

HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

BX-1S CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>	<u>CHASSIS NO.</u>
KV-21FS150	RM-YA005	LATIN NORTH	SCC-S79G-A
KV-21FS150	RM-YA005	LATIN SOUTH	SCC-S79H-A

ORIGINAL MANUAL ISSUE DATE: 2/2007

REVISION DATE

SUBJECT

2/2007

No revisions or updates are applicable at this time.

TRINITRON® COLOR TELEVISION

SONY®

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KV-21FS150



RM-YA005

TRINITRON® COLOR TELEVISION

SONY®

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SPECIFICATIONS

	KV-21FS150
Power Requirements	120V, 60Hz
Number of Inputs/Outputs	
Video ¹⁾	2
Y, P _B , P _R ²⁾	1
Audio ³⁾	3
VHF/UHF	1
Monitor Output	1
Headphone Output	1
Speaker Output (W)	5W x 2
Power Consumption (W)	
In Use (Max)	108W
In Standby (Max) ⁵⁾	<1W
Dimensions (W x H x D)	
mm	647 x 469 x 509 mm
in	25 ^{1/2} x 18 ^{7/16} x 20 in
Mass	
kg	24.6 kg
lbs	54.23 lbs

1) 1 Vp-p 75 ohms unbalanced, sync negative

2) Y: 1.0 Vp-p, 75 ohms, sync negative; PB: 0.7 Vp-p, 75 ohms;
PR Vp-p, 75 ohms.

3) 500 mVrms (100% modulation), Impedance: 47 kilohms

Television system

American TV standard, NTSC

Channel coverage

VHF: 2-13/UHF: 14-69/CATV: 1-125

Antenna

Dipole

Picture tube

FD Trinitron[®] tube

Visible screen size

20-inch picture measured diagonally

Actual screen size

21-inch measured diagonally

Supplied Accessories

Remote Commander RM-YA005

Two Size AA (R6) Batteries

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Design and specifications are subject to change without notice.

WARNINGS AND CAUTIONS

CAUTION


Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the AC power line.



SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and  mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

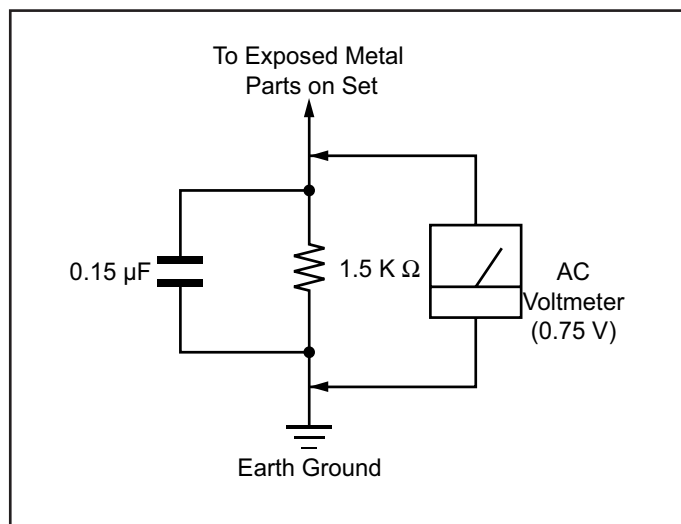


Figure A. Using an AC voltmeter to check AC leakage.

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

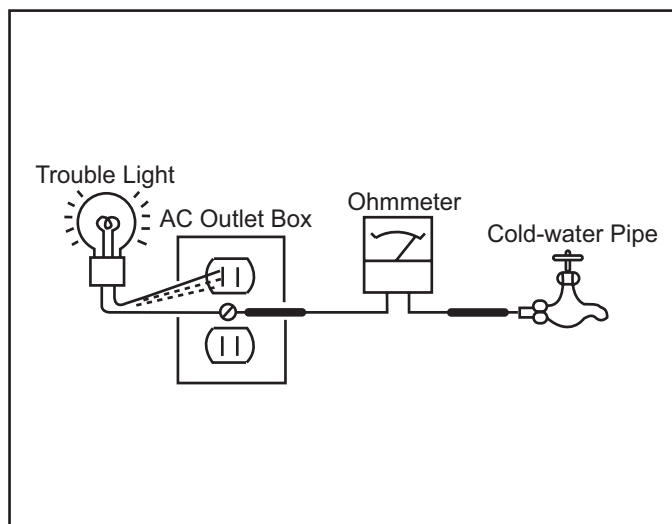


Figure B. Checking for earth ground.

SELF-DIAGNOSTIC FUNCTION



The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY LED indicator will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. Diagnostic Test Indicators

When an error occurs, the STANDBY LED indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.

Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

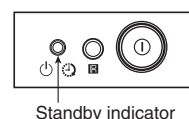
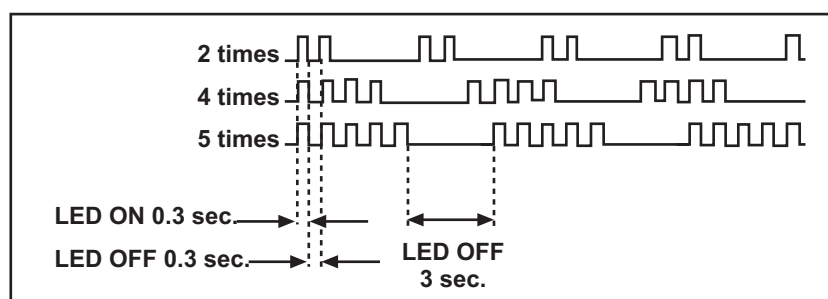
Diagnostic Item Description	No. of Times STANDBY LED Indicator Flashes	Self-Diagnostic Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	—	<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out (F600). (A Board) 	<ul style="list-style-type: none"> Power does not come on. No power is supplied to the TV. AC Power supply is faulty.
+B overcurrent (OCP)*	2 times *	2:0 or 2:1 - 255	<ul style="list-style-type: none"> H.OUT (Q805) is shorted. (A Board) IC751 is shorted. (C Board) 	<ul style="list-style-type: none"> Power does not come on. Load on power line is shorted.
V-Protect (OVP)	4 times	4:0 or 4:1 - 255	<ul style="list-style-type: none"> +13V is not supplied. (A Board) IC804 is faulty. (A Board) 	<ul style="list-style-type: none"> Has entered standby state after horizontal raster. Vertical deflection pulse is stopped. Power line is shorted or power supply is stopped.
IK (AKB)	5 times	5:0 or 5:1 - 255	<ul style="list-style-type: none"> Video OUT (IC1545) is faulty(A Board) IC001 is faulty. (A Board) Screen (G2) is improperly adjusted.** 	<ul style="list-style-type: none"> No raster is generated. CRT Cathode current detection reference pulse output is small.
Power Supply NG (+5V) for Video Processor	8 times	8:0 or 8:1 - 255	<ul style="list-style-type: none"> IC604 is faulty. IC602 is faulty. 	<ul style="list-style-type: none"> No power supply to CRT Anode. No RASTER is generated.

*One flash count is not used for self-diagnostic.

*If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously. The symptom that is diagnosed first by the microcontroller is displayed on the screen.

**Refer to Screen (G2) Adjustments in Section 2-4. of this manual.

2. Display of STANDBY LED Flash Count



3. Stopping the STANDBY LED Indicator Flash

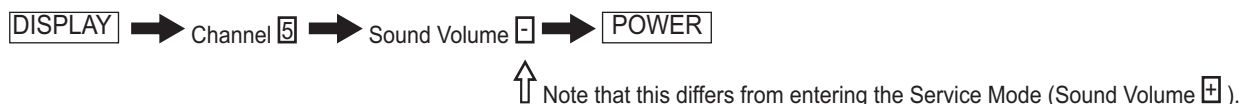
Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY LED Indicator from flashing.

4. Self-Diagnostic Screen Display

For errors with symptoms such as "power sometimes shuts off" or "screen sometimes goes out" that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

To Bring Up Screen Test

In standby mode, press buttons on the Remote Commander sequentially, in rapid succession, as shown below:



The following screen will be displayed indicating the error count:

SELF DIAGNOSTIC		
2	OCP	: 0
3	OVP	: N/A
4	VSTOP	: 0
5	AKB	: 1
8	SUP	: 0
101	WDT	: N/A
SERIAL:		
MODEL:		

Number "0" means that no fault was detected.

Number "1" means a fault was detected one time only.

Handling of Self-Diagnostic Screen Display

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to "0".

Unless the result display is cleared to "0", the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

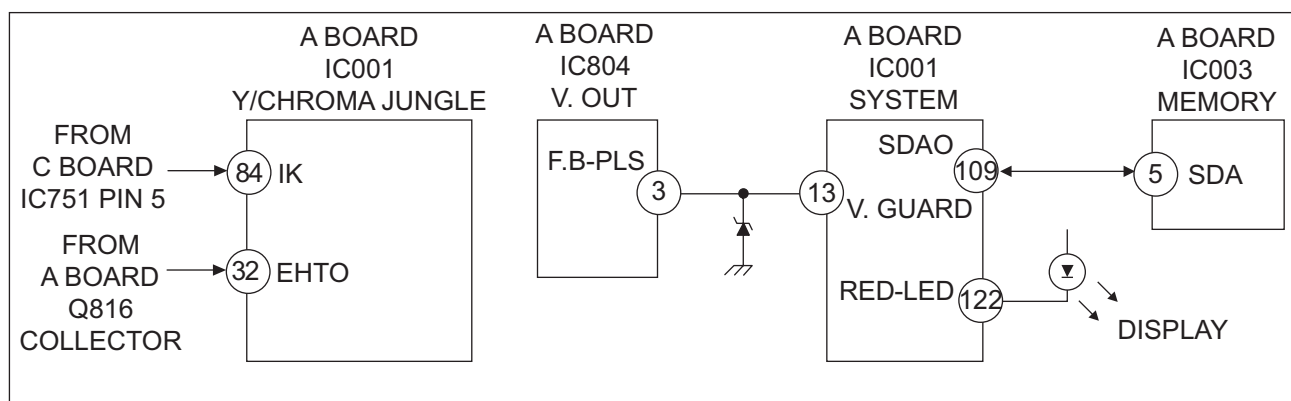
To clear the result display to "0", press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:



Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-Diagnostic Circuit



+B overcurrent (OCP)

Occurs when an overcurrent on the +B (135V) line is detected by pin 32 of IC001 (A Board). If the voltage of pin 32 of IC001 (A Board) is more than 4V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

V-Protect

Occurs when an absence of the vertical deflection pulse is detected by pin 13 of IC001 (a Board). Power supply will shut down when waveform interval exceeds 2 seconds.

IK (AKB)

If the RGB levels* do not balance within 15 seconds after the power is turned on, this error will be detected by IC001 (A Board). TV will stay on, but there will be no picture.

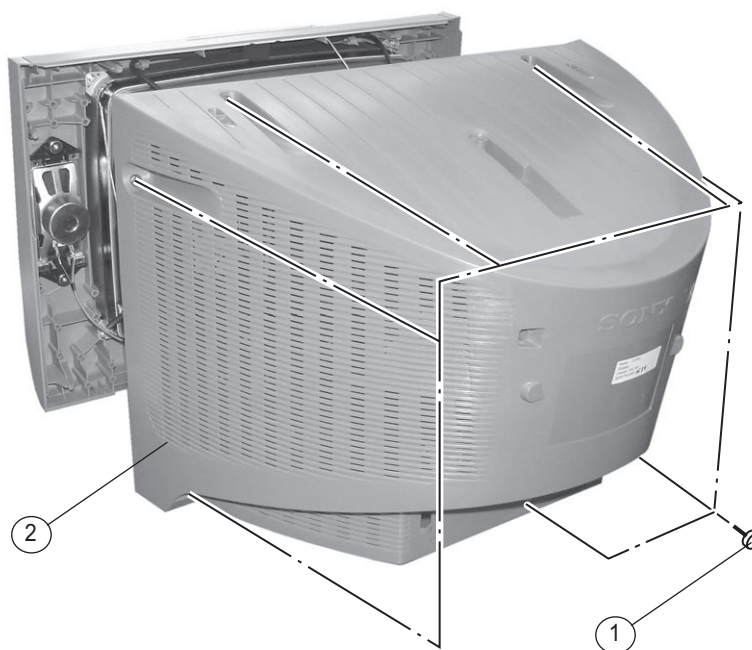
Power Supply NG (+5V) for Video Processor

Occurs when IC001 internal HV protect detects an abnormal H-Pulse (frequency) due to improper power supply to IC001. The TV cuts off high voltage power of anode CRT. No picture will be detected. eg: faulty IC602 or IC604

SECTION 1: DISASSEMBLY

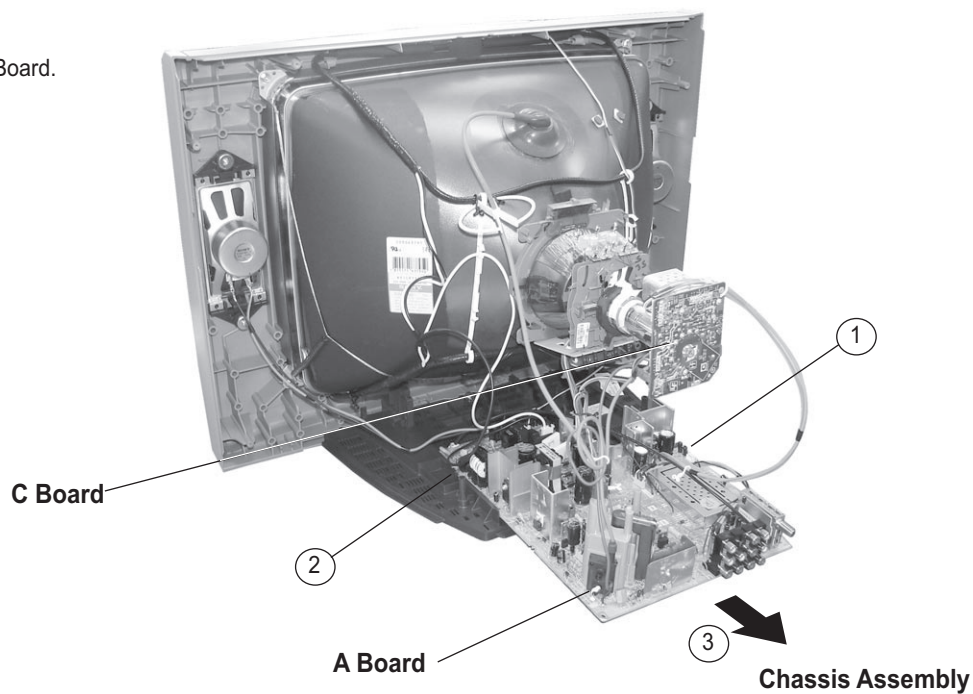
1-1. REAR COVER REMOVAL

- ① Remove 7 screws
+BVTP 4X16
- ② Remove rear cover



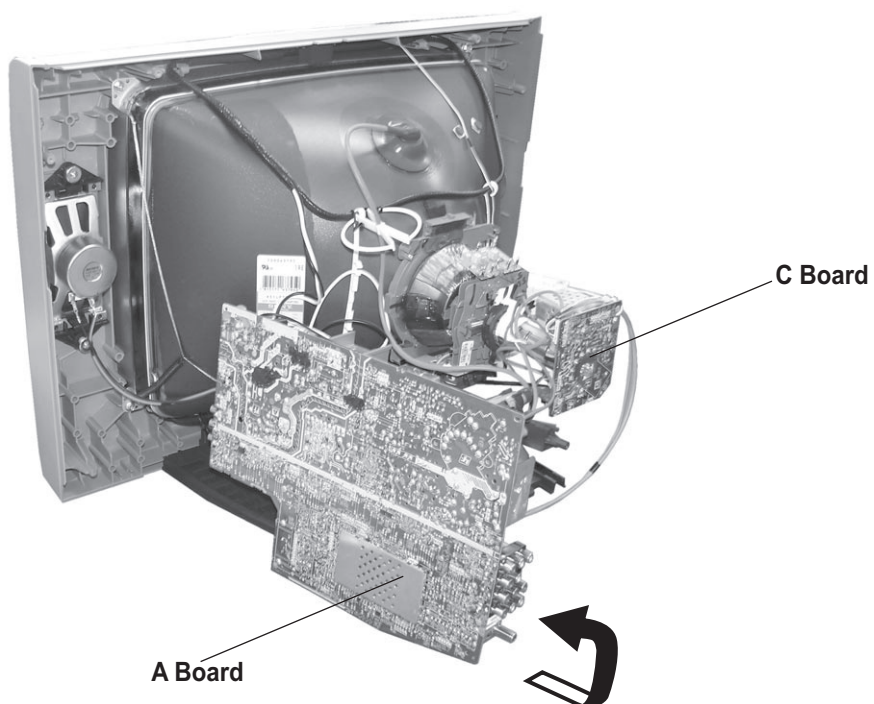
1-2. CHASSIS ASSEMBLY REMOVAL

- ① Release power cord.
- ② Press on catch tab to release A Board.
- ③ Gently pull the chassis forward.



1-3. SERVICE POSITION

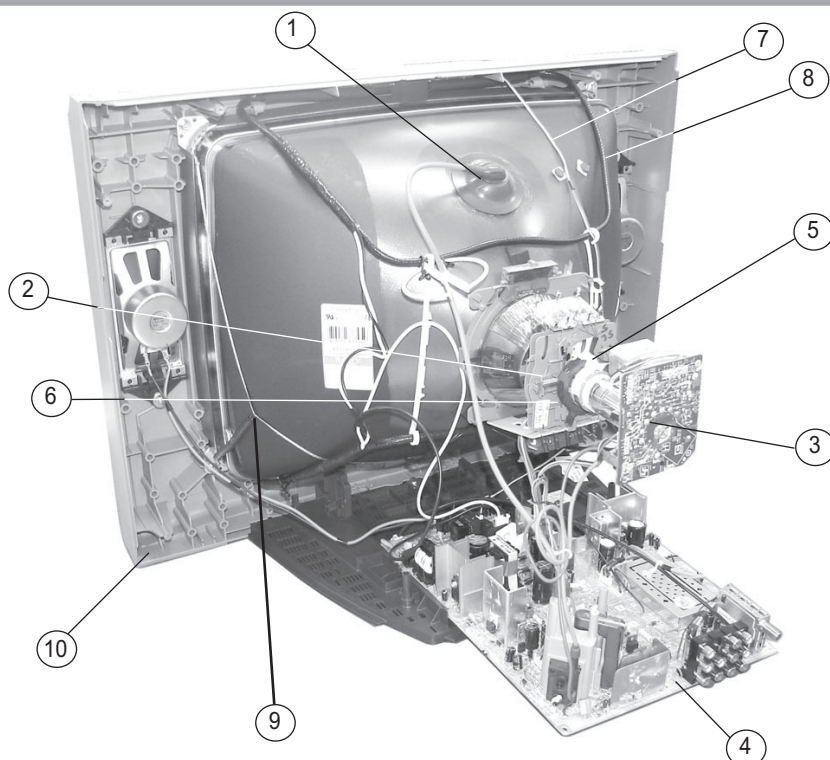
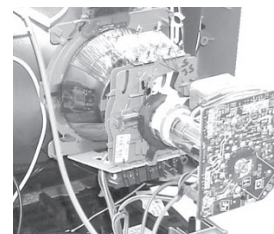
- ① Press on catch tab to release A Board.
- ② Gently pull the A Board forward to access the CN200 connector (to speakers)
- ③ Disconnect the CN200 from the A Board.
- ④ Gently continuing pulling the A Board and rotate into service position.
- ⑤ Reconnect CN200.



1-4. PICTURE TUBE REMOVAL

WARNING: BEFORE REMOVING THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT before attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



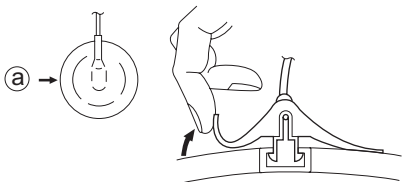
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the neck assembly fixing screw and remove.
6. Loosen the deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the degaussing coil holders.
8. Remove the degaussing coils.
9. Remove the CRT grounding strap and spring tension devices.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT [Take care not to handle the CRT by the neck].

ANODE CAP REMOVAL PROCEDURE

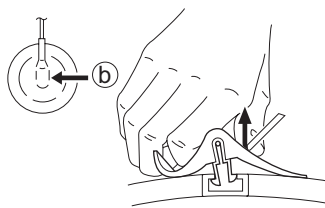
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode cap, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

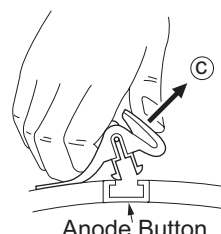
REMOVAL PROCEDURES



Turn up one side of the rubber cap in the direction indicated by arrow (a) .



Use your thumb to pull the rubber cap firmly in the direction indicated by arrow (b) .

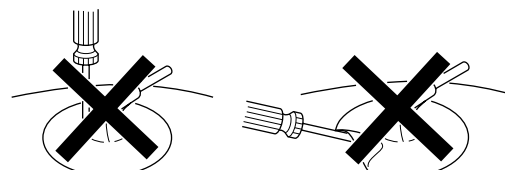


Anode Button

When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow (c) .

HOW TO HANDLE AN ANODE CAP

1. Do not use sharp objects which may cause damage to the surface of the anode cap.
2. To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.
3. Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.



SECTION 2: SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls as follows unless otherwise noted:

Picture control NORMAL

Brightness control NORMAL

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note Test Equipment Required:

- | | |
|--------------------------------|--------------------|
| 1. Color Bar Pattern Generator | 5. Oscilloscope |
| 2. Degausser | 6. Landing Checker |
| 3. DC Power Supply | 7. XCV Adjuster |
| 4. Digital Multimeter | |

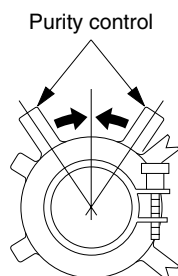
2-1. BEAM LANDING

Before beginning adjustment procedure:

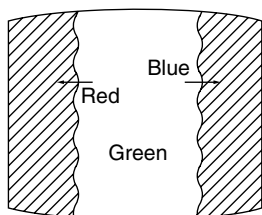
1. Feed in the white pattern signal.
2. In order to reduce the geomagnetism on the set's picture tube, face it east or west.

Adjustment Procedure

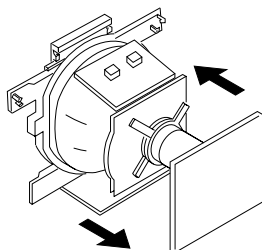
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown below:



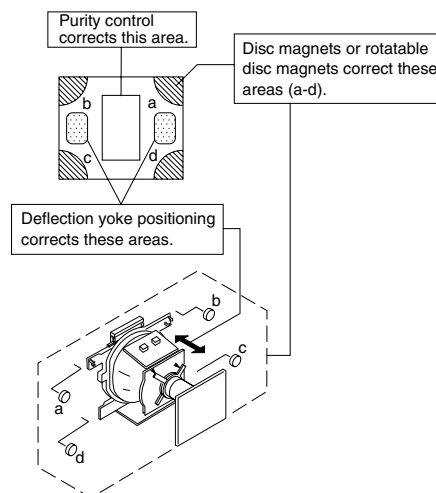
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are even on both sides.



5. Move the deflection yoke forward, and adjust so that the entire screen becomes green.



6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. If landing at the corner is not right, adjust by using the disk magnets.



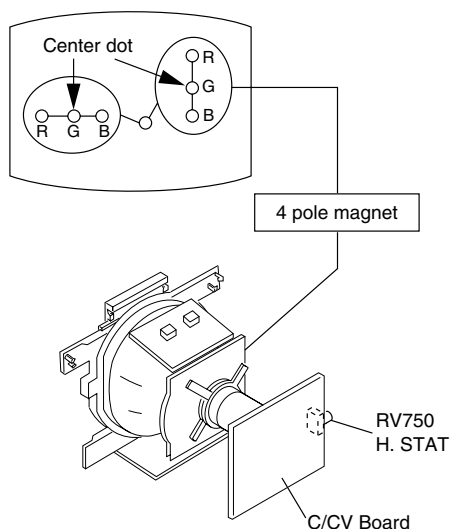
2-2. CONVERGENCE

Before starting convergence adjustments:

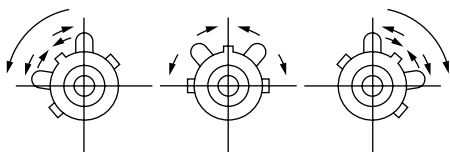
- 1 Perform FOCUS, VLIN and VSIZE adjustments.
- 2 Set BRIGHTNESS control to minimum.
- 3 Set Picture mode to STANDARD.
- 4 Feed in dot pattern.

Vertical Static Convergence

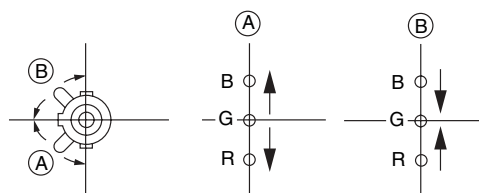
1. Adjust the 4 pole magnet to converge red, green and blue dots in the center of the screen.



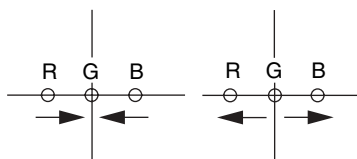
2. Tilt the 4 pole magnet and adjust static convergence to open or close the 4 pole magnet.



