

# Liquid crystal display

Chassis: WDQ2 Model: S23A750D S27A750D

# Service Manual

## Thin film liquid crystal displays



S23A750D / S27A750D

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# 1. Precautions

#### 1-1. Safety Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

## 1-1-1. Warnings



- 1. For continued safety, do not attempt to modify the circuit board.
- 2. Disconnect the AC power and DC power jack before servicing.

## 1-1-2. Servicing the LCD TV Monitor

- 1. When servicing the LCD TV Monitor, disconnect the AC line cord from the AC outlet.
- 2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

#### 1-1-3. Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

- 1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
- 2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators, etc.
- 3. Leakage Current Hot Check (Figure 1-1):



Do not use an isolation transformer during this test.

Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).



Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp.

Reverse the power-plug prongs in the AC outlet and repeat the test.

#### 1-1-4. Product Safety Notices

Some electrical and mechanical parts have special safetyrelated characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage,

wattage, etc. Parts that have special safety characteristics are identified by A on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

# 1-2. Servicing Precautions

An electrolytic capacitor installed with the wrong polarity might explode.



**Caution** Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

#### **1-2-1 General Servicing Precautions**

- 1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to: (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
- 2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
- 3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
- 4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
- 5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug. The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
- 6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

## **1-3. Static Electricity Precautions**

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

- 1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
- 2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
- 3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
- 4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
- 5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
- 6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
- 7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.



**Caution** Be sure no power is applied to the chassis or circuit and observe all other safety precautions.

8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

## 1-4. Installation Precautions

- 1. For safety reasons, more than a people are required for carrying the product.
- 2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
- 3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
- 4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
- 5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
- 6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
- 7. When installing the product, leave enough space (10cm) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

2. Product specifications

# 2. Product specifications

# 2-1. Feature & Specifications

Feature						
Elegance Touch of Color Design						
Energy Saving						
□ Interactive Energy Saving	(luminance/proximity sensor)					
Deeper Color expression w	vith Dynamic Contrast Ratio					
High picture quality and ad	vanced functions					
- FHD 120Hz 3D compatil consumption, and more	bility, 16:9 aspect ratio, high DCR, software o e	ptimized to Windows 7, low power				
	Specifications					
Item	Desc	ription				
Model	S23A750D	S27A750D				
LCD Panel	TFT-LCD panel, RGB vertical stripe, norma	Ily white transmissive				
	23" Wide viewable	27" Wide viewable				
	0.2655(H) x 0.2655(W) mm pixel pitch	0.31125(H) x 0.31125(W) mm pixel pitch				
Scanning Frequency	Horizontal: 24 kHz ~ 138 kHz / Vertical: 27	Hz ~ 120 Hz				
Display Colors	Display Colors 16.7 million color (Hi-FRC)					
Maximum resolution	Maximum resolution Horizontal : 1920 pixels					
	Vertical : 1080 pixels					
Brightness	250cd/m <sup>1</sup>	300cd/m <sup>2</sup>				
Contrast	Contrast 1000:1					
Dynamic Contrast Ratio	Dynamic Contrast Ratio MEGA(Typ.)					
Supported Resolution VGA ~ WSXGA+						
Input Signal HDMI , DP Interface						
Input Sync Signal	Input Sync Signal Seperate H/V sync, Composite H/V, Sync-on-Green Level: TTL level					
Maximum Pixel Clock rate 300 MHz						

Active Display (Horizontal/Vertical)	509.76 (H) x 286.74 (V)	597.6 (H) x 336.15 (V)			
AC power voltage & Frequency	AC 110 ~ 240V, 50 ~ 60 Hz	240V, 50 ~ 60 Hz			
Power Consumption	Typical 45 W / Max 48 W DPMS: Typical 1 watt / Max 1 watt	Typical 53 W / Max 56 W DPMS: Typical 1 watt / Max 1 watt			
Dimensions Set (W x D x H)	543.4 x 404.5 x 191.1 mm (with Stand) 543.4 x 321.0 x 18.9 mm (without Stand)	631.2 x 453.9 x 191.1 mm (with Stand) 631.2 x 370.4 x 18.9 mm (without Stand)			
Weight Set (After installation Stand)	5.2 Kg (without Stand) 7.6 Kg (with Stand)	4.5 Kg (without Stand) 7.0 Kg (with Stand)			
Environmental ConsiderationsOperating Temperature: 10°C ~ 50°C(50°F ~ 122°F) Operating Humidity: 10% ~ 90% Storage Temperature: -20°C ~ 45°C(-4°F ~ 113°F) Storage Humidity: 5% ~ 90%					
Note: Designs and specifications are subject to change without prior notice.					

2. Product specifications

2-2.	Spec	Comparison	to	the	Old	Models
------	------	------------	----	-----	-----	--------

Model		[SA750] S23A750D / S27A750D	[CREAM] 2233RZ
Design			
	Size	23 "/27"	22 "
R	esolution	1920 X 1080	1680 X 1050
	DCR	MEGA	20,000:1
	DP	0	x
	DVI-DL	x	0
IN/OUT	HDMI	0	х
	HP-OUT	ο	х
	3D format compatible	ο	х
	2D -> 3D	ο	Х
3D Function	3D game compatible (3D Driver)	ο	o (Nvidia)
	PS3, X-Box, BD Player	ο	х
	3D glasses type	ВТ	IR
Feature	HDCP	0	0
Panel		LED	LCD

2-2

2. Product specifications

# 2-3. Accessories

Product	Description	Code. No	Remark
	Safety Guide	BN68-03413A	
	Warranty Card (Not available in all locations)	BH68-00344C	
	User Manual	BN68-03632B	
	Cleaning Cloth BN63-02368B		
	Adapter	BN44-00461A	Samsung Electronics Service center
	Power Cord	3903-000598	
	DP Cable	BN39-01501A	
	3D Glasses Assy	BN96-18236A	

# 3. Disassembly and reassembly

Repair manual this chapter describes the display disassembly and reassembly step.

**Warning:** This display contains electrostatic sensitive devices. Should use caution when handling these parts.

# 3-1. Disassembly

Be careful: 1. As before, please turn off the monitor.

2. When removing the display, do not use the open metal tools other than the tools provided.

3.Please follow the steps below carefully remove the display.

Introductions	Pictures
1. As shown and pull the arrow and remove the bottom cover at the back.	
2. According to diagram the arrows and pull the back cover and remove liner.	State



Introductions	Photo caption
6. Remove the front cover as shown in the figure.	
7. As shown in Figure remove rear cover.	

#### 3.拆卸和重新组装



Introductions

Photo caption

10. As shown in diagram disassembly and fan hub.



11. As shown in the figure and remove LVDS Wiring and printed circuit boards.



#### 3.拆卸和重新组装





\*Reassembly step and disassembly steps instead.

