

## Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 1

Please add this notice to the Service Manuals listed below.

Category : <u>COLOR TELEVISION</u>	Date : <u>Mar. / 26 /1996</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-01</u> ←
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original** Service Manual for Chassis No. 31650-00 used in Model DS31650 (SM510144).

### 1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason of change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub    F : Schematic Location Change    G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchange-ability	Reason
Page 15, Chassis Electrical Parts List	★ R497	Old	401 057 9907	OXIDE-MT 1.5 JA 1W	1	NO	D
		New	401 057 8009	OXIDE-MT 1 JA 1W	1	NO	
Page 17, Chassis Electrical Parts List	★ Q900	Old	414 008 3800	CRT M78JUA069X71	1	NO	D
		New	414 008 9208	CRT A78LKU30X07(M)	1	NO	

Prod. Code : 111325083, G5HWM

REFERENCE No. SM510144-01

For parts or service contact  
**SANYO FISHER SERVICE CORPORATION**  
 1411 West 190th Street, Suite 700,  
 South Bay Corporate Center, Gardena, CA 90248



# Notice



- CORRECTION                       PRODUCTION CHANGE  
 SERVICE FLASH                       ADD INFORMATION

FILE NO. C-2174

Please add this notice to the Service Manuals listed below.

REVISION 2

Category : <u>COLOR TELEVISION</u>	Date : <u>Aug. / 26 / 1996</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-02</u> ←
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-00. Only the **Difference Service Information** is given in this manual. For additional Service Information including :

- Service Adjustments
- Service Hints
- Mechanical Disassemblies
- Chassis Electrical Parts List
- Cabinet Parts List
- Component and Testpoint Locations
- Schematic Diagram

Refer to the **Original Service Manual and Notices** for Chassis No. 31650-00 used in Model DS31650 (SM510144).

## Contents

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## Specifications

Power Rating	120V 60Hz
Antenna Input Impedance	75 Ω
	UHF/VHF/CATV
Receiving Channel	2 - 13(VHF), 14 - 69(UHF), 01, 14 - 125(CATV)
Remote Ready	32 Key Remote Control
Sound Output	1.0W/CH
Intermediate Frequency	
Picture IF Carrier	45.75MHz
Sound Carrier	41.25MHz
Color Sub Carrier	42.17MHz
Picture Tube	M78JUA069X71
Semiconductors	
Integrated Circuits	10
Transistors	31
	Except within Tuner and RC Pre-Amp.
Cabinet Dimensions	
Width	766mm
Height	716mm
Depth	525.5mm

# SERVICE ADJUSTMENTS

## ANTENNA CONNECTION

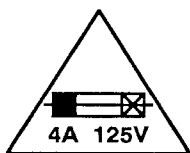
This receiver is designed for UHF/VHF reception. A 75 ohm terminal is provided for UHF and VHF receptions.

When connecting the CATV antenna system, connect the 75 ohm coaxial cable directly to 75 ohm terminal. For 300 ohm UHF/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 130V" and - lead to ground (TE7). Connect receiver to AC 120V line. Tune receiver to an active channel. Reset the PICTURE ADJUST to "FACTORY PRESET" level. Voltage must measure between +128.0V and +131.1V. If the voltage is out of this range, the power circuit must be checked. No +B adjustment is provided on this chassis.

## RF-AGC ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set contrast and brightness controls for maximum.
3. Turn RF-AGC Control (VR141) in the direction which causes snow to appear, then in the opposite direction until the snow just disappears.

## VERTICAL SIZE ADJUSTMENT

Tune receiver to an active channel. Adjust Vert. Size Control (VR501) for full scan.

## VERTICAL CENTERING ADJUSTMENT

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

## FOCUS ADJUSTMENT

Adjust Focus Control (T402) for well-defined scanning lines.

## GRAYSCALE ADJUSTMENT

1. Set Red (VR704) and Blue (VR705) Drive Controls to mid position. Set Blue (VR703), Green (VR702) and Red (VR701) Bias Controls to minimum (fully counter-clockwise).
2. Set Screen Control (T402) to minimum (fully counter-clockwise).
3. Set Service Switch (SW701) to "SERVICE" position on Pix Tube Board.
4. Advance Screen Control (T402) clockwise to obtain just visible one color line. If line does not appear, place this control to maximum (fully clockwise).
5. Advance each Bias Control to obtain just visible white line.

6. Set Service Switch (SW701) to "NORMAL" position.
7. Adjust Red and Blue Drive Controls alternately to produce normal black and white picture in highlight areas.
8. Check for proper grayscale at all brightness levels.

**Note:** If Grayscale Adjustment is made after picture tube replacement, check brightness level adjustment.

## BRIGHTNESS LEVEL ADJUSTMENT

**Note:** High Voltage Check, and AGC and Grayscale Adjustments must be completed before attempting Brightness Level Adjustment.

1. Connect a color bar generator to the antenna terminal.
2. Switch the generator to the crosshatch pattern.
3. Reset the PICTURE ADJUST to "FACTORY PRESET" level.
4. Connect Voltmeter (high impedance) + lead to terminal "TP51" and - lead to terminal "TP50" as shown in Figure 1.
5. Turn off the receiver and disconnect the AC power cord (AC 120V line).
6. While pressing the "MENU" key, connect the AC power cord again. Then "SUBBRIGHT ADJUST" display appears. (See Figure 2.)
7. Adjust Sub-Brightness Level with "+" or "-" key for 650mVdc.
8. Press the "MENU" key to turn off the SUBBRIGHT ADJUST display.
9. Check brightness level on every active channels. Readjust (repeat step 5-9 above) if necessary.

**Note:** Do not set to excessive brightness levels, otherwise the contrast level is suppressed.

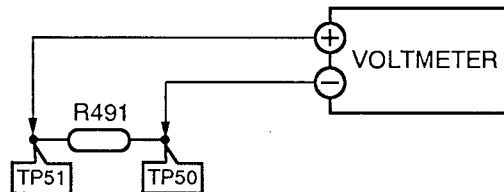


Figure 1. Connecting Voltmeter

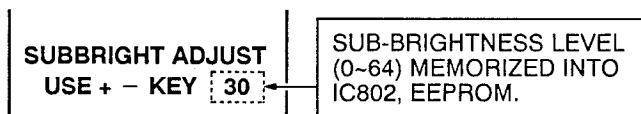


Figure 2. SUBBRIGHT ADJUST Display

## HIGH VOLTAGE CHECK

**Note:** +B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

1. Connect high voltage voltmeter + lead to anode of picture tube, and connect - lead to ground.
2. Tune receiver to an active channel and confirm TV is operating properly.
3. Eliminate the beam current by adjusting contrast and brightness controls to minimum.
4. Confirm high voltage is within 28.5KV to 30.5KV. 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 AC 120V line. Tune receiver to an active channel. Reset the PICTURE ADJUST to FACTORY PRESET level.
2. Check that the voltage measured between "TP7" and "TE7" (ground side) is within 16.5V to 21V. If the voltage is out of this range, the hold-down circuit must be checked.
3. Connect DC Voltage supply (+23V) to "TP7" through a 100 ohm, 1/4W resistor and "TE7"(ground side). Set the DC supply to 23V. 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 short time. Now turn on the receiver.

### AFT FIELD ADJUSTMENT

1. Disconnect the AC power cord (AC 120V line).
2. Connect voltmeter + lead to "TP113" on Main Board and - lead to Main Board ground. Ground "TP113" with a short jumper lead.
3. Connect the AC power cord again, and then press the "POWER" key to turn on the receiver.
4. Tune TV set to a good-quality active color channel, using keys 0 ~ 9 on the remote control transmitter. Wait a few seconds until properly tuned, and then remove the short lead from terminal "TP113".
5. Turn AFT Centering Coil (T161) on Main Board fully clockwise, and then gradually turn the coil counterclockwise until voltage is at the maximum level (approximately 3.8V). Continue to turn the coil counterclockwise until voltage is at the minimum level (approximately 1.2V), and then turn the coil clockwise until voltage indicates 2.5V. Voltage change in the coil adjustment is shown in Figure 3.
6. Disconnect voltmeter from chassis. Select every active channel with keys 0 ~ 9 and scanning keys, and check to be sure the AFT is operating properly.

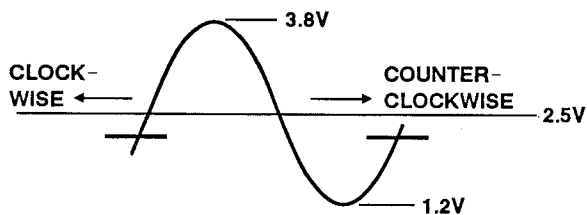


Figure 3. Voltage Change in Coil Adjustment

### REMOTE CONTROL TRANSMITTER SERVICE NOTE

To repair remote control transmitter, check as follows:

1. Check battery installation and battery voltage. If necessary, replace batteries.
2. Connect oscilloscope to Q9901 "Base" and ground.

3. Check the amplitude of the pulse on the base by pressing the remote control transmitter keys.
4. If pulse does not appear, replace with a new unit.

### VIDEO INPUT LEVEL ADJUSTMENT

**Note:** Video Input Level Adjustment affects brightness levels. After Video Input Level Adjustment, brightness level must be checked.

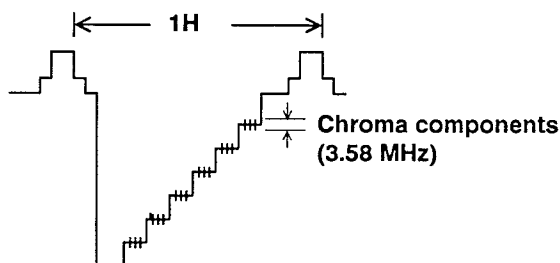
1. Connect video signal generator output (1Vp-p terminated at 75 ohm) to VIDEO INPUT JACK.
2. Set TV to VIDEO mode.
3. Connect scope to "TP16A" and ground.
4. Adjust Video Input Level (VR1023) for 1Vp-p.
5. Disconnect video signal generator from VIDEO INPUT JACK. Connect TV antenna to antenna terminal.
6. Tune receiver to an active channel. Set PICTURE ADJUST mode to "FACTORY PRESET" level. Check the proper contrast of the picture on all active channels. Readjust slightly if necessary.

### DISPLAY PLL ADJUSTMENT

1. Connect Voltmeter + lead to "TP501" (PLL Filter) and - lead to ground.
2. Tune receiver to an active channel.
3. Adjust Display PLL Control (VC801) for  $2.5 \pm 0.5$  Vdc.

### COMB FILTER ADJUSTMENT

1. Connect color-bar generator to antenna terminal.
2. Reset the PICTURE ADJUST to "FACTORY PRESET" level.
3. Connect scope to TP27 and ground.
4. Adjust VR300 and C305 for minimum chroma components in the video signals.



### SOUND ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set volume control to middle level.
3. Adjust Sound I.F. Transformer (T131) for the best sound and minimum noise.

## MULTI-SOUND SECTION ADJUSTMENTS

### 1.5 fH B.P.F. Adjustment

1. Connect DC Supply (+13.8V) to "TP2" and ground.
2. Connect Signal Generator to "TP301" through capacitor (10  $\mu$  F, 16V, Non-Polarized Electrolytic) and ground.
3. Ground "TP20" with a jumper lead.
4. Connect an Audio Voltmeter to "TP310" and ground.
5. Set Signal Output to 22.9kHz, 290mVp-p.
6. Adjust 1.5fH B.P.F. Adjustment (VR3403) for a reading of minimum voltage.

### Stereo VCO Adjustment

7. Remove Audio Voltmeter from "TP310".
8. Connect DC Voltmeter to "TP312" and ground.
9. Change Signal Output to 15.734kHz, 140mVp-p.
10. Read DC voltage at "TP312".
11. Change connection of DC Voltmeter to "TP313" and ground.
12. Adjust Stereo VCO Adjustment (VR3406) for "TP313" voltage to conform to "TP312" voltage.

### Multi-Sound Section Alignment

Variable resistors VR3411 and VR3421 are adjusted for stereo separation and have been preset at the factory. If these parts are to be replaced, first check the resistance values or adjustment positions of the original parts and set the replacement parts to the same values or positions.

If these parts are replaced, check the stereo and bilingual sound on a received broadcast multi-sound program. If separation is unacceptable, tune the adjustment positions of the replacement parts slightly. Adjust VR3421 (Low Separation) for minimum low frequencies in the right speaker. Adjust VR3411 (High Separation) for minimum high frequencies in the left speaker. Repeat adjustments for best separation.

### PURITY AND CONVERGENCE ADJUSTMENT

Convergence and Purity have been aligned at the factory. No re-alignment is necessary.

## P.I.F. ALIGNMENT INSTRUCTIONS

**GENERAL:** Shielding around the P.I.F. circuit must be in place. To prevent possible damage to the TV circuit, the TV set should be OFF when you connect the alignment equipment to the circuit.

### P.I.F. ALIGNMENT

Connect the test equipment and set the TV controls as follows:

#### BIAS SUPPLY

Apply IF AGC +6.0V to TP12, and +13.8V DC supply to TP2.

#### SCOPE

Connect scope VERT INPUT to SCOPE VERT on SWEEP/MARKER GENERATOR.  
Connect scope EXTERNAL HORIZ IN to scope HORIZ on SWEEP/MARKER GENERATOR.

#### SWEEP/MARKER GENERATOR

Connect SWEEP OUTPUT to TP132 through the matching pad as shown in Figure 1. Connect INPUT PROBE to TP16 through scope input pad as shown in Figure 2.

#### TELEVISION

Ground TP11 with jumper lead.  
Turn on the TV set and tune to an inactive channel.

Align P.I.F. as follows:

STEP AND MARKERS
P.I.F. Detection Stage Adjustment : 41.67MHz, 42.17MHz, 42.67MHz, and 45.75MHz markers ON.
ALIGNMENT PROCEDURES
Response characteristics should be similar to Figure 3. Adjust P.I.F. Detection Transformer (T151) so that the Picture Marker point of the P.I.F. detection spectrum is at 45.75MHz as shown in Figure 3.

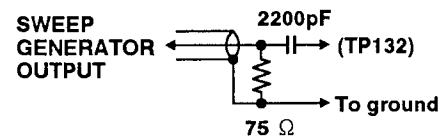


Figure 1. Matching Pad

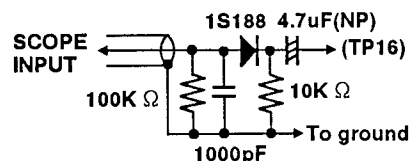


Figure 2. Scope Input Pad

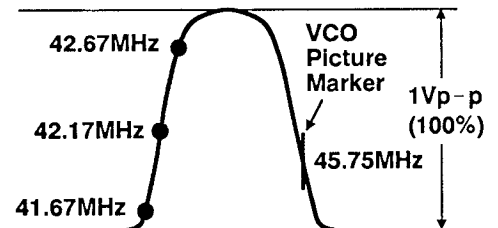


Figure 3. P.I.F. Detection Stage

# 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 set 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 Oscillation 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. Connect a DC Voltmeter to the following TEST POINTS .

TJ4	12V
TJ5	9V

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

# MECHANICAL DISASSEMBLIES

## CABINET BACK REMOVAL

1. Refer to Figure 1, remove 13 screws.
2. Pull off cabinet back and remove.

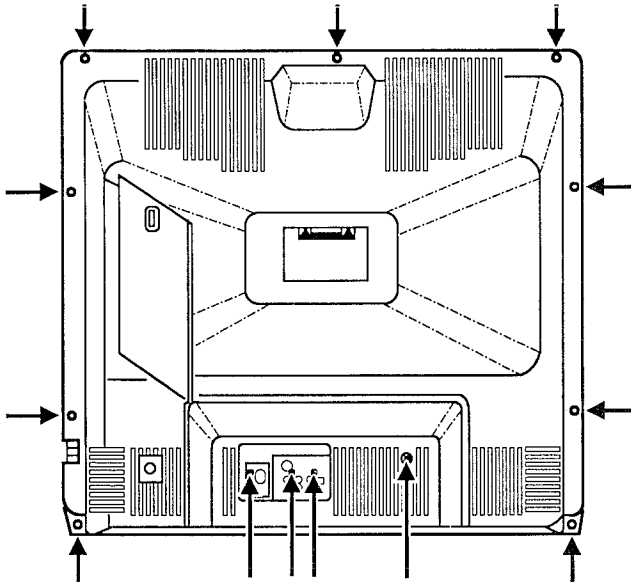


Figure 1. Cabinet Back Removal

## CHASSIS REMOVAL

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the dag coating (picture tube grounding lead).
3. Unplug Degaussing coil socket (KD), Picture tube socket, Deflection yoke connector (KX), Speakers connector (KSP), Pix tube ground leads 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.

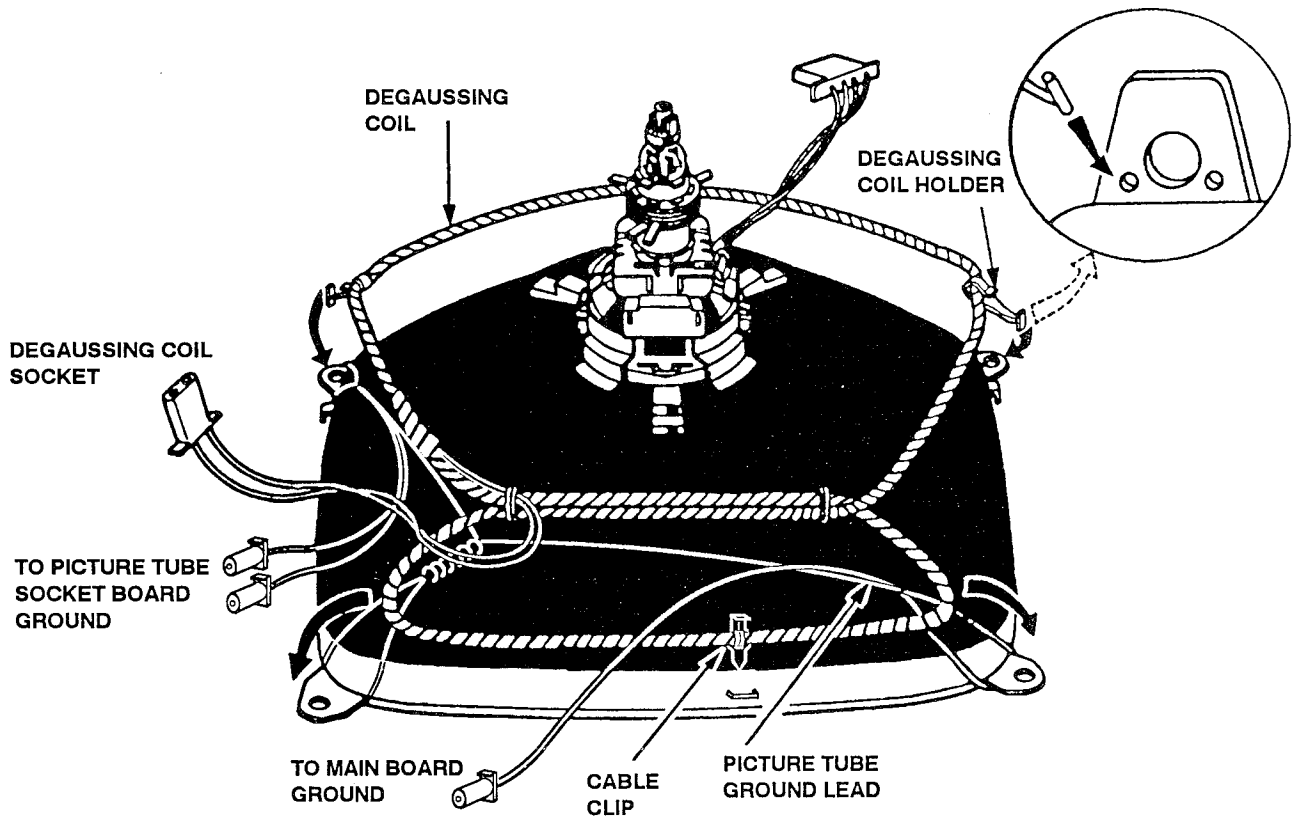


Figure 2. Picture Tube Replacement

## REMOTE CONTROL TRANSMITTER DISASSEMBLY

1. Press the hook of battery cover forward and lift it up in the direction of the arrow to remove it. See Figure 1.
2. Remove two screws. See Figure 1.
3. Starting at the rear of the remote, push the top section of the cabinet in and pull up the bottom section. Proceed by pressing in at the sides of top section, while pulling the bottom from the top. See Figure 2.

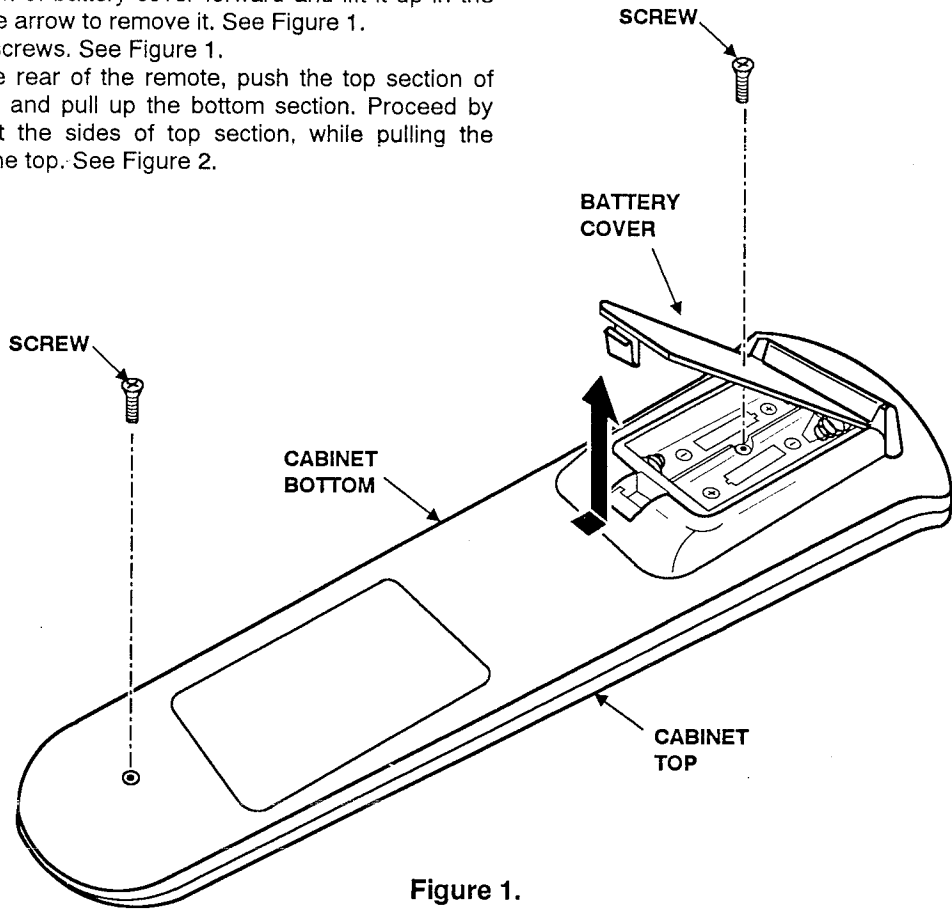


Figure 1.

