740N(Haydn) Training Manual

SAMSUNG ELCECTRONICS [DM]
VD Division
LCD Monitor Development Department

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- Haydn Specification
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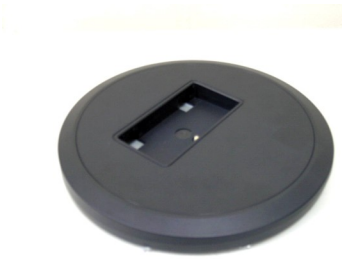
- AD Board and IP Board Circuits
- How to install winDDC program
- Updating Firmware
- Updating DDC
- Panel & Model Define process
- SVC Mode

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	150º/135º	150º/135º
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)

SAMSUNG

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)

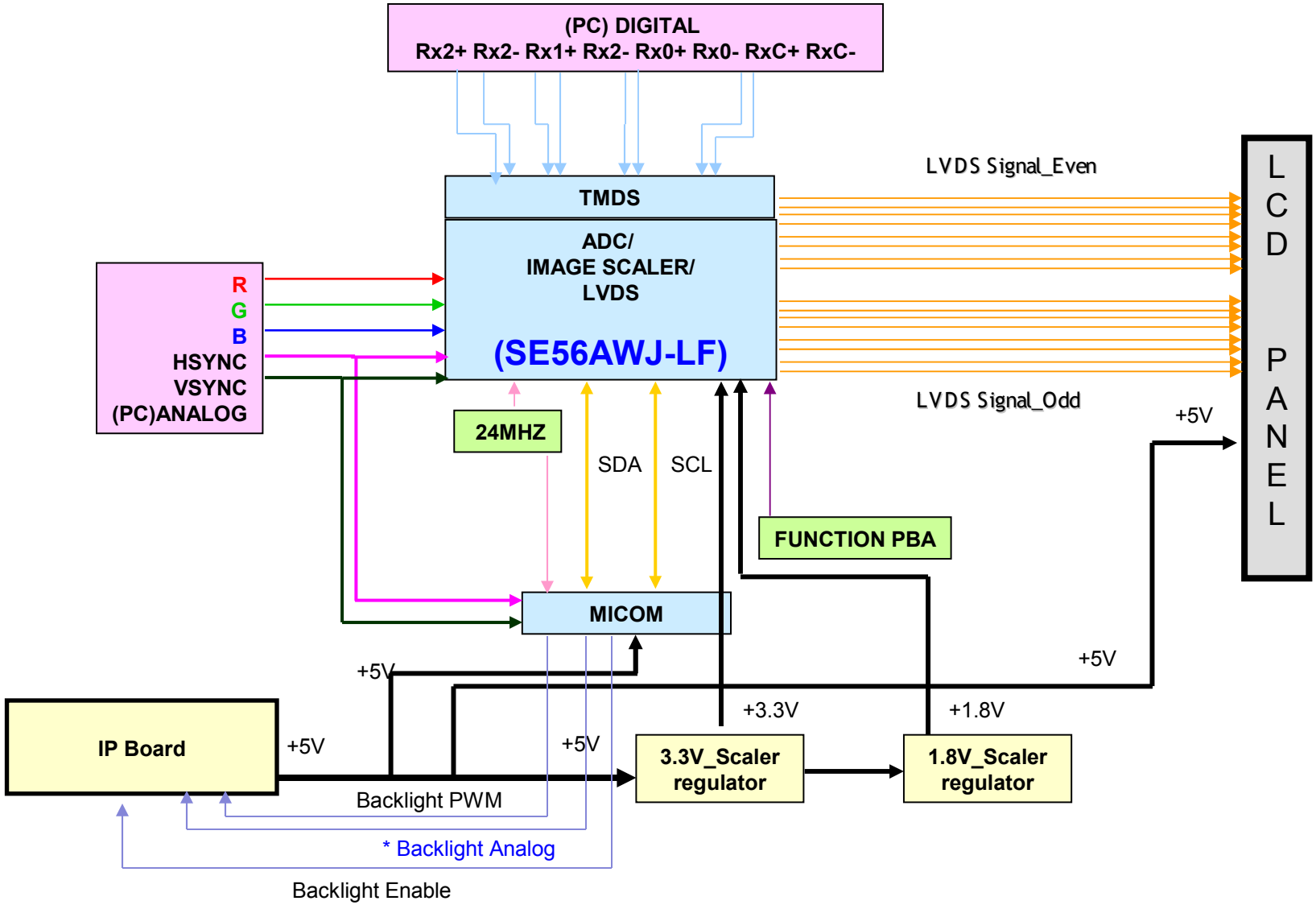
Key Specification			
Model	**940B**	**940T**	**940Fn**
Screen Size	19”	19”	19”
Resolution	1280x1024@75Hz	1280x1024@75Hz	1280x1024@75Hz
Colors	16.2M	16.7M	16.7M
Brightness	**300cd/m²**	**250cd/m²**	**250cd/m²**
Contrast	**700:1**	**1000:1**	**1000:1**
Supported Resolution	VGA ~ XSGA	VGA ~ XSGA	VGA ~ XSGA
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	150º/135º	180º/180º	180º/180º
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)

