

# Service Manual

30" LCD (Liquid Crystal Display) TV

Model : DLP-3022



## 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.

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**REVISION HISTORY**

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VERSION	DATA	DESCRIPTION	NOTE
00	2004. 06. 07		개 정

Note : Specification and others are subject to change without notice for improvement.

### TV

#### 1.Input Signal :

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PAL  
SECAM  
SD,HD  
VGA ~SXGA

**2. Tuner :** PAL  
SECAM

**3. Input Voltage :** AC 100V ~ 240V, @ 50/60Hz, 2A

**4. Power Consumption :** 150W

**5. LCD Module :** V296W1 - ### (CHIMEI)

**6. Speaker Impedance :** 8Ω

**7. Sound Output :** 7W + 7W (Max)

**8. Feature :**

- AV Input
- Component1 Input (DVD)
- Component2 Input (DTV)
- D-SUB (Analog RGB 15 pin)
- S-Video Input
- Composite Input
- SCART1 Input (Full/RGB,CVBS)
- SCART2 Input (Half/CVBS)
- Tuner (PAL,SECAM)
- Audio Input (Composite, Component 1/2, S-Video, PC)
- RS-232C (9 pin)

**9. Function :**

- ZOOM
- PIP
- PBP (4:3,16:9)
- MTS
- TELETEXT

**10. External Interface**

1) AV / COMPONENT Input

ITEM	MIN	TYP	MAX	UNIT
AV Video Input Level	0.85	1.00	1.15	Vpp

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AV Sync Input Level	0.24	0.29	0.32	Vpp
AV Burst Input Level	0.14	0.28	0.35	Vpp
AV Video Input Level	0.47	0.63	0.79	V
AV Audio Input L/R	0.47	0.63	0.79	V
Component Video Input Level (Y,Cb/Pb,Cr/Pr)	0.6	0.7	0.8	Vpp
Analog RGB Level	0.6	0.7	0.8	Vpp

### 2) H/V Sync Input Level

ITEM	MIN	TYP	MAX	UNIT
H/V Sync Input Level	3.5	3.7	4.5	Vpp

### 3) COMPONENT Mode (Y,Cb/Pb,Cr/Pr)

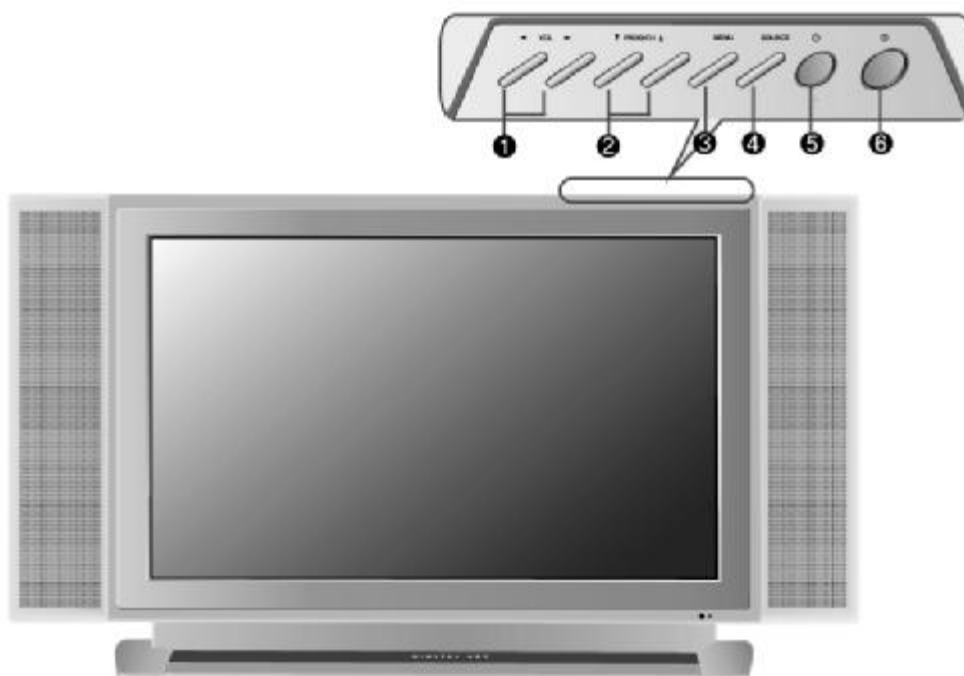
RESOLUTION	H-Freq(KHz)	V-Freq(Hz)	Timing	Note
720*480	15.73	60.00	480i	Component 1 (DVD)
720*576	15.63	50.00	576i	
720*480	31.47	59.94	480p	Component 2 (DTV)
1280*720	45.00	60.00	720p	
1280*720	44.96	59.94	720p	
1920*1080	33.75	60.00	1080i	
1920*1080	33.72	59.94	1080i	

### 4) SUPPORTING DISPLAY Mode

RESOLUTION	H-Freq(KHz)	V-Freq(Hz)
640*480	31.47	60
	37.86	72
	37.50	75
720*400	31.47	70
800*600	35.15	56
	37.88	60
	48.88	72
	46.88	75
1024*768	48.36	60
	56.48	70
	60.02	75
1280*1024	64.00	60

## CONTROL DESCRIPTIONS

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❶ VOLUME Button : VOLUME -, + Button

❷ PROGRAM/ Channel Button : PROGRAM/ Channel  
-, + Button

❸ MENU Button : OSD MENU Display Button

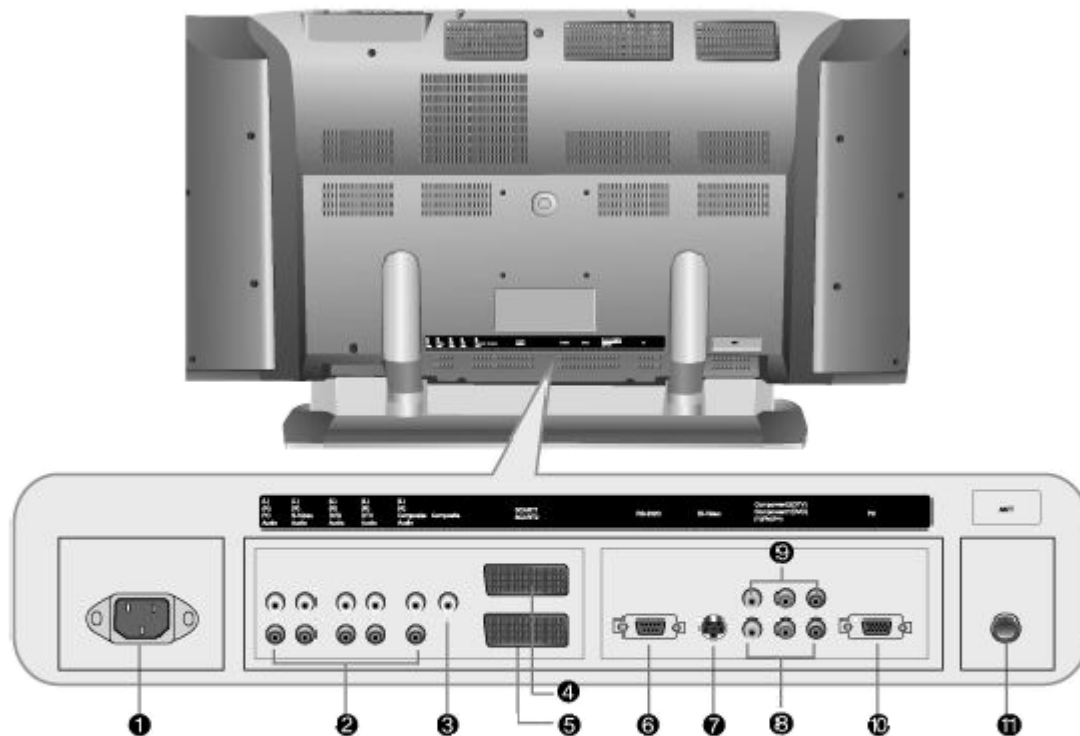
❹ Source select Button : TV, SCART 1, SCART 2,  
Composite, S-Video,  
Component 1 (DVD),  
Component 2 (DTV),  
PC, Select Button

❺ Standby Button

❻ Main Power Button : Please turn off the main power  
switch, if the LCD TV will not be used for a long  
period of time

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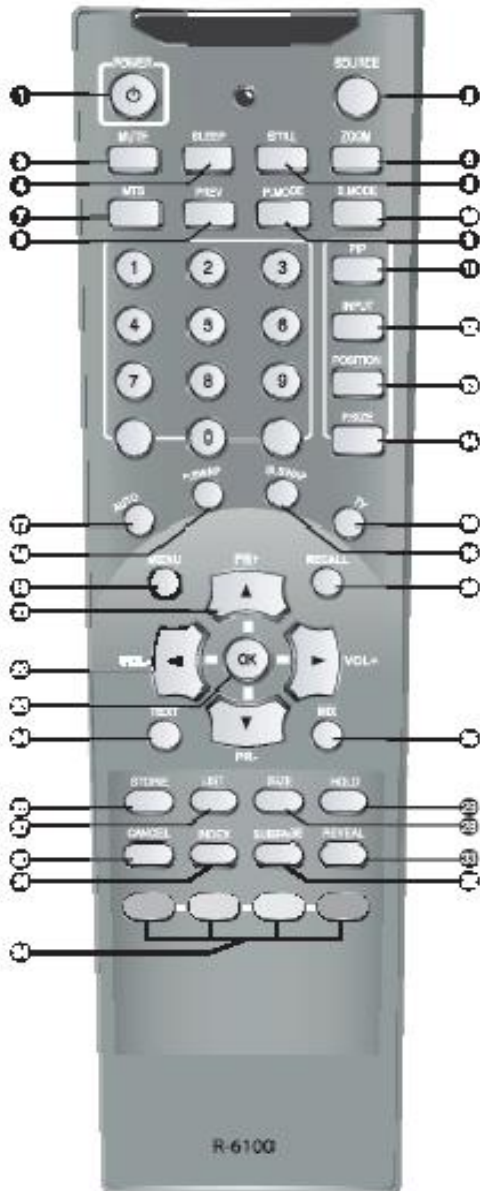


- ❶ AC Input (AC 100-240V~, 50/60Hz, 2A)
- ❷ Audio Input (PC, S-Video, DVD, DTV, Composite)
- ❸ AV Input (Composite)
- ❹ SCART 1 (Full SCART)
- ❺ SCART 2 (Half SCART)
- ❻ RS-232C
- ❼ S-Video Input
- ❽ Component 1 (DVD) Input 480i/576i
- ❾ Component 2 (DTV) Input 480p/720p/1080i
- ❿ RGB PC Input [VGA-SXGA (60Hz)]
- ⓫ Antenna (RF) Input

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## REMOTE CONTROL BUTTONS

The remote control uses Infra-Red (IR). Point it towards the front of the LCD TV. The remote control may not work correctly if it is operated out of range or out of angle.



1. POWER : TURNS THE TV ON AND OFF
2. SOURCE : USE TO SELECT AN INPUT SOURCE
3. MUTE : PRESS TO TEMPORARILY CUT OFF THE SOUND
4. SLEEP : PRESS TO SELECT A TIME FOR THE TV TO TURN OFF AUTOMATICALLY
5. STILL : PRESS TO STOP THE ACTION DURING A PARTICULAR SCENE
6. ZOOM : PRESS TO CHANGE THE PICTURE SIZE
7. MTS (Multi-Television Sound) : PRESS TO SELECT MONO OR STEREO MODE
8. PREV : TURNS TO THE PREVIOUS PROGRAM
9. P.MODE : PICTURE STATUS MEMORY KEY (CUSTOM, DYNAMIC, STANDARD, MOVIE, MLD)
10. S.MODE : SOUND STATUS MEMORY KEY (CUSTOM, STANDARD, MUSIC, MOVIE, SPEECH)

### ◆PIP CONTROL KEY

11. PIP : PIP ON/OFF
12. INPUT : PIP INPUT SELECT KEY
13. POSITION : PIP POSITION CONTROL KEY
14. P.SIZE : PIP AND PBP MODE CHANGE
15. P.SWAP : PIP SOURCE SWAP
16. S.SWAP : SOUND SWAP KEY
17. AUTO(AUTO IN PROGRESS) : IN PC MODE, PRESS TO CONTROL THE MONITOR PICTURE AUTOMATICALLY
18. TV : TV INPUT SOURCE SELECT KEY
19. MENU : DISPLAYS THE MAIN ON-PICTURE MENU
20. RECALL : PRESS TO DISPLAY THE CURRENT PROGRAM AND AUDIO/VIDEO SETTINGS
21. ▲, ▼ (PR+, PR-) : PROGRAM, MENU CONTROL OR PAGE UP AND DOWN KEY, STAND BY ON
22. ◀, ▶ (VOL-, VOL+) : PRESS TO INCREASE OR DECREASE THE VOLUME OR MENU CONTROL KEY
23. OK : SAVE THE VALUE

### ◆TELETEXT CONTROL KEY

24. TEXT : TELETEXT KEY
25. MIX : MIX WITH TV PICTURE
26. STORE : STORE THE USER DEFINED FAVORITE PAGE
27. LIST : EXCHANGE FLOF/LIST MODE
28. SIZE : TELETEXT PICTURE SIZE KEY
29. HOLD : HOLD FUNCTION DURING TELETEXT DISPLAY
30. CANCEL : DISPLAY CANCEL OR TEXT UPDATE KEY
31. INDEX : TEXT INDEX KEY
32. SUBPAGE : SUBPAGE DISPLAY MODE KEY
33. REVEAL : SELECT HIDDEN CONTENT DURING TELETEXT DISPLAY
34. (RED, GREEN, YELLOW, BLUE) : DIRECT ACCESS TELETEXT LINKED PAGE KEY

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## Teletext Function

### Basic Function

#### ■TEXT On/Off

1. Press "TEXT" once , then displays the Teletext pages.
2. If you press "TEXT" once more, Text mode goes off.

#### ■TOP TEXT

The user guide displays four fields-red, green, yellow and blue at the bottom of the picture. The yellow field denotes the next group and the blue field indicates the next block.

#### - Group/Block/Page selection

1. With the blue button you can progress block to block.
2. Use the Yellow button to proceed to the next group with automatic overflow to the next block.
3. With the Green button you can proceed to the next existing page with automatic overflow to the next group.
4. The RED button permits to return to previous selection.

#### ■FLOF TEXT

The teletext pages are colour coded along the bottom of the picture and are selected by pressing the corresponding coloured button.

#### - Page selection

1. Press the Index button to select the index page.
2. You can select the pages, which are colour coded along the bottom line with the same coloured buttons.

### Special Teletext Function key

■MIX : In the mix mode display, the underlying video and the teletext page display are both simultaneously visible on the picture. This command turns the display to mix mode and is enabled only in the text mode.

■STORE : This command stores the user defined favourite pages. This command is enabled only if the list mode is active.

■LIST : This command toggles between list mode and current. Text mode(FLOF, TOP or normal)

■SIZE : Toggle the display page size between double-size top, double-size bottom and normal.

■HOLD : The update of the current display page is halted so that the content will not be changed.

■CANCEL : Press this button to display cancel or updated teletext page.

■INDEX : Return to the index page.

■SUBPAGE : In TV mode this command makes clock display at right-top corner.  
In TEXT mode if this command is given the sub page mode is activated.

■REVEAL : Press this button to display the concealed information. Such as solutions of riddles or puzzles.

■RED, GREEN, YELLOW, BLUE : In the TOP/FLOF automatic navigation mode, these keys select and display the linked page.

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## PIN CONFIGURATION

### 1. A/D BOARD PIN CONFIGURATION

# I : Input Port, O : Out Port, G : Ground, I/O : Input / Output Port, NC : Not Connected

	Pin No	I/O	Specification	Description
CON4	1 ( +12V )	I	+12V	MAIN B/D 12V Input
	2 ( +12V )	I	+12V	MAIN B/D 12V Input
	3 ( AC_DET )	I	+3.3V	AC_DETECT PIN (입전시:high, 정전시:low)
	4 ( GND )	G	GND	Ground
	5 ( GND )	G	GND	Ground
	6 ( GND )	G	GND	Ground
	7 ( S5V )	I	S5V	Stand-by 5V Input
	8 ( GND )	G	GND	Ground
	9 ( BRITE_ADJ )	O	BRIGHTNESS_ADJUST	LCD Brightness Adjustment(Min:3V , Max:0V)
	10 ( GND )	G	GND	Ground
	11 ( BKL_ON )	O	BACKLIGHT_ON	LCD Backlight ON (ON:high, OFF:low)
	12(POWER_ON/OFF )	O	POWER_ON/OFF	POWER ON_OFF Control ( ON:low, OFF:high)
CON2	1 ( GND )	G	GND	Ground
	2 ( LEDG )	O	LED_GREEN	GREEN LED CONTORL OUTPUT PORT : High : Green LED On
	3 ( LEDR )	O	LED_RED	RED LED CONTORL OUTPUT PORT : High : Red LED On
	4 ( IR )	I	5V / 0V	IR RECEIVER SIGNAL INPUT PORT
	5 ( GND )	G	GND	Ground
	6 ( VCC )	O	5V / 0V	OSD B/D 5V Output
CON1	1 ( POWER )	I	3.3V / 0V	POWER S/W PORT :DC POWER ON_OFF
	2 ( SOURCE )	I	3.3V / 0V	Input Source Selecting/Enter
	3 ( MENU )	I	3.3V / 0V	OSD MENU Display
	4 ( CH+ )	I	3.3V / 0V	TV CHANNEL CONTROL(UP)
	5 ( CH- )	I	3.3V / 0V	TV CHANNEL CONTROL(DOWN)
	6 ( VOL+ )	I	3.3V / 0V	SOUND CONTROL(VOLUME UP)
	7 ( VOL- )	I	3.3V / 0V	SOUND CONTROL(VOLUME DOWN)
	8 ( GND )	G	GND	Ground

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J5	1 (VCC12)	O	VCC12	Power Supply +12.0V
	2 (VCC12)	O	VCC12	Power Supply +12.0V
	3 (VCC5A)	O	VCC5A	Power Supply +5.0V
	4 (MSP_L_OUT1)	O	MSP_L_OUT1	MSP LEFT Sound Output1
	5 (MSP_R_OUT1)	O	MSP_R_OUT1	MSP RIGHT Sound Output1
	6 (GND)	G	GND	Ground
	7 (MSP_L_OUT2)	O	MSP_L_OUT2	MSP LEFT Sound Output2
	8 (MSP_R_OUT2)	O	MSP_R_OUT2	MSP RIGHT Sound Output2
	9 (GND)	G	GND	Ground
	10 (AFT)	I	AFT	AFT Level
	11 (TUNER_SIF)	I	TUNER_SIF	RF TV Sound Input
	12 (GND)	G	GND	Ground
	13 (TUNER_CVBS)	I	TUNER_CVBS	RF TV Video Input
	14 (GND)	G	GND	Ground
	15 (S_MUTE)	O	S_MUTE	Sound Mute
	16 (AMP_ST-BY)	O	AMP_ST-BY	Sound Stand- by
	17 (HEAD_MUTE)	I	HEAD_MUTE	Not used
	18 (GND)	G	GND	Ground
	19 (SDA3)	I	SDA3	I2C Bus(DATA)
	20 (SCL3)	O	SCL3	I2C Bus(CLK)
J1	1 (VCC5)	O	VCC5	Power Supply +5.0V
	2 (VCC5)	O	VCC5	Power Supply +5.0V
	3 (SCART_R)	I	SCART_R	Full Scart Red Input
	4 (SCART_G)	I	SCART_G	Full Scart GREEN Input
	5 (SCART_B)	I	SCART_B	Full Scart BLUE Input
	6 (SCART_FB)	I	SCART_FB	Full Scart FAST BLANK Input
	7 (GND)	G	GND	Ground
	8 (FSCART_CVBS_IN)	I	FSCART_CVBS_IN	Full Scart Composite Input
	9 (GND)	G	GND	Ground
	10 (HSCART_CVBS_IN)	I	HSCART_CVBS_IN	Half Scart Composite Input
	11 (GND)	G	GND	Ground
	12 (FSCART_ID)	I	FSCART_ID	Full Scart Check Signal Input
	13 (HSCART_ID)	I	HSCART_ID	Half Scart Check Signal Input
	14 (GND)	G	GND	Ground
	15 (F_CVBS_OUT)	O	F_CVBS_OUT	Full Scart Composite Output
	16 (GND)	G	GND	Ground
	17 (H_CVBS_OUT)	O	H_CVBS_OUT	Half Scart Composite Output
	18 (GND)	G	GND	Ground
	19 (F_CVBS_L_OUT)	O	F_CVBS_L_OUT	Full Scart Composite Left Sound Output
	20 (F_CVBS_R_OUT)	O	F_CVBS_R_OUT	Full Scart Composite Right Sound Output
	21 (GND)	G	GND	Ground

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	22(H_CVBS_L_OUT)	O	H_CVBS_L_OUT	Half Scart Composite Left Sound Output
	23(H_CVBS_R_OUT)	O	H_CVBS_R_OUT	Half Scart Composite Right Sound Output
	24 (GND)	G	GND	Ground
J2	1 (VCC5)	O	VCC5	Power Supply +5.0V
	2 (F_SC_L_IN)	I	F_SC_L_IN	Full Scart Left Sound Input
	3 (F_SC_R_IN)	I	F_SC_R_IN	Full Scart Right Sound Input
	4 (GND)	G	GND	Ground
	5 (H_SC_L_IN)	I	H_SC_L_IN	Half Scart Left Sound Input
	6 (H_SC_R_IN)	I	H_SC_R_IN	Half Scart Right Sound Input
	7 (GND)	G	GND	Ground
	8 (AV_CVBS_IN)	I	AV_CVBS_IN	Composite Video Input
	9 (AV_CVBS_DET)	I	AV_CVBS_DET	Composite Check Signal Input
	10 (GND)	G	GND	Ground
	11 (SVIDEO_L_IN)	I	SVIDEO_L_IN	SVIDEO_Left Sound Input
	12 (SVIDEO_R_IN)	I	SVIDEO_R_IN	SVIDEO_Right Sound Input
	13 (GND)	G	GND	Ground
	14 (PC_L_IN)	I	PC_L_IN	Analog RGB Left Sound Input
	15 (PC_R_IN)	I	PC_R_IN	Analog RGB Right Sound Input
	16 (GND)	G	GND	Ground
	17 (DTV_L_IN)	I	DTV_L_IN	Component2(DTV) Left Sound Input
	18 (DTV_R_IN)	I	DTV_R_IN	Component(DTV) Right Sound Input
	19 (GND)	G	GND	Ground
	20 (DVD_L_IN)	I	DVD_L_IN	Component1(DVD) Left Sound Input
	21 (DVD_R_IN)	I	DVD_R_IN	Component(DVD) Right Sound Input
	22 (GND)	G	GND	Ground
	23 (AV_L_IN)	I	AV_L_IN	Composite Left Sound Input
	24 (AV_R_IN)	I	AV_R_IN	Composite Right Sound Input