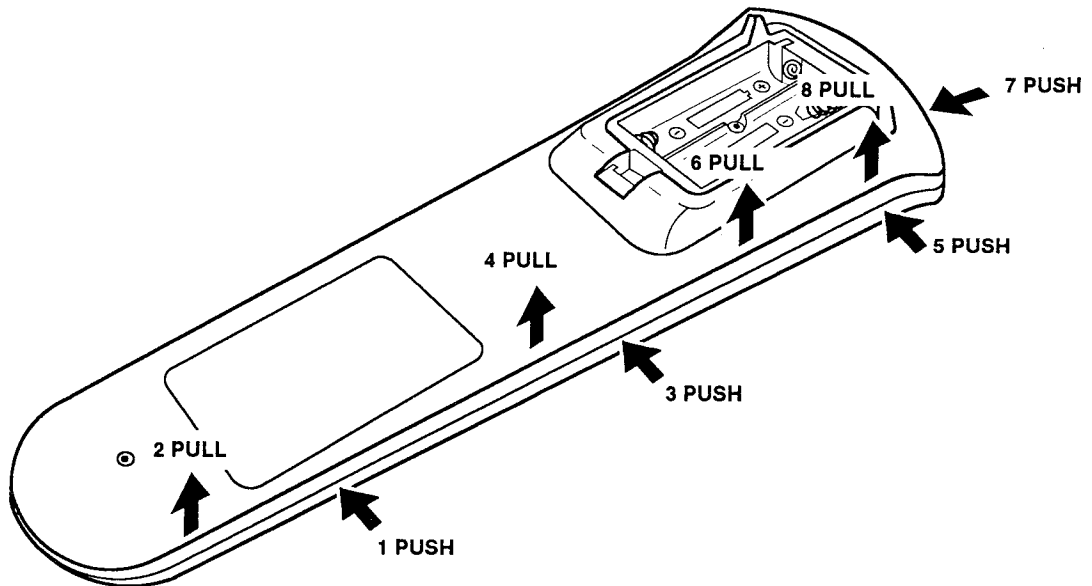


Figure 2.

## Remote Control Transmitter Disassembly

# CHASSIS ELECTRICAL PARTS LIST

**CAUTION:** To protect against electric shock and for continued product safety, refer to Safety Precautions, X-Radiation Precaution, High Voltage Hold-Down Test and Product Safety Notice on Page 2 of the Original Service Manual for Chassis No. 31650-00 used in Model DS31650 (SM510144).

## PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT 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.

**NOTE ;** Parts having Location Number are located in the following boards.

- Numbers under 600 Series ..... In the Main Board.
- Numbers 700 Series ..... In the Picture Tube Socket Board.
- Numbers 800 Series ..... In the Main Board.
- Numbers 900 Series ..... Out of Board.
- Numbers 1000 Series ..... In the Main Board.
- Numbers 1900 Series ..... In the Main Board.
- Numbers 3400 Series ..... In the Main Board.
- Numbers 3600 Series ..... In the Main Board.

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
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### CAPACITORS

**NOTES:**

Read description in the Capacitor as follows:

(Example)

CERAMIC 100P K 50V

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

C001	403 049 0008	ELECT	1U M	50V
C002	403 072 4400	CERAMIC	270P K	50V
C003	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	403 069 8305	CERAMIC	0.01U Z	50V
C016	403 049 0008	ELECT	1U M	50V
C017	403 041 8804	ELECT	10U M	16V
C019	403 042 7707	ELECT	22U M	16V
C021	403 049 0008	ELECT	1U M	50V
C022	403 072 4400	CERAMIC	270P K	50V
C023	403 039 6508	ELECT	100U M	10V
C026	403 044 1703	ELECT	470U M	16V
C027	403 067 5603	MT-COMPO	0.1U J	50V
	403 166 6808	MT-POLYEST	0.1U J	63V
C036	403 049 0008	ELECT	1U M	50V
C037	403 041 8804	ELECT	10U M	16V
C041	403 042 4805	ELECT	1000U M	16V
C042	403 042 7707	ELECT	22U M	16V
C101	403 041 4509	ELECT	470U M	10V
C103	403 069 8305	CERAMIC	0.01U Z	50V
C104	403 038 8602	ELECT	33U M	6.3V
C131	403 067 6501	MT-COMPO	0.18U J	50V
	403 166 8208	MT-POLYEST	0.18U J	63V
C133	403 069 8305	CERAMIC	0.01U Z	50V
C142	403 069 8305	CERAMIC	0.01U Z	50V
C143	403 040 3701	ELECT	220U M	10V
C150	403 060 8403	POLYESTER	0.033U K	50V
	403 312 1305	POLYESTER	0.033U K	50V
C151	403 048 6308	ELECT	0.47U M	50V
C152	403 041 8804	ELECT	10U M	16V
C153	403 069 8305	CERAMIC	0.01U Z	50V
C154	403 068 9006	CERAMIC	100P K	50V
C155	403 069 0507	CERAMIC	1000P K	50V
C156	403 069 0507	CERAMIC	1000P K	50V
C158	403 069 8305	CERAMIC	0.01U Z	50V
C161	403 028 2009	CERAMIC	56P J	50V
C166TM	403 019 7402	CERAMIC	27P J	50V
C202	403 069 8305	CERAMIC	0.01U Z	50V

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
C203	403 009 3100	CERAMIC 100P J 50V	C607	403 103 0005	ELECT 4.7U M 160V
C205	403 033 3305	CERAMIC 82P J 50V	★C611	403 082 6302	POLYPRO 0.01U J 200V
C208	403 011 3501	CERAMIC 120P J 50V	C622	403 047 5005	ELECT 470U M 25V
C212	403 031 8104	CERAMIC 7P D 50V	C623	403 039 3507	ELECT 470U M 6.3V
C214	403 049 0008	ELECT 1U M 50V	C701	403 070 8400	CERAMIC 1500P K 50V
C215	403 048 6308	ELECT 0.47U M 50V	C703	403 074 8901	CERAMIC 680P K 50V
C216	403 049 0008	ELECT 1U M 50V	C705	403 074 8901	CERAMIC 680P K 50V
C217	403 012 4101	CERAMIC 15P J 50V	C707	403 074 8901	CERAMIC 680P K 50V
C251	403 040 3701	ELECT 220U M 10V	★C708	403 077 2708	CERAMIC 1000P P 2K
C252	403 058 3403	POLYESTER 0.015U K 50V		403 175 3409	CERAMIC 1000P P 2K
	403 311 9708	POLYESTER 0.015U K 50V	C801	403 067 5603	MT-COMPO 0.1U J 50V
C253	403 049 9803	ELECT 2.2U M 50V		403 166 6808	MT-POLYEST 0.1U J 63V
C301	403 069 8305	CERAMIC 0.01U Z 50V	C802	403 041 8804	ELECT 10U M 16V
C302	403 018 6208	CERAMIC 220P J 50V	C806	403 069 8305	CERAMIC 0.01U Z 50V
C303	403 041 8804	ELECT 10U M 16V	C811	403 049 0008	ELECT 1U M 50V
C304	403 011 3501	CERAMIC 120P J 50V	C814	403 023 9706	CERAMIC 39P J 50V
C305	610 003 0381	TRIMMER, 40PF(Y/C SEP.)	C818	403 071 7402	CERAMIC 2200P K 50V
C324	403 069 0507	CERAMIC 1000P K 50V	C819	403 049 9803	ELECT 2.2U M 50V
C351	403 049 0008	ELECT 1U M 50V	C821	403 041 8804	ELECT 10U M 16V
C352	403 073 6403	CERAMIC 470P K 50V	C826	403 049 9803	ELECT 2.2U M 50V
C361	403 022 6003	CERAMIC 33P J 50V	C827	403 072 5308	CERAMIC 2700P K 50V
C371	403 048 6308	ELECT 0.47U M 50V	C829	403 049 0008	ELECT 1U M 50V
C401	403 042 7707	ELECT 22U M 16V	C831	403 076 2006	CERAMIC 330P K 500V
C402	403 049 9803	ELECT 2.2U M 50V	C832	403 062 0504	POLYESTER 0.047U K 50V
C403	403 060 8403	POLYESTER 0.033U K 50V		403 312 2203	POLYESTER 0.047U K 50V
	403 312 1305	POLYESTER 0.033U K 50V	C834	403 058 3403	POLYESTER 0.015U K 50V
C404	403 073 6403	CERAMIC 470P K 50V		403 311 9708	POLYESTER 0.015U K 50V
C406	403 076 3607	CERAMIC 470P K 500V	C851	403 041 8804	ELECT 10U M 16V
C407	403 076 0507	CERAMIC 2200P K 500V	C856	403 041 8804	ELECT 10U M 16V
C408	403 054 9102	ELECT 4.7U M 100V	C861	403 041 8804	ELECT 10U M 16V
★C411	404 063 7400	MT-POLYPRO 8000P H 1.5K	C862	403 069 8305	CERAMIC 0.01U Z 50V
★C412	404 069 3802	MT-POLYPRO 8600P H 1.5K	C868	403 041 8804	ELECT 10U M 16V
★C413	403 083 4901	POLYPRO 0.027U J 400V	C871	403 041 8804	ELECT 10U M 16V
★C414	403 083 3904	POLYPRO 0.018U J 400V	C883	403 049 9803	ELECT 2.2U M 50V
★C416	403 082 9808	POLYPRO 0.33U J 200V	C886	403 049 9803	ELECT 2.2U M 50V
★C417	403 082 9006	POLYPRO 0.27U J 200V	C891	403 069 8305	CERAMIC 0.01U Z 50V
C419	403 158 9107	MT-POLYEST 2.2U K 100V	C892	403 041 8804	ELECT 10U M 16V
C421	403 038 6301	ELECT 220U M 6.3V	C1002	403 042 2405	ELECT 100U M 16V
C422	403 158 9305	MT-POLYEST 0.47U K 250V	C1003	403 043 6006	ELECT 330U M 16V
C461	403 049 0008	ELECT 1U M 50V	C1006	403 041 8804	ELECT 10U M 16V
C462	403 038 1603	ELECT 100U M 6.3V	C1007	403 041 8804	ELECT 10U M 16V
C466	403 047 3100	ELECT 47U M 25V	C1008	403 038 1603	ELECT 100U M 6.3V
C470	403 067 7805	MT-COMPO 0.47U J 50V	★C1020	404 008 6802	CERAMIC 2200P M 125V
	403 166 7706	MT-POLYEST 0.47U J 63V	C1022	403 041 8804	ELECT 10U M 16V
C482	403 115 0802	ELECT 22U M 100V	C1023	403 043 6006	ELECT 330U M 16V
C483	404 069 2102	ELECT 47U M 160V	C1026	403 041 8804	ELECT 10U M 16V
C484	403 051 0607	ELECT 4.7U M 50V	C1027	403 041 8804	ELECT 10U M 16V
C487	403 052 8503	ELECT 1000U M 35V	C1031	403 085 4008	NP-ELECT 10U M 16V
C489	403 044 1703	ELECT 470U M 16V	C1032	403 012 4101	CERAMIC 15P J 50V
C491	403 043 0202	ELECT 220U M 16V	C1901	403 049 0008	ELECT 1U M 50V
C493	404 056 5307	NP-ELECT 2.2U M 100V	C3401	403 046 9905	ELECT 4.7U M 25V
C496	403 044 1703	ELECT 470U M 16V	C3402	403 048 6308	ELECT 0.47U M 50V
C501	403 043 6006	ELECT 330U M 16V	C3404	403 046 9905	ELECT 4.7U M 25V
C502	403 057 0601	POLYESTER 0.01U K 50V	C3406	403 046 9905	ELECT 4.7U M 25V
	403 311 8701	POLYESTER 0.01U K 50V	C3407	403 073 8308	CERAMIC 4700P K 50V
C503	403 205 4604	ELECT 10U K 25V	C3408	403 046 9905	ELECT 4.7U M 25V
C504	403 045 1504	ELECT 1000U M 25V	C3409	403 062 0504	POLYESTER 0.047U K 50V
C505	403 072 4400	CERAMIC 270P K 50V		403 312 2203	POLYESTER 0.047U K 50V
C506	403 204 6104	ELECT 1U M 50V	C3411	403 046 9905	ELECT 4.7U M 25V
C507	403 053 2104	ELECT 220U M 35V	C3412	403 046 9905	ELECT 4.7U M 25V
C508	403 054 1502	ELECT 470U M 35V	C3413	403 090 6004	TA-SOLID 3.3U K 10V
C509	403 069 0507	CERAMIC 1000P K 50V		403 124 7908	TA-SOLID 3.3U K 10V
C556	403 041 8804	ELECT 10U M 16V	C3414	403 049 0008	ELECT 1U M 50V
★C601	404 072 7903	MT-POLYEST 0.068U K 250V	C3416	403 090 3607	TA-SOLID 10U K 10V
	404 073 7407	MT-POLYEST 0.068U M 275V		403 090 3706	TA-SOLID 10U K 10V
★C604	403 075 7101	CERAMIC 1000P K 500V	C3417	403 046 9905	ELECT 4.7U M 25V
★C605	403 075 7101	CERAMIC 1000P K 500V	C3418	403 060 0001	POLYESTER 2700P J 50V
C606	404 049 4805	ELECT 470U M 200V		403 312 0605	POLYESTER 2700P J 50V

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
C3419	403 041 2109	ELECT 47U M 10V		408 008 2406	DIODE 1N4148
C3422	403 048 6308	ELECT 0.47U M 50V	D463	407 013 1008	DIODE 1S1553
C3423	403 046 9905	ELECT 4.7U M 25V		407 013 4306	DIODE 1S2076A
C3424	403 138 5600	POLYESTER 5600P J 50V		407 013 6508	DIODE 1S2471
	403 312 2302	POLYESTER 5600P J 50V		408 008 2406	DIODE 1N4148
C3426	403 214 5203	POLYESTER 0.012U J 50V	D481	407 007 6606	DIODE ES1
	403 311 9203	POLYESTER 0.012U J 50V		407 124 5506	DIODE RMPG06G
C3436	403 069 8305	CERAMIC 0.01U Z 50V		407 124 6404	DIODE ERA18-04
C3601	403 043 9106	ELECT 47U M 16V	D482	407 011 4407	DIODE TVR1G
C3602	403 058 3403	POLYESTER 0.015U K 50V	D483	407 007 6606	DIODE ES1
	403 311 9708	POLYESTER 0.015U K 50V		407 124 5506	DIODE RMPG06G
C3603	403 048 4205	ELECT 0.33U M 50V		407 124 6404	DIODE ERA18-04
C3604	403 049 0008	ELECT 1U M 50V	D484	407 007 7603	DIODE EU2
C3606	403 049 0008	ELECT 1U M 50V	D486	407 007 7603	DIODE EU2
C3607	403 048 4205	ELECT 0.33U M 50V	D487	407 005 8602	DIODE ERA15-02
C3608	403 058 3403	POLYESTER 0.015U K 50V		407 011 3004	DIODE S5277B
	403 311 9708	POLYESTER 0.015U K 50V		407 088 6502	DIODE MPG06D
C7922	403 041 8804	ELECT 10U M 16V		408 009 9404	DIODE 1N4002ID
VC801	610 003 0381	TRIMMER, 40PF (DISPLAY PLL)	D491	407 005 8602	DIODE ERA15-02
				407 011 3004	DIODE S5277B
				407 088 6502	DIODE MPG06D
				408 009 9404	DIODE 1N4002ID
				407 005 8602	DIODE ERA15-02
				407 011 3004	DIODE S5277B
				407 088 6502	DIODE MPG06D
				408 009 9404	DIODE 1N4002ID
				407 005 8602	DIODE ERA15-02
				407 011 3004	DIODE S5277B
				407 088 6502	DIODE MPG06D
				408 009 9404	DIODE 1N4002ID
				407 005 7605	DIODE EM2B
				407 013 3200	DIODE 1S1887A
				408 008 8606	DIODE GP15G
				407 005 7605	DIODE EM2B
				407 013 3200	DIODE 1S1887A
				408 008 8606	DIODE GP15G
				407 005 7605	DIODE EM2B
				407 013 3200	DIODE 1S1887A
				408 008 8606	DIODE GP15G
				407 005 7605	DIODE EM2B
				408 008 8606	DIODE GP15G
				407 005 7605	DIODE EM2B
				407 013 3200	DIODE 1S1887A
				408 008 8606	DIODE GP15G
				407 005 8602	DIODE ERA15-02
				407 011 3004	DIODE S5277B
				407 088 6502	DIODE MPG06D
				408 009 9404	DIODE 1N4002ID
				407 005 4505	DIODE DS442X
				407 007 9904	DIODE GMA01
				407 012 4406	DIODE 1SS133
				407 012 5809	DIODE 1SS176
				407 013 1206	DIODE 1S1555
				407 013 4207	DIODE 1S2076
				407 013 7109	DIODE 1S2473
				408 008 2406	DIODE 1N4148
				407 012 4406	DIODE 1SS133
				407 012 5809	DIODE 1SS176
				407 013 1206	DIODE 1S1555
				407 013 4207	DIODE 1S2076
				407 013 7109	DIODE 1S2473
				408 008 2406	DIODE 1N4148
				407 056 8002	ZENER DIODE RD5.1EB2 (5.1V)
				407 151 8402	ZENER DIODE UZ-5.1BCB (5.1V)
				407 005 4505	DIODE DS442X
				407 007 9904	DIODE GMA01
				407 012 4406	DIODE 1SS133
				407 012 5809	DIODE 1SS176
				407 013 1206	DIODE 1S1555
				407 013 4207	DIODE 1S2076
				407 013 7109	DIODE 1S2473
				408 008 2406	DIODE 1N4148
				407 005 4505	DIODE DS442X
				407 007 9904	DIODE GMA01
				407 012 4406	DIODE 1SS133
				407 012 5809	DIODE 1SS176
				407 013 1206	DIODE 1S1555
				407 013 4207	DIODE 1S2076
				407 013 7109	DIODE 1S2473
				408 008 2406	DIODE 1N4148
				407 005 4505	DIODE DS442X
				407 007 9904	DIODE GMA01
				407 012 4406	DIODE 1SS133
				407 012 5809	DIODE 1SS176
				407 013 1206	DIODE 1S1555
				407 013 4207	DIODE 1S2076
				407 013 7109	DIODE 1S2473
				408 008 2406	DIODE 1N4148
				407 005 4505	DIODE DS442X
				407 007 9904	DIODE GMA01
				407 012 4406	DIODE 1SS133
				407 012 5809	DIODE 1SS176
				407 013 1206	DIODE 1S1555
				407 013 4207	DIODE 1S2076
				407 013 7109	DIODE 1S2473
				408 008 2406	DIODE 1N4148

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
D803	407 005 4505	DIODE DS442X			
	407 007 9904	DIODE GMA01	★LF601	610 031 5938	LINE FILTER
	407 012 4406	DIODE 1SS133		610 223 1212	LINE FILTER
	407 012 5809	DIODE 1SS176	L164	645 003 9782	INDUCTOR, 22U K
	407 013 1206	DIODE 1S1555		645 016 2831	INDUCTOR, 22U K
	407 013 4207	DIODE 1S2076	L166TM	645 003 9812	INDUCTOR, 33U K
	407 013 7109	DIODE 1S2473		645 016 2985	INDUCTOR, 33U K
	408 008 2406	DIODE 1N4148	L201	645 001 4567	INDUCTOR, 10U K
D831	407 056 4707	ZENER DIODE RD4.3EB2 (4.3V)		645 016 2534	INDUCTOR, 10U K
	407 164 9601	ZENER DIODE UZ-4.3BCB (4.3V)	L301	610 030 0828	DELAY LINE
D834	407 055 2902	ZENER DIODE RD22EB2 (22V)		645 009 6013	DELAY LINE
	407 164 8109	ZENER DIODE UZ-22BCB (22V)	L302	610 029 7388	PEAKING COIL 15UH J
D836	407 005 4505	DIODE DS442X		645 007 9627	INDUCTOR, 15U J
	407 007 9904	DIODE GMA01	L303	610 029 7425	PEAKING COIL 18UH J
	407 012 4406	DIODE 1SS133		645 007 9719	INDUCTOR, 18U J
	407 012 5809	DIODE 1SS176	L315	610 029 7883	PEAKING COIL 8.2UH J
	407 013 1206	DIODE 1S1555		645 008 0395	INDUCTOR, 8.2U J
	407 013 4207	DIODE 1S2076	L401	610 032 4381	FILTER COIL
	407 013 7109	DIODE 1S2473		610 032 4404	FILTER COIL
	408 008 2406	DIODE 1N4148	L402	610 031 9998	PIPE CORE
D843	407 005 4505	DIODE DS442X	L403	610 078 4635	PIPE CORE
	407 007 9904	DIODE GMA01	L404	645 008 2771	INDUCTOR, 120U K
	407 012 4406	DIODE 1SS133		645 016 2626	INDUCTOR, 120U K
	407 012 5809	DIODE 1SS176	★L413	610 000 0971	LINEARITY COIL
	407 013 1206	DIODE 1S1555		610 205 0103	LINEARITY COIL
	407 013 4207	DIODE 1S2076	L414	645 019 5990	INDUCTOR, 6800U
	407 013 7109	DIODE 1S2473	L416	610 208 3781	COIL
	408 008 2406	DIODE 1N4148		645 013 8676	INDUCTOR, 350U
D851	407 005 4505	DIODE DS442X	L416H1	610 092 1689	EYELET
	407 007 9904	DIODE GMA01	L801	645 008 2894	INDUCTOR, 5.6U K
	407 012 4406	DIODE 1SS133		645 016 3104	INDUCTOR, 5.6U K
	407 012 5809	DIODE 1SS176	L811	610 029 7760	PEAKING COIL 5.6UH J
	407 013 1206	DIODE 1S1555		645 008 0180	INDUCTOR, 5.6U J
	407 013 4207	DIODE 1S2076	L822	645 008 2894	INDUCTOR, 5.6U K
	407 013 7109	DIODE 1S2473		645 016 3104	INDUCTOR, 5.6U K
	408 008 2406	DIODE 1N4148	L823	645 008 2894	INDUCTOR, 5.6U K
★D1001	407 145 3703	PHOTO COUPLE PC827C		645 016 3104	INDUCTOR, 5.6U K
	407 176 6100	PHOTO COUPLE PC827D	L826	645 008 2771	INDUCTOR, 120U K
	407 176 6209	PHOTO COUPLE TLP521-2-BL		645 016 2626	INDUCTOR, 120U K
★D1003	408 000 0301	PC TLP551 (VIDEO)	L842	645 008 2894	INDUCTOR, 5.6U K
D1011	407 007 6606	DIODE ES1		645 016 3104	INDUCTOR, 5.6U K
	407 124 5506	DIODE RMPG06G	★L901	645 020 9116	COIL, DEGAUSSING
	407 124 6404	DIODE ERA18-04	L1901	645 008 2894	INDUCTOR, 5.6U K
D1012	407 162 5308	ZENER DIODE UZ-12BCC (12V)		645 016 3104	INDUCTOR, 5.6U K

