

## Recommended Safety Parts

Item	Part No.	Description
	4822 276 12597	MAIN SWITCH
	4822 258 30274	FUSE HOLDER
	4822 255 40955	LED HOLDER
	4822 267 60243	EURO CONN.
	4822 265 30389	2P FOR M1
	4822 265 40596	2P FOR M2
	4822 070 32002	FUSE 2A
	4822 071 56301	FUSE 630MA
1500	4822 124 40199	680uF 20% 16V
1540	4822 124 41525	100uF 20% 25V
2015	4822 124 41525	100uF 20% 25V
2157	4822 124 41525	100uF 20% 25V
2160	4822 124 41525	100uF 20% 25V
2161	4822 124 41525	100uF 20% 25V
2270	4822 124 41525	100uF 20% 25V
2443	4822 124 40196	220uF 20% 16V
2445	4822 122 33467	1.5nF 10%R 2KV
2448	4822 124 80096	47uF 200V
2450	4822 121 51612	330nF 5% 250V
2500	4822 124 41531	470nF 10% 250V
2506	4822 126 11137	3.3nF 20% 400V
2524	4822 126 11382	1nF 10% 1KV
2526	4822 122 32442	10nF 50V
2530	4822 124 80096	47uF 200V
2534	4822 126 11524	1.5nF 10% 1KV
2666	4822 124 41525	100uF 20% 25V
2685	4822 124 41525	100uF 20% 25V
3001	4822 052 10229	22ohm 5% 0,33W
3015	4822 052 10109	10ohm 5% 0,33W
3015	4822 052 10159	15ohm 5% 0,33W
3124	4822 052 10229	22ohm 5% 0,33W
3157	4822 050 21003	10k 1% 0,6W
3159	4822 052 11208	20hm 5% 0,5W
3163	4822 052 11208	20hm 5% 0,5W
3171	4822 116 52283	4k7 5% 0,5W
3296	4822 052 10109	10ohm 5% 0,33W
3370	4822 052 11471	470ohm 5% 0,5W
3402	4822 050 23901	390ohm 1% 0,6W
3403	4822 116 52266	3k 5% 0,5W
3403	4822 116 52269	3k3 5% 0,5W
3404	4822 051 10242	2k4 2% 0,25W
3408	4822 053 10681	680ohm 2 5% 1W
3411	4822 052 11208	20hm 5% 0,5W
3412	4822 052 10278	20hm7 5% 0,33W
3440	4822 116 52199	68ohm 5% 0,5W
3444	4822 117 10037	4k7 5% 3W
3448	4822 052 10108	10hm 5% 0,33W
3449	4822052 10108	10hm 5% 0,33W
3452	4822 052 10109	10ohm 5% 0,33W
3452	4822 052 10159	15ohm 5% 0,33W
3452	4822 052 10478	4ohm 7 5% 0,33W
3454	4822 052 11102	1k 5% 0,5W
3470	4822 052 10478	4ohm7 5% 0,33W
3470	4822 052 10828	8ohm2 5% 0,33W
3503	4822 053 21475	4M7 5% 0,5W
3504	4822 053 21475	4M7 5% 0,5W
3544	4822 052 10108	10hm 5% 0,33W
3557	4822 053 11271	270ohm 5% 2W
3561	4822 116 52219	330ohm 5% 0,5W
3564	4822 052 10109	10ohm 5% 0,33W
3571	4822 050 24701	470ohm 1% 0,6W
3572	4822 116 52202	82ohm 5% 0,5W
5258	4822 157 51462	10uH
5296	4822 157 51462	10uH
5443	4822 157 51462	10uH
5445	4822 140 10406	LOT AT2079/40
5453	4822 157 51462	10uH
5470	4822 157 51462	10uH
5560	4822 157 51462	10uH
5601	4822 157 51462	10uH
5652	4822 157 51462	10uH
5653	4822 157 51462	10uH
6522	4822 130 30621	1N4148
6663	4822 209 30563	TLXR5400
6849	4822 130 30621	1N4148
6865	4822 130 30621	1N4148
7157	4822 209 60956	TDA7052/N1
7514	4822 130 82034	CNX83A
	4822 255 70251	CRT SOCKET
1235	4822 071 56301	FUSE 630MA
3208	4822 051 10242	2k4 2% 0,25W
3221	4822 051 10242	2k4 2% 0,25W
3231	4822 051 10242	2k4 2% 0,25W
3235	4822 052 10108	10hm 5% 0,33W
1710	4822 071 52501	FUSE 250MA
3700	4822 116 52219	330ohm 5% 0,5W
3701	4822 116 52219	330ohm 5% 0,5W
3765	4822 116 52202	82ohm 5% 0,5W
3766	4822 116 52202	82ohm 5% 0,5W
3767	4822 116 52202	82ohm 5% 0,5W
7710	5322 130 41982	BC848B
7711	5322 130 41982	BC848B
7715	5322 130 41982	BC848B
7732	5322 130 41982	BC848B
7754	5322 130 41982	BC848B
7755	5322 130 41982	BC848B
7765	5322 130 41982	BC848B
7766	5322 130 41982	BC848B
7767	5322 130 41982	BC848B
2244	4822 124 41525	100uF 20% 25V
2161	4822 124 41525	100uF 20%25V
3136	4822 053 11181	180ohm 5% 2W
3154	4822 051 10472	4k 2% 0.25W
3155	4822 051 10103	10k 2% 0.25W
7156	5322 130 41982	BC848B
7158	5322 130 41982	BC848B
3255	4822 051 10103	10k 2% 0.25W
2351	4822 124 40246	4.7uF 20% 63V

## Electrical Adjustments

### 1. Adjustments on the main panel (Fig. 7)

#### 1.1 +100V power supply voltage

Connect a voltmeter (DC) between pin 6 of connector M5 and ground. Adjust potentiometer 3535 for a voltage of +100V (14"-17") or +92,5V (21").

#### 1.2 Horizontal synchronization

Interconnect pins 8 and 28 of IC7015. Apply an aerial signal and tune the set. Adjust potentiometer 3356 until the picture is straight. Remove the interconnection.

#### 1.3 Horizontal centring

Is adjusted with potentiometer 3354.

#### 1.4 Vertical centring

Can be adjusted by eventually mounting one of the resistors 3401 or 3408.

#### 1.5 Picture height

Is adjusted with potentiometer 3410.

#### 1.6 Focussing

Is adjusted with the focussing potentiometer in the line output transformer (see Fig. 8).

#### 1.7 IF filter for PALISECAM BGLL'- or PAL/SECAM BGLL'I sets

Connect a signal generator (e.g. PM 5326) via a condenser 5p6 to pin 17 of the tuner and adjust the frequency for 33.4 MHz. Connect an oscilloscope to pin 1 of filter 1015. Switch on the set and select system Europe via the system button on the set. Adjust 5012 for a minimum amplitude.

#### 1.8 AFC

#### a. Alignments for PAL/SECAM BGLL'- or PAL/SECAM BGLL'I sets

Connect a signal generator (e.g. PM 5326) as indicated in point 1.7 and adjust the frequency for 33.4 MHz. Tune the set in the VHF1 band at a tuning voltage of approx. 5V on pin 11 of the tuner. Select system France via the system button on the set. Connect a voltmeter to pin 21 of IC7015. Adjust 5040 for 6V (DC). Next adjust the frequency of the signal generator for 38,9 MHz. Select system Europe on the set. Adjust 5043 for 6V (DC).

