

# AKAI

# SERVICE MANUAL

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**Model:** CT3216

Safety Instructions  
Features & Specifications  
Block Diagram  
Circuit Diagram  
Disassembly  
Pin Descriptions  
Exploded View Diagram  
Spare Part List

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This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

## IMPORTANT SERVICE SAFETY INFORMATION

Operating the receiver outside of its cabinet or with its back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage RF terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis, escutcheon, picture tube dag and tuner when operating chassis.

These receivers have a "polarized" AC line cord. The AC plug is designed to fit into standard AC outlets in one direction only. The wide blade connects to the "ground side" and the narrow blade connects to the hot "side" of the AC line. This assures that the TV receiver is properly grounded to the house wiring. If an extension cord must be used, make sure it is of the "polarized" type.

Since the chassis of this receive is connected to one side of the AC supply during operation, service should not be attempted by anyone not familiar with the precautions necessary when working on these types of equipment.

When it is necessary to make measurements or tests with AC power applied to the receiver chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damage to transistors. The Isolation Transformer should be connected between the TV line cord plug and the AC power outlet.

Certain High voltage (HV) maybe cause X-ray radiation. Receivers should not be operated with HV levels exceeding the specified rating for their chassis type. Higher voltage may also increase the possibility of failure in the HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the receive that could cause a rise in high voltage, or operating supply voltages. No changes should be made the original design of the receiver.

Components shown in the shaded areas on the schematic diagram and/or identified by in the replacement parts list should be replaced only with exact factory recommended replacement parts. The use of unauthorized substitute parts man creats may create shock, fire, X-ray radiation, or other hazards.

To determine the presence of high voltage, use an accurate high impedance HV meter connected between the second anode lead and he CRT dag grounding device. When servicing the High Voltage System remove static charges from it by connecting a 10K Ohm resistor in series Wan insulated wire(such as test probe) between the picture tube dag and 2<sup>nd</sup> anode lead(Have AC line cord disconnected from AC supply).

The picture tube use in this receiver employ integral implosion protection. Replace with a tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely, Keep others without shatter proof goggles away.

Before returning the receiver to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Replace all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers of shieldls, isolation resistor-capacitor networks, mechanical insulators etc.

3. To be sure that not shock hazard exists, a check for the presence of leakage current should be made at each exposed metal part having a return path to the chassis (antenna, cabinet metal, screw heads knobs and/or shafts, escutcheon, etc.) in the following manner.

Plug the AC line cord directly into a 120V, AC receptacle. (Do not use an Isolation Transformer during these checks.) All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a nonpolarized adapter plug must be used only for the purpose of completing these checks.)

If available, measure current using an accurate leakage current tester. Any reading of 0.35mA or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to owner.

If a reliable leakage current tester is not available, this alternate method of measurement should be used. Using two clip leads, connect a 1500 Ohm, 10 watt resistor paralleled by a 0.15uF capacitor in series with a known earth ground, such as a water pipe or conduit and the metal part to be checked. Use a VTVM or VOM with 1000 Ohms per Volt, or higher, sensitivity to measure this AC voltage drop across the resistor,. Any reading of 0.35 volt RMS or more is excessive and indicates potential shock hazard which must be corrected before returning he receiver to the owner.

## **ALIGNMENT PROCEDURES**

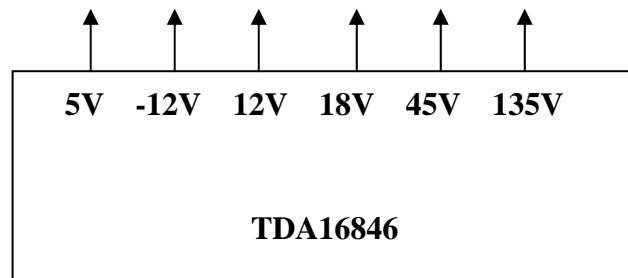
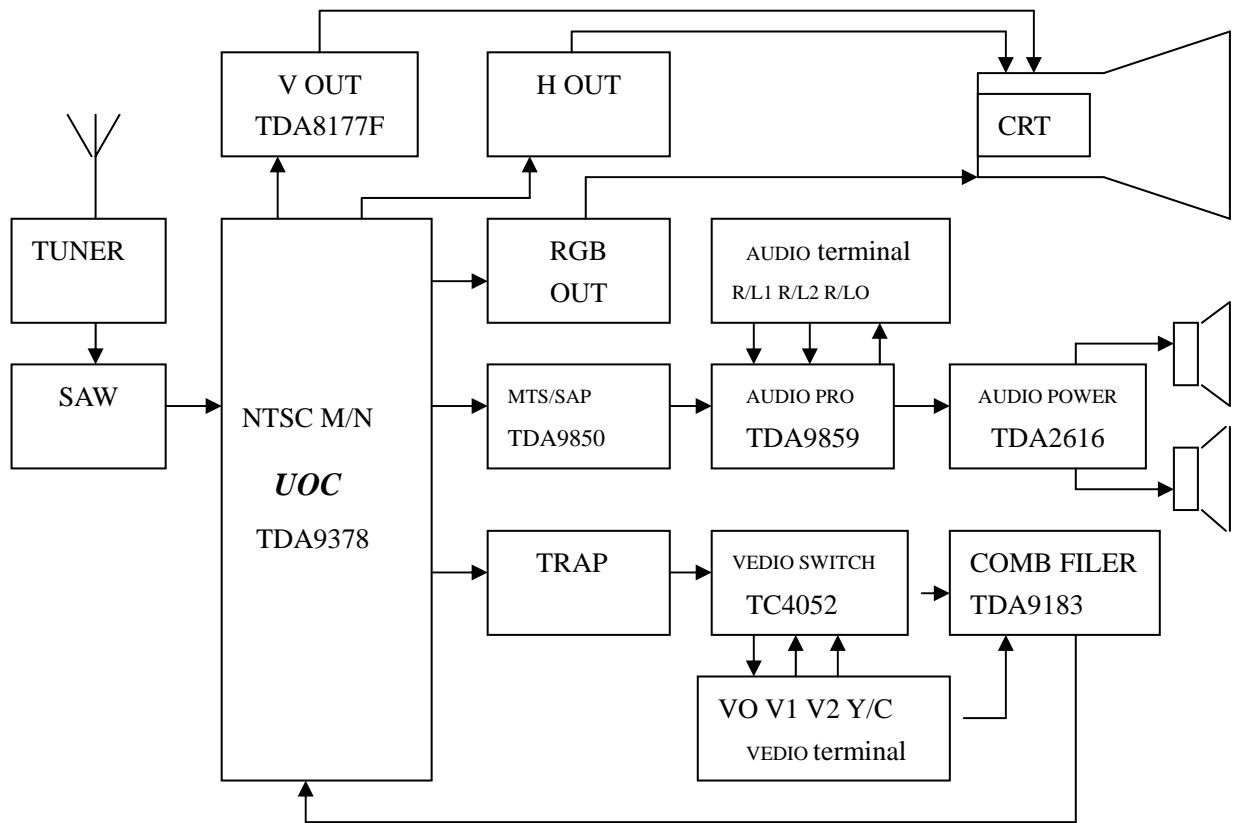
### **PLEASE READ BEFORE ATTEMPTING SERVICE**

