116 52175	100Ω 5% 0,5W
3454	4822 116 52256	2k2 5% 0,5W
3456	4822 116 52244	15k 5% 0,5W
3463	4822 116 83864	10k 5% 0,5W
3464	4822 116 80676	1Ω5 5% 0,5W
3465	4822 116 80676	1Ω5 5% 0,5W

5450	4822 157 71414	1000µH 10%
5452	4822 157 71033	N/S correction coil

6452▲	4822 130 30621	1N4148
6453	4822 130 31024	BZX79-C18
6454▲	4822 130 34499	BZX79-C20
6455▲	4822 130 30621	1N4148

7450	4822 130 63441	J108
7451	4822 130 63441	J108

Scavem panel [V]

Various

1041	4822 212 31857	Scavem panel
1041	4822 212 31866	Scavem France
	4822 265 31244	3P male v 2,5
	4822 265 41448	7P male v 2,5 grey

2604	5322 124 21189	100µF 20% 40V
2605▲	5322 122 34123	1nF 10% 50V
2606▲	4822 124 41525	100µF 20% 25V
2607▲	5322 122 34123	1nF 10% 50V
2620▲	4822 122 33342	33nF 10% 63V
2621	4822 122 33496	100nF 10% 63V
2622	4822 122 33496	100nF 10% 63V
2624▲	4822 122 33342	33nF 10% 63V
2625	4822 124 40255	100µF 20% 63V
2636	4822 122 33496	100nF 10% 63V
2637	4822 122 33496	100nF 10% 63V
2638	4822 122 33496	100nF 10% 63V
2639	4822 122 33496	100nF 10% 63V
2647	4822 124 40255	100µF 20% 63V
2661	4822 124 41596	22µF 20% 50V
2671	5322 122 32268	470pF 10% 50V
2672	5322 122 32268	470pF 10% 50V
2680	4822 124 41596	22µF 20% 50V
2800	4822 124 41596	22µF 20% 50V
2802▲	4822 122 33342	33nF 10% 63V
2804	4822 122 33496	100nF 10% 63V
2805	4822 122 33514	68pF 5% 50V
2805	5322 122 32661	56pF 5% 50V
2806	5322 122 31946	27pF 5% 63V
2807	5322 122 32452	47pF 5% 63V
2813▲	4822 122 33342	33nF 10% 63V
2815	4822 122 33891	3,3nF 10% 63V
2816	4822 122 33216	270pF 5% 50V
2816	4822 122 33575	220pF 5% 50V
2819▲	4822 122 33342	33nF 10% 63V
2820▲	4822 122 33342	33nF 10% 63V
2821▲	5322 122 32269	6,8pF 5% 50V
2821	5322 122 32967	5,6pF 10% 63V
2822▲	4822 122 33342	33nF 10% 63V
2825▲	4822 122 33177	10nF 20% 50V
2835	4822 122 33891	3,3nF 10% 63V
2839▲	4822 122 33342	33nF 10% 63V
2840▲	4822 122 33342	33nF 10% 63V
2841	5322 122 32481	15pF 5% 50V
2841	4822 122 32139	12pF 2% 63V
2842▲	4822 122 33342	33nF 10% 63V
2845▲	4822 122 33177	10nF 20% 50V
2855	4822 122 33891	3,3nF 10% 63V
2856	5322 122 32531	100pF 5% 50V
2856	4822 122 33515	82pF 5% 63V
2859▲	4822 122 33342	33nF 10% 63V
2860▲	4822 122 33342	33nF 10% 63V
2861▲	5322 122 32269	6,8pF 5% 50V
2861	5322 122 32967	5,6pF 10% 63V
2862▲	4822 122 33342	33nF 10% 63V
2865	5322 122 32531	100pF 5% 50V
2886▲	4822 122 33177	10nF 20% 50V

3606	4822 051 20478	4Ω7 5% 0,1W
3608	4822 051 20478	4Ω7 5% 0,1W
3609▲	4822 052 10228	2Ω2 5% 0,33W
3610▲	4822 052 10228	2Ω2 5% 0,33W
3612	4822 051 10478	4Ω7 5% 0,25W
3613	4822 051 10478	4Ω7 5% 0,25W
3614	4822 051 10478	4Ω7 5% 0,25W
3615	4822 051 10478	4Ω7 5% 0,25W
3630▲	4822 053 10681	680Ω 5% 1W
3633	4822 051 20182	1k8 5% 0,1W
3634	4822 051 20122	1k2 5% 0,1W
3635	4822 116 52191	33Ω 5% 0,5W
3637▲	4822 053 10181	180Ω 5% 1W
3638▲	4822 053 10681	680Ω 5% 1W
3640	4822 051 20103	10k 5% 0,1W
3641	4822 051 20182	1k8 5% 0,1W
3642	4822 051 20122	1k2 5% 0,1W
3643	4822 116 52191	33Ω 5% 0,5W
3645▲	4822 052 10339	33Ω 5% 0,33W
3647▲	4822 052 10339	33Ω 5% 0,33W
3648	4822 051 20101	100Ω 5% 0,1W
3652	4822 051 20331	330Ω 5% 0,1W
3653	4822 051 20471	470Ω 5% 0,1W
3654	4822 051 20331	330Ω 5% 0,1W
3655	4822 051 20471	470Ω 5% 0,1W
3656	4822 051 20331	330Ω 5% 0,1W
3657	4822 051 20471	470Ω 5% 0,1W
3658	4822 051 20331	330Ω 5% 0,1W
3659	4822 051 20471	470Ω 5% 0,1W
3661	4822 116 83864	10k 5% 0,5W
3670	4822 051 20822	8k2 5% 0,1W
3671	4822 051 20822	8k2 5% 0,1W
3672	4822 051 10102	1k 2% 0,25W
3680	4822 051 20103	10k 5% 0,1W
3681	4822 116 83864	10k 5% 0,5W
3682	4822 051 20101	100Ω 5% 0,1W
3800▲	4822 052 10228	2Ω2 5% 0,33W
3802▲	4822 051 20472	4k7 5% 0,1W
3803	4822 051 20562	5k6 5% 0,1W
3804	4822 051 10102	1k 2% 0,25W
3805	4822 051 20101	100Ω 5% 0,1W
3806	4822 051 20561	560Ω 5% 0,1W
3807▲	4822 051 20121	120Ω 5% 0,1W
3812▲	4822 051 20472	4k7 5% 0,1W
3813▲	4822 051 20472	4k7 5% 0,1W
3815	4822 116 52243	1k5 5% 0,5W
3816	4822 051 20229	22Ω 5% 0,1W
3816	4822 051 20279	27Ω 5% 0,1W
3819▲	4822 052 10109	10Ω 5% 0,33W
3820	4822 051 20471	470Ω 5% 0,1W
3821	4822 051 20101	100Ω 5% 0,1W
3822	4822 051 20471	470Ω 5% 0,1W
3823	4822 051 20101	100Ω 5% 0,1W
3824	4822 116 52207	1k2 5% 0,5W
3825	4822 051 20569	56Ω 5% 0,1W
3826	4822 051 20222	2k2 5% 0,1W
3832▲	4822 051 20472	4k7 5% 0,1W
3833▲	4822 051 20472	4k7 5% 0,1W
3835	4822 116 52243	1k5 5% 0,5W
3837▲	4822 051 20008	0Ω 5% 0,1W
3839▲	4822 052 10109	10Ω 5% 0,33W
3840	4822 051 20151	150Ω 5% 0,1W
3841	4822 051 20101	100Ω 5% 0,1W
3842	4822 051 20151	150Ω 5% 0,1W
3843	4822 051 20101	100Ω 5% 0,1W
3844	4822 116 52207	1k2 5% 0,5W
3845	4822 051 20569	56Ω 5% 0,1W
3846	4822 051 20222	2k2 5% 0,1W
3852▲	4822 051 20472	4k7 5% 0,1W
3853▲	4822 051 20472	4k7 5% 0,1W
3855	4822 116 52243	1k5 5% 0,5W
3856	4822 116 52197	56Ω 5% 0,5W
3857	4822 051 20821	820Ω 5% 0,1W
3859▲	4822 052 10109	10Ω 5% 0,33W
3860	4822 051 20471	470Ω 5% 0,1W
3861	4822 051 20479	47Ω 5% 0,1W
3862	4822 051 20471	470Ω 5% 0,1W
3863	4822 051 20479	47Ω 5% 0,1W
3864	4822 116 52224	470Ω 5% 0,5W
3865	4822 051 10102	1k 2% 0,25W
3866	4822 051 20689	68Ω 5% 0,1W
3869	4822 051 20272	2k7 5% 0,1W
3880▲	4822 051 20472	4k7 5% 0,1W
3881	4822 051 20473	47k 5% 0,1W
3882	4822 051 10102	1k 2% 0,25W
3883	4822 051 10102	1k 2% 0,25W
3884	4822 051 20103	10k 5% 0,1W
3886	4822 051 10102	1k 2% 0,25W
3887	4822 051 20272	2k7 5% 0,1W
3888	4822 051 10102	1k 2% 0,25W
3999	4822 051 20339	33Ω 5% 0,1W
3999	4822 051 20479	47Ω 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

5612	4822 157 63507	Ferrite bead
5614	4822 157 63507	Ferrite bead
5806	4822 157 53066	15µH 10%
5807	4822 157 53575	3,3µH 10%
5807	4822 157 60123	6,8µH 10%
5816	4822 157 63507	Ferrite bead
5856	4822 157 63507	Ferrite bead

6610	4822 130 34233	BZX79-C5V1
6616	4822 130 34233	BZX79-C5V1
6630▲	4822 130 30621	1N4148
6638▲	4822 130 30621	1N4148
6661▲	4822 130 30621	1N4148
6662▲	4822 130 30621	1N4148
6680▲	4822 130 30621	1N4148
6805	5322 130 34337	BAV99
6836	5322 130 32103	BAT83
6837	5322 130 32103	BAT83
6853	4822 130 34382	BZX79-C8V2
6880▲	4822 130 30621	1N4148
6886▲	4822 130 34173	BZX79-C5V6

7607▲	5322 130 41982	BC848B
7610	4822 130 40823	BD135
7611	4822 130 42589	BF370
7612	4822 130 40823	BD135
7613	4822 130 40824	BD136
7614	4822 130 40823	BD135
7615	4822 130 40824	BD136
7616	4822 130 40823	BD135
7617	4822 130 42589	BF370
7618	4822 130 60511	BC847B
7619	5322 130 60508	BC857B
7620	4822 130 60511	BC847B
7621	5322 130 60508	BC857B
7682▲	5322 130 41982	BC848B
7802▲	5322 130 41982	BC848B
7810	4822 209 63447	MC1496D
7830	4822 209 63447	MC1496D
7850	4822 209 63447	MC1496D
7865▲	5322 130 41982	BC848B
7881	4822 209 73852	PMBT2369
7886▲	5322 130 41982	BC848B

Geometry panel (DDP) [J]

Various

1029	4822 212 31859	Geometry
	4822 265 51383	22P strip
1310	5322 242 73686	Crystal 12 MHz

2304	4822 124 41579	10µF 20% 50V
2306	4822 124 40242	1µF 20% 63V
2308	5322 122 32658	22pF 5% 50V
2309	5322 122 32658	22pF 5% 50V
2312	5322 122 32452	47pF 5% 63V
2314	4822 124 41579	10µF 20% 50V
2315	4822 126 10002	100nF 20% 25V
2316	4822 126 10002	100nF 20% 25V
2317	4822 126 10002	100nF 20% 25V
2318	4822 124 40242	1µF 20% 63V
2319	4822 122 33575	220pF 5% 50V
2320	5322 116 80853	560pF 5% 63V
2321	4822 126 10002	100nF 20% 25V
2322▲	5322 122 34123	1nF 10% 50V
2326	4822 126 10002	100nF 20% 25V
2327	4822 126 10002	100nF 20% 25V
2328	4822 126 10002	100nF 20% 25V
2330	4822 122 32535	680pF 10% 63V
2331	4822 126 10002	100nF 20% 25V
2332	4822 126 10002	100nF 20% 25V
2334▲	4822 122 33177	10nF 20% 50V
2338▲	4822 122 33177	10nF 20% 50V
2345	4822 126 10002	100nF 20% 25V
2353	4822 124 40184	1000µF 20% 10V
2354	4822 124 41584	100µF 20% 10V
2355	4822 124 41584	100µF 20% 10V
2357	4822 124 41584	100µF 20% 10V
2359▲	4822 124 41525	100µF 20% 25V
2360	5322 122 32452	47pF 5% 63V
2362	4822 126 10002	100nF 20% 25V
2390	5322 122 34099	470pF 10% 63V
2391	4822 126 10002	100nF 20% 25V
2392	5322 122 34099	470pF 10% 63V
2394	4822 126 13483	330pF 10% 500V

3305	4822 051 10102	1k 2% 0,25W
3306	4822 051 20333	33k 5% 0,1W
3307	4822 051 20222	2k2 5% 0,1W
3308	4822 051 10102	1k 2% 0,25W
3309	4822 051 20103	10k 5% 0,1W
3310	4822 051 20105	1M 5% 0,1W
3311	4822 050 11002	1k 1% 0,4W
3312	4822 051 20332	3k3 5% 0,1W
3314	4822 051 20101	100Ω 5% 0,1W
3315	4822 051 20101	100Ω 5% 0,1W
3316	4822 051 20103	10k 5% 0,1W
3317	4822 051 10102	1k 2% 0,25W
3318	4822 051 10102	1k 2% 0,25W
3319	4822 051 20222	2k2 5% 0,1W
3320	4822 051 20391	390Ω 5% 0,1W
3323	4822 051 20104	100k 5% 0,1W
3324	4822 116 52175	100Ω 5% 0,5W
3326	4822 051 20105	1M 5% 0,1W
3327	4822 051 20474	470k 5% 0,1W
3328	4822 051 20473	47k 5% 0,1W
3329	4822 116 52305	820k 5% 0,5W
3330	4822 116 83864	10k 5% 0,5W
3331	4822 051 20474	470k 5% 0,1W
3332	4822 051 20101	100Ω 5% 0,1W
3333	4822 051 20473	47k 5% 0,1W
3334	4822 051 20473	47k 5% 0,1W
3336	4822 116 52283	4k7 5% 0,5W
3337	4822 051 10102	1k 2% 0,25W
3338	4822 051 20122	1k2 5% 0,1W
3339	4822 051 20681	680Ω 5% 0,1W
3341	4822 051 20391	390Ω 5% 0,1W
3342	4822 117 11139	1k5 1% 0,1W
3343	4822 050 23601	360Ω 1% 0,6W
3344	4822 050 23601	360Ω 1% 0,6W
3345▲	4822 050 21002	1k 1% 0,6W
3346▲	4822 050 21002	1k 1% 0,6W
3351	4822 051 10102	1k 2% 0,25W
3352	4822 051 20332	3k3 5% 0,1W
3353▲	4822 052 10338	3Ω3 5% 0,33W
3357▲	4822 052 10129	12Ω 5% 0,33W
3359	4822 050 11002	1k 1% 0,4W
3360	4822 050 11002	1k 1% 0,4W
3361	4822 051 20274	270k 5% 0,1W
3363	4822 051 20104	100k 5% 0,1W
3364	4822 051 20273	27k 5% 0,1W
3386	4822 116 52238	12k 5% 0,5W

Spare parts list / Stükliste / Liste des pièces

3387	4822 051 10102	1k 2% 0,25W
3388	4822 051 20339	33Ω 5% 0,1W
3389	4822 051 20334	330k 5% 0,1W
3390	4822 051 20104	100k 5% 0,1W
3391	4822 051 20103	10k 5% 0,1W
3392▲	4822 051 20472	4k7 5% 0,1W
3393	4822 051 20104	100k 5% 0,1W
3394	4822 051 20824	820k 5% 0,1W
3395	4822 116 52284	47k 5% 0,5W
3999	4822 051 20279	27Ω 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

5353	4822 158 10604	6,8µH 10%
5354	4822 158 10604	6,8µH 10%

6306	4822 130 34441	BZX79-C22
6307▲	4822 130 34173	BZX79-F5V6
6316▲	4822 130 30621	1N4148
6317▲	4822 130 30621	1N4148
6318▲	4822 130 30621	1N4148
6319▲	4822 130 30621	1N4148
6320▲	4822 130 30621	1N4148
6322▲	4822 130 30621	1N4148
6323▲	4822 130 30621	1N4148
6334▲	4822 130 30621	1N4148
6359▲	4822 130 30621	1N4148
6362▲	4822 130 30621	1N4148
6363▲	4822 130 30621	1N4148
6365▲	4822 130 30621	1N4148
6390▲	4822 130 30621	1N4148
6391	4822 130 34145	BZX79-C39
6393▲	4822 130 30621	1N4148
6394▲	4822 130 30621	1N4148

7306	4822 130 42513	BC858C
7307	4822 130 42513	BC858C
7308▲	5322 130 41982	BC848B
7315	4822 209 90038	TDA9155/N6A
7320▲	5322 130 41982	BC848B
7335▲	4822 209 83163	LM833N
7342▲	5322 130 41982	BC848B
7360	5322 209 61487	LM358N
7390	4822 130 42513	BC858C
7391	5322 130 42136	BC848C
7392	4822 130 42513	BC858C

Picture tube panel [R]

Various

	4822 265 31243	5P male v 2,5
▲	4822 265 40596	2P male
	4822 265 31242	2P male v 2,5
	4822 265 41451	9P male v 1,25
	4822 492 70788	Spring fix IC
	4822 255 70305	Socket for CRT
	4822 404 31199	Bracket
1030	4822 212 31829	Picture tube panel 29" SF
1030	4822 212 31833	Picyure tube panel 25" - 33"

2223▲	5322 122 34123	1nF 10% 50V
2230	5322 122 32661	56pF 5% 50V
2231	5322 122 32967	5,6pF 10% 63V
2232▲	5322 126 10223	4,7nF 10% 63V
2233▲	5322 122 34123	1nF 10% 50V
2236▲	4822 122 33342	33nF 10% 63V
2237	4822 121 42068	33nF 10% 400V
2240	5322 122 32661	56pF 5% 50V
2241	5322 122 32967	5,6pF 10% 63V
2242▲	5322 126 10223	4,7nF 10% 63V
2243▲	5322 122 34123	1nF 10% 50V
2246▲	4822 122 33342	33nF 10% 63V
2247	4822 121 42068	33nF 10% 400V
2250	5322 122 32661	56pF 5% 50V
2251	5322 122 32967	5,6pF 10% 63V
2252▲	5322 126 10223	4,7nF 10% 63V
2253▲	5322 122 34123	1nF 10% 50V
2256▲	4822 122 33342	33nF 10% 63V
2257	4822 121 42068	33nF 10% 400V
2260	5322 122 31946	27pF 5% 63V
2270	4822 124 23494	10µF 20% 250V
2272	4822 124 41643	100µF 20% 16V
2281	4822 122 31175	1nF 10% 500V
2285	4822 122 31175	1nF 10% 500V
2293▲	4822 122 33177	10nF 20% 50V
2297	4822 121 70581	1,5nF 5% 2KV

3222	4822 116 83864	10k 5% 0,5W
3223	4822 051 20103	10k 5% 0,1W
3224	4822 051 20271	270Ω 5% 0,1W
3225	4822 051 20182	1k8 5% 0,1W
3230	4822 051 20242	2k4 5% 0,1W
3231	4822 050 21204	120k 1% 0,6W
3233▲	4822 051 20008	0Ω 5% 0,1W
3234	4822 116 52175	100Ω 5% 0,5W
3235	4822 111 30991	680Ω 10%
3239	4822 050 11002	1k 1% 0,4W
3240	4822 051 20242	2k4 5% 0,1W
3241	4822 050 21204	120k 1% 0,6W
3242	4822 051 20622	6k2 5% 0,1W
3243▲	4822 051 20008	0Ω 5% 0,1W
3244	4822 116 52175	100Ω 5% 0,5W
3245	4822 111 30991	680Ω 10%
3249	4822 050 11002	1k 1% 0,4W
3250	4822 051 20242	2k4 5% 0,1W
3251	4822 050 21204	120k 1% 0,6W
3252	4822 051 20222	2k2 5% 0,1W
3253▲	4822 051 20008	0Ω 5% 0,1W
3254	4822 116 52175	100Ω 5% 0,5W
3255	4822 111 30991	680Ω 10%
3258	4822 051 20822	8k2 5% 0,1W
3259	4822 050 11002	1k 1% 0,4W
3260	4822 050 11002	1k 1% 0,4W
3261	4822 051 20823	82k 5% 0,1W
3263	4822 051 20333	33k 5% 0,1W
3272▲	4822 052 10688	6Ω8 5% 0,33W
3273▲	4822 052 10109	10Ω 5% 0,33W
3280	4822 052 11398	3Ω9 5% 0,5W
3280▲	4822 052 11108	1Ω 5% 0,5W
3281▲	4822 052 10151	150Ω 5% 0,33W
3282	4822 116 52182	15Ω 5% 0,5W
3283	4822 116 21231	VDR 1mA 50V MAX 115V
3285	4822 116 21231	VDR 1mA 50V MAX 115V
3287	4822 052 11398	3Ω9 5% 0,5W
3287▲	4822 052 11108	1Ω 5% 0,5W
3292	4822 116 52255	200k 5% 0,5W
3293	4822 116 52238	12k 5% 0,5W
3296	4822 116 52175	100Ω 5% 0,5W
3297	4822 050 21502	1k5 1% 0,6W
3999	4822 051 20222	2k2 5% 0,1W
3999	4822 051 20332	3k3 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

5272	4822 157 51216	5,6µH 10%
5273	4822 157 51216	5,6µH 10%
5280	4822 157 71461	22µH 10%
5281	4822 157 71461	22µH 10%

6225	4822 130 32831	BZX79-F3V0
6235	4822 130 30842	BAV21
6245	4822 130 30842	BAV21
6255	4822 130 30842	BAV21

7224	5322 130 42136	BC848C
7230	4822 209 33365	TDA6111Q/N3
7240	4822 209 33365	TDA6111Q/N3
7250	4822 209 33365	TDA6111Q/N3

Audio power amplifier [A]

Various

	4822 265 31246	6P male v 2,5
	4822 265 31247	3P male v 1,25
	4822 265 31242	2P male v 2,5
	4822 265 41462	7P male v 1,25
	4822 290 61229	Socket for ext. loudsp.
	4822 277 30967	Switch loudsp. ON/OFF
	5322 390 20011	Vet silic.P4 20GR
	4822 492 62076	spring fix trans.
1050	4822 212 31831	Audio amplifier standard
1050	4822 212 31832	Audio amplifier Dolby

2500	4822 124 41579	10µF 20% 50V
2501	4822 122 32614	1,2nF 10% 50V
2502	4822 124 41579	10µF 20% 50V
2503	4822 122 32614	1,2nF 10% 50V
2504	4822 124 81082	3,3µF 20% 50V
2504	4822 121 51256	39nF 10% 50V
2505	4822 122 32808	1,2nF 10% 63V
2506	4822 124 41579	10µF 20% 50V
2507	4822 122 32614	1,2nF 10% 50V
2512	4822 126 13346	39nF 10% 50V
2515	5322 122 32658	22pF 5% 50V
2516	5322 122 32658	22pF 5% 50V
2518	4822 126 10002	100nF 20% 25V
2519	4822 126 10002	100nF 20% 25V
2520	4822 121 51252	470nF 5% 63V
2522	4822 126 13477	82nF 10% 25V
2524▲	4822 122 33342	33nF 10% 63V
2525	4822 126 13371	56nF 10% 50V
2528	4822 122 33175	2,2nF 20% 50V
2531	4822 122 33128	15nF 10% 63V
2533	4822 122 33128	15nF 10% 63V
2535	4822 121 42408	220nF 5% 63V
2536	4822 126 10002	100nF 20% 25V
2537	4822 126 10002	100nF 20% 25V
2544	4822 126 12944	47nF 10% 50V
2545	4822 122 32927	220nF 20% 50V
2546	4822 126 12944	47nF 10% 50V
2547	4822 122 32927	220nF 20% 50V
2548	4822 126 12784	22nF 20% 100V
2554	4822 126 12944	47nF 10% 50V
2555	4822 122 32927	220nF 20% 50V
2556	4822 126 12944	47nF 10% 50V
2557	4822 122 32927	220nF 20% 50V
2558	4822 126 12784	22nF 20% 100V
2559	4822 126 12784	22nF 20% 100V
2560	4822 126 12784	22nF 20% 100V
2561	4822 124 41584	100µF 20% 10V
2562	4822 124 41579	10µF 20% 50V
2563	5322 124 41431	22µF 20% 35V
2564	4822 126 10002	100nF 20% 25V
2565	4822 126 10002	100nF 20% 25V
2566	4822 124 41334	470µF 20% 35V
2567	4822 124 41334	470µF 20% 35V
2568	4822 124 41579	10µF 20% 50V
2569	4822 124 41579	10µF 20% 50V
2574	4822 126 12944	47nF 10% 50V
2576	4822 126 12944	47nF 10% 50V
2584	4822 126 12944	47nF 10% 50V
2586	4822 126 12944	47nF 10% 50V

3500	4822 051 10392	3k9 2% 0,25W
3501▲	4822 051 20472	4k7 5% 0,1W
3502	4822 116 52276	3k9 5% 0,5W
3503▲	4822 051 20472	4k7 5% 0,1W
3504	4822 051 20392	3k9 5% 0,1W
3505▲	4822 051 20472	4k7 5% 0,1W
3506	4822 051 20392	3k9 5% 0,1W
3507▲	4822 051 20472	4k7 5% 0,1W
3510	4822 051 20393	39k 5% 0,1W
3511	4822 051 20393	39k 5% 0,1W
3512	4822 051 20183	18k 5% 0,1W
3515	4822 051 20104	100k 5% 0,1W
3516	4822 051 20104	100k 5% 0,1W
3517	4822 051 20104	100k 5% 0,1W
3518	4822 051 20104	100k 5% 0,1W
3519	4822 116 52257	22k 5% 0,5W
3520	4822 051 20223	22k 5% 0,1W
3521	4822 051 20153	15k 5% 0,1W
3522	4822 051 20182	1k8 5% 0,1W
3524▲	4822 051 20109	10Ω 5% 0,1W
3525	4822 051 20224	220k 5% 0,1W
3527	4822 051 20104	100k 5% 0,1W
3528	4822 051 20104	100k 5% 0,1W
3530	4822 051 20104	100k 5% 0,1W
3531	4822 051 20104	100k 5% 0,1W
3532	4822 051 20104	100k 5% 0,1W
3533	4822 116 52234	100k 5% 0,5W
3534	4822 051 20104	100k 5% 0,1W
3535	4822 051 20104	100k 5% 0,1W
3536	4822 051 20103	10k 5% 0,1W
3541	4822 051 20473	47k 5% 0,1W
3542	4822 116 52296	6k8 5% 0,5W
3543	4822 116 52234	100k 5% 0,5W
3544▲	4822 052 10828	8Ω2 5% 0,33W
3545	4822 116 52234	100k 5% 0,5W
3546▲	4822 052 10828	8Ω2 5% 0,33W
3547	4822 116 52234	100k 5% 0,5W
3548	4822 051 20103	10k 5% 0,1W
3552	4822 116 52296	6k8 5% 0,5W
3553	4822 116 52234	100k 5% 0,5W
3554▲	4822 052 10828	8Ω2 5% 0,33W
3555	4822 116 52234	100k 5% 0,5W
3556▲	4822 052 10828	8Ω2 5% 0,33W
3557	4822 051 20223	22k 5% 0,1W
3558▲	4822 051 20472	4k7 5% 0,1W
3560	4822 051 20473	47k 5% 0,1W
3561	4822 051 20473	47k 5% 0,1W
3562	4822 051 20471	470Ω 5% 0,1W
3563	4822 051 20104	100k 5% 0,1W
3564	4822 116 52224	470Ω 5% 0,5W
3565	4822 051 20104	100k 5% 0,1W
3566	4822 051 20104	100k 5% 0,1W
3567	4822 051 20104	100k 5% 0,1W
3568	4822 053 10471	470Ω 5% 1W
3569	4822 053 10471	470Ω 5% 1W
3570	4822 051 20181	180Ω 5% 0,1W
3571	4822 051 20562	5k6 5% 0,1W
3572	4822 051 20562	5k6 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W
3999	4822 051 20339	33Ω 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

6520▲	4822 130 30621	1N4148
6521▲	4822 130 30621	1N4148
6568	4822 130 34278	BZX79-C6V8
6569	4822 130 34278	BZX79-C6V8

7510	4822 209 30095	LM833D
7520	4822 209 30095	LM833D
7535	5322 209 14481	HEF4053BT
7540	4822 209 32641	TDA2616Q/N1
7550	4822 209 32641	TDA2616Q/N1
7560▲	5322 130 41982	BC848B
7561▲	5322 130 41982	BC848B
7562	5322 130 41983	BC858B
7566▲	5322 130 41982	BC848B
7567▲	5322 130 41982	BC848B
7568▲	5322 130 41982	BC848B

I/O dolby panel [U]

Various

	4822 265 41451	9P male v 1,25
	4822 265 41462	7P male v 1,25
1052	4822 212 31851	I/O Dolby panel

2570	4822 124 41579	10µF 20% 50V
2572	4822 124 41579	10µF 20% 50V
2574▲	4822 122 33342	33nF 10% 63V
2576	4822 126 13371	56nF 10% 50V
2577	4822 121 51252	470nF 5% 63V
2579	4822 126 13477	82nF 10% 25V
2580	5322 122 31944	3,9pF 5% 50V
2581	4822 126 10002	100nF 20% 25V
2585	4822 124 41579	10µF 20% 50V
2586	4822 124 42377	10µF 20% 16V
2587	4822 124 42377	10µF 20% 16V
2589▲	4822 122 33342	33nF 10% 63V
2591	4822 126 13371	56nF 10% 50V
2592	4822 121 51252	470nF 5% 63V
2594	4822 126 13477	82nF 10% 25V
2595▲	5322 122 34123	1nF 10% 50V
2596	4822 126 10002	100nF 20% 25V
2598	4822 126 10002	100nF 20% 25V
2599	4822 124 41643	100µF 20% 16V

3564	4822 051 20104	100k 5% 0,1W
3565	4822 051 20103	10k 5% 0,1W
3566	4822 051 20104	100k 5% 0,1W
3568	4822 051 20104	100k 5% 0,1W
3570	4822 051 20272	2k7 5% 0,1W
3571▲	4822 051 20472	4k7 5% 0,1W
3572▲	4822 052 10109	10Ω 5% 0,33W
3573▲	4822 051 20109	10Ω 5% 0,1W
3574	4822 051 20223	22k 5% 0,1W
3575	4822 051 20224	220k 5% 0,1W
3577	4822 051 20223	22k 5% 0,1W
3578	4822 051 20182	1k8 5% 0,1W
3579	4822 051 20153	15k 5% 0,1W
3580	4822 051 20304	300k 5% 0,1W
3581	4822 051 20184	180k 5% 0,1W
3585	4822 051 20272	2k7 5% 0,1W

3586▲	4822 051 20472	4k7 5% 0,1W
3589	4822 051 20223	22k 5% 0,1W
3590	4822 051 20224	220k 5% 0,1W
3592	4822 051 20223	22k 5% 0,1W
3593	4822 051 20182	1k8 5% 0,1W
3594	4822 051 20153	15k 5% 0,1W
3595	4822 051 20222	2k2 5% 0,1W
3596	4822 051 20392	3k9 5% 0,1W
3597▲	4822 051 20109	10Ω 5% 0,1W
3598	4822 051 20332	3k3 5% 0,1W
3599	4822 051 20332	3k3 5% 0,1W
3999	4822 051 20479	47Ω 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

6575▲	4822 130 30621	1N4148
6576▲	4822 130 30621	1N4148
6590▲	4822 130 30621	1N4148
6591▲	4822 130 30621	1N4148

7572	4822 209 30095	LM833D
7574	4822 051 10008	0Ω 5% 0,25W
7587	4822 209 30095	LM833D
7588	5322 209 14481	HEF4053BT
7589▲	5322 130 41982	BC848B

Source selection panel [I] [I1] [I2]

