HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

BX-1S CHASSIS

MODEL NAME	REMOTE COMMANDER	DESTINATION	CHASSIS NO.
KV-21FW150	RM-YA005	LATIN NORTH	SCC-S79W-A
KV-21FW150	RM-YA005	LATIN SOUTH	SCC-S79X-A

ORIGINAL MANUAL ISSUE DATE: 3/2007

REVISION DATE	SUBJECT
3/2007	No revisions or updates are applicable at this time.

TRINITRON® COLOR TELEVISION

SONY®

9-883-738-01

Self Diagnosis Supported model

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KV-21FW150

RM-YA005

TRINITRON® COLOR TELEVISION

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SPECIFICATIONS

	KV-21FW150
Power Requirements	120V 60Hz 220V 50/60 Hz (Chile, Perú, Bolivia)
Number of Inputs/Outputs	
Video [1]	2
Audio [2]	2
VHF/UHF	1
Speaker Output (W)	3W x 2
Power Consumption (W)	
In Use (Max)	108W
In Standby (Max) [3]	<1W
Dimensions (W x H x D)	
mm	600 x 466 x 481 mm
in	$23\ ^{5/8}$ x $18\ ^{6/16}$ x $18\ ^{15/16}$ in
Mass	
kg	23 kg
lbs	50.7 lbs

1) 1 Vp-p 75 ohms unbalanced, sync negative
2) 500 mVrms (100% modulation), Impedance: 47 kilohms
3) This specification is the maximum wattage.

Television system
American TV standard, NTSC

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

Antenna
75-ohm external antenna terminal for VHF/UHF

Picture tube
FD Trinitron® tube

Visible screen size
508mm (20-inch) picture measured diagonally

Actual screen size
533.4mm (21-inch) measured diagonally

Supplied Accessories
Remote Commander RM-YA005
Two Size AA (R6) Batteries
Converter EAC-25
Dipolo Antenna

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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

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 milliampmeter. 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).

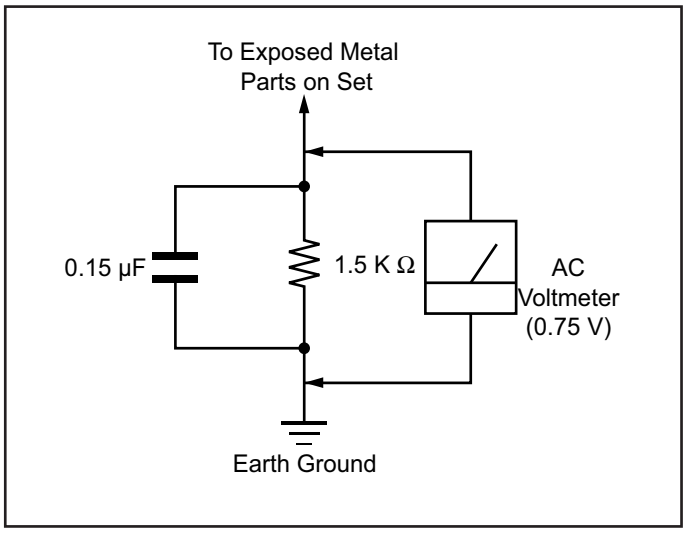


Figure A. Using an AC voltmeter to check AC leakage.

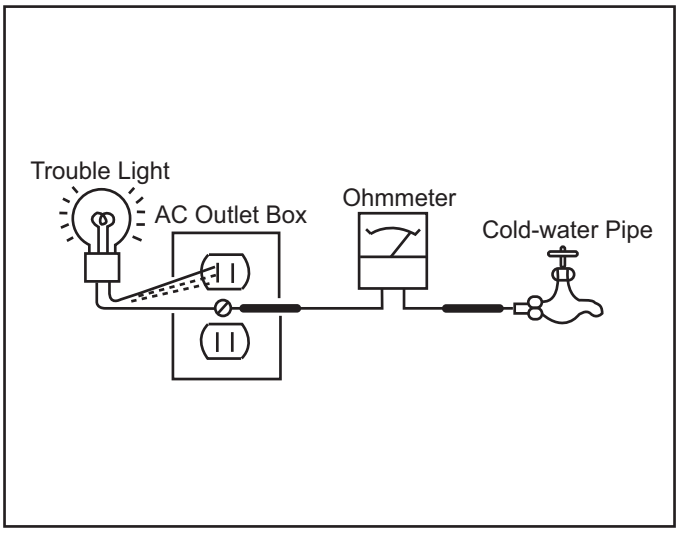


Figure B. Checking for earth ground.

SELF-DIAGNOSTIC FUNCTION

Self Diagnosis Supported model

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

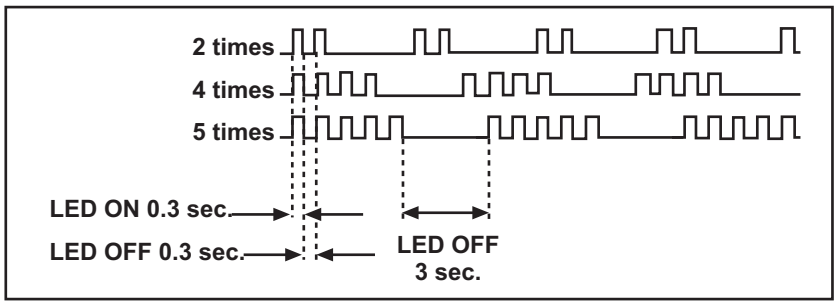
When an error occurs, the STANDBY LED indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.
Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

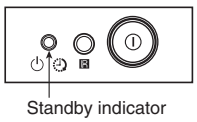
Diagnostic Item Description	No. of Times STANDBY LED Indicator Flashes	Self-Diagnositc Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	————	• Power cord is not plugged in. • Fuse is burned out (F600). (A Board)	• Power does not come on. • No power is supplied to the TV. • AC Power supply is faulty.
+B overcurrent (OCP)*	2 times *	2:0 or 2:1 - 255	• H.OUT (Q805) is shorted. (A Board) • IC751 is shorted. (C Board)	• Power does not come on. • Load on power line is shorted.
V-Protect (OVP)	4 times	4:0 or 4:1 - 255	• +13V is not supplied. (A Board) • IC804 is faulty. (A Board)	• 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	• Video OUT (IC1545) is faulty(A Board) • IC001 is faulty. (A Board) • Screen (G2) is improperly adjusted.**	• 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	• IC604 is faulty. • IC602 is faulty.	• 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 mircrocontroller 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:

DISPLAY → Channel 5 → Sound Volume − → POWER

↑ Note that this differs from entering the Service Mode (Sound Volume +).

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

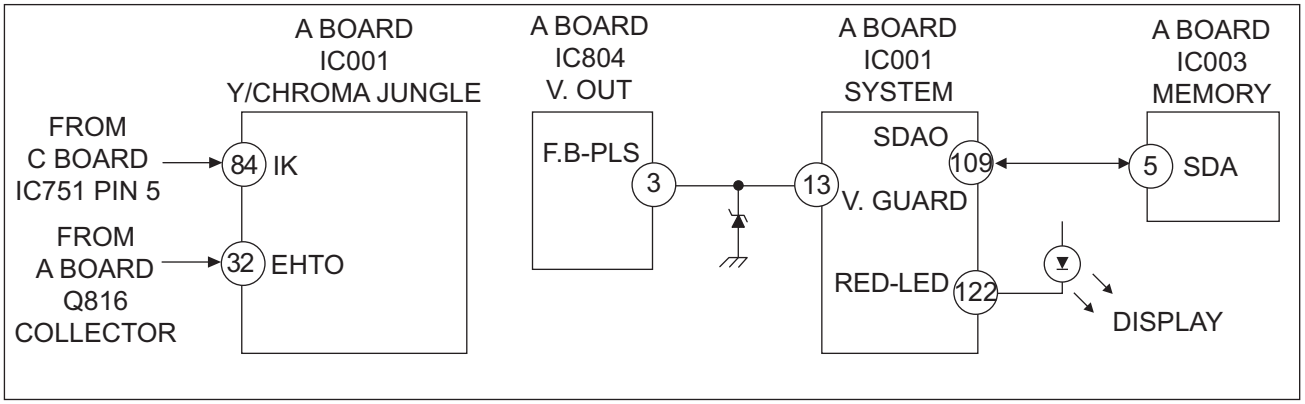
To clear the result display to "0", press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel 8 → 0

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

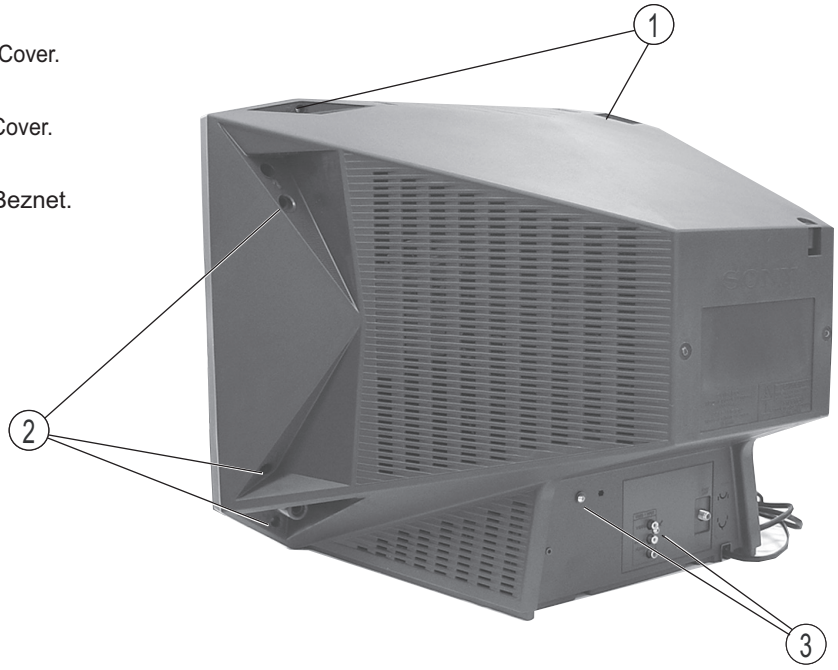
1-1. REAR COVER REMOVAL

① Remove 2 screws from the top of the Rear Cover.
2 Screws +BVTP 4x16 TYPE2 TT(B)

② Remove 3 screws from both sides of the Rear Cover.
6 Screws +BVTP 4x16 TYPE2 TT(B)

③ Remove 1 screw from the bottom of the Rear Cover.
+BVTP 4x16 TYPE2 TT(B)

Slide to remove the Rear Cover from the Beznet.



1-2. CHASSIS ASSEMBLY REMOVAL

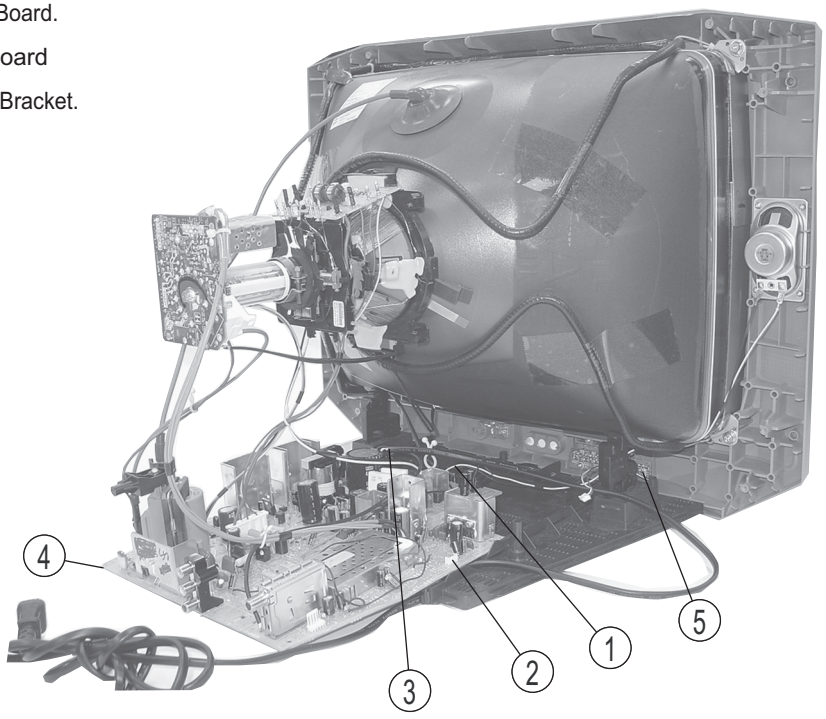
① Remove the speaker connector from the A Board.

② Remove the H connectors from the A Board

③ Slide to remove the A Board from the PWB Bracket.

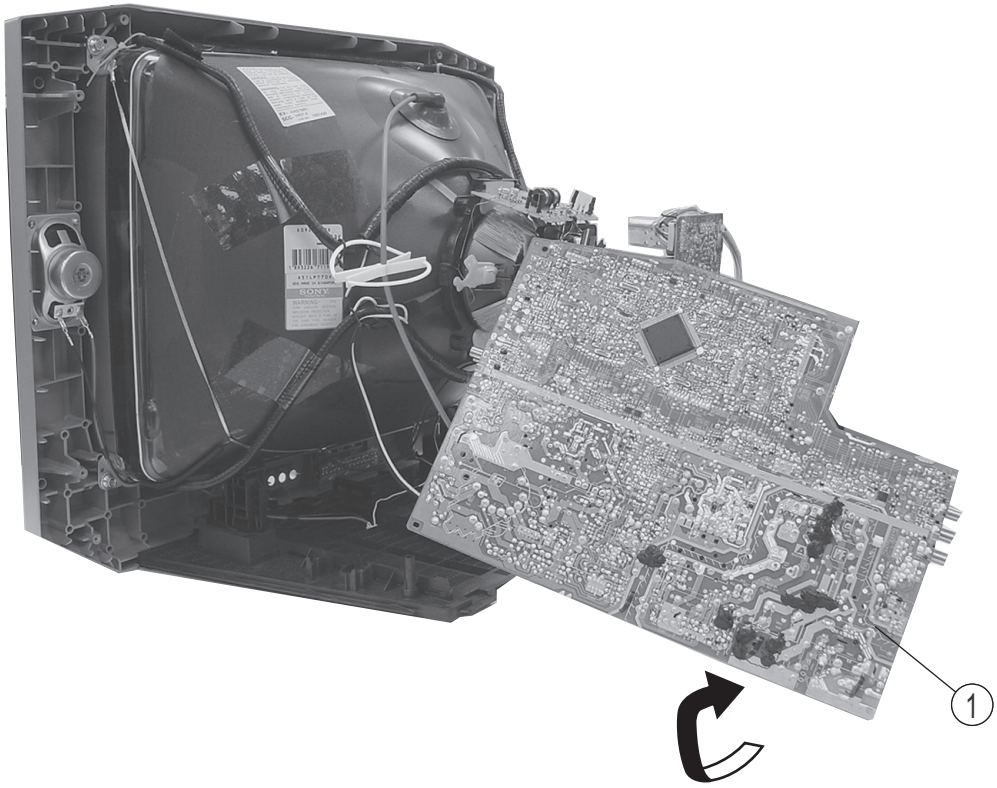
④ Release the AC Power cord.

⑤ Remove 2 screws from the H Board.
2 Screws +BVTP 3X12 TYPE2 TT(B)



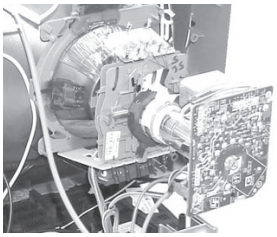
1-3. SERVICE POSITION

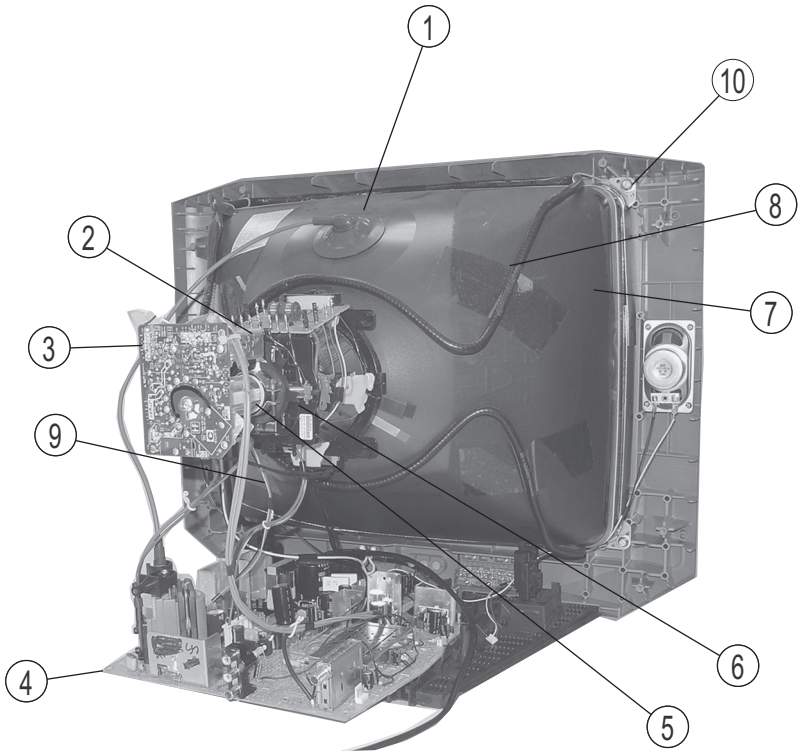
① Rotate A Board.



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.



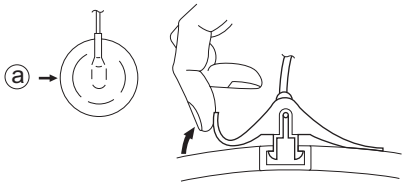


1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the neck assembly fixing screw and remove.
6. 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].