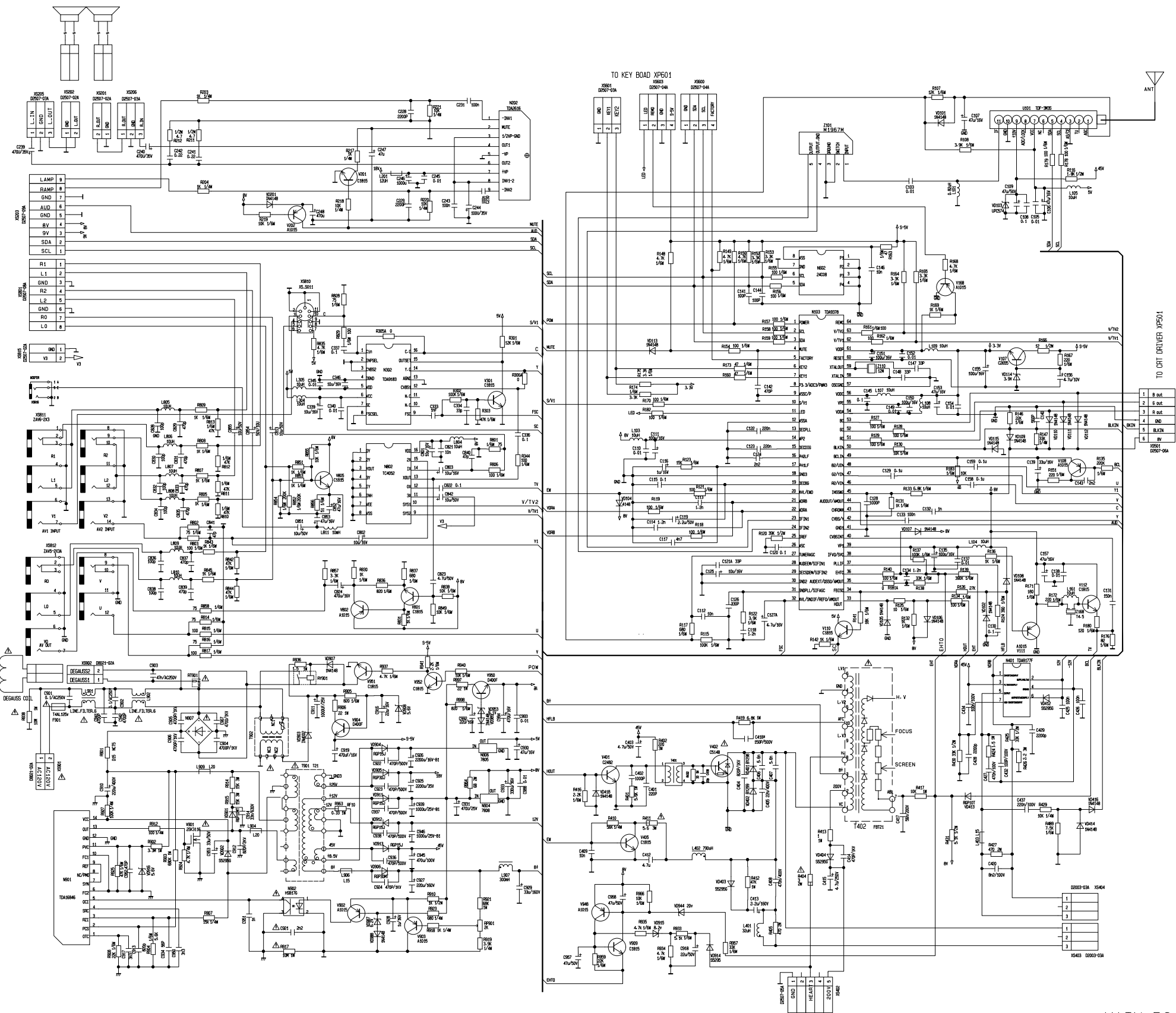
1. Use an Isolation Transformer when performing any service on this chassis.
2. Never disconnect any leads while receiver is in operation.
3. Disconnect all power before attempting an repairs.
4. Do not short any porsition of the circuit while the power is on.
5. For safety reasons, replacing any components should be according with identical replacement parts (SEE PARTS LIST).
6. Before testing, warm up the TV for at least 30 minutes and demagnetize the CRT with an external degaussing coil.
7. When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
8. Inferior silicon grease can damage IC's and transistors. When replacing IC's and transistors, use only specified silicon grease,. Remove all old silicon when applying new silicon.
9. Before removing the anode cap, discharge eiecticity because it contains high voltage.

## FUNCTION AND SPECIFICATION

<b>TUBE/POWER SUPPLY</b>	
TUBE TYPE	NF
SIZE	32"
ASPECT RATIO	4 : 3
POWER SUPPLY	~120V, 60Hz
MAIN POWER SWITCH	SOFT SWITCH
<b>TUNER</b>	
BUILT-IN FS TUNER	YES
# OF CHANNEL/PROGRAM	181 CH
COLOR SYSTEM	NTSC
SOUND SYSTEM	M
AV NTSC 3.58/4.43	AV NTSC 3.58
<b>PICTURE</b>	
COMB FILTER	2LINE
TINT, COLOR, BRIGHTNESS, CONTRAST AND SHARPNESS CONTROL	YES
USER SELECTABLE PICTURE CONTROL(NORMAL,BRIGHT,USER,SOFT)	YES
USER SELECTABLE 3-STAGE COLOR TEMPERATURE CONTROLS	YES
OSD LANGUAGE	ENG, FR, SPA
<b>SOUND</b>	
STEREO/MONO	MTS/SAP
AV STEREO	YES
SURROUND	YES
tone control(BASS/TREBLE/BALANCE)	YES
USER SELECTABLE SOUND CONTROL	YES
SPEAKER QUANTITY	2
AUDIO OUTPUT POWER	4Wx2
<b>USER CONVENIENCE</b>	
FULL FUNCTION REMOTE CONTROL	YES
CCD	YES
V-CHIP	YES
CHILD LOCK	YES
SLEEP TIMER	YES
RECALL	YES
QUICK VIEW	YES
<b>CONNECTORS</b>	
CABLE/ANTENNA INPUT	1 REAR
AV INPUT	2 REAR,1SIDE
S-VIDEO INPUT	1 REAR
COMPONENT VIDEO INPUT (YCbCr)	1 REAR
AV OUTPUT	1 REAR(Audio)
HEADPHONE OUTPUT	YES

