



SM-142

Service Manual - SM-142

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PIN VOLTAGES OF IC'S

IC101 (TDA956X H) TV signal processor-Teletext Decoder with embedded u-Controller					
Pin	Connection	V DC (*)	Pin	Connection	V DC (*)
1	Volume +/-	3,2 (3,2)	41	Gnd for TV processor	0 (0)
2	Status 1	0 (0)	42	External CVBS input	0 (0)
3	Status 2	0 (0)	43	Gnd for TV processor	0 (0)
4	Digital ground for u-controller	0 (0)	44	SVHS-Y input	3.35 (0)
5	Not connected	0.75 (0.25)	45	SVHS-C input	0 (0)
6	Standby on/off	0.01 (3.9)	46	White stretch capacitor	3.4 (0)
7	Analog Gnd of text decoder and dig Gnd of TV processor	0 (0)	47	CVBS output	2.8 (0.07)
8	Secam PLL decoupling	2.3 (0)	48	Audio output/AM audio output	3.45 (0)
9	2nd supply voltage TV proc (8V)	8.0 (0.26)	49	2nd IF video output (not conn.)	
10	Supply volt.deccoup. of dig. Gnd of TV processor	5.0 (0)	50	2nd RGB / YUV insertion input	0.17 (0)
11	Phase 2 filter	2.73 (0)	51	Red input	2.6 (0)
12	Phase 1 filter	3.9 (0)	52	Green input	2.6 (0)
13	Gnd 3 for TV processor	0 (0)	53	Blue input	2.6 (0)
14	Decoupling bandgap	4.0 (0)	54	Beam current limiter input	2.6 -3.4 (0)
15	AVL (90 versions) / East/West drive signal (110 versions)	3.0 (0.5)	55	Black current input / V-guard input	4.6-5.7 (0)
16	V-drive B output	1.0 (0)	56	Red output	see oscilog.
17	V-drive A output	1.0 (0)	57	Green output	see oscilog.
18	IF-1 input	1.87 (0)	58	Blue output	see oscilog.
19	IF-2 input	1.87 (0)	59	Analog supply of text decoder and dig.supply of TV proc (3.3V)	3.3 (3.3)
20	Reference current input	3.9 (0)	60	OTP programming voltage	0 (0)
21	Vertical sawtooth capacitor	3.8 (0)	61	Dig. Supply to core (3.3V)	3.3 (3.3)
22	Tuner AGC output	4.3 (0)	62	X-tal Gnd	0 (0)
23	Sound IF input 1	1.9 (0)	63	X-tal input	
24	Gnd	0 (0)	64	X-tal output	
25	Gnd	0 (0)	65	Programming Reset (not connected)	0 (0)
26	Narrow band PLL filter	2.2 (0)	66	Dig. Supply to periphery (3.3V)	3.3 (3.3)
27	AVL (Automatic Vol. Levelling)	0.42 (0.08)	67	SCL1 (Eeprom)	3.3 (3.3)
28	Ext. Audio (audio 2) input	3.73 (0.08)	68	SDA1 (Eeprom)	3.3 (3.3)
29	Audio 3 input (not connected)	3.73 (0.09)	69	IR input	3.3 (3.3)
30	H-drive output	2.33 (0.26)	70	Not connected	
31	Sandcastle output-Hor.Fly.input	0.56 (0.25)	71	SCL	see oscilog.
32	Decoupling sound demodulator	2.0 (0)	72	SDA	see oscilog.
33	QSS intercarrier output / AM output	3.43 (0.3)	73	MSP reset (IC301)	4.9 (0)
34	EHT / overvoltage protection input	2.2 (0.08)	74	Mute	0 (3.3)
35	IF-PLL loop filter	2.45 (0)	75	SVHS switching	3.3 (3.3)
36	Sound IF AGC	0.5 (0)	76	L/L' switching	3.3 (3.3)
37	QSS output	0.6 (0)	77	F Blank MM Not conn.	3.3 (3.3)
38	IF video / selected CVBS output	3.0 (0)	78	Program +	3.3 (3.3)
39	main supply voltage TV processor	8.0 (0.25)	79	CVBS sync filter	3.3 (1.8)
40	Internal CVBS input	3.8 (0)	80	Program -	3.3 (3.3)

(*) Standby values are given in parenthesis

Note: The function of pin 15, 27, 33 and 48 is dependent on the mode of operation (mono intercarrier mode / QSS IF amplifier and East-West output or not) and is controlled by some software control bits.

IC 301- MULTI STANDARD SOUND PROCESSOR (MSP 3400D)					
Pin	Connection	V DC	Pin	Connection	V DC
1	Not connected		33	Scart 2 sound output (R)	3.7
2	Gnd	0	34	Scart 2 sound output (L)	3.7
3	Gnd	0	35	Gnd	0
4	Gnd	0	36	Scart 1 sound output (R)	3.7
5	Gnd	0	37	Scart 1 sound output (L)	3.7
6	Gnd	0	38	Volume capacitor Main	
7	Supply	4.9	39	Analog Supply	8
8	Supply	4.9	40	Volume capacitor Aux	
9	SCL	2.4-2.6	41	Gnd	0
10	SDA	1.8-2.1	42	Analog ref. supply	3.7
11	Not connected	2.4	43	Scart 4 input (L)	3.7
12	Not connected	2.4	44	Scart 4 input (R)	3.7
13	Not connected	2.4	45	Gnd	0
14	Not connected	4.9	46	CINCH - sound input (L)	3.7
15	Not connected	0.7	47	CINCH - sound input (R)	3.7
16	Not connected	0.7	48	Gnd	0
17	Not connected	0.7	49	Scart 2 sound input (L)	3.7
18	Supply	4.9	50	Scart 2 sound input (R)	3.7
19	Gnd	0	51	Gnd	0
20	Not connected	0.7	52	Scart 1 input (R)	3.7
21	Gnd	0	53	Scart 1 input (L)	3.7
22	Gnd	0	54	A/D converter ref. Voltage	2.5
23	Gnd	0	55	Mono sound input	3.7
24	MSP, RESET	4.9	56	Gnd	0
25	Headphone sound output (R)	2.1	57	Analog Supply	4.9
26	Headphone sound output (L)	2.1	58	IF input 1	1.5
27	Gnd	0	59	-	1.5
28	R-out	0.1-2.1	60	IF input 2	0
29	L-out	0.1-2.1	61	Gnd	0
30	Dolby on (C)	0.1-2.1	62	Crystal oss. input	2.3
31	Dolby on (SUB)	0.1-2.1	63	Crystal oss. output	2.3
32	Dolby on (S)	0	64	Gnd	0

IC303, IC304 Audio Output IC					
Pin	Connection	V DC	Pin	Connection	V DC
1	Left In	1.6	7		0,5-0,9
2	Left In V	1.6	8	Right out	14.2
3	Mute	15.3	9	VS	28
4	Right In V	1.6	10	Left out	13.9
5	Right In	1.6	11		0,5-0,9
6	Gnd	0	12	Left In	0.6

IC501 TDA835X					
Pin	Connection	V DC	Pin	Connection	V DC
1	Input A	0,98 (0)	6	Vertical Flyback Supply Voltage	45,6 (10,9)
2	Input B	0.94 (0)	7	Output A	7,64 (0,1)
3	Supply voltage	14,7 (1.0)	8	Guard Output	0,3 (0)
4	Output B	7,55 (0,4)	9	Feedback Input	7,9 (0)
5	Gnd	0 (0)			

IC601 MC44608 AP					
Pin	Connection	V DC	Pin	Connection	V DC
1	Demag	0.85 (0.0)	5	Driver	2.1 (0.14)
2	I sense	0.1 (0.32)	6	VCC	12.3 (8.8)
3	Control input	5 (5.5)	7	Not connected	-
4	Gnd	0	8	VI	116 (117)

(*) Standby values are given in parenthesis

IC701 TDA6107					
Pin	Connection	V DC	Pin	Connection	V DC
1	Red in	2.3-2.5	6	Vdd supply	190
2	Green in	2.5-2.7	7	Red out	134-137
3	Blue in	2.5-2.7	8	Green out	128-130
4	Gnd	0	9	Blue out	130-137
5	Black	4.5-5.5			

PIN VOLTAGES OF SOME TRANSISTORS

1. PH601 (PC127FY) PHOTOCOUPLER

Pin	Standby VDC	ON VDC
1	12.5	11
2	11.5	10
3	5.5	5
4	8.8	12.3

2. T603 (BC848) NPN

	Standby VDC			TV ON VDC		
	B	C	E	B	C	E
T603	0.6	0.02	0	0.1	0.3	0

3. T604 (BC848) NPN

	Standby VDC			TV ON VDC		
	B	C	E	B	C	E
T604	0.02	12.7	0	0.7	0.05	0

4. T605 (BC848) NPN

	Standby VDC			TV ON VDC		
	B	C	E	B	C	E
T605	0.6	0.02	0	0.1	0.7	0

5. T606 (BC848) NPN

	Standby VDC			TV ON VDC		
	B	C	E	B	C	E
T606	0.6	0	0	1	6.8	0

6. T607 (BC848) NPN

	Standby VDC			TV ON VDC		
	B	C	E	B	C	E
T607	0.6	0	0	0.1	2.5	0

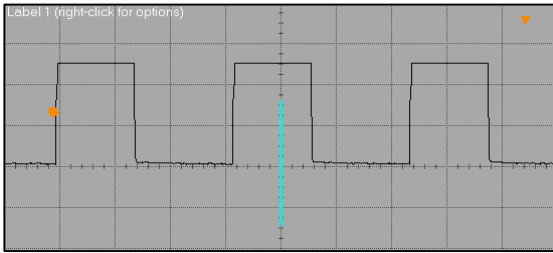
7. T307 (BC848) NPN

	Standby VDC			TV ON VDC		
	B	C	E	B	C	E
T307	0.6	0	0	0.1	15	0

OSCILLOGRAPHS OF SOME IC PINS

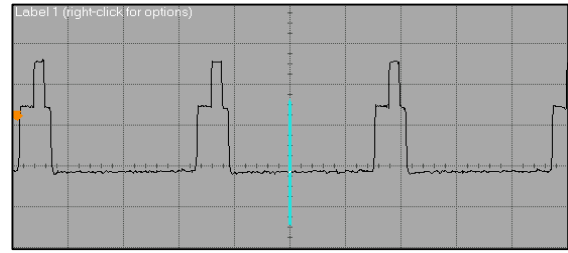
Note: TV is connected to a pattern generator (Colour bar, sound 1 kHz).

