AKIRA

makes life better

Colour TV
Service Manual

Model: 25CF9N
Chassis: 5P60

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SAFETY NOTICE

SAFETY PRECAUTIONS

1. An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.
2. Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor network etc. Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.

X-RADIATION PRECAUTION

The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X_RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage must be maintained within the specified limits.

PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement made in any area of a receiver. Components indicated by mark ! in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designed on the parts list in this manual be used for component replacement designated by mark !. No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark !.

TECHNICAL SPECIFICATION

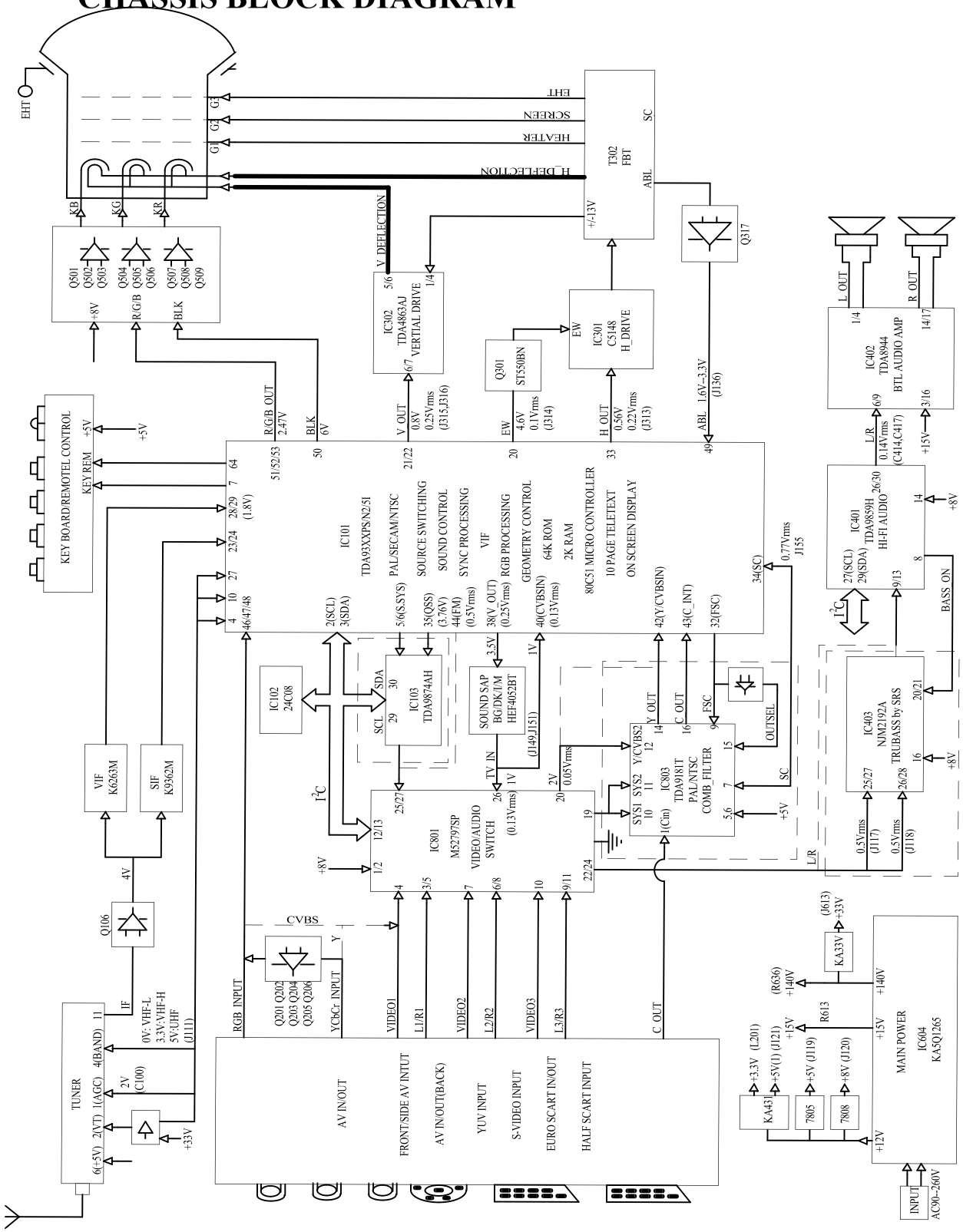
FEATURES

- Hyper-Band Tuner
- 100-Channel Memories
- NTSC Playback
- Front or Side AV Input
- Rear AV Input/Output
- S-Video Input
- On-Screen display
- Sleep Timer
- Auto Search/Store/Shut-off
- Full Function Remote Control
- 8W x 2 Speakers
- 772 (W) x 595 (D) x 856 (H) mm
- Weight: 78Kg
- Options
    - DVD-Component Input
    - Fastext
    - MTS
    - NICAM/German Stereo
    - Wide Power Supply

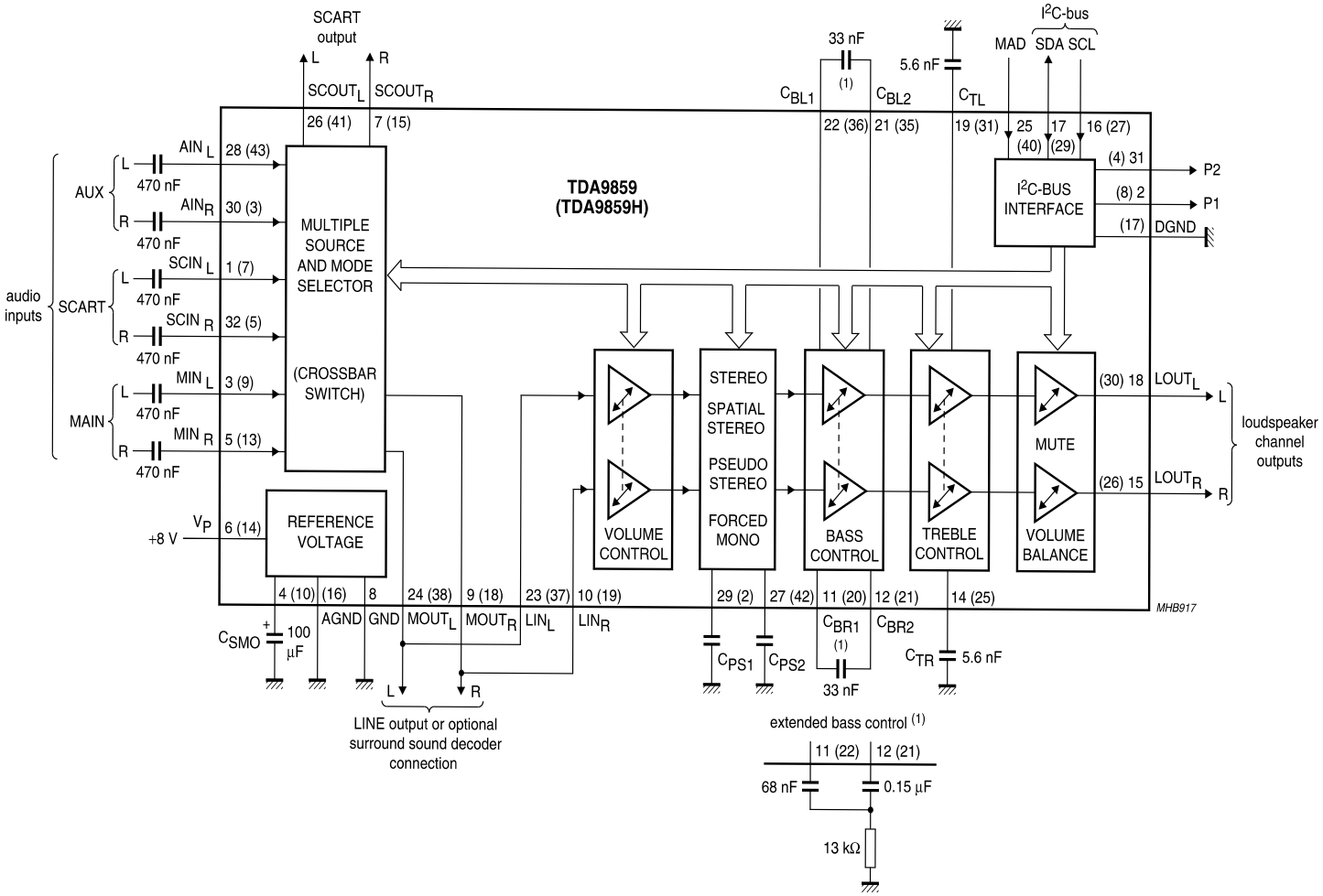
GENERAL SPECIFICATION

POWER CONSUMPTION	150W MAX
STANDBY POWER CONSUMPTION	5W
RECEIVER SYSTEM	D/K; I; B/G; M
COLOUR SYSTEM	PAL/ SECAM / NTSC
VISION INTERMEDIATE FREQUENCY	38.9MHz
INTER-CARRIER FREQUENCY	4.5 MHz (M)
	5.5 MHz (B/G)
	6.0 MHz (I)
	6.5 MHz (D/K)
	5.85 MHz (NICAM B/G, D/K)
	6.55 MHz (NICAM I)
	5.74 MHz (GERMAN STEREO)
CHROMA IF FREQUENCY PAL/NTSC	34.47 / 35.32 MHz
ANTENNA TYPE	DIN TYPE 75 OHM
CHANNELS RECEIVING	VHF-1 A-0; E2-E4; S1-S9 CH 44.25-161.25 MHz
	VHF-2 S10-S41; E5-E12 CH 168.25-163.25MHz
	UHF E21-E69 CH 471.25-863.25 MHz
TUNING SYSTEM	VS TUNING
AV IN/OUT	1 AV IN+1 AV OUT; 1 FRONT AV INPUT
	1 S-VIDEO IN, 1 YUV IN (OPTION);
	21 PIN SCART (OPTION)
AV IN/OUT SPECIFICATION	Y/C IN-----y 1.0 0.2V_{p-p} 75 ohm c: 0.7V_{p-p} 75 ohm
	VIDEO IN ----1.0 0.2V_{p-p} 75ohm
	AUDIO IN ---- 0.2V (r.m.s)
	VIDEO OUT ---- 1.0 0.2V_{p-p} 75ohm
	AUDIO OUT ----0.2V (r.m.s)
	RGB IN: -----0.7V_{p-p}
	YUV ---- Y 1.0V_{p-p}; U 0.7V_{p-p}; V 0.7V_{p-p}
OSD LANGUAGE	ENGLISH, RUSSIAN, IRANIAN, ARABIC, ITALIAN, TURKIC, GERMAN, FRANCE
TELETEXT LANGUAGE	PAN-EUROPEAN, CYRILLIC 2, IRANIAN, ARABIC
AUDIO OUTPUT POWER	>5W (1KHz, 0.5v INPUT, 10% THD)
SAFETY AUTHENTICATION STANDARD	CB/ CE
LED INDICATOR	POWER ON
HAND SET TYPE	HS08 HS09
HAND SET POWER SUPPLY	BATTERY 3V UM-3/R6/AA x2
COLOUR PICTURE TUBE	25” – 38” 110 DEGREE TUBE
REMOTE CONTROL DISTANCE	5m

