Confidential	
Storage Terms	3 Years

SyncMaster magic 220TN

Training Manual

SAMSUNG ELECTRONICS CO.,LTD
Visual Display Division

Contents

Features and Specifications

1. Features

- Stylish & Superior Image Quality LCD Display
  - Consists of an Web Camera + Mic + Speaker
  - 22" TFT, 300cd/㎡ BR, 700:1 CR, 5ms R/T, 160/160 VA
  - Usable as a general LCD monitor when connected to a PC via a signal cable
  - Supports Dual Monitor via VGA Out

- Various and convenient Function / Excellent Video Conference Quaility
  - Various and convenient VoIP Solution
    : Office / Contents Sharing, PIP, Instant Messaging
  - Excellent Video Conference Quaility (Using H/W Codec)
  - Support Office Sharing
  - Support Multi Conference

- Supports Multiple Applications
  - Utilizes the Win XPe OS, which supports the use of multiple applications and local peripheral devices
  - Simple applications can be performed without connecting to a server

- Web Monitor Function
  - The local web browser allows simple Internet use without connecting to a server.

Features and Specifications

2. Specifications (1)

	220TN
OS	WIN XPe
CPU	AMD Geode LX800
CPU Clock	500 MHz
Memory (Flash/RAM)	1GB / 256MB
LAN	100 Mbps
Networking Protocols	MS RDP / Citrix ICA
USB	Version 2.0 (4 Port)
Client Display Mode	1680 X 1050 (60Hz)

Features and Specifications

2. Specifications (2)

Key Specification	
Model	220TN
Screen Size	22”
Maximum Resolution	1680*1050@60Hz
Colors	16.7M
Brightness	300cd/㎡
Contrast	700:1
Horizontal Frequency	30~81kHz
Vertical Frequency	56~75Hz
Viewing Angle	160 / 160
Response Time	5ms
Signal Input	Analog (15pin D-sub) [Separate/Composite Sync]
Power Consumption	70 Watt (Max)

Features and Specifications

2. Specifications (3)

Key Specification	
Model	220TN
Tilt (forward / backward)	- 3°(Forward) ~ 22.0°(Backward)
Power Supply	IP Board
Emissions Standard	X
Wall- Mountable	VESA 100mm*100mm
Size (WxDxH)	520.0 x 68.5 x 399.0mm(without Stand)
	520.0 x 202.0 x 452.3mm(with Stand)
Weight	7.9kg(Set) / 10.2kg (Package)

Features and Specifications

3. Product Features

No	Feature	Description	Operating method
1	VoIP	Support video phone that use VoIP	
2	Network	Connects to a server PC over a LAN. Shares resources with the server PC over the LAN.	
3	Device	Can read/write from/to various USB devices connected via the USB port	USB 2.0 supported
4	Internet	Use of the Internet is possible both when connected to a server PC and in the standalone state	

No	Feature	Description	Operating method
1	Auto Auto	The default mode displayed on the monitor for the first time automatically performs auto adjustments so that the monitor displays the optimal image without any additional user operations.	
2	Auto Power on/off	When the monitor enters DPMS, the monitor power turns on and off automatically. At this time, the power LED blinks.	
3	Wall mount	Wall-mountable	
4	Refined adjustments for gamma, color and temperature	Supports three (3) degrees of adjustment for gamma, color and temperature.	Magic tune 3.6
5	Magic Bright	Supports six (6) modes: User-defined, Character, Internet, Game, Sport, and Movie mode.	Magic tune 3.6
6	Sharpness	Provides a precision adjustment in increments that suits the characteristics of the video card.	Magic tune 3.6

Features and Specifications

3. Comparative Specifications to the Previous Model (CX716XT)

	CX716XT	220TN
Display	17"	22"
Panel	- 300cd/ ㎡ BR, 600:1 CR - 8ms R/T, 160/160 VA	- 300cd/ ㎡ BR, 700:1 CR - 5ms R/T, 160/160 VA
Resolution	1280x1024@60Hz	1680x1050@60Hz
Operating system	Win XPe	Win Xpe
CPU	AMD Geode NX1500	AMD Geode LX800
Memory (Flash / RAM)	1G MB / 256 MB	1 GB / 256 MB
Networking Protocols	MS RDP / Citrix ICA	MS RDP / Citrix ICA
USB	4 downstream ports	4 downstream ports
Serial port	O	X
LAN port	1Gbps	100 Mbps
Camera Module	X	2M Pixel Camera
Signal Input	D-sub	D-sub
Signal Output	D-sub : SXGA(default), XGA	D-sub : SXGA(default), XGA
Compatible OS	Windows 2000 Server Windows 2003 Server	Windows 2000 Server Windows 2003 Server

Features and Specifications

4. New Specifications

○ **LCD Monitor embedded Thin Client add VoIP function**

- Presence Call
- Instant Message
- DB (Call History, Phone Book ...)
- Conference call
- Call Forward, Hold, Wait, Transfer
- Office Sharing
- Busy Signal Handling

○ **Support Management S/W.**

- Window RDP, Support Citrix ICA

○ **Support Analog Input.**

- Analog Separate,Composite Sync.

○ **Features and Specifications.**

- LAN : 10/100M bps
- USB : Version 2.0 (4 Port), 1 Upstream port(USB Device sharing with PC)
- Sound : 1.5W X 2 Speaker.
- Multi Media : Embedded Webcam and Microphone

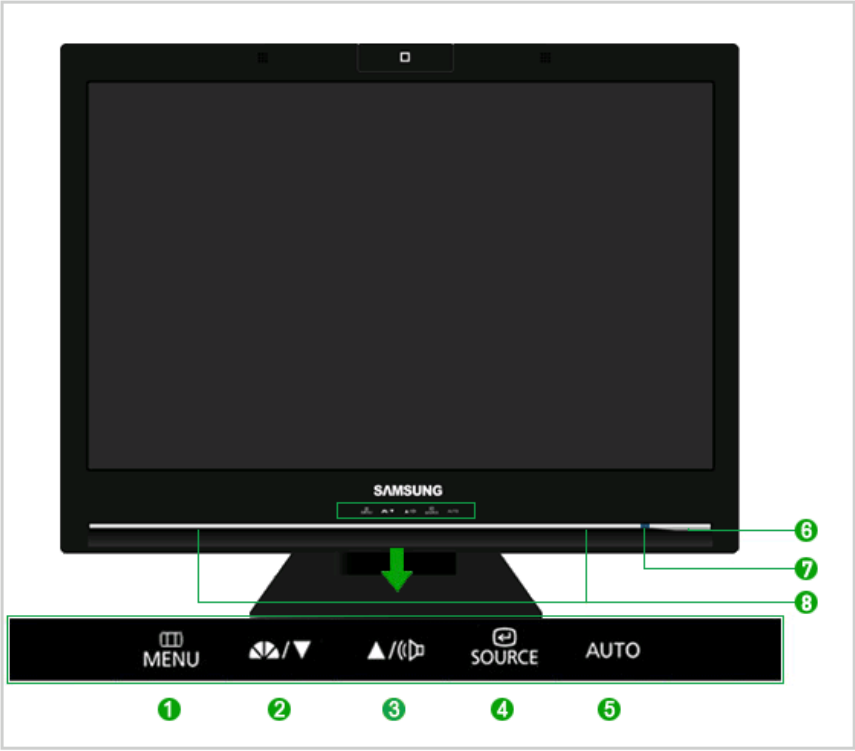
Features and Specifications

5. Comparative Competitor Specifications

	SAMSUNG	Sony
Model	220TN	PCS-TL50
Target Customer	B2B	B2B
Fuction	Normal Monitor/VOIP /Thin Client	Normal Monitor/VOIP
Camera	CMOS 2M Pixel	CCD 0.38M Pixel
Multi Communication	6 Persons(Need another device)	6 Persons
Data sharing	Support	Support (Need another device)
VoIP Protocol	SIP	H.323
Standard	4CIF, 30Fps, 2.5Mbps	CIF, 30Fps, 2Mbps
Video Codec	H.263	H.261, H.263, H.264, MPEG4
Audio Codec	G.711	G.711, G.722, G.723, G.729
Strong Point & Weak Point	▪ Strong Point -. Thin Client/VoIP Function Convergence -. Support Total B2B Solution. -. Excellent VoIP Compatibility (Using Protocol based SIP). -. Inexpensive price ▪ Weak Point -. Supporting Format (Codec) -. Camera Digital Zoom -. UI	

Structure and Connections

1. Structure (Front)



1	MENU button [MENU]	Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.
2,3	Adjust buttons [▼/▲]	These buttons allow you to adjust items in the menu.
2	MagicBright™ button []	MagicBright™ is a new feature providing optimum viewing environment depending on the contents of the image you are watching. Currently six different modes are available: Custom, Text, Internet, Game, Sport and Movie. Each mode has its own pre-configured brightness value. You can easily select one of six settings by simply pressing MagicBright™ control buttons. 1) Custom Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the brightness and contrast by using the OSD menu. 2) Text For documentations or works involving heavy text. 3) Internet For working with a mixture of images such as texts and graphics. 4) Game For watching motion pictures such as a game. 5) Sport For watching motion pictures such as a Sport. 6) Movie For watching motion pictures such as a DVD or Video CD. >> Click here to see an animation clip
3	Volume button []	When OSD is not on the screen, push the button to adjust volume. >> Click here to see an animation clip
4	Enter button [SOURCE] / SOURCE button	Activates a highlighted menu item. / Push the 'SOURCE', then selects the video signal while the OSD is off. (When the SOURCE button is pressed to change the input mode, a message appears in the upper left of the screen displaying the current mode -- analog or digital input signal.) >> Click here to see an animation clip
5	AUTO button [AUTO]	Use this button for auto adjustment. >> Click here to see an animation clip
6	Power button []	Use this button for turn the monitor on and off.
7	Power indicator	This will enable you to see the overall power status of the system. For more information, see the PowerSaver section.
8	Speaker	You can hear sound by connecting the soundcard of your PC to the monitor.

Structure and Connections

2. Structure (Rear)

Rear

Structure and Connections

2. Structure (Rear)

❶ POWER

- POWER
  : Connect the power cord for your monitor to the POWER on the back of the monitor.

❷ RGB OUT

- Connect when using it as a monitor.

❸ USB / USB2

Ⓐ USB
: Connect the USB of the USB monitor and a USB device with the USB cable.

Ⓑ USB2
: Connect the USB of the monitor and the USB of the computer with the USB cable.

⚠

- **To use USB, you have to connect the USB2 to the PC.**
- **Make sure to use the USB cable supplied with this monitor to connect the monitor's USB2 and your computer's USB.**

❹ LAN (LAN Connection Terminal)

- Connect when using it as a monitor.

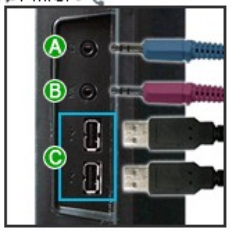
❺ RGB IN

- RGB IN
  :Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.

❻ Kensington Lock

- The Kensington lock is a device used to physically fix the system when using it in a public place.
  (The locking device has to be purchased separately.)
  For using a locking device, contact where you purchase it.

❼ 🎧 / MIC/ USB

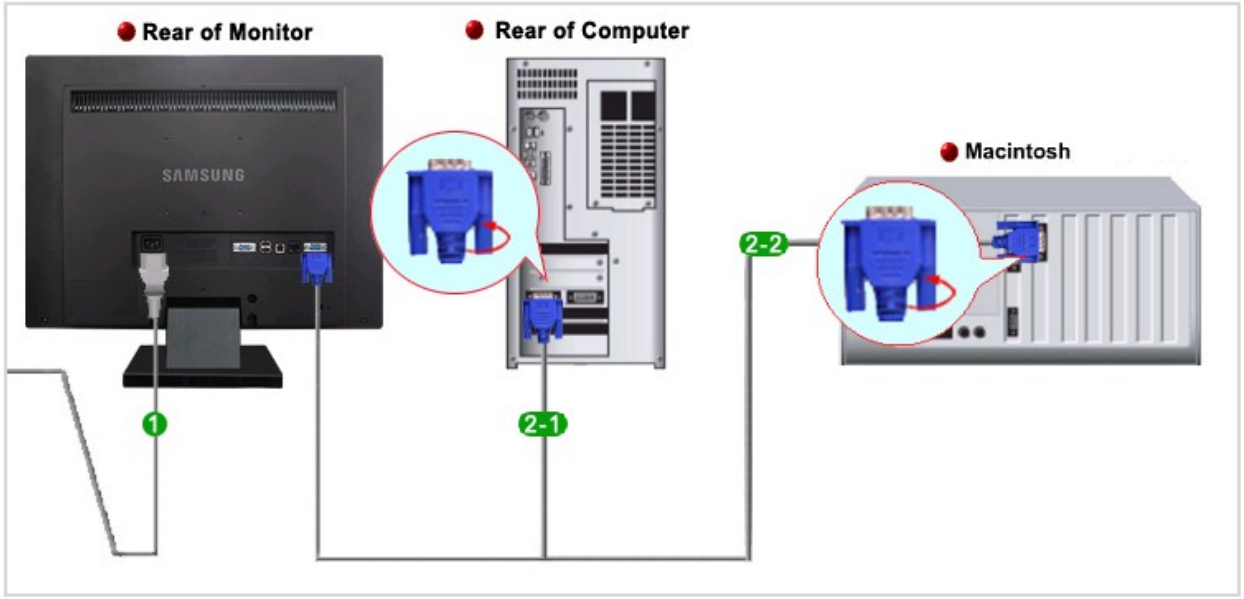


Ⓐ 🎧 (Earphone jack)
: Headphone connection terminal.
Ⓑ MIC (The Microphone connection terminal)
: Connect a microphone to the MIC terminal.
Ⓒ USB (USB Connection Terminal)
: Connect USB devices such as a mouse, keyboard and external storage devices (DSC, MP3, external storage, etc.).

Structure and Connections

3. Connection

Connecting Cables (When used as a normal monitor)



1. Connect the power cord for your monitor to the POWER port on the back of the monitor.
   Plug the power cord for the monitor into a nearby outlet.
2. Use a connection appropriate for your computer.
   - 2-1 Using the D-sub (Analog) connector on the video card.
     - Connect the D-Sub Cable to the RGB IN port on the back of your monitor.

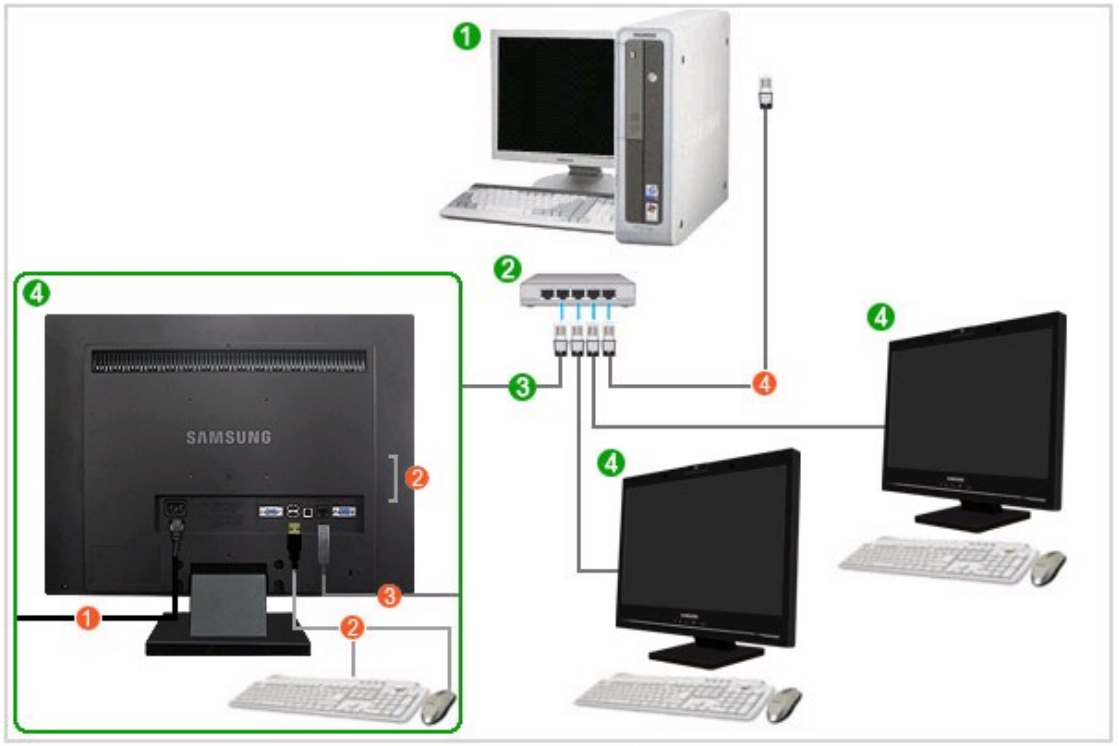
      [RGB IN]
   - 2-2 Using Macintosh
     - Connect the monitor and the Macintosh computer using the computer connection cable.

※ If the monitor and the computer are connected, you can turn them on and use them.

Structure and Connections

3. Connection

Connect to the host PC using a LAN cable



1 Host PC 2 Hub 3 LAN Cable 4 Monitor

1 Connect the power cord to the power terminal at the back of the monitor.
2 Connect the mouse and the keyboard to the USB ports.
3 Connect the LAN port on the back of the monitor and the hub.
4 Connect the hub and the LAN port of the host PC.

Structure and Connections

3. Connection

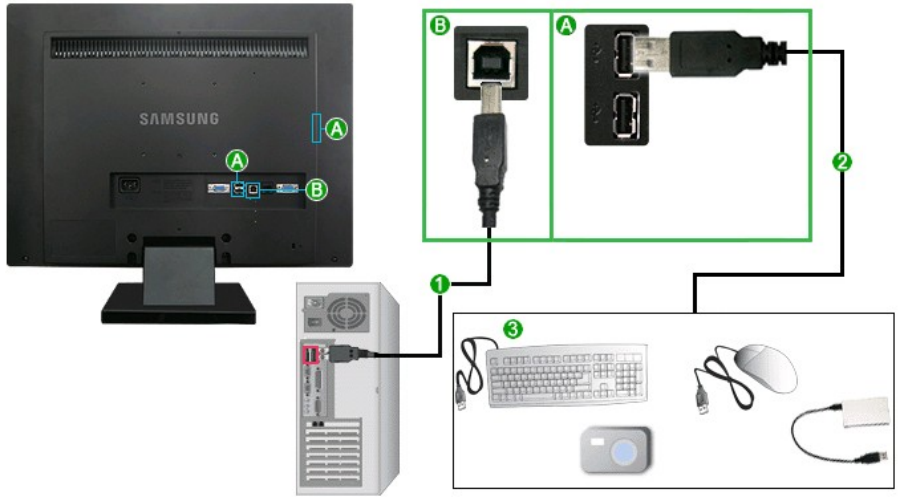
Connecting USB

※ Turn on your monitor and PC. If you connect the 2 cable to the 2 connector of your monitor and the cable to the connector of your PC, the installation programs related to microphone and camcorder are performed automatically.

You can use a USB device such as a mouse, keyboard, Memory Stick, or external hard disk drive by connecting them to the port of the monitor without connecting them to the PC.

The USB port of the monitor supports High-Speed Certified USB 2.0.

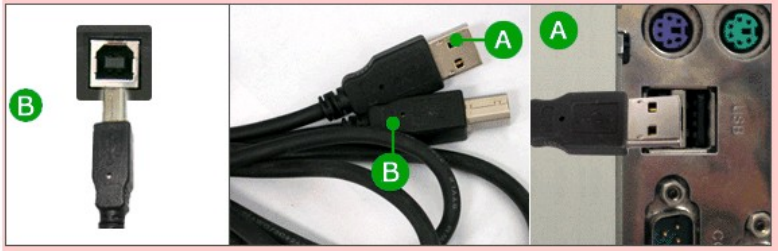
	High speed	Full speed	Low speed
Data Rate	480 Mbps	12 Mbps	1.5 Mbps



❶ Connect the 2 port of the monitor and the USB port of the computer with the USB cable.

※ To use port, you have to connect the 2 to the PC.

Make sure to use the USB cable supplied with this monitor to connect the monitor's B port and your computer's USB port.



❷ Connect the port of the USB monitor and a USB device with the USB cable.

❸ The use procedures are as the same as those for using an external device connecting to the PC.

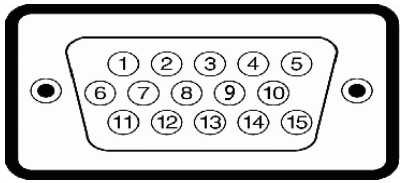
- You can connect and use a keyboard and mouse.
- You can play a file from a media device.
  (Examples of media devices: MP3, digital camera, etc.)
- You can run, move, copy or delete the files on the storage device.
  (Examples of storage devices: external memory, memory card, memory reader, HDD-type MP3 player, etc.)
- You can use other USB devices that can be connected to a computer.

Signal Connections and Pin Assignments

You can perform a self-test when the cable is disconnected.

