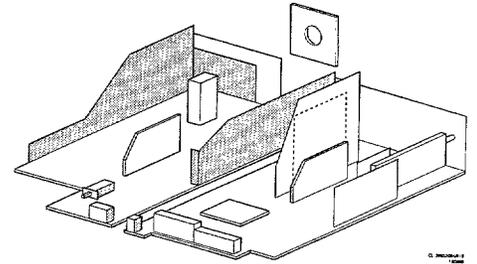


Service  
Service  
**Service**

**FL 1.10**  
AA



# Service Manual

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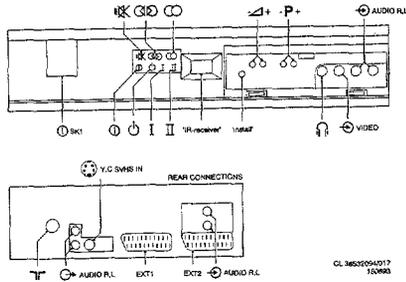
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# 1. Technical data

Mains voltage	: 220 - 240 V (± 10%)
	: 50 Hz - 60 Hz (± 5%)
Aerial input impedance	: 75 Ω - coaxial
Minimum aerial voltage	: 30 μV (VHF), 40 μV (UHF)
Maximum aerial voltage VHF/S/UHF	: 180 mV
Programmes	: 0 - 59
VCR programmes	: 0, 50 - 59

# 2. Connection facilities and Chassis overview



## Specification of the connectors

### EXT1 (AUX): RGB+CVBS

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

### EXT2 (VCR): SVHS (Y/C) + CVBS

1	-Audio	⊕	R(0,5VRMS ≤ 1kΩ)
2	-Audio	⊖	R(0,5VRMS ≥ 10kΩ)
3	-Audio	⊕	L(0,5VRMS ≤ 1kΩ)
4	-Audio	⊥	
5	--		
6	-Audio	⊖	L(0,5VRMS ≥ 10kΩ)
7	--		
8	-CVBS-status	⊖	0-2V: int 4,5-7V: EXT 16:9 9,5-12V: EXT 4:3 ⊕ 4,5 : EXT 16:9
9	--		
10	--		
11	--		
12	--		
13	-C	⊥	
14	--		
15	-C	⊖	(1V <sub>pp</sub> /75Ω)
16	--		
17	-CVBS	⊥	
18	-CVBS	⊥	
19	-CVBS	⊕	(1V <sub>pp</sub> /75Ω)
20	-CVBS/Y	⊖	(1V <sub>pp</sub> /75Ω)
21	-Earth screen		

### EXT2 (SVHS) (rear)

SVHS	1 -	⊥	
	2 -	⊥	
	3 - Y	⊕	(1V <sub>pp</sub> ; 75Ω)
	4 - C	⊖	(0,3V <sub>pp</sub> ; 75Ω)
	⊕ CINCH Audio	⊖	L(0,2 - 2VRMS; ≥ 10kΩ)
	⊕ CINCH Audio	⊖	R(0,2 - 2VRMS; ≥ 10kΩ)

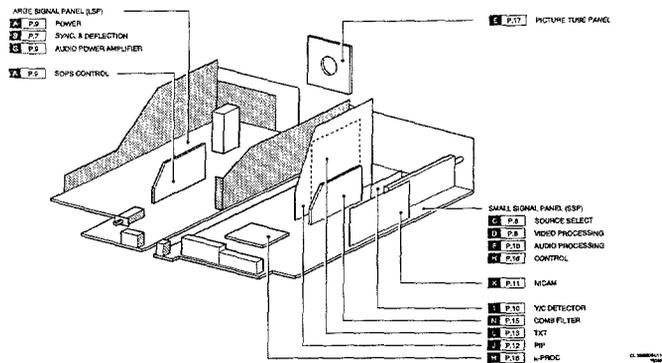
### EXT3 (front)

⊕ CINCH Video	⊖	300mV <sub>pp</sub> /75Ω
⊕ CINCH Audio	⊖	L(0,2 - 2VRMS; ≥ 10kΩ)
⊕ CINCH Audio	⊖	R(0,2 - 2VRMS; ≥ 10kΩ)
⊕ 8.3mm	⊕	32-2000Ω ≥ 10mW

### Audio out (rear)

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

Chassis overview



3. Warnings and Notes

Warnings

Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol ▲.

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).

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 of the unit. Keep components and tools also at this same potential.

When repairing a unit, always connect it to the mains voltage via an isolating transformer.

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

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

It is recommended that safety goggles are worn when replacing the picture tube.

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

After repair the wiring should be fastened once more in the cable clamps for this purpose.

10. In order to prevent measuring errors, the heat sinks should not be used as reference points for measurements. The heat sink for the sound output amplifier is connected to the -16/-11 volts.
11. On this unit the 140 volt supply voltage is not supplied via an interconnection on the deflection yoke to the line output transformer. When the deflection cable is detached, the +140 volt supply remains loaded. In order to unload the +140 volts, coil 5511 should be removed.
12. 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.

Notes

1. The direct voltages and oscillograms should be measured with regard to the tuner earth (⊥<sub>T</sub>), or hot earth (⊥) 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 PCB 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.
6. The connectors used for the modules (board to board) are gold-plated and should only be replaced by the same type.

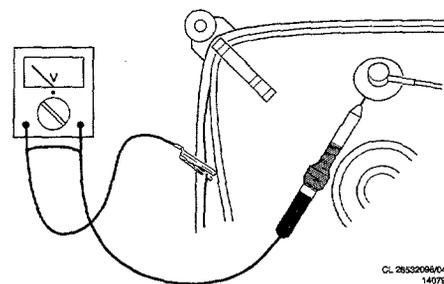


Fig. 3.1

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## 2 4. Mechanical instructions

It is extremely important that following disassembly all cables are replaced in their original positions in order that safety and sound and picture quality may be guaranteed.

### 1. Removing the rear panel

Before the rear panel is removed the connection to the subwoofer should first be disconnected:  
 Open the flap in the rear panel. Disconnect the subwoofer cable. (connector L36)  
 Remove the rear panel from the set.

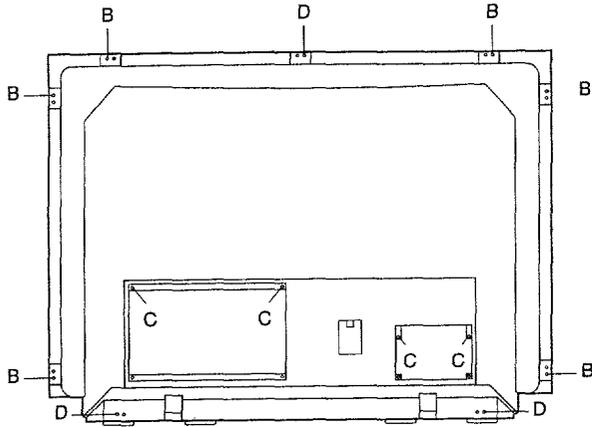


Fig. 4.1

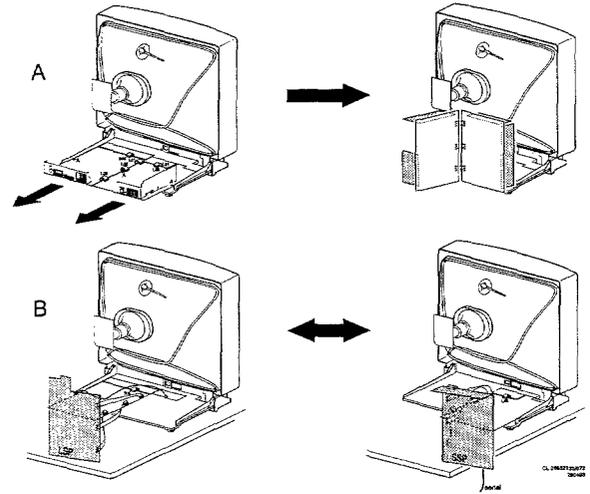


Fig. 4.2

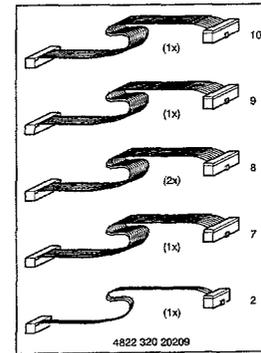


Fig. 4.3

### 2. Service positions

FL1 can be placed in two service positions. (fig. 4.2)  
 Remove the rear panel.  
 Remove the screw behind the flap on the front side of the set.

#### Service position 1:

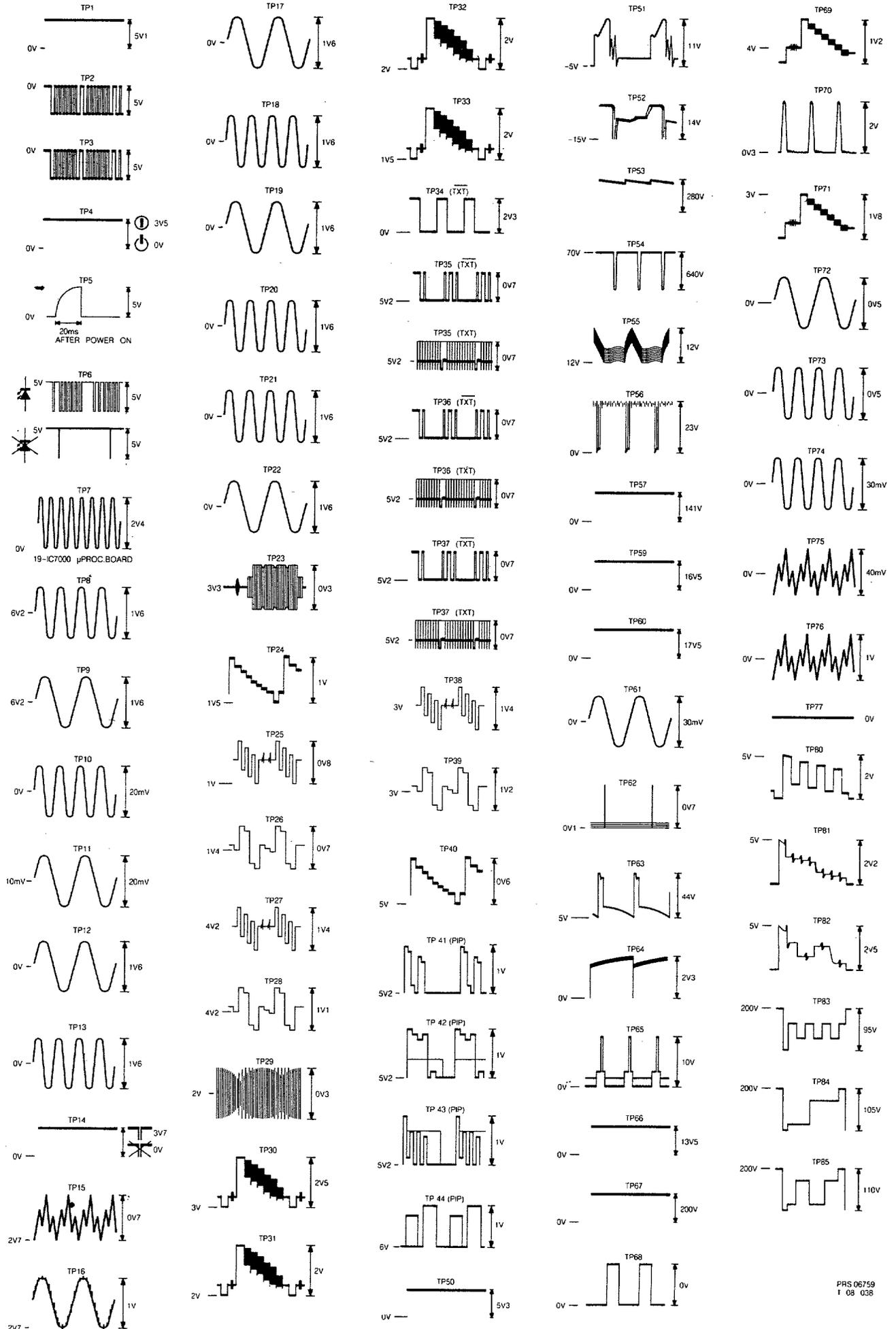
If present, press down the lugs with which the chassis is secured and pull both panels simultaneously to the rear, removing any hindering cables from the cable ties if necessary.  
 Place the panels vertically behind the set as illustrated in figure 4.2a.

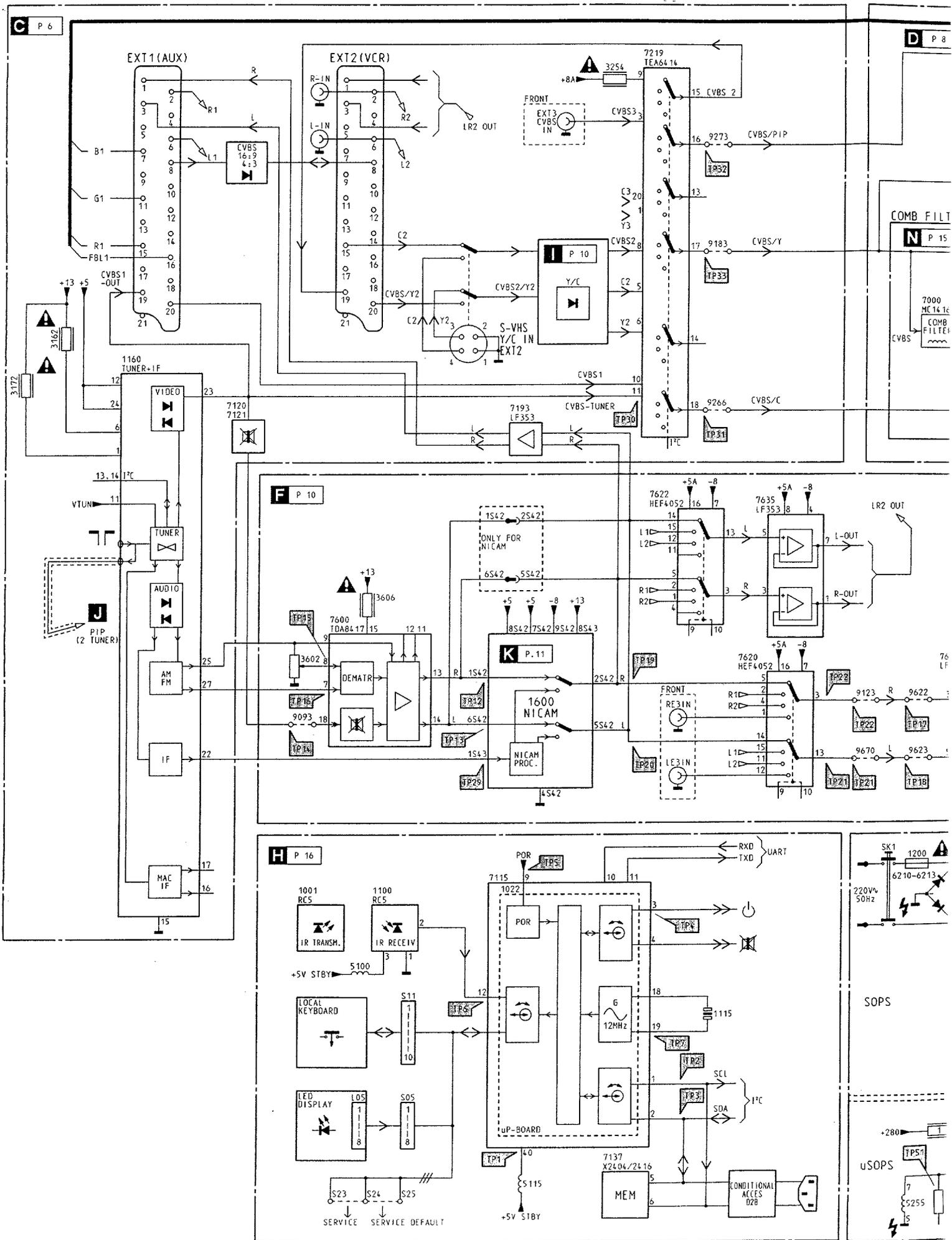
#### Service position 2:

Disconnect connectors L01, L02 and L03 that connect the small (SSP) and large signal panel (LSP) together. Pull the panel concerned backwards out of the set. Using extension cable set 4822 320 20209 (fig. 4.3) reconnect both panels together. Place the panel concerned behind the set as illustrated in figure 4.2b.

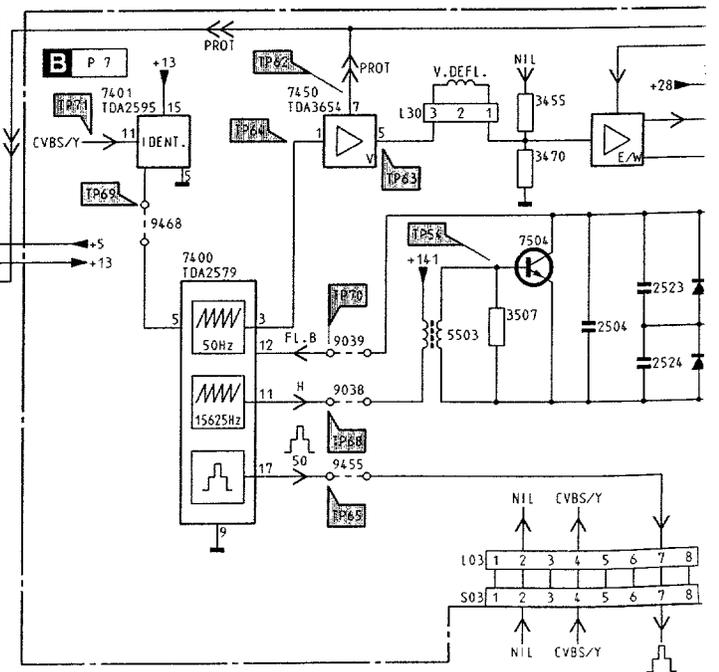
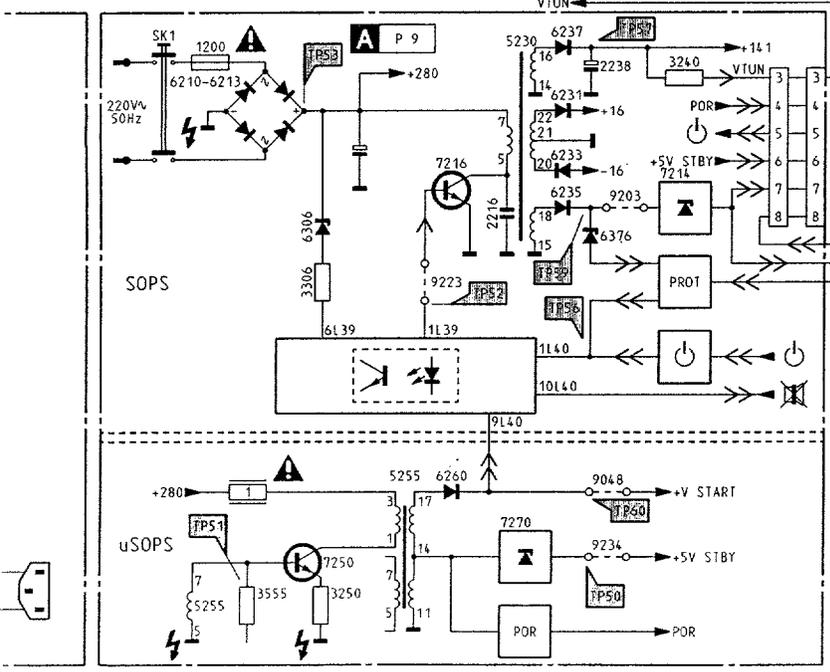
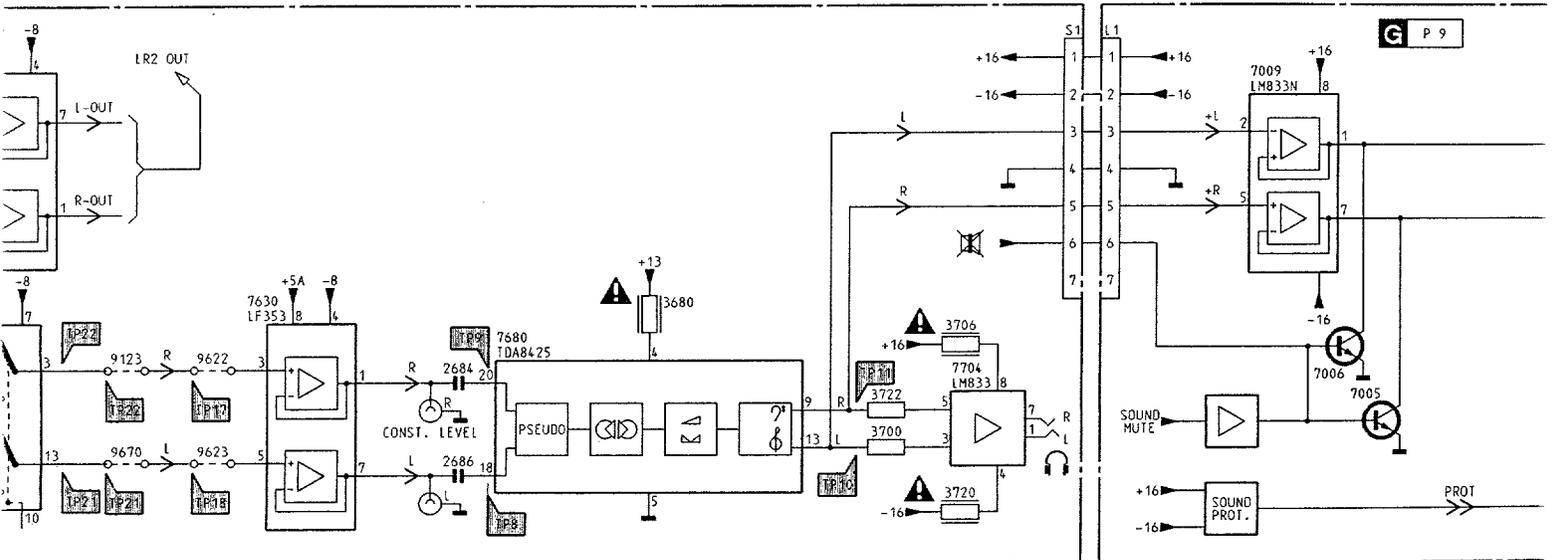
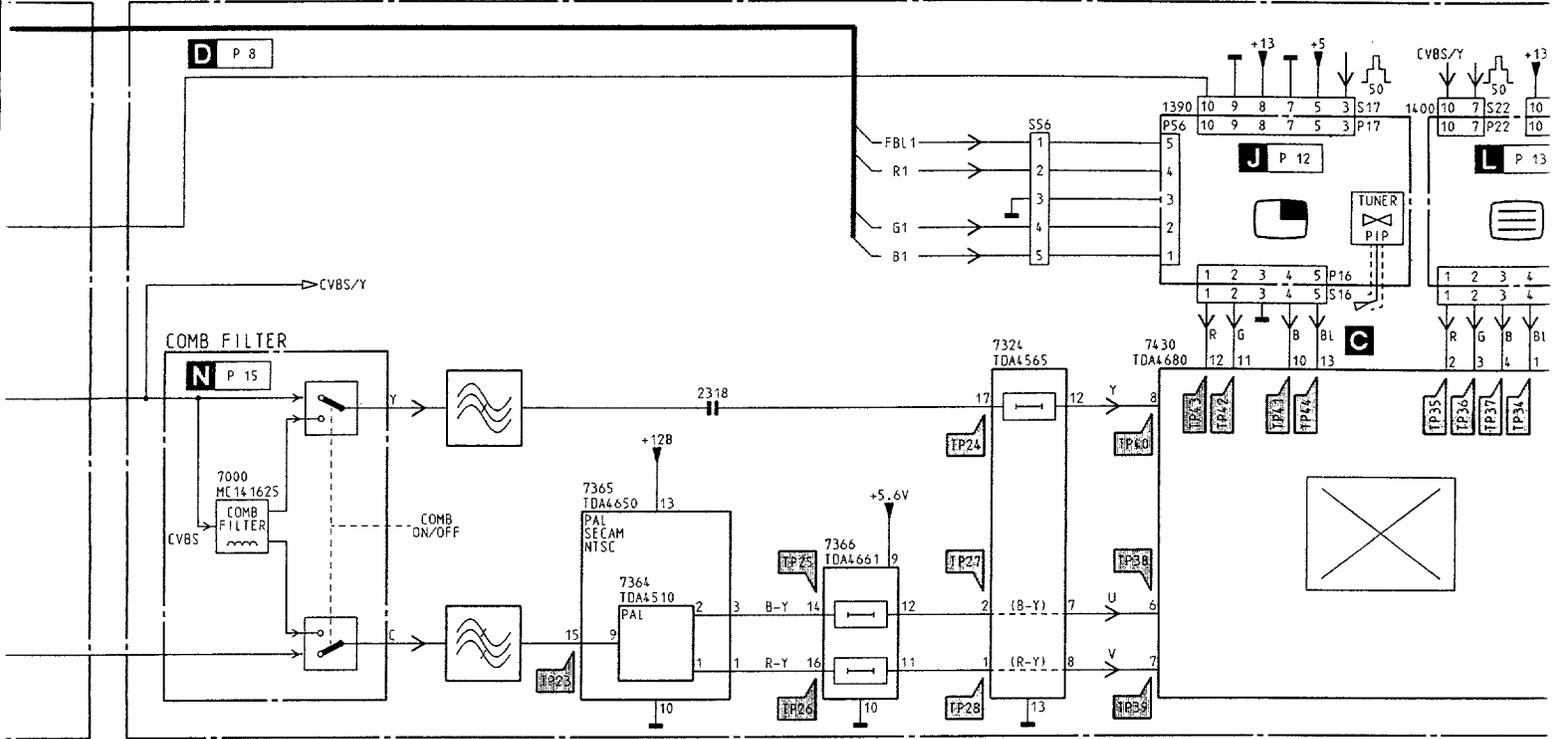


# Oscillograms Oscillograms / Oscillogrammes

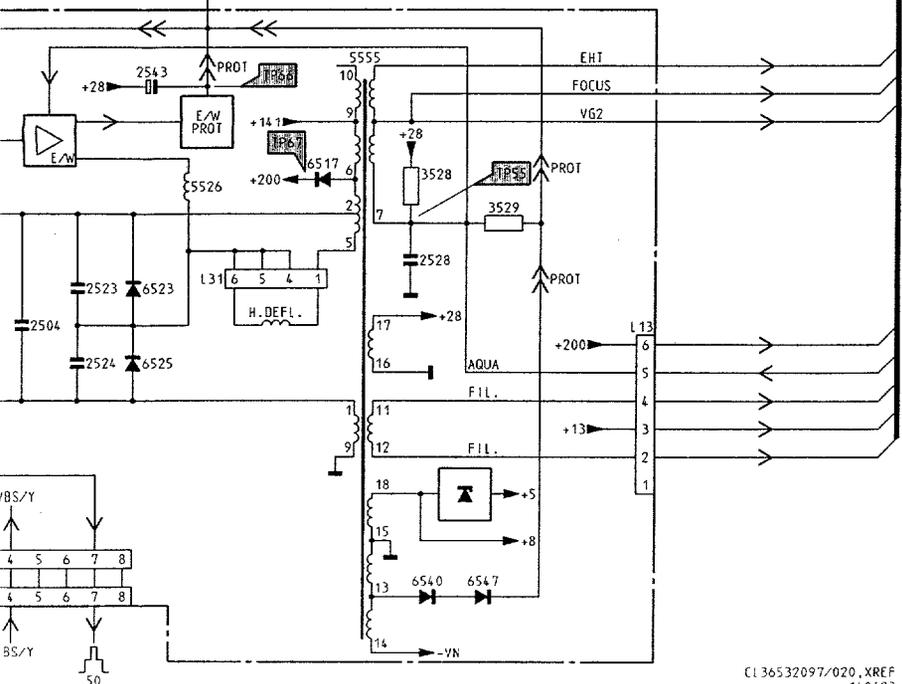
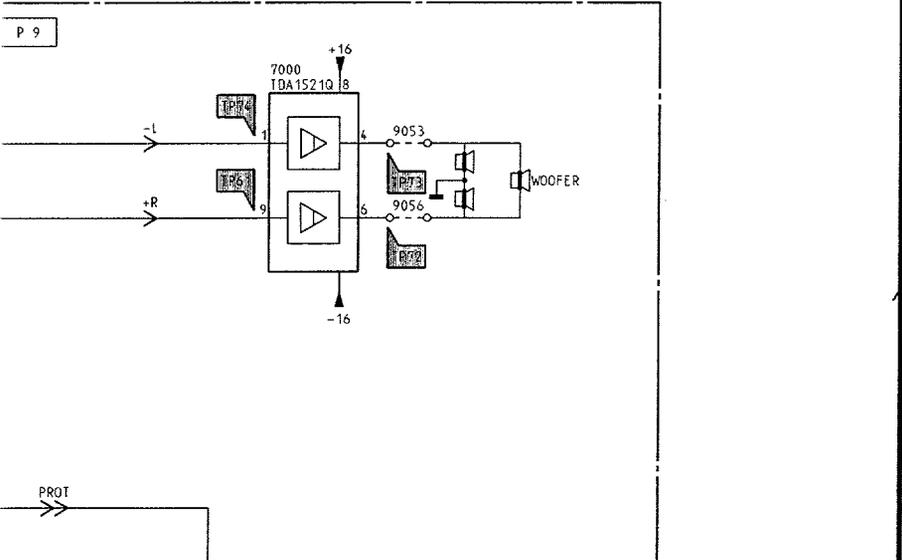
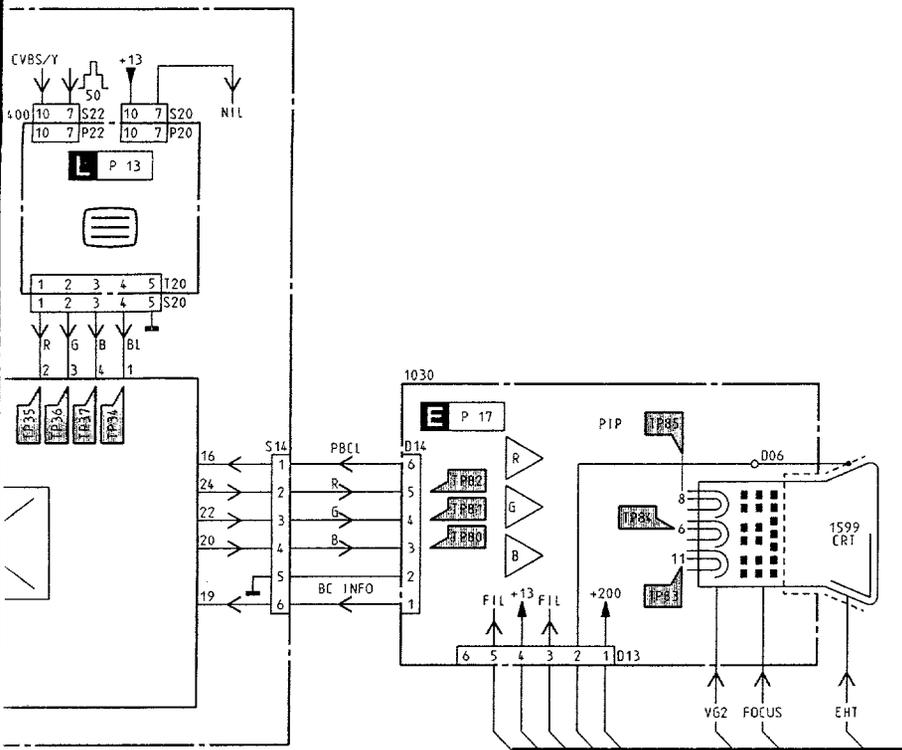


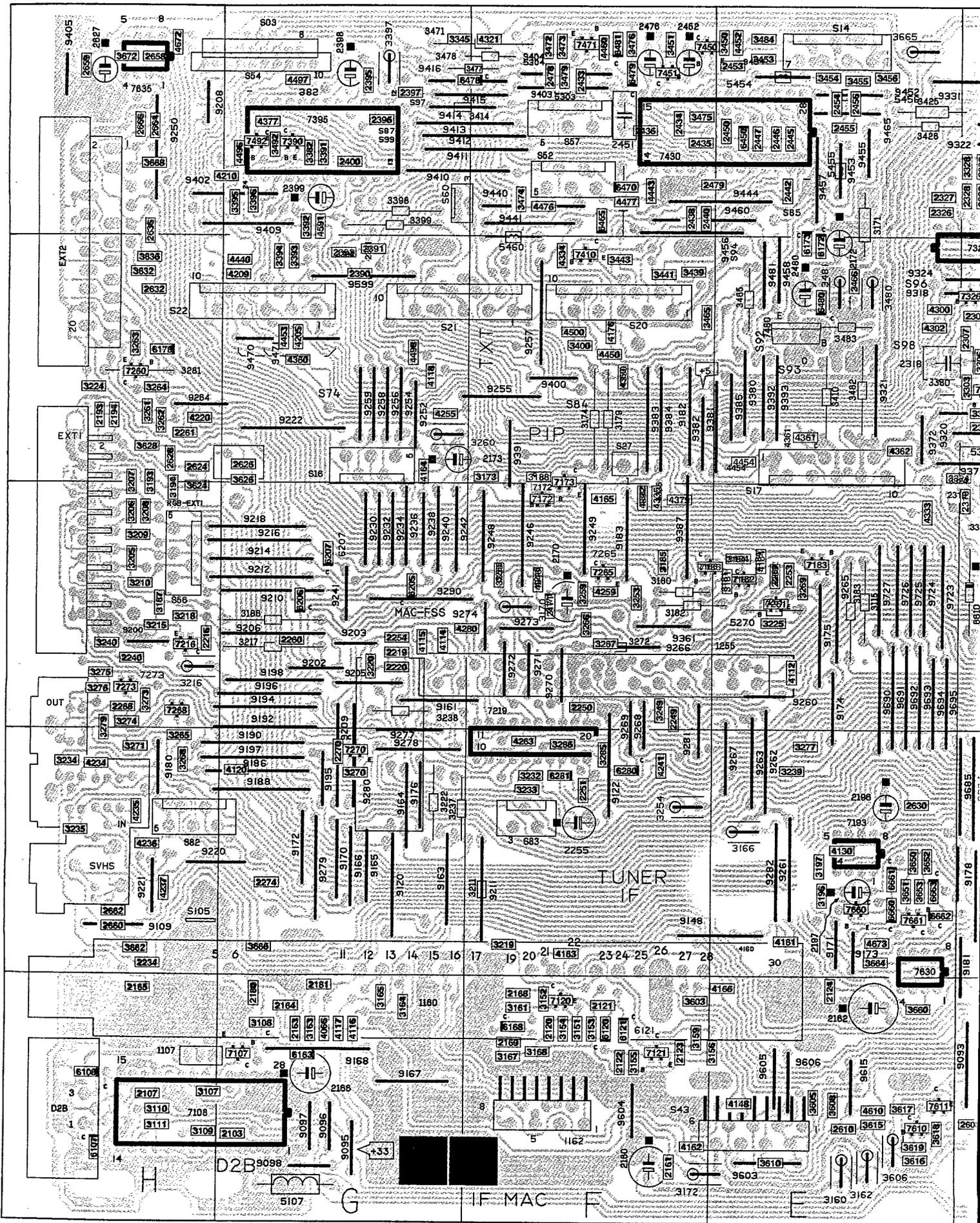


# Blockdiagram / Blockschaltbild /

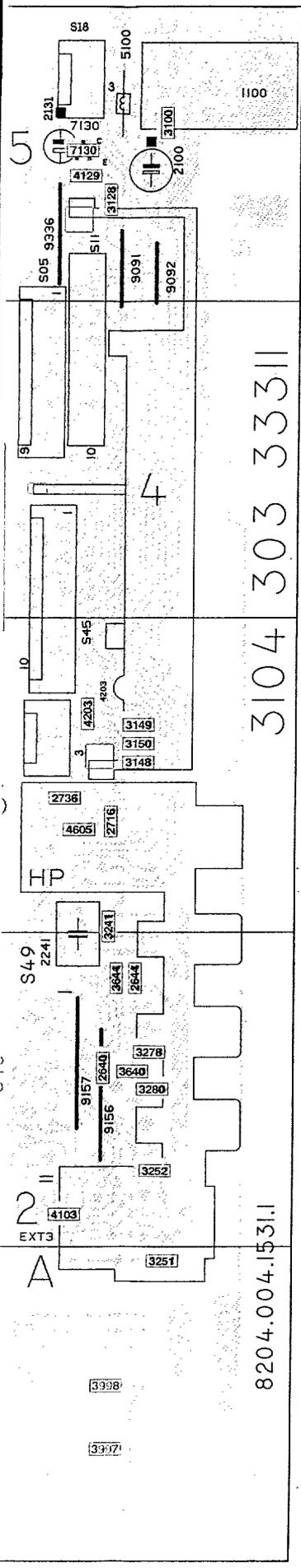


# Diagramme schématique

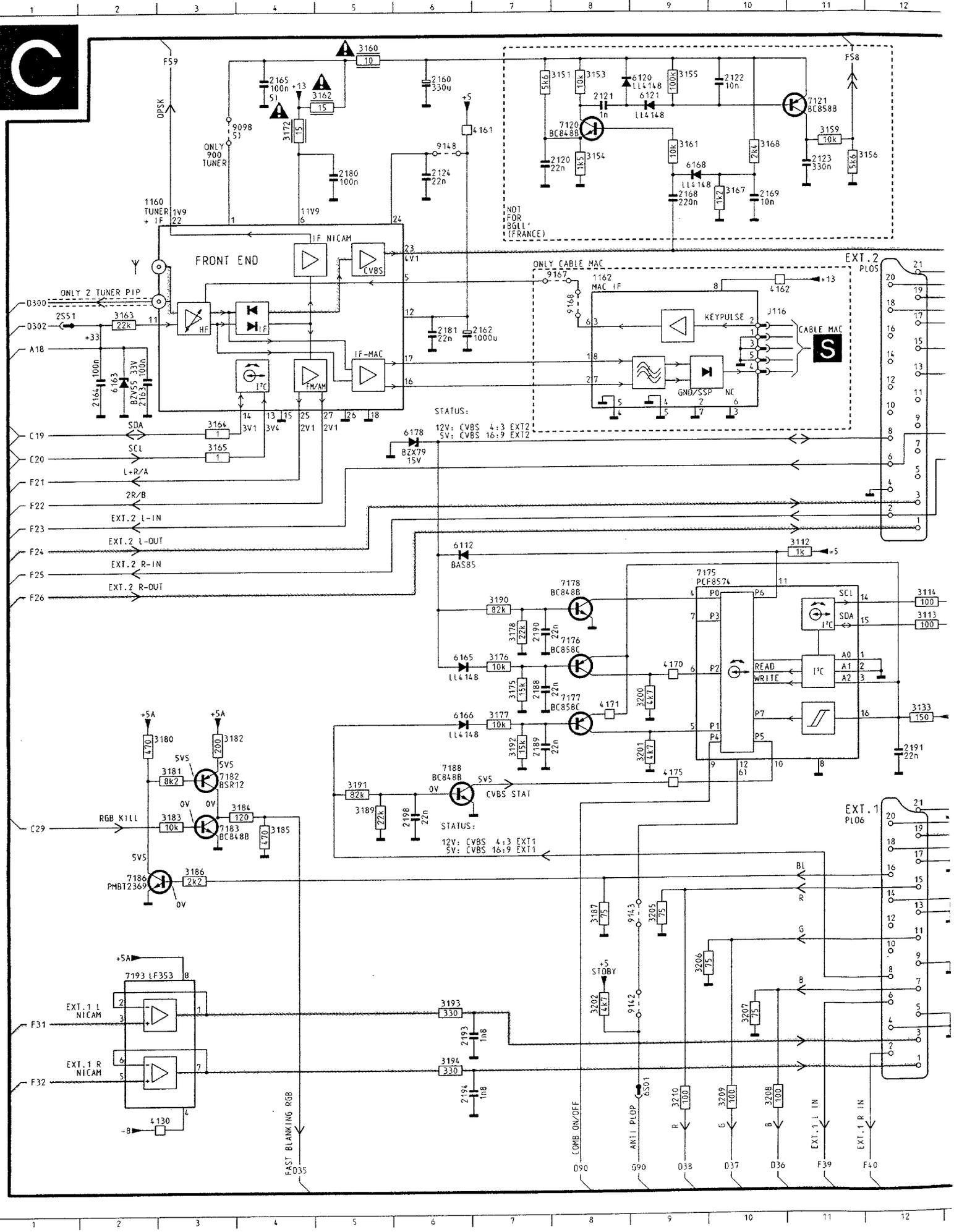
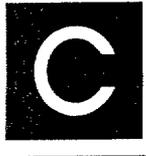