When the 4 pole magnet is moved in the direction of arrow (A) and (B), the red, green, and blue dots move as shown below:

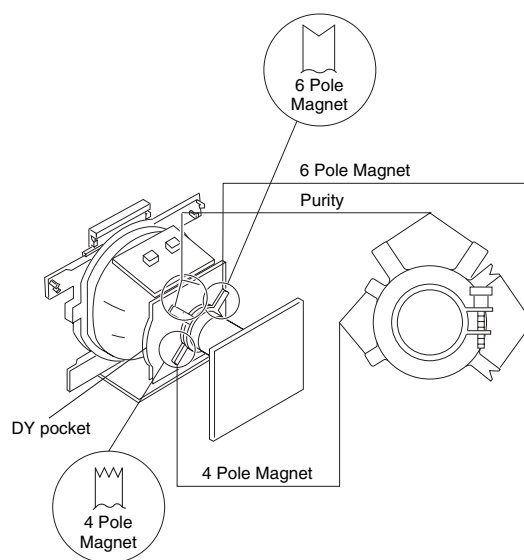
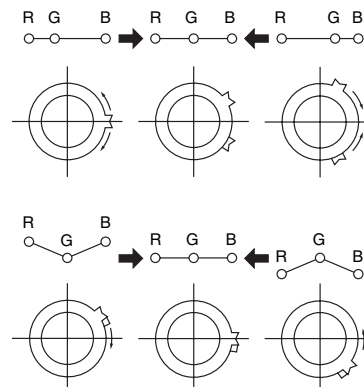


Moved RV750 (H.STAT)



Horizontal Static Convergence

If the blue dot does not converge with the red and green dots, use the 6 pole magnet to adjust as shown:



Convergence Rough Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

Input cross hatch pattern.

a) TLH

Adjust the horizontal convergence of red and blue dots by inserting TLH Correction Plate to the DY pocket (left or right).

b) YCH

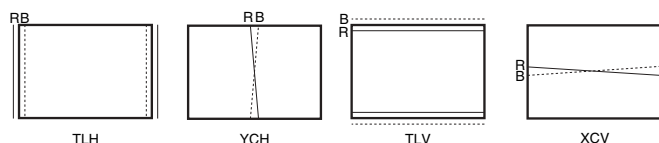
Adjust YCH to balance Y axis.

c) TLV

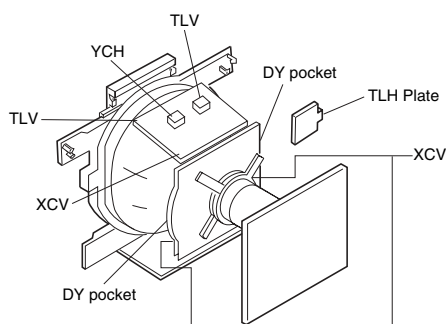
Adjust YCh to balance Y axis.

d) XCV

Adjust XCV to balance X-axis.

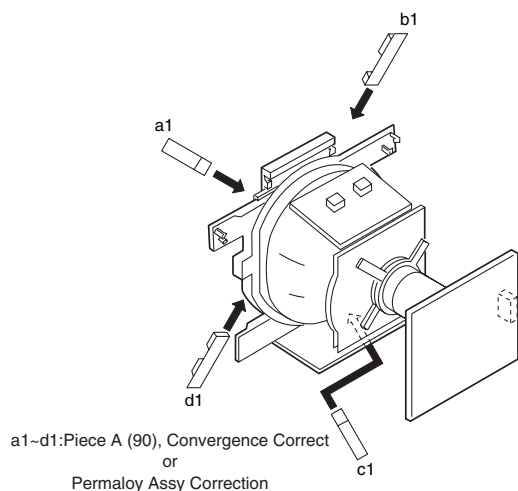
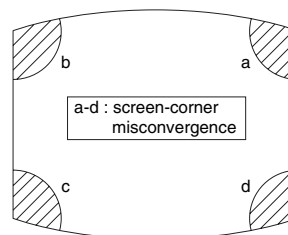


ON DY:



Screen Corner Convergence

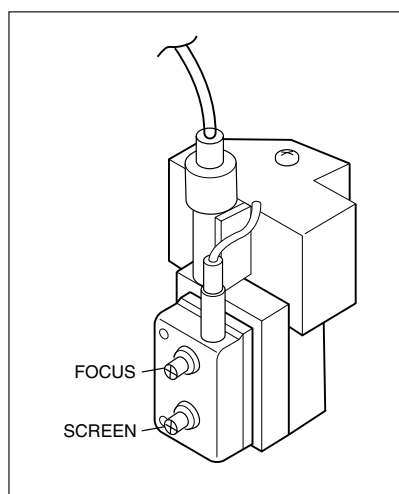
Affix a Piece A (90), Convergence Correct/Permaloy Assy Correction to the misconverged areas.



2-3. FOCUS

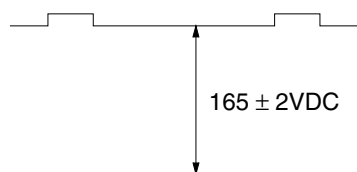
FOCUS adjustment should be completed before White Balance adjustment. (See 4-4. White Balance Adjustment)

1. Receive digital monoscope pattern.
2. Set Picture Mode to "DYNAMIC".
3. Adjust focus VR to obtain a just focus at the center of the screen.
4. Change the receiving signal to white pattern and blue back.
5. Confirm magenta ring is not noticeable. In case magenta ring is obvious, then adjust FOCUS VR to balance magenta ring and FOCUS.



2-4. SCREEN (G2)

1. Before beginning adjustment procedure:
 - Set Picture and Brightness to "STANDARD".
 - Set TV to Video mode.
 - Set WHBL 016 "RGBB" to 01
2. Connect R, G, B of the C Board cathode to oscilloscope.
3. Adjust Brightness to obtain the cathode value to the value shown below:



4. Adjust SCREEN VR on the FBT until the scanning line disappears.
5. Set WHBL 16 "RGBB" back to 00.

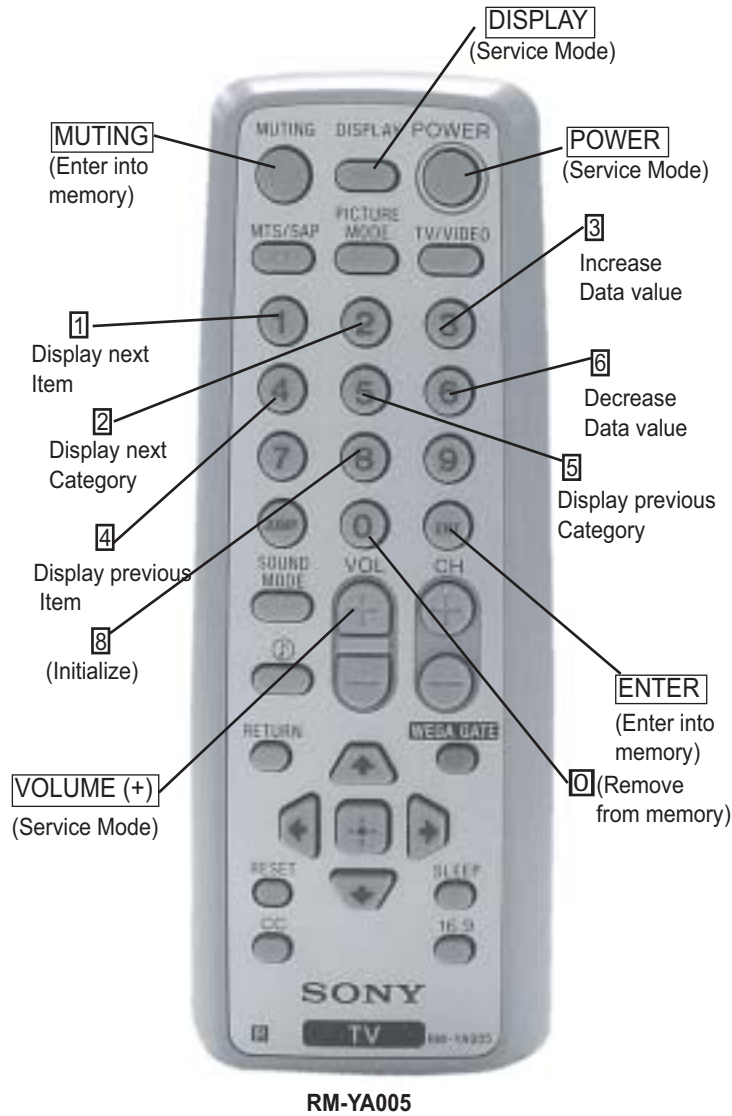
SECTION 3: CIRCUIT ADJUSTMENTS

Electrical Adjustments by Remote Commander

Use the Remote Commander (RM-YA005) to perform the circuit adjustments in this section.

Test Equipment Required: 1. Pattern generator 2. Frequency counter 3. Digital multimeter 4. Audio oscillator

3-1. REMOTE ADJUSTMENT BUTTONS AND INDICATORS



3-2. ACCESSING THE SERVICE MENU MODE

Use the remote commander to access the service menu mode and perform the following adjustments.

- Standby mode (Power off).
- Press the following buttons on the remote commander within a second of each other:

DISPLAY

 ➡ Channel

5

 ➡ Sound Volume

4

 ➡

POWER

The screen displays the first service data category item.

category	item no. in decimal	item name	service data in decimal	NVM NG	service command	field frequency	channel no./ video input name
GEOM	000	HPOZ	055	■	SERVICE	60	VIDEO 1

release ID	software version	service data in binary	reserved for factory	color system	power on time (decimal)
STR31	7.11U	0011 1111	FF FF	- - - -	00084

Flash DCXO		Status Byte #1 SSD	Status Byte #2 SSD
000 00 00 0000	<div style="border: 1px solid black; padding: 2px; display: inline-block;">3E</div>	40 000	004000 0000FF

- On the Remote Commander press

2

 to select the next category, or

5

 to select the previous category.
- Press

1

 to select the next item, or

4

 to select the previous item.
- Press

3

 to increase the data value, or

6

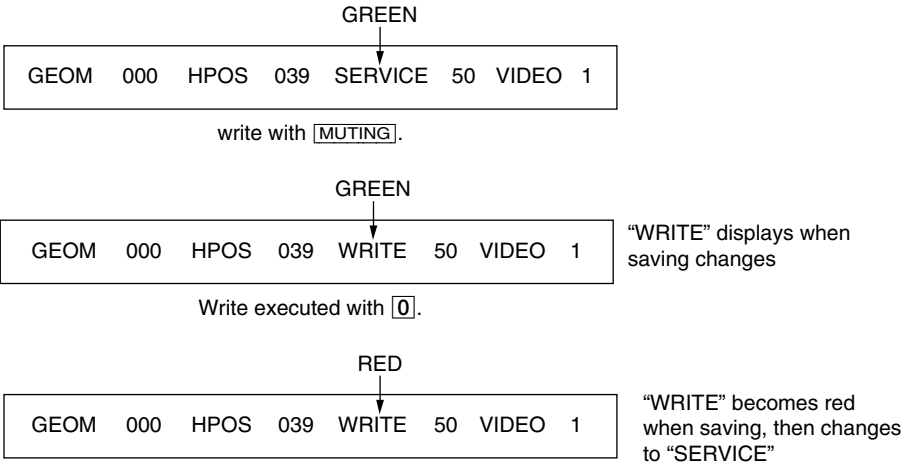
 to decrease the data value.
- Press

MUTING

 then

0

 to write into memory.



Resetting the User Menus

Use the following procedure to reset the User Menus to the factory default settings.

- Access Service Adjustment Mode.
- Press

8

 then

0

 on the Remote Commander.

3-3. CONFIRMING SERVICE ADJUSTMENT CHANGES

1. After completing adjustments, pull out the plug from the AC outlet, then replace the plug in the AC outlet again.
2. Access Service Adjustment Mode.
3. Using the buttons on the Remote Commander, locate the adjusted items again to confirm they were adjusted.

3-4. WHITE BALANCE ADJUSTMENTS

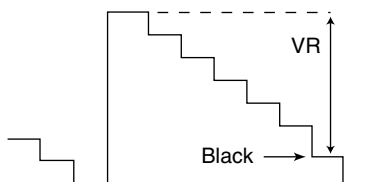
NOTE: FOCUS adjustment should be completed before White Balance adjustment. (See 2-3. FOCUS)

1. Access Service Mode.
2. Input white raster signal using signal generator.
3. Set the following condition:
Picture "DYNAMIC", PICT 006, note value of "WTS" then change to 00.
4. Press **[2]** or **[5]** to select the WHBL category.
5. Press **[1]** or **[4]** to display the 03 "GDRV" and 04 "BDRV" items.
6. Press **[3]** or **[6]** to adjust for the best white balance.
7. At Cutoff, select WHBL 000 "BKOR" and 001 "BKOG" and adjust the data.
8. Perform adjustment at Highlight and Cutoff condition until it reaches its target.
9. Press **[MUTING]** then **[ENTER]** to save into the memory.
10. Set PICT 006 "WTS" back to its original data.

3-5. PICTURE QUALITY ADJUSTMENTS

P Max/Contrast Adjustment

1. Set TV to Video mode.
2. Set Picture mode to "CUSTOM".
3. Input PAL 100% CB to TV set (OTHERS), NTSC 75% CB (NTSC model).
4. Set PICT 003 "PWL" to 00h WHBL 017 "BLBG" to 01h.
5. Set the following condition:
PICTURE 100%, COLOR 0%, BRIGHTNESS 50%
6. Connect an oscilloscope to pin ④ (R Output) of CN004.
7. Press **[1]** or **[4]** to display SADJ 000 "PMAx", then adjust VR by pressing **[3]** or **[6]** until the spec below:



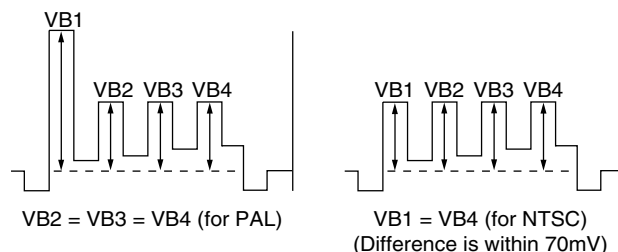
- 1.46 ± 0.03 Vp-p = For 21" without VM models
- 1.65 ± 0.03 Vp-p = With VM models except NTSC models
- 1.23 ± 0.03 Vp-p = NTSC models VM models
- 1.10 ± 0.03 Vp-p = For 21" NTSC non VM models

8. Select Wide Mode to "ON" in TV and Video mode and write "PMAx" data - 8 steps (for models with V-Compression features only).
9. Press **[MUTING]** then **[0]** to write into memory.

10. Set "PWL" and "BLBG" back to initial data.
("PWL": 01h and "BLBG": 00h)
11. Press **[MUTING]** then **[0]** to write into memory.

Sub Color Adjustment

1. Set TV to Video mode.
2. Set Picture mode to "CUSTOM".
3. Input PAL 100% Color Bar (CB) to TV set (OTHER MODEL).
4. INPUT NTSC 75% CB to TV set (NTSC MODEL).
5. Set PICT 006 "WTS" to 00h and Intelligent Picture to "OFF".
6. Set the following condition:
PICTURE 50%, COLOR 50%, BRIGHTNESS 50%, HUE 50%, SHARPNESS 50%
7. Connect an oscilloscope to pin ② (B Output) of CN004.
8. Press **[1]** or **[4]** to select SADJ 004 "SCOL", then adjust $VB_2=VB_3=VB_4$ (for PAL), $VB_1 = VB_4$ (for NTSC) by pressing **[3]** or **[6]**, then write in the data +5 step offset.

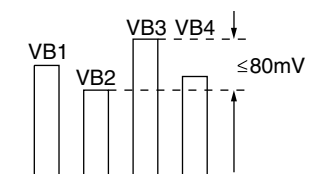


9. Press **[MUTING]** then **[0]** to write into memory.
10. Set "WTS" back to original data and Intelligent Picture to "ON".
11. Copy no.9 data to PAL TV & DVD mode.

Sub Hue Adjustment

1. Set TV to Video mode.
2. Set Picture mode to "CUSTOM".
3. Input NTSC 3.58 CB to TV set.
4. Set the following condition:
PICTURE 50%, COLOR 50%, BRIGHTNESS 50%, HUE 50%, SHARPNESS 50%
5. Press **[1]** or **[4]** to select service mode and - 5 step offset from SADJ 004 "SCOL".
6. Connect oscilloscope to pin ② (B output) of CN004.
7. Press **[1]** or **[4]** to select SADJ 001 "SHUE", then press **[3]** or **[6]** to adjust the data.
8. Press **[MUTING]** then **[0]** to write into memory.
9. Press **[1]** or **[4]** to select SADJ 004 "SCOL" and +5 step offset, then press **[MUTING]** then **[0]** to write into memory.
10. Select TV channel with 3.58 and repeat item (3) to (7) and +1 step data offset.(NTSC model)
11. Press **[MUTING]** then **[0]** to write into memory.

12. For single system model with NTSC 4.43, select TV channel with NTSC 4.43 and repeat items (3) to (8)



The highest level of VB1, VB2, VB3, VB4 must be aligned at the same time.
The ideal difference between VB2 and VB3 is within $\pm 80\text{mV}$

13. Once adjustment is completed in Video mode, carry out adjustment in DVD mode. Set TV to DVD mode. Input NTSC 3.58 CB to DVD set and perform steps 4 to 9 and 11.

Sub Bright Adjustment

- Set TV to RF mode.
- Input PAL monoscope to RF mode.
- Set Brightness 50% and Picture to "MINIMUM".
- Press **[1]** (or **[4]**) to select WHBL 010 "SBRT".
- Press **[3]** to increase the data value, or **[6]** to decrease the data value so that the cut-off level is 10 IRE, slightly glimmer: 20 IRE.
- Press **[MUTING]** then **[0]** to write into memory.

Geometry Adjustment

Geometry adjustment must be done for both color systems PAL and NTSC.

General Setting

- Input Monoscope or Special Color Bar (SPCB) signal using a pattern generator.
- Access Service Mode.
- Select the category item that needs adjusting by pressing **[1]** or **[4]**
- Press **[3]** to increase the data value, or **[6]** to decrease the data value.
- Press **[MUTING]** then **[0]** to write into memory.

NOTE: Geometry Adjustment must be performed for 4 different modes:

PAL 50Hz NORMAL MODE,
PAL 50Hz WIDE MODE,
NTSC 60Hz NORMAL MODE,
NTSC 60Hz WIDE MODE.

PAL 50Hz Normal Mode

- Input PAL signal 50Hz in the Service Mode.
- Set Wide Mode to "OFF".
- Perform the below adjustments using the "General Setting" sequence.

Item No.	Function	Illustration
GEOM 013 (VPOS)	Vertical Shift	
GEOM 011 (VSIZ)	Vertical Amplitude	 <i>Note: Adjust VSIZ to 12.4±(SPCB), 11.3±(PAL Monoscope), 11.5±(NTSC Monoscope)</i>
GEOM 000 (HPOS)	Horizontal Shift	
GEOM 009 (EWTZ)	EW Trapezoid	
GEOM 005 (HSIZ)	EW Width (EW)	 <i>Note: Adjust HSIZ to 16.4±(SPCB), 14.6±(PAL Monoscope), 15.3±(NTSC Monoscope)</i>
GEOM 002 (HBOW)	Horizontal Bow	
GEOM 006 (EWPW)	EW Parabola/Width (PW)	
GEOM 007 (UCOP)	EW Upper Corner Parabola	
GEOM 008 (LCOP)	EW Lower Corner Parabola	
GEOM 001 (HPAR)	Horizontal Parallelogram	
GEOM 012 (SCOR)	S-Correction(SC)	
GEOM 003 (VLIN)	Vertical Linearity	
GEOM 004 (VSCR)	Vertical Scroll	

- After completing the adjustments for PAL 50Hz NORMAL MODE, set Wide mode to "ON", and copy all PAL 50Hz NORMAL MODE adjusted data to PAL 50Hz WIDE MODE except VSCR.
- Complete the adjustment for NTSC 60Hz NORMAL MODE.
- Set Wide mode to "OFF".
- Complete the adjustment items listed in the above table using the "General Setting" sequence.
- After completing the adjustments set Wide mode to "ON" and copy all NTSC 60Hz NORMAL MODE adjusted data to NTSC 60Hz WIDE MODE except VSCR.
- After completing all the adjustments, reconfirm VSIZ and VPOS.

3-6. SERVICE DATA

TVJ	Functionality		Function	Initial Value				
Category	No.	Name		Common	(4:3) 50	(4:3) 60	(4:3) w50	(4:3) w60
GEOM	000	HPOS	Horizontal Shift (HS)		31	31	31	31
	001	HPAR	Horizontal Parallelogram		31	31	31	31
	002	HBOW	Horizontal Bow		31	31	31	31
	003	VLIN	Vertical Linearity		31	31	31	31
	004	VSCR	Vertical Scroll		31	31	31	31
	005	HSIZ	EW Width (EW)		31	31	31	31
	006	EWPW	EW Parabola/Width (PW)		31	31	31	31
	007	UCOP	EW Upper Corner Parabola		17	17	17	17
	008	LCOP	EW Lower Corner Parabola		17	17	17	17
	009	EWTZ	EW Trapezium		31	31	31	31
	010	VSLP	Vertical Slope (VS)		31	31	31	31
	011	VSIZ	Vertical Amplitude		15	15	15	15
	012	SCOR	S-Correction (SC)		14	14	14	14
	013	VPOS	Vertical Shift (VSH)		31	31	31	31
	014	HBL	RGB Blanking Mode		01	01	01	01
	015	WBF	Timing of Wide Blanking (WBF)		07	07	07	07
	016	WBR	Timing of Wide Blanking (WBR)		10	14	10	14
	017	SBL	Service Blanking	00				
	018	COPY	Copy the GEO data to all 50/60Hz NVM area	00				

TVJ	Functionality		Function	Initial Value					
Category	No.	Name		Common	Col Temp (Cool other)	Col Temp (Warm other)	Col Temp (Neutral other)	Col Temp (Cool YUV)	Col Temp (Warm YUV)
WHBL	000	BKOR	Black Level Offset R (OFB = 00), Offset B (OFB = 01)		31	31	31	31	31
	001	BKOG	Black Level Offset G		31	31	31	31	31
	002	RDRV	White Point R		37	37	37	37	37
	003	GDRV	White Point G		37	37	37	37	37
	004	BDRV	White Point B		37	37	37	37	37
	005	LPG	RGB Gain Preset	01					
	006	PGR	Preset Gain R (PGR)	50					
	007	PGG	Preset Gain G (PGG)	50					
	008	PGB	Preset Gain B (PGB)	50					
	009	GNOF	Preset Gain Offset	15					
	010	SBRT	Sub-Brightness						
	011	SBRO	Sub-Brightness Offset (Intelligent Pic)	02					
	012	CBS	Control Sequence of Beam Current Limiting	00					
	013	RGBB	RGB Blanking	00					
	014	BLBG	Blanking of Blue & Green Output	00					
	015	OFB	Black Level Offset Blue	01					
	016	WBP	Color Temp setting (0:High , 1:Normal , 2,3: Low)						

TVJ	Functionality		Function	Initial Value					
Category	No.	Name		Col Temp	YUV	50pal(TV)	50pal(Video)	Pic mode 0 (VIVID)	Pic mode 1 (STANDARD)
WHBL	000	BKOR	Black Level Offset R (OFB = 00), Offset B (OFB = 01)	31					
	001	BKOG	Black Level Offset G	31					
	002	RDRV	White Point R	37					
	003	GDRV	White Point G	37					
	004	BDRV	White Point B	37					
	005	LPG	RGB Gain Preset						
	006	PGR	Preset Gain R (PGR)						
	007	PGG	Preset Gain G (PGG)						
	008	PGB	Preset Gain B (PGB)						
	009	GNOF	Preset Gain Offset						
	010	SBRT	Sub-Brightness		31	31	31		
	011	SBRO	Sub-Brightness Offset (Intelligent Pic)						
	012	CBS	Control Sequence of Beam Current Limiting						
	013	RGBB	RGB Blanking						
	014	BLBG	Blanking of Blue & Green Output						
	015	OFB	Black Level Offset Blue						
	016	WBP	Color Temp setting (0:High , 1:Normal , 2,3: Low)					00	01

TVJ	Functionality		Function	Initial Value		
Category	No.	Name		Pic Mode 2 (CUSTOM)	TV	Video
WHBL	000	BKOR	Black Level Offset R (OFB = 00), Offset B (OFB = 01)			
	001	BKOG	Black Level Offset G			
	002	RDRV	White Point R			
	003	GDRV	White Point G			
	004	BDRV	White Point B			
	005	LPG	RGB Gain Preset			
	006	PGR	Preset Gain R (PGR)			
	007	PGG	Preset Gain G (PGG)			
	008	PGB	Preset Gain B (PGB)			
	009	GNOF	Preset Gain Offset			
	010	SBRT	Sub-Brightness		31	31
	011	SBRO	Sub-Brightness Offset (Intelligent Pic)			
	012	CBS	Control Sequence of Beam Current Limiting			
	013	RGBB	RGB Blanking			
	014	BLBG	Blanking of Blue & Green Output			
	015	OFB	Black Level Offset Blue			
	016	WBP	Color Temp setting (0:High , 1:Normal , 2,3: Low)	02		

TVJ Category	Functionality		Function	Initial Value							
	No.	Name		Common	YUV	TV	Video	50pal(TV)	50pal(Video)	50secam(TV)	50secam(Video)
SADJ	000	PMAX	Picture Maximum								
	001	SHUE	Sub-Hue								
	002	SSHP	Sub-Sharpness		42						
	003	SSHO	Sub-Sharpness Offset (Intelligent Pic)	06							
	004	SCOL	Sub-Color					31	31	00	31
	005	SCOO	Sub-Color Offset (Intelligent Pic)	02							
	006	PIC	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								
	007	COL	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								
	008	BRT	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								
	009	HUE	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)] (* send to TINT #1Eh(5-0) with US model)								
	010	SHP	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								