CON5	1 (NC)	NC	NC	Not Connected
	2 (NC)	NC	NC	Not Connected
	3 (NC)	NC	NC	Not Connected

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4 (GND)	G	GND	Ground
5 (ODD0-)	O	RX0-	Negative LVDS Differential data input. Channel 0
6 (ODD0+)	O	RX0+	Positive LVDS Differential data input. Channel 0
7 (GND)	G	GND	Ground
8 (ODD1-)	O	RX1-	Negative LVDS Differential data input. Channel 1
9 (ODD1+)	O	RX1+	Positive LVDS Differential data input. Channel 1
10 (GND)	G	GND	Ground
11 (ODD2-)	O	RX2-	Negative LVDS Differential data input. Channel 2
12 (ODD2+)	O	RX2+	Positive LVDS Differential data input. Channel 2
13 (GND)	G	GND	Ground
14 (ODDCLK-)	O	RXCLK-	Negative LVDS Differential Clock input.
15 (ODDCLK+)	O	RXCLK+	Positive LVDS Differential Clock input.
16 (GND)	G	GND	Ground
17 (ODD3-)	O	RX3-	Negative LVDS Differential data input. Channel 3
18 (ODD3+)	O	RX3+	Positive LVDS Differential data input. Channel 3
19 (GND)	G	GND	Ground
20 (NC)	NC	NC	Not Connected
21 (NC)	NC	NC	Not Connected
22 (NC)	NC	NC	Not Connected
23 (GND)	G	GND	Ground
24 (GND)	G	GND	Ground
25 (GND)	G	GND	Ground
26 (VCC 5V)	O	VCC	+5.0V Power Supply
27 (VCC 5V)	O	VCC	+5.0V Power Supply
28 (VCC 5V)	O	VCC	+5.0V Power Supply
29 (VCC 5V)	O	VCC	+5.0V Power Supply
30 (VCC 5V)	O	VCC	+5.0V Power Supply

## 2. I/O BOARD PIN CONFIGURATION

# I : Input Port, O : Out Port, G : Ground, I/O : Input / Output Port, NC : Not Connected

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Pin No	I/O	Specification	Description	
J1	1 (VCC5)	I	VCC5	Power Supply +5.0V
	2 (VCC5)	I	VCC5	Power Supply +5.0V
	3 (SCART_R)	O	SCART_R	Full Scart Red Output
	4 (SCART_G)	O	SCART_G	Full Scart GREEN Output
	5 (SCART_B)	O	SCART_B	Full Scart BLUE Output
	6 (SCART_FB)	O	SCART_FB	Full Scart FAST BLANK Output
	7 (GND)	G	GND	Ground
	8(FSCART_CVBS_IN)	O	FSCART_CVBS_IN	Full Scart Composite Output
	9 (GND)	G	GND	Ground
	10(HSCART_CVBS_IN)	O	HSCART_CVBS_IN	Half Scart Composite Output
	11 (GND)	G	GND	Ground
	12 (FSCART_ID)	I	FSCART_ID	Full Scart Check Signal Output
	13 (HSCART_ID)	I	HSCART_ID	Half Scart Check Signal Output
	14 (GND)	G	GND	Ground
	15 (F_CVBS_OUT)	O	F_CVBS_OUT	Full Scart Composite Output
	16 (GND)	G	GND	Ground
	17 (H_CVBS_OUT)	O	H_CVBS_OUT	Half Scart Composite Output
	18 (GND)	G	GND	Ground
	19(F_CVBS_L_OUT)	O	F_CVBS_L_OUT	Full Scart Composite Left Sound Output
	20(F_CVBS_R_OUT)	O	F_CVBS_R_OUT	Full Scart Composite Right Sound Output
	21 (GND)	G	GND	Ground
	22(H_CVBS_L_OUT)	O	H_CVBS_L_OUT	Half Scart Composite Left Sound Output
	23(H_CVBS_R_OUT)	O	H_CVBS_R_OUT	Half Scart Composite Right Sound Output
	24 (GND)	G	GND	Ground
J2	1 (VCC5)	I	VCC5	Power Supply +5.0V
	2 (F_SC_L_)	O	F_SC_L_IN	Full Scart Left Sound Output
	3 (F_SC_R_)	O	F_SC_R_IN	Full Scart Right Sound Output
	4 (GND)	G	GND	Ground
	5 (H_SC_L_)	O	H_SC_L_IN	Half Scart Left Sound Output
	6 (H_SC_R_)	O	H_SC_R_IN	Half Scart Right Sound Output
	7 (GND)	G	GND	Ground
	8 (AV_CVBS_)	O	AV_CVBS_IN	Composite Video Output
	9(AV_CVBS_DET)	O	AV_CVBS_DET	Composite Check Signal Output
	10 (GND)	G	GND	Ground
	11(SVIDEO_L_)	O	SVIDEO_L_IN	SVIDEO_Left Sound Output
	12(SVIDEO_R_)	O	SVIDEO_R_IN	SVIDEO_Right Sound Output
	13 (GND)	G	GND	Ground
	14 (PC_L_)	O	PC_L_	Analog RGB Left Sound Output
	15 (PC_R_)	O	PC_R_	Analog RGB Right Sound Output

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16 (GND)	G	GND	Ground
17 (DTV_L_)	O	DTV_L_	Component2(DTV) Left Sound Output
18 (DTV_R_)	O	DTV_R_	Component(DTV) Right Sound Output
19 (GND)	G	GND	Ground
20 (DVD_L_)	O	DVD_L_	Component1(DVD) Left Sound Output
21 (DVD_R_)	O	DVD_R_	Component(DVD) Right Sound Output
22 (GND)	G	GND	Ground
23 (AV_L_)	O	AV_L_	Composite Left Sound Output
24 (AV_R_)	O	AV_R_	Composite Right Sound Output

### 3. TUNER BOARD PIN CONFIGURATION

# I : Input Port, O : Out Port, G : Ground, I/O : Input / Output Port, NC : Not Connected

Pin No	I/O	Specification	Description
1 (VCC12)	I	VCC12	Power Supply +12.0V
2 (VCC12)	I	VCC12	Power Supply +12.0V
3 (VCC5A)	I	VCC5A	Power Supply +5.0V
4 (MSP_L_OUT1)	O	MSP_L_OUT1	MSP LEFT Sound Output1
5 (MSP_R_OUT1)	O	MSP_R_OUT1	MSP RIGHT Sound Output1
6 (GND)	G	GND	Ground
7 (MSP_L_OUT2)	O	MSP_L_OUT2	MSP LEFT Sound Output2
8 (MSP_R_OUT2)	O	MSP_R_OUT2	MSP RIGHT Sound Output2
9 (GND)	G	GND	Ground
10 (AFT)	O	AFT	AFT Level
11 (TUNER_SIF)	O	TUNER_SIF	RF TV Sound Output
12 (GND)	G	GND	Ground
13 (TUNER_CVBS)	O	TUNER_CVBS	RF TV Video Output
14 (GND)	G	GND	Ground
15 (S_MUTE)	O	S_MUTE	Sound Mute
16 (AMP_ST-BY)	O	AMP_ST-BY	Sound Stand- by
17 (HEAD_MUTE)	O	HEAD_MUTE	Head Phone Mute(사용하지 않음)
18 (GND)	G	GND	Ground
19 (SDA3)	O	SDA3	I2C Bus(DATA)
20 (SCL3)	O	SCL3	I2C Bus(CLK)

### 4. OSD BOARD PIN CONFIGURATION

# I : Input Port, O : Out Port, G : Ground, I/O : Input / Output Port, NC : Not Connected

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## DLP-3022 SERVICE MANUAL

Pin No	I/O	Specification	Description
CON1	1 ( POWER )	I	3.3V / 0V POWER S/W PORT :DC POWER ON_OFF
	2 ( SOURCE )	I	3.3V / 0V Input Source Selecting/Enter
	3 ( MENU )	O	3.3V / 0V OSD MENU Display
	4 ( CH+ )	O	3.3V / 0V TV CHANNEL CONTROL(UP)
	5 ( CH- )	O	3.3V / 0V TV CHANNEL CONTROL(DOWN)
	6 ( VOL+ )	O	3.3V / 0V SOUND CONTROL(VOLUME UP)
	7 ( VOL- )	O	3.3V / 0V SOUND CONTROL(VOLUME DOWN)
	8 ( GND )	G	GND Ground

### 5. IR/LED BOARD PIN CONFIGURATION

# I : Input Port, O : Out Port, G : Ground, I/O : Input / Output Port, NC : Not Connected

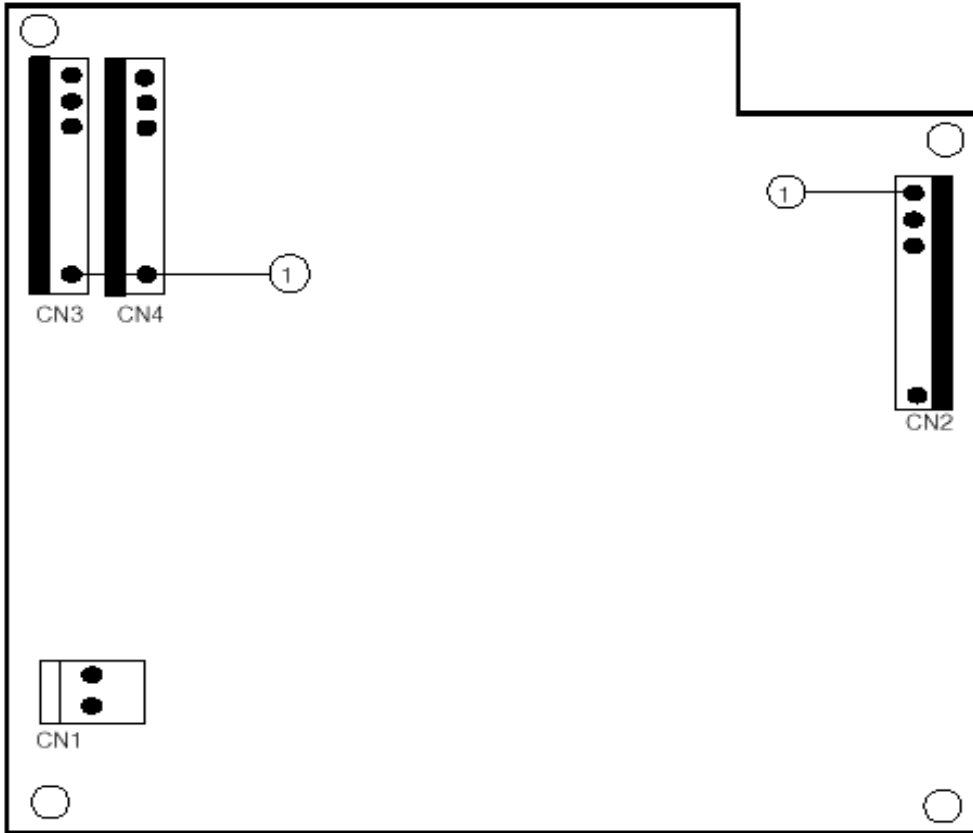
Pin No	I/O	Specification	Description
CON1	1 ( GND )	G	GND Ground
	2 ( LEDG )	O	LED_GREEN GREEN LED CONTORL OUTPUT PORT : High : Green LED On
	3 ( LEDR )	O	LED_RED RED LED CONTORL OUTPUT PORT : High : Red LED On
	4 ( IR )	O	5V / 0V IR RECEIVER SIGNAL INPUT PORT
	5 ( GND )	G	GND Ground
	6 ( VCC )	I	5V / 0V OSD B/D 5V Output

### 6. POWER BOARD PIN CONFIGURATION

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## 30인치 POWER CONNECTION

PANEL:LC300W01-A3(LG-PHILIPS)



NO	CN1	
1	AC	YW396-03A(연호전자)
2	AC	

NO	CN2
1	+12V
2	+12V
3	SEQUENCE
4	GND
5	GND
6	GND
7	+5VS
8	GND
9	BRI-ADJ
10	GND
11	ON/OFF
12	CONTROL

SMW200-12P(연호전자)

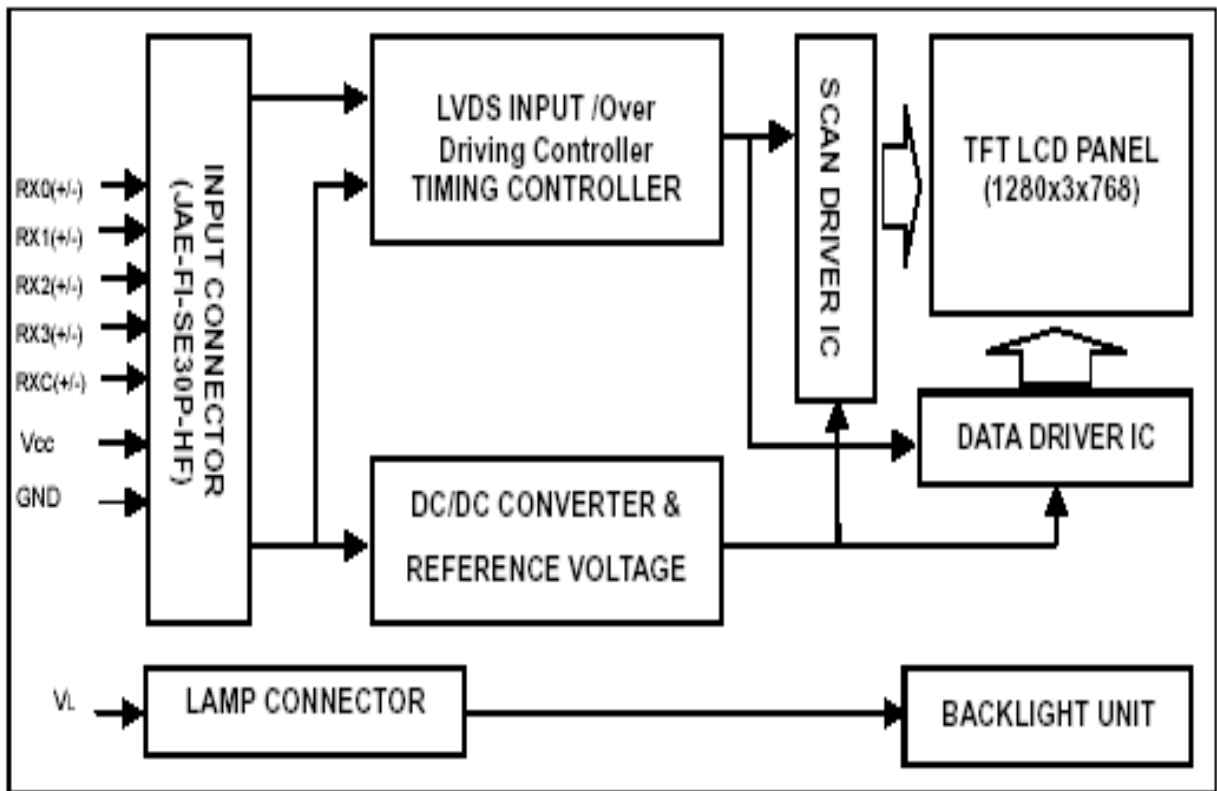
NO	CN3,CN4
1	+24V
2	+24V
3	+24V
4	+24V
5	+24V
6	+24V
7	GND
8	GND
9	N/C
10	GND
11	GND
12	ON/OFF
13	GND
14	BRI-ADJ
15	GND

SMW200-15P(연호전자)

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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7. MODULE BASIC CONFIGURATION

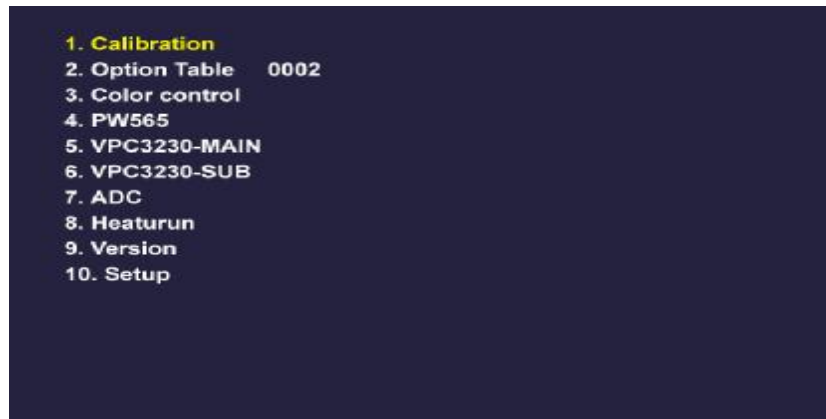
[V296W1 - ###]



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## FACTORY MENU

### 1. CALIBRATION MENU



## FACTORY MDE

- n 1. Calibration  
: Automatic adjustment of white balance for Analogue input (PC) and Component2 (DTV) input.
- n 2. Option Table 0002  
: Initial installation of OSD.
- n 3. Color control  
: Adjustment of contrast and brightness for scaler generating power.
- n 4. PW565  
: Adjustment of contrast and brightness for scaler input port (CH1 or CH2).
- n 5. VPC3230-MAIN  
: Value adjustment for video decoder' s brightness and contrast, color tickness in the main window.
- n 6. VPC3230-SUB  
: Value adjustment for video decoder' s brightness and contrast, color tickness in the sub window.
- n 7. ADC  
: Value adjustment for brightness and contrat, color thickness of analogue RGB, Y, Pb, Pr of AD9883 A/D convertor.
- n 8. Heatrun  
: The mode when you do aging.
- n 9. Version  
: It shows the information of Firmware version and Panel.
- n 10. Setup  
: Installation of TTX language and video, protocol, logo.

### 2. CALIBRATION MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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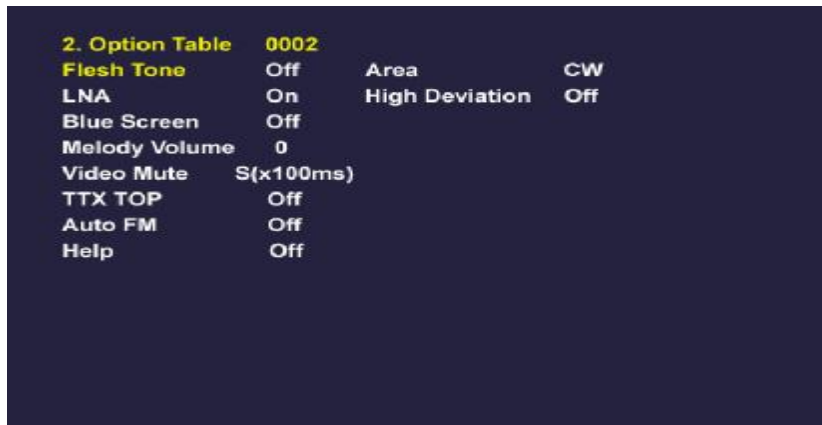
- 1. Calibration
  - 1. PC Calibration
  - 2. DTV Calibration

## CALIBRATION MENU

- n 1. PC Calibration  
: Automatic adjustment as the fittest status of white balance for analogue input (PC)
- n 2. DTV Calibration  
: Automatic adjustment as the fittest status of white balance for component2 (DTV) input.

## 3. OPTION TABLE MENU

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## OPTION TABLE MENU

n Flesh tone

n LNA(Low Noise Amplifier)

: On/Off Installation of screen quality improvement function, when TV input signal is weak.

n Blue Screen

: When there are no input signal of the TV and external equipment, you can install the screen color as blue.

n Melody Volume

: Installation of the melody volume for initial soft power On/Off. The volume is ex-factory as "0" due to license.

n Video Mute

n TTX TOP

n Auto FM

n Help

n Area

n High Deviation

## 4. COLOR CONTROL MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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**3. Color Control**

<b>Sub-Brightness</b>	128	<b>Sub-Contrast</b>	108
<b>Red Offset</b>	128	<b>Red Gain</b>	128
<b>Green Offset</b>	128	<b>Green Gain</b>	128
<b>Blue Offset</b>	128	<b>Blue Gain</b>	128
<b>Brightness</b>	0	<b>Contrast</b>	0
<b>TTX-Bright</b>	0	<b>TTX-Contrast</b>	0

## COLOR CONTROL MENU

- n Sub-Brightness  
: The brightness adjustment of scaler generating power.
- n Red, Green, Blue Offset  
: The brightness adjustment of each Red, Green, Blue for scaler generating power.
- n Brightness  
: The brightness adjustment of current screen. Adjustment value of brightness for User Menu
- n TTX-Bright  
: It is not useful mode.
- n Sub Contrast  
: Contrast adjustment of scaler generating power.
- n Red, Green, Blue Gain  
: Contrast adjustment of each Red, Green, Blue for Scaler generating power.
- n Contrast  
: Contrast adjustment for current screen. The value adjustment of contrast for User Menu
- n TTX-Contrast  
: It is not useful mode.

## 5. PW565 MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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4. PW565			
Red Gain	140	Pixel Shift	Video Port
Green Gain	140	Pixel Number	4
Blue Gain	140	Time	4
Red Offset	128	Virtual Framelock	2
Green Offset	140	Alpha	255
Blue Offset	140	Beta	255
APL	Off	Degree	30

## PW565 MENU

**n Red, Green, Blue Gain**

: The contrast value adjustment of each Red, Green, Blue for scaler input port (CH1 OR CH2)

**n Red, Green, Blue Offset**

: The brightness adjustment of each Red, Green, Blue for scaler input port (CH1 OR CH2)

**n APL**

**n Pixel Shift**

**n Pixel Number**

**n Time**

**n Virtual Framelock**

: Installation of frame frequency for panel (50Hz, 60Hz).

