S/M No. : CM003P-010

Service Manual

Color Television

CHASSIS : CM-003

Model : DTH-14V1FS
DTH-20V1FS
DTH-21V1FS
DTH-14V3FS
DTH-20V3FS
DTH-21V3FS
DTH-14V4FS
DTH-20V4FS
DTH-21V4FS


DTH-14V1FC


DTH-14V3FC


DTH-20V4FC


R-38T01

Features

- 181CH quartz frequency synthesis tuning system
- On-Screen Display(Simple Icon Type/Trilingual : Eug/Span/Fren)
- Programmable channel skip memory
- 24 hour programmable TV on/off function
- Convenient sleep timer
- Built-in Closed Caption
- Full function infrared remote control

Specifications

Model Name	DTH-14V1/V3/V4FS	DTH-20V1/V3/V4FS	DTH-21V1/V3/V4FS
Screen Size	14"	20"	21"
Channel Coverage	VHF 2-13 UHF 14-69 113 Cable Ch.	VHF 2-13 UHF 14-69 113 Cable Ch.	VHF 2-13 UHF 14-69 113 Cable Ch.
Power Source	AC 100-260, 50/60Hz	AC 100-260, 50/60Hz	AC 100-260, 50/60Hz
Power Consumption	63W	70W	73W
Set Dimensions (W H D)	336 x 338 x 376(mm)	496x446(2)(2)x464(4)(3)(mm)	516x469(6)(4)x482(6)(2)(mm)
Net Weight	8.7Kg	16.3Kg	19Kg
Stuffing Q'th(48ft)	1100Set	540Set	

DAEWOO ELECTRONICS CO., LTD
http : //svc.dwe.co.kr
Sep. 1999

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PRODUCT SAFETY SERVICING GUIDELINES FOR AUDIO - VIDEO PRODUCTS

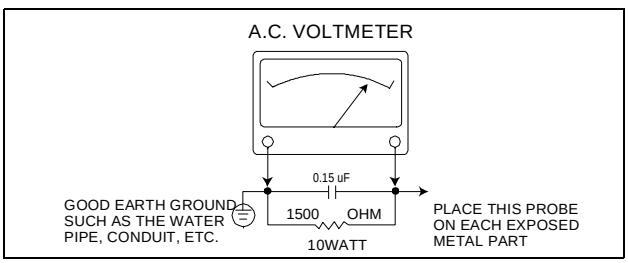
CAUTION : DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY. NEVER PERFORM CUSTOMIZED INSTALLATIONS WITHOUT MANUFACTURER'S APPROVAL. UNAUTHORIZED MODIFICATIONS WILL NOT ONLY VOID THE WARRANTY, BUT MAY LEAD TO YOUR BEING LIABLE FOR ANT RESULTING PROPERTY DAMAGE OR USER INJURY.
SERVICE WORK SHOULD BE PERFORMED ONLY AFTER YOU ARE THOROUGHLY FAMILIAR WITH ALL OF THE FOLLOWING SAFETY CHECKS AND SERVICING GUIDELINES. TO DO OTHERWISE, INCREASES THE RISK OF POTENTIAL HAZARDS AND INJURY TO THE USER.
WHILE SERVICING, USE AN ISOLATION TRANSFORMER FOR PROTECTION FROM A.C. LINE SHOCK.

SAFETY CHECKS

AFTER THE ORIGINAL SERVICE PROBLEM HAS BEEN CORRECTED, A CHECK SHOULD BE MADE OF THE FOLLOWING:

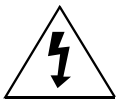
SUBJECT:FIRE & SHOCK HAZARD

1. BE SURE THAT ALL COMPONENTS ARE POSITIONED IN SUCH A WAY AS TO AVOID POSSIBILITY OF ADJACENT COMPONENT SHORTS. THIS IS ESPECIALLY IMPORTANT ON THOSE MODULES WHICH ARE TRANSPORTED TO AND FROM THE REPAIR SHOP.
2. NEVER RELEASE A REPAIR UNLESS ALL PROTECTIVE DEVICES SUCH AS INSULATORS, BARRIERS, COVERS, SHIELDS, STRAIN RELIEFS, POWER SUPPLY CORDS, AND OTHER HARDWARE HAVE BEEN REINSTALLED PER ORIGINAL DESIGN. BE SURE, THAT THE SAFETY PURPOSE OF THE POLARIZED LINE PLUG HAS NOT BEEN DEFEATED.
3. SOLDERING MUST BE INSPECTED TO DISCOVER POSSIBLE COLD SOLDER JOINTS, SOLDER SPLASHES OF SHARP SOLDER POINTS. BE CERTAIN TO REMOVE ALL LOOSE FOREIGN PARTICLES.
4. CHECK FOR PHYSICAL EVIDENCE OF DAMAGE OR DETERIORATION TO PARTS AND COMPONENTS, FOR FRAYED LEADS, DAMAGED INSULATION (INCLUDING A.C. CORD), AND REPLACE IF NECESSARY. FOLLOW ORIGINAL LAYOUT, LEAD LENGTH AND DRESS.
5. NO LEAD OR COMPONENT SHOULD TOUCH A RECEIVING TUBE OR A RESISTOR RATED AT 1 WATT OR MORE. LEAD TENSION AROUND PROTRUDING METAL SURFACES MUST BE AVOIDED.
6. ALL CRITICAL COMPONENTS SUCH AS FUSES, FLAMEPROOF RESISTOR, CAPACITORS, ETC. MUST BE REPLACED WITH EXACT FACTORY TYPES. DO NOT USE REPLACEMENT COMPONENTS OTHER THAN THOSE SPECIFIED OR MAKE UNRECOMMENDED CIRCUIT MODIFICATIONS.
7. AFTER RE-ASSEMBLY OF THE STE ALWAYS PERFORM AN A.C. LEAKAGE TEST ON ALL EXPOSED METALLIC PARTS OF THE CABINET. (THE CHANNEL SELECTOR KNOB, ANTENNA TERMINALS, HANDLE AND SCREWS) TO BE SURE THE SET IS SAFE TO OPERATE WITHOUT DANGER OF ELECTRICAL SHOCK. DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST USE AN A.C. VOLTMETER, HAVING 5000 OHMS PER VOLT OR MORE SENSITIVITY, IN THE FOLLOWING MANNER : CONNECT A 1500 OHM 10 WATT RESISTOR, PARALLELED BY A .15 MFD. 150V A.C. TYPE CAPACITOR BETWEEN A KNOWN GOOD EARTH GROUND (WATER POPE, CONDUIT, ETC.) AND THE EXPOSED METALLIC PARTS, ONE AT A TIME. MEASURE THE A.C. VOLTAGE ACROSS THE COMBINATION OF 1500 OHM RESISTOR AND .15 MFD CAPACITOR. REVERSE THE A.C. PLUG AND REPEAT A.C. VOLTAGE MEASUREMENTS FOR EACH EXPOSED METALLIC PART. VOLTAGE MEASURED MUST NOT EXCEED .75 VOLTS R.M.S THIS CORRESPONDS TO 0.5 MILLIAMP A.C. NAY VALUE EXCEEDING THIS LIMIT CONSTITUTES A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED IMMEDIATELY.



SUBJECT : GRAPHIC SYMBOLS

THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION ON SERVICE LITERATURE.

SUBJECT : X-RADIATION

1. BE SURE PROCEDURES AND INSTRUCTIONS TO ALL SERVICE PERSONNEL COVER THE SUBJECT OF X-RADIATION. THE ONLY POTENTIAL SOURCE OF X-RAYS IN CURRENT T.V. RECEIVERS IS THE PICTURE TUBE. HOWEVER, THIS TUBE DOES NOT EMIT X-RAYS WHEN THE HIGH VOLTAGE IS AT THE FACTORY SPECIFIED LEVEL. THE PROPER VALUE IS GIVEN IN THE APPLICABLE SCHEMATIC. OPERATION AT HIGHER VOLTAGES MAY CAUSE A FAILURE OF THE PICTURE TUBE OR HIGH VOLTAGE SUPPLY AND UNDER CERTAIN CIRCUMSTANCES, AMY PRODUCE RADIATION IN EXCESS OF DESIRABLE LEVELS.
2. ONLY FACTORY SPECIFIED C.R.T ANODE CONNECTORS MUST BE USED. DEGAUSSING SHIELDS ALSO SERVE AS X-RAY SHIELD IN COLOR SETS. ALWAYS RE-INSTALL THEM.
3. IT IS ESSENTIAL THAT SERVICE PERSONNEL HAVE AVAILABLE AN ACCURATE AND RELIABLE HIGH VOLTAGE METER. THE CALIBRATION OF THE METER SHOULD BE CHECKED PERIODICALLY AGAINST A REFERENCE STANDARD. SUCH AS THE ONE AVAILABLE AT YOUR DISTRIBUTOR.
4. WHEN THE HIGH VOLTAGE CIRCUITRY IS OPERATING PROPERLY THERE IS NO POSSIBILITY OF AN X-RADIATION PROBLEM. EVERY TIME A COLOR CHASSIS IS SERVICED, THE BRIGHTNESS SHOULD BE RUN UP AND DOWN WHILE MONITORING THE HIGH VOLTAGE WITH A METER TO BE CERTAIN THAT THE HIGH VOLTAGE DOES NOT EXCEED THE SPECIFIED VALUE AND THAT IT IS REGULATING CORRECTLY. WE SUGGEST THAT YOU AND YOUR SERVICE ORGANIZATION REVIEW TEST PROCEDURES SO THAT VOLTAGE REGULATION IS ALWAYS CHECKED AS A STANDARD SERVICING PROCEDURE, AND THAT THE HIGH VOLTAGE READING BE RECORDED ON EACH CUSTOMER'S INVOICE.
5. WHEN TROUBLESHOOTING AND MAKING TEST MEASUREMENTS IN A PRODUCT WITH A PROBLEM OF EXCESSIVE HIGH VOLTAGE, AVOID BEING UNNECESSARILY CLOSE TO THE PICTURE TUBE AND THE HIGH VOLTAGE SUPPLY. DO NOT OPERATE THE PRODUCT LONGER THAN IS NECESSARY TO LOCATE THE CAUSE OF EXCESSIVE VOLTAGE.
6. REFER TO HV, B+ AND SHUTDOWN ADJUSTMENT PROCEDURES DESCRIBED IN THE APPROPRIATE SCHEMATIC AND DIAGRAMS (WHERE USED).

SUBJECT : IMPLOSION

1. ALL DIRECT VIEWED PICTURE TUBES ARE EQUIPPED WITH AN INTEGRA IMPLOSION PROTECTION SYSTEM. BUT CARE SHOULD BE TAKEN TO AVOID DAMAGE DURING INSTALLATION. AVOID SCRATCHING THE TUBE. OF SCRATCHED REPLACE IT.
2. USE ONLY RECOMMENDED FACTORY REPLACEMENT TUBES.

SUBJECT : TIPS ON PROPER INSTALLATION

1. NEVER INSTALL ANY PRODUCT IN A CLOSED-IN RECESS, CUBBYHOLE OR CLOSELY FITTING SHELF SPACE, OVER OR CLOSE TO HEAT DUCT, OR IN THE PATH OF HEATED AIR FLOW.
2. AVOID CONDITIONS OF HIGH HUMIDITY SUCH AS: OUTDOOR PATIO INSTALLATIONS WHERE DEW IS A FACTOR, NEAR STEAM RADIATORS WHERE STEAM LEAKAGE IS A FACTOR, ETC.
3. AVOID PLACEMENT WHERE DRAPERIES MAY OBSTRUCT REAR VENTING. THE CUSTOMER SHOULD ALSO AVOID THE USE OF DECORATIVE SCARVES OR OTHER COVERINGS WHICH MIGHT OBSTRUCT VENTILATION.
4. WALL AND SHELF MOUNTED INSTALLATIONS USING A COMMERCIAL MOUNTING KIT, MUST FOLLOW THE FACTORY APPROVED MOUNTING INSTRUCTIONS. A PRODUCT MOUNTED TO A SHELF OR PLATFORM MUST RETAIN ITS ORIGINAL FEET (OR THE EQUIVALENT THICKNESS IN SPACERS)TO PROVIDE ADEQUATE AIR FLOW ACROSS THE BOTTOM, BOLTS OR SCREWS USED FOR FASTENERS MUST NOT TOUCH ANY PARTS OR WIRING. PERFORM LEAKAGE TEST ON CUSTOMIZED INSTALLATIONS.
5. CAUTION CUSTOMERS AGAINST THE MOUNTING OF A PRODUCT ON SLOPING SHELF OR A TILTED POSITION, UNLESS THE PRODUCT IS PROPERLY SECURED.
6. A PRODUCT ON A ROLL-ABOUT CART SHOULD BE STABLE ON ITS MOUNTING TO THE CART. CAUTION THE CUSTOMER ON THE HAZARDS OF TRYING TO ROLL A CART WITH SMALL CASTERS ACROSS THRESHOLDS OR DEEP PILE CARPETS.
7. CAUTION CUSTOMERS AGAINST THE USE OF A CART OR STAND WHICH HAS NOT BEEN LISTED BY UNDERWRITERS LABORATORIES. INC. FOR USE WITH THEIR SPECIFIC MODEL OF TELEVISION RECEIVER OR GENERICALLY APPROVED FOR USE WITH T.V.S OF THE SAME OR LARGER SCREEN SIZE.
8. CAUTION CUSTOMERS AGAINST THE USE OF EXTENSION CORDS, EXPLAIN THAT A FOREST OF EXTENSIONS SPROUTING FROM A SINGLE OUTLET CAN LEAD TO DISASTROUS CONSEQUENCES TO HOME AND FAMILY.

PRODUCT SAFETY SERVICING GUIDELINES FOR COLOR TELEVISION RECEIVERS

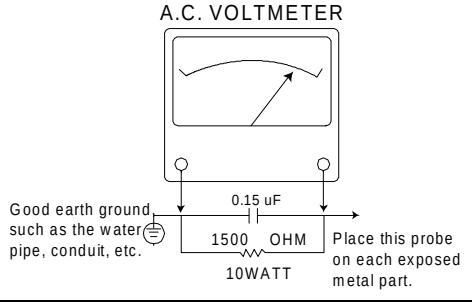
CAUTION : Do not attempt to modify this product in any way. Unauthorized modifications will not only void the warranty, but may lead to your being liable for any resulting property damage or user injury.
Service work should be performed only after you are thoroughly familiar with all of the following safety checks and servicing guidelines. To do otherwise, increases the risk of potential hazards and injury to the user.

SAFETY CHECKS

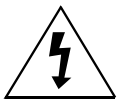
After the original service problem has been corrected, a check should be made of the following:

SUBJECT : FIRE & SHOCK HAZARD

1. Be sure that all components are positioned in such a way as to avoid possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the repair shop.
2. Never release a repair unless all protective devices such as insulators, barriers, covers, shields, strain reliefs, and other hardware have been reinstalled per original design.
3. Soldering must be inspected to discover possible cold solder joints, frayed leads, damaged insulation (including A.C. cord), solder splashes or sharp solder points. Be certain to remove all loose foreign particals.
4. Check for physical evidence of damage or deterioration to parts and components, and replace if necessary follow original layout, lead length and dress.
5. No leads or components should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces must be avoided.
6. All critical components such as fuses, flameproof resistors, capacitors, etc. must be replaced with exact factory types. Do not use replacement components other than those specified or make unrecommended circuit modifications.
7. After re-assembly of the set always perform an A.C. leakage test on all exposed metallic parts of the cabinet, (the channel selector knob, antenna terminals, handle and screws) to be sure the set is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this test. Use an A.C. voltmeter, having 5000 ohms per volt or more sensitivity, in the following manner : connect a 1500 ohm 10 watt resistor, paralleled by a 15 mfd. 150V A.C. type capacitor between a known good earth ground (9water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the A.C. voltage across the combination of 1500 ohm resistor and 0.15 MFD capacitor. Reverse the A.C. plug and repeat A.C. voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75 volts R.M.S. This corresponds to 0.5 milliamp A.C. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

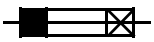


GRAPHIC SYMBOLS :



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the service personnel to the presence of uninsulated "dangerous voltage" that may be of sufficienty magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the service personnel to the presence of important safety information in service literature.



Fuse symbol is printed on pcb adjacent to the fuse, with "RISK OF FIRE REPLACE FUSE AS MARKED". The symbol is explained in the service manual with the following wording or equivalent.

"CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE (4A, 125V)" and "**ATTENTION**: AFIN D'ASSU UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET DE "4A, 125V".

SUBJECT : X-RADIATION

1. Be sure procedures and instructions to all service personnel cover the subject of X-rays in current T.V. receivers is the picture tube. However, this tube does not emit X-rays when the high voltage is at the factory specified level. The proper value is given in the applicable schematic. Operation at higher voltages may cause a failure of the picture tube or high voltage supply and, under certain circumstances, may produce radiation in excess of desirable levels.
2. Only factory specified C.R.T. anode connectors must be used. Degaussing shields also serve as X-ray shield in color sets. Always re-install them.
3. It is essential that the serviceman has available an accurate and reliable high voltage meter. The calibration of the meter should be checked perio - dically against a reference standard. Such as the one available at your distributor.
4. When the high voltage circuitry is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be run up and down while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly. We suggest that you and your service organization review test procedures so that voltage regulation is always checked as a standard servicing procedure. And that the high voltage reading be recorded on each customer's invoice.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, avoid being unnecessarily close to the picture tub eand the high voltage compartment.
   Do not operate the chassis longer than is necessary to locate the cause of excessive voltage.
6. Refer to HV, B+and Shutdown adjustment procedures described in the appropriate schematic and diagrams(where used).

SUBJECT : IMPLOSION

1. All direct viewed picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage during installation. Avoid scratching the tube. If scratched, replace it.
2. Use only recommended factory replacement tubes.

SUBJECT : TIPS ON PROPER INSTALLATION

1. Never install any receiver in closed-in recess, cubbyhole or closely fitting shelf space over, or close to heat duct, or in the path of heated air flow.
2. Avoid conditions of high humidity such as : Outdoor patio installations where dew is a factor. Near steam radiators where steam leakage is a factor, etc.
3. Avoid placement where draperies may obstruct rear venting. The customer should also avoid the use of decorative scarves or other coverings which might obstruct ventilation.
4. Wall and shelf mounted installations using a commercial mounting kit, must follow the factory approved mounting instructions. A receiver mounted to a shelf or platform must retain its original feet(or the equivalent thickness in spacers) to provide adequate are flow across the bottom, bolts or screws used for fasteners must not touch and parts or wiring. Perform leakage test on customized installations.
5. Caution customers against the mounting of a receiver on sloping shelf or a tilted position, unless the receiver is properly secured.
6. A receiver on a roll-about cart should be stable on its mounting to the cart. Caution the customer on the hazards of trying to roll a cart with small casters across thresholds or deep pile carpets.
7. Caution customers against the use of a cart or stand which has not been listed by underwriters laboratories, inc. For use with their specific model of television receiver or generically approved for use with T.V.'s of the same or larger screen size.

Specifications

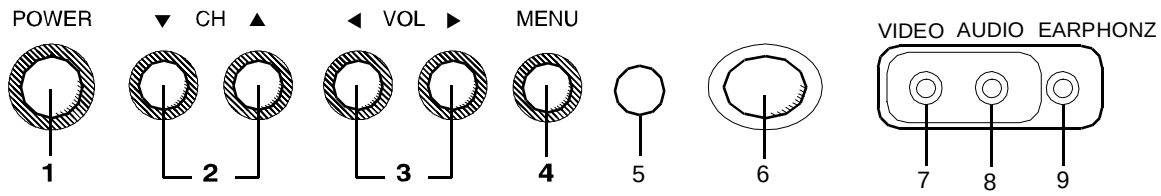
ITEMS \ MODEL	DTH-14V1FS DTH-14V3FS DTH-14V4FS	DTH-20V1FS DTH-20V3FS DTH-20V4FS	DTH-21V1FS DTH-21V3FS DTH-21V4FS	REMARKS
TV STANDARD	NTSC-M, PAL N/M			
POWER INPUT	AC 160-260V, 50/60 Hz			
POWER CONSUMPTION	14"=63W, 20"=70W, 21"=73W			
TUNING SYSTEM	Frequency Synthesizer (FS) Tuning System			
TUNING RANGES	VHF : 2~13(12) UHF : 2~13(56) CATV : 1~125(125)			
SOUND OUTPUT	4W			
SPEAKER	3 W 8 ohm			
ANTENNA INPUT IMPEDANCE	75 ohm Unbalanced			
AUXILIARY INPUT TERMINAL	Front : Video, Audio, Ear phone Rear : Video, Audio			
INTERMEDIATE FREQUENCIES	Picture IF Carrier Frequency : 45.75 MHz Sound IF Carrier Frequency : 41.25 MHz Color Sub-Carrier Frequency : 42.17 MHz			
REMOTE CONTROL	R-38T01			
SPECIAL FUNCTIONS	3-Language OSD With CAPTION Wake-up/Off Time Sleep Timer Power Restore			

User's Instruction

Overview of Your Equipment

Your TV comes with a remote control. The section below summarizes the buttons, controls, and terminals that you will use with your TV.

