

# Service Manual

## Color Television

CHASSIS : CN-001A

Model :

DTQ-14V1FC/20V1FC

DTQ-14V5FC/20V4FC

DTQ-14V1FS/20V1FS

DTQ-14V5FS/20V4FS

DTQ-14V3FS/20V3FS

DTQ-14U1FS/20U1FS

DTQ-14V1FSP/20V1FSP

DTQ-14V5FSP/20V4FSP

DTQ-14U1FSP/20U1FSP

U.S.A

Canada

Middle America  
(AC 110V)

Mexico, Chile,  
Peru (AC 220V)



DTQ-14V1FC



DTQ-14V3FC



DTQ-20V4FC



DTQ-14V5FC



DTQ-14U1FS



R-38T01

### ✓ Caution

: In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL (Parts Price List) in Service Information Center (<http://svc.dwe.co.kr>).

**DAEWOO ELECTRONICS CO., LTD**

[http : //svc.dwe.co.kr](http://svc.dwe.co.kr)

Aug. 1999

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# PRODUCT SAFETY SERVICING GUIDELINES FOR AUDIO - VIDEO PRODUCTS

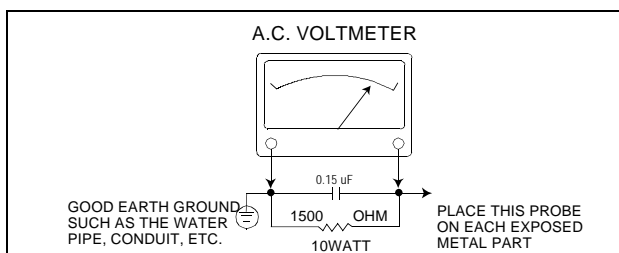
**CAUTION :** DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY. NEVER PERFORM CUSTOMIZED INSTALLATIONS WITHOUT MANUFACTURER'S APPROVAL. UNAUTHORIZED MODIFICATIONS WILL NOT ONLY VOID THE WARRANTY, BUT MAY LEAD TO YOUR BEING LIABLE FOR ANT RESULTING PROPERTY DAMAGE OR USER INJURY. SERVICE WORK SHOULD BE 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 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 (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 MILLIAMPS A.C. ANY 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, ANY 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 : IMPLSION

1. ALL DIRECT VIEWED PICTURE TUBES ARE EQUIPPED WITH AN INTEGRAL IMPLSION 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

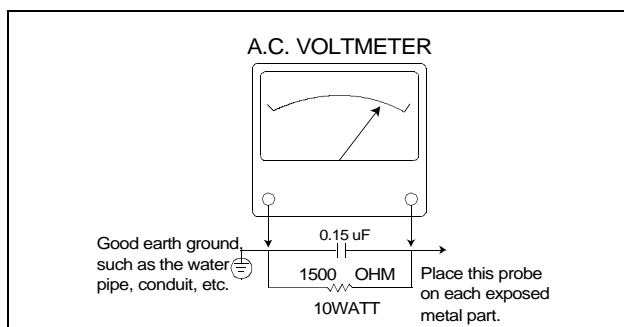
**CAUTION :** Do not attempt to modify this product in any way. Unauthorized modifications will not only void the warranty, but may lead to your being liable for any resulting property damage or user injury. Service work should be performed only after you are thoroughly familiar with all of the following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

### SAFETY CHECKS

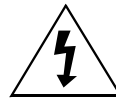
After the original service problem has been corrected, a check should be made of the following:

#### 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 particulates.
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 (water 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.



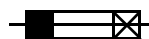
### GRAPHIC SYMBOLS :



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 sufficiently 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 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 receiver with a problem of excessive high voltage, avoid being unnecessarily close to the picture tube and 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).

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**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**

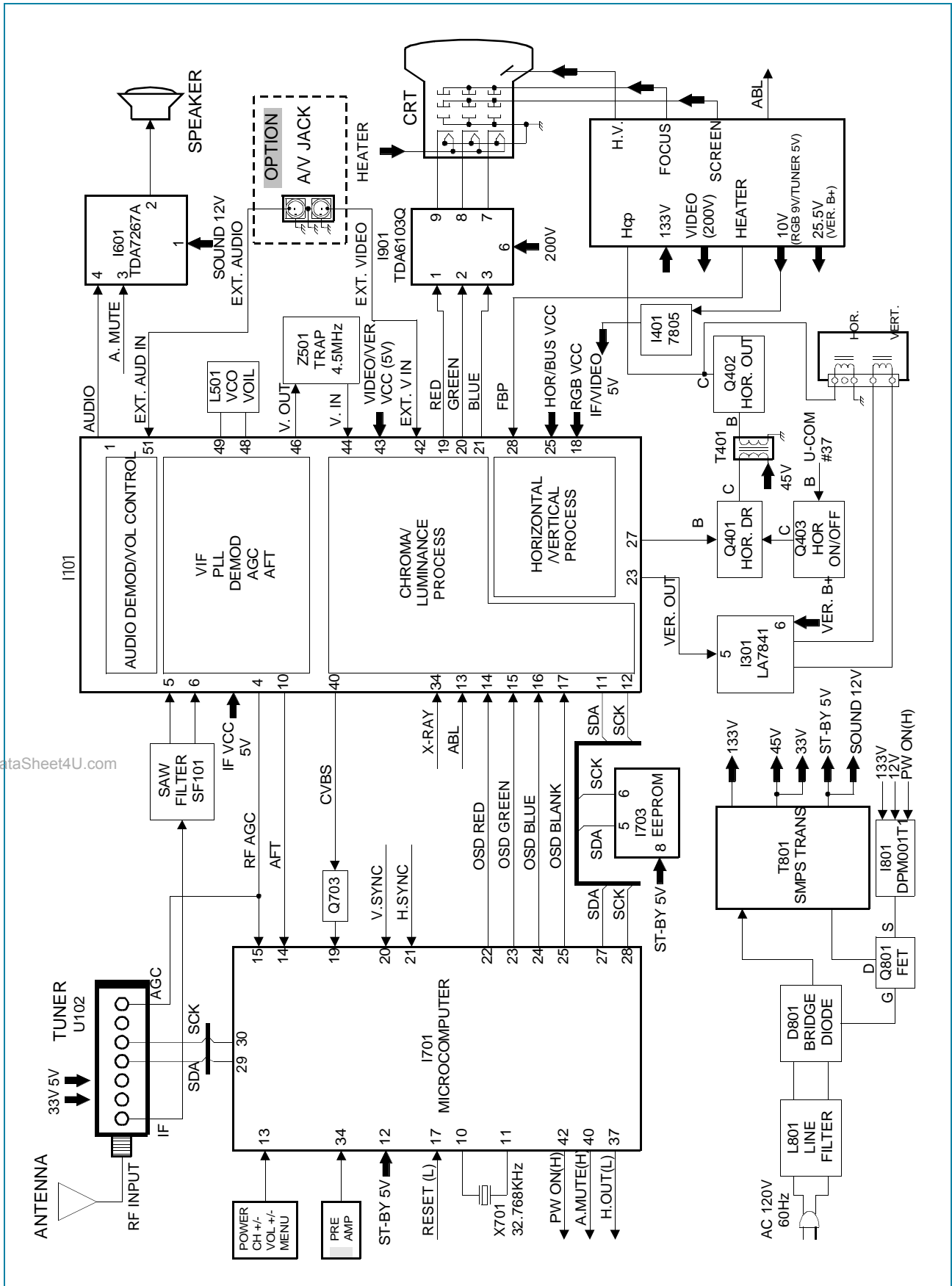
1. Never install any receiver in closed-in recess, cubbyhole or closely fitting shelf space over, or close to heat duct, or in the path of heated air flow.
2. Avoid conditions of high humidity such as : Outdoor patio installations where dew is a factor. Near steam radiators where steam leakage is a factor, 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	DTQ-14/20U1FS	DTQ-14/20U1FSP	DTQ-14/20V1FSP DTQ-14V5/20V4FSP	REMARKS
	DTQ-14/20V1FC DTQ-14V5/20V4FC DTQ-14/20V1FS DTQ-14V5/20V4FS DTQ-14/20V3FS				
TV STANDARD	NTSC-M				
POWER INPUT	AC 120V 60 Hz		AC 220V 50/60 Hz		
POWER CONSUMPTION	14 = 55W 20 = 65W				
TUNING SYSTEM	Frequency Synthesizer ( FS ) Tuning System				
TUNING RANGES	VHF : 2 ~ 13 (12) UHF : 14 ~ 69 (56) CATV : 1 ~ 125 (125)				
SOUND OUTPUT	1.3 W	1.3 W+1.3 W		1.3 W	
SPEAKER	3 W 8 ohm				
ANTENNA INPUT IMPEDANCE	75 ohm Unbalanced				
AUXILIARY INPUT TERMINAL	Front : Video, Audio 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 On/Off Time Sleep Timer Power Restore				

# BLOCK DIAGRAM



# ALIGNMENT INSTRUCTIONS

## 1. SERVICE MODE ADJUSTMENTS

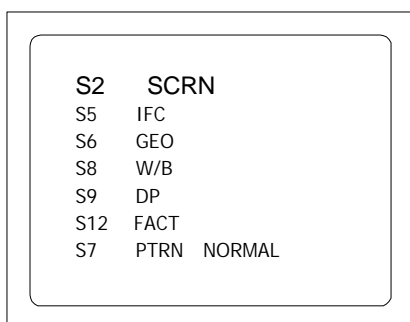
Follow the steps below whenever service adjustment is required. See Table- A and Table- B to determine if service adjustments are required.

### 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.

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**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									
<b>I703</b> (EEPROM)	O		Initial setting values are written from I701. Adjusting Items <table border="1" style="margin-left: 20px;"> <tr> <td>S5</td> <td>RFAGCD</td> </tr> <tr> <td>S6</td> <td>H.PHASE/V.POSI/V.SIZE</td> </tr> <tr> <td>S8</td> <td>RD/BD/RB/GB/BB</td> </tr> <tr> <td>S9</td> <td>Subbrightness</td> </tr> </table>	S5	RFAGCD	S6	H.PHASE/V.POSI/V.SIZE	S8	RD/BD/RB/GB/BB	S9	Subbrightness
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)								



## ALIGNMENT INSTRUCTIONS

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)	8	0 ~ 31	Must be set to 20
	AGC Point	3.75	-	Select AGC reference voltage
	A/D VALUE	-	-	
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)
	NO SD POWER OFF	YES	-	Automatically turn off in 15min for no received signal.
	Vertical S-Correction (V SC)	0	0 ~ 31	Must be set to 6
	Vertical Linearity (V LIN)	20	0 ~ 31	Must be set to 16
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)	10	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
	Subbrightness	*	0 ~ 127	Align common RGB DC level
S9	Contrast	10	0 ~ 27	
	Tint	27	0 ~ 27	
	Color	15	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 can 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, DON'T PRESS OTHER BUTTONS EXCEPT VOLUME UP OR DOWN BUTTON.

## ALIGNMENT INSTRUCTIONS

**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.

IF	CONTROL	
AUTO	RFAGC	START
VIDEOL		7
RFAGCD		10
FM.LEV		8
AGC POINT		3.75
A/D VALUE : 8DH		
MOVE            ADJUST    RECALL : SET		

- 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.

NORMAL → BLACK → WHITE100 → WHITE60 → CROSS

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

GEOMETRY	
H. PHASE	20
V. POSI	29
V. SIZE	70
NO SD POWER OFF YES	
V SC	0
V LIN	20
MOVE            ADJUST    RECALL : SET	

**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.

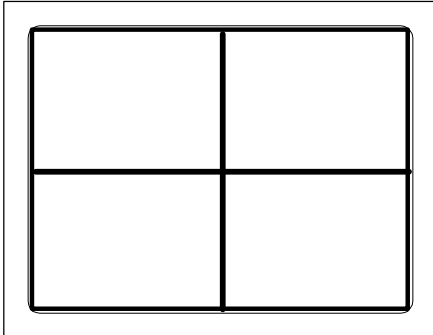
**4-2. Vertical Position Adjustment**

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

## ALIGNMENT INSTRUCTIONS

### 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.

RD	58
GD	10
BD	65
RB	105
GB	160
BB	100
MOVE        ADJUST    RECALL : SET	

- 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.
- 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 shown in below.

D.P.	
SUB BRIGHTNESS	64
CONTRAST	10
TINT	27
COLOR	15
MOVE        ADJUST    RECALL : SET	

## ALIGNMENT INSTRUCTIONS

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

### CONTRAST

- Fixed value = 10

### TINT

- Fixed value = 27

### COLOR

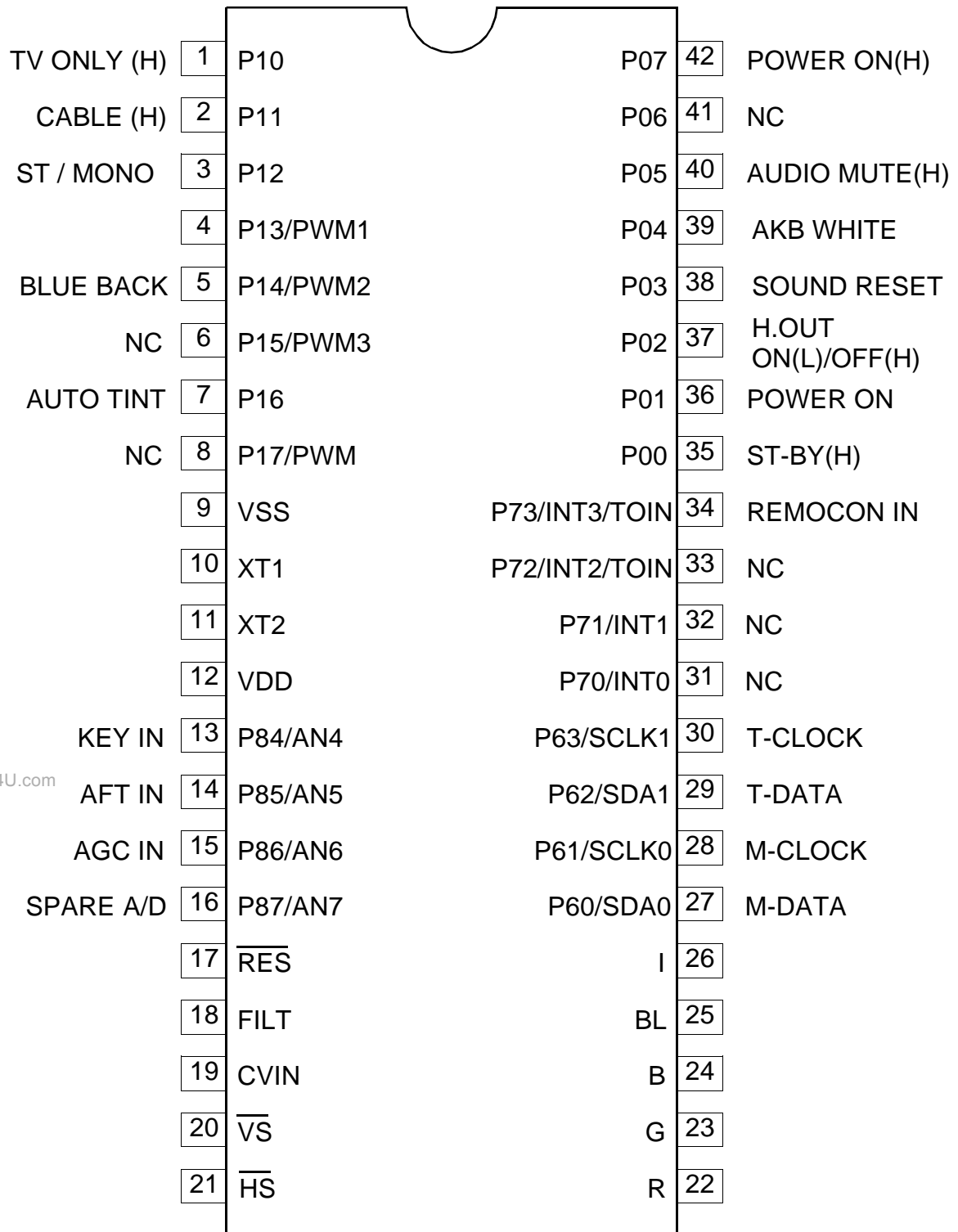
- Fixed value = 15

### 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.

## IC DESCRIPTION

- 3) On Screen Displays function is interior designed.
- 4) Package. : 42 PIN SDIP.
- 5) Tuner (Pre-scaler.) : I<sup>2</sup>C Bus.  
/PLL IC : TAU 6014-S(SIEMENS).
- 6) Remocon. : The IC of Transmission (MITSUBISHI M50560)
- 7) E<sup>2</sup>PROM. : 24C08(I<sup>2</sup>C 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<sup>2</sup>C 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<sup>2</sup>C Bus Control
- 5) The Others Function.
  - Video/Audio Mute Function.
  - If a Channel is no signal, after 15 minutes is Auto-Power Off Function.