**n Alpha**

**n Beta**

**n Degree**

## 6. VPC3230- MAIN MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	24/73

## DLP-3022 SERVICE MANUAL

5. VPC3230-MAIN					
CT	32	CIPCT	2B	KILVL	07
BR	8A	PFS	00	LDLY	06
ACC_SAT	80	PK	01	PKCOR	01
TINT	00	VPK	03	FB_GAIN	62
SATCb	26	LPF2	00		
SATCr	36	CBW2	00		
CIPTNT	22	CBW	03		
CIPBR	C0	IFC	02		

### VPC3230-MAIN MENU

- n CT  
: Contrast adjustment of Composite & S-Video form' s signal.
- n BR  
: Brightness adjustment of Composite & S-Video form' s signal.
- n ACC\_SAT
  
- n TINT  
: The color sense adjustment of Composite & S-Video form' s signal.
- n SATCb  
: The blue color sense adjustment of Component & RGB form' s signal.
- n SATCr  
: The red color sense adjustment of Component & RGB form' s signal
- n CIPTNT  
: The color sense adjustment of Component & RGB form' s signal.
- n CIPBR  
: The brightness adjustment of Component & RGB form' s signal.
- n KILVL
  
- n LDLY  
: The delayed time adjustment of brightness signal.
- n PKCOR
  
- n FB\_GAIN

### 7. VPC3230- SUB MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	25/73

6. VPC3230-SUB					
CT	32	CIPCT	2B	KILVL	07
BR	8A	PFS	00	LDLY	06
ACC_SAT	80	PK	01	PKCOR	01
TINT	00	VPK	03	FB_GAIN	62
SATCb	26	LPF2	00		
SATCr	36	CBW2	00		
CIPTNT	22	CBW	03		
CIPBR	C0	IFC	02		

## VPC3230-SUB MENU

- n CT  
: The contrast adjustment of Composite & S-Video form' s signal.
- n BR  
: The brightness adjustment of Composite & S-Video form' s signal.
- n ACC\_SAT
  
- n TINT  
: The color sense adjustment of Composite & S-Video form' s signal.
- n SATCb  
: The blue color sense adjustment of Component & RGB form' s signal.
- n SATCr  
: The red color sense adjustment of Component & RGB form' s signal.
- n CIPTNT  
: The color sense adjustment of Component & RGB form' s signal.
- n CIPBR  
: The brightness adjustment of Component & RGB form' s signal.
- n KILVL
  
- n LDLY  
: The delayed time installation of brightness signal.
- n PKCOR
  
- n FB\_GAIN

## 8. ADC MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	26/73

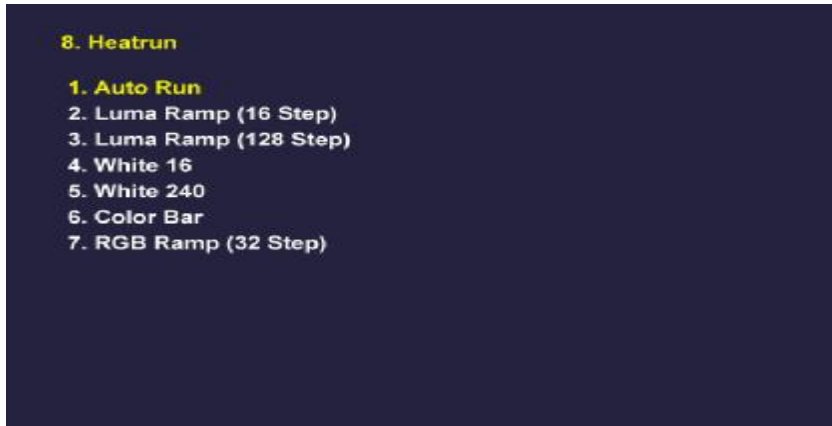
7. ADC			
Red Gain	166	Pr Gain	155
Green Gain	166	Y Gain	157
Blue Gain	161	Pb Gain	155
Red Offset	63	Pr Offset	63
Green Offset	77	Y Offset	59
Blue Offset	69	Pb Offset	61
Current	0	TTX Phase	96
VCO	0	TTX Contrast	00

## ADC MENU

- n Red, Green, Blue Gain  
: Control ADC input range (Contrast) of each respective channel.
- n Red, Green, Blue Offset  
: Control dc offset (Brightness) of each respective channel.
- n Current  
: Installation of PLL Part VCO Current. (For test)
- n VCO  
: Installation of PLL Part VCO Range (For test)
- n Pr, Y, Pb Gain  
: Contrast adjustment of Component2 Pr, Y, Pb signal.
- n Pr, Y, Pb Offset  
: Brightness adjustment of Component2 Pr, Y, Pb signal.
- n TTX Phase  
: It is not useful mode.
- n TTX Contrast  
: It is not useful mode.

## 9. HEATRAN MENU

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## HEATRUN MENU

- n 1. Auto Run  
: It is the mode to change the heatrun pattern as a certain time interval.
- n 2. Luma Ramp (16 Step)  
: It is gray pattern of 16 Step.
- n 3. Luma Ramp (128 Step)  
: It is gray pattern of 128 Step.
- n 4. White 16  
: It is low Gray pattern.
- n 5. White 240  
: It is high gray pattern.
- n 6. Color Bar  
: It is color Bar Pattern.
- n 7. RGB Ramp (32 Step)  
: It is RGB Ramp pattern of 32 Step.

## 10. VERSION MENU

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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### 9. Version

```
Version :      565 Ver.A0
Release :      2003/10/08
Panel used time :    5Day22h36m
Panel Name :   EraeLCDTV
```

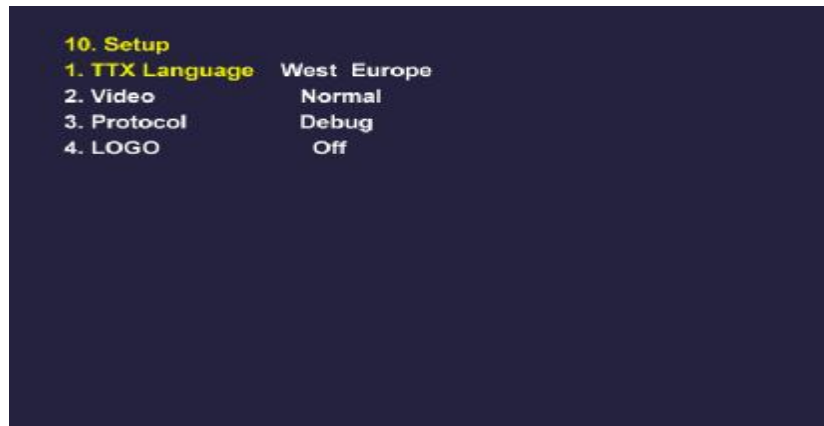
## VERSION MENU

- n Version  
: It is to show the Firmware Version.
- n Release  
: It is to show the date of Firmware revision.
- n Panel Used Time  
: It is to show the used time of Panel.
- n Panel Name  
: It is to show the name of the PDP.

## 11. SETUP MENU

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## DLP-3022 SERVICE MANUAL



### SETUP MENU

#### n 1. TTX Language

: Installation of initial language of the TTX.

West Europe	East Europe	Turkish	Cyrillic	Farsi	Arabic
English	Polish	English	English	English	English
France	France	France	Russian	France	France
Scandinavian	Scandinavian	Scandinavian	Estonian	Scandinavian	Scandinavian
Czech, Slovak	Czech, Slovak	Turkish	Czech, Slovak	Czech, Slovak	Czech, Slovak
German	German	German	German	German	German
Spain, Portuguese	Slovenian, Croatian	Spain, Portuguese	Ukrainian	Hebrew	Hebrew
Italian	Italian	Italian	Lettish, Lithuanian	Italian	Italian
English	Rumanian	Greek	Ukrainian	Arabic	Farsi

#### 2. Video

: Video format per country and it is composed of Normal, PAL N, PAL M

#### n 3. Protocol

: Installation of communication protocol for remote control.

(Normal : Debug, Remote Control : rpc)

#### n 4. LOGO

: Installation to show company logo on the screen when power "On" (ON/OFF).

### WHITE BALANCE ADJUSTMENT

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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## 1. Color temperature (White Balance) adjustment

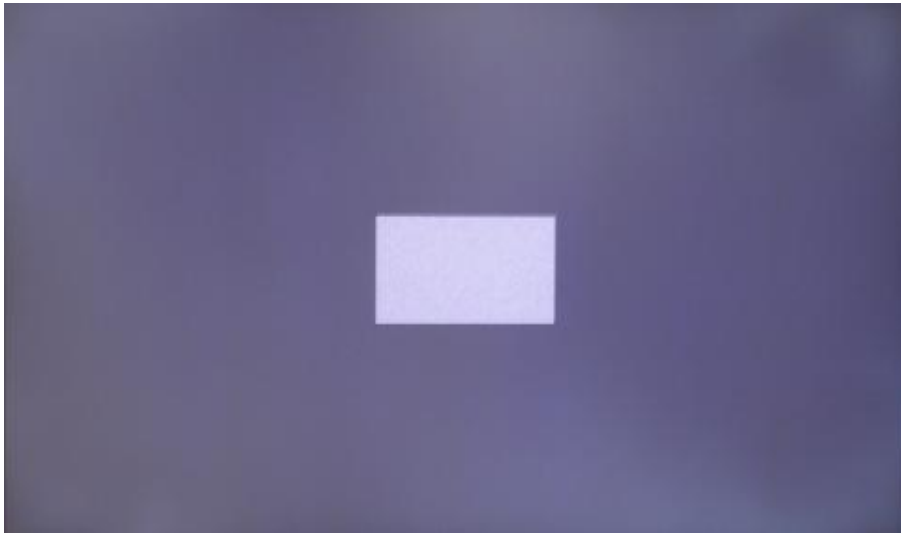
### 1) How to enter Factory mode for adjustment of White Balance

(1) LCD TV Power "On" --> SOURCE key on Remote control.

(2) Choose composite first and then LCD TV Power "Off".

(3) LCD TV Power "Off" (Stand-by) and S.MODE on the R/C ==> P.MODE ==> PREV ==> OK

### 2) For COMPOSITE adjustment (manual adjustment)



(1) Signal Generator supply the pattern of above picture. (Timing  $\Rightarrow$  386, Patten  $\Rightarrow$  10)

- Timing  $\Rightarrow$  386

(Name : PAL B,D,G,H,I HF : 625 VF : 50 Resolution :  $768 \times 576$ )

- Patten  $\Rightarrow$  10 (Window- ON/OFF)

(2) After movement to 3.color control on Factory Mode, move to sub menu as choice of volume button.

(3) After check the Brightness  $\Rightarrow$  50, Contrast  $\Rightarrow$  85, choose the Sub- Brightness.

Zero calibration's execution of CA- 110 and the sensor Keep distance of about 10 Cm in surface of LCD module

(4) Adjustment as choice of volume button in order that it becomes  $Y = 10.0 \pm 0.5 \text{ cd/m}^2$  on the sub brightness.

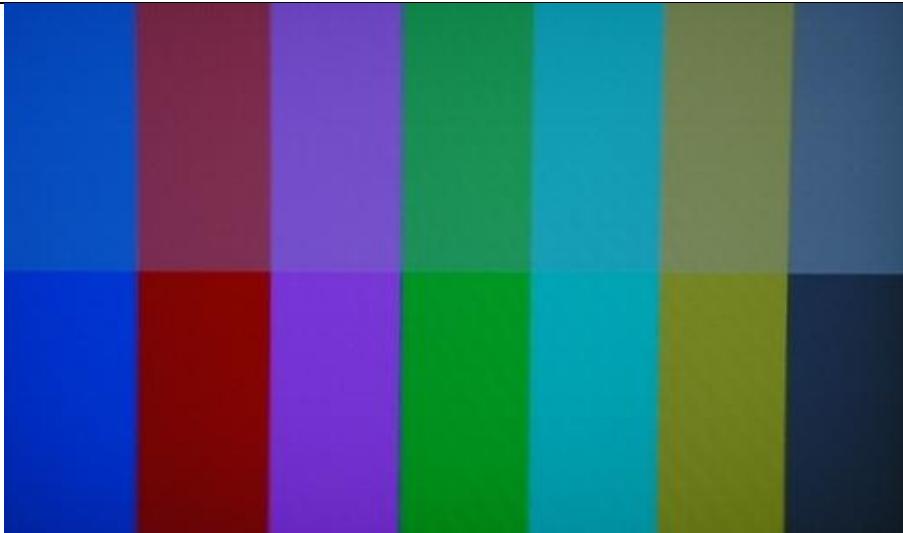
(6) Color coordinates' adjustment of Red Offset, Green Offset, Blue Offset using this kind of method.

Color coordination  $\Rightarrow x = 0.260 \pm 0.007, y = 0.270 \pm 0.007, Y = 10.0 \pm 0.5 \text{ cd/m}^2$

(7) The Sub- Brightness' readjustment when it is not satisfied with brightness after adjustment.

### 3) For DTV adjustment

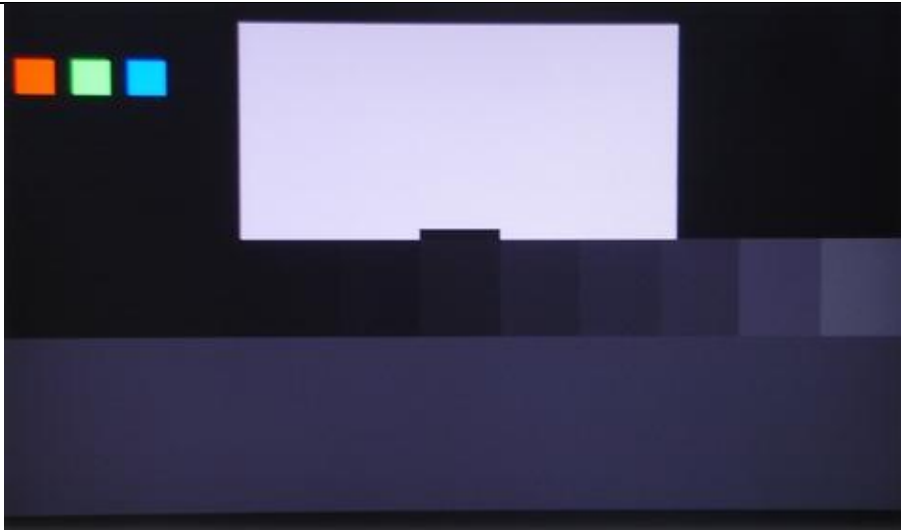
MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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- (1) **Signal Generator supply the pattern of above picture.**
  - Timing ⇒ 395
  - (Name : HD (720P 60Hz) HF : 45 VF : 60 Resolution : 1280 × 720)
  - Patten ⇒ 251 (Color- Bar- 16)
- (2) **After movement to 1.calibration on Factory Mode, move to sub menu as choice of volume button**
- (3) **After movement to 2. DTV Calibration, choose it with volume button.**
- (4) **If OK key, it starts the calibration.**

**4) For PC adjustment**

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- (1) **Signal Generator supply the pattern of above picture.**
  - Timing ⇒ 313  
(Name : 1024 × 768 HF : 48.363 VF : 60.004 Resolution : 1024 × 768)
  - Patten ⇒ 609 (Toshiba)
- (2) **After movement to 1.calibration on Factory Mode, move to sub menu as choice of volume button.**
- (3) **After movement to 1. PC Calibration, choose it with volume button.**
- (4) **If OK key, it starts the calibration automatically**

**How to exit the Factory Mode**

**S.MODE ==> P.MODE ==> PREV ==> OK**

**5) Adjustment verification**

**Adjustment as volume “0” and then 4 times of OK key**

**DESCRIPTION OF SPECIAL FUNCTIONS**

**1. P.MODE (Picture Mode)**

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Function to adjust picture status to an optimal condition in accordance with the type of program being viewed (custom, dynamic, standard, movie, mild).

## **2. S.MODE (Sound Mode)**

Function to adjust sound status to an optimal condition in accordance with the type of program being viewed (custom, standard, music, movie, speech).

## **3. ZOOM**

Function to adjust the picture size. (Auto wide, wide, panorama, zoom1, zoom2, 4:3, 14:9)

## **4. PANORAMA**

Function to prevent pictures recorded in the 4:3 format from being stretched to the extreme left and right when played on a 16:9 display. Since the focus of the camera is concentrated on the center, it naturally enlarges the picture within the outer perimeter of the screen without expanding the central area.

## **5. PIP (Picture In Picture)**

Function to enable the simultaneous viewing of two pictures by displaying a small sub-frame within the main picture. The main picture may be viewed with multiple types of input source (Analog/Digital RGB, composite, S-Video, component), while the sub-frame is only available in composite, S-Video or component (480i).

## **6. PBP (Picture By Picture)**

Function to assign two separate signals onto a single screen, thereby enabling the viewer to simultaneously watch different pictures on each half of the display.

## **7. PIP Swap Simultaneous Conversion Between Sub and Main Pictures.**

Function to convert between the sub-frame and main picture being watched simultaneously.

## **8. PIP Sound Swap Simultaneous Conversion Between sub and Main Picture Audio**

Function to convert between simultaneous audio streams from the sub-frame and main picture being viewed.

## **9. EQUALIZER**

Function to control sound according to frequency. (100Hz, 300Hz, 1KHz, 3KHz, 10KHz)

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## **10. AVL (Auto Volume Level)**

Function to automatically adjust varying sound levels from each individual broadcasting company to an appropriate volume, in case of watching a television connected to external equipment. This allows to viewer to enjoy a comfortable and stable sound level even when changing the channel.

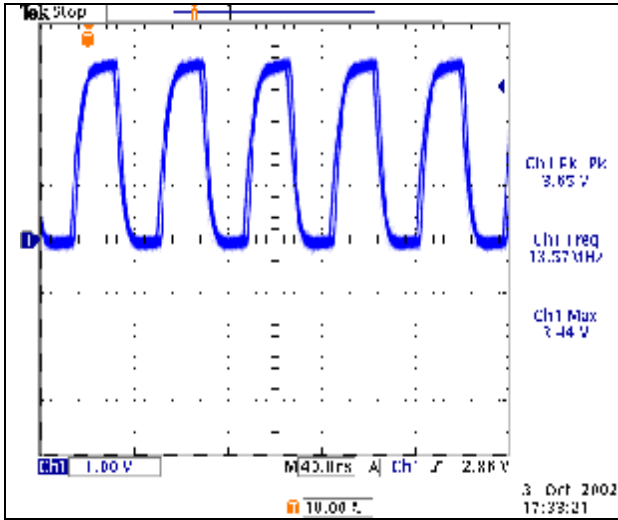
## **CIRCUIT OPERATION & WAVEFORM**

### **1. VPC3230D (Video Processor)**

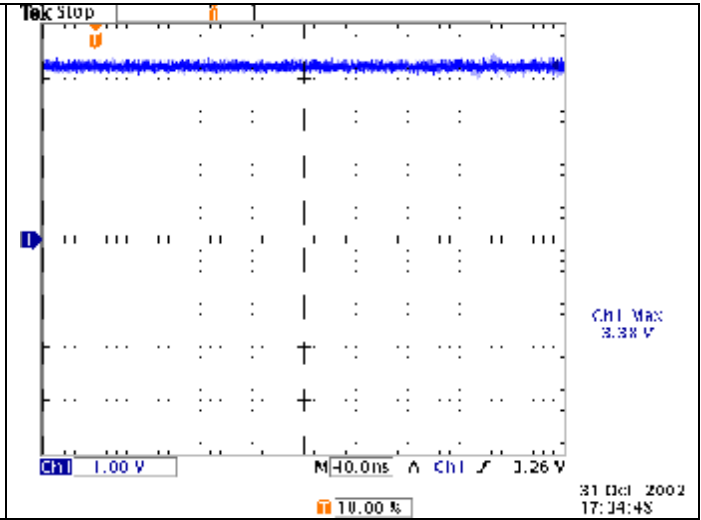
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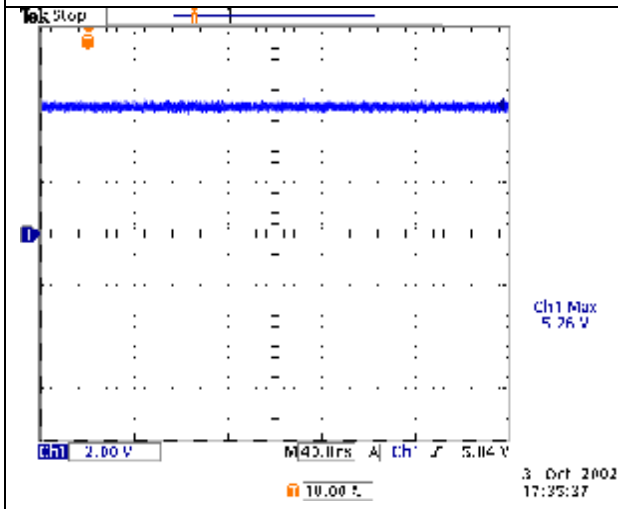
Converts analog pictures (including Composite, S- Video, Component (480i) or the like) to Y-UV digital pictures. Compatible with various TV formats of NTSC, PAL, SECAM, etc.



