

Notice



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FILE NO.

Please add this notice to the Service Manual listed below.

REVISION 2

Category : **COLOR TELEVISION**

Date: **MAY / 7 / 2001**

Model: **AVM-1309S**

Effective from : Chassis No. **G6L-1309S2**

Destination: **U.S.A./CANADA** REF : No. **SM510238**

NOTE: Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual.
If the Service Manual Chassis No. does not match the unit's, additional Service Literature is required. This chassis is similar to Chassis No. G6L-1309S0, however, all service Information is given in this Notice for Chassis No. G6L-1309S2.

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Specifications

Power Rating	120V, 60Hz 53W (Avg), 1.1A (Max)
Antenna Input Impedance	75Ω UHF/VHF/CATV
Receiving Channel	2 - 13 (VHF), 14 - 69 (UHF), 01, 14-94, 95-125 (CATV)
Remote Ready	23 Key Remote Control
Sound Output	1.0 W
Intermediate Frequency	
Picture IF Carrier	45.75MHz
Sound IF Carrier	41.25MHz
Color Sub Carrier	42.17MHz
Picture Tube	A34JRY24X/A34JRY24X (DT)/ A34KPU02XX/A34KPU03XX
Semiconductors	
Integrated Circuits	7
Transistors	10
Except within Tuner and RC Pre-Amp.	
Cabinet Dimensions	
Width	372mm
Height	335mm
Depth	373mm

SAFETY INSTRUCTIONS

SAFETY PRECAUTIONS

WARNING: The chassis of this receiver has a floating ground with the potential of one half the AC line voltage in respect to earth ground. Service should not be attempted by anyone not familiar with the precautions necessary when working on this type of equipment.

The following precautions must be observed:

1. An isolation transformer must be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Comply with all caution and safety-related notes provided on the side of the cabinet, inside the cabinet, on the chassis, and the picture tube.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as control knobs, adjustment covers, shields and barriers.

DO NOT OPERATE THIS TELEVISION RECEIVER WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PROPERLY SECURED.

4. Before replacing the back cover of the set, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.

Before returning any television to the customer, the service technician must perform the following safety checks to be sure that the unit is completely safe to operate without danger of electrical shock.

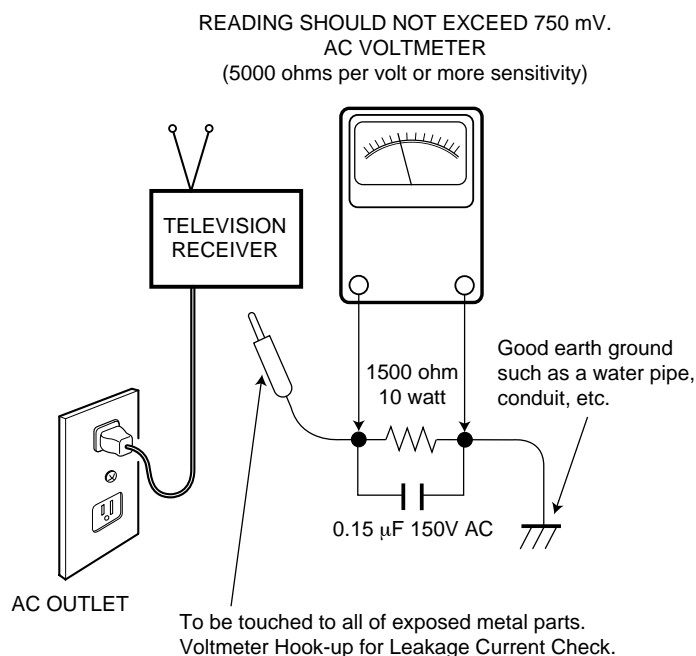
ANTENNA COLD CHECK

Remove AC plug from the 120 VAC outlet and place a jumper across the two blades. Connect one lead of an ohmmeter to the jumpered AC plug, and touch the other lead to each exposed antenna terminal (UHF and VHF antenna terminals). The resistance must measure between 1M ohm and 5.2M ohm. Any resistance value below or above this range indicates an abnormality which requires corrective action.

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120 VAC outlet. (Do not use an isolation transformer for this check.) Use an AC voltmeter, that has 5000 ohms per volt or more sensitivity. Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μ F 150 VAC capacitor, between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of the cabinet (antennas, handle bracket, metal cabinet, screw heads, metal overlays, control shafts, etc.). Measure the AC voltage across the 1500 ohm resistor. The AC voltage should not exceed 750 mV. A reading exceeding 750 mV indicates that a dangerous potential exists. The fault must be located and corrected. Repeat the above test with the receiver power plug reversed.

NEVER RETURN A RECEIVER TO THE CUSTOMER WITHOUT TAKING THE NECESSARY CORRECTIVE ACTION.



X-RADIATION PRECAUTION

The primary source of X-RADIATION in solid-state receivers is the picture tube. The picture tube is specially constructed to limit X-Ray emission. For continued X-RADIATION protection, the replacement tube must be the same type as the original (including the suffix letter in the part numbers). Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specific limits. Refer to the X-RADIATION WARNING NOTE on the CHASSIS SCHEMATIC in this service manual for specific high voltage limits. If the high voltage exceeds specified limits, check the components specified on the chassis schematic diagram and take the necessary corrective action. Carefully follow the instructions for the +B Voltage Check and the High Voltage Check to maintain the high voltage within the specified limits.

HIGH VOLTAGE HOLD-DOWN TEST

To prevent X-RADIATION from the picture tube due to excessive high voltage, a HOLD-DOWN circuit is provided in the high voltage circuit. Every time the receiver is serviced, the high voltage HOLD-DOWN circuit must be tested for proper operation. Refer to the HIGH VOLTAGE HOLD-DOWN TEST in service adjustments.

PRODUCT SAFETY NOTICE

When replacing components in a receiver, always keep in mind the necessary product safety precautions. Pay special attention to the replacement of components marked with a star (★) in the parts list and in the schematic diagrams. To ensure safe product operation, it is necessary to replace those components with the exact same PARTS.

SERVICE ADJUSTMENTS

GENERAL

This set has an On-screen Service Menu system included in the CPU that allows remote operation for most of the service adjustments.

IC802 (EEPROM) REPLACEMENT

When IC802 (EEPROM) is replaced, IC801 (CPU) will automatically write the initial reference data into IC802 for basic TV operation. However, the bus data should be checked and some bus data should be set up before attempting the service adjustments. (See pages 4 – 5 for detailed information.)

INITIAL BUS DATA SETUP

Note: When IC802 (EEPROM) is replaced, the Service Menu No. 007 VLN (V Linearity), No. 021 SBI (Sub-Bias), No. 023 POS (Pre/Over-Shoot), No. 028 PRE (Pre-Shoot Width), No. 035 YGM (Y Gamma Start Point), No. 037 AF (AutoFlesh), No. 041 RYA (R-Y/B-Y Angle), No. 054 SCO (Sub-Color), No. 055 STI (Sub-Tint) and No. 059 HR (OSD H-Position) should be set up for proper TV operation before attempting the service adjustments.

1. Disconnect the AC power cord (AC 120V line).
2. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
3. Select No. 007 VLN (V Linearity) with ▲ or ▼ key. Adjust the data with + or – key for 17.
4. Select No. 021 SBI (Sub-Bias) with ▲ or ▼ key. Adjust the data with + or – key for 70.
5. Select No. 023 POS (Pre/Over-Shoot) with ▲ or ▼ key. Adjust the data with + or – key for 1.
6. Select No. 028 PRE (Pre-Shoot Width) with ▲ or ▼ key. Adjust the data with + or – key for 3.
7. Select No. 035 YGM (Y Gamma Start Point) with ▲ or ▼ key. Adjust the data with + or – key for 2.
8. Select No. 037 AF (AutoFlesh) with ▲ or ▼ key. Adjust the data with + or – key for 1.
9. Select No. 041 RYA (R-Y/B-Y Angle) with ▲ or ▼ key. Adjust the data with + or – key for 2.
10. Select No. 054 SCO (Sub-Color) with ▲ or ▼ key. Adjust the data with + or – key for 7.
11. Select No. 055 STI (Sub-Tint) with ▲ or ▼ key. Adjust the data with + or – key for 20.
12. Select No. 059 HR (OSD H-Position) with ▲ or ▼ key. Adjust the data with + or – key for 14.
13. Press the MENU key to turn off the Service Menu display.

ON-SCREEN SERVICE MENU SYSTEM

1. Enter the Service Menu:

- While pressing the MENU key, reconnect the AC power cord. The Service Menu Display will now appear. (See Figure 1 below.)

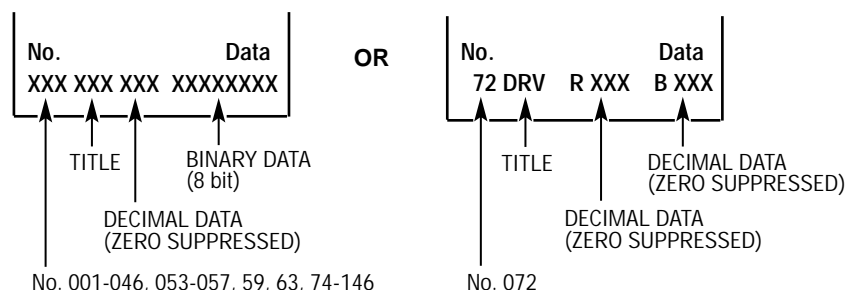


Figure 1. Service Menu Display

2. Service Adjustments:

- Press the ▲ or ▼ key to select the desired service menu you want to adjust. (See page 4 for On-screen Service Menu.)
- Use the + or – key to adjust the data.

3. Exit from the Service Menu:

- Press the MENU key to turn off the Service Menu display.

Table 1. ON-SCREEN SERVICE MENU

When IC802 (EEPROM) is replaced, check the bus data to confirm they are the same as below. The shaded menu should be checked and be set up or readjusted according to the procedures described in the following pages. Initial Setup Data marked with an * should be changed from Initial Reference Data. (See page 3 for Initial Bus Data Setup.)

No.	TITLE	INITIAL REFERENCE DATA	INITIAL SETUP DATA	RANGE OF DATA	FUNCTION
001	HFR	30	30	0~63	Align Horizontal Frequency
002	AFC	0	0	0, 1	Select Horizontal First Loop Gain & H-Sync Gating On/Off
003	HP	13	13	0~31	Align Sync to Flyback Phase (Horizontal Phase)
004	VS	50	50	0~127	Align Vertical Amplitude (Vertical Size)
005	VPO	5	5	0~63	Align Vertical DC Bias (Vertical Position)
006	VSP	0	0	0, 1	Select Vertical Sync Separation Sensitivity
007	VLN	19	17*	0~31	Align Vertical Linearity
008	CRS	0	0	0~3	Service Test Mode (Normal/Black/White/Cross)
009	GRY	1	1	0, 1	OSD Gray Tone Enable
010	VSC	8	8	0~31	Align Vertical S-Correction
011	HBR	3	3	0~7	H-Blanking Control for Right Side Edge on Screen
012	HBL	4	4	0~7	H-Blanking Control for Left Side Edge on Screen
013	CDM	0	0	0, 1	Select Count Down Mode
014	VC	7	7	0~7	Align Vertical Size Compensation
015	RB	0	0	0~255	Align Red OUT DC Level (Red Bias)
016	GB	0	0	0~255	Align Green OUT DC Level (Green Bias)
017	BB	0	0	0~255	Align Blue OUT DC Level (Blue Bias)
018	RD	64	64	0~127	Align Red OUT AC Level (Red Drive)
019	GD	8	8	0~15	Align Green OUT AC Level (Green Drive)
020	BD	64	64	0~127	Align Blue OUT AC Level (Blue Drive)
021	SBI	64	70*	0~127	Align Common RGB DC Level (Sub-Bias)
022	OSD	2	2	0~3	Align OSD AC Level
023	POS	0	1*	0, 1	Select Control for Pre/Over-Shoot Adjustment
024	FLS	1	1	0~7	Select Y/C Filter Mode
025	CKO	3	3	0~7	Select Color Killer Operational Point
026	GYA	0	0	0, 1	Select G-Y Angle
027	CRG	2	2	0~3	Select Coring Gain (w/Defeat)
028	PRE	1	3*	0~3	Select Pre-Shoot Width
029	WP	1	1	0~3	Select White Peak Limiter Operating Point
030	FSW	0	0	0, 1	Enable RGB Blanking or FBP
031	VBL	0	0	0, 1	Select Vertical Blanking Period
032	BSG	1	1	0~3	Select Black Stretch Gain
033	BSS	1	1	0~3	Select Black Stretch Start Point (w/Defeat)
034	DCR	1	1	0~3	Select Luma DC Restoration
035	YGM	1	2*	0~3	Select Y Gamma Start Point
036	CBP	0	0	0, 1	Select Chroma BPF Bypass
037	AF	0	1*	0, 1	Enable AutoFlesh Function
038	BAT	4	4	0~7	Align Brightness ABL Threshold
039	MSD	0	0	0, 1	Disable Brightness Mid Stop
040	ABL	0	0	0, 1	Disable Brightness ABL
041	RYA	4	2*	0~15	R-Y/B-Y Angle
042	RAD	15	15	0~63	Align RF AGC Threshold (RF-AGC Delay)
043	IAS	0	0	0, 1	Disable IF and RF AGC (IF AGC Switch)
044	FMM	0	0	0, 1	Disable FM Outputs (FM Mute)
045	FL	15	15	0~31	Align WBA Output Level (FM Level)
046	VL	4	4	0~7	Align IF Video Level
053	SB	32	32	0~63	Align Sub-Brightness
054	SCO	10	7*	0~31	Align Sub-Color
055	STI	22	20*	0~31	Align Sub-Tint
056	SSH	18	18	0~15	Align Sub-Sharpness
057	OPT	0	0	0~255	Option (Program Codes) (See Note 1 page 5.)
059	HR	13	14*	0~31	Align OSD H-Position
063	SBO	5	5	0~255	Sub-Bright Offset
072	DRV	—	—	0~127	Red Drive Adjustment (See Note 2 page 5.)
		—	—	0~127	Blue Drive Adjustment (See Note 2 page 5.)
073	—	0	0	0~255	Red Bias Adjustment (See Note 3 page 5.)
	—	0	0	0~255	Green Bias Adjustment (See Note 3 page 5.)
	—	0	0	0~255	Blue Bias Adjustment (See Note 3 page 5.)
074	R00	0	0	0~255	N/A
↓	↓	↓	↓	↓	↓
146	R48	0	0	0~255	N/A

SERVICE ADJUSTMENTS (Continued)

PROGRAM CODES

The microprocessor used in this model is a multi-purpose type and is used in several different models. To ensure proper operation and the correct features for your particular model, the Program Codes must be correct.