### COILS

### INTEGRATED CIRCUITS

### TRANSISTORS

IC001	409 343 0409	IC TDA7231A	0016	405 011 8401	TR 2SC1740S-Q
IC021	409 343 0409	IC TDA7231A		405 011 8500	TR 2SC1740S-R
★IC101	409 274 3302	IC LA7673		405 011 8609	TR 2SC1740S-S
IC481	409 366 7904	IC UPC78M09AHF		405 012 2002	TR 2SC1815-GR
	409 367 2809	IC BA178M09T		405 012 2101	TR 2SC1815-O
	409 370 0007	IC MC78M09CT		405 012 2309	TR 2SC1815-Y
★IC501	409 173 2802	IC LA7838		405 019 1909	TR 2SC536-E-NP
★IC601	409 243 0806	IC STR30130		405 019 2708	TR 2SC536-F-NP
IC801	410 252 7304	IC LC864116W-5A10		405 019 3804	TR 2SC536-G-NP
IC802	409 270 0008	IC ST24C01B1		405 020 7501	TR 2SC945A-PA
	409 321 0902	IC 24LC01B/P		405 020 7709	TR 2SC945A-OA
	409 321 7307	IC XLS24C01AP		405 020 7907	TR 2SC945A-RA
	410 243 3803	IC AT24C01A-10PC-2.5	0036	405 011 8401	TR 2SC1740S-Q
IC3401	409 272 3205	IC CXA1534S		405 011 8500	TR 2SC1740S-R
IC3601	409 279 3109	IC CXA1279AS		405 011 8609	TR 2SC1740S-S
				405 012 2002	TR 2SC1815-GR
				405 012 2101	TR 2SC1815-O
				405 012 2309	TR 2SC1815-Y
				405 019 1909	TR 2SC536-E-NP
				405 019 2708	TR 2SC536-F-NP

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
	405 019 3804	TR 2SC536-G-NP		405 012 2101	TR 2SC1815-0
	405 020 7501	TR 2SC945A-PA		405 012 2309	TR 2SC1815-Y
	405 020 7709	TR 2SC945A-QA		405 019 1909	TR 2SC536-E-NP
	405 020 7907	TR 2SC945A-RA		405 019 2708	TR 2SC536-F-NP
Q043	405 011 8401	TR 2SC1740S-Q		405 019 3804	TR 2SC536-G-NP
	405 011 8500	TR 2SC1740S-R		405 020 7501	TR 2SC945A-PA
	405 011 8609	TR 2SC1740S-S		405 020 7709	TR 2SC945A-QA
	405 012 2002	TR 2SC1815-GR		405 020 7907	TR 2SC945A-RA
	405 012 2101	TR 2SC1815-0	Q371	405 001 7407	TR 2SA1015-0(SAN)
	405 012 2309	TR 2SC1815-Y		405 001 7605	TR 2SA1015-Y(SAN)
	405 019 1909	TR 2SC536-E-NP		405 004 3109	TR 2SA564A-Q(CU)
	405 019 2708	TR 2SC536-F-NP		405 004 3208	TR 2SA564A-R(CU)
	405 019 3804	TR 2SC536-G-NP		405 004 4205	TR 2SA608-E-CTV-NP
	405 020 7501	TR 2SC945A-PA		405 004 4809	TR 2SA608-F-CTV-NP
	405 020 7709	TR 2SC945A-QA		405 006 1707	TR 2SA933S-Q
	405 020 7907	TR 2SC945A-RA		405 006 1806	TR 2SA933S-R
Q161	405 001 7407	TR 2SA1015-0(SAN)	Q372	405 001 7407	TR 2SA1015-0(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)		405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)		405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)		405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP		405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP		405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q		405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R		405 006 1806	TR 2SA933S-R
Q202	405 001 7407	TR 2SA1015-0(SAN)	Q401	405 013 6207	TR 2SC2271-D-CTV
	405 001 7605	TR 2SA1015-Y(SAN)		405 013 6306	TR 2SC2271-E-CTV
	405 004 3109	TR 2SA564A-Q(CU)		405 029 7106	TR 2SC2271-D
	405 004 3208	TR 2SA564A-R(CU)		405 029 7205	TR 2SC2271-E
	405 004 4205	TR 2SA608-E-CTV-NP	★Q402	405 112 7600	TR 2SD1880-CTV-YB
	405 004 4809	TR 2SA608-F-CTV-NP	Q461	405 011 8401	TR 2SC1740S-Q
	405 006 1707	TR 2SA933S-Q		405 011 8500	TR 2SC1740S-R
	405 006 1806	TR 2SA933S-R		405 011 8609	TR 2SC1740S-S
Q281	405 001 7407	TR 2SA1015-0(SAN)		405 012 2002	TR 2SC1815-GR
	405 001 7605	TR 2SA1015-Y(SAN)		405 012 2309	TR 2SC1815-Y
	405 004 3109	TR 2SA564A-Q(CU)		405 019 2708	TR 2SC536-F-NP
	405 004 3208	TR 2SA564A-R(CU)		405 019 3804	TR 2SC536-G-NP
	405 004 4205	TR 2SA608-E-CTV-NP		405 020 7501	TR 2SC945A-PA
	405 004 4809	TR 2SA608-F-CTV-NP		405 020 7709	TR 2SC945A-QA
	405 006 1707	TR 2SA933S-Q	Q462	405 064 7307	TR 2SB1274-Q-RA
	405 006 1806	TR 2SA933S-R		405 064 7406	TR 2SB1274-R-RA
Q303	405 011 8401	TR 2SC1740S-Q	Q491	405 023 5009	TR 2SD400-E-MP
	405 011 8500	TR 2SC1740S-R		405 023 5306	TR 2SD400-F-MP
	405 011 8609	TR 2SC1740S-S	Q621	405 011 8401	TR 2SC1740S-Q
	405 012 2002	TR 2SC1815-GR		405 011 8500	TR 2SC1740S-R
	405 012 2101	TR 2SC1815-0		405 011 8609	TR 2SC1740S-S
	405 012 2309	TR 2SC1815-Y		405 012 2002	TR 2SC1815-GR
	405 019 1909	TR 2SC536-E-NP		405 012 2101	TR 2SC1815-0
	405 019 2708	TR 2SC536-F-NP		405 012 2309	TR 2SC1815-Y
	405 019 3804	TR 2SC536-G-NP		405 019 1909	TR 2SC536-E-NP
	405 020 7501	TR 2SC945A-PA		405 019 2708	TR 2SC536-F-NP
	405 020 7709	TR 2SC945A-QA		405 019 3804	TR 2SC536-G-NP
	405 020 7907	TR 2SC945A-RA		405 020 7501	TR 2SC945A-PA
Q304	405 011 8401	TR 2SC1740S-Q		405 020 7709	TR 2SC945A-QA
	405 011 8500	TR 2SC1740S-R		405 020 7907	TR 2SC945A-RA
	405 011 8609	TR 2SC1740S-S	Q622	405 011 8401	TR 2SC1740S-Q
	405 012 2002	TR 2SC1815-GR		405 011 8500	TR 2SC1740S-R
	405 012 2101	TR 2SC1815-0		405 011 8609	TR 2SC1740S-S
	405 012 2309	TR 2SC1815-Y		405 012 2002	TR 2SC1815-GR
	405 019 1909	TR 2SC536-E-NP		405 012 2101	TR 2SC1815-0
	405 019 2708	TR 2SC536-F-NP		405 012 2309	TR 2SC1815-Y
	405 019 3804	TR 2SC536-G-NP		405 019 1909	TR 2SC536-E-NP
	405 020 7501	TR 2SC945A-PA		405 019 2708	TR 2SC536-F-NP
	405 020 7709	TR 2SC945A-QA		405 019 3804	TR 2SC536-G-NP
	405 020 7907	TR 2SC945A-RA		405 020 7501	TR 2SC945A-PA
Q306	405 011 8401	TR 2SC1740S-Q		405 020 7709	TR 2SC945A-QA
	405 011 8500	TR 2SC1740S-R		405 020 7907	TR 2SC945A-RA
	405 011 8609	TR 2SC1740S-S	Q623	405 001 7407	TR 2SA1015-0(SAN)
	405 012 2002	TR 2SC1815-GR		405 001 7605	TR 2SA1015-Y(SAN)

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
	405 004 3109	TR 2SA564A-Q(CU)		405 020 7501	TR 2SC945A-PA
	405 004 3208	TR 2SA564A-R(CU)		405 020 7709	TR 2SC945A-QA
	405 004 4205	TR 2SA608-E-CTV-NP		405 020 7907	TR 2SC945A-RA
	405 004 4809	TR 2SA608-F-CTV-NP	01002	405 011 8401	TR 2SC1740S-Q
	405 006 1707	TR 2SA933S-Q		405 011 8500	TR 2SC1740S-R
	405 006 1806	TR 2SA933S-R		405 011 8609	TR 2SC1740S-S
Q701	405 041 6507	TR 2SC2621-D-RA		405 012 2002	TR 2SC1815-GR
	405 041 6705	TR 2SC2621-E-RA		405 012 2101	TR 2SC1815-O
	405 066 4304	TR 2SC2621-C-RA		405 012 2309	TR 2SC1815-Y
	405 066 9903	TR 2SC2688(1)-K		405 019 1909	TR 2SC536-E-NP
	405 067 0008	TR 2SC2688(1)-L		405 019 2708	TR 2SC536-F-NP
	405 067 0107	TR 2SC2688(1)-M		405 019 3804	TR 2SC536-G-NP
	406 000 3605	TR 2SC3620(LB-SAN-1)		405 020 7501	TR 2SC945A-PA
Q703	405 041 6507	TR 2SC2621-D-RA		405 020 7709	TR 2SC945A-QA
	405 041 6705	TR 2SC2621-E-RA	01003	405 020 7907	TR 2SC945A-RA
	405 066 4304	TR 2SC2621-C-RA		405 011 8401	TR 2SC1740S-Q
	405 066 9903	TR 2SC2688(1)-K		405 011 8500	TR 2SC1740S-R
	405 067 0008	TR 2SC2688(1)-L		405 011 8609	TR 2SC1740S-S
	405 067 0107	TR 2SC2688(1)-M		405 012 2002	TR 2SC1815-GR
	406 000 3605	TR 2SC3620(LB-SAN-1)		405 012 2101	TR 2SC1815-O
Q705	405 041 6507	TR 2SC2621-D-RA		405 012 2309	TR 2SC1815-Y
	405 041 6705	TR 2SC2621-E-RA		405 019 1909	TR 2SC536-E-NP
	405 066 4304	TR 2SC2621-C-RA		405 019 2708	TR 2SC536-F-NP
	405 066 9903	TR 2SC2688(1)-K		405 019 3804	TR 2SC536-G-NP
	405 067 0008	TR 2SC2688(1)-L		405 020 7501	TR 2SC945A-PA
	405 067 0107	TR 2SC2688(1)-M		405 020 7709	TR 2SC945A-QA
	406 000 3605	TR 2SC3620(LB-SAN-1)		405 020 7907	TR 2SC945A-RA
Q831	405 001 7407	TR 2SA1015-O(SAN)	01021	405 011 8401	TR 2SC1740S-Q
	405 001 7605	TR 2SA1015-Y(SAN)		405 011 8500	TR 2SC1740S-R
	405 004 3109	TR 2SA564A-Q(CU)		405 011 8609	TR 2SC1740S-S
	405 004 3208	TR 2SA564A-R(CU)		405 012 2002	TR 2SC1815-GR
	405 004 4205	TR 2SA608-E-CTV-NP		405 012 2309	TR 2SC1815-Y
	405 004 4809	TR 2SA608-F-CTV-NP		405 019 2708	TR 2SC536-F-NP
	405 006 1707	TR 2SA933S-Q		405 019 3804	TR 2SC536-G-NP
	405 006 1806	TR 2SA933S-R		405 020 7501	TR 2SC945A-PA
Q881	405 011 8401	TR 2SC1740S-Q	03431	405 020 7709	TR 2SC945A-QA
	405 011 8500	TR 2SC1740S-R		405 011 8401	TR 2SC1740S-Q
	405 011 8609	TR 2SC1740S-S		405 011 8500	TR 2SC1740S-R
	405 012 2002	TR 2SC1815-GR		405 011 8609	TR 2SC1740S-S
	405 012 2101	TR 2SC1815-O		405 012 2002	TR 2SC1815-GR
	405 012 2309	TR 2SC1815-Y		405 012 2101	TR 2SC1815-O
	405 019 1909	TR 2SC536-E-NP		405 012 2309	TR 2SC1815-Y
	405 019 2708	TR 2SC536-F-NP		405 019 1909	TR 2SC536-E-NP
	405 019 3804	TR 2SC536-G-NP		405 019 2708	TR 2SC536-F-NP
	405 020 7501	TR 2SC945A-PA		405 019 3804	TR 2SC536-G-NP
	405 020 7709	TR 2SC945A-QA		405 020 7501	TR 2SC945A-PA
	405 020 7907	TR 2SC945A-RA		405 020 7709	TR 2SC945A-QA
Q882	405 011 8401	TR 2SC1740S-Q	03601	405 020 7907	TR 2SC945A-RA
	405 011 8500	TR 2SC1740S-R		405 011 8401	TR 2SC1740S-Q
	405 011 8609	TR 2SC1740S-S		405 011 8500	TR 2SC1740S-R
	405 012 2002	TR 2SC1815-GR		405 011 8609	TR 2SC1740S-S
	405 012 2101	TR 2SC1815-O		405 012 2002	TR 2SC1815-GR
	405 012 2309	TR 2SC1815-Y		405 012 2101	TR 2SC1815-O
	405 019 1909	TR 2SC536-E-NP		405 012 2309	TR 2SC1815-Y
	405 019 2708	TR 2SC536-F-NP		405 019 1909	TR 2SC536-E-NP
	405 019 3804	TR 2SC536-G-NP		405 019 2708	TR 2SC536-F-NP
	405 020 7501	TR 2SC945A-PA		405 019 3804	TR 2SC536-G-NP
	405 020 7709	TR 2SC945A-QA		405 020 7501	TR 2SC945A-PA
	405 020 7907	TR 2SC945A-RA		405 020 7709	TR 2SC945A-QA
Q1001	405 011 8401	TR 2SC1740S-Q		405 020 7907	TR 2SC945A-RA
	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			
	405 019 1909	TR 2SC536-E-NP			
	405 019 2708	TR 2SC536-F-NP			
	405 019 3804	TR 2SC536-G-NP			

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
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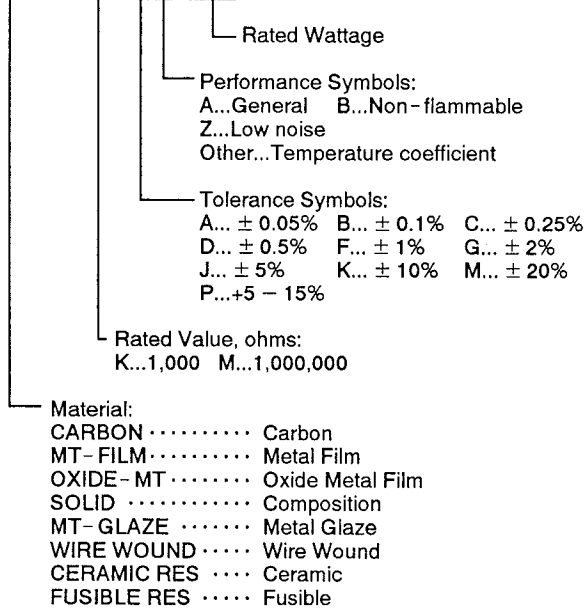
### RESISTORS

**NOTES:**

Read description in the Resistor as follows:

(Example)

**CARBON 4.7K JA 1/4W**

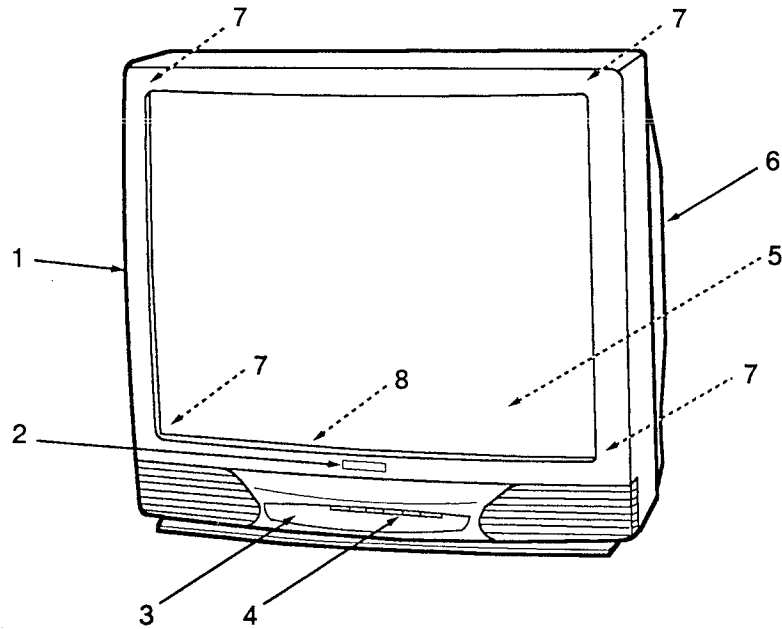


R001	401 026 7408	CARBON	39K JA	1/6W	R202	401 026 0607	CARBON	270 JA	1/6W
R002	401 027 8602	CARBON	8.2K JA	1/6W	R204	401 020 0801	CARBON	470 JA	1/4W
R003	401 025 5405	CARBON	2.2 JA	1/6W	R205	401 027 5205	CARBON	680 JA	1/6W
R016	401 027 9005	CARBON	82K JA	1/6W	R212	401 025 3807	CARBON	180 JA	1/6W
R017	401 025 4606	CARBON	18K JA	1/6W	R213	401 025 7409	CARBON	220 JA	1/6W
R018	401 026 6609	CARBON	390 JA	1/6W	R216	401 024 8001	CARBON	1M JA	1/6W
R019	401 024 6700	CARBON	100 JA	1/6W	R217	401 024 8001	CARBON	1M JA	1/6W
R021	401 026 7408	CARBON	39K JA	1/6W	R251	401 024 7400	CARBON	10K JA	1/6W
R022	401 027 8602	CARBON	8.2K JA	1/6W	R252	401 027 8602	CARBON	8.2K JA	1/6W
R023	401 025 5405	CARBON	2.2 JA	1/6W	R271	401 024 6700	CARBON	100 JA	1/6W
R036	401 027 9005	CARBON	82K JA	1/6W	R272	401 024 6700	CARBON	100 JA	1/6W
R037	401 025 4606	CARBON	18K JA	1/6W	R273	401 024 6700	CARBON	100 JA	1/6W
R038	401 026 6609	CARBON	390 JA	1/6W	R281	401 024 6700	CARBON	100 JA	1/6W
R039	401 024 6700	CARBON	100 JA	1/6W	R282	401 026 9600	CARBON	470 JA	1/6W
R041	401 027 8305	CARBON	820 JA	1/6W	R284	401 026 0409	CARBON	27 JA	1/6W
R042	401 027 8305	CARBON	820 JA	1/6W	R305	401 027 2303	CARBON	560 JA	1/6W
R043	401 026 1307	CARBON	27K JA	1/6W	R308	401 025 7805	CARBON	2.2K JA	1/6W
★R101	401 015 6603	CARBON	2.2 JB	1/4W	R309	401 026 0607	CARBON	270 JA	1/6W
R104	401 013 4205	CARBON	120 JA	1/4W	R310	401 024 7004	CARBON	1K JA	1/6W
R106	401 009 2000	CARBON	27K JA	1/2W	R311	401 026 0607	CARBON	270 JA	1/6W
R111	401 024 9008	CARBON	120 JA	1/6W	R313	401 024 7004	CARBON	1K JA	1/6W
R112	401 024 9008	CARBON	120 JA	1/6W	R351	401 026 9600	CARBON	470 JA	1/6W
R133	401 027 8602	CARBON	8.2K JA	1/6W	R352	401 026 1604	CARBON	270K JA	1/6W
R142	401 024 7707	CARBON	100K JA	1/6W	R354	401 024 9701	CARBON	12K JA	1/6W
R151	401 025 1308	CARBON	150 JA	1/6W	R355	401 026 4308	CARBON	3.3K JA	1/6W
R152	401 025 7805	CARBON	2.2K JA	1/6W	R358	401 026 4605	CARBON	33K JA	1/6W
R153	401 024 7400	CARBON	10K JA	1/6W	R361	401 024 7400	CARBON	10K JA	1/6W
R155	401 026 1604	CARBON	270K JA	1/6W	R363	401 027 2600	CARBON	5.6K JA	1/6W
R156	401 026 1604	CARBON	270K JA	1/6W	R371	401 026 4605	CARBON	33K JA	1/6W
R157	401 026 4902	CARBON	330K JA	1/6W	R372	401 024 7400	CARBON	10K JA	1/6W
R159	401 025 7409	CARBON	220 JA	1/6W	R373	401 024 7707	CARBON	100K JA	1/6W
R161	401 026 1604	CARBON	270K JA	1/6W	R374	401 027 3003	CARBON	56K JA	1/6W
R162	401 024 7004	CARBON	1K JA	1/6W	R375	401 024 7400	CARBON	10K JA	1/6W
R163	401 026 3905	CARBON	330 JA	1/6W	★R401	401 068 8807	OXIDE-MT	5.6K JA	2W
R164	401 026 1000	CARBON	2.7K JA	1/6W	★R402	401 061 7401	OXIDE-MT	3.9K JA	1W
R201	401 027 3003	CARBON	56K JA	1/6W	R403	401 025 7805	CARBON	2.2K JA	1/6W
					R404	401 026 3905	CARBON	330 JA	1/6W
					R406	401 010 8305	CARBON	5.6K JA	1/2W
					★R407	401 068 4700	OXIDE-MT	4.7K JA	2W
					★R413	402 072 8906	WIRE WOUND	4.7 KA	8W
						402 072 9002	WIRE WOUND	4.7 KA	7W
					★R418	401 009 1607	CARBON	2.7K JB	1/2W
					★R421	401 052 8608	MT-FILM	1.3K 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	401 025 1902	CARBON	15K JA	1/6W
					R460	401 026 3905	CARBON	330 JA	1/6W
					R461	401 025 7409	CARBON	220 JA	1/6W
					R467	401 010 8305	CARBON	5.6K JA	1/2W
					R468	401 027 5205	CARBON	680 JA	1/6W
					R471	401 027 5205	CARBON	680 JA	1/6W
					R473	401 027 3003	CARBON	56K JA	1/6W
					R474	401 025 4903	CARBON	180K JA	1/6W
					R475	401 027 5205	CARBON	680 JA	1/6W
					★R481	401 009 4905	CARBON	33 JB	1/2W
					★R482	401 011 9004	CARBON	1 JB	1/4W
					★R483	401 006 7701	CARBON	1 JB	1/2W
					★R484	401 060 0403	OXIDE-MT	2.7 JA	1W
					★R486	401 066 5204	OXIDE-MT	22 JA	2W
					R487	401 010 5809	CARBON	5.6 JA	1/2W
					R488	401 010 5809	CARBON	5.6 JA	1/2W
					★R489	401 068 1600	OXIDE-MT	4.7 JA	2W
					R490	401 026 6609	CARBON	390 JA	1/6W
					R491	401 012 5708	CARBON	1K JA	1/4W
					R492	401 097 3903	MT-FILM	39K FA	1/6W
					R493	401 018 5801	CARBON	330K JA	1/4W
					R494	401 017 3808	CARBON	270K JA	1/4W