#### Screw size

Code number	A (mm)	B (mm)	C (mm)	The number of	
6001-001114	8	6	4	4 EA	
6003-000264	6	6	3	4 EA	A
6003-001374	8	12	4	4 EA	
6006-001096	8	12	4	2 EA	в
6003-001785	8	8	4	5 EA	c

# 4 Troubleshooting

# 4-1. Troubleshooting

- 1. In front of the repair, set the custom mode as follows:
  - Resolution:1920×1080
  - Horizontal frequency:67.5 kHz
  - Vertical frequency:60 Hz
- 2. If no image appears, ensure that the power cables are properly connected.
- 3. Check the following circuit:
  - If the screen is black: functional printed circuit board Assembly, printed circuit board assemblies
  - If LED Background lights not lit, despite LED Open: check LED Drive, 1 And 2 Connector between the layers and FPC LVDS Wiring
  - If W/R/G/B Test chart can display, although the background light is lit: check 60 针 FFC Wiring, 1 And 2 Connector between the layers and FPC LVDS Wiring
- 4. Press [Menu] Button and change the brightness and contrast 0, Then press and hold " (Confirmation/Source)" Button for more than 5 Seconds, the display will automatically go to factory reset.

# **4-2** When the power supply is not available

Sign	-After connecting the power supply turn on the power button, the front of the monitor LED is not running.				
Mainly a checkpoint	<ul> <li>-Check the screens at the back of the monitor power switch is turned on.</li> <li>-Check whether the adapter and connector are connected correctly.</li> <li>-Check that the connector is properly connected to the 1 And 2 Between the layers.</li> </ul>				
Diagnosis	第2 On a CN504 PIN 2和3 Volta 为 OV Pipe 1 The voltage is a DC14V ? 第2 On the powerls there a normal Source 第1 Layer 2 Between key 6,7和8 所 the input voltage 6州? 第1 On the powerls there a normal Source 第1 On the powerls there a normal Source 第1 Layer 1 C505 和 IC506 Related circuits If necessary, 2 Floor Check 1 Layer 1 C201, IC202, IC203, IC204, Q208 和 Q630 Related circuits and, Replace the motherboard				
Attention	Check the make sure to disconnect power before connecting the motherboard.				

Main PBA – 1st Floor\_Top



Main PBA – 2st Floor\_Top



4-2-1 When power is not available in the circuit diagram (1 Circuit)





4-2-2 When power is not available in the circuit diagram ( 2 Circuit)





# 4-3. When you monitor black screen (HDMI )



Main PBA



**4-3-1.** Black screen appears when the circuit diagram (HDMI )

#### D303 50 8804DI 0 4C1< 4C1< HDMI\_RX2+ HDMI\_RX2-0 Г o-4C1< 4C1< 0 ₿ HDMI\_RX1+ HDMI\_RX1-0-R309 AM 0-4C1< 4C1< ℁ HDMI\_RX0+ HDMI\_RX0-0-R311 W \* 2 R312 W \* 2 4C1< 4C1< c ≩ HDMI\_RXC+ HDMI\_RXC-0 +5V\_HDM1 0 DDC\_HDMI\_SCL 3F4< 5B3< DDC\_HDMI\_SDA 3F4< 5B3< R346 220HM R303 220HM R304 220HM 0 ₿ 335 M 1000HM HDMI\_DPMS HDMI\_CHK 0 5E1> 0 1KOHM 0 4.7KOHM R336 R315 4.7KOHM ₿ +5V\_IN 4 ¥ FGN CN301 FD05015-19 FGND Q301 2SC2412K-Q R302 1KOHM $(\mathcal{F})$ HDMI\_HPD 5B3< FGNI G $\leftarrow$ # 綻 c ΛΛΛΛΛ ⇇ υά ά ά ά ά ά ά ά ά ά ά \*\* 綻 ф Ţ

HDMI INPUT

# 4-3-2.Screen no display of HDMI )



# 4-4. When you monitor black screen (DP )

Sign	-当 DP When the wiring is connected, the power LED Is on and the screen black screen or W/R/G/B Pattern interruption-style display.					
Mainly a checkpoint	-Scrutineering DP Wiring connections. inly a -Scrutineering LVDS The wiring is correctly connected to the Panel. kpoint -Check 1 Layer and 2 Between connector and 60 针 FFC The wiring is connected properly.					
Diagnosis	Check the signal wiring and Scrut <sup>X501</sup> Shock is normal?					
Attention	Check the make sure to disconnect power before connecting the motherboard.					

Main PBA



**4-4-1.** Black screen appears when the circuit diagram (**DP** )

4 故障排除 • ē • • 欬 -\$ • • 欬 • ; 影 ≸  $\gg$ 3 l₽ œ j 肉 Ş ] # ╜ LVDS INPUT +1.2V\_FPGA CN400 ⊡ 10000 6.3V +C400 
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 500</td EZ14-060-G213 MGND2  $\leftarrow$ NRESET LVDS\_TX4\_DP LVDS\_TX4\_DN LVDS\_TX4\_CP LVDS\_TX4\_CN LVDS\_TX4\_BP LVDS\_TX4\_BN LVDS\_TX4\_BN LVDS\_TX4\_AP LVDS\_TX4\_AN LVDS\_TX4\_CLKP LVDS\_TX4\_CLKN LVDS\_TX3\_DP LVDS\_TX3\_DN LVDS\_TX3\_CP LVDS\_TX3\_CN LVDS\_TX3\_CN LVDS\_TX3\_BP LVDS\_TX3\_BN LVDS\_TX3\_AP LVDS\_TX3\_AN LVDS\_TX3\_CLKP LVDS\_TX3\_CLKN 綻 LVDS\_TX2\_DP LVDS\_TX2\_DN LVDS\_TX2\_CP LVDS\_TX2\_CN LVDS\_TX2\_AP LVDS\_TX2\_BN LVDS\_TX2\_BN LVDS\_TX2\_AP LVDS\_TX2\_AN LVDS\_TX2\_CLKP LVDS\_TX2\_CLKN ⇇ LVDS\_TX1\_DP LVDS\_TX1\_DN LVDS\_TX1\_CP LVDS\_TX1\_CN LVDS\_TX1\_CN LVDS\_TX1\_BP LVDS\_TX1\_BN LVDS\_TX1\_AP LVDS\_TX1\_AN LVDS\_TX1\_CLKP LVDS\_TX1\_CLKN 3D\_SYNC\_LR O\_BLU\_LED\_T ENABLE\_3D EMITTER\_3D\_SYNC EXT2\_PLL K ф #

4-4-2. Screen no display of waveforms (DP)



# 4-5. Examples of faults and corrective actions

Failure pictures	Symptoms and corrective actions	Notes
	Symptom: when you turn the monitor on, regardless of whether there is signal, continuous display of full white pattern.	
	Reason: an LVDS Connection failure or error connections. Corrective action: replace or correctly connect LVDS Wiring.	
	Indication: in the connection DVD The screen noise emission. Reason: HDCPKey cannot be inserted.	
	Corrective action: enable HDCPKey.	