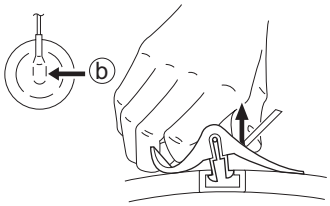
ANODE CAP REMOVAL PROCEDURE

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.

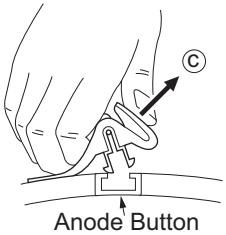
REMOVAL PROCEDURES



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



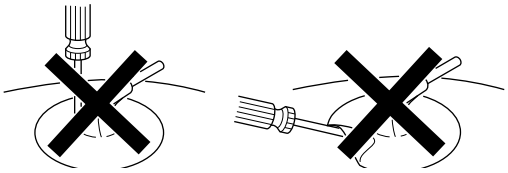
Use your thumb to pull the rubber cap firmly in the direction indicated by arrow ⓑ .



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 ⓒ .

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
2. Degausser
3. DC Power Supply
4. Digital Multimeter
5. Oscilloscope
6. Landing Checker
7. XCV Adjuster

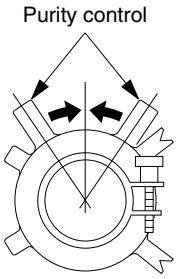
2-1. BEAM LANDING

Before beginning adjustment procedure:

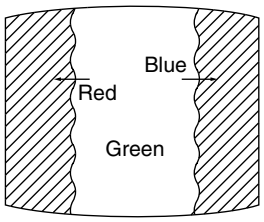
1. Feed in the white pattern signal.
2. In order to reduce the geomagnetism on the set's picture tube, face it east or west.

Adjustment Procedure

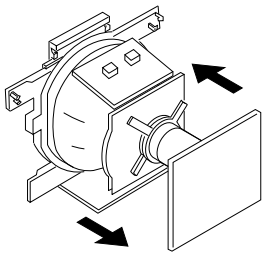
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown below:



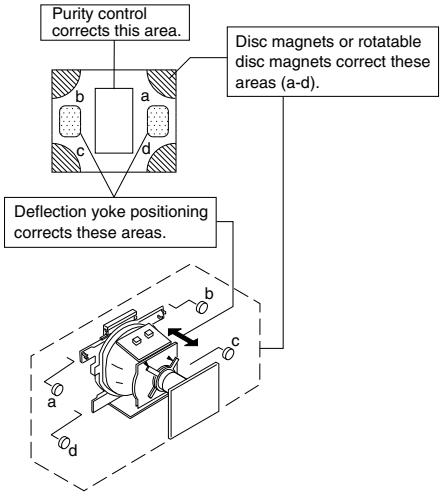
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are even on both sides.



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.



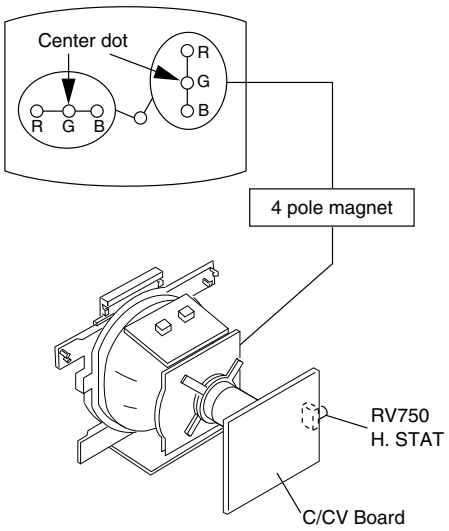
2-2. CONVERGENCE

Before starting convergence adjustments:

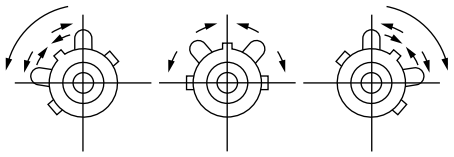
1 Perform FOCUS, VLIN and VSIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Set Picture mode to STANDARD.
4. Feed in dot pattern.

Vertical Static Convergence

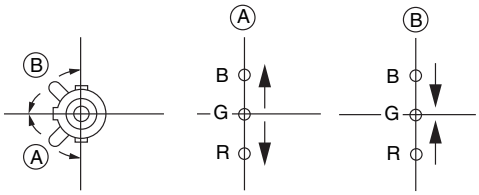
1. Adjust the 4 pole magnet to converge red, green and blue dots in the center of the screen.



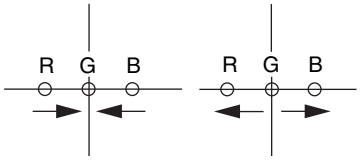
2. Tilt the 4 pole magnet and adjust static convergence to open or close the 4 pole magnet.



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

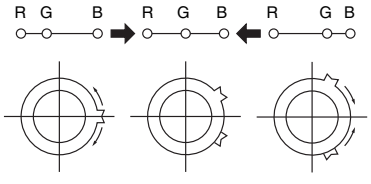


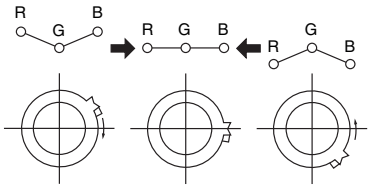
Moved RV750 (H.STAT)

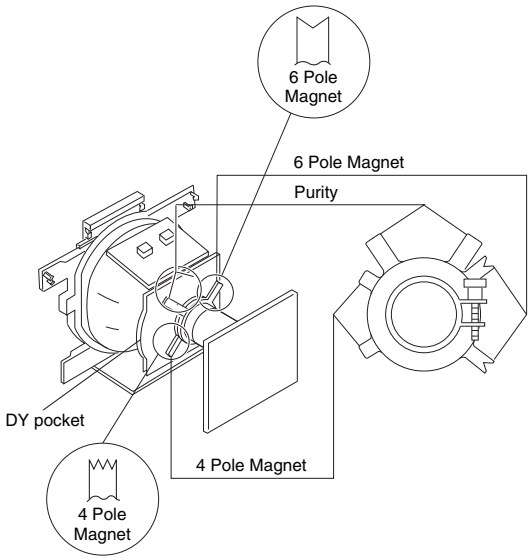


Horizontal Static Convergence

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

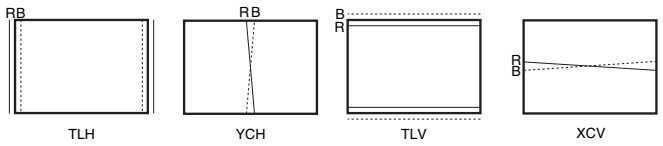
Adjust YCH to balance Y axis.

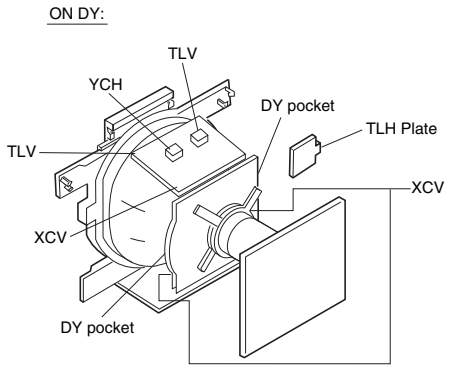
c) TLV

Adjust YCh to balance Y axis.

d) XCV

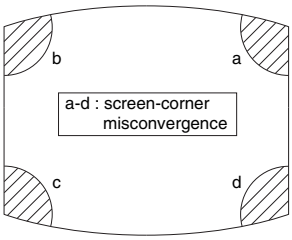
Adjust XCV to balance X-axis.

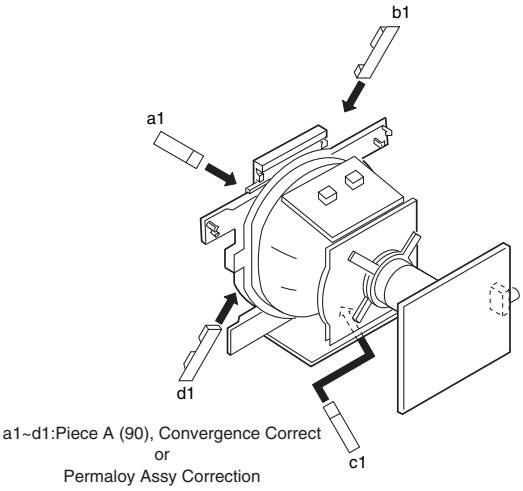




Screen Corner Convergence

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



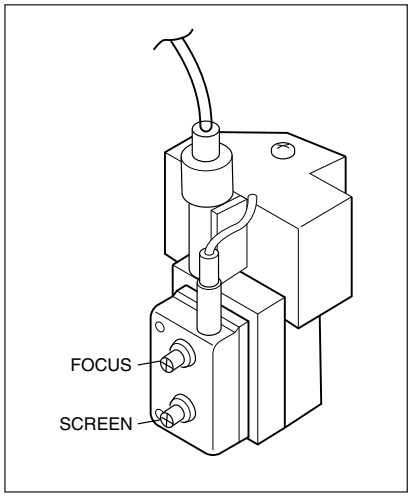


a1~d1:Piece A (90), Convergence Correct
or
Permaloy Assy Correction

2-3. FOCUS

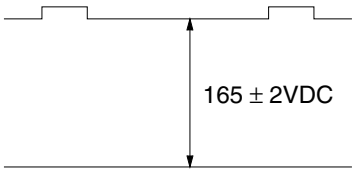
FOCUS adjustment should be completed before White Balance adjustment. (See 4-4. White Balance Adjustment)

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 adustment 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:



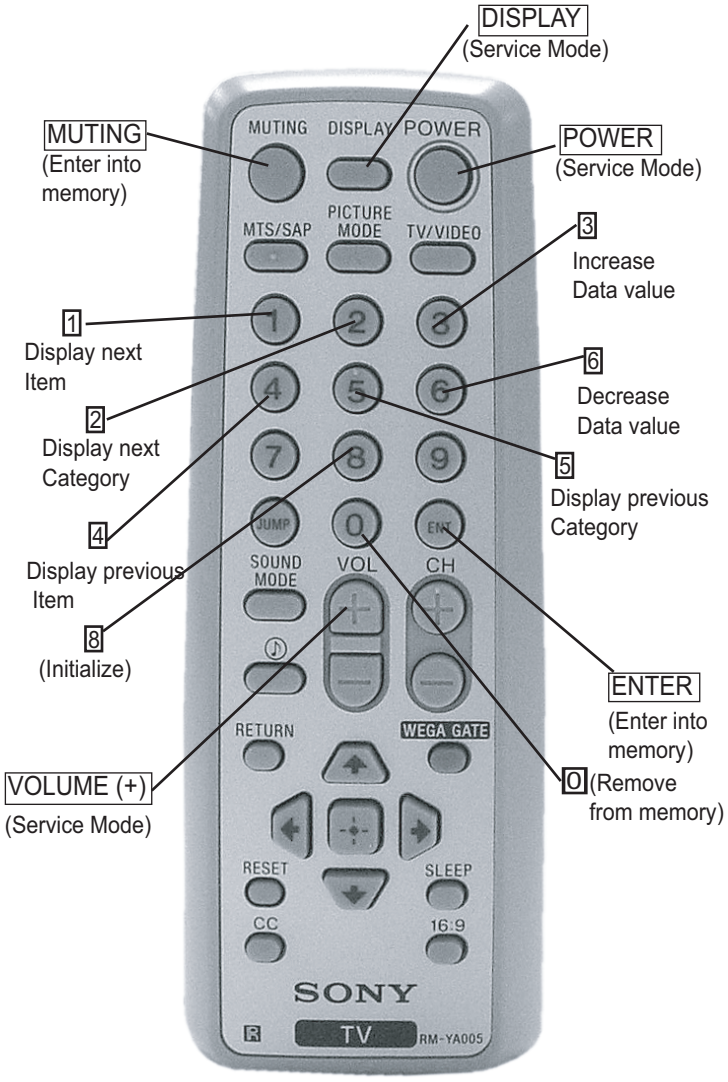
4. Adjust SCREEN VR on the FBT until the scanning line disappears.
5. Set WHBL 16 “RGBB” back to 00.

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



RM-YA005

3-2. ACCESSING THE SERVICE MENU MODE

Use the remote commander to access the service meu mode and perform the following adjusments.

1. Standby mode (Power off).
2. Press the following buttons on the remote commander within a second of each other:
   DISPLAY ➡ Channel 5 ➡ Sound Volume + ➡ POWER

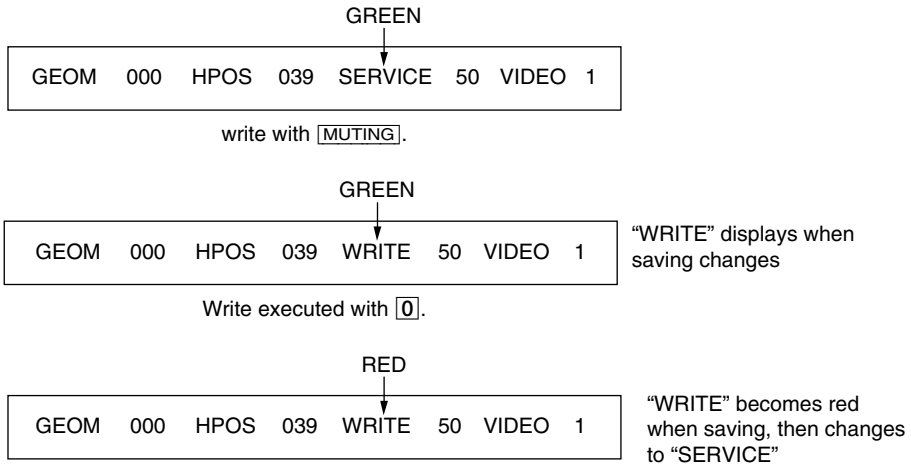
The screen displays the first service data category item.

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	3E	40 000 004000	0000FF

1. On the Remote Commander press 2 to select the next category, or 5 to select the previous category.
2. Press 1 to select the next item, or 4 to select the previous item.
3. Press 3 to increase the data value, or 6 to decrease the data value.
4. 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.

1. Access Service Adjustment Mode.
2. 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

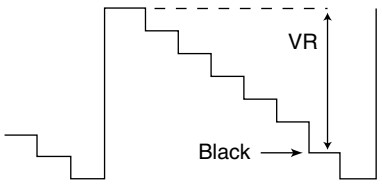
NOTE: FOCUS adjustment should be completed before White Balance adjustment. (See 2-3. FOCUS)

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:

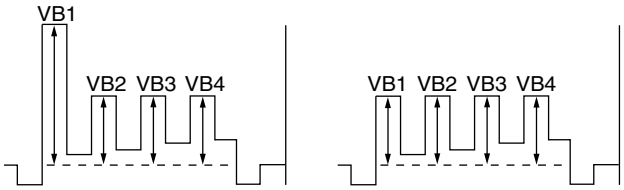


1.46 ± 0.03 Vp-p = For 21" without VM models
1.65 ± 0.03 Vp-p = With VM models except NTSC models
1.23 ± 0.03 Vp-p = NTSC models VM models
1.10 ± 0.03 Vp-p = For 21" NTSC non VM models

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 $V_{B2}=V_{B3}=V_{B4}$ (for PAL), $V_{B1}=V_{B4}$ (for NTSC) by pressing 3 or 6 , then write in the data +5 step offset.



VB2 = VB3 = VB4 (for PAL)

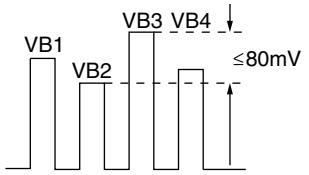
VB1 = VB4 (for NTSC)
(Difference is within 70mV)

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 V_{B1}, V_{B2}, V_{B3}, V_{B4} must be aligned at the same time. The ideal difference between V_{B2} and V_{B3} is within ± 80mV

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

1. Set TV to RF mode.
2. Input PAL monoscope to RF mode.
3. Set Brightness 50% and Picture to “MINIMUM”.
4. Press 1 (or 4) to select WHBL 010 “SBRT”.
5. 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.
6. Press MUTING then 0 to write into memory.

Geometry Adjustment

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

General Setting

1. Input Monoscope or Special Color Bar (SPCB) signal using a pattern generator.
2. Access Service Mode.
3. Select the category item that needs adjusting by pressing 1 or 4
4. Press 3 to increase the data value, or 6 to decrease the data value.
5. 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

1. Input PAL signal 50Hz in the Service Mode.
2. Set Wide Mode to “OFF”.
3. Perform the below adjustments using the “General Setting” sequence.

