

740N(Haydn) Training Manual



SAMSUNG ELCELECTRONICS [DM]
VD Division
LCD Monitor Development Department

A decorative graphic is located in the top left corner, featuring a black crosshair overlaid on a background of yellow, red, and blue rectangular blocks.

Contents

- Introduction
- Haydn Design & Function
- Haydn Specification
- Block Diagram
- AD Board and IP Board Circuits
- How to install winDDC program
- Updating Firmware
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- Panel & Model Define process
- SVC Mode

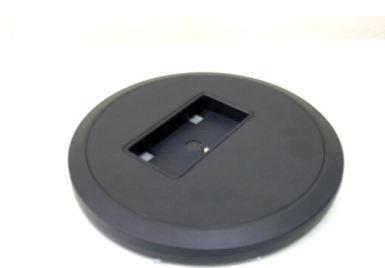
1. HADEN DESIGN AND FUNCTION



➤ HAS Stand



➤ Simple Stand



- Easy Contact Key function
- Various Direct Key




2-1 Specification(15 inch)



Key Specification		
Model	540N	540B
Screen Size	15"	15"
Resolution	1024*768@75Hz	1024*768@75Hz
Colors	16.2M	16.2M
Brightness	250cd/m²	250cd/m²
Contrast	700:1	700:1
Supported Resolution	VGA ~ XGA	VGA ~ XGA
Horizontal Frequency	30~63kHz	30~63kHz
Sync Type	Sep./Comp./SOG	Sep./Comp./SOG
Vertical Frequency	56~75Hz	56~75Hz
Viewing Angle	150°/135°	150°/135°
Response Time	8ms(w to b)	8ms(w to b)
Signal Input	Analog (15pin D-sub)	Analog/Digital (15pin D-sub/DVI-D)
Power Consumption	25 Watt (Max)	25 Watt (Max)

2-2. Specification(15 inch)

Magic Color

Key Specifications		
Model	540N	540B
Set Dimension(mm)	337.5x200.0x336.8 (W x H x D)	337.5x180.0x333.8 (W x H x D)
Package(mm)	389x 380x 132(W x H x D)	447x334x215 (W x H x D)
VESA(mm)	75 x 75	75 X 75
□□ (kg)	2.8 (3.5 : Package)	3.7 (4.9 : Package)
Tilt	-1° ~ 0°(Forward) 0° ~ 23°(Backward)	-1° ~ 0°(Forward) 0° ~ 23°(Backward)
Power Supply	Internal Power/Inveter	
Safety Mode	Up to XSGA	Up to XGA
Magic Bright II /Magic Color  	Support	Support
Emissions Standard	TCO '99	TCO '99
Magic Tune 	Version 3.6	Version 3.6

2-3. Specification(17 inch)






Key Specification			
Model	740N	740BF	740T
Screen Size	17"	17"	17"
Resolution	1280x1024@75Hz	1280x1024@75Hz	1280x1024@75Hz
Colors	16.2M	16.2M	16.7M
Brightness	300cd/m²	300cd/m²	280cd/m²
Contrast	700:1	700:1	1500:1
Supported Resolution	VGA ~ XSGA	VGA ~ XSGA	VGA ~ XSGA
Horizontal Frequency	30~81kHz	30~81kHz	30~81kHz
Sync Type	Sep./Comp./SOG	Sep./Comp./SOG	Sep./Comp./SOG
Vertical Frequency	56~75Hz	56~75Hz	56~75Hz
Viewing Angle	150°/135°	150°/135°	170°/170°
Response Time	8ms(w to b)	8ms(w to b)	25ms(w to b)
Signal Input	Analog (15pin D-sub)	Analog/Digital (15pin D-sub/DVI-D)	Analog/Digital (15pin D-sub/DVI-D)
Power Consumption	34 Watt (Max)	34 Watt (Max)	34 Watt (Max)

2-4. Specification(17 inch)



Magic Color

Key Specifications			
Model	740N	740BF	740T
Set Dimension(mm)	366.0x200.0x379.3 (W x H x D)	366.0 x180.0 x333.8 (W x H x D)	362.1 x200.0 x389.6 (W x H x D)
Package(mm)	443 x435 x132 (W x H x D)	497 x334 x215(W x H x D)	497 x375 x235 (W x H x D)
VESA(mm)	75 x 75	75 x 75	75 X 75
□□ (kg)	3.4 (4.6 : Package)	4.8 (6.6 : Package)	4.6 (6.0 : Package)
Tilt	-1° ~ 0°(Forward) 0° ~ 23°(Backward)	-1° ~ 0°(Forward) 0° ~ 23°(Backward)	-1° ~ 0°(Forward) 0° ~ 23°(Backward)
Power Supply	Internal Power/Inveter (17" & 19")		
Safety Mode	Up to UXGA	Up to UXGA	Up to UXGA
Magic Bright II /Magic Color	Support	Support	Support
 			
Emissions Standard	TCO '99 (TCO'03)	TCO '99 (TCO'03)	TCO '99 (TCO'03)
Magic Tune 	Version 3.6	Version 3.6	Version 3.6




2-5 Specification(19 inch)



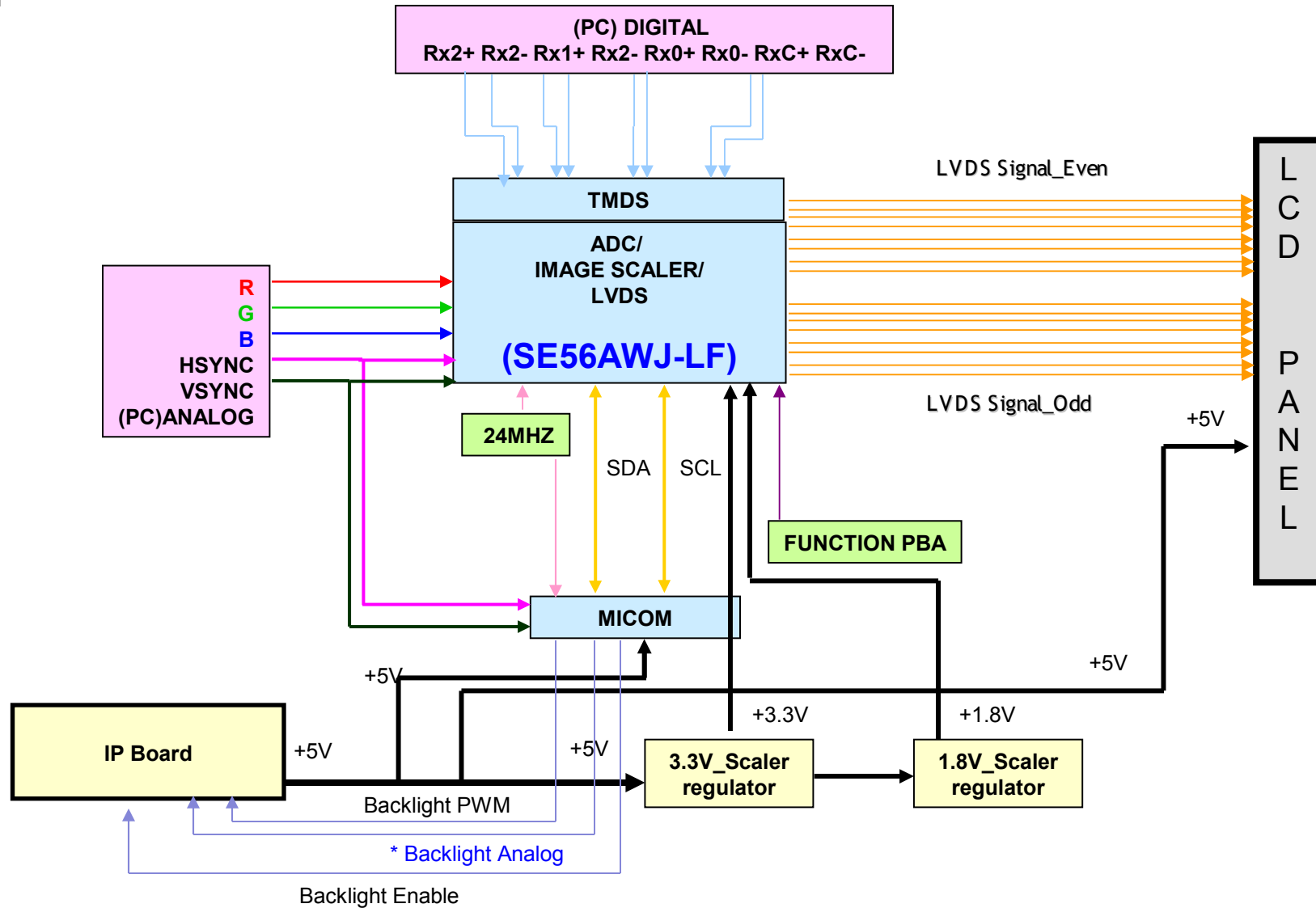
Key Specification			
Model	940B	940T	940Fn
Screen Size	19"	19"	19"
Resolution	1280x1024@75Hz	1280x1024@75Hz	1280x1024@75Hz
Colors	16.2M	16.7M	16.7M
Brightness	300cd/m ²	250cd/m ²	250cd/m ²
Contrast	700:1	1000:1	1000:1
Supported Resolution	VGA ~ XSGA	VGA ~ XSGA	VGA ~ XSGA
Horizontal Frequency	30~81kHz	30~81kHz	30~81kHz
Sync Type	Sep./Comp./SOG	Sep./Comp./SOG	Sep./Comp./SOG
Vertical Frequency	56~75Hz	56~75Hz	56~75Hz
Viewing Angle	150°/135°	180°/180°	180°/180°
Response Time	8ms(w to b)	20ms(w to b)	8ms(G to G)
Signal Input	Analog / Digital (15pin D-sub / DVI-D)	Analog / Digital (15pin D-sub / DVI-D)	Digital / Digital (DVI-I / DVI-I)
Power Consumption	38 Watt (Max)	38 Watt (Max)	40 Watt (Max)

2-6. Specification(19 inch)

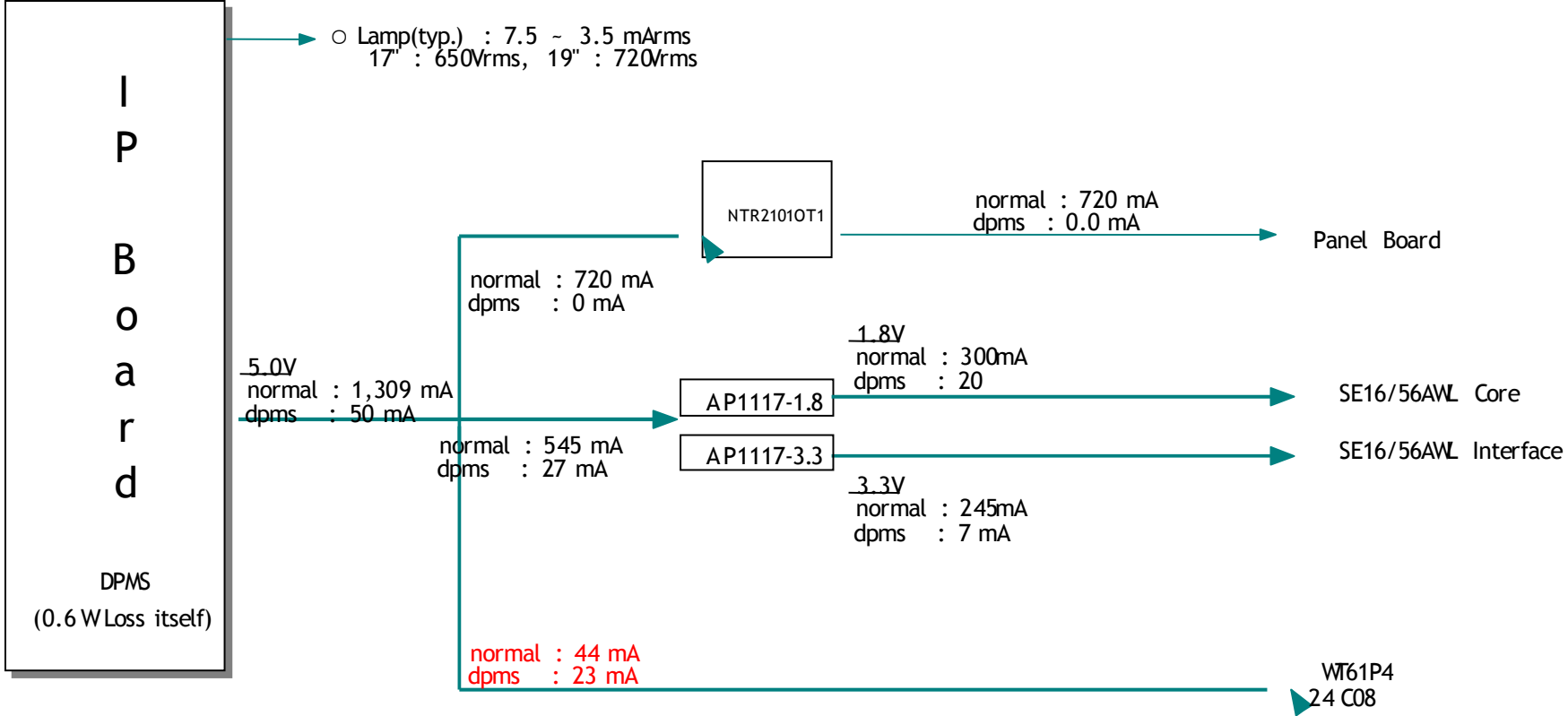
Magic Color

Key Specifications		
Model	940B	940T
Set Dimension(mm)	407.6 x217.0 x421.5 (W x H x D)	403.2 x200.0 x406.4 (W x H x D)
Package(mm)	495 x476 x150 (W x H x D)	522 x412 x235 (W x H x D)
VESA(mm)	75 x 75	75 X 75
□□ (kg)	4.9 (6.8 : Package)	5.4 (6.8 : Package)
Tilt	-1° ~ 0°(Forward) 0° ~ 23°(Backward)	-1° ~ 0°(Forward) 0° ~ 23°(Backward)
Power Supply	Internal Power/Inveter (17" & 19")	
Safety Mode	Up to UXGA	Up to UXGA
Magic Bright II /Magic Color	Support	Support
 		
Emissions Standard	TCO '99 (TCO'03)	TCO '99 (TCO'03)
Magic Tune 	Version 3.6	Version 3.6

