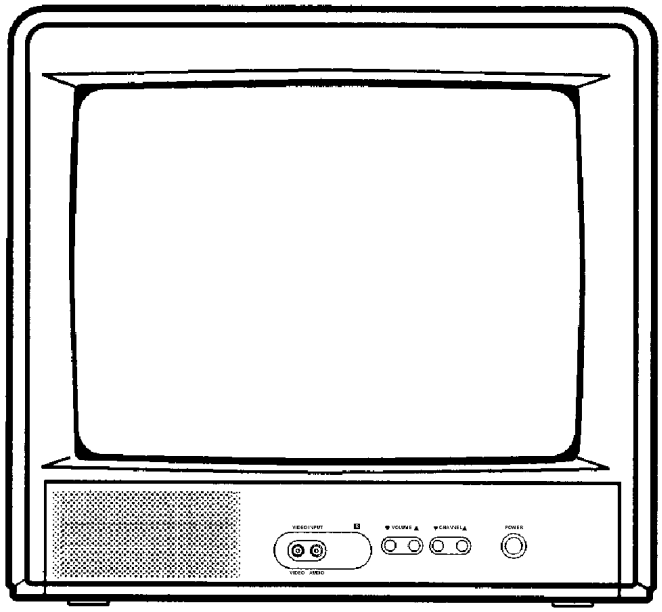
Service Manual

MT1132

13” Color Television



THIS SERVICE MANUAL IS FOR MT1132 SUFFIX A , B , C AND D CRT USAGE

	SUFFIX A	SUFFIX B	SUFFIX C	SUFFIX D
V451	5721-014ST37N (37GDA86X)	5721-37CN030T (370KSB22(SYB))	5721-026TT37N (A34JFQ90X)	5721-030ZT37N (A34JXV70X)
DY501	4993-117	4993-052	4993-110	4993-124

Memorex®

FEATURES

- On-screen graphics guide you through setup features and operations
- Automatic programming of channels allows easy selection of stations available in your viewing area
- Sleep timer programs the TV to turn itself off at a preset time
- One day timer programs the TV to come on once at a preset time
- Weekly timer programs the TV to come on at a preset time every day
- 26 button infrared remote control allows remote operation
- VHF/UHF/CATV tuning allows reception of standard broadcasts or cable TV channels
- Closed caption decoder displays captions or half-screen text
- V-Block function

SPECIFICATIONS

AC Power Input:	120V, 60Hz
AC Power Consumption:	77Watts
Chassis Construction:	IC Solid State
Picture Tube:	13" (measured diagonally)
Speaker:	3.5 x 2 in (90 x 50 mm) Oval, 8 ohms
Tuner:	181 Channel, Freq. Synthesized
Remote Control:	Infrared, Direct Access 26 Key, 2 "AA" batteries
Receiving Channels:	
VHF	2 - 13
UHF	14 - 69
CATV	
Mid Band	14 - 22
Super Band	23 - 36
Hyper Band	37 - 65
Ultra Band	66 - 94, 100 - 125
Sub Mid Band	1, 95 - 99
Cabinet:	Monitor Style
Antenna Input Impedance	75 ohm (VHF/UHF) Coaxial Input

CAUTION:

- In case you forget the V-Block Pass Number, reset using the Service Remote Control. At the Pass Number entry screen, while holding down the [SHIFT] button press the [Q.REV] button repeatedly four times. The display will change from "????" to "!!!!". Release the [SHIFT] button and then press the [MENU] button. V-Block screen will be display.

- To prevent electric shock, match wide blade of plug to wide slot, fully insert .

IMPORTANT SERVICE SAFETY INFORMATION

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

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

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

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

Certain HV failures can increase X-ray radiation. Receivers should not be operated with HV levels exceeding the specified rating for their chassis type. The maximum operating HV specified for the chassis used in these receivers is 25 kV 1.0kV at zero beam current with a line voltage of 120V AC. Higher voltage may also increase possibility of failure in HV supply.

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

Components shown in the shaded areas on the schematic diagram or identified by the safety mark in the replacement parts list should be replaced only with exact Factory recommended replacement parts. The use of unauthorized substitute parts may create shock, fire, X-radiation or other hazard.

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

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

When removing springs or spring mounting parts from tuner, tuner cluster or chassis, shatter-proof goggles must be worn. Keep others without shatter-proof goggles away.

SAFETY INSPECTION

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

PROTECT YOUR CUSTOMER

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.

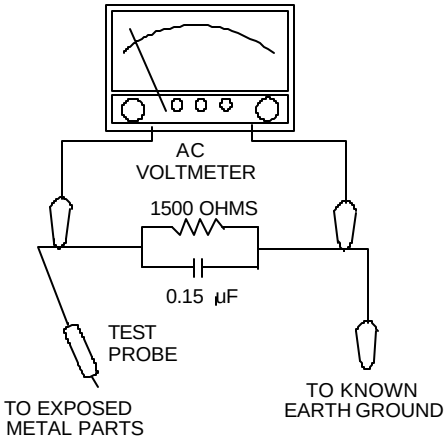
2. Replace all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor capacitor networks, mechanical insulators, etc.

3. To be sure that no shock hazard exists, a check for the presence of leakage current should be made at each exposed metal part having a return path to the chassis (antenna, cabinet metal, screw heads, knobs and/or shafts, escutcheon, etc.) in the following manner.

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

If available, measure current using an accurate leakage current tester. (Use Standard Item No. 25086,21641) Any reading of 0.4 mA or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to the owner.

If a reliable leakage current tester is not available, this alternate method of measurement should be used. Using two clip leads, connect a 1500 ohm, 10 watt resistor paralleled by a 0.15 MF capacitor in series with a known earth ground, such as a water pipe or conduit and the metal part to be checked. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure this AC voltage drop across the resistor. Any reading of 0.61 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to the owner.



X-RAY PROTECTOR CIRCUIT CHECK

PERFORM WHENEVER HIGH VOLTAGE CIRCUITRY OR POWER SUPPLY CIRCUITRY IS SERVICED.

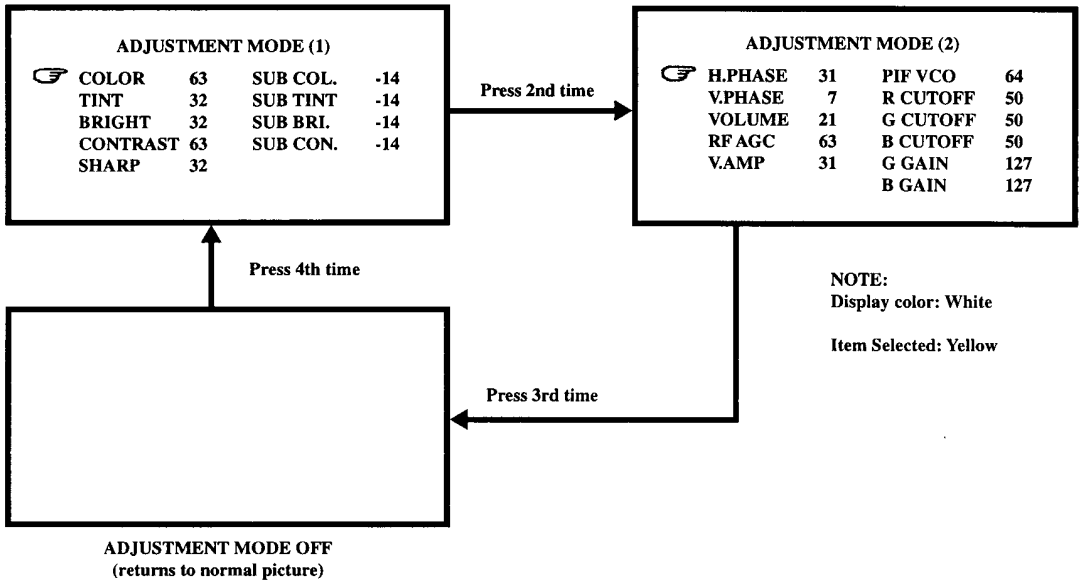
1. Plug the AC Line Cord (P1) into a AC 120V, 60Hz receptacle.
2. Turn the Power Switch (S101) on and wait for about 10 minutes.
3. Connect the antenna leads to the EXT. Antenna Terminal (TE1) and select a broadcasting station.
4. Connect DC Digital Voltmeter to TP11 (positive lead) and TP4 (negative lead).
5. Apply DC 11V between TP11 and TP4 from external equipment.
6. If picture and sound do not disappear, check IC301,D552,D553, D554,R554,R555,R556,R557,C555 and C556.

ADJUSTMENT MODE

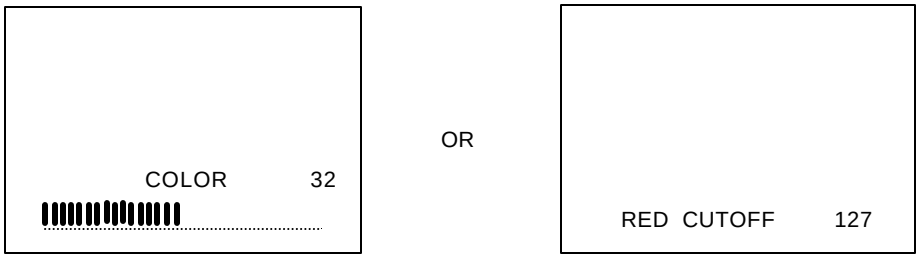
The following adjustment items can be performed from menus by Remote Control as shown below :

NOTE: The button combination and position on the Remote Control to select the adjustment items is given on page 4.

1. Press the SHIFT + ADJ. MODE buttons on the Remote Control simultaneously to bring up the adjustment mode menu screens shown below.



2. From the menu screen, press the + or - button on the Remote Control to select the item to be adjusted.
3. Press the MENU button on the Remote Control to enter adjustment mode for the item selected, and the display shown below appears :

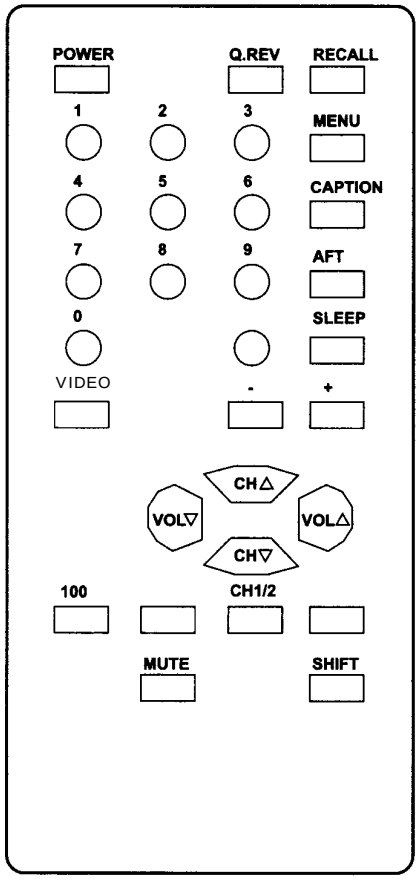


Example:

4. Use the + or - button on the Remote Control to adjust the data for the item selected.
5. When adjustment has been completed, press the SHIFT + ADJ. MODE buttons on the Remote Control simultaneously to return to the main menu.