D28	H1	2250	F3	2636	H4	3175	B1	3329	D4	3682	B5	4591	G5	7390	G5	9186	G2	9414	G5
EXT1	H3	2251	F2	2638	D2	3176	B1	3330	D5	3684	B4	4600	C1	7395	G5	9187	B3	9415	F5
EXT2	H4	2252	E2	2640	A2	3177	B1	3331	D5	3686	B4	4605	A3	7410	F4	9188	G2	9416	F5
EXT3	A3	2253	B3	2642	C2	3178	B1	3336	D4	3700	B5	4610	E1	7430	E5	9189	C4	9440	F5
SVHS	H2	2254	G3	2644	A2	3179	F4	3337	C3	3702	B4	4672	H5	7450	F5	9192	G2	9444	F5
S01	B5	2255	F2	2646	C2	3180	F3	3338	C4	3704	B5	4673	E2	7451	F5	9192	G2	9444	E5
S02	D5	2257	C1	2658	H5	3181	E3	3339	C4	3706	C4	5100	A5	7471	F5	9194	G3	9447	D3
S03	H5	2258	C1	2659	H5	3182	F3	3342	C3	3708	B5	5107	G1	7480	E4	9195	G2	9448	D3
S05	A4	2260	G3	2660	H2	3183	E3	3344	C4	3710	C5	5115	B3	7492	G5	9196	G3	9449	D2
S11	A5	2261	H4	2662	H2	3184	E3	3345	G5	3712	C4	5270	E3	7600	D1	9197	G2	9450	D2
S14	E5	2268	H3	2664	H5	3185	F3	3346	D3	3713	C4	5280	B2	7610	E1	9198	G3	9451	D1
S15	B2	2269	E3	2666	H5	3186	G3	3350	C4	3714	C5	5303	F5	7611	E1	9200	H3	9452	E5
S16	G4	2270	G2	2660	B5	3187	H3	3351	C3	3720	B5	5304	F5	7620	C2	9202	G3	9453	E5
S17	E4	2274	G2	2681	B5	3189	B1	3353	C4	3722	B5	5305	D4	7622	C2	9203	G3	9454	E5
S18	A5	2301	D4	2682	B5	3190	B1	3360	D5	3724	B5	5310	D4	7630	E1	9205	G3	9455	E5
S19	B2	2305	D4	2684	B4	3191	B1	3361	D5	3726	C5	5345	C4	7635	H5	9206	G3	9456	F4
S20	F4	2306	D4	2686	B5	3192	B1	3365	D3	3728	C5	5346	C4	7660	E2	9208	H5	9457	E5
S21	F4	2307	D4	2688	B5	3193	H3	3369	C4	3730	C5	5370	C5	7661	E2	9209	G2	9458	E4
S22	G4	2310	D3	2690	B5	3194	H3	3370	C4	3732	C5	5375	C3	7662	C5	9210	G3	9460	F5
S26	C5	2311	D4	2692	B5	3195	B3	3371	C4	3733	C5	5454	E5	7680	B5	9211	F2	9465	E5
S27	F4	2312	C3	2694	B5	3196	E2	3372	C4	3734	C5	5455	E5	7704	C5	9212	G3	9466	E4
S42	D1	2318	E4	2696	B5	3197	E2	3375	C3	3750	B2	5456	E5	7706	C4	9214	G3	9470	G4
S43	E1	2320	D5	2697	B5	3198	B3	3376	D3	3751	B2	5460	F4	7708	C4	9216	G3	9471	G4
S44	B4	2322	D5	2698	B5	3199	B3	3377	C4	3996	A1	6107	H1	7730	C5	9218	G3	9481	E4
S45	A4	2324	D4	2699	B5	3200	B1	3380	D4	3997	A1	6108	H1	7732	C5	9220	G2	9509	G4
S46	A3	2326	E5	2700	B5	3201	B1	3381	D5	3998	A1	6112	B1	9084	B4	9221	H2	9602	D1
S47	C4	2327	E5	2702	B5	3202	B1	3382	G5	3999	A1	6117	B3	9086	B4	9222	G4	9603	E1
S48	B2	2328	D5	2704	B4	3205	H3	3383	D5	4066	G1	6120	F1	9087	B4	9230	G3	9604	F1
S49	A2	2330	D5	2706	C5	3206	H3	3387	D5	4103	A2	6121	F1	9088	B4	9232	G3	9605	E1
S50	C4	2331	D5	2707	B5	3207	H3	3388	D5	4105	D1	6130	B3	9089	G2	9234	G3	9606	E1
S51	D5	2332	D4	2714	C5	3208	H3	3389	D5	4106	D1	6135	B4	9090	C5	9236	G3	9615	E1
S52	F5	2333	D4	2716	A3	3209	H3	3390	D5	4107	D2	6136	B4	9091	A5	9238	G3	9620	D2
S53	C2	2338	C3	2720	B5	3210	H3	3391	G5	4108	C1	6163	G1	9092	A5	9240	G3	9621	D2
S54	H5	2342	C4	2721	C5	3211	F2	3392	G5	4109	D2	6165	B1	9093	D1	9241	G3	9622	D2
S56	H3	2343	C4	2726	B5	3215	C4	3393	G4	4110	D2	6166	B1	9095	G1	9242	G3	9623	D2
S57	F5	2344	C4	2727	B5	3216	H3	3394	G4	4111	C2	6168	F1	9096	G1	9246	F3	9624	D2
S60	G5	2345	C4	2728	C5	3217	G3	3395	G5	4112	E3	6172	E4	9097	G1	9248	F3	9628	D2
S82	G2	2347	C4	2734	C5	3218	H3	3396	G5	4114	G3	6173	E4	9098	G1	9249	F3	9635	C1
S83	F2	2353	C4	2736	A3	3219	F2	3397	G5	4115	G3	6178	H4	9100	B2	9250	H5	9636	D1
S100	F4	2360	D5	3100	A5	3220	G3	3398	G5	4116	G1	6205	G3	9101	B2	9252	G4	9637	C1
S101	D3	2361	D5	3101	B2	3222	G2	3399	G5	4117	G1	6206	G3	9102	B2	9254	G4	9638	D1
S105	H2	2364	C4	3102	B3	3224	H4	3400	F4	4118	G4	6207	G3	9103	B2	9255	F4	9639	C1
1100	A5	2365	C4	3103	B3	3225	E3	3410	E4	4120	G2	6256	C2	9104	B2	9256	G4	9641	C1
1107	G1	2366	C4	3104	B2	3232	F2	3414	G5	4126	B4	6257	C1	9105	B2	9257	F4	9642	C1
1115	B3	2367	C4	3105	B1	3233	F2	3425	E5	4127	B4	6280	F2	9106	C3	9258	G4	9650	B2
1160	E2	2368	C4	3106	B2	3234	H2	3426	E5	4129	A5	6281	F2	9107	B2	9259	G4	9651	B2
1182	F1	2389	C4	3107	H1	3235	H2	3439	F4	4130	E2	6342	C4	9108	B3	9260	G3	9652	D2
1248	B1	2370	C4	3108	G1	3237	G2	3441	F4	4148	E1	6343	C4	9109	H2	9261	E2	9653	C2
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1380	D4	2373	D4	3111	H1	3240	H3	3451	F5	4163	F2	6386	D5	9112	B2	9264	H4	9656	C2
1602	D1	2374	D4	3112	C1	3241	A3	3453	E5	4164	G4	6387	D5	9113	B2	9265	E3	9657	C2
2100	A5	2375	D4	3113	C1	3242	B1	3454	E5	4165	F3	6450	E5	9114	B2	9266	F3	9658	C2
2103	G1	2376	C4	3114	C1	3243	B1	3455	E5	4166	E1	6465	F5	9115	B1	9267	E2	9659	C2
2105	B3	2377	C4	3115	E3	3244	B1	3456	E5	4167	B3	6470	F5	9116	B2	9268	F3	9660	C2
2107	H1	2378	D4	3116	C3	3245	B1	3465	F4	4170	C1	6471	F5	9117	B2	9269	F2	9670	C2
2108	B3	2379	D4	3117	B3	3246	B1	3466	E4	4171	B1	6478	F5	9118	B2	9270	F3	9671	C2
2109	B3	2380	D4	3118	B3	3247	B1	3471	F5	4175	B1	6479	F5	9119	B3	9271	F3	9672	C2
2110	B3	2381	D4	3119	B3	3248	B1	3472	F5	4176	F4	6480	E4	9120	G2	9272	F3	9673	C2
2111	B3	2382	D4	3120	B3	3249	F3	3473	F5	4184	E3	6481	F5	9121	D1	9273	F3	9674	D2
2114	B3	2383	D4	3121	C3	3251	A1	3474	F5	4200	C5	6610	D3	9122	F2	9274	F3	9675	D2
2115	B3	2384	D4	3122	B3	3252	A2	3475	F5	4201	C5	6611	D3	9123	D3	9277	G2	9676	D2
2116	B3	2385	D4	3123	B3	3253	F3	3476	F5	4203	A3	6660	E2	9125	C2	9278	G2	9677	C2
2117	B3	2387	C5	3124	B3	3254	F2	3477	F5	4205	G4	6661	E2	9126	C2	9279	G2	9680	D2
2118	C3	2388	D5	3125	B3	3255	F3	3478	F5	4209	G4	6662	E2	9127	B2	9280	G2	9681	D2
2119	B3	2389	D5	3126	B2	3256	C2	3479	F5	4210	G5	6663	E2	9130	B3	9281	F2	9682	D2
2120	F1	2390	G4	3127	B2	3257	C1	3480	E4	4220	H4	6664	B5	9131	G2	9282	E2	9683	D2
2121	F1	2391	G4	3128	A5	3259	F3	3481	E4	4234	H2	6665	D1	9132	F2	9290	G3	9684	D2
2122	F1	2392	G4	3129	B2	3260	G4	3482	E4	4235	H2	7107	G1	9133	C4	9310	C5	9685	D2
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2124	E1	2396	G5	3131	C3	3262	H4	3484	E5	4237	H2	7115	B3	9137	D3	9317	C1	9691	E3
2126	B3	2397	G5	3132	B4	3263	H4	3482	G5	4241	F2	7119	C3	9138	D3	9318	D4	9692	E3
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2131	A5	2433	F5	3136	B4	3267	F3	3604	C1	4263	F2	7137	B3	9143	C1	9322	D5	9696	D3
2132	B3	2434	F5	3137	B4	3268	H2	3605	E1	4280	F3	7150	B3	9145	B4	9323	D5	9697	D3
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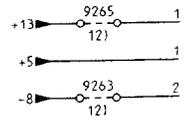
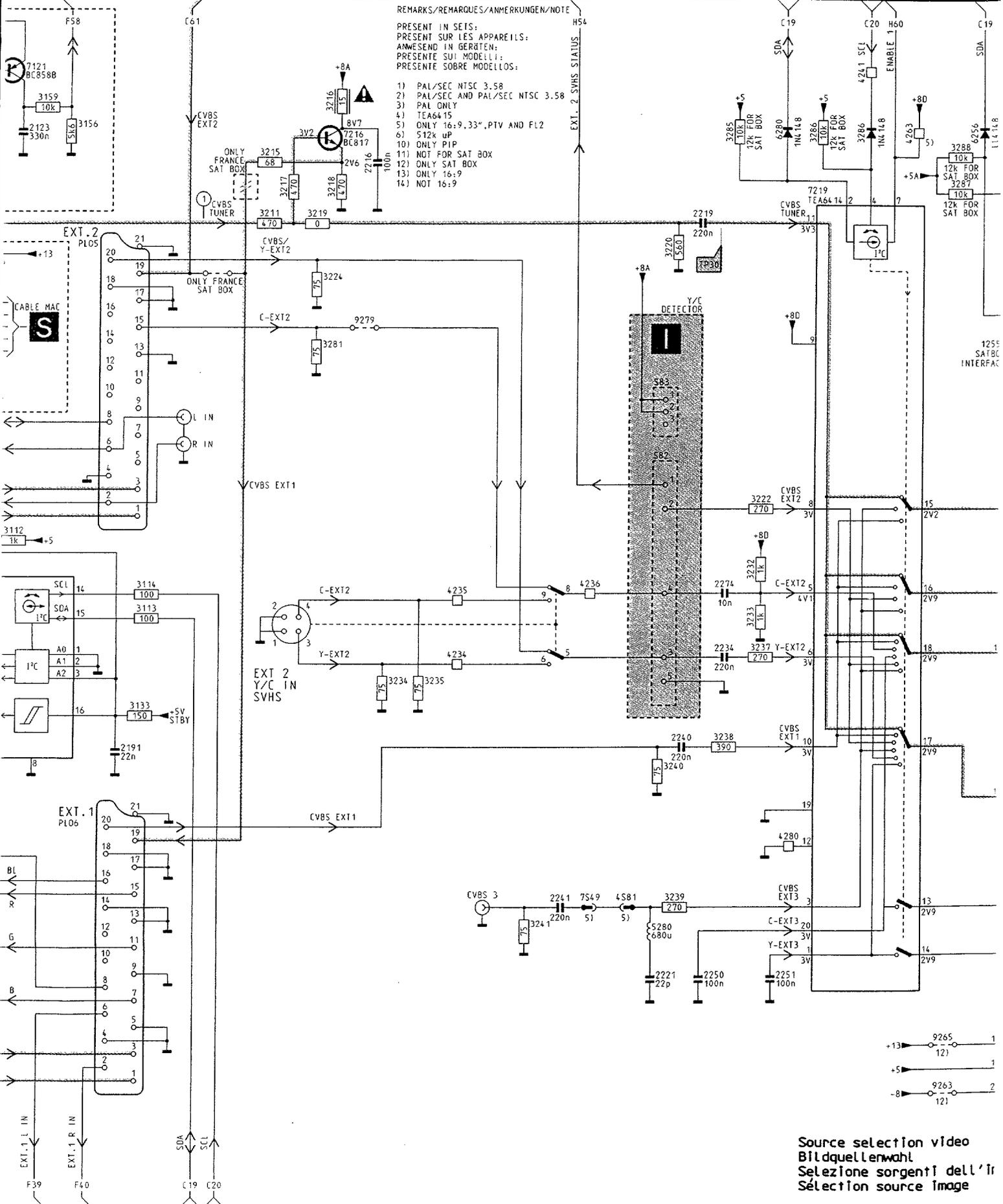
# Sélection de source

11 12 13 14 15 16 17 18 19 20 21 22

REMARKS/REMARQUES/ANMERKUNGEN/NOTE

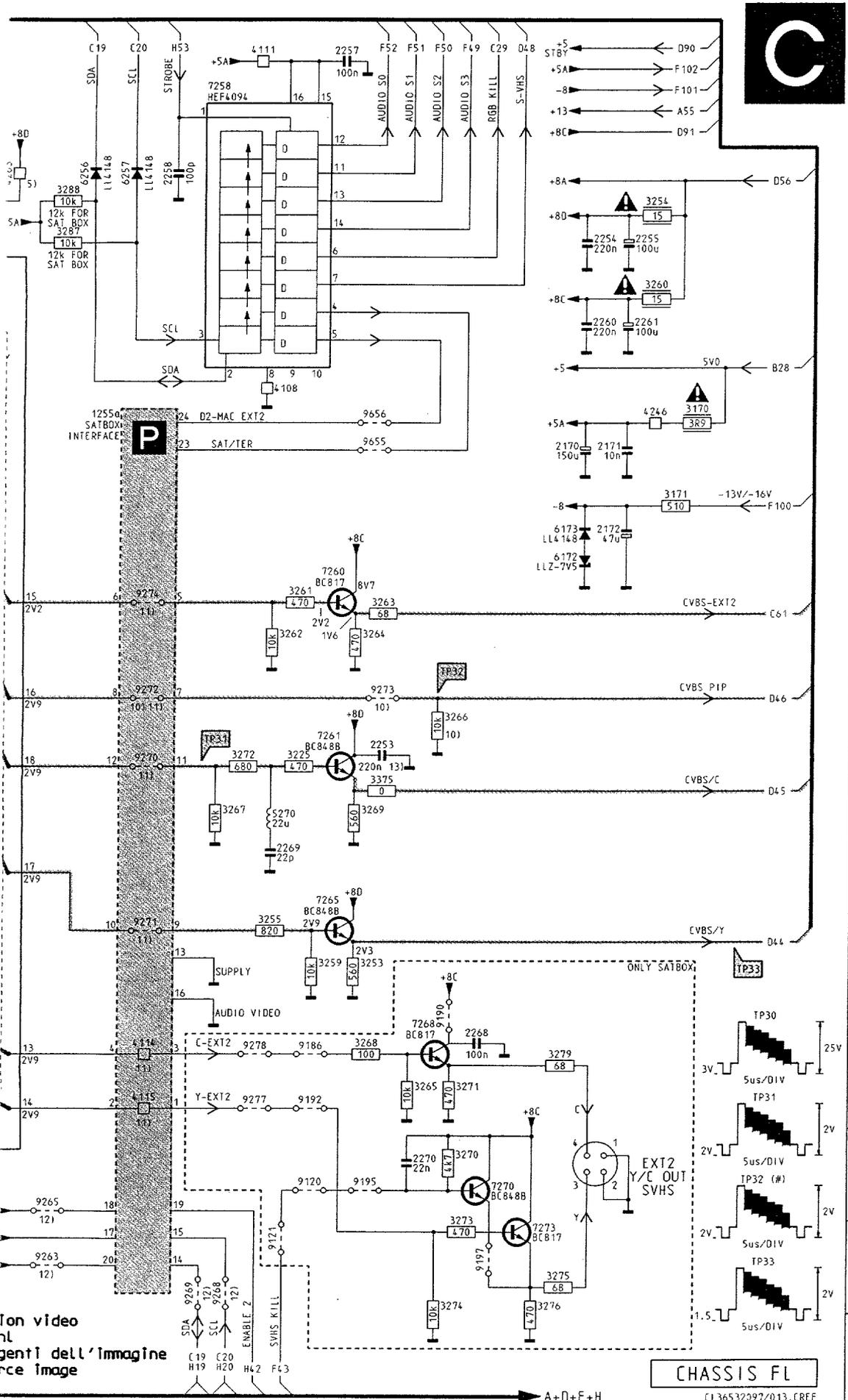
PRESENT IN SETS:  
 PRESENT SUR LES APPAREILS:  
 ANWESENDE IN GERÄTEN:  
 PRESENTE SUI MODELLI:  
 PRESENTE SOBRE MODELOS:

- 1) PAL/SEC NTSC 3.58
- 2) PAL/SEC AND PAL/SEC NTSC 3.58
- 3) PAL ONLY
- 4) TEA6415
- 5) ONLY 16:9, 33", PTV AND FL2
- 6) 512K UP
- 10) ONLY PIP
- 11) NOT FOR SAT BOX
- 12) ONLY SAT BOX
- 13) ONLY 16:9
- 14) NOT 16:9



Source selection video  
 Bildquellenwahl  
 Selezione sorgenti dell'ir  
 Sélection source Image

11 12 13 14 15 16 17 18 19 20 21 22



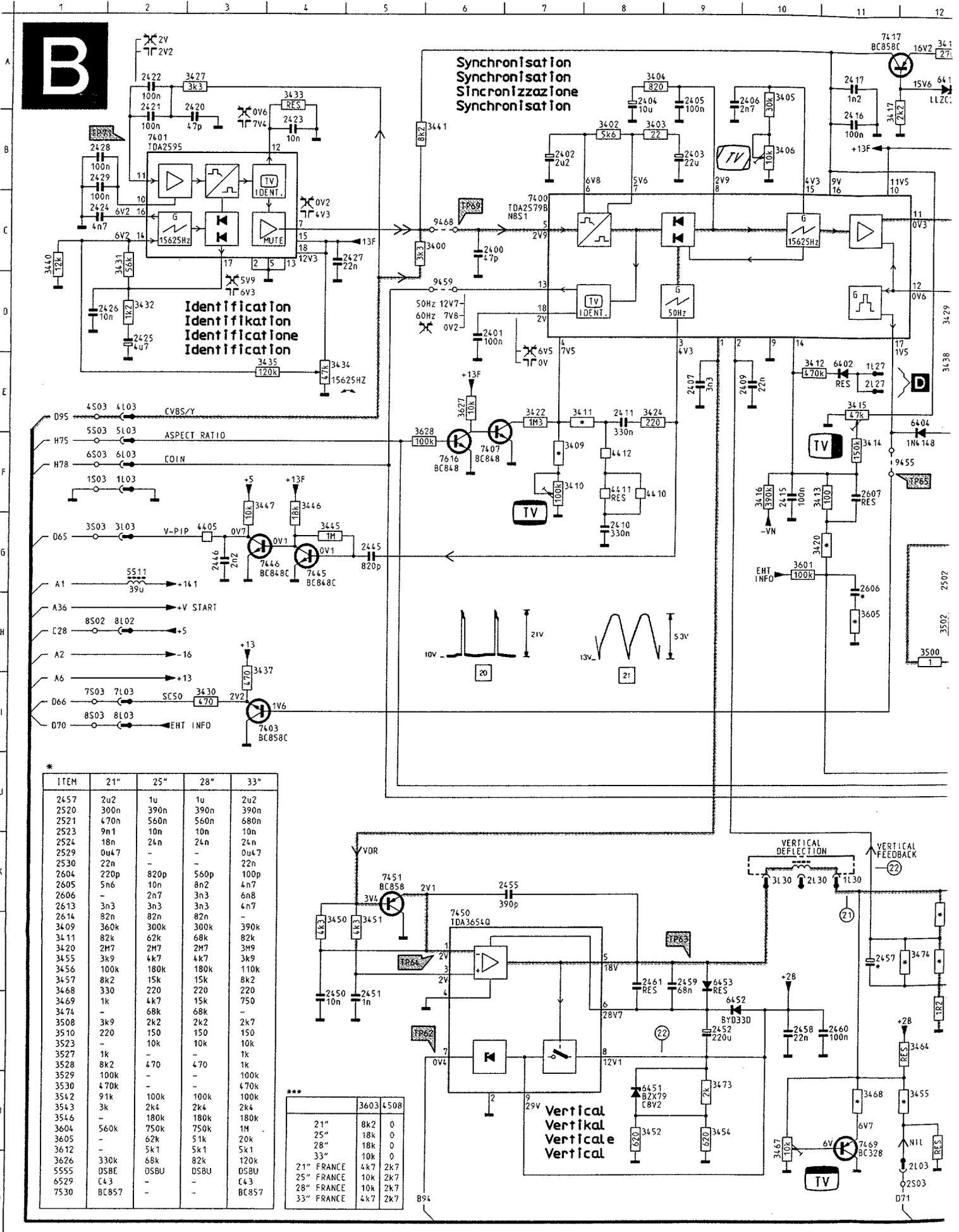
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2122	A10	3264	G25
2123	B11	3265	L26
2124	B 6	3266	H26
2160	A 6	3267	I24
2162	D 7	3268	L26
2163	E 2	3269	I25
2164	E 2	3270	M27
2165	A 4	3271	L27
2168	C 9	3272	I24
2169	C10	3273	N27
2170	E28	3274	N26
2171	E28	3275	N28
2172	F28	3276	N27
2180	B 5	3279	L28
2181	D 6	3281	E14
2188	I 7	3285	B19
2189	J 7	3286	B21
2190	H 7	3286	B21
2191	J12	3287	C22
2193	M 6	3288	B22
2194	N 6	3375	I26
2198	K 6	4108	E25
2216	C15	4111	A24
2219	C19	4114	L23
2221	M19	4115	L23
2234	I19	4130	N 3
2240	J19	4161	B 7
2241	L17	4162	D10
2250	M19	4170	I 9
2251	M20	4171	I 8
2253	H26	4175	J 9
2254	C28	4234	I16
2255	C28	4235	H16
2257	A25	4236	H18
2258	B23	4241	B21
2260	D28	4246	E29
2261	D28	4263	B22
2268	L27	4280	K20
2269	J25	5270	I25
2270	M26	5280	L19
2274	H19	6112	S 6
3112	G11	6120	A 9
3113	H12	6121	A 9
3114	H12	6163	E 2
3133	I12	6165	I 6
3151	A 7	6166	I 6
3153	A 8	6168	B 9
3154	B 8	6172	F28
3155	A 9	6173	F28
3156	B11	6178	F 6
3159	B11	6256	B23
3160	A 5	6257	B23
3161	B 9	6280	B20
3162	A 5	7120	B 8
3163	D 2	7121	B11
3164	F 3	7175	H 9
3165	F 3	7176	H 8
3167	C10	7177	I 8
3168	B10	7178	H 8
3170	E29	7182	J 3
3171	F29	7183	K 3
3172	B 4	7186	K 2
3175	I 7	7188	J 6
3176	I 7	7193	M 2
3177	I 7	7216	B15
3178	H 7	7219	C20
3180	I 2	7258	A24
3181	J 3	7260	G25
3182	I 3	7261	H25
3183	K 3	7265	J25
3184	J 4	7268	K26
3185	K 4	7270	M27
3186	K 3	7273	N27
3187	L 8	9098	B 3
3189	J 5	9120	M25
3190	H 7	9121	N25
3191	J 5	9142	M 9
3192	J 7	9143	L 9
3193	M 6	9148	B 6
3194	N 6	9167	D 8
3200	I 9	9168	D 8
3201	J 9	9186	L25
3202	M 8	9190	K26
3205	L 9	9192	L25
3206	L 9	9195	M26
3207	M10	9197	N27
3208	N10	9263	M22
3209	N10	9265	M22
3210	N 9	9268	N24
3211	C14	9269	N24
3215	C14	9270	I23
3216	B15	9271	J23
3217	C14	9272	H23
3218	C15	9273	H26
3219	C14	9274	G23
3220	O19	9277	L24
3222	G20	9278	L24
3224	D14	9279	E15
3225	I25	9655	E26
3232	H20	9656	E26
3233	H20		
3234	I15		
3235	I16		
3237	I20		
3238	J19		
3239	L19		
3240	J19		
3241	L17		
3253	K25		
3254	C29		
3255	J25		

Ion video  
nl  
genti dell'immagine  
nce image

CHASSIS FL  
CL36532097/013, CREF  
070693

# Synchronisation / Synchronisierung /

# Sync



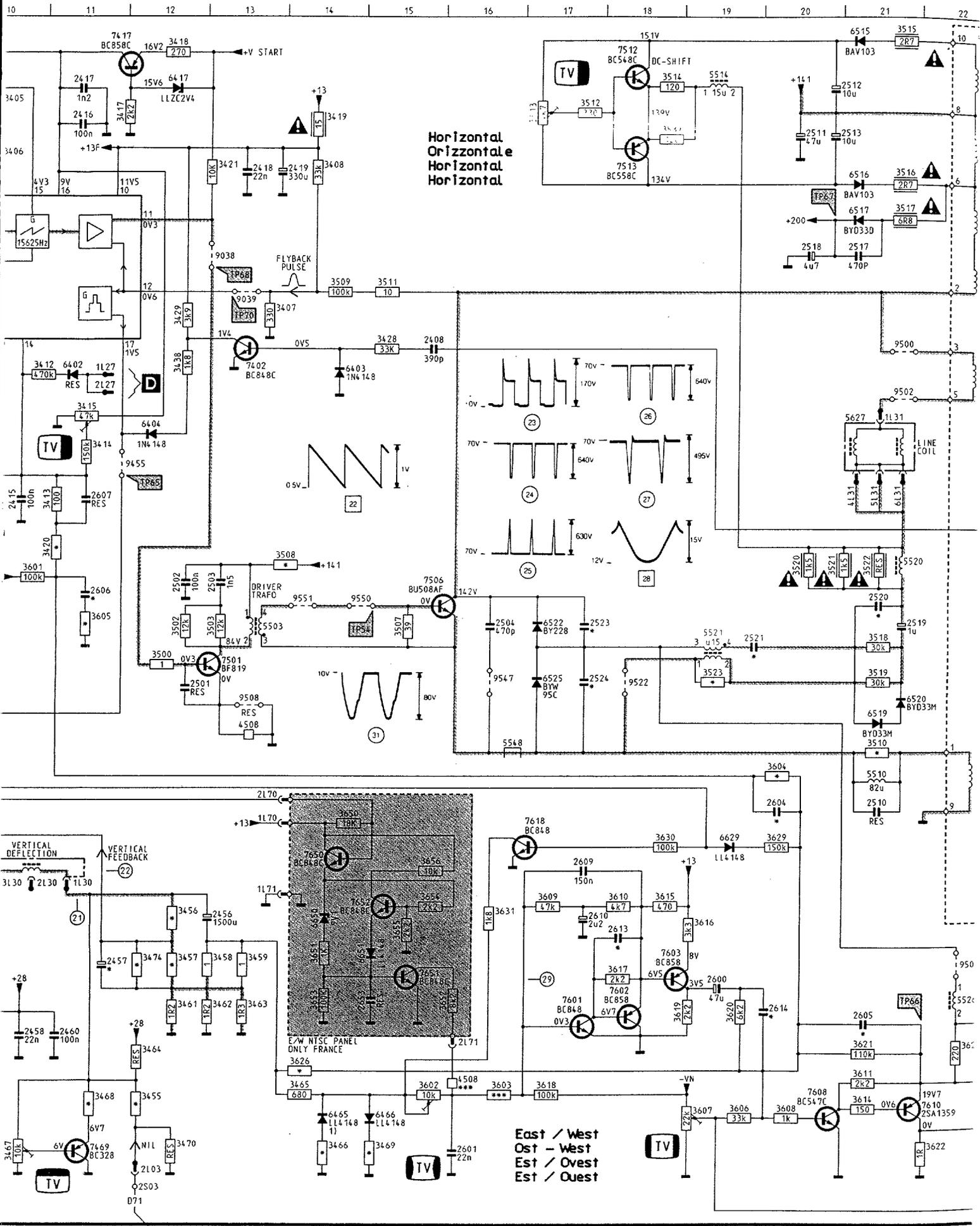
Identification  
Identification  
Identification  
Identification

Synchronisation  
Synchronizzazione  
Synchronisation

Vertical  
Vertical  
Vertical  
Vertical

ITEM	21"	25"	28"	33"
2457	2u2	1u	1u	2u2
2520	300n	390n	390n	390n
2521	470n	560n	560n	680n
2523	9n1	10n	10n	10n
2524	18n	24n	24n	24n
2529	0u47	-	-	0u47
2530	22n	-	-	22n
2604	220p	820p	560p	100p
2605	5n6	10n	8n2	4n7
2606	-	2n7	3n3	6n8
2613	3n3	3n3	3n3	4n7
2614	82n	82n	82n	-
3409	360k	300k	300k	390k
3411	82k	62k	68k	82k
3420	2M7	2M7	2M7	3M9
3455	3k9	4k7	4k7	3k9
3456	100k	180k	180k	110k
3457	8k2	15k	15k	8k2
3468	330	220	220	220
3469	1k	4k7	15k	750
3474	-	68k	68k	-
3508	3k9	2k2	2k2	2k7
3510	220	150	150	150
3523	-	10k	10k	10k
3527	1k	-	-	1k
3528	8k2	470	470	1k
3529	100k	-	-	100k
3530	470k	-	-	470k
3542	91k	100k	100k	100k
3543	3k	2k4	2k4	2k4
3546	-	180k	180k	180k
3604	560k	750k	750k	1M
3605	-	62k	51k	20k
3612	-	5k1	5k1	5k1
3626	330k	68k	82k	120k
5555	DSBE	DSBU	DSBU	DSBU
6529	C43	-	-	C43
7530	BC857	-	-	BC857

	3603	4508
21" FRANCE	8k2	0
25" FRANCE	18k	0
28" FRANCE	18k	0
33" FRANCE	10k	0
21" FRANCE	4k7	2k7
25" FRANCE	10k	2k7
28" FRANCE	10k	2k7
33" FRANCE	4k7	2k7

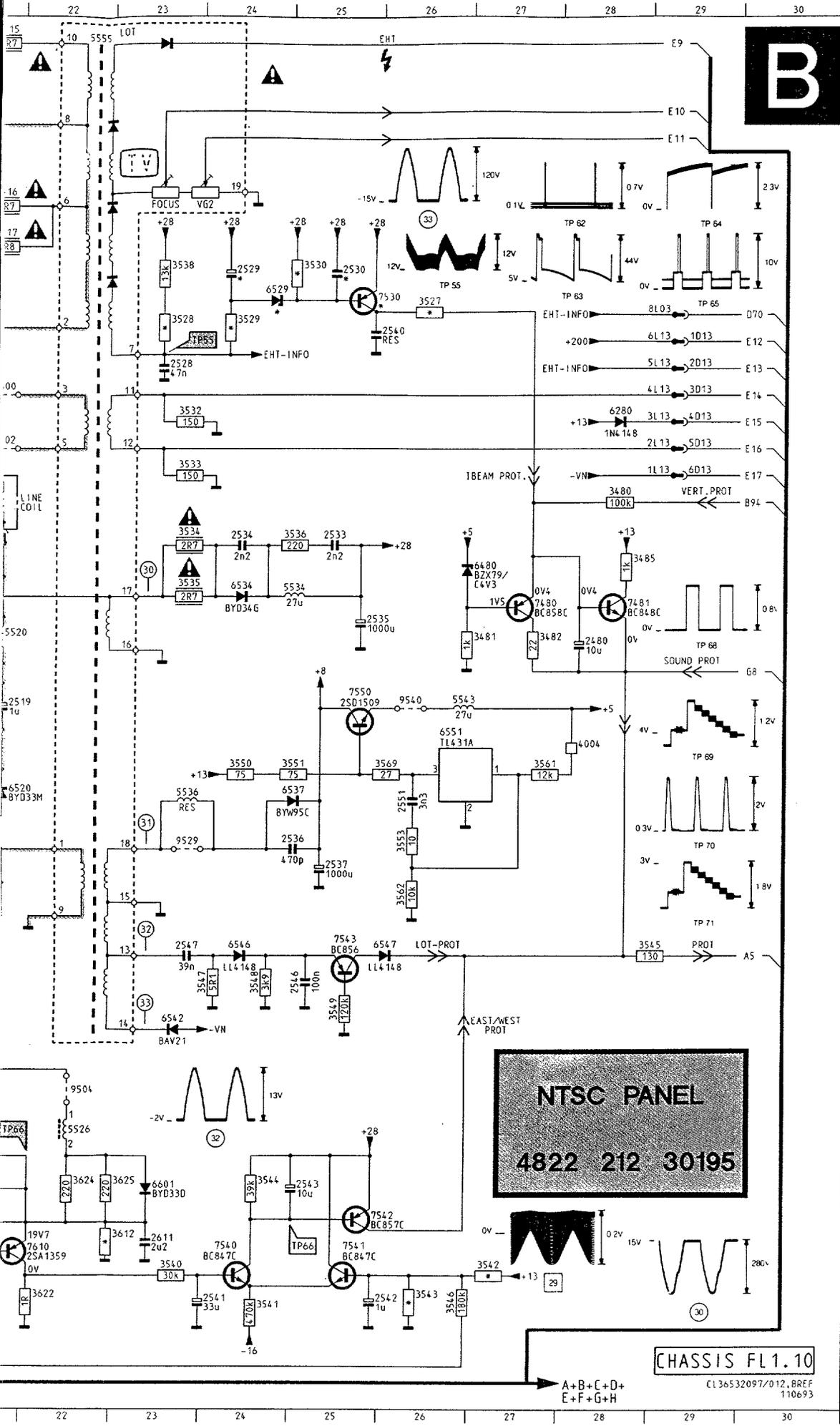


Horizontal  
Orizzontale  
Horizontal  
Horizontal

East / West  
Ost - West  
Est / Ovest  
Est / Ouest

VERTICAL DEFLECTION  
VERTICAL FEEDBACK

E/W NTSC PANEL  
ONLY FRANCE



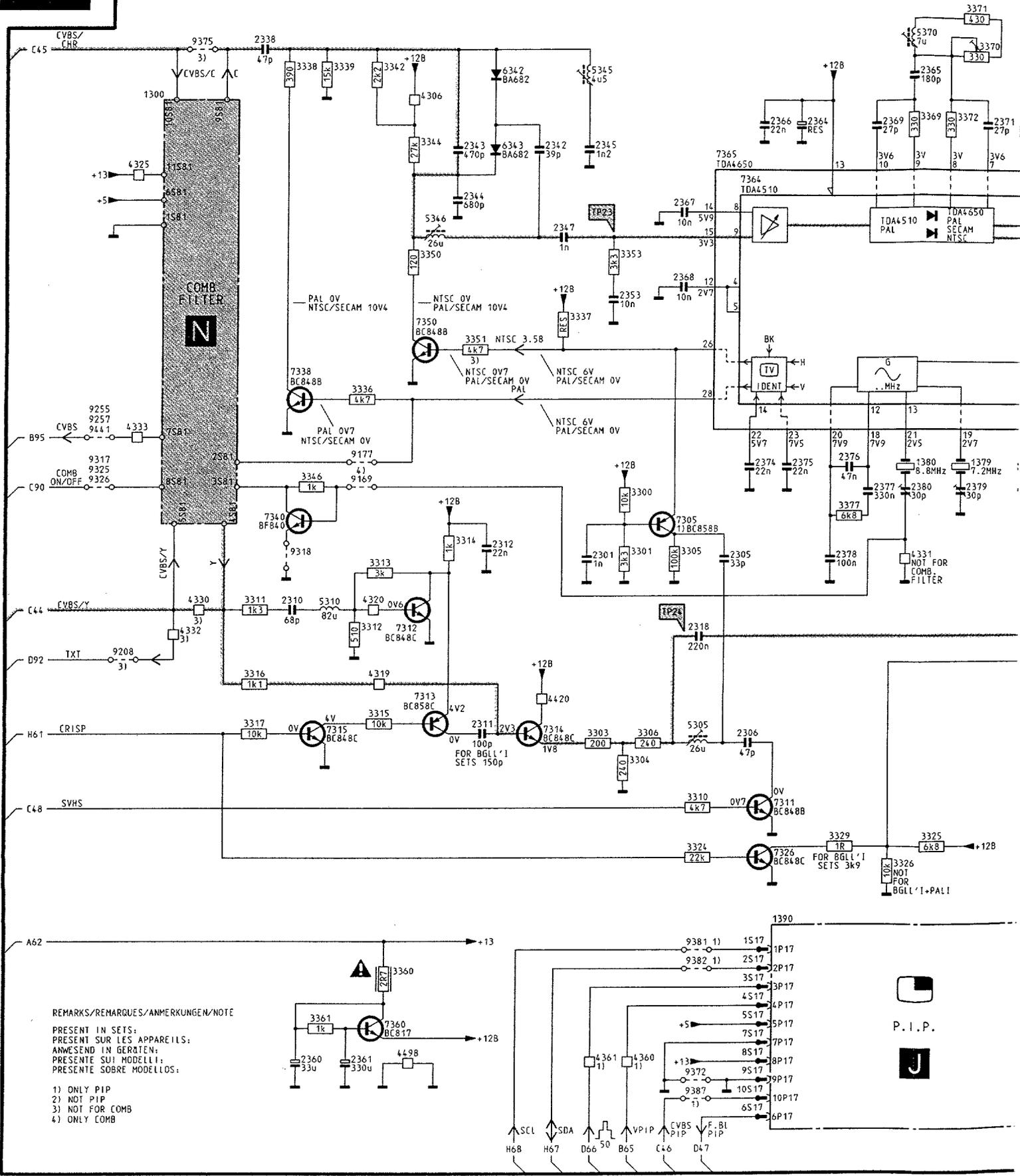
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2401	D 6	3440	C 1	4411	F 8
2402	B 7	3441	B 6	4412	F 8
2403	B 9	3445	G 4	4508	I13
2404	A 8	3446	F 4	4508	N16
2405	A 9	3447	F 3	5503	H13
2406	A 9	3450	L 4	5510	J21
2407	E 9	3451	L 5	5511	G 2
2408	D15	3452	N 8	5514	A19
2409	E10	3454	N 9	5520	G21
2410	G 8	3455	N12	5521	H19
2411	E 8	3456	K12	5526	M22
2415	F10	3457	L12	5534	G25
2416	B11	3458	L13	5536	I23
2417	A11	3459	L13	5543	H26
2418	B13	3461	M12	5548	I16
2419	B14	3462	M13	5555	A22
2420	B 3	3463	M13	5627	E21
2421	B 2	3464	M12	6280	E28
2422	A 2	3465	N14	6402	E11
2423	B 4	3466	N14	6403	E14
2424	C 1	3467	N10	6404	E12
2425	D 2	3468	N11	6417	A12
2426	D 1	3469	N15	6451	N 8
2427	C 4	3470	N12	6452	H10
2428	B 1	3473	N 9	6453	L 9
2429	B 1	3474	L12	6465	N14
2445	G 5	3480	F28	6466	N15
2446	G 3	3481	G27	6480	F27
2450	M 4	3482	G27	6515	A21
2451	M 5	3485	F28	6516	B21
2452	M 9	3500	H12	6517	C21
2455	K 7	3502	H12	6519	I21
2456	L13	3503	H13	6520	I21
2456	L13	3507	H15	6522	H17
2457	L11	3508	G14	6525	I17
2458	M10	3509	D14	6529	C24
2459	L 9	3510	I21	6534	G24
2460	M11	3511	D15	6537	I25
2461	L 8	3512	A17	6542	K23
2480	G28	3513	A17	6546	K24
2501	I12	3514	A18	6547	K26
2502	G12	3515	A21	6551	H26
2503	G13	3516	B21	6601	H23
2504	H16	3517	C21	6629	K19
2510	J21	3518	H21	6650	L14
2511	B20	3519	I21	6651	L15
2512	A20	3520	G20	7400	C 7
2513	B20	3521	G20	7401	B 2
2517	C21	3522	G21	7402	E13
2518	C20	3523	I19	7403	I 3
2519	H21	3527	C26	7407	F 6
2520	H21	3528	D23	7417	A12
2521	H19	3529	D24	7445	G 4
2523	H17	3530	C25	7446	G 3
2524	I17	3532	E23	7450	L 6
2528	D23	3533	E23	7451	K 5
2529	C24	3534	F23	7469	N11
2530	C25	3535	G23	7480	G27
2533	F25	3536	F25	7481	G28
2534	F24	3537	B18	7501	H13
2535	G25	3538	C23	7506	G16
2536	I25	3540	N23	7512	A18
2537	J25	3541	N24	7513	B18
2540	O25	3542	N27	7530	C25
2541	O24	3543	N26	7540	N24
2542	O25	3544	H24	7541	N25
2543	M25	3545	K29	7542	N25
2546	K25	3546	O26	7543	K25
2547	K23	3547	K24	7550	H25
2551	I26	3548	K24	7601	M17
2600	L19	3549	K25	7602	M18
2601	N16	3550	I24	7603	L19
2604	J20	3551	I25	7608	N20
2605	M21	3553	I26	7610	N22
2606	G11	3561	I27	7616	F 6
2607	F11	3562	J26	7618	J17
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2653	M15	3605	H11	9455	F11
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3403	B 8	3608	N20	9500	D21
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3406	B10	3611	N21	9508	I13
3407	D13	3612	M23	9522	I18
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3417	A11	3624	M22		
3418	A12	3625	M23		
3419	A14	3626	M14		
3420	G11	3627	E 6		
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3422	E 7	3629	K20		
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3427	A 3	3631	K16		
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3432	D 2	3654	K15		
3433	A 4	3655	L15		
3434	E 4	3656	K15		
3435	E 4	4004	H28		
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**NTSC PANEL**  
4822 212 30195

CHASSIS FL1.10

CL36532097/012, BREF 110693

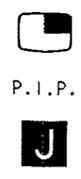
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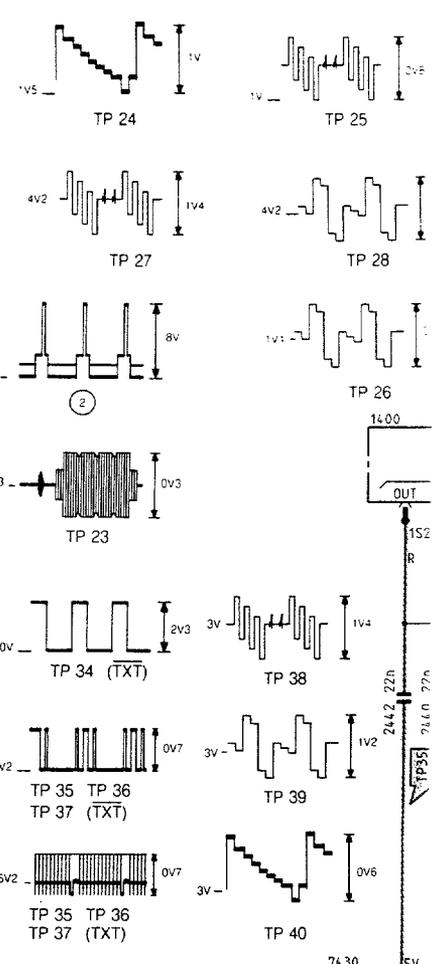
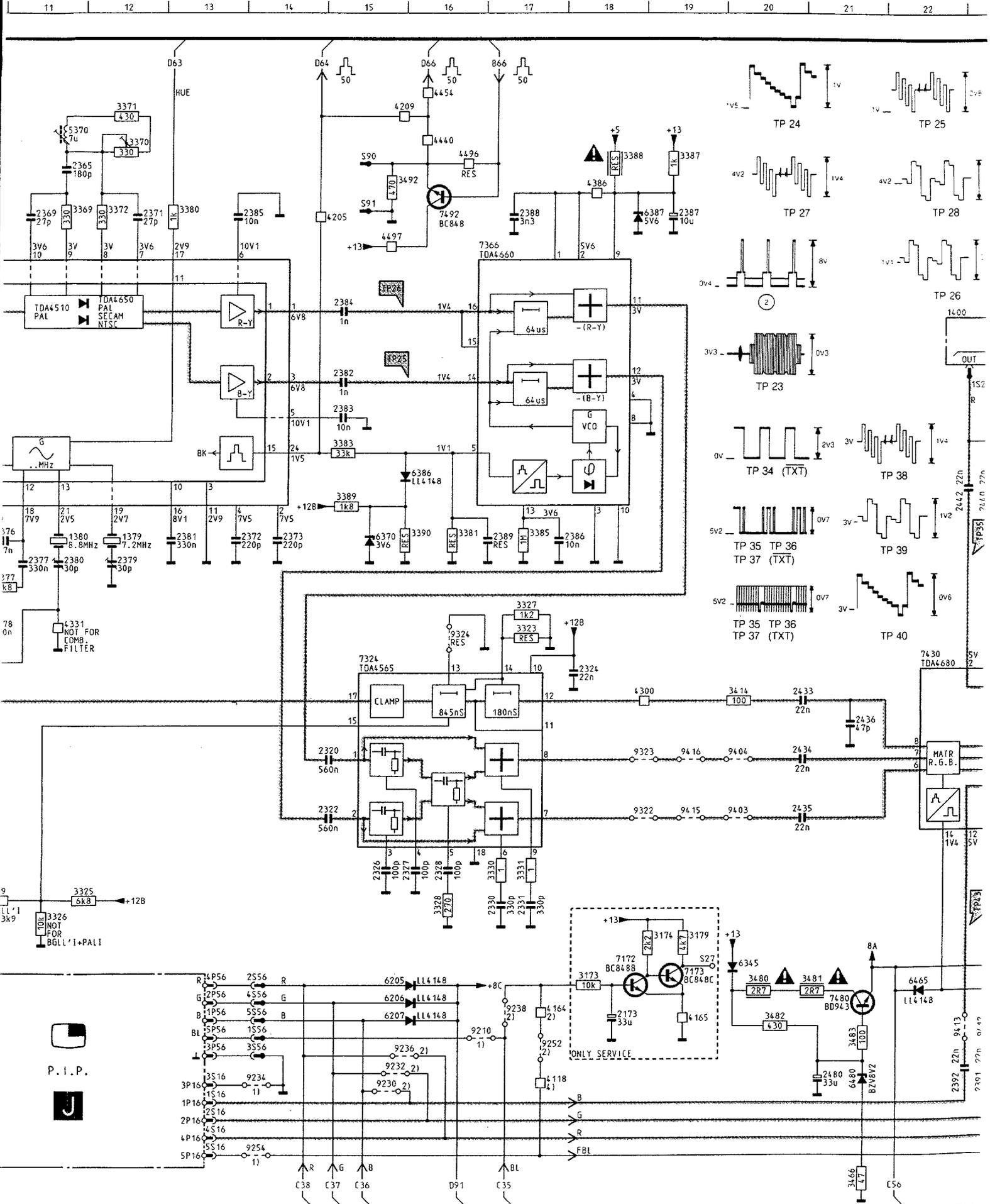
REMARKS/REMARQUES/ANMERKUNGEN/NOTE

PRESENT IN SETS;  
PRESENT SUR LES APPAREILS;  
ANWESEND IN GERÄTEN;  
PRESENTI SUI MODELLI;  
PRESENTI SOBRE MODELLOS.

