

Service Manual

Color Television

CHASSIS : CN-220B/C

Model : DTQ - 20D5FS / FSP

DTQ - 20D5FC

DTQ - 20D4AS / ASP

DTQ - 20D4SSF / SSSP



■ SPECIFICATIONS

ITEM \ MODEL	DTQ-20D5FS	DTQ-20D5FSP	20D5FC
TV STANDARD	NTSC-M		
POWER INPUT	120V 60HZ	220V 60HZ	120V 60HZ
POWER CONSUMPTION	84W		
TUNING SYSTEM	Frequency Synthesizer (FS) Tuning System		
TUNING RANGES	VHF : 2 ~ 13 (12) UHF : 14 ~ 69 (56) A~W, A- 5 ~ A-1, W + 1 ~ W + 84		
SOUND OUTPUT	5W + 5W		
SPEAKER	8 ohm 5W x 2EA		
ANTENNA INPUT IMPEDANCE	75 ohm Unbalanced		
AUXILIARY INPUT TERMINAL	Front : Video, Audio, Earphone Rear: Video, Audio, (R,L)		
INTERMEDIATE FREQUENCIES	Picture IF Carrier Frequency : 45.75 MHZ Sound IF Carrier Frequency : 41.25 MHZ Color Sub-Carrer Frequency : 3.579545 MHZ		
REMOTE CONTROL	R - 40		
SPECIAL FUNCTIONS	AV only PIP ICON MENU TYPE STEREO / SAP 3 - Language OSD with Caption		

✓ **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>)

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SAFETY INSTRUCTION

WARNING : Only competent service personnel may carry out work involving the testing or repair of this equipment

■ X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 22-23 kV (14") or 24-26 kV (20" - 21") at max beam current. The high voltage must not, under any circumstances, exceed 27.5 kV (14", 20"), 29KV (21"). Each time a receiver requires servicing, the high voltage should be checked. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY Radiation in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

■ SAFETY PRECAUTION

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back cover removed involves a shock hazard from the receiver.
 - 1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
 - 2) Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor body 10 mm away from the circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver must operate under AC 230 volts, 50 Hz. NEVER connect to a DC supply of any other voltage or frequency.

■ PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this equipment have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are identified by designated symbol on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitutes replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY Radiation.

SPECIFICATIONS

■ CN-220B Chassis

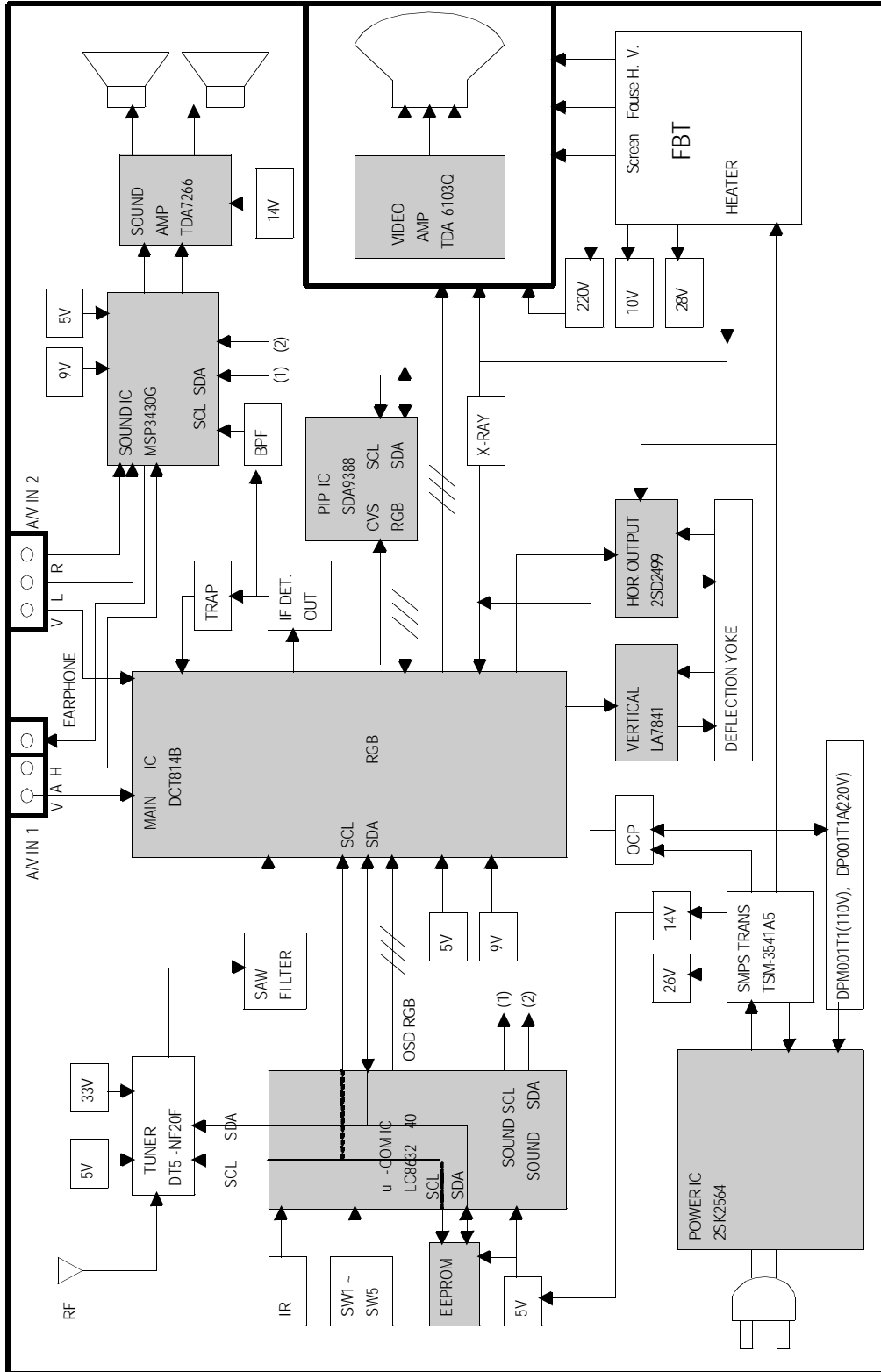
ITEM \ MODEL	DTQ-20D5FSP	DTQ-20D5FS	DTQ-20D5FC	DTQ-20D4SSSP
TV STANDARD	NTSC-M			
POWER INPUT	120V 60HZ	220V 60HZ	120V 60HZ	220V 60HZ
POWER CONSUMPTION	84W			
TUNING SYSTEM	Frequency Synthesizer (FS) Tuning System			
TUNING RANGES	VHF : 2 ~ 13 (12) UHF : 14 ~ 69 (56) A~W, A- 5 ~ A-1, W + 1 ~ W + 84			
SOUND OUTPUT	5W + 5W			
SPEAKER	8 ohm 5W x 2EA			
ANTENNA INPUT IMPEDANCE	75 ohm Unbalanced			
AUXILIARY INPUT TERMINAL	Front : Video, Audio, Earphone Rear: Video, Audio, (R,L)			
INTERMEDIATE FREQUENCIES	Picture IF Carrier Frequency : 45.75 MHZ Sound IF Carrier Frequency : 41.25 MHZ Color Sub-Carrer Frequency : 3.579545 MHZ			
REMOTE CONTROL	R - 40			
SPECIAL FUNCTIONS	AV only PIP ICON MENU TYPE STEREO / SAP 3 -Language OSD with Caption			ICON MENU TYPE STEREO / SAP 3 -Language OSD with Caption

SPECIFICATIONS

■ CN-220C Chassis

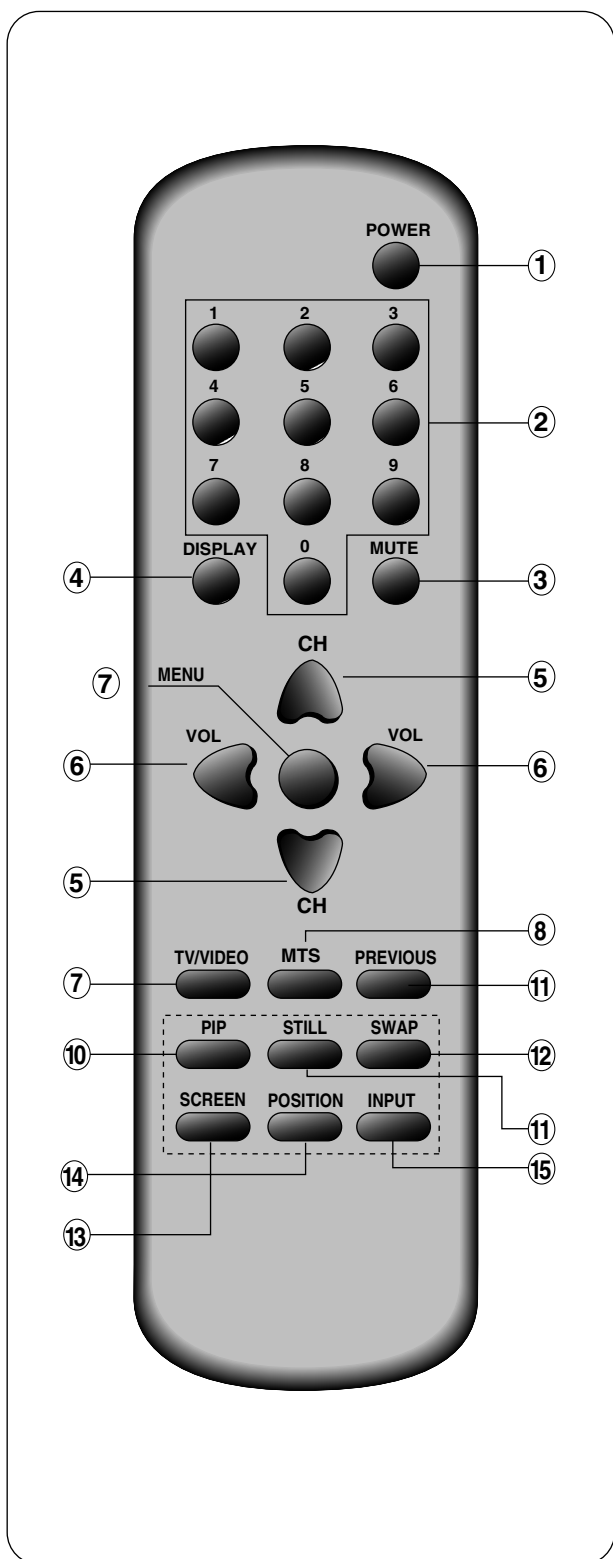
ITEM \ MODEL	DTQ-20D4AS	DTQ-20D4ASP	DTQ-20D4ASP
TV STANDARD	NTST-M		
POWER INPUT	120V 60HZ	220V 60HZ	90-260V 60HZ
POWER CONSUMPTION	84W		
TUNING SYSTEM	Frequency Synthesizer (FS) Tuning System		
TUNING RANGES	TV VHF(L) : CH 2 ~ CH 6 UHF(H) : CH 7 ~ CH 13 UHF : CH 14 ~ CH 69 CATV VHF(L) : 5A, A, B, A-5 - A-1 CH 2 - CH 6 VHF(H) : C - W + 11 CH 7 - CH 13 UHF : W + 12 - W + 84		
SOUND OUTPUT	5W + 5W		
SPEAKER	8 ohm 5W x 2EA		
ANTENNA INPUT IMPEDANCE	75 ohm Unbalanced		
AUXILIARY INPUT TERMINAL	Front : Video, Audio, Earphone Rear: Video, Audio, (R,L)		
INTERMEDIATE FREQUENCIES	Picture IF Carrier Frequency : 45.75 MHZ Sound IF Carrier Frequency : 41.25 MHZ Color Sub-Carrer Frequency : 3.579545 MHZ		
REMOTE CONTROL	R - 40		
SPECIAL FUNCTIONS	1) ICON MENU TYPE 2) 3-Language OSD 3) WITH CAPTION 4) CH LABEL		

CIRCUIT BLOCK DIAGRAM



ALIGNMENT INSTRUCTIONS

Your Remote Control



1. POWER

Use this button to turn your TV on or off.

2. 0 - 9

Use these buttons to change channels.

3. MUTE

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

4. DISPLAY

Use this buttons to display the channel number and status.

5. ▼ CH ▲

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

6. ◀ VOL ▶

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

7. TV/VIDEO

Use this button to select main picture source.

8. MTS

Use this button to select one mode of Mono, Stereo or SAP.

9. PREVIOUS

Use this button to return previous channel you were watching.

10. PIP

Use this button to turn PIP on/off.

11. STILL

Use this button to still PIP source.

12. SWAP

Use this button to exchange PIP source and main source.

13. SCREEN

Use this button to change the size of the picture (from normal 4:3 to WIDE, ZOOM, and the original 4:3 in turn).

14. POSITION

Use this button to change position of pip on your TV.

15. INPUT

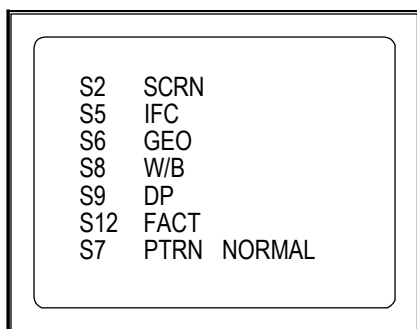
Use this button to select PIP source (TV/VIDEO).

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)		○	Data is stored in I703.								
I101 (MAIN)		○									
I703 (EEPROM)	○		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	○		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
S9	Subbrightness	*	0 ~ 127	Align common RGB DC level
	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

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.

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	R FAGC	START
VIDEOL		7
R FAGCD		10
FM.LEV		8
AGC POINT		3.75
A/D VALUE : 8DH		
▲▼ MOVE ◀▶ ADJUST RECALL : SET		

Select R FAGCD 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

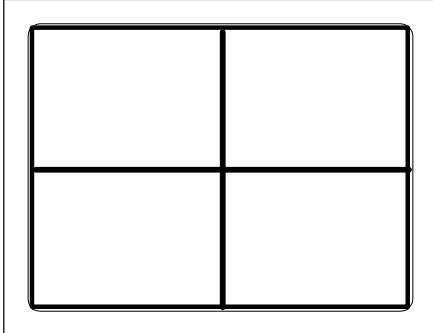
Select H.PHASE item, adjust H.PHASE data value to obtain proper horizontal centering of the internal cross pattern at the left and right of the screen.

4-2. Vertical Position Adjustment

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

4-3. Vertical Size Adjustment

Select "V.SIZE" item, adjust "V.SIZE" data value to proper vertical size as follows.

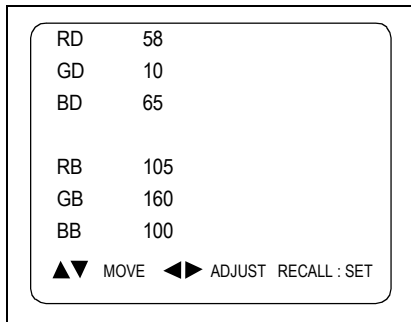


5) WHITE BALANCE ADJUSTMENT(S8)

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.

Press the DISPLAY button to memorize the data.

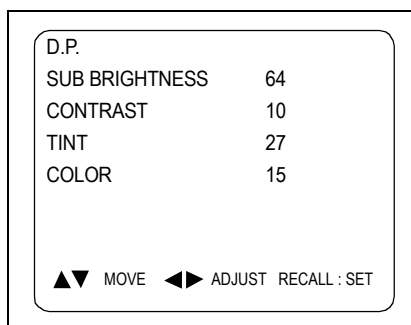
6) DIGITAL PRESET(D.P) ADJUSTMENTS(S9)

SUBBRIGHTNESS ADJUSTMENT

Receive a good local channel.

