

TOSHIBA

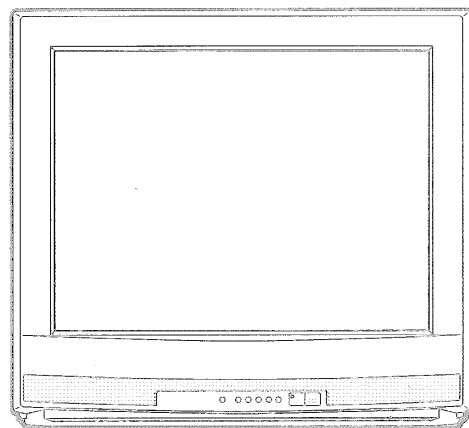
FILE NO. 020-9626

SERVICE MANUAL

COLOR TELEVISION

N5ES Chassis

CF27F30, CL29F30
(TAC9620) (TAC9620)



PRINTED IN U.S.A. Sep., 1996 (S)

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 28.1 kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed 29.5 kV. Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing

an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.

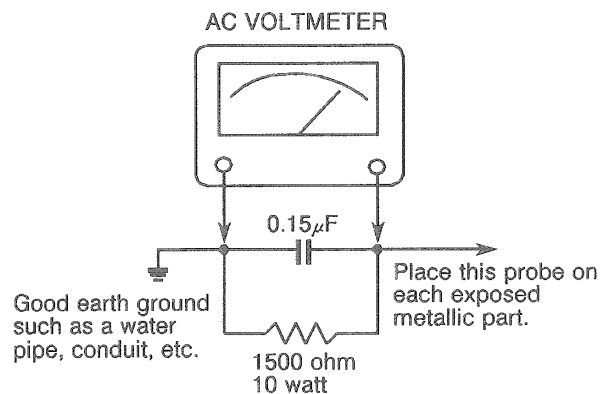
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some parts in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μ F, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 μ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



PRODUCT SAFETY NOTICE

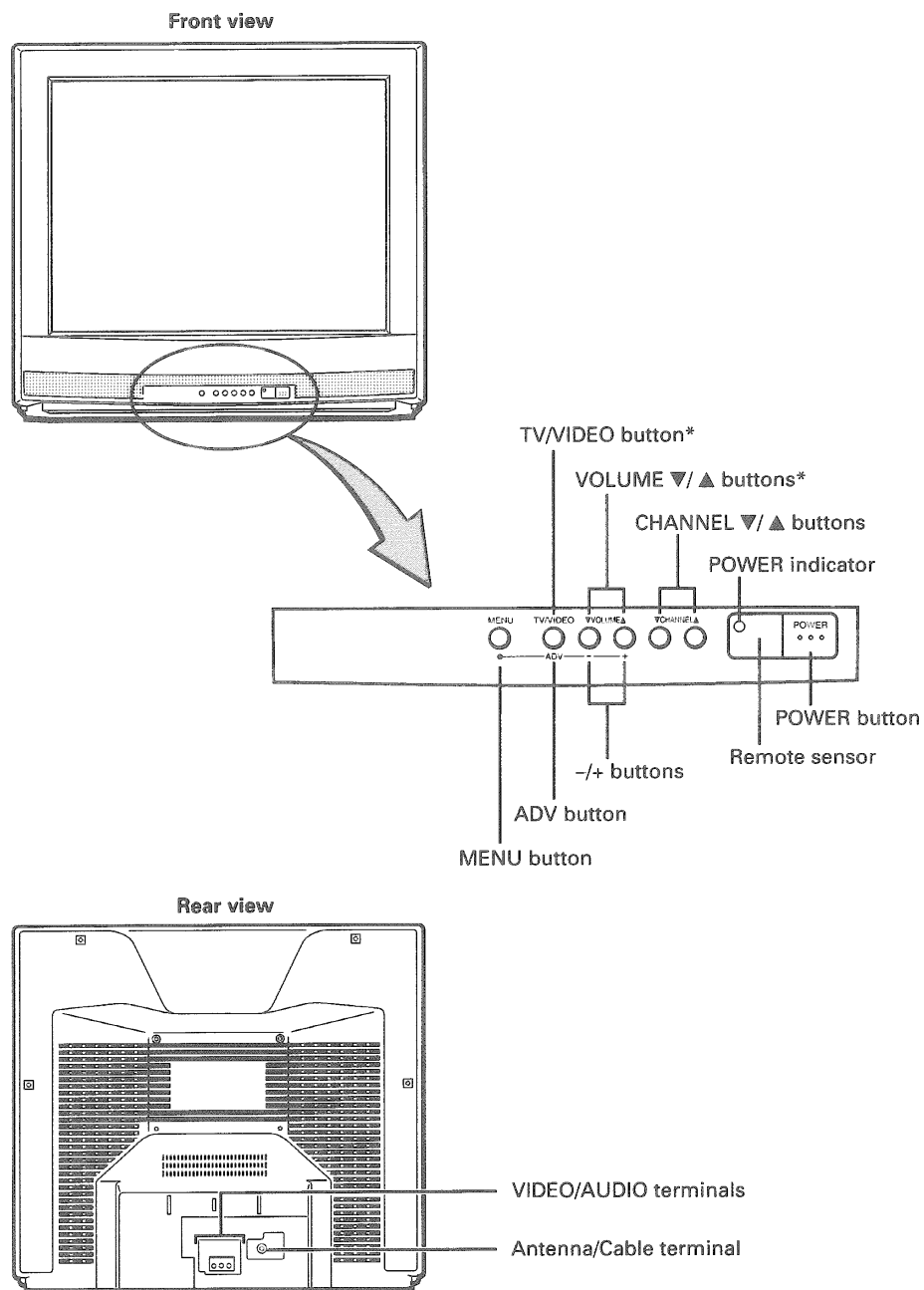
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

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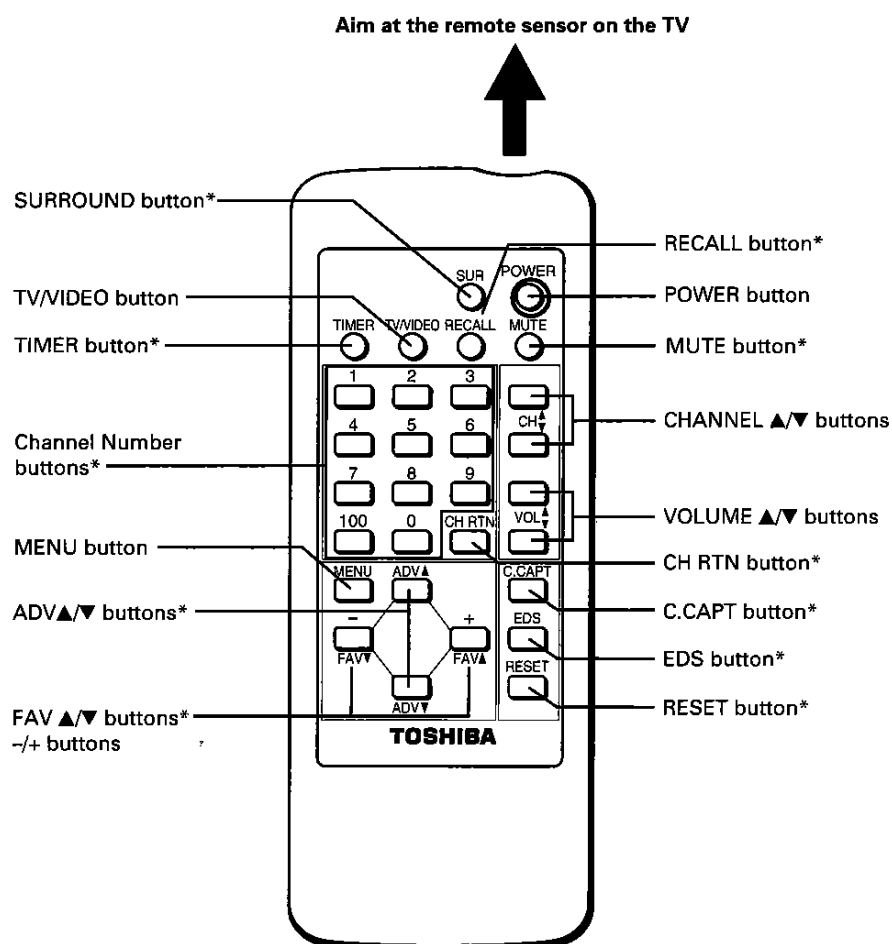
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Location of Controls (TV Set)



* These buttons have dual functions.

Location of Controls (Remote Control)

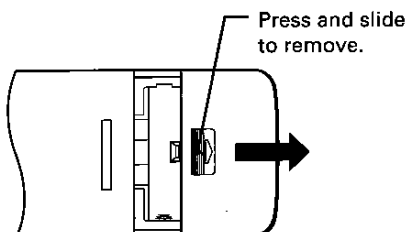


*These functions do not have duplicate locations on the TV set.
They can be controlled only with the Remote Control.

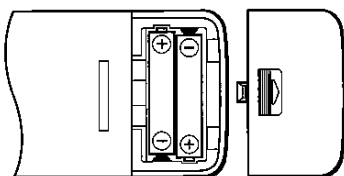
Before Using the Remote Control

Installing and replacing batteries

- 1 Place the Remote Control with the face down. Press down on the ridged area of the battery cover and slide it off.



- 2 Place two "AA" size batteries, matching the + and - signs on each battery to the + and - signs of the battery compartment.



- 3 Replace the battery cover until the lock snaps.