Note 1. Option Data 1 (No. 057 OPT) should be decimal 0 (00000000 binary). See page 3 INITIAL DATA SETUP for set up procedure. If this program code is wrong the TV will not operate properly.

BIT	FUNCTION	DATA	
		0	1
0	TV/HOTEL	TV	HOTEL
1	NOT USED	N/A	
2	NOT USED	N/A	
3	NOT USED	N/A	
4	NOT USED	N/A	
5	NOT USED	N/A	
6	NOT USED	N/A	
7	NOT USED	N/A	

Note 2. Red/Blue Drive Adjustments in Service Menu No. 072 DRV: Adjust Red and Blue Drive Levels alternately with 1, 3, 7, and 9 keys on the remote control. (See figure 2.) The Drive Level adjustment data will be written in the Service Menu No. 018 and 020 automatically.

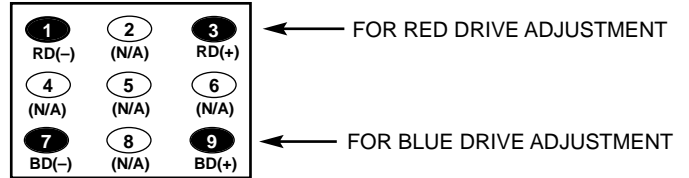


Figure 2.

Note 3. Red/Green/Blue Bias Adjustments in Service Menu No. 073: Adjust each Bias Level with 1, 3, 4, 6, 7, or 9 key on the remote control. (See figure 3.) The Bias Level adjustment data will be written in the Service Menu No. 015 ~ 017 automatically.

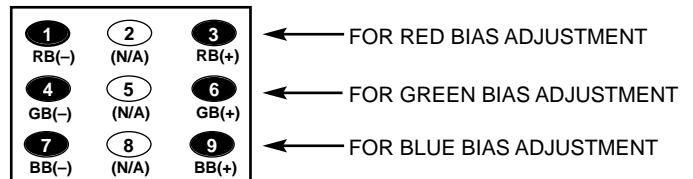


Figure 3.

SERVICE ADJUSTMENTS (Continued)

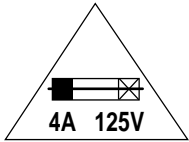
ANTENNA CONNECTIONS

This receiver is designed for UHF/VHF reception. A 75 ohm terminal is provided for UHF and VHF receptions. When connecting a CATV antenna system, connect the 75 ohm coaxial cable directly to the 75 ohm terminal. For 300 ohm VHF antenna, use an adapter (not included with the TV set).

CIRCUIT PROTECTION

Fuse F601 (4A) is included in the AC line. This fuse must be replaced with the proper fuse (see Parts List).

CAUTION



FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

+B VOLTAGE CHECK

Connect Voltmeter + lead to TJ1 135V and – lead to ground (TE7). Connect receiver to AC 120V line. Tune receiver to an active channel. Set the picture controls to the Auto levels. Voltage must measure between +133.0V and 136.1V. If the voltage is out of this range, the power circuit must be checked. No +B adjustment is provided on this chassis.

HORIZONTAL CENTERING ADJUSTMENT

1. Tune receiver to an active channel.
2. Check that picture is in the horizontal center of TV screen. If picture is not centered horizontally, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select No. 003 HP (Horizontal Phase) with ▲ or ▼ key.
6. Adjust the data with + or – key for proper horizontal center. To turn off the Service Menu display, press the MENU key.

VERTICAL SIZE ADJUSTMENT

1. Tune receiver to an active channel.
2. Check the vertical size of the picture. If the vertical size is too large or small, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select No. 004 VS (Vertical Size) with ▲ or ▼ key.
6. Adjust the data with + or – key for full scan. To turn off the Service Menu display, press the MENU key.

VERTICAL CENTERING ADJUSTMENT

1. Tune receiver to an active channel.
2. Check that picture is in the vertical center of TV screen. If picture center is too low, replace resistor R513 (3.9K ohm, 1/6W) with 470 ohm, 1W resistor. If picture center is too high, connect resistor R512 (470 ohm, 1W).

GRAYSCALE ADJUSTMENT

1. Set the picture controls to the Auto levels.
2. Turn off the receiver and disconnect the AC power cord (120V AC line).
3. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
4. Select No. 015 RB (Red Bias), No. 016 GB (Green Bias), and No. 017 BB (Blue Bias) with ▲ or ▼ key and set each data to 0 with + or – key.
5. Select No. 018 RD (Red Drive) and No. 020 BD (Blue Drive) with ▲ or ▼ key and set each data to 64 with + or – key.
6. Set No. 019 GD (Green Drive) data to 8, No. 053 SB (Sub-Brightness) data to 32, No. 054 SCO (Sub-Color) data to 7, No. 055 STI (Sub-Tint) to 20 and No. 056 SSH (Sub-Sharpness) data to 18 with ▲ or ▼, and + or – keys.
7. Turn Screen Control (T402) to minimum (fully counterclockwise).
8. Select the Service Menu No. 073 (Bias Adjustments) with ▲ or ▼ key.
9. Advance Screen Control (T402) clockwise to obtain just visible one color line. If line does not appear, place this control to maximum (fully clockwise).
10. Raise each Bias Level with 3, 6, and 9 keys to obtain just visible white line. (See Figure 4 below.)

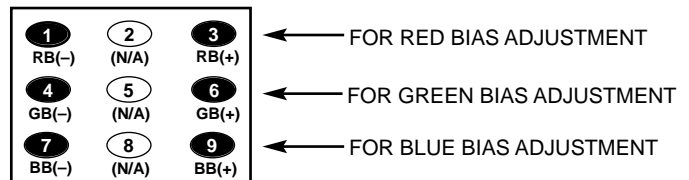


Figure 4. Remote Control Number keys' function in Service Menu No. 073

11. Select the Service Menu No. 072 DRV (Drive Adjustments) with ▲ or ▼ key.
12. Adjust Red and Blue Drive Levels alternately with 1, 3, 7, or 9 key to produce normal black and white picture in highlight areas. (See figure 5 below.)

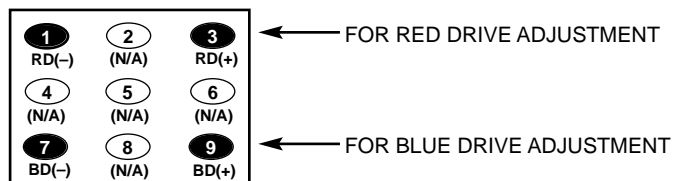


Figure 5. Remote Control Number keys' function in Service Menu No. 072 DRV

13. Check for proper grayscale at all brightness levels. To turn off the Service Menu display, press the MENU key.

Note: If Grayscale Adjustment is made after picture tube replacement, check Brightness Level Adjustment.

FOCUS ADJUSTMENT

Adjust focus control (T402) for well defined scanning lines.

VCO ADJUSTMENT

Note: VCO must be adjusted after IC101 (Signal Processor), IC802 (EEPROM) or T151 (PLL VCO Coil) is replaced.

1. Connect digital voltmeter + lead to IC101 pin 58 (C153 (+)) on main board and – lead to main board ground.
2. Tune receiver to an active channel. Set the picture controls to Auto levels.
3. Confirm voltmeter reading of 3.6 ± 0.2 VDC.
4. If the voltage is out of this range, adjust PLL VCO Coil (T151) for 3.6 ± 0.2 VDC.
5. Disconnect voltmeter from chassis.

RF-AGC ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set contrast and brightness controls for maximum.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select No. 042 RAD (RF-AGC Delay) with ▲ or ▼ key.
6. Adjust the data with + or – key in the direction which causes snow to appear; then in the opposite direction until the snow just disappears.
7. To turn off the Service Menu display, press the MENU key.

VIDEO LEVEL ADJUSTMENT

1. Connect a color-bar generator to the antenna terminal. Switch the generator to a white field (100 IRE).
2. Set the picture controls to the Auto levels.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. Connect oscilloscope + lead to terminal TP16 (C211(–)) on main board and – lead to main board ground.
5. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
6. Confirm voltage reading of 1.0 ± 0.1 Vp-p. If voltage is within this range, Skip to Step 9. If voltage is out of this range, go to step 7.
7. Select No. 046 VL (IF Video Level) with ▲ or ▼ key.
8. Adjust the data with + or – key for 1.0 ± 0.1 Vp-p at TP16. To turn off the Service Menu display, press the MENU key.
9. Disconnect oscilloscope from chassis.

BRIGHTNESS LEVEL ADJUSTMENT

Note: Grayscale, RF-AGC, Video Level and High Voltage Check must be adjusted before attempting Brightness Level Adjustment.

1. Connect a color-bar generator to the antenna terminals.
2. Switch the generator to the crosshatch pattern.
3. Set the picture controls to the Auto levels.
4. Turn off the receiver and disconnect the AC power cord (120V AC line).
5. Connect voltmeter (high impedance) + lead to terminal TP51 and – lead to terminal TP50 on main board. Set voltmeter for 1.5V ~ 3V range.
6. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
7. Select No. 053 SB (Sub-Brightness) with ▲ or ▼ key.
8. Adjust the data with + or – key for 625 mVDC.
9. Press the MENU key to turn off the Service Menu display.

10. Check brightness level on every active channel, readjust (repeat steps 5 ~ 9) if necessary.

Note: Do not set to excessive brightness level, otherwise the contrast level will be suppressed.

HIGH VOLTAGE CHECK

Note: +B (+135V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

1. Connect high voltage voltmeter negative lead to ground, and connect + lead to anode of picture tube.
2. Tune receiver to an active channel and confirm TV is operating properly.
3. Eliminate the beam current by adjusting the contrast and brightness controls to minimum.
4. Confirm high voltage is within 20.0 KV and 22.0 KV. If reading is not within range, check horizontal circuit.

No high-voltage adjustment is provided on this chassis.

HIGH VOLTAGE HOLD-DOWN TEST

Every time the receiver is serviced, the HIGH VOLTAGE HOLD-DOWN circuit must be tested for proper operation by following these steps:

1. Connect receiver to 120V AC line. Tune receiver to active channel. Set the picture controls to the Auto levels.
2. Check that the voltage measured between TP7 and TE7 (ground side) is within 15.6 VDC to 19.2 VDC. If the voltage is out of this range, the Hold-Down Circuit must be checked.
3. Connect a DC Voltage supply to TP7 and TE7 through a 100 ohm 1/4W resistor. Adjust the DC voltage to 23 VDC. The receiver should shutdown, losing raster and sound. Then the receiver should turn off automatically. This reaction indicates that the Hold-Down circuit is functioning properly. If the receiver does not shutdown, a malfunction is indicated and its cause **must** be found and corrected.
4. To obtain picture again, remove the DC Supply and wait a few minutes. Now turn on the receiver.

FM LEVEL ADJUSTMENT

1. Select a channel with audio of 1 KHz 100% modulation. Set the picture controls to the Auto levels.
2. Turn off the receiver and disconnect the AC power cord (120V AC line).
3. Connect oscilloscope + lead to terminal TP21 (IC101 pin 75) on main board and – lead to main board ground.
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Confirm voltage reading of 1.5 ± 0.2 Vp-p. If voltage is within this range, Skip to Step 8. If voltage is out of this range, go to step 6.
6. Select No. 045 FL (FM Level) with ▲ or ▼ key.
7. Adjust the data with + or – key for 1.5 ± 0.2 Vp-p at TP21. To turn off the Service Menu display, press the MENU key.
8. Disconnect oscilloscope from chassis.

PURITY AND CONVERGENCE ADJUSTMENTS

CAUTION: Purity and Convergence adjustments have been made at the factory. Readjustments should be made only after the picture tube or deflection yoke is replaced. Follow the steps below for the necessary readjustments.

PURITY ADJUSTMENT

1. When replacing picture tube or deflection yoke, mount deflection yoke and purity-convergence magnets assembly properly. See Figure 1. Position the picture tube facing east or west. Demagnetize the picture tube and receiver using an external degaussing coil. Set receiver to Service Menu No. 073 (no vertical sweep) while degaussing.
2. Place the yoke on tube neck fully against glass. Place the CPM on the tube neck aligning the center of the purity magnet tabs (2 pole) over center of Focus Gap (G3 & G4). See Figure 2.
3. Connect a color bar generator to the antenna terminal. Switch the generator to a white field. Move yoke backward on the neck until a uniform white field is obtained.
4. Allow 30 minutes warm up on a blank white field (high intensity grayscale).