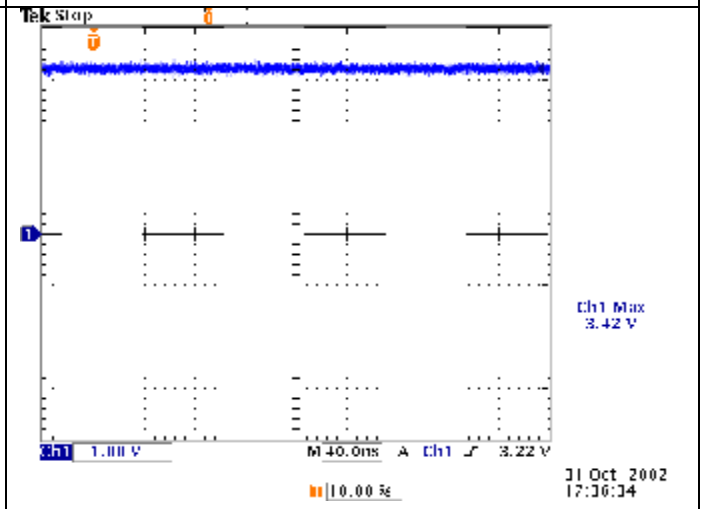
U41 (VPC3230D)\_#28\_S- LLC1



U42 (LM2937- 3.3V)\_#3\_V3.3



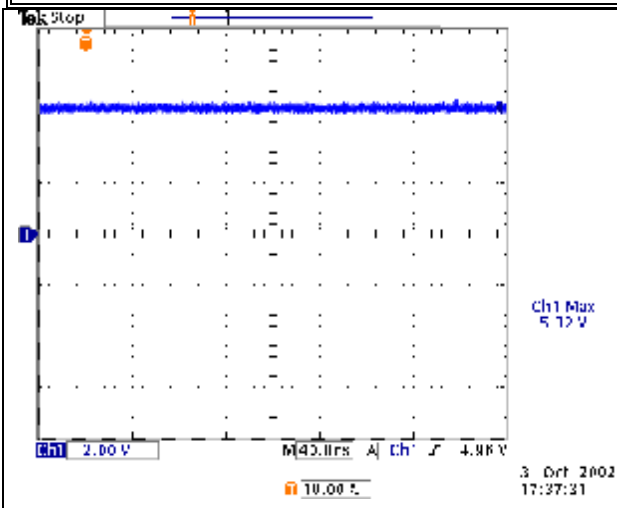
LC18 (STS104B)\_#2\_VAA3230



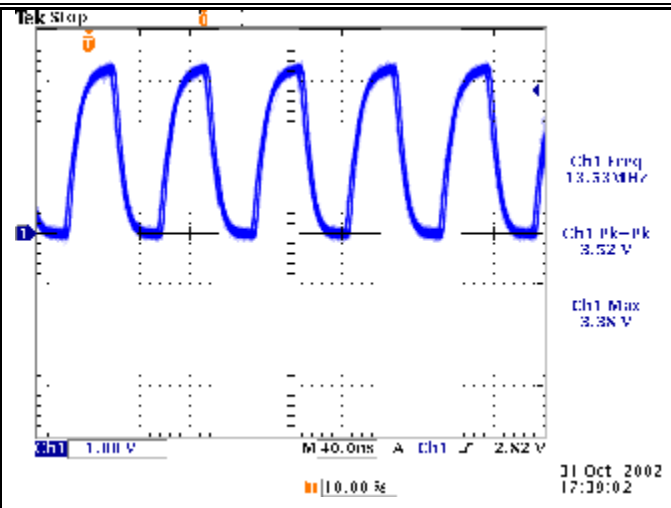
U40 (LM2937- 3.3V)\_#3\_V3.3V- 1

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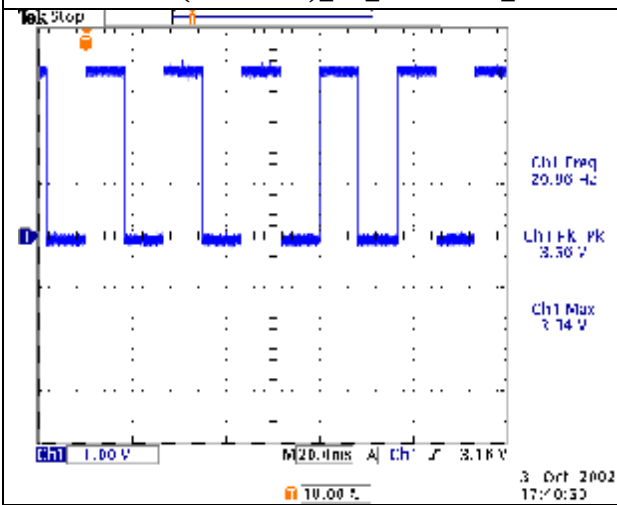
# DLP-3022 SERVICE MANUAL



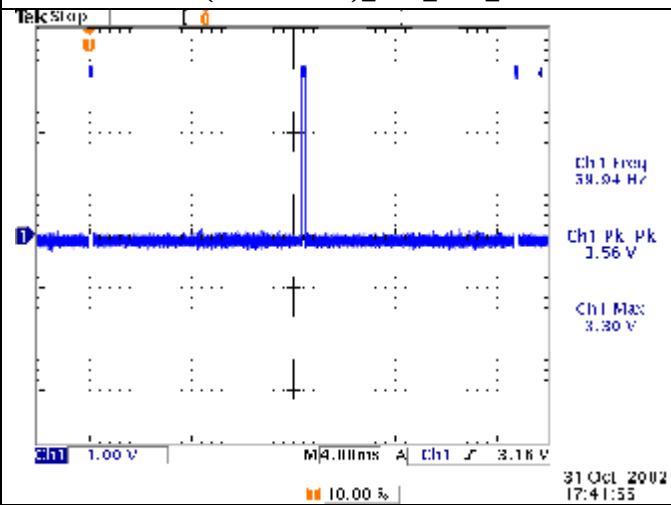
**LC16 (STS104B)\_#2\_VAA3230\_1**



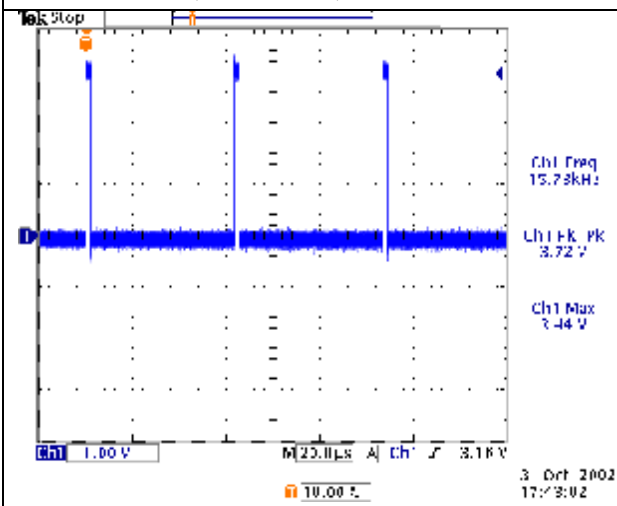
**U41 (VPC3230D)\_#28\_VID\_CLK**



**U41 (VPC3230D)\_#53\_INTLC**



**U41 (VPC3230D)\_#57\_VID-VS**



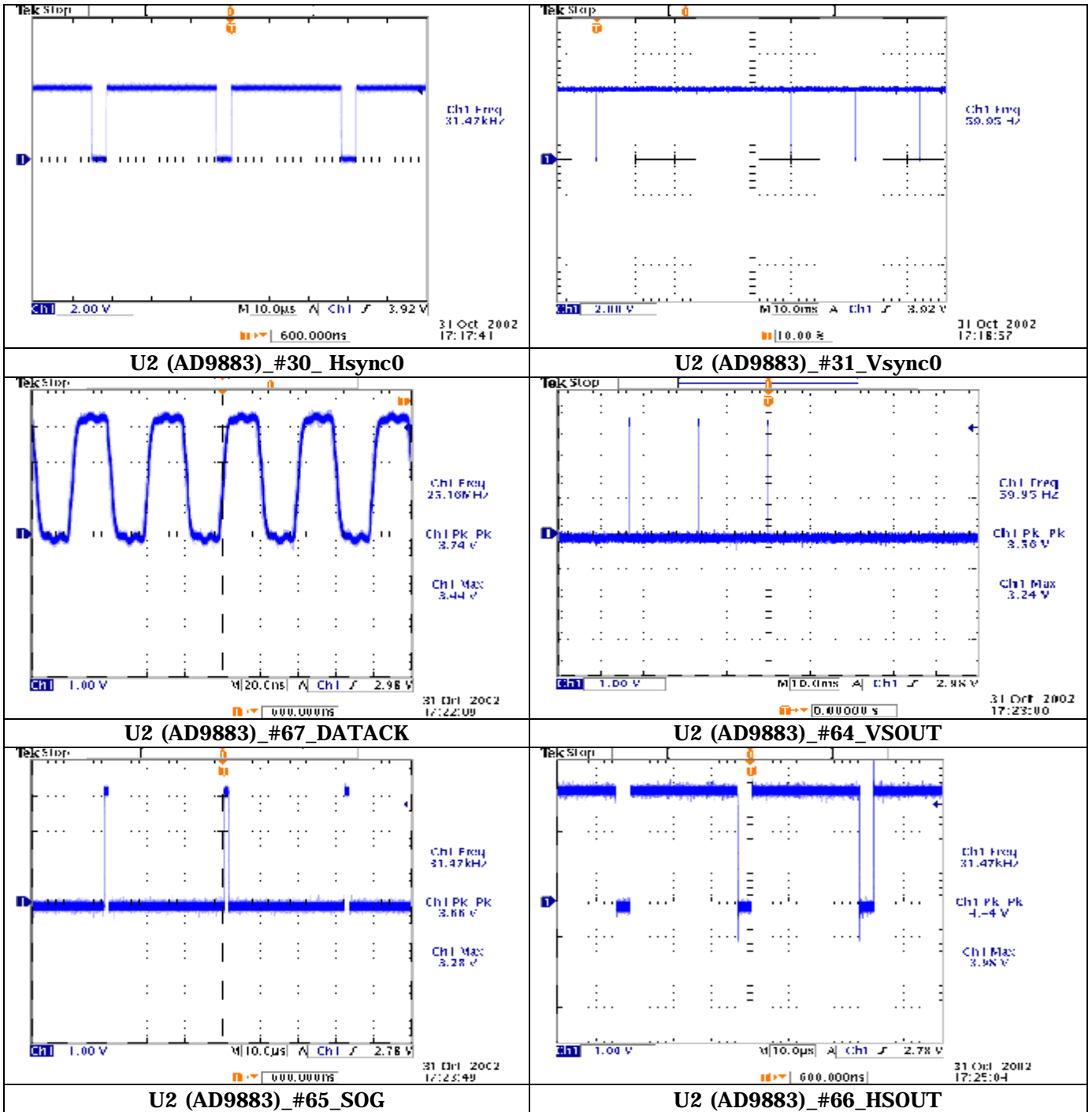
**U41 (VPC3230D)\_#56\_VID-HS**

## 2. AD9883 (A/D Converter)

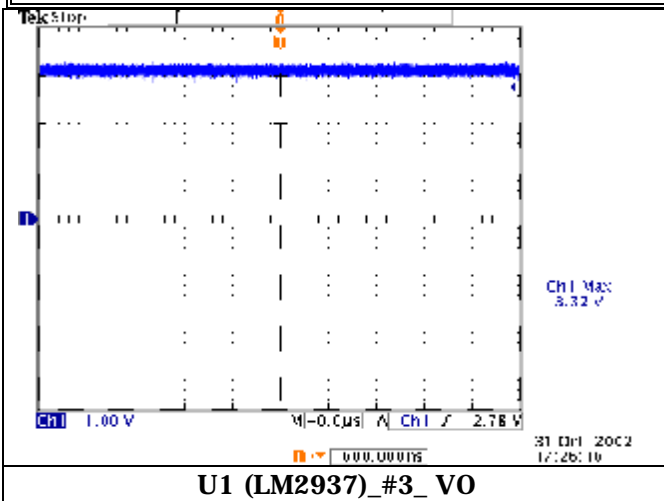
MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	37/73

# DLP-3022 SERVICE MANUAL

Converts an analog RGB signal to a process able digital signal. Converts a component signal (480p, 720p, 1080i) to a digital signal and transmits it to PW565 (Scaler).



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DLP-3022	ELT040605-001	00	04/06/05	38/73

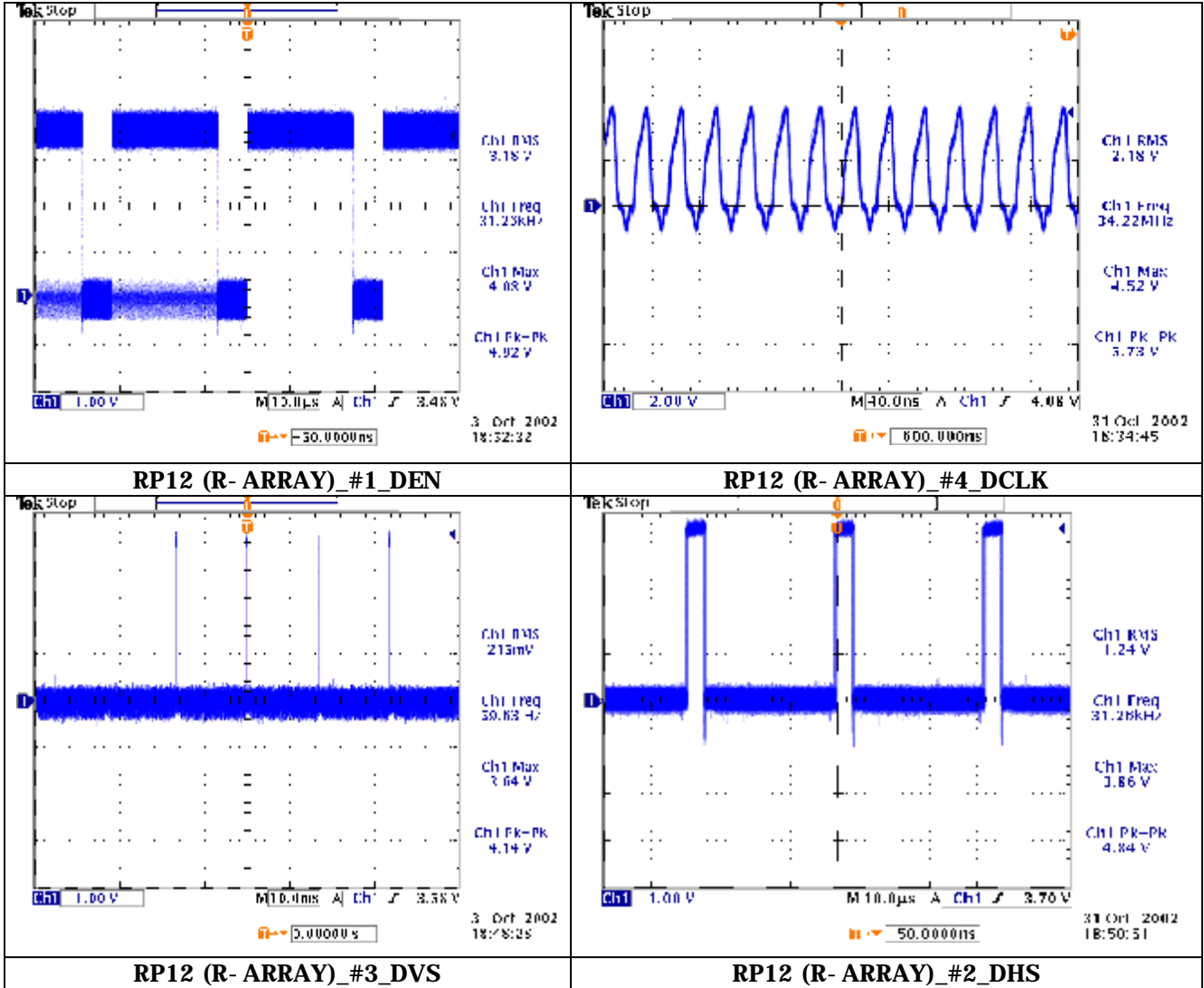


**3. PW565 (Scaler)**

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	39/73

## DLP-3022 SERVICE MANUAL

Receives, at the same time, a video signal from VPC3230, an Analog/Digital RGB signal and a Component signal, which are converted at AD9883 and THC63DV151, adjusted to a LCD display, and transmitted to a LCD module. In particular, it receives any PC signal input at various scanning rates and performs scaling to adjust to LCD resolution.

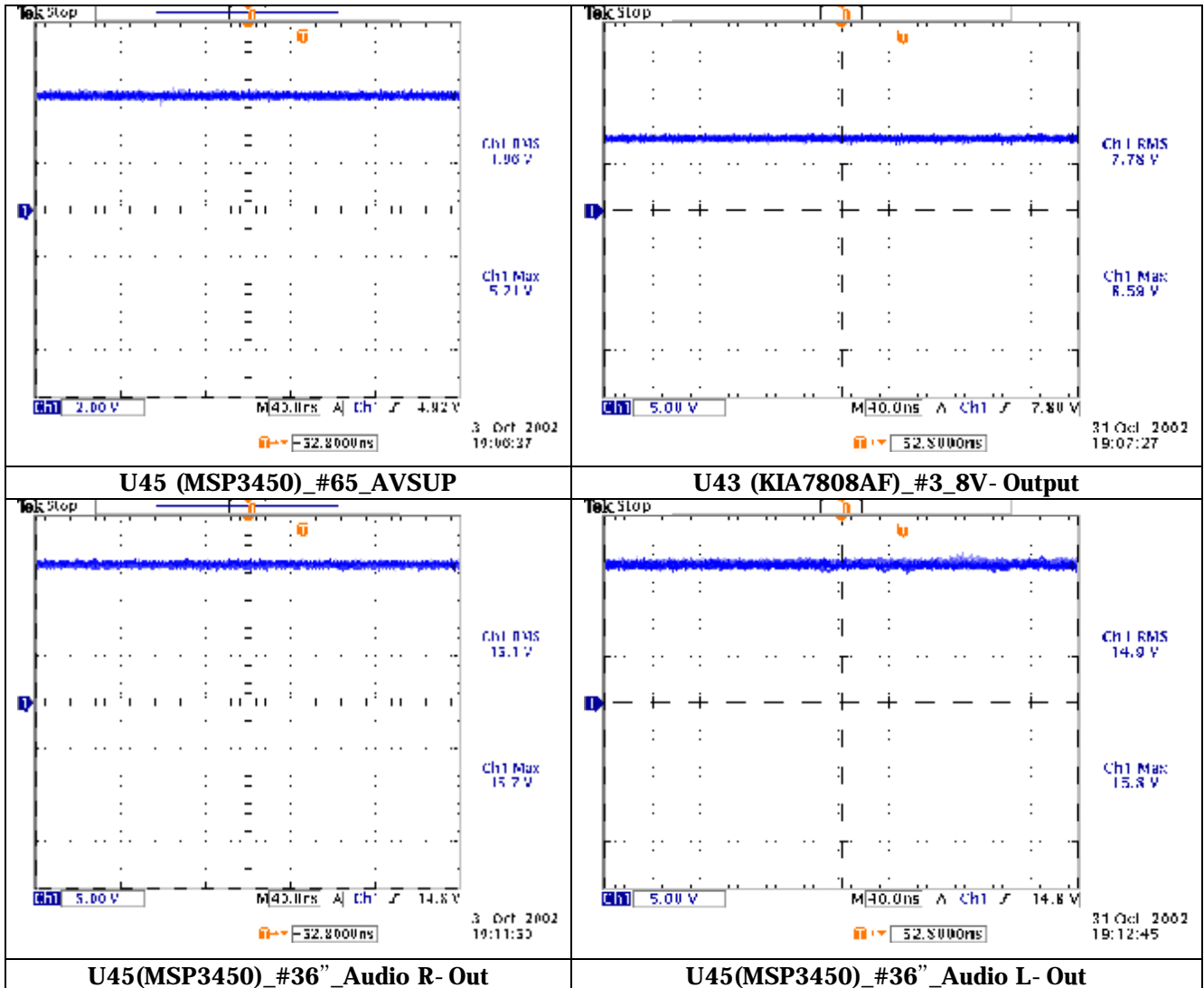


### 4. MSP3450 (Sound Processor)

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	40/73

## DLP-3022 SERVICE MANUAL

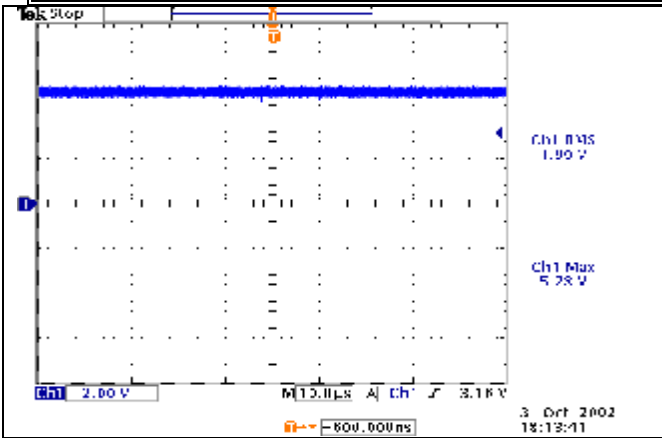
Receives and converts any Sound IF signal from a TV Tuner to a general audio signal (LCD TV). Also, outputs the desired input signal out of many audio input signal options, and produces a woofer signal or Headphone signal as well as a general Speaker signal (LCD TV).