Your TV's Front Panel



1 POWER

Use this button to turn your TV on or off.

2 ▼ CH ▲

Use these buttons to change channels on your TV, or to select items in the menu system.

3 ◄ VOL ►

Use these buttons to change your TV's volume, to activate selections in the menu system, or to change audio and video settings.

4 MENU

Use this button to turn the TV's menu system on and off.

5 STAND-BY(red) indicatior

This indicator lights up when the AC power cord is connected to a power source.

6 Remote Control Receiver

This receiver receives a signal from your remote control. Do not block it.

7 VIDEO IN jack

Use this jack to receive a video signal from another A/V component.

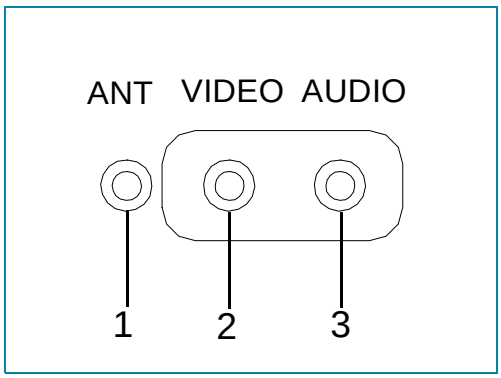
8 AUDIO IN jack

Use this jack to receive an aideo signal from another A/V component.

9 EARPHONE jack

Use this jack to receive an audio signal from your TV.

Your TV's Back Panel



1 Antenna terminal(ANT)

Use this terminal to attach an antenna or cable system to your TV.

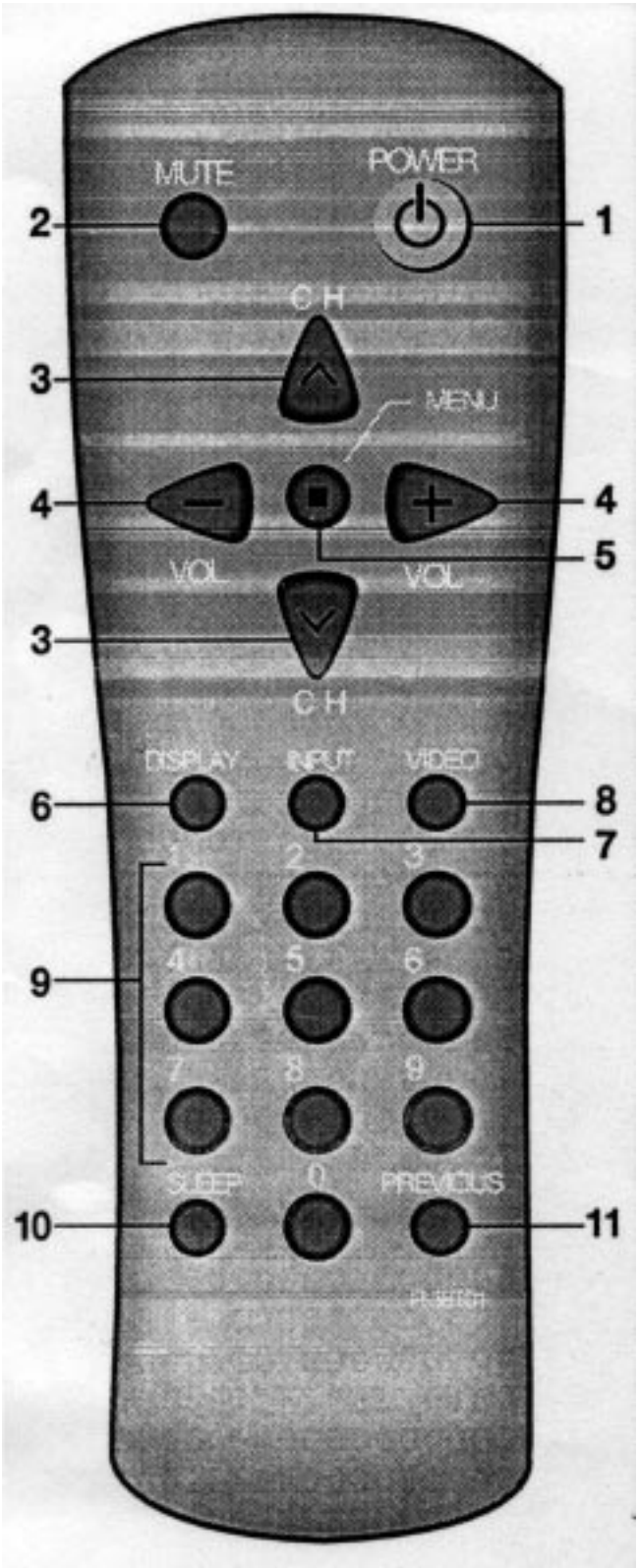
2 VIDEO IN

This terminal allows the TV to receive a video sighal from another component, such as a VCR.

3 AOUDIO IN

This terminal allows the TV to receive an audio sighal from another component, such as a VCR.

Your Remote Control



1. POWER
   Use this button to turn your TV on or off.

2. MUTE
   Use to turn the TV's sound on and off.

3. ▲ CH ▼
   Use these buttons to change channels on your TV, or select items in the meun system.

4. ◀ VOL ▶
   Usee these buttons to change your TV's volume, to activate selections in the menu system, or to change audio and video settings.

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5. MENU
   Use this button to turn the TV's menu system on and off.

6. DISPLAY
   Use this button to select the TV's signal source.

7. INPUT
   Use this button to select the tv's signal source.

8. VIDEO
   Use this button to display video adjustment items.

9. 0-9
   Use these buttons to change channels.

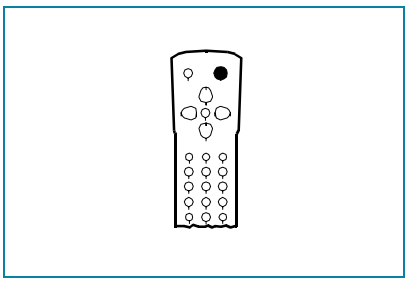
10. SLEEP
    Use this button to program the TV to turn off after a certain time.

11. PREVIOUS
    Use this button to return to the previous channel you were watching.

Operating Your TV

Once you have connected your TV to an antenna or cable system, plugged the TV in, and put batteries in the remote, you are ready to use the TV. The first thing you should do is program your TV so it memorizes all of available channels.

Turning Your TV On



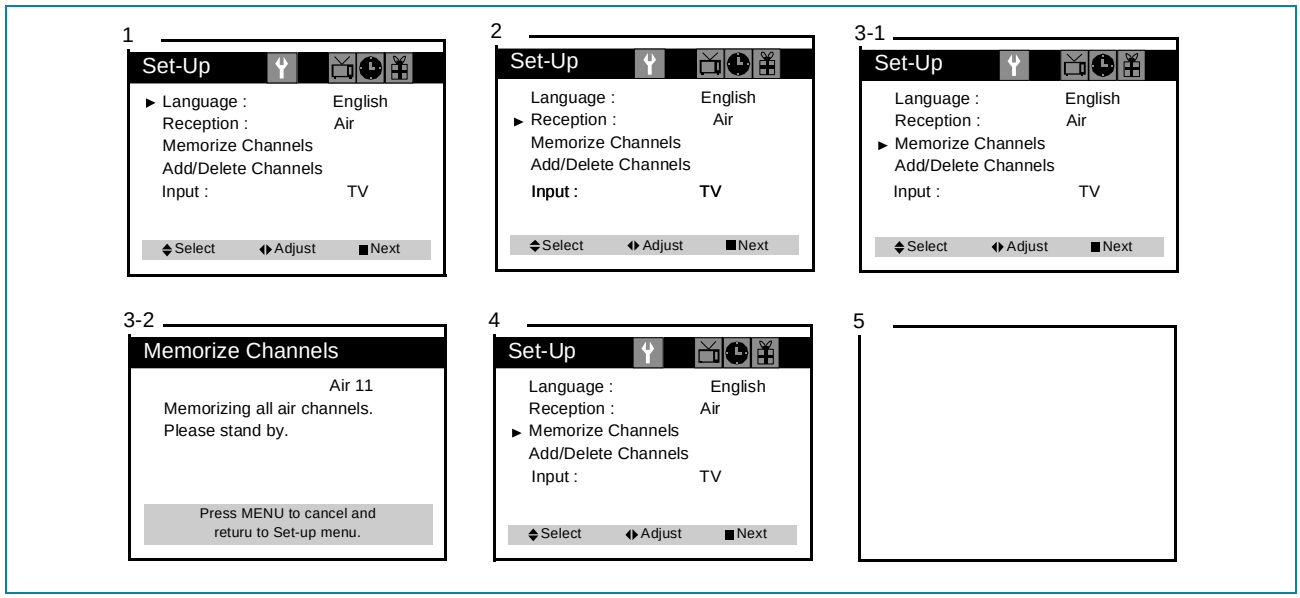
1 To turn your TV, press the POWER button on the front panel then, press the ▼ CH ▲ , ◀ VOL ▶ or MENU botton.
You can also use the POWER button on the remote control.
Make sure your TV is plugged in before you try to turn it on.

Programming Your TV's Channel Memory

Your TV's memory determines the channels that are available using the ▲ CH▼ buttons. If a channel is not in memory, you can tune to it with the number buttons, but not with the ▲ CH▼ buttons. Follow these steps to program your TV's memory:

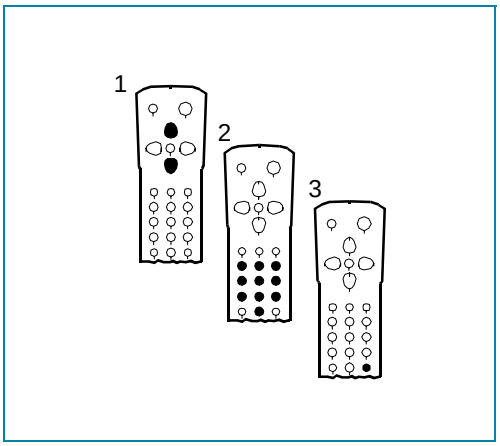
1 With the TV on, press the MENU button twice, then " Set-Up" menu will appear.
2 Use the ▲ CH▼ buttons to select " Reception" , then use the ◀ VOL ▶ button to select 'Air' or 'Cable'. If you connected an antenna to your TV, select 'Air'; If you connected a cable system, select 'Cable'.
3 Use the ▲ CH▼ buttons to select " Memorize Channels" , then use the ◀ VOL ▶ button to enter the" Memorize Channels" process. Again press the ◀ VOL ▶ button to begin.
4 Press the MENU button to return to Set-Up menu.
5 Press the MENU button three times to return to normal TV viewing.

Your TV's channel memory will not be affected by a power outage. You will not need to re-program the memory unless you change the type of cable or antenna connected to your TV.



Changing Channels

You can change channels in three ways:

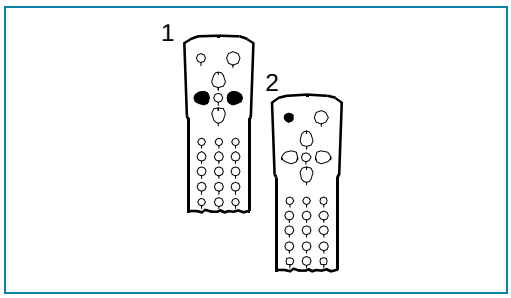


1 The ▲ CH▼ buttons will take you through all memorized channels, one by one. The ▲ CH▼ buttons will not access channels that have not been programmed into the TV's memory. For more information about programming channels into memory, see the section "Programming your TV's Channel Memory" on the previous page.

2 The number buttons (0-9) will take you to any channel, even if it has not been memorized. To change to a channel, enter its number; the TV will tune to the new channel when you enter the second digit of the channel.

3 The PREVIOUS button will take you instantly to the last channel you were watching.

Changing the Volume



1 To change the volume of the TV set, use the ◀ VOL ▶ buttons on the remote or on the front panel.

2 To quickly turn off the sound, press the MUTE button on the remote. The 'MUTE' will appear on screen, colored green. To return the volume to its previous level, press MUTE again.

Changing the TV's Channel Memory

Your TV's memory determines the channels that are available using the ▲ CH▼ buttons. You can add channels to this memory or remove them from memory. If a channel is removed from memory, you can tune to it with the number buttons, but you cannot tune to it with the ▲ CH▼ buttons.

If there are just one channel memorized, then the Add/Delete Channels function will search the whole channels. But if there are two or more channel memorized, then the Add/Delete Channels function will search the memorized channels only.

Adding/Deleting a channel to memory

1 Use the number buttons to tune to the channel.

2 Press the MENU button twice, then " Set-Up" menu will display.

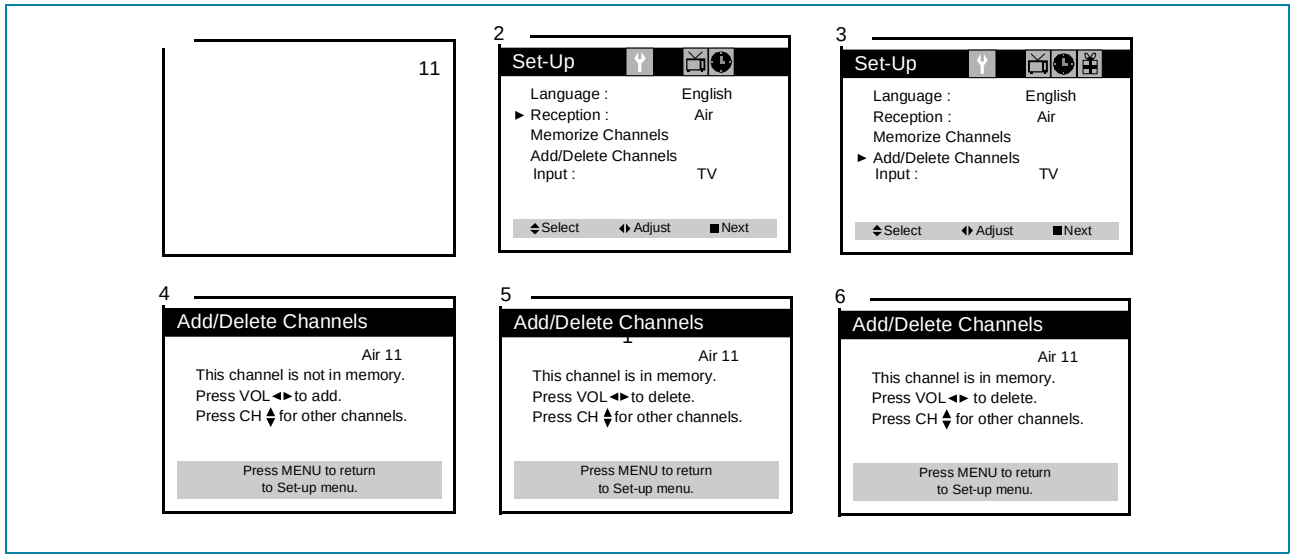
3 Use the ▲ CH▼ buttons to select " Add/Delete Channels" , then use the ◀ VOL ▶ button to enter the "Add/Delete Channels" process.

4 If the channel is not in memory, then use the ◀ VOL ▶ button to add the channel from memory.

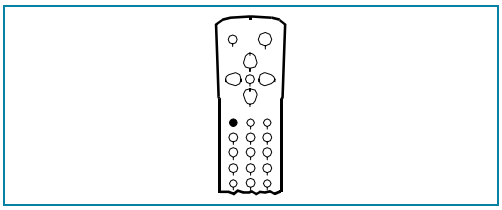
5 If the channel is in memory, then use the ◀ VOL ▶ button to delete the channel from memory.

6 If you are going to delete other channel, then press the ▲ CH▼ buttons until desired channel is selected. And press the ◀ VOL ▶ button to delete the channel.

7 Wait 10 seconds, or press the MENU button four times to exit.



Displaying the Current Channel



1 To quickly see the current channel number and status, press DISPLAY button on the remote control.The current channel number and status will be displayed.

Cahging the TV's Input

Normally, your TV displays the signal coming through the antenna terminal.

However, If you've connected another component to yoru TV(such as a VCR) usingthe Video/Audio input, you will want to be able to view the signal from the component.

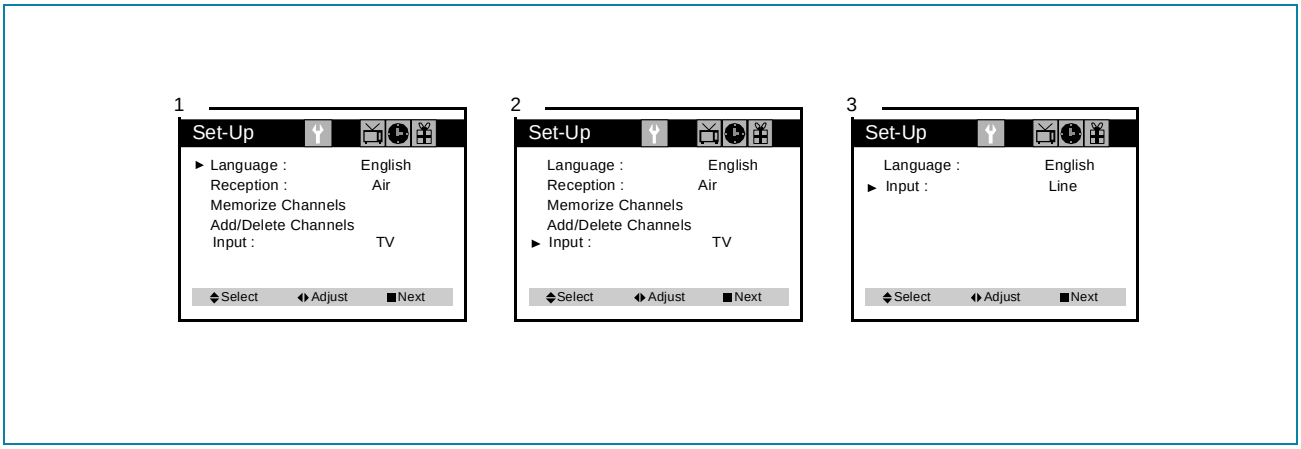
To do this, you will need to switch from the 'TV' input to the 'Line' Input, as follows.

1 With the TV on, press the MENU button twice, then "set-up" menu will appear.

2 Use the ▲ CH▼ buttons to select "Input".

3 Press the ◀ VOL ▶ buttons to change from 'TV' to 'Line'.

4 Wait 10 seconds, or press the MENU button to return to normal TV viewing.



When it connected an Video/Audio cable from the Video/Audio out jack on the VCR to the Video/Audio in jack on the front your TV, and your 'TV's back panel at the same time, the latter takes precedence of the former.