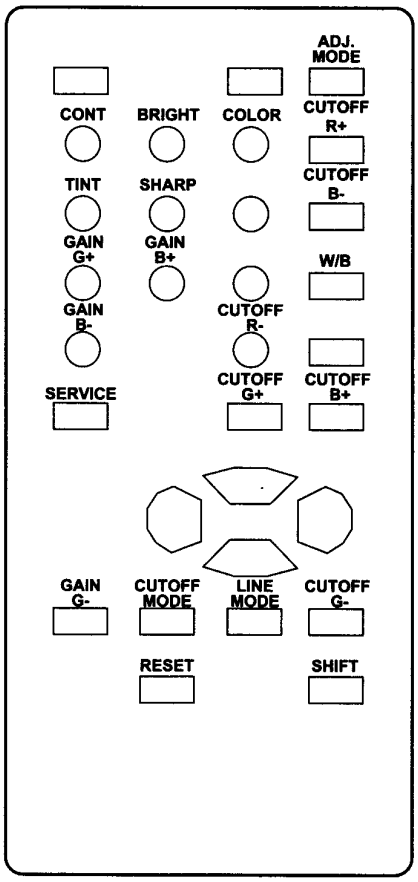
REMOTE CONTROL LAYOUT

NORMAL MODE LAYOUT
(WITHOUT SHIFT KEY)



ONLY PRESS THE SELECTED ITEM BUTTON

SPECIAL MODE LAYOUT
(SHIFT + SELECTED ITEM)



MUST PRESS SHIFT + SELECTED ITEM BUTTON

IC, TRANSISTOR AND CRT COMPLEMENT

INTEGRATED CIRCUITS

IC101 TA87C-B2	Microcomputer	IC601 STR30130	AVR
IC102 M24CO2B	EEPROM	IC671 NJ7805LD	Voltage Regulator and Reset
IC301 TA1268N	IF/Video/Chroma/Deflection	IC701 TLP651	Photo-Interrupter
IC311 NJ7809FA	Voltage Regulator	IC702 TLP631	Photo-Interrupter
IC501 AN5512	Vertical Deflection Output		

TRANSISTORS

Q101 DTC143ZS	Vertical Synchronizing	Q551 2SC1473A(R)	Horizontal Driver
Q102 2SC945(P)	Horizontal Synchronizing	Q552 2SD1877	Horizontal Driver
Q173 2SC945(P)	SD Signal Buffer	Q601 2SC945(P)	Power On/Off Relay Driver
Q301 2SC945(P)	SIF Signal Buffer	Q701 2SC945(P)	External Video In
Q302 2SA733(P)	Video Buffer Amplifier	Q703 2SC945(P)	External Audio In
Q303 2SC945(P)	Video Out	Q751 2SC945(P)	Video Amplifier
Q304 2SA733(P)	Video In	Q752 2SC945(P)	Audio Amplifier
Q351 DTC143ZS	Service Mode Switching	Q753 2SC945(P)	Video Amplifier
Q451 2SC1473A(R)	Red Color Driver	Q801 2SC945(P)	Audio Amplifier
Q452 2SC1473A(R)	Blue Color Driver	Q802 2SA950(0)	Audio Amplifier
Q453 2SC1473A(R)	Green Color Driver	Q803 2SC2120(0)	Audio Amplifier

PICTURE TUBE

V451 37GDA86X	CRT (SUFFIX A)	V451 A34JFQ90X	CRT (SUFFIX C)
V451 370KSB22(SYB)	CRT (SUFFIX B)	V451 A34JXV70X	CRT (SUFFIX D)

CHASSIS REMOVAL

1. Remove 4 screws (177) from Cabinet Back (AB) and remove Cabinet Back from rear.
2. Discharge anode lead at CRT chassis ground through a 10kohm resistor.
3. Disconnect anode lead from CRT.
4. Disconnect CRT Socket P.C. board (PCB-2) from CRT(V451).
5. Disconnect 3 connectors (CN501 (DY501), CN601 (L601) and LCN801) from Main P.C. board (PCB-1).
6. When replacing chassis, reverse the above procedure making certain that all leads are fastened in their original places.

CRT REMOVAL

CAUTION: Wear shatterproof goggles and exercise proper handling precautions when working around high vacuum picture tubes.

1. Remove chassis per instructions under CHASSIS REMOVAL.
2. Remove Convergence Magnet Assembly (MG451) from neck of CRT.
3. Remove Deflection Yoke (DY501) from neck of CRT
4. Remove 3 wedges (142) from CRT
5. Remove Degaussing Coil (L601) from CRT
6. Remove braid wire (331) and spring (158) from CRT
7. Lay cabinet face down on some protective material.
8. Remove 4 CRT mounting screws (156).
9. Remove CRT from Cabinet Front (AA).
10. To install new CRT, reverse above procedure.
11. Perform purity and convergence adjustments.

CAUTION: Use an isolation transformer when performing any service on this chassis.

SHUTDOWN CIRCUIT: When the high voltage rises, there are simultaneous voltage increase developed at terminal 6 of the Horizontal Output Transformer (T671) and applied to pin 29 of IC301. If excessive high voltage is produced, the increased voltage developed exceeds the rating of zener diode D552 causing the Horizontal Oscillator to stop functioning and the high voltage system to shut down.

AFT (AUTOMATIC FINE TUNING) ADJUSTMENT

1. Connect TV Test Pattern Generator (NTSC signal, Monoscope signal, 70dBu, channel 2) to EXT. Antenna Terminal (TE1) through TV Channel Signal Generator.
2. Connect wire (+) of DC Digital Voltmeter to TP6 and wire (-) to TP4. (Figure 1)
3. Adjust T202 so that the DC Digital Voltmeter reading is 2.0V ± 0.1V.

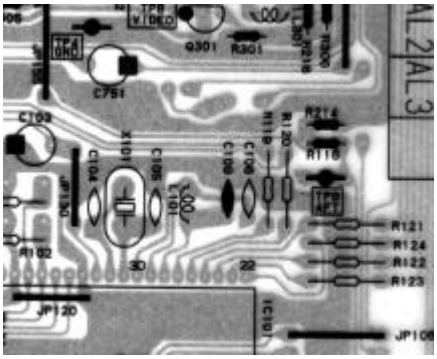


FIG. 1

SUB TINT ADJUSTMENT

1. Connect TV Test Pattern Generator (NTSC signal, Color Bar signal, 70dB u , channel 6) to EXT. Antenna Terminal (TE1) through TV Channel Signal Generator.
2. Connect positive lead of Oscilloscope to TP14 and negative lead to TP4.
3. Connect EXT. trigger of Oscilloscope to R463.
4. Set Tint control to center position. (by Remote Control).

(NOTE: For steps 5, 6 and 7 below, refer to page 3 for Adjustment By Remote Control Method).

5. Go to Adjustment Mode (1) by remote control.
6. Select SUB TINT from Adjustment Mode (1) menu screen.
7. Adjust SUB TINT level (by using + or - button on remote control) so that waveform is the same as shown in Figure 2.

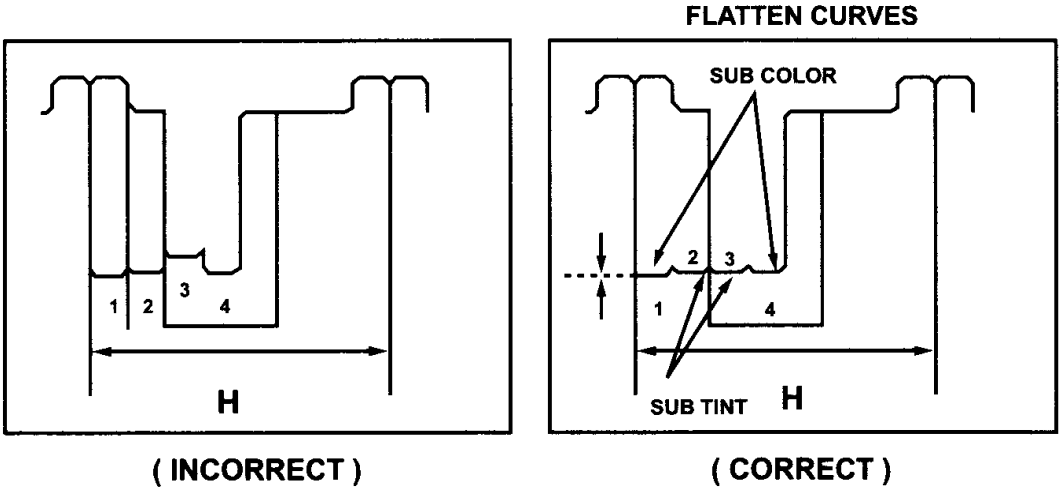


FIG. 2

SOUND IF ADJUSTMENT

1. Connect TV Test Pattern Generator (NTSC signal, 70dB u , channel 2) to EXT. Antenna Terminal (TE1) through TV Channel Signal Generator. (Standard modulation is 400Hz at 25kHz deviation for sound signal.
2. Connect positive lead of DC Digital Voltmeter to TP7 and negative lead to TP4.
3. Adjust T203 so that the DC Digital Voltmeter reading is 4.0V.

COLOR PURITY ADJUSTMENT

For best results, it is recommended that the purity adjustment be made in the final receiver location. If the receiver will be moved, perform this adjustment with it facing East.
The receiver must have been operating 15 minutes prior to this procedure and the face plate of the CRT must be at room temperature. The following procedure is recommended while using a Dot/Bar Generator.

1. Check correct location of all neck components. (Refer to Figure 3)
2. Rough -in the static convergence at the center of the CRT, as explained in the static convergence procedure.
3. Set the Contrast control to minimum position and Brightness control as far maximum as possible without causing the picture to “bloom”.
4. Apply green raster signal from Dot/Bar Generator to receiver.
5. Loosen the deflection yoke clamp screw and pull the deflection yoke toward the rear of the CRT.
6. Begin the following adjustment with the tabs on the round purity magnet rings set together. Slowly separate the two tabs while at the same time rotating them to adjust for a uniform green vertical band at the center of the CRT screen.
7. Carefully slide the deflection yoke forward to achieve green purity (Uniform green screen).
   NOTE: Center purity is obtained by adjusting the tabs on the round purity magnet rings. Outer edge purity is obtained by sliding the deflection yoke forward.
8. Check for red and blue field purity by applying red and blue raster signal alternately from Dot/Bar Generator to receiver. Repeat steps 2 through 7, if required.
9. Tighten deflection yoke clamp screw.
10. Perform BLACK AND WHITE ADJUSTMENT procedure.

(CW : clockwise, CCW : counterclockwise)

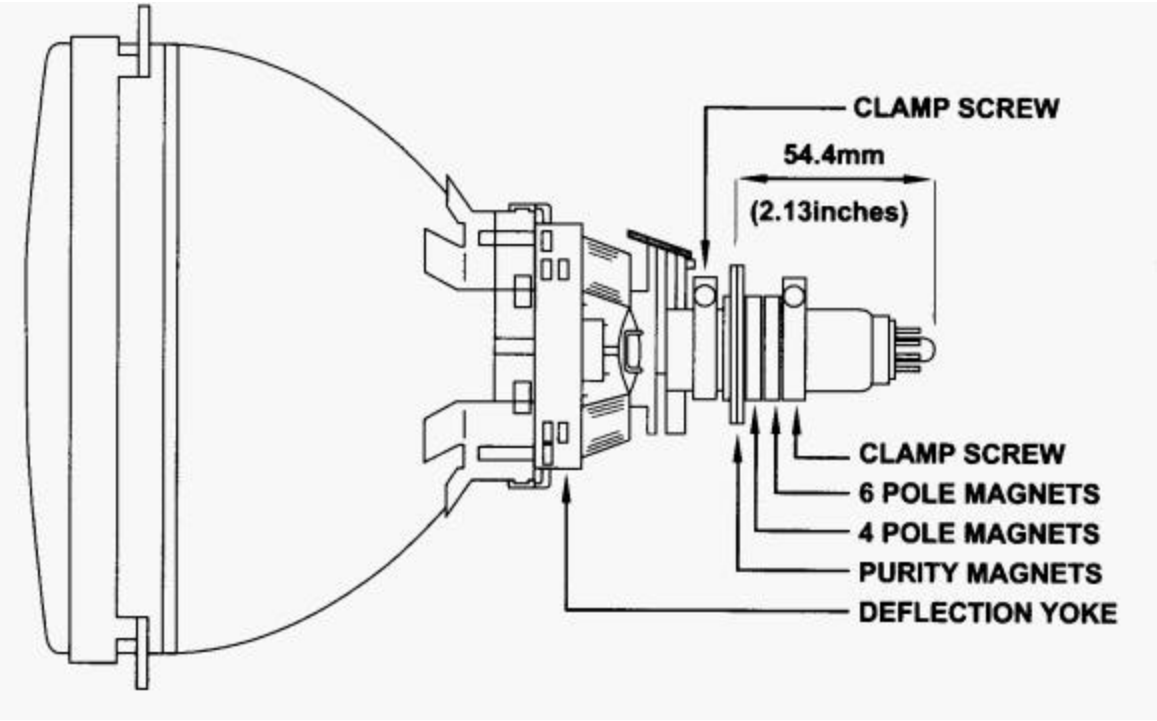


FIG. 3

STATIC CONVERGENCE ADJUSTMENT (Refer to Figure 3 and 4)

IMPORTANT: Before proceeding, make sure the location of the convergence magnet assembly on the neck of the CRT is as shown in Figure 3. The rear edge of this assembly must be positioned 65 mm from the tip of the CRT base. If not properly positioned, convergence adjustment may be difficult, if not impossible.