Various

	4822 265 51385	25P male v 1,25
	4822 265 41451	9P male v 1,25
	4822 267 60399	Socket SCART blue
	4822 267 60398	Socket SCART black
	4822 267 31877	Socket 2 x cinch
1032	4822 212 31858	Source selection panel ECO
1805	4822 242 72527	Crystal 4,00 MHz

2800	4822 124 81092	47µF 20% 25V
2801	4822 122 32927	220nF 20% 50V
2802	4822 124 81093	10µF 20% 25V
2804	4822 124 81093	10µF 20% 25V
2805	4822 124 81093	10µF 20% 25V
2806	4822 124 81093	10µF 20% 25V
2808	4822 124 81093	10µF 20% 25V
2810	4822 124 81093	10µF 20% 25V
2811	4822 124 81093	10µF 20% 25V
2812	4822 124 81093	10µF 20% 25V
2813	4822 124 81093	10µF 20% 25V
2814	4822 124 81093	10µF 20% 25V
2816	4822 122 32927	220nF 20% 50V
2817	4822 124 81092	47µF 20% 25V
2818	4822 122 32927	220nF 20% 50V
2819	4822 124 81093	10µF 20% 25V
2820	4822 122 32927	220nF 20% 50V
2821	4822 122 32927	220nF 20% 50V
2823	4822 122 32927	220nF 20% 50V
2825	4822 122 32927	220nF 20% 50V
2827	4822 122 32927	220nF 20% 50V
2828	4822 122 32927	220nF 20% 50V
2829	4822 122 32927	220nF 20% 50V
2830	4822 124 81093	10µF 20% 25V
2832	4822 124 81092	47µF 20% 25V
2833▲	5322 122 34123	1nF 10% 50V
2835	5322 122 32531	100pF 5% 50V
2836	5322 122 31863	330pF 5% 50V
2837	5322 122 31863	330pF 5% 50V
2838	5322 122 31863	330pF 5% 50V
2839	4822 122 32927	220nF 20% 50V
2840	4822 122 32927	220nF 20% 50V
2842	4822 124 81093	10µF 20% 25V
2843	5322 122 31863	330pF 5% 50V
2845	4822 122 32927	220nF 20% 50V
2846	4822 124 81093	10µF 20% 25V
2847	4822 124 81093	10µF 20% 25V
2848	5322 122 31842	330pF 2% 63V
2853	5322 122 31863	330pF 5% 50V
2854	5322 122 31863	330pF 5% 50V
2855	5322 122 31863	330pF 5% 50V
2856	5322 122 31842	330pF 2% 63V
2857	4822 122 32927	220nF 20% 50V
2858	5322 122 31863	330pF 5% 50V
2860	5322 122 31863	330pF 5% 50V
2861	5322 122 31863	330pF 5% 50V
2864	5322 122 31863	330pF 5% 50V
2865	5322 122 31863	330pF 5% 50V
2866	5322 122 31863	330pF 5% 50V
2868	5322 122 31863	330pF 5% 50V
2869	4822 122 32927	220nF 20% 50V
2870	4822 122 32927	220nF 20% 50V
2871	4822 122 32927	220nF 20% 50V
2872	4822 122 32927	220nF 20% 50V
2873	4822 122 32927	220nF 20% 50V
2874	4822 122 32927	220nF 20% 50V
2885	4822 122 32927	220nF 20% 50V
2886	4822 122 32927	220nF 20% 50V
2887	4822 122 32927	220nF 20% 50V
2888	4822 122 32139	12pF 2% 63V
2890	4822 122 32927	220nF 20% 50V
2891	4822 124 81093	10µF 20% 25V
2892	4822 124 81093	10µF 20% 25V
2893	4822 124 81092	47µF 20% 25V
2894	4822 126 13473	220nF 20% 50V
2895	4822 126 13473	220nF 20% 50V
2896	4822 126 10326	180pF 5% 63V
2897	4822 126 10326	180pF 5% 63V
2899▲	5322 122 34123	1nF 10% 50V

3800▲	4822 052 10478	4Ω7 5% 0,33W
3801	4822 051 20221	220Ω 5% 0,1W
3802	4822 051 20103	10k 5% 0,1W
3803	4822 051 20103	10k 5% 0,1W
3805	4822 051 20473	47k 5% 0,1W
3806	4822 051 20104	100k 5% 0,1W
3807	4822 051 20473	47k 5% 0,1W
3808	4822 051 20151	150Ω 5% 0,1W
3809	4822 051 20151	150Ω 5% 0,1W
3810	4822 051 20432	4k3 5% 0,1W
3811	4822 051 20242	2k4 5% 0,1W
3812	4822 051 20681	680Ω 5% 0,1W
3813	4822 051 20681	680Ω 5% 0,1W
3818	4822 051 20103	10k 5% 0,1W
3819	4822 051 20103	10k 5% 0,1W
3820	4822 051 20103	10k 5% 0,1W
3821	4822 051 20103	10k 5% 0,1W
3822	4822 051 20362	3k6 5% 0,1W
3823	4822 051 20273	27k 5% 0,1W
3825	4822 051 20473	47k 5% 0,1W
3827	4822 051 20222	2k2 5% 0,1W
3828	4822 051 20561	560Ω 5% 0,1W
3829	4822 051 20222	2k2 5% 0,1W
3830	4822 051 20222	2k2 5% 0,1W
3831	4822 051 20561	560Ω 5% 0,1W
3832	4822 051 20222	2k2 5% 0,1W
3833	4822 051 20222	2k2 5% 0,1W
3834	4822 051 20561	560Ω 5% 0,1W
3835	4822 051 20222	2k2 5% 0,1W
3836	4822 051 20101	100Ω 5% 0,1W
3837	4822 051 20561	560Ω 5% 0,1W
3838	4822 051 20103	10k 5% 0,1W
3842	4822 051 20331	330Ω 5% 0,1W
3843	4822 051 20331	330Ω 5% 0,1W
3844	4822 051 20222	2k2 5% 0,1W
3845	4822 051 20331	330Ω 5% 0,1W
3846	4822 051 20331	330Ω 5% 0,1W
3847	4822 051 10369	36Ω 2% 0,25W
3848▲	4822 051 20472	4k7 5% 0,1W
3849	4822 051 10102	1k 2% 0,25W
3850	4822 051 20474	470k 5% 0,1W
3852	4822 051 20153	15k 5% 0,1W
3853	4822 051 20103	10k 5% 0,1W
3854	4822 051 20153	15k 5% 0,1W
3855	4822 051 20103	10k 5% 0,1W
3856	4822 051 20153	15k 5% 0,1W
3857	4822 051 20103	10k 5% 0,1W
3866	4822 051 20101	100Ω 5% 0,1W
3867	4822 051 20101	100Ω 5% 0,1W
3868	4822 051 20101	100Ω 5% 0,1W
3871	4822 051 20101	100Ω 5% 0,1W
3872	4822 051 20101	100Ω 5% 0,1W
3875	4822 051 20101	100Ω 5% 0,1W
3876▲	4822 116 83953	75Ω 5% 0,125W
3877	4822 051 20151	150Ω 5% 0,1W
3878	4822 051 20151	150Ω 5% 0,1W
3879	4822 051 20151	150Ω 5% 0,1W
3880	4822 051 20331	330Ω 5% 0,1W
3881	4822 051 10102	1k 2% 0,25W
3882	4822 051 20471	470Ω 5% 0,1W
3883	4822 051 20471	470Ω 5% 0,1W
3884▲	4822 116 83953	75Ω 5% 0,125W
3885	4822 051 20103	10k 5% 0,1W
3886	4822 051 10102	1k 2% 0,25W
3887	4822 051 20331	330Ω 5% 0,1W
3888▲	4822 116 83953	75Ω 5% 0,125W
3889▲	4822 116 83953	75Ω 5% 0,125W
3890▲	4822 116 83953	75Ω 5% 0,125W
3891	4822 051 10151	150Ω 2% 0,25W
3892▲	4822 116 83953	75Ω 5% 0,125W
3893	4822 051 20151	150Ω 5% 0,1W
3894	4822 051 20224	220k 5% 0,1W
3895	4822 051 20224	220k 5% 0,1W
3896▲	4822 052 10478	4Ω7 5% 0,33W
3897	4822 051 10102	1k 2% 0,25W
3898	4822 051 20471	470Ω 5% 0,1W
3899	4822 051 20103	10k 5% 0,1W
3900	4822 051 20471	470Ω 5% 0,1W
3901▲	4822 116 83953	75Ω 5% 0,125W
3902	4822 051 10102	1k 2% 0,25W
3903	4822 051 20224	220k 5% 0,1W
3904▲	4822 116 83953	75Ω 5% 0,125W
3905▲	4822 116 83953	75Ω 5% 0,125W
3906▲	4822 116 83953	75Ω 5% 0,125W
3907▲	4822 116 83953	75Ω 5% 0,125W
3909	4822 051 20151	150Ω 5% 0,1W
3910	4822 051 10102	1k 2% 0,25W
3915	4822 051 10102	1k 2% 0,25W
3917▲	4822 116 83953	75Ω 5% 0,125W
3921	4822 051 20471	470Ω 5% 0,1W
3922	4822 051 20224	220k 5% 0,1W
3924	4822 051 20332	3k3 5% 0,1W
3926▲	4822 052 10478	4Ω7 5% 0,33W
3927▲	4822 052 10478	4Ω7 5% 0,33W
3928▲	4822 052 10478	4Ω7 5% 0,33W
3929▲	4822 052 10478	4Ω7 5% 0,33W
3931▲	4822 052 10478	4Ω7 5% 0,33W
3932	4822 051 20331	330Ω 5% 0,1W
3934	4822 051 20331	330Ω 5% 0,1W
3935▲	4822 052 10478	4Ω7 5% 0,33W
3938	4822 051 20223	22k 5% 0,1W
3939	4822 051 20223	22k 5% 0,1W
3941	4822 051 20223	22k 5% 0,1W
3942	4822 051 20223	22k 5% 0,1W
3943	4822 051 20223	22k 5% 0,1W
3944	4822 051 20223	22k 5% 0,1W
3945	4822 051 20151	150Ω 5% 0,1W
3946	4822 051 20151	150Ω 5% 0,1W
3954	4822 051 10102	1k 2% 0,25W
3961	4822 051 10102	1k 2% 0,25W
3962	4822 051 10102	1k 2% 0,25W
3965	4822 051 20103	10k 5% 0,1W
3966	4822 051 20103	10k 5% 0,1W
3967	4822 051 20103	10k 5% 0,1W
3968	4822 051 20103	10k 5% 0,1W
3970	4822 051 10331	330Ω 2% 0,25W
3971	4822 051 20122	1k2 5% 0,1W
3972	4822 117 11139	1k5 1% 0,1W
3973	4822 051 20474	470k 5% 0,1W
3977	4822 051 20103	10k 5% 0,1W
3980	4822 051 20473	47k 5% 0,1W
3981	4822 051 20473	47k 5% 0,1W
3982	4822 051 20182	1k8 5% 0,1W
3983	4822 051 20332	3k3 5% 0,1W
3984	4822 051 20222	2k2 5% 0,1W
3992	4822 051 10102	1k 2% 0,25W
3993	4822 051 20151	150Ω 5% 0,1W
3994	4822 051 10102	1k 2% 0,25W
3995	4822 051 20103	10k 5% 0,1W
3996	4822 051 20471	470Ω 5% 0,1W
3997	4822 051 20471	470Ω 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W
4xxx	4822 051 20002	0Ω 5% 0,1W

5801	4822 157 51216	5,6µH 10%

6800	4822 130 81513	LLZ-C6V8
6802	4822 130 81513	LLZ-C6V8
6808	4822 130 81513	LLZ-C6V8
6809	4822 130 81513	LLZ-C6V8
6810	4822 130 81513	LLZ-C6V8
6811	4822 130 81513	LLZ-C6V8
6812	4822 130 81513	LLZ-C6V8
6813	4822 130 81513	LLZ-C6V8
6814	4822 130 81513	LLZ-C6V8
6815	4822 130 81513	LLZ-C6V8
6816	4822 130 81513	LLZ-C6V8
6817	4822 130 81513	LLZ-C6V8
6818	4822 130 81513	LLZ-C6V8
6819	4822 130 81513	LLZ-C6V8
6821	4822 130 82346	LLZ-C27
6823	4822 130 82346	LLZ-C27
6826	4822 130 82346	LLZ-C27
6827	4822 130 82346	LLZ-C27
6830	4822 130 82346	LLZ-C27
6831	4822 130 82346	LLZ-C27
6832	4822 130 82346	LLZ-C27
6833	4822 130 82346	LLZ-C27
6834	4822 130 82346	LLZ-C27
6835	4822 130 82346	LLZ-C27
6836	4822 130 82346	LLZ-C27
6837	4822 130 82346	LLZ-C27
6838	4822 130 82346	LLZ-C27
6839	4822 130 82346	LLZ-C27
6840	4822 130 82346	LLZ-C27
6841	4822 130 82346	LLZ-C27
6842	4822 130 82346	LLZ-C27
6843	4822 130 82346	LLZ-C27
6844	4822 130 82346	LLZ-C27
6845	4822 130 82346	LLZ-C27
6846	4822 130 82346	LLZ-C27
6847	4822 130 82346	LLZ-C27
6848	4822 130 82346	LLZ-C27
6849	4822 130 82346	LLZ-C27
6851	4822 130 80446	LL4148

7800▲	5322 130 41982	BC848B
7801	5322 130 42136	BC848C
7803▲	5322 130 41982	BC848B
7804▲	5322 130 41982	BC848B
7805▲	5322 130 41982	BC848B
7806▲	5322 130 41982	BC848B
7808▲	5322 130 41982	BC848B
7811▲	5322 130 41982	BC848B
7812▲	5322 130 41982	BC848B
7814	4822 209 90046	TMD47C203N
7815	4822 209 90051	TDA8601/C1
7817	4822 209 80631	LM339N
7819▲	4822 130 44197	BC558B
7820▲	5322 130 41982	BC848B
7822	4822 209 90048	TEA6430
7823	4822 209 33314	TEA6417
7830	5322 130 41983	BC858B
7831▲	5322 130 41982	BC848B

Feature-box [F]

Various

	4822 267 51433	10P female BTB
	4822 255 41356	IC socket
1345	4822 212 31803	Feature box 3
1485	4822 242 72572	Crystal 12 MHz

2375	5322 122 32531	100pF 5% 50V
2376	4822 122 33496	100nF 10% 63V
2377	5322 122 32965	18pF 5% 50V
2378	5322 122 32661	56pF 5% 50V
2379	4822 122 33515	82pF 5% 63V
2380	4822 122 32542	47nF 10% 63V
2385	5322 122 32531	100pF 5% 50V
2386	4822 126 10002	100nF 20% 25V
2387	5322 122 32661	56pF 5% 50V
2388	5322 126 10343	1,8pF 5% 63V
2389	4822 126 10326	180pF 5% 63V
2390▲	5322 122 32654	22nF 10% 63V
2395	5322 122 32531	100pF 5% 50V
2396	4822 126 10002	100nF 20% 25V
2397	5322 122 32661	56pF 5% 50V
2398	5322 126 10343	1,8pF 5% 63V
2399	4822 126 10326	180pF 5% 63V
2400▲	5322 122 32654	22nF 10% 63V
2410	4822 124 41715	220µF 20% 6,3V
2411	4822 124 41715	220µF 20% 6,3V
2412▲	5322 122 32654	22nF 10% 63V
2413▲	5322 122 32654	22nF 10% 63V
2415▲	5322 122 32654	22nF 10% 63V
2419	4822 124 20678	47µF 50% 10V
2420	4822 126 10002	100nF 20% 25V
2421▲	5322 122 32654	22nF 10% 63V
2422	4822 124 41643	100µF 20% 16V
2423	4822 124 41643	100µF 20% 16V
2424▲	5322 122 32654	22nF 10% 63V
2425▲	5322 122 32654	22nF 10% 63V
2426	4822 124 41715	220µF 20% 6,3V
2430	5322 122 32531	100pF 5% 50V
2433	5322 122 32531	100pF 5% 50V
2435	5322 122 32531	100pF 5% 50V
2440	4822 126 10002	100nF 20% 25V
2441	4822 124 20678	47µF 50% 10V
2445	4822 126 10002	100nF 20% 25V
2446	4822 126 10002	100nF 20% 25V
2447	4822 126 11725	1µF 205 5V
2448	4822 124 20678	47µF 50% 10V
2449▲	4822 124 40433	47µF 20% 25V
2450▲	5322 122 32654	22nF 10% 63V
2451▲	5322 122 32654	22nF 10% 63V

Spare parts list / Stükliste / Liste des pièces

2452▲	4822 124 40246	4,7µF 20% 63V
2453	4822 126 10002	100nF 20% 25V
2454	4822 124 20678	47µF 50% 10V
2455	4822 124 41579	10µF 20% 50V
2460▲	5322 122 32654	22nF 10% 63V
2462▲	5322 122 32654	22nF 10% 63V
2465	5322 122 32966	39pF 5% 50V
2466	5322 122 32531	100pF 5% 50V
2467	5322 122 32481	15pF 5% 50V
2468	5322 122 32658	22pF 5% 50V
2469	5322 122 33538	150pF 2% 63V
2476	5322 122 32659	33pF 5% 50V
2477	5322 122 32287	4,7pF 5% 50V
2478	5322 122 33861	120pF 10% 50V
2481	5322 122 32659	33pF 5% 50V
2482	5322 122 32287	4,7pF 5% 50V
2483	5322 122 33861	120pF 10% 50V
2485	5322 122 32448	10pF 5% 50V
2486	5322 122 32448	10pF 5% 50V
2490	5322 122 32531	100pF 5% 50V
2492	5322 122 32531	100pF 5% 50V
2493	5322 122 32531	100pF 5% 50V
2505	4822 126 10002	100nF 20% 25V
2508	5322 122 32452	47pF 5% 63V
2509	5322 122 32452	47pF 5% 63V

3370	4822 051 20101	100Ω 5% 0,1W
3371	4822 051 20101	100Ω 5% 0,1W
3372	4822 051 20101	100Ω 5% 0,1W
3375	4822 051 20332	3k3 5% 0,1W
3376	4822 051 20473	47k 5% 0,1W
3377	4822 051 10102	1k 2% 0,25W
3378	4822 117 11597	510Ω 1% 0,1W
3379	4822 117 11449	2k2 1% 0,1W
3380	4822 051 20681	680Ω 5% 0,1W
3385	4822 051 20332	3k3 5% 0,1W
3386	4822 051 20473	47k 5% 0,1W
3387	4822 117 11503	220Ω 1% 0,1W
3388	4822 117 11597	510Ω 1% 0,1W
3389	4822 117 10361	680Ω 1% 0,1W
3390	4822 051 20681	680Ω 5% 0,1W
3395	4822 051 20332	3k3 5% 0,1W
3396	4822 051 20473	47k 5% 0,1W
3397	4822 117 11595	27Ω 1% 0,1W
3398	4822 117 10845	620Ω 1% 0,1W
3399	4822 117 10361	680Ω 1% 0,1W
3400	4822 051 20681	680Ω 5% 0,1W
3410	4822 116 52176	10Ω 5% 0,5W
3411	4822 117 11448	180Ω 1% 0,1W
3413	4822 051 20301	300Ω 5% 0,1W
3414	4822 051 20103	10k 5% 0,1W
3422▲	4822 052 10279	27Ω 5% 0,33W
3430	4822 051 10102	1k 2% 0,25W
3431▲	4822 051 20472	4k7 5% 0,1W
3432▲	4822 051 20472	4k7 5% 0,1W
3433	4822 051 20332	3k3 5% 0,1W
3434	4822 051 20101	100Ω 5% 0,1W
3435	4822 051 20332	3k3 5% 0,1W
3436	4822 051 20101	100Ω 5% 0,1W
3450	4822 051 20101	100Ω 5% 0,1W
3451	4822 051 20101	100Ω 5% 0,1W
3452	4822 051 20101	100Ω 5% 0,1W
3453	4822 051 20101	100Ω 5% 0,1W
3460▲	4822 052 10229	22Ω 5% 0,33W
3461	4822 051 20682	6k8 5% 0,1W
3462	4822 051 20122	1k2 5% 0,1W
3465	4822 117 11596	390Ω 1% 0,1W
3466	4822 117 11373	100Ω 1% 0,1W
3467	4822 051 20479	47Ω 5% 0,1W
3468	4822 051 20479	47Ω 5% 0,1W
3469	4822 117 11594	200Ω 1% 0,1W
3475	4822 117 11596	390Ω 1% 0,1W
3476	4822 117 11503	220Ω 1% 0,1W
3477	4822 051 20203	20k 5% 0,1W
3480	4822 117 11596	390Ω 1% 0,1W
3481	4822 117 11504	270Ω 1% 0,1W
3482	4822 117 11154	1k 1% 0,1W
3485	4822 051 20104	100k 5% 0,1W
3490▲	4822 051 20472	4k7 5% 0,1W
3491	4822 051 20103	10k 5% 0,1W
3492▲	4822 051 20472	4k7 5% 0,1W
3493	4822 051 20103	10k 5% 0,1W
3494	4822 051 20471	470Ω 5% 0,1W
3495	4822 051 20479	47Ω 5% 0,1W
3500	4822 051 20561	560Ω 5% 0,1W
3502▲	4822 051 20472	4k7 5% 0,1W
3503	4822 051 20221	220Ω 5% 0,1W
3504	4822 051 20273	27k 5% 0,1W
3505	4822 051 20222	2k2 5% 0,1W
3506	4822 051 20103	10k 5% 0,1W
3507	4822 051 20272	2k7 5% 0,1W
3508	4822 051 20101	100Ω 5% 0,1W
3509	4822 051 20101	100Ω 5% 0,1W
3510	4822 051 10102	1k 2% 0,25W
3511	4822 051 10102	1k 2% 0,25W
3512	4822 051 20101	100Ω 5% 0,1W
3513	4822 051 20101	100Ω 5% 0,1W
3514	4822 051 20101	100Ω 5% 0,1W
3515▲	4822 051 20008	0Ω 5% 0,1W
3999	4822 051 10102	1k 2% 0,25W
4xxx	4822 051 20008	0Ω 5% 0,1W

5377	4822 157 53303	12µH 10%
5378	4822 153 20251	18µH 10%
5388	4822 157 63316	56µH 10%
5398	4822 157 63316	56µH 10%
5420	4822 157 51216	5,6µH 10%
5421	4822 157 51216	5,6µH 10%
5425	4822 157 60147	2,2µH
5440	4822 157 51216	5,6µH 10%
5445	4822 157 51216	5,6µH 10%
5446	4822 157 51216	5,6µH 10%
5447	4822 157 51216	5,6µH 10%
5453	4822 157 51216	5,6µH 10%
5454	4822 157 51216	5,6µH 10%
5465	4822 157 xxxxx	1,5µH 20%
5466	4822 157 71443	1,8µH 20%
5477	4822 157 60122	4,7ΩH 10%
5482	4822 157 60122	4,7µH 10%
5490	4822 157 60147	2,2µH
5492	4822 157 60147	2,2µH
5505	4822 157 51216	5,6µH 10%

6500	4822 130 34382	BZX79-F8V2

7376	5322 130 42136	BC848C
7380	5322 130 42136	BC848C
7386	5322 130 42136	BC848C
7390	5322 130 42136	BC848C
7396	5322 130 42136	BC848C
7400	5322 130 42136	BC848C
7432	4822 209 73852	PMBT2369
7441	4822 209 90033	TDA8753
7445	4822 209 90021	TMS4C2970
7446	4822 209 90021	TMS4C2970
7447	4822 209 90034	SAA4990H/V1
7450	4822 209 33689	SAA4970/V2
7460	4822 209 72042	MC78L05ACP
7461	5322 130 42136	BC848C
7490	4822 209 73852	PMBT2369
7492	4822 209 73852	PMBT2369
7493	4822 130 42513	BC858C
7500	5322 130 42136	BC848C
7504	4822 209 73852	PMBT2369
7505	4822 209 90019	SOFTWARE FBX3 V1.0
7506	4822 130 42513	BC858C

PIP panel [P]

Various

	4822 265 41328	10P female BTB
	4822 267 41154	4P female BTB
	4822 265 31251	5P male v 1,25
1340	4822 212 31861	PIP panel 2^e tuner
1750	4822 242 81575	Crystal 3,579 500 MHz
1765	4822 242 81691	crystal 4,433 619 MHz
1775	4822 210 10635	UV1216
1788	4822 242 81966	Crystal 21,05915 MHz
1920	4822 242 80295	Crystal OFWG3962M

2755▲	5322 122 32654	22nF 10% 63V
2756	4822 124 41576	2,2µF 20% 50V
2758	4822 124 41643	100µF 20% 16V
2759	4822 126 13473	220nF 20% 50V
2760	4822 126 13482	470nF 20% 16V
2761▲	4822 124 40433	47µF 20% 25V
2762	4822 126 10002	100nF 20% 25V
2766	4822 124 41643	100µF 20% 16V
2767	4822 124 40756	1µF 20% 100V
2768	4822 124 41643	100µF 20% 16V
2770	4822 124 40756	1µF 20% 100V
2772	4822 124 40756	1µF 20% 100V
2778	4822 126 10002	100nF 20% 25V
2780	4822 126 10002	100nF 20% 25V
2781	4822 126 13473	220nF 20% 50V
2782	4822 126 13473	220nF 20% 50V
2784	4822 126 13473	220nF 20% 50V
2786	4822 126 10002	100nF 20% 25V
2787	5322 122 31946	27pF 5% 63V
2788	4822 126 10002	100nF 20% 25V
2789	5322 122 31946	27pF 5% 63V
2790▲	5322 122 32654	22nF 10% 63V
2792	4822 126 10002	100nF 20% 25V
2794	4822 126 12944	47nF 10% 50V
2796	4822 126 12944	47nF 10% 50V
2798	4822 126 10002	100nF 20% 25V
2800	4822 122 33219	1,8nF 10% 50V
2802	5322 122 32531	100pF 5% 50V
2810	4822 126 13473	220nF 20% 50V
2812	4822 126 10002	100nF 20% 25V
2816	4822 126 10002	100nF 20% 25V
2821	5322 122 32287	4,7pF 5% 50V
2822	4822 126 12944	47nF 10% 50V
2823	5322 122 32287	4,7pF 5% 50V
2824	4822 126 12944	47nF 10% 50V
2825	5322 122 32287	4,7pF 5% 50V
2826	4822 126 12944	47nF 10% 50V
2828	4822 126 12944	47nF 10% 50V
2830	4822 126 12944	47nF 10% 50V
2832	4822 126 12944	47nF 10% 50V
2844▲	5322 122 32654	22nF 10% 63V
2846	4822 126 10002	100nF 20% 25V
2848▲	5322 126 10223	4,7nF 10% 63V
2850▲	5322 126 10223	4,7nF 10% 63V
2852	4822 122 33575	220pF 5% 50V
2856	4822 122 33575	220pF 5% 50V
2862▲	5322 122 32654	22nF 10% 63V
2863	4822 122 32614	1.2nF 10% 50V
2866	4822 126 12944	47nF 10% 50V
2867	4822 126 10002	100nF 20% 25V
2869	4822 122 32535	680pF 10% 63V
2874	5322 122 34123	1nF 10% 50V
2876	5322 122 32661	56pF 5% 50V

3755	4822 051 20101	100Ω 5% 0,1W
3756	4822 051 20101	100Ω 5% 0,1W
3757	4822 051 20475	4M7 5% 0,1W
3762	4822 051 20221	220Ω 5% 0,1W
3764	4822 051 20221	220Ω 5% 0,1W
3766	4822 051 20221	220Ω 5% 0,1W
3800	4822 051 20181	180Ω 5% 0,1W
3802	4822 051 20221	220Ω 5% 0,1W
3804	4822 051 20391	390Ω 5% 0,1W
3806	4822 051 20221	220Ω 5% 0,1W
3807	4822 051 20101	100Ω 5% 0,1W
3808	4822 051 20471	470Ω 5% 0,1W
3809	4822 051 10101	100Ω 2% 0,25W
3810	4822 051 20101	100Ω 5% 0,1W
3812	4822 051 10102	1k 2% 0,25W
3813	4822 051 20473	47k 5% 0,1W
3814▲	4822 051 20008	0Ω 5% 0,1W
3816	4822 051 20562	5k6 5% 0,1W
3818	4822 051 20222	2k2 5% 0,1W
3820	4822 051 20104	100k 5% 0,1W
3821	4822 051 20681	680Ω 5% 0,1W
3822▲	4822 051 20472	4k7 5% 0,1W
3823	4822 051 20681	680Ω 5% 0,1W
3824	4822 051 20681	680Ω 5% 0,1W
3825	4822 051 20681	680Ω 5% 0,1W
3826	4822 116 52283	4k7 5% 0,5W
3830	4822 051 20273	27k 5% 0,1W
3831	4822 050 11002	1k 1% 0,4W
3832	4822 116 52283	4k7 5% 0,5W
3833	4822 051 20103	10k 5% 0,1W
3834	4822 051 20222	2k2 5% 0,1W
3836	4822 051 10102	1k 2% 0,25W
3838▲	4822 051 20008	0Ω 5% 0,1W
3840	4822 051 10102	1k 2% 0,25W
3842	4822 051 20151	150Ω 5% 0,1W
3844	4822 116 52257	22k 5% 0,5W
3846	4822 116 52175	100Ω 5% 0,5W
3848	4822 116 52175	100Ω 5% 0,5W
3850▲	4822 051 20472	4k7 5% 0,1W
3852▲	4822 051 20472	4k7 5% 0,1W
3858	4822 051 20221	220Ω 5% 0,1W
3859	4822 051 20829	82Ω 5% 0,1W
3863	4822 051 20471	470Ω 5% 0,1W
3864	4822 051 20221	220Ω 5% 0,1W
3869	4822 051 20391	390Ω 5% 0,1W
3870	4822 116 52175	100Ω 5% 0,5W
3872	4822 116 52175	100Ω 5% 0,5W
3873	4822 051 20181	180Ω 5% 0,1W
3874	4822 051 20682	6k8 5% 0,1W
3876	4822 117 11139	1k5 1% 0,1W
3877	4822 051 20222	2k2 5% 0,1W
3878	4822 051 20112	1k1 5% 0,1W
3879	4822 051 10102	1k 2% 0,25W
3880	4822 051 20221	220Ω 5% 0,1W
3882	4822 051 20331	330Ω 5% 0,1W
3884	4822 051 20331	330Ω 5% 0,1W
3886	4822 051 20331	330Ω 5% 0,1W
3890	4822 051 20561	560Ω 5% 0,1W
3891	4822 051 20471	470Ω 5% 0,1W
3894▲	4822 051 20008	0Ω 5% 0,1W
3906▲	4822 052 10229	22Ω 5% 0,33W
3908▲	4822 052 10228	2Ω2 5% 0,33W
3912	4822 101 11191	10k 30% LIN
3914	4822 051 20822	8k2 5% 0,1W
3916	4822 051 20822	8k2 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W
4xxx	4822 051 10008	0Ω 5% 0,25W

5754	4822 157 60122	4,7µH 10%
5756	4822 157 60122	4,7µH 10%
5757	4822 157 60122	4,7µH 10%
5760	4822 157 60122	4,7µH 10%
5762	4822 157 60122	4,7µH 10%
5920	4822 157 53302	1µH 20%

6750	5322 130 80255	BZX84-C8V2
6752	4822 130 80542	BZX84-C33
6754▲	4822 130 30621	1N4148
6756▲	4822 130 30621	1N4148
6758▲	4822 130 30621	1N4148
6813▲	5322 130 31928	BAS16
6814	5322 130 31928	BAS16

7750	4822 209 90031	TDA8310/N1
7751	4822 209 90036	TDA8395T/N2
7762	5322 130 41983	BC858B
7764	5322 130 41983	BC858B
7766	5322 130 41983	BC858B
7788	4822 209 90026	SDA9288X
7800▲	5322 130 41982	BC848B
7808	4822 209 73852	PMBT2369
7810	5322 130 44349	BC635
7828▲	5322 130 41982	BC848B
7833	5322 130 42136	BC848C
7858▲	5322 130 41982	BC848B
7864▲	5322 130 41982	BC848B
7877	5322 130 41983	BC858B

NICAM sound module [G]