1. 15pin D-sub connector

Pin	Monitor Side of the 15- Pin Side Signal Cable
1	Video- Red
2	Video- Green
3	Video- Blue
4	GND
5	DDC- Return
6	GND- R
7	GND- G
8	GND- B
9	DDC +5V
10	GND- Sync/Self- test
11	GND
12	DDC Data
13	H- Sync
14	V- Sync
15	DDC Clock



Display Modes

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 480	31.469	59.940	26.175	+/-
IBM, 720 x400	31.469	70.087	28.322	-/+
VESA 640 x480	37.5	75	31.5	-/-
VESA 800 x 600	37.879	60.317	40.0	+/+
VESA 800 x 600	46.875	75.0	49.5	+/+
VESA 1024 x 768	48.363	60.004	65.0	-/-
VESA 1024 x 768	60.023	75.029	78.750	+/+
VESA 1280 x 1024	63.981	60.020	108.00	+/+
VESA 1280 x 1024	79.976	75.025	135.0	+/+
SUN 1280 x 1024	81.129	76.106	135.00	-/-
VESA 1400 x 1050	65.317	59.978	121.75	-/+ (203B)
VESA 1680 x 1050	65.300	60.000	146.00	+/+ (205BW)

Product Components

1. Panel Assembly

- See Specifications

2. IP BOARD

- Inverter + SMPS BOARD

3. Main Board Assembly

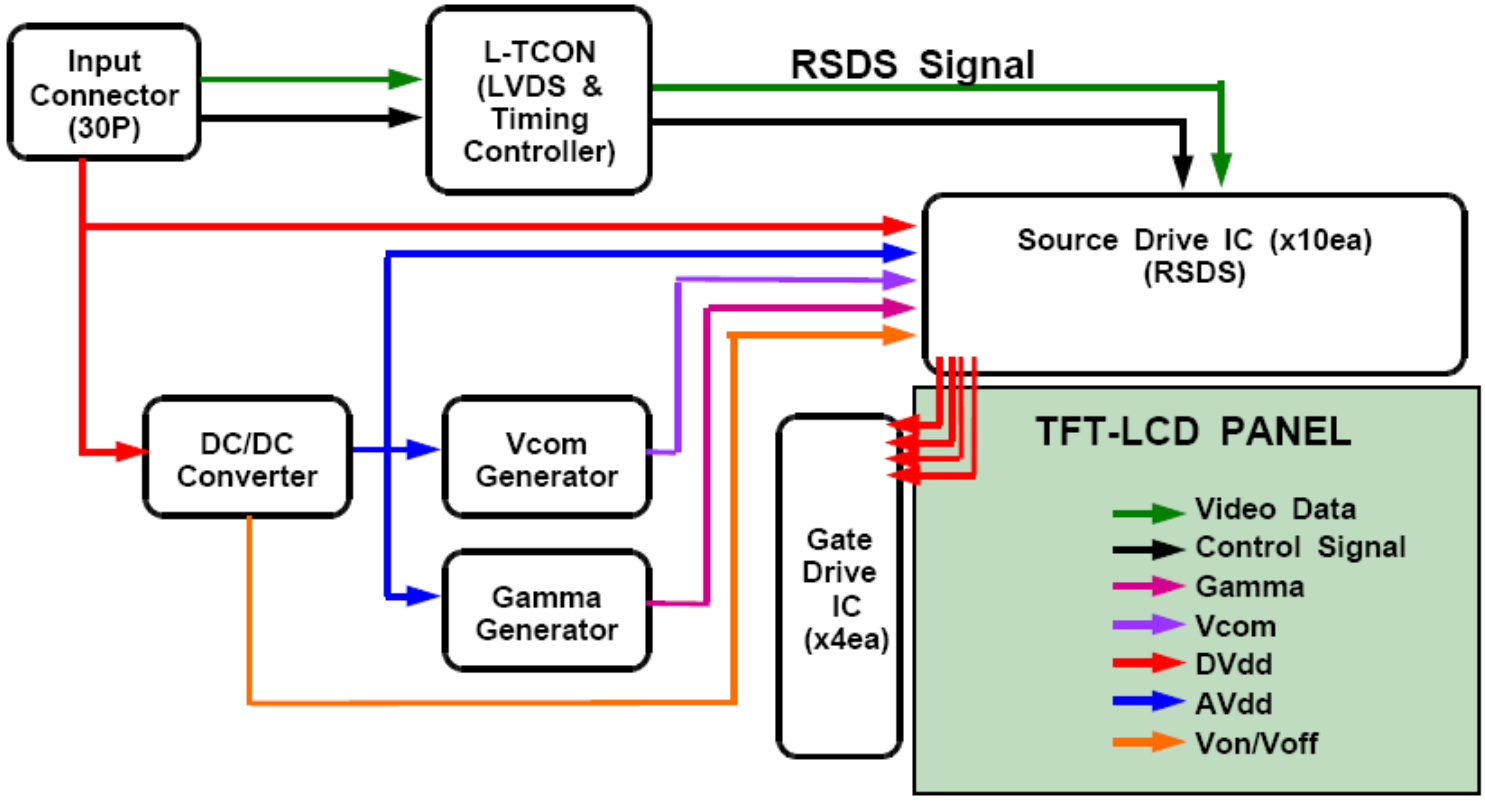
- The regulator part generates the Vcc required by each IC.
- The monitor part receives external PC analog signals and outputs video signals to the panel using the Scaler.
- The network part consists of various devices such as the Ethernet, USB, CPU, memory, and video decoder, etc.

4. Functions Keys

- Transfers the input signals of the function keys to the main board and also displays the status of the LEDs.

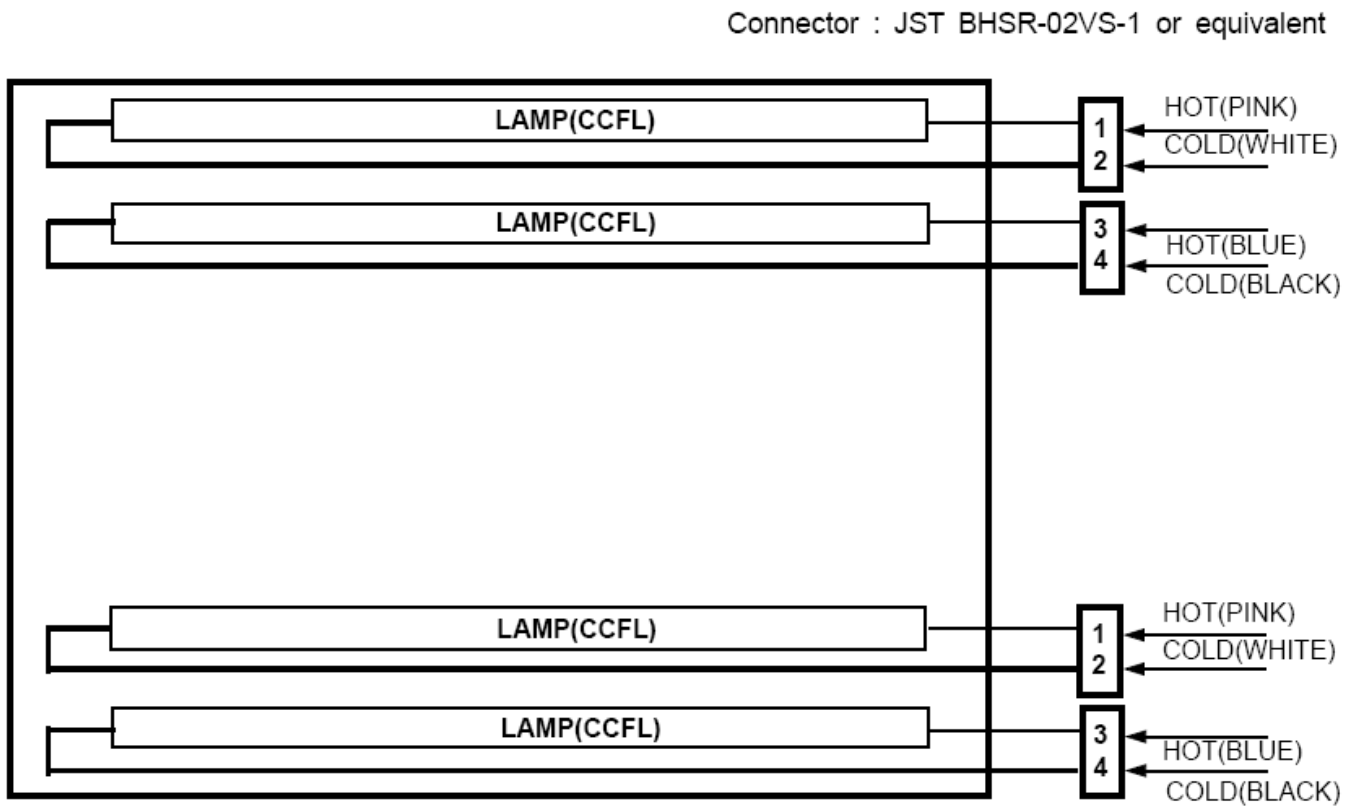
Product Components

1-1. Panel Assembly (TFT LCD Module)



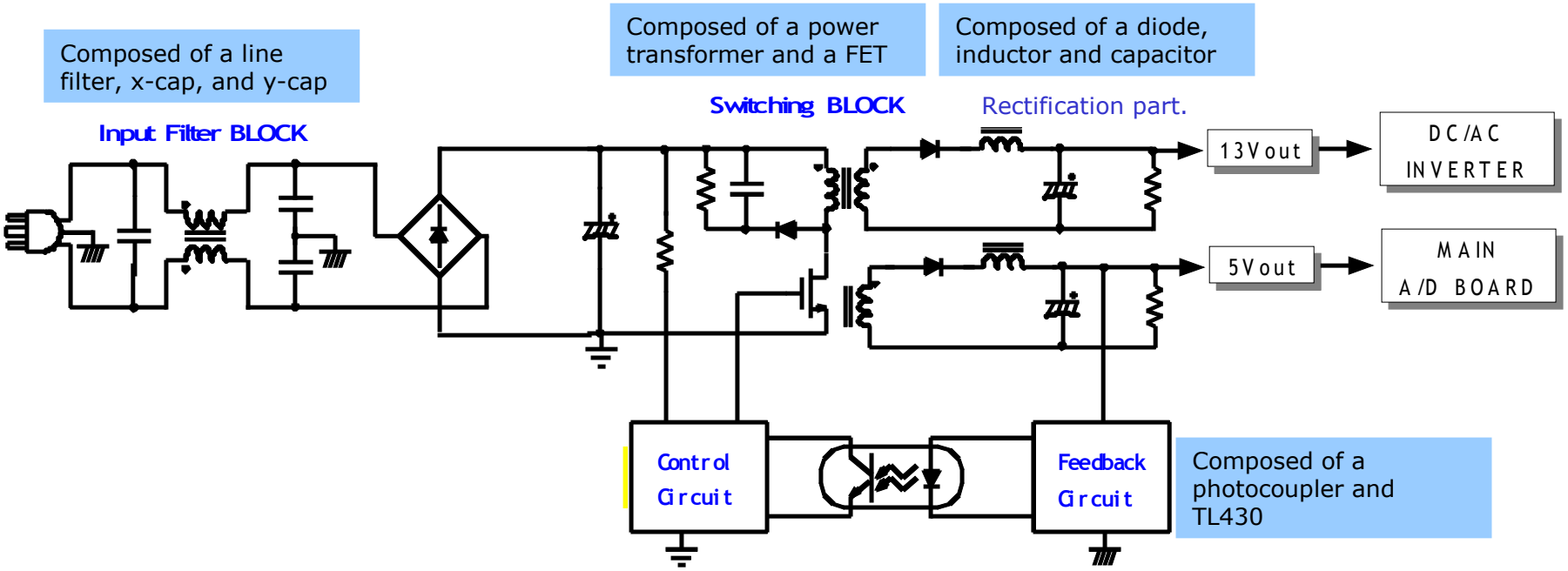
Product Components

1-2. Panel Assembly (Back-Light Unit)



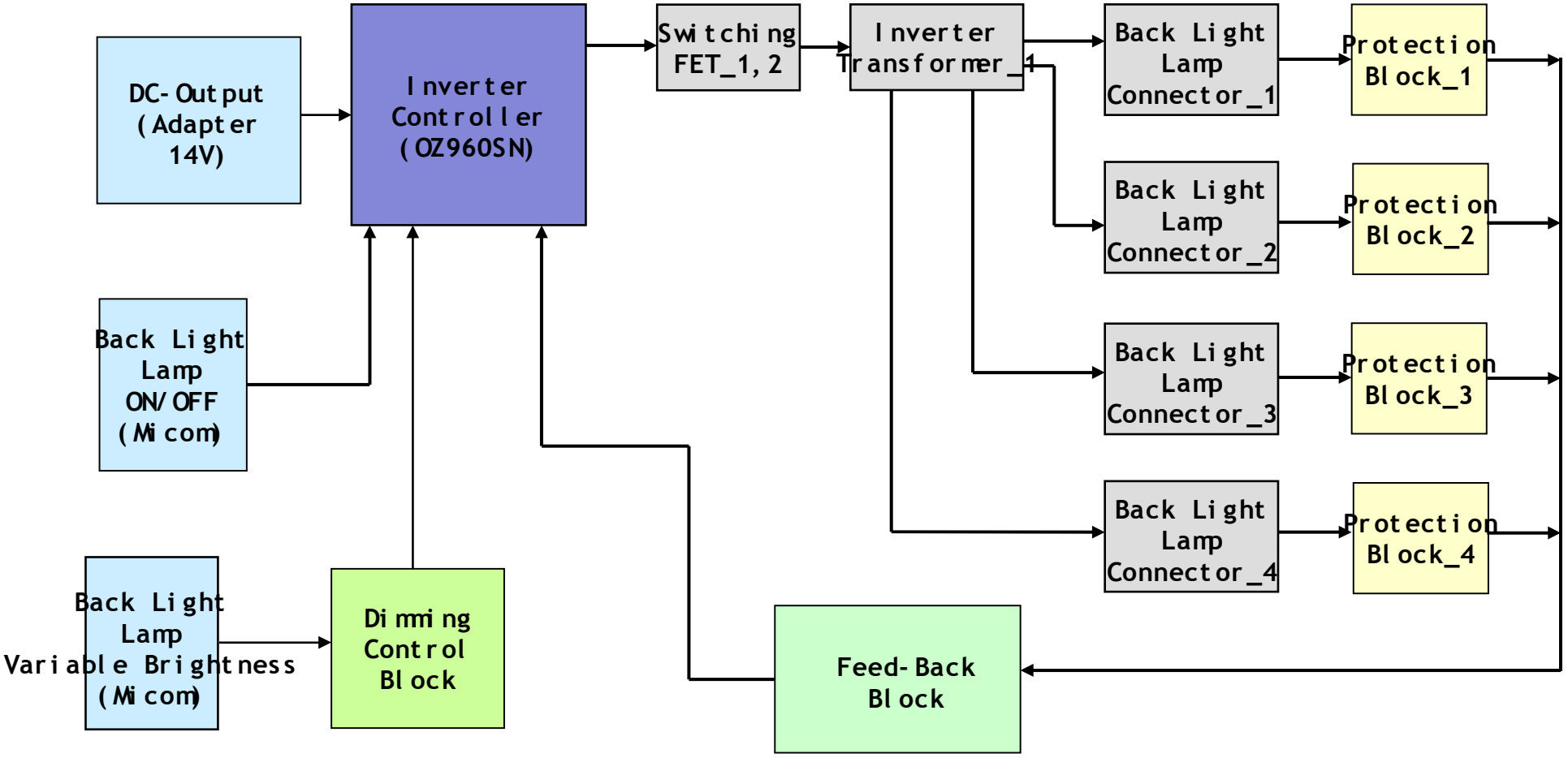
Product Components

2-1. IP Board (SMPS)



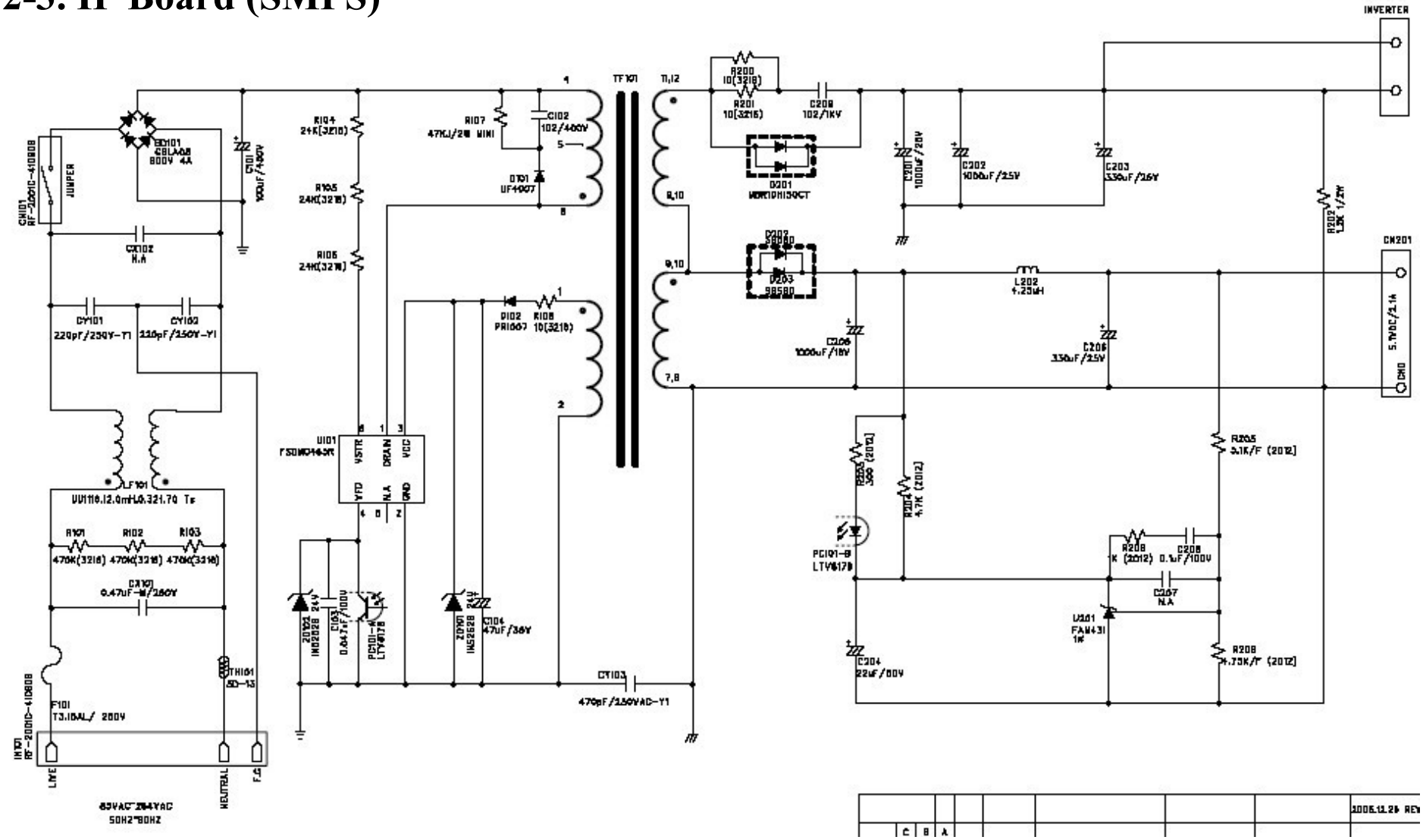
Product Components

2-2. IP Board (Inverter)



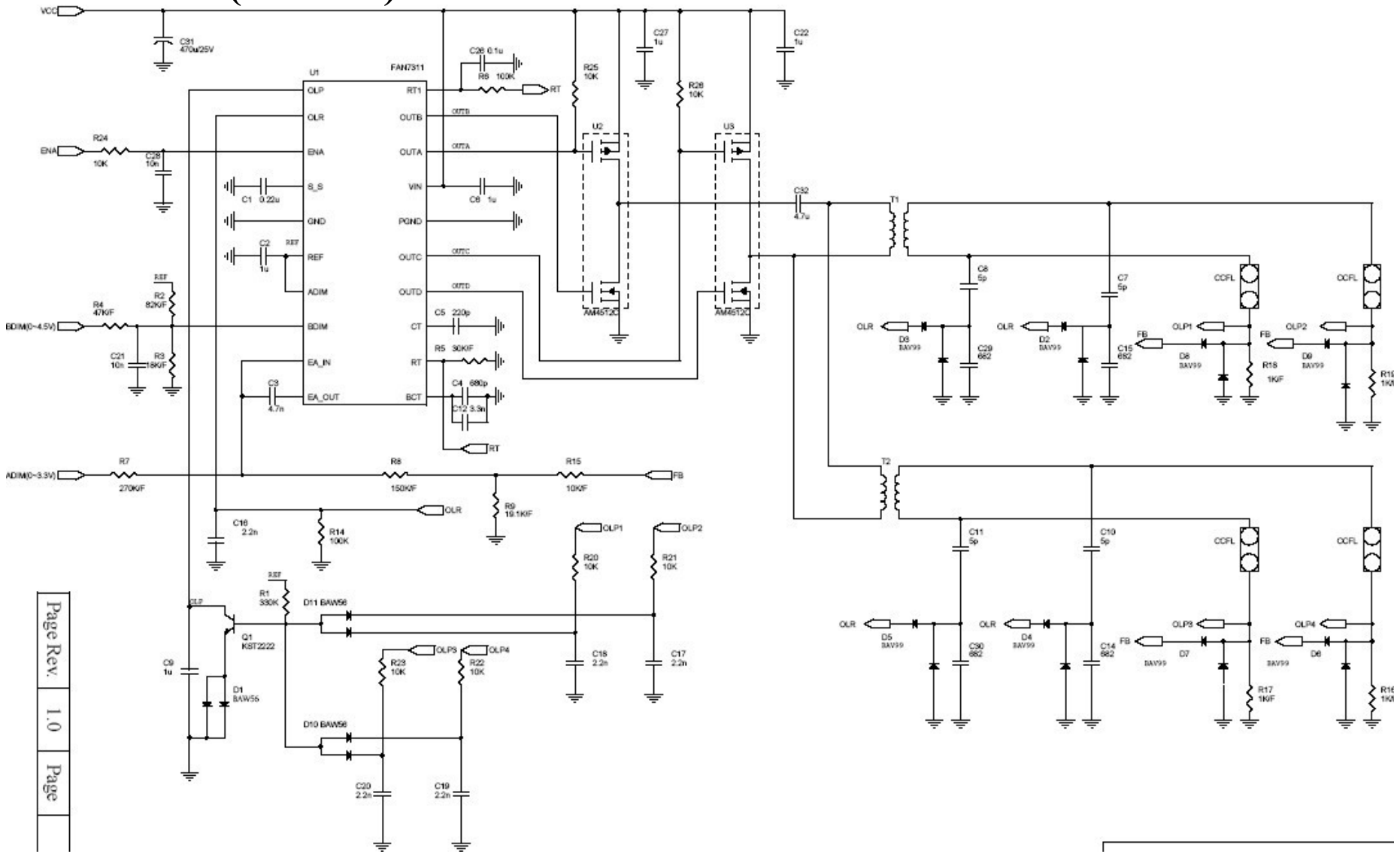
Product Components

2-3. IP Board (SMPS)



Product Components

2-4. IP Board (Inverter)



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Product Components

2-5. IP Board (Inverter-Dimming)

There are three methods. First, the Current Control method adjusts the amount of current that enters the lamp. Second, the PWM method turns the lamp on and off using a specific frequency. Third, the Complex method mixes the first and second methods.

Current Control (Analog Dimming)

- Dimming is possible without affecting the panel to a great degree.
- Requires a minimum level of current that does not turn the lamp on even at minimum brightness.
- A low dimming ratio (approx. 2 : 1)
- The conditions of the inverter are optimized for maximum brightness. Therefore, efficiency degrades in the dimmed state.

PWM Control (Burst Dimming)

- Performs dimming by turning the lamp on and off with the 300 Hz to 1 kHz frequencies.
- A large level of current is turned on and off at a specific cycle, which causes instability in the grounding of the panel's electrical parts and generates noise and 'waterfalls'.
- Always operates at maximum brightness when the lamp is turned on. Therefore, this method exhibits a high efficiency and resolves the problem of partly turning on/off at minimum brightness.
– High dimming ratio (approx. 5:1)

Complex Control

- The Current Control (Analog Dimming) method is used in the early stage of dimming, which restrains possible generation of 'waterfalls'.
- The PWM method is used in the late stage of dimming, which produces a high dimming ratio.

Product Components

2-6. IP Board (Protection)

- LAMP (Inverter) PROTECTION

  => If there is no feedback because the lamp connector is disconnected or the lamp is cracked, lamp protection is activated.