Block diagram

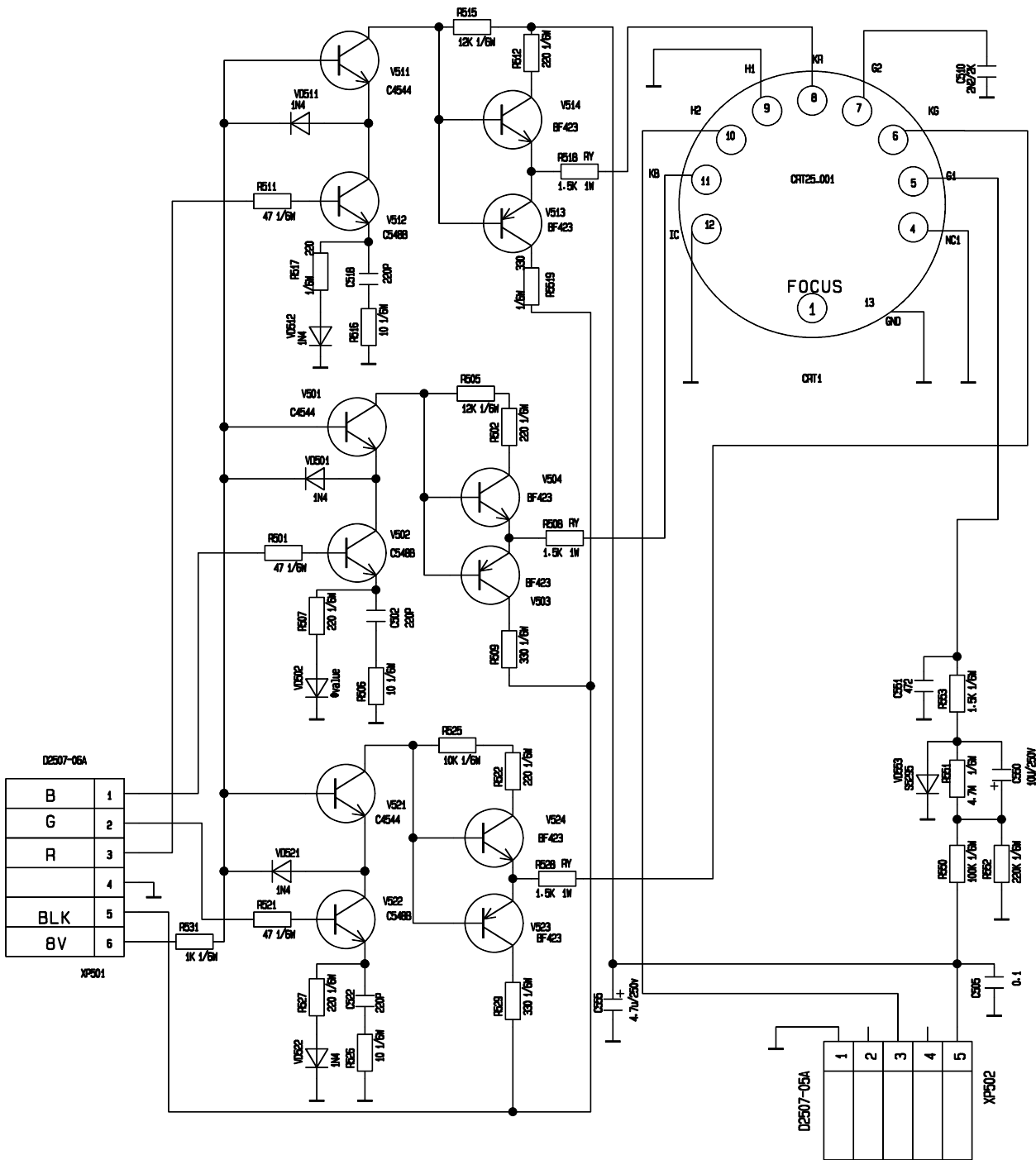




MAIN BOARD

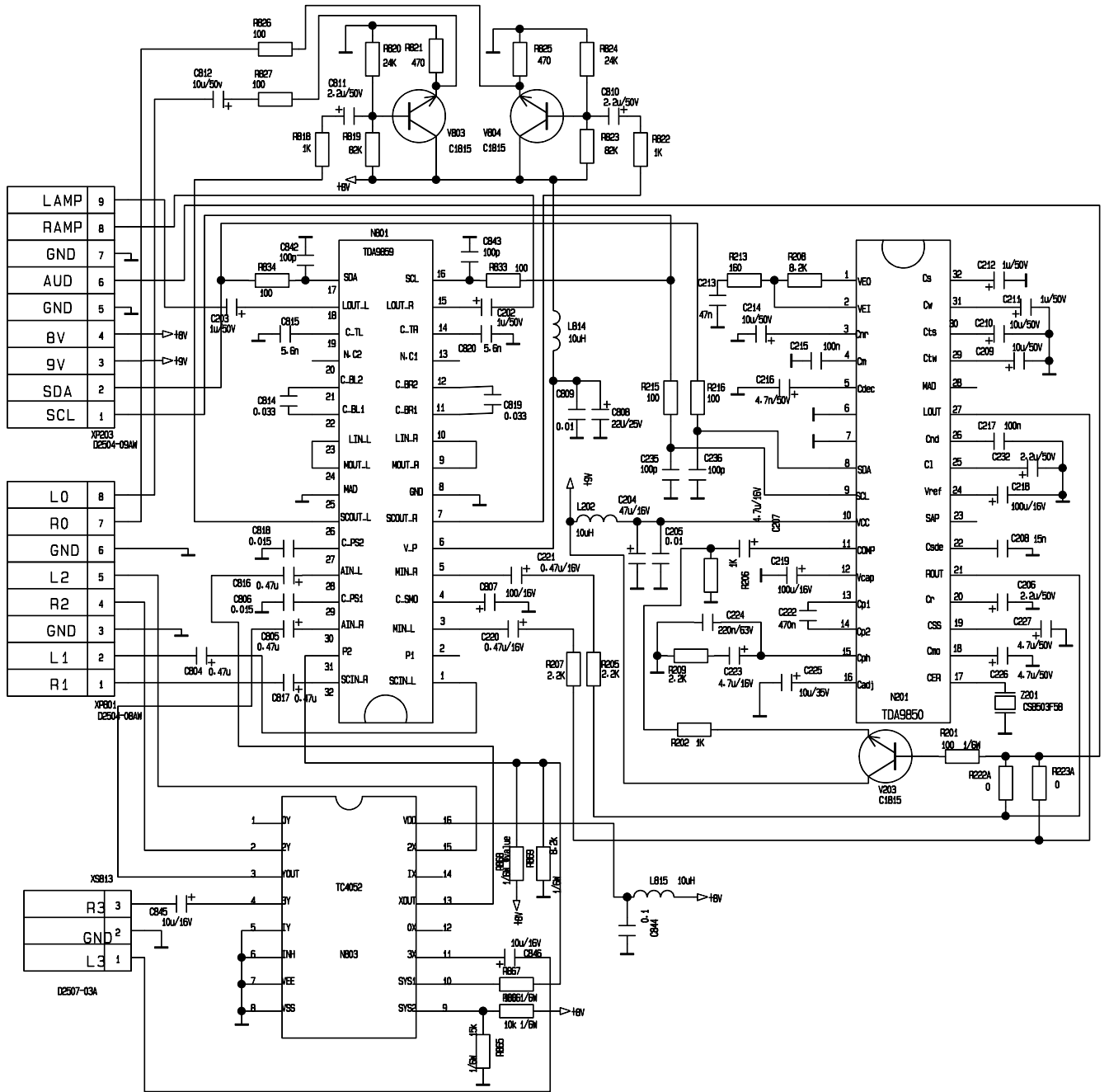
NOTE:

- (1) ALL CAPACITORS ARE IN  $\mu\text{F}$  UNLESS OTHERWISE NOTED.  
ALL CAPACITORS ARE 50V UNLESS OTHERWISE NOTED.
- (2) CAPACITORS NOT SPECIFICALLY DESIGNATED ARE CERAMIC CAPACITORS.
- (3) ALL RESISTORS ARE IN OHM 1/6 WATT UNLESS OTHERWISE NOTED.
- (4) RESISTORS NOT SPECIFICALLY DESIGNATED ARE CARSON FILM RESISTORS.
- (5) THIS CIRCUIT DIAGRAM IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.
- (6)  $\Delta$  DESIGNATES A SAFETY CRITICAL COMPONENT.



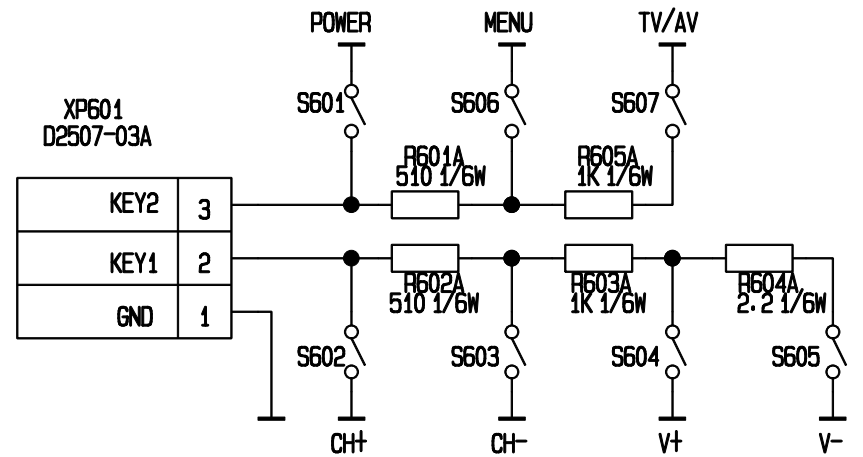
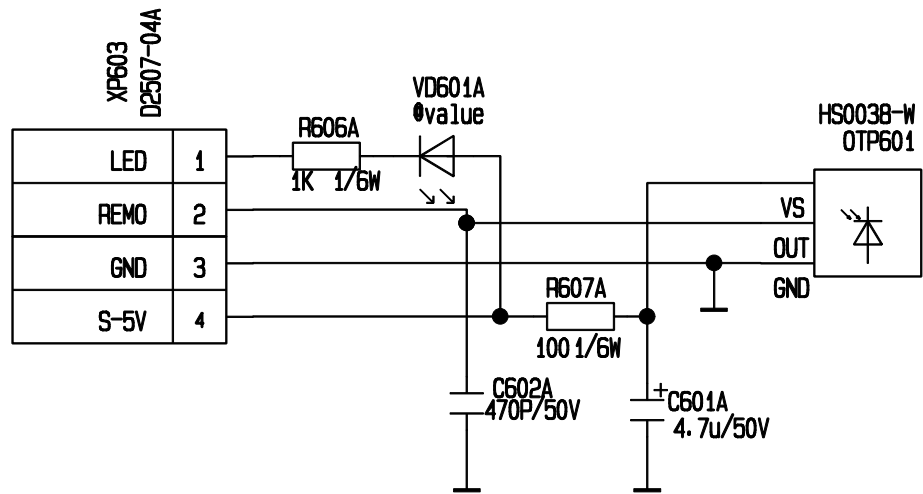
CRT DRIVER

