

SERVICE MANUAL

BA-4D CHASSIS

Self Diagnosis
Supported model

MODEL

KV-21ME43

COMMANDER

RM-Y156

DEST

E

CHASSIS NO.

SCC-S55A-A



KV-21ME43



RM-Y156

TRINITRON® COLOR TV
SONY®

SPECIFICATIONS

	KV-21M43
Power Requirements	AUTO VOLT 120-220V, 50/60 Hz
Number of inputs/outputs	
Video ¹⁾	2
Audio Input ²⁾	2
Audio Out ³⁾	-
Speaker Output (W)	3Wx2
Power Consumption (W)	
In Use (Max)	80W
In Standby	1W
Dimensions (W/H/D)	
(mm)	522 x 477 x 479 mm
(in)	20 ⁵ / ₈ x 18 ¹³ / ₁₆ x 18 ⁷ / ₈ in.
Mass	
(kg)	21.6 kg
(lbs)	48 lbs.

- ¹⁾ 1 Vp-p 75 ohms unbalanced, sync negative.
²⁾ 500 mVrms (100% modulation), impedance: 47 kilohms
³⁾ More than 408 mVrms at the maximum volume setting (variable), More than 408 mVrms (fix), impedance: 5 kilohms

Television system

American TV standard/NTSC

Picture tube

Trinitron® Tube

Channel coverage

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

Visible screen size

20" picture measured diagonally

Actual screen size

21" picture measured diagonally

Antenna

75 ohm external terminal for VHF/UHF

Supplied Accessories

Remote Commander (RM-Y156)
 Size AA (R6) batteries (2)

Optional Accessories

Dipole antenna
 Connecting cables VMC-810S/820S, VMC-720M,
 YC-15V/30V, RK74A
 U/V mixer EAC-66

(●) SRS (SOUND RETRIEVAL SYSTEM)

The (●) SRS (SOUND RETRIEVAL SYSTEM) is manufactured by Sony Corporation under license from SRS Labs, Inc. It is covered by U.S. Patent No. 4,748,669. Other U.S. and foreign patents pending.

The word 'SRS' and the SRS symbol (●) are registered trademarks of SRS Labs, Inc.

BBE and BBE symbol are trademarks of BBE Sound, Inc. and are licensed by BBE Sound, Inc. under U.S. Patent No. 4,638,258 and 4,482,866.

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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 Δ 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.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RESQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE Δ SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY. LES REGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRESENT MANUEL. SUIVRE CES PROCEDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT SUSPECTE.

SELF-DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER LED 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/TIMER 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.

Diagnostic Test Indicators

When an error occurs, the STANDBY/TIMER LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED 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".

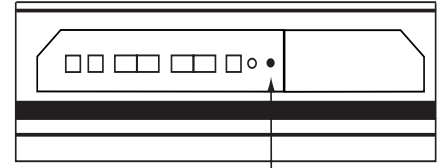
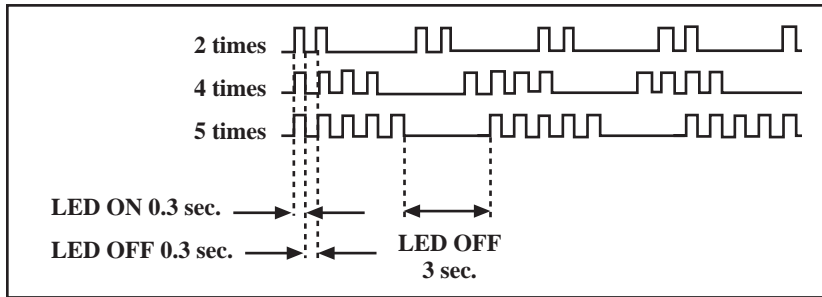
Diagnostic Item Description	No. of Times STANDBY/TIMER LED Flashes	Self-diagnostic Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	_____	<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out (F601). 	<ul style="list-style-type: 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	<ul style="list-style-type: none"> H.OUT (Q502) is shorted (A Board) IC701 and Q701 (C Board) are shorted. 	<ul style="list-style-type: none"> Power does not come on. Load on power line is shorted.
Vertical deflection stopped*	4 times	4:0 or 4:1	<ul style="list-style-type: none"> +13V is not supplied. (A Board) IC541 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.
White balance failure (not balanced)	5 times	5:0 or 5:1	<ul style="list-style-type: none"> Video OUT (Q394 to 392) is faulty. (A Board) IC301 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.

* 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 Sections 3 and 4 of this manual.

Display of Standby/Timer LED Flash Count



STANDBY/TIMER LED

<u>Diagnostic Item</u>	<u>Flash Count*</u>
+B overcurrent	2 times
Vertical deflection stopped	4 times
White balance failure	5 times

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

Stopping the Standby/Timer LED Flash

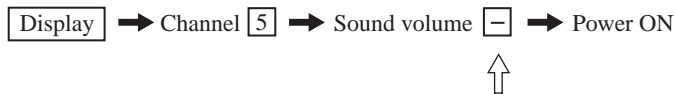
Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER LED from flashing.

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:



↑
Note that this differs from entering the service mode (sound volume).

Self Diagnostic Screen Display

SELF DIAGNOSTIC		
2:		0
3:	N/A	0
4:		0
5:		1
101:	N/A	0

← Numeral “0” means that no fault was detected.

← Numeral “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

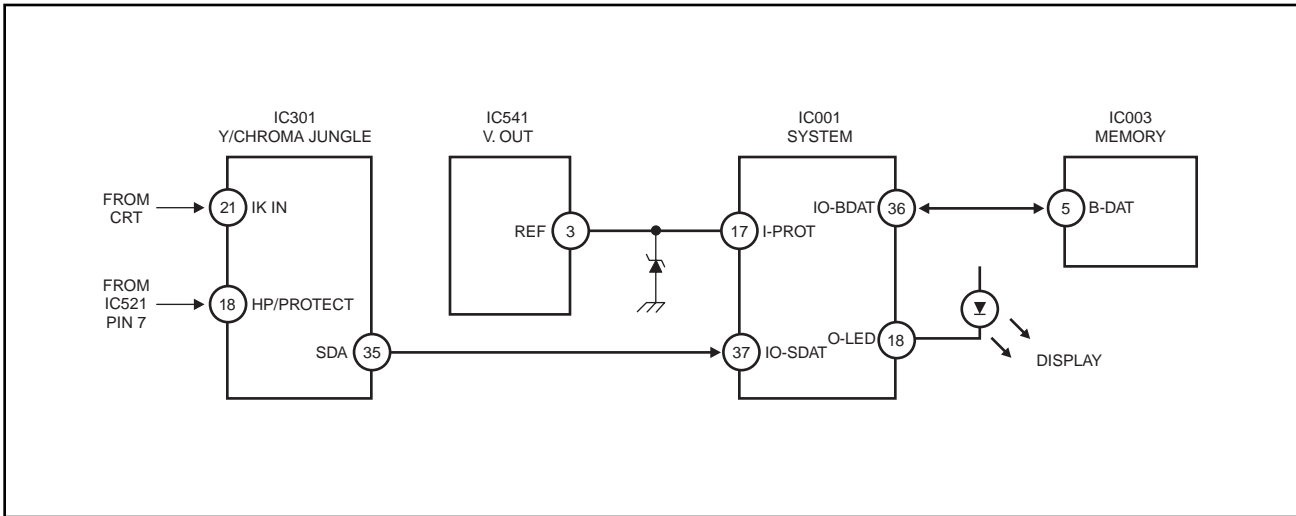
To clear the result display to “0”, press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel **8** → **ENTER**

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 (115V) line is detected by pin 18 of IC301. If the voltage of pin 18 of IC301 is less than 1V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

Vertical deflection stopped

Occurs when an absence of the vertical deflection pulse is detected by pin 17 of IC001. Power supply will shut down when waveform interval exceeds 2 seconds.

White balance failure

If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC301. TV will stay on, but there will be no picture.

*(Refers to the RGB levels of the AKB detection Ref pulse that detects 1K.)

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

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 microampere). 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 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).

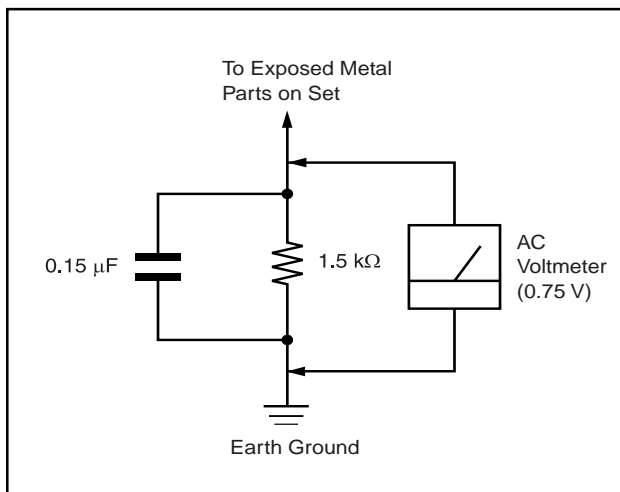


Figure A. Using an AC voltmeter to check AC leakage.

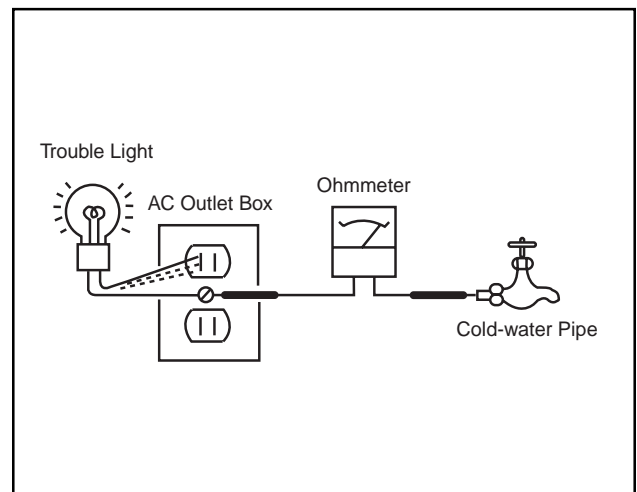


Figure B. Checking for earth ground.

The instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers shown reflect those of the Operating Instruction Manual.

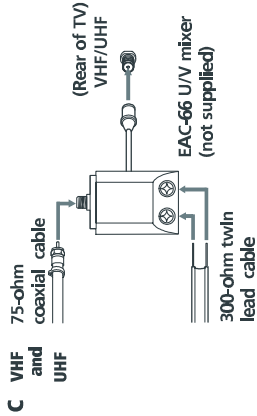
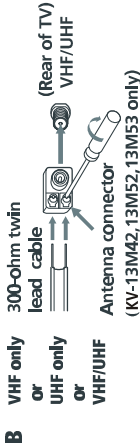
Connecting Your TV

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

Basic Connections

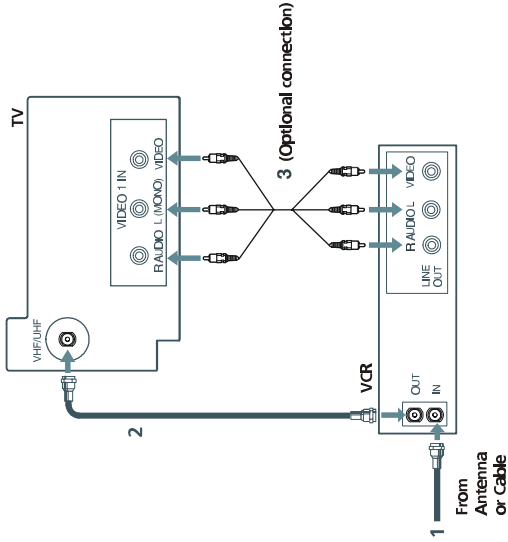
TV with indoor or outdoor antenna, or CATV cable

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



If you are connecting to an indoor or outdoor antenna, it will be necessary to adjust the orientation of the antenna for best reception.

Connecting Additional Equipment TV and VCR



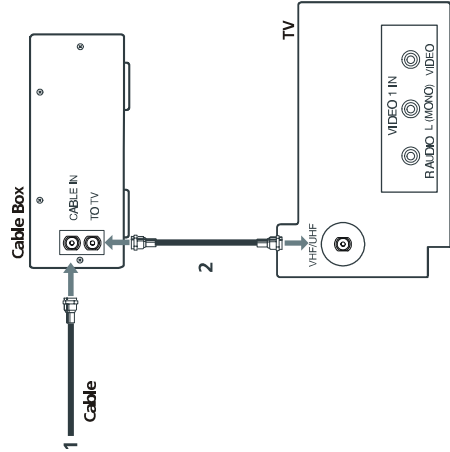
- 1 Connect the coaxial cable from your TV antenna or cable TV to the IN jack on your VCR.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF IN jack on the TV.

To watch video programs from your VCR, tune your TV to channel 3 or 4 (as set on the rear of your VCR).

(Optional Connection)

- 3 If your VCR is equipped with video inputs, for best picture quality you should connect A/V connectors to AUDIO/VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV. You can use the TV/VIDEO button to switch between the TV and VCR inputs.

TV and Cable Box

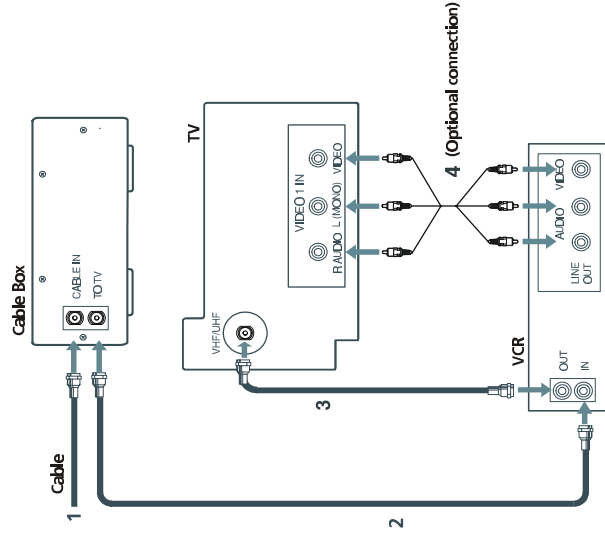


- 1 Connect the coaxial cable from the wall to the IN jack on your cable box.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF/UHF IN jack on the TV.