1. Apply dot or crosshatch pattern from Dot/Bar Generator to receiver. Reduce setting of Brightness and/or Contrast controls to eliminate any blooming in pattern.
2. Observe the blue and red pattern appearing on the CRT screen. Locate the 4 pole magnet rings and separate their adjusting tabs approximately the width of one tab.
3. Now rotate this pair of magnet rings as a unit without re-adjusting the spacing between the tabs. This will minimize the separation between the blue and red dots (lines).
4. If the blue and red dots are not completely converged at this point, readjust the spacing between the two tabs to complete convergence of the blue and red dots (lines), thus producing magenta dots (lines).
5. If necessary, repeat step 2, 3 and 4 until proper convergence is achieved.
6. Observe the magenta (B/R) and green pattern now appearing on the CRT screen.
7. Locate the 6 pole magnet rings and separate their adjusting tabs approximately the width of one tab.
8. Rotate this pair of magnet rings as a unit without re-adjusting the spacing between the tabs. This will minimize the separation between the magenta (B/R) and green dots (lines).
9. If the magenta and green dots (lines) are not completely converged at these points, readjust the spacing between the two tabs to complete convergence of the magenta and green dots (lines).
10. If necessary, repeat step 7, 8 and 9 until proper convergence is obtained.
    To prevent accidental mis-adjustment of the magnets, apply a stripe of paint across all six rings and onto the neck of the CRT.

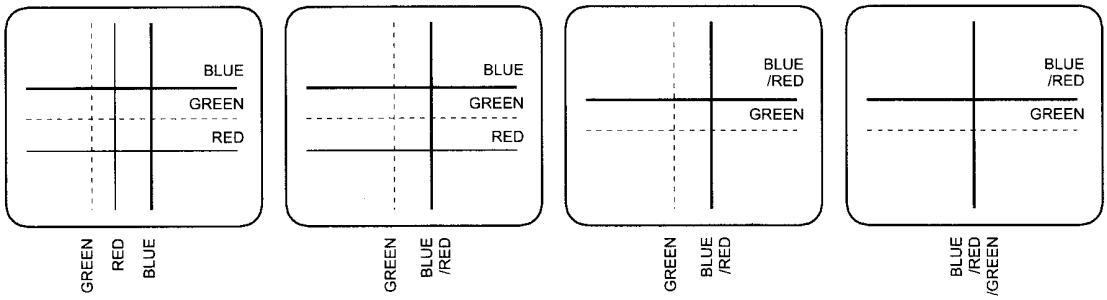


FIG. 4

DYNAMIC CONVERGENCE ADJUSTMENT (Refer to Figure 5)

Dynamic convergence (convergence of the three edges of the CRT screen) is accomplished by proper insertion and positioning of three rubber wedges between the edges of the deflection yoke and funnel of the CRT. This is accomplished in the following manner.

1. Turn the receiver ON and allow it to warm up for 15 minutes.
2. Apply crosshatch pattern from Dot/Bar Generator to receiver. Observe spacing between lines around edges of CRT screen.
3. For the misconvergence shown in Figure 5 (A), tilt the deflection yoke down and insert wedge A between deflection yoke and CRT.
4. For the misconvergence shown in Figure 5 (B), tilt the deflection yoke up and insert wedge B between deflection yoke and CRT.
5. For the misconvergence shown in Figure 5 (C), tilt left side of the deflection yoke and slightly insert wedge C between deflection yoke and CRT. Then, deeply insert wedges A and B between deflection yoke and CRT.
6. For the misconvergence shown in Figure 5 (D), tilt right side of the deflection yoke and deeply insert wedge C between deflection yoke and CRT. Then, slightly insert and/or extract wedges A and B between deflection yoke and CRT.
7. Alternately change spacing between and depth of insertion of the three wedges until proper dynamic convergence is obtained.
8. Use a strong adhesive tape to firmly secure each of the three rubber wedges to the funnel of the CRT.

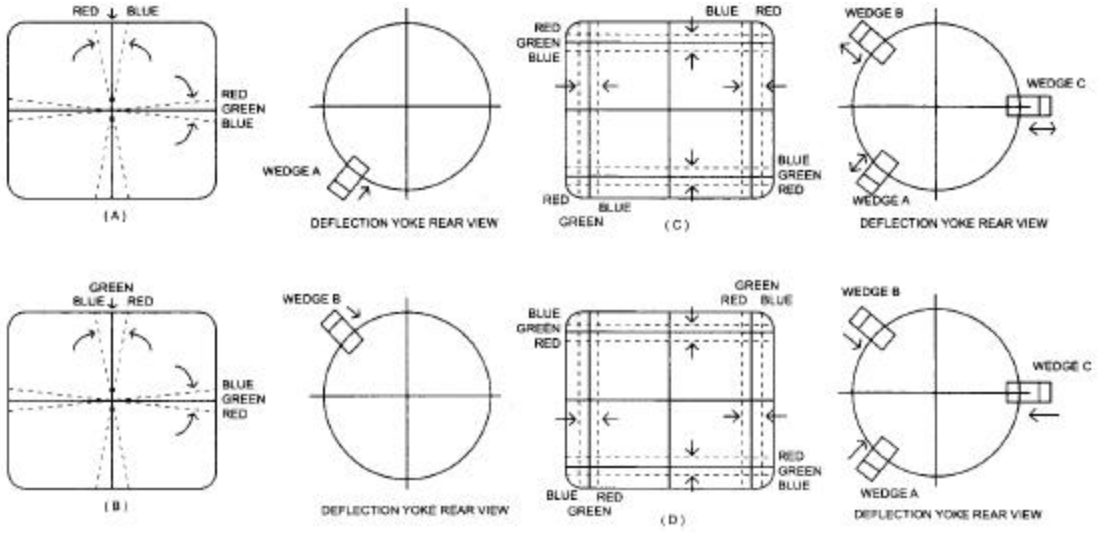


FIG. 5

FOCUS ADJUSTMENT

Adjust focus control, located on the Horizontal Output Transformer (T671), for maximum overall definition and fine picture detail with Brightness and Contrast controls set at normal viewing levels.

BLACK AND WHITE ADJUSTMENT (CUTOFF / WHITE BALANCE)

The purpose of this procedure is to adjust the bias applied to the color picture tube for reproducing a quality monochrome picture at all brightness levels and also to achieve maximum usable brightness. Confirm that proper purity and AGC adjustments have been completed before starting this adjustment.

1. Connect the TV test pattern generator (Monoscope pattern) to the EXT. antenna terminal via TV VHF/UHF signal generator (NTSC signal, 70dB u).
2. Select Cutoff Mode by remote control, (refer to page 4 for remote control key combination and position.) and CUT OFF will be displayed on top-right screen for about 3 seconds. At the same time the data readings for Cutoff and Gain in Adjustment Mode (2) will become as follows :
   R CUTOFF : 50, G CUTOFF : 50, B CUTOFF : 50 , G GAIN : 127, B GAIN : 127
3. Select Service Mode by remote control, (refer to page 4 for remote control key combination and position.) and TV screen becomes horizontal line.
4. Turn the Screen control (located under the flyback transformer) clockwise until any blue, green or red color line appears.
5. Check the color of the line which appeared first, then turn the Screen control (located under the flyback transformer) fully counterclockwise.
6. Adjust the cutoff level of the color which appeared first by remote control, (refer to page 4 for remote control key combination and position.) so that voltage between TP16 and TP15 (blue), TP14 (green) or TP13 (red) is 20 ± 1V.
7. Turn the Screen control (located under the flyback transformer) clockwise so that the bright color line can just be seen.
8. Adjust cutoff levels other than the above by remote control, (refer to page 4 for remote control key combination and position.) so that the line color is white.
9. Press again Service Mode key by remote control, (refer to page 4 for remote control key combination and position.) to return to TV position. Monoscope pattern will appear on TV screen.
10. Adjust the contrast and brightness controls to make the picture dim. Adjust the Green and Blue Cutoff levels by remote control, (refer to page 4 for remote control key combination and position.) so that the picture is white.
11. Adjust the contrast and brightness controls to make the picture bright. Adjust the Green and Blue Gain levels by remote control, (refer to page 4 for remote control key combination and position.) so that the picture is white.
12. Repeat steps 10 and 11 so that the picture is white in both dim and bright conditions.

HORIZONTAL PHASE ADJUSTMENT

1. Connect TV Test pattern Generator (NTSC signal 70dB u, Monoscope Pattern) to EXT. Antenna Terminal (TE1) through TV Channel Generator.

(NOTE: For steps 2, 3 and 4 below, refer to page 3 for Adjustment By Remote Control Method).

2. Go to Adjustment Mode (2) by remote control.
3. Select H. PHASE from Adjustment Mode (2) menu screen.
4. Adjust H. PHASE level (by using + or - button on remote control) so that horizontal reading of test pattern becomes the same value.

VERTICAL PHASE ADJUSTMENT

1. Connect TV Test pattern Generator (NTSC signal 70dB u, Monoscope Pattern) to EXT. Antenna Terminal (TE1) through TV Channel Generator.

(NOTE: For steps 2, 3 and 4 below, refer to page 3 for Adjustment By Remote Control Method).

2. Go to Adjustment Mode (2) by remote control.
3. Select V. PHASE from Adjustment Mode (2) menu screen.
4. Adjust V. PHASE level (by using + or - button on remote control) so that vertical reading of test pattern becomes the same value.

VERTICAL AMPLITUDE ADJUSTMENT

1. Connect TV Test pattern Generator (NTSC signal 70dB u, Monoscope Pattern) to EXT. Antenna Terminal (TE1) through TV Channel Generator.

(NOTE: For steps 2, 3 and 4 below, refer to page 3 for Adjustment By Remote Control Method).

2. Go to Adjustment Mode (2) by remote control.
3. Select V. AMP from Adjustment Mode (2) menu screen.
4. Adjust V. AMP level (by using + or - button on remote control) so that picture fills the picture opening from top to bottom and is proportionate to the width.

RF AGC ADJUSTMENT

1. Connect TV Channel Signal Generator to EXT. Antenna Terminal (TE1).
2. Connect positive lead of DC Digital Voltmeter to TP5 and negative lead of DC Digital Voltmeter to TP4.
3. Adjust level of TV Channel signal Generator so that the output level is 55dB u. (Monoscope Pattern)

(NOTE: For steps 4, 5 and 6 below, refer to page 3 for Adjustment By Remote Control Method).

4. Go to Adjustment Mode (2) by remote control.
5. Select RF AGC from Adjustment Mode (2) menu screen.
6. Adjust RF AGC level (by using + or - button on remote control) so that the DC Digital Voltmeter reading is 6.0V $\pm$ 0.2V.

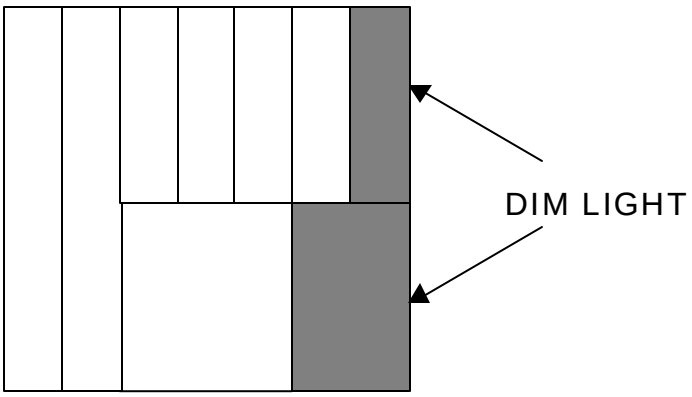
SUB BRIGHTNESS ADJUSTMENT

1. Connect TV Test Pattern Generator (NTSC signal, Color Bar Signal, 70dB u) to EXT. Antenna Terminal through TV Channel Signal Generator.
2. Set Brightness, Tint and Sharpness menu option to center. Set Color and Contrast menu option to minimum. (by Remote Control).

(NOTE: For steps 3, 4 and 5 below, refer to page 3 for Adjustment By Remote Control Method).