TVJ Category	Functionality		Function	Initial Value							
	No.	Name		60ntsc(TV)	60ntsc(Video)	60palm(TV)	60palm(Video)	50YUV	60YUV	50RGB	60RGB
SADJ	000	PMAX	Picture Maximum								
	001	SHUE	Sub-Hue								
	002	SSHP	Sub-Sharpness								
	003	SSHO	Sub-Sharpness Offset (Intelligent Pic)								
	004	SCOL	Sub-Color	31	31	31	31	31	31		
	005	SCOO	Sub-Color Offset (Intelligent Pic)								
	006	PIC	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								
	007	COL	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								
	008	BRT	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								
	009	HUE	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)] (* send to TINT #1Eh(5-0) with US model)								
	010	SHP	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]								

TVJ	Functionality		Function	Initial Value								
Category	No.	Name		50RGB	60RGB	Pic mode 0 (VIVID)	Pic mode 1 (STANDARD)	Pic Mode 2 (CUSTOM)	TV	Video	TV Wide (4:3)	Video Wide (4:3)
SADJ	000	PMAX	Picture Maximum						37	37	37	37
	001	SHUE	Sub-Hue						07	07		
	002	SSHP	Sub-Sharpness						40	42		
	003	SSHO	Sub-Sharpness Offset (Intelligent Pic)									
	004	SCOL	Sub-Color									
	005	SCOO	Sub-Color Offset (Intelligent Pic)									
	006	PIC	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			100	80	80				
	007	COL	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			56	50	50				
	008	BRT	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			50	50	50				
	009	HUE	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)] (* send to TINT #1Eh(5-0) with US model)			50	50	50				
	010	SHP	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			60	50	50				

TVJ	Functionality		Function	Initial Value						
Category	No.	Name		Common	Others	YUV	PAL(TV)	NTSC(TV)	SECAM(TV)	PAL(Video)
YC	000	PFRQ	Peaking Center Frequency and Delay		01					
	001	RPA	Ratio Pre & Over Shoot		02					
	002	RPO	Ratio of Positive & Negative Peaks		03					
	003	YDLY	Y-Delay			09	8	09	NIL	09
	004	CMAT	PAL-SECAM or NTSC (Japan/USA) Matrix	01						
	005	ACL	Automatic Color Limiting	01						
	006	CB	Chroma Bandpass Center Frequency	00						
	007	SBO	SECAM Black Offset	00						
	008	CHSE	PAL/NTSC Ident Sensitivity	02						
	009	CLO	Center Frequency of Cloche(Bell) Filter	00						
	010	CTRP	Chroma Trap Mode		00					
	011	QDT	Second Chroma Trap		00					
	012	BPS	Bypass of Chroma Base-band Delay Line		00					
	013	TINT	Base-Band Tint Control		31	31				
	014	TUV	Tint Control on UV Signals	00						
	015	BWYC	Bandwidth at YC mode for 3.58 MHz color system (BWYC)	00						
	016	OSB	Width of internal burstkey pulse of chroma demodulator (OSB)	00						
	017	BKC	Burst Key Position		00			00	00	

TVJ	Functionality		Function	Initial Value					
Category	No.	Name		NTSC(Video)	SECAM(Video)	S-INPUT	SECAM	NTSC	TV
YC	000	PFRQ	Peaking Center Frequency and Delay						00
	001	RPA	Ratio Pre & Over Shoot						03
	002	RPO	Ratio of Positive & Negative Peaks						03
	003	YDLY	Y-Delay	09	02	09			
	004	CMAT	PAL-SECAM or NTSC (Japan/USA) Matrix						
	005	ACL	Automatic Color Limiting						
	006	CB	Chroma Bandpass Center Frequency						
	007	SBO	SECAM Black Offset						
	008	CHSE	PAL/NTSC Ident Sensitivity						
	009	CLO	Center Frequency of Cloche(Bell) Filter						
	010	CTRP	Chroma Trap Mode				01		
	011	QDT	Second Chroma Trap				00		
	012	BPS	Bypass of Chroma Base-band Delay Line					01	
	013	TINT	Base-Band Tint Control						31
	014	TUV	Tint Control on UV Signals						
	015	BWYC	Bandwidth at YC mode for 3.58 MHz color system (BWYC)						
	016	OSB	Width of internal burstkey pulse of chroma demodulator (OSB)						
017	BKC	Burst Key Position							

TVJ	Functionality		Function	Initial Value						
Category	No.	Name		Common	(4:3) 50	(4:3) 60	Others	YUV	TV	Video
SYNC	000	SYS	Synchronization on YSYNC Input	00						
	001	FO	Phase 1 Time Constant						03	03
	002	VID	Video Ident Mode		00	00				
	003	FSL	Forced Slicing Level for Vertical Sync	00						
	004	SSL	Slicing Level Sync Separator		00	00				
	005	SVID	Source Selection for Video Identification				00	00		
	006	FORF	Forced Field Frequency	01						
	007	MVK	Macro Vision Keying	01						

TVJ	Functionality		Function	Initial Value
Category	No.	Name		No Signal
SYNC	000	SYS	Synchronization on YSYNC Input	
	001	FO	Phase 1 Time Constant	00
	002	VID	Video Ident Mode	
	003	FSL	Forced Slicing Level for Vertical Sync	
	004	SSL	Slicing Level Sync Separator	
	005	SVID	Source Selection for Video Identification	
	006	FORF	Forced Field Frequency	
	007	MVK	Macro Vision Keying	

TVJ	Functionality		Function	Initial Value						
Category	No.	Name		Common	Others	RGB	Live	TV(Others)	Video(Dyn)	Video(Others)
PICT	000	CADL	Cathode Drive Level	00						
	001	CFA	Comb Filter Mode	00						
	002	SOC	Soft Clipping Level	00						
	003	PWL	Peak White Limiting Switch	01						
	004	WHTL	Peak White Limiting	00						
	005	GAM	Gamma	00						
	006	WTS	Gamma Control and White Stretch		01		01			
	007	TFR	DC Transfer Ratio of Luminance Signal		01		01			
	008	COR	Coring					00	00	00
	009	CORO	Coring Offset (Intelligent Pic)	02						
	010	BKS	Black Stretch		02					
	011	AAS	Black Area to Switch off the Black Stretch	01						

TVJ	Functionality		Function	Initial Value			
Category	No.	Name		Color Temp (HIGH)	Color Temp (Others)	Color Temp (LOW)	Color Temp (NORMAL)
PICT	000	CADL	Cathode Drive Level				
	001	CFA	Comb Filter Mode				
	002	SOC	Soft Clipping Level				
	003	PWL	Peak White Limiting Switch				
	004	WHTL	Peak White Limiting				
	005	GAM	Gamma				
	006	WTS	Gamma Control and White Stretch				
	007	TFR	DC Transfer Ratio of Luminance Signal				
	008	COR	Coring				
	009	CORO	Coring Offset (Intelligent Pic)				
	010	BKS	Black Stretch				
	011	AAS	Black Area to Switch off the Black Stretch				

TVJ	Functionality		Function	Initial Value		
Category	No.	Name		YUV	TV	Video
SW	000	SVO	Function of IFVO/SVO/CVBSI Pin @ 48	02	01	01

TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
VIF	000	OIFD	Offset IF Demodulator	35
	001	AGCT	AGC Take-over	31
	002	STM	Search Tuning Mode	01
	003	GD	Group Delay on CVBS1 Signal	00
	004	AGCS	IF AGC Speed	00
	005	FFI	Fast Filter IF PLL	00
	006	LNAI	RF Amp LNA bit initial value	00
	007	LNAT	RF Amp Threshold Level	195
	008	LNSN	RF Amp SN Level Threshold	03
	009	LNSD	RF Amp SN Level Drop Threshold	01
	010	LNEX	RF Amp check SN Drop Timing	30
	011	CHTR	Channel Threshold after Auto Prg to set RF Amp User Mode	25
	012	TUSO	Sony Tuner used	00

TVJ	Functionality		Function	Initial Value					
Category	No.	Name		Common	Pic mode 0	Pic mode 1	Pic Mode 2	OTHERS	TV
VM	000	RGBD	Delay of RGB Output to VM Output	04					
	001	VMA	Amplitude of VM Output	00					
	002	VMAP	VM setting (0:High , 1:Low , 2,3: OFF)		00	01	00		
	003	VMMO	VM Mode	01					
	004	CRAO	Coring on SVM					0	0

TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
SDEM	000	FMWS	Window Selection for FM Demodulator	02
	001	QSS	Quasi Split Sound (QSS) Amplifier Mode(N/A for GA multi M system)	01
	002	BPB	Bypass of Sound Bandpass Filter	00
	003	HPVC	Head Phone Volume Control	00
	004	CMCA	Activate Mono Channel	00
	005	BPBS	Bypass of sound bandpass filter at stereo mode (BPBS)	01

TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
TXT	000	TXV	Teletext Vertical Position for Philips	00
	001	THD	Teletext H-sync Active Edge Shift	00
	002	TBR	Teletext RGB Brightness	00
	003	ACQ	Teletext Acquisition (Auto-0, PAL-1)	00
	004	TBRM	Teletext Mix Mode Brightness	00

TVJ	Functionality		Function	Initial Value					
Category	No.	Name		Common	TV	Video	Off	SRS/WOW	Trusurround
SDSP	000	BBL	BBE Contour	00					
	001	BBH	BBE Process	00					
	002	BBLW	BBE Contour Offset	06					
	003	SVOF	Surround /Effect Mode Volume Offset				04	11	04
	004	LAD	Decoder Level Adjust	05					
	005	LAM	Mono Level Adjust	05					
	006	LAN	Nicam Level Adjust	22					
	007	LAS	SAP Level Adjust	05					
	008	LAA	ADC Level Adjust		00	00			
	009	SEF	Incredible Mono/Stereo Effect						
	010	BAS	Main Bass Offset	22					
	011	TRE	Main Treble Offset	21					
	012	EQ1	Equalizer Main Channel Band (100 Hz) Offset	20					
	013	EQ2	Equalizer Main Channel Band (300 Hz) Offset	03					
	014	EQ3	Equalizer Main Channel Band (1000 Hz) Offset	00					
	015	EQ4	Equalizer Main Channel Band (3000 Hz) Offset	00					
	016	EQ5	Equalizer Main Channel Band (8000 Hz) Offset	00					
	017	BFCT	DBE, DUB and BBE Control	00					
	018	SCEN	SRS3D Center Control	04					
	019	SSPA	SRS3D Space Control	01					
	020	BBHW	BBE process offset in WOW mode	00					
	021	STRE	Treble Offset for surround mode	01					
	022	BBHT	BBE Offset in TV mode	00					
	023	TTRE	Treble Offset in TV Mode	02					
	024	VBAS	Bass Offset depend on user volume	00					
	025	VTRE	Treble Offset depend on user volume	00					
	026	TBAS	Bass Offset for TV	00					
	027	BBLO	BBL Offset depend on User Volume	3					
	028	BBHO	BBH Offset Depend on Use Volume	3					

TVJ	Functionality		Function	Initial Value	
Category	No.	Name		Istereo	Imono
SDSP	000	BBL	BBE Contour		
	001	BBH	BBE Process		
	002	BBLW	BBE Contour Offset		
	003	SVOF	Surround /Effect Mode Volume Offset	*	*
	004	LAD	Decoder Level Adjust		
	005	LAM	Mono Level Adjust		
	006	LAN	Nicam Level Adjust		
	007	LAS	SAP Level Adjust		
	008	LAA	ADC Level Adjust		
	009	SEF	Incredible Mono/Stereo Effect	05	03
	010	BAS	Main Bass Offset		
	011	TRE	Main Treble Offset		
	012	EQ1	Equalizer Main Channel Band (100 Hz) Offset		
	013	EQ2	Equalizer Main Channel Band (300 Hz) Offset		
	014	EQ3	Equalizer Main Channel Band (1000 Hz) Offset		
	015	EQ4	Equalizer Main Channel Band (3000 Hz) Offset		
	016	EQ5	Equalizer Main Channel Band (8000 Hz) Offset		
	017	BFCT	DBE, DUB and BBE Control		
	018	SCEN	SRS3D Center Control		
	019	SSPA	SRS3D Space Control		
	020	BBHW	BBE process offset in WOW mode		
	021	STRE	Treble Offset for surround mode		
	022	BBHT	BBE Offset in TV mode		
	023	TTRE	Treble Offset in TV Mode		
	024	VBAS	Bass Offset depend on user volume		
	025	VTRE	Treble Offset depend on user volume		
	026	TBAS	Bass Offset for TV		
	027	BBLO	BBL Offset depend on User Volume		
	028	BBHO	BBH Offset Depend on Use Volume		

TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
SDEC	000	SPTU	Upper Threshold forSAP carrier detection	05
	001	SPTL	Lower Threshold for SAP carrier detection	15
	002	SPTH	Noise Threshold for automute of SAP	09
	003	SPHY	Hysteresis size for automute of SAP	03
	004	FMTH	Noise Threshold for automute of SC2 in FM A2 standard	00
	005	FMHY	Hysteresis size for automute of SC2 in FM A2 standard	04
	006	NILE	NICAM lower error limit (DDEP)	50
	007	NIUE	NICAM upper error limit (DDEP)	200
	008	EPMD	DEMDEC Easy Programming (DDEP)	01
	009	STDS	Bits multiplexed for ASD and SSS modes	13
	010	OVMA	FM overmodulation adaption	00
	011	FLBW	FM/AM demodulator filter bandwidth	01
	012	IDMD	FM ident speed in SSS mode	01
	013	OVMT	Overmodulation level threshold relative to nominal	03
	014	DCXI	NICAM DCXO Scaling Control Inverter	00
	015	DCXG	NICAM DCXO Scaling Control Gain	00
	016	DCLL	NICAM DCXO Scaling Control Limit (L)	00
	017	DCLH	NICAM DCXO Scaling Control Limit (H)	00

TVJ	Functionality		Function	Initial Value				
Category	No.	Name		Common	(4:3) 50	(4:3) 60	Others	YUV
OPTM	000	ASHT	auto shut off timer (data * 5 min)	06				
	001	OSDB	OSD brightness	12				
	002	OSDH	OSD Horizontal Position	08				
	003	OSDV	OSD Vertical Position		63	39		
	004	MUTE	No Signal Mute Switch (1 = enabled)	01				
	005	RFUL	RF Signal Change Counter after Unlocked (Disable when 0fh)	01				
	006	RFLK	RF Signal Change Counter after Locked (Disable when 0fh)	04				
	007	LANG	OSD language shipping condition	01				
	008	HTXT	sync separator sw				00	00
	009	CMSS	Sync sw	01				
	010	DCXO	DCXO Value	47				
	011	DISC	target DISCO data for DCXO adjust by color dec	128				
	012	EXBL	Extended Blanking Timer to Eliminate White Noise.	06				
	013	TSYS	Memorize TV Sys in NVM at Test Reset [0:B/G, 1:I, 2:D/K, 3:M] (GA Model)	03				
	014	LNSW	Signal Booster Shipping/Test Reset condition (1: Auto, 0:Off)	00				
	015	AVUL	AV Signal Change Counter after Unlocked (Disable when 0Fh)	04				
	016	AVLK	AV Signal Change Counter after Locked (Disable when 0Fh)	00				
	017	SENH	Sound Enhancer Crackling sound c/m (0:Off, 1:On)	01				
	018	SPSC	SPEED search (0: disable, 1:4times, 2:6times, 3:8times)	01				
	019	MULO	Audio Mute Port Logic Selection (0:Active High, 1:Active Low)	01				

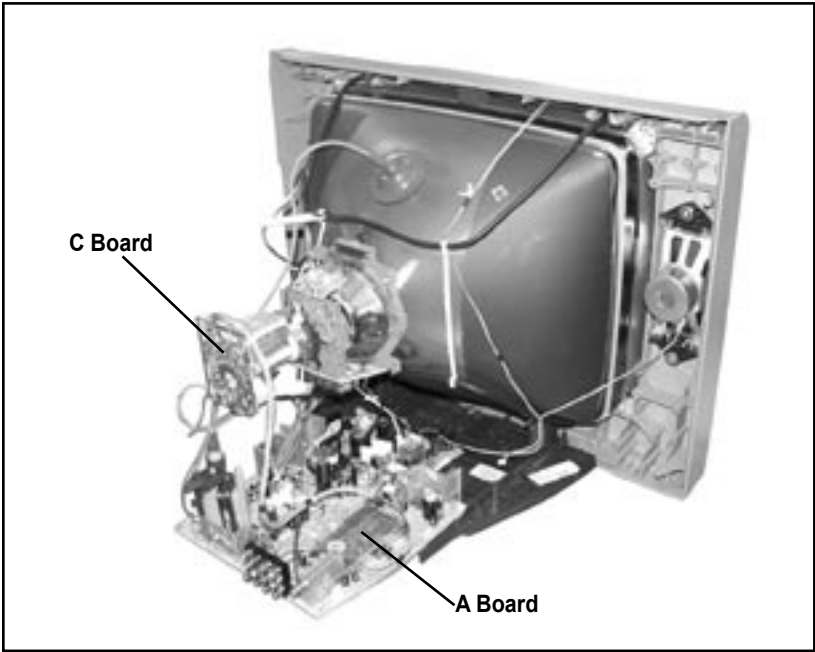
TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
OPTB	001	OPB1	Option 1 (System related)	8
	002	OPB2	Option 2 (Video Signal related)	105
	003	OPB3	Option 3 (Stereo Decoding related)	4
	004	OPB4	Option 4 (Miscellaneous)	0
	005	OPB5	Option 5 (Miscellaneous)	3
	006	OPB6	Option 6 (OSD Language related)	1

TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
OPUS	000	SOFF	stay off (0: follow last memory with AC on, 1: standby with AC on)	01
	001	SPCH	Channel Number after Shipping Condition	6
	002	SPCA	Cable Selection after Shipping Condition (1 = Cable On)	01
	003	CCBR	CC Brightness (only for US)	20
	004	CCHP	CC H position (only for US)	13
	005	OUV	Offset Control on UV Input Signals (only for NTSC model)	
	006	CFA2	Forced Comb Filter On (only for NTSC model)	00
	007	HSYC	H Sync Selection for Tuning (SL, LOCK or SID) only for US	01


TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
OPFM	000	FMCT	FM Radio Auto Scan Carrier Threshold	20
	001	RPST	Waiting time for each frequency step during radio preset	10
	002	MPTU	Upper Threshold for MPX pilot detection (FM_RADIO)	12
	003	DCOU	Upper threshold for DC offset from FM demodulator	140
	004	DCOL	Lower threshold for DC offset from FM demodulator	114
	005	OVMA	FM overmodulation adaption (FM_RADIO)	00
	006	FMBR	OSD Brightness during FM Mode	12
	007	RTRE	Treble Offset in FM Radio Mode	03
	008	RBAS	Bass Offset in FM Radio Mode	02
	009	AGCT	ACG takeover in FM Radio Mode	32
	010	FLBW	FM/AM demodulator filter bandwidth	01
	011	STDS	Selectable IF 0:STDSEL(17) 50us deemphasis 1: STDSEL(18) 75us deemp	01

SECTION 4: DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



The components identified by shading and \triangle symbol are critical for safety. Replace only with part number specified.

The symbol  indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

4-2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM INFORMATION


All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.


All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms. $k=1000$, $M=1000k$


Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm Rating electrical power :

$\frac{1}{4}$ W in resistance, $\frac{1}{10}$ W and $\frac{1}{8}$ W in chip resistance.


 : nonflammable resistor.

 : fusible resistor.

\triangle : internal component.

 : panel designation and adjustment for repair.

\perp : earth ground

 : earth-chassis

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a 10M digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.


Voltage variations may be noted due to normal production tolerances.

All voltages are in V.

S : Measurement impossibility.

 : B-line.

(Actual measured value may be different).

 : signal path. (RF)

Circled numbers are waveform references.

REFERENCE INFORMATION

RESISTOR

: RN METAL FILM
: RC SOLID
: FPRD NONFLAMMABLE CARBON
: FUSE NONFLAMMABLE FUSIBLE
: RW NONFLAMMABLE WIREWOUND
: RS NONFLAMMABLE METAL OXIDE
: RB NONFLAMMABLE CEMENT
: \otimes ADJUSTMENT RESISTOR

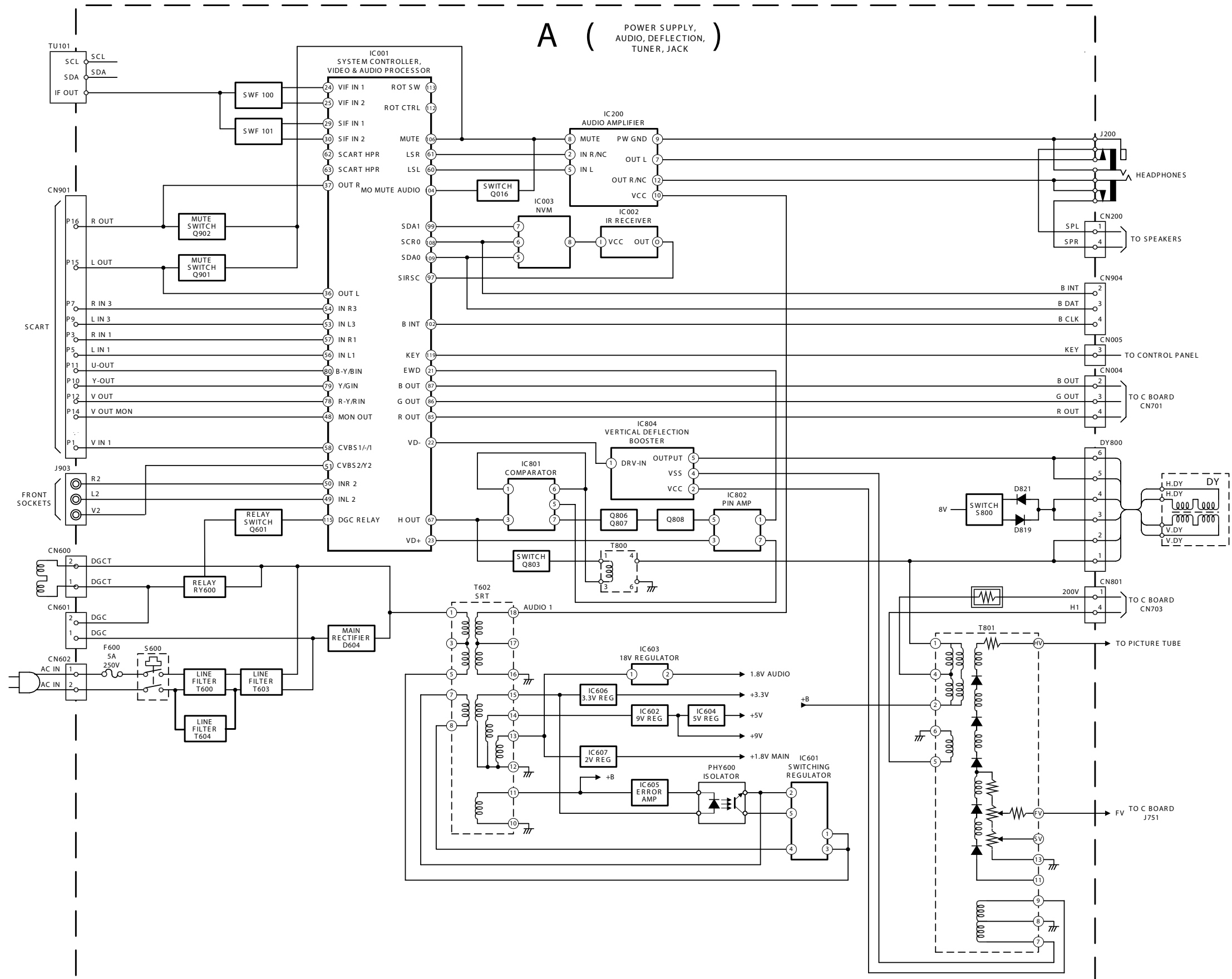
CAPACITOR

: TA TANTALUM
: PS STYROL
: PP POLYPROPYLENE
: PT MYLAR
: MPS METALIZED POLYESTER
: MPP METALIZED POLYPROPYLENE
: ALB BIPOLAR
: ALT HIGH TEMPERATURE
: ALR HIGH RIPPLE