#### b. Alignment for PAL BG-, PAL/SECAM BG-, PAL/SECAM BGDK- or PAL I sets

Connect a signal generator (e.g. PM 5326) as indicated in point 1.7 and adjust the frequency for 38.9 MHz (PAL I: 39.5MHz). Connect a voltmeter to pin 21 of IC7015. Adjust 5040 for 6V (DC).

#### 1.9 RFAGC

If the picture of a strong local transmitter is reproduced distorted, adjust potentiometer 3021 until the picture is undistorted.

#### 1.10 Chroma band-pass filter for PAL/SECAM sets

Connect a signal generator (e.g. PM5326) to pin 20 of the euro connector and adjust it for a frequency of 4,286 MHz. Connect pin 8 of the euro connector and pin 27 of IC7250 to pin 13 of IC7250 (+12V). Connect an oscilloscope to pin 15 of IC7250. Adjust 5259 for a maximum amplitude. Remove the interconnections.

#### 1.11 Chroma subcarrier oscillator

Apply a PAL colour-bar pattern. Interconnect pin 11 of IC7260 (TDA4510) or pin 17 of IC7250 (TDA4650) to ground. Adjust 2265 so that colour

pattern on the screen is practically stationary. Remove the interconnection.

#### 1.12 SECAM demodulators for PALISECAM sets

Apply a SECAM black pattern. Connect an oscilloscope to pin 1 of IC7250. Adjust 5320 for 0 reading. Connect the oscilloscope to pin 3 of IC7250. Adjust 3320 for 0 reading.

#### 1.13 The FM sound section

**a. General adjustments**  
Apply a PAL BG (PAL I for PAL I sets) generator signal whose sound carrier is (FM) modulated with a frequency of 1 kHz. Set the generator to the mono mode. Tune the set and select, if possible, system Europe. Adjust 5138 for maximum sound output.

#### b. Additional adjustment for PAL/SECAM BGDK sets

After the general adjustment (see point a.) put the generator in SECAM DK position. Adjust 5139 for maximum sound output.

#### 1.14 The AM sound section for PAL/SECAM BGLL'- or PAL/SECAM BGLL'I sets

Connect pin 3 of IC7125 to a fixed voltage level of +2V by means of an adjustable power supply. Connect a signal generator (e.g. PM 5326) via a condenser 5p6 to pin 17 of the tuner and adjust the frequency for 32,4 MHz. Modulate (AM) the signal with 1 kHz. Tune the set in the UHF band and select system France.

First adjust 5106 for maximum sound output. Next adjust 5104 for maximum sound output. Adjust the frequency of the signal generator for 30,9 MHz. and modulate (AM) the signal with 1 kHz. Adjust 5102 for minimum sound output. Remove the power supply connection.

### 2. Adjustments on the picture tube panel (Fig. 9)

#### 2.1 Cut-off points of picture tube

Apply a black pattern generator signal. Adjust contrast at minimum. Adjust brightness until the DC voltage across potentiometer 3213 is 0V. Adjust 3207, 3220 and 3234 for a black level of 125V on the collectors of transistors 7205, 7218 and 7227. Adjust Vg2 potentiometer until the gun that first emits light is just no longer visible. Adjust the two other guns with the respective controls (3207, 3220 or 3234) until just no light will be visible.

#### 2.2 Grey scale

Apply a test pattern signal and adjust the set for normal operation. Allow the set to warm up for about 10 minutes. Adjust 3213 and 3214 until the desired grey scale has been obtained.

Black Hibri and Black Matrix tubes for Anubis A and Anubis B  
In the 17", 20" and 21" Anubis A and Anubis B sets new dark tubes are used.  
These dark tubes do not require other electrical adaptations.

- 17" 4822 131 20597 A41 EAM 40X13
- 20" 4822 131 20605 A48 EEV 13X31
- 21" 4822 131 20588 A51 EAM 50X45

#### List of Error Messages

Error Message	Error Description	Possible Defective Component
Flashing LED	Internal µC error	IC7600
F2 + Flashing LED	EEPROM error	IC7685

### 2. Error codes Anubis A

In the service manual Anubis AAC error code 3 is not published. The error codes should be:

Error code	Error message	Error description	Possible defective component
1	OSD: E1 LEO: ON/OFF ratio 1:1	Internal RAM error	IC7600
2	OSD: E2 LEO: ON/OFF ratio 2:1	EEPROM error	IC7685
3	OSD: E3 LED: ON/OFF ratio 3:1	TXT error	IC7700 or IC7702

### 3. Main carrier .2 PWB for Anubis A

Anubis A sets with production code PM 11 and QG11 are provided with a .2 PWB main carrier. This carrier implies the following changes:

#### Black stability improvement circuitry (Fig. 1)

Compensation of the grey scale at contrast changes by adapting the +160 by:  
- a new LOT (no winding any more between pin 7 secondary side and pin 2 primary side)  
- a new driving circuitry at pin 2 of the LOT. If CONTRAST ↑ → Beam current ↑ → EHT ↓ → +160 Difference Vgt and cathode of gun ↓ → Brightness ↑ . So if contrast up automatically the brightness goes up, so stable grey scale.

#### Different LOT windings

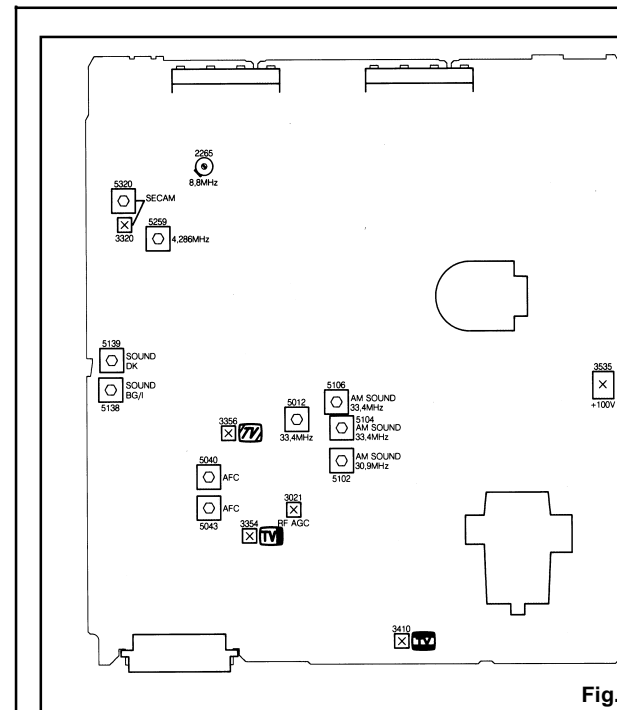
The LOT in a .2 main carrier PWB can be provided with 2 different winding configurations:  
- if black stability circuitry, then a winding between pin 7 and 3 at the secondary side (as published in service manual Anubis A AC)  
- if no black stability circuitry, then a winding between pin 7 secondary side and pin 2 primary side. Both configurations can be used in the .2 main carrier PWB. In case the LOT is replaced by a LOT of the other type, the CRT panel, the focus and the Vg2 have to be readjusted.