3. Go to Adjustment Mode (1) by remote control.
4. Select SUB BRI. from Adjustment Mode (1) menu screen.
5. Adjust SUB BRI. level (by using + or - button on remote control) to obtain a dim pattern. (Refer to Figure 6)

FIG. 6



VIDEO IN ADJUSTMENT

1. Connect Pattern Generator (1Vp-p, Color Bar Pattern) to video jack (J701).
2. Connect positive lead of Oscilloscope probe 1 to R703 and negative lead of Oscilloscope to TP4 to detect video in signal.
3. Connect positive lead of Oscilloscope probe 2 to TP10 and negative lead of Oscilloscope to TP4.
4. Select Video Mode by remote control.
5. Compare the waveform probe 2 with waveform probe 1.
6. Adjust VR701 to get the waveform at TP10 and TP4 is 0.9Vp-p ± 0.1Vp-p same with the waveform at probe 1. (Refer to Figure 7)

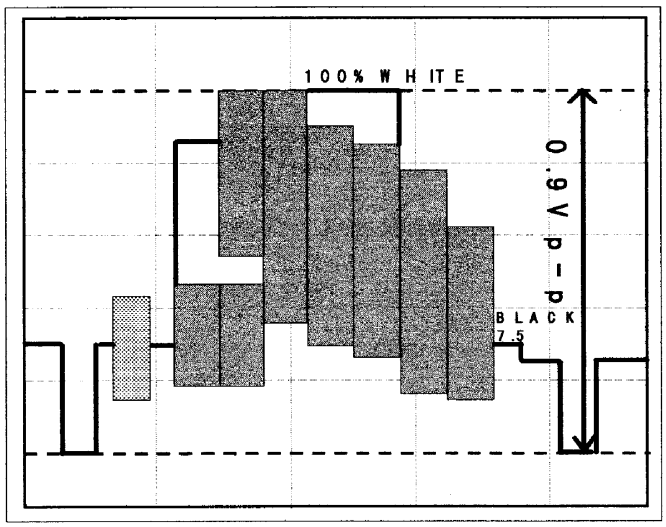


Fig. 7

AUDIO IN ADJUSTMENT

1. Connect Pattern Generator (1Vp-p, Color Bar Pattern) to video jack (J701).
2. Connect Audio Generator to audio jack (J702).
3. Connect positive lead of Oscilloscope probe 1 to R705 and negative lead of Oscilloscope to TP4 to detect audio in signal.
4. Connect positive lead of Oscilloscope probe 2 to TP9 and negative lead of Oscilloscope to TP4.
5. Select Video Mode by remote control.
6. Compare the waveform probe 2 with waveform probe 1.
7. Adjust VR702 to get the waveform at TP9 and TP4 is 1.0Vp-p ± 0.05Vp-p same with the waveform at probe 1. (Refer to Figure 8)

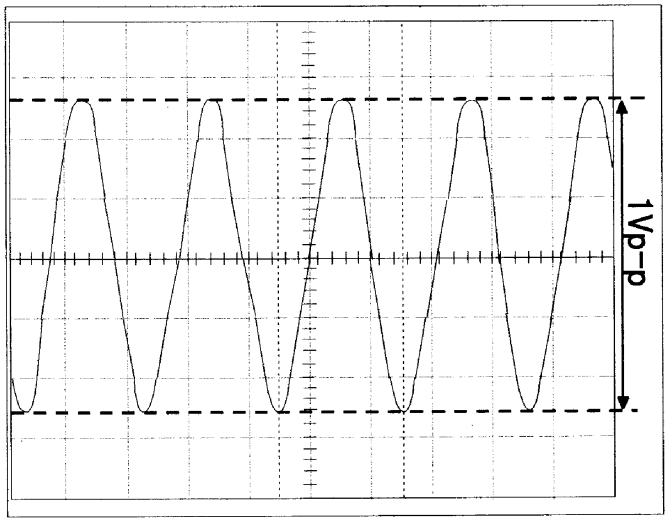
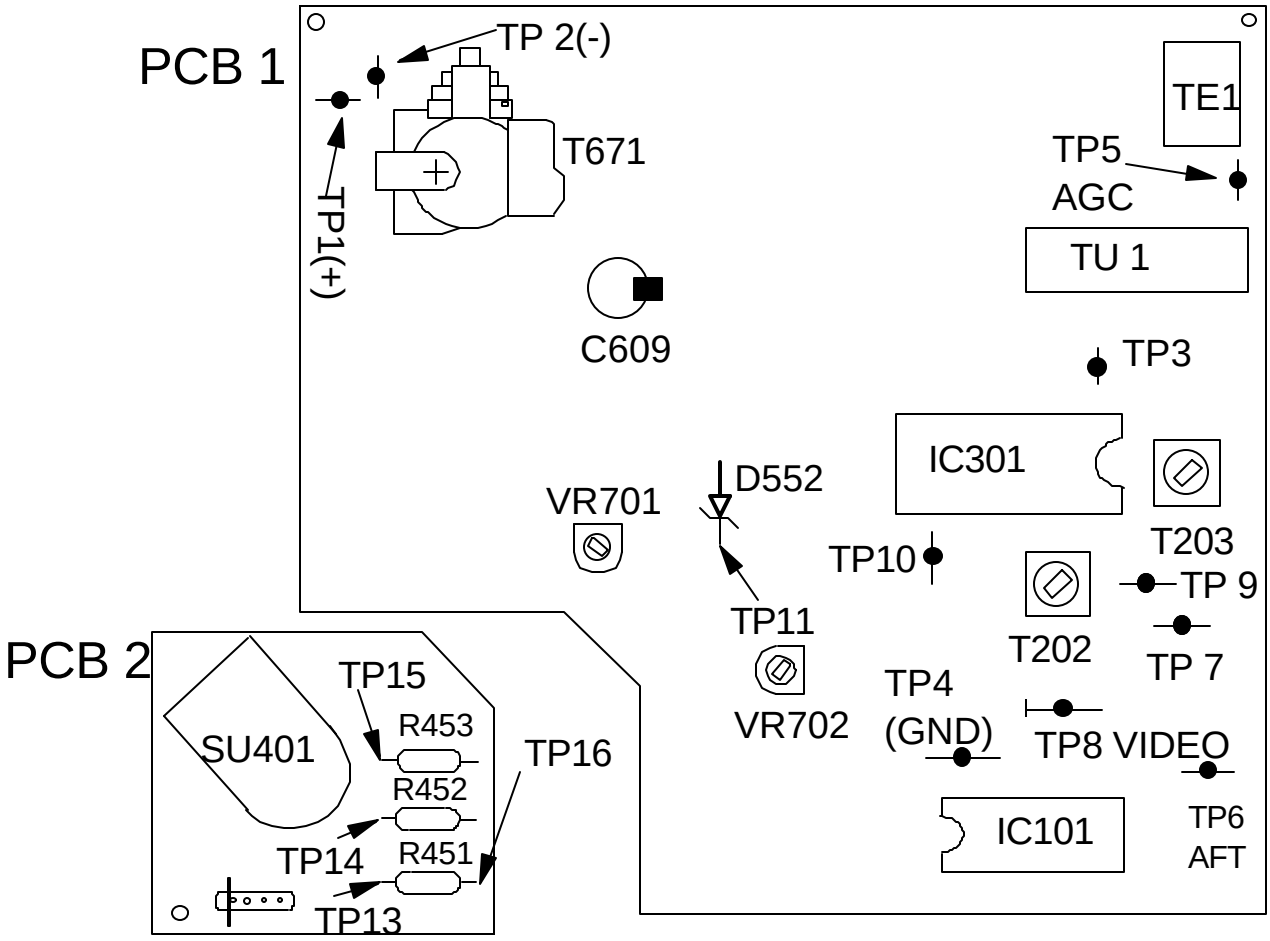


Fig. 8

TEST POINT


PCB 1
TP 2(-)
TP1(+)
T671
C609
TE1
TP5
AGC
TU 1
TP3
IC301
T203
D552
VR701
TP10
TP 9
TP11
T202
TP 7
PCB 2
TP15
R453
SU401
TP16
TP4
(GND)
VR702
TP8 VIDEO
R452
TP14
R451
IC101
TP6
AFT
TP13

VOLTAGE CHART (all in volts)

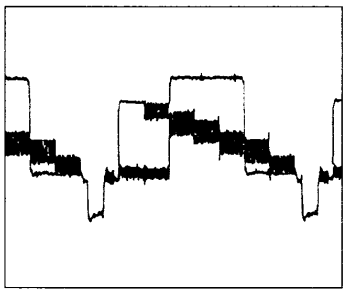
OPERATION CONDITION : TINT, BRIGHT and COLOR CONTROL…….. CENTER
CONTRAST …… MAXIMUM
COLOR BAR SIGNAL

IC101	TERMINAL No	1	2	3	4	5	6	7	8	9	10
	Volt	0.0	0.0	0.0	0.0	5.0	5.0	0.0	0.0	0.0	1.0
	TERMINAL No	11	12	13	14	15	16	17	18	19	20
	Volt	5.0	0.0	5.0	5.0	5.0	2.9	0.0	0.0	1.0	1.0
	TERMINAL No	21	22	23	24	25	26	27	28	29	30
	Volt	4.9	0.0	0.0	0.0	0.0	3.8	4.3	4.8	4.9	0.0
	TERMINAL No	31	32	33	34	35	36	37	38	39	40
	Volt	2.1	2.3	5.0	0.0	5.0	4.5	3.0	2.0	0.0	0.7
	TERMINAL No	41	42								
	Volt	0.7	5.0								
IC102	TERMINAL No	1	2	3	4	5	6	7	8		
	Volt	0.0	0.0	0.0	0.0	1.9	3.0	0.0	5.0		
IC301	TERMINAL No	1	2	3	4	5	6	7	8	9	10
	Volt	0.0	3.9	2.3	3.4	4.4	0.0	2.0	1.2	9.1	5.8
	TERMINAL No	11	12	13	14	15	16	17	18	19	20
	Volt	6.5	4.9	0.0	0.0	4.8	4.8	4.8	3.2	2.3	2.1
	TERMINAL No	21	22	23	24	25	26	27	28	29	30
	Volt	2.2	0.7	4.7	4.8	6.5	9.1	3.0	1.9	2.8	1.2
	TERMINAL No	31	32	33	34	35	36	37	38	39	40
	Volt	0.7	1.2	7.7	6.3	0.0	2.9	3.2	3.0	1.6	5.2
	TERMINAL No	41	42	43	44	45	46	47	48	49	50
	Volt	3.0	5.0	5.0	2.0	1.8	9.1	4.0	9.1	8.1	8.1
	TERMINAL No	51	52	53	54	55	56				
	Volt	0.0	0.0	2.8	4.0	2.8	0.0				
IC311	TERMINAL No	1	2	3							
	Volt	16.0	0.0	9.0							
IC501	TERMINAL No	1	2	3	4	5	6	7	8	9	
	Volt	0.0	11.4	0.0	23.0	12.6	0.0	-0.3	1.6	25.4	
IC601	TERMINAL No	1	2	3	4	5					
	Volt	0.0	121.0	160.0	160.0	0.0					
IC671	TERMINAL No	1	2	3	4	5	6	7	8		
	Volt	14.0	0.0	5.5	0.0	0.0	4.6	0.0	5.0		
IC701	TERMINAL No	1	2	3	4	5	6	7	8		
	Volt	0.0	8.8	7.6	0.0	0.0	1.2	0.7	9.0		
IC702	TERMINAL No	1	2	3	4	5	6				
	Volt	7.5	6.6	0.0	0.0	1.1	0.6				

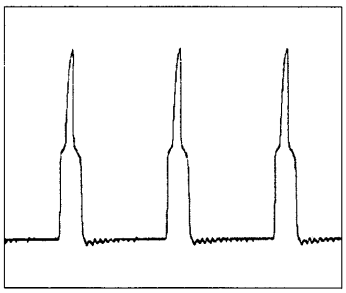
	B	E	C
	Volt	Volt	Volt
Q101	1.5	0.0	4.3
Q102	-0.8	0.0	3.8
Q173	-0.1	0.0	4.5
Q301	4.0	3.4	9.1
Q302	1.5	2.1	0.0
Q303	1.7	1.1	9.1
Q304	2.9	0.0	0.0
Q351	0.0	0.0	9.1
Q451	2.3	2.2	139
Q452	2.2	3.2	145
Q453	2.1	2.0	149

	B	E	C
	Volt	Volt	Volt
Q551	0.3	0.0	84.4
Q552	-0.2	0.0	-
Q601	0.7	0.0	0.2
Q701	2.9	2.3	9.8
Q703	2.9	2.3	10.3
Q751	1.1	0.5	4.1
Q752	1.0	0.4	5.4
Q753	4.1	3.5	8.9
Q801	0.7	0.0	7.1
Q802	7.1	7.8	0.0
Q803	8.4	7.8	16.0