- 1) ONLY PIP
- 2) NOT PIP
- 3) NOT FOR COMB
- 4) ONLY COMB



# Traitement vidéo

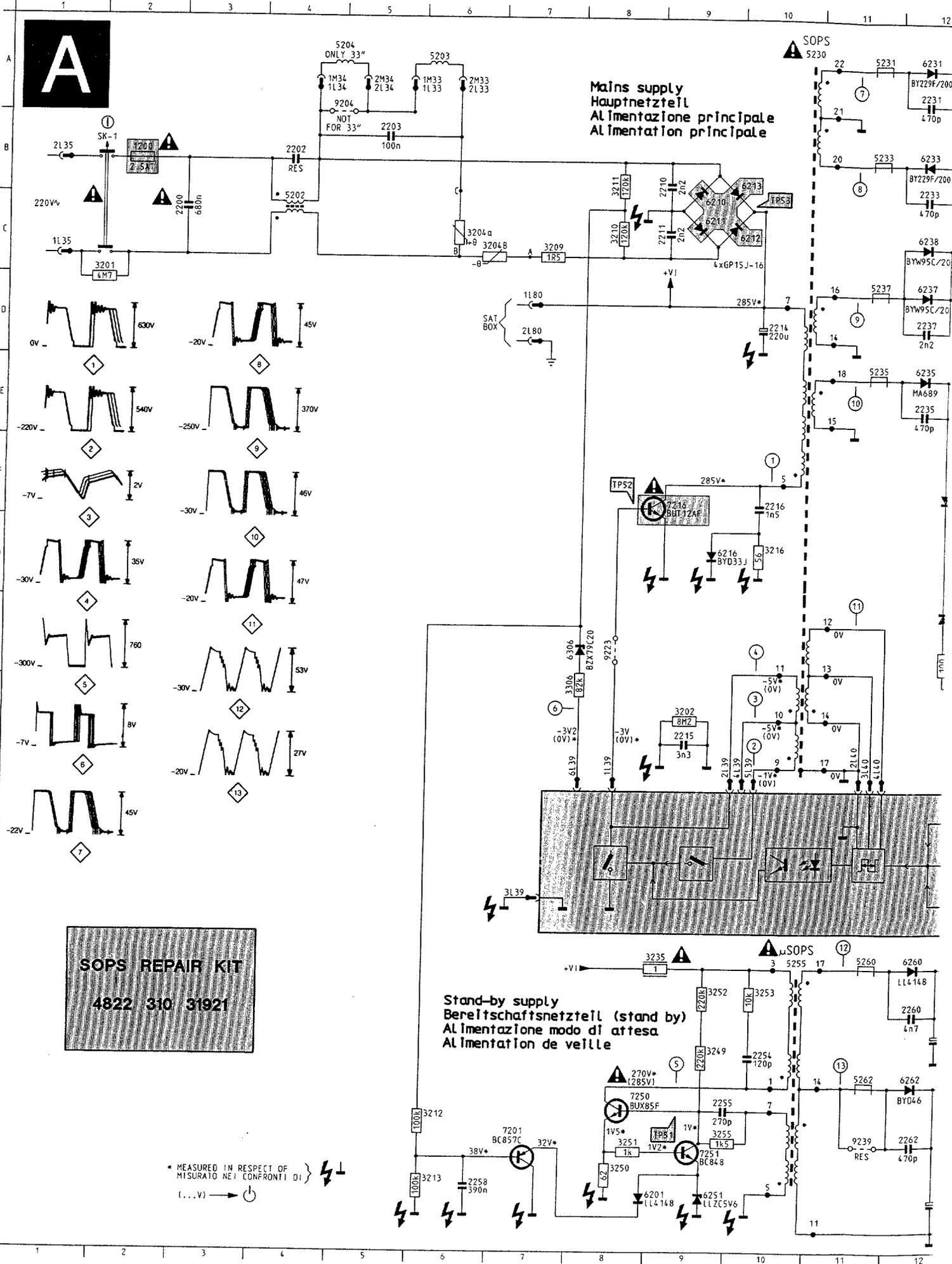


ONLY SERVICE



# Power supply / Stromversorgung / L'alimentation

# A

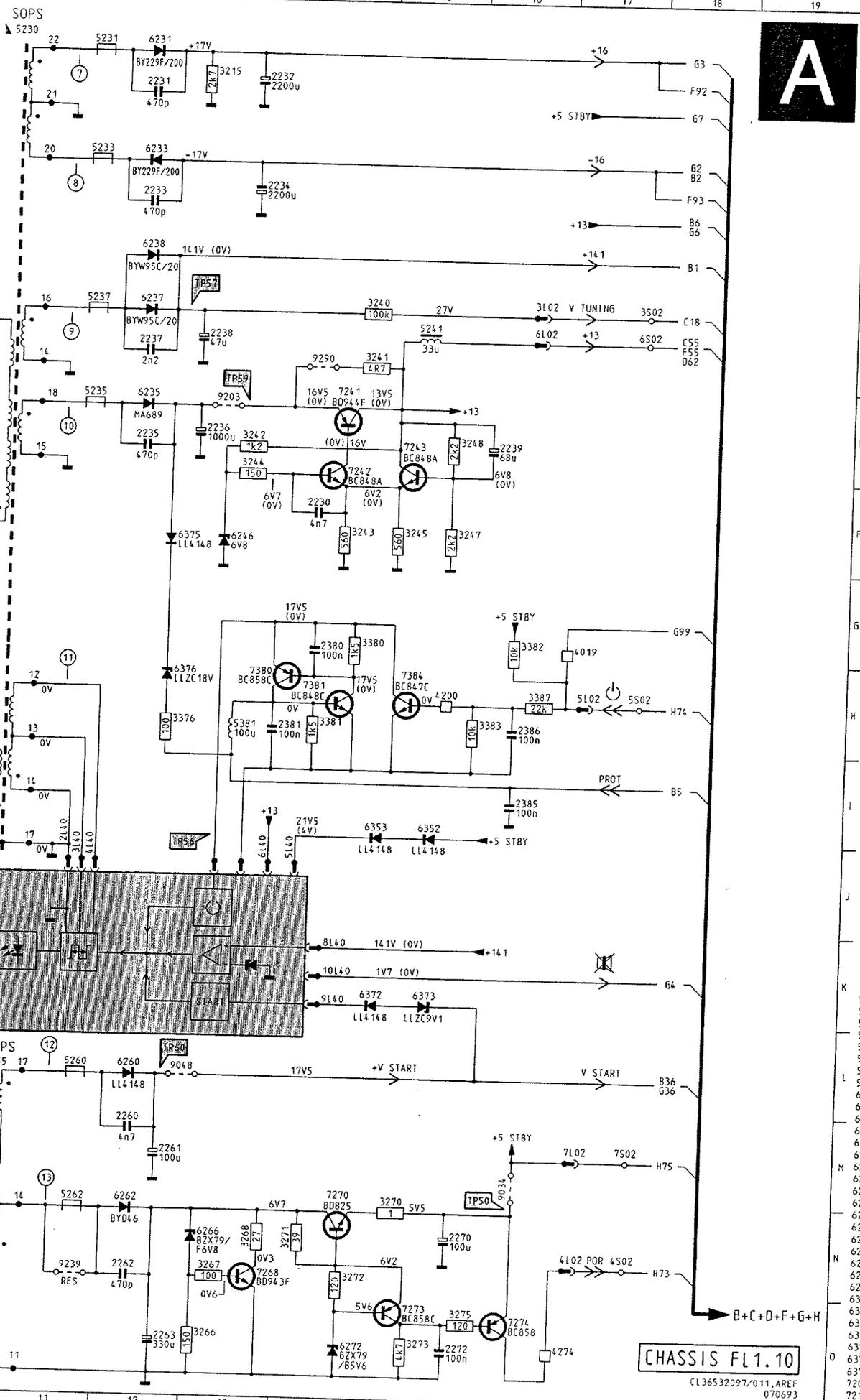


**Mains supply**  
**Hauptnetzteil**  
**Alimentazione principale**  
**Alimentation principale**

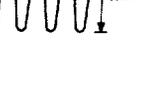
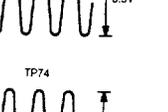
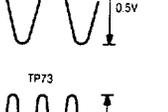
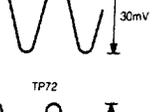
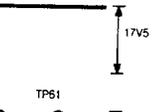
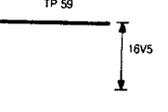
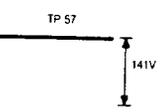
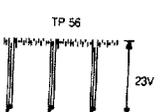
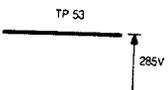
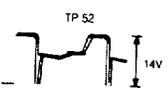
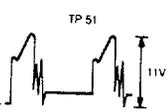
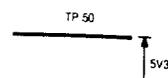
**Stand-by supply**  
**Bereitschaftsnetzteil (stand by)**  
**Alimentazione modo di attesa**  
**Alimentation de veille**

**SOPS REPAIR KIT**  
**4822 310 31921**

\* MEASURED IN RESPECT OF  
 MISURATO NEI CONFRONTI DI  
 (...V) →



1200	B 2	7242	E 14
2200	C 2	7243	E 15
2202	B 4	7250	N 8
2203	B 5	7251	N 9
2210	B 9	7268	N 13
2211	C 9	7270	M 14
2214	D 10	7273	O 15
2215	I 9	7274	O 16
2216	F 10	7380	H 13
2230	F 14	7381	H 14
2231	A 12	7384	H 15
2232	A 13	9034	M 16
2233	B 12	9048	L 12
2234	B 13	9203	E 13
2235	E 12	9204	A 4
2236	E 12	9223	H 8
2237	D 12	9239	N 11
2238	D 12	9290	D 14
2239	E 16		
2254	M 10		
2255	N 9		
2258	O 6		
2260	M 12		
2261	M 12		
2262	M 12		
2263	O 12		
2270	M 15		
2272	O 15		
2380	G 14		
2381	H 13		
2385	I 16		
2386	H 16		
3201	C 1		
3202	I 9		
3204	C 6		
3204	C 6		
3209	C 7		
3210	C 8		
3211	B 8		
3212	N 6		
3213	O 6		
3215	A 13		
3216	G 10		
3235	I 9		
3240	D 14		
3241	D 14		
3242	E 13		
3243	F 14		
3244	E 13		
3245	F 15		
3247	F 15		
3248	E 15		
3249	M 9		
3250	O 8		
3251	N 8		
3252	L 9		
3253	L 10		
3255	N 9		
3266	O 13		
3267	N 13		
3268	N 13		
3270	N 15		
3271	N 14		
3272	N 14		
3273	O 15		
3275	O 16		
3306	I 7		
3376	H 12		
3380	G 14		
3381	H 14		
3382	G 16		
3383	H 16		
3387	H 16		
4019	G 17		
4200	H 15		
4274	O 17		
5202	C 4		
5203	A 6		
5204	A 4		
5230	A 10		
5231	A 11		
5233	B 11		
5235	E 11		
5237	D 11		
5241	D 15		
5255	L 10		
5260	L 11		
5262	N 11		
5381	H 13		
6201	O 9		
6210	C 9		
6211	C 9		
6212	C 9		
6213	B 9		
6216	G 9		
6231	A 12		
6233	B 12		
6235	E 12		
6237	D 12		
6238	C 12		
6246	F 13		
6251	O 9		
6260	L 12		
6262	N 12		
6266	N 13		
6272	O 14		
6306	H 7		
6352	I 15		
6353	I 14		
6372	K 14		
6373	K 15		
6375	F 12		
6376	H 12		
7201	N 7		
7216	F 9		
7241	E 14		



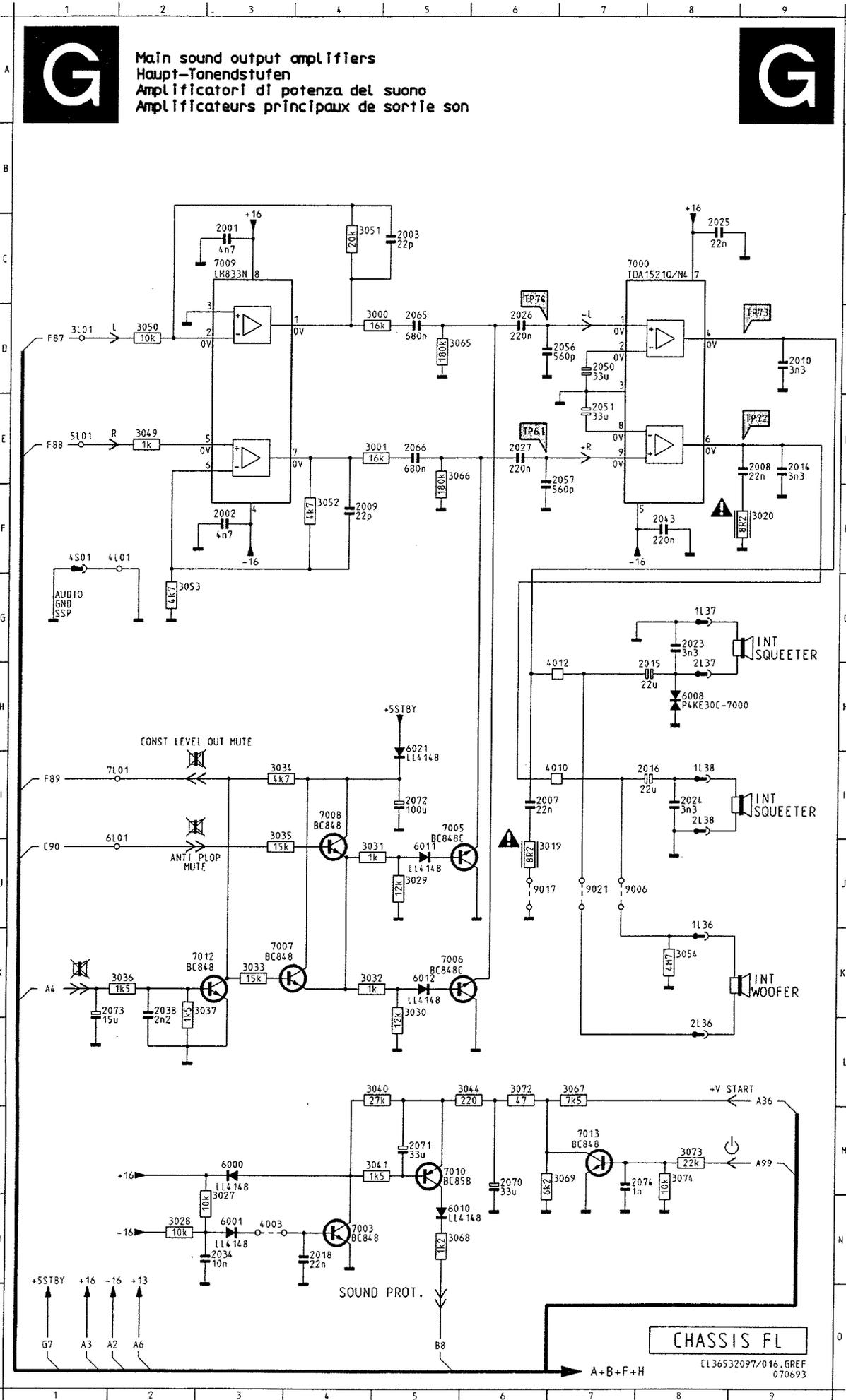
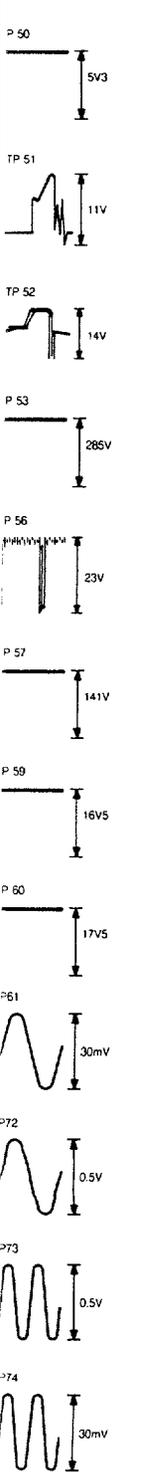
CHASSIS FL 1.10

CL36532097/011, AREF 070693

# Audio amplification / Tonsignal Verstärker / Amplificateur audio



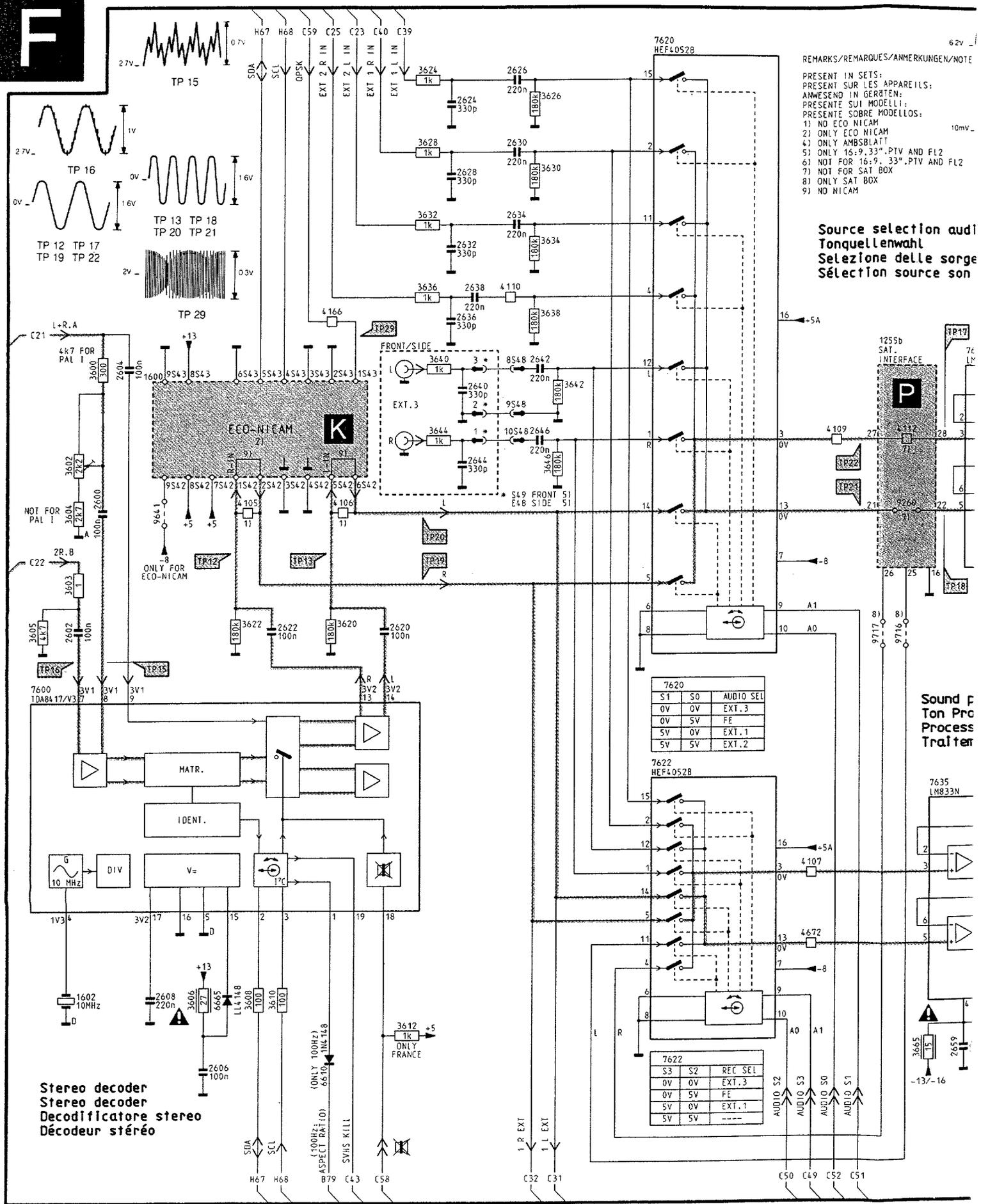
Main sound output amplifiers  
 Haupt-Tonendstufen  
 Amplificatori di potenza del suono  
 Amplificateurs principaux de sortie son



2001	C 3
2002	F 3
2003	C 5
2007	I 6
2008	E 9
2009	F 4
2010	D 9
2014	E 9
2015	H 8
2016	I 8
2018	N 4
2023	G 8
2024	I 8
2025	C 8
2026	D 6
2027	E 6
2034	N 3
2038	K 2
2043	F 8
2050	D 7
2051	E 7
2056	D 6
2057	F 6
2065	D 5
2066	E 5
2070	M 6
2071	M 5
2072	I 5
2073	K 1
2074	M 7
3000	D 4
3001	E 4
3019	J 6
3020	F 9
3027	M 3
3028	N 2
3029	J 5
3030	K 5
3031	J 4
3032	K 4
3033	K 3
3034	I 3
3035	J 3
3036	K 2
3037	K 2
3040	L 5
3041	M 5
3044	L 6
3049	E 2
3050	O 2
3051	C 4
3052	F 4
3053	G 2
3054	K 8
3065	D 5
3066	E 5
3067	L 7
3068	N 5
3069	M 7
3072	L 6
3073	M 8
3074	M 8
4003	N 3
4010	I 7
4012	H 7
6000	M 3
6001	N 3
6008	H 8
6010	N 5
6011	J 5
6012	K 5
6021	I 5
7000	C 7
7003	N 4
7005	I 5
7006	K 5
7007	K 3
7008	I 4
7009	C 3
7010	M 5
7012	K 2
7013	M 7
9006	J 7
9013	L 7
9017	J 6
9021	J 7

CHASSIS FL

CL36532097/016, GREFF 070693



REMARKS/REMARQUES/ANMERKUNGEN/NOTE

PRESENT IN SETS:  
PRESENT SUR LES APPAREILS:  
ANWESEND IN GERBEN:  
PRESENTI SUI MODELLI:  
PRESENTE SOBRE MODELOS:

1) NO ECO NICAM  
2) ONLY ECO NICAM  
4) ONLY AMBSBLATT  
5) ONLY 16:9, 33" PTV AND FL2  
6) NOT FOR 16:9, 33" PTV AND FL2  
7) NOT FOR SAT BOX  
8) ONLY SAT BOX  
9) NO NICAM

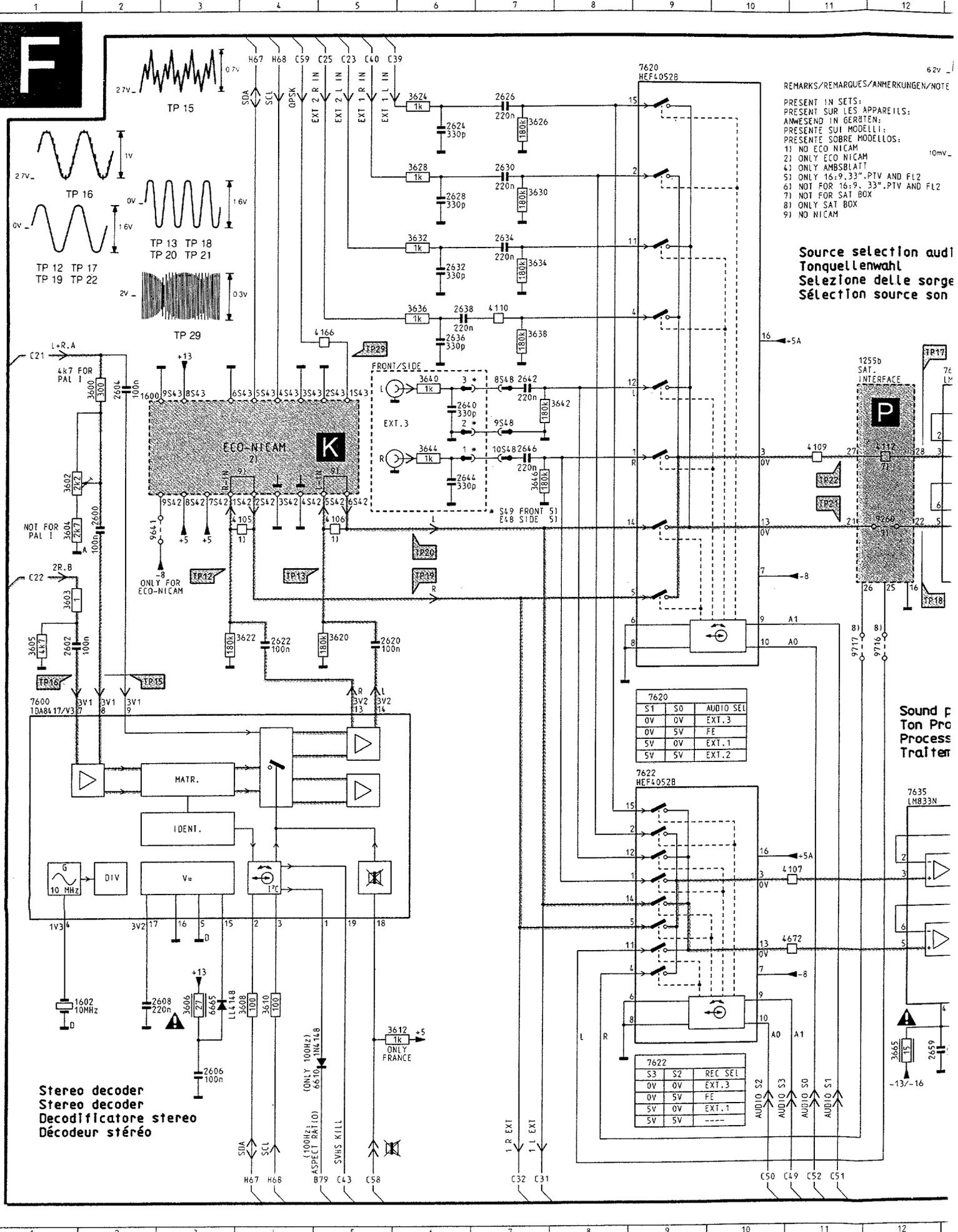
Source selection aud  
Tonquellenwahl  
Selezione delle sorg  
Sélection source son

S1	S0	AUDIO SEL
0V	0V	EXT. 3
0V	5V	FE
5V	0V	EXT. 1
5V	5V	EXT. 2

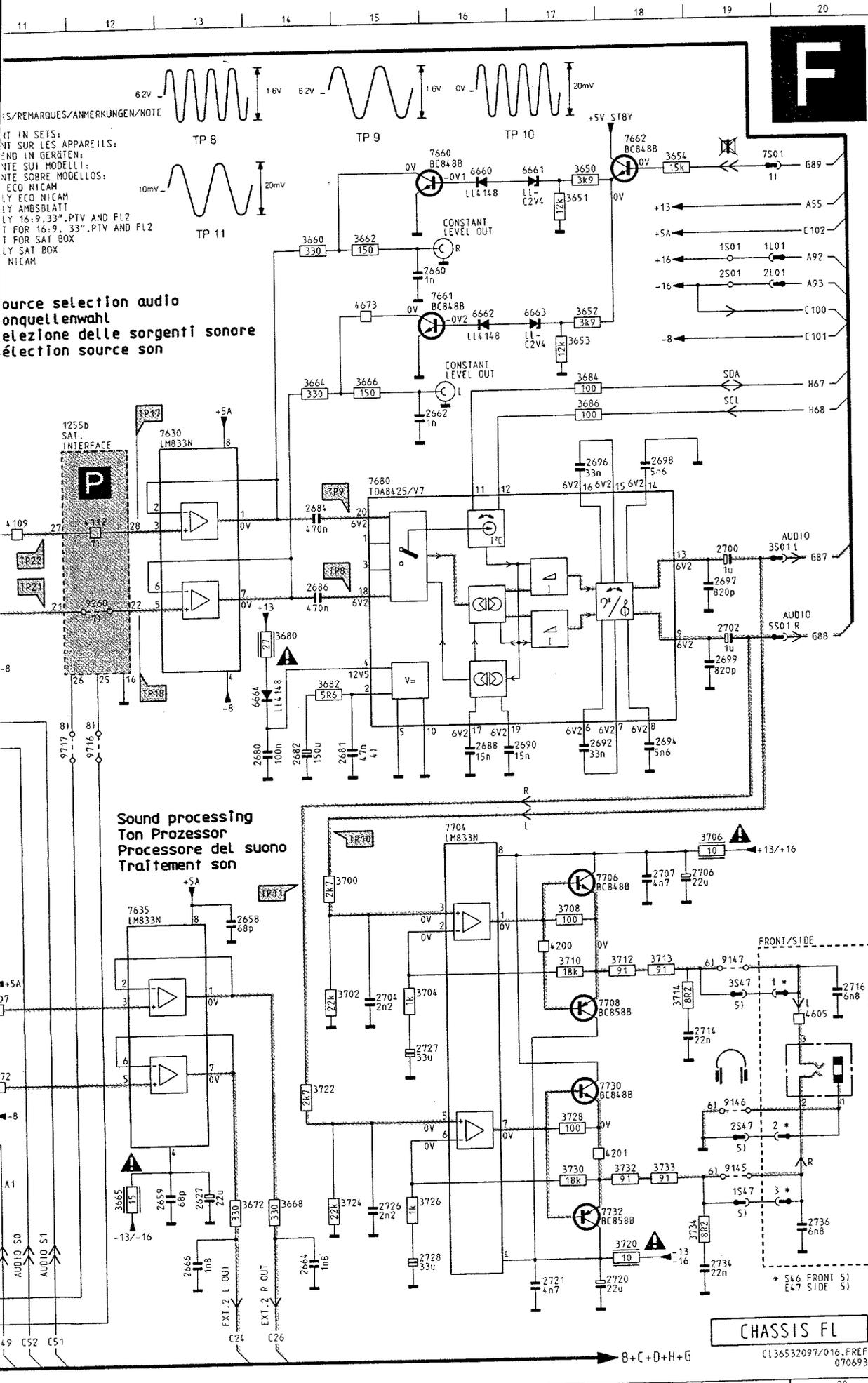
S3	S2	REC SEL
0V	0V	EXT. 3
0V	5V	FE
5V	0V	EXT. 1
5V	5V	---

Sound p  
Ton Proc  
Process  
Traiter

Stereo decoder  
Stereo decoder  
Decodificatore stereo  
Décodeur stéréo



# Traitement audio



REMARQUES/ANMERKUNGEN/NOTE  
 IN SETS:  
 SUR LES APPAREILS:  
 IN GERÄTEN:  
 SUI MODELLI:  
 SOBRE MODELOS:  
 ECO NICAM  
 Y ECO NICAM  
 AMBSBLATT  
 16:9, 33" PTV AND FL2  
 16:9, 33" PTV AND FL2  
 FOR SAT BOX  
 Y FOR SAT BOX  
 NICAM

source selection audio  
 Tonquellenwahl  
 elezione delle sorgenti sonore  
 sélection source son

Sound processing  
 Ton Prozessor  
 Processore del suono  
 Traitement son

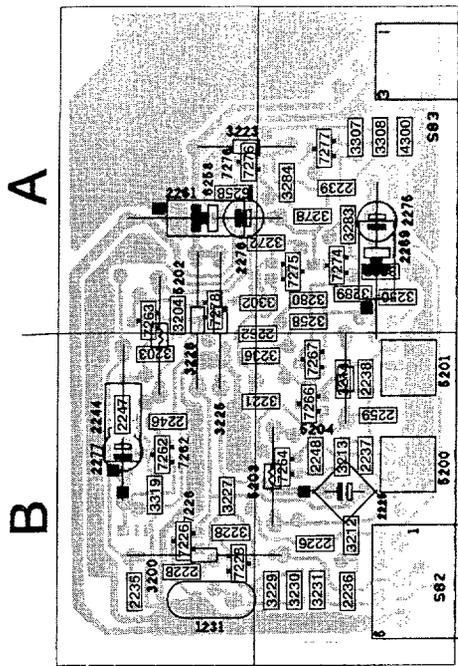


1255	E11	4109	F11
1600	E 2	4110	D 7
1602	M 1	4112	F12
2600	G 2	4166	D 5
2602	H 1	4200	K17
2604	E 2	4201	M17
2606	N 3	4605	L20
2608	M 2	4672	L11
2620	H 5	4673	C15
2622	H 4	6610	N 5
2624	B 6	6660	B16
2626	A 7	6661	B17
2627	M13	6662	D16
2628	C 6	6663	D17
2630	B 7	6664	H14
2632	D 6	6665	M 3
2634	C 7	7600	I 1
2636	D 6	7620	A 9
2638	D 6	7622	J 9
2640	E 6	7630	E12
2642	E 7	7635	J12
2644	F 6	7660	B16
2646	F 7	7661	C16
2658	J13	7662	B18
2659	M12	7680	E15
2660	C16	7704	L16
2662	E16	7706	J17
2664	N14	7708	K17
2666	M13	7730	L17
2680	H14	7732	N17
2681	H15	9145	M19
2682	H14	9146	M19
2684	F14	9147	K19
2686	G14	9260	G12
2688	H16	9641	G 2
2690	H16	9716	H12
2692	H17	9717	H11
2694	H18		
2696	E17		
2697	E19		
2698	E18		
2699	H19		
2700	F19		
2702	G19		
2704	K15		
2706	J18		
2707	J18		
2714	L18		
2716	K20		
2720	O17		
2721	O17		
2726	N15		
2727	L15		
2728	N15		
2734	N19		
2736	N20		
3600	F 2		
3602	F 1		
3603	H 1		
3604	G 1		
3605	H 1		
3606	M 3		
3608	M 4		
3610	M 4		
3612	M 6		
3620	H 5		
3622	H 3		
3624	A 6		
3626	B 7		
3628	B 6		
3630	C 7		
3632	C 6		
3634	C 7		
3636	D 6		
3638	D 7		
3640	E 6		
3642	E 7		
3644	F 6		
3646	F 7		
3650	B17		
3651	B17		
3652	O17		
3653	O17		
3654	B18		
3660	C14		
3662	C15		
3664	D14		
3665	M12		
3666	D15		
3668	N14		
3672	M13		
3680	G14		
3682	H14		
3684	O17		
3686	E17		
3700	J14		
3702	K14		
3704	K15		
3706	J19		
3708	K17		
3710	K18		
3712	K18		
3713	K18		
3714	K18		
3720	N18		
3722	L14		
3724	N14		
3726	N15		
3728	M17		
3730	M17		
3732	M18		
3733	M18		
3734	N18		
4105	G 4		
4106	G 5		
4107	K11		

CHASSIS FL  
 C136532097/016.FREF  
 070693

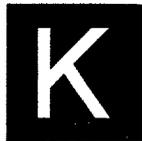


1231 M 4  
 2225 J 5  
 2226 J 6  
 2228 K 3  
 2235 C 3  
 2236 H 2  
 2237 H 3  
 2238 H 4  
 2239 N 3  
 2244 C 4  
 2246 B 4  
 2247 C 5  
 2248 I 2  
 2259 G 3  
 2261 N 2  
 2262 E 6  
 2269 H 7  
 2275 H 6  
 2276 N 2  
 2277 B 4  
 3200 C 3  
 3201 C 4  
 3203 B 5  
 3204 B 6  
 3212 H 2  
 3213 G 3  
 3214 G 4  
 3221 F 5  
 3223 N 1  
 3225 J 5  
 3226 J 5  
 3227 J 4  
 3228 J 4  
 3229 L 4  
 3230 L 3  
 3231 L 3  
 3236 F 5  
 3250 G 5  
 3258 F 6  
 3272 E 7  
 3278 F 8  
 3280 F 6  
 3282 G 7  
 3283 G 7  
 3284 F 8  
 3289 G 6  
 3302 C 7  
 3307 G 8  
 3308 G 8  
 3319 C 5  
 4300 F 9  
 5200 G 3  
 5201 G 4  
 5202 B 5  
 5203 F 3  
 5204 F 4  
 6258 N 3  
 7226 K 6  
 7228 K 4  
 7262 C 5  
 7263 C 6  
 7264 H 5  
 7266 F 5  
 7267 F 6  
 7274 F 6  
 7275 F 7  
 7276 F 8  
 7277 G 8  
 7278 C 7

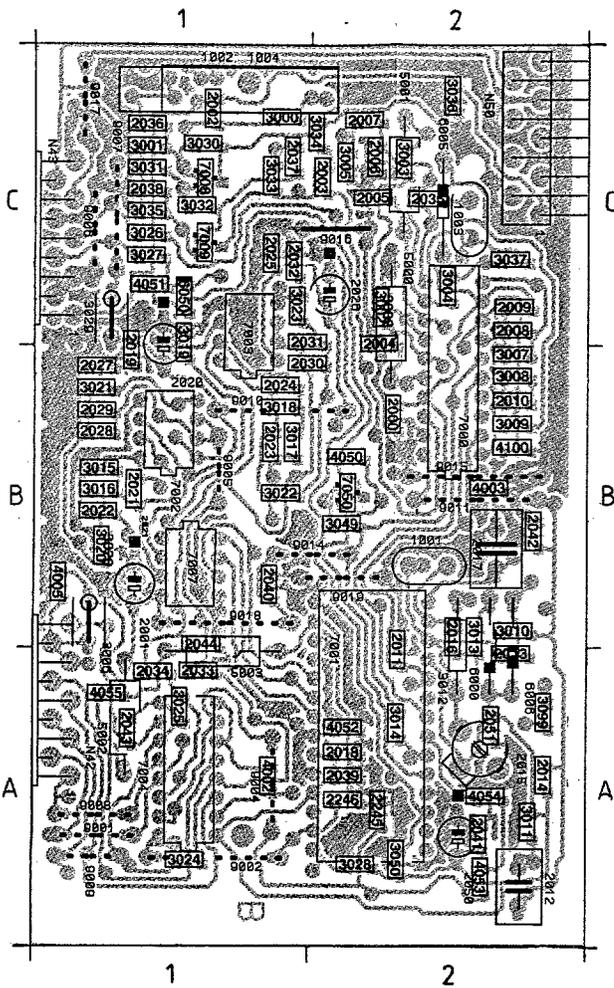


S82 B2	2239 A2	2276 A1	3221 B2	3250 A2
S83 A2	2244 B1	2277 B1	3223 A1	3258 B2
1231 B1	2246 B1	3190 A2	3225 A1	3272 A2
2225 B2	2247 B1	3200 B1	3226 A1	3278 A2
2226 B2	2248 B2	3201 A1	3227 B1	3280 A2
2228 B1	2258 B2	3203 B1	3228 B1	3282 A2
2235 B1	2261 A1	3204 A1	3229 B2	3283 A2
2236 B2	2262 B2	3212 B2	3230 B2	3284 A2
2237 B2	2269 A2	3213 B2	3231 B2	3289 A2
2238 B2	2275 A2	3214 B2	3236 B2	3302 A2
3307 A2	6258 A1	7276 A1		
3308 A2	7226 B1	7277 A2		
3319 B1	7228 B1	7278 A1		
3991 A2	7262 B1			
4300 A2	7263 A1			
5200 B2	7264 B2			
5201 B2	7266 B2			
5202 B1	7267 B2			
5203 B2	7274 A2			
5204 B2	7275 A2			

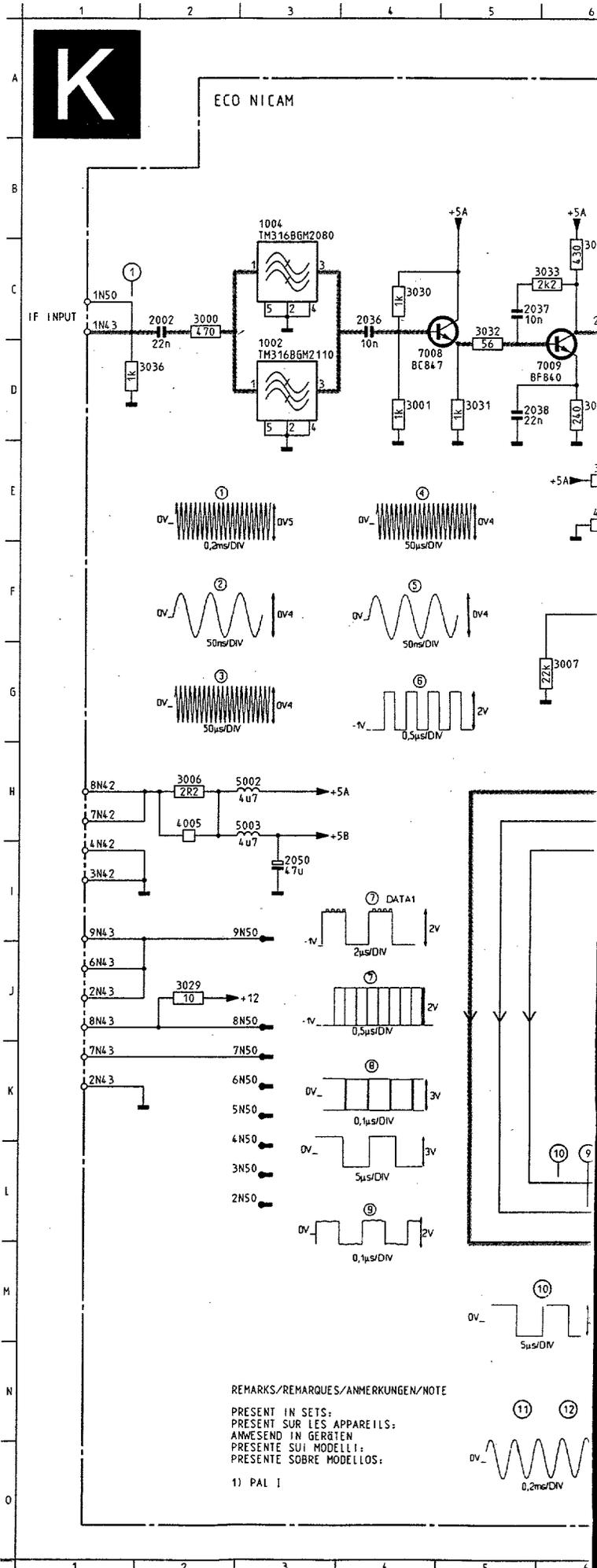
# NICAM



ECO NICAM



N42	A1	2018	A2	2043	A1	3019	B1	4050	B2	9002	A1
N43	C1	2019	B1	2044	A1	3020	B1	4051	C1	9004	A1
N50	C2	2020	B1	2050	A2	3021	B1	4052	A2	9005	B1
1001	B2	2021	B1	2051	A2	3022	B1	4053	A2	9006	C1
1002	C1	2022	B1	2245	A2	3023	C1	4054	A2	9007	C1
1003	C2	2023	B1	2246	A2	3024	A1	4055	A1	9008	A1
1004	C1	2024	B1	3000	C1	3025	A1	4100	B2	9009	A1
2000	B2	2025	C1	3001	C1	3026	C1	5000	C2	9010	B1
2001	B1	2026	C2	3002	C2	3027	C1	5001	C2	9011	B2
2002	C1	2027	B1	3003	C2	3028	A2	5002	A1	9014	B2
2003	C2	2028	B1	3004	C2	3029	C1	5003	A1	9015	B2
2004	B2	2029	B1	3005	C2	3030	C1	6000	A2	9016	C2
2005	C2	2030	B2	3006	B1	3031	C1	6005	C2	9017	C1
2006	C2	2031	B2	3007	B2	3032	C1	6006	A2	9018	B1
2007	C2	2032	C1	3008	B2	3033	C1	6050	C1	9019	B2
2008	B2	2033	A1	3009	B2	3034	C2	7000	B2		
2009	C2	2034	A1	3010	A2	3035	C1	7001	A2		
2010	B2	2035	C2	3011	A2	3036	C2	7002	B1		
2011	A2	2036	C1	3012	A2	3037	C2	7003	B1		
2012	A2	2037	C1	3013	A2	3049	B2	7004	A1		
2013	A2	2038	C1	3014	A2	3050	A2	7007	B1		
2014	A2	2039	A2	3015	B1	3099	A2	7008	C1		
2015	A2	2040	B1	3016	B1	4002	A1	7009	C1		
2016	A2	2041	A2	3017	B1	4003	B2	7050	B2		
2017	B2	2042	B2	3018	B1	4005	B1	9001	A1		