Note: If white field cannot be obtained, check Grayscale Adjustments on page 6.

5. Set the picture controls to the Auto levels. Select a green raster, either with the signal generator or by adjusting the bias controls. If a signal generator is used for this step, Skip to Step 10. If the bias controls will be used, go to step 6.
6. Adjust Service Menu No. 015 RB (R-Bias), No. 016 GB (G-Bias), and No. 017 BB (B-Bias) data to 0 each.
7. Select Service Menu No. 073 (no vertical sweep).
8. Adjust the screen control counterclockwise until the horizontal scan lines is no longer visible.
9. Select Service Menu No. 016 GB (G-Bias) and raise the data to produce green raster. If retrace lines appear, reduce screen control slightly.
10. Pull yoke back on the tube neck to obtain three-color raster (blue, green and red).
11. Adjust the angle between the two purity magnet tabs to center the vertical green belt in the picture tube. Do not rotate tabs. See Figure 3.
12. Slowly slide the deflection yoke forward until a uniform green screen is obtained.
13. Check the purity of the red and blue screens for uniformity. Turn off other colors to check (use bias controls) or use generator. If necessary, readjust the yoke position until all screens are pure.
14. If bias controls and screen control were used to set purity, reset Grayscale and Brightness Level. Refer to Grayscale Adjustment on page 6 and Brightness Level Adjustment on page 7.
15. Confirm that the yoke is not tilted. Tighten the yoke mounting screw. Adjust convergence next.

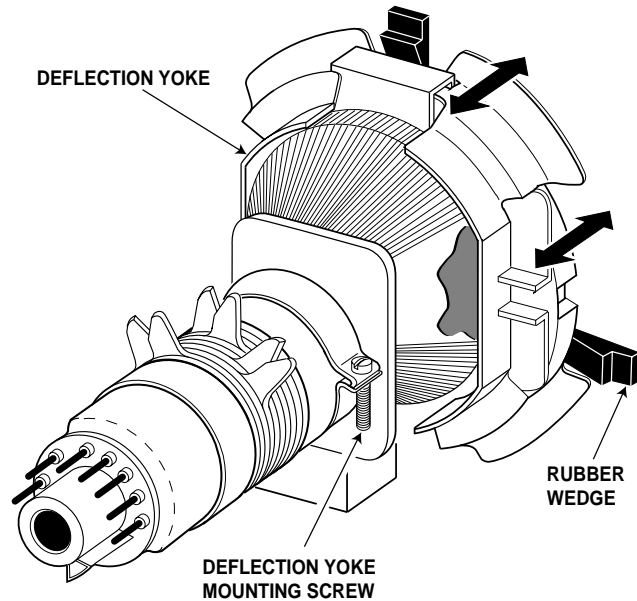


Figure 1. Deflection Yoke Movement

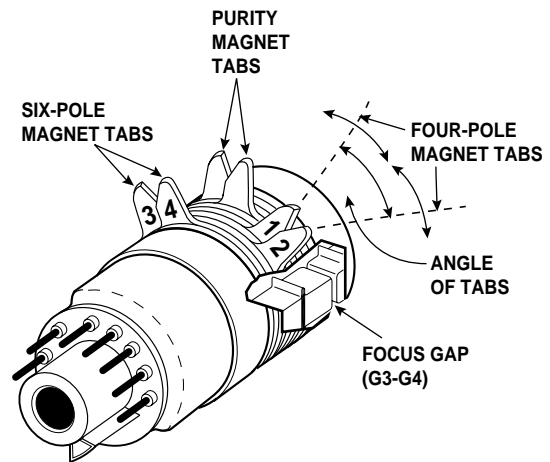


Figure 2. Purity and Convergence Magnets

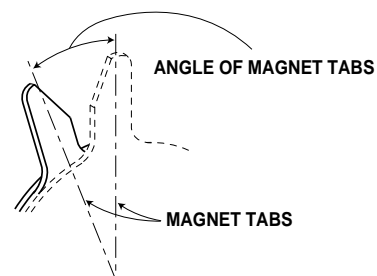
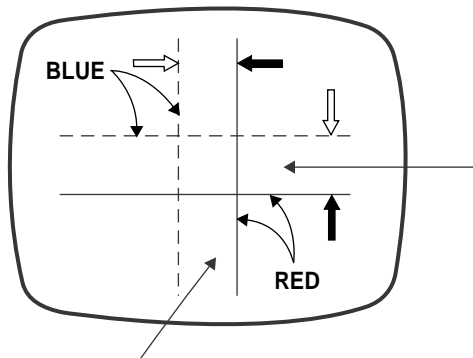


Figure 3. Adjusting Magnet

CONVERGENCE ADJUSTMENT

CENTER CONVERGENCE ADJUSTMENT

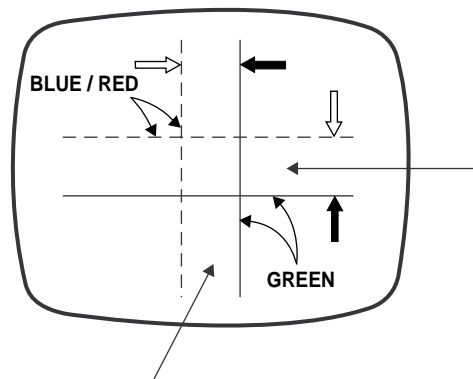
1. Connect a crosshatch generator to antenna terminals.
2. Set Contrast control to low level to eliminate Blooming.
Reduce Brightness level to obtain black background if necessary.
3. Adjust the angle between the four-pole magnet tabs 1 and 2 (Figure 2), and superimpose the red and blue vertical lines in the center area of the picture screen. See Figure 4.
4. Keeping the tabs at the same angle, rotate them together to superimpose the blue and red horizontal lines in the center area of the picture screen. See Figure 4.
5. Adjust the six-pole magnet tabs 3 and 4 so the converged red/blue line is superimposed on the green line. This is the same procedure used in Steps 3 and 4. See Figure 5.



Adjust four-pole tabs angle to superimpose blue and red vertical line.

Adjust four-pole tabs together to superimpose red and blue horizontal line.

Figure 4. Blue and Red Line Movement



Adjust six-pole tabs angle to superimpose red / blue and green vertical line.

Adjust six-pole tabs together to superimpose red / blue and green horizontal line.

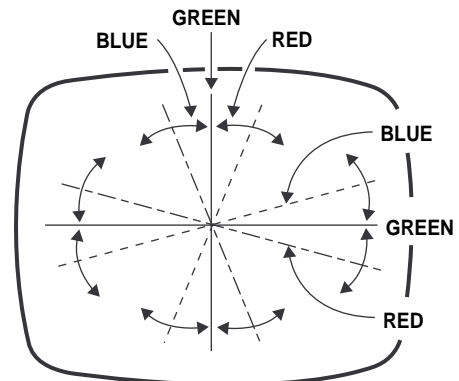
Figure 5. Blue/Red and Green Line Movement

OUTER AREA CONVERGENCE ADJUSTMENT

The outer area convergence is performed by positioning of the yoke as follows:

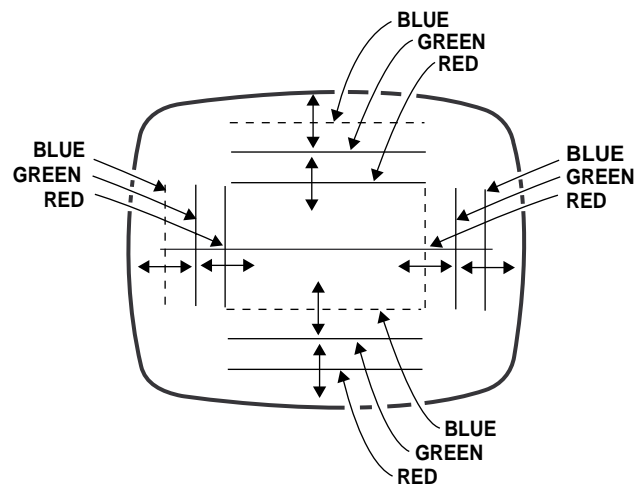
1. Move the top of the yoke toward or away from the picture tube. This movement will affect the vertical lines at the top and bottom and the horizontal lines at the sides. See Figure 6.
2. Check that splits at 12 O'Clock and 6 O'Clock positions are minimized, adjust yoke for best compromise. Secure with wedge at 12 O'Clock position. See Figure 1.
3. Move the side of the yoke toward or away from the picture tube to converge the horizontal lines at the top and bottom and the vertical lines at the sides. See Figure 7.
4. Check that splits at 12 O'Clock and 6 O'Clock are minimized, adjust yoke for best compromise. Secure yoke position with the side wedges. See Figure 1.

Note: When reusing the rubber wedges, apply a small amount of silicone rubber adhesive or hot melt to each of the wedges.



Line movement when adjusting top of yoke in and out.

Figure 6. Top of Yoke Movement



Line movement when adjusting side of yoke in and out.

Figure 7. Side of Yoke Movement

SERVICE HINTS

POWER FAILURE DETECTOR

This set is equipped with a Power Failure Detector function included in the CPU which checks for an abnormal condition in the chassis power supplies, including the power supply derived from the Horizontal Output Transformer.

If, while the power is on, a failure is caused by any of the following which results in a low voltage supply, the CPU will turn the set off in 1.5 seconds to prevent unnecessary damage:

- Failure within the power supply circuits.
- A short circuit in the load side from the supply.
- Stoppage of the Horizontal Output Oscillator caused by the X-Radiation protection Hold-Down Circuit.

If, while the power is off, the power is switched on and any of these failures remains uncorrected, the CPU will shut off the power within 3 seconds.

Check the following if the set is turned off by the power failure detector.

1. Disconnect the AC power cord (120V AC line) for at least 10 seconds.
2. Connect a DC Voltmeter to the following TEST POINTS.

TJ5	9V
TJ6	5V
D429 Cathode	11.5V
D802 Cathode	14.5V

3. Press the power key and check for the proper voltage supplies.
4. If any of these voltages is low, the power failure detector should turn the set off within 3 seconds.
5. Check all circuits listed above.

Note: This set is equipped with a Power Surge Protection feature included in the CPU. If power failure occurs three times within 15 minutes, the CPU will automatically stop functioning to help prevent secondary damage. (TV will not turn on by pressing the power key.) To reset the operating programs within the CPU, disconnect the AC power cord for at least 10 seconds.

MECHANICAL DISASSEMBLIES

CABINET BACK REMOVAL

1. Refer to Figure 1, remove 4 screws.
2. Pull off cabinet back and remove.

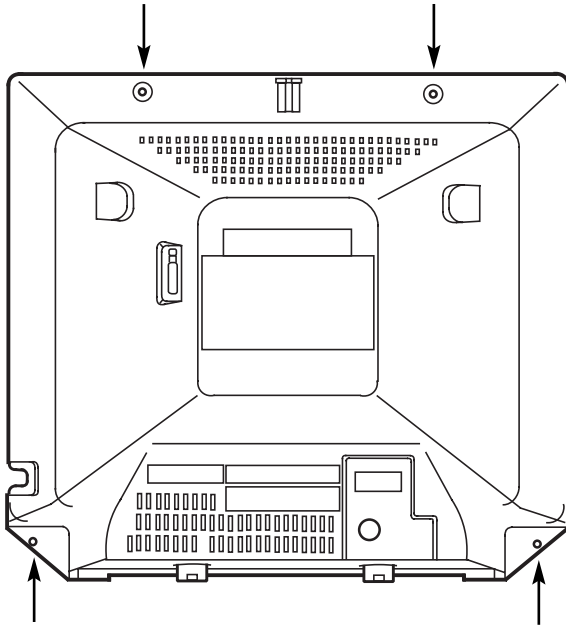


Figure 1. Cabinet Back Removal

CHASSIS REMOVAL

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the dag coating (picture tube grounding lead).
3. Disconnect Degaussing coil socket (KD), Picture tube socket, Deflection yoke connector (KX), Speaker connector (KSP), picture tube ground lead, and 2nd anode lead.
4. Remove chassis completely by sliding it straight back.

PICTURE TUBE REMOVAL

CAUTION: Do not disturb the deflection yoke or magnet assembly on the picture tube neck. Care must be taken to keep these assemblies intact, unless picture tube is being replaced. Discharge the picture tube to the coating before handling the tube.

1. Remove chassis, referring to Chassis Removal instructions.
2. Place cabinet's front face down on a soft surface.
3. Remove the screw on each corner of the picture tube and GENTLY lift the picture tube out of the cabinet.
4. Install a replacement picture tube in reverse order. Properly install the degaussing coil and picture tube grounding lead on the picture tube. See Figure 2.

Note: If Picture Tube is being replaced, mount the Degaussing Coil properly on the tube. See Figure 2.