3. Block Diagram

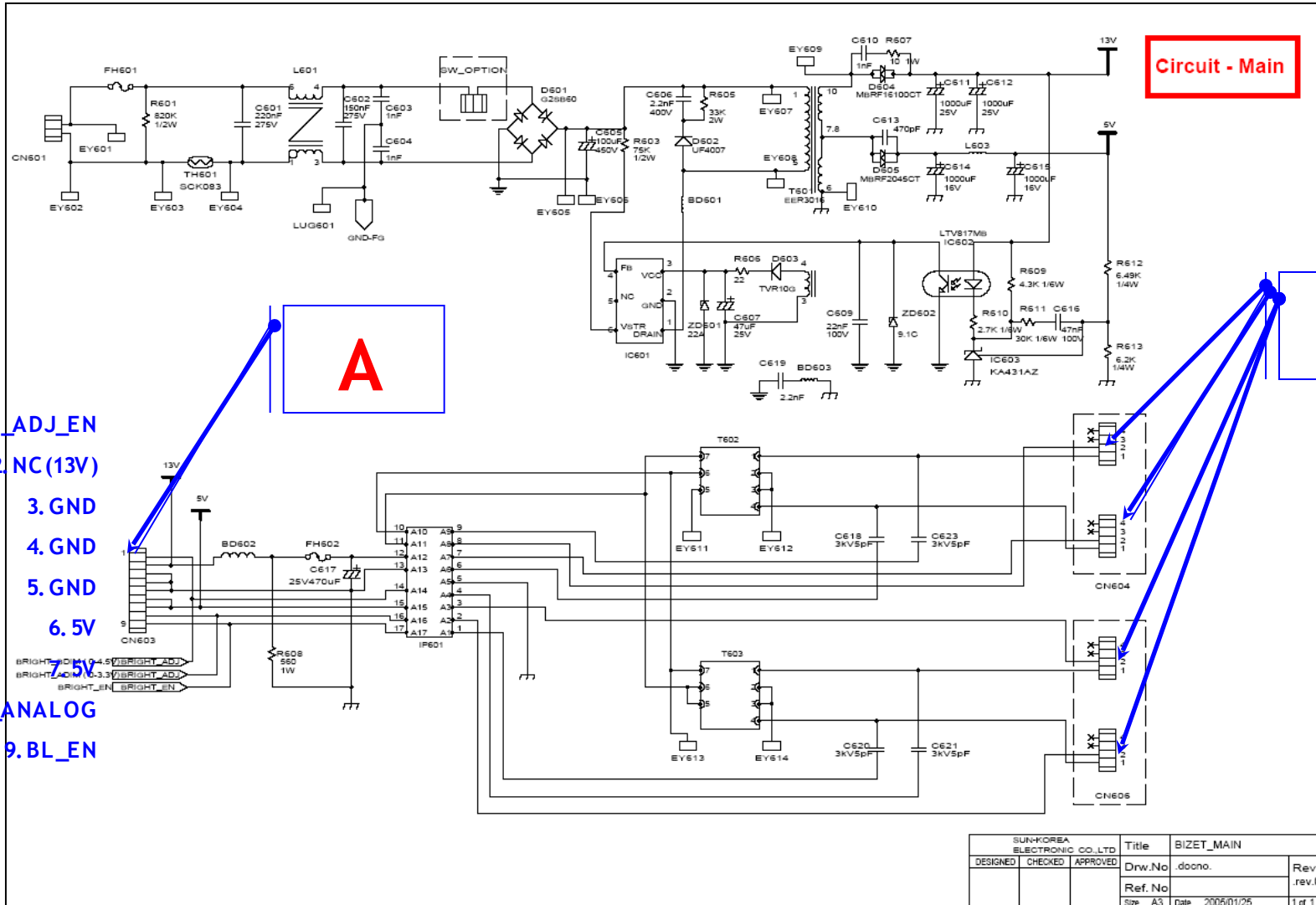


3.1 Main Board Power Tree



*** Notice***
SE16AWL : Analog
SE56AWL : Dual

4. IP BOARD Circuits



Circuit - Main

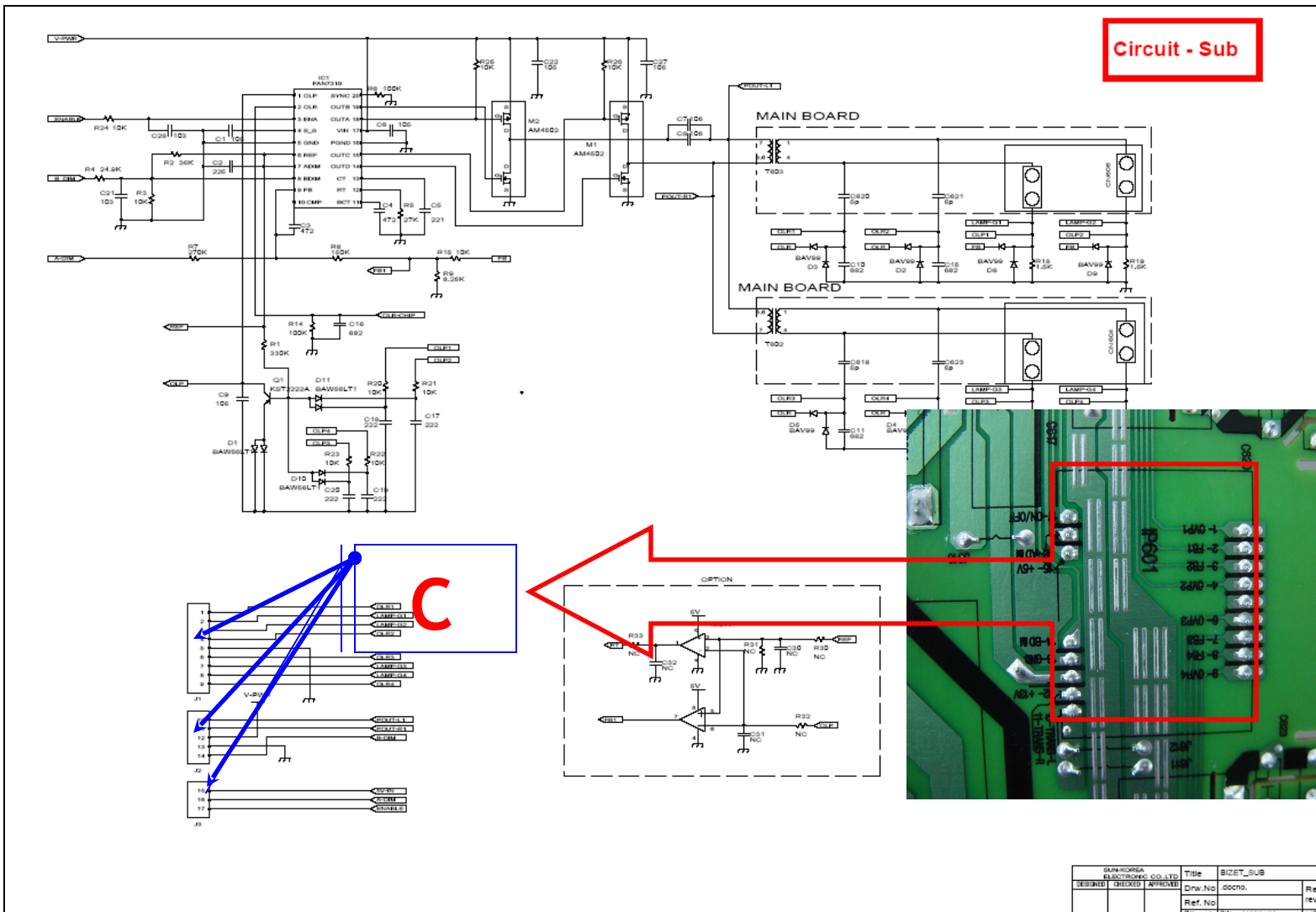
A

B

- 1. BL_ADJ_EN
- 2. NC (13V)
- 3. GND
- 4. GND
- 5. GND
- 6. 5V
- 7. 5V
- 8. BL_ADJ_ANALOG
- 9. BL_EN

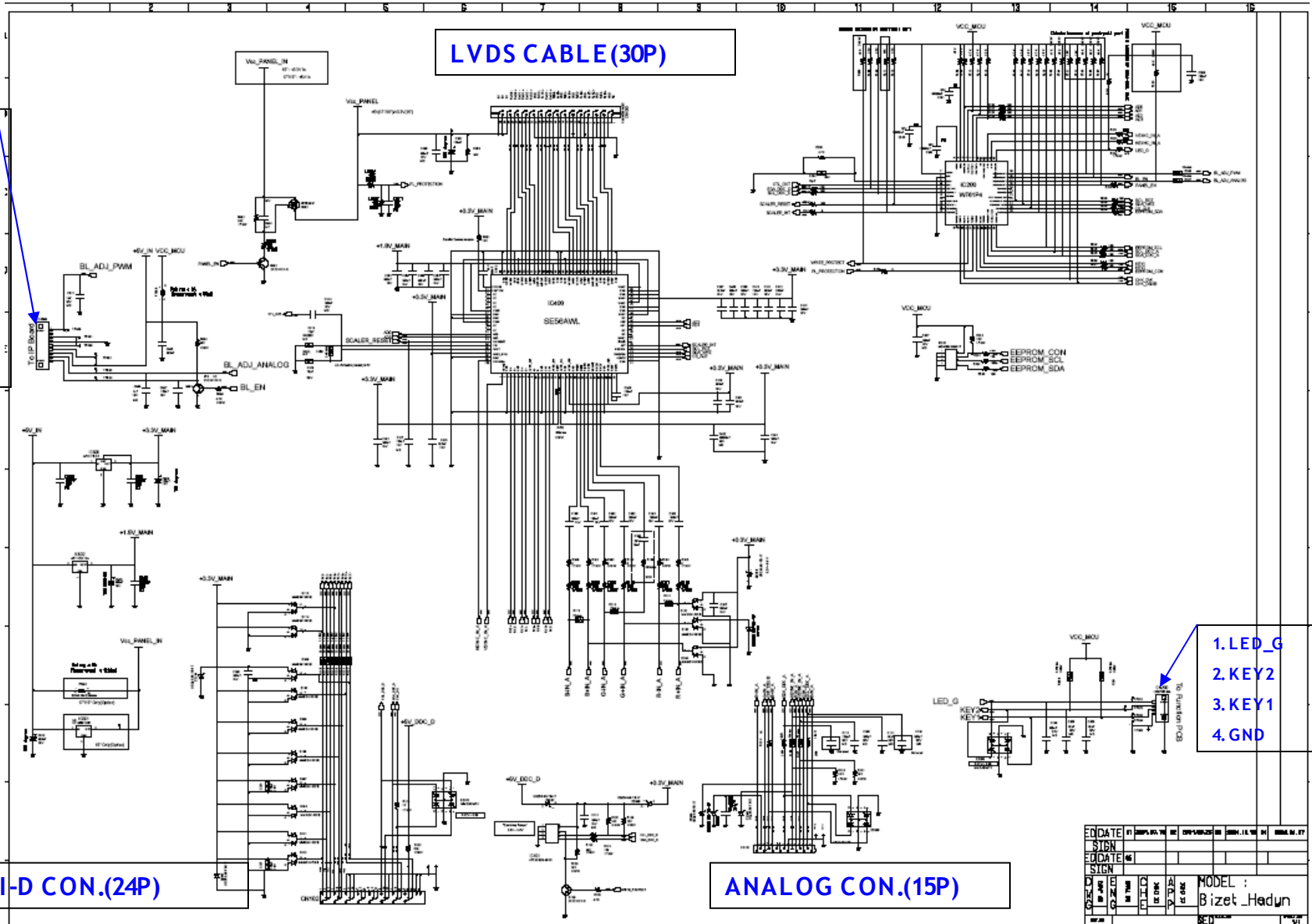
SUN-KOREA ELECTRONIC CO.,LTD			Title	BIZET_MAIN	
DESIGNED	CHECKED	APPROVED	Drw.No	doono	Rev.
			Ref.No		rev.0
			Size	A3	Date 2005/01/25
					1 of 1

4-1 IP BOARD Circuits



SAMSUNG ELECTRONICS CO., LTD.			Title	BIZET_SUB
DESIGN	CHECKED	APPROVE	Drw. No	00000
			Ref. No	
			Rev	rev.0

4-2. Main Circuits



- 1. BL_ADJ_EN
- 2. NC(13V)
- 3. GND
- 4. GND
- 5. GND
- 6. 5V
- 7. 5V
- 8. BL_ADJ_ANALOG
- 9. BL_EN


- 1. LED_G
- 2. KEY2
- 3. KEY1
- 4. GND

DVI-D CON.(24P)

ANALOG CON.(15P)

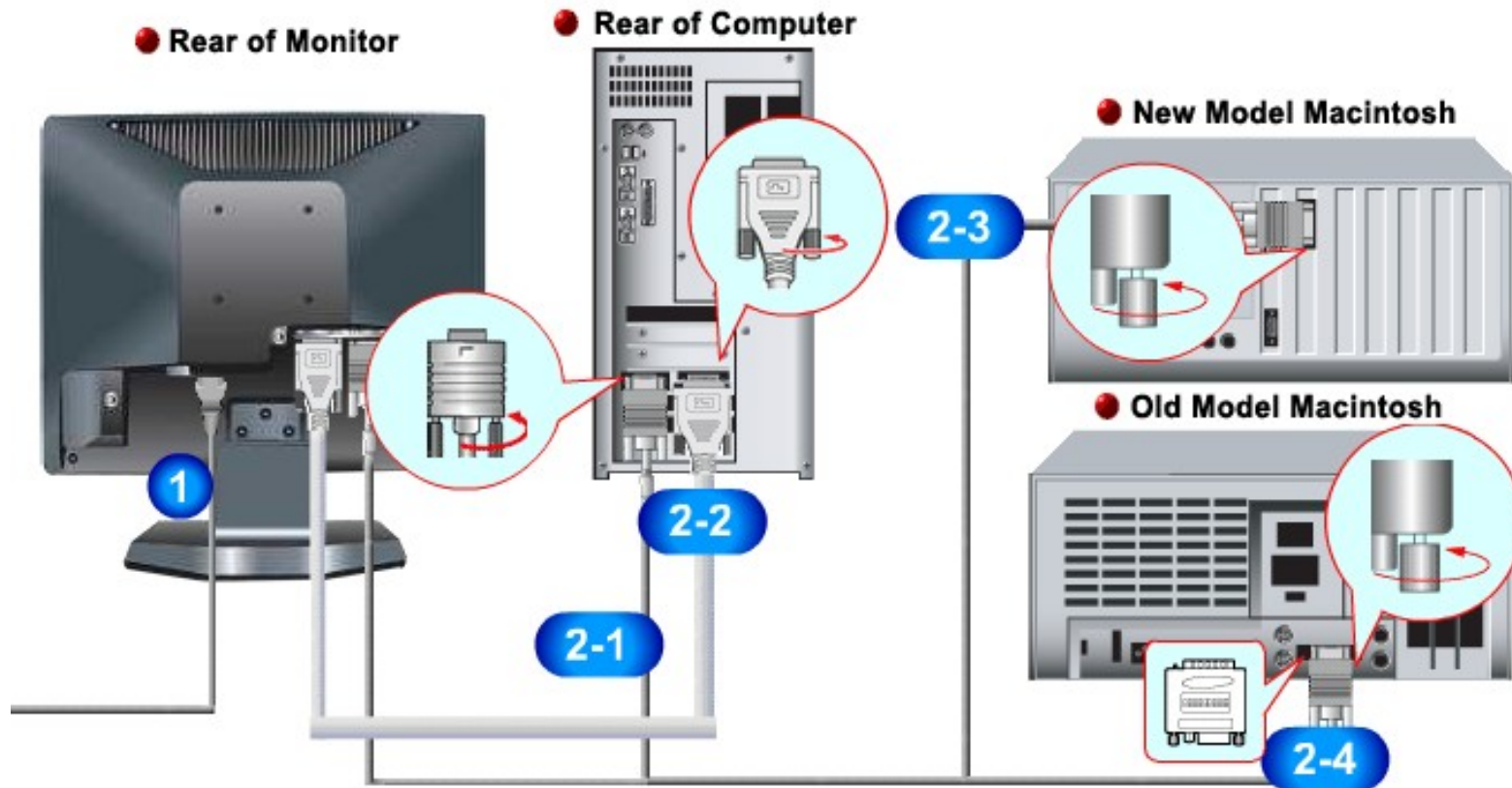
ED DATE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
ED DATE																	
ED DATE																	
DESIGN	DATE	BY	CHK	DATE	BY	CHK	DATE	BY	CHK	DATE	BY	CHK	DATE	BY	CHK	DATE	BY
MODEL :	Bizet_Hadun																
REV	1.0																

❖ The Check items before troubleshooting

- Notes:
1. Before troubleshooting, setup the PC's display as below.
 - Resolution: 1024 x 768
 - H-frequency: 61 kHz
 - V-frequency: 75 Hz
 2. If no picture appears, make sure the power cord is correctly connected.
 3. Check the following circuits.
 - No raster appears: Function PBA, Main PBA, I/D PBA
 - 5V develop but no screen: Main PBA
 - 5V does not develop: I/D PBA
 4. If you push and hold the “ (Enter, Source)” button for more than 5 seconds, the monitor automatically returns to the factory preset.