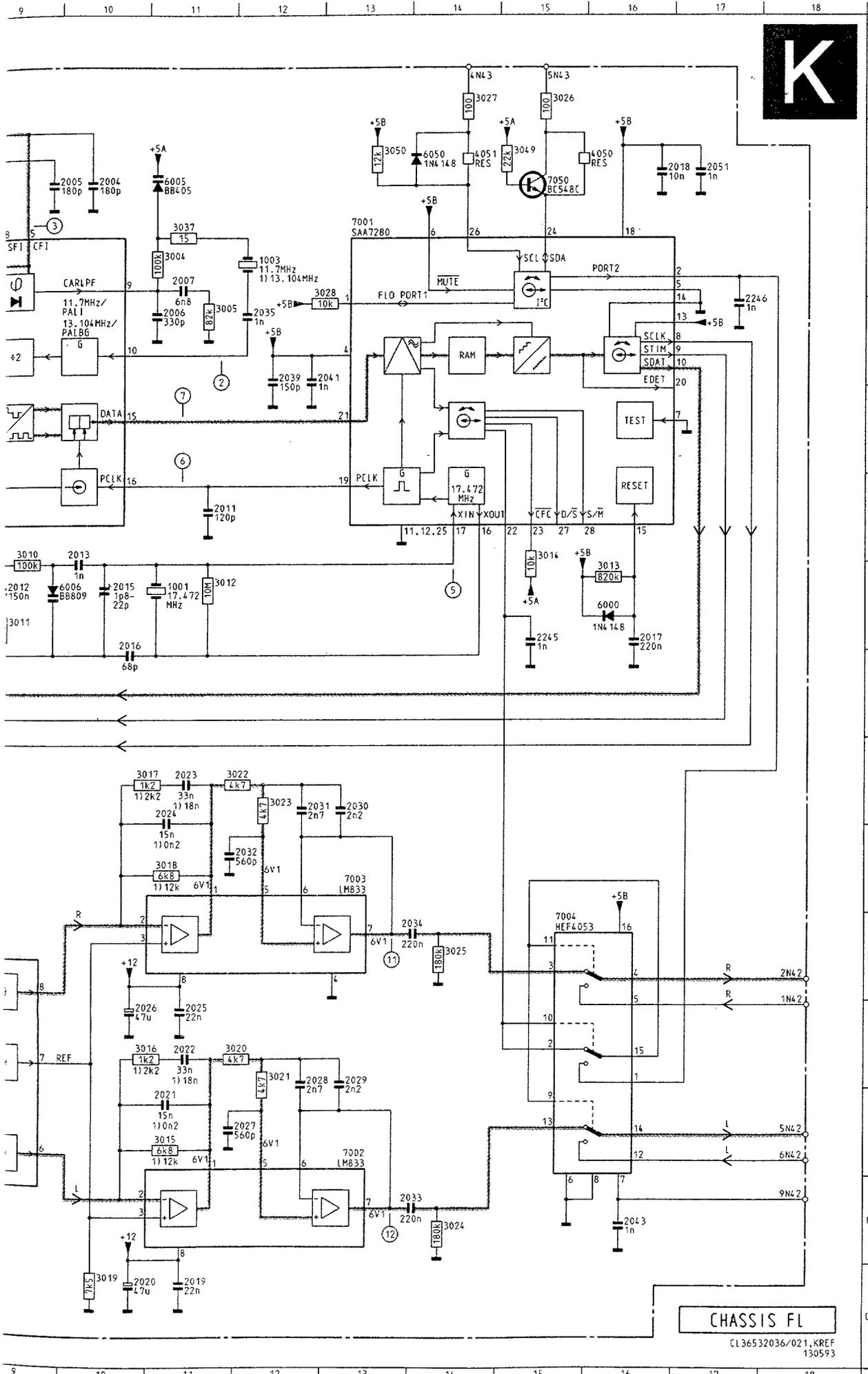
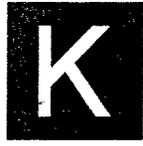


REMARKS/REMARQUES/ANMERKUNGEN/NOTE

PRESENT IN SETS:  
PRESENT SUR LES APPAREILS:  
ANWESEND IN GERÄTEN  
PRESENTE SUI MODELLI:  
PRESENTE SOBRE MODELLOS:

1) PAL I



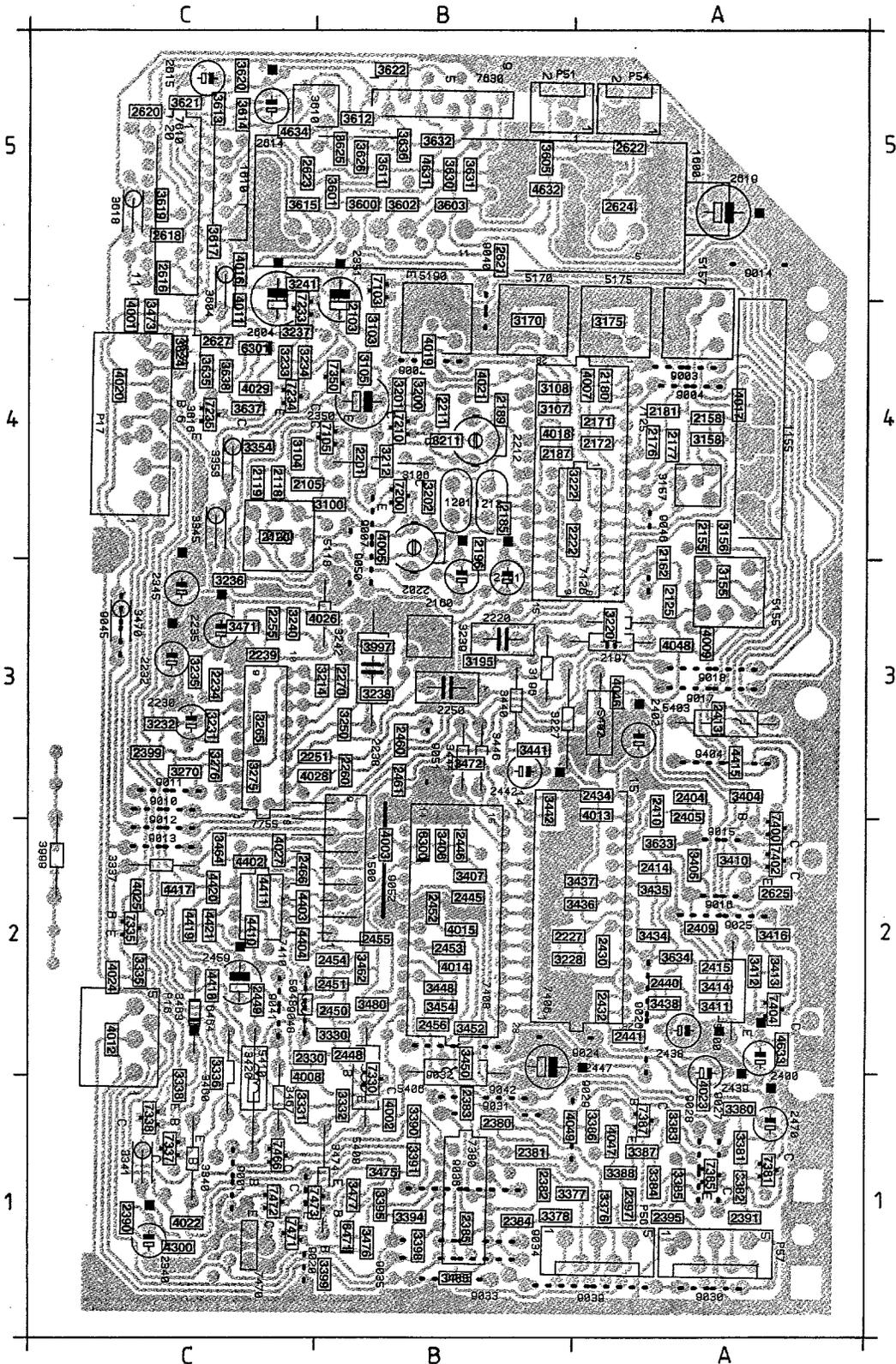


1001	G11
1002	D 3
1003	C12
1004	B 3
2000	B 7
2002	C 2
2003	C 6
2004	B10
2005	B 9
2006	D11
2007	C11
2008	G 6
2009	B 7
2010	G 7
2011	F11
2012	G 9
2013	F10
2014	G 8
2015	G10
2016	G10
2017	G16
2018	B16
2019	O11
2020	O10
2021	M11
2022	L11
2023	L11
2024	L11
2025	L11
2026	L10
2027	M12
2028	L12
2029	L13
2030	L13
2031	L12
2032	J12
2033	N14
2034	K14
2035	D12
2036	C 4
2037	C 5
2038	D 5
2039	D12
2040	J 8
2041	D12
2042	G 8
2043	N16
2050	I 3
2051	B17
2245	G15
2246	D17
3000	C 2
3001	D 4
3002	B 8
3003	B 8
3004	C11
3005	D11
3006	H 2
3007	G 6
3008	G 7
3009	E 6
3010	F 9
3011	G 9
3012	G11
3013	G16
3014	F15
3015	M11
3016	L10
3017	L10
3018	J11
3019	O10
3020	L12
3021	L12
3022	L12
3023	L12
3024	N14
3025	K14
3026	A15
3027	A14
3028	C13
3029	J 2
3030	C 4
3031	D 5
3032	C 5
3033	C 6
3034	C 6
3035	D 6
3036	D 1
3037	C11
3049	B15
3050	B13
4005	H 2
4050	B16
4051	B14
4100	E 6
5000	B 9
5001	B 9
5002	H 3
5003	H 3
6000	G16
6005	B11
6006	G 9
6050	B14
7000	C 7
7001	C13
7002	M13
7003	J13
7004	K15
7007	K 7
7008	D 5
7009	D 6
7050	B15
P16	C2
P17	C4
P51	B5
P54	A5
P56	A1
P57	A1
1155	A4
1201	B4
1212	B4
1500	B2
1600	B5
1610	C5
2103	B4
2105	C4
2118	C4
2119	C4

CHASSIS FL  
CL36532036/021, KREF  
130593

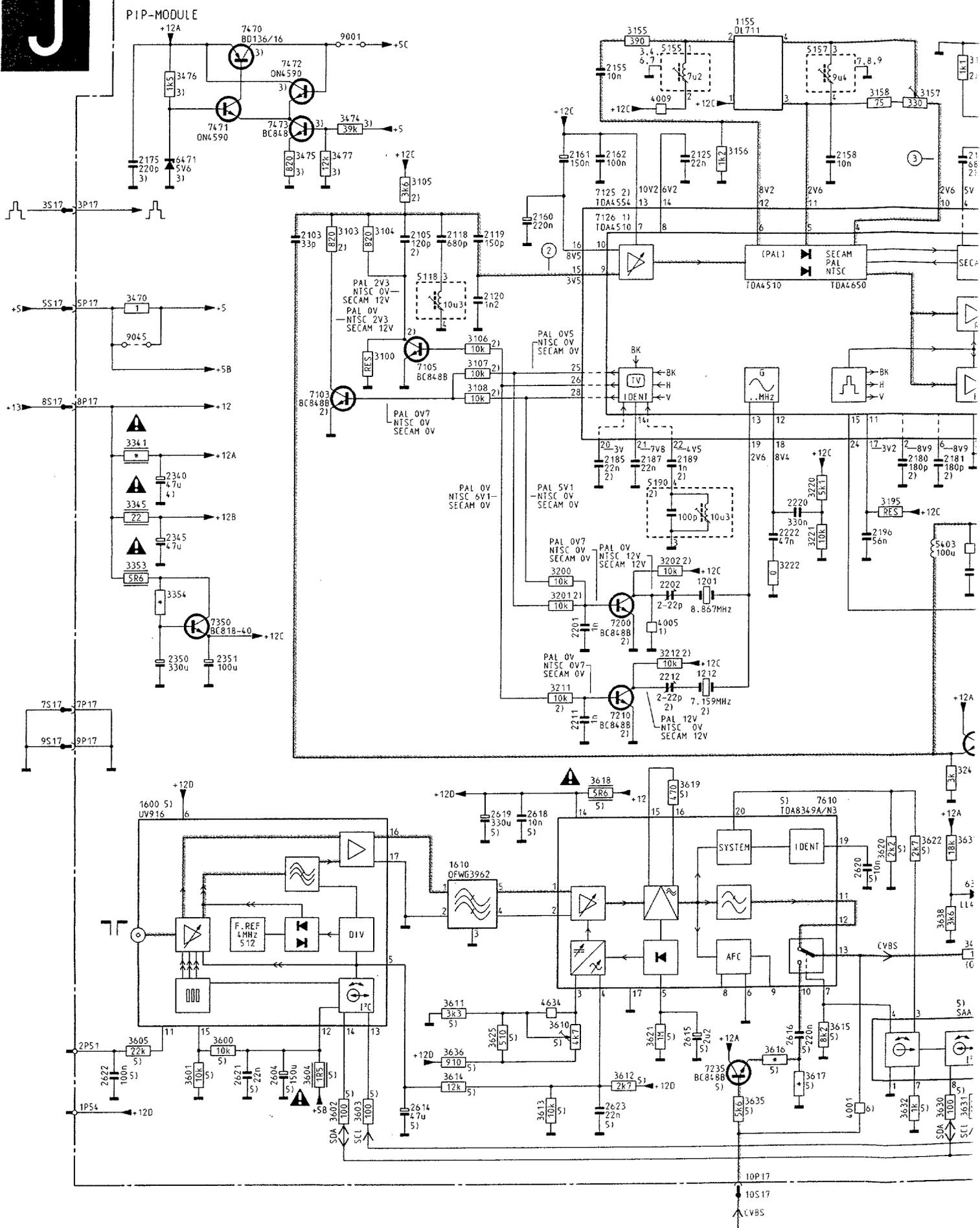
# PIP panel

1001 G11  
1002 D 3  
1003 C12  
1004 B 3  
2000 B 7  
2002 C 2  
2003 C 6  
2004 B10  
2005 B 9  
2006 D11  
2007 C11  
2008 G 6  
2009 B 7  
2010 G 7  
2011 F11  
2012 G 9  
2013 F10  
2014 G 8  
2015 G10  
2016 G10  
2017 G16  
2018 B16  
2019 O11  
2020 O10  
2021 H11  
2022 L11  
2023 L11  
2024 L11  
2025 L11  
2026 L10  
2027 M12  
2028 L12  
2029 L13  
2030 L13  
2031 L12  
2032 J12  
2033 N14  
2034 K14  
2035 O12  
2036 C 4  
2037 C 5  
2038 D 5  
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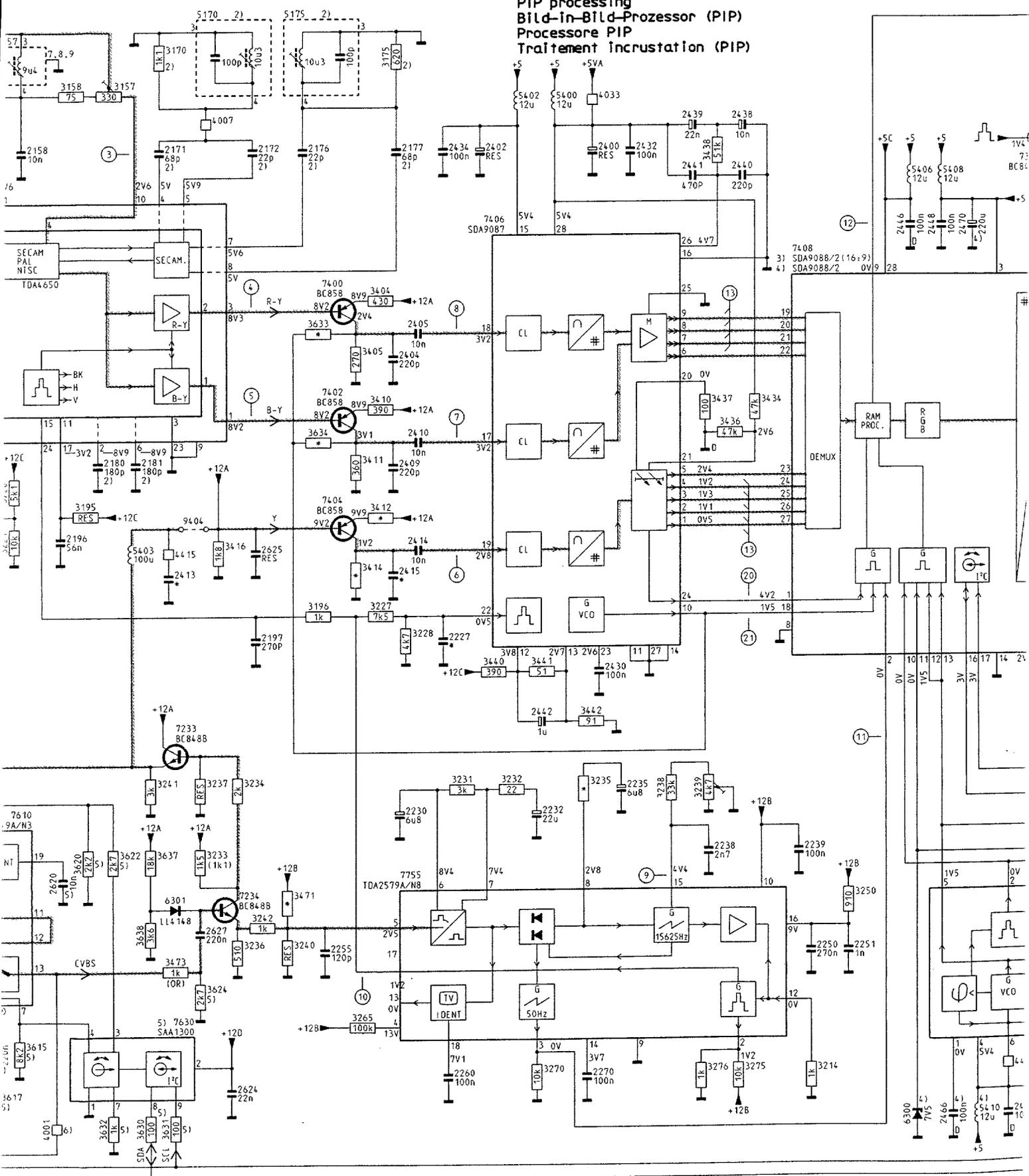
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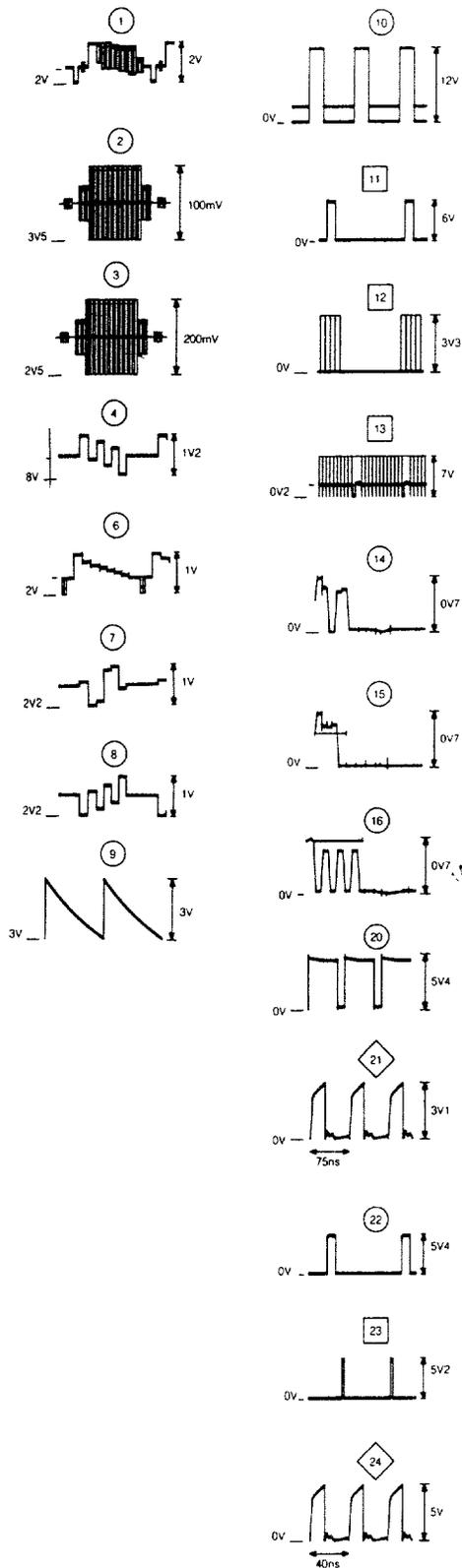
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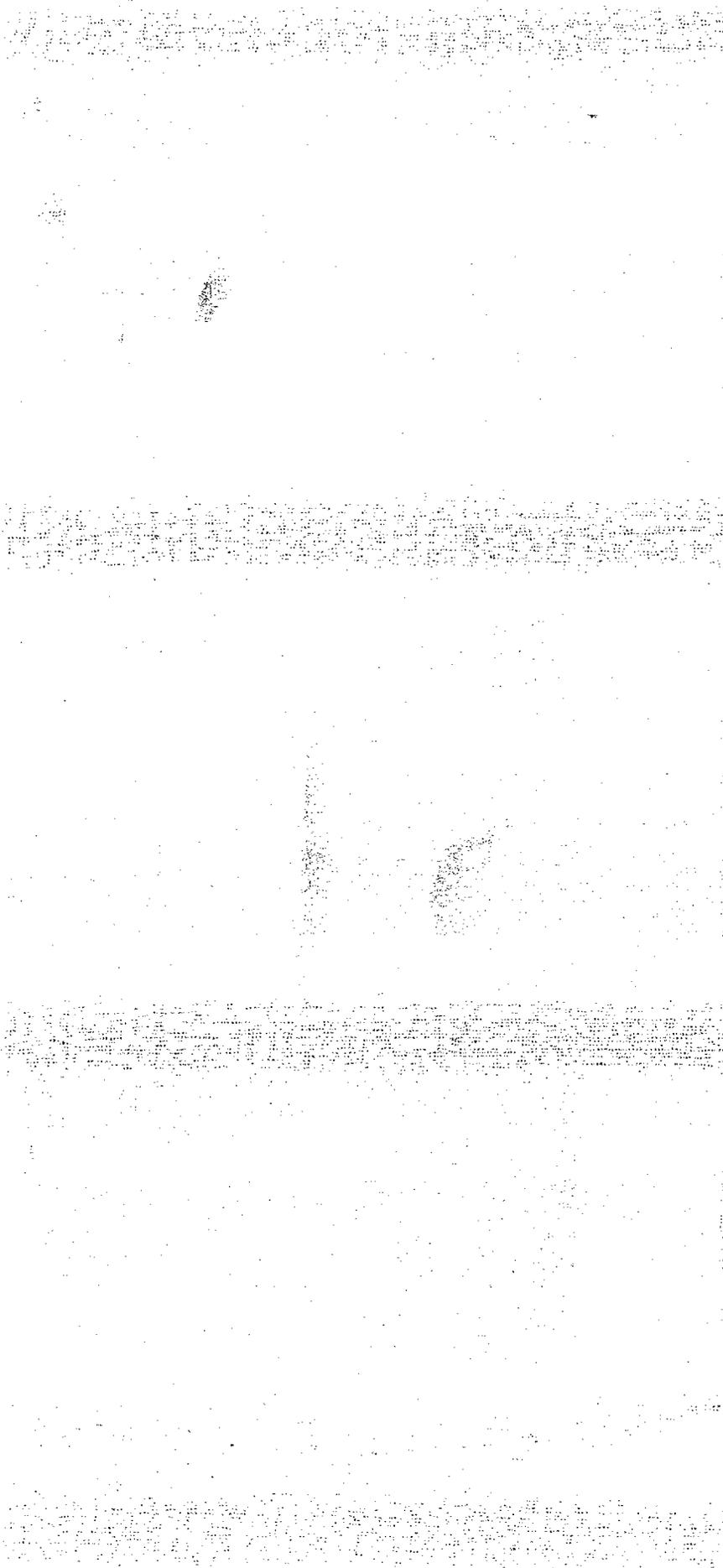
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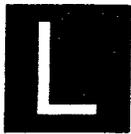


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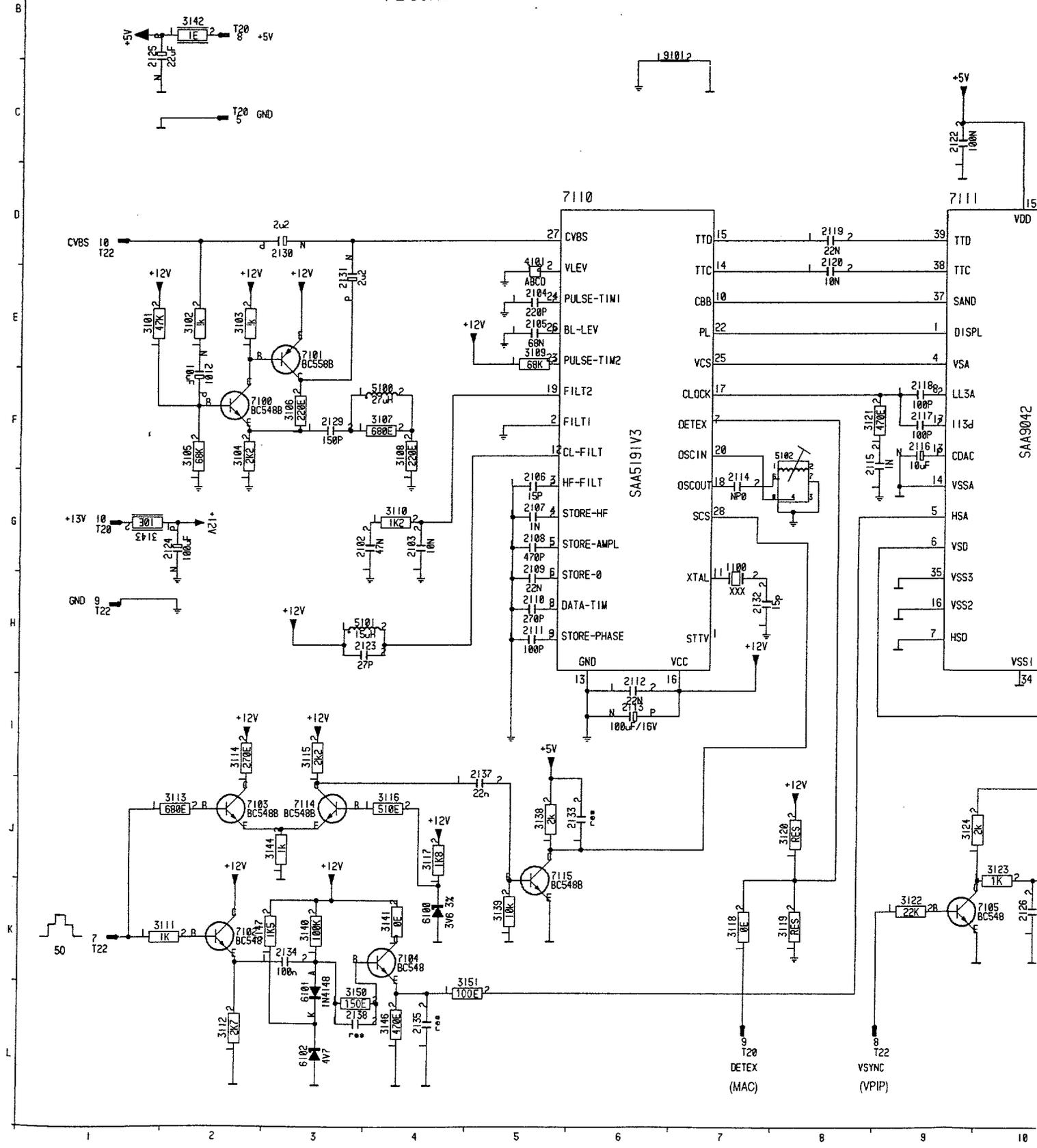




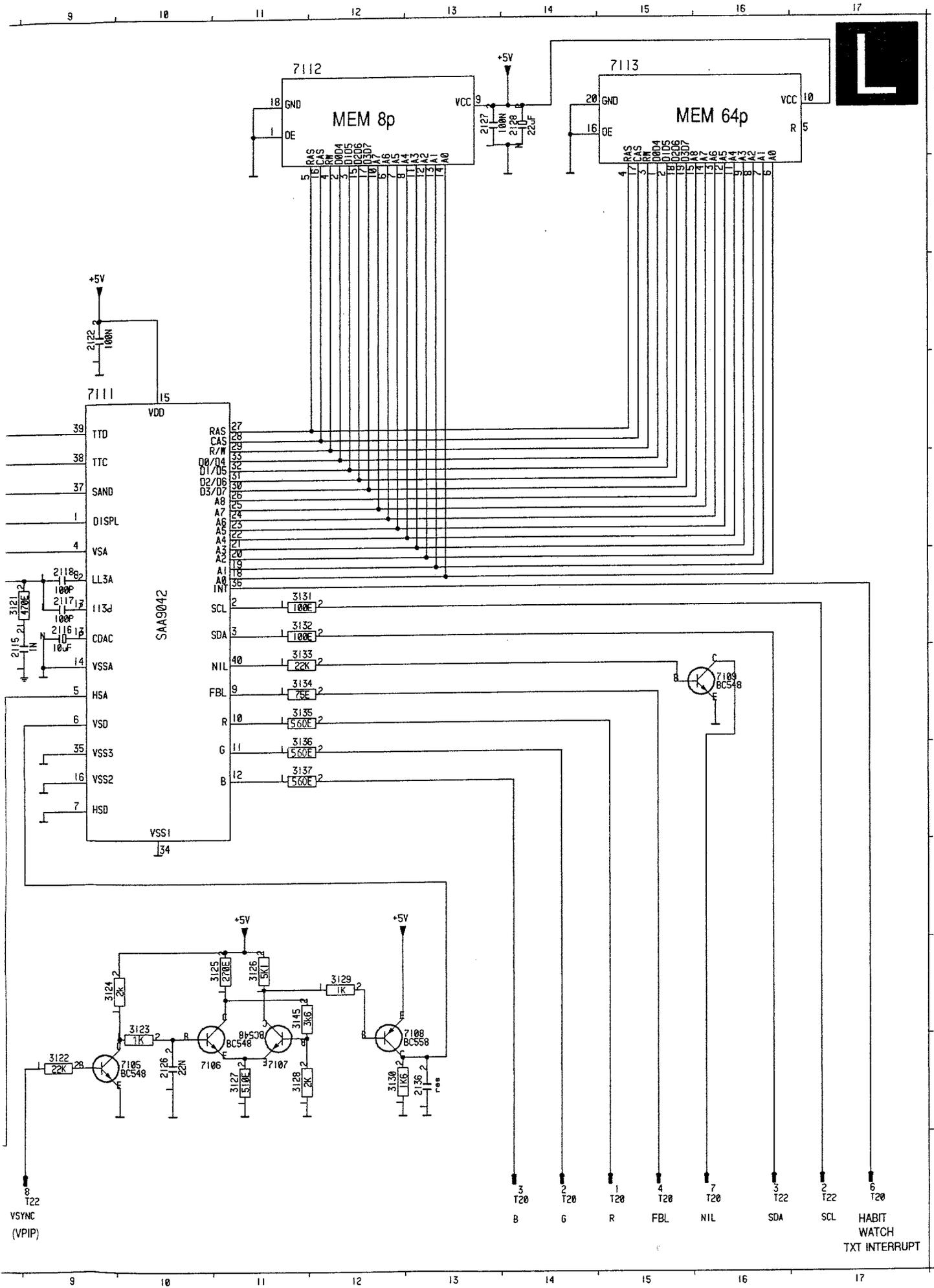




TELETEXT DECODER  
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 FL-50Hz



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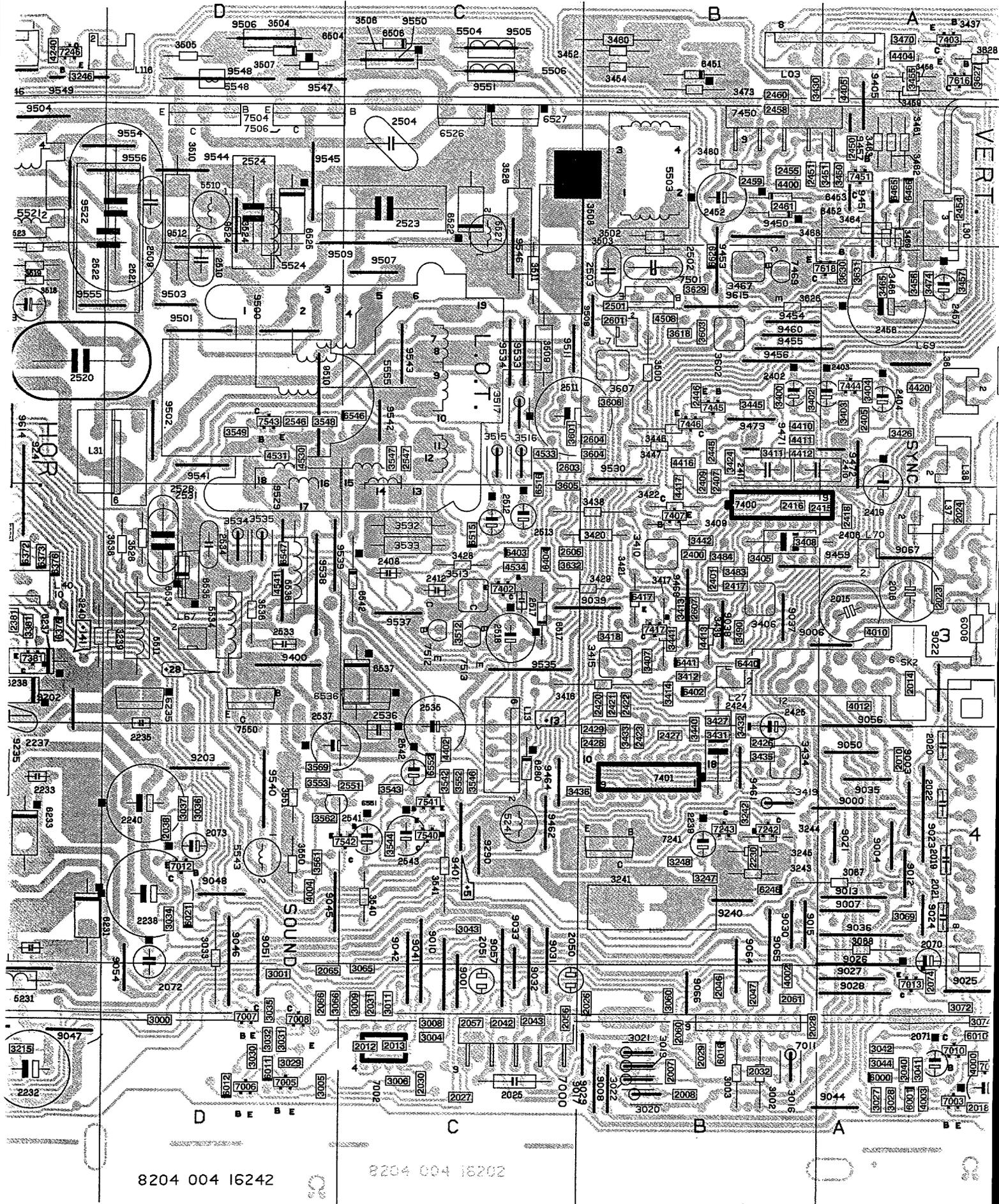


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# Large signal panel / Groß-signal Platte /

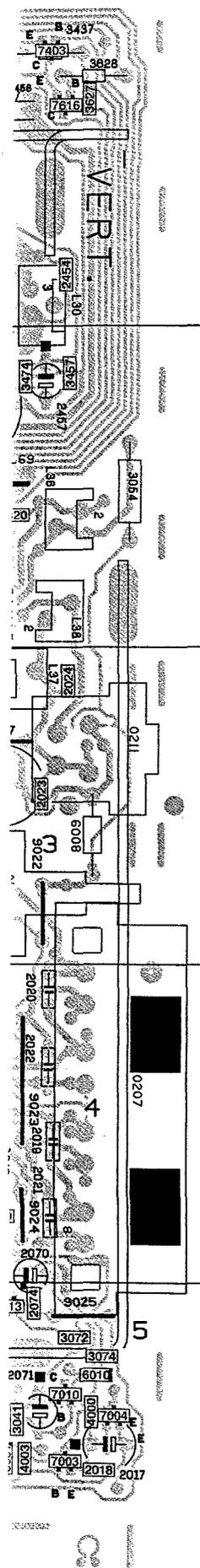
Plati



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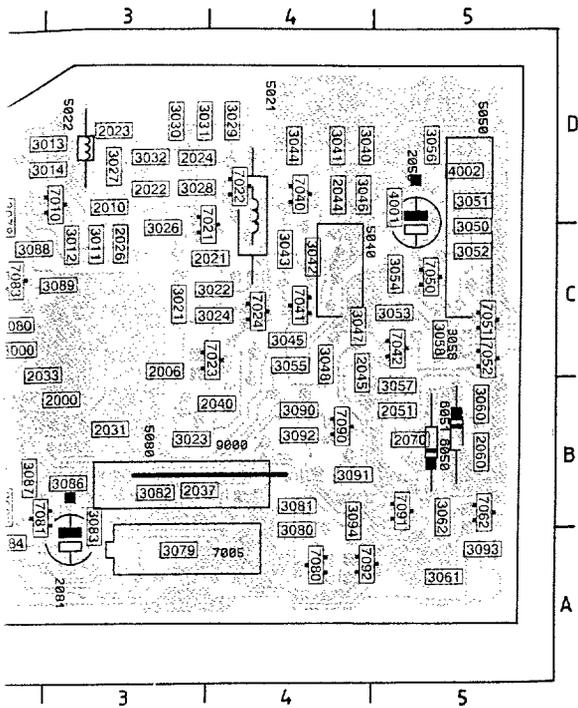


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2050 C5	2456 A2	3072 A5	3405 B3	3528 D3	5235 E4	6516 C2	9006 A3	9456 B2	
2051 C5	2457 A2	3073 F5	3406 B3	3529 F1	5237 E3	6517 C3	9007 A4	9457 A1	
2056 C5	2458 B1	3074 A5	3407 B3	3530 F2	5241 C4	6519 E2	9008 B5	9459 B3	
2057 C5	2459 B1	3201 H3	3408 B3	3532 C3	5255 F3	6520 E2	9010 C5	9460 B2	
2060 B5	2460 B1	3202 F5	3409 B3	3533 C3	5260 E3	6522 C1	9012 A4	9461 B4	
2061 B5	2461 B1	3203 H2	3410 B3	3534 D3	5262 E3	6525 D1	9013 A4	9462 C4	
2065 D5	2480 E2	3204 H1	3411 B2	3535 D3	5308 H5	6526 C1	9015 B4	9464 C4	
2066 D5	2501 B2	3205 G1	3412 B3	3536 D3	5310 H5	6527 C1	9017 B5	9468 B3	
2070 A4	2502 B2	3209 G1	3413 B3	3537 F2	5381 E3	6529 F1	9019 E3	9471 B2	
2071 A5	2503 B2	3210 F3	3414 B3	3538 D3	5503 B1	6534 D3	9021 A4	9472 A2	
2072 D4	2504 C1	3211 G3	3415 B3	3540 C4	5504 C1	6535 D3	9022 A3	9473 B2	
2073 D4	2509 D1	3212 F3	3416 B3	3541 C4	5506 C1	6536 C3	9023 A4	9500 D2	
2074 A5	2510 D2	3213 F3	3417 B3	3542 C4	5510 D1	6537 C3	9024 A4	9501 D2	
2200 H3	2511 C2	3214 E5	3418 B3	3543 C4	5511 D3	6542 C3	9025 A5	9502 D2	
2202 G2	2512 C3	3215 E5	3419 B4	3544 C4	5514 F2	6546 C2	9026 A4	9503 D2	
2203 H2	2513 C3	3216 F4	3420 B3	3545 E2	5520 E2	6547 D3	9027 A5	9504 E1	

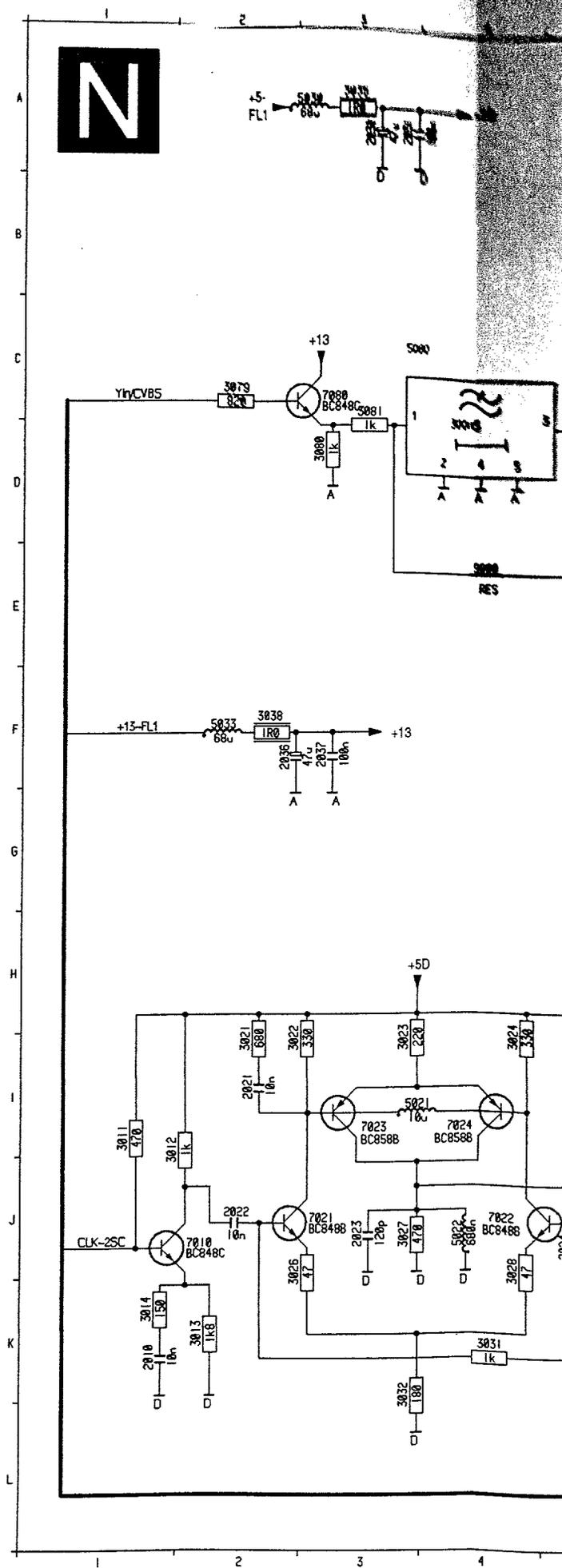
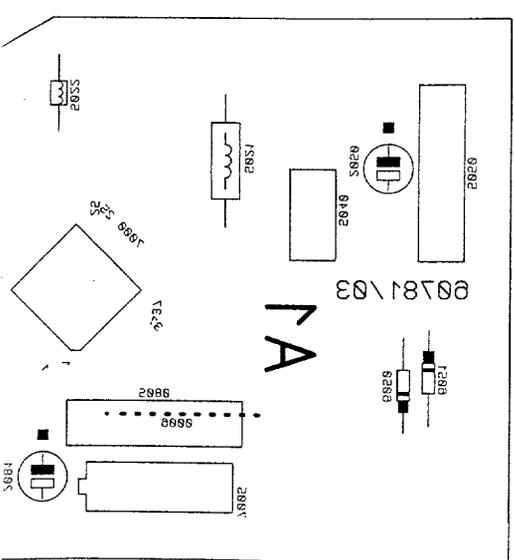
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9534 C2  
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9537 C3  
9538 D3  
9539 D3  
9540 D4  
9541 D2  
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9543 C2  
9544 D1  
9545 D1  
9546 C2  
9547 D1  
9548 D1  
9549 E1  
9550 C1  
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9556 D1  
9557 E2  
9601 E1  
9614 E2  
9615 B2

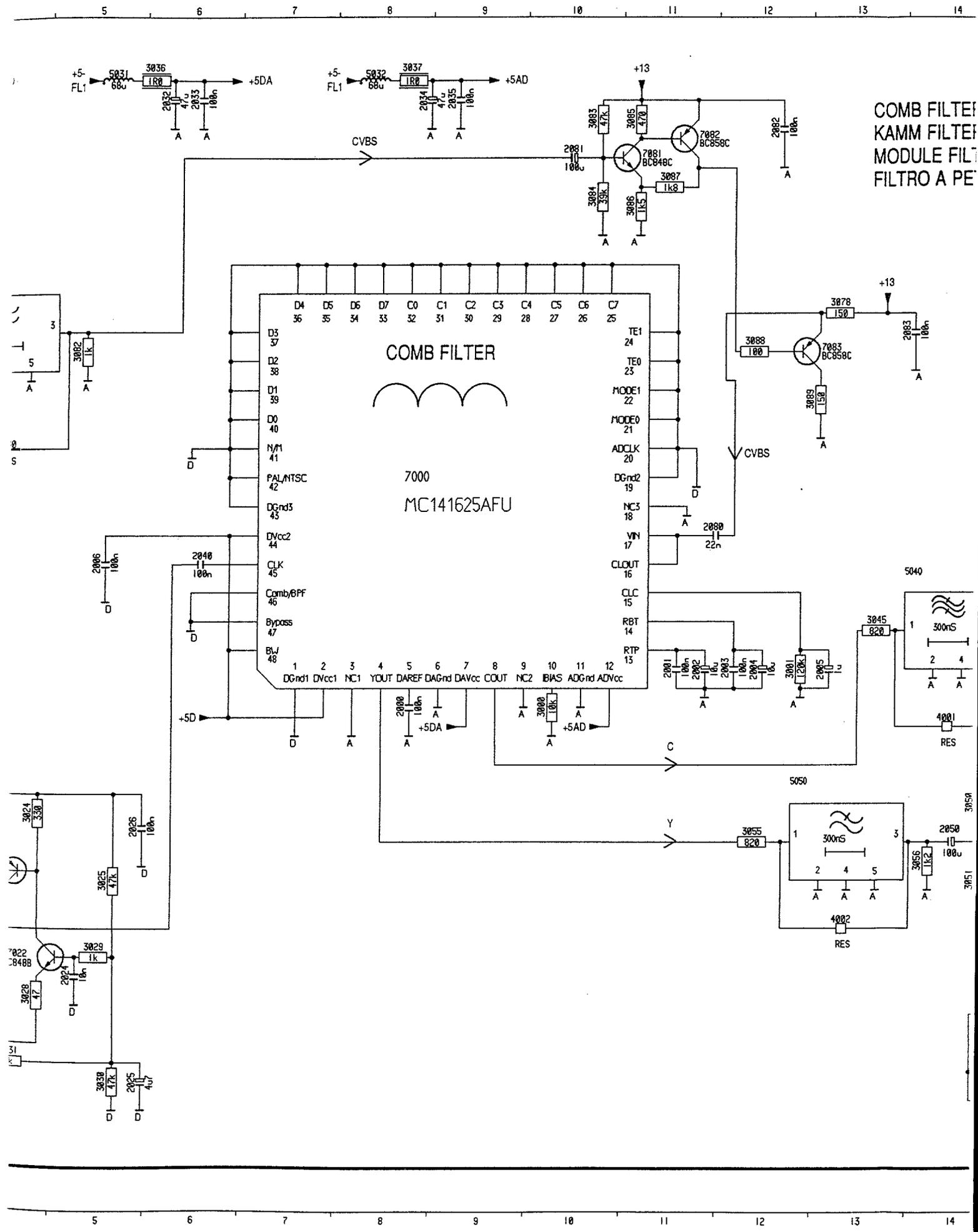
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34  
E3  
32  
E3  
E1  
F2  
F2  
C4  
H5  
H4  
E2  
D3  
C4  
A1  
B1  
A1  
B2  
B2  
B2  
B2  
A1  
B3  
B2  
B4  
C4  
C4  
B3  
B2  
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D2  
D2  
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D3  
D2