To view channels from your cable box, tune your TV to channel 3 or 4 (as set on the rear panel of your cable box) and use the cable box's remote control to change channels.

If you will be controlling all channel selection through your cable box, you should consider using the CHANNEL FIX feature on page 17.

TV, VCR, and Cable box



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

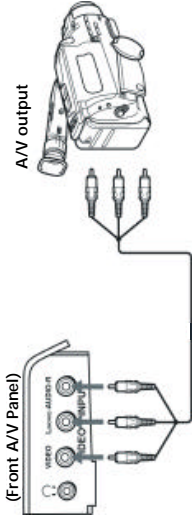
If you will be controlling all channel selection through your cable box, you should consider using the CHANNEL FIX feature on page 17.

(Optional Connection)

- 4 If your VCR is equipped with video inputs, for best picture quality you should connect A/V connectors to AUDIO/VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV. You can use the TV/VIDEO button to switch between the TV and VCR inputs.

Connecting a Camcorder
















Using A/V cables, connect AUDIO and VIDEO OUT on your camcorder to AUDIO and VIDEO IN on your TV.




For model KV-13M42, this connection can be made to the A/V input located on the rear of the TV.

Using the Remote Control and Basic Functions

This section shows you how to use more advanced buttons on the remote control and how to use the on-screen menus.

	Turns the TV off automatically in approximately 30, 60 or 90 minutes. Cancel by pressing until SLEEP OFF appears.
	Instantly turns off the sound. Press again or press  to restore sound.
	Cycles through the available video inputs.
	Press once to show current time, (if set) and channel number. Press again to activate CAPTION VISION settings, if available. To cancel, press again until DISPLAY OFF appears.
	Cycles through the Multi-Channel TV Sound (MTS) options: STEREO, SAP (Second Audio Programming) and MONO, (KV-20S42, 20S43 only).
	Press for channel selection, the channel will change after 2 seconds.
	Press after selecting a channel using the  buttons to immediately activate selection.
	Alternates back and forth between the last two channels selected with the  buttons.
	Displays the on-screen menu. Press again to exit the menu at any time.
	Activates highlighted selections in the on-screen menu.
	Moves the cursor in the on-screen menu.
	Press to restore factory settings while in the on-screen menu.

 Buttons shown are for remote control RM-Y155, your remote control may not look exactly like the one illustrated.

Other Information

Troubleshooting

If you are having a problem with your TV, try the suggestions below. If the problem persists, contact your nearest Sony dealer.

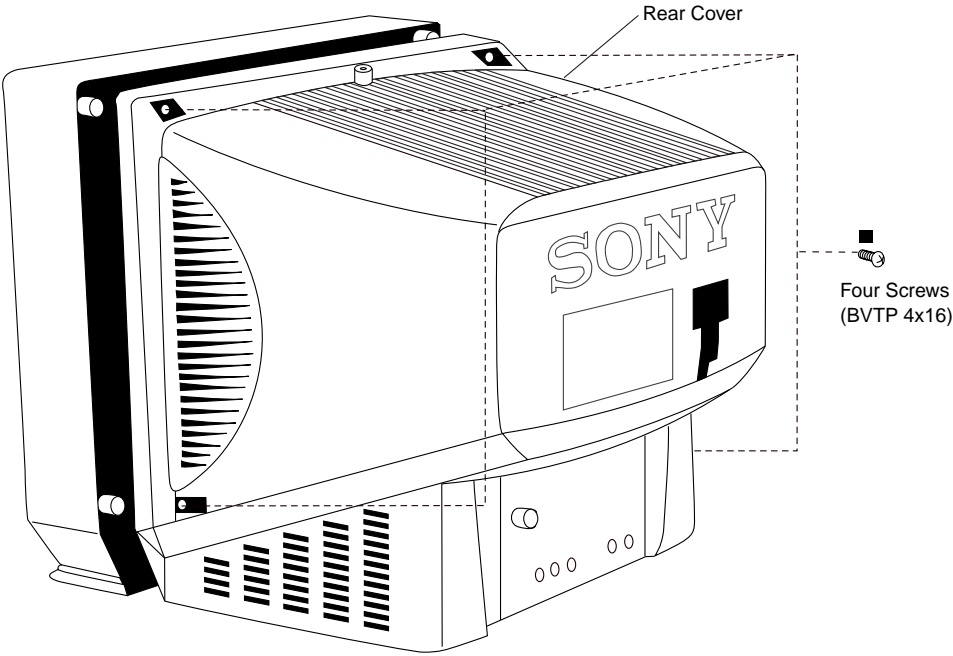
No picture, no sound	<input type="checkbox"/> Make sure the power cord is plugged in.
	<input type="checkbox"/> If a red light is flashing on the front of your TV for more than a few minutes, call your local service center.
	<input type="checkbox"/> Check the TV/VIDEO settings: when watching TV, set to TV; when watching video equipment, set to VIDEO (page 13).
	<input type="checkbox"/> Check your PARENTAL CONTROL settings. (see pages 22-23).
Poor or no picture, good sound	<input type="checkbox"/> Make sure the batteries have been inserted correctly into the remote control.
	<input type="checkbox"/> Try another channel, it could be station trouble.
	<input type="checkbox"/> Adjust PICTURE in the VIDEO menu (page 13).
Good picture, no sound	<input type="checkbox"/> Adjust BRIGHTNESS in the VIDEO menu (page 13).
	<input type="checkbox"/> Check the antenna and/or cable connections (page 3).
	<input type="checkbox"/> Press MUTING so that MUTING disappears from the screen (page 9).
No color	<input type="checkbox"/> Check your AUDIO settings. Your TV may be set to SAP (page 14).
	<input type="checkbox"/> Adjust COLOR in the VIDEO menu (page 13).
Only snow appears on the screen	<input type="checkbox"/> Check the CABLE setting in the SET UP menu (page 17).
	<input type="checkbox"/> Check the antenna and/or cable connections (page 3).
Dotted lines or stripes	<input type="checkbox"/> Make sure the channel selected is currently broadcasting.
	<input type="checkbox"/> Adjust the antenna.
Double images or ghosts	<input type="checkbox"/> Move the TV away from other electronic equipment. Some electronic equipment can create electrical noise, which can interfere with TV reception.
	<input type="checkbox"/> Check your outdoor antenna or call your cable service.

Cannot receive higher number channels (UHF) when using an antenna	<input type="checkbox"/> Make sure CABLE is set to OFF in the SET UP menu (page 17).
	<input type="checkbox"/> Use AUTO PROGRAM to add channels that are not presently in the memory (page 17).
Cable stations don't seem to work	<input type="checkbox"/> Make sure CABLE is set to ON in the SET UP menu (page 16).
	<input type="checkbox"/> Use AUTO PROGRAM to add channels that are not presently in the memory (page 17).
Remote control does not operate	<input type="checkbox"/> Batteries could be weak. Replace them (page 2).
	<input type="checkbox"/> Move the TV 3-4 feet away from fluorescent lights.
The TV needs to be cleaned	<input type="checkbox"/> Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.
	<input type="checkbox"/> In the password screen, enter the following master password: 4357. After using the master password, you must create a new password, it cannot be used to unlock currently blocked programs.

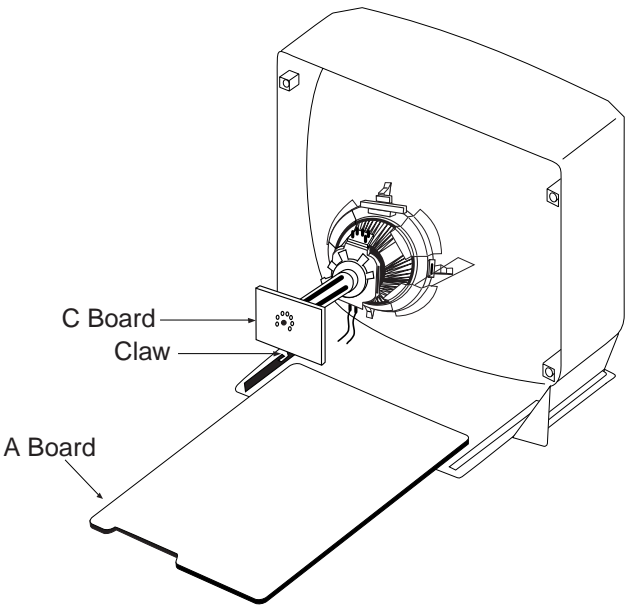
If, after reading these operating instructions, you have additional questions related to the use of your Sony television, please call our Direct Response Center at 1-800-222-SONY (7669) (U.S. customers only) or (416) 499-SONY (7669) (Canadian customers only).

SECTION 2
DISASSEMBLY

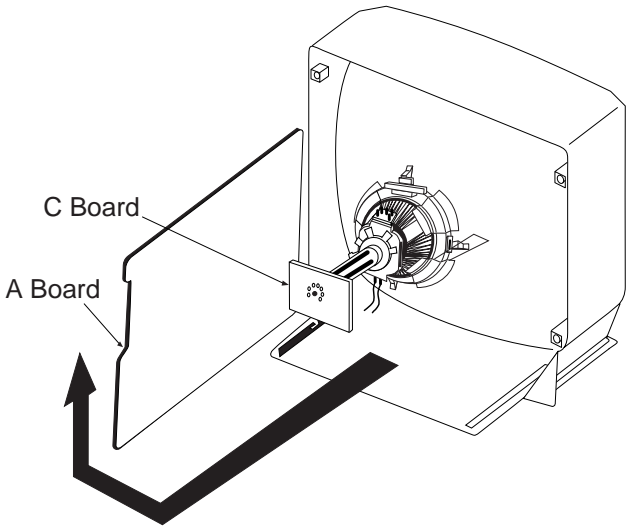
2-1. REAR COVER REMOVAL



2-2. A BOARD REMOVAL



2-3. SERVICE POSITION

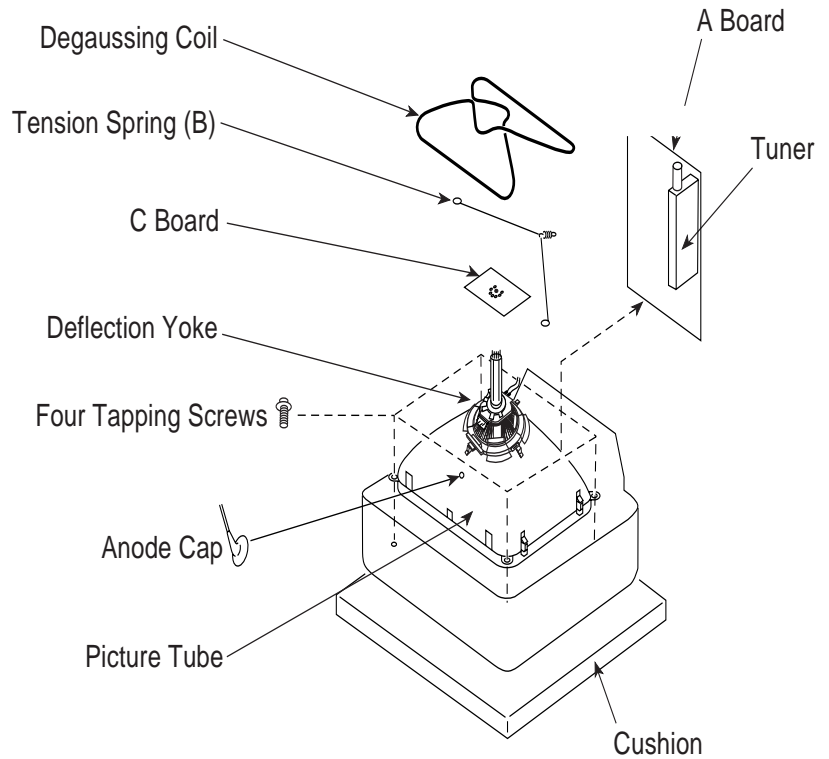
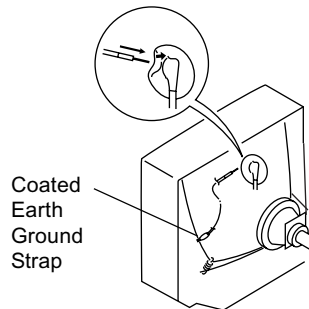


2-4. PICTURE TUBE REMOVAL

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.

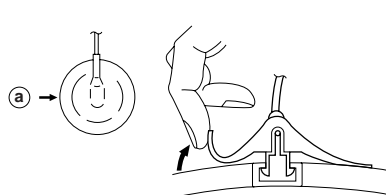


ANODE CAP REMOVAL

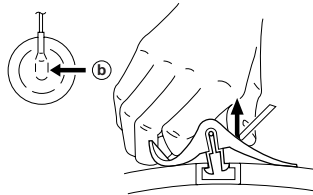
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electrical shock, discharge the CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode, 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.

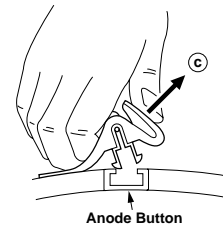
REMOVAL PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by arrow a.



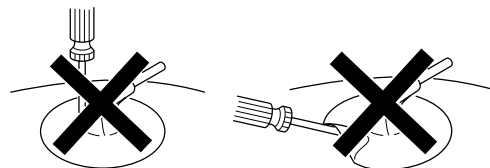
- ② Use your thumb to pull the rubber cap firmly in the direction indicated by arrow b.



- ③ 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 3 SET-UP ADJUSTMENTS

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

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

Set the controls and switch 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:

- Color bar pattern generator
- Degausser
- DC power supply
- Digital multimeter

3-1. BEAM LANDING

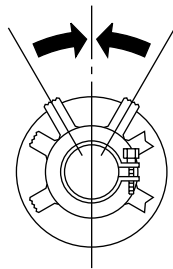
Before beginning adjustment procedure:

1. Degauss the entire screen.
2. Feed in the white pattern signal.

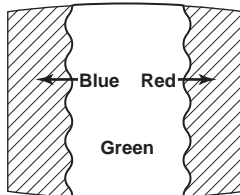
Adjustment Procedure

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.