COIL

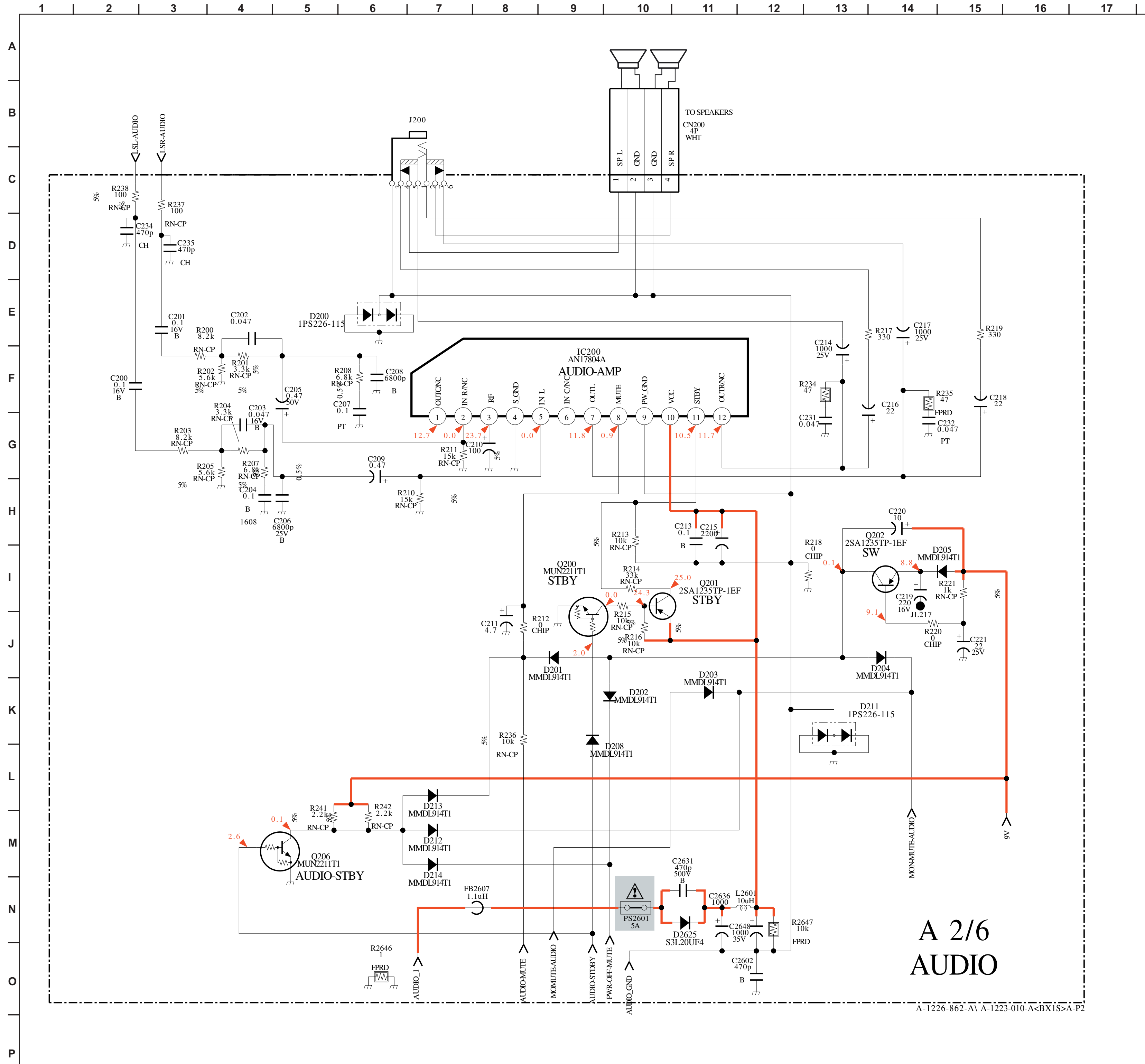
: LF-8L MICRO INDUCTOR

4-3. BLOCK DIAGRAM SIGNAL FLOW BLOCK DIAGRAM

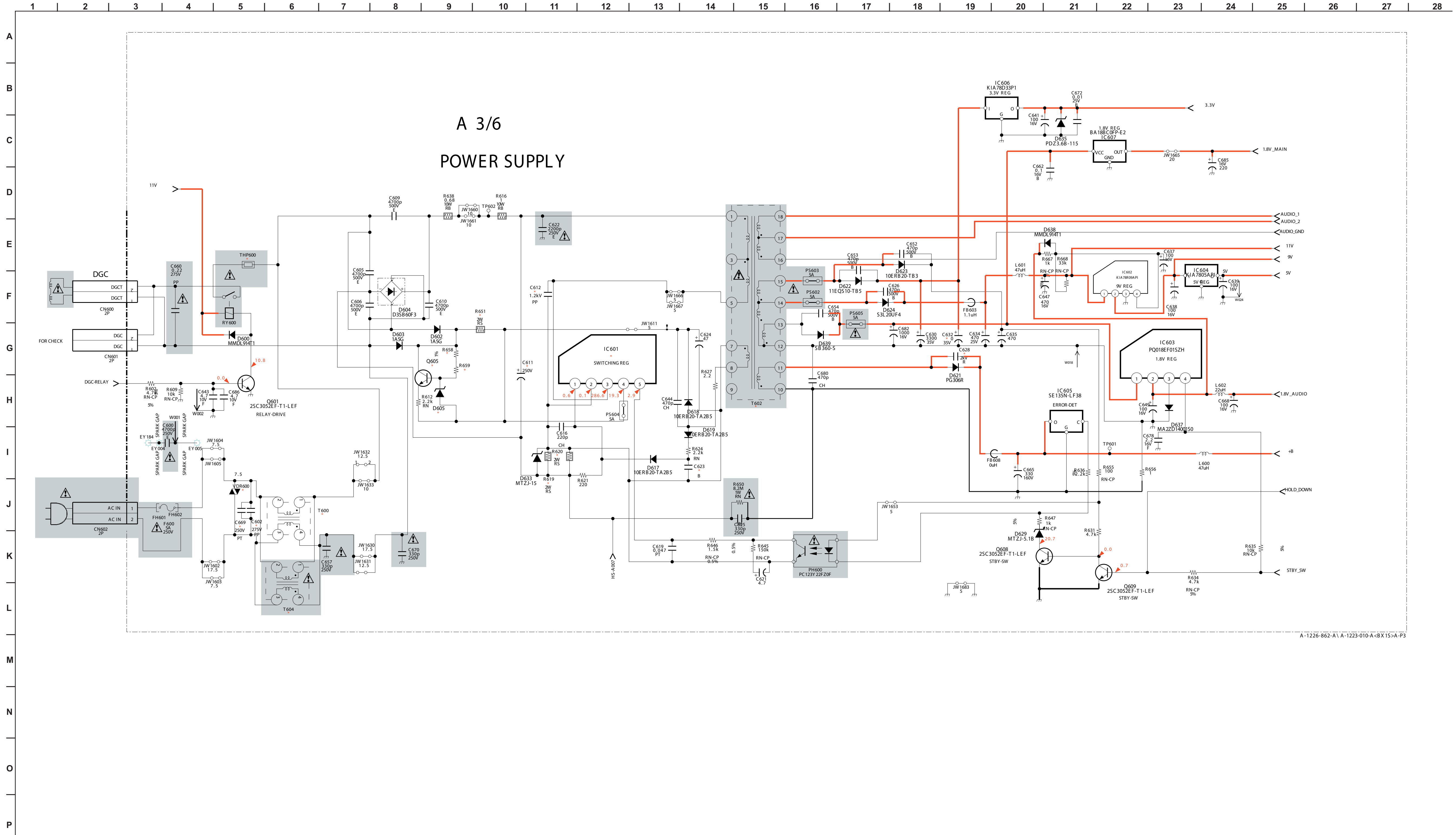




A BOARD SCHEMATIC DIAGRAM (2 OF 6)

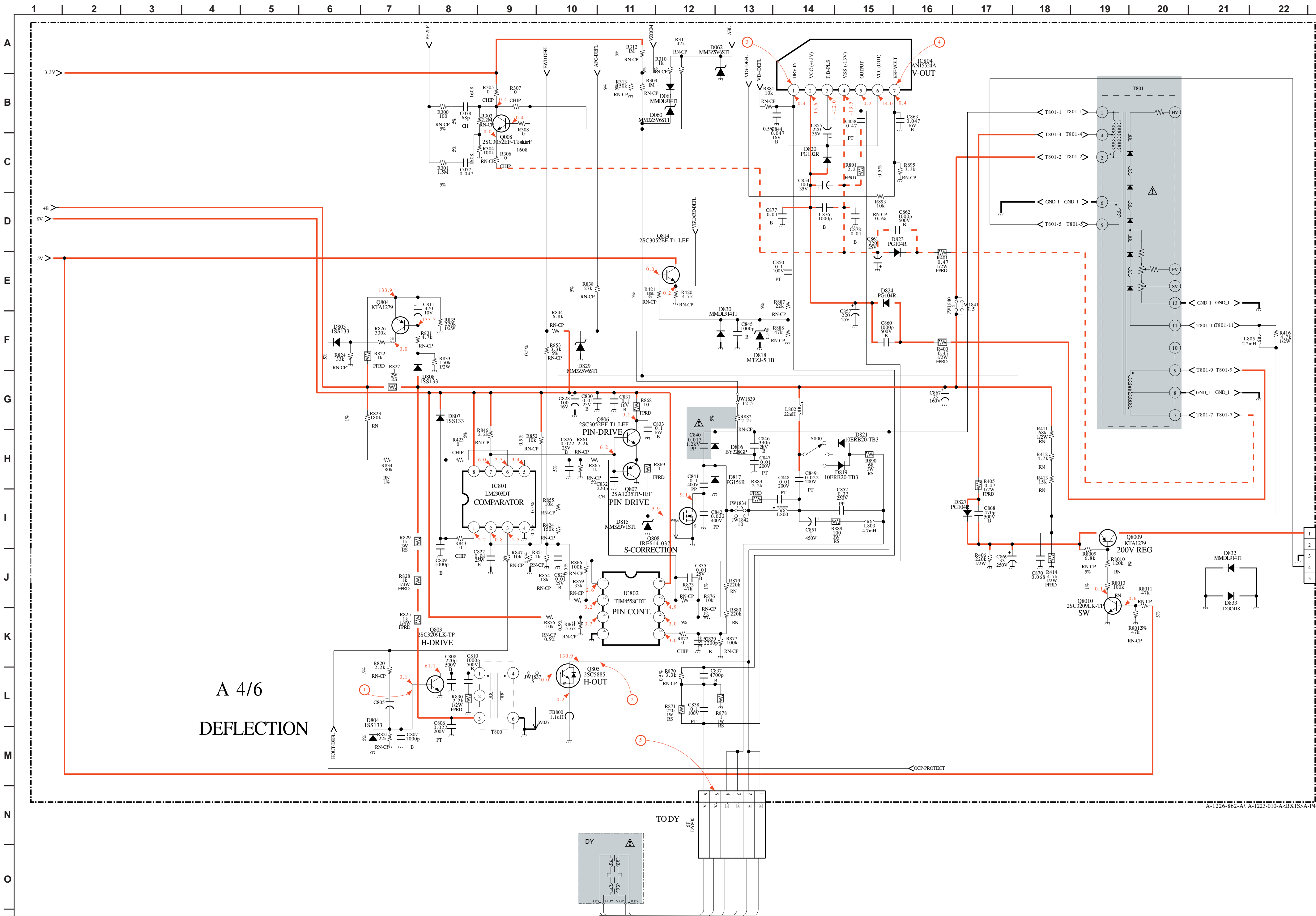


A BOARD SCHEMATIC DIAGRAM (3 OF 6)

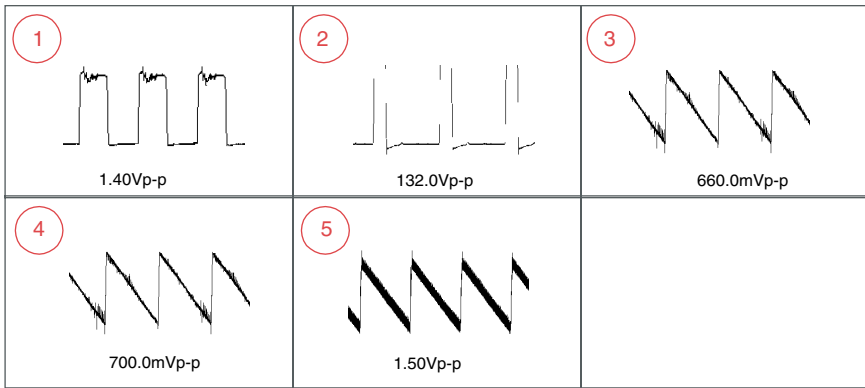


A-1226-862-A \ A-1223-010-A <BX15>A-P3

A BOARD SCHEMATIC DIAGRAM (4 OF 6)



A BOARD WAVEFORMS

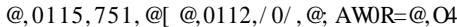


1	200V
2	NC
3	GND
4	H1
5	NC

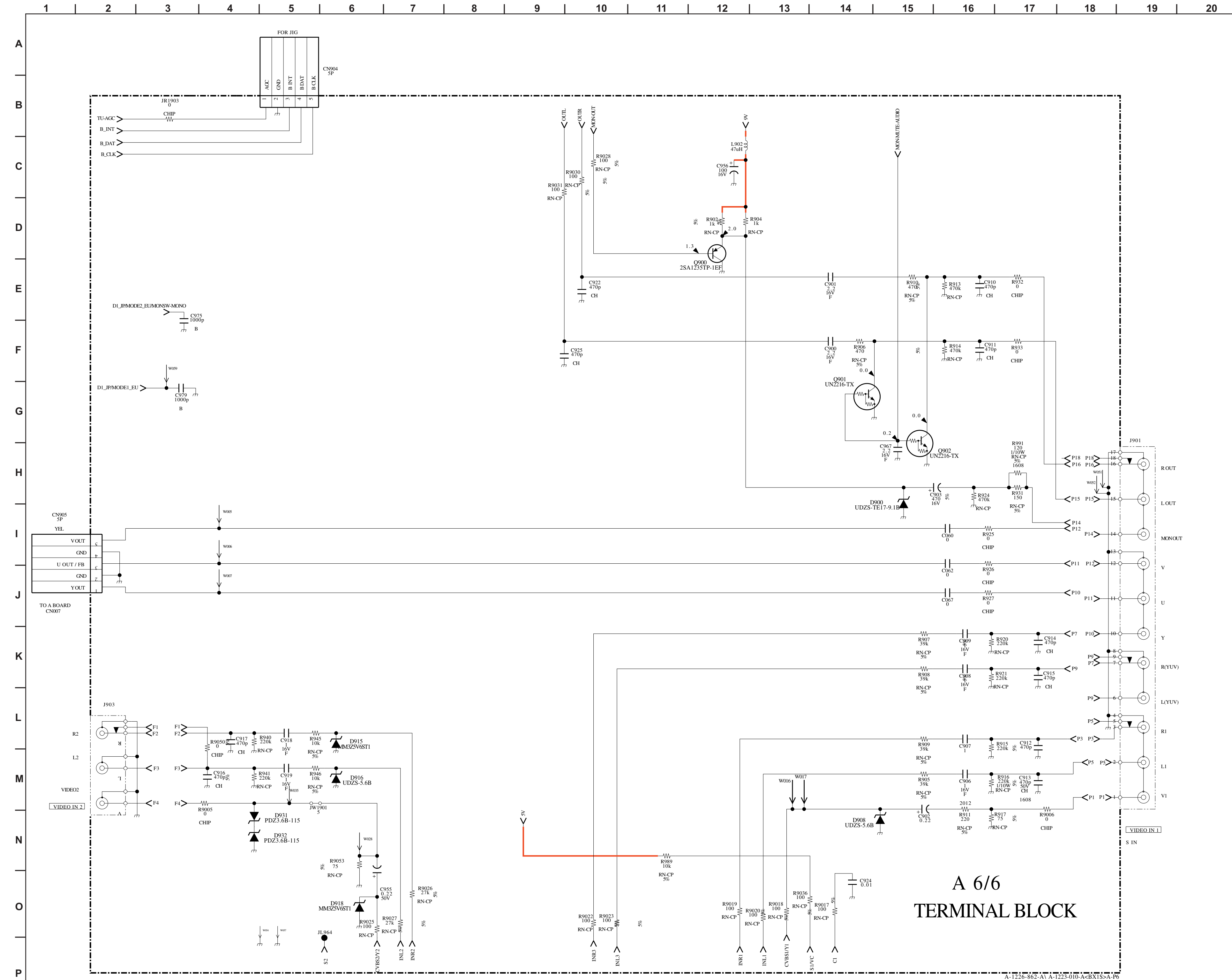
DC BOARD

A-1226-862-A\ A-1223-010-A<BX1S>A-P4

@ 4.5
STMDQ

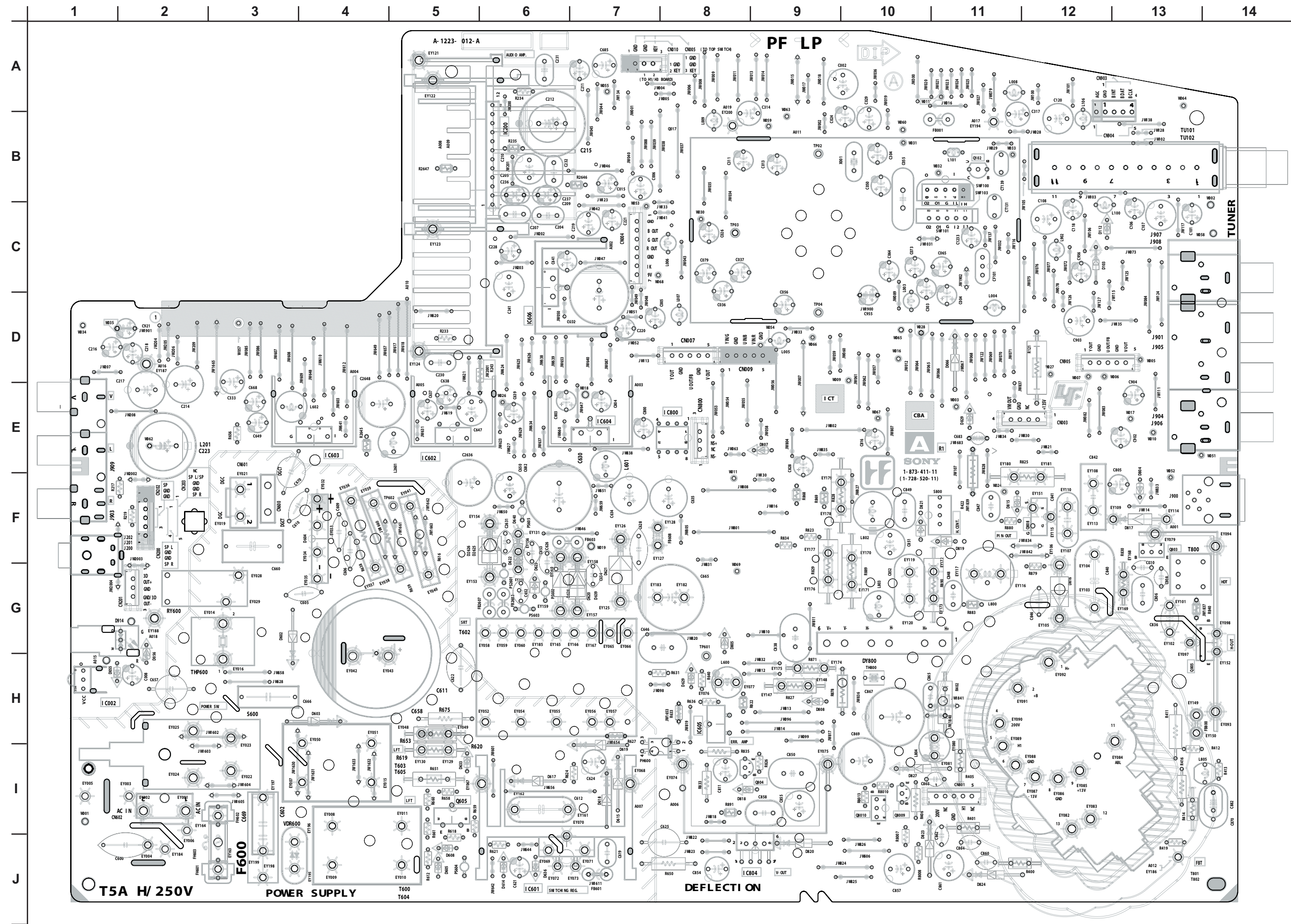


A BOARD SCHEMATIC DIAGRAM (6 OF 6)



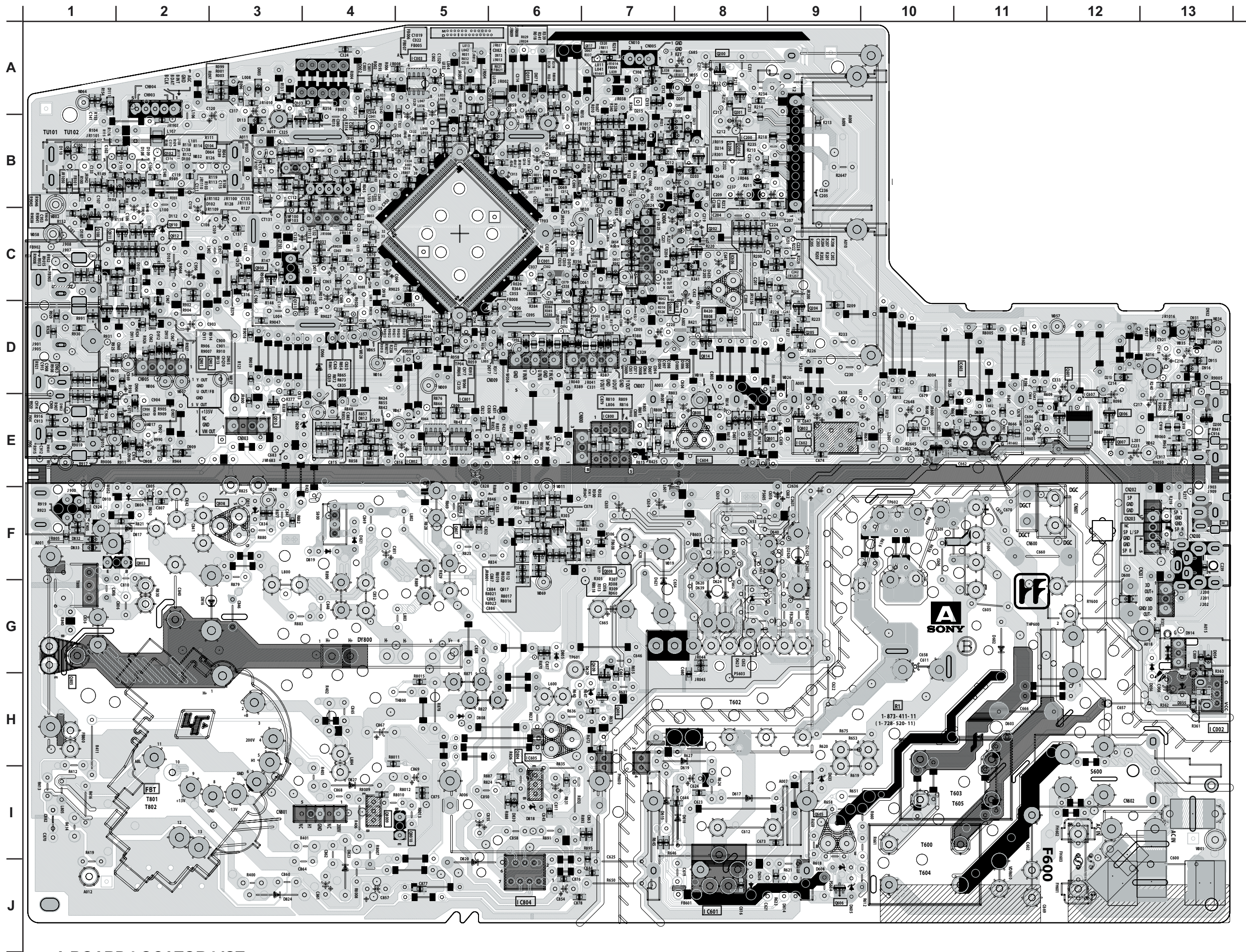
A [AUDIO-VIDEO PROCESSOR, MICRO, AUDIO, POWER SUPPLY, DEFLECTION, TUNER, TERMINAL BLOCK]

COMPONENT SIDE



A [AUDIO-VIDEO PROCESSOR, MICRO, AUDIO, POWER SUPPLY, DEFLECTION, TUNER, TERMINAL BLOCK]