CONNECT TO MAIN BOARD

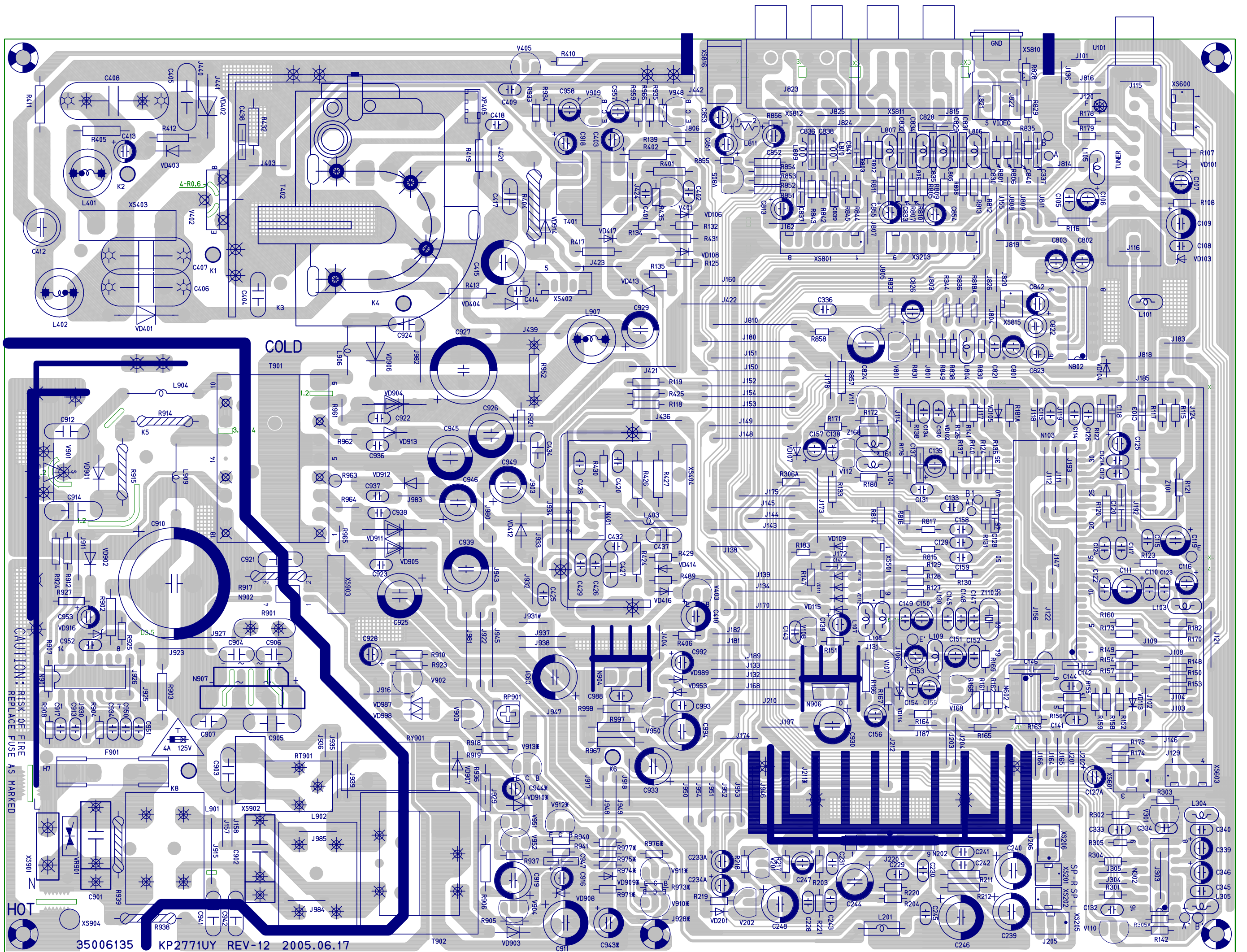


SOUND PROCESS





CONTROL BOARD



35006135 KP2771UY REV-12 2005.06.17

CAUTION: RISK OF FIRE  
REPLACE FUSE AS MARKED

HOT

COLD

TUNER

I<sup>2</sup>C-bus controlled BTSC stereo/SAP decoder

TDA9850

PINNING

SYMBOL	PIN	DESCRIPTION
VEO	1	variable emphasis output for dbx
VEI	2	variable emphasis input for dbx
C <sub>NR</sub>	3	capacitor noise reduction for dbx
C <sub>M</sub>	4	capacitor mute for SAP
C <sub>DEC</sub>	5	capacitor DC-decoupling for SAP
AGND	6	analog ground
DGND	7	digital ground
SDA	8	serial data input/output
SCL	9	serial clock input
V <sub>CC</sub>	10	supply voltage (+9 V)
COMP	11	composite input signal
V <sub>CAP</sub>	12	capacitor for electronic filtering of supply
C <sub>P1</sub>	13	capacitor for pilot detector
C <sub>P2</sub>	14	capacitor for pilot detector
C <sub>PH</sub>	15	capacitor for phase detector
C <sub>ADJ</sub>	16	capacitor for filter adjustment
CER	17	ceramic resonator
C <sub>MO</sub>	18	capacitor DC-decoupling mono
C <sub>SS</sub>	19	capacitor DC-decoupling stereo/SAP
C <sub>R</sub>	20	adjustment capacitor, right channel
OUTR	21	output, right channel
C <sub>SDE</sub>	22	capacitor SAP de-emphasis
SAP	23	SAP output
V <sub>ref</sub>	24	reference voltage $0.5 \times (V_{CC} - 1.5 V)$
C <sub>L</sub>	25	adjustment capacitor, left channel
C <sub>ND</sub>	26	noise detector capacitor
OUTL	27	output, left channel
MAD	28	programmable address bit
C <sub>TW</sub>	29	capacitor timing wideband for dbx
C <sub>TS</sub>	30	capacitor timing spectral for dbx
C <sub>W</sub>	31	capacitor wideband for dbx
C <sub>S</sub>	32	capacitor spectral for dbx

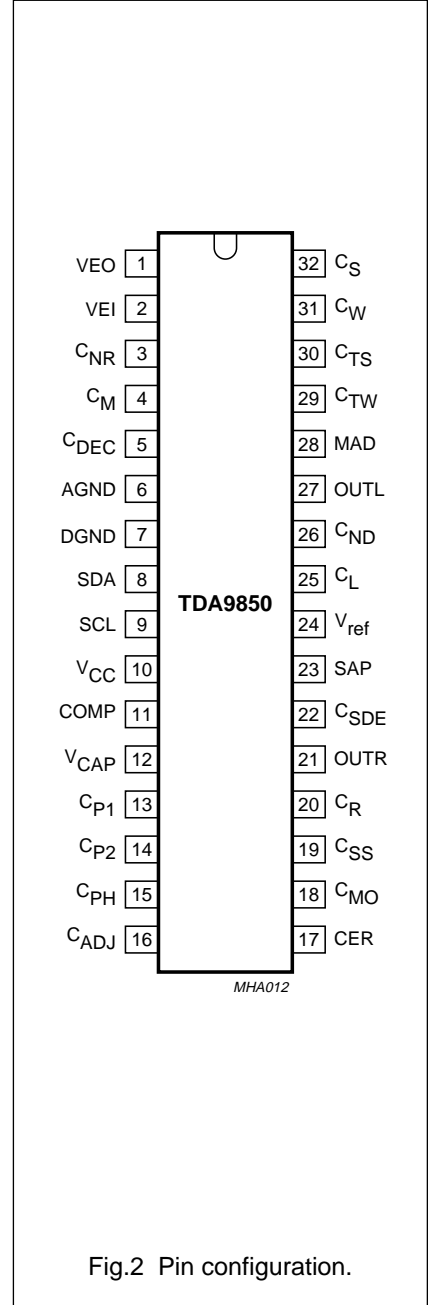


Fig.2 Pin configuration.