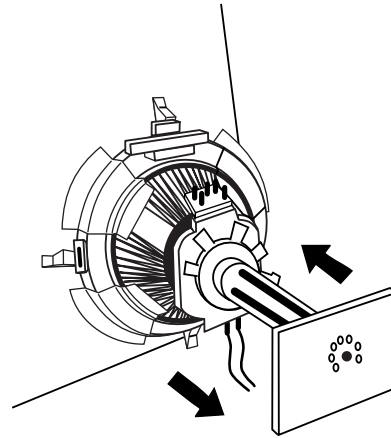
Purity Control



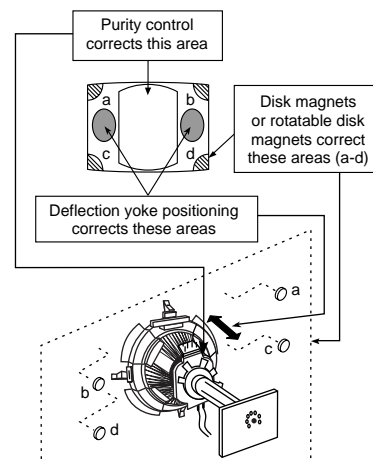
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward and adjust the purity control so that green is in the center and red and blue are at the sides evenly.



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.



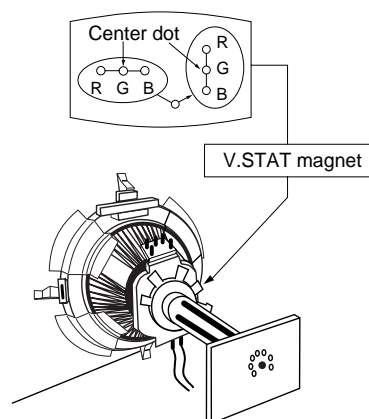
3-2. CONVERGENCE

Before starting convergence adjustments:

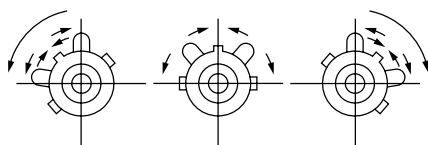
1. Perform FOCUS, V.LIN AND V.SIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Feed in dot pattern.

Vertical Static Convergence

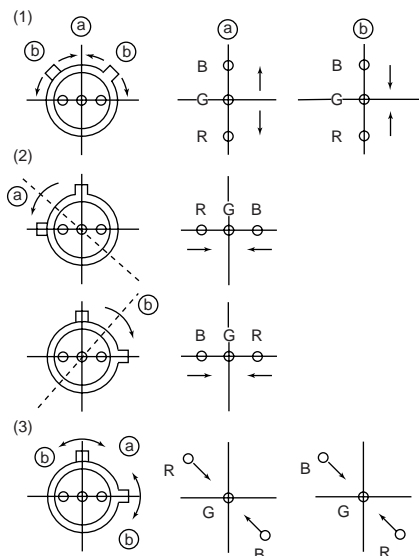
1. Adjust V.STAT magnet to converge red, green and blue dots in the center of the screen (vertical movement).



2. Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.

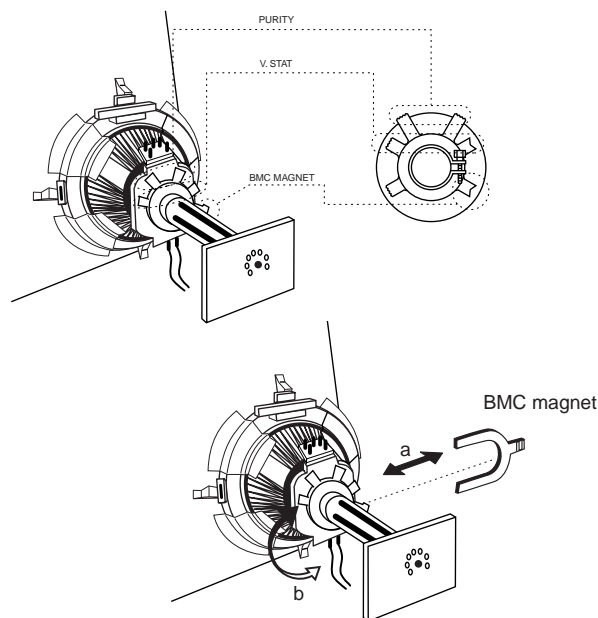


When the V.STAT magnet is moved in the direction of arrows (a) and (b), red, green, and blue dots move as shown below:



If the blue dot does not converge with the red and green dots, perform the following:

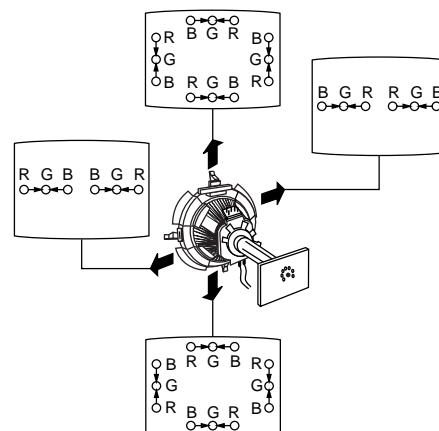
1. Move BMC magnet (a) to correct insufficient H. Static convergence.
2. Rotate BMC magnet (b) to correct insufficient V. Static convergence.
3. In either case, repeat Beam Landing Adjustment.



Dynamic Convergence Adjustment

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

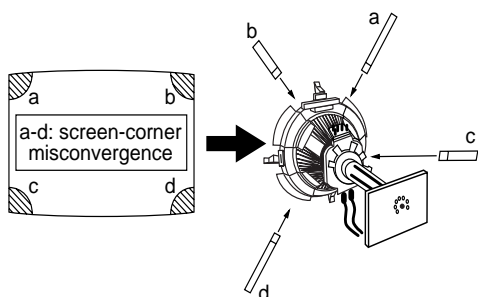
1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence, as shown below:



4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

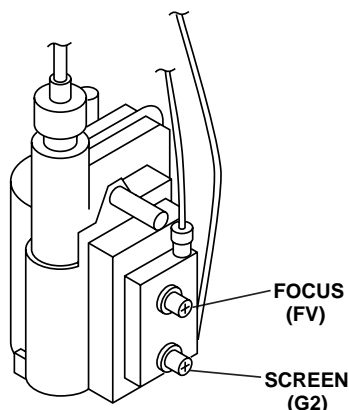
Screen-Corner Convergence

1. Affix a permalloy assembly corresponding to the misconverged areas.



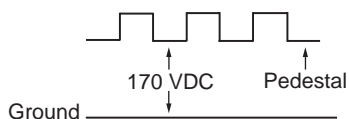
3-3. FOCUS

1. Adjust FOCUS control for best picture.



3-4. SCREEN (G2)

1. Input a dots pattern.
2. Set the PICTURE and BRIGHTNESS controls at minimum and COLOR control at normal.
3. Adjust SBRT, GCUT, BCUT in service mode with an oscilloscope as shown below so that voltages on the red, green, and blue cathodes are 170 VDC.



4. Observe the screen and adjust SCREEN (G2) VR to obtain the faintly visible background of dot signal.

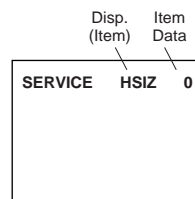
3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

Service Mode Procedure

1. Standby mode (power off).
2. **Display** → Channel **5** → Sound volume **+** → Power ON on the Remote Commander (press each button within a second).

Service Adjustment Mode In

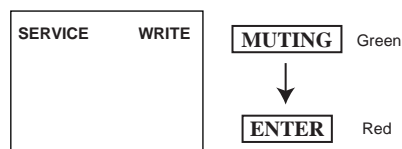
1. The CRT displays the item being adjusted.



2. Press **1** or **4** on the Remote Commander to select the item.
3. Press **3** or **6** on the Remote Commander to change the data.
4. Press **MUTING** then **ENTER** to save into the memory.

Service Adjustment Mode Memory

Turn set off then on to exit service adjustment mode.




3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal.
2. Set to Service Adjustment Mode.
3. Set DCOL to "0".
4. Set the PICTURE and BRIGHTNESS to minimum.
5. Adjust with SBRT if necessary.
6. Select GCUT and BCUT with **1** and **4**.
7. Adjust with **3** and **6** for the best white balance.
8. Set PICTURE and BRIGHTNESS to maximum.
9. Select GDRV and BDRV with **1** and **4**.
10. Adjust with **3** and **6** for the best white balance.
11. Reset DCOL to "1".
12. To write into memory, press **MUTING** then **ENTER**.

SECTION 4

SAFETY RELATED ADJUSTMENTS

4-1. R582 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components which are marked with  on the schematic diagram.

DY, C511, C574, C575, D572, D573, D574, R578, R582, R583, R584, R585, R586, R625, R626, R635, R640, T504, IC301, IC521, IC602


Preparation Before Confirmation

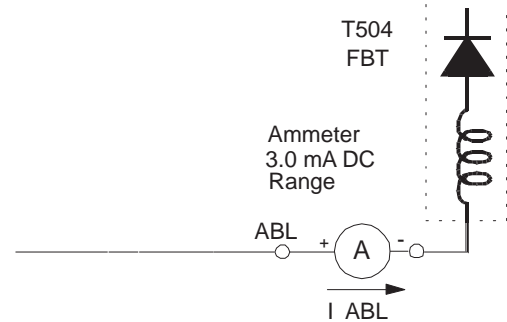
1. Turn the POWER switch ON. Input an entirely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
2. Confirm that the voltage between C574 (+) and ground is more than 99.8 VDC when the set is operating normally with 120-220±VAC.

Hold-down Operation Confirmation


1. Connect the current meter between Pin 11 of the FBT (T504) and the PCB land where Pin 11 would normally attach. (See Figure 1 on the following page.)
2. Input a dot signal and set PICTURE and BRIGHTNESS to minimum: $I_{ABL} = 95 + 100/-95\mu A$.
3. Confirm the voltage of A Board TP-600 is 117.0 ± 0.3 VDC.
4. Connect the digital voltmeter and the DC power supply via diode 1SS119 to C574 (+) and ground (See Figure 1 on the following page).
5. Increase the DC power voltage gradually until the picture blanks out.
6. Read the digital voltmeter indication.
7. Turn DC power source off immediately: (standard: less than or equal to 127.3 VDC).
8. Input a white signal and set PICTURE and BRIGHTNESS to maximum: (standard: less than or equal to 127.3 VDC).
9. Repeat steps 4 to 7.

Hold-down Readjustment

If the setting indicated in step 2 of Hold-down Operation Confirmation cannot be met, readjustment should be performed by altering the resistance value of R582, a component marked with .



4-2. B+ VOLTAGE CONFIRMATION AND ADJUSTMENT

Note: The following adjustments should always be performed when replacing the following components, which are marked with  on the schematic diagram.

IC001, IC602, R030, R625, R626, R632, R633, R635, R636, R637, R638, R639

1. Supply 120-220±VAC to the set with a variable auto transformer.
2. Input a dot signal.
3. Set the PICTURE and BRIGHTNESS controls to minimum.
4. Set to Service Adjustment Mode.
5. Select PADJ with 1 and 4.
6. Adjust with 6 to the 0 level.
7. Confirm the voltage of A board TP-600 is less than 125 VDC.
8. If step 7 is not satisfied, replace the components and repeat the above steps.
9. Supply 120-220±VAC to the set with a variable auto transformer.
10. Adjust with 3 and 6 for $117.0 \pm .3$ VDC.
11. Press MUTING then ENTER to save into the memory.

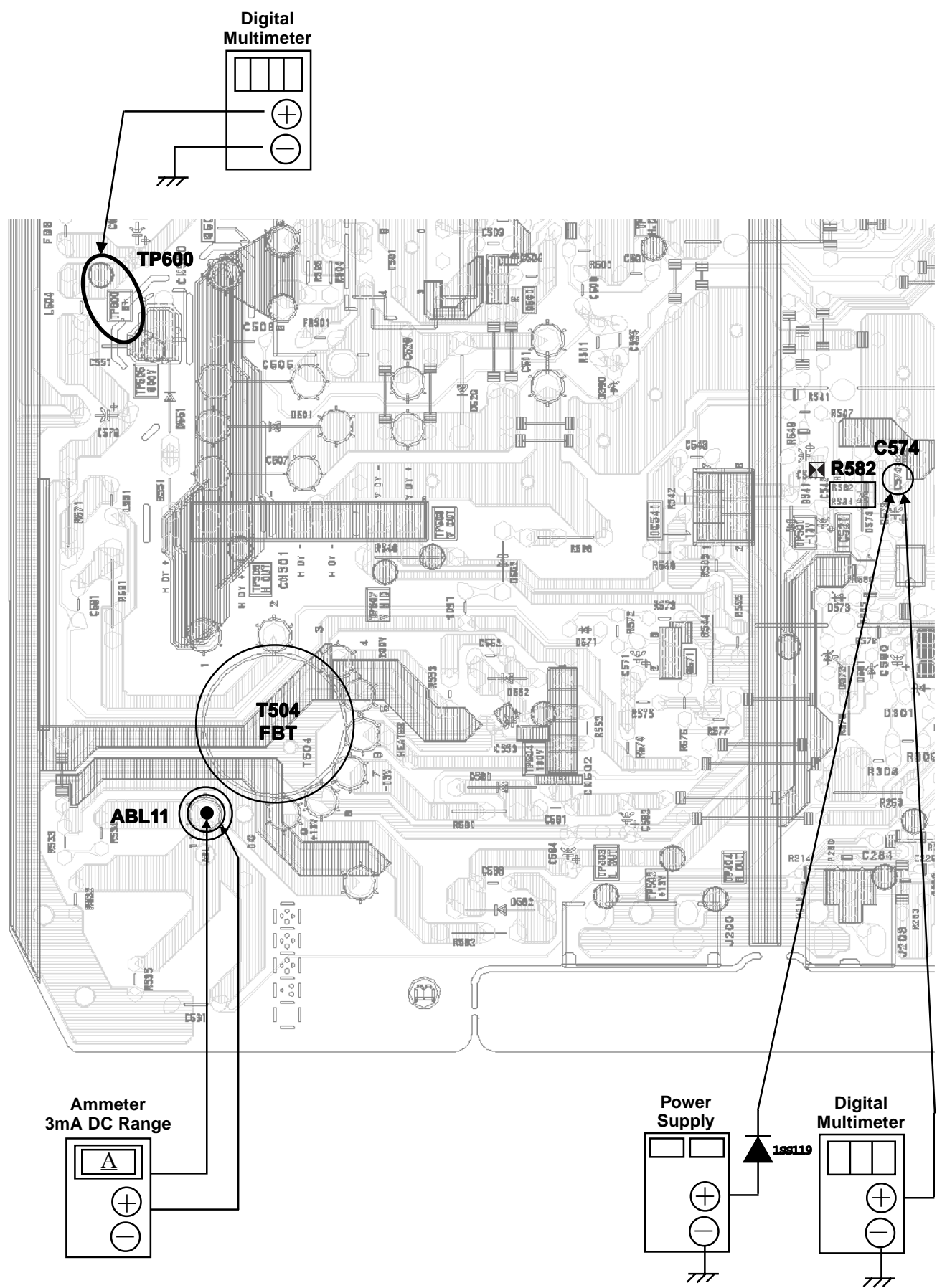


Figure 1

SECTION 5 CIRCUIT ADJUSTMENTS

Electrical Adjustment by Remote Commander

Use the Remote Commander (RM-Y156) to perform the circuit adjustments in this section.