Adjusting Video Settings

You may wish to adjust the video settings (e. g. contrast or color) to obtain the most pleasing picture. To do so, follow these directions:

1 With the TV on, press the MENU button. then " Video" menu will appear.

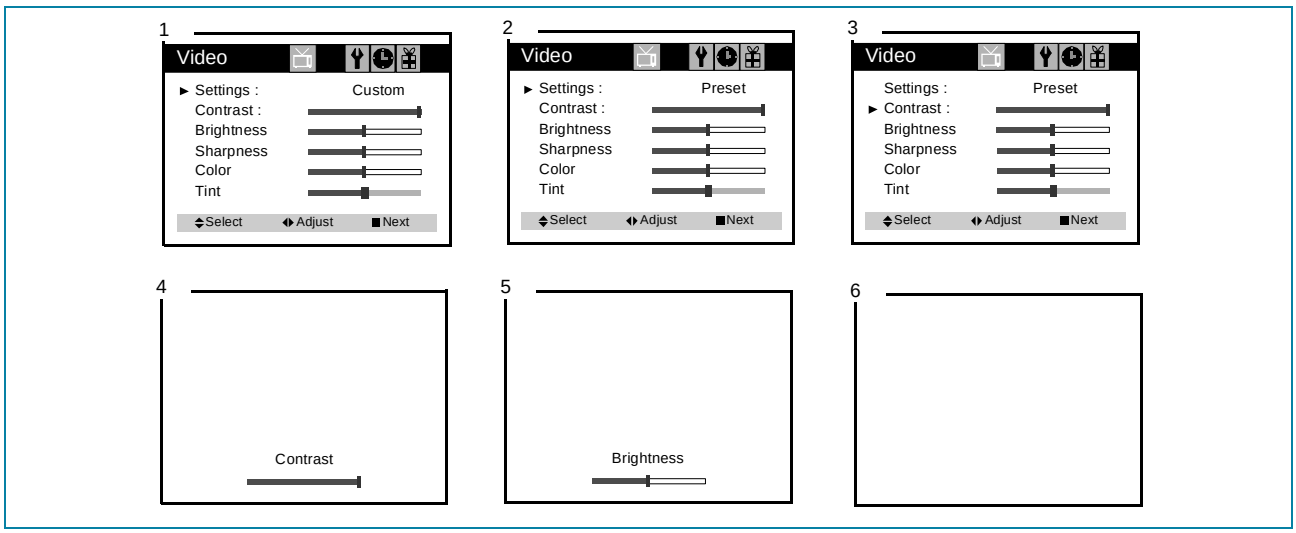
2 The " Settings" item will be selected. Use the ◀ VOL ▶ buttons to turn Settings to Preset or Custom.

3 Use the ▲ CH▼ buttons to select the video setting you wish to adjust.Descriptions of the video settings are on the next page.

4 Use the ◀ VOL ▶ buttons to adjust the video setting to the level you prefer.

5 Use the ▲ CH▼ buttons to select another video setting to adjust.

6 When you are finished, press the MENU button until menu OSD will be disappeared.



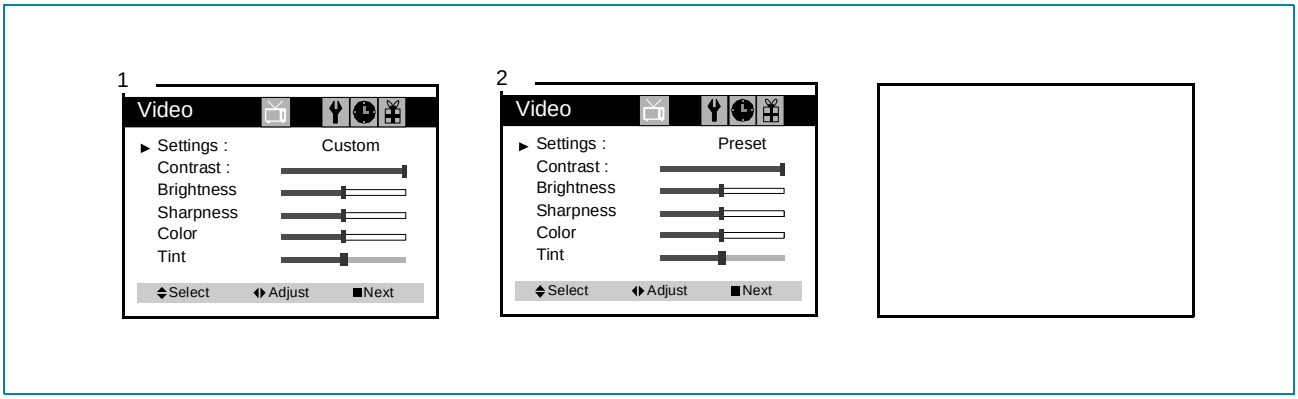
Returning to the factory settings

If you would like to return to the original video settings, as they were calibrated at the factory, follow these steps :

1 With the TV on, press the MENU button. then "Video" menu will appear.

2 Press the ◀ VOL ▶ buttons to set the "Settings" to 'Preset'.

The TV will remember the 'Custom' settings you had previously chosen. When you set" Settings" to 'Custom' again, your previous custom settings will be restored.



Descriptions of video settings

The contrast setting controls the relation between the light and black areas of the screen. If the light areas are too bright and are losing details, press the ◀ VOL button; if the picture is gray and lacks contrast, press the VOL ▶ button.

The brightness settings controls the overall amount of light in the picture. If the picture is too bright, press the ◀ VOL button; if the picture is too dark, press the VOL ▶ button.

Sharpness controls how the TV displays edges of objects on-screen. If the TV shows multiple vertical lines at the edges of an object, press the ◀ VOL button; if the vertical edges of on-screen objects are fuzzy, press the VOL ▶ button.

The color setting controls the intensity of color. If the color is over-saturated, press the VOL ▶ button; if the color is washed out, press the VOL ▶ button.

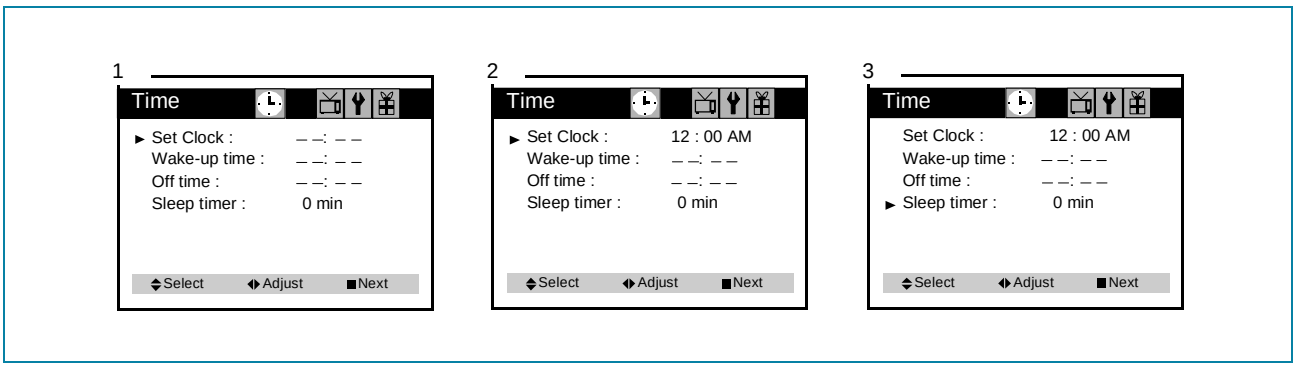
The tint setting controls the relationship of red and green in a picture. Tint is especially noticeable in flesh tones. If flesh tones seem too red or purple, press the VOL ▶ button; if flesh tones are too green, press the VOL ▶ button.

Using Timer Functions

Your TV has a built in-clock, and you can set the TV to turn on and off at times that you select. You can also set your TV to turn off after counting down a certain amount of time.

Setting the Clock

1. With the TV turned on, press the MENU button until "Time" menu will be displayed.
2. The "Set Clock" item will be selected. Press the ◀ VOL ▶ buttons to set the clock. If you hold down either ◀ VOL or VOL ▶ button, the corresponding numbers will change more quickly.
3. When the clock is set correctly, use the ▲CH▼ buttons to select another "Time" function, or press the MENU button until menu OSD will be disappeared.

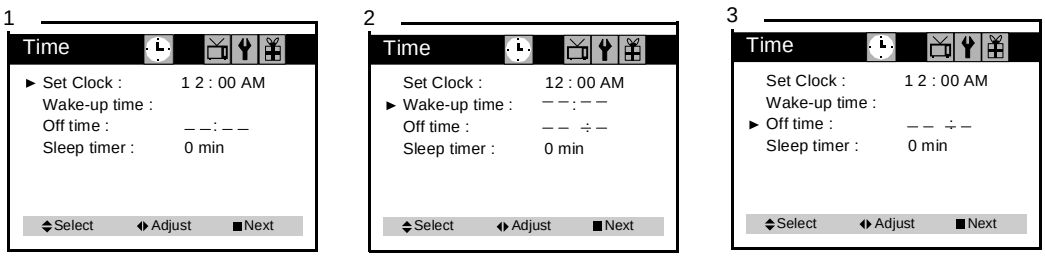


Settings the Wake-up timer

If you enter a time in the "Wake-up time" setting, your TV will automatically turn on at that time. Follow these instructions to set the "Wake-up time".

After Wake-up Timer turned on the TV set, if user do not input the user control (e.g. remote CH or VOL key) within 15 minutes, the TV set will turn off automatically. If user input the user control within 15 minutes, the TV set will turn on continuously.
It is safety feature for prevent from any kind of problem without human control.

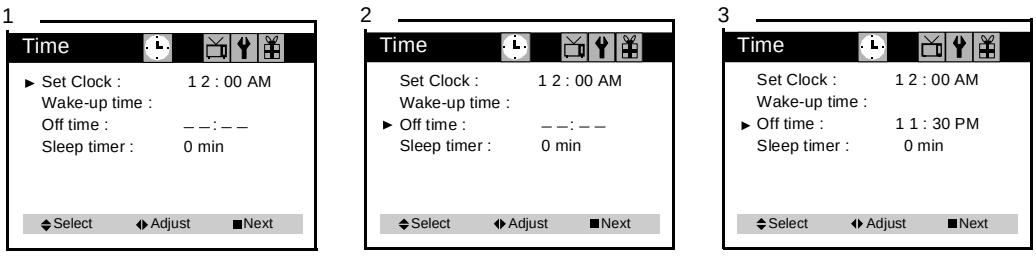
1 With the TV turned on, press the MENU button until "Time" menu will be displayed.
2 Use the ▲ CH▼ buttons to select "Wake-up time" item.
3 If you hold down either ◀ VOL or VOL ▶ button, the corresponding numbers will change more quickly.
4 When the setting is correct, use the ▲ CH▼ buttons to select another "Time" function, or press the MENU button until menu OSD will be disappeared.



Setting the Off Timer

If you enter a time in the "Off time" setting, your TV will automatically turn off at that time. Follow these instructions to set the "Off time".

1 With the TV turned on, press the MENU button until "Time" menu will be displayed.
2 Use the ▲ CH▼ buttons to select "Off time" item.
3 If you hold down either ◀ VOL or VOL ▶ button, the corresponding numbers will change more quickly.
4 When the setting is correct, use the ▲ CH▼ buttons to select another "Time" function, or press the MENU button until menu OSD will be disappeared.



Canceling the Wake-up Timer or Off Timer

If you would like to cancel the Wake-up Timer or the Off Timer, Press the ◀ VOL ▶ buttons until the timer settings return to "- -:- -".
The Wake-up Timer and Off Timer will not function correctly unless the clock has been set.

Setting the Sleep Timer

The sleep timer allows you to set an amount of time from 15 minutes to 120 minutes.TV will count down the amount of time you set, then turn itself off.To set the sleep timer:

1 With the TV turned on, press the MENU button until "Time" menu will be displayed.

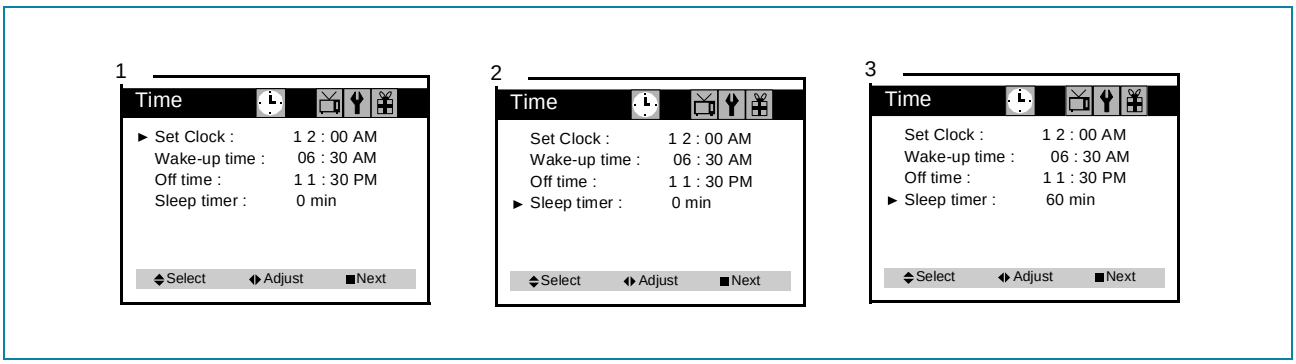
2 Use the ▲ CH▼ buttons to select "Sleep timer" item.

3 Use the ◀ VOL ▶ buttons to set the sleep time. Each time you press VOL, you step between the available sleep times : 15min, 30min, 45min, 60min, 90min, or 120min.

4 When the setting is correct, use the ▲ CH▼ buttons to select another "Time" function, or press the MENU button until menu OSD will be disappeared.

5 You can also set the "Sleep Timer" during normal TV viewing, simply by pressing the SLEEP button on the remote control. This button steps through the available sleep times(see step 3), one by one.

To cancel the Sleep timer, turn the TV off, or set the sleep time to "0" using one of the methods described above.



Additional Features

This section contains descriptions of the more advanced features of your TV.

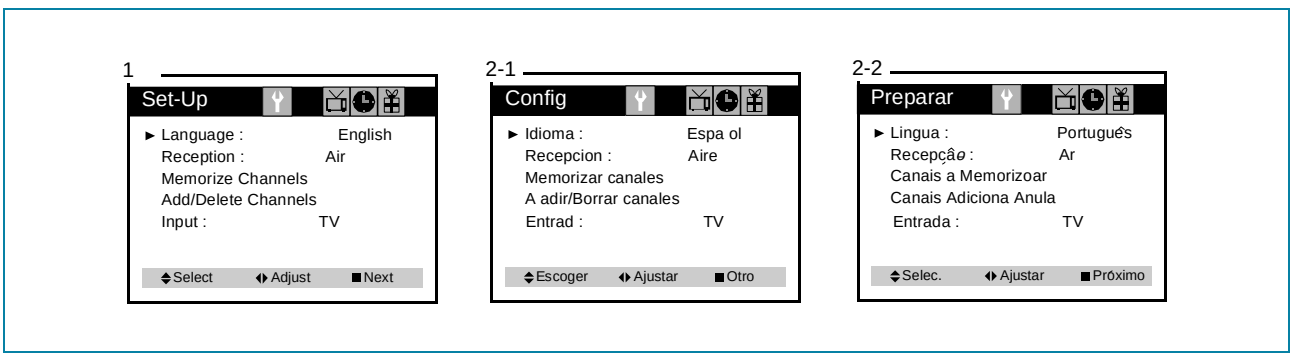
Changing the Language of the On-screen Menus

You can choose to display the on-screen menus in English, Spanish, French.To change the on-screen language:

1 With the TV on, press the MENU button twice, then "Set-Up" menu will appear.

2 The "Language" item will be selected. Press the ◀ VOL ▶ buttons to select the language you want to use: English, Spanish, French.

3 To return normal TV viewing, press the MENU button until menu OSD will be disappeared.



Captioning

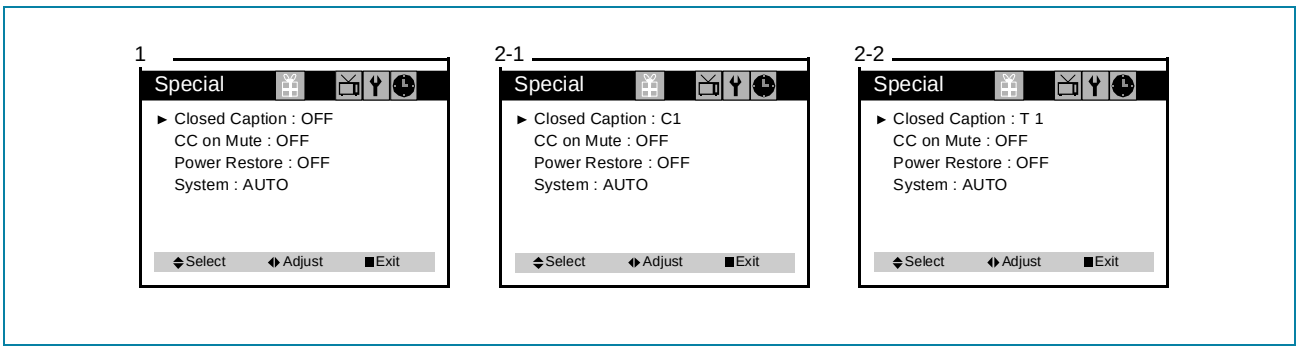
Many TV shows contains "closed captions". These captions are hidden words that can be displayed on your TV screen. There are two types of these words : "captions" usually follow the action on-screen, providing a written version of the dialogue, narration, and sound effects ; "text" is not usually related to the action on-screen, often providing information such as news or weather. A TV program might be providing more than one set of captions or one set of text.

To set your TV to display captions or text.

1 With the TV turned on, press the MENU button until "Special" menu will be displayed.

2 The "Closed Caption" item be selected. To turn captioning on, use the ◀ VOL ▶ buttons to select Captions (C1 or C2) or Text (T1 or T2). At the time these instructions were written, only C1 is normally available, but feel free to try the other selections.

3 Wait 10 seconds, or press the MENU button to return to normal TV viewing.Your setting will remain intact until you change it.



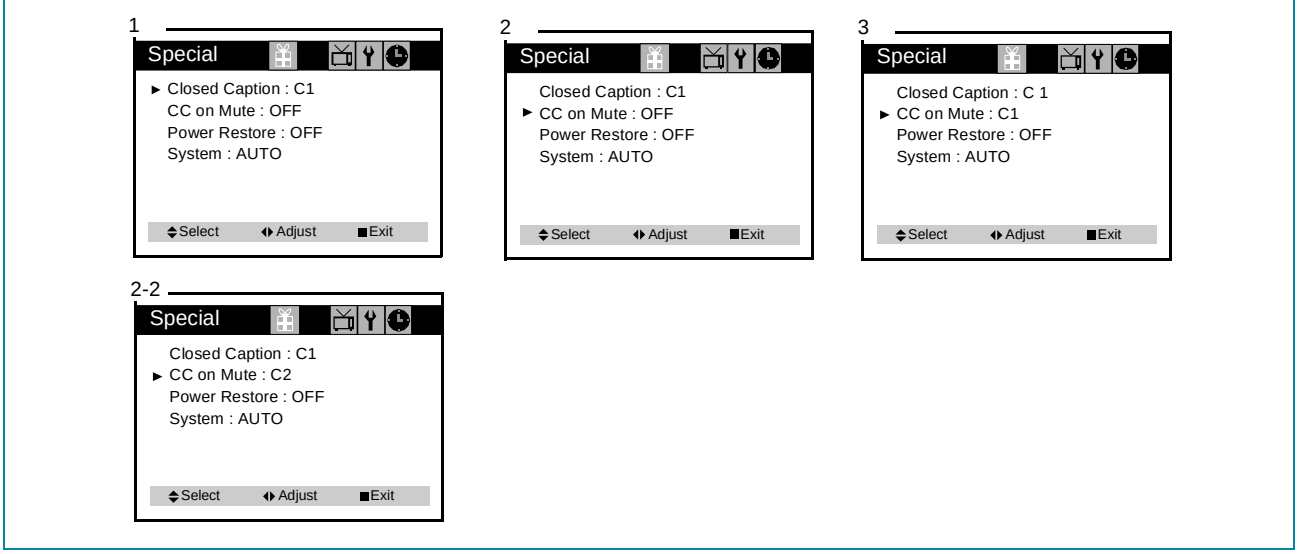
CC on Mute

When the sound is muted, user can select the caption display. It will display the caption content instead of sound mute.