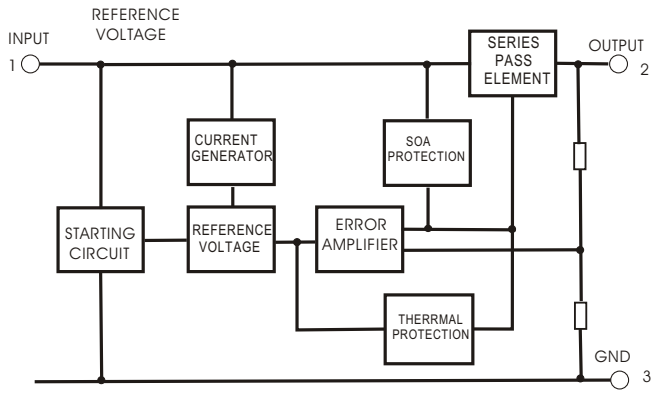
CHASSIS BLOCK DIAGRAM



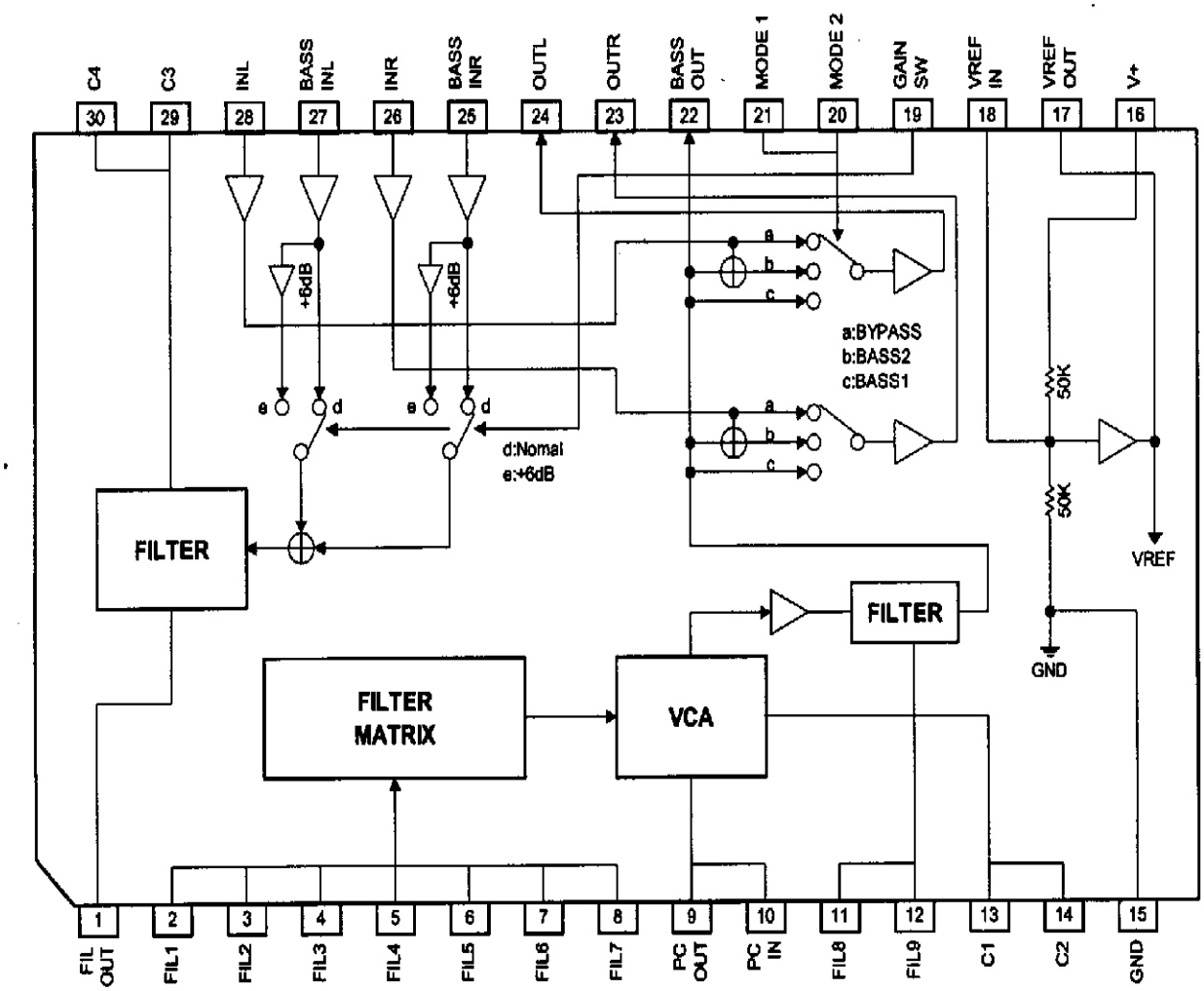
IC 401 (UNIVERSAL HI-FI AUDIO PROCESSOR) TDA9859H



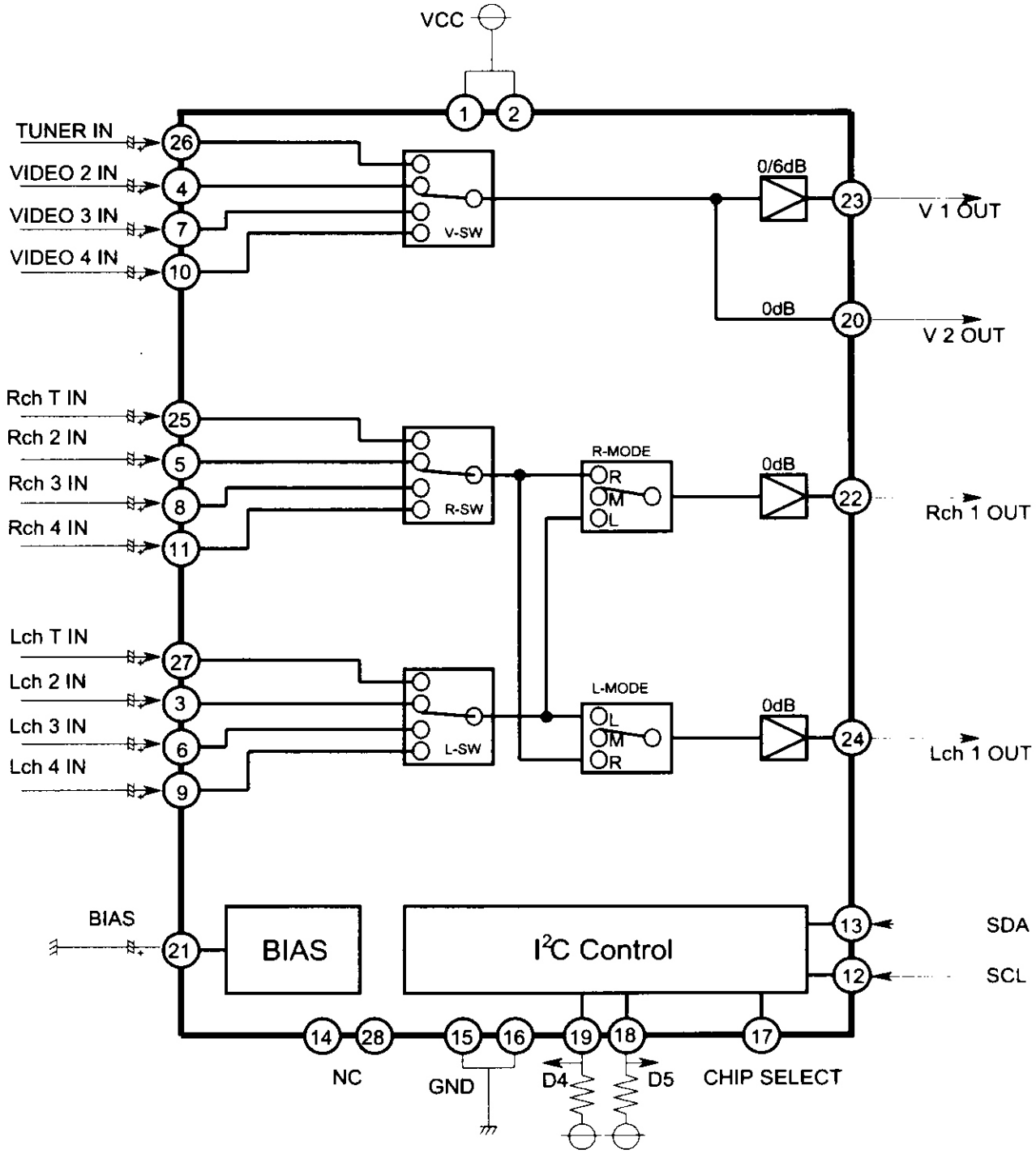
IC605. IC606 <REGULATORS> L7800 SERIES



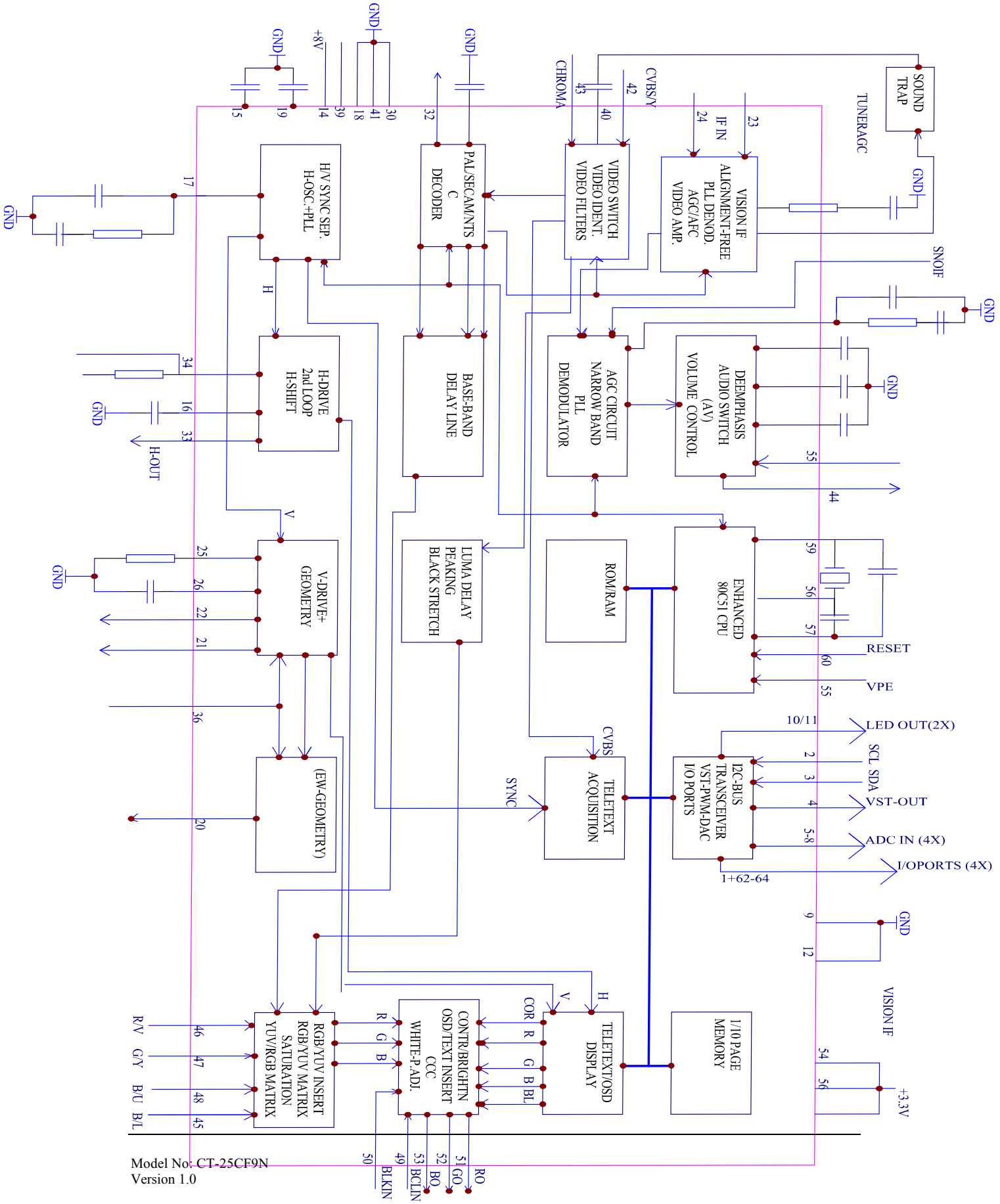
IC 402 (SRS TRUBASS) NJM2192 AM



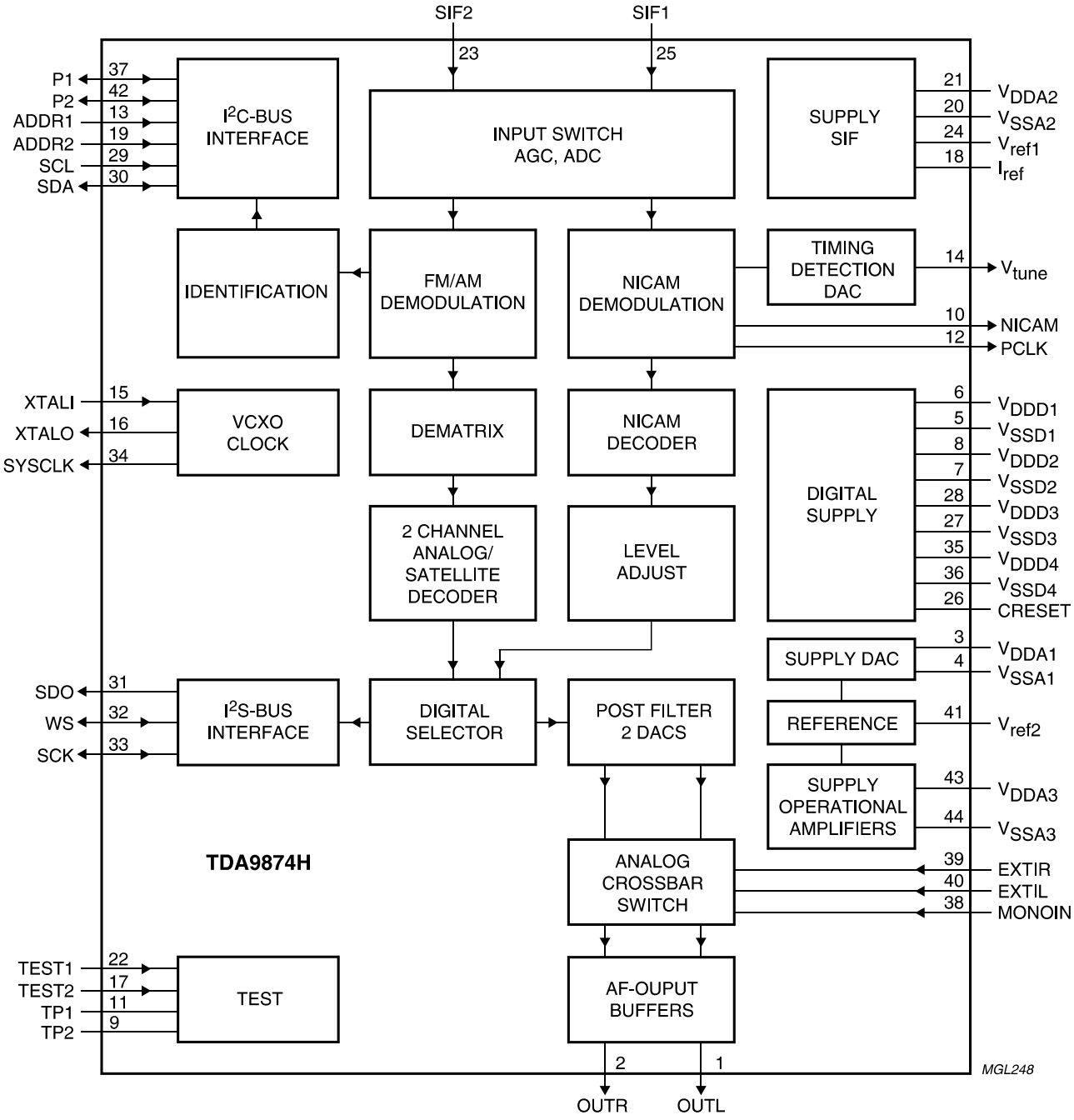
IC 401 (AV SWITCH W/IIC BUS CONTROL) M52797SP