1. IC101 (TDA956X)



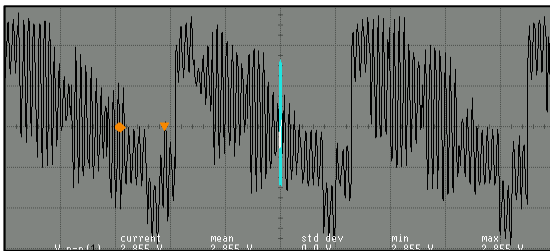
Pin 30

2V/div, 20 usn/div, Vpp=4.9 V, 15625 kHz



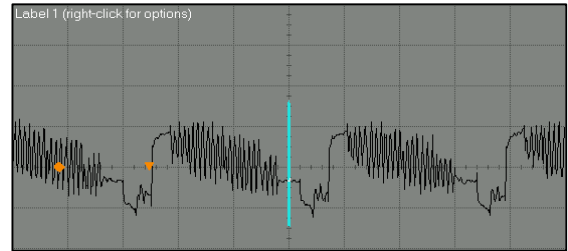
Pin 31

2V/div, 20 usn/div, Vpp=5.6 V, 15625 kHz



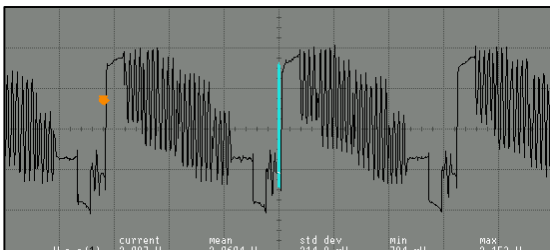
Pin 38

2V/div, 20 usn/div, Vpp=2.9 V, 15625 kHz



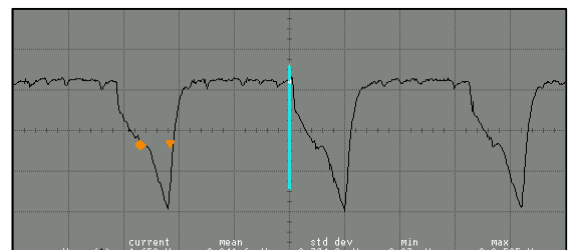
Pin 40

500 mV/div, 20 usn/div, Vpp=1.2 V, 15625 kHz



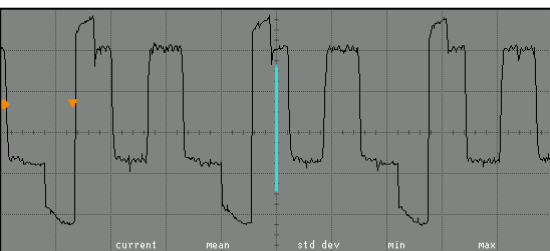
Pin 47

500 mV/div, 20 usn/div, Vpp=2.1 V, 15625 kHz



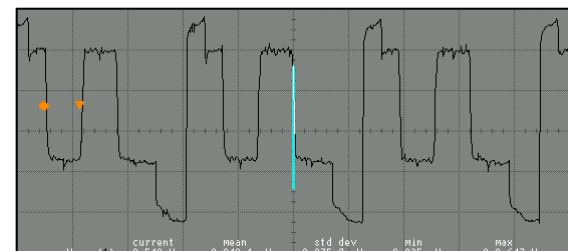
Pin 55

500 mV/div, 20 usn/div, Vpp=1.65 V, 15625 kHz



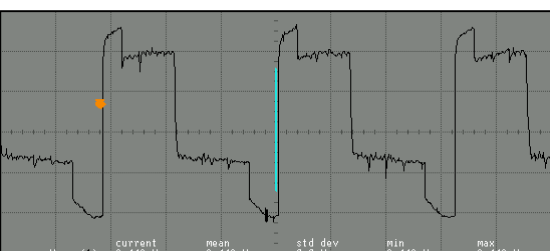
Pin 56

500 mV/div, 20 usn/div, Vpp=2.7 V, 15625 kHz



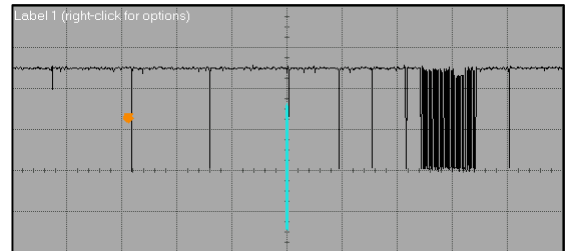
Pin 57

500 mV/div, 20 usn/div, Vpp=2.6 V, 15625 kHz



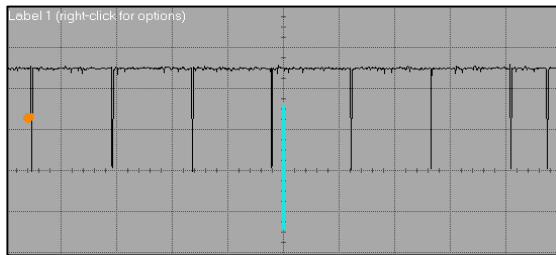
Pin 58

500 mV/div, 20 usn/div, Vpp=2.4 V, 15625 kHz



Pin 71

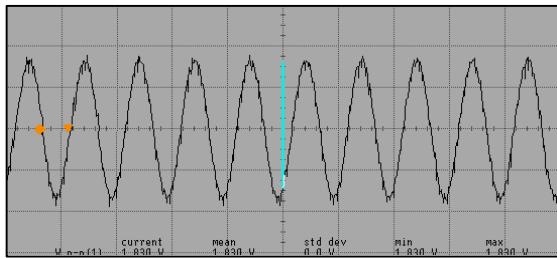
2 V/div, 1 msn/div, Vpp=5.2 V



Pin 72

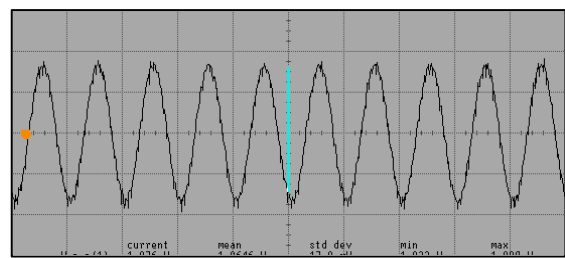
2 V/div, 1 msn/div, Vpp=5.2 V

2. IC301 (MSP34XX)



Pin 28

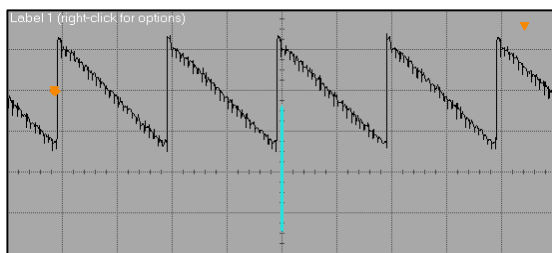
500 mV/div, 1 msn/div, Vpp=1.8 V



Pin 29

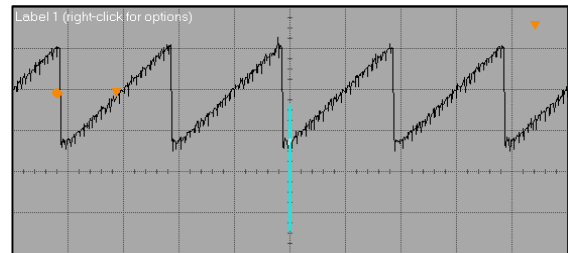
500 mV/div, 1 msn/div, Vpp=1.8 V

3. IC501 (TDA835X)



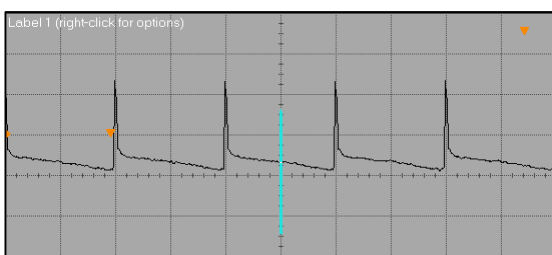
Pin 1

500 mV/div, 10 msn/div, Vpp=1.4 V, 50Hz



Pin 2

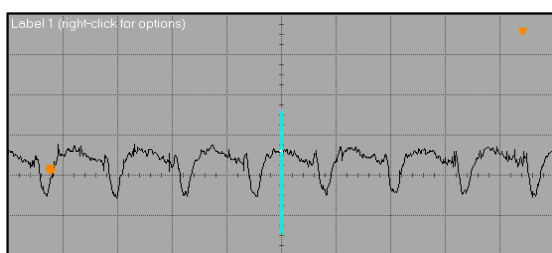
500 mV/div, 10 msn/div, Vpp=1.4 V, 50Hz



Pin 7

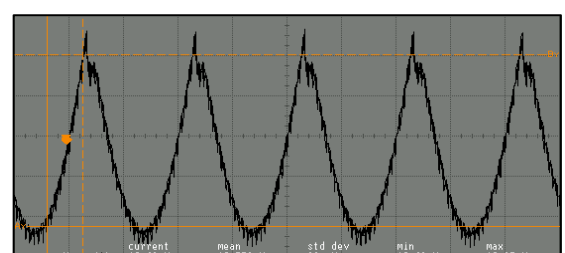
500 mV/div, 10 msn/div, Vpp=44.6 V, 50Hz

4. T501 (2SK2381)



Gate (EW drive)

200 mV/div, 50 usn/div, Vpp=268 mV, 15625 Hz



Drain (EW drive)

2 V/div, 10 usn/div, Vpp=10.7 V, 50 Hz

1. ELECTRICAL ADJUSTMENTS

1.1. Supply Voltage Adjustment

Connect a digital voltmeter to the cathode of diode D611 at the AV1 mode of the TV and set the screen voltage to the minimum with the screen potentiometer. Adjust the main supply voltage (B+) with P601 potentiometer to the following value (after adjustment, readjust Screen voltage).

25"	: 145 VDC
28"	: 145 VDC (147 VDC for A66EAK071X11)
28" Pure Flat 16/9	: 140 VDC
28" Super Flat 16/9	: 140 VDC
29" Pure Flat	: 125 VDC
29" Super Flat	: 125 VDC
32" Pure Flat 16/9	: 140 VDC
32" Super Flat 16/9	: 131 VDC
33"	: 158 VDC

2. SERVICE ADJUSTMENTS

You need the special service remote control to enter and exit the service menu of the TV (you can order it from the manufacturer). All buttons of the Service RC are same with the user remote control, only service menu In / Ot was added to it (please see the picture below).

Navigation

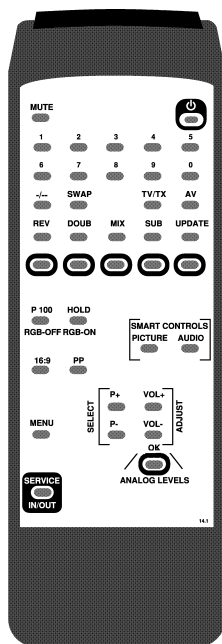
Service In/Out : Enters to / exits from the Service Menu

P+ / P- : Moves upward / downward inside the menu

V+ / V- : Changes the value or option

Green & Red : For screen adjustment (pls see the explanation below)

OK : Changes the brightness, contrast values to 00, 3F and preset values sequentially (Its OSD is shown). When P+ / P- buttons pressed the service menu is re shown.



2.1. AGC Adjustment

Apply a signal with amplitude 65 ± 1 dBuV to the antenna input of TV with a pattern generator (switch sound carrier to Off and switch "Video Ext" to On). Switch on the Service Menu with the Service RC and find the AGC with P+ / P- buttons. Measure the 38.9 MHz signal on pin 11 (IF) of Tuner with an oscilloscope. Adjust AGC to get following values:

BG versions : 840 ± 20 mVpp

BG/DK NICAM : 540 ± 20 mVpp

2.2. Geometry Adjustments

- Apply a FUBK or Philips Test pattern.
- Enter Service Menu with Service RC and select "VSLP" option with P+ / P- buttons (In this option, the upper half part of the pattern is shown and lower half part is blanked).
- Adjust VSLP such that middle line of the pattern is cut.
- For 16/9 sets, adjust VZOM to 25. On 4/3 sets, when VZOM is selected, set switches to 16/9 mode. In this case, adjust the circle of the pattern just touches to the upper and lower edges. Re adjust the VSLP if required.
- Adjust vertical position with VSHT, vertical linearity with SCOR and vertical height with VAMP.
- For 4/3 sets, adjust the horizontal amplitude with EWW.
For 16/9 sets, adjust the 16/9 horizontal amplitude with EWW1 and 4/3 horizontal amplitude with EWW (EWW value is 21 lower than EWW1 value).
- For 16/9 sets, find the VZM1 option and adjust such that second lines from top and bottom just touches to the edges.
- Adjust horizontal centering with HSHT, parabola with EWPW and trapezium with EWT.
- For 4/3 sets, adjust the 16/9 general parabola with EWP1.
- Adjust the upper corner parabola with EWCU and lower corner parabola with EWCL, vertical parallelogram with HPAR, horizontal bow with HBOW.
- Exit from the Service Menu.