1 With the TV turned on, press the MENU button until "Special" menu will be displayed.

2 Use the ▲ CH▼ buttons to select "CC on Mute" item.

3 Use the ◀ VOL ▶ buttons to select "C1" or "C2".



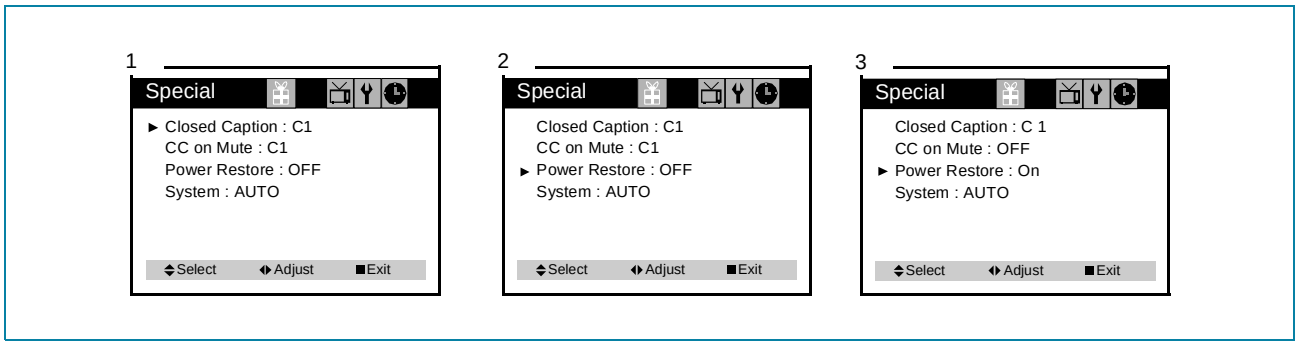
Power Restore

User can select the On/Off status when the power cord put into the wall outlet. If user have a cable box with AC outlet, then user can connect the TV power cord to the AC outlet and control the TV without TV remote control. This function is rarely used for home use, so special care is needed while using.

1 With the TV turned on, press the MENU button until "Special" menu will be displayed.

2 Use the ▲ CH▼ buttons select "Power Restore" item.

3 Use the ◀ VOL ▶ buttons to select "On" or "Off".

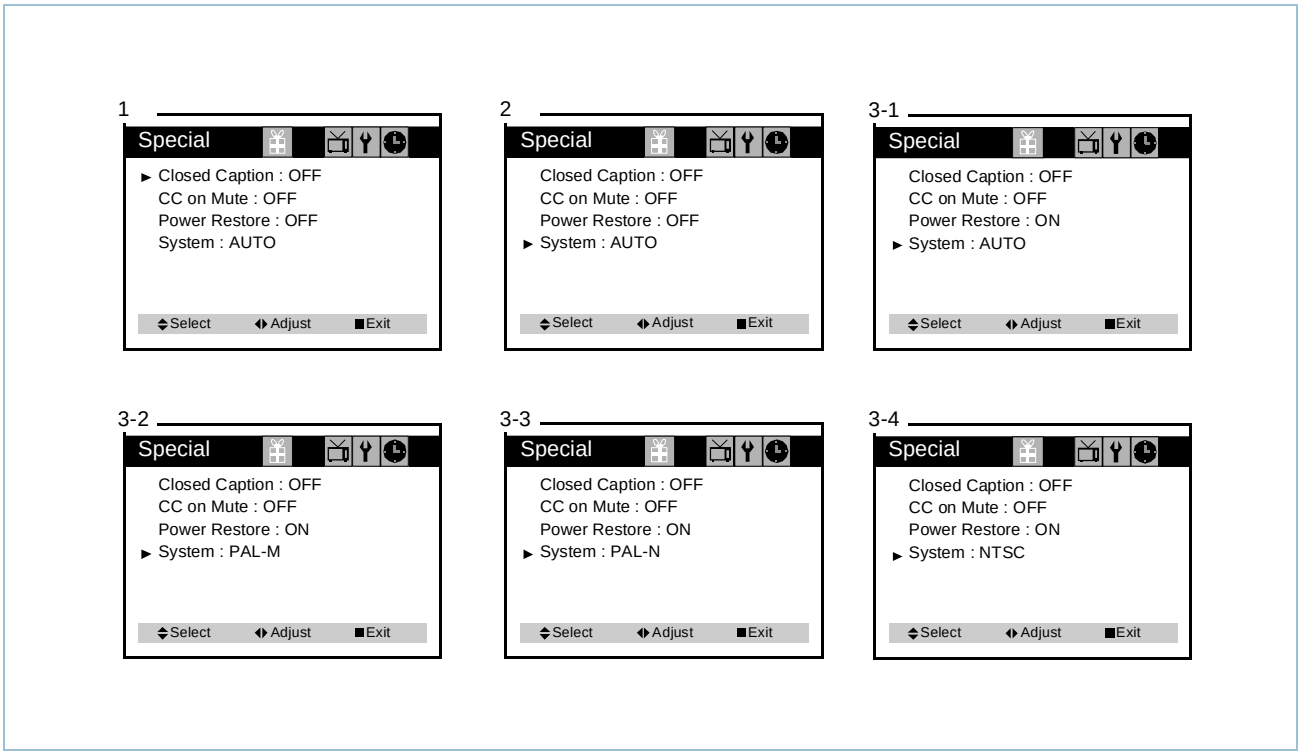


System

User can select the AUTO/PAL-M/PAL-N/NTSC color system modes.

If you have no color problem when see the FF mode of VCR or non standard signal, you must choose the NTSC of color system modes.

1. With the TV turned on, press the MENU button until "Special" menu will be displayed.
2. Use the ▲ CH▼ buttons select "system" item.
3. Use the ◀ VOL ▶ buttons to selcet "AUTO", "PAL-M", "PAL-N" or "NSTC"



Troubleshooting

Your Daewoo television is designed to give you trouble-free performance for many years. If you have a problem with your TV, try the solutions listed below.

If the suggestions listed below do not solve your problem, contact your Daewoo dealer or an authorized Daewoo service center. You can also call Daewoo directly at 1-800-DAEWOO8.

There is no picture or sound, or the TV won't turn on.

• Make sure the TV is plugged in.
• Make sure the MUTE is not set.
• Make sure the power is on.
• If there is neither picture or sound, unplug the TV for 30 seconds, then plug it in and try again.

There is no picture or sound on some UHF channels.

• Try another station. If the other stations are OK, it may be a station problem.
• Check that the antenna is connected, is in good working order, has no broken wires, and is adjusted correctly.
• See if anything is interfering with the antenna signal.
• Make sure the AIR/CABLE setting is correct.

The sound is OK, but the picture is poor.

• Try another station. If the other stations are OK, it may be a station problem.
• Check that the antenna is connected and is in good working order, has no broken wires, and is adjusted correctly.

The picture is OK, but the sound is poor.

• Try another station. If the other stations are OK, it may be a station problem.
• Check that the antenna is connected, is in good working order, has no broken wires, and adjusted correctly.

There is poor reception on some channels.

• Try another station. If the other stations are OK, it may be a station problem.
• Check that the antenna is connected, is in good working order, has no broken wires, and is adjusted correctly.

You cannot tune to a cable channel.

• Make sure the AIR/CABLE setting is correct.
• The channel may not be programmed into memory.USER'S INSTRUCTION

The picture rolls, slants, shows lines, is grainy, has poor color, or has ghosts.

• Try another station. If the other station are OK, it may be a station problem.
• Check that the antenna is connected, is in good working order, has no broken wires, and is adjusted correctly.
• See of anything is interfering with the antenna signal.

The remote control does not work.

• Make sure the TV is plugged in.
• Make sure there are fresh batteries in the remote control.
• Make sure there is nothing blocking the remote control signal.

WARRANTY

Daewoo Electronics Corporation of America warrants each new electronic product manufactured by it to be free from defective material and workmanship and agrees to remedy any such defect or to furnish a new part (at the Company's option) in exchange for any part of any unit of its manufacture which under normal installation, use, and service disclosed such defect, provided the unit is delivered by the owner to us or to our authorized distributor from whom purchased or authorized service station, intact, for our examination with all transportation charges prepaid to our factory. To establish and receive warranty service at our factory or authorized service facilities, proof of purchase/dated sales invoice is required

Return authorization must be obtained before any merchandise is returned to the factory.

This warranty does not extend to any of our electronic products which have been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation, unauthorized modification, or to use in violation of instructions furnished by us, nor units which have been repaired or altered outside of our factory, nor to cases where the serial number thereof has been removed, defaced, or changed.

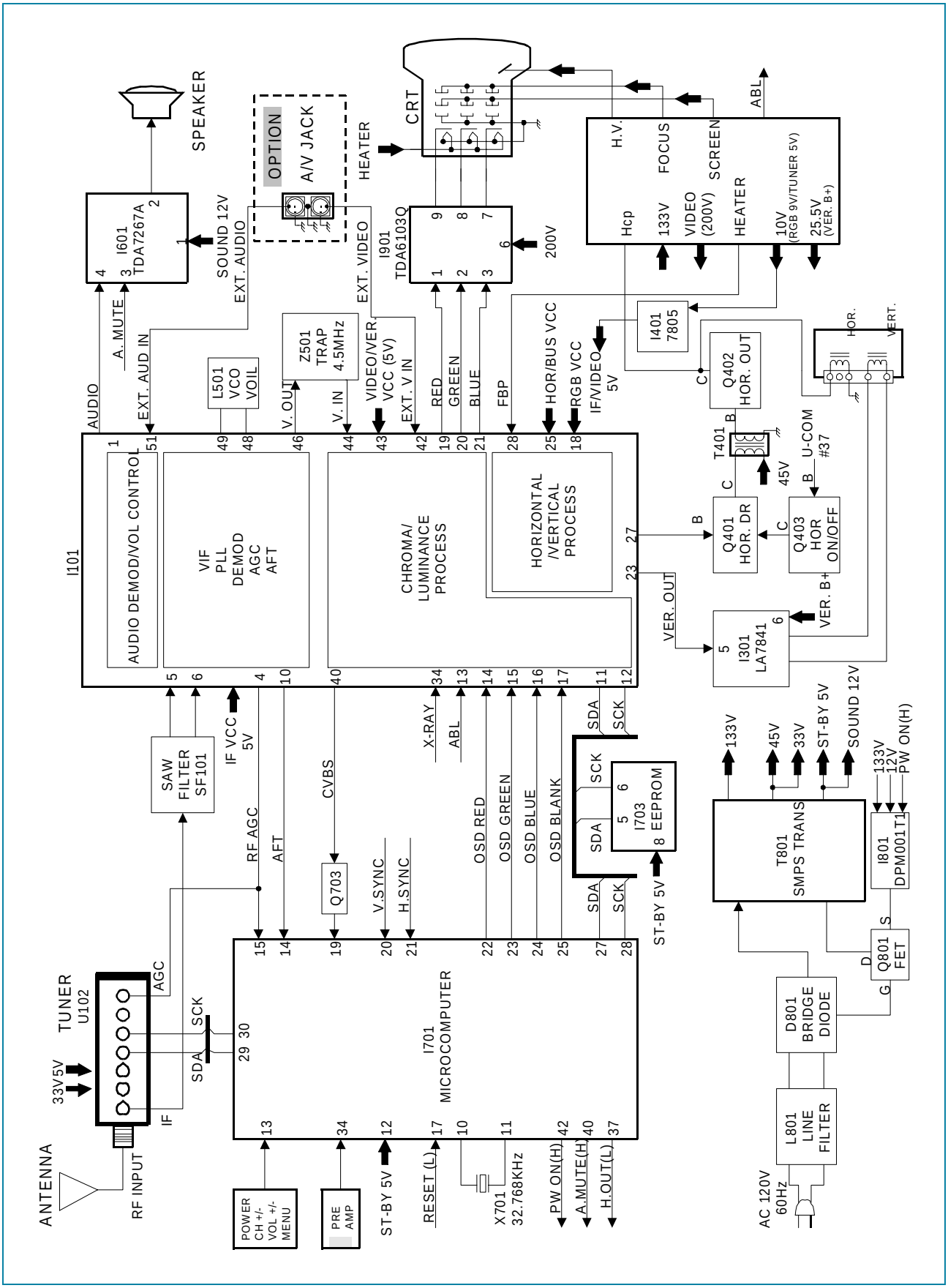
This warranty is in lieu of all warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sake of our electronic products.

Over-the-counter exchange for units that are initially defective

"Initially defective" is described as when the dealer opens the unit and finds that it is inoperative or a customer opens a new unit and finds that it is inoperable. This unit may be returned to the factory by the dealer for exchange. Under no circumstances will the customer be permitted to return the defective unit directly to the factory.Exchange must be directly with the dealer.

Model	Parts	Labor	Picture Tube
DTH-14V1FS	1 year	90 days	2 years
DTH-20V1FS	1 year	90 days	2 years
DTH-21V1FS	1 year	90 days	2 years
DTH-14V3FS	1 year	90 days	2 years
DTH-20V3FS	1 year	90 days	2 years
DTH-21V3FS	1 year	90 days	2 years
DTH-14V4FS	1 year	90 days	2 years
DTH-20V4FS	1 year	90 days	2 years
DTH-21V4FS	1 year	90 days	2 years

Block Diagram



Alignment Instructions

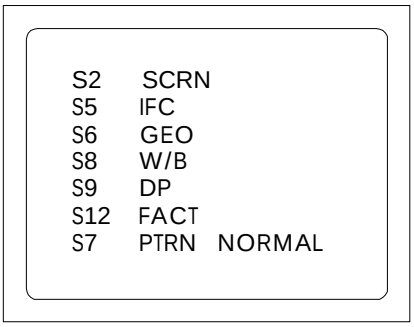
1. SERVICE MODE ADJUSTMENTS

Follow the steps below whenever service adjustment is required. See Table- A and Table- B to determine if service adjustments are required.

1) How to enter the service mode using the user remote control.

- Turn the set on.
- Direct the remote control to the reception window of TV.
- Push buttons of remote control in sequence as follows.

  1 → MUTE → DISPLAY → MUTE
- Then, the screen will appear as follows.



- Using the channel up or channel down button, select the item you wish to adjust.
  (The color of selected item turns into the red.)
- Press the volume up or down button to enter in the service mode you wish to adjust.

2) How to memorize the adjusted values in the service mode.

- Must press **DISPLAY** button the state which the screen is displaying each of service menus after all adjustments are completed each of all service menu.

Table-A : Adjust the values of service mode when a part is replaced.

PART REPLACED	ADJUSTMENT		NOTES
	NECESSARY	UNNECESSARY	
I701 (U-COM)		O	Data is stored in I703.
I101 (MAIN)		O	
I703 (EEPROM)	O		Initial setting values are written from I701. Adjusting Items S5 RFAGCD S6 H.PHASE/V.POSI/V.SIZE S8 RD/BD/RB/GB/BB S9 Subbrightness
CRT	O		Adjust items related to picture tube only.(White Balance adjustment)

Table-B

MODE	ADJUSTMENT ITEMS	DATA		REMARKS
		INITIAL	RANGE	
S2	Screen Adjustment	-	-	
S5	Auto RF AGC	-	-	
	Video Level (VIDEOL)	7	0 ~ 7	Must be set to 7
	RF AGC Delay (RFAGCD)	*	0 ~ 63	Align RF AGC threshold
	FM Level (FM.LEV)	20	0 ~ 31	Must be set to 20
	AGC Point	3.75	-	Select AGC reference voltage
	FF CHK VCR	-	-	VCR VCR/RF NOT USE
S6	Horizontal Phase(H.PHASE)	*	0 ~ 31	Align sync to flyback pulse, using internal cross pattern(S7)
	Vertical Position (V.POSI)	*	0 ~ 63	Align vertical DC bias, using internal cross pattern(S7)
	Vertical Size (V.SIZE)	*	0 ~ 127	Align vertical amplitude, using internal cross pattern(S7)
	Vertical Linearity	NO	0 ~ 31	(Must be set to 16)
	Vertical S-Correction (V SC)	0	0 ~ 31	Must be set to 6
	No Sd Off	YES	-	(Automatically turn off in 15min for no received signal)
	60 ~ 50 Hz	4	0 ~ 31	
	60 ~ 50 Hz	22	0 ~ 63	
	60 ~ 50 Hz	0	0 ~ 127	
	60 ~ 50 Hz	3	0 ~ 31	
S7	Internal Black	-	-	Display internal BLACK pattern
	Internal 100% White	-	-	Display internal 100% WHITE
	Internal 60% White	-	-	Display internal 60% WHITE
	Internal Cross Pattern	-	-	Display internal CROSS pattern
S8	Red Drive (RD)	*	0 ~ 127	Align RED OUT AC level
	Green Drive (GD)	14	0 ~ 15	Must be set to 10
	Blue Drive (BD)	*	0 ~ 127	Align BLUE OUT AC level
	Red Bias (RB)	*	0 ~ 255	Align RED OUT DC level
	Green Bias (GB)	*	0 ~ 255	Align GREEN OUT DC level
	Blue Bias (BB)	*	0 ~ 255	Align BLUE OUT DC level
S9	Subbrightness	*	0 ~ 127	Align common RGB DC level
	Contrast	27	0 ~ 27	
	Tint	35	0 ~ 27	
	Color	25	0 ~ 27	
S12	Forwarding Mode	-		Factory Initialization

* indicates the items with different settings each of sets

2. ASSEMBLY ADJUSTMENTS

1) SCREEN ADJUSTMENT (S2)

- Enter the service mode and select service adjustment S2.
- You cna see the one horizontal line on the screen.
- Adjust the Screen Control Volume (located on FBT) so that the horizontal line onscreen may be disappeared.
- Press the volume up or down button to exit in the screen adjustment mode.

NOTE

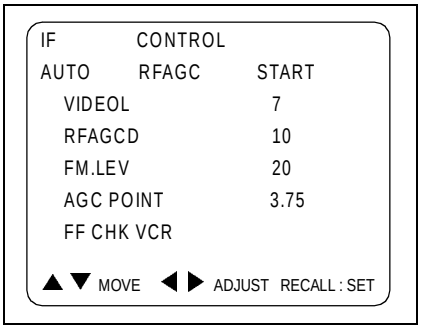
IN THE SCREEN ADJUSTMENT MODE, DONT PRESS OTHER BUTTONS EXCEPT VOLUME UP OR DOWN BUTTON.

2) FOCUS ADJUSTMENT

- Turn in a local station and adjust the Focus Control knob (located on FBT) for best picture details at high light condition.

3) RF AGC DELAY ADJUSTMENT (S5)

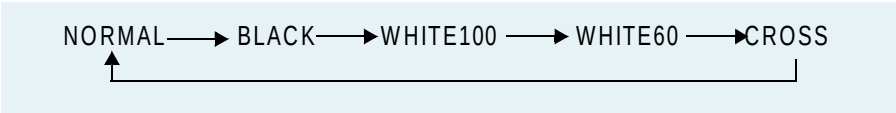
- Receive a good local channel.
- Enter the service mode and select service adjustment S5.
- You can see the OSD as shown in below.



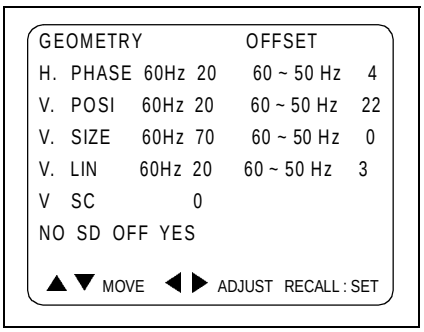
- Select RFAGCD item, press the volume up or down button until noise or beat in picture disappears.
- Press the DISPLAY button to memorize the data.

4) GEOMETRIC ADJUSTMENTS (S6)

- Enter the service mode and select service adjustment S7.
- Whenever you select the “S7” using the volume up or down button, the screen is changing like this.



- Using the volume up or down button, select internal cross pattern.
- Select service adjustment S6
- You can see the OSD as shown in below.



4-1. Horizontal Position Adjustment

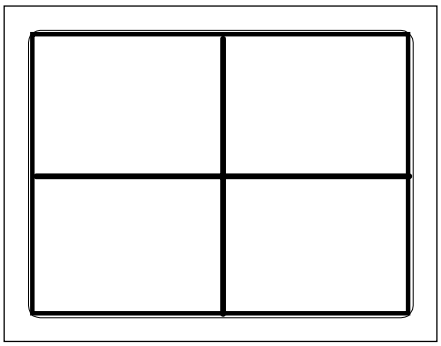
- Select H.PHASE item, adjust H.PHASE data value to obtain proper horizontal centering of the internal cross pattern at the left and right of the screen.

4-2. Vertical Position Adjustment

- Select V.POSI item, adjust V.POSI data value to center the raster properly on thescreen.

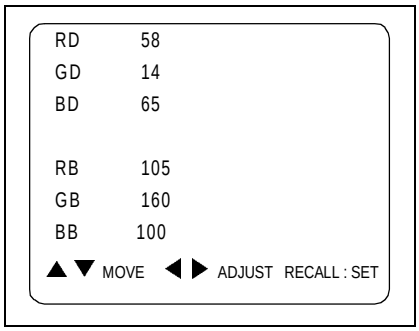
4-3. Vertical Size Adjustment

- Select “V.SIZE” item, adjust “V.SIZE” data value to proper vertical size as follows.