## IC DESCRIPTION

- 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<sup>2</sup>PROM Interface (I<sup>2</sup>C 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
CN - 001A www.DataSheet4U.com	#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.
	#4	Remote		O	- Low(DC_0V) : Deawoo. - High(DC_5V) : Mitsubishi
	#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.
Tatal Sun				7	- Use. (No Use.)



## IC DESCRIPTION

### 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) : Mitshubishi. - Low(DC_0V) : Daewoo(Only at Factory)								
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 (Cn-220 only)	- The 8 pin is a spare pin. - Pin 1 to Pin 8. - 8-bit input / output port. - Input /Output can be specified in a bit. - Other function. <table border="1" data-bbox="694 1160 1102 1348"> <tbody> <tr> <td>P13</td> <td>PWM 1 output</td> </tr> <tr> <td>P14</td> <td>PWM 2 output</td> </tr> <tr> <td>P15</td> <td>PWM 3 output</td> </tr> <tr> <td>P16</td> <td>Timer 1(PWM) output.</td> </tr> </tbody> </table> - This use cn220 but don't use cn001.		P13	PWM 1 output	P14	PWM 2 output	P15	PWM 3 output	P16
P13	PWM 1 output										
P14	PWM 2 output										
P15	PWM 3 output										
P16	Timer 1(PWM) output.										
9	VSS	GND	- GND - Negative power supply.								
10	XT1	XT1	- It uses 32.768KHz X-TAL.								
11	XT2	XT2	- 10 pin is input terminal for crystal oscillator. - 11 pin is output terminal for crystal oscillator.								
12	VDD	VDD	- +5V( $\pm 0.5V$ ) - 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								

## IC DESCRIPTION

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

## IC DESCRIPTION

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

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

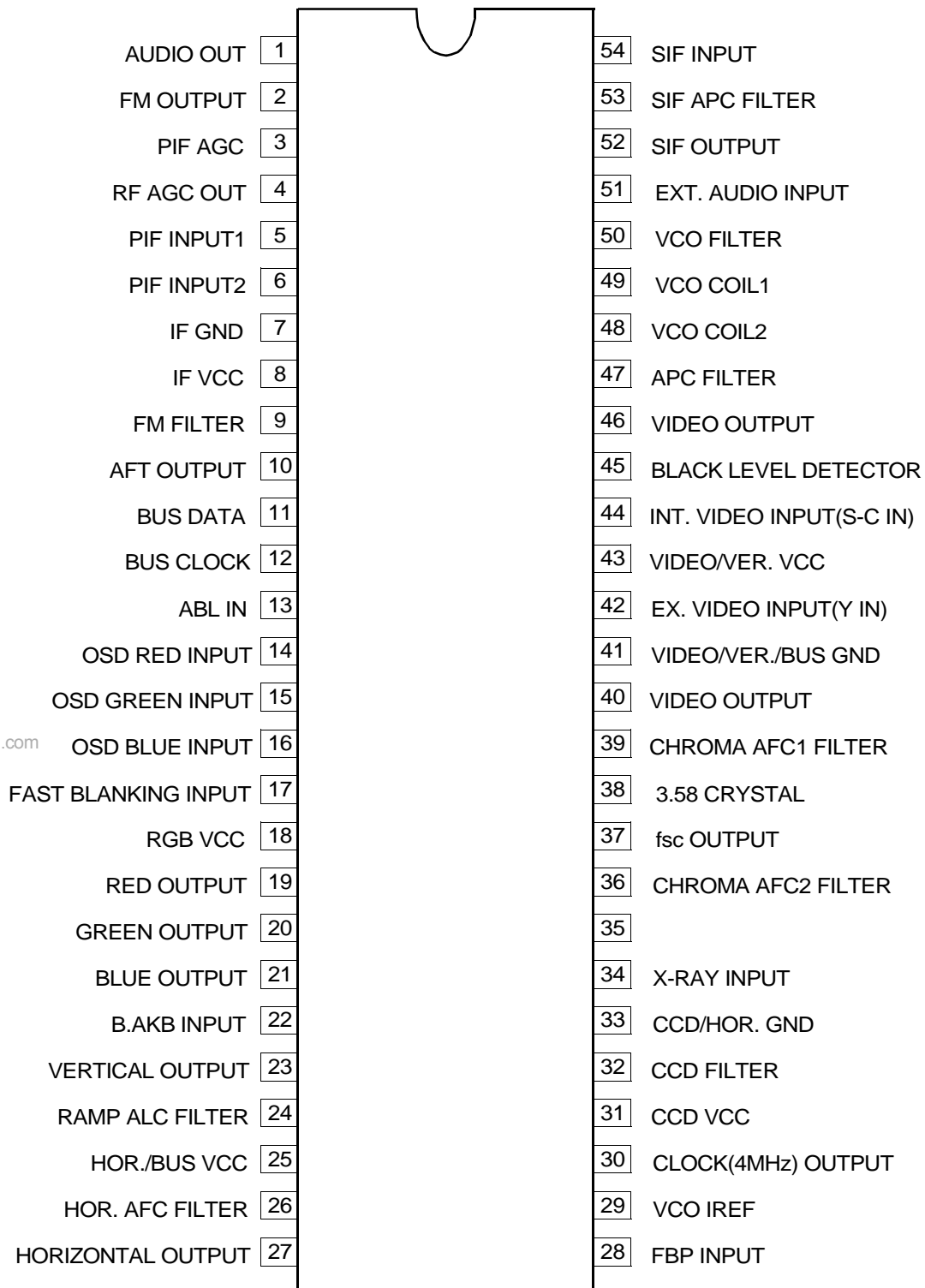
At port 1,"Programmable pull-up resistor provided" when specifying either CMOS or N-ch open drain output.

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 resistor OFF.