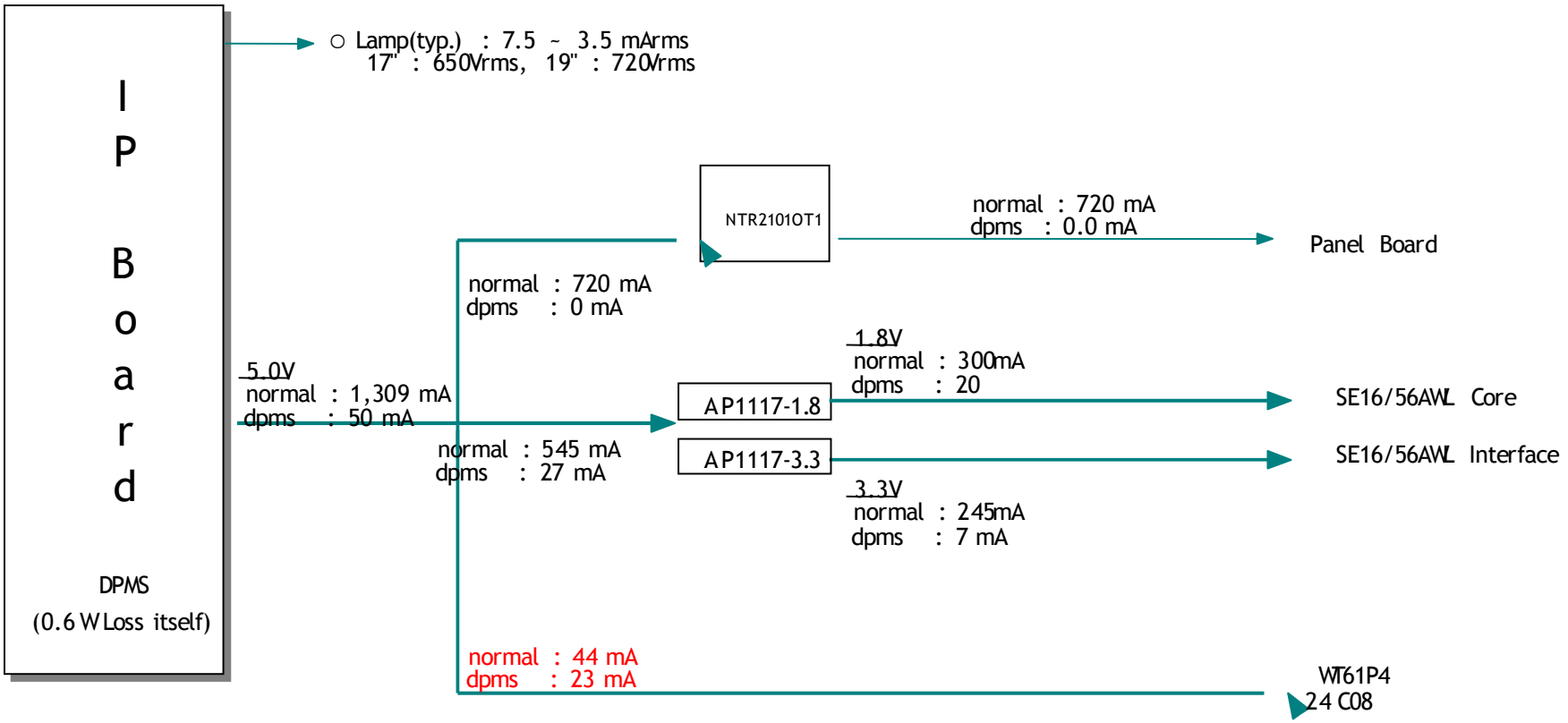
Magic Color

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

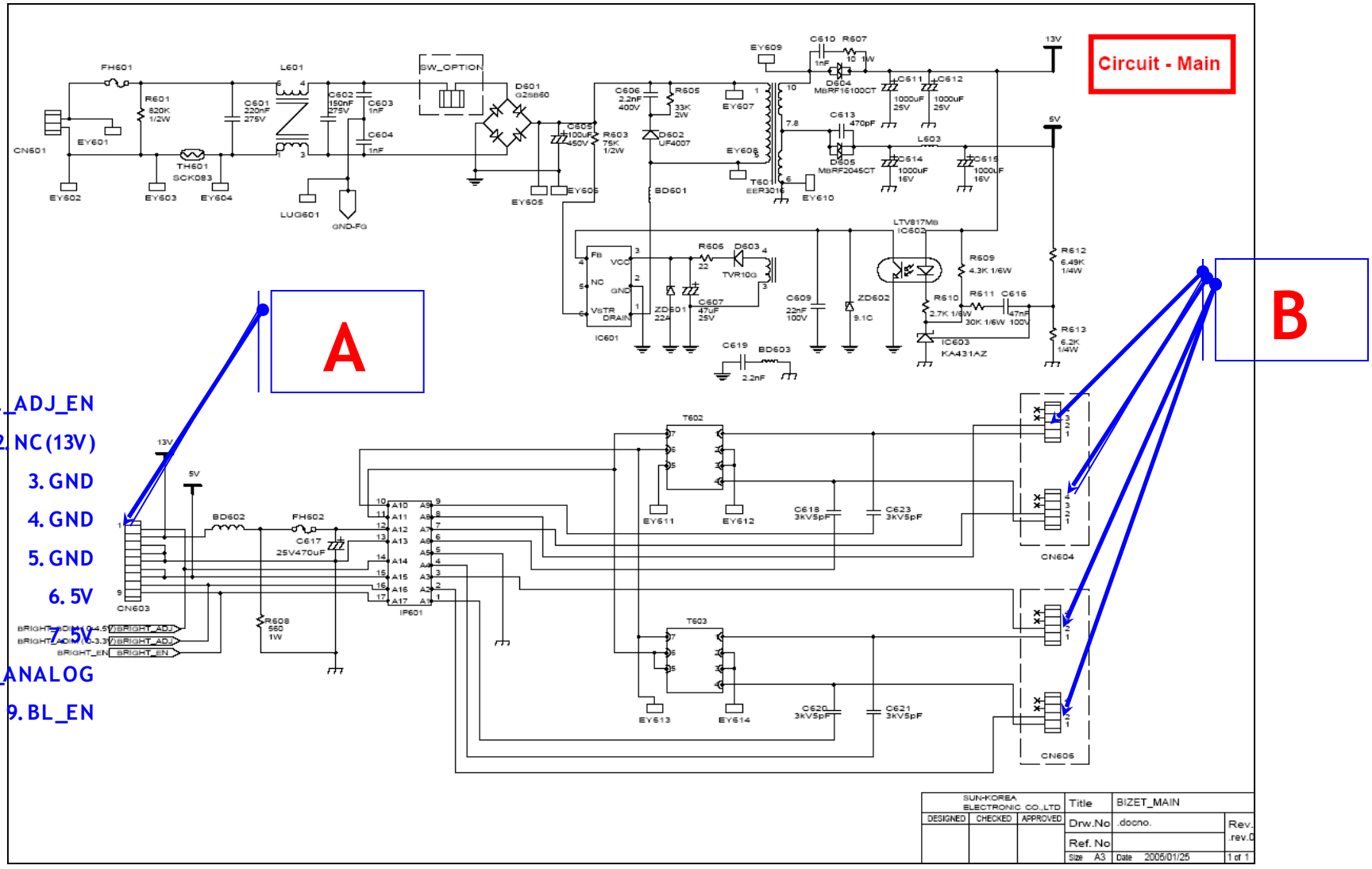


*** Notice***

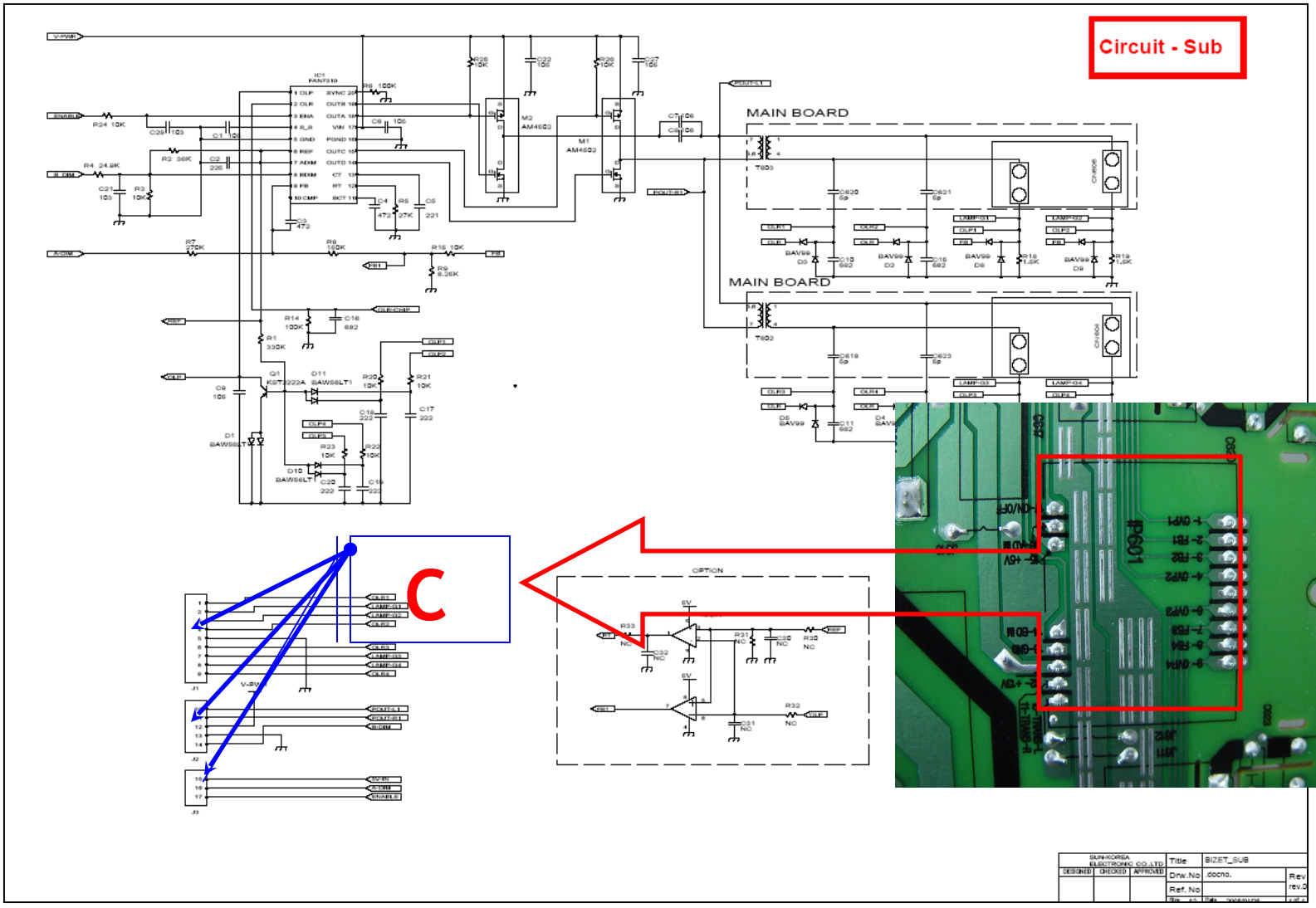
SE16AWL : Analog

SE56AWL : Dual

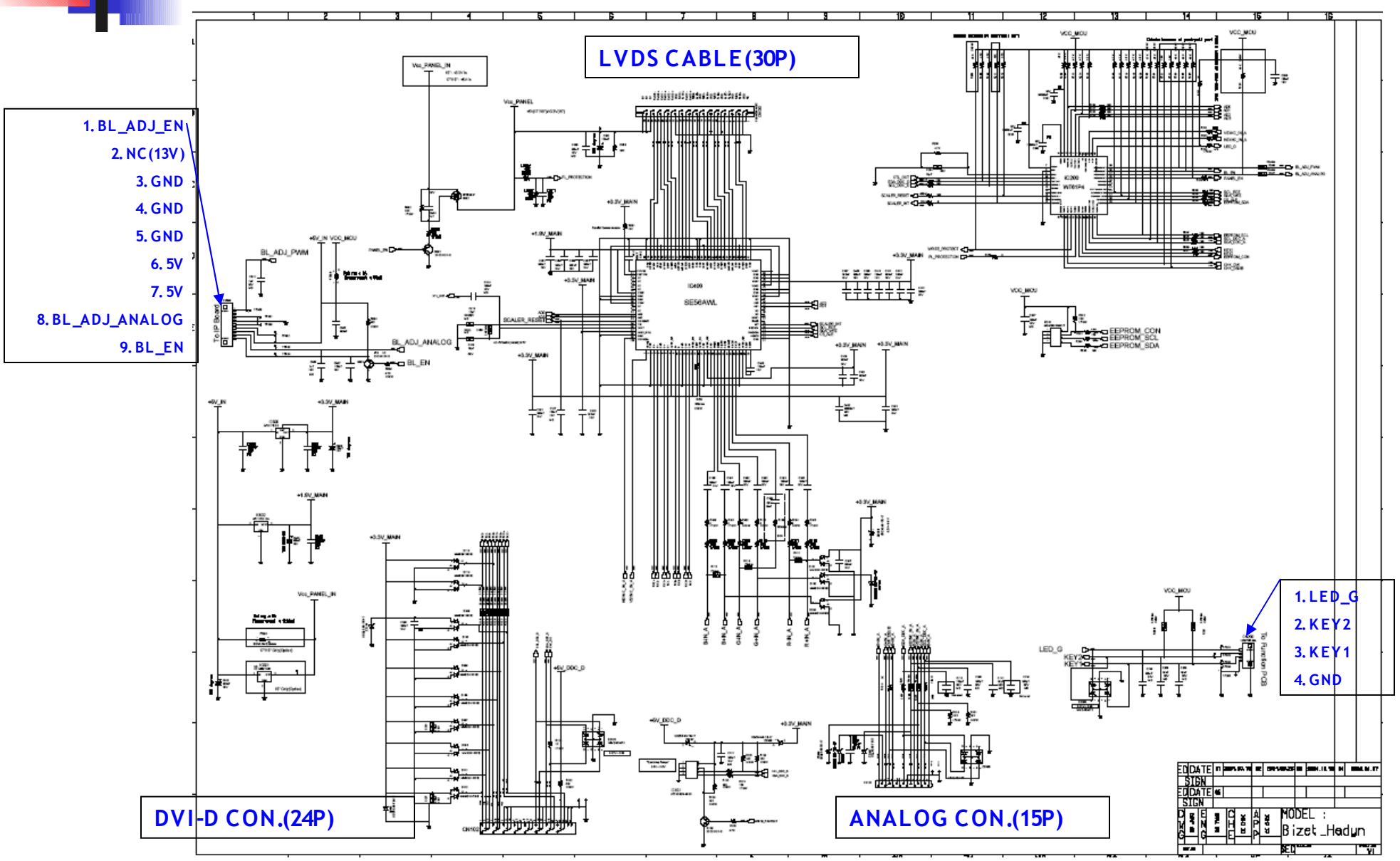
4. IP BOARD Circuits



4-1. IP BOARD Circuits



4-2. Main Circuits



5-1. Trouble Shooting

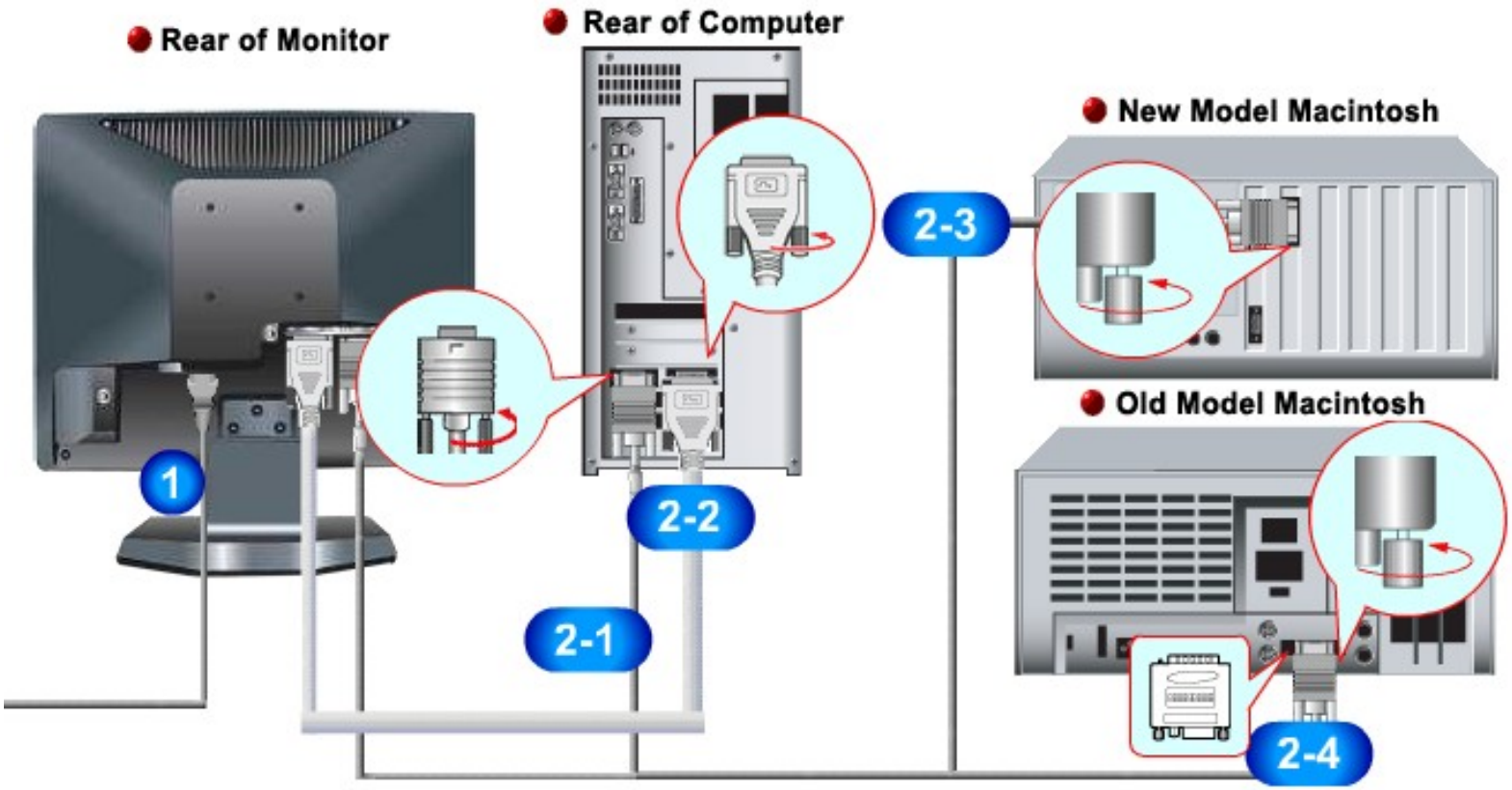
❖ The Check items before troubleshooting

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

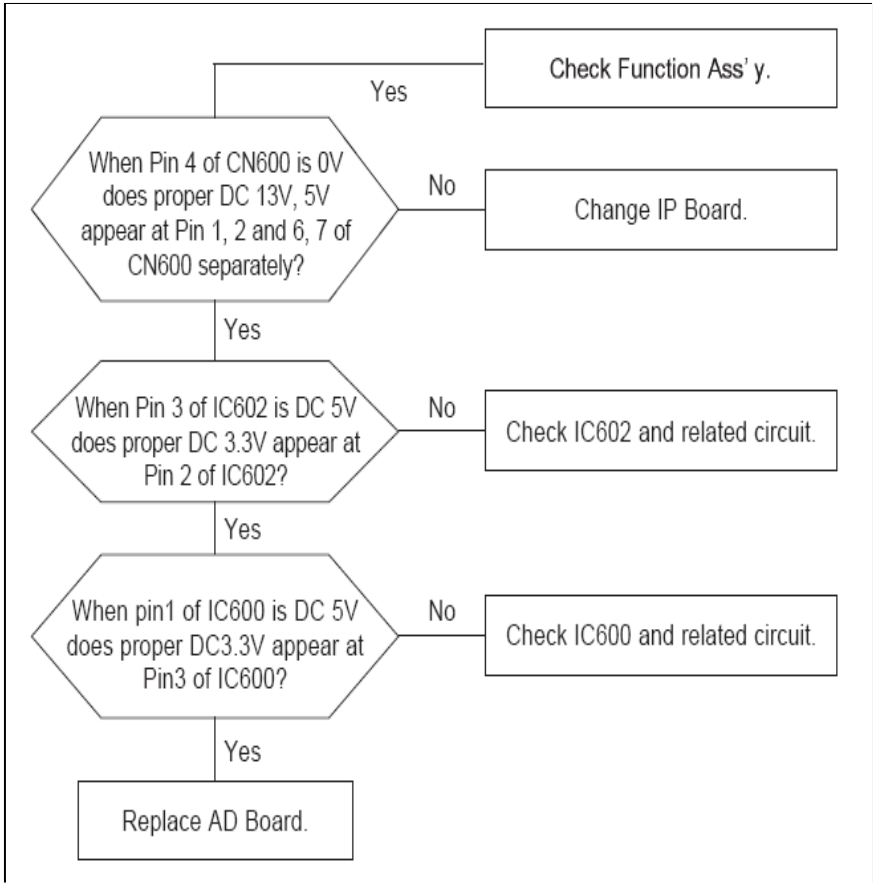
❖ How to connect the cables



5-3. Trouble Shooting

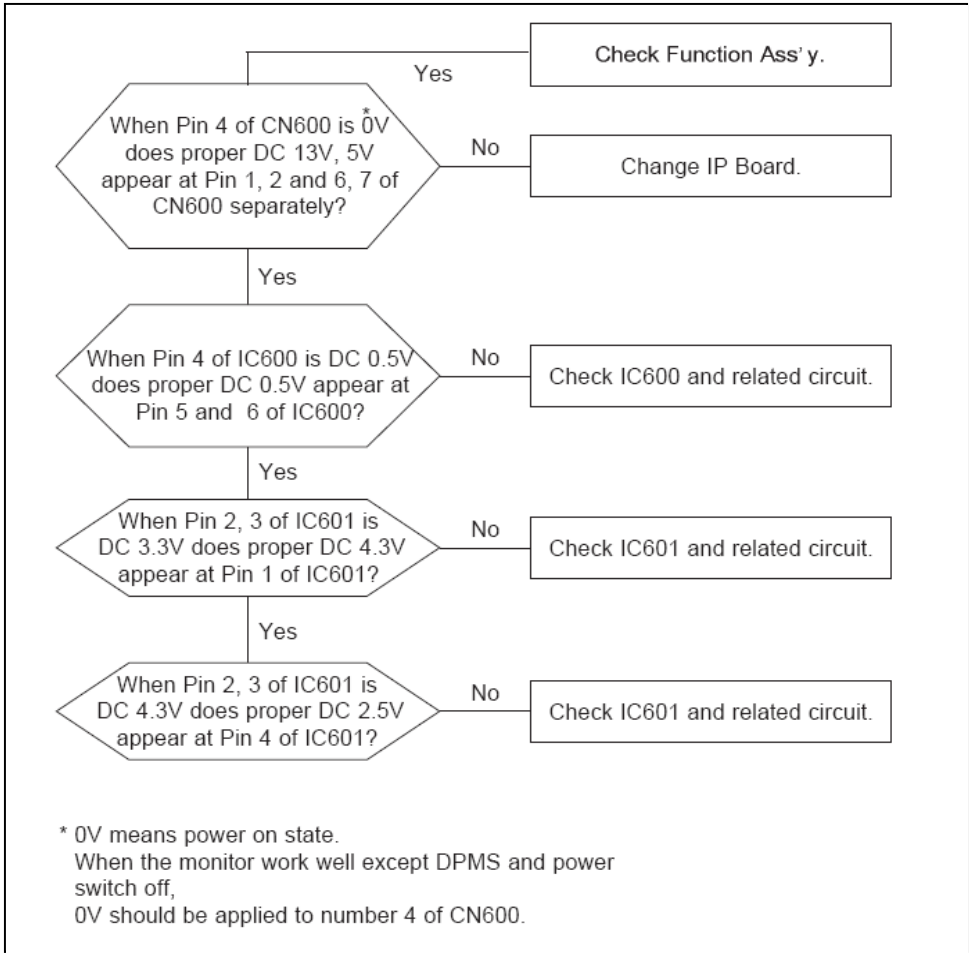
❖ No Power

LS15HAA/LS15HAB



LS17HAA/LS17HAB/LS17HAT

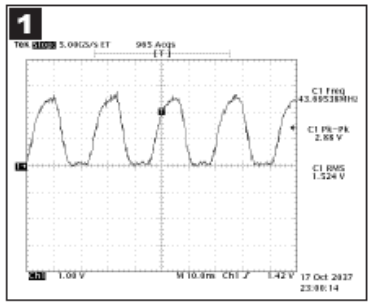
LS19HAA/LS19HAB/LS19HAT/LS19HAP

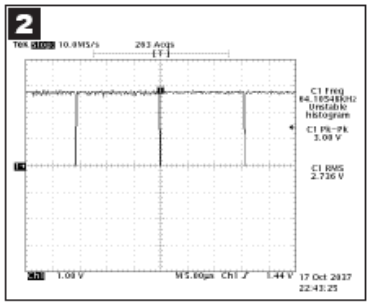


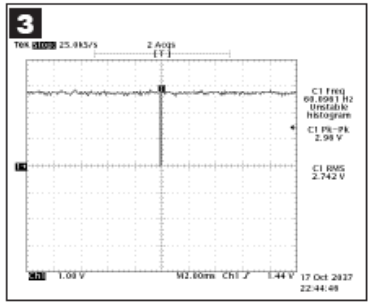
* 0V means power on state.
When the monitor work well except DPMS and power switch off,
0V should be applied to number 4 of CN600.

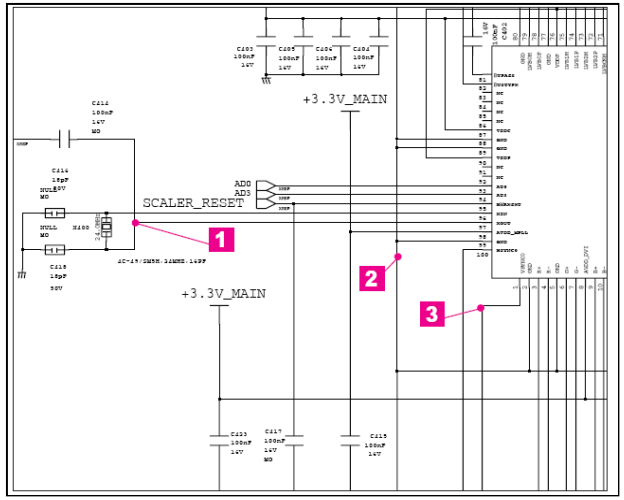
5-4. Trouble Shooting

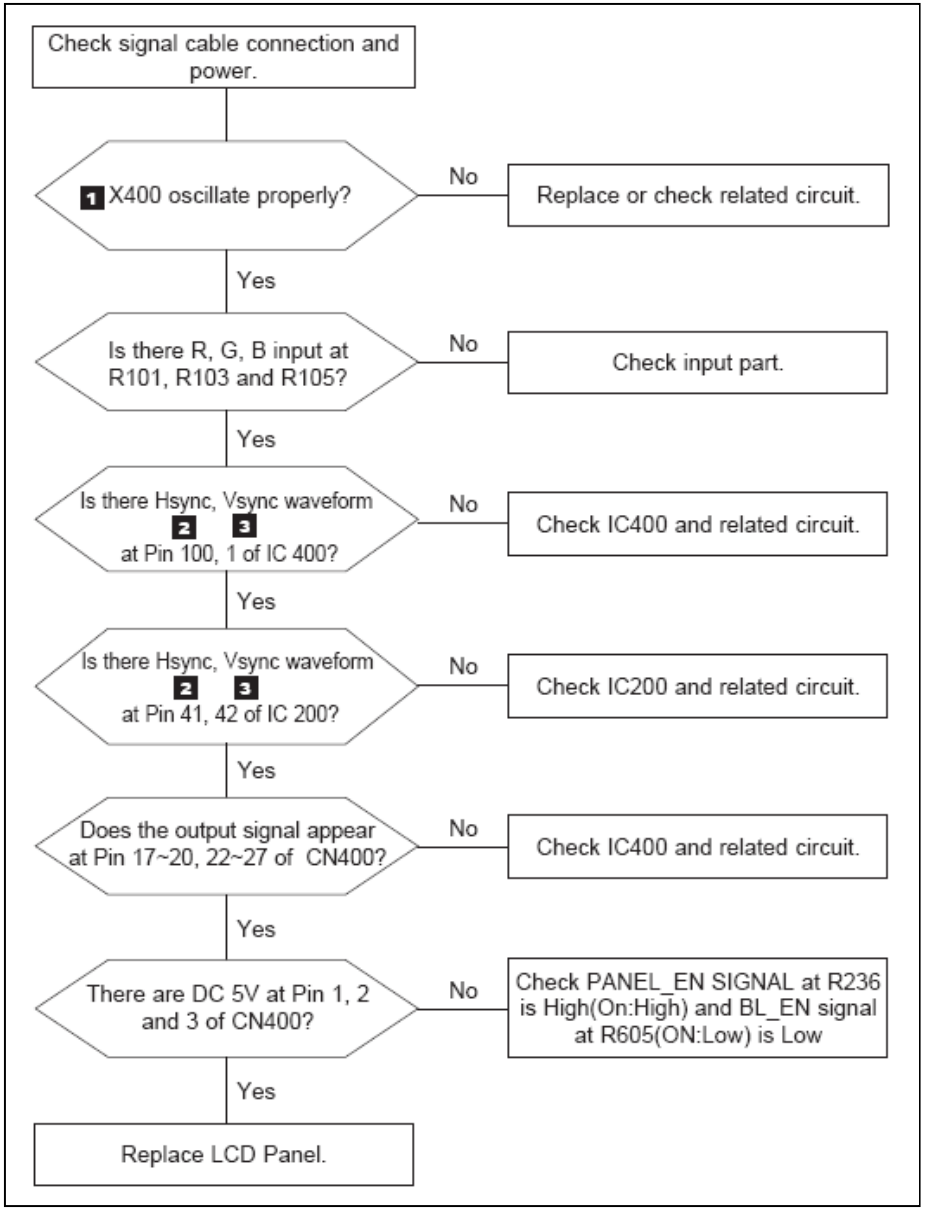
❖ No Video (Analog)





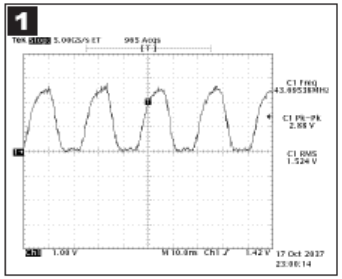


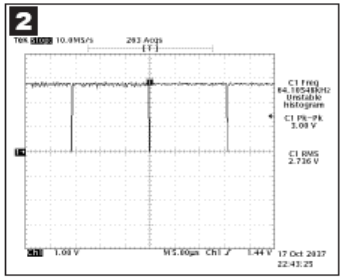


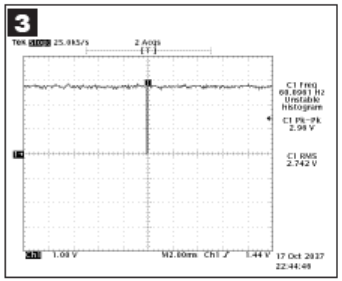


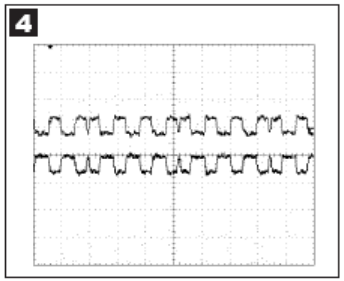
5-5. Trouble Shooting

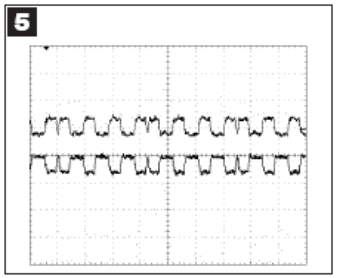
❖ No Video (Digital)