5-2. Trouble Shooting

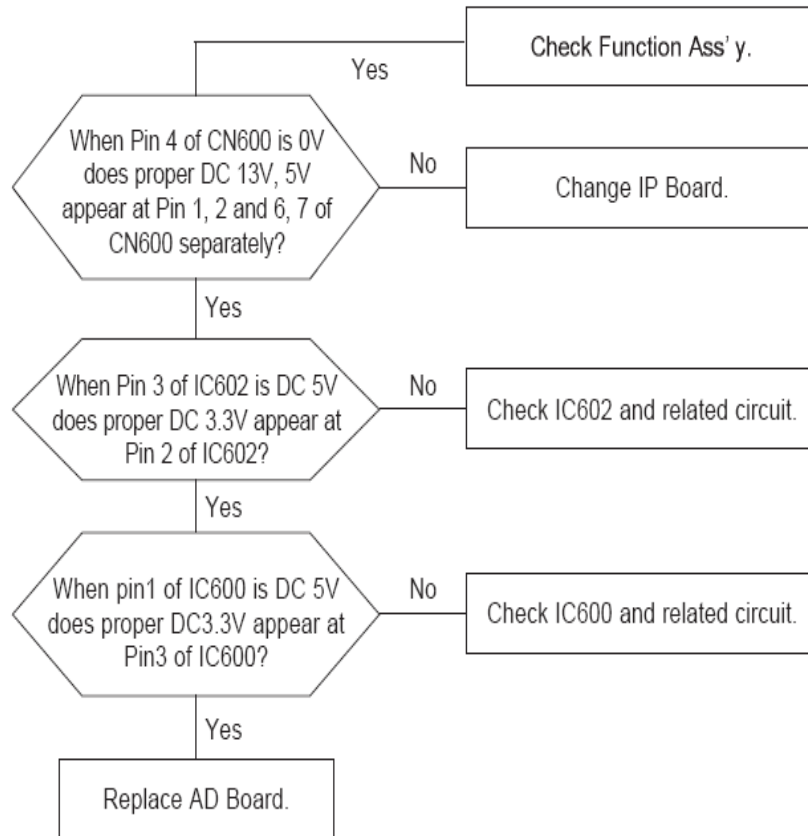
❖ How to connect the cables



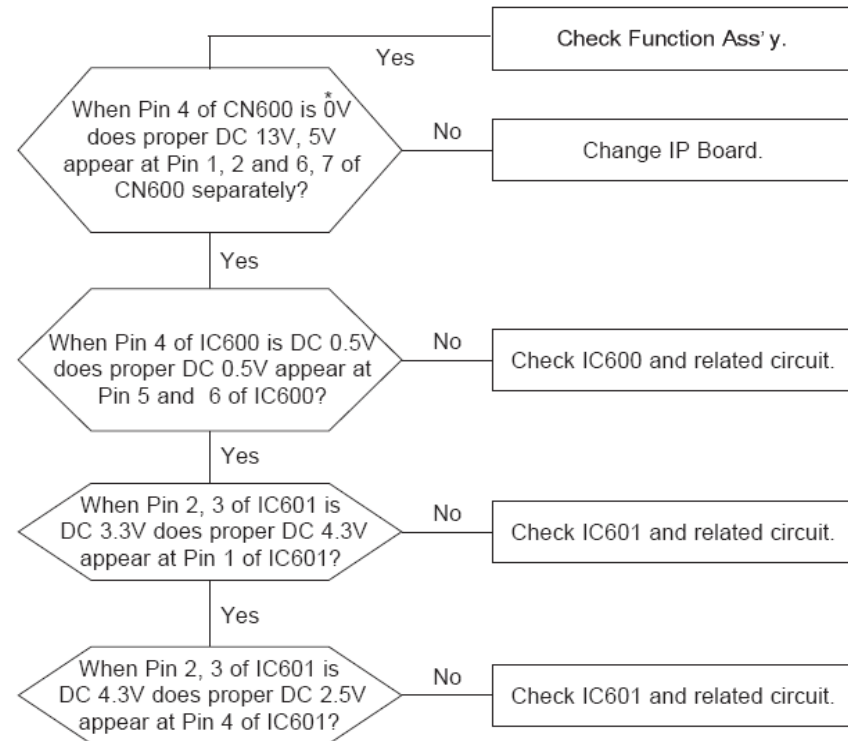
5-3. Trouble Shooting

❖ No Power

LS 15HAA/LS 15HAB



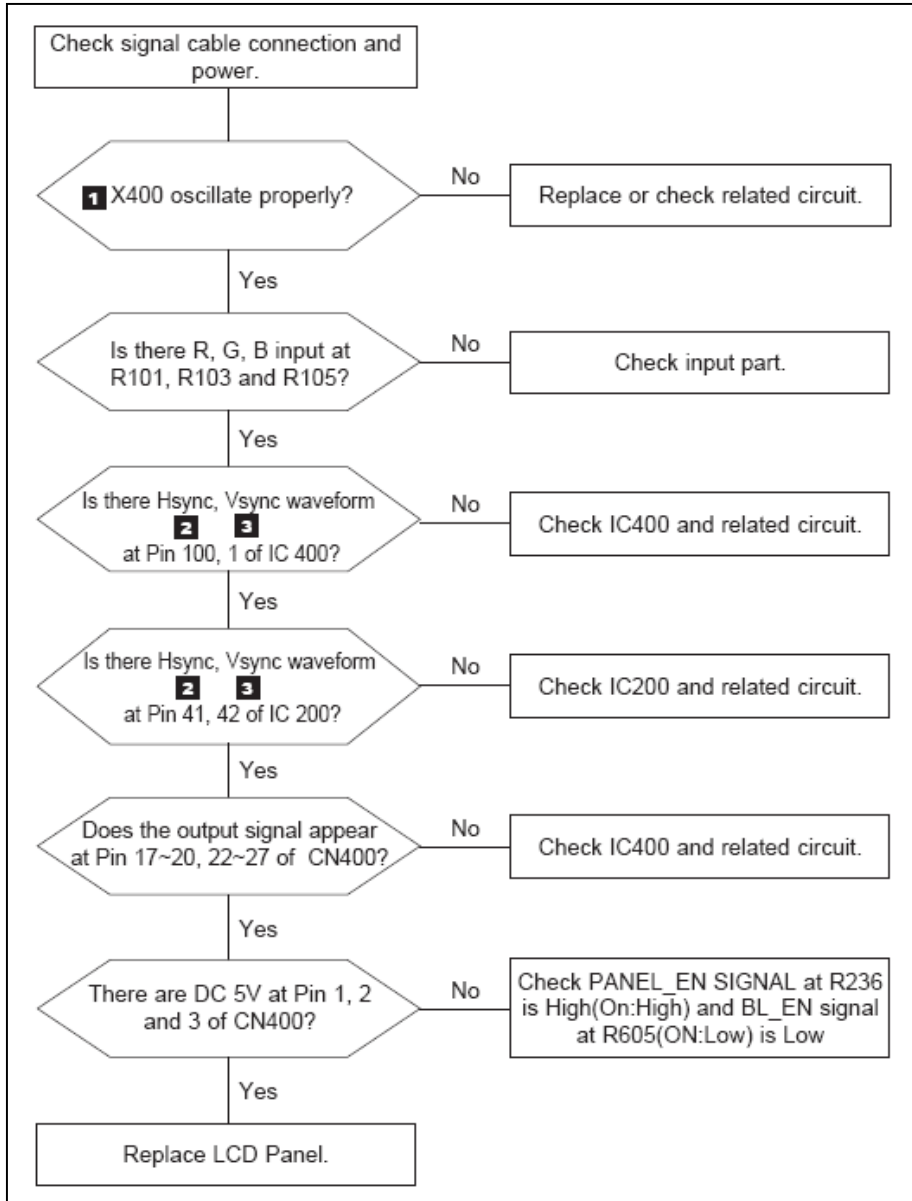
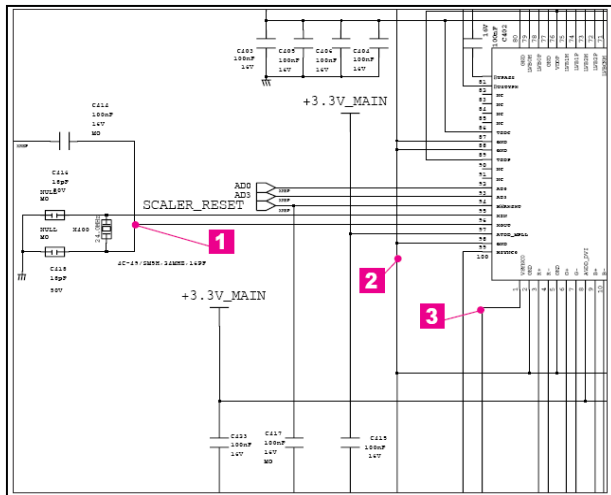
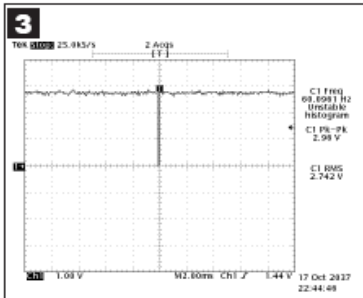
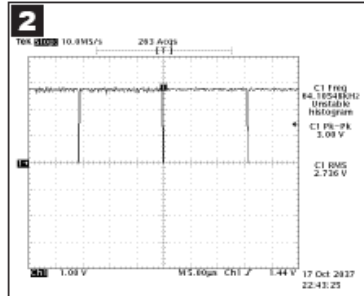
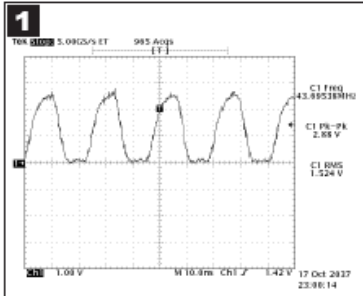
LS 17HAA/LS 17HAB/LS 17HAT LS 19HAA/LS 19HAB/LS 19HAT/LS 19HAP



* 0V means power on state.
When the monitor work well except DPMS and power switch off, 0V should be applied to number 4 of CN600.

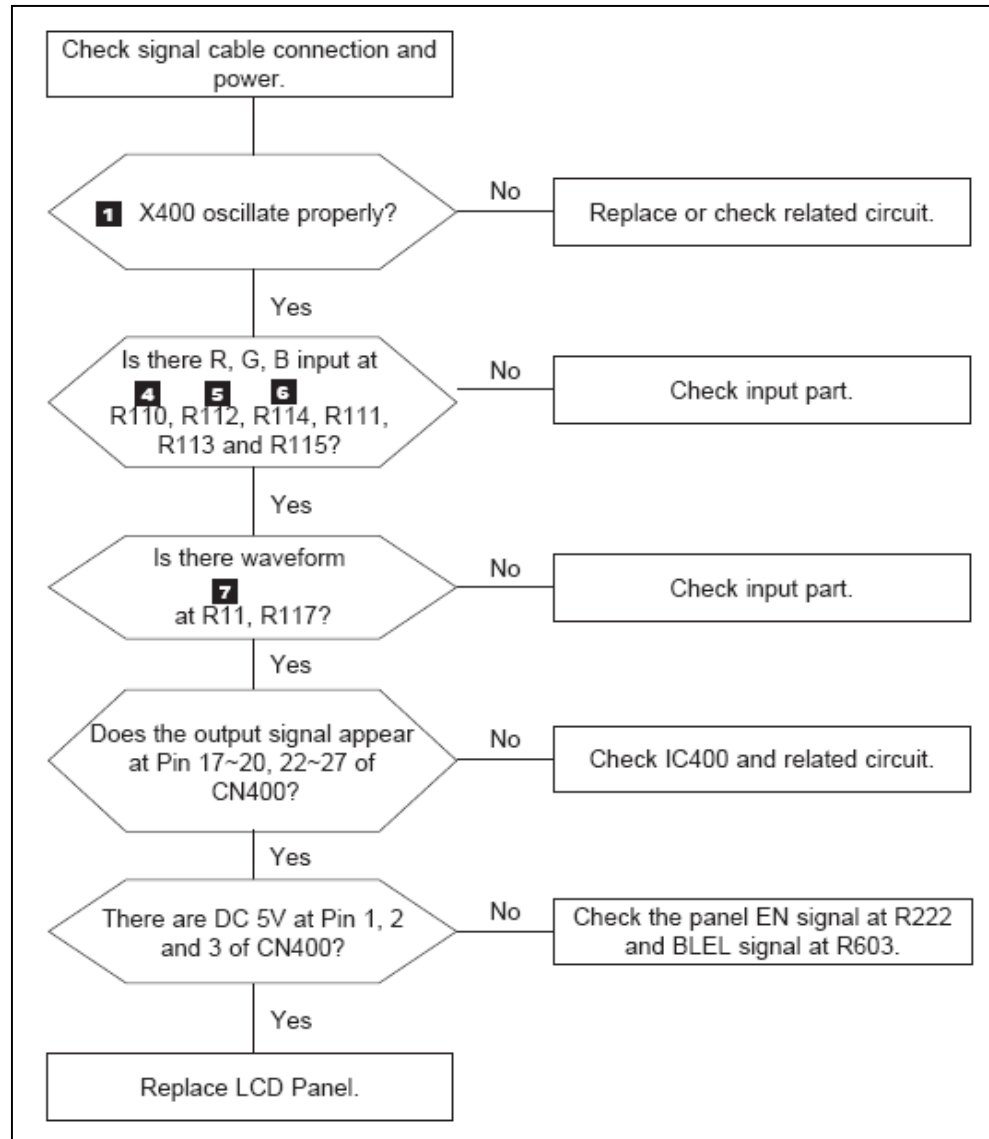
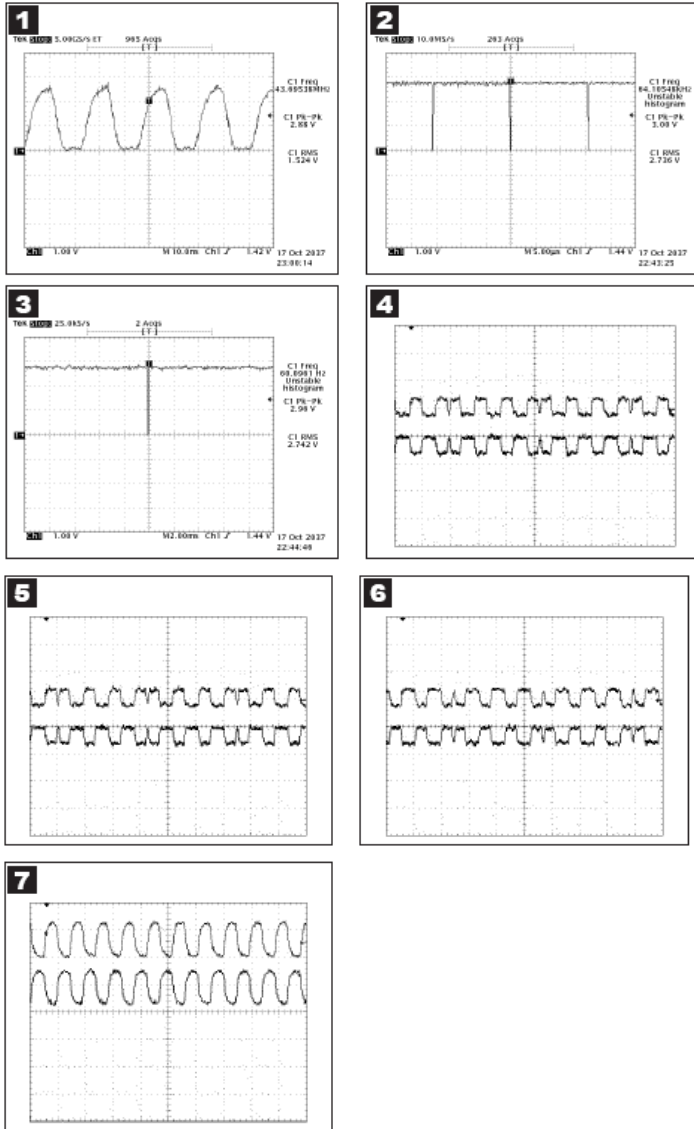
5-4. Trouble Shooting

❖ No Video (Analog)



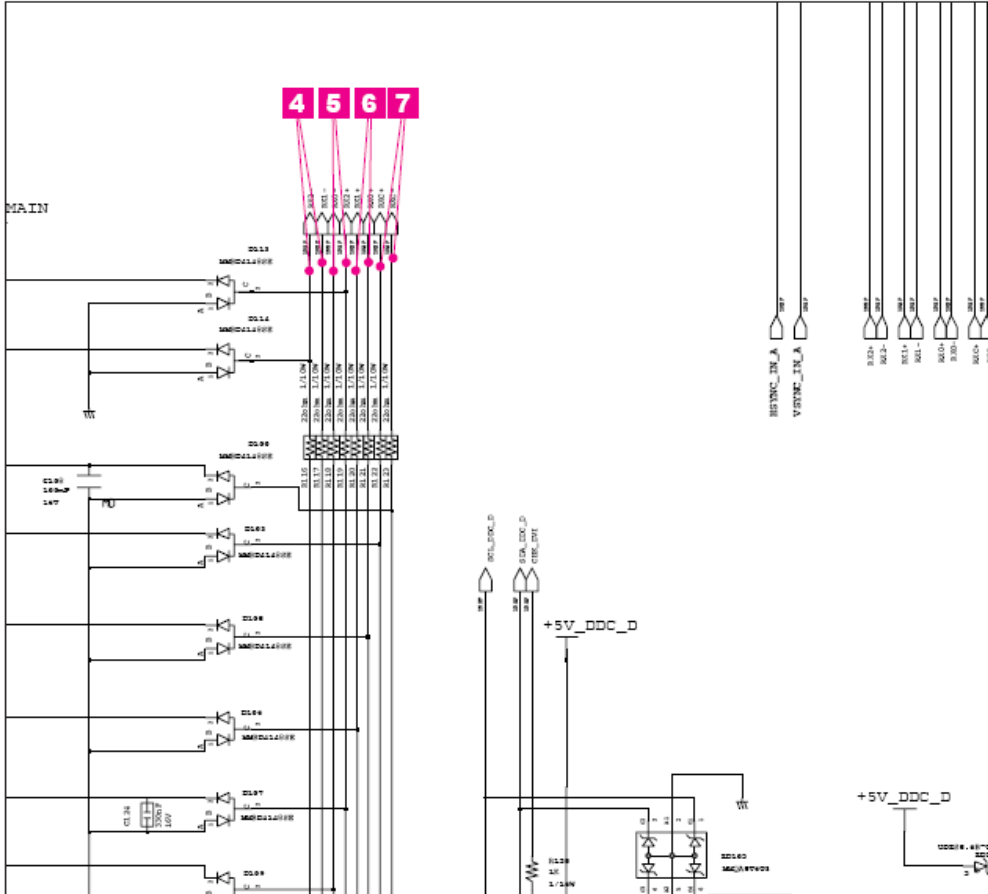
5-5. Trouble Shooting

❖ No Video (Digital)



5-6. Trouble Shooting

❖ No Video (Digital)



5-7. Disassembly

WARNING : This Monitor contains electrostatically sensitive devices. Use Caution when handling these components

Caution : 1. Disconnect the monitor from the power source before disassembly.