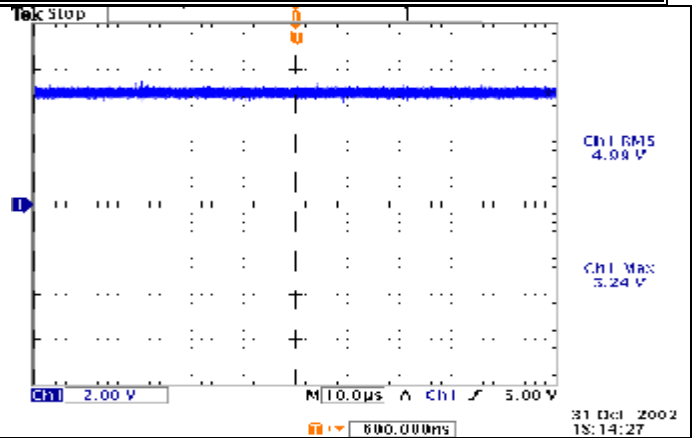
### 5. Power & MISC Waveform

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	41/73

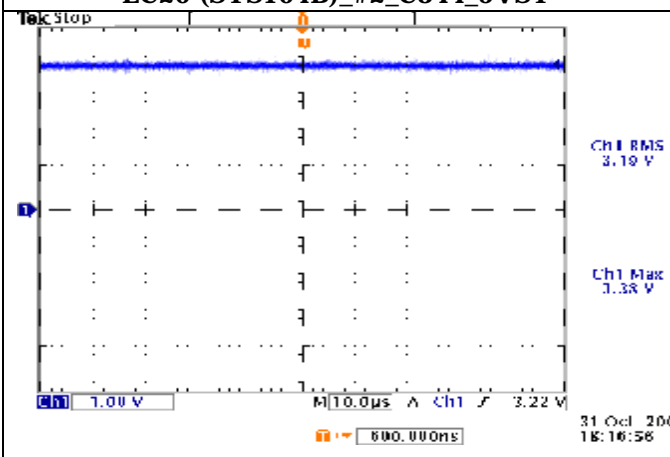
# DLP-3022 SERVICE MANUAL



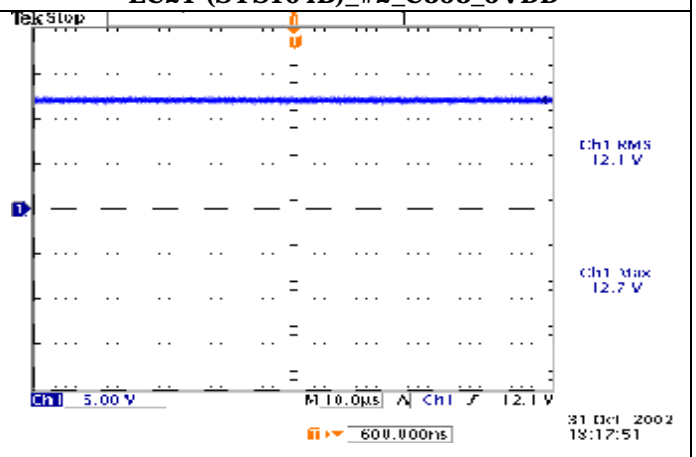
**LC20 (STS104B) #2\_C344\_5VST**



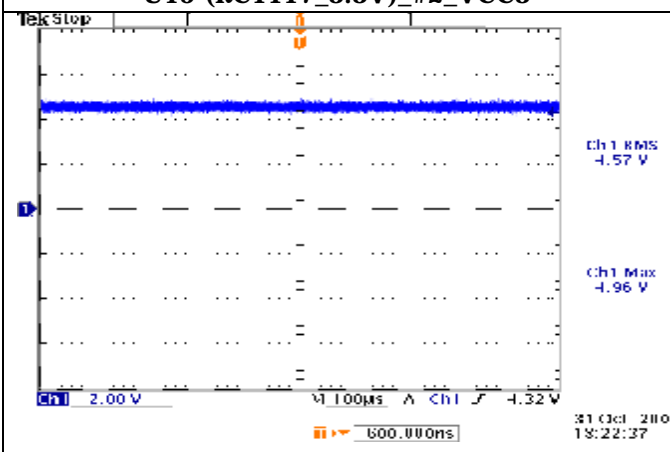
**LC21 (STS104B) #2\_C353\_5VDD**



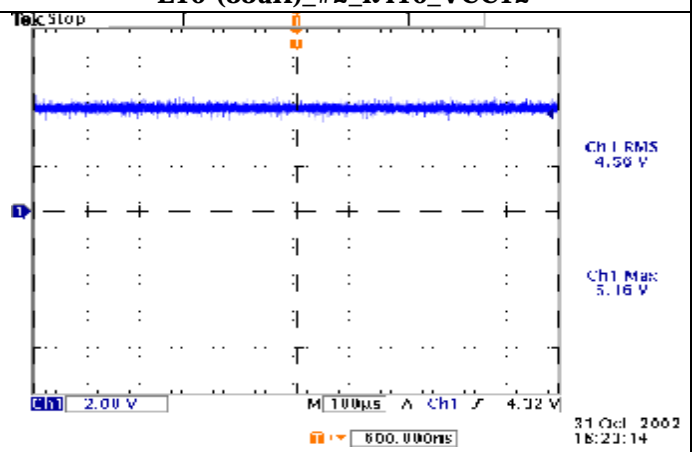
**U15 (RC1117\_3.3V) #2\_VCC3**



**L10 (33uH) #2\_R410\_VCC12**



**Q33 (MMBT3904) "C" \_RL\_ON**



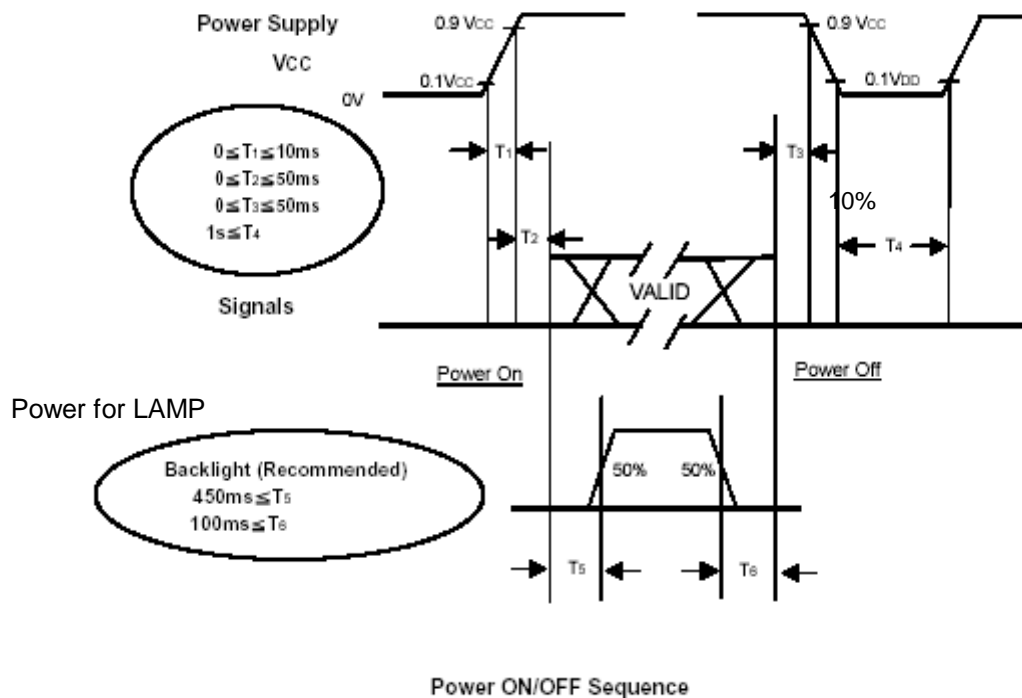
**Q30 (MMBT3904) "C" \_VAVS\_ON**

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	42/73

## MODULE POWER SEQUENCE

### [V296W1]

To prevent a latch-up or DC operation of LCD module, the power on/off sequence should be as the diagram below.



#### Note.

- (1) The supply voltage of the external system for the module input should be the same as the definition of V<sub>CC</sub>.
- (2) Apply the lamp voltage within the LCD operation range. When the backlight turns on before the LCD operation of the LCD turns off before the backlight turns off, the display may momentarily become abnormal screen.
- (3) In case of vcc = off level, please keep the level of input signals on the low or keep a high impedance.
- (4) T<sub>4</sub> should be measured after the module has been fully discharged between power off and on period.
- (5) Interface signal shall not be kept at high impedance when the power is on.

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## **MODULE PRECAUTIONS**

### **1. PRECAUTIONS**

#### **1) ASSEMBLY AND HANDLING PRECAUTIONS**

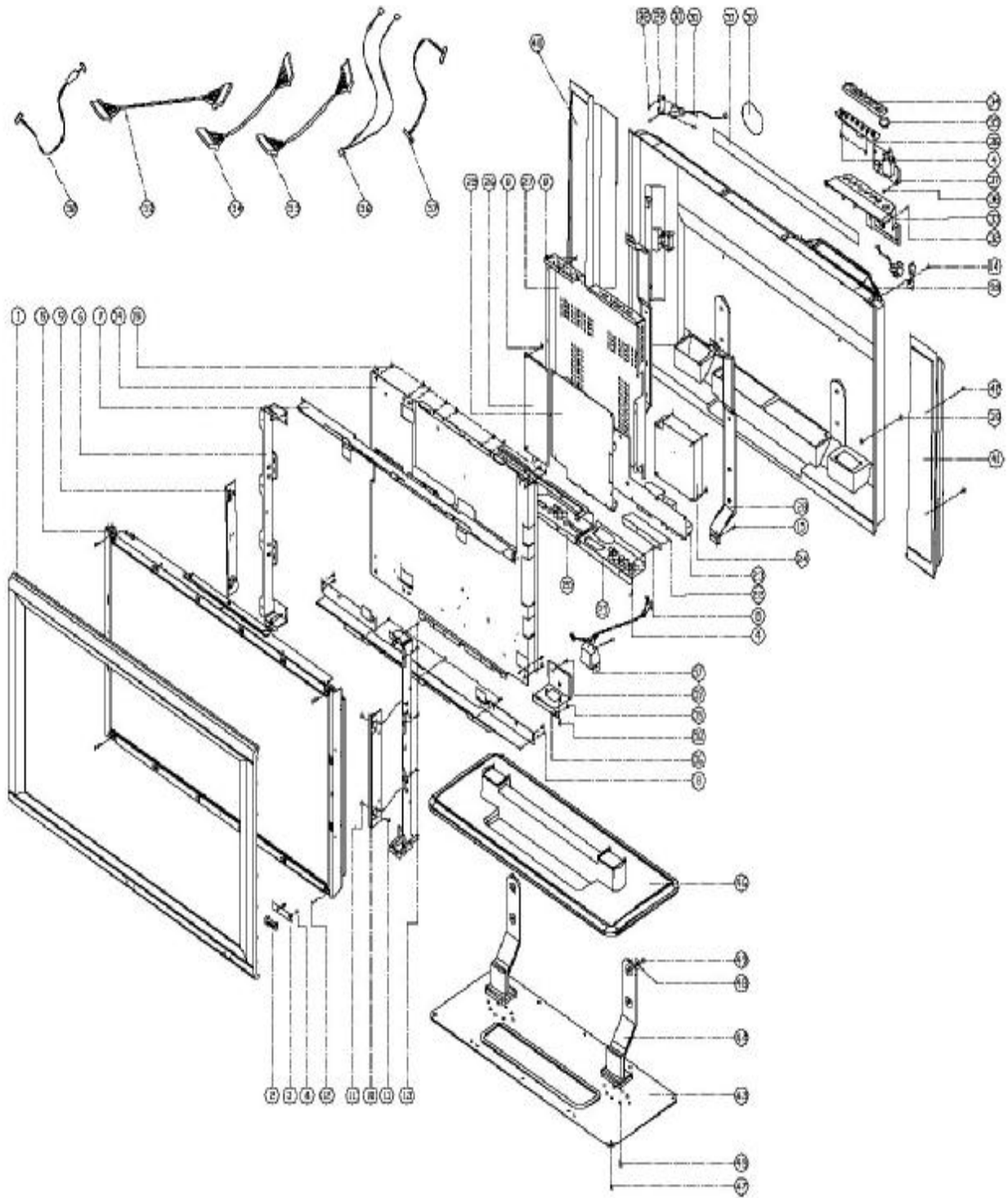
- (1) Do not apply rough force such as bending or twisting to the module during assembly.
- (2) It is recommended to assemble or to install a module into the user's system in clean working areas. The dust and oil may cause electrical short or worsen the polarizer.
- (3) Do not apply pressure or impulse to the module to prevent the damage of LCD panel and Backlight.
- (4) Always follow the correct power-on sequence when the LCD module is turned on. This can prevent the damage and latch-up of the CMOS LSI chips.
- (5) Do not plug in or pull out the I/F connector while the module is in operation.
- (6) Do not disassemble the module.
- (7) Use a soft dry cloth without chemicals for cleaning, because the surface of polarizer is very soft and easily scratched.
- (8) Moisture can easily penetrate into LCD module and may cause the damage during operation.
- (9) High temperature or humidity may deteriorate the performance of LCD module. Please store LCD modules in the specified storage conditions.
- (10) When ambient temperature is lower than 10°C, the display quality might be reduced. For example, the response time will become slow, and the starting voltage of CCFL will be higher than that of room temperature.

#### **2) SAFETY PRECAUTIONS**

- (1) The startup voltage of a Backlight is approximately 1000 Volts. It may cause an electrical shock while assembling with the inverter. Do not disassemble the module or insert anything into the Backlight unit.
- (2) If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.
- (3) After the module's end of life, it is not harmful in case of normal operation and storage.

## **Exploded overview**

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DLP-3022	ELT040605-001	00	04/06/05	44/73



### Replacement Parts List

Item	Code	Description		
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DLP-3022	ELT040605-001	00	04/06/05	45/73

## DLP-3022 SERVICE MANUAL

1	70PELM4793	FRONT B
2	70EELM466	LENS
3	S110236003	IR & LED BOARD ASSY
4	74B2BN3008FB	T/SCREW (BH T 3X8 2S ZB)
5	65- 0046	LCD PANEL (V296W1_L14(대만_CMO))
6	71AELP2672	FRAME Y
7	71AELP2692	FRAME X
8	74A2BN3006FN	M/SCREW (BH M 3X6 ZN)
9	71AELP335	BRKT HOLDER- L
10	71AELP334	BRKT HOLDER- R
11	74A2BN4006FY	M/SCREW (BH M 4X6 ZN)
12	74A2BN3514FY	SCREW (BH M 3.5X14 ZN)
13	74C2BN4010FB	T/SCREW (BH TT 4X10 ZB)
14	71BELP270	BRKT PCB
15	74A2BN4008FY	M/SCREW (BH M 4X8 ZN)
16	71BELP273	BRKT IN- LET
17	54- 0011	NOISE FILTER
18	74A2FN3008FB	M/SCREW (FH M 3X8 ZB)
19	74GELM014	GRAOUND SCREW (PH M 4X6 (SPECIAL))
20	71AELP271	SHIELD- A
21	71AELP266	SHIELD- B
22	73DELI050	INSULATION
23	S110232003	I/O BOARD ASSY
24	60- 0068	30" PSU
25	S110231024	A/D BOARD ASSY
26	S110233003	TUNER BOARD ASSY
27	71FELP268	SHIELD MAIN
28	71HELP2641	FRAME SUPPORT
29	71AELP272	WAFER BRKT
30	50- 0126	SPK WIRE 2P 200MM
31	74A9BZ2604FY	M/SCREW (BH M 2.6X4 ZN)
32	74C2BN3010FW	T/SCREW (BH TT 3X10 2S ZW)
33	70PELM4281	BACK COVER
34	70AELM4311	FUNCTION KNOB
35	70AELM4341	POWER KNOB
36	S110237003	OSD BOARD ASSY

Item	Code	Description
37	S110235003	POWER S/W BOARD ASSY
38	74B2CN3006FB	T/SCREW (BH TT 3X6 2S ZB)
39	74A2B4010FB	M/SCREW (BH M 4X10 ZB)
40	60- 0072	SPEAKER ASSY(DLP- 3022 (DEAWOO ELECTRONICS 向) - L)

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	46/73

## DLP-3022 SERVICE MANUAL

41	60- 0073	SPEAKER ASSY(DLP- 3022 (DEAWOO ELECTRONICS 向) - R)
42	74A9BZ4028FB	M/SCREW (BH M 4X28 ZB)
43	70AELP508	STAND PLATE
44	71ZELP275	STAND SUPPROT
45	74J2FN5010FW	M/SCREW (FH M 5X10 ZW/NYLON PATCH LOCK)
46	70AELM507	STAND BASE
47	74C2FN3008FW	T/SCREW (FH TT 3X8 2S ZW)
48	73E10D5D12	PVC WASHER (PVC/1TX5X12)
49	74A9BZ5012FB	M/SCREW (BH M 5X12 ZB)
50	73ELE089	BACK COVER CAP
51	70HELD075	DECO JACK
52	50- 0142	LVDS WIRE 30P 200MM
53	50- 0093	POWER WIRE 12P 120MM
54	50- 0149	INVERTER WIRE 12P 120MM
55	50- 0133	OSD WIRE 08P 600MM
56	50- 0135	SPK WIRE 4P 600/800MM
57	50- 0148	IR WIRE 6P 450MM

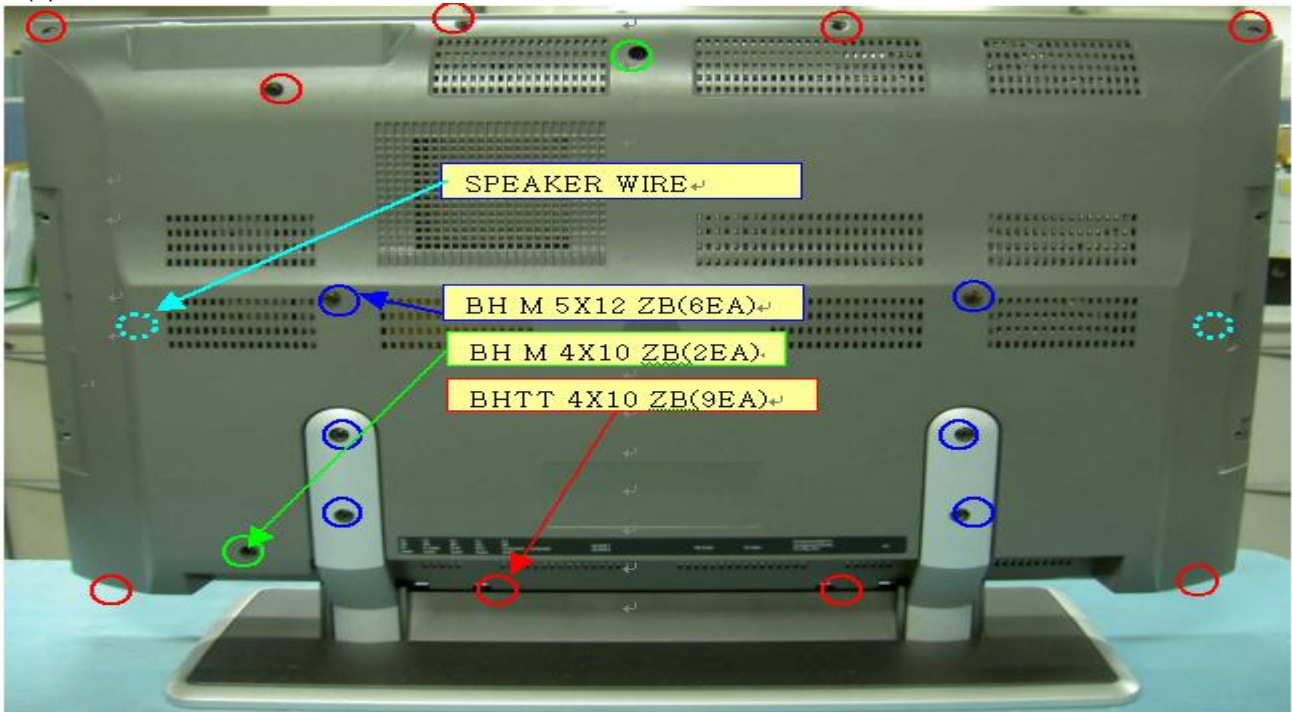
### Disassembly Procedure

(1) BH M 4X28 ZB 제거 후 SPEAKER ASSY 분리

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	47/73

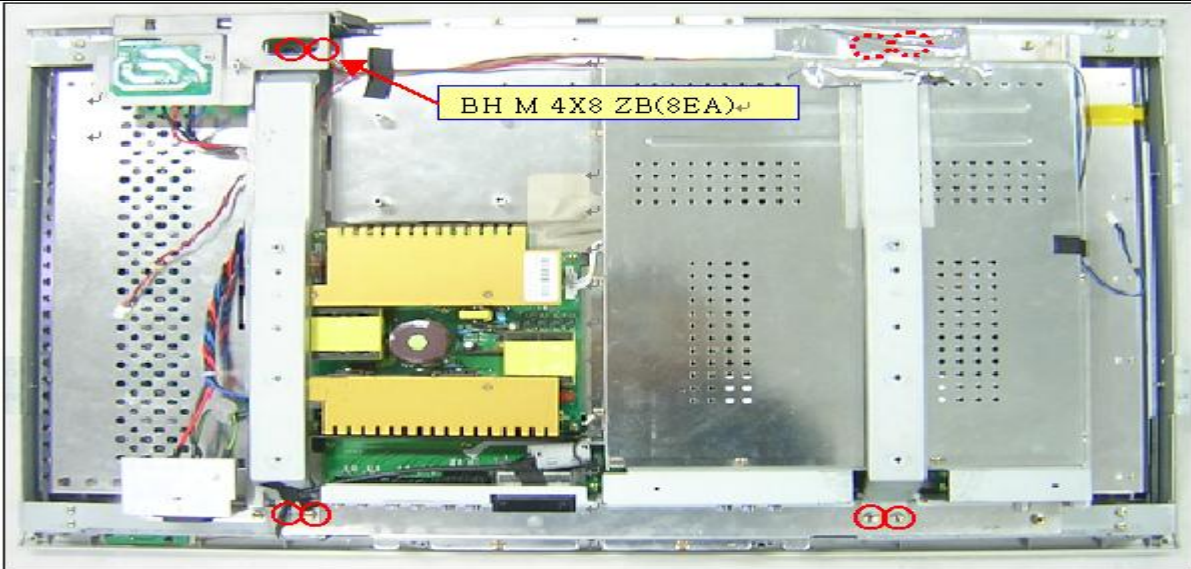


- (1) BH M 5X12 ZB 제거 후 STAND ASSY 분리
- (2) BH M 4X10 ZB , BH TT 4X10 ZB 제거 후 BACK COVER 분리
- (3) BACK COVER 분리 시 SPEAKER WIRE JACK 분리



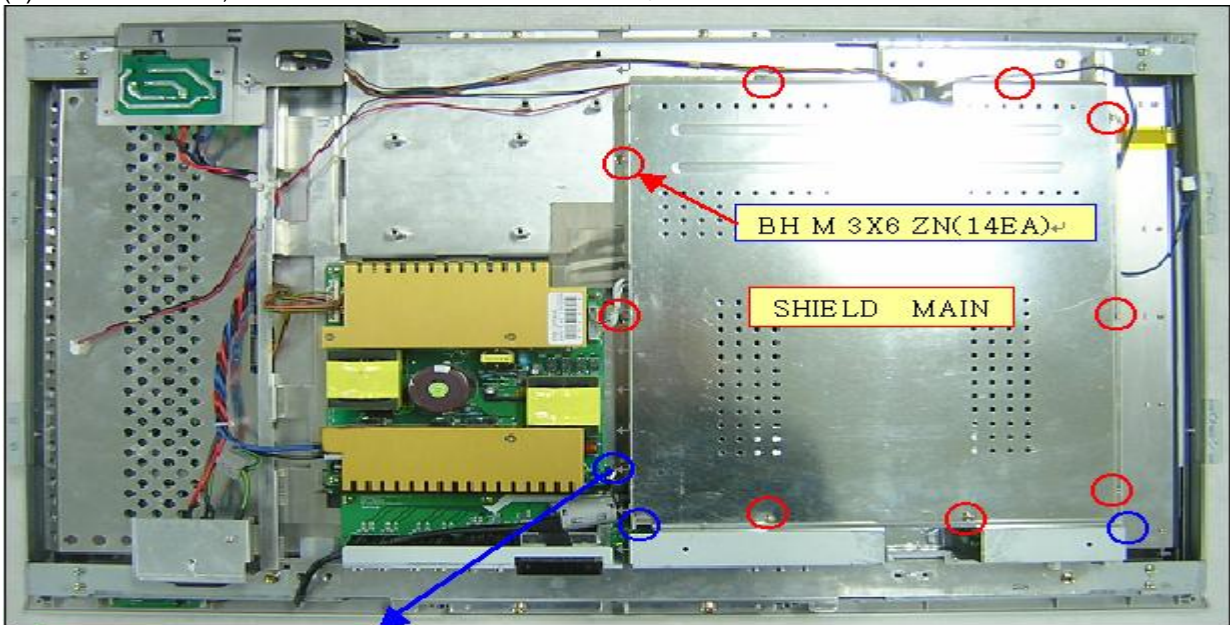
- (4) BACK COVER 분리 시 SPEAKER WIRE JACK 분리