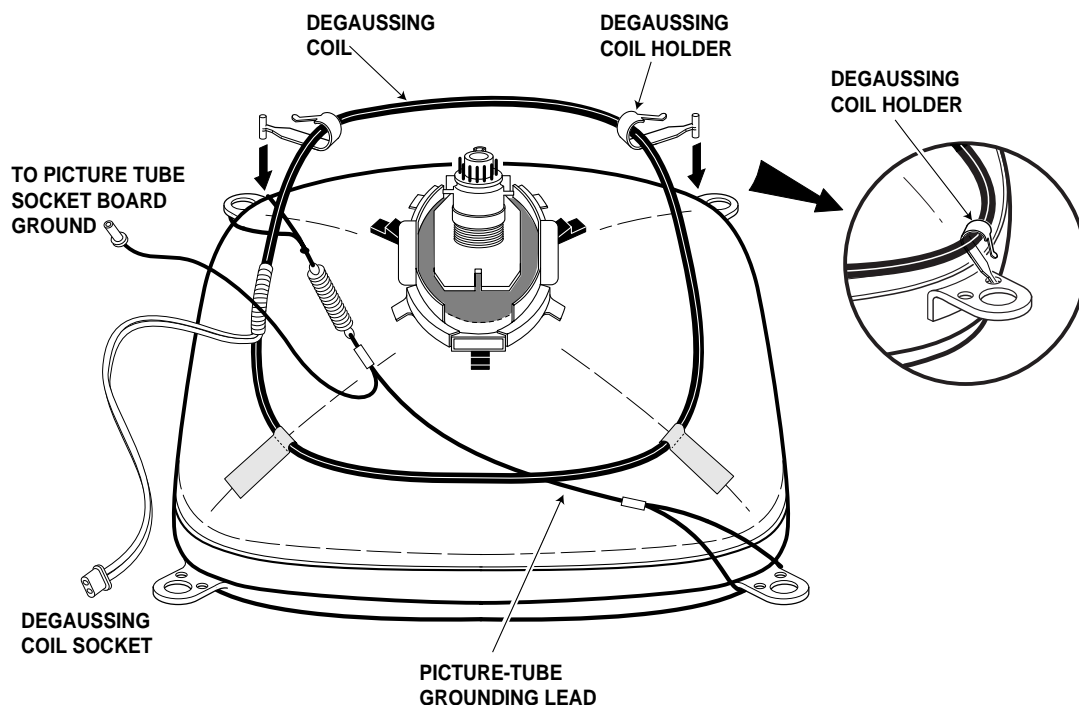


Figure 2. Picture Tube Removal

CHASSIS ELECTRICAL PARTS LIST

CAUTION: To Protect against electrical shock and for continued product safety, refer to **SAFETY PRECAUTIONS**, **X-RADIATION PRECAUTIONS**, **HIGH VOLTAGE HOLD-DOWN TEST**, and **PRODUCT SAFETY NOTICE** on Page 2.

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. COMPONENTS INDICATED BY A STAR (★) IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS DESIGNATED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT DESIGNATED BY A STAR. NO DEVIATIONS FROM RESISTANCE, WATTAGE, AND VOLTAGE RATINGS MAY BE MADE FOR REPLACEMENT ITEMS DESIGNATED BY A STAR.

Notes: Parts having Location Number are located on the following boards.

Numbers under 700 Series On the Main Board.
 Numbers 700 Series On the Picture Tube Socket Board.
 Numbers 800 Series On the Main Board
 Numbers 900 Series Out of Board.
 Numbers 1900 series On the Main Board

Note: Schematic part location numbers may not always match with the part descriptions.
 The part descriptions are correct and should be used.

Schematic Location	Part No.	Description
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CAPACITORS

NOTES:

Read description of the Capacitor as follows:

(Example)

CERAMIC 100P K 50V

Rated Voltage
 Tolerance Symbols:
less than 10PF
 A . . Not specified
 B . . ±0.1PF C . . ±0.25PF
 D . . ±0.5PF F . . ±1PF
 G . . ±2PF R . . +0.25 - 0PF
 S . . +0 - 0.25PF E . . +0 - 1PF
more than 10PF
 A . . Not specified
 B . . ±0.1% C . . ±0.25%
 D . . ±0.5% F . . ±1%
 G . . ±2% H . . ±3%
 J . . ±5% K . . ±10%
 L . . ±15% M . . ±20%
 N . . ±30% P . . +100 - 0%
 Q . . +30 - 10% T . . +50 - 10%
 U . . +75 - 10% V . . +20 - 10%
 W . . +100 - 10% X . . +40 - 20%
 Y . . +150 - 10% Z . . +80 - 20%
 Rated Value: P...Pico Farad U...Micro Farad

Material:

CERAMIC Ceramic
 MT-PAPER Metalized Paper
 POLYESTER Polyester
 MT-POLYEST Metalized Polyester
 POLYPRO Polypropylene
 MT-POLYPRO Metalized Polypropylene
 COMPO-FILM Composite Film
 MT-COMPO Metalized Composite
 STYRENE Styrene
 TA-SOLID Tantalum Solid
 AL-SOLID Aluminum Solid
 ELECT Electrolytic
 NP-ELECT Non-Polarized Electrolytic
 OS-SOLID Aluminum Solid with Organic
 Semiconductive Electrolytic

Schematic Location	Part No.	Description
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C001	403 047 8402	ELECT	0.1U M	50V
C002	403 224 5804	CERAMIC	2200P K	50V
C004	403 039 6508	ELECT	100U M	10V
C006	403 044 1703	ELECT	470U M	16V
C007	403 067 5603	MT-COMPO	0.1U J	50V
	403 166 6808	MT-POLYEST	0.1U J	63V
C008	403 043 6006	ELECT	330U M	16V
C101	403 038 6301	ELECT	220U M	6.3V
C103	403 224 6108	CERAMIC	0.01U K	50V
C106	403 050 6600	ELECT	3.3U M	50V
C131	403 049 0008	ELECT	1U M	50V
C132	403 224 6108	CERAMIC	0.01U K	50V
C133	403 224 6108	CERAMIC	0.01U K	50V
C134	403 224 5705	CERAMIC	1000P K	50V
C137	403 364 7508	CERAMIC	10P J	50V
C141	403 224 6108	CERAMIC	0.01U K	50V
C142	403 343 4603	CERAMIC	0.022U K	50V
C143	403 224 6108	CERAMIC	0.01U K	50V
C146	403 224 6108	CERAMIC	0.01U K	50V
C147	403 038 1603	ELECT	100U M	6.3V
C151	403 048 6308	ELECT	0.47U M	50V
C153	403 048 6308	ELECT	0.47U M	50V
C161	403 357 9601	CERAMIC	0.1U Z	50V
C211	403 051 0607	ELECT	4.7U M	50V
C212	403 049 9803	ELECT	2.2U M	50V
C221	403 224 6108	CERAMIC	0.01U K	50V
C252	403 062 0504	POLYESTER	0.047U K	50V
	403 312 2203	POLYESTER	0.047U K	50V
C253	403 048 6308	ELECT	0.47U M	50V
C256	403 049 0008	ELECT	1U M	50V
C257	403 224 6108	CERAMIC	0.01U K	50V
C258	403 043 9106	ELECT	47U M	16V
C272	403 050 6600	ELECT	3.3U M	50V
C284	403 041 8804	ELECT	10U M	16V
C285	403 224 6108	CERAMIC	0.01U K	50V
C401	403 043 0202	ELECT	220U M	16V

Schematic Location	Part No.	Description
C402	403 224 6108	CERAMIC 0.01U K 50V
C403	403 063 0206	POLYESTER 6800P K 50V
	403 312 2807	POLYESTER 6800P K 50V
C405	403 086 2607	NP-ELECT 1U M 50V
C406	403 075 9006	CERAMIC 150P K 500V
C407	403 075 7101	CERAMIC 1000P K 500V
C408	403 103 0005	ELECT 4.7U M 160V
★C411	403 343 7802	MT-POLYPRO 4200P H 1.5K
	404 078 2506	MT-POLYPRO 4200P H 1.5K
★C413	403 324 3007	CERAMIC 680P K 3K
C414	403 076 4000	CERAMIC 4700P K 500V
★C417	403 346 7106	MT-POLYPRO 0.27U J 250V
	404 081 2609	MT-POLYPRO 0.27U M 200V
C421	403 038 6301	ELECT 220U M 6.3V
C426	403 224 6108	CERAMIC 0.01U K 50V
C441	403 224 6108	CERAMIC 0.01U K 50V
C483	404 069 2102	ELECT 47U M 160V
C484	403 051 0607	ELECT 4.7U M 50V
C487	403 053 2104	ELECT 220U M 35V
C489	403 044 1703	ELECT 470U M 16V
C491	403 041 8804	ELECT 10U M 16V
C493	404 056 5307	NP-ELECT 2.2U M 100V
C496	403 044 1703	ELECT 470U M 16V
C497	403 038 1603	ELECT 100U M 6.3V
C498	403 043 9106	ELECT 47U M 16V
C501	403 049 4204	ELECT 10U M 50V
C502	403 053 2104	ELECT 220U M 35V
C503	403 044 6609	ELECT 10U M 25V
C504	403 042 4805	ELECT 1000U M 16V
C505	403 067 7805	MT-COMPO 0.47U J 50V
	403 166 7706	MT-POLYEST 0.47U J 63V
C506	403 059 0104	POLYESTER 0.018U K 50V
	403 312 0100	POLYESTER 0.018U K 50V
C508	403 028 1705	CERAMIC 56P J 50V
C509	403 067 7805	MT-COMPO 0.47U J 50V
	403 166 7706	MT-POLYEST 0.47U J 63V
C511	403 063 2309	POLYESTER 0.068U K 50V
	403 312 3002	POLYESTER 0.068U K 50V
C516	403 049 0008	ELECT 1U M 50V
★C601	404 066 1702	MT-POLYEST 0.1U M 275V
	404 071 2107	MT-POLYEST 0.1U K 250V
★C604	403 075 7101	CERAMIC 1000P K 500V
★C605	403 075 7101	CERAMIC 1000P K 500V
C606	404 049 4706	ELECT 330U M 200V
	404 085 9000	ELECT 330U M 200V
C607	403 103 0005	ELECT 4.7U M 160V
C621	403 075 7101	CERAMIC 1000P K 500V
C622	403 047 5005	ELECT 470U M 25V
C623	403 039 3507	ELECT 470U M 6.3V
C701	403 357 8802	CERAMIC 1000P J 50V
C711	403 357 9403	CERAMIC 820P J 50V
C721	403 357 9403	CERAMIC 820P J 50V
★C742	403 077 2807	CERAMIC 1000P Z 2K
C801	403 224 6108	CERAMIC 0.01U K 50V
C806	403 039 3507	ELECT 470U M 6.3V
C807	403 234 9809	CERAMIC 18P J 50V
C808	403 234 9809	CERAMIC 18P J 50V
C811	403 235 0607	CERAMIC 100P J 50V
C812	403 235 0607	CERAMIC 100P J 50V

Schematic Location	Part No.	Description
C822	403 041 8804	ELECT 10U M 16V
C831	403 049 0008	ELECT 1U M 50V
C834	403 224 6108	CERAMIC 0.01U K 50V
C841	403 224 6108	CERAMIC 0.01U K 50V
C842	403 224 6108	CERAMIC 0.01U K 50V
C843	403 224 6108	CERAMIC 0.01U K 50V
C862	403 224 6108	CERAMIC 0.01U K 50V
C891	403 086 2300	NP-ELECT 1U M 50V
C892	403 224 5705	CERAMIC 1000P K 50V
C894	403 323 3602	CERAMIC 0.047U K 50V
C896	403 049 9803	ELECT 2.2U M 50V
C1902	403 038 1603	ELECT 100U M 6.3V
DIODES		
D101	407 056 2307	ZENER DIODE RD36EB1 (36V)
	407 100 0204	ZENER DIODE MTZJ36A (36V)
D351	407 056 8002	ZENER DIODE RD5.1EB2 (5.1V)
	407 063 8606	ZENER DIODE MTZJ5.1A (5.1V)
D409	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
	407 124 6404	DIODE ERA18-04
★D421	407 158 1307	ZENER DIODE HZ11B2L (11V)
★D422	407 158 1307	ZENER DIODE HZ11B2L (11V)
D428	407 054 4808	ZENER DIODE RD13EB3 (13V)
	407 099 3309	ZENER DIODE MTZJ13C (13V)
D429	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D482	407 011 4407	DIODE TVR1G
D483	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
	407 124 6404	DIODE ERA18-04
D484	407 006 4108	DIODE ERB44-04
	407 007 7603	DIODE EU2
D486	407 006 4108	DIODE ERB44-04
	407 007 7603	DIODE EU2
D487	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D490	407 057 0104	ZENER DIODE RD5.6EB3 (5.6V)
	407 063 8903	ZENER DIODE MTZJ5.6C (5.6V)
D496	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D501	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
★D602	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★D603	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★D604	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A

Schematic Location	Part No.	Description
★D604 (Cont.)	408 008 8606	DIODE GP15G
★D605	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
D621	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D622	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D623	407 056 8002	ZENER DIODE RD5.1EB2 (5.1V)
	407 056 8200	ZENER DIODE RD5.1EB3 (5.1V)
	407 063 8606	ZENER DIODE MTZJ5.1A (5.1V)
	407 099 5204	ZENER DIODE MTZJ5.1B (5.1V)
D801	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D802	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D831	407 222 5903	ZD UDZS3.6B-TE-17 (3.6V)
D834	407 056 8002	ZENER DIODE RD5.1EB2 (5.1V)
	407 056 8200	ZENER DIODE RD5.1EB3 (5.1V)
	407 063 8606	ZENER DIODE MTZJ5.1A (5.1V)
	407 099 5204	ZENER DIODE MTZJ5.1B (5.1V)
D836	407 149 0807	DIODE 1SS355-TE-17
D843	407 149 0807	DIODE 1SS355-TE-17