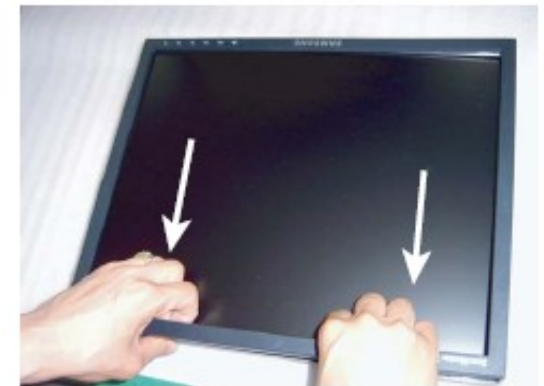
❖ Has Stand



1. Place monitor face down on cushioned table. Remove 3 screws from the stand.

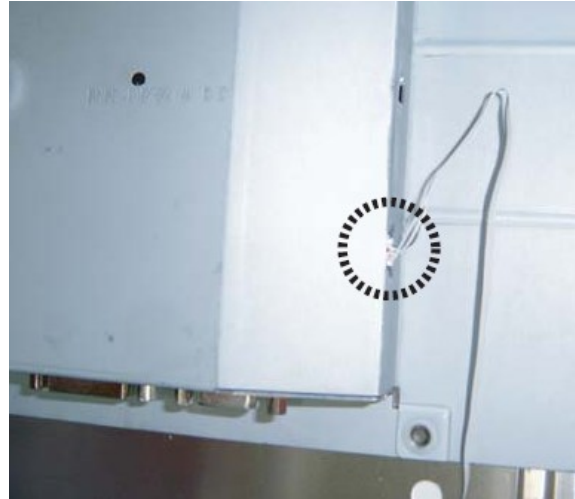
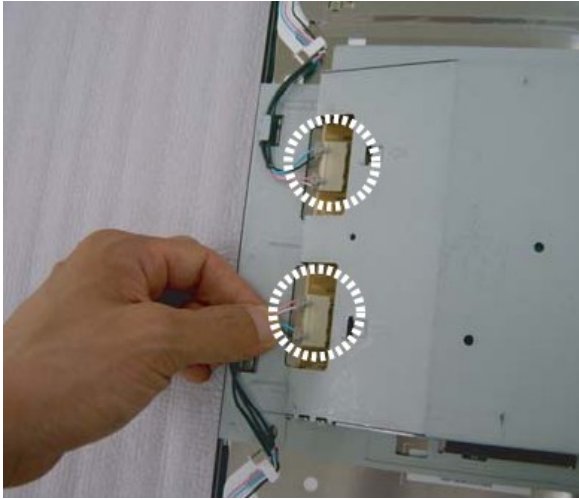


1. Place monitor face down on cushioned table. Remove 2 screws from the stand and

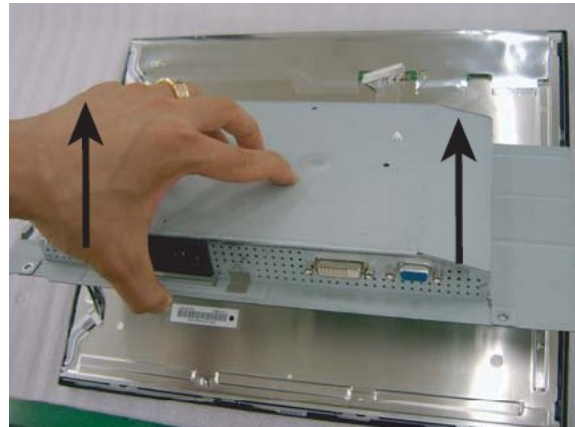
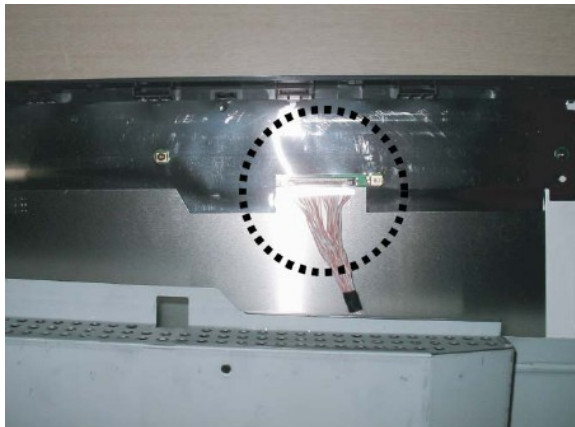


2. Remove stand and front cover.

5-8. Disassembly

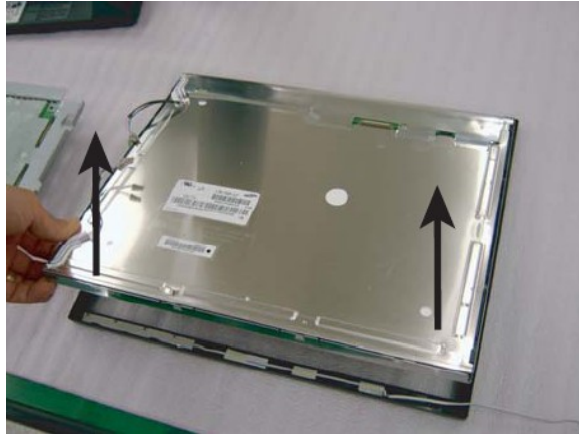


4. Disconnect Lamp wires and function Harness



5. Lift up the shield and disconnect LVDS cable

5-9. Disassembly



6. Lift up the LCD Panel

Please check the Panel Name and Company.

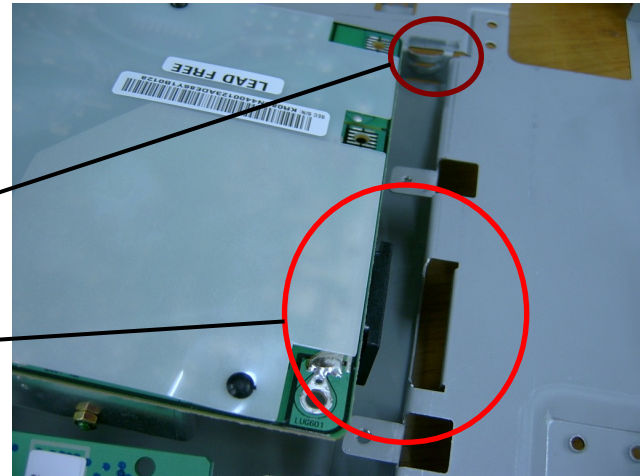
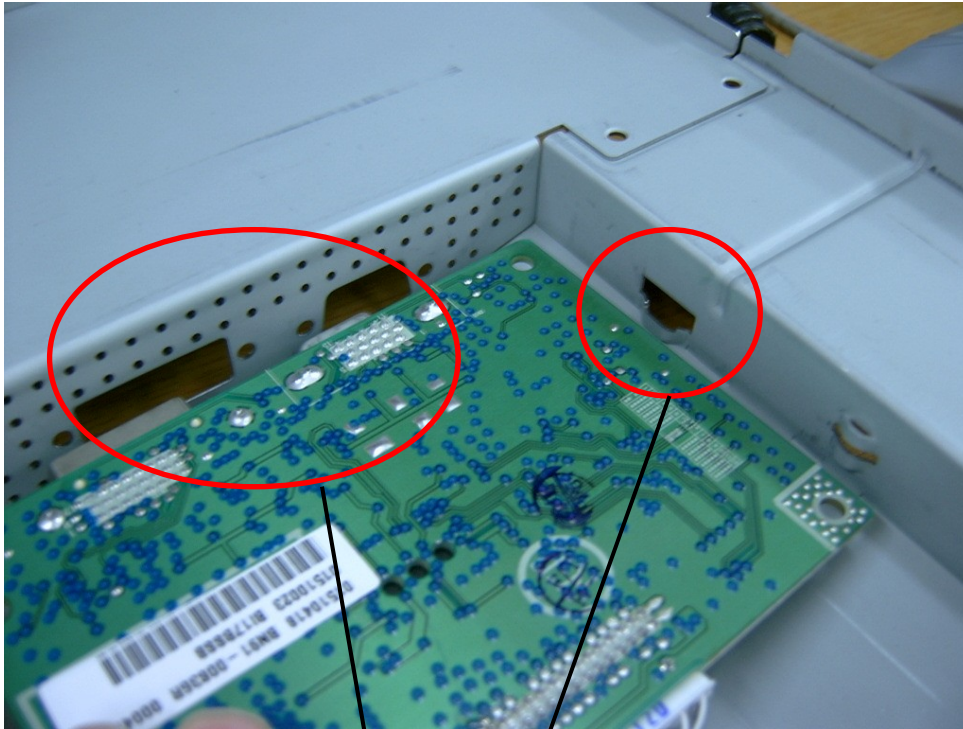
5-10. Disassembly



7. Disassembly the Board and Cables from the Shield

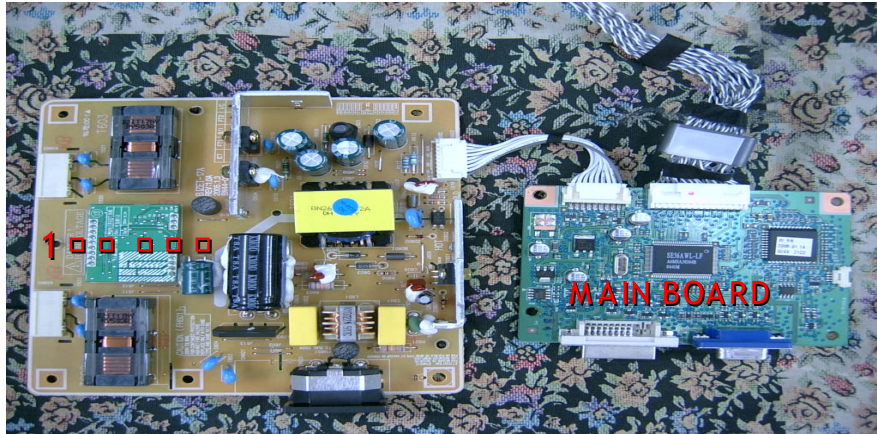


5-11. Assembly

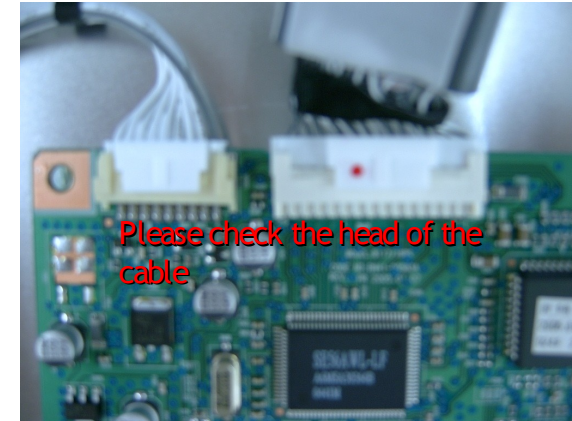


Please fix the board completely to the shield like above picture.

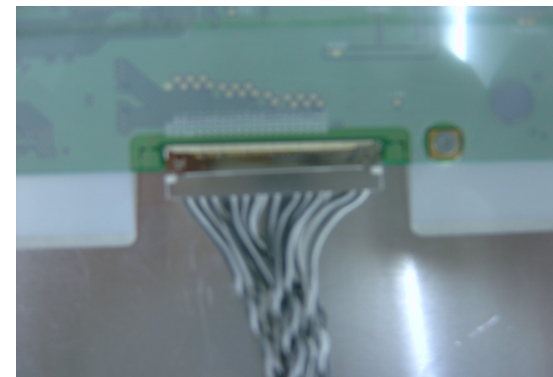
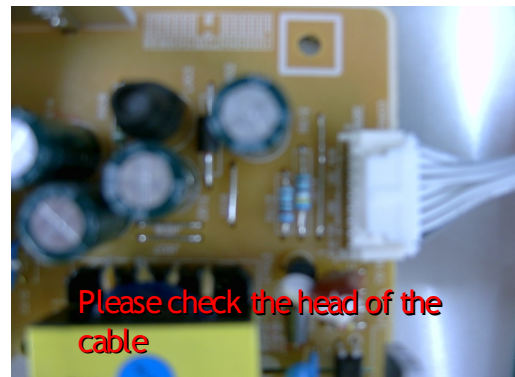
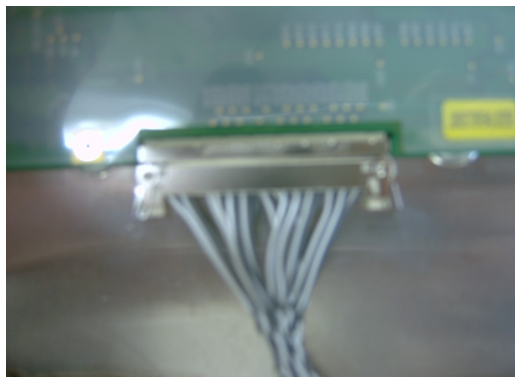
5-12. Assambly



19" LVDS HARNESS

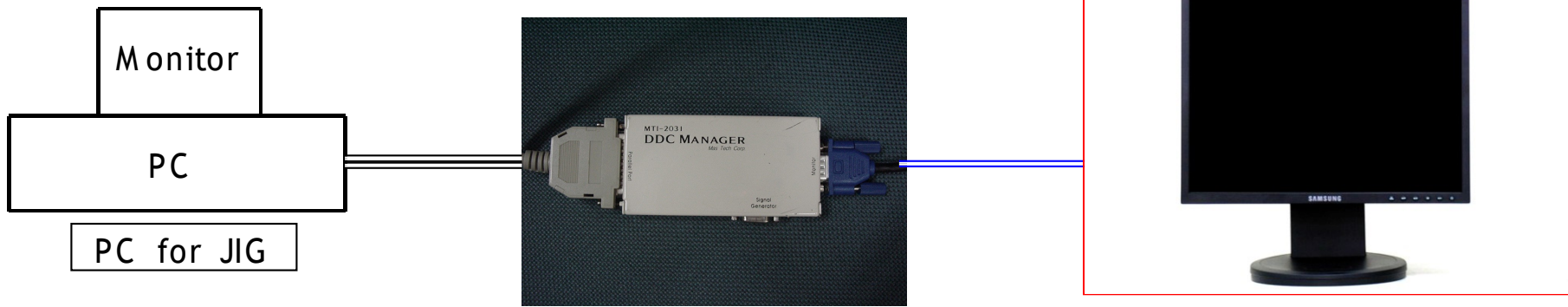


17" LVDS HARNESS



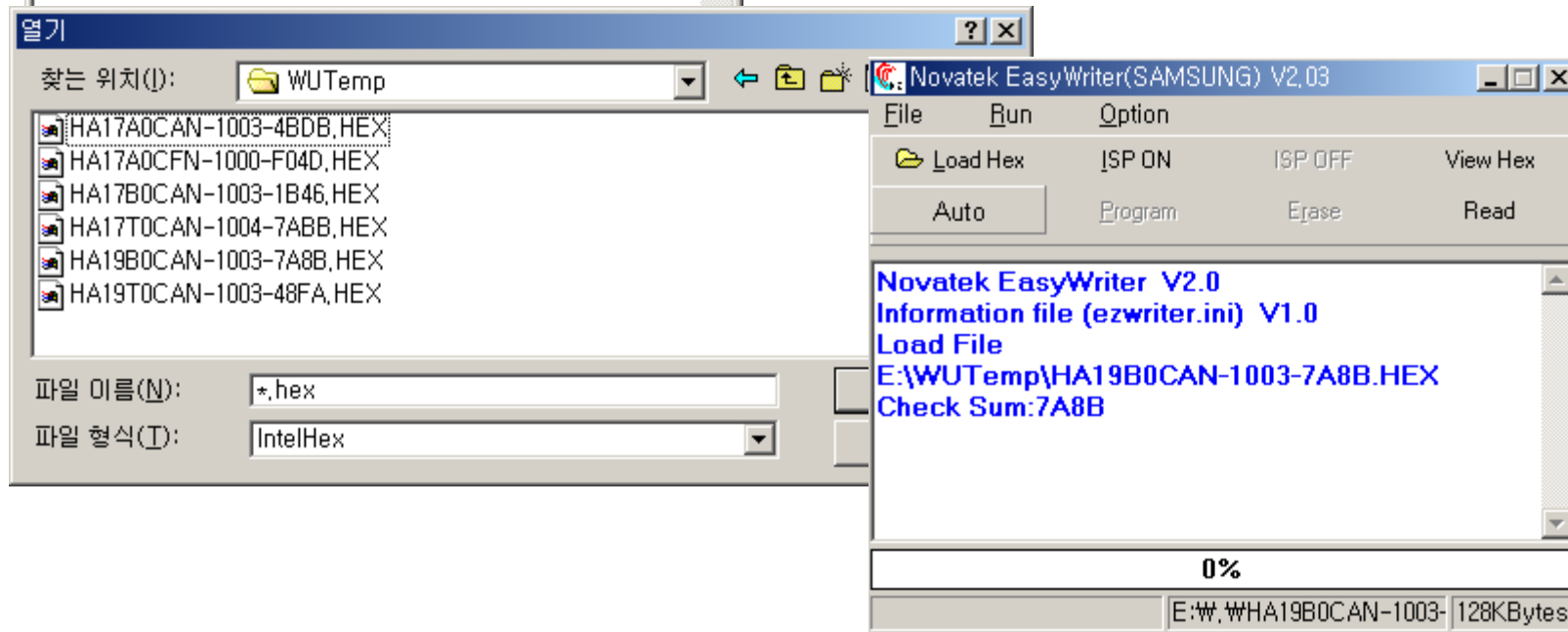
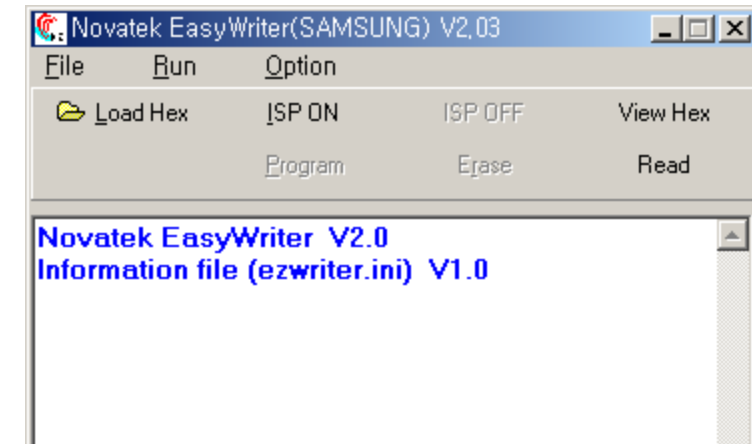
6. How to download the Program(17"/19")

1. Download below **EasyWriter** program.zip file in your computer.
2. Unzip winDDC program.zip file.
3. Click **EasyWriter.exe** file.