CAUTION:

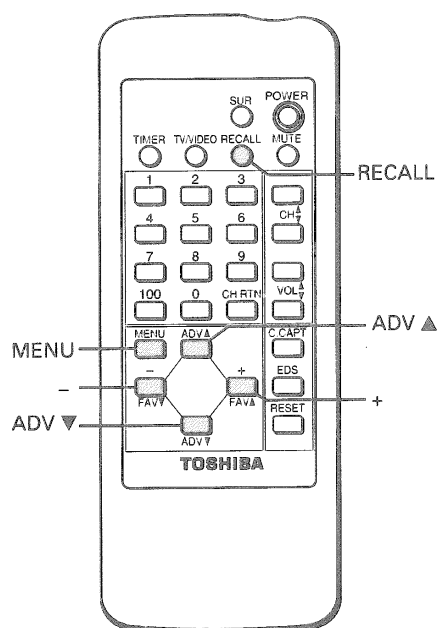
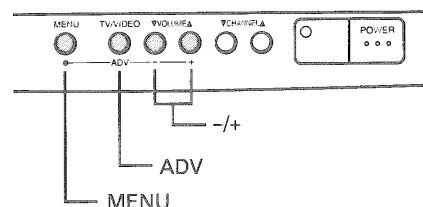
- Do not throw your batteries into a fire. Dispose of your batteries in a designated disposal area.
- Do not combine used old batteries with new ones.
- Do not mix battery types.

Tips for Best Operation

- For optimum performance, aim the Remote Control directly at the TV from a distance of no more than 16 ft (5m) and be sure there is no obstruction between the Remote Control and the TV.
- If your Remote Control does not always adjust the TV as you wish, you probably need to replace the batteries.
The life expectancy of the battery is about one year.
- Remove dead batteries immediately to prevent battery acid from leaking into the battery compartment.
- If you do not intend to use the Remote Control for a long period, remove the batteries.

Menu Function (General Instructions)

We suggest you familiarize yourself with the procedure before using the Menu function.
To adjust any TV feature, the use of the Menu function is required. The adjustments that can be made to the TV appear on the screen.



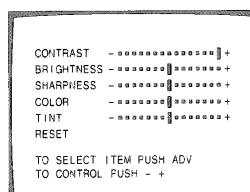
Notes:

- The ADV button on the TV will function as the TV/VIDEO button when no menu display is on the screen.
- The -/+ buttons on the TV will function as the VOLUME ▼/▲ buttons when no menu display is on the screen.
- The -/+ buttons on the Remote Control will function as the FAV ▼/▲ buttons when no menu display is on the screen.

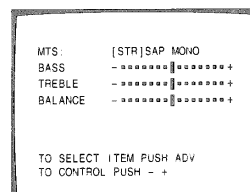
MENU button (on TV and on Remote)

Each time you press **MENU**, the Picture, Audio, Setup or Option menu on-screen display is selected in order, then press **ADV**.

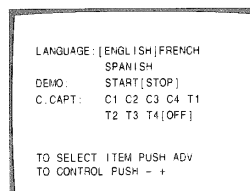
Picture menu



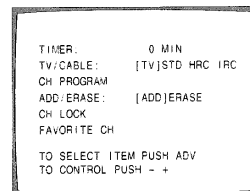
Audio menu



Option menu



Setup menu



ADV button (on TV and on Remote)

Use **ADV** after you have selected the on-screen menu you want to adjust with the **MENU** button.

Each time you press **ADV**, the function to be adjusted will be selected in order.

ADV ▲ button from bottom to top

ADV, ADV ▼ button from top to bottom

The selected function will be displayed in magenta.

- /+ buttons (on TV and on Remote)

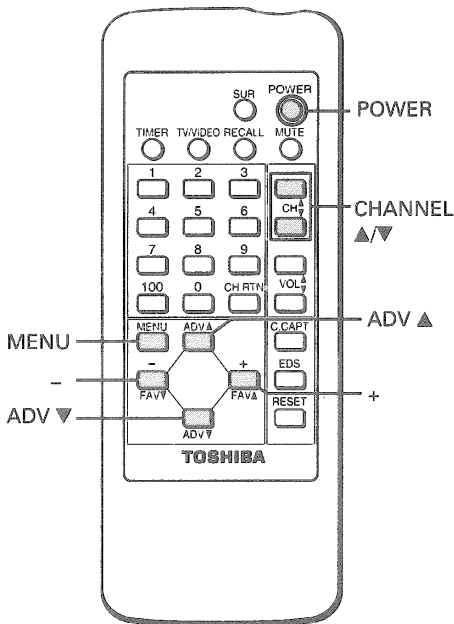
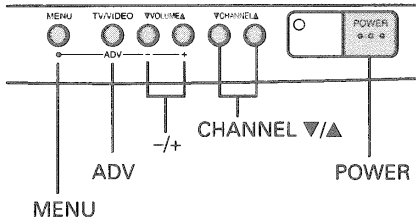
Use - /+ to adjust the function you have selected with the **ADV** button.

RECALL button (on Remote)

The above four menu displays will automatically disappear from the screen if no control has been operated for about 15 seconds.
If you want to clear the screen of all on-screen displays instantly, press **RECALL**.

Programming Channel Memory

The channel memory is the list of TV channel numbers your TV will stop on when you press the CHANNEL ▲ or ▼ button. First, use the TV/CABLE and CH PROGRAM functions to preset all active channels in your area. If necessary, arrange the preset channels with the ADD/ERASE functions so that you can tune into only desired channels.



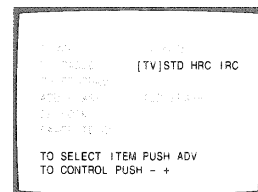
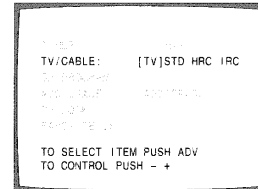
* This TV receives the following TV signals:

1. **TV:** TV broadcasts signals.
(VHF channels 2 through 13 and UHF channels 14 through 69)
2. **STD:** Standard cable TV signals.
3. **HRC:** Harmonic Related Carrier cable TV signals.
4. **IRC:** Incremental Related Carrier cable TV signals.

If you are not sure what CABLE system they are using, consult your local cable company.

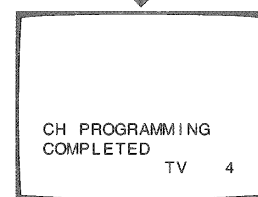
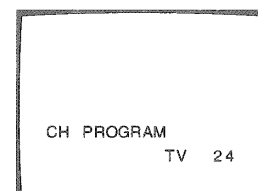
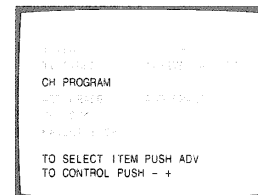
TV/CABLE function

- 1 Press **POWER** to turn on the TV.
- 2 Press **MENU** repeatedly until the Setup menu is displayed on the screen.
- 3 Press **ADV** repeatedly until "TV/CABLE" is displayed in magenta.
- 4 Press **-** or **+** until the mode that corresponds to your TV signal system is displayed in magenta. Each time you press the button, the TV*, STD*, HRC* or IRC* mode will be selected in order.



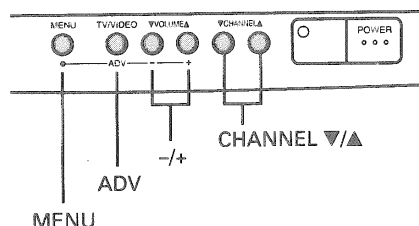
CH PROGRAM function

- 1 Press **MENU** repeatedly until the Setup menu is displayed on the screen.
- 2 Press **ADV** repeatedly until "CH PROGRAM" is displayed in magenta.
- 3 Press **-** or **+** to start channel programming. The TV will automatically cycle through all the TV or CABLE channels depending on the mode selected, and store active channels in the channel memory.
- 4 When channel programming is complete, you will see the message at the right.



- 5 Press **CHANNEL ▲** or **▼** to make sure the channel programming has been done properly.

Programming Channel Memory (Continued)



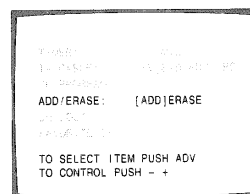
ADD/ERASE function

After performing the CH PROGRAM function, you can add or erase specific channels.

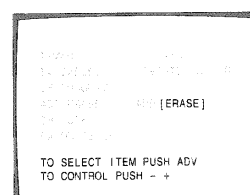
1 Select the channel you want to erase using the **CHANNEL ▲** or **▼** button, or select the channel you want to add using the **Channel Number** buttons.

2 Press **MENU** repeatedly until the Setup menu is displayed on the screen.

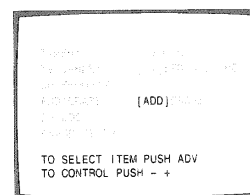
3 Press **ADV** repeatedly until "ADD/ERASE" is displayed in magenta.



4 Press **-** or **+** :
To erase the channel
 Press the button until "ERASE" is displayed in magenta indicating that the channel has been erased from the memory.



To add the channel
 Press the button until "ADD" is displayed in magenta indicating that the channel has been memorized.



5 Repeat steps 1 to 4 for other channels.

You have now completed the channel programming.