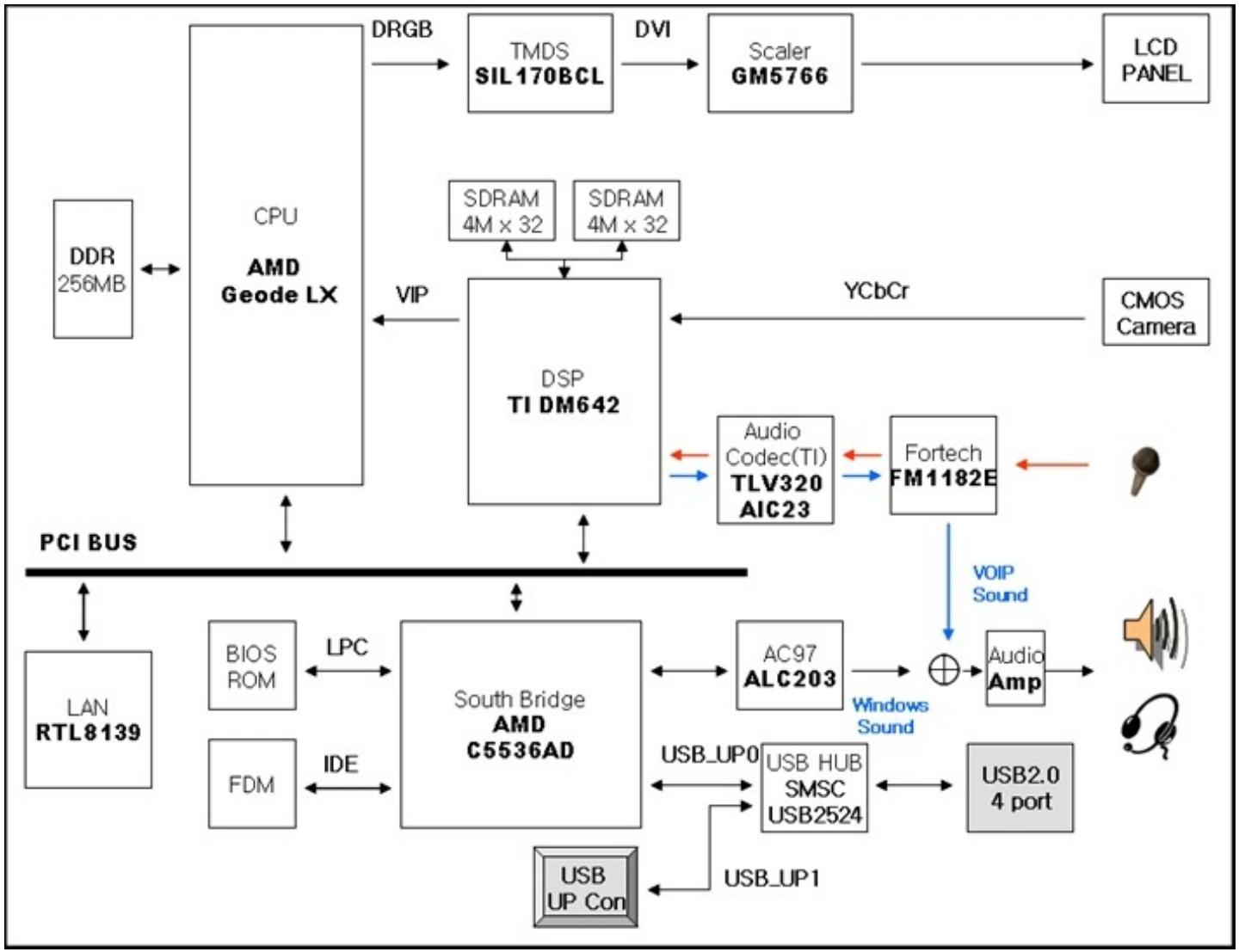
  => If the output voltage of the inverter transformer is high, lamp protection is activated rather than voltage protection mode.

- Power Protection

  => All protections (OVP/OCP) for the panel operate in auto recovery mode.
  If a protection is activated individually, the power operation starts automatically when the protection is cleared.
  However, Thermal Protection can only start normal operations if the power is turned off and the remaining electricity is discharged and the power is turned on again.

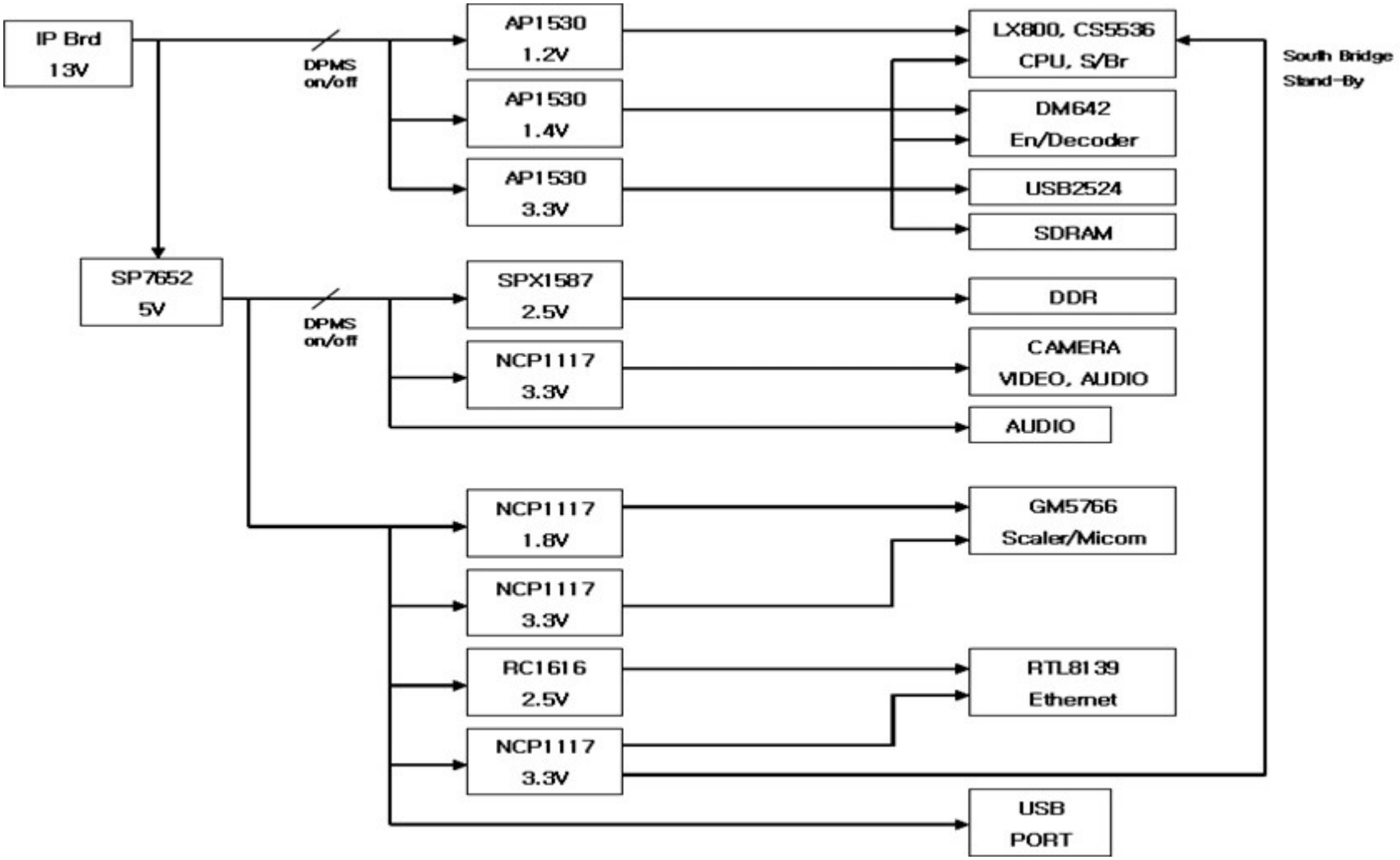
Product Components

3-1. Main Board (Schematics)



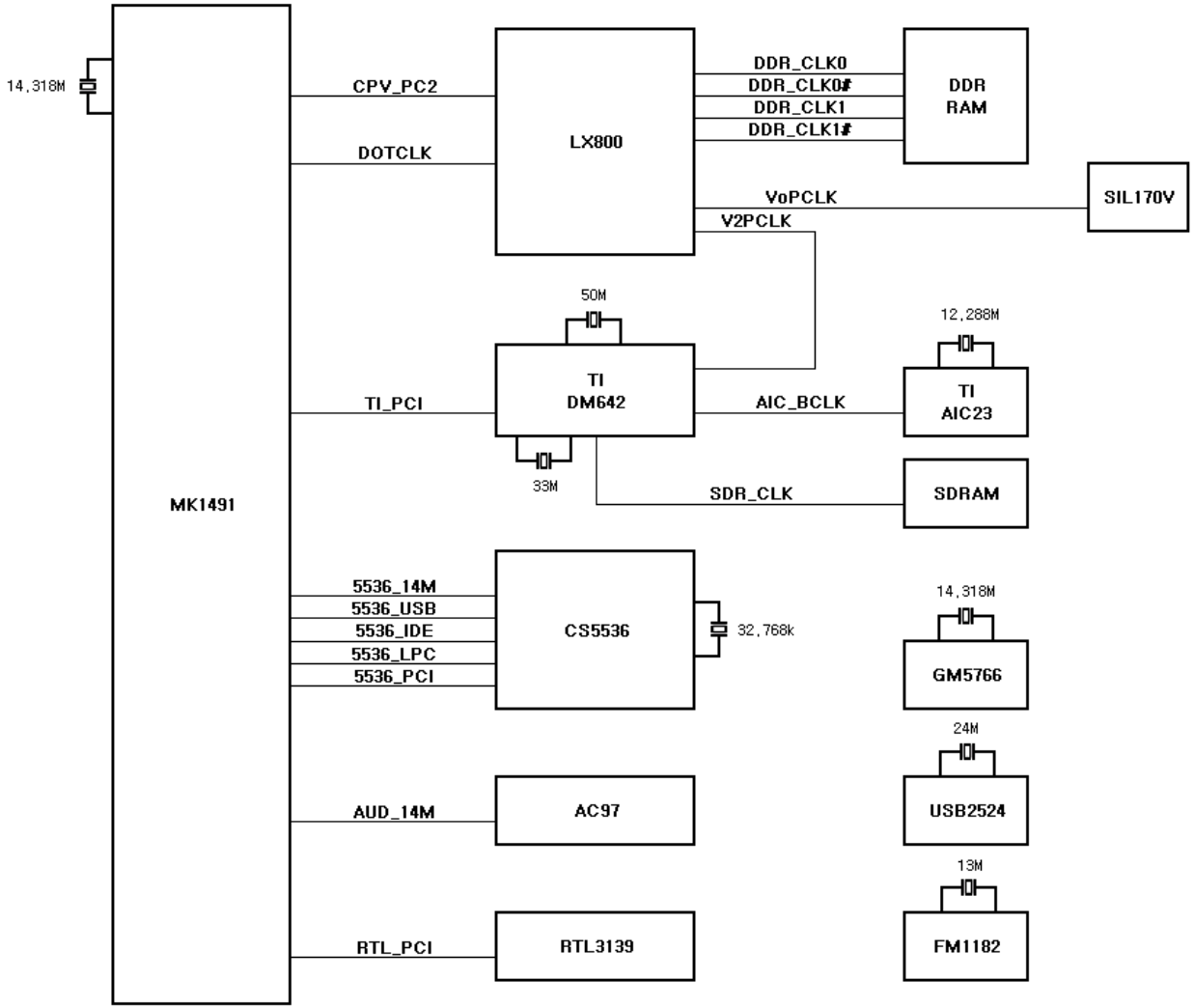
Product Components

3-2. Main Board (Power Tree)



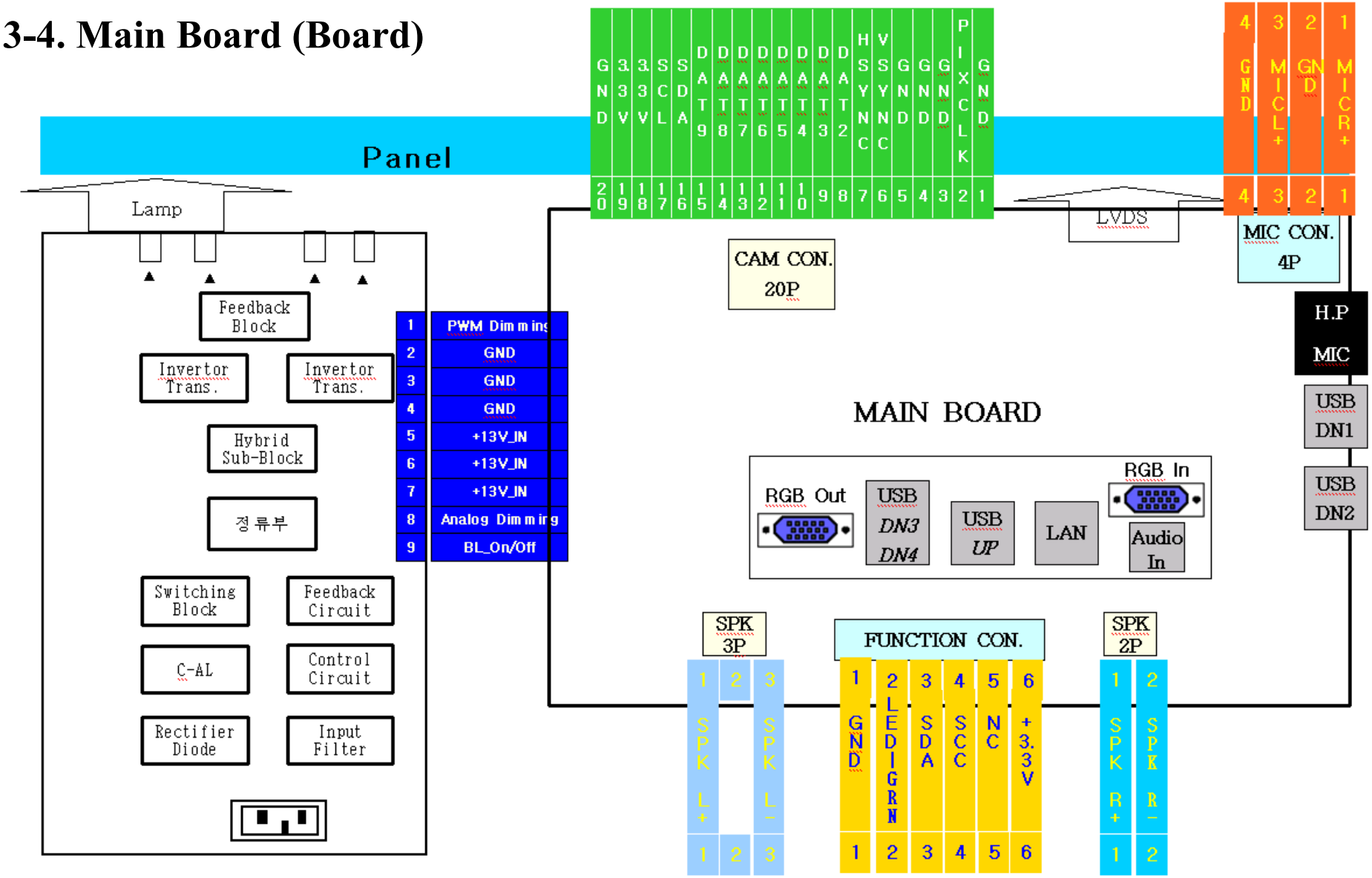
Product Components

3-3. Main Board (Clock Tree)



Product Components

3-4. Main Board (Board)



Product Components

3-4. Main Board (Detailed Description)

CPU – An AMD Geode LX800 operating at 500 MHz. This is the central processing unit and performs all instructions of the network assembly.

South Bridge – CS5536. An IC located at the PCI slot side and is a bridge for connections with external interfaces such as IDE and USB.

Memory – 256MBytes

BIOS – Basic Input Output System. Performs a self- test when the computer boots up, and contains information on the IO systems.

FDM – Flash Disk Module. The location where the Windows XPe OS is stored.

LAN Controller – RTL8139. An Ethernet controller which controls the 100 Mbps LAN signals.

TMDS – This IC converts a 24bit RGB signal to a DVI signal. Converts CPU 24bit RGB signals to DVI signals which the scaler can receive.

Scaler – GM5766. Performs the Scaling, ADC (Analog Digital Converter), and Auto Color functions.

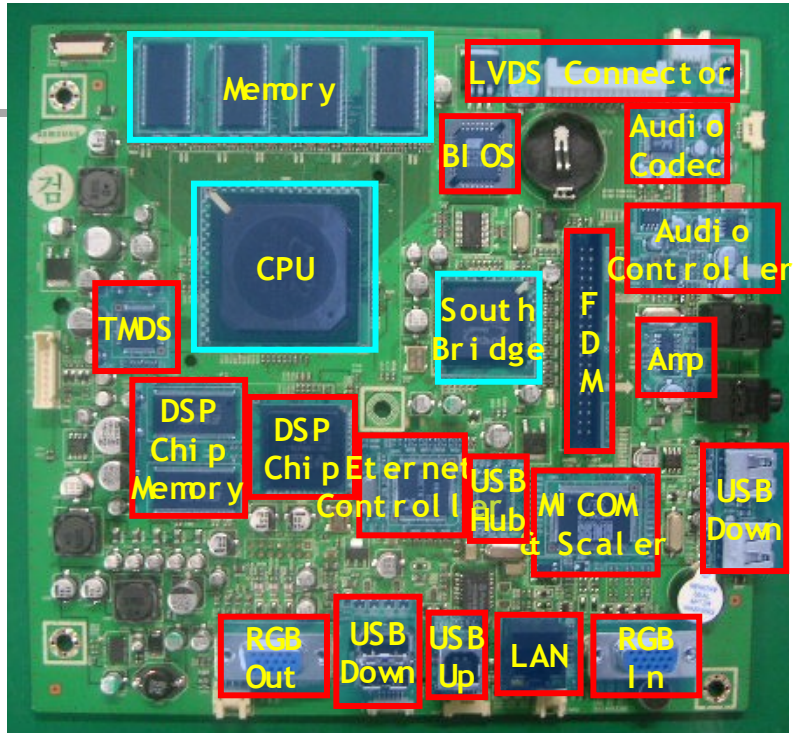
MICOM – GM5766. Controls the monitor.

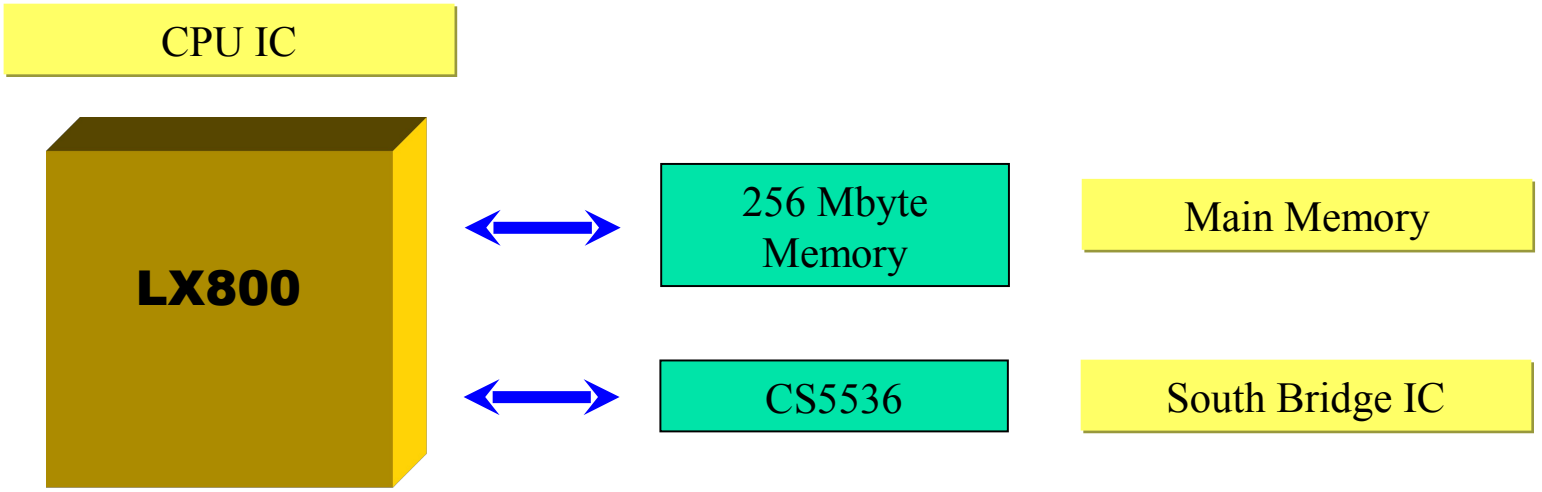
Product Components

3-5. Main Board

1. LX800

- CPU
- Supports 500 MHz core speed



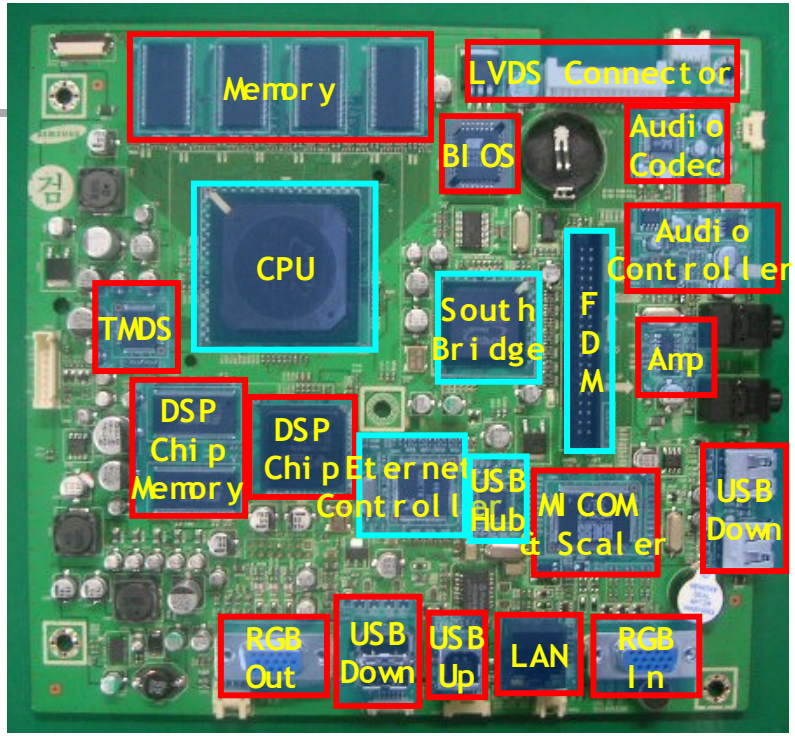


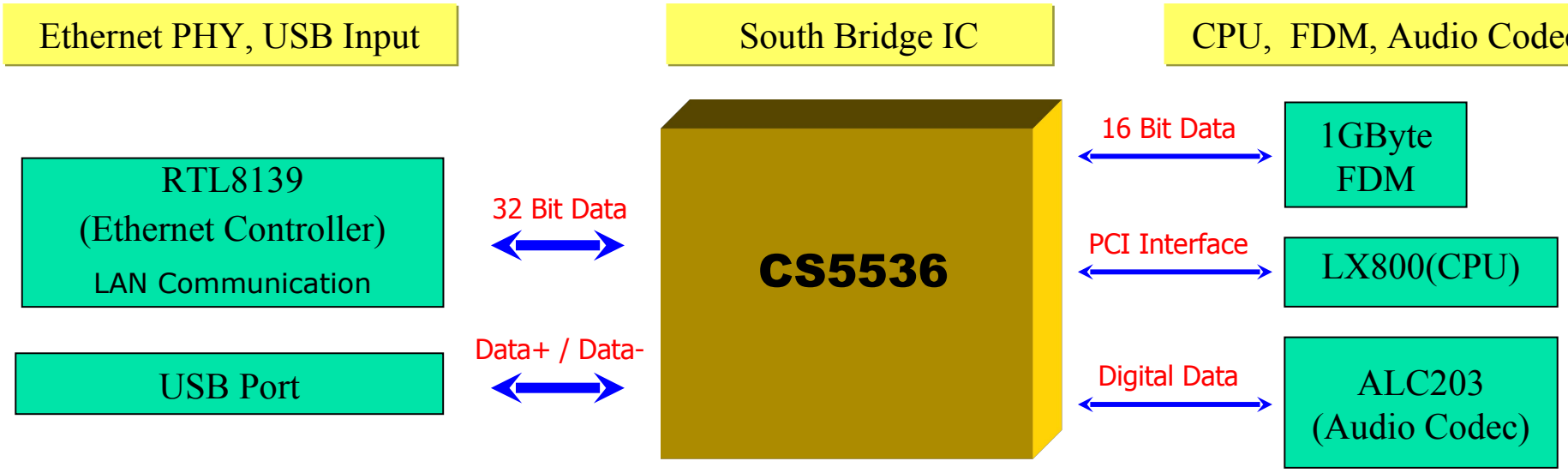
Product Components

3-5. Main Board

2. CS5536

- South Bridge
- Controls peripheral devices.