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
R496	401 024 7707	CARBON 100K JA 1/6W	R843	401 025 7805	CARBON 2.2K JA 1/6W
★R497	401 057 9907	OXIDE-MT 1.5 JA 1W	R846	401 027 8305	CARBON 820 JA 1/6W
R501	401 026 3707	CARBON 33 JA 1/6W	R847	401 026 9907	CARBON 4.7K JA 1/6W
R502	401 027 3003	CARBON 56K JA 1/6W	R848	401 026 1307	CARBON 27K JA 1/6W
R503	401 026 1307	CARBON 27K JA 1/6W	R850	401 024 7400	CARBON 10K JA 1/6W
R504	401 026 1000	CARBON 2.7K JA 1/6W	R851	401 024 7400	CARBON 10K JA 1/6W
R506	401 026 0607	CARBON 270 JA 1/6W	R853	401 025 7805	CARBON 2.2K JA 1/6W
R507	401 006 8104	CARBON 1.2 JA 1/2W	R856	401 025 1605	CARBON 1.5K JA 1/6W
R508	401 021 3009	CARBON 5.6K JA 1/4W	R858	401 052 9308	MT-FILM 15K FA 1/6W
R509	401 025 4200	CARBON 1.8K JA 1/6W	R860	401 053 4708	MT-FILM 6.8K FA 1/6W
★R511	401 060 2704	OXIDE-MT 220 JA 1W	R861	401 027 2600	CARBON 5.6K JA 1/6W
★R601	402 072 7404	WIRE WOUND 1.5 KA 8W	R862	401 026 4308	CARBON 3.3K JA 1/6W
	402 072 7503	WIRE WOUND 1.5 KA 7W	R864	401 026 1000	CARBON 2.7K JA 1/6W
★R602	401 007 2903	CARBON 1M JA 1/2W	R866	401 026 9907	CARBON 4.7K JA 1/6W
R604	401 012 7009	CARBON 10K JA 1/4W	R867	401 027 5205	CARBON 680 JA 1/6W
R605	401 016 5803	CARBON 220K JA 1/4W	R868	401 024 7400	CARBON 10K JA 1/6W
★R606	401 010 2600	CARBON 47 JB 1/2W	R869	401 024 7400	CARBON 10K JA 1/6W
★R607	401 065 1801	OXIDE-MT 12 JA 2W	R871	401 027 2600	CARBON 5.6K JA 1/6W
★R608	402 060 4606	WIRE WOUND 220 KA 10W	R872	401 027 3003	CARBON 56K JA 1/6W
	402 076 2603	WIRE WOUND 220 JA 10W	R873	401 026 9907	CARBON 4.7K JA 1/6W
★R609	402 060 4606	WIRE WOUND 220 KA 10W	R874	401 026 9907	CARBON 4.7K JA 1/6W
	402 076 2603	WIRE WOUND 220 JA 10W	R876	401 025 7805	CARBON 2.2K JA 1/6W
★R610	401 065 1801	OXIDE-MT 12 JA 2W	R877	401 025 7805	CARBON 2.2K JA 1/6W
★R611	401 066 1404	OXIDE-MT 1.8K JA 2W	R880	401 026 7408	CARBON 39K JA 1/6W
★R621	402 057 4107	WIRE WOUND 820 KA 6W	R881	401 026 6401	CARBON 39 JA 1/6W
	402 057 4206	WIRE WOUND 820 KA 6W	R882	401 025 1902	CARBON 15K JA 1/6W
★R622	401 067 0000	OXIDE-MT 270 JA 2W	R884	401 024 7400	CARBON 10K JA 1/6W
R623	401 025 7805	CARBON 2.2K JA 1/6W	R886	401 024 7400	CARBON 10K JA 1/6W
★R624	401 061 2505	OXIDE-MT 330 JA 1W	R892	401 027 5908	CARBON 68K JA 1/6W
R625	401 027 2600	CARBON 5.6K JA 1/6W	R893	401 026 7408	CARBON 39K JA 1/6W
R626	401 024 7004	CARBON 1K JA 1/6W	R896	401 024 7004	CARBON 1K JA 1/6W
R627	401 026 9907	CARBON 4.7K JA 1/6W	R897	401 024 7004	CARBON 1K JA 1/6W
R628	401 026 4308	CARBON 3.3K JA 1/6W	R898	401 024 7004	CARBON 1K JA 1/6W
R629	401 025 7805	CARBON 2.2K JA 1/6W	R1001	401 027 2105	CARBON 56 JA 1/6W
R703	401 024 6700	CARBON 100 JA 1/6W	R1002	401 025 8703	CARBON 220K JA 1/6W
R706	401 024 6700	CARBON 100 JA 1/6W	R1003	401 025 8703	CARBON 220K JA 1/6W
R707	401 027 8107	CARBON 82 JA 1/6W	R1004	401 027 8107	CARBON 82 JA 1/6W
R710	401 024 6700	CARBON 100 JA 1/6W	R1006	401 025 0004	CARBON 120K JA 1/6W
★R711	401 065 4604	OXIDE-MT 12K JA 2W	R1007	401 025 0004	CARBON 120K JA 1/6W
★R712	401 065 4604	OXIDE-MT 12K JA 2W	R1008	401 025 7805	CARBON 2.2K JA 1/6W
★R713	401 065 4604	OXIDE-MT 12K JA 2W	R1011	401 025 0004	CARBON 120K JA 1/6W
R715	401 009 1508	CARBON 2.7K JA 1/2W	R1012	401 025 0004	CARBON 120K JA 1/6W
R716	401 009 1508	CARBON 2.7K JA 1/2W	R1013	401 025 7805	CARBON 2.2K JA 1/6W
R717	401 009 1508	CARBON 2.7K JA 1/2W	R1016	401 027 2600	CARBON 5.6K JA 1/6W
R804	401 024 7400	CARBON 10K JA 1/6W	R1017	401 024 7004	CARBON 1K JA 1/6W
R807	401 024 7400	CARBON 10K JA 1/6W	R1018	401 024 6700	CARBON 100 JA 1/6W
R808	401 024 7400	CARBON 10K JA 1/6W	★R1020	402 000 0705	SOLID 3.3M KA 1/2W
R811	401 024 7400	CARBON 10K JA 1/6W	R1021	401 025 7102	CARBON 22 JA 1/6W
R813	401 024 7400	CARBON 10K JA 1/6W	R1022	401 024 6700	CARBON 100 JA 1/6W
R814	401 024 7400	CARBON 10K JA 1/6W	R1023	401 024 6700	CARBON 100 JA 1/6W
R816	401 026 3905	CARBON 330 JA 1/6W	R1026	401 027 2303	CARBON 560 JA 1/6W
R818	401 025 8208	CARBON 22K JA 1/6W	R1027	401 027 2303	CARBON 560 JA 1/6W
R821	401 024 7400	CARBON 10K JA 1/6W	R1031	401 024 7400	CARBON 10K JA 1/6W
R822	401 025 3807	CARBON 180 JA 1/6W	R1032	401 024 7004	CARBON 1K JA 1/6W
R823	401 024 9701	CARBON 12K JA 1/6W	R1037	401 027 8107	CARBON 82 JA 1/6W
R826	401 024 7400	CARBON 10K JA 1/6W	R1038	401 027 2105	CARBON 56 JA 1/6W
R827	401 027 2600	CARBON 5.6K JA 1/6W	R1901	401 024 7400	CARBON 10K JA 1/6W
R828	401 026 4605	CARBON 33K JA 1/6W	R1902	401 024 7004	CARBON 1K JA 1/6W
R829TM	401 024 7400	CARBON 10K JA 1/6W	R1903	401 025 4200	CARBON 1.8K JA 1/6W
R831	401 024 7707	CARBON 100K JA 1/6W	R1904	401 025 7805	CARBON 2.2K JA 1/6W
R833	401 024 7400	CARBON 10K JA 1/6W	R1905	401 026 7002	CARBON 3.9K JA 1/6W
R834	401 024 6700	CARBON 100 JA 1/6W	R1906	401 027 2600	CARBON 5.6K JA 1/6W
R836	401 027 5205	CARBON 680 JA 1/6W	R1907	401 024 9701	CARBON 12K JA 1/6W
R837	401 026 7002	CARBON 3.9K JA 1/6W	R3401	401 024 7400	CARBON 10K JA 1/6W
R838	401 027 5205	CARBON 680 JA 1/6W	R3402	401 026 7002	CARBON 3.9K JA 1/6W
R839	401 026 7002	CARBON 3.9K JA 1/6W	R3403	401 103 1503	MT-FILM 45.3K FD 1/6W
R841	401 024 7004	CARBON 1K JA 1/6W	R3404	401 095 0409	MT-FILM 47K FA 1/6W
R842	401 026 7002	CARBON 3.9K JA 1/6W	R3406	401 027 3003	CARBON 56K JA 1/6W



# CABINET PARTS LIST



## CABINET PARTS LIST

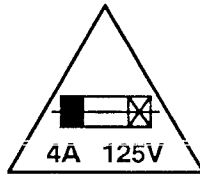
KEY NO.	PARTS NO.	DESCRIPTION
1.	610 257 8645	CABINET FRONT
2.	610 236 9274	SANYO BADGE
3.	610 257 8799	DEC SHEET
4.	610 245 5816	BUTTON UNITED
	412 036 1805	SCREW 4X14(3 USED)
OR	411 078 1101	SCREW 4X14
5.	610 262 9033	DEC AV SHEET
6.	610 262 1488	CABINET BACK
	412 036 1805	SCREW 4X14(11 USED)
OR	411 078 1101	SCREW 4X14
	412 018 8402	SCREW 3X10E(2 USED)
7.	610 102 7151	DC HOLDER(4 USED)
8.	610 261 4220	CABLE CLIP
	412 051 7806	WASHER(4 USED FOR MTG CRT)
	412 000 7505	SCREW 6X30E(4 USED FOR MTG CRT)
OR	412 032 0406	SCREW 6X30
OR	412 053 3905	SCREW 6X30
OR	412 053 4001	SCREW 6X30
OR	412 054 0002	SCREW 6X30
OR	412 054 0101	SCREW 6X30
	412 036 1805	SCREW 4X14(8 USED FOR MTG SP)
OR	411 078 1101	SCREW 4X14

## ACCESSORY PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
	645 014 5346	ASSY, RC TRANSMITTER
	610 259 4522	RC-BATTERY COVER
	610 258 3243	OWNER'S MANUAL

# COMPONENT AND TESTPOINT LOCATIONS

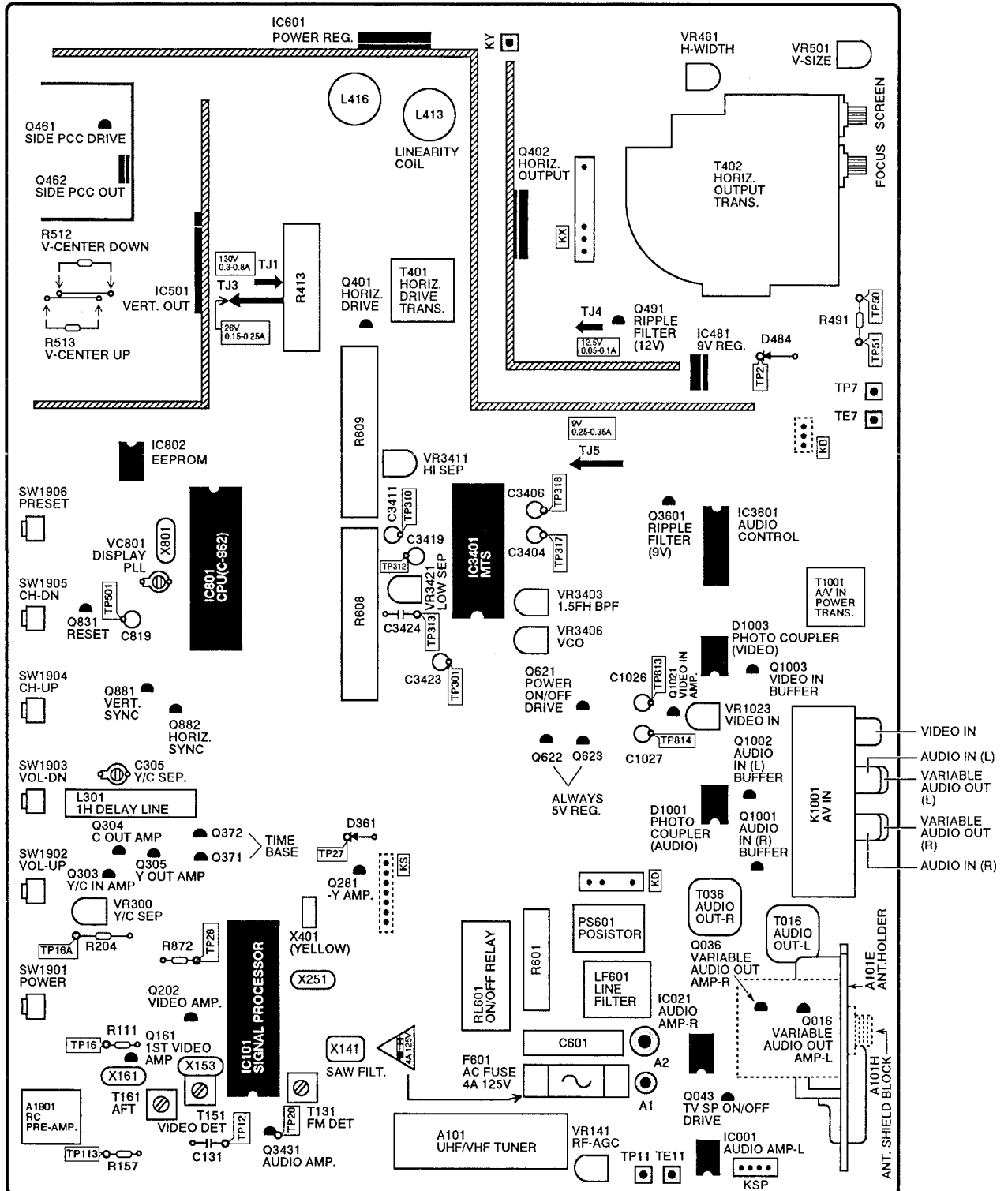
CAUTION



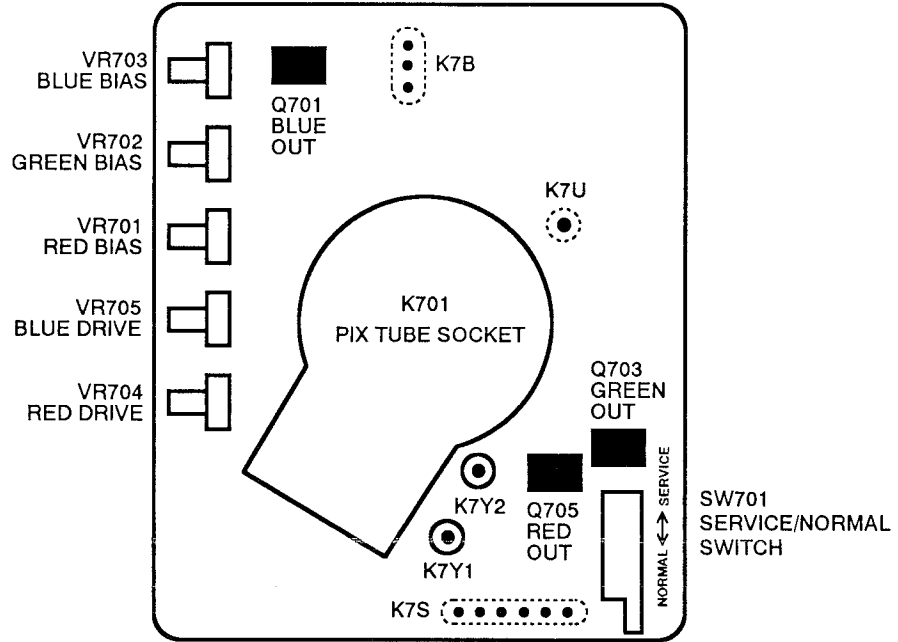
FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

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

## MAIN BOARD




# PIX TUBE SOCKET BOARD



# SCHEMATIC DIAGRAM

## 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  $\mu$  F (Micro Farad) and the values more than 1 are in pF.
3. Unless otherwise noted on schematic, voltage reading taken with "VTVM" from point indicated to chassis ground. Voltage reading taken using a 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 color bar signal and controls adjusted for normal picture. Waveforms marked with an \* may vary with signal strength.
5. The Symbol  indicates fusible resistor, which protects the circuit from possible short circuits.

## SERVICE NOTES:

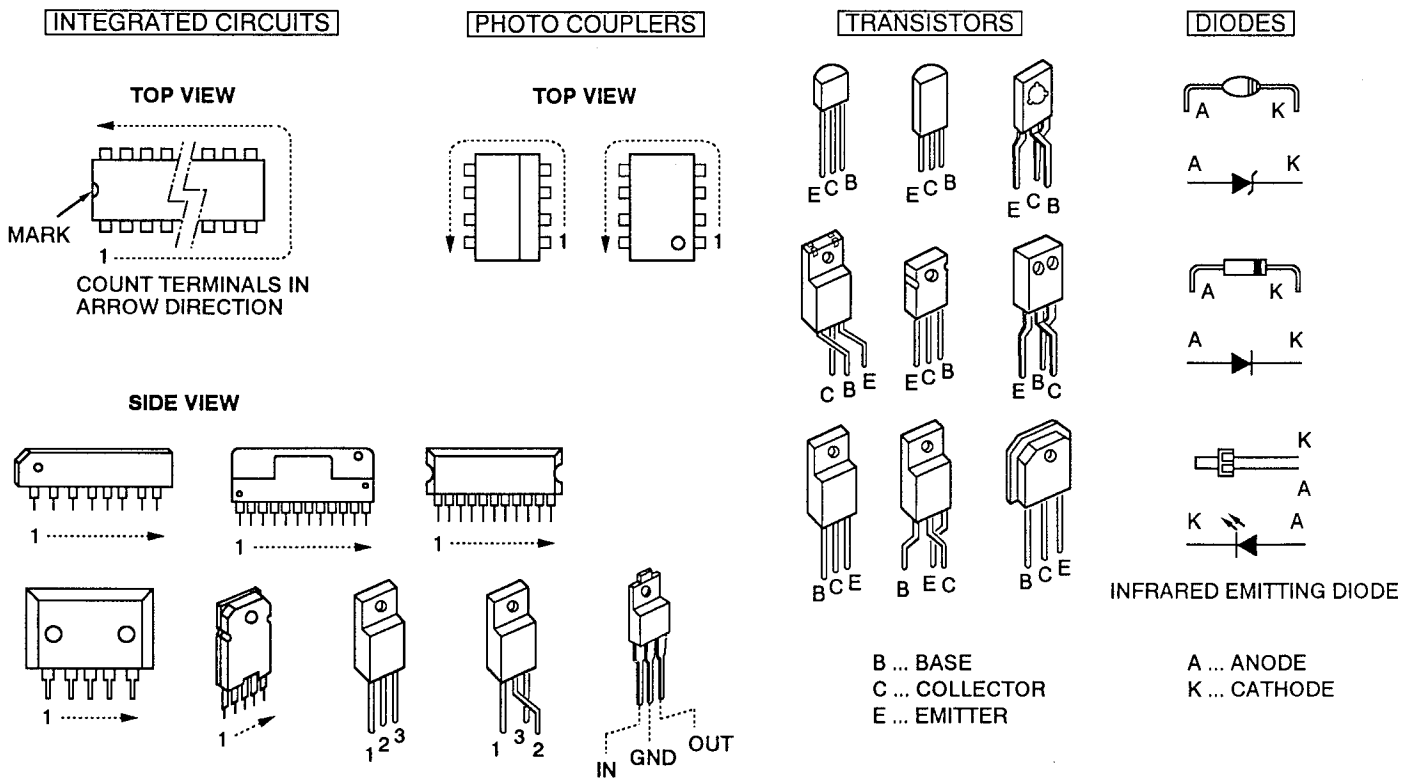
1. When replacing parts on circuit boards, clamp the lead wires to terminals before soldering.
2. When replacing high wattage resistors on circuit board, keep the resistor body 10 mm (3/8") from circuit board.
3. Keep wires away from high voltage and high temperature components.