Various

	4822 265 41327	8P female BTB
	4822 265 41328	10P female BTB
	4822 265 31249	5P male v 2,5
1320	4822 212 31848	NICAM module PAL BG
1320	4822 212 31849	NICAM module PAL I
1320	4822 212 31865	NICAM module L
1525	4822 242 81719	Crystal 8,192MHz
1530	4822 242 81187	Crystal 11.700MHz
1530	4822 242 81188	Crystal 13.104MHz

2525▲	4822 122 33177	10nF 20% 50V
2526▲	4822 122 33177	10nF 20% 50V
2527▲	4822 122 33177	10nF 20% 50V
2528▲	5322 122 32654	22nF 10% 63V
2529▲	5322 122 32654	22nF 10% 63V
2531▲	4822 124 40433	47µF 20% 25V
2533▲	5322 122 32654	22nF 10% 63V
2541▲	5322 122 32654	22nF 10% 63V
2542	4822 126 12102	330nF 20% 50V
2543▲	5322 122 34123	1nF 10% 50V
2545▲	5322 122 34123	1nF 10% 50V
2546	5322 122 31863	330pF 5% 50V
2550	5322 122 32531	100pF 5% 50V
2551	5322 122 32531	100pF 5% 50V
2552	5322 122 32659	33pF 5% 50V
2553	5322 122 32659	33pF 5% 50V
2554	5322 122 33538	150pF 2% 63V
2554	5322 122 32531	100pF 5% 50V
2556	4822 122 33575	220pF 5% 50V
2557	5322 122 31866	6,8nF 10% 63V

Spare parts list / Stükliste / Liste des pièces

2558	5322 122 31863	330pF 5% 50V
2559	5322 122 33538	150pF 2% 63V
2560	5322 122 33538	150pF 2% 63V
2570	4822 126 10002	100nF 20% 25V
2572	4822 122 33514	68pF 5% 50V
2573	5322 122 31863	330pF 5% 50V
2574	4822 126 10002	100nF 20% 25V
2575	4822 126 13061	220nF 20% 25V
2576	4822 126 10002	100nF 20% 25V
2578	4822 126 10002	100nF 20% 25V
2581▲	4822 124 40433	47µF 20% 25V
2582	4822 122 33514	68pF 5% 50V
2583	5322 122 31863	330pF 5% 50V
2585	4822 126 13482	470nF 20% 16V
2586	4822 126 13482	470nF 20% 16V
2588	5322 122 32452	47pF 5% 63V
2589	5322 122 32452	47pF 5% 63V
2590	4822 122 33891	3,3nF 10% 63V
2591	4822 122 33216	270pF 5% 50V
2594	4822 122 33216	270pF 5% 50V
2596▲	4822 124 40433	47µF 20% 25V
2610	4822 122 33891	3,3nF 10% 63V
2611	4822 122 33216	270pF 5% 50V
2614	4822 126 13452	270pF 10% 63V
2616▲	4822 124 40433	47µF 20% 25V
2621▲	4822 124 40433	47µF 20% 25V

3382	4822 051 20243	24k 5% 0,1W
3383	4822 051 20333	33k 5% 0,1W
3524▲	4822 051 20109	10Ω 5% 0,1W
3525	4822 051 20182	1k8 5% 0,1W
3526	4822 051 20392	3k9 5% 0,1W
3527	4822 051 20392	3k9 5% 0,1W
3528	4822 051 10102	1k 2% 0,25W
3529	4822 051 20569	56Ω 5% 0,1W
3530	4822 051 20222	2k2 5% 0,1W
3531	4822 051 20431	430Ω 5% 0,1W
3532	4822 051 20241	240Ω 5% 0,1W
3540	4822 051 20223	22k 5% 0,1W
3541	4822 051 20273	27k 5% 0,1W
3542	4822 051 20104	100k 5% 0,1W
3543	4822 051 20104	100k 5% 0,1W
3544	4822 051 20103	10k 5% 0,1W
3545	4822 051 20105	1M 5% 0,1W
3546	4822 051 10102	1k 2% 0,25W
3550	4822 051 20332	3k3 5% 0,1W
3551	4822 051 20332	3k3 5% 0,1W
3552	4822 051 20104	100k 5% 0,1W
3553	4822 051 20159	15Ω 5% 0,1W
3554	4822 051 20823	82k 5% 0,1W
3555	4822 051 20223	22k 5% 0,1W
3556	4822 051 20223	22k 5% 0,1W
3557	4822 051 20392	3k9 5% 0,1W
3560▲	4822 052 10109	10Ω 5% 0,33W
3561▲	4822 052 10278	2Ω7 5% 0,33W
3562	4822 051 20563	56k 5% 0,1W
3563	4822 051 20224	220k 5% 0,1W
3564	4822 051 20101	100Ω 5% 0,1W
3565	4822 051 20101	100Ω 5% 0,1W
3566▲	4822 052 10478	4Ω7 5% 0,33W
3567	4822 051 20563	56k 5% 0,1W
3570	4822 050 11002	1k 1% 0,4W
3571	4822 051 20103	10k 5% 0,1W
3572	4822 051 20103	10k 5% 0,1W
3572▲	4822 051 20472	4k7 5% 0,1W
3573	4822 051 20103	10k 5% 0,1W
3575	4822 051 20104	100k 5% 0,1W
3582	4822 051 20103	10k 5% 0,1W
3582	4822 051 20222	2k2 5% 0,1W
3583	4822 051 20333	33k 5% 0,1W
3583	4822 051 20683	68k 5% 0,1W
3584	4822 051 20103	10k 5% 0,1W
3584	4822 051 20243	24k 5% 0,1W
3585	4822 051 20333	33k 5% 0,1W
3590	4822 051 10102	1k 2% 0,25W
3591	4822 051 20103	10k 5% 0,1W
3592	4822 051 20103	10k 5% 0,1W
3592▲	4822 051 20472	4k7 5% 0,1W
3593	4822 051 20103	10k 5% 0,1W
3596	4822 051 20104	100k 5% 0,1W
3999	4822 051 10279	27Ω 2% 0,25W
3999	4822 051 10339	33Ω 2% 0,25W
3999	4822 051 10479	47Ω 2% 0,25W
4xxx	4822 051 20008	0Ω 5% 0,1W

5525	4822 157 53473	1µH 10%
5526	4822 157 53473	1µH 10%
5530	4822 156 11157	Filter LC 5,85MHz
5530	4822 156 11158	Filetr LC 6,55MHz
5530	4822 157 71463	Filter LC 5,85MHz France
5540	4822 157 53634	5,6µH 10%
5541	4822 157 53634	5,6µH 10%
5542	4822 157 53634	5,6µH 10%
5550	4822 157 62552	2,2µH 20%

6525	4822 130 83396	OF4271
6530	4822 209 30911	OF4076
6540▲	4822 130 30621	1N4148

7525▲	5322 130 41982	BC848B
7526	4822 130 60887	BF840
7530▲	5322 130 41982	BC848B
7540	4822 209 30909	TDA8732/C1
7550	4822 209 32959	SAA7282AZP
7560▲	4822 209 83163	LM833N

Audio Feature Unit [Z]

Various

	4822 265 41451	9P male v 1,25
	4822 265 51385	25P male v 1,25
1051	4822 212 31842	AFU module
1765	4822 242 81969	Crystal 2,00MHz

2746	4822 124 41579	10µF 20% 50V
2755	4822 124 40242	1µF 20% 63V
2756	4822 122 33175	2,2nF 20% 50V
2757	5322 122 32268	470pF 10% 50V
2758	4822 126 13196	100nF 10% 25V
2759	4822 124 41643	100µF 20% 16V
2760▲	4822 124 40433	47µF 20% 25V
2765	4822 122 33575	220pF 5% 50V
2766	4822 122 33575	220pF 5% 50V
2767	4822 126 12944	47nF 10% 50V
2768	4822 126 12944	47nF 10% 50V
2769	4822 126 13196	100nF 10% 25V
2770	4822 124 41579	10µF 20% 50V
2771	5322 122 32268	470pF 10% 50V
2772	4822 122 33891	3,3nF 10% 63V
2773	4822 124 41579	10µF 20% 50V
2774	4822 122 32927	220nF 20% 50V
2775▲	5322 122 34123	1nF 10% 50V
2777	5322 122 32268	470pF 10% 50V
2778	4822 122 33175	2,2nF 20% 50V
2779	4822 124 41643	100µF 20% 16V
2780	4822 121 70592	5,6nF 5% 400V
2781▲	4822 124 40196	220µF 20% 16V
2782	5322 121 41797	47nF 5% 100V
2783	5322 121 42498	680nF 5% 63V
2784	4822 121 42408	220nF 5% 63V
2785	4822 121 42408	220nF 5% 63V
2786	4822 121 42408	220nF 5% 63V
2787▲	4822 124 40246	4,7µF 20% 63V
2788▲	4822 124 40246	4,7µF 20% 63V
2789	4822 121 42408	220nF 5% 63V
2790	4822 126 13196	100nF 10% 25V
2791	4822 121 51356	180nF 10% 63V
2792	4822 124 41579	10µF 20% 50V
2793	4822 124 42377	10µF 20% 16V
2794	4822 124 42377	10µF 20% 16V
2795	4822 126 13196	100nF 10% 25V
2796	4822 126 13196	100nF 10% 25V
2797	4822 126 13196	100nF 10% 25V
2798	4822 121 41856	22nF 5% 250V
2799	4822 121 41856	22nF 5% 250V
2800	4822 121 41717	100nF 5% 100V
2801	4822 121 41717	100nF 5% 100V
2802	5322 126 10733	680pF 5% 50V
2803	5322 121 41797	47nF 5% 100V
2804	4822 121 41717	100nF 5% 100V
2805	4822 121 41717	100nF 5% 100V
2806	5322 126 10733	680pF 5% 50V
2807	5322 121 41797	47nF 5% 100V
2808	4822 124 81083	10µF 20% 16V
2809	4822 124 42377	10µF 20% 16V
2810	4822 124 42377	10µF 20% 16V
2811	4822 124 42377	10µF 20% 16V
2812	4822 121 42408	220nF 5% 63V
2813	4822 122 32927	220nF 20% 50V
2814	4822 122 32927	220nF 20% 50V
2815	4822 124 41579	10µF 20% 50V
2816	4822 121 70591	4,7nF 5% 400V
2817	4822 124 81088	22µF 10% 16V
2818	5322 122 31865	1,5nF 10% 63V
2819	5322 122 31865	1,5nF 10% 63V
2820	5322 122 31865	1,5nF 10% 63V
2821	4822 122 33128	15nF 10% 63V
2822	4822 122 33128	15nF 10% 63V
2823▲	4822 122 33342	33nF 10% 63V
2824	4822 122 32646	5,6nF 10% 50V
2825	5322 122 32268	470pF 10% 50V
2826	5322 122 32268	470pF 10% 50V
2827	5322 122 31865	1,5nF 10% 63V
2828	5322 122 31865	1,5nF 10% 63V
2829▲	4822 122 33342	33nF 10% 63V
2830	4822 122 32646	5,6nF 10% 50V
2831	4822 124 40242	1µF 20% 63V
2832	4822 124 41643	100µF 20% 16V
2835	4822 121 51319	1µF 10% 63V
2836	4822 121 51319	1µF 10% 63V
2837	4822 122 33891	3,3nF 10% 63V
2838	4822 122 33891	3,3nF 10% 63V
2839▲	5322 122 34123	1nF 10% 50V
2840▲	5322 122 34123	1nF 10% 50V
2841▲	4822 122 33177	10nF 20% 50V
2842▲	4822 122 33177	10nF 20% 50V
2843▲	4822 122 33342	33nF 10% 63V
2844▲	4822 122 33342	33nF 10% 63V
2845	4822 126 13196	100nF 10% 25V
2846	4822 126 13196	100nF 10% 25V
2847	4822 124 40242	1µF 20% 63V
2848	4822 122 33891	3,3nF 10% 63V
2849	4822 122 33891	3,3nF 10% 63V
2850▲	5322 122 34123	1nF 10% 50V
2851▲	5322 122 34123	1nF 10% 50V
2852▲	4822 122 33177	10nF 20% 50V
2853▲	4822 122 33177	10nF 20% 50V
2854▲	4822 122 33342	33nF 10% 63V
2855▲	4822 122 33342	33nF 10% 63V
2856	4822 126 13196	100nF 10% 25V
2857	4822 126 13196	100nF 10% 25V
2858	4822 124 41579	10µF 20% 50V
2859	5322 122 32452	47pF 5% 63V
2860	4822 126 13196	100nF 10% 25V
2861	4822 124 41579	10µF 20% 50V
2862	5322 122 32452	47pF 5% 63V
2863▲	4822 122 33342	33nF 10% 63V
2864	4822 122 32646	5,6nF 10% 50V
2868▲	4822 122 33342	33nF 10% 63V
2869	4822 122 32646	5,6nF 10% 50V
2870	4822 124 40242	1µF 20% 63V
2871	4822 124 41643	100µF 20% 16V
2874	4822 122 33891	3,3nF 10% 63V
2875	4822 122 33891	3,3nF 10% 63V
2876▲	5322 122 34123	1nF 10% 50V
2877▲	5322 122 34123	1nF 10% 50V
2878▲	4822 122 33177	10nF 20% 50V
2879▲	4822 122 33177	10nF 20% 50V
2880▲	4822 122 33342	33nF 10% 63V
2881▲	4822 122 33342	33nF 10% 63V
2882	4822 126 13196	100nF 10% 25V
2883	4822 126 13196	100nF 10% 25V
2884	4822 124 40242	1µF 20% 63V
2885	4822 122 33891	3,3nF 10% 63V
2886	4822 122 33891	3,3nF 10% 63V
2887	4822 121 51319	1µF 10% 63V
2889▲	4822 122 33177	10nF 20% 50V
2890▲	4822 122 33177	10nF 20% 50V
2891▲	4822 122 33342	33nF 10% 63V
2892▲	4822 122 33342	33nF 10% 63V
2893	4822 126 13196	100nF 10% 25V
2894	4822 126 13196	100nF 10% 25V
2895	5322 122 31865	1,5nF 10% 63V
2896	5322 122 31865	1,5nF 10% 63V
2897	5322 122 31865	1,5nF 10% 63V
2898	4822 122 33175	2,2nF 20% 50V
2899	4822 122 33175	2,2nF 20% 50V

3746	4822 051 20103	10k 5% 0,1W
3747	4822 116 52175	100Ω 5% 0,5W
3748	4822 116 52175	100Ω 5% 0,5W
3754▲	4822 052 10278	2Ω7 5% 0,33W
3755	4822 051 20223	22k 5% 0,1W
3756	4822 051 20333	33k 5% 0,1W
3757	4822 051 20822	8k2 5% 0,1W
3758	4822 051 20209	20Ω 5% 0,1W
3760	4822 116 52228	680Ω 5% 0,5W
3761	4822 116 52228	680Ω 5% 0,5W
3765	4822 051 20105	1M 5% 0,1W
3768	4822 051 10102	1k 2% 0,25W
3769	4822 051 20209	20Ω 5% 0,1W
3770	4822 051 20153	15k 5% 0,1W
3771	4822 051 20183	18k 5% 0,1W
3772	4822 051 20153	15k 5% 0,1W
3773	4822 051 20682	6k8 5% 0,1W
3774	4822 051 10102	1k 2% 0,25W
3775	4822 051 20391	390Ω 5% 0,1W
3776	4822 051 20153	15k 5% 0,1W
3777	4822 051 20153	15k 5% 0,1W
3778	4822 051 20153	15k 5% 0,1W
3780	4822 117 10837	100k 1% 0,1W
3783	4822 051 20334	330k 5% 0,1W
3791	4822 051 20473	47k 5% 0,1W
3792	4822 051 20473	47k 5% 0,1W
3793	4822 051 20223	22k 5% 0,1W
3794	4822 051 20223	22k 5% 0,1W
3800	4822 051 20752	7k5 5% 0,1W
3801	4822 051 20153	15k 5% 0,1W
3802	4822 051 20473	47k 5% 0,1W
3804	4822 116 52299	7k5 5% 0,5W
3805	4822 051 20153	15k 5% 0,1W
3806	4822 051 20473	47k 5% 0,1W
3808	4822 053 20106	10M 5% 0,25W
3816	4822 051 20104	100k 5% 0,1W
3825	4822 050 11002	1k 1% 0,4W
3826	4822 050 11002	1k 1% 0,4W
3827	4822 116 52175	100Ω 5% 0,5W
3828	4822 116 52175	100Ω 5% 0,5W
3830	4822 116 52228	680Ω 5% 0,5W
3831	4822 116 52228	680Ω 5% 0,5W
3835	4822 051 20101	100Ω 5% 0,1W
3836	4822 051 20101	100Ω 5% 0,1W
3837	4822 051 20682	6k8 5% 0,1W
3839	4822 051 20682	6k8 5% 0,1W
3841	4822 051 20682	6k8 5% 0,1W
3843	4822 051 20682	6k8 5% 0,1W
3845	4822 051 20682	6k8 5% 0,1W
3848	4822 051 20682	6k8 5% 0,1W
3850	4822 051 20682	6k8 5% 0,1W
3852	4822 051 20682	6k8 5% 0,1W
3854	4822 051 20682	6k8 5% 0,1W
3856	4822 051 20682	6k8 5% 0,1W
3858▲	4822 051 20472	4k7 5% 0,1W
3859	4822 051 20103	10k 5% 0,1W
3860▲	4822 052 10828	8Ω2 5% 0,33W
3861▲	4822 051 20472	4k7 5% 0,1W
3862	4822 051 20103	10k 5% 0,1W
3865	4822 116 52175	100Ω 5% 0,5W
3866	4822 116 52175	100Ω 5% 0,5W
3867	4822 116 52175	100Ω 5% 0,5W
3868	4822 051 20681	680Ω 5% 0,1W
3869	4822 051 20681	680Ω 5% 0,1W
3870	4822 051 20681	680Ω 5% 0,1W
3871	4822 051 20681	680Ω 5% 0,1W
3872	4822 116 52175	100Ω 5% 0,5W
3873	4822 116 52175	100Ω 5% 0,5W
3874	4822 051 20682	6k8 5% 0,1W
3876	4822 051 20682	6k8 5% 0,1W
3878	4822 051 20682	6k8 5% 0,1W
3880	4822 051 20682	6k8 5% 0,1W
3882	4822 051 20682	6k8 5% 0,1W
3885	4822 051 20682	6k8 5% 0,1W
3889	4822 051 20682	6k8 5% 0,1W
3891	4822 051 20682	6k8 5% 0,1W
3893	4822 051 20682	6k8 5% 0,1W
3898	4822 051 20561	560Ω 5% 0,1W
3899	4822 051 20561	560Ω 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

5759	4822 158 10604	6,8 µH 10%

6750	4822 130 42488	BYD33D

7746	5322 209 10883	PCF8574P
7760	4822 209 90023	NJU9701D
7773▲	5322 130 41982	BC848B
7775	5322 130 41983	BC858B
7791▲	5322 130 41982	BC848B
7792▲	5322 130 41982	BC848B
7800	4822 209 32693	NJM2177
7820	4822 209 33293	TDA9860/V2
7840	4822 209 90028	TEA6360/V2
7860	4822 209 33293	TDA9860/V2
7862▲	4822 209 83163	LM833N
7867	5322 130 41983	BC858B
7880	4822 209 90028	TEA6360/V2

Spare parts list / Stükliste / Liste des pièces

Incredible-sound module [AY]

Various

	4822 265 41469	Strip 7P
1650	4822 212 31864	Incredible sound module

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2600	4822 126 13189	1µF 20%16V
2601	4822 122 33175	2,2nF 20% 50V
2602	5322 122 32268	470pF 10% 50V
2603▲	5322 122 34123	1nF 10% 50V
2604	4822 122 33175	2,2nF 20% 50V
2605	4822 126 10002	100nF 20% 25V
2606	4822 126 13189	1µF 20%16V
2607	4822 122 33175	2,2nF 20% 50V
2608	5322 122 32268	470pF 10% 50V
2609▲	5322 122 34123	1nF 10% 50V
2610	4822 122 33175	2,2nF 20% 50V
2611	4822 126 10002	100nF 20% 25V
2612	4822 126 10002	100nF 20% 25V
2613	4822 124 41643	100µF 20% 16V
2624	4822 126 13189	1µF 20%16V
2625	4822 126 13189	1µF 20%16V

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3600	4822 051 10682	6k8 2% 0,25W
3601▲	4822 051 10103	10k 2% 0,25W
3602	4822 051 20103	10k 5% 0,1W
3603	4822 051 20222	2k2 5% 0,1W
3604	4822 051 20122	1k2 5% 0,1W
3605	4822 051 20122	1k2 5% 0,1W
3606	4822 051 20103	10k 5% 0,1W
3607	4822 051 10102	1k 2% 0,25W
3608	4822 051 20103	10k 5% 0,1W
3609	4822 051 20101	100Ω 5% 0,1W
3610	4822 051 20103	10k 5% 0,1W
3611	4822 051 20391	390Ω 5% 0,1W
3612	4822 051 10682	6k8 2% 0,25W
3613▲	4822 051 10103	10k 2% 0,25W
3614	4822 051 20103	10k 5% 0,1W
3615	4822 051 20222	2k2 5% 0,1W
3616	4822 051 20122	1k2 5% 0,1W
3617	4822 051 20122	1k2 5% 0,1W
3618	4822 051 20103	10k 5% 0,1W
3619	4822 051 10102	1k 2% 0,25W
3620	4822 051 20103	10k 5% 0,1W
3621	4822 051 20101	100Ω 5% 0,1W
3622	4822 051 20103	10k 5% 0,1W
3623	4822 051 20391	390Ω 5% 0,1W
3625	4822 051 20103	10k 5% 0,1W
3626	4822 051 20103	10k 5% 0,1W
3627	4822 116 83864	10k 5% 0,5W
4xxx	4822 051 20008	0Ω 55 0,1W

7600	4822 209 30095	LM833D
7601	4822 209 30095	LM833D
7602	5322 209 14481	HEF4053BT

Subwoofer-filter [AK]

Various

	4822 265 31242	2P male v 2,5
	4822 267 31874	2P male v 2,5 black
1053	4822 212 31836	Subwoofer-filter GFL4

⊣⊢

2570	4822 124 41069	47µF 20% 63V
2571	4822 124 81086	100µF 20% 50V
2573	4822 124 41069	47µF 20% 63V

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3571	4822 113 80677	22Ω 10% 5W

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5570	4822 157 62199	Choke TS422

Combfilter panel [O]

Various

	4822 267 51432	12P female BTB
1335	4822 212 31855	Combfilter panel

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2000	4822 126 13196	100nF 10% 25V
2001	5322 122 31866	6,8nF 10% 63V
2006	4822 126 13196	100nF 10% 25V
2010	4822 126 13196	100nF 10% 25V
2011	5322 122 32452	47pF 5% 63V
2012▲	4822 122 33177	10nF 20% 50V
2013▲	4822 124 40433	47µF 20% 25V
2014	4822 122 32535	680pF 10% 63V
2015	4822 126 13196	100nF 10% 25V
2016	5322 122 31946	27pF 5% 63V
2017▲	5322 122 32654	22nF 10% 63V
2018▲	5322 122 32654	22nF 10% 63V
2019	4822 122 33216	270pF 5% 50V
2021	4822 124 41579	10µF 20% 50V
2023	4822 126 13196	100nF 10% 25V
2028	5322 122 32448	10pF 5% 50V
2030▲	5322 122 32654	22nF 10% 63V
2031	4822 126 13196	100nF 10% 25V
2032▲	4822 124 40433	47µF 20% 25V
2033	4822 126 13196	100nF 10% 25V
2034▲	4822 124 40433	47µF 20% 25V
2035	4822 126 13196	100nF 10% 25V
2036	5322 122 32531	100pF 5% 50V
2044	4822 126 13196	100nF 10% 25V
2050	4822 124 41579	10µF 20% 50V
2059	5322 122 32336	560pF 10% 100V
2060	4822 126 13196	100nF 10% 25V
2061	5322 122 32452	47pF 5% 63V
2062	5322 122 32452	47pF 5% 63V
2063	5322 122 32452	47pF 5% 63V
2064	5322 122 32452	47pF 5% 63V
2074	4822 124 41579	10µF 20% 50V
2075▲	5322 122 32654	22nF 10% 63V
2076▲	4822 124 40433	47µF 20% 25V
2077	4822 124 40756	1µF 20% 100V
2078	4822 126 13196	100nF 10% 25V
2079	4822 124 41579	10µF 20% 50V
2081	5322 122 32965	18pF 5% 50V
2082	4822 126 13196	100nF 10% 25V
2083	5322 122 32965	18pF 5% 50V
2090▲	4822 124 41525	100µF 20% 25V
2095	4822 126 13196	100nF 10% 25V

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3000	4822 051 20103	10k 5% 0,1W
3001	4822 051 20151	150Ω 5% 0,1W
3002	4822 051 20471	470Ω 5% 0,1W
3011	4822 051 10102	1k 2% 0,25W
3012	4822 051 10102	1k 2% 0,25W
3013	4822 051 20103	10k 5% 0,1W
3018	4822 051 10102	1k 2% 0,25W
3019	4822 051 10102	1k 2% 0,25W
3020	4822 051 20471	470Ω 5% 0,1W
3021	4822 051 10102	1k 2% 0,25W
3022	4822 051 20103	10k 5% 0,1W
3024	4822 051 20103	10k 5% 0,1W
3026	4822 051 20103	10k 5% 0,1W
3027	4822 051 20101	100Ω 5% 0,1W
3028	4822 051 20471	470Ω 5% 0,1W
3029	4822 051 20181	180k 5% 0,1W
3030▲	4822 051 20332	3k3 5% 0,1W
3031	4822 051 20183	18k 5% 0,1W
3032	4822 051 10102	1k 2% 0,25W
3033	4822 051 10102	1k 2% 0,25W
3034	4822 051 10102	1k 2% 0,25W
3035▲	4822 052 10108	1Ω 5% 0,33W
3036	4822 051 20101	100Ω 5% 0,1W
3040	4822 051 20183	18k 5% 0,1W
3041	4822 051 20183	18k 5% 0,1W
3042	4822 051 20122	1k2 5% 0,1W
3043	4822 051 20331	330Ω 5% 0,1W
3044	4822 051 20751	750Ω 5% 0,1W
3047	4822 051 10102	1k 2% 0,25W
3050	4822 051 20183	18k 5% 0,1W
3051	4822 051 20183	18k 5% 0,1W
3052	4822 051 20122	1k2 5% 0,1W
3053	4822 051 20331	330Ω 5% 0,1W
3054	4822 051 20751	750Ω 5% 0,1W
3057	4822 051 10102	1k 2% 0,25W
3065	4822 051 20103	10k 5% 0,1W
3071	4822 051 20124	120k 5% 0,1W
3078	4822 051 20471	470Ω 5% 0,1W
3079	4822 051 20101	100Ω 5% 0,1W
3080	4822 051 10102	1k 2% 0,25W
3081	4822 051 10102	1k 2% 0,25W
3082	4822 051 10102	1k 2% 0,25W
3084	4822 051 20471	470Ω 5% 0,1W
3085	4822 051 20221	220Ω 5% 0,1W
3086	4822 051 20331	330Ω 5% 0,1W
3087	4822 051 10102	1k 2% 0,25W
3088	4822 051 20101	100Ω 5% 0,1W
3089	4822 051 20101	100Ω 5% 0,1W
3090	4822 051 20479	47Ω 5% 0,1W
3091▲	4822 052 10108	1Ω 5% 0,33W
3092	4822 051 20101	100Ω 5% 0,1W
3099▲	4822 051 20472	4k7 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W

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5025	4822 157 51216	5,6µH 10%
5030	4822 157 51216	5,6µH 10%
5031	4822 157 51216	5,6µH 10%
5032	4822 157 51216	5,6µH 10%
5080	4822 154 10057	Filter LC 7,2MHz low-pass

7000	4822 209 52583	MC141625AFU1
7001	4822 209 30144	74HC4046AD
7003	4822 130 63732	MMUN2212
7008▲	5322 130 41982	BC848B
7009▲	5322 130 41982	BC848B
7010▲	5322 130 41982	BC848B
7011▲	5322 130 41982	BC848B
7013	4822 130 63732	MMUN2212
7020	5322 209 71589	74HC74D
7021	4822 130 63732	MMUN2212
7028	5322 130 42136	BC848C
7030	4822 130 63732	MMUN2212
7031▲	5322 130 41982	BC848B
7032	5322 130 41983	BC858B
7033	4822 130 63732	MMUN2212
7040▲	5322 130 41982	BC848B
7041	5322 130 41983	BC858B
7042▲	5322 130 41982	BC848B
7050▲	5322 130 41982	BC848B
7051	5322 130 41983	BC858B
7052▲	5322 130 41982	BC848B
7080▲	5322 130 41982	BC848B
7081▲	5322 130 41982	BC848B
7083▲	5322 130 41982	BC848B

VCI panel [W]

Various

	4822 265 41451	9 male v 1,25
	4822 267 51434	12P female BTB
1040	4822 212 31854	VCI panel scavem
1040	4822 212 31856	VCI panel non scavem

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2400	4822 124 41643	100µF 20% 16V
2401▲	5322 122 32654	22nF 10% 63V
2402▲	5322 122 32654	22nF 10% 63V
2410	4822 122 33575	220pF 5% 50V
2425	4822 124 41579	10µF 20% 50V
2435	4822 124 41579	10µF 20% 50V
2445	4822 124 41579	10µF 20% 50V
2577▲	5322 122 32654	22nF 10% 63V
2587▲	5322 122 32654	22nF 10% 63V

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3400▲	4822 052 10229	22Ω 5% 0,33W
3402	4822 116 52256	2k2 5% 0,5W
3410	4822 051 20473	47k 5% 0,1W
3411	4822 051 10822	8k2 2% 0,25W
3412	4822 051 20103	10k 5% 0,1W
3413	4822 051 20684	680k 5% 0,1W
3420	4822 051 10102	1k 2% 0,25W
3421	4822 051 20223	22k 5% 0,1W
3422	4822 051 10104	100k 2% 0,25W
3423	4822 051 20104	100k 5% 0,1W
3424	4822 051 20103	10k 5% 0,1W
3425	4822 051 20151	150Ω 5% 0,1W
3426	4822 051 20104	100k 5% 0,1W
3427	4822 051 20151	150Ω 5% 0,1W
3428	4822 051 20104	100k 5% 0,1W
3429	4822 051 20222	2k2 5% 0,1W
3430▲	4822 051 10103	10k 2% 0,25W
3431	4822 051 20221	220Ω 5% 0,1W
3432	4822 116 52234	100k 5% 0,5W
3433	4822 051 20104	100k 5% 0,1W
3434	4822 116 83864	10k 5% 0,5W
3435	4822 051 20151	150Ω 5% 0,1W
3436	4822 051 20104	100k 5% 0,1W
3437	4822 051 20151	150Ω 5% 0,1W
3438	4822 051 20104	100k 5% 0,1W
3439	4822 051 20222	2k2 5% 0,1W
3441	4822 051 20221	220Ω 5% 0,1W
3442	4822 116 52234	100k 5% 0,5W
3443	4822 051 20104	100k 5% 0,1W
3444	4822 116 83864	10k 5% 0,5W
3445	4822 051 20151	150Ω 5% 0,1W
3446	4822 051 20104	100k 5% 0,1W
3447	4822 051 20151	150Ω 5% 0,1W
3448	4822 051 20104	100k 5% 0,1W
3449	4822 051 20222	2k2 5% 0,1W
3450	4822 051 20471	470Ω 5% 0,1W
3451	4822 051 20471	470Ω 5% 0,1W
3452	4822 116 52186	22Ω 5% 0,5W
3460	4822 051 20471	470Ω 5% 0,1W
3461	4822 051 20471	470Ω 5% 0,1W
3462	4822 051 20229	22Ω 5% 0,1W
3470	4822 051 20471	470Ω 5% 0,1W
3471	4822 051 20471	470Ω 5% 0,1W
3472	4822 116 52186	22Ω 5% 0,5W
3531	4822 051 20221	220Ω 5% 0,1W
3575	4822 116 52232	910Ω 5% 0,5W
3576	4822 051 20302	3k 5% 0,1W
3577	4822 117 11139	1k5 1% 0,1W
3578	4822 051 20161	160Ω 5% 0,1W
3579	4822 051 20561	560Ω 5% 0,1W
3580	4822 051 20681	680Ω 5% 0,1W
3583	4822 051 20911	910Ω 5% 0,1W
3584	4822 051 20302	3k 5% 0,1W
3585	4822 117 11139	1k5 1% 0,1W
3586	4822 051 20161	160Ω 5% 0,1W
3587	4822 051 20561	560Ω 5% 0,1W
3588	4822 051 20681	680Ω 5% 0,1W
3591	4822 116 52232	910Ω 5% 0,5W
3592	4822 051 20302	3k 5% 0,1W
3593	4822 117 11139	1k5 1% 0,1W
3594	4822 051 20161	160Ω 5% 0,1W
3595	4822 051 20561	560Ω 5% 0,1W
3596	4822 051 20681	680Ω 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W
3999	4822 051 20339	33Ω 5% 0,1W
4xxx	4822 051 10008	0Ω 5% 0,25W