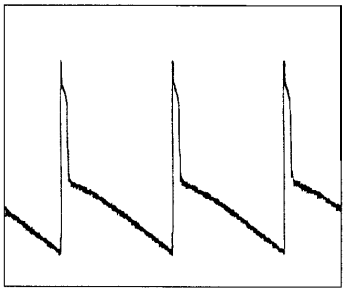
CHASSIS WAVEFORM



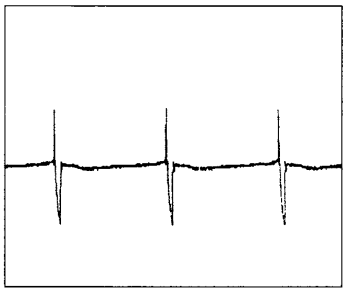
WF-1 1.0Vp-p(H)



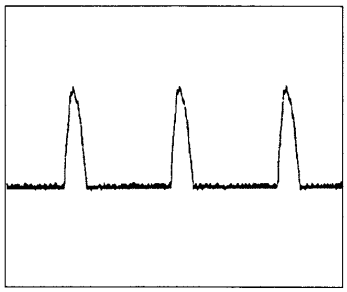
WF-2 9.7Vp-p(H)



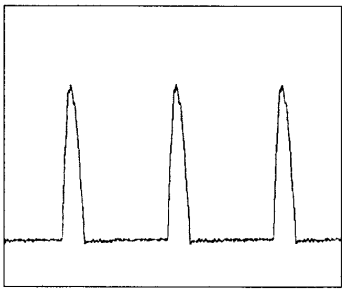
WF-3 47.2Vp-p(V)



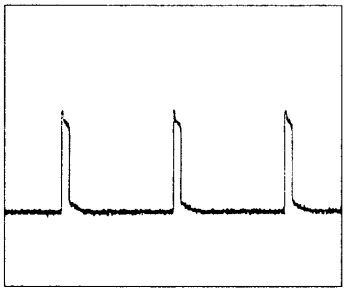
WF-4 1.7Vp-p(V)



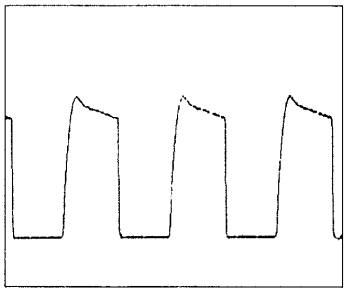
WF-5 27.4Vp-p(H)



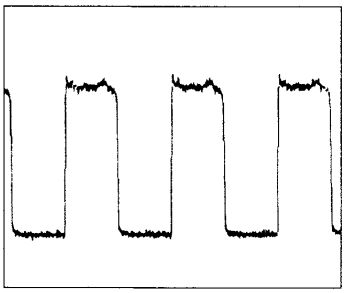
WF-6 24.4Vp-p(H)



WF-7 25.8Vp-p(V)



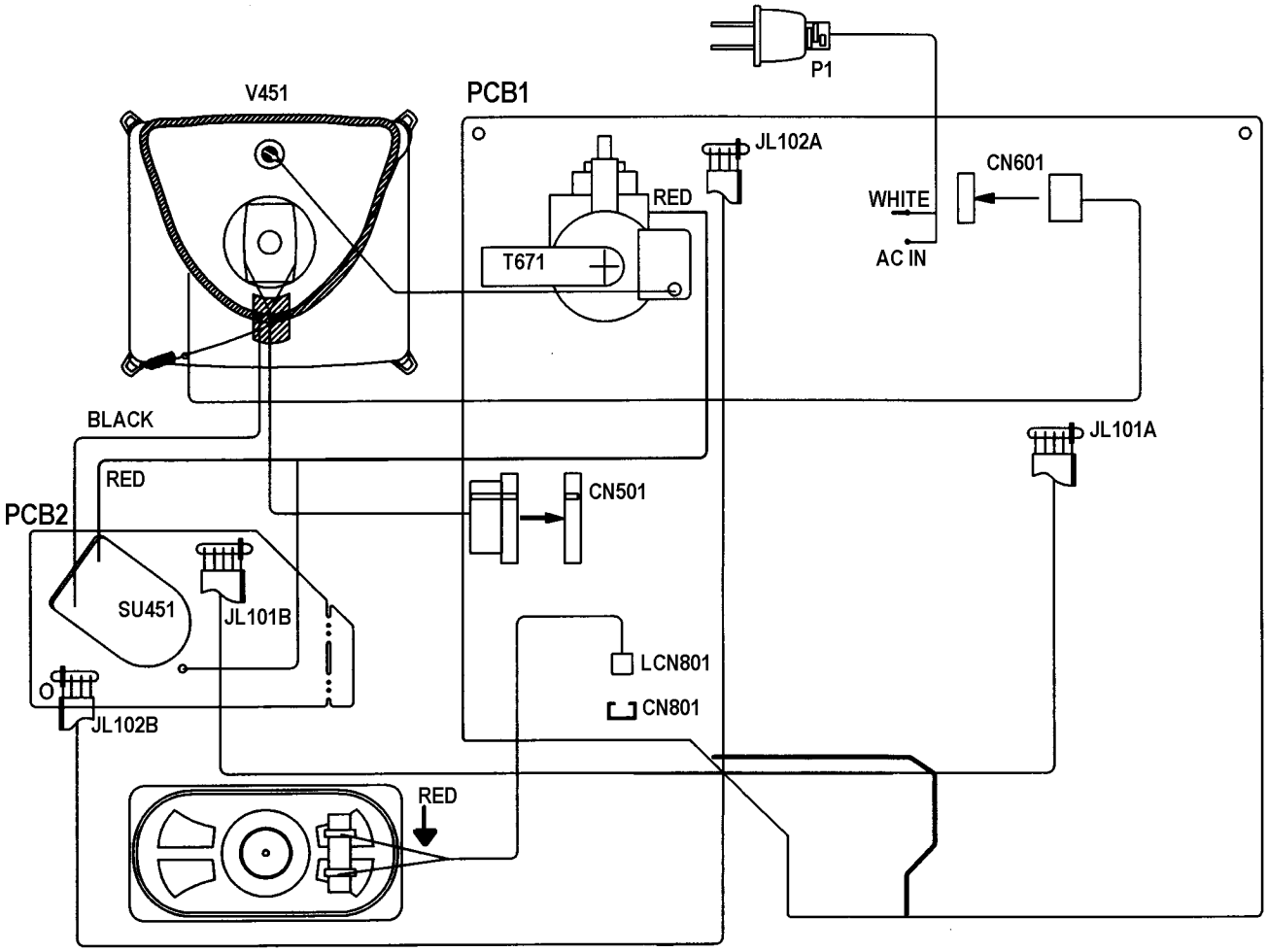
WF-8 202Vp-p(H)



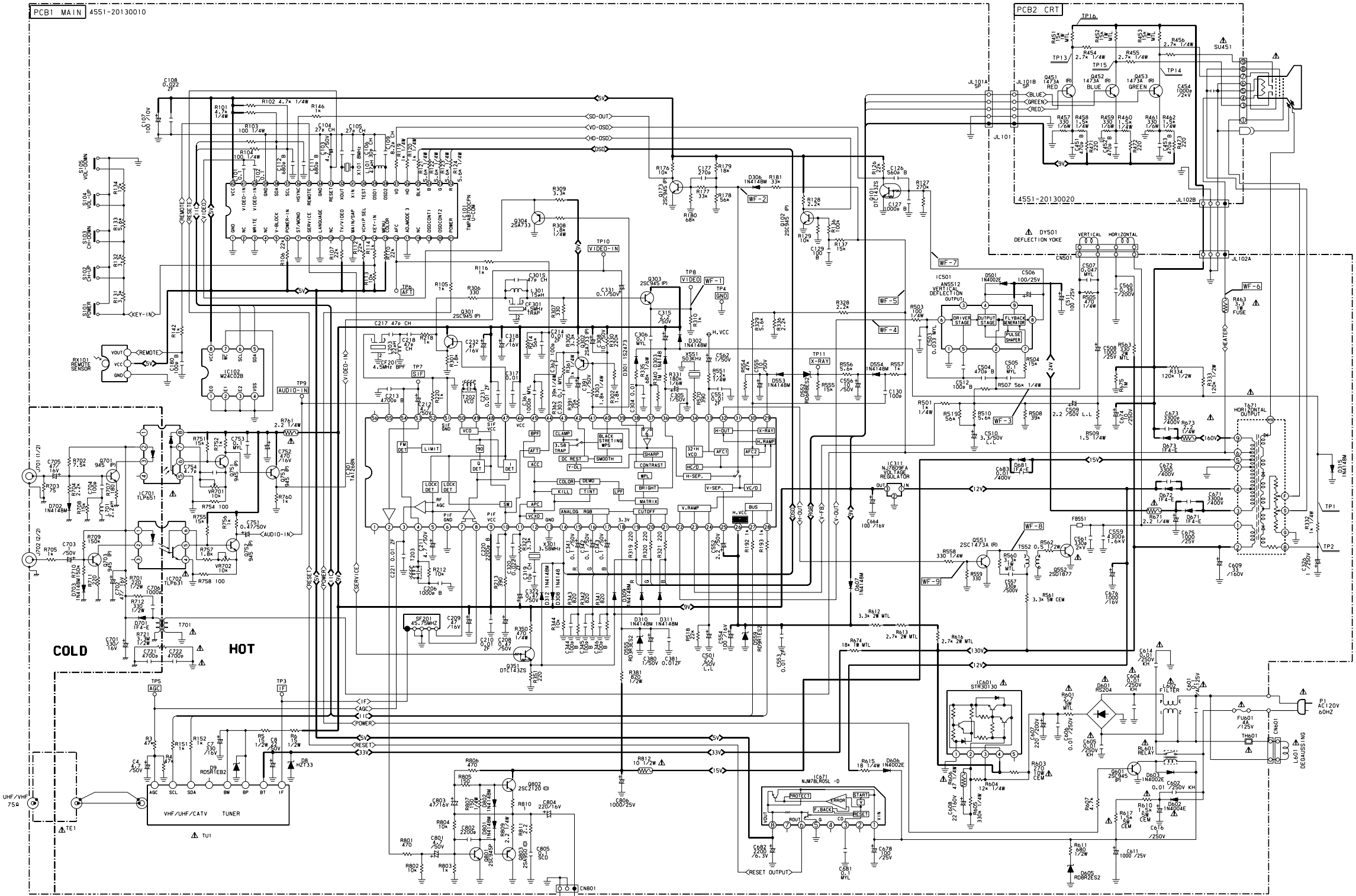
WF-9 0.75Vp-p(H)

NOTES:
WAVEFORMS SHOWN WERE PRODUCED USING A PATTERN GENERATOR WITH ITS CONTROL SET TO PRODUCE A COLOR BAR SIGNAL AND A WIDEBAND OSCILLOSCOPE WITH LOW CAPACITY PROBE TO PREVENT LOADING. RECEIVER OPERATING CONTROLS WERE ADJUSTED TO PRODUCE A NORMAL PICTURE. OSCILLOSCOPE SWEEP WAS SET AT 5mS FOR VERTICAL WAVEFORMS AND 20uS FOR HORIZONTAL WAVEFORMS. PEAK-TO-PEAK VOLTAGES INDICATED MAY VARY DEPENDING ON CALIBRATION OF TEST EQUIPMENT, CHASSIS PARTS TOLERANCES AND CONTROL SETTINGS. ALL WAVEFORMS ARE TAKEN WITH WIDEBAND OSCILLOSCOPE VOLTAGES AND WAVEFORMS ARE TAKEN WITH COLOR BAR SIGNAL GENERATOR APPLIED TO THE SET.