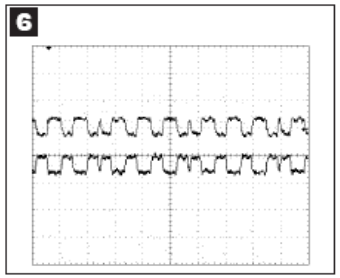


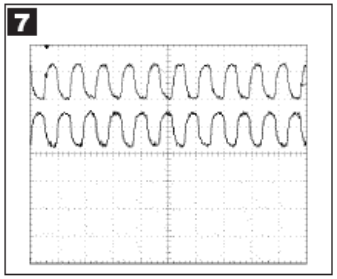


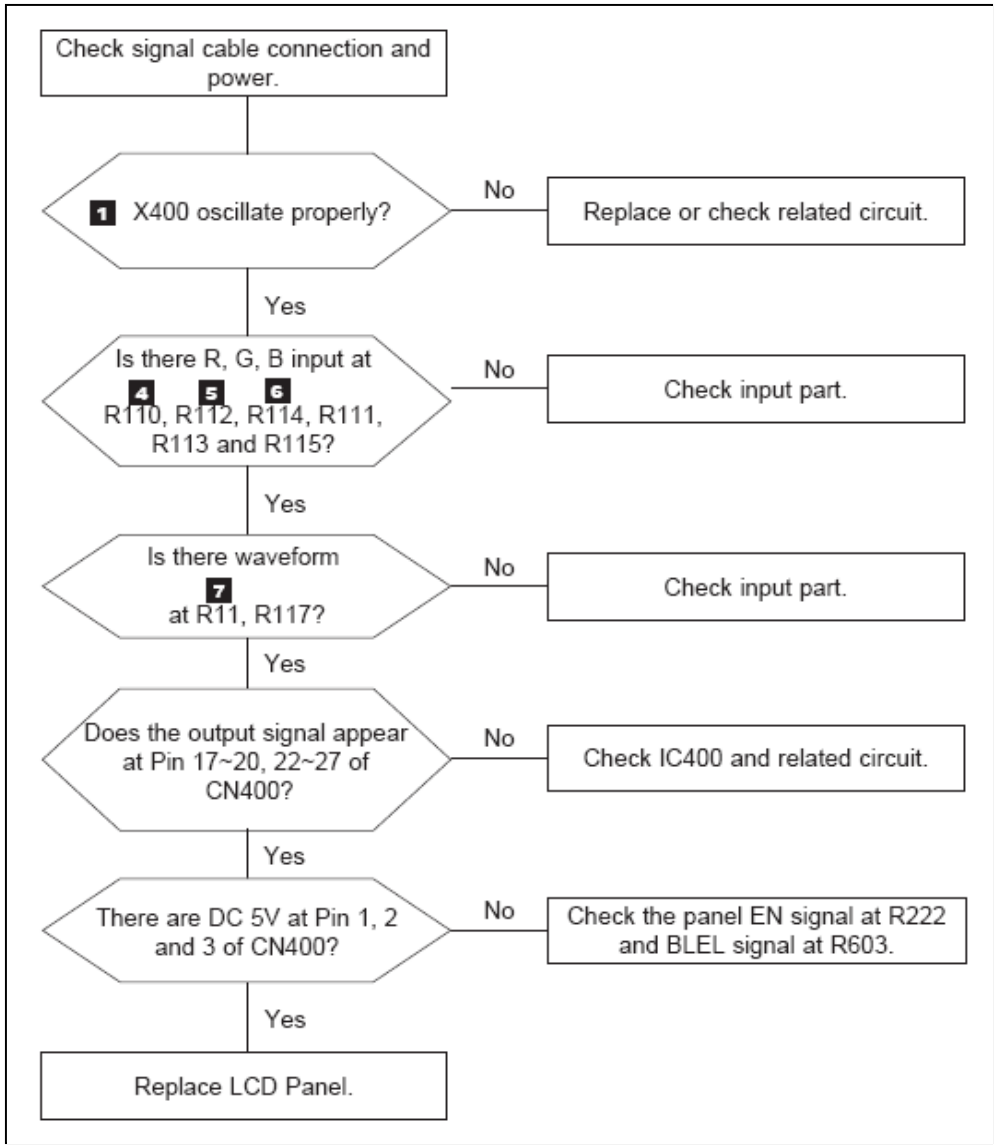






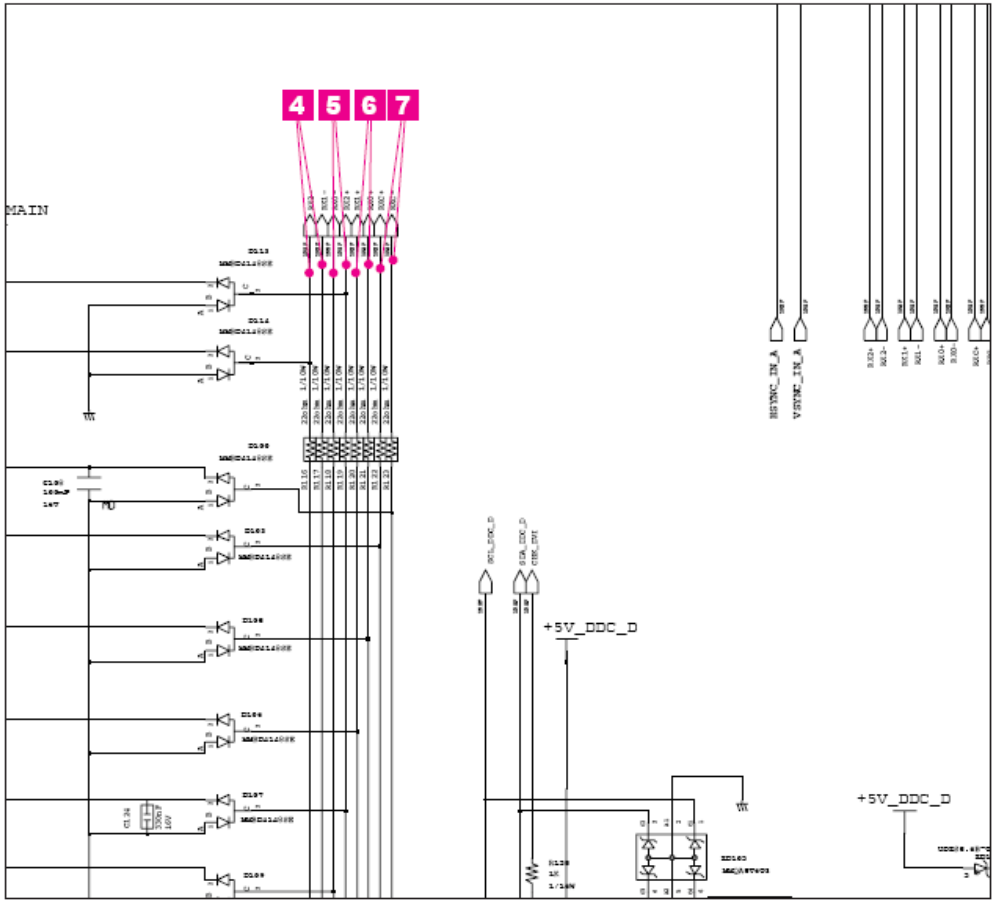






5-6. Trouble Shooting

❖ No Video (Digital)



5-7. Disassembly

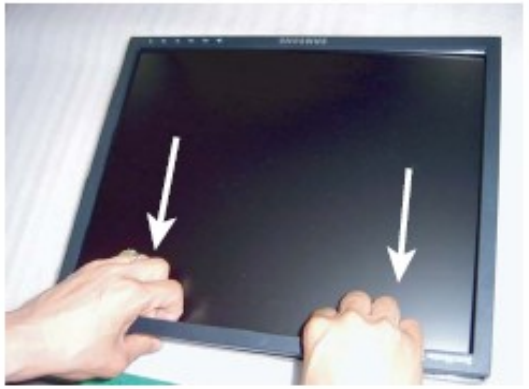
WARNING : This Monitor contains eletrostatically sensitive devices. Use Caution when handling these components

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

❖ Has Stand

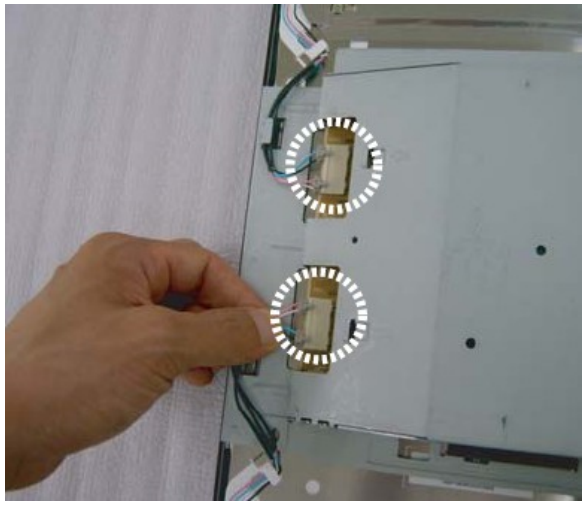
1. Place monitor face down on cushioned table. Remove 2 screws from the stand and

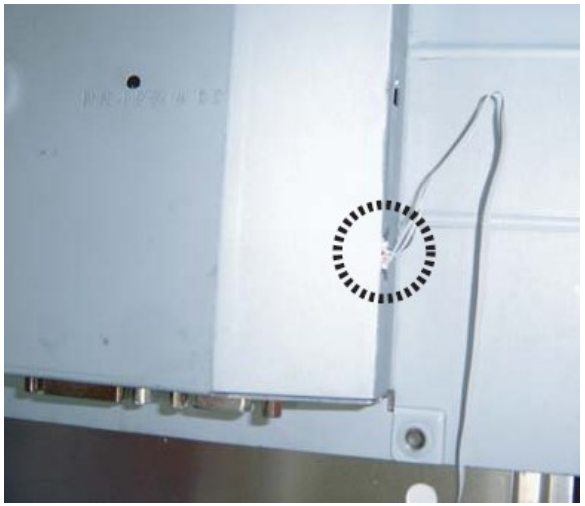
2. Remove stand and front cover.



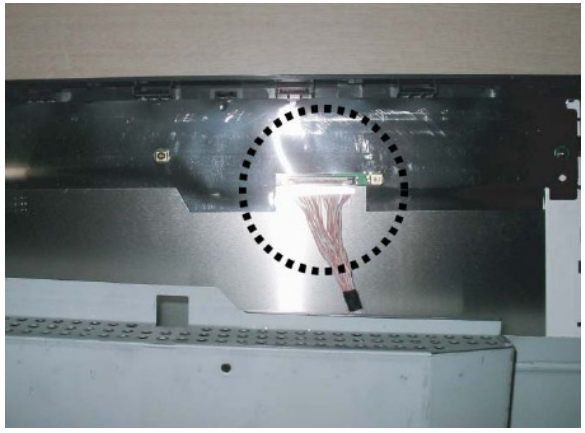
1. Place monitor face down on cushioned table. Remove 3 screws from the stand.

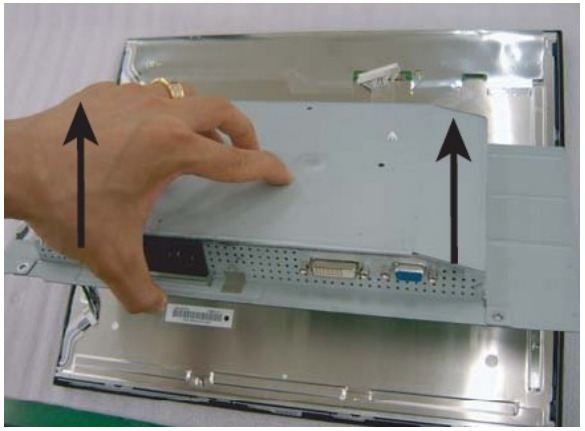
5-8. Disassembly





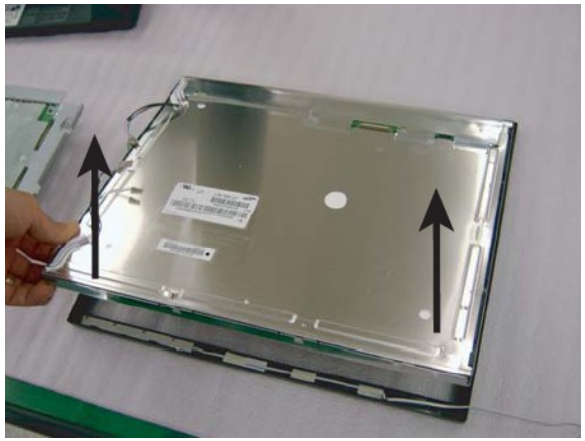
4. Disconnect Lamp wires and function Harness





5. Lift up the shield and disconnect LVDS cable

5-9. Disassembly



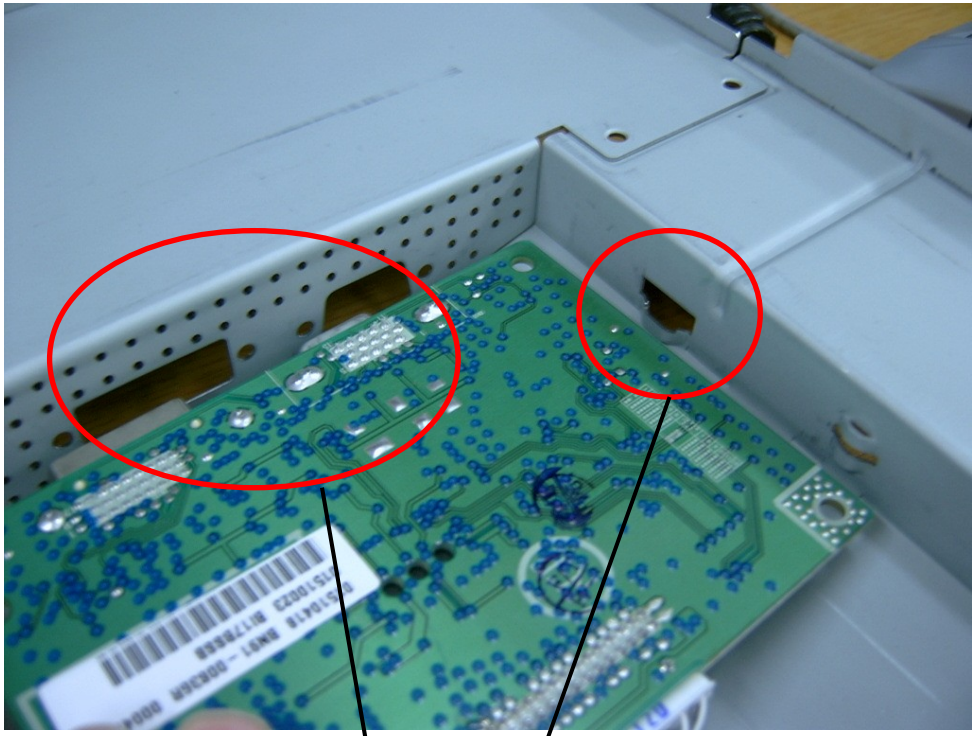
6. **Lift up the LCD Panel**

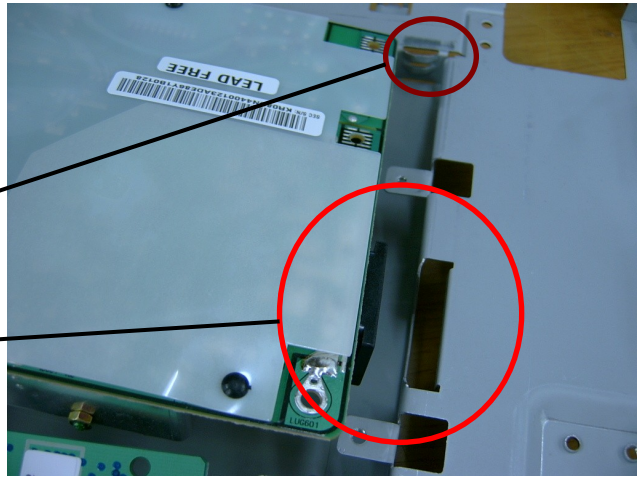
Please check the Panel Name and Company.

5-10. Disassembly

7. **Disassembly the Board and Cables from the Shield**

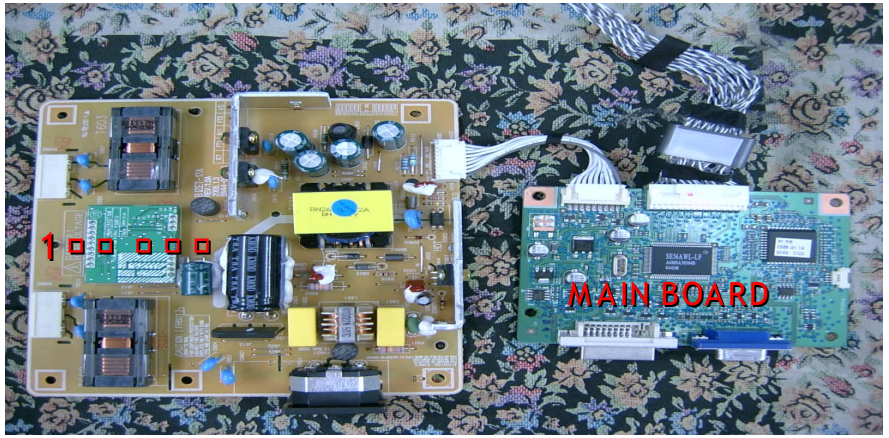
5-11. Assambly



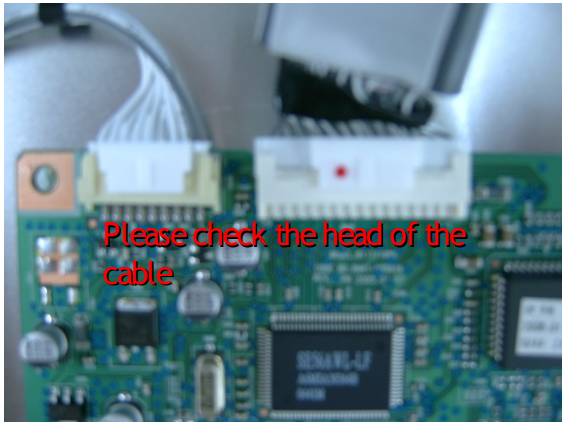


Please fix the board completely
to the shield like above picture.