PINNING

SYMBOL	PIN	DESCRIPTION
C <sub>IN</sub>	1	chrominance signal input
INPSEL	2	input switch select input
Y/CVBS <sub>2</sub>	3	luminance or CVBS signal 2 input
DGND	4	digital ground
V <sub>DDD</sub>	5	digital supply voltage
V <sub>CCA</sub>	6	analog supply voltage
SC	7	sandcastle signal input
FSCSEL	8	colour subcarrier select input
FSC	9	colour subcarrier signal input
n.c.	10	not connected
n.c.	11	not connected
Y/CVBS <sub>1</sub>	12	luminance or CVBS signal 1 input
AGND	13	analog ground (signal reference)
Y/CVBS <sub>OUT</sub>	14	luminance or CVBS signal output
OUTSEL	15	output switch select input
C <sub>OUT</sub>	16	chrominance signal output

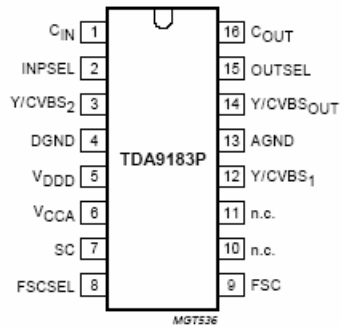


Fig.2 Pin configuration (DIP16).

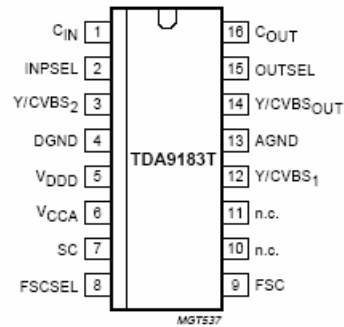


Fig.3 Pin configuration (SO16).

**PINNING**

SYMBOL	PIN	DESCRIPTION
SCIN <sub>L</sub>	1	SCART input; left channel
P1	2	port 1 output
MIN <sub>L</sub>	3	MAIN input; left channel
C <sub>SMO</sub>	4	smoothing capacitor of reference voltage
MIN <sub>R</sub>	5	MAIN input; right channel
V <sub>P</sub>	6	supply voltage
SCOUT <sub>R</sub>	7	SCART output; right channel
GND	8	ground
MOUT <sub>R</sub>	9	MAIN output; right channel
LIN <sub>R</sub>	10	input to right loudspeaker channel
C <sub>BR1</sub>	11	bass capacitor connection 1; right channel
C <sub>BR2</sub>	12	bass capacitor connection 2; right channel
n.c.	13	not connected
C <sub>TR</sub>	14	treble capacitor connection; right channel
LOUT <sub>R</sub>	15	loudspeaker output; right channel
SCL	16	serial clock input; I <sup>2</sup> C-bus
SDA	17	serial data input/output; I <sup>2</sup> C-bus
LOUT <sub>L</sub>	18	loudspeaker output; left channel
C <sub>TL</sub>	19	treble capacitor connection; left channel
n.c.	20	not connected
C <sub>BL2</sub>	21	bass capacitor connection 2; left channel
C <sub>BL1</sub>	22	bass capacitor connection 1; left channel
LIN <sub>L</sub>	23	input to left loudspeaker channel
MOUT <sub>L</sub>	24	MAIN output; left channel
MAD	25	module address select input
SCOUT <sub>L</sub>	26	SCART output; left channel
C <sub>PS2</sub>	27	pseudo stereo capacitor 2
AIN <sub>L</sub>	28	AUX input; left channel
C <sub>PS1</sub>	29	pseudo stereo capacitor 1
AIN <sub>R</sub>	30	AUX input; right channel
P2	31	port 2 output
SCIN <sub>R</sub>	32	SCART input signal RIGHT

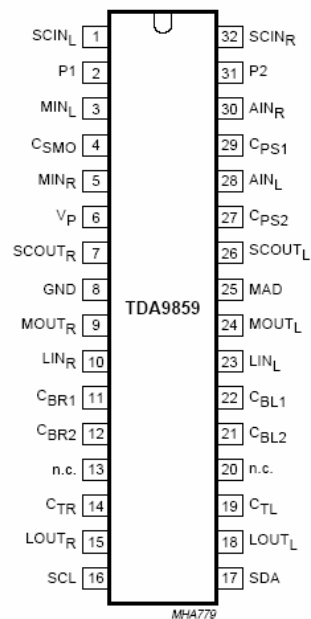
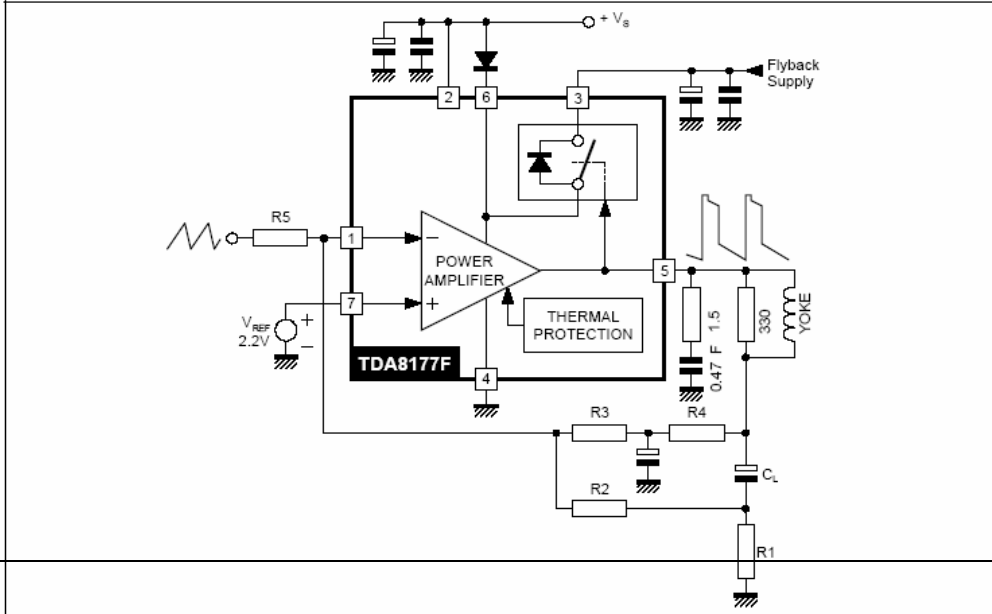
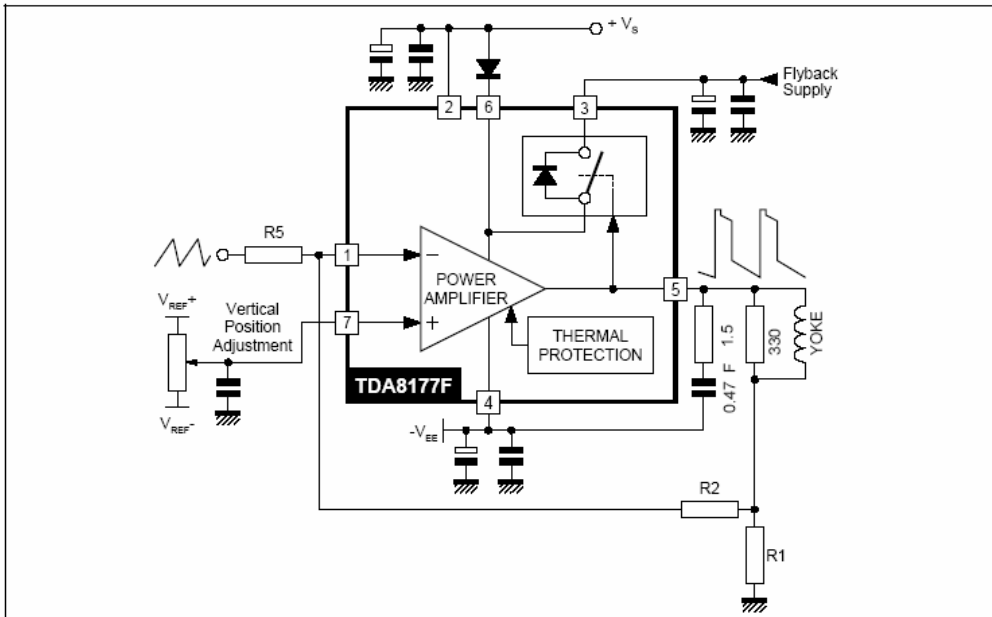


Fig.2 Pin configuration.