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5400	4822 157 51216	5,6µH 10%
5575	4822 320 40311	Delay line
5585	4822 320 40311	Delay line
5595	4822 320 40311	Delay line

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6400▲	4822 130 30621	1N4148
6402▲	4822 130 30621	1N4148

7400	4822 209 60177	LM339D
7410	5322 209 11303	HEF4021BT
7420	5322 130 41983	BC858B
7425▲	5322 130 41982	BC848B
7426▲	5322 130 41982	BC848B
7427	4822 130 60383	BF824
7435▲	5322 130 41982	BC848B
7436▲	5322 130 41982	BC848B
7437	4822 130 60383	BF824
7445▲	5322 130 41982	BC848B
7446▲	5322 130 41982	BC848B
7447	4822 130 60383	BF824
7450▲	5322 130 41982	BC848B
7460▲	5322 130 41982	BC848B
7470▲	5322 130 41982	BC848B
7578▲	5322 130 41982	BC848B
7579	5322 130 41983	BC858B
7588▲	5322 130 41982	BC848B
7589	5322 130 41983	BC858B
7598▲	5322 130 41982	BC848B
7599	5322 130 41983	BC858B

Teletext panel [AQ]

Various

	5322 255 40677	68P-PLCC-S-HC
	4822 265 51384	15P male v 1,25
1031	4822 212 31852	TXT panel

2430	4822 126 10002	100nF 20% 25V
2433	5322 122 32658	22pF 5% 50V
2434	4822 122 31772	47pF 2% 63V
2435	5322 122 32658	22pF 5% 50V
2436	5322 122 32658	22pF 5% 50V
2437	5322 122 32658	22pF 5% 50V
2438	5322 122 32452	47pF 5% 63V
2440	5322 122 32531	100pF 5% 50V
2441	5322 122 32658	22pF 5% 50V
2442	5322 122 32658	22pF 5% 50V
2443	4822 126 10002	100nF 20% 25V
2444	4822 126 10002	100nF 20% 25V
2445	4822 122 32482	22pF 2% 63V
2446▲	5322 122 34123	1nF 10% 50V
2447	5322 122 31866	6,8nF 10% 63V
2448	4822 126 10002	100nF 20% 25V
2449	4822 126 10002	100nF 20% 25V
2451	4822 126 10002	100nF 20% 25V
2452	4822 126 10002	100nF 20% 25V
2453	4822 126 10002	100nF 20% 25V
2454	4822 124 41643	100µF 20% 16V
2455	4822 124 41643	100µF 20% 16V
2459	4822 124 41643	100µF 20% 16V
2461	4822 126 10002	100nF 20% 25V
2462	4822 126 10002	100nF 20% 25V
2463▲	5322 122 34123	1nF 10% 50V
2464	4822 126 10002	100nF 20% 25V
2465	5322 122 32658	22pF 5% 50V
2466	4822 122 33575	220pF 5% 50V
2467	4822 126 10326	180pF 5% 63V
2468	4822 126 10002	100nF 20% 25V
2469	4822 126 10002	100nF 20% 25V
2470	4822 122 33575	220pF 5% 50V
2472	4822 126 10002	100nF 20% 25V

3148▲	4822 052 10279	27Ω 5% 0,33W
3149	4822 051 20474	470k 5% 0,1W
3151▲	4822 051 20472	4k7 5% 0,1W
3152	4822 051 20471	470Ω 5% 0,1W
3153	4822 051 20103	10k 5% 0,1W
3154	4822 051 20103	10k 5% 0,1W
3155▲	4822 051 20472	4k7 5% 0,1W
3156	4822 051 20223	22k 5% 0,1W
3451	4822 051 20273	27k 5% 0,1W
3454	4822 051 20221	220Ω 5% 0,1W
3455	4822 051 20151	150Ω 5% 0,1W
3457	4822 051 20151	150Ω 5% 0,1W
3461	4822 051 10102	1k 2% 0,25W
3462	4822 051 20272	2k7 5% 0,1W
3463	4822 051 20101	100Ω 5% 0,1W
3464	4822 051 20221	220Ω 5% 0,1W
3465	4822 051 20339	33Ω 5% 0,1W
3481	4822 051 20101	100Ω 5% 0,1W
3482	4822 051 20101	100Ω 5% 0,1W
3483▲	4822 051 20472	4k7 5% 0,1W
3484	4822 051 20101	100Ω 5% 0,1W
3488	4822 051 20101	100Ω 5% 0,1W
3489	4822 051 20101	100Ω 5% 0,1W
3490	4822 051 20101	100Ω 5% 0,1W
3491	4822 051 20101	100Ω 5% 0,1W
3493	4822 051 20101	100Ω 5% 0,1W
3495	4822 051 20101	100Ω 5% 0,1W
3497	4822 051 20151	150Ω 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W

5451	4822 157 53634	5,6µH 10%
5452	4822 157 53634	5,6µH 10%
5454	4822 157 53634	5,6µH 10%
5455	4822 157 51216	5,6µH 10%
5460	4822 157 71464	Coil trimm.

6001	5322 130 80119	BBY40
6002▲	4822 130 30621	1N4148

7049	4822 209 72042	MC78L05ACP
7050	4822 209 33465	74HCT4046AD
7055	4822 130 42131	BF550
7056▲	5322 130 41982	BC848B
7057▲	5322 130 41982	BC848B
7051	4822 209 90037	SAA5270WP/A
7490	4822 209 90027	HYB514400BJ-70

Service
Service
Service

GFL2.20E

95.01

Service Information

1. Introduction of the V1.2 software

During production in week 9514 the V1.2 software was introduced. This software prevents the spontaneous appearance of 'Greek' characters in teletext. This software is fully compatible with the previous version. The code number of the V.1.2 software is 4822 900 10584.

2. Repair tip

Following the repair of a GFL it is recommended that connector connections L11, S11 and L21-Hdef be checked. If these do not make a good connection a defect in the line transistor may occur.

3. Correction source selection circuit diagrams (I1,I2)

The diagrams of the source selection circuit given in service manual GFL2.20E AA are not correct. New diagrams of the source selection circuit are provided in this service information. These pages (23/24 and 25/26) may be replaced in the service manual GFL2.20E AA.

4. Introduction eco NICAM panel

A new NICAM has been introduced during production. This new NICAM panel is fully compatible with the old one. It is however necessary to change the option for 'NICAM type' from 'BG or I' to 'Eco NICAM'. This new NICAM module has been introduced in sets with a serial number beginning with AG02 and higher. The circuit diagram, print layout and the parts list are provided in this service information.

5. Introduction eco I/O panel

A new I/O panel has been introduced during production. This new I/O panel is electrically but not mechanically compatible with the old panel. If the old panel is replaced by a new panel the SSP cover will also require replacement. This new I/O panel has been introduced in sets with a serial number beginning with AG02 and higher. The situation is now as follows:

AG00-01:	I/O panel	4822 212 31858
	SSP cover	4822 432 93334
≥AG02:	I/O panel	4822 212 31948
	SSP cover	4822 432 93343

The print layout and parts list for this panel are provided in this service information. The diagram is given in service manual GFL2.20E AA.

6. Introduction eco DDP

A new geometry panel has been introduced during production. This new geometry panel is fully compatible with the old one and has been introduced in sets with a serial number beginning with AG03 and higher.
The geometry panel is recognizable by the colour of the print - the new panel is brown and the old panel is green. The code number of the new geometry panel is 4822 212 31926. The circuit diagram and parts list for this panel are provided in this service information. The print layout is given in service manual GFL2.20E AA.

7. New frontic IC on the featurebox-3-full

During production the frontic IC on the featurebox-3-full (IC7441) has been changed from a TDA8753N/C1 to a TDA8753AN/C1 (4822 209 90528). This change was introduced in week 9511.
Together with this IC a number of other components have also been changed, namely:

Changed

Position 3413 to 270Ω	4822 051 20271
Position 3414 to 5k6	4822 051 20562

Added

Position 4505 (jumper)	4822 051 20008

8. Introduction 28" 16:9 set

In week 9522 the 28" 16:9 set was introduced. With the introduction of this set a number of new panels were also introduced, namely:

a. LSP 28" 16:9
b. PTP 28" 16:9
c. TXT
d. Panaview

For all these panels the diagram, print layout and parts list given in service manual GFL2.20E AA may be used, but with the addition of the code numbers below:

a. **Large Signal Panel 28" 16:9 L1,L2]**

2409	4822 121 70581	1,5nF 5% 2kV
2421	4822 121 43397	680nF 5% 250V
2422	4822 121 43397	680nF 5% 250V
2423	4822 121 70281	510nF 5% 400V
3270	4822 116 80676	1Ω5 5% 0.5W
3271	4822 116 80676	1Ω5 5% 0.5W

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3272	4822 116 81039	1Ω8 5% 0.5W
3431	4822 050 27505	7M5Ω 1% 0.6W
3447	4822 116 52176	10Ω 5% 0.5W
3457	4822 116 52252	180k 5% 0.5W
5413	4822 157 71097	0,56µH
5420	4822 157 70871	Bridge coil 28" 16:9
5428	4822 157 50101	Linearity corr. 28" 16:9

b. **Picture tube panel 28" 16:9 [R]**

1030	4822 212 32159	PTP 28" 16:9
2286	4822 121 40483	10nF 10% 400V

c. **Teletext panel [AQ]**

1031	4822 212 32166	TXT-VT3/M3 panel
7051	4822 209 90323	SAA5270WP/B/M3

d. **Panaview panel [AB]**

The parts list for the Panaview panel is provided in this service information. The diagram and the print layout are given in service manual FL2.20E AA.

9. Introduction GFL2.20 H AA

In week 9521 the 28" 16:9 for the Hong Kong region was introduced. With the introduction of this set a number of new panels were also introduced, namely:

a. LSP 28" 16:9 HK
b. SSP 28" 16:9 HK
c. TXT HK
d. ELPS global
e. Connector panel
f. Multi voltage panel
g. Global I/O panel
h. Global sound decoder

For all these panels the diagram, print layout and parts list given in service manual GFL2.20E AA may be used, but with the addition of the code numbers below:

a. **Large Signal Panel 28" 16:9 HK [L1,L2]**

2105	4822 121 70657	680nF 5% 400V
2106	4822 121 70657	680nF 5% 400V
2120	4822 126 11157	470pF 10% 500V
2124	4822 126 12644	100pF 20% 400V
2125	4822 122 40602	1nF 20% 400V
2140	4822 126 11157	470pF 10% 500V
2142	4822 124 40246	47µF 20% 50V
2143	4822 124 40246	47µF 20% 50V
3122	4822 116 52256	2k2 5% 0.5W
3140	4822 050 11002	1k 1% 0.4W
3141	4822 116 52176	10Ω 5% 0.5W
3142	4822 116 52243	1k5 5% 0.5W
5140	4822 156 20915	33µH 10%
6138	4822 130 42488	BYD33D
6139	4822 130 30621	1N4148
6140	4822 130 34278	BZX79-C6V8
7138	4822 130 41715	BC328-40

b. **Small Signal Panel [Sa,Sb]**

1300	4822 210 10654	FV916MG/PH
3210	4822 051 20221	220Ω 5% 0.1W
3211	4822 051 10102	1k 2% 0.25W
3223	4822 051 10102	1k 2% 0.25W
3240	4822 050 11002	1k 1% 0.4W
3306	4822 051 20103	10k 5% 0.1W
3307	4822 051 20472	4k7 5% 0.1W
3308	4822 051 20122	1k2 5% 0.1W
3469	4822 051 20391	390Ω 5% 0.1W
3471	4822 051 20391	390Ω 5% 0.1W
3525	4822 051 20103	10k 5% 0.1W
6527	4822 130 80446	LL4148
7213	5322 209 11306	HEF4094BT
7306	5322 130 41982	BC848B

c. **TXT-HK [AQ]**

1031	4822 212 32185	TXT-HK
7051	4822 209 90361	SAA5270WP/A/M2E

d. **Eco Low Power Standby global [AU]**

1080	4822 212 32182	ELPS global
	4822 265 20722	2P red 7A
2146	4822 122 30045	27pF 2% 100V
2148	4822 121 70285	470nF 10% 250V
3145	4822 050 22201	220Ω 1% 0.6W
3147	4822 116 40247	PTC/PTC
5144	4822 212 32096	Mains filter CU28D3

e. **Connector panel [H]**

	4822 267 41217	Headph.+cinch+SVHS
6240	4822 130 82346	LLZ-C27
6241	4822 130 82346	LLZ-C27
6244	4822 130 82346	LLZ-C27
6245	4822 130 82346	LLZ-C27

f. **Multi voltage panel [M]**

The parts list for the Multi voltage panel is provided in this service information. The diagram and print layout are given in service manual GFL2.20E AA.

g. **Global I/O panel [I]**

The parts list for the Global I/O panel is provided in this service information. The diagram and print layout are given in service manual GFL2.20E AA.

h. **Global sound decoder [G]**

The parts list for the Global sound decoder is provided in this service information. The diagram and print layout are given in service manual GFL2.20E AA.

10. Introduction FL5 4:3 cabinets

In week 9512 the FL5 cabinet was introduced in production. These sets have been introduced with serial number AG03 and higher. With the introduction of this new cabinet a number of new panels have also been introduced, namely:

a. LSP 25"
b. PIP panel
c. ELPS 25"
d. A/I smartic panel
e. Feature box 3 smartic
f. Incredible sound
g. Mainswitch panel and keyboard panel

For all of these panels, except the Feature box and Incredible sound, the print layout and parts list can be used that us given in service manual GFL2.20E AA, but with the addition of the code numbers below:

a. **Large Signal Panel 25" [L1,L2]**

2409	4822 121 70595	1,2nF 5% 2kV
2433	4822 121 51528	470nF 5% 250V
2450	5322 121 42489	33nF 5% 250V
3263	4822 116 52215	220Ω 5% 0.5W
3264	4822 116 52215	220Ω 5% 0.5W
3431	4822 050 27505	7M5Ω 1% 0.6W
5413	4822 157 71097	0,56µH
5421	4822 157 7135	Bridge coil
6263	5322 130 32296	BZV85-C10

b. **PIP panel [P]**

1340	4822 212 31931	PIP panel

c. **Eco Low Power Standby [AU]**

1080	4822 212 31933	ELPS 25"

d. **A/I smartic panel [AR]**
The parts list for the A/I smartic panel is provided in this service information. The diagram and print layout are given in service manual GFL2.20E AA.

e. **Feature box 3 smartic [F]**
A new diagram and print layout for the Feature box is provided in this service information. For the parts list the parts list in service manual GFL2.20E AA can be used with the following additions:

1345	4822 212 31927	Feature box 3 smartic
	4822 532 21513	Spacer
1485	4822 242 82001	Crystal 12MHz
2381	5322 122 32268	470pF 10% 50V
3381	4822 051 20751	750Ω 5% 0.1W
3413	4822 051 20271	270Ω 5% 0.1W
3414	4822 051 20562	5k6 5% 0.1W
4505	4822 051 20008	jumper
5381	4822 157 52333	100µH 10%
7440	4822 209 90528	TDA8753AN/C1
7505	4822 209 90335	P83C654FFA/542 V1.1

f. **Incredible sound panel [AY]**
A new diagram, print layout and parts list for the Incredible sound panel is provided in this service information.

g. **Mainswitch panel and keyboard panel**
The parts list for the mainswitch and keyboard panel is provided in this service information. The diagram and print layout are given in service manual GFL2.20E AA.

For the 25" picture tube several amendments have also been made to the electrical adjustments. The following paragraphs have been changed:

5.1 Picture tube adjustments

White Drive
Turn off DNR and 'Contrast Plus' before adjusting. Use the internal test patter (a white picture). Adjust the white level for the three settings 'WARM', 'NORMAL' and 'COOL'.Start in the 'NORMAL' position and take the standard value for green as a basis (value 26) and then adjust red and blue.

The factory settings for the colour temperatures are:

Tint	Temp K	X	Y
Warm	7200	303	314
Normal	8700 9500	289 284	299 292
Cool	10200 12000	280 272	287 278

	Europe	Hong kong
Warm	7200K	7200K
Normal	8700K	9500K
Cool	10200K	12000K

In case no colour analyzer is available the following values for 'White Drive' can be maintained:

25"	Cool	Normal	Warm
R	31	32	36
G	27	27	26
B	25	21	16

29"	Cool	Normal	Warm
R	25	26	28
G	26	26	25
B	18	16	13

Cut-off
Before adjusting turn off DNR and 'Contrast Plus', set brightness at step 37 (Brightness:) and the contrast setting to maximum. Use the internal test pattern (a black picture). Use a Minolta CA-100 colour analyzer and adjust the light output for the settings 'Cool', 'Normal' and 'White' to 3NIT with the colour temperatures given below:

	Europe	Hong kong
Warm	7200K	7200K
Normal	8700K	9500K
Cool	10200K	12000K

In case no colour analyzer is available the following values for 'Cut-off' can be maintained:

25"	Cool	Normal	Warm
R	30	32	29
G	27	27	19
B	37	30	15

29"	Cool	Normal	Warm
R	23	24	29
G	20	20	20
B	27	20	14

Soft Clipper
Use a black picture with a small white square in the middle as a test pattern. Set contrast to maximum. Adjust 'White Peak Limiter' temporarily to 63. Using a colour analyzer measure in the middle of the white square and adjust the light output with the aid of 'Soft Clipper' as follows:

25" SF	: 800 NIT (Smartic)
29" SF	: 600 NIT (Smartic)
32"	: 320 NIT
28" WS	: 680 NIT
29" SF	: 520 NIT (Compact Dolby)

In case no colour analyzer is available the following values for 'Soft Clipper' can be maintained:

25" SF	: 'Soft Clipper' = 53
29" SF	: 'Soft Clipper' = 49

Peak White Limiter
Use a black picture with a small white square in the middle as a test pattern. Set contrast to maximum. Adjust 'Soft Clipper' temporarily to 63. Using a colour analyzer measure in the middle of the white square and adjust the light output with the aid of 'Peak White Limiter' as follows:

25" SF	: 700 NIT (Smartic)
29" SF	: 500 NIT (Smartic)
32"	: 320 NIT
28" WS	: 780 NIT
29" SF	: 520 NIT (Compact Dolby)

In case no colour analyzer is available the following values for 'Peak White Limiter' can be maintained:

25" SF	: 'Soft Clipper' = 23
29" SF	: 'Soft Clipper' = 22

5.2 Small signal adjustments

Stereo channel separation
In the text concerning this adjustment left and right should be reversed. The correct text is then as follows:

Feed in an aerial signal with a PAL BG signal and tune the set. Select sound mode STEREO and modulate the right channel with a 1kHz sign and the left channel with no signal. Switch off the right loudspeaker or turn the audio balance fully to the left. Adjust 'Stereo Channel Separation' to minimum sound reproduction from the left loudspeaker.

5.4 Options

With the introduction of the FL5 styling the options have also been expanded. A new overview of the options and selections follows below (see table):

8.14 New protection circuit diagram (Fig. 8.4)

8.15 Position of the DST in sets with an FL5 cabinet

In the sets with an FL5 cabinet the position of the IR LED is different than that in sets with an FL4 cabinet. In the FL5 cabinet the IR LED is located on the opposite side of the IR receiver in comparison to FL4 cabinets. The position of the DST in the FL5 cabinets is illustrated in figure: 1.

8.16 New error search circuit diagrams

The error search circuit diagrams on pages 47 and 48 have been corrected. The new diagrams have been provided in this service information.

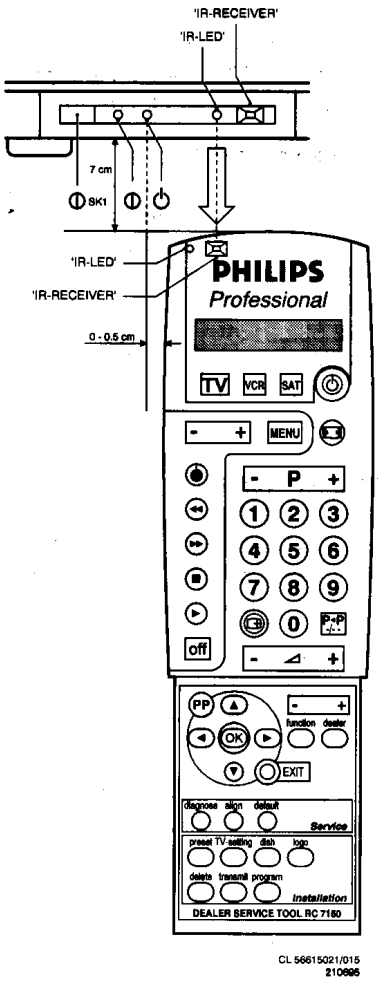


Fig. 1

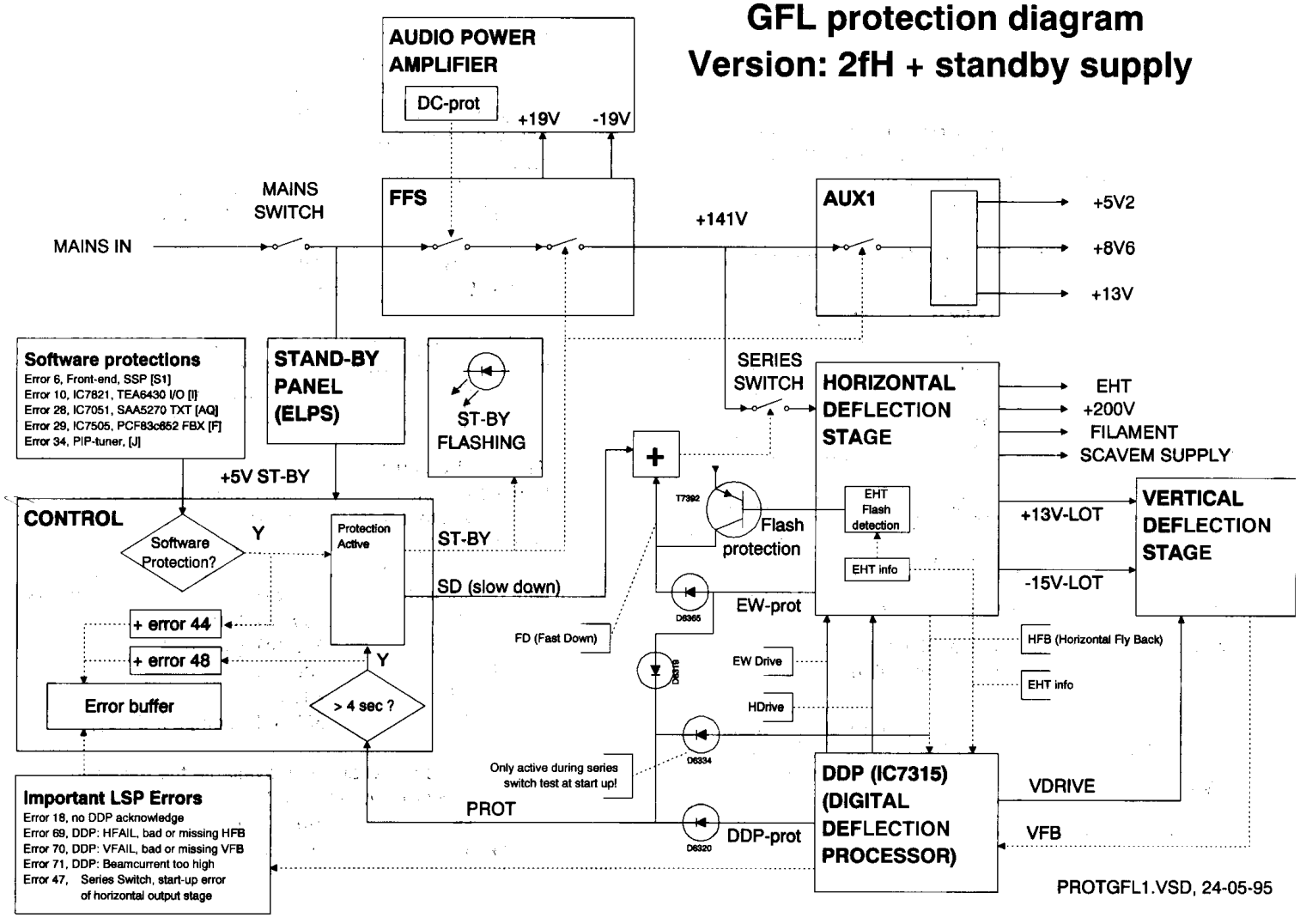
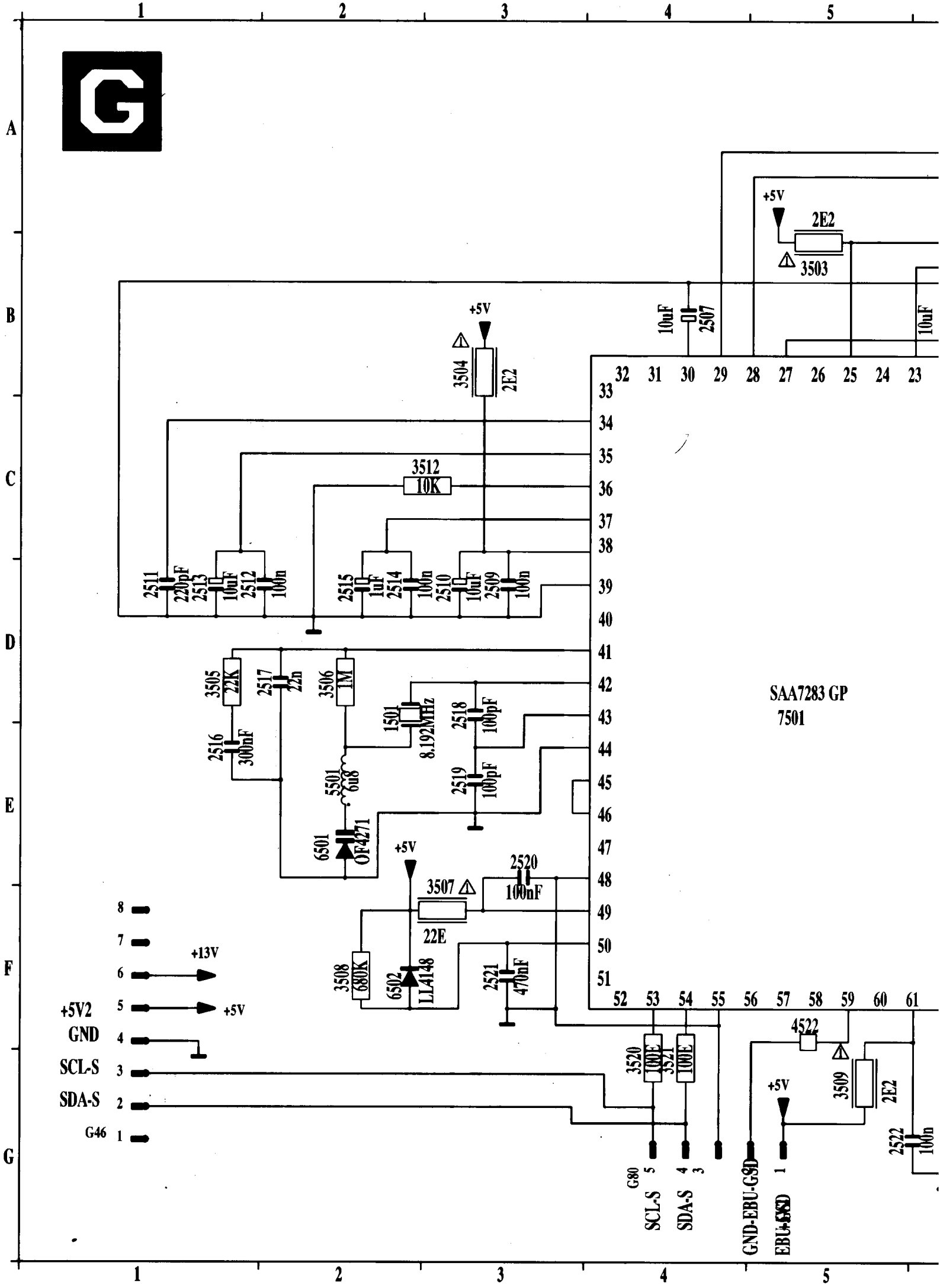
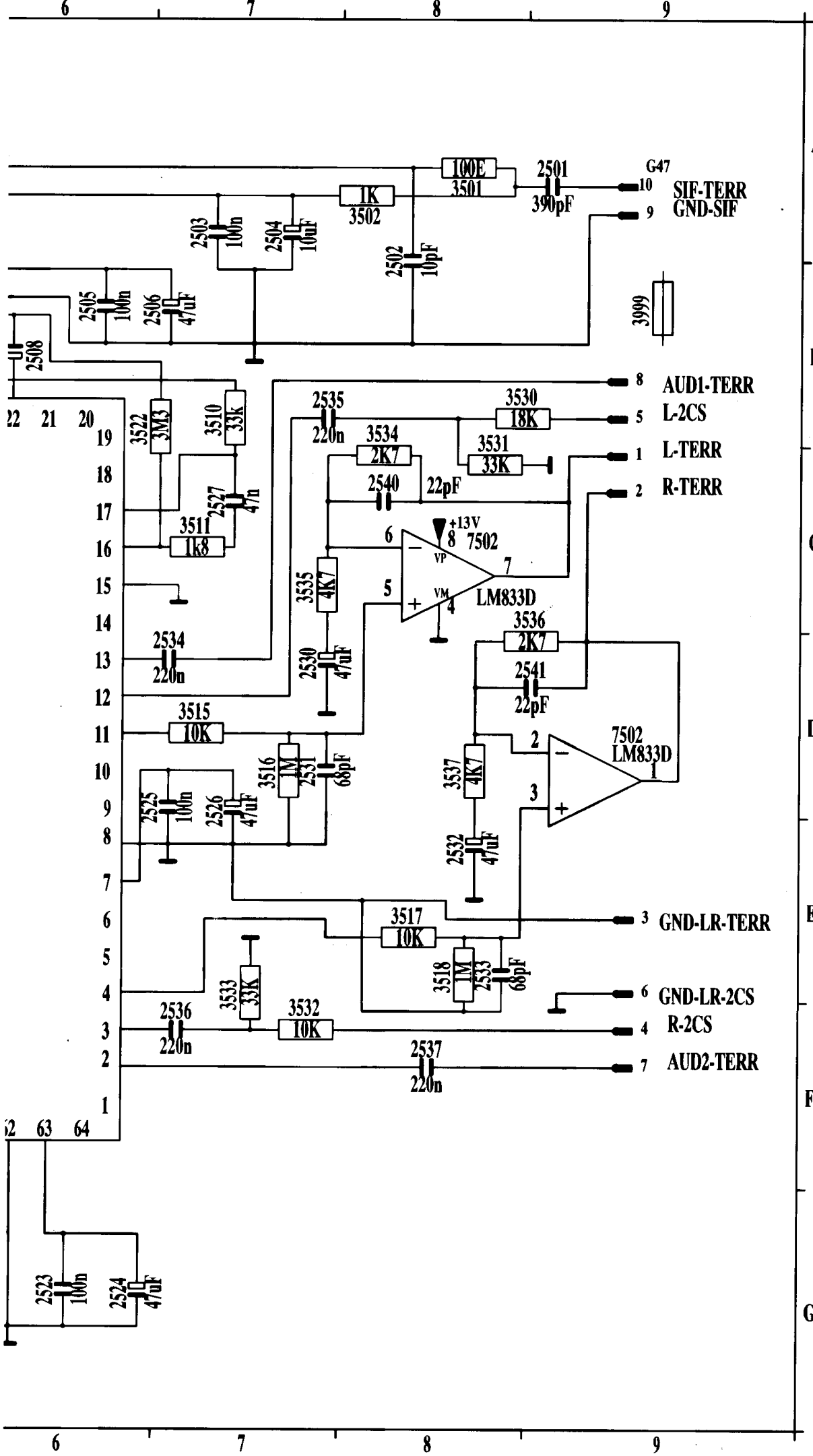