5) WHITE BALANCE ADJUSTMENT(S8)

- Receive a good local channel.
- Enter the service mode and select service adjustment S8.
- You can see the OSD as shown in below.

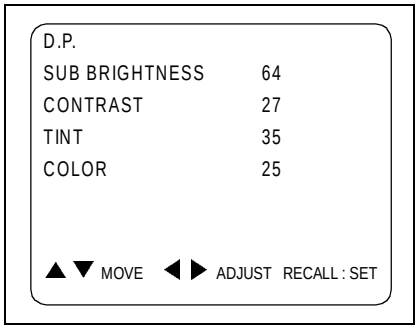


- Using volume up or volume down, adjust service adjustment data of RD/GD/BD and RB/GB/BB until a good gray scale with normal whites is obtained.ALIGNMENT INSTRUCTIONS
- Press the DISPLAY button to memorize the data.

6) DIGITAL PRESET(D.P) ADJUSTMENTS(S9)

SUBBRIGHTNESS ADJUSTMENT

- Receive a good local channel.
- Enter the service mode and select service adjustment S9.
- You can see the OSD as shoown in below.



- Select Subbrightness item, adjust Subbrightness data value to obtain normal brightness level.
- Press the DISPLAY button to memorize the data.

CONTRAST

- Fixed value = 27

TINT

- Fixed value = 35

COLOR

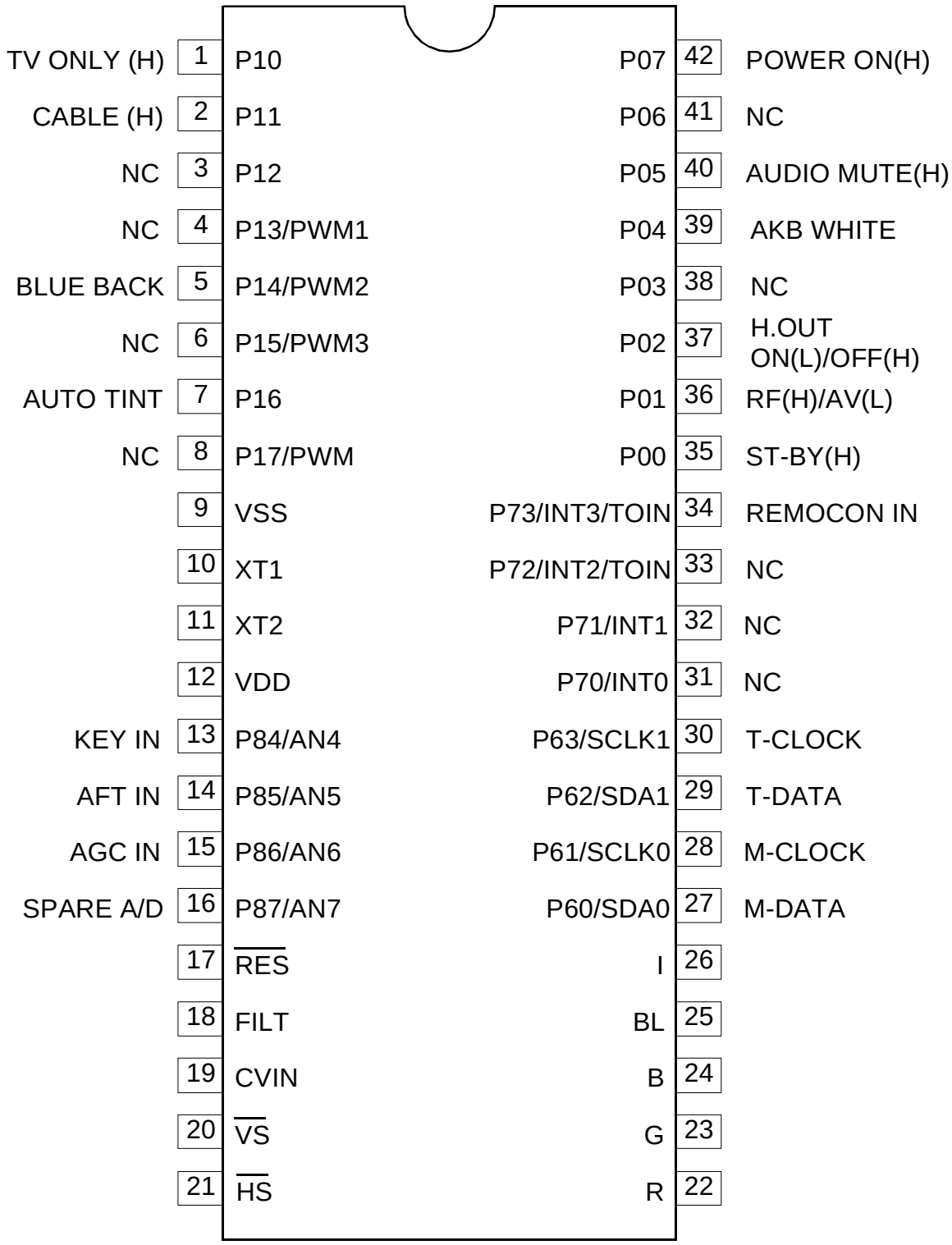
- Fixed value = 25

7) FACTORY OUTGOING MODE (S12 : FACT)

- If you select the S12, then the set becomes factory outgoing status.
- You can see the OSD “outgoing OK”

IC Description

U-COM(I701)



- X'TAL : 32.768 KHz

1. Abstract.

This specification is 1-Tuner Mono Model for North/South America, CCD 1-Chip MICOM LC863228A.
It is developing software specification for tuning only NTSC and 3 system TV F/S.
* 3 System : NTSC-M, PAL-M, PAL-N.

2. H/W Outline.

1) ROM : 28,672 x 8bits.tsc
: 15,872 x 8 bits for CGROM.
2) RAM : 512 x 8bits.
: 336 x 9bits.(for CRT Display)
3) OSD Function.

- Screen Display. : 34 characters x 16 lines.(by software)
- RAM : 336 words. (9 bits per word)
  Display area. : 34 words. x 8 lines.
  1st control area. : 8 words. x 8 lines.
- Characters.
  244 patterns programmable.
  Up to 244 kinds of 16 x 17 dot characters.
  Up to 244 kinds of 8 x 9 dot characters.
  or
  Up to 244 kinds of 16 x 32 dot characters used 16K bytes.
- Various characters attributes.
  Character colors. : 16 colors
  Character background colors. : 16 colors
  Fringe / shadow colors. : 16 colors
  Full screen colors. : 16 colors
  Rounding.
  Underline.
  Italic character.(slanting)
- Attribute can be changed without spacing.
- Vertical display start line number can be set for each row independently.(Row can be overlapped.)
- Horizontal display start position can be set for each row independently.
- Different display modes can be set for each row independently.
  Caption and Text mode/ OSD mode 1/ OSD mode 2(Quarter size)/ Simplified graphic mode.
- Ten character sizes.
  Horiz. x Vert. = (1x1),(1x2),(2x2),(2x4),(0.5x0.5)
  (1.5x1),(1.5x2),(3x2),(3x4),(0.75x0.5)
- Shuttering and scrolling on each row.

3. System Feature.

1) The system for TV tuning is Frequency Synthesis type.
2) Closed Captions function is interior designed.

3) On Screen Displays function is interior designed.
4) Package. : 42 PIN SDIP.
5) Tuner (Pre-scaler.) : I^2C Bus.
/PLL IC : TAU 6014-S(SIEMENS).
6) Remocon. : The IC of Transmission (MITSUBISHI M50560)
7) E^2PROM. : 24C08(I^2C Bus) ◊ Apply one byte Read/Write mode.
8) 6-Local Key. : A/D Input Control.(Power, Ch Up/Down, Vol Up/Down, Menu)
9) Option S/W : Port Input Option Check.
10) IF/V/C/D IC :LA76814(, The only NTSC), LA76810(, 3-system)

4. Function.

1) C. C. D. function.
- A section of C. C. D. operates FCC based specification.

2) C. C. D. controlled function.
- Closed Caption Mode. (Off<-->C1<-->C2<-->T1<-->T2<-->Off)
- CC On Mute.(Off <-->C1<-->C2<-->Off)
- Closed Caption is prior to CC On Mute.

3) Tuning Function.
- I^2C Bus.
- PLL IC Interface.
- FS 181 Channel (AIR 2-69CH, CABLE 1-125CH)
- AFT Operation(Fine Tuning) -2.5Fn+2.5MHz
- AIR/CABLE (STD, HRC, IRC). Only Cable 5,6CH is that AFT range is cover over broad-band. -2.5MHzFn+3.5MHz..
- Memorize Channels.(If a channel is broadcasting, the channel is memorized.)
- Direct Tuning(09KEY)
- Channel Up/Down.(Memorized Channels) -> The Ch Up/Down buttons on the Remocon and on the front panel are same function.
- Search Channel Up/Down.(If No-Memory or only 1CH is Memory)
- Channel Memory.(ADD/DELETE)
- Channel Review Function.
- Last Channel Memory Function.

4) OSD Function.
- In Line(Video) Mode, Things(Items) that is concerned with Air and Cable disappear in the Menu.
- Channel, AV display.
- Small & Graphic ICON Menu.
- Volume / Picture control --> I^2C Bus Control

5) The Others Function.
- Video/Audio Mute Function.
- If a Channel is no signal, after 15 minutes is Auto-Power Off Function.

- Auto Power On Function.(Power Restore function in the Special Menu)
- Heat Run Function. --- OSD White Back-Ground
- Sleep Timer.
- Wake Up Time Function.
- Off Time Function.
- Remote Reception & Control.
- Auto Tint.
- Power Restore.
- Input(TV/Line) Controlled function. ---------- (Option)
- Reception.(Air/Cable : Factory Initial Condition)----------(Option)
- Blue Background.----------(Option)
- 3-Language (North America : ENG/SPA/FRA, South America : ENG/SPA/POR).
- E^2PROM Interface (I^2C Bus Control)
- CH 6 TRAP Function.(IS-31)
- PLL IC Band Data.(Control Byte 2-->P3~P0)

  VHF L : 1

  VHF H : 2

  CH6 TRAP : 5 (IS-31) AIR(Cable) CH 6 Only

  UHF : 8

5. The Table of Option and Schedule.

Model Name	Pin	Option		Application	Reference
CM - 003	#1	Input	Video/TV	O	- Low(DC_0V) : Video.
					- High(DC_5V) : TV.
	#2	Reception	Air/Cable	O	- Low(DC_0V) : Air.
					- High(DC_5V) : Cable.
	#3	Audio	Mono/Stereo	O	- Low(DC_0V) : Stereo.
					- High(DC_5V) : Mono.
	#5	Bule Back		O	- Low(DC_0V) : Blue Back.
					- High(DC_5V) : No Use.
	#6	XDS		X	- No Use.
	#7	Channel Lock		X	- No Use.
	#4 #8	Brand OSD Display	DAEWOO/ PHILCO	X	#4 #8 1 0 : DAEWOO 0 1 : PH1LCO
Tatal Sun				7	- Use. (No Use.)

6. Pin Description

PIN	Terminal	Name	Explanation	Remarks
1	P10	Input (Option)	- High(DC_5V) : The only TV. - Low(DC_0V) : Line.(Video)	- Output Format. - CMOS/Nch -OD.
2	P11	Reception (Option)	- High(DC_5V) : Cable. - Low(DC_0V) : Air.	
3	P12	Audio (Option)	- High(DC_5V) : Mono. - Low(DC_0V) : Stereo.	
4	P13/PWM1	Remocon (Option)	- High(DC_5V) :DAEWOO - Low(DC_0V) : NON	
5	P14/PWM2	Blue Back (Option)	- High(DC_5V) : No Blue Back. - Low(DC_0V) : Blue Back.	
6	P15/PWM3	Option (V-Chip)	- High(DC_5V) : V-Chip. - Low(DC_0V) : No V-Chip.	
7	P16	Option (Auto Tint)	- High(DC_5V) : Auto Tint. - Low(DC_0V) : No Auto Tint.	
8	P17/PWM	PWM	- High (DC-54) : PHILCO - LOW(DC-0V) : NON	
9	VSS	GND	- GND - Negative power supply.	
10	XT1	XT1	- It uses 32.768KHz X-TAL. - 10 pin is input terminal for crystal oscillator. - 11 pin is output terminal for crystal oscillator.	
11	XT2	XT2		
12	VDD	VDD	- +5V(±0.5V) - Positive power supply.	
13	P84 / AN4	KEY IN	- Power, Ch up/down, Vol up/down, Menu.	
14	P85 / AN5	AFT IN	- DC value that comes from the 10 pin of LA76810/14	
15	P86 / AN6	AGC IN	- Connect this port to AGC of Tuner - Default Voltage. : 3.75V - Variable Voltages.: 3.25V, 3.5V, 4.0V	

<table>
<tr><th>Pin</th><th>Terminal</th><th>Name</th><th>Explanation</th><th>Remarks</th></tr>
<tr><td>16</td><td>P87 / AN7</td><td>SPARE A/D</td><td>- 16 pin is a spare pin..
- 13 pin to 16 pin.
- 4 bit input/output port, Nch-OD output.
- Input or output can be specified for each bit.
- Other function.
.AD converter input port (4 lines).</td><td></td></tr>
<tr><td>17</td><td>/RES</td><td>/RES</td><td>- Reset terminal.
- Active Low.</td><td></td></tr>
<tr><td>18</td><td>FILT</td><td>Filter</td><td>- Filter terminal for PLL.
- Output terminal.</td><td></td></tr>
<tr><td>19</td><td>CVIN</td><td>CVSB IN</td><td>- Video signal input terminal..</td><td></td></tr>
<tr><td>20</td><td>/VS</td><td>/VS</td><td>- Vertical synchronization signal input terminal.</td><td></td></tr>
<tr><td>21</td><td>/HS</td><td>/HS</td><td>- Horizontal synchronization signal input terminal.</td><td></td></tr>
<tr><td>22</td><td>R</td><td>R</td><td>- Red output terminal of RGB image.</td><td></td></tr>
<tr><td>23</td><td>G</td><td>G</td><td>- Green output terminal of RGB image.</td><td></td></tr>
<tr><td>24</td><td>B</td><td>B</td><td>- Blue output terminal of RGB image.</td><td></td></tr>
<tr><td>25</td><td>BL</td><td>BL</td><td>- Fast blanking control signal.
- Switch TV image signal and caption / OSD image signal.
- Output terminal.</td><td></td></tr>
<tr><td>26</td><td>I</td><td>I</td><td>- Intensity output terminal of RGB image signal.
- Output terminal.</td><td></td></tr>
<tr><td>27</td><td>P60/ SDA 0</td><td>ROM Data
Main IC Data</td><td rowspan="4">- 6-bit input/ output port.
- Input / output can be specified for each bit.
- Other function.
<table><tr><td>P60</td><td>IIC0 data I/O</td></tr><tr><td>P61</td><td>IIC0 clock output.</td></tr><tr><td>P62</td><td>IIC1 data I/O.</td></tr><tr><td>P63</td><td>IIC1 clock output.</td></tr></table></td><td rowspan="4"></td></tr>
<tr><td>28</td><td>P61/ SCLK 0</td><td>ROM CLK
Main IC CLK</td></tr>
<tr><td>29</td><td>P62/ SDA 1</td><td>Tuner Data</td></tr>
<tr><td>30</td><td>P63/ SCLK 1</td><td>Tuner CLK</td></tr>
</table>

<table>
<tr><th>Pin</th><th>Terminal</th><th>Name</th><th>Explanation</th><th>Remarks</th></tr>
<tr><td>31</td><td>P70 / INT 0</td><td>Sound Input</td><td rowspan="3">- 4-bit input/ output port.
- Input or output can be specified for each bit.
- # 31 : . Only Cn-220, ITT(MSP)
Low : Front Mask /Mono, High : Back / Stereo.
- Other function
<table><tr><td></td><td>R</td><td>F</td><td>R/ F</td><td>H</td><td>L</td><td>V</td></tr><tr><td>INT0</td><td>E</td><td>E</td><td>D</td><td>E</td><td>E</td><td>03H</td></tr><tr><td>INT1</td><td>E</td><td>E</td><td>D</td><td>E</td><td>E</td><td>0BH</td></tr><tr><td>INT2</td><td>E</td><td>E</td><td>E</td><td>D</td><td>D</td><td>13H</td></tr><tr><td>INT3</td><td>E</td><td>E</td><td>E</td><td>D</td><td>D</td><td>1BH</td></tr></table>- Interrupt receiver format, vector addresses.
<table><tr><td>P70</td><td>INT0input/HOLDrelease input/Nch-Tr. output for watchdog timer.</td></tr><tr><td>P71</td><td>INT1 input/HOLD release input.</td></tr><tr><td>P72</td><td>INT2 input /Timer 0 event input.</td></tr><tr><td>P73</td><td>INT3 input(noise rejection filter attached)/Timer</td></tr></table>♣ Notice ☞ R: Rising, F: falling, H: H level, L: L level, V: Vector, E: Enable, D: Disable.</td><td></td></tr>
<tr><td>32</td><td>P71/ INT 1</td><td>N.C</td></tr>
<tr><td>33</td><td>P72 / INT 2/ T0 IN</td><td>SD In</td></tr>
<tr><td>34</td><td>P72 / INT 3 / T0 IN</td><td>Remocon In</td><td></td></tr>
<tr><td>35</td><td>P00</td><td>ST_By LED</td><td>- Use only Japan Model.
- This port uses when is Stand-By status.
- Condition : Input AC Power On.
- Power off : ‘High(DC 5V)’ Output.(Red)
- Power on : ‘Low(DC 0V)’Output.</td><td></td></tr>
<tr><td>36</td><td>P01</td><td>TV/VIDEO</td><td>- TV Mode : ‘ High’ Line(Video) Mode : ‘Low’.</td><td></td></tr>
<tr><td>37</td><td>P02</td><td>H.Out</td><td>- Use to discharge High Voltage when TV set turns off.</td><td></td></tr>
<tr><td>38</td><td>P03</td><td>Sound Reset</td><td>- Sound IC Reset : ITT.</td><td>-Only Cn-220</td></tr>
<tr><td>39</td><td>P04</td><td>AKB</td><td>-Use when control AKB(High Beam: ‘High(5V)’ Output)</td><td></td></tr>
<tr><td>40</td><td>P05</td><td>Audio Mute</td><td>-Use only ‘read data’ of ‘LA76814/10.</td><td></td></tr>
<tr><td>41</td><td>P06</td><td>Video White</td><td>-Use when TV set turns off.</td><td></td></tr>
<tr><td>42</td><td>P07</td><td>Power</td><td>- Use when does power off/on.
- .Power Off : Output ‘Low(DC 0V)’
. Power On : Output ‘High(DC 5V)’</td><td></td></tr>
</table>

Output form and existence of pull-up resistor for every port can be specified for each bit.