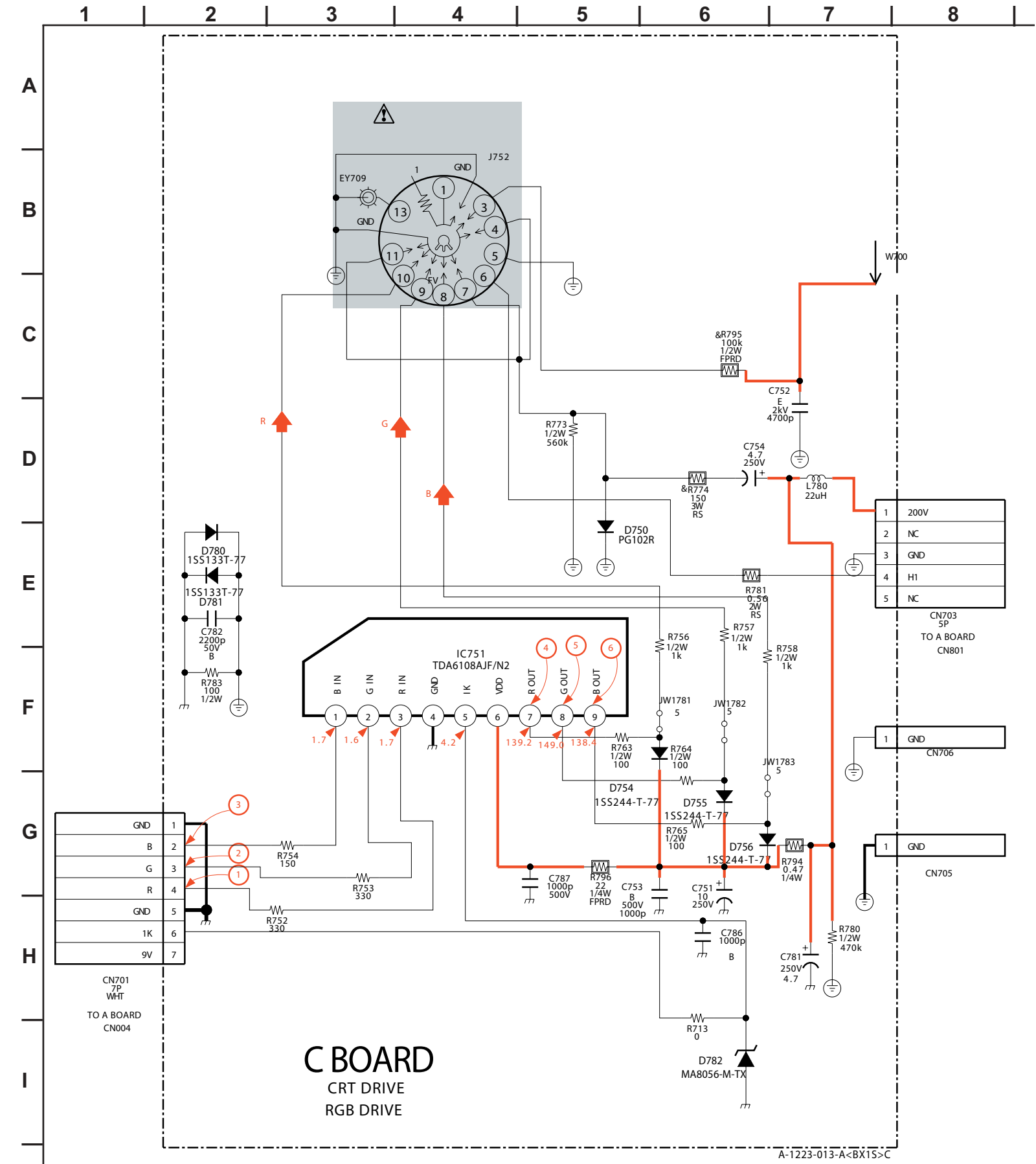
CONDUCTOR SIDE



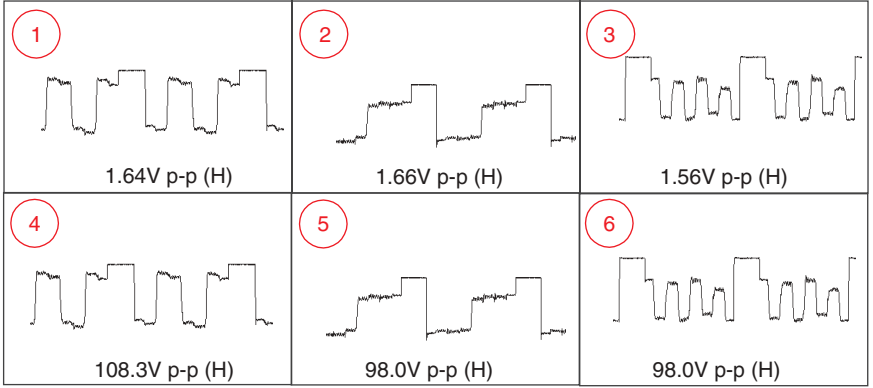
A BOARD LOCATOR LIST

DIODE		DIODE		DIODE		DIODE		TRANSISTOR							
D002	A-4	D106	C-1	D621	G-7	D827	I-4	Q001	C-7						
D003	A-3	D108	B-2	D622	G-8	D829	E-3	Q006	E-12						
D023	C-7	D109	B-2	D623	G-8	D830	I-6	Q007	E-12						
D024	B-7	D200	E-13	D624	G-8	D832	F-1	Q008	F-7						
D025	C-7	D201	A-8	D629	G-7	D833	F-1	Q010	E-3						
D054	G-13	D202	C-8	D633	I-9	D908	E-2	Q016	B-8						
D055	H-13	D203	B-8	D635	G-8	D915	D-13	Q100	C-1						
D056	G-13	D204	B-8	D637	E-11	D916	D-13	Q102	B-2						
D057	C-7	D205	C-8	D638	D-11	D918	D-4	Q200	A-8						
D058	C-7	D208	B-8	D639	F-8	D931	D-13	Q201	B-8						
D059	C-7	D211	E-10	D804	F-2	D932	D-13	Q202	C-8						
D060	D-6	D212	B-7	D805	G-6	D2625	F-9	Q206	B-8						
D061	C-6	D213	B-8	D807	E-6	IC		Q601	D-12						
D062	C-7	D214	B-8	D808	H-5	IC001	C-5	Q605	I-9						
D063	F-6	D600	G-13	D809	E-9	IC002	H-13	Q606	J-9						
D064	B-4	D602	G-11	D815	F-3	IC003	A-5	Q608	G-7						
D065	B-4	D603	H-11	D816	G-3	IC200	B-8	Q609	F-6						
D066	D-4	D604	F-11	D817	F-2	IC601	J-8	Q803	F-2						
D068	A-8	D605	J-9	D818	I-6	IC602	E-9	Q804	I-6						
D071	A-6	D608	J-9	D819	F-4	IC603	D-11	Q805	H-13						
D072	B-5	D614	J-9	D820	J-5	IC604	E-8	Q806	F-5						
D074	C-4	D615	I-7	D821	F-4	IC605	H-6	Q807	F-6						
D075	C-6	D617	I-8	D823	I-4	IC606	C-8	Q808	F-3						
D103	C-2	D618	I-8	D824	J-3	IC607	E-12	Q814	D-8						
D105	B-2	D619	H-8					IC801	E-5	Q900	C-3				
								IC802	E-5	Q901	D-3				
								IC804	J-6	Q902	D-3				
								Q8009			I-4				
								Q8010			I-5				

C BOARD SCHEMATIC DIAGRAM

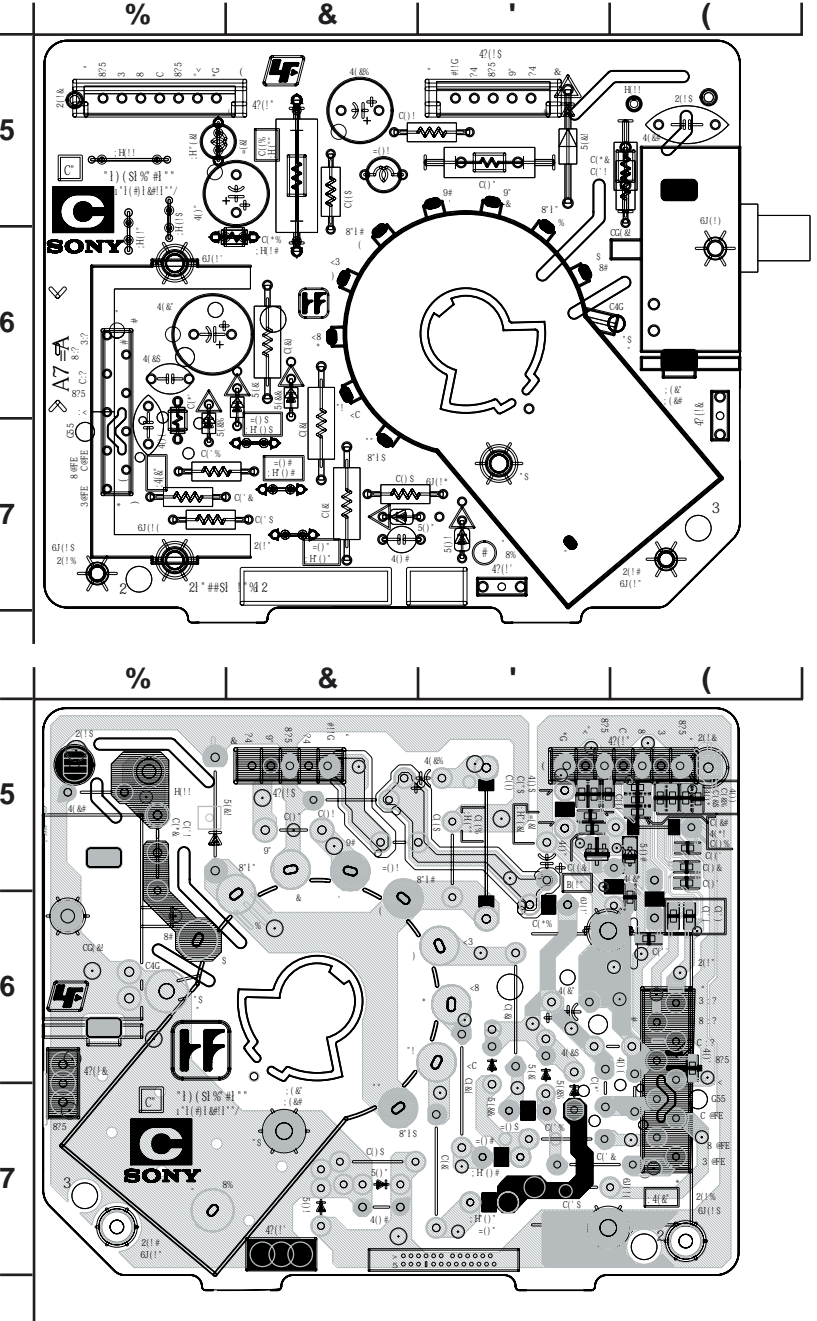


C BOARD WAVEFORMS

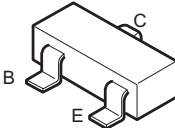
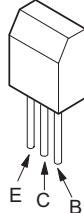
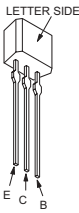
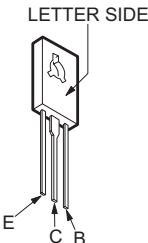
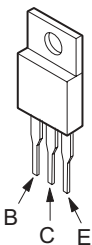
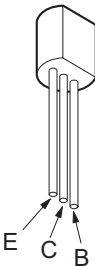
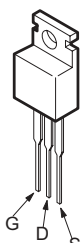
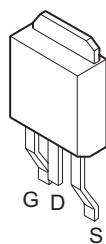
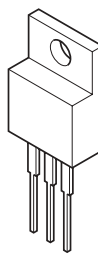
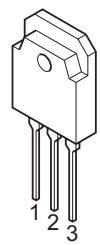
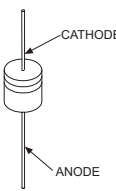
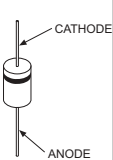
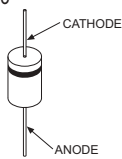
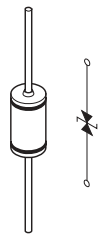
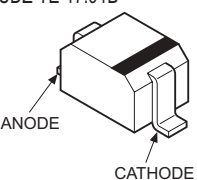
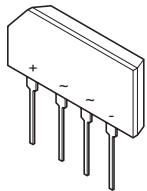
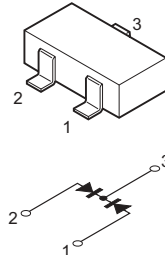
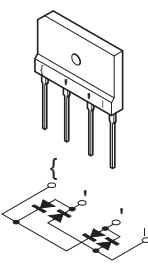
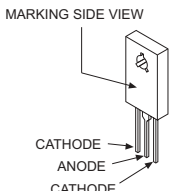
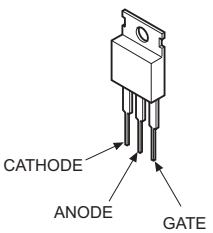


C [CRT DRIVE, RGB DRIVE]
COMPONENT SIDE

C [CRT DRIVE, RGB DRIVE]
CONDUCTOR SIDE



4-5. SEMICONDUCTORS


2SB709A-QRS-TX 2SD601A-QRS-TX 	2SB734-T-34 2SC3209LK-TP 	2SA1309A-QRSTA 2SC3311A-QRSTA 2SD2144S-TP-UVW 	2SC3840K 	2SA1837 
2SA10910-TPE2 	IRF614 	2SK2663 	2SC4793 	2SD2578-YB 
ERA38-06TP1 ERA82-004TP5 1SS133T-77 D1NS0R-TA MTZJ-T-77-12C MTZJ-T-77-15B MTZJ-T-77-33B MTZJ-T-77-39 	RU-1P ERC06-15S EGP20DPKG23 MTZJ-T-77-5.1C MTZJ-T-77-5.6C MTZJ-T-77-7.5A MTZJ-T-77-10B MTZJ-T-77-30D RGP10-GPKG3 RGP02-17PKG23 RGP15GPKG23 	ERB44-06TP1 1SS83TD GP08DPKG23 RGP10GPKG23 RU4AM-T3 	RD9.1EW-T1 	MA111-TX UDZ-TE-17.5.1B UDZ-TE-17.91B 
D2SB60A-F04 	DAP202K-T-146 	D4SB60L-F 		
D5LC20U 	TF541M 			

SECTION 5: EXPLODED VIEWS





Components not identified by a part number or description are not stocked because they are seldom required for routine service.

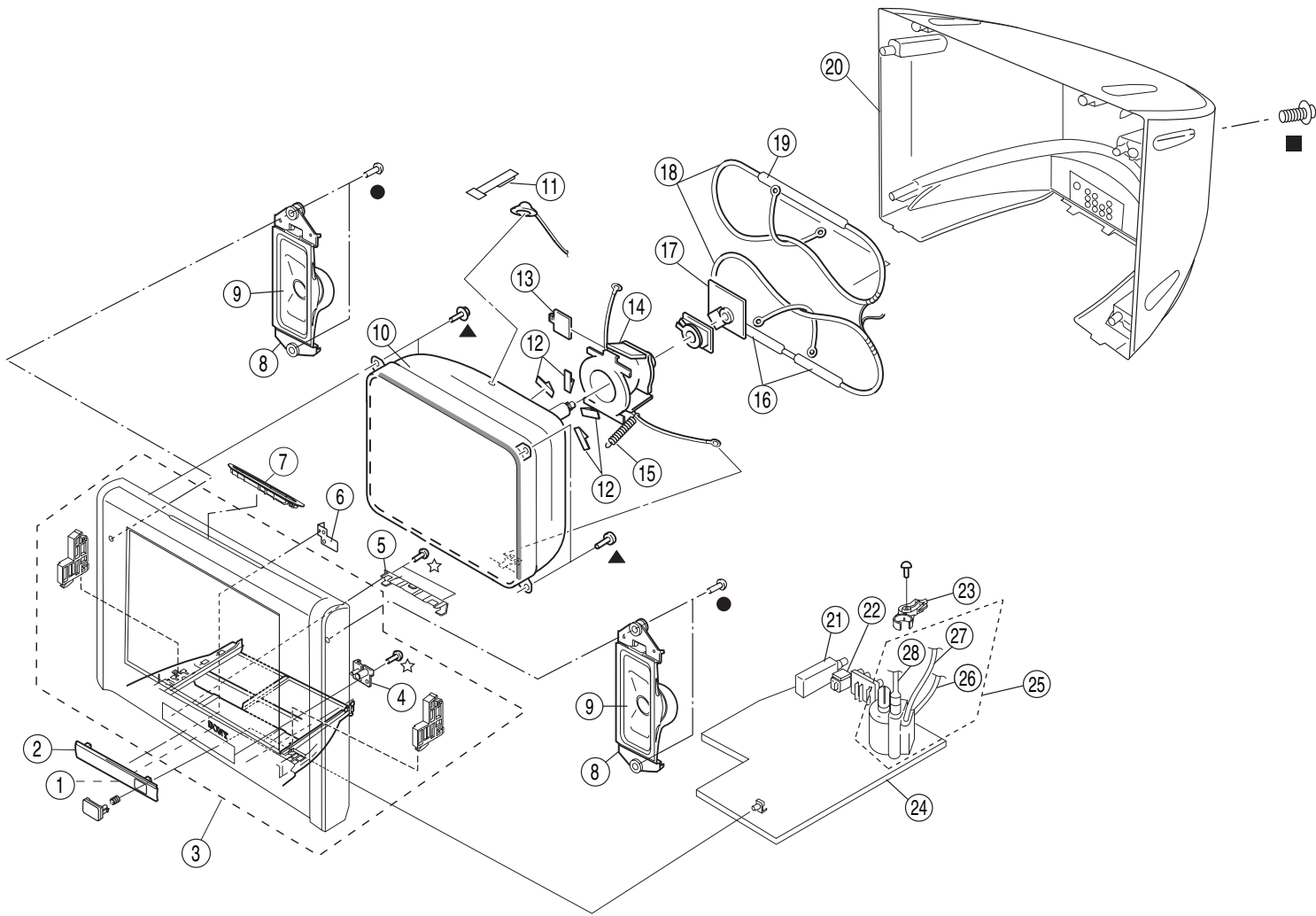
The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.








* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

5-1. PICTURE TUBE, SPEAKERS, AND CHASSIS

-  7-685-663-79
- SCREW +BVTP 4X16 TYPE2 TT(B)
-  4-365-808-01
- SCREW (5), TAPPING
-  2-580-654-01
- SCREW, +PWTP2 4X16
-  7-685-648-79
- SCREW +BVTP 3X12 TYPE2 IT-3



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
1	4-046-161-21	EMBLEM, SONY NO.8		16	2-629-888-01	TUBE, DGC (BOTTOM)	
2	2-658-328-31	DOOR		* 17	A-1223-013-A	C BOARD, MOUNTED (VAR)	
3	X-2176-424-1	BEZNET ASSY	[4]	 18	1-456-153-11	DEGAUSSING COIL	
* 4	2-658-329-01	GUIDE, LIGHT		19	4-103-011-01	TUBE, DGC (C) (UPPER)	
5	2-658-331-01	COVER, FRONT PANEL		20	2-658-334-02	COVER, REAR	
6	4-093-704-01	SPRING, DOOR		21	1-693-729-11	TUNER	
7	1-479-380-71	TOP SWITCH BLOCK		22	4-022-115-00	HOLDER, AC CORD	
* 8	4-046-981-04	BRACKET, SPEAKER		* 23	2-658-337-01	BRACKET, FBT	
9	1-825-691-12	SPEAKER (15X6.5CM)		* 24	A-1223-010-A	A BOARD, COMPLETE	
 10	8-738-873-05	CRT 21RSN2(FOR ME) (A51LPT**X)				(LATIN NORTH MODEL ONLY)	
11	4-094-690-01	PIECE A(90), CONV. CORRECT				The high-voltage leads associated with the FBT on this	
12	4-046-600-11	SPACER, DY				A Board are not included and must be ordered separately. [See 26-28]	
13	4-057-714-01	PIECE ASSY, TLH CORRECTION		* 24	A-1226-862-A	A BOARD, COMPLETE	
 14	8-451-505-61	DY Y21RSA-S3				(LATIN SOUTH MODEL ONLY)	
15	4-095-706-01	SPRING, EXTENSION				The high-voltage leads associated with the FBT on this	
						A Board are not included and must be ordered separately. [See 26-28]	
				 25	1-453-489-11	FBT ASSY NX-4800//M3A4	[26-28]
				 26	1-910-027-23	LEAD ASSY, FOCUS	
				 27	1-910-027-08	LEAD ASSY, G2	
				 28	1-417-664-21	HIGH-VOLTAGE CAP ASSY	

SECTION 6: ELECTRICAL PARTS LIST

NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.


RESISTORS

- All resistors are in ohms
- F : nonflammable
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.







When ordering parts by reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
	A-1223-010-A	A BOARD, COMPLETE (LATIN NORTH MODEL ONLY)				C030	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
	A-1226-862-A	A BOARD, COMPLETE (LATIN SOUTH MODEL ONLY)				C036	1-126-933-11	ELECT	100μF	20%	16V
		The high-voltage leads associated with the FBT on these A Boards are not included and must be ordered separately.				C037	1-126-963-11	ELECT	4.7μF	20%	50V
						C038	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
						C041	1-162-966-11	CERAMIC CHIP	0.0022μF	10%	50V
	1-910-027-23	LEAD ASSY, FOCUS				C042	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
	1-910-027-08	LEAD ASSY, G2				C044	1-164-505-11	CERAMIC CHIP	2.2μF		16V
	1-417-664-21	HIGH-VOLTAGE CAP ASSY				C046	1-162-969-11	CERAMIC CHIP	0.0068μF	10%	25V
	4-382-854-01	SCREW (M3X8), P, SW (+)				C048	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
	4-382-854-21	SCREW (M3X14), P, SW (+)				C049	1-164-227-11	CERAMIC CHIP	0.022μF	10%	25V
CAPACITOR						C050	1-126-964-11	ELECT	10μF	20%	50V
C001	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C052	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C002	1-126-935-11	ELECT	470μF	20%	16V	C053	1-164-227-11	CERAMIC CHIP	0.022μF	10%	25V
C003	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C054	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C004	1-126-933-11	ELECT	100μF	20%	16V	C055	1-100-829-11	FILM	0.15μF	5%	250V
C005	1-126-933-11	ELECT	100μF	20%	16V	C056	1-126-933-11	ELECT	100μF	20%	16V
C006	1-126-925-91	ELECT	470μF	20%	10V	C057	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C008	1-126-947-11	ELECT	47μF	20%	35V	C058	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C010	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	C060	1-216-864-11	SHORT CHIP			
C013	1-126-933-11	ELECT	100μF	20%	16V	C061	1-162-967-11	CERAMIC CHIP	0.0033μF	10%	50V
C014	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V	C062	1-216-864-11	SHORT CHIP			
C018	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C063	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C020	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C064	1-126-961-11	ELECT	2.2μF	20%	50V
C021	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C065	1-126-962-11	ELECT	3.3μF	20%	50V
C022	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V	C067	1-216-864-11	SHORT CHIP			
C023	1-164-505-11	CERAMIC CHIP	2.2μF		16V	C069	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C024	1-126-965-91	ELECT	22μF	20%	50V	C070	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C025	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V	C072	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C026	1-126-947-11	ELECT	47μF	20%	35V	C073	1-126-961-11	ELECT	2.2μF	20%	50V
C028	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C077	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V
C029	1-126-925-91	ELECT	470μF	20%	10V	C078	1-162-925-11	CERAMIC CHIP	68pF	5%	50V
						C080	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
						C081	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
						C082	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
						C083	1-162-979-11	CERAMIC CHIP	0.0027μF	10%	50V
						C089	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
						C090	1-162-927-11	CERAMIC CHIP	100pF	5%	50V

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
C091	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C231	1-137-374-11	MYLAR	0.047μF	5%	50V
C092	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C232	1-137-374-11	MYLAR	0.047μF	5%	50V
C093	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C234	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C094	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C235	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C095	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C301	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C096	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C302	1-164-505-11	CERAMIC CHIP	2.2μF		16V
C100	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	C303	1-126-933-11	ELECT	100μF	20%	16V
C101	1-126-964-11	ELECT	10μF	20%	50V	C304	1-126-933-11	ELECT	100μF	20%	16V
C102	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C308	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C104	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C311	1-126-961-11	ELECT	2.2μF	20%	50V
C106	1-126-964-11	ELECT	10μF	20%	50V	C312	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C107	1-126-935-11	ELECT	470μF	20%	16V	C313	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C108	1-126-935-11	ELECT	470μF	20%	16V	C316	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
C109	1-162-968-11	CERAMIC CHIP	0.0047μF	10%	50V	C317	1-126-934-11	ELECT	220μF	20%	16V
C111	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C318	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C112	1-162-910-11	CERAMIC CHIP	5pF	0.25pF	50V	C319	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C115	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C320	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C116	1-162-968-11	CERAMIC CHIP	0.0047μF	10%	50V	C321	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C117	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C322	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C118	1-126-965-91	ELECT	22μF	20%	50V	C323	1-112-034-91	CERAMIC CHIP	0.01μF	5%	50V
C119	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C325	1-164-227-11	CERAMIC CHIP	0.022μF	10%	25V
C120	1-126-935-11	ELECT	470μF	20%	16V	C328	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C131	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C329	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C133	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C330	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C135	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C331	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C137	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	C333	1-126-925-91	ELECT	470μF	20%	10V
C138	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	 C600	1-119-895-51	CERAMIC	4700pF	20%	250V
C140	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	 C602	1-165-538-31	FILM	0.1μF	10%	275V
C200	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V		(LATIN SOUTH MODEL ONLY)				
C201	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C605	1-161-830-00	CERAMIC	0.0047μF	20%	500V
C202	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V	C606	1-161-830-00	CERAMIC	0.0047μF	20%	500V
C203	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V	C609	1-161-830-00	CERAMIC	0.0047μF	20%	500V
C204	1-130-495-00	MYLAR	0.1μF	5%	50V	C610	1-161-830-00	CERAMIC	0.0047μF	20%	500V
C205	1-126-959-11	ELECT	0.47μF	20%	50V	C611	1-165-922-11	ELECT(BLOCK)	470μF	20%	250V
C206	1-162-969-11	CERAMIC CHIP	0.0068μF	10%	25V		(LATIN NORTH MODEL ONLY)				
C207	1-130-495-00	MYLAR	0.1μF	5%	50V	C611	1-117-751-11	ELECT(BLOCK)	220μF	20%	450V
C208	1-162-969-11	CERAMIC CHIP	0.0068μF	10%	25V		(LATIN SOUTH MODEL ONLY)				
C209	1-126-959-11	ELECT	0.47μF	20%	50V	C612	1-117-623-11	FILM	1500pF	3%	1.2KV
C210	1-126-968-11	ELECT	100μF	20%	50V	C616	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C211	1-126-963-11	ELECT	4.7μF	20%	50V	C619	1-130-491-00	MYLAR	0.047μF	5%	50V
C213	1-115-339-11	CERAMIC CHIP	0.1μF	10%	50V	C621	1-126-963-11	ELECT	4.7μF	20%	50V
C214	1-126-942-61	ELECT	1000μF	20%	25V	 C622	1-119-888-51	CERAMIC	2200pF	20%	250V
C215	1-128-550-11	ELECT	2200μF	20%	50V	C623	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C216	1-126-965-91	ELECT	22μF	20%	50V		(LATIN NORTH MODEL ONLY)				
C217	1-126-942-61	ELECT	1000μF	20%	25V	C623	1-162-966-11	CERAMIC CHIP	0.0022μF	10%	50V
C218	1-126-965-91	ELECT	22μF	20%	50V		(LATIN SOUTH MODEL ONLY)				
C219	1-126-934-11	ELECT	220μF	20%	16V	C624	1-126-967-11	ELECT	47μF	20%	50V
C220	1-126-964-11	ELECT	10μF	20%	50V	 C625	1-127-943-51	CERAMIC	330pF	10%	250V
						C626	1-102-228-00	CERAMIC	470pF	10%	500V