INTEGRATED CIRCUITS

IC001	409 343 0409	IC TDA7231A
★IC101	409 491 4809	IC LA76834NM-TBM
IC481	409 366 7904	IC UPC78M09AHF
	409 367 2809	IC BA178M09T
	409 370 0007	IC MC78M09CT
	409 377 5401	IC L78M09CV
★IC501	409 340 1805	IC LA7840
★IC601	409 047 8602	IC STR30135
IC801	410 388 1900	IC LC863428V-5V67-TLM
IC802	409 333 3700	IC 24LC02B/P
	409 376 1503	IC ST24C02B6
	409 440 8902	IC M24C02-BN6
	409 495 6908	IC CAT24WC02P
	409 497 0706	IC S524C20D21-DCB0

COILS

★LF601	610 031 5938	LINE FILTER
	610 031 6034	LINE FILTER
	610 031 6041	LINE FILTER
	610 031 6065	LINE FILTER
	610 031 6072	LINE FILTER
	610 223 1212	LINE FILTER
	610 290 3027	LINE FILTER
L164	645 003 9713	INDUCTOR,15U K
	645 016 2657	INDUCTOR,15U K

Schematic Location	Part No.	Description
L402	610 031 9998	PIPE CORE
L403	610 031 9998	PIPE CORE
L801	645 008 2894	INDUCTOR,5.6U K
	645 016 3104	INDUCTOR,5.6U K
L821	645 008 2894	INDUCTOR,5.6U K
	645 016 3104	INDUCTOR,5.6U K
★L901	645 022 8551	COIL,DEGAUSSING
	645 022 8568	COIL,DEGAUSSING
	645 033 1640	ASSY,COIL,DEGAUSSING
★L902	610 003 5270	DEFLECTION YOKE
	610 003 5287	DEFLECTION YOKE

TRANSISTORS

Q401	405 013 6207	TR 2SC2271-D-CTV
	405 013 6306	TR 2SC2271-E-CTV
	405 040 6201	TR 2SC2271M
	405 040 6300	TR 2SC2271N
	405 065 5401	TR 2SC2271-C-CTV
★Q402	405 157 1304	TR 2SD2634-YB
Q490	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
Q621	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q622	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q623	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q701	405 010 6507	TR 2SC1473NC-P
	405 010 6606	TR 2SC1473NC-Q
	405 010 6705	TR 2SC1473NC-R
Q711	405 010 6507	TR 2SC1473NC-P
	405 010 6606	TR 2SC1473NC-Q
	405 010 6705	TR 2SC1473NC-R

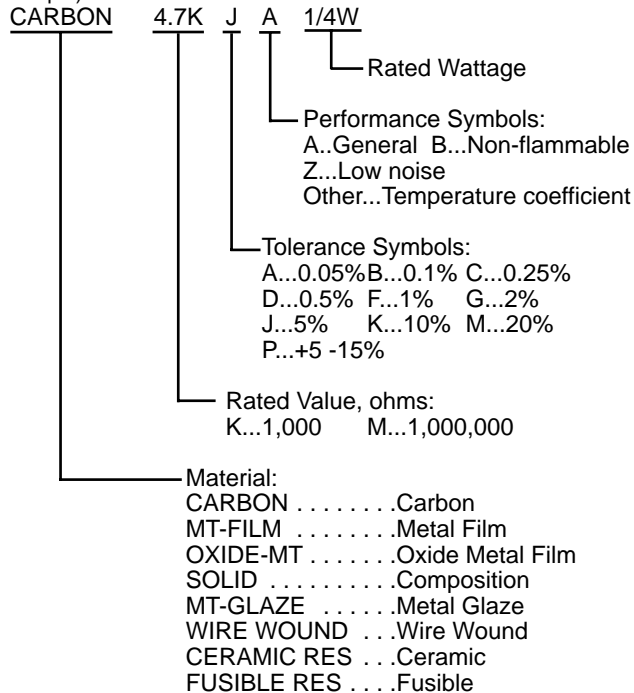
Schematic Location	Part No.	Description
Q721	405 010 6507	TR 2SC1473NC-P
	405 010 6606	TR 2SC1473NC-Q
	405 010 6705	TR 2SC1473NC-R
Q831	405 002 0308	TR 2SA1037K T146 R
	405 002 0407	TR 2SA1037K T146 S
	405 002 6706	TR 2SA1179-M6-TB
	405 002 6904	TR 2SA1179-M7-TB
	405 134 5905	TR 2SA1037AK-T146-R
	405 147 2205	TR 2SA1037AK-S-T146
	405 163 1503	TR 2SA1179N-M6-TB
	405 163 2708	TR 2SA1179N-M7-TB

RESISTORS

NOTES:

Read description of the Resistor as follows:

(Example)



Schematic Location	Part No.	Description
R131	401 256 6004	MT-GLAZE 27K JA 1/10W
R132	401 024 6700	CARBON 100 JA 1/6W
R133	401 255 6401	MT-GLAZE 3K JA 1/10W
R142	401 026 4605	CARBON 33K JA 1/6W
R143	401 150 6209	MT-GLAZE 1K JA 1/10W
R151	401 152 3206	MT-GLAZE 330 JA 1/10W
R161	401 150 5806	MT-GLAZE 100K JA 1/10W
R162	401 150 5806	MT-GLAZE 100K JA 1/10W
R163	401 255 8702	MT-GLAZE 22 JA 1/10W
R164	401 150 6209	MT-GLAZE 1K JA 1/10W
R165	401 162 2701	MT-GLAZE 180 JA 1/10W
R166	401 256 7506	MT-GLAZE 390 JA 1/10W
R211	401 256 7100	MT-GLAZE 680K JA 1/10W
R212	401 256 7100	MT-GLAZE 680K JA 1/10W
R251	401 162 3005	MT-GLAZE 22K JA 1/10W
R252	401 162 3005	MT-GLAZE 22K JA 1/10W
R272	401 027 5502	CARBON 6.8K JA 1/6W
R273	401 150 5905	MT-GLAZE 10K JA 1/10W
R276	401 256 0408	MT-GLAZE 12K JA 1/10W
R281	401 150 5905	MT-GLAZE 10K JA 1/10W
R284	401 256 5601	MT-GLAZE 47 JA 1/10W
R286	401 162 2701	MT-GLAZE 180 JA 1/10W
R287	401 162 2701	MT-GLAZE 180 JA 1/10W
R288	401 162 2701	MT-GLAZE 180 JA 1/10W
R301	401 150 5905	MT-GLAZE 10K JA 1/10W
R353	401 024 7400	CARBON 10K JA 1/6W
R400	401 024 6700	CARBON 100 JA 1/6W
★R401	401 066 1404	OXIDE-MT 1.8K JA 2W
★R402	401 065 7704	OXIDE-MT 1.5K JA 2W
★R403	401 065 7704	OXIDE-MT 1.5K JA 2W
R404	401 025 7409	CARBON 220 JA 1/6W
R405	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R406	401 021 3009	CARBON 5.6K JA 1/4W
★R407	401 066 2104	OXIDE-MT 18K JA 2W
★R408	401 062 6106	OXIDE-MT 560 JA 1W
★R411A	401 068 6209	OXIDE-MT 5.6 JA 2W
R416	401 026 9303	CARBON 47 JA 1/6W
★R421	401 053 2704	MT-FILM 3.9K FA 1/6W
★R422	401 052 6802	MT-FILM 10K FA 1/6W
★R423	401 053 2605	MT-FILM 3.3K FA 1/6W
R426	401 027 5205	CARBON 680 JA 1/6W
R428	401 024 9701	CARBON 12K JA 1/6W
R441	401 150 6209	MT-GLAZE 1K JA 1/10W
R442	401 150 5905	MT-GLAZE 10K JA 1/10W
R443	401 150 5905	MT-GLAZE 10K JA 1/10W
R444	401 150 5905	MT-GLAZE 10K JA 1/10W
R449	401 265 1700	MT-GLAZE 4.7K FA 1/10W
★R482	401 011 9004	CARBON 1 JB 1/4W
★R483	401 006 7701	CARBON 1 JB 1/2W
★R484	401 059 9608	OXIDE-MT 2.2 JA 1W
R485	401 025 4606	CARBON 18K JA 1/6W
★R486	401 066 9103	OXIDE-MT 27 JA 2W
★R487	401 008 3800	CARBON 2.2 JB 1/2W
R488	401 008 9901	CARBON 27 JA 1/2W
★R489	401 065 9609	OXIDE-MT 18 JA 2W
R490	401 026 6609	CARBON 390 JA 1/6W
R491	401 024 7004	CARBON 1K JA 1/6W
R492	401 156 8504	MT-FILM 33K FA 1/6W
R493	401 020 3901	CARBON 470K JA 1/4W

C136	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J001	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J131	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J202	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J256	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J257	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J286	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J291	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J404	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J622	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J806	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
J821	401 150 6001	MT-GLAZE	0.000 ZA 1/10W
R001	401 256 3607	MT-GLAZE	15K JA 1/10W
R002	401 256 7308	MT-GLAZE	6.8K JA 1/10W
R004	401 025 5405	CARBON	2.2 JA 1/6W
R106	401 009 7005	CARBON	33K JA 1/2W

Schematic Location	Part No.	Description
R495	401 011 1107	CARBON 68 JA 1/2W
R496	401 011 1107	CARBON 68 JA 1/2W
★R497	401 069 0404	OXIDE-MT 6.8 JA 2W
R498	401 011 1107	CARBON 68 JA 1/2W
R499	401 008 9901	CARBON 27 JA 1/2W
R503	401 026 7002	CARBON 3.9K JA 1/6W
R504	401 026 9907	CARBON 4.7K JA 1/6W
R505	401 006 8401	CARBON 1.5 JA 1/2W
R506	401 024 6700	CARBON 100 JA 1/6W
R507	401 006 8807	CARBON 1.8 JA 1/2W
R508	401 027 8602	CARBON 8.2K JA 1/6W
R509	401 027 2600	CARBON 5.6K JA 1/6W
★R511	401 061 2505	OXIDE-MT 330 JA 1W
R513	401 026 7002	CARBON 3.9K JA 1/6W
R517	401 025 4606	CARBON 18K JA 1/6W
R518	401 025 4606	CARBON 18K JA 1/6W
★R601	402 055 3201	WIRE WOUND 1 KA WA 6W
	402 055 3300	WIRE WOUND 1 KA ZA 6W
	402 072 2706	WIRE WOUND 1 KA 5W
R602	402 078 5008	CARBON 1M JA 1/2W
R604	401 012 7009	CARBON 10K JA 1/4W
R605	401 016 5803	CARBON 220K JA 1/4W
★R606	401 010 2600	CARBON 47 JB 1/2W
★R607	401 068 6209	OXIDE-MT 5.6 JA 2W
★R609	402 083 8001	WIRE WOUND 180 JA 10W
R620	401 007 7601	CARBON 150 JA 1/2W
★R621	402 078 6203	WIRE WOUND 820 KA 6W
★R622	401 067 0000	OXIDE-MT 270 JA 2W
R623	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R624	401 008 0908	CARBON 180 JA 1/2W
R625	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R626	401 150 6209	MT-GLAZE 1K JA 1/10W
R627	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R628	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R629	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R701	401 026 0607	CARBON 270 JA 1/6W
R703	401 162 2404	MT-GLAZE 1.2K JA 1/10W
R704	401 255 9006	MT-GLAZE 82 JA 1/10W
R706	401 009 1508	CARBON 2.7K JA 1/2W
★R707	401 059 4900	OXIDE-MT 15K JA 1W
R711	401 026 0607	CARBON 270 JA 1/6W
R713	401 162 2404	MT-GLAZE 1.2K JA 1/10W
R716	401 009 1508	CARBON 2.7K JA 1/2W
★R717	401 059 4900	OXIDE-MT 15K JA 1W
R718	401 255 9006	MT-GLAZE 82 JA 1/10W
R721	401 026 0607	CARBON 270 JA 1/6W
R723	401 024 9305	CARBON 1.2K JA 1/6W
R726	401 009 1508	CARBON 2.7K JA 1/2W
★R727	401 059 4900	OXIDE-MT 15K JA 1W
R728	401 255 9006	MT-GLAZE 82 JA 1/10W
R801	401 256 5809	MT-GLAZE 270K JA 1/10W
R803	401 255 6500	MT-GLAZE 100 JA 1/10W
R804	401 255 6500	MT-GLAZE 100 JA 1/10W
R806	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R807	401 150 5905	MT-GLAZE 10K JA 1/10W
R808	401 150 5905	MT-GLAZE 10K JA 1/10W
R809	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R823	401 024 6700	CARBON 100 JA 1/6W
R829	401 024 6700	CARBON 100 JA 1/6W