6. How to download the Program(17"/19")

- Click the **LoadHex** button
Select the right Hex file on your computer
(Please download the last version from the site.)
Click the **Auto** Button



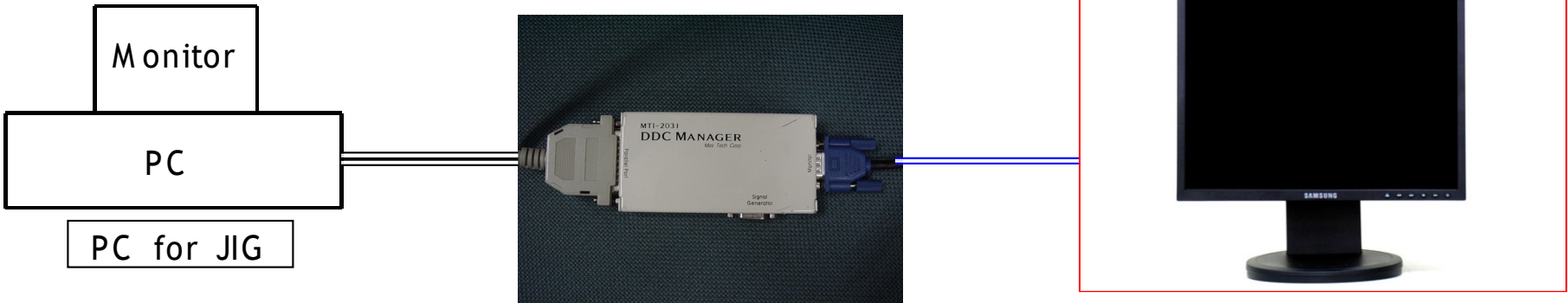
6. How to install the winDDC Program (15”)

1. Download below winDDC program.zip file in your computer.

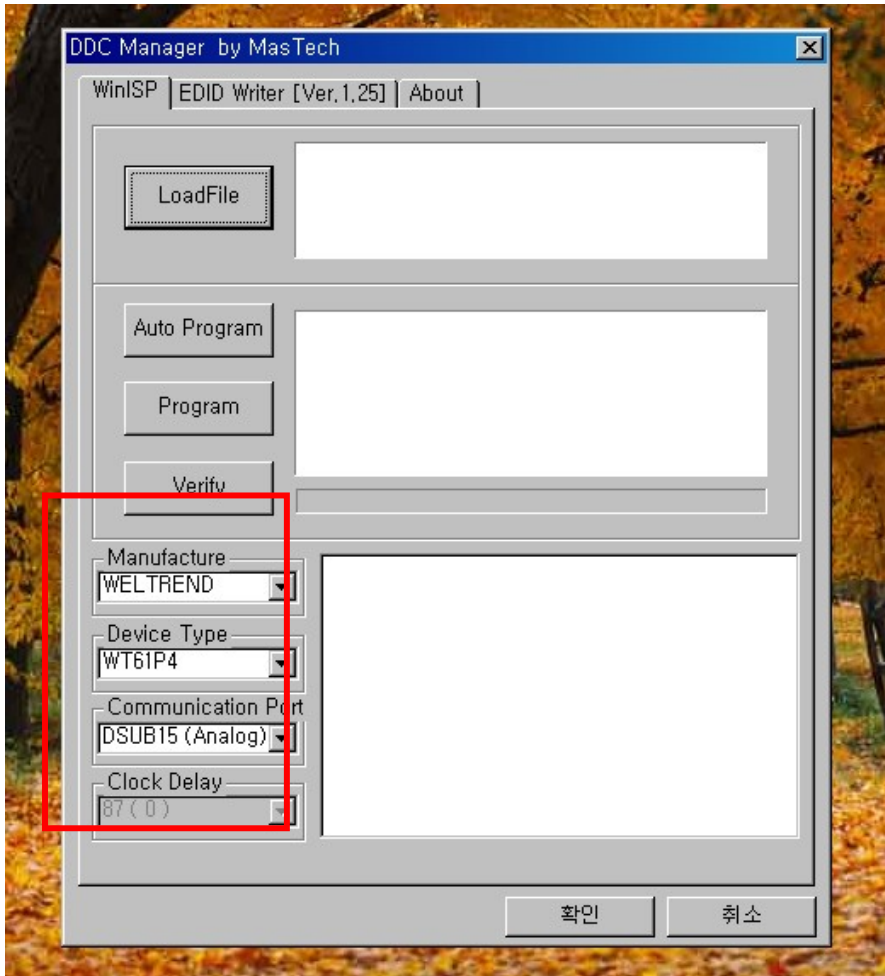
winDDC
program.zip

2. Unzip winDDC program.zip file.

3. Click winDDC.exe file.



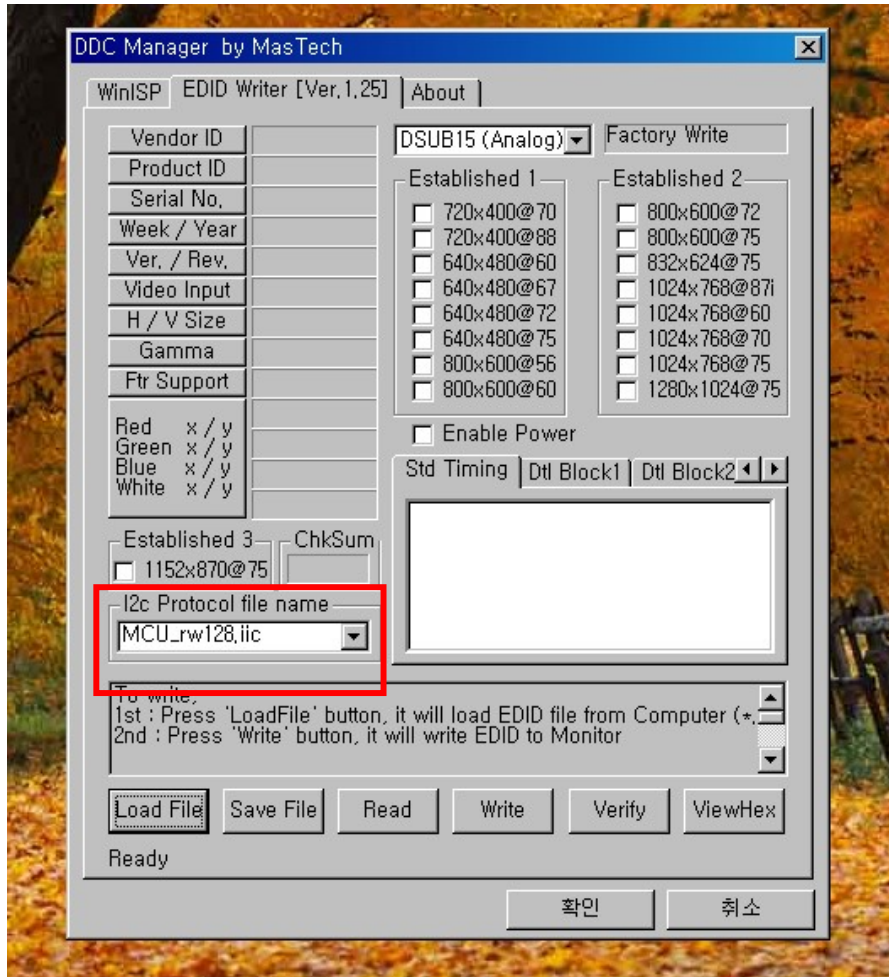
How to install the WinDDC Program(15")



4. Click WinISP Tap, and set as below

- Manufacture : **WELTREND**
- Device Type : **WT61P4**
- Communication Port : **DSUB15 (Analog)**

How to install the WinDDC Program (15")



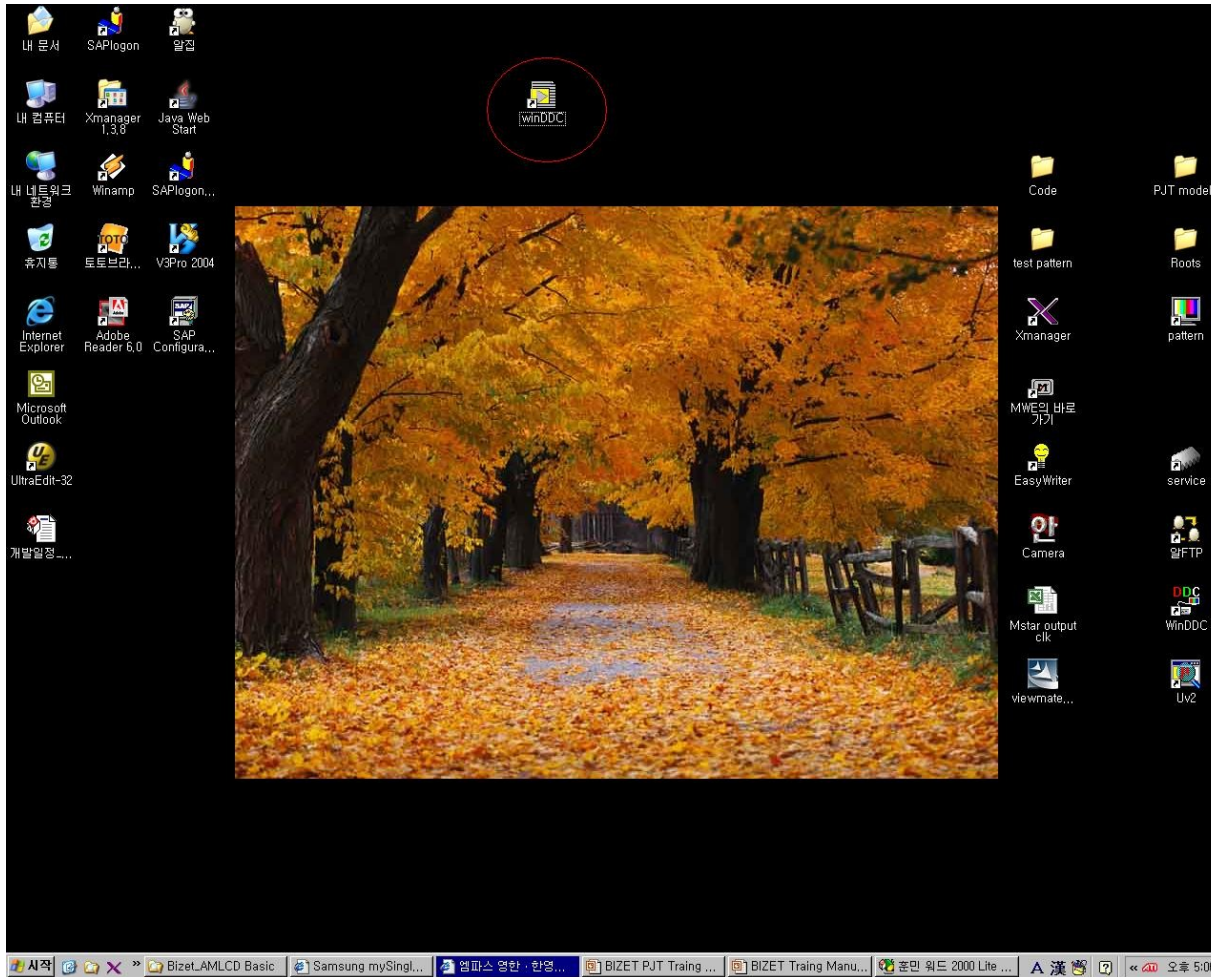
4. Click EDID Writer[Ver.1.25] Tap,
and set as below

-I2c Protocol file name
: [MCU_rw128.iic](#)

5. Click button '□ □'.

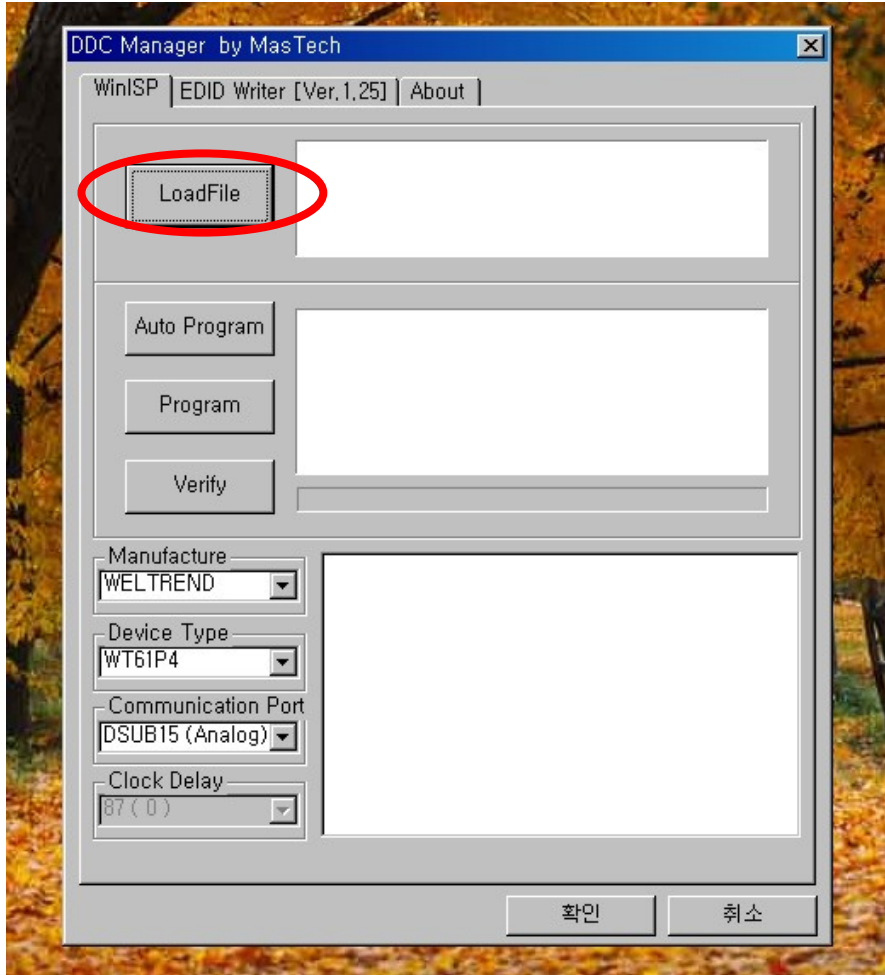
6. The installment is all done.

Firmware Updating_WinDDC Program (15")



1. Select the program 'WinDDC'

Firmware Updating – Load Hex (15”)

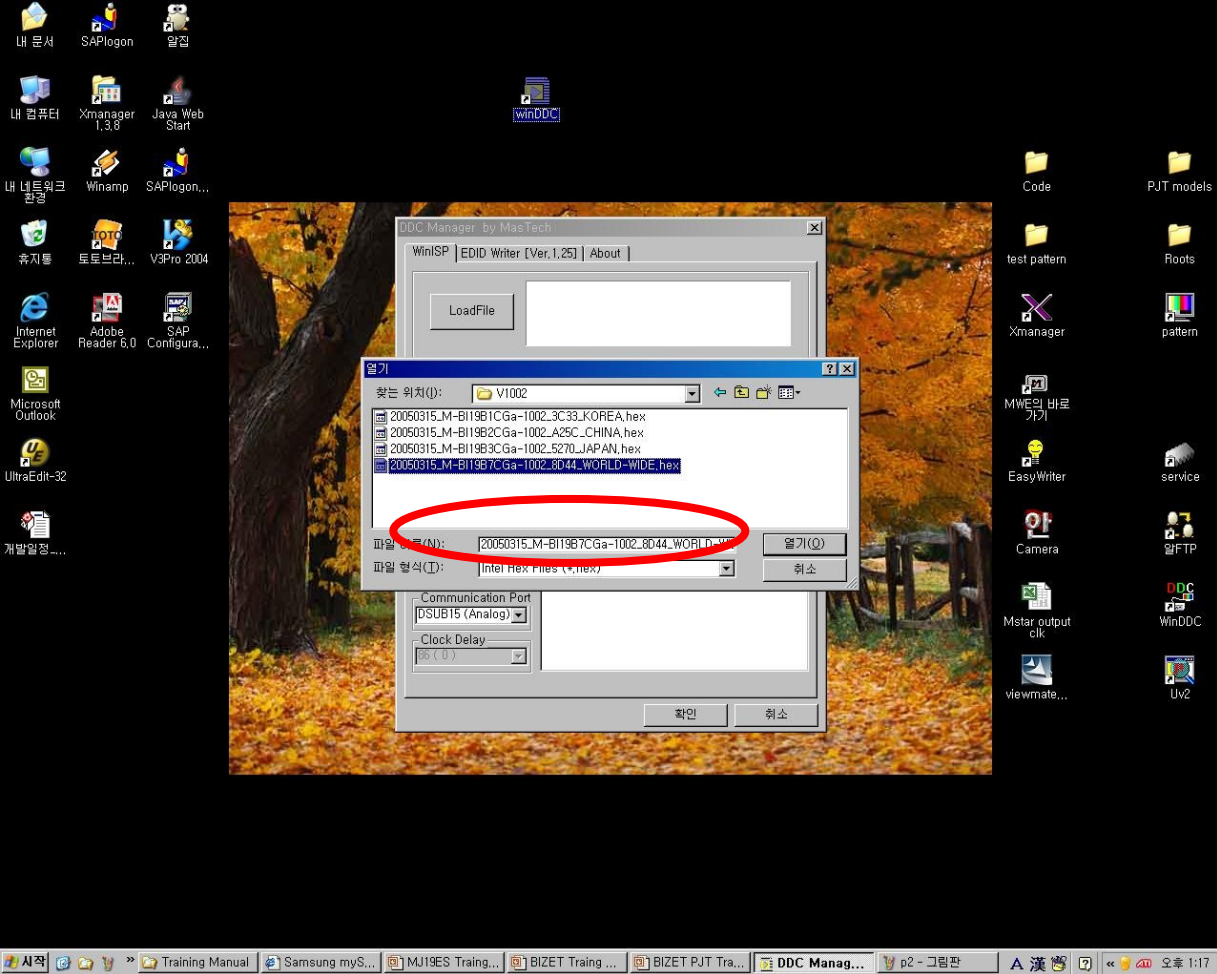


2. Push Button 'LoadFile'

Attention !