NOTE: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
C628	1-117-768-91	CERAMIC (LATIN NORTH MODEL ONLY)	470pF	10%	2KV	C835	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C628	1-125-772-91	CERAMIC (LATIN SOUTH MODEL ONLY)	1500pF	10%	2KV	C837	1-162-968-11	CERAMIC CHIP	0.0047μF	10%	50V
C630	1-128-549-11	ELECT	3300μF	20%	35V	C838	1-106-220-00	MYLAR	0.1μF	10%	100V
C632	1-126-953-11	ELECT (LATIN NORTH MODEL ONLY)	2200μF	20%	35V	C839	1-162-966-11	CERAMIC CHIP	0.0022μF	10%	50V
C632	1-126-952-11	ELECT (LATIN SOUTH MODEL ONLY)	1000μF	20%	35V	Δ C840	1-117-647-21	FILM	13000pF	3%	1.2KV
C634	1-126-941-11	ELECT	470μF	20%	25V	C841	1-107-846-11	FILM	0.1μF	5%	400V
C635	1-126-971-11	ELECT	470μF	20%	50V	C842	1-100-122-21	FILM	0.022μF	5%	400V
C637	1-126-933-11	ELECT	100μF	20%	16V	C844	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V
C638	1-126-933-11	ELECT	100μF	20%	16V	C845	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C639	1-126-933-11	ELECT	100μF	20%	16V	C846	1-162-115-00	CERAMIC	330pF	10%	2KV
C641	1-126-933-11	ELECT	100μF	20%	16V	C847	1-107-364-11	MYLAR	0.01μF	10%	200V
C643	1-117-720-11	CERAMIC CHIP	4.7μF		10V	C848	1-107-364-11	MYLAR	0.01μF	10%	200V
C644	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	C849	1-106-375-12	MYLAR	0.022μF	5%	200V
C647	1-126-935-11	ELECT	470μF	20%	16V	C850	1-106-220-00	MYLAR	0.1μF	10%	100V
C649	1-126-933-11	ELECT	100μF	20%	16V	C851	1-107-675-11	ELECT	1μF	20%	450V
C652	1-102-228-00	CERAMIC	470pF	10%	500V	C852	1-117-665-11	FILM	0.33μF	5%	250V
C653	1-102-228-00	CERAMIC	470pF	10%	500V	C854	1-126-948-11	ELECT	100μF	20%	35V
C654	1-102-228-00	CERAMIC	470pF	10%	500V	C855	1-107-894-11	ELECT	220μF	20%	35V
Δ C657	1-127-943-51	CERAMIC	330pF	10%	250V	C857	1-104-666-11	ELECT	220μF	20%	25V
Δ C660	1-165-539-31	FILM	0.22μF	10%	275V	C858	1-137-959-91	MYLAR	0.47μF	5%	100V
C662	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C860	1-162-318-11	CERAMIC	0.001μF	10%	500V
C665	1-110-626-11	ELECT	330μF	20%	160V	C861	1-104-666-11	ELECT	220μF	20%	25V
C668	1-126-933-11	ELECT	100μF	20%	16V	C862	1-162-318-11	CERAMIC	0.001μF	10%	500V
C669	1-165-530-31	MYLAR (LATIN NORTH MODEL ONLY)	0.47μF	10	0V	C863	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V
Δ C670	1-127-943-51	CERAMIC	330pF	10%	250V	C867	1-165-441-81	ELECT	33μF	20%	160V
C672	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C868	1-102-228-00	CERAMIC	470pF	10%	500V
C678	1-164-505-11	CERAMIC CHIP	2.2μF		16V	C869	1-107-654-11	ELECT	33μF	20%	250V
C680	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	C870	1-106-387-00	MYLAR	0.068μF	10%	200V
C682	1-115-466-91	ELECT	1000μF	20%	16V	C876	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C685	1-126-934-11	ELECT	220μF	20%	16V	C877	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C686	1-117-720-11	CERAMIC CHIP	4.7μF		10V	C878	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C805	1-126-960-11	ELECT	1μF	20%	50V	C900	1-164-505-11	CERAMIC CHIP	2.2μF		16V
C806	1-106-375-12	MYLAR	0.022μF	5%	200V	C901	1-164-505-11	CERAMIC CHIP	2.2μF		16V
C807	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	C902	1-126-957-11	ELECT	0.22μF	20%	50V
C808	1-102-244-00	CERAMIC	220pF	10%	500V	C903	1-126-935-11	ELECT	470μF	20%	16V
C809	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	C906	1-164-346-11	CERAMIC CHIP	1μF		16V
C810	1-162-318-11	CERAMIC	0.001μF	10%	500V	C907	1-164-346-11	CERAMIC CHIP	1μF		16V
C811	1-126-925-91	ELECT	470μF	20%	10V	C908	1-164-346-11	CERAMIC CHIP	1μF		16V
C822	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C909	1-164-346-11	CERAMIC CHIP	1μF		16V
C825	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C910	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C826	1-164-227-11	CERAMIC CHIP	0.022μF	10%	25V	C911	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C828	1-126-933-11	ELECT	100μF	20%	16V	C912	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C830	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C913	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C831	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C914	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C832	1-164-230-11	CERAMIC CHIP	220pF	5%	50V	C915	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C833	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C916	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
						C917	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
						C918	1-164-346-11	CERAMIC CHIP	1μF		16V
						C919	1-164-346-11	CERAMIC CHIP	1μF		16V
						C922	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
						C924	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V

NOTE: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES	REF. NO.	PART NO.	DESCRIPTION	VALUES
C925	1-164-315-11	CERAMIC CHIP	470pF 5% 50V	D200	8-719-062-51	DIODE	1PS226-115
C955	1-126-957-11	ELECT	0.22μF 20% 50V	D201	8-719-404-50	DIODE	MA111-TX
C956	1-126-933-11	ELECT	100μF 20% 16V	D202	8-719-404-50	DIODE	MA111-TX
C967	1-164-505-11	CERAMIC CHIP	2.2μF 16V	D203	8-719-404-50	DIODE	MA111-TX
C975	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V	D204	8-719-404-50	DIODE	MA111-TX
C979	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V	D205	8-719-404-50	DIODE	MA111-TX
C1019	1-125-891-11	CERAMIC CHIP	0.47μF 10% 10V	D208	8-719-404-50	DIODE	MA111-TX
C2602	1-164-315-11	CERAMIC CHIP	470pF 5% 50V	D211	8-719-062-51	DIODE	1PS226-115
C2631	1-102-228-00	CERAMIC	470pF 10% 500V	D212	8-719-404-50	DIODE	MA111-TX
C2636	1-126-972-11	ELECT	1000μF 20% 50V	D213	8-719-404-50	DIODE	MA111-TX
C2648	1-126-952-11	ELECT	1000μF 20% 35V	D214	8-719-404-50	DIODE	MA111-TX
CONNECTOR				D600	8-719-404-50	DIODE	MA111-TX
* CN005	1-564-506-11	PLUG, CONNECTOR	3P	D602	6-501-301-01	DIODE	1A5G
* CN200	1-564-507-11	PLUG, CONNECTOR	4P	D603	6-501-301-01	DIODE	1A5G
* CN600	1-508-786-00	PIN, CONNECTOR (5MM PITCH)	2P	D604	8-719-077-77	DIODE	D3SB60F3
Δ CN602	1-580-843-11	PIN, CONNECTOR (POWER)		D605	8-719-109-85	DIODE	RD5.1ESB2
* CN801	1-564-508-11	PLUG, CONNECTOR	5P	(LATIN SOUTH MODEL ONLY)			
* CN904	1-508-743-00	PIN, CONNECTOR	5P	D617	6-500-567-11	DIODE	10ERB20-TA2B5
DIODE				D618	6-500-567-11	DIODE	10ERB20-TA2B5
D002	8-719-404-50	DIODE	MA111-TX	D619	6-500-567-11	DIODE	10ERB20-TA2B5
D003	8-719-404-50	DIODE	MA111-TX	D621	8-719-312-10	DIODE	RU4AM-T3
D023	8-719-422-97	DIODE	MA8091-M	D622	8-719-085-37	DIODE	11EQS10-TB5
D024	8-719-422-97	DIODE	MA8091-M	D623	6-500-567-31	DIODE	10ERB20-TB3
D025	8-719-422-97	DIODE	MA8091-M	D624	8-719-510-73	DIODE	S3L20UF4
D054	8-719-977-03	DIODE	DTZ5.6B	D629	8-719-109-85	DIODE	RD5.1ESB2
D055	8-719-109-89	DIODE	RD5.6ESB2	D633	8-719-923-86	DIODE	MTZJ-T-77-15
D056	8-719-991-33	DIODE	1SS133T-77	D635	6-501-588-01	DIODE	MA8036-H-TX
D057	8-719-404-50	DIODE	MA111-TX	D637	8-719-072-70	DIODE	MA2ZD14001S0
D058	8-719-404-50	DIODE	MA111-TX	D638	8-719-404-50	DIODE	MA111-TX
D059	8-719-404-50	DIODE	MA111-TX	D639	6-501-311-01	DIODE	SB360-S
D060	8-719-977-03	DIODE	DTZ5.6B	D804	8-719-991-33	DIODE	1SS133T-77
D061	8-719-404-50	DIODE	MA111-TX	D805	8-719-991-33	DIODE	1SS133T-77
D062	8-719-977-03	DIODE	DTZ5.6B	D807	8-719-991-33	DIODE	1SS133T-77
D063	8-719-404-50	DIODE	MA111-TX	D808	8-719-991-33	DIODE	1SS133T-77
D064	8-719-977-03	DIODE	DTZ5.6B	D815	8-719-923-60	DIODE	MTZJ-T-77-9.1A
D065	8-719-977-03	DIODE	DTZ5.6B	D816	6-501-402-01	DIODE	BY228GPL-5402E3/72
D066	8-719-083-20	DIODE	PG102R	D817	6-501-302-01	DIODE	PG156R
D068	8-719-977-03	DIODE	DTZ5.6B	D818	8-719-109-85	DIODE	RD5.1ESB2
D071	8-719-404-50	DIODE	MA111-TX	D819	6-500-567-31	DIODE	10ERB20-TB3
D072	8-719-404-50	DIODE	MA111-TX	D820	8-719-083-20	DIODE	PG102R
D074	8-719-404-50	DIODE	MA111-TX	D821	6-500-567-31	DIODE	10ERB20-TB3
D075	8-719-422-97	DIODE	MA8091-M	D823	8-719-074-25	DIODE	PG104R
D103	8-719-036-43	DIODE	MA4300-H(TA)	D824	8-719-074-25	DIODE	PG104R
D105	8-719-404-50	DIODE	MA111-TX	D827	8-719-074-25	DIODE	PG104R
D106	8-719-157-94	DIODE	RD3.3SB	D829	8-719-109-89	DIODE	RD5.6ESB2
D108	8-719-977-03	DIODE	DTZ5.6B	D830	8-719-404-50	DIODE	MA111-TX
D109	8-719-977-03	DIODE	DTZ5.6B	D832	8-719-404-50	DIODE	MA111-TX
D112	8-719-109-89	DIODE	RD5.6ESB2				
D113	8-719-977-03	DIODE	DTZ5.6B				

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REF. NO.	PART NO.	DESCRIPTION	VALUES	REF. NO.	PART NO.	DESCRIPTION	VALUES
D833	8-719-404-50	DIODE	MA111-TX	JACK			
D900	8-719-977-03	DIODE	DTZ5.6B	J200	1-770-786-31	JACK	
D908	8-719-977-03	DIODE	DTZ5.6B	J901	1-817-299-22	PHONO JACK	11P
D914	8-719-083-18	DIODE	SPB-25MVWF	J903	1-770-329-13	JACK, PIN	3P
D915	8-719-977-03	DIODE	DTZ5.6B	CHIP CONDUCTOR			
D916	8-719-977-03	DIODE	DTZ5.6B	JR001	1-216-864-11	SHORT CHIP	
D918	8-719-977-03	DIODE	DTZ5.6B	JR002	1-216-864-11	SHORT CHIP	
D931	6-501-588-01	DIODE	MA8036-H-TX	JR003	1-216-864-11	SHORT CHIP	
D932	6-501-588-01	DIODE	MA8036-H-TX	JR004	1-216-864-11	SHORT CHIP	
D2625	8-719-510-73	DIODE	S3L20UF4	JR005	1-216-864-11	SHORT CHIP	
DY CONNECTOR				JR007	1-216-864-11	SHORT CHIP	
* DY800	1-580-798-11	CONNECTOR PIN (DY)	6P	JR008	1-216-864-11	SHORT CHIP	
FUSE				JR009	1-216-864-11	SHORT CHIP	
\triangle F600	1-576-232-51	FUSE	5A 250V	JR012	1-216-864-11	SHORT CHIP	
FERRITE BEAD				JR013	1-216-864-11	SHORT CHIP	
FB001	1-410-397-21	FERRITE	1.1 μ H	JR014	1-216-864-11	SHORT CHIP	
FB005	1-469-981-21	FERRITE	0 μ H	JR015	1-216-864-11	SHORT CHIP	
FB006	1-469-981-21	FERRITE	0 μ H	JR016	1-216-864-11	SHORT CHIP	
FB007	1-469-981-21	FERRITE	0 μ H	JR017	1-216-864-11	SHORT CHIP	
FB008	1-469-981-21	FERRITE	0 μ H	JR018	1-216-864-11	SHORT CHIP	
FB021	1-414-234-22	FERRITE	0 μ H	JR019	1-216-864-11	SHORT CHIP	
FB603	1-469-578-11	FERRITE	1.1 μ H	JR020	1-216-864-11	SHORT CHIP	
FB608	1-412-911-11	FERRITE	0 μ H	JR024	1-216-864-11	SHORT CHIP	
FB800	1-469-578-11	FERRITE	1.1 μ H	JR025	1-216-864-11	SHORT CHIP	
FB2607	1-469-578-11	FERRITE	1.1 μ H	JR026	1-216-864-11	SHORT CHIP	
FUSE HOLDER				JR027	1-216-864-11	SHORT CHIP	
\triangle FH601	1-533-223-11	FUSE HOLDER	0A 0V	JR037	1-216-864-11	SHORT CHIP	
\triangle FH602	1-533-223-11	FUSE HOLDER	0A 0V	JR038	1-216-864-11	SHORT CHIP	
IC				JR040	1-216-864-11	SHORT CHIP	
IC001	6-709-776-01	IC	TDA12001H/N1F4B	JR041	1-216-864-11	SHORT CHIP	
IC002	6-704-532-01	IC	RPM7240-H5	JR042	1-216-864-11	SHORT CHIP	
IC003	6-710-021-01	IC	CAT24C16WI-GT3	JR043	1-216-864-11	SHORT CHIP	
IC200	6-706-985-01	IC	AN17808A	JR046	1-216-864-11	SHORT CHIP	
IC601	6-704-263-01	IC	STR-F6267S LF1357	JR047	1-216-864-11	SHORT CHIP	
	(LATIN NORTH MODEL ONLY)			JR049	1-216-864-11	SHORT CHIP	
IC601	6-703-472-11	IC	STR-F6264SLF1357	JR051	1-216-864-11	SHORT CHIP	
	(LATIN SOUTH MODEL ONLY)			JR300	1-216-864-11	SHORT CHIP	
IC602	6-706-789-01	IC	KIA78R09API	JR301	1-216-864-11	SHORT CHIP	
IC603	6-703-478-01	IC	PQ018EF01SSH	JR302	1-216-864-11	SHORT CHIP	
IC604	8-759-646-52	IC	KIA7805API	JR600	1-216-864-11	SHORT CHIP	
IC605	6-705-063-01	IC	SE135N-LF38	JR601	1-216-864-11	SHORT CHIP	
IC606	6-706-886-01	IC	KIA78D33PI	JR602	1-216-864-11	SHORT CHIP	
IC607	8-759-832-05	IC	BA18BC0FP-E2	JR806	1-216-864-11	SHORT CHIP	
IC801	6-703-708-01	IC	LM2903DT	JR807	1-216-864-11	SHORT CHIP	
IC802	6-701-937-01	IC	TJM4558CDT	JR808	1-216-864-11	SHORT CHIP	
IC804	6-708-756-01	IC	STV9302B				

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REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
JR809	1-216-864-11	SHORT CHIP				<u>IC LINK</u>					
JR810	1-216-864-11	SHORT CHIP				△	PS602	1-533-597-41	IC LINK	5A	90V
JR811	1-216-864-11	SHORT CHIP				△	PS603	1-533-597-41	IC LINK	5A	90V
JR812	1-216-864-11	SHORT CHIP					PS604	1-533-597-41	IC LINK	5A	90V
JR1006	1-216-864-11	SHORT CHIP				△	PS605	1-533-597-41	IC LINK	5A	90V
						△	PS2601	1-533-597-41	IC LINK	5A	90V
JR1011	1-216-864-11	SHORT CHIP				<u>TRANSISTOR</u>					
JR1012	1-216-864-11	SHORT CHIP				Q001	8-729-038-67	TRANSISTOR	KRC102S		
JR1013	1-216-864-11	SHORT CHIP				Q006	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
JR1014	1-216-864-11	SHORT CHIP				Q007	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
JR1016	1-216-864-11	SHORT CHIP				Q008	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
						Q010	8-729-600-22	TRANSISTOR	2SA1235-F		
JR1050	1-216-811-11	METAL CHIP	150	5%	1/10W	Q016	8-729-038-67	TRANSISTOR	KRC102S		
JR1100	1-216-864-11	SHORT CHIP				Q100	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
JR1101	1-216-864-11	SHORT CHIP				Q102	8-729-022-54	TRANSISTOR	2SC3779C,D-AA		
JR1110	1-216-864-11	SHORT CHIP				Q111	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
JR1113	1-216-864-11	SHORT CHIP				Q200	8-729-038-67	TRANSISTOR	KRC102S		
JR1903	1-216-864-11	SHORT CHIP				Q201	8-729-600-22	TRANSISTOR	2SA1235-F		
<u>COIL</u>						Q202	8-729-600-22	TRANSISTOR	2SA1235-F		
L003	1-414-856-11	INDUCTOR	10μH			Q206	8-729-038-67	TRANSISTOR	KRC102S		
L004	1-414-187-11	INDUCTOR	47μH			Q601	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
L005	1-414-856-11	INDUCTOR	10μH			Q605	6-550-572-01	TRANSISTOR	FN155		
L006	1-414-856-11	INDUCTOR	10μH				(LATIN SOUTH MODEL ONLY)				
L007	1-414-856-11	INDUCTOR	10μH			Q608	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
L008	1-414-856-11	INDUCTOR	10μH			Q609	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
L009	1-414-856-11	INDUCTOR	10μH			Q803	8-729-140-50	TRANSISTOR	2SC3209LK		
L012	1-412-058-11	INDUCTOR	10μH			Q804	6-550-362-01	TRANSISTOR	KTA1279		
L040	1-469-555-21	INDUCTOR	10μH			Q805	6-550-410-01	TRANSISTOR	2SC5885		
L041	1-469-555-21	INDUCTOR	10μH			Q806	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
L042	1-469-555-21	INDUCTOR	10μH			Q807	8-729-600-22	TRANSISTOR	2SA1235-F		
L043	1-469-555-21	INDUCTOR	10μH			Q808	6-551-406-01	TRANSISTOR	IRFS614BYDTU		
L044	1-469-555-21	INDUCTOR	10μH			Q814	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
L045	1-469-555-21	INDUCTOR	10μH			Q900	8-729-600-22	TRANSISTOR	2SA1235-F		
L046	1-469-555-21	INDUCTOR	10μH			Q901	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
L047	1-469-555-21	INDUCTOR	10μH			Q902	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
L100	1-414-857-11	INDUCTOR	100μH			Q8009	6-550-362-01	TRANSISTOR	KTA1279		
L101	1-414-138-11	INDUCTOR	0.33μH			Q8010	8-729-140-50	TRANSISTOR	2SC3209LK		
L103	1-216-295-91	SHORT CHIP				<u>RESISTOR</u>					
L106	1-414-857-11	INDUCTOR	100μH			R001	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
L107	1-216-296-11	SHORT CHIP				R002	1-216-809-11	METAL CHIP	100	5%	1/10W
L600	1-412-533-21	INDUCTOR	47μH			R003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
L601	1-412-533-21	INDUCTOR	47μH			R004	1-216-809-11	METAL CHIP	100	5%	1/10W
L602	1-412-529-11	INDUCTOR	22μH			R010	1-216-833-11	METAL CHIP	10K	5%	1/10W
L800	1-456-848-21	COIL, HORIZONTAL LINEARITY				R011	1-216-817-11	METAL CHIP	470	5%	1/10W
L802	1-406-679-11	INDUCTOR	22MH			R012	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
L803	1-414-493-41	INDUCTOR	4.7MH			R014	1-216-809-11	METAL CHIP	100	5%	1/10W
L805	1-408-947-00	INDUCTOR	2.2MH			R015	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
L902	1-414-187-11	INDUCTOR	47μH			R018	1-216-809-11	METAL CHIP	100	5%	1/10W
L2601	1-412-525-31	INDUCTOR	10μH								
<u>PHOTO COUPLER</u>											
△ PH600	8-749-019-60	IC	K1010HB01								



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
R020	1-216-809-11	METAL CHIP	100	5%	1/10W	R205	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R024	1-216-809-11	METAL CHIP	100	5%	1/10W	R207	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W	R208	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R026	1-216-809-11	METAL CHIP	100	5%	1/10W	R210	1-216-835-11	METAL CHIP	15K	5%	1/10W
R029	1-216-809-11	METAL CHIP	100	5%	1/10W	R211	1-216-835-11	METAL CHIP	15K	5%	1/10W
R030	1-216-809-11	METAL CHIP	100	5%	1/10W	R212	1-216-864-11	SHORT CHIP			
R038	1-216-809-11	METAL CHIP	100	5%	1/10W	R213	1-216-833-11	METAL CHIP	10K	5%	1/10W
R039	1-216-809-11	METAL CHIP	100	5%	1/10W	R214	1-216-839-11	METAL CHIP	33K	5%	1/10W
R041	1-216-809-11	METAL CHIP	100	5%	1/10W	R215	1-216-833-11	METAL CHIP	10K	5%	1/10W
R042	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R216	1-216-833-11	METAL CHIP	10K	5%	1/10W
R044	1-216-834-11	METAL CHIP	12K	5%	1/10W	R217	1-249-411-11	CARBON	330	5%	1/4W
R045	1-216-809-11	METAL CHIP	100	5%	1/10W	R218	1-216-295-91	SHORT CHIP			
R046	1-216-809-11	METAL CHIP	100	5%	1/10W	R219	1-249-411-11	CARBON	330	5%	1/4W
R048	1-216-809-11	METAL CHIP	100	5%	1/10W	R220	1-216-864-11	SHORT CHIP			
R051	1-218-885-11	METAL CHIP	39K	0.50%	1/10W	R221	1-216-821-11	METAL CHIP	1K	5%	1/10W
R056	1-216-809-11	METAL CHIP	100	5%	1/10W	R234	1-249-401-11	CARBON	47	5%	1/4W
R058	1-216-809-11	METAL CHIP	100	5%	1/10W	R235	1-249-401-11	CARBON	47	5%	1/4W
R059	1-216-821-11	METAL CHIP	1K	5%	1/10W	R236	1-216-833-11	METAL CHIP	10K	5%	1/10W
R060	1-216-809-11	METAL CHIP	100	5%	1/10W	R237	1-216-809-11	METAL CHIP	100	5%	1/10W
R061	1-216-819-11	METAL CHIP	680	5%	1/10W	R238	1-216-809-11	METAL CHIP	100	5%	1/10W
R087	1-216-813-11	METAL CHIP	220	5%	1/10W	R241	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R088	1-216-816-11	METAL CHIP	390	5%	1/10W	R242	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R096	1-216-813-11	METAL CHIP	220	5%	1/10W	R300	1-216-809-11	METAL CHIP	100	5%	1/10W
R097	1-216-813-11	METAL CHIP	220	5%	1/10W	R301	1-216-859-11	METAL CHIP	1.5M	5%	1/10W
R098	1-216-813-11	METAL CHIP	220	5%	1/10W	R303	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R099	1-216-813-11	METAL CHIP	220	5%	1/10W	R304	1-216-845-11	METAL CHIP	100K	5%	1/10W
R100	1-216-821-11	METAL CHIP	1K	5%	1/10W	R307	1-216-864-11	SHORT CHIP			
R103	1-211-981-11	METAL CHIP	33	0.50%	1/10W	R309	1-216-857-11	METAL CHIP	1M	5%	1/10W
R106	1-216-832-11	METAL CHIP	8.2K	5%	1/10W	R310	1-216-821-11	METAL CHIP	1K	5%	1/10W
R107	1-216-826-11	METAL CHIP	2.7K	5%	1/10W	R311	1-216-841-11	METAL CHIP	47K	5%	1/10W
R108	1-216-820-11	METAL CHIP	820	5%	1/10W	R312	1-216-857-11	METAL CHIP	1M	5%	1/10W
R109	1-216-021-00	RES-CHIP	68	5%	1/10W	R313	1-216-847-11	METAL CHIP	150K	5%	1/10W
R115	1-216-809-11	METAL CHIP	100	5%	1/10W	R314	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R116	1-216-809-11	METAL CHIP	100	5%	1/10W	R315	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R118	1-216-809-11	METAL CHIP	100	5%	1/10W	R317	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R119	1-211-981-11	METAL CHIP	33	0.50%	1/10W	R320	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R121	1-215-925-11	METAL OXIDE	22K	5%	3W	R322	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R128	1-216-864-11	SHORT CHIP				R323	1-216-809-11	METAL CHIP	100	5%	1/10W
R146	1-216-821-11	METAL CHIP	1K	5%	1/10W	R324	1-216-864-11	SHORT CHIP			
R147	1-216-813-11	METAL CHIP	220	5%	1/10W	R331	1-216-809-11	METAL CHIP	100	5%	1/10W
R148	1-211-969-11	METAL CHIP	10	0.50%	1/10W	R336	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R149	1-218-839-11	METAL CHIP	470	0.50%	1/10W	R337	1-216-817-11	METAL CHIP	470	5%	1/10W
R150	1-216-809-11	METAL CHIP	100	5%	1/10W	R338	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R152	1-216-864-11	SHORT CHIP				R339	1-216-809-11	METAL CHIP	100	5%	1/10W
R153	1-218-839-11	METAL CHIP	470	0.50%	1/10W	R340	1-216-833-11	METAL CHIP	10K	5%	1/10W
R200	1-216-832-11	METAL CHIP	8.2K	5%	1/10W	R341	1-216-809-11	METAL CHIP	100	5%	1/10W
R201	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R355	1-216-837-11	METAL CHIP	22K	5%	1/10W
R202	1-216-830-11	METAL CHIP	5.6K	5%	1/10W	R356	1-216-864-11	SHORT CHIP			
R203	1-216-832-11	METAL CHIP	8.2K	5%	1/10W	R363	1-216-864-11	SHORT CHIP			
R204	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R364	1-216-821-11	METAL CHIP	1K	5%	1/10W