# 4-6. Regulation

#### 4-6-1 . Conditions of repairs

#### Maintenance considerations for adjusting

- 1) Check for repairs if the device is functioning properly.
- 2) In order to secure large enough to remove the display.
- 3) Prepare a cushion before the demolition.

#### Enter maintenance mode



#### After replacing the basic maintenance items

- 1.Scrutineering PC Color adjustment.
- 2.DDC Input (analog and digital input)
- 3. Check that the model is suitable MCU Code input.
- 4.Enter maintenance mode after power off and reset.

## 4-6-2. Maintenance of functional specifications

#### Checking the version code

- 1. In SVC Model checking MCU Code revision and inspection.
- 2. In SVC Model
  - Adjust the brightness and contrast values for 0.
  - Press enter five (5) Seconds
  - SVC Function OSD On the show.
  - If you want to exit SVC Function, turn off the power.
- 3. Safe mode
  - When the input signal when supported by higher frequency signals than the product, safe mode gives the user some time (1 Minutes) change the graphics mode are set to the recommended setting.



SVC Function OSD Included 103(Width)X 82(Height) grid, Board information, and display the software version and Micom Inspection and.

#### Maintenance mode (move)

#### 1.Press▼Button to move to the other options.

	Se	rvic	e Functio	n				
Monitor Panel	On Time Ch. No. On Time Cycle			0 Hr 0 0 Hr 61				
Auto Aut Pixelshif Country	t t	]-	: Off English 9	On				
riou lug	THILE		U		S	ervic	e Function	
Scaler-N	1CU	: ]	Novatek N	Monitor Panel	On Tim Ch. No.	e :		0 Hr O
Version Checksu	: m-A5: in : 2B81	271	10GAA-08		On Tim Cycle	e : :		0 Hr 61
				Auto Auto PixeShift Country HotPlug	Time CU		: Off English 9 Novatek NT	On 68779
				Version Checksu	: m-A5 n : 2B81	527H	10GAA-080	0.2

#### 2.Press Button, change the setting to on or off.



#### When panels are replaced

Replace the Panel, select a Panel item and press the menu button five (5) Seconds. Plate surface Ch. No will increase 1 and time information will be changed to 0.

	Ser	vice	e Function		
Monitor	On Time	1		0 Hr	
Panel	Ch. No.	;		0	
	On Time	÷.		0 Hr	
	Cycle	:		61	
Auto Aut	0		:	On	
Pixelshif	t	0	Off		
Country			English		
HotPlug	Time	:	9		
Scaler-N	ICU	: N	lovatek NT	68779	
Version	: m-A52	7H	0GAA-080	0.2	

This number increased 1

# 4-6-3. Enter DDC (MTI-2510)

## WinDDCU Pop-up menu

Pop-up menu	Function
EDID Logger	Run a recorder and verified by computer on the monitor EDID
	Data (*.ddc) File.
	The menu is mainly being used to enter EDID Data files (*.ddc) For
	more information.
EDID Multi-purpose	Enter number EDID Data (up to 6 ) (*.ddc) File for more
logger	information.
WinISP	The implementation of MICOM Upgrade.
EEPROM Logger	The implementation of EEPROM Upgrade.
IR Transmitter	New on the computer allIRData and usesMTI-2510Data display
	equipment.
System upgrade	Using the system Hex Files to upgrade or downgrade your system
	version.

EDID Recorder menu

Select the in	nput		If you want to ch	an&#I+Q</th></tr><tr><td>DDC Manager by MasTech</td><td>USB</td><td></td><td>an an air an an an an an an an an an an</td><td>×</td></tr><tr><td>EDID Writer EDID Multi-Writer Vendor ID Product ID Serial No. Week / Year Ver. / Rev. Video Input H / V Size Gamma Ftr Support Red × / y Green × / y Bilue × / y White × / y Established 3 ChkSum 1152x870@75 I2c Protocol file name [24LC21_rw8.iic ] To write. Ist : Press 'LoadFile' button, it w Model Name = MTI-2510</td><td>WinISP       EEPROM Write         DSUB1 (Analog)       ▼         -Established 1       Es         -720×400@70       F         720×400@70       F         720×400@70       F         640×480@60       F         640×480@75       F         640×480@75       F         800×600@66       F         300×600@66       F         Standard Timing       Detail         It will load EDID file from /       III write EDID to Monitor         It will load EDID file from /       III write EDID to Monitor</td><td>r   IR Transmitter Factory Write tablished 2 800x600@75 832x624@75 1024x768@870 1024x768@70 1024x768@75 1280x1024@75 Ite Length ▼ Block1   C ↓ → Computer (+, ~</td><td>System Upgrade   About   CEA EDID CEA EDID CEA EDID Revision Detail Timing Start Address DTV support Underscan DTV support VCbCr(4:4:4) DTV support VCbCr(4:4:4) DTV support Native Video Audio Block   Video Block   V</td><td>✓</td></tr><tr><td></td><td></td><td></td><td></td><td>Ready</td></tr><tr><td></td><td></td><td></td><td>확인</td><td>취소</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>
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Loading\*.ddc File Start recording Start verify

EDID Logger mode

- Factories in write mode: write and validate EDID Data. (This is
  - the most commonly used mode.  $\ )$
  - Quality read mode: read only EDID Data.
  - Management edit mode: perform all of the functions (write,

read, and modify data, etc).

- Bar code write mode: reading the serial number barcode and direct the writing process.

The implementation of **EDID** Logger

1. The implementation of [Load file], And select a ddc File input for more information.

DDCFile name					
S23A750D	S27A750D				
SMS23A750DH.ddc	SMS27A750DH.ddc				

Vendor ID Product ID Serial No, Week / Year Ver, / Rev, Video Input H / V Size		SUB1 (Analog)	Ter CEA EDID CEA EDID Revelon Detail Timing Start Address Detail Timing Start Address DTV support Inderscan DTV support Basic Audio PDTV support VCbCr(44:2) DTV support VCbCr(42:2)	
Ftr Support led ×/y areen ×/y lue ×/y Vhite ×/y Established 1152x870 12c Protoco 24L C21, rw6	찾는 위치(():           내 문서           내 컴퓨터           내 김퓨터           내 김류터           내 김류터           대 비트위크 월           11년 1월 5일까           SMS27A550H	() 바랑 화면 ) 가 바랑함면 <mark>4-1.ddc</mark>		<u>+   +  </u>
lead EDID fi	파일 미름( <u>N</u> ): 파일 형식( <u>T</u> ):	SMS27A550HA-1 EDID Files (+, ddc)	월기(Q) · 취소	

Select an input port and mode Don't forget to check these locations!!

2.Check the loading process→Display a confirmation, click on the[Logger]Begin writing.



3.Write to complete. In factEDID The writing process was not complete at this stage.