#### Sandcastle signal of the delay line IC7221 (left top part of Fig. 2)

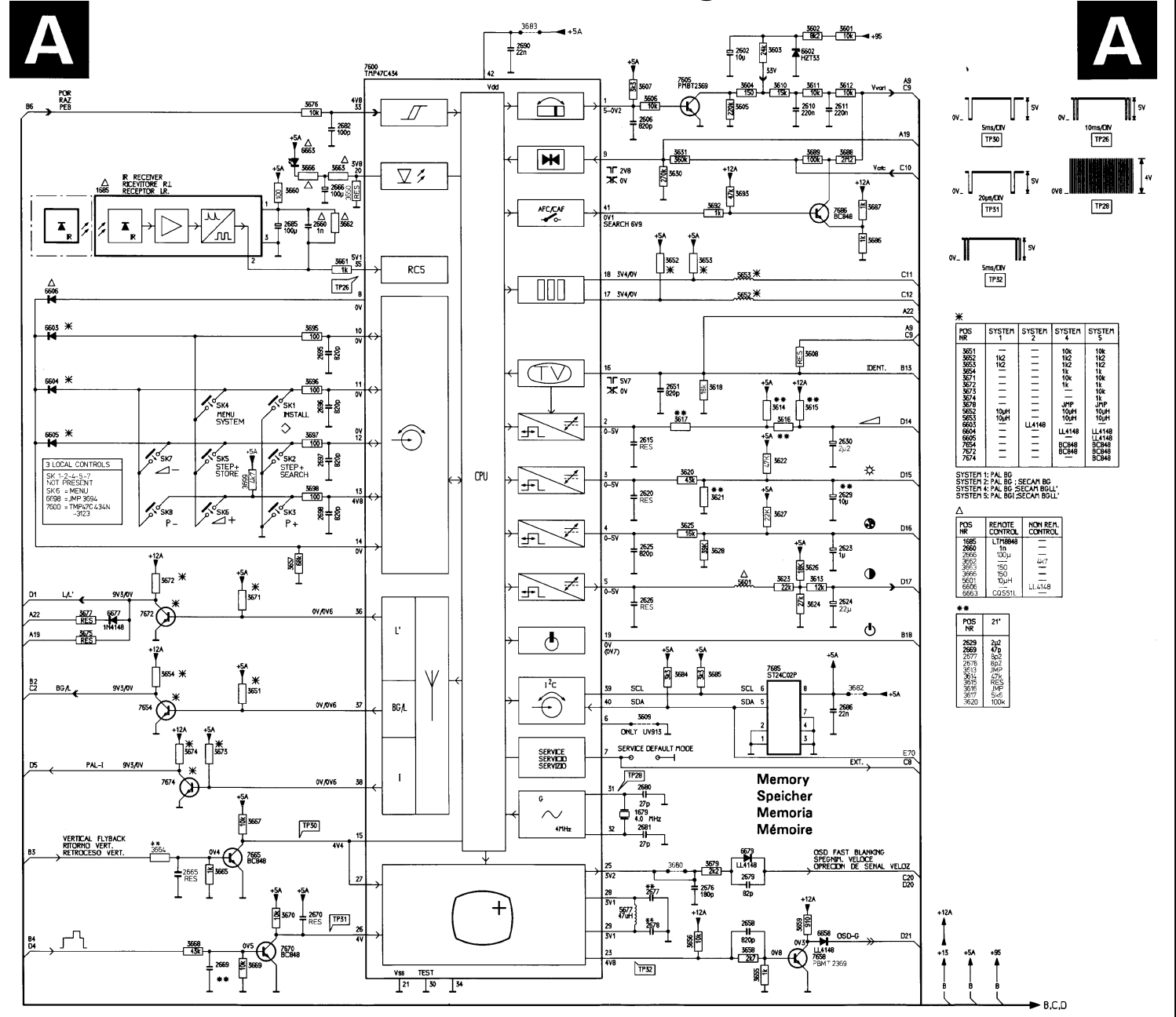
The adapted circuitry optimizes the detection of the line time base component of the sandcastle signal at pin 5 of delay line IC7221.

#### VCR identification (Fig. 4)

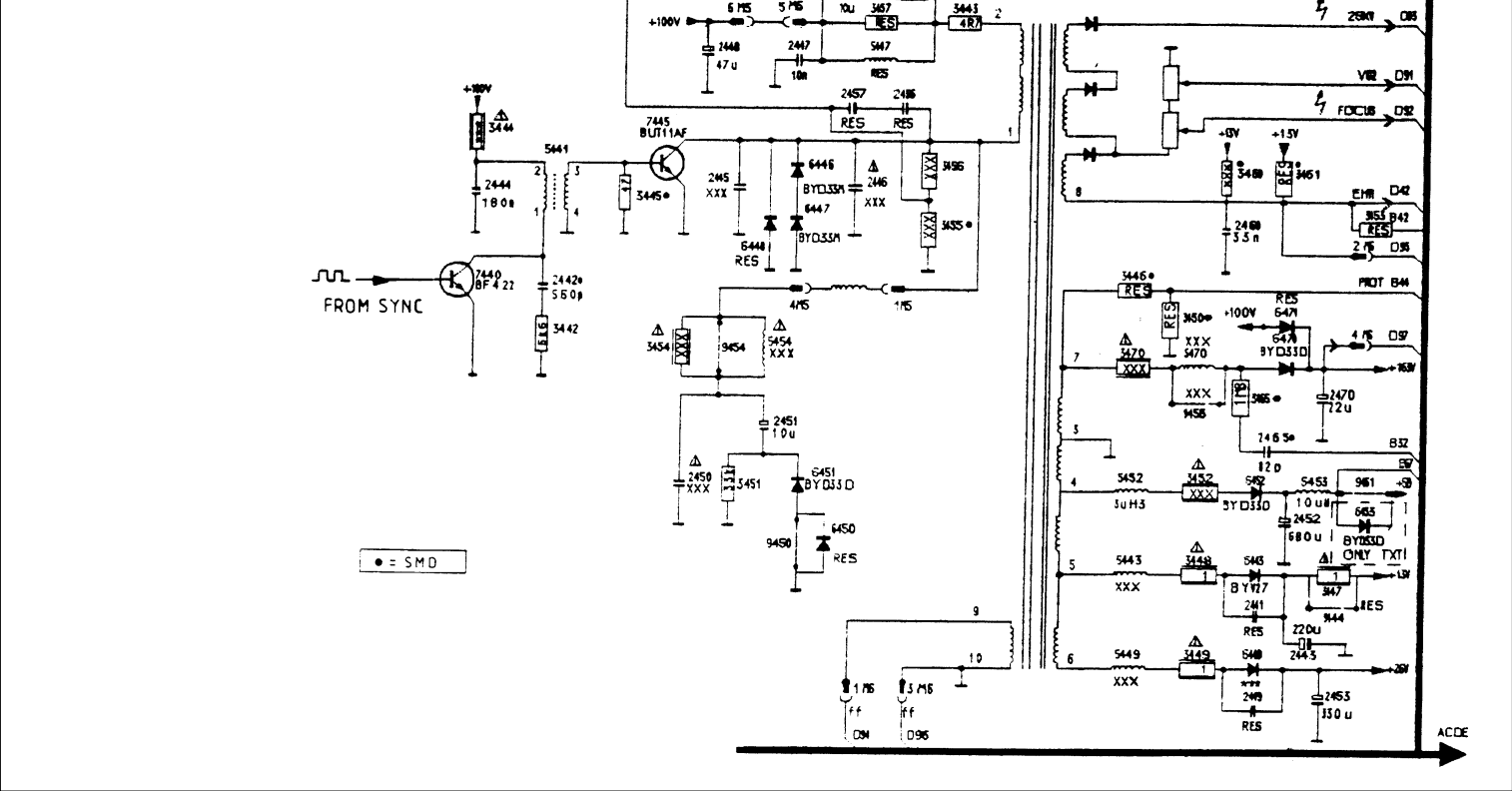
**Function:** Keep DENT present during VCR play back after switching off and on the TV-set again.  
**Operation:** The AEC at pin 21107015 is kept at a voltage inside the locking range (6V9) when the TV is switched on.