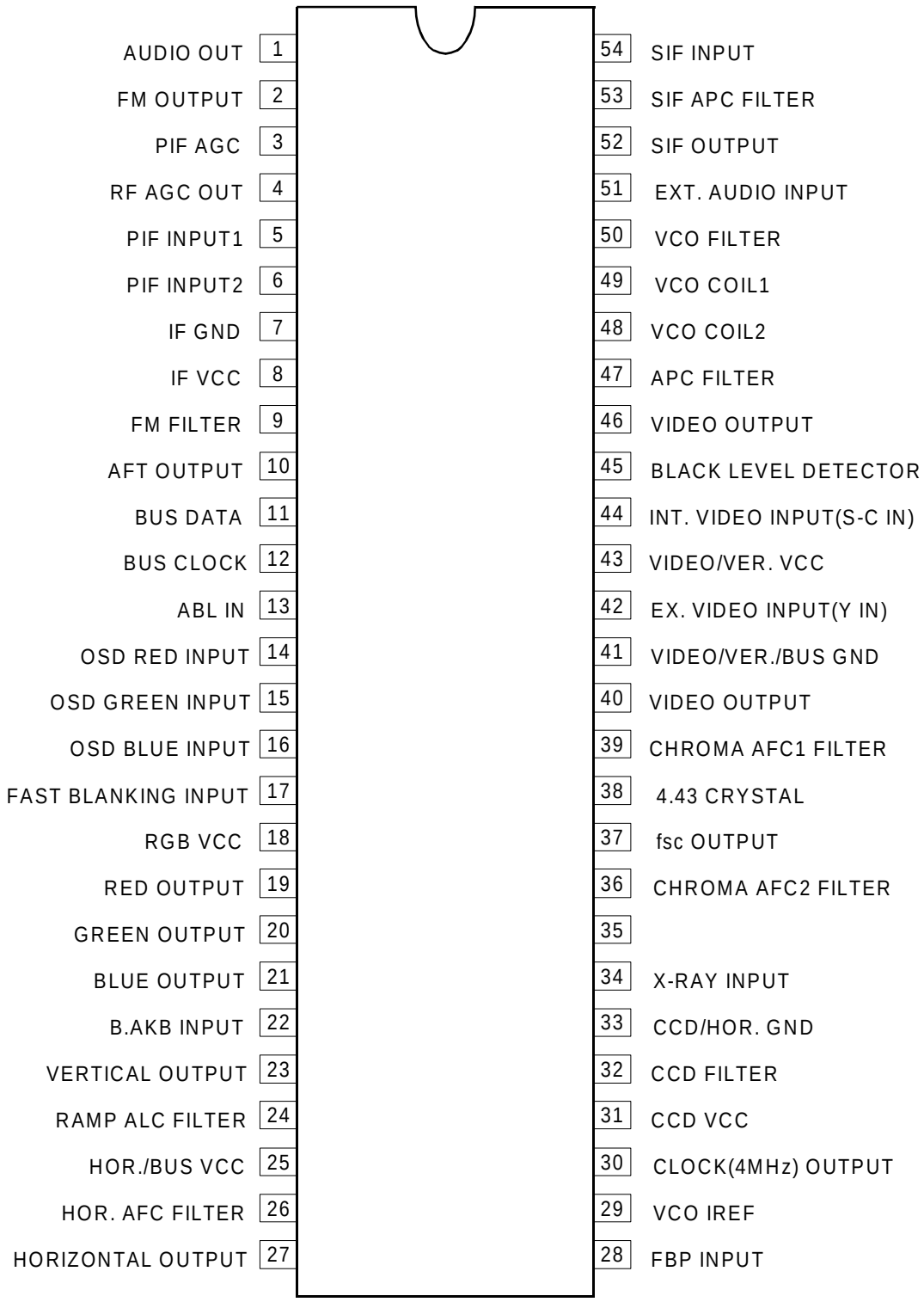
At port 1,”Programmable pull-up resistor provided” when specifying either CMOS or N-ch open drain output.

Port status in reset.

Terminal	I / O	Pull-up resistor status at selecting pull-up option.
Port 0	I	Pull-up resistor OFF, ON after reset release.
Port 1	I	Programmable pull-up resister OFF.

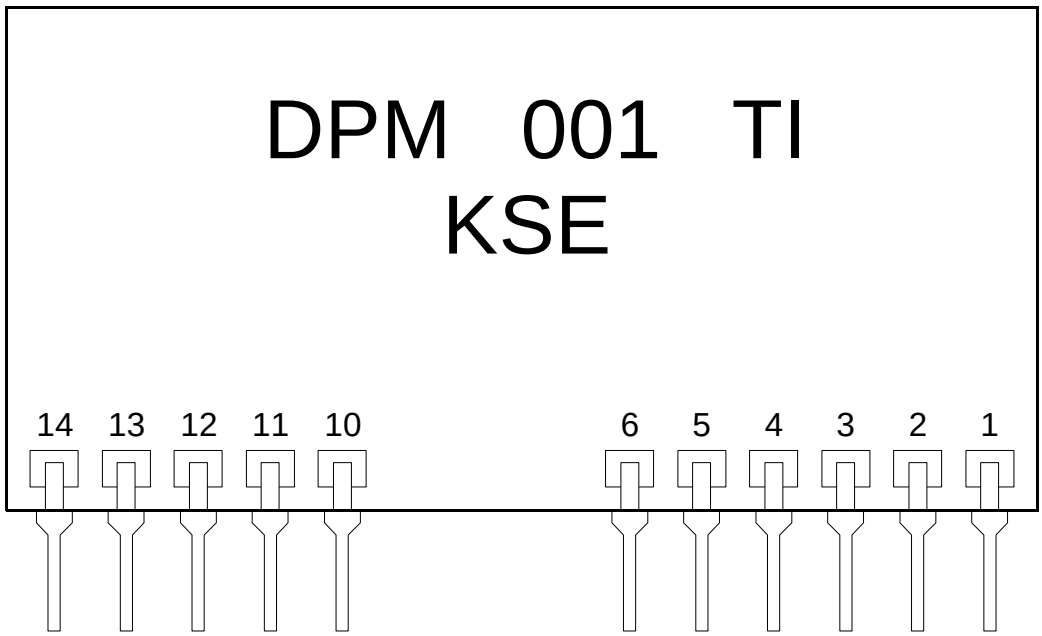
I101

LA76805 : IC VIDEO PROCESSOR



I801

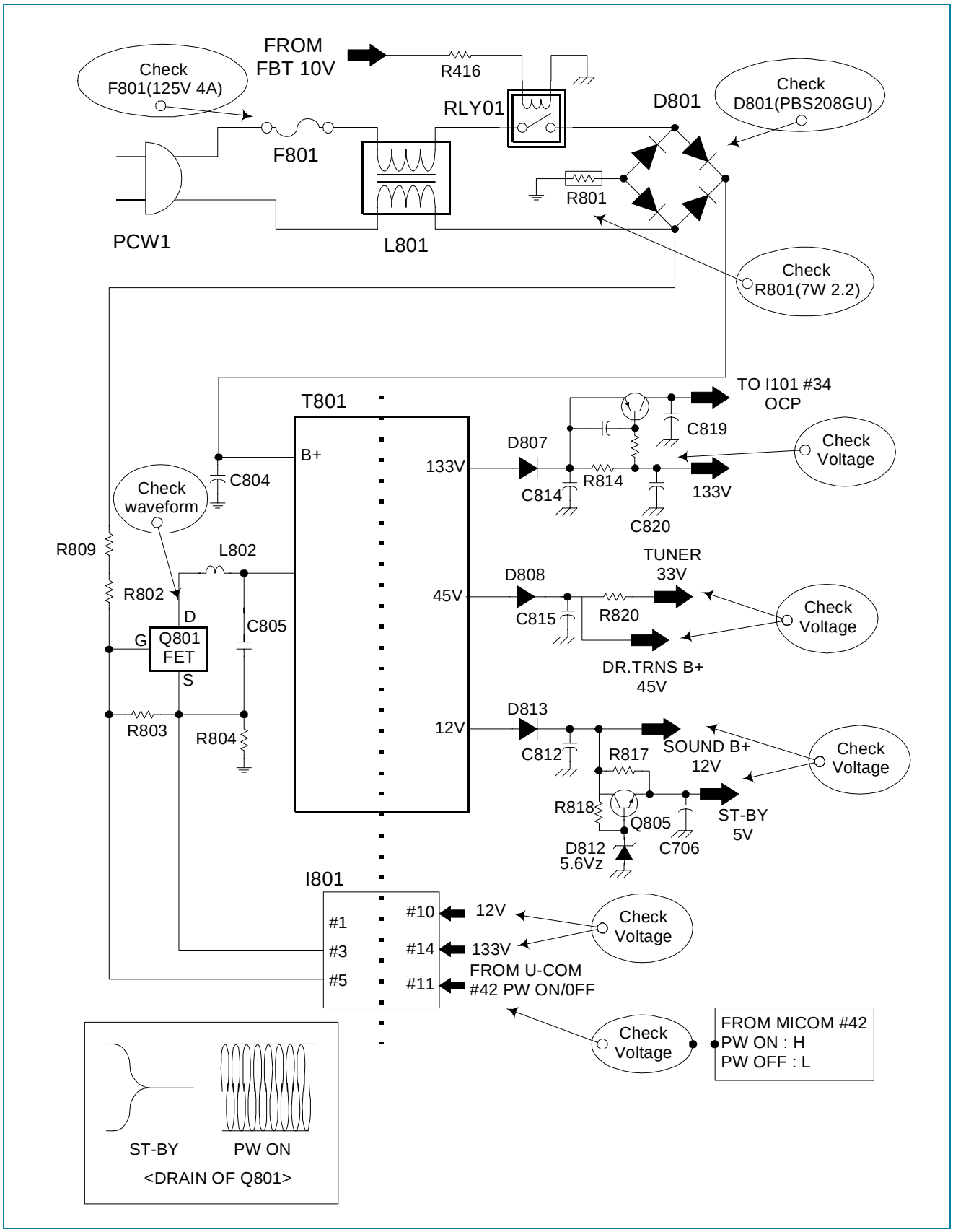
POWER CONTROL MODULE



PIN NO	DESCRIPTION	PIN NO	DESCRIPTION
1	GATE DRIVE1	10	+12V INPUT
2	OCP	11	POWER CONTROL
3	SOURCE	12	NC
4	GND1	13	GND2
5	GATE	14	+133V INPUT
6	GATE DRIVE2		

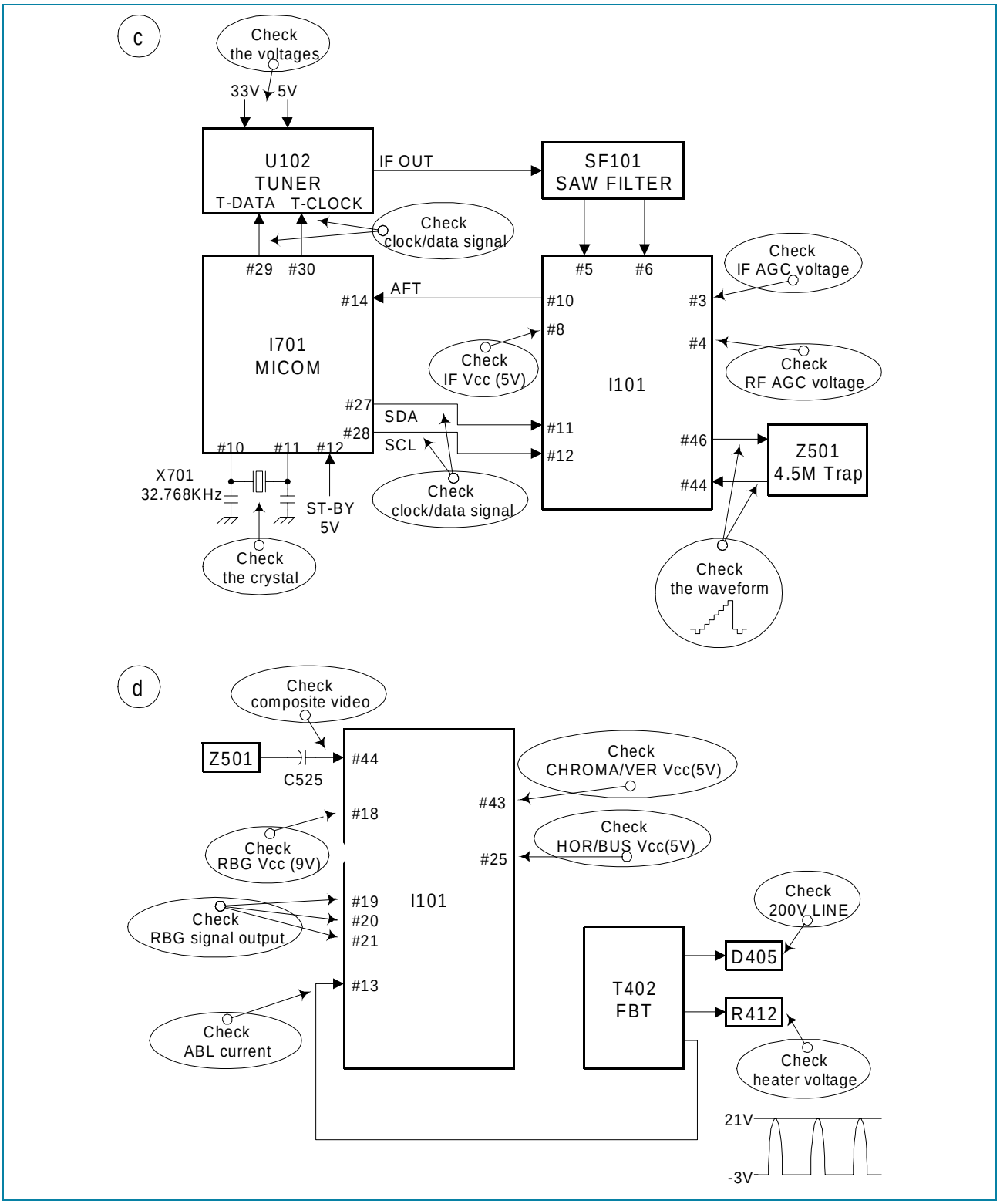
Troubleshooting Guide

1. NO POWER



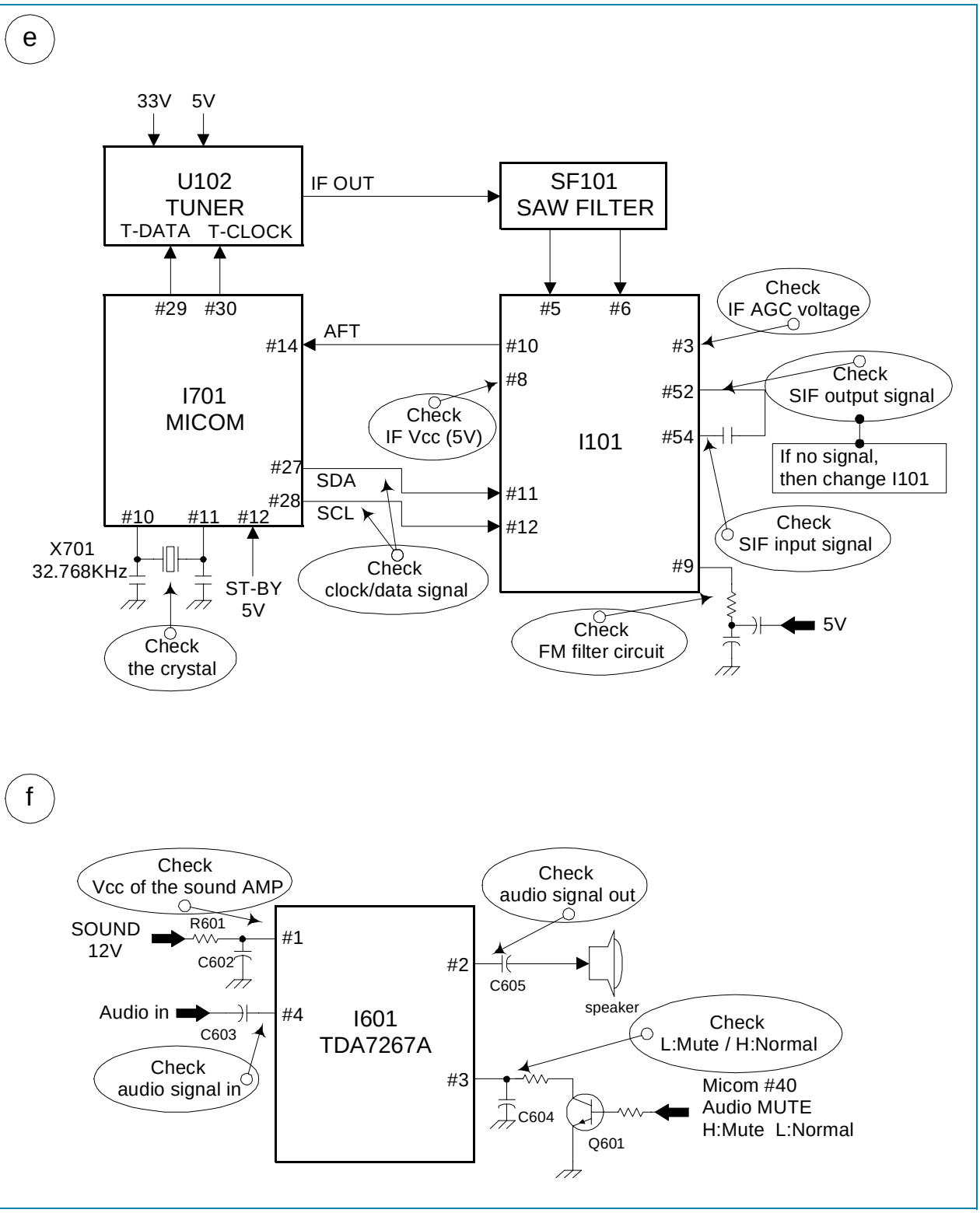
2. NO PICTURE

Check the waveform of I101 #46	NG : GO to the figure ⓒ
	OK : Go the figure ⓓ



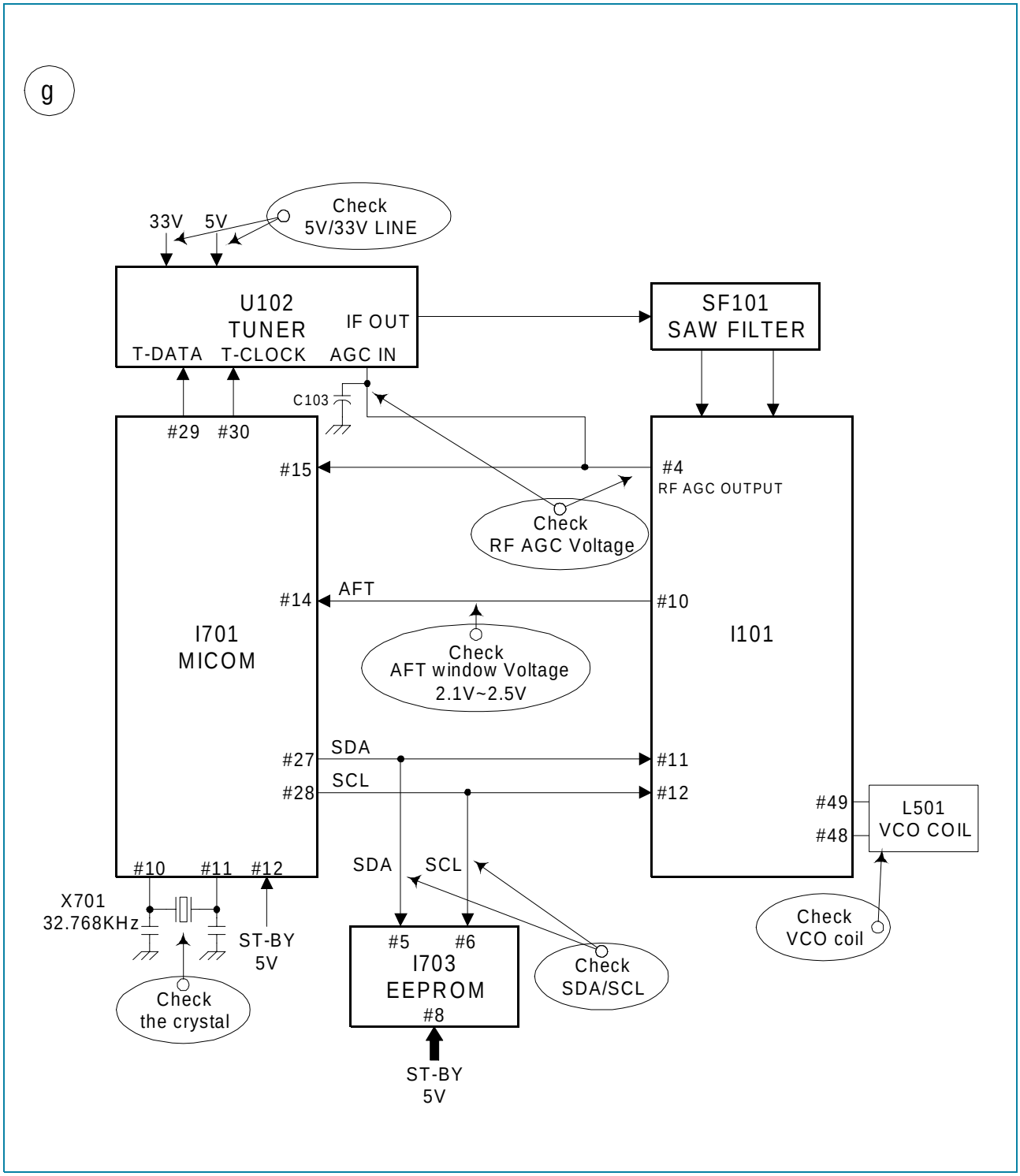
3. NO SOUND

Check audio output signal of I101 #1	NG : Go to the figure ⓔ
	OK : Go to the figure ⓕ