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	48/73



(5) BH M 3 X 6 ZN SCREW 제거와 함께 GROUND 를 제거 후 SHIELD MAIN 제거

(6) BH M 3 X 6 ZN, BH TT 3X8 2S ZB SCREW 제거 후 SHIELD-A 제거



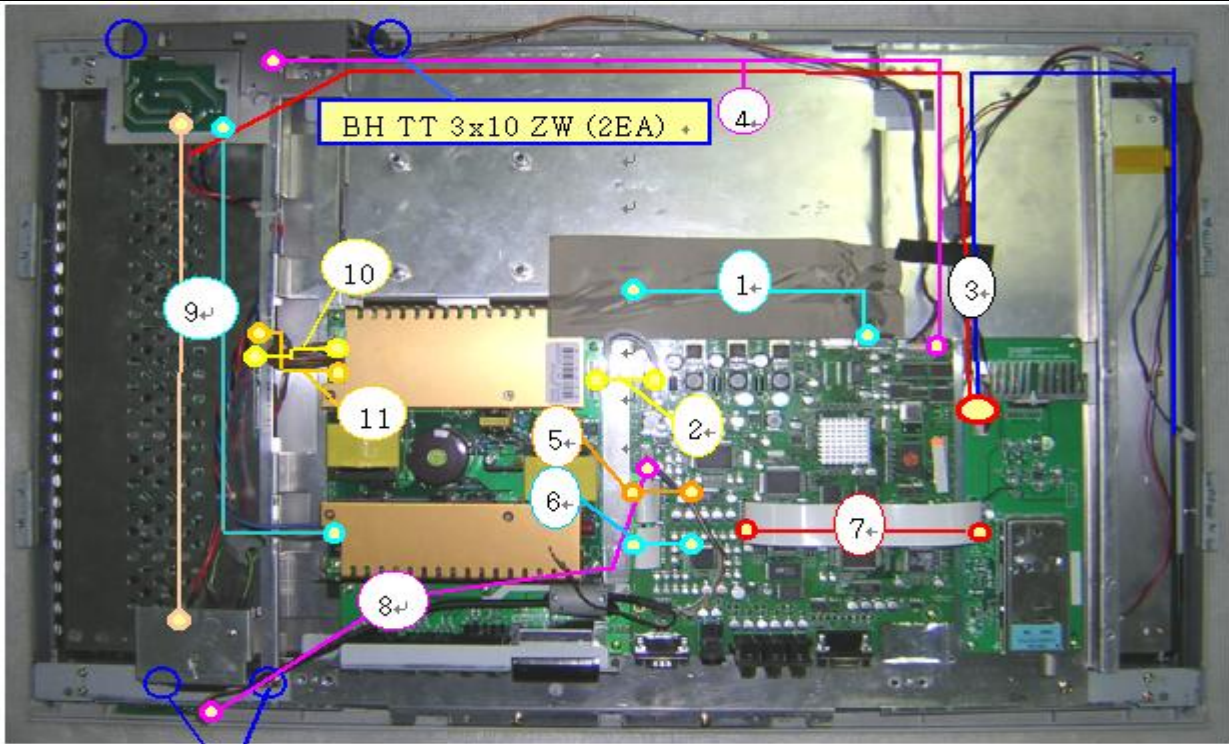
BH TT 3X8 2S ZB(2EA)

SHIELD A

(7) 1~11 WIRE 분리

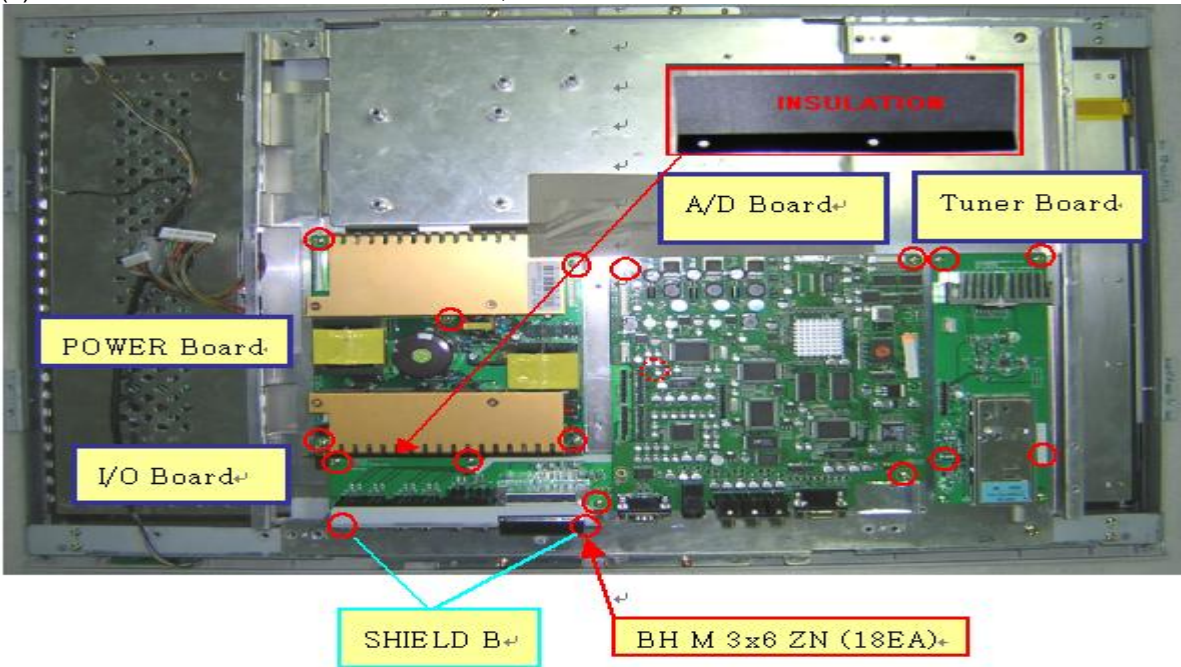
(8) BH M 4 X 8 ZN SCREW 제거, AC INLET 분리, BH TT 3X10 ZW SCREW 제거 후 KNOB GUIDE 분리

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	49/73



BH M 4x8 ZN (2EA)

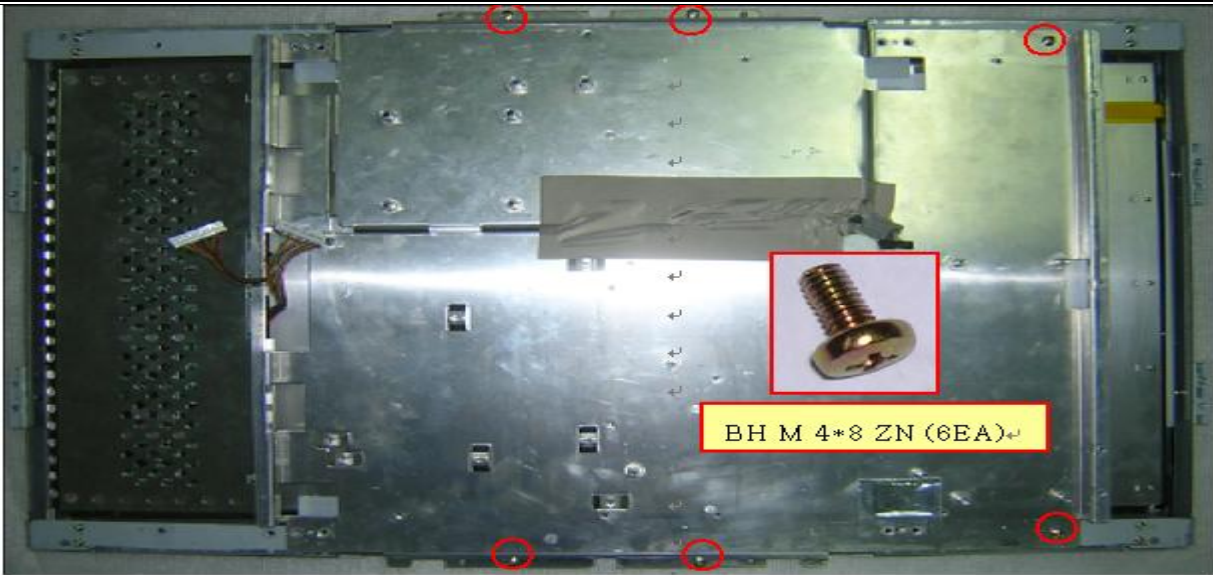
(9) BH M 3 X 6 ZN 제거 후 BOARD 분리, SHIELD-B 분리



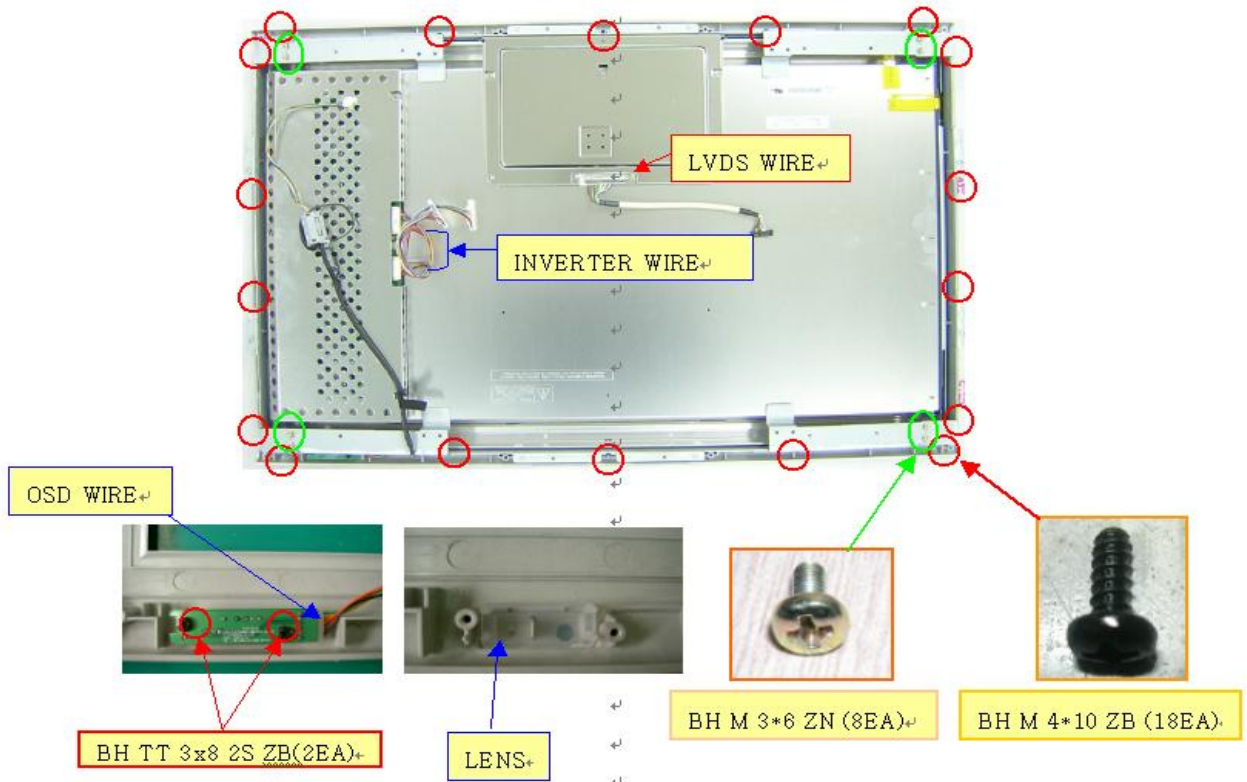
(10) BH M 4 X 8 ZN 제거 후 BRKT PCB 분리

MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	50/73

# DLP-3022 SERVICE MANUAL

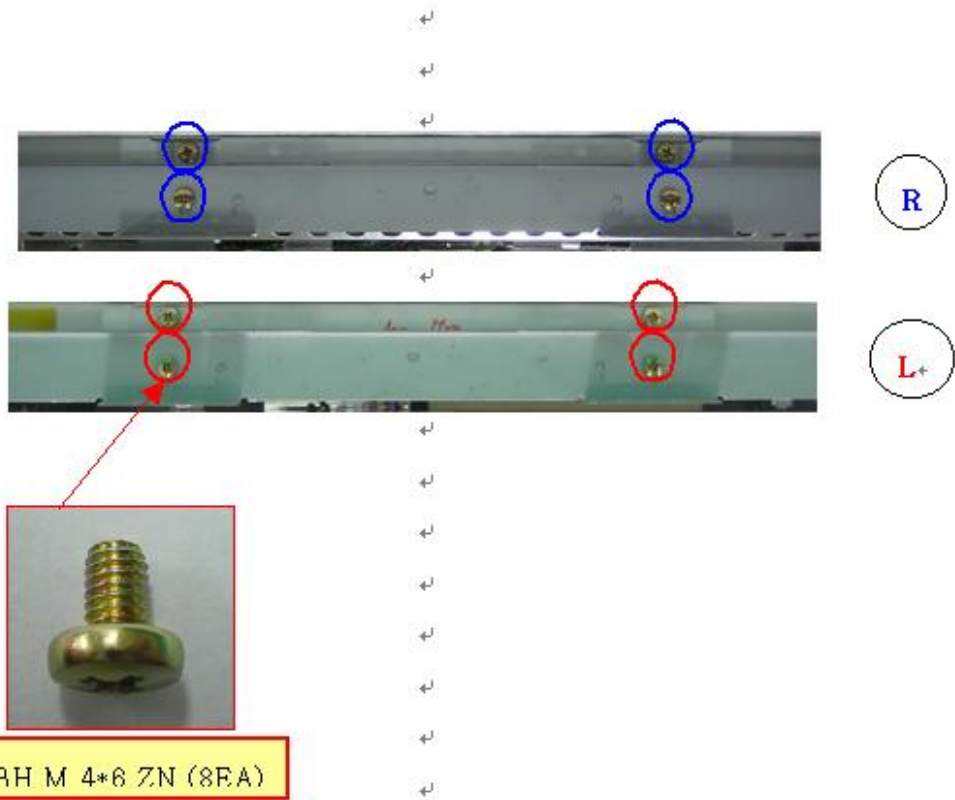


- (11) BH TT 4 X 8 2S ZB 제거 후 IR PCB, LENS 분리
- (12) WIRE 제거
- (13) BH T 4 X 10 ZB 제거 후 FRONT 분리
- (14) BH M 4X6 ZN 제거 후 FRAME-X 분리



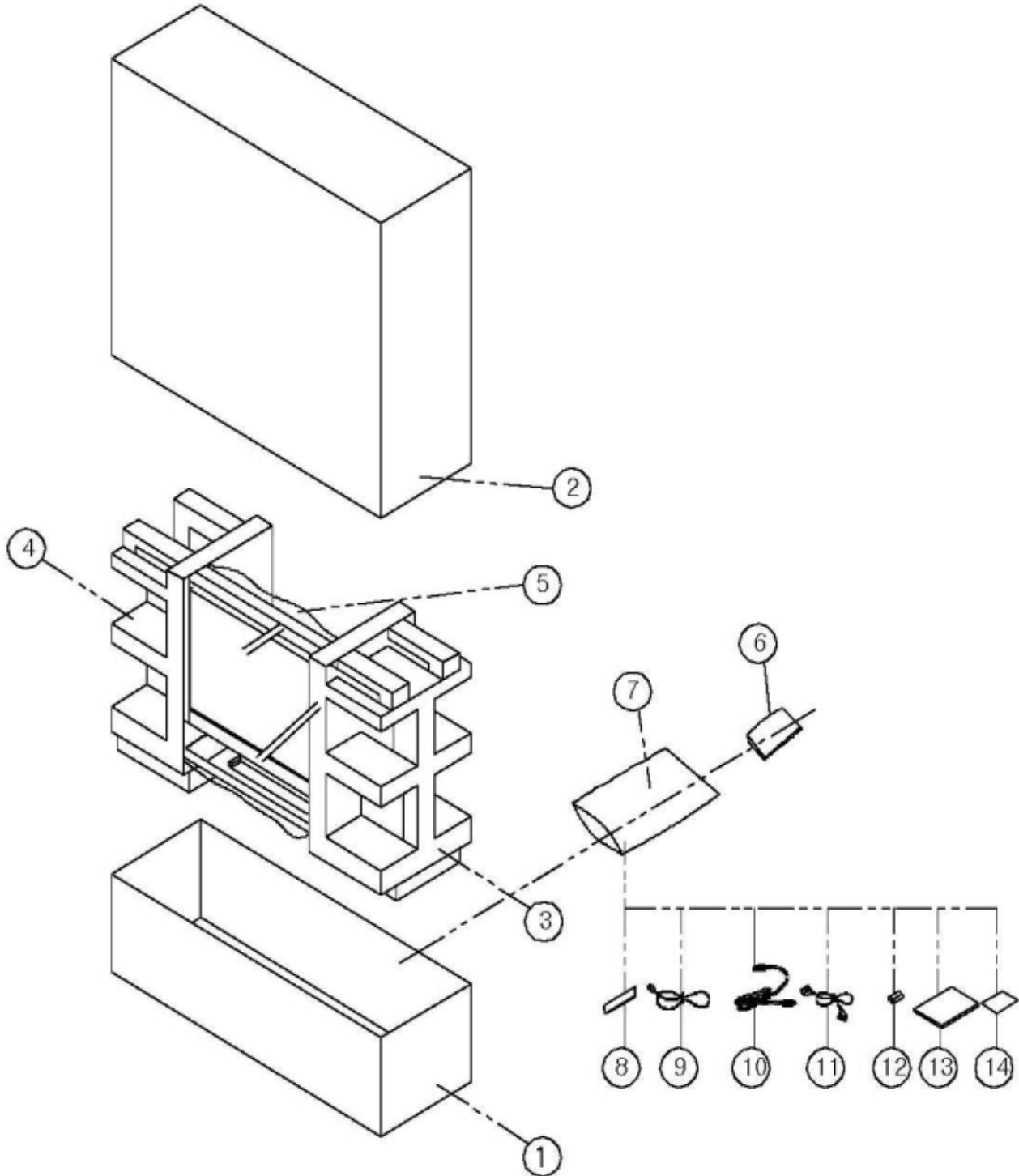
- (15) BH M 3.5 X 14 ZN 제거 후 FRAME Y 분리

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DLP-3022	ELT040605-001	00	04/06/05	51/73



**Packing overview**

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DLP-3022	ELT040605-001	00	04/06/05	52/73



Replacement Parts List

No.	Code Number	Description		
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DLP-3022	ELT040605-001	00	04/06/05	53/73

## DLP-3022 SERVICE MANUAL

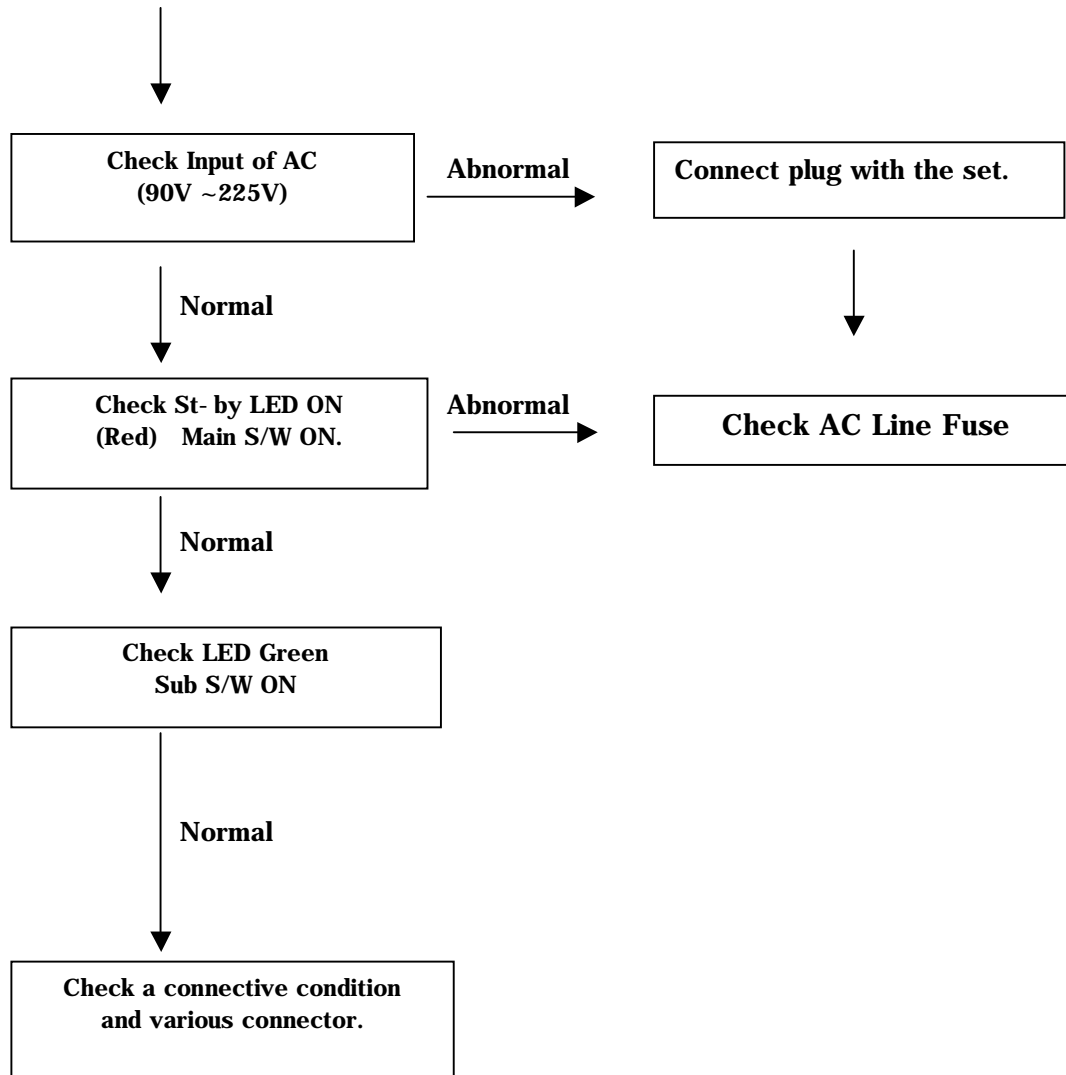
1	86AELB209	BOX BOTTOM
2	86AELB208	BOX TOP
3	93BELB220	PE PAD-R
4	93BELB221	PE PAD-L
5	92CELB1021	PE BAG
6	AL-00016	SILICA-GEL
7	92AELV0012	POLY BAG-M
8	60-0067	REMOCON
9	57-0130	P-CORD
10	55-0027	CABLE
11	55-0023	CABLE
12	27-0004	BATTERY
13	D2630P-00-D	MANUAL
14	88AELB345	WARRANTY CARD

## TROUBLE SHOOTING

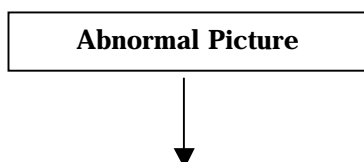
### 1. No Power

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	T NO	REVISION NO	REVISION DATE	PAGE
DLP-3022	ELT040605-001	00	04/06/05	54/73