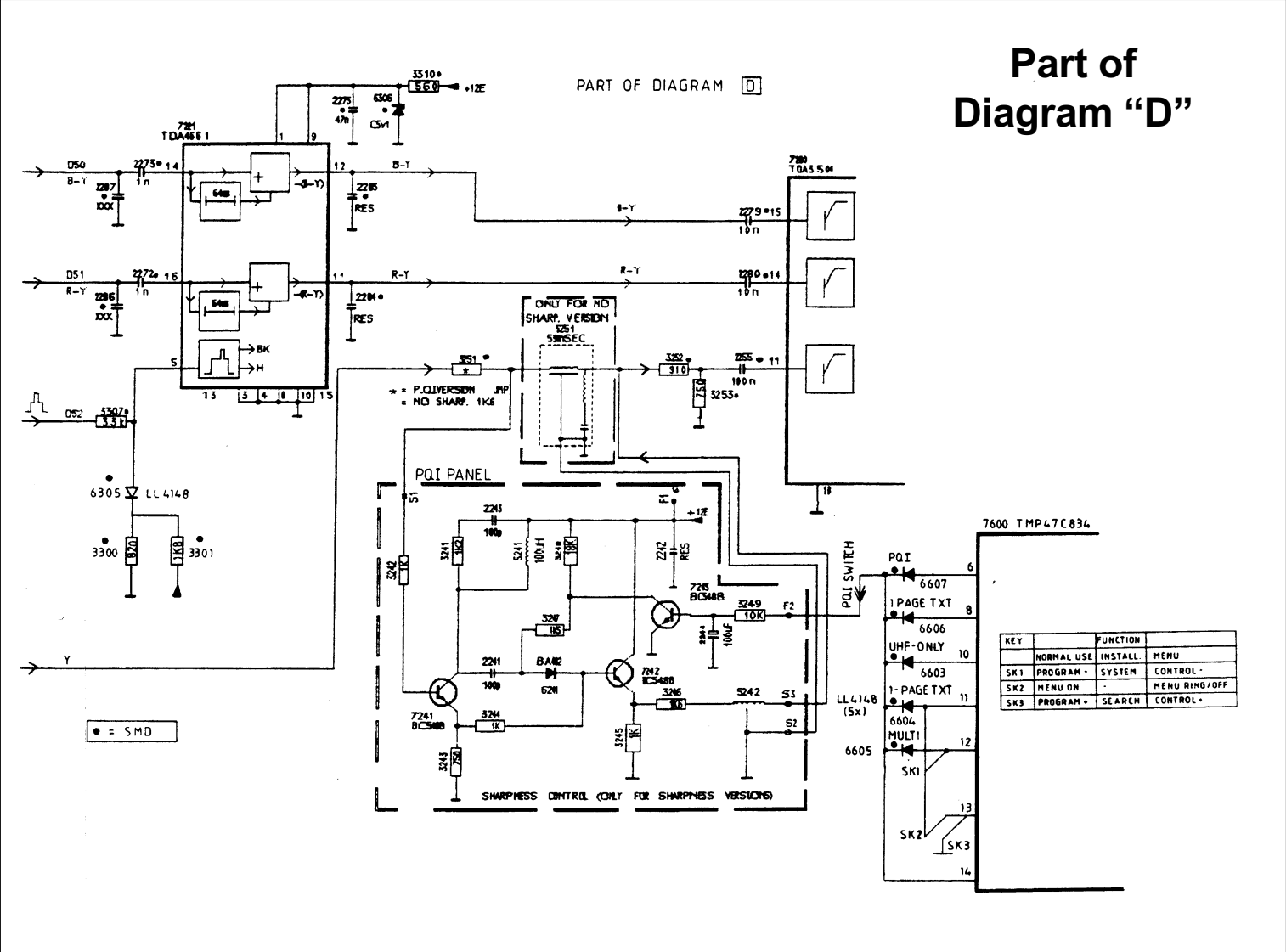
### Control PCB Diagram



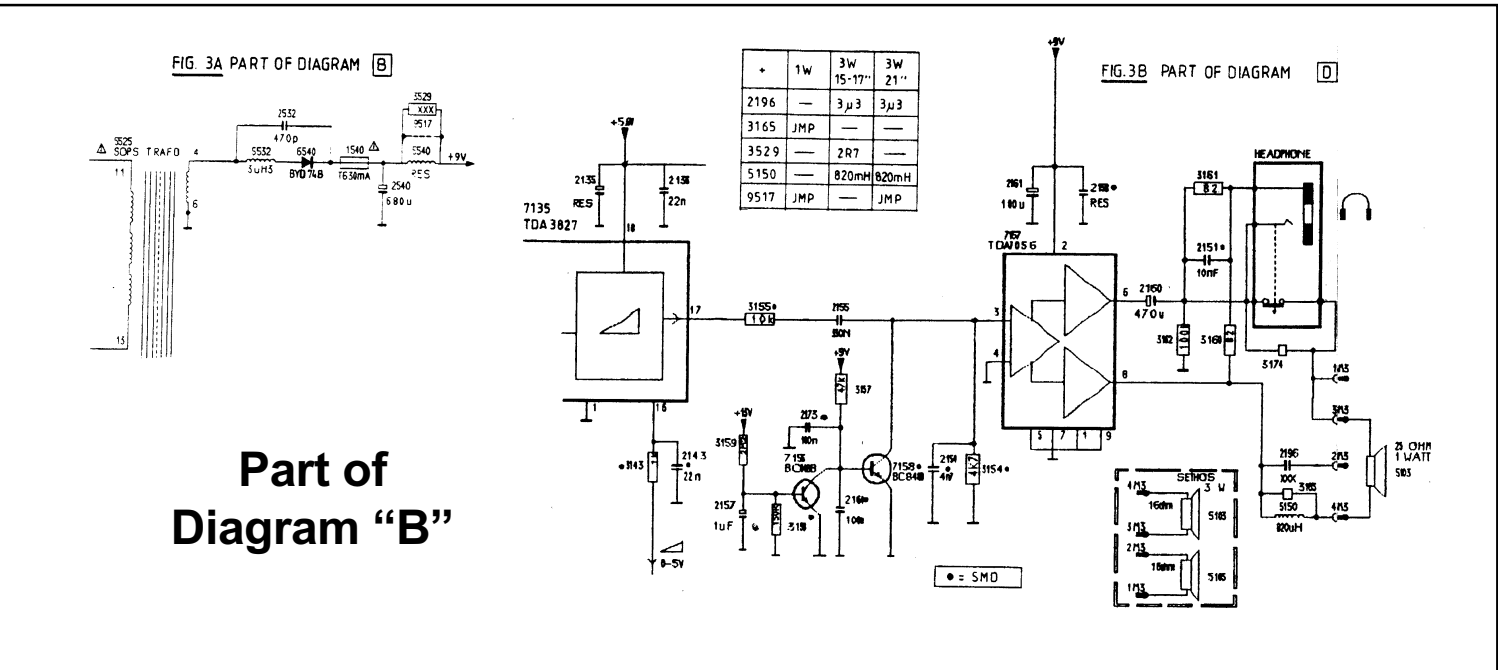
### Part of Diagram "B"