NOTE: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
R377	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	Δ R650	1-247-289-00	METAL	8.2M	5%	1W
R379	1-216-843-11	METAL CHIP	68K	5%	1/10W	R651	1-243-595-71	METAL OXIDE	39K	5%	2W
R380	1-216-809-11	METAL CHIP	100	5%	1/10W		(LATIN NORTH MODEL ONLY)				
R384	1-216-809-11	METAL CHIP	100	5%	1/10W	R655	1-216-809-11	METAL CHIP	100	5%	1/10W
R385	1-216-809-11	METAL CHIP	100	5%	1/10W	R656	1-249-381-11	CARBON	1	5%	1/4W
R386	1-216-809-11	METAL CHIP	100	5%	1/10W	R667	1-216-821-11	METAL CHIP	1K	5%	1/10W
R387	1-218-285-11	METAL CHIP	75	5%	1/10W	R658	1-245-480-21	METAL	560K	1%	1/4W
R388	1-218-285-11	METAL CHIP	75	5%	1/10W		(LATIN SOUTH MODEL ONLY)				
R389	1-218-285-11	METAL CHIP	75	5%	1/10W	R659	1-245-482-21	METAL	680K	1%	1/4W
R393	1-216-809-11	METAL CHIP	100	5%	1/10W		(LATIN SOUTH MODEL ONLY)				
R394	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R668	1-216-839-11	METAL CHIP	33K	5%	1/10W
R395	1-216-845-11	METAL CHIP	100K	5%	1/10W	R820	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R398	1-216-797-11	METAL CHIP	10	5%	1/10W	R821	1-216-837-11	METAL CHIP	22K	5%	1/10W
R400	1-260-288-11	CARBON	0.47	5%	1/2W	R822	1-249-417-11	CARBON	1K	5%	1/4W
R401	1-260-288-11	CARBON	0.47	5%	1/2W	R823	1-245-468-21	METAL	180K	1%	1/4W
R405	1-260-288-11	CARBON	0.47	5%	1/2W	R824	1-216-839-11	METAL CHIP	33K	5%	1/10W
R406	1-260-127-11	CARBON	220K	5%	1/2W	R825	1-243-606-71	METAL OXIDE	1K	5%	3W
R411	1-214-909-00	METAL	68K	1%	1/2W	R826	1-247-891-00	CARBON	330K	5%	1/4W
R412	1-215-437-00	METAL	4.7K	1%	1/4W	R827	1-216-369-00	METAL OXIDE	1	5%	2W
R413	1-215-449-00	METAL	15K	1%	1/4W	R828	1-243-606-71	METAL OXIDE	1K	5%	3W
R414	1-260-336-11	CARBON	4.7K	5%	1/2W	R829	1-243-606-71	METAL OXIDE	1K	5%	3W
R416	1-260-107-11	CARBON	4.7K	5%	1/2W	R830	1-260-332-51	CARBON	2.2K	5%	1/2W
R420	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R831	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R421	1-216-833-11	METAL CHIP	10K	5%	1/10W	R833	1-260-125-11	CARBON	150K	5%	1/2W
R423	1-216-864-11	SHORT CHIP				R834	1-245-468-21	METAL	180K	1%	1/4W
R424	1-218-899-11	METAL CHIP	150K	0.50%	1/16W	R835	1-260-127-11	CARBON	220K	5%	1/2W
R602	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R838	1-216-838-11	METAL CHIP	27K	5%	1/10W
R609	1-216-833-11	METAL CHIP	10K	5%	1/10W	R843	1-216-864-11	SHORT CHIP			
R612	1-215-429-00	METAL	2.2K	1%	1/4W	R844	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
	(LATIN SOUTH MODEL ONLY)					R846	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R616	1-205-998-11	METAL	1	5%	10W	R847	1-216-833-11	METAL CHIP	10K	5%	1/10W
R619	1-216-361-00	METAL OXIDE	0.22	5%	2W	R851	1-216-821-11	METAL CHIP	1K	5%	1/10W
	(LATIN NORTH MODEL ONLY)					R852	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R619	1-216-363-21	METAL OXIDE	0.33	5%	2W	R853	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
	(LATIN SOUTH MODEL ONLY)					R854	1-218-877-11	METAL CHIP	18K	0.50%	1/10W
R620	1-216-361-00	METAL OXIDE	0.22	5%	2W	R855	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
	(LATIN NORTH MODEL ONLY)					R856	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R620	1-216-363-21	METAL OXIDE	0.33	5%	2W	R859	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
	(LATIN SOUTH MODEL ONLY)					R861	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R621	1-249-409-11	CARBON	220	5%	1/4W	R864	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
R624	1-215-429-00	METAL	2.2K	1%	1/4W	R865	1-216-821-11	METAL CHIP	1K	5%	1/10W
R627	1-249-385-11	CARBON	2.2	5%	1/4W	R866	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R631	1-249-425-11	CARBON	4.7K	5%	1/4W	R868	1-249-393-11	CARBON	10	5%	1/4W
R634	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R869	1-249-381-11	CARBON	1	5%	1/4W
R635	1-216-833-11	METAL CHIP	10K	5%	1/10W	R870	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R636	1-249-421-11	CARBON	2.2K	5%	1/4W	R871	1-243-692-71	METAL OXIDE	220	5%	1W
R638	1-240-262-11	METAL	0.68	5%	10W	R872	1-216-864-11	SHORT CHIP			
R645	1-218-899-11	METAL CHIP	150K	0.50%	1/16W	R873	1-216-841-11	METAL CHIP	47K	5%	1/10W
R646	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W	R876	1-216-833-11	METAL CHIP	10K	5%	1/10W
R647	1-216-821-11	METAL CHIP	1K	5%	1/10W	R877	1-218-895-11	METAL CHIP	100K	0.50%	1/10W

KV-21FS150

NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

A **C**

REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
<u>VARISTOR</u>					<u>RESISTOR</u>						
VDR600	1-804-991-21	VARISTOR (LATIN NORTH MODEL ONLY)				R713	1-216-864-11	SHORT CHIP			
VDR600	1-804-995-11	VARISTOR (LATIN SOUTH MODEL ONLY)				R752	1-216-815-11	METAL CHIP	330	5%	1/10W
						R753	1-216-815-11	METAL CHIP	330	5%	1/10W
						R754	1-216-811-11	METAL CHIP	150	5%	1/10W
						R756	1-219-746-11	METAL	1K	5%	1/2W
<u>CRYSTAL</u>											
X001	1-813-311-21	QUARTS CRYSTAL UNIT				R757	1-219-746-11	METAL	1K	5%	1/2W
						R758	1-219-746-11	METAL	1K	5%	1/2W
						R763	1-260-087-11	CARBON	100	5%	1/2W
						R764	1-260-087-11	CARBON	100	5%	1/2W
						R765	1-260-087-11	CARBON	100	5%	1/2W
						R773	1-260-132-11	CARBON	560K	5%	1/2W
						R774	1-215-912-11	METAL OXIDE	150	5%	3W
						R780	1-260-131-11	CARBON	470K	5%	1/2W
						R781	1-243-950-71	METAL OXIDE	0.56	5%	2W
						R783	1-260-087-11	CARBON	100	5%	1/2W
						R794	1-249-377-11	CARBON	0.47	5%	1/4W
						R795	1-260-352-11	CARBON	100K	5%	1/2W
						R796	1-249-397-11	CARBON	22	5%	1/4W
<u>CAPACITOR</u>					<u>ACCESSORIES AND PACKING</u>						
C751	1-107-961-91	ELECT	10µF	20%	250V	A-1226-859-A		ACCESSORY ASSY (LATIN SOUTH ONLY)			
C752	1-115-350-51	CERAMIC	0.0047µF		2KV	A-1223-016-A		ACCESSORY ASSY (LATIN NORTH ONLY)			
C753	1-162-318-11	CERAMIC	0.001µF	10%	500V	1-501-730-61		ANTENNA, TELESCOPIC			
C754	1-107-651-11	ELECT	4.7µF	20%	250V	* 4-073-838-11		BAG, PROTECTION			
C781	1-107-651-11	ELECT	4.7µF	20%	250V	* 4-039-372-01		BAG, PROTECTION (LATIN NORTH ONLY)			
C782	1-102-121-00	CERAMIC	0.0022µF	10%	50V	* 3-094-035-01		CARTON, INDIVIDUAL			
C786	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V	* 2-657-077-01		CUSHION, LOWER			
C787	1-164-645-11	CERAMIC	1000pF	10%	500V	* 2-657-078-01		CUSHION, UPPER			
<u>CONNECTOR</u>											
* CN701	1-564-510-11	PLUG, CONNECTOR 7P				1-528-692-61		DRY, BATTERY CARBON-ZINC			
CN705	1-695-915-11	TAB (CONTACT)				2-898-033-41		MANUAL, INSTRUCTION			
CN706	1-695-915-11	TAB (CONTACT)				1-417-182-11		MATCHING TRANSFORMER, ANTENNA			
<u>DIODE</u>					<u>MISCELLANEOUS</u>						
D750	8-719-083-20	DIODE	PG102R			△ 1-833-044-11		CORD, AC POWER(WITH CONNECTOR) (LATIN NORTH ONLY)			
D754	8-719-970-83	DIODE	HSS82-TJ			△ 1-824-968-11		POWER CORD (WITH CONNECTOR) (LATIN SOUTH ONLY)			
D755	8-719-970-83	DIODE	HSS82-TJ			* 2-658-335-01		BRACKET, PWB			
D756	8-719-970-83	DIODE	HSS82-TJ			1-452-885-11		MAGNET, LANDING			
D780	8-719-991-33	DIODE	1SS133T-77								
D781	8-719-991-33	DIODE	1SS133T-77								
D782	8-719-977-03	DIODE	DTZ5.6B								
<u>IC</u>											
IC751	6-709-352-01	IC	TDA6108AJF/N2								
<u>JACK</u>											
* △ J752	1-451-589-11	SOCKET, CRT									
<u>COIL</u>											
L780	1-414-185-41	INDUCTOR	22uH								

REF. NO.	PART NO.	DESCRIPTION	VALUES	REF. NO.	PART NO.	DESCRIPTION	VALUES
<u>REMOTE COMMANDER</u>							
	1-479-626-12	REMOTE COMMANDER (RM-YA005)					
	9-939-697-11	BATTERY COVER (for RM-YA005)					

In an effort to reduce the size of this pdf file the tiled schematics are not attached to this Service Manual. To receive a complete set of the tiled schematics for this manual please submit a request to:

Service_Promotion@am.sony.com.



FD Trinitron
WEGA[®]

Operating Instructions

KV-21FS150

WARNING

To reduce the risk of fire or electric shock, do not expose the TV to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Note to the CATV Installer

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

SAFETY PRECAUTIONS

- ☐ Operate the TV only on 120 V AC.
- ☐ One blade of the power plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- ☐ If any liquid or solid object falls into the TV, unplug it and have it checked by qualified personnel before operating it further.

CAUTION

When using TV games, computers, and similar products with your TV, keep the brightness and contrast functions at low settings. If a fixed (non-moving) pattern is left on the screen for long periods of time at a high brightness or contrast setting, the image can be permanently imprinted onto the screen. Continuously watching the same channel can cause the imprint of station logos onto the TV screen. These types of imprints are not covered by your warranty because they are the results of misuse.



To reduce the risk of electric shock, do not use this polarized plug with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure.



Pursuant to FCC regulations you are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

NOTIFICATION

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Reorient or relocate the receiving antennas.
- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ☐ Consult the dealer or an experienced radio/TV technician for help.

Protecting the TV

- ☐ To prevent internal heat build-up, do not block the ventilation openings.
- ☐ Do not install the TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.

Note on Closed Captions (CC)

This television receiver provides display of television closed captioning in accordance with § 15.119 of the FCC rules.

Use of this television for other than private viewing of programs broadcast on UHF or VHF or transmitted by cable companies for the use of the general public may require authorization from the broadcaster-cable company and/or program owner.

Owner’s Record

The model and serial numbers are located on the front cover of this manual and at the rear of your TV.

Trademarks and Copyrights

ENERGY STAR® is a registered mark.



Sony, FD Trinitron, WEGA®, Steady Sound and Intelligent Picture are Sony Corporation’s trademarks.

IMPORTANT SAFEGUARDS

For your protection, please read these instructions completely, and keep this manual for future reference. Carefully observe and comply with all warnings, cautions and instructions placed on the set, or described in the operating instructions or service manual.

WARNING

To guard against injury, the following basic safety precautions should be observed in the installation, use, and servicing of the set.

USE

Power Sources

This set should be operated only from the type of power source indicated on the serial / model plate. If you are not sure of the type of electrical power supplied to your home, consult your dealer or local power company. For those sets designed to operate from battery power, refer to the operating instructions.



Grounding or Polarization

This set may be equipped with a polarized alternating current line plug (a plug having one blade wider than other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

For the set with a polarized AC power cord plug

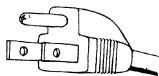
This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the polarized plug by forcing it in.



Alternate Warning

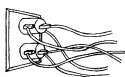
For the set with a three-wire grounding type AC plug

This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the grounding plug.



Overloading

Do not overload wall outlets, extension cords or convenience receptacles beyond their capacity, since this can result in fire or electric shock.



Always turn the set off when it is not to be used. When the set is left unattended and unused for long periods of time, unplug it from the wall outlet as a precaution against the possibility of an internal malfunction that could create a fire hazard.

Do not disconnect the antenna or the power cord during a heavy storm. Lightning may strike while you are holding the cable or cord, causing serious injury. Turn off your TV and wait for the weather to improve.

Object and Liquid Entry

Never push objects of any kind into the set through the cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the set.



Attachments

Do not use attachments not recommended by the manufacturer, as they may cause hazards.

Do not place any objects, especially heavy objects, on top of the set. The object may fall from the set, causing injury.



Cleaning

Unplug the set from the wall outlet before cleaning or polishing it. Do not use liquid cleaners or aerosol cleaners. Use a cloth lightly dampened with water for cleaning the exterior of the set.



If a snapping or popping sound from a TV set is continuous or frequent while the TV is operating, unplug the TV and consult your dealer or service technician. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off.



Installation

Always use two or more people to lift or move the set. The set is heavy and the bottom surface is flat. Serious injury can result from trying to move the set by yourself alone, or from unsteady handling.

Install the set on a stable, level surface.

Water and Moisture

Do not use power-line operated sets near water — for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.



Accessories

Do not place the set on an unstable cart, stand, tripod, bracket, table, or shelf. The set may fall, causing serious injury to a child or an adult, and serious damage to the set. Use only a cart or stand recommended by the manufacturer for the specific model of TV. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



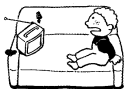
Ventilation

The slots and openings in the cabinet and in the back or bottom are provided for necessary ventilation. To ensure reliable operation of the set, and to protect it from overheating, these slots and openings must never be blocked or covered.

- ❑ Never cover the slots and openings with a cloth or other materials.



- ❑ Never block the slots and openings by placing the set on a bed, sofa, rug or other similar surface.



- ❑ Never place the set in a confined space, such as a bookcase or built-in cabinet, unless proper ventilation is provided.



- ❑ Do not place the set near or over a radiator or heat register, or where it is exposed to direct sunlight.



Power-Cord Protection

Do not allow anything to rest on or roll over the power cord, and do not place the set where the power cord is subject to wear or abuse.



ANTENNAS

Outdoor Antenna Grounding

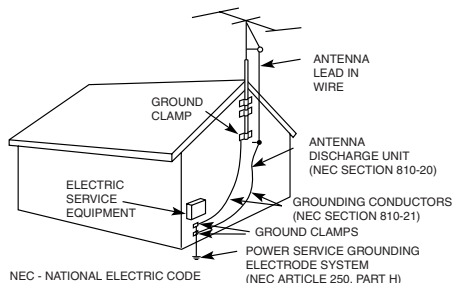
If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits.

WHEN INSTALLING AN OUTDOOR ANTENNA SYSTEM, EXTREME CARE SHOULD BE TAKEN TO KEEP FROM CONTACTING SUCH POWER LINES OR CIRCUITS AS CONTACT WITH THEM IS ALMOST INVARIABLY FATAL.

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in USA and Section 54 of the Canadian Electrical Code in Canada provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Antenna Grounding According to the NEC

Antenna Grounding According to the National Electrical Code, ANSI/NFPA 70.



Lightning

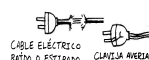
For added protection for this television receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage to the receiver due to lightning and power-line surges.

SERVICE

Damage Requiring Service

Unplug the set from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- ❑ When the power cord or plug is damaged or frayed.



- ❑ If liquid has been spilled into the set or objects have fallen into the product.



- ❑ If the set has been exposed to rain or water.



- ❑ If the set has been subject to excessive shock by being dropped, or the cabinet has been damaged.



- ❑ If the set does not operate normally when following the operating instructions. Adjust only those controls that are specified in the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the set to normal operation.



- ❑ When the set exhibits a distinct change in performance — this indicates a need for service.

Servicing

Do not attempt to service the set yourself since opening the cabinet may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.



Replacement Parts

When replacement parts are required, be sure the service technician certifies in writing that he has used replacement parts specified by the manufacturer that have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.



Safety Check

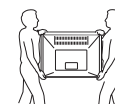
Upon completion of any service or repairs to the set, ask the service technician to perform routine safety checks (as specified by the manufacturer) to determine that the set is in safe operating condition, and to so certify. When the set reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the set.



CARRYING THE TV






Carry the TV in the specified manner.

Carrying the TV requires at least two people. If you carry the TV in a manner other than that specified and without the specified number of persons, it may drop and serious injury may result.



- ❑ Carry the TV holding the upper and bottom frames of the TV as illustrated.
- ❑ When transporting, do not subject the TV to shocks or vibrations, or excessive force.
- ❑ When lifting or moving the TV, be sure to hold the panel firmly as illustrated. Place your palm directly under the panel, from the rear of the TV.

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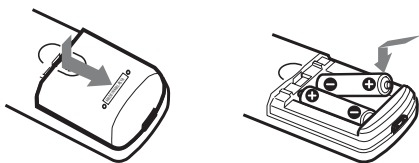
Introduction

Congratulations on your purchase of the Sony FD Trinitron WEGA®.




About this Manual

This manual provides instructions to help you enjoy your new TV. It shows you how to connect to an antenna or cable, cable box, VCR, DVD or satellite receiver. Once your TV is connected, follow the instructions and use the remote control to access the on-screen menus.

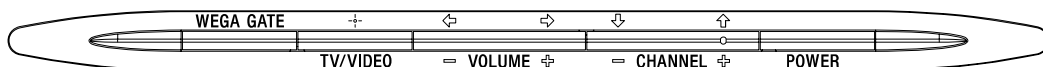
Batteries for the Remote Control







Insert two AA batteries (supplied) into the remote control using the following illustration as a guide.


-  Under normal conditions, batteries will last up to six months. If the remote control does not operate properly, the batteries might be worn out.
-  If you will not be using the remote control for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
-  Check the orientation of the batteries.

Menu Controls on the Upper Panel

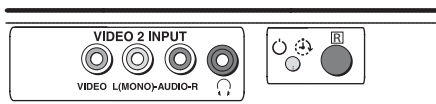


The Upper Panel controls allow you to access the menu without the remote control.

- ☐ Press the POWER button to turn the television on or off.
- ☐ Press the WEGA GATE button to make the Menu appear on the screen.
- ☐ Use the  (TV/VIDEO),   (- VOLUME +),  and (- CHANNEL +) buttons to navigate through the menus and to select options. The upper panel controls also allow you to change the channel, adjust the volume and change the video inputs.

-  To navigate the menus with the remote control, see "Using the Remote Control to Navigate the On-Screen Menus" on page 7.

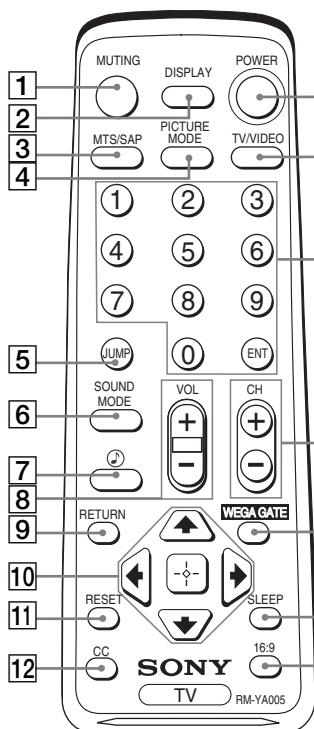
Menu Controls on the Front Panel



The Front Panel allows you to connect Audio/Video cables (not supplied) as well as headphones.

Using the Remote Control

Remote Control Description



Button	Description
1 MUTING	Press to turn off the sound. Press again or press VOL to restore the sound.
2 DISPLAY	Press once to display the channel number, the channel label (if set) and the status of the stereo mode.
3 MTS/SAP	Press to scroll through the MTS options: Stereo, Auto SAP and Mono (see page 11).
4 PICTURE MODE	Press repeatedly to step through the available video picture mode options: Vivid, Standard and Personal (see page 10).
5 JUMP	Press to jump back and forth between two channels. The television changes to the last channel which was tuned in for at least 5 seconds.
6 SOUND MODE	Allows you to select between options for sound effects.
7	Press for a direct selection of Effect settings: Surround, Simulated and Off (see page 11).
8 VOL (volume)	Press (+) or (-) to adjust the volume.
9 RETURN	Allows you to return to the previously selected menu level.
10	Press the arrow buttons to move the cursor in the on-screen menus. Press the center button to select or access an option.
11 RESET	Press to return the factory settings while in an on-screen menu.
12 CC	Allows you to select three subtitle modes.
13 POWER	Press to turn on/off the TV.
14 TV/VIDEO	Press to cycle through the available video inputs.
15 0-9 and ENT	Press 0-9 ; the channel changes after 2 seconds. Press ENT to change channels immediately.
16 CH (channel)	Press to change the channel.
17 WEGA GATE	Show the WEGA GATE menu. Press again to exit the menu.
18 SLEEP	Press repeatedly until the TV displays the time in minutes (15, 30, 45, 60, 75 or 90) that you want the TV to remain or before shutting off automatically. Cancel by pressing until Sleep Off appears.
19 16:9 (vertical compression)	Provides an improved resolution of the picture.

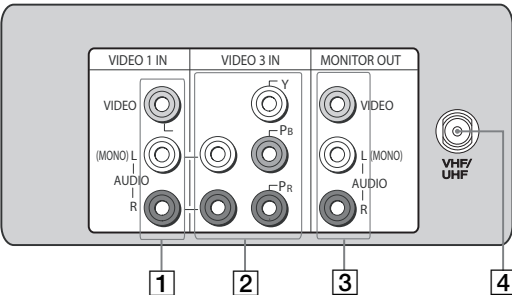


If you lose your remote control, see page 14.

Connecting your TV

Read this section before setting up your TV for the first time. This section covers basic connections in additions to any optional equipment you may be connecting.

TV Rear Panel

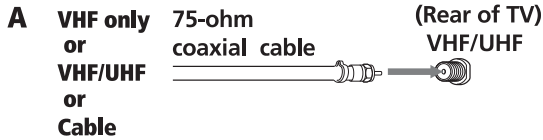


Jack	Description
1 VIDEO/AUDIO L(MONO)/R	This input connects to the AUDIO/VIDEO output jacks on your VCR or other video equipment. A third video input (VIDEO 2) jack is located on the front panel of the TV. These AUDIO/VIDEO IN connections provide a better quality image than the VHF/UHF connection.
2 YPbPr/ L, R	This input connects to the component video YPbPr and AUDIO L, R jacks on your DVD Player or digital set-top box (480i only).
3 MONITOR OUT	Allows you to record the program you are watching to a VCR. By connecting two VCRs, you can use the television as a monitor for video editing.
4 VHF/UHF	Connects to your VHF/UHF antenna or cable.

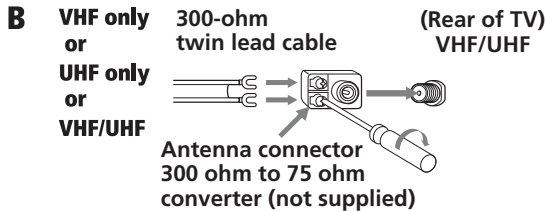
Basic Connections

TV with Cable, Indoor or Outdoor Antenna

Depending on the cable system available in your home, choose one of the connections below:



Use this to connect the TV to a cable system or an antenna with a 75-ohm cable.



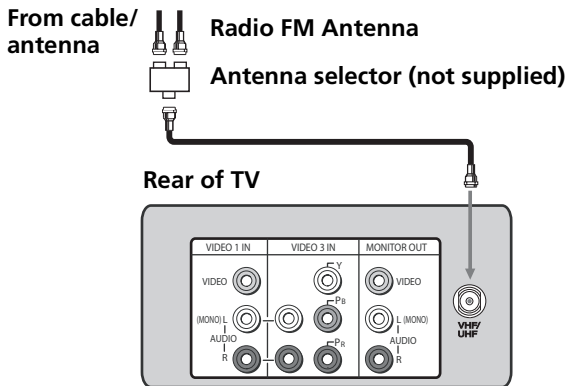
Use this to connect the TV to a dipole antenna, also known as a “rabbit ears antenna”.



If you connect the television to an interior or exterior antenna, you may have to adjust the orientation of the antenna to get better reception.