Item No.	Function	Illustration
GEOM 013 (VPOS)	Vertical Shift	
GEOM 011 (VSIZ)	Vertical Amplitude	*Note: Adjust VSIZ to 12.4±(SPCB) 11.3±(PAL Monoscope) 11.5±(NTSC Monoscope)*
GEOM 000 (HPOS)	Horizontal Shift	
GEOM 009 (EWTZ)	EW Trapezoid	
GEOM 005 (HSIZ)	EW Width (EW)	*Note: Adjust HSIZ to 16.4±(SPCB) 14.6±(PAL Monoscope) 15.3±(NTSC Monoscope)*
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	

4. 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.
5. Complete the adjustment for NTSC 60Hz NORMAL MODE.
6. Set Wide mode to “OFF”.
7. Complete the adjustment items listed in the above table using the “General Setting” sequence.
8. 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.
9. 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	Functionality		Function	Initial Value							
Category	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	Functionality		Function	Initial Value							
Category	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								
	007	COL	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit								
	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	06	04
	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				

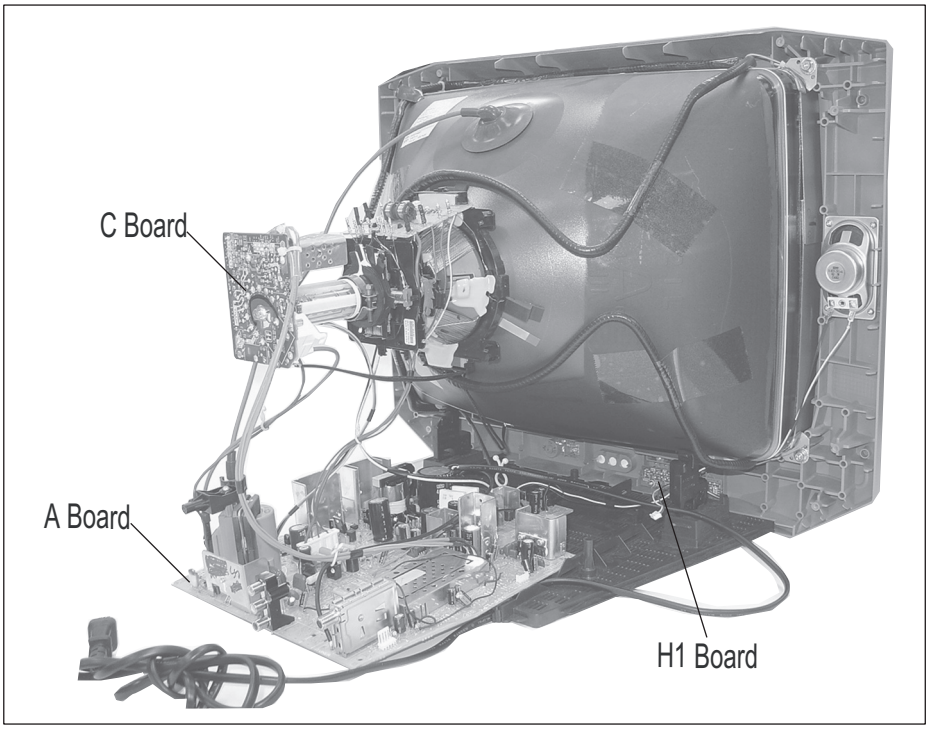
TVJ	Functionality		Function	Initial Value
Category	No.	Name		Common
OPTB	001	OPB1	Option 1 (System related)	8
	002	OPB2	Option 2 (Video Signal related)	9
	003	OPB3	Option 3 (Stereo Decoding related)	1
	004	OPB4	Option 4 (Miscellaneous)	0
	005	OPB5	Option 5 (Miscellaneous)	3
	006	OPB6	Option 6 (OSD Language 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



4-2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM INFORMATION

All capacitors are in µF unless otherwise noted. pF : µµF 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 :

$^{1}/_{4}$ W in resistance, $^{1}/_{10}$ W and $^{1}/_{8}$ W in chip resistance.

: nonflammable resistor.

: fusible resistor.

: internal component.

: panel designation and adjustment for repair.

: 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 impossibillity.

: B-line.

(Actual measured value may be different).

: signal path. (RF)

Circled numbers are waveform references.

The components identified by shading and ⚠ 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.

REFERENCE INFORMATION

RESISTOR

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

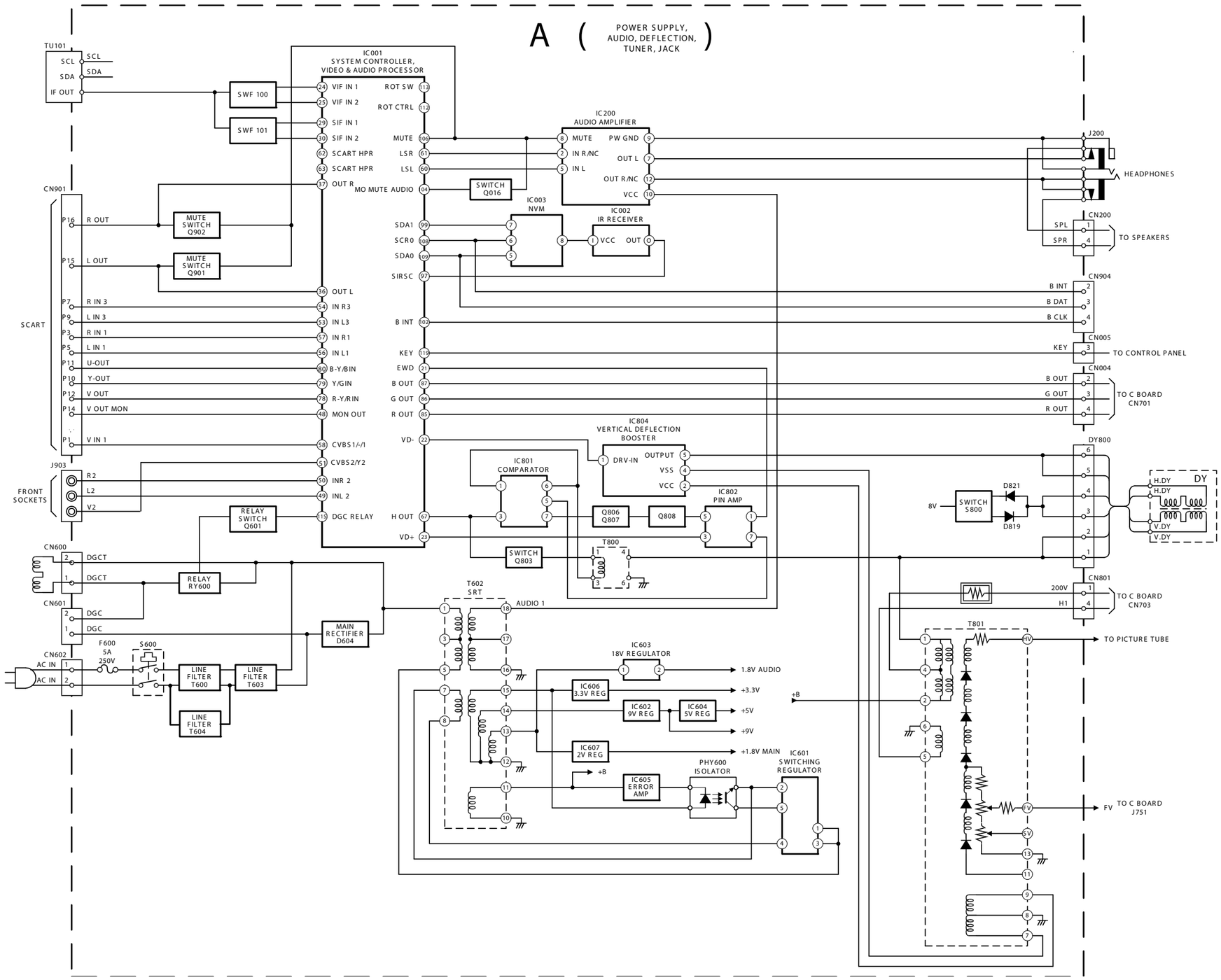
COIL

: LF-8L	MICRO INDUCTOR

CAPACITOR

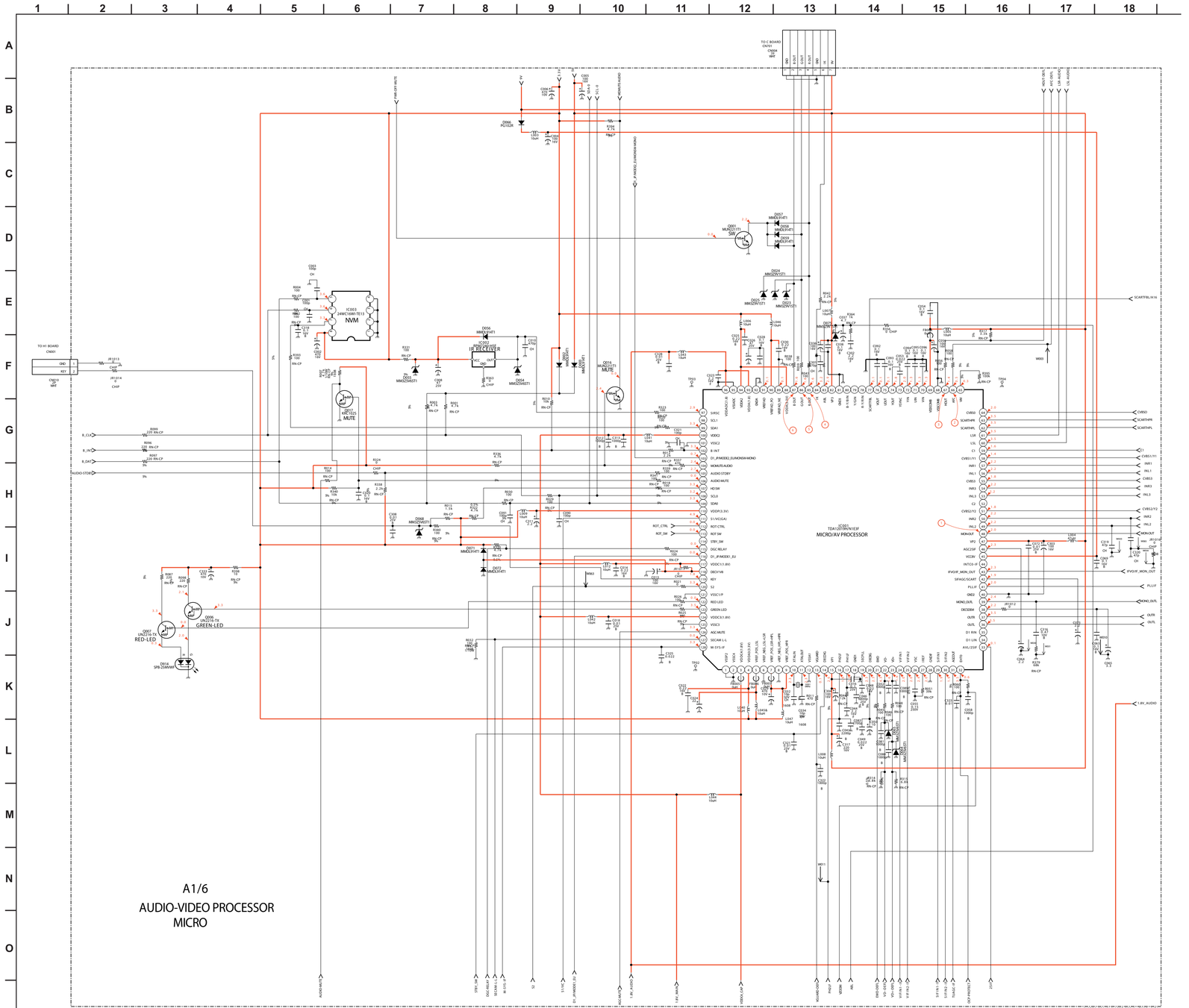
: TA	TANTALUM
: PS	STYROL
: PP	POLYPROPYLENE
: PT	MYLAR
: MPS	METALIZED POLYESTER
: MPP	METALIZED POLYPROPYLENE
: ALB	BIPOLAR
: ALT	HIGH TEMPERATURE
: ALR	HIGH RIPPLE

4-3. BLOCK DIAGRAM
SIGNAL FLOW BLOCK DIAGRAM



4-4. SCHEMATICS AND SUPPORTING INFORMATION

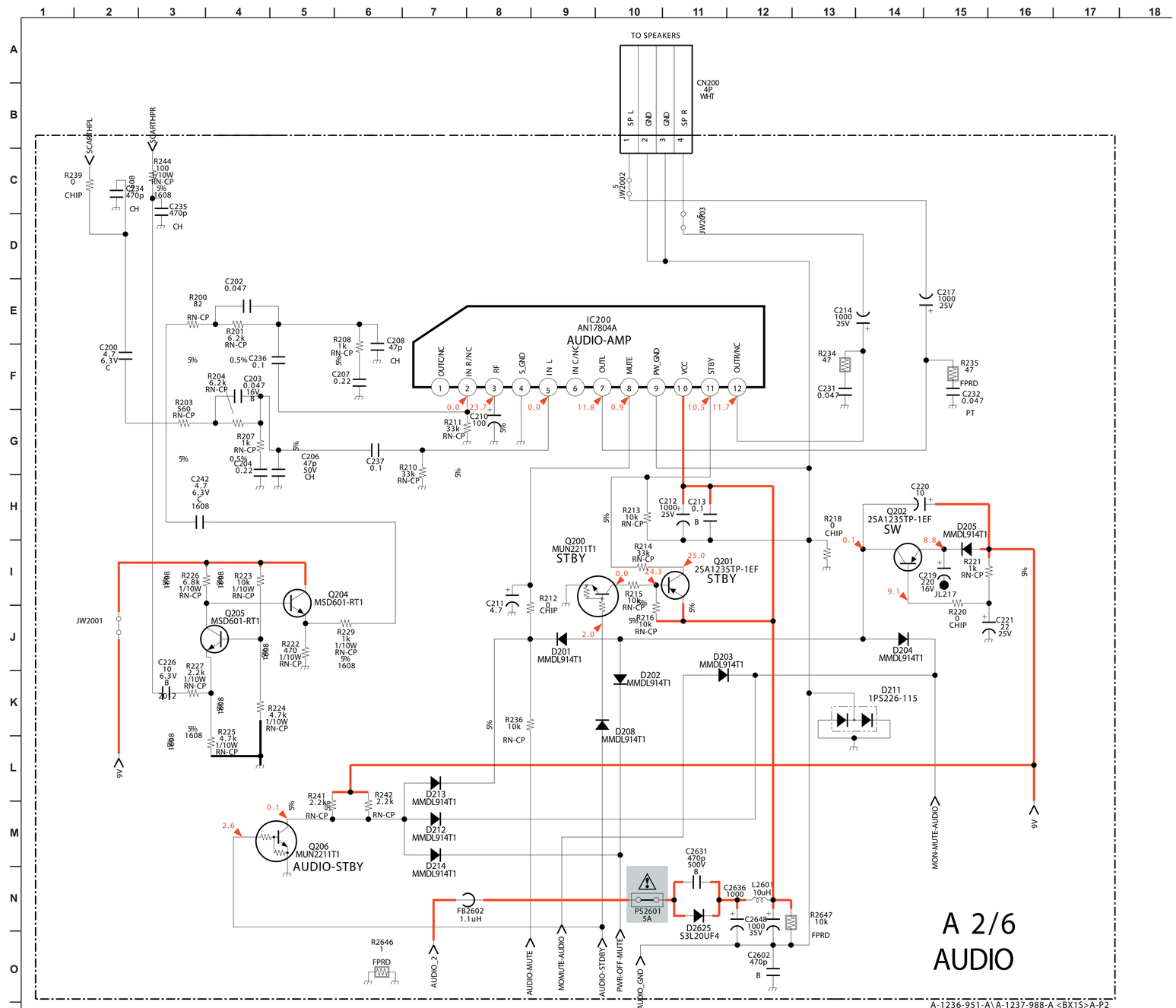
A BOARD SCHEMATIC DIAGRAM (1 OF 6)



A BOARD WAVEFORMS

1	2	3
2.5 Vp-p (V)	5.4 Vp-p (H)	3.2 Vp-p (H)
4	5	6
1.6 Vp-p (H)	1.8 Vp-p (H)	2.0 Vp-p (H)

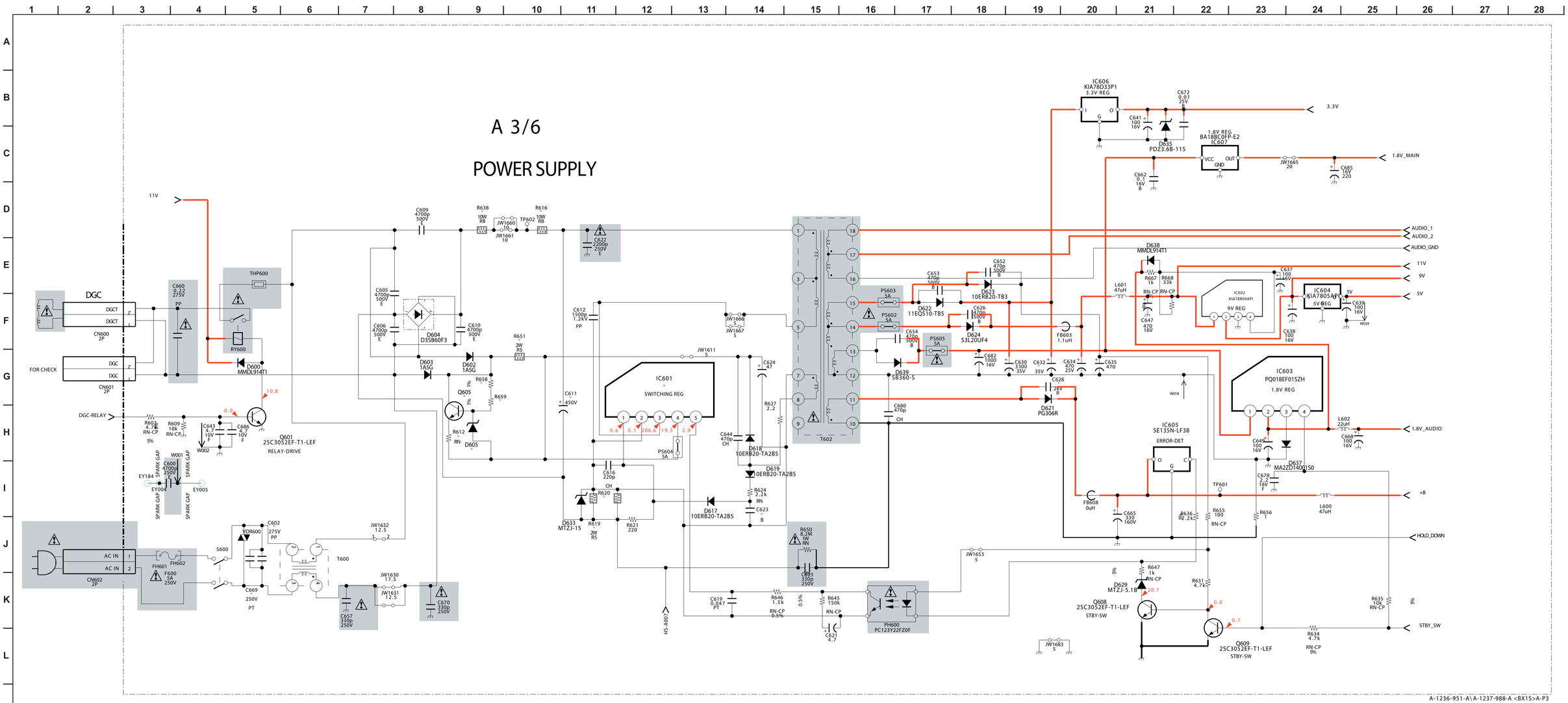
A BOARD SCHEMATIC DIAGRAM (2 OF 6)