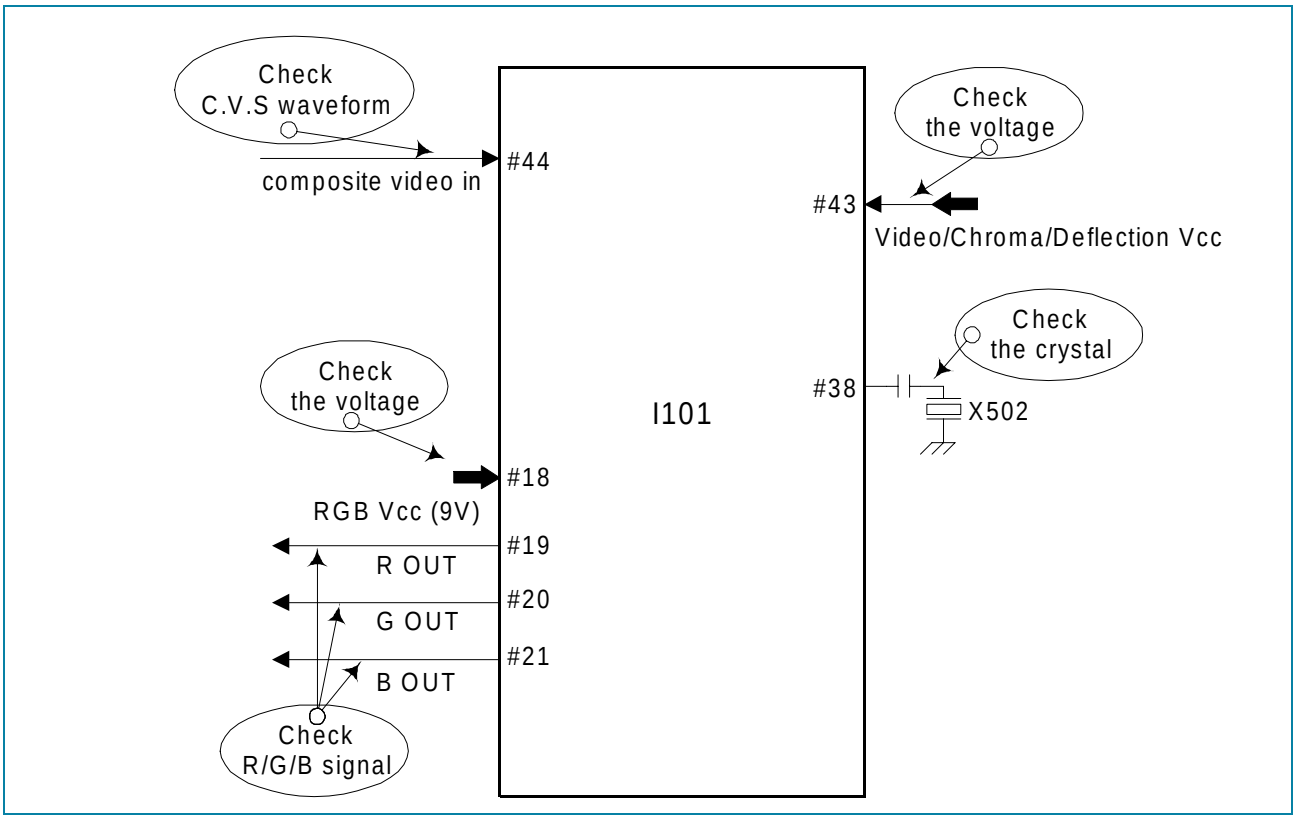


4. CH DON'T STOP

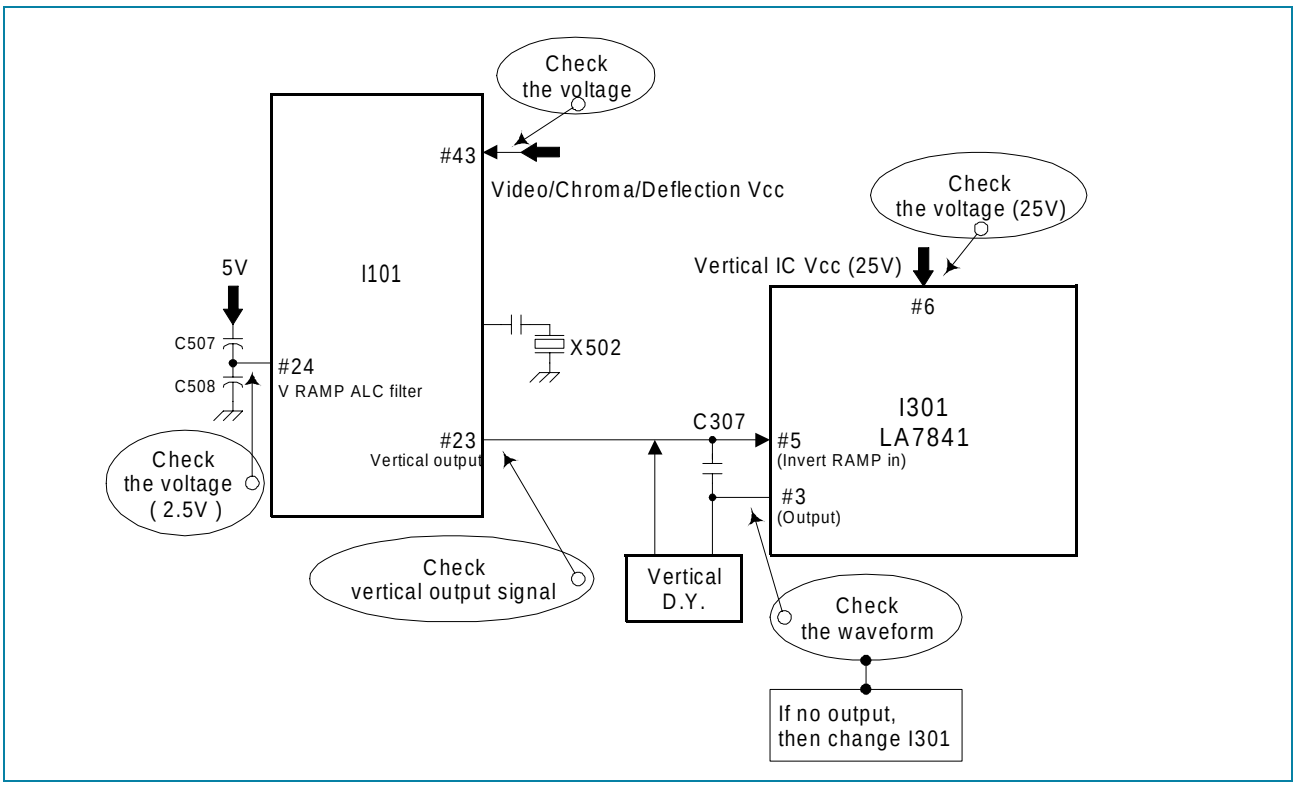
Check the input signal conditions	NG : Loss of signal or weak signal
	OK : Go to the figure ⓖ



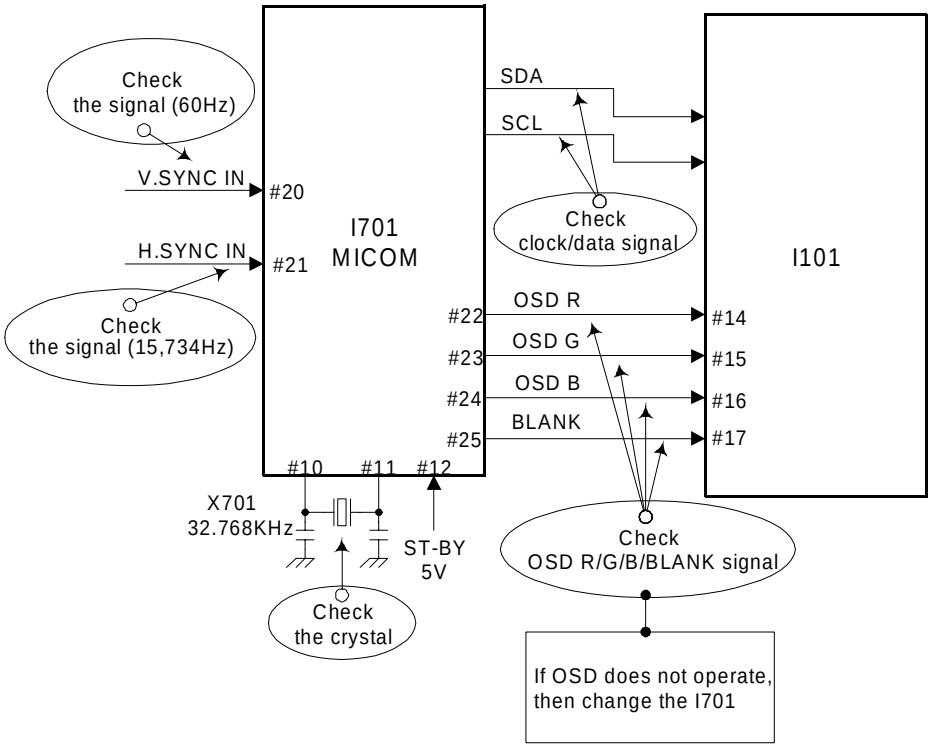
5. NO COLOR



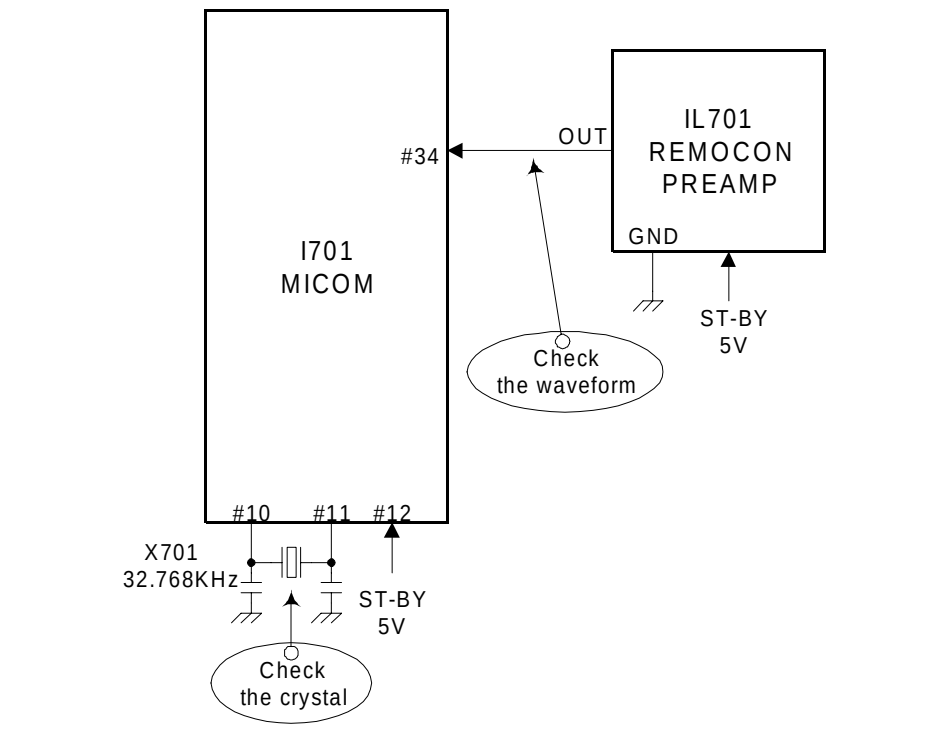
6. NO VERTICAL DEFLECTION



7. NO ON-SCREEN DISPLAY



8. REMOTE CONTROL DOES NOT OPERATE



Service Parts List (DTH-14V1FS)

CAUTION

" Ⓡ " Parts recommended for stock.
" ⚠ " Safety critical component, Replace only with genuine Daewoo safety part.

LOC	PART CODE	PART NAME	DESCRIPTION
■⚠Ⓡ	**48B3738T01**	**TRANSMITTER REMOCON**	**R-38T01**
■⚠	**PTACPWH403**	**ACCESSORY AS**	**DTH-14V4FS**
10	4850A02510	ANT ROD	S3BW216B (L=600 MM)
30	486A716200	BATTERY	AAAM 1.5V
40	4850A00250	TRANS ANT MATCHING	IMT-06
M821	4858213800	BAG INSTRUCTION	L.D.P.E T0.05X250X400
■⚠	**PTBCSHH427**	**COVER BACK AS**	**DTH-14V1FS**
M211	4852151400	COVER BACK	FR HIPS BK
M541	4855415800	SPEC PLATE	150ART P/E FILM (C/TV)
M591	4855930905	DECO TERM	PVC CL T0.2
■⚠	**PTPKCPH427**	**PACKING AS**	**DTH-14V1FS**
10	6520010100	STAPLE PIN	18M/M J D O
M681	4856812400	BAND	18MM X 3M
M801	4858038700	BOX CARTON	SW-2 DTQ-1463FW
M811	4858186701	PAD	EPS 14V1
M821	4858261100	BAG P.E	LDPE T0.02X1200X1000000
■⚠	58G0000084	COIL DEGAUSSING	DC-1450
■⚠	48519A4710	CRT GROUND NET	1401S-1015-1P
■⚠	PTCACAH427	CABINET AS	DTH-14V1FS
Ⓡ CRT1	PTRTPWH403	CRT AS	DTH-14V4FS
V01	58D0000082	COIL DY	ODY-M1489
V02	2233030001	PAINT LOCK	3B-1401B
V03	2TC26019BE	TAPE CLOTH	19X30 BEIGE
V04	2224050025	BOND SILICON	RTV 122 TUBE
V05	4850PM001-	MAGNET CP	NY-225 (MINI NECK)
V06	48A96R004-	RUBBER WEDGE	HMR 28 SR (Ø0X54)
V901	48A96414NA	CRT BARE	A34JLL41X(K)
M191	4851931802	BUTTON CTRL	4939102+5536001
M191A	7128301011	SCREW TAPPING	T2S WAS 3X10 MFZN
M201A	4856013300	SCREW CRT FIXING	30X80 BK
⚠Ⓡ M201B	4856215402	WASHER RUBBER	CR T2.0
⚠Ⓡ M211A	7122401412	SCREW TAPPING	T2S TRS 4X14 MFZN BK

LOC	PART CODE	PART NAME	DESCRIPTION
M321	4853214800	BRKT	FR HIPS BK
M491	4854939103	BUTTON	ABS BK
M561	48556136SS	MARK BRAND	SILVER ETCHING DIA-CUTTIN
M601	4856013301	SCREW CRT FIXING	30X140 YL
M681	4856812001	TIE CABLE	NYLON66 DA100
SP01A	7128301011	SCREW TAPPING	T2S WAS 3X10 MFZN
■⚠	PTFMSJH427	MASK FRONT AS	DTH-14V1FS
M201	4852067201	MASK FRONT	HIPS BK
■⚠	PTSPPWH407	SPEAKER AS	DTQ-14J4FC
PA601	4850703S50	CONNECTOR	YH025-03+35098+ULW=200
Ⓡ SP01	4858314010	SPEAKER	SP-5070F01 3W 8 OHM
■⚠Ⓡ	PTMPMSH403	PCB MAIN MANUAL AS	DTH-14V4FS
A000	4859901111	CORD POWER	KKP-419C KLCE-2F (2.1ME)
C101	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C102	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP
C103	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C104	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)
C105	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP
C106	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C107	CEXF1H228V	C ELECTRO	50V RSS 0.22MF (5X11) TP
C109	CCZF1H103Z	C CERA	50V F 0.01MF Z
C110	CCZF1H103Z	C CERA	50V F 0.01MF Z
C111	CCZF1H103Z	C CERA	50V F 0.01MF Z
C112	CCZF1H103Z	C CERA	50V F 0.01MF Z
C113	CCZF1H103Z	C CERA	50V F 0.01MF Z
C301	CMXB1H103J	C MYLAR	50V EU 0.01MF J (TP)
C302	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP
C303	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
C305	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP
C307	CXSL2H100D	C CERA	500V SL 10PF D (TAPPING)
C308	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)
C310	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP

LOC	PART CODE	PART NAME	DESCRIPTION
C311	CEXD1H229Q	C ELECTRO	50V RT 2.2MF (6.3X11) TP
C401	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
C403	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)
C404	CMYH3C722H	C MYLAR	1.6KV BUP 7200PF H
C405	CEXF2C109V	C ELECTRO	160V RSS 1MF (6.3X11) TP
C406	CMYE2D514J	C MYLAR	200V PU 0.51MF J
C410	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP
C411	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
C412	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
C413	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
C414	CEXF1V471V	C ELECTRO	35V RSS 470MF (10X20) TP
C415	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP
C416	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
C417	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
C418	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)
C419	CCZF1H103Z	C CERA	50V F 0.01MF Z
C451	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP
C452	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP
C501	CMXB1H105J	C MYLAR	50V EU 1MF J (TP)
C502	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP
C507	CMXB1H224J	C MYLAR	50V EU 0.22MF J (TP)
C508	CMXB1H224J	C MYLAR	50V EU 0.22MF J (TP)
C509	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C510	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP
C511	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)
C512	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP
C513	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C514	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP
C515	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C516	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP
C518	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP
C520	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C521	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
C523	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP
C524	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
C525	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP

LOC	PART CODE	PART NAME	DESCRIPTION
C526	CCZB1H681K	C CERA	50V B 680PF K (AXIAL)
C527	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)
C528	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)
C529	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)
C530	CXCH1H809D	C CERA	50V CH 8PF D (TAPPING)
C532	CCZF1H103Z	C CERA	50V F 0.01MF Z
C533	CZCH1H180J	C CERA	50V CH 18PF J (AXIAL)
C534	CCZF1H103Z	C CERA	50V F 0.01MF Z
C535	CCZF1H103Z	C CERA	50V F 0.01MF Z
C536	CCZF1H103Z	C CERA	50V F 0.01MF Z
C537	CCZB1H181K	C CERA	50V B 180PF K (AXIAL)
C538	CCZF1H103Z	C CERA	50V F 0.01MF Z
C539	CCZF1H103Z	C CERA	50V F 0.01MF Z
C540	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)
C541	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)
C542	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)
C548	CCXB1H152K	C CERA	50V B 1500PF K (TAPPING)
C555	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C566	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
C601	CMXB1H103J	C MYLAR	50V EU 0.01MF J (TP)
C602	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP
C603	CEXF1H108V	C ELECTRO	50V RSS 0.1MF (5X11) TP
C606	CMXB1H103J	C MYLAR	50V EU 0.01MF J (TP)
C611	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
C701	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP
C702	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP
C703	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C704	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C705	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C706	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP
C707	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)
C708	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C709	CZCH1H180J	C CERA	50V CH 18PF J (AXIAL)
C710	CZCH1H180J	C CERA	50V CH 18PF J (AXIAL)
C711	CCZF1H103Z	C CERA	50V F 0.01MF Z
C712	CCZF1H103Z	C CERA	50V F 0.01MF Z

LOC	PART CODE	PART NAME	DESCRIPTION
C713	CCZB1H221K	C CERA	50V B 220PF K (AXIAL)
C714	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)
C723	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)
C724	CCZF1H103Z	C CERA	50V F 0.01MF Z
C725	CCZF1H103Z	C CERA	50V F 0.01MF Z
C801	CL1UC3104M	C LINE ACROSS	WORLD AC250V 0.1UF M R.47
C802	CCXB3A472K	C CERA	1KV B 4700PF K (TAPPING)
C803	CCXB3A472K	C CERA	1KV B 4700PF K (TAPPING)
C804	CEYN2W181P	C ELECTRO	450V LHS 180MF (30X35)
C805	CMYU3A472J	C MYLAR	1KV BCP 4700PF J
C806	CCXB3A102K	C CERA	1KV B 1000PF K (TAPPING)
C807	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)
C812	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP
C813	CBXB3D471K	C CERA SEMI	2KV BL(N) 470PF K (T)
C814	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP
C815	CEXF2A100V	C ELECTRO	100V RSS 10MF (6.3X11) TP
C818	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP
C819	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP
C820	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP
C832	CBXB3D471K	C CERA SEMI	2KV BL(N) 470PF K (T)
C885	CH1BFE222M	C CERA AC	U/C/V AC400V 2200PF
C886	CH1BFE222M	C CERA AC	U/C/V AC400V 2200PF
C887	CH1BFE472M	C CERA AC	AC400V 4700PF M U/C/V
C888	CH1BFE472M	C CERA AC	AC400V 4700PF M U/C/V
C901	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)
C902	CMXL2E104K	C MYLAR	250V MEU 0.1MF K
C905	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)
C965	CCXB3D102K	C CERA	2KV B 1000PF K (TAPPING)
CA01	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
CA02	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)
D101	DUZ33B----	DIODE ZENER	UZ-33B
D301	D1N4003---	DIODE	1N4003 (TAPPING)
Ⓡ D401	D1N4937G--	DIODE	1N4937G
D405	D1N4937G--	DIODE	1N4937G
D406	D1N4937G--	DIODE	1N4937G
D407	D1N4937G--	DIODE	1N4937G