### Part of Diagram "D"

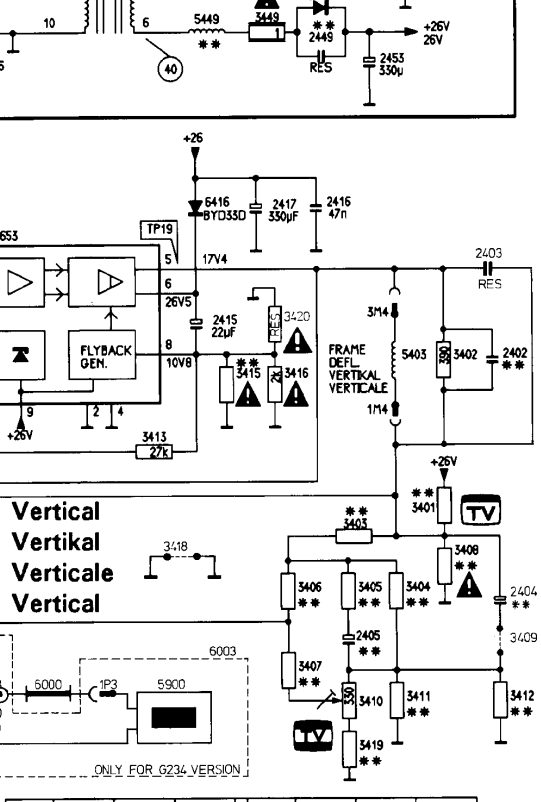
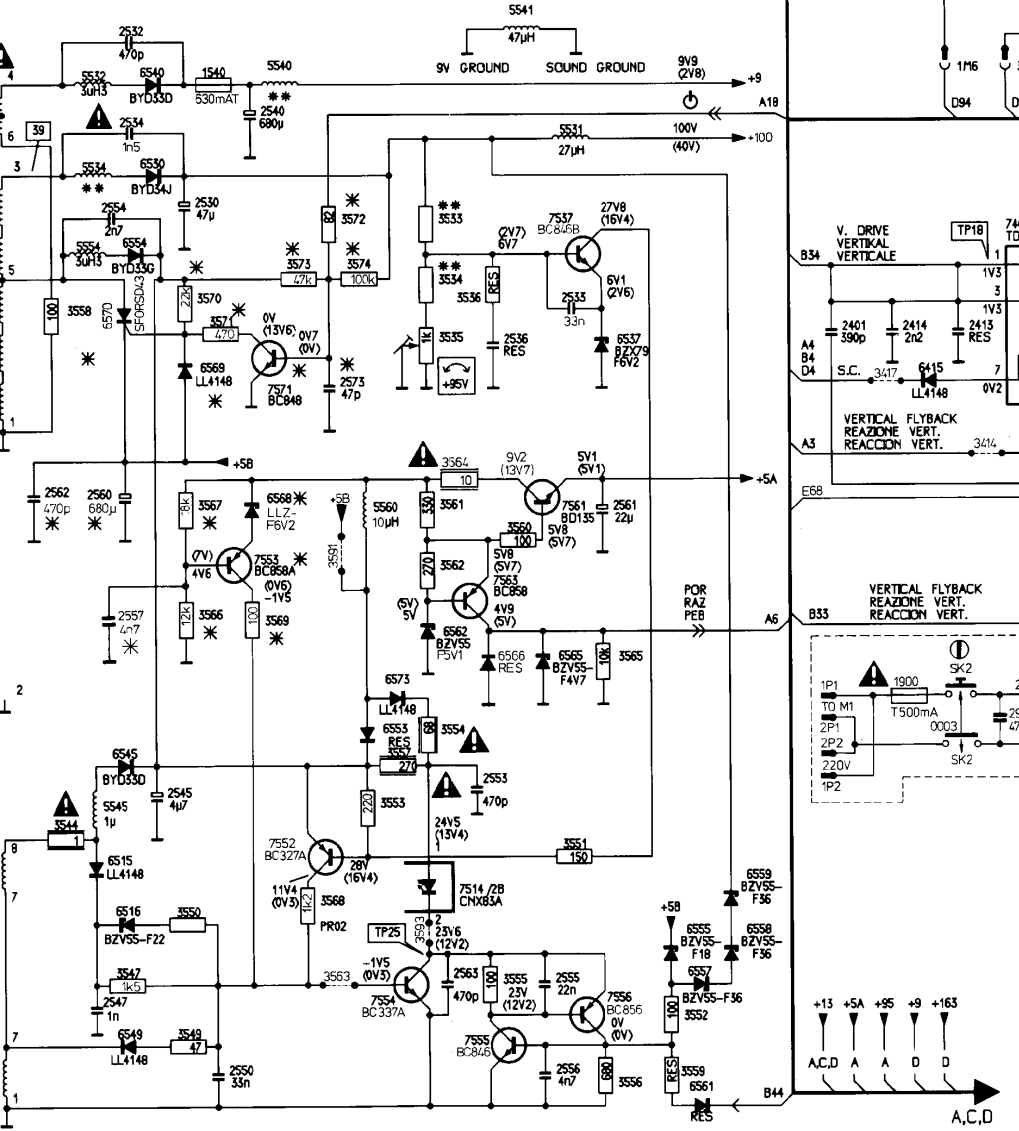
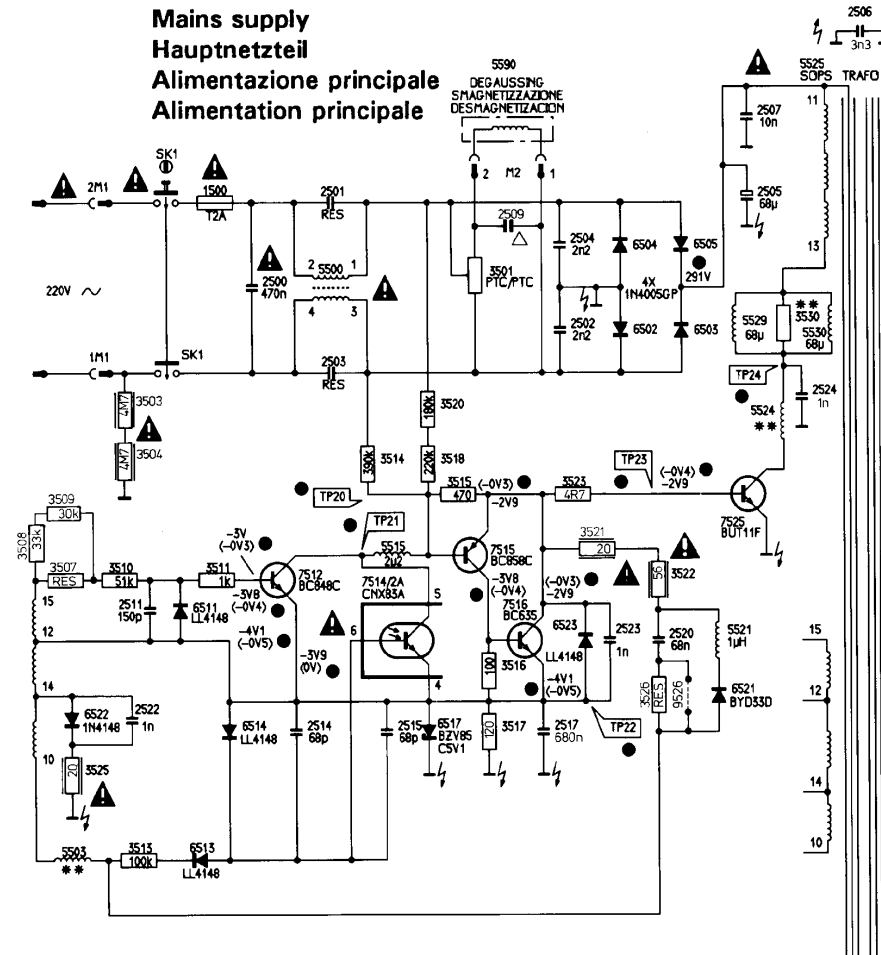