NOTE: Test Equipment Required:

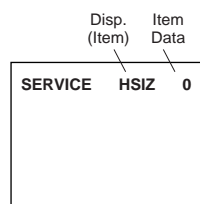
- Pattern generator
- Frequency counter
- Digital multimeter
- Audio oscillator

5-1. Setting the Service Adjustment Mode

1. Standby mode (power off).
2. **Display** → Channel **5** → Sound volume **+** → Power ON
on the Remote Commander (press each button within a second).

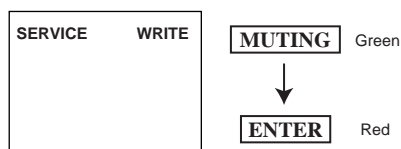
Service Adjustment Mode On

1. The CRT displays the item being adjusted.

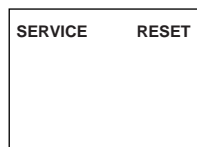


2. Press **1** or **4** on the Remote Commander to select an item.
3. Press **3** or **6** on the Remote Commander to change the data.
4. Press **MUTING** then **ENTER** to save into the memory.

Service Adjustment Mode Memory



1. Press **8** then **ENTER** on the Remote Commander to initialize.



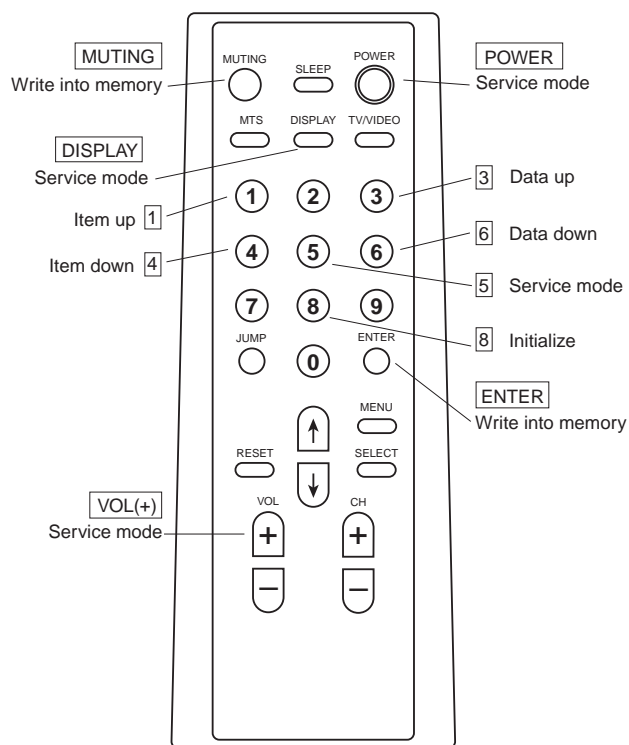
Carry out step 1 when adjusting IDs 0-4 and when replacing and adjusting IC003.

2. Turn set off then on to exit service adjustment mode.

5-2. Memory Write Confirmation Method

1. After adjustment, remove the power plug from the AC outlet, then plug it in again.
2. Turn the power switch ON and set to service mode.
3. Call the adjusted items again to confirm they were adjusted.

5-3. Adjust Buttons and Indicators



RM-Y156

NO.	ITEM	FUNCTION	DATA RANGE	INITIAL DATA	AVERAGE DATA
1	HSIZ	HORIZONTAL SIZE ADJ.	0-63	31	31
2	HPOS	HORIZONTAL POS. ADJ.	0-63	31	20
3	VBOW	VRT LINE BOWING ADJ.	0-15	7	6
4	VANG	VRT LINE BOW SLANT ADJ.	0-15	7	6
5	TRAP	HORIZ. TRAPEZOID ADJ.	0-15	7	15
6	PAMP	HORIZ. PIN DISTORTION ADJ.	0-63	31	31
7	CPIN	SAME AS PAMP-SCRN TP/BTM	0-63	31	31
8	VSIZ	VERTICAL SIZE ADJ.	0-63	31	37
9	VPOS	VERTICAL POSITION ADJ.	0-63	31	38
10	VLIN	VERTICAL LINEARITY ADJ.	0-15	7	7
11	SCOR	VERTICAL "S" CORRECTION ADJ.	0-15	7	7
12	VZOM	16:9 CRT Z MODE ON/OFF	0, 1	0	0
13	EHT	VRT HI-VOLT. CORRECTION	0-15	7	4
14	ASP	ASPECT RATIO CONTROL	0-63	63	47
15	SCRL	16:9 CRT Z MODE TRANS SCROLL	0-63	31	31
16	HBLK	HORIZONTAL BLANKING ON/OFF	0, 1	0	1
17	LBLK	LEFT BLANKING ADJ.	0-15	7	15
18	RBLK	RIGHT BLANKING ADJ.	0-15	7	3
19	VUSN	V SAW WAVEFORM COMPRESS	0, 1	0	0
20	HDW	H. DRIVE PULSE WIDTH	0, 1	0	0
21	EWDC	"PARABOLA" EW/DC ADJ.	0, 1	0	0
22	LVLN	LOWER SCREEN BTM VRT LIN ADJ.	0-15	0	0
23	UVLN	UPPER SCREEN BTM VRT LIN ADJ.	0-15	0	0
24	RDRV	R OUTPUT DRIVE CONTROL	0-63	31	27
25	GDRV	G OUTPUT DRIVE CONTROL	0-63	31	24
26	BDRV	B OUTPUT DRIVE CONTROL	0-63	31	27
27	RCUT	R OUTPUT CUTOFF CONTROL	0-15	7	10
28	GCUT	G OUTPUT CUTOFF CONTROL	0-15	7	6
29	BCUT	B OUTPUT CUTOFF CONTROL	0-15	7	7
30	DCOL	DYNAMIC COLOR ON/OFF	0, 1	0	0
31	SHUE	SUB HUE	0-31	14	18
32	SCOL	SUB COLOR	0-31	14	18
33	SBRT	SUB BRIGHTNESS	0-31	14	10
34	RON	R OUTPUT ON/OFF	0, 1	0	1
35	GON	G OUTPUT ON/OFF	0, 1	0	1
36	BON	B OUTPUT ON/OFF	0, 1	0	1
37	AXPL	AXIS PAL	0, 1	0	0
38	AXNT	AXIS NTSC	0, 1	0	0
39	CBPF	CHROMA BPF ON/OFF	0, 1	0	1
40	CTRP	Y TRAP FILTER ON/OFF	0, 1	0	1
41	COFF	COLOR ON/OFF	0, 1	0	0
42	KOFF	SET COLOR KILLER	0, 1	0	0
43	SSHP	SUB SHARPNESS	0-15	8	6
44	SHPF	SHARPNESS CIRCUIT F0	0, 1	0/0 *2	0/0 *2
45	PREL	PRE/OVR SHOOT SWITCHING	0, 1	0	1
46	Y-DC	DC TRANS RATIO SWITCHING	0, 1	0	1
47	GAMM	GAMMA CORRECTION AMNT	0-3	0	0
48	ABLM	ABL MODE SWITCHING	0, 1	1	1
49	VTH	ABL CD VHT SWITCHING	0, 1	0	1
50	YDEL	Y DELAY TIME CONTROL	0-15	7	7
51	NCOL	NO COLOR ID	0, 1	0	1
52	FSC	FSC OUT ON/OFF	0, 1	0	1
53	K-ID	KILLER ID CONTROL SW	0, 1	0	0
54	HOSC	H VCO OSCILLATION FREQ	0-15	7	7
55	VSS	V SYNC SLICE LEVEL	0, 1	0	0
56	HSS	H SYNC SLICE LEVEL	0, 1	0	0
57	HMSK	H SYNC MASK WIDTH	0, 1	0	1
58	VTMS	SELECT SIGNAL VTIM PIN	0-3	0	0
59	CDMD	V CNT DWN MODE SWITCHING	0-3	0/1 *2	0/1 *2
60	AFC	AFC LOOP GAIN SWITCHING	0-3	0/0 *2	0/0 *2
61	FIFR	FIELD FREQUENCY	0-3	0	3
62	SBAS	SUB BASS	0-15	7	8
63	STRE		0-15	7	9

NO.	ITEM	FUNCTION	DATA RANGE	INITIAL DATA	AVERAGE DATA
64	SBAL	SUB BALANCE	0-31	14	13
65	DISP	O.S.D DISPLAY POSITION	0-127	0	5
66	PADJ	POWER ADJUSTMENT	0-63	3	42
67	HCHM		0-255	69	69
68	HCLM		0-255	16	16
69	HCHS		0-255	69	69
70	HCLS		0-255	16	16
71	PVCH		0-1	0	0
72	PVON		0-1	0	1
73	PVLN		0-31	17	17
74	PVSB		0-255	64	64
75	PVLV		0-255	130	130
76	ID1	ID1	0-255	3	See ID Map below
77	ID2	ID2	0-255	11	See ID Map below
78	ID3	ID3	0-255	1	See ID Map below
79	ID4	ID4	0-255	23	See ID Map below
80	ID5	ID5	0-255	0	See ID Map below
81	ID6	ID6	0-255	0	See ID Map below
82	ID7	ID7	0-255	64	See ID Map below

*2: TV/VIDEO

Notes:

No. 1–82 show the order that each adjustment mode may be selected while in service mode.

Data Range shows the range of possible settings for each adjustment mode.

Initial Data shows the standard settings for each adjustment mode.

SERVICE	ID0	25
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Feature ID Map

MODEL	DEST.	ID-0	ID-1	ID-2	ID-3	ID-4	ID-5	ID-6	ID-7
KV-21ME43	E	17	3	0	195	115	1	0	0

5-4. A BOARD ADJUSTMENTS

H. Frequency Adjustment

1. Input a monoscope signal.
2. Set to Service Adjustment Mode.
3. Connect a frequency counter to base of Q501 (TP-500 H. DRIVE).
4. Select the item of AFC, set to 3 level (free run).
5. Check H. Frequency for the 15735 ± 200 Hz.
6. Select the AFC item again and adjust level to 0.
7. Press **MUTING** then **ENTER** to save into the memory.

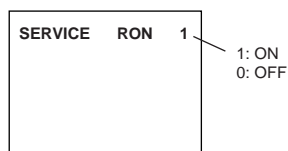
V. Frequency Adjustment

1. Select video 1 with no signal input.
2. Set the conditions for a standard setting.
3. Connect the frequency counter across TP-508 or CN501 VDY (+) pin ⑥ connector and ground.
4. Check that V. Frequency shows 60 ± 2 Hz.

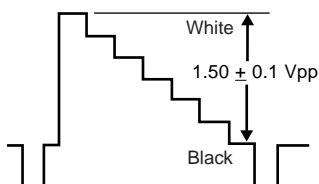
Sub Contrast Adjustment (RDRV)

1. Input a color-bar signal.
2. Set the red color.
3. Set to Service Adjustment Mode.
4. Select the item DCOL level to 0.
5. Set the conditions as follows:

PICTURE: MAX
 COLOR: MIN
 BRIGHT: CENTER
 R ON: ON (1)
 G ON: OFF (0)
 B ON: OFF (0)



6. Connect an oscilloscope probe to CN301 pin ② (R OUT) and ground.
7. Select RDRV with **1** and **4**.
8. Adjust with **3** and **6** for 1.50 ± 0.1 Vp-p



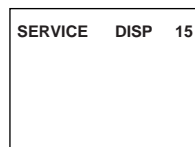
9. Reset the item DCOL to 1.
10. Press **MUTING** then **ENTER** to save into the memory.

11. Return the following back to normal after adjustment.

PICTURE: MAX
 COLOR: CENTER
 BRIGHT: CENTER
 R ON: ON (1)
 G ON: OFF (0)
 B ON: OFF (0)

Display Position Adjustment (DISP)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select DISP with **1** and **4**.
4. Adjust with **3** and **6** to adjust characters to the center.
5. Press **MUTING** then **ENTER** to save into the memory.
6. Check to see if the text is displayed on the screen.



Sub Bright Adjustment (SBRT)

1. Input a crosshatch signal.
2. Set to Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Select the SBRT item with **1** and **4**.
5. Adjust with **3** and **6** to obtain a faintly visible crosshatch.
6. Press **MUTING** then **ENTER** to save into the memory.

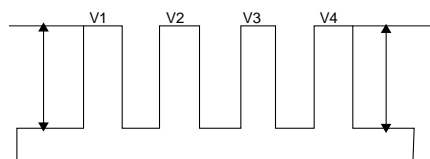
Sub Hue, Sub Color Adjustment (SHUE, SCOL)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select the DCOL item and set the value to 0.
4. Connect a probe to TP47B → B-OUT (C Board).
 - 4.1) Decrease SCOL Register -1 step (only for Q, R, S).
5. Measure white V1 & blue V4.
 - 5.1) Increase SCOL Register + 1 step (only for Q, R, S).
6. Reset the DCOL level to 1.