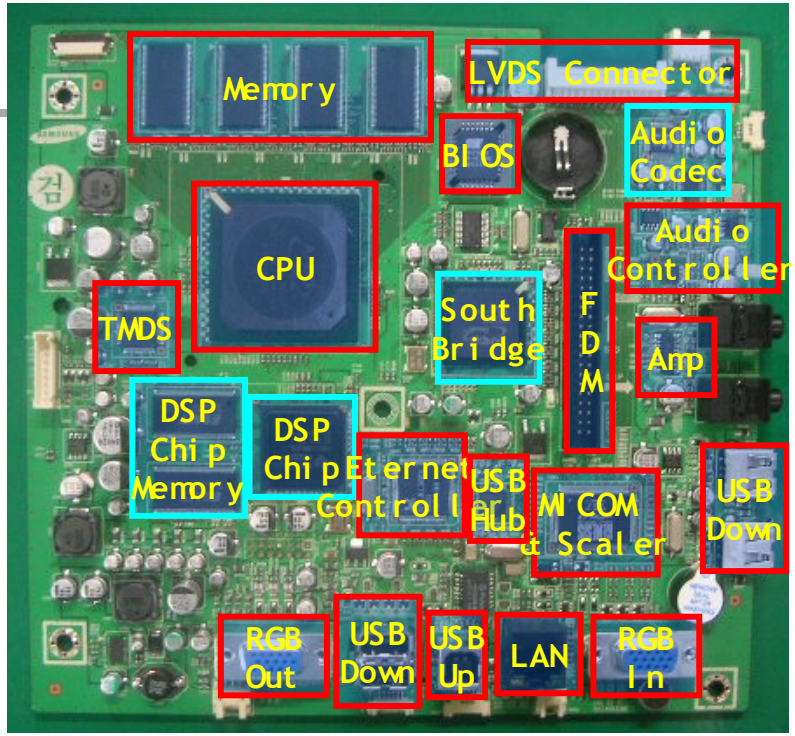


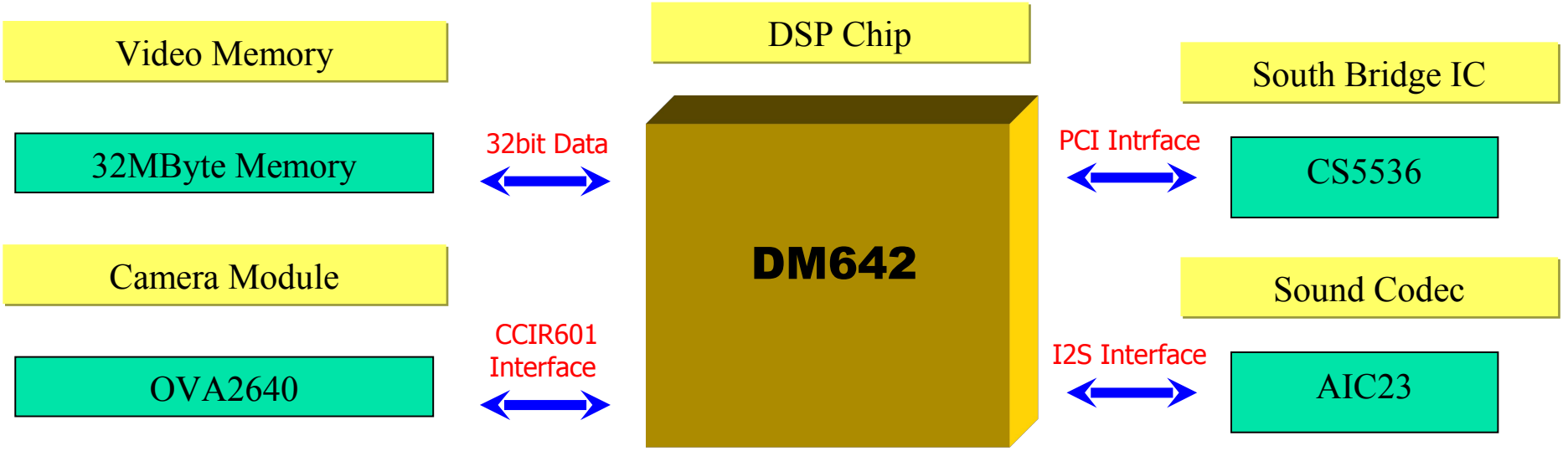
Product Components

3-5. Main Board

3. DM642

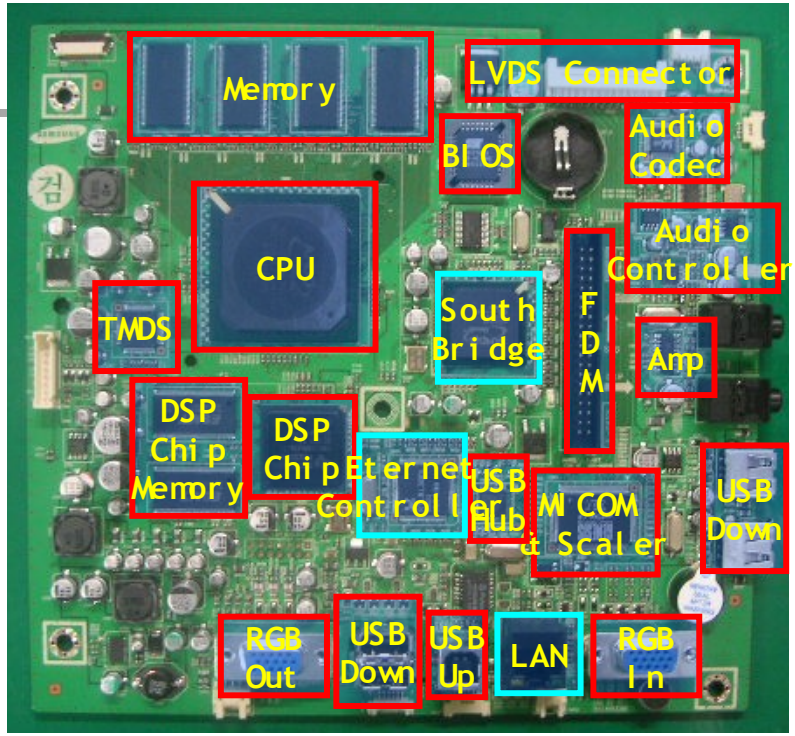
- DSP(Digital Signal Processing) Chip.
- 600MHz CPU Core





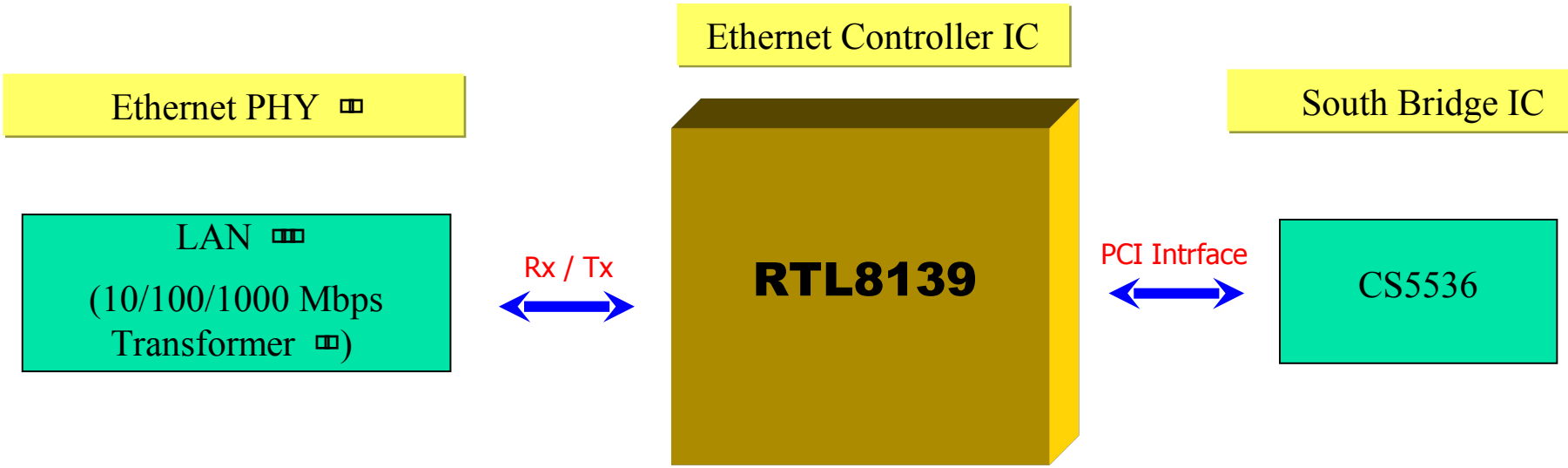
Product Components

3-5. Main Board



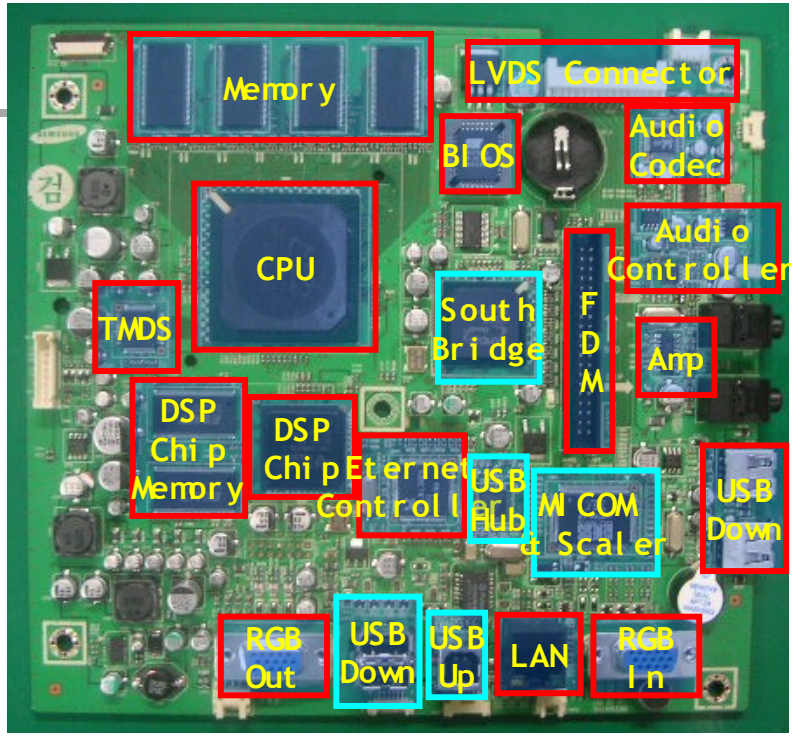
4. RTL8139

- Ethernet Controller
- Supports 10/100 Mbps LAN
- Uses MAC (Media Access Controller) Address



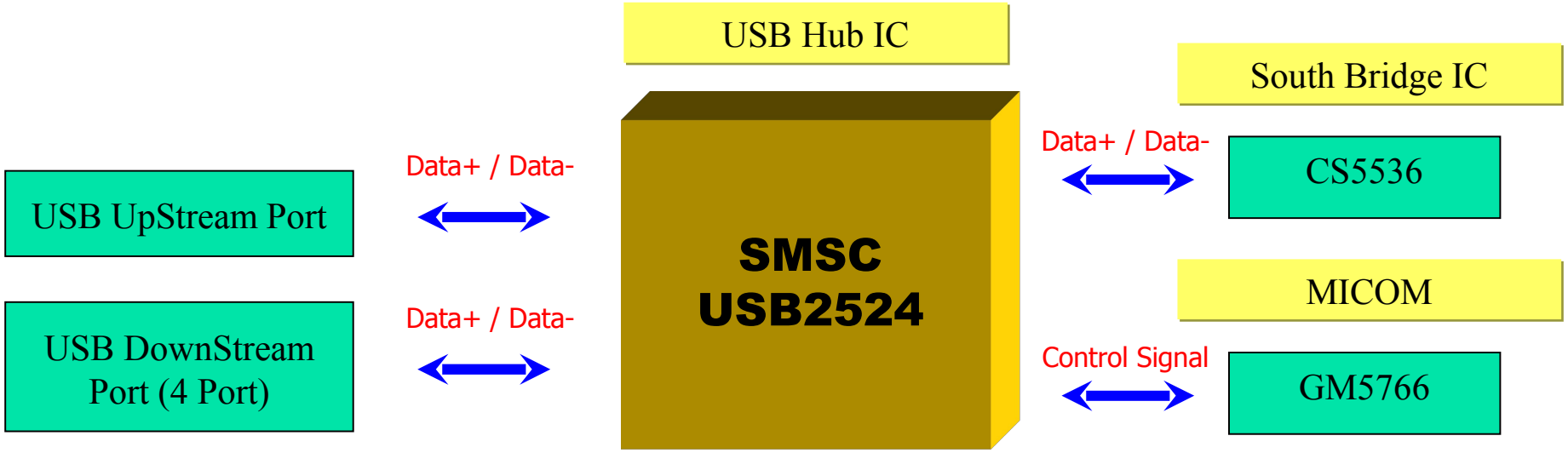
Product Components

3-5. Main Board



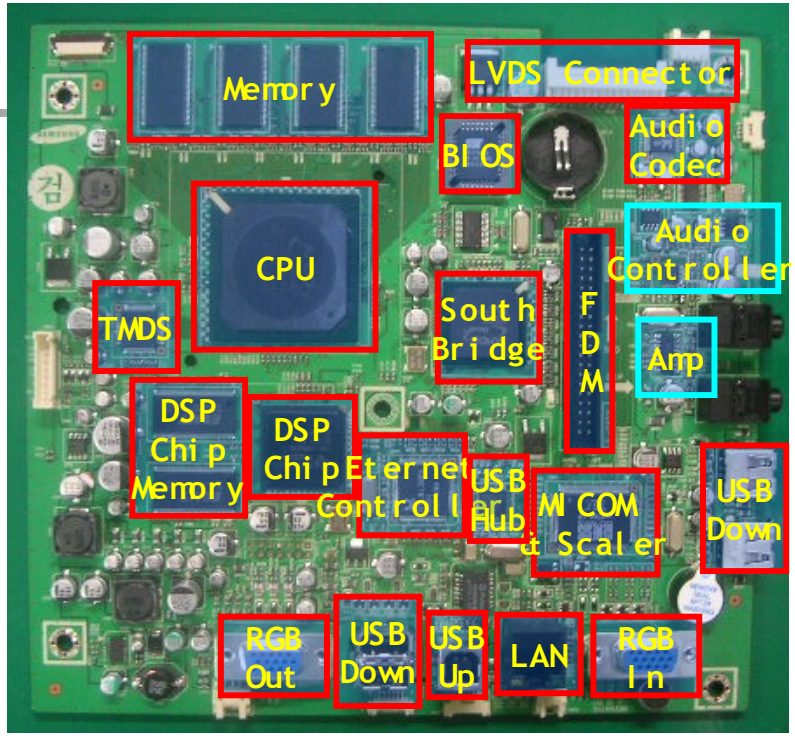
5. USB2524

- USB Switching Hub
- Supports USB 2.0
- Supports 2 Upstream ports ang 4 Downstream ports