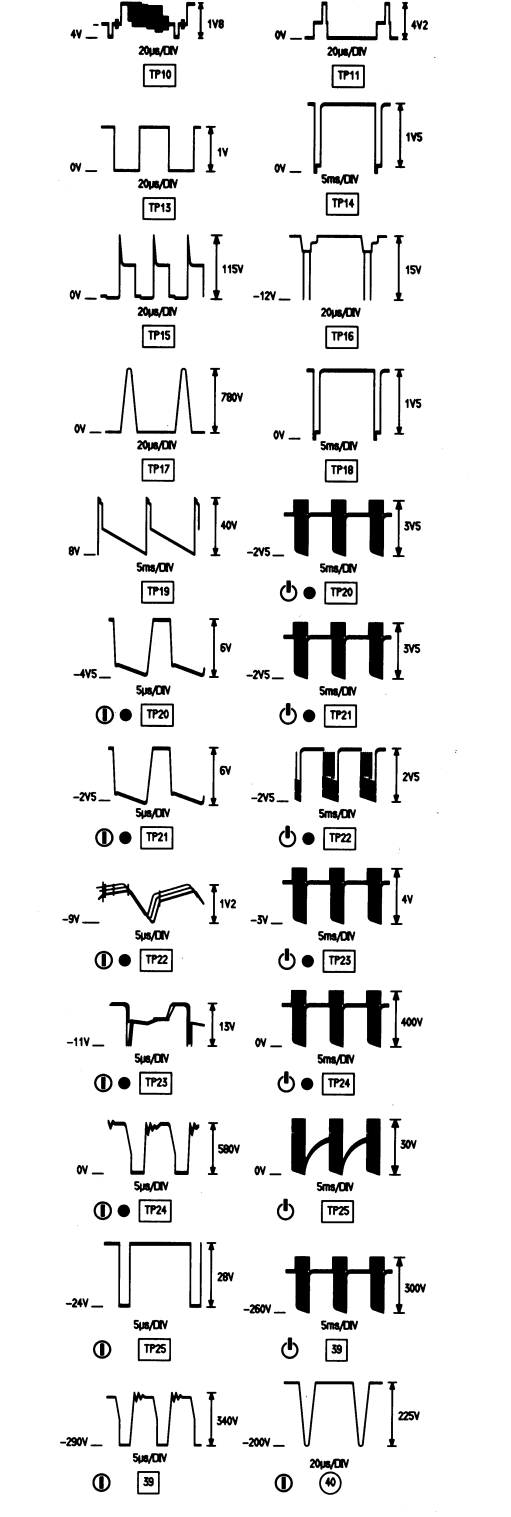
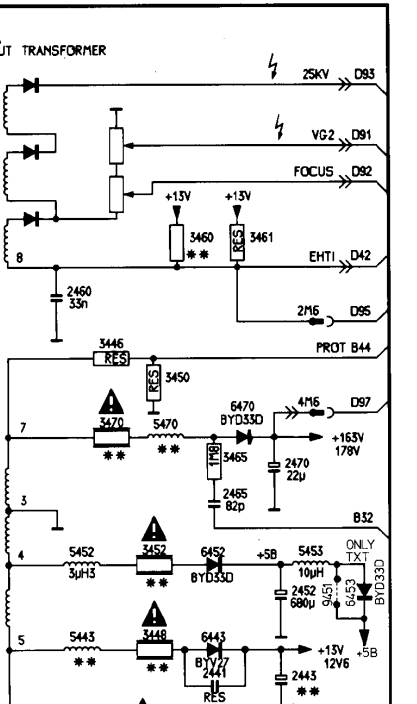
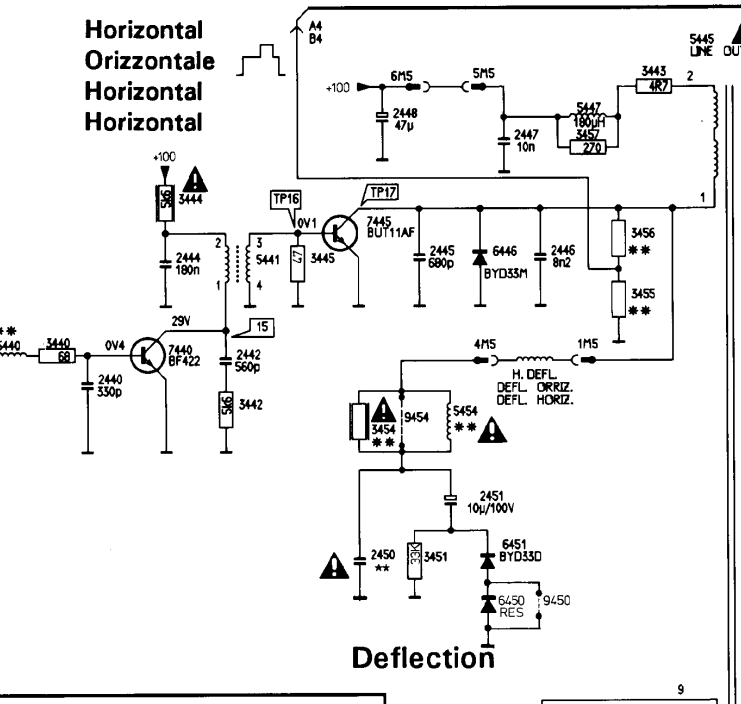
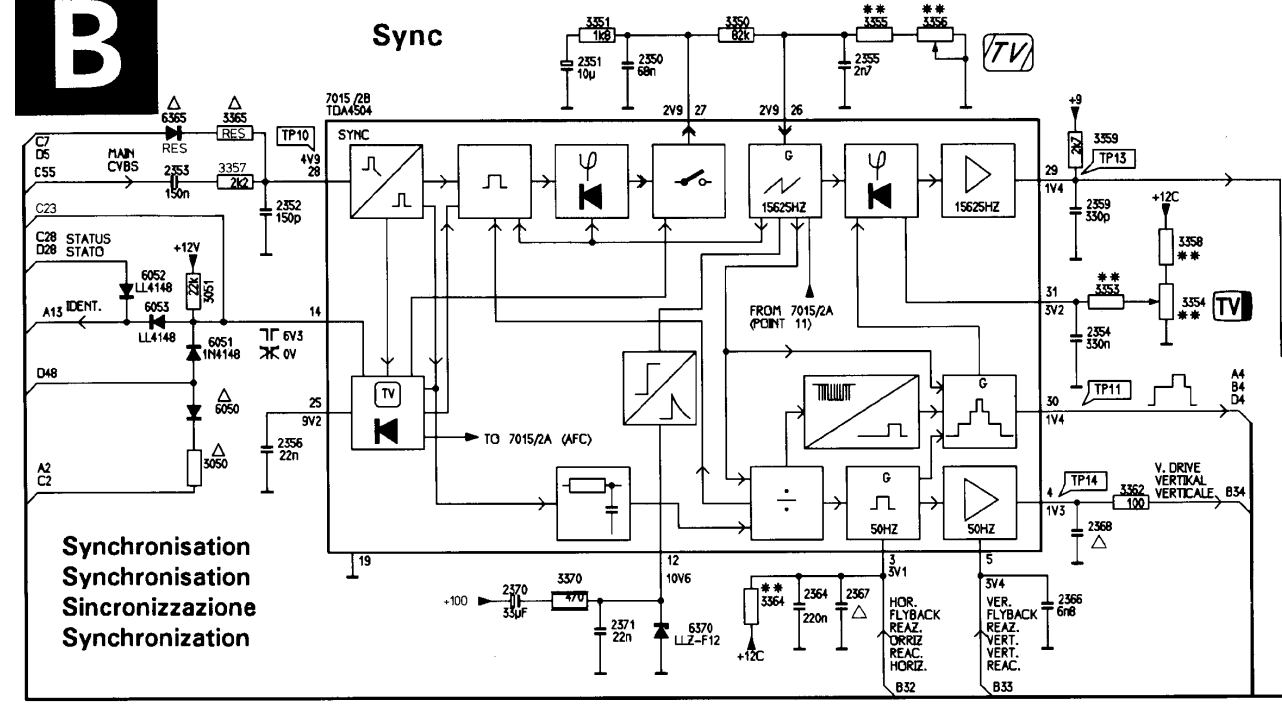