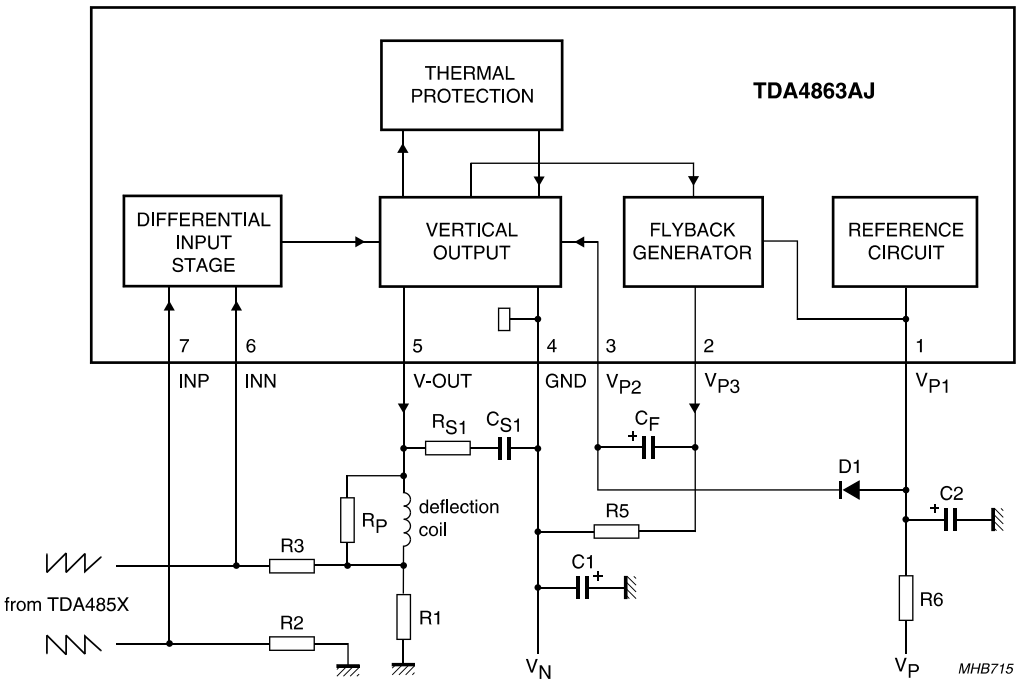
IC 101 (SYSTEM TV SIGNAL PROCESSOR-TELETEXT) TDA93XXPS/N2/5I



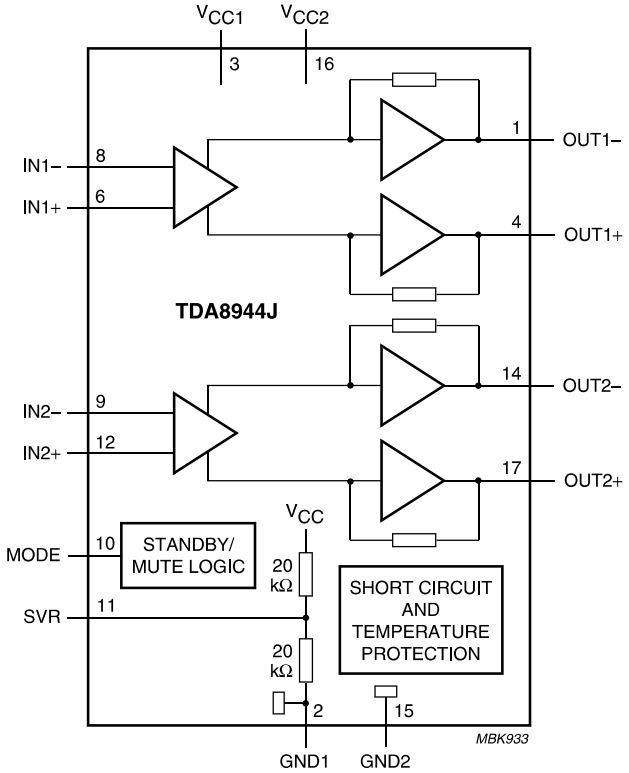
IC 103 (DIGITAL TV SOUND DEMODULATOR / DECODER) TDA9874AH



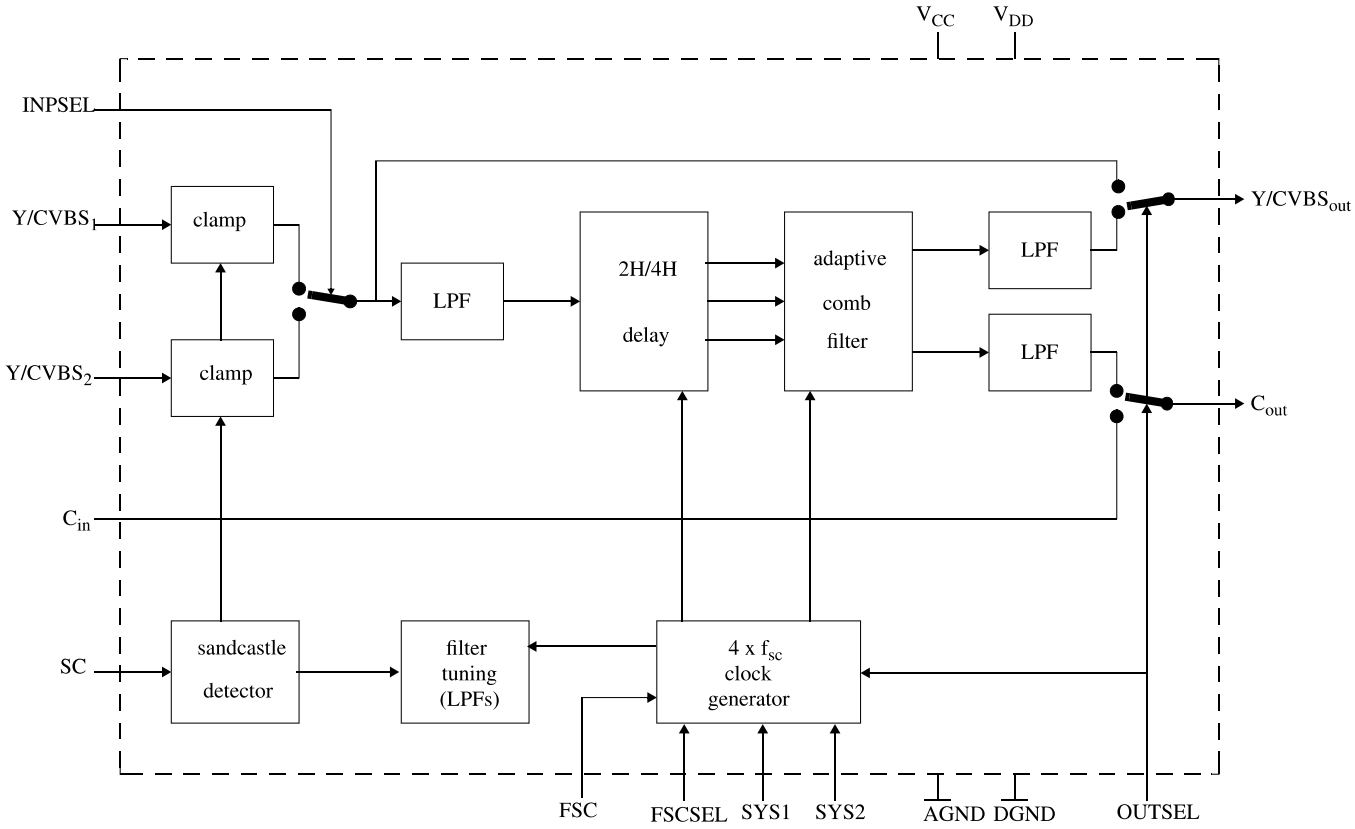
IC 302 (VERTICAL DEFLECTION BOOSTER) (TDA4863AJ)



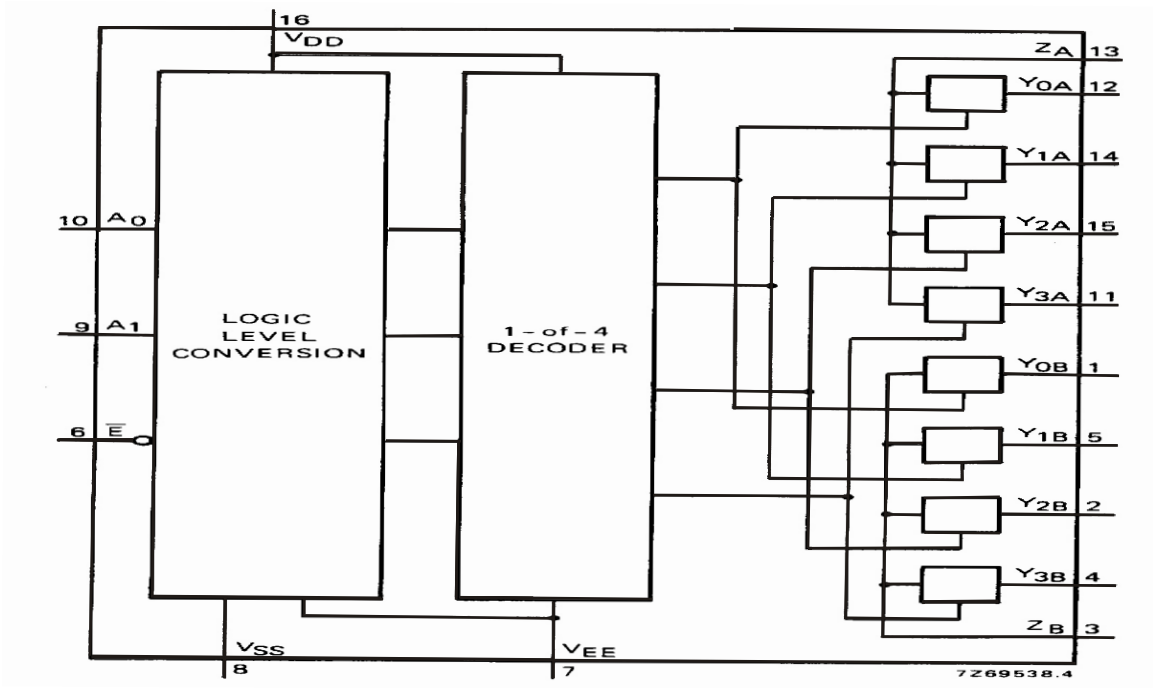
IC 404(BTL AUDIO AMPLIFIER)(TDA8944J)



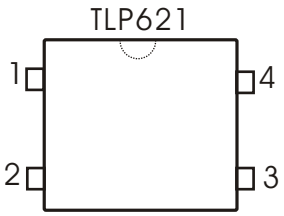
IC 803(MULTISTANDARD COMB FILTE) (TDA9181T)



IC 802(HEF4052)