## PRODUCT SAFETY NOTICE

**THE COMPONENTS DESIGNATED BY A STAR (★) ON THIS SCHEMATIC DIAGRAM DESIGNATE COMPONENT 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.**

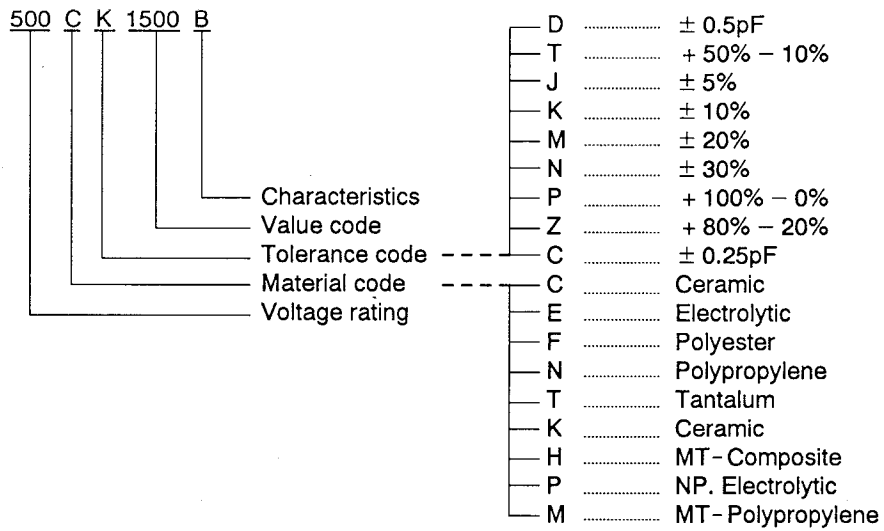
## X - RADIATION WARNING NOTE

**THIS TV CONTAINS CRITICAL PARTS TO PROTECT AGAINST X - RADIATION. NOMINAL 2ND ANODE VOLTAGE IS 29.5KV AT ZERO BEAM CURRENT AT 120VOLTS AC LINE, AND MUST NOT EXCEED 30.5KV UNDER ANY OPERATING CONDITION. SEE HIGH VOLTAGE CHECK ON PAGE 2.**

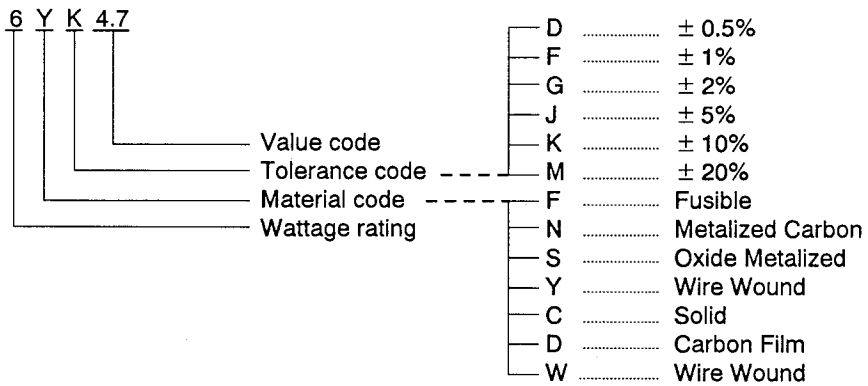


## CAPACITOR AND RESISTOR CODE CHART

### CAPACITOR (Example)



### RESISTOR (Example)



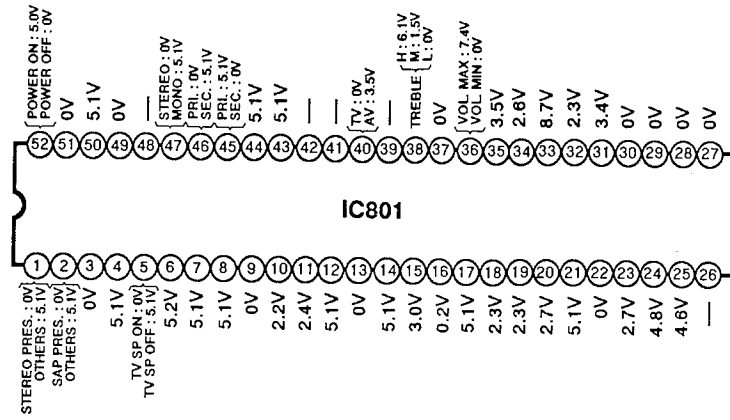
# MODEL DS31650

## Chassis No. 31650-02

**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.

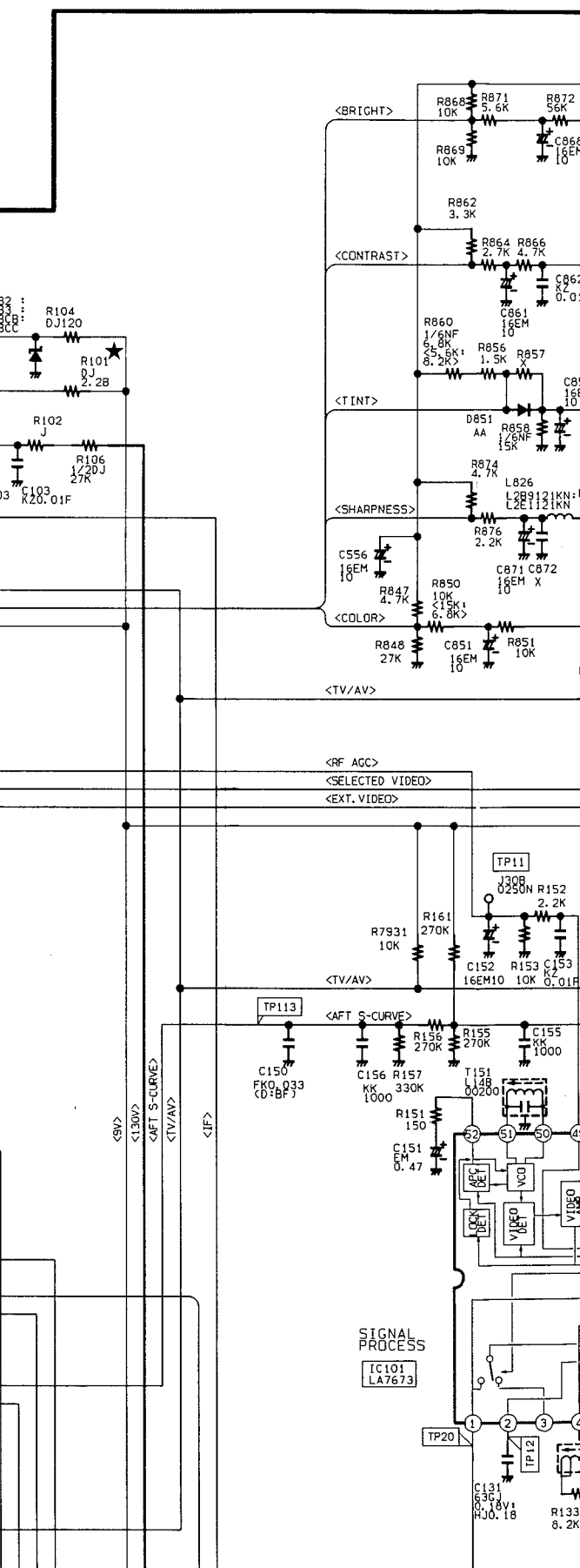
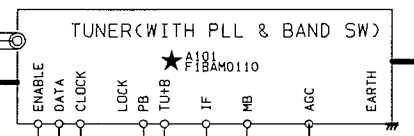
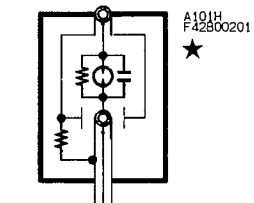
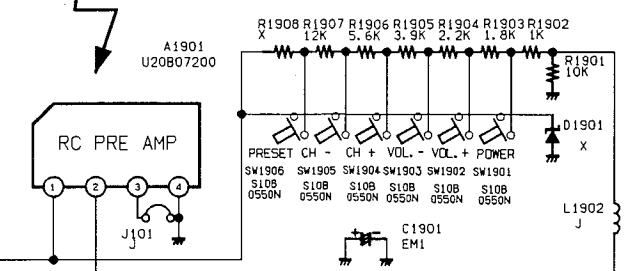


G5HVM  
ASSY PWB MAIN G5HVM  
1AA0B10B07300

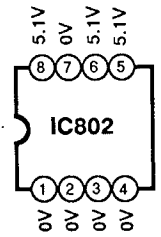
G5HYM  
ASSY PWB MAIN G5HVM-A  
1AA0B10B073A0

G5HZM  
ASSY PWB MAIN G5HVM-B  
1AA0B10B073B0

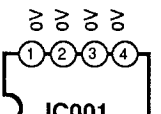
PB100 1AA4B10B02400 PWB MAIN G5HVM



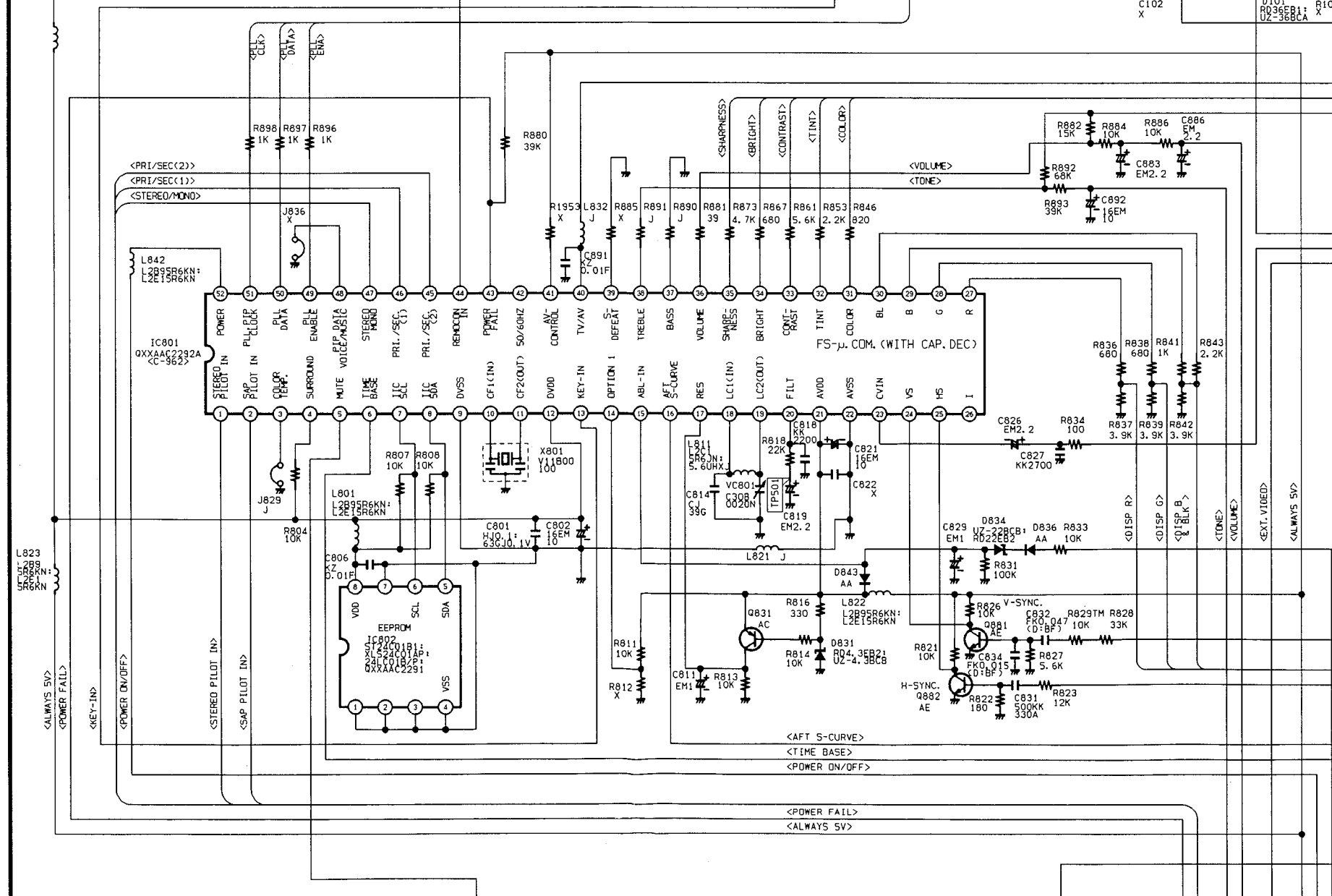
Q831	
VOLT.	
B	4.5 V
C	5.1 V
E	5.1 V

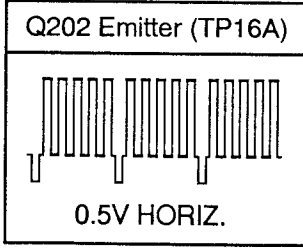


Q881	
VOLT.	
B	-0.1 V
C	4.8 V
E	0 V



Q882	
VOLT.	
B	0 V
C	4.6 V
E	0 V





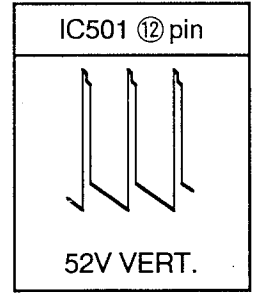
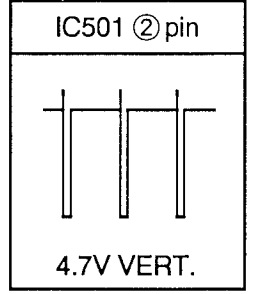
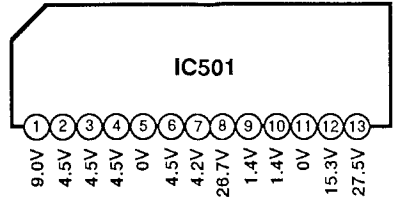
Q161	
VOLT.	
B	3.0 V
C	0 V
E	3.7 V

Q202	
VOLT.	
B	3.6 V
C	0 V
E	4.3 V

Q303	
VOLT.	
B	4.3 V
C	12.9 V
E	3.7 V

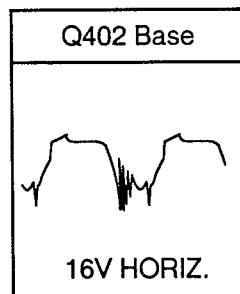
Q304	
VOLT.	
B	4.3 V
C	12.9 V
E	3.7 V

Q306	
VOLT.	
B	4.3 V
C	12.9 V
E	3.7 V

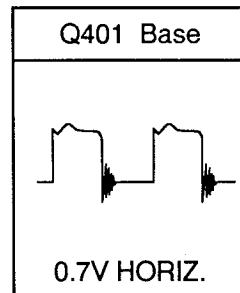


Q462	
VOLT.	
B	10.5 V
C	0 V
E	11.1 V

Q461	
VOLT.	
B	0.6 V
C	10.5 V
E	0 V



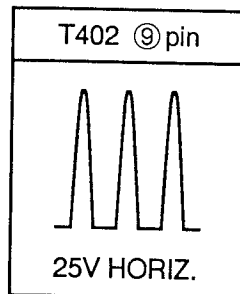
Q402	
VOLT.	
B	0.2 V
C	—
E	0 V



Q401	
VOLT.	
B	0.4 V
C	43.9 V
E	0 V

Q371	
VOLT.	
B	6.4 V
C	0 V
E	5.2 V

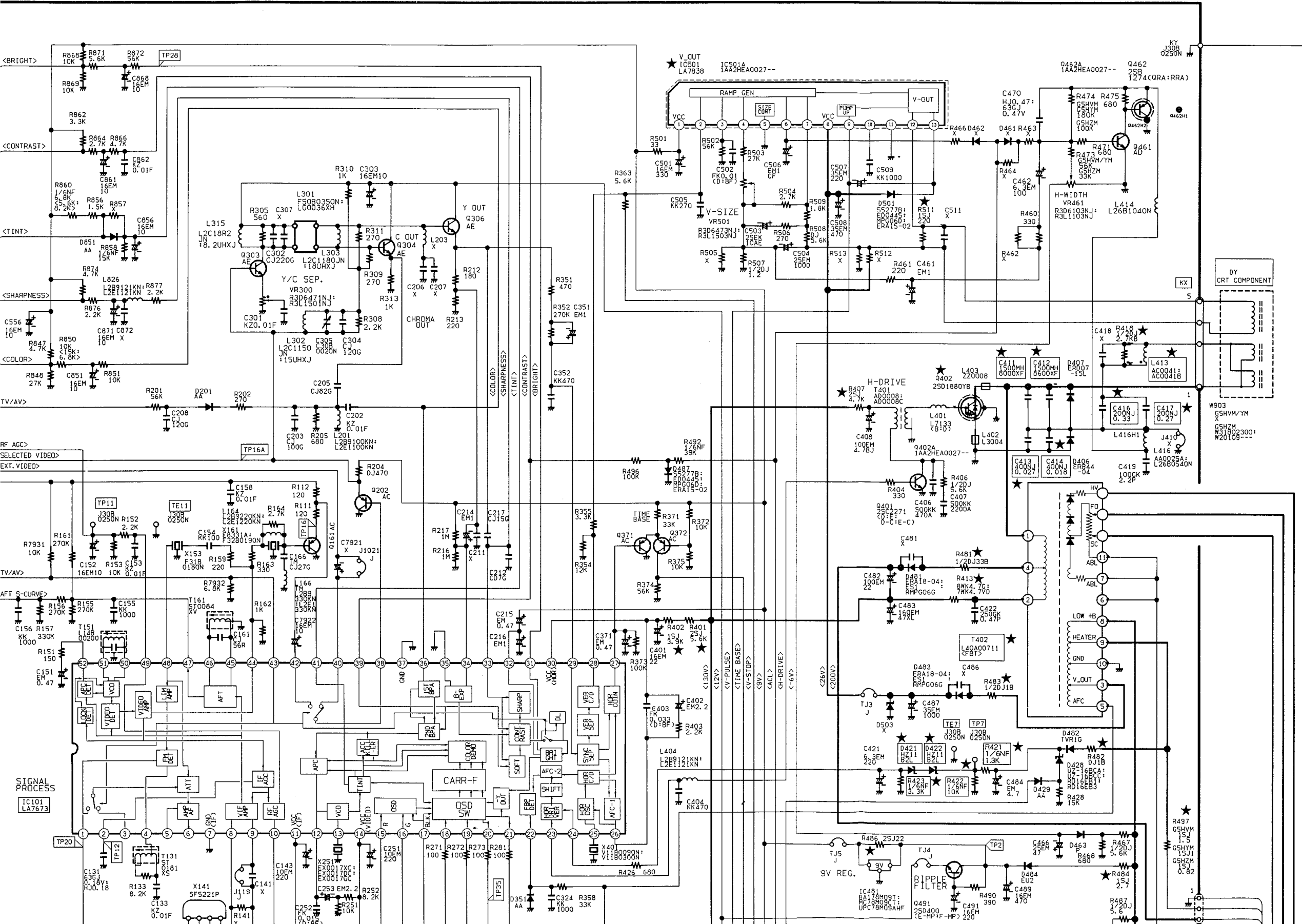
Q372	
VOLT.	
B	4.6 V
C	5.2 V
E	5.2 V



9.1V IC481 13.8V  
0V

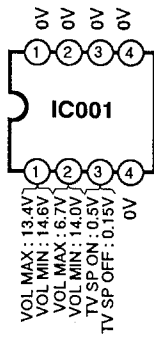
Q281	
VOLT.	
B	5.3 V
C	0.2 V

Q491	
VOLT.	
B	13.5 V
C	13.8 V



E	0V
---	----

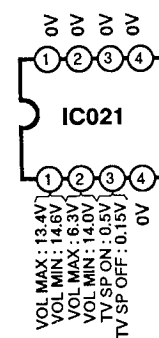
Q882	
VOLT.	
B	0V
C	4.6V
E	0V



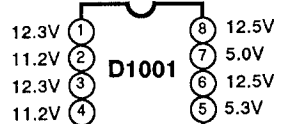
VOL MAX: 13.4V  
VOL MIN: 14.6V  
VOL MAX: 6.7V  
VOL MIN: 14.0V  
TV SP ON: 0.5V  
TV SP OFF: 0.15V

Q016	
VOLT.	
B	1.4V
C	6.5V
E	0.7V

Q036	
VOLT.	
B	1.4V
C	6.4V
E	0.8V



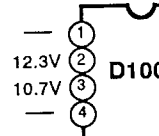
VOL MAX: 13.4V  
VOL MIN: 14.6V  
VOL MAX: 6.7V  
VOL MIN: 14.0V  
TV SP ON: 0.5V  
TV SP OFF: 0.15V



Q1001	
VOLT.	
B	5.8V
C	11.2V
E	5.2V

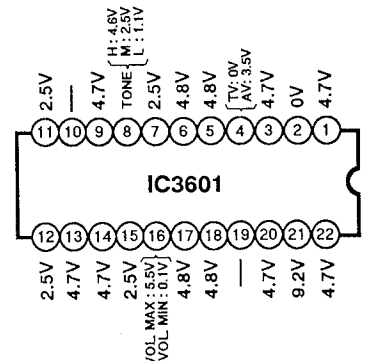
Q1002	
VOLT.	
B	5.9V
C	11.2V
E	5.3V

Q1003	
VOLT.	
B	1.8V
C	10.7V
E	1.2V

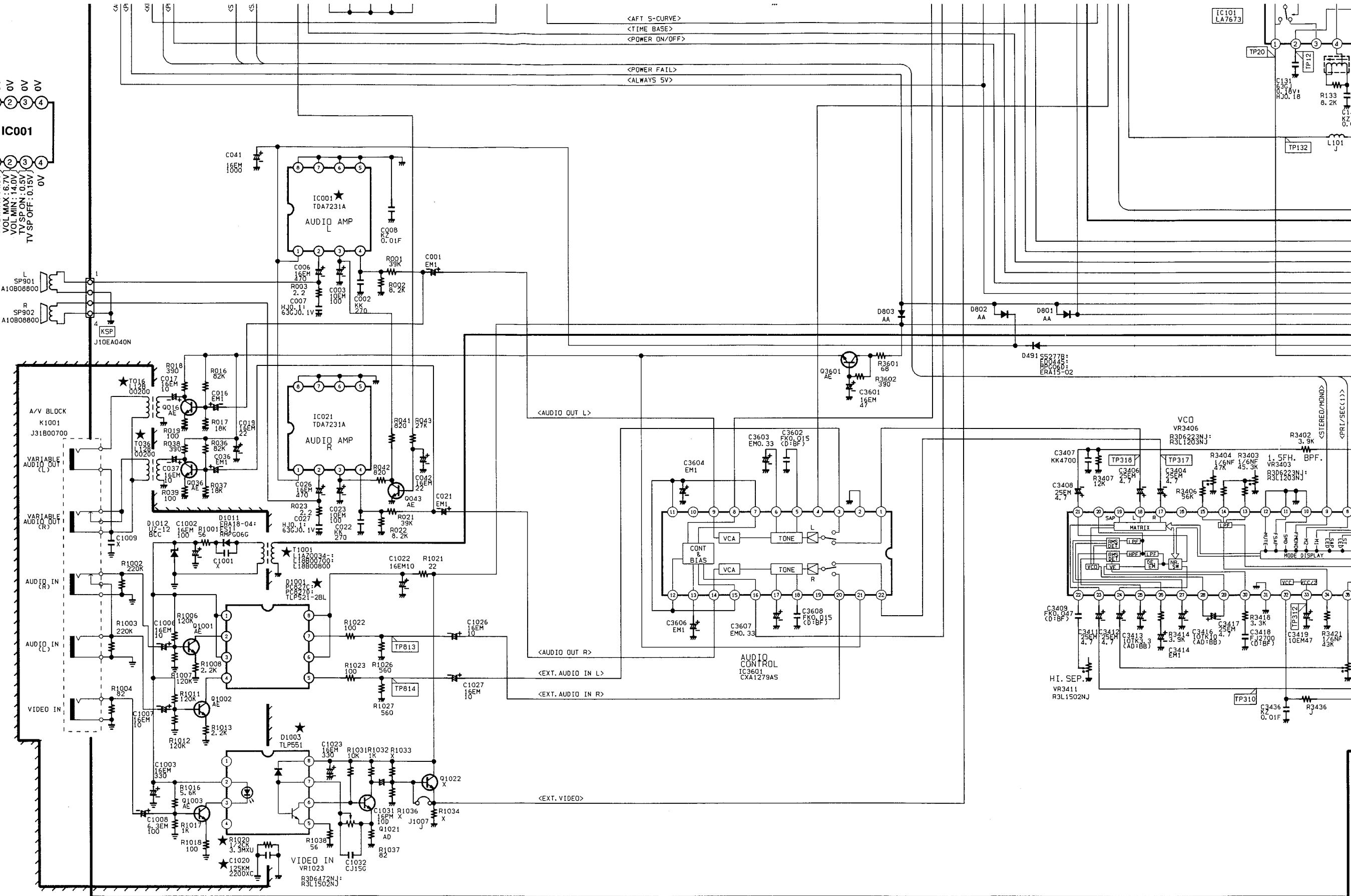
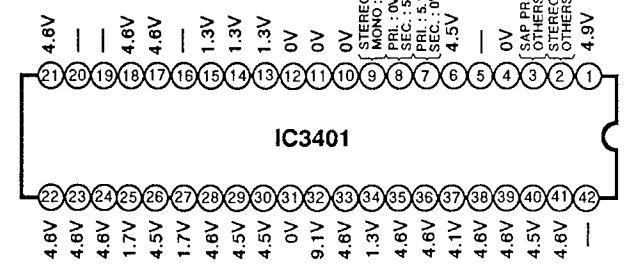