**I101**

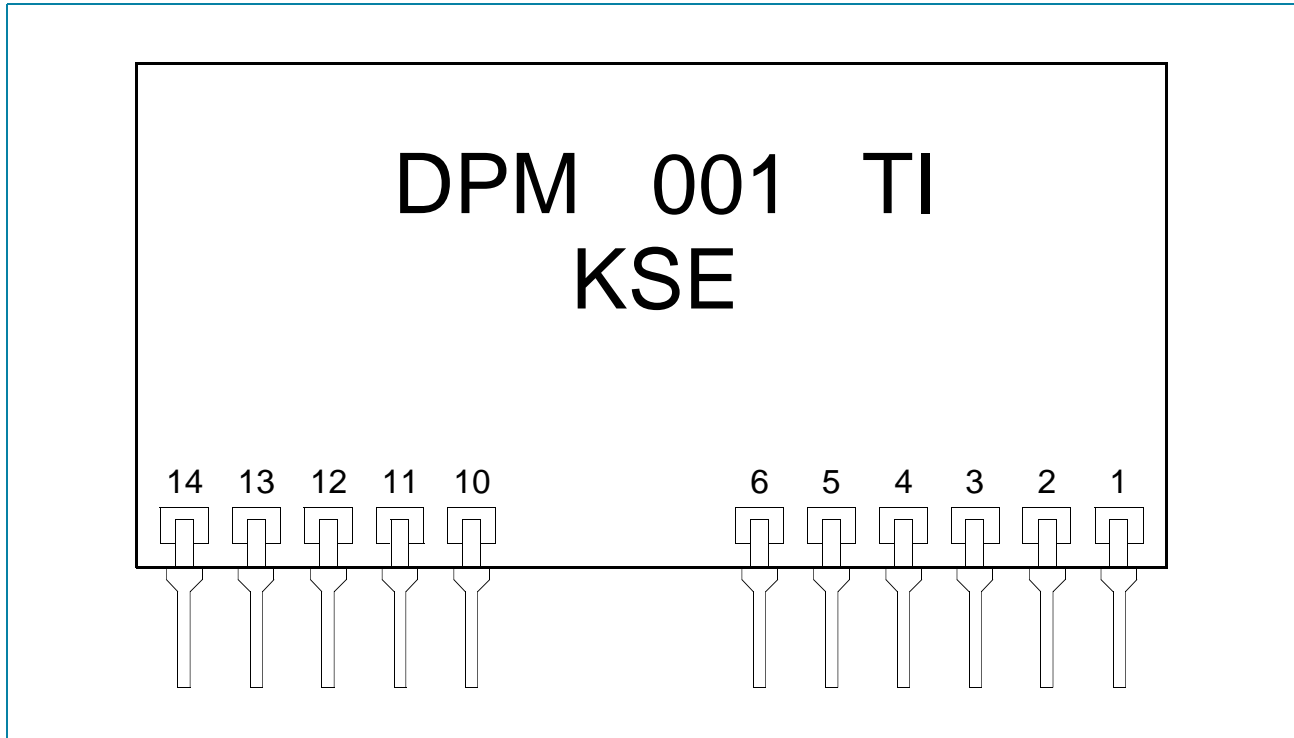
DCT814(LA76814) : IC VIDEO PROCESSOR



## IC DESCRIPTION

### I801

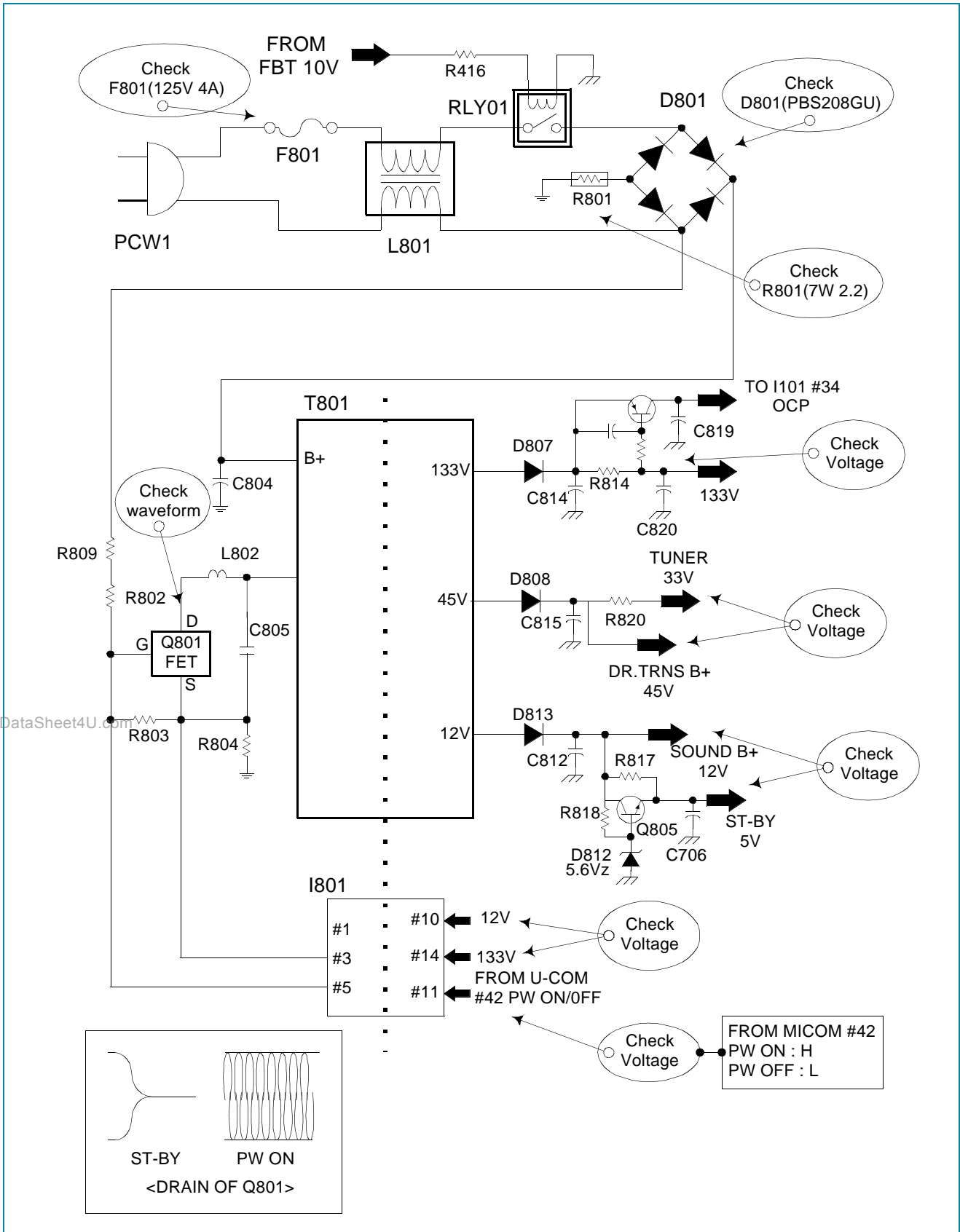
POWER CONTROL MODULE



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

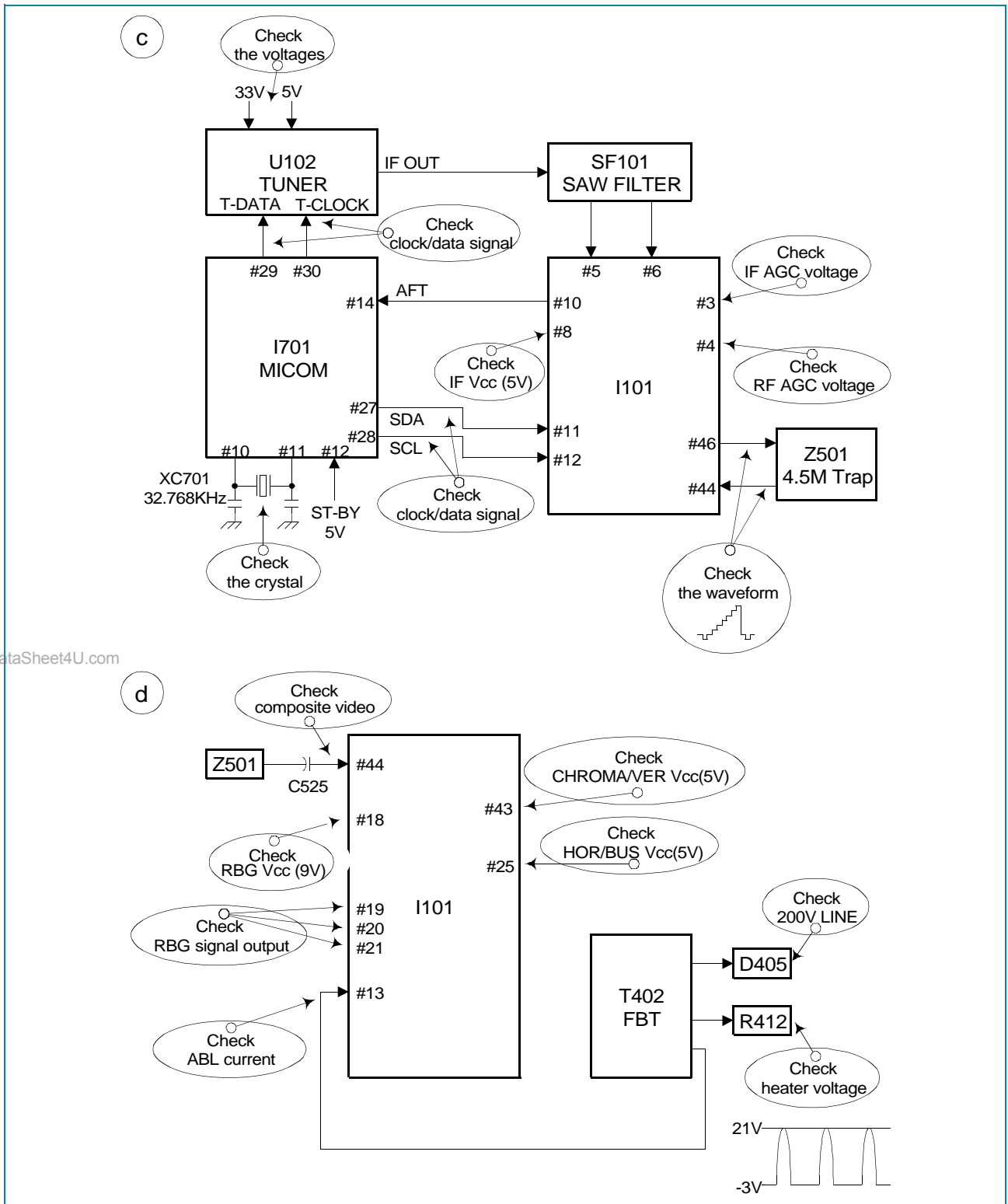
## 1. NO POWER



TROUBLESHOOTING GUIDE

2. NO PICTURE

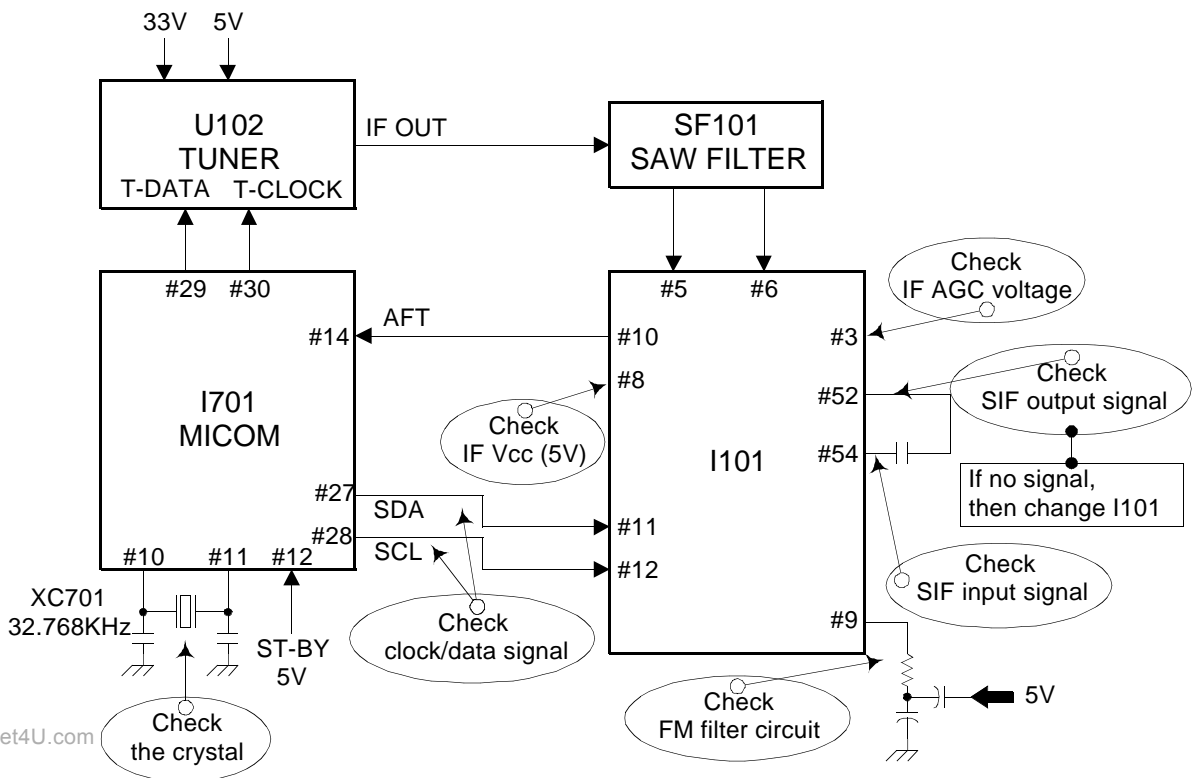
Check the waveform of I101 #46	NG : GO to the figure ㉓
	OK : Go the figure ㉔



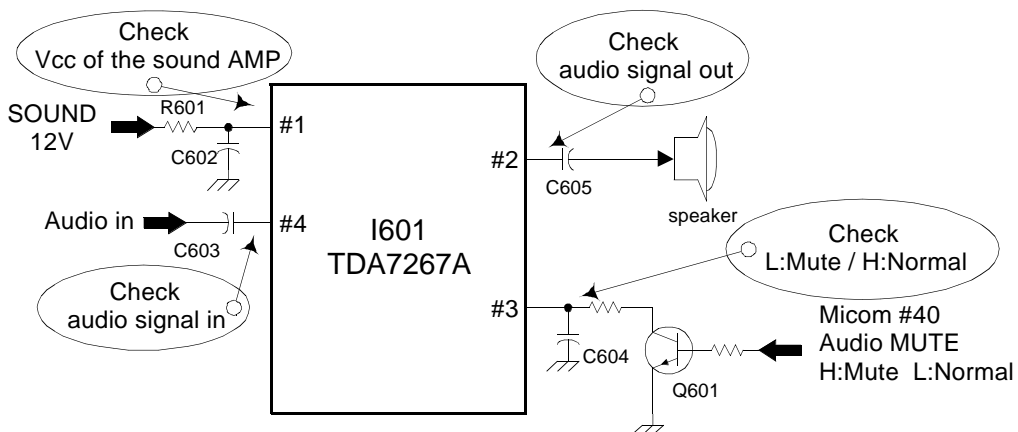
3. NO SOUND

Check audio output signal of I101 #1	NG : Go to the figure ㉔
	OK : Go to the figure ㉕