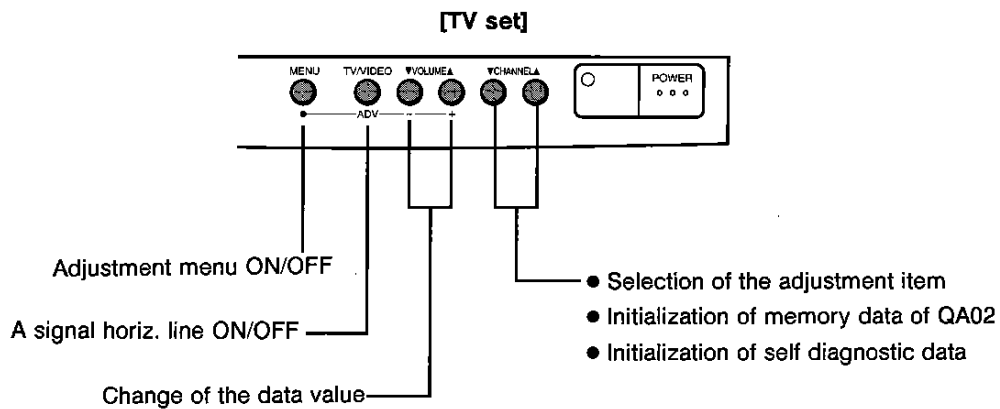
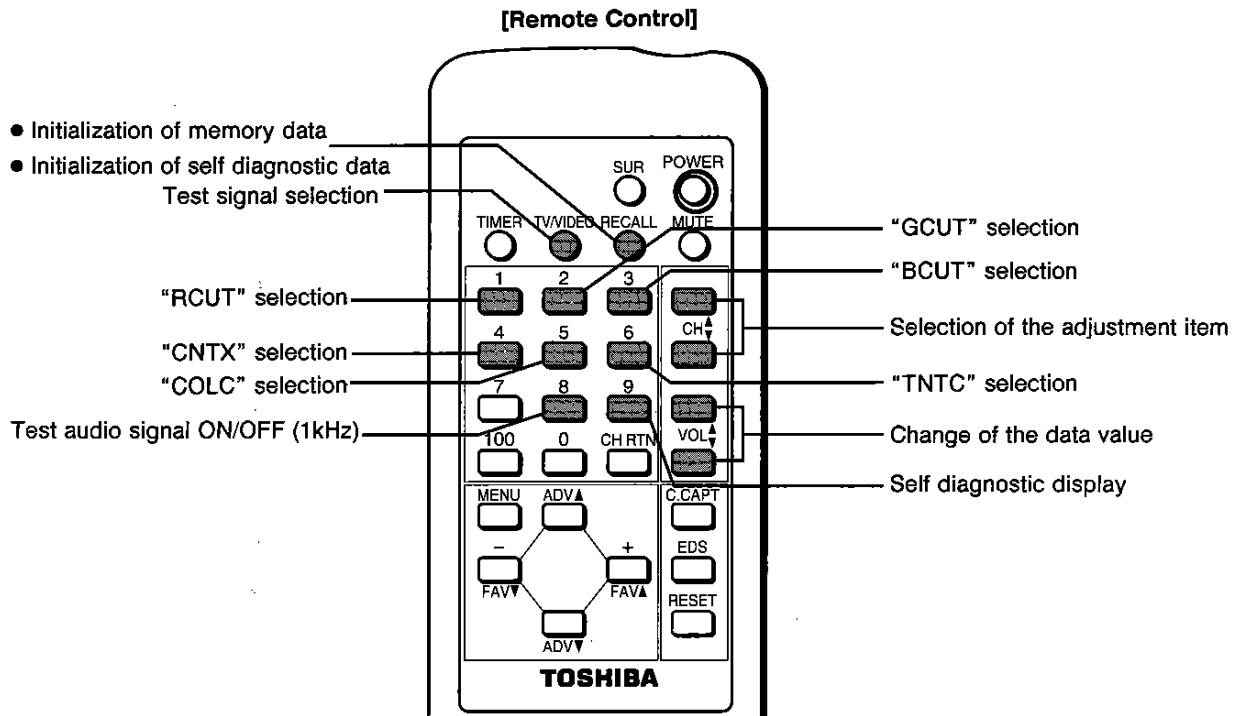
CABLE channel reference chart

Number on this TV	1	5	6	14	15	16	34	35	36	37	38	60	61	62	63	64	65	66
Corresponding CABLE channel	A-8	5(A-7)	6(A-6)	A	B	C	U	V	W	AA	BB	XX	YY	ZZ	AAA	BBB	65	66
Number on this TV	67	68	69	92	93	94	95	96	97	98	99	100	101	102	123	124	125	
Corresponding CABLE channel	67	68	69	92	93	94	A-5	A-4	A-3	A-2	A-1	100	101	102	123	124	125	

The above chart is typical of many cable system channel allocations. If in doubt, consult your cable company.

SERVICE MODE

KEY FUNCTION IN THE SERVICE MODE



1. ENTERING TO SERVICE MODE

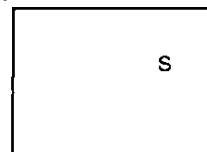
1) Press MUTE button once on Remote Control.



2) Press MUTE button again to keep pressing.



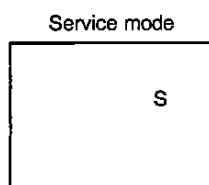
3) While pressing the MUTE button, press MENU button on TV set.



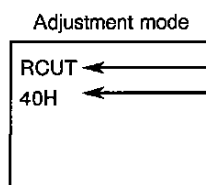
(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



Press
Press



Item
Data

3. SELECTING THE ADJUSTING ITEMS

- 1) Every pressing of CHANNEL ▲ button changes the adjustment items in the following order. (▼ button for reverse order.)

	Item (OSD)	Name of adjustment	Data	Remarks
☆	RCUT	R CUTOFF	40H	
☆	GCUT	G CUTOFF	40H	
☆	BCUT	B CUTOFF	40H	
☆	GDRV	G DRIVE	80H	
☆	BDRV	B DRIVE	80H	
	CNTX	SUB-CONTRAST	58H	
☆	BRTC	SUB-BRIGHT	40H	
☆	COLC	SUB-COLOR	2CH	
☆	TNTC	SUB-TINT	42H	
☆	ATT	ATTENUATOR	20H	
☆	STVC	STEREO VCO	20H	
☆	STRF	STEREO FILTER	20H	
☆	WBAN	STEREO SEPARATION	20H	
☆	SPEC	SPECTRAL	20H	
☆	SAVC	SAP VCO	20H	
☆	HPOS	HORIZ. POSITION	16H	
☆	VPOS	VERT. POSITION	02H	
☆	HIT	HEIGHT	23H	
	LIN	V-LINEARITY	07H	Not used
	VSC	V-S CORRECTION	0AH	Not used
	VPS	V-SHIFT	0DH	Not used
	VCP	V-COMPENSATION	04H	Not used
	WID	PICTURE WIDTH	25H	Not used
	DPC	E-W, PARABOLA (DPC)	13H	Not used
	CNR	E-W CORNER	06H	Not used
	TRAP	TRAPEZIUM	10H	Not used
	HCP	H-COMPENSATION	03H	Not used
	VFC	V-F CORRECTION	0FH	Not used
	PCOL	PIP COLOR	20H	Not used
	PHUE	PIP TINT	40H	Not used

☆ These adjustments may be required when replacing QA02 and Q501.

4. ADJUSTING THE DATA

- 1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

5. EXIT FROM SERVICE MODE

- 1) Press POWER button to turn off the TV once

INITIALIZATION OF MEMORY DATA OF QA02

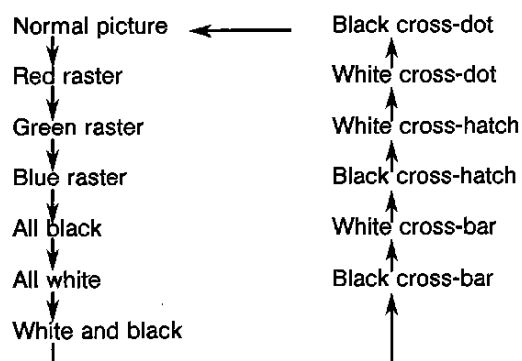
After replacing QA02, the following initialization is required.

1. Enter the service mode, then select any register item.
2. Press and hold the RECALL button on the Remote, then press the CHANNEL button on the TV. The initialization of QA02 has been completed.
3. Check the picture carefully. If necessary, adjust any adjustment item above.
Perform "Programming Channel memory" on page 8.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

TEST SIGNAL SELECTION

- 1) Every pressing of TV/VIDEO button on the Remote Control changes the built-in test patterns on screen in the following order.



Note: If the video cable is connected to the VIDEO INPUT jack, the built-in pattern signals are not displayed.

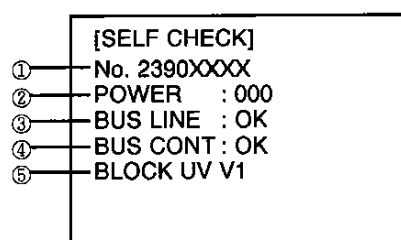
Signals	Picture
<ul style="list-style-type: none"> • Red raster • Green raster • Blue raster • All Black • All White 	
<ul style="list-style-type: none"> • Black & White 	
<ul style="list-style-type: none"> • Black cross-bar • White cross-bar 	
<ul style="list-style-type: none"> • Black cross-hatch • White cross-hatch 	
<ul style="list-style-type: none"> • Black cross-dot • White cross-dot 	

SELF DIAGNOSTIC FUNCTION

- 1) Press "9" button on Remote Control during display of adjustment menu.