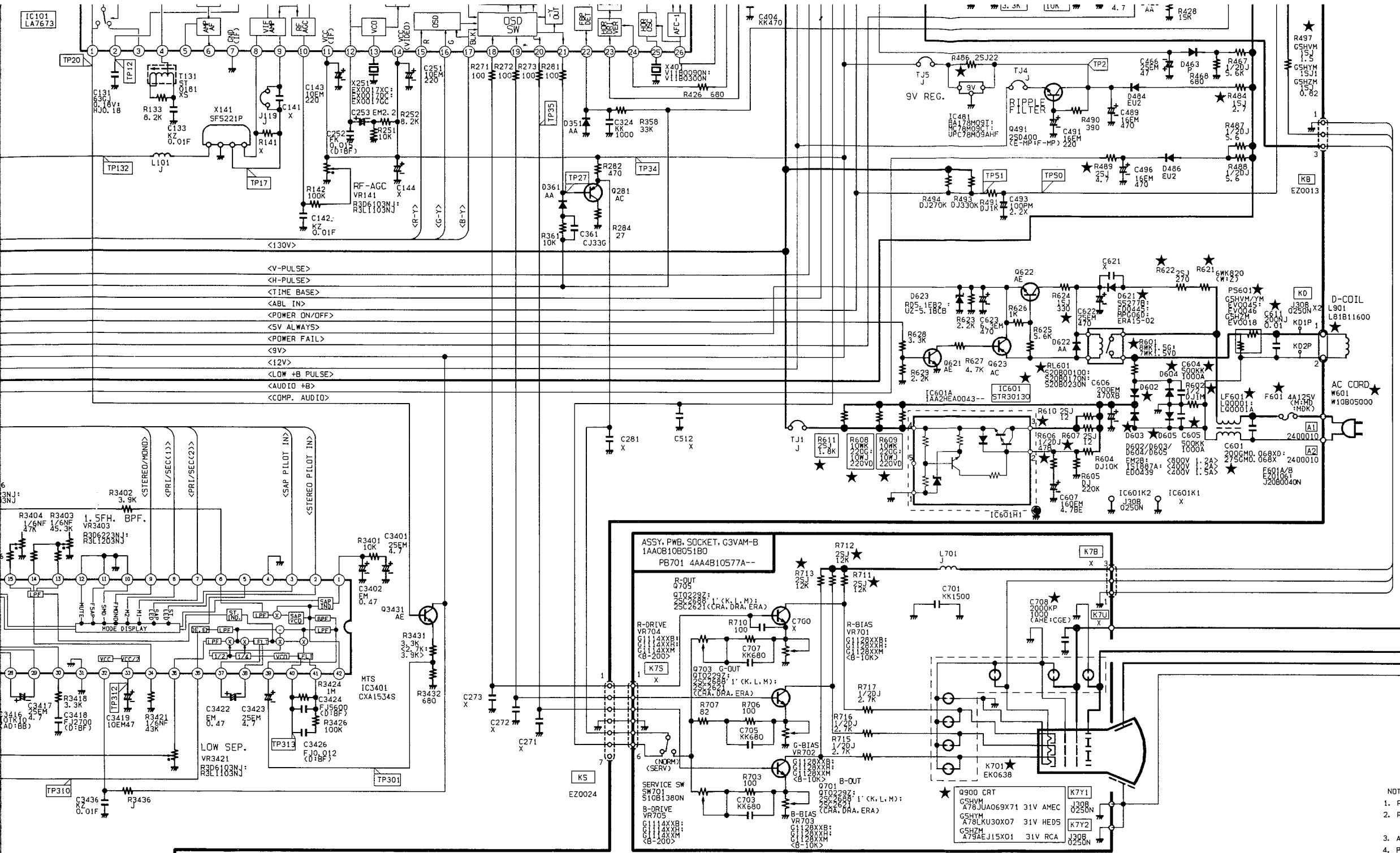
Q043	
TV SP ON	TV SP OFF
B	0V
C	0.5V
E	0V

Q1021	
VOLT.	
B	1.4V
C	4.1V
E	0.7V



Q3601	
VOLT.	
B	10.0V
C	10.0V
E	9.2V



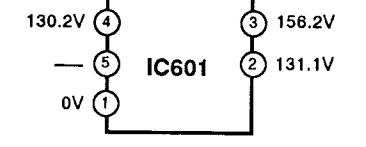


9.1V IC481 13.8V  
0V

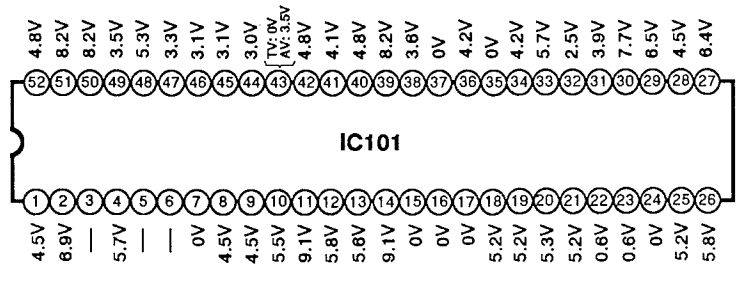
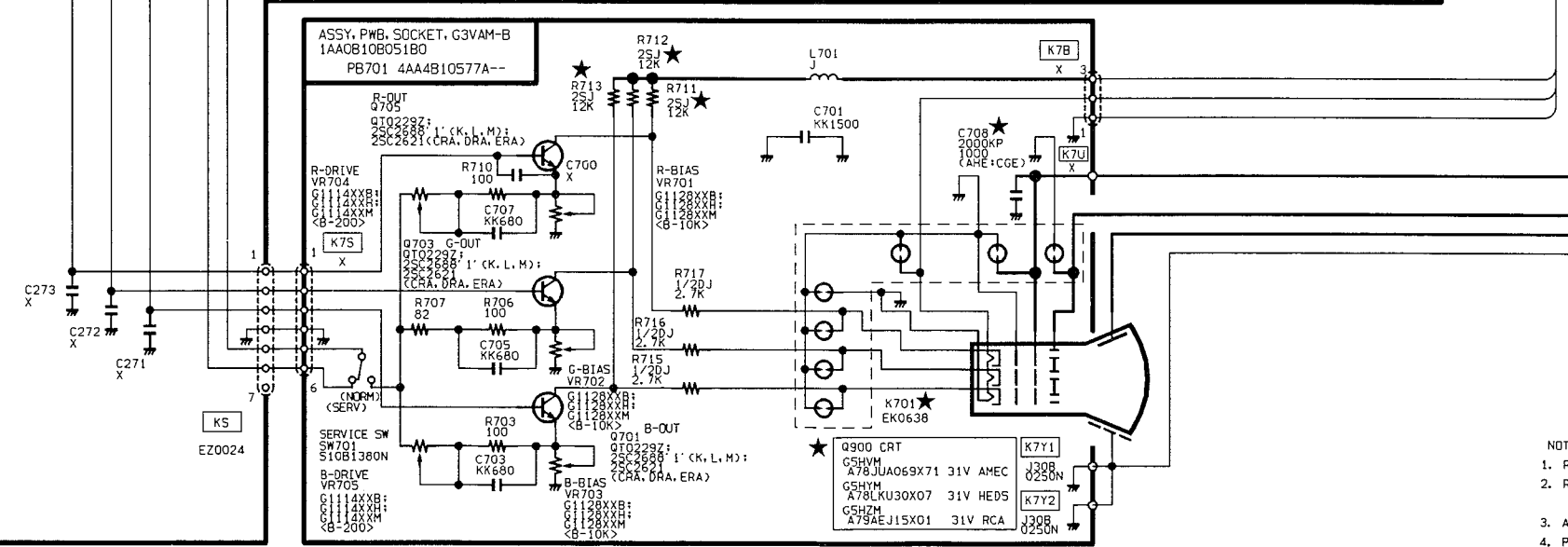
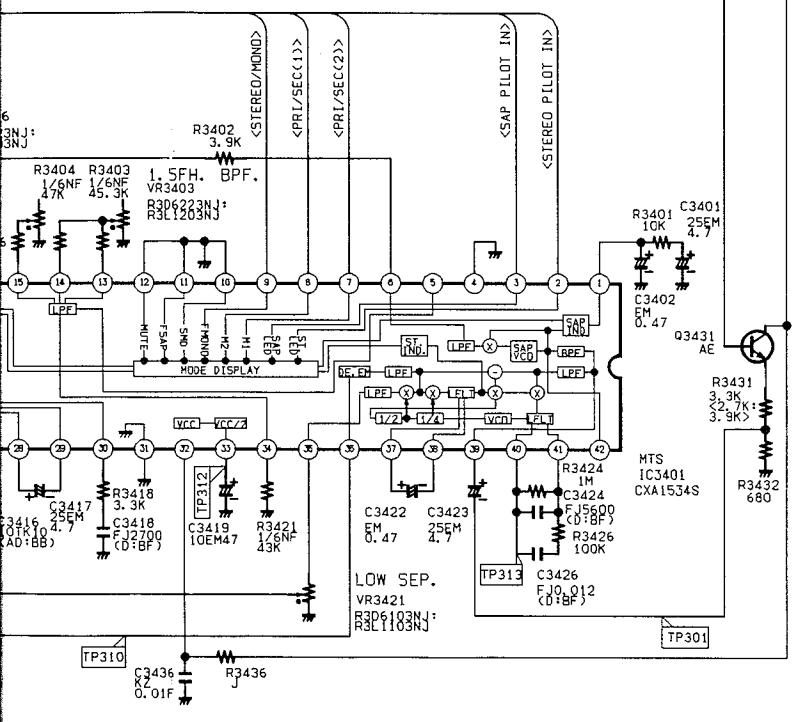
Q281		Q491	
VOLT.		VOLT.	
B	5.3 V	B	13.5 V
C	0.2 V	C	13.8 V
E	5.5 V	E	12.9 V

Q622	
POWER ON	POWER OFF
B	5.2 V 5.9 V
C	19.1 V 5.2 V
E	5.1 V 5.2 V

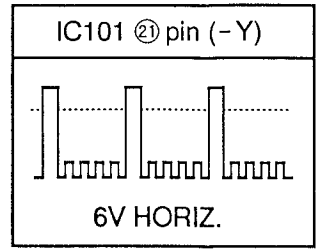
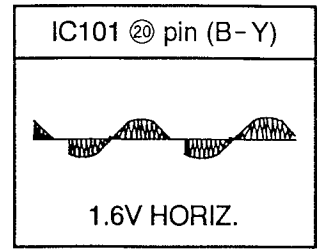
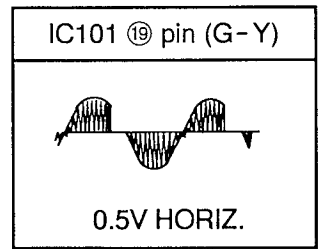
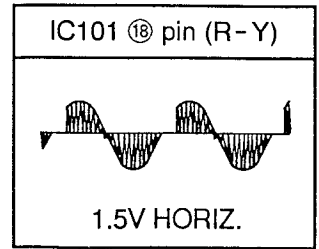
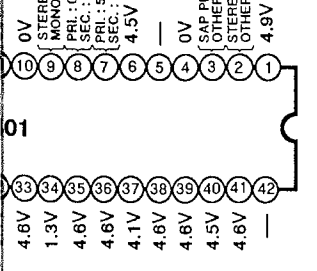
Q621		Q623	
POWER ON	POWER OFF	POWER ON	POWER OFF
B	0.7 V 0 V	B	4.5 V 16.8 V
C	0 V 16.7 V	C	5.1 V 5.2 V
E	0 V 0 V	E	5.3 V 17.6 V



- <130V>
- <V-PULSE>
- <H-PULSE>
- <TIME BASE>
- <ABL IN>
- <POWER ON/OFF>
- <SV ALWAYS>
- <POWER FAIL>
- <9V>
- <12V>
- <LOW +B PULSE>
- <AUDIO +B>
- <COMP. AUDIO>



Q3431		Q705		Q703		Q701	
VOLT.		VOLT.		VOLT.		VOLT.	
B	4.5 V	B	5.2 V	B	5.2 V	B	5.3 V
C	9.1 V	C	196.3 V	C	200.3V	C	194.8 V
E	3.9 V	E	5.5 V	E	5.4 V	E	5.4 V



- NOTES:
- RESISTORS SPECIFIED WITH RESISTANCE VALUE ARE "1/60J".
  - RESISTORS SPECIFIED WITH TYPE OF RESISTOR, TOLERANCE AND RESISTANCE VALUE ARE "1/4".
  - ALL CAPACITORS ARE 50MV RATING UNLESS OTHERWISE NOTED.
  - PARTS MARKED WITH ARE RELATED WITH X-RADIATION.
  - THICK LINES ARE ISMATS SUPPLY LINE.
  - VIEW OF TR & IC.
- TOP VIEW
- 
7. ISOLATION BORDER LINE.
- COLD SIDE | HOT SIDE
8. LIST OF REPLACEABLE DIODES.
- |                |  |
|----------------|--|
| M (7ED00025)   | 1S5176, 1S5133, GMA01  |
| R (7DD00019)   | 1S1555, 1S2076, 1S2473, DS442, 1N4148                        |
| AA (7DD000192) | 1S1555, 1S2076, 1S2473, DS442, 1N4148, 1S5176, 1S5133, GMA01 |
| P (7DD000021)  | 1S1553, 1S2076A, 1S2471, 1N4148                              |
9. LIST OF REPLACEABLE TRANSISTORS.
- |               |         |         |          |          |
|---------------|---------|---------|----------|----------|
| AD (7T200183) | 25C536  | 25C945A | 25C1815  | 25C1740S |
| AE (70T00202) | F, G    | Q, P    | Y, GR    | Q, R, S  |
|               | E, F, G | R, Q, P | D, Y, GR | Q, R, S  |
|               | 25A608  | 25A564A | 25A1015  | 25A933S  |
| AB (7T200181) | F       | R       | Y        | Q, R     |
| AC (7T200182) | E, F    | Q, R    | D, Y     | R        |
10. "J" : JUMPER WIRE.  
"X" : PART NOT USED.

For Parts or Service Contact  
**SANYO FISHER SERVICE CORPORATION**  
1411 West 190th Street, Suite 700,  
South Bay Corporate Center, Gardena, CA 90248

# Notice



- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

**REVISION 3**

Please add this notice to the Service Manuals listed below.

Category : <u><b>COLOR TELEVISION</b></u>	Date : <u>Oct. / 25 / 1996</u>
Model : <u><b>DS31650</b></u>	Effective from : Chassis No. <u><b>31650-03</b></u> ←
Destination : <u><b>U.S.A.</b></u>	REF : No. <u><b>SM510144</b></u>

**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. 31650-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original** Service Manual and **Notices** for Chassis No. 31650-00 used in Model DS31650 (SM510144).

## 1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page * & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 15, Chassis Electrical Parts List	★ R497	Old	401 057 9907	OXIDE-MT 1.5 JA 1W	1	NO	D
		New	401 057 8009	OXIDE-MT 1 JA 1W	1	NO	
Page 16, Chassis Electrical Parts List	X161	Old	610 015 3059 610 015 3066	TRAP, CERAMIC 4.5MHZ CERAMIC TRAP	1	YES	G
		New	610 015 3059	TRAP, CERAMIC 4.5MHZ	1	YES	
Page 16, Chassis Electrical Parts List	A100	Old	610 262 7985	ASSY, PWB, MAIN	1	NO	D
		New	610 263 2989	ASSY, PWB, MAIN	1	NO	
Page 16, Chassis Electrical Parts List	★ Q900	Old	414 008 3800	CRT M78JUA069X71	1	NO	D
		New	414 008 9208	CRT A78LKU30X07(M)	1	NO	

\* ... The page no. shown in this Parts List above refers to the page no. in the Notice for Chassis No. 31650-02 (SM510144-02).

**G5HYM, PRODUCT CODE 111325083**

**REFERENCE No. SM510144-03**

For parts or service contact  
**SANYO FISHER SERVICE CORPORATION**  
 1200 West Artesia Blvd., Compton, California, 90220

# Notice



- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 4

Please add this notice to the Service Manual listed below.

Category : COLOR TELEVISION      Date : Nov. / 11 / 1996  
 Model : DS31650      Effective from : Chassis No. 31650-04 ←  
 Destination : U.S.A.      REF : No. SM510144

**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. 31650-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original Service Manual and Notices** for Chassis No. 31650-00 used in Model DS31650 (SM510144).

## 1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page * & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 14, Chassis Electrical Parts List	R473	Old	401 027 3003	CARBON 56K JA 1/6W	1	NO	D
		New	401 026 4605	CARBON 33K JA 1/6W	1	NO	
Page 14, Chassis Electrical Parts List	R474	Old	401 025 4903	CARBON 180K JA 1/6W	1	NO	D
		New	401 024 7707	CARBON 100K JA 1/6W	1	NO	
Page 15, Chassis Electrical Parts List	★R497	Old	401 057 8009	OXIDE-MT 1 JA 1W	1	NO	D
		New	401 057 7507	OXIDE-MT 0.82 JA 1W	1	NO	
Page 16, Chassis Electrical Parts List	A100	Old	610 263 2989	ASSY, PWB, MAIN	1	NO	D
		New	610 263 7694	ASSY, PWB, MAIN	1	NO	
Page 16, Chassis Electrical Parts List	★PS601	Old	408 021 9109 408 021 9208	THERMISTOR 903P51D030MN14GR THERMISTOR PTH451C460BG3R0Q140	1	YES	D
		New	408 002 5205	TH PTH451C260BF5R0M140	1	NO	

\* ... The page no. shown in this Parts List above refers to the page no. in the Notice for Chassis No. 31650-02 (SM510144-02).

Parts list continued on back.

# 1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page * & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 16, Chassis Electrical Parts List	★ Q900	Old	414 008 9208	CRT A78LKU30X07 (M)	1	NO	D
		New	414 008 0502	CRT A79AEJ15X01	1	NO	
Page 16, Chassis Electrical Parts List	★ W903	Old		NOT USED			D
		New	610 253 4610 610 232 9803	ASSY WIRE, DY CONNECTOR (USA) CORD	1	NO	

\* ... The page no. shown in this Parts List above refers to the page no. in the Notice for Chassis No. 31650-02 (SM510144-02).



## Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 5

Please add this notice to the Service Manual listed below.

Category : <u>COLOR TELEVISION</u>	Date : <u>Jan. / 27 / 1997</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-00</u>
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original** Service Manual and **Notices** for Chassis No. 31650-00 used in Model DS31650 (SM510144).

### 1. IN THE SERVICE ADJUSTMENTS

#### [PAGE 4]

##### DISPLAY PLL ADJUSTMENT

1. Connect Digital Voltmeter - lead to ground and + lead to "TP501" (PLL Filter).
2. Tune receiver to an active channel.
3. Set the PICTURE ADJUST mode to "FACTORY PRESET."
4. Adjust VC801 for a D.V.M. reading of  $2.50 \pm 0.5$  VDC.

#### [PAGE 5]

##### COMB FILTER ADJUSTMENT

1. Connect color-bar generator to antenna terminal.
2. Reset the PICTURE ADJUST mode to "FACTORY PRESET."
3. Connect scope to "TP27" and ground.
4. Adjust VR300 and C307 for minimum chroma components in the video signals at "TP27".

Continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 9, Chassis Electrical Parts List	C156	Old	403 060 8403 403 060 8809	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	G
		New	403 060 8403 403 312 1305	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C252	Old	403 058 3403 403 058 3809	POLYESTER 0.015U K 50V POLYESTER 0.015U K 50V	1	YES	G
		New	403 058 3403 403 311 9708	POLYESTER 0.015U K 50V POLYESTER 0.015U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C302	Old	403 033 3305	CERAMIC 82P J 50V	1	NO	B
		New	403 026 0809	CERAMIC 47P J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C307	Old	403 011 3501	CERAMIC 120P J 50V	1	NO	B
		New	610 003 0381	TRIMMER, 40PF	1	YES	
Page 10, Chassis Electrical Parts List	C403	Old	403 060 8403 403 060 8809	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	G
		New	403 060 8403 403 312 1305	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C411, C412	Old	404 052 1907	MT-POLYPRO 8200P H 1.5K	2	YES	G
		New	404 066 6103	MT-POLYPRO 8200P H 1.5K	2	YES	
Page 10, Chassis Electrical Parts List	C419	Old	403 066 0005	MT-POLYEST 2.2U J 100V	1	YES	G
		New	403 158 9107	MT-POLYEST 2.2U K 100V	1	YES	
Page 10, Chassis Electrical Parts List	C502	Old	403 057 0601 403 057 1004	POLYESTER 0.01U K 50V POLYESTER 0.01U K 50V	1	YES	G
		New	403 057 0601 403 311 8701	POLYESTER 0.01U K 50V POLYESTER 0.01U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C511	Old	403 063 2309 403 063 2705	POLYESTER 0.068U K 50V POLYESTER 0.068U K 50V	1	YES	G
		New	403 063 2309 403 312 3002	POLYESTER 0.068U K 50V POLYESTER 0.068U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	★C601	Old	404 047 3909 404 066 2105	MT-POLYEST 0.22U M 125V MT-POLYEST 0.22U M 275V	1	YES	G
		New	404 072 7903 404 073 7506	MT-POLYEST 0.068U K 250V MT-POLYEST 0.068U M 275V	1	YES	
Page 10, Chassis Electrical Parts List	C613	Old	403 057 7303 403 214 5203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	G
		New	403 214 5203 403 311 9203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C683	Old	403 044 6609	ELECT 10U M 25V	1	YES	D
		New		NOT USED		YES	

Parts list continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint

B : Quality Reliability

C : Standardization

D : Design

E : Add As a possible sub

F : Schematic Location Change

G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 10, Chassis Electrical Parts List	C832	Old	403 061 9805 403 062 0207	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	G
		New	403 061 9805 403 312 2104	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C834	Old	403 058 2604 403 058 3007	POLYESTER 0.015U J 50V POLYESTER 0.015U J 50V	1	YES	G
		New	403 058 2604 403 311 9609	POLYESTER 0.015U J 50V POLYESTER 0.015U J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C1011	Old	403 049 0800	ELECT 1U M 50V	1	YES	G
		New	403 049 0008	ELECT 1U M 50V	1	YES	
Page 10, Chassis Electrical Parts List	C3409	Old	403 062 0504 403 062 1006	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	G
		New	403 052 0504 403 312 2203	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3418	Old	403 060 0001 403 060 0308	POLYESTER 2700P J 50V POLYESTER 2700P J 50V	1	YES	G
		New	403 060 0001 403 312 0605	POLYESTER 2700P J 50V POLYESTER 2700P J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3424	Old	403 062 4908 403 138 5600	POLYESTER 5600P J 50V POLYESTER 5600P J 50V	1	YES	G
		New	403 138 5600 403 312 2302	POLYESTER 5600P J 50V POLYESTER 5600P J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3426	Old	403 057 7303 403 214 5203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	G
		New	403 214 5203 403 311 9203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3604	Old	403 043 9106	ELECT 47U M 16V	1	YES	G
		New	403 049 0008	ELECT 1U M 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3611, C3613	Old	403 069 0507	CERAMIC 1000P K 50V	1	YES	D
		New		NOT USED		YES	
Page 11, Chassis Electrical Parts List	VC801	Old	403 014 0319	CERAMIC 18P J 50V	1	NO	B
		New	610 003 0381	TRIMMER, 40PF	1	YES	
Page 12, Chassis Electrical Parts List	L301	Old	610 030 0828	DELAY LINE	1	YES	G
		New	610 030 0828 645 009 6013	DELAY LINE DELAY LINE	1	YES	
Page 12, Chassis Electrical Parts List	L315	Old	610 029 7883 645 008 0395	PEAKING COIL 8.2UH J INDUCTOR, 8.2U J	1	NO	B
		New	610 029 7388 645 007 9627	PEAKING COIL 15UH J INDUCTOR, 15U J	1	YES	

Parts list continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 12, Chassis Electrical Parts List	L621, L622	Old	610 078 4635	PIPE CORE	1	YES	D
		New	610 197 5711	WIRE LEAD		YES	
Page 12, Chassis Electrical Parts List	★L901	Old	645 016 1483	COIL, DEGAUSSING	1	YES	G
		New	645 017 9334 645 022 8704	COIL, DEGAUSSING COIL, DEGAUSSING	1	YES	
Page 14, Chassis Electrical Parts List	J807 (See Note below.)	Old	610 197 5759	WIRE LEAD	1	NO	B
		New	401 024 6700	CARBON 10 JA 1/6W	1	YES	
Page 15, Chassis Electrical Parts List	★R413	Old	402 057 9706	WIRE WOUND 4.7 KA 6W	1	YES	G
		New	402 057 9706 402 075 5605	WIRE WOUND 4.7 KA 6W WIRE WOUND 4.7 KA 5W	1	YES	
Page 15, Chassis Electrical Parts List	★R601	Old	402 057 5104	WIRE WOUND 1 KA 8W	1	YES	G
		New	402 057 5104 402 076 6908	WIRE WOUND 1 KA 8W WIRE WOUND 1 KA 7W	1	YES	
Page 16, Chassis Electrical Parts List	★T402	Old	645 000 0898 645 004 7435	TRANS, FLYBACK TRANS, FLYBACK	1	YES	G
		New	645 018 9579	TRANS, FLYBACK	1	YES	
Page 16, Chassis Electrical Parts List	VR701, VR702, VR703	Old	610 020 9053 610 020 9077 610 020 9084	VR B-10K (R/G/B-BIAS) VR B-10K VR B-10K	3	YES	G
		New	645 020 2605	VR B-10K (R/G/B-BIAS)	3	YES	
Page 16, Chassis Electrical Parts List	VR704, VR705	Old	610 020 8599 610 020 8612 610 020 8629	VR B-200 (R/B-DRIVE) VR B-200 VR B-200	2	YES	G
		New	645 020 2612	VR B-200 (R/B-DRIVE)	2	YES	
Page 17, Chassis Electrical Parts List	X161	Old	610 015 3066 610 015 3059	CERAMIC TRAP TRAP, CERAMIC 4.5MHZ	1	YES	G
		New	610 015 3059	TRAP, CERAMIC 4.5MHZ	1	YES	
Page 17, Chassis Electrical Parts List	A1901	Old	645 007 1546	UNIT, RC RECEIVER	1	YES	G
		New	645 020 9277	UNIT, RC RECEIVER	1	YES	
Page 17, Chassis Electrical Parts List	★K701	Old	610 010 4181	CRT SOCKET	1	YES	G
		New	610 010 4181 645 017 2588	CRT SOCKET SOCKET, CRT 8P	1	YES	
Page 17, Chassis Electrical Parts List	★PS601	Old	408 0002 5205	TH PTH451C260BF5R0M140	1	NO	B
		New	408 021 9109 408 021 9208	THERMISTOR 903P51D03MN14 THERMISTER PTH451C460BG3R	1	YES	

**Note:** To prevent possible damage to the CPU IC801, change both W900 and J807.

Parts list continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change          G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 17, Chassis Electrical Parts List	★ W900 (See Note below.)	Old	610 236 0509	(MEX) GND CONNECTOR	1	YES	G
		New	610 067 0325 610 264 8362	(MEX) GND CONNECTOR ASSY, WIRE GND CONNECTOR	1	NO	

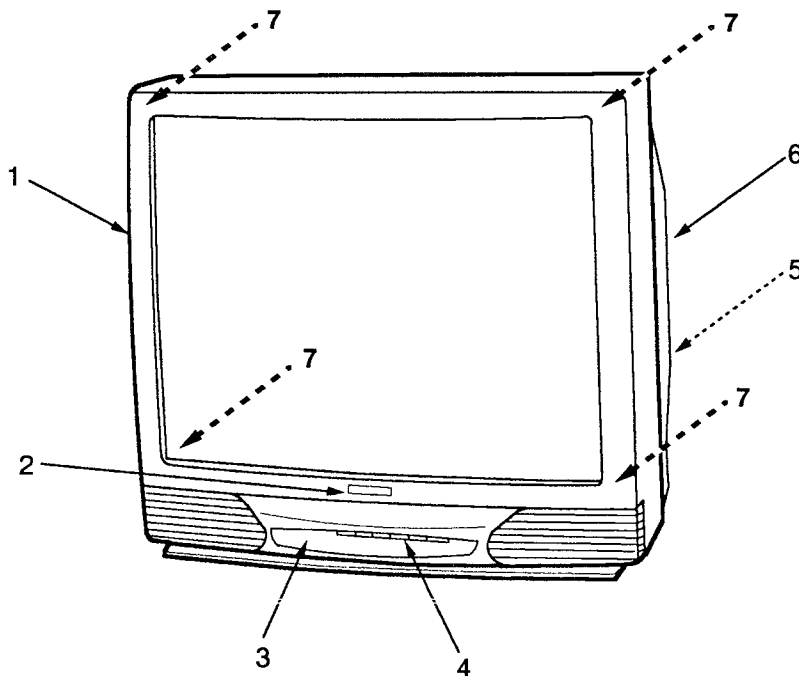
**Note:** To prevent possible damage to the CPU IC801, change both W900 and J807.

## 3. IN THE CABINET PARTS LIST

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change          G : Purchasing Request

Page & Section	Key No.		Part No.	Description	Q'ty	Interchangeability	Reason
Page 18, Cabinet Parts List	6	Old	610 257 8911	CABINET BACK	1	YES	G
		New	610 257 8911 610 262 1488	CABINET BACK CABINET BACK	1	YES	
Page 18, Cabinet Parts List	7	Old	610 261 4220	CABLE CLIP	10	YES	G
		New	610 102 7151	DC HOLDER	4	YES	



For parts or service contact  
**SANYO FISHER SERVICE CORPORATION**  
1200 West Artesia Blvd., Compton, California, 90220

## Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 6

Please add this notice to the Service Manual listed below.

Category : <u>COLOR TELEVISION</u>	Date : <u>Jan. / 27 / 1997</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-01</u> ←
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original** Service Manual and **Notices** for Chassis No. 31650-00 used in Model DS31650 (SM510144).

### 1. IN THE SERVICE ADJUSTMENTS

#### [PAGE 4]

##### DISPLAY PLL ADJUSTMENT

1. Connect Digital Voltmeter - lead to ground and + lead to "TP501" (PLL Filter).
2. Tune receiver to an active channel.
3. Set the PICTURE ADJUST mode to "FACTORY PRESET."
4. Adjust VC801 for a D.V.M. reading of  $2.50 \pm 0.5$  VDC.

#### [PAGE 5]

##### COMB FILTER ADJUSTMENT

1. Connect color-bar generator to antenna terminal.
2. Reset the PICTURE ADJUST mode to "FACTORY PRESET."
3. Connect scope to "TP27" and ground.
4. Adjust VR300 and C307 for minimum chroma components in the video signals at "TP27".

Continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 9, Chassis Electrical Parts List	C156	Old	403 060 8403 403 060 8809	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	G
		New	403 060 8403 403 312 1305	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C252	Old	403 058 3403 403 058 3809	POLYESTER 0.015U K 50V POLYESTER 0.015U K 50V	1	YES	G
		New	403 058 3403 403 311 9708	POLYESTER 0.015U K 50V POLYESTER 0.015U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C302	Old	403 033 3305	CERAMIC 82P J 50V	1	NO	B
		New	403 026 0809	CERAMIC 47P J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C307	Old	403 011 3501	CERAMIC 120P J 50V	1	NO	B
		New	610 003 0381	TRIMMER, 40PF	1	YES	
Page 10, Chassis Electrical Parts List	C403	Old	403 060 8403 403 060 8809	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	G
		New	403 060 8403 403 312 1305	POLYESTER 0.033U K 50V POLYESTER 0.033U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C411, C412	Old	404 052 1907	MT-POLYPRO 8200P H 1.5K	2	YES	G
		New	404 066 6103	MT-POLYPRO 8200P H 1.5K	2	YES	
Page 10, Chassis Electrical Parts List	C419	Old	403 066 0005	MT-POLYEST 2.2U J 100V	1	YES	G
		New	403 158 9107	MT-POLYEST 2.2U K 100V	1	YES	
Page 10, Chassis Electrical Parts List	C502	Old	403 057 0601 403 057 1004	POLYESTER 0.01U K 50V POLYESTER 0.01U K 50V	1	YES	G
		New	403 057 0601 403 311 8701	POLYESTER 0.01U K 50V POLYESTER 0.01U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	C511	Old	403 063 2309 403 063 2705	POLYESTER 0.068U K 50V POLYESTER 0.068U K 50V	1	YES	G
		New	403 063 2309 403 312 3002	POLYESTER 0.068U K 50V POLYESTER 0.068U K 50V	1	YES	
Page 10, Chassis Electrical Parts List	★C601	Old	404 047 3909 404 066 2105	MT-POLYEST 0.22U M 125V MT-POLYEST 0.22U M 275V	1	YES	G
		New	404 072 7903 404 073 7506	MT-POLYEST 0.068U K 250V MT-POLYEST 0.068U M 275V	1	YES	
Page 10, Chassis Electrical Parts List	C613	Old	403 057 7303 403 214 5203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	G
		New	403 214 5203 403 311 9203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C683	Old	403 044 6609	ELECT 10U M 25V	1	YES	D
		New		NOT USED		YES	

Parts list continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint

B : Quality Reliability

C : Standardization

D : Design

E : Add As a possible sub

F : Schematic Location Change

G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 10, Chassis Electrical Parts List	C832	Old	403 061 9805 403 062 0207	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	G
		New	403 061 9805 403 312 2104	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C834	Old	403 058 2604 403 058 3007	POLYESTER 0.015U J 50V POLYESTER 0.015U J 50V	1	YES	G
		New	403 058 2604 403 311 9609	POLYESTER 0.015U J 50V POLYESTER 0.015U J 50V	1	YES	
Page 10, Chassis Electrical Parts List	C1011	Old	403 049 0800	ELECT 1U M 50V	1	YES	G
		New	403 049 0008	ELECT 1U M 50V	1	YES	
Page 10, Chassis Electrical Parts List	C3409	Old	403 062 0504 403 062 1006	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	G
		New	403 052 0504 403 312 2203	POLYESTER 0.047U J 50V POLYESTER 0.047U J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3418	Old	403 060 0001 403 060 0308	POLYESTER 2700P J 50V POLYESTER 2700P J 50V	1	YES	G
		New	403 060 0001 403 312 0605	POLYESTER 2700P J 50V POLYESTER 2700P J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3424	Old	403 062 4908 403 138 5600	POLYESTER 5600P J 50V POLYESTER 5600P J 50V	1	YES	G
		New	403 138 5600 403 312 2302	POLYESTER 5600P J 50V POLYESTER 5600P J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3426	Old	403 057 7303 403 214 5203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	G
		New	403 214 5203 403 311 9203	POLYESTER 0.012U J 50V POLYESTER 0.012U J 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3604	Old	403 043 9106	ELECT 47U M 16V	1	YES	G
		New	403 049 0008	ELECT 1U M 50V	1	YES	
Page 11, Chassis Electrical Parts List	C3611, C3613	Old	403 069 0507	CERAMIC 1000P K 50V	1	YES	D
		New		NOT USED		YES	
Page 11, Chassis Electrical Parts List	VC801	Old	403 014 0319	CERAMIC 18P J 50V	1	NO	B
		New	610 003 0381	TRIMMER, 40PF	1	YES	
Page 12, Chassis Electrical Parts List	L301	Old	610 030 0828	DELAY LINE	1	YES	G
		New	610 030 0828 645 009 6013	DELAY LINE DELAY LINE	1	YES	
Page 12, Chassis Electrical Parts List	L315	Old	610 029 7883 645 008 0395	PEAKING COIL 8.2UH J INDUCTOR, 8.2U J	1	NO	B
		New	610 029 7388 645 007 9627	PEAKING COIL 15UH J INDUCTOR, 15U J	1	YES	

Parts list continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 12, Chassis Electrical Parts List	L621, L622	Old	610 078 4635	PIPE CORE	1	YES	D
		New	610 197 5711	WIRE LEAD	1	YES	
Page 12, Chassis Electrical Parts List	★L901	Old	645 016 1483	COIL, DEGAUSSING	1	YES	G
		New	645 016 1483 645 022 8681	COIL, DEGAUSSING COIL, DEGAUSSING	1	YES	
Page 14, Chassis Electrical Parts List	J807 (See Note below.)	Old	610 197 5759	WIRE LEAD	1	NO	B
		New	401 024 6700	CARBON 10 JA 1/6W	1	YES	
Page 15, Chassis Electrical Parts List	★R413	Old	402 057 9706	WIRE WOUND 4.7 KA 6W	1	YES	G
		New	402 057 9706 402 075 5605	WIRE WOUND 4.7 KA 6W WIRE WOUND 4.7 KA 5W	1	YES	
Page 15, Chassis Electrical Parts List	★R601	Old	402 057 5104	WIRE WOUND 1 KA 8W	1	YES	G
		New	402 057 5104 402 076 6908	WIRE WOUND 1 KA 8W WIRE WOUND 1 KA 7W	1	YES	
Page 16, Chassis Electrical Parts List	★T402	Old	645 000 0898 645 004 7435	TRANS, FLYBACK TRANS, FLYBACK	1	YES	G
		New	645 018 9579	TRANS, FLYBACK	1	YES	
Page 16, Chassis Electrical Parts List	VR701, VR702, VR703	Old	610 020 9053 610 020 9077 610 020 9084	VR B-10K (R/G/B-BIAS) VR B-10K VR B-10K	3	YES	G
		New	645 020 2605	VR B-10K (R/G/B-BIAS)	3	YES	
Page 16, Chassis Electrical Parts List	VR704, VR705	Old	610 020 8599 610 020 8612 610 020 8629	VR B-200 (R/B-DRIVE) VR B-200 VR B-200	2	YES	G
		New	645 020 2612	VR B-200 (R/B-DRIVE)	2	YES	
Page 17, Chassis Electrical Parts List	X161	Old	610 015 3066 610 015 3059	CERAMIC TRAP TRAP, CERAMIC 4.5MHZ	1	YES	G
		New	610 015 3059	TRAP, CERAMIC 4.5MHZ	1	YES	
Page 17, Chassis Electrical Parts List	A100	Old	610 260 1992	ASSY, PWB, MAIN	1	NO	D
		New	610 262 2867	ASSY, PWB, MAIN	1	NO	
Page 17, Chassis Electrical Parts List	A1901	Old	645 007 1546	UNIT, RC RECEIVER	1	YES	G
		New	645 020 9277	UNIT, RC RECEIVER	1	YES	
Page 17, Chassis Electrical Parts List	★K701	Old	610 010 4181	CRT SOCKET	1	YES	G
		New	610 010 4181 645 017 2588	CRT SOCKET SOCKET, CRT 8P	1	YES	

**Note:** To prevent possible damage to the CPU IC801, change both W900 and J807.

Parts list continued on next page.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 17, Chassis Electrical Parts List	★ Q900	Old	414 008 3800	CRT M78JUA069X71	1	NO	D
		New	414 008 9208	CRT A78LKU30X07(M)	1	NO	
Page 17, Chassis Electrical Parts List	★ W900 (See Note below.)	Old	610 236 0509	(MEX) GND CONNECTOR	1	YES	G
		New	610 067 0325 610 264 8362	(MEX) GND CONNECTOR ASSY, WIRE GND CONNECTOR	1	NO	

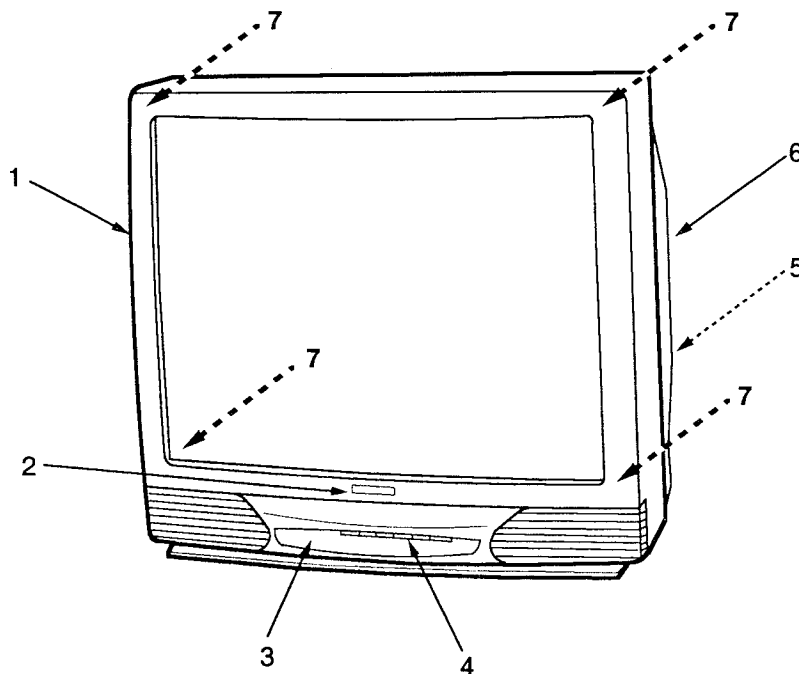
**Note:** To prevent possible damage to the CPU IC801, change both W900 and J807.

## 3. IN THE CABINET PARTS LIST

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Key No.		Part No.	Description	Q'ty	Interchangeability	Reason
Page 18, Cabinet Parts List	6	Old	610 257 8911	CABINET BACK	1	YES	G
		New	610 257 8911 610 262 1488	CABINET BACK CABINET BACK	1	YES	
Page 18, Cabinet Parts List	7	Old	610 261 4220	CABLE CLIP	10	YES	G
		New	610 102 7151	DC HOLDER	4	YES	





## Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 7

Please add this notice to the Service Manual listed below.

Category : <u>COLOR TELEVISION</u>	Date : <u>Jan. / 27 / 1997</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-02</u> ←
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-02. Only the Difference Service Information is given in this manual. For detailed Service Information, refer to the Notices for Chassis No. 31650-02 used in Model DS31650 (SM510144-02).

### 1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 8, Chassis Electrical Parts List	C152	Old	403 041 8804	ELECT 10U M 16V	1	NO	B
		New	403 046 9905	ELECT 4.7U M 25V	1	YES	
Page 8, Chassis Electrical Parts List	C166TM	Old	403 019 7402	CERAMIC 27P J 50V	1	NO	F
		New		NOT USED			
Page 8, Chassis Electrical Parts List	C166	Old		NOT USED			F
		New	403 019 7402	CERAMIC 27P J 50V	1	NO	
Page 9, Chassis Electrical Parts List	C408	Old	403 054 9102	ELECT 4.7U M 100V	1	YES	G
		New	403 054 9102 403 211 7903	ELECT 4.7U M 100V ELECT 4.7U M 100V	1	YES	
Page 9, Chassis Electrical Parts List	★ C411	Old	404 063 7400	MT-POLYPRO 8000P H 1.5K	1	YES	G
		New	404 068 6200	MT-POLYPRO 8000P H 1.5K	1	YES	
Page 9, Chassis Electrical Parts List	★ C412	Old	404 069 3802	MT-POLYPRO 8600P H 1.5K	1	YES	G
		New	404 069 6407	MT-POLYPRO 8600P H 1.5K	1	YES	
Page 9, Chassis Electrical Parts List	★ C601	Old	404 072 7903 404 073 7407	MT-POLYEST 0.068U K 250V MT-POLYEST 0.068U M 250V	1	YES	G
		New	404 072 7903 404 073 7506	MT-POLYEST 0.068U K 250V MT-POLYEST 0.068U M 250V	1	YES	

Parts list continued on next page.