A BOARD SCHEMATIC DIAGRAM (3 OF 6)

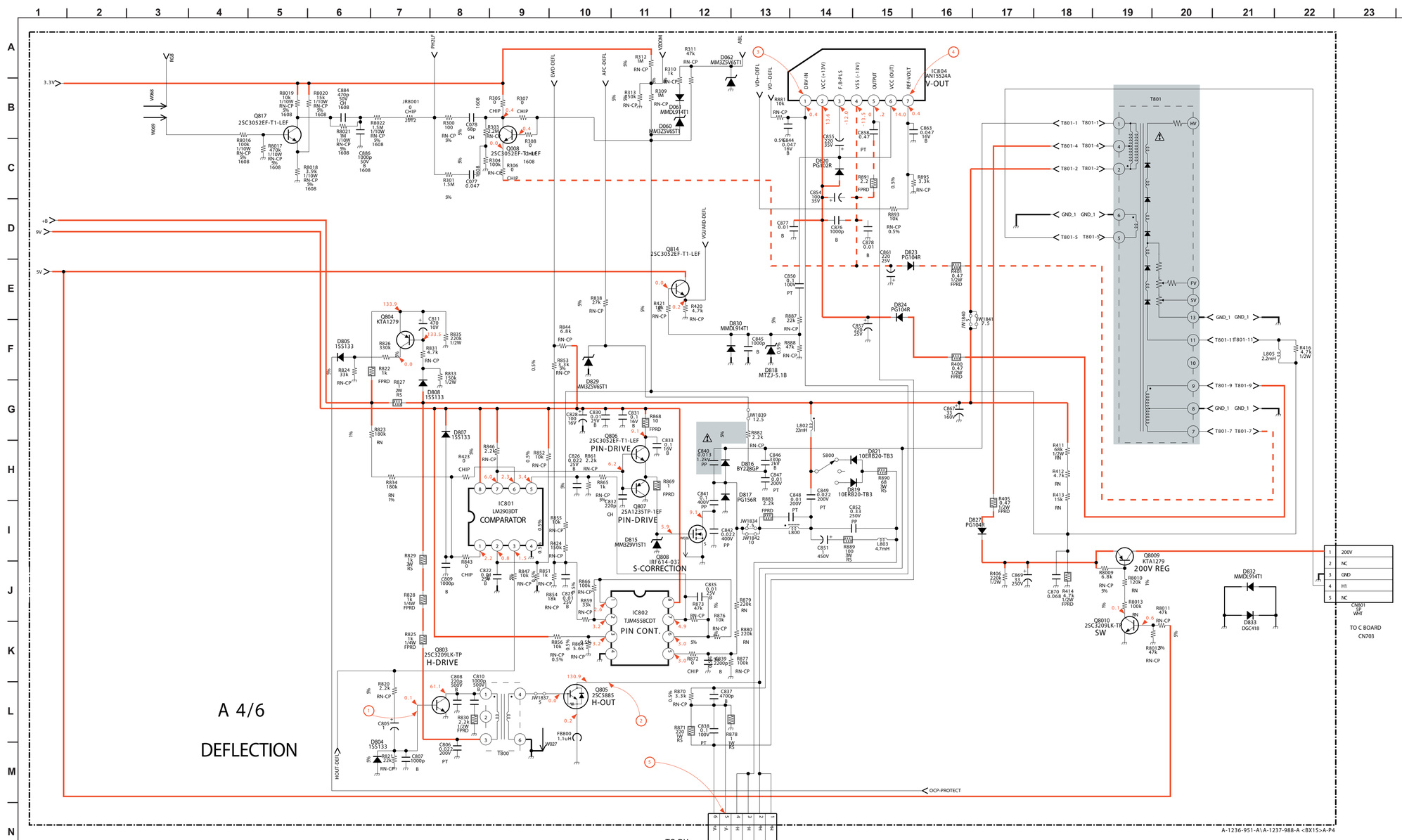
A 3/6

POWER SUPPLY

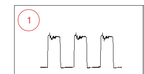
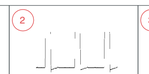
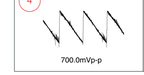


A-1236-951-A\A-1237-988-A <BX1S>A-P3

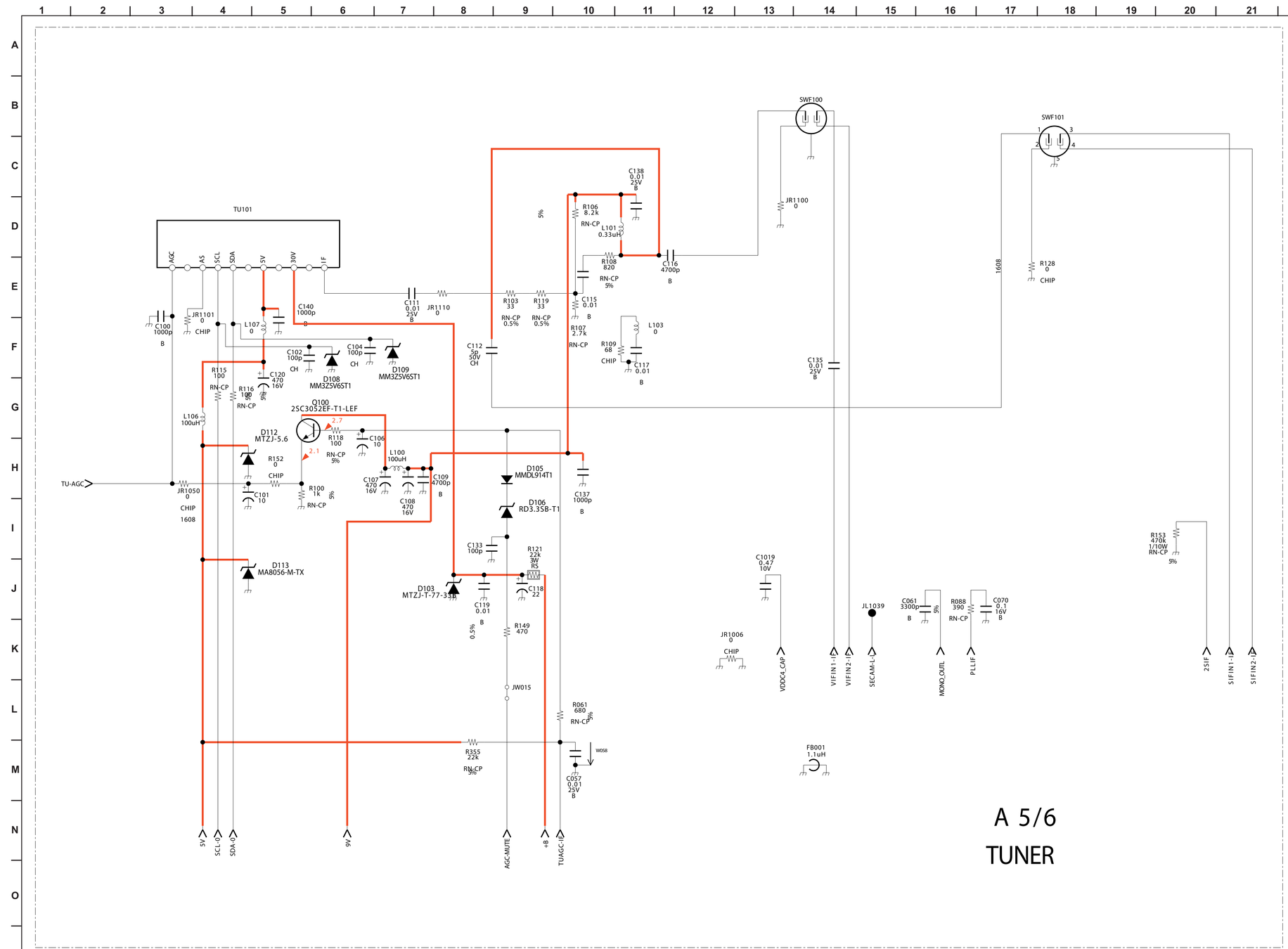
A BOARD SCHEMATIC DIAGRAM (4 OF 6)



A BOARD WAVEFORMS

1  1.40Vp-p	2  132.0Vp-p	3  660.0mVp-p
4  700.0mVp-p	5  1.50Vp-p	

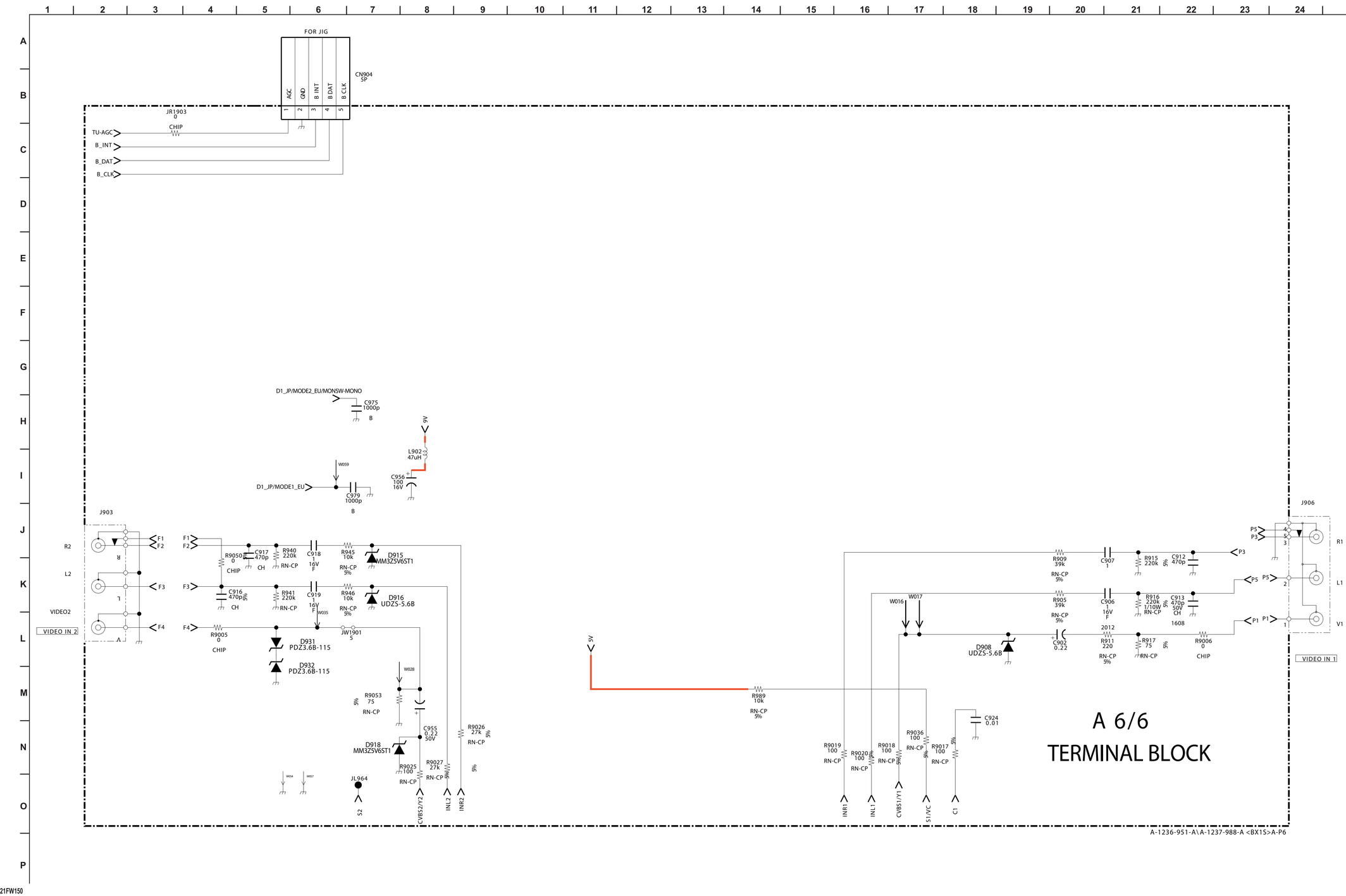
A BOARD SCHEMATIC DIAGRAM (5 OF 6)



A 5/6
TUNER

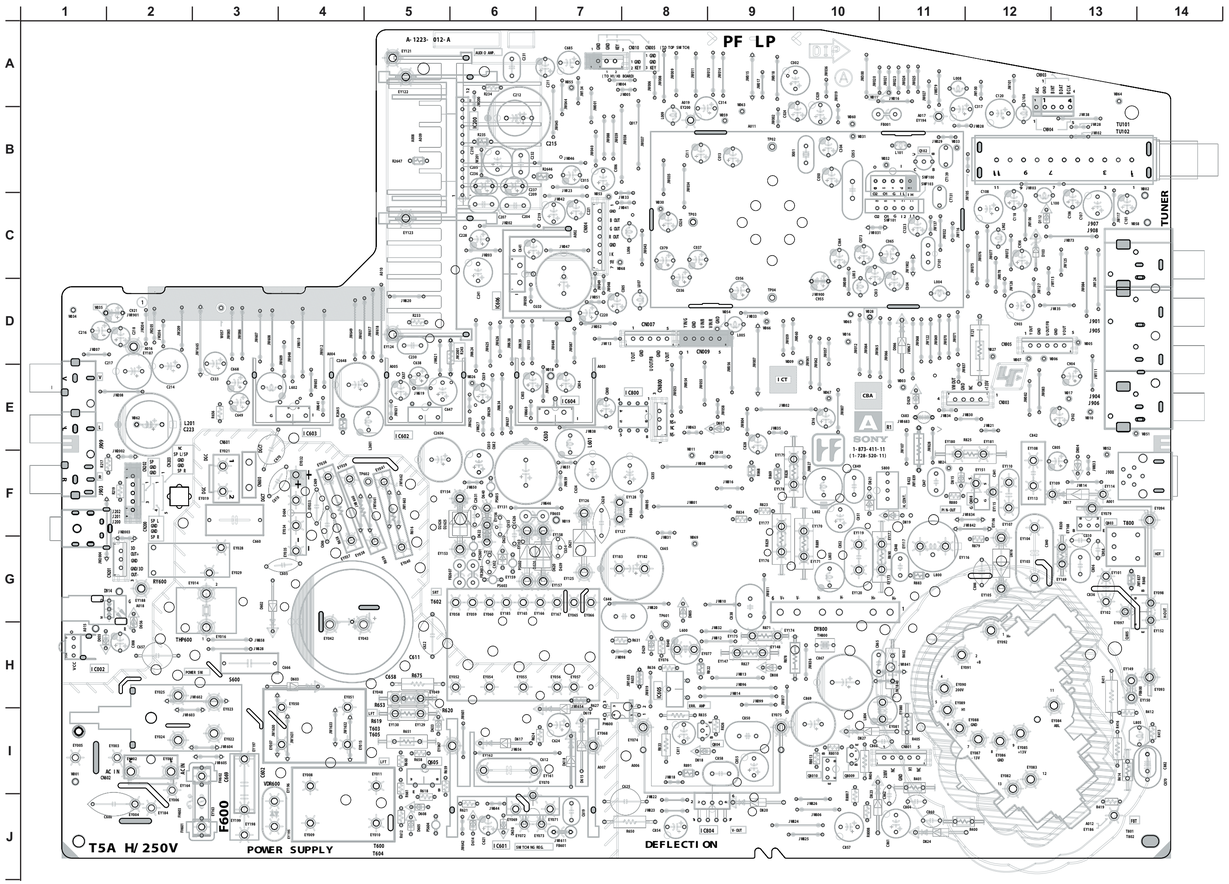
A-1236-951-A\ A-1237-988-A <BX1S>A-P5

A BOARD SCHEMATIC DIAGRAM (6 OF 6)



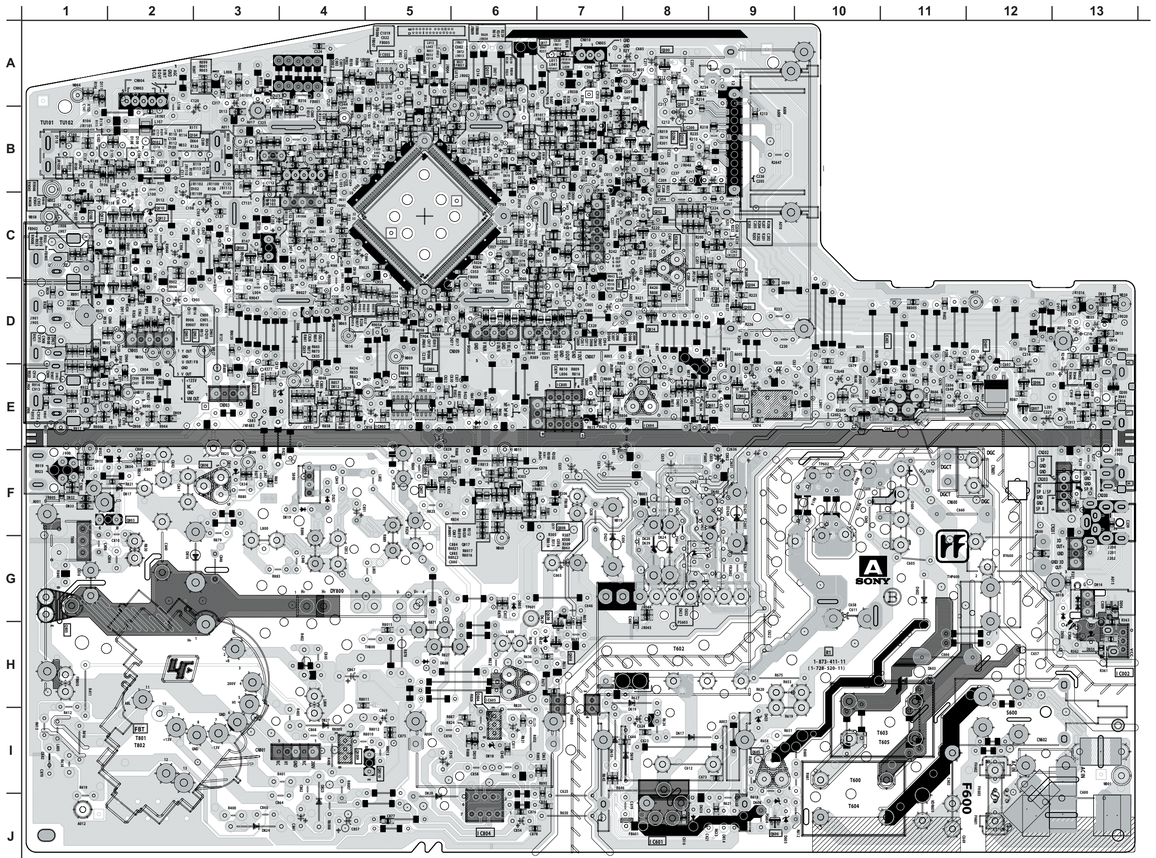
A [AUDIO-VIDEO PROCESSOR, MICRO, AUDIO, POWER SUPPLY, DEFLECTION, TUNER, TERMINAL BLOCK]