㉔



㉕

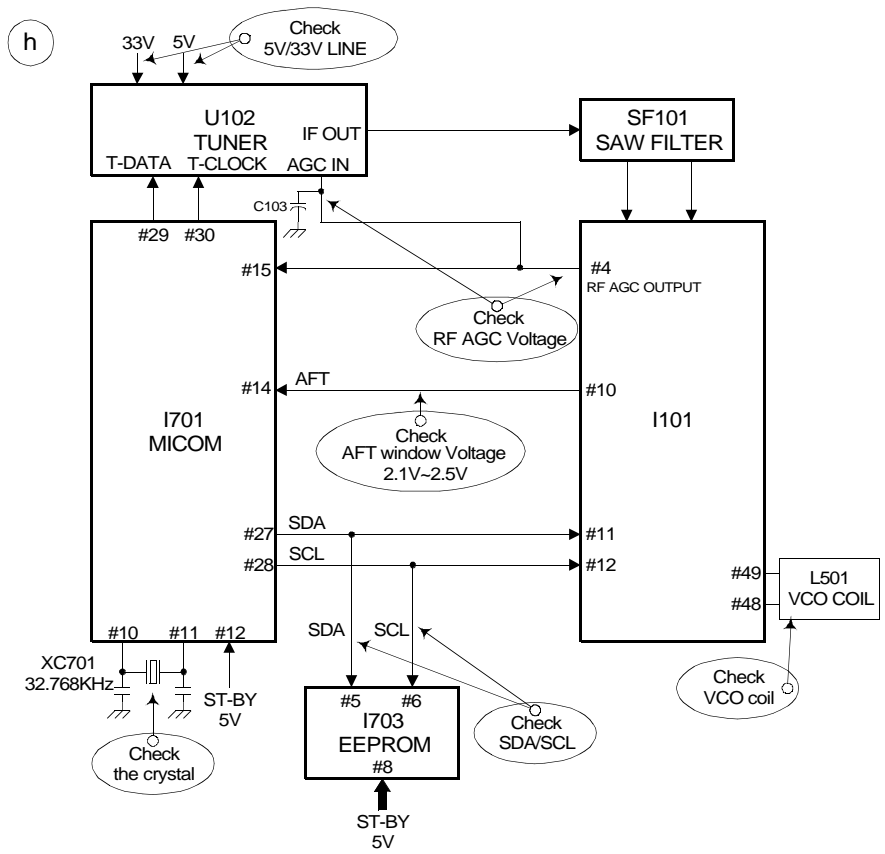




**TROUBLESHOOTING GUIDE**

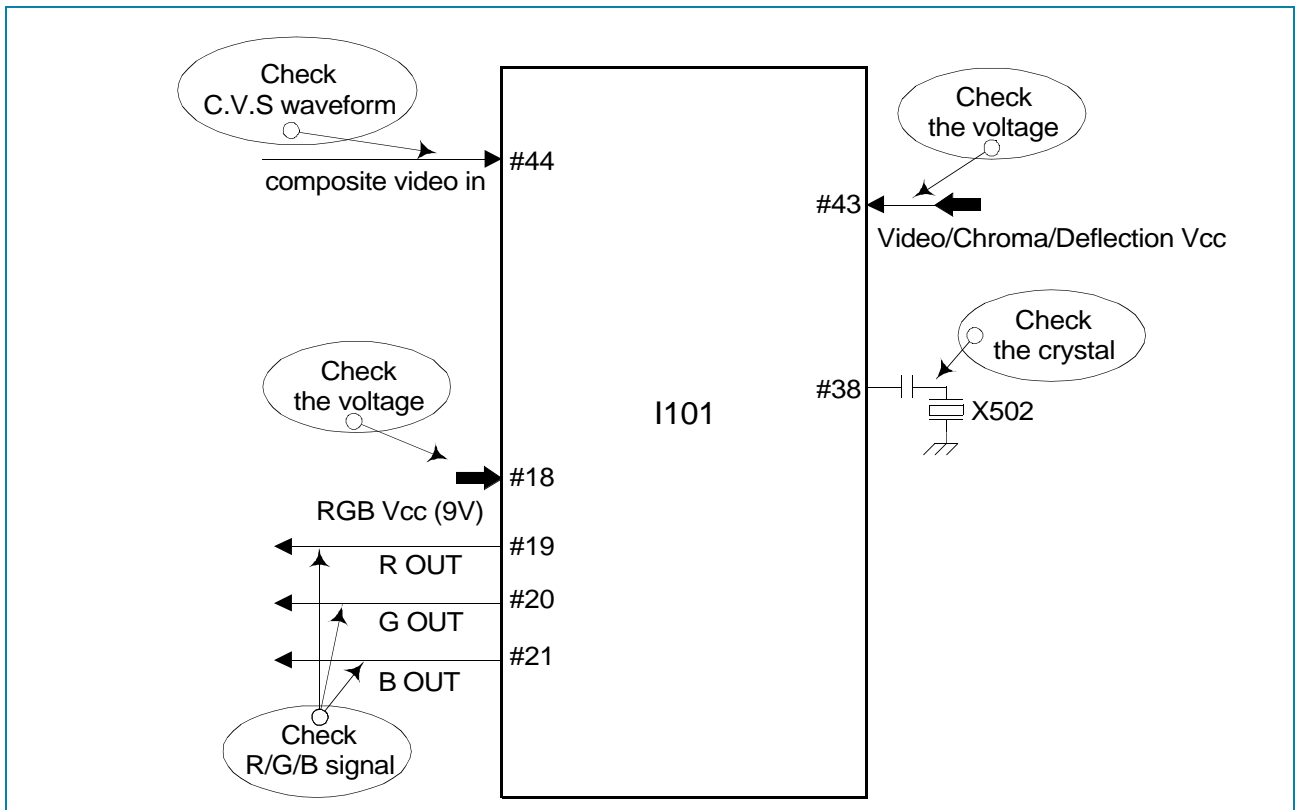
**4. CH DON'T STOP**

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

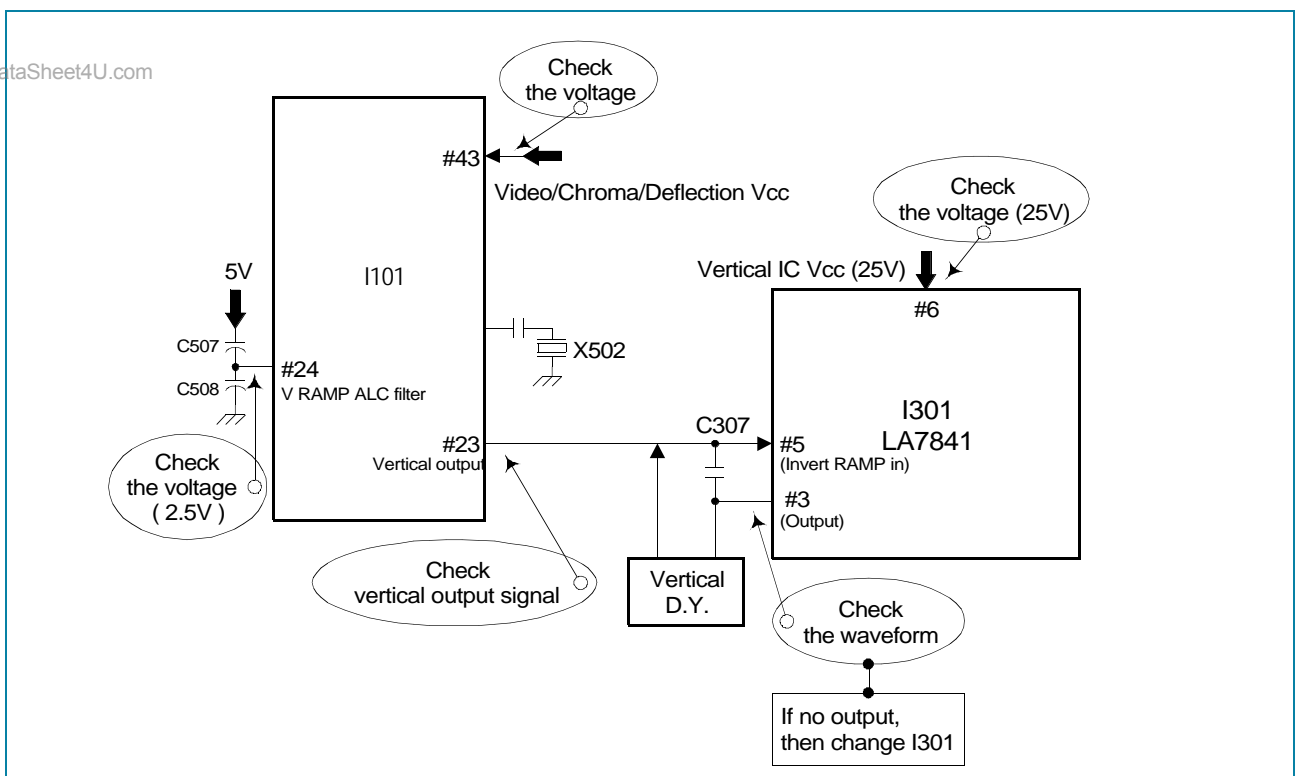


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### 5. NO COLOR

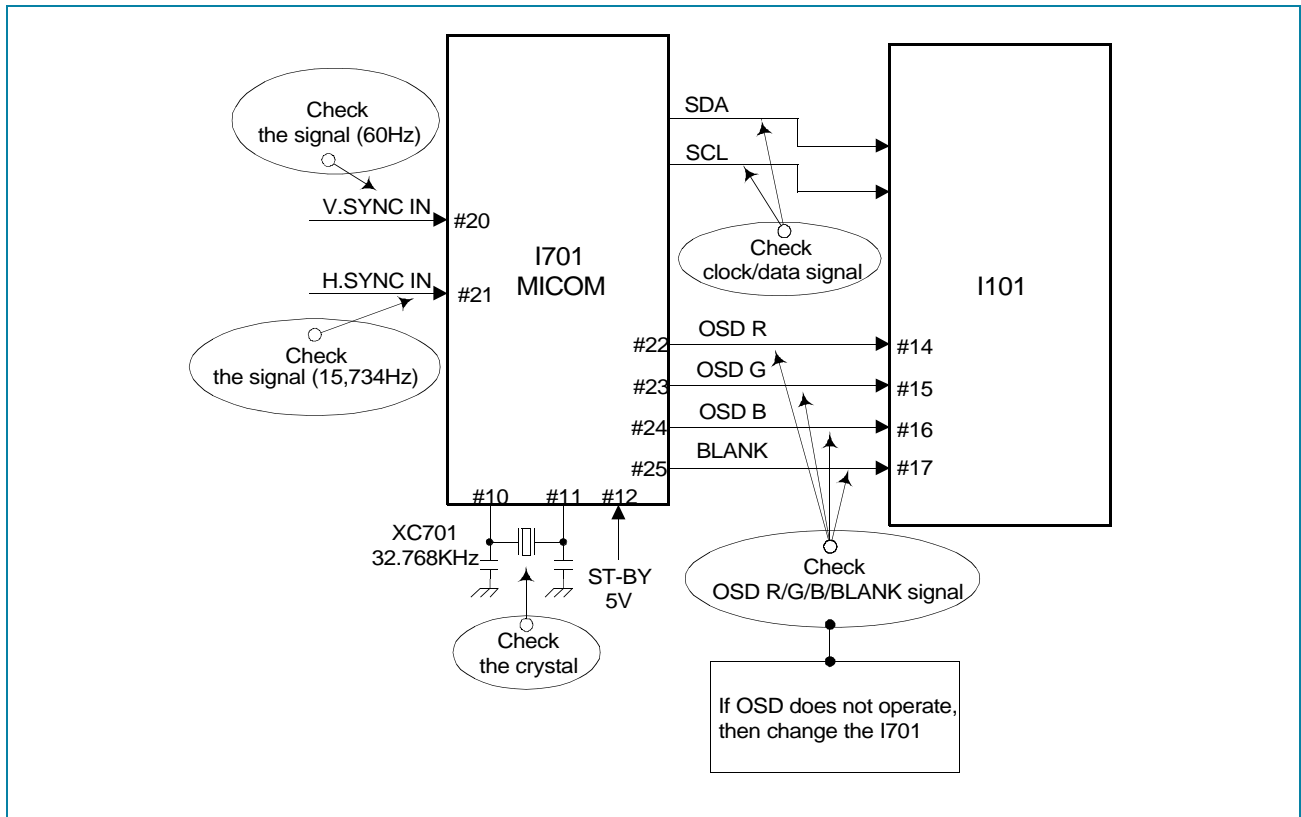


### 6. NO VERTICAL DEFLECTION



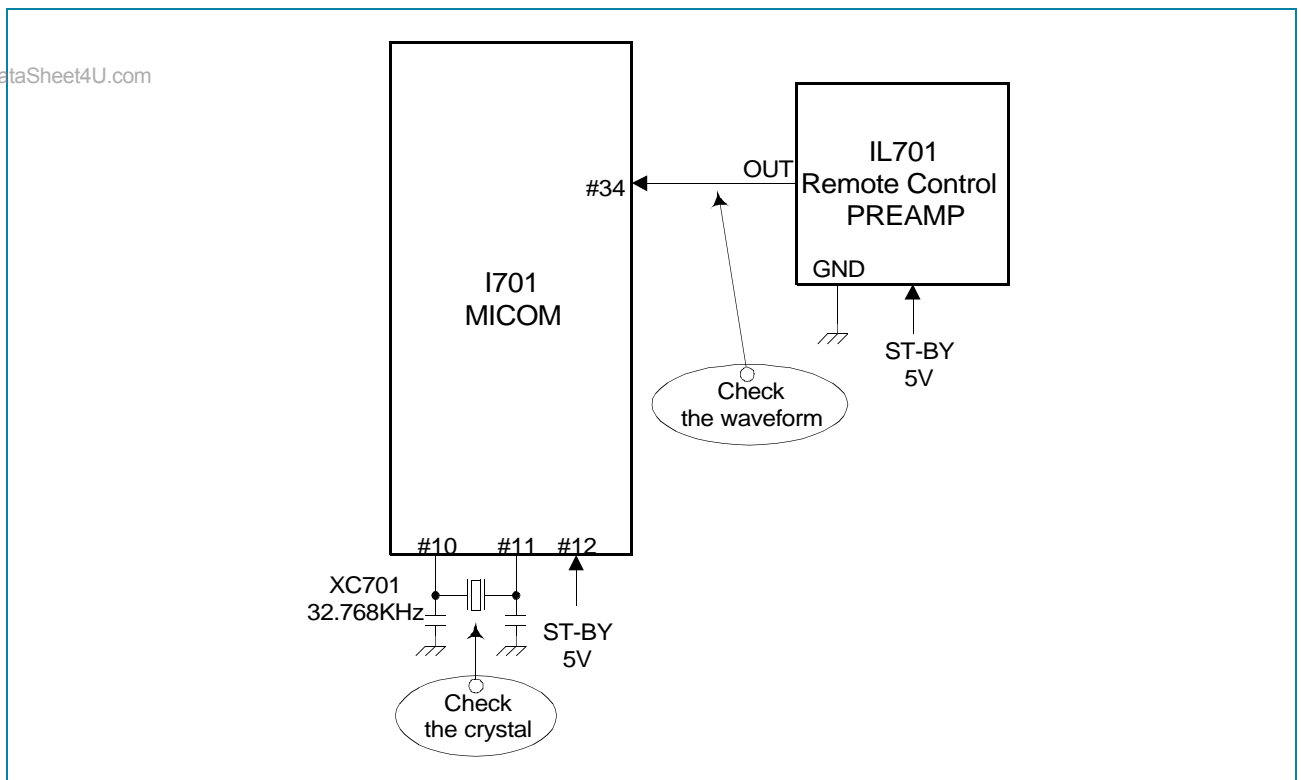
**ROUBLESHOOTING GUIDE**

**7. NO ON-SCREEN DISPLAY**



**8. REMOTE CONTROL DOES NOT OPERATE**

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# ELECTRICAL PARTS LIST

✓ **Caution:** In this Service Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service information Center(<http://svc.dwe.co.kr>)

"△" is a safety part, so it must be used the same part.

"Ⓜ" is a recommendable part for essential stock.

LOC	PART CODE	PART NAME	DESCRIPTION	LOC	PART CODE	PART NAME	DESCRIPTION
Ⓜ ZZ100	48B3738T01	TRANSMITTER REMOCON	R-38T01	C103	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
ZZ110	PTACPWH394	ACCESSORY AS	DTQ-14P2FC	C104	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)
10	4850A02510	ANT ROD	S3BW216B (L=600 MM)	C105	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP
30	486A716200	BATTERY	AAAM 1.5V	C106	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
40	4850A00250	TRANS ANT MATCHING	IMT-06	C107	CEXF1H228V	C ELECTRO	50V RSS 0.22MF (5X11) TP
ZZ120	PTBCSHH404	COVER BACK AS	DTQ-14V1FS	C301	CMXB1H103J	C MYLAR	50V EU 0.01MF J (TP)
M211	4852151401	COVER BACK	HIPS BK	C302	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP
M541	4855415800	SPEC PLATE	150ART P/E FILM (C/TV)	C303	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
M591	4855930901	DECO TERM	PVC CL T0.2	C305	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP
ZZ130	PTPKCPH404	PACKING AS	DTQ-14V1FS	C307	CXSL2H100D	C CERA	500V SL 10PF D (TAPPING)
10	6520010100	STAPLE PIN	18MM J D O	C308	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)
M801	485803871D	BOX CARTON	SW-2	C310	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP
M811	4858186700	PAD	EPS 14V1	C311	CEXD1H229Q	C ELECTRO	50V RT 2.2MF (6.3X11) TP
M821	4858261100	BAG P.E	LDPE T0.02X1200X1000000	C401	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
△ ZZ131	58G0000078	COIL DEGAUSSING	DC-1400	C402	CCXB1H471K	C CERA	50V B 470PF K (TAPPING)
ZZ132	48519A4710	CRT GROUND NET	1401S-1015-1P	C403	CCYB2H103K	C CERA	500V B 0.01MF K
ⓂⓂ CRT1	PTRTPWH394	CRT AS	"NTSC 14"" ITC CRT AS"	C404	CMYH3C722H	C MYLAR	1.6KV BUP 7200PF H
△ V01	58D0000082	COIL DY	ODY-M1489	C405	CEXF2C109V	C ELECTRO	160V RSS 1MF (6.3X11) TP
V02	2233030001	PAINT LOCK	3B-1401B	C406	CMYE2D514J	C MYLAR	200V PU 0.51MF J
V03	2TC26019BE	TAPE CLOTH	19X30 BEIGE	C410	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP
V04	2224050025	BOND SILICON	RTV 122 TUBE	C411	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
V05	4850PM001-	MAGNET CP	NY-225 (MINI NECK)	C412	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
V06	48A96R004-	RUBBER WEDGE	HMR 28 SR (10X54)	C413	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
V901	48A96414N1	CRT BARE	A34JLL40X	C414	CEXF1V471V	C ELECTRO	35V RSS 470MF (10X20) TP
M191	4851931801	BUTTON CTRL	4939101+5536001	C415	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP
M201A	4856013300	SCREW CRT FIXING	30X80 BK	C416	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
M201B	4856215402	WASHER RUBBER	CR T2.0	C417	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)
M211A	7122401612	SCREW TAPPING	T2S TRS 4X16 MFZN BK	C418	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)
M321	4853214800	BRKT	FR HIPS BK	C451	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP
M561	4855613600	MARK BRAND	COPPER T0.4	C452	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP
M601	4856013301	SCREW CRT FIXING	30X140 YL	C501	CMXL1H105J	C MYLAR	50V MEU 1MF J
M681	4856812001	TIE CABLE	NYLON66 DA100	C502	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP
SP01A	7128301011	SCREW TAPPING	T2S WAS 3X10 MFZN	C507	CEXF1H228V	C ELECTRO	50V RSS 0.22MF (5X11) TP
ZZ200	PTFMSJH404	MASK FRONT AS	DTQ-14V1FS	C508	CEXF1H228V	C ELECTRO	50V RSS 0.22MF (5X11) TP
M201	4852067200	MASK FRONT	FR HIPS BK	C509	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
ZZ202	PTSPWH407	SPEAKER AS	DTQ-14J4FC	C510	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP
PA601	4850703550	CONNECTOR	YH025-03+35098+ULW=200	C511	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)
Ⓜ SP01	4858314010	SPEAKER	SP-5070F01 3W 8 OHM	C512	CEXF1H108V	C ELECTRO	50V RSS 0.1MF (5X11) TP
Ⓜ ZZ290	PTMPMSH404	PCB MAIN MANUAL AS	DTQ-14V1FS	C513	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP
C101	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	C514	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP
C102	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	C515	CEXD1H109F	C ELECTRO	50V RND 1MF (5X11) TP

## ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	LOC	PART CODE	PART NAME	DESCRIPTION
C516	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	CC154	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C517	CMXB1H473J	C MYLAR	50V 0.047MF J (TP)	CC155	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C518	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	CC426	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C519	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	CC528	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C520	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	CC551	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C524	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	CC552	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C525	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	CC556	HCQK809DCA	C CHIP CERA	50V CH 8PF D 2012
C601	CMXB1H103J	C MYLAR	50V EU 0.01MF J (TP)	CC560	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C602	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP	CC562	HCQK180JCA	C CHIP CERA	50V CH 18PF J 2012
C603	CEXF1H108V	C ELECTRO	50V RSS 0.1MF (5X11) TP	CC567	HCQK181JCA	C CHIP CERA	50V CH 180PF J 2012
C604	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	CC568	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C605	CEXF1C471V	C ELECTRO	16V RSS 470MF (10X12.5)TP	CC569	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C701	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	CC570	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C702	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP	CC571	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C703	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	CC573	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C704	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	CC575	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C705	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	CC580	HCBK152KCA	C CHIP CERA	50V X7R 1500PF K 2012
C706	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	CC662	HCBK153KCA	C CHIP CERA	50V X7R 0.015MF K 2012
C707	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)	CC752	HCQK180JCA	C CHIP CERA	50V CH 18PF J 2012
C708	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	CC753	HCQK180JCA	C CHIP CERA	50V CH 18PF J 2012
C801	CL1UC3104M	C LINE ACROSS	WORLD AC250V 0.1UF M R.47	CC754	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
⚠ C802	CCXB2H222K	C CERA	500V B 2200PF K (TAPPING)	CC755	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
⚠ C803	CCXB2H222K	C CERA	500V B 2200PF K (TAPPING)	CC756	HCQK221JCA	C CHIP CERA	50V CH 220PF J 2012
C804	CEYN2E221P	C ELECTRO	250V LHS 220MF (22X30)	CC757	HCBK333KCA	C CHIP CERA	50V X7R 0.033MF K 2012
C805	CMYU3A472J	C MYLAR	1KV BCP 4700PF J	CC758	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C806	CCXB3A102K	C CERA	1KV B 1000PF K (TAPPING)	CC759	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C807	CMXB1H103J	C MYLAR	50V EU 0.01MF J (TP)	CC760	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C812	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP	CC766	HRFT000-CA	R CHIP	1/10 0 OHM 2012
C813	CBXB3D471K	C CERA SEMI	2KV BL(N) 470PF K (T)	CC768	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C814	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP	CC780	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C815	CEXF2A100V	C ELECTRO	100V RSS 10MF (6.3X11) TP	CC796	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C818	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	CC799	HRFT000-CA	R CHIP	1/10 0 OHM 2012
C819	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	CC801	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C820	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP	CC900	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C832	CBXB3D471K	C CERA SEMI	2KV BL(N) 470PF K (T)	CCA01	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C880	CH1BFE222M	C CERA AC	U/C/V AC400V 2200PF	D101	DUZ33B----	DIODE ZENER	UZ-33B
⚠ C881	CH1HFE102M	C CERA AC	4.0KV 1000PF E DG	D301	D1N4003---	DIODE	1N4003 (TAPPING)
C902	CMXL2E104K	C MYLAR	250V MEU 0.1MF K	Ⓜ D401	D1N4937G--	DIODE	1N4937G
C905	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)	D405	D1N4937G--	DIODE	1N4937G
C965	CCXB3D102K	C CERA	2KV B 1000PF K (TAPPING)	D406	D1N4937G--	DIODE	1N4937G
CA01	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	D407	D1N4937G--	DIODE	1N4937G
CC151	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012	D408	D1N4937G--	DIODE	1N4937G
CC152	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012	D409	D1N4148---	DIODE	1N4148 (TAPPING)
CC153	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012	D501	D1N4148---	DIODE	1N4148 (TAPPING)

## ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	LOC	PART CODE	PART NAME	DESCRIPTION
D502	D1N4148---	DIODE	1N4148 (TAPPING)	L111	58C5580019	COIL CHOKE	TRF-9225 (0.55UH)
D503	DUZ9R1BM--	DIODE ZENER	UZ-9.1BM 9.1V	L112	5CPZ220K02	COIL PEAKING	22UH K (AXIAL 3.5MM)
D504	D1N4148---	DIODE	1N4148 (TAPPING)	L501	58N0000042	COIL VCO	TRF-V008
D505	DUZ9R1BM--	DIODE ZENER	UZ-9.1BM 9.1V	L502	5CPZ470K04	COIL PEAKING	47UH 10.5MM K (LAL04TB)
D701	D1N4148---	DIODE	1N4148 (TAPPING)	L533	5CPZ150K02	COIL PEAKING	15UH K (AXIAL 3.5MM)
D703	DLH2PR----	LED BLOCK	LH-2P-R	L701	5CPZ220K02	COIL PEAKING	22UH K (AXIAL 3.5MM)
D704	DUZ3R9B---	DIODE ZENER	UZ-3.9B	L800	58Q0000093	COIL DELAY LINE	RS208
D757	D1N4148---	DIODE	1N4148 (TAPPING)	△ L801	5PLF24A2--	FILTER LINE	LF-24A2
D801	DD2SB80---	DIODE BRIDGE	D2SB80	L802	5MC0000100	COIL BEAD	HC-3550
Ⓡ D807	DRGP15J---	DIODE	RGP15J	L805	58CX430599	COIL CHOKE	AZ-9004Y 940K TP
D808	DRGP15J---	DIODE	RGP15J	L807	5MC0000100	COIL BEAD	HC-3550
D812	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	L808	5MC0000100	COIL BEAD	HC-3550
D813	DRGP15J---	DIODE	RGP15J	M681	4856812001	TIE CABLE	NYLON66 DA100
D822	DR2M-----	DIODE ZENER	R2M	P401	4859240020	CONN WAFER	YFW500-05
DA01	D1N4148---	DIODE	1N4148 (TAPPING)	P601	485923162S	CONN WAFER	YW025-03 (STICK)
△Ⓡ F801	5F1GB4021L	FUSE GLASS TUBE	UL/CSA TL 4A 125V MF51	P801A	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)
F801A	4857415001	CLIP FUSE	PFC5000-0702	P801B	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)
F801B	4857415001	CLIP FUSE	PFC5000-0702	PA501	4850708N08	CONNECTOR	BIC-08T-25T+C-20T+ULW=400
Ⓡ I101	1DCT814B--	IC CHROMA	DCT814B	△Ⓡ PWC1	PTWASW2710	CORD POWER ASS'Y	4859903711+ 4857417700
Ⓡ I301	1LA7841---	IC VERTICAL	LA7841	Q401	TKSC2330Y-	TR	KSC2330Y (TP)
I301A	4857027101	HEAT SINK	SPCC T1.0+SN	Ⓡ Q402	T2SD2499--	TR	2SD2499
I301B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	Q403	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
I401	1K1A7805P1	IC REGULATOR	KIA7805P1	Q601	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Ⓡ I601	1TDA7267A-	IC AMP	TDA7267A	Q701	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Ⓡ I701	1DW8632AA2	IC MICOM	DW863228V-AA2(5K39)	Q702	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
Ⓡ I703	1AT24C02PC	IC MEMORY	AT24C02-10PC	Q703	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
△Ⓡ I801	4850M04310	MODULE POWER	DPM001T1	Q704	TKSA733CY-	TR	KSA733CY (TP)
Ⓡ I901	1TDA6103Q-	IC VIDEO	TDA6103Q	Q707	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
I901A	4857031100	HEAT SINK	A1050P-H24 T2.0	△Ⓡ Q801	T2SK2564--	FET	2SK2564
I901B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	Q801A	4857024500	HEAT SINK	AL EX B/K
Ⓡ IL701	1KRT30----	IC PREAMP	KRT30	Q801B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN
J001-J004	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	Q804	TKSA1013Y-	TR	KSA1013Y (TP)
J006-J024	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	Q805	TKTC3205Y-	TR	KTC3205Y (TP)
J025	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	QV01	TKSC945CY-	TR	KSC 945C-Y (TAPPING)
J027-J037	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R301	RN01B471JS	R METAL FILM	1W 470 OHM J SMALL
J039-J045	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R302	RN01B471JS	R METAL FILM	1W 470 OHM J SMALL
J047	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R303	RN01B129JS	R METAL FILM	1W 1.2 OHM J SMALL
J049-J062	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R305	RN01B331JS	R METAL FILM	1W 330 OHM J SMALL
J066-J069	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R352	RN-4Z1603F	R METAL FILM	1/4 160K OHM F
J072-J075	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R353	RN-4Z1502F	R METAL FILM	1/4 15K OHM F
JCA02	HRFT000-CA	R CHIP	1/10 0 OHM 2012	R401	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J
JL01	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	R403	RN01B562JS	R METAL FILM	1W 5.6K OHM J SMALL
JP02	4859109950	JACK PIN BOARD	PH-JB-9710A	R405	RD-2Z751J-	R CARBON FILM	1/2 750 OHM J
JP03	4859109150	JACK PIN BOARD	PH-JB-9615C	R411	RN01B229JS	R METAL FILM	1W 2.2 OHM J SMALL

## ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	LOC	PART CODE	PART NAME	DESCRIPTION
R412	RN01B369JS	R METAL FILM	1W 3.6 OHM J SMALL	R822	RD-4Z363J-	R CARBON FILM	1/4 36K OHM J
R413	RN01B229JS	R METAL FILM	1W 2.2 OHM J SMALL	R883	DEC7R0M140	POSISTOR	ECPAC7R0M140
R414	RN01B229JS	R METAL FILM	1W 2.2 OHM J SMALL	△ R888	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K
R416	RD-2Z121J-	R CARBON FILM	1/2 120 OHM J	R910	RD-2Z152J-	R CARBON FILM	1/2 1.5K OHM J
R418	RN02B150JS	R METAL FILM	2W 15 OHM J SMALL	R911	RD-2Z152J-	R CARBON FILM	1/2 1.5K OHM J
R420	RN02B620JS	R METAL FILM	2W 62 OHM J SMALL	R912	RD-2Z152J-	R CARBON FILM	1/2 1.5K OHM J
R425	RD-4Z752J-	R CARBON FILM	1/4 7.5K OHM J	R913	RN01B124JS	R METAL FILM	1W 120K OHM J SMALL
R451	RD-4Z153J-	R CARBON FILM	1/4 15K OHM J	R914	RN01B124JS	R METAL FILM	1W 120K OHM J SMALL
R452	RD-4Z113J-	R CARBON FILM	1/4 11K OHM J	R915	RN01B124JS	R METAL FILM	1W 120K OHM J SMALL
R501	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	RC105	HRFT153JCA	R CHIP	1/10 15K OHM J 2012
R502	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	RC150	HRFT153JCA	R CHIP	1/10 15K OHM J 2012
R511	RD-4Z151J-	R CARBON FILM	1/4 150 OHM J	RC151	HRFT104JCA	R CHIP	1/10 100K OHM J 2012
R601	RS01Z688J-	R M-OXIDE FILM	1W 0.68 OHM J	RC154	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R602	RD-2Z271J-	R CARBON FILM	1/2 270 OHM J	RC156	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R604	RD-4Z622J-	R CARBON FILM	1/4 6.2K OHM J	RC165	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R605	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J	RC351	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012
R701	RD-4Z240J-	R CARBON FILM	1/4 24 OHM J	RC359	HRFT273JCA	R CHIP	1/10 27K OHM J 2012
R708	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	RC360	HRFT333JCA	R CHIP	1/10 33K OHM J 2012
R709	RD-4Z152J-	R CARBON FILM	1/4 1.5K OHM J	RC361	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
R712	RD-4Z473J-	R CARBON FILM	1/4 47K OHM J	RC362	HRFT113JCA	R CHIP	1/10 11K OHM J 2012
R736	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	RC426	HRFT302JCA	R CHIP	1/10 3K OHM J 2012
R743	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC453	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R744	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC454	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R746	RD-4Z222J-	R CARBON FILM	1/4 2.2K OHM J	RC455	HRFT331JCA	R CHIP	1/10 330 OHM J 2012
R747	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J	RC503	HRFT752JCA	R CHIP	1/10 7.5K OHM J 2012
R750	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	RC508	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R776	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	RC509	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R777	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC510	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R780	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC512	HRFT000-CA	R CHIP	1/10 0 OHM 2012
R785	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC513	HRFT000-CA	R CHIP	1/10 0 OHM 2012
R789	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC520	HRFT000-CA	R CHIP	1/10 0 OHM 2012
R790	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	RC525	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R799	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	RC526	HRFT132JCA	R CHIP	1/10 1.3K OHM J 2012
R801	RX07C229JF	R CEMENT	7W 2.2 OHM J 15MM 4P	RC530	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R802	RD-4Z394J-	R CARBON FILM	1/4 390K OHM J	RC531	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R803	RD-4Z333J-	R CARBON FILM	1/4 33K OHM J	RC533	HRFT390JCA	R CHIP	1/10 39 OHM J 2012
R804	RS02Z278JS	R M-OXIDE FILM	2W 0.27 OHM J SMALL	RC554	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R805	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J	RC555	HRFT824JCA	R CHIP	1/10 820K OHM J 2012
R809	RD-4Z394J-	R CARBON FILM	1/4 390K OHM J	RC557	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012
R813	RD-4Z363J-	R CARBON FILM	1/4 36K OHM J	RC558	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R814	RS02Z828JS	R M-OXIDE FILM	2W 0.82 OHM J SMALL	RC559	HRFT331JCA	R CHIP	1/10 330 OHM J 2012
R817	RN01B301JS	R METAL FILM	1W 300 OHM J SMALL	RC561	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R818	RD-4Z561J-	R CARBON FILM	1/4 560 OHM J	RC562	HRFT824JCA	R CHIP	1/10 820K OHM J 2012
R820	RD-4Z392J-	R CARBON FILM	1/4 3.9K OHM J	RC565	HRFT123JCA	R CHIP	1/10 12K OHM J 2012

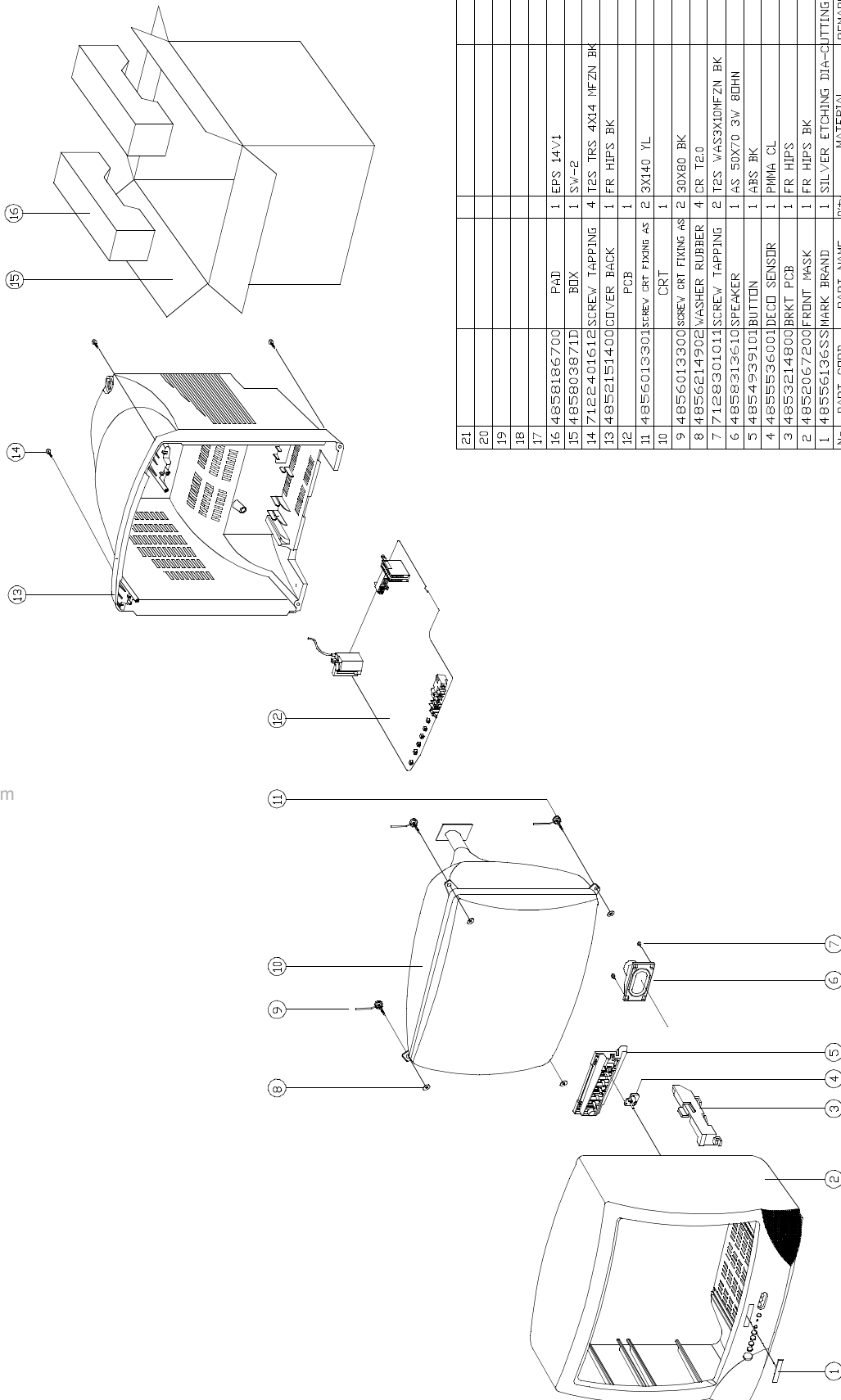
## ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	LOC	PART CODE	PART NAME	DESCRIPTION
RC566	HRFT123JCA	R CHIP	1/10 12K OHM J 2012	RC794	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
RC567	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	RC795	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
RC568	HRFT472FCA	R CHIP	1/10 4.7K OHM F 2012	RC796	HRFT471JCA	R CHIP	1/10 470 OHM J 2012
RC569	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012	RC797	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
RC570	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	RC862	HRFT363JCA	R CHIP	1/10 36K OHM J 2012
RC571	HRFT272JCA	R CHIP	1/10 2.7K OHM J 2012	RC913	HRFT272JCA	R CHIP	1/10 2.7K OHM J 2012
RC572	HRFT223JCA	R CHIP	1/10 22K OHM J 2012	RC914	HRFT272JCA	R CHIP	1/10 2.7K OHM J 2012
RC573	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	RC915	HRFT272JCA	R CHIP	1/10 2.7K OHM J 2012
RC655	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012	RC923	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
RC656	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	RC924	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
RC703	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	RC925	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
RC704	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	RCA01	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
RC705	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	RCA02	HRFT104JCA	R CHIP	1/10 100K OHM J 2012
RC706	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	RCA03	HRFT750JCA	R CHIP	1/10 75 OHM J 2012
RC707	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	RCA04	HRFT101JCA	R CHIP	1/10 100 OHM J 2012
RC731	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	RCA05	HRFT224JCA	R CHIP	1/10 220K OHM J 2012
RC732	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	RCA06	HRFT392JCA	R CHIP	1/10 3.9K OHM J 2012
RC733	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	RCA07	HRFT224JCA	R CHIP	1/10 220K OHM J 2012
RC734	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	RCA09	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
RC735	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	⚠ RLY1	5SC0101338	SW RELAY	DO5D1-O(M)/GJ-SS-105LM
RC737	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	⚠ RS801	DSVC271D14	VARISTOR	SVC271D14A
RC738	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	RV01	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J
RC751	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	⚠ R SCT1	4859303430	SOCKET CRT	PCS633A
RC752	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	SF101	5PTS5241P	FILTER SAW	TSF5241P
RC756	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	SW701	5S50101090	SW TACT	SKHV17910A
RC759	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	SW702	5S50101090	SW TACT	SKHV17910A
RC763	HRFT201JCA	R CHIP	1/10 200 OHM J 2012	SW703	5S50101090	SW TACT	SKHV17910A
RC770	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	SW704	5S50101090	SW TACT	SKHV17910A
RC781	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	SW705	5S50101090	SW TACT	SKHV17910A
RC782	HRFT331JCA	R CHIP	1/10 330 OHM J 2012	SW706	5S50101090	SW TACT	SKHV17910A
RC784	HRFT514JCA	R CHIP	1/10 510K OHM J 2012	T401	50D000022	TRANS DRIVE	HD-15D
RC786	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	⚠ R T402	50H0000198	FBT	FSA37012M
RC787	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	⚠ T801	50M3541T1-	TRANS SMPS	TSM-3541T1
RC788	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	⚠ R U102	4859719130	TUNER VARACTOR	DT5-NF20F
RC790	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	X502	5XEX3R579C	CRYSTAL QUARTZ	HC-49U 3.579545M (TP)
RC791	HRFT392JCA	R CHIP	1/10 3.9K OHM J 2012	XC701	HXA32R768C	CRYSTAL CHIP QUARTZ	32.768KHZ 20PPM 8038
RC792	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	Z501	5PXPS45MB-	FILTER CERA	TPS-4.5MB TRAP (TAPPING)
RC793	HRFT102JCA	R CHIP	1/10 1K OHM J 2012				