4.Click Verify. Because of the tests included in the writing process, this option can be selected is

#### not enforced.



#### DDC Data backup

1. 在 EDID Selected in the formula bar[Read]。



2. Enter a file name and keep the backup data.

Vendor ID         SAIV           Product ID         CB 07           Serial No.         None 89           Week / Year         45 / 2010           Ver. / Rev.         1.3           Video Input         Analogo	DSUB1 (Ana Established ☞ 720×400 ☞ 720×400 다른 이름으로 저장	Image: Text of the second s	CEA EDID CEA EDID Revisio Detail Timing Start Add	n ress san \$3
H / V Size 00 / 34 Gamma 2.2 Ft Support 0FF DP 0.640/0. Streen × / y 0.320/0. Sue × / y 0.152/0. White × / y 0.313/0.	저장 위치(i):	BEA 일치하는 형국	_ <b>← ਇ 6</b> 이 없습니다.	* ==-
Established 3 Chi 1152x870@75 0x00 12c Protocol file name 24_C21_rw0,lic Reading Address = 128 Read from Monitor>	파일 미름(N): 파일 형식(T): OK	[SA350A,ddc [EDID Data Files (+,ddc)	<b>_</b>	제장(S) 취소
			Total Number of Detail Tir	ning

3. DDC Data backup is complete.

Venuorio	SAM	DSUB1 (Analog)		CEAEDID	
Product ID	CB 07	Established 1	Established 2	CEA EDID Revision	4
Serial No.	None 894644"	I▼ 720×400@70	₩ 800×600@72	Dotall Timing Start Adcress	0×19
Ver, / Rev. Ver, / Rev. Video Input H / V Size	45 / 2010 1,3 Analog(0xE), 60 / 34 cm	F 720×400@88     F 640×480@60     F 640×480@67     F 640×480@72     F 640×480@75     F 640×480	800×600@75      832×624@75      1024×768@671      1024×768@60      1024×768@70      1024×768@70      1024×760@70	DTV support Underscan DTV support Basic Audio DTV support VCbCr(4:4:4) DTV support VCbCr(4:2:2)	
Gamma	CEE DBMARA	I⊋ 800×600@56	IV 1024x768@75	Number of Native Video	0
Red x/y Green x/y Blue x/y White x/y	0,640/0,238 0,320/0,617 0,152/0,047 0,313/0,328	Enable Power Stardard Timing	128 Byte Length ▼ Detail Block1   C ↓ ▶	Audio Block   Video Block   V	'endor B <u>•</u>
✓ 1152x870@ 12c Protocol 24_C21_rw8,	file name	1283 × 1024 @60 + 1443 × 900 @60 H 1603 × 1200 @60 H 1683 × 1050 @60 + 1152 × 864 @75 H 1443 × 900 @75 H	42 2 12 12 2 2 2		

DDC Data backup requirements are as follows.

-When many of the same model is used, you should check DDC Files for defects. Run **EDID** Multi-purpose logger (for analog and **HDMI** Input signal)

1. For analog input signal: click[Loading]And select simulation ddc File.

For HDMI Input signal: click[Loading], And select HDMI ddc

File.