COMPONENT SIDE



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

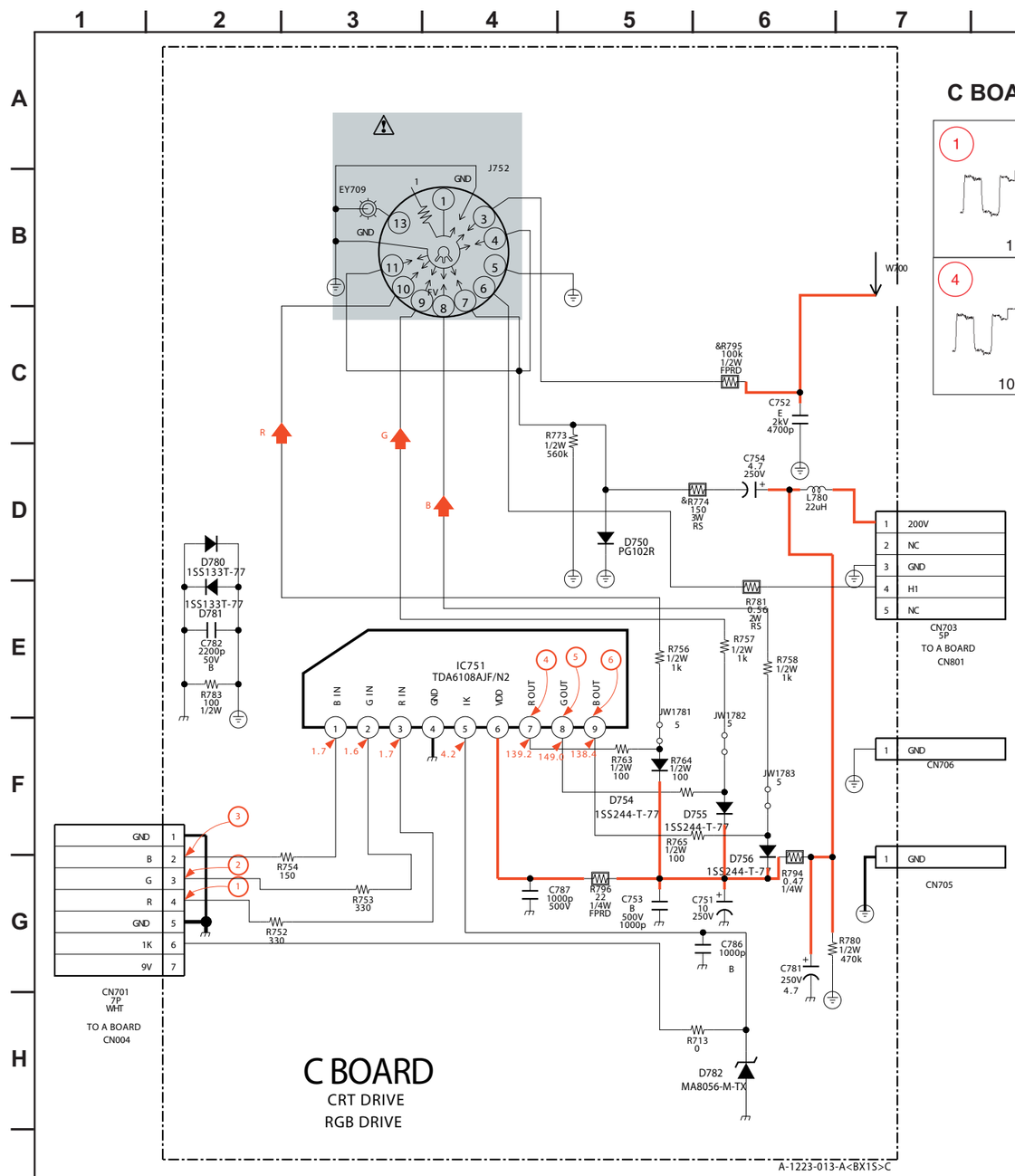
CONDUCTOR SIDE



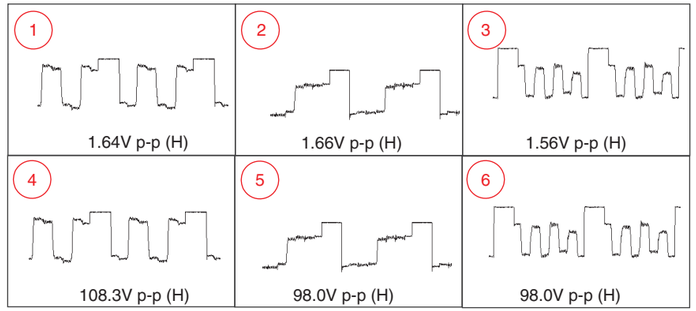
A BOARD LOCATOR LIST

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

C BOARD SCHEMATIC DIAGRAM

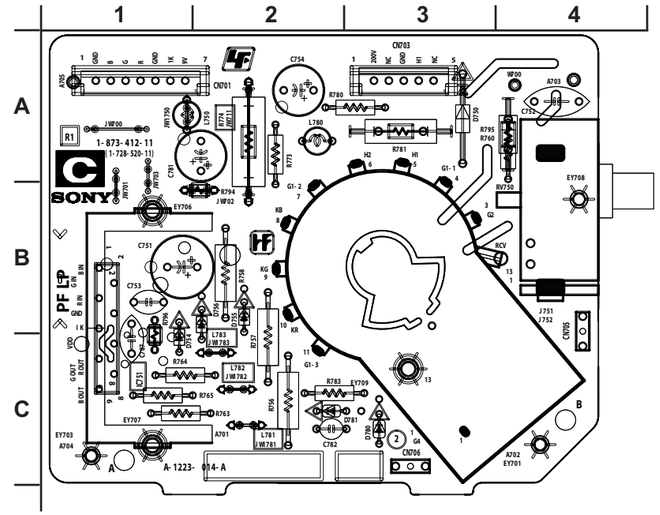


C BOARD WAVEFORMS



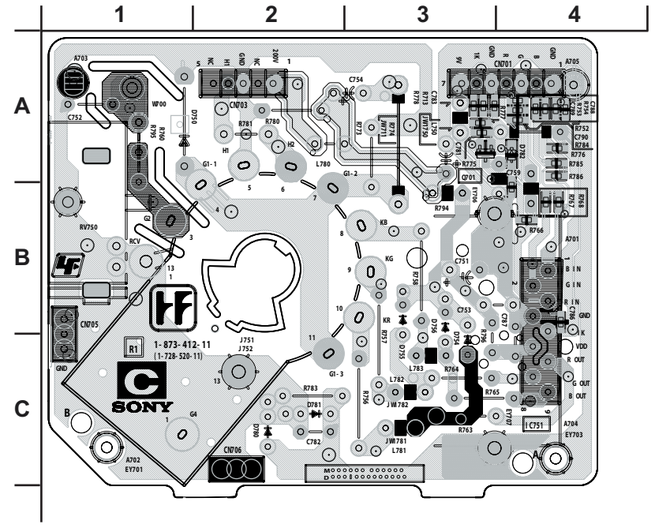
C [CRT DRIVE, RGB DRIVE]

COMPONENT SIDE

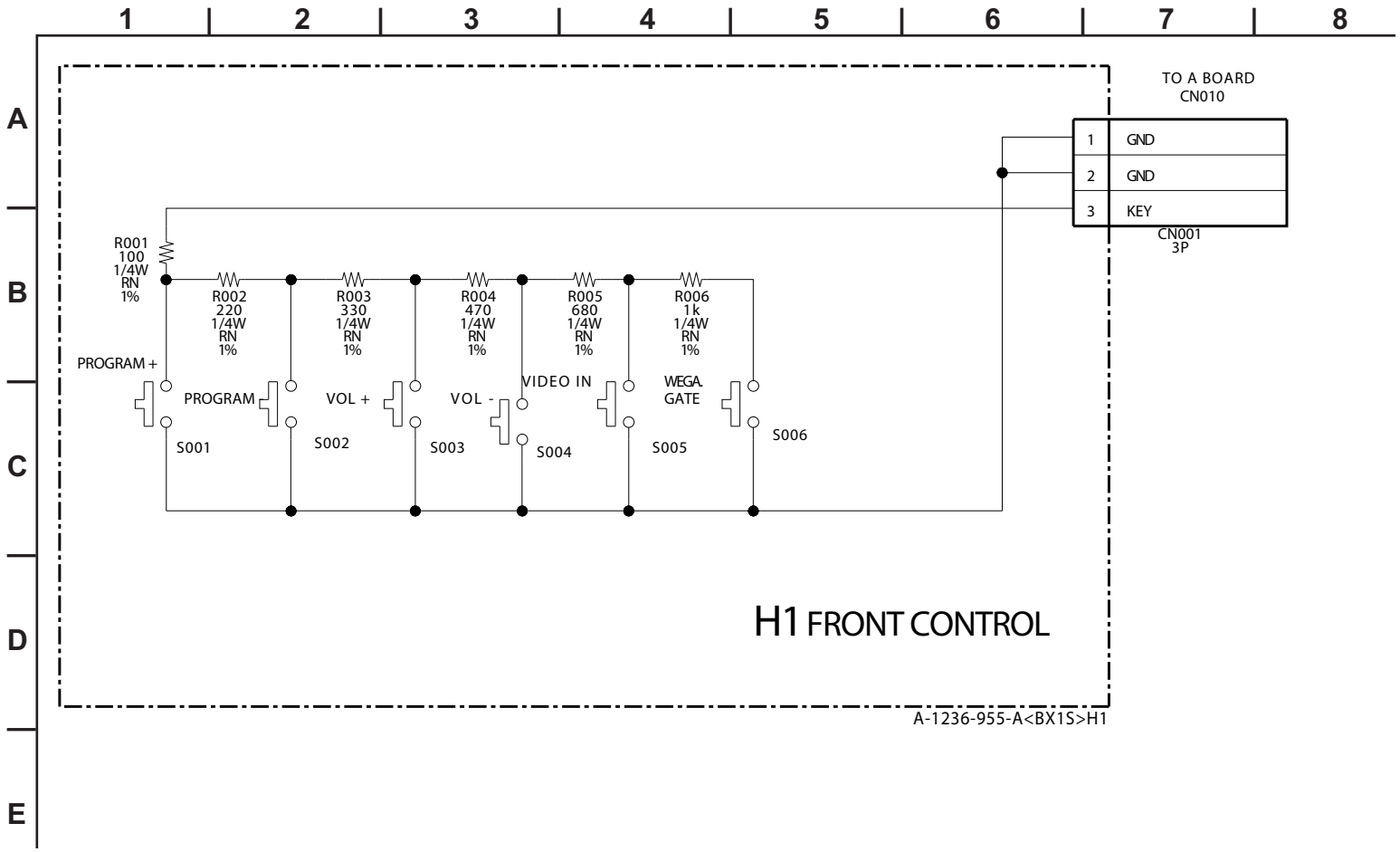


C [CRT DRIVE, RGB DRIVE]

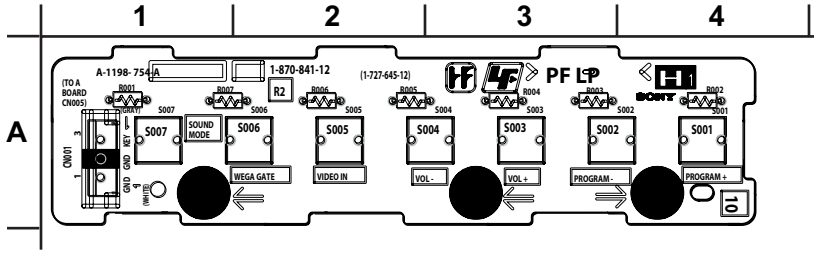
CONDUCTOR SIDE



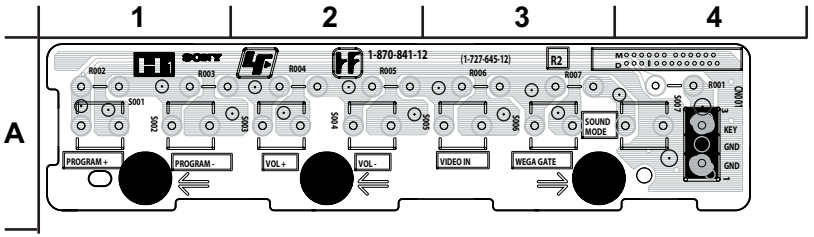
H1 BOARD SCHEMATIC DIAGRAM



H1 [FRONT CONTROL] COMPONENT SIDE

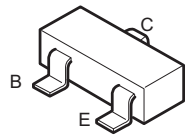


H1 [FRONT CONTROL] CONDUCTOR SIDE

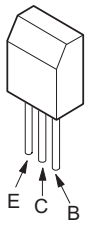


4-5. SEMICONDUCTORS

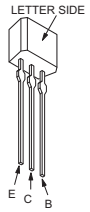
2SB709A-QRS-TX
2SD601A-QRS-TX



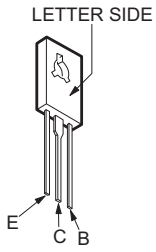
2SB734-T-34
2SC3209LK-TP



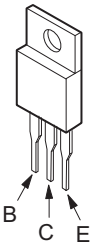
2SA1309A-QRSTA
2SC3311A-QRSTA
2SD2144S-TP-UVW



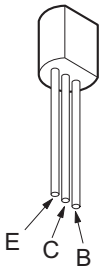
2SC3840K



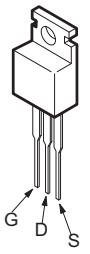
2SA1837



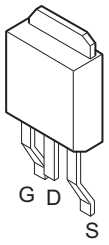
2SA1091O-TPE2



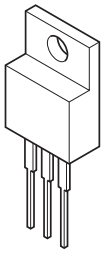
IRF614



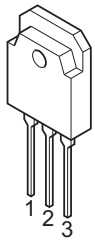
2SK2663



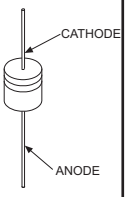
2SC4793



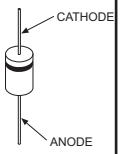
2SD2578-YB



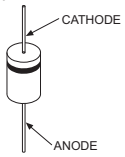
ERA38-06TP1
ERA82-004TP5
1SS133T-77
D1NS0R-TA
MTZJ-T-77-12C
MTZJ-T-77-15B
MTZJ-T-77-33B
MTZJ-T-77-39



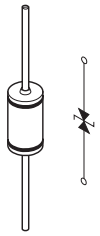
RU-1P
ERC06-15S
EGP20DPKG23
MTZJ-T-77-5.1C
MTZJ-T-77-5.6C
MTZJ-T-77-7.5A
MTZJ-T-77-10B
MTZJ-T-77-30D
RGP10-GPKG3
RGP02-17PKG23
RGP15GPKG23



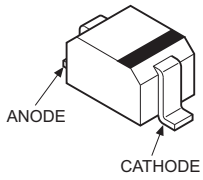
ERB44-06TP1
1SS83TD
GP08DPKG23
RGP10GPKG23
RU4AM-T3



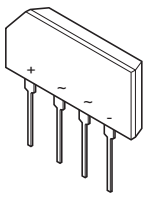
RD9.1EW-T1



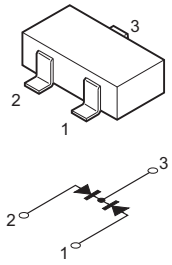
MA111-TX
UDZ-TE-17.5.1B
UDZ-TE-17.91B



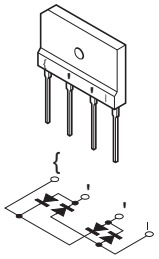
D2SB60A-F04



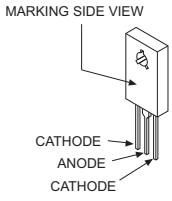
DAP202K-T-146



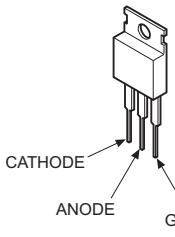
D4SB60L-F



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.