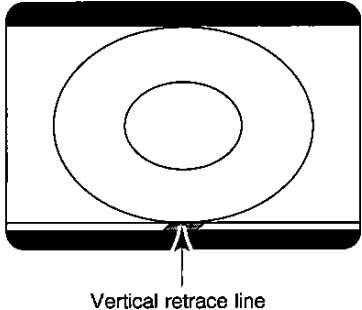
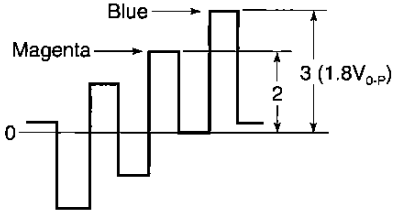
The diagnosis will begin to check if interface among IC's are executed properly.

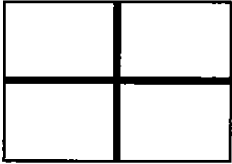
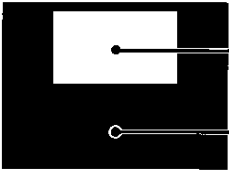
- 2) During diagnosis, the following displays are shown.



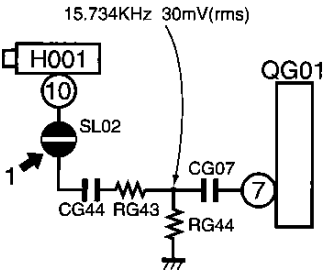
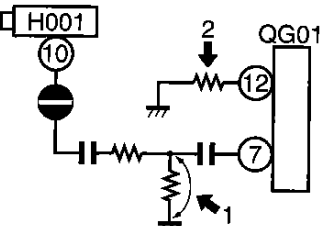
- ① Part number of microprocessor (QA01)
- ② Operation number of protection circuit (current limiter)
- ③ BUS line check
 - "OK" Normal
 - "NG" SCL-GND short circuit
SDA-GND short circuit
SCL-SDA short circuit
- ④ BUS line ACK (acknowledge) check
 - "OK" ... Normal
 - Display of Location Number (Ex. H001) ... NG
- ⑤ Sync. signal check
 - Green display ... Normal
 - Cyan display ... No check
 - Red display NG

ELECTRICAL ADJUSTMENTS

ITEM	ADJUSTMENT PROCEDURE
FOCUS VR ADJ.	<ol style="list-style-type: none"> 1. Enter the service mode, then select any register item. 2. Press the TV/VIDEO button on the Remote until the black cross-bar pattern appears on the screen. 3. Adjust the FOCUS control (on T461) for well defined scanning 24 lines on the picture screen.
SUB-BRIGHTNESS (BRTC)	<ol style="list-style-type: none"> 1. Constrict the picture height until the vertical retrace line appears adjusting the HEIGHT control on the MAIN board. 2. Adjust the CONTRAST to the minimum and BRIGHTNESS to the center. 3. Enter the service mode, then select "BRTC" register. 4. Adjust the data value so the belt of vertical retrace line just disappear. 5. Adjust the CONTRAST for the desired contrast. 6. Adjust the HEIGHT control. <div data-bbox="1011 483 1374 792" style="text-align: center;">  </div>
SUB-COLOR (COLC) SUB-TINT (TNTC)	<ol style="list-style-type: none"> 1. Receive color-bar signal from color-bar generator. 2. Adjust the BRIGHTNESS and CONTRAST to the center (RESET status). 3. Connect oscilloscope pin 23 of Q501 on the MAIN board. 4. Enter the service mode, then select "COLC". 5. Temporarily adjust the data value to achieve about $1V_{0-p}$ of blue bar. 6. Select "TNTC" register. 7. Adjust the data value to obtain the blue bar to magenta bar ratio of 3:2 as shown. 8. Select "COLC" register. 9. Adjust the data value to achieve $1.8V_{0-p}$ of blue bar on scope. 10. Check the picture with off-air signal. <div data-bbox="991 1003 1385 1211" style="text-align: center;">  </div>
WIDTH (WID)	<ol style="list-style-type: none"> 1. Call up the adjustment mode display, then select the address WID. 2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack. 3. Press the VOLUME ▲ or ▼ button to advance the data by 7 steps. <p>Note : Check the horizontal picture position is correct.</p>

ITEM	ADJUSTMENT PROCEDURE						
HORIZONTAL POSITION (HPOS) VERTICAL POSITION (VPOS)	<ol style="list-style-type: none"> 1. Call up the adjustment mode display, then select the item HPOS or VPOS. 2. Press the TV/VIDEO button on Remote until the white cross-bar or black cross-bar pattern appears on the screen. 3. Adjust the HORIZONTAL and VERTICAL position alternately by pressing the VOLUME ▲ or ▼ button for proper picture position. 4. Check the picture with off-air signal. 						
HEIGHT (HIT)	<ol style="list-style-type: none"> 1. Call up the adjustment mode display, then select the item HIT. 2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 8 steps. <p>Note : Check the vertical picture position is correct.</p>						
WHITE BALANCE (RCUT) (GCUT) (BCUT) (GDRV) (BDRV)	<ol style="list-style-type: none"> 1. Adjust the CONTRAST control to the center, and BRIGHTNESS control to the maximum. 2. Call up the adjustment mode display, and press the TV/VIDEO button on Remote until the white and black pattern appears on the screen. 3. Adjust the following address with the CHANNEL ▲/▼ and VOLUME ▲/▼ buttons. <table border="0" data-bbox="614 831 1321 920"> <tr> <td>Item : RCUT → Data : 40H</td> <td>Item : GDRV → Data : 80H</td> </tr> <tr> <td>Item : GCUT → Data : 40H</td> <td>Item : BDRV → Data : 80H</td> </tr> <tr> <td>Item : BCUT → Data : 40H</td> <td></td> </tr> </table> 4. Press the TV/VIDEO button on TV to display a single horizontal line on the screen. 5. Turn the SCREEN control (FBT) fully counterclockwise and gradually rotate clockwise until the first horizontal line appears slightly on the screen. 6. Press the TV/VIDEO button to display the normal picture. 7. Adjust the remaining two "?CUT" items (CHANNEL ▲/▼ → TV/VIDEO → VOLUME ▲/▼ in order) to obtain the slightly lighted horizontal line in the same levels of three (red, green, blue) colors. The line should be white if the adjustments are proper. <div data-bbox="512 1232 1369 1400">  <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <p>Bright area Adjust "GDRV" or "BDRV" to be white.</p> <p>Dark area Fine adjust "RCUT", "GCUT" or "BCUT" to be black.</p> </div> </div>	Item : RCUT → Data : 40H	Item : GDRV → Data : 80H	Item : GCUT → Data : 40H	Item : BDRV → Data : 80H	Item : BCUT → Data : 40H	
Item : RCUT → Data : 40H	Item : GDRV → Data : 80H						
Item : GCUT → Data : 40H	Item : BDRV → Data : 80H						
Item : BCUT → Data : 40H							

MTS ADJUSTMENT

No.	ITEM	INPUT SIGNAL	ADJUSTMENT PROCEDURE
1	ATTENUATOR (ATT)	<ul style="list-style-type: none"> 1kHz 30% mod. → ANT terminal 	<ol style="list-style-type: none"> 1. Connect rms meter to pin 40 of QG01. 2. Display item ATT on screen. 3. Change data by VOLUME ▲/ ▼ buttons so that the reading of meter becomes value as close as 150mVrms.
2	STEREO VCO (STVC)	<ul style="list-style-type: none"> No signal 	<ol style="list-style-type: none"> 1. Short circuit RG44 with a jumper wire. 2. Display item STVC on screen. 3. Connect frequency counter to pin 40 of QG01. 4. Change data by VOLUME ▲/ ▼ buttons so that the reading of counter becomes value as close as 15.73kHz.
3	STEREO FILTER (STRF)	<ul style="list-style-type: none"> 15.734kHz 30mV(rms) 	<ol style="list-style-type: none"> 1. Unsolder the solder link SL01. 2. Display item STRF on screen. 3. Connect oscilloscope to pin 40 of QG01. 4. Change data by VOLUME ▲/ ▼ button to minimize AC output level on scope. 5. Resolder SL02.
4	STEREO SEPARATION (WBAN)	<ul style="list-style-type: none"> STEREO 300Hz R-channel only → ANT 	<ol style="list-style-type: none"> 1. Display item WBAN on screen. 2. Connect oscilloscope to pin 41 of QG01. 3. Change data by VOLUME ▲/ ▼ buttons so that 300Hz element on scope becomes minimum.
	(SPEC)	<ul style="list-style-type: none"> STEREO 3kHz R-channel only → ANT 	<ol style="list-style-type: none"> 4. Display item SPEC on screen. 5. Change data by Volume ▲/ ▼ buttons so that 3kHz element on scope becomes minimum.
5	SAP VCO (SAVC)	<ul style="list-style-type: none"> No signal 	<ol style="list-style-type: none"> 1. Shortcircuit RG44 with a short jumper. 2. Connect 1Mohm resistor between pin 12 of QG01 and ground. 3. Display item SAVC on screen. 4. Connect frequency counter to pin 40 of QG01. 5. Change data by VOLUME ▲/ ▼ buttons so that the reading of counter becomes value as close as 78.67kHz. 6. Remove the short jumper and 1M ohm resistor.

CIRCUIT CHECKS

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

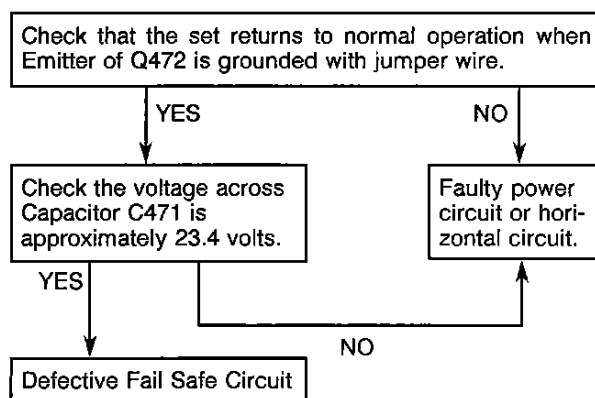
1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below 29.5 kV.
4. Vary the BRIGHTNESS control to both extremes to be sure the high voltage does not exceed the limit under any conditions.