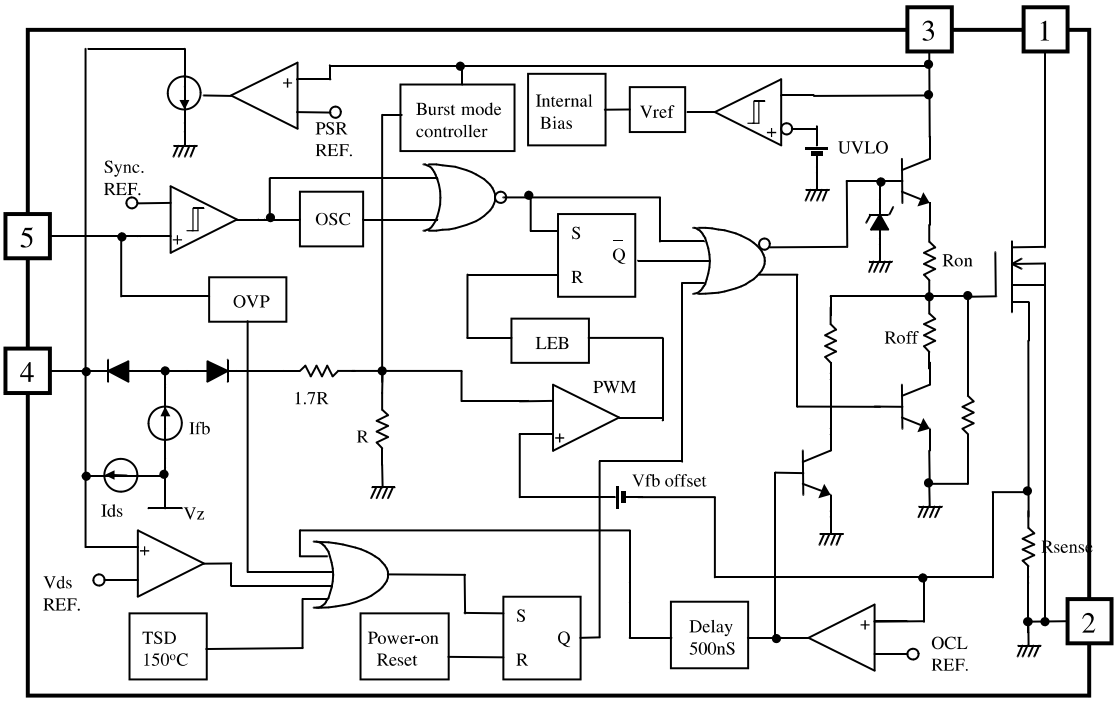


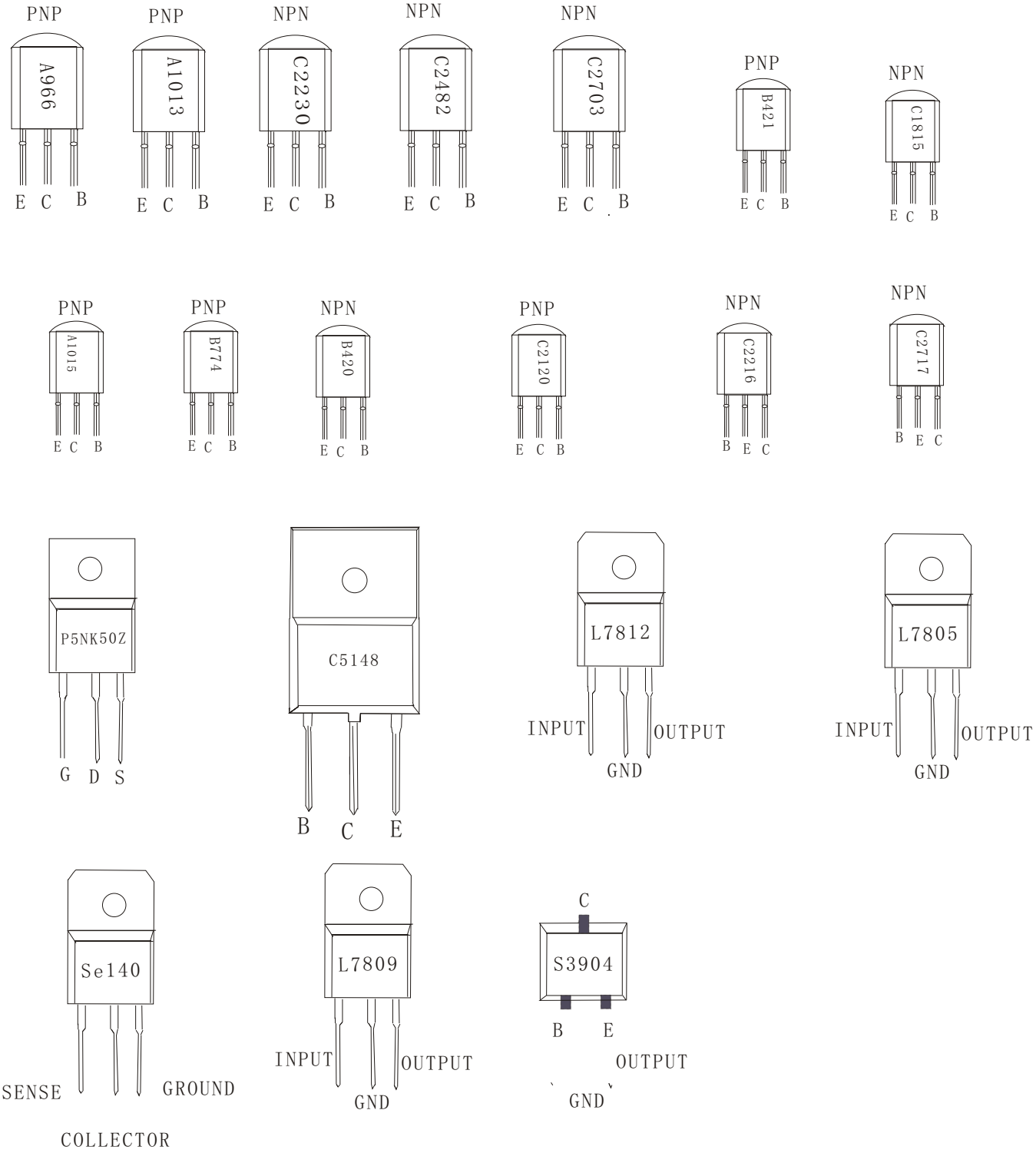
IC 601 <PHOTO TRANSISTOR> TLP621



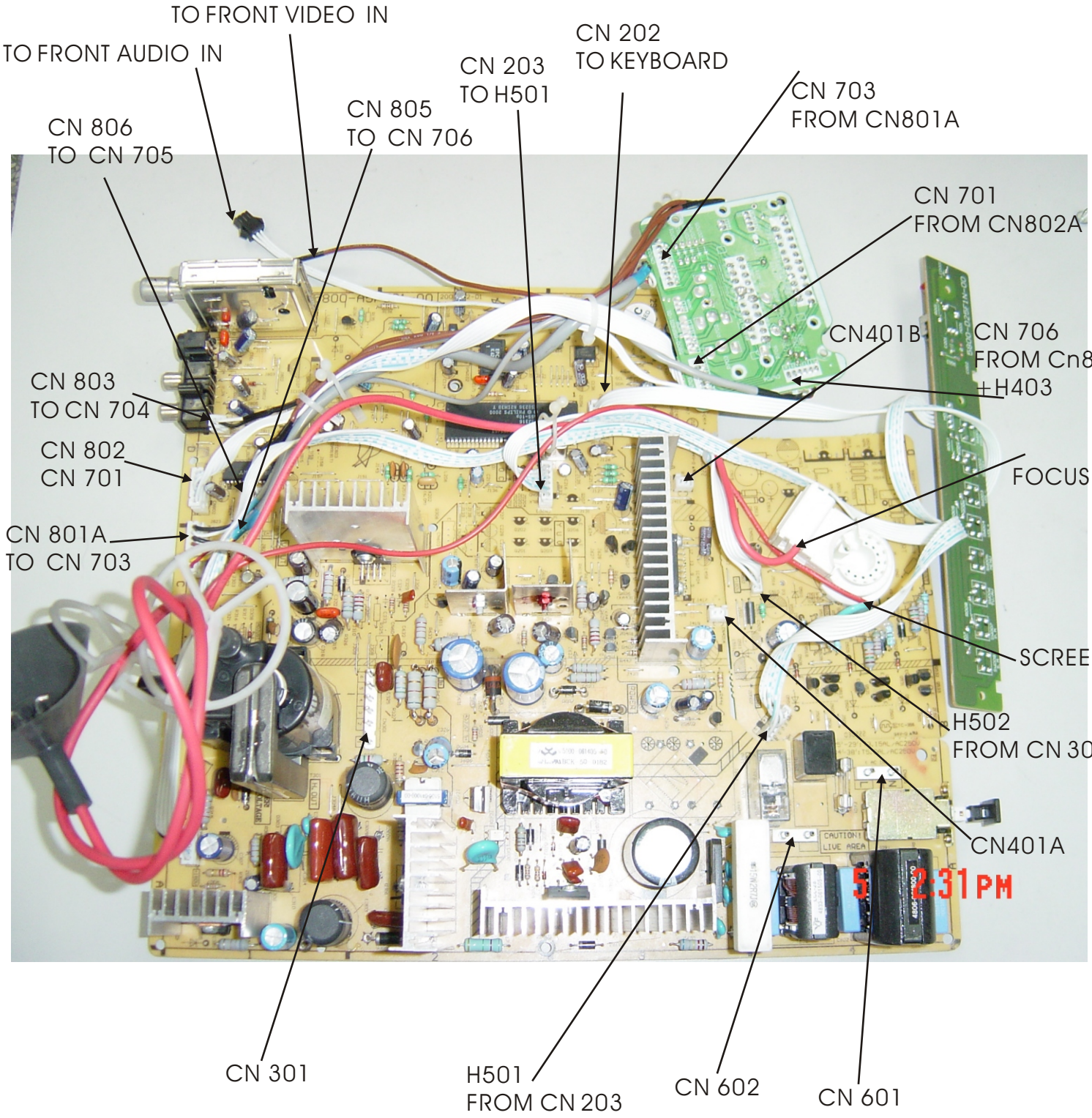
1:ANODE
2:CATHODE
3:EMITTER
4:COLLECTOT

IC 604 <POWER SWITCH> KA5Q12XXRF

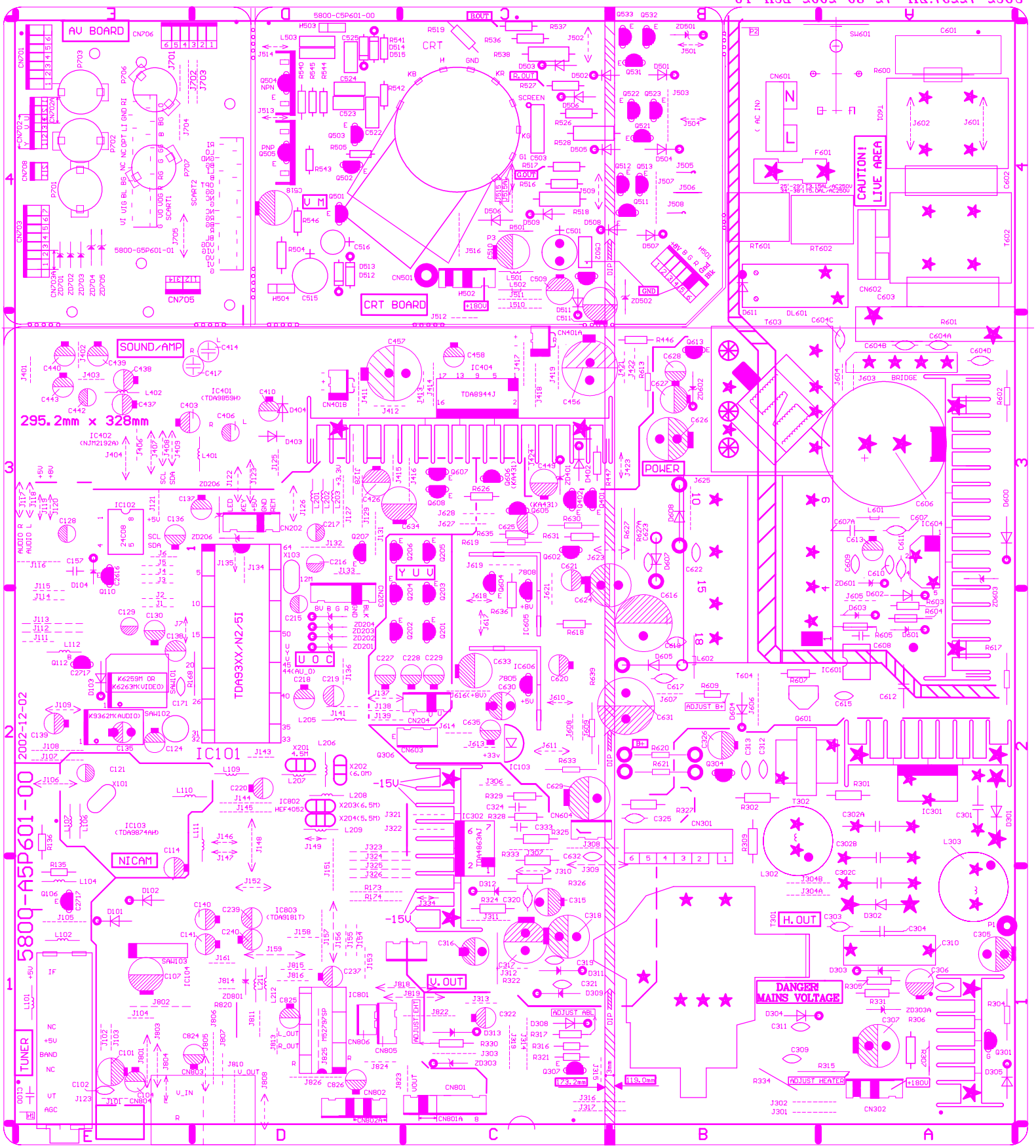



PNP
A966
E C B
PNP
A1013
E C B
NPN
C2230
E C B
NPN
C2482
E C B
NPN
C2703
E C B
PNP
B421
E C B
NPN
C1815
E C B
PNP
A1015
E C B
PNP
B774
E C B
NPN
B420
E C B
PNP
C2120
E C B
NPN
C2216
B E C
NPN
C2717
B E C
P5NK50Z
G D S
C5148
B C E
L7812
INPUT
OUTPUT
GND
L7805
INPUT
OUTPUT
GND
Se140
Vout SENSE
GROUND
COLLECTOR
L7809
INPUT
OUTPUT
GND
C
S3904
B E
OUTPUT
GND