2.3. Screen Adjustment

- Enter the Service Menu with the Service RC and select "SCRN" option with P+ / P- buttons and switch to ON with V+ / V- button. "BRI 32" is shown on the screen. With the red and green buttons of Service RC, select "BRI 00".
- Adjust the screen potentiometer to the level where the screen is just black. Change to "BRI32".
- By pressing one of V+ / V- buttons, get the picture (SCRN is switched to Off).
- Exit from Service menu.

2.4. White Balance Adjustment

- Enter the Service Menu with the Service RC and select "GRN" option with P+ / P- buttons and adjust it to "32" V+ / V- button.
- Adjust RED and BLUE for white balance. If white balance can not be adjusted properly change GRN value.
- Adjust BLOR and BLOG for red and green cut off.
- Exit from Service menu.

2.5. Feature Options

Tuner	: Panasonic, Phillips, Sharp, Temic
STD	: STBY-Off (Default)
Head	: Yes (Headphone available), No
SCRN	: Off, On (used in screen adjustment)
AV	: 01 (1 Scart), 03 (2 Scarts), 04 (2 Scarts + Front AV), 05 (2 Scarts + Front AV+ SVHS)
SSTD	: BG only, I only, BG+DK, BG + LL', All SYS
STYP	: NICAM On (available), NICAM Off
Toptext	: Yes (available), No
TXT table	: West (West Europe), East (East Europe), Cyrillic
Hotel	: On (Hotel Mode), Off (TV Mode)
Subwoofer	: Yes (available), No
CRT	: 4/3, 16/9
Peak1	: Yes (16/9 sets), No (4/3 sets)
Car	: Yes (Default)

2.6. Default Preset Values

Note:

1. PF means Pure Flat and SF means Super Flat.
2. The values in the table are decimal and shown in paranthesis on the OSD of TV.

		25" 28"	28" 16/9 P F	28" 16/9 S F	29" P F	29" S F	32" 16/9 P F	32" 16/9 S F	33"
AGC	Automatic gain control	14	14	14	14	14	14	14	14
EEPE	Reset the eeprom, all values lost	00	00	00	00	00	00	00	00
PEAK	Peaking	32	32	32	32	32	32	32	32
GRN	Green level	37	37	37	37	37	37	37	37
RED	Red level	40	35	35	32	35	40	40	42
BLUE	Blue level	34	32	33	26	33	34	34	34
BLOG	Black level offset green	30	28	30	25	30	31	31	27
BLOR	Black level offset red	36	41	40	33	40	41	41	37
YDLY	Luminance delay	04	04	04	04	04	04	04	04
SAT	Saturation	20	20	20	20	20	20	20	20
HUE	Sharpness	32	32	32	32	32	32	32	32
CON	Contrast	40	40	40	40	40	40	40	40
CDR	Cathode Drive Level	05	05	05	05	05	05	05	05
BRI	Brightness	32	32	32	32	32	32	32	32
EWT	East West Trapezium	28	17	24	28	27	24	24	26
EWCU	EW upper corner	32	22	14	32	39	07	07	27
EWCL	EW lower corner	32	48	38	38	42	22	22	37
EWPW	EW parabola width	17	08	08	14	12	12	12	20
HSHT	Horizontal shift	35	35	40	31	29	29	29	35
EWV	East West Width	60	37	36	55	57	39	39	62
VAMP	Vertical amplitude	46	42	42	43	45	45	45	48
SCOR	S correction	25	25	17	31	25	17	17	25
VSHT	Vertical shift	29	27	28	28	26	31	31	25
VSLP	Vertical slope	32	32	32	34	29	35	35	32
RGB	OSD brightness level	01	01	01	01	01	01	01	01
VZOM	Vertical zoom	39	39	39	39	39	39	39	39
PWLT	Peak white limiting	11	07	07	11	11	07	07	11
IFO	Offset IF demodulator	32	32	32	32	32	32	32	32
HPAR	Horizontal parallelogram	32	32	32	32	32	32	32	32
HBOW	Horizontal bow	32	32	32	32	32	32	32	32
TEST	Added for EMC purposes	09	09	09	09	09	09	09	09
EWV1	16/9 EW parabola width (for only 4/3 sets)	08	05	05	09	09	05	05	13
EWV1	East West Width (for only 16/9 sets)	-	58	57	-	-	60	60	-
VZM1	Vertical Zoom (for only 16/9 sets)	-	58	59	-	-	59	59	-

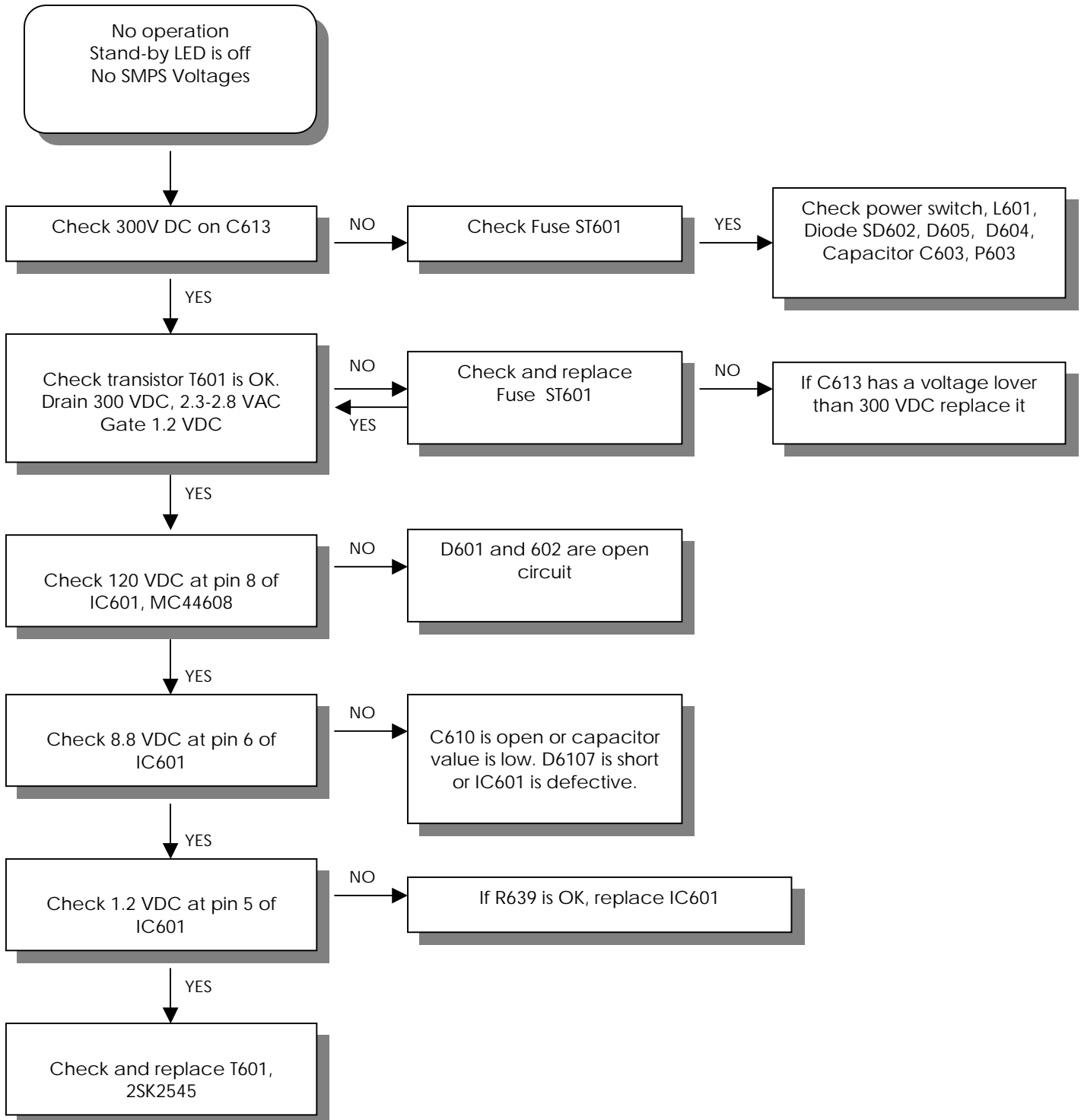
2.7. Exit from Service Menu

During exit from service menu, the software version and feature options (hexadecimal number) are shown on the screen. For example: VER14_2 BASIC, C697H

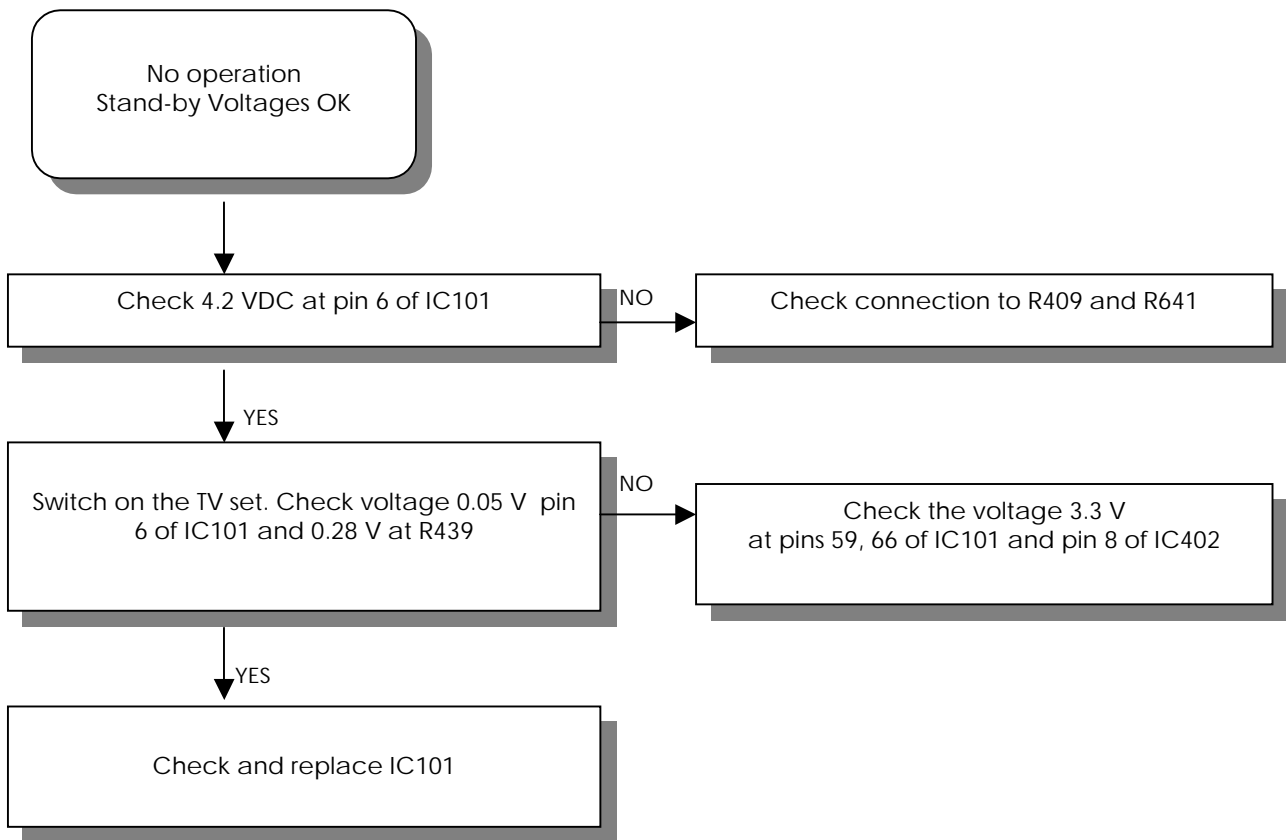
POWER SUPPLY DEFECTS (I)

Note:

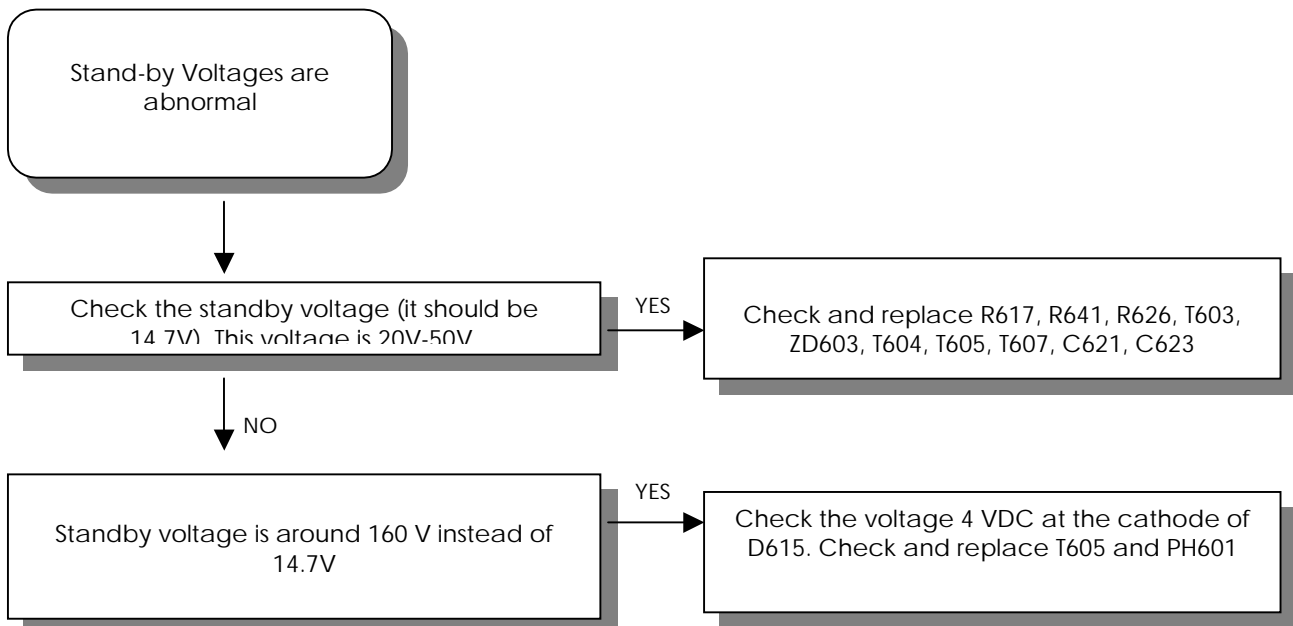
1. All values in the diagrams are for 230 VAC mains supply.
2. Before replacing T601, check following components: R640, R604, R605, R609, C615.
3. Burst type standby mode was designed (Fixed frequency is 21.5 kHz for standby and 38.8 kHz for normal operation) . In standby the output voltages drop to about 1/10 of the normal operation values (except +12V which stays same), i.e. from +145V to 14.7V, from 15V to 1.1V, from 28V to 2.5V. In standby, Standby signal from IC101 is high. Then, T605 conducts, T604 blocks and thristor TH601 conducts. Therefore, +145 line which is now 14.7V is connected to 12V. The regulation is done by ZD603 in standby and by ZD602 (TL431) in normal mode.



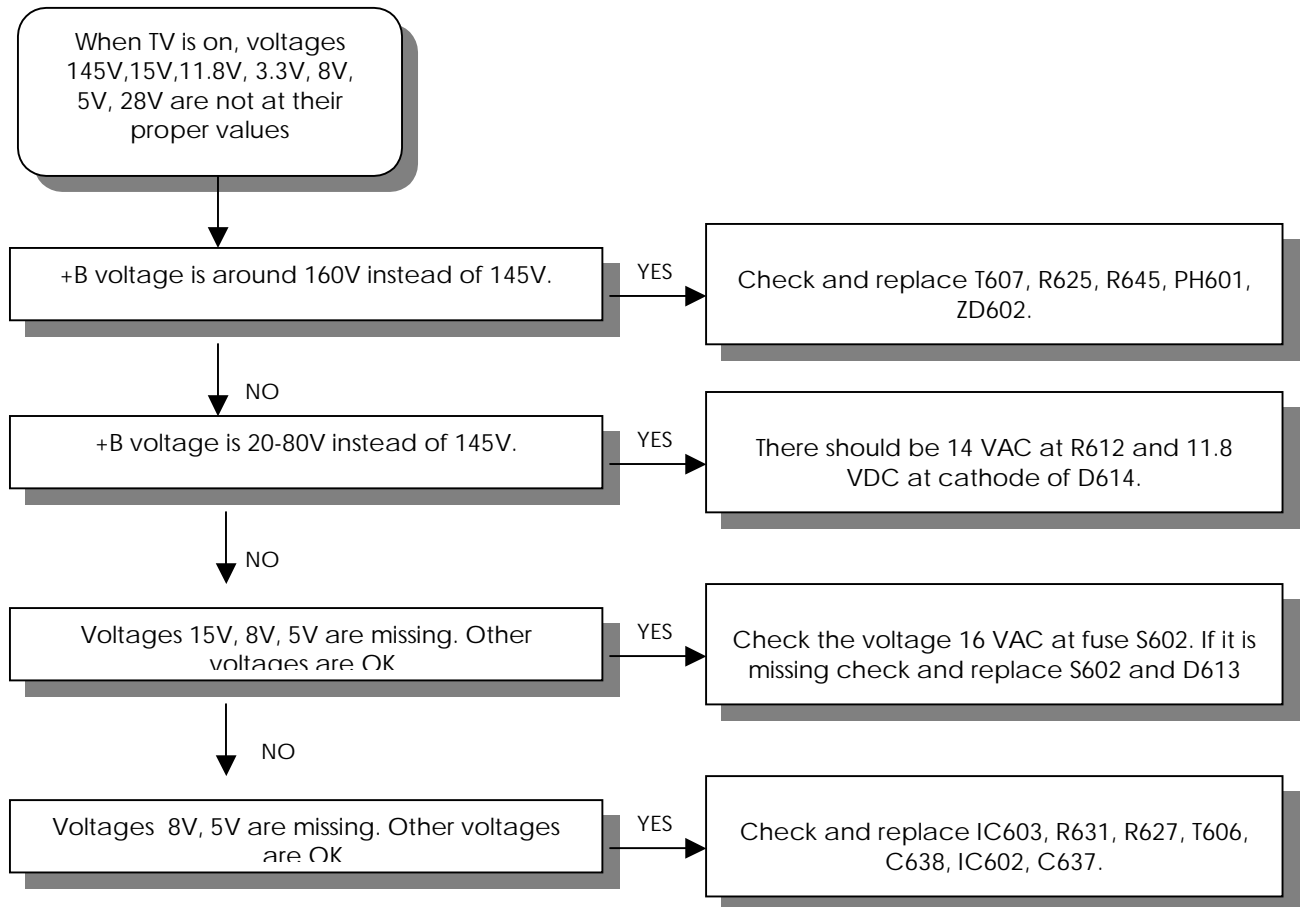
POWER SUPPLY DEFECTS (II)



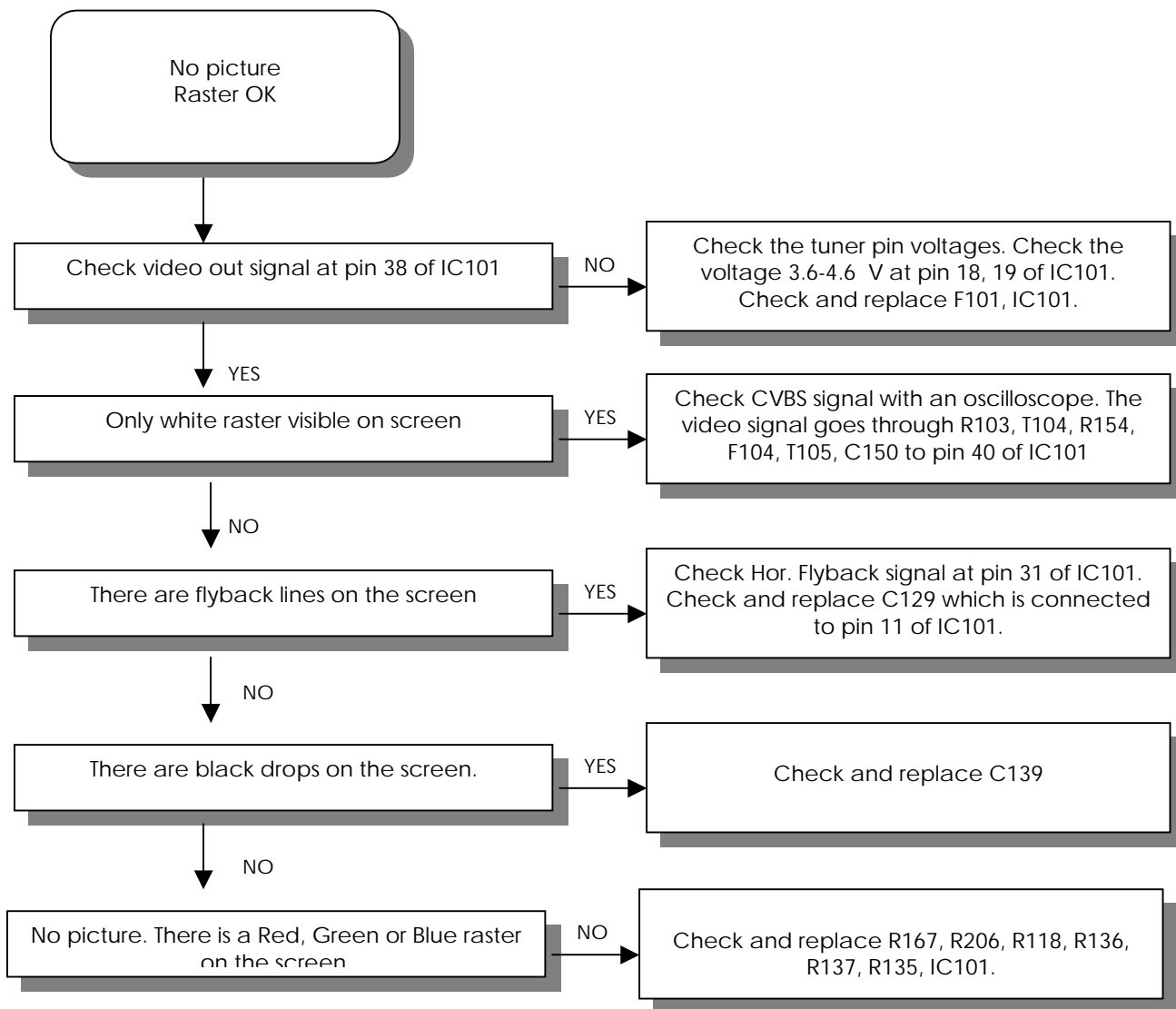
POWER SUPPLY DEFECTS (III)