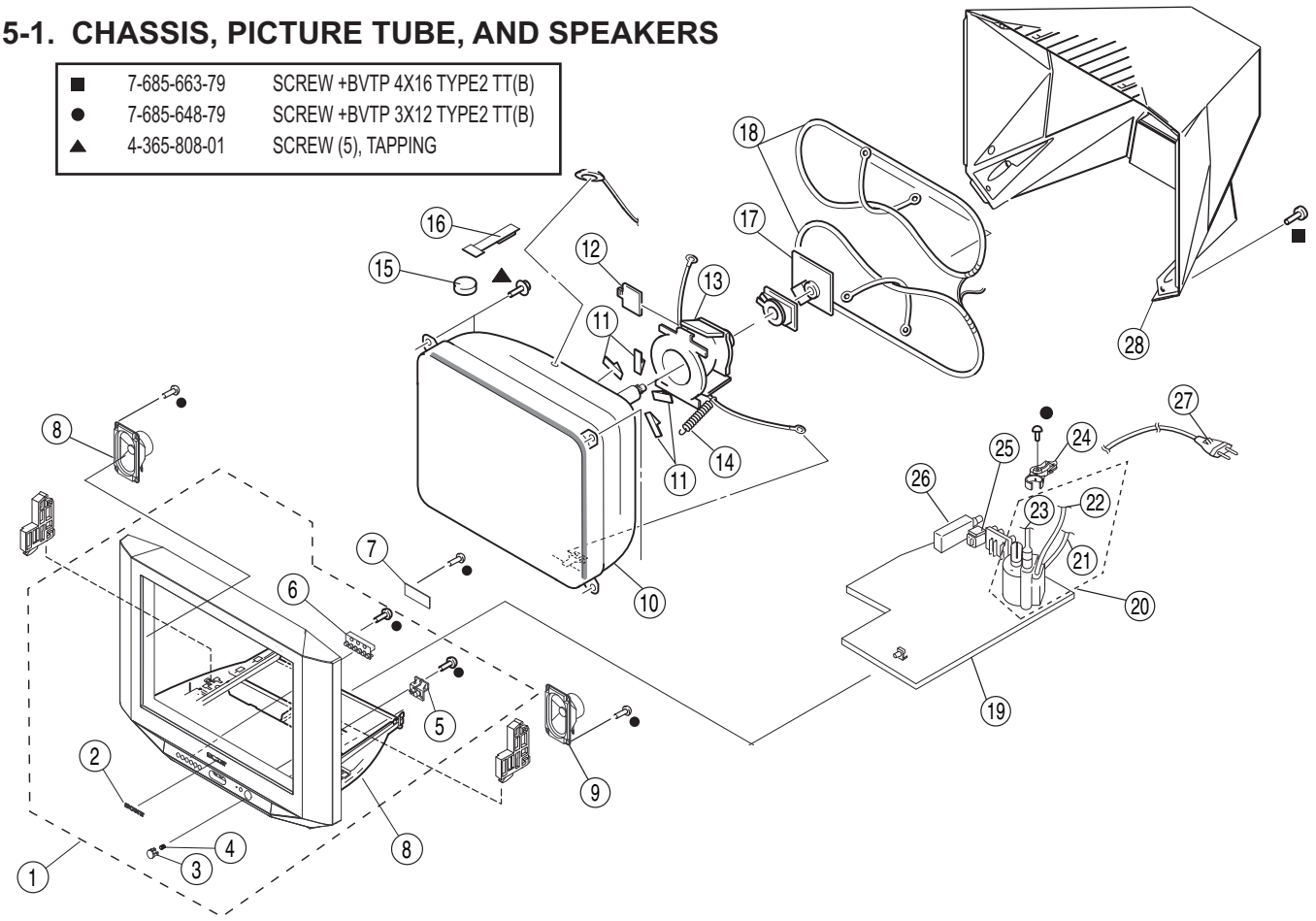
The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

*** 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. CHASSIS, PICTURE TUBE, AND SPEAKERS

■	7-685-663-79	SCREW +BVTP 4X16 TYPE2 TT(B)
●	7-685-648-79	SCREW +BVTP 3X12 TYPE2 TT(B)
▲	4-365-808-01	SCREW (5), TAPPING



	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
	1	X-2176-706-1	BEZNET ASSY (21FW)	[2-6]
	2	4-046-161-21	EMBLEM, SONY NO.8	
	3	2-894-435-11	BUTTON, POWER (21FW)	
	4	4-036-405-11	SPRING, COMPRESSION	
*	5	2-894-437-01	GUIDE, LIGHT (21FW)	
	6	2-894-436-11	BUTTON, MULTI (21FW)	
*	7	A-1236-955-A	H1 (VAR) BOARD, MOUNTED	
*	8	2-894-434-01	BRACKET, PWB (21FW)	
	9	1-825-293-41	LOUDSPEAKER (5X9 CM)	
⚠	10	8-738-873-05	CRT 21RSN2(FOR ME) A51LPT**X	
	11	4-046-600-11	SPACER, DY	
	12	4-057-714-01	PIECE ASSY, TLH CORRECTION	
⚠	13	8-451-505-61	DY Y21RSA-S3	
	14	4-095-706-01	SPRING, EXTENSION	
	15	1-452-032-00	MAGNET,DISC	
	16	4-094-690-01	PIECE A(90), CONV. CORRECT	
*	17	A-1223-013-A	C (VAR) BOARD, MOUNTED	
⚠	18	1-456-153-21	DEGAUSSING COIL	

	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
*	19	A-1236-951-A	A BOARD, COMPLETE (KV-21FW150 LATIN NORTH ONLY)	
			The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately. [See 21-23]	
*	19	A-1237-988-A	A BOARD, COMPLETE (KV-21FW150 LATIN SOUTH ONLY)	
			The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately. [See 21-23]	
⚠	20	1-453-482-21	FBT ASSY NX-4800//M3A4	[21-23]
⚠	21	1-910-027-23	LEAD ASSY, FOCUS	
⚠	22	1-910-034-21	LEAD ASSY, G2	
⚠	23	1-417-664-21	HIGH-VOLTAGE CAP ASSY	
*	24	2-681-320-01	BRACKET, FBT	
	25	4-022-115-00	HOLDER, AC CORD	
	26	1-693-729-11	TUNER	
⚠	27	1-833-044-11	CORD, AC POWER(WITH CONNECTOR) (KV-21FW150 LATIN NORTH ONLY)	
⚠	27	1-824-968-11	POWER CORD (WITH CONNECTOR) (KV-21FW150 LATIN SOUTH ONLY)	
	28	2-894-433-01	COVER, REAR (21FW)	

SECTION 6: ELECTRICAL PARTS LIST

NOTE: The components identified by shading and ⚠ 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
A			
*	A-1236-951-A	A BOARD, COMPLETE (KV-21FW150 LATIN NORTH ONLY)	
*	A-1237-988-A	A BOARD, COMPLETE (KV-21FW150 LATIN SOUTH ONLY)	
		The high-voltage leads associated with the FBT on these A Boards are not included and must be ordered separately.	
⚠	1-910-027-23	LEAD ASSY, FOCUS	
⚠	1-910-034-21	LEAD ASSY, G2	
⚠	1-417-664-21	HIGH-VOLTAGE CAP ASSY	
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	4-382-854-21	SCREW (M3X14), P, SW (+)	
* A015	4-055-304-01	HOLDER, LED	
		CAPACITOR	
C001	1-162-927-11	CERAMIC CHIP	100pF 5% 50V
C002	1-126-935-11	ELECT	470µF 20% 16V
C003	1-162-927-11	CERAMIC CHIP	100pF 5% 50V
C004	1-126-933-11	ELECT	100µF 20% 16V
C005	1-126-933-11	ELECT	100µF 20% 16V
C006	1-126-925-91	ELECT	470µF 20% 10V
C008	1-126-947-11	ELECT	47µF 20% 35V
C010	1-164-315-11	CERAMIC CHIP	470pF 5% 50V
C013	1-126-933-11	ELECT	100µF 20% 16V
C014	1-127-715-91	CERAMIC CHIP	0.22µF 10% 16V
C016	1-164-156-11	CERAMIC CHIP	0.1µF 25V
C018	1-162-970-11	CERAMIC CHIP	0.01µF 10% 25V
C020	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C021	1-162-927-11	CERAMIC CHIP	100pF 5% 50V
C022	1-127-715-91	CERAMIC CHIP	0.22µF 10% 16V
C023	1-164-505-11	CERAMIC CHIP	2.2µF 16V
C024	1-126-965-91	ELECT	22µF 20% 50V
C025	1-127-715-91	CERAMIC CHIP	0.22µF 10% 16V
C026	1-126-947-11	ELECT	47µF 20% 35V
C028	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C029	1-126-925-91	ELECT	470µF 20% 10V
C030	1-127-715-91	CERAMIC CHIP	0.22µF 10% 16V
C036	1-126-933-11	ELECT	100µF 20% 16V
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
C044	1-164-505-11	CERAMIC CHIP	2.2µF 16V
C046	1-162-969-11	CERAMIC CHIP	0.0068µF 10% 25V
C048	1-127-715-91	CERAMIC CHIP	0.22µF 10% 16V
C049	1-164-227-11	CERAMIC CHIP	0.022µF 10% 25V
C050	1-126-964-11	ELECT	10µF 20% 50V
C052	1-162-964-11	CERAMIC CHIP	0.001µF 10% 50V
C053	1-164-227-11	CERAMIC CHIP	0.022µF 10% 25V
C054	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C055	1-100-829-11	FILM	0.15µF 5% 250V
C056	1-126-933-11	ELECT	100µF 20% 16V
C057	1-162-970-11	CERAMIC CHIP	0.01µF 10% 25V
C058	1-162-964-11	CERAMIC CHIP	0.001µF 10% 50V
C061	1-162-967-11	CERAMIC CHIP	0.0033µF 10% 50V
C063	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C064	1-126-961-11	ELECT	2.2µF 20% 50V
C065	1-126-962-11	ELECT	3.3µF 20% 50V
C069	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C070	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C072	1-162-970-11	CERAMIC CHIP	0.01µF 10% 25V
C073	1-126-961-11	ELECT	2.2µF 20% 50V
C077	1-165-176-11	CERAMIC CHIP	0.047µF 10% 16V
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

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

A

REF. NO.	PART NO.	DESCRIPTION	VALUES		
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
C091	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C092	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C093	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C094	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C095	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C096	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C100	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C101	1-126-964-11	ELECT	10µF	20%	50V
C102	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C104	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C106	1-126-964-11	ELECT	10µF	20%	50V
C107	1-126-935-11	ELECT	470µF	20%	16V
C108	1-126-935-11	ELECT	470µF	20%	16V
C109	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C111	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C112	1-162-910-11	CERAMIC CHIP	5pF	0.25pF	50V
C115	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C116	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C117	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C118	1-126-965-91	ELECT	22µF	20%	50V
C119	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C120	1-126-935-11	ELECT	470µF	20%	16V
C133	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C135	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C137	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C138	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C140	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C200	1-100-507-91	CERAMIC CHIP	4.7µF	20%	6.3V
C202	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C203	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C204	1-137-190-91	FILM	0.22µF	5%	50V
C206	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C207	1-137-190-91	FILM	0.22µF	5%	50V
C208	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C210	1-126-968-11	ELECT	100µF	20%	50V
C211	1-126-963-11	ELECT	4.7µF	20%	50V
C212	1-126-942-61	ELECT	1000µF	20%	25V
C213	1-115-339-11	CERAMIC CHIP	0.1µF	10%	50V
C214	1-126-942-61	ELECT	1000µF	20%	25V
C217	1-126-942-61	ELECT	1000µF	20%	25V
C219	1-126-934-11	ELECT	220µF	20%	16V
C220	1-126-964-11	ELECT	10µF	20%	50V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C226	1-165-989-11	CERAMIC CHIP	10µF	10%	6.3V
C231	1-137-374-11	MYLAR	0.047µF	5%	50V
C232	1-137-374-11	MYLAR	0.047µF	5%	50V
C234	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C235	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C236	1-130-495-00	MYLAR	0.1µF	5%	50V
C237	1-130-495-00	MYLAR	0.1µF	5%	50V
C242	1-100-507-91	CERAMIC CHIP	4.7µF	20%	6.3V
C301	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C302	1-164-505-11	CERAMIC CHIP	2.2µF		16V
C303	1-126-933-11	ELECT	100µF	20%	16V
C304	1-126-933-11	ELECT	100µF	20%	16V
C308	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C311	1-126-961-11	ELECT	2.2µF	20%	50V
C312	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C313	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C316	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C317	1-126-934-11	ELECT	220µF	20%	16V
C318	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C319	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C320	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C321	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C322	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C323	1-112-034-91	CERAMIC CHIP	0.01µF	5%	50V
C325	1-164-227-11	CERAMIC CHIP	0.022µF	10%	25V
C328	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C333	1-126-925-91	ELECT	470µF	20%	10V
⚠ C600	1-119-895-51	CERAMIC	4700pF	20%	250V
⚠ C602	1-165-538-31	FILM	0.1µF	10%	275V
		(KV-21FW150 LATIN SOUTH ONLY)			
C605	1-161-830-00	CERAMIC	0.0047µF	99%	500V
C606	1-161-830-00	CERAMIC	0.0047µF	99%	500V
C609	1-161-830-00	CERAMIC	0.0047µF	99%	500V
C610	1-161-830-00	CERAMIC	0.0047µF	99%	500V
C611	1-165-922-11	ELECT(BLOCK)	470µF	20%	250V
		(KV-21FW150 LATIN NORTH ONLY)			
C611	1-117-751-11	ELECT(BLOCK)	220µF	20%	450V
		(KV-21FW150 LATIN SOUTH ONLY)			
C612	1-117-623-11	FILM	1500pF	3%	1.2KV
C616	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C619	1-130-491-00	MYLAR	0.047µF	5%	50V
C621	1-126-963-11	ELECT	4.7µF	20%	50V
⚠ C622	1-119-888-51	CERAMIC	2200pF	20%	250V

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

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	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	C623	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
			(KV-21FW150 LATIN NORTH ONLY)			
	C623	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
			(KV-21FW150 LATIN SOUTH ONLY)			
	C624	1-126-967-11	ELECT	47µF	20%	50V
⚠	C625	1-127-943-51	CERAMIC	330pF	10%	250V
	C626	1-102-228-00	CERAMIC	470pF	10%	500V
	C628	1-117-768-91	CERAMIC	470pF	10%	2KV
			(KV-21FW150 LATIN NORTH ONLY)			
	C628	1-125-772-91	CERAMIC	1500pF	10%	2KV
			(KV-21FW150 LATIN SOUTH ONLY)			
	C630	1-128-549-11	ELECT	3300µF	20%	35V
	C632	1-126-953-11	ELECT	2200µF	20%	35V
			(KV-21FW150 LATIN NORTH ONLY)			
	C632	1-126-952-11	ELECT	1000µF	20%	35V
			(KV-21FW150 LATIN SOUTH ONLY)			
	C634	1-126-941-11	ELECT	470µF	20%	25V
	C635	1-126-971-11	ELECT	470µF	20%	50V
	C637	1-126-933-11	ELECT	100µF	20%	16V
	C638	1-126-933-11	ELECT	100µF	20%	16V
	C639	1-126-933-11	ELECT	100µF	20%	16V
	C641	1-126-933-11	ELECT	100µF	20%	16V
	C643	1-117-720-11	CERAMIC CHIP	4.7µF		10V
	C644	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
	C647	1-126-935-11	ELECT	470µF	20%	16V
	C649	1-126-933-11	ELECT	100µF	20%	16V
	C652	1-102-228-00	CERAMIC	470pF	10%	500V
	C653	1-102-228-00	CERAMIC	470pF	10%	500V
	C654	1-102-228-00	CERAMIC	470pF	10%	500V
⚠	C657	1-127-943-51	CERAMIC	330pF	10%	250V
⚠	C660	1-165-539-31	FILM	0.22µF	10%	275V
	C662	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	C665	1-110-626-11	ELECT	330µF	20%	160V
	C668	1-126-933-11	ELECT	100µF	20%	16V
	C669	1-165-530-31	MYLAR	0.47µF	10	0V
			(KV-21FW150 LATIN NORTH ONLY)			
⚠	C670	1-127-943-51	CERAMIC	330pF	10%	250V
	C672	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C678	1-164-505-11	CERAMIC CHIP	2.2µF		16V
	C680	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
	C682	1-115-466-91	ELECT	1000µF	20%	16V
	C685	1-126-934-11	ELECT	220µF	20%	16V
	C686	1-117-720-11	CERAMIC CHIP	4.7µF		10V
	C805	1-126-960-11	ELECT	1µF	20%	50V
	C806	1-106-375-12	MYLAR	0.022µF	5%	200V

	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	C807	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C808	1-102-244-00	CERAMIC	220pF	10%	500V
	C809	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C810	1-112-472-11	CERAMIC	0.001µF	10%	500V
	C811	1-126-925-91	ELECT	470µF	20%	10V
	C822	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C825	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C826	1-164-227-11	CERAMIC CHIP	0.022µF	10%	25V
	C828	1-126-933-11	ELECT	100µF	20%	16V
	C830	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C831	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	C832	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
	C833	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	C835	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C837	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
	C838	1-106-220-00	MYLAR	0.1µF	10%	100V
	C839	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
⚠	C840	1-117-647-21	FILM	13000pF	3%	1.2KV
	C841	1-107-846-11	FILM	0.1µF	5%	400V
	C842	1-100-122-21	FILM	0.022µF	5%	400V
	C844	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
	C845	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C846	1-131-984-91	CERAMIC	330pF	10%	2KV
	C847	1-107-364-11	MYLAR	0.01µF	10%	200V
	C848	1-107-364-11	MYLAR	0.01µF	10%	200V
	C849	1-106-375-12	MYLAR	0.022µF	5%	200V
	C850	1-106-220-00	MYLAR	0.1µF	10%	100V
	C851	1-107-675-11	ELECT	1µF	20%	450V
	C852	1-117-665-11	FILM	0.33µF	5%	250V
	C854	1-126-948-11	ELECT	100µF	20%	35V
	C855	1-107-894-11	ELECT	220µF	20%	35V
	C857	1-104-666-11	ELECT	220µF	20%	25V
	C858	1-137-959-91	MYLAR	0.47µF	5%	100V
	C861	1-104-666-11	ELECT	220µF	20%	25V
	C863	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
	C867	1-165-441-81	ELECT	33µF	20%	160V
	C869	1-107-654-11	ELECT	33µF	20%	250V
	C870	1-106-387-00	MYLAR	0.068µF	10%	200V
	C876	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C877	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C878	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C884	1-164-315-11	CERAMIC CHIP	470pF	5%	50V