STANDARD

$$|V4 - V1| = \pm 0.20$$

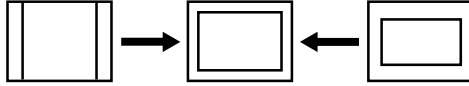
$$|V3 - V2| = \pm 0.20$$



7. Press **MUTING** then **ENTER** to save into the memory.

V. Size Adjustment (VSIZ)

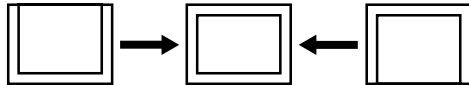
1. Input a crosshatch signal.
2. Set to Service Adjustment Mode.
3. Select the VSIZ item with **[1]** and **[4]**.
4. Adjust value of VPOS with **[3]** and **[6]** for the best vertical center.



5. Press **[MUTING]** then **[ENTER]** to save into the memory.

V. Center Adjustment (VPOS)

1. Input a crosshatch signal.
2. Set to Service Adjustment Mode.
3. Select the VPOS item with **[1]** and **[4]**.
4. Adjust value of VPOS with **[3]** and **[6]** for the best vertical center.

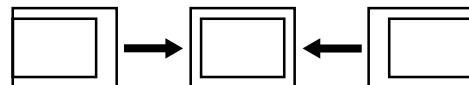


5. Press **[MUTING]** then **[ENTER]** to save into the memory.

H. Center Adjustment (HPOS)

Perform this adjustment after checking H. Frequency.

1. Input a crosshatch signal.
2. Set to Service Adjustment Mode.
3. Select the HPOS item with **[1]** and **[4]**.
4. Adjust the value of HPOS with **[3]** and **[6]** for the best horizontal center.

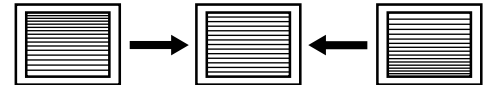


5. Press **[MUTING]** then **[ENTER]** to save into the memory.

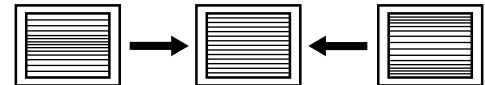
V. Linearity (VLIN), V Correction

1. Input a crosshatch signal.
2. V. correction is automatically adjusted from the circuit and should satisfy the conditions below.

V LINEARITY (VLIN)



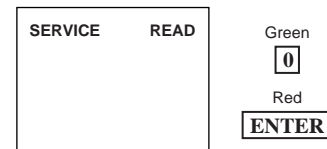
V CORRECTION



Service Adjustment Mode Memory

1. Change the value of the DCOL item to 1.
2. After completing all adjustments, press **[0]** then **[ENTER]**.

Read From Memory



NOTES:

This image shows a full page of blank, lined paper. It features approximately 28 horizontal grey lines spaced evenly apart, typical of standard notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings present.

NOTES:

[illegible]

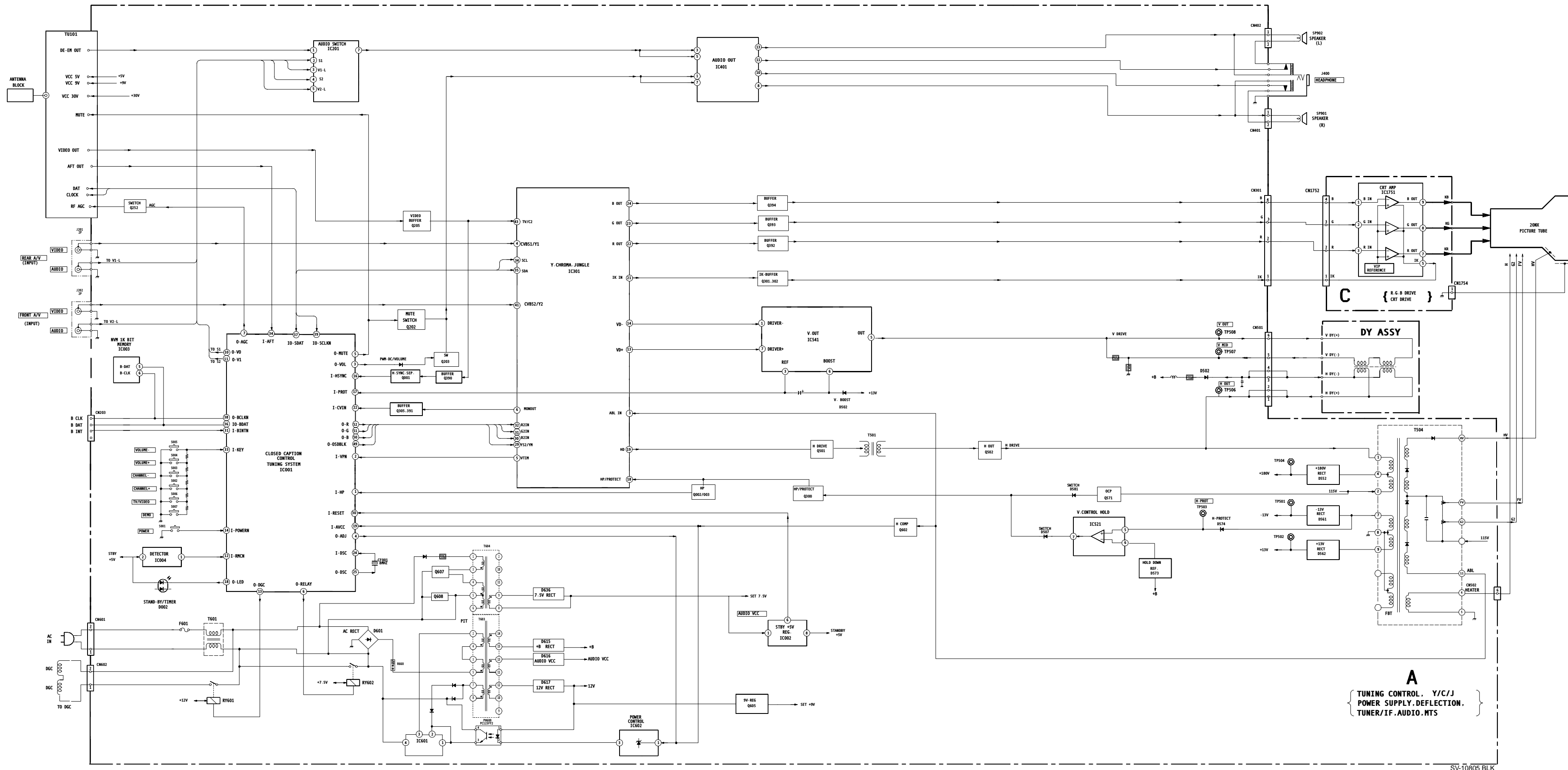
NOTES:

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.

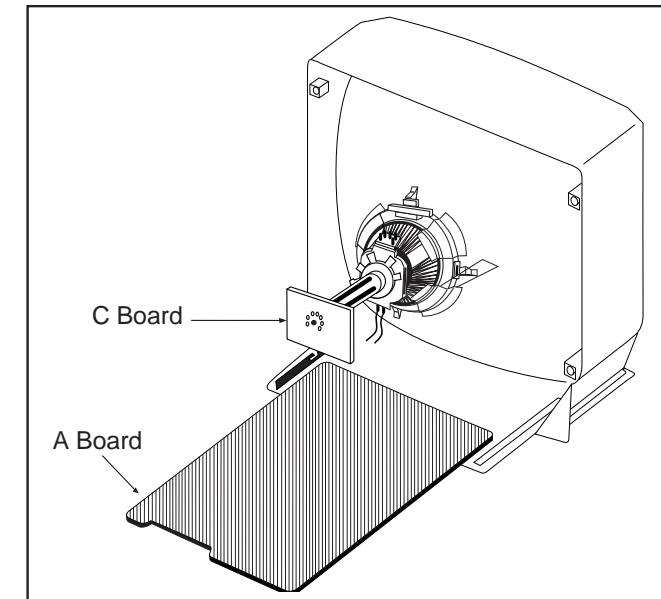
6.1 BLOCK DIAGRAM

SECTION 6

DIAGRAMS



6.2 CIRCUIT BOARD LOCATIONS



6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS


- All capacitors are in μF unless otherwise noted.
pF: μF 50 WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are 50V unless otherwise specified
- Indication of resistance, which does not have one for rating electrical power, is as follows:
Pitch: 5mm
Rating electrical power 1/4W (CHIP: 1/10W)


Reference Information


RESISTOR	:	RN	METAL FILM
	:	RC	SOLID
	:	FPRD	NON FLAMMABLE CARBON
	:	FUSE	NON FLAMMABLE FUSIBLE
	:	RW	NON FLAMMABLE WIREWOUND
	:	RS	NON FLAMMABLE METAL OXIDE
	:	RB	NON FLAMMABLE CEMENT
	:	*ZF	ADJUSTMENT RESISTOR
COIL	:	LF-8L	MICRO INDUCTOR
CAPACITOR	:	TA	TANTALUM
	:	PS	STYROL
	:	PP	POLYPROPYLENE
	:	PT	MYLAR
	:	MPS	METALIZED POLYESTER
	:	MPP	METALIZED POLYPROPYLENE
	:	ALB	BIPOLAR
	:	ALT	HIGH TEMPERATURE
	:	ALR	HIGH RIPPLE

Note:



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




The symbol  (displayed on component side of the circuit board) indicates fast operating fuse. Replace only with fuse of the same rating as marked.

Les composants identifiés par un tramé et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

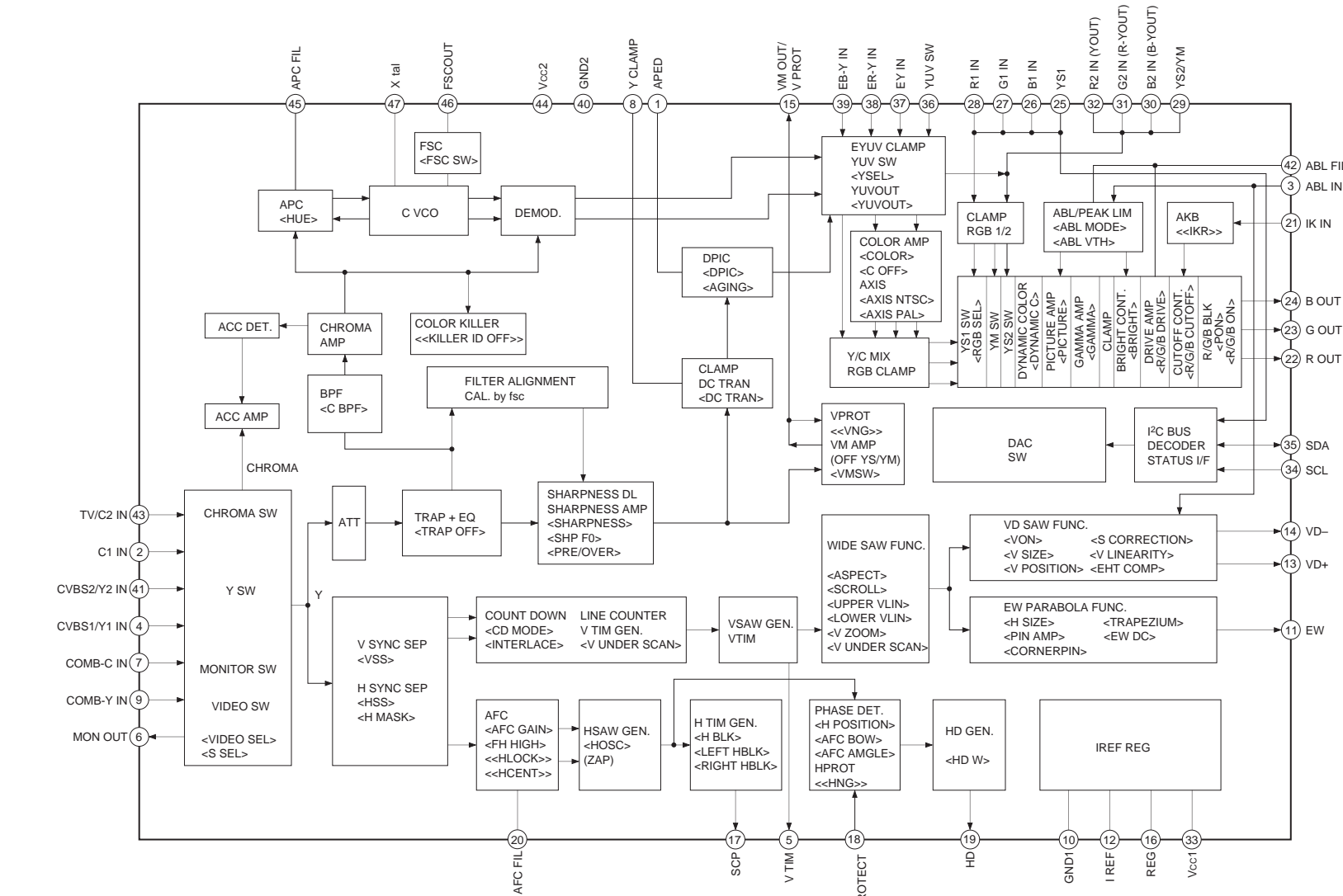
Le symbole  indique une fusible à action rapide. Doit être remplacée par une fusible de même valeur, comme marque.

- When replacing parts shown in the table below, be sure to perform the related adjustments.