Schematic Location	Part No.	Description
R831	401 150 5905	MT-GLAZE 10K JA 1/10W
R832	401 150 5905	MT-GLAZE 10K JA 1/10W
R833	401 152 3206	MT-GLAZE 330 JA 1/10W
R834	401 150 5806	MT-GLAZE 100K JA 1/10W
R837	401 024 7400	CARBON 10K JA 1/6W
R842	401 256 0309	MT-GLAZE 820 JA 1/10W
R843	401 256 0309	MT-GLAZE 820 JA 1/10W
R844	401 256 0309	MT-GLAZE 820 JA 1/10W
R846	401 150 6209	MT-GLAZE 1K JA 1/10W
R847	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R848	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R849	401 027 2600	CARBON 5.6K JA 1/6W
R851	401 256 5908	MT-GLAZE 2.7K JA 1/10W
R852	401 256 1702	MT-GLAZE 33K JA 1/10W
R856	401 024 6700	CARBON 100 JA 1/6W
R857	401 024 6700	CARBON 100 JA 1/6W
R862	401 255 6500	MT-GLAZE 100 JA 1/10W
R863	401 150 6001	MT-GLAZE 0.000 ZA 1/10W
R864	401 256 0200	MT-GLAZE 120K JA 1/10W
R865	401 024 7004	CARBON 1K JA 1/6W
R881	401 255 6500	MT-GLAZE 100 JA 1/10W
R882	401 255 6500	MT-GLAZE 100 JA 1/10W
R883	401 255 6500	MT-GLAZE 100 JA 1/10W
R884	401 255 6500	MT-GLAZE 100 JA 1/10W
R886	401 150 5905	MT-GLAZE 10K JA 1/10W
R892	401 162 2909	MT-GLAZE 220 JA 1/10W
R893	401 255 6500	MT-GLAZE 100 JA 1/10W
R894	401 255 6005	MT-GLAZE 1M JA 1/10W
R897	401 026 9600	CARBON 470 JA 1/6W
R898	401 162 3609	MT-GLAZE 470 JA 1/10W
R899	401 162 3807	MT-GLAZE 470K JA 1/10W
R1901	401 150 5905	MT-GLAZE 10K JA 1/10W
R1902	401 150 6209	MT-GLAZE 1K JA 1/10W
R1903	401 162 2800	MT-GLAZE 1.8K JA 1/10W
R1904	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R1905	401 256 7605	MT-GLAZE 3.9K JA 1/10W
R1906	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R1907	401 256 0408	MT-GLAZE 12K JA 1/10W
R1909	401 255 6500	MT-GLAZE 100 JA 1/10W

SWITCHES

SW1901	645 006 9673	SWITCH,PUSH 1P-1T (POWER)
SW1902	645 006 9673	SWITCH,PUSH 1P-1T (VOL.+)
SW1903	645 006 9673	SWITCH,PUSH 1P-1T (VOL.-)
SW1904	645 006 9673	SWITCH,PUSH 1P-1T (CH.▲)
SW1905	645 006 9673	SWITCH,PUSH 1P-1T (CH.▼)
SW1906	645 006 9673	SWITCH,PUSH 1P-1T (MENU)

TRANSFORMERS

T151	645 047 8680	TRANS,OSC 45.75MHZ
T401	610 000 9424	HORIZONTAL DRIVE TRANS
★T402	645 038 1669	TRANS,FLYBACK

Schematic Location	Part No.	Description
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FILTERS/CRYSTALS

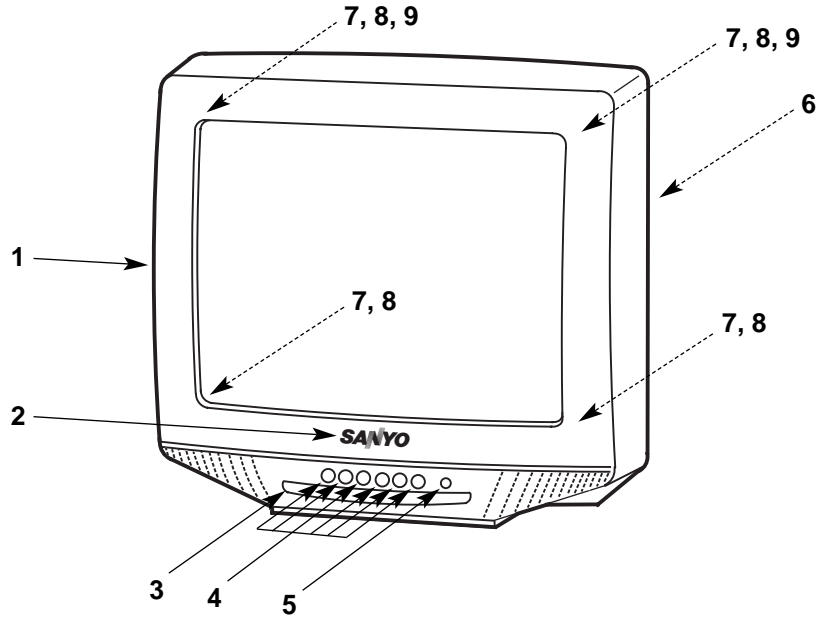
X141A	421 008 9008	SAW F TSF5235P
X161	610 015 3059	TRAP,CERAMIC 4.5MHZ
	645 041 1618	TRAP CERAMIC 4.5MHZ
X251	610 012 0655	CRYSTAL OSCILLATOR
	610 204 4195	CRYSTAL OSCILLATOR
	610 245 9746	CRYSTAL OSCILLATOR
X801	645 004 1938	OSC,CRYSTAL 32.768KHZ
	645 004 1945	OSC,CRYSTAL 32.768KHZ

Schematic Location	Part No.	Description
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MISCELLANEOUS

A100	610 289 2710	ASSY,PWB,MAIN
★A101	645 038 5827	TUNER,U/V
	645 042 1976	TUNER,U/V
★A102	645 044 2513	BLOCK,SPECIAL(ANT)
	645 045 1171	BLOCK,SPECIAL(ANT)
A700	610 289 2727	ASSY,PWB,SOCKET
A1901	645 041 1519	UNIT,REMOCON RECEIVER
	645 044 0519	UNIT,REMOCON RECEIVER
★F601	423 007 1601	FUSE 125V 4A
	423 007 1809	FUSE 125V 4A
	423 018 8101	FUSE 125V 4A
F601A	645 000 5077	HOLDER,FUSE
	645 016 0479	HOLDER,FUSE
F601B	645 000 5077	HOLDER,FUSE
	645 016 0479	HOLDER,FUSE
★K701A	645 026 1992	SOCKET,CRT 8P
★PS601	408 000 3203	TH PTH632D01BF7R0M140
★Q901	413 006 4703	CRT A34JRY24X
	414 007 4808	CRT A34KPU02XX
	414 009 5001	CRT A34KPU02XX
	414 010 3805	CRT A34KPU03XX
	414 010 3904	CRT A34JRY24X (DT)
Q901A1	610 117 0154	DY SPACER
	610 117 7924	DY SPACER
Q901A2	610 117 0154	DY SPACER
	610 117 7924	DY SPACER
Q901A3	610 117 0154	DY SPACER
	610 117 7924	DY SPACER
Q901C	610 217 7787	CG PURITY MAGNET
★RL601	645 000 4155	RELAY
	645 011 2713	RELAY
	645 015 8629	RELAY
	645 024 7767	RELAY
	645 024 7828	RELAY
SP901	610 055 6614	SPEAKER
	645 028 0870	SPEAKER,8
★W601	645 034 8525	CORD,POWER-2.0MK-A5003
★W902	610 252 5618	ASSY,WIRE GND CONNECTOR
	610 287 6581	ASSY,WIRE GND CONNECTOR

CABINET PARTS LIST



CABINET PARTS LIST

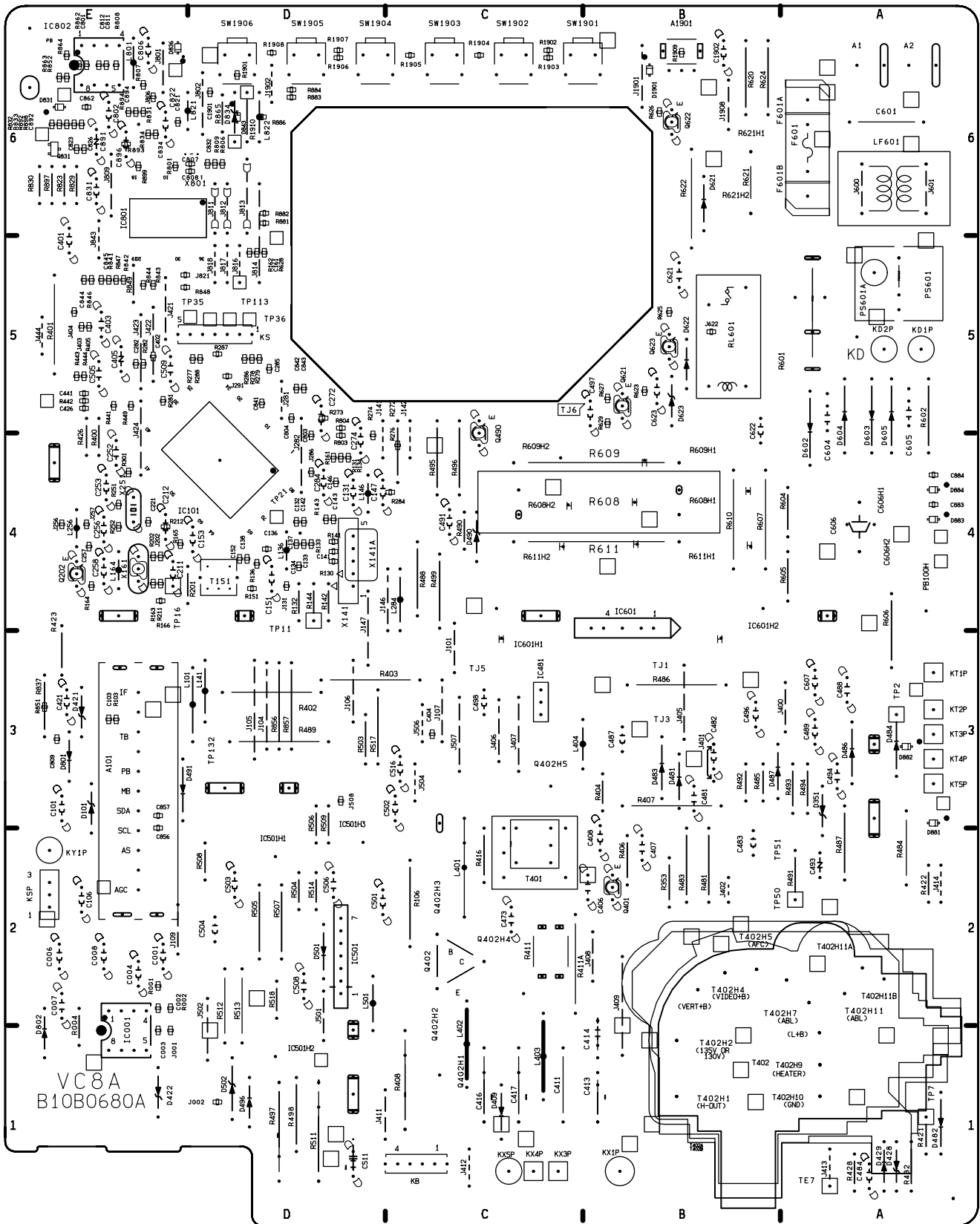
KEY NO.	PARTS NO.	DESCRIPTION
1	610 291 2159	CABINET FRONT
2	610 236 9267	SANYO BADGE
3	610 277 0841	DEC SHEET
4	610 275 1857	BUTTON UNITED
	411 078 1101	SCREW 4X14
OR	412 036 1805	SCREW 4X14
5	610 265 3786	CAP RC
6	610 291 2210	CABINET BACK
	411 078 1101	SCREW 4X14 (4 USED)
OR	412 036 1805	SCREW 4X14 (4 USED)
7	610 278 4367	CRT SPACER (4 USED)
8	412 000 7604	CRT MTG SCREW 5X30 (4 USED)
9	610 102 7151	DC HOLDER (2 USED)

ACCESSORY PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
	645 044 3176	ASSY,RC TRANSMITTER
OR	645 044 3213	ASSY,RC TRANSMITTER
	610 290 1221	RC-BATTERY COVER
OR	610 290 1283	RC-BATTERY COVER
	610 216 4886	ROD ANTENNA ASSY
OR	610 216 4916	ROD ANTENNA ASSY
OR	645 042 4519	ANTENNA,ROD
	645 003 3742	ANTENNA CONVERTER
OR	645 007 9061	ANTENNA CONVERTER
	610 289 2901	OWNER'S MANUAL

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

MAIN BOARD - Foil Side



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For parts or service contact

SANYO Fisher Service Corporation

21605 Plummer Street,

Chatsworth, CA 91311 (U.S.A.)

300 Applewood Crescent,


Concord, Ontario L4K 5C7 (CANADA)

May / 2001 / 2770 SMC

Printed in U.S.A.

MODEL AVM-1309S Chassis No. G6L-1309S2
SCHEMATIC DIAGRAMS

NOTES ON SCHEMATIC DIAGRAM

1. All resistance values in ohms K=1,000 M=1,000,000.
2. Unless otherwise noted on schematic, all capacitor values less than 1 are expressed in pF (Micro Farad), and the values more than 1 are in pF.
3. Unless otherwise noted on schematic, voltage reading taken with VOM from point indicated to chassis ground. Voltage reading taken using offset color bar-signal on VHF channel 5, all controls at normal. Line voltage at 120 volts. Some voltages may vary with signal strength.
4. Waveforms were taken with offset color-bar signal and controls adjusted for normal picture. Waveforms marked with an * may vary with signal strength.
5. Symbol  indicates a fusible resistor, which protects the circuit from possible short circuits.