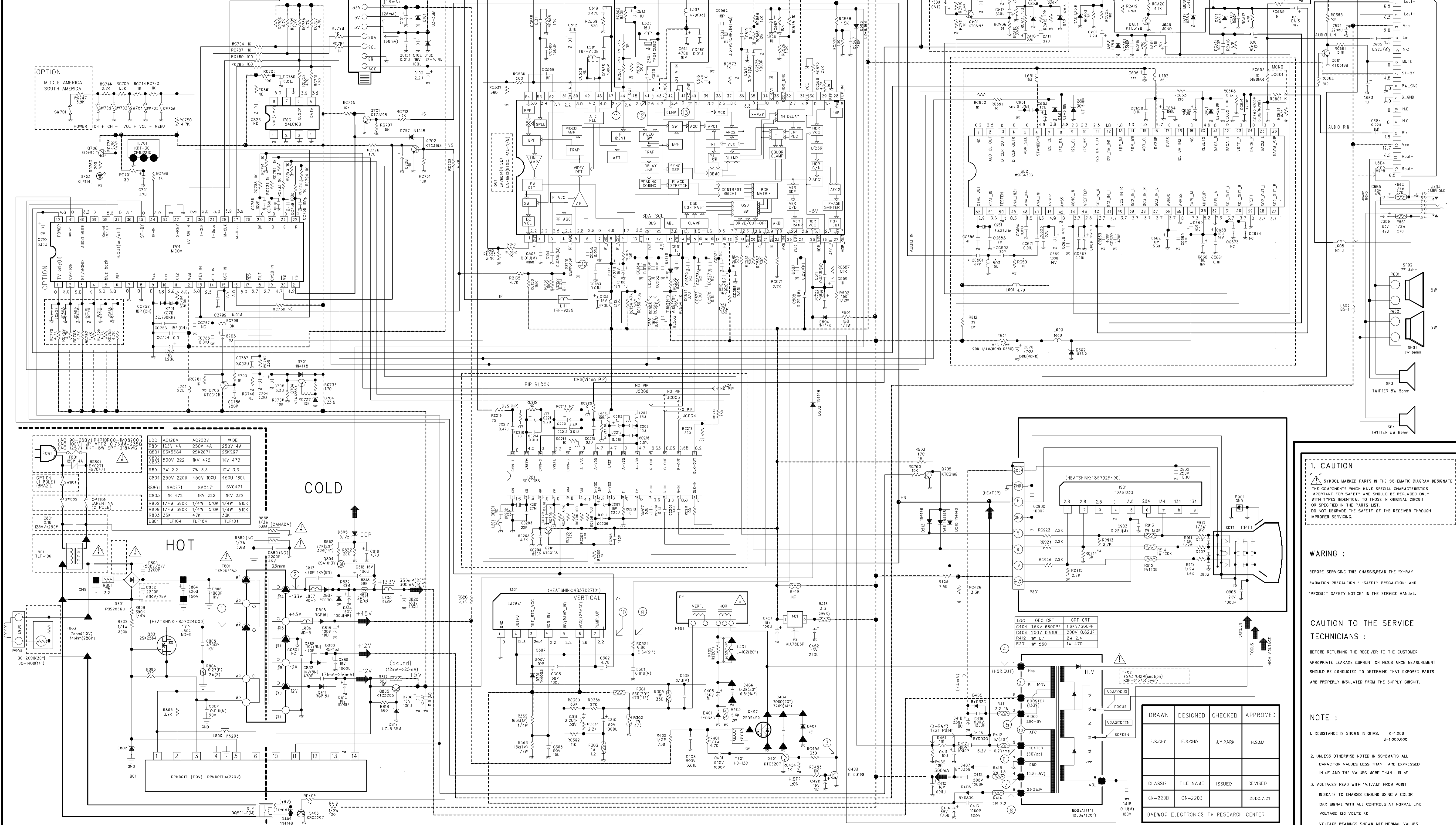
Enter the service mode and select service adjustment S9.

You can see the OSD as shown in below.



CN-220B DTQ-20D5FS/FSP/FC

CN-220C DTQ-20D4AS/ASP, 14/20D3ASS
MONO, W/O PIP, W/O AV OUT



COLD

HOT

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 IDENTICAL TO THOSE IN ORIGINAL CIRCUIT OR SPECIFIED IN THE PARTS LIST. DO NOT DEGRADE THE SAFETY OF THE RECEIVER THROUGH IMPROPER SERVICING.

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

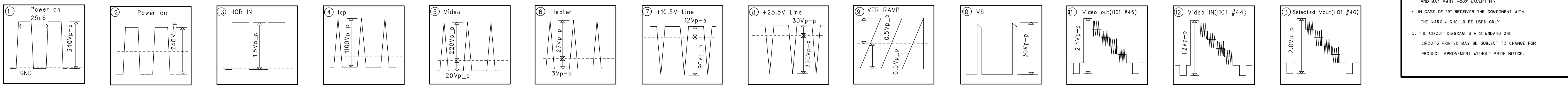
CAUTION TO THE SERVICE TECHNICIANS :
 BEFORE RETURNING THE RECEIVER TO THE CUSTOMER APPROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENT SHOULD BE CONDUCTED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTE :

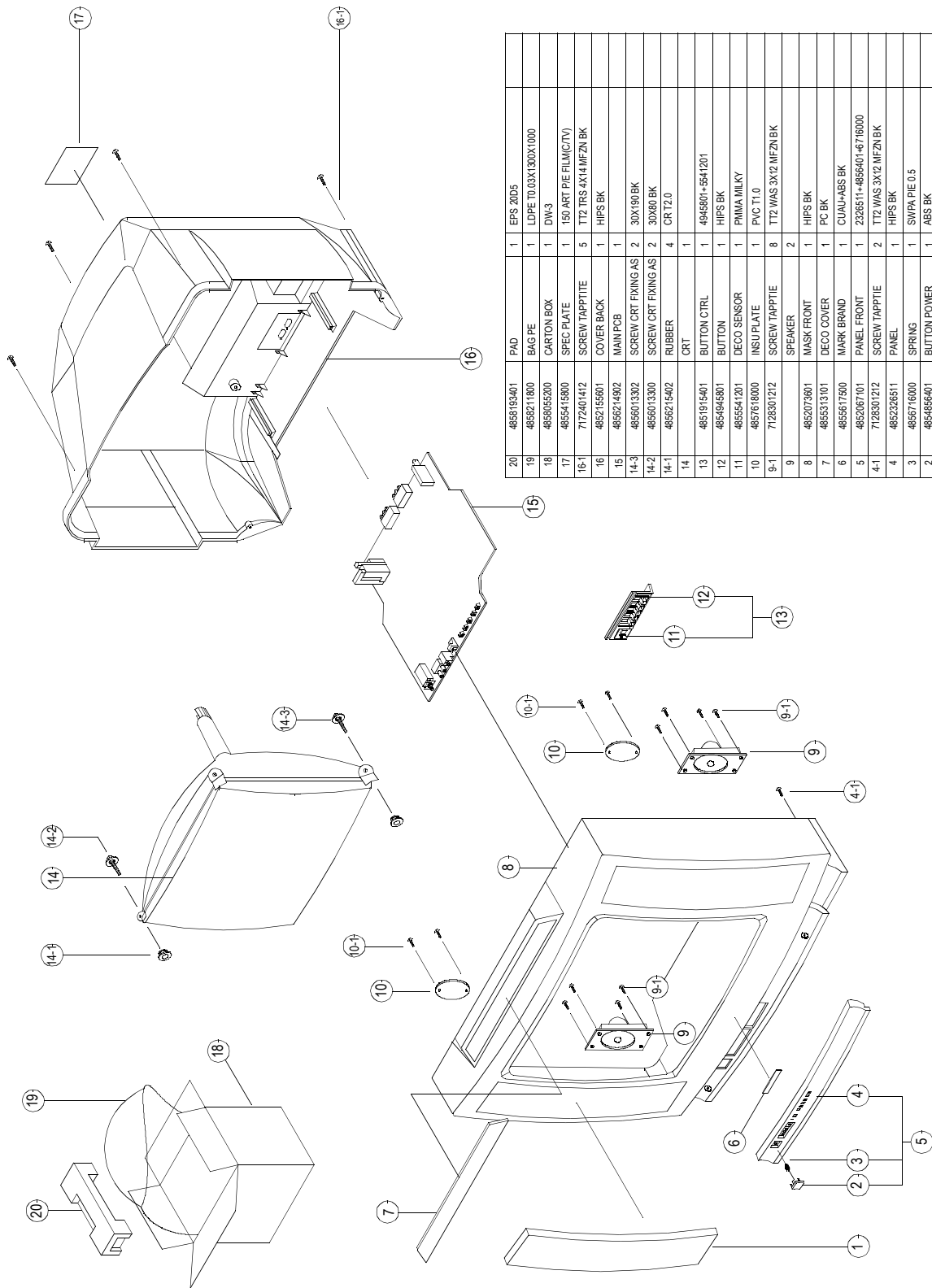
- RESISTANCE IS SHOWN IN OHMS. $\times 1000$ $\neq 1000,000$
- UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES LESS THAN 1 ARE EXPRESSED IN PF AND THE VALUES MORE THAN 1 IN PF
- VOLTAGES READ WITH "V.T.V.M" FROM POINT INDICATE TO CHASSIS GROUND UNLESS A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE VOLTAGE 120 VOLTS AC
- VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY $\pm 20\%$ EXCEPT HV
- IN CASE OF "P" RECEIVER THE COMPONENT WITH THE MARK "P" SHOULD BE USED ONLY
- THE CIRCUIT DIAGRAM IS A STANDARD ONE. CIRCUITS PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE.

DRAWN	DESIGNED	CHECKED	APPROVED
E.S.CHO	E.S.CHO	LY.PARK	H.S.MA
CHASSIS	FILE NAME	ISSUED	REVISED
CN-220B	CN-220B		2000.7.21

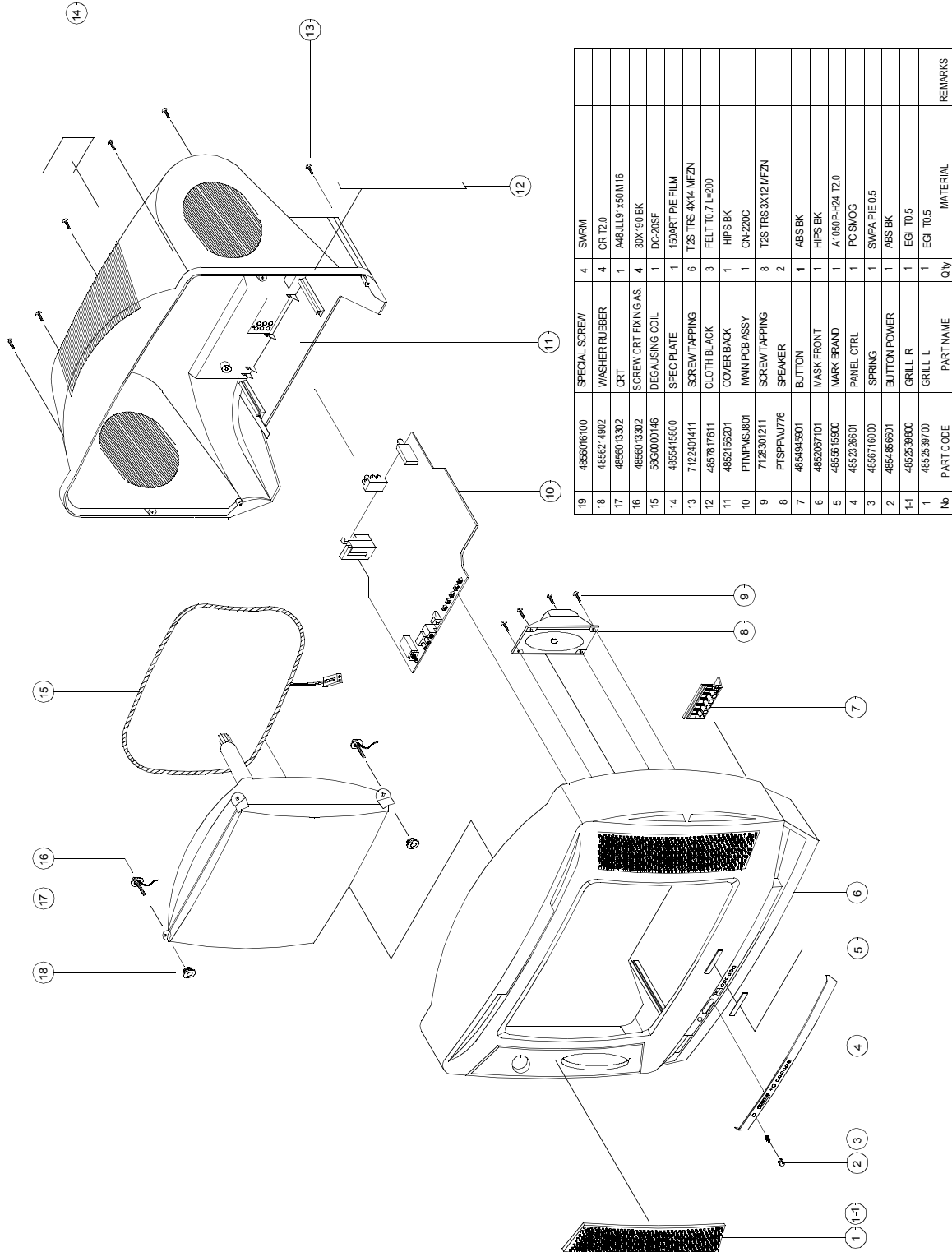
DAEWOO ELECTRONICS TV RESEARCH CENTER



EXPLODED VIEW

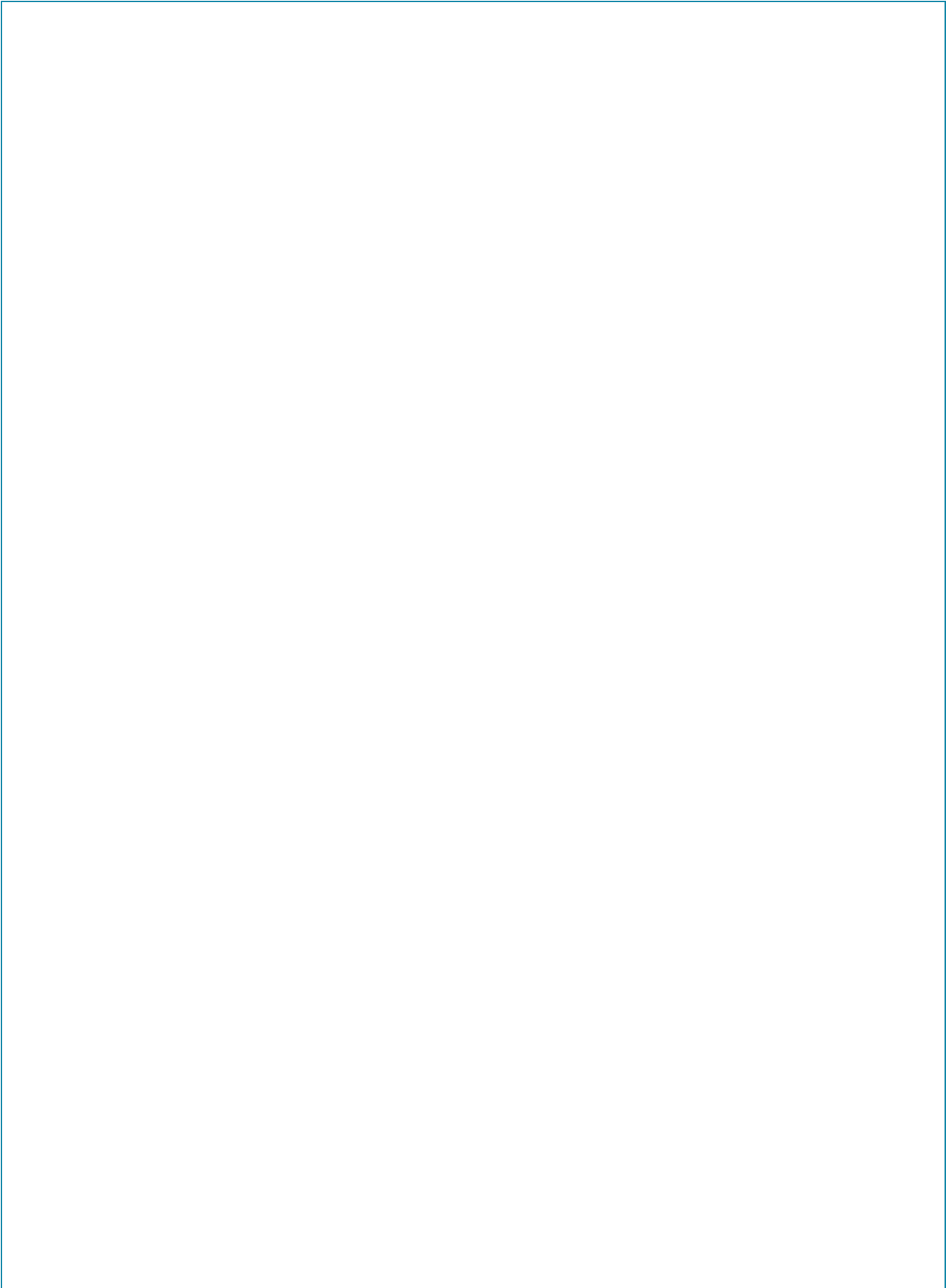


No	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
20	4858193401	PAD	1	EPS 20D5	
19	4858211800	BAG PE	1	LDPE 10.03X1300X1000	
18	4858055200	CARTON BOX	1	DW-3	
17	4855415800	SPEC PLATE	1	150 ART PIE FILM(C/TV)	
16-1	7172401412	SCREW TAPPTITE	5	T2 TRS 4X14.MFZN BK	
16	4852155001	COVER BACK	1	HIPS BK	
15	4858214802	MAIN PCB	1		
14-3	4858013302	SCREW CRT FIXING AS	2	30X190 BK	
14-2	4858013300	SCREW CRT FIXING AS	2	30X80 BK	
14-1	4858215402	RUBBER	4	CR T2.0	
14		CRT	1		
13	4851915401	BUTTON CTRL	1	4945801+5541201	
12	4854945801	BUTTON	1	HIPS BK	
11	4855541201	DECO SENSOR	1	PMMA MILKY	
10	4857618000	INSU PLATE	1	PVC T1.0	
9-1	7128301212	SCREW TAPPTITE	8	T2 WAS 3X12.MFZN BK	
9		SPEAKER	2		
8	4852073801	MASK FRONT	1	HIPS BK	
7	4855313101	DECO COVER	1	PC BK	
6	4856617500	MARK BRAND	1	CUAU-ABS BK	
5	4852051701	PANEL FRONT	1	2326511+4656401-6716000	
4-1	7128301212	SCREW TAPPTITE	2	T2 WAS 3X12.MFZN BK	
4	4852328511	PANEL	1	HIPS BK	
3	4856718000	SPRING	1	SWPA PIE 0.5	
2	4854856401	BUTTON POWER	1	ABS BK	
1	4852539601	GRILL	2	EGT0.5	
No	PART CODE	PART NAME	QTY	MATERIAL	REMARKS