APPLICATION CIRCUITS  
AC COUPLING

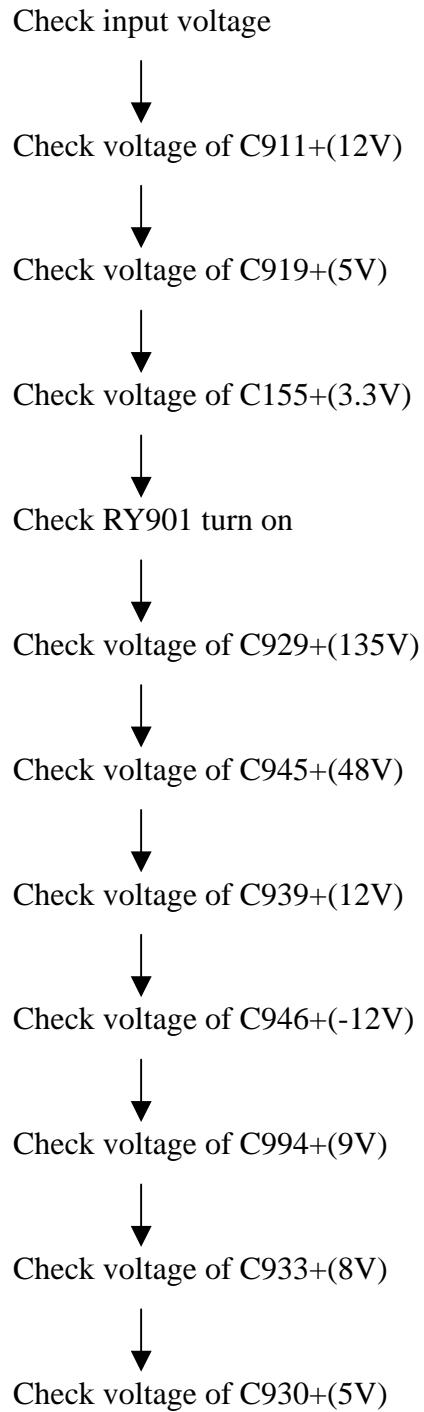


DC COUPLING



## Service Flow Chart

### Power supply



## CPU circuit

Check voltage of N103 pin54, pin56, pin61(3.3V)



Check waveform of N103 pin58, pin59



Check waveform of N103 pin2, pin3



Check voltage of N602 pin8 (5V)



Check waveform of N602 pin5, pin6

## Vertical circuit

Check voltage of N103 pin14, pin39(8V)



Check waveform of N103 pin26



Check waveform of N103 pin21, pin22



Check voltage of N401 pin3(48V)



Check voltage of N401 pin2(12V)



Check voltage of N401 pin4(-12V)



Check waveform of N401 pin1, pin7



Check waveform of N401 pin5



## Horizontal circuit

Check voltage of N103 pin14,pin39(8V)



Check waveform of N103 pin33



Check voltage of C945+(48V)



Check waveform of V401-B



Check waveform of V401-C



Check voltage of C929+(135V)



Check waveform of V402-B



Check waveform of V402-C



Check voltage of C415+(200V)

## Video circuit

Check voltage of C109+(33V)



Check voltage of C106+(5V)



Check waveform of tuner pin4, pin5



Check waveform of tuner pin11(IF)



Check voltage of L103 and L104(8V)



Check waveform of N103 pin23, pin24



Check waveform of N103 pin38



Check waveform of N103 pin40



Check waveform of N802 pin12, pin13



Check waveform of N302 pin12, pin14, pin16



Check waveform of N103 pin42, pin43



Check waveform of N103 pin51, pin52, pin53



Check video amplify circuit

## Audio circuit

Check waveform of N103 pin28



Check waveform of N103 pin44



Check waveform of N201 pin11



Check voltage of N201 pin10(9V)



Check waveform of N201 pin8, pin9



Check waveform of N201 pin21, pin27



Check waveform of N801 pin3, pin5



Check voltage of N801 pin6(8V)



Check waveform of N801 pin16, pin17



Check waveform of N801 pin15, pin18



Check waveform of N202 pin1, pin9



Check voltage of N202 pin7



Check waveform of N202 pin4, pin6



Check waveform of speaker

## TEST EQUIPMENT

1. Standard Signal Generator (PT5820)
2. Oscilloscope
3. Digital Voltmeter
4. High Voltage Meter(40KV)
5. Demagnetizing Coil

**Tip:** some adjustments must be performed in the SERVICE menu. You can enter the SERVICE menu in the following way:

1. Press the MENU button on the remote control then press the INFO button on the remote control at least 5 times immediately.
2. Press the CH+/- buttons to select the desired mode or press 0-9 number buttons to enter the SERVICE "X" menu directly and then press the CH+/- buttons to select the desired mode.
3. Press the VOL+/- buttons to change the settings.

### IF ADJUSTMENT

1. Enter the SERVICE menu and press the number button "4" on the remote control to bring up SERVICE 4.
2. Set the IFFS to "1".

### B+ ADJUSTMENT

TEST EQUIPMENT: DIGITAL METER

1. Operate the TV set with AC 120V.
2. Connect the digital voltmeter + lead to C929 and GND. Adjust the RP901 until the meter reading  $DC135 \pm 0.5V$ .

### GEOMETRY ADJUSTMENT

1. Receive a geometry pattern.
2. Enter the SERVICE menu (SERVICE 1 for horizontal and SERVICE 2 for vertical).
3. Select a value between 0 and 63, and the changed value is stored immediately.

Horizontal:

6PAR: Horizontal Parallelogram

Set the horizontal parallelogram to change to rectangle or trapezium.

6BOW: Horizontal Bow

Set the vertical lines straight.

6HSH: Horizontal Delay (horizontal shift)

Set the horizontal centre of the picture at the centre of the tube.

6EWW: Horizontal Width

Set the correct picture width.

6EWP: East-west parabola correction

Set the vertical lines at the sides of the screen straight.

6UCR: East-west corner-correction

Set the vertical lines in the upper corners straight.

6LCR: East-west corner-correction

Set the vertical lines in the lower corners straight.

6EWT: Trapezium correction

Set the vertical lines as vertical as possible.

Vertical:

6VSL: Vertical S-correction

Set the vertical lines as vertical as possible.

6VAM: Vertical Amplitude (picture height)

Set the correct picture height.

6SCL: Vertical Linearity

Set the height of the squares in the top and bottom of the picture so that they are equal of the height.

6VSH: Vertical Shift

Set the vertical centre of the picture at the centre of the tube.

### **WHITE BALANCE ADJUSTMENT**

1. Enter the TV menu and set the color mode to "NORMAL".
2. Receive a black-white pattern with color sync signal.
3. Adjust the CONTRAST and BRIGHTNESS in such a way that the brightness value of the black area is 5 nit and the white is 80 nit.
4. Enter the SERVICE 3 menu and adjust RED, GRN, WPR, WPG and WPB in such a way that X and Y have the following values:  
X=0.248, Y=0.299