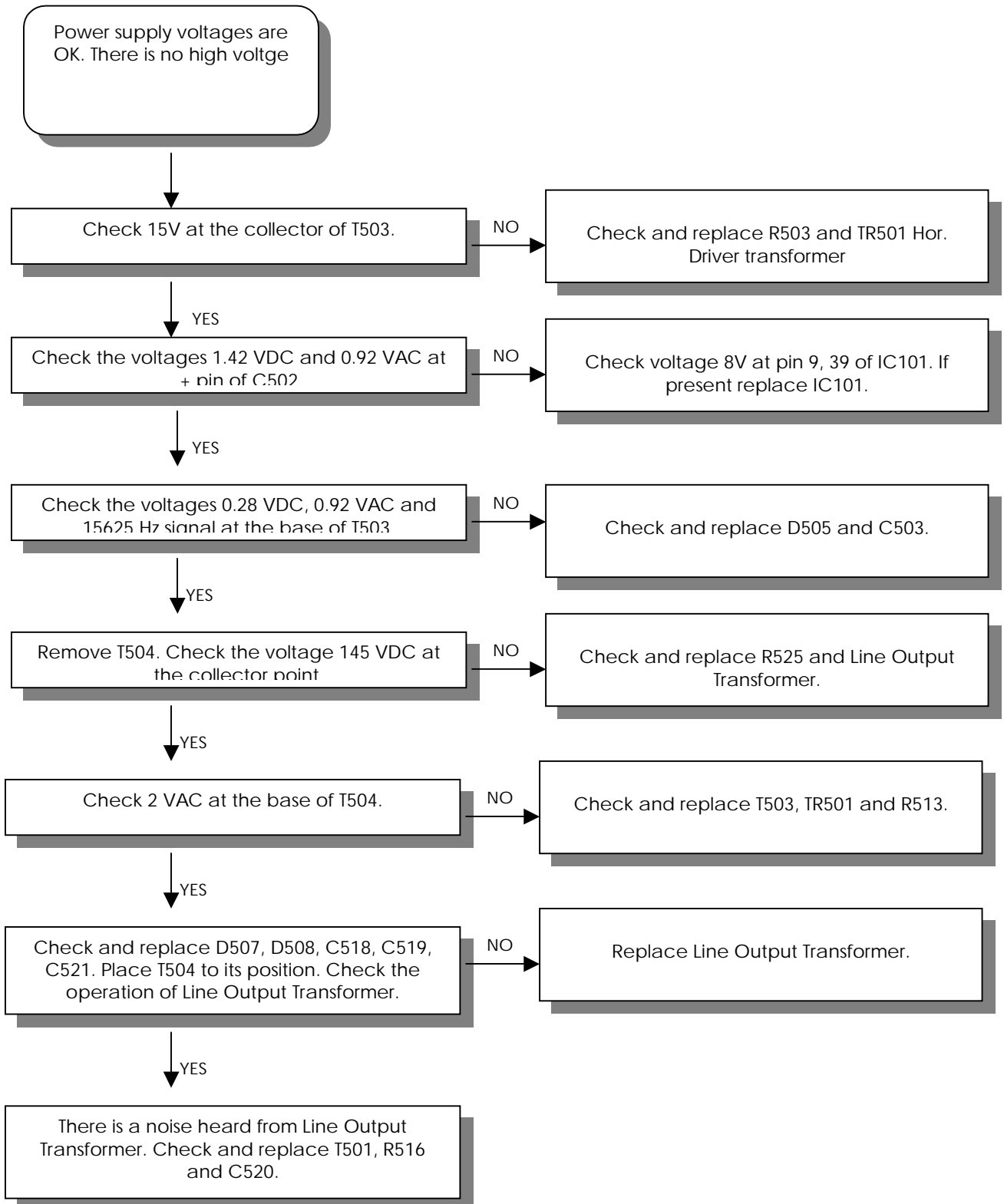
POWER SUPPLY DEFECTS (IV)