### Part of Diagram "B"



## Power Supply Diagram

### B



#### Power supply

POS NR	PAL-B/G AMTS BL	PAL-SEC B/G-LL	PAL-SEC I-B/G-LL
2367	10n	—	—
2368	10n	—	—
2369	2n2	—	—
3050	—	3k3	3k3
3365	RES	2M2	2M2
6050	—	1N4148	1N4148
6365	RES	LL4148	LL4148

ONLY FOR REMOTE CONTROL SETS SOLO R1

MEASURED IN RESPECT TO MISURATO NEI CONFRONTI

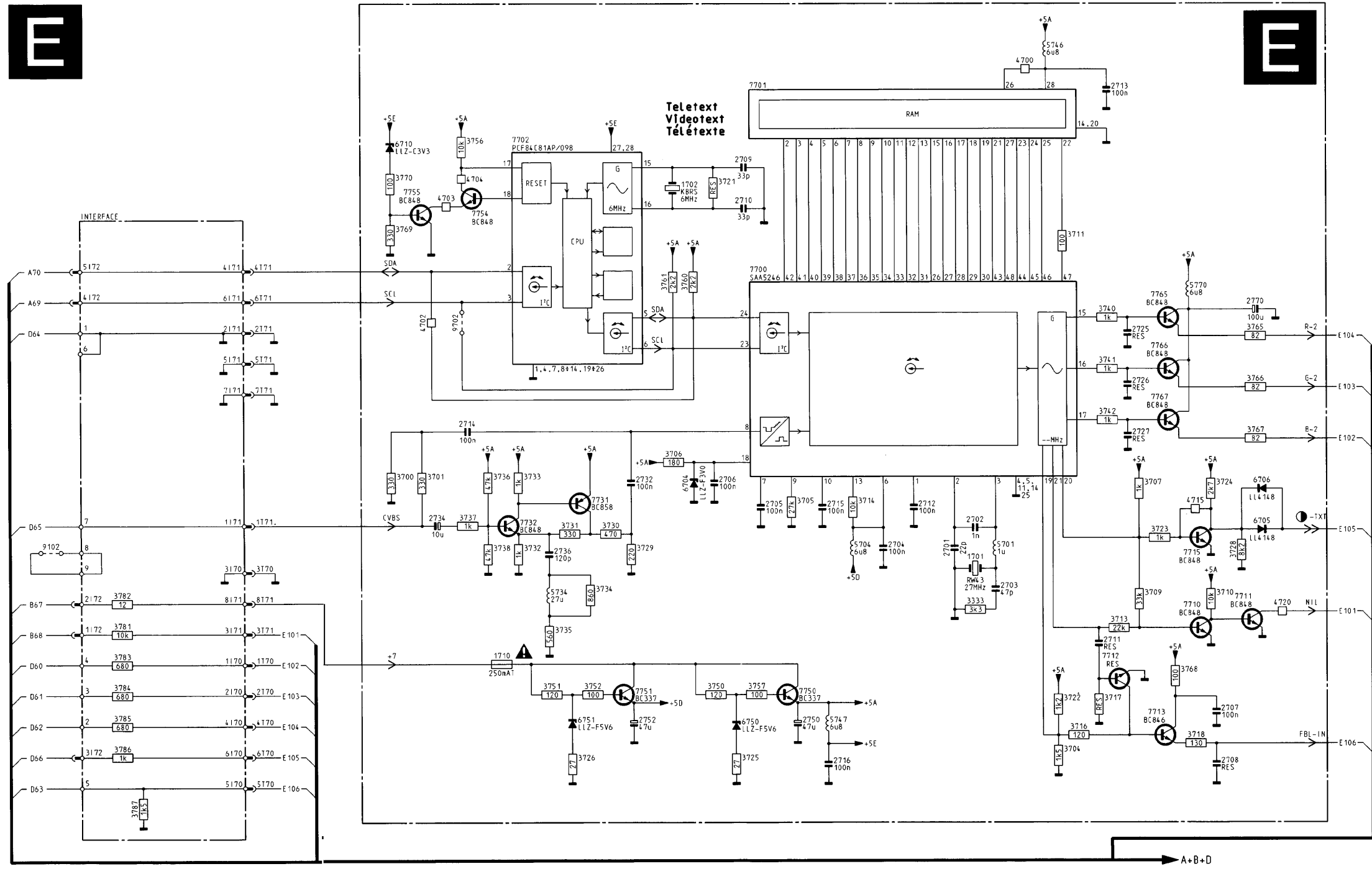
**	14*	15/17*	21*	**	14*	15/17*	21*
2402	47k	47n	100n	3445	68R	68R	47R
2404	1500u	1500u	5500u	3448	10R	10R	J1P
2405	22u	22u	10u	3452	10R	10R	15R
2443	220u	220u	470u	3454	180	180	180
2450	560n	330n	470n	3455	18k	18k	12k
2517	680n	1u	3456	430k	430k	330k	330k
3353	47k	47k	52k	3460	11k	11k	10k
3354	100k	100k	22k	3470	487	487	862
3355	27k	27k	30k	3517	120	120	68R
3356	10k	68R	3530	270	270	180	180
3358	100k	100k	43k	3535	487	487	47k
3364	350k	350k	350k	3534	3k5	3k5	3k0
3401	2k4	2k4	3402	22u	22u	J1P	J1P
3403	3k3	3k3	3k0	3403	10u	10u	J1P
3404	2k0	2k4	4k3	3449	47u	47u	J1P
3405	150	150	15R	3454	UNCOR.	UNCOR.	J1P
3406	12k	15k	18k	3470	10u	10u	J1P
3407	18k	22k	18k	3503	4u7	4u7	J1P
3408	2k4	2k4	680	3521	1u0	1u0	J1P
3411	48.3	3R6	2R0	3524	1u0	1u0	J1P
3412	48.3	2R7	2R7	3534	5u5	5u5	J1P
3415	2k0	2k0	1k5	3540	47u	47u	J1P
3419	J1P	J1P	100	6449	BYD33D	BYD33D	8Y268