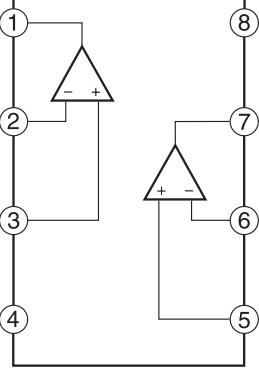
Part Replaced ()	Adjustment ()
DY, C511, C574, C575, D572, D573, D574, R582, R583, R584, R585, R586, R578, R625, R626, R640, R635, T504, IC301, IC521, IC602	HV HOLD-DOWN (R582)
IC001, IC602, R030, R625 R626, R632, R633, R635, R636, R637, R638, R639	B+ VOLTAGE CONFIRMATION

- All voltages are in Volts
- Voltage is DC with respect to ground unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- * : cannot be measured
-  : B + Line
-  : B - Line
-  : Signal path

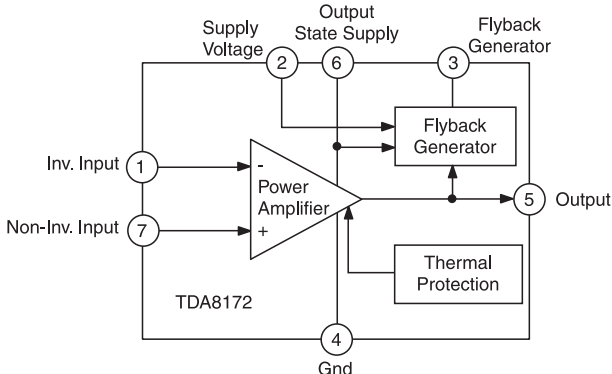
A BOARD: IC301 CXA2133BS



A BOARD: IC521 NJM4558M-TE2



A BOARD: IC541 TDA8172



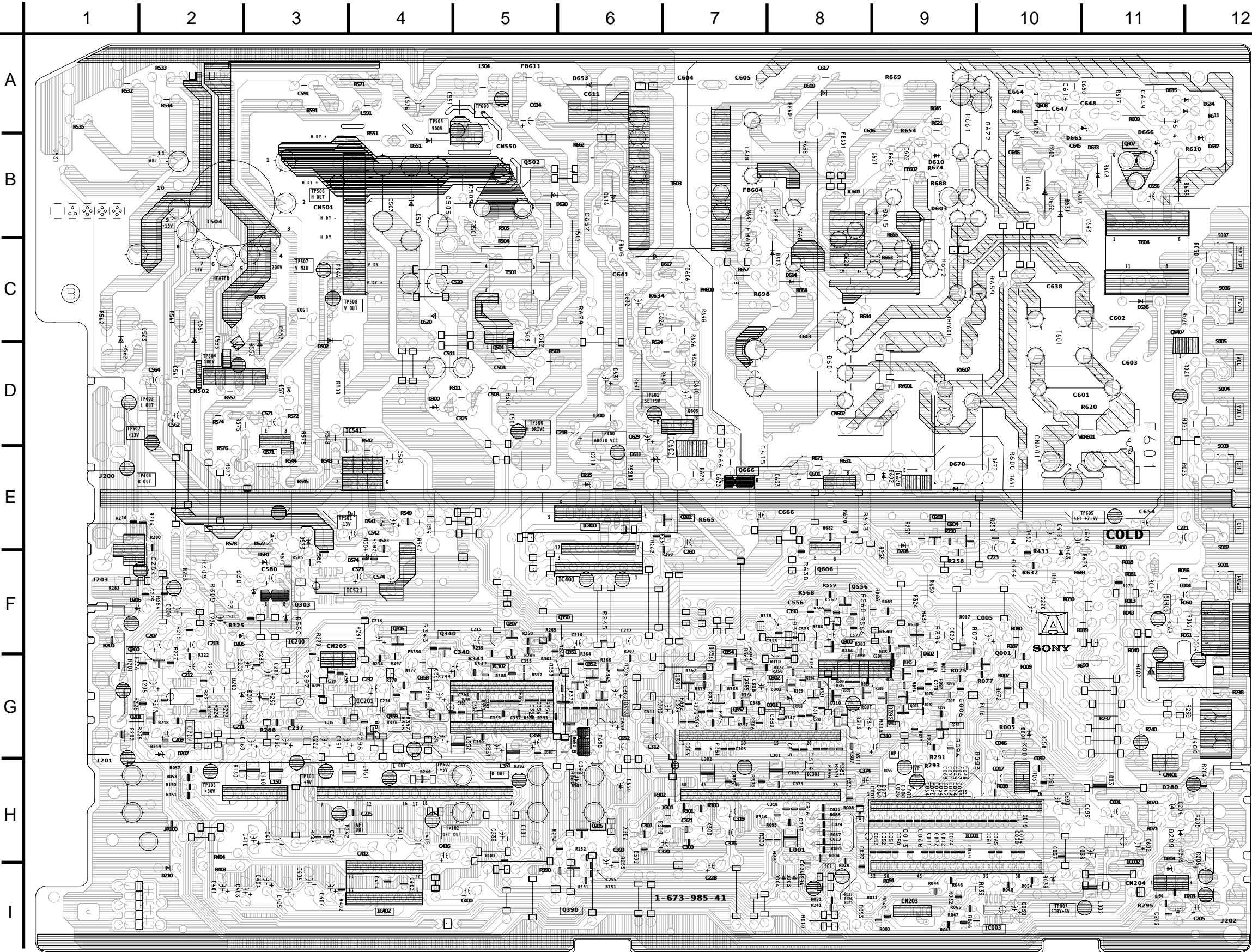
NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shocks during inspection or repair.

A BOARD LOCATION LIST

DIODE	D601	D-8	TRANSISTOR
D001	G-10	D602	E-9
D002	G-11	D603	B-9
D003	H-8	D611	D-6
D004	H-8	D613	C-8
D038	H-10	D614	C-8
D201	G-3	D615	B-9
D203	I-11	D616	B-6
D205	F-3	D617	B-7
D208	E-9	D631	B-10
D209	H-11	D632	B-10
D210	H-2	D633	B-11
D215	E-6	D634	A-12
D301	F-3	D635	A-11
D302	G-8	D636	C-11
D310	G-8	D637	B-12
D311	G-8	D638	B-12
D320	F-8	D650	G-6
D403	E-10	D653	A-9
D434	E-30	D670	E-9
D501	B-4	IC	Q501
D502	C-3	IC001	H-9
D541	E-4	IC002	H-11
D552	C-3	IC003	I-10
D561	C-2	IC004	F-12
D562	C-2	IC201	G-4
D571	D-3	IC301	G-7
D572	E-30	IC401	F-6
D573	E-30	IC521	F-4
D574	E-4	IC541	D-4
D581	E-30	IC601	B-8
		IC602	D-7
			Q670
			E-9

A

[TUNING CONTROL, Y/C/J, POWER SUPPLY, DEFLECTION, TUNER/IF, AUDIO MTS]





SECTION 8 ELECTRICAL PARTS LIST

Note:

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

Note:

Les composants identifiés par un trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

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

RESISTORS

- All resistors are in ohms
- F : nonflammable

- Items marked with an asterisk "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<div style="border: 1px solid black; padding: 5px; display: inline-block; font-size: 2em; font-weight: bold; margin-bottom: 10px;">A</div> <p>* A-1299-446-A A BOARD, COMPLETE</p> <p>The high-voltage leads associated with the FBT on this board are not included and must be ordered separately. Order the following leads when requesting this A Board:</p> <p>1-251-643-41 CAP ASSY, HIGH VOLTAGE</p> <p>1-900-800-65 CONECTOR ASSY, FOCUS LEAD</p> <p>1-900-803-22 WIRE ASSY, G2 LEAD</p> <p>1-533-223-11 HOLDER, FUSE</p> <p>* 4-374-846-11 COVER, CAPACITOR, CAP TYPE</p> <p>4-382-854-11 SCREW (M3X10), P, SW (+)</p> <p>4-382-854-11 SCREW (M3X10), P, SW (+)</p> <p style="text-align: center;"><u>CAPACITOR</u></p>				C039	1-126-964-11	ELECT	10μF 20% 50V
				C046	1-104-664-11	ELECT	47μF 20% 25V
				C047	1-163-259-91	CERAMIC CHIP	220pF 5% 50V
				C048	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V
				C050	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
				C055	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
				C060	1-163-005-11	CERAMIC CHIP	470pF 10% 50V
				C062	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V
				C065	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V
				C072	1-163-259-91	CERAMIC CHIP	220pF 5% 50V
				C074	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
				C077	1-163-251-11	CERAMIC CHIP	100pF 5% 50V
				C091	1-163-231-11	CERAMIC CHIP	15pF 5% 50V
				C092	1-163-231-11	CERAMIC CHIP	15pF 5% 50V
				C101	1-126-963-11	ELECT	4.7μF 20% 50V
				C150	1-126-935-11	ELECT	470μF 20% 16V
				C151	1-104-664-11	ELECT	47μF 20% 25V
				C160	1-126-382-11	ELECT	100μF 20% 16V
				C200	1-107-698-11	ELECT	10μF 20% 25V
				C201	1-126-960-11	ELECT	1μF 20% 50V
				C203	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V
				C204	1-107-698-11	ELECT	10μF 20% 25V
				C205	1-126-960-11	ELECT	1μF 20% 50V
				C215	1-126-957-11	ELECT	0.22μF 20% 50V
				C216	1-126-959-11	ELECT	0.47μF 20% 50V
				C217	1-126-959-11	ELECT	0.47μF 20% 50V
				C218	1-126-941-11	ELECT	470μF 20% 25V
				C219	1-130-495-00	MYLAR	0.1μF 5% 50V
				C220	1-126-941-11	ELECT	470μF 20% 25V
				C221	1-126-941-11	ELECT	470μF 20% 25V
				C222	1-126-964-11	ELECT	10μF 20% 50V
				C226	1-107-635-11	ELECT	4.7μF 20% 160V
				C228	1-126-964-11	ELECT	10μF 20% 50V
				C232	1-126-960-11	ELECT	1μF 20% 50V
				C234	1-126-964-11	ELECT	10μF 20% 50V
				C236	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V
				C243	1-163-017-00	CERAMIC CHIP	.0047μF 10% 50V
				C260	1-126-960-11	ELECT	1μF 20% 50V
				C301	1-163-233-11	CERAMIC CHIP	18pF 5% 50V
C001	1-163-259-91	CERAMIC CHIP	220pF 5% 50V				
C004	1-104-664-11	ELECT	47μF 20% 25V				
C005	1-126-960-11	ELECT	1μF 20% 50V				
C006	1-163-035-00	CERAMIC CHIP	0.047μF 50V				
C007	1-163-259-91	CERAMIC CHIP	220pF 5% 50V				
C008	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V				
C010	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V				
C011	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V				
C012	1-163-009-11	CERAMIC CHIP	0.001μF 10% 50V				
C013	1-163-259-91	CERAMIC CHIP	220pF 5% 50V				
C014	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V				
C017	1-126-960-11	ELECT	1μF 20% 50V				
C019	1-163-135-00	CERAMIC CHIP	560pF 5% 50V				
C020	1-130-495-00	MYLAR	0.1μF 5% 50V				
C027	1-163-259-91	CERAMIC CHIP	220pF 5% 50V				
C028	1-163-005-11	CERAMIC CHIP	470pF 10% 50V				
C030	1-163-259-91	CERAMIC CHIP	220pF 5% 50V				
C034	1-163-037-11	CERAMIC CHIP	0.022μF 10% 50V				
C037	1-164-161-11	CERAMIC CHIP	0.0022μF 10% 50V				
C038	1-126-941-11	ELECT	470μF 20% 25V				