# 1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 11, Chassis Electrical Parts List	L166TM	Old	645 003 9812 645 016 2985	INDUCTOR, 33U K INDUCTOR, 33U K	1	NO	F
		New		NOT USED			
Page 11, Chassis Electrical Parts List	L166	Old		NOT USED			F
		New	645 003 9812 645 016 2985	INDUCTOR, 33U K INDUCTOR, 33U K	1	NO	
Page 11, Chassis Electrical Parts List	L401	Old	610 032 4381 610 032 4404	FILTER COIL FILTER COIL	1	YES	G
		New	610 032 4381 610 032 4404 645 021 2727	FILTER COIL FILTER COIL FILTER COIL	1	YES	
Page 11, Chassis Electrical Parts List	L416H1	Old	610 092 1689	EYELET	1	NO	A
		New		NOT USED			
Page 15, Chassis Electrical Parts List	R829TM	Old	401 024 7400	CARBON 10K JA 1/6W	1	NO	F
		New		NOT USED			
Page 15, Chassis Electrical Parts List	R829	Old		NOT USED			F
		New	401 024 7400	CARBON 10K JA 1/6W	1	NO	
Page 16, Chassis Electrical Parts List	VR141, VR3421, VR461	Old	645 006 5422 645 011 6988	VR B-10K (RF-AGC/LOW SEP./ H-WIDTH)	3	YES	G
		New	645 006 5422 645 011 6988 645 019 6003	VR B-10K (RF-AGC/LOW SEP./ H-WIDTH)	3	YES	
Page 16, Chassis Electrical Parts List	VR300	Old	645 006 5590 645 008 8254	VR B-470 (Y/C SEP.) VR B-500	1	YES	G
		New	645 006 5590 645 008 8254 645 022 9589	VR B-470 (Y/C SEP.) VR B-500 VR B-500	1	YES	
Page 16, Chassis Electrical Parts List	VR501	Old	610 232 8479 645 006 5613	VR B-50K (V-SIZE) VR B-47K	1	YES	G
		New	610 232 8479 645 006 5613 645 022 9602	VR B-50K (V-SIZE) VR B-47K VR B-50K	1	YES	
Page 16, Chassis Electrical Parts List	VR701, VR702, VR703	Old	610 020 9053 610 020 9077 610 020 9084	VR B-10K (R/G/B-BIAS) VR B-10K VR B-10K	3	YES	G
		New	645 020 2605	VR B-10K (R/G/B-BIAS)	3	YES	
Page 16, Chassis Electrical Parts List	VR704, VR705	Old	610 020 8599 610 020 8612 610 020 8629	VR B-200 (R/B-DRIVE) VR B-200 VR B-200	2	YES	G
		New	645 020 2612	VR B-200 (R/B-DRIVE)	2	YES	

Parts list continued on next page.

**1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)**

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change          G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 16, Chassis Electrical Parts List	VR1023	Old	610 232 8455 645 006 5606	VR B-5K (VIDEO IN) VR B-4.7K	1	YES	G
		New	610 232 8455 645 006 5606 645 022 9596	VR B-5K (VIDEO IN) VR B-4.7K VR B-5K	1	YES	
Page 16, Chassis Electrical Parts List	VR3403, VR3406	Old	645 006 5521 645 008 8247	VR B-22K (1.5fH BPF/VCO) VR B-20K	2	YES	G
		New	645 006 5521 645 008 8247 645 022 9541	VR B-22K (1.5fH BPF/VCO) VR B-20K VR B-20K	2	YES	
Page 16, Chassis Electrical Parts List	VR3411	Old	610 232 8455	VR B-5K (HI SEP.)	1	YES	G
		New	610 232 8455 645 022 9596	VR B-5K (HI SEP.) VR B-5K	1	YES	
Page 16, Chassis Electrical Parts List	X161	Old	610 015 3059 610 015 3066	TRAP, CERAMIC 4.5MHZ CERAMIC TRAP	1	YES	G
		New	610 015 3059	TRAP, CERAMIC 4.5MHZ	1	YES	
Page 16, Chassis Electrical Parts List	★ A101	Old	645 012 2163	TUNER, U/V	1	YES	G
		New	645 012 2163 645 023 3340	TUNER, U/V TUNER, U/V	1	YES	
Page 16, Chassis Electrical Parts List	A1901	Old	645 007 1546	UNIT, RC RECEIVER	1	YES	G
		New	645 020 9277	UNIT, RC RECEIVER	1	YES	
Page 16, Chassis Electrical Parts List	★ K701	Old	610 010 4181	CRT SOCKET	1	YES	G
		New	610 010 4181 645 017 2588	CRT SOCKET SOCKET, CRT 8P	1	YES	
Page 16, Chassis Electrical Parts List	★ W900	Old	610 236 0509	(MEX) GND CONNECTOR	1	YES	G
		New	610 267 0325 610 264 8362	(MEX) GND CONNECTOR ASSY, WIRE GND CONNECTOR	1	NO	



## Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 8

Please add this notice to the Service Manual listed below.

Category : <u>COLOR TELEVISION</u>	Date : <u>Jan. / 27 / 1997</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-03</u> ←
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-02. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Notices** for Chassis No. 31650-02 used in Model DS31650 (SM510144-02).

### 1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub    F : Schematic Location Change    G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 8, Chassis Electrical Parts List	C152	Old	403 041 8804	ELECT 10U M 16V	1	NO	B
		New	403 046 9905	ELECT 4.7U M 25V	1	YES	
Page 8, Chassis Electrical Parts List	C166TM	Old	403 019 7402	CERAMIC 27P J 50V	1	NO	F
		New		NOT USED			
Page 8, Chassis Electrical Parts List	C166	Old		NOT USED			F
		New	403 019 7402	CERAMIC 27P J 50V	1	NO	
Page 9, Chassis Electrical Parts List	C408	Old	403 054 9102	ELECT 4.7U M 100V	1	YES	G
		New	403 054 9102	ELECT 4.7U M 100V	1	YES	
			403 211 7903	ELECT 4.7U M 100V	1		
Page 9, Chassis Electrical Parts List	★ C411	Old	404 063 7400	MT-POLYPRO 8000P H 1.5K	1	YES	G
		New	404 068 6200	MT-POLYPRO 8000P H 1.5K	1	YES	
Page 9, Chassis Electrical Parts List	★ C412	Old	404 069 3802	MT-POLYPRO 8600P H 1.5K	1	YES	G
		New	404 069 6407	MT-POLYPRO 8600P H 1.5K	1	YES	
Page 9, Chassis Electrical Parts List	★ C601	Old	404 072 7903	MT-POLYEST 0.068U K 250V	1	YES	G
			404 073 7407	MT-POLYEST 0.068U M 250V			
		New	404 072 7903	MT-POLYEST 0.068U K 250V	1	YES	
404 073 7506	MT-POLYEST 0.068U M 250V						

Parts list continued on next page.

# 1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 11, Chassis Electrical Parts List	L166TM	Old	645 003 9812 645 016 2985	INDUCTOR, 33U K INDUCTOR, 33U K	1	NO	F
		New		NOT USED			
Page 11, Chassis Electrical Parts List	L166	Old		NOT USED			F
		New	645 003 9812 645 016 2985	INDUCTOR, 33U K INDUCTOR, 33U K	1	NO	
Page 11, Chassis Electrical Parts List	L401	Old	610 032 4381 610 032 4404	FILTER COIL FILTER COIL	1	YES	G
		New	610 032 4381 610 032 4404 645 021 2727	FILTER COIL FILTER COIL FILTER COIL	1	YES	
Page 11, Chassis Electrical Parts List	L416H1	Old	610 092 1689	EYELET	1	NO	A
		New		NOT USED			
Page 15, Chassis Electrical Parts List	★R497	Old	401 057 9907	OXIDE-MT 1.5 JA 1W	1	NO	D
		New	401 057 8009	OXIDE-MT 1 JA 1W	1	NO	
Page 15, Chassis Electrical Parts List	R829TM	Old	401 024 7400	CARBON 10K JA 1/6W	1	NO	F
		New		NOT USED			
Page 15, Chassis Electrical Parts List	R829	Old		NOT USED			F
		New	401 024 7400	CARBON 10K JA 1/6W	1	NO	
Page 16, Chassis Electrical Parts List	VR141, VR3421, VR461	Old	645 006 5422 645 011 6988	VR B-10K (RF-AGC/LOW SEP./ H-WIDTH)	3	YES	G
		New	645 006 5422 645 011 6988 645 019 6003	VR B-10K (RF-AGC/LOW SEP./ H-WIDTH)	3	YES	
Page 16, Chassis Electrical Parts List	VR300	Old	645 006 5590 645 008 8254	VR B-470 (Y/C SEP.) VR B-500	1	YES	G
		New	645 006 5590 645 008 8254 645 022 9589	VR B-470 (Y/C SEP.) VR B-500 VR B-500	1	YES	
Page 16, Chassis Electrical Parts List	VR501	Old	610 232 8479 645 006 5613	VR B-50K (V-SIZE) VR B-47K	1	YES	G
		New	610 232 8479 645 006 5613 645 022 9602	VR B-50K (V-SIZE) VR B-47K VR B-50K	1	YES	
Page 16, Chassis Electrical Parts List	VR701, VR702, VR703	Old	610 020 9053 610 020 9077 610 020 9084	VR B-10K (R/G/B-BIAS) VR B-10K VR B-10K	3	YES	G
		New	645 020 2605	VR B-10K (R/G/B-BIAS)	3	YES	

Parts list continued on next page.

# 1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change          G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 16, Chassis Electrical Parts List	VR704, VR705	Old	610 020 8599 610 020 8612 610 020 8629	VR B-200 (R/B-DRIVE) VR B-200 VR B-200	2	YES	G
		New	645 020 2612	VR B-200 (R/B-DRIVE)	2	YES	
Page 16, Chassis Electrical Parts List	VR1023	Old	610 232 8455 645 006 5606	VR B-5K (VIDEO IN) VR B-4.7K	1	YES	G
		New	610 232 8455 645 006 5606 645 022 9596	VR B-5K (VIDEO IN) VR B-4.7K VR B-5K	1	YES	
Page 16, Chassis Electrical Parts List	VR3403, VR3406	Old	645 006 5521 645 008 8247	VR B-22K (1.5fH BPF/VCO) VR B-20K	2	YES	G
		New	645 006 5521 645 008 8247 645 022 9541	VR B-22K (1.5fH BPF/VCO) VR B-20K VR B-20K	2	YES	
Page 16, Chassis Electrical Parts List	VR3411	Old	610 232 8455	VR B-5K (HI SEP.)	1	YES	G
		New	610 232 8455 645 022 9596	VR B-5K (HI SEP.) VR B-5K	1	YES	
Page 16, Chassis Electrical Parts List	X161	Old	610 015 3059 610 015 3066	TRAP, CERAMIC 4.5MHZ CERAMIC TRAP	1	YES	G
		New	610 015 3059	TRAP, CERAMIC 4.5MHZ	1	YES	
Page 16, Chassis Electrical Parts List	A100	Old	610 262 7985	ASSY, PWB, MAIN	1	NO	D
		New	610 263 2989	ASSY, PWB, MAIN	1	NO	
Page 16, Chassis Electrical Parts List	★ A101	Old	645 012 2163	TUNER, U/V	1	YES	G
		New	645 012 2163 645 023 3340	TUNER, U/V TUNER, U/V	1	YES	
Page 16, Chassis Electrical Parts List	A1901	Old	645 007 1546	UNIT, RC RECEIVER	1	YES	G
		New	645 020 9277	UNIT, RC RECEIVER	1	YES	
Page 16, Chassis Electrical Parts List	★ K701	Old	610 010 4181	CRT SOCKET	1	YES	G
		New	610 010 4181 645 017 2588	CRT SOCKET SOCKET, CRT 8P	1	YES	
Page 16, Chassis Electrical Parts List	★ Q900	Old	414 008 3800	CRT M78JUA069X71	1	NO	D
		New	414 008 9208	CRT A78LKU30X07(M)	1	NO	
Page 16, Chassis Electrical Parts List	★ W900	Old	610 236 0509	(MEX) GND CONNECTOR	1	YES	G
		New	610 267 0325 610 264 8362	(MEX) GND CONNECTOR ASSY, WIRE GND CONNECTOR	1	NO	



## Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 9

Please add this notice to the Service Manual listed below.

Category : <u>COLOR TELEVISION</u>	Date : <u>Jan. / 27 / 1997</u>
Model : <u>DS31650</u>	Effective from : Chassis No. <u>31650-04</u> ←
Destination : <u>U.S.A.</u>	REF : No. <u>SM510144</u>

**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. 31650-02. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Notices** for Chassis No. 31650-02 used in Model DS31650 (SM510144-02).

### 1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 8, Chassis Electrical Parts List	C152	Old	403 041 8804	ELECT 10U M 16V	1	NO	B
		New	403 046 9905	ELECT 4.7U M 25V	1	YES	
Page 8, Chassis Electrical Parts List	C166TM	Old	403 019 7402	CERAMIC 27P J 50V	1	NO	F
		New		NOT USED			
Page 8, Chassis Electrical Parts List	C166	Old		NOT USED			F
		New	403 019 7402	CERAMIC 27P J 50V	1	NO	
Page 9, Chassis Electrical Parts List	C408	Old	403 054 9102	ELECT 4.7U M 100V	1	YES	G
		New	403 054 9102	ELECT 4.7U M 100V	1	YES	
			403 211 7903	ELECT 4.7U M 100V			
Page 9, Chassis Electrical Parts List	★C411	Old	404 063 7400	MT-POLYPRO 8000P H 1.5K	1	YES	G
		New	404 068 6200	MT-POLYPRO 8000P H 1.5K	1	YES	
Page 9, Chassis Electrical Parts List	★C412	Old	404 069 3802	MT-POLYPRO 8600P H 1.5K	1	YES	G
		New	404 069 6407	MT-POLYPRO 8600P H 1.5K	1	YES	
Page 9, Chassis Electrical Parts List	★C601	Old	404 072 7903	MT-POLYEST 0.068U K 250V	1	YES	G
			404 073 7407	MT-POLYEST 0.068U M 250V			
		New	404 072 7903	MT-POLYEST 0.068U K 250V	1	YES	
			404 073 7506	MT-POLYEST 0.068U M 250V			

Parts list continued on next page.

# 1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint

B : Quality Reliability

C : Standardization

D : Design

E : Add As a possible sub

F : Schematic Location Change

G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 11, Chassis Electrical Parts List	L166TM	Old	645 003 9812 645 016 2985	INDUCTOR, 33U K INDUCTOR, 33U K	1	NO	F
		New		NOT USED			
Page 11, Chassis Electrical Parts List	L166	Old		NOT USED			F
		New	645 003 9812 645 016 2985	INDUCTOR, 33U K INDUCTOR, 33U K	1	NO	
Page 11, Chassis Electrical Parts List	L401	Old	610 032 4381 610 032 4404	FILTER COIL FILTER COIL	1	YES	G
		New	610 032 4381 610 032 4404 645 021 2727	FILTER COIL FILTER COIL FILTER COIL	1	YES	
Page 11, Chassis Electrical Parts List	L416H1	Old	610 092 1689	EYELET	1	NO	A
		New		NOT USED			
Page 14, Chassis Electrical Parts List	R473	Old	401 027 3003	CARBON 56K JA 1/6W	1	NO	D
		New	401 026 4605	CARBON 33K JA 1/6W	1	NO	
Page 14, Chassis Electrical Parts List	R474	Old	401 025 4903	CARBON 180K JA 1/6W	1	NO	D
		New	401 024 7707	CARBON 100K JA 1/6W	1	NO	
Page 15, Chassis Electrical Parts List	★R497	Old	401 057 9907	OXIDE-MT 1.5 JA 1W	1	NO	D
		New	401 057 7507	OXIDE-MT 0.82 JA 1W	1	NO	
Page 15, Chassis Electrical Parts List	R829TM	Old	401 024 7400	CARBON 10K JA 1/6W	1	NO	F
		New		NOT USED			
Page 15, Chassis Electrical Parts List	R829	Old		NOT USED			F
		New	401 024 7400	CARBON 10K JA 1/6W	1	NO	
Page 16, Chassis Electrical Parts List	VR141, VR3421, VR461	Old	645 006 5422 645 011 6988	VR B-10K (RF-AGC/LOW SEP./ H-WIDTH)	3	YES	G
		New	645 006 5422 645 011 6988 645 019 6003	VR B-10K (RF-AGC/LOW SEP./ H-WIDTH) VR B-10K	3	YES	
Page 16, Chassis Electrical Parts List	VR300	Old	645 006 5590 645 008 8254	VR B-470 (Y/C SEP.) VR B-500	1	YES	G
		New	645 006 5590 645 008 8254 645 022 9589	VR B-470 (Y/C SEP.) VR B-500 VR B-500	1	YES	
Page 16, Chassis Electrical Parts List	VR501	Old	610 232 8479 645 006 5613	VR B-50K (V-SIZE) VR B-47K	1	YES	G
		New	610 232 8479 645 006 5613 645 022 9602	VR B-50K (V-SIZE) VR B-47K VR B-50K	1	YES	
Page 16, Chassis Electrical Parts List	VR701, VR702, VR703	Old	610 020 9053 610 020 9077 610 020 9084	VR B-10K (R/G/B-BIAS) VR B-10K VR B-10K	3	YES	G
		New	645 020 2605	VR B-10K (R/G/B-BIAS)	3	YES	

Parts list continued on next page.

# 1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint                      B : Quality Reliability                      C : Standardization                      D : Design  
 E : Add As a possible sub      F : Schematic Location Change          G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 16, Chassis Electrical Parts List	VR704, VR705	Old	610 020 8599 610 020 8612 610 020 8629	VR B-200 (R/B-DRIVE) VR B-200 VR B-200	2	YES	G
		New	645 020 2612	VR B-200 (R/B-DRIVE)	2	YES	
Page 16, Chassis Electrical Parts List	VR1023	Old	610 232 8455 645 006 5606	VR B-5K (VIDEO IN) VR B-4.7K	1	YES	G
		New	610 232 8455 645 006 5606 645 022 9596	VR B-5K (VIDEO IN) VR B-4.7K VR B-5K	1	YES	
Page 16, Chassis Electrical Parts List	VR3403, VR3406	Old	645 006 5521 645 008 8247	VR B-22K (1.5fH BPF/VCO) VR B-20K	2	YES	G
		New	645 006 5521 645 008 8247 645 022 9541	VR B-22K (1.5fH BPF/VCO) VR B-20K VR B-20K	2	YES	
Page 16, Chassis Electrical Parts List	VR3411	Old	610 232 8455	VR B-5K (HI SEP.)	1	YES	G
		New	610 232 8455 645 022 9596	VR B-5K (HI SEP.) VR B-5K	1	YES	
Page 16, Chassis Electrical Parts List	X161	Old	610 015 3059 610 015 3066	TRAP, CERAMIC 4.5MHZ CERAMIC TRAP	1	YES	G
		New	610 015 3059	TRAP, CERAMIC 4.5MHZ	1	YES	
Page 16, Chassis Electrical Parts List	A100	Old	610 262 7985	ASSY, PWB, MAIN	1	NO	D
		New	610 263 7694	ASSY, PWB, MAIN	1	NO	
Page 16, Chassis Electrical Parts List	★ A101	Old	645 012 2163	TUNER, U/V	1	YES	G
		New	645 012 2163 645 023 3340	TUNER, U/V TUNER, U/V	1	YES	
Page 16, Chassis Electrical Parts List	A1901	Old	645 007 1546	UNIT, RC RECEIVER	1	YES	G
		New	645 020 9277	UNIT, RC RECEIVER	1	YES	
Page 16, Chassis Electrical Parts List	★ K701	Old	610 010 4181	CRT SOCKET	1	YES	G
		New	610 010 4181 645 017 2588	CRT SOCKET SOCKET, CRT 8P	1	YES	
Page 16, Chassis Electrical Parts List	★ PS601	Old	408 021 9109 408 021 9208	THERMISTOR 903P51D030MN14GR THERMISTOR 903P51D030MN14GR	1	YES	D
		New	408 002 5205	TH PTH451C260BF5R0M140	1	NO	
Page 16, Chassis Electrical Parts List	★ Q900	Old	414 008 3800	CRT M78JUA069X71	1	NO	D
		New	414 008 0502	CRT A79AEJ15X01	1	NO	
Page 16, Chassis Electrical Parts List	★ W900	Old	610 236 0509	(MEX) GND CONNECTOR	1	YES	G
		New	610 267 0325 610 264 8362	(MEX) GND CONNECTOR ASSY, WIRE GND CONNECTOR	1	NO	
Page 16, Chassis Electrical Parts List	★ W903	Old		NOT USED			D
		New	610 253 4610 610 232 9803	ASSY WIRE, DY CONNECTOR (USA) CORD	1	NO	





# Notice

- CORRECTION       PRODUCTION CHANGE  
 SERVICE FLASH     ADD INFORMATION

FILE NO. C-2174

REVISION 10

Please add this notice to the Service Manual listed below.

Category : COLOR TELEVISION      Date : Oct. / 17 / 1997  
 Model : DS31650      Effective from : Chassis No. 31650-5 ←  
 Destination : U.S.A.      REF : No. SM510144

**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. 31650-02. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Notices** for Chassis No. 31650-02 used in Model DS31650 (SM510144-02).

## IMPORTANT NOTE:

For complete Parts List and Service Adjustments, refer to Notice No. SM510144-02 used for Model DS31650 Chassis No. 31650-02.

### 1. IN THE CABINET AND ACCESSORY PARTS LIST

The reason of change.

- A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	KEY NO.		Part No.	Description	Q'ty	Interchange-ability	Reason
Page 17, Chassis Electrical Parts List	—	Old	645 014 5346	ASSY, RC TRANSMITTER	1	YES	D
		New	645 023 5771 645 024 6265	ASSY, RC TRANSMITTER ASSY, RC TRANSMITTER	1	YES	

Continued on back.

## 2. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason of change.

A : Misprint      B : Quality Reliability      C : Standardization      D : Design  
 E : Add As a possible sub      F : Schematic Location Change      G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchange-ability	Reason
Page 11, Chassis Electrical Parts List	★L901	Old	645 020 9116	COIL, DEGAUSSING	1	YES	G
		New	645 020 9116 645 022 8698	COIL, DEGAUSSING COIL, DEGAUSSING	1	YES	
Page 14, Chassis Electrical Parts List	R460	Old	401 026 3905	CARBON 330 JA 1/6W	1	NO	D
		New	401 026 9600	CARBON 470 JA 1/6W	1	NO	
Page 14, Chassis Electrical Parts List	R461	Old	401 025 7409	CARBON 220 JA 1/6W	1	NO	D
		New	401 025 1308	CARBON 150 JA 1/6W	1	NO	
Page 15, Chassis Electrical Parts List	★R497	Old	401 057 9907	OXIDE-MT 1.5 JA 1W	1	NO	D
		New	401 057 9105	OXIDE-MT 1.2 JA 1W	1	NO	
Page 16, Chassis Electrical Parts List	A100	Old	610 262 7985	ASSY, PWB, MAIN	1	NO	D
		New	610 271 5149	ASSY, PWB, MAIN	1	NO	
Page 16, Chassis Electrical Parts List	★Q900	Old	414 008 3800	CRT M78JUA069X71	1	NO	D
		New	414 009 5407 414 009 5704	CRT M78JUA068X78 CRT A78LKU30X12(W)	1	NO	

For parts or service contact  
**SANYO FISHER Service Company**  
 A Division of SANYO Logistics Corporation  
 1411 West 190th Street, Suite 800,  
 Gardena, CA 90248 (U.S.A.)