**SOPS REPAIR KIT**

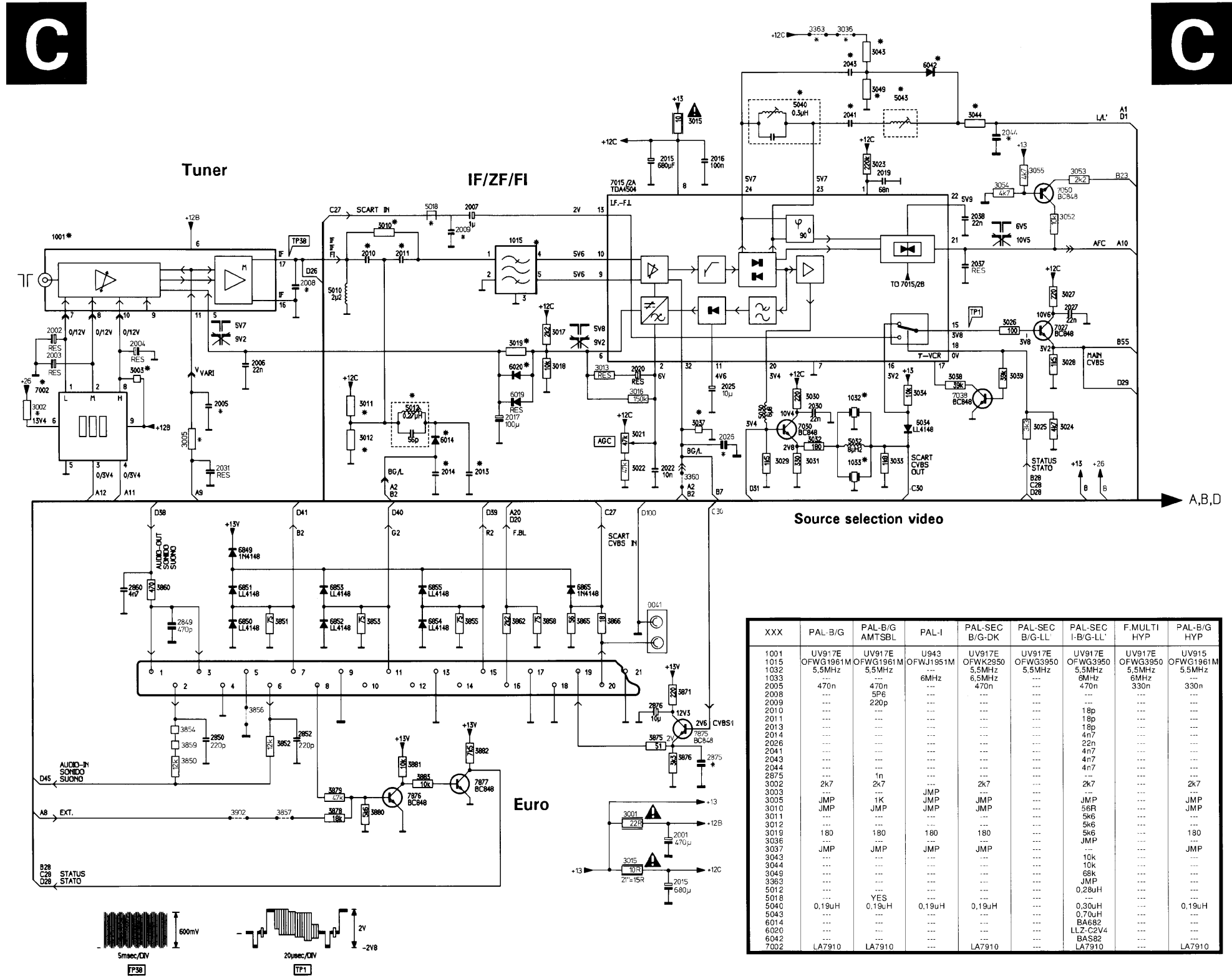
SBC 7021  
4822 310 20491

1500	6517
6502	6523
6503	7512
6504	7514
6505	7515
6511	7516
6513	7525
6514	

Teletext Diagram



Tuner IF Diagram



XXX	PAL-B/G	PAL-B/G AMTSBL	PAL-I	PAL-SEC B/G-DK	PAL-SEC B/G-LL	PAL-SEC I-B/G-LL'	F.MULTI HYP	PAL-B/G HYP
1001	UV917E	UV917E	U943	UV917E	UV917E	UV917E	UV917E	UV915
1015	OFWG1981M	OFWG1981M	OFWJ1951M	OFWK2950	OFWG3950	OFWG3950	OFWG3950	OFWG1981M
1032	5.5MHz	5.5MHz	...	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz
1033	...	...	6MHz	6.5MHz	...	6MHz	...	...
2005	470n	470n	...	470n	...	470n	330n	330n
2008	...	5pF	...	...	...	...	...	...
2009	...	220p	...	...	...	...	...	...
2010	...	10µ	...	...	...	...	18p	...
2011	...	...	...	...	...	...	18p	...
2013	...	...	...	...	...	...	18p	...
2014	...	...	...	...	...	...	4n7	...
2026	...	...	...	...	...	...	22n	...
2041	...	...	...	...	...	...	4n7	...
2043	...	...	...	...	...	...	4n7	...
2044	...	...	...	...	...	...	4n7	...
2875	2k7	1n	...	2k7	...	...	2k7	2k7
3003	...	...	JMP	...	...	...	...	...
3005	JMP	1K	JMP	JMP	...	JMP	...	JMP
3010	JMP	JMP	JMP	JMP	...	56R	...	JMP
3011	...	...	...	...	...	5k6	...	...
3012	...	...	...	...	...	5k6	...	...
3019	180	180	180	180	...	5k6	...	180
3036	...	...	...	...	...	JMP	...	...
3037	JMP	JMP	JMP	JMP	...	...	...	JMP
3043	...	...	...	...	...	10k	...	...
3044	...	...	...	...	...	10k	...	...
3049	...	...	...	...	...	68k	...	...
3363	...	...	...	...	...	JMP	...	...
5012	...	...	...	...	...	0.28uH	...	...
5018	...	...	...	...	...	...	...	...
5040	0.19uH	0.19uH	0.19uH	0.19uH	...	0.30uH	...	0.19uH
5043	...	...	...	...	...	0.70uH	...	...
6014	...	...	...	...	...	BA682	...	...
6020	...	...	...	...	...	LL2-C2V4	...	...
6042	...	...	...	...	...	BA582	...	...
7002	LA7910	LA7910	...	LA7910	...	LA7910	...	LA7910