FS CIRCUIT CHECK

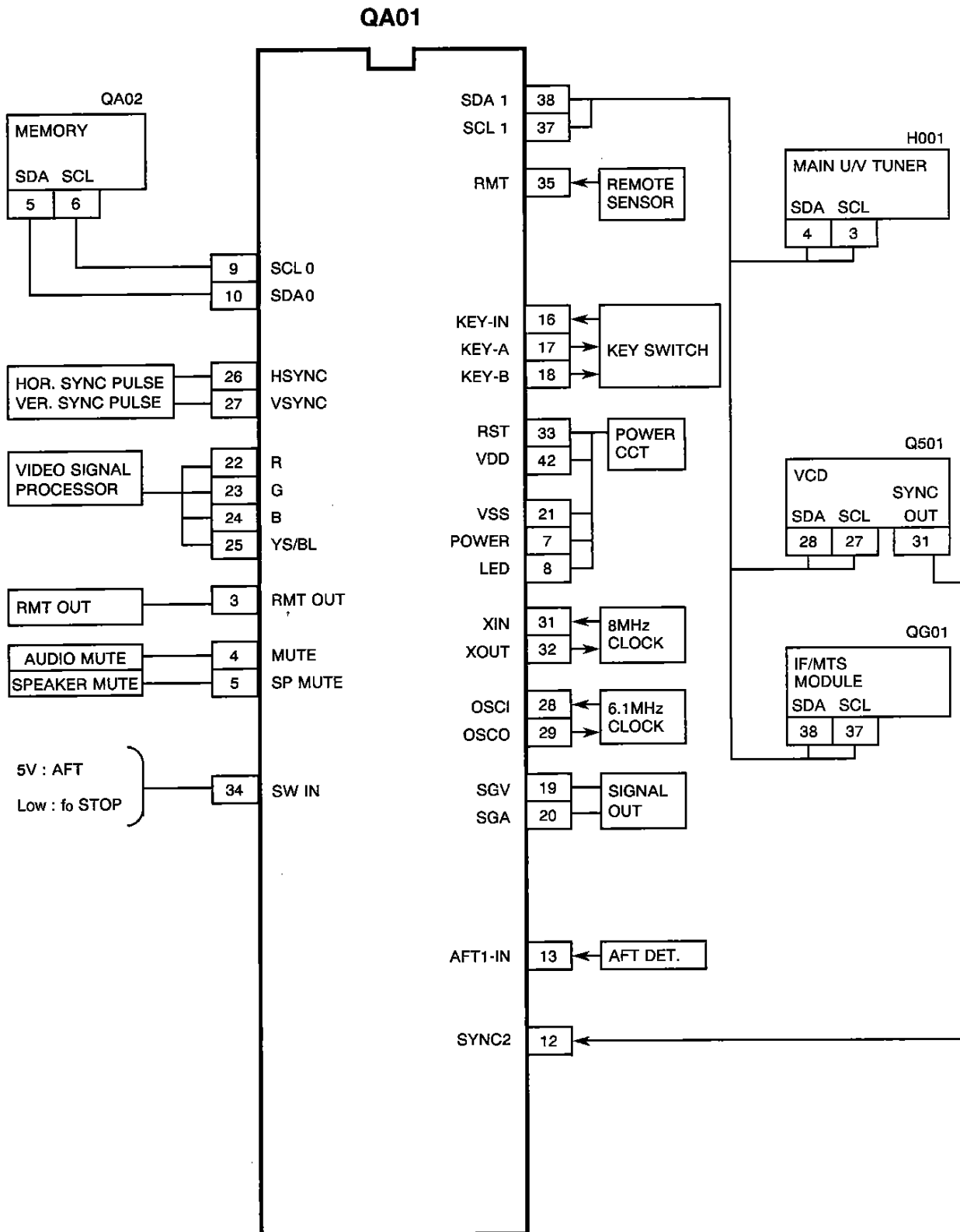
The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on and press the RESET button.
2. Temporarily short TP- ⑧ and TP- ⑨ with a jumper wire.
Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the power switch on to produce a normal picture.

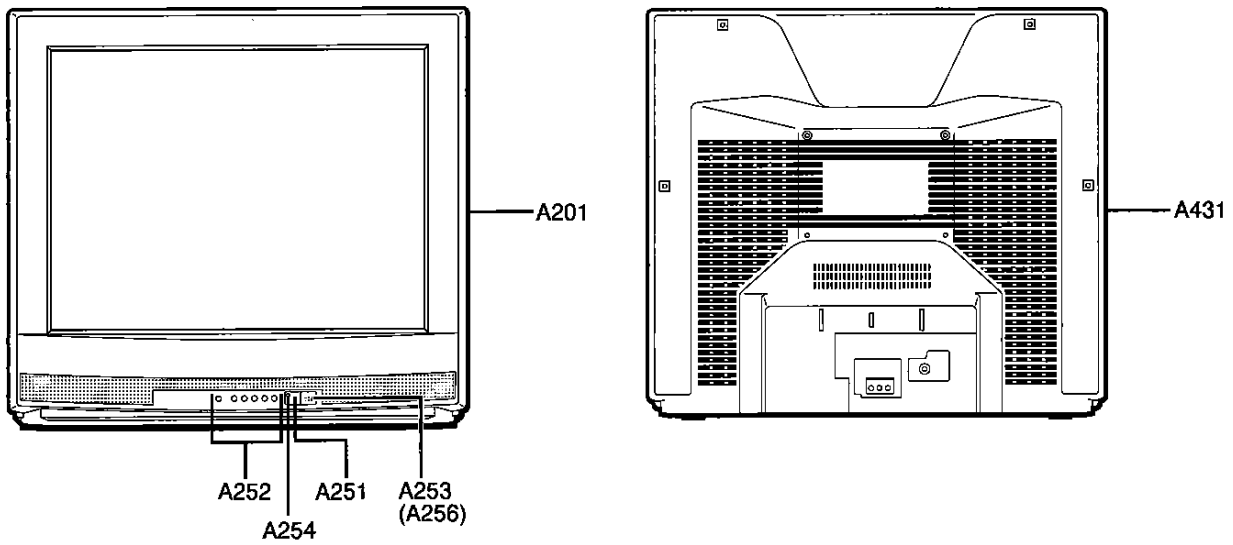
Troubleshooting Guide for Fail Safe Circuit



MICROPROCESSOR SYSTEM BLOCK DIAGRAM



CABINET REPLACEMENT PARTS LIST



Location No.	Part No.	Description
A201	23410574	Front Cover
A251	23450023	Filter, Remote
A252	23443954	Button, Control
A253	23443953	Button, Power
A254	23430227	Lens, Indicator
A256	23836492	Spring
A431	23426428	Back Cover

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols "△" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE:

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with * mark is no longer available after the end of the production.

Models : CF27F30/CL29F30

ABBREVIATIONS:

Capacitors..... CD : Ceramic Disk	PF : Plastic Film	EL : Electrolytic
Resistors..... CF : Carbon Film	CC : Carbon Composition	MF : Metal Film
OMF : Oxide Metal Film	VR : Variable Resistor	FR : Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C102	24763221	EL, 220μF, ±20%, 16V
C105	24212102	CD, 1000pF, ±10%
C106	24797479	EL, 4.7μF, ±20%, 50V
C113	24794470	EL, 47μF, ±20%, 16V
C201	24797478	EL, 0.47μF, ±20%, 50V
C202	24794220	EL, 22μF, ±20%, 16V
C205	24794220	EL, 22μF, ±20%, 16V
C207	24794100	EL, 10μF, ±20%, 16V
C208	24797010	EL, 1μF, ±20%, 50V
C209	24085944	EL, 2.2μF, ±20%, 50V, Non-Polar
C210	24794470	EL, 47μF, ±20%, 16V
C230	24794470	EL, 47μF, ±20%, 16V
C232	24092398	CD, 0.1μF, +80%, -20%
C233	24794100	EL, 10μF, ±20%, 16V
C234	24436080	CD, 8pF, ±0.25pF
C301	24617912	EL, 2.2μF, ±10%, 50V
C302	24212152	CD, 1500pF, ±10%
C305	24617912	EL, 2.2μF, ±10%, 50V
C306	24630798	EL, 3300μF, ±10%, 25kV
C307	24693473	PF, 0.047μF, 100V
C308	24668221	EL, 220μF, ±20%, 35V
C309	24591102	PF, 1000pF
C310	24796102	EL, 1000μF, ±20%, 35V
C313	24082057	PF, 0.22μF, 100V
C314	24591563	PF, 0.056μF
C315	24797229	EL, 2.2μF, ±20%, 50V
C317	24214471	CD, 470pF, ±10%, 500V
C320	24668101	EL, 100μF, ±20%, 35V
C370	24794101	EL, 100μF, ±20%, 16V
C371	24667100	EL, 10μF, ±20%, 25V
C403	24591203	PF, 0.02μF
C404	24797229	EL, 2.2μF, ±20%, 50V
C413	24214391	CD, 390pF, ±10%, 500V
C415	24214331	CD, 330pF, ±10%, 500V
C416	24676100	EL, 10μF, ±20%, 100V
C417	24214471	CD, 470pF, ±10%, 500V
C421	24794470	EL, 47μF, ±20%, 16V
C430	24232103	CD, 0.01μF, +80%, -20%
C431	24794331	EL, 330μF, ±20%, 16V