Fig. 8.4

TV Systems	Tuner Type	FQ916(D)MF FQ916MR FV916MG FQ916MD FQ936D FS988 Tuner China FQ944D	Select tuner type (type number is on the tuner)
Stereo Decoder	Nicam Type	Not Available BG or I BG and I Eco Nicam	No Nicam Nicam with 2 IC's and 1 input filter Nicam with 2 IC's and 2 input filters Nicam with 1 IC
	2 CS	Yes No	TDA9840 present on SSP TDA9840 not present on SSP
	Global	Yes No	Global sound decoder present Global sound decoder not present
Satelite	Sat. Mod. Available	Yes No	Satellite module present Satellite module not present
	Pulse Magnetic	Yes No	Polarizer panel present Polarizer panel not present
PIP	PIP Available	Yes No	PIP module present PIP module not present
	PIP Version	Euro Latam Japan	European PIP module South American PIP module (reserved) Japanese PIP module (reserved)
	PIP Tuner Type	Not Available Euro Latam Japan	no PIP tuner European PIP tuner South American PIP tuner (reserved) Japanese PIP tuner (reserved)
	PIP Processor	PIP1 PIP2	PIP with TDA4650 (no longer used) PIP with TDA8310
	Triple PIP	Yes No	(reserved)
	Forced Colour	Yes No	For PIP 1 yes For PIP 2 yes, if PCF8574 is present
	Multi PIP	Yes No	
Teletext	TXT	mem-128 mem-512 mem-1M	128 kB teletext memory 512 kB teletext memory (1x514256) 1 MB teletext memory (2x514256)
Communication	D2B	Yes No	D2B connector present D2B connector not present
	ESI	Yes No	reserved
	EACAM	Yes No	reserved
	Project 50	Yes No	reserved
Video Repro	Frame	Digital Scan 100/120 Hz 50/60 Hz	Feature box present Eco feature box present No feature box present
	Combfilter	Not Present SAA4961 MC 141625	No Comb filter present Comb filter with SAA4961 Comb filter with MC 141625
	Scavem	No Yes	SCAVEM without TDA8444 SCAVEM with TDA8444
	Smartic	Yes No	Dynamic contrast present No dynamic contrast present
Source Selection	SS Type	Euro AV1 Euro AV2 Euro AV3 Cinch AV1	Fully populated double-sided EURO I/O panel (EURO) Semi populated double-sided EURO I/O panel (ECO) Single-sided EURO I/O panel CINCH I/O panel
	Euro AV3	None Normal	No 3rd EURO connector (only with EURO I/O) 3rd EURO connector present
	Euro AV4	None Normal	No 4th EURO connector (only with EURO I/O) 4th EURO connector present
	Euro AV	No Yes	No EURO connector (only with CINCH I/O) EURO connector present
CRT Type	4:3 16:9		4:3 picture tube 16:9 picture tube
Audio Repro	Basic Equalizer Eq. + Dolby		TDA9860 present on SSP AFU panel without Dolby AFU panel with Dolby
Digital Output	No Yes		no digital output present digital output present (NICAM also present)


+5V
2E2
3503
10uF
2507
3504
3512
10K
2511
220pF
2513
10uF
2512
100n
2515
1uF
2514
100n
2510
10uF
2509
100n
3505
22K
2517
22n
3506
1M
1501
8.192MHz
2518
100pF
2516
300nF
5501
6u8
2519
100pF
6501
OF4271
2520
100nF
3507
22E
3508
680K
6502
LL4148
2521
470nF
SAA7283 GP
7501
+13V
+5V2
+5V
GND
SCL-S
SDA-S
G46
3520
100E
3521
100E
4522
3509
2E2
2522
100n
G80
SCL-S
SDA-S
GND-EBU-GND
EBU-DATA


100E
3501
2501
390pF
1K
3502
2503
100n
2504
10uF
2502
10pF
2505
100n
2506
47uF
2508
3999
SIF-TERR
GND-SIF
AUD1-TERR
L-2CS
L-TERR
R-TERR
3522
3M3
3510
33K
2535
220n
3530
18K
3534
2K7
3531
33K
2540
22pF
2527
47n
3511
1k8
+13V
7502
LM833D
3535
4K7
2534
220n
2530
47uF
3536
2K7
2541
22pF
3515
10K
3516
1M
2531
68pF
2525
100n
2526
47uF
3537
4K7
2532
47uF
7502
LM833D
GND-LR-TERR
3517
10K
3518
1M
2533
68pF
GND-LR-2CS
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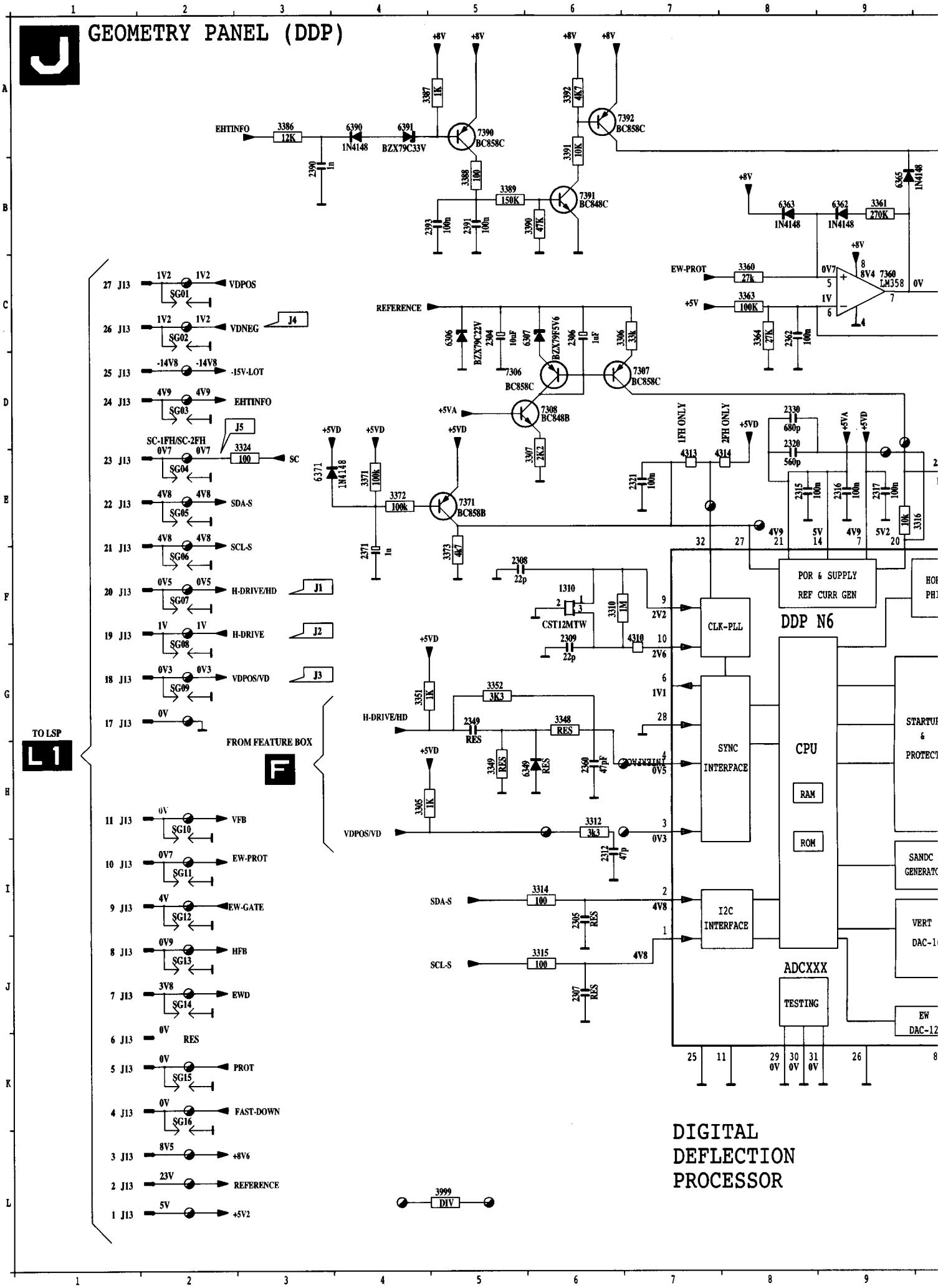
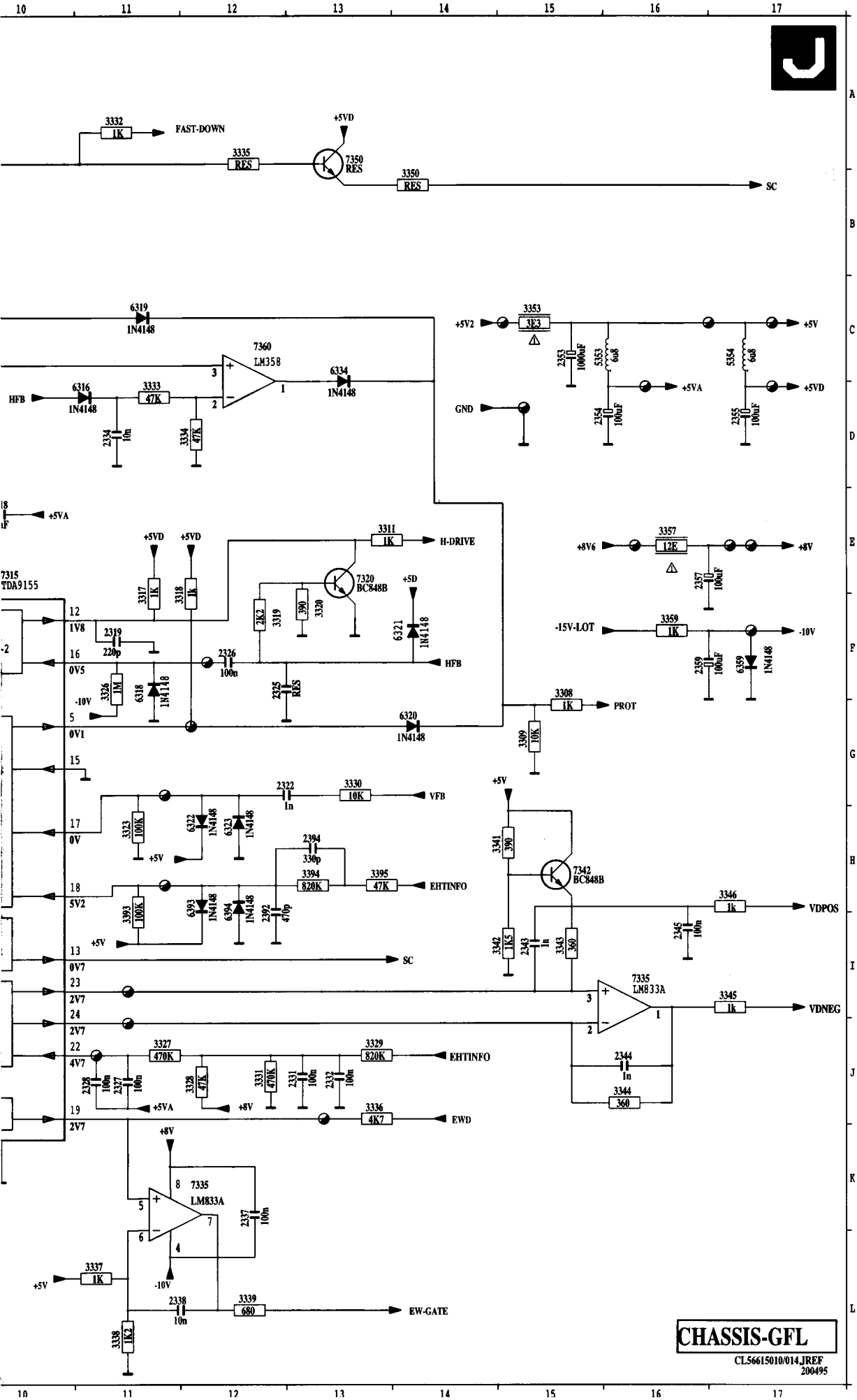
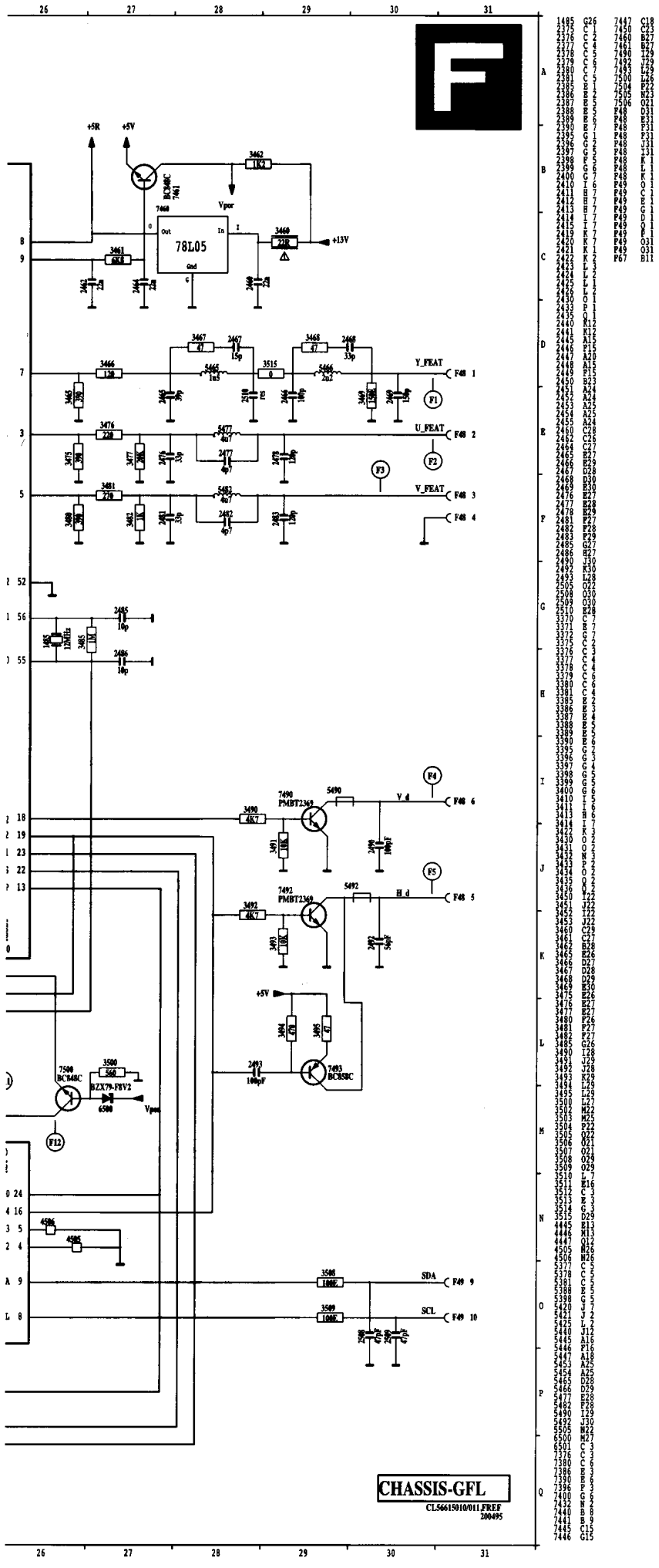
220n
AUD2-TERR
2523
100n
2524
47uF

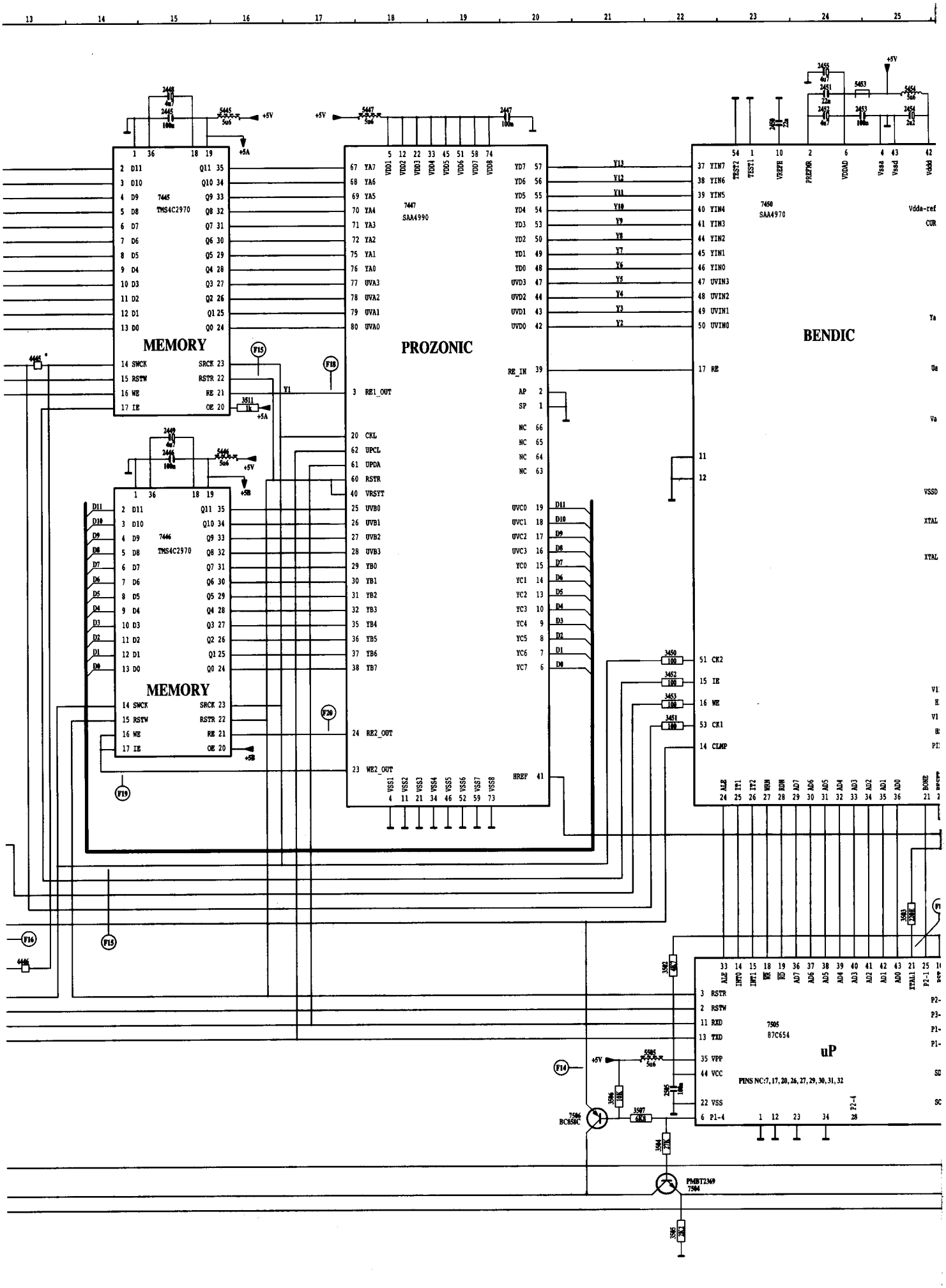

GEOMETRY PANEL (DDP)
J
TO LSP
L1
FROM FEATURE BOX
F
27 J13 VDPOS
26 J13 VDNEG
25 J13 -15V-LOT
24 J13 EHTINFO
23 J13 SC
22 J13 SDA-S
21 J13 SCL-S
20 J13 H-DRIVE/HD
19 J13 H-DRIVE
18 J13 VDPOS/VD
17 J13
11 J13 VFB
10 J13 EW-PROT
9 J13 EW-GATE
8 J13 HFB
7 J13 EWD
6 J13 RES
5 J13 PROT
4 J13 FAST-DOWN
3 J13 +8V6
2 J13 REFERENCE
1 J13 +5V2
EHTINFO
REFERENCE
EW-PROT
SDA-S
SCL-S
H-DRIVE/HD
VDPOS/VD
DDP N6
POR & SUPPLY
REF CURR GEN
CLK-PLL
SYNC
INTERFACE
CPU
RAM
ROM
I2C
INTERFACE
ADCXXX
TESTING
DIGITAL
DEFLECTION
PROCESSOR



1310	F 6	7335	K12		
2304	C 5	7342	H15		
2305	I 6	7350	A13		
2306	C 6	7360	C12		
2307	J 6	7360	C 9		
2308	F 5	7371	E 5		
2309	F 6	7390	A 5		
2312	I 6	7391	B 6		
2315	E 8	7392	A 6		
2316	E 9	J13	L 1		
2317	E 9	J13	L 1		
2318	E10	J13	L 1		
2319	F11	J13	K 1		
2320	D 8	J13	K 1		
2321	E 7	J13	K 1		
2322	G13	J13	J 1		
2325	F12	J13	J 1		
2326	F12	J13	I 1		
2327	J11	J13	I 1		
2328	J11	J13	H 1		
2330	D 8	J13	G 1		
2331	J13	J13	G 1		
2332	J13	J13	F 1		
2334	D11	J13	F 1		
2337	K12	J13	F 1		
2338	L11	J13	E 1		
2343	I15	J13	E 1		
2344	J16	J13	D 1		
2345	I16	J13	D 1		
2349	G 5	J13	C 1		
2353	C15	J13	C 1		
2354	D15	SG01	C 2		
2355	D17	SG02	C 2		
2357	E16	SG03	D 2		
2359	F16	SG04	E 2		
2360	H 6	SG05	E 2		
2362	C 8	SG06	F 2		
2371	F 4	SG07	F 2		
2390	B 3	SG08	G 2		
2391	B 5	SG09	G 2		
2392	H12	SG10	H 2		
2393	B 5	SG11	I 2		
2394	H13	SG12	I 2		
3305	H 4	SG13	J 2		
3306	C 7	SG14	J 2		
3307	E 6	SG15	K 2		
3308	F15	SG16	K 2		
3309	G15				
3310	F 6				
3311	E13				
3312	H 6				
3314	I 6				
3315	J 6				
3316	E10				
3317	E11				
3318	E12				
3319	F12				
3320	F13				
3323	H11				
3324	E 3				
3326	F11				
3327	J11				
3328	J12				
3329	G13				
3330	J12				
3331	A11				
3333	D11				
3334	D12				
3335	A12				
3336	J13				
3337	L11				
3338	L11				
3339	L12				
3341	H15				
3342	I15				
3343	I15				
3344	J16				
3345	I17				
3346	H17				
3348	G 6				
3349	H 5				
3350	B14				
3351	G 4				
3352	G 5				
3353	C15				
3357	E16				
3359	F16				
3360	C 8				
3361	B 9				
3363	C 8				
3364	C 8				
3371	E 4				
3372	E 4				
3373	F 5				
3386	A 3				
3387	A 5				
3388	B 5				
3389	B 5				
3390	B 6				
3391	A 6				
3392	A 6				
3393	H11				
3394	H13				
3395	H13				
3999	L 5				
4310	F 7				
4313	E 7				
4314	E 8				
5353	C15				
5354	C17				
6306	C 5				
6307	C 5				
6316	D11				
6318	F11				
6319	C11				
6320	G14				
6321	F14				
6322	H12				
6323	H12				
6334	C13				
6349	H 6				
6359	F17				
6362	B 9				
6363	B 8				
6365	B 9				
6371	E 3				
6390	A 4				
6391	A 4				
6393	H12				
6394	H12				
7306	D 5				
7307	D 7				
7308	D 6				
7315	E10				
7320	E13				
7335	I16				

Feature box (100 Hz Digital Scan) panel /

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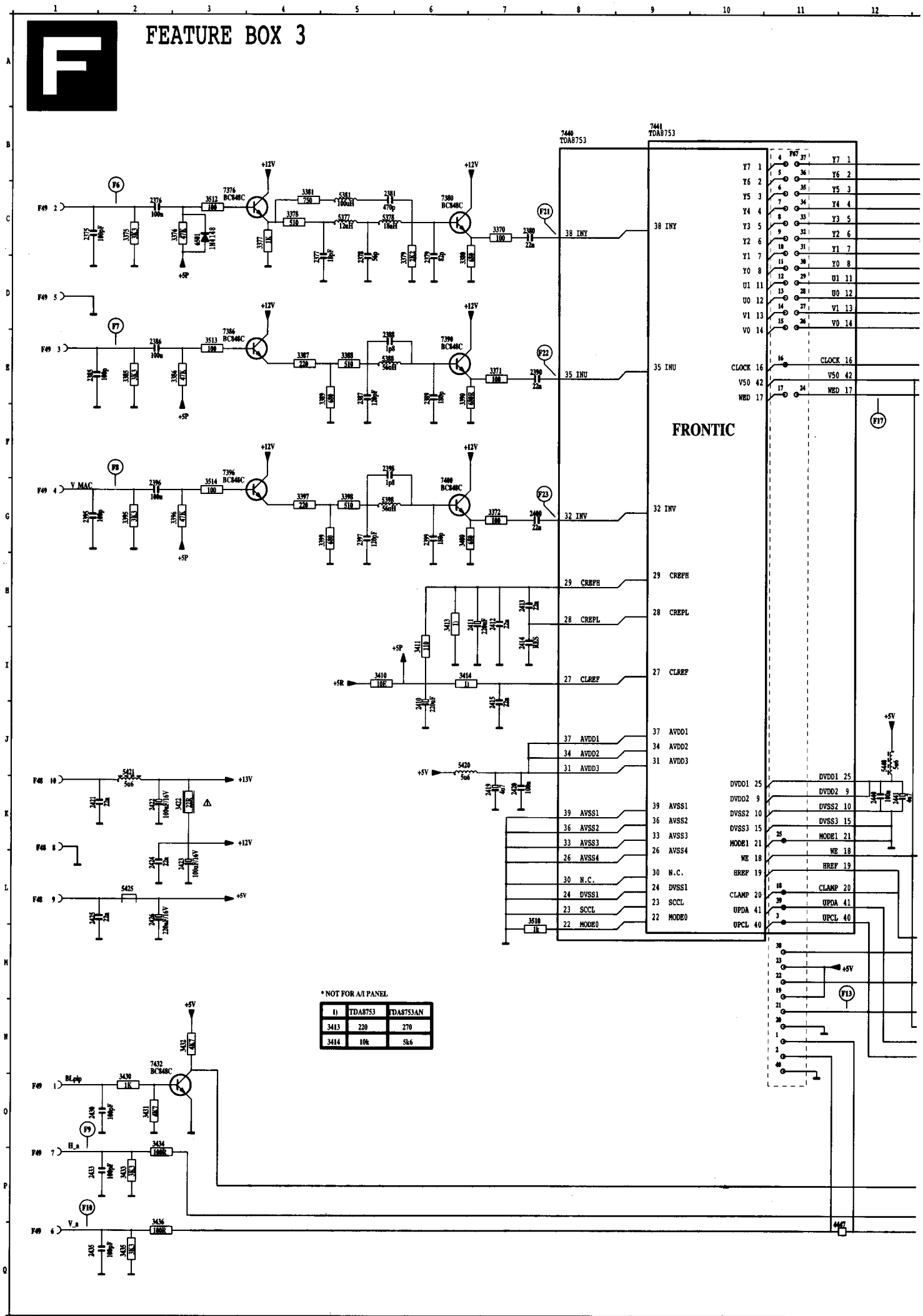
7445
TMS4C2970
MEMORY
7446
TMS4C2970
PROZONIC
7447
SAA4990
BENDIC
7450
SAA4970
uP
7505
87C654
PINS NC:7, 17, 20, 26, 27, 29, 30, 31, 32
PMBT2369
7504
BC858C
7506

Platine Feature box (100 Hz Digital Scan)



Multi voltage panel [M]

Various

	4822 492 42769	Spring
	4822 466 93029	Insulator
	4822 492 62076	Spring fix trans.
	4822 265 31243	5P female v 2,5
	4822 265 10296	2P male yellow
1060	4822 212 32211	Multi voltage panel 90-270V

2050	4822 121 70141	33nF 5% 400V
2052▲	4822 126 13451	2,2nF 10% 2kV
2053▲	4822 126 13451	2,2nF 10% 2kV
2054	4822 122 30045	27pF 2% 100V
2058	4822 124 80782	4,7µF 20% 400V
2059	4822 124 80782	4,7µF 20% 400V
2060▲	4822 124 41525	100µF 20% 25V
2061	5322 121 42386	100nF 5% 63V
2062	4822 121 41689	100nF 10% 250V
2063	4822 121 41689	100nF 10% 250V
2064	4822 121 51256	39nF 10% 50V
2065	4822 121 70141	33nF 5% 400V
2066▲	4822 124 81171	470U 20% 385V
2067▲	4822 124 81171	470U 20% 385V
2073	5322 121 42386	100nF 5% 63V
2078	5322 121 42386	100nF 5% 63V
2079	5322 121 42386	100nF 5% 63V
2080	5322 121 42386	100nF 5% 63V
2084	4822 124 41997	470µF 10V

3050▲	4822 050 22201	220Ω 1% 0,6W
3058	4822 053 11228	2Ω2 5% 2W
3061	4822 053 11478	4Ω7 5% 2W
3062	4822 113 60209	5Ω6 10% 7W
3063	4822 053 10683	68k 5% 1W
3064	4822 050 26803	68k 1% 0,6W
3065▲	4822 050 22201	220Ω 1% 0,6W
3066	4822 117 11771	220k 5%
3068	4822 053 12104	100k 5% 3W
3069	4822 117 11743	27k 5%
3070	4822 052 10821	820Ω 5% 0,33W
3071	4822 116 52296	6k8 5% 0,5W
3072▲	5322 113 41021	0,1Ω 10% 3,5W
3073	4822 116 52256	2k2 5% 0,5W
3074	4822 117 11769	3k3 5%
3076	4822 116 83864	10k 5% 0,5W
3077	4822 116 52234	100k 5% 0,5W
3078	4822 116 52234	100k 5% 0,5W
3079	4822 116 52257	22k 5% 0,5W
3080	4822 116 52234	100k 5% 0,5W
3081	4822 116 52263	2k7 5% 0,5W
3083	4822 116 52199	68Ω 5% 0,5W
3084	4822 050 26802	6k8 1% 0,6W
3085	4822 050 22204	220k 1% 0,6W
3086	4822 116 52271	33k 5% 0,5W

5051▲	4822 212 32096	Mains filter CU28D3
5065▲	4822 158 30224	Transf.assy CU20D3

6050	4822 130 80928	BZX79-C30
6051	4822 130 80928	BZX79-C30
6052▲	4822 130 82892	D5SBA60S
6058▲	4822 130 32896	BYD33M
6059▲	4822 130 32896	BYD33M
6062	4822 130 20277	S0824NH
6063	4822 130 34441	BZX79-C22
6064	4822 130 80928	BZX79-C30
6065	4822 130 80928	BZX79-C30
6066▲	4822 130 32896	BYD33M
6067▲	4822 130 32896	BYD33M
6068▲	4822 130 32896	BYD33M
6069	4822 130 20215	SF0R5J43
6070	4822 130 34278	BZX79-C6V8
6071	4822 130 34329	BZX79-C43
6078	4822 130 20295	OT293
6085	4822 130 34167	BZX79-F6V2

7060	4822 209 32584	STR80145A
7064	4822 130 41594	PH2369
7066	4822 130 63789	2SA1699
7079	4822 130 40937	BC548B
7085	4822 130 63789	2SA1699

Mains switch/RC5 panel [AW]

Various

	4822 276 13592	Mains switch
	4822 265 20711	2P male h
	4822 256 92284	LED FL5
	4822 265 41478	7P male h
1002▲	4822 212 31953	Mains switch/RC5 panel GFL5
1111	4822 212 30842	IR receiver TFMS5360