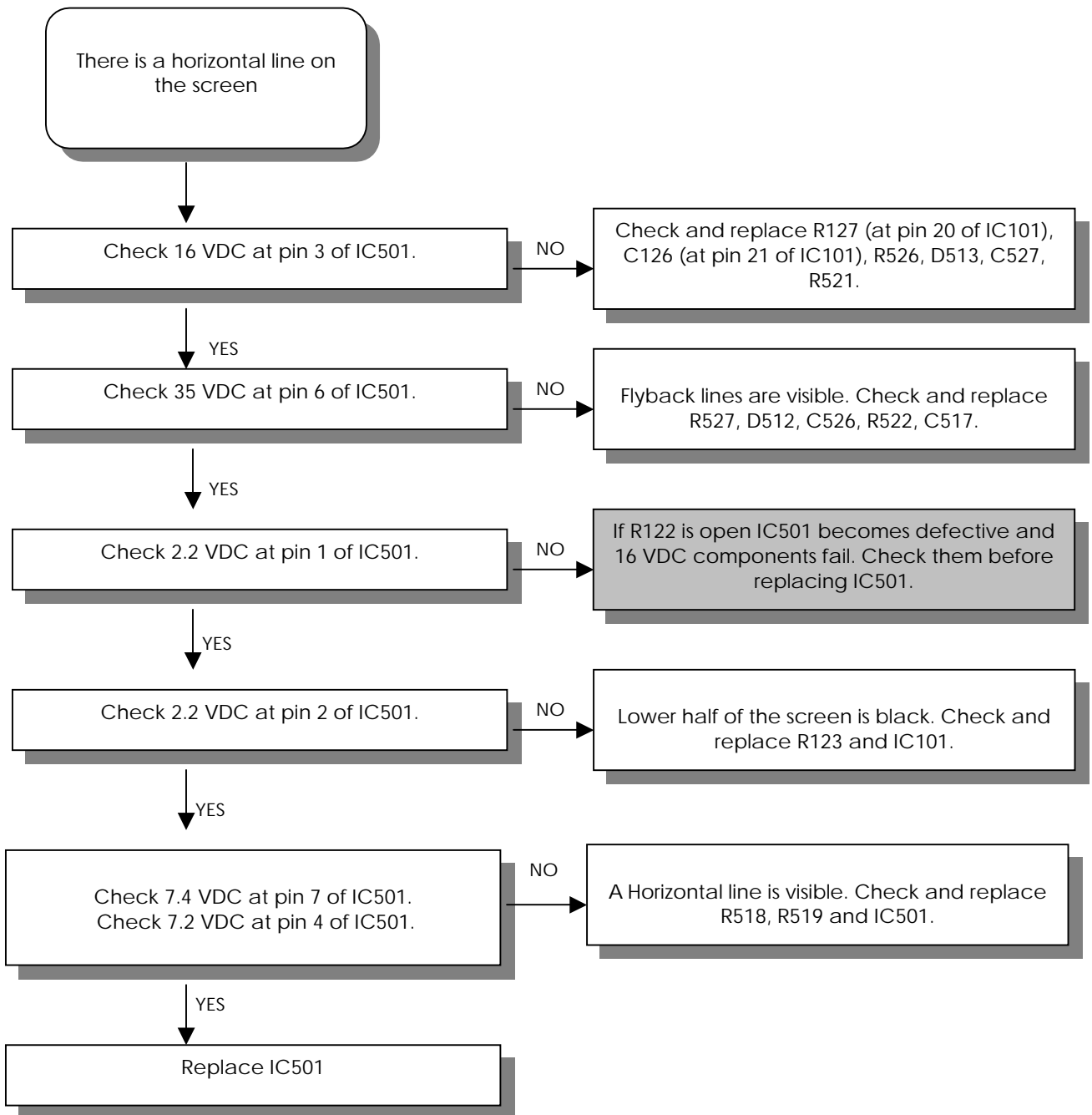
PICTURE AND COLOUR DEFECTS



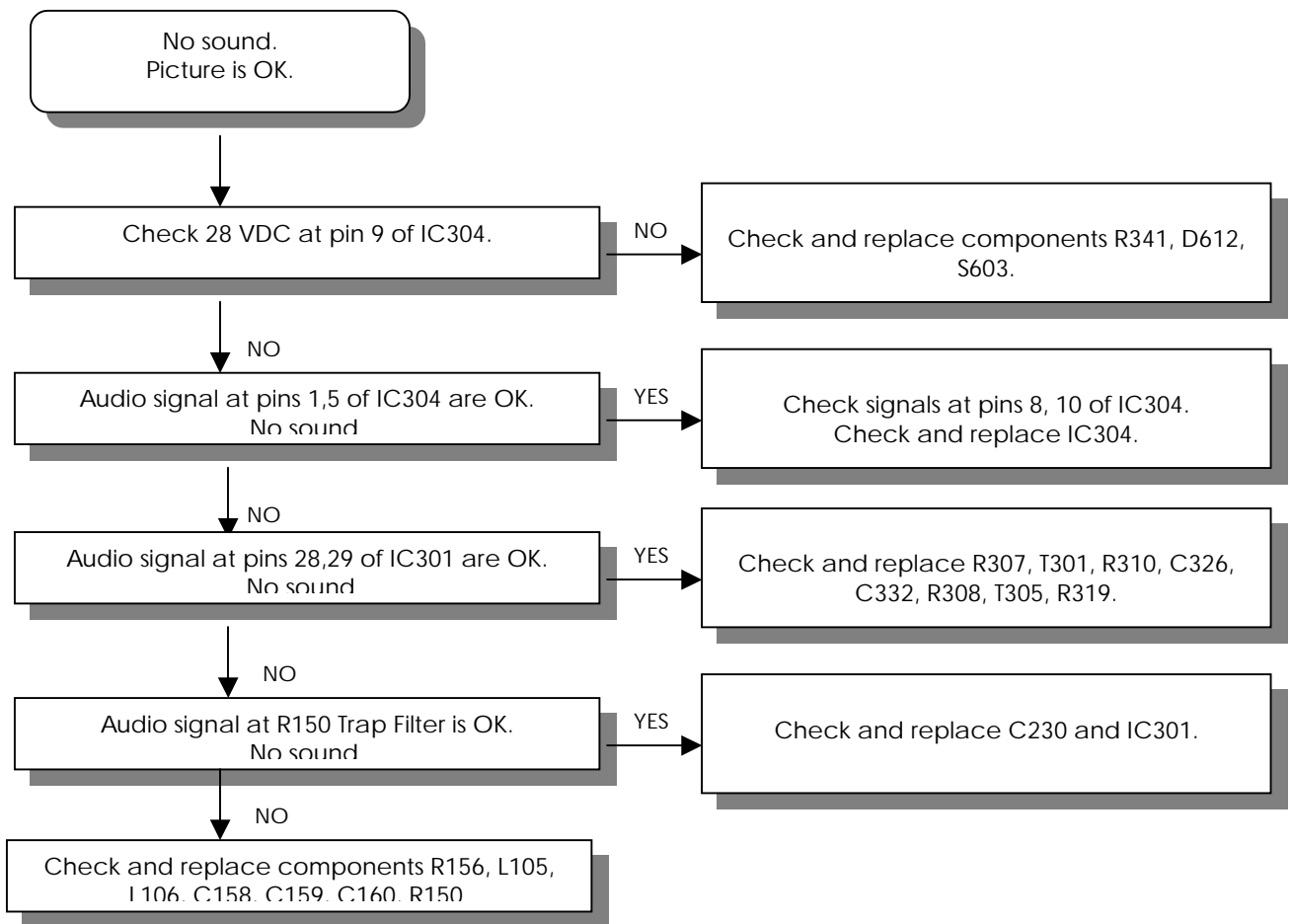
HORIZONTAL DEFLECTION CIRCUIT DEFECTS



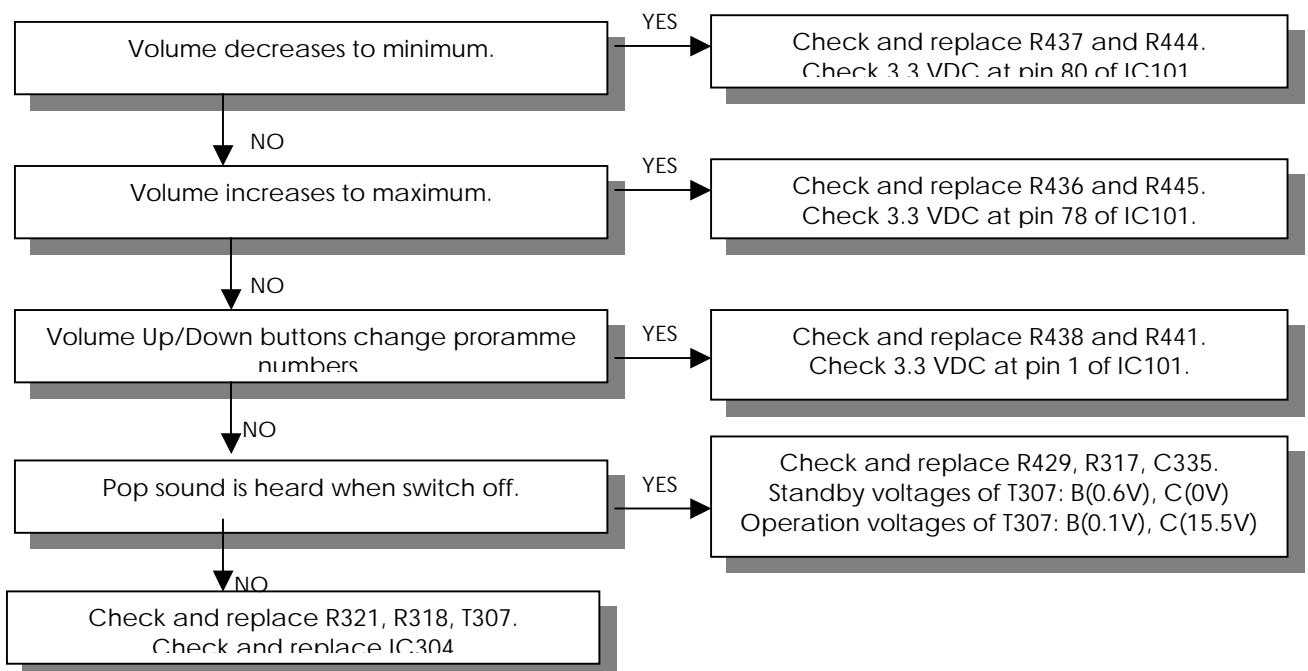
VERTICAL DEFLECTION CIRCUIT DEFECTS



AUDIO DEFECTS (I)



AUDIO DEFECTS (II)



PART LIST

PART NO	DESCRIPTION	NOTES	POSITION NUMBERS				
291103	CC-CHIP 100PF J 50V /0805 N		C101	C111			
293108	CC-CHIP 10NF K 50V /0805 X7		C103	C149			
290473	CC-CHIP 47PF J 50V /0805 NP		C104	C107			
252112	EC 100UF 16V 11*6 R:5		C105				
250111	EC 1UF 16V 11*5 R:5		C110				
292479	CC-CHIP 4.7NF K 50V /1206 X		C112				
293230	CC-CHIP 22NF K 50V /0805 X7		C118	C120			
259223	EC 2.2UF 63V 11*5 R:5		C124	C139	C507		
294231	CC-CHIP 220NF K 16V /0805 X		C125				
274107	C-PEM 100NF J 100V R:5		C126				
290561	CC-CHIP 56PF J 50V NPO 0805		C131	C165			
290222	CC-CHIP 22PF J 50V /0805 NP		C136				
294476	CC-CHIP 470NF K 16V /0805 X		C145				
251107	EC 10UF M 16V 11*5 R:5		C146	C148	C162	C167	C638
294475	CC-CHIP 470NF M 25V /1206 Z		C151				
291822	CC-CHIP 820PF J 50V /0805 N		C158	C160			
290684	CC-CHIP 68PF J 50V /0805 NP		C186				
291225	CC-CHIP 220PF K 50V /0805 X		C202	C203			
291473	CC-CHIP 470PF K 50V /0805 X		C209	C366			
291474	CC-CHIP 470PF J 50V /1206 N		C214	C210			
251478	EC 47UF 16V 11*5 R:5		C217	C221	C224	C302	C314
250470	EC 4.7UF 16V 11*5 R:5		C220	C222	C226	C225	
294111	CC-CHIP 100NF K 25V /0805 X		C229	C235			
294331	CC-CHIP 330NF K 16V /0805 X		C239	C241			
299152	CC-CHIP 1.5PF C 25V/0805		C308	C313			
292110	CC-CHIP 1NF K 50V /0805 X7R		C322	C324			
250227	EC 2.2UF 16V 11*5 R:5	EXTERNAL SPEAKER	C330A				
292105	CC-CHIP 1NF K 50V /1206 X7R		C332	C334			
253101	EC 1000UF 35V 25*13 R:5		C338	C340			
252229	EC 220UF 16V 11*8 R:5	EXTERNAL SPEAKER	C344	C346			
252112	EC 100UF 16V 11*6 R:5		C352	C353	C337	C401	C402
253106	EC 1000UF 25V 20*13 R:5		C354	C355	C620		
291477	CC-CHIP 470PF J 50V /0805 N		C405	C406			
290334	CC-CHIP 33PF J 50V /0805 NP		C413				
272101	C-PEM 1NF K 50V R:5		C503				
251478	EC 47UF 16V 11*5 R:5		C504	C639			
274230	C-PEM 220NF J 100V R:5		C505	C524	C523		
200680	CC 68PF J 500V NPO R:5		C506				
292223	CC-CHIP 2.2NF K 50V /0805 X		C508	C509			
252476	EC 470UF 25V 11*10 R:5		C512	C527			
272154	C-PPM 1.5NF J 1600V R:15	25",28"4/3	C513				
272103	C-PPM 1NF J 2KV R:15	28"16/9	C513				
271331	C-PPM 330PF J 1500V/1600V R	32"	C513				
294109	CC-CHIP 100NF K 50V /0805 X		C515	C516			
273104	C-PPM 10NF J 1.5/1.6KV R:22	25",28"4/3	C518				
273119	C-PPM 11NF J 1.5/1.6KV R:22	33"	C518				
273120	C-PPM 12NF J 1.5/1.6KV R:22	28"16/9	C518				
273131	C-PPM 13.1NF J 1.5/1.6KV R:	29",32"	C518				
273151	C-PPM 15NF J 1KV R:15	16/9 sets	C519				
273228	C-PPM 22NF J 1KV R:15	4/3 sets	C519				
274563	C-PPM 560NF J 250V R:15		C520	C521			
274563	C-PPM 560NF J 250V R:15	25",32",28"4/3	C521				
274684	C-PPM 680NF J 250V R:15	33"	C521				
274684	C-PPM 680NF J 250V R:15	28"16/9	C521				
250100	EC 1UF 160V 11*6.3 R:5		C522				
251225	EC 22UF 16V 11*5 R:5		C528				
272110	C-PEM 1NF J 100V R:5		C529				
274224	C-PEM 220NF K 275V-AC R22.		C601	C602			
274105	C-PEM 100NF J 250V R:10		C603	C701			
202105	CC 1NF K 1KV Y5P R:5		C604	C605	C607	C608	
274102	C-PEM 100NF J 63V R:5		C606				

PART LIST

PART NO	DESCRIPTION	NOTES	POSITION NUMBERS
252150	EC 150UF 400V 40*22 R:10		C613
201471	CC 470PF 2KV		C614 C619
203330	C-PPM 33NF J 630V R:15		C615
202220	CC 2.2NF M 250VAC Y5U R:10		C616
253101	EC 1000UF 35V 25*13 R:5		C621
293681	CC-CHIP 68NF K 25V /0805 X7		C624
293474	CC-CHIP 47NF K 50V /0805 X7		C625 C626
252104	EC 100UF 200V 25*16 R:7.5		C629 C627
251228	EC 22UF 200V 11.5*8 R:5		C629
201108	CC 100PF 500V NPO R:5		C631
294108	CC-CHIP 100NF K 50V /1206 X		C632 C326
293332	CC-CHIP 33NF K 50V /0805 X7		C634
293475	CC-CHIP 47NF K 50V /1206 X7		C636
251120	EC 10UF 10V 5*4 R:5		C637 C901
251109	EC 10UF 250V 16*10 R:5		C702 C703
273225	C-PEM 22NF J 63V R:5		C704
202221	C-CE 2.2NF K 2KV Y5P R:7.5		C705
202106	CC 1NF K 50V Y5P R:5	SVHS	C920 C921 C922 C923
273471	C-PEM 47NF K 63V R:5		C940 C941
201472	CC 470PF K 50V SL R:5	EXTERNAL SPEAKER	C962 C963
291101	CC-CHIP 100PF J 50V /1206 N		C981 C982
303195	DIODE 4148 MELF	LL'	D102
303223	DIODE-CHIP BA682 SOD80	LL'	D103 D104
302296	DIODE 1N4148 26MM		D401 D402
302289	DIODE 1N4148 52MM		D401 D402 D505
303195	DIODE 4148 MELF		D503 D504
303109	DIODE ERC06-1500		D507
303244	DIODE RGP30K		D508
302948	DIODE 1N4007		D509 D701
300305	DIODE BA157		D510 D511 D512
303227	DIODE RGP15J		D513
303209	DIODE BAV21		D515 D702 D703 D704
303217	DIODE RGP10J		D601 D615
303308	DIODE RF2007		D602 D603 D604 D605
303215	DIODE RGP10G		D607 D614
303214	DIODE UF4006		D608 D609
303206	DIODE RGP30MS		D611
303228	DIODE RGP30D		D612 D613
303988	LED LTL 4224 RED (SHORT LEG	28"	D901
303942	LED LTL4224 RED	25"	D901
303900	LED ROT	29",32",33"	D901
303993	LED LTL4221N D:3 R/D RED		D980
303991	LED IR SIR563SB3F 23/940		D981
56749	SAW FILTER OFW G1985M	BG	F101
56760	SAW FILTER OFW J1956M	P I	F101
56709	SAW FILTER OFW K3953M	PS DK	F101
56708	SAW FILTER OFW K3958M	LL'	F101
56767	SAW FILTER OFW K9456M	LL'	F102
56721	SER.FILTER TPS5.5MWA	PS BG DK	F104
56745	SER.FILTER TPS6.0MB	P I	F104
53740	COIL 1UH K LAL03		F105
056640-01	SER.FILTER MKT40.4MA110P-TF	DK	F105
56744	SAW FILTER OFW G9353M	DK	F106
056640-01	SER.FILTER MKT40.4MA110P-TF	LL'	F108
458642	IC-CHIP TDA9563H/N1/3	BG I	IC101
458643	IC-CHIP TDA9565H/N1/3	BG DK LL'	IC101
452510	IC 4053B CMOS 16SOIC		IC102
452575-01	IC MSP3400G	NON VIRTUAL DOLBY	IC301
452800	IC MSP3410G PSDIP64 AUDIO P	NON VIRTUAL DOLBY	IC301
452595	IC MSP3411G	VIRTUAL DOLBY	IC301
452374	IC L78L05 ACZ TR		IC302