No	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
1	485253800	EG1 TO.5	1	EG1 TO.5	
1-1	485466601	GRILL R	1	ABS BK	
2	485466601	GRILL L	1	ABS BK	
3	485716000	BUTTON POWER	1	SMPA PIE 0.5	
4	485228601	PANEL CTRL	1	PC SMOG	
5	485595800	MARK BRAND	1	A1080P-H24 T2.0	
6	485206701	MASK FRONT	1	HIPS BK	
7	485494801	BUTTON	1	ABS BK	
8	PTSPRAU7/6	SPEAKER	2		
9	7128301211	SCREW TAPPING	8	T2S TRS 3X12 MFZN	
10	PTMPCSJ001	MAIN PCB ASSY	1	ON-220C	
11	4852156201	COVER BACK	1	HIPS BK	
12	4857817611	CLOTH BLACK	3	FELT TO.7 L=200	
13	7122401411	SCREW TAPPING	6	T2S TRS 4X14 MFZN	
14	4855415800	SPEC PLATE	1	150ART PIE FILM	
15	59G0000746	DEGAUSSING COIL	1	DC-205F	
16	4858013302	SCREW CRT FIXING AS.	4	30X180 BK	
17	4858013302	CRT	1	A48JL191x50 M18	
18	485214802	WASHER RUBBER	4	CR T2.0	
19	485016100	SPECIAL SCREW	4	SWRM	

PRINTED CIRCUIT BOARD



SERVICE PARTS LIST

Caution ㉔ is a recommendable part for stock.

△ is safety component, so it must be used the same component.

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LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
ZZ100	TRANSMITTER REMOCON	R-40C03	10000	㉔
ZZ110	ACCESSORY AS	DTQ-20D5FS	10000	
10	BATTERY	R03/NN	20000	
20	ANT ROD	S3BW216B (L=600 MM)	10000	
30	TRANS ANT MATCHING	IMT-06	10000	
M821	BAG INSTRUCTION	L.D.P.E T0.05X250X400	10000	
ZZ120	COVER BACK AS	DTQ-20D5FS	10000	
M211	COVER BACK	HIPS BK	10000	
M541	SPEC PLATE	150ART P/E FILM (C/TV)	10000	
M781	CLOTH BLACK	FELT 200X20X0.7	20000	
M782	CLOTH BLACK	FELT 300X20X0.7	20000	
ZZ130	PACKING AS	DTQ-20D5FS	10000	
M801	BOX CARTON	DW-3	10000	
M811	PAD	EPS 20D5	10000	
M821	BAG P.E	L.D.P.E T0.03X1300X1000	10000	
ZZ131	COIL DEGAUSSING	DC-2030	10000	△
ZZ132	CRT GROUND NET	2001S-1015-1P	10000	
ZZ140	CABINET AS	DTQ-20D5FS	10000	
CRT1	CRT AS	NTSC 20" ITC CRT AS	10000	
V01	COIL DY	ODY-M2050	10000	△
V02	PAINT LOCK	3B-1401B	10	
V03	TAPE CLOTH	19X30 BEIGE	1700	
V04	BOND SILICON	RTV 122 CARTRIDGE	10	
V05	MAGNET CP	NY-225 (MINI NECK)	10000	
V06	RUBBER WEDGE	HMR 28 SR (10X54)	30000	
V901	CRT BARE	A48JLL40X(W)	10000	㉔ △
CRT1A	WASHER RUBBER	CR T2.0	40000	
CRT1B	SCREW CRT FIXING	30X80 BK	20000	
CRT1C	SCREW CRT FIXING	30X190 BK	20000	
M191	BUTTON CTRL	4945802+5541201	10000	
M192	PANEL FRONT AS	2326511+4856401+6716000	10000	
M192A	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	20000	
M201A	SCREW TAPPTITE	TT2 TRS 4X14 MFZN BK	50000	
M531	DECO COVER	PC BK	10000	
M561	MARK BRAND	CU AU+ABS BK	10000	
M681	TIE CABLE	NYLON66 DA100	10000	
M761	INSU PLATE	PVC T1.0	20000	
M761A	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	40000	
M781	CLOTH BLACK	CLOTH T0.7 L=200	20000	
SP01A	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	20000	
SP02A	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	20000	
ZZ200	MASK FRONT AS	DTQ-20D5FS	10000	
M201	MASK FRONT	HIPS BK	10000	㉔
M251	GRILL	EGJ T0.8	20000	
ZZ210	SPEAKER AS	DTQ-20D5FS	10000	
PA601	CONNECTOR	YH025-04+35098+ULW=400	10000	
SP01	SPEAKER	7.5W 8 OHM 95BF03LC	10000	㉔
SP02	SPEAKER	7.5W 8 OHM 95BF03LC	10000	
ZZ290	PCB MAIN MANUAL AS	DTQ-20D5FS	10000	
C403	C CERA	500V B 0.01MF K	10000	
C404	C MYLAR	1.6KV BUP 7000PF J	10000	㉔
C406	C MYLAR	200V EU 0.39MF J	10000	㉔
C801	C LINE ACROSS	WORLD AC250V 0.1UF M R.47	10000	㉔
C804	C ELECTRO	200V LHS 330MF	10000	㉔
C805	C MYLAR	1KV BCP 4700PF J	10000	
C880	C CERA AC	U/C/V AC400V 2200PF	10000	
D703	LED	KLR114L	10000	㉔
D801	DIODE BRIDGE	D2SB80	10000	㉔ △

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
D807	DIODE	RGP30J	10000	㉔
F801	FUSE GLASS TUBE	UL/CSA TL 4A 125V MF51	10000	㉔ △
I301	HEAT SINK ASS'Y	1LA7841--- + 7174300811	10000	
I301	IC VERTICAL	LA7841	10000	㉔
I301A	HEAT SINK	AL EX DG	10000	
I301B	SCREW TAPPTITE	TT2 RND 3X8 MFZN	10000	
I401	IC REGULATOR	KIA7805API	10000	㉔
I501	IC CHROMA	DCT814B	10000	㉔
I601	HEAT SINK ASS'Y	1TDA7266-- + 7174301011	10000	
I601	IC AUDIO	TDA7266	10000	㉔
I601A	HEAT SINK	AL EX BK	10000	
I601B	SCREW TAPPTITE	TT2 RND 3X10 MFZN	10000	
I602	IC AUDIO	MSP3430G-P0-A4	10000	㉔
I701	IC MICOM	DW863240V-GM1(5P34)	10000	㉔
I703	IC	AT24C16-10PC	10000	㉔
I801	MODULE POWER	DPM001T1	10000	㉔
I901	HEAT SINK ASS'Y	1TDA6103Q- + 7174300811	10000	
I901	IC VIDEO	TDA6103Q	10000	㉔
I901A	HEAT SINK	A1050P-H24 T2.0	10000	
I901B	SCREW TAPPTITE	TT2 RND 3X8 MFZN	10000	
IL701	IC PREAMP	TS0P1238W11	10000	㉔
JA02	JACK PIN BOARD	YS-JB9711	10000	
JA03	JACK PIN BOARD	PH-JB-9614A	10000	
JA05	JACK PIN BOARD	PH-JB-9614A	10000	
L111	COIL CHOKE	TRF-9225 (0.55UH)	10000	
L401	COIL H-LINEARITY	L-102 (102UH)	10000	
L501	COIL VCO	TRF-V008	10000	
L801	FILTER LINE	LF-24A2	10000	㉔ △
M352	HOLDER LED	P.P	10000	
P401	CONN WAFER	YFW500-05	10000	
P501A	CONNECTOR	BIC-08T-25T+C-20T+ULW=400	10000	
PWC1	CORD POWER ASS'Y	4859903711+ 4857417700	10000	
PW000	CORD POWER	SPT-2#18AWG 2.1MM W/ TERMI	10000	
PW001	TERM CLAMP	PT-01-T3	20000	
Q402	HEAT SINK ASS'Y	T2SD2499-- + 7174301011	10000	㉔
Q402	TR	2SD2499	10000	
Q402A	HEAT SINK	AL T1.0	10000	
Q402B	SCREW TAPPTITE	TT2 RND 3X10 MFZN	10000	
Q402C	WASHER	SPCC	10000	
Q801	HEAT SINK ASS'Y	T2SK2564-- + 7174300811	10000	㉔
Q801	FET	2SK2564	10000	
Q801A	HEAT SINK	AL EX B/K	10000	
Q801B	SCREW TAPPTITE	TT2 RND 3X8 MFZN	10000	㉔
R801	R CEMENT	7W 2.2 OHM J 15MM 4P	10000	㉔
R883	POSISTOR	ECPAC7R0M140	10000	㉔
RLY1	SW RELAY	DQ5D1-O(M)/GJ-SS-105LM	10000	
RS801	VARISTOR	SVC471D14A	10000	
SCT1	SOCKET CRT	PCS633A	10000	㉔
SF101	FILTER SAW	TSF5241P	10000	
SW701	SW TACT	KPT-1112 1C-1P	10000	㉔
T401	TRANS DRIVE	HD-15D	10000	㉔ △
T402	FBT	FSA37012M	10000	㉔ △
T801	TRANS SMPS	TSM-3541A5	10000	㉔
U102	TUNER VARACTOR	DT5-NF20F	10000	㉔
X201	CRYSTAL QUARTZ	HC-49/U 27.0MHZ 30PPM	10000	㉔
X651	CRYSTAL QUARTZ	HC-49/U 18.43200MHZ 30PPM	10000	㉔
X701	CRYSTAL QUARTZ	C-001R 32.768000KHZ 20PPM	10000	㉔

SERVICE PARTS LIST

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
Z501	FILTER CERA	TPS-4.5MB TRAP (TAPPING)	10000	
ZZ200	PCB CHIP MOUNT B AS	DTQ-20D5FS	10000	
CC151	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC152	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC153	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC154	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC155	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC202	C CHIP CERA	50V CH 20PF J 2012	10000	
CC203	C CHIP CERA	50V CH 20PF J 2012	10000	
CC204	C CHIP CERA	50V CH 820PF J 2012	10000	
CC205	C CHIP CERA	50V CH 180PF J 2012	10000	
CC206	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC207	C CHIP CERA	50V X7R 0.1MF K 2012	10000	
CC208	C CHIP CERA	50V X7R 0.1MF K 2012	10000	
CC209	C CHIP CERA	50V X7R 0.1MF K 2012	10000	
CC210	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC212	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC213	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC214	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC215	C CHIP CERA	50V X7R 0.1MF K 2012	10000	
CC217	C CHIP CERA	Y5V 50V 0.47MF Z 2012	10000	
CC220	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC501	C CHIP CERA	50V CH 47PF J 2012	10000	
CC502	C CHIP CERA	50V CH 20PF J 2012	10000	
CC528	C CHIP CERA	50V X7R 1000PF K 2012	10000	
CC551	C CHIP CERA	50V CH 100PF J 2012	10000	
CC552	C CHIP CERA	50V CH 100PF J 2012	10000	
CC556	C CHIP CERA	50V CH 8PF D 2012	10000	
CC560	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC562	C CHIP CERA	50V CH 18PF J 2012	10000	
CC567	C CHIP CERA	50V CH 180PF J 2012	10000	
CC568	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC569	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC570	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC571	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC573	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC575	C CHIP CERA	50V X7R 1000PF K 2012	10000	
CC580	C CHIP CERA	50V X7R 1500PF K 2012	10000	
CC605	C CHIP CERA	50V X7R 0.1MF K 2012	10000	
CC650	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC651	C CHIP CERA	50V X7R 4700PF K 2012	10000	
CC652	C CHIP CERA	50V X7R 4700PF K 2012	10000	
CC653	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC654	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC655	C CHIP CERA	50V CH 4PF C 2012	10000	
CC656	C CHIP CERA	50V CH 4PF C 2012	10000	
CC661	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC663	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC665	C CHIP CERA	50V Y5V 0.1MF Z 2012	10000	
CC666	C CHIP CERA	50V X7R 470PF K 2012	10000	
CC667	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC669	C CHIP CERA	50V X7R 470PF K 2012	10000	
CC670	C CHIP CERA	50V X7R 470PF K 2012	10000	
CC671	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC752	C CHIP CERA	50V CH 18PF J 2012	10000	
CC753	C CHIP CERA	50V CH 18PF J 2012	10000	
CC754	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC755	C CHIP CERA	50V X7R 0.01MF K 2012	10000	

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
CC756	C CHIP CERA	50V CH 220PF J 2012	10000	
CC757	C CHIP CERA	50V X7R 0.033MF K 2012	10000	
CC758	C CHIP CERA	50V CH 100PF J 2012	10000	
CC759	C CHIP CERA	50V CH 100PF J 2012	10000	
CC760	C CHIP CERA	50V CH 100PF J 2012	10000	
CC761	C CHIP CERA	50V X7R 0.1MF K 2012	10000	
CC768	C CHIP CERA	50V CH 100PF J 2012	10000	
CC780	C CHIP CERA	50V X7R 0.01MF K 2012	10000	
CC900	C CHIP CERA	50V X7R 1000PF K 2012	10000	
CCA01	C CHIP CERA	50V X7R 1000PF K 2012	10000	
CCA13	C CHIP CERA	50V X7R 1000PF K 2012	10000	
CCA14	C CHIP CERA	50V X7R 1000PF K 2012	10000	Ⓢ
I201	IC CHIP PIP	SDA9388X	10000	
JC210	R CHIP	1/10 0 OHM 2012	10000	
JC301	R CHIP	1/10 0 OHM 2012	10000	
JC401	R CHIP	1/10 0 OHM 2012	10000	
JC502	R CHIP	1/10 0 OHM 2012	10000	
JC504	R CHIP	1/10 0 OHM 2012	10000	
JC507	R CHIP	1/10 0 OHM 2012	10000	
JC510	R CHIP	1/10 0 OHM 2012	10000	
JC604	R CHIP	1/10 0 OHM 2012	10000	
JC680	R CHIP	1/10 0 OHM 2012	10000	
JCA01	R CHIP	1/10 0 OHM 2012	10000	
JCA03	R CHIP	1/10 0 OHM 2012	10000	
RC105	R CHIP	1/10 15K OHM J 2012	10000	
RC150	R CHIP	1/10 15K OHM J 2012	10000	
RC151	R CHIP	1/10 100K OHM J 2012	10000	
RC154	R CHIP	1/10 47K OHM J 2012	10000	
RC156	R CHIP	1/10 47K OHM J 2012	10000	
RC165	R CHIP	1/10 4.7K OHM J 2012	10000	
RC202	R CHIP	1/10 4.7K OHM J 2012	10000	
RC203	R CHIP	1/10 1K OHM J 2012	10000	
RC204	R CHIP	1/10 3.9K OHM J 2012	10000	
RC205	R CHIP	1/10 47K OHM J 2012	10000	
RC206	R CHIP	1/10 1K OHM J 2012	10000	
RC207	R CHIP	1/10 47K OHM J 2012	10000	
RC208	R CHIP	1/10 1K OHM J 2012	10000	
RC209	R CHIP	1/10 1K OHM J 2012	10000	
RC210	R CHIP	1/10 0 OHM 2012	10000	
RC211	R CHIP	1/10 100 OHM J 2012	10000	
RC212	R CHIP	1/10 330 OHM J 2012	10000	
RC213	R CHIP	1/10 330 OHM J 2012	10000	
RC216	R CHIP	1/10 1K OHM J 2012	10000	
RC219	R CHIP	1/10 75 OHM J 2012	10000	
RC220	R CHIP	1/10 0 OHM 2012	10000	
RC351	R CHIP	1/10 6.8K OHM J 2012	10000	
RC359	R CHIP	1/10 27K OHM J 2012	10000	
RC360	R CHIP	1/10 33K OHM J 2012	10000	
RC361	R CHIP	1/10 2.2K OHM J 2012	10000	
RC362	R CHIP	1/10 11K OHM J 2012	10000	
RC405	R CHIP	1/10 1K OHM J 2012	10000	
RC426	R CHIP	1/10 3.3K OHM J 2012	10000	
RC453	R CHIP	1/10 10K OHM J 2012	10000	
RC454	R CHIP	1/10 1K OHM J 2012	10000	
RC455	R CHIP	1/10 330 OHM J 2012	10000	
RC501	R CHIP	1/10 1K OHM J 2012	10000	
RC503	R CHIP	1/10 5.6K OHM J 2012	10000	
RC508	R CHIP	1/10 1K OHM J 2012	10000	