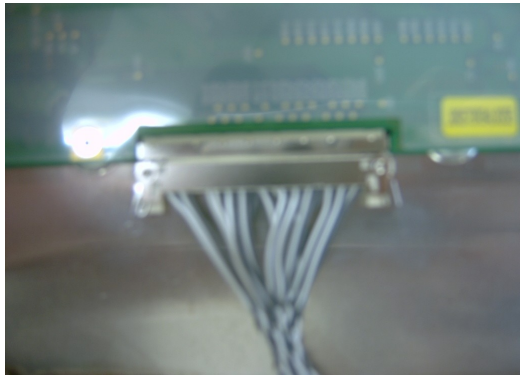
5-12. Assambly

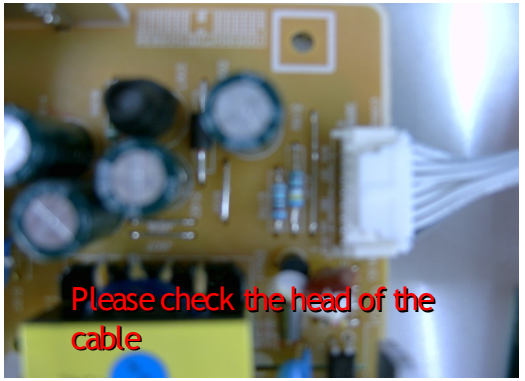


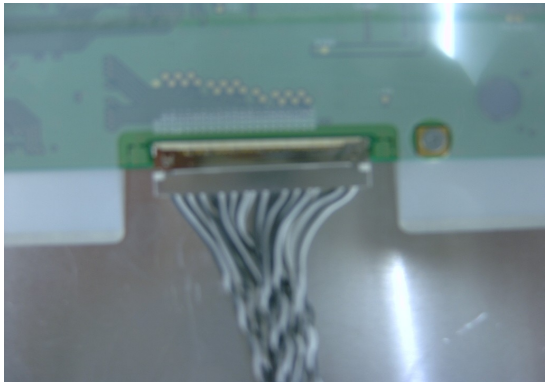
19” LVDS HARNESS



17” LVDS HARNESS





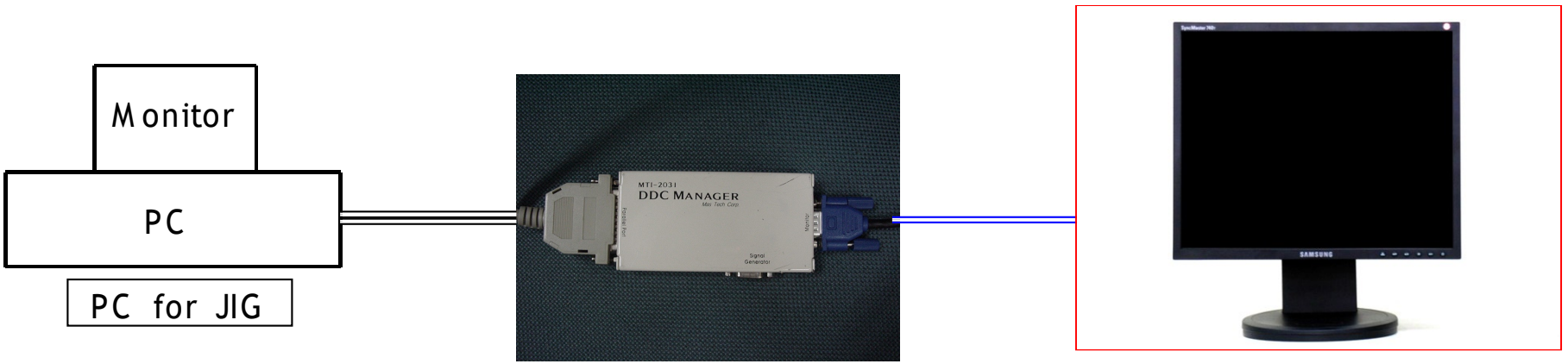


6. How to download the Program(17”/19”)

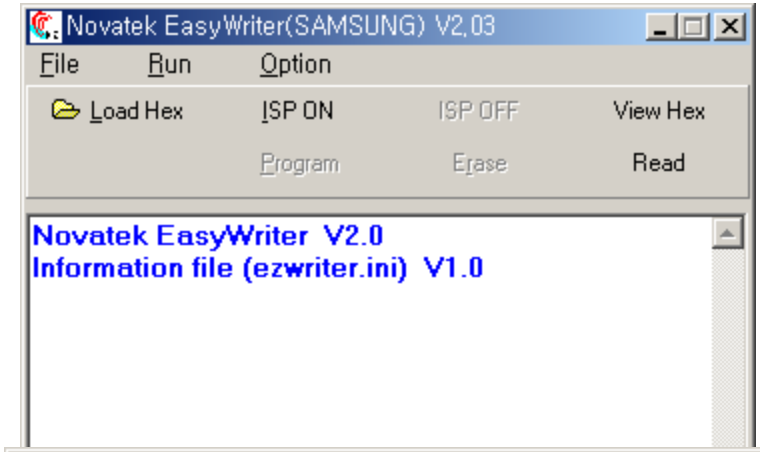
1. Download below **EasyWriter** program.zip file in your computer.

2. Unzip winDDC program.zip file.

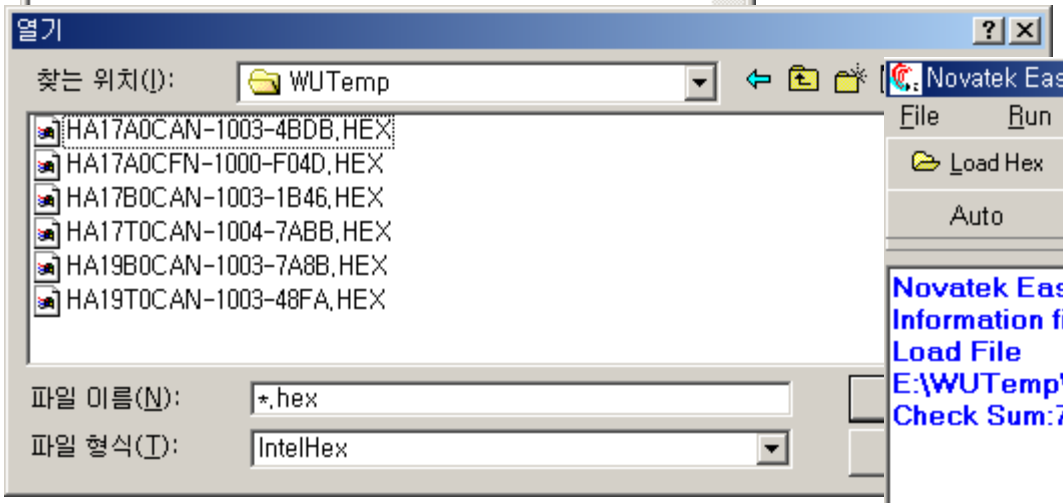
3. Click **EasyWriter.exe** file.

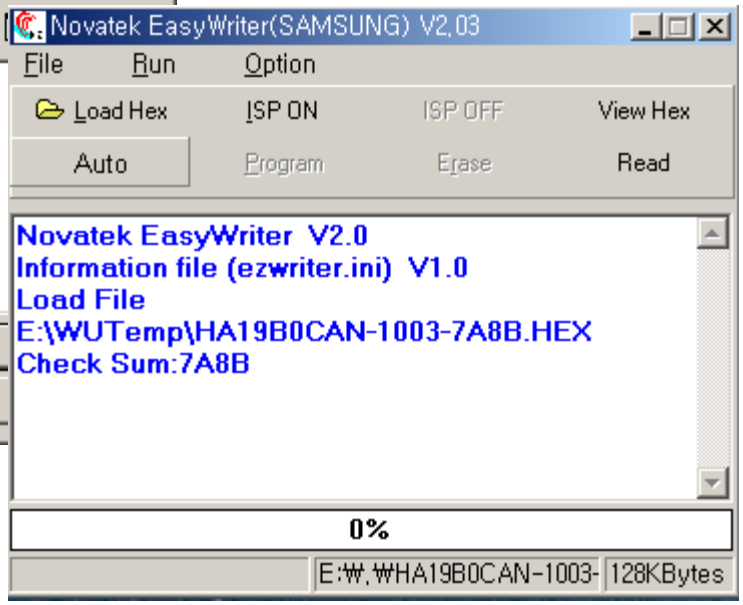


6. How to download the Program(17”/19”)



4. Click the LoadHex button
   Select the right Hex file on your computer
   (Please down load the last version form the site.)
   Click the Auto Button





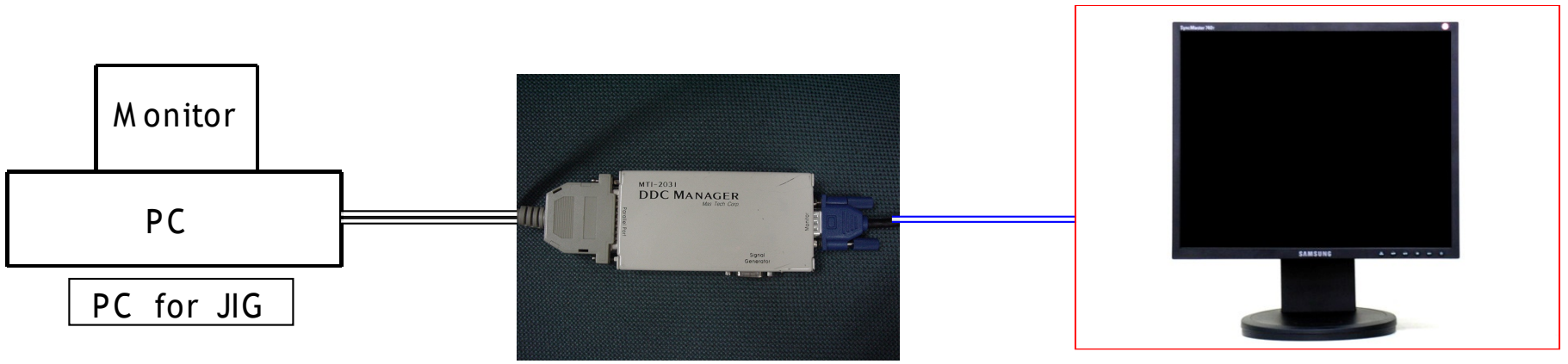
6. How to install the winDDC Program (15”)

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

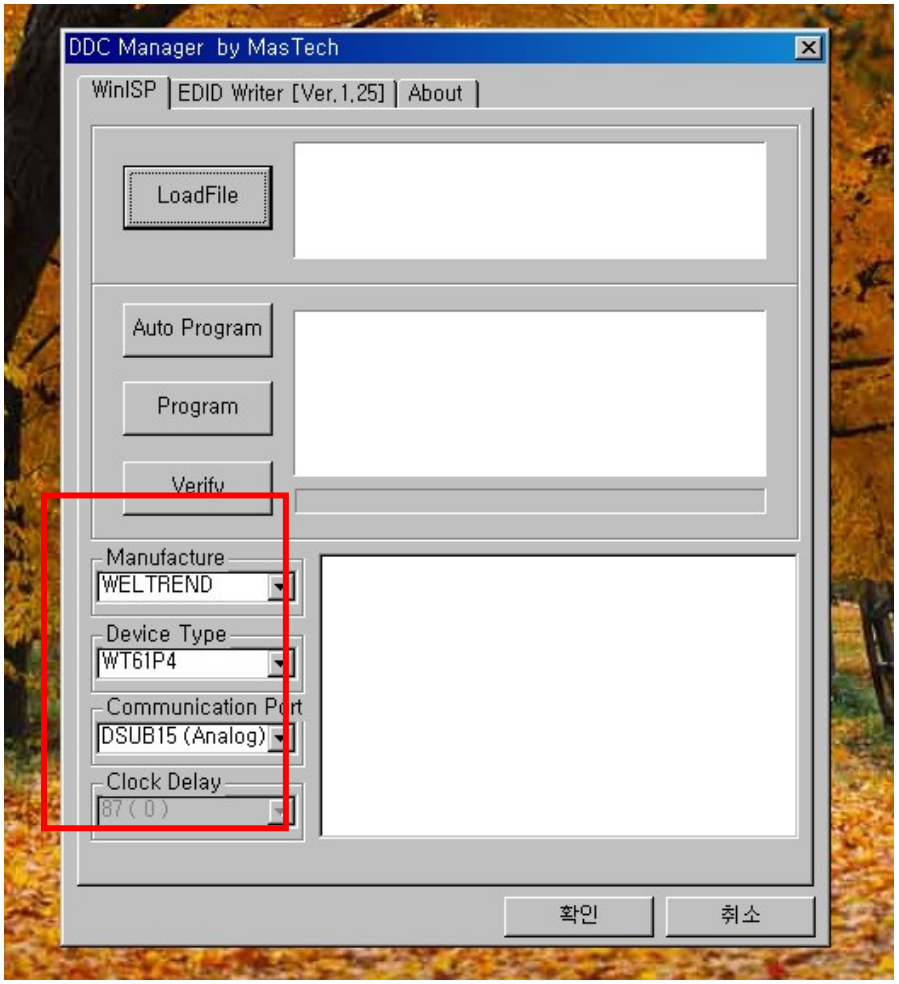
winDDC
program.zip

2. Unzip winDDC program.zip file.

3. Click winDDC.exe file.

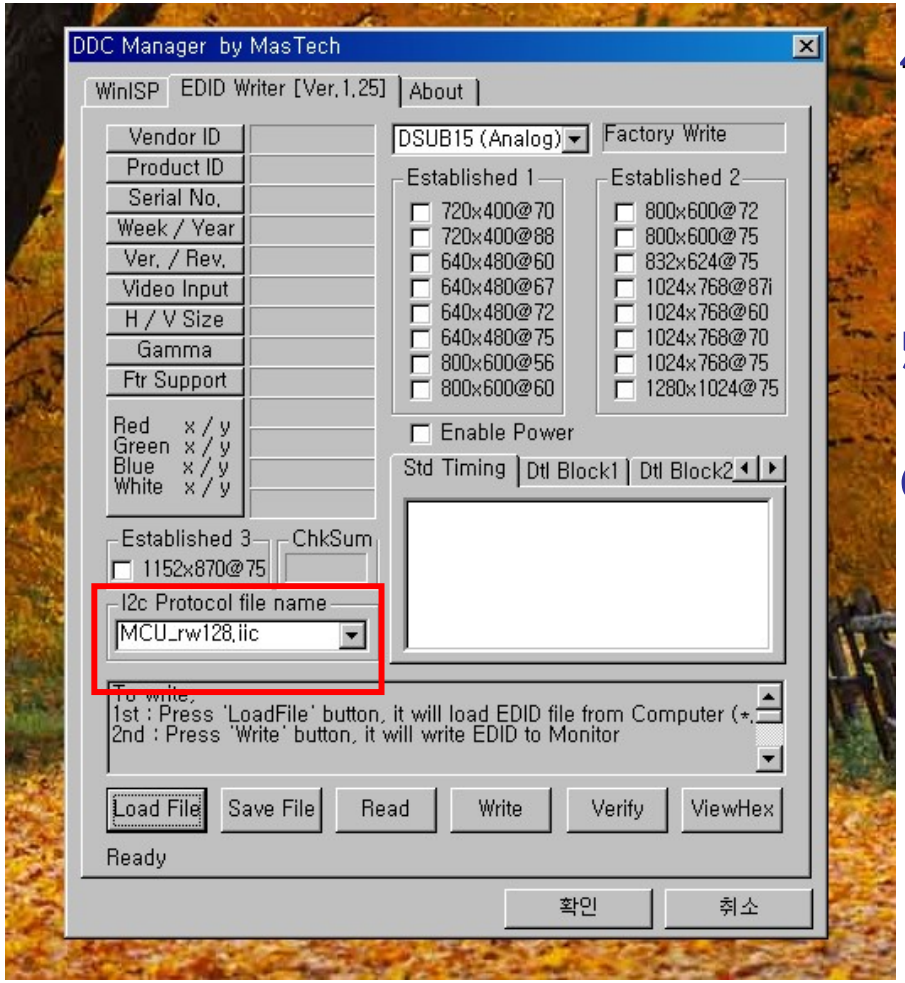


How to install the WinDDC Program(15”)