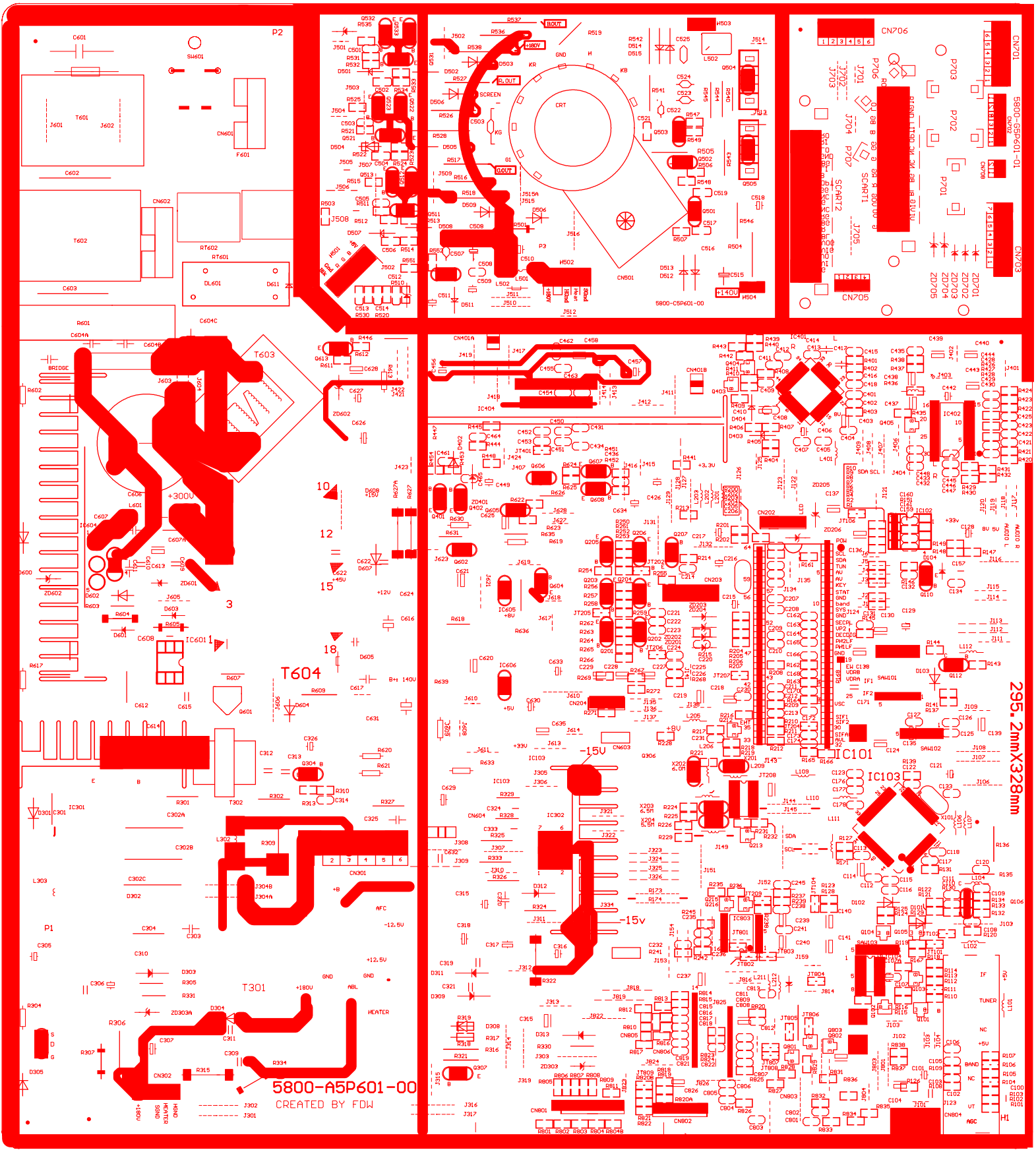
CHASSIS WIRING DIAGRAM



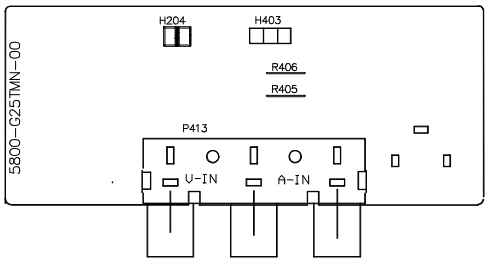
PBC BOARD


5800-A5P601-00
2002-12-02
295.2mm × 328mm
AV BOARD
CRT BOARD
SOUND/AMP
POWER
TUNER
NICAM
IC101
TDA93XX/N2/5I
TDA9859H
TDA9874AH
TDA9818T
TDA8944J
CAUTION! LIVE AREA
DANGER MAINS VOLTAGE
H. OUT
V. OUT
-15V
+33V
+180V
119.0mm
123.2mm

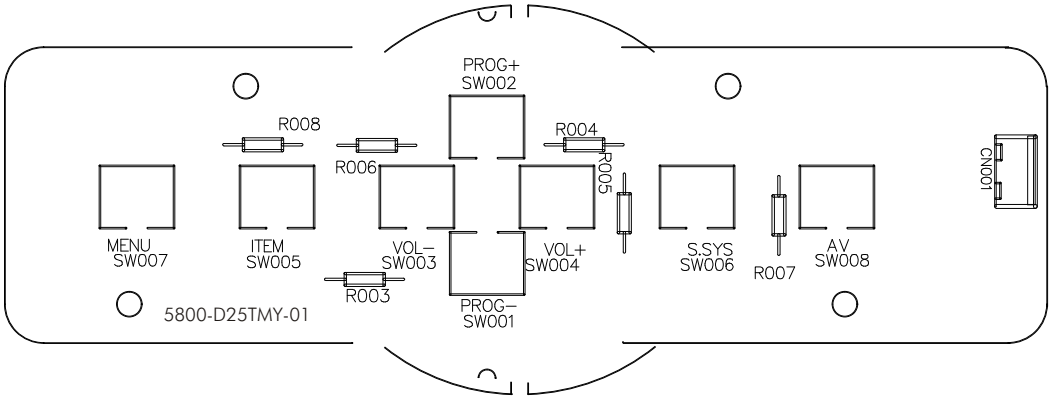
U0C2-12291.ZIP 12-30-2002 LCH T6



SIDE FRONT AV & AV PCB TOP LAYER



CONTROL PCB TOP LAYER



SERVICE ADJUSTMENT

1. Please notice the following before debug and equipment
   a. The main power is 90~260V/50/60Hz. Please be careful when you debug and equip.
   b. Don't short any two soldering points, which should not be shorted and don't touch any component, which should not be touched.
   c. Pls pull out plug before equipment.
   d. For safety reasons, all components equipped or replaced should be identical with BOM.
   e. Must be warm up for 30 minutes or more and degauss CRT thoroughly with demagnetizer before alignment.
   f. The data of EEPROM must be stored before the adjustment for main chassis.

2. Tools and equipments for adjustment
   a. Small "-" screwdriver.
   b. Screwdriver without inductance.
   c. Pattern Generator.
   d. DC regulator power supply.
   e. Digital Voltmeter.
   f. Sweep signal generator.
   g. 20MHz 2-channel Oscilloscope.
   h. Signal condition

ITEMS	LOGO	PICTURE CARRIER	PATTERN	SYSTEM	SOUND MODE	REMARK
1	CHN-1CH	49.75	PHILIPHS PICTURE	PAL--I	1KHz	
2	USA-3CH	61.25	COLOR BAR	NTSC--M	1KHz	
3	WE-6CH	182.25MHz	RED FIELD	PAL--BG	L: R: 400HZ	A2 STEREO /TELETEXT
4	CH12	205.25MHz	CROSS HATCH	NTSC/M	1KHz	
5	CHN-12CH	216.25	GREY/COLOR BAR	SECEM -- D/K	BTSC	
6		224.25	PHILIPHS PICTURE	PAL--BG	A: BTSC B: MUSIC C: 1KHZ	B/G NICAM
7	WE-S20CH	294.25	HALF COLOR BAR	PAL--BG	A: 400HZ B: 1KHZ	STEREO
8	CHN-13CH	471.25	CROSS HATCH	PAL--D/K	1KHZ	
9		489.25	MONOSCOPE	NTSC	1KHZ	
10		751.25	MOMOSCOPE	PAL--I	A: BTSC B: MUSIC C: 1KHZ	I NICAM

3. Power adjustment
   Connect a 100W bulb cross C616. Then connect AC 220V power to CN601. If the bulb light, the voltage is prescriptive, and there is no unconventionality, then the power is OK, else be repaired.

4. Complete machine general adjustment.
   a. Go to factory mode before warm up line.
   Method: Press key CLOCK, P.M., ◯ , TV SET will go to factory mode. Press key 0-9 to entering factory menu. Select the item by "PROG+" and "PROG-" keys. Adjust by "VOL+" and "VOL-" Keys. Press "⏎" key to exit factory mode.

   b. Focus adjustment.
      i. Receive monoscope pattern.
      ii. Set TV to work in dynamic status.
      iii. Adjust the focus knob of FBT to get the clearest picture.

   c. Screen Voltage Adjustment (KEY 0)
      i. Set TV at "TV" "STANDARD" mode, no signal input.
      ii. Press key CLOCK, P.M. ◯ in turn to entering factory mode.
      iii. Press 0 key.
      iv. Adjust the screen knob of FBT to get a horizontal faintness beam line.
      v. Press other keys to go to the normal work status.

   d. Vertical size and pin cushion adjustment (KEY 2)
      i. Receive 50HZ cross hatch pattern. Set TV standard status, adjust 5VSL to obtain half of the cross hatch, adjust 5SCL to obtain picture's vertical pin cushion a good status, adjust 5VSH to obtain picture's vertical center at the center of CRT screen in factory mode.
      ii. Receive 50HZ monoscope pattern. Set TV standard status,. Adjust 5VAM to obtain picture's vertical redisplay ratio more than 90% in factory mode.

Vertical slope 50Hz	5VSL
Vertical amplitude 50Hz	5VAM
S-correction 50Hz	5SCL
Vertical shift 50Hz	5VSH

      iii. Receive 60HZ cross hatch pattern. Set TV standard status. Adjust 6VSL to obtain half of the cross hatch, adjust 6SCL to obtain picture's vertical pin cushion a good status. Adjust 6VSH to obtain picture's vertical center at the center of CRT screen in factory mode.
      iv. Receive 60HZ monoscope pattern. Set TV standard status. Adjust 6VAM to obtain picture's vertical redisplay ratio more than 90% in factory mode.

Vertical slop 60Hz	6VSL
Vertical amplitude 60Hz	6VAM
S-correction 60Hz	6SCL
Vertical shift 60Hz	6VSH

      v. If necessary, adjust Horizontal Center and EW again.
      vi. Receive 50HZ RGB or YUV cross hatch pattern. Set TV standard status. Adjust 5RGH to obtain picture's vertical center at the center of CRT screen in factory mode. (OPTION).
      vii. Receive 60HZ RGB or YUV cross hatch pattern. Set TV standard status. Adjust 6RGH to obtain picture's vertical center at the center of CRT screen in factory. (OPTION).

e. Horizontal Center and EW adjustment (KEY 1)
   i. Received 50HZ monoscope PATTERN. Set TV standard status. Adjust 5HSH to obtain horizontal center at the center of CRT screen.
   ii. Receive 50HZ cross hatch pattern. Set TV standard status. Adjust 5EWW, 5PWW, 5UCR, 5LCR, 5PAR, 5BOW, 5EWT to obtain picture's Horizontal redisplay ratio more than 90% in factory mode.

Horizontal parallelogram 50Hz	5PAR
Horizontal bow 50Hz	5BOW
Horizontal shift 50Hz	5HSH
EW width 50Hz	5EWW
EW parabola /width 50Hz	5EWP
EW upper corner parabola 50Hz	5UCR
EW lower corner parabola 50Hz	5LCR
EW trapezium 50Hz	5EWT

   iii. Receive 60HZ monoscope PATTERN. Set TV standard status. Adjust 6HSH to obtain horizontal center at the center of CRT screen.
   iv. Receive 60HZ cross hatch pattern. Set TV standard status. Adjust 6EWW, 6PWW, 6URC, 6LCR, 6BOW, 6EWT to obtain picture's Horizontal redisplay ratio more than 90% in factory mode.