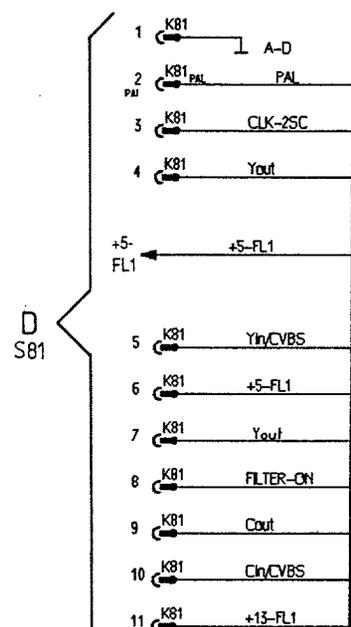
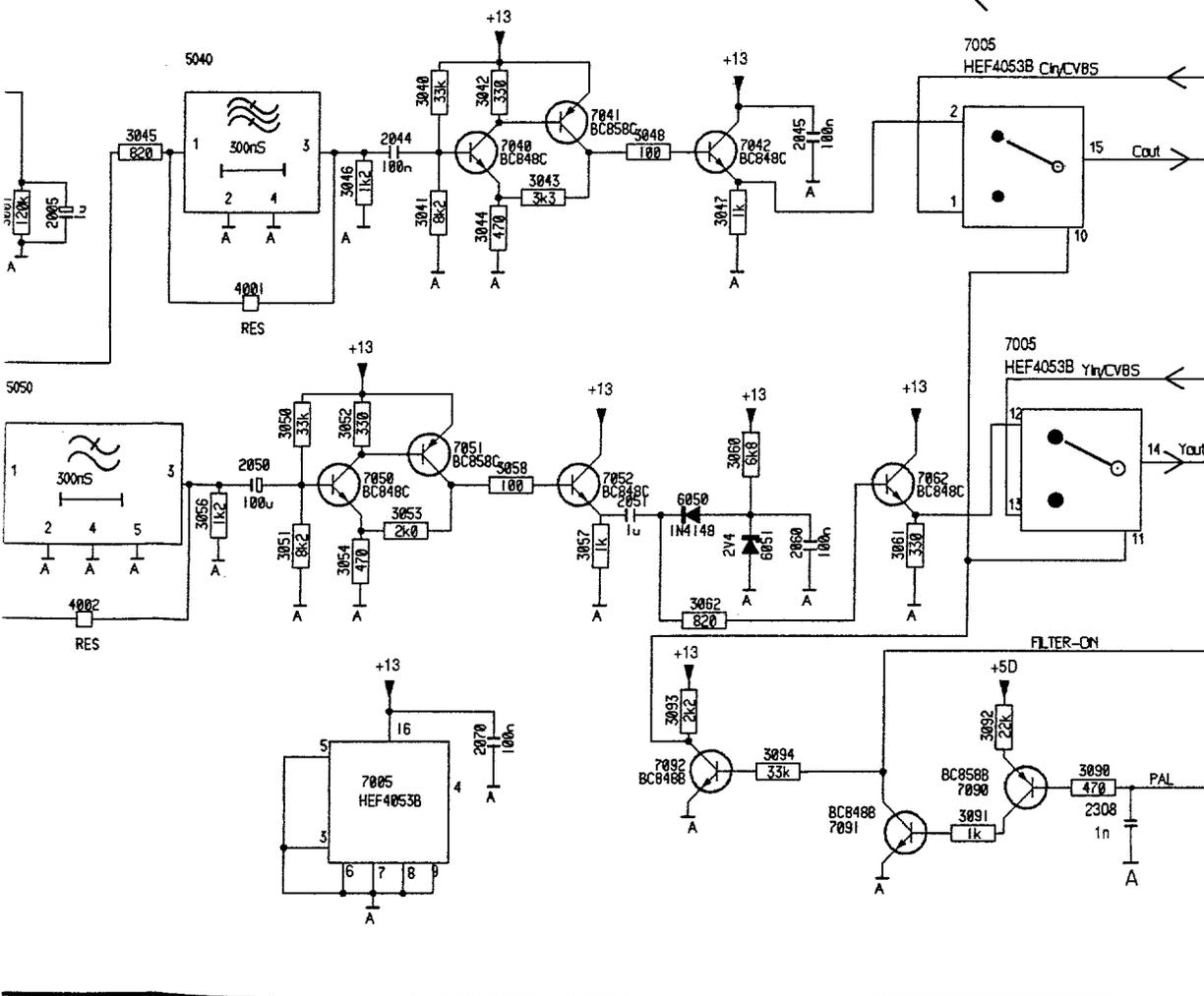
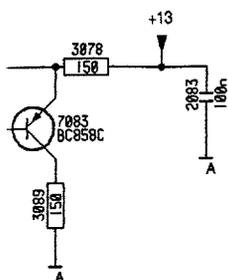
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03	3050 C5	3082 B3	5022 D3	7024 C4	
04	3051 D5	3083 B3	5030 B1	7040 D4	
03	3052 C5	3084 A2	5031 B1	7041 C4	
31	3053 C5	3085 B2	5032 B1	7042 C5	
32	3054 C5	3086 B3	5033 B1	7050 C5	
31	3055 C4	3087 B2	5040 C4	7051 C5	
01	3056 D5	3088 C2	5050 C5	7052 C5	
04	3057 B5	3089 C3	5080 B3	7062 B5	
04	3058 C5	3090 B4	6050 B5	7080 A4	
04	3060 B5	3091 B4	6051 B5	7081 B2	
04	3061 A5	3092 B4	7000 C3	7082 B2	
04	3062 B5	3093 A5	7005 A3	7083 C2	
04	3078 D2	3094 B4	7010 D3	7090 B4	
04	3079 A3	4001 D5	7021 C4	7091 B5	
04	3080 A4	4002 D5	7022 D4	7092 A4	



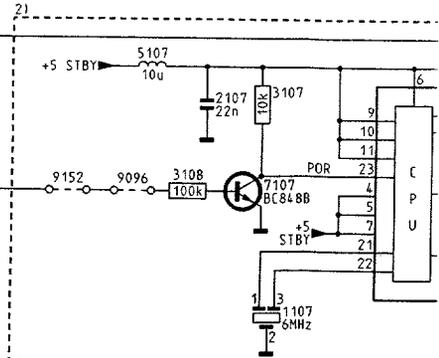
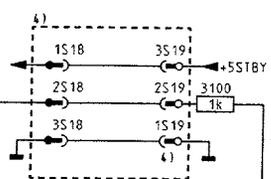
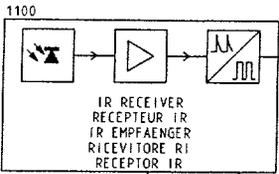
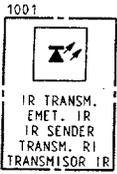


COMB FILTER  
KAMM FILTER  
MODULE FILT  
FILTRO A PE

COMB FILTER  
KAMM FILTER  
MODULE FILTRE EN PEIGNE  
FILTRO A PETTINE

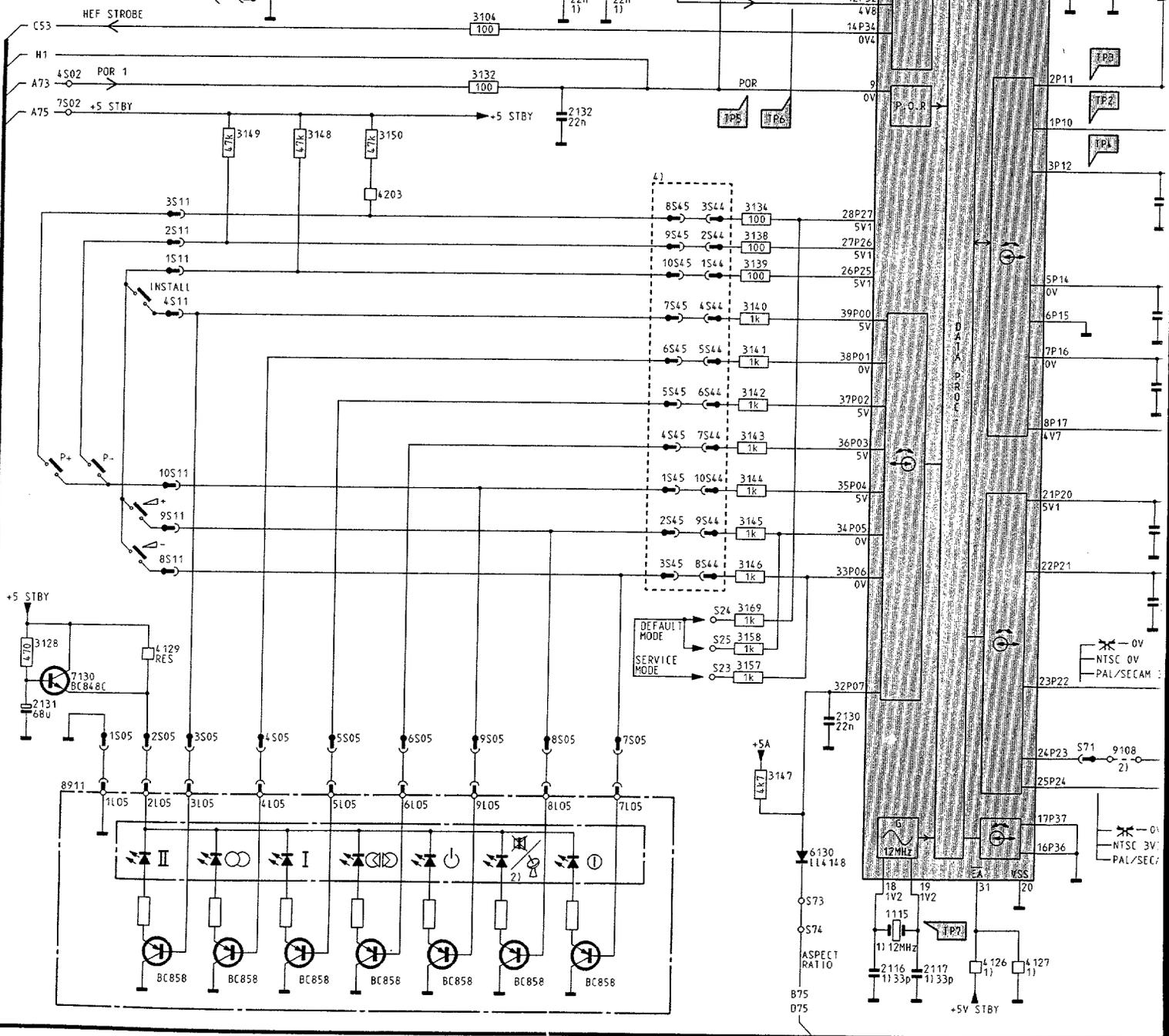


2800	G 8	K81	B19
2801	G11	K81	B19
2802	G12	K81	C19
2803	G12	K81	D19
2804	G12	K81	D19
2805	G13	K81	D19
2806	F 5	K81	E19
2810	K 1	K81	E19
2821	J 2	K81	E19
2822	J 2	K81	E19
2823	J 2	K81	E19
2824	J 2	K81	E19
2825	J 2	K81	E19
2826	J 2	K81	E19
2830	A 3	K81	A 3
2831	A 3	K81	A 3
2832	A 6	K81	A 6
2833	A 6	K81	A 6
2834	A 8	K81	A 8
2835	A 8	K81	A 8
2836	F 8	K81	F 8
2837	F 8	K81	F 8
2838	F 8	K81	F 8
2839	F 8	K81	F 8
2844	G15	K81	G15
2845	G18	K81	G18
2850	I14	K81	I14
2851	I16	K81	I16
2860	I18	K81	I18
2870	K16	K81	K16
2880	F11	K81	F11
2881	B10	K81	B10
2882	A12	K81	A12
2883	D14	K81	D14
2884	G10	K81	G10
2881	G12	K81	G12
2812	I 1	K81	I 1
2813	K 2	K81	K 2
2814	I 2	K81	I 2
2821	I 3	K81	I 3
2822	I 4	K81	I 4
2823	I 4	K81	I 4
2824	I 4	K81	I 4
2825	I 4	K81	I 4
2826	I 4	K81	I 4
2827	I 4	K81	I 4
2828	J 4	K81	J 4
2829	J 5	K81	J 5
2830	K 4	K81	K 4
2831	K 4	K81	K 4
2832	K 3	K81	K 3
2833	A 3	K81	A 3
2834	A 8	K81	A 8
2835	A 8	K81	A 8
2836	A 8	K81	A 8
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2846	G17	K81	G17
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2853	I15	K81	I15
2854	I15	K81	I15
2855	I12	K81	I12
2856	I14	K81	I14
2857	I16	K81	I16
2858	H14	K81	H14
2859	I18	K81	I18
2860	J17	K81	J17
2878	C13	K81	C13
2879	C 2	K81	C 2
2880	D 3	K81	D 3
2881	C 3	K81	C 3
2882	D 5	K81	D 5
2883	A10	K81	A10
2884	B10	K81	B10
2885	A11	K81	A11
2886	B11	K81	B11
2887	B11	K81	B11
2888	D12	K81	D12
2889	D12	K81	D12
2890	K20	K81	K20
2891	K19	K81	K19
2892	J19	K81	J19
2893	J17	K81	J17
2894	K17	K81	K17
4801	H14	K81	H14
4802	J12	K81	J12
4803	I 3	K81	I 3
5022	J 4	K81	J 4
5030	A 3	K81	A 3
5031	A 5	K81	A 5
5032	A 8	K81	A 8
5033	F 2	K81	F 2
5040	F13	K81	F13
5050	H12	K81	H12
5080	C 3	K81	C 3
6050	I17	K81	I17
7000	E 8	K81	E 8
7005	K15	K81	K15
7005	G19	K81	G19
7005	I19	K81	I19
7010	J 2	K81	J 2
7021	J 3	K81	J 3
7022	J 4	K81	J 4
7023	I 4	K81	I 4
7024	G16	K81	G16
7041	F16	K81	F16
7042	G17	K81	G17
7050	I15	K81	I15
7051	I15	K81	I15
7052	I16	K81	I16
7062	I18	K81	I18
7080	C 3	K81	C 3
7081	B11	K81	B11
7082	B11	K81	B11
7083	D12	K81	D12
7090	K18	K81	K18
7091	K18	K81	K18
7092	K17	K81	K17
9808	E 4	K81	E 4
K81	B19	K81	B19

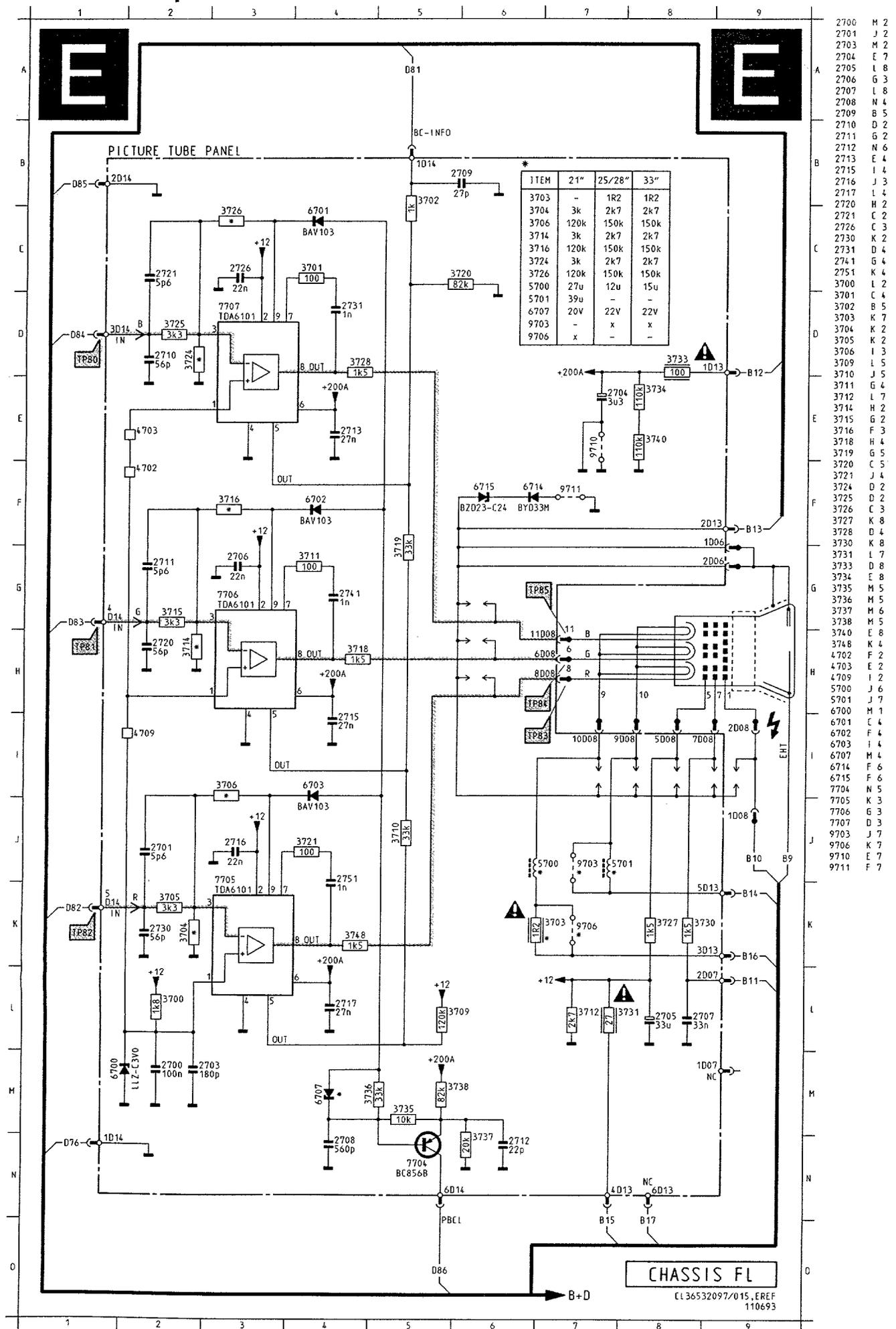


Control panel  
Bedienungsplatte  
Platine Commande  
Pannelo di comando

TO SAT INTERFACE  
TXD = TOMAC  
RXD = FROMAC







- 2700 M 2
- 2701 J 2
- 2703 M 2
- 2704 E 7
- 2705 L 8
- 2706 G 3
- 2707 L 8
- 2708 N 4
- 2709 B 5
- 2710 D 2
- 2711 G 2
- 2712 N 6
- 2713 E 4
- 2715 L 4
- 2716 J 3
- 2717 L 4
- 2720 H 2
- 2721 C 2
- 2726 C 3
- 2730 K 2
- 2731 D 4
- 2741 G 4
- 2751 K 4
- 3700 L 2
- 3701 C 4
- 3702 B 5
- 3703 K 7
- 3704 K 2
- 3705 K 2
- 3706 I 3
- 3709 L 5
- 3710 J 5
- 3711 G 4
- 3712 L 7
- 3714 H 2
- 3715 G 2
- 3716 F 3
- 3718 H 4
- 3719 G 5
- 3720 C 5
- 3721 J 4
- 3724 D 2
- 3725 D 2
- 3726 C 3
- 3727 K 8
- 3728 D 4
- 3730 K 8
- 3731 L 7
- 3733 D 8
- 3734 E 8
- 3735 M 5
- 3736 M 5
- 3737 M 6
- 3738 M 5
- 3740 E 8
- 3748 K 4
- 4702 F 2
- 4703 E 2
- 4709 J 2
- 5700 J 6
- 5701 J 7
- 6700 M 1
- 6701 C 4
- 6702 F 4
- 6703 I 4
- 6707 M 4
- 6714 F 6
- 6715 F 6
- 7704 N 5
- 7705 K 3
- 7706 G 3
- 7707 D 3
- 9703 J 7
- 9706 K 7
- 9710 E 7
- 9711 F 7

CHASSIS FL  
CL 36532097/015, EREF  
110693



## Setting conditions

- \* Unless stated otherwise, the supply voltage used is: 220 - 240V ± 10%; 50 - 60Hz ± 5%
- \* Voltages and oscillograms are measured in relation to tuner earth. **Never** use the cooling plates as earth.
- \* Warming-up time ≈ 10 minutes
- \* For all measurements it is true that:
- \* probe Ri > 1MΩ; Ci ≤ 10pF

## 1. Electrical settings on the large signal panel

### 1.1 +141V supply voltage

Supply the mains voltage; this must be isolated from the mains.

Connect a voltmeter over C2238.

Using R3371, on the SOPS DRIVE CIRCUIT

(fig. 7.2) set the supply voltage to + 141V ± 0.5V.

### 1.2 Focusing

This is set with the focus potentiometer (top one on the Line output transformer).

### 1.3 Vg2 setting

Supply an aerial signal.

Set the contrast to maximum and the brightness and saturation to nominal.

Using an oscilloscope set to field frequency, measure the direct voltage level of the measurement pulse (fig. 7.1) on pin 9 of IC7705, IC7706 and IC7707 in relation to earth.

Now adjust the highest voltage level found with the aid of the Vg2 potentiometer (bottom left on the Line output transformer to 150V ± 2V.

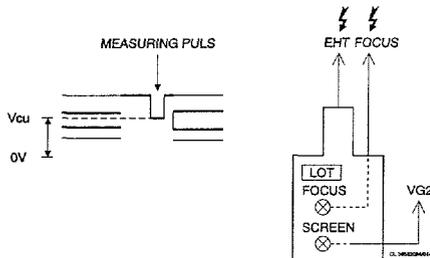


Fig. 7.1

### 1.4 Stable OSD

Short circuit pin 11 IC7401 to pin 13 IC7401

Short circuit pin 5 IC7755 to earth.

Measure the frequency on pin 16-IC7401 and set this to 15,625 Hz ± 25 Hz with R3434.

Remove the short circuits.

### 1.5 Horizontal synchronisation

Connect point 5-IC7400 to point 9-IC7400.

Supply an aerial signal and set the receiver.

Adjust potentiometer R3406 until the picture is straight.

Break the through connection.

### 1.6 Horizontal centring

Feed in a test pattern that makes the horizontal linearity visible (e.g. a symmetrical cross pattern or a test circle).

Adjust the DC offset current through the horizontal deflection coil using R3513 so that the horizontal linearity is optimal (the distance between the two vertical lines should be equal on both the left and right hand sides of the picture).

### 1.7 Picture width

Set using potentiometer R3607.

### 1.8 Vertical centring

Set using potentiometer R3467.

### 1.9 Picture height

Set using potentiometer R3410.

### 1.10 East/West correction

Set using potentiometer R3602.

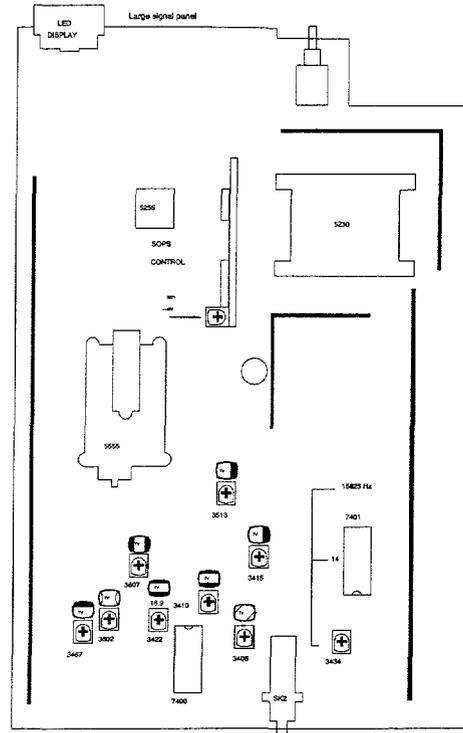


Fig. 7.2

## 2. Electrical settings on the small signal panel

### 2.1 Stereo audio channel separation

Connect a signal generator with a 2 carrier stereo signal ("stereo" mode).

Select 1kHz for the right-hand channel and switch off the sound for the left-hand channel.

Connect an oscilloscope to pin 3 of Euroconnector EXT1 Using R3602 on the small signal panel, set the amplitude of the signal to minimum amplitude.

### 2.2 4.43 MHz chroma suppression circuit

Supply a colour bar signal. Connect an oscilloscope to point 17 of IC7324 and set L5305 to minimum amplitude of the chrominance signal.

### 2.3 Electrical settings IC7365 (TDA4650)

#### 2.3.1 Chroma bandpassfilter

Connect a signal generator (e.g. PM 5326) to pin 20 of the euroconnector (EXT1) and set its frequency to 4.286 MHz/0.2 Vpp. Switch the unit to EXT1. Connect pin 27-IC7365 to pin 13-IC7365 (+12V). Connect an oscilloscope to pin 15-IC7365.

Set L5345 to maximum amplitude.

Remove the interconnection

2.3.2 4  
C  
V  
C  
C  
S  
F  
  
2.3.3 6  
C  
E  
2  
C  
C  
S  
F  
  
2.3.4 C  
C  
b  
e  
p  
  
2.3.5 C  
C  
b  
e  
p  
  
2.3.6 5  
C  
b  
e  
C  
r

- 2.3.2 **4.50 MHz NTSC sound suppression**  
 Connect a generator to point 20 of Euroconnector EXT1 with a frequency of 4.50 MHz and 200mV<sub>rms</sub>. Connect point 26-IC7365 to point 13-IC7365. Connect an oscilloscope to point 15 of IC7365. Set L5346 to minimum amplitude. Remove the short circuit.
- 2.3.3 **6.50 MHz SECAM DK sound suppression**  
 Connect a sine-wave generator to point 20 of Euroconnector EXT1 with a frequency of 6.50 MHz and 200mV<sub>rms</sub>. Connect point 28-IC7365 to point 13-IC7365. Connect an oscilloscope to point 15 of IC7365. Set L5346 to minimum amplitude. Remove the short circuit.
- 2.3.4 **Chroma 8,87 MHz auxiliary oscillator**  
 Connect a pattern generator and supply a PAL colour bar pattern. Connect pin 17-IC7365 (TDA4650) to earth. Set C2380 so that the colour on the screen has practically stopped. Remove the interconnection.
- 2.3.5 **Chroma 7,16 MHz auxiliary oscillator**  
 Connect a pattern generator and supply a PAL colour bar pattern. Connect pin 17-IC7365 (TDA4650) to earth. Set R2379 so that the colour on the screen has practically stopped. Remove the interconnection.
- 2.3.6 **SECAM demodulators**  
 Connect a pattern generator and supply a SECAM black pattern. Connect an oscilloscope to pin 3-IC7365. Set L5370 to minimum amplitude. Connect the oscilloscope to pin 1-IC7365. Set R3370 to minimum amplitude.

SMALL SIGNAL PANEL

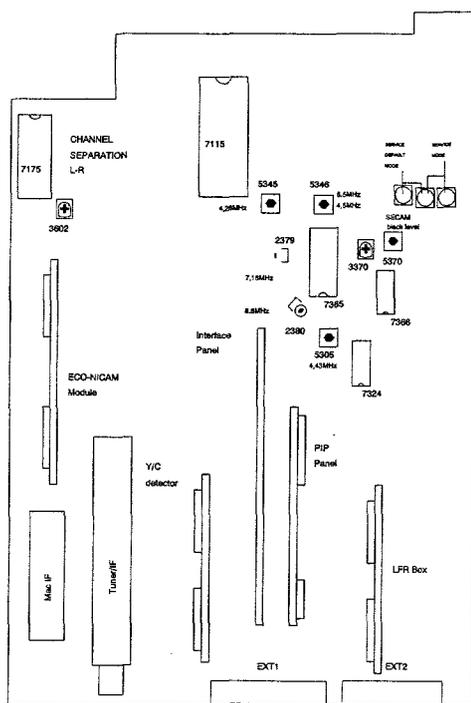


Fig. 7.3

**3. Electrical setting on the teletext decoder**

Connect pin 7-T22 briefly to earth. Connect a frequency counter to pin 17-IC7110. Using L5102, set to 13.500 MHz ± 100 kHz. Remove the short circuit.

**4. Electrical settings on the ECO-NICAM decoder panel**

- 4.1 **Neutral frequency adjustment**  
 Connect a frequency counter via a probe (C<sub>i</sub> ≤ 15pF) to pin 19 of IC7001 (SAA 7280) and pin 15 (GND). Adjust C2015 in such a manner that the clock frequency is set at 728.025 kHz. (±5Hz)

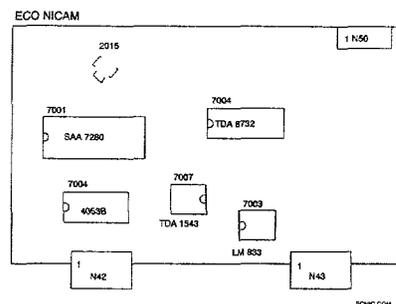


Fig. 7.4

**5. Y/C detector adjustment**

- 5.1 **PAL/SECAM**  
 Inject a chroma signal of 4.418 MHz/200mV on pin 15 of EXT2 SCART (PL05). Connect an oscilloscope to the collector of T7266 (T7). Using L5201 adjust the 4.418 MHz signal to maximum amplitude.
- 5.2 **NTSC**  
 As PAL/SECAM but with a signal of 3.582 MHz/200mV. Adjust with L5200.

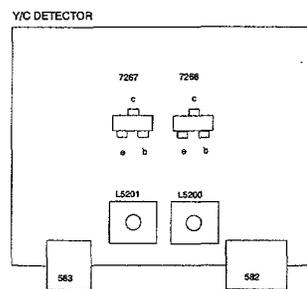


Fig. 7.5

**6. Electrical settings on the PIP panel**

**Setting conditions**

Before carrying out each setting, it should be ensured that a P.I.P. picture with colour bar is visible on the screen and the unit should have reached its operating temperature (after ≈20 min.).



# Electrical adjustments

## 7. Alignments in the Service Menu

- 7.1 Switch in the Service Menu by momentarily connecting together pins S23 and S24 on the small signal panel (diagram H). The Service Menu will then appear on the screen. The procedure is as follows:
- Select the required alignment with the coloured keys A to E.
  - Change the values set using the "Menu +/-" key.
  - Store the values set in the EAROM and leave the Service Menu by selecting STORE.

### 7.2 White Drive Alignment

Select a white picture. (A black picture (e.g. VCR1) set at maximum brightness is also suitable). Switch the Service Menu in. Select the required white drive alignment by adjusting the colours red and blue in relation to green (green is the reference colour).

**Remarks:** In the original factory settings "white" has a colour temperature of 7600K (White with a bluish tint). The point of departure is green with a value of 44. The factory setting for blue is then approx. 44. The factory setting for red is then approx. 21.

### 7.3 Cut-off Alignment

Select a black picture (e.g. VCR1). Switch the service menu in. Set the brightness level so that the picture just (but clearly) illuminates. Using the Cut-off adjustments align the colour temperatures in such a manner that at minimum illumination of the picture they are the same as the colour temperatures at maximum brightness. (At minimum picture illumination it is possible that one colour may dominate. This is however normal and does not have to be (fully) compensated with the cut-off alignment).

**Remarks:** In the original factory settings "white" has a colour temperature of 7600K (White with a bluish tint). The point of departure is green with a value of 28. The factory setting for blue is then approx. 33. The factory setting for red is then approx. 25.

### 7.4 D2-MAC Alignment

These alignments are described in the section: FL1 SAT box chapter 7.

### 7.5 Option Alignment

The microprocessor communicates with a great number of components in the set. For correct communication the microprocessor has to know what IC's and modules are present in the set. This is done using option codes. An incorrectly set option code will give a communication problem and an accompanying error code. Every function has been allocated a value. The sum of 8 values forms an option code. This number can vary from 0 to 255. The option code tables are given at the end of this paragraph.

For example, a set has:

Option code 1	Function	Value
	Frontend FQ916/ME/IF	2
	PIP Module	8
	NTSC-M	16
	NICAM module	64 +

Option code 1 is now: 218

Option code 2	Function	Value
	Comb filter	128+

Option code 2 is now: 128

Option code 3	Function	Value
	-	0 +

Option code 3 is now: 0

Option code 4:	Function	Value
	IC 7000 = MC 141625	16 +

Option code 4 is now: 16

Optioncode 1	
Nbr.	Function
0	<b>Front end = FQ916</b> A reception of PAL BG or PAL BG and SECAM BG is now possible
1	<b>Front-End = FQ944</b> Only reception of the UHF band is now possible
2	<b>Front end = FQ916/ME/IF</b> Reception of SECAM L but not of SECAM L' is now possible (reception of NTSC-M is now usually also possible).
4	<b>Front end = FQ916/MF/IF</b> Reception of both SECAM L and SECAM L' is now possible (NTSC M reception is generally possible now via the Euroconnector).
8	<b>PIP module present</b> This makes it possible to show PIP (Picture in Picture) displays.
16	<b>NTSC-M reception possible</b> This is normally always in combination with front end FQ916/ME/IF.
32	<b>SECAM DK module fitted</b> In this case transmissions using the SECAM DK system can also be received.
64	<b>NICAM module fitted</b> In this case the digital sound with NICAM transmission can be received.
128	<b>Second front end for PIP fitted</b> If this second front end is fitted a second transmitter can be displayed in the PIP picture. The PIP function (number 8) still applies.

Optioncode	Nbr.
	1
	2
	4
	8-32
	64
	128

Optioncode	Nbr.
	1-32
	64
	128

Optioncode	Nbr.
	1
	2
	4
	8
	16
	32-128

Optioncode 2	
Nbr.	Function
1	Not in use
2	Not in use
4	100Hz featuring present
8-32	Not in use
64	100 Hz LFR box present
128	Comb filter (see further the number 16 of option code 4).

Optioncode 3	
Nbr.	Function
1-32	Not in use
64	16:9 present
128	"Videocolor 36" Picture tube

Optioncode 4	
Nbr.	Function
1	Teletext Peaking Filter on/off for LFR box (Scandinavia) In Scandinavia this number must be selected .
2	Multi-PIP (100 Hz, LFR) When the PIP-module operates on a 50Hz basis the Multi-PIP function is present and this option is active. (Multi-PIP provides 9 or 16 small pictures on the screen simultaneously).
4	FL2 model When the operating buttons are located on the side of the set, the set is an FL2 model.
8	Not in use
16	Comb filter: IC 7000 = MC 141625 (see further the number 128 of option code 2).
32-128	Not in use

## 8. Repair tips

### 1. The Service Default Mode

The FL1/2 is equipped with a service default mode. The service default mode is a fixed, definite state to which the set can be switched.

#### 1.1 Definition state

The definition of the fixed state in the service default mode is as follows:

- all sound and picture controls are in the central position (exception volume which is turned down)
- tuned to 475.25 MHz
- system:
  - \* PAL/SECAM BG for Multi Europe
  - \* PAL I for UK
  - \* SECAM L for Multi French

#### 1.2 Switch on and off

The service default mode is switched on by shorting pins S24 and S25 on the small signal panel.

The service default mode can only be switched off by switching the set to stand-by. If the set is switched off and then on again using the mains switch or the mains plug, the service default mode will remain on.

If the set switches to stand-by immediately after switching-on, the set cannot be operated and also cannot be switched to the service default mode. The child-proof lock has already been activated (see also Section 9).

#### 1.3 Fault signals

To indicate that the set is in the service default mode, the following is displayed on the screen:

**SERVICE 00 00 05 06 05**

The five numbers after the word "service" stand for the last five fault signals noted by the operator(s). The number on the extreme right represents the last fault signal, that on the extreme left the last fault signal but 4. Since this enables fault reports to be looked at afterward, it means that intermittent faults can be traced.

When the set leaves the service default mode, the fault-report memory is cleared.

#### 1.4 Operation

During the service default mode the set will accept all operating commands. When, however, the set is switched off and on, it will return to the state as defined above.

## 2. Error messages

In both FL1 and FL2 models the IC error messages are indicated by a combination of flashing LED's. In FL1 7 LED's on the front of the set are used. In FL2 only 2 LED's have been fitted to the front of the set: 'on' and 'stand-by'; for service purposes the 7 LED's have been fitted inside the set in an SMD version. These are located on the solder side of the panel with buttons for local control on the side of the set. The 2 LED's on the front of the set are connected in parallel with the corresponding service LED's.

M BG  
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DK

Figure 8.1 illustrates the situation for FL1 and FL2. A table of error messages is provided at the end of this chapter.

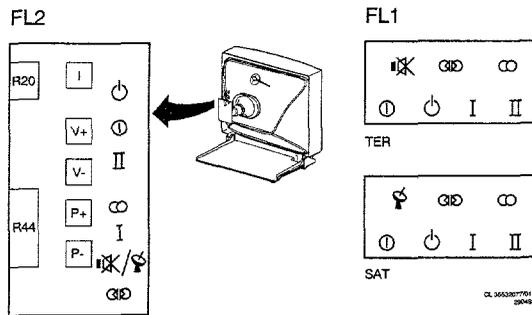


Fig. 8.1

### 3. Replacement of EEPROM IC7137

If, during a repair, the EEPROM has to be replaced, the microprocessor will detect that the EEPROM is empty. A fault signal (No. 21) will then be displayed.

If the service mode is now activated (see section 7), the microprocessor will load the EEPROM with a number of standard values for the white balance and the other linear settings. These values, however, must all be checked and, if necessary, re-adjusted.

All options have also to be set, the programs installed and the personal preference set.

### 4. Extension prints

To simplify the measurements ON the various modules extension prints are available for the modules fitted with BTB connectors. Modules can be placed in these connectors so that they stick out above the other prints when the chassis is in the service position.

The code numbers for the extension prints are:

5-fold	4822 395 30261
6-fold	4822 395 30259
8-fold	4822 214 31402
9-fold	4822 395 30258
10-fold	4822 395 30257

### 5. Removing the PIP module

The PIP module can be simply removed, leaving the set functioning normally (The LED display does however indicate an error condition). Following the removal of the PIP module the signal path is broken. The signal path can be restored by placing the 5-core flat cable with connector S56 in connector foot S16 (see diagram D). The error message can be removed through the application of the option codes (see chapter 7).

### 6. Extension cables

Extension cables are available to lead the large signal and small signal panel signals (LSP and SSP) separately out of the set. These are made up as follows:

4822 320 20209	Set of 6 cables for LSP and SSP connections.
----------------	--

See chapter 4 also.

## 7 Diagnosis and protection

### 7.1 Hardware and software protection

In case any serious fault occurs in the set, one of the protection circuits will activate. A protection circuit switches of the main power supply (SOPS) via the stand-by input (STBY) of the SOPS control panel. This input is located on pin 1 of connector pin L40 with test point number TP56, and is illustrated on diagram A. As the microprocessor is fed by a separate stand-by power supply (SOPS), the processor and the LED's will continue to operate, even when the main power supply is switched off.

A number of protection circuits can switch off the power supply independently and immediately (hardware protection). In two protection circuits the microprocessor itself switches off the power supply (software protection).

All protection circuits come together on the stand-by input (TP56 of the main power supply. A diagnosis determines which protection circuit is active.

### 7.2 Protection test point TP56 [diagram A]

The following voltages may be present on the stand-by input of the SOPS control panel (TP56): [see diagram A]

1	Approx. 17V	during operation;
2	0.5 - 1V	during hardware protection; (this value is maintained by a thyristor circuit formed by TS7380/TS7381);
3	<0.5V	during stand-by and software protection.

### 7.3 Hardware protection:

- Power supply voltage +13 from the SOPS too high (+V) [diagram A].  
This protection circuit activates if the voltage in +13V circuit of the SOPS becomes too high during operation.
- SOPS and/or +11/+16/-11/-16V for the audio output amplifier defective (SOUND-PROT). [diagram G]  
The protection circuit activates when the +11/+16V and -11/-16V voltages are no longer in balance, or when both voltages are absent. This protection circuit also operates when the SOPS does not function or is short-circuited.  
This protection circuit is fed by the start-up voltage 'Vstart' from the SOPS.
- Beam current too high (I-BEAM) [diagram B]  
When the beam current becomes too high this protection circuit switches off the power supply. Before this protection circuit can activate the picture will first illuminate brightly. This fault occurs for example on the absence of the +200V power supply voltage on the picture tube panel.

4 Deviating LOT behaviour (EHT, LOT-PROT) [diagram B].  
This protection circuit becomes active when a 'unusual' voltage forms appear on the LOT outputs (5555). This may indicate defective or loose components in the line deflection circuit. (LOT, switching transistors, capacitors).

5 East/west output stage defective [diagram B].  
This protection circuit activates when the current through the east/west switching transistor T7610 exceeds a specific value. In this case transistor T7542 will conduct for a brief period. (the base-emitter voltage  $U_{be}$  from T7542 is then momentary greater than 0.6V).

6 Vertical deflection end stage (IC7450) defective [diagram B].  
The frame output stage IC7450 has a protection output (pin 7, TP62). This output becomes momentarily high on any defect in this IC or during the absence of the power supply voltage.

During normal operation there are short pulses on this output.

The frame output stage is fed by a winding on the LOT (5555) (+28V or +32V).

During diagnosis a check should be made whether the +28/+32V power supply voltage continually drops before the protection circuit output is activated. If this is the case then one of the other protection circuits is responsible for switching out the power supply.

By measuring the timing pulses between the protection output (pin 7) and the power supply voltage (pin 6) in relation to earth (pin 2 or 4) it can be determined whether the protection is originating from the frame output stage.

The protection circuit overview at the end of this chapter provides a schematic overview of the measurements.

## 4 Software protection

### 4.1 Error message 99

Error message 99 is displayed when software protection is generated by the microprocessor.

Software protection becomes active when the +13V and or +5V power supply voltage is not present on the small signal panel (SSP). Due to the absence of the power supply the connected components are unable to provide an I<sup>2</sup>C signal to the microprocessor. The processor then sets the SOPS in stand-by. If this is the case error message 99 is then displayed.

Software protection can be switched out by activating the 'Service Default Mode' (see §8.1).

If the +13V or +5V are absent as a result of hardware protection switching out the power supply, error message 99 will be displayed by the LED's following a short period, as the microprocessor is no longer receiving any signal from the connected IC's. The processor now bridges the hardware protection via the STBY signal. Each hardware protection will therefore eventually result in software protection, resulting in error message 99 being displayed.

During hardware protection the microprocessor makes repeated attempts at communication with the connected I<sup>2</sup>C IC's before making a decision for software protection. During this period (up to approximately 5 minutes) the set will not react to any operational commands. Because none of the I<sup>2</sup>C IC's responds in this period various error messages will be displayed by the LED's. If error message 99 does not eventually appear then the protection circuits are not operational and the cause of the fault can be sought elsewhere.

When the microprocessor generates a STBY signal for implementing software protection TP56 will be made lower than 0.5V by the STBY signal, through which any eventual hardware protection on TP56 will be bridged. In order to determine whether hardware protection is active via TP56 the voltage on TP56 should be measured with the set in the 'Service Default Mode' or measured before error message 99 appears on the LED display.

### 7.4.2 Software protection

7 +5V on the small signal panel (SSP) [diagram B and C]

To test whether the +5V power supply voltage, from the LOT winding (5555) [diagram B], is reaching the small signal panel without short-circuiting the front-end (1160 [diagram C]) must provide a signal to the microprocessor via I<sup>2</sup>C within a specific time. If this signal does not arrive, the microprocessor switches the main power supply into stand-by, and the LED's will indicate error message 99 once more.

To test whether the front-end is defective the service default mode will have to be selected. If the power supply voltages on the front-end are correct and a front-end error message persists (error 11), then the front-end is defective.

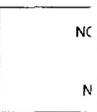
8 +13V on the small signal panel (SSP) [diagrams A, D and F].