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

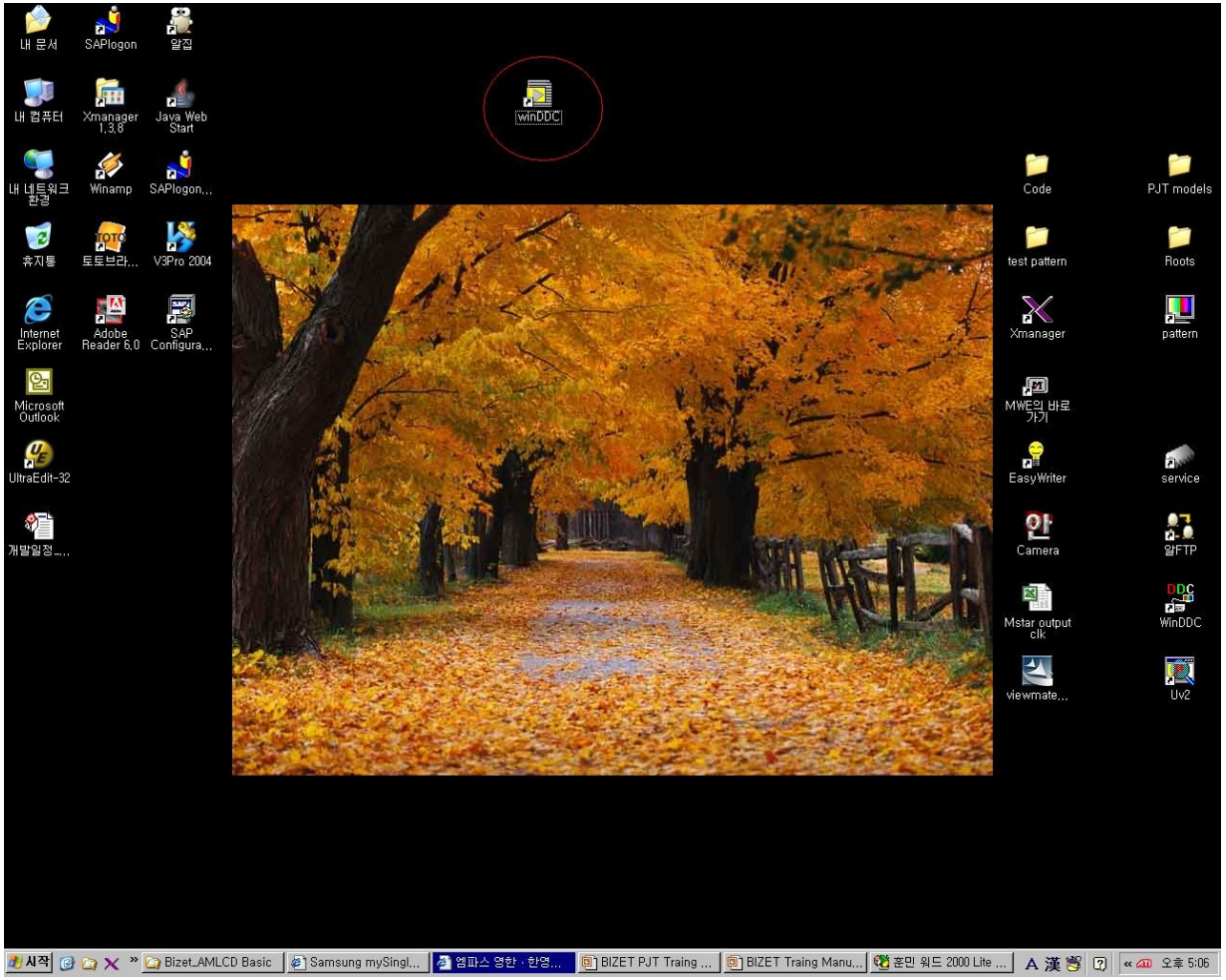
   -.I2c Protocol file name

   : MCU_rw128.iic

5. Click button ‘ □ □ ’.

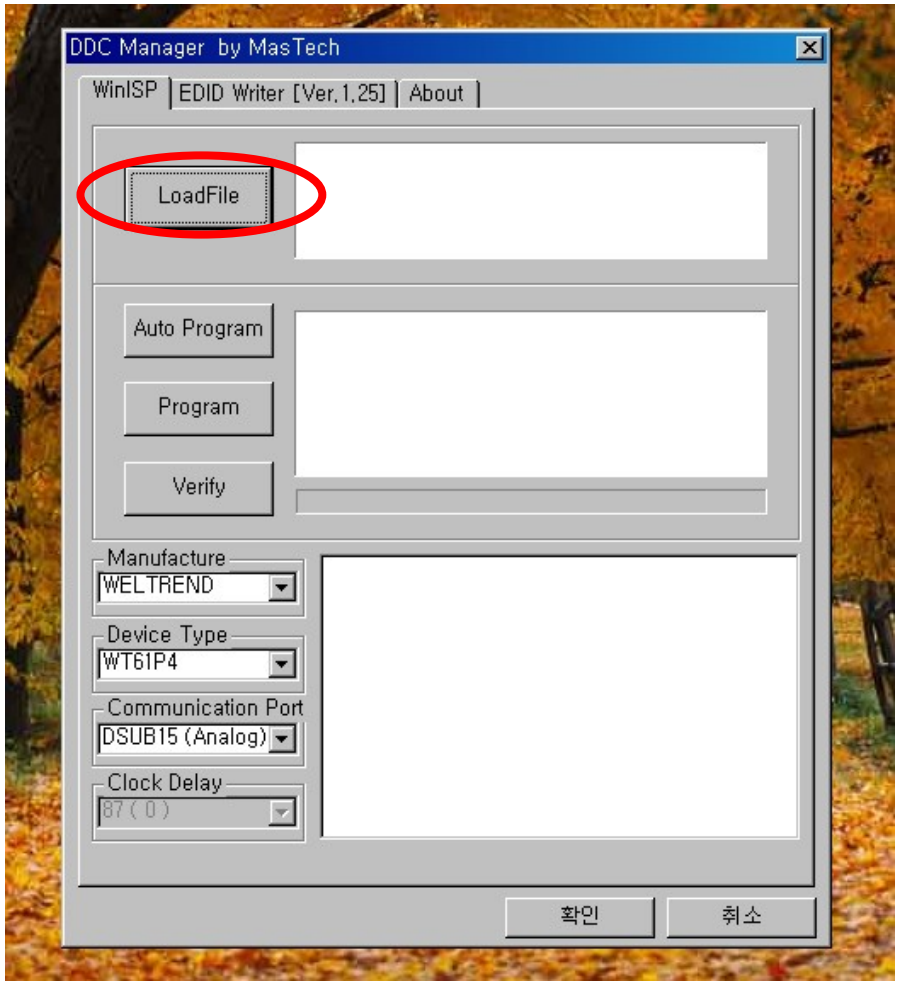
6. The installment is all done.

Firmware Updating_WinDDC Program (15”)



1. Select the program ‘WinDDC’

Firmware Updating – Load Hex (15”)

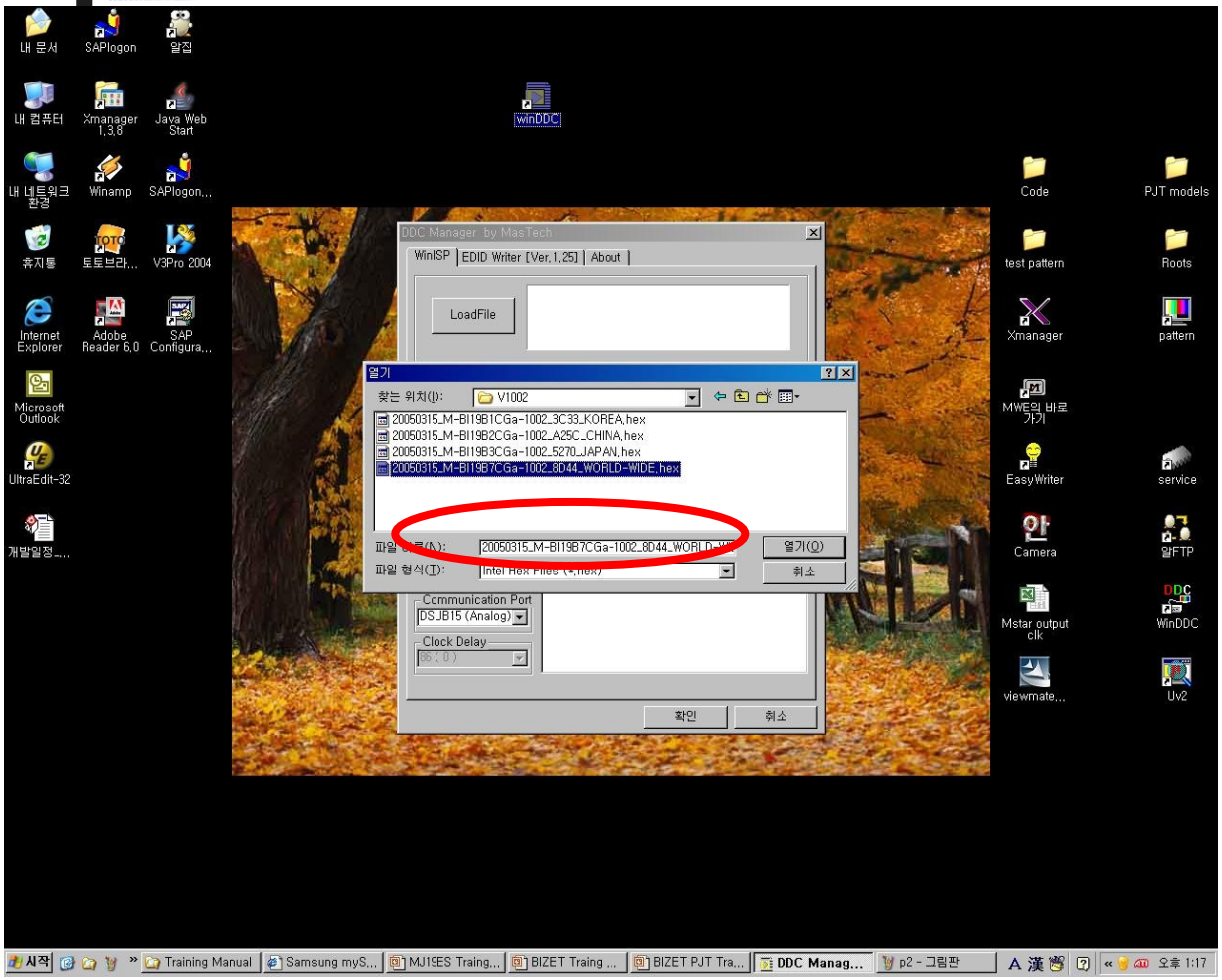


2. Push Button ‘LoadFile’

Attention !

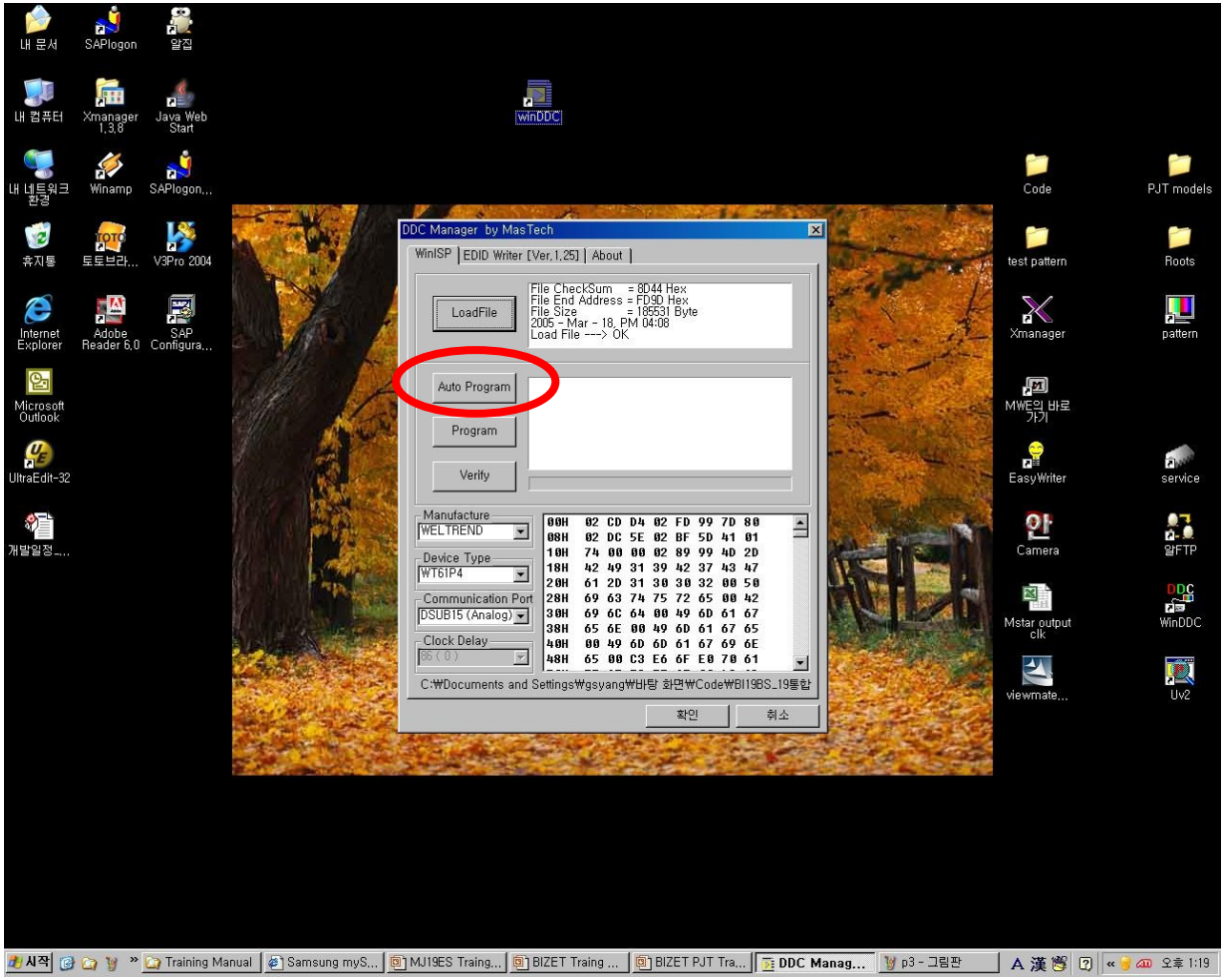
Select the Right Model and the latest Version Program

Firmware Updating – Selecting firmware



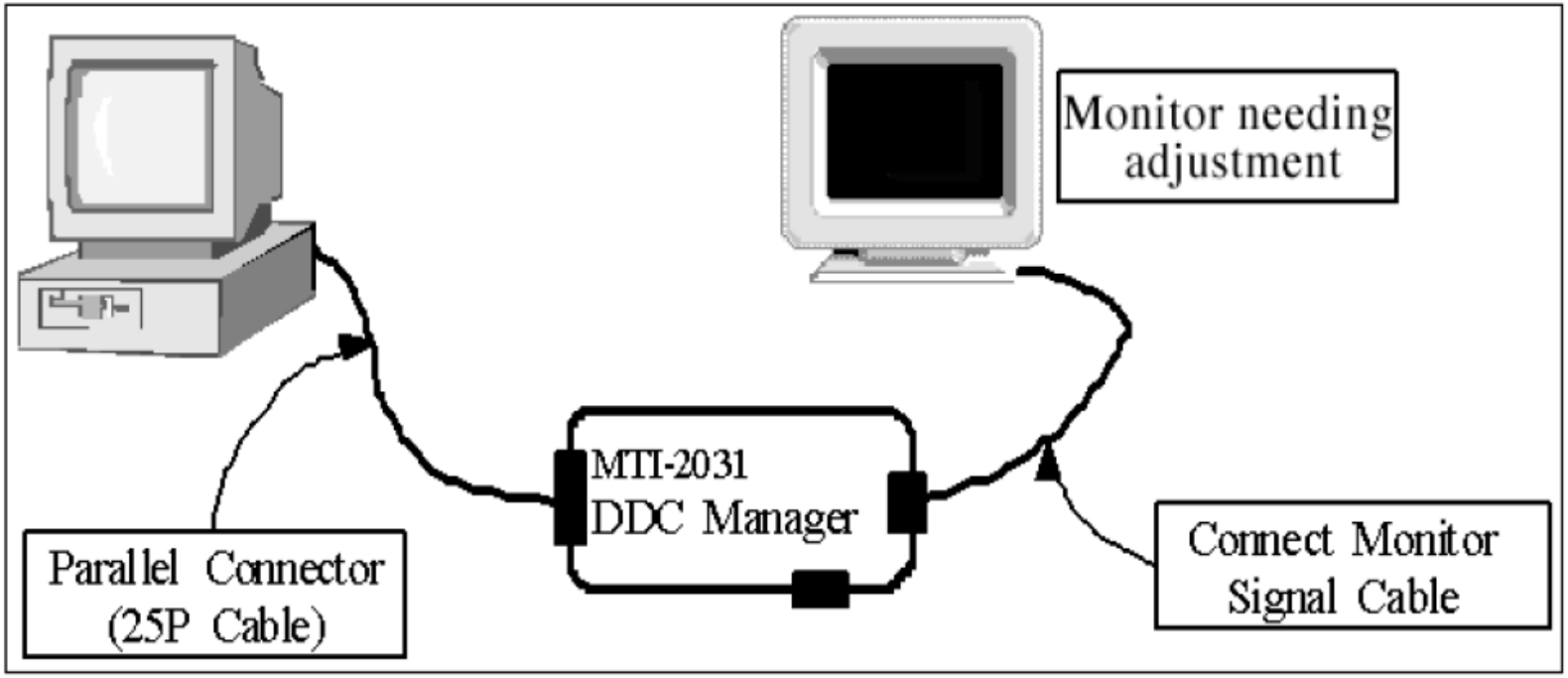
3. Select the Firmware

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



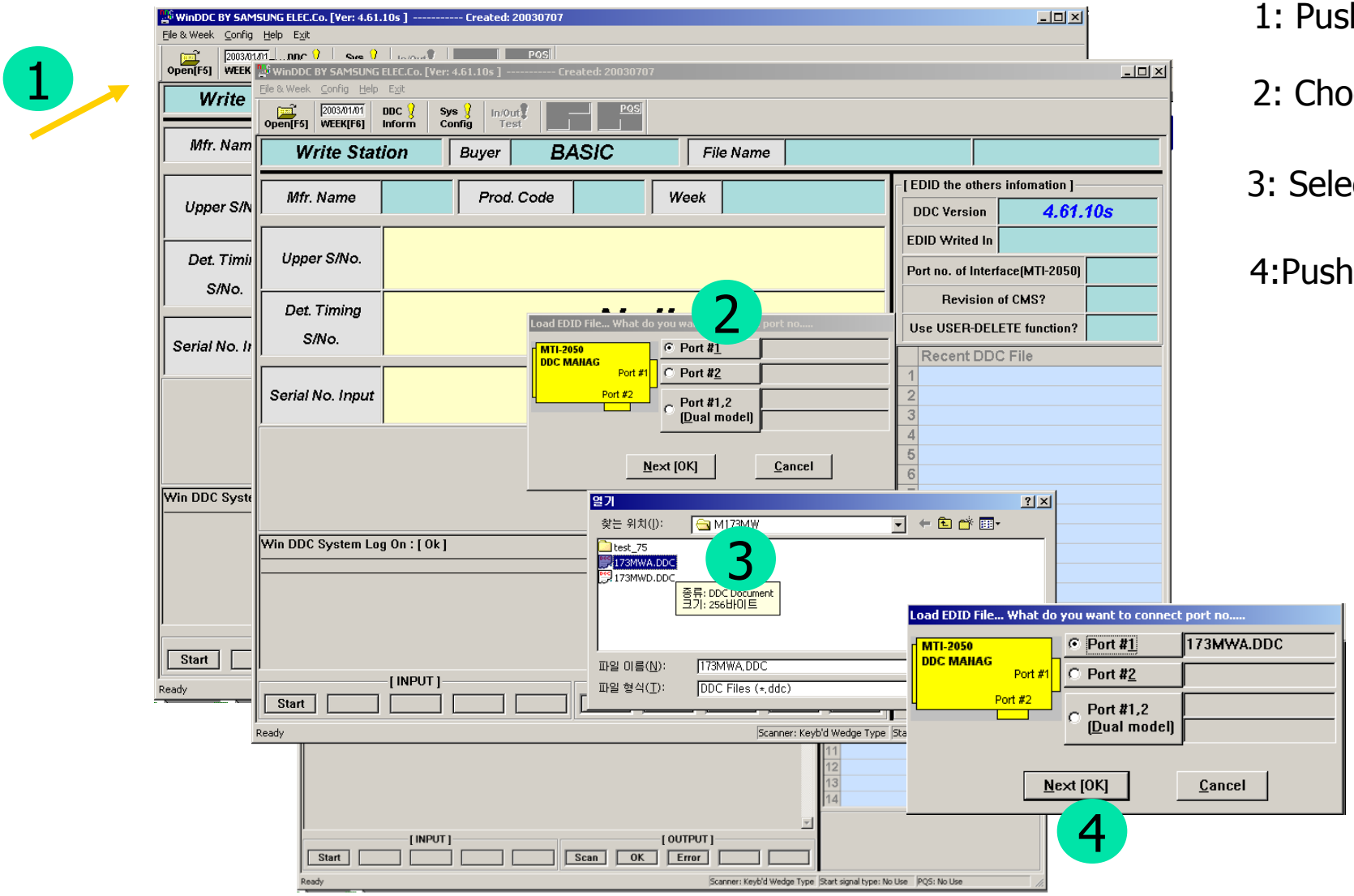
5. Now updating is ready, just push the button ‘Auto Program’