Horizontal parallelogram 60Hz	6PAR
Horizontal bow 60Hz	6BOW
Horizontal shift 60Hz	6HSH
EW width 60Hz	6EWW
EW parabola/ width 60Hz	6EWP
EW upper corner parabola 60Hz	6UCR
EW lower corner parabola 60Hz	6LCR
EW trapezium 60Hz	6EWT

f. OSD position adjustment.
   i. Menu OSD position adjustment. Received 50/60Hz cross hatch pattern. Set TV standard status. Press KEY 2 in factory mode, adjust 5VOF /6VOF and HOF item, to obtain menu OSD at the center of CRT screen.
   ii. LOGO position adjustment. Receive 50/60Hz cross hatch pattern. Set TV standard status. Press KEY 7 in factory mode, adjust XMIN, XMAX, YMIN, and YMAX item, to obtain LAGO at the center up to 1/3 of CRT screen.
   iii. TELETEXT OSD position adjust. Received 50/60HZ TELETEXT signal. Set TV standard status. Press KEY 7 in factory in factory mode, adjust TXMI and 5TYM/6TYM item, to obtain INDEX at the center of CRT screen.

g. White Balance adjust (Applied in factory) (KEY 3)
   i. Normally, 5P60 can auto adjust white balance, but for some CRT need to adjust white balance carefully by hand. Set BRIGHTNESS and CONTRAST at normal status, receive GREY SCAL and entering factory mode press KEY 3, set WPR at 31, adjust WPG and WPR to obtain white balance.

h. RF. AGC adjustment (KEY 4)
   i. Receive 60dB RF signal. Connect Digital voltmeter positive terminal to tuner AGC terminal and negative terminal to GND.
   ii. Entering the AGC item in factory mode by the REMOTE CONTROL. Metod. Press key CLOCK, P.M. inturn, you can enter into factory mode, then press key “4” and select AGC item by PROG+/-.
   iii. Adjust “VOL+” and “VOL-” keys to obtain 3.8V Digital voltage meter reading or just no NOISE on screen.
   iv. Press key “ + ” to exit factory mode.

i. E2PROM initialization
   i. When in repairing, we can replace E2PROM by other empty or unempty E2PROM, but you must initialize E2PROM to avoid unknown things.
   ii. Methods:
      1. Press remote control KEY CLOCK, P.M. in turn to entering factory mode.
      2. Press remote control KEY 8 to entering INIT menu, then press key PROG +, you can see “INIT BUSY” waiting for about 5 seconds till “BUSY” disappeared, then POWER OFF and ON by main power E2PROM initialization in completed.
   iii. Setting the data in E2PROM. When in manufacturing, first you read the data from an good E2PROM 24C08, then WRITE to other E2PROM 24C08.

Service items

This appendix shows information about service items that are available. The table list all possible available service items with its.

Item	Display string	Range (Index | value)		Default value
Service information	SW10	Software Version (V1.1)		Fixed, not changeable
Direct Key "8"				
Init TV receiver	INIT	Active	1	0
		Inactive	0	
Direct Key "0"				
VSD	VG2	Active	1	0
		Inactive	0	
Direct Key "1"				
Horizontal paralellogram 50Hz	5PAR	0-63		31
Horizontal bow 50Hz	5BOW	0-63		35
Horizontal shift 50Hz	5HSH	0-63		19
EW width 50Hz	5EWW	0-63		33
EW parabola/width 50Hz	5EWP	0-63		19
EW upper corner parabola 50Hz	5UCR	0-63		33
EW lower corner parabola 50Hz	5LCR	0-63		18
EW trapezium 50Hz	5EWT	0-63		43
Horizontal paralellogram 60Hz	6PAR	0-63		31
Horizontal bow 60Hz	6BOW	0-63		31
Horizontal shift 60Hz	6HSH	0-63		27
EW width 60Hz	6EWW	0-63		33
EW parabola/width 60Hz	6EWP	0-63		19
EW upper corner parabola 60Hz	6UCR	0-63		44
EW lower corner parabola 60Hz	6LCR	0-63		10
EW trapezium 60Hz	6EWT	0-63		44
Direct Key "2"				
Vertical slope 50Hz	5VSL	0-63		31
Vertical amplitude 50Hz	5VAM	0-63		10
S-correction 50Hz	5SCL	0-63		31
Vertical shift 50Hz	5VSH	0-63		22
OSD vertical position offset 50Hz	5VOF	0-63		38
Horizontal shift 50Hz on RGB mode	5RGH	0-63		31
Vertical slope 60Hz	6VSL	0-63		30
Vertical amplitude 60Hz	6VAM	0-63		11
S-correction 60Hz	6SCL	0-63		31
Vertical shift 60Hz	6VSH	0-63		23
OSD vertical position offset 60Hz	6VOF	0-63		31
Horizontal shift 60Hz on RGB mode	6RGH	0-63		31
OSD horizontal position offset	HOF	0-63		42
Vertical zoom	VX	0-63		32
Direct Key "3"				
Black level off-set R	RED	0-63		32
Black level off-set G	GRN	0-63		32
~~White point R ***(Direct Key "Red")***~~	~~WPR~~	~~0-63~~		~~31~~

Item	Display string	Range (Index | value)		Default value
White point G ***(Direct Key "Green")***	WPG	0-63		31
White point B ***(Direct Key "Blue")***	WPB	0-63		31
Luminance delay time PAL	YDFP	0-15		15
Luminance delay time NTSC	YDFN	0-15		8
Luminance delay time SECAM	YDFS	0-15		8
Luminance delay time AV	YDAV	0-15		8
Teletext brightness	TTBR	0-15		2
Mute delay	MUTD	0-20		13
Direct Key "4"				
AGC take-over	AGC	0-63		27
UOC Volume	VOL	0-63		50
Gain control for TDA9874	9874	0-30		15
AVL Setting for TDA9874	AVLT	0-3		1
Gain control for TDA9859	9859	0-100		100
IF frequency	IFFS	38.9MHz	2	2
		38.0MHz	3	
Cathode drive level	HDOL	0-15		10
IF AGC speed	SPD	0.7X	0	1
		Normal	1	
		3X	2	
		6X	3	
VG2 Brightness	VG2B	0-63		31
Max Bass	MBAS	0-19		12
Max Bass when Trubass is ON	MTBA	0-19		12
Max treble	MTRE	0-12		8
Direct Key "6"				
Contrast – Soft pre-set	1CON	0-100		40
Brightness –Soft pre-set	1BRI	0-100		30
Colour –Soft pre-set	1COL	0-100		30
Sharpness –Soft pre-set	1SHP	0-100		30
Contrast –Standard pre-set	2CON	0-100		50
Brightness – Standard pre-set	2BRI	0-100		50
Colour – Standard pre-set	2COL	0-100		50
Sharpness – Standard pre-set	2SHP	0-100		50
Contrast – Rich pre-set	3CON	0-100		100
Brightness – Rich pre-set	3BRI	0-100		60
Colour – Rich pre-set	3COL	0-100		60
Sharpness – Rich pre-set	3SHP	0-100		60
Direct Key "7"				
Screen saver / Logo Left position	XMIN	0-255		44
Screen saver Right position	XMAX	0-255		186
Screen saver Top position	YMIN	0-63		4
Screen saver Bottom position	YMAX	0-63		37
Teletext Horizontal position	TXMI	0-255		40
Teletext Vertical position 50Hz	5TYM	0-63		38
Teletext Vertical position 60Hz	6TYM	0-63		38
Direct Key "5"				
NVM option 1	**OP1**	**0**	**1**	125
VG2 Alignment mode	Bit 0	AVG	VSD	1
YUV or Yprpb	Bit 1	YUV	Yprpb	0
XX	Bit 2	Off	On	1
XX	Bit 3	Off	On	1
~~AV2~~	~~Bit 4~~	~~Off~~	~~On~~	~~1~~

Item	Display string	Range (Index | value)		Default value
SVHS	Bit 5	Off	On	1
XX	Bit 6	Off	On	1
XX	Bit 7	Off	On	0
NVM option 2	**OP2**	**0**	**1**	14
AVL	Bit 0	Off	On	0
Auto sound in autosearch mode	Bit 1	Off	On	1
Pan Europe Teletext set	Bit 2	Off	On	1
Cyrillic Teletext set	Bit 3	Off	On	1
Farsi Teletext set	Bit 4	Off	On	0
Arabic Teletext set	Bit 5	Off	On	0
Sync On Y (YUV/Yprpb mode)	Bit 6	Off	On	Not in N2 “0”
Slicing lever	Bit 7	depenon noise	Fixed	0
NVM option 3	**OP3**	**0**	**1**	**255**
English Menu	Bit 0	Off	On	1
Farsi Menu	Bit 1	Off	On	1
Arabic Menu	Bit 2	Off	On	1
Turkish Menu	Bit 3	Off	On	1
France Menu	Bit 4	Off	On	1
Germany Menu	Bit 5	Off	On	1
Italy Menu	Bit 6	Off	On	1
Russia Menu	Bit 7	Off	On	1
NVM option 4	**OP4**	**0**	**1**	**92**
Narrow-band sound PLL window	Bit 0	Small	Large	0
Power mode	Bit 1	Standby	Last Memory	0
Geometry control	Bit 2	Off	On	1
Logo	Bit 3	Off	On	1
EHT tracking mode	Bit 4	Vertical	Vert. & EW	1
Search tuing mode sensitivity	Bit 5	Normal	Reduced	0
Menu half-tone	Bit 6	Off	On	1
Zoom function	Bit 7	Off	On	0
NVM option 5	**OP5**	**0**	**1**	**191**
Sound system DK	Bit 0	Off	On	1
Sound system BG	Bit 1	Off	On	1
Sound system I	Bit 2	Off	On	1
XX	Bit 3	Off	On	1
Reserve	Bit 4	X	X	1
Reserve	Bit 5	X	X	1
Switch-off in vertical overscan	Bit 6	Undefined	Vert. overscan	0
Power on to AV (Last status)	Bit 7	Off	On	1
NVM option 6	**OP6**	**0**	**1**	**218**
“No signal” OSD when no signal	Bit 0	Off	On	0
Blue screen or black screen	Bit 1	Black	Blue	1
16:9 mode	Bit 2	Off	On	0
Child lock (Lock local key)	Bit 3	Off	On	1
Top & bottom bar on Menu	Bit 4	Off	On	1
Mid line bar on Menu	Bit 5	Off	On	0
Set “POC” bit when no signal	Bit 6	Off	On	1
Game	Bit 7	Off	On	1
NVM option 7	**OP7**	**0**	**1**	**81**
AV1	Bit 0	Off	On	1
Selection QSS or AM out	Bit 1	QSS	AM	0
TV and monitor out select	Bit 2	Monitor	TV	0
LISTEN PRESET	Bit 3	Disable	Enable	0
Power on always	Bit 4	See OP4 bit 1	Direct On	1

Item	Display string	Range (Index | value)		Default value
Noise Reduce Off	Bit 5	***See Table 1***		0
Noise Reduce On	Bit 6			1
NTSC-M Control switch	Bit 7	1(FM)	0(QSS)	0
		ON	OFF	
TrueBass control	BASS	1	0	1
Comb-filter Control	COMB	1	0	1
NICAM control	NICA	1	0	1
YUV Control	YUV	1	0	0
RGB control	RGB	1	0	1
NTSC-M Control	M	1	0	1
Direct Key "CLOCK"				Direct Key "CLOCK
Logo edit (7 chars. & 2 lines)	Logo Text	English letter & number etc..		Logo edit (7 chars. & 2 lines)

Table 1 : Noise Reduce Setting for PAL

Noise Reduce On	Noise Reduce Off	OP7 Bit 5	OP5 Bit 6
2.7MHz	3.1MHz	0	0
2.7MHz	3.5MHz	1	0
3.1MHz	3.5MHz	0	1
3.1MHz	3.5MHz	1	1

* Remark : For NTSC only 2.7 -> 3.1MHz

PURITY ADJUSTMENT

1. Before color purity adjustment, warm up the TV set over 15 minutes and fully degauses.
2. Receive pure white signal in AV status and set the TV receiver dynamic.
3. Go to factory mod MENU2. After write down the values of R-BIAS and B-BIAS, set the values of R-BIAS and B-BIAS zero.
4. Loosen the clamp screw of the deflection yoke and pull the deflection yoke towards color purity Magnetic loop.
5. Adjust color purity magnetic loop to make the green area at the center of CRT screen.
6. Slowly push the deflection yoke toward the front of CRT and set it where a uniform green field is obtained. Tighten the clamp screw of the deflection yoke.
7. Restore the values of R-BIAS, G_BIAS and B-BIAS.

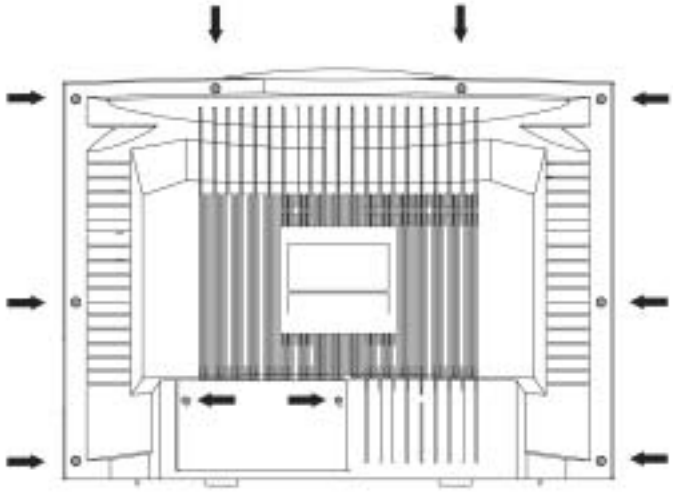
CONVERHENCE ADJUSTMENT

1. Receive a dotted pattern. Set the TV receiver dynamic.
2. Loose the convergence magnet clamper and align red with blue dots at the center of the screen by rotating (R, B) static convergence magnets.
3. Align Red/Blue with green dots at the center of the screen by rotating (RB-G) static convergence magnet.
4. Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good.