EDID Writer	п бу маатеен	NUSB	
	EDID Multi-Writar	WinISP   EEPROM Witter   IR Transmitter   System Upgra	de   About
ANALOG		DVI-1 HDMI-	
Vend	or ID	Vendor ID Ven	do ID
Produ	ict ID	Product ID Proc	fuct ID
Check	Eum128	CheckSum128	ck8um128
	kSum256	CheckSum256 Che	ckSum256
Check	kSum384	CheckSum384 Che	ckSum384
Chec	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )		
Load	월기		
Load	☆는 위치(]):	🞲 바땅 하면 💽 🕈 🛤 🗂	
	🗀 내 문서		
Vend	물내 컴퓨터		
Produ	월대 대도위크	환경 개지 비타하며	
Chec	SMS27A550	HA-1,ddc	
Chec	m SMS27A550	HH 1.ddc	
Chec			
Chec	파일 이름(N):	[SMS27A550HA-1	열기(0)
Lood		EDID Elles (+ dds)	
Load	THE SOLTY	(EDID Files (x, ddo)	취소 Hex
			확인 취소
	No. ANAL CONTRACTOR		
DDC Manage	r by MasTech	USB	
EDID Writer	EDID Multi-Writar	WinISP   EEPROM Writer   IR Transmitter   System Upgra	
ANALOG			de About
	-1	DVI-1 HDMI-	de About
Vend	or ID SAM	HDMI-I Vendor ID	
Vend Produ	-1 or ID SAM ict ID CB 07	Vendor ID HDMI- Produc: ID Product	I
Vend Produ Check	-1 or ID SAM ict ID CB 07 kSum 128 0x00	Vendor ID Produc: IU CheckCum 128	de   About        act 10    act 10
Vend Produ Chect	-1 or ID   EAM Ict ID   CB 07 kSum128   0x00 kSum256	DVI-1         HDMI-           Vendor ID         Ven           Produc: ID         Proc           CheckSum 128         Check           CheckSum256         Chec	i         i           dor 1D         i           ckSum(128)         i           ckSum(256)         i
Vend Produ Chect Chect Chect	-1 or ID SAM ret ID CB 07 kSum 128 0x00 kSum 256 ssum 384	DVI-1 HDMI- Vendor ID Produce ID Produce ID CheckSum128 CheckSum256 CheckSum284 Chec	i         Joet 10           uor 10         L
Vend Produ Check Check Check Check	-1 or ID SAM iet ID CB 07 kSum 128 0x00 kSum 256 kSum 384 kBum 512	DVI-1 HDM1- Ven Produc:10 CheckSum128 CheckSum286 CheckSum384 CheckSum384 CheckSum384 CheckSum384	de   About   I dor ID toct ID ck8um128- ck8um286- ck8um284- ck8um284- ck9um512-
Vend Produ Checi Checi Checi Checi	-1 or ID SAM ret ID CB 07 KSum128 0000 KSum266 KSum384 KSum512 Unload	twindowid2     t	do         About           do         10
Vend Produ Checi Checi Checi Checi	-1 or ID SAM ict ID CB 07 kSum128 0x00 kSum266 kSum266 kSum384 kSum384	DVI-1         HDMI-           Vendor ID         Produc: IJ           Produc: IJ         Produc: IJ           CheckSum128         Check           CheckSum384         Check           ChockSum512         Check           fex         Load         Hex	de About der ID Just ID Leckourn 128 eckourn 128 eckourn 128 eckourn 128 der ID Leckourn 128 der ID
Vend Produ Checi Checi Checi Checi Checi	-1 or ID   EAM ict ID   CB 07 iSum128   0x00 iSum266 iSum266 iSum364 iSum512   Unload   2 2 3 3 3 4 3 4 4 4 4 4 4 4 4 4 4 4 4 4	DVI-1 HDM1- Ven Produc 10 CheckSum128 CheckSum256 CheckSum384 Ch	do About do TD do
Vend Produ Checi Checi Checi Load	-1 or ID SAM let ID CB 07 KSum128 0x00 KSum266 KSum384 KSum512 1 Unload 1 -2	DV-1     HDM1-       Vendor ID     Produc: ID       Produc: ID     CheckSum128       CheckSum256     CheckSum334       CheckSum334     CheckSum334       CheckSum334     CheckSum334       CheckSum334     CheckSum334       CheckSum334     CheckSum334       Produc: ID     Load       Val     Unload       Val     Val	de About de 10 10 10 10 10 10 10 10 10 10
Vend Produ Checi Checi Load Checi Load Produ Checi	-1 or ID CB 07 (Et ID CB 07 (Sum 128 0×00 (Sum 266 (Sum 314 Unitoad 1 2 or ID cB 07	DV-1     HDM1-       Wendor ID     Wendor ID       Produc: IJ     Produc: IJ       CheckSum286     CheckSum286       CheckSum384     CheckSum384       CheckSum3812     CheckSum384       Hex     Load       Unload     Hex       S2L     위치(0):       W 방 화면     J	de About   de Bout   1000 10
Vend Produ Checi Checi Load Checi Checi Checi Checi Checi Checi	-1 or ID SAM ctID C6 07 (Sum128 0X00 (Sum286 (Sum384 (Sum512 Unload 1 Unload 1 (CID Sum512 (Sum512) (S	DVI-1     HDMI-I       Vendor1D     Produc:10       Produc:10     Produc:10       CheckSum256     CheckSum256       CheckSum256     CheckSum312       CheckSum312     CheckSum314       Load     Unload       Hex     Load       VH B #At     UB S 20	de About de To de To troct To t
Vend Produ Cheel Cheel Load -ANACOG Produ Produ Cheel	-1 or ID SAM (CB 07 (Sum256 (Sum256 (Sum256 (Sum512 Unicad -2 or ID (Unicad -2 (Sum128 (Sum128 (Sum128 (Sum256 (Sum578) (Sum578 (Sum578)	DV-1     HDMI-       Produc: IJ     Produc: IJ       Produc: IJ     Produc: IJ       CheckSum286     CheckSum386       CheckSum386     CheckSum386       Unit Status     CheckSum386       CheckSum386     CheckSum386       Unit Status     CheckSum386       CheckSum386     CheckSum386       CheckSum386     CheckSum386       CheckSum386     CheckSum386       CheckSum386     CheckSum386       CheckSum386     CheckSum386       CheckSum386     CheckS	de About   de Tol   de
Vend Produ Checi Checi Checi Load Produ Produ Checi Checi	-1 or ID SAM ict ID CB 07 KSum128 0400 SSum314 SSum314 SSum314 CC CC	DV-1     HDM1-       Vendor ID     Produc: IJ       Produc: IJ     Produc: IJ       CheckSum256     CheckSum256       CheckSum254     CheckSum256       CheckSum254     CheckSum256       CheckSum254     CheckSum256       Unit add     Hex       Unit add     Hex       Util add     Unitadd       Util add     Util add	de About   de Bout   tuet 10
Vend Produ Checi Checi Load ANALOG Vend Produ Checi Checi	-1 or ID SAM tet ID CB 07 450m128 0000 550m256 550m384 450m518 1 Unload 1 -2 or ID cet ID 5 550m128 5 550m128 5 550m384	DV-1         HDM1-           Wendor ID         Produc: IL           Produc: IL         Produc: IL           CheckSum256         CheckSum256           CheckSum256         CheckSum324           CheckSum256         CheckSum324           CheckSum256         CheckSum324           CheckSum324         CheckSum324           CheckSum325         CheckSum324           CheckSum324         CheckSum324           Ublicad         Hex           Load         Uniticad           VII UBAL         UIUB 240           UII UBAL         UIUB 240           UII UBAL         UIUB 240           SUMS27ASE0HA-1.dada         SMS27ASE0H4-1.dada	de About   de Tabut   de Ta
Vendu Produ Checi Checi Load FANALOG Produ Checi Checi Checi Checi	-1 or ID SAM ict ID C5 07 &Cum 128 0x00 Simm256 Simm314 Simm178 Unload C2 or ID Ict ID Ict ID Simm178 Simm178 Simm178 Simm178	DV-1     HDM1-       Produc: IJ     Produc: IJ       Produc: IJ     Produc: IJ       CheckSum256     CheckSum266       CheckSum256     CheckSum264       CheckSum256     CheckSum264       CheckSum256     CheckSum264       CheckSum256     CheckSum264       CheckSum256     CheckSum264       CheckSum266     CheckSum264       CheckSum266     CheckSum264       Viti Ext     United to the set of t	de About   de Tol   de
Vend Checi Checi Load Prod Prod Checi Checi Checi Checi Checi	-1 or ID SAM ict ID CB 07 KSum128 0X00 KSum284 SSum314 Unicad 2 2 cr ID cr ID cr ID cr ID cr ID cr ID cr ID cr ID cr ID cr ID cr ID	DV-1     HDM1-I       Yendor ID     Produe: 10       Produe: 10     Produe: 10       CheckSum256     CheckSum384       CheckSum312     CheckSum312       Hex     Load       Unload     Hex       Load     Unload       Hex     Load       Unload     Hex       Exact     SM27A500HI-1	de About   de To D tuet 10 tuet 10
Vend Checi Checi Checi Load -ANALOG Vend Produ Checi Checi Checi	-1 or ID SAM or ID SAM (ct ID (C5 07 &2um 128) 0x00 &2um 218 (cum C12) Unload (cum C12) Unload (cum 512) Unload	DV-1         HDM1-           Produc: 10         Produc: 10           Produc: 10         Produ: 10	de About de Bout de De Constant de De Const
Vend Checi Checi Checi Checi Checi Checi Checi Checi Checi Checi Checi	-1 or ID SAM Ist ID CB 07 Soum256 Soum256 Soum256 Soum256 Soum256 Soum258 Soum258 Soum258 Soum512 Soum258 Soum258 Soum258 Soum258	DV-1         HDMI-           Wendor ID         Produce TD           Wendor ID         Produce TD           CheckSum28         CheckSum28           State         CheckSum28           Ut US         Unload           Hex         Load           Ut US         Ut US           Ht US         State           Ht US         State           Ht US         State           StMS27A550HH-1.ddc         State           M2         Ge(t):           StMS27A550HH-1         D2           M2         Ge(t):	de About de Bout 100-10 100-10 100-10 100-00 Hox CKSum756 CKSum766
Vend Cheel Cheel Cheel Load -MALOG Cheel Cheel Cheel Cheel Cheel Cheel Cheel	-1 or ID SAM (cFID) (CB 07 (82um128) 0x00 (83um256) (83um314) (22um128) (22um128) (22um128) (23u	DV-1     HDM1-       Wendor ID     Produc: 10       Produc: 11     Produc: 10       CheckSum256     CheckSum256       CheckSum256     CheckSum256       CheckSum256     CheckSum256       CheckSum256     CheckSum256       CheckSum256     CheckSum256       Util 24     Unload       Util 25-21     Dill 25 20*       SMS27A550H-1.dda     SMS27A550H+1.dda       DSMS27A550H-1.dda     EMS27A550H+1.dda	de About de About de Table de Table d
Vend Checi Checi Checi Checi Checi Checi Checi Checi Checi Checi Checi	-1 or ID SAM or ID SAM (cFID) CB 07 (c2um128) 0X00 (c2um256) (c2um512) Unicad (c2um512) Unicad (c2um512) (	DM-1         HDM1-           Produc: 10         Produc: 10           Produc: 10         Produc: 10           Produc: 10         Produc: 10           CheckSum286         CheckSum286           Ut BA         Ut BA           Ut BA         IIIE 416           Ut BA         IIIE 417           Ut BA         SMS27A650HH-1.dde           SMS27A550HH-1.dde         SMS27A550HH-1           ISM 22(D):         FDID Files (*, ddc)	de About de Bout de Bourites ckournites
Vend Cheel C	-1 or ID SAM ict ID (CB 07 KSum128) Skum314 Skum314 Unicad -2 cr ID cr I	DV-1         HDM1-I           Produc 10         Produc 10           Produc 10         Produc 10           Produc 10         Produc 10           CheckSum256         CheckSum256           Uddad Hex         Coad           Unload         Hex           Load         Unload           Hu H 24         Uddad           Hu H 25         CheckSum234           Hu H 25         CheckSum234           Hu H 25         CheckSum234           Hu H 25         CheckSum234           SMS27A500HA-1.ddc         SMS274500HA-1.ddc           DS MS274500H-1.ddc         FDID Files (*, ddc)	de Abot de Bot de B
Vend Checi Checi Checi Load -ANALOG Vend Produ Checi Checi Checi Checi Checi	-1 or ID SAM (cHD) (CB 07 &Sum128 0X00 (Sum256 (Sum314 (Sum217) Unicad 1 22 or ID (CHD) (Sum128 (Sum128 (Sum512) Unicad 1 (Sum512) Unicad 1 (Sum512) Unicad 1 (Sum512) Unicad 1 (Sum512)	DV-1     HDMI-       Wendor ID     Produc: 10       Produc: 10     Produc: 10       CheckSum256     CheckSum256       Ut Back     Load       Ut Back     Load       Ut Back     Load       Ut Back     SMS27A550HH-1.ddc       SMS27A550HH-1.ddc     SMS27A550HH-1       DSU Big Close     FDID Files (*, ddc)	de About de Bout de Bout de Bout LRSuni 128 LRSuni 128 LRSu
Vend Checi Checi Checi Load -ANALOG Vend Produ Checi Checi Checi Checi	-1 or ID SAM (ctID) (CB 07 (Sum256) (Sum256) (Sum256) (Sum256) (Sum266) (Su	DV-1     HDM1-       Wendor ID     Produc: 13       Wendor ID     Produc: 13       CheckSum28     CheckSum28       Vit Us At     Us att       Uit EA     SM27       SM327A550HH-1.ddc     SM327A550HH-1       DS 01s (t):     FDID Files (=,ddc)	de About de Bout de Bout d