SERVICE PARTS LIST

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
RC509	R CHIP	1/10 1K OHM J 2012	10000	
RC510	R CHIP	1/10 390 OHM J 2012	10000	
RC525	R CHIP	1/10 1K OHM J 2012	10000	
RC526	R CHIP	1/10 1.3K OHM J 2012	10000	
RC530	R CHIP	1/10 560 OHM J 2012	10000	
RC531	R CHIP	1/10 560 OHM J 2012	10000	
RC533	R CHIP	1/10 39 OHM J 2012	10000	
RC554	R CHIP	1/10 1K OHM J 2012	10000	
RC555	R CHIP	1/10 820K OHM J 2012	10000	
RC557	R CHIP	1/10 1.8K OHM J 2012	10000	
RC558	R CHIP	1/10 1K OHM J 2012	10000	
RC559	R CHIP	1/10 330 OHM J 2012	10000	
RC561	R CHIP	1/10 330 OHM J 2012	10000	
RC562	R CHIP	1/10 820K OHM J 2012	10000	
RC565	R CHIP	1/10 12K OHM J 2012	10000	
RC566	R CHIP	1/10 12K OHM J 2012	10000	
RC567	R CHIP	1/10 10K OHM J 2012	10000	
RC568	R CHIP	1/10 4.7K OHM F 2012	10000	
RC569	R CHIP	1/10 1.5K OHM J 2012	10000	
RC570	R CHIP	1/10 10K OHM J 2012	10000	
RC571	R CHIP	1/10 2.7K OHM J 2012	10000	
RC572	R CHIP	1/10 22K OHM J 2012	10000	
RC573	R CHIP	1/10 1K OHM J 2012	10000	
RC580	R CHIP	1/10 330 OHM J 2012	10000	
RC581	R CHIP	1/10 330 OHM J 2012	10000	
RC582	R CHIP	1/10 330 OHM J 2012	10000	
RC601	R CHIP	1/10 1K OHM J 2012	10000	
RC602	R CHIP	1/10 1K OHM J 2012	10000	
RC603	R CHIP	1/10 8.2K OHM J 2012	10000	
RC604	R CHIP	1/10 8.2K OHM J 2012	10000	
RC651	R CHIP	1/10 1K OHM J 2012	10000	
RC652	R CHIP	1/10 1K OHM J 2012	10000	
RC653	R CHIP	1/10 100 OHM J 2012	10000	
RC661	R CHIP	1/10 5.1K OHM J 2012	10000	
RC662	R CHIP	1/10 510 OHM J 2012	10000	
RC665	R CHIP	1/10 10K OHM J 2012	10000	
RC701	R CHIP	1/10 39 OHM J 2012	10000	
RC703	R CHIP	1/10 100 OHM J 2012	10000	
RC704	R CHIP	1/10 1K OHM J 2012	10000	
RC705	R CHIP	1/10 4.7K OHM J 2012	10000	
RC706	R CHIP	1/10 4.7K OHM J 2012	10000	
RC707	R CHIP	1/10 1K OHM J 2012	10000	
RC708	R CHIP	1/10 4.7K OHM J 2012	10000	
RC709	R CHIP	1/10 1.5K OHM J 2012	10000	
RC712	R CHIP	1/10 47K OHM J 2012	10000	
RC731	R CHIP	1/10 10K OHM J 2012	10000	
RC732	R CHIP	1/10 1K OHM J 2012	10000	
RC733	R CHIP	1/10 1K OHM J 2012	10000	
RC734	R CHIP	1/10 1K OHM J 2012	10000	
RC735	R CHIP	1/10 1K OHM J 2012	10000	
RC736	R CHIP	1/10 10K OHM J 2012	10000	
RC737	R CHIP	1/10 10K OHM J 2012	10000	
RC738	R CHIP	1/10 470 OHM J 2012	10000	
RC743	R CHIP	1/10 1K OHM J 2012	10000	
RC744	R CHIP	1/10 1K OHM J 2012	10000	
RC746	R CHIP	1/10 2.2K OHM J 2012	10000	
RC747	R CHIP	1/10 3.9K OHM J 2012	10000	
RC750	R CHIP	1/10 4.7K OHM J 2012	10000	

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
RC751	R CHIP	1/10 470 OHM J 2012	10000	
RC752	R CHIP	1/10 470 OHM J 2012	10000	
RC755	R CHIP	1/10 4.7K OHM J 2012	10000	
RC756	R CHIP	1/10 4.7K OHM J 2012	10000	
RC758	R CHIP	1/10 4.7K OHM J 2012	10000	
RC759	R CHIP	1/10 4.7K OHM J 2012	10000	
RC760	R CHIP	1/10 10K OHM J 2012	10000	
RC763	R CHIP	1/10 200 OHM J 2012	10000	
RC776	R CHIP	1/10 4.7K OHM J 2012	10000	
RC780	R CHIP	1/10 100 OHM J 2012	10000	
RC781	R CHIP	1/10 1K OHM J 2012	10000	
RC782	R CHIP	1/10 330 OHM J 2012	10000	
RC784	R CHIP	1/10 510K OHM J 2012	10000	
RC785	R CHIP	1/10 100 OHM J 2012	10000	
RC786	R CHIP	1/10 1K OHM J 2012	10000	
RC787	R CHIP	1/10 4.7K OHM J 2012	10000	
RC788	R CHIP	1/10 4.7K OHM J 2012	10000	
RC789	R CHIP	1/10 1K OHM J 2012	10000	
RC791	R CHIP	1/10 1K OHM J 2012	10000	
RC792	R CHIP	1/10 1K OHM J 2012	10000	
RC793	R CHIP	1/10 1K OHM J 2012	10000	
RC794	R CHIP	1/10 1K OHM J 2012	10000	
RC795	R CHIP	1/10 10K OHM J 2012	10000	
RC796	R CHIP	1/10 470 OHM J 2012	10000	
RC797	R CHIP	1/10 10K OHM J 2012	10000	
RC798	R CHIP	1/10 1K OHM J 2012	10000	
RC799	R CHIP	1/10 10K OHM J 2012	10000	
RC913	R CHIP	1/10 2.7K OHM J 2012	10000	
RC914	R CHIP	1/10 3K OHM J 2012	10000	
RC915	R CHIP	1/10 2.7K OHM J 2012	10000	
RC923	R CHIP	1/10 2.2K OHM J 2012	10000	
RC924	R CHIP	1/10 2.2K OHM J 2012	10000	
RC925	R CHIP	1/10 2.2K OHM J 2012	10000	
RCA10	R CHIP	1/10 220K OHM J 2012	10000	
RCA11	R CHIP	1/10 100 OHM J 2012	10000	
RCA12	R CHIP	1/10 100 OHM J 2012	10000	
RCA13	R CHIP	1/10 220K OHM J 2012	10000	
RCA14	R CHIP	1/10 910KOHM J 2012	10000	
RCA16	R CHIP	1/10 47K OHM J 2012	10000	
RCA17	R CHIP	1/10 47K OHM J 2012	10000	
RCA18	R CHIP	1/10 47K OHM J 2012	10000	
RCA19	R CHIP	1/10 1K OHM J 2012	10000	
RCA20	R CHIP	1/10 20K OHM J 2012	10000	
RCV03	R CHIP	1/10 75 OHM J 2012	10000	
RCV04	R CHIP	1/10 100 OHM J 2012	10000	
RCV05	R CHIP	1/10 47 OHM J 2012	10000	
RCV06	R CHIP	1/10 51 OHM J 2012	10000	
RCV10	R CHIP	1/10 2.4K OHM J 2012	10000	
RCV11	R CHIP	1/10 1K OHM J 2012	10000	
RCV12	R CHIP	1/10 10 OHM J 2012	10000	
ZZ200	PCB MAIN (RHU) AS	DTQ-20D5FS	10000	
C105	C ELECTRO	16V RSS 470MF (10X12.5)TP	10000	
C310	C ELECTRO	25V RSS 1000MF (13X20) TP	10000	
C410	C ELECTRO	250V RSS 10MF (10X20) TP	10000	
C414	C ELECTRO	35V RSS 470MF (10X20) TP	10000	
C415	C ELECTRO	16V RSS 1000MF (10X20) TP	10000	
C510	C ELECTRO	16V RSS 470MF (10X12.5)TP	10000	
C514	C ELECTRO	16V RSS 470MF (10X12.5)TP	10000	

SERVICE PARTS LIST

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
C670	C ELECTRO	16V RSS 470MF (10X12.5)TP	10000	
C681	C ELECTRO	25V RUS 2200MF (16X25) TP	10000	
C812	C ELECTRO	16V RSS 1000MF (10X20) TP	10000	
C813	C CERA SEMI	2KV BL(N) 470PF K (T)	10000	
C814	C ELECTRO	160V RSS 100MF (16X25) TP	10000	
C820	C ELECTRO	160V RSS 100MF (16X25) TP	10000	
C832	C CERA SEMI	2KV BL(N) 470PF K (T)	10000	
C888	C CERA	2KV B 470PF K (TAPPING)	10000	
C889	C ELECTRO	16V RUS 1000MF (10X20) TP	10000	
C965	C CERA	2KV B 1000PF K (TAPPING)	10000	Ⓢ
L800	COIL DELAY LINE	RS208	10000	
ZZ200	PCB MAIN M-10 AS	DTQ-20D5FS	10000	
10	TAPE MASKING	6.2X500	1200	
E01	EYE LET	BSR T0.2 (R1.6)	10000	
E02	EYE LET	BSR T0.2 (R1.6)	10000	
E04	EYE LET	BSR T0.2 (R2.3)	10000	
E05	EYE LET	BSR T0.2 (R2.3)	10000	
E06	EYE LET	BSR T0.2 (R1.6)	10000	
E07	EYE LET	BSR T0.2 (R1.6)	10000	
E08	EYE LET	BSR T0.2 (R1.6)	10000	
E09	EYE LET	BSR T0.2 (R1.6)	10000	
E10	EYE LET	BSR T0.2 (R2.3)	10000	
E11	EYE LET	BSR T0.2 (R2.3)	10000	
E12	EYE LET	BSR T0.2 (R2.3)	10000	
E13	EYE LET	BSR T0.2 (R2.3)	10000	
E14	EYE LET	BSR T0.2 (R2.3)	10000	
E15	EYE LET	BSR T0.2 (R1.6)	10000	
E17	EYE LET	BSR T0.2 (R2.3)	10000	
E18	EYE LET	BSR T0.2 (R2.3)	10000	
E19	EYE LET	BSR T0.2 (R2.3)	10000	
E20	EYE LET	BSR T0.2 (R2.3)	10000	
E22	EYE LET	BSR T0.2 (R2.3)	10000	
E23	EYE LET	BSR T0.2 (R1.6)	10000	
E24	EYE LET	BSR T0.2 (R1.6)	10000	
E25	EYE LET	BSR T0.2 (R1.6)	10000	
E26	EYE LET	BSR T0.2 (R1.6)	10000	
E27	EYE LET	BSR T0.2 (R1.6)	10000	
E29	EYE LET	BSR T0.2 (R2.3)	10000	
E30	EYE LET	BSR T0.2 (R1.6)	10000	
E31	EYE LET	BSR T0.2 (R1.6)	10000	
E32	EYE LET	BSR T0.2 (R1.6)	10000	
E33	EYE LET	BSR T0.2 (R2.3)	10000	
E34	EYE LET	BSR T0.2 (R2.3)	10000	
E35	EYE LET	BSR T0.2 (R2.3)	10000	
P601	CONN WAFER	YW025-04 (STICK)	10000	
P801A	TERM PIN	DA-IB0214(D2.3/DY PIN)	10000	
P801B	TERM PIN	DA-IB0214(D2.3/DY PIN)	10000	Ⓢ
R303	R M-OXIDE FILM	1W 1.2 OHM J (TAPPING)	10000	Ⓢ
R403	R M-OXIDE FILM	2W 5.6K OHM J SMALL	10000	Ⓢ
R414	R M-OXIDE FILM	2W 2.2 OHM J SMALL	10000	
R804	R M-OXIDE FILM	2W 0.27 OHM J SMALL	10000	Ⓢ
R814	R M-OXIDE FILM	2W 0.82 OHM J SMALL	10000	
ZZ200	PCB MAIN RADIAL AS	DTQ-20D5FS	10000	
C101	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C102	C ELECTRO	16V RSS 100MF (6.3X11) TP	10000	
C103	C ELECTRO	50V RSS 3.3MF (5X11) TP	10000	
C104	C MYLAR	50V EU 0.033MF J (TP)	10000	
C106	C ELECTRO	50V RSS 1MF (5X11) TP	10000	

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
C107	C ELECTRO	50V RSS 0.22MF (5X11) TP	10000	
C201	C ELECTRO	16V RSS 220MF (8X11.5) TP	10000	
C202	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C203	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C220	C ELECTRO	50V RSS 2.2MF (5X11) TP	10000	
C221	C ELECTRO	50V RSS 2.2MF (5X11) TP	10000	
C301	C MYLAR	50V EU 0.01MF J (TP)	10000	
C302	C ELECTRO	50V RSS 4.7MF (5X11) TP	10000	
C303	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C305	C ELECTRO	50V RSS 100MF (8X11.5) TP	10000	
C307	C CERA	500V SL 10PF D (TAPPING)	10000	
C308	C MYLAR	50V EU 0.1MF J (TP)	10000	
C311	C ELECTRO	50V RT 2.2MF (6.3X11) TP	10000	
C401	C CERA	500V B 1000PF K (TAPPING)	10000	
C405	C ELECTRO	160V RSS 1MF (6.3X11) TP	10000	
C411	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C412	C CERA	500V B 1000PF K (TAPPING)	10000	
C413	C CERA	500V B 1000PF K (TAPPING)	10000	
C416	C CERA	500V B 1000PF K (TAPPING)	10000	
C417	C CERA	500V B 1000PF K (TAPPING)	10000	
C418	C MYLAR	100V 0.1MF J (TP)	10000	
C420	C ELECTRO	50V RSS 0.33MF (5X11) TP	10000	
C451	C ELECTRO	16V RSS 100MF (6.3X11) TP	10000	
C452	C ELECTRO	16V RSS 220MF (8X11.5) TP	10000	
C501	C MYLAR	50V MEU 1MF J	10000	
C502	C ELECTRO	16V RSS 330MF (8X11.5) TP	10000	
C507	C MYLAR	50V EU 0.22MF J (TP)	10000	
C508	C MYLAR	50V EU 0.22MF J (TP)	10000	
C509	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C511	C MYLAR	50V EU 0.033MF J (TP)	10000	
C512	C ELECTRO	50V RSS 0.1MF (5X11) TP	10000	
C513	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C516	C ELECTRO	50V RSS 2.2MF (5X11) TP	10000	
C517	C MYLAR	50V 0.047MF J (TP)	10000	
C518	C ELECTRO	50V RSS 0.47MF (5X11) TP	10000	
C519	C ELECTRO	50V RSS 0.47MF (5X11) TP	10000	
C520	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C525	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C551	C ELECTRO	50V RSS 0.47MF (5X11) TP	10000	
C651	C MYLAR	50V EU 0.1MF J (TP)	10000	
C652	C ELECTRO	16V RSS 47MF (5X11) TP	10000	
C654	C ELECTRO	16V RSS 100MF (6.3X11) TP	10000	
C655	C ELECTRO	50V RSS 3.3MF (5X11) TP	10000	
C658	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C659	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C660	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C662	C ELECTRO	50V RSS 3.3MF (5X11) TP	10000	
C666	C ELECTRO	50V RSS 10MF (5X11) TP	10000	
C669	C ELECTRO	25V RSS 100MF (6.3X11) TP	10000	
C682	C MYLAR	50V EU 0.22MF J (TP)	10000	
C683	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C684	C MYLAR	50V EU 0.22MF J (TP)	10000	
C685	C ELECTRO	25V RSS 47MF (5X11) TP	10000	
C686	C ELECTRO	25V RSS 47MF (5X11) TP	10000	
C701	C ELECTRO	25V RSS 47MF (5X11) TP	10000	
C702	C ELECTRO	16V RSS 220MF (8X11.5) TP	10000	
C703	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C704	C ELECTRO	50V RSS 2.2MF (5X11) TP	10000	