SERVICE NOTES:

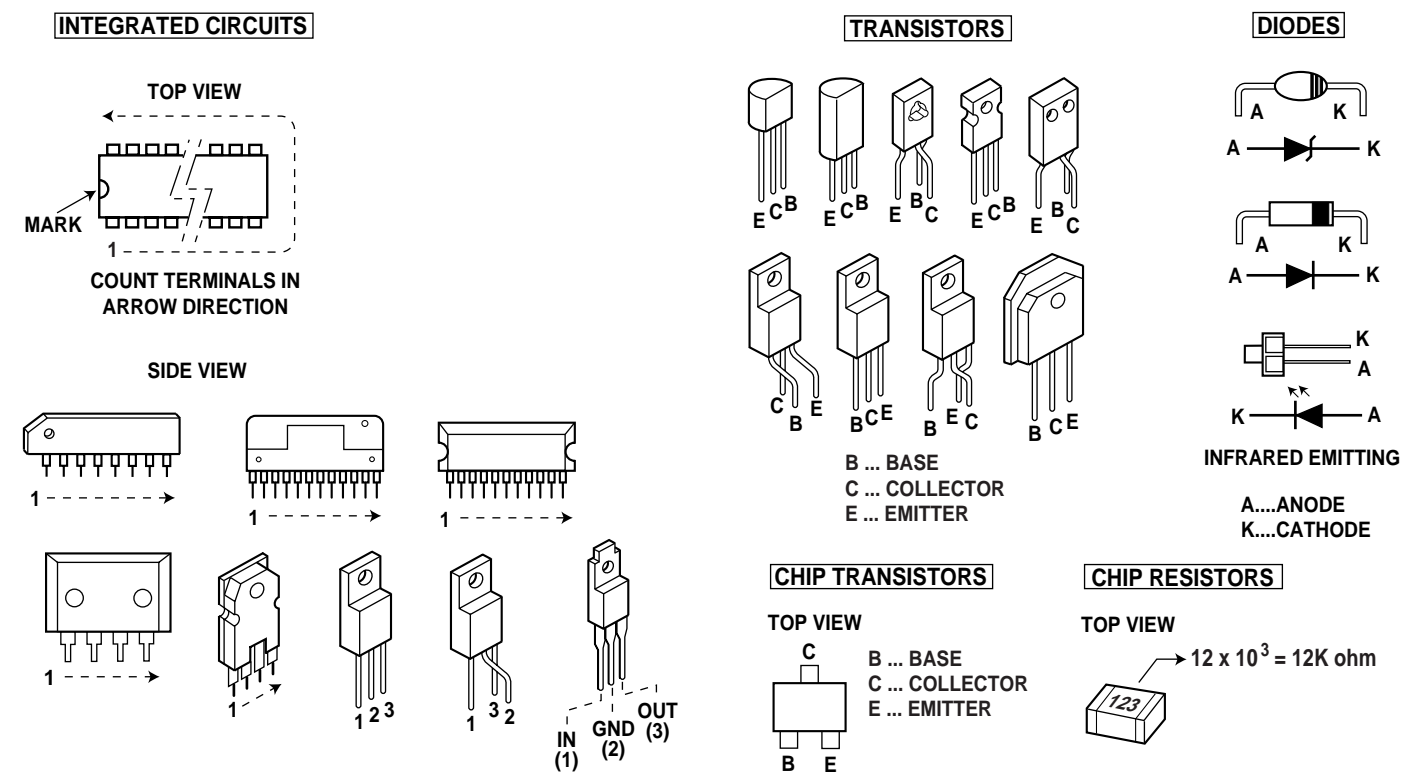
1. When replacing parts on circuit boards, clamp the lead wires to terminals before soldering.
2. When replacing high wattage resistors on circuit board, keep the resistor body 10 mm (3/8") from circuit board.
3. Keep wires away from high voltage and high temperature components.

PRODUCT SAFETY NOTICE

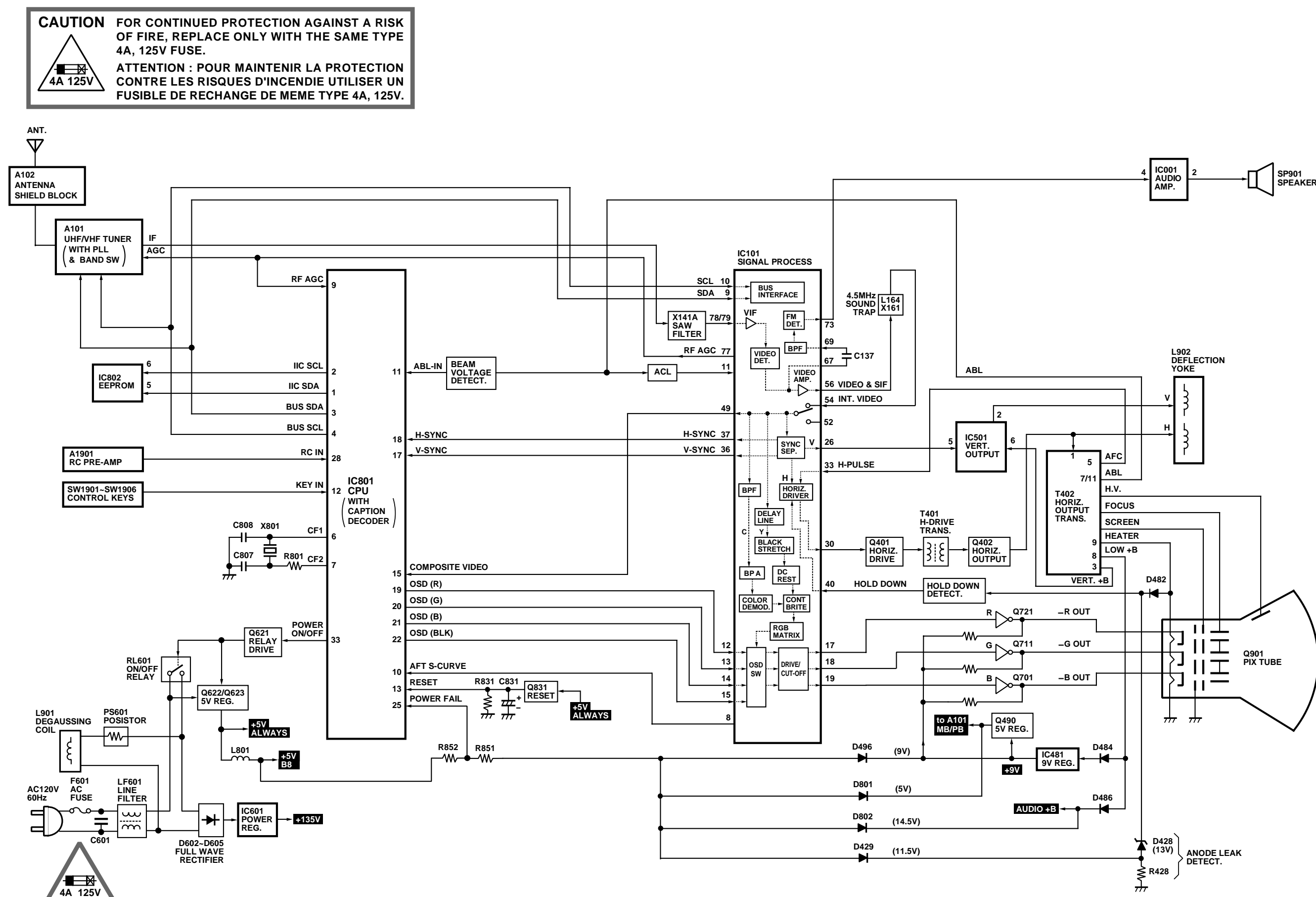
THE COMPONENTS DESIGNATED BY A STAR (★) ON THIS SCHEMATIC DIAGRAM DESIGNATE COMPONENTS WHOSE VALUES ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A STAR NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

X-RADIATION WARNING NOTE

THIS TV CONTAINS CRITICAL PARTS TO PROTECT AGAINST X-RADIATION. NORMAL 2ND ANODE VOLTAGE IS 21.0KV AT ZERO BEAM CURRENT AT 120 VOLTS AC LINE, AND MUST NOT EXCEED 22.0KV UNDER ANY OPERATING CONDITION. SEE HIGH VOLTAGE CHECK ON PAGE 7.

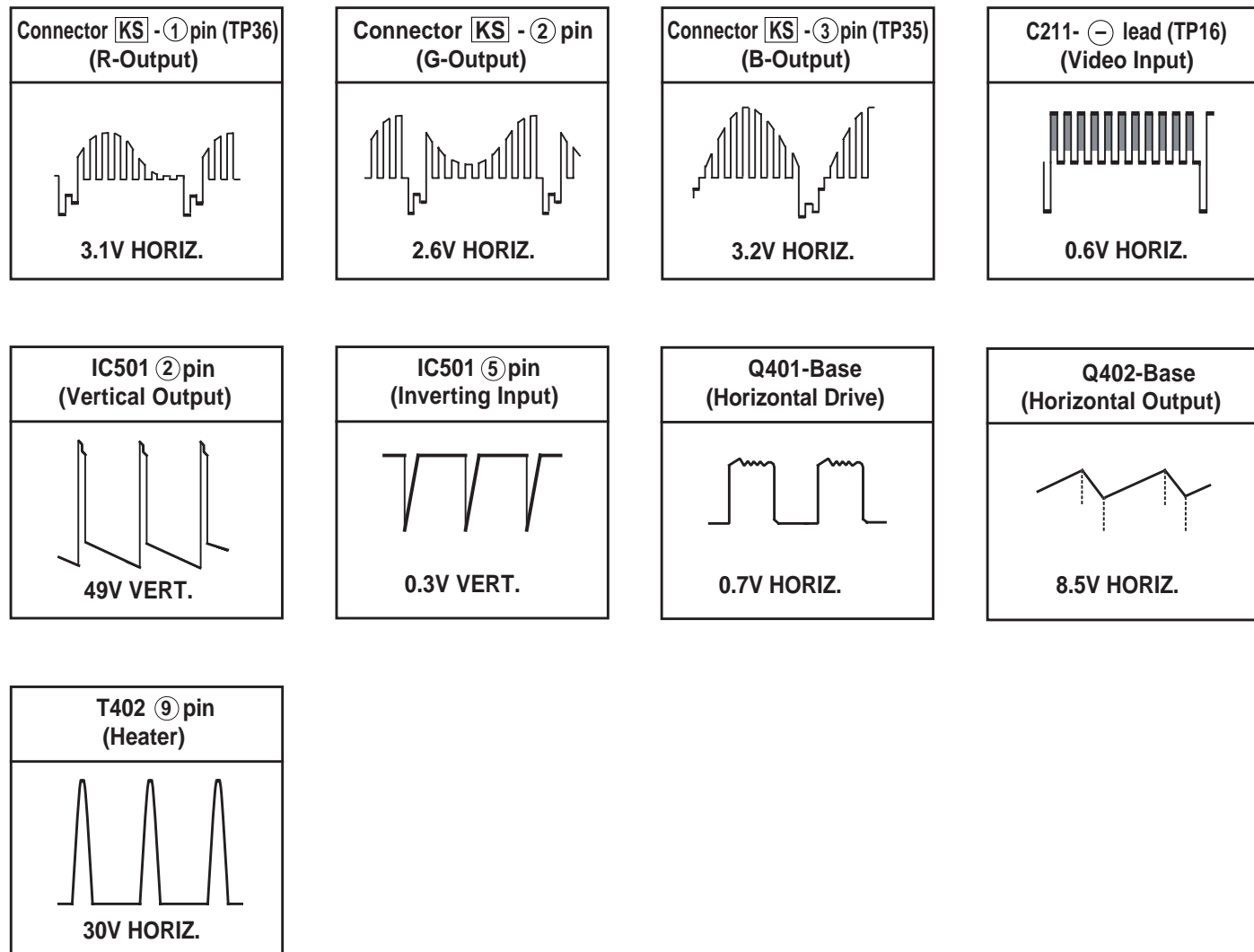


BLOCK DIAGRAM



WAVEFORMS

Note: Voltages were measured with offset color-bar signal and controls adjusted for normal picture



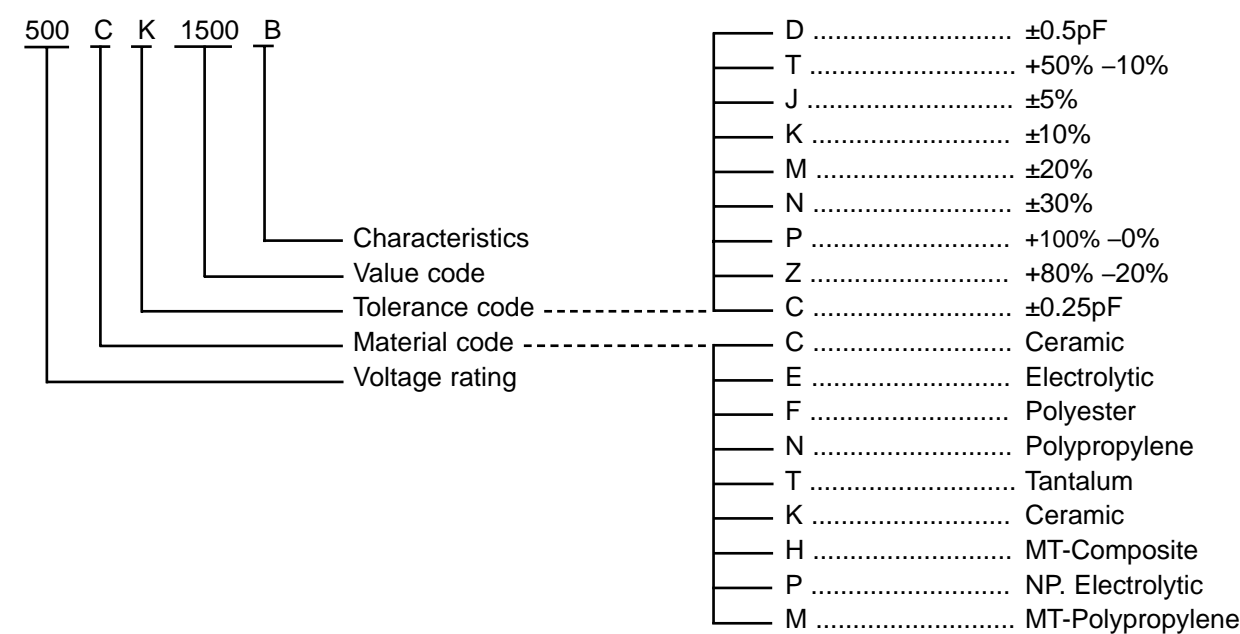
VOLTAGE CHARTS

Note: Voltages were measured with offset color-bar signal and controls adjusted for normal picture.