2.Check the loading process→Display a confirmation, click on the[Logger and verify].



3.EDID Multi-purpose logger process to complete.



#### 4-6-4.Enter EDID

#### Connection

Connection DDC Manager to your computer; next, use DVI 或 HDMI Wiring connections DDC Manager to the display.

Menu

#### Select an input port (DVI 或 HDMI) DDC Manager by MasTech USB x WinISP EDID Writer | EDID Multi-Writer | EEPROM Writer | IR Transmitter | System Upgrade | About | CEA EDID Vendor ID SAM Factory Write DVI1 (Digital) CEA EDID Revision Product ID 98 07 Established 1-Established 2-Serial No. None 0 Detail Timing Start Address 0x28 ☐ 720×400@70 🗖 800×600@72 Week / Year 3 / 2011 720x400@88 800x600@75 832x624@75 ☑ DTV support Underscan ☑ DTV support Basic Audio 832x624@75 1024x768@87i 1024x768@87i 1024x768@70 1024x768@75 1280x1024@75 ₩ 640×480@60 Ver, / Rev, 13 Video Input Digital(0x80)/ 640×480@67 DTV support YCbCr(4:4:4) DTV support YCbCr(4:2:2) 640x480@72 H / V Size 60 / 34 cm G40×480@75 G40×480@75 G800×600@56 G800×600@60 Gamma Number of Native Video 11 OFF DPMS(0 Ftr Support Audio Block | Video Block | Vendor B 0,640/0,328 Red x/y Green x/y Blue x/y White x/y Audio Block Length ==> 3 Audio Block Counter ==> 1 Audio Format Description ==> Linear PCM (Uncompressed) Maximum Number of Channels ==> 2\_ Enable Power 256 Byte Length 0,297/0,598 -Standard Timing Detail Block1 | C.4 + 0,148/0,059 0,313/0,328 ) x 1200 @60 Hz ) x 1024 @60 Hz ) x 960 @60 Hz ) x 800 @60 Hz ) x 800 @60 Hz ) x 1050 @60 Hz Established 3 ChkSum ==> 2 Audio Frequency ==> 32kHz ==> 44kHz ==> 48kHz Audio Bit ==> 16bit ==> 20bit ==> 24bit -I2c Protocol file name-24LC21\_rw8,iic -Samsung EDID Protection Disabled Writing Address = 256 Write to Monitor ---> OK Verify Address = 256 Verify from Monitor ---> OK Total Number of Detail Timing 1 Block CheckSum 256 Byte 💌 0xD6 📕 Save File Read Write Verify 🔍 ViewHex D:₩Model₩01\_2011년₩700Series₩MICOM₩DDC₩SA750₩27₩SMS27A750DH,ddc 확인 취소

4 故障排除

Loading\*.ddc File Confirm change

1.Click on the[Load file].

2. Choose DDC File.

3. Choose [Write] Buttons.

4. If EDID Upgrade intact,

you can see the following information.

Samsung EDID Protection Disabled Writing Address = 256 Write to Monitor --> OK Verify Address = 256 Verify from Monitor --> OK

\*DP EDID Has been included in the MICOM , So you don't need to upgrade DP EDID.

DDCFile name					
S23A750D	S27A750D				
SMS23A750DH.ddc	SMS27A750DH.ddc				

#### 4-6-5.Enter Micom

Connection

Connection DDC Management devices to your computer USB Port connect HDMI-DVI Connection to DDC Management unit and the back of the product HDMI Port.

WinISP Menu

(internet)	
LoadFile	File CheckSum = 54BF Hex File End Address = 7FFF Hex (0x7FFF) File Size = 524268 Byte 2011 – Mar - 05, PM 01:32 Load File> OK
Auto Program	Erasing Programing Program> OK
Verify Manutacture MSTAR	
2 Device Type TSUMxxx	
3 Communication Port DVI1 (Digital)	
Grand	′ I ☐ Display Hex, Data

- 1. ChooseManufactureSelectMicomConstructor.
- 2. Select the type of device.
- 3. Select the input port.
- 4. Select external memory storage capacity.

## 4-6-6.Enter the code (HDCP )

1.Runservice.exeFile.