2125	4822 124 41545	220µF 20% 16V
2134	4822 124 41545	220µF 20% 16V

3101▲	4822 053 21475	4M7 5% 0,5W
3106▲	4822 116 21217	VDR 1mA/423V 800V
3114	4822 050 11002	1k 1% 0,4W
3115▲	4822 051 20472	4k7 5% 0,1W
3116	4822 050 11001	100Ω 1% 0,4W
3117	4822 051 20181	180Ω 5% 0,1W
3119	4822 051 20101	100Ω 5% 0,1W
3120	4822 051 20181	180Ω 5% 0,1W
3122	4822 116 52283	4k7 5% 0,5W
3123	4822 051 20101	100Ω 5% 0,1W
3125	4822 050 11009	10Ω 1% 0,4W
3126	4822 111 31021	12Ω 5% 0,25W
4xxx	4822 051 20008	0Ω 5% 0,1W

5134	4822 157 53906	47µH 10%
5151	4822 157 63821	400µH

6117	4822 130 83414	TLHR4405 (red)
6120	4822 130 80313	TLHG4400 (green)
6124	4822 130 81642	TSIP5201 (IR led)

7116	4822 130 62748	BC858
7119	4822 130 62748	BC858
7124	5322 130 44593	BC369

Keyboard/connector panel [AV]

Various

	4822 256 92285	Tact switch holder
	4822 265 41463	Headp + cinch + SVHS
	4822 276 13591	Tact switch vertical
	4822 290 40295	7P male
	4822 265 41451	9P female v 1,25
	4822 265 31248	3P female v 1,25
1001▲	4822 212 31952	Keyboard/connector panel GFL5

2004	5322 122 31863	330pF 5% 50V
2007	5322 122 31863	330pF 5% 50V
2010	5322 122 31863	330pF 5% 50V
2014	5322 122 31866	6,8nF 10% 63V
2018	5322 122 31866	6,8nF 10% 63V

3001	4822 116 52201	75Ω 5% 0,5W
3003	4822 116 52201	75Ω 5% 0,5W
3004	4822 116 52201	75Ω 5% 0,5W
3006	4822 051 20223	22k 5% 0,1W
3007	4822 051 20102	1k 5% 0,1W
3009	4822 051 20223	22k 5% 0,1W
3010	4822 051 20102	1k 5% 0,1W
3012	4822 051 20399	39Ω 5% 0,1W
3013	4822 051 20399	39Ω 5% 0,1W
3014	4822 051 20103	10k 5% 0,1W
3016	4822 051 20399	39Ω 5% 0,1W
3017	4822 051 20399	39Ω 5% 0,1W
3018	4822 051 20103	10k 5% 0,1W
3020	4822 051 20473	47k 5% 0,1W
3021	4822 051 20473	47k 5% 0,1W
3022	4822 051 20473	47k 5% 0,1W
3023	4822 051 20473	47k 5% 0,1W
3024	4822 051 20473	47k 5% 0,1W

6001	4822 130 81512	TZM-C6V2
6003	4822 130 81512	TZM-C6V2
6004	4822 130 81512	TZM-C6V2
6006	4822 130 81512	TZM-C6V2
6007	4822 130 81512	TZM-C6V2
6009	4822 130 81512	TZM-C6V2
6010	4822 130 81512	TZM-C6V2
6012	4822 130 81512	TZM-C6V2
6013	4822 130 81512	TZM-C6V2
6016	4822 130 81512	TZM-C6V2
6017	4822 130 81512	TZM-C6V2

Geometry panel (DDP) [J]

Various

1029	4822 212 31926	Geometry panel
	4822 265 51383	22P strip
1310	5322 242 73686	Crystal 12 MHz

2304▲	4822 124 41579	10µF 20% 50V
2306	4822 124 40242	1µF 20% 63V
2308	5322 122 32658	22pF 5% 50V
2309	5322 122 32658	22pF 5% 50V
2312	5322 122 32452	47pF 5% 63V
2315	4822 126 10002	100nF 20% 25V
2316	4822 126 10002	100nF 20% 25V
2317	4822 126 10002	100nF 20% 25V
2318	4822 124 40242	1µF 20% 63V
2319	4822 122 33575	220pF 5% 50V
2320	5322 116 80853	560pF 5% 63V
2321	4822 126 10002	100nF 20% 25V
2322▲	5322 122 34123	1nF 10% 50V
2326	4822 126 10002	100nF 20% 25V
2327	4822 126 10002	100nF 20% 25V
2328	4822 126 10002	100nF 20% 25V
2330	4822 122 32535	680pF 10% 63V
2331	4822 126 10002	100nF 20% 25V
2332	4822 126 10002	100nF 20% 25V
2334▲	4822 122 33177	10nF 20% 50V
2338▲	4822 122 33177	10nF 20% 50V
2345	4822 126 10002	100nF 20% 25V
2353	4822 124 40184	1000µF 20% 10V
2354	4822 124 41584	100µF 20% 10V
2355	4822 124 41584	100µF 20% 10V
2357	4822 124 41584	100µF 20% 10V
2359▲	4822 124 41525	100µF 20% 25V
2360	5322 122 32452	47pF 5% 63V
2362	4822 126 10002	100nF 20% 25V
2371	4822 124 40242	1µF 20% 63V
2390	5322 122 34099	470pF 10% 63V
2391	4822 126 10002	100nF 20% 25V
2392	5322 122 34099	470pF 10% 63V
2394	4822 126 13483	330pF 10% 500V

3305	4822 050 11002	1k 1% 0,4W
3306	4822 051 20333	33k 5% 0,1W
3307	4822 051 20222	2k2 5% 0,1W
3308	4822 050 11002	1k 1% 0,4W
3309	4822 051 20103	10k 5% 0,1W
3310	4822 051 20105	1M 5% 0,1W
3311	4822 050 11002	1k 1% 0,4W
3312	4822 116 52269	3k3 5% 0,5W
3314	4822 116 52175	100Ω 5% 0,5W
3315	4822 116 52175	100Ω 5% 0,5W
3316	4822 051 20103	10k 5% 0,1W
3317	4822 051 10102	1k 2% 0,25W
3318	4822 051 10102	1k 2% 0,25W
3319	4822 051 20222	2k2 5% 0,1W
3320	4822 051 20391	390Ω 5% 0,1W
3323	4822 051 20104	100k 5% 0,1W
3324	4822 051 20101	100Ω 5% 0,1W
3326	4822 116 52235	1M 5% 0,5W
3327	4822 116 52285	470k 5% 0,5W
3328	4822 051 20473	47k 5% 0,1W
3329	4822 116 52305	820k 5% 0,5W
3330	4822 116 83864	10k 5% 0,5W
3331	4822 051 20474	470k 5% 0,1W
3332	4822 116 52175	100Ω 5% 0,5W
3333	4822 051 20473	47k 5% 0,1W
3334	4822 051 20473	47k 5% 0,1W
3336	4822 116 52283	4k7 5% 0,5W
3337	4822 051 10102	1k 2% 0,25W
3338	4822 051 20122	1k2 5% 0,1W
3339	4822 116 52228	680Ω 5% 0,5W
3341	4822 051 20391	390Ω 5% 0,1W
3342	4822 117 11139	1k5 1% 0,1W
3343	4822 050 23601	360Ω 1% 0,6W
3344	4822 050 23601	360Ω 1% 0,6W
3345▲	4822 050 21002	1k 1% 0,6W
3346▲	4822 050 21002	1k 1% 0,6W
3351	4822 051 10102	1k 2% 0,25W
3352	4822 051 20332	3k3 5% 0,1W
3353▲	4822 052 10338	3Ω3 5% 0,33W
3357▲	4822 052 10129	12Ω 5% 0,33W
3359	4822 050 11002	1k 1% 0,4W
3360	4822 051 10102	1k 2% 0,25W
3361	4822 051 20274	270k 5% 0,1W
3363	4822 116 52234	100k 5% 0,5W
3364	4822 051 20273	27k 5% 0,1W
3371	4822 051 20104	100k 5% 0,1W
3372	4822 051 20104	100k 5% 0,1W
3373▲	4822 051 20472	4k7 5% 0,1W
3386	4822 116 52238	12k 5% 0,5W
3387	4822 051 10102	1k 2% 0,25W
3388	4822 051 20339	33Ω 5% 0,1W
3389	4822 051 20334	330k 5% 0,1W
3390	4822 051 20104	100k 5% 0,1W
3391	4822 051 20103	10k 5% 0,1W
3392▲	4822 051 20472	4k7 5% 0,1W
3393	4822 051 20104	100k 5% 0,1W
3394	4822 116 52305	820k 5% 0,5W
3395	4822 116 52284	47k 5% 0,5W
3999	4822 051 20279	27Ω 5% 0,1W
4xxx	4822 051 10008	0Ω 5% 0,25W

5353▲	4822 158 10604	6,8 µH 10%
5354▲	4822 158 10604	6,8 µH 10%

6306	4822 130 34441	BZX79-C22
6307▲	4822 130 34173	BZX79-F5V6
6316▲	4822 130 30621	1N4148
6318▲	4822 130 30621	1N4148
6319▲	4822 130 30621	1N4148
6320▲	4822 130 30621	1N4148
6321▲	4822 130 30621	1N4148
6322▲	4822 130 30621	1N4148
6323▲	4822 130 30621	1N4148
6334▲	4822 130 30621	1N4148
6359▲	4822 130 30621	1N4148
6362▲	4822 130 30621	1N4148
6363▲	4822 130 30621	1N4148
6365▲	4822 130 30621	1N4148
6371▲	4822 130 30621	1N4148
6390▲	4822 130 30621	1N4148
6391	4822 130 34145	BZX79-C39
6393▲	4822 130 30621	1N4148
6394▲	4822 130 30621	1N4148

7306	4822 130 42513	BC858C
7307	4822 130 42513	BC858C
7308▲	5322 130 41982	BC848B
7315	4822 209 90038	TDA9155/N6A
7320▲	5322 130 41982	BC848B
7335▲	4822 209 83163	LM833N
7342▲	5322 130 41982	BC848B
7360	5322 209 61487	LM358N
7371	5322 130 41983	BC858B
7390	4822 130 42513	BC858C
7391	5322 130 42136	BC848C
7392	4822 130 42513	BC858C

Panaview [AB]

Various

1028	4822 212 31946	Panaview panel
	4822 265 41468	12P strip

2095	4822 121 51563	560nF 5% 250V

2096	4822 121 51563	560nF 5% 250V
2097	4822 124 80341	1µF 20% 160V
2098	4822 124 80341	1µF 20% 160V
2799	4822 126 12784	22nF 20% 100V

3093	4822 116 52226	560Ω 5% 0,5W
3094	4822 116 52238	12k 5% 0,5W
3095	4822 116 52238	12k 5% 0,5W
3096	4822 116 83874	220k 5% 0,5W
3097	4822 116 52215	220Ω 5% 0,5W
3098	4822 116 52277	39k 5% 0,5W
3099	4822 116 80176	1Ω 5% 0,5W
3725	4822 116 52271	33k 5% 0,5W
3726	4822 116 52271	33k 5% 0,5W
3727	4822 052 10332	3k3 5% 0,33W
3728	4822 052 10332	3k3 5% 0,33W
3729	4822 052 10332	3k3 5% 0,33W
3998	4822 116 52226	560Ω 5% 0,5W

6090	4822 130 34441	BZX79-C22
6091▲	4822 130 32896	BYD33M
6092▲	4822 130 32896	BYD33M
6093▲	4822 130 61219	BZX79-C10

7090▲	4822 209 32126	SOC1012T
7100	4822 130 63364	IRFI640G
7092	4822 130 44257	BC547

ECO source selection panel [I1] [I2]

Various

	4822 267 60399	Socket scart blue
	4822 267 60398	Socket scart black
	4822 267 31877	Socket 2 x cinch
	4822 265 51385	25P male v 1,25
	4822 265 41451	9P male v 1,25
1032	4822 212 31948	ECO source selection panel
1805	4822 242 72527	Crystal 4,00 MHz

2800	4822 124 81092	47µF 20% 25V
2801	4822 126 13473	220nF 20% 50V
2802	4822 124 81093	10µF 20% 25V
2804	4822 124 81093	10µF 20% 25V
2805	4822 124 81093	10µF 20% 25V
2806	4822 124 81093	10µF 20% 25V
2808	4822 124 81093	10µF 20% 25V
2810	4822 124 81093	10µF 20% 25V
2811	4822 124 81093	10µF 20% 25V
2812	4822 124 81093	10µF 20% 25V
2813	4822 124 81093	10µF 20% 25V
2814	4822 124 81093	10µF 20% 25V
2816	4822 126 13473	220nF 20% 50V
2817	4822 124 81092	47µF 20% 25V
2818	4822 126 13473	220nF 20% 50V
2819	4822 124 81093	10µF 20% 25V
2820	4822 126 13473	220nF 20% 50V
2821	4822 122 32927	220nF 20% 50V
2823	4822 126 13473	220nF 20% 50V
2825	4822 126 13473	220nF 20% 50V
2827	4822 126 13473	220nF 20% 50V
2828	4822 126 13473	220nF 20% 50V
2829	4822 126 13473	220nF 20% 50V
2830	4822 124 81093	10µF 20% 25V
2832	4822 124 81092	47µF 20% 25V
2833▲	5322 122 34123	1nF 10% 50V
2834	4822 122 33575	220pF 5% 50V
2836	5322 122 31863	330pF 5% 50V
2837	5322 122 31863	330pF 5% 50V
2838	5322 122 31863	330pF 5% 50V
2839	4822 126 13473	220nF 20% 50V
2840	4822 126 13473	220nF 20% 50V
2842	4822 124 81093	10µF 20% 25V
2843	5322 122 31863	330pF 5% 50V
2845	4822 126 13473	220nF 20% 50V
2846	4822 124 81093	10µF 20% 25V
2847	4822 124 81093	10µF 20% 25V
2848	5322 122 31863	330pF 5% 50V
2853	5322 122 31863	330pF 5% 50V
2854	5322 122 31863	330pF 5% 50V
2855	5322 122 31863	330pF 5% 50V
2856	5322 122 31863	330pF 5% 50V
2857	4822 126 13473	220nF 20% 50V
2858	5322 122 31863	330pF 5% 50V
2860	5322 122 31863	330pF 5% 50V
2861	5322 122 31863	330pF 5% 50V
2864	5322 122 31863	330pF 5% 50V
2865	5322 122 31863	330pF 5% 50V
2866	5322 122 31863	330pF 5% 50V
2868	5322 122 31863	330pF 5% 50V
2869	4822 126 13473	220nF 20% 50V
2870	4822 126 13473	220nF 20% 50V
2871	4822 126 13473	220nF 20% 50V
2872	4822 126 13473	220nF 20% 50V
2873	4822 126 13473	220nF 20% 50V
2874	4822 126 13473	220nF 20% 50V
2880	5322 122 32531	100pF 5% 50V
2881	5322 122 32531	100pF 5% 50V
2885	4822 126 13473	220nF 20% 50V
2886	4822 126 13473	220nF 20% 50V
2887	4822 126 13473	220nF 20% 50V
2888	5322 122 32531	100pF 5% 50V
2889	4822 122 33575	220pF 5% 50V
2890	4822 126 13473	220nF 20% 50V
2891	4822 124 81093	10µF 20% 25V
2892	4822 124 81093	10µF 20% 25V
2893	4822 124 81092	47µF 20% 25V
2894	4822 121 42408	220nF 5% 63V
2895	4822 126 13473	220nF 20% 50V
2896	4822 126 10326	180pF 5% 63V
2897	4822 126 10326	180pF 5% 63V
2899▲	5322 122 34123	1nF 10% 50V

3800▲	4822 052 10478	4Ω7 5% 0,33W
3801	4822 051 20221	220Ω 5% 0,1W
3802	4822 116 83864	10k 5% 0,5W
3803	4822 051 20103	10k 5% 0,1W
3805	4822 051 20473	47k 5% 0,1W
3808	4822 051 10151	150Ω 2% 0,25W
3809	4822 051 10151	150Ω 2% 0,25W
3810	4822 051 20432	4k3 5% 0,1W
3811	4822 051 20242	2k4 5% 0,1W
3812	4822 051 20681	680Ω 5% 0,1W
3813	4822 116 52228	680Ω 5% 0,5W
3818	4822 051 20103	10k 5% 0,1W
3819	4822 051 20103	10k 5% 0,1W
3820	4822 051 20103	10k 5% 0,1W
3821	4822 051 20103	10k 5% 0,1W
3822	4822 051 20362	3k6 5% 0,1W
3823	4822 051 20273	27k 5% 0,1W
3824	4822 051 20221	220Ω 5% 0,1W
3825	4822 051 20473	47k 5% 0,1W
3826	4822 051 20104	100k 5% 0,1W
3827	4822 051 20222	2k2 5% 0,1W
3828	4822 051 20561	560Ω 5% 0,1W
3829	4822 116 52256	2k2 5% 0,5W
3830	4822 116 52256	2k2 5% 0,5W
3831	4822 051 20561	560Ω 5% 0,1W
3832	4822 051 20222	2k2 5% 0,1W
3833	4822 051 20222	2k2 5% 0,1W
3834	4822 051 20561	560Ω 5% 0,1W
3835	4822 051 20222	2k2 5% 0,1W
3836	4822 051 20101	100Ω 5% 0,1W
3837	4822 051 20561	560Ω 5% 0,1W
3838	4822 051 20103	10k 5% 0,1W
3842	4822 051 20331	330Ω 5% 0,1W
3843	4822 051 20331	330Ω 5% 0,1W
3844	4822 051 20222	2k2 5% 0,1W
3845	4822 051 20331	330Ω 5% 0,1W
3846	4822 051 20331	330Ω 5% 0,1W
3847	4822 051 10369	36Ω 2% 0,25W
3848▲	4822 051 20472	4k7 5% 0,1W
3849	4822 051 10102	1k 2% 0,25W
3850	4822 051 20474	470k 5% 0,1W
3852	4822 051 20153	15k 5% 0,1W
3853	4822 051 20103	10k 5% 0,1W
3854	4822 051 20153	15k 5% 0,1W
3855	4822 051 20103	10k 5% 0,1W
3856	4822 051 20153	15k 5% 0,1W
3857	4822 051 20103	10k 5% 0,1W
3866	4822 051 20101	100Ω 5% 0,1W
3867	4822 116 52175	100Ω 5% 0,5W
3868	4822 116 52175	100Ω 5% 0,5W
3871	4822 116 52175	100Ω 5% 0,5W
3872	4822 116 52175	100Ω 5% 0,5W
3875	4822 051 20101	100Ω 5% 0,1W
3876▲	4822 116 83953	75Ω 5% 0,125W
3877	4822 051 10151	150Ω 2% 0,25W
3878	4822 051 10151	150Ω 2% 0,25W
3879	4822 051 10151	150Ω 2% 0,25W
3880	4822 051 20331	330Ω 5% 0,1W
3881	4822 051 10102	1k 2% 0,25W
3882	4822 051 20471	470Ω 5% 0,1W
3883	4822 051 10471	470Ω 2% 0,25W
3884▲	4822 116 83953	75Ω 5% 0,125W
3885	4822 051 20103	10k 5% 0,1W
3886	4822 051 10102	1k 2% 0,25W
3887	4822 051 20331	330Ω 5% 0,1W
3888▲	4822 116 83953	75Ω 5% 0,125W
3889▲	4822 116 83953	75Ω 5% 0,125W
3890▲	4822 116 83953	75Ω 5% 0,125W
3891	4822 051 10151	150Ω 2% 0,25W
3892▲	4822 116 83953	75Ω 5% 0,125W
3893	4822 051 10151	150Ω 2% 0,25W
3894	4822 051 20224	220k 5% 0,1W
3895	4822 051 20224	220k 5% 0,1W
3896▲	4822 052 10478	4Ω7 5% 0,33W
3897	4822 051 10102	1k 2% 0,25W
3898	4822 051 20471	470Ω 5% 0,1W
3899	4822 051 20103	10k 5% 0,1W
3900	4822 051 10471	470Ω 2% 0,25W
3901▲	4822 116 83953	75Ω 5% 0,125W
3902	4822 051 10102	1k 2% 0,25W
3903	4822 051 20224	220k 5% 0,1W
3904▲	4822 116 83953	75Ω 5% 0,125W
3905▲	4822 116 83953	75Ω 5% 0,125W
3906▲	4822 116 83953	75Ω 5% 0,125W
3907▲	4822 116 83953	75Ω 5% 0,125W
3909	4822 051 20151	150Ω 5% 0,1W
3910	4822 051 10102	1k 2% 0,25W
3915	4822 051 10102	1k 2% 0,25W
3917▲	4822 116 83953	75Ω 5% 0,125W
3922	4822 051 20224	220k 5% 0,1W
3924	4822 051 20332	3k3 5% 0,1W
3926▲	4822 052 10478	4Ω7 5% 0,33W
3927▲	4822 052 10478	4Ω7 5% 0,33W
3928▲	4822 052 10478	4Ω7 5% 0,33W
3929▲	4822 052 10478	4Ω7 5% 0,33W
3931▲	4822 052 10478	4Ω7 5% 0,33W
3932	4822 051 20331	330Ω 5% 0,1W
3934	4822 051 20331	330Ω 5% 0,1W
3935▲	4822 052 10478	4Ω7 5% 0,33W
3938	4822 116 52257	22k 5% 0,5W
3939	4822 116 52257	22k 5% 0,5W
3941	4822 116 52257	22k 5% 0,5W
3942	4822 116 52257	22k 5% 0,5W
3943	4822 051 20223	22k 5% 0,1W
3944	4822 051 20223	22k 5% 0,1W
3945	4822 051 10151	150Ω 2% 0,25W
3946	4822 051 10151	150Ω 2% 0,25W
3954	4822 051 20222	2k2 5% 0,1W
3965	4822 051 20103	10k 5% 0,1W
3966	4822 051 20103	10k 5% 0,1W
3967	4822 051 20103	10k 5% 0,1W
3968	4822 051 20103	10k 5% 0,1W
3970	4822 051 10331	330Ω 2% 0,25W
3971	4822 051 20122	1k2 5% 0,1W
3972	4822 117 11139	1k5 1% 0,1W
3973	4822 051 20474	470k 5% 0,1W
3977	4822 051 20103	10k 5% 0,1W
3980	4822 051 20473	47k 5% 0,1W
3981	4822 051 20473	47k 5% 0,1W
3982	4822 051 20182	1k8 5% 0,1W
3983	4822 051 20332	3k3 5% 0,1W
3984	4822 051 20222	2k2 5% 0,1W
3990	4822 116 52175	100Ω 5% 0,5W
3992	4822 051 10102	1k 2% 0,25W
3993	4822 051 10151	150Ω 2% 0,25W
3994	4822 051 10102	1k 2% 0,25W
3995	4822 051 20103	10k 5% 0,1W
3996	4822 051 20471	470Ω 5% 0,1W
3997	4822 051 20471	470Ω 5% 0,1W
3999	4822 051 20279	27Ω 5% 0,1W

5801	4822 157 51216	5,6µH 10%

6800	4822 130 81513	LLZ-C6V8
6802	4822 130 81513	LLZ-C6V8
6808	4822 130 81513	LLZ-C6V8
6809	4822 130 81513	LLZ-C6V8
6810	4822 130 81513	LLZ-C6V8
6811	4822 130 81513	LLZ-C6V8
6812	4822 130 81513	LLZ-C6V8
6813	4822 130 81513	LLZ-C6V8
6814	4822 130 81513	LLZ-C6V8
6815	4822 130 81513	LLZ-C6V8
6816	4822 130 81513	LLZ-C6V8
6817	4822 130 81513	LLZ-C6V8
6818	4822 130 81513	LLZ-C6V8
6819	4822 130 81513	LLZ-C6V8
6821	4822 130 82346	LLZ-C27
6823	4822 130 82346	LLZ-C27
6824	4822 130 80446	LL4148
6826	4822 130 82346	LLZ-C27
6827	4822 130 82346	LLZ-C27
6830	4822 130 82346	LLZ-C27
6831	4822 130 82346	LLZ-C27
6832	4822 130 82346	LLZ-C27
6833	4822 130 82346	LLZ-C27
6834	4822 130 82346	LLZ-C27
6835	4822 130 82346	LLZ-C27
6836	4822 130 82346	LLZ-C27
6837	4822 130 82346	LLZ-C27
6838	4822 130 82346	LLZ-C27
6839	4822 130 82346	LLZ-C27
6840	4822 130 82346	LLZ-C27
6841	4822 130 82346	LLZ-C27
6842	4822 130 82346	LLZ-C27
6843	4822 130 82346	LLZ-C27
6844	4822 130 82346	LLZ-C27
6845	4822 130 82346	LLZ-C27
6846	4822 130 82346	LLZ-C27
6847	4822 130 82346	LLZ-C27
6848	4822 130 82346	LLZ-C27
6849	4822 130 82346	LLZ-C27
6851	4822 130 80446	LL4148

7800▲	5322 130 41982	BC848B
7802	5322 130 42136	BC848C
7803▲	5322 130 41982	BC848B
7804▲	5322 130 41982	BC848B
7805▲	5322 130 41982	BC848B
7806▲	5322 130 41982	BC848B
7808▲	5322 130 41982	BC848B
7811▲	5322 130 41982	BC848B
7812▲	5322 130 41982	BC848B
7814	4822 209 90046	TMD47C203N
7815	4822 209 90051	TDA8601/C1
7817	4822 209 80631	LM339N
7819▲	4822 130 44197	BC558B
7820▲	5322 130 41982	BC848B
7822	4822 209 90048	TEA6430
7823	4822 209 33314	TEA6417
7830	5322 130 41983	BC858B
7831▲	5322 130 41982	BC848B

Global source selection [I]

Various

	4822 267 31877	Socket 2 x cinch
	4822 267 31906	Socket 3 x cinch + SVHS + switch
	4822 267 31905	Socket cinch + SVHS
	4822 267 60399	Socket scart blue
	4822 265 31248	3P male v 1,25
	4822 265 51385	25P male v 1,25
	4822 265 41451	9P male v 1,25
1032	4822 212 32212	Global source selection panel

2801	5322 122 32531	100pF 5% 50V
2806	4822 122 33805	330pF 10% 63V
2808	4822 122 33805	330pF 10% 63V
2810	5322 122 32531	100pF 5% 50V
2812	4822 126 13473	220nF 20% 50V
2816	4822 122 33805	330pF 10% 63V
2818	4822 122 33805	330pF 10% 63V
2820	4822 126 13473	220nF 20% 50V
2822	5322 122 32531	100pF 5% 50V
2831	4822 122 33805	330pF 10% 63V
2833	4822 122 33805	330pF 10% 63V
2837	4822 126 10002	100nF 20% 25V
2842	5322 122 32531	100pF 5% 50V
2844	4822 126 13473	220nF 20% 50V
2846	4822 126 13473	220nF 20% 50V
2850	4822 122 33805	330pF 10% 63V
2854	4822 122 33805	330pF 10% 63V
2859	4822 126 13473	220nF 20% 50V
2860	4822 124 81092	47µF 20% 25V
2861	4822 126 13473	220nF 20% 50V
2862	4822 126 13473	220nF 20% 50V
2863	4822 126 13473	220nF 20% 50V
2864	4822 126 13473	220nF 20% 50V
2865	4822 126 13473	220nF 20% 50V
2866	4822 126 13473	220nF 20% 50V
2867	4822 126 13473	220nF 20% 50V
2868	4822 126 13473	220nF 20% 50V
2869	4822 126 13473	220nF 20% 50V
2870	4822 126 13473	220nF 20% 50V
2872	4822 126 13473	220nF 20% 50V
2880	4822 124 81092	47µF 20% 25V

Spare parts list / Stükliste / Liste des pièces

2881	4822 124 81093	10µF 20% 25V
2882	4822 124 81093	10µF 20% 25V
2883	4822 124 81093	10µF 20% 25V
2884	4822 124 81093	10µF 20% 25V
2885	4822 124 81093	10µF 20% 25V
2886	4822 124 81093	10µF 20% 25V
2887	4822 124 81093	10µF 20% 25V
2888	4822 124 81093	10µF 20% 25V
2889	4822 124 81092	47µF 20% 25V
2890	4822 124 81093	10µF 20% 25V
2891	4822 124 81093	10µF 20% 25V
2892▲	5322 122 34123	1nF 10% 50V
2893	4822 124 81093	10µF 20% 25V
2894	4822 124 81093	10µF 20% 25V
2905	4822 126 10002	100nF 20% 25V
2920	4822 122 33805	330pF 10% 63V
2922	4822 122 33805	330pF 10% 63V
2934	4822 126 10002	100nF 20% 25V
2938	4822 126 13473	220nF 20% 50V
2940	4822 122 33805	330pF 10% 63V
2941	4822 122 33805	330pF 10% 63V
2950	4822 126 13473	220nF 20% 50V
2951	4822 126 13473	220nF 20% 50V

3801	4822 117 11149	82k 1% 0,1W
3802	4822 051 20103	10k 5% 0,1W
3803▲	4822 051 20472	4k7 5% 0,1W
3804	4822 051 20473	47k 5% 0,1W
3805	4822 051 20101	100Ω 5% 0,1W
3806	4822 051 10102	1k 2% 0,25W
3807	4822 051 10102	1k 2% 0,25W
3808	4822 051 20101	100Ω 5% 0,1W
3809	4822 116 52201	75Ω 5% 0,5W
3810▲	4822 051 20472	4k7 5% 0,1W
3811	4822 051 20473	47k 5% 0,1W
3812	4822 117 11149	82k 1% 0,1W
3813	4822 051 20103	10k 5% 0,1W
3814	4822 116 52201	75Ω 5% 0,5W
3815	4822 051 20101	100Ω 5% 0,1W
3817	4822 051 20101	100Ω 5% 0,1W
3818	4822 051 10102	1k 2% 0,25W
3819	4822 051 10102	1k 2% 0,25W
3820▲	4822 051 20472	4k7 5% 0,1W
3822	4822 051 20103	10k 5% 0,1W
3823	4822 117 11149	82k 1% 0,1W
3824	4822 051 20473	47k 5% 0,1W
3825	4822 051 20101	100Ω 5% 0,1W
3826	4822 051 20101	100Ω 5% 0,1W
3827▲	4822 051 20472	4k7 5% 0,1W
3828	4822 051 20101	100Ω 5% 0,1W
3829	4822 116 52201	75Ω 5% 0,5W
3830	4822 051 20101	100Ω 5% 0,1W
3831	4822 051 10102	1k 2% 0,25W
3832	4822 051 20101	100Ω 5% 0,1W
3833	4822 051 10102	1k 2% 0,25W
3835	4822 051 20103	10k 5% 0,1W
3836	4822 051 20101	100Ω 5% 0,1W
3837▲	4822 052 10478	4Ω7 5% 0,33W
3838	4822 051 20561	560Ω 5% 0,1W
3840	4822 116 52201	75Ω 5% 0,5W
3841	4822 117 11149	82k 1% 0,1W
3842	4822 051 20473	47k 5% 0,1W
3843	4822 051 20103	10k 5% 0,1W
3844	4822 116 52201	75Ω 5% 0,5W
3845	4822 051 20101	100Ω 5% 0,1W
3846	4822 116 52201	75Ω 5% 0,5W
3847	4822 051 20101	100Ω 5% 0,1W
3850	4822 051 10102	1k 2% 0,25W
3851	4822 051 10102	1k 2% 0,25W
3853	4822 116 52201	75Ω 5% 0,5W
3854	4822 116 52201	75Ω 5% 0,5W
3855	4822 116 52201	75Ω 5% 0,5W
3856	4822 051 20101	100Ω 5% 0,1W
3857	4822 116 52201	75Ω 5% 0,5W
3860▲	4822 052 10478	4Ω7 5% 0,33W
3861	4822 051 20681	680Ω 5% 0,1W
3862	4822 051 20681	680Ω 5% 0,1W
3863	4822 051 20101	100Ω 5% 0,1W
3864	4822 051 20101	100Ω 5% 0,1W
3865	4822 051 20101	100Ω 5% 0,1W
3866	4822 051 20101	100Ω 5% 0,1W
3870	4822 051 20101	100Ω 5% 0,1W
3871	4822 051 20101	100Ω 5% 0,1W
3872	4822 051 20101	100Ω 5% 0,1W
3880▲	4822 052 10478	4Ω7 5% 0,33W
3882	4822 051 20101	100Ω 5% 0,1W
3884	4822 051 20101	100Ω 5% 0,1W
3890	4822 051 20101	100Ω 5% 0,1W
3891	4822 051 20101	100Ω 5% 0,1W
3892▲	4822 052 10108	1Ω 5% 0,33W
3893	4822 051 20224	220k 5% 0,1W
3894	4822 051 20224	220k 5% 0,1W
3895▲	4822 052 10478	4Ω7 5% 0,33W
3896	4822 051 20101	100Ω 5% 0,1W
3897	4822 051 20103	10k 5% 0,1W
3898	4822 051 20103	10k 5% 0,1W
3899	4822 051 20392	3k9 5% 0,1W
3900	4822 051 20561	560Ω 5% 0,1W
3902	4822 051 20101	100Ω 5% 0,1W
3904	4822 051 20331	330Ω 5% 0,1W
3905	4822 051 20103	10k 5% 0,1W
3906	4822 051 20561	560Ω 5% 0,1W
3909	4822 051 20103	10k 5% 0,1W
3911	4822 051 20103	10k 5% 0,1W
3914	4822 051 20103	10k 5% 0,1W
3915	4822 051 20103	10k 5% 0,1W
3917	4822 051 20331	330Ω 5% 0,1W
3918	4822 051 20151	150Ω 5% 0,1W
3919	4822 051 20331	330Ω 5% 0,1W
3920	4822 051 20151	150Ω 5% 0,1W
3921	4822 051 20103	10k 5% 0,1W
3922▲	4822 052 10478	4Ω7 5% 0,33W
3923	4822 051 20103	10k 5% 0,1W
3924	4822 051 20101	100Ω 5% 0,1W
3925	4822 116 52201	75Ω 5% 0,5W
3927	4822 051 20561	560Ω 5% 0,1W
3929	4822 051 20101	100Ω 5% 0,1W
3931	4822 051 20561	560Ω 5% 0,1W
3933	4822 116 52201	75Ω 5% 0,5W
3935	4822 051 20151	150Ω 5% 0,1W
3937	4822 051 20151	150Ω 5% 0,1W
3938	4822 051 20331	330Ω 5% 0,1W