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	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	C886	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C902	1-126-957-11	ELECT	0.22µF	20%	50V
	C906	1-164-346-11	CERAMIC CHIP	1µF		16V
	C907	1-164-346-11	CERAMIC CHIP	1µF		16V
	C912	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
	C913	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
	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
	C924	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C955	1-126-957-11	ELECT	0.22µF	20%	50V
	C956	1-126-933-11	ELECT	100µF	20%	16V
	C967	1-164-505-11	CERAMIC CHIP	2.2µF		16V
	C975	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C979	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C1019	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
	C2602	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
	C2631	1-102-228-00	CERAMIC	470pF	10%	500V
	C2636	1-126-972-11	ELECT	1000µF	20%	50V
	C2648	1-126-952-11	ELECT	1000µF	20%	35V
		CONNECTOR				
*	CN005	1-564-506-11	PLUG, CONNECTOR		3P	
*	CN200	1-564-507-11	PLUG, CONNECTOR		4P	
*	CN600	1-508-786-00	PIN, CONNECTOR (5MM PITCH)		2P	
⚠	CN602	1-580-843-11	PIN, CONNECTOR (POWER)			
*	CN801	1-564-508-11	PLUG, CONNECTOR		5P	
*	CN904	1-508-743-00	PIN, CONNECTOR		5P	
		DIODE				
	D002	8-719-404-50	DIODE	MA111-TX		
	D003	8-719-404-50	DIODE	MA111-TX		
	D023	8-719-422-97	DIODE	MA8091-M		
	D024	8-719-422-97	DIODE	MA8091-M		
	D025	8-719-422-97	DIODE	MA8091-M		
	D054	8-719-977-03	DIODE	DTZ5.6B		
	D055	8-719-109-89	DIODE	RD5.6ESB2		
	D056	8-719-991-33	DIODE	1SS133T-77		
	D057	8-719-404-50	DIODE	MA111-TX		
	D058	8-719-404-50	DIODE	MA111-TX		
	D059	8-719-404-50	DIODE	MA111-TX		
	D060	8-719-977-03	DIODE	DTZ5.6B		

REF. NO.	PART NO.	DESCRIPTION	VALUES
D061	8-719-404-50	DIODE	MA111-TX
D062	8-719-977-03	DIODE	DTZ5.6B
D064	8-719-977-03	DIODE	DTZ5.6B
D065	8-719-977-03	DIODE	DTZ5.6B
D066	8-719-083-20	DIODE	PG102R
D068	8-719-977-03	DIODE	DTZ5.6B
D071	8-719-404-50	DIODE	MA111-TX
D072	8-719-404-50	DIODE	MA111-TX
D075	8-719-422-97	DIODE	MA8091-M
D103	8-719-036-43	DIODE	MA4300-H(TA)
D105	8-719-404-50	DIODE	MA111-TX
D106	8-719-157-94	DIODE	RD3.3SB
D108	8-719-977-03	DIODE	DTZ5.6B
D109	8-719-977-03	DIODE	DTZ5.6B
D112	8-719-109-89	DIODE	RD5.6ESB2
D113	8-719-977-03	DIODE	DTZ5.6B
D201	8-719-404-50	DIODE	MA111-TX
D202	8-719-404-50	DIODE	MA111-TX
D203	8-719-404-50	DIODE	MA111-TX
D204	8-719-404-50	DIODE	MA111-TX
D205	8-719-404-50	DIODE	MA111-TX
D208	8-719-404-50	DIODE	MA111-TX
D211	8-719-062-51	DIODE	1PS226-115
D212	8-719-404-50	DIODE	MA111-TX
D213	8-719-404-50	DIODE	MA111-TX
D214	8-719-404-50	DIODE	MA111-TX
D600	8-719-404-50	DIODE	MA111-TX
D602	6-501-301-01	DIODE	1A5G
D603	6-501-301-01	DIODE	1A5G
D604	8-719-077-77	DIODE	D3SB60F3
D605	8-719-109-85	DIODE	RD5.1ESB2
		(KV-21FW150 LATIN SOUTH ONLY)	
D617	6-500-567-11	DIODE	10ERB20-TA2B5
D618	6-500-567-11	DIODE	10ERB20-TA2B5
D619	6-500-567-11	DIODE	10ERB20-TA2B5
D621	8-719-312-10	DIODE	RU4AM-T3
D622	8-719-085-37	DIODE	11EQS10-TB5
D623	6-500-567-31	DIODE	10ERB20-TB3
D624	8-719-510-73	DIODE	S3L20µF4
D629	8-719-109-85	DIODE	RD5.1ESB2
D633	8-719-923-86	DIODE	MTZJ-T-77-15
D635	6-501-588-01	DIODE	MA8036-H-TX
D637	8-719-072-70	DIODE	MA2ZD14001S0
D638	8-719-404-50	DIODE	MA111-TX
D639	6-501-311-01	DIODE	SB360-S

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	REF. NO.	PART NO.	DESCRIPTION	VALUES	
	D804	8-719-991-33	DIODE	1SS133T-77	
	D805	8-719-991-33	DIODE	1SS133T-77	
	D807	8-719-991-33	DIODE	1SS133T-77	
	D808	8-719-991-33	DIODE	1SS133T-77	
	D815	8-719-923-60	DIODE	MTZJ-T-77-9.1A	
	D816	6-501-402-01	DIODE	BY228GPL-5402E3/72	
	D817	6-501-302-01	DIODE	PG156R	
	D818	8-719-109-85	DIODE	RD5.1ESB2	
	D819	6-500-567-31	DIODE	10ERB20-TB3	
	D820	8-719-083-20	DIODE	PG102R	
	D821	6-500-567-31	DIODE	10ERB20-TB3	
	D823	8-719-074-25	DIODE	PG104R	
	D824	8-719-074-25	DIODE	PG104R	
	D827	8-719-074-25	DIODE	PG104R	
	D829	8-719-109-89	DIODE	RD5.6ESB2	
	D830	8-719-404-50	DIODE	MA111-TX	
	D832	8-719-404-50	DIODE	MA111-TX	
	D833	8-719-404-50	DIODE	MA111-TX	
	D908	8-719-977-03	DIODE	DTZ5.6B	
	D914	8-719-083-18	DIODE	SPB-25MVWF	
	D915	8-719-977-03	DIODE	DTZ5.6B	
	D916	8-719-977-03	DIODE	DTZ5.6B	
	D918	8-719-977-03	DIODE	DTZ5.6B	
	D931	6-501-588-01	DIODE	MA8036-H-TX	
	D932	6-501-588-01	DIODE	MA8036-H-TX	
	D2625	8-719-510-73	DIODE	S3L20µF4	
		DY CONNECTOR			
*	DY800	1-580-798-11	CONNECTOR PIN (DY)	6P	
		FUSE			
⚠	F600	1-576-232-51	FUSE	5A	250V
		FERRITE BEAD			
	FB001	1-410-397-21	FERRITE	1.1µH	
	FB005	1-469-981-21	FERRITE	0µH	
	FB006	1-469-981-21	FERRITE	0µH	
	FB007	1-469-981-21	FERRITE	0µH	
	FB008	1-469-981-21	FERRITE	0µH	
	FB603	1-469-578-11	FERRITE	1.1µH	
	FB608	1-412-911-11	FERRITE	0µH	
	FB800	1-469-578-11	FERRITE	1.1µH	
	FB2602	1-469-578-11	FERRITE	1.1µH	

	REF. NO.	PART NO.	DESCRIPTION	VALUES	
		FUSE HOLDER			
⚠	FH601	1-533-223-11	FUSE HOLDER	0A	0V
⚠	FH602	1-533-223-11	FUSE HOLDER	0A	0V
		IC			
	IC001	6-709-724-01	IC	TDA12060H/N1F00	
	IC002	6-704-532-01	IC	RPM7240-H5	
	IC003	6-710-021-01	IC	CAT24C16WI-GT3	
	IC200	6-706-985-01	IC	AN17808A	
	IC601	6-704-263-01	IC	STR-F6267S	LF1357
			(KV-21FW150 LATIN NORTH ONLY)		
	IC601	6-703-472-11	IC	STR-F6264SLF1357	
			(KV-21FW150 LATIN SOUTH ONLY)		
	IC602	6-706-789-01	IC	KIA78R09API	
	IC603	6-703-478-01	IC	PQ018EF01SSH	
	IC604	8-759-646-52	IC	KIA7805API	
	IC605	6-705-063-01	IC	SE135N-LF38	
	IC606	6-706-886-01	IC	KIA78D33PI	
	IC607	8-759-832-05	IC	BA18BC0FP-E2	
	IC801	6-703-708-01	IC	LM2903DT	
	IC802	6-701-937-01	IC	TJM4558CDT	
	IC804	6-708-756-01	IC	STV9302B	
		JACK			
	J903	1-770-329-13	JACK, PIN	3P	
	J906	1-817-296-22	PHONO JACK	3P	
		CHIP CONDUCTOR			
	JR001	1-216-864-11	SHORT CHIP		
	JR002	1-216-864-11	SHORT CHIP		
	JR003	1-216-864-11	SHORT CHIP		
	JR004	1-216-864-11	SHORT CHIP		
	JR005	1-216-864-11	SHORT CHIP		
	JR007	1-216-864-11	SHORT CHIP		
	JR008	1-216-864-11	SHORT CHIP		
	JR009	1-216-864-11	SHORT CHIP		
	JR012	1-216-864-11	SHORT CHIP		
	JR013	1-216-864-11	SHORT CHIP		
	JR014	1-216-864-11	SHORT CHIP		
	JR015	1-216-864-11	SHORT CHIP		
	JR016	1-216-864-11	SHORT CHIP		
	JR017	1-216-864-11	SHORT CHIP		
	JR018	1-216-864-11	SHORT CHIP		
	JR019	1-216-864-11	SHORT CHIP		
	JR020	1-216-864-11	SHORT CHIP		

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
JR024	1-216-864-11	SHORT CHIP			
JR025	1-216-864-11	SHORT CHIP			
JR026	1-216-864-11	SHORT CHIP			
JR027	1-216-864-11	SHORT CHIP			
JR037	1-216-864-11	SHORT CHIP			
JR038	1-216-864-11	SHORT CHIP			
JR040	1-216-864-11	SHORT CHIP			
JR041	1-216-864-11	SHORT CHIP			
JR042	1-216-864-11	SHORT CHIP			
JR043	1-216-864-11	SHORT CHIP			
JR046	1-216-864-11	SHORT CHIP			
JR047	1-216-864-11	SHORT CHIP			
JR051	1-216-864-11	SHORT CHIP			
JR300	1-216-864-11	SHORT CHIP			
JR301	1-216-864-11	SHORT CHIP			
JR302	1-216-864-11	SHORT CHIP			
JR600	1-216-864-11	SHORT CHIP			
JR601	1-216-864-11	SHORT CHIP			
JR602	1-216-864-11	SHORT CHIP			
JR806	1-216-864-11	SHORT CHIP			
JR807	1-216-864-11	SHORT CHIP			
JR808	1-216-864-11	SHORT CHIP			
JR809	1-216-864-11	SHORT CHIP			
JR810	1-216-864-11	SHORT CHIP			
JR811	1-216-864-11	SHORT CHIP			
JR812	1-216-864-11	SHORT CHIP			
JR813	1-216-864-11	SHORT CHIP			
JR1006	1-216-864-11	SHORT CHIP			
JR1011	1-216-864-11	SHORT CHIP			
JR1012	1-216-864-11	SHORT CHIP			
JR1013	1-216-864-11	SHORT CHIP			
JR1014	1-216-864-11	SHORT CHIP			
JR1016	1-216-864-11	SHORT CHIP			
JR1050	1-216-811-11	METAL CHIP	150	5%	1/10W
JR1100	1-216-864-11	SHORT CHIP			
JR1101	1-216-864-11	SHORT CHIP			
JR1110	1-216-864-11	SHORT CHIP			
JR1903	1-216-864-11	SHORT CHIP			
JR8001	1-216-295-91	SHORT CHIP			
		COIL			
L003	1-414-856-11	INDUCTOR	10µH		
L004	1-414-187-11	INDUCTOR	47µH		
L005	1-414-856-11	INDUCTOR	10µH		
L006	1-414-856-11	INDUCTOR	10µH		
L007	1-414-856-11	INDUCTOR	10µH		
L008	1-414-856-11	INDUCTOR	10µH		
L009	1-414-856-11	INDUCTOR	10µH		
L012	1-412-058-11	INDUCTOR	10µH		
L040	1-469-555-21	INDUCTOR	10µH		
L041	1-469-555-21	INDUCTOR	10µH		
L042	1-469-555-21	INDUCTOR	10µH		
L043	1-469-555-21	INDUCTOR	10µH		
L044	1-469-555-21	INDUCTOR	10µH		
L045	1-469-555-21	INDUCTOR	10µH		
L046	1-469-555-21	INDUCTOR	10µH		
L047	1-469-555-21	INDUCTOR	10µH		
L100	1-414-857-11	INDUCTOR	100µH		
L101	1-414-138-11	INDUCTOR	0.33µH		
L103	1-216-295-91	SHORT CHIP			
L106	1-414-857-11	INDUCTOR	100µH		
L107	1-216-296-11	SHORT CHIP			
L600	1-412-533-21	INDUCTOR	47µH		
L601	1-412-533-21	INDUCTOR	47µH		
L602	1-412-529-11	INDUCTOR	22µH		
L800	1-456-848-21	COIL, HORIZONTAL LINEARITY			
L802	1-406-679-11	INDUCTOR	22MH		
L803	1-414-493-41	INDUCTOR	4.7MH		
L805	1-408-947-00	INDUCTOR	2.2MH		
L902	1-414-187-11	INDUCTOR	47µH		
L2601	1-412-525-31	INDUCTOR	10µH		
		PHOTO COUPLER			
⚠ PH600	8-749-019-60	IC	K1010HB01		
		IC LINK			
⚠ PS602	1-533-597-41	IC	LINK	5A	90V
⚠ PS603	1-533-597-41	IC	LINK	5A	90V
PS604	1-533-597-41	IC	LINK	5A	90V
⚠ PS605	1-533-597-41	IC	LINK	5A	90V
⚠ PS2601	1-533-597-41	IC	LINK	5A	90V
		TRANSISTOR			
Q001	8-729-038-67	TRANSISTOR	KRC102S		
Q006	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
Q007	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
Q008	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF		
Q016	8-729-038-67	TRANSISTOR	KRC102S		

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REF. NO.	PART NO.	DESCRIPTION	VALUES
Q017	8-729-038-67	TRANSISTOR	KRC102S
Q100	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q102	8-729-022-54	TRANSISTOR 2SC3779C,D-AA	
Q200	8-729-038-67	TRANSISTOR	KRC102S
Q201	8-729-600-22	TRANSISTOR	2SA1235-F
Q202	8-729-600-22	TRANSISTOR	2SA1235-F
Q204	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q205	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q206	8-729-038-67	TRANSISTOR	KRC102S
Q601	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q605	6-550-572-01	TRANSISTOR	FN155
		(KV-21FW150 LATIN SOUTH ONLY)	
Q608	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q609	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q803	8-729-140-50	TRANSISTOR	2SC3209LK
Q804	6-550-362-01	TRANSISTOR	KTA1279
Q805	6-550-410-01	TRANSISTOR	2SC5885
Q806	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q807	8-729-600-22	TRANSISTOR	2SA1235-F
Q808	6-551-406-01	TRANSISTOR	IRFS614BYDTU
Q814	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q817	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q8009	6-550-362-01	TRANSISTOR	KTA1279
Q8010	8-729-140-50	TRANSISTOR	2SC3209LK