≪Samsung ∎onitor A/S	Jig 3.5 for	LCD/0F0 (U	SB Jig Suppo	·) ×	
LCD mcnitor[LCDmonitor.n	ndl]		<u> </u>	Reload	
Timing List CRT on Tir	me HDCP	EEPRON	EPRON Ddc Protocol Debugging		
Geometry Color Etc.	Sei	vice Menu	Advance	d Tool	
•	Þ	Reset (refres	h all values)	PLIN	
H-Position	50 (32h)	Error Me	essage		
H-Position	50 [32]	@1: USER D	ELETE		
V-Position	20 [14]	@2: AUTO AE	JUSTMENT		
Clock chase (Fine)	0 [00]	@3: FAST AU	ITO ADJUSTME	INT	
	00140004	@4: STORE (	CURRENT SET	TINGS	
		@5: RESTOR	RECURRENT	NODE	
		@6: RESTOP	RE GEOMETRY	8	
		@7: FACTOR	Y PRESET		
		@8: DSUB IN	IPUT		
		@9: DVI INPU	JT		

2.Click on the HDCP Buttons.

Sansung Non	itor A/S Jig 3.5 for	LCD/BFH (US		r 1) 🔀
LCD monitor[LC	Dmonitor.mdl]		*	Reload
Timing List	CRT on Time HDCP	EEPROM	Ddc Protocol	Debugging
Geometry Col	or Etc. Ser	vice Menu	Advance	ed Tool
•	•	Reset (refres	h all values)	
H-Position	50 (32h)	Error Me	ssage	RUN
H-Position V-Position Clock (Coar Clock phase	Load HDCP	Wri	te HDCP	IT INGS DDE

3.点击 HDCP 写入按钮并选择 Mstar\_HDCPKEY。

Sansung Honi i	tor A/S Jig 3.5 for LCD/HFM (U	SB Jig Support) X
Timing List C	RT on Time   HDCP   EEPROM	Ddc Protocol Debugging
Geometry Color	Etc. Service Menu	Advanced Tool
◀ H-Position	Beset (refres 50 (32h) Error M	sh all values) RUN
H-Position V-Position Clock (Co Clock pha	.oad HDCP	ENT ENT TTINGS
查找范	围(I): C HDCPKEY_NOVATEK	
新建 第 HDC: 第 HDC: 8	2文件夹 PKEY_NOVATEK_900000. bin PKEY_NOVATEK_900001. bin PKEY_NOVATEK_900002. bin PKEY_NOVATEK_900003. bin PKEY_NOVATEK_900003. bin PKEY_NOVATEK_900004. bin PKEY_NOVATEK_900004. bin PKEY_NOVATEK_900004. bin	_NOVATEK_900005.bin III HDCPK _NOVATEK_900006.bin III HDCPK _NOVATEK_900007.bin III HDCPK _NOVATEK_900008.bin III HDCPK _NOVATEK_900009.bin III HDCPK _NOVATEK_900010.bin III HDCPK
文件名	(N): HDCPKEY_NOVATEK_900000.bin	打开(0)
文件类	型(T): Data Files (*.bin) 「 以只读方式打开(R)	▼ 取消

#### 4.输入 HDCP 密钥已完成。



# 5. Wiring Diagram

# 5-1. Wiring Diagram Schematic





# 5-3. Board Connection

Main PBA – 1st Floor



Location	Block	Functions
1	LVDS connector between the 1st and 2nd floors	Connects the LVDS signal from the 1st floor to the 2nd floor
2	FPGA	Receives and bypasses the LVDS 4 channel input, creates the 148.5MHz output, and puts the output into the M180 system clock on the 2nd floor
3	DDR3	Starts the scaler
4	Scaler	This main IC receives the external input and displays pictures on the screen.
5	B to B connector between the 1st and 2nd floors	Transmits the signals between the 1st and 2nd floors
6	DP	Stands for Display Port and offers a higher input port performance than a DVI
7	HDMI	Connects to an AV device or PC
8	LED Driver	Turns on the backlight of the LED panel
9	Flash	This IC is where MICOMs for the scaler and FPGA are saved.
0	Function + Bluetooth	Connects the Function Assy and BT module
1	FAN	Starts the fan

ENABLE\_3D

EMIT\_3D\_SYNC

GND

NRESET\_M180

EXT1\_PLL

								e
(	2	LED Dri	ver	Turns on the backligh	1 ↔ 2 LVDS Connector			
		1			1	AU_MCLK	31	LVDS_TX2_DN
	1	DP Signal In	put Co	nnector	2	AU_SCLK	32	LVDS_TX2_CP
1		DP_LANE3-	11	GND	3	AU_LRCLK	33	LVDS_TX2_CN
2		GND	12	DP_LANE0+	4	AU SDOUT	34	LVDS TX2 BP
3	[	DP_LANE3+	13	GND	5	GND	35	LVDS TX2 BN
4		DP_LANE2-	14	GND	6		36	LVDS TX2 AP
5		GND	15	DP_AUX+	7		37	LVDS_TX2_AN
6	[	DP_LANE2+	16	GND	8		38	
7		DP_LANE1-	17	DP_AUX-	0		20	
8		GND	18	DP_HPD	10		40	
9	[	DP_LANE1+	19	GND	10		40	
10		DP_LANE0-	20	VCC	11	LVDS_TX4_BN	41	
			1 1		12	LVDS_TX4_AP	42	LVDS_TX1_DP
					13	LVDS_TX4_AN	43	LVDS_TX1_DN
					14	GND	44	LVDS_TX1_CP
					15	LVDS_TX4_CLKP	45	LVDS_TX1_CN
					16	LVDS_TX4_CLKN	46	LVDS_TX1_BP
					17	GND	47	LVDS_TX1_BN
					18	LVDS_TX3_DP	48	LVDS_TX1_AP
					19	LVDS_TX3_DN	49	LVDS_TX1_AN
					20	LVDS_TX3_CP	50	GND
					21	LVDS_TX3_CN	51	LVDS_TX1_CLKP
					22	LVDS_TX3_BP	52	LVDS_TX1_CLKN
					23	LVDS_TX3_BN	53	GND
		F	FAN Co	nnector	24	LVDS_TX3_AP	54	3D_SYNC_LR
	1				25	LVDS_TX3_AN	55	O_BLU_LED_T