Select the Right Model and the latest Version Program

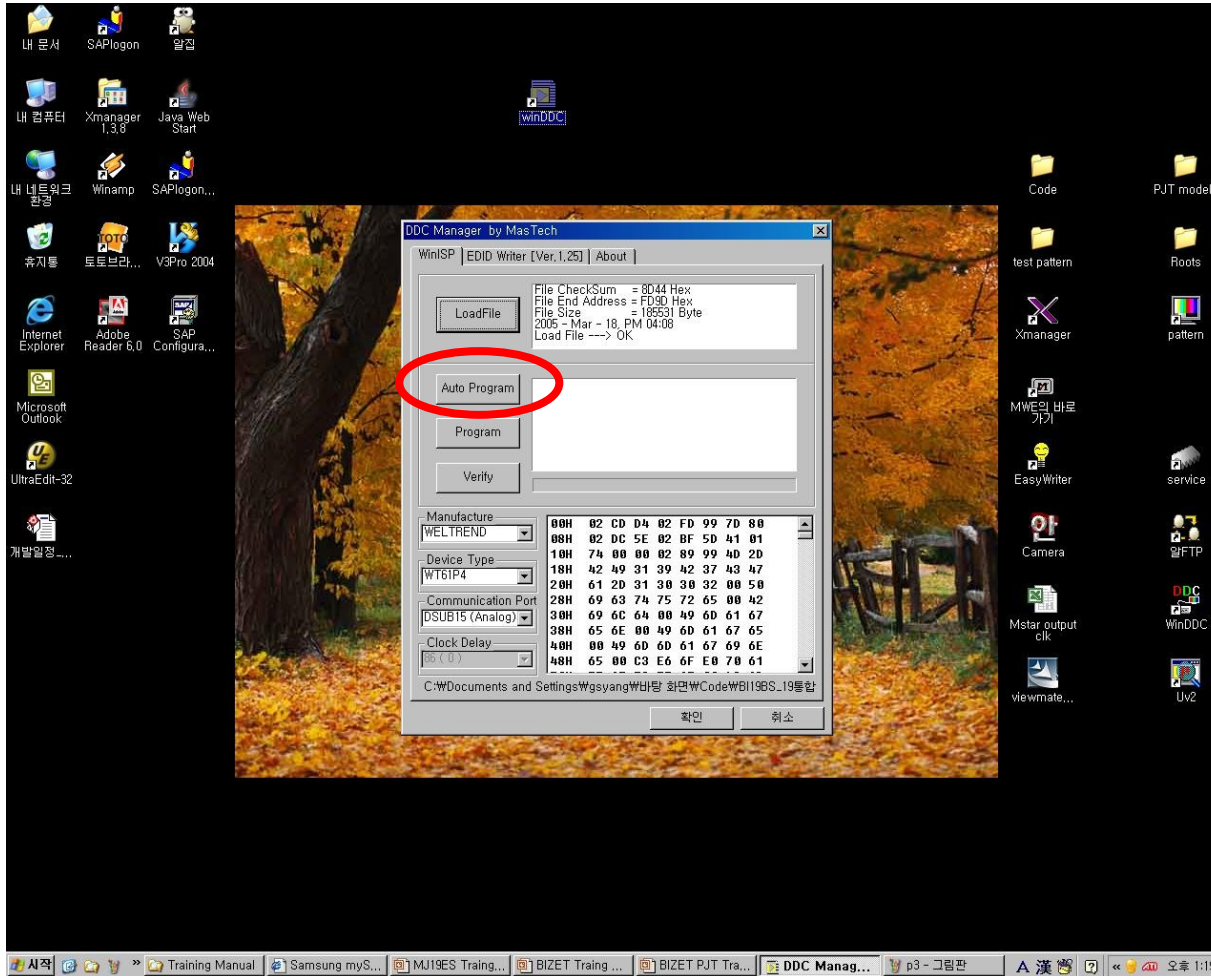
Firmware Updating – Selecting firmware



3. Select the Firmware

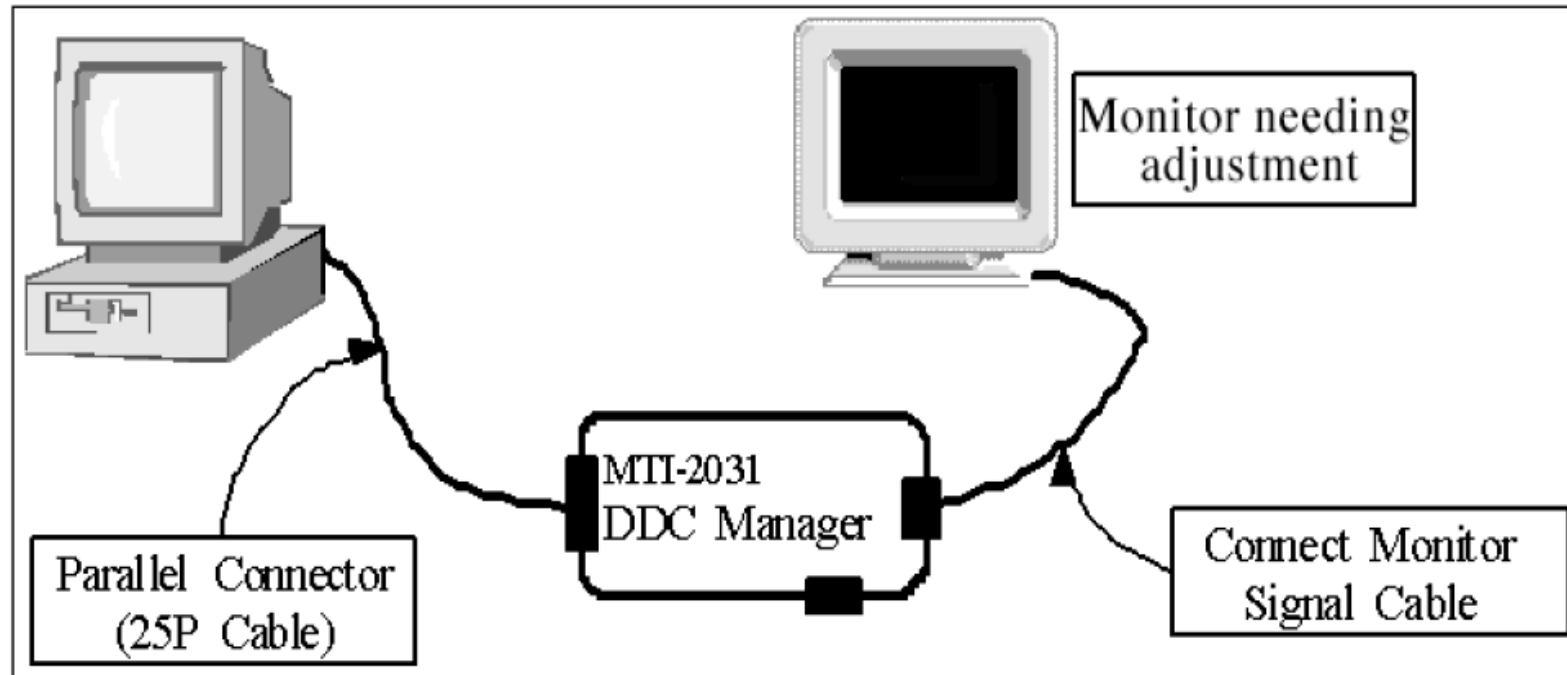
Firmware Updating – Up dating (AutoProgram Button) (15”)

SAMSUNG



5. Now updating is ready, just push the button 'Auto Program'

8.DDC - Device Setting



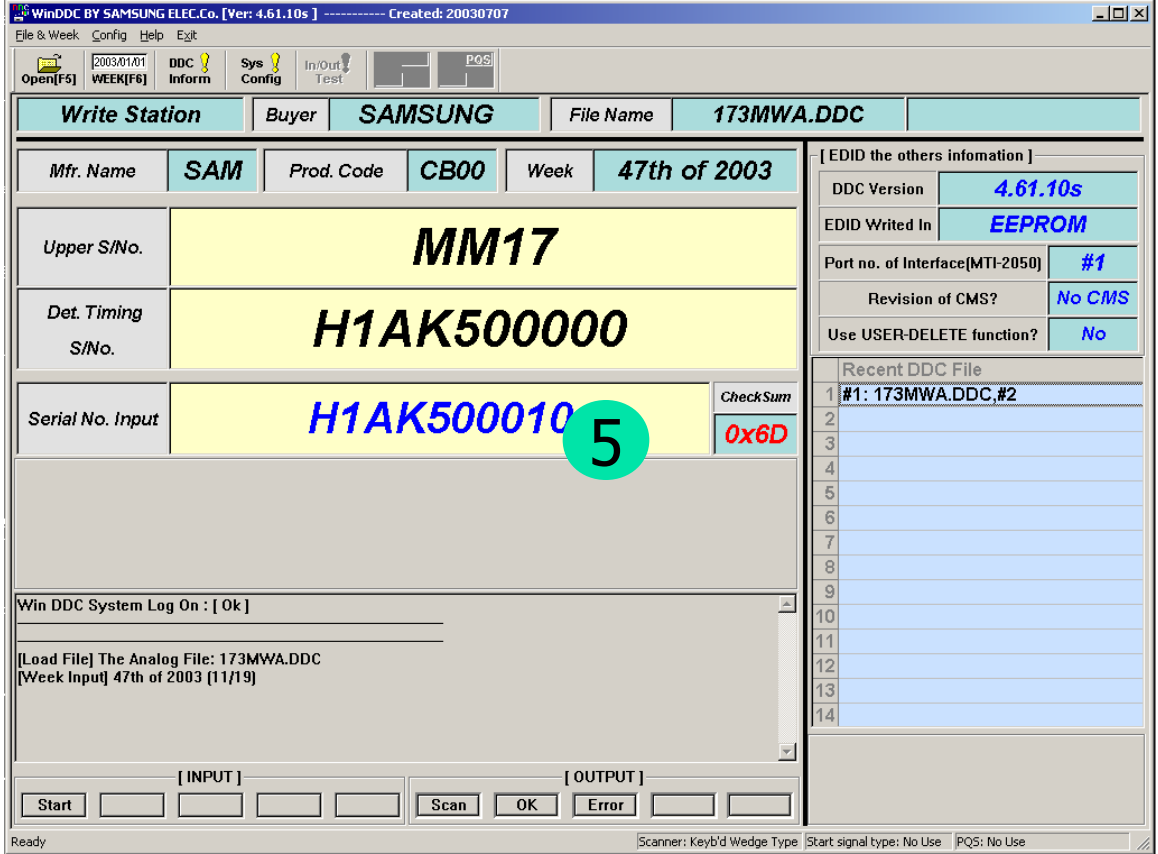
1. Set your devices & Monitor
2. After you set like the picture, you have to wait until 'Check Signal' OSD runs in the screen.
3. Now push the button 'MENU & ▽', and then the LED lamp will blink.
4. This process should be done before updating DDC File

DDC – Program & File Setting

The screenshot shows the WinDDC software interface. The main window is titled 'WinDDC BY SAMSUNG ELEC.Co. [Ver: 4.61.10s]'. It has a menu bar (File & Week, Config, Help, Exit) and a toolbar. The main area is divided into several sections: 'Write Station' (with 'Buyer' set to 'BASIC'), a table for 'Mfr. Name', 'Prod. Code', and 'Week', and a section for 'Upper S/No.' and 'Det. Timing S/No.'. There are also fields for 'Serial No. Input' and 'Serial No. It'. A 'Start' button is visible at the bottom left. Two 'Load EDID File...' dialog boxes are overlaid on the main window. The first dialog box shows 'Port #1' selected. The second dialog box shows a file explorer view with '173MWA.DDC' selected. A yellow arrow points to the 'Open' button in the top toolbar. Four green circles with numbers 1, 2, 3, and 4 are placed over the 'Open' button, the 'Port #1' selection, the file selection, and the 'Next [OK]' button respectively.

- 1: Push 'Open'
- 2: Choosing Port
- 3: Selecting DDC File
- 4: Push 'Next(OK)' button

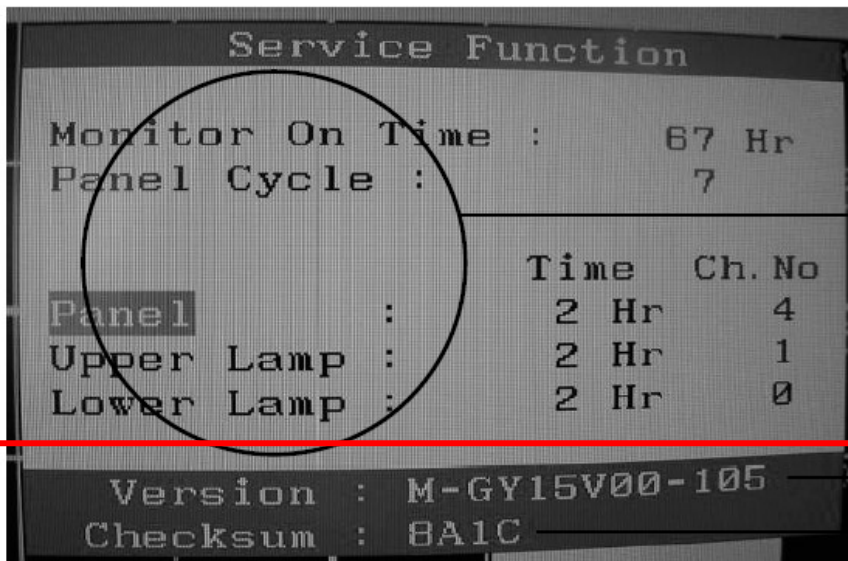
DDC - Last



5: Writing the Monitor's Serial Number, and push the 'Enter' key

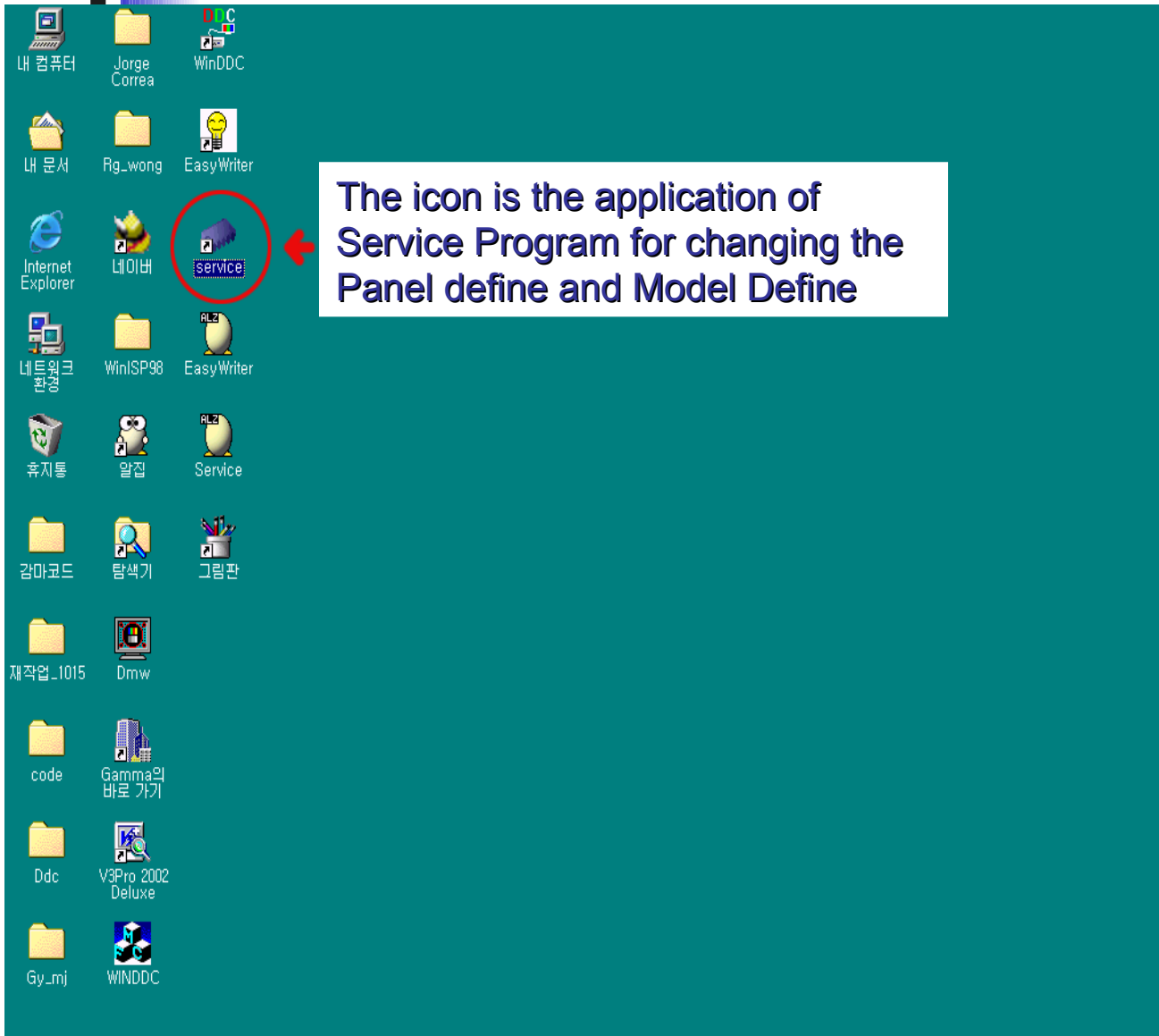
9. Panel & Model Define Process

1. Control 'Bright / Contrast' to 'Zero(0)'
2. Push the 'Enter' key for 5 seconds
3. And then you can see 'SVC OSD'.
4. SVC OSD displays 'Firmware check sum/Panel,Lamp Life time'
→If you want to get out of SVC mode, just Soft Power Off.
5. After checking Software version, you can choose the Method 1 or Method 2 of Panel & Model Define Process as below,
Before Software Version : xxxxx → Use the Method 1
After Software Version : xxxxx → Use the Method 2



Software Version
Check sum

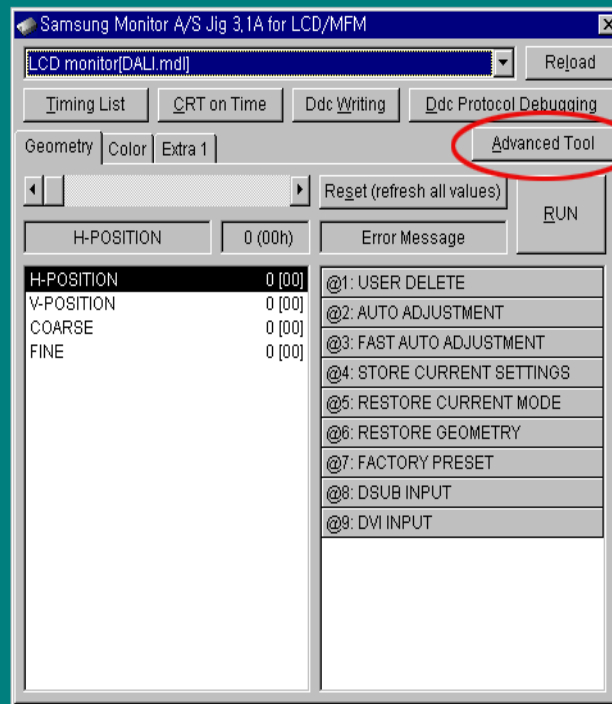
Panel & Model Define Process(Method 1)