# EXPLODED VIEW

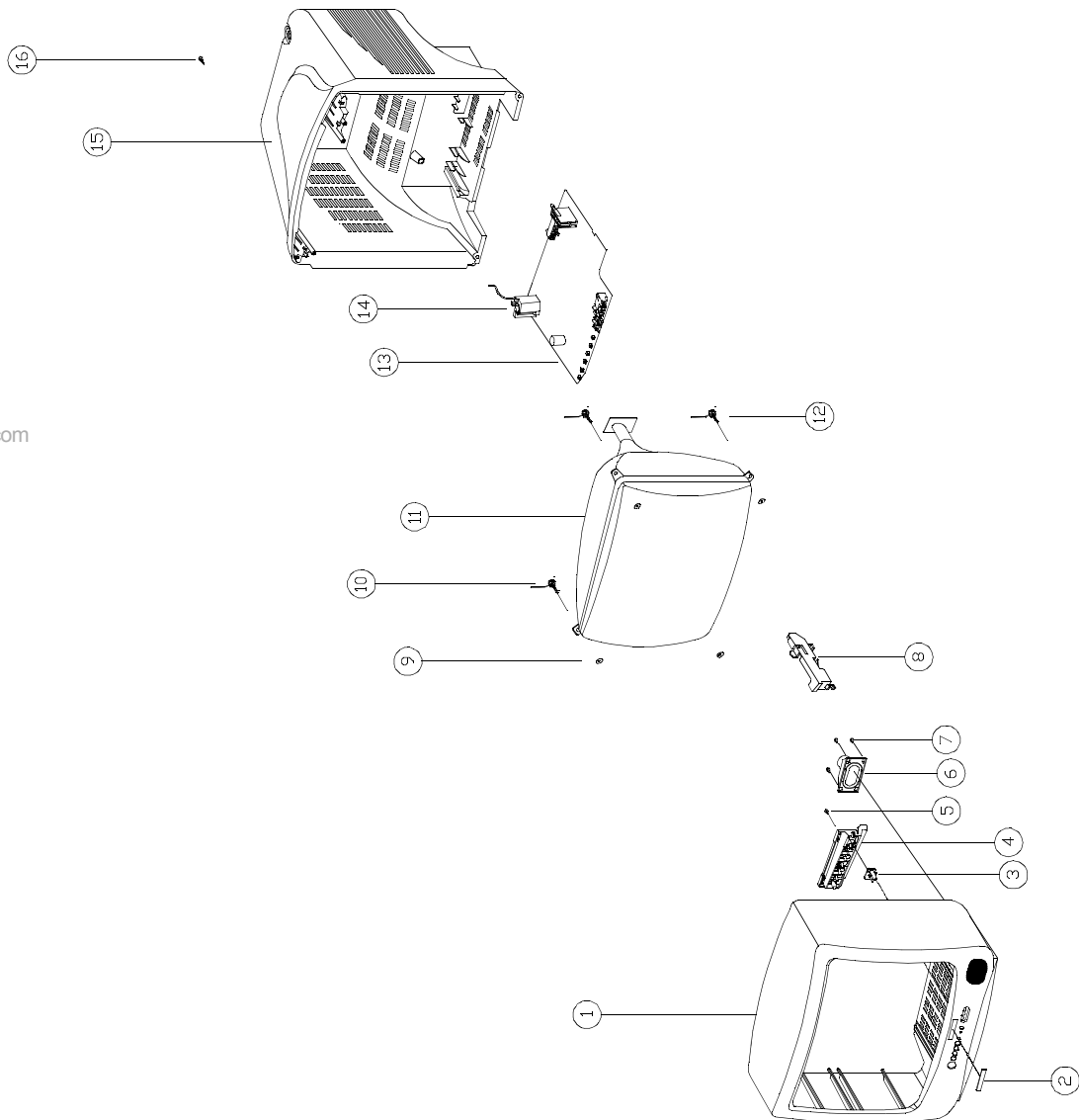
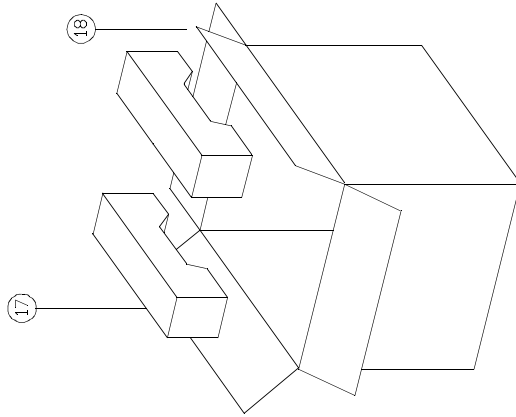
## 1. DTQ-14V1FS



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
21					
20					
19					
18					
17	4858186700	PAD	1	EPS 14V1	
16	4858038710	BOX	1	SW-2	
15	7122401612	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
14	4852151400	COVER BACK	1	FR HIPS BK	
13		PCB	1		
12	4856013301	SCREW CRT FIXING AS	2	3X140 YL	
11		CRT	1		
10	4856013300	SCREW CRT FIXING AS	2	30X80 BK	
9	4856214902	WASHER RUBBER	4	CR T20	
8	7128301011	SCREW TAPPING	2	T2S WAS3X10MFZN BK	
7	4858313610	SPEAKER	1	AS 50X70 3W 80HM	
6	4854939101	BUTTON	1	ABS BK	
5	4855536001	DECO SENSOR	1	PMMA CL	
4	4853214800	BRKT PCB	1	FR HIPS	
3	4852067200	FRONT MASK	1	FR HIPS BK	
2	4855613655	MARK BRAND	1	SILVER ETCHING DIA-CUTTING	
1		CORD			

EXPLODED VIEW

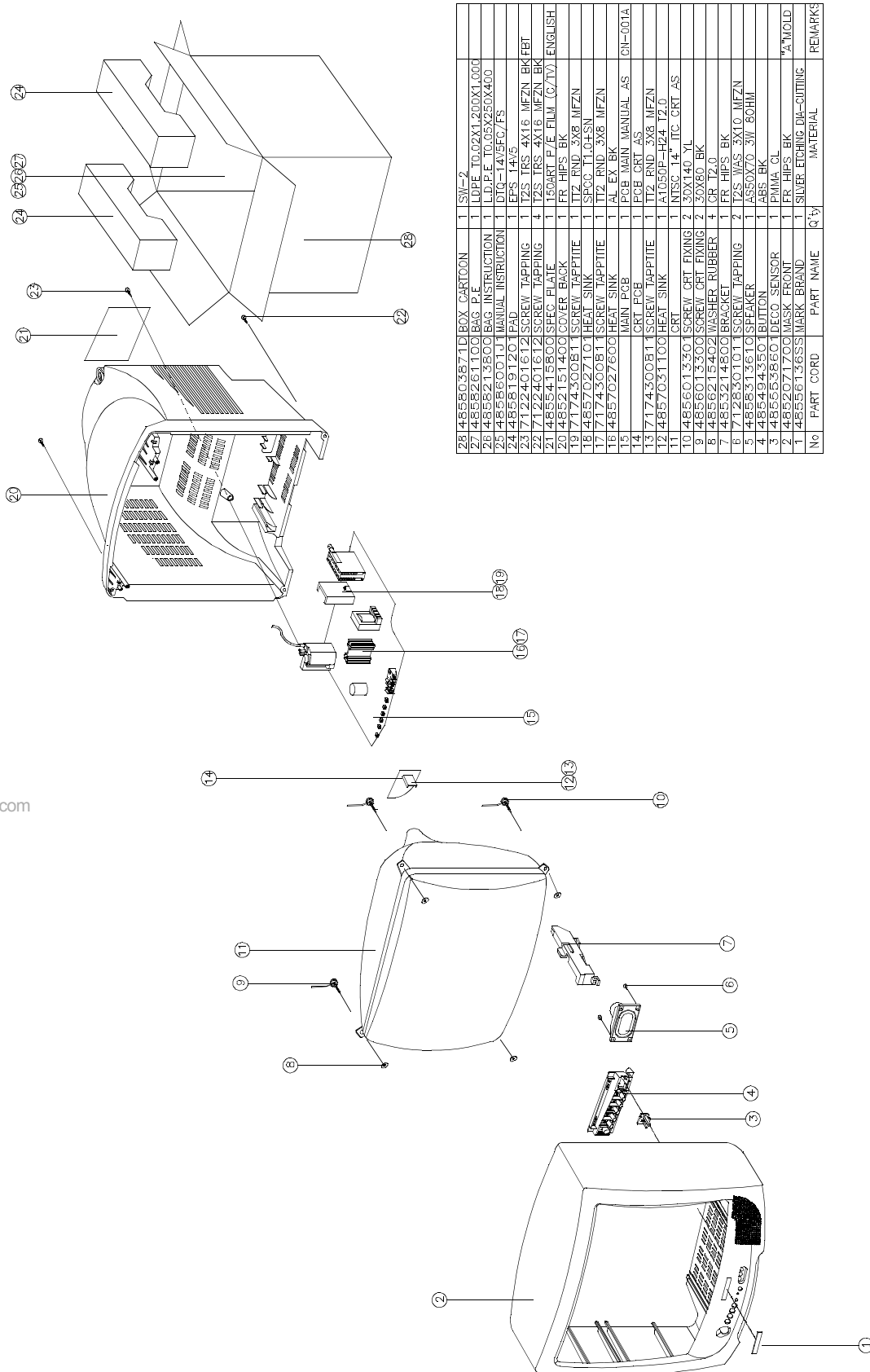
2. DTQ-14V3FS



No	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
24					
23					
22					
21					
20					
19	48830870	MOD.	1	SVL-2	
18	48840750	PCB	1	EPS 14V3	
17	71824502	SCREW TAPPING	4	TES 108.4016 1F2U BK.	
16	48830850	COVER MASK	1	FR. RPS BK.	
15	48830850	COVER MASK	1	FR. RPS BK.	
14	48830850	PCB	1		
13	48830850	SCREW CRT FIXING AS E	1	20X4.0 TL	
12	48830850	SCREW CRT FIXING AS E	1	20X4.0 TL	
11	48830850	SCREW CRT FIXING AS E	2	20X4.0 TL	
10	48830850	SCREW CRT FIXING AS E	2	20X4.0 TL	
9	48830850	SCREW CRT FIXING AS E	2	20X4.0 TL	
8	48830850	SCREW CRT FIXING AS E	2	20X4.0 TL	
7	48830850	SCREW TAPPING	4	TES 108.4016 1F2U BK.	
6	48830850	SCREW TAPPING	4	TES 108.4016 1F2U BK.	
5	48830850	SCREW TAPPING	2	TES 108.4016 1F2U BK.	
4	48830850	SCREW TAPPING	2	TES 108.4016 1F2U BK.	
3	48830850	SCREW TAPPING	2	TES 108.4016 1F2U BK.	
2	48830850	FRONT MASK	1	FR. RPS BK.	
1	48830850	FRONT MASK	1	FR. RPS BK.	