NC

DDC\_HDMI\_SCL

DDC\_HDMI\_SDA

26

27

28

29

20

GND

LVDS\_TX3\_CLKP

LVDS\_TX3\_CLKN

GND

LVDS\_TX2\_DP

56

57

58

59

60

FAN\_FB

GND

14

15

16

1

2

3

HDMI\_RX2+

GND

HDMI\_RX2-

HDMI\_RX1+

GND

HDMI\_RX1-

1

2

3

4 5

6

0-0
0-0

7	HDMI_RX0+	17	HDMI_DPMS			
8	GND	18	HDMI_CHK			
9	HDMI_RX0-	19	VCC			
10	HDMI_RXC+					
1 ↔ 2 B-to-B Connector						
1	VLED1	11	LED6			
2	LED3	12	LED5			
3	LED2	13	LED4			
4	LED1	14	VLED3			
5	GND	15	GND			
6	+14V	16	SUB_SDA			
7	+14V	17	SUB_SCL			
8	+14V	18	DPMS_ON			
9	HP_MUTE 19		PANEL_EN			
10	NC	20	+5V_PANEL			
	Function + I	BT Cor	nnector			
1	BT_TEST	8	ENABLE_3D			
2	EMIT_3D_SYNC	9	GND			
3	GND	10	+3.3V_FUNC			
4	USB_P	11	GND			
5	USB_N	12	FUNC_SDA			
6	+5V_BT	13	FUNC_SCL			
7	PAIRING	14	FUNC_GPIO			
	•		Main DD			

Main PBA – 2nd Floor



Location	Block	Functions
1	LVDS connector between the 1st and 2nd floors	Connects the LVDS signal from the 1st floor to the 2nd floor
2	DDR1	Starts M180
3	M180	This Samsung patent-applied IC starts the 3D function.
4	DDR1	Starts M180
5	LVDS Connector	Connects the LVDS 4 channel and LED driver signal panel
6	DC Jack	Supplies 14V power
7	Audio Jack	Outputs audio from the HDMI/DP input
8	B to B connector between the 1st and 2nd floors	Transmits the signals between the 1st and 2nd floors

#### 5. Wiring Diagram

	Power Adaptor Connector					
1	+14V_VCC					
2	GND					
3	GND					
4	GND					

Headphone Out Connector								
1	GND							
2	HF	HP_L_OUT						
3	HF	P_L_OI	TL					
4	HP	_R_0	JT					
5	HP	_R_0	JT					
1 ↔ 2 B-to-B Connector								
1	VLED1	11	LED6					
2	LED3	12	LED5					
3	LED2	13	LED4					
4	LED1	14	VLED3					
5	GND	15	GND					
6	+14V	16	SUB_SDA					
7	+14V	17	SUB_SCL					
8	+14V	18	DPMS_ON					
9	HP_MUTE	19	PANEL_EN					
10	NC	20	+5V_PANEL					

**To Panel LVDS** 

50

F\_RXO0P

71

GND

B\_RXO1P

B\_RXO1N

B\_RXO0P

**B\_RXO0N** 

GND

F\_RXE3P

F\_RXE3N

GND

		1 ↔ 2 LVI	OS Co	S Connector				
	1	AU_MCLK	31		LVDS_TX2_DN			
	2	AU_SCLK	32	2	LVDS_TX2_CP			
	3	AU_LRCLK	33	3	LVDS_TX2_CN			
	4	AU_SDOUT	34	ŀ	LVDS_TX2_BP			
	5	5 GND		5	LVDS_TX2_BN			
	6	LVDS_TX4_DP	36	6	LVDS_TX2_AP			
	7	LVDS_TX4_DN	37	,	LVDS_TX2_AN			
	8	LVDS_TX4_CP	38	3	GND			
	9	LVDS_TX4_CN	39	)	LVDS_TX2_CLKP			
	10	LVDS_TX4_BP	40	)	LVDS_TX2_CLKN			
	11	LVDS_TX4_BN	41		GND			
	12	LVDS_TX4_AP	42	2	LVDS_TX1_DP			
	13	13 LVDS_TX4_AN		3	LVDS_TX1_DN			
	14	14 GND		ŀ	LVDS_TX1_CP			
	15	15 LVDS_TX4_CLKP		5	LVDS_TX1_CN			
	16	16 LVDS_TX4_CLKN		5	LVDS_TX1_BP			
	17	17 GND		,	LVDS_TX1_BN			
	18	18 LVDS_TX3_DP		3	LVDS_TX1_AP			
	19	19 LVDS_TX3_DN		)	LVDS_TX1_AN			
	20	20 LVDS_TX3_CP		)	GND			
	21	LVDS_TX3_CN	51		LVDS_TX1_CLKP			
	22	LVDS_TX3_BP	52	2	LVDS_TX1_CLKN			
	23	LVDS_TX3_BN	53	3	GND			
	24	LVDS_TX3_AP	54	ŀ	3D_SYNC_LR			
	25	LVDS_TX3_AN	55	5	O_BLU_LED_T			
s c	onn	ector GND	56	5	ENABLE_3D			
43	-27	E BXOCP	57 64		EMIT_3D_SYNC			
44	-28	E RXOCN	65 65		GND VIN_5V			
45	-29	GND	59		NRESET_M180			
45	20	LVDS_TX2_DP	60		EXT1_PLL			
46		F_RXO2P	67		VIN_5V			
47		F_RXO2N	68		NC			
48		F_RXO1P	69		NC(CTL)			
49		F_RXO1N 7		NC(CE)				

1

2

3

4

5

6

7

8

B\_RXE3P

B\_RXE3N

GND

**B\_RXECP** 

**B\_RXECN** 

GND

B\_RXE2P

B\_RXE2N

22

23

24

25

26

27

28

29

9	B_RXE1P	30	F_RXECP	51	F_RXO0N	72	GND
10	B_RXE1N	31	F_RXECN	52	FB6	73	SDATA
11	B_RXE0P	32	GND	53	FB5	74	SCLK
12	B_RXE0N	33	F_RXE2P	54	FB4	75	STV
13	GND	34	F_RXE2N	55	VCC_LED2	76	GND
14	B_RXO3P	35	F_RXE1P	56	VCC_LED1	77	NC(Sync_o)
15	B_RXO3N	36	F_RXE1N	57	FB3	78	BIST_EN
16	GND	37	F_RXE0P	58	FB2	79	NC(ELIT_EN)
17	B_RXOCP	38	F_RXE0N	59	FB1	80	PWMI
18	B_RXOCN	39	GND	60	GND	81	Frame_sel
19	GND	40	F_RXO3P	61	GND	82	GND
20	B_RXO2P	41	F_RXO3N	62	VIN_5V		
21	B_RXO2N	42	GND	63	VIN_5V		
	•		•		•		•



# 5-4. Connector Functions

Connector	Functions
CN301 (1st floor)	HDMI signal input port * Failure symptoms: No HDMI Output error may occur.
CN302 (1st floor)	DP signal input port * Failure symptoms: No DP Output error may occur.
CN100 (1st floor)	Port that connects the power and signals between the 1st and 2nd floors * Failure symptoms: No Power error may occur or the LED backlight may not turn on.

eatedly. the 1st and 2nd nay not work.	
eatedly. the 1st and 2nd nay not work.	
the 1st and 2nd nay not work.	
nay not work.	
Headphones-output port	
Port that connects the LVDS signal between the 1st and 2nd floors	
eatedly.	
loors	
turn on.	
LVDS output port	
eatedly or the LED	
e f	

# 5-5. Cables

Use	LVDS 60Pin FFC Cable	LVDS 82 Pin FPC Cable
Code	BN96-18862A	BN96-14108U
Photo		