Location No.	Part No.	Description
△C440	24082549	PF, 7500pF, ±3%, 1250V
△C442	24082701	PF, 0.62μF, 250V
△C444	24082544	PF, 7000pF, ±3%, 1250V
C445	24828124	PF, 0.12μF, 200V
C446	24679100	EL, 10μF, ±20%, 250V
C448	24640908	EL, 33μF, ±20%, 160V
C449	24667102	EL, 1000μF, ±20%, 25V
C450	24539224	PF, 0.22μF
C451	24590563	PF, 0.056μF
C463	24212152	CD, 1500pF, ±10%
C471	24797479	EL, 4.7μF, ±20%, 50V
C474	24794100	EL, 10μF, ±20%, 16V
C480	24747220	EL, 22μF, ±20%, 50V
C481	24538474	PF, 0.47μF
C504	24353090	CD, 9pF, ±0.25pF
C510	24797229	EL, 2.2μF, ±20%, 50V
C514	24591223	PF, 0.022μF
C612	24794470	EL, 47μF, ±20%, 16V
C613	24232103	CD, 0.01μF, +80%, -20%
C661	24212102	CD, 1000pF, ±10%
C662	24212102	CD, 1000pF, ±10%
C663	24794100	EL, 10μF, ±20%, 16V
C671	24667470	EL, 47μF, ±20%, 25V
C672	24667470	EL, 47μF, ±20%, 25V
C673	24669229	EL, 2.2μF, ±20%, 50V
C676	24539104	PF, 0.1μF
C677	24539104	PF, 0.1μF
C678	24669229	EL, 2.2μF, ±20%, 50V
C679	24667470	EL, 47μF, ±20%, 25V
C681	24667471	EL, 470μF, ±20%, 25V
C682	24667102	EL, 1000μF, ±20%, -25V
C683	24667471	EL, 470μF, ±20%, 25V
C801	24082001	PF, 0.47μF, ±20%, AC125V
C810	24086859	EL, 470μF, ±20%, 200V
C811	24092270	CD, 4700pF, ±20%, AC400V
C812	24094820	CD, 2200pF, ±20%, AC400V
C815	24094820	CD, 2200pF, ±20%, AC400V
C819	24766478	EL, 0.47μF, ±20%, 50V
C840	24795471	EL, 470μF, ±20%, 25V
C842	24792101	EL, 100μF, ±20%, 6.3V
C843	24539104	PF, 0.1μF

Location No.	Part No.	Description
C860	24214103	CD, 0.01 μ F, \pm 10%, 500V
C862	24082858	PF, 820pF, \pm 2%
C863	24539104	PF, 0.1 μ F
C865	24092345	CD, 1000pF, \pm 10%, 2kV
C866	24669220	EL, 22 μ F, \pm 20%, 50V
C867	24212682	CD, 6800pF, \pm 10%
C868	24667101	EL, 100 μ F, \pm 20%, 25V
C869	24678229	EL, 2.2 μ F, \pm 20%, 200V
C870	24095800	PF, 0.082 μ F, 400V
C871	24092345	CD, 1000pF, \pm 10%, 2kV
C872	24212332	CD, 3300pF, \pm 10%
C873	24212332	CD, 3300pF, \pm 10%
C874	24435221	CD, 220pF, 500V
C876	24539104	PF, 0.1 μ F
C884	24640018	EL, 220 μ F, \pm 20%, 160V
C885	24214471	CD, 470pF, \pm 10%, 500V
C886	24214471	CD, 470pF, \pm 10%, 500V
C889	24795222	EL, 2200 μ F, \pm 20%, 25V
C891	24082229	PF, 0.1 μ F, \pm 10%, 250V
C893	24092338	CD, 270pF, \pm 10%, 2kV
C894	24092338	CD, 270pF, \pm 10%, 2kV
C898	24212101	CD, 100pF, \pm 10%
C902	24211102	CD, 1000pF, \pm 10%, 2kV
C921	24212681	CD, 680pF, \pm 10%
C922	24212561	CD, 560pF, \pm 10%
C923	24212561	CD, 560pF, \pm 10%
C971	24794100	EL, 10 μ F, \pm 20%, 16V
C972	24794100	EL, 10 μ F, \pm 20%, 16V
CA01	24472100	CD, 10pF
CA02	24472100	CD, 10pF
CA12	24212101	CD, 100pF, \pm 10%
CA33	24232103	CD, 0.01 μ F, +80%, -20%
CA37	24212101	CD, 100pF, \pm 10%
CA38	24212101	CD, 100pF, \pm 10%
CA42	24763221	EL, 220 μ F, \pm 20%, 16V
CA43	24232103	CD, 0.01 μ F, +80%, -20%
CA44	24232103	CD, 0.01 μ F, +80%, -20%
CA68	24794100	EL, 10 μ F, \pm 20%, 16V
CA69	24232103	CD, 0.01 μ F, +80%, -20%
CB01	24794470	EL, 47 μ F, \pm 20%, 16V
CB20	24212101	CD, 100pF, \pm 10%
CG02	24794220	EL, 22 μ F, \pm 20%, 16V
CG03	24539104	PF, 0.1 μ F
CG05	24797010	EL, 1 μ F, \pm 20%, 50V
CG06	24797479	EL, 4.7 μ F, \pm 20%, 50V
CG07	24797229	EL, 2.2 μ F, \pm 20%, 50V
CG08	24591473	PF, 0.047 μ F
CG09	24797478	EL, 0.47 μ F, \pm 20%, 50V
CG10	24539104	PF, 0.1 μ F
CG12	24206108	EL, 0.1 μ F, 50V
CG14	24797010	EL, 1 μ F, \pm 20%, 50V
CG16	24704106	Tantalum, 10 μ F, \pm 20%, 16V
CG17	24797010	EL, 1 μ F, \pm 20%, 50V
CG18	24797010	EL, 1 μ F, \pm 20%, 50V
CG19	24797479	EL, 4.7 μ F, \pm 20%, 50V
CG20	24797010	EL, 1 μ F, \pm 20%, 50V
CG25	24797479	EL, 4.7 μ F, \pm 20%, 50V
CG26	24797479	EL, 4.7 μ F, \pm 20%, 50V
CG27	24591223	PF, 0.022 μ F
CG28	24797229	EL, 2.2 μ F, \pm 20%, 50V
CG29	24591102	PF, 1000pF
CG30	24206108	EL, 0.1 μ F, 50V
CG31	24797229	EL, 2.2 μ F, \pm 20%, 50V
CG32	24591102	PF, 1000pF

Location No.	Part No.	Description
CG33	24206108	EL, 0.1 μ F, 50V
CG38	24797229	EL, 2.2 μ F, \pm 20%, 50V
CG39	24797229	EL, 2.2 μ F, \pm 20%, 50V
CG42	24797010	EL, 1 μ F, \pm 20%, 50V
CG44	24794100	EL, 10 μ F, \pm 20%, 16V
CG45	24763101	EL, 100 μ F, \pm 20%, 16V
CM05	24212331	CD, 330pF, \pm 10%
CM08	24539104	PF, 0.1 μ F
CR01	24797478	EL, 0.47 μ F, \pm 20%, 50V
CR02	24797478	EL, 0.47 μ F, \pm 20%, 50V
CR03	24797478	EL, 0.47 μ F, \pm 20%, 50V
CV06	24797478	EL, 0.47 μ F, \pm 20%, 50V
RESISTORS		
R101	24382183	OMF, 18k ohm, 1W
R102	24381560	OMF, 56 ohm, 1/2W
R103	24366681	CF, 680 ohm
R201	24381391	OMF, 390 ohm, 1/2W
R202	24366152	CF, 1500 ohm
R203	24366152	CF, 1500 ohm
R208	24366683	CF, 68k ohm
R228	24367113	CF, 11k ohm, \pm 2%
R230	24366223	CF, 22k ohm
R231	24366103	CF, 10k ohm
R235	24366184	CF, 180k ohm
R236	24366101	CF, 100 ohm
R237	24366101	CF, 100 ohm
R238	24366472	CF, 4700 ohm
R241	24366433	CF, 43k ohm
R242	24366473	CF, 47k ohm
R246	24366225	CF, 2.2M ohm
R247	24366561	CF, 560 ohm
R301	24366102	CF, 1k ohm
R302	24383471	OMF, 470 ohm, 2W
R303	24321109	MF, 1 ohm, 1/2W
R304	24366333	CF, 33k ohm
R305	24322758	MF, 0.75 ohm, 1W
R306	24366183	CF, 18k ohm
R307	24366364	CF, 360k ohm
R308	24366102	CF, 1k ohm
R309	24553221	OMF, 220 ohm, 1W
R313	24366153	CF, 15k ohm
R317	24366273	CF, 27k ohm
R327	24339569	MF, 5.6 ohm, 2W
R336	24383271	OMF, 270 ohm, 2W
R337	24366223	CF, 22k ohm
R338	24366223	CF, 22k ohm
R345	24366564	CF, 560k ohm
R370	24321109	MF, 1 ohm, 1/2W
R371	24366133	CF, 13k ohm
R372	24366562	CF, 5600 ohm
R374	24366153	CF, 15k ohm
R375	24366102	CF, 1k ohm
R379	24366102	CF, 1k ohm
R400	24366163	CF, 16k ohm
R401	24366391	CF, 390 ohm
R402	24366103	CF, 10k ohm
R403	24366332	CF, 3300 ohm
R404	24366332	CF, 3300 ohm
R405	24382682	OMF, 6800 ohm, 1W
R406	24366333	CF, 33k ohm
R407	24366223	CF, 22k ohm
R408	24366821	CF, 820 ohm
R410	24366271	CF, 270 ohm