MECHANICAL DISASSEMBLY

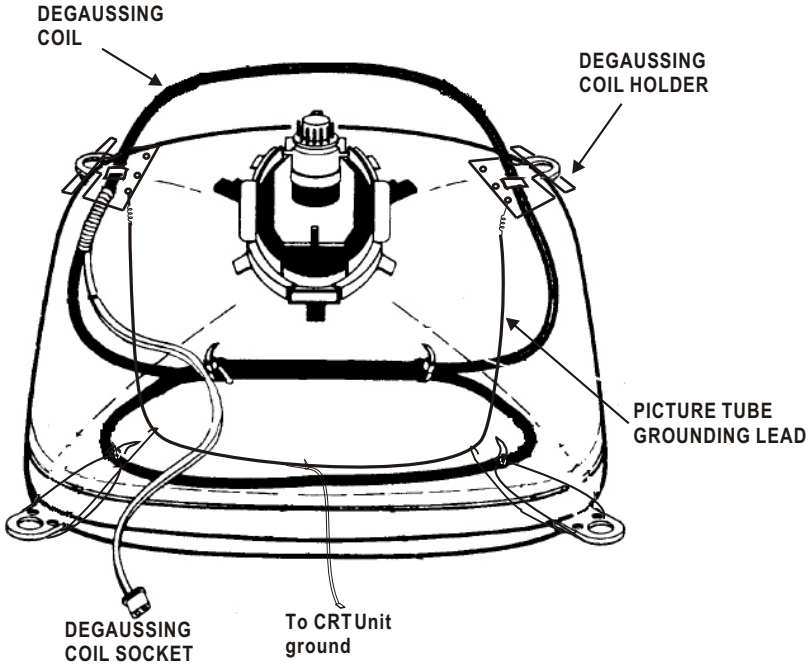
Cabinet back removal

1. Refer to figure 1, remove 10 screws.
2. Pull off cabinet back and remove.



Chassis removal

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the dag coating (picture tube grounding lead).
3. Disconnect Degaussing coil socket (KE), picture tube socket, Deflection yoke connector (KDY), speaker connectors (KL and KR) and 2nd anode lead.
4. Remove chassis completely by sliding it straight back.

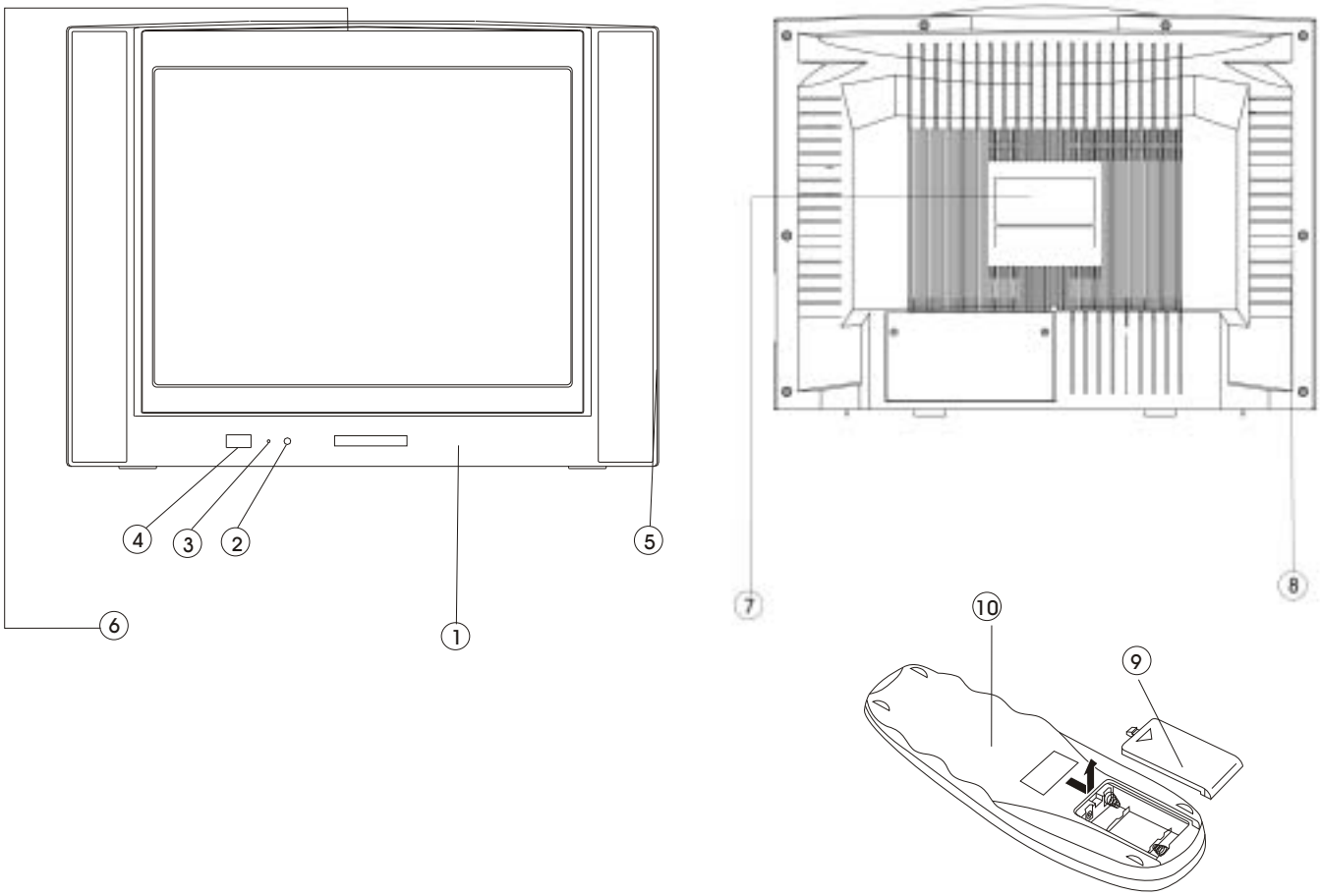


Picture tube removal

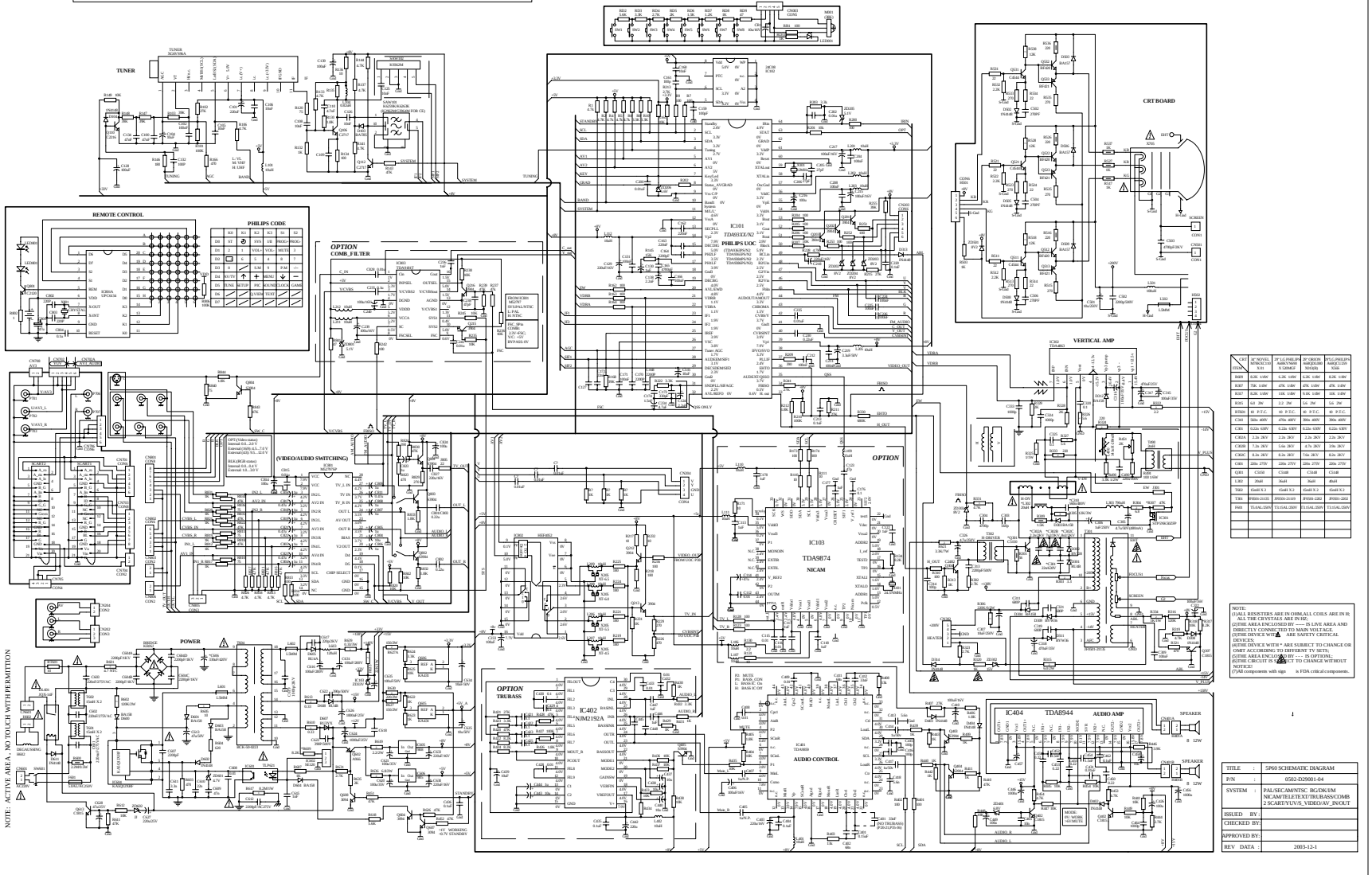
CAUTION: Do not disturb the deflection yoke or magnet assembly on the picture tube Neck. Care must be taken to keep these assemblies intact, unless picture tube is being replaced. Discharge the picture tube to the coating before handling the tube.

1. Remove chassis, referring to chassis removal instructions.
2. Place cabinet front face down on the soft surface.
3. Remove the screw on each corner of the picture tube and GENTLY lift the picture tube out of the cabinet.
4. Install a replacement picture tube in reverse order. Properly install the degaussing coil and picture tube grounding lead on the picture tube. See Figure 2.

Note: If picture tube is being replaced, mount the Degaussing Coil on the picture tube. See following…



5P60 SCHEMATIC DIAGRAM



CRT	14" NOVEL/ NPM3CC110	29" LG PHILIPS/ A68KY96X	29" OR036 A68QEG08X	4/3,LG PHILIPS/ A54CX22X
DYOK	A 51	A 5.6MmLP	M51AL	X68
R469	6.2K 1/4W	6.2K 1/4W	6.2K 1/4W	6.2K 1/4W
R307	75K 1/4W	47K 1/4W	47K 1/4W	47K 1/4W
R307	6.2K 1/4W	10K 1/4W	9.1K 1/4W	10K 1/4W
R305	6# 3W	2.2 2W	5# 2W	5# 2W
R5926	10 P.T.C.	10 P.T.C.	10 P.T.C.	10 P.T.C.
C301	560v 400V	470v 400V	390v 400V	390v 400V
C305	0.22v 630V	0.22v 630V	0.22v 630V	0.22v 630V
C402A	2.2n 2KV	2.2n 2KV	2.2n 2KV	2.2n 2KV
C302B	7.5n 2KV	5.6n 2KV	4.7n 2KV	33n 2KV
C03C	8.2n 2KV	8.2n 2KV	7.6n 2KV	8.2n 2KV
C601	220u 275V	220u 275V	220u 275V	220u 275V
Q201	C5151	C5148	C5148	C5148
L302	20uH	16uH	36uH	40uH
T602	03n60 S.2	03n60 S.2	03n60 S.2	03n60 S.2
T301	05S01-21/35	05S01-21/35	05S01-2202	05S01-2202
F601	T6.6AL/250V	T3.15AL/250V	T3.15AL/250V	T3.15AL/250V

NOTE:
1) ALL RESISTERS ARE IN OHM,ALL COILS ARE IN H; ALL THE CRYSTALS ARE IN MC.
2)THE AREA ENCLOSED BY ------ IS LIVE AREA AND THESE TEV CONNECTED TO MAIN VOLTAGE.
3)THE DEVICE WITH ▲ ARE SAFETY CRITICAL DEVICES.
4)THE DEVICE WITH * ARE SUBJECT TO CHANGE OR OMIT ACCORDING TO DIFFERENT TV SETS.
5)THE AREA ENCLOSED BY ---- IS OPTIONL.
6)THE CIRCUIT IS SUBJECT TO CHANGE WITHOUT NOTICE!
7)All components with sign is FDA critical components.