WIRING DIAGRAM



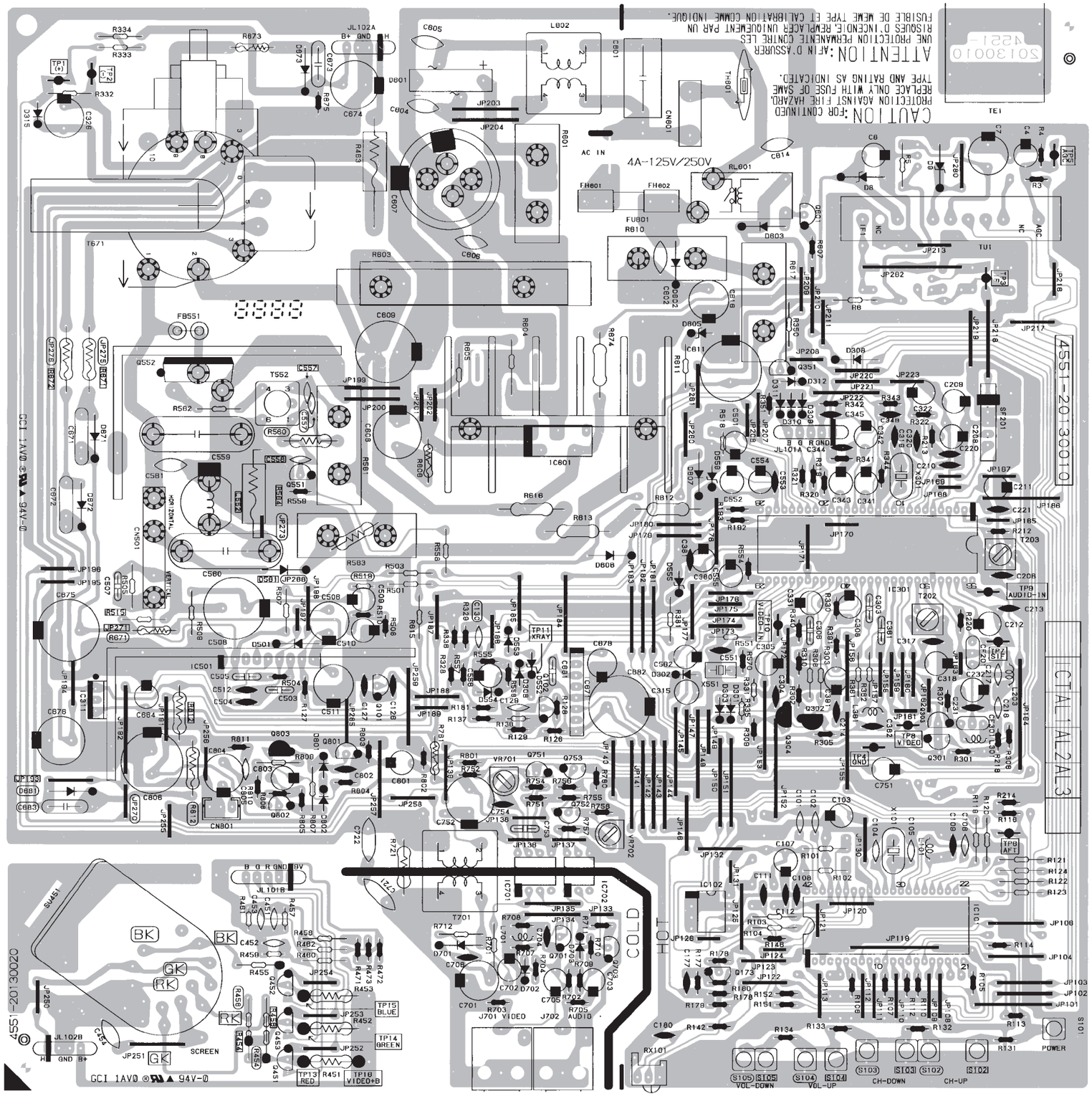
SCHEMATIC DIAGRAM



P.C. BOARDS

PCB-1

MAIN P.C. BOARD



PCB-2

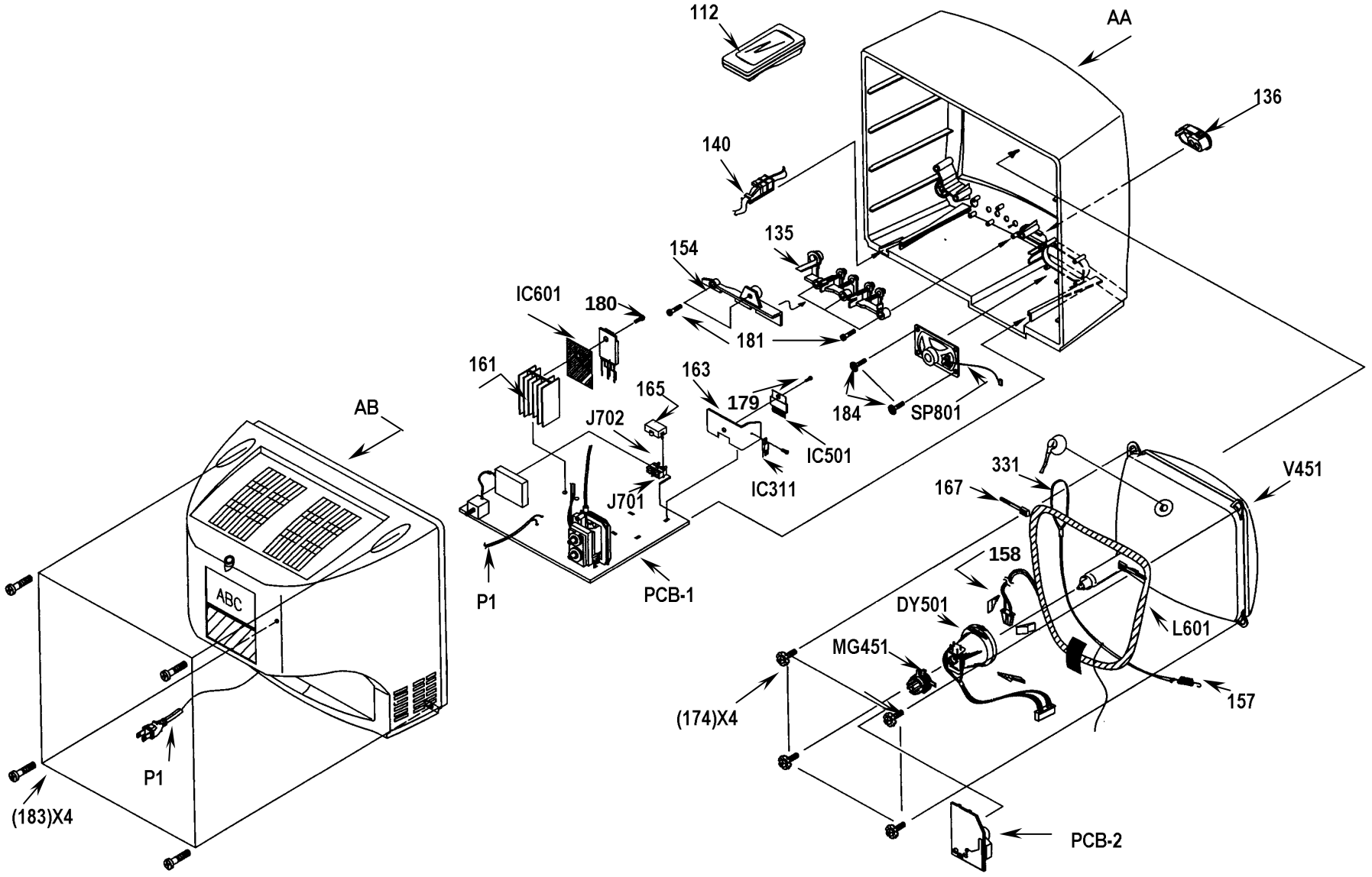
CRT SOCKET P.C. BOARD

NOTE

XXXX MT1132/MT1133

XXXX MT1192

EXPLODED VIEW



GENERAL UNIT PARTS LIST

Ref No.	Part No.	Description
⚠ 135	1662-78503	Push Button
⚠ 136	1532-25301	Window
⚠ 140	2240-742	Holder;CORD BUSHING
⚠ 154	2133-318	Protector;BUTTON
157	2651-199	Spring CRT;WIRE
158	2132-412	Wedge Deflection Yoke; SPACER(x3)
⚠ 161	2222-378	Heat Sink
⚠ 163	2222-295	Heat Sink
⚠ 165	2240-723	Holder JACK
167	2240-R0101	Holder Wiring;WIREx2(x4)
169	2240-7051	Holder Wiring
170	2240-7052	Holder Wiring
171	2114-1300	Bushing CRT;(x4)
172	2401-542	Metal Washer;(BOTTOM)(x2)
173	2401-543	Metal Washer;CRT(TOP)(x2)
174	2340-33	Special Self-Tapping Screw (+);(x4)
179	2347-R0130082	Self-Tapping Screw (+) (3x8 mm);(x2)
180	2347-R0130102	Self-Tapping Screw (+) (3x10 mm)
181	2347-R0130102	Self-Tapping Screw (+) (3x10 mm)
183	2347-R0140162	Self-Tapping Screw (+) (4x16 mm);(x4)
184	2347-R0130082	Self-Tapping Screw (+) (3x8 mm);(x2)
⚠ 153	2133-332	Protector
⚠ AA	A412-13V1109B	Cabinet
⚠ AB	A422-13V1109B	Cabiback;SUFFIX A
⚠ AB	A422-13V1109C	Cabiback;SUFFIX B
⚠ AB	A422-13V1109E	Cabiback;SUFFIX C
⚠ AB	A422-13V1109F	Cabiback;SUFFIX D

ELECTRICAL PARTS LIST

COILS AND TRANSFORMER

⚠ L601	4994-041	Coil

MISCELLANEOUS

⚠ DY501	4993-117	Coil Deflection Yoke SUFFIX A
⚠ DY501	4993-114	Coil Deflection Yoke SUFFIX B
⚠ DY501	4993-110	Coil Deflection Yoke SUFFIX C
⚠ DY501	4993-124	Coil Deflection Yoke SUFFIX D
⚠ LCN801	4163-06036003	Connector with Lead Wire;(SP)
MG1	4291-033	Magnet Assembly
SP801	5812-0101G750	Speaker
⚠ V451	5721-014ST37N	CRT;(37GDA86X) SUFFIX A
⚠ V451	5721-37CN030T	CRT (370KSB22(SYB)) SUFFIX B
⚠ V451	5721-026TT37N	CRT;(A34JFQ90X) SUFFIX C
⚠ V451	5721-030ZT37N	CRT;(A34JXV70X) SUFFIX D
112	6142-09010	Infrared Remote Control;CONTROL
⚠ 331	4105-01901	CRT Wire;(CRT GND)

PCB-1 MAIN P.C.BOARD

Ref No.	Part No.	Description
C4	5345-475-50	4.7 uF +-20% 50V Electrolytic
C7	5345-337-16	330 uF +-20% 16V Electrolytic
C8	5345-226-50	22 uF +-20% 50V Electrolytic
C101	5369-104144	0.1 uF +-10% 25V Semiconductor
C102	5369-104144	0.1 uF +-10% 25V Semiconductor
C103	5345-475-50	4.7 uF +-20% 50V Electrolytic
C104	5361-270JCH	27 pF +-5% 50V Ceramic CH
C105	5361-270JCH	27 pF +-5% 50V Ceramic CH
C106	5361-300JCH	30 pF +-5% 50V Ceramic CH
C107	5345-107-10	100 uF +-20% 10V Electrolytic
C108	V5369-S04FZ223	0.022 uF +80%-20% 25V Semiconductor
C109	V5361-S17CJ8R2	8.2 pF +-5% 50V Ceramic CH
C111	V5369-S05BK681	680 pF +-10% 50V Semiconductor
C112	V5369-S05BK681	680 pF +-10% 50V Semiconductor
C126	V5361-S17BK561	560 pF +-10% 50V Ceramic B
C127	V5369-S05BK102	1000 pF +-10% 50V Semiconductor
C129	5361-101KB	100 pF +-10% 50V Ceramic B
C130	5361-101KB	100 pF +-10% 50V Ceramic B
C177	V5361-S17BK271	270 pF +-10% 50V Ceramic B
C180	V5361-S17BK101	100 pF +-10% 50V Ceramic B
C206	V5369-S05BK102	1000 pF +-10% 50V Semiconductor
C208	5345-474-50	0.47 uF +-20% 50V Electrolytic
C209	5345-476-16	47 uF +-20% 16V Electrolytic
C210	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C211	5345-475-50	4.7 uF +-20% 50V Electrolytic
C212	5345-475-50	4.7 uF +-20% 50V Electrolytic
C213	V5369-S03XM472	4700 pF +-20% 16V Semiconductor
C214	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C217	5361-470JCH	47 pF +-5% 50V Ceramic CH
C218	5361-470JCH	47 pF +-5% 50V Ceramic CH
C220	V5369-S03XM222	2200 pF +-20% 16V Semiconductor
C221	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C231	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C232	5345-476-16	47 uF +-20% 16V Electrolytic
C303	5354-104593	0.1 uF +-5% 50V TF
C304	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C305	5345-105-50	1 uF +-20% 50V Electrolytic
C306	5354-104K1HM	0.1 uF +-10% 50V Mylar
C308	5345-106-50	10 uF +-20% 50V Electrolytic
C315	5342-S06FM225	2.2 uF +-20% 50V Electrolytic NP
C317	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C318	5345-476-16	47 uF +-20% 16V Electrolytic
C319	V5361-S17CJ100	10 pF +-5% 50V Ceramic CH
C320	V5369-S04FZ223	0.022 uF +80%-20% 25V Semiconductor
C322	5345-474-50	0.47 uF +-20% 50V Electrolytic
C326	5345-105-250	1 uF +-20% 250V Electrolytic
C331	5345-104-50	0.1 uF +-20% 50V Electrolytic