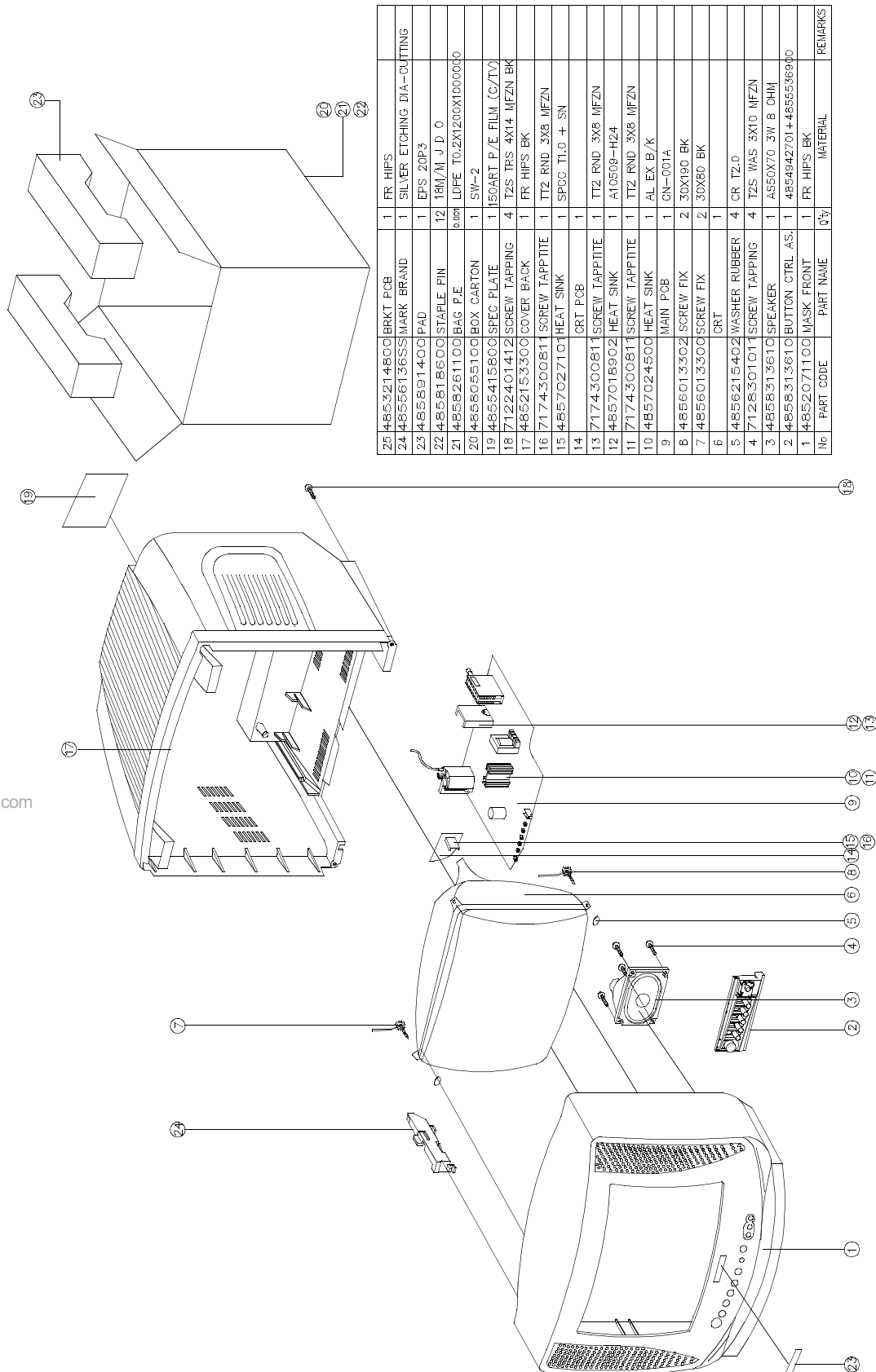
EXPLODED VIEW

3. DTQ-14V5FC / FS



EXPLODED VIEW

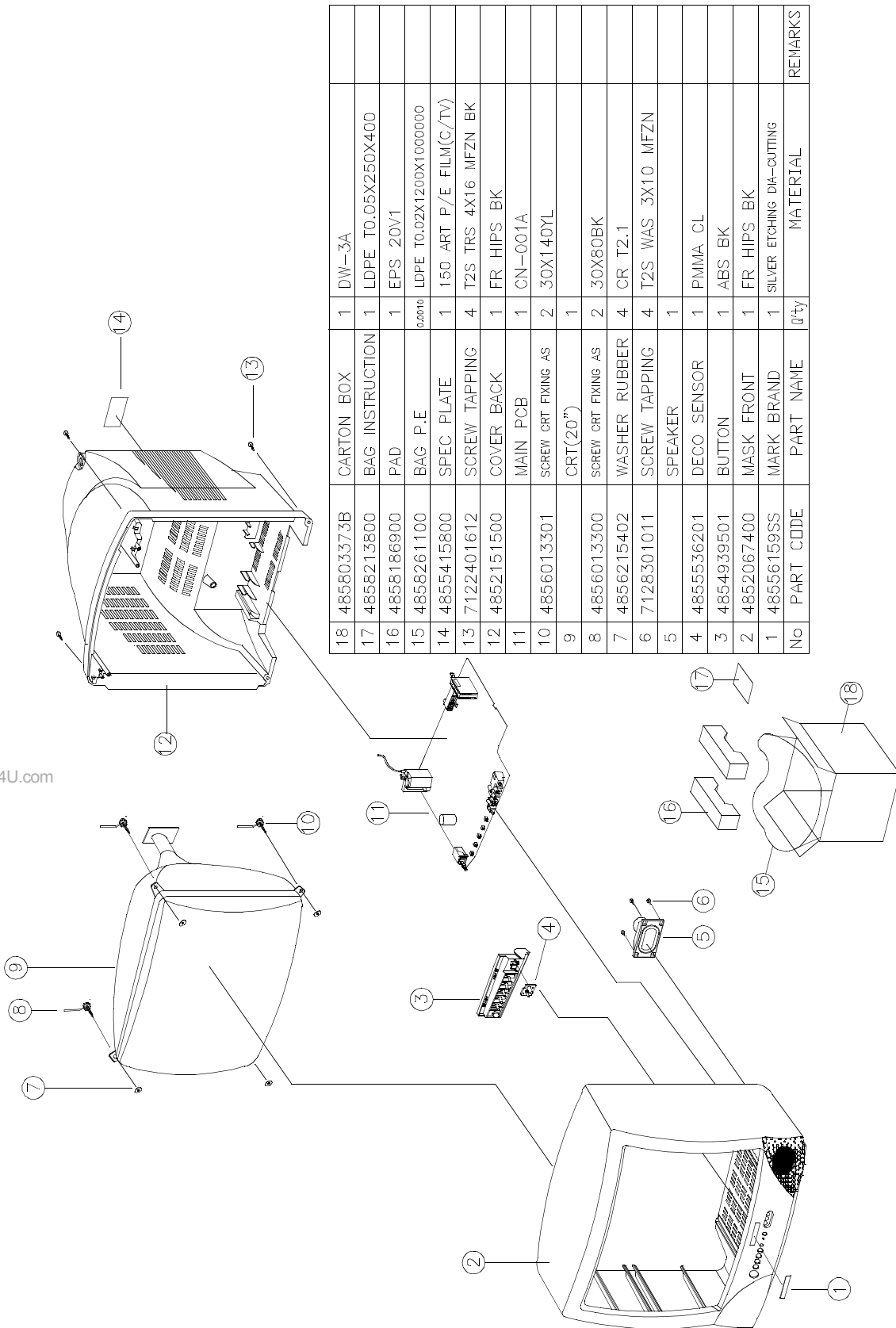
4. DTQ-14U1FS



25	4853214800	BRKT PCB	1	FR HIPS		
24	48556136SS	SILVER ETCHING DIA-CUTTING	1			
23	485691400	EPS 20P3	1			
22	485818600	STAPLE PIN	12	18M/M J.D.0		
21	4858261100	BAG P/E	1	LDPE TO:2X1200X10000000		
20	4858055100	BOX CARTON	1	5W-2		
19	4855415800	SPEC. PLATE	1	150ART P/E FILM (C/TV)		
18	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK		
17	4852153300	COVER BACK	1	FR HIPS BK		
16	7174300811	SCREW TAPPTITE	1	TT2 RND 3X8 MFZN		
15	4857027101	HEAT SINK	1	SPOC TL.0 + SN		
14		CRT PCB	1			
13	7174300811	SCREW TAPPTITE	1	TT2 RND 3X8 MFZN		
12	4857018902	HEAT SINK	1	A10508-H24		
11	7174300811	SCREW TAPPTITE	1	TT2 RND 3X8 MFZN		
10	4857024500	HEAT SINK	1	AL EX B/K		
9		MAIN PCB	1	CN-001A		
8	4856013302	SCREW FIX	2	30X190 BK		
7	4856013300	SCREW FIX	2	30X80 BK		
6		CRT	1			
5	4856215402	WASHER RUBBER	4	CR T2.0		
4	7128301011	SCREW TAPPING	4	T2S WAS 3X10 MFZN		
3	4858313610	SPEAKER	1	AS50X70 3W B OHM		
2	4858313610	BUTTON CTRL. AS.	1	4R54942701+485536900		
1	4852071100	MASK FRONT	1	FR HIPS BK		
No	PART CODE	PART NAME	QTY	MATERIAL		REMARKS

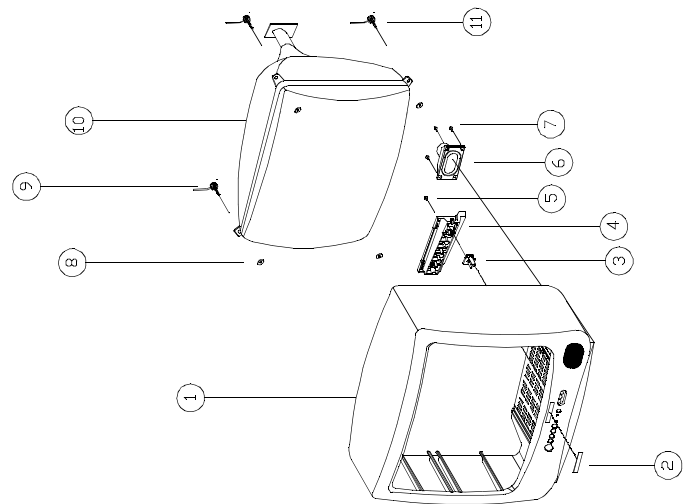
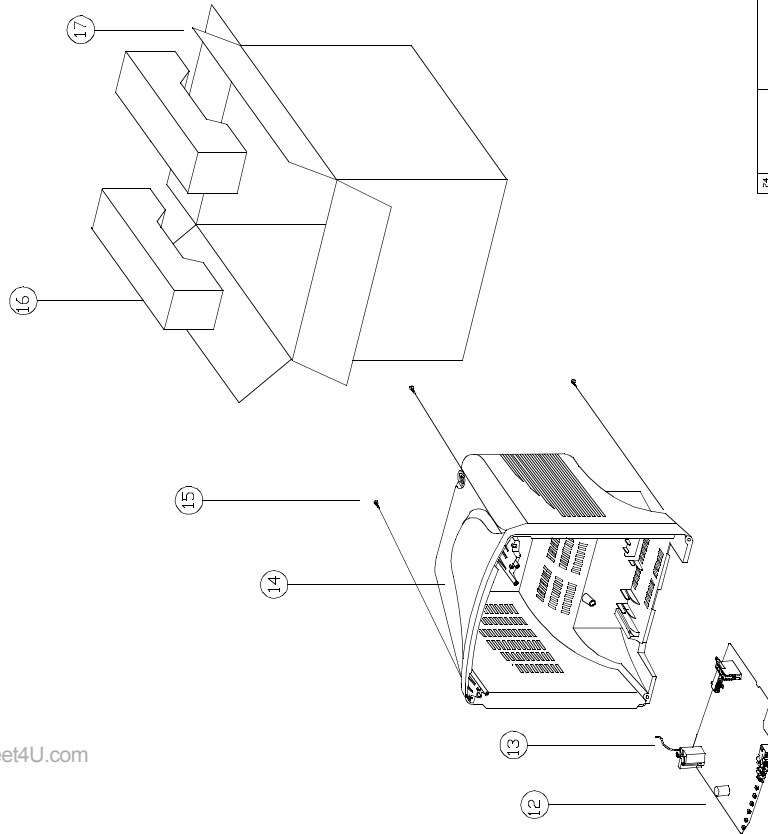
EXPLODED VIEW

5. DTQ-20V1FS



EXPLODED VIEW

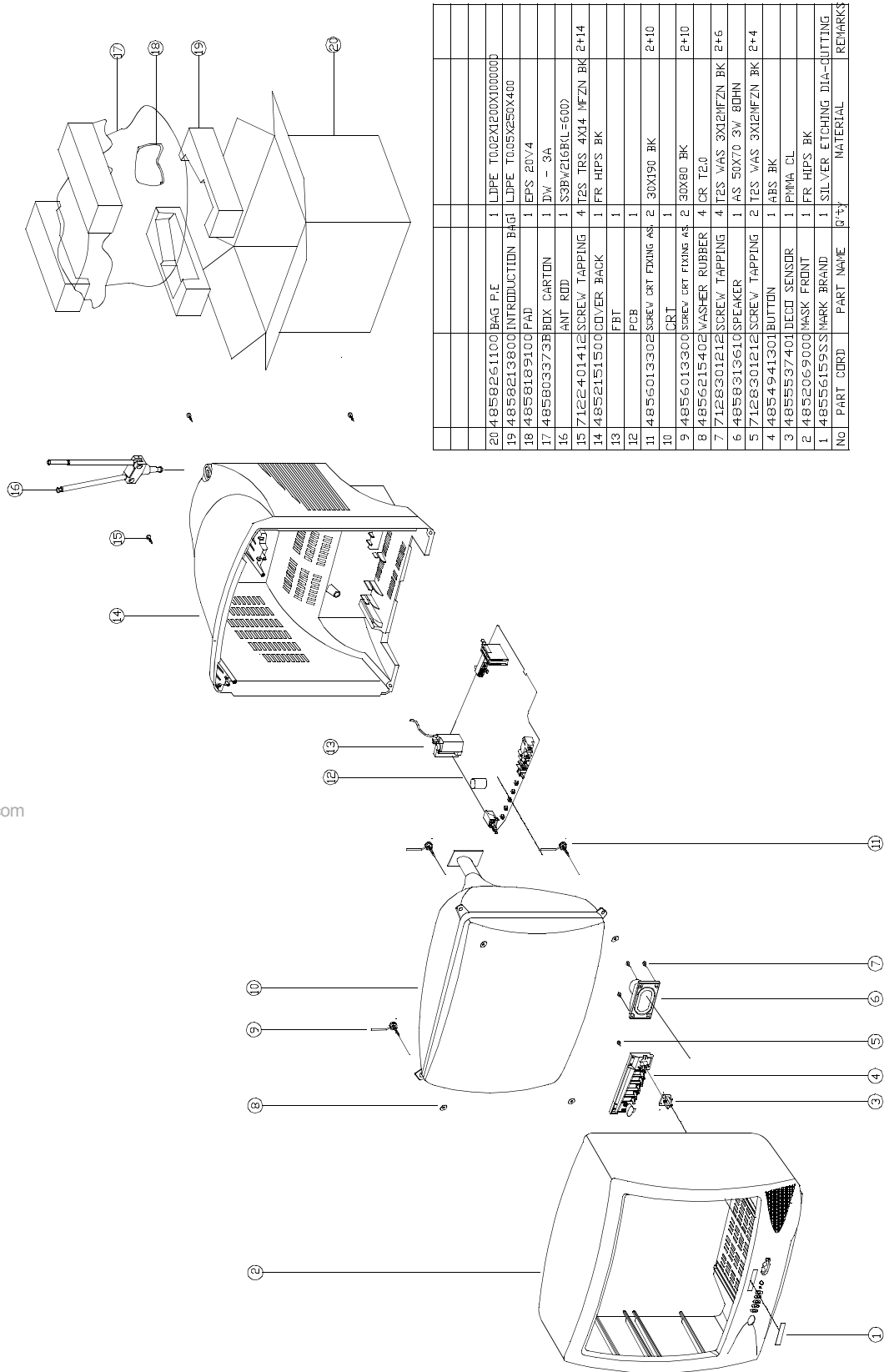
6. DTQ-20V3FS



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
24					
23					
22					
21					
20					
19					
18	4852653700	BOX	1	EV-2	
17	4852653700	PAN	1	EV-2	
16	4852653700	SCREW TAPPING	4	EV-2	
15	7125200448	COVER RACK	1	FR ABS BK	
14	4852653700	FR	1	FR ABS BK	
13	4852653700	FR	1	FR ABS BK	
12	4852653700	FR	1	FR ABS BK	
11	4852653700	FR	1	FR ABS BK	
10	4852653700	FR	1	FR ABS BK	
9	4852653700	FR	1	FR ABS BK	
8	4852653700	FR	1	FR ABS BK	
7	4852653700	FR	1	FR ABS BK	
6	4852653700	FR	1	FR ABS BK	
5	4852653700	FR	1	FR ABS BK	
4	4852653700	FR	1	FR ABS BK	
3	4852653700	FR	1	FR ABS BK	
2	4852653700	FR	1	FR ABS BK	
1	4852653700	FR	1	FR ABS BK	