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



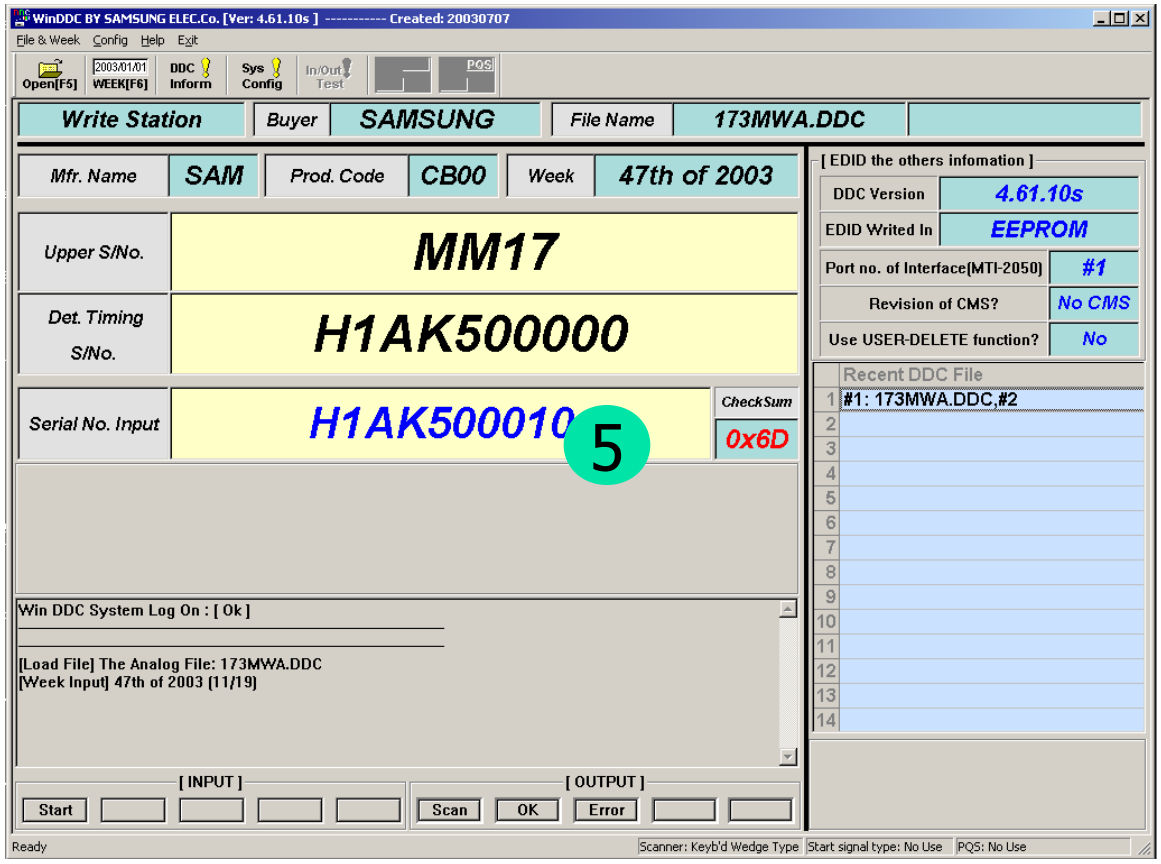
1: Push ‘Open’

2: Choosing Port

3: Selecting DDC File

4:Push ‘Next(OK)’ button

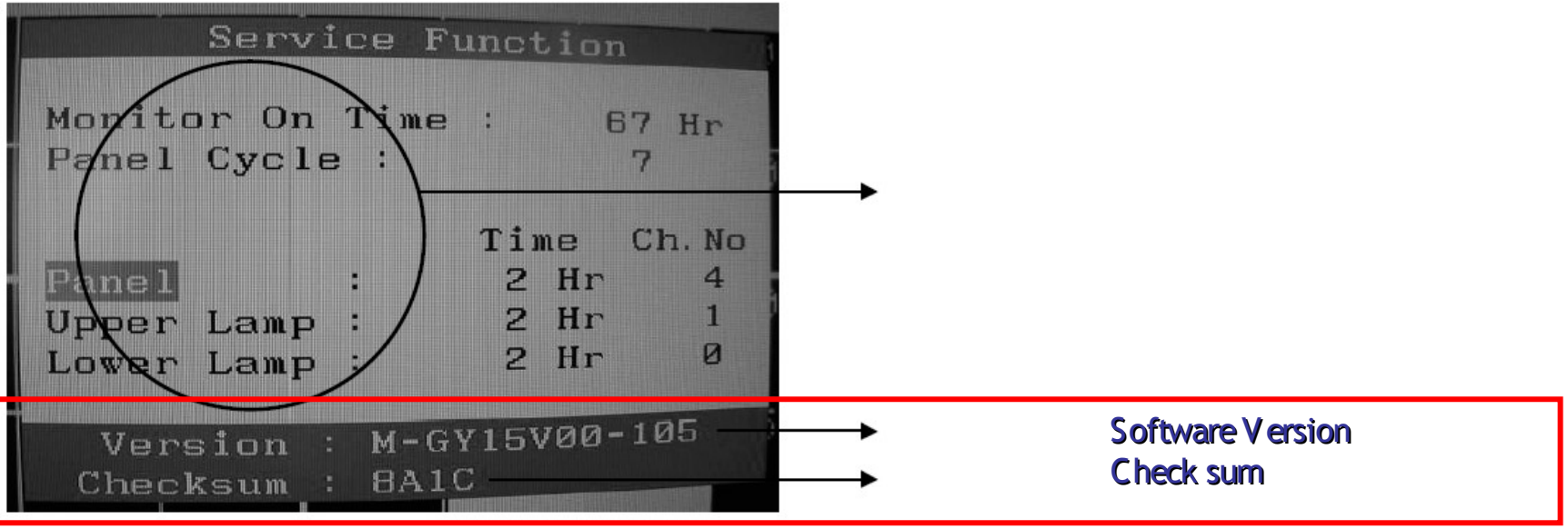
DDC - Last



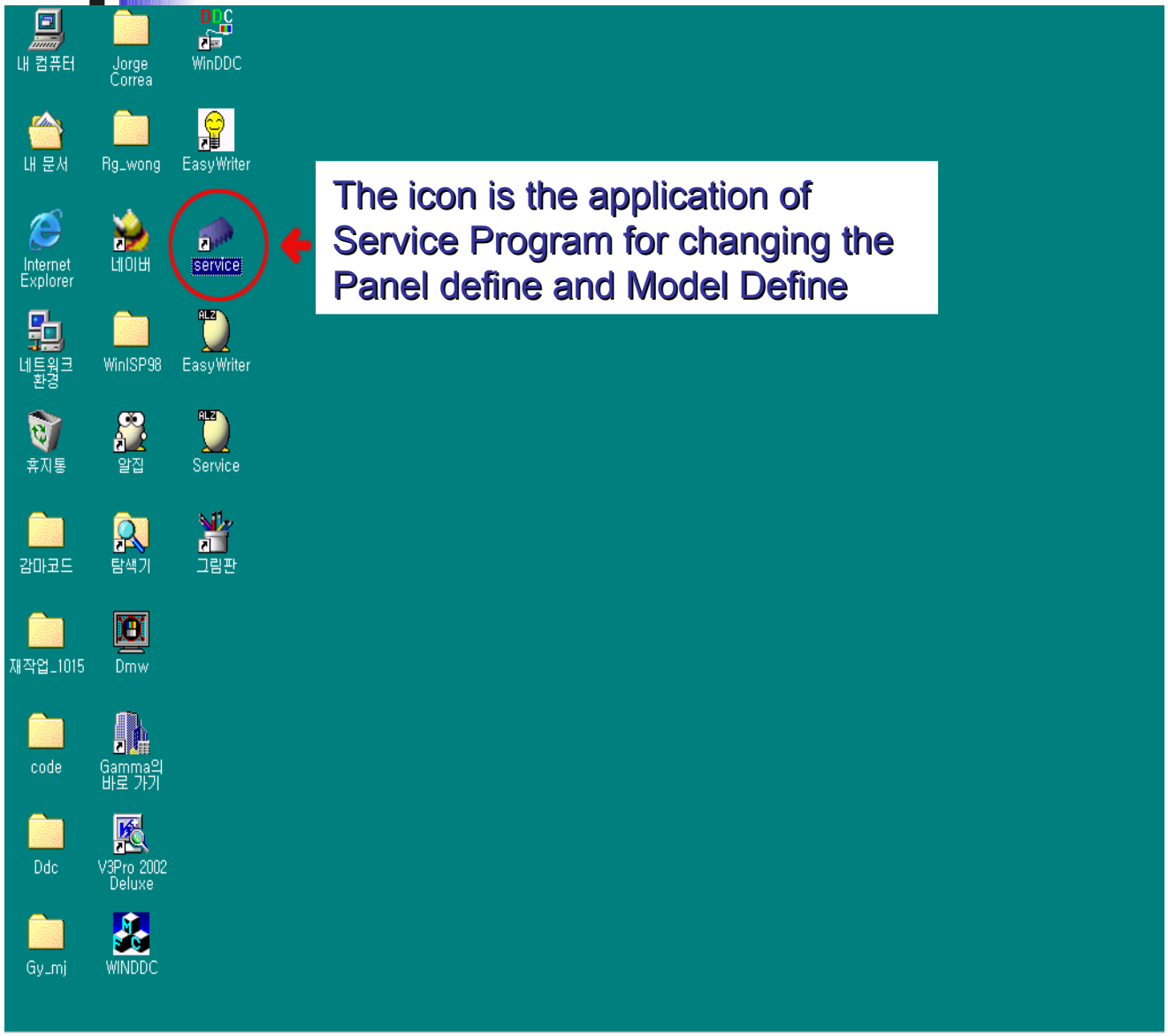
5: Writing the Monitor's Serial Number, and push the 'Enter' key

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



Panel & Model Define Process(Method 1)



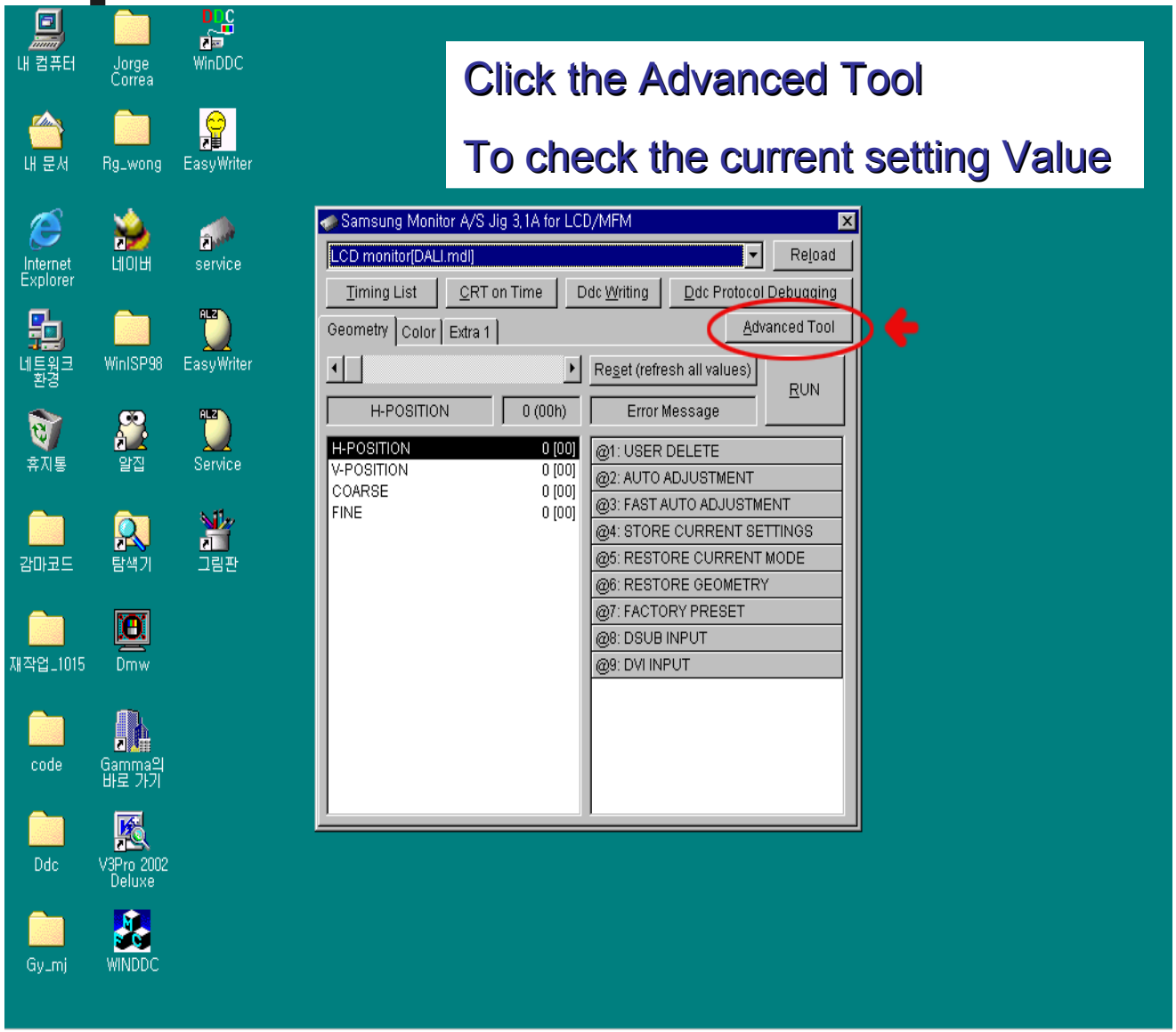
The icon is the application of Service Program for changing the Panel define and Model Define