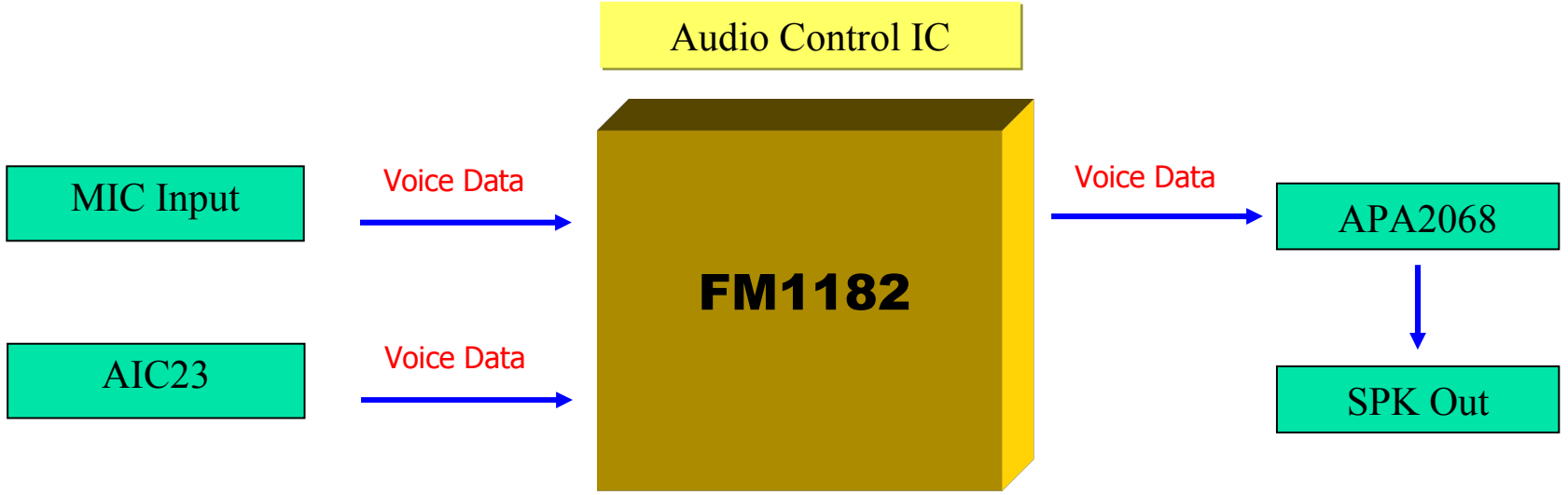
Product Components

3-5. Main Board



6. FM1182

- Voice Process Chip
- Acoustic Echo Cancellation
- Superior Full- duplex

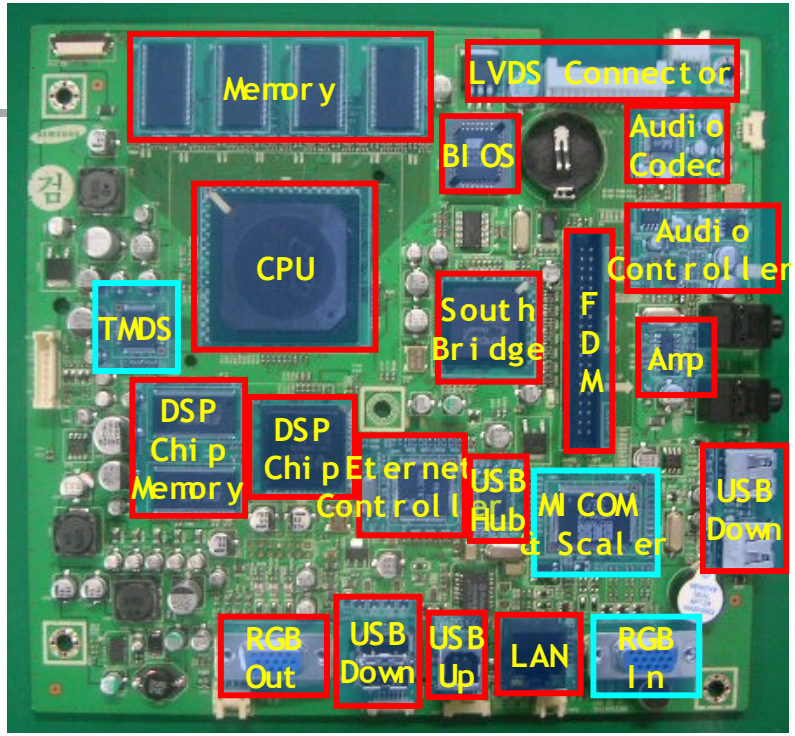


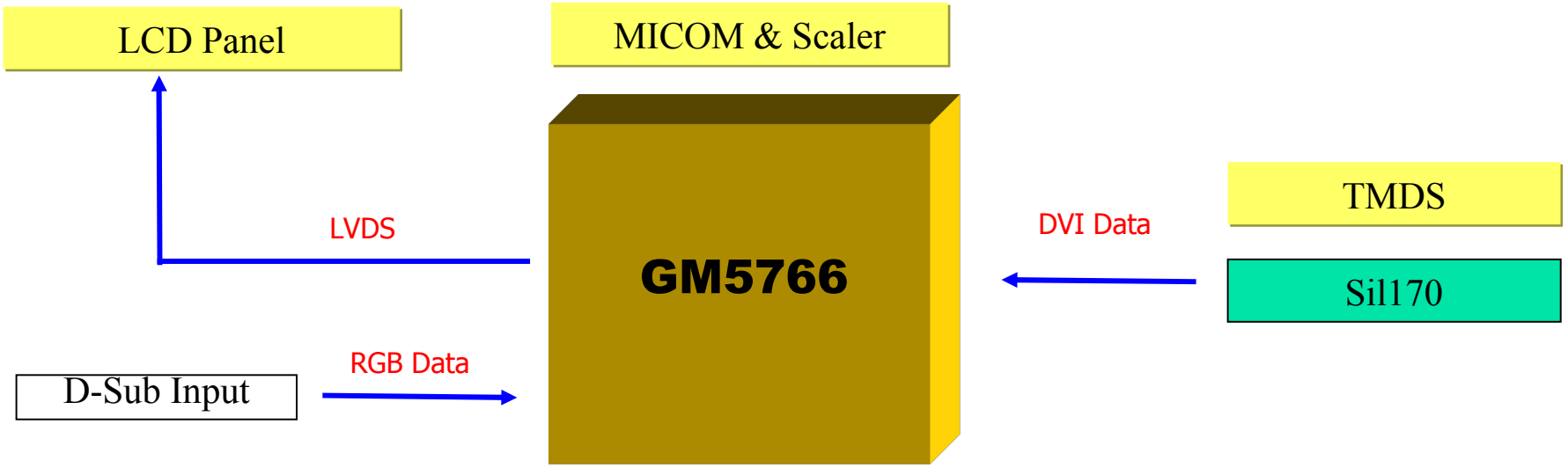
Product Components

3-5. Main Board

7. GM5766

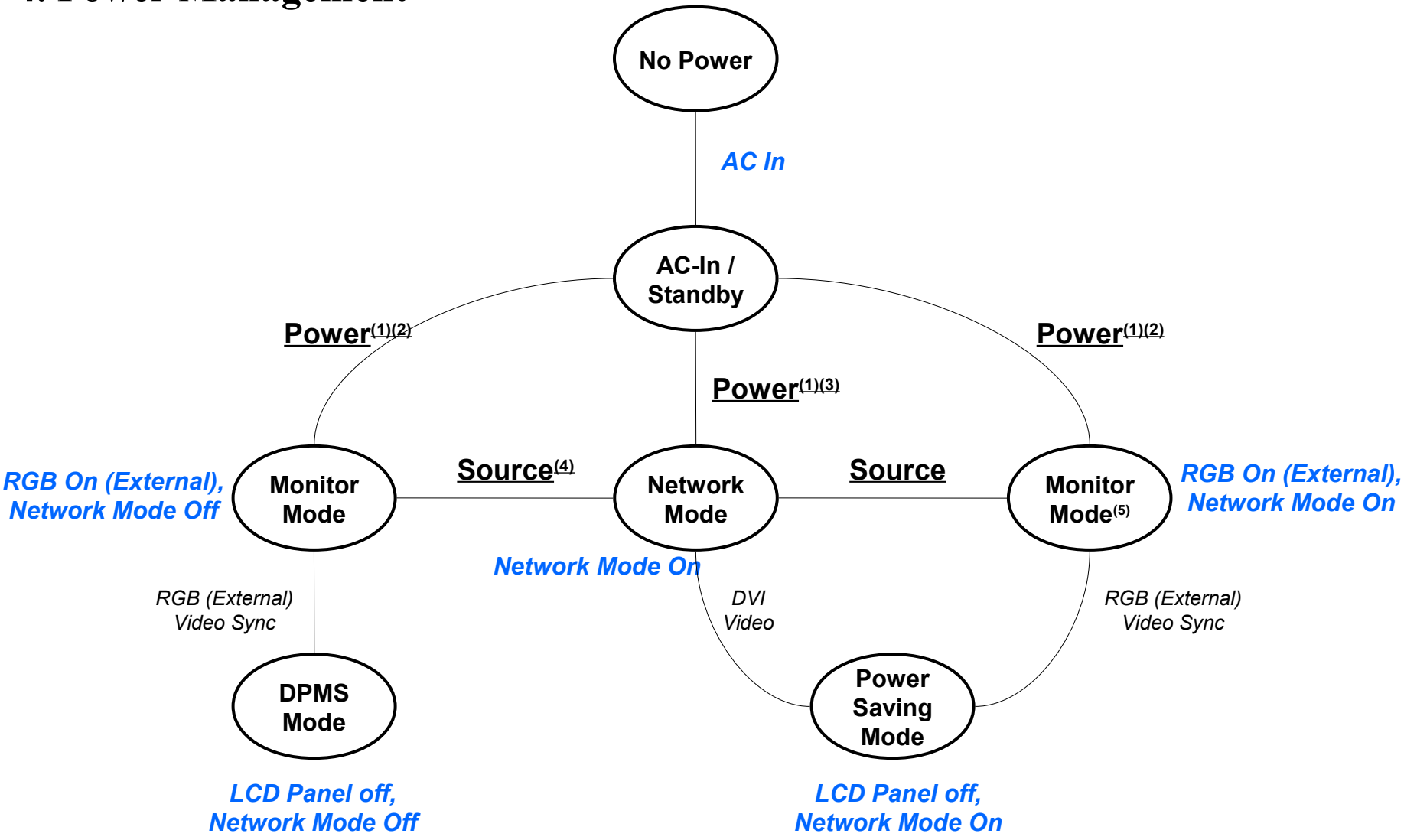
- Scaler & MICOM Chip





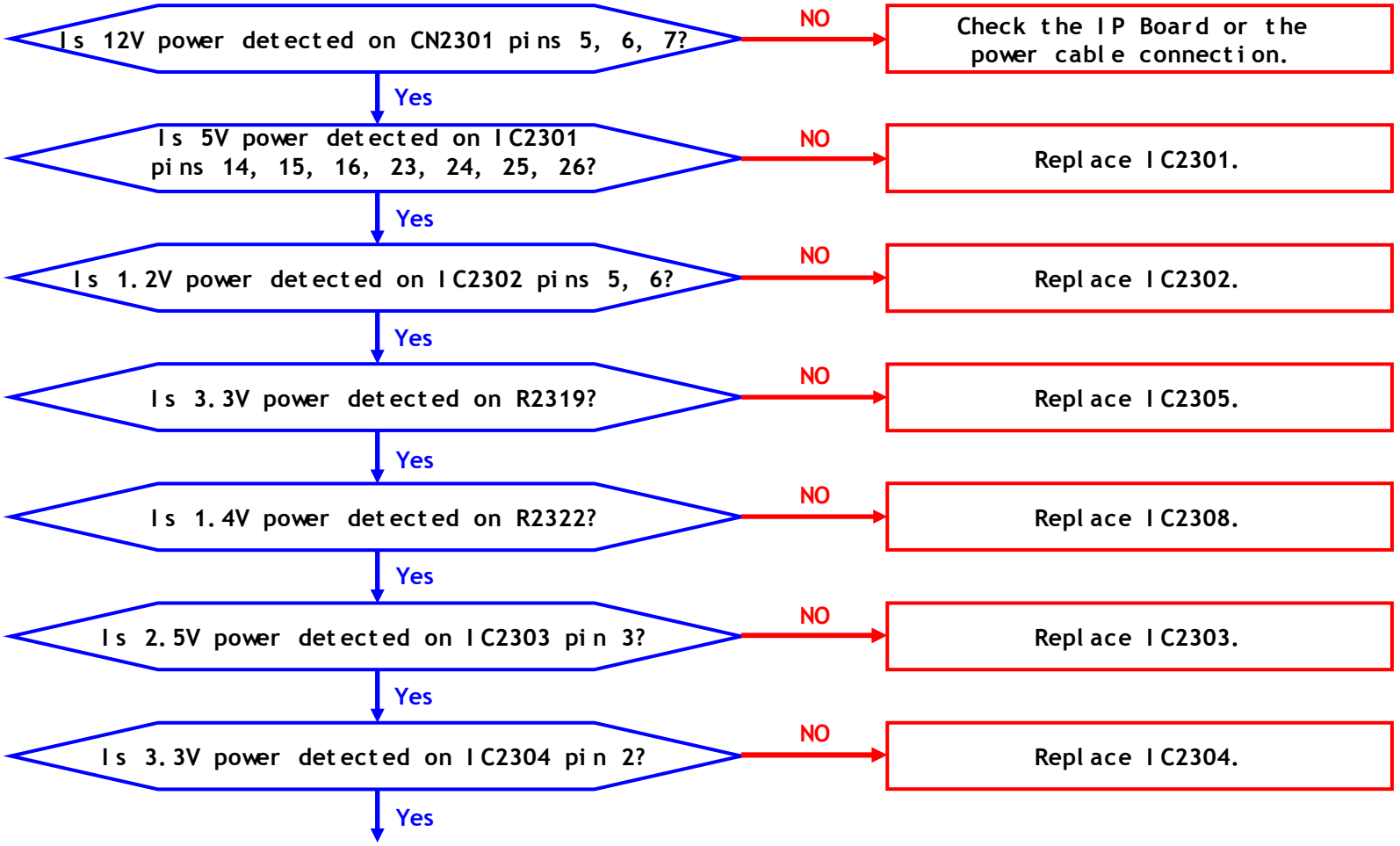
Product Components

4. Power Management

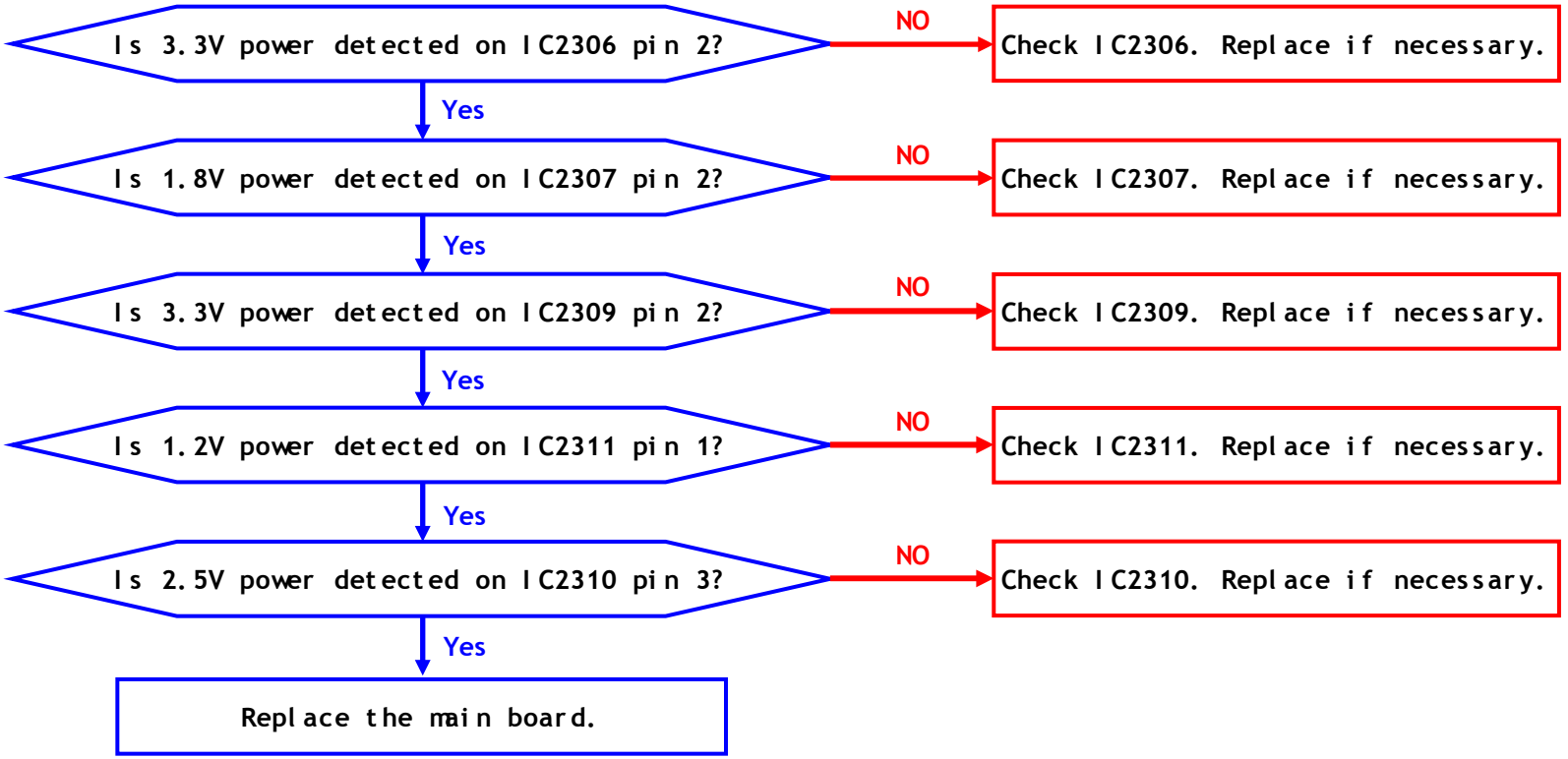


Troubleshooting

1. Troubleshooting (When the monitor does not turn on)

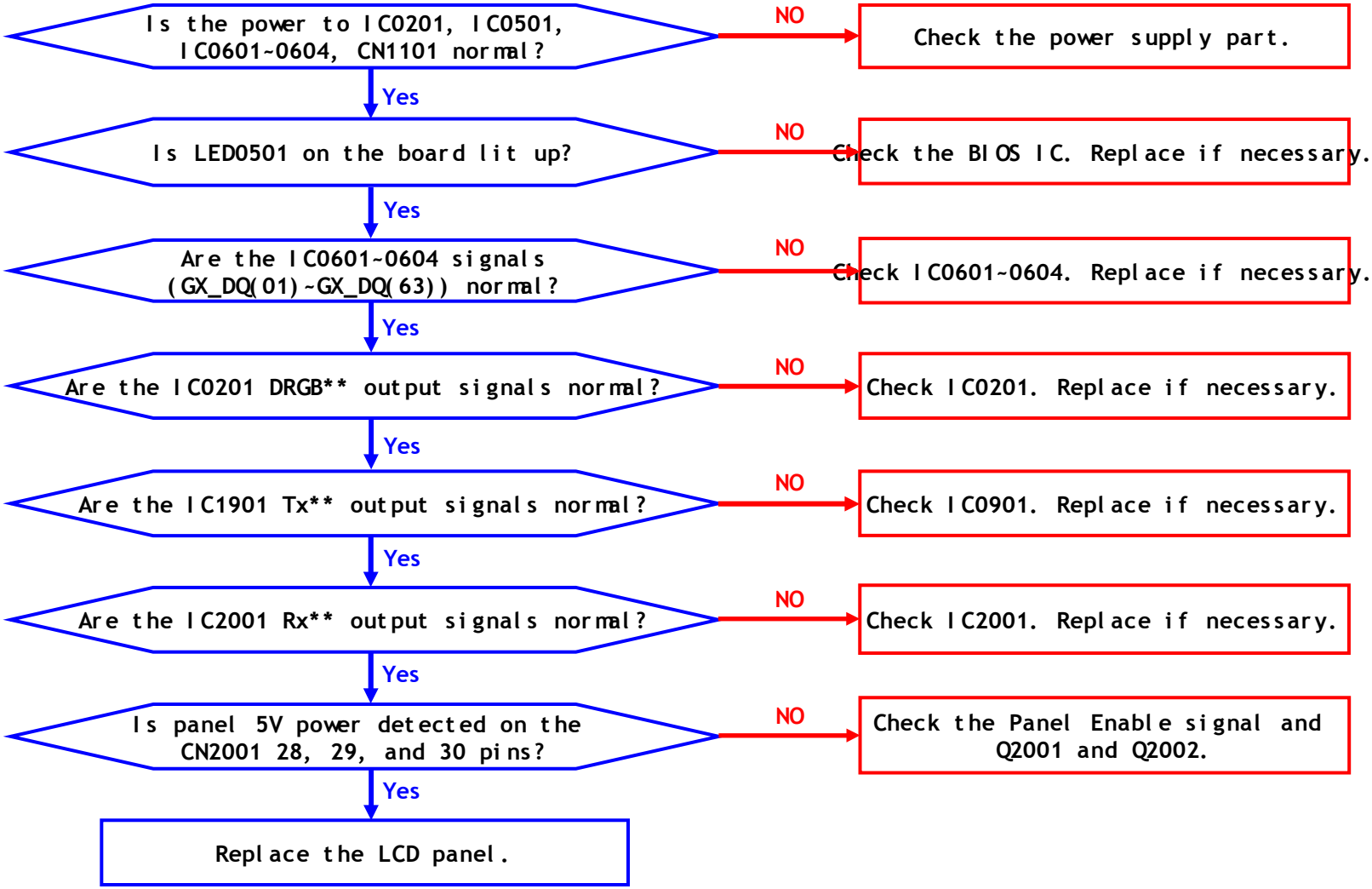


Troubleshooting



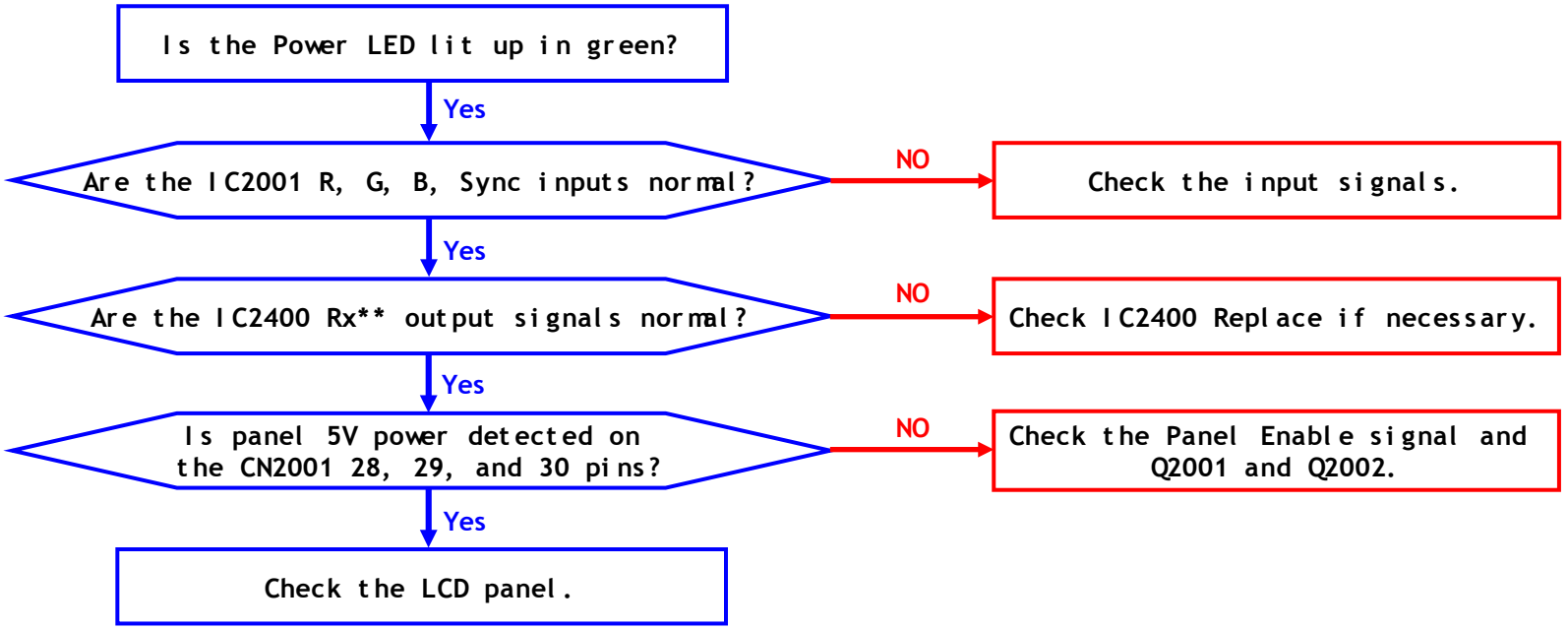
Troubleshooting

1. Troubleshooting (When no images appear on the client screen)



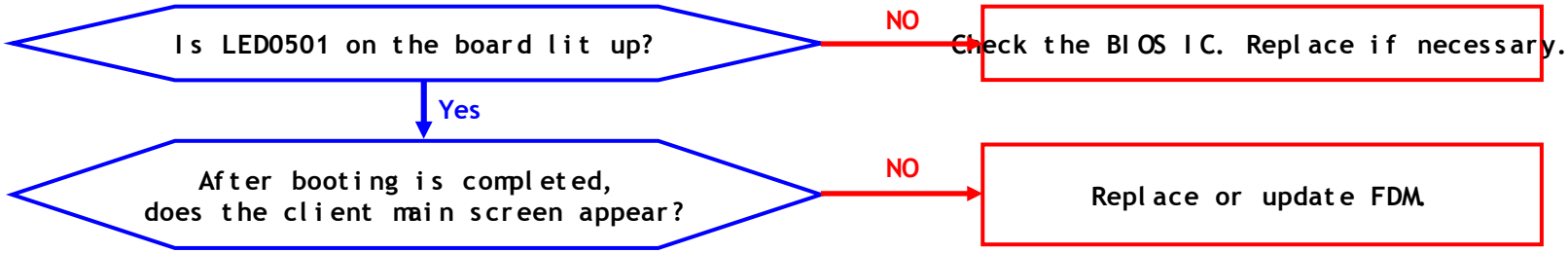
Troubleshooting

1. Troubleshooting (When no images appear on an analog screen)



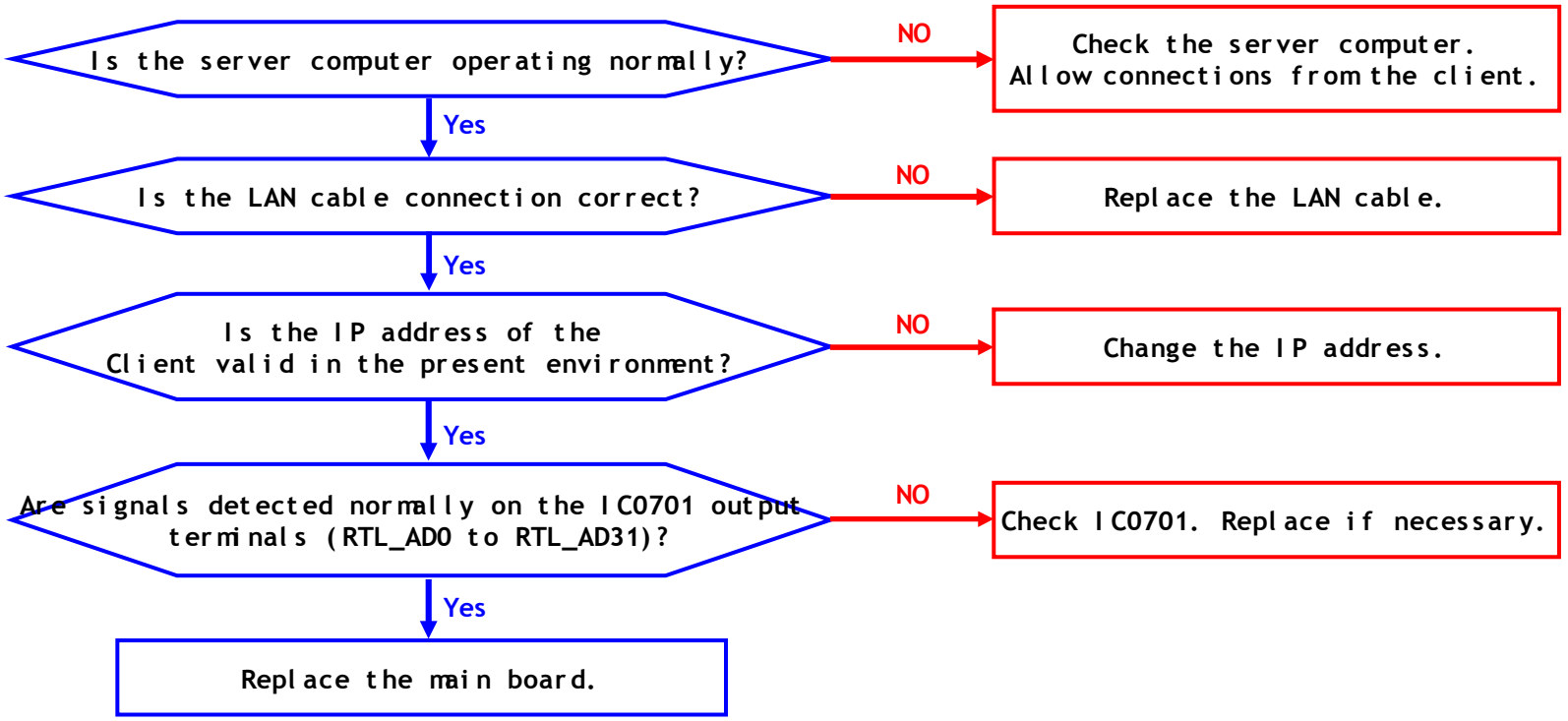
Troubleshooting

1. Troubleshooting (When unable to boot up in Client mode)



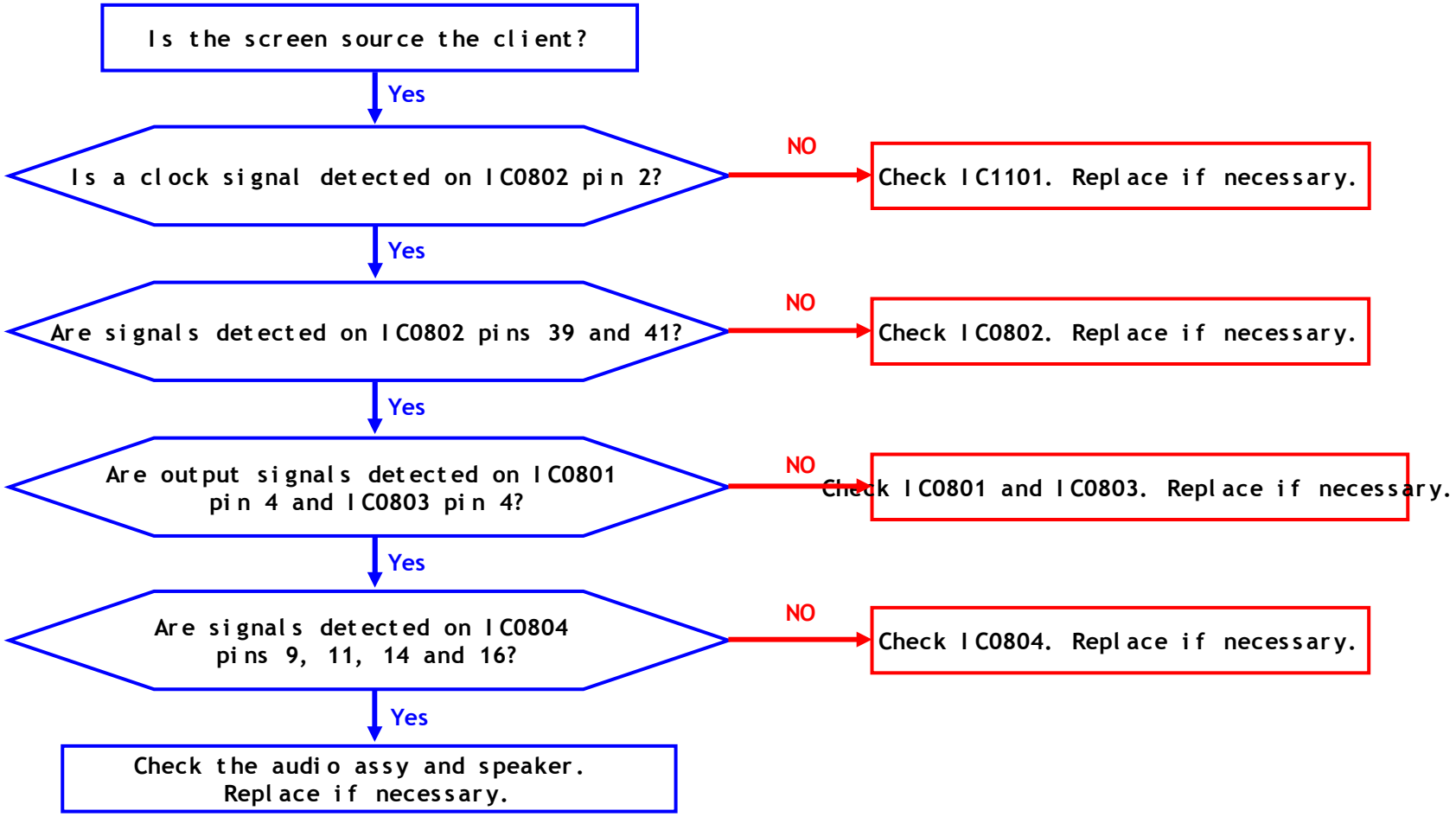
Troubleshooting

1. Troubleshooting (When unable to connect to the server)



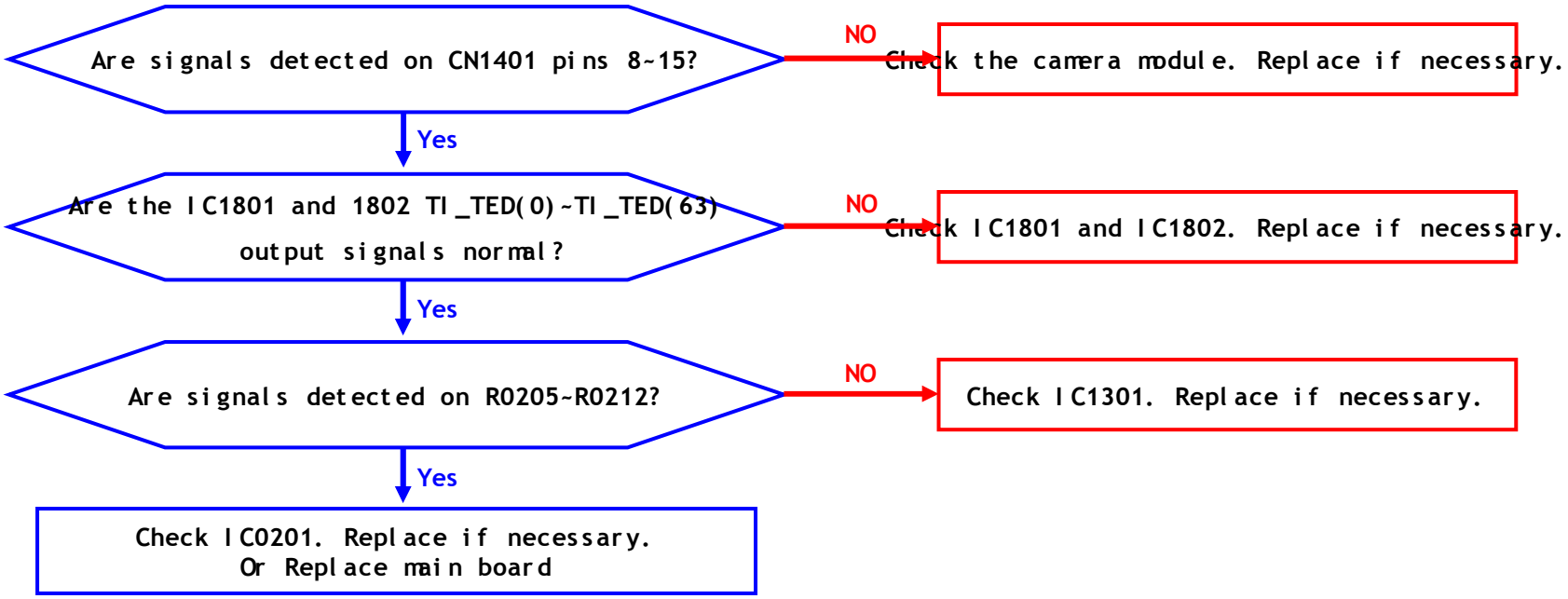
Troubleshooting

1. Troubleshooting (When there is no sound in client mode)

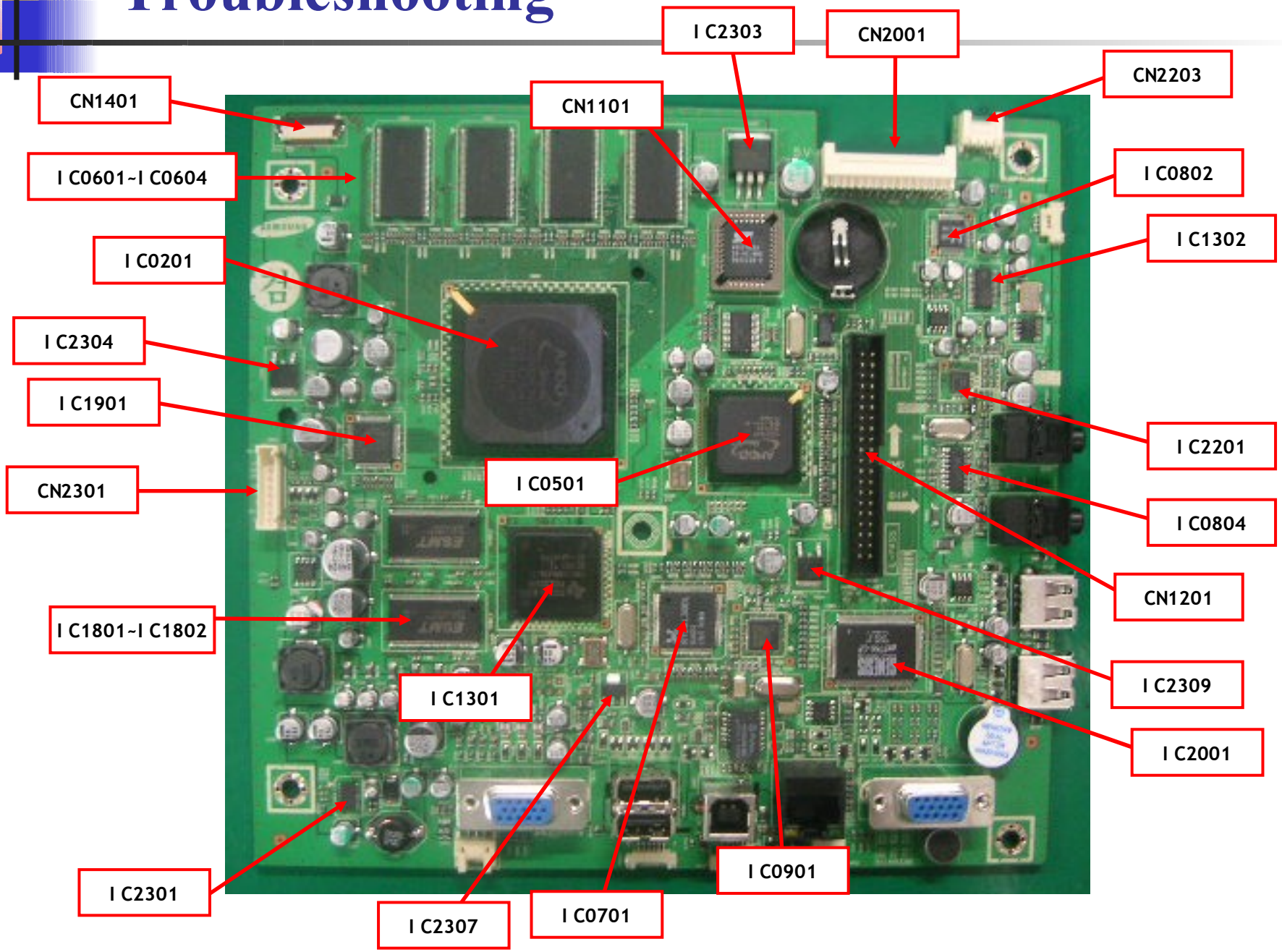


Troubleshooting

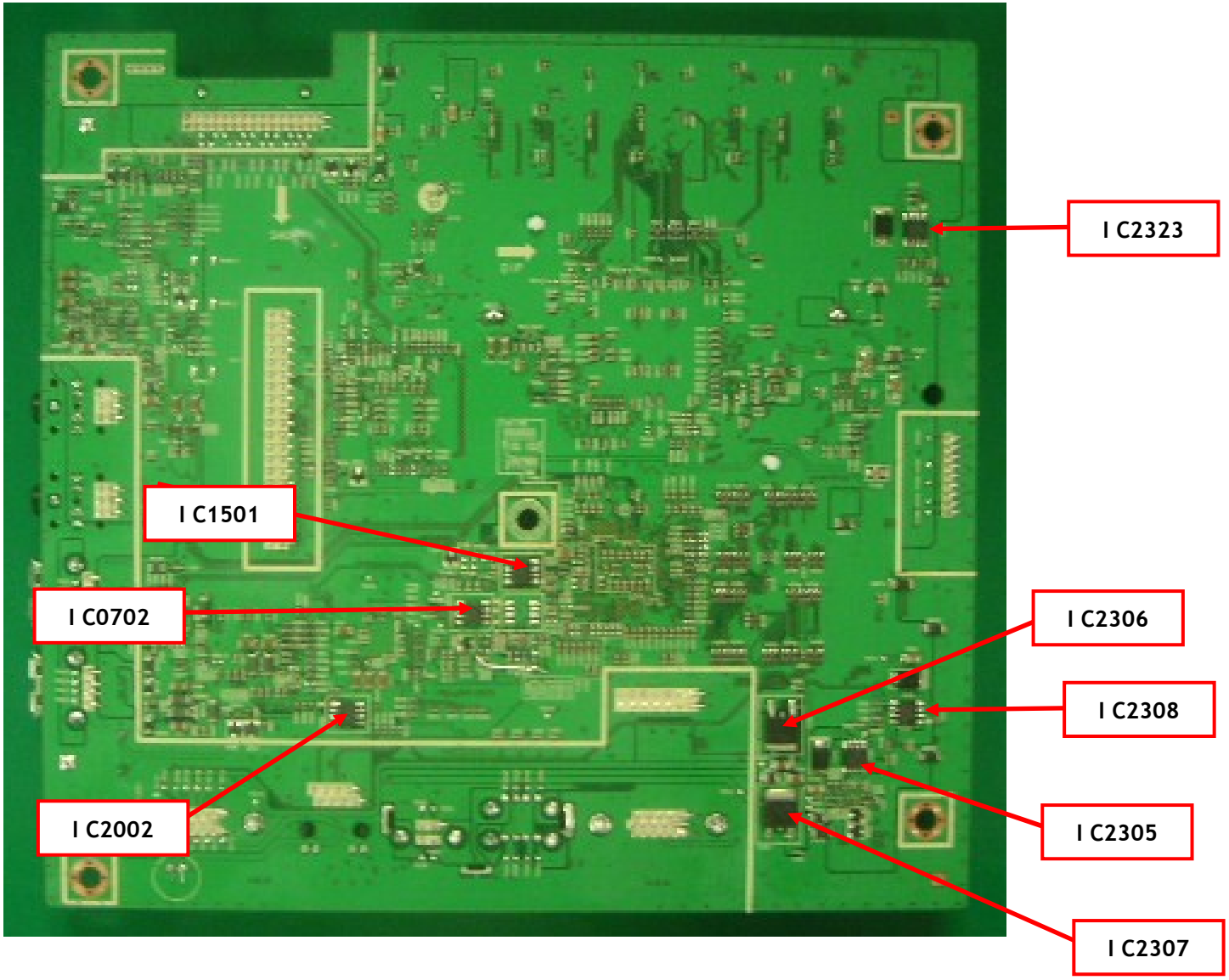
1. Troubleshooting (When camera does not act)



Troubleshooting



Troubleshooting

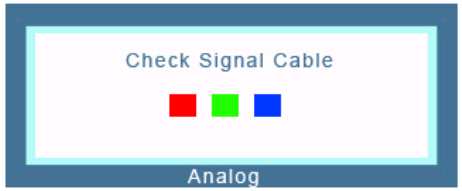


Troubleshooting

Self-Test Feature Check

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.

   If the monitor is functioning properly, you will see a box in the illustration below.



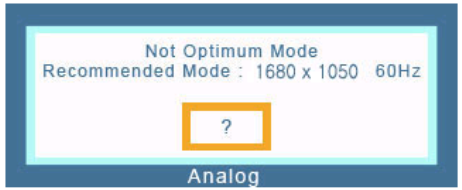
   This box appears during normal operation if the video cable becomes disconnected or damaged.

4. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

   If your monitor screen remains blank after using the previous procedure, check your video controller and computer system; your monitor is functioning properly.

Warning Messages

If there is something wrong with the input signal, a message appears on the screen or the screen goes blank although the power indicator LED is still on. The message may indicate that the monitor is out of scan range or that you need to check the signal cable.



Environment

- The location and the position of the monitor may influence the quality and other features of the monitor.
  - If there are any sub woofer speakers near the monitor, unplug and relocate the woofer to another room.
    Remove all electronic devices such as radios, fans, clocks and telephones that are within 3 feet (one meter) of the monitor.

Useful Tips

- A monitor recreates visual signals received from the computer. Therefore, if there is trouble with the computer or the video card, this can cause the monitor to become blank, have poor coloring, noise, Video mode not supported, etc. In this case, first check the source of the problem, and then contact the Service Center or your dealer.

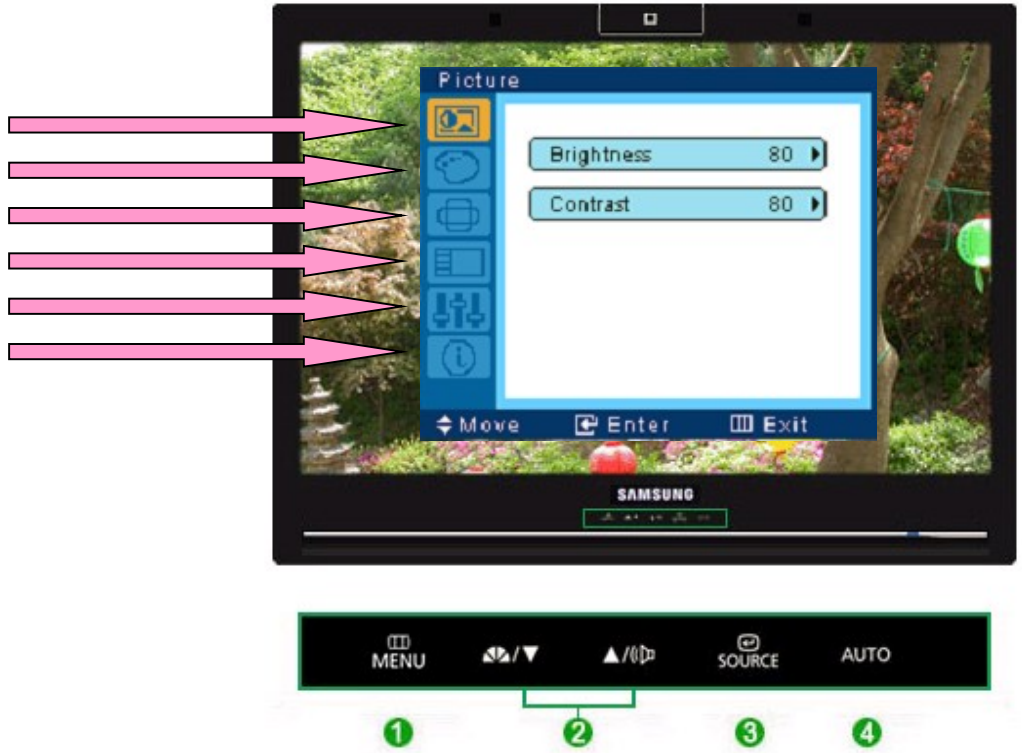
- Judging the monitor's working condition

  If there is no image on the screen or a "Not Optimum Mode", "Recommended Mode 1680 x 1050 60 Hz" message comes up, disconnect the cable from the computer while the monitor is still powered on.

  - If there is a message coming up on the screen or if the screen goes white, this means the monitor is in working condition.
  - In this case, check the computer for trouble.

OSD Looking

(1) Picture
(2) Color
(3) Image
(4) OSD
(5) Setup
(6) Information



1. [MENU] Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.
2. [▼/▲] These buttons allow you to adjust items in the menu.
3. [SOURCE] Press this button to activate a highlighted menu item.
4. [AUTO] When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center.

OSD Looking

Menu	Description
AUTO	When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center. Auto adjustment allows the monitor to self-adjust to the incoming Analog signal. The values of fine, coarse and position are adjusted automatically. (Available in Analog mode only) To make the automatic adjustment function sharper, execute the 'AUTO' function while the AUTO PATTERN is on. ▸ If auto adjustment does not work properly, press 'AUTO' button again to adjust picture with more accuracy. ▸ If you change resolution in the control panel, auto function will be executed automatically.
OSD Locked & Unlock	This is the function that locks the OSD in order to keep the current states of settings or prevent others from adjusting the current settings. **Locked** : Hold down the menu button for more than five seconds to activate the OSD adjustment lock function. **Unlock** : Hold down the menu button for more than five seconds to deactivate the OSD adjustment lock function. ※ Though the OSD adjustment lock function is activated, you can still adjust the brightness and contrast, and adjust MagicBright ( ) using the Direct button.