6800	4822 130 81513	LLZ-C6V8
6801	4822 130 81513	LLZ-C6V8
6802	4822 130 81513	LLZ-C6V8
6803	4822 130 81513	LLZ-C6V8
6804	4822 130 81513	LLZ-C6V8
6805	4822 130 81513	LLZ-C6V8
6806	4822 130 81513	LLZ-C6V8
6807	4822 130 81513	LLZ-C6V8
6809	4822 130 81513	LLZ-C6V8
6810	4822 130 81513	LLZ-C6V8
6811	4822 130 81513	LLZ-C6V8
6812	4822 130 81513	LLZ-C6V8
6813	4822 130 81513	LLZ-C6V8
6814	4822 130 81513	LLZ-C6V8
6818	4822 130 81513	LLZ-C6V8
6819	4822 130 81513	LLZ-C6V8
6820	4822 130 81513	LLZ-C6V8
6821	4822 130 81513	LLZ-C6V8
6822	4822 130 81513	LLZ-C6V8
6823	4822 130 81513	LLZ-C6V8
6824	4822 130 81513	LLZ-C6V8
6825	4822 130 81513	LLZ-C6V8
6826	4822 130 81513	LLZ-C6V8
6827	4822 130 81513	LLZ-C6V8
6828	4822 130 81513	LLZ-C6V8
6840	4822 130 81513	LLZ-C6V8
6841	4822 130 81513	LLZ-C6V8
6842	4822 130 82346	LLZ-C27
6843	4822 130 82346	LLZ-C27
6845	4822 130 82346	LLZ-C27
6846	4822 130 81513	LLZ-C6V8
6847	4822 130 81513	LLZ-C6V8
6848	4822 130 81513	LLZ-C6V8
6849	4822 130 81513	LLZ-C6V8
6850	4822 130 81513	LLZ-C6V8
6920	4822 130 81513	LLZ-C6V8
6921	4822 130 81513	LLZ-C6V8
6922	4822 130 81513	LLZ-C6V8
6923	4822 130 81513	LLZ-C6V8
6940	4822 130 81513	LLZ-C6V8
6942	4822 130 81513	LLZ-C6V8
6944	4822 130 81513	LLZ-C6V8
6945	4822 130 81513	LLZ-C6V8
6946	4822 130 81513	LLZ-C6V8
6947	4822 130 81513	LLZ-C6V8
6948	4822 130 81513	LLZ-C6V8
6949	4822 130 81513	LLZ-C6V8

7801▲	5322 130 41982	BC848B
7810▲	5322 130 41982	BC848B
7825▲	5322 130 41982	BC848B
7837	4822 130 40937	BC548B
7843▲	5322 130 41982	BC848B
7860	4822 209 90368	TEA6425
7862	4822 209 90368	TEA6425
7880	4822 209 90369	TEA6422
7900	5322 209 10883	PCF8574P
7905	4822 130 40937	BC548B
7908	4822 130 40937	BC548B
7930	4822 130 40937	BC548B
7935	4822 130 40937	BC548B

A/I smartic [AR]

Various

1067	4822 212 31947	A/I smartic panel
	4822 265 61296	Socket 40P

2008	4822 126 10002	100nF 20% 25V
2009	4822 126 10002	100nF 20% 25V

3006	4822 051 20272	2k7 5% 0,1W

7008	4822 212 31947	A/I smartic panel
7009	4822 212 31947	A/I smartic panel

ECO-NICAM

Various

1320	4822 212 31949	ECO-NICAM module
	4822 265 20712	8P male
	4822 267 51433	10P male
1501	4822 242 81719	Crystal 8,192 MHz

2501▲	4822 122 33172	390pF 5% 50V
2502	5322 122 32448	10pF 5% 50V
2503	4822 126 13196	100nF 10% 25V
2504▲	4822 124 41579	10µF 20% 50V
2505	4822 126 13196	100nF 10% 25V
2506▲	4822 124 40433	47µF 20% 25V
2507▲	4822 124 41579	10µF 20% 50V
2508▲	4822 124 41579	10µF 20% 50V
2509	4822 126 13196	100nF 10% 25V
2510▲	4822 124 41579	10µF 20% 50V
2511	4822 122 33575	220pF 5% 50V
2512	4822 126 13196	100nF 10% 25V
2513▲	4822 124 41579	10µF 20% 50V
2514	4822 126 13196	100nF 10% 25V
2515	4822 124 40242	1µF 20% 63V
2516	4822 126 13518	330nF 50V
2517▲	5322 122 32654	22nF 10% 63V
2518	5322 122 32531	100pF 5% 50V
2519	5322 122 32531	100pF 5% 50V
2520	4822 126 13196	100nF 10% 25V
2521	4822 126 13485	470nF 80/20% 50V
2522	4822 126 13196	100nF 10% 25V
2523	4822 126 13196	100nF 10% 25V
2525	4822 126 13196	100nF 10% 25V
2527▲	5322 122 32654	22nF 10% 63V
2530▲	4822 124 40433	47µF 20% 25V
2531	4822 122 33514	68pF 5% 50V
2532▲	4822 124 40433	47µF 20% 25V
2533	4822 122 33514	68pF 5% 50V
2534	4822 126 13473	220nF 80-20% 50V
2535	4822 126 13473	220nF 80-20% 50V
2536	4822 126 13473	220nF 80-20% 50V
2540	5322 122 32658	22pF 5% 50V
2541	5322 122 32658	22pF 5% 50V

3501	4822 051 20101	100Ω 5% 0,1W
3502	4822 051 10102	1k 2% 0,25W
3503▲	4822 052 10228	2Ω2 5% 0,33W
3504▲	4822 052 10228	2Ω2 5% 0,33W
3505	4822 051 20223	22k 5% 0,1W
3506	4822 051 20105	1M 5% 0,1W
3507▲	4822 052 10229	22Ω 5% 0,33W
3508	4822 051 20684	680k 5% 0,1W
3509▲	4822 052 10228	2Ω2 5% 0,33W
3510	4822 051 20104	100k 5% 0,1W
3511	4822 051 20222	2k2 5% 0,1W
3512	4822 051 20103	10k 5% 0,1W
3515	4822 051 20103	10k 5% 0,1W
3516	4822 051 20105	1M 5% 0,1W
3517	4822 051 20103	10k 5% 0,1W
3518	4822 051 20105	1M 5% 0,1W
3520	4822 116 52175	100Ω 5% 0,5W
3521	4822 051 20101	100Ω 5% 0,1W
3530	4822 116 52251	18k 5% 0,5W
3531	4822 051 20333	33k 5% 0,1W
3532	4822 051 20183	18k 5% 0,1W
3533	4822 051 20333	33k 5% 0,1W
3534	4822 051 20272	2k7 5% 0,1W
3535▲	4822 051 20472	4k7 5% 0,1W
3536	4822 051 20272	2k7 5% 0,1W
3537▲	4822 051 20472	4k7 5% 0,1W

5501	4822 157 60123	6,8µH 10%

6501	4822 130 83396	OF4271
6502▲	4822 130 30621	1N4148

7502	4822 209 30095	LM833D

Incredible sound [AY]

Various

1650	4822 212 31864	Incredible sound panel
	4822 265 41469	7P strip

2600▲	4822 124 40246	4,7µF 20% 63V
2601	4822 122 33175	2,2nF 20% 50V
2602	5322 122 32268	470pF 10% 50V
2603▲	5322 122 34123	1nF 10% 50V
2604▲	5322 122 32654	22nF 10% 63V
2605	4822 126 10002	100nF 20% 25V
2606▲	4822 124 40246	4,7µF 20% 63V
2607	4822 122 33175	2,2nF 20% 50V
2608	5322 122 32268	470pF 10% 50V
2609▲	5322 122 34123	1nF 10% 50V
2610▲	5322 122 32654	22nF 10% 63V
2611	4822 126 10002	100nF 20% 25V
2612	4822 126 10002	100nF 20% 25V
2613	4822 124 41643	100µF 20% 16V
2626	4822 126 10002	100nF 20% 25V
2627	4822 126 10002	100nF 20% 25V
2634	4822 126 13189	1µF 80-20%16V
2635	4822 126 13189	1µF 80-20%16V

3600	4822 051 20682	6k8 5% 0,1W
3601	4822 051 20103	10k 5% 0,1W
3602	4822 051 20103	10k 5% 0,1W
3603	4822 051 20222	2k2 5% 0,1W
3604	4822 051 20122	1k2 5% 0,1W
3605	4822 051 20122	1k2 5% 0,1W
3606	4822 051 20103	10k 5% 0,1W
3607	4822 051 10102	1k 2% 0,25W
3608	4822 051 20103	10k 5% 0,1W
3609	4822 051 20101	100Ω 5% 0,1W
3610	4822 051 20103	10k 5% 0,1W
3611	4822 051 20821	820Ω 5% 0,1W
3612	4822 051 20682	6k8 5% 0,1W
3613	4822 051 20103	10k 5% 0,1W
3614	4822 051 20103	10k 5% 0,1W
3615	4822 051 20222	2k2 5% 0,1W
3616	4822 051 20122	1k2 5% 0,1W
3617	4822 051 20122	1k2 5% 0,1W
3618	4822 051 20103	10k 5% 0,1W
3619	4822 051 10102	1k 2% 0,25W
3620	4822 051 20103	10k 5% 0,1W
3621	4822 051 20101	100Ω 5% 0,1W
3622	4822 051 20103	10k 5% 0,1W
3623	4822 051 20821	820Ω 5% 0,1W
3624▲	4822 052 10109	10Ω 5% 0,33W
3625	4822 051 20103	10k 5% 0,1W
3626	4822 051 20103	10k 5% 0,1W
3627	4822 051 20103	10k 5% 0,1W
3636	4822 051 20821	820Ω 5% 0,1W
3637	4822 051 20681	680Ω 5% 0,1W
3637	4822 051 20821	820Ω 5% 0,1W

7600	4822 209 30095	LM833D
7601	4822 209 30095	LM833D
7602	5322 209 14481	HEF4053BT
7604	4822 209 30095	LM833D

Global sound decoder [G]

Various

1019	4822 212 32102	Global sound decoder
	4822 265 20712	8P
	4822 267 51433	10P
1531	4822 156 11158	Filter
1532	4822 156 11157	COIL
1534	4822 242 81188	Crystal 13,104 MHz
1535	4822 242 81187	Crystal 11,700 MHz
1550	4822 242 81639	Crystal 8,192 000 MHz
1578	4822 242 80271	Filter 4,5MHz
1579	4822 242 70714	Filter 5,5MHz
1580	4822 242 71841	Filter 6,0MHz
1581	4822 242 72059	Filter 6,5MHz
1582	4822 242 70485	Filter 5,74MHz
1583	4822 242 80292	Filter 6,74MHz
1605	4822 242 80276	Crystal 10,000 000 MHz

2524	4822 126 12944	47nF 10% 50V
2525▲	5322 122 34123	1nF 10% 50V
2527	5322 122 32269	6,8pF 5% 50V
2528	4822 126 13059	100nF 20% 50V
2529	4822 126 12944	47nF 10% 50V
2531▲	5322 122 34123	1nF 10% 50V
2533	5322 122 33538	150pF 2% 63V
2534	4822 126 13059	100nF 20% 50V
2535	4822 126 13059	100nF 20% 50V
2536	5322 122 32659	33pF 5% 50V
2537	5322 122 32531	100pF 5% 50V
2538	5322 122 32659	33pF 5% 50V
2539	5322 122 32531	100pF 5% 50V
2540	5322 122 31863	330pF 5% 50V
2541	5322 122 31866	6,8nF 10% 63V
2542	5322 122 33538	150pF 2% 63V
2543	5322 122 33538	150pF 2% 63V
2544	5322 122 33538	150pF 2% 63V
2546▲	5322 122 32654	22nF 10% 63V
2547	4822 126 12102	330nF 80%20 50V
2548	5322 122 34098	10nF 10% 63V
2549▲	5322 122 34123	1nF 10% 50V
2550▲	5322 122 34123	1nF 10% 50V
2551	5322 122 31863	330pF 5% 50V
2552▲	4822 124 40433	47µF 20% 25V
2553	4822 126 13059	100nF 20% 50V
2554▲	4822 124 40433	47µF 20% 25V
2555	4822 122 33514	68pF 5% 50V
2557	5322 122 31863	330pF 5% 50V
2558	4822 126 13059	100nF 20% 50V
2559	4822 126 13061	220nF 20% 25V
2560	5322 122 33446	3,3nF 10% 63V
2561	4822 122 33216	270pF 5% 50V
2562▲	4822 124 40433	47µF 20% 25V
2563	4822 126 13059	100nF 20% 50V
2564▲	4822 124 40433	47µF 20% 25V
2565	4822 126 13059	100nF 20% 50V
2566	4822 122 33216	270pF 5% 50V
2567	4822 122 33514	68pF 5% 50V
2568	5322 122 31863	330pF 5% 50V
2569	4822 124 40248	10µF 20% 63V
2570	5322 122 33446	3,3nF 10% 63V
2571	4822 122 33216	270pF 5% 50V
2573▲	4822 124 40433	47µF 20% 25V
2574▲	5322 122 32654	22nF 10% 63V
2575	4822 124 40248	10µF 20% 63V
2576	4822 126 12102	330nF 80%20 50V
2577	4822 124 40248	10µF 20% 63V
2579	4822 122 33216	270pF 5% 50V
2580	4822 126 12102	330nF 80%20 50V
2581	4822 126 12102	330nF 80%20 50V
2582	4822 126 12102	330nF 80%20 50V
2583	4822 126 12102	330nF 80%20 50V
2584	4822 126 12102	330nF 80%20 50V
2586	4822 124 40248	10µF 20% 63V
2590	4822 124 40248	10µF 20% 63V
2591	5322 122 34098	10nF 10% 63V
2592	4822 124 40248	10µF 20% 63V
2593▲	4822 124 81023	2,2µF 20% 50V
2594▲	4822 124 81023	2,2µF 20% 50V
2596	4822 126 13061	220nF 20% 25V
2597	4822 126 13061	220nF 20% 25V
2598	4822 122 33806	820pF 10% 63V
2600	5322 122 34098	10nF 10% 63V
2601	5322 122 34098	10nF 10% 63V
2602	4822 126 13061	220nF 20% 25V
2603	4822 126 13059	100nF 20% 50V
2604	4822 121 51361	5,6nF 2% 160V
2605	4822 124 40248	10µF 20% 63V
2606	5322 122 34098	10nF 10% 63V
2607	4822 124 41584	100µF 20% 10V
2608	4822 126 13059	100nF 20% 50V
2610	5322 122 32531	100pF 5% 50V
2611	4822 126 12944	47nF 10% 50V
2612	4822 126 12944	47nF 10% 50V
2613▲	4822 124 40433	47µF 20% 25V
2614	4822 126 13059	100nF 20% 50V
2615▲	5322 122 32654	22nF 10% 63V
2616▲	5322 122 32654	22nF 10% 63V
2617▲	5322 122 34123	1nF 10% 50V
2618	4822 122 32627	2,7nF 10% 50V
2619▲	4822 124 40433	47µF 20% 25V
2620	4822 126 12944	47nF 10% 50V
2621	4822 122 33127	2,2nF 10% 63V
2622	4822 124 81022	1µF 20% 50V
2623	4822 126 12102	330nF 80%20 50V
2625	4822 126 13059	100nF 20% 50V
2630	5322 122 34098	10nF 10% 63V
2631	5322 122 34098	10nF 10% 63V
2633	5322 122 34098	10nF 10% 63V
2634	5322 122 34098	10nF 10% 63V
2635	5322 122 34098	10nF 10% 63V
2638	5322 122 34098	10nF 10% 63V
2642	5322 122 34098	10nF 10% 63V
2644	5322 122 33538	150pF 2% 63V
2646	4822 124 40248	10µF 20% 63V

3523	4822 051 20271	270Ω 5% 0,1W
3524	4822 051 20271	270Ω 5% 0,1W
3525	4822 051 20123	12k 5% 0,1W
3526	4822 051 20392	3k9 5% 0,1W
3527	4822 051 20271	270Ω 5% 0,1W
3528	4822 051 20271	270Ω 5% 0,1W
3529	4822 051 20339	33Ω 5% 0,1W
3530	4822 051 20561	560Ω 5% 0,1W
3531	4822 051 20182	1k8 5% 0,1W
3532	4822 051 20182	1k8 5% 0,1W
3533	4822 051 20104	100k 5% 0,1W
3534	4822 051 20569	56Ω 5% 0,1W
3535	4822 051 20332	3k3 5% 0,1W
3536	4822 051 20229	22Ω 5% 0,1W
3537	4822 051 20332	3k3 5% 0,1W
3538	4822 051 20159	15Ω 5% 0,1W
3539	4822 117 11149	82k 1% 0,1W
3540	4822 051 20104	100k 5% 0,1W
3541	4822 051 20223	22k 5% 0,1W
3542	4822 051 20223	22k 5% 0,1W
3543	4822 051 20392	3k9 5% 0,1W
3544	4822 051 20223	22k 5% 0,1W
3545	4822 051 20273	27k 5% 0,1W
3547	4822 051 20104	100k 5% 0,1W
3548	4822 051 20104	100k 5% 0,1W
3549	4822 051 20103	10k 5% 0,1W
3550	4822 051 20102	1k 5% 0,1W
3552	4822 051 20105	1M 5% 0,1W
3553	4822 050 12209	22Ω 1% 0,4W
3554	4822 051 20563	56k 5% 0,1W
3555	4822 051 20224	220k 5% 0,1W
3557	4822 051 20563	56k 5% 0,1W
3560	4822 051 20102	1k 5% 0,1W
3561	4822 051 20103	10k 5% 0,1W
3563	4822 051 20103	10k 5% 0,1W
3566	4822 051 20103	10k 5% 0,1W
3567	4822 051 20102	1k 5% 0,1W
3568	4822 051 20103	10k 5% 0,1W
3569	4822 051 20103	10k 5% 0,1W
3570	4822 051 20103	10k 5% 0,1W
3571	4822 051 20682	6k8 5% 0,1W
3572	4822 051 20103	10k 5% 0,1W
3573	4822 051 20682	6k8 5% 0,1W
3574	4822 051 20103	10k 5% 0,1W
3575	4822 051 20682	6k8 5% 0,1W
3576	4822 051 20224	220k 5% 0,1W
3577	4822 051 20103	10k 5% 0,1W
3578	4822 051 20102	1k 5% 0,1W
3579	4822 051 20561	560Ω 5% 0,1W
3580	4822 051 20471	470Ω 5% 0,1W
3581	4822 051 20471	470Ω 5% 0,1W
3582	4822 051 20561	560Ω 5% 0,1W
3583	4822 051 20471	470Ω 5% 0,1W
3584	4822 050 12703	27k 1% 0,4W
3586	4822 051 20682	6k8 5% 0,1W
3590	4822 051 20562	5k6 5% 0,1W
3591	4822 051 20103	10k 5% 0,1W
3593	4822 051 20101	100Ω 5% 0,1W
3594	4822 051 20101	100Ω 5% 0,1W
3595	4822 051 20101	100Ω 5% 0,1W
3596	4822 051 20103	10k 5% 0,1W
3597	4822 051 20101	100Ω 5% 0,1W
3601▲	4822 052 10228	2Ω2 5% 0,33W
3602	4822 051 20105	1M 5% 0,1W
3603	4822 051 20105	1M 5% 0,1W
3604▲	4822 052 10109	10Ω 5% 0,33W
3605▲	4822 052 10109	10Ω 5% 0,33W
3606▲	4822 052 10109	10Ω 5% 0,33W
3607▲	4822 051 20472	4k7 5% 0,1W
3608	4822 051 20473	47k 5% 0,1W
3609	4822 051 20104	100k 5% 0,1W
3610	4822 051 20105	1M 5% 0,1W
3611	4822 051 20104	100k 5% 0,1W
3612	4822 051 20102	1k 5% 0,1W
3613	4822 051 20474	470k 5% 0,1W
3614	4822 051 20103	10k 5% 0,1W
3615	4822 051 20103	10k 5% 0,1W
3616	4822 051 20331	330Ω 5% 0,1W
3617	4822 051 20229	22Ω 5% 0,1W
3620	4822 051 20154	150k 5% 0,1W
3621	4822 051 20154	150k 5% 0,1W
3622	4822 051 20102	1k 5% 0,1W
3623	4822 051 20104	100k 5% 0,1W
3624	4822 051 20681	680Ω 5% 0,1W
3625	4822 051 20103	10k 5% 0,1W
3626	4822 051 20103	10k 5% 0,1W
3627	4822 051 20103	10k 5% 0,1W
3628	4822 051 20101	100Ω 5% 0,1W
3629	4822 051 20101	100Ω 5% 0,1W
3630	4822 051 20473	47k 5% 0,1W
3631▲	4822 051 20472	4k7 5% 0,1W
3632	4822 051 20332	3k3 5% 0,1W
3633	4822 051 20102	1k 5% 0,1W
3634▲	4822 051 20472	4k7 5% 0,1W
3635	4822 051 20332	3k3 5% 0,1W
3637	4822 051 20103	10k 5% 0,1W
3638	4822 051 20103	10k 5% 0,1W
3640	4822 051 20103	10k 5% 0,1W
3641	4822 051 20103	10k 5% 0,1W
3642	4822 051 20103	10k 5% 0,1W
3643	4822 051 20103	10k 5% 0,1W
3644	4822 051 20104	100k 5% 0,1W
3645	4822 051 20272	2k7 5% 0,1W
3646	4822 051 20102	1k 5% 0,1W
3647	4822 051 20224	220k 5% 0,1W
4xxx	4822 051 20008	0Ω 5% 0,1W

5535	4822 157 53473	1000µH 10%
5537	4822 157 53473	1000µH 10%
5590	4822 156 21293	1500µH 5%
5600	4822 157 51216	5,6µH 10%
5601	4822 157 51216	5,6µH 10%
5602	4822 157 51216	5,6µH 10%
5603	4822 157 51216	5,6µH 10%
5604	4822 157 51216	5,6µH 10%
5605	4822 157 51216	5,6µH 10%
5606	4822 157 51216	5,6µH 10%
5610▲	4822 157 52285	6,8µH 10%
5611▲	4822 157 52285	6,8µH 10%
5612▲	4822 157 52285	6,8µH 10%
5613▲	4822 157 52285	6,8µH 10%
5618	4822 157 52392	27µH 10%
5619▲	4822 157 53941	100µH 10%

6535	5322 130 34953	BB405B
6540	5322 130 34953	BB405B
6545	5322 130 31684	BB809
6555▲	4822 130 30621	1N4148
6594▲	4822 130 30621	1N4148
6595▲	4822 130 30621	1N4148
6612▲	4822 130 30621	1N4148
6622▲	5322 130 80617	BAT81
6623▲	5322 130 80617	BAT81
6624	4822 130 80655	BZX79-F2V4

7525	5322 130 42136	BC848C
7526	5322 130 42136	BC848C
7530	5322 130 41983	BC858B
7535	4822 209 30909	TDA8732/C1
7545▲	5322 130 41982	BC848B
7550	4822 209 32959	SAA7282AZP
7561▲	4822 209 83163	LM833N
7576▲	5322 130 41982	BC848B
7590	4822 209 63998	TDA9820
7600	4822 209 32863	TDA9840/V2
7608	5322 130 41983	BC858B
7610	4822 209 70672	LM358N
7615	5322 130 42136	BC848C
7620	5322 130 42136	BC848C
7624	5322 130 41983	BC858B
7625▲	5322 130 41982	BC848B
7630	5322 209 10883	PCF8574P
7631▲	5322 130 41982	BC848B
7632▲	5322 130 41982	BC848B
7638▲	5322 130 41982	BC848B
7642▲	5322 130 41982	BC848B
7647▲	5322 130 41982	BC848B

Service
Service
Service

GFL2.20E
GFL2.30E

96.01

Service Information

1. Restoration of the Multi PIP option in 4GFL2.20

With the introduction of software version V1.4 in week 9514, the Multi PIP option was also introduced in the 29PT826C and 29PT828C. With this new software it is possible to switch Multi PIP 'on' and 'off'. Previously Multi PIP was always 'on'. If the software in older sets is now replaced this bit is now 0, which means that the Multi PIP is 'off'. In order to enable Multi PIP again the SW option has to be increased by 64:
SW: xxxxxx yyyyyy where yyyyyy has to be changed to yyyyyy+64.

2. New Eco Low Power Standby panel

During production a new Eco Low Power Standby panel has been introduced.
This new ELPS is fully compatible with the old one. This new panel has been introduced in 4GFL2.20 sets with serial numbers beginning with AG04 and higher. The service information provides the circuit diagram, print layout and the parts list for this panel.

3. Introduction darker picture tube in GFL2.20 E 28" WS+ 16:9 sets

In type numbers 28PW9501 and 70WA9430 a darker picture tube (W66EWR002X42) was introduced in week 9548. This picture tube was introduced in sets with a serial number beginning with AG05 or higher. The code number of this picture tube is 4822 131 11071.

4. Introduction SF picture tube in GFL2.20 E 28" WS+ 16:9 sets

In week 9601 an SF picture tube (W66ESF002X44) was introduced in type numbers 28PW9501, 28PW9521 and 70WA9430. This picture tube was introduced in sets with a serial number beginning with AG06 or higher. The code number of this picture tube is 4822 131 20704.
At the same time as this modification the following components and panels were changed:

Cabinet FL2:	from 4822 430 50889 to 4822 449 80019
Large signal panel:	from 4822 212 32321 to 4822 212 10434
Picture tube panel:	from 4822 212 32159 to 4822 212 31829
ELPS:	from 4822 212 32316 to 4822 212 32314
Feature box:	from 4822 212 31803 to 4822 212 32368
Degaussing coil:	from 4822 157 71259 to 4822 157 71847

The modifications on the panels are as follows:
LSP
Modified:

Position 2429 in 11nF	4822 121 70398
Position 3270 in 1,8Ω	4822 116 81039
Position 3271 in 1,8Ω	4822 116 81039
Position 5428 in	4822 157 71831

Added:

Position 2436 390nF	4822 121 10494
Position 5421 bridge coil	4822 157 71828
Position 9428 (jumper)	

Removed:
Position 1028, 2423, 5420, 9426 en 9432

SSP
Modified:

Position 2544 in 4μF	4822 124 81264
Position 3522 in 120kΩ	4822 051 20124
Position 7202 in	4822 900 10714

Added:

Position 2330 4,7nF	4822 121 43856
Position 3210 220Ω	4822 051 20221
Position 3211 1kΩ	4822 051 10102
Position 3223 1kΩ	4822 051 10102
Position 3330 1kΩ	4822 050 11002
Position 3519 33k	4822 051 20333
Position 3539 1MΩ	4822 051 20105
Position 4520 (jumper)	4822 051 20008
Position 6527 LL4148	4822 130 80446

Removed:
Position 3521, 6522

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PCS 81 798 GB

PTP
Modified:

Position 3224 in 240Ω	4822 051 20241
Position 3233 in 220Ω	4822 051 20221
Position 3243 in 220Ω	4822 051 20221
Position 3253 in 220Ω	4822 051 20221
Position 3280 in 3,9Ω	4822 052 11398
Position 3287 in 3,9Ω	4822 052 11398
Position 7230 in TDA6101Q/N3	4822 209 91143
Position 7240 in TDA6101Q/N3	4822 209 91143
Position 7250 in TDA6101Q/N3	4822 209 91143

Added:

Position 2285 1nF	4822 122 31175

Removed:
Position 2286

5. Introduction of Cyrillic menu in -/58 sets

In week 9546 new software for the Cyrillic menu was introduced in all -/58 GFL sets. This software has been introduced in the following sets:
2GFL2.20 ≥ AG04
4GFL2.20 ≥ AG06
5GFL2.20 ≥ AG04
5GFL2.30 ≥ AG04
The code number of this software is 4822 900 10738.

6. Introduction of Cyrillic teletext in -/58 sets

In week 99606 Cyrillic teletext was introduced in all -/58 GFL sets. This software has been introduced in the following sets:
2GFL2.20 ≥ AG07
4GFL2.20 ≥ AG07
5GFL2.20 ≥ AG05
5GFL2.30 ≥ AG05
The code number of the TXT module is 4822 212 10445.
The code number of the SAA5270WP/E/M3A is 4822 209 12877.