1. Select the 'Service' program

Panel & Model Define Process

Click the Advanced Tool

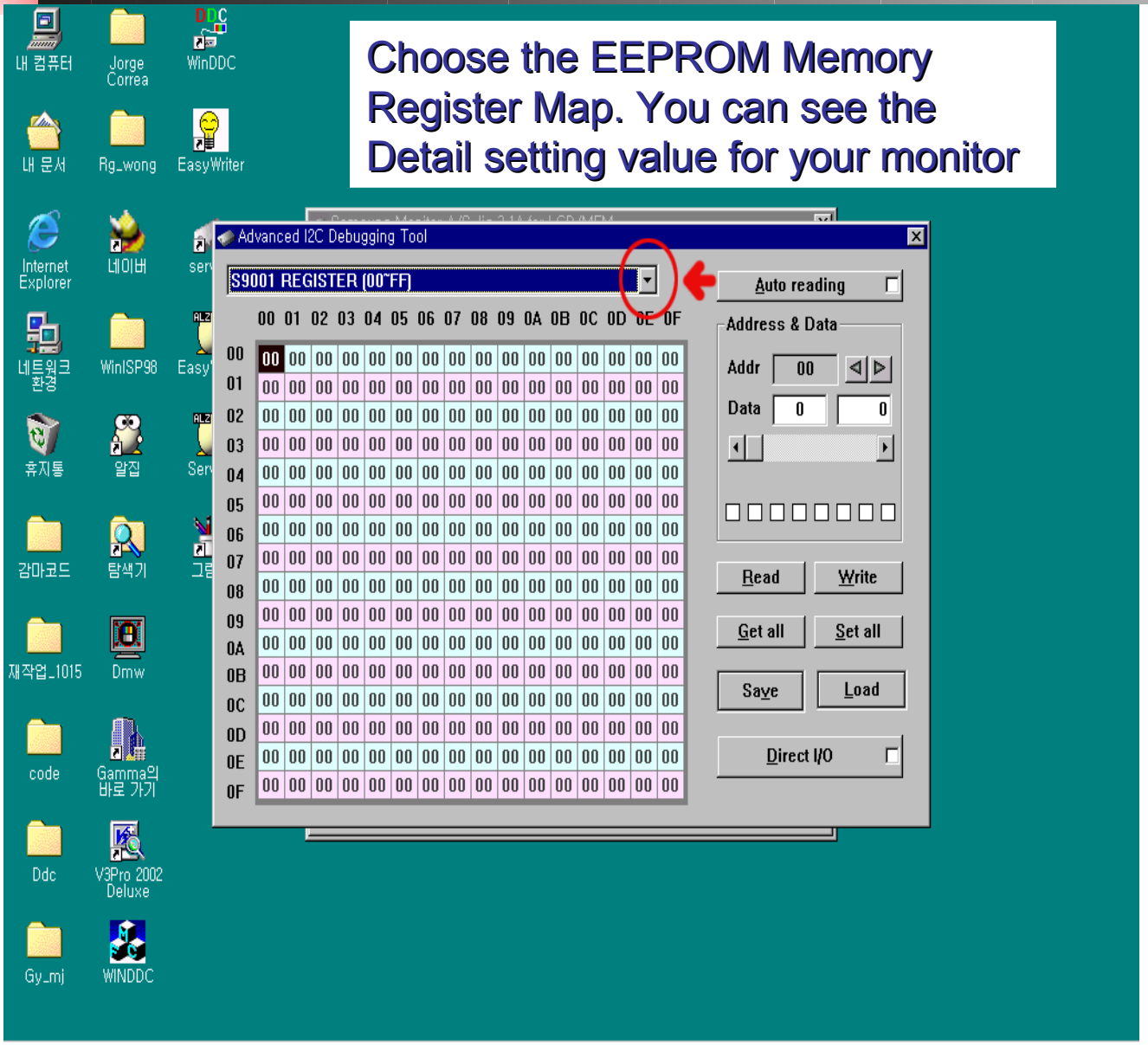
To check the current setting Value



2. Push the button ‘Advanced Tool’

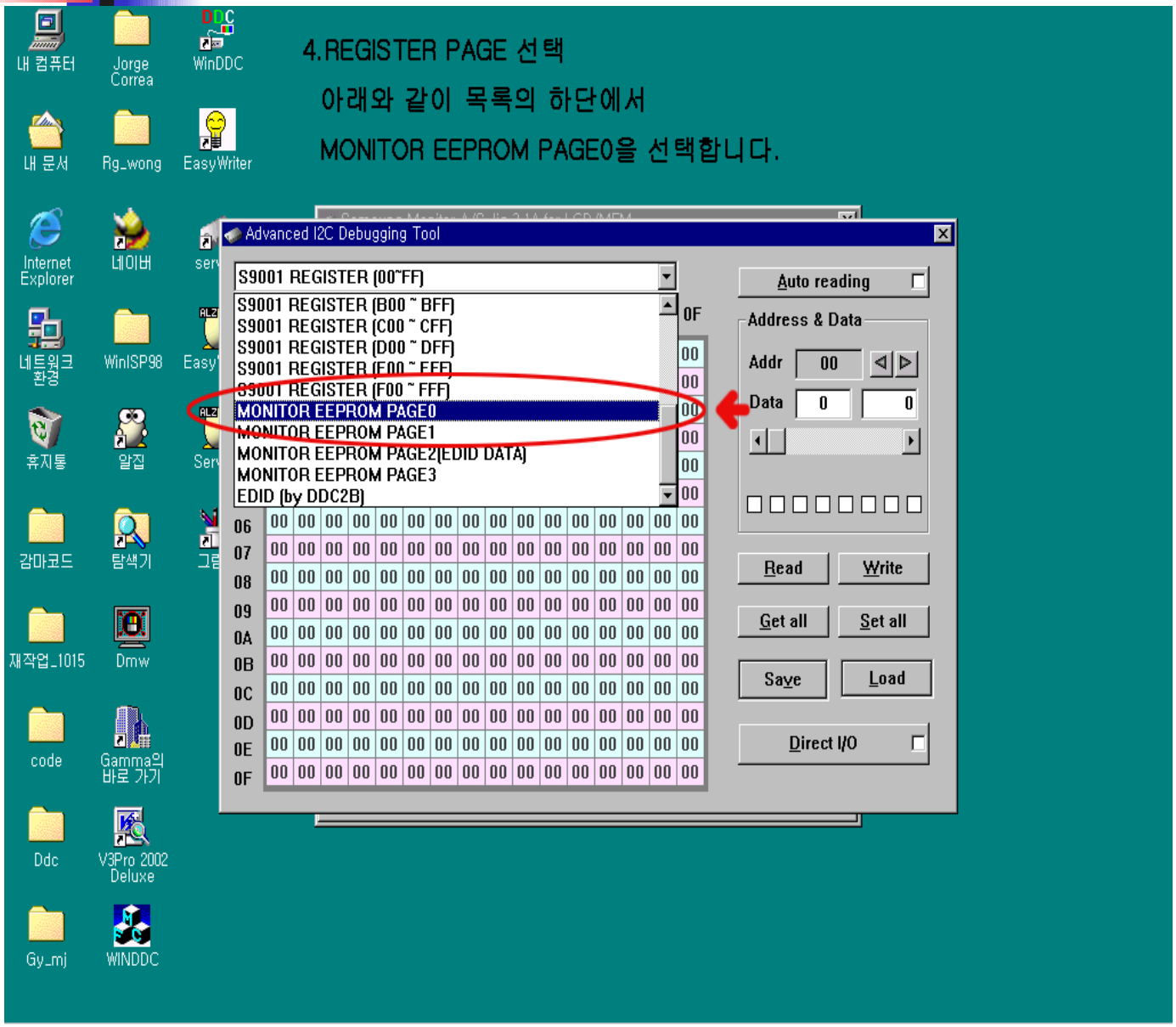
Panel & Model Define Process

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



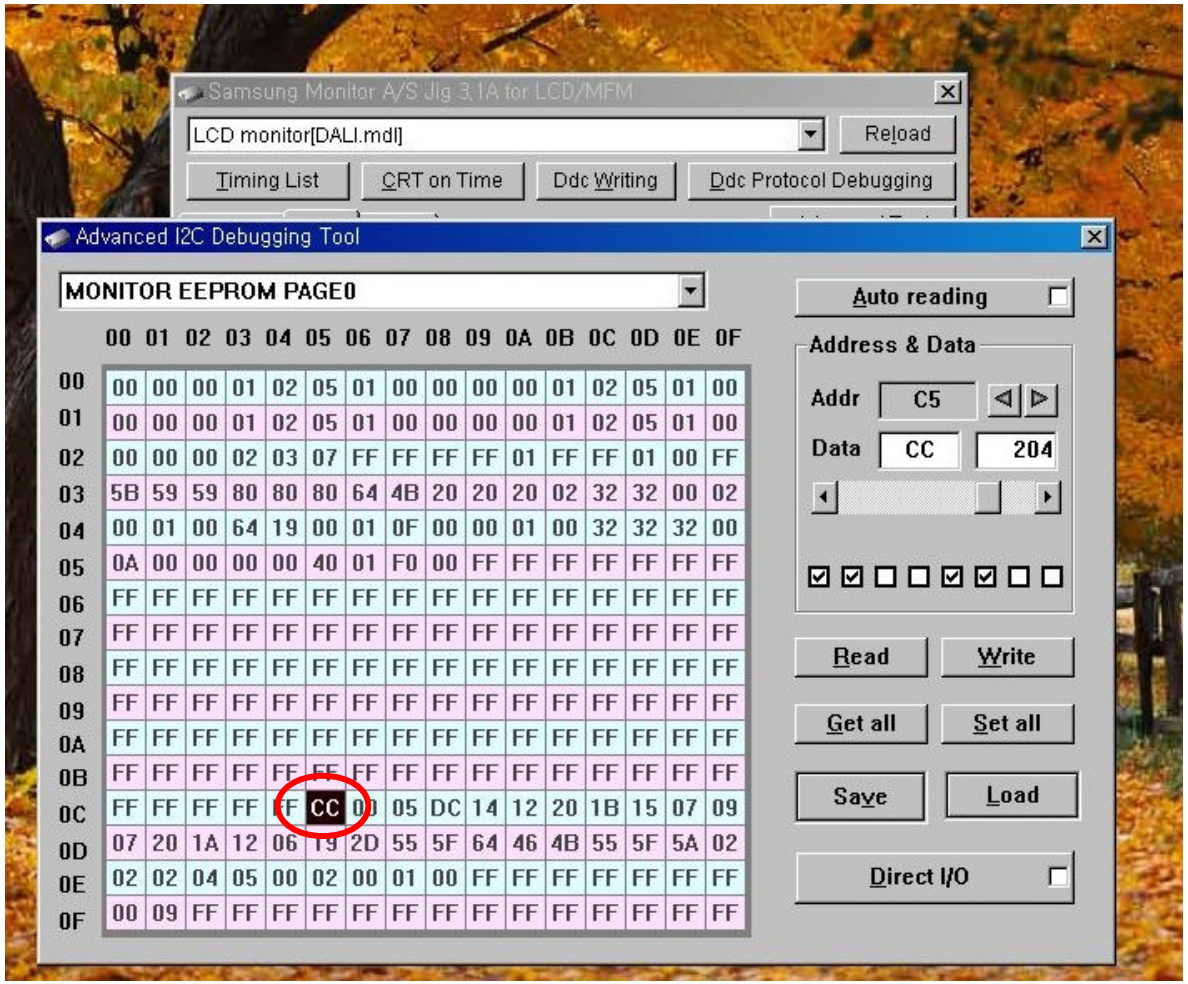
3. Click the button -down tap.

Panel & Model Define Process



4. Select 'Monitor EEPROM PAGE0'

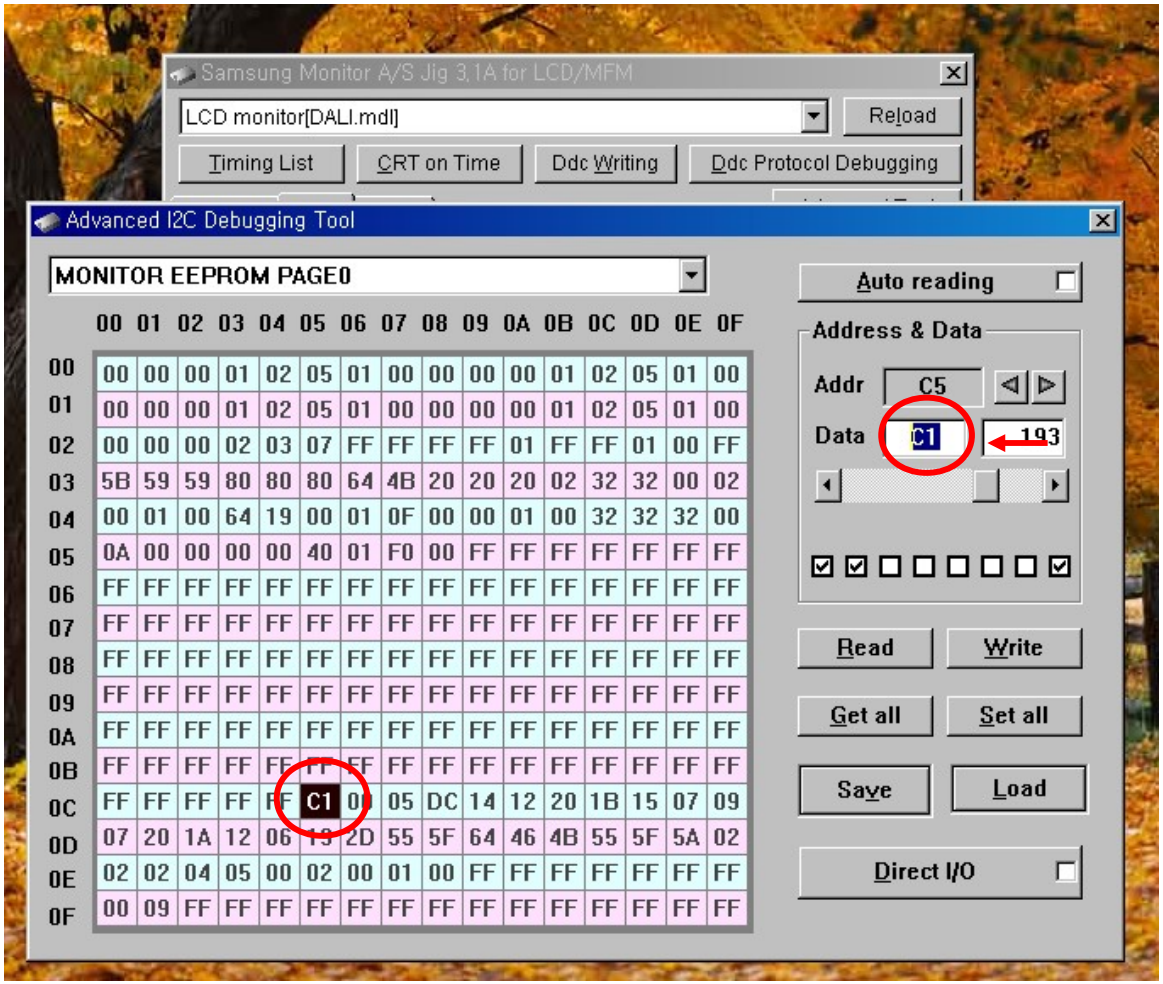
Panel & Model Define Process



5. Click the pixel

(row : 0C / column : 05)

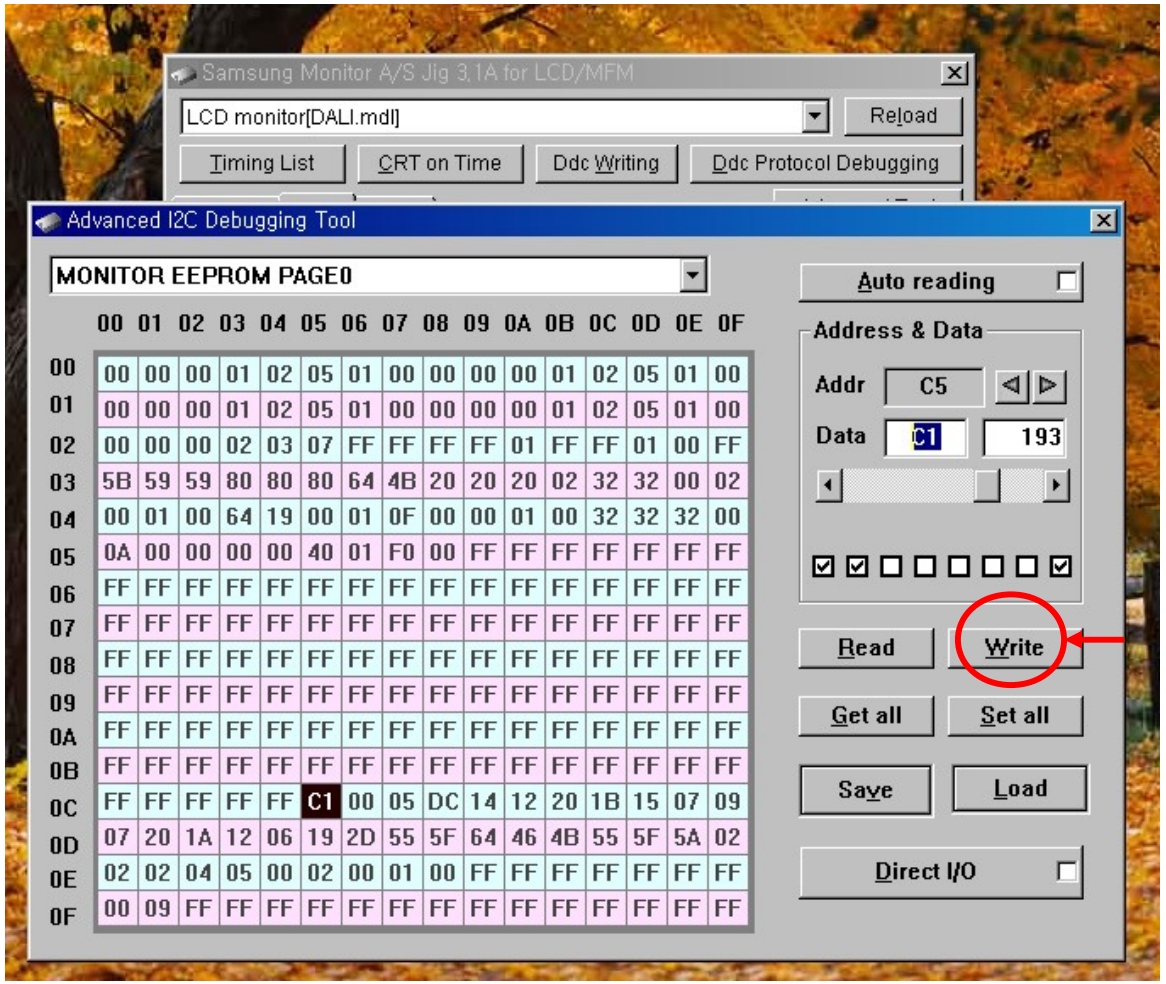
Panel & Model Define Process



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

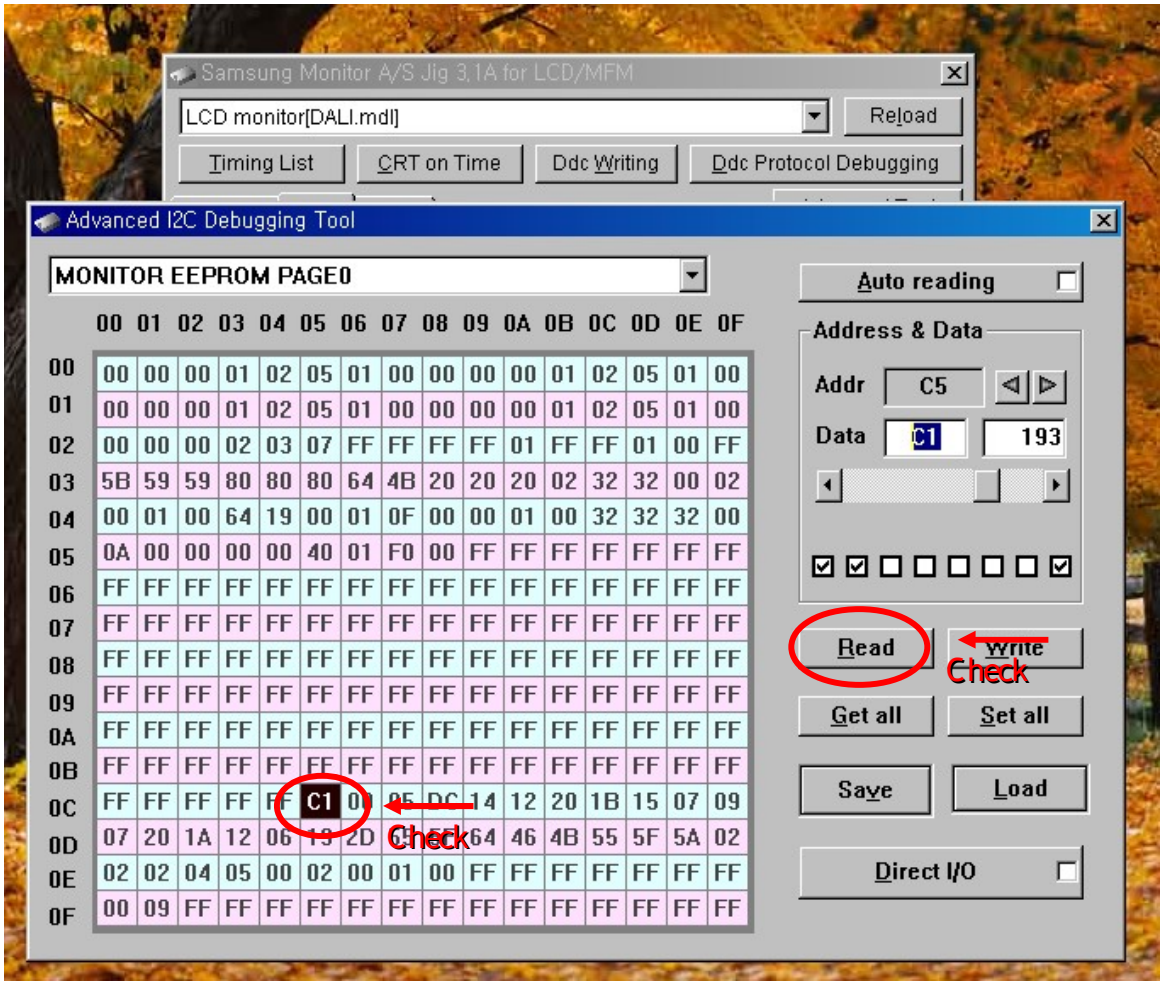
→ The Model & Panel information SHEET should be with you doing SVC work.

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.