TV with FM Radio Antenna

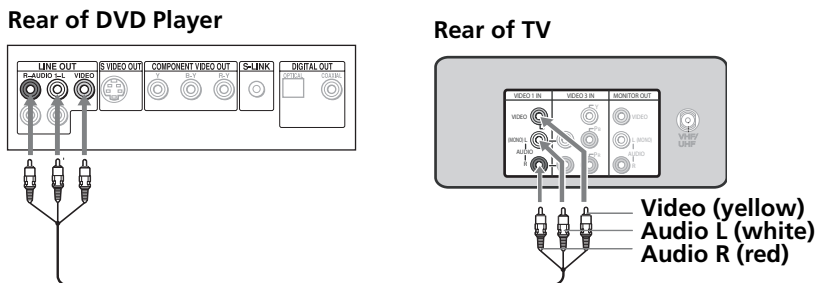
To improve the FM Radio Frequency in your TV, use the connection below:



Connecting Additional Equipment

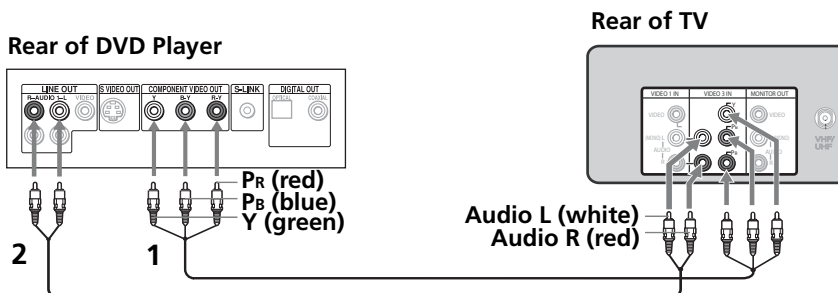
Connecting a DVD Player using Composite Video (VIDEO/AUDIO L(MONO), R)

Use AUDIO/VIDEO cables (not supplied) connect AUDIO/VIDEO OUT on your DVD player to VIDEO IN on your TV.



Connecting a DVD Player using Component Video (YPbPr/R,L)

If your DVD player is equipped with video outputs (YPbPr), you can improve the picture quality by using component video cables (480i only).



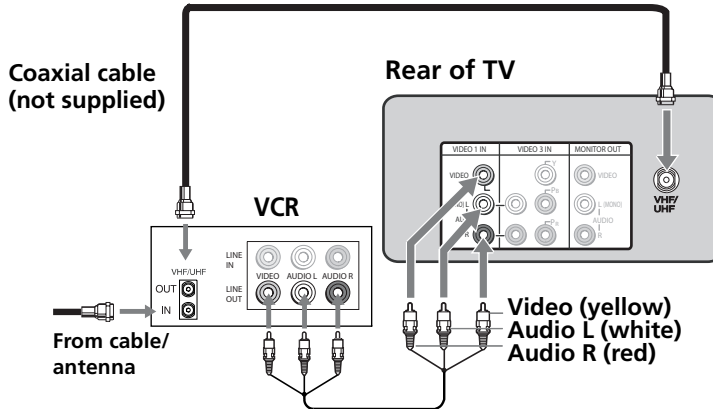
- 1** Connect YPbPr OUT on your DVD Player to YPbPr IN on your TV using component video cables (not supplied).
- 2** Connect AUDIO OUT on your DVD player to AUDIO IN on your TV.



The YPbPr outputs on your DVD player are sometimes labeled Y, C_B and C_R or Y, B-Y, and R-Y. If so, connect the cables to like color of the jacks.

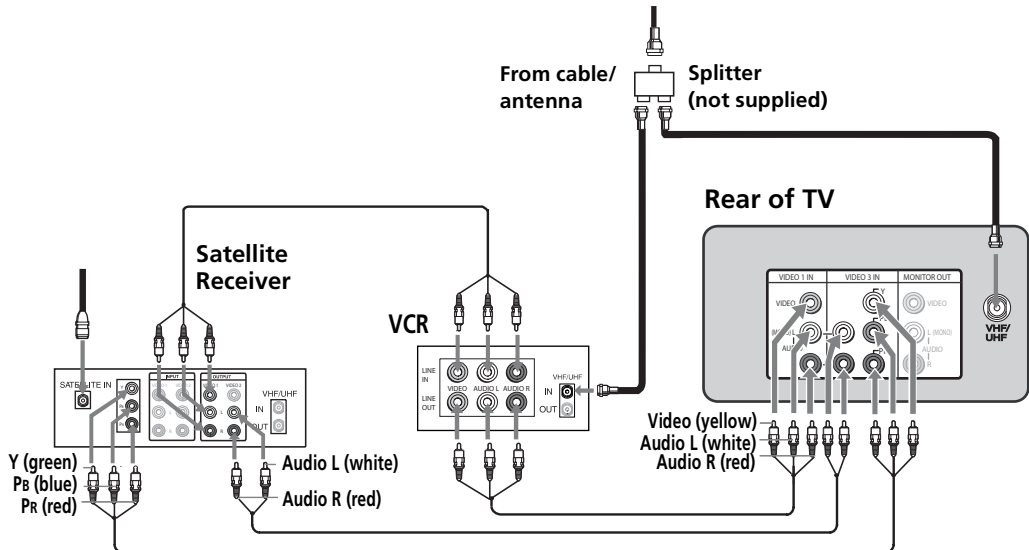
Connecting a TV and VCR

- 1 Connect the coaxial cable from your TV antenna or cable service to the IN jack on your VCR.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF jack on the TV.



You can use the button to change between the VHF/UHF and VIDEO inputs.

Connecting a TV, VCR and Satellite Receiver using Component Video (YPbPr/R,L)



To view from the satellite receiver or VCR, select the video input to which your satellite receiver or VCR is connected by pressing on the remote control.



The satellite receiver and cable service are pay television systems.

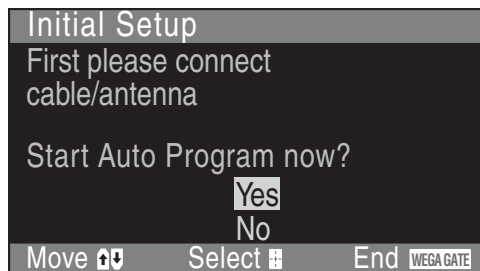
Using Basic Functions

Setting Up the TV

After you have finished connecting your TV, use Auto Program to set up your analog and digital channel lists. During Auto Program, the TV will automatically search for available channels and program receivable channels.



- 1 Press \uparrow or \downarrow to select the desired menu language, then press \rightarrow .



- 2 Press \downarrow or \uparrow to select **Yes**, then press \rightarrow to preset the channels automatically. To skip automatic channel presetting, select **No**, then press \rightarrow .

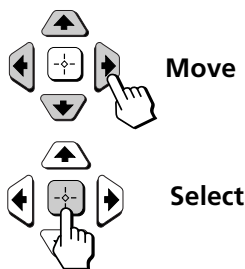
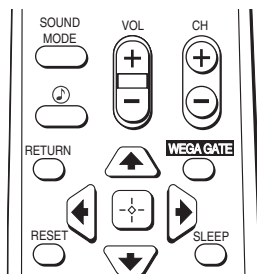


The Initial Setup screen appears each time until you select **No** on "Display this menu next time ?" option.

To perform Auto Program again:

- 1 Press WEGA GATE .
- 2 Press \downarrow to highlight Settings menu.
- 3 Press \downarrow to highlight Channel Setup. Press \rightarrow to select.
- 4 Press \downarrow to highlight Auto Program. Press \rightarrow to select.
- 5 Press \downarrow or \uparrow to highlight Yes. Press \rightarrow to search for channels.
- 6 After Auto Program finishes, press WEGA GATE to exit.

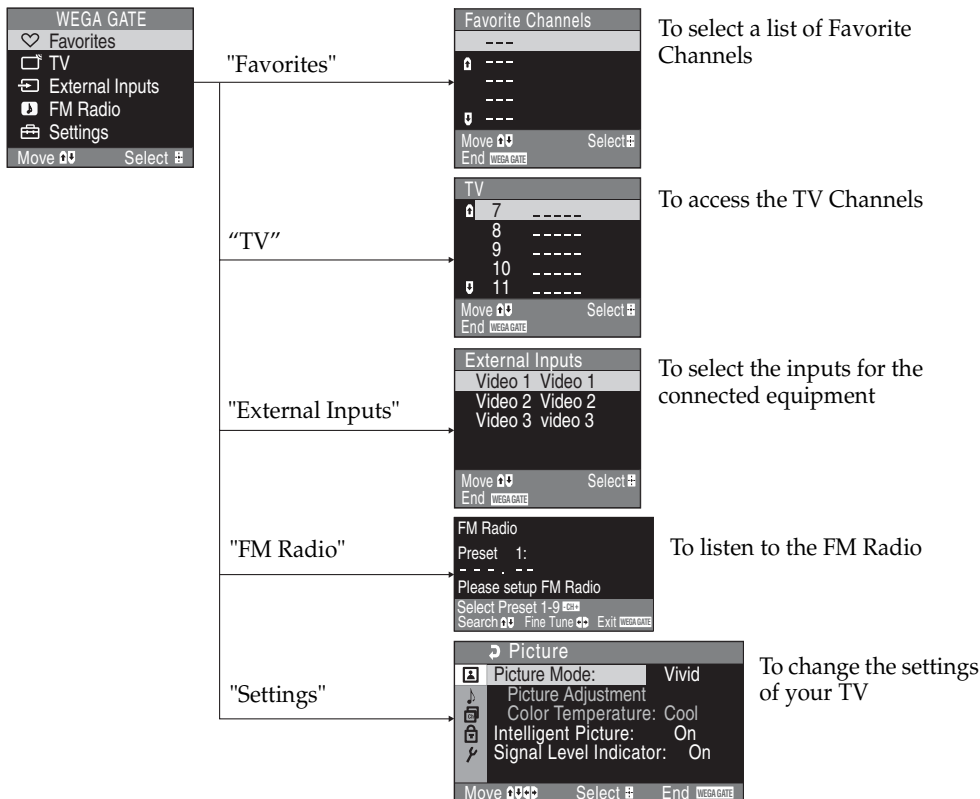
Using the Remote Control to Navigate the On-Screen Menus



To navigate on the on-screen menus, use the "arrow" buttons (\uparrow , \downarrow , \leftarrow , \rightarrow) to move the cursor. Pressing these arrows will cause the cursor to move in the corresponding direction. Pressing center button \rightarrow will allow you to select an option.

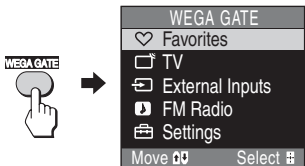
Introducing the WEGA GATE Navigator

WEGA GATE is a gateway that allows you to access to preset list of Favorites channels, TV channels, connected external inputs, listening FM Radio and "Settings".



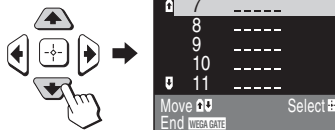
How to use WEGA GATE

- 1 Press WEGA GATE to display or cancel the WEGA GATE menu.

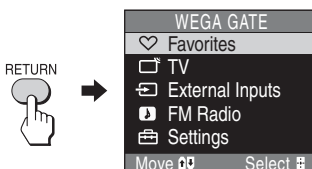


- 2 Press **[+]** or **[→]** to confirm your selection or press **[↑]** or **[↓]** to go to the next level.

- 3 Press **[↑]** or **[↓]** to select the desired item.



- 4 Press **[RETURN]** or **[←]** to move to the previous level or press **[WEGA GATE]** to exit the menu.






Listening to the FM Radio

You are able to listen to the FM Radio stations using your TV.



To access to FM Radio mode:

- 1 Press  and select "FM Radio", or
- 2 Press FM button on the front control panel (see page 1).


To exit from FM Radio mode:

- 1 Press , select the desired items: "TV" or "External Inputs", then press . Select the desired TV channel or external inputs and press , or
- 2 Press FM button on the front control panel





Listening to preset stations

- 1 Access to FM Radio Mode.
- 2 Press  and select "Settings".
Preset the desired FM radio stations in "FM Radio Setup" from "Channel Setup" menu.
- 3 Exit from "Channel Setup" menu by pressing . The selected preset FR radio station number and label will appear on the screen.





You can also use the  on the remote control to directly select the desired preset FM radio station.

Listening to non-preset stations

- 1 Access to FM Radio mode.
- 2 Press  or  to search for the desired FM radio station. The preset number and label will not be displayed.
- 3 If the station has a weak signal, press  or  to fine tune the radio frequency manually.

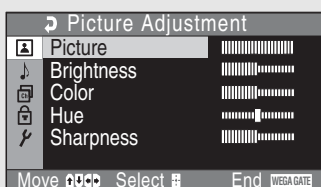
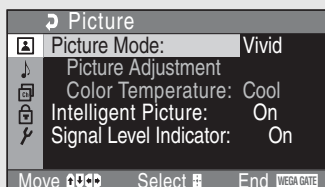


You can only operate , ,  and  functions using the remote control buttons in FM Radio mode.



The available radio frequency is only for temporary listening pleasure and cannot be stored in the memory.

Using the Picture Menu



Press **↓** to highlight an option; then press **⊕**.

Picture Mode

Customized picture viewing

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

Vivid: Select for enhanced picture contrast and sharpness.

Standard: Select for a standard picture.

Custom: Select to get access for Picture Adjustment and Color Temperature Settings.



The options for Picture Adjustment and Color Temperature settings are only available when Picture Mode is set to the Custom option.



Press **PICTURE MODE** on the remote control to directly select Picture Mode (Vivid, Standard and Custom).

Picture Adjustment

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

Contrast: Press **←** to decrease the contrast. Press **→** to increase the contrast.

Brightness: Press **←** to darken the picture. Press **→** to brighten the picture.

Color: Press **←** to decrease color saturation. Press **→** to increase color saturation.

Hue: Press **←** to increase the red tones. Press **→** to increase the green tones.

Sharpness: Press **←** to soften the picture. Press **→** to sharpen the picture.

Color Temperature

White intensity adjustment

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

Cool: Gives white colors a blue tint.

Neutral: Gives white colors a neutral tint.

Warm: Gives white colors a red tint.

Intelligent Picture

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

On: Select this option to get a better picture quality on channels with a noisy signal.

Off: Select this option to turn off Intelligent Picture.

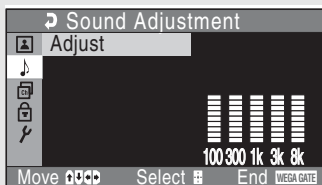
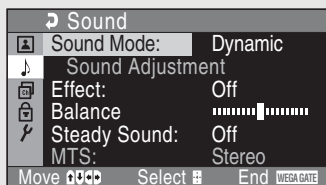
Signal level Indicator

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕**.

On: Select this option if you want your TV displays indicator bar of the reception signal level of Video or current TV channel.

Off: Select this option if you do not want your TV displays indicator bar of the reception signal level of Video or current TV channel.

Using the Sound 🎵 Menu



Press **↓** to highlight an option; then press **[+]**.

Sound Mode Select any of the modes: “**Dynamic**” (low and high tones), “**Standard**” (voice and high tones), or “**Custom**” (adjusts the settings to your preference).

The Sound Adjustment option is only available when Sound Mode is set to Custom.

In Video you cannot access MTS.

Effect Use the **↑** or **↓** buttons to highlight one of the following options, then press **[+]** to select it.

Surround: Simulates theater quality sound for stereo programs.

Simulated: Simulates the stereo sound of movie theaters for mono programs.

Off: Mono or normal stereo reception.

Press to directly select Effect settings (Surround, Simulated, Off).

Balance Press **←** to emphasize the left speaker. Press **→** to emphasize the right speaker.

Steady Sound Use the **↑** or **↓** buttons to highlight one of the following options, then press **[+]** to select it.
Stabilizes volume

On: Select to stabilize the volume when changing channels.

Off: Select to turn Steady Sound off.

MTS Use the **↑** or **↓** buttons to highlight one of the following options, then press **[+]**:
Multi-Channel TV Sound

Stereo: Select when viewing a broadcast in stereo.



Auto SAP: Select to have the TV automatically switch to a Second Audio Program (SAP) when a signal is received.

Mono: Select to reduce noise in areas of poor reception.

Press to directly select MTS settings (Stereo, Auto SAP and Mono).











Using the Channel Setup Menu







Press  to highlight an option; then press .

Favorites Channels




Quick access to favorite channels

- 1 Press  or  to highlight the position (1 to 8) where you want to set a favorite channel, then press .
- 2 Press  or  to find the channels you want to add to your favorite channels.
- 3 Press  to select the channel. The TV will automatically change to the selected channel and assign it to the selected position (1 – 8).
- 4 To remove a channel from the Favorite Channels menu select the channel while pressing  and then press .
- 5 Press  to return to the Channel Setup menu or press  to exit.



To use the Favorite Channels option: Exit all the menus and press . Press  or  to move the cursor to the desired channel number and press .

Cable

Use the  or  buttons to highlight one of the following options, then press  to select it.

- On:** Select if you are receiving cable channels with a CATV cable.
Off: Select if you are using a TV antenna.
















After changing the Cable setting the first time, you will need to run Auto Program.

Auto Program

Perform Auto Program whenever setting up your TV. Auto Program will search for available channels and program receivable channels.












Channel Edit

Use this function after executing Auto Program to remove channels you don't want or to add new channels.

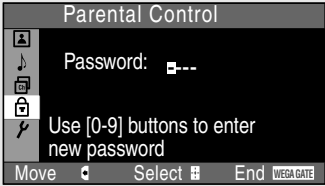
- 1 Press  or  to select the position of the desired channel and then press .
- 2 Press  to select "Name" and then press  or  to show the first letter or number of the label and then press . To move to the next space. Repeat this process until you have selected all of the letters.
- 3 Press  to show "Skip" and then press . Press  or  to select "Yes" if you want to delete the channel or "No" if you want to activate the channel.
- 4 Press  to return to the Channel Setup menu or press  to exit.

FM Radio Setup

Preset up to nine FM radio stations. You can manually preset FM radio stations that can be received in your area and then store the radio frequency of the desired FM radio stations.

- 1 Press  or  to select the desired FM radio station position, then press .
- 2 Press  or  to search the FM radio stations. Searching stops automatically when a station is tuned in. If the station has a weak signal, press  or  to fine tune the radio frequency manually, then press  to store the FM radio station.
- 3 You may edit the FM radio station label. Press  or  to select alphanumeric characters for the label, then press .
- 4 Repeat steps 1 through 3 to preset other FM radio stations.

Using the Parental Control Menu

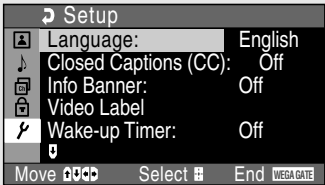




Use the 0-9 buttons to enter a 4-digit password.




















Select one of the following options:

Channel Block	Off:	Gives access to the blocked channel you have selected.
	Custom:	Allows you to block or permit access to channels.
Change Password	Use the 0-9 buttons to create a new 4-digit password.	

Using the Setup Menu



Press  to highlight an option; then press .



Language	<p>Display all menus in the language of your choice.</p> <p>Use the  or  buttons to select from one of the following options: English and Español (Spanish). Then press .</p>
Closed Captions (CC) <i>Closed captioning</i>	<p>Allows you to select from three closed-caption modes for programs that are broadcast with closed captioning.</p> <p>Use the  or  buttons to highlight one of the following options, then press  to select it.</p> <p>Off: Caption Vision is not activated.</p> <p>CC1, 2, 3, 4: Displays printed dialog and sound effects of a program.</p> <p>Text 1, 2, 3, 4: Display network/station information.</p>
Info Banner	<p>Displays the name of the current program and its remaining time (if available). Use the  or  buttons to highlight: On or Off. Then press .</p>
Video Label <i>Label connected equipment</i>	<p>Allows you to identify the video components connected to the TV: VCR, DVD etc. When you press  to switch inputs, the Video Label appears on screen.</p> <ol style="list-style-type: none"> Press  or  to highlight the input you want to label and press . Press  or  to highlight a label and press . Press  to return to the Setup menu or press  to exit.
Wake-up Timer	<p>Set TV to turn on automatically according to the desired period of time (from 10 minutes to 12 hours). The  indicator on TV lights up amber ones you set the wake up timer. To cancel, press until No appears.</p>
Sleep	<p>Press repeatedly until the TV displays the time in minutes (15, 30, 45, 60, 75 or 90) that you want the TV to remain on before shutting itself off automatically. To cancel, press until Sleep Off appears.</p>
16:9 Enhanced	<p>Provides enhanced picture resolution for wide-screen sources such as DVD.</p>

Other Information

Troubleshooting

If you have problems with your TV, try the suggestions below. If the problem persists, see the information at the end of this section.

General

I want to reset the TV to the factory settings	<input type="checkbox"/> Turn on the TV. While holding down the  button on the remote control, press the POWER button on the upper panel of the TV (the TV will turn off). Release the  button. Turn on the television.
The TV is dirty	<input type="checkbox"/> Clean the TV with a soft dry cloth. Never use strong solvents such as alcohol or benzene, which might damage the finish of the cabinet.
There is a “Black box” on the screen	<input type="checkbox"/> You have selected a text option in the Setup Menu (page 13) and no text is available. To turn off this feature, set the Closed Captions (CC) option to Off. If you wish to see subtitles, select CC1-4 instead of Text1-4.
I forgot the Parental Control password	<input type="checkbox"/> Enter the following master access code: 4357. After using the master password, you must create a new access code. You cannot use the master to unlock currently blocked channels.

Remote Control


I cannot operate the remote control	<input type="checkbox"/> Check the orientation of the batteries. <input type="checkbox"/> The batteries may be weak. Replace them (page 1). <input type="checkbox"/> Move the TV three to four feet away from fluorescent light.
I cannot change channels with the remote control	<input type="checkbox"/> Make sure you have not inadvertently switched your TV from the channel 3 or 4 setting if you are using another device to change channels.
I lost the remote control.	<input type="checkbox"/> You can use the buttons on the upper panel to access the menus (page 1). Contact your local Sony authorized dealer to request a replacement.

Picture

No picture, no sound	<input type="checkbox"/> Make sure the power cord is plugged in. <input type="checkbox"/> If a red light flashes on the front of your TV for more than a few minutes, disconnect and reconnect the power cord. If the problem continues contact your local service center. <input type="checkbox"/> Verify the TV/VIDEO setting: when watching TV, set it to TV; when you watch video, select Video 1, 2 or 3 (page 2). <input type="checkbox"/> Try another channel to make sure there is no problem with the signal.
Poor or no picture, good sound	<input type="checkbox"/> Adjust the Contrast in the Picture Menu (page 10). <input type="checkbox"/> Adjust the Brightness in the Picture Menu (page 10). <input type="checkbox"/> Check the antenna and/or cable connections (page 4).
Poor color or sharpness of the picture	<input type="checkbox"/> Adjust the Color in the Picture Menu (page 10). <input type="checkbox"/> Adjust the Sharpness in the Picture Menu (page 10). <input type="checkbox"/> Make sure that “Intelligent Picture” is set to “Off” in Picture Menu (page 10).
No color	<input type="checkbox"/> Adjust the Color in the Picture Menu (page 10).

No signal	<input type="checkbox"/> Check the Cable setting in the Channel Setup Menu (page 12). <input type="checkbox"/> Check the connections to the antenna or pay television source (page 4). <input type="checkbox"/> Make sure that the channel selected is broadcasting a signal.
Dotted lines or stripes	<input type="checkbox"/> Adjust the antenna. <input type="checkbox"/> Move the TV away from other electronic equipment. Some electronic equipment creates electrical noise, which can interfere with TV reception.
Double images or ghosts	<input type="checkbox"/> Check the outdoor antenna and its orientation, or call technical support for your pay television service.

Sound

Good picture, no sound	<input type="checkbox"/> Press  so that Muting disappears from the screen (page 2). <input type="checkbox"/> Check the Sound Mode settings. The television may be set to Auto SAP (page 11).
TV cannot receive FM Radio station	<input type="checkbox"/> Connect a separate FM antenna and the TV channel source through an antenna selector (switch) to your TV.

Channels

I cannot receive higher number channels (UHF) when using an antenna	<input type="checkbox"/> Make sure that Cable is set to Off in the Channel Setup Menu (page 12). <input type="checkbox"/> Perform Auto Program to add channels that are not presently in the memory (page 7).
Cable stations don't seem to work	<input type="checkbox"/> Make sure that Cable is set to On in the Channel Setup Menu (page 12). <input type="checkbox"/> Perform Auto Program to add channels that are not presently in the memory (page 7).

If after reading this instruction manual you have more questions about the use of your Sony television, contact your local Sony authorized dealer to get technical assistance or visit our internet page <http://www.sony.net/>.

Specifications

Television System	American TV standard/NTSC
Channel Coverage	VHF: 2-13/UHF: 14-69/CATV: 1-125
Picture tube	FD Trinitron® tube
Power Requirements	120 V AC, 60 Hz
Accessories included	2 AA batteries 1 Remote control RM-YA005 1 Dipole antenna
Inputs	1 video, 1 audio (front panel) 1 YPBPR, 1 audio (rear panel) 1 VHF/UHF (rear panel) 1 video, 1 audio (rear panel)
Outputs	1 Headphone (front panel) 1 Monitor (rear panel)
Screen size	Actual Screen Size: 21 inches (533.4 mm) measured diagonally Visible Screen Size: 20 inches (508 mm) measured diagonally
Speaker output	5 W x 2
Power consumption	108 W Less than 1W in standby
Dimensions (W/H/D)	25 1/2 x 18 7/16 x 20 inches (647 x 469 x 509 mm)
Mass	54 lbs. 23 oz (24.6 kg)

Design and specifications are subject to change without notice.

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For Your Convenience

Please contact Sony directly if you:

- Have questions on the use of your television after reading your manual
- Experience difficulty operating your television

Contact Sony Customer Support at:

<http://www.sony.com/tvsupport>

or call the phone number that appears on your warranty card.

Sony will work to resolve your questions more quickly than your retailer or place of purchase.

Please Do not Return the Product to the Store



2898033211

Printed in the U.S.A.

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