MagicBright™	Push the MagicBright™ button to circle through available preconfigured modes. - Six different modes (Custom/Text/Internet/Game/Sport/Movie/)
Volume	When OSD is not on the screen, push the button to adjust volume.
SOURCE	Selects the Video signal while the OSD is off. (Analog/Digital)

OSD Function

Picture	Brightness	Contrast			
Color	MagicColor	Color Tone	Color Control	Gamma	
Image	Coarse	Fine	Sharpness	H-Position	V-Position
OSD	Language	H-Position	V-Position	Transparency	Display Time
Setup	VoIP Mode	Image Reset	Color Reset		
Information					

Picture

Menu	Description
Brightness	You can use the on-screen menus to change the brightness according to personal preference. MENU → ↵ → ↵ → ▲, ▼ → MENU
Contrast	You can use the on-screen menus to change the contrast according to personal preference. MENU → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU

OSD Looking

Color

Menu	Description
MagicColor	MagicColor is a new technology that Samsung has exclusively developed to improve digital image and to display natural color more clearly without disturbing image quality. ❶ Off — Returns to the original mode. ❷ Demo — The screen before applying MagicColor appears on the right and the screen after applying MagicColor appears on the left. ❸ Full — Displays not only vivid natural color but also more realistic natural skin color with clearness. ❹ Intelligent — Displays vivid natural color with clearness. MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU
Color Tone	The tone of the color can be changed and one of four modes can be selected -Cool, Normal, Warm and Custom. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
Color Control	Adjusts individual Red, Green, Blue color balance. -Red, Green, Blue MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
Gamma	Gamma correction changes the luminance of the colors with intermediate luminance. - Mode 1 - Mode 2 - Mode 3 MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU

Image

Menu	Description
Coarse	Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu. (Available in analog mode only) MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU
Fine	Removes noise such as horizontal stripes. If the noise persists even after fine tuning, repeat it after adjusting the frequency (clock speed). (Available in analog mode only) MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
Sharpness	Changes the clearance of image. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
H-Position	Changes the horizontal position of the monitor's entire display. (Available in analog mode only) MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
V-Position	Changes the vertical position of the monitor's entire display. (Available in analog mode only) MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU

OSD Looking

OSD

Menu	Description
Language	You can choose one of nine languages. • **English, Deutsch, Español, Français, Italiano, Svenska, Русский , Português , Türkçe** ※ The language chosen affects only the language of the OSD. It has no effect on any software running on the computer. MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU
H-Position	You can change the horizontal position where the OSD menu appears on your monitor. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
V-Position	You can change the vertical position where the OSD menu appears on your monitor. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
Transparency	Change the transparency of the background of the OSD. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
Display Time	The menu will be automatically turned off if no adjustments are made for a certain time period. You can set the amount of time the menu will wait before it is turned off. - 5 sec, 10 sec, 20 sec, 200 sec MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU

Setup

Menu	Description
VoIP Mode	SOUCE Button 기능(아날로그/Client)을 설정(On) 또는 해제(Off)할 수 있습니다. 해제(Off)를 선택한 경우 SOUCE 기능은 동작하지 않습니다. MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU
Image Reset	Image parameters are replaced with the factory default values. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU
Color Reset	Color parameters are replaced with the factory default values. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU

Information

Menu	Description
Information	Shows a video source, display mode on the OSD screen. MENU → ▲, ▼

OSD Looking

○ Key Table

Function	Operating Method
OSD Adjustment Lock/Unlock	Hold down the menu key for five (5) seconds to lock/unlock the OSD Adjustment function.
Hidden Service function	To display the Service Function OSD, set both the brightness and contrast to 0 and hold down the Enter/Source key for five (5) seconds.
Factory Reset	To reset to the factory defaults, display the OSD by pressing the menu key and holding down the Enter key for five (5) seconds.
Auto Color	Let the 16 gray pattern shown below appear in the Auto Color Calibration screen, and then hold down the Enter key for five (5) seconds in the Language Selection OSD.