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

Les composants identifiés par un trame et une
marque \triangle sont critiques pour la sécurité. Ne
les remplacer que par une pièce portant le
numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C303	1-126-964-11	ELECT	10 μ F 20% 50V	C603 \triangle	1-119-907-51	CERAMIC CHIP 4700pF 20% 250V	
C305	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V	C604 \triangle	1-119-907-51	CERAMIC CHIP 4700pF 20% 250V	
C306	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V	C605 \triangle	1-119-907-51	CERAMIC CHIP 4700pF 20% 250V	
C308	1-126-964-11	ELECT	10 μ F 20% 50V	C611	1-117-214-11	CERAMIC CHIP 0.001 μ F 10% 2KV	
C309	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C613	1-117-893-11	ELECT 470 μ F 20% 250V	
C310	1-126-960-11	ELECT	1 μ F 20% 50V	C614	1-130-471-00	MYLAR 0.001 μ F 5% 50V	
C311	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C618 \triangle	1-125-893-11	FILM 680pF 3% 1.5KV	
C312	1-126-942-61	ELECT	1000 μ F 20% 25V	C620	1-102-114-00	CERAMIC CHIP 470pF 10% 50V	
C313	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C621	1-136-356-11	MYLAR 470pF 5% 50V	
C314	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V	C622	1-136-479-11	FILM 0.001 μ F 5% 50V	
C316	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C623	1-136-153-00	FILM 0.01 μ F 5% 50V	
C317	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C626	1-126-959-11	ELECT 0.47 μ F 20% 50V	
C318	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	C628	1-104-665-11	ELECT 100 μ F 20% 25V	
C319	1-126-963-11	ELECT	4.7 μ F 20% 50V	C629	1-104-665-11	ELECT 100 μ F 20% 25V	
C320	1-126-959-11	ELECT	0.47 μ F 20% 50V	C630	1-163-021-91	CERAMIC CHIP 0.01 μ F 10% 50V	
C321	1-163-133-00	CERAMIC CHIP	470pF 5% 50V	C631	1-126-768-11	ELECT 2200 μ F 20% 16V	
C330	1-163-007-11	CERAMIC CHIP	680pF 10% 50V	C632	1-126-942-61	ELECT 1000 μ F 20% 25V	
C373	1-163-038-11	CERAMIC CHIP	0.1 μ F 25V	C633	1-126-967-11	ELECT 47 μ F 20% 50V	
C374	1-126-935-11	ELECT	470 μ F 20% 16V	C634	1-131-867-51	ELECT 100 μ F 160V	
C375	1-163-038-11	CERAMIC CHIP	0.1 μ F 25V	C638	1-136-311-11	MYLAR 0.47 μ F 20% 125V	
C376	1-104-664-11	ELECT	47 μ F 20% 25V	C641	1-102-002-00	CERAMIC CHIP 680pF 10% 500V	
C390	1-130-495-00	MYLAR	0.1 μ F 5% 50V	C643	1-113-924-11	CERAMIC CHIP .0047 μ F 20% 250V	
C418	1-126-964-11	ELECT	10 μ F 20% 50V	C644	1-113-924-11	CERAMIC CHIP .0047 μ F 20% 250V	
C502	1-106-371-00	MYLAR	0.015 μ F 20% 200V	C645	1-137-605-11	MYLAR 0.01 μ F 10% 250V	
C504	1-102-228-00	CERAMIC CHIP	470pF 10% 500V	C646	1-107-679-91	ELECT 10 μ F 20% 450V	
C505 \triangle	1-117-626-11	FILM	2000pF 3% 1.2KV	C647	1-130-467-00	MYLAR 470pF 5% 50V	
C507 \triangle	1-117-633-11	FILM	3900pF 3% 1.2KV	C648	1-162-318-11	CERAMIC CHIP 0.001 μ F 10% 500V	
C508 \triangle	1-106-371-00	MYLAR	0.015 μ F 20% 200V	C650	1-130-471-00	MYLAR 0.001 μ F 5% 50V	
C509 \triangle	1-162-115-00	CERAMIC CHIP	330pF 10% 2KV	C651	1-126-382-11	ELECT 100 μ F 20% 16V	
C511 \triangle	1-117-665-11	FILM	0.33 μ F 5% 250V	C653	1-104-664-11	ELECT 47 μ F 20% 25V	
C531	1-106-387-00	MYLAR	0.068 μ F 10% 200V	C654	1-126-970-11	ELECT 330 μ F 20% 50V	
C541	1-126-969-11	ELECT	220 μ F 20% 50V	C656	1-126-965-11	ELECT 22 μ F 20% 50V	
C542	1-126-967-11	ELECT	47 μ F 20% 50V	C657	1-102-002-00	CERAMIC CHIP 680pF 10% 500V	
C543	1-136-169-00	FILM	0.22 μ F 5% 50V	C690	1-126-959-11	ELECT 0.47 μ F 20% 50V	
C552	1-102-244-00	CERAMIC CHIP	220pF 10% 500V	C691	1-126-941-11	ELECT 470 μ F 20% 25V	
C553	1-107-652-11	ELECT	10 μ F 20% 250V	C692	1-104-664-11	ELECT 47 μ F 20% 25V	
C556	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V	C693	1-137-194-81	FILM 0.47 μ F 5% 50V	
C561	1-102-244-00	CERAMIC CHIP	220pF 10% 500V				
C562	1-126-941-11	ELECT	470 μ F 20% 25V				
C563	1-137-417-11	MYLAR	.0047 μ F 10% 200V				
C564	1-126-941-11	ELECT	470 μ F 20% 25V				
C571 \triangle	1-126-965-11	ELECT	22 μ F 20% 50V				
C573	1-126-963-11	ELECT	4.7 μ F 20% 50V				
C574	1-107-635-11	ELECT	4.7 μ F 20% 160V				
C575 \triangle	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C576	1-123-024-21	ELECT	33 μ F 160V				
C577 \triangle	1-126-959-11	ELECT	0.47 μ F 20% 50V				
C591 \triangle	1-137-150-11	MYLAR	0.01 μ F 10% 100V				
C601 \triangle	1-136-311-11	MYLAR	0.47 μ F 20% 125V				
C602 \triangle	1-119-907-51	CERAMIC CHIP	4700pF 20% 250V				
				CONNECTOR			
				CN203*	1-560-124-00	PLUG, CONNECTOR (2.5MM)	4P
				CN301*	1-564-508-11	PLUG, CONNECTOR	5P
				CN401	1-564-505-11	PLUG, CONNECTOR	2P
				CN402	1-564-505-11	PLUG, CONNECTOR	2P
				CN501*	1-580-798-11	CONNECTOR PIN (DY)	6P
				CN502*	1-564-509-11	PLUG, CONNECTOR	6P
				CN601	1-580-843-11	PIN, CONNECTOR (POWER)	
				CN602*	1-508-786-00	PIN, CONNECTOR (5MM PITCH)	2P

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

Les composants identifiés par un triangle et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
DIODE				D653	8-719-312-10	DIODE RU4AM-T3	
D001	8-719-921-44	DIODE MTZJ-T-77-5.1C		D670	8-719-991-33	DIODE 1SS133T-77	
D002	1-810-039-21	LED UNIT		FUSE			
D003	8-719-991-33	DIODE 1SS133T-77		F601 \triangle	1-533-795-11	LINK, FUSE	
D004	8-719-911-19	DIODE 1SS119-25TD		FERRITE BEAD			
D038	8-719-109-89	DIODE MTZJ-T-77-5.6C		FB501	1-410-396-41	FERRITE	0.45 μ H
D201	8-719-110-17	DIODE MTZJ-T-77-10B		FB600	1-410-397-21	FERRITE	1.1 μ H
D203	8-719-110-17	DIODE MTZJ-T-77-10B		FB601	1-410-397-21	FERRITE	1.1 μ H
D205	8-719-982-22	DIODE MTZJ-T-77-30D		FB602	1-410-397-21	FERRITE	1.1 μ H
D208	8-719-110-17	DIODE MTZJ-T-77-10B		FB604	1-410-397-21	FERRITE	1.1 μ H
D209	8-719-110-17	DIODE MTZJ-T-77-10B		FB605	1-410-397-21	FERRITE	1.1 μ H
D210	8-719-110-17	DIODE MTZJ-T-77-10B		FB606	1-410-397-21	FERRITE	1.1 μ H
D215	8-719-110-17	DIODE MTZJ-T-77-10B		FB609	1-412-911-11	FERRITE	0 μ H
D301	8-719-110-08	DIODE MTZJ-T-77-8.2B		FB611	1-410-397-21	FERRITE	1.1 μ H
D302	8-719-921-44	DIODE MTZJ-T-77-5.1C		IC			
D310	8-719-073-01	DIODE MA111-TX		IC001	8-759-639-83	IC M37273 μ F-255SP	
D311	8-719-073-01	DIODE MA111-TX		IC002	8-759-575-47	IC NJM78LR05BM-TE2	
D320	8-719-976-99	DIODE UDZ-TE-17-5.1B		IC003	8-759-575-71	IC M24C04-MN6T	
D403	8-719-991-33	DIODE 1SS133T-77		IC004	8-742-205-20	HYB IC SBX3081-01(20)	
D434	8-719-991-33	DIODE 1SS133T-77		IC201	8-759-450-93	IC NJM2521M-TE1	
D501	8-719-945-80	DIODE ERC06-15S		IC301	8-752-098-78	IC CXA2133BS	
D502	8-719-302-43	DIODE RGP10GPKG23		IC401	8-759-490-17	IC TDA7057AQ/N2	
D541	8-719-908-03	DIODE GP08DPKG23		IC521 \triangle	8-759-100-96	IC NJM4558M-TE2	
D552	8-719-302-43	DIODE RGP10GPKG23		IC541	8-759-980-58	IC TDA8172	
D561	8-719-979-85	DIODE RGP15GPKG23		IC601 \triangle	8-749-015-60	IC STR-F6624	
D562	8-719-979-85	DIODE RGP15GPKG23		IC602 \triangle	8-759-198-31	IC UPC1093J-1-T	
D571 \triangle	8-719-991-33	DIODE 1SS133T-77		JACK			
D572	8-719-991-33	DIODE 1SS133T-77		J201	1-580-441-71	JACK, PIN 2P	
D573	8-719-110-08	DIODE MTZJ-T-77-8.2B		J202	1-580-441-41	JACK, PIN 2P	
D574 \triangle	8-719-979-84	DIODE EGP20DPKG23		J400	1-568-267-21	JACK	
D581 \triangle	8-719-991-33	DIODE 1SS133T-77		CONDUCTOR			
D601 \triangle	8-719-510-51	DIODE D3SB60F		JR003	1-216-295-11	SHORT	0
D602	8-719-991-33	DIODE 1SS133T-77		COIL			
D603	8-719-046-74	DIODE 10ELS2N-TA1B2		L001	1-412-058-11	INDUCTOR	10 μ H
D611	8-719-110-17	DIODE MTZJ-T-77-10B		L002	1-412-064-11	INDUCTOR	100 μ H
D613	8-719-063-70	DIODE D1NL20U-TA		L003	1-412-064-11	INDUCTOR	100 μ H
D614	8-719-063-70	DIODE D1NL20U-TA		L150	1-412-064-11	INDUCTOR	100 μ H
D615	8-719-510-02	DIODE D1NS4-TA		L151	1-412-058-11	INDUCTOR	10 μ H
D616	8-719-510-73	DIODE S3L20 μ F4					
D617	8-719-027-43	DIODE S2L20 μ F					
D631	8-719-911-55	DIODE ERC04-06S					
D632	8-719-911-55	DIODE ERC04-06S					
D633	8-719-948-45	DIODE ERA22-08TP3					
D634	8-719-991-33	DIODE 1SS133T-77					
D635	8-719-991-33	DIODE 1SS133T-77					
D636	8-719-063-70	DIODE D1NL20U-TA					
D637	8-719-109-93	DIODE MTZJ-T-77-6.2C					
D638	8-719-510-48	DIODE D1N20R-TA					
D650	8-719-109-89	DIODE MTZJ-T-77-5.6C					



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numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
				RESISTOR			
L160	1-412-058-11	INDUCTOR	10 μ H	R001	1-216-073-00	RES-CHIP	10K 5% 1/10W
L301	1-412-062-11	INDUCTOR	47 μ H	R002	1-249-429-11	CARBON	10K 5% 1/4W
L302	1-412-058-11	INDUCTOR	10 μ H	R003	1-216-033-00	RES-CHIP	220 5% 1/10W
L503	1-412-553-11	INDUCTOR	3.3MH	R004	1-216-073-00	RES-CHIP	10K 5% 1/10W
L504	1-412-533-21	INDUCTOR	47 μ H	R005	1-216-033-00	RES-CHIP	220 5% 1/10W
L591 \triangle	1-412-531-31	INDUCTOR	33 μ H				
PHOTO COUPLER				R007	1-216-025-11	RES-CHIP	100 5% 1/10W
				R008	1-216-033-00	RES-CHIP	220 5% 1/10W
PH600 \triangle	8-749-010-64	PHOTO COUPLER PC123FY2		R009	1-249-409-11	CARBON	220 5% 1/4W
IC LINK				R013	1-249-433-11	CARBON	22K 5% 1/4W
				R016	1-249-413-11	CARBON	470 5% 1/4W
PS201 \triangle	1-532-984-11	LINK, IC 2A/90V		R017	1-216-113-00	RES-CHIP	470K 5% 1/10W
				R018	1-249-417-11	CARBON	1K 5% 1/4W
TRANSISTOR				R019	1-249-425-11	CARBON	4.7K 5% 1/4W
				R020	1-249-427-11	CARBON	6.8K 5% 1/4W
Q001	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R021	1-249-415-11	CARBON	680 5% 1/4W
Q002	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R022	1-249-416-11	CARBON	820 5% 1/4W
Q003	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R023	1-249-421-11	CARBON	2.2K 5% 1/4W
Q202	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX					
Q203	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R025	1-249-426-11	CARBON	5.6K 5% 1/4W
				R026	1-249-426-11	CARBON	5.6K 5% 1/4W
Q205	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R027	1-249-426-11	CARBON	5.6K 5% 1/4W
Q252	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R028	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q300 \triangle	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R030	1-249-429-11	CARBON	10K 5% 1/4W
Q301	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX					
Q302	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R031	1-216-045-00	RES-CHIP	680 5% 1/10W
				R032	1-216-033-00	RES-CHIP	220 5% 1/10W
Q303	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		R033	1-249-409-11	CARBON	220 5% 1/4W
Q305	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R038	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q390	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R040	1-249-413-11	CARBON	470 5% 1/4W
Q391	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX					
Q392	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R043	1-249-417-11	CARBON	1K 5% 1/4W
				R044	1-216-033-00	RES-CHIP	220 5% 1/10W
Q393	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R045	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q394	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R046	1-216-033-00	RES-CHIP	220 5% 1/10W
Q501	8-729-140-50	TRANSISTOR 2SC3209LK-TP		R047	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q502	8-729-051-69	TRANSISTOR 2SD2624					
Q556	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R048	1-216-025-11	RES-CHIP	100 5% 1/10W
				R049	1-216-089-11	RES-CHIP	47K 5% 1/10W
Q571 \triangle	8-729-200-17	TRANSISTOR 2SA1091O-TPE2		R050	1-249-429-11	CARBON	10K 5% 1/4W
Q601	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		R054	1-216-073-00	RES-CHIP	10K 5% 1/10W
Q602	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R055	1-216-033-00	RES-CHIP	220 5% 1/10W
Q605	8-729-423-99	TRANSISTOR 2SD2137-OP-TA					
Q606	8-729-111-55	TRANSISTOR 2SD1292-T103		R056	1-249-425-11	CARBON	4.7K 5% 1/4W
				R057	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q607	8-729-044-30	TRANSISTOR 2SK2845-LB102		R058	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q608	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		R065	1-216-033-00	RES-CHIP	220 5% 1/10W
Q650	8-729-111-55	TRANSISTOR 2SD1292-T103		R066	1-216-033-00	RES-CHIP	220 5% 1/10W
Q670	8-729-140-96	TRANSISTOR 2SD774-T-34					
				R072	1-249-409-11	CARBON	220 5% 1/4W
				R073	1-216-304-11	RES-CHIP	3.3 5% 1/10W
				R074	1-216-073-00	RES-CHIP	10K 5% 1/10W
				R075	1-216-073-00	RES-CHIP	10K 5% 1/10W
				R076	1-216-121-11	RES-CHIP	1M 5% 1/10W