To test whether the +13V power supply voltage from the main power supply (SOPS) [diagram A] is reaching the small signal panel without short-circuiting, IC7430 (TDA4680 video processor, [diagram D]) or IC7600 (TDA8417, stereo decoder, [diagram F]) or IC7680 (TDA8425, audio processor [diagram F]) must provide a signal via I<sup>2</sup>C to the microprocessor within a specific time. If none of these three IC's provides any signal the microprocessor switches the main power supply into stand-by. The LED's indicate error code 99.

### 7.5 Measurements in the protection circuits.

All hardware circuits are illustrated in figure 8.2. The oscillograms indicate the voltages on the relevant test points immediately after the set is switched on. In this case the signals illustrated are for during:

- normal operation
- protection caused by this circuit (PROT);
- protection caused by a different protection circuit (N-PROT).



# Faultfindingtree

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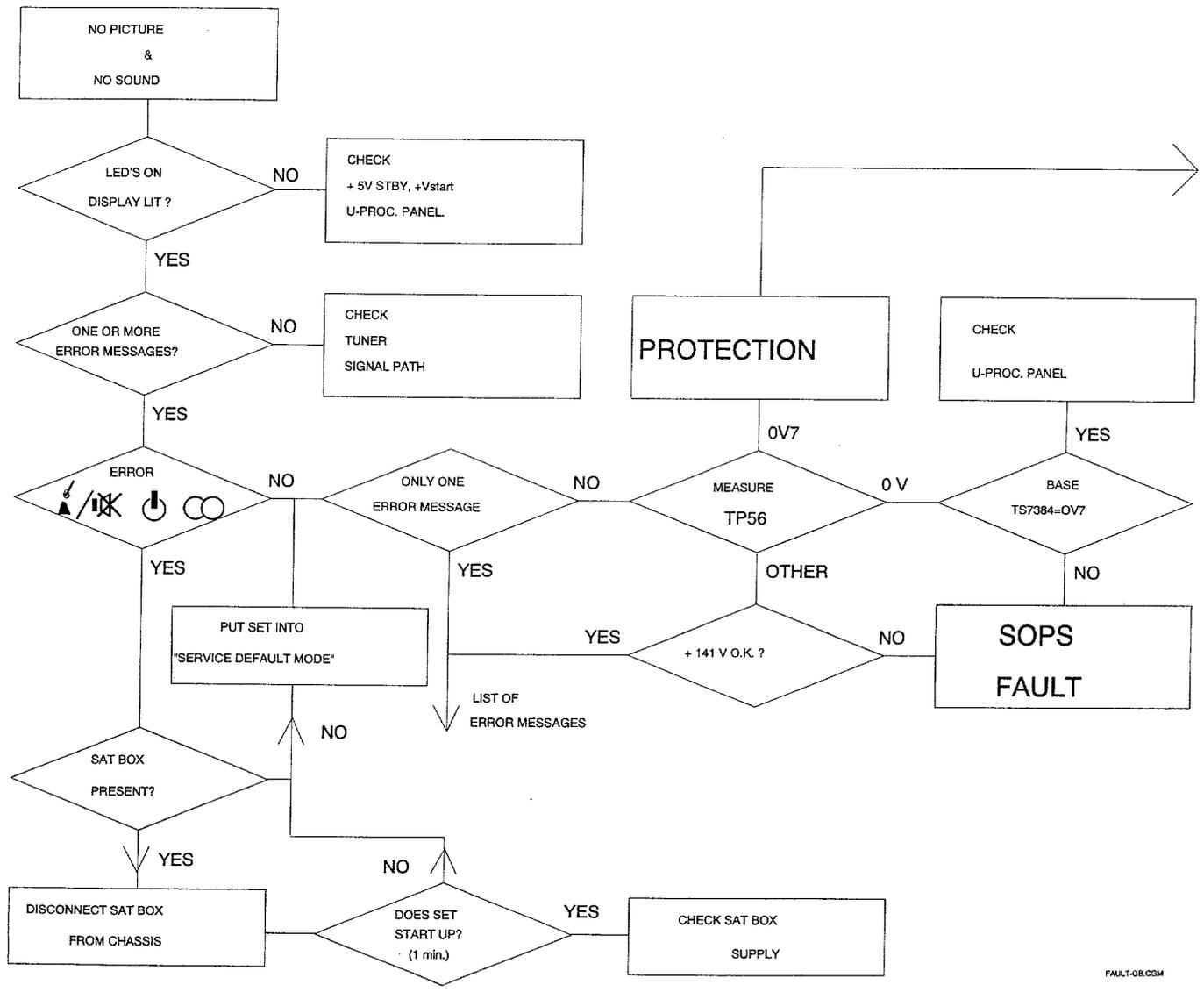
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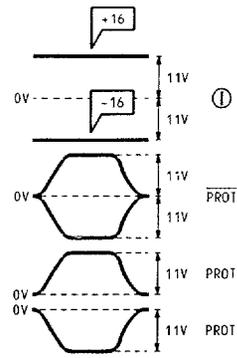
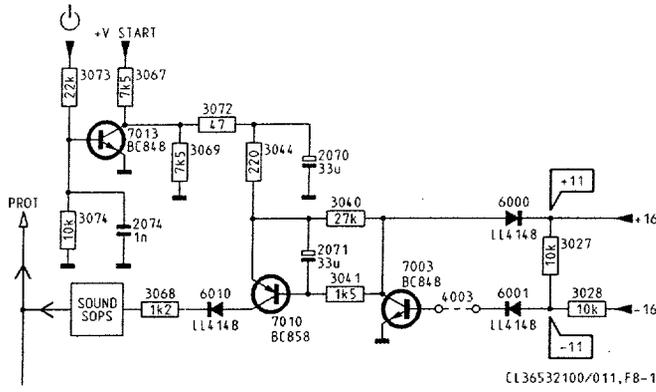
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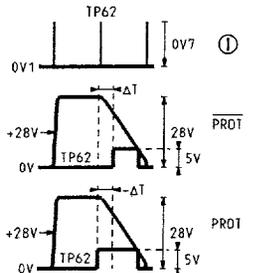
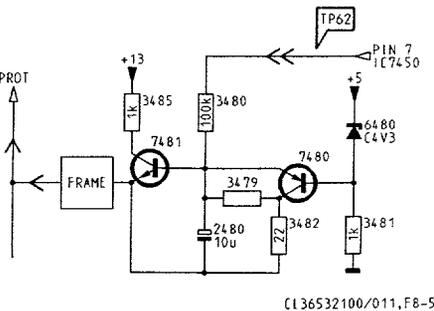
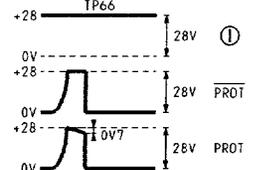
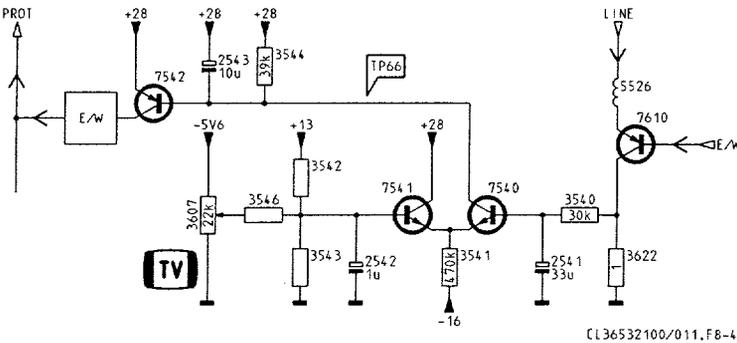
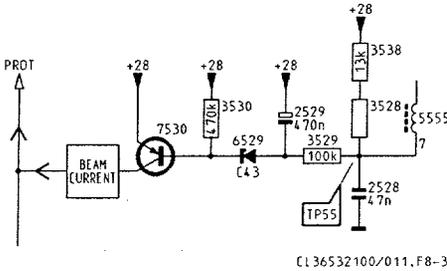
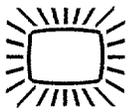
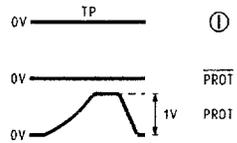
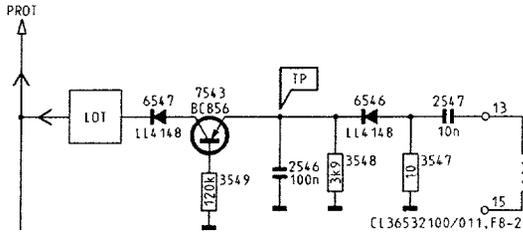


FAULT-GB.COM

**SOPS**  
+ 16  
- 16



**EHT**



**+V**

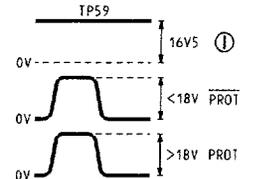
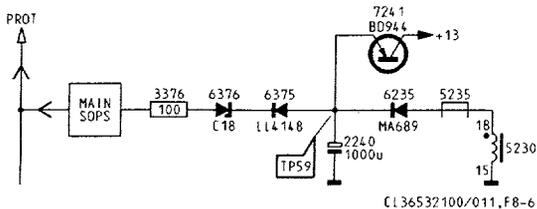


Fig. 8.2

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55
99

## List of error messages

Error number on screen	Flashing LED							Description of error
						I	II	
1 <sup>1)</sup>			X		X	X		I <sup>2</sup> C, IC7108, SSP [H] (MSM6307)
3					X	X		I <sup>2</sup> C, IC7215, TXT SAA 9042 [L] [L'] I <sup>2</sup> C, IC7111, TXT SAA 9042 [L]
4				X			X	I <sup>2</sup> C, IC7220, 100Hz [M] [L'] 83C652
5				X				I <sup>2</sup> C, IC7408, PIP [J] (SDA9088)
6				X	X	X		I <sup>2</sup> C, IC7600, SSP [F] (TDA8417)
7							X	I <sup>2</sup> C, IC7680, SSP [F] (TDA8425)
8						X	X	IC7440, frame rotation [Z], PCF8574 (16:9)
9			X	X		X		I <sup>2</sup> C, IC7430, SSP [D] (TDA4680)
10				X	X		X	I <sup>2</sup> C, IC7395, SSP [D] (TDA8443)
11				X	X			I <sup>2</sup> C, front-end, SSP [C] (FQ 9XX)
12						X		I <sup>2</sup> C, IC7137, SSP [H] (X24C04)
13			X					I <sup>2</sup> C, bus on chassis blocked
14			X	X				I <sup>2</sup> C, IC7258, SSP [C] (HEF4094)
15			X	X	X			I <sup>2</sup> C, IC7219, SSP [C] (TEA6414)
16			X			X		I <sup>2</sup> C, IC7040, SAT Interface [P] (TEA6414)
17			X		X			IR-receiver on SSP [H] blocked (1100)
18				X		X	X	7115, SSP, $\mu$ proc. [H]
19			X	X	X	X		UART Bus blocked, 7115, SSP, $\mu$ proc. [H]
20				X	X	X	X	7115, SSP, $\mu$ proc. [H]
21				X				EAROM X24C04 empty, IC7137, SSP [H] (§ 8.3)
23	X				X			I <sup>2</sup> C, IC7080, convergence panel [V] (TDA8444)
28		X						I <sup>2</sup> C, PIP tuner [J]
29		X						I <sup>2</sup> C, IC7638, PIP-modulo [J] (SAA1300)
30			X		X		X	I <sup>2</sup> C, IC7175, SSP [C] (PCF8574)
31			X		X	X	X	I <sup>2</sup> C, IC7001, NICAM-panel [K] (SAA7280)
33		X						I <sup>2</sup> C, PLL (1500) PIP modulo [L]
34 <sup>1)</sup>	X		X				X	LNC supply on SAT box [Q,R] not correct
35 <sup>1)</sup>	X		X		X		X	IM-bus on SAT box [Q,S] blocked.
36 <sup>1)</sup>	X		X	X			X	I <sup>2</sup> C, bus on SAT box blocked.
37 <sup>1)</sup>	X		X	X	X		X	I <sup>2</sup> C, IC7450, D2-MAC [S] (X24C02)
38 <sup>1)</sup>	X		X			X	X	I <sup>2</sup> C, SAT Tuner [Q] (SF914; SF916)
39 <sup>1)</sup>	X		X		X	X	X	HEF STROBE 1, IC7925, FSS [T] (HEF4094)
40 <sup>1)</sup>	X		X	X		X	X	D2-MAC [S]
41 <sup>1)</sup>	X		X	X	X	X	X	HEF STROBE 2, IC7475, D2-MAC [S] (HEF4094)
42 <sup>1)</sup>	X				X		X	IC7250, TUNER/CONTROL [Q]
43 <sup>1)</sup>	X			X			X	UART bus blocked IC7250, TUNER/CONTROL [Q].
44 <sup>1)</sup>	X			X	X		X	SAT Tuner [Q] (SF914/916)
45 <sup>1)</sup>	X					X	X	IC7250, TUNER/CONTROL [Q]
46 <sup>1)</sup>	X				X	X	X	IC7250, TUNER/CONTROL [Q]
47 <sup>1)</sup>	X			X		X	X	IC7262, TUNER/CONTROL [Q]
48 <sup>1)</sup>	X			X	X	X	X	D2-MAC [S]
49 <sup>1)</sup>	X			X		X		EAROM X24C02 empty, 7450, D2-MAC [S] (§17)
51 <sup>1)</sup>					X	X	X	IC7250, TUNER/CONTROL [Q]
52 <sup>1)</sup>			X				X	D2B Bus EXT, SSP [H] blocked.
53			X			X	X	IC7330, MAC TXT [S], TPU2735
55			X	X		X	X	IC7140, Panorama [B], PCF8574 (16:9)
99	X		X		X			Protection

1) This error is only possible on sets with built in SAT box.

In case an error indication on the set is not included in this table, then check the optional codes (see § 7).

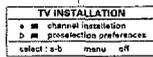
# About this handbook

This is a handbook to help you with the installation and operation of your new menu TV. With a menu TV, menus can be called up on the screen. These menus provide information either about operations to be carried out or about functions you can select.

This handbook consists of two parts :

## Installation

This part helps you with installing your TV, selecting your menu language, locating and storing your TV channels and composing your favourite list of programme numbers. To do this, follow the directions of the **SYSTEM INSTALLATION** menu very closely. The installation menu is shown as it will appear on your screen.



## Operation

After you have stored the TV channels, you can call them up on the screen. You can adjust the picture and sound via the main menu. The **MAIN MENU** is shown here as it will appear on the screen. Feel free to try out all the different possibilities of your TV. Use this part of the handbook to help you doing this.



- This circle in front of a sentence indicates that you have to do something.
- ▷ This arrow in front of a sentence indicates the result of what you have done.

In the stripe under each menu you are told which keys you can press and how you can switch the menus off again.

## Contents

### Installation

- Preparation
- Switching TV on
- Selecting your Menu language
- Searching for and Storing TV channels

### Operation

- Operation
- Main Menu
- Other Functions
- Pip Picture in Picture
- Teletext
- Peripherals Equipment Tips

## Selecting your menu language

You can choose for yourself the language of the menus - the instructions and the various possible choices - which you call up on your screen.

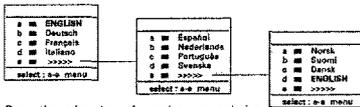
- Open the control panel on the front of your TV.



- Press **Install**. If the message **CHILD LOCK ON** appears, the child lock should be switched off.
  - ▷ The **SYSTEM INSTALLATION** menu appears on the screen.
- It is also possible to enter the installation menu via the main menu.*



- Press the red key a on the remote control.
- ▷ The language menu appears on the screen.



- Press the colour key of your language choice.
  - Press the corresponding colour key for >>>> if the language you want does not appear on the first language menu.
  - ▷ **LANGUAGE STORED** appears for a moment at the top of the menu. The language menu disappears and the **SYSTEM INSTALLATION** menu appears again.
- From this point on, all menus are presented in the language of your choice.

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

## Searching for and storing TV channels

After you have switched on your TV and selected your menu language, you can search for and store your TV channels. Within the installation menu you yourself assign each of these TV channels a number and a name of your own choice, which are then used to call the channels up for viewing.

- Press the green key b.
- ▷ The **TV INSTALLATION** menu appears.

*Is the menu that appears not in your chosen language ? Press the MENU key and go back to 3. Select your menu language.*

- Press the red key a.
- ▷ The **CHANNEL INSTALLATION** menu appears.



Now follow very closely and step by step the instructions of the **CHANNEL INSTALLATION** menu. You must go through every step. Do this for every TV channel.

## Selecting the TV system

The television picture is not broadcast in the same way in all countries. We speak of different television systems (PAL, SECAM, NTSC,...) Now you must select the TV system yourself.

- Press the red key a. **ONLY ONE SYSTEM AVAILABLE** appears
- ▷ The **SELECTING THE SYSTEM** menu appears..... **OR** You have a set that can receive only one system. You do not need to make any selection.
- 1 You have your own aerial.
  - Press the colour key of the country or part of the world from where you want to select the TV channel.
  - ▷ The **CHANNEL INSTALLATION** menu now appears.
  - ▷ Your selection lights up.
- 2 You are connected to the cable system.
  - Press the colour key of the country or part of the world where you now are located.
  - ▷ The **CHANNEL INSTALLATION** menu now appears.
  - ▷ Your selection lights up.

## Searching for a TV channel

This can be done in two different ways : Either automatic searching or else entering a frequency yourself.

**Automatic searching.....OR.....Entering a frequency yourself.....**

- The TV itself searches for the channel.
  - Press the green key b.
  - ▷ **SEARCHING** appears and the TV is searching for a channel.
  - ▷ The frequency increases until a channel is found.
  - Go on to step 2 if you want to store the channel that has been found.
  - Press **□** under the door of the remote control to recognise which programme is being broadcast.
  - ▷ The **CHANNEL INSTALLATION** menu disappears temporarily.
- A TV channel is transmitted at a certain frequency. If you know the frequency, you can enter it directly and in this way call up the TV channel. Ask for a list of the frequencies at your cable company or at a dealer.
  - First enter the 5 digits of the desired frequency.
  - For frequencies under 100 MHz, first enter a 0. For example : 063.25.
  - Have you entered a wrong number ? First complete the frequency with arbitrary numbers and then start again.*

Do you want a different channel or is the reception poor ?

- Press the green key b again.

Is the reception still poor ? See Tips.

If no TV channel is found, interrupt the automatic searching by pressing any digit key. Check if you have selected the correct TV system or if the aerial is connected properly.

### Fine-tuning

You may be able to improve the reception of picture and sound of a TV channel. Adjust the frequency yourself with the **MENU -** or **+** key on the remote control.

## Entering the programme number and name

Now you yourself must assign a number of your choice and a name to the TV channel located. In this way you decide for yourself the order of all your TV channels.

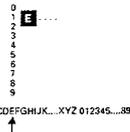
With the assigned programme number you can call up your TV channel again later.

A name of maximum 5 letters or numbers can be given to the programme numbers 0 to 29. For example : SUPER, BBC1, ... Thus you see immediately which TV channel you have stored under which programme number.

- Press the yellow key c.
- ▷ **NAMING THE PROGRAMME** appears.
- Press the red key a.
- Hold down the **P -** or **+** key on the remote control until the desired programme number appears in the menu.

In this list you can now enter the name of the TV channel. With the arrow under the letter and number line you select which letter or which number in the list above you wish to enter. In the list there is a red block next to the chosen programme number.

- Hold, as desired, either the green key b down to move the arrow to the left, or else the yellow key c to move the arrow to the right.
- ▷ The letter or number that you indicate with the arrow appears in the block.
- Press the blue key d.
- ▷ The block moves over one space. Now you can choose a following letter or number with the arrow.
- Place the arrow between 2 and 0 for a space.



*Did you fill in a wrong letter or number ? Press repeatedly on the blue key d until the block is back in the place where you want to make a change. Now choose with the arrow the correct letter or the correct number.*

- Is the complete name filled in ?
- Then press **MENU**.
- ▷ The **CHANNEL INSTALLATION** menu appears again.

## Storing

Now the TV system, the located TV channel, its programme number and its programme name must be stored in the memory.

- Press the blue key d.
- ▷ **PROGRAMME STORED** appears briefly at the top of the menu.
- ▷ The TV channel is stored in the memory.

## out

Do you want to exit the **CHANNEL INSTALLATION** menu or have you finished locating TV channels ?

- Press **MENU**.
- ▷ The **TV INSTALLATION** menu appears

## Preselection Preferences

All the stored TV channels have been automatically placed into the programme list. In the PRESELECTION PREFERENCES menu you yourself should indicate for each stored TV channel if you want to keep that programme number as a favourite. You can do this also for a programme number you want to reserve for the programmes you receive from your decoder. This will make selecting your favourite TV channels a lot easier and faster.

TV INSTALLATION	
a	channel installation
b	preselection preferences
select: a-b menu off	
PRESELECTION PREFERENCES	
a	programme number
b	favourite status
c	decoder
select: a-c 0-9 menu off	

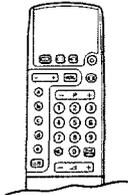
### Favourite TV channels

- o Press the green key b in the TV INSTALLATION menu.
- o The PRESELECTION PREFERENCES menu appears.
- o Press the red key a.
- o PROGRAMME NUMBER lights up.
- o Select the programme number of a TV channel with MENU - or + or with the digit keys.
- o Press the green key b.
- o FAVOURITE STATUS lights up.
- o Press MENU - or + to select NO or YES. In this way you decide whether you want to keep the selected TV channel as a favourite TV channel or not.
- o Repeat this for each programme number.
- o From now on when you run quickly through the TV channels by holding the P - or + key pressed down, only those TV channels which are in the favourite list will be displayed. When you select a TV channel with the digit keys, the indication of the selected TV channel will be displayed in white characters when it is a TV channel from the favourite list, in red characters when it is a TV channel which is not in the favourite list.

### Decoder

- In case you have connected a decoder, see Decoders, you can define one or more programme numbers as a decoder preselection.
- o Press the red key a in the PRESELECTION PREFERENCES menu.
  - o PROGRAMME NUMBER lights up.
  - o Select the programme number under which you want to store the programme coming from your decoder with MENU - or + or with the digit keys.
  - o Press the yellow key c.
  - o DECODER lights up.
  - o Press MENU - or + repeatedly until the designation EXT1 or EXT2 appears according to the euroconnector to which you connected your decoder. Select NO if you do not want the selected programme number being activated as a decoder preselection.
  - o Press MENU twice.
  - o The SYSTEM INSTALLATION menu appears again.

## Operation



Every time you press a key on the remote control, the green lamp (1) on the front of your TV set blinks.

### Switching TV on

- o Press (1) on the front of your TV.
- o A green lamp (2) lights up. PRI appears briefly and possibly also the programme name.
- o Does a red lamp (3) light up? Your TV is on standby. Read on.

### Standby

- o With the standby key (4) at the top of the remote control you can temporarily switch the TV off.
- o The lamp (3) on the TV lights up.
- o Press a digit key in order to turn the TV on again. If for a period of 10 minutes no aerial signal is received, then your set automatically switches to standby. Switch off your TV overnight instead of leaving it on standby. You save energy and the picture tube is demagnetised which supports good picture quality.

### Selecting TV channels

- o Select the TV channel with the digit keys on the remote control.
- o For a two-digit programme number, enter the second digit within 2 seconds.
- o If you want to know which channel you are watching, open the door of the remote control and press (5) short.

Quickly run through the TV channels from the Favourite list.

- o Hold the P - or + key pressed down.

### Volume control

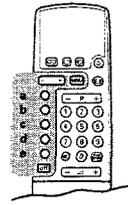
- o Press (6) - or +.

### Temporarily interrupt the sound

- o Press (7).
- o The sound is temporarily interrupted.
- o The lamp (8) on the front of the TV lights up.
- o Press (7) again to get the sound back.



## Main Menu



You use the keys in the grey area of the drawing to operate the main menu.

With the colour keys a-b-c-d-e you select your choice in the menus.

The main menu is split into 2 menus and you can:

- o adjust picture and sound according to personal preference
- o call up a programme list with an overview of the TV channels stored
- o select from among various special features
- o select recording sources for your video recorder
- o enter the system installation menu.

- o Press MENU.
- o The MAIN MENU appears.
- o Press off to switch off each menu.

MAIN MENU 1	
a	picture
b	sound
c	programme list
d	special features
e	*****
select: a-e menu off	

MAIN MENU 2	
a	recording source
b	system installation
c	>>>>
select: a-c menu off	

### Adjusting the picture

- o Press MENU.
- o Press the corresponding colour key for PICTURE.
- o The PICTURE menu appears.
- o Press one of the colour keys to select the adjustment you want to regulate. When you have a set that can receive the NTSC system and when USA is selected in Selecting the TV system, also the option tint appears.
- o The selected adjustment lights up.
- o Press MENU - or + in order to regulate the selected adjustment.
- o Press a colour key once more in order to select another adjustment. Do you want to store the changed adjustment in the memory? See Special Features, PP store.
- o Press MENU.
- o The MAIN MENU appears again.

PICTURE 1	
a	brightness
b	colour
c	contrast
d	sharpness
select: a-d menu off	

### Adjusting the sound

- o Press MENU.
- o Press the corresponding colour key for SOUND.
- o The SOUND 1 menu appears.
- o Volume, balance, treble, bass
- o Press one of the colour keys to select the adjustment you want to regulate.
- o The selected adjustment lights up.
- o Press MENU - or + in order to regulate the selected adjustment.
- o Press a colour key again to select another adjustment. Do you want to store the modified adjustment in the memory? See Special Features, PP store.
- o Press MENU.
- o The MAIN MENU appears.
- o See Special Features, PP store.

SOUND 1	
a	volume
b	balance
c	treble
d	bass
e	>>>>
select: a-e menu off	

SOUND 2	
a	speech
b	spatial
c	sound mode
d	>>>>
select: a-d menu off	

- o Speech
- o Press the white key a in the SOUND 1 menu.
- o The SOUND 2 menu appears.
- o Press the corresponding colour key for SPEECH.
- o SPEECH lights up.
- o Press MENU + to reveal the treble and to suppress the bass.
- o Press MENU - to switch off.

#### Spatial sound

- o Press the corresponding colour key for SPATIAL in the SOUND 2 menu.
- o SPATIAL lights up.
- o Press MENU - or + to switch off or on.
- o When SPATIAL ON is selected, it seems as though the loudspeakers are spread further apart from one another. You get a spatial sound effect.
- o The lamp (8) on the TV lights up.

#### Mono broadcasting

- o Select SPATIAL ON.
- o The lamp (8) on the front of the TV lights up.
- o You get a pseudo stereo effect.

#### Stereo broadcasting

- o The lamp (9) on the front of the TV lights up.
- o Select SPATIAL ON.
- o The lamps (8) and (9) on the front of the TV lights up.
- o You get a spatial stereo effect.

#### Sound mode

- o Press the corresponding colour key for SOUND MODE in the SOUND 2 menu.
- o SOUND MODE lights up.
- o If the TV channel which you are now watching transmits stereo or digital sound you can choose between stereo or mono if the TV channel transmits stereo sound, digital or analogue if the TV channel transmits digital sound.
- o Select analogue or mono in case of weak digital or weak stereo sound signals.
- o Press MENU - or +.



If you do not make a sound choice for the TV channel which you are watching your TV will choose between stereo or digital sound, depending on the sound the TV channel transmits.

- o Press MENU.
- o The MAIN MENU 1 appears again.
- o Press off to switch off each menu.

## Programme list

- o Press MENU.
- o Press the corresponding colour key for PROGRAMME LIST.
- o A list with an overview of the stored TV channels appears. TV channels from the favourite list are displayed in white characters. TV channels which are not in the favourite list are displayed in red characters.
- o Press MENU.
- o The MAIN MENU 1 appears again.
- o Press off.
- o The MAIN MENU disappears.

## Special features

- o Press MENU.
- o Press the corresponding colour key for SPECIAL FEATURES.
- o The SPECIAL FEATURES menu appears.
- o Press a colour key in order to choose between child lock, sleep timer, pp store, demonstration or pip size (for TV sets with the picture in picture option).
- o Your choice lights up.
- o Press once more on a colour key to make another choice.

SPECIAL FEATURES 1	
a	child lock
b	sleep timer
c	pp store
d	demonstration
v	pip size
select : a menu off	

### Child lock

If the child lock is on, the TV can only be switched on with the digit keys on the remote control. The keys on the TV cannot be used.

- o Press the corresponding colour key for CHILD LOCK.
- o Press MENU - or + to switch the child lock off or on.

### Sleep timer

With the aid of the sleep timer you can set the time when the TV should switch itself off.

- o Press the corresponding colour key for SLEEP TIMER.
- o Hold the key MENU + pressed down.
- o The counter runs from off up to 90 minutes.
- o Hold the key MENU - pressed down.
- o The counter runs from 90 down to off.
- o If you have set a time, then one minute before the TV switches off the remaining minute automatically appears on the screen. You can always switch off your set earlier. Up to the last minute you can always change the time set.



### PP store

Adjustments made in the picture- and sound menu can be stored in the memory and be called up again with the PP key.

- o Press the corresponding colour key for PP STORE.
- o PP STORE lights up and PERSONAL PREFERENCE STORED appears briefly on the top of the menu.
- o At this point all previous adjustments are cancelled.

### Demonstration

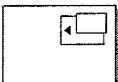
This function demonstrates one after another all the possible options of your TV.

- o Press the corresponding colour key for DEMONSTRATION.
- o Press MENU + to switch the demonstration on.
- o Press off in order to stop the demonstration.

### Pip size

You can select either a large or a small pip format.

- o Press the corresponding colour key for PIP SIZE.
- o Press MENU - or +.
- o For more information about Pip, see Pip, Picture in Picture.



## Recording Source

If you want to record a programme, then first read Peripherals, Recording.

## System Installation

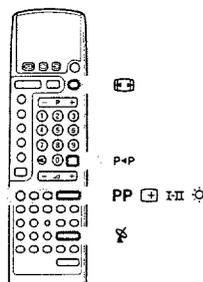
You can also enter the System Installation menu via the Main Menu 2 to select your menu language and to locate and to store your TV channels.

- o Press MENU.
- o Press the corresponding colour key for SYSTEM INSTALLATION.
- o The SYSTEM INSTALLATION menu appears on the screen.
- o Now follow very closely and step by step the instructions as described on page 4 and following.

## OFF

- o Press MENU to leave the SYSTEM INSTALLATION menu.
- o Press off to leave the SYSTEM INSTALLATION menu or the MAIN MENU.

## Other functions



## Movie compress

Movies and other new programmes in the future are broadcast in the Wide Screen format. D2-MAC satellite programmes in the Wide Screen format recorded on a video recorder or prerecorded Wide Screen tapes can be reproduced on a normal TV screen in a conventional picture format.

- o Press [P+P].
- o The picture is compressed. There are black bars at the top and bottom of the screen.
- o Press [P+P] again to switch off movie compress. When you have a Wide Screen format video recorder connected with a eurocable, the pictures will be compressed automatically.



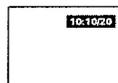
## Previous programme

- o Press the P+P key.
- o The previous selected TV channel is displayed again. The P+P indication has a video recorder function.

## Time

The time can only be called up if the TV channel you are watching is also broadcasting teletext.

- o Teletext does not need to be switched on.
- o Open the door of the remote control.
- o Press [P+P].
- o The time appears in the upper right hand corner of the screen.
- o Press [P+P] again in order to switch off.



## Selecting satellites

The keys I and II are only functional when having connected a satellite tuner in combination with a satellite positioner and an automatically rotatable polarmount antenna to select satellites.

## PP key

With the green PP-key you can call up again the picture and sound adjustments which have been stored with the PP store in the Special Features menu.

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

## Information on screen

After the selection of a TV channel the following information appears briefly on your screen:

- o the programme number and name of the selected TV channel
- o the actually selected sound mode if the TV-channel transmits stereo or digital sound
- o the name of the pip connection if pip is switched on. See Pip-Picture in Picture.

PR1 BBC1

- o Open the door of the remote control.
- o Press [P+P] short.
- o The channel information appears on the screen for a few seconds.
- o If the sleep timer is on, then the remaining time becomes visible.



## Permanent Programme number

- o Open the door of the remote control.
- o Press [P+P] long.
- o The channel information appears on the screen for a few seconds. The permanent programme number remains in the upper right hand corner of the screen when it was off, or disappears when it was on.

## Bilingual Broadcast

If you are watching a TV channel which is being broadcast in two languages, dubbed and original language, the lamp I or II on the front of your TV lights up.

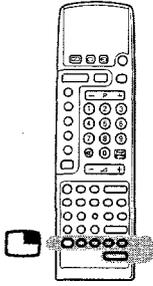
- o Open the door of the remote control.
- o Press key I-II and select language I or II.
- o The setting is stored in the memory for the selected TV channel when switching to another TV channel or to standby.

I-II

## Brightness

- o Open the door of the remote control.
- o Press [P+P] - or + in order to adjust the brightness.

## Pip - Picture in Picture



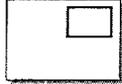
For TV sets with the Picture in Picture option.

With pip, picture in picture, you can call up a little screen within the main TV screen. Thus at the same time you can watch a programme from other equipment, connected with a eurocable.

The picture in the small screen has no sound.

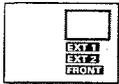
### Switching pip on and off

- o Open the door of the remote control.
- o Press **[PIP]**.
- o The pip screen appears and the image is the same as in the main screen.
- o The name of the pip programme appears briefly on the main screen.
- o Press **[PIP]** again to switch pip off.



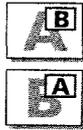
### Selecting pip connections

- o Press **[PIP]** repeatedly.
- o The name of the connections appear.
- o If any other electronic unit is connected and switched on, then its programmes appear in the pip screen.
- o Select on your video recorder the TV channels which you have stored in it.
- o For connecting equipment to EXTERNAL 1, EXTERNAL 2, FRONT, see Peripheral Equipment.



### Switching screens

- o Press **[PIP]**.
- o The main screen and the pip screen exchange places.
- o If the TV channel is only in the pip screen and not in the main screen, then use - P + of the pip keys in order to change your TV channel in the pip screen.

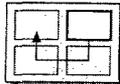


### Still Picture

- o Press **[PIP]**.
- o The picture in the pip screen stands still.
- o Even when pip is not switched on, the main screen will appear as a still picture in the pip screen.
- o Press **[PIP]** again or select another channel in the pip screen in order to cancel the still picture.

### Moving the Pip screen

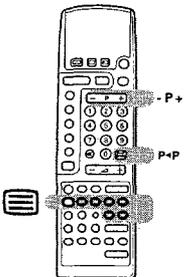
- o Press **[PIP]**.
- o Each time you press this key, the pip screen moves to another corner of the main screen.



### Pip Size

You can select either a large or a small pip screen. See Main Menu : Special Features.

## 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 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: WST, TOP, FLOF. The system utilised is indicated in the options line at the bottom of the screen.



### Switching Teletext On and Off

- o Select the TV channel for the desired teletext broadcast.
- o Teletext cannot be switched on when there is a menu on the screen.
- o Open the door of the remote control.
- o Press **[PIP]** in order to switch on the teletext.
- o The contents appear on the screen together with two information lines at the top and an options line at the bottom.

When a selected teletext page contains several subpages, the subpage numbers which are automatically stored in the memory appear in the first information line. The coloured number indicates the displayed subpage. The white numbers refer to the subpages which can be selected with MENU - or +.

In the following information line appears:

- o the name of the TV channel selected
- o the page counter
- o date and time.
- o Press **[PIP]** again in order to switch off the teletext.
- o The TV channel reappears.

## Easy Teletext system

The major advantages of this new teletext system are :

- o A considerable **reduced waiting time** by predicting what the user will probably select and which results in :
  - o a fast and direct selection of previous and following pages which are in transmission
  - o the precapturing of the pagenumbers read from the displayed page
  - o the direct selection of the last 2 page numbers selected with the digit keys
  - o the precapturing of the pages referred to in the options line
  - o the creation of a **habit watcher list** : not predictable pages, being selected by the user, are put in a list of preferred pages so that they are immediately available afterwards.

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

### Selecting a Teletext Page

With the digit keys ..... OR With the options line .....

- o Enter the desired page number with the digit keys.
- o The page counter seeks the page or the page appears immediately when the page number has been stored in the memory.
- o A message appears when you have entered a not existing or an incorrect page number. Page numbers beginning with 0 or 9 do not exist.
- o Enter the correct page number.
- o Select with the colour keys, corresponding to the coloured options at the bottom of the screen and depending on the teletext the selected TV channel transmits,
  - the previous or the following pages
  - the previous selected pages
  - another subject

### Quickly run through the teletext pages

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

### Selecting the previous teletext page

- o Press the P-P key.
- o The previous selected teletext page is displayed again.

### Selecting 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 subpage numbers appear in white as soon as the transmission has found them.

- o Press MENU - to select the previous subpage.
- o Press MENU + to select the following subpage.



### Selecting the table of contents

- o Press the white colour key e.
- o The table of contents appears.

### Special teletext functions

#### Hold

You can stop the page counter from seeking when you have entered a wrong page number or when the page is not available.

- o Press **[Hold]**.
- o **[Hold]** appears in the first information line.
- o The page counter stops seeking the entered page number.
- o Enter another page number.
- o **[Hold]** disappears.



#### Reveal

Some pages contain concealed information, such as solutions to riddles and puzzles.

- o Press **[Reveal]** to call up concealed information.
- o Press **[Reveal]** again in order to switch off the concealed information.

#### Interrupt

- o Press **[Interrupt]**.
- o The TV programme appears.
- o **[Interrupt]** at the top of the screen indicates that you are still in the teletext mode.
- o Before interrupting teletext, you can select a page number.
- o When the page has been found, the information line appears briefly on your screen.
- o Press **[Interrupt]** again.
- o Teletext reappears.



#### Mix

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

#### Enlarge

- o Press **[Enlarge]** to enlarge the top half of the teletext page.
- o Press **[Enlarge]** again to enlarge the bottom half of the teletext page.
- o Press once more to return to normal page size.



#### Subpage

- o By adding a subcode you can call up a desired subpage.
- o Enter the page number.
- o Press **[Subpage]**.
- o Enter the desired subpage with the digit keys : e.g. 3 for the third page of seven subpages.
- o Press **[Subpage]** in order to cancel the subcode.

#### Subtitles and newflashes

- o Select the contents page (usually page 100).
- o Select the page number for subtitles or newflashes.
- o Subtitles or newflashes, if there are, appear at the bottom of the TV programme.

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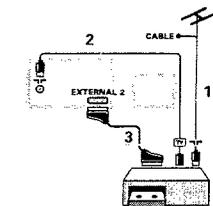
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## Peripheral Equipment

There is a wide range of electronic 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 of the TV.

### TV and video recorder

- Connect the aerial cables 1 and 2 as shown alongside. A better picture quality is obtained if you connect a eurocable 3 additionally.

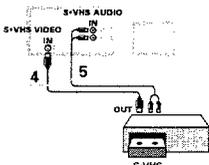


### S-VHS video recorder

- Do you have a S-VHS video recorder with S-VHS cinch connectors, then connect as well as the aerial cables 1 and 2

the S-VHS cables 4 and 5

Do not connect an additional eurocable.



OR

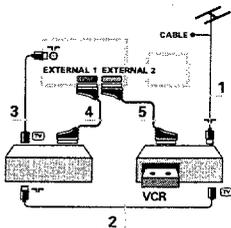
- Do you have a S-VHS video recorder with a S-VHS euroconnector, then connect as well as the aerial cables 1 and 2, the S-VHS eurocable 3.

Never connect to the same TV one video recorder with S-VHS cables at the same time as one video recorder with a euroconnector. The euroconnector has no function.

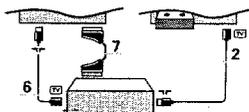
- Searching for and storing the testsignal of the video recorder
- Unplug the aerial cable of the aerial socket "T" of your video recorder.
  - Switch on your TV and video recorder.
  - Press the **Install** key at the front of your TV, or enter the System Installation menu via the main menu.
  - The **SYSTEM INSTALLATION** menu appears.
  - Search for the testsignal of your video recorder in the same way as you searched for and stored the TV channels. See Installation, Searching for and storing TV channels.
  - Store the testsignal either under programme number 0 or between 50 and 59.
  - Insert the aerial plug again into the aerial socket "T" of your video recorder after you have stored the testsignal.

### TV, video recorder 1 and one or more peripherals

- Connect the aerial cables 1, 2 and 3 as shown alongside. A better picture quality is obtained if you connect the eurocables 4 and 5 additionally.
- Look for the test signal of your peripheral in the same way as you do for a video recorder.



When having more than one peripheral, connect them to each other with an extra aerial cable 6 and an additional eurocable 7 to obtain a better picture quality.

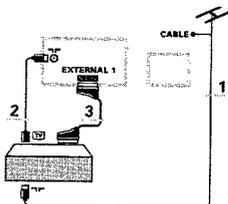


Only with a video recorder connected to EXTERNAL 2 it is possible to record a programme from your TV as well as from other connected equipment. See Recording with your video recorder.

### TV and laser disc or satellite tuner

- Connect the aerial cables 1 and 2 as shown alongside. A better picture quality is obtained if you connect the eurocable 3 additionally.

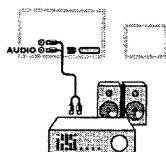
Look for the test signal of your equipment in the same way as you do for a video recorder.



### Audio equipment

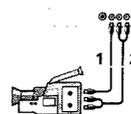
You can listen to your TV sound via your audio equipment.

- Therefore connect the audio cables to the audio input of your equipment and to AUDIO L and R at the back of your TV.
- Press **OK** on the remote control.
- The loudspeakers of your TV are switched off.



### Camera and camcorder

- Connect your camera or camcorder to **FRONT** at the front of your TV.
- Connect the equipment to **Video 1** and **Audio L 2** for mono equipment.
- In the **SOUND** menu select mono sound. See Main Menu, Adjusting the sound, Sound mode
- Connect **Audio R 2** for stereo equipment.
- In the **SOUND** menu select stereo sound.



### Headphone

- Insert the plug into the headphone socket at the front of the TV.
  - Adjust the volume with **-** or **+**.
  - Press **OK** on the remote control.
  - The internal loudspeakers of your TV are switched off.
- The headphone socket has an impedance of between 8 and 4000 Ohm and is of the 6.3 mm jack type.

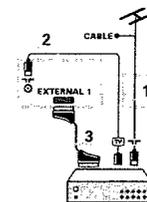


## Decoders

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.

### Connecting a decoder with an aerial socket to the TV

- Connect the aerial cables 1 and 2 as shown alongside. When your decoder has a euroconnector you obtain a better picture quality if you connect a eurocable 3 additionally.

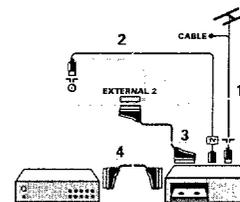


### Connecting a decoder without an aerial socket to the TV

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

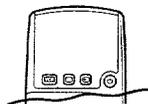
### Connecting the decoder to the video recorder

- Some video recorders have a special euroconnector for decoder.
- Connect a eurocable 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 before.



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

## Reproducing Picture and Sound



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

### a. from equipment connected only with an aerial cable

- Switch your TV on.
- With the digit keys select the programme number under which you have stored the test signal.
- Switch on the equipment with the remote control.
- The picture and/or sound is reproduced.

Do you want to watch TV again ?

- Enter the programme number of the TV channel which you want to watch with the digit keys.

### b. from equipment connected with a eurocable

- Switch your TV on.
- Switch your equipment on.
- Either the picture and/or the sound is reproduced or descrambled.

If this is not the case :

- Press **EXT** repeatedly until the designation EXT1, EXT2 or **FRONT** appears on the screen, according to where you connected your equipment at the back or the front of your TV.
- Either the picture and/or the sound is reproduced.

Do you want to watch TV again ?

- Press **OK**.

**C. from a S-VHS recorder connected with S-VHS cables**

- Switch your TV on.
- Press **EXT2** until the indication **EXT2** appears on the screen.
- Switch your S-VHS recorder on.
- The picture stored in your video recorder from a pre-recorded cassette or from a TV channel is reproduced.

**d. from equipment connected to the front of the TV**

- Switch your TV on.
  - Press **FRONT** repeatedly until the indication **FRONT** appears on the screen.
  - Switch your equipment on.
  - The picture is reproduced.
- Do you want to watch the TV picture again ?
- Enter the programme number of the TV channel which you want to watch with the digit keys.

**Operating the video recorder with the TV remote control**

- Keep the **VCR** key pressed and press one of the video recorder keys of the remote control at the same time.

- VCR + ▶** for play
- VCR + ■** for record
- VCR + ■** for stop
- VCR + ◀** for rewind
- VCR + ▶▶** for wind
- VCR + ⏸** for timer.