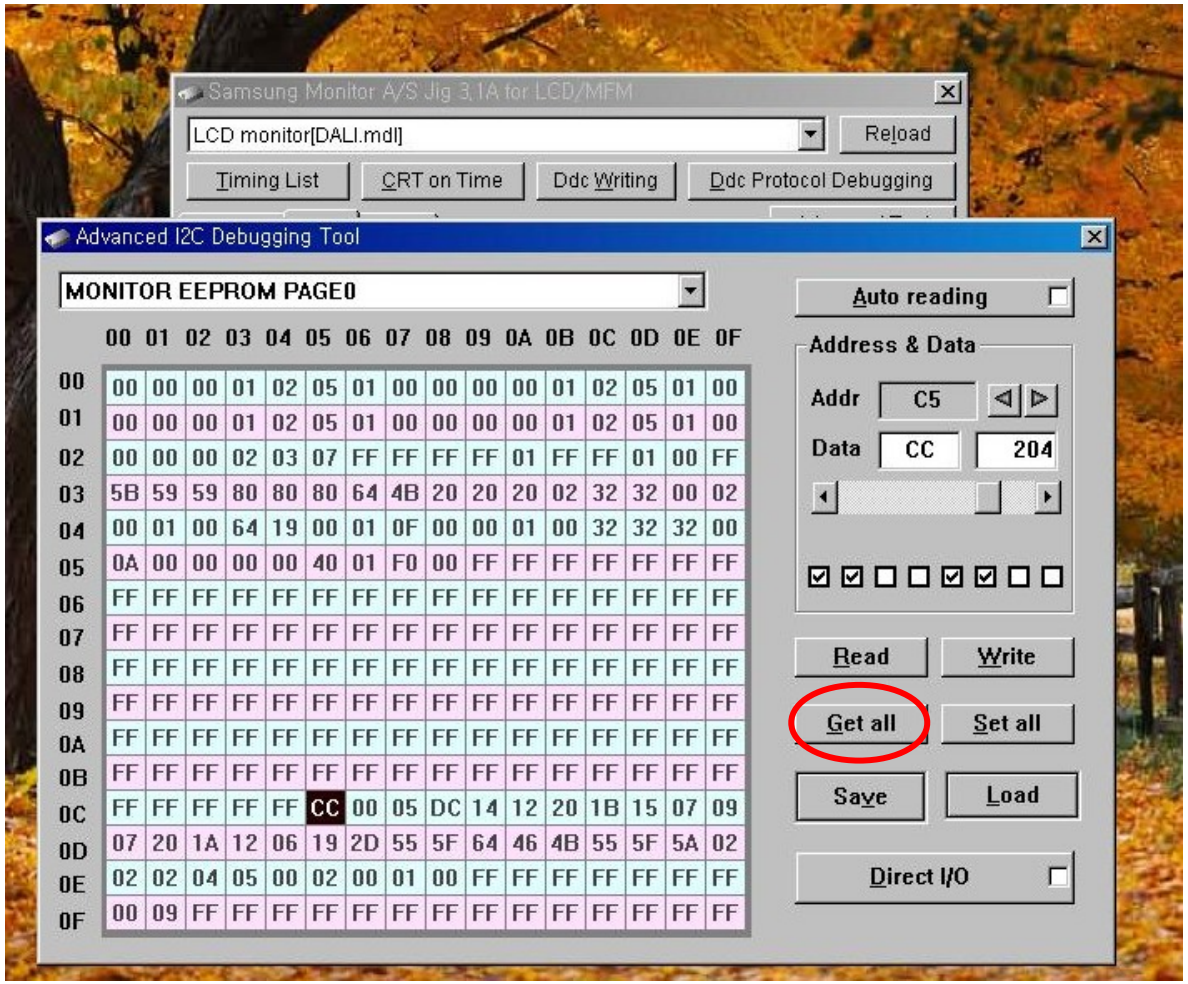
9. Turn the Soft Power off,
and Turn it on.

This is the LAST PROCESS.

Panel & Model Define Process(Method 2)

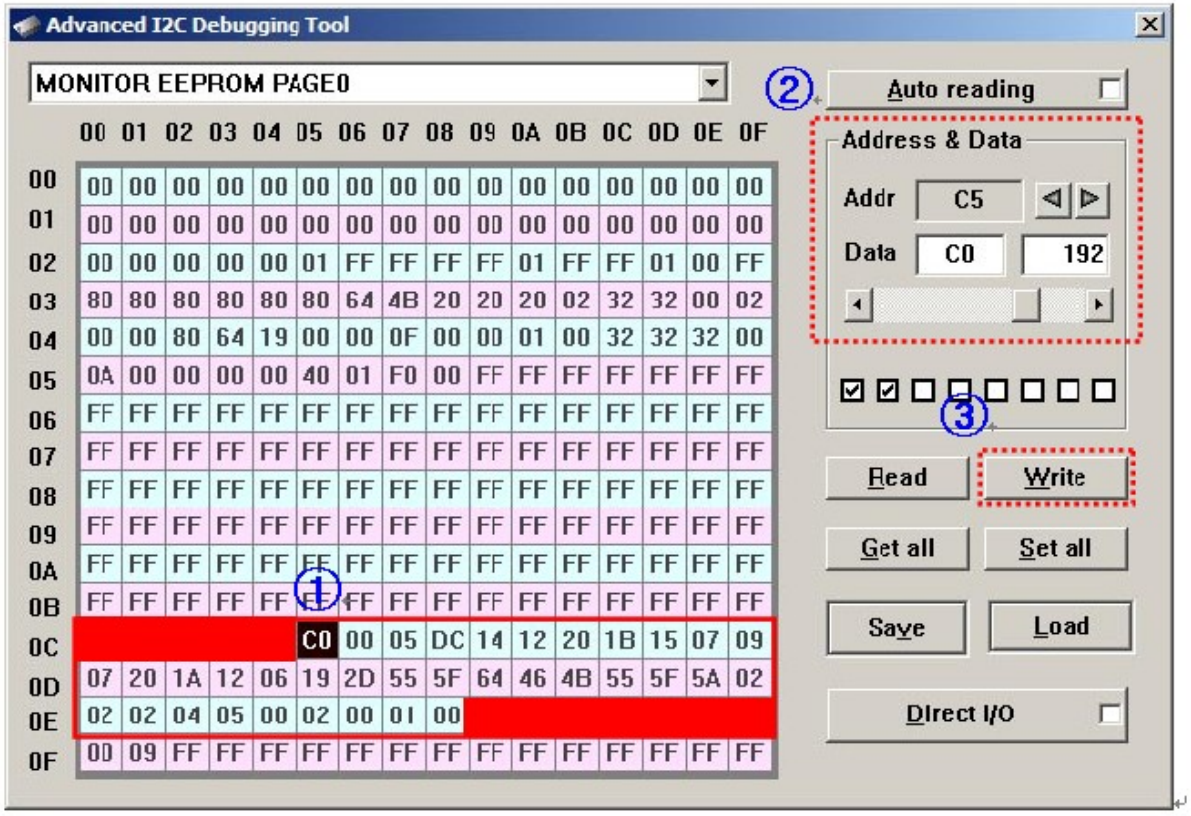
1. Repeat the process 1~4 of Method 1

Panel & Model Define Process



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

Panel & Model Define Process

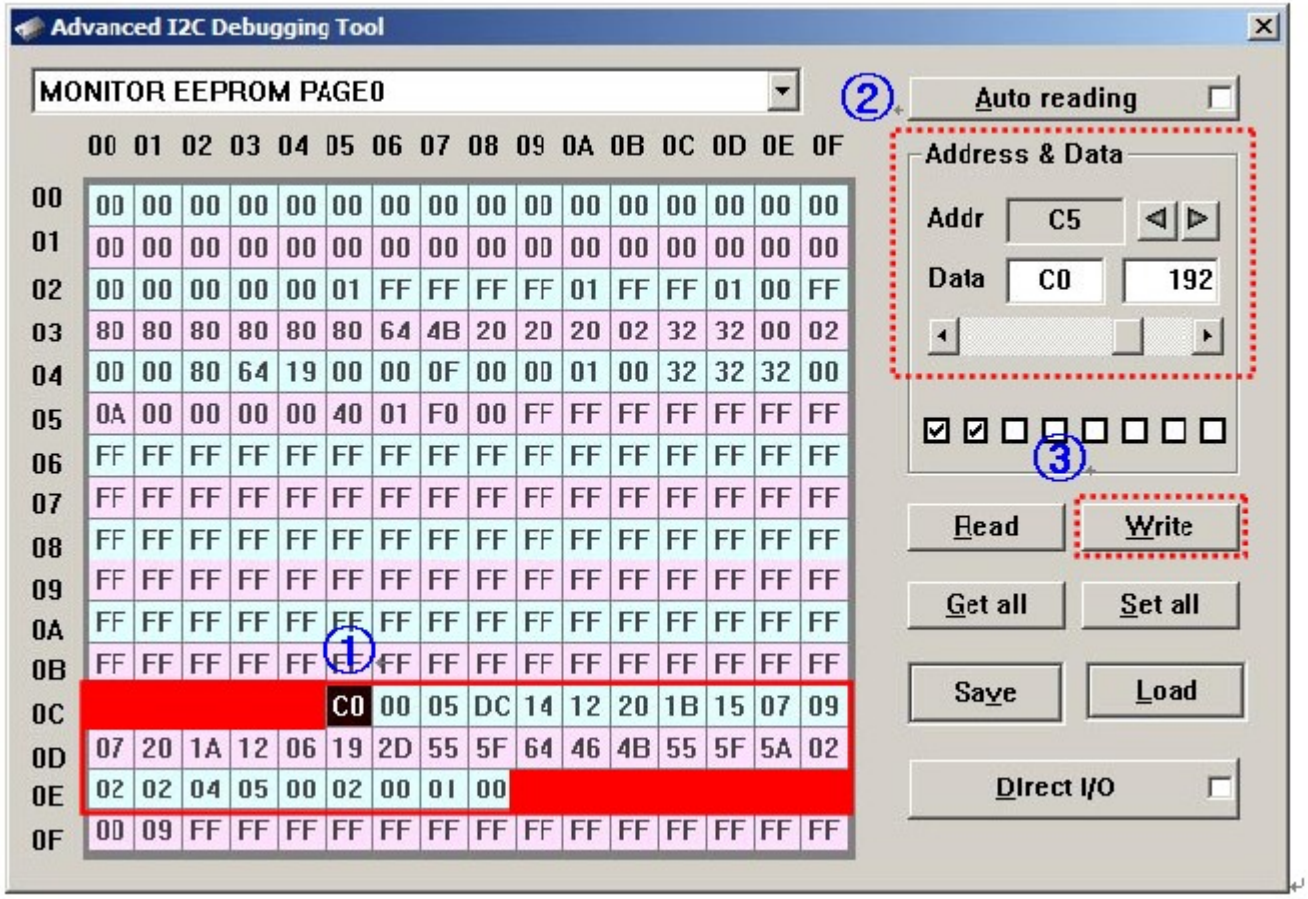


→ The Model & Panel information SHEET should be with you doing SVC work.

3. Set data values in your the Model & Panel information SHEET to EEPROM Address from C5(Row 0C, Colum 05) to E8(Row 0E, Colum 08) like the process 5~8 of Method1

Panel & Model Define Process

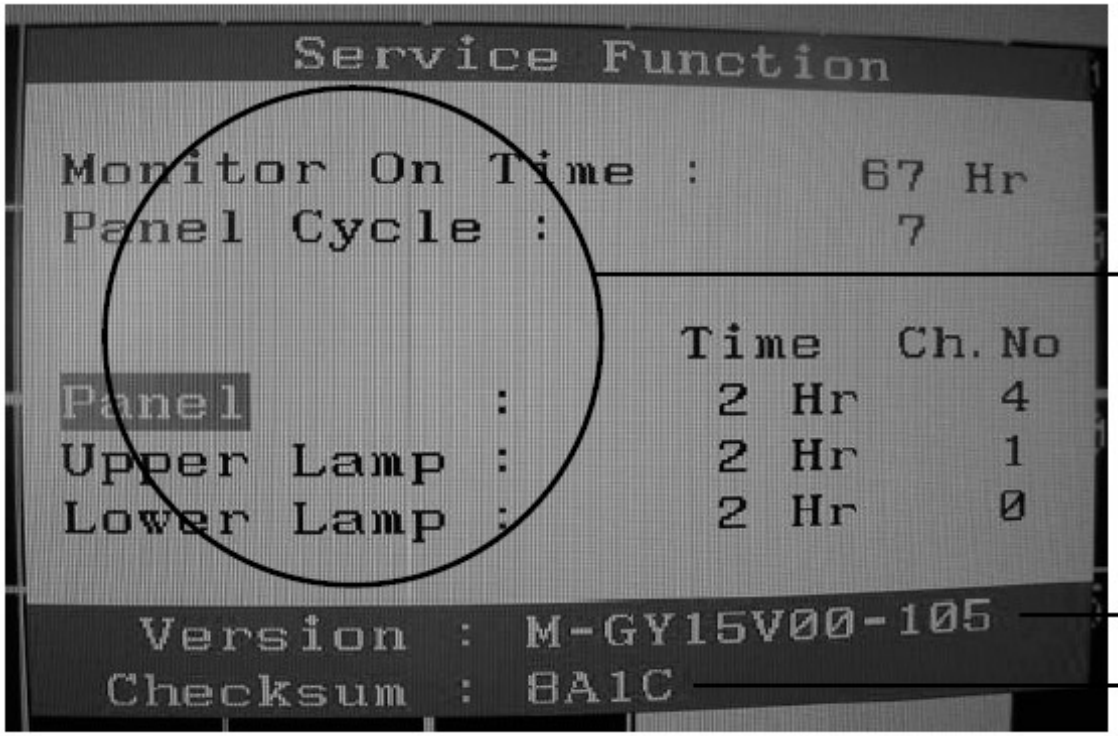
4. Turn Hard Power off, and Turn it on,
   and check whether data setting is right or not.
   This is the last process.



9.SVC Mode - Information

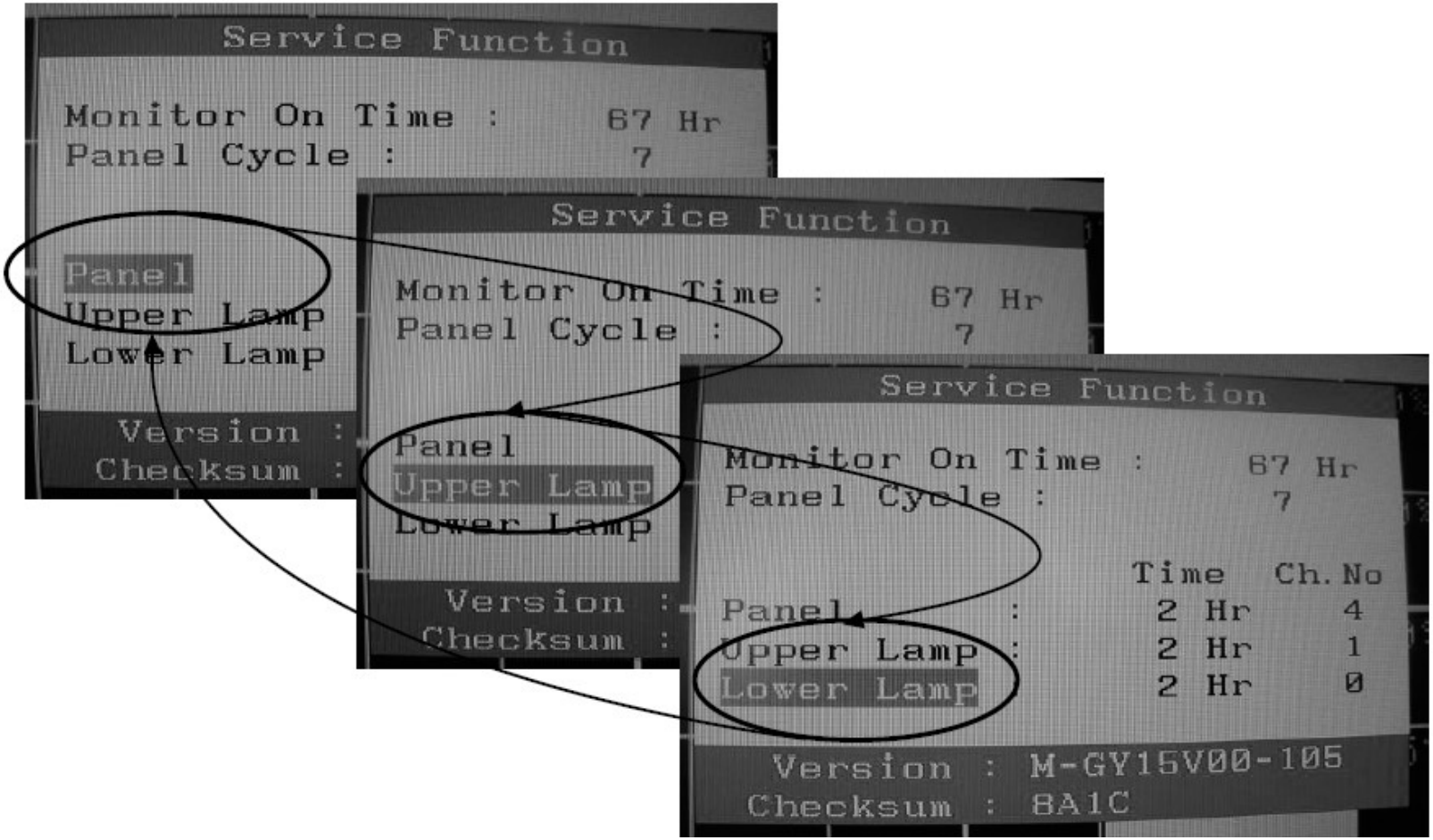
1. Control 'Bright / Contrast' to 'Zero(0)'
2. Push the 'Enter' key for 5 seconds
3. And then you can see 'SVC OSD'.
4. SVC OSD displays 'Firmware check sum/Panel,Lamp Life time'

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



SVC Mode - Items

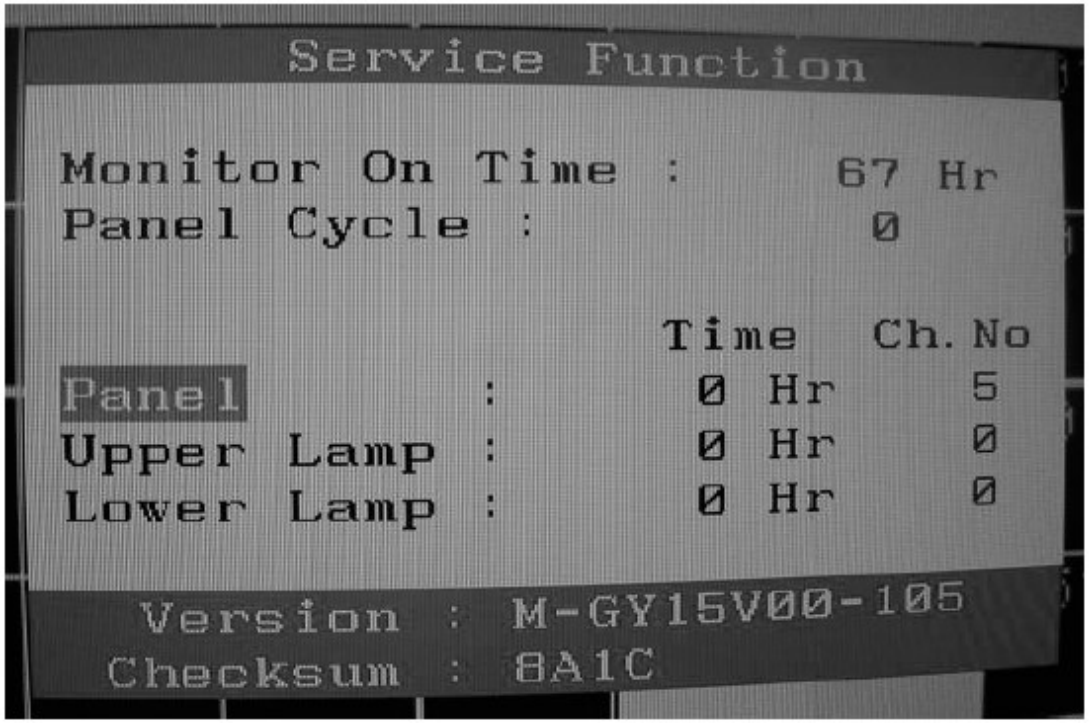
* ‘▲ ‘ key enables you change the item.



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)