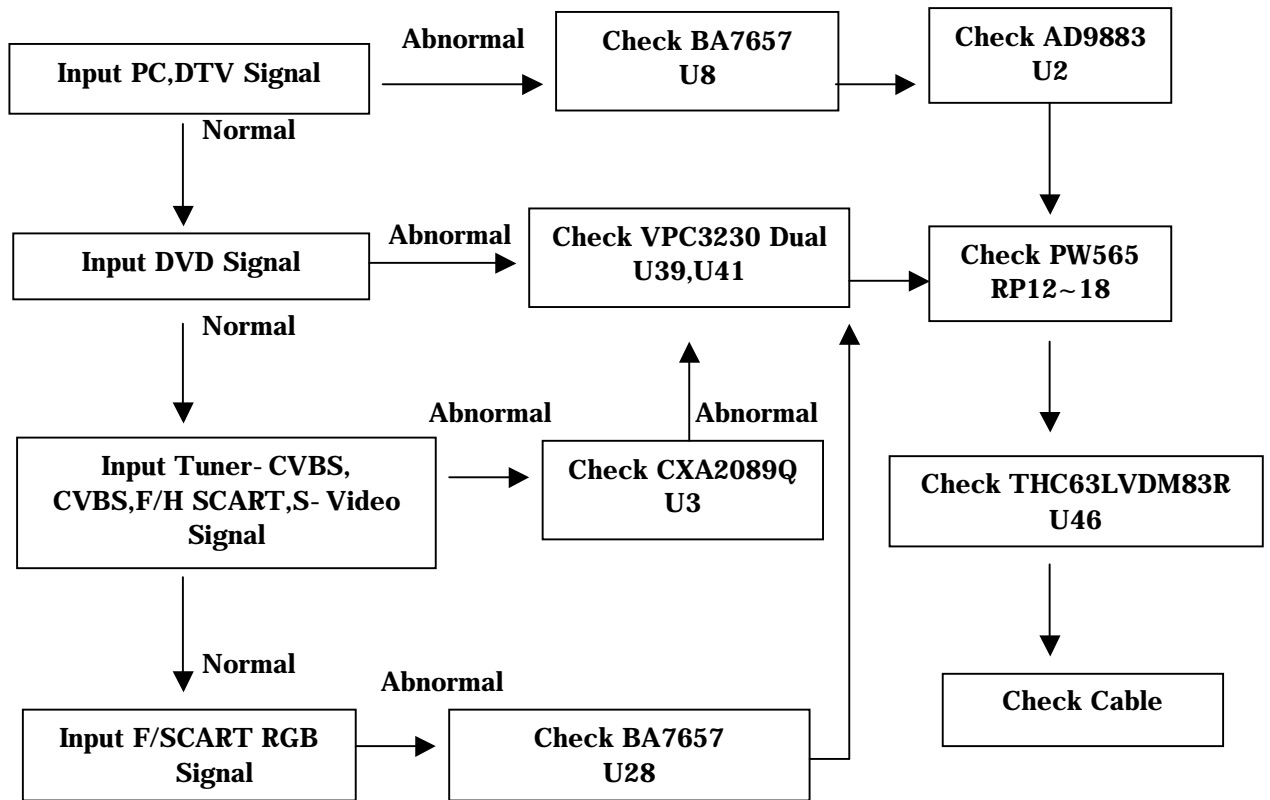


**2. No Video**

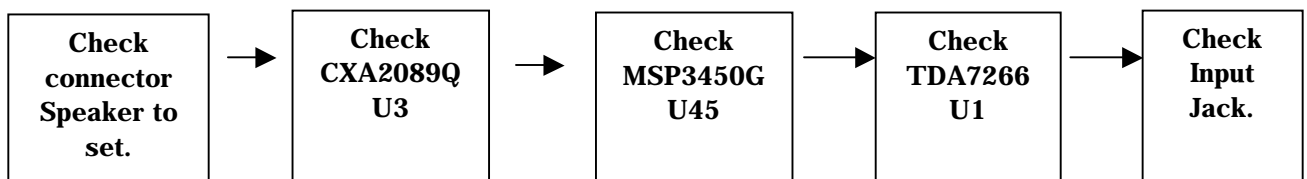


MODEL NAME	DOCUMENT NO	REVISION NO	REVISION DATE	PAGE
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# DLP-3022 SERVICE MANUAL



### 3. No Sound



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# DLP-3022 SERVICE MANUAL

## REPLACEMENT PARTS LIST

CODE NO	DESCRIPTION	SPECIFICATION
<b>E1102039ERA</b>	<b>LCD TV</b>	<b>DLP-3022 (대우일렉트로닉스-SKD)</b>
S110210039	MAIN ASSY	DLP-3022 (대우일렉트로닉스-SKD)
S110211039	PACKING ASSY	DLP-3022 (대우일렉트로닉스-SKD)
S11022A039	LCD BRKT ASSY	DLP-3022 (대우일렉트로닉스-SKD)
S11022B039	ACCESSORY ASSY	DLP-3022 (대우일렉트로닉스-SKD)
S11023A039	STAND ASSY	DLP-3022 (대우일렉트로닉스-SKD)
S11023B039	SPEAKER ASSY	DLP-3022 (대우일렉트로닉스-SKD)
S110231024	A/D BOARD ASSY	ELT-3020AP (SILVER-STD)
S110232003	I/O BOARD ASSY	ELT-2600P, 3000P, 3020P
S110233003	TUNER BOARD ASSY	ELT-2600P, 3000P, 3020P
S110234024	MODULE ASSY	ELT-3020AP (SILVER-STD)
S110235003	POWER S/W BOARD ASSY	ELT-2600P, 3000P, 3020P
S110236003	IR&LED BOARD ASSY	ELT-2600P, 3000P, 3020P
S110237003	OSD BOARD ASSY	ELT-2600P, 3000P, 3020P
S110238024	WIRE ASSY	ELT-3020AP (SILVER-STD)
<b>S110210039</b>	<b>MAIN ASSY</b>	<b>DLP-3022 (대우일렉트로닉스-SKD)</b>
54-0011	SOCKET	ID-064C-S (NOISE FILTER) 이레사급
60-0068	30" PSU	PMR-2073DW (DEAWOO ELECTRONICS 向)
97EW160	FILAMENT TAPE	10X60
AL-00001	CABLE TIE	DACT-100 (140mm)
73ELE089	BACK COVER CAP	PVC 0.3T
70EELM66	LENS	ACRIL (MLK)
70HELD075	DECO JACK	PVC 0.5T/30" TV-PAL/PC
71AELP266	SHIELD-B	EGI 1T/PAL用
71AELP271	SHIELD-A	EGI 1T/PAL用
71AELP272	WAFER BRKT	EGI 1T
71AELP334	BRKT HOLDER-R	EGI 1.0T
71AELP335	BRKT HOLDER-L	EGI 1.0T
71BELP270	BRKT PCB	AL 1.5T
71BELP273	BRKT IN-LET	AL 1.5T
71FELP268	SHIELD MAIN	SPT 0.4T
72SELM044	아세 테이트 TAPE	아세 테이트/10X60
73DELI050	INSULATION	PC, 0.45t 160X36X16
73DELI076	INSULATOR-S	0.2TX50X120 (PVC 투명)
74GELM014	GRAOUND SCREW	PH M 4X6 (SPECIAL)

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# DLP-3022 SERVICE MANUAL

70AELM4311	FUNCTION KNOB	ABS/DW/SV2202BP
70AELM4341	POWER KNOB	ABS/DW/SV2202BP
70CELM4301	KNOB GUIDE	ABS/DW/GY8204BP
70PELM4281	BACK COVER	PC/ABS/WALL
70PELM4793	FRONT B	PC+ABS/SILVER+DARK/DAEWOO
71AELP2672	FRAME Y	EGI 1T/CHIMEI
71AELP2692	FRAME X	EGI 1T/CHIMEI
71HELP2641	FRAME SUPPORT	EGI 1.6T/WALL
74A2B4010FB	M/SCREW	BH M 4X10 ZB
74A2BN3006FN	M/SCREW	BH M 3X6 ZN
74A2BN3514FY	SCREW	BH M 3.5X14 ZN
74A2BN4006FY	M/SCREW	BH M 4X6 ZN
74A2BN4008FY	M/SCREW	BH M 4X8 ZN
74A2FN3008FB	M/SCREW	FH M 3X8 ZB
74A9BZ2604FY	M/SCREW	BH M 2.6X4 ZN
74A9BZ4028FB	M/SCREW	BH M 4X28 ZB
74A9BZ5012FB	M/SCREW	BH M 5X12 ZB
74B2BN3008FB	T/SCREW	BH T 3X8 2S ZB
74B2CN3006FB	T/SCREW	BH TT 3X6 2S ZB
74C2BN3010FW	T/SCREW	BH TT 3X10 2S ZW
74C2BN4010FB	T/SCREW	BH TT 4X10 ZB
<b>S11022A039</b>	<b>LCD BRKT ASSY</b>	<b>DLP- 3022(대우일렉트로닉스- SKD)</b>
<b>S11023A039</b>	<b>STAND ASSY</b>	<b>DLP- 3022(대우일렉트로닉스- SKD)</b>
70AELM507	STAND BASE	HIPS/SILVER/30" DAEWOO
70AELP508	STAND PLATE	EGI 2T/DAEWOO
71ZELP275	STAND SUPPROT	ZNDC,SPRAY
72AELR131	RUBBER FOOT	RUBBER (2TX50X15)
73E10D5D12	PVC WASHER	PVC/1TX5X12
74C2FN3008FW	T/SCREW	FH TT 3X8 2S ZW
74J2FN5010FW	M/SCREW	FH M 5X10 ZW/NYLON PATCH LOCK
<b>S11023B039</b>	<b>SPEAKER ASSY</b>	<b>DLP- 3022(대우일렉트로닉스- SKD)</b>
<b>S11023B039</b>	<b>SPEAKER ASSY</b>	<b>DLP- 3022(대우일렉트로닉스- SKD)</b>
60- 0072	SPEAKER ASSY	DLP- 3022 (DEAWOO ELECTRONICS 向) - L
60- 0073	SPEAKER ASSY	DLP- 3022 (DEAWOO ELECTRONICS 向) - R
<b>S110231024</b>	<b>A/D BOARD ASSY</b>	<b>ELT- 3020AP(SILVER- STD)</b>
<b>S110241024</b>	<b>A/D BOARD ASSY(TOP SMD)</b>	<b>ELT- 3020AP(SILVER- STD)</b>
<b>S110251024</b>	<b>A/D BOARD ASSY(BOTTOM SMD)</b>	<b>ELT- 3020AP(SILVER- STD)</b>
04- 0050	DIODE SCHOTTKY	1N5822 TP
11- 0117	EC	SHL 25V 680UF (10X16)
12- 0004	PC	10PS 470MJ 12 (10X12.5)

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19-0007	X-TAL	6.000MHZ
19-0009	X-TAL	20.000MHZ
19-0011	X-TAL	18.432000MHz 18PF
19-0010	X-TAL	20.250000MHz 18PF
22-0002	S/W TACT	KLT-1105(4.3MM)
30-0001	OSCILLATOR	80MHz(3.3V)
52-0002	CONNECTOR	DHR20-15K-7100 (15PIN D-SUB R/A)
52-0124	CONNECTOR	MYD-09-2100010(9PIN D-SUB R/A)
52-0217	WAFER	SMW200-06
52-0218	WAFER	SMW200-08
52-0239	WAFER	SMW200-12
52-0269	WAFER	53014-0310
53-0059	JACK	PJ6046B-04(S-VIDEO)
53-0060	JACK	PPJ122A-11
71BELP315	HEAT SHINK	AL 28X28X13
<b>S110241024</b>	<b>A/D BOARD ASSY(TOP SMD)</b>	<b>ELT-3020AP(SILVER-STD)</b>
01-0019	IC REG	LM2937MP-3.3 SOT-223
01-0020	IC REG	LM317EMP SOT-223
01-0034	IC	THC63LVDM83R TSOP-56
01-0040	IC EEPROM	24LC16B SOP-08
01-0041	IC EEPROM	24LC21A SOP-08
01-0053	IC TTL	74LCX14M SOP-14
01-0055	IC TTL	SN74LV273A SOP-20
01-0057	IC TTL	SN74LVC541A SOP-20
01-0059	IC REG	RC1117S33 SOT-223
01-0071	IC REG	KIA7809AF D-PAK
01-0073	IC	K4S643232E TSSOP(II)
01-0088	IC REG	KIA7805AF D-PAK
01-0089	IC REG	KIA7808AF D-PAK
01-0108	IC	DS232AS SO-16
01-0225	IC MCU	HMS87C1102AD SOP-16
01-0233	IC REG	AP1501-50
01-0253	IC	VPC3230D-C5 PQFP-80
01-0259	IC	FDC6561AN-Super SOT-6
01-0260	IC	MSP3450G PQFT-80
01-0261	IC	SST39VF080AT-TSOP40
01-0262	IC	SDA5550 M 3901.A14 9RF
01-0263	IC	HY62U8200BLST-85I sTSOP
01-0264	IC	CXA2089Q
01-0266	IC	BA7657-SOP24
01-0273	IC REG	NCP1117ST18T30
01-0278	IC	AD9883AKST-140
01-0282	IC	24LC256-SOIC8
01-0283	IC	AP1084K18-T0263

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01-0284	IC	PW565_10Q_BGA
01-0285	IC	MT28F800B3WG-9T
01-0286	IC	SN74LVC139AD- SOIC16
01-0288	IC	TLC7733QD SOIC-08
01-0294	IC	G960T65(3.3V)
01-0307	IC	MM74LVX74M
02-0012	TR	MMBT3904 SOT- 23
02-0038	TR	KSC1623Y
03-0001	FET	IRF7314 SOP-08
04-0005	DIODE	BAV99 SOT- 23
04-0030	DIODE ZENER	Z02W3.3 SOT- 23
04-0054	DIODE	KDS184
04-0058	DIODE ZENER	Z02W18V- Y
10-0009	CC CHIP	25V 330J 1608 TP
10-0016	CC CHIP	16V 224Z 1608 TP
10-0017	CC CHIP	16V 474Z 1608 TP
10-0021	CC CHIP	25V 102K 1608 TP
10-0023	CC CHIP	25V 104Z 1608 TP
10-0028	CC CHIP	25V 393K 1608 TP
10-0029	CC CHIP	25V 473K 1608 TP
10-0053	CC CHIP	25V 392K 1608 TP
10-0057	CC CHIP	10V 684Z 1608 TP
10-0058	CC CHIP	25V 200J 1608 TP
10-0059	CC CHIP	25V 471J 1608 TP
10-0060	CC CHIP	25V 334Z 1608 TP
10-0180	CC CHIP	25V 682K 1608 TP
10-0024	CC CHIP	25V 180J 1608 TP
11-0044	EC SMD	MV 16V 22UF (5X5.3) TP
11-0045	EC SMD	MV 16V 10UF (4X5.3) TP
11-0046	EC SMD	MV 16V 220UF (8X10.3) TP
11-0048	EC SMD	MV 16V 100UF (6.3X5.3) TP
11-0049	EC SMD	MV 16V 47UF (6.3X5.3) TP
11-0051	EC SMD	MV 50V 3.3UF (4X5.3)TP
11-0055	EC SMD	MV 50V 1UF (4X5.3) TP
11-0123	EC SMD	MV 16V 33UF(6.3X5)TP
11-0146	EC SMD	MV 16V 330UF (8X10)TP
14-0001	R ARRAY	164P 000J TP
14-0003	R ARRAY	164P 470J TP
14-0007	R CHIP	1608 000J TP
14-0008	R CHIP	1608 101F TP
14-0010	R CHIP	1608 102F TP
14-0012	R CHIP	1608 103F TP
14-0043	R CHIP	1608 332F TP
14-0050	R CHIP	1608 470F TP
14-0052	R CHIP	1608 472F TP

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14-0069	R CHIP	1608 750F TP
14-0175	R CHIP	1608 820J TP
14-0179	R CHIP	1608 152F TP
14-0268	R CHIP	1608 122J TP
14-0278	R CHIP	1608 241J TP
14-0462	R ARRAY	164P 750J TP
14-0479	R CHIP	1608 105F TP
16-0015	COIL	3.3UH (3216) 50MA
16-0016	COIL	10UH (10X10 SMD)1.15A
16-0017	COIL	33UH (12X12 SMD) 2.8A
17-0003	BEAD	HB- 1M2012- 221JT
17-0004	BEAD	HH- 1M3216- 121JT
17-0023	BEAD	HCB 4516K- 600T60
17-0037	BEAD	HH- 1M1608- 600JT
20-0001	FILTER NOISE	STS104B 2012.5 TP
31-0197	PCB	E81- U004- 00- PB00 REV.03
52-0254	WAFER	GT121- 21P- LD
52-0266	WAFER	10022HS- 24A00
52-0271	WAFER	GT121- 31P- LD
74GELC0016	육각볼트	4.8mm(M3)
74GELC0017	육각볼트	5.8mm(M3)
<b>S110251024</b>	<b>A/D BOARD ASSY(BOTTOM SMD)</b>	<b>ELT- 3020AP(SILVER- STD)</b>
01-0068	IC	QS3257 SOP- 16
02-0012	TR	MMBT3904 SOT- 23
02-0025	TR	KTC3875Y SOT- 23
04-0127	DIODE	1SR154- 400
10-0004	CC CHIP	25V 101J 1608 TP
10-0016	CC CHIP	16V 224Z 1608 TP
10-0021	CC CHIP	25V 102K 1608 TP
10-0022	CC CHIP	25V 103Z 1608 TP
10-0023	CC CHIP	25V 104Z 1608 TP
10-0024	CC CHIP	25V 180J 1608 TP
10-0029	CC CHIP	25V 473K 1608 TP
10-0049	CC CHIP	25V 560J 1608 TP
10-0050	CC CHIP	25V 391J 1608 TP
10-0055	CC CHIP	25V 152K 1608 TP
10-0059	CC CHIP	25V 471J 1608 TP
10-0063	CC CHIP	25V 221J 1608 TP
10-0189	CC CHIP	25V 105Z 1608 TP
14-0007	R CHIP	1608 000J TP
14-0008	R CHIP	1608 101F TP
14-0010	R CHIP	1608 102F TP
14-0012	R CHIP	1608 103F TP
14-0022	R CHIP	1608 153F TP

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14-0029	R CHIP	1608 201F TP
14-0030	R CHIP	1608 202F TP
14-0034	R CHIP	1608 223F TP
14-0037	R CHIP	1608 271J TP
14-0043	R CHIP	1608 332F TP
14-0050	R CHIP	1608 470F TP
14-0052	R CHIP	1608 472F TP
14-0055	R CHIP	1608 473J TP
14-0067	R CHIP	1608 681F TP
14-0069	R CHIP	1608 750F TP
14-0107	R CHIP	1608 471F TP
14-0169	R CHIP	1608 131F TP
14-0175	R CHIP	1608 820J TP
14-0178	R CHIP	1608 220F TP
14-0179	R CHIP	1608 152F TP
14-0205	R CHIP	1608 683J TP
14-0268	R CHIP	1608 122J TP
14-0321	R CHIP	1608 391F TP
14-0470	R CHIP	1608 132F TP
14-0476	R CHIP	1608 474F TP
14-0477	R CHIP	1608 181F TP
14-0507	R CHIP	1608 362F TP
17-0023	BEAD	HCB 4516K- 600T60
20-0001	FILTER NOISE	STS104B 2012.5 TP
<b>S110232003</b>	<b>I/O BOARD ASSY</b>	<b>ELT- 2600P, 3000P,3020P</b>
S110242003	I/O BOARD ASSY(SMD)	ELT- 3000P
53-0061	JACK	42PS(SCART)
53-0062	JACK	PPJ121A- 03(AUDIO)
53-0063	JACK	UJB- 06- 15F(3P)
<b>S110242003</b>	<b>I/O BOARD ASSY(SMD)</b>	<b>ELT- 3000P</b>
04-0128	DIODE	KDZ8.2EV- RTK
10-0004	CC CHIP	25V 101J 1608 TP
10-0021	CC CHIP	25V 102K 1608 TP
10-0022	CC CHIP	25V 103Z 1608 TP
10-0023	CC CHIP	25V 104Z 1608 TP
10-0054	CC CHIP	25V 331J 1608 TP
11-0045	EC SMD	MV 16V 10UF (4X5.3) TP
14-0008	R CHIP	1608 101F TP
14-0010	R CHIP	1608 102F TP
14-0012	R CHIP	1608 103F TP
14-0052	R CHIP	1608 472F TP
14-0055	R CHIP	1608 473J TP
14-0069	R CHIP	1608 750F TP

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16-0015	COIL	3.3UH (3216) 50MA
17-0034	BEAD	BLM11A601S
31-0204	PCB	E81-U004-20-PB00 REV.01
52-0266	WAFER	10022HS-24A00
<b>S110233003</b>	<b>TUNER BOARD ASSY</b>	<b>ELT-2600P,3000P,3020P</b>
S110246003	TUNER BOARD ASSY(SMD)	ELT-3000P
01-0098	IC	TDA7266 MULTI-WATT15V
52-0213	WAFER	SMW200-04
52-0217	WAFER	SMW200-06
66-0020	TUNER	TCPQ9091PD27D(S)
71MELP230	HEAT SINK	AL
74A9BZ3008FW	M/SCREW	BH M 3X8 ZW
<b>S110246003</b>	<b>TUNER BOARD ASSY(SMD)</b>	<b>ELT-3000P</b>
01-0234	IC	TS482 IDT SO-8
01-0267	IC	BA6161F-SOP8
02-0012	TR	MMBT3904 SOT-23
04-0005	DIODE	BAV99 SOT-23
04-0125	DIODE	MMBD4148 SOT-23
04-0126	DIODE	RB160L-60(SOD-106)
10-0016	CC CHIP	16V 224Z 1608 TP
10-0023	CC CHIP	25V 104Z 1608 TP
10-0055	CC CHIP	25V 152K 1608 TP
11-0044	EC SMD	MV 16V 22UF (5X5.3) TP
11-0045	EC SMD	MV 16V 10UF (4X5.3) TP
11-0048	EC SMD	MV 16V 100UF (6.3X5.3) TP
11-0049	EC SMD	MV 16V 47UF (6.3X5.3) TP
11-0050	EC SMD	MV 50V 4.7UF (4X5.3)TP
11-0055	EC SMD	MV 50V 1UF (4X5.3) TP
11-0122	EC SMD	MV 50V 100UF(8X10)TP
11-0123	EC SMD	MV 16V 33UF(6.3X5)TP
11-0143	EC SMD	MV 25V 470UF(10X10) TP
14-0007	R CHIP	1608 000J TP
14-0008	R CHIP	1608 101F TP
14-0010	R CHIP	1608 102F TP
14-0012	R CHIP	1608 103F TP
14-0039	R CHIP	1608 273F TP
14-0058	R CHIP	1608 511F TP
14-0268	R CHIP	1608 122J TP
14-0309	R CHIP	1608 104F TP
14-0319	R CHIP	1608 363F TP
14-0322	R CHIP	1608 392F TP
14-0467	R CHIP	1608 4R7F TP
16-0052	COIL	4.7mH 3DM TYPE