RESISTOR

R001	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R002	1-216-809-11	METAL CHIP	100	5%	1/10W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R004	1-216-809-11	METAL CHIP	100	5%	1/10W
R007	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R010	1-216-833-11	METAL CHIP	10K	5%	1/10W
R011	1-216-817-11	METAL CHIP	470	5%	1/10W
R012	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R014	1-216-809-11	METAL CHIP	100	5%	1/10W
R015	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R018	1-216-809-11	METAL CHIP	100	5%	1/10W
R020	1-216-809-11	METAL CHIP	100	5%	1/10W
R021	1-216-295-91	SHORT CHIP			
R024	1-216-809-11	METAL CHIP	100	5%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W
R026	1-216-809-11	METAL CHIP	100	5%	1/10W
R029	1-216-809-11	METAL CHIP	100	5%	1/10W
R030	1-216-809-11	METAL CHIP	100	5%	1/10W
R032	1-216-809-11	METAL CHIP	100	5%	1/10W
R038	1-216-809-11	METAL CHIP	100	5%	1/10W
R039	1-216-809-11	METAL CHIP	100	5%	1/10W
R041	1-216-809-11	METAL CHIP	100	5%	1/10W
R042	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R044	1-216-834-11	METAL CHIP	12K	5%	1/10W
R045	1-216-809-11	METAL CHIP	100	5%	1/10W
R046	1-216-809-11	METAL CHIP	100	5%	1/10W
R048	1-216-809-11	METAL CHIP	100	5%	1/10W
R051	1-218-885-11	METAL CHIP	39K	0.50%	1/10W
R056	1-216-809-11	METAL CHIP	100	5%	1/10W
R058	1-216-809-11	METAL CHIP	100	5%	1/10W
R060	1-216-809-11	METAL CHIP	100	5%	1/10W
R061	1-216-819-11	METAL CHIP	680	5%	1/10W
R087	1-216-813-11	METAL CHIP	220	5%	1/10W
R088	1-216-816-11	METAL CHIP	390	5%	1/10W
R096	1-216-813-11	METAL CHIP	220	5%	1/10W
R097	1-216-813-11	METAL CHIP	220	5%	1/10W
R098	1-216-813-11	METAL CHIP	220	5%	1/10W
R099	1-216-813-11	METAL CHIP	220	5%	1/10W
R100	1-216-821-11	METAL CHIP	1K	5%	1/10W
R103	1-211-981-11	METAL CHIP	33	0.50%	1/10W
R106	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R107	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R108	1-216-820-11	METAL CHIP	820	5%	1/10W
R109	1-216-021-00	RES-CHIP	68	5%	1/10W
R115	1-216-809-11	METAL CHIP	100	5%	1/10W
R116	1-216-809-11	METAL CHIP	100	5%	1/10W
R118	1-216-809-11	METAL CHIP	100	5%	1/10W
R119	1-211-981-11	METAL CHIP	33	0.50%	1/10W
R121	1-215-925-11	METAL OXIDE	22K	5%	3W
R128	1-216-864-11	SHORT CHIP			
R149	1-218-839-11	METAL CHIP	470	0.50%	1/10W
R152	1-216-864-11	SHORT CHIP			
R153	1-216-853-11	METAL CHIP	470K	5%	1/10W
R200	1-216-808-11	METAL CHIP	82	5%	1/10W
R201	1-218-866-11	METAL CHIP	6.2K	0.50%	1/10W
R203	1-216-818-11	METAL CHIP	560	5%	1/10W
R204	1-218-866-11	METAL CHIP	6.2K	0.50%	1/10W
R207	1-216-821-11	METAL CHIP	1K	5%	1/10W
R208	1-216-821-11	METAL CHIP	1K	5%	1/10W
R210	1-216-839-11	METAL CHIP	33K	5%	1/10W
R211	1-216-839-11	METAL CHIP	33K	5%	1/10W
R212	1-216-864-11	SHORT CHIP			

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R213	1-216-833-11	METAL CHIP	10K	5%	1/10W
R214	1-216-839-11	METAL CHIP	33K	5%	1/10W
R215	1-216-833-11	METAL CHIP	10K	5%	1/10W
R216	1-216-833-11	METAL CHIP	10K	5%	1/10W
R218	1-216-295-91	SHORT CHIP			
R220	1-216-864-11	SHORT CHIP			
R221	1-216-821-11	METAL CHIP	1K	5%	1/10W
R222	1-216-817-11	METAL CHIP	470	5%	1/10W
R223	1-216-833-11	METAL CHIP	10K	5%	1/10W
R224	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R225	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R226	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R227	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R229	1-216-821-11	METAL CHIP	1K	5%	1/10W
R234	1-249-401-11	CARBON	47	5%	1/4W
R235	1-249-401-11	CARBON	47	5%	1/4W
R236	1-216-833-11	METAL CHIP	10K	5%	1/10W
R239	1-216-809-11	METAL CHIP	100	5%	1/10W
R241	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R242	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R244	1-216-809-11	METAL CHIP	100	5%	1/10W
R300	1-216-809-11	METAL CHIP	100	5%	1/10W
R301	1-216-859-11	METAL CHIP	1.5M	5%	1/10W
R303	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R304	1-216-845-11	METAL CHIP	100K	5%	1/10W
R307	1-216-864-11	SHORT CHIP			
R309	1-216-857-11	METAL CHIP	1M	5%	1/10W
R310	1-216-821-11	METAL CHIP	1K	5%	1/10W
R311	1-216-841-11	METAL CHIP	47K	5%	1/10W
R312	1-216-857-11	METAL CHIP	1M	5%	1/10W
R313	1-216-847-11	METAL CHIP	150K	5%	1/10W
R314	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R315	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R317	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R320	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R322	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R323	1-216-809-11	METAL CHIP	100	5%	1/10W
R324	1-216-864-11	SHORT CHIP			
R331	1-216-809-11	METAL CHIP	100	5%	1/10W
R336	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R337	1-216-817-11	METAL CHIP	470	5%	1/10W
R338	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R339	1-216-809-11	METAL CHIP	100	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R340	1-216-833-11	METAL CHIP	10K	5%	1/10W
R341	1-216-809-11	METAL CHIP	100	5%	1/10W
R355	1-216-837-11	METAL CHIP	22K	5%	1/10W
R356	1-216-864-11	SHORT CHIP			
R363	1-216-864-11	SHORT CHIP			
R364	1-216-821-11	METAL CHIP	1K	5%	1/10W
R379	1-216-843-11	METAL CHIP	68K	5%	1/10W
R380	1-216-809-11	METAL CHIP	100	5%	1/10W
R384	1-216-809-11	METAL CHIP	100	5%	1/10W
R385	1-216-809-11	METAL CHIP	100	5%	1/10W
R386	1-216-809-11	METAL CHIP	100	5%	1/10W
R393	1-216-809-11	METAL CHIP	100	5%	1/10W
R394	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R395	1-216-845-11	METAL CHIP	100K	5%	1/10W
R398	1-216-797-11	METAL CHIP	10	5%	1/10W
R400	1-260-288-11	CARBON	0.47	5%	1/2W
R401	1-260-288-11	CARBON	0.47	5%	1/2W
R405	1-260-288-11	CARBON	0.47	5%	1/2W
R406	1-260-127-11	CARBON	220K	5%	1/2W
R411	1-214-909-00	METAL	68K	1%	1/2W
R412	1-215-437-00	METAL	4.7K	1%	1/4W
R413	1-215-449-00	METAL	15K	1%	1/4W
R414	1-260-336-11	CARBON	4.7K	5%	1/2W
R416	1-260-107-11	CARBON	4.7K	5%	1/2W
R420	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R421	1-216-833-11	METAL CHIP	10K	5%	1/10W
R423	1-216-864-11	SHORT CHIP			
R424	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R602	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R609	1-216-833-11	METAL CHIP	10K	5%	1/10W
R612	1-215-429-00	METAL	2.2K	1%	1/4W
		(KV-21FW150 LATIN SOUTH ONLY)			
R616	1-205-998-11	METAL	1	5%	10W
		(KV-21FW150 LATIN NORTH ONLY)			
R616	1-220-820-31	METAL	1.5	5%	10W
		(KV-21FW150 LATIN SOUTH ONLY)			
R619	1-216-361-00	METAL OXIDE	0.22	5%	2W
		(KV-21FW150 LATIN NORTH ONLY)			
R619	1-216-363-21	METAL OXIDE	0.33	5%	2W
		(KV-21FW150 LATIN SOUTH ONLY)			
R620	1-216-361-00	METAL OXIDE	0.22	5%	2W
		(KV-21FW150 LATIN NORTH ONLY)			
R620	1-216-363-21	METAL OXIDE	0.33	5%	2W
		(KV-21FW150 LATIN SOUTH ONLY)			
R621	1-249-409-11	CARBON	220	5%	1/4W
R624	1-215-429-00	METAL	2.2K	1%	1/4W

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

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R627	1-249-385-11	CARBON	2.2	5%	1/4W
R631	1-249-425-11	CARBON	4.7K	5%	1/4W
R634	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R635	1-216-833-11	METAL CHIP	10K	5%	1/10W
R636	1-249-421-11	CARBON	2.2K	5%	1/4W
R638	1-240-262-11	METAL	0.68	5%	10W
		(KV-21FW150 LATIN NORTH ONLY)			
R638	1-220-820-31	METAL	1.5	5%	10W
		(KV-21FW150 LATIN SOUTH ONLY)			
R645	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R646	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W
R647	1-216-821-11	METAL CHIP	1K	5%	1/10W
⚠ R650	1-247-289-00	METAL	8.2M	5%	1W
R651	1-243-595-71	METAL OXIDE	39K	5%	2W
		(KV-21FW150 LATIN NORTH ONLY)			
R655	1-216-809-11	METAL CHIP	100	5%	1/10W
R656	1-249-381-11	CARBON	1	5%	1/4W
R658	1-245-480-21	METAL	560K	1%	1/4W
		(KV-21FW150 LATIN SOUTH ONLY)			
R659	1-245-482-21	METAL	680K	1%	1/4W
		(KV-21FW150 LATIN SOUTH ONLY)			
R667	1-216-821-11	METAL CHIP	1K	5%	1/10W
R668	1-216-839-11	METAL CHIP	33K	5%	1/10W
R820	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R821	1-216-837-11	METAL CHIP	22K	5%	1/10W
R822	1-249-417-11	CARBON	1K	5%	1/4W
R823	1-245-468-21	METAL	180K	1%	1/4W
R824	1-216-839-11	METAL CHIP	33K	5%	1/10W
R825	1-243-606-71	METAL OXIDE	1K	5%	3W
R826	1-247-891-00	CARBON	330K	5%	1/4W
R827	1-216-369-00	METAL OXIDE	1	5%	2W
R828	1-243-606-71	METAL OXIDE	1K	5%	3W
R829	1-243-606-71	METAL OXIDE	1K	5%	3W
R830	1-260-332-51	CARBON	2.2K	5%	1/2W
R831	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R833	1-260-125-11	CARBON	150K	5%	1/2W
R834	1-245-468-21	METAL	180K	1%	1/4W
R835	1-260-127-11	CARBON	220K	5%	1/2W
R838	1-216-838-11	METAL CHIP	27K	5%	1/10W
R843	1-216-864-11	SHORT CHIP			
R844	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R846	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R847	1-216-833-11	METAL CHIP	10K	5%	1/10W
R851	1-216-821-11	METAL CHIP	1K	5%	1/10W
R852	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R853	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R854	1-218-877-11	METAL CHIP	18K	0.50%	1/10W
R855	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R856	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R859	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
R861	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R864	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
R865	1-216-821-11	METAL CHIP	1K	5%	1/10W
R866	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R868	1-249-393-11	CARBON	10	5%	1/4W
R869	1-249-381-11	CARBON	1	5%	1/4W
R870	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R871	1-243-692-71	METAL OXIDE	220	5%	1W
R872	1-216-864-11	SHORT CHIP			
R873	1-216-841-11	METAL CHIP	47K	5%	1/10W
R876	1-216-833-11	METAL CHIP	10K	5%	1/10W
R877	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R878	1-216-349-00	METAL OXIDE	1	5%	1W
R879	1-245-470-21	METAL	220K	1%	1/4W
R880	1-245-470-21	METAL	220K	1%	1/4W
R881	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R882	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R883	1-249-421-11	CARBON	2.2K	5%	1/4W
R887	1-216-837-11	METAL CHIP	22K	5%	1/10W
R888	1-218-887-11	METAL CHIP	47K	0.50%	1/10W
R889	1-243-531-71	METAL OXIDE	100	5%	3W
R890	1-215-910-00	METAL OXIDE	68	5%	3W
R891	1-249-385-11	CARBON	2.2	5%	1/4W
R893	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R895	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R905	1-216-840-11	METAL CHIP	39K	5%	1/10W
R906	1-216-817-11	METAL CHIP	470	5%	1/10W
R909	1-216-840-11	METAL CHIP	39K	5%	1/10W
R911	1-216-813-11	METAL CHIP	220	5%	1/10W
R915	1-216-849-11	METAL CHIP	220K	5%	1/10W
R916	1-216-849-11	METAL CHIP	220K	5%	1/10W
R917	1-218-285-11	METAL CHIP	75	5%	1/10W
R940	1-216-849-11	METAL CHIP	220K	5%	1/10W
R941	1-216-849-11	METAL CHIP	220K	5%	1/10W
R945	1-216-833-11	METAL CHIP	10K	5%	1/10W
R946	1-216-833-11	METAL CHIP	10K	5%	1/10W
R989	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2646	1-249-381-11	CARBON	1	5%	1/4W

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

A C

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2647	1-249-429-11	CARBON	10K	5%	1/4W
R8009	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R8010	1-245-464-21	METAL	120K	1%	1/4W
R8011	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8012	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8013	1-245-462-21	METAL	100K	1%	1/4W
R8016	1-216-845-11	METAL CHIP	100K	5%	1/10W
R8017	1-216-853-11	METAL CHIP	470K	5%	1/10W
R8018	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R8019	1-216-833-11	METAL CHIP	10K	5%	1/10W
R8020	1-216-835-11	METAL CHIP	15K	5%	1/10W
R8021	1-216-857-11	METAL CHIP	1M	5%	1/10W
R8022	1-216-859-11	METAL CHIP	1.5M	5%	1/10W
R9005	1-216-864-11	SHORT CHIP			
R9006	1-216-864-11	SHORT CHIP			
R9017	1-216-809-11	METAL CHIP	100	5%	1/10W
R9018	1-216-809-11	METAL CHIP	100	5%	1/10W
R9019	1-216-809-11	METAL CHIP	100	5%	1/10W
R9020	1-216-809-11	METAL CHIP	100	5%	1/10W
R9021	1-216-809-11	METAL CHIP	100	5%	1/10W
R9022	1-216-809-11	METAL CHIP	100	5%	1/10W
R9023	1-216-809-11	METAL CHIP	100	5%	1/10W
R9025	1-216-809-11	METAL CHIP	100	5%	1/10W
R9026	1-216-838-11	METAL CHIP	27K	5%	1/10W
R9027	1-216-838-11	METAL CHIP	27K	5%	1/10W
R9028	1-216-809-11	METAL CHIP	100	5%	1/10W
R9036	1-216-809-11	METAL CHIP	100	5%	1/10W
R9050	1-216-864-11	SHORT CHIP			
R9053	1-218-285-11	METAL CHIP	75	5%	1/10W

RELAY

⚠ RY600	1-755-198-11	RELAY, AC POWER	

SWITCH

S600	1-786-649-12	SWITCH, AC POWER PUSH	
S800	1-572-707-11	SWITCH, LEVER	
SWF100	1-795-929-12	SAW FILTER	
SWF101	1-813-391-11	FILTER,SURFACE WAVE (41.25MHZ)	

TRANSFORMER

⚠ T602	1-439-697-11	CONVERTER TRANSFORMER	(SRT)
⚠ T604	1-424-461-11	TRANSFORMER, LINE FILTER	
T800	1-437-936-22	FERRITE TRANSFORMER	(HDT)
⚠ T801	1-453-482-21	FBT ASSY NX-4800//M3A4	

REF. NO.	PART NO.	DESCRIPTION	VALUES		

THERMISTOR

⚠ THP600	1-805-809-11	THERMISTOR, PTC	
TP602	1-536-354-00	POST PIN	

TUNER

TU101	1-693-729-11	TUNER	

VARISTOR

VDR600	1-804-991-21	VARISTOR	

CRYSTAL

X001	1-813-311-21	QUARTS CRYSTAL	UNIT

C

A-1223-013-A C (VAR) BOARD, MOUNTED

4-382-854-01 SCREW (M3X8), P, SW (+)

CAPACITOR

C751	1-107-961-91	ELECT	10µF	20%	250V
C752	1-115-350-51	CERAMIC	0.0047µF		2KV
C753	1-162-318-11	CERAMIC	0.001µF	10%	500V
C754	1-107-651-11	ELECT	4.7µF	20%	250V
C781	1-107-651-11	ELECT	4.7µF	20%	250V
C782	1-102-121-00	CERAMIC	0.0022µF	10%	50V
C786	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C787	1-164-645-11	CERAMIC	1000pF	10%	500V

CONNECTOR

* CN701	1-564-510-11	PLUG, CONNECTOR	7P	
CN705	1-695-915-11	TAB (CONTACT)		
CN706	1-695-915-11	TAB (CONTACT)		

DIODE

D750	8-719-083-20	DIODE	PG102R
D754	8-719-970-83	DIODE	HSS82-TJ
D755	8-719-970-83	DIODE	HSS82-TJ
D756	8-719-970-83	DIODE	HSS82-TJ
D780	8-719-991-33	DIODE	1SS133T-77
D781	8-719-991-33	DIODE	1SS133T-77
D782	8-719-977-03	DIODE	DTZ5.6B

IC

IC751	6-709-352-01	IC	TDA6108AJF/N2

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

C H1

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	JACK				
*⚠ J752	1-451-589-12	SOCKET, CRT			
	COIL				
L780	1-414-185-41	INDUCTOR	22µH		
	RESISTOR				
R713	1-216-864-11	SHORT CHIP			
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
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

H1

*	**A-1236-955-A**	**H1 (VAR) BOARD, MOUNTED**			
	RESISTOR				
R001	1-215-397-00	METAL	100	1%	1/4W
R002	1-215-405-00	METAL	220	1%	1/4W
R003	1-215-409-00	METAL	330	1%	1/4W
R004	1-215-413-00	METAL	470	1%	1/4W
R005	1-215-417-00	METAL	680	1%	1/4W
R006	1-215-421-00	METAL	1K	1%	1/4W

REF. NO.	PART NO.	DESCRIPTION
	SWITCH	
S001	1-786-726-11	SWITCH, TACTILE
S002	1-786-726-11	SWITCH, TACTILE
S003	1-786-726-11	SWITCH, TACTILE
S004	1-786-726-11	SWITCH, TACTILE
S005	1-786-726-11	SWITCH, TACTILE
S006	1-786-726-11	SWITCH, TACTILE
	ACCESSORIES AND PACKING	
	A-1236-954-A	ACCESSORY ASSY
	1-501-730-61	ANTENNA, TELESCOPIC
*	2-319-801-01	BAG, PROTECTION
*	2-894-186-01	CARTON, INDIVIDUAL
*	2-894-185-01	CUSHION, LOWER
*	2-894-184-01	CUSHION, UPPER
	3-095-897-41	MANUAL, INSTRUCTION
	1-417-182-11	MATCHING TRANSFORMER, ANTENNA
	REMOTE COMMANDER	
	1-479-626-12	REMOTE COMMANDER (RM-YA005)
	9-939-697-11	BATTERY COVER (for RM-YA005)

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Service Promotion Department

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SERVICE MANUAL

BX-1S CHASSIS

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