PART LIST

PART NO	DESCRIPTION	NOTES	POSITION NUMBERS				
452368	IC TDA7262 PWR AMP SGS THOM	33"	IC304				
452482	IC TDA7263		IC304				
452784	IC-CHIP M24C08-WMN6 (EEPROM		IC401				
452976	IC TDA8359 J		IC501				
452487-01	IC MC44608P40		IC601				
451517	IC TDB7805CT T0220CASE		IC602				
451518	IC KA317TU T0220CASE		IC603	IC604			
50S310	INSULATOR BUZ90 17*12*.15		IC603				
452520	IC TDA6108JF		IC701				
452521	IR RECEIVER TSOP 1838		IC901				
452382	IC-CHIP S3C1840DA9/SMB1		IC980				
53711	COIL 10UH K (TAIYO) LAL03		L101	L301	L302	L401	L402
53719	COIL CHIP 1UH		L102	L105	L106		
53794	COIL CHIP 330NH /0805		L102				
53737	COIL-CHIP 8.2UH K /1206		L104				
53735	COIL-CHIP 18UH K /12		L201	L303			
51707	COIL 6MH E/W 11.1		L501				
51605	COIL H.LINEARITE 39UH	25",29"	L502				
53330	COIL H.LINEARITE 45UH	28" 16/9	L502				
52692	COIL LINEARITY 30UH (TERMAL	28" 4/3, 32", 33"	L502				
51729	BRIDGE COIL 1.5MH	25",28*4/3,33"	L503				
051798-01	BRIDGE COIL 1.8MH	28"16/9,32"	L503				
51813	BRIDGE COIL 850UH	29"	L503				
51737	LINE FILTRE 2*18MH E-TYPE		L601				
53734	COIL 4.7UH LAL03		L603				
53739	COIL CHOKE 50UH		L604				
53352	COIL- CHOKE 10UH R0814 14.1		L701				
55139	CHOKE COIL 50MHZ 600R PH-WB		L962	L963			
133118	R-VAR 10K V(2.5MM) 5*3		P601				
452408	IC PC123FY2PHOTO COUPLER		PH601				
56952	CRYSTAL 18.432MHZ +-30PPM		Q301				
56946	CRYSTAL 12MHZ		Q401				
56210	CER.RESONATOR GSB455E		Q980				
173154	RC-CHIP 15K J 1/10W /0805		R112				
174104	RC-CHIP 100K J 1/10W /0805		R114				
101683	CFR 680R J 1/4W /6 52MM		R124				
172274	RC-CHIP 2.7K J 1/8W/1206 (T		R126				
173392	RC-CHIP 39K %1 1/10W/0805		R127				
171393	RC-CHIP 390R J 1/10W /0805		R129				
173479	RC-CHIP 47K J 1/10W /0805		R139	R142			
171182	RC-CHIP 180R J 1/10W /0805		R147	R163			
171150	RC-CHIP 150R J 1/10W /0805		R154				
171102	RC-CHIP 100R J 1/10W /0805		R158	R105			
171221	RC-CHIP 220R J 1/10W /0805		R164	R429			
173273	CFR-CHIP 27K J 1/10W /0805		R165				
171332	RC-CHIP 330R J 1/10W /0805		R170	R425			
179001	RC-CHIP 0R /0805 2*1.25		R176	R151			
172333	RC-CHIP 3.3K J 1/8W /1206		R201	C336			
170750	RC-CHIP 75R J 1/10W /0805		R209	R213			
171334	RC-CHIP 330R J 1/8W /1206		R214	R215			
172101	RC-CHIP 1K J 1/10W /0805		R216	R217			
171104	CFR-CHIP 100R J 1/8W /1206		R220	R221			
172335	RC-CIHP 3.3K J 1/10W /0805		R314	R310			
173104	RC-CHIP 10K J 1/8W /1206		R317	R633			
172123	RC-CHIP 1.2K J 1/8W /1206		R326	R330			
171821	RC-CHIP 820R J 1/8W /1206		R328	R332			
170473	CFR-CHIP 47R J 1/8W /1206		R329	R162			
129150	RWF 1.5R J 1.5W	NOT FOR 33"	R341				
119104	RWF 1R J 1.5W (UFLB) 73MM	33"	R341				
179002	RC-CHIP 0R /1206		R342	R228			
170332	RC-CHIP 33R J 1/10W /0805		R401	R412			

PART LIST

PART NO	DESCRIPTION	NOTES	POSITION NUMBERS
170390	RC-CHIP 39R J 1/8W /1206		R404
170101	RC-CHIP 10R J 1/10W /0805		R421
172474	RC-CHIP 4.7K J 1/8W /1206		R434
172475	RC-CHIP 4.7K J 1/10W /0805		R435 R440
170472	RC-CHIP 47R J 1/10W /0805		R437 R438
171471	RC-CHIP 470R J 1/10W /0805		R439 R218
120234	RMF 22R J 1/2W		R503
110270	RMF 27R J .75W 52MM		R503
174180	RC-CHIP 180K J 1/10W /0805		R504
173333	RC-CHIP 33K J 1/10W /0805		R505 R102
173276	RC-CHIP 27K J 1/8W /1206		R506
114110	RM 100K %1 1/4W 26MM		R508
121182	RW 180R J 2W 73MM		R510
109472	CFR 0.47R J 1/2W /9 52MM	25", 28" 4/3, 33"	R513
114151	RM 150K J 1/2W		R514 R517
119476	RMF 4.7R J 1W	25",28" 16/9, 29",32",33"	R516 R527
119271	RM 2.7R J 1/2W	25"	R518 R519
119271	RM 2.7R J 1/2W		R518 R519
119181	RMF 1.8R J 1W 52MM	28" 4/3	R518
119220	RM 2.2R J 1/2W	28"16/9	R519
129395	RMF 3.9R J 0.5W 52MM	32"	R519
129395	RMF 3.9R J 0.5W 52MM		R519
119476	RMF 4.7R J 1W	28"4/3	R519 R527
111224	RMO 220R J 1W		R520
119480	RM 0.47R J 1/2W	25"	R521 R607
129471	RF 4.7R J 0.25W 52MM		R522
122114	RWF 1K J 1.5W 73MM		R523
113113	RMF 10K J 1/2W		R524
119152	RMO 1.5R J 2W		R525
119184	RMO 1.8R K 3W R:20		R525
129475	RW 4.7R J 7W (YATIK)	29"	R525
129109	RWF 0.1R J 0.75W 73MM		R526
103116	CFR 10K J 1/4W /6 52MM		R528
119684	RMF 0.68R J 1W	25"	R529
119122	RMF 1.2R J 1W	28" 16/9	R529
119155	RMF 1.5R J 1W	32".33"	R529
119110	RMF 1R J 1W	28" 4/3	R529
129109	RWF 0.1R J 0.75W 73MM	29"	R529
113335	RMO 33K J 1W		R531
154216	NTC 5.1R M (S234R)		R601
154225	PTC 18R/3 PIN	28"16/9, 29",33"	R602
112393	RM 3.9K %1 1/4W 52MM		R605
119336	RM 0.33R %1 1W		R607
111101	RMO 1K J 1W		R608
113681	RMO 68K J 2W		R609
115470	RM 4.7M J 1/2W 52MM		R610
102105	CFR 1K J 1/2W /6 52MM		R611
119109	RNF 0.1R J 0.4W (UFLB) 52MM		R612
100473	CFR 47R J 1/4W /6 52MM		R617 R333
110476	RMO 47R J 3W		R618
113475	RMO 47K J 1W		R621 R629
173101	RC-CHIP 10K J 1/10W /0805		R622 R626
172273	RC-CHIP 2.7K J 1/10W /0805		R623
114115	RM 115K %1 1/4W	28" 16:9, 29", 32"	R625
114152	RM 150K F 1/4W 52MM	25, 28" 4/3, 33"	R625
112131	RM 1.3K %1 1/4W 26MM		R627
111391	RM 390R %1 1/4W 26MM		R628
172105	RC-CHIP 1K J 1/8W /1206		R630 R236
111241	RM 240R %1 1/4W 26MM		R631 R632
100154	CFR 15R J 1/2W 52MM		R639
103273	CFR 27K J 1/4W /6 52MM		R645