EXPLODED VIEW

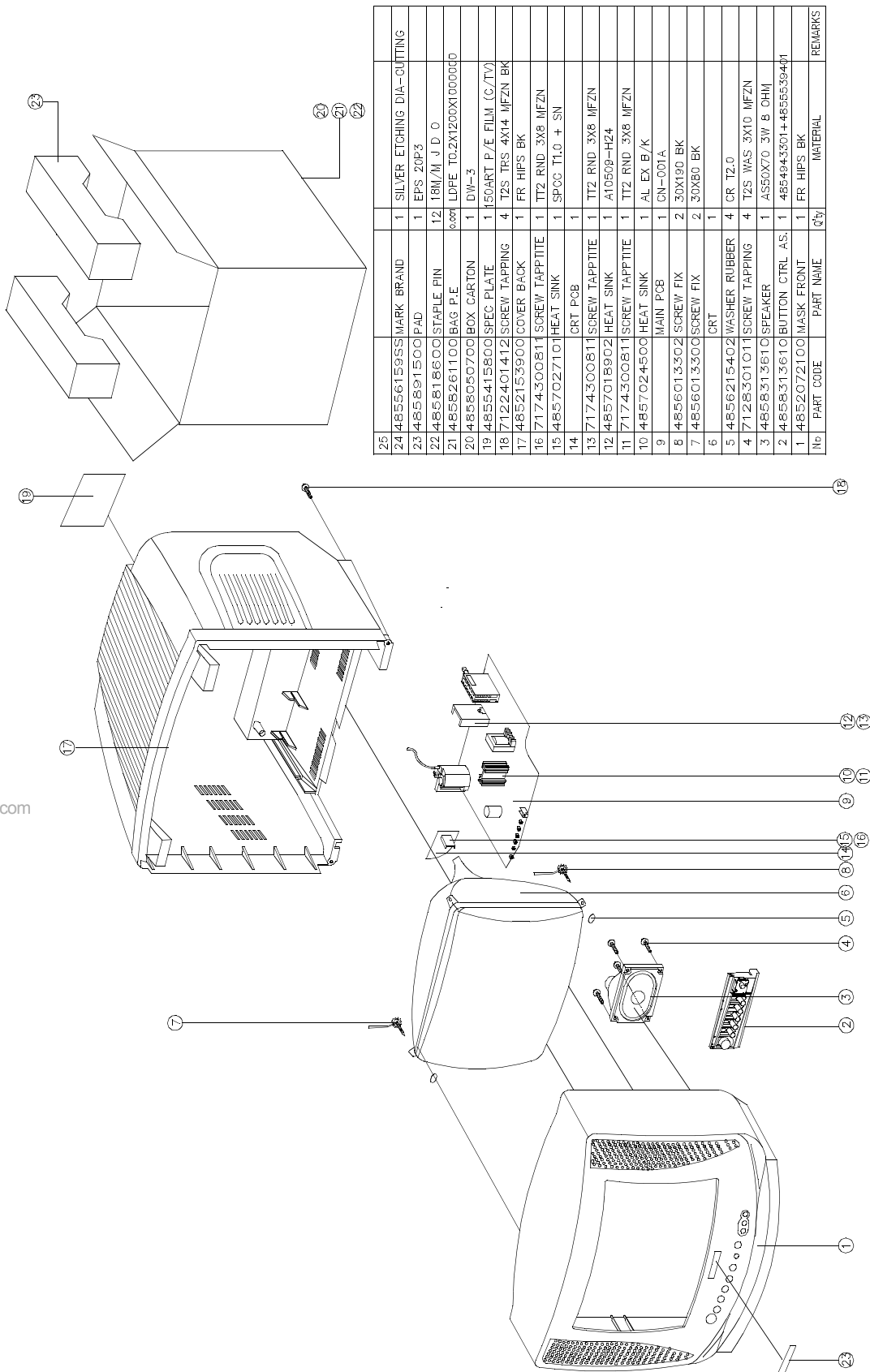
7. DTQ-20V4FS



NO	PART CORD	PART NAME	QTY	MATERIAL	REMARKS
20	4858261100	BAG PE	1	LDPE T002X1200X100000	
19	4858213800	INTRODUCTION BAG	1	LDPE T005X250X400	
18	4858189100	PAD	1	EPS 20V4	
17	485803373B	BOX CARTON	1	DM - 3A	
16		ANT ROD	1	SSRW216RL=600	
15	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK 2+14	
14	4852151500	COVER BACK	1	FR HIPS BK	
13		FBT	1		
12		PCB	1		
11	4856013302	SCREW CRT FIXING AS	2	30X190 BK	2+10
10		CRT	1		
9	4856013300	SCREW CRT FIXING AS	2	30X80 BK	2+10
8	4856215402	WASHER RUBBER	4	CR TL0	
7	7128301212	SCREW TAPPING	4	T2S WAS 3X12MFZN BK 2+6	
6	485831610	SPEAKER	1	TAS 50X70 3W 80HN	
5	7128301212	SCREW TAPPING	2	T2S WAS 3X12MFZN BK 2+4	
4	4854941301	BUTTON	1	ABS BK	
3	4855537401	DECD SENSOR	1	PMMA CL	
2	4852069000	MASK FRONT	1	FR HIPS BK	
1	4855615555	MARK BRAND	1	SILVER ETCHING DIA-CUTTING	

EXPLODED VIEW

8. DTQ-20U1FS



No	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
1	4852072100	MASK FRONT	1	FR HIPS BK	
2	4858313610	BUTTON CTRL AS	1	485494301+4855539401	
3	4858313610	SPEAKER	1	ASS0X70 3W 8 OHM	
4	712B301011	SCREW TAPPING	4	T2S WAS 3X10 MFZN	
5	4856215402	WASHER RUBBER	4	CR T2.0	
6	4856013300	SCREW FIX	2	30X190 BK	
7	4856013300	SCREW FIX	2	30X80 BK	
8	4856013302	SCREW FIX	2	30X190 BK	
9	4857024500	HEAT SINK	1	AL EX B/K	
10	4857024500	HEAT SINK	1	AL EX B/K	
11	7174300811	SCREW TAPPING	1	T12 RND 3X8 MFZN	
12	4857018902	HEAT SINK	1	A10509-H24	
13	7174300811	SCREW TAPPING	1	T12 RND 3X8 MFZN	
14	4857027101	HEAT SINK	1	SPOC T1.0 + SN	
15	4857027101	HEAT SINK	1	SPOC T1.0 + SN	
16	7174300811	SCREW TAPPING	1	T12 RND 3X8 MFZN	
17	4852153900	COVER BACK	1	FR HIPS BK	
18	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
19	4855415800	SPEC PLATE	1	ISOART P/E FILM (C/TV)	
20	4858050700	BOX CARTON	1	DW-3	
21	4858261100	BAG P.E	1	LDFE TG.2X120DX1000000	
22	485818600	STAPLE PIN	12	18M/M J.D.0	
23	485891500	PAD	1	EPS 20P3	
24	4855615955	MARK BRAND	1	SILVER ETCHING DIA-CUTTING	



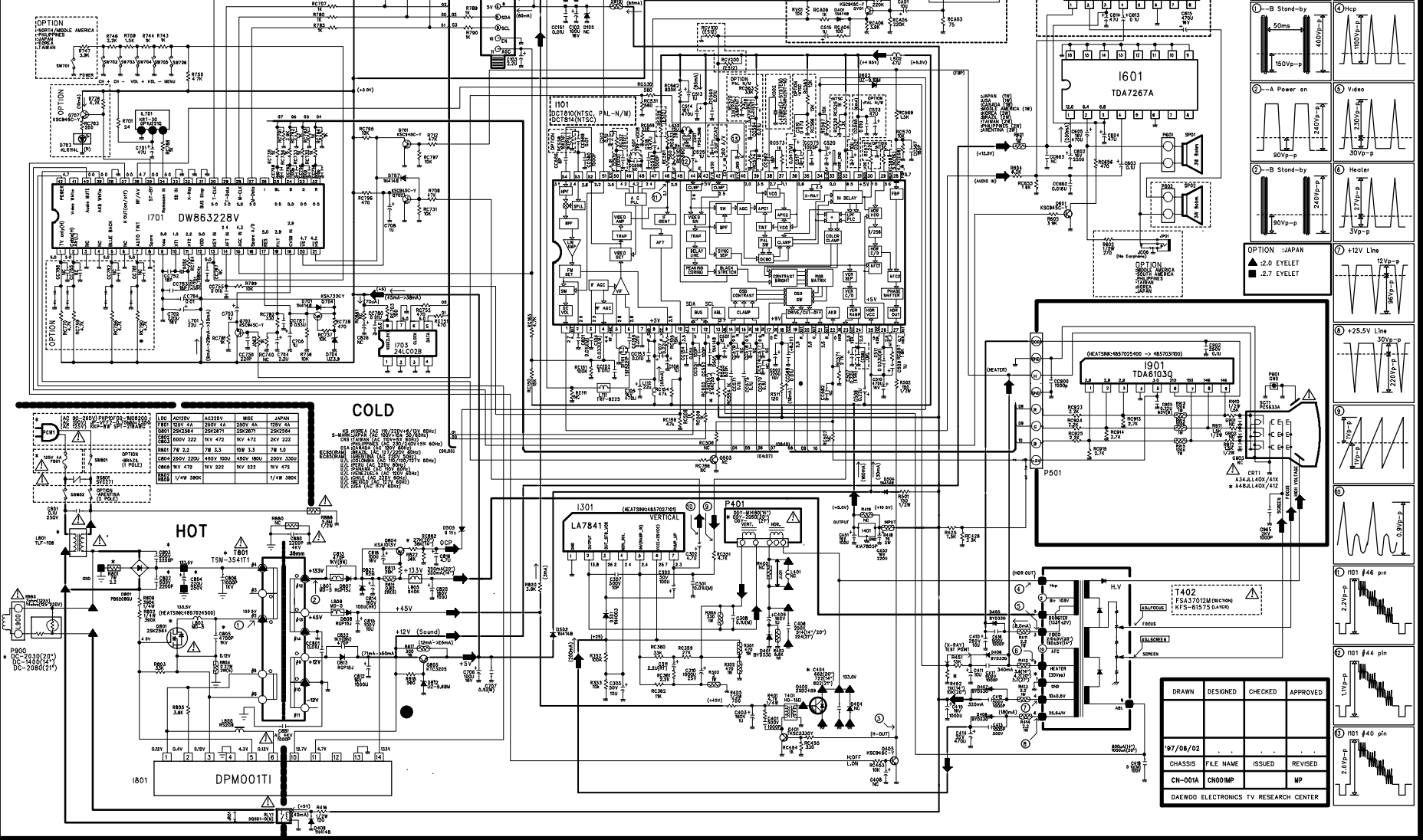
**SCHEMATIC DIAGRAM**  
**CN-001A/CM-003**  
**(T-30 MODEL)**  
 North America (AC 120V Only)  
 :DTQ-14P2FC/20P2FC  
 :DTQ-14P3FC/20P3FC  
 :DTQ-14V5FC  
 :DTQ-20V4FC  
 :U.S.A / CANADA

Middle America (AC)  
 :DTQ-14V1FS/20V1FS  
 :DTQ-14V5FS  
 :DTQ-20V4FS  
 :DTQ-14U1FS/20U1FS  
 :MEXICO/PANAMA etc.

South America (AC)  
 :DTH-14V1FS/20V1FS/21V1FS  
 :DTH-14V3FS/20V3FS/21V3FS  
 :DTH-14U1FS/20U1FS/21U1FS  
 :DTH-14V4FS/20V4FS/21V4FS  
 :DTH-14V5FS/20V5FS  
 :CHILE/PERU

**CN-001A/CM-003 SCHEMATIC DIAGRAM**  
 1998.11.02

- ① KOREA (NTSC)
- ② JAPAN (NTSC)
- ③ TAIWAN (NTSC)
- ④ PHILIPPINES (NTSC)
- ⑤ USA / CANADA / MEXICO (NTSC)
- ⑥ BRAZIL / ARGENTINA (PAL 4/4)
- ⑦ CHILE / PERU / PANAMA (NTSC)
- ⑧ VENEZUELA / COLOMBIA (NTSC)
- ⑨ NORTH AMERICA
- ⑩ SOUTH AMERICA
- ⑪ MIDDLE AMERICA



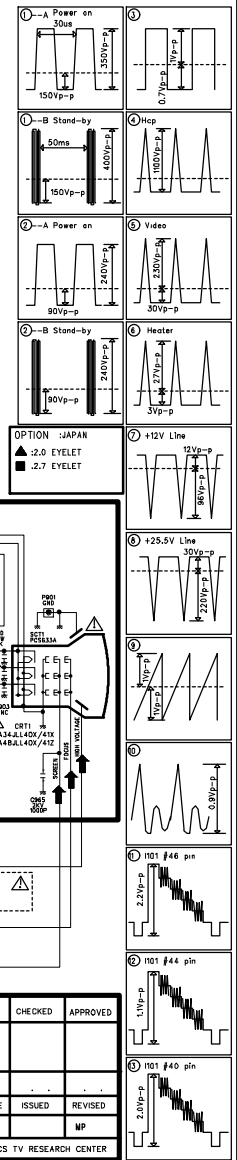
**1. CAUTION**  
 △ HYBRID MARKED PARTS IN THE SCHEMATIC DIAGRAM DENOTE THE COMPONENTS WHICH HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN ORIGINAL CIRCUIT. DO NOT DISCARD THE SAFETY OF THE RECEIVER THROUGH IMPROPER SERVICE.

**WARNING :**  
 BEFORE SERVING THIS CHASSIS/REAR THE "X-RAY RADIATION PRECAUTION" "SAFETY PRECAUTION" AND "FRONT SAFETY NOTICE" IN THE SERVICE MANUAL.

**CAUTION TO THE SERVICE TECHNICIANS :**  
 BEFORE RETURNING THE RECEIVER TO THE CUSTOMER, APPROPRIATE LEAKAGE CURRENT OR RESIDUAL VOLTAGE SHOULD BE CONDUCTED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

**NOTE :**

1. RESISTANCE IS SHOWN IN OHMS, K=1000, M=1,000,000
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES LESS THAN 1 ARE EXPRESSED IN pF AND THE VALUES MORE THAN 1 IN μF.
3. VOLTAGES READ WITH "1.5kΩ" FROM FRONT INDICATE TO CHASSIS GROUND USING A COLOR BIA SIGNAL WITH ALL CONTROLS AT NORMAL LINE VOLTAGE 100 VOLTS AC. VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY ±20% EXCEPT BY.
4. IN CASE OF "MP" RECEIVER THE COMPONENT WITH THE MARK "S" SHOULD BE USED ONLY.
5. THE CIRCUIT DIAGRAM IS A STANDARD ONE. QUALITY PRINTED UNIT BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE.



DRAWN	DESIGNED	CHECKED	APPROVED
197/06/02	FILE NAME	ISSUED	REVISED
CN-001A	CN00MP		MP
DAEWOO ELECTRONICS TV RESEARCH CENTER			

**DAEWOO**

DAEWOO ELECTRONICS CO., LTD

686, AHYEON-DONG MAPO-GU

SEOUL, KOREA

C.P.O. BOX 8003 SEOUL, KOREA

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CABLE : "DAEWOOELEC"

E-mail : G7F00E@web.dwe.co.kr

TEL : 82-2-360-8179-8180/8187

FAX : 82-2-360-8184