7. Introduction new small signal panel

In week 9616 a new small signal panel was introduced during production. This small signal panel has been introduced in sets with a serial number beginning with AG10 or higher. The reason for this new SSP is the introduction of the 'Philips comb filter' and 'easy link'. The new service SSP is fully compatible with the old service SSP providing the 'video' option 'comb filter' is set to SAA4961.
The code number of the new SSP is 4822 212 10573.
This service information includes the circuit diagram S5 and the new print layout. The difference with the old SSP panel is:

Modified:

Position 3352 in 4k7	4822 051 20472
Position 3365 in 330Ω	4822 051 20331
Position 3367 in 330Ω	4822 051 20331
Position 7202 in	8204 000 57490

Added:

Position 2350 100nF	4822 126 10002
Position 2351 100nF	4822 126 10002
Position 2352 220nF	4822 126 13561
Position 2353 22pF	5322 121 32658
Position 2355 100nF	4822 126 10002
Position 2356 100nF	4822 126 10002
Position 2358 100nF	4822 126 10002
Position 2359 100µF	4822 124 41525
Position 2363 680pF	5322 126 10184
Position 2365 100µF	4822 124 41525
Position 2369 100µF	4822 124 41525
Position 2375 100nF	4822 126 10002
Position 2377 22pF	5322 121 32658
Position 2400 220pF	4822 122 33575
Position 2401 1nF	5322 126 10511
Position 2624 4,7nF	5322 126 10223
Position 3351 68Ω	4822 051 20689
Position 3353 82Ω	4822 051 20829
Position 3368 1Ω	4822 051 20108
Position 3369 1k	4822 051 20102
Position 3371 1Ω	4822 051 20108
Position 3398 1k1	4822 051 20112
Position 3399 220Ω	4822 051 20221
Position 3400 22k	4822 051 20223
Position 3618 1k	4822 051 20102
Position 5313 0,33µH	4822 157 10401
Position 5350 10µH	4822 157 51462
Position 5351 10µH	4822 157 51462
Position 5352 10µH	4822 157 51462
Position 5353 27µH	4822 157 53001
Position 7350 SAA4961/V2/S1	4822 209 12998
Position 7351 BC858C	4822 130 42513
Position 7371 BC848C	5322 130 42136

Removed:
S55, 1335, 2371, 4353, 4355

8. Introduction 32" WS+ set

In week 9535 the 32" 16:9 set was introduced. With the introduction of this set a number of new panels were also introduced, namely:
a. LSP 32" 16:9
b. SSP 32" 16:9
c. PTP 32" 16:9
d. ELPS 32" 16:9
e. Scavem 32" 16:9
f. DAF panel
g. FBX3-Panic

The circuit diagrams, print layouts and parts lists provided in service manual GFL2.20E AA may be used for all the above panels, but with the addition of the following code numbers:

a. Large signal panel 32" 16:9 [L1,L2]

2421	4822 121 43397	680nF 5% 250V
2422	4822 121 43397	680nF 5% 250V
2436	2222 375 04474	470n 5% 400V
3270	4822 116 81039	1,8Ω 5% 0,5W
3271	4822 116 81039	1,8Ω 5% 0,5W
3272	4822 116 81039	1,8Ω 5% 0,5W
3431	4822 050 27505	7M5 1% 0,6W
3447	4822 116 52176	10Ω 5% 0,5W
3457	4822 116 52252	180k 5% 0,5W
3476	4822 116 52272	330k 55 0,5W
5421	4822 157 71829	Bridge coil 32"
5428	4822 157 71833	Linearity corr. 32"
5450	4822 140 10541	L.O.T. 32"
6263	4822 130 70028	BZV85-C3V6

b. Small signal panel [Sa, Sb]

7202	4822 900 10714	Software

c. Picture tube panel 32" 16:9 [R]

2266	4822 126 13597	330pF 10% 500V
3265	4822 051 20184	180k 5% 0,1W
3266	4822 051 20472	4k7 5% 0,1W
3267	4822 051 20222	2k2 5% 0,1W
3268	4822 116 52234	100k 5% 0,5W
5280	4822 157 71452	18µH 10%
7266	5322 130 41983	BC858B

d. Eco Low Power Supply [AU]

1080	4822 212 32314	ELPS 32"

e. Scavem [V]

2816	4822 126 10326	180pF 5% 63V
2856	5322 122 33538	150pF 2% 63V
2900	4822 122 33342	33nF 10% 63V
2920	4822 122 33342	33nF 10% 63V
2921	4822 122 33342	33nF 10% 63V
2922	4822 122 33342	33nF 10% 63V
2930	4822 122 33342	33nF 10% 63V
2934	4822 122 33342	33nF 10% 63V
2940	4822 122 33342	33nF 10% 63V
3816	4822 051 20339	33Ω 5% 0,1W
3856	4822 116 52193	39Ω 55 0,5W
3857	4822 117 11139	1k5 1% 0,1W
3900	4822 052 10109	10Ω 5% 0,33W
3901	4822 051 20101	100Ω 5% 0,1W
3902	4822 051 20101	100Ω 5% 0,1W
3920	4822 051 20272	2k7 5% 0,1W
3921	4822 052 10109	10Ω 5% 0,3W
3922	4822 051 20103	10k 5% 0,1W
3923	4822 051 20472	4k7 5% 0,1W
3924	4822 051 20222	2k2 5% 0,1W
3925	4822 051 20103	10k 5% 0,1W
3926	4822 050 11002	1k 1% 0,4W
3927	4822 050 11002	1k 1% 0,4W
3930	4822 052 10109	10Ω 5% 0,3W
3931	4822 051 20101	100Ω 5% 0,1W
3932	4822 051 20471	470Ω 5% 0,1W
3933	4822 116 52195	47Ω 5% 0,5W
3940	4822 052 10109	10Ω 5% 0,3W
3941	4822 051 20101	100Ω 5% 0,1W
3942	4822 051 20471	470Ω 5% 0,1W
3943	4822 116 52195	47Ω 5% 0,5W
6901	4822 130 34197	BZX79-B12
6902	4822 130 34197	BZX79-B12
6932	4822 130 31253	BZX79-C2V4
6933	4822 130 31253	BZX79-C2V4
7900	4822 209 63995	TDA8444P/N4
7920	5322 209 61487	LM358N
7931	5322 130 60508	BC857B
7932	4822 130 40981	BC337-25
7940	4822 130 41246	BC327-25
7941	4822 130 60511	BC847B

f. DAF panel [AB]

1028	4822 212 32391	DAF panel
	4822 265 20733	2P yellow
	4822 265 41468	Pin strip 12P
2090	4822 126 12084	390pF 10% 2kV
2091	4822 126 12084	390pF 10% 2kV
3090	4822 116 21239	VDR
3091	4822 116 21239	VDR
5090	4822 148 81242	Transf. DAF

g. Featurebox 3 Panic [F]

1345	4822 212 32368	Feature box 3 Panic

9. Picture tube adjustments

White drive

Turn off DNR and 'Contrast Plus' before adjusting. Use the internal test pattern (a white picture). Adjust the white level for the three settings 'WARM', 'NORMAL' and 'COOL'.

Start in the 'NORMAL' position, take the standard value of green as a starting point (value 26), and then adjust red and blue.

The factory settings for the colour temperatures are:

Tint	Temp K	X	Y
Warm	7200	303	314
Normal	8700	289	299
	9500	284	292
Cool	10200	280	287
	12000	272	278

	Europe	Hong Kong
Warm	7200K	7200K
Normal	8700K	9500K
Cool	10200K	12000K

In case a colour analyzer is not available the following values for 'White Drive' can be maintained:

25"	Cool	Normal	Warm
R	31	32	36
G	27	27	26
B	25	21	16

29"	Cool	Normal	Warm
R	25	26	28
G	26	26	25
B	18	16	13

33"	Cool	Normal	Warm
R	44	46	50
G	40	40	41
B	36	32	27

28" WS+	Cool	Normal	Warm
R	35	37	41
G	31	31	31
B	27	23	19

32" WS+	Cool	Normal	Warm
R	34	35	39
G	25	26	26
B	22	19	15

28" SF	Cool	Normal	Warm
R	30	35	35
G	25	25	25
B	21	18	14

32" SF	Cool	Normal	Warm
R	30	35	35
G	25	25	25
B	21	18	14

Cut-off

Before adjusting turn off DNR and 'Contrast Plus', set brightness to step 37 (Brigntness: ████████ ▮▮▮▮▮▮) and contrast to maximum.

Use the internal test pattern (a black picture). Use a Minolta CA-100 colour analyzer and adjust the light output for the settings 'Cool', 'Normal' and 'Warm' to 3NIT with the colour temperature below.

	Europe	Hong Kong
Warm	7200K	7200K
Normal	8700K	9500K
Cool	10200K	12000K

In case a colour analyzer is not available the following values for 'Cut-off' can be maintained:

25"	Cool	Normal	Warm
R	30	32	29
G	27	27	19
B	37	30	15

29"	Cool	Normal	Warm
R	23	24	29
G	20	20	20
B	27	20	14

33"	Cool	Normal	Warm
R	34	34	34
G	26	23	18
B	37	27	15

28" WS+	Cool	Normal	Warm
R	34	34	34
G	25	22	18
B	34	24	13

32" WS+	Cool	Normal	Warm
R	34	34	34
G	23	21	17
B	33	24	13

28" SF	Cool	Normal	Warm
R	34	34	34
G	26	26	17
B	36	29	14

32" SF	Cool	Normal	Warm
R	34	34	34
G	26	26	17
B	36	29	14

Soft clipper

Use a black picture with a small white square in the middle as test pattern. Adjust contrast to maximum. Temporarily adjust 'Peak White Limiter' to 63. Using a colour analyzer on the middle of the white square, and with the aid of 'Soft Clipper', adjust the light output as follows:

25" SF : 800 NIT
29" SF : 600 NIT (Smartic)
29" SF : 520 NIT Compact Dolby)
33" : 380 NIT
28" WS : 750 NIT
32" WS : 480 NIT
28" SF WS : 620 NIT
32" SF WS : 600 NIT

In case a colour analyzer is not available the following values for 'Soft clipper' can be maintained:

25" SF : 'Soft Clipper' = 53
29" SF : 'Soft Clipper' = 49
29" SF : 'Soft Clipper' = 40
33" : 'Soft Clipper' = 40
28" WS : 'Soft Clipper' = 40
32" WS : 'Soft Clipper' = 40
28" SF WS : 'Soft Clipper' = 40
32" SF WS : 'Soft Clipper' = 40

Peak White Limiter

Use a black picture with a small white square in the middle as test pattern. Adjust contrast to maximum. Temporarily adjust 'Soft Clipper' to 63. Using a colour analyzer on the middle of the white square, and with the aid of 'Peak White Limiter', adjust the light output as follows:

25" SF : 700 NIT
29" SF : 500 NIT (Smartic)
29" SF : 520 NIT Compact Dolby)
33" : 350 NIT
28" WS : 650 NIT
32" WS : 410 NIT
28" SF WS : 550 NIT
32" SF WS : 500 NIT

In case a colour analyzer is not available the following values for 'Peak White Limiter' can be maintained:

25" SF : 'Peak White Limiter' = 23
29" SF : 'Peak White Limiter' = 22
29" SF : 'Peak White Limiter' = 25
33" : 'Peak White Limiter' = 25
28" WS : 'Peak White Limiter' = 25
32" WS : 'Peak White Limiter' = 25
28" SF WS : 'Peak White Limiter' = 25
32" SF WS : 'Peak White Limiter' = 25

10. Overview Featureboxes for the GFL chassis

GFL sets can be fitted with the following basic feature boxes (FBX):

- GFL 2.20 FBX3 Digital Scan
- GFL 2.30 FBX4 Digital Scan Natural Motion

Two extra panels can be soldered onto the basic feature box for additional functions:

- AI panel for the 'Dynamic Contrast' and Digital Panorama Mode' functions.
- PALplus for the decoder of the 'Helper' signals and Motion Adaptive Colour Plus (MACP))only for FBX4).

Up to the present the AI panel can include two different functions:

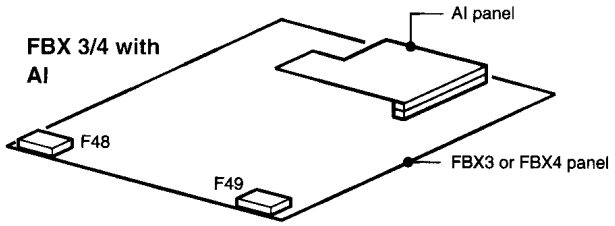
- Dynamic contrast (AI-S) (via the SMARTIC IC (SAA4975H, IC7008)).
- Digital Panorama (AI-P) (via the PANIC IC (SAA4992WP/V1, IC7010) (this panel replaces the panorama panel on the LSP)).

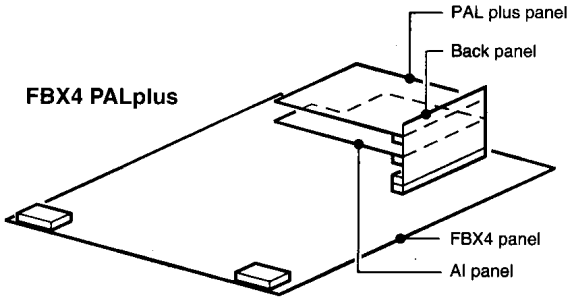
The combination of both functions on the AI panel is indicated by means of AI-S/P.

A combination of FBX4, Ai and PALplus is also possible, but this has a different metal housing due to the presence of the so-called 'Back panel' that directly connects the three horizontally positioned PCBs to one another (FBX4 + AI + PALplus is thicker).

The different variations are given in the figure below:

In the overview below the various options are given together with their service code numbers:





CL66615003_013.AI
040496

Model/component		Basic panel		AI panel		Backpanel	PALplus panel
Model	Code number	FBX3	FBX4	Smartic	Panic		
FBX4-S/P-PALplus *)	4822 212 32366		X	X	X	X	X
FBX4-S/P	4822 212 32365		X	X	X		
FBX3-VGA	4822 212 32337	X					
FBX3-P	4822 212 32368	X			X		
FBX3-S	4822 212 31927	X		X			
FBX3	4822 212 31803	X					
AI-S	4822 212 31947			X			
AI-P	4822 212 32392				X		
AI-S/P	4822 212 32389			X	X		
AI-S/P for PALplus	4822 212 32373			X	X		
PALplus + AI-S/P	4822 212 32377			X	X	X	X

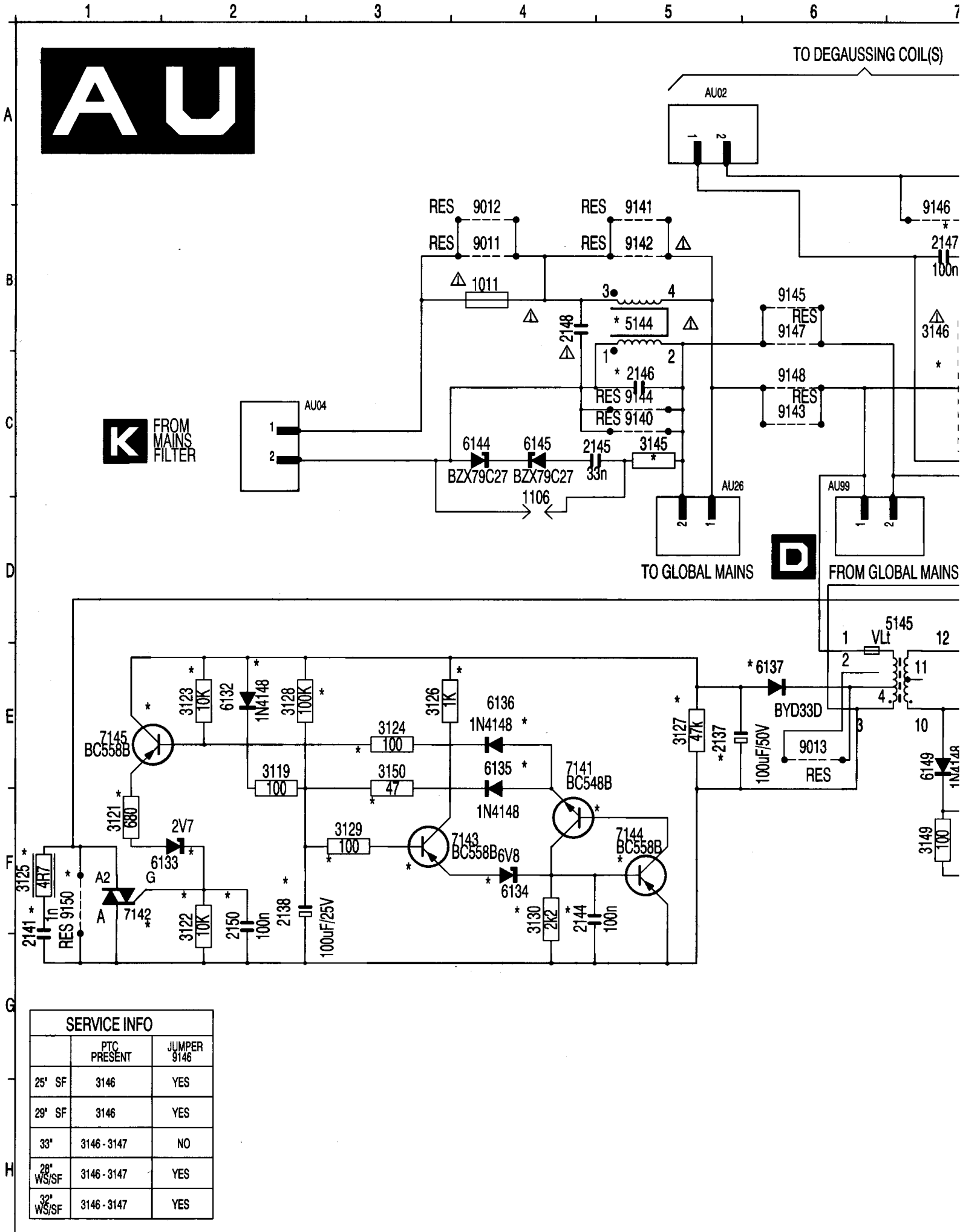
*) This article can be repaired via a central repair procedure.

Model/type number	
Model	Type number
FBX3	29PT82XC, 28PW95X1,
FBX3-S	25PT9XX1, 29PT9XX1, 33PT9XX1
FBX3-P	32PW95X1, 28PW95X1 ≥ AG06
FBX3-VGA	29PX8001, PD5029C1
FBX4-S/P	28PW96X1, 32PW96X1
FBX4-S/P-PALplus	28PW97X1, 32PW97

Microprocessor/software (IC7505) for the various feature boxes:

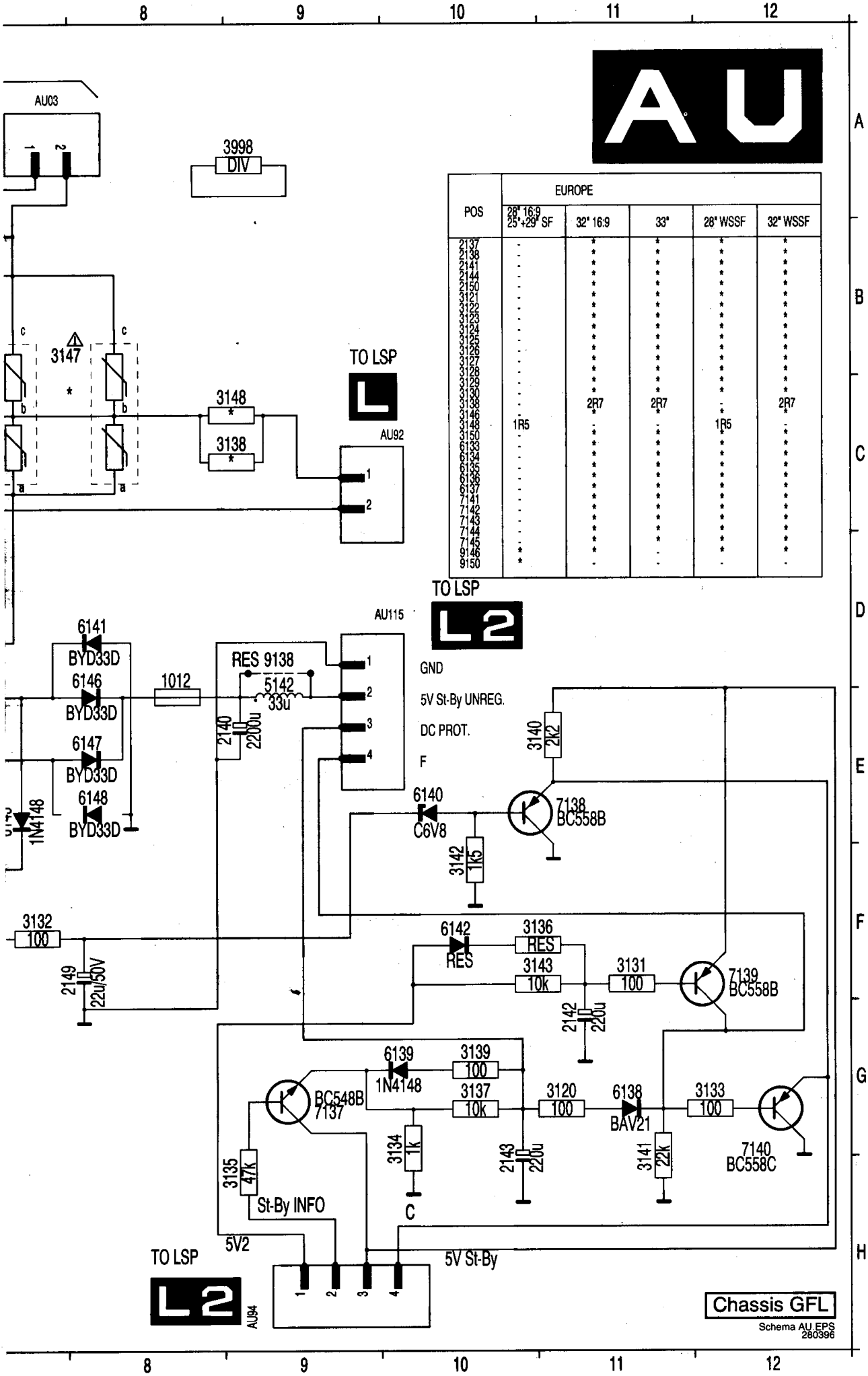
Feature box	Software
FBX3 with TDA8753	4822 209 90033
FBX3 with TDA8753AN/C	4822 209 90153
FBX4	4822 900 10745

Standby supply (ELPS) / Bereitschaftnetzteil (ELPS) /



SERVICE INFO		
	PTC PRESENT	JUMPER 9146
25" SF	3146	YES
29" SF	3146	YES
33"	3146 - 3147	NO
28" WS/SF	3146 - 3147	YES
32" WS/SF	3146 - 3147	YES

Alimentation de veille (ELPS)

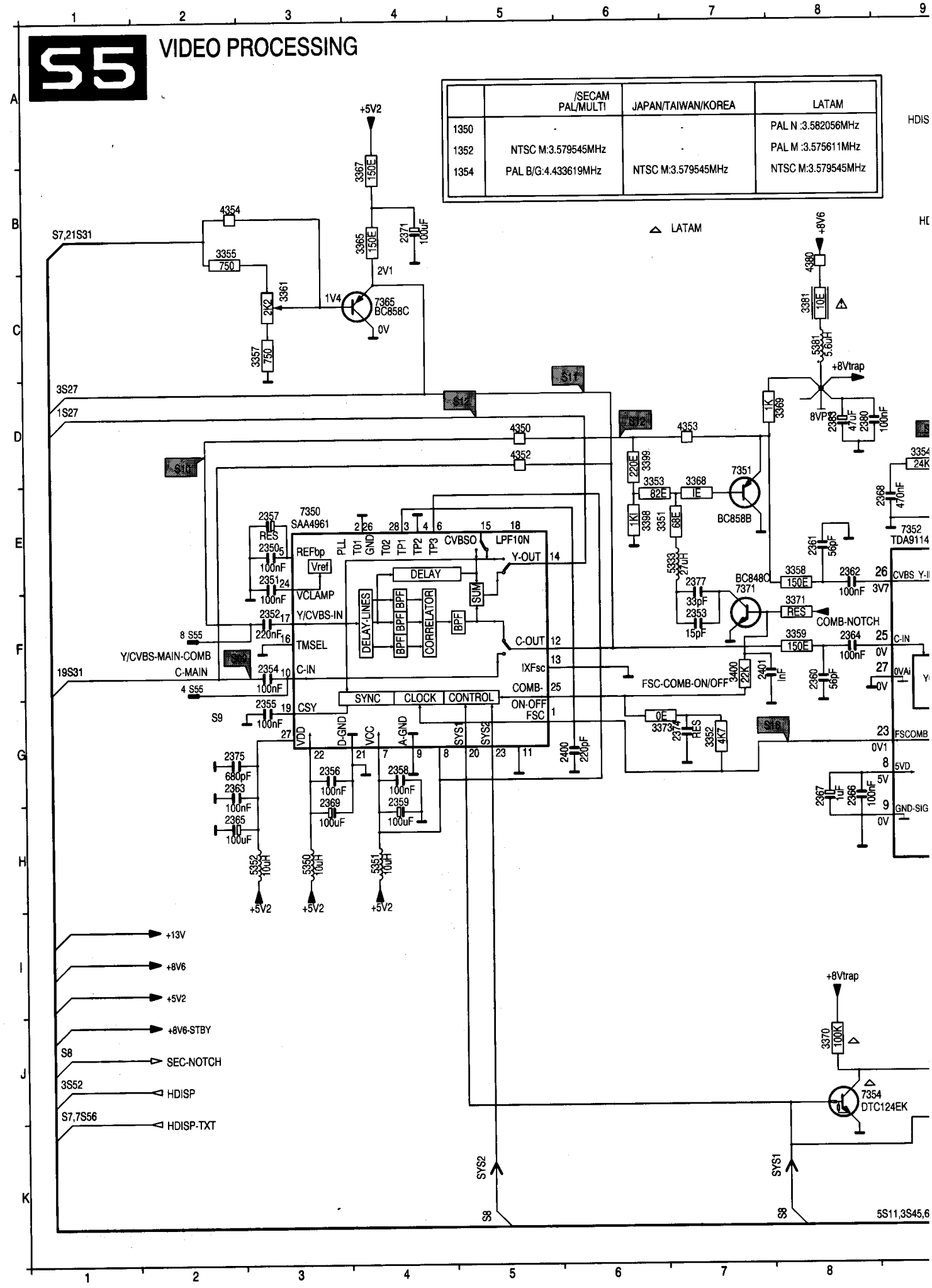


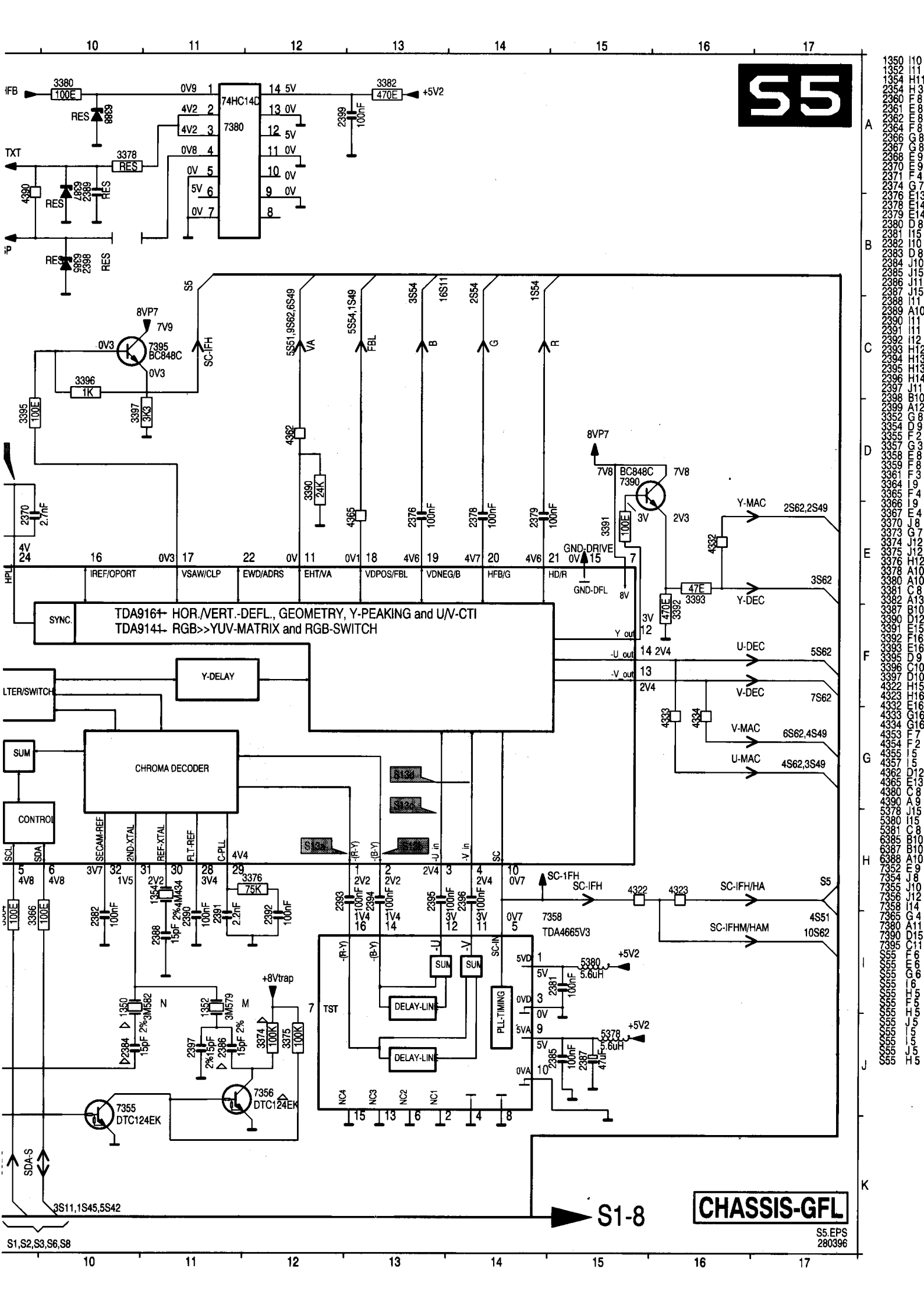
POS	EUROPE				
	28" 16:9 25°+29° SF	32" 16:9	33"	28" WSSF	32" WSSF
2137	-	*	*	*	*
2138	-	*	*	*	*
2141	-	*	*	*	*
2144	-	*	*	*	*
2150	-	*	*	*	*
3121	-	*	*	*	*
3122	-	*	*	*	*
3123	-	*	*	*	*
3124	-	*	*	*	*
3125	-	*	*	*	*
3126	-	*	*	*	*
3127	-	*	*	*	*
3128	-	*	*	*	*
3129	-	*	*	*	*
3130	-	*	*	*	*
3139	-	2R7	2R7	-	2R7
3146	-	*	*	*	*
3148	1R5	-	-	1R5	-
3150	-	*	*	*	*
6133	-	*	*	*	*
6134	-	*	*	*	*
6135	-	*	*	*	*
6136	-	*	*	*	*
6137	-	*	*	*	*
7141	-	*	*	*	*
7142	-	*	*	*	*
7143	-	*	*	*	*
7144	-	*	*	*	*
7145	-	*	*	*	*
9146	*	-	-	-	-
9150	*	-	-	-	-

1011 B4
1012 D8
1106 D4
2137 E5
2138 F2
2140 E9
2141 F1
2142 G11
2143 G10
2144 F4
2145 C5
2146 C5
2147 B7
2148 B4
2149 F8
2150 F2
3119 E2
3120 G11
3121 F1
3122 F2
3123 E2
3124 E3
3125 F1
3126 E3
3127 E5
3128 E2
3129 F3
3130 F4
3131 F11
3132 F7
3133 G12
3134 G10
3135 H9
3136 F11
3137 G10
3138 C9
3139 G10
3140 E11
3141 G11
3142 F10
3143 F11
3145 C5
3146 B7
3147 B7
3148 C9
3149 F7
3150 E3
3998 A9
5142 E9
5144 B5
5145 D6
6132 E2
6133 F2
6134 F4
6135 E4
6136 E4
6137 E6
6138 G11
6139 G10
6140 E10
6141 D8
6142 F10
6143 E7
6144 C4
6145 C4
6146 D8
6147 E8
6148 E8
6149 E7
7137 G9
7138 E11
7139 F12
7140 G12
7141 E4
7142 F1
7143 F4
7144 F5
7145 E1
9011 B4
9012 B4
9013 E6
9138 D9
9140 C5
9141 B5
9142 B5
9143 C6
9144 C5
9145 B6
9146 B7
9147 B6
9148 C6
9150 F1

AU02 A5
AU03 A7
AU04 C2
AU115 D10
AU26 C6
AU92 B10
AU94 H9
AU99 C6

Video processing / Videosignal-Verarbeitung / Traitement vidéo




S5
TDA9161 HOR./VERT.-DEFL., GEOMETRY, Y-PEAKING and U/V-CTI
TDA9141 RGB>>YUV-MATRIX and RGB-SWITCH
IREF/OPORT
VSAW/CLP
EWD/ADRS
EHT/VA
VDPOS/FBL
VDNEG/B
HFB/G
HD/R
SYNC.
Y-DELAY
CHROMA DECODER
SUM
CONTROL
TDA4665V3
DELAY-LINE
PLL-TIMING
74HC14D
7380
7395 BC848C
7390 BC848C
7355 DTC124EK
7356 DTC124EK
Y-MAC
U-MAC
V-MAC
Y-DEC
U-DEC
V-DEC
SC-IFH
SC-IFH/HA
SC-IFHM/HAM
SDA-S
3S11,1S45,5S42
S1,S2,S3,S6,S8
S1-8
CHASSIS-GFL
S5.EPS
280396