SERVICE PARTS LIST

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
C705	C ELECTRO	50V RSS 3.3MF (5X11) TP	10000	
C706	C ELECTRO	16V RSS 100MF (6.3X11) TP	10000	
C707	C MYLAR	50V EU 0.1MF J (TP)	10000	
C708	C ELECTRO	50V RSS 1MF (5X11) TP	10000	
C802	C CERA	500V B 2200PF K (TAPPING)	10000	
C803	C CERA	500V B 2200PF K (TAPPING)	10000	
C806	C CERA	1KV B 1000PF K (TAPPING)	10000	
C807	C MYLAR	50V EU 0.01MF J (TP)	10000	
C815	C ELECTRO	100V RSS 10MF (6.3X11) TP	10000	
C818	C ELECTRO	16V RSS 100MF (6.3X11) TP	10000	
C819	C ELECTRO	50V RSS 4.7MF (5X11) TP	10000	
C902	C MYLAR	250V MEU 0.1MF K	10000	
C903	C MYLAR	63V MEU 0.22MF J (TP)	10000	
CA01	C ELECTRO	50V RSS 0.1MF (5X11) TP	10000	
CA10	C ELECTRO	50V RSS 22MF (5X11) TP	10000	
CA11	C ELECTRO	50V RSS 22MF (5X11) TP	10000	
CA15	C ELECTRO	50V RSS 0.1MF (5X11) TP	10000	
CA16	C ELECTRO	50V RSS 0.1MF (5X11) TP	10000	
CA17	C ELECTRO	16V RSS 330MF (8X11.5) TP	10000	
CV01	C ELECTRO	50V RSS 2.2MF (5X11) TP	10000	
CV02	C ELECTRO	50V RSS 47MF (6.3X11) TP	10000	
CV12	C ELECTRO	50V RSS 100MF (8X11.5) TP	10000	
F801A	CLIP FUSE	PFC5000-0702	10000	
F801B	CLIP FUSE	PFC5000-0702	10000	
L202	COIL PEAKING	56UH J (RADIAL)	10000	
L203	COIL PEAKING	56UH J (RADIAL)	10000	
L652	COIL PEAKING	56UH J (RADIAL)	10000	
L805	COIL CHOKE	AZ-9004Y 940K TP	10000	
Q201	TR	KSC 945C-Y (TAPPING)	10000	Ⓢ
Q401	TR	KSC2330Y (TP)	10000	
Q403	TR	KSC 945C-Y (TAPPING)	10000	Ⓢ
Q405	TR	KTC3207 (TP)	10000	
Q601	TR	KSC 945C-Y (TAPPING)	10000	
Q701	TR	KSC 945C-Y (TAPPING)	10000	
Q702	TR	KSC 945C-Y (TAPPING)	10000	
Q703	TR	KSC 945C-Y (TAPPING)	10000	Ⓢ
Q704	TR	KSA733CY (TP)	10000	
Q705	TR	KTC3198Y	10000	
Q706	TR	KSC 945C-Y (TAPPING)	10000	Ⓢ
Q804	TR	KSA1013Y (TP)	10000	Ⓢ
Q805	TR	KTC3205Y (TP)	10000	
QA01	TR	KSC 945C-Y (TAPPING)	10000	
QV01	TR	KSC 945C-Y (TAPPING)	10000	Ⓢ
R301	R METAL FILM	1W 560 OHM J SMALL	10000	Ⓢ
R302	R METAL FILM	1W 470 OHM J SMALL	10000	
R305	R METAL FILM	1W 330 OHM J SMALL	10000	
R402	R METAL FILM	1W 1K OHM J SMALL	10000	Ⓢ
R411	R METAL FILM	1W 2.2 OHM J SMALL	10000	Ⓢ
R412	R METAL FILM	1W 4.3 OHM J SMALL	10000	Ⓢ
R413	R METAL FILM	2W 1.5 OHM J SMALL	10000	Ⓢ
R418	R METAL FILM	2W 3.3 OHM J SMALL	10000	
R420	R METAL FILM	2W 62 OHM J SMALL	10000	
R503	R METAL FILM	1W 470 OHM J SMALL	10000	
R612	R METAL FILM	2W 39 OHM J SMALL	10000	Ⓢ
R817	R METAL FILM	1W 300 OHM J SMALL	10000	Ⓢ
R913	R METAL FILM	1W 120K OHM J SMALL	10000	Ⓢ
R914	R METAL FILM	1W 120K OHM J SMALL	10000	Ⓢ
R915	R METAL FILM	1W 120K OHM J SMALL	10000	

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
SW702	SW TACT	SKHV17910A	10000	
SW703	SW TACT	SKHV17910A	10000	
SW704	SW TACT	SKHV17910A	10000	
SW705	SW TACT	SKHV17910A	10000	
SW706	SW TACT	SKHV17910A	10000	
X502	CRYSTAL QUARTZ	HC-49U 3.579545M (TP)	10000	
ZZ200	PCB MAIN AXIAL AS	DTQ-20D5FS	10000	
10	TAPE MASKING	3M #232 6.0X2000M	42000	
20	TAPE MASKING	3M #232-MAP-C 6.2X2000M	42000	
A001	PCB MAIN	330X246 S1B	10000	
D101	DIODE ZENER	UZ-33B	10000	
D105	DIODE ZENER	UZ-5.1B UNIZON	10000	
D301	DIODE	1N4004	10000	
D401	DIODE	1N4937G (TAPPING)	10000	Ⓢ
D405	DIODE	1N4937G (TAPPING)	10000	Ⓢ
D406	DIODE	1N4937G (TAPPING)	10000	Ⓢ
D407	DIODE	1N4937G (TAPPING)	10000	Ⓢ
D408	DIODE	1N4937G (TAPPING)	10000	Ⓢ
D409	DIODE	1N4148 (TAPPING)	10000	
D501	DIODE	1N4148 (TAPPING)	10000	
D502	DIODE	1N4148 (TAPPING)	10000	
D503	DIODE ZENER	UZ-9.1BM 9.1V	10000	
D504	DIODE	1N4148 (TAPPING)	10000	
D505	DIODE ZENER	UZ-9.1BM 9.1V	10000	
D510	DIODE	1N4148 (TAPPING)	10000	
D511	DIODE	1N4148 (TAPPING)	10000	
D512	DIODE	1N4148 (TAPPING)	10000	
D601	DIODE ZENER	UZ-5.6BM(TAPPING)	10000	
D602	DIODE ZENER	UZ-8.2B (8.2V)	10000	
D651	DIODE ZENER	UZ-5.1B UNIZON	10000	
D652	DIODE ZENER	UZ-5.1B UNIZON	10000	
D701	DIODE	1N4148 (TAPPING)	10000	
D704	DIODE ZENER	UZ-3.9B	10000	
D757	DIODE	1N4148 (TAPPING)	10000	Ⓢ
D808	DIODE	RGP15J	10000	
D812	DIODE ZENER	UZ-5.6BM(TAPPING)	10000	Ⓢ
D813	DIODE	RGP15J	10000	Ⓢ
D822	DIODE ZENER	RZ1155V1	10000	Ⓢ
D888	DIODE	RGP15J	10000	
DA04	DIODE ZENER	UZ-8.2B (8.2V)	10000	
DA05	DIODE ZENER	UZ-5.6BM(TAPPING)	10000	
DA12	DIODE ZENER	UZ-5.6BM(TAPPING)	10000	
J001	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J002	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J007	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J008	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J010	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J011	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J012	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J013	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J014	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J015	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J016	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J017	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J018	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J020	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J021	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J022	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	

LOC	PART NAME	PART DESCRIPTION	QTY	REMARK
J804	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J805	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J807	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J808	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J809	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J810	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J811	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J812	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J813	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J820	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J821	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
J822	WIRE COPPER	AWG22 1/0.65 TIN COATING	500	
L112	COIL PEAKING	22UH K (AXIAL 3.5MM)	10000	
L502	COIL PEAKING	47UH 10.5MM K (LAL04TB)	10000	
L503	COIL PEAKING	15UH K (AXIAL 3.5MM)	10000	
L533	COIL PEAKING	15UH K (AXIAL 3.5MM)	10000	
L601	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	10000	
L603	COIL PEAKING	100UH K (AXIAL 3.5MM)	10000	
L604	COIL BEAD	HC-3550	10000	
L605	COIL BEAD	HC-3550	10000	
L607	COIL BEAD	HC-3550	10000	
L651	COIL PEAKING	15UH K (AXIAL 3.5MM)	10000	
L701	COIL PEAKING	22UH K (AXIAL 3.5MM)	10000	
L802	COIL BEAD	HC-3550	10000	
L806	COIL BEAD	HC-3550	10000	
L807	COIL BEAD	HC-3550	10000	
R352	R METAL FILM	1/4 160K OHM F	10000	
R353	R METAL FILM	1/4 15K OHM F	10000	
R401	R CARBON FILM	1/4 4.7K OHM J	10000	
R405	R CARBON FILM	1/2 750 OHM J	10000	
R416	R CARBON FILM	1/2 120 OHM J	10000	
R425	R CARBON FILM	1/4 7.5K OHM J	10000	
R451	R CARBON FILM	1/4 11K OHM J	10000	
R452	R CARBON FILM	1/4 10K OHM J	10000	
R501	R CARBON FILM	1/2 150 OHM J	10000	
R502	R CARBON FILM	1/2 150 OHM J	10000	
R511	R CARBON FILM	1/4 150 OHM J	10000	
R651	R CARBON FILM	1/2 120 OHM J	10000	
R661	R CARBON FILM	1/2 270 OHM J	10000	
R662	R CARBON FILM	1/2 270 OHM J	10000	
R703	R CARBON FILM	1/4 1K OHM J	10000	
R802	R CARBON FILM	1/4 390K OHM J	10000	
R803	R CARBON FILM	1/4 33K OHM J	10000	
R805	R CARBON FILM	1/4 3.9K OHM J	10000	
R809	R CARBON FILM	1/4 390K OHM J	10000	
R813	R CARBON FILM	1/4 36K OHM J	10000	
R818	R CARBON FILM	1/4 560 OHM J	10000	
R820	R CARBON FILM	1/4 3.9K OHM J	10000	
R822	R CARBON FILM	1/4 36K OHM J	10000	
R862	R CARBON FILM	1/4 27K OHM J	10000	Ⓡ Δ
R880	R CARBON COMP	1/2 5.6M OHM K	10000	
R910	R CARBON FILM	1/2 1.5K OHM J	10000	
R911	R CARBON FILM	1/2 1.5K OHM J	10000	
R912	R CARBON FILM	1/2 1.5K OHM J	10000	

DIFFERENT PARTS LIST

■ CN-220B DIFFERENT PARTS LIST

LOC.	PART NAME	DTQ-20D5FS		DTQ-20D5FC		DTQ-20D5FSP	
		PART CODE	PART DESC.	PART CODE	PART DESC.	PART CODE	PART DESC.
C802	C CERA	CX2B2H222K	500V B 2200PF K (TAPPING)	←	←	X	X
C803	C CERA	CX2B2H222K	500V B 2200PF K (TAPPING)	←	←	X	X
C804	C ELECTRO	CEYN2D331P	200V LHS 330MF	←	←	CEYN2W101P	450V LHS 100MF (25X30)
C805	C MYLAR	CMYU3A472J	1KV BCP 4700PF J	←	←	CMYU3C222J	1.6KV BCP 2200PF J
C808	C CERA	X	X	←	←	CCXB3A472K	1KV B 4700PF K (TAPPING)
C809	C CERA	X	X	←	←	CCXB3A472K	1KV B 4700PF K (TAPPING)
CRT1	CRT	X	X	←	←	4859630461	A48JLL91X50 M16
CRT1	CRT AS	PTRTPWJ666	NTSC 20" ITC CRT AS	←	←	X	X
V901	CRT BARE	48A96420N1	A48JLL40X(W)	←	←	X	X
V01	COIL DY	58D0000083	ODY-M2050	←	←	X	X
F801	FUSE GLASS TUBE	5F1GB4021L	UL/GSA TL 4A 125V MF51	←	←	5F5GB4022L	SEMKO TL 4A 250V MF51
I801	MODULE POWER	4850M04310	DPM001T1	←	←	4850M04710	DPM001T1A
PWC1	CORD POWER AS	PTWASW2710	4859903711+ 4857417700	4859907910	ME301P+TER=1830	4859908410	MP229+H03VVH2-F+TER=2100
PW000	CORD POWER	4859903711	SPT-2#18AWG 2.1MM W/TERMI	←	←	X	X
Q801	FET	T2SK2564--	2SK2564	←	←	T2SK2671--	2SK2671
R801	R CEMENT	RX07C229JF	7W 2.2 OHM J 15MM 4P	←	←	RX07C339JF	7W 3.3 OHM J 15MM 4P
R802	R CARBON FILM	RD-4Z394J-	1/4 390K OHM J	←	←	RD-4Z514J-	1/4 510K OHM J
R809	R CARBON FILM	RD-4Z394J-	1/4 390K OHM J	←	←	RD-4Z514J-	1/4 510K OHM J
R883	POSITOR	DDC3R0M140	ECPCD3R0M140	←	←	DDC7R0M290	ECPCD7R0M290
ZZ131	COIL DEGAUSSING	58G0000141	DC-20S1	←	←	58G0000146	DC-20SF

■ CN-220C Different Part List

LOC	PART NAME	DTQ-20D5FS		DTQ-20D4AS		DTQ-20D4ASP		DTQ-20D4SSF		DTQ-20D4SSSP	
		PART CODE	PART DESC.	PART CODE	PART DESC.	PART CODE	PART DESC.	PART CODE	PART DESC.	PART CODE	PART DESC.
C201	C ELECTRO	CEXF1C221V	16V RSS 220MF (8X11.5) TP	X	X	X	X	X	X	X	X
C202	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	X	X	X	X	X	X	X	X
C203	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	X	X	X	X	X	X	X	X
C220	C ELECTRO	CEXF1H229V	50V RSS 2.2MF (5X11) TP	X	X	X	X	X	X	X	X
C221	C ELECTRO	CEXF1H229V	50V RSS 2.2MF (5X11) TP	X	X	X	X	X	X	X	X
C505	C MYLAR	X	X	CMXM2A103J	100V 0.01MF J (TP)	←	←	←	←	X	X
C651	C MYLAR	CMXM2A104J	100V 0.1MF J (TP)	X	X	X	X	X	X	X	X
C652	C ELECTRO	CEXF1C470V	16V RSS 47MF (5X11) TP	X	X	X	X	X	X	X	X
C654	C ELECTRO	CEXF1C101V	16V RSS 100MF (6.3X11) TP	X	X	X	X	X	X	X	X
C655	C ELECTRO	CEXF1H339V	50V RSS 3.3MF (5X11) TP	X	X	X	X	X	X	X	X
C658	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	X	X	X	X	X	X	X	X
C659	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	X	X	X	X	X	X	X	X
C660	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	X	X	X	X	X	X	X	X
C662	C ELECTRO	CEXF1H339V	50V RSS 3.3MF (5X11) TP	X	X	X	X	X	X	X	X
C666	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	X	X	X	X	X	X	X	X
C669	C ELECTRO	CEXF1E101V	25V RSS 100MF (6.3X11) TP	X	X	X	X	X	X	X	X
C670	C ELECTRO	CEXF1C471V	16V RSS 470MF (10X12.5) TP	CEXF1V331C	35V RUS 330MF (10X20) TP	←	←	←	←	X	X
C802	C CERA	CCXB2H222K	500V B 2200PF K (TAPPING)	←	←	X	X	X	X	X	X
C803	C CERA	CCXB2H222K	500V B 2200PF K (TAPPING)	←	←	X	X	X	X	X	X
C804	C ELECTRO	CEYN2D331P	200V LHS 330MF	←	←	CEYN2W101P	450V LHS 100MF (25X30)	CEYN2W151P	450V LHS 150MF (25X40)	CEYN2W101P	450V LHS 100MF (25X30)
C805	C MYLAR	CMYU3A472J	1KV BCP 4700PF J	←	←	CMYU3C222J	1.6KV BCP 2200PF J	←	←	CMYU3C222J	1.6KV BCP 2200PF J
C808	C CERA	X	X	X	X	CCXB3A472K	1KV B 4700PF K (TAPPING)	←	←	CCXB3A472K	1KV B 4700PF K (TAPPING)
C809	C CERA	X	X	X	X	CCXB3A472K	1KV B 4700PF K (TAPPING)	←	←	CCXB3A472K	1KV B 4700PF K (TAPPING)
CA10	C ELECTRO	CEXF1H220V	50V RSS 22MF (5X11) TP	X	X	X	X	X	X	X	X
CA11	C ELECTRO	CEXF1H220V	50V RSS 22MF (5X11) TP	X	X	X	X	X	X	X	X