1. Select the 'Service' program

Panel & Model Define Process

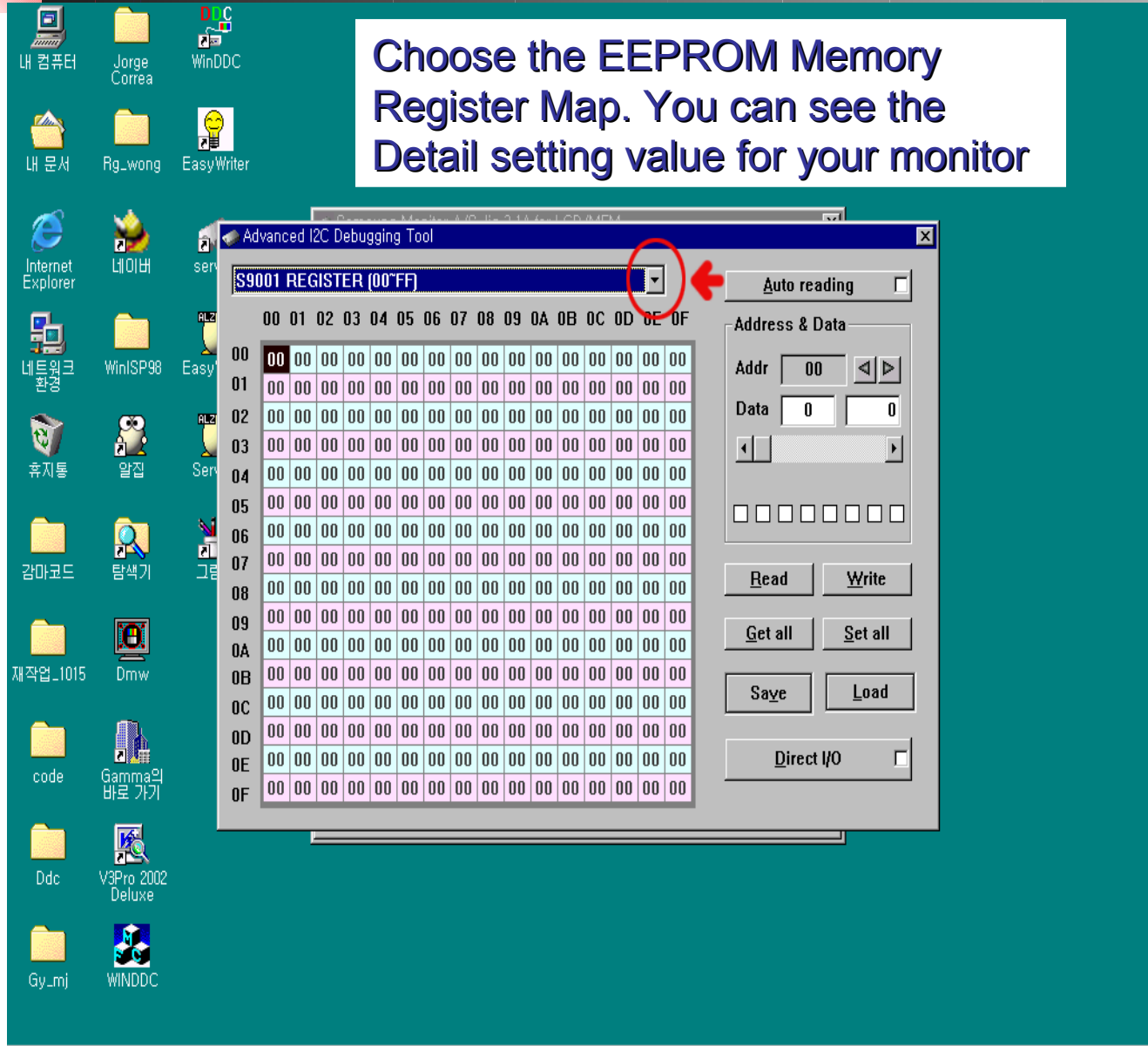
Click the Advanced Tool
To check the current setting Value



2. Push the button
'Advanced Tool'

Panel & Model Define Process

Choose the EEPROM Memory Register Map. You can see the Detail setting value for your monitor

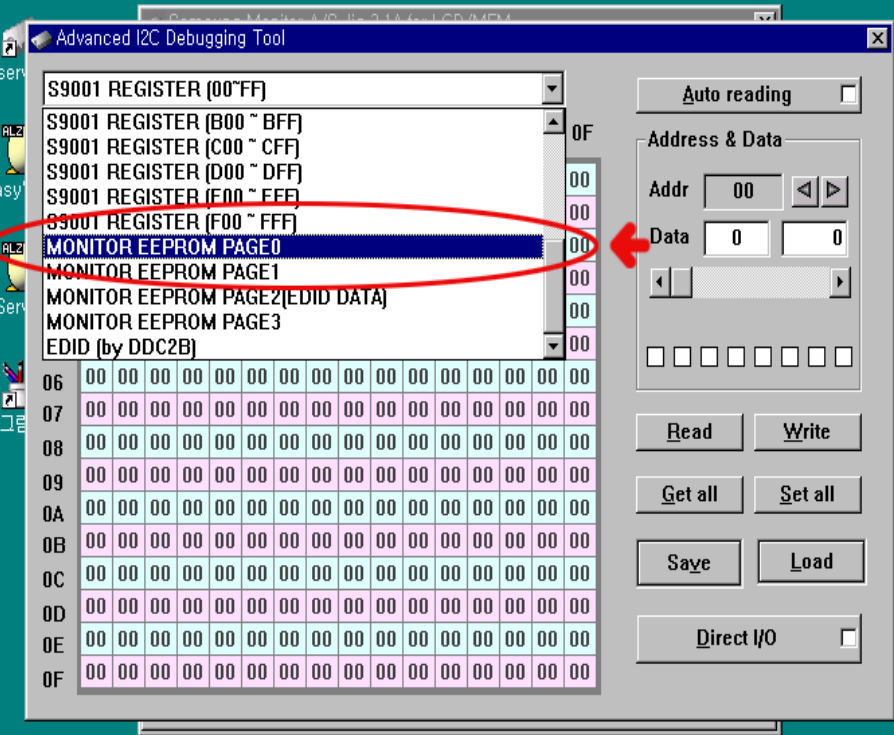


3. Click the button -down tap.

Panel & Model Define Process

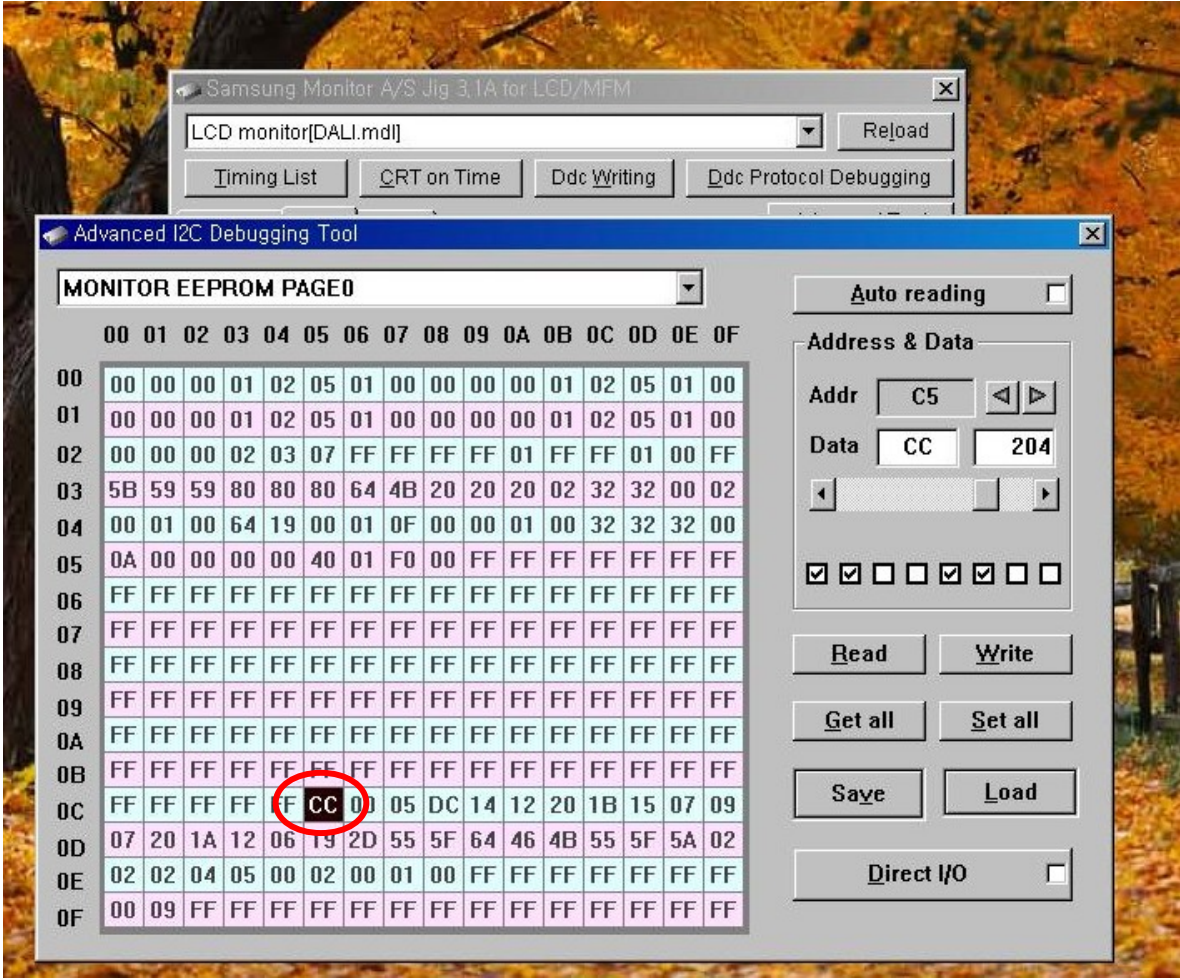
4. REGISTER PAGE 선택

아래와 같이 목록의 하단에서
MONITOR EEPROM PAGE0을 선택합니다.



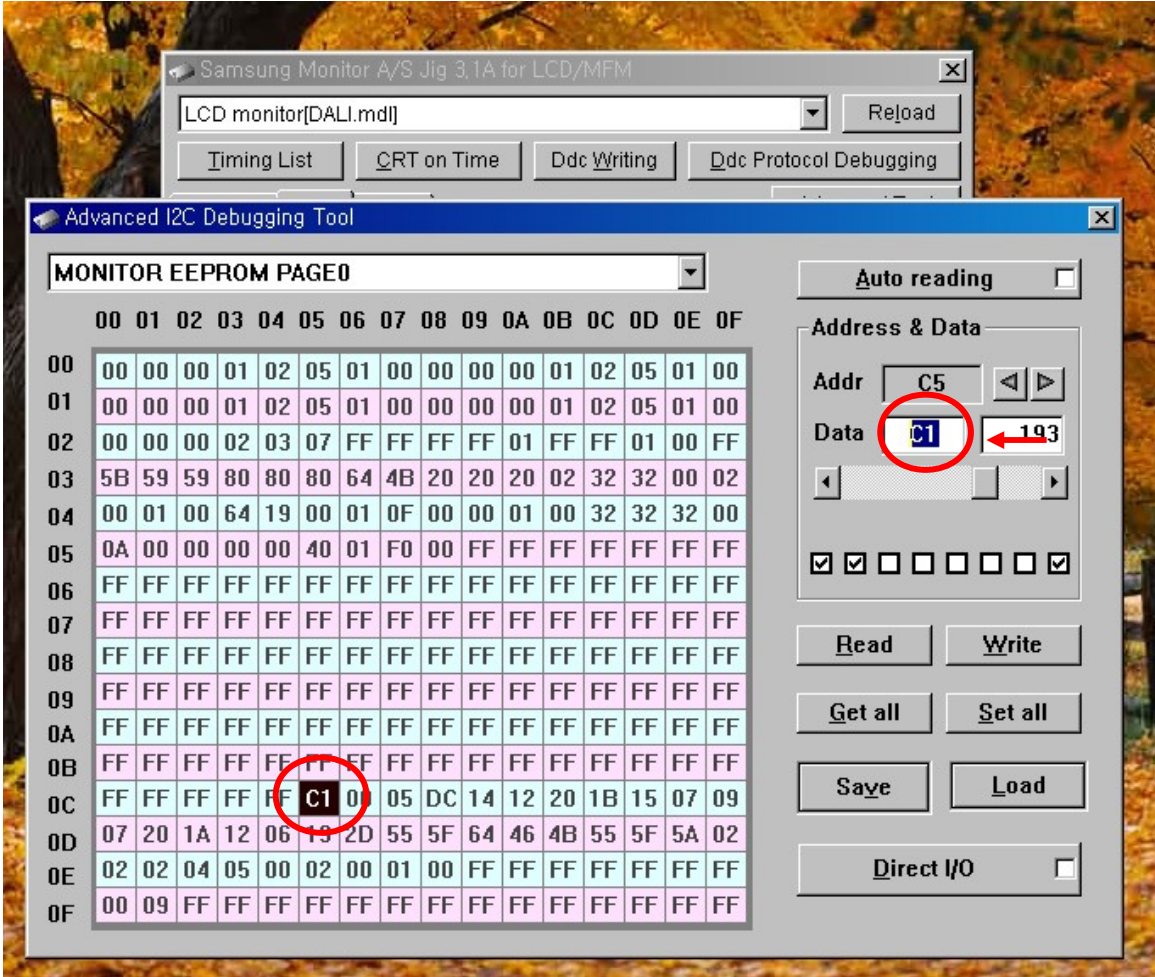
4. Select 'Monitor EEPROM PAGE0'