### **FOCUS ADJUSTMENT**

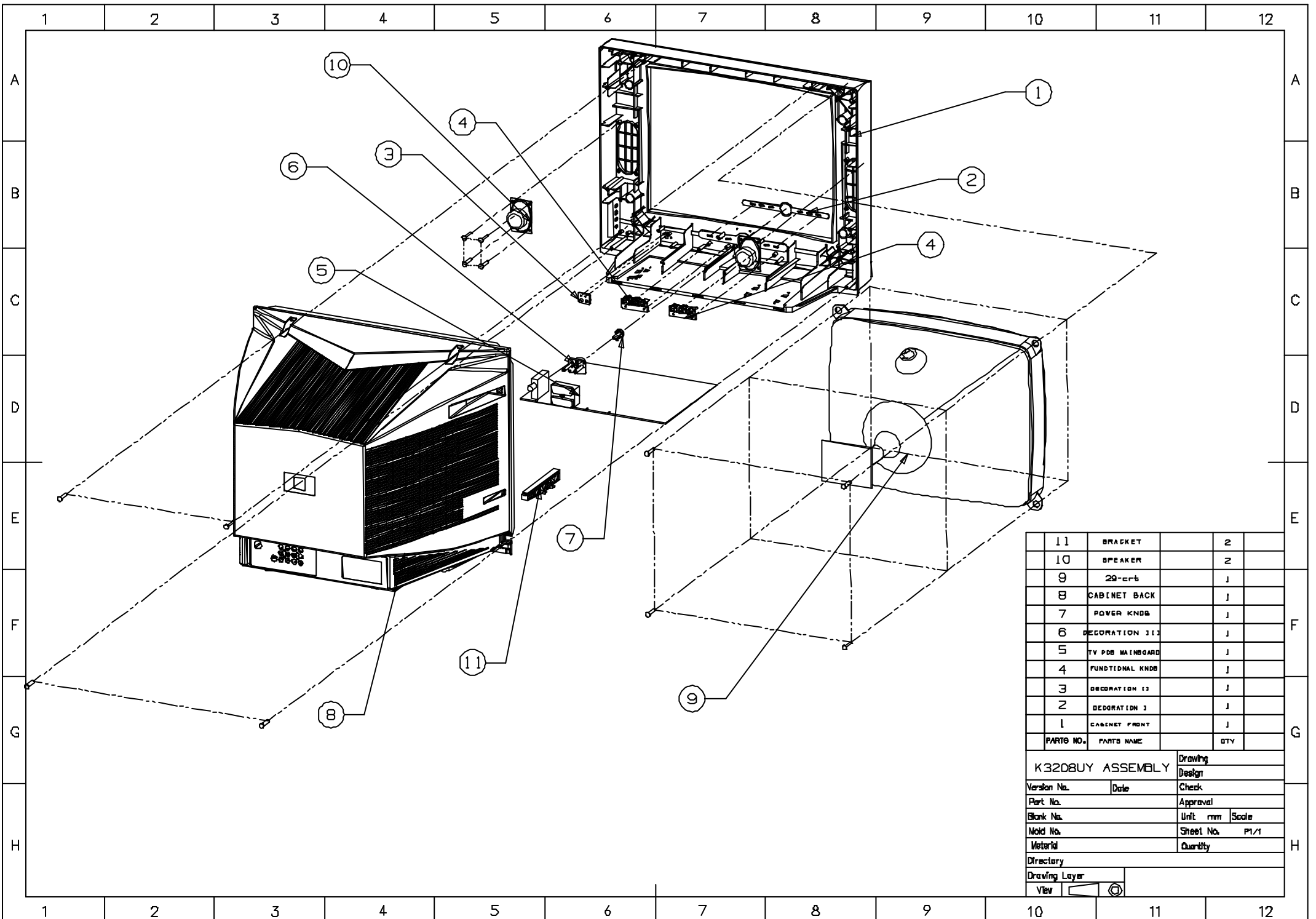
1. Set CONTRAST control to maximum position and BRIGHTNESS control to middle position.
2. Adjust FOCUS control (on the FBT) to obtain the sharpest and clearest picture on the CRT.

### **RF AGC**

1. Receive the signal of channel 13 (VHF HIGH).
2. Set the input field strength to 60 dB  $\mu$  V.
3. Adjust RF AGC (TOP, in SERVICE 4) control to the point where noise is the least.

## **OSD ADJUSTMENT**

1. Receive the TV Signal with caption text.
2. Enter the SERVICE 2 menu..
3. Select a correct value for the items below.
  - 6VOF: Vertical OSD position alignment
  - 6CCV: Vertical OSD of CCD position alignment
  - HOF: Horizontal OSD position alignment
  - CCHF: Horizontal OSD of CCD position alignment
  - VX: Vertical Zoom (select 25)



11	BRACKET	2
10	SPEAKER	2
9	29-erb	1
8	CABINET BACK	1
7	POWER KNDB	1
6	DECORATION 111	1
5	TV PDB MAINBOARD	1
4	FUNDIDNAL KNDB	1
3	DECORATION 13	1
2	DECORATION 1	1
1	CABINET FRONT	1
PARTS NO.	PARTS NAME	QTY

K320BUY ASSEMBLY		Drawing	
Version No.	Date	Design	
Part No.		Check	
Blank No.		Approval	
Mold No.		Unit: mm	Scale
Material		Sheet No.	P1/1
Directory		Quantity	
Drawing Layer			
View	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## Spare Part List

**CT3216 Spare Part List**

Item	Component	Description/Country Origin	Unit	Qty
1. CRT, CRT Socket, D.G coil, DG thermistor, Relay				
1	31001692	CRT-A80LJF60X10(C)-01 SAIGE HITACHI/AU	PCS	1
2	25000962	CRT SOCKET GZS10-2-AC3-14~17KV/A/M	PCS	1
3	12000452	DEGAUSSING COIL KK80B-75T7D0.50-3480/U	PCS	1
4	13005053	DEGAUSSING THERMISTOR T705-B60-A110-4R5M 230V-EPCOS/#	PCS	1
5	34002023	RELAY G5PA-1-OMRON	PCS	1
2. All ICs ( excluding the voltage regulator )				
1	19000493	*IC TDA2616-PHILIPS/#	PCS	1
2	19000695	* HS817B (G) -VISHAY/#	PCS	1
3	19001329	IC TDA16846-SIEMENS/#	PCS	1
4	19001639	IC TDA9859-PHILIPS/#	PCS	1
5	19002089	IC TDA9183-PHILLPS/#	PCS	1
6	19002389	IC TDA9850-PHILIPS/#	PCS	1
7	19002820	IC TDA8177F-ST/#	PCS	1
8	19002979	*IC HCF4052BEY-ST/#	PCS	2
9	19003783	*IC M24C08-WBN6-ST/#	PCS	1
10	19003949	IC CKP1408S PHILIPS/(TDA9378PS)	PCS	1
3. All TRs ( excluding the general switching TR )				
1	17000056	*TRANSISTOR 2SA1015-Y/V	PCS	8
2	17000060	*TRANSISTOR 2SC1815-Y/V	PCS	10
3	17000066	*TRANSISTOR 2SC2482/V	PCS	1
4	17000067	*TRANSISTOR 3DA4544	PCS	3
5	17000184	TRANSISTOR 2SB985-S-SANYO/#/	PCS	1
6	17000621	*TRANSISTOR D400-F/V	PCS	1
7	17000651	TRANSISTOR BF423-PHILIPS/#V	PCS	3
8	17000662	TRANSISTOR BF422-PHILIPS/#V	PCS	3
9	17001141	*TRANSISTOR 3DD2901	PCS	1
10	17001201	TRANSISTOR BC547B-PHILIPS/#	PCS	3
11	17001211	*TRANSISTOR 3DG2655/V	PCS	1
12	17001212	*TRANSISTOR 3CG1013/V	PCS	1
13	17001231	F. E. T. SSH10N60B-FAIRCHILD/#	PCS	1
14	17001341	FET IRF630B-FAIRCHILD/#	PCS	1
4. Diodes ( excluding the general purpose Diode such as 1N4148etc )				
1	16000172	*FAST RECOVERY DIODE RU4A-3A600V400ns	PCS	3
2	16000180	*FAST RECOVERY DIODE BY299-2A800V500ns	PCS	1
3	16000181	*SILICON BRIDGE RECTIFIER D3SB60-4A600V	PCS	1
4	16000189	RECTIFIER DIODE IN4002-1A100V/H	PCS	1
5	16000194	*FAST RECOVERY DIODES5295G-0.5A400V0.2 μ s	PCS	6
6	16000215	*ZENER DIODE 0.5W3V9-3.7~4.1/H	PCS	1