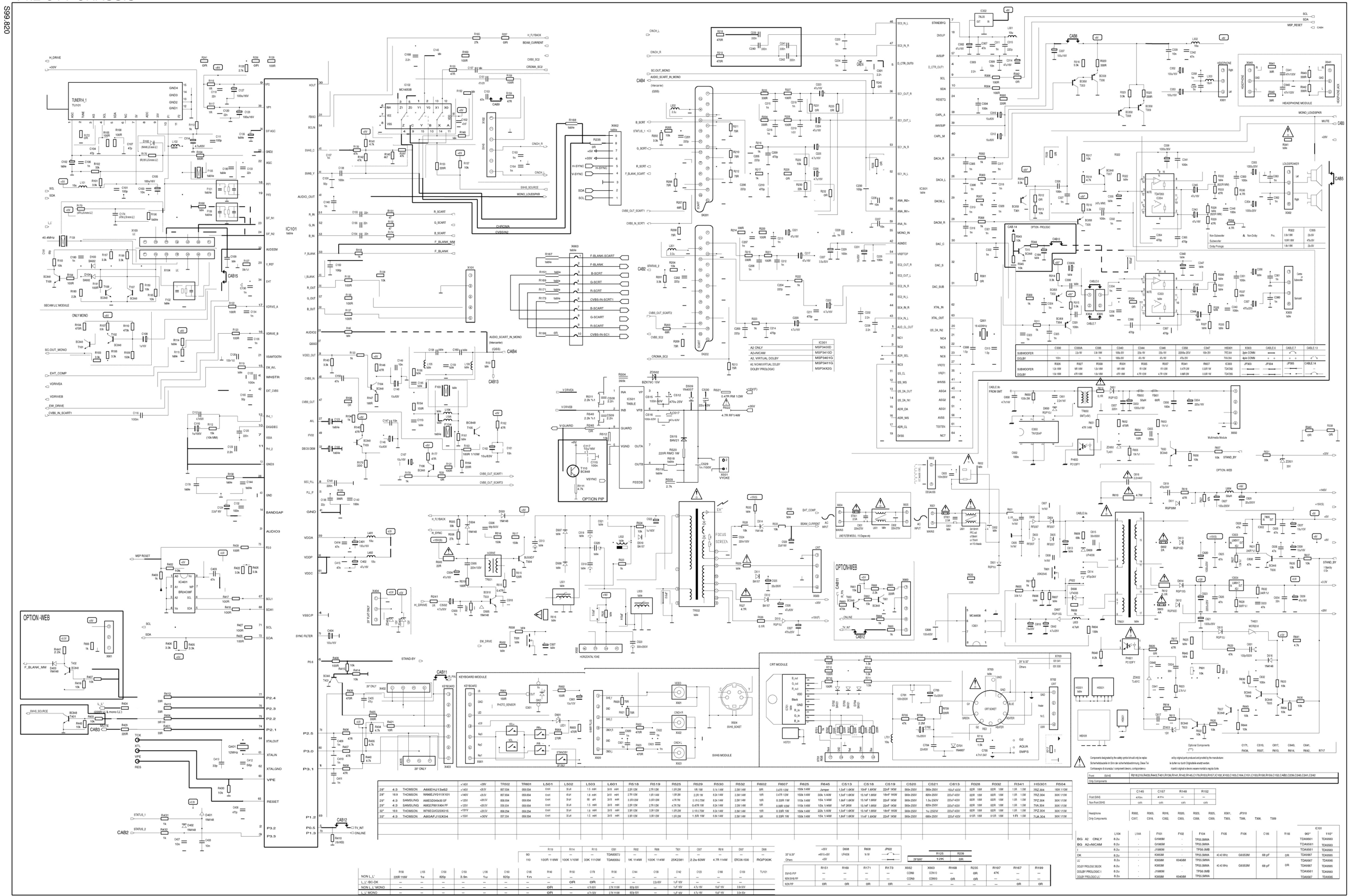
PART LIST

PART NO	DESCRIPTION	NOTES	POSITION NUMBERS			
103475	CFR 47K J 1/4W /6 52MM		R705			
102159	CFR 1.5K J 1/2W /9 52MM	PS 29" HHOP U44	R711	R713	R715	R716
102166	CFR 1.5K J 1/4W /6 26MM	EXTERNAL SPEAKER	R903			
54261	FUSE 2.5AT (215 SER.)		S601			
54280	FUSE 3.15AT (215)		S601			
54263	FUSE T2A		S602			
54264	FUSE T4A		S603			
10760	SLIDE SWITCH 4P2P/4PST	32" 29"	S960			
31251	SCART SOCKET 14.1		SK202	SK201		
10861	ON/OFF SWITCH BK98	25"	SW901			
010840-01	TACT SW LONG STEN 2LEG	33"	SW901	SW902		
401141	TRN-CHIP BC848B SOT23		T103	T104	T105	T106
401142	TRN-CHIP BC858B SOT23		T301	T302	T303	T305 T308
400989	TRN BC558B		T306	T309		
401141	TRN-CHIP BC848B SOT23		T307	T403		
401279	TRN 2SK2381		T501			
401218	TRN BC618		T503			
401215	TRN BU508DF		T504			
401142	TRN-CHIP BC858B SOT23		T980			
401141	TRN-CHIP BC848B SOT23		T603	T604		
410026	THRYSTOR MCR22-8		TH601			
51709	DRIVER TRANSFORMER 11.1		TR501			
57834	DST-SANAL 28" 16:9 14.1	28" 16:9	TR502			
58934	FBT SANAL 29" 14.1 (C-TYPE)	29"	TR502			
57534	FBT-SANAL 2528 14.1	25", 28"	TR502			
57334	FBT-SANAL 33' 14.1	33"	TR502			
059834-TR1	SMPS 28" 16:9/SLOT TR/.....		TR601			
59934	SMPS SANAL 29" 14.1	29"	TR601			
59534	SMPS-SANAL 2528 14.1	25", 28"	TR601			
59834	SMPS-SANAL 28" 16:9 14.1	28" 16:9	TR601			
59334	SMPS-SANAL 33" 14.1	33"	TR601			
51805	COIL PFC 56MH DTH30563H ELI		TR602			
7RZ136-PH3	TUNER PH ASIMETRIK UV1316/A		TU101			
31866	CONN.HOUSING X2006 GREY		X102			
31035	PIN HEADETR 2.5MM 7.PC.MOLE	LL'	X104			
31854	CONN.HOUSING X2003 GREY		X301	X405	X940	
31858	CONN.HOUSING X2004 GREY		X302	X402		
31780	CONN.HOUSING 2"LI GREY		X303	X501		
31872	CONN.HOUSING X2007 BLACK		X403			
31856	CONN.HOUSING X2003 BLACK		X404			
31794	CONN.MALE HOR. 4.PIN PLUG		X502			
31821	CON.HOUSING X2.5TMK 2204 GR		X503			
31675	CON.HOUSING 2P MALE		X601	X602	X604	X605
031530-01	INCHANG/CRT SOCKET ISHM05S-		X703			
31165	KONN. CINCH YEL	SVHS	X921			
31162	KONN. CINCH RCA PJ803-4 YEL	SVHS	X921			
31164	KONN. CINCH RED	SVHS	X922			
31161	KONN. CINCH RCA PJ803-3 RED	SVHS	X922			
31163	KONN. CINCH WHITE	SVHS	X923			
31160	KONN. CINCH RCA PJ803-2 WHI	28" SVHS	X923			
31784	KONN.S-VHS B10B MONAKOR	SVHS	X924			
31423	HEADPHONE JACK YKB21-5103		X941			
31357	CON.HOUSING X2.5TMK 2904 G	EXTERNAL SPEKAER	X962			
31021	PIN HEADETR 2.54MM 3.PC.MOL	29" 32"	X964			
31020	PIN HEADETR 2.54MM 4.PC.MOL	29" 32"	X965			
303826	DIODE Z. BZX55C 15V		ZD501			
303771	DIODE Z. UZT33V		ZD502			
451885-01	IC TL431CLP (ON SEMICONDUCT		ZD602			
303799	D- ZENER MTZJ12B		ZD603			
300193	DIODE Z. BZX55C9V1-GPS(VISH		ZD606			

PART LIST

PART NO	DESCRIPTION	NOTES	POSITION NUMBERS
Z33110	B8 CHASIS-25" P/NC/PTX/2SC/	P BG 25"	
Z54110	B8 CHASIS-25" PS/DK/NC/PX/2	PS DK 25"	
Q29110	B8 CHASIS-28" PS/DK/NX/2S/H	PS DK 28" SVHS	
T78110	B8 CHASIS-SD 28" 16:9 P/NX/	P BG 28" 16:9	
U99110	B8 CHASIS-SD 29 SF PS/LL/NV	PS LL 29" EXT.SPE. VDB	
U44110	B8 CHASIS-SD 29" SF PS/SNCX	PS 29" EXT.SPEAKER	
V26110	B8 CHASIS-SD 32"16:9 PI/VD/	P I 32" EXT.SPE. VDB	
W67110	B8 CHASIS-SD 33" P/PTX/ST/2	P BG 33"	
7RZ273	BACK COVER R/C A.TYPE GREY		
54C500	CORD POWER	EUROPE	
55127	CORE FERRIT		
7RZ206	COVER BATTERY BOX R/C GREY		
056428-PS1	CPT PS W66EHK51X36	28"16/9	
056432-PS2	CPT PS W76EKW10X21 P.FLAT	32"	
056325-VC4	CPT VC A59EHJ13X38	25"	
056328-VC6	CPT VC A66EHJ13X62	28"4/3	
056329-VC2	CPT VC A68EGD049X30 (S.FLAT	29"	
056333-VC3	CPT VC A80AEJ15X04	33"	
31541	CRT SOCKET 29" DOUBLE FOCUS	32"	
7PZ172	CU ASSY 29"T12 14.1		
533167-AS	DEGAUSING COIL 33"	33"	
525167-AS	DEGAUSSING COIL ASSY 25" BA	25"	
628167-AS	DEGAUSSING COIL ASSY 28" BA	28"4/3	
55597	FERRITE BEAD 12*8		
500258	HOLDER CABLE OVER HEAT SINK		
U98160	IR/LED ASSY 29"T12 14.2	EXT.SPEAKER	
U99160	IR/LED ASSY 29"T17 14.2	PS LL 29" EXT.SPE. VDB	
7PZ212	KNOB PROGRAM CONTROL PANEL		
56D204	LENS LED 21SI-BKT12	28"	
5JT100-AS	MAIN SW ASSY 20/21MNTR-TD1-	28"	
7MZ100-AS	MAIN SW ASSY 21TD1 14.1 LOC	29"	
7MY100-AS	MAIN SW ASSY 21TD1/TW1 FIL.	28" 16/9	
5U5100-AS	MAIN SW ASSY 28TL2 W/FUSE W	32"	
7TT100-AS	MAIN SW ASSY 28TL2/TL3 FILT	29"	
10971	MAIN SWITCH GDE S40 4/100A-	33"	
010712-03	POWER SWITCH S40 4/100A-250	28",29",32"	
571925	PUSH CATCH NWE TYPE	PS DK 28" SVHS Q29	
7P3187	RC ARC.TYPE ARC.PRINTED SIL	P I 32" HHOP VDB V26	
6VM187	RC ARC.TYPE SILVER 14.1	P 33" W67	
7UK187	RC A-TYPE GREY 14.1	P 25" Z33	
7TK187	RC BEKO TYPE FUME 14.1	P 28" 16:9 T78	
7PE187	RC BEKO TYPE M.GREY 14.1	PS LL 29" HHOP VDB U99	
5T1187	RC BEKO TYPE SILV.14.1	PS DK 25" Z54	
7UB109-AS	SPE.SUB 4R/20W(NOM)21T04/25	29"	
7UB107-AS	SPEAKER 8R/15W(MAX)21T04/25	29"	
6X1107-AS	SPK.8R/15W(MAX) 32"T20/T21	EXTERNAL SPEAKER	
010840-01	TACT SW LONG STEN 2LEG	28"	
10845	TACT SW WITH GREEN LED	32" 29"	
10844	TACT SWITCH 2 LEG (MTSB)	25"	
600302	TERMINAL BATT.BOX(-) R/C		
600301	TERMINAL BATT.BOX(+) R/C		
600303	TERMINAL BATT.BOX(+/-) R/C		
401047	TRN BC337-25		
7UB108-AS	TWEETER 10R/10W(N)21T04/25T	29"	
7VA108-AS	TWEETER DYNAMIC D=52 8R/15W	33"	
7RZ207	WINDOW FILTER R/C ARC.TYPE		

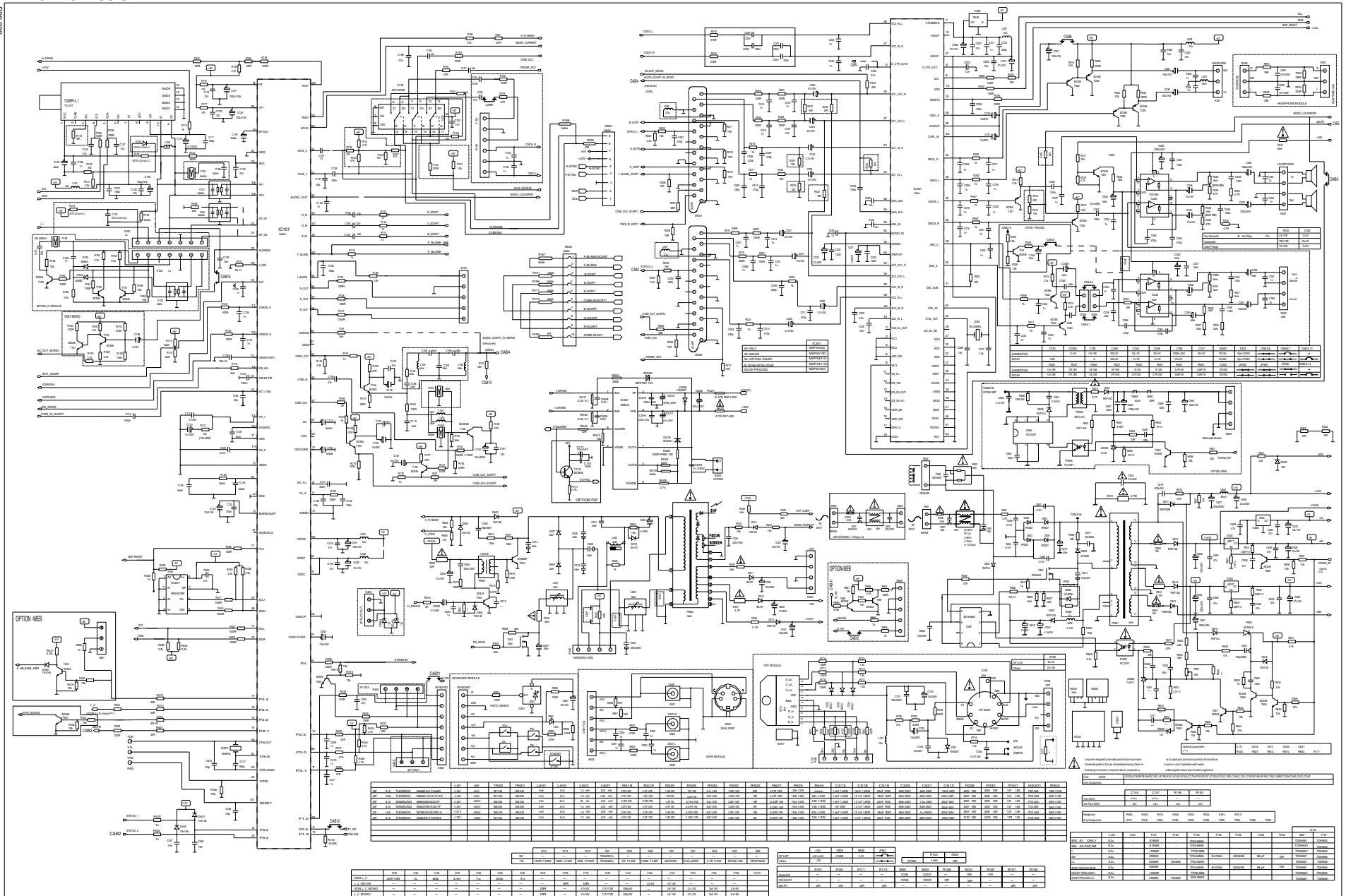
Please note that Product Part List Files should be investigated for the mechanical parts like cabinets, etc.



		+REV		-REV		T5502		TH001		L601		L602		L503		L601		P1516		P1519		P5525		P5529		P630		P5532		P6602		P6007		P6035		P6445		C1513		C1516		C1519		C550		C621		C613		P3328		P3332		P3441		P130301																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
2P	4.3	THOMSON	AB66F113M2	+REV	-REV	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh	97.034	enh

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