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REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
R077	1-216-097-11	RES-CHIP	100K	5%	1/10W	R306	1-216-675-91	METAL CHIP	10K	0.50%	1/10W
R078	1-216-049-11	RES-CHIP	1K	5%	1/10W	R307	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R085	1-216-073-00	RES-CHIP	10K	5%	1/10W	R308	1-247-887-00	CARBON	220K	5%	1/4W
R086	1-216-073-00	RES-CHIP	10K	5%	1/10W	R309	1-249-433-11	CARBON	22K	5%	1/4W
R087	1-216-045-00	RES-CHIP	680	5%	1/10W	R310	1-216-049-11	RES-CHIP	1K	5%	1/10W
R088	1-216-045-00	RES-CHIP	680	5%	1/10W	R312	1-216-033-00	RES-CHIP	220	5%	1/10W
R089	1-216-045-00	RES-CHIP	680	5%	1/10W	R313	1-249-409-11	CARBON	220	5%	1/4W
R090	1-249-429-11	CARBON	10K	5%	1/4W	R314	1-249-409-11	CARBON	220	5%	1/4W
R091	1-249-429-11	CARBON	10K	5%	1/4W	R315	1-249-409-11	CARBON	220	5%	1/4W
R092	1-216-049-11	RES-CHIP	1K	5%	1/10W	R316	1-216-025-11	RES-CHIP	100	5%	1/10W
R093	1-249-425-11	CARBON	4.7K	5%	1/4W	R317	1-249-421-11	CARBON	2.2K	5%	1/4W
R096	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R318	1-216-073-00	RES-CHIP	10K	5%	1/10W
R097	1-216-073-00	RES-CHIP	10K	5%	1/10W	R319	1-216-073-00	RES-CHIP	10K	5%	1/10W
R099	1-249-425-11	CARBON	4.7K	5%	1/4W	R321	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R101	1-216-073-00	RES-CHIP	10K	5%	1/10W	R322	1-216-073-00	RES-CHIP	10K	5%	1/10W
R150	1-216-025-11	RES-CHIP	100	5%	1/10W	R323	1-249-415-11	CARBON	680	5%	1/4W
R151	1-216-025-11	RES-CHIP	100	5%	1/10W	R324	1-249-425-11	CARBON	4.7K	5%	1/4W
R201	1-216-113-00	RES-CHIP	470K	5%	1/10W	R325	1-216-097-11	RES-CHIP	100K	5%	1/10W
R204	1-216-022-00	RES-CHIP	75	5%	1/10W	R329	1-216-025-11	RES-CHIP	100	5%	1/10W
R205	1-247-895-91	CARBON	470K	5%	1/4W	R330	1-216-025-11	RES-CHIP	100	5%	1/10W
R231	1-216-073-00	RES-CHIP	10K	5%	1/10W	R331	1-216-025-11	RES-CHIP	100	5%	1/10W
R235	1-208-794-11	METAL CHIP	3.3K	0.50%	1/10W	R347	1-216-045-00	RES-CHIP	680	5%	1/10W
R237	1-249-409-11	CARBON	220	5%	1/4W	R356	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R238	1-249-417-11	CARBON	1K	5%	1/4W	R383	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R239	1-249-409-11	CARBON	220	5%	1/4W	R384	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R240	1-249-417-11	CARBON	1K	5%	1/4W	R385	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R242	1-249-433-11	CARBON	22K	5%	1/4W	R390	1-216-025-11	RES-CHIP	100	5%	1/10W
R243	1-216-085-00	RES-CHIP	33K	5%	1/10W	R391	1-216-049-11	RES-CHIP	1K	5%	1/10W
R245	1-216-295-11	SHORT	0			R392	1-216-025-11	RES-CHIP	100	5%	1/10W
R251	1-216-041-00	RES-CHIP	470	5%	1/10W	R393	1-216-049-11	RES-CHIP	1K	5%	1/10W
R252	1-216-041-00	RES-CHIP	470	5%	1/10W	R394	1-247-807-31	CARBON	100	5%	1/4W
R253	1-215-899-11	METAL CHIP	15K	5%	2W	R400	1-249-433-11	CARBON	22K	5%	1/4W
R254	1-216-025-11	RES-CHIP	100	5%	1/10W	R432	1-249-430-11	CARBON	12K	5%	1/4W
R255	1-216-025-11	RES-CHIP	100	5%	1/10W	R433	1-216-075-00	RES-CHIP	12K	5%	1/10W
R256	1-249-425-11	CARBON	4.7K	5%	1/4W	R501	1-249-421-11	CARBON	2.2K	5%	1/4W
R257	1-216-073-00	RES-CHIP	10K	5%	1/10W	R502 \triangle	1-215-921-11	METAL CHIP	4.7K	5%	3W
R260	1-216-097-11	RES-CHIP	100K	5%	1/10W	R508 \triangle	1-215-864-00	METAL CHIP	150	5%	1W
R261	1-216-097-11	RES-CHIP	100K	5%	1/10W	R532	1-215-437-00	METAL CHIP	4.7K	1%	1/4W
R262	1-216-025-11	RES-CHIP	100	5%	1/10W	R533	1-215-461-00	METAL CHIP	47K	1%	1/4W
R269	1-208-794-11	METAL CHIP	3.3K	0.50%	1/10W	R534	1-215-453-00	METAL CHIP	22K	1%	1/4W
R280	1-216-022-00	RES-CHIP	75	5%	1/10W	R535	1-249-441-11	CARBON	100K	5%	1/4W
R284	1-216-295-11	SHORT	0			R541	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R289	1-216-295-11	SHORT	0			R542	1-249-429-11	CARBON	10K	5%	1/4W
R290	1-216-025-11	RES-CHIP	100	5%	1/10W	R543	1-249-429-11	CARBON	10K	5%	1/4W
R291	1-216-071-00	RES-CHIP	8.2K	5%	1/10W	R544	1-216-377-11	METAL CHIP	4.7	5%	2W
R293	1-249-429-11	CARBON	10K	5%	1/4W	R546	1-215-890-11	METAL CHIP	470	5%	2W
R295	1-216-295-11	SHORT	0			R547	1-249-385-11	CARBON	2.2	5%	1/4W
R298	1-216-025-11	RES-CHIP	100	5%	1/10W	R548	1-249-425-11	CARBON	4.7K	5%	1/4W
R301	1-216-295-11	SHORT	0			R549	1-216-073-00	RES-CHIP	10K	5%	1/10W
R304	1-216-073-00	RES-CHIP	10K	5%	1/10W	R552	1-247-887-00	CARBON	220K	5%	1/4W



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

The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R553	1-260-312-11	CARBON	47 5% 1/2W	R641	1-216-397-11	METAL CHIP	4.7 5% 3W
R559	1-216-101-00	RES-CHIP	150K 5% 1/10W	R643	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R560	1-216-093-91	RES-CHIP	68K 5% 1/10W	R644	1-249-418-11	CARBON	1.2K 5% 1/4W
R561	1-216-349-00	METAL CHIP	1 5% 1W	R647	1-260-081-11	CARBON	33 5% 1/2W
R562	1-216-349-00	METAL CHIP	1 5% 1W	R648	1-249-421-11	CARBON	2.2K 5% 1/4W
R565	1-216-081-00	RES-CHIP	22K 5% 1/10W	R649	1-249-413-11	CARBON	470 5% 1/4W
R566	1-216-077-91	RES-CHIP	15K 5% 1/10W	R650	1-249-415-11	CARBON	680 5% 1/4W
R567	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R651 A	1-219-513-11	CARBON	4.7M 5% 1/2W
R568	1-216-121-11	RES-CHIP	1M 5% 1/10W	R655	1-216-361-00	METAL CHIP	0.22 5% 2W
R571 A	1-216-369-00	METAL CHIP	1 5% 2W	R656	1-249-419-11	CARBON	1.5K 5% 1/4W
R572 A	1-249-421-11	CARBON	2.2K 5% 1/4W	R657	1-247-843-11	CARBON	3.3K 5% 1/4W
R573 A	1-247-895-91	CARBON	470K 5% 1/4W	R659 A	1-202-961-11	CEMENTED	1.8 5% 10W
R574 A	1-249-417-11	CARBON	1K 5% 1/4W	R660 A	1-220-926-11	FUSIBLE	0.47 10% 1/2W
R575 A	1-247-891-00	CARBON	330K 5% 1/4W	R661	1-216-485-11	METAL CHIP	5.6K 5% 3W
R576 A	1-249-441-11	CARBON	100K 5% 1/4W	R662	1-249-377-11	CARBON	0.47 5% 1/4W
R577	1-249-432-11	CARBON	18K 5% 1/4W	R663	1-216-369-00	METAL CHIP	1 5% 2W
R578	1-216-467-11	METAL CHIP	56K 5% 2W	R664	1-215-483-00	METAL CHIP	390K 1% 1/4W
R579	1-216-646-11	METAL CHIP	620 0.50% 1/10W	R670	1-249-421-11	CARBON	2.2K 5% 1/4W
R580	1-216-295-11	SHORT	0	R671	1-249-417-11	CARBON	1K 5% 1/4W
 R582	1-208-826-11	METAL CHIP	68K 0.50% 1/10W	R672	1-216-485-11	METAL CHIP	5.6K 5% 3W
R583	1-208-830-11	METAL CHIP	100K 0.50% 1/10W	R674	1-249-415-11	CARBON	680 5% 1/4W
R584	1-208-806-11	METAL CHIP	10K 0.50% 1/10W	R675	1-215-859-00	METAL CHIP	22 5% 1W
R585	1-216-085-00	RES-CHIP	33K 5% 1/10W	R679	1-249-413-11	CARBON	470 5% 1/4W
R586 A	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R682	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R591	1-215-880-00	METAL CHIP	10 5% 2W	R683	1-249-421-11	CARBON	2.2K 5% 1/4W
R602	1-249-389-11	CARBON	4.7 5% 1/4W	R688	1-216-485-11	METAL CHIP	5.6K 5% 3W
R603	1-247-895-91	CARBON	470K 5% 1/4W				
R608	1-240-205-91	CARBON	22M 5% 1/2W				
R609	1-249-421-11	CARBON	2.2K 5% 1/4W				
R610	1-249-417-11	CARBON	1K 5% 1/4W				
R611	1-249-437-11	CARBON	47K 5% 1/4W				
R612	1-249-415-11	CARBON	680 5% 1/4W				
R614	1-249-429-11	CARBON	10K 5% 1/4W				
R616	1-260-302-51	CARBON	6.8 5% 1/2W				
R617	1-249-415-11	CARBON	680 5% 1/4W				
R620	1-219-512-11	CARBON	2.2M 5% 1/2W				
R623	1-249-429-11	CARBON	10K 5% 1/4W				
R625 A	1-215-429-00	METAL CHIP	2.2K 1% 1/4W				
R626 A	1-215-469-00	METAL CHIP	100K 1% 1/4W				
R630	1-249-421-11	CARBON	2.2K 5% 1/4W				
R631	1-249-429-11	CARBON	10K 5% 1/4W				
R632	1-208-806-11	METAL CHIP	10K 0.50% 1/10W				
R633	1-215-457-00	METAL CHIP	33K 1% 1/4W				
R634	1-249-417-11	CARBON	1K 5% 1/4W				
R635 A	1-216-073-00	RES-CHIP	10K 5% 1/10W				
R636	1-208-798-11	METAL CHIP	4.7K 0.50% 1/10W				
R637	1-208-806-11	METAL CHIP	10K 0.50% 1/10W				
R638	1-208-814-91	METAL CHIP	22K 0.50% 1/10W				
R639	1-216-089-11	RES-CHIP	47K 5% 1/10W				
R640 A	1-216-089-11	RES-CHIP	47K 5% 1/10W				

RELAY


RY601 A	1-755-198-11	RELAY
RY602 A	1-755-266-11	RELAY, AC POWER


SWITCH

S001	1-692-431-21	SWITCH TACTILE
S002	1-692-431-21	SWITCH TACTILE
S003	1-692-431-21	SWITCH TACTILE
S004	1-692-431-21	SWITCH TACTILE
S005	1-692-431-21	SWITCH TACTILE
S006	1-692-431-21	SWITCH TACTILE
S007	1-692-431-21	SWITCH TACTILE

TRANSFORMER

T501 A	1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE
T504 A	1-453-238-21	TRANSFORMER, FBT ASSY (NX-1744//X4E4)
T601 A	1-423-895-11	TRANSFORMER, LINE FILTER (LFT)
T603 A	1-433-816-11	TRANSFORMER, REGULATOR
T604 A	1-431-852-11	TRANSFORMER, CONVERTER (SRT)

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

Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<u>THERMISTOR</u>				<u>IC</u>			
THP601	1-810-597-11	THERMISTOR, POSITIVE		IC1751	8-759-562-43	IC TDA6108JF/N1B	
<u>TUNER</u>				<u>JACK</u>			
TU101△	1-693-454-12	TUNER		J1751△	1-251-688-11	SOCKET, CRT	
<u>VARISTOR</u>				<u>COIL</u>			
VDR601△	1-803-585-11	VARISTOR	ENE271D-10A	L1751	1-408-613-31	INDUCTOR	68μH
<u>CRYSTAL</u>				<u>RESISTOR</u>			
X001	1-767-487-11	VIBRATOR, CRYSTAL		R1756	1-260-328-11	CARBON	1K 5% 1/2W
X301	1-567-505-11	OSCILLATOR, CRYSTAL		R1757	1-260-328-11	CARBON	1K 5% 1/2W
<div>C</div>				R1758	1-260-328-11	CARBON	1K 5% 1/2W
				R1759	1-260-087-11	CARBON	100 5% 1/2W
				R1760	1-260-123-11	CARBON	100K 5% 1/2W
				R1761	1-216-392-11	METAL CHIP	1.8 5% 3W
				R1763	1-247-807-31	CARBON	100 5% 1/4W
				R1764	1-247-807-31	CARBON	100 5% 1/4W
				R1765	1-247-807-31	CARBON	100 5% 1/4W
				R1770	1-260-132-11	CARBON	560K 5% 1/2W
				<u>ACCESSORIES AND PACKING MATERIALS</u>			
				1-417-182-11	CONVERTER (EAC-25)		
				1-501-730-41	ANTENNA, TELESCOPIC		
				*	4-061-391-01	CUSHION, LOWER ASSY	
				*	4-061-392-01	CUSHION, UPPER ASSY	
				*	4-061-395-12	CARTON, INDIVIDUAL	
				4-081-454-41	MANUAL, INSTRUCTION		
				*	4-377-015-01	BAG, PROTECTION	
				<u>REMOTE COMMANDER</u>			
				1-475-632-11	REMOTE COMMANDER (RM-Y156)		
				9-939-830-11	BATTERY COVER (for RM-Y156)		

NOTES:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