## Spare Part List

7	16000225	*ZENER DIODE 0.5W5V6-5.35~5.85/H	PCS	1
8	16000532	*ZENER DIODE INTEGRATED POTENTIOSTAT $\mu$ PC574J-NEC/#	PCS	1
9	16001041	*FAST RECOVERY DIODE TRGP10M-1A1000V250ns	PCS	2
10	16001320	*FAST RECOVERY DIODE TRU3YX-2A-200V0.1 $\mu$ s	PCS	1
11	16001381	*FAST RECOVERY DIODE BYT56M-3A1000V100ns-VISHAY/#	PCS	1
12	16001463	*DAMPER DIODE TE25-15-5.0A-1500V-TIANSAN	PCS	1
13	16001676	* DIODE BZX79-B/C6V2-PHILIPS/#H	PCS	1
14	16001680	* DIODE BZX79-B/C9V1-PHILIPS/#H	PCS	1
5. Transformer ( Switching, Flyback, Line Drive etc )				
1	11001453	SWITCHING TRANSF. BCK50-066/A.U	PCS	1
2	30001494	FLYBACK TRANSFORMER BSC28-072/A	PCS	1
3	11000244	LINE DRIVE TRANSF. BCT19F-04	PCS	1
6. Power Cord, Fuse				
1	27000130	POWER SUPPLY CORD SP-120P-D10A125V2.3MK220/U、C	PCS	1
2	27000148	FUSE RT1-20-4A-L125V/# K	PCS	1
7. Remote Controller , IR Receiver				
1	KK-Y261N	REMOTE HANDSET KK-Y261N FOR AKAI	SET	1
2	21000311	IR REMOTE CONTROL RECEIVER	PCS	1
8. Tuner / Saw Filter				
1	32000959	TUNER TDQ-BFSNS2/2	PCS	1
2	20000762	*SAW FILTER M1967-NIANYAN	PCS	1
9. Speaker				
1	29000086	SPEAKER YDP58 $\times$ 126F-4 8 $\Omega$ 7W	PCS	2
10. Mechanical part ( Front Mask, Back cover etc )				
1	36024379	FRONT CABINET 200*KP340811/101C-121	PCS	1
2	36022714	BACK CABINET 202*T347312/101C-C116	PCS	1
3	36022784	FUNCTION PRESS BUTTON 291*KP290810/101D	PCS	2
4	36022785	POWER BUTTON 292*KP290810/101D	PCS	1
5	36022786	263*KP290820/101J	PCS	1
6	36023711	263*K140820/101J	PCS	1
11. Packing material ( PAD, Box )				
1	36002115	*RUBBER PAD 334*371601-01	PCS	4
2	36019326	PAD 250*T2576S10/100G-G	PCS	4
3	36004647	FIBER PAPER PAD $\Phi$ 8.2 $\times$ $\Phi$ 22 $\times$ 1.5	PCS	8
4	36006413	FELT PAPER 200X15X0.5	PCS	9
5	36015248	FIBER PAPER PAD $\Phi$ 10.5 $\times$ $\Phi$ 22 $\times$ 1.5	PCS	4
6	36018336	*SPONGE BLOCK 340*P3411T10/00	PCS	2
7	36000182	*CARTON BOX HANDLE 219*292101-01	PCS	4
8	39004416	POLYBAG 310*071104-11R FOR ENVIRONMENT PROTECTION	PCS	1
9	39004417	POLYBAG 310*111404-11R FOR ENVIRONMENT PROTECTION	PCS	1

## Spare Part List

10	39006747	POLYBAG 310*135132/044R FOR ENVIRONMENT PROTECTION	PCS	1
11	39007879	*CORRUGATED CARDBOARD 512*T3468K10/00	PCS	1
12	39010999	*CARTON BOX (DOWN) 510*T34SE17320/00	PCS	1
13	39014046	POLYFOAM (UP) 300*KP3208UY10/00	PCS	1
14	39014047	POLYFOAM (DOWN) 300*KP3208UY20/00	PCS	1
15	39016092	CARTON BOX 510*CT-320810/02-AKAI	PCS	1
12. Instruction Manual				
1	39015659	MANUAL 570*CT-3208/01-AKAI	PCS	1
13. Other key parts				
1	K3208UYSKD-00	K3208UY SKD CHASSIS ASSEMBLY	SET	1
2	K3208UYAJB-00	K3208UY KEY RECEIVING BOARD ASS'Y	SET	1
3	K3208UYCDAVB-00	K3208UY ASIDE AV BOARD ASS'Y	SET	1
4	K3208UYCRT-00	K3208UY CRT BOARD ASS'Y	SET	1
5	K3208UYSYCLB-00	K3208UY SOUND PROCESS BOARD ASS'Y	SET	1
6	11001452	POWER FILTER LCL-246	PCS	2
7	13002004	*COATING QUICK-FUSED RESIS. RF10D-1W0. 33 $\Omega$ K/A	PCS	1
8	13003642	FUSED RESIS. RF1S-1W0. 33 $\Omega$ J-KOA/#U	PCS	1
9	13003714	*NTC 5D2-14-5 $\Omega$ -K-270V-ISHIZUK/#	PCS	1
10	13004803	*NTC-S237/5. 0-5 $\Omega$ M265V-SIEMENS/#	PCS	1
11	13005314	*HIGH VOLTAGE GLASSGLAZE RESIS.	PCS	2
12	14000480	*METALIZED POLY. CAP. CL21-250V104K/10	PCS	1
13	14000710	*POLYPROPYLENE CAP. CBB12-400V223J/10	PCS	1
14	14000833	*METALIZED POLY. CAP. CL21-630V333K/10	PCS	1
15	14001028	*METALIZED POLYPROPYLENE CAP. CBB81-1600V752J/20	PCS	2
16	14001589	*TV CERAMIC CAP. CT81-2KV-Bn182J/b10	PCS	1
17	14001758	*AC CERAMIC CAP. CT81-250VAC-2E4-222MYA/b12. 5A	PCS	1
18	14001776	*TV CERAMIC CAP. CT81-2KV-Bn222J/b10	PCS	1
19	14002241	*HIGH FREQUENCY ELEC. CAP. CD288-160V227T/1940	PCS	1
20	14002355	*HIGH FREQUENCY ELEC. CAP. CD288-160V336T/1225	PCS	1
21	14002488	*TV CERAMIC CAP. CT81-1KV-2B4-471K/b7. 5	PCS	1
22	14002494	*TV CERAMIC CAP. CT81-2KV-Bn471K/b7. 5	PCS	1
23	14002856	AC CERAMIC CAP. ECKDNA471KB PANASONIC/b10#U	PCS	2
24	14003535	*HIGH FREQUENCY ELEC. CAP. CD288-250V475T/1220	PCS	1
25	14003661	AC CERAMIC CAP. DE0910B471KB MURATA/b10#U	PCS	2
26	14003662	AC CERAMIC CAP. DE1210E222ME MURATA/b10#U	PCS	1
27	14003975	*LARGE CAN TYPE ALUMINUM ELEC. CAP. SMH-200V477M-NIPPON/2235#	PCS	1
28	14004022	*AC CERAMIC CAP. CT81-250VAC-2B4-471-K-YA/b10A	PCS	2
29	14005310	*METALIZED POLYPROPYLENE CAP. CBB21B-250V564J/20	PCS	1
30	14005596	*HIGH FREQUENCY ELEC. CAP. CD288-63V477M/1	PCS	1
31	14005598	*HIGH FREQUENCY ELEC. CAP. CD288-25V477M/1	PCS	1
32	14005599	*HIGH FREQUENCY ELEC. CAP. CD288-16V108M/	PCS	1
33	15000086	*INDUCTANCE COIL L161-001-160 $\mu$ HK/L7. 5	PCS	1

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34	15000099	HORI. LINEARITY COIL HXC-19A/L7.5	PCS	1
35	15000209	*INDUCTANCE COIL L791-001-790 $\mu$ HK/L7.5	PCS	1
36	16000165	*SWITCHING DIODE IN4148-0.1A75V4ns/H	PCS	24
37	19000297	IC L7808CV-SGS/#	PCS	1
38	19000771	IC L7805CV-SGS/#	PCS	1
39	20000002	*CERAMIC TRAP FILTER XT4.5MB	PCS	1
40	20000274	CERAMIC RESONATOR CSB503F58 MURATA /#	PCS	1
41	21000251	*OPTOCOUPLER IC TCET1108(G)-Vishay/#	PCS	1
42	22000340	*QUARTZ CRYSTAL JA120-12M-30-20PF-20 $\Omega$	PCS	1
43	23000226	TOUCH SWITCH KFC-A06-L4-4.5 $\times$ 6.5-4.3B	PCS	6
44	23000481	TOUCH SWITCH KFC-A07-10H070	PCS	1
45	25000187	THREE HOLE AV SOCKET WK3-8.4-13	PCS	1
46	25000924	SIX HOLE AV SOCKET AV6-8.4-1	PCS	1
47	25001375	STEREO JACK ST-035-070-100	PCS	1
48	36014984	AC LINE CORE CLIP 254*000210/00-F	PCS	1
49	36015179	GUIDE RAIL 229*T2568N10/100C-C	PCS	2
50	36015337	BRACKET 229*ST296810/100C	PCS	2
51	36018318	SPEAKER BRACKET229*P3411T10/101	PCS	2
52	36018993	*BRACKET229*P3460S30/00A	PCS	2
53	36022241	BRACKET 229*T347310/101C	PCS	1
54	36027855	MODEL PLATE 412*CT-320810/01-AKAI	PCS	1
55	37008152	NAME PLATE 401*CFT271610/01-AKAI	PCS	1