**Recording with your video recorder**

**1. Recording a TV programme**

only using an aerial cable

- Select the programme number on your video recorder.
- Press **record** under the door of the remote control or on your video recorder.

using a **eurocable** connected to the euroconnector **EXTERNAL 2**

- Select the programme number on the TV.
- Press **MENU**.
- Press the corresponding colour key for **RECORDING SOURCE** in the **MAIN MENU 2** menu.
- RECORDING SOURCE** appears.
- Press the red key **a**.
- TV TO EXT 2** is displayed.
- Set your video recorder to record.
- (See the handbook for your video recorder.)
- Press **record** under the door of the remote control or on your video recorder.

using a **eurocable** connected to the euroconnector **EXTERNAL 1**

- Select the programme number on the TV.
- Set your video recorder to record.
- (See the handbook for your video recorder.)
- Press **record** under the door of the remote control or on your video recorder.

**2. Recording a programme from connected peripheral equipment**

- Switch on the equipment.
- Press **MENU**.
- Press the corresponding colour key for **RECORDING SOURCE** in the **MAIN MENU 2** menu.
- RECORDING SOURCE** appears.
- With the colour keys select the connection from which you want to record.
- Your selection lights up.
- Set your video recorder to record.
- (See the handbook for your video recorder.)
- Press **record** under the door of the remote control or on your video recorder.

RECORDING SOURCE	
<b>a</b>	TV TO EXT 2
<b>b</b>	EXT 1 to EXT 2
<b>c</b>	FRONT to EXT 2
select: a-c menu off	

**Tips**

**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 unrecognisable ? Check if you have entered the correct frequency or adjust the frequency by fine tuning. See Installation, p. 5. Are brightness and contrast out of adjustment ? Press the **PP** key. Switch off your TV overnight with **Ⓞ** on the front of the TV.

**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 secondly installed TV in good condition ? If in doubt, consult your dealer.

**NO PICTURE** means that the selected peripheral equipment is transmitting no picture.

Did you press the correct keys on the remote control ? Try it once more.

Did you press **Ⓞ** again after switching on teletext ?

Has the child lock been switched off ? See Special Features, p. 14

**Sound**

Did you perhaps interrupt the sound with the **TX** key ? Were the internal loudspeakers perhaps switched off by the switch on the back of your TV set ? See Extra loudspeakers, p. 27. Is the sound coming out of only one loudspeaker ? Was the balance perhaps set to one extreme ? See **SOUND** menu, p. 12. Select **SPATIAL ON** in the **SOUND** menu if there is no sound coming out of the extra loudspeakers in back. See **Spatial and Surround Sound**, p. 12.

**Remote control**

Does your TV no longer respond to the remote control ? Press the **Ⓞ** key again. Perhaps the batteries are empty. See Preparation, p. 2.

**Menu**

Did you select the wrong menu ? Once more press **MENU** or **off** to exit from the menu.

**Connections**

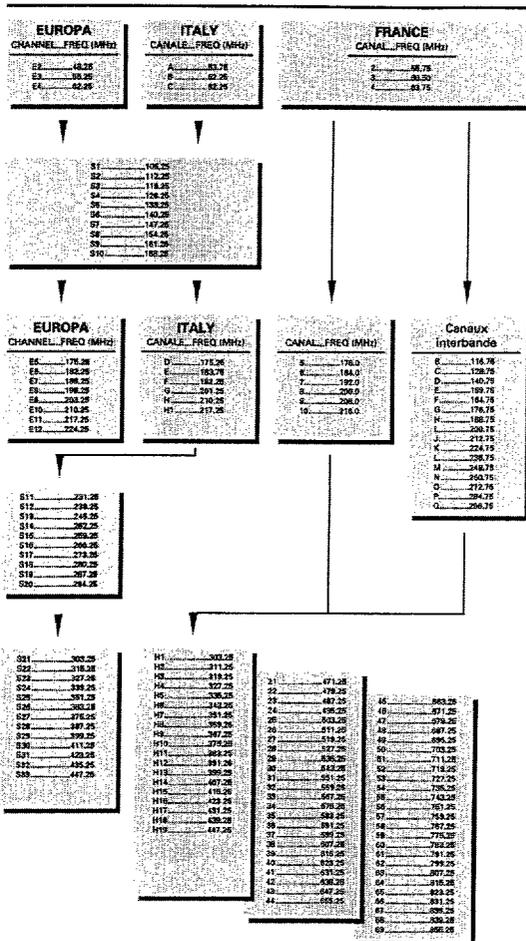
Check whether your peripheral equipment is in fact properly connected. Have you switched on the peripheral equipment ?

**Table of TV frequencies.**

Frequenztafel der Fernsehsender.  
Liste des fréquences des émetteurs.  
Frequenztafel TV-zenders.  
Tabella delle frequenze delle trasmissioni.  
Lista de frecuencias.

**Tabla de frecuencias de transmisión de televisión.**

Frekvens översigt.  
Frekvenstabell.  
Tabell över TV-frekvenser.  
TV-taajuksien taulukko.



**GB**

The frequencies used by a cable company may differ from the frequencies on the table. Consult your cable company or your dealer for detailed information.

**D**

In Kabelfernsehanlagen können Abweichungen von den in den Frequenztabellen aufgeführten Frequenzen vorkommen. Bitte wenden Sie sich an Ihren Fachhändler oder Ihre Kabelfernsehgesellschaft, die Ihnen die zutreffenden Frequenzen mitteilt.

**F**

Les fréquences utilisées par une société de télédistribution peuvent être différentes de celles sur la liste des fréquences. Consultez votre société de télédistribution ou votre revendeur pour des informations plus détaillées.

**NL**

De frequenties die gebruikt worden door een kabelmaatschappij kunnen verschillen van deze op de tabel. Raadpleeg uw kabelexploitant of uw handelaar voor meer informatie.

**I**

Le frequenze usate da una società di tele distribuzione possono essere differenti da quelle sulla tabella. Consultare la società di tele distribuzione o il vostro rivenditore per informazioni specifiche.

**E**

Las frecuencias utilizadas por las empresas de distribución de señal por cable, pueden ser diferentes de las que se encuentran en esta tabla. Consulte con su compañía de distribución de televisión por cable o con su distribuidor para que le proporcionen una información más detallada.

**P**

As frequências utilizadas por uma sociedade de tele distribuição podem ser diferentes das indicadas na lista de frequências. Consultar a sociedade de tele distribuição ou o vendedor para informações mais detalhadas.

**DK**

Frekvenser benyttes af kabel operatører kan være afvigende fra disse, kontakt deres kabel operatør eller forhandler for nærmere information.

**N**

Frekvensene som benyttes på et kabelnett kan avvike fra de som er oppført i tabellen. Kontakt ditt kabel-TV selskap eller din forhandler for nærmere opplysninger.

**S**

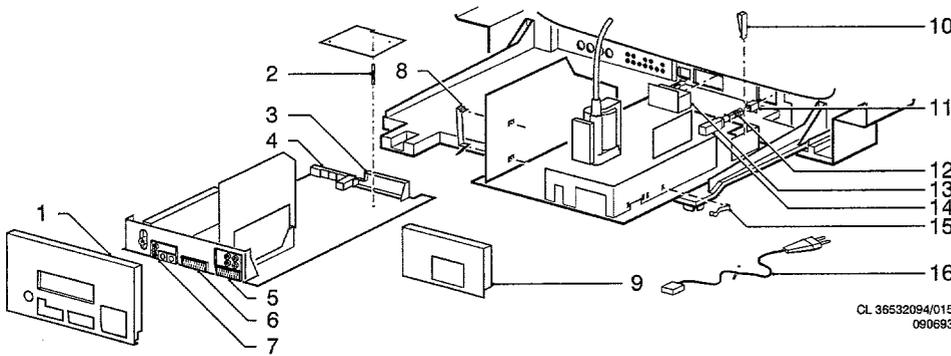
Frekvenserna som används i kabel-TV:nät kan avvika från frekvenserna i tabellen. Kontakta ditt kabel-TV-bolag eller din radiohandlare för vidare information.

**SF**

Kaapeliyhtiöiden käyttämät taajuudet voivat poiketa taajuusosasto ohjeista taajuuslista. Tarkat tiedot saat kaapeliyhtiöltä tai myyjältä.

# 10. Exploded view & Mechanical parts list

Large s



**MECHANICAL COMPONENTS  
LSP AND SSP**

1	4822 432 93138	Cover SSP	3201▲4822
2	4822 466 92954	Spacer	3202▲4822
3	4822 218 21084	Keyboard	3203 4822
4	4822 267 20408	Headph./cinch connector	3204▲4822
5	4822 267 20457	Euro/2 x cinch connector	3204▲4822
6	4822 267 51058	Euro connector	3209▲4822
7	4822 267 20409	Cinch/SVHS connector	3210 4822
8	4822 492 70789	Spring	3211 4822
9	4822 432 92991	Cover LSP	3212 4822
10	4822 492 62067	Spring	3213 4822
11	4822 404 31156	Extension mains knob	3215 4822
12	4822 492 52218	Spring	3216▲4822
12	4822 492 52338	spring 21"	3235▲4822
13	4822 466 93002	Led block	3240 4822
13	4822 130 91183	Led block 21"	3241 4822
14	4822 276 12998	Mains switch	3242 4822
15	4822 482 70143	Spring	3243 4822
16	4822 321 10736	Mains cord	3244 4822
	4822 404 31167	Bracket for mains cord	3245 4822
			3247 4822
			3248 4822
			3249 4822
			3250 4822
			3251 4822
			3252 4822
			3253 4822
			3255 4822
			3266 4822
			3267 4822
			3268 4822
			3270 4822
			3271 4822
			3272 4822
			3273▲4822
			3275 4822
			3300 4822
			3304 4822
			3305 4822
			3306 4822
			3308 4822
			3309▲4822
			3310 4822
			3311 4822
			3312 4822
			3313 4822
			3314 4822
			3315 4822
			3317 4822
			3320 4822
			3321 4822
			3322 4822
			3331 4822
			3332 4822
			3351 4822
			3356 4822
			3357 4822
			3358 4822
			3360 4822
			3362 4822
			3363 4822
			3366 4822
			3368 4822
			3369 4822
			3370 4822
			3371 4822
			3372 4822
			3374 4822
			3375▲4822
			3376 4822
			3378 4822
			3380 4822
			3381 4822
			3382▲4822
			3383▲4822
			3387 4822
			3400 4822
			3402 4822
			3403 4822
			3404 4822
			3405 4822
			3406 4822
			3407 4822

**Large signal panel [A] [B] [G]**

Connectors	
4822 265 30525	2P male white
4822 265 20541	2P male black
▲ 4822 265 40469	6P female gold plated
4822 265 40472	10P female gold plated
4822 290 40295	7P male grey
4822 265 40618	8P male grey
4822 267 40985	6P male black
4822 264 40207	3P male grey
4822 265 40421	6P male grey
▲ 4822 265 30389	2P male
▲ 4822 265 40596	2P male
4822 265 20509	2P male grey
4822 265 20512	2P male green
4822 265 20511	2P male blue
4822 267 50591	6P male gold plated
4822 264 50149	10P male gold plated
4822 267 30871	2P female
4822 266 20163	2P black
Various	
5322 390 20011	silicone grease
4822 492 70143	spring 10 X 33mm
4822 492 62076	spring fix transistor
4822 492 70789	spring fix transistor
▲ 4822 276 12998	mains switch
▲ 4822 256 30496	fuse holder
4822 310 31921	SOPS repair kit
1010 4822 212 23892	NTSC assy
1200 4822 070 32502	fuse T2,5A
-  -	
2001 4822 122 31784	4,7nF 10% 50V
2002 4822 122 31784	4,7nF 10% 50V
2003 4822 126 11175	22pF 5% 50V
2004 4822 122 32142	270pF 2% 63V
2005 4822 122 32142	270pF 2% 63V
2007 4822 122 31797	22nF 10% 63V
2008 4822 122 31797	22pF 10% 63V
2009 4822 126 11175	22pF 5% 50V
2010 4822 122 32597	6,8nF 10% 63V
2014 4822 122 32597	6,8nF 10% 63V
2015▲4822 124 42109	22μF 10% 50V
2016▲4822 124 42109	22μF 10% 50V
2018 4822 122 31797	22nF 10% 63V
2023 5322 122 33446	3,3nF 10% 63V
2024 5322 122 33446	3,3nF 10% 63V
2025 4822 122 10167	22nF 30% 25V
2026 4822 122 32927	220nF 20% 50V
2027 4822 122 32927	220nF 20% 50V
2038 4822 122 31644	2,2nF 10% 63V
2043 4822 122 32927	220nF 20% 50V
2050 4822 124 42362	33μF 20% 16V
2051 4822 124 42362	33μF 20% 16V
2056 4822 122 31773	560pF 2% 63V
2057 4822 122 31773	560pF 2% 63V

2060 4822 122 31773	560pF 2% 63V
2065 4822 126 11156	684nF 20%
2066 4822 126 11156	684nF 20%
2070 4822 124 40272	33μF 20% 16V
2071 4822 124 23489	33μF 20% 25V
2072 4822 124 41584	100μF 20% 10V
2073 4822 124 21212	15μF 20% 40V
2074 5322 122 31647	1nF 10% 63V
2200▲4822 121 43819	680nF 10% 250V
2203▲4822 121 40487	100nF 10% 400V
2210 4822 126 11141	2,2nF 10% 1kV
2211 4822 126 11141	2,2nF 10% 1kV
2214 4822 124 23492	220μF 50% 385V
2215▲4822 122 33665	3,3nF 20% 125V
2216▲4822 126 12274	1500pF 10% 2kV
2230 4822 122 31784	4,7nF 10% 50V
2231 4822 126 11157	470pF 10% 500V
2232 4822 124 21511	2200μF 20% 25V
2233 4822 126 11157	470pF 10% 500V
2234 4822 124 21511	2200μF 20% 25V
2235 4822 126 11157	470pF 10% 500V
2237▲4822 126 12276	2200pF 10% 2kV
2238 4822 124 22583	47μF 160V
2239 4822 124 40193	68μF 20% 16V
2240 4822 124 42183	1000μF 20% 63V
2254 4822 126 11496	120pF 5% 2kV
2255 4822 122 32142	270pF 2% 63V
2258 5322 121 42502	390nF 5% 63V
2260 4822 122 31784	4,7nF 10% 50V
2261 5322 124 21189	100μF 20% 40V
2262 4822 122 31727	470pF 2% 63V
2263 4822 124 40849	330μF 20% 16V
2270 4822 124 41584	100μF 20% 10V
2272 4822 122 33496	100nF 10% 63V
2302 4822 122 31965	220pF 2% 63V
2303 4822 122 31767	150pF 2% 63V
2308 4822 122 32891	68nF 10% 63V
2321 4822 121 51319	1μF 10% 63V
2331 4822 122 32891	68nF 10% 63V
2351 4822 121 41854	150nF 5% 63V
2360 4822 122 31981	33nF 5% 50V
2361 4822 121 42589	82nF 5% 63V
2365 5322 122 32838	82nF 10% 63V
2372 5322 121 42502	390nF 5% 63V
2376 4822 124 40272	33μF 20% 16V
2380 4822 122 33496	100nF 10% 63V
2381 4822 122 33496	100nF 10% 63V
2382 4822 122 33496	100nF 10% 63V
2386 5322 122 31647	1nF 10% 63V
2400 4822 122 31772	47pF 2% 63V
2401 4822 122 33496	100nF 10% 63V
2402 4822 124 41576	2,2μF 20% 50V
2403 5322 124 41431	2,2μF 20% 35V
2404 4822 124 40435	100μF 20% 50V
2405 4822 122 33496	100nF 10% 63V
2406 4822 121 42937	2,7nF 1% 250V
2407 5322 122 33446	3,3nF 10% 63V
2408 4822 126 12831	390pF 10% 100V
2409 4822 122 31797	22nF 10% 63V

2410 4822 121 51244	330nF 5% 50V
2411 4822 121 51244	330nF 5% 50V
2415 4822 122 33496	100nF 10% 63V
2416 4822 122 33496	100nF 10% 63V
2417 4822 122 32808	1,2nF 10% 63V
2418 4822 122 31797	22nF 10% 63V
2419 4822 124 40849	330μF 20% 16V
2420 4822 122 31772	47pF 2% 63V
2421 4822 122 33496	100nF 10% 63V
2422 4822 122 33496	100nF 10% 63V
2423▲4822 122 32442	10nF 50V
2424 4822 121 51565	4,7nF 1% 250V
2425 4822 124 41577	4,7μF 20% 50V
2426▲4822 122 32442	10nF 50V
2427 4822 122 31797	22nF 10% 63V
2428 4822 122 33496	100nF 10% 63V
2429 4822 122 33496	100nF 10% 63V
2445 4822 122 31974	820pF 10% 63V
2446 4822 122 32999	2,2nF 5%
2450▲4822 122 32442	10nF 50V
2451 4822 122 31746	1000pF 2% 63V
2452 4822 124 41716	220μF 20% 35V
2455 4822 122 31771	390pF 2% 63V
2456 5322 124 41743	1500μF 20% 35V
2457 4822 124 42252	2,2μF 10% 50V
2457 4822 124 42249	1μF 10% 50V
2458 4822 122 31797	22nF 10% 63V
2459 4822 122 32891	68nF 10% 63V
2460 4822 122 33496	100nF 10% 63V
2480 4822 124 23495	10μF 20% 25V
2502 4822 121 41689	100nF 10% 250V
2503 4822 126 11501	1,5nF 10% 500V
2504▲4822 126 11254	330pF 10% 2kV
2509 4822 126 12832	2,7nF 10% 100V
2511 4822 124 41739	47μF 20% 160V
2512 4822 124 40435	10μF 20% 50V
2513 4822 124 40435	10μF 20% 50V
2517 4822 126 11157	470pF 10% 500V
2518 4822 124 22449	4,7μF 30% 350V
2519 4822 124 80341	1μF 20% 160V
2520 4822 121 43844	300nF 5% 250V
2520▲4822 121 51527	390nF 5% 250V
2521▲4822 121 51528	470nF 5% 250V
2521 4822 121 51563	560nF 5% 250V
2521▲4822 121 43397	680nF 5% 250V
2523▲4822 122 33382	9,1nF 5% 2kV
2523 4822 121 70366	10nF
2524 4822 121 43845	18nF 5% 400V
2524▲4822 121 51564	24nF 5% 400V
2528▲4822 121 40336	47nF 10% 250V
2529 4822 124 23491	0,47μF 20% 50V
2530 4822 122 31797	22nF 10% 63V
2533 5322 122 32818	2,2nF 10% 100V
2534 4822 126 11494	2,2nF 10% 500V
2535 4822 124 23488	1000μF 20% 35V
2536 4822 126 11502	470pF 10% 500V
2537 4822 124 40184	1000μF 20% 10V
2541 4822 124 23489	33μF 20% 25V

2542 4822 124 22466	1μF 20% 50V
2543 4822 124 23495	10μF 20% 25V
2546 4822 122 33496	100nF 10% 63V
2547 4822 122 33608	39nF 10%

# Spare parts lists / Ersatzteilliste /

## Large signal panel [A] [B] [G]

	3201▲	4822 053 21475	4M7 5% 0,5W
	3202▲	4822 053 21825	8M2 5% 0,5W
	3203	4822 111 41573	470Ω 10% 0,5W
connector	3204▲	4822 116 40236	PTC/NTC 32R
connector	3204▲	4822 116 40215	PTC/NTC 24R
or	3209▲	4822 113 80384	1Ω5 10% 7W
connector	3210	4822 116 52239	120k 5% 0,5W
	3211	4822 116 52239	120k 5% 0,5W
	3212	4822 116 52234	100k 5% 0,5W
	3213	4822 051 10823	82k 2% 0,25W
	3215	4822 051 10272	2k7 2% 0,25W
ins knob	3216▲	4822 115 90309	560Ω 10% 5W
	3235▲	4822 052 10108	1Ω 5% 0,33W
	3240	4822 116 52234	100k 5% 0,5W
	3241	4822 113 80583	4Ω7 10% 5W
	3242	4822 051 10122	1k2 2% 0,25W
	3243	4822 116 52228	680Ω 5% 0,5W
	3244	4822 116 52211	150Ω 5% 0,5W
ains cord	3245	4822 116 52228	680Ω 5% 0,5W
	3247	4822 051 20222	2k2 5% 0,1W
	3248	4822 051 10202	2k 2% 0,25W
	3249	4822 116 52258	220Ω 5% 0,5W
	3250	4822 116 52198	62Ω 5% 0,5W
	3251	4822 051 10102	1k 2% 0,25W
	3252	4822 116 52258	220Ω 5% 0,5W
% 50V	3253	4822 116 82738	10k 10% 5W
% 25V	3255	4822 116 52243	1k5 5% 0,5W
10% 63V	3266	4822 051 10151	150Ω 2% 0,25W
% 63V	3267	4822 051 10101	100Ω 2% 0,25W
0% 63V	3268	4822 115 10129	27Ω 10% 5W
% 40V	3270	4822 051 10108	1Ω 5% 0,25W
% 63V	3271	4822 053 10399	39Ω 5% 1W
2% 63V	3272	4822 051 51201	120Ω 1% 0,125W
	3273▲	4822 051 10472	4k7 2% 0,25W
2% 63V	3275	4822 116 52206	120Ω 5% 0,5W
0% 50V	3300	4822 053 10753	75k 5% 1W
0% 63V	3304	4822 051 10473	47k 2% 0,25W
0% 63V	3305	4822 051 10392	3k9 2% 0,25W
	3306	4822 051 10823	82k 2% 0,25W
	3308	4822 053 12151	150Ω 5% 3W
	3309▲	4822 051 10103	10k 2% 0,25W
	3310	4822 050 11109	11Ω 1% 0,4W
	3311	4822 051 10471	470Ω 2% 0,25W
0% 50V	3312	4822 051 10101	100Ω 2% 0,25W
10% 50V	3313	4822 050 11109	11Ω 1% 0,4W
0% 63V	3314	4822 116 52223	430Ω 5% 0,5W
0% 50V	3315	4822 116 52223	430Ω 5% 0,5W
% 63V	3317	4822 051 10682	6k8 2% 0,25W
	3320	4822 051 10471	470Ω 2% 0,25W
	3321	4822 051 10471	470Ω 2% 0,25W
	3322	4822 051 10471	470Ω 2% 0,25W
	3331	4822 116 52267	30k 5% 0,5W
	3332	4822 116 52233	10k 5% 0,5W
0,25W	3351	4822 052 11279	27Ω 5% 0,5W
0,25W	3356	4822 051 10102	1k 2% 0,25W
0,33W	3357	4822 050 11102	1k1 1% 0,4W
0,33W	3358	4822 116 52182	15Ω 5% 0,5W
0,25W	3360	4822 051 10122	1k2 2% 0,25W
0,25W	3362	4822 051 10151	150Ω 2% 0,25W
0,25W	3364	4822 051 10471	470Ω 2% 0,25W
0,25W	3365	4822 051 10221	220Ω 2% 0,25W
0,25W	3366	4822 051 10221	220Ω 2% 0,25W
0,25W	3368	4822 116 52226	560Ω 5% 0,5W
0,25W	3369	4822 116 52226	560Ω 5% 0,5W
0,25W	3370	4822 051 10332	3k3 2% 0,25W
0,25W	3371	4822 100 11348	1k 30% lin
0,25W	3372	4822 051 10561	560Ω 2% 0,25W
0,25W	3374	4822 116 52301	75k 5% 0,5W
0,25W	3375▲	4822 051 10242	2k4 2% 0,25W
0,25W	3376	4822 116 52175	100Ω 5% 0,5W
0,25W	3378	4822 051 10101	100Ω 2% 0,25W
0,25W	3380	4822 051 10152	1k5 2% 0,25W
0,25W	3381	4822 051 10152	1k5 2% 0,25W
0,5W	3382▲	4822 051 10103	10k 2% 0,25W
0,5W	3383▲	4822 051 10103	10k 2% 0,25W
0,5W	3387	4822 051 10223	22k 2% 0,25W
0,5W	3400	4822 051 10332	3k3 2% 0,25W
0,5W	3402	4822 051 10562	5k6 2% 0,25W
0,25W	3403	4822 051 10229	22Ω 2% 0,25W
0,25W	3404	4822 051 10821	820Ω 2% 0,25W
0,25W	3405	4822 051 10303	30k 2% 0,25W
0,25W	3406	4822 100 11483	10k 30% lin
0,25W	3407	4822 051 10331	330Ω 2% 0,25W

	3408	4822 051 10333	33k 2% 0,25W
	3409	4822 116 52275	360k 5% 0,5W
	3409	4822 116 52268	300k 5% 0,5W
	3409	4822 116 52265	270k 5% 0,5W
	3409	4822 116 52278	390k 5% 0,5W
	3410	4822 101 11003	220k 30% 0,1W
	3411	4822 051 10823	82k 2% 0,25W
	3411	4822 051 56203	62k 1% 0,125W
	3411	4822 051 10683	68k 2% 0,25W
	3413	4822 051 10101	100Ω 2% 0,25W
	3414	4822 051 10154	150k 2% 0,25W
	3415	4822 100 11392	47k 30% lin
	3416	4822 116 52278	390k 5% 0,5W
	3417	4822 116 52256	2k2 5% 0,5W
	3418	4822 051 10221	220Ω 2% 0,25W
	3419▲	4822 116 81193	15Ω 5% 0,3W
	3420	4822 116 83006	2M7 5% 0,5W
	3420	4822 050 23905	3M9 1% 0,6W
	3421	4822 116 52233	10k 5% 0,5W
	3422	4822 116 83029	1M3 5% 0,5W
	3424	4822 051 10221	220Ω 2% 0,25W
	3427	4822 051 10332	3k3 2% 0,25W
	3428	4822 116 52271	3k 5% 0,5W
	3429	4822 116 52276	3k9 5% 0,5W
	3430	4822 051 10471	470Ω 2% 0,25W
	3431	4822 051 10563	56k 2% 0,25W
	3432	4822 051 10122	1k2 2% 0,25W
	3434	4822 100 11642	47k 30% lin
	3435	4822 051 10124	120k 2% 0,25W
	3437	4822 116 52224	470Ω 5% 0,5W
	3438	4822 116 52249	1k8 5% 0,5W
	3440	4822 051 10123	12k 2% 0,25W
	3441	4822 051 10822	8k2 2% 0,25W
	3445	4822 051 10105	1M 5% 0,25W
	3446	4822 116 52251	18k 5% 0,5W
	3447	4822 116 52233	10k 5% 0,5W
	3450	4822 051 10432	4k3 2% 0,25W
	3451	4822 051 10432	4k3 2% 0,25W
	3452	4822 116 52227	620Ω 5% 0,5W
	3454	4822 116 52227	620Ω 5% 0,5W
	3455	4822 051 10392	3k9 2% 0,25W
	3455▲	4822 051 10472	4k7 2% 0,25W
	3456	4822 051 10104	100k 2% 0,25W
	3456	4822 051 10184	180k 2% 0,25W
	3456	4822 051 10114	110k 2% 0,25W
	3457	4822 051 10822	8k2 2% 0,25W
	3457	4822 051 10153	15k 2% 0,25W
	3458	4822 116 80176	1Ω 5% 0,5W
	3459	4822 116 80176	1Ω 5% 0,5W
	3461	5322 116 82222	1Ω2 5% 0,5W
	3462	5322 116 82222	1Ω2 5% 0,5W
	3463	4822 116 82739	1Ω3 5% 0,5W
	3465	4822 051 10681	680Ω 2% 0,25W
	3466	4822 050 11002	1k 1% 0,4W
	3467	4822 100 20166	10k 30% lin
	3468	4822 053 12331	330Ω 5% 3W
	3468	4822 053 12221	220Ω 5% 3W
	3469	4822 050 11002	1k 1% 0,4W
	3469▲	4822 116 52283	4k7 5% 0,5W
	3469	4822 116 52244	15k 5% 0,5W
	3469	4822 116 52229	750Ω 5% 0,5W
	3473	4822 116 52253	2k 5% 0,5W
	3474	4822 051 10683	68k 2% 0,25W
	3480	4822 116 52234	100k 5% 0,5W
	3481	4822 051 10102	1k 2% 0,25W
	3482	4822 051 10229	22Ω 2% 0,25W
	3485	4822 051 10102	1k 2% 0,25W
	3500	4822 116 80176	1Ω 5% 0,5W
	3502	4822 116 52238	12k 5% 0,5W
	3503	4822 116 52238	12k 5% 0,5W
	3507▲	4822 116 52193	39Ω 5% 0,5W
	3508	4822 116 82379	3k9 10% 5W
	3508▲	4822 116 60523	2k7 10% 5W
	3508	4822 116 53418	2k2 10% 5W
	3509▲	4822 053 21104	100k 5% 0,5W
	3510	4822 053 12221	220Ω 5% 3W
	3510	4822 053 12151	150Ω 5% 3W
	3511	4822 116 52176	10Ω 5% 0,5W
	3512	4822 051 10331	330Ω 2% 0,25W
	3513	4822 100 11319	4k7 30% lin
	3514	4822 116 52206	120Ω 5% 0,5W
	3515▲	4822 052 10278	2Ω7 5% 0,33W
	3516▲	4822 052 10278	2Ω7 5% 0,33W

	3517▲	4822 052 11688	6Ω8 5% 0,5W
	3518	4822 116 52267	30k 5% 0,5W
	3519	4822 116 52267	30k 5% 0,5W
	3520	4822 052 11152	1k5 5% 0,5W
	3521	4822 052 11152	1k5 5% 0,5W
	3523	4822 116 52233	10k 5% 0,5W
	3527	4822 051 10102	1k 2% 0,25W
	3528	4822 116 52303	8k2 5% 0,5W
	3528	4822 116 52224	470Ω 5% 0,5W
	3528	4822 050 11002	1k 1% 0,4W
	3529	4822 051 10204	200k 2% 0,25W
	3530	4822 051 10474	470k 2% 0,25W
	3532▲	4822 050 23301	330Ω 1% 0,6W
	3533▲	4822 050 23301	330Ω 1% 0,6W
	3534▲	4822 052 10278	2Ω7 5% 0,33W
	3535▲	4822 052 10278	2Ω7 5% 0,33W
	3536▲	4822 116 52215	220Ω 5% 0,5W
	3537	4822 116 52206	120Ω 5% 0,5W
	3538	4822 116 52238	12k 5% 0,5W
	3538	4822 116 52241	13k 5% 0,5W
	3540	4822 116 52267	30k 5% 0,5W
	3541	4822 116 52285	470k 5% 0,5W
	3542	4822 051 10913	91k 2% 0,25W
	3542	4822 051 10104	100k 2% 0,25W
	3543	4822 051 10302	3k 2% 0,25W
	3543▲	4822 051 10242	2k4 2% 0,25W
	3544	4822 051 10393	39k 2% 0,25W
	3545	4822 116 52208	130Ω 5% 0,5W
	3546	4822 051 10184	180k 2% 0,25W
	3547	4822 051 10518	5Ω1 5% 0,25W
	3548	4822 051 10392	3k9 2% 0,25W
	3549	4822 051 10124	120k 2% 0,25W
	3550	4822 116 52201	75Ω 5% 0,5W
	3551	4822 116 52201	75Ω 5% 0,5W
	3553	4822 051 10109	10Ω 2% 0,25W
	3561	4822 051 10113	11k 2% 0,25W
	3562▲	4822 051 10103	10k 2% 0,25W
	3569	4822 051 10279	27Ω 2% 0,25W
	3601	4822 051 10104	100k 2% 0,25W
	3602	4822 100 20166	10k 30% lin
	3603	4822 051 10822	8k2 2% 0,25W
	3603▲	4822 051 10472	4k7 2% 0,25W
	3603	4822 051 20183	18k 5% 0,1W
	3603▲	4822 051 10103	10k 2% 0,25W
	3603	4822 051 10153	15k 2% 0,25W
	3604	4822 051 10564	560k 2% 0,25W
	3604	4822 051 10754	750k 2% 0,25W
	3604	4822 051 10105	1M 5% 0,25W
	3605	4822 051 56203	62k 1% 0,125W
	3605	4822 051 10513	51k 2% 0,25W
	3605	4822 051 10203	20k 2% 0,25W
	3606	4822 051 10223	22k 2% 0,25W
	3606	4822 051 10333	33k 2% 0,25W
	3607	4822 100 11213	22k 30% lin
	3608	4822 051 10102	

# Liste des pièces



2% 0,25W	6353	4822 130 80446	LL4148
2% 0,25W			
< 2% 0,25W	6355	4822 130 80446	LL4148
5% 0,1W	6356	4822 130 80886	LLZ-F22
5% 0,1W	6357	4822 130 80446	LL4148
	6370	4822 130 81512	LLZ-C6V2
2% 0,25W	6371	4822 130 80446	LL4148

2% 0,25W	6372	4822 130 80446	LL4148
2% 0,25W	6373	4822 130 82583	LLZ-C9V1
2% 0,25W	6375	4822 130 80446	LL4148
2% 0,25W	6376	4822 130 80922	LLZ-C18
2% 0,25W	6403	4822 130 80446	LL4148

sf.assy	6404	4822 130 80446	LL4148
OD3	6417	4822 130 81223	LLZ-C2V4
PS transf.	6451	4822 130 34382	BZX79-C8V2
te bead	6452	4822 130 42488	BYD33D
te bead	6465	4822 130 80446	LL4148
te bead			
te bead	6466	4822 130 80446	LL4148
-1 10%	6480	4822 130 31554	BZX79-C4V3
PS transf.	6515	4822 130 80877	BAV103
te bead	6516	4822 130 80877	BAV103
te bead	6517	4822 130 42488	BYD33D

H 10%	6519	4822 130 32896	BYD33M
H 10%	6520	4822 130 32896	BYD33M
H 10%	6522	4822 130 41275	BY228/20
driver 50Hz	6525	4822 130 80572	RGP30J-L7004
-1 10%	6529	4822 130 34329	BZX79-C43

-1 7,5%	6534	4822 130 82353	BYD34G
-1 10%	6537	4822 130 80572	RGP30J-L7004
assy CU15	6542	4822 130 30842	BAV21
arity 21"	6546	4822 130 80446	LL4148
arity 25"-28"	6547	4822 130 80446	LL4148
arity 33"			

arity 21"	6551	4822 209 32586	TL431A
arity	6601	4822 130 42488	BYD33D
-west	6629	4822 130 80446	LL4148
-1 7,5%	6650	4822 130 82583	LLZ-C9V1
-1 10%	6651	4822 130 80446	LL4148

te bead	7000	4822 209 73311	TDA1521Q/N4
T. 21"	7003	4822 130 61207	BC848
T.	7005	5322 130 42136	BC848C
	7006	5322 130 42136	BC848C
	7007	4822 130 61207	BC848

148	7008	4822 130 61207	BC848
148	7009	4822 209 83163	LM833N
E30C-7000	7010	5322 130 42012	BC858
148	7012	4822 130 61207	BC848
148	7013	4822 130 61207	BC848

148	7201	5322 130 42756	BC857C
148	7216	4822 130 63239	ON4827
148	7241	4822 130 61003	BD944F
148	7242	5322 130 41981	BC848A
5J-16	7243	5322 130 41981	BC848A

7480	4822 130 42513	BC858C
7481	5322 130 42136	BC848C
7501	4822 130 42159	BF819
7506	4822 130 61265	BU508AF
7512	4822 130 44196	BC548C

7513	4822 130 60068	BC558C
7530	4822 130 61233	BC857
7540	5322 130 42755	BC847C
7541	5322 130 42755	BC847C
7542	5322 130 42756	BC857C

7543	4822 130 60136	BC856
7550	4822 130 62742	BD943F
7601	4822 130 61207	BC848
7602	5322 130 42012	BC858
7603	5322 130 42012	BC858

7608	4822 130 44503	BC547C
7610	4822 130 60935	BD948F
7616	4822 130 61207	BC848
7618	4822 130 61207	BC848
7650	5322 130 42136	BC848C

7651	5322 130 42136	BC848C
7652	5322 130 42136	BC848C

4822 265 40252	7P
4822 265 40253	8P
4822 265 41086	9P male
4822 255 40901	socket 40P
4822 265 41082	10P flex

4822 290 40295	7P male
4822 267 41095	5P male
4822 265 41326	10P male
4822 265 31009	terminal strip 3P
4822 290 61116	terminal strip 9P

4822 265 31112	5P male
4822 265 31101	3P male

4822 267 20457	socket SCART + 2xinch
4822 267 51058	socket SCART
4822 267 20409	socket cinch +SVHS
4822 267 20408	socket headph. +cinch
4822 218 21084	keyboard

4822 212 30803	control panel
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2172	4822 124 40433	47µF 20% 25V
2173	4822 124 41643	100µF 20% 16V

2180	4822 122 31947	100nF 20% 63V
2181	4822 126 11544	22000pF 63V
2188	4822 126 11544	22000pF 63V
2189	4822 126 11544	22000pF 63V
2190	4822 121 41856	22nF 5% 250V

2191	4822 126 11544	22000pF 63V
2193	4822 122 32153	1,8nF 10% 63V
2194	4822 122 32153	1,8nF 10% 63V
2198	4822 121 41856	22nF 5% 250V
2216	4822 122 32927	220nF 20% 50V

2219	4822 122 32927	220nF 20% 50V
2221	4822 126 12075	680pF 2% 63V
2234	4822 122 32927	220nF 20% 50V
2240	4822 122 32927	220nF 20% 50V
2241	4822 121 42408	220nF 5% 63V

2250	4822 122 31947	100nF 20% 63V
2251	4822 122 31947	100nF 20% 63V
2253	4822 126 11492	220nF 10% 50V
2254	4822 122 32927	220nF 20% 50V
2255	4822 124 41643	100µF 20% 16V

2257	4822 122 31947	100nF 20% 63V
2258	4822 122 31765	100pF 2% 63V
2260	4822 122 31947	100nF 20% 63V
2261	4822 122 31947	100nF 20% 63V
2269	4822 122 32482	22pF 2% 63V

2274	4822 122 32862	10nF 80% 50V
2301	5322 122 31647	1nF 10% 63V
2305	4822 126 10324	33pF 2% 63V
2306	4822 122 31772	47pF 2% 63V
2310	4822 122 31774	56pF 2% 63V

2311	4822 122 31765	100pF 2% 63V
2311	4822 122 31767	150pF 2% 63V
2312	4822 126 11544	22000pF 63V
2318	4822 121 42408	220nF 5% 63V
2320	4822 121 51412	560nF 5% 63V

2322	4822 121 51412	560nF 5% 63V
2324	4822 126 11544	22000pF 63V
2326	4822 122 31765	100pF 2% 63V
2327	4822 122 31765	100pF 2% 63V
2328	4822 122 31765	100pF 2% 63V

2438	4822 126 11544	22000pF 63V
2440	4822 126 11544	22000pF 63V
2442	4822 126 11544	22000pF 63V
2445	4822 122 31947	100nF 20% 63V
2446	4822 122 31947	100nF 20% 63V

2447	4822 122 31947	100nF 20% 63V
2451	5322 121 42661	330nF 5% 63V
2452	4822 124 22466	1µF 20% 50V
2453	4822 122 31774	56pF 2% 63V
2454	4822 126 10324	33pF 2% 63V

2455	4822 126 10324	33pF 2% 63V
2456	4822 126 10324	33pF 2% 63V
2476	4822 124 40435	100nF 20% 50V
2479	4822 122 31947	100nF 20% 63V
2480	4822 124 40272	33µF 20% 16V

2600	4822 122 31947	100nF 20% 63V
2602	4822 122 31947	100nF 20% 63V
2604	4822 122 31947	100nF 20% 63V
2606	4822 122 31947	100nF 20% 63V
2608	4822 122 32927	220nF 20% 50V

2620	4822 122 32927	220nF 20% 50V
2622	4822 122 32927	220nF 20% 50V
2624	5322 122 31842	330pF 2% 63V
2626	4822 122 32927	220nF 20% 50V
2627	5322 124 41431	22µF 20% 35V

2628	5322 122 31842	330pF 2% 63V
2630	4822 122 32927	220nF 20% 50V
2632	5322 122 31842	330pF 2% 63V
2634	4822 121 42408	330pF 5% 63V
2636	5322 122 31842	220pF 2% 63V

2638	4822 121 42408	220nF 5% 63V
2640	5322 122 31842	330pF 2% 63V
2642	4822 122 32927	220nF 20% 50V
2644	5322 122 31842	330pF 2% 63V
2646	4822 122 32927	220nF 20% 50V

2658	4822 122 31961	68pF 2% 63V
2659	4822 122 31961	68pF 2% 63V
2660	5322 122 31647	1nF 10% 63V
2662	5322 122 31647	1nF 10% 63V
2664	4822 122 32153	1,8nF 10% 63V

2666	4822 122 32153	1,8nF 10% 63V
2680	4822 122 31947	100nF 20% 63V
2681	4822 122 32542	47nF 10% 63V
2682	4822 124 40195	150µF 20% 16V
2684	4822 121 51252	470nF 5% 63V

# Spare parts lists / Ersatzteilliste / Liste des pièces

## Small signal panel [C] [D] [F] [H]

3125	4822 051 10101	100Ω 2% 0,25W
3126	4822 051 10101	100Ω 2% 0,25W
3128	4822 051 10471	470Ω 2% 0,25W
3129	4822 116 52175	100Ω 5% 0,5W
3131	4822 116 52175	100Ω 5% 0,5W
3132	4822 116 52175	100Ω 5% 0,5W
3133	4822 051 10151	150Ω 2% 0,25W
3134	4822 116 52175	100Ω 5% 0,5W
3135	4822 051 10101	100Ω 2% 0,25W
3136	4822 051 10101	100Ω 2% 0,25W
3137	4822 116 52175	100Ω 5% 0,5W
3138	4822 116 52175	100Ω 5% 0,5W
3139	4822 116 52175	100Ω 5% 0,5W
3140	4822 050 11002	1k 1% 0,4W
3141	4822 050 11002	1k 1% 0,4W
3142	4822 050 11002	1k 1% 0,4W
3143	4822 050 11002	1k 1% 0,4W
3144	4822 050 11002	1k 1% 0,4W
3145	4822 050 11002	1k 1% 0,4W
3146	4822 050 11002	1k 1% 0,4W
3147	4822 116 52283	4k7 5% 0,5W
3148	4822 051 10473	47k 2% 0,25W
3149	4822 051 10473	47k 2% 0,25W
3150	4822 051 10473	47k 2% 0,25W
3151	4822 051 10562	5k6 2% 0,25W
3153	4822 051 10103	10k 2% 0,25W
3154	4822 051 10152	1k5 2% 0,25W
3155	4822 051 10104	100k 2% 0,25W
3156	4822 051 10562	5k6 2% 0,25W
3157	4822 050 11002	1k 1% 0,4W
3158	4822 050 11002	1k 1% 0,4W
3159	4822 051 10103	10k 2% 0,25W
3160	4822 052 10109	10Ω 5% 0,33W
3161	4822 051 10103	10k 2% 0,25W
3162	4822 052 10159	15Ω 5% 0,33W
3163	4822 051 10223	22k 2% 0,25W
3164	4822 051 10108	1Ω 5% 0,25W
3165	4822 051 10108	1Ω 5% 0,25W
3167	4822 051 10122	1k2 2% 0,25W
3168	4822 051 10242	2k4 2% 0,25W
3169	4822 050 11002	1k 1% 0,4W
3170	4822 116 82772	3Ω9 5% 0,3W
3171	4822 052 11511	510Ω 5% 0,5W
3172	4822 052 10159	15Ω 5% 0,33W
3173	4822 051 20182	1k8 5% 0,1W
3175	4822 051 10153	15k 2% 0,25W
3176	4822 051 10103	10k 2% 0,25W
3177	4822 051 10103	10k 2% 0,25W
3178	4822 051 10223	22k 2% 0,25W
3180	4822 116 52224	470Ω 5% 0,5W
3181	4822 051 10102	1k 2% 0,25W
3181	4822 051 10822	8k2 2% 0,25W
3182	4822 116 52214	200Ω 5% 0,5W
3183	4822 116 52233	10k 5% 0,5W
3184	4822 051 51201	120Ω 1% 0,125W
3185	4822 051 10471	470Ω 2% 0,25W
3186	4822 116 52256	2k2 5% 0,5W
3187	4822 051 10759	75Ω 2% 0,25W
3189	4822 051 10223	22k 2% 0,25W
3190	4822 051 10823	82k 2% 0,25W
3191	4822 051 10823	82k 2% 0,25W
3192	4822 051 10153	15k 2% 0,25W
3193	4822 051 10331	330Ω 2% 0,25W
3194	4822 051 10331	330Ω 2% 0,25W
3200	4822 051 10472	4k7 2% 0,25W
3201	4822 051 10472	4k7 2% 0,25W
3202	4822 051 10472	4k7 2% 0,25W
3205	4822 051 10759	75Ω 2% 0,25W
3206	4822 051 10759	75Ω 2% 0,25W
3207	4822 051 10759	75Ω 2% 0,25W
3208	4822 051 10101	100Ω 2% 0,25W
3209	4822 051 10101	100Ω 2% 0,25W
3210	4822 051 10101	100Ω 2% 0,25W
3211	4822 116 52224	470Ω 5% 0,5W
3215	4822 051 10689	68Ω 2% 0,25W
3216	4822 052 10828	8Ω 2% 0,33W
3217	4822 116 52224	470Ω 5% 0,5W
3218	4822 051 10471	470Ω 2% 0,25W
3219	4822 051 10008	0Ω 5% 0,25W
3220	4822 051 10561	560Ω 2% 0,25W
3222	4822 116 52217	270Ω 5% 0,5W
3224	4822 051 10759	75Ω 2% 0,25W