LOC	PART CODE	PART NAME	DESCRIPTION
D408	D1N4937G--	DIODE	1N4937G
D409	D1N4148---	DIODE	1N4148 (TAPPING)
D501	D1N4148---	DIODE	1N4148 (TAPPING)
D502	D1N4148---	DIODE	1N4148 (TAPPING)
D503	DUZ9R1BM--	DIODE ZENER	UZ-9.1BM 9.1V
D504	D1N4148---	DIODE	1N4148 (TAPPING)
D505	DUZ9R1BM--	DIODE ZENER	UZ-9.1BM 9.1V
D601	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)
D701	D1N4148---	DIODE	1N4148 (TAPPING)
D703	DLH2PR----	LED BLOCK	LH-2P-R
D704	DUZ3R9B---	DIODE ZENER	UZ-3.9B
D757	D1N4148---	DIODE	1N4148 (TAPPING)
Ⓡ D801	DPBS208GUF	DIODE BRIDGE	PBS208GU-CA (FORMING)
Ⓡ D807	DRGP15J---	DIODE	RGP15J
D808	DRGP15J---	DIODE	RGP15J
D812	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)
D813	DRGP15J---	DIODE	RZ1155V1
D822	DRZ115V1--	DIODE ZENER	R2M
DA01	D1N4148---	DIODE	1N4148 (TAPPING)
F801	5FSGB4022L	FUSE GLASS TUBE	SEMKO TL 4A 250V MF51
F801A	4857415001	CLIP FUSE	PFC5000-0702
F801B	4857415001	CLIP FUSE	PFC5000-0702
I101	1LA76805--	IC MAIN	LA76805
I301	PTC2SW7101	HEAT SINK ASS'Y	1LA7841--- + 7174300811
I301	1LA7841---	IC VERTICAL	LA7841
Ⓡ I301A	4857027101	HEAT SINK	SPCC T1.0+SN
Ⓡ I301B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN
I401	1K1A7805P1	IC REGULATOR	KIA7805API
I601	PTH2SW5400	HEAT SINK ASS'Y	1TDA7056A- + 7174301011
Ⓡ I601	1TDA7056A-	IC AUDIO	TDA7056A
I601A	4857025400	HEAT SINK	A1050P-H24 T2.0
I601B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN
Ⓡ I701	1DW8632CM1	IC MICOM	DW863228V-CM1
Ⓡ I703	1AT24C04PC	IC MEMORY	AT24C04-10PC
Ⓡ I801	4850M04710	MODULE POWER	DPM001T1A
I901	PTA2SW5400	HEAT SINK ASS'Y	1TDA6103Q- + 7174300811

LOC	PART CODE	PART NAME	DESCRIPTION
Ⓡ I901	1TDA6103Q-	IC VIDEO	TDA6103Q
I901A	4857025400	HEAT SINK	A1050P-H24 T2.0
I901B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN
IL701	1KRT30----	IC PREAMP	KRT30
JP02	4859109950	JACK PIN BOARD	PH-JB-9710A
JP03	4859109150	JACK PIN BOARD	PH-JB-9615C
L111	58C5580019	COIL CHOKE	TRF-9225 (0.55UH)
L112	5CPZ220K02	COIL PEAKING	22UH K (AXIAL 3.5MM)
L501	58N0000042	COIL VCO	TRF-V008
L502	5CPZ470K04	COIL PEAKING	47UH 10.5MM K (LAL04TB)
L533	5CPZ150K02	COIL PEAKING	15UH K (AXIAL 3.5MM)
L601	5MC0000100	COIL BEAD	HC-3550
L701	5CPZ220K02	COIL PEAKING	22UH K (AXIAL 3.5MM)
L800	58Q0000093	COIL DELAY LINE	RS208
L801	5PTLF106--	FILTER LINE	TLF-106
L802	5MC0000100	COIL BEAD	HC-3550
L805	58CX430599	COIL CHOKE	AZ-9004Y 940K TP
L807	5MC0000100	COIL BEAD	HC-3550
L808	5MC0000100	COIL BEAD	HC-3550
M681	4856812001	TIE CABLE	NYLON66 DA100
P401	4859240020	CONN WAFER	YFW500-05
P601	485923162S	CONN WAFER	YW025-03 (STICK)
P801A	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)
P801B	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)
PA501	4850708N08	CONNECTOR	BIC-08T-25T+C-20T+ULW=400
Ⓡ PWC1	4859902910	CORD POWER AS	KKP419C+BL102NG+TUBE=2100
PWC1A	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)
PWC1B	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)
Q401	TKSC2330Y-	TR	KSC2330Y (TP)
Ⓡ Q402	T2SD2499--	TR	2SD2499
Q403	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Q601	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Q602	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Q603	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Q701	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Q702	TKSC945CY-	TR	KSC 945C-Y (TAPPING)

LOC	PART CODE	PART NAME	DESCRIPTION
Q703	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Q704	TKSA733CY-	TR	KSA733CY (TP)
Q801	PTR2SW4500	HEAT SINK ASS'Y	T2SK2671-- + 7174300811
Ⓡ Q801	T2SK2671--	FET	2SK2671
Q801A	4857024500	HEAT SINK	AL EX B/K
Q801B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN
Q804	TKSA1013Y-	TR	KSA1013Y (TP)
Q805	TKTC3205Y-	TR	KTC3205Y (TP)
Q807	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
QV01	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
R101	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J
R103	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J
R104	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J
R105	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J
R106	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J
R107	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R301	RN01B471JS	R METAL FILM	1W 470 OHM J SMALL
R302	RN01B471JS	R METAL FILM	1W 470 OHM J SMALL
R303	RN02B129JS	R METAL FILM	2W 1.2 OHM J SMALL
R304	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J
R305	RN01B331JS	R METAL FILM	1W 330 OHM J SMALL
R306	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J
R307	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R308	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R309	RD-AZ113J-	R CARBON FILM	1/6 11K OHM J
R352	RN-4Z1603F	R METAL FILM	1/4 160K OHM F
R353	RN-4Z1502F	R METAL FILM	1/4 15K OHM F
R401	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J
R403	RN01B562JS	R METAL FILM	1W 5.6K OHM J SMALL
R405	RD-2Z751J-	R CARBON FILM	1/2 750 OHM J
R411	RN01B229JS	R METAL FILM	1W 2.2 OHM J SMALL
R412	RN01B369JS	R METAL FILM	1W 3.6 OHM J SMALL
R413	RN01B229JS	R METAL FILM	1W 2.2 OHM J SMALL
R414	RN01B229JS	R METAL FILM	1W 2.2 OHM J SMALL
R416	RD-2Z121J-	R CARBON FILM	1/2 120 OHM J
R418	RN02B150JS	R METAL FILM	2W 15 OHM J SMALL

LOC	PART CODE	PART NAME	DESCRIPTION
R420	RN02B620JS	R METAL FILM	2W 62 OHM J SMALL
R421	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J
R422	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R423	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R424	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R425	RD-AZ752J-	R CARBON FILM	1/6 7.5K OHM J
R451	RD-4Z153J-	R CARBON FILM	1/4 15K OHM J
R452	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J
R501	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J
R502	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J
R503	RD-AZ822J-	R CARBON FILM	1/6 8.2K OHM J
R504	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R505	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R506	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J
R507	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J
R508	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R511	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J
R512	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R513	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R514	RD-AZ390J-	R CARBON FILM	1/6 39 OHM J
R515	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R516	RD-AZ824J-	R CARBON FILM	1/6 820K OHM J
R517	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J
R518	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R520	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R521	RD-AZ914J-	R CARBON FILM	1/6 910K OHM J
R522	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R525	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R526	RN-AZ4701F	R METAL FILM	1/6 4.7K OHM F
R527	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J
R528	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R581	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R582	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R583	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R601	RS01Z688J-	R M-OXIDE FILM	1W 0.68 OHM J
R602	RD-2Z621J-	R CARBON FILM	1/2 620 OHM J

LOC	PART CODE	PART NAME	DESCRIPTION
R604	RD-AZ752J-	R CARBON FILM	1/6 7.5K OHM J
R605	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J
R606	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J
R610	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R611	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R612	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R613	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J
R701	RD-AZ240J-	R CARBON FILM	1/6 24 OHM J
R703	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R704	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R705	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R706	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R707	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R708	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R709	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J
R710	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R711	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R712	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J
R713	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R714	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R715	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R716	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R717	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R719	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R720	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R722	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R723	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R724	RD-AZ271J-	R CARBON FILM	1/6 270 OHM J
R726	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R727	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R728	RD-AZ514J-	R CARBON FILM	1/6 510K OHM J
R729	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R730	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R731	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R732	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R733	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J

LOC	PART CODE	PART NAME	DESCRIPTION
R734	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R735	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R736	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R737	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R738	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R739	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R740	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R743	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R744	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R746	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R750	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R777	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R780	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R785	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R789	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R790	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R799	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R801	RX10B339JN	R CEMENT	10W 3.3 OHM J BENCH 4P
R802	RD-4Z514J-	R CARBON FILM	1/4 510K OHM J
R803	RD-4Z333J-	R CARBON FILM	1/4 33K OHM J
R804	RS02Z278JS	R M-OXIDE FILM	2W 0.27 OHM J SMALL
R805	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J
R807	RD-AZ363J-	R CARBON FILM	1/6 36K OHM J
R809	RD-4Z514J-	R CARBON FILM	1/4 510K OHM J
R813	RD-4Z363J-	R CARBON FILM	1/4 36K OHM J
R814	RS02Z828JS	R M-OXIDE FILM	2W 0.82 OHM J SMALL
R817	RN01B301JS	R METAL FILM	1W 300 OHM J SMALL
R818	RD-4Z561J-	R CARBON FILM	1/4 560 OHM J
R820	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J
R822	RD-4Z363J-	R CARBON FILM	1/4 36K OHM J
R837	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J
R880	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K
R883	DJ140M290L	POSISTOR	J503P53D140M290L
R901	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J
R902	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J
R903	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J

LOC	PART CODE	PART NAME	DESCRIPTION
R904	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R905	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R906	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R910	RD-2Z152J-	R CARBON FILM	1/2 1.5K OHM J
R911	RD-2Z152J-	R CARBON FILM	1/2 1.5K OHM J
R912	RD-2Z152J-	R CARBON FILM	1/2 1.5K OHM J
R913	RN01B124JS	R METAL FILM	1W 120K OHM J SMALL
R914	RN01B124JS	R METAL FILM	1W 120K OHM J SMALL
R915	RN01B124JS	R METAL FILM	1W 120K OHM J SMALL
RA01	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
RA02	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J
RA03	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J
RA04	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
RA05	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J
RA06	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J
RA07	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J
RA08	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
RLY1	5SC0101338	SW RELAY	DQ5D1-O(M)/GJ-SS-105LM
RS801	DSVC471D14	VARISTOR	SVC471D14A
RV01	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
SCT1	4859303430	SOCKET CRT	PCS633A
SF101	5PTSF5241P	FILTER SAW	TSF5241P
SW702	5S50101090	SW TACT	SKHV17910A
SW703	5S50101090	SW TACT	SKHV17910A
SW704	5S50101090	SW TACT	SKHV17910A
SW705	5S50101090	SW TACT	SKHV17910A
SW706	5S50101090	SW TACT	SKHV17910A
® SW801	5S40101146	SW POWER PUSH	SS-160-7-B
T401	50D0000022	TRANS DRIVE	HD-15D
® T402	50H0000198	FBT	FSA37012M
® T801	50M3541T1-	TRANS SMPS	TSM-3541T1
® U102	4859719130	TUNER VARACTOR	DT5-NF20F
X502	5XE4R4336C	CRYSTAL QUARTZ	HC-49/U 4.433619MHZ 20PPM
X701	5XYR03276C	CRYSTAL QUARTZ	C-001R 32.768000KHZ 20PPM
Z501	5PXPS45MB-	FILTER CERA	TPS-4.5MB TRAP (TAPPING)

OPTION LIST

1. CM-003 14"/20"/21" DIFFERENT PARTS LIST

LOC	PART NAME	14 INCHES		20 INCHES		21 INCHES	
		PART CODE	DESCRIPTION	PART CODE	DESCRIPTION	PART CODE	DESCRIPTION
C404	C MYLAR	CMYH3C722H	1.6 KV BUP 7200PF H	CMYH3C662H	1.6 KV BUP 6600PF H	CMYH3C622H	1.6 KV BUP P6200PF H
R412	R METAL FILM	RN01B369JS	1W 3.6 OHM J SMALL	RN01B479JS	1W 4.7 OHM J SMALL	RN01B479JS	1W 5.1 OHM J SMALL
R452	R CARBON FILM	RD-4Z103J-	1/4 10K OHM J	RD-4Z912J-	1/4 9.1K OHM J	RD-4Z912J-	1/4 9.1K OHM J
R503	R CARBON FILM	RD-AZ822J-	1/6W 8.2K	RD-AZ752J-	1/6W 7.5K	RD-AZ682J-	1/6W 6.8K OHM J
R807	R CARBON FILM	RD-AZ363J	1/6W 27K	RD-AZ273J-	1/6W 27K	RD-AZ273J-	1/6W 27K OHM J
V01	COIL DY	58D0000082	ODY-M1489	48A96420N1	ODY-M2050	58D0000086	ODY-L2144
V901	CRT BARE	48A96414NA	A34JLL41X(K)	48A96420NB	A48JLL41X	48A96321P5	A51JSW91X(G)
ZZ131	COIL DEGAUSSING	48519A4710	DC-1400	58G0000122	DC-2030	58G0000110	PC-2080
ZZ132	CRT GROUND NET	48519A4710	1401S-1015-1P	N8519A5110	2001S-1015-1P	48519A5310	2101S-1015-1P

SCHEMATIC DIAGRAM
CM-003
(T-30 MODEL)
South America(AC
:DTH-14V1FS/20V1FS/21V1FS
:DTH-14V3FS/20V3FS/21V3FS
:DTH-14U1FS/20U1FS/21U1FS
:DTH-14V4FS/20V4FS/21V4FS
:DTH-14V5FS/20V5FS
:CHILE/PERU

1. CAUTION

"⚠" SYMBOL MARKED PARTS IN THE SCHEMATIC DIAGRAM DESIGNATE THE COMPONENTS WHICH HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY AND SHOULD BE REPLACED ONLY WITH TYPES INDENTICAL TO THOSE IN ORIGINAL CIRCUIT OR SPECIFIED IN THE PARTS LIST.
DO NOT DEGRADE THE SAFETY OF THE RECEIVER THROUGH IMPROPER SERVICING.

WARING :

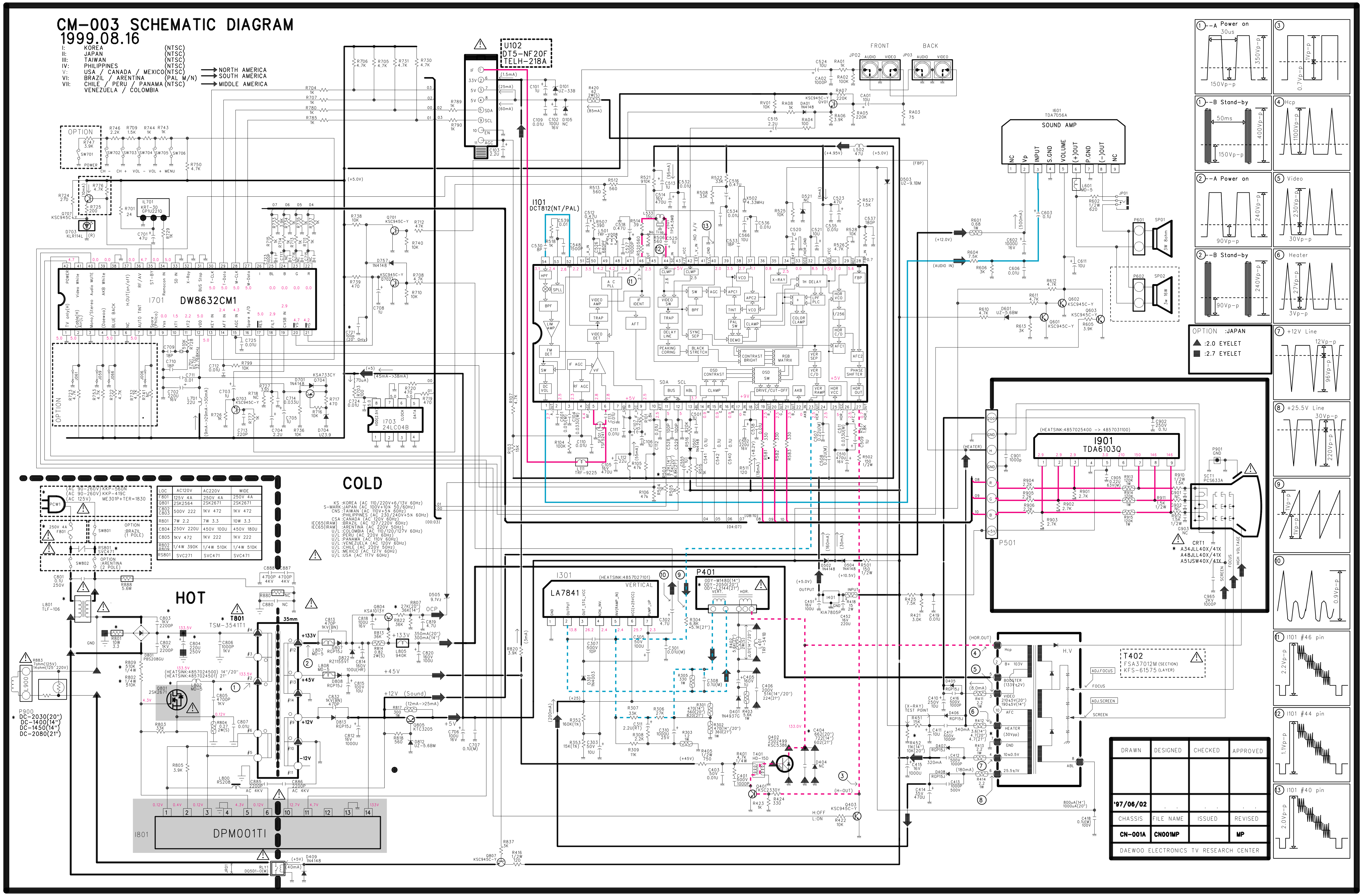
BEFORE SERVICING THIS CHASSIS,READ THE "X-RAY RADIATION PRECAUTION " "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" IN THE SERVICE MANUAL.

CAUTION TO THE SERVICE TECHNICIANS :

BEFORE RETURNING THE RECEIVER TO THE CUSTOMER APROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENT SHOULD BE CONDUCTED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTE :

1. RESISTANCE IS SHOWN IN OHMS. K=1,000 M=1,000,000
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES LESS THAN I ARE EXPRESSED IN uF AND THE VALUES MORE THAN I IN pF.
3. VOLTAGES READ WITH "V.T.V.M" FROM POINT INDICATE TO CHASSIS GROUND USING A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE VOLTAGE 120 VOLTS AC.
VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY +20% EXCEPT H.V.
4. IN CASE OF 19" RECEIVER THE COMPONENT WITH THE MARK * SHOULD BE USED ONLY.
5. THE CIRCUIT DIAGRAM IS A STANDARD ONE. CIRCUITS PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE.



POWER
VIDEO/CVBS
SOUND/SIF
REMARKABLE PARTS
HORIZONTAL
VERTICAL
WAVE FORMS