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17-0023	BEAD	HCB 4516K-600T60
31-0173	PCB	E81-U004-11-PB00 REV.02
52-0266	WAFER	10022HS-24A00
<b>S110234024</b>	<b>MODULE ASSY</b>	<b>ELT-3020AP(SILVER-STD)</b>
65-0046	LCD PANEL	V296W1_L14(대만_CMO)
<b>S110235003</b>	<b>POWER S/W BOARD ASSY</b>	<b>ELT-2600P,3000P,3020P</b>
22-0013	S/W AC POWER	SDDFC30300
31-0220	PCB	E81-U004-08-PB00 REV.03 (POWER S/W)
52-0268	WAFER	YAW396-03
<b>S110236003</b>	<b>IR&amp;LED BOARD ASSY</b>	<b>ELT-2600P,3000P,3020P</b>
04-0129	LED	SRM3671
10-0013	CC	50V 104K
31-0213	PCB	E81-U004-03-PB00 REV.03(IR&LED)
33-0002	IR RECEIVER	KSM-603TM2
52-0265	WAFER	SMAW200-06
AL-00021	수축튜브	6mm, Φ3
72AECR023	RUBBER FOOT	NBR 1.5 X Φ9.5
<b>S110237003</b>	<b>OSD BOARD ASSY</b>	<b>ELT-2600P,3000P,3020P</b>
22-0002	S/W TACT	KLT-1105(4.3MM)
31-0160	PCB	E81-U004-02-PB00 REV.00
52-0218	WAFER	SMW200-08
<b>S110238024</b>	<b>WIRE ASSY</b>	<b>ELT-3020AP(SILVER-STD)</b>
17-0011	CORE	ZCAT 1518-0730-M-K
50-0093	WIRE ASSY	POWER WIRE 12P 120MM REV.00
50-0100	WIRE ASSY	24PX50MM REV.00
50-0126	WIRE ASSY	SPK WIRE 2P_R 200MM REV.01
50-0127	WIRE ASSY	SPK WIRE 2P_L 200MM REV.01
50-0133	WIRE ASSY	OSD 08P 600MM REV.01
50-0135	WIRE ASSY	SPK WIRE 4P 600/800MM REV.02
50-0142	WIRE ASSY	LVDS WIRE 30P 200MM(ELT-3020AP)
50-0148	WIRE ASSY	IR WIRE 6P 450MM(ELT-3020)
50-0149	WIRE ASSY	INVERTER WIRE 12P 120MM(ELT-3020AP)
50-0150	WIRE ASSY	INVERTER WIRE 10P 120MM(ELT-3020AP)
50-0152	WIRE ASSY	FFC 24PX150mm
50-0162	WIRE ASSY	AC POWER WIRE 2P 350MM (ELT-3020AP) Rev. 02
<b>S110211039</b>	<b>PACKING ASSY</b>	<b>DLP-3022(대우일렉트로닉스-SKD)</b>
AL-00016	SILICA-gel	200g(42", 60"PDP수출용)
71BELD159	BRAND DW2	AL/DAEWOO ELECTRONICS/DLP-3022(30"用)

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86AELB273	BOX TOP	DW- 3/DAEWOO수출기본/DLP- 3022
89AELB209	BOX DOWN	DW- 3/ELT- 300
93BELB220	PAD R	EPE(ELT- 3000P용)
93BELB221	PAD L	EPE(ELT- 3000P용)
92CELB1021	PE BAG	PE/1X1200X900(양면 발포지)/EPM- 420/set 用
92FELV0351	정전기 AIR POLY BAG	145X200/SKD
<b>S11022B039</b>	<b>ACCESSORY ASSY</b>	<b>DLP- 3022(대우일렉트로닉스- SKD)</b>
27- 0004	BATTERY	AAA Type(망간)
55- 0023	CABLE	Scart Cable 1.2M
55- 0027	CABLE	RF- CABLE(2 CORE/6φ)1P/2100MM
57- 0038	P- CORD	250V/10A BLK 1.8M 영국향 3구 G TYPE
60- 0067	REMOCON	KRC- 6140CR (DEAWOO ELECTRONICS 向)
<b>92AELV0012</b>	<b>POLY BAG- M</b>	<b>LDPE 0.08TX300X320(일반)/REV.01(주의문구추가)</b>
90※ 3022P- L14- DW- 00	MANUAL	ART지/30"PAL/DAEWOO

## INSPECTION CRITERIA

### (1) Definition of dot defect

- a) The definition of dot: The size of a defective dot over 1/2 of whole dot is regarded as one defective dot.
- b) Bright dot: Dots appear bright and unchanged in size in which module is displaying under black pattern.
- c) Dark dot: Dots appear dark and unchanged in size in which module is displaying under pure red, green , blue picture.
- d) 2 dot adjacent = 1pair = 2 dots

Picture:



2 dot adjacent



2 dot adjacent



2 dot adjacent (vertical)



2 dot adjacent (slant)

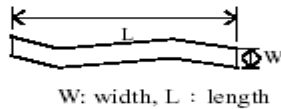
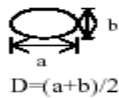
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(2) Electrical Inspection

Items		Acceptable count
Bright dot	Random	$N \leq 2$
	2 dots adjacent	$N \leq 0$
	3 dots adjacent or more	$N \leq 0$
Distance	Minimum Distance Between Bright dots	$L \geq 5\text{mm}$
Dark dot	Random	$N \leq 5$
	2 dots adjacent	$N \leq 2$
	3 dots adjacent or more	$N \leq 0$
Distance	Minimum Distance Between Dark dots	$L \geq 5\text{mm}$
Total bright and dark dot		$N \leq 5$
Display failure (V-line/H-line/Cross line etc.)		Not allowable

(3) Appearance inspection

Item	Standards
Foreign Black/White/Bright Spot	$0.5 < D \leq 1.2 \text{ mm}$ , $N \leq 10$
Foreign Black/White/Bright Lint	$0.15 < W \leq 0.25 \text{ mm}$ , $0.3 < L \leq 10.0 \text{ mm}$ , $N \leq 4$
Polarizer Scratches	$0.15 < W \leq 0.25 \text{ mm}$ , $0.3 < L \leq 10.0 \text{ mm}$ , $N \leq 4$
Dent/Air Bubble	$0.3 < D \leq 1.2 \text{ mm}$ , $N \leq 10$

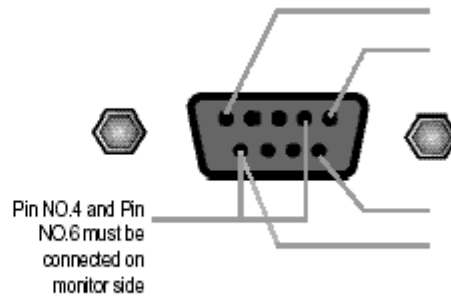


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## RS-232C Communication

### 1) Type of connector : D-Sub 9-pin male

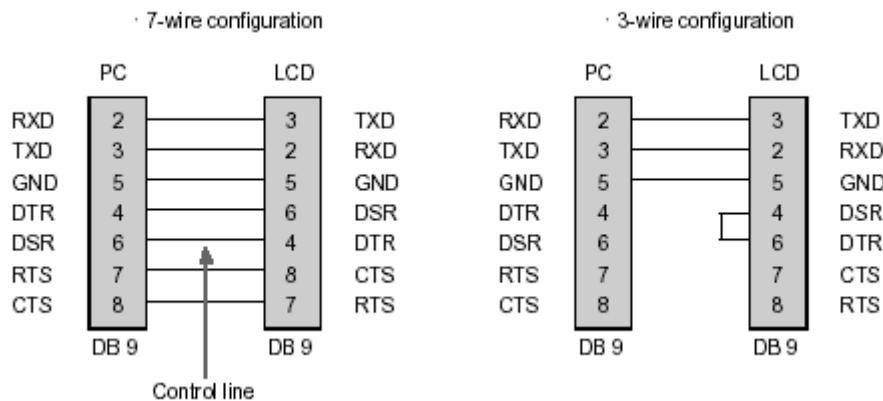
No.	Pin name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (Dce side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection



. Use a crossed(reverse)cable.

Wire the cable so that each pair of data lines cross between the two devices. These data Line pairs are RXD(Receive to send) and TXD(Transmit data), DTR (DTE side ready) and DSR(DCE side ready), and RTS(Ready to send)and CTS(Clear to send).

### 2) RS-232C configurations



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### 3) Communication Parameters

- BAUD RATE : 9600bps
- Data Length : 8bits
- Parity : None
- Stop bit : 1bit

### 4) Command List

Item	ASCII Code	Data(hex)
1. Power	p	00h~01h
2. Input Source	i	00h~07h
3. Aspect Ratio	r	00h~08h
4. Volume Mute	w	00h~01h
5. Volume Control	v	00h~64h
6. Picture Mode	s	00h~04h
7. Brightness	b	00h~64h
8. Contrast	k	00h~64h
9. Colour	c	00h~64h
10. Tint	t	00h~64h

Item	ASCII Code	Data(hex)
11. Sharpness	h	00h~64h
12. Information	f	00h~01h
13. Pip On	o	00h~01h
14. Pip Source	u	00h~07h
15. Pip Location	n	00h~03h
16. Pip Sound set	e	00h~01h
17. Pip Mode	d	00h~02h
18. Remote Control On	j	00h~01h
19. Prog -,+	a	00h~01h
20. Abnormal State	q	00h~01h
21. Sound Mode	y	00h~04h

### 5) Transmission / Receiving Protocol List

#### \* Transmission

{Command}	{SET ID}{Data}{Cr}
{Command}	To Control Code LCD TV
{ }	"Space , ASCII Code = 0x20"
{SET ID}	You Can Adjust SET ID Setup Menu of LCD TV
{Data}	Data Command Transmit 'FF' data to data read mode
{Cr}	Carriage Return ASCII Code 0x0d

#### \* Ok Acknowledge

{SET ID}{:}{OK}{x}{Data}{x}
The LCD TV set transmits ASCII based on this format When receiving normal data. At this time, If the data is data read mode, it indicates present status data if the data is data write mode, it returns the data of PC.

\* In case set ID is 0, Ack data doesn't feed back, and you can adjust all LCD set.

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## 6) Commands

### 1. Power : p

▶ To Control Power On/Off of the LCD TV

\* Transmission

{p}{SET ID}{Data}{Cr}

Data 0 : Off

Data 1 : On

\* Ack

{SET ID}{OK}{Data}{x}

Data 0 : Off

Data 1 : On

▶ Read Power On Source Status

\* Transmission

{p}{SET ID}{FF}{Cr}

\* Ack

{SET ID}{OK}{Data}{x}

Data 0 : Power Off

Data 1 : Power On TV

Data 2 : Power On Scart1

Data 3 : Power On Scart2

Data 4 : Power On Composite

Data 5 : Power On S-Video

Data 6 : Power On Component1

Data 7 : Power On Component2

Data 8 : Power On PC(RGB)

※ If Other Functions Transmit 0xFF data based on this format, Ack data feeds back present status about each function.

### 2. Input Source : i

▶ To Input Source Select

\* Transmission

{i}{SET ID}{Data}{Cr}

Data 0 : TV

Data 1 : Scart1

Data 2 : Scart2

Data 3 : Composite

Data 4 : S-Video

Data 5 : Component1

Data 6 : Component2

Data 7 : PC(RGB)

\* Ack

{SET ID}{OK}{Data}{x}

Data 0 : TV

Data 1 : Scart1

Data 2 : Scart2

Data 3 : Composite

Data 4 : S-Video

Data 5 : Component1

Data 6 : Component2

Data 7 : PC(RGB)

### 3. Aspect Ratio : r

▶ To adjust picture format

\* Transmission

{r}{SET ID}{Data}{Cr}

Data 0 : Auto Wide

Data 1 : Wide

Data 2 : Panorama

Data 3 : Zoom1

Data 4 : Zoom2

Data 5 : 4:3

Data 6 : 14:9

Data 7 : 4:3(In PC Mode)

Data 8 : Wide(In PC Mode)

\* Ack

{SET ID}{OK}{Data}{x}

Data 0 : Auto Wide

Data 1 : Wide

Data 2 : Panorama

Data 3 : Zoom1

Data 4 : Zoom2

Data 5 : 4:3

Data 6 : 14:9

Data 7 : 4:3(In PC Mode)

Data 8 : Wide(In PC Mode)

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## 4. Volume Mute : w

▶ To Select volume mute on/off

\* Transmission

{w}{SET ID}{Data}{Cr}

Data 0 : On

Data 1 : Off

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data 0 : On

Data 1 : Off

## 5. Volume Control : v

▶ To adjust volume

\* Transmission

{v}{SET ID}{Data}{Cr}

Data : Min : 00h-Max : 64h

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data : Min : 00h-Max : 64h

## 6. Picture Mode : s

▶ To Select Picture Mode

\* Transmission

{s}{SET ID}{Data}{Cr}

Data 0 : Custom

Data 1 : Dynamic (In PC Mode : High)

Data 2 : Standard (In PC Mode : Middle)

Data 3 : Movie (In PC Mode : Low)

Data 4 : Mild

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data 0 : Custom

Data 1 : Dynamic (In PC Mode : High)

Data 2 : Standard (In PC Mode : Middle)

Data 3 : Movie (In PC Mode : Low)

Data 4 : Mild

## 7. Brightness : b

▶ To adjust Brightness

\* Transmission

{b}{SET ID}{Data}{Cr}

Data : Min : 00h-Max : 64h

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data : Min : 00h-Max : 64h

## 8. Contrast : k

▶ To adjust Contrast

\* Transmission

{k}{SET ID}{Data}{Cr}

Data : Min : 00h-Max : 64h

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data : Min : 00h-Max : 64h

## 9. Colour : c

▶ To adjust Colour (Not available in PC Mode)

\* Transmission

{c}{SET ID}{Data}{Cr}

Data : Min : 00h-Max : 64h

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data : Min : 00h-Max : 64h

## 10. Tint : t

▶ To adjust Tint (Not available in PC Mode)

\* Transmission

{t}{SET ID}{Data}{Cr}

Data : Min : 00h-Max : 64h

\* Ack

{SET ID};{OK}{x}{Data}{x}

Data : Min : 00h-Max : 64h

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## 11. Sharpness : h

▶ To adjust Sharpness

\* Transmission

{h} {SET ID} {Data} {Cr}

Data : Min : 00h~Max : 64h

\* Ack

{SET ID} {OK} {Data} {x}

Data : Min : 00h~Max : 64h

## 12. Information : f

▶ Information on/off

\* Transmission

{f} {SET ID} {Data} {Cr}

Data 0 : On

Data 1 : Off

\* Ack

{SET ID} {OK} {Data} {x}

Data 0 : On

Data 1 : Off

## 13. Pip On : o

▶ Pip on/off

\* Transmission

{o} {SET ID} {Data} {Cr}

Data 0 : On

Data 1 : Off

\* Ack

{SET ID} {OK} {Data} {x}

Data 0 : On

Data 1 : Off

## 14. Pip Source: u

▶ To Select Pip Source [Not available]

(only adjustable when pip mode is activated.)

\* Transmission

{u} {SET ID} {Data} {Cr}

Data 0 : TV

Data 1 : Scart1

Data 2 : Scart2

Data 3 : Composite

Data 4 : S-Video

Data 5 : Component1

Data 6 : Component2

Data 7 : PC(RGB)

\* Ack

{SET ID} {OK} {Data} {x}

Data 0 : TV

Data 1 : Scart1

Data 2 : Scart2

Data 3 : Composite

Data 4 : S-Video

Data 5 : Component1

Data 6 : Component2

Data 7 : PC(RGB)

## 15. Pip Location : n

▶ To Select Pip Position

(only adjustable when pip mode is activated.)

\* Transmission

{n} {SET ID} {Data} {Cr}

Data 0 : Right Bottom

Data 1 : Right Top

Data 2 : Left Top

Data 3 : Left Bottom

\* Ack

{SET ID} {OK} {Data} {x}

Data 0 : Right Bottom

Data 1 : Right Top

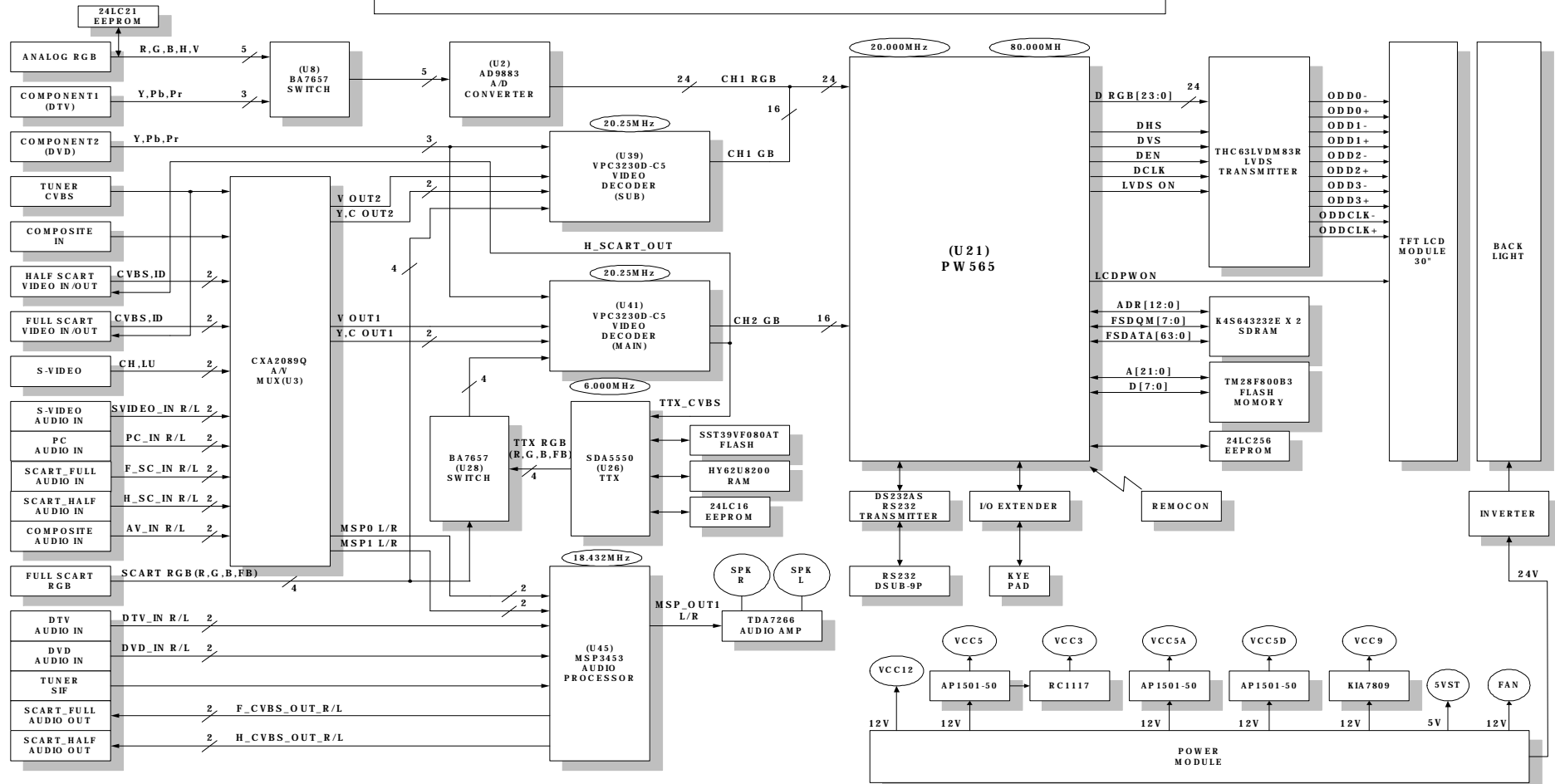
Data 2 : Left Top

Data 3 : Left Bottom

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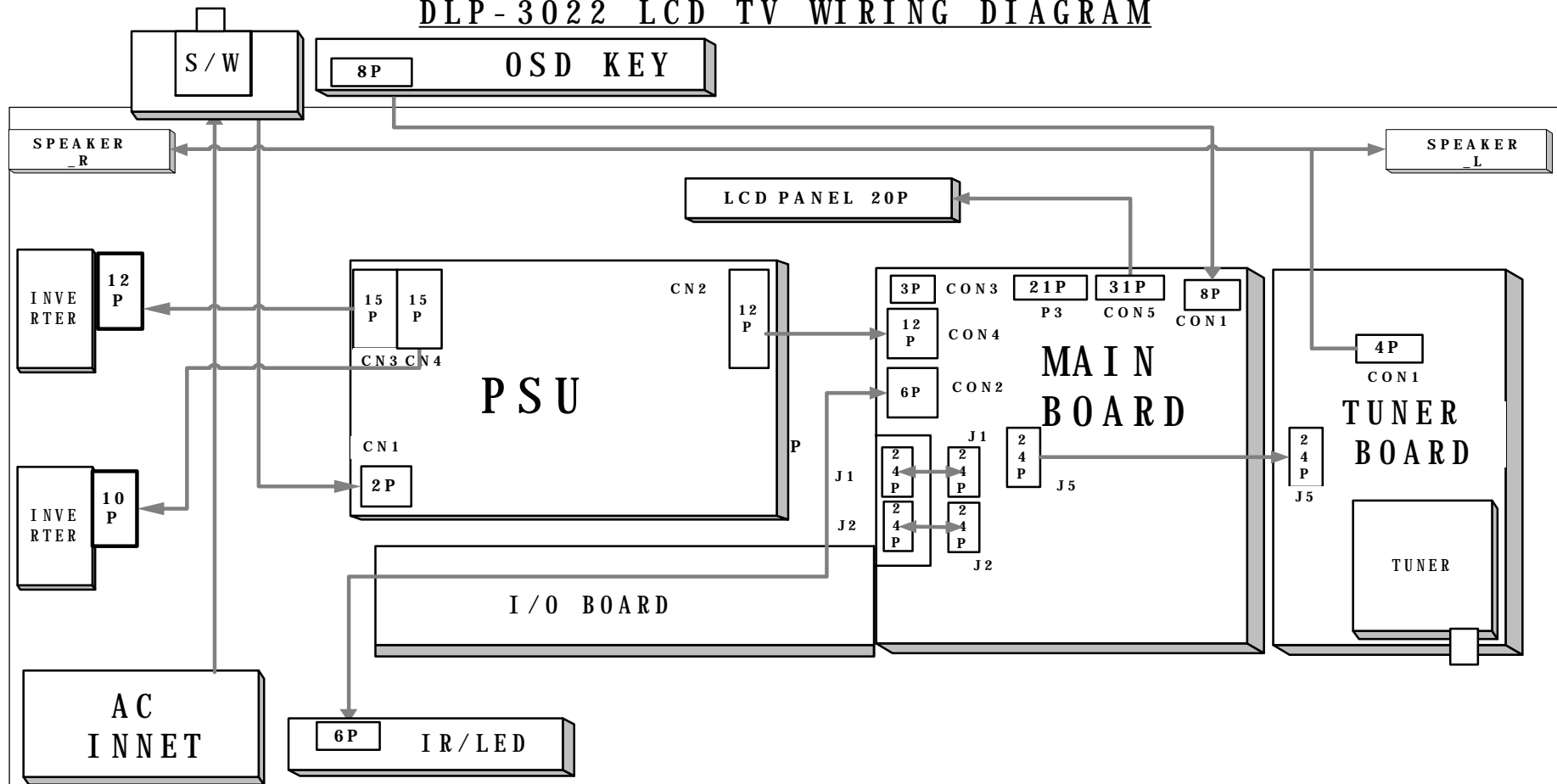
## DLP-3022 PW565 BLOCK DIAGRAM



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# DLP-3022 SERVICE MANUAL

## DLP-3022 LCD TV WIRING DIAGRAM



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