Panel & Model Define Process



5. Click the pixel
(row : 0C / column : 05)

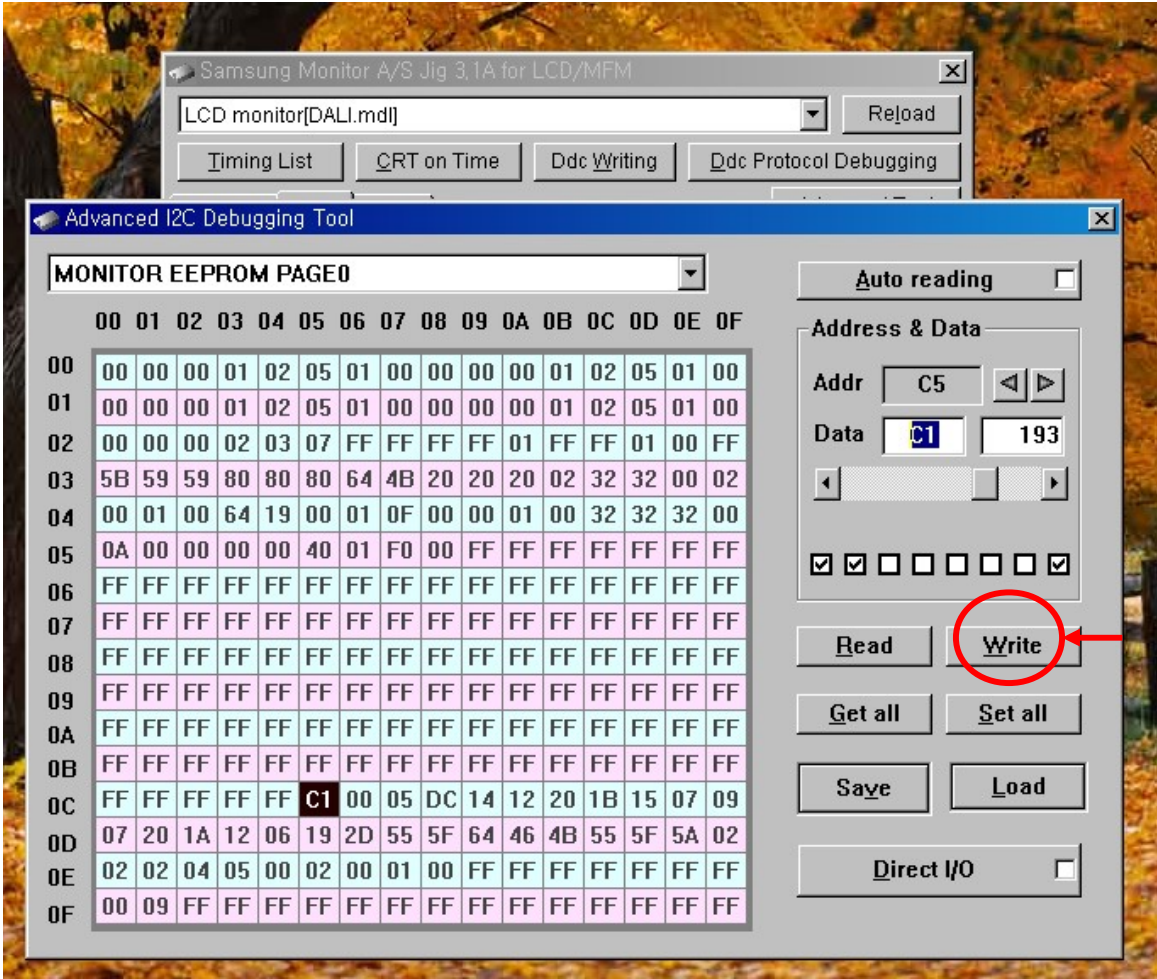
Panel & Model Define Process



6. Write the Model & Panel information in 'DATA' (The information is different in Model & Panel)

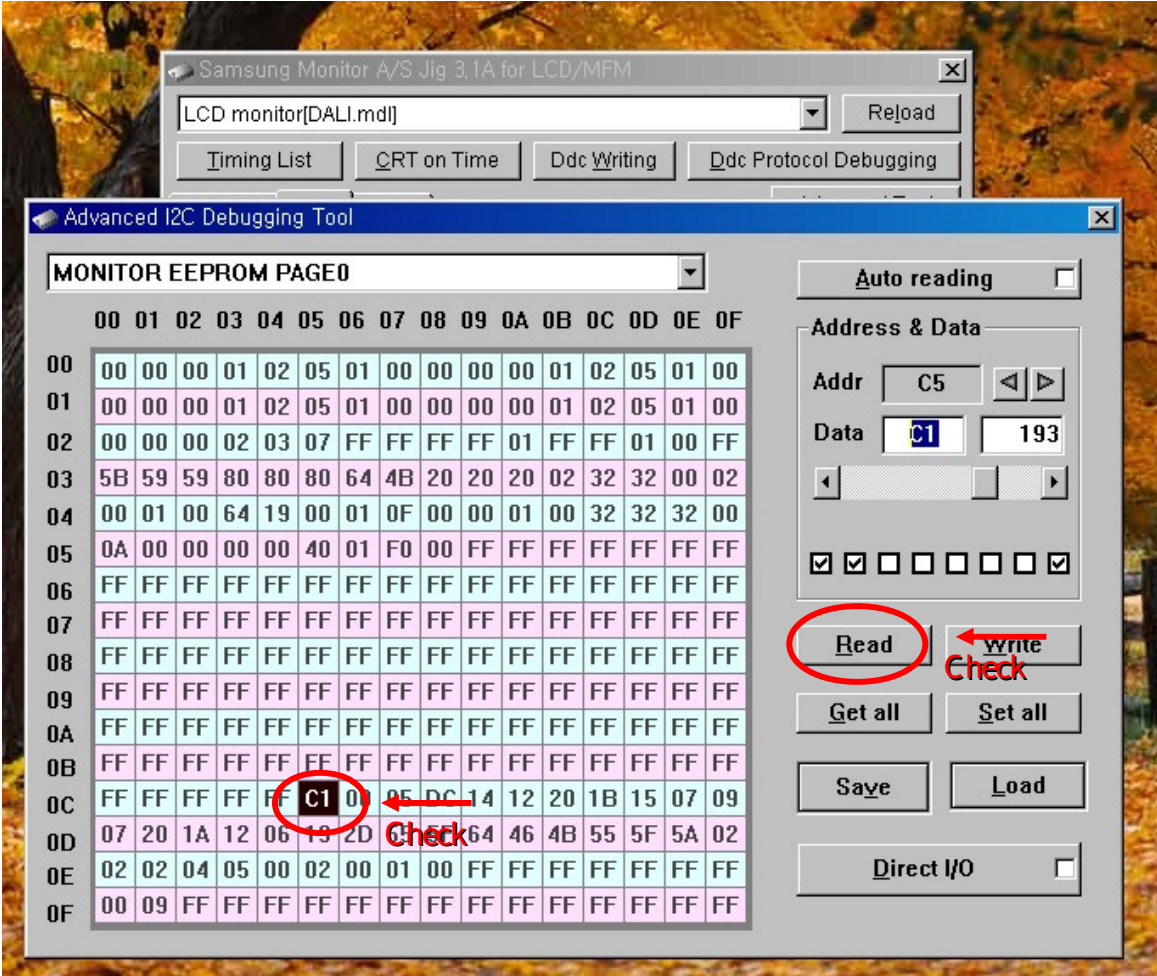
→ The Model & Panel information SHEET should be with you doing SVC work.

Panel & Model Define Process



7. Push the button 'Write'

Panel & Model Define Process



8. Click 'Read' button. And you have to check the pixel(0C /05) data remains the same.

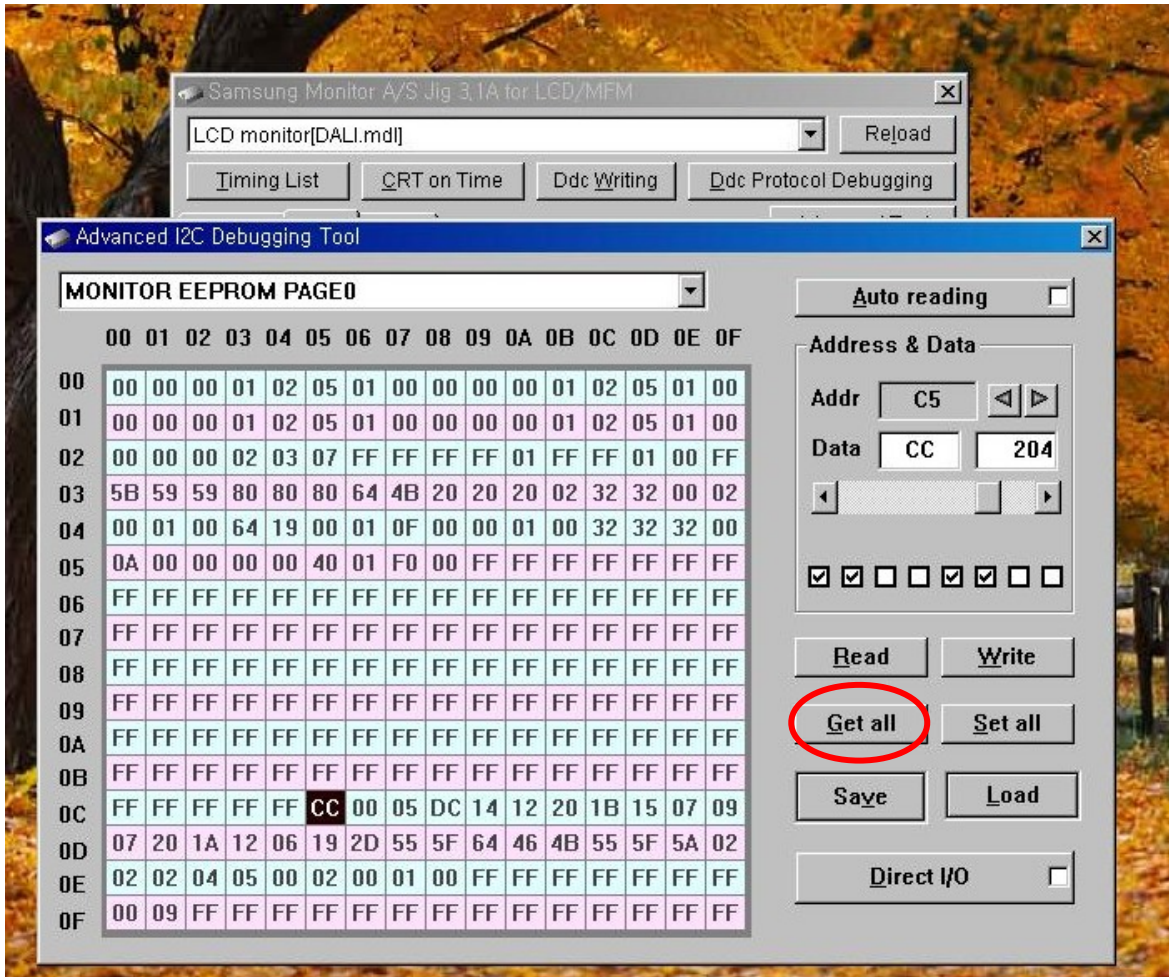
9. Turn the Soft Power off, and Turn it on. This is the LAST PROCESS.



Panel & Model Define Process(Method 2)

1. Repeat the process 1~4 of Method 1

Panel & Model Define Process



- Click Button 'Get all'.
Check current setting values

Panel & Model Define Process

The screenshot shows the 'Advanced I2C Debugging Tool' interface. At the top, a dropdown menu is set to 'MONITOR EEPROM PAGE0'. A grid displays EEPROM data for addresses 00 to 0F. A red box highlights the data from address 0C to 0E, with a circled '1' pointing to the value 'C0' at address 0C, column 05. To the right, the 'Address & Data' section is highlighted with a red dashed box. It shows 'Addr' set to 'C5' and 'Data' set to 'C0' and '192'. A circled '2' is next to the 'Auto reading' checkbox, and a circled '3' is next to the 'Write' button. Other buttons include 'Read', 'Get all', 'Set all', 'Save', 'Load', and 'Direct I/O'.

→ The Model & Panel information SHEET should be with you doing SVC work.

3. Set data values in your the Model & Panel information SHEET to EEPROM Address from C5 (Row 0C, Column 05) to E8 (Row 0E, Column 08) like the process 5~8 of Method 1

Panel & Model Define Process

4. Turn Hard Power off, and Turn it on,
and check whether data setting is right or not.
This is the last process.

Advanced I2C Debugging Tool

MONITOR EEPROM PAGED

00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F

00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
02	00	00	00	00	00	01	FF	FF	FF	FF	01	FF	FF	01	00	FF
03	80	80	80	80	80	80	64	4B	20	20	20	02	32	32	00	02
04	00	00	80	64	19	00	00	0F	00	00	01	00	32	32	32	00
05	0A	00	00	00	00	40	01	F0	00	FF	FF	FF	FF	FF	FF	FF
06	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
07	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
08	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
09	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0A	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0B	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0C						C0	00	05	DC	14	12	20	1B	15	07	09
0D	07	20	1A	12	06	19	2D	55	5F	64	46	4B	55	5F	5A	02
0E	02	02	04	05	00	02	00	01	00							
0F	00	09	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

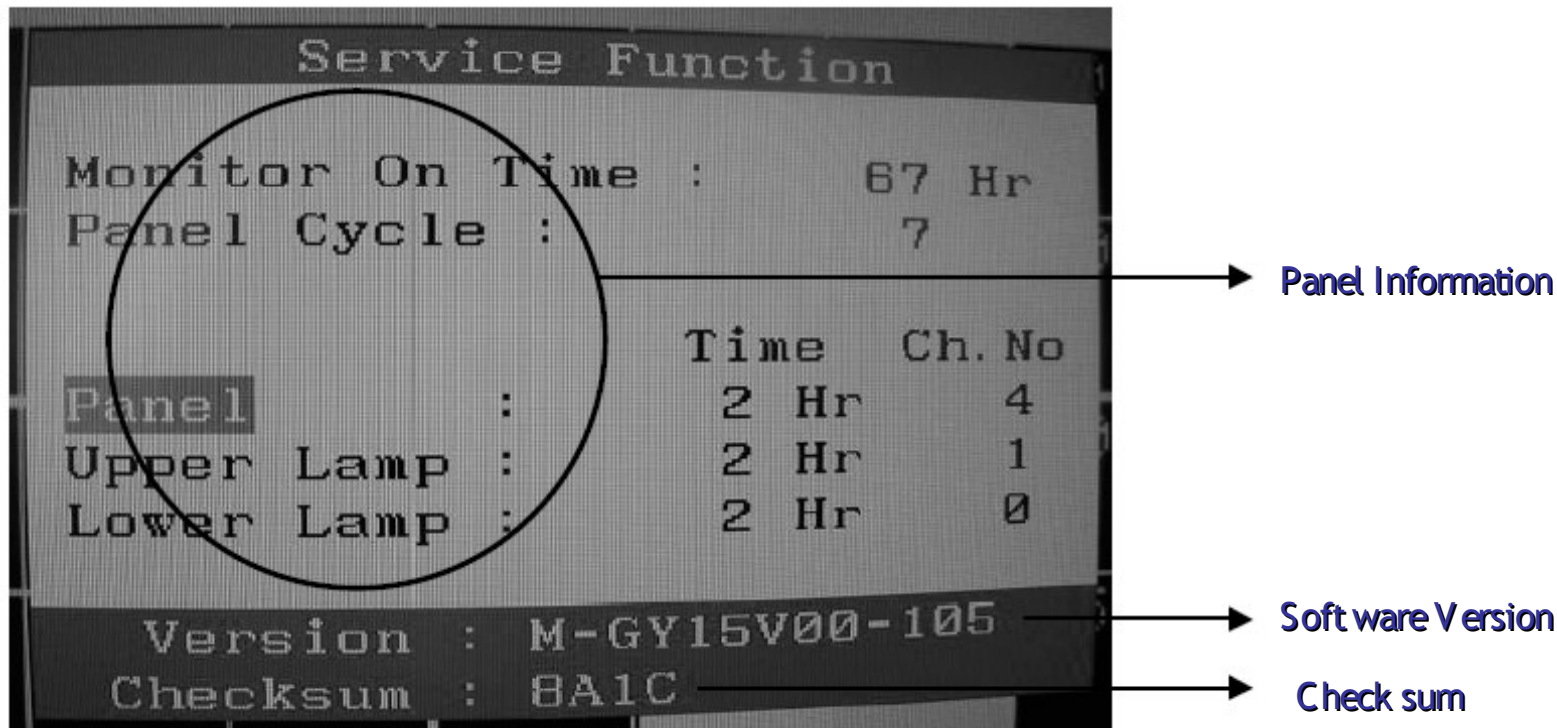
Control Panel:

- Auto reading:
- Address & Data:
 - Addr: C5
 - Data: C0, 192
- Buttons: Read, Write, Get all, Set all, Save, Load
- Direct I/O:

9. SVC Mode - Information

1. Control 'Bright / Contrast' to 'Zero(0)'
2. Push the 'Enter' key for 5 seconds
3. And then you can see 'SVC OSD'.
4. SVC OSD displays 'Firmware check sum/Panel,Lamp Life time'

→ If you want to get out of SVC mode, just Soft Power Off.



SVC Mode - Items

* '▲' key enables you change the item.

The image shows three sequential screenshots of the SVC Mode menu. The first screenshot shows the main menu with 'Panel' highlighted. The second screenshot shows the same menu with 'Upper Lamp' highlighted. The third screenshot shows a detailed menu for 'Upper Lamp' with 'Upper Lamp' highlighted. Arrows indicate the navigation path from the first to the second, and from the second to the third.

```
Service Function
Monitor On Time : 67 Hr
Panel Cycle : 7
Panel
Upper Lamp
Lower Lamp
Version :
Checksum :
```

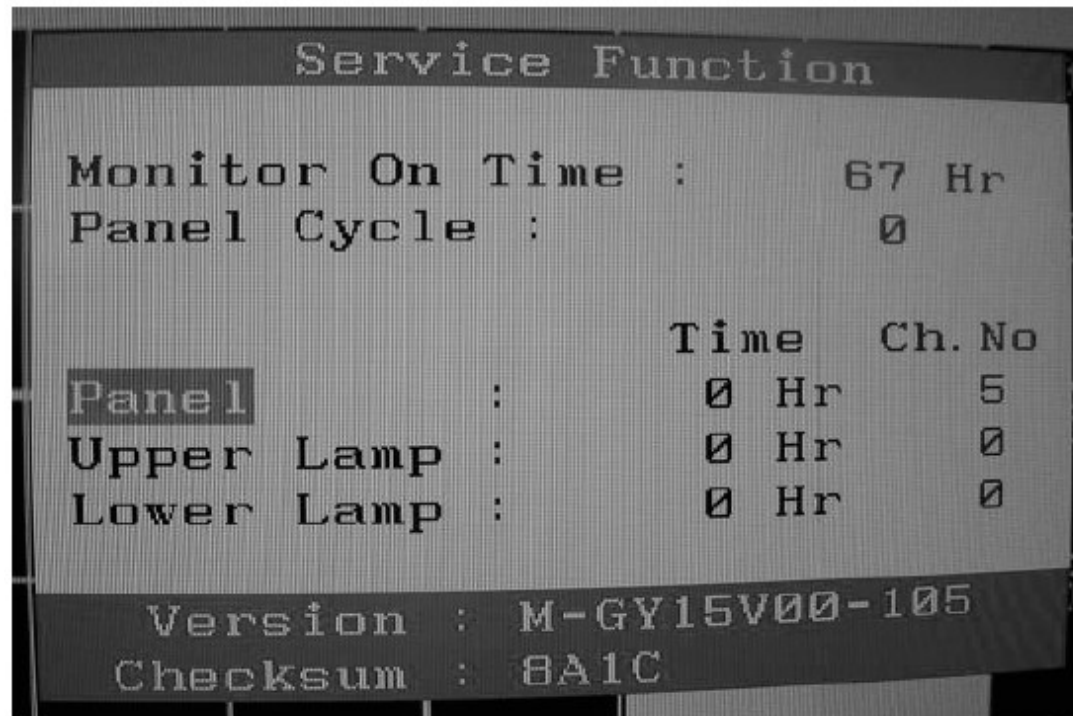
```
Service Function
Monitor On Time : 67 Hr
Panel Cycle : 7
Panel
Upper Lamp
Lower Lamp
Version :
Checksum :
```

```
Service Function
Monitor On Time : 67 Hr
Panel Cycle : 7
Time Ch.No
Panel : 2 Hr 4
Upper Lamp : 2 Hr 1
Lower Lamp : 2 Hr 0
Version : M-GY15V00-105
Checksum : 8A1C
```

SVC Mode – Panel Change

*** If you change the PANEL, you should change the information of PANEL in SVC mode ***

1. In SVC mode, choose 'Panel' item with '▲' key.
2. Push the 'MENU' key for 5 seconds. And then 'Ch. No' will counter up and Lamp time will be Zero(0)



SVC Mode – Lamp Change

*** If you change the LAMP, you should change the information of LAMP in SVC mode ***

- 1. In SVC mode, choose 'Upper/Lower Lamp' item with '▲' key.
- 2. Push the 'MENU'key for 5 seconds. And then 'Ch. No' will counter up and Lamp time will be Zero(0)