3225	4822 051 10471	470Ω 2% 0,25W
3232	4822 051 10102	1k 2% 0,25W
3233	4822 051 10102	1k 2% 0,25W
3234	4822 051 10759	75Ω 2% 0,25W
3235	4822 051 10759	75Ω 2% 0,25W
3237	4822 116 52217	270Ω 5% 0,5W
3238	4822 116 52222	390Ω 5% 0,5W
3239	4822 051 10271	270Ω 2% 0,25W
3240	4822 051 10759	75Ω 2% 0,25W
3241	4822 051 10759	75Ω 2% 0,25W
3253	4822 051 10331	330Ω 2% 0,25W
3254	4822 052 10828	8Ω 2% 0,33W
3255	4822 051 10821	470Ω 2% 0,25W
3259	4822 051 10103	10k 2% 0,25W
3260	4822 052 10828	8Ω 2% 0,33W
3261	4822 051 10471	470Ω 2% 0,25W
3262	4822 051 10103	10k 2% 0,25W
3263	4822 051 10689	68Ω 2% 0,25W
3264	4822 051 10471	470Ω 2% 0,25W
3266	4822 051 10103	10k 2% 0,25W
3267	4822 051 10103	10k 2% 0,25W
3269	4822 051 10561	560Ω 2% 0,25W
3272	4822 116 52228	680Ω 5% 0,5W
3278	4822 051 10273	27k 2% 0,25W
3280	4822 051 10273	27k 2% 0,25W
3281	4822 116 52201	75Ω 5% 0,5W
3285	4822 051 10103	10k 2% 0,25W
3286	4822 051 10103	10k 2% 0,25W
3287	4822 051 10103	10k 2% 0,25W
3288	4822 051 10103	10k 2% 0,25W
3300	4822 051 10103	10k 2% 0,25W
3301	4822 051 10332	3k3 2% 0,25W
3303	4822 051 10201	200Ω 2% 0,25W
3304	4822 051 10241	240Ω 2% 0,25W
3305	4822 051 10104	100k 2% 0,25W
3306	4822 051 10241	240Ω 2% 0,25W
3310	4822 116 52283	4k7 5% 0,5W
3311	4822 051 10182	1k8 2% 0,25W
3312	4822 051 10511	510Ω 2% 0,25W
3313	4822 051 10362	3k6 2% 0,25W
3314	4822 051 10102	1k 2% 0,25W
3315	4822 051 10103	10k 2% 0,25W
3316	4822 051 10112	1k1 2% 0,25W
3317	4822 116 52233	10k 5% 0,5W
3324	4822 051 10223	22k 2% 0,25W
3325	4822 051 10682	6k8 2% 0,25W
3326	4822 051 10103	10k 2% 0,25W
3327	4822 051 10122	1k2 2% 0,25W
3328	4822 051 10271	270Ω 2% 0,25W
3329	4822 051 10108	1Ω 5% 0,25W
3329	4822 051 10392	3k9 2% 0,25W
3330	4822 051 10108	1Ω 5% 0,25W
3331	4822 051 10108	1Ω 5% 0,25W
3336	4822 051 10472	4k7 2% 0,25W
3338	4822 051 10391	390Ω 2% 0,25W
3339	4822 051 10153	15k 2% 0,25W
3342	4822 051 20222	2k2 5% 0,1W
3344	4822 051 10273	27k 2% 0,25W
3345	4822 051 10102	1k 2% 0,25W
3346	4822 051 10102	1k 2% 0,25W
3350	4822 051 51201	120Ω 1% 0,125W
3351	4822 051 10472	4k7 2% 0,25W
3353	4822 051 10332	3k3 2% 0,25W
3360	4822 052 10278	2Ω 7 5% 0,33W
3361	4822 051 10102	1k 2% 0,25W
3365	4822 051 10331	330Ω 2% 0,25W
3369	4822 051 10331	330Ω 2% 0,25W
3370	4822 100 11391	330Ω 30% lin
3371	4822 051 10431	430Ω 2% 0,25W
3372	4822 051 10331	330Ω 2% 0,25W
3375	4822 116 80176	1Ω 5% 0,5W
3377	4822 051 10682	6k8 2% 0,25W
3380	4822 050 11002	1k 1% 0,4W
3383	4822 051 10333	33k 2% 0,25W
3387	4822 050 11002	1k 1% 0,4W
3389	4822 051 10182	1k8 2% 0,25W
3399	4822 116 80176	1Ω 5% 0,5W
3410	4822 116 52224	470Ω 5% 0,5W
3414	4822 116 52175	100Ω 5% 0,5W
3425	4822 116 52224	470Ω 5% 0,5W
3426	4822 116 52224	470Ω 5% 0,5W
3439	4822 051 10221	220Ω 2% 0,25W
3441	4822 051 10221	220Ω 2% 0,25W

3443	4822 051 10221	220Ω 2% 0,25W
3450	4822 051 20222	2k2 5% 0,1W
3451	4822 051 10432	4k3 2% 0,25W
3451	4822 051 10103	10k 2% 0,25W
3453	4822 051 10511	510Ω 2% 0,25W
3454	4822 051 10101	100Ω 2% 0,25W
3455	4822 051 10101	100Ω 2% 0,25W
3456	4822 051 10101	100Ω 2% 0,25W
3465	4822 051 10472	4k7 2% 0,25W
3466	4822 051 10479	47Ω 2% 0,25W
3471	4822 116 52233	10k 5% 0,5W
3472	4822 051 10682	6k8 2% 0,25W
3473	4822 051 10362	3k6 2% 0,25W
3475	4822 051 10124	120k 2% 0,25W
3476	4822 051 10154	150k 2% 0,25W
3477	4822 116 52286	5k1 5% 0,5W
3478	4822 116 52224	470Ω 5% 0,5W
3479	4822 051 10223	22k 2% 0,25W
3480	4822 052 10278	2Ω 7 5% 0,33W
3481	4822 052 10278	2Ω 7 5% 0,33W
3482	4822 052 10431	430Ω 5% 0,33W
3483	4822 116 52175	100Ω 5% 0,5W
3484	4822 051 10102	1k 2% 0,25W
3492	4822 051 10471	470Ω 2% 0,25W
3600	4822 051 10301	300Ω 2% 0,25W
3602	4822 100 11212	2k2 30% lin
3603	4822 051 10108	1Ω 5% 0,25W
3604	4822 051 10272	2k7 2% 0,25W
3605	4822 051 10472	4k7 2% 0,25W
3606	4822 052 10279	27Ω 5% 0,33W
3608	4822 051 10101	100Ω 2% 0,25W
3610	4822 051 10101	100Ω 2% 0,25W
3612	4822 051 10102	1k 2% 0,25W
3620	4822 051 10184	180k 2% 0,25W
3622	4822 051 10184	180k 2% 0,25W
3624	4822 051 10102	1k 2% 0,25W
3626	4822 051 10184	180k 2% 0,25W
3628	4822 051 10102	1k 2% 0,25W
3630	4822 051 10184	180k 2% 0,25W
3632	4822 051 10102	1k 2% 0,25W
3634	4822 051 10184	180k 2% 0,25W
3636	4822 051 10102	1k 2% 0,25W
3638	4822 051 10184	180k 2% 0,25W
3640	4822 051 10102	1k 2% 0,25W
3642	4822 051 10184	180k 2% 0,25W
3644	4822 051 10102	1k 2% 0,25W
3646	4822 051 10184	180k 2% 0,25W
3650	4822 051 10392	3k9 2% 0,25W
3651	4822 051 10123	12k 2% 0,25W
3652	4822 051 10392	3k9 2% 0,25W
3653	4822 051 10123	12k 2% 0,25W
3654	4822 116 52244	15k 5% 0,5W
3660	4822 051 10331	330Ω 2% 0,25W
3662	4822 051 10151	150Ω 2% 0,25W
3664	4822 051 10331	330Ω 2% 0,25W
3665	4822 116 81193	15Ω 5% 0,3W
3666	4822 051 10151	150Ω 2% 0,25W
3668	4822 051 10331	330Ω 2% 0,25W
3672	4822 051 10331	330Ω 2% 0,25W
3680	4822 052 10279	27Ω 5% 0,33W
3682	4822 051 10568	5Ω 6 5% 0,25W
3684	4822 116 52175	100Ω 5% 0,5W
3686	4822 116 52175	100Ω 5% 0,5W
3700	4822 116 52263	2k7 5% 0,5W
3702	4822 051 10223	22k 2% 0,25W
3704	4822 051 10102	1k 2% 0,25W
3706	4822 116 81203	10Ω 5% 0,3W
3708	4822 051 10101	100Ω 2% 0,25W
3710	4822 051 20183	18k 5% 0,1W
3712	4822 116 52203	91Ω 5% 0,5W
3713	4822 116 52203	91Ω 5% 0,5W
3714	4822 051 10828	8Ω 2% 0,25W
3720	4822 116 81203	10Ω 5% 0,3W
3722	4822 116 52263	2k7 5% 0,5W
3724	4822 051 10223	22k 2% 0,25W
3726	4822 051 10102	1k 2% 0,25W
3728	4822 051 10101	100Ω 2% 0,25W
3730	4822 051 20183	18k 5% 0,1W
3732	4822 116 52203	

5% 0,25W

H 10%  
H 10%  
H 10%  
3μH 20%  
trim. 2,52MHz  
  
H 10%  
trim. 7,96MHz  
trim. 2,52MHz  
trim. 7,96MHz  
3μH 20%  
3μH 20%  
9μH 20%

H148  
-F7V5  
148  
148  
148

-F5V1  
150  
-F33  
148  
148

-C7V5  
148  
-C15  
148

148  
148  
148  
148  
148

148  
382  
382  
1150  
-F3V6

148  
-C5V6  
-C6V2  
148  
-C22

/103  
-FBV2  
148  
-C2V4  
148

-C2V4  
148  
148

348B  
348B  
358C  
348C  
34C04B

348C  
348B  
-8574P  
358C  
358C

348B  
312  
348B  
BT2369  
347B

53N  
317-40  
6414  
-4094BP  
317-40

348C  
348B  
358B  
348B  
348C



7313	4822 130 42513	BC858C
7314	5322 130 42136	BC848C
7315	5322 130 42136	BC848C
7324	4822 209 71512	TDA4565/V6
7326	5322 130 42136	BC848C
7338▲	5322 130 41982	BC848B
7340	4822 130 60887	BF840
7350▲	5322 130 41982	BC848B
7360	4822 130 42615	BC817-40
7365	4822 209 30837	TDA4650/V4/S1

7366	4822 209 31714	TDA4661/V2
7410	4822 209 73852	PMBT2369
7430	4822 209 31592	TDA4680/V6
7450	5322 130 42755	BC847C
7451	5322 130 42755	BC847C
7471	5322 130 42136	BC848C
7480	5322 130 44921	BD943
7492	5322 130 42136	BC848C
7600	4822 209 63967	TDA8417/V3
7620	4822 209 10263	4052B

7622	4822 209 10263	4052B
7630	4822 209 61115	LF353N
7635	4822 209 61115	LF353N
7660▲	5322 130 41982	BC848B
7661▲	5322 130 41982	BC848B
7662▲	5322 130 41982	BC848B
7680	4822 209 63734	TD84425/V7
7704▲	4822 209 83163	LM833N
7706▲	5322 130 41982	BC848B
7708	5322 130 41983	BC858B

7730▲	5322 130 41982	BC848B
7732	5322 130 41983	BC858B

PIP panel [J]

Connectors

4822 265 31085	5P female
4822 265 41328	10P female
4822 265 31112	5P male

Various

1023	4822 212 30921	PIP multi
1023	4822 212 30922	PIP PAL
1155	4822 320 40284	delay line DL1711G
1201	4822 242 70304	crystal 8,867 238 MHz
1212	4822 242 70736	crystal 7,159 090 MHz

-II-

2103	4822 126 10324	33pF 2% 63V
2105	4822 122 31766	120pF 2% 63V
2118	4822 122 31775	680pF 2% 63V
2119	4822 122 31767	150pF 2% 63V
2120	4822 122 31807	1200pF 2% 63V
2125	4822 126 11544	22000pF 63V
2155	4822 122 32862	10nF 80% 50V
2158	4822 122 32862	10nF 80% 50V
2160	4822 121 42408	220nF 5% 63V
2161	4822 121 41854	150nF 5% 63V

2162	4822 122 31947	100nF 20% 63V
2171	4822 122 31961	68pF 2% 63V
2172	4822 126 11175	22pF 5% 50V
2176	4822 126 11175	22pF 5% 50V
2177	4822 122 31961	68pF 2% 63V

2180	4822 122 31768	180pF 2% 63V
2181	4822 122 31768	180pF 2% 63V
2185	4822 126 11544	22000pF 63V
2187	4822 126 11544	22000pF 63V
2189	4822 122 31746	1000pF 2% 63V

2196	4822 122 32183	56nF 10% 50V
2197	4822 122 31385	22pF 50V
2201	4822 122 31746	1000pF 2% 63V
2202	4822 125 50045	20pF trim
2211	4822 122 31746	1000pF 2% 63V

2212	4822 125 50045	20pF trim
2220	5322 121 42661	330nF 5% 63V
2222	4822 122 32542	47nF 10% 63V
2227	5322 122 31842	330pF 2% 63V
2230	4822 124 41578	6,8μF 20% 50V

-II-

2232	5322 124 41431	22μF 20% 35V
2234	4822 122 33496	100nF 10% 63V
2235	4822 124 41578	6,8μF 20% 50V
2238	4822 121 42937	2,7nF 1% 250V
2239	4822 122 31947	100nF 20% 63V
2250	4822 121 41738	270nF 5% 63V
2251	5322 122 31647	1nF 10% 63V
2255	4822 122 31766	120pF 2% 63V
2260	4822 122 31947	100nF 20% 63V
2270	4822 122 31947	100nF 20% 63V

2340	4822 124 40433	47μF 20% 25V
2345	4822 124 40433	47μF 20% 25V
2350	4822 124 40849	330μF 20% 16V
2351	4822 124 41643	100μF 20% 16V
2380	4822 122 32927	220nF 20% 50V
2381	4822 122 32927	220nF 20% 50V
2382	4822 122 32927	220nF 20% 50V
2383	4822 122 32927	220nF 20% 50V
2384	4822 122 32927	220nF 20% 50V
2385	4822 122 32927	220nF 20% 50V

2390	4822 122 31947	100nF 20% 63V
2399	4822 122 31746	1000pF 2% 63V
2404	4822 122 31965	220pF 2% 63V
2405	4822 122 32862	10nF 80% 50V
2409	4822 122 31965	220pF 2% 63V
2410	4822 122 32862	10nF 80% 50V
2413	4822 122 31839	82pF 2% 63V
2414	4822 122 32862	10nF 80% 50V
2415	4822 122 32765	820pF 2% 63V
2430	4822 122 31947	100nF 20% 63V

2432	4822 122 31947	100nF 20% 63V
2434	4822 122 31947	100nF 20% 63V
2438	4822 121 41857	10nF 5% 250V
2439	4822 121 41856	22nF 5% 250V
2440	4822 122 31965	220pF 2% 63V

2441	4822 122 31727	470pF 2% 63V
2442	4822 124 40242	1μF 20% 63V
2447	5322 121 42386	100nF 5% 63V
2448	4822 122 31947	100nF 20% 63V
2449	4822 122 31947	100nF 20% 63V

2450	4822 122 32856	8,2nF 10% 63V
2452	4822 122 31765	100pF 2% 63V
2453	4822 122 31765	100pF 2% 63V
2455	4822 122 31972	39pF 2% 63V
2456	4822 122 31765	100pF 2% 63V

2459	4822 124 41997	470μF 10V
2466	4822 122 31947	100nF 20% 63V
2470	4822 124 40435	10μF 20% 50V
2627	4822 122 32927	220nF 20% 50V

-II-

3100	4822 051 10008	0Ω 5% 0,25W
3103	4822 051 10821	820Ω 2% 0,25W
3104	4822 051 10821	820Ω 2% 0,25W
3105	4822 051 10362	3k6 2% 0,25W
3106	4822 116 52233	10k 5% 0,5W

3107	4822 051 10103	10k 2% 0,25W
3108	4822 051 10103	10k 2% 0,25W
3155	4822 051 10391	390Ω 2% 0,25W
3156	4822 051 10122	1k2 2% 0,25W
3157	4822 100 11391	330Ω 30% lin

3158	4822 051 10759	75Ω 2% 0,25W
3170	4822 051 10112	1k1 2% 0,25W
3175	4822 051 10621	620Ω 2% 0,25W
3196	4822 050 11002	1k 1% 0,4W
3200	4822 051 10103	10k 2% 0,25W

3201	4822 051 10103	10k 2% 0,25W
3202	4822 051 10103	10k 2% 0,25W
3211	4822 051 10103	10k 2% 0,25W
3212	4822 051 10103	10k 2% 0,25W
3214	4822 051 10102	1k 2% 0,25W

3220	4822 051 10512	5k1 2% 0,25W
3221	4822 116 52233	10k 5% 0,5W
3222	4822 051 10008	0Ω 5% 0,25W
3227	4822 116 52299	7k5 5% 0,5W
3228	4822 051 10472	4k7 2% 0,25W

3231	4822 051 10302	3k 2% 0,25W
3232	4822 051 10229	22Ω 2% 0,25W
3233	4822 051 10821	820Ω 2% 0,25W
3234	4822 051 10202	2k 2% 0,25W
3235	4822 051 10122	1k2 2% 0,25W

3236	4822 051 10511	510Ω 2% 0,25W
3237	4822 051 10153	15k 2% 0,25W

-II-

3238	4822 051 10333	33k 2% 0,25W
3239	4822 100 11319	4k7 30% lin
3241	4822 051 10302	3k 2% 0,25W

3242	4822 050 11002	1k 1% 0,4W
3250	4822 051 10911	910Ω 2% 0,25W
3265	4822 051 10104	100k 2% 0,25W
3270	4822 051 10103	10k 2% 0,25W
3275	4822 051 10103	10k 2% 0,25W

3276	4822 051 10102	1k 2% 0,25W
3335	4822 051 10271	270Ω 2% 0,25W
3336	4822 051 10472	4k7 2% 0,25W
3337	4822 116 52207	1k2 5% 0,5W
3338	4822 051 10332	3k3 2% 0,25W

3340	4822 051 10202	2k 2% 0,25W
3341▲	4822 111 41424	22Ω 5% 0,3W
3345▲	4822 111 41424	22Ω 5% 0,3W
3353▲	4822 052 10568	5Ω 5% 0,33W
3354	4822 051 10271	270Ω 2% 0,25W

3376	4822 051 10102	1k 2% 0,25W
3377	4822 051 10102	1k 2% 0,25W
3378	4822 051 10102	1k 2% 0,25W
3390	4822 051 10151	150Ω 2% 0,25W
3391	4822 051 10181	180Ω 2% 0,25W

3394	4822 051 10151	150Ω 2% 0,25W
3395	4822 051 10181	180Ω 2% 0,25W
3398	4822 051 10151	150Ω 2% 0,25W
3399	4822 051 10181	180Ω 2% 0,25W
3404	4822 051 10431	430Ω 2% 0,25W

3405	4822 051 10271	270Ω 2% 0,25W
3410	4822 051 10391	390Ω 2% 0,25W
3411	4822 051 10361	360Ω 2% 0,25W
3412	4822 051 10361	360Ω 2% 0,25W
3414	4822 051 51201	120Ω 1% 0,125W

3416	4822 051 10182	1k8 2% 0,25W
3434	4822 051 10473	47k 2% 0,25W
3436	4822 051 10473	47k 2% 0,25W
3437	4822 051 10101	100Ω 2% 0,25W
3438	4822 051 10513	51k 2% 0,25W

3440	4822 116 52222	390Ω 5% 0,5W
3441	4822 051 10519	51Ω 2% 0,25W
3442	4822 051 10919	91Ω 2% 0,25W
3444	4822 116 52175	100Ω 5% 0,5W
3446	4822 116 52175	100Ω 5% 0,5W

3448	4822 051 10392	3k9 2% 0,25W
3450	4822 051 10621	620Ω 2% 0,25W
3452	4822 051 10621	620Ω 2% 0,2

# Spare parts lists / Ersatzteilliste / Liste des pièces

-C7V5 148	3711 4822 051 10101 100Ω 2% 0,25W 3712 4822 051 10272 2k7 2% 0,25W
48B 48B 4554/V1 4510/V8 48B	3714 4822 051 10302 3k 2% 0,25W 3714 4822 051 10272 2k7 2% 0,25W 3715 4822 051 10332 3k3 2% 0,25W 3716 4822 050 21204 120k 1% 0,6W 3716 4822 050 21504 150k 1% 0,6W
48B 48B 48B 48B	3718 4822 111 50518 1k5 5% 0,5W 3718 4822 111 50579 680Ω 10% 0,5W 3719 4822 051 10008 0Ω 5% 0,25W 3719 4822 051 10333 33k 2% 0,25W 3720 4822 051 10823 82k 2% 0,25W
48B 48B	3721 4822 051 10101 100Ω 2% 0,25W 3724 4822 051 10302 3k 2% 0,25W 3724 4822 051 10272 2k7 2% 0,25W 3725 4822 051 10332 3k3 2% 0,25W 3726 4822 050 21204 120k 1% 0,6W
48B 118-40 5114A 58B 58B	3726 4822 050 21504 150k 1% 0,6W 3727 4822 111 50518 1k5 5% 0,5W 3728 4822 111 50518 1k5 5% 0,5W 3728 4822 111 50579 680Ω 10% 0,5W 3730 4822 111 50518 1k5 5% 0,5W
58B 9087 9088-2WS 9086-3 3T2369	3731▲ 4822 052 10279 27Ω 5% 0,33W 3733 4822 052 11101 100Ω 5% 0,5W 3734 4822 051 10114 110k 2% 0,25W 3735▲ 4822 051 10103 10k 2% 0,25W 3736 4822 051 10333 33k 2% 0,25W
2579B/N2	3737 4822 051 10203 20k 2% 0,25W 3738 4822 116 52304 82k 5% 0,5W 3739 4822 116 52186 22Ω 5% 0,5W 3739 4822 116 52195 47Ω 5% 0,5W 3739 4822 116 52191 33Ω 5% 0,5W
I [E]	3740 4822 051 10114 110k 2% 0,25W 3741 4822 051 10124 120k 2% 0,25W 3742 4822 051 10333 33k 2% 0,25W 3743 4822 051 10333 33k 2% 0,25W 3748 4822 111 50579 680Ω 10% 0,5W
grey nale ire tube socket	3761 4822 051 10102 1k 2% 0,25W 3761▲ 4822 051 10472 4k7 2% 0,25W 3761 4822 051 20222 2k2 5% 0,1W
ire tube socket nale nale	
25"-28" 21" 33"	
10% 63V F 5% 50V F 2% 63V F 20% 250V F 20% 16V	
F 10% 63V F 10% 1600V F 2% 63V F 2% 63V	
F 5% 50V F 5% 50V F 10% 400V F 10% 400V F 10% 63V	
F 10% 400V F 2% 63V F 5% 50V F 10% 63V F 2% 63V	
10% 63V 10% 63V 10% 63V	
5% 2W 2% 0,25W 2% 0,25W % 0,25W % 0,25W	
2% 0,25W 2% 0,25W 1% 0,6W 1% 0,6W 5% 0,5W	
2% 0,25W % 0,25W 2% 0,25W	

Various	1003 4822 242 81187 crystal 11,700MHz 1003 4822 242 81188 crystal 13,104MHz 1106 4822 242 72303 filter TH316BQM
-II-	2000 4822 122 31947 100nF 20% 63V 2001▲ 4822 124 40433 47μF 20% 25V 2002 4822 122 31797 22nF 10% 63V 2003 4822 122 31797 22nF 10% 63V 2004 4822 122 31768 180pF 2% 63V
	2005 4822 122 31768 180pF 2% 63V 2006 5322 122 31842 330pF 2% 63V 2007 4822 122 31767 6,8nF 10% 63V 2008 4822 122 31767 150pF 2% 63V 2009▲ 4822 122 32442 10nF 50V
	2010 4822 122 31767 150pF 2% 63V 2011 4822 122 31766 120pF 2% 63V 2012 4822 121 41854 150nF 5% 63V 2013 4822 122 31746 1000pF 2% 63V 2014▲ 4822 122 32442 10nF 50V
	2015 4822 125 50045 20pF trim. 2016 4822 122 31961 68pF 2% 63V 2017 4822 121 42408 220nF 5% 63V 2018▲ 4822 122 32442 10nF 50V 2019 4822 122 31797 22nF 10% 63V
	2020▲ 4822 124 40433 47μF 20% 25V 2021 4822 122 31782 15000pF 10% 50V 2021 4822 122 32856 8,2nF 10% 63V 2022 4822 122 31981 33nF 5% 50V 2022 4822 122 31759 18nF
	2023 4822 122 31981 33nF 5% 50V 2023 4822 122 31759 18nF 2024 4822 122 31782 15000pF 10% 50V 2024 4822 122 32856 8,2nF 10% 63V 2025 4822 122 31797 22nF 10% 63V
	2026▲ 4822 124 40433 47μF 20% 25V 2027 4822 122 31773 560pF 2% 63V 2028 4822 126 10171 2700pF 2% 63V 2029 4822 122 32999 2,2nF 5% 50V 2030 4822 122 32999 2,2nF 5% 50V
	2031 4822 126 10171 2700pF 2% 63V 2032 4822 122 31773 560pF 2% 63V 2033 4822 126 11492 220nF 10% 63V 2034 4822 126 11492 220nF 10% 63V 2035 4822 122 31746 1000pF 2% 63V
	2036▲ 4822 122 32442 10nF 50V 2037▲ 4822 122 32442 10nF 50V 2038 4822 122 31797 22nF 10% 63V 2039 4822 126 11691 150nF 10% 63V 2041 5322 122 31647 1nF 10% 63V
	2042 4822 126 10183 330pF 10% 63V 2043 5322 122 31647 1nF 10% 63V 2044 5322 122 31647 1nF 10% 63V 2050▲ 4822 124 40433 47μF 20% 25V 2051 5322 122 31647 1nF 10% 63V
	2245 5322 122 31647 1nF 10% 63V 2246 5322 122 31647 1nF 10% 63V
	3000 4822 051 10471 470Ω 2% 0,25W 3002 4822 051 10332 3k3 2% 0,25W 3003 4822 051 10332 3k3 2% 0,25W 3004 4822 051 10104 100k 2% 0,25W 3005 4822 051 10823 82k 2% 0,25W
	3007 4822 051 10223 22k 2% 0,25W 3008 4822 051 10223 22k 2% 0,25W 3009 4822 051 10392 3k9 2% 0,25W 3010 4822 051 10104 100k 2% 0,25W 3011 4822 051 10104 100k 2% 0,25W
	3012 4822 053 20106 10M 5% 0,25W 3013 4822 051 10824 820k 2% 0,25W 3014▲ 4822 051 10103 10k 2% 0,25W 3015 4822 051 10682 6k8 2% 0,25W 3015 4822 051 10123 12k 2% 0,25W
	3016 4822 051 10122 1k2 2% 0,25W 3016 4822 051 20222 2k2 5% 0,1W 3017 4822 051 10122 1k2 2% 0,25W 3017 4822 051 20222 2k2 5% 0,1W 3018 4822 051 10682 6k8 2% 0,25W
	3018 4822 051 10123 12k 2% 0,25W 3019 4822 051 10752 7k5 2% 0,25W 3019 4822 051 10562 5k6 2% 0,25W 3020▲ 4822 051 10472 4k7 2% 0,25W

	3021▲ 4822 051 10472 4k7 2% 0,25W
	3022▲ 4822 051 10472 4k7 2% 0,25W 3023▲ 4822 051 10472 4k7 2% 0,25W 3024 4822 051 10184 180k 2% 0,25W 3025 4822 051 10184 180k 2% 0,25W 3026 4822 051 10101 100Ω 2% 0,25W
	3027 4822 051 10101 100Ω 2% 0,25W 3028▲ 4822 051 10103 10k 2% 0,25W 3029▲ 4822 052 10109 10Ω 5% 0,33W 3030 4822 051 10102 1k 2% 0,25W 3031 4822 051 10102 1k 2% 0,25W
	3032 4822 051 10569 56Ω 2% 0,25W 3033 4822 051 20222 2k2 5% 0,1W 3034 4822 051 10421 430Ω 2% 0,25W 3035 4822 051 10241 240Ω 2% 0,25W 3036 4822 051 10102 1k 2% 0,25W
	3037 4822 051 10159 15Ω 2% 0,25W 3049 4822 051 10223 22k 2% 0,25W 3050 4822 051 10123 12k 2% 0,25W 3099 4822 051 10101 100Ω 2% 0,25W 3099 4822 051 51201 120Ω 1% 0,125W
Jumper	
4xxx	4822 051 10008 0Ω 5% 0,25W
	5000 4822 157 50975 1mH 10% 5001 4822 157 50975 1mH 10% 5002 4822 157 70458 4,7μH 10% 5003 4822 157 70458 4,7μH 10%
	6000▲ 4822 130 30621 1N4148 6005 4822 209 30911 OF4076 6006 5322 130 31684 BB809 6050 4822 130 80446 LL4148
	7000 4822 209 30909 TDA8732/C1 7001▲ 4822 209 30914 SAA7280/M3 7002▲ 4822 209 83163 LM833N 7003▲ 4822 209 83163 LM833N 7004 5322 209 10576 4053B
	7007 4822 209 73236 TDA1543/N2 7008 5322 130 42755 BC847C 7009 4822 130 60887 BF840 7050 5322 130 42136 BC848C
Comb filter [N]	
Connectors	4822 265 41337 terminal strip 11P
Various	1300 4822 212 30906 COMBIFILTER
-II-	2000 4822 122 33496 100nF 10% 63V 2001 4822 122 33496 100nF 10% 63V 2002 4822 124 40435 10μF 20% 50V 2003 4822 122 33496 100nF 10% 63V 2004 4822 124 40435 10μF 20% 50V
	2005 4822 124 40242 1μF 20% 63V 2006 4822 122 33496 100nF 10% 63V 2010▲ 4822 122 32442 10nF 50V 2021▲ 4822 122 32442 10nF 50V 2022▲ 4822 122 32442 10nF 50V
	2023 4822 122 31766 120pF 2% 63V 2024▲ 4822 122 32442 10nF 50V 2025 4822 124 41577 4,7μF 20% 50V 2026 4822 122 33496 100nF 10% 63V 2030 4822 124 40177 47μF 20% 10V
	2031 4822 122 33496 100nF 10% 63V 2032 4822 124 40177 47μF 20% 10V 2033 4822 122 33496 100nF 10% 63V 2034 4822 124 40177 47μF 20% 10V 2035 4822 122 33496 100nF 10% 63V
	2036▲ 4822 124 40433 47μF 20% 25V 2037 4822 122 33496 100nF 10% 63V 2038 5322 122 31647 1nF 10% 63V

	2040 4822 122 33496 100nF 10% 63V 2044 4822 122 33496 100nF 10% 63V
	2045 4822 122 33496 100nF 10% 63V 2050 4822 124 80283 100μF 20% 6,3V 2051 4822 126 11725 1μF 20% 5V 2060 4822 122 33496 100nF 10% 63V 2070 4822 122 33496 100nF 10% 63V
	2080 4822 122 31797 22nF 10% 63V 2081 4822 124 80283 100μF 20% 6,3V 2082 4822 122 33496 100nF 10% 63V 2083 4822 122 33496 100nF 10% 63V
	3000▲ 4822 051 10103 10k 2% 0,25W 3001 4822 051 10124 120k 2% 0,25W 3011 4822 051 10471 470Ω 2% 0,25W 3012 4822 051 10102 1k 2% 0,25W 3013 4822 051 10182 1k8 2% 0,25W
	3014 4822 051 10151 150Ω 2% 0,25W 3021 4822 051 10122 1k2 2% 0,25W 3022 4822 051 10331 330Ω 2% 0,25W 3023 4822 051 10221 220Ω 2% 0,25W 3024 4822 051 10331 330Ω 2% 0,25W
	3025 4822 051 10473 47k 2% 0,25W 3026 4822 051 10479 47Ω 2% 0,25W 3027 4822 051 10471 470Ω 2% 0,25W 3028 4822 051 10479 47Ω 2% 0,25W 3029 4822 051 10102 1k 2% 0,25W
	3030 4822 051 10473 47k 2% 0,25W 3031 4822 051 10102 1k 2% 0,25W 3032 4822 051 10181 180Ω 2% 0,25W 3035▲ 4822 052 10108 1Ω 5% 0,33W 3036▲ 4822 052 10108 1Ω 5% 0,33W
	3037▲ 4822 052 10108 1Ω 5% 0,33W 3038▲ 4822 052 10108 1Ω 5% 0,33W 3040 4822 051 10333 33k 2% 0,25W 3041 4822 051 10822 8k2 2% 0,25W 3042 4822 051 10331 330Ω 2% 0,25W
	3043 4822 051 10332 3k3 2% 0,25W 3044 4822 051 10471 470Ω 2% 0,25W 3045 4822 051 10821 820Ω 2% 0,25W 3046 4822 051 10122 1k2 2% 0,25W 3047 4822 051 10102 1k 2% 0,25W
	3048 4822 051 10101 100Ω 2% 0,25W 3050 4822 051 10333 33k 2% 0,25W 3051 4822 051 10822 8k2 2% 0,25W 3052 4822 051 10331 330Ω 2% 0,25W 3053 4822 051 10202 2k 2% 0,25W
	3054 4822 051 10471 470Ω 2% 0,25W 3055 4822 051 10821 820Ω 2% 0,25W 3056 4822 051 10122 1k2 2% 0,25W 3057 4822 051 10102 1k 2% 0,25W 3058 4822 051 10101 100Ω 2% 0,25W
	3060 4822 051 10682 6k8 2% 0,25W 3061 4822 051 10331 330Ω 2% 0,25W 3062 4822 051 10821 820Ω 2% 0,25W 3078 4822 051 10151 150Ω 2% 0,25W 3079 4822 051 10821 820Ω 2% 0,25W
	3080 4822 051 10102 1k 2% 0,25W 3081 4822 051 10102 1k 2% 0,25W 3082 4822 051 10102 1k 2% 0,25W 3083 4822 051 10473 47k 2% 0,25W 3084 4822 051 10393 39k 2% 0,25W
	3085 4822 051 10471 470Ω 2% 0,25W 3086 4822 051 10152 1k5 2% 0,25W 3087 4822 051 10182 1k8 2% 0,25W 3088 4822 051 10101 100Ω 2% 0,25W 3089 4822 051 10151 150Ω 2% 0,25W
	3090 4822 051 10471 470Ω 2% 0,25W 3091 4822 051 10102 1k 2% 0,25W 3092 4822 051 10223 22k 2% 0,25W 3093 4822 051 20222 2k2 5% 0,1W 3094 4822 051 10333 33k 2% 0,25W
	5021▲ 4822 157 51462 10μH 10% 5022 4822 157 63065 0,68μH 20% 5030 4822 157 51312 68μH 10% 5031 4822 157 51312 68μH 10% 5032 4822 157 51312 68μH 10%
	5033 4822 157 51312 68μH 10% 5040 4822 154 10056 4,43MHz BAND-PASS

Comb filter [N]

5050	4822 154 10057	7,2MHz LOW-PASS
5080	4822 154 10057	7,2MHz LOW-PASS



6050	4822 130 30621	1N4148
6051	4822 130 31253	BZX79-C2V4



7000	4822 209 32587	MC141625A
7005	5322 209 10576	4053B
7010	5322 130 42136	BC848C
7021	5322 130 41982	BC848B
7022	5322 130 41982	BC848B
7023	5322 130 41983	BC858B
7024	5322 130 41983	BC858B
7040	5322 130 42136	BC848C
7041	4822 130 42513	BC858C
7042	5322 130 42136	BC848C
7050	5322 130 42136	BC848C
7051	4822 130 42513	BC858C
7052	5322 130 42136	BC848C
7062	5322 130 42136	BC848C
7080	5322 130 42136	BC848C

7081	5322 130 41982	BC848B
7082	5322 130 41983	BC858B
7083	4822 130 42513	BC858C
7090	5322 130 41983	BC858B
7091	5322 130 41982	BC848B
7092	5322 130 41982	BC848B

TXT panel [L]

Connectors

4822 265 41083	terminal strip 10P
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Various

1400	4822 212 30904	TXT-DVTB-EUR
1400	4822 212 30905	TXT-DVTB-SCAN
1100	4822 242 71417	crystal 13,875 000 Hz



2101	4822 124 40435	10µF 20% 50V
2102	5322 122 31641	47nF 50V
2103	4822 122 31782	15000pF 10% 50V
2104	4822 122 31965	220pF 2% 63V
2105	4822 122 32891	68nF 10% 63V

2106	4822 122 32504	15pF 2% 63V
2107	5322 122 31647	1nF 10% 63V
2108	4822 122 31727	470pF 2% 63V
2109	4822 126 11544	22000pF 63V
2110	4822 122 32142	270pF 2% 63V

2111	4822 122 31765	100pF 2% 63V
2112	4822 126 11544	22000pF 63V
2113	4822 124 41525	100µF 20% 25V
2114	4822 122 32083	8,2pF 5% 50V
2115	5322 122 31647	1nF 10% 63V

2116	4822 124 40435	10µF 20% 50V
2117	4822 122 31765	100pF 2% 63V
2118	4822 122 31765	100pF 2% 63V
2119	4822 126 11544	22000pF 63V
2120	4822 122 32862	10nF 80% 50V

2122	4822 122 33496	100nF 10% 63V
2123	4822 122 31825	27pF 2% 63V
2124	4822 124 41525	100µF 20% 25V
2125	5322 124 41431	22µF 20% 35V
2126	4822 122 31981	33nF 5% 50V

2127	4822 122 33496	100nF 10% 63V
2128	5322 124 41431	22µF 20% 35V
2129	4822 122 31767	150pF 2% 63V
2130	4822 124 41576	2,2µF 20% 50V
2131	4822 124 41576	2,2µF 20% 50V

2132	4822 122 32504	15pF 2% 63V
2134	4822 122 33496	100nF 10% 63V
2137	4822 126 11544	22000pF 63V



3101	4822 051 10473	47k 2% 0,25W
3102	4822 051 10102	1k 2% 0,25W



3103	4822 051 10102	1k 2% 0,25W
3104	4822 051 20222	2k2 5% 0,1W
3105	4822 051 10683	68k 2% 0,25W

3106	4822 051 10221	220Ω 2% 0,25W
3107	4822 051 10681	680Ω 2% 0,25W
3108	4822 051 10221	220Ω 2% 0,25W
3109	4822 051 10683	68k 2% 0,25W
3110	4822 051 10122	1k2 2% 0,25W

3111	4822 051 10102	1k 2% 0,25W
3112	4822 051 10272	2k7 2% 0,25W
3113	4822 051 10681	680Ω 2% 0,25W
3114	4822 051 10271	270Ω 2% 0,25W
3115	4822 051 20222	2k2 5% 0,1W

3116	4822 051 10511	510Ω 2% 0,25W
3117	4822 051 10182	1k8 2% 0,25W
3118	4822 051 10008	0Ω 5% 0,25W
3121	4822 051 10471	470Ω 2% 0,25W
3122	4822 051 10223	22k 2% 0,25W

3123	4822 051 10102	1k 2% 0,25W
3124	4822 051 20222	2k2 5% 0,1W
3125	4822 051 10271	270Ω 2% 0,25W
3126	4822 051 10512	5k1 2% 0,25W
3127	4822 051 10511	510Ω 2% 0,25W

3128	4822 051 10202	2k 2% 0,25W
3129	4822 051 10102	1k 2% 0,25W
3130	4822 051 10162	1k6 2% 0,25W
3131	4822 051 10101	100Ω 2% 0,25W
3132	4822 051 10101	100Ω 2% 0,25W

3133	4822 051 10223	22k 2% 0,25W
3134	4822 116 52201	75Ω 5% 0,5W
3135	4822 116 52226	560Ω 5% 0,5W
3136	4822 116 52226	560Ω 5% 0,5W
3137	4822 116 52226	560Ω 5% 0,5W

3138	4822 051 10202	2k 2% 0,25W
3139	4822 051 10103	10k 2% 0,25W
3140	4822 051 10104	100k 2% 0,25W
3141	4822 051 10008	0Ω 5% 0,25W
3142	4822 052 10108	1Ω 5% 0,33W

3143	4822 052 10109	10Ω 5% 0,33W
3144	4822 051 10102	1k 2% 0,25W
3145	4822 051 10362	3k6 2% 0,25W
3146	4822 051 10471	470Ω 2% 0,25W
3147	4822 051 10152	1k5 2% 0,25W

3148	4822 051 10399	39Ω 2% 0,25W
3148	4822 051 10279	27Ω 2% 0,25W
3150	4822 051 10151	150Ω 2% 0,25W
3151	4822 051 10101	100Ω 2% 0,25W

Jumper

4xxx	4822 051 10008	0Ω 5% 0,25W
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5100	4822 157 52392	27µH 10%
5101	4822 157 50965	15µH 10%
5102	4822 156 11169	coil trim. 601,54kHz



6100	4822 130 83406	LLZ-F3V6
6101	4822 130 80446	LL4148
6102	4822 130 80883	LLZ-C4V7



7100	5322 130 42136	BC848C
7101	4822 130 42513	BC858C
7102	5322 130 41982	BC848B
7103	5322 130 41982	BC848B
7104	5322 130 41982	BC848B

7105	5322 130 41982	BC848B
7106	5322 130 42136	BC848C
7107	5322 130 42136	BC848C
7108	4822 130 42513	BC858C
7109	5322 130 42136	BC848C

7110	4822 209 32629	SAA5191/V3
7111	4822 209 31851	SAA9042P/A/MOB
7113	4822 209 52359	HYB514256B-70
7114	5322 130 41982	BC848B
7115	5322 130 41982	BC848BConnectors

4822 265 40503	5P
4822 265 30431	3P

Y/C detector [I]

Various

1021	4822 212 23929	Y/C detector PIP
1021	4822 212 30007	Y/C detector NP/PI
1231	4822 242 80364	filter 4,43MHz



2225	4822 124 40196	220µF 20% 16V
2226	4822 122 32927	220nF 20% 50V
2228	4822 122 32927	220nF 20% 50V
2235	4822 122 31965	220pF 2% 63V
2236	4822 122 31772	47pF 2% 63V

2237	4822 122 32142	270pF 2% 63V
2237	4822 122 32142	270pF 2% 63V
2238	4822 122 31768	180pF 2% 63V
2239	4822 122 31947	100nF 20% 63V
2244	4822 124 20722	1µF 10% 63V

2246	4822 122 31947	100nF 20% 63V
2247	4822 122 31766	120pF 2% 63V
2261	4822 124 20678	47µF 10% 10V
2262	4822 122 31767	150pF 2% 63V
2269	4822 124 20726	4,7µF 10% 63V



3200	4822 050 11002	1k 1% 0,4W
3201	4822 116 83006	2M7 5% 0,5W
3203	4822 051 10563	56k 2% 0,25W
3204	4822 051 10103	10k 2% 0,25W
3212	4822 051 10751	750Ω 2% 0,25W

3213	4822 051 10153	15k 2% 0,25W
3213	4822 051 10153	15k 2% 0,25W
3214	4822 051 10153	15k 2% 0,25W
3221	4822 051 10472	4k7 2% 0,25W
3223	4822 116 52203	91Ω 5% 0,5W

3225	4822 116 52219	330Ω 5% 0,5W
3226	4822 116 52243	1k5 5% 0,5W
3227	4822 051 10112	1k1 2% 0,25W
3228	4822 051 10474	470k 2% 0,25W
3229	4822 051 10331	330Ω 2% 0,25W

3230	4822 051 10102	1k 2% 0,25W
3231	4822 051 10681	680Ω 2% 0,25W
3236	4822 051 10331	330Ω 2% 0,25W
3250	4822 051 10151	150Ω 2% 0,25W
3258	4822 051 10102	1k 2% 0,25W

3272	4822 051 10471	470Ω 2% 0,25W
3278	4822 051 10472	4k7 2% 0,25W
3280	4822 051 10102	1k 2% 0,25W
3282	4822 051 10103	10k 2% 0,25W
3283	4822 051 10472	4k7 2% 0,25W

3284	4822 051 10102	1k 2% 0,25W
3289	4822 051 10102	1k 2% 0,25W
3302	4822 051 10102	1k 2% 0,25W
3307	4822 051 10474	470k 2% 0,25W
3308	4822 051 10471	470Ω 2% 0,25W

3309	4822 051 10008	0Ω 5% 0,25W
3319	4822 051 10102	1k 2% 0,25W

5200	4822 157 62824	coil trim. 7,96MHz
5201	4822 157 62824	coil trim. 7,96MHz
5202		