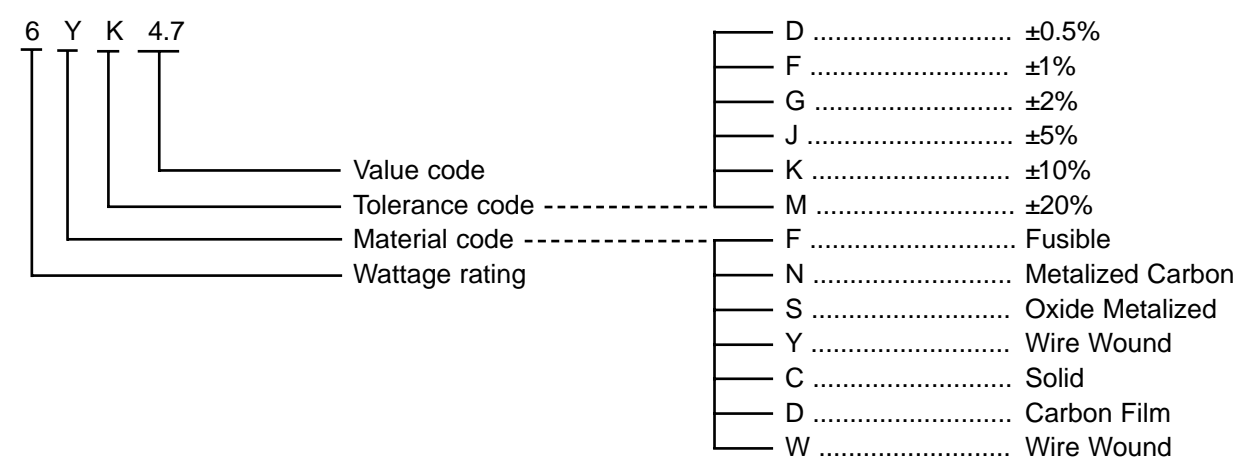
Device/Pin #	Volts/Mode	Device/Pin #	Volts/Mode	Device/Pin #	Volts/Mode	Device/Pin #	Volts/Mode
IC001-1	14.3	IC101-46	N.C.	IC801-4	4.3	Q621-C	POWER ON: 0 POWER OFF: 16.6
IC001-2	7.0	IC101-47	2.9	IC801-5	GND	Q621-E	GND
IC001-3	0.5	IC101-48	0	IC801-6	1.8	Q622-B	POWER ON: 5.0 POWER OFF: 5.8
IC001-4	0	IC101-49	1.9	IC801-7	2.7	Q622-C	POWER ON: 19.4 POWER OFF: 5.1
IC001-5	GND	IC101-50	GND	IC801-8	4.9	Q622-E	POWER ON: 4.9 POWER OFF: 5.0
IC001-6	GND	IC101-51	GND	IC801-9	2.1	Q623-B	POWER ON: 4.3 POWER OFF: 16.6
IC001-7	GND	IC101-52	2.7	IC801-10	0.8	Q623-C	POWER ON: 4.9 POWER OFF: 5.0
IC001-8	GND	IC101-53	5.2	IC801-11	3.4	Q623-E	POWER ON: 5.1 POWER OFF: 17.4
IC101-1	GND	IC101-54	2.7	IC801-12	0	Q701-B	2.2
IC101-2	GND	IC101-55	2.6	IC801-13	4.9	Q701-C	106.0
IC101-3	GND	IC101-56	2.2	IC801-14	2.5	Q701-E	2.1
IC101-4	GND	IC101-57	GND	IC801-15	2.5	Q711-B	2.3
IC101-5	GND	IC101-58	3.4	IC801-16	4.5	Q711-C	106.4
IC101-6	5.2	IC101-59	4.5	IC801-17	5.2	Q711-E	2.1
IC101-7	2.1	IC101-60	4.5	IC801-18	4.2	Q721-B	2.2
IC101-8	0.4	IC101-61	GND	IC801-19	0	Q721-C	108.5
IC101-9	4.3	IC101-62	GND	IC801-20	0	Q721-E	2.1
IC101-10	4.3	IC101-63	GND	IC801-21	0	Q831-B	4.3
IC101-11	4.2	IC101-64	GND	IC801-22	0	Q831-C	4.9
IC101-12	1.5	IC101-65	2.4	IC801-23	N.C.	Q831-E	4.9
IC101-13	1.5	IC101-66	N.C.	IC801-24	N.C.		
IC101-14	1.5	IC101-67	2.0	IC801-25	4.9		
IC101-15	0	IC101-68	2.4	IC801-26	GND		
IC101-16	8.2	IC101-69	3.2	IC801-27	GND		
IC101-17	2.2	IC101-70	GND	IC801-28	4.7		
IC101-18	2.1	IC101-71	GND	IC801-29	GND		
IC101-19	2.2	IC101-72	GND	IC801-30	GND		
IC101-20	GND	IC101-73	2.3	IC801-31	GND		
IC101-21	GND	IC101-74	GND	IC801-32	GND		
IC101-22	GND	IC101-75	2.2	IC801-33	POWER ON: 4.5 POWER OFF: 0		
IC101-23	GND	IC101-76	2.5	IC801-34	GND		
IC101-24	GND	IC101-77	2.1	IC801-35	4.9		
IC101-25	N.C.	IC101-78	2.9	IC801-36	4.9		
IC101-26	2.2	IC101-79	2.9	IC802-1	GND		
IC101-27	2.6	IC101-80	GND	IC802-2	GND		
IC101-28	5.2	IC481-1 (IN)	13.3	IC802-3	GND		
IC101-29	2.7	IC481-2	GND	IC802-4	GND		
IC101-30	0.6	IC481-3 (OUT)	9.2	IC802-5	4.9		
IC101-31	GND	IC501-1	GND	IC802-6	4.9		
IC101-32	4.9	IC501-2	10.5	IC802-7	GND		
IC101-33	1.1	IC501-3	26.1	IC802-8	4.9		
IC101-34	1.7	IC501-4	2.6	Q401-B	0.3		
IC101-35	4.9	IC501-5	2.6	Q401-C	17.3		
IC101-36	5.2	IC501-6	25.9	Q401-E	GND		
IC101-37	4.2	IC501-7	0.9	Q402-B	1.0		
IC101-38	4.7	IC601-1	GND	Q402-C	N/A		
IC101-39	GND	IC601-2	136.2	Q402-E	1.0		
IC101-40	0	IC601-3	162.8	Q490-B	5.9		
IC101-41	GND	IC601-4	135.3	Q490-C	7.2		
IC101-42	GND	IC601-5	N.C.	Q490-E	5.2		
IC101-43	GND	IC801-1	4.9				
IC101-44	2.2	IC801-2	4.9				
IC101-45	3.6	IC801-3	4.3	Q621-B	POWER ON: 0.7 POWER OFF: 0		

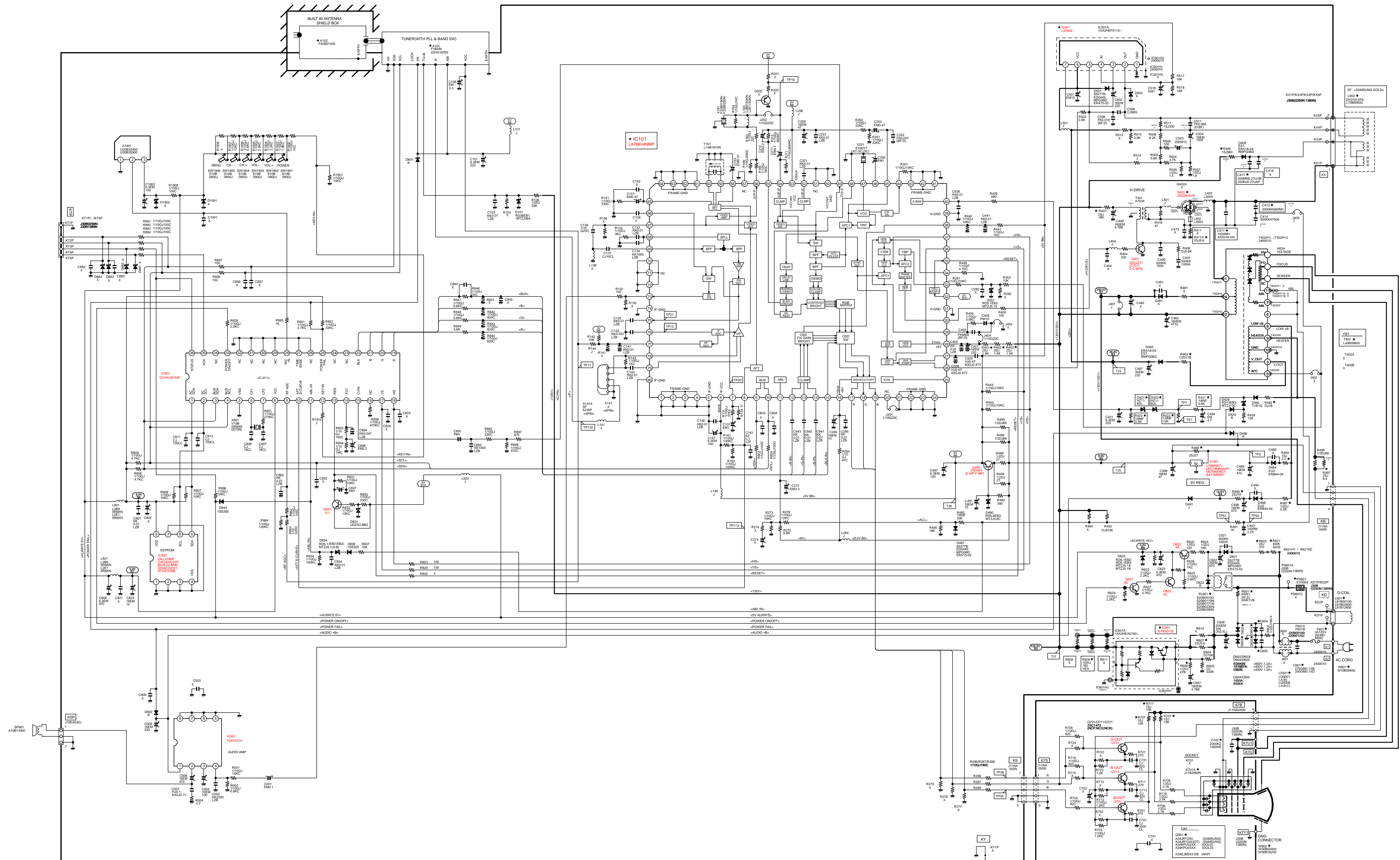
CAPACITOR AND RESISTOR CODE CHART

CAPACITOR (Example)



RESISTOR (Example)





- NOTES:
1. RESISTORS SPECIFIED WITH RESISTANCE VALUE ARE "16D".
 2. RESISTORS SPECIFIED WITH TYPE OF RESISTOR, TOLERANCE AND RESISTANCE VALUE ARE "14".
 3. ALL CAPACITORS ARE 50WV RATING UNLESS OTHERWISE NOTED.
 4. PARTS MARKED WITH ARE RELATED WITH X-RADIATION.
 5. THICK LINE ARE 10WATT SUPPLY LINE.

- | 8. LIST OF REPLACEABLE DIODES | |
|-------------------------------|---------------------------------------|
| M | 1S5176, 1S5133, GMA01 |
| R | 1S2076, 1S2473, DS442, 1N4148 |
| AA | 1S2076, 1S2473, DS442, 1N4148, 1S5133 |
| P | 1S2076A, 1S2471, 1N4148 |

- | | 2SC1740S | 2SC945A | 2SC1815 |
|----|----------|---------|---------|
| AD | Q.R.S. | Q.P | Y.GR |
| AE | Q.R.S. | R.Q.P | Q.Y.GR |
| | 2SA933S | 2SA564A | 2SA1015 |
| AB | R | R | Y.GR |
| AC | Q.R | Q.R | Q.Y.GR |

IMPORTANT:
SCHEMATIC PART LOCATION NUMBERS MAY NOT ALWAYS MATCH THE SCHEMATIC SYMBOLS.
THE SCHEMATIC SYMBOLS AND PART DESCRIPTIONS ARE CORRECT AND SHOULD BE USED.
THE PART DESCRIPTIONS WILL BE LISTED UNDER THE LOCATION NUMBER IN THE PARTS LIST.