DIFFERENT PART LIST

CV02	C ELECTRO	CEXF1H470V	50V RSS 47MF (6.3X11) TP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	SEMKO TL 4A 250V MF51
CV12	C ELECTRO	CEXF1H101V	50V RSS 100MF (8X11.5) TP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D601	DIODE ZENER	DUZ5R68M--	UZ-5.6BM	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D602	DIODE ZENER	DUZ8R28M--	UZ-8.2B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D651	DIODE ZENER	DUZ5R1B---	UZ-5.1B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D652	DIODE ZENER	DUZ5R1B---	UZ-5.1B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DA04	DIODE ZENER	DUZ8R28M--	UZ-8.2B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F801	FUSE GLASS TUBE	5F1GB4021L	UL/CSA TL 4A 125V MF51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I201	IC CHIP PIP	1SDA9388XE	SDA9388X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I602	IC AUDIO	1MSP3430A4	MSP3430G-P0-A4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I801	MODULE POWER	4850M04310	DPM001T1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J021	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J201	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J206	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J209	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J210	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J211	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J224	WIRE COPPER	X	X	85801065GY	X	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J530	WIRE COPPER	X	X	85801065GY	X	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J536	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J540	WIRE COPPER	X	X	85801065GY	X	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J551	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J556	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J606	C CERA SEMI	X	X	CBZF1H104Z	X	50V F 0.1MF Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J611	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J612	WIRE COPPER	X	X	85801065GY	X	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J613	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J614	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

DAEWOO

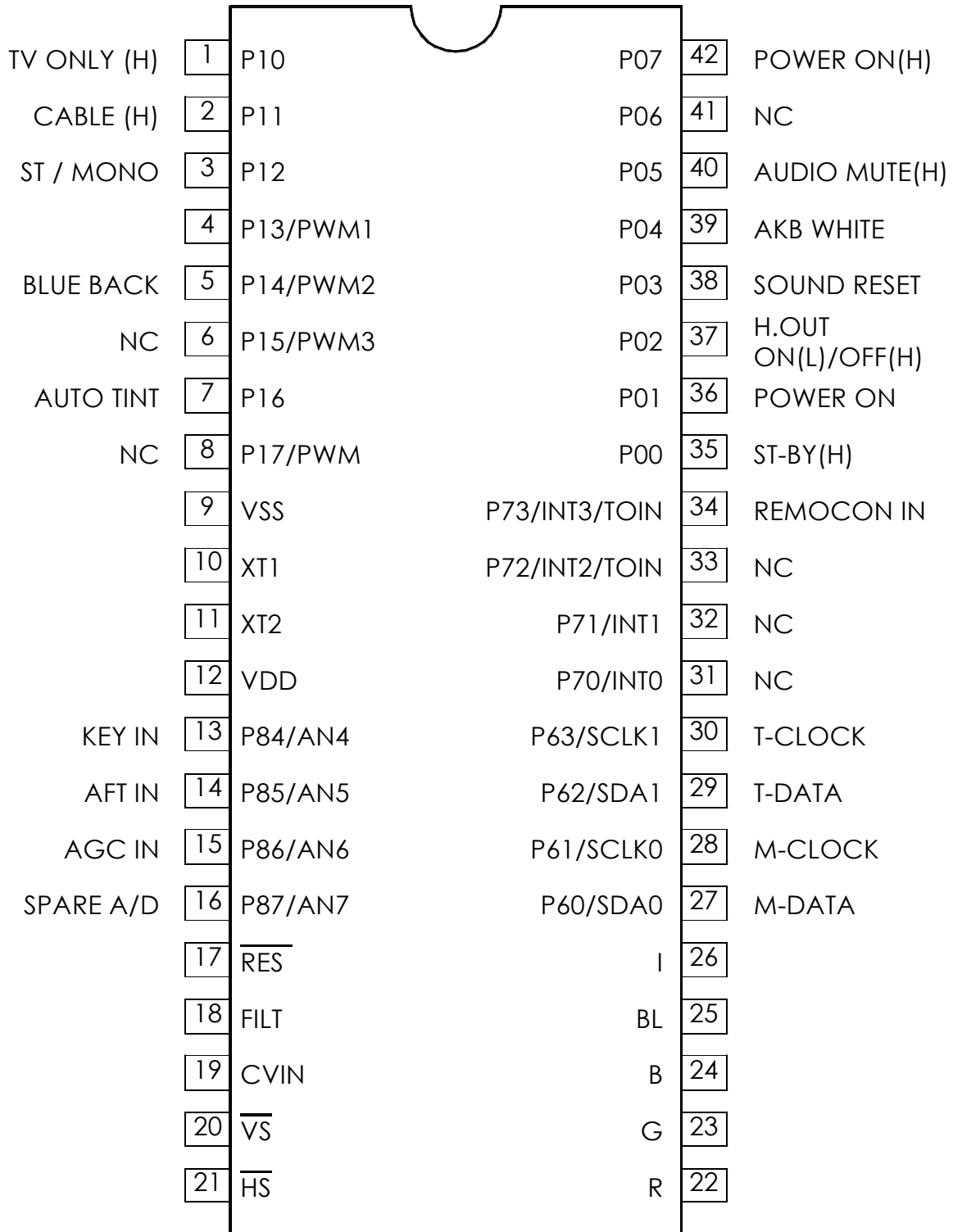
DAEWOO ELECTRONICS CO., LTD

686, AHYEON-DONG MAPO-GU
SEOUL, KOREA
C.P.O. BOX 8003 SEOUL, KOREA
TELEX : DWELEC K28177-8
CABLE : "DAEWOOELEC"
E-mail : leesk@web.dwe.co.kr
TEL : 82-2-360-7802
FAX : 82-2-360-7877

APPENDIX

IC DESCRIPTION

U-COM(I701)



- X'TAL : 32.768 KHz

APPENDIX

IC DESCRIPTION

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.) : I²C Bus.
/PLL IC : TAU 6014-S(SIEMENS).
- 6) Remocon. : The IC of Transmission (MITSUBISHI M50560)
- 7) E²PROM. : 24C08(I²C 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.
 - I²C 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 --> I²C Bus Control
- 5) The Others Function.
 - Video/Audio Mute Function.
 - If a Channel is no signal, after 15 minutes is Auto-Power Off Function.

APPENDIX

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).
- E²PROM Interface (I²C 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 - 220B	#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) : Mitshubishi					
#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.)

6. Pin Description

PIN	Terminal	Name	Explanation	Remarks							
1	P10	Input (Option)	-High(DC_5V):The only TV. -Low(DC_0V):Line.(Videl)	-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	Remote (Option)	-High(DC_5V):Mishubishi. -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)	<ul style="list-style-type: none"> - 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. - Ohter function. <table border="1" style="margin-left: 20px;"> <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> </table> <p>- This use cn220 but don't use cn001.</p>		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(+0.5V) -Positive power supply.								
13	P84 / AN4	KEY IN	-Power, CH up/down, Vol up/down, Meun.								
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								

APPENDIX

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	CVTN	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.		
28	P61 / SCLK 0	ROM CLK Main IC CLK	-Other function.		
29	SDA 1	Tuner Data			
30	P63 / SCLK 1	Tuner CLK	P60		IIC0 data I/O.
			P61		IIC0 clock output.
			P62	IIC1 data I/O.	
			P63	IIC1 clock output.	

Pin	Terminal	Name	Explanation	Remarks																																											
31	P70 / INT0	Sound Input	- 4-bit input/output port.																																												
32	P71 / INT1	N.C	- Input or output can be specified for each bit.																																												
33	P72 / INT2 TO IN	SD In	- #31 : Only Cn-220, ITT(MSP) Low : Front Mask/Mono, High : Back/stereo -Other function.																																												
34	P72 / INT3 TO 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>INT0</td> <td>E</td> <td>E</td> <td>D</td> <td>E</td> <td>E</td> <td>0BH</td> </tr> <tr> <td>INT0</td> <td>E</td> <td>E</td> <td>E</td> <td>D</td> <td>D</td> <td>13H</td> </tr> <tr> <td>INT0</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>INT0 input(HOLD release in 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	INT0	E	E	D	E	E	0BH	INT0	E	E	E	D	D	13H	INT0	E	E	E	D	D	1BH	P70	INT0 input(HOLD release in 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																																									
INT0	E	E	D	E	E	0BH																																									
INT0	E	E	E	D	D	13H																																									
INT0	E	E	E	D	D	1BH																																									
P70	INT0 input(HOLD release in 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	POO	ST_By LED	-Use only Japan Model. -This port uses when is Stand-by status. -condition :Input AC Power On. -Power off : High(D.C 5V)Output(red) -Power on : Low(D.C 0V)Output.																																												
36	P01	TV/VIDEO	-TV Mode high' Line(Videl)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-Cn220																																											
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	Vudio White	-Use when TV set turns off.																																												
42	P07	Power	-Use when dose 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, "Programable pull-up resistor provided" when specifying either CMOS or N-ch open drain output.

Port status in reset.

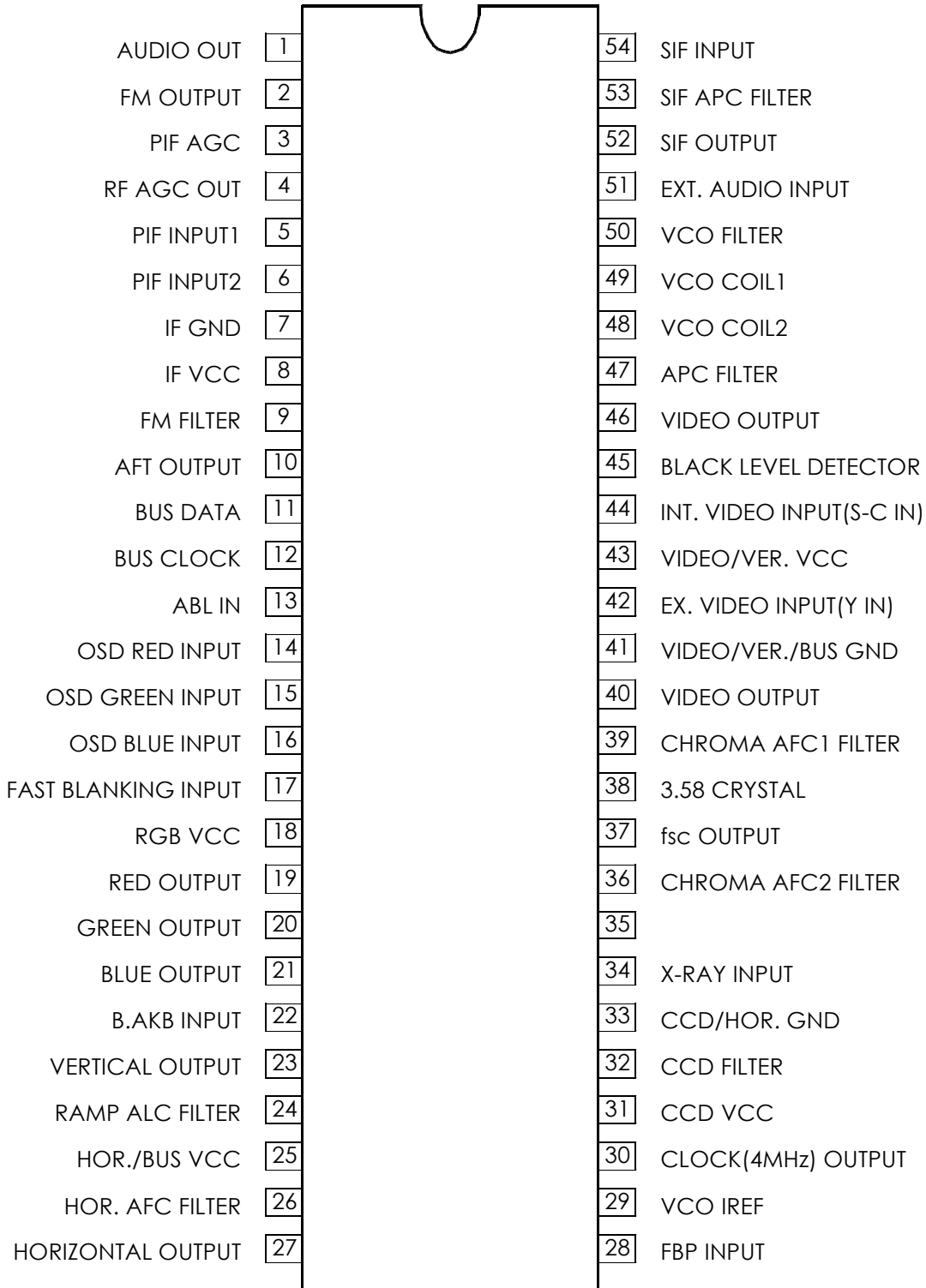
Terminal	I/O	Pull-up resistor status at selecting pull-up option
Port 0	I	Pull-up resistor OFF, ON after reset release
Port 1	I	Programmable pull-up resistor OFF.

APPENDIX

IC DESCRIPTION

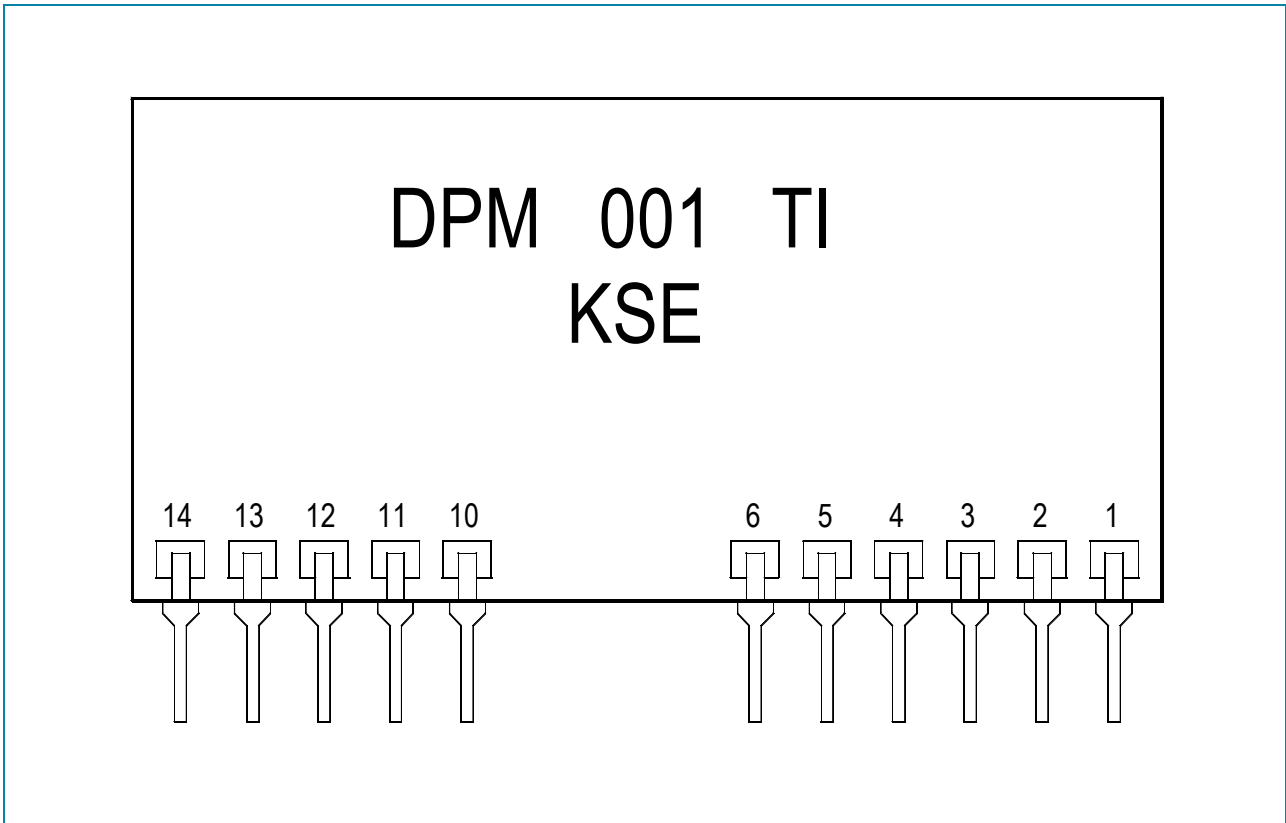
I101

DCT814(LA76814) : IC VIDEO PROCESSOR



I801

POWER CONTROL MODULE



PIN NO	DESCRIPTION	PIN NO	DESCRIPTION
1	GATE DRIVE 1	10	+12V INPUT
2	OCP	11	POER CONTROL
3	SOURCE	12	NC
4	GND 1	13	GND 2
5	GATE	14	+133V INPUT
6	GATE DRIVE 2		