TITLE :	5P60 SCHEMATIC DIAGRAM
P/N :	0502-D29001-04
SYSTEM :	PAL/SECAM/NTSC BG/DK/I/M NICAM/TELETEXT/TRUBASS/COMB 2 SCART/YUV/S_VIDEO/AV_IN/OUT
ISSUED BY :	
CHECKED BY:	
APPROVED BY:	
REV DATA :	2003-12-1

1

No	Part no	Description
1	SKCM0025TM0110	CABINET COLOUR MATCH-METAL SILVER GREY #MS G001
2	SK100729TM0001	FRONTLINS (REMOTE CONTROL WINDOW)
3	SK100729TM0001	FRONT LENS (LED WINDOW)
4	SK100925TM0001	POWER KNOB-ELECTROPLATING SILVER (abs)
5	SK100425TM0002	SIDE AV JACK BRACKET-DARK GREY #DG001(ABS)
6	SK100829TM0001	CONTROL KEY KNOB-ELECTROPLATING SILVER (ABS)
7	SK060125TM00W6	BACK LABEL FISHER TF25M2T W/PCBENG
8	SK100225TM0003	BACK CABINET-DARK GREY #DG001(HIPS) 94V-0
9	SK1016HS080006	BATTERY DOOR-METAL SILVER GREY #MSG001 (ABS)
10	SKHS08S0360600	HANDSET-36 KEYS FOR OVERSEAS NORMAL GREY ENG (5N11)

TYPICAL TROUBLE SHOOTING CHART

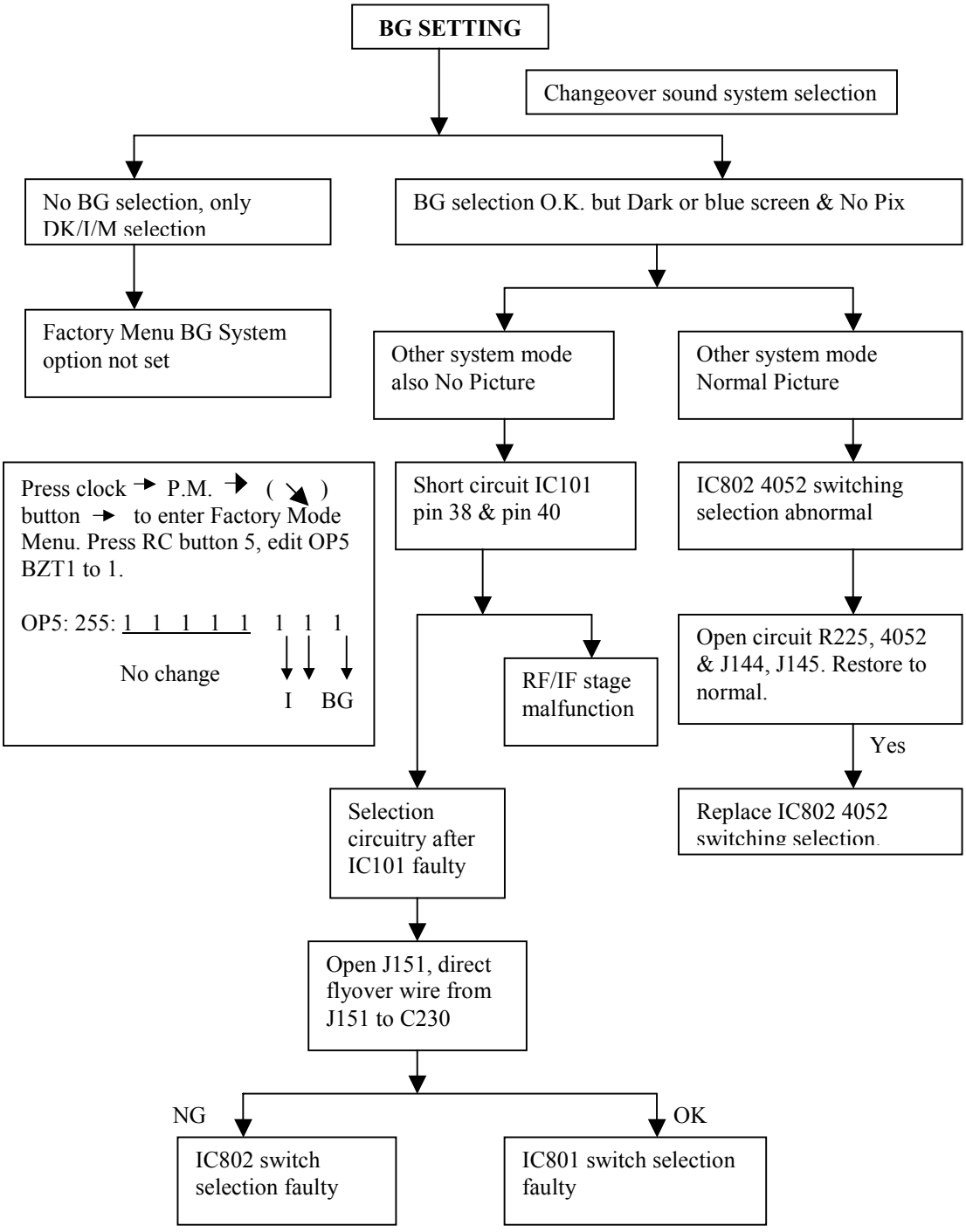


Figure 1-1: Repair logic chart for BG System

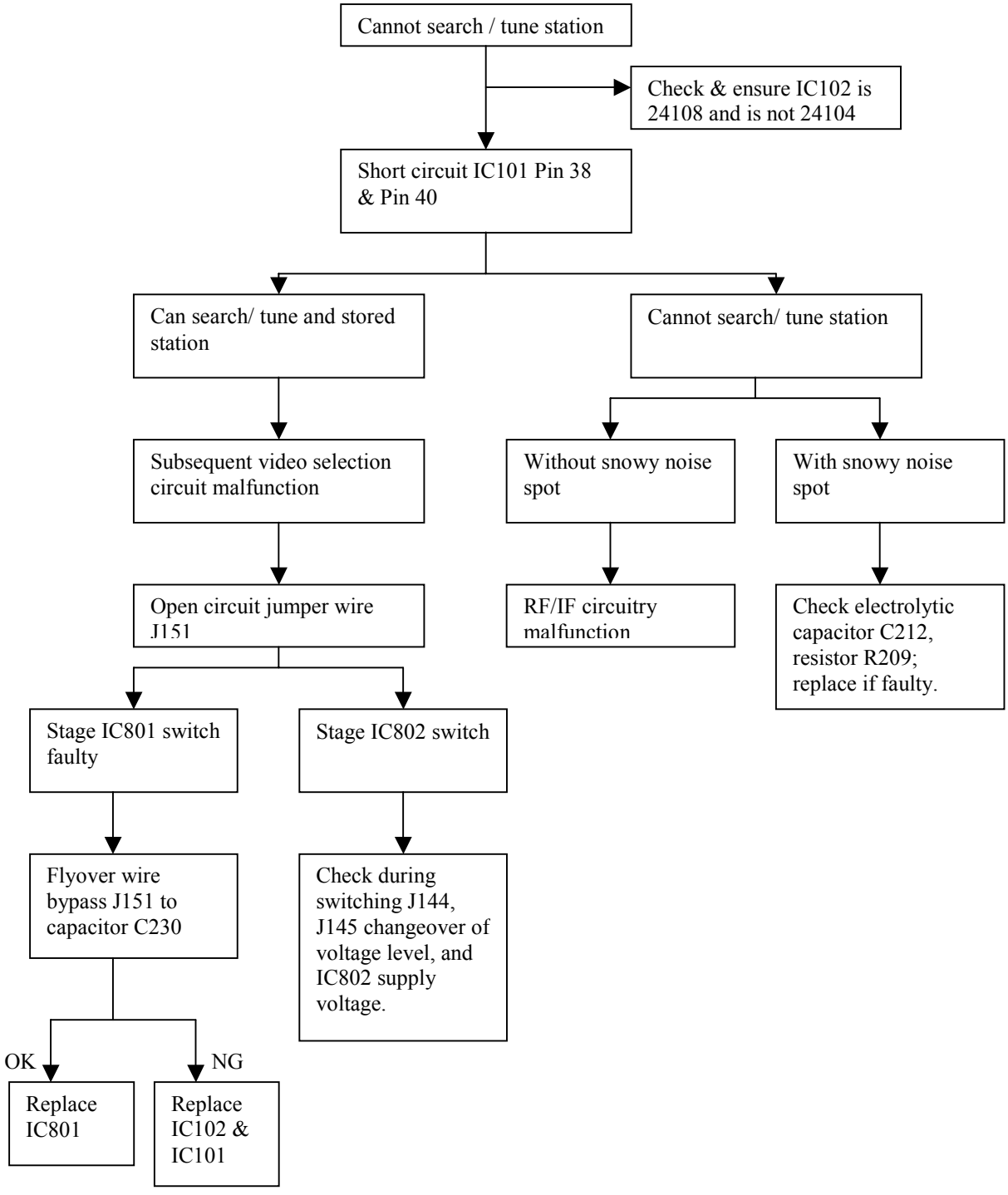


Figure 1-2: Repair logic chart for search/ tune & stored

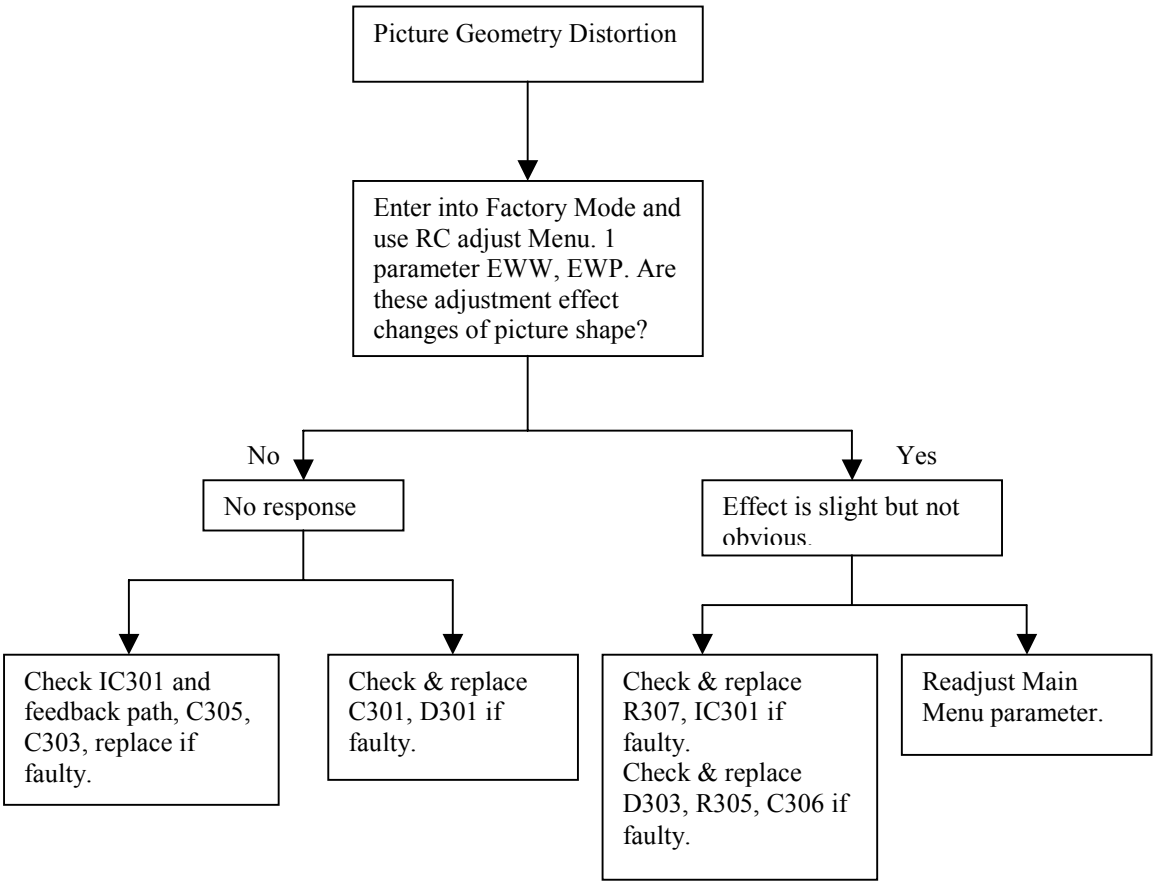


Figure 1-3: Picture Geometry Distortion repair logical chart.

Repair precaution:

1. Use isolating transformer and rubber for safety isolation.
2. Obey operating procedure, according factory alignment explanation for parameter setup to ensure good function requirement and specification before leaving the factory.
3. Components with safety mark should be replaced with what the original factory requires.
4. To solder out the IC, irons should have good grounding to prevent static charge.
5. Should not replace components and modify the circuit at will.
6. Follow checking by eyes before connecting AC principal. When smoke is found resulting from the unit burnt, AC power supply should be disconnected first. It will be reconnected to AC supply only when the problem has been solved.
7. After repair, all functions should be checked. Reassembly should be done according good workmanship and unreasonable performance is prohibited.
8. To replace CRT, anti-explosion precaution should be followed.

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