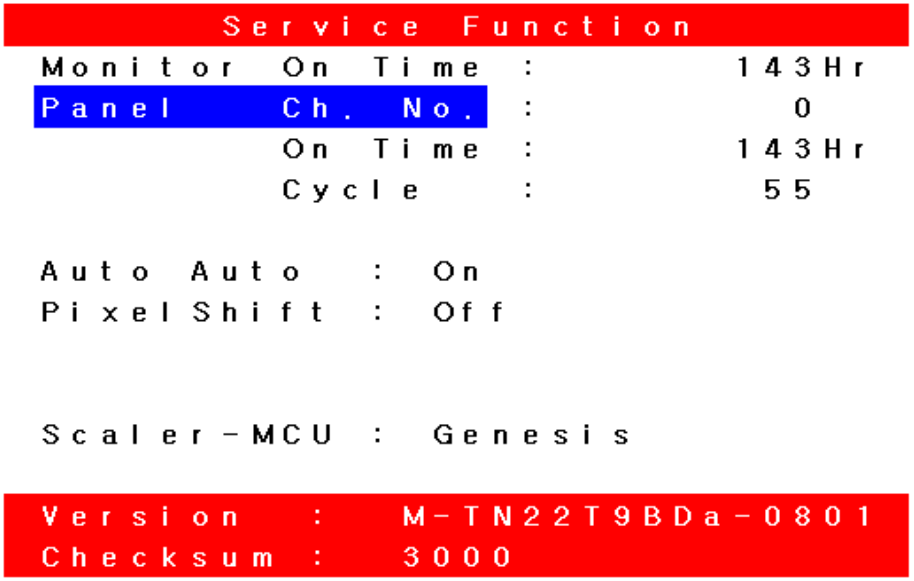
< 16 Gray Parttern >

OSD Looking

○ Hidden Service Function

To display the Service Function OSD, set both the brightness and contrast to 0 and hold down the Enter/Source key for five (5) seconds.

- To exit the Service Function OSD, turn the system power off .



▲Key : Moves around the menu
▼Key : Changes the setting (On/Off change, language change)
Menu Key : Holding it down for five (5) seconds resets the panel and lamp.

OSD Looking

○ Hidden Service Function

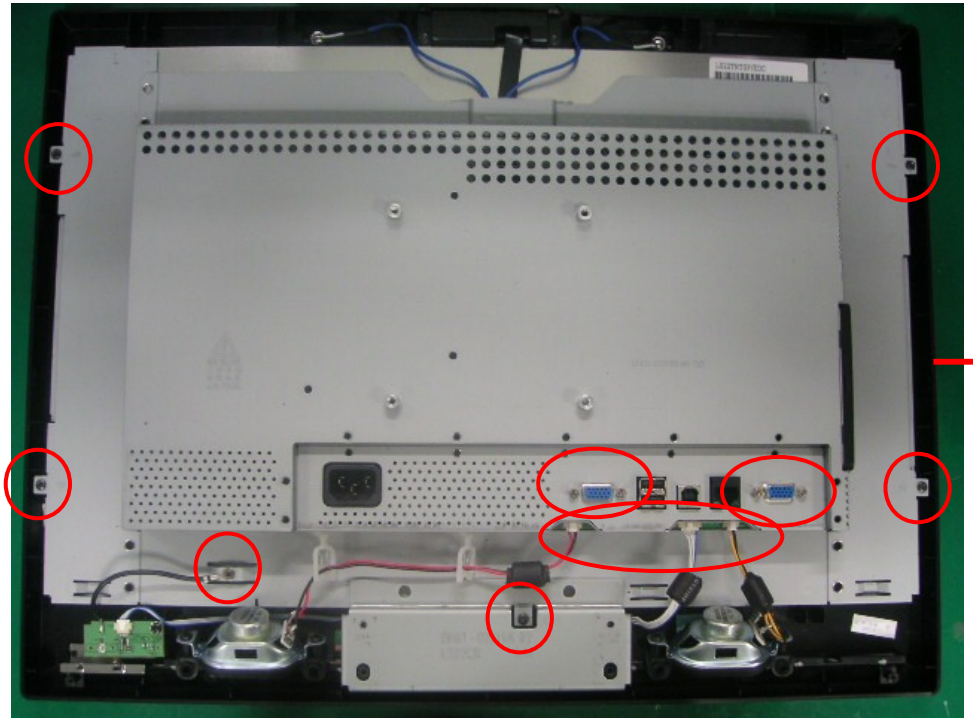
Hidden Service Function	Operating Method
Monitor On Time	Power On Time
Panel Ch. No.	Panel Change Number
Panel On Time	Panel's Power On Time (Performs a reset after a panel replacement and increases the replacement count)
Panel Cycle	Panel On/Off Time (Performs power on/off, mode change, DPMS on/off, etc. Resets after a panel replacement)
Auto Auto	Turns the Auto Auto function On/Off
Pixel Shift	This function is applied to panels with afterimages. It moves the screen up, down, left and right by 8 pixels, in a total of 32 steps. When this occurs, most users cannot detect these movements. The factory default is Off .
Scaler-MCU	Scaler-MCU Type
Version	MCU Firmware Version
Checksum	MCU Firmware Checksum

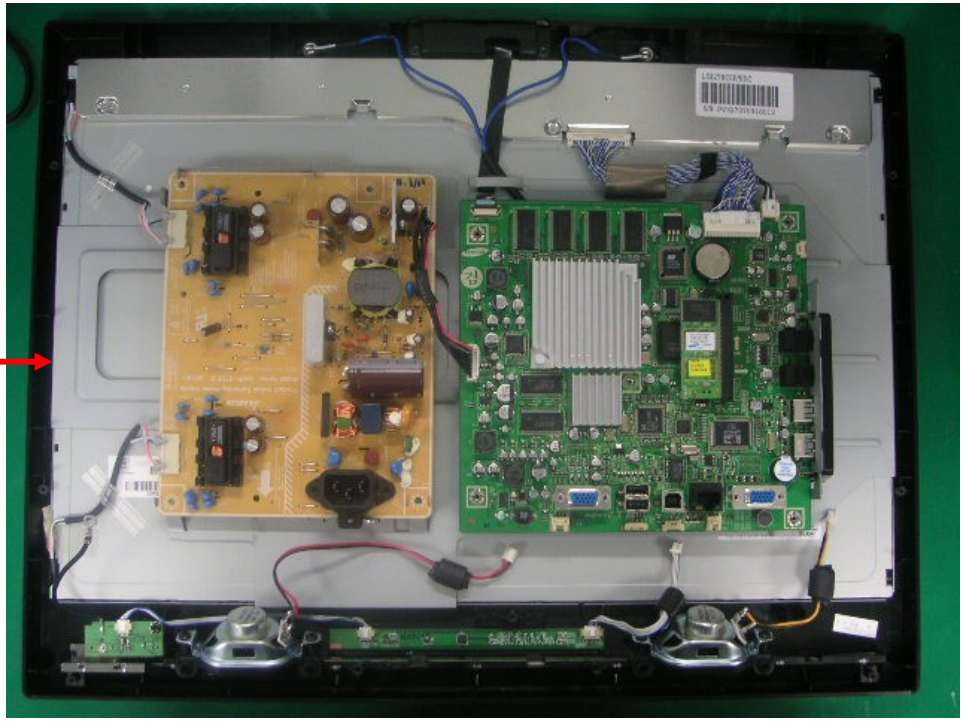
Assembly/Disassembly

1. Place the monitor on a flat floor and start disassembling the stand.
   Before placing the monitor down, lay a soft cloth on the floor to prevent the screen from becoming damaged.
2. First, disconnect the signal cable and the power cord.

1. Remove the six screws.
2. Remove the stand and back cover.

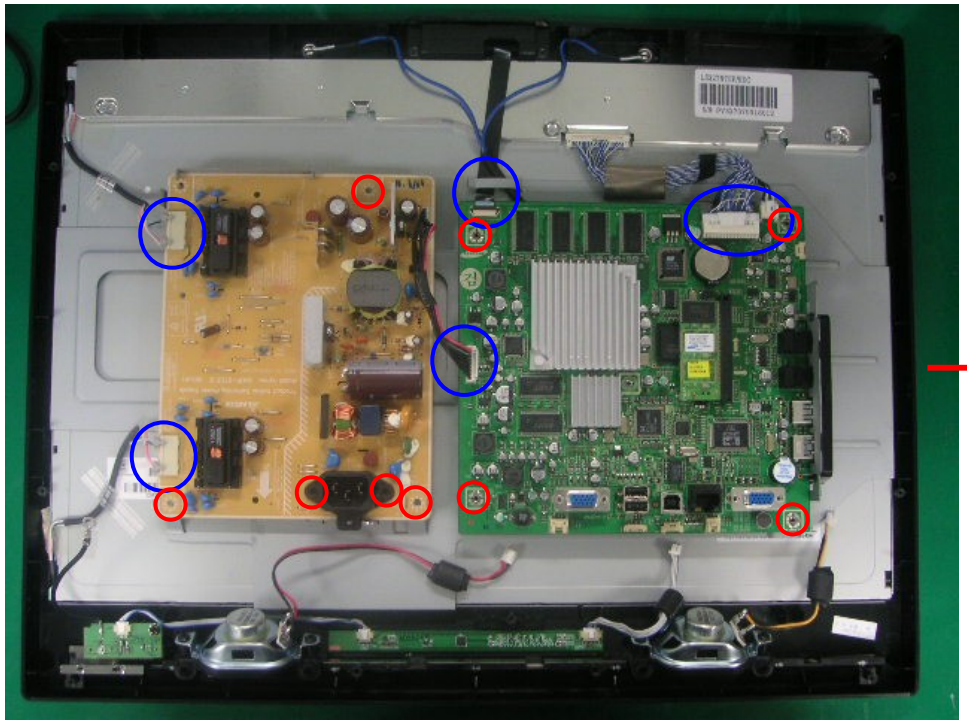
Assembly/Disassembly

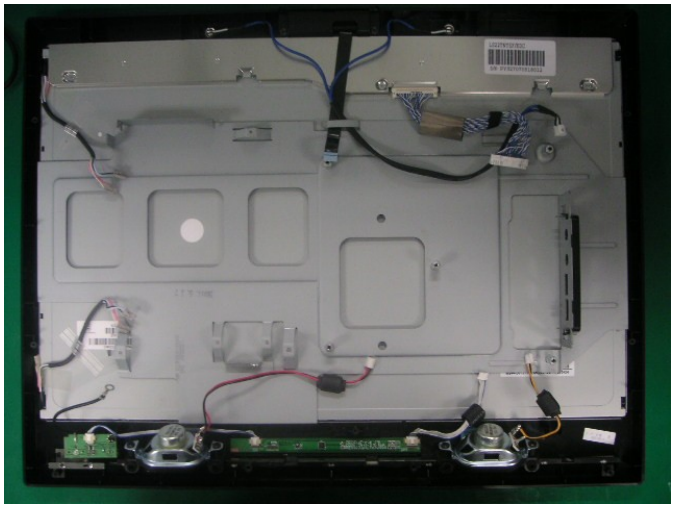


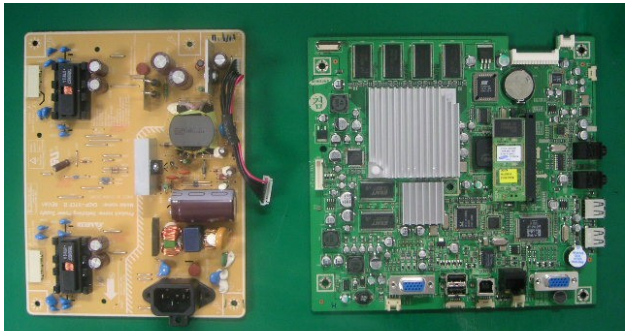


3. Remove the six screws.
4. Remove the four hexagonal screws.
5. Remove the function and speaker harness.
6. Remove the rear shield.

Assembly/Disassembly

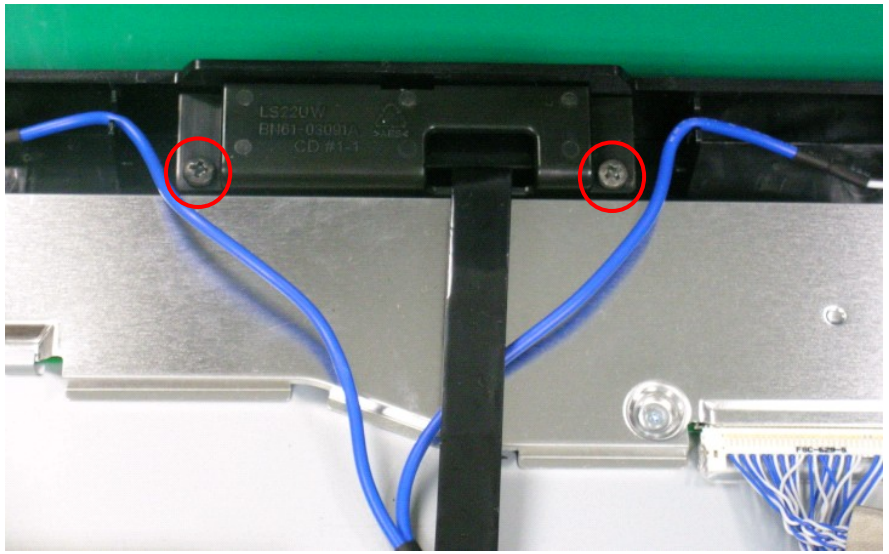






7. Disconnect the LVDS cable ,MIC harness and Camera harness.
8. Disconnect the IP board power cable and back light power connector.
9. Remove the screws that hold the main board screws in place.
10. Remove the screws that hold the IP board in place.
11. Remove the main board and IP board.

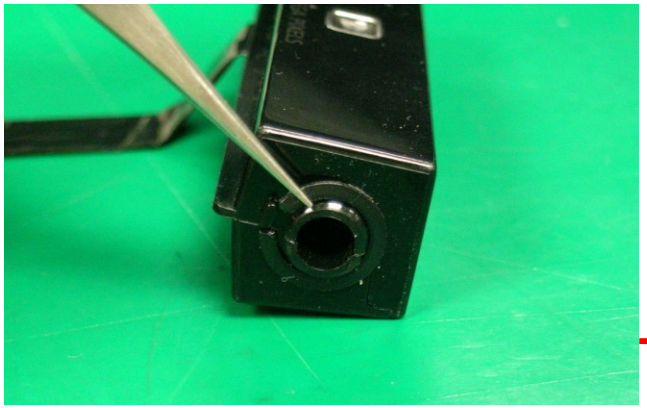
Assembly/Disassembly

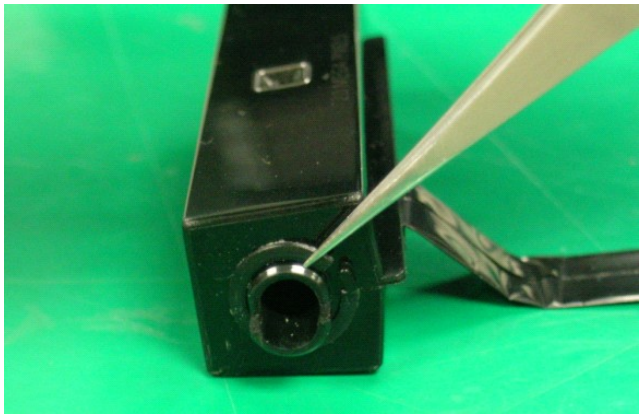


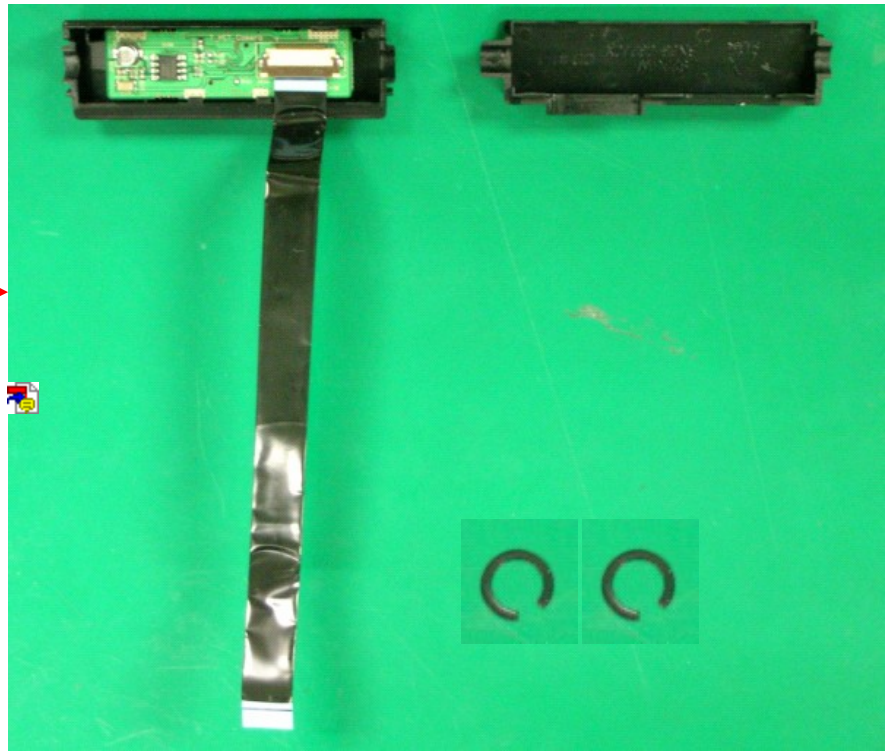
1. Remove the 2 Screws.
2. Remove the Camera Module.

Assembly/Disassembly

Assembly/Disassembly

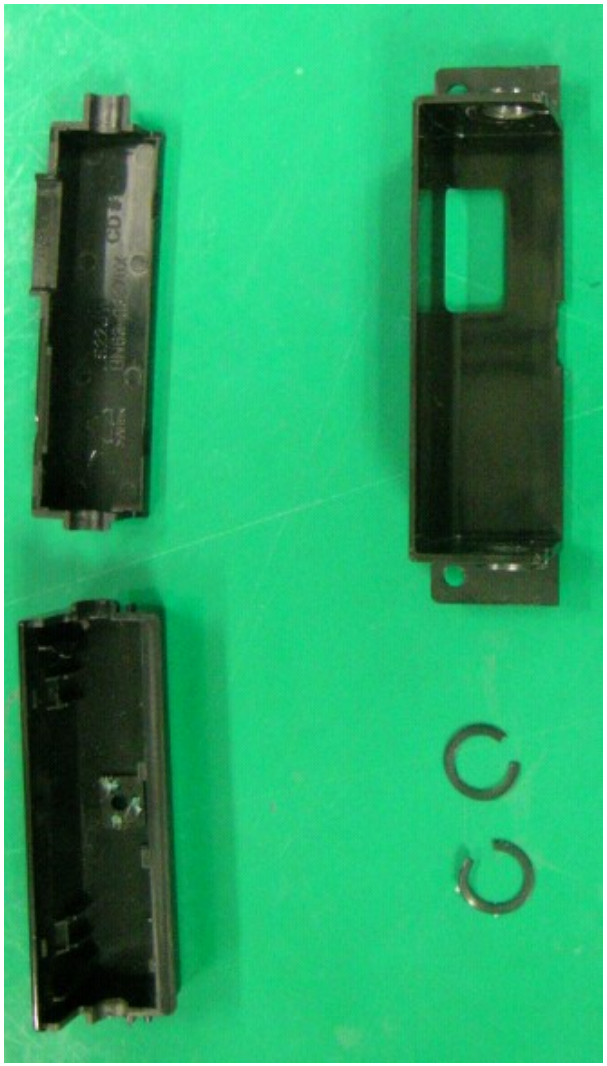






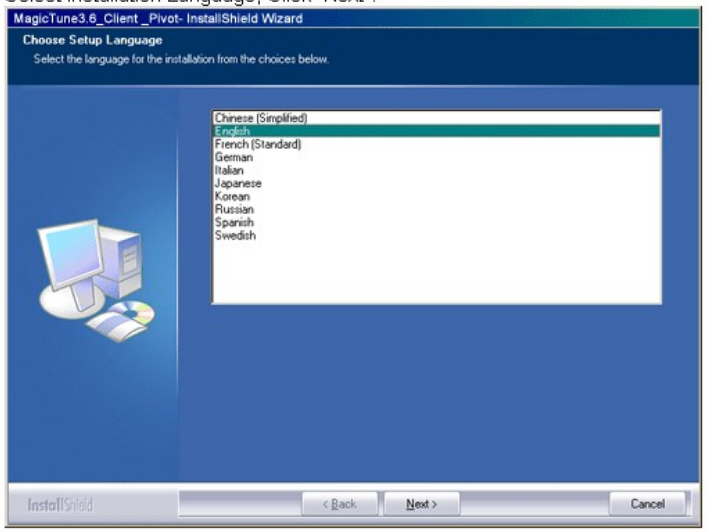
- Caution : Plastic ring may not stick again if have removed once

Assembly/Disassembly

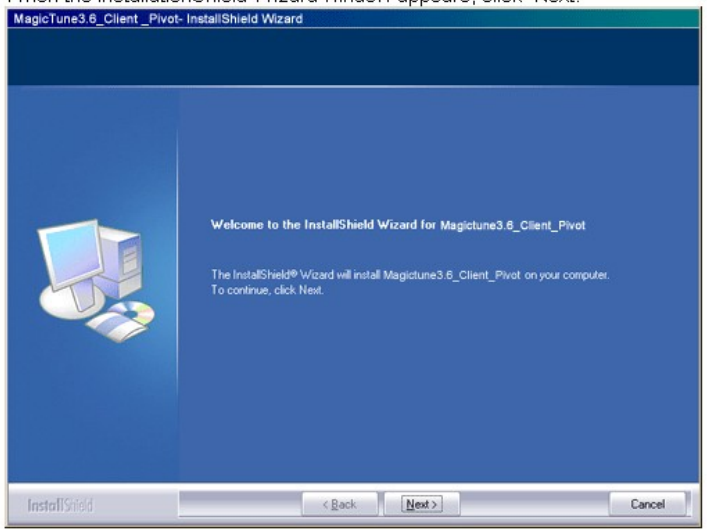


Magic Tune™ (Setup)

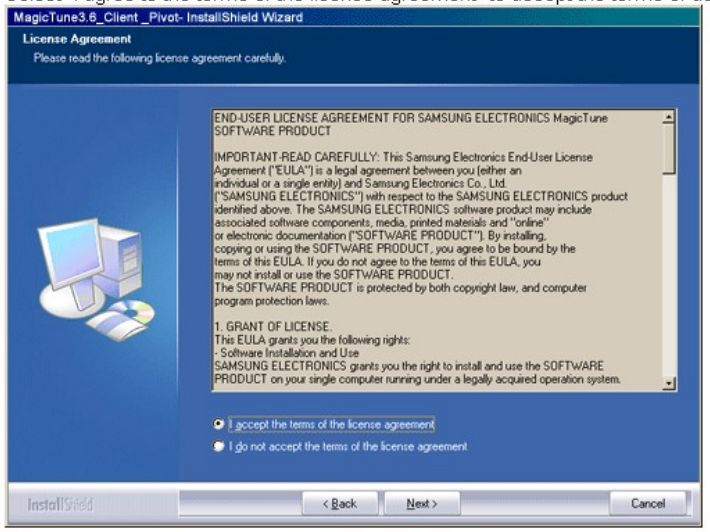
1. Insert the installation CD into the CD-ROM drive.
2. Click the MagicTune™ installation file.
3. Select installation Language, Click "Next".