APPENDIX

IC DESCRIPTION

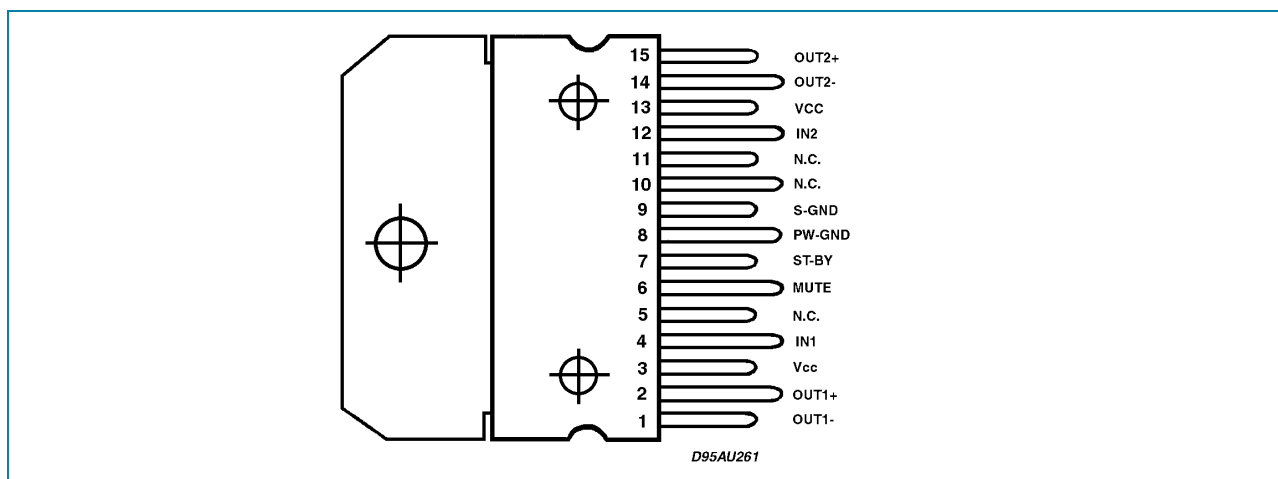
ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	Supply Voltage	20	V
Io	Output Peak Current (internally limited)	2	A
Ptot	Total Power Dissipation (Tcase=70oC)	33	w
Top	Operating Temperature	0 to 70	°C
Tstg, Tj	Storage and Junction Temperature	-40 to + 150	°C

THERMAL DATA

Symbol	Description	Value		Unit
Rth j-case	Thermal Resistance Junction to case	Typ. 1.4	Max.2	°C/W

PIN CONNECTION (Top view)

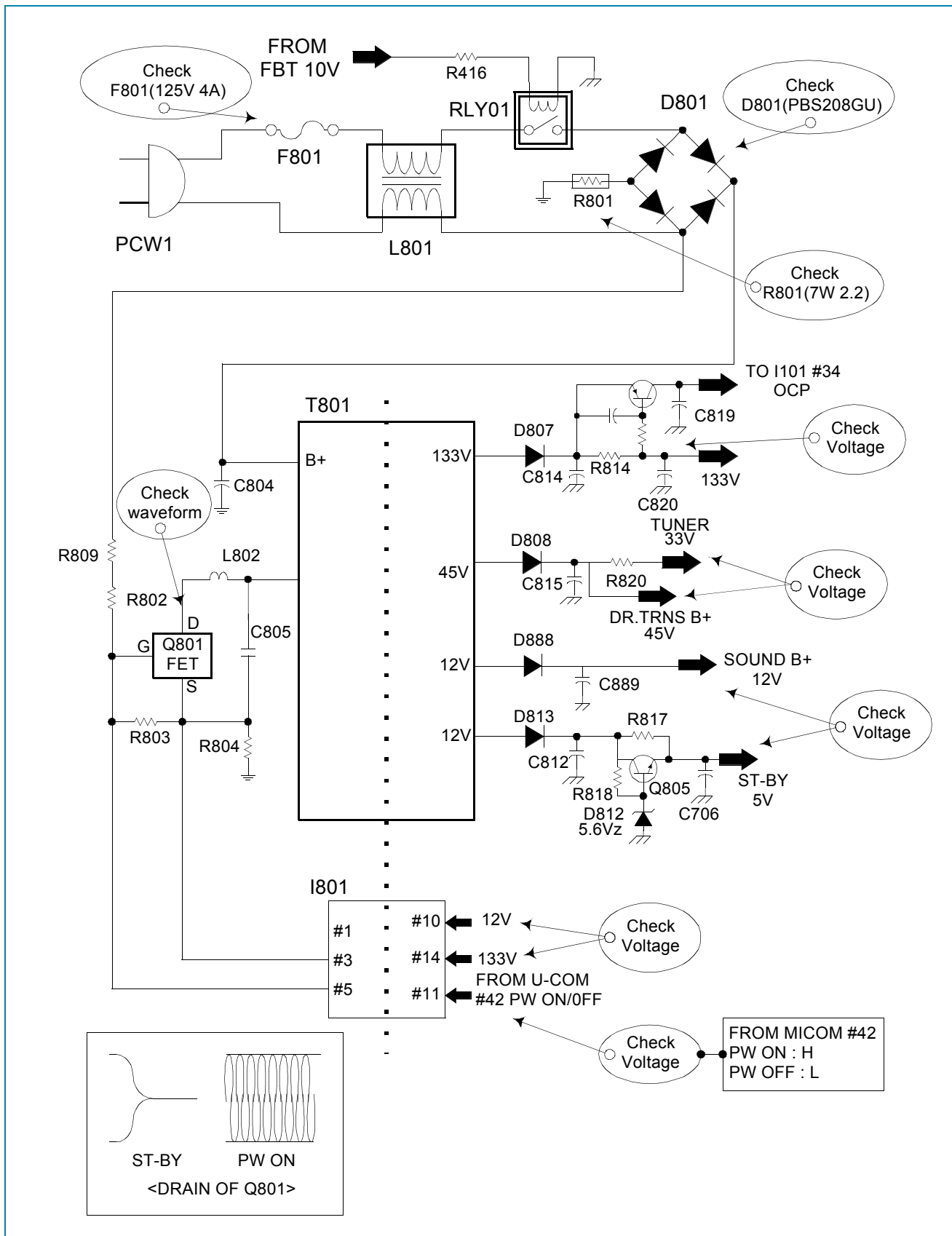


ELECTRICAL CHARACTERISTICS (Vcc = 11V, R = 8Ω, f = 1kHz, Tamb = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Vcc	Supply Range		3	11	18	V
Iq	Total Quiescent Current			50	65	mA
Vos	Output offset Voltage				120	mV
Po	Output Power	THD = 10%	6.3	7		W
THD	Total Harmonic Distortion	Po = 1W		0.05	0.2	%
		Po = 0.1W to 2W f = 100Hz VR = 0.5V			1	%
SVR	Supply Voltage Rejection	f = 100 Hz VF = 05 V	40	56		dB
CT	Crosstalk		46	60		dB
Amute	Mute Attenuation		60	80		dB
Tw	Thermal Threshold			150		oC
Gv	Closed Loop Voltage Gain		25	26	27	dB
AGv	Voltage Gain Matching				0.5	dB
R1	Input Resistance		25	30		K
VTmute	Mute Threshold	for Vcc > 6.4V O = -30dB for Vcc > 6.4V; V0 = -3.0db	2.3			
			Vcc/2-1			

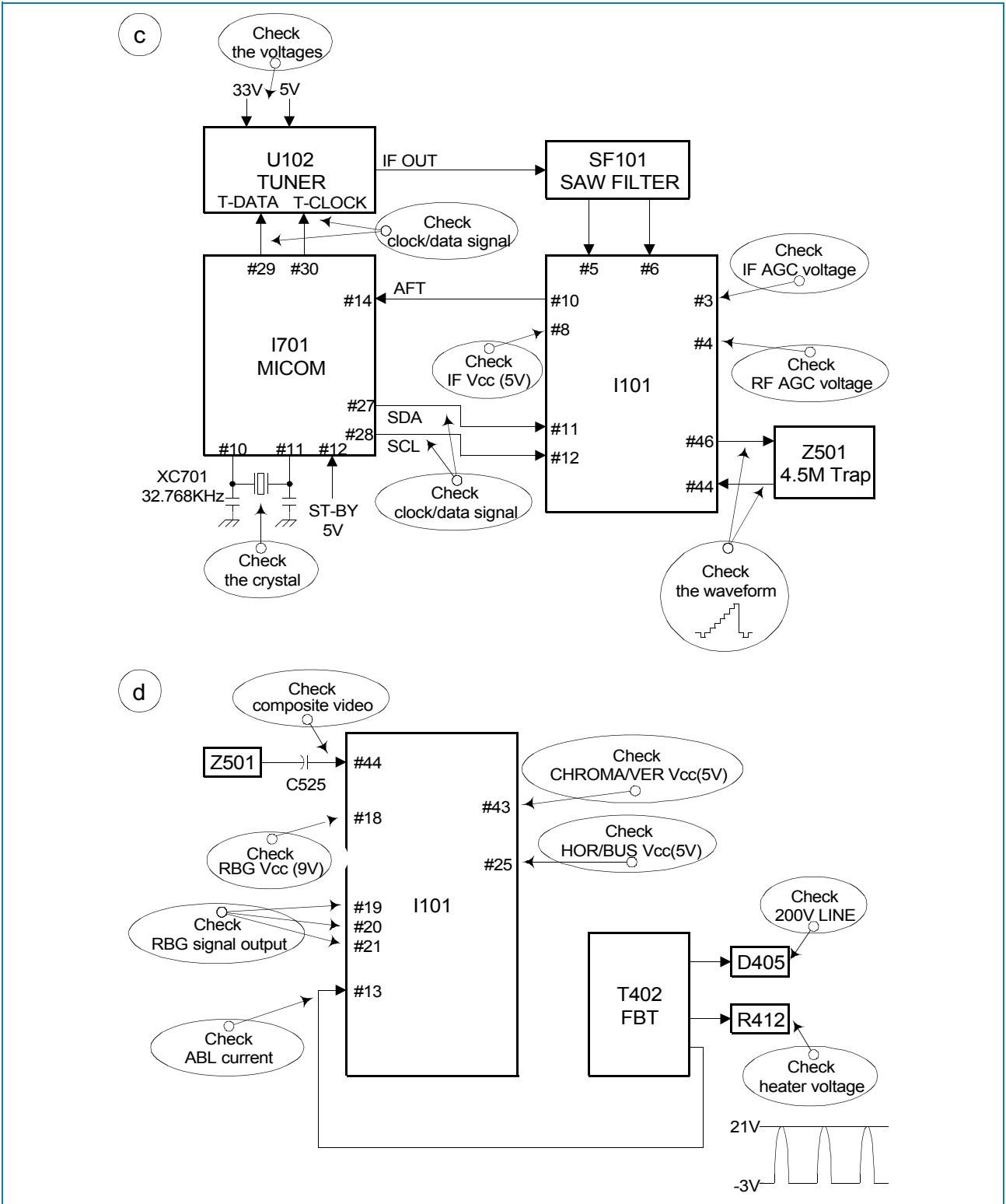
TROUBLESHOOTING GUIDE

1. NO POWER



2. NO PICTURE

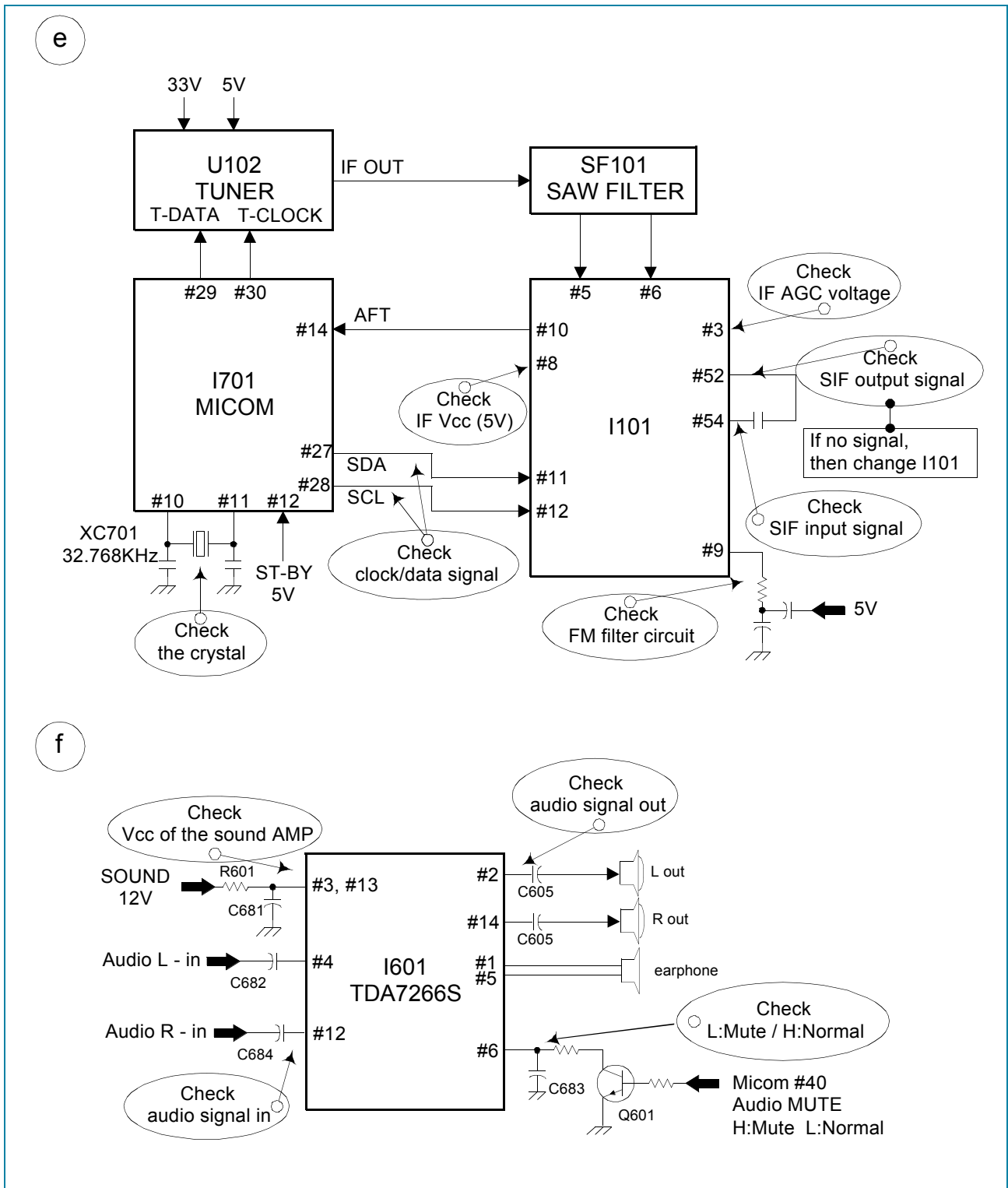
Check the waveform of I101 #46	NG : GO to the figure ㉓
	OK : Go the figure ㉔