Location No.	Part No.	Description
R411	24366331	CF, 330 ohm
R415	24553222	OMF, 2200 ohm, 1W
R416	24510562	Cement, 5600 ohm, 5W
R418	24531120	FR, 12 ohm, 1/2W
R421	24321339	OMF, 3.3 ohm, 1/2W
R422	24366471	CF, 470 ohm
R430	24366102	CF, 1k ohm
R431	24366103	CF, 10k ohm
R432	24366202	CF, 2k ohm
R442	24532102	FR, 1k ohm, 1W
R448	24338478	MF, 0.47 ohm, 1W
R472	24552270	OMF, 27 ohm, 1/2W
△R475	24366391	CF, 390 ohm
R476	24366823	CF, 82k ohm
R477	24366273	CF, 27k ohm
△R478	24327133	MF, 13k ohm, ±1%, 1/4W
R481	24366333	CF, 33k ohm
△R482	24327472	MF, 4700 ohm, ±1%, 1/4W
R485	24322568	MF, 0.56 ohm, 1W
R486	24552820	OMF, 82 ohm, 1/2W
R487	24552301	OMF, 300 ohm, 1/2W
R488	24327183	MF, 18k ohm, ±1%, 1/4W
R489	24327183	MF, 18k ohm, ±1%, 1/4W
R490	24366102	CF, 1k ohm
R503	24366334	CF, 330k ohm
R504	24366332	CF, 3300 ohm
R506	24366101	CF, 100 ohm
R507	24366101	CF, 100 ohm
R508	24366101	CF, 100 ohm
R612	24366103	CF, 10k ohm
R613	24366222	CF, 2200 ohm
R614	24366102	CF, 1k ohm
R661	24366822	CF, 8200 ohm
R662	24366822	CF, 8200 ohm
R663	24366272	CF, 2700 ohm
R664	24366272	CF, 2700 ohm
R667	24366223	CF, 22k ohm
R668	24366103	CF, 10k ohm
R669	24366103	CF, 10k ohm
R676	24366229	CF, 2.2 ohm
R677	24366229	CF, 2.2 ohm
R808	24000862	PTC Thermistor, 7 ohm, ±20%, 140V
R810	24568119	Cement, 1.1 ohm, 7W
R816	24366471	CF, 470 ohm
R818	24366561	CF, 560 ohm
R819	24366102	CF, 1k ohm
R861	24382103	OMF, 10k ohm, 1W
R862	24552220	OMF, 22 ohm, 1/2W
R863	24552432	OMF, 4300 ohm, 1/2W
R864	24552392	OMF, 3900 ohm, 1/2W
R866	24552470	OMF, 47 ohm, 1/2W
R867	24367473	CF, 47k ohm, ±2%
R870	24321569	MF, 5.6 ohm, 1/2W
R871	24381820	OMF, 82 ohm, 1/2W
R872	24382823	OMF, 82k ohm, 1W
R883	24381153	OMF, 15k ohm, 1/2W
R884	24366102	CF, 1k ohm
R891	24366102	CF, 1k ohm
R897	24366339	CF, 3.3 ohm
R898	24946395	CC, 3.9M ohm, ±10%, 1/2W
R901	24376102	CF, 1k ohm, 1/2W
R902	24376102	CF, 1k ohm, 1/2W
R903	24376102	CF, 1k ohm, 1/2W

Location No.	Part No.	Description
R911	24366561	CF, 560 ohm
R912	24366561	CF, 560 ohm
R913	24366561	CF, 560 ohm
R920	24000961	FR, 2.2 ohm, 2W
R921	24366271	CF, 270 ohm
R922	24366271	CF, 270 ohm
R923	24366271	CF, 270 ohm
R931	24366102	CF, 1k ohm
R932	24366102	CF, 1k ohm
R933	24366102	CF, 1k ohm
R941	24366680	CF, 68 ohm
R942	24366680	CF, 68 ohm
R943	24366680	CF, 68 ohm
R961	24554153	OMF, 15k ohm, 2W
R962	24554153	OMF, 15k ohm, 2W
R963	24554153	OMF, 15k ohm, 2W
R971	24366681	CF, 680 ohm
R972	24366102	CF, 1k ohm
R973	24366122	CF, 1200 ohm
R974	24366331	CF, 330 ohm
RA03	24366102	CF, 1k ohm
RA04	24366102	CF, 1k ohm
RA07	24366102	CF, 1k ohm
RA08	24366102	CF, 1k ohm
RA12	24366103	CF, 10k ohm
RA13	24366102	CF, 1k ohm
RA16	24366102	CF, 1k ohm
RA17	24366102	CF, 1k ohm
RA18	24366102	CF, 1k ohm
RA22	24366472	CF, 4700 ohm
RA23	24366472	CF, 4700 ohm
RA24	24366472	CF, 4700 ohm
RA25	24366822	CF, 8200 ohm
RA26	24366102	CF, 1k ohm
RA27	24366102	CF, 1k ohm
RA33	24366103	CF, 10k ohm
RA34	24366102	CF, 1k ohm
RA35	24366102	CF, 1k ohm
RA37	24366331	CF, 330 ohm
RA38	24366331	CF, 330 ohm
RA40	24366102	CF, 1k ohm
RA61	24366103	CF, 10k ohm
RA62	24366103	CF, 10k ohm
RA67	24366472	CF, 4700 ohm
RA68	24366472	CF, 4700 ohm
RA70	24366333	CF, 33k ohm
RA71	24366683	CF, 68k ohm
RA72	24366223	CF, 22k ohm
RA73	24366103	CF, 10k ohm
RB01	24366271	CF, 270 ohm
RB03	24366101	CF, 100 ohm
RB09	24366470	CF, 47 ohm
RB11	24366103	CF, 10k ohm
RB26	24366103	CF, 10k ohm
RB27	24366103	CF, 10k ohm
RB28	24366104	CF, 100k ohm
RB30	24366103	CF, 10k ohm
RB40	24366103	CF, 10k ohm
RB41	24366182	CF, 1800 ohm
RB42	24366102	CF, 1k ohm
RB43	24366103	CF, 10k ohm
RB44	24366103	CF, 10k ohm
RB45	24366181	CF, 180 ohm
RB46	24366101	CF, 100 ohm

Location No.	Part No.	Description
RG05	24366102	CF, 1k ohm
RG08	24366564	CF, 560k ohm
RG09	24366563	CF, 56k ohm
RG14	24366302	CF, 3k ohm
RG15	24327153	MF, 15k ohm, $\pm 1\%$, 1/4W
RG16	24366162	CF, 1600 ohm
RG17	24366512	CF, 5100 ohm
RG22	24366101	CF, 100 ohm
RG23	24366101	CF, 100 ohm
RG43	24366472	CF, 4700 ohm
RG44	24366272	CF, 2700 ohm
RG45	24545479	FR, 4.7 ohm, 1/4W
RG46	24552681	OMF, 680 ohm, 1/2W
RM02	24366102	CF, 1k ohm
RM41	24366102	CF, 1k ohm
RR90	24366122	CF, 1200 ohm
RR91	24366122	CF, 1200 ohm
RR92	24366122	CF, 1200 ohm
RR93	24366472	CF, 4700 ohm
RS21	24366472	CF, 4700 ohm
RS24	24366472	CF, 4700 ohm
RV01	24366750	CF, 75 ohm
RV03	24366390	CF, 39 ohm
COILS & TRANSFORMERS		
L101	23289220	Coil, Peaking, TRF4220AF
L202	23289109	Coil, Peaking, TRF41R0AF
L204	23289100	Coil, Peaking, TRF4100AF
L205	23289181	Coil, Peaking, TRF4181AF
L301	23103880	Coil (Ferrite Bead), TEM2011Y
L400	23289100	Coil, Peaking, TRF4100AF
△L441	23233045	Coil, Linearity, TLN2083G
△L462	-----	DY, Supplied with V901
L805	23248150	Coil, Choke, TLN3427
L806	23221747	Coil, Choke, TRF9253D
L883	23103880	Coil (Ferrite Bead), TEM2011Y
L884	23103880	Coil (Ferrite Bead), TEM2011Y
L885	23248073	Coil, Choke, TLN3299D
L886	23103880	Coil (Ferrite Bead), TEM2011Y
L888	23103880	Coil (Ferrite Bead), TEM2011Y
L901	23200789	Coil, Degaussing, TSB2205A
LA01	23289100	Coil, Peaking, TRF4100AF
LB02	23289560	Coil, Peaking, TRF4560
T401	23224336	Transformer, Horiz. Drive, TLN1083
△T461	23236467	Transformer, Flyback, TFB4125BD
T801	23211671	Line Filter, TRF3202K
T840	23213513	Transformer, Power, TPW1459AZ
T862	23217304	Transformer, Converter, TPW3318AD
SEMICONDUCTORS		
Q101	23114528	Transistor, 2SC1740S-Q
Q301	B0378560	IC, TA8427K
Q370	23114530	Transistor, 2SA933S-Q
Q402	A678971D	Transistor, 2SC1569 FA-5
Q403	23314444	Transistor, 2SC4721 P
Q404	A6871313	Transistor, 2SD1556(E)
Q421	23314141	Transistor, 2SC3852
Q471	A6534036	Transistor, 2SA1015-O
Q472	23114528	Transistor, 2SC1740S-Q
Q480	A6532853	Transistor, 2SA949-Y(C)