Ref No.	Part No.	Description
	CAPACITORS	
C341	5345-104-50	0.1 uF +-20% 50V Electrolytic
C342	5345-104-50	0.1 uF +-20% 50V Electrolytic
C343	5345-104-50	0.1 uF +-20% 50V Electrolytic
C344	V5361-S17BK101	100 pF +-10% 50V Ceramic B
C345	V5361-S17BK101	100 pF +-10% 50V Ceramic B
C346	V5361-S17BK101	100 pF +-10% 50V Ceramic B
C361	5354-102K1HM	1000 pF +-10% 50V Mylar
C362	V5361-S17BK101	1000 pF +-10% 50V Ceramic B
C380	5345-105-50	1 uF +-20% 50V Electrolytic
C381	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C391	5345-105-50	1 uF +-20% 50V Electrolytic
C501	5345-L225M50	2.2 uF +-20% 50V Electrolytic L.L
C503	5354-333K1HM	0.033 uF +-10% 50V Mylar
C504	V5361-S17BK471	470 pF +-10% 50V Ceramic B
C505	5354-104593	0.1 uF +-5% 50V TF
C506	5345-107-25	100 uF +-20% 25V Electrolytic
C507	5354-473K1HM	0.047 uF +-10% 50V Mylar
C508	5345-108-25	1000 uF +-20% 25V Electrolytic
C509	5345-L225M50	2.2 uF +-20% 50V Electrolytic L.L
C510	5345-L335M50	3.3 uF +-20% 50V Electrolytic L.L
C511	5345-107-25	100 uF +-20% 25V Electrolytic
C512	V5361-S17BK101	100 pF +-10% 50V Ceramic B
C551	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C552	5345-225-50	2.2 uF +-20% 50V Electrolytic
C553	V5369-S04FZ103	0.01 uF +80%-20% 25V Semiconductor
C554	5345-107-16	100 uF +-20% 16V Electrolytic
C555	5345-106-50	10 uF +-20% 50V Electrolytic
C556	5345-106-50	10 uF +-20% 50V Electrolytic
C557	5361-R01BK331	330 pF +-10% 500V Ceramic
C559	5352-S020J432	4300 pF +-5% 1.6 kV Metalized Polyester
C560	5352-S321J394	0.39 uF +-5% Metalized Polyester
C561	5361-S11BK331	330 pF +-10% 2 kV Ceramic
C562	5345-105-50	1 uF +-20% 50V Electrolytic
⚠ C601	5352-S331K104	0.1 uF+-10% Metalized Polyester
⚠ C602	5361-S40FM103	0.01 uF +-20% 250V Cetamic F
⚠ C604	5361-S40FM103	0.01 uF +-20% 250V Cetamic F
⚠ C605	5361-S40FM103	0.01 uF +-20% 250V Cetamic F
C606	5361-S09VZ103	0.01 uF +80%-20% 250V Ceramic
C607	5345-S48LM227	220 uF +-20% 200V Electrolytic
C608	5345-226-160	22 uF +-20% 160V Electrolytic
C609	5345-336-160	33 uF +-20% 160V Electrolytic
C611	5345-108-25	1000 uF +-20% 25V Electrolytic
⚠ C614	5361-S40FM103	0.01 uF +-20% 250V Cetamic F
C616	5345-S59MM105	1 uF +-20% 250V Electrolytic
C664	5345-107-16	100 uF +-20% 16V Electrolytic
C671	5359-3321959	3300 pF +-10% 400V Polypropylene
C672	5359-3321959	3300 pF +-10% 400V Polypropylene

Ref No.	Part No.	Description
	CAPACITORS	
C673	5359-3321959	3300 pF +-10% 400V Polypropylene
C674	5345-106-250	10 uF +-20% 250V Electrolytic
C675	5345-108-25	1000 uF +-20% 25V Electrolytic
C676	5345-108-16	1000 uF +-20% 16V Electrolytic
C678	5345-107-25	100 uF +-20% 25V Electrolytic
C681	5354-104K1HM	0.1 uF +-10% 50V Mylar
C682	5345-228-06	2200 uF +-20% 6.3V Electrolytic
C683	5359-1031959	0.01 uF +-10% 400V Polypropylene
C701	5345-337-16	330 uF +-20% 16V Electrolytic
C702	5345-476-16	47 uF +-20% 16V Electrolytic
C703	5345-105-50	1 uF +-20% 50V Electrolytic
C704	V5361-S17BK101	100 pF +-10% 50V Ceramic B
C705	5345-476-16	47 uF +-20% 16V Electrolytic
C706	V5369-S05BK102	1000 pF +-10% 50V Semiconductor
⚠ C721	5361-S40EM472	4700 pF +-20% 250V Ceramic
⚠ C722	5361-S40EM472	4700 pF +-20% 250V Ceramic
C751	5345-474-50	0.47 uF +-20% 50V Electrolytic
C752	5345-108-16	1000 uF +-20% 16V Electrolytic
C753	5354-104593	0.1 uF +-5% 50V TF
C754	V5361-S17CK4R7	40 uF +-10% 50V Ceramic CH
C801	5345-475-50	4.7 uF +-20% 50V Electrolytic
C802	V5369-S03XM222	2200 pF +-20% 16V Semiconductor
C803	5345-476-16	47 uF +-20% 16V Electrolytic
C804	5345-227-16	220 uF +-20% 16V Electrolytic
C805	5369-104144	0.1 uF +-10% 25V Semiconductor
C806	5345-108-25	1000 uF +-20% 25V Electrolytic
	RESISTORS	
R3	V5133-R010J473	47 k ohm +-5% 1/8W Carbon
R4	V5133-R010J473	47 k ohm +-5% 1/8W Carbon
R5	5135-150J50P	15 ohm +-5% 1/2W Carbon
R6	5135-150J50P	15 ohm +-5% 1/2W Carbon
R101	5134-472J25P	4.7 k ohm +-5% 1/4W Carbon
R102	5134-472J25P	4.7 k ohm +-5% 1/4W Carbon
R103	5134-101J25P	100 ohm +-5% 1/4W Carbon
R104	5134-101J25P	100 ohm +-5% 1/4W Carbon
R105	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R106	V5133-R010J223	22 k ohm +-5% 1/8W Carbon
R107	V5133-R010J223	22 k ohm +-5% 1/8W Carbon
R110	V5133-R010J223	22 k ohm +-5% 1/8W Carbon
R112	V5133-R010J223	22 k ohm +-5% 1/8W Carbon
R113	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R114	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R116	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R119	5134-102J25P	1 k ohm +-5% 1/4W Carbon
R120	5134-102J25P	1 k ohm +-5% 1/4W Carbon

RESISTORS

Ref No.	Part No.	Description
R121	5134-562J25P	5.6 k ohm +-5% 1/4W Carbon
R122	5134-562J25P	5.6 k ohm +-5% 1/4W Carbon
R123	5134-562J25P	5.6 k ohm +-5% 1/4W Carbon
R124	5134-562J25P	5.6 k ohm +-5% 1/4W Carbon
R126	V5133-R010J223	22 k ohm +-5% 1/8W Carbon
R127	V5133-R010J274	270 k ohm +-5% 1/8W Carbon
R128	V5133-R010J222	2.2 k ohm +-5% 1/8W Carbon
R129	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R131	V5133-R010J332	3.3 k ohm +-5% 1/8W Carbon
R132	V5133-R010J332	3.3 k ohm +-5% 1/8W Carbon
R133	V5133-R010J562	5.6 k ohm +-5% 1/8W Carbon
R134	V5133-R010J123	12 k ohm +-5% 1/8W Carbon
R136	5232-104J16P	100 k ohm +-5% 1/6W Carbon
R137	V5133-R010J153	15 k ohm +-5% 1/8W Carbon
R142	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R146	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R151	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R152	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R176	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R177	V5133-R010J333	33 k ohm +-5% 1/8W Carbon
R178	V5133-R010J563	56 k ohm +-5% 1/8W Carbon
R179	V5133-R010J183	18 k ohm +-5% 1/8W Carbon
R180	V5133-R010J683	68 k ohm +-5% 1/8W Carbon
R181	V5133-R010J333	33 k ohm +-5% 1/8W Carbon
R192	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R193	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R212	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R213	V5133-R010J391	390 ohm +-5% 1/8W Carbon
R214	V5133-R010J563	56 k ohm +-5% 1/8W Carbon
R218	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R220	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R301	V5133-R010J182	1.8 k ohm +-5% 1/8W Carbon
R302	V5133-R010J182	1.8 k ohm +-5% 1/8W Carbon
R303	5134-182J25P	1.8 k ohm +-5% 1/4W Carbon
R305	V5133-R010J332	3.3 k ohm +-5% 1/8W Carbon
R306	V5133-R010J331	330 ohm +-5% 1/8W Carbon
R307	V5133-R010J331	330 ohm +-5% 1/8W Carbon
R308	5134-182J25P	1.8 k ohm +-5% 1/4W Carbon
R309	V5133-R010J332	3.3 k ohm +-5% 1/8W Carbon
R310	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R319	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R320	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R321	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R322	V5133-R010J332	3.3 k ohm +-5% 1/8W Carbon
R328	V5133-R010J222	2.2 k ohm +-5% 1/8W Carbon
R329	V5133-R010J562	5.6 k ohm +-5% 1/8W Carbon
R330	V5133-R010J224	220 k ohm +-5% 1/8W Carbon
R332	5134-102J25P	1 k ohm +-5% 1/4W Carbon
R333	5135-124J50P	120 k ohm +-5% 1/2W Carbon

RESISTORS

Ref No.	Part No.	Description
R334	5135-124J50P	120 k ohm +-5% 1/2W Carbon
R335	5232-683J16P	68 k ohm +-5% 1/6W Carbon
R336	V5133-R010J222	2.2 k ohm +-5% 1/8W Carbon
R340	V5133-R010J105	1 M ohm +-5% 1/8W Carbon
R341	V5133-R010J821	820 ohm +-5% 1/8W Carbon
R342	V5133-R010J821	820 ohm +-5% 1/8W Carbon
R343	V5133-R010J821	820 ohm +-5% 1/8W Carbon
R344	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R350	5134-471J25P	470 ohm +-5% 1/4W Carbon
R351	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R361	5134-102J25P	1 k ohm +-5% 1/4W Carbon
R362	5134-393J25P	39 k ohm +-5% 1/4W Carbon
R381	5135-821J50P	820 ohm +-5% 1/2W Carbon
R391	V5133-R010J753	75 k ohm +-5% 1/8W Carbon
R463	5102-3R35716	3.3 ohm +-5% 1W Fuse
⚠ R501	5134-102J25P	1 k ohm +-5% 1/4W Carbon
R503	5134-101J25P	100 ohm +-5% 1/4W Carbon
R504	V5133-R010J153	15 k ohm +-5% 1/8W Carbon
R505	5134-471J25P	470 ohm +-5% 1/4W Carbon
R507	5134-563J25P	56 k ohm +-5% 1/4W Carbon
R508	V5133-R010J333	33 k ohm +-5% 1/8W Carbon
R509	5134-1R5J25P	1.5 ohm +-5% 1/4W Carbon
R510	V5133-R010J562	5.6 k ohm +-5% 1/8W Carbon
R518	5232-223J16P	22 k ohm +-5% 1/6W Carbon
R519	5232-563J16P	56 k ohm +-5% 1/6W Carbon
R551	5134-222J25P	2.2 k ohm +-5% 1/4W Carbon
R554	V5133-R010J473	47 k ohm +-5% 1/8W Carbon
R555	V5133-R010J153	15 k ohm +-5% 1/8W Carbon
R556	V5133-R010J562	5.6 k ohm +-5% 1/8W Carbon
R557	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R558	5134-331J25P	330 ohm +-5% 1/4W Carbon
R559	V5133-R010J331	330 ohm +-5% 1/8W Carbon
R560	5171-S071J332	3.3 k ohm +-5% 1W Metal
R561	5275-S080K332	3.3 k ohm +-10% 5W Cement
R562	5135-0R5J50P	0.5 ohm +-5% 1/2W Carbon
R563	5173-S051J331	330 ohm +-5% 2W Metal
R570	V5133-R010J391	390 ohm +-5% 1/8W Carbon
R601	5179-S010K2R7	2.7 ohm +-10% 5W Cement
⚠ R603	5276-S021J271	270 ohm +-5% 10W Cement
⚠ R604	5134-123J25P	12 k ohm +-5% 1/4W Carbon
R605	5134-334J25P	330 k ohm +-5% 1/4W Carbon
R606	5102-S101J470	47 ohm +-5% 1/4W Fuse
⚠ R607	V5133-R010J472	4.7 k ohm +-5% 1/8W Carbon
R610	5275-S080K152	1.5 k ohm +-10% 5W Cement
⚠ R611	5135-681J50P	680 ohm +-5% 1/2W Carbon
R612	5173-S051J332	3.3 k ohm +-5% 2W Metal
R613	5173-S051J272	2.7 k ohm +-5% 2W Metal
R615	5134-180J25P	18 ohm +-5% 1/4W Carbon
R616	5173-S051J272	2.7 k ohm +-5% 2W Metal