3. NO SOUND

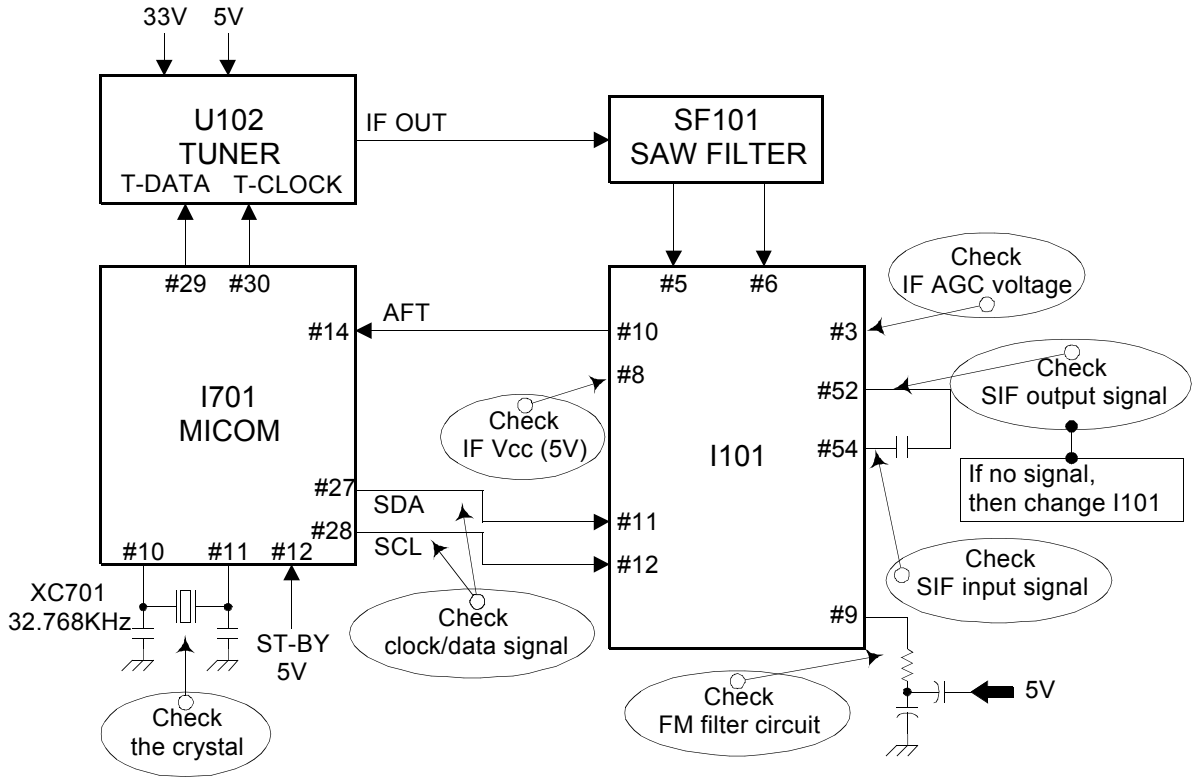
Check audio output signal of I101 #1	NG : Go to the figure ㉔
	OK : Go to the figure ㉕

3-1. CN-220B CHASSIS

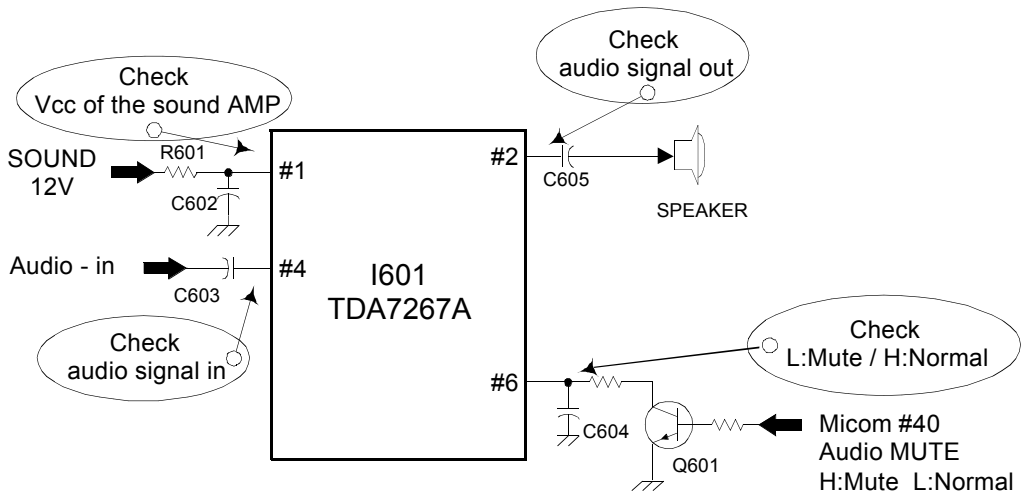


3-2. CN-220C CHASSIS

e

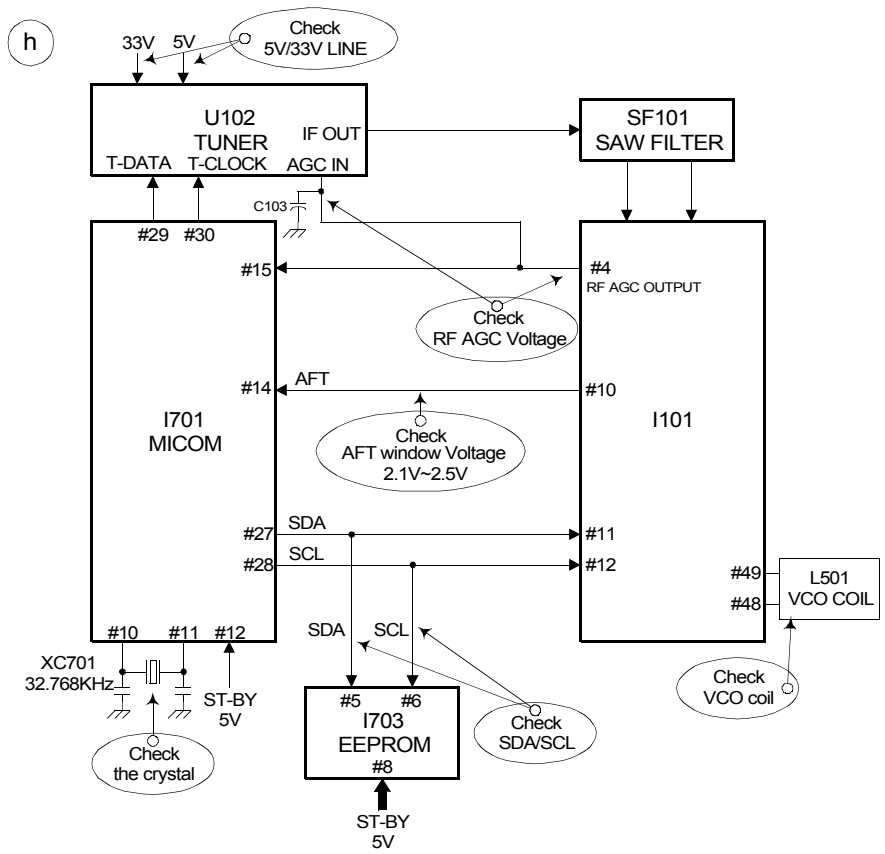


f

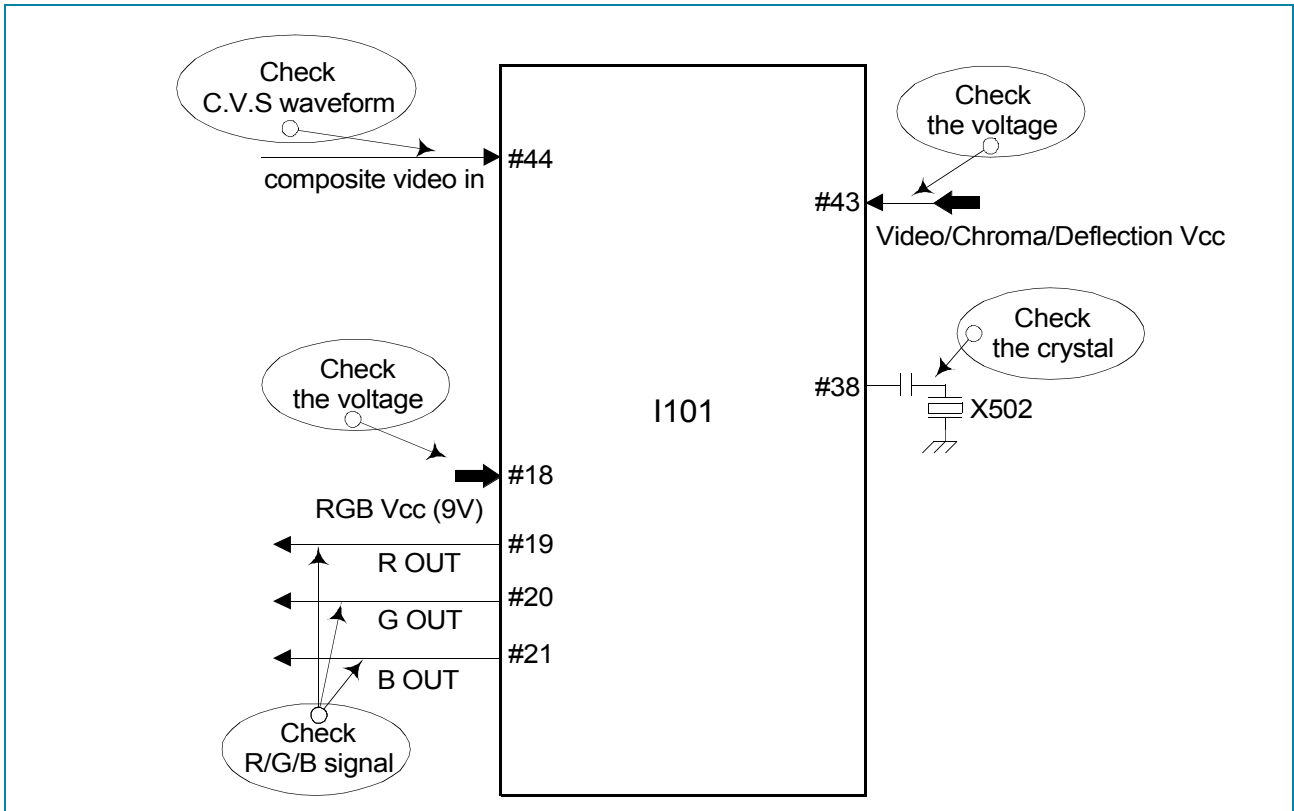


4. CH DON'T STOP

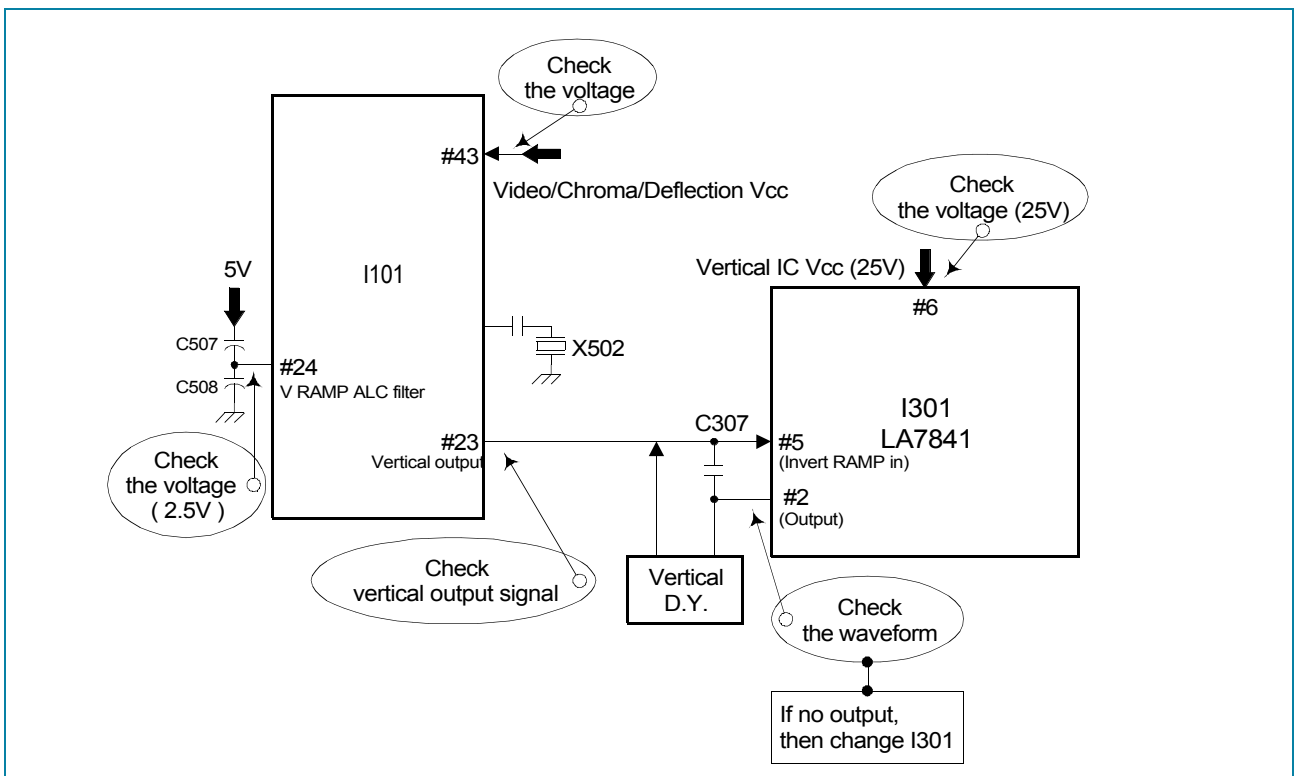
Check the input signal conditions	NG : Loss of signal or weak signal
	OK : Go to the figure ㉑



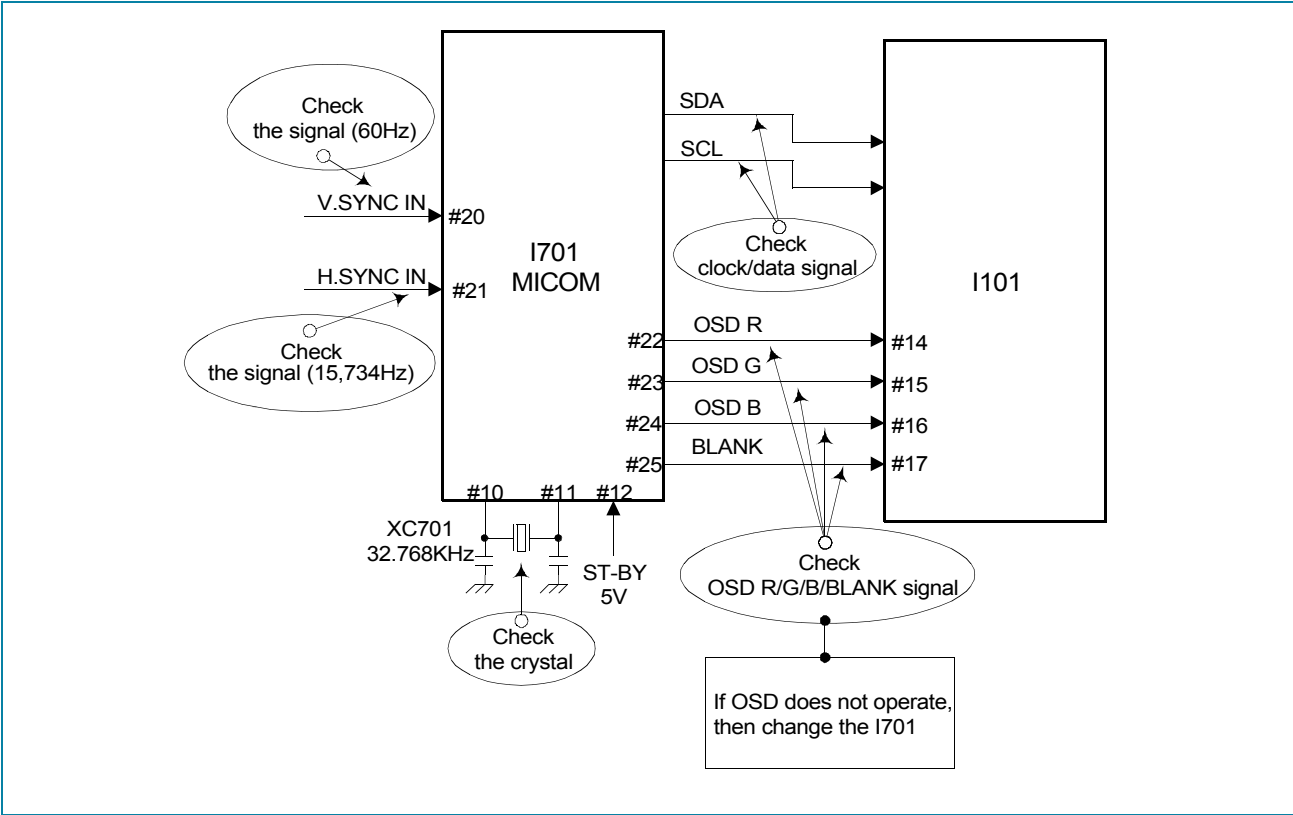
5. NO COLOR



6. NO VERTICAL DEFLECTION



7. NO ON-SCREEN DISPLAY



8. REMOTE CONTROL DOES NOT OPERATE