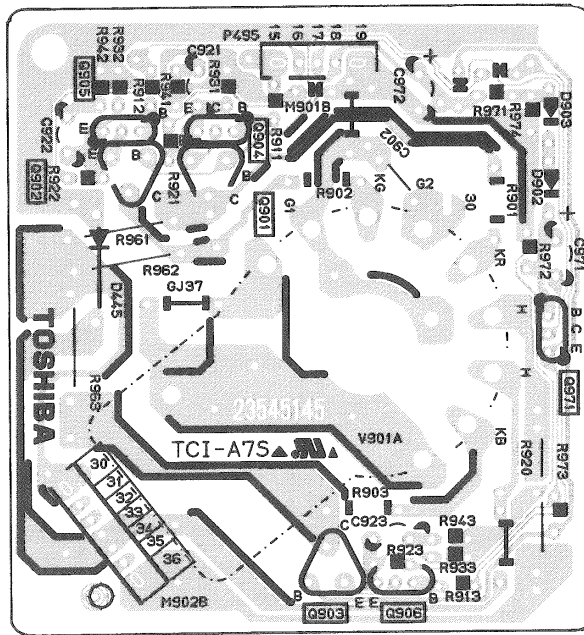
Location No.	Part No.	Description
Q501	B0385424	IC, TA1223AN
Q610	B0376856	IC, TA8211AH
Q611	A6342206	Transistor, 2SC2878-A(TE)
Q612	23114530	Transistor, 2SA933S-Q
Q613	A6342206	Transistor, 2SC2878-A(TE)
Q801	23904891	IC, STR-Z2751-L
Q817	23114528	Transistor, 2SC1740S-Q
Q818	A6012010	Transistor, RN2201
Q819	23114528	Transistor, 2SC1740S-Q
Q840	23318299	IC, L78MR05
Q843	A6002050	Transistor, RN1205
Q862	A8643135	Photo Coupler, TLP621(GRL)
△Q883	A6907777	IC, S1854 FA-4
Q901	A6363200	Transistor, 2SC3619
Q902	A6363200	Transistor, 2SC3619
Q903	A6363200	Transistor, 2SC3619
Q904	23114528	Transistor, 2SC1740S-Q
Q905	23114528	Transistor, 2SC1740S-Q
Q906	23114528	Transistor, 2SC1740S-Q
Q971	23114530	Transistor, 2SA933S-Q
QA02	23904941	IC, 24LC02BI/P
QB01	23114528	Transistor, 2SC1740S-Q
QB03	A6002050	Transistor, RN1205
QB21	23114528	Transistor, 2SC1740S-Q
QB30	23114528	Transistor, 2SC1740S-Q
QB40	23114528	Transistor, 2SC1740S-Q
QG01	23905591	IC, UPC1851CU
QG05	A6333346	Transistor, 2SC2655-Y(C)
D101	23316694	Diode, Zener, UZT33
D102	23316673	Diode, Zener, MTZJ5.6C
D201	23316292	Diode, Zener, UZ3.3BSA
D205	23115537	Diode, 1SS131
D210	23115537	Diode, 1SS131
D220	23115537	Diode, 1SS131
D301	23118094	Diode, EU2A
D302	A7978850	Diode, S5295G
D308	23118822	Diode, ERB12-02
D309	23118822	Diode, ERB12-02
D370	23316308	Diode, Zener, UZ5.6BSA
D406	A7978850	Diode, S5295G
D407	23115537	Diode, 1SS131
D408	A7580658	Diode, 3JH41
D409	23316327	Diode, Zener, UZ10BSB
D421	23316327	Diode, Zener, UZ10BSB
D441	23316687	Diode, Zener, MTZJ9.1B
D445	23118479	Diode, BYD33J
D471	A7568460	Diode, TVR-1B
D472	23115774	Diode, Zener, RD6.2E(4)
D473	23115537	Diode, 1SS131
D480	23316370	Diode, Zener, UZ36BSA
D611	23115537	Diode, 1SS131
D612	23115537	Diode, 1SS131
D801	A7568754	Diode, 1S1887AFA-1
D802	A7568754	Diode, 1S1887AFA-1
D803	A7568754	Diode, 1S1887AFA-1
D804	A7568754	Diode, 1S1887AFA-1
D840	23316962	Diode, S1WBA20 4101
D845	23115537	Diode, 1SS131
D862	23118094	Diode, EU2A
D864	23118094	Diode, EU2A
D875	23316348	Diode, UZ20BSB
D876	23316360	Diode, Zener, UZ27BSC
D881	23115537	Diode, 1SS131
D883	23115530	Diode, RG2

Location No.	Part No.	Description
D884	23115530	Diode, RG2
D885	23118094	Diode, EU2A
D886	23118094	Diode, EU2A
D899	24000268	Varistor, ENC271D-14A
D902	23115537	Diode, 1SS131
D903	23115537	Diode, 1SS131
DA42	23316309	Diode, Zener, UZ5.6BSB
DB01	23358501	Diode (LED), SCL003URC5F
DB03	23358522	LED, SIR-56SB3F
DB30	23115537	Diode, 1SS131
DB45	23115537	Diode, 1SS131
DG02	23316327	Diode, Zener, UZ10BSB
△G882	23316653	Diode, Zener, MTZJ2.7B
MISCELLANEOUS		
B110	23162263	Frame, ANT Terminal
F470	23144805	Fuse, 1.6A
F470A	23165433	Holder, Fuse
F801	23144888	Fuse, 5.0A, 125V
F801A	23165433	Holder, Fuse
F860	23144511	Fuse, 4.0A, 125V
F889	23144776	Fuse, 1.6A, 125V
G203	24366390	CF, 39 ohm
G217	24366103	CF, 10k ohm
G500	23238714	Coil, Peaking, TRF4100AJ
G520	24366332	CF, 3300 ohm
G521	24366332	CF, 3300 ohm
G813	24092270	CD, 4700pF, ±20%, AC125V
G814	24094820	CD, 2200pF, ±20%, AC250V
G816	24094820	CD, 2200pF, ±20%, AC250V
G861	23103880	Coil (Ferrite Bead), TEM2011Y
KB01	23905177	Remote Sensor, PIC-TB16
P801	23176006	Power Cord
SA01	23145227	Switch, Push, 1C1P
SA02	23145227	Switch, Push, 1C1P
SA03	23145227	Switch, Push, 1C1P
SA04	23145227	Switch, Push, 1C1P
SA05	23145227	Switch, Push, 1C1P
SA06	23145227	Switch, Push, 1C1P
SA07	23145227	Switch, Push, 1C1P
SR81	23146916	Power Relay, DG1U-12
V901A	23902068	Socket, CRT, 10P
W661	23351088	Speaker, SPK-1360, 60x120mm, 8 ohm
W662	23351088	Speaker, SPK-1360, 60x120mm, 8 ohm
X401	23153721	Ceramic Resonator, 503kHz, TCR1023
X501	23153961	Crystal, 3.58MHz
XA01	23153325	Ceramic Resonator, 8.00M, TCR1056
PC BOARD ASSEMBLIES		
*U902		Main Board, PB6461A-1
*U902		CRT Drive Board, PB6461A-2
PICTURE TUBE		
△V901	23312662	Picture Tube, A68ADT28X02
TUNER		
H001	23321226	Tuner, EL923L2

Location No.	Part No.	Description
ACCESSORIES		
K912	23306172	Remote Hand Unit, CT-9855
AT03	23305743	Battery Cover
Y107	23142003	Adapter, Antenna, AD-503J

CRT-D BOARD PB6461A-2

BOTTOM (FOIL) SIDE



TERMINAL VIEWS OF TRANSISTORS

- ① 2SA562TM
2SA1015
2SC1815
2SC1959
2SC2878
2SC388ATM
2SA949



- ② 2SA1026



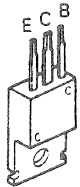
- ③ 2SA1020
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2SC752GTM
2SC2230A
2SC2229
2SC2482
2SC2655



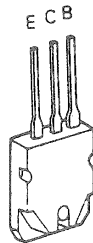
- ④ RN1001
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RN1004
RN2005
RN1201
RN1202
RN1203
RN1204
RN2204



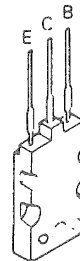
- ⑤ 2SD1052A
2SC1569
2SC2383
2SC2553
2SD880



- ⑥ 2SD1092
2SD1294



- ⑦ 2SD1427
2SD1428



- ⑧ 2SC2068
2SD2023



SPECIFICATIONS	
TELEVISION SYSTEM	NTSC standard
CHANNEL COVERAGE	VHF: 2 through 13 UHF: 14 through 69 Cable TV: Mid band (A-8 through A-1, A through I) Super band (J through W) Hyper band (AA through ZZ, AAA, BBB) Ultra band (65 through 94, 100 through 125)
POWER SOURCE	120V AC, 60Hz
POWER CONSUMPTION	82W (average)
AUDIO POWER	2W + 2W
SPEAKER TYPE	Two 2-3/8 x 4-3/4 inches (60 x 120 mm)
VIDEO/AUDIO INPUTS	VIDEO: 1 V(p-p), 75 ohm, negative sync. AUDIO: 150 mV(rms) (30% modulation equivalent, 47k ohm)
DIMENSIONS	Width 26-21/32 inches (677mm) Height 24-11/32 inches (618mm) Depth 21-25/32 inches (553mm)
MASS	75.8 lbs. (34.4 kg)
SUPPLIED ACCESSORIES	Remote Control with 2 "AA" size batteries Antenna adapter
OPTIONAL TV STAND	ST2712

Specifications are subject to change without notice.