RESISTORS

Ref No.	Part No.	Description
R617	5275-S080K152	1.5 k ohm +-10% 5W Cement
⚠ R671	5102-S101J2R2	2.2 ohm +-5% 1/4W Fuse
⚠ R673	5102-S101J2R2	2.2 ohm +-5% 1/4W Fuse
⚠ R674	5171-S071J183	18 k ohm +-5% 1W Metal
R675	V5133-R010J105	1 M ohm +-5% 1/8W Carbon
R701	5135-221J50P	220 ohm +-5% 1/2W Carbon
R702	V5133-R010J752	7.5 k ohm +-5% 1/8W Carbon
R703	V5133-R010J750	75 ohm +-5% 1/8W Carbon
R704	V5133-R010J222	2.2 k ohm +-5% 1/8W Carbon
R705	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R707	V5133-R010J181	180 ohm +-5% 1/8W Carbon
R708	V5133-R010J153	15 k ohm +-5% 1/8W Carbon
R709	V5133-R010J154	150 k ohm +-5% 1/8W Carbon
R711	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R712	5135-331J50P	330 ohm +-5% 1/2W Carbon
⚠ R721	5135-S051J335	3.3 M ohm +-5% 1/2W Carbon
R751	V5133-R010J153	15 k ohm +-5% 1/8W Carbon
R752	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R754	V5133-R010J101	100 ohm +-5% 1/8W Carbon
R755	V5133-R010J153	15 k ohm +-5% 1/8W Carbon
R756	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R757	V5133-R010J182	1.8 k ohm +-5% 1/8W Carbon
R758	V5133-R010J101	100 ohm +-5% 1/8W Carbon
R760	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
⚠ R761	5102-S101J2R2	2.2 ohm +-5% 1/4W Fuse
R801	V5133-R010J471	470 ohm +-5% 1/8W Carbon
R802	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R803	V5133-R010J102	1 k ohm +-5% 1/8W Carbon
R804	V5133-R010J103	10 k ohm +-5% 1/8W Carbon
R805	V5133-R010J151	150 ohm +-5% 1/8W Carbon
R806	V5133-R010J471	470 ohm +-5% 1/8W Carbon
R807	5134-151J25P	150 ohm +-5% 1/4W Carbon
R809	5134-2R2J25P	2.2 ohm +-5% 1/4W Carbon
R810	V5133-R010J1R0	1 ohm +-5% 1/8W Carbon
R811	V5133-R010J2R2	2.2 ohm +-5% 1/8W Carbon
⚠ R812	5102-S111J100	10 ohm +-5% 1/2W Fuse

TRANSISTORS

Ref No.	Part No.	Description
Q101	5613-C143ZS	Transistor, DTC143ZS
Q102	5613-2785(F)	Transistor, 2SC2785(F)
Q173	5613-2785(F)	Transistor, 2SC2785(F)
Q301	5613-2785(F)	Transistor, 2SC2785(F)
Q302	5611-1175(F)	Transistor, 2SA1175(F)
Q303	5613-2785(F)	Transistor, 2SC2785(F)
Q304	5611-1175(F)	Transistor, 2SA1175(F)
Q351	5613-C143ZS	Transistor, DTC143ZS
Q551	5613-1473A(R)	Transistor, 2SC1473A(R)
⚠ Q552	5614-1877	Transistor, 2SD1877;(HORIZONTAL)
Q601	5613-2785(F)	Transistor, 2SC2785(F)
Q701	5613-2785(F)	Transistor, 2SC2785(F)
Q703	5613-2785(F)	Transistor, 2SC2785(F)
Q751	5613-2785(F)	Transistor, 2SC2785(F)
Q752	5613-2785(F)	Transistor, 2SC2785(F)
Q753	5613-2785(F)	Transistor, 2SC2785(F)
Q801	5613-2785(F)	Transistor, 2SC2785(F)
Q802	5613-2120(O)	Transistor, 2SC2120(O)
Q803	5611-950(O)	Transistor, 2SA950(O)

INTEGRATED CIRCUITS

Ref No.	Part No.	Description
IC101	5654-TA87C-B2	IC;(u-COM)
IC102	5654-S24C02BP	IC;(EEPROM)
IC301	5653-TA1268N	IC, TA1268N ;(IF/VIDEO/CHROMA/DEF)
IC311	5653-NJ7809FA	IC, NJM7809FA;(9V REGULATOR)
IC501	5652-AN5512	IC, AN5512;(VERTICAL)
⚠ IC601	5653-STR30130	IC, STR30130;(AVR)
IC671	5653-NJ7805LD	IC, NJM78LR05L-D;(5V REGULATOR/RESET 4.2V)
⚠ IC701	5624-TLP651	Photo-Interrupter;(VIDEO)
⚠ IC702	5624-TLP631	Photo-Interrupter;(AUDIO)

DIODES

Ref No.	Part No.	Description
D8	5635-HZT33	Zener, HZT33 33V 400 mW
D9	5635-RD5R1EB2	Zener, RD5.1EB2 5.1V
D301	5636-1N4148M	Diode
D302	5636-1N4148M	Diode
D303	5636-1N4148M	Diode
D306	5636-1N4148M	Diode
D308	5636-1N4148	Diode
D309	5636-1N4148M	Diode
D310	5636-1N4148M	Diode
D311	5636-1N4148M	Diode
D312	5636-1N4148M	Diode
D315	5636-1N4148M	Diode
D501	5632-1N4002E	Diode, RL1N4002-E
D552	5635-RD6R8ES2	Zener;6.8V
D553	5636-1N4148M	Diode
D554	5636-1N4148M	Diode
D555	5635-RD3R3ES2	Zener;3.3V
D559	5635-RD9R1ES2	Zener;9.1V
⚠ D601	5685-RS204LST	Bridge Silicon Diode
⚠ D602	5632-1N4004E	Diode, RL1N4004-E
D603	5632-1N4002E	Diode, RL1N4002-E
D605	5635-RD8R2ES2	Zener;8.2V
D606	5632-1N4002E	Diode, RL1N4002-E
D607	5636-1N4148	Diode
D671	5632-1F4-E	Diode, 1F4
D672	5632-1F4-E	Diode, 1F4
D673	5632-1F4-E	Diode, 1F4
D681	5632-1F4-E	Diode, 1F4
D701	5632-1F4-E	Diode, 1F4
D702	5636-1N4148M	Diode
D703	5636-1N4148M	Diode
D801	5636-1N4148M	Diode
D802	5636-1N4148M	Diode

CONTROLS

VR701	5101-10301934	10 k ohm Variable Resistor
VR702	5101-10301934	10 k ohm Variable Resistor

COILS AND TRANSFORMERS

Ref No.	Part No.	Description
L101	5995-470098	Coil 47 uH
L203	5995-220098	Coil 22 uH
L301	5995-150098	Coil 15 uH
L361	5995-5R6098	Coil 5.6uH
⚠ L602	5583-52301	Coil AF CH;(LINE FILTER)
L701	5995-2R2098	Coil 2.2 uH
T202	5932-12502	Coil;(AFT)
T203	5562-0019	Transformer (SIF DET)
T552	5581-18801	Transformer
⚠ T671	4992-078	Transformer
⚠ T701	5583-52301	Coil AF CH

MISCELLANEOUS

CF201	5671-02810452	Ceramic Filter;(4.5MHz BAND PASS F.)
CF301	5671-02410452	Ceramic Filter;(4.5MHz TRAP)
CN501	4443-0501142	Connector 5-pin;(DY)
CN601	4443-10101002	Connector 2-pin.;(DEGAUSS)
CN801	4443-03201003	Connector;(SP)
FB551	5597-51001	Ferrite Bead
FH601	4472-05001	Fuse Holder;(FU601)
FH602	4472-05001	Fuse Holder;(FU601)
⚠ FU601	5732-02401402	Fuse;(4A/125V)
J701	4481-01602	Jack;(VIDEO INPUT)
J702	4481-01603	Jack;(AUDIO INPUT)
⚠ JL101	4242-R0505401	Jumper Lead 5-Wire;(MAIN~CRT)
⚠ JL102	4242-R0504301	Jumper Lead 4-Wire;(MAIN~CRT)
⚠ P1	4161-14701212	Cord w/Plug;(AC CORD)
⚠ RL601	4331-03403	DC Relay
RX101	6143-02401	Remote Control Receiver Unit
S101	4437-00611	Push Switch
S102	4437-00611	Push Switch
S103	4437-00611	Push Switch
S104	4437-00611	Push Switch
S105	4437-00611	Push Switch
SF201	5679-01501450	Surface Acoustic Wave Filter
⚠ TE1	4363-01201	Antenna Coupler;(ANT)

Ref No.	Part No.	Description

MISCELLANEOUS

⚠ TH601	5192-01801	Posistor
⚠ TU1	6119-15502	VHF/UHF/CATV Tuner Assembly
X101	5691-S2401802	Crystal Osc.8.0MHz;(8.0MHz)
X301	5691-S2401362	Crystal Osc. 3.579545MHz;(3.57945MHz)
X551	5693-SB503F30	Ceramic Osc. 503 kHz;(503kHz)

PCB-2 CRT SOCKET P.C.BOARD(D551-13T102B)

CAPACITORS

C451	5361-471KB	470 pF +-10% 50V Ceramic B
C452	5361-471KB	470 pF +-10% 50V Ceramic B
C453	5361-471KB	470 pF +-10% 50V Ceramic B
C454	5361-S11BK102	1000 pF +-10% 2 kV Ceramic

RESISTORS

R451	5171-S071J153	15 k ohm +-5% 1W Metal
R452	5171-S071J153	15 k ohm +-5% 1W Metal
R453	5171-S071J153	15 k ohm +-5% 1W Metal
R454	5134-272J25P	2.7 k ohm +-5% 1/4W Carbon
R455	5134-272J25P	2.7 k ohm +-5% 1/4W Carbon
R456	5134-272J25P	2.7 k ohm +-5% 1/4W Carbon
R457	5232-331J16P	330 ohm +-5% 1/6W Carbon
R458	5134-152J25P	1.5 k ohm +-5% 1/4W Carbon
R459	5232-331J16P	330 ohm +-5% 1/6W Carbon
R460	5134-152J25P	1.5 k ohm +-5% 1/4W Carbon
R461	5232-331J16P	330 ohm +-5% 1/6W Carbon
R462	5134-152J25P	1.5 k ohm +-5% 1/4W Carbon
R471	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R472	V5133-R010J221	220 ohm +-5% 1/8W Carbon
R473	V5133-R010J221	220 ohm +-5% 1/8W Carbon

TRANSISTORS

Q451	5613-1473A(R)	Transistor, 2SC1473A(R)
Q452	5613-1473A(R)	Transistor, 2SC1473A(R)
Q453	5613-1473A(R)	Transistor, 2SC1473A(R)

MISCELLANEOUS

⚠ SU451	4474-08001	Socket

Note: ⚠ ***Safety Related Components.***
Use Only Exact Replacement Parts.