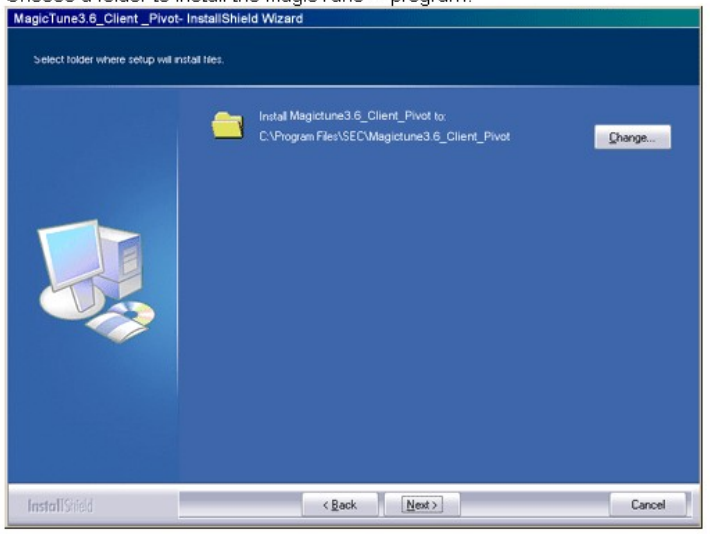
4. When the InstallationShield Wizard window appears, click "Next."



5. Select "I agree to the terms of the license agreement" to accept the terms of use.

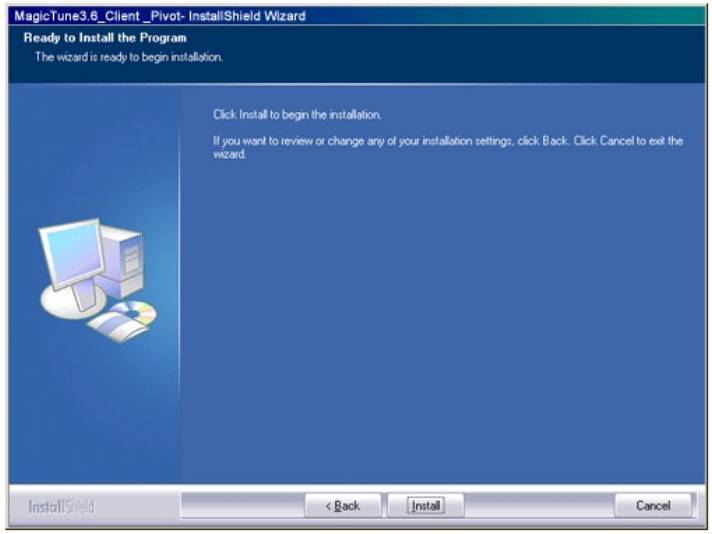


6. Choose a folder to install the MagicTune™ program.

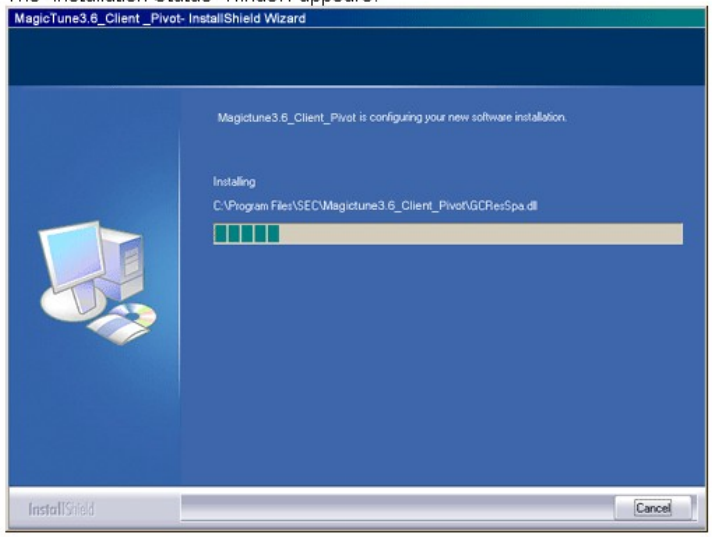


Magic Tune™ (Setup)

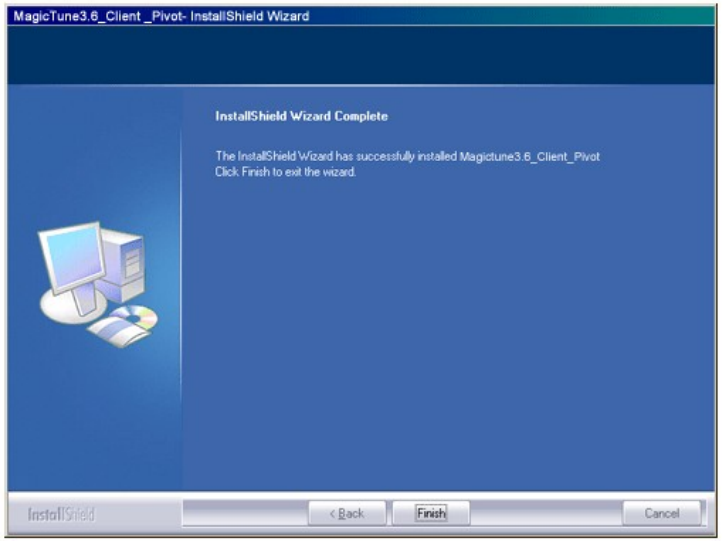
7. Click "Install."



8. The "Installation Status" window appears.



9. Click "Finish."



10. When the installation is complete, the MagicTune™ executable icon appears on your desktop.

Double-click the icon to start the program.

Magic Tune™ (Running)

Picture Tab

1. Brightness : Adjusts the brightness for the best viewing condition.
2. Contrast : Adjusts the difference between the bright area and the dark area on the screen.
3. Resolution : Lists all display resolutions supported by the program.
4. MagicBright : A feature providing the optimum viewing environment depending on the contents of the image you are watching. (Custom / Text / Internet/ Game / Sport / Movie)

Color Tab

1. Color Tone : Cool / Normal / Warm / Custom
2. Color Control : Adjusts the image color of the monitor. R/G/B
3. Calibration :
4. Magic Color : Reset, Demo, Full, Intelligent , Magic Zone
5. Gamma :
Mode 1 : normal gamma
Mode 2 : higher gamma(brighter)
Mode 3 : lower gamma(darker)

Magic Tune™ (Running)

Image Tab

1. Image : Fine,
   Auto setup : The values of fine, coarse, and position are adjusted automatically.
2. Position : Adjusts the screen location horizontally and vertically.
3. Sharpness : Adjusts the sharpness of the image.

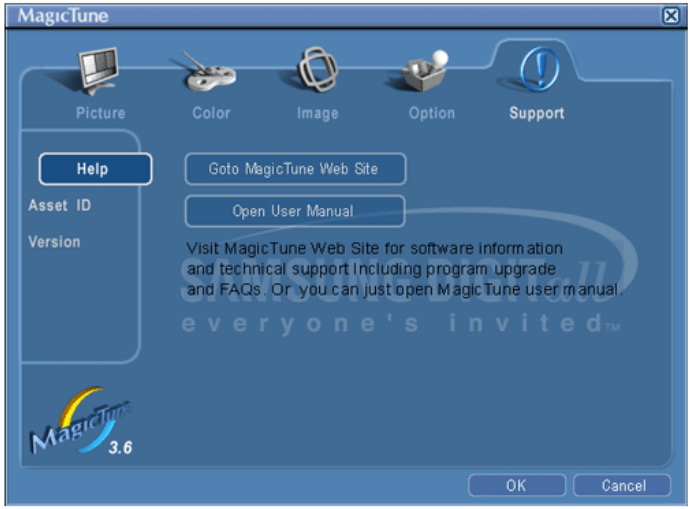
Option Tab

1. Preference : Loads the Preference Dialog Box. Preferences in use will have an "V" in the check box. To turn on or off any Preference, position the cursor over the box and click.

* Select Language – The language chosen affects only the language of the OSD.

2. Source Select : Select between Analog and Digital.

Magic Tune™ (Running)

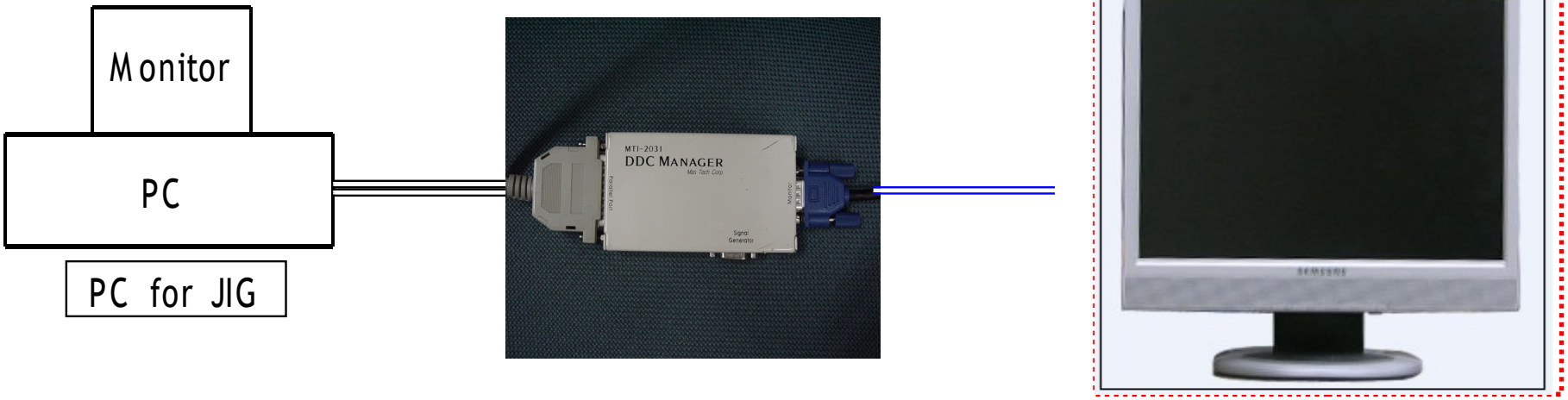


Support Tab

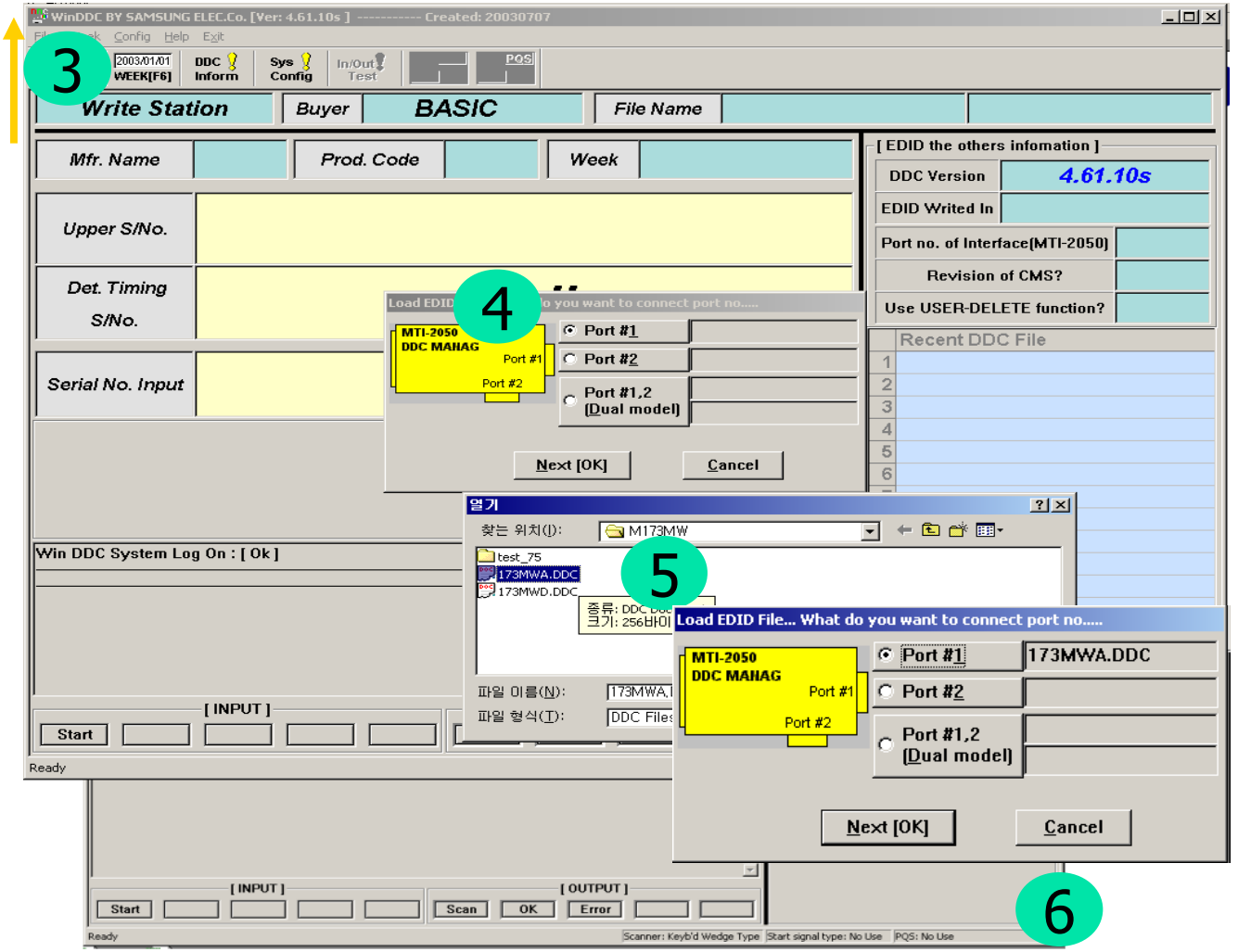
1. Help : Visit the Magic Tune website or click to open the Help files (User Manual) if you need any help installing or running MagicTune.
2. Monitor ID : It is to use the server which controls the client monitor. (Install the server program to use this function.)
3. Version : Displays the version of Magic Tune program.

How to Input EDID Data

After replacing the main board, you should enter the EDID data using a DDC control jig.
Connect a DDC control jig as shown in the figure below.

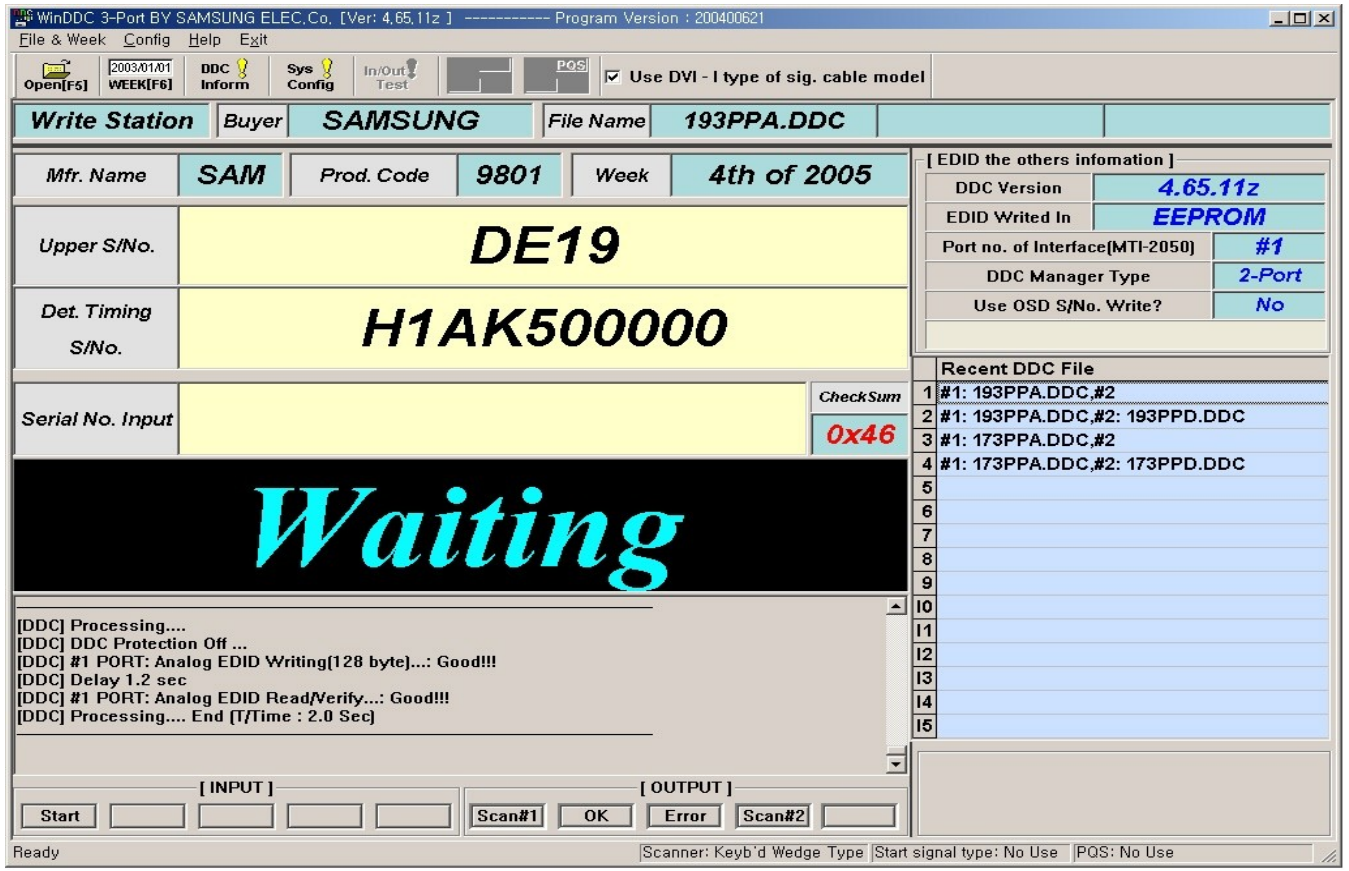


Entering EDID Data (Windows Program)



1. Run Winddc.exe and install the program on your PC.
2. Double-click the Winddc icon on the Desktop.
3. File open.
4. Select Port #1.
5. Select a DDC file
   - File Name
   "CX715NT1.ddc"
6. Click the Next (OK) button.

Entering EDID Data (Windows Program)



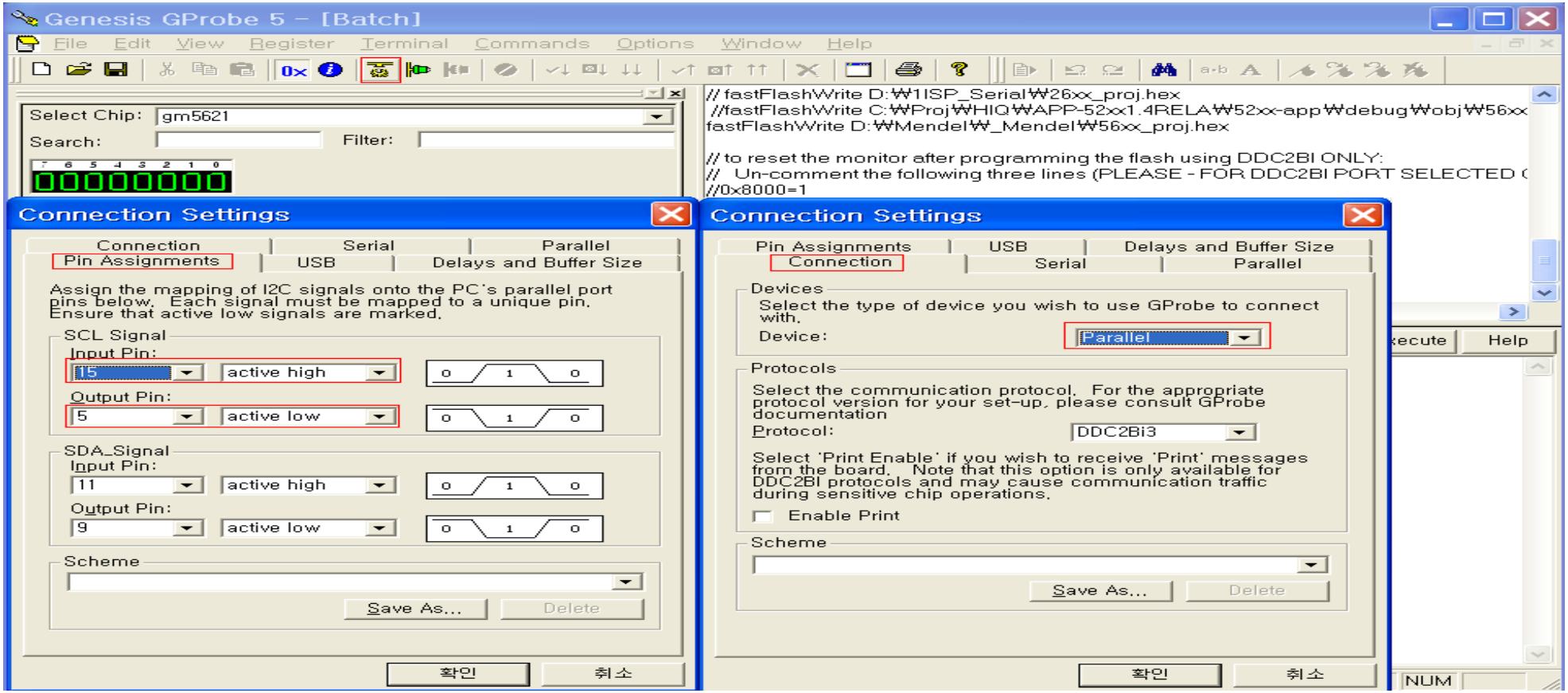
7. Press the Enter key on the keyboard.

Entering MICOM Data

Order	Description	Example
1	Connect DDC Manager - . DDC Manager and PC and monitor connection	- . Parallel Port PC's Parallel port and DDC Manager connection.
		- . Monitor LCD Monitor's D- Sub port and DDC Manager connection.
		- . Signal Generator Signal Generator and DDC Manager connection.
2	Compress Batch.zip file after do GProbe program install and copy to Directory that Grobe is placed canceling.	- . Gprobe 5.2.0.2.exe  Grobe.zip  Batch.zip
3	Gprobe Program establishment.	- . Config. Setting does setting with following page.
3	Batch Hex file path Code by where was stored change and stores .	- . Hex route on intermediate park if open batch file under GProge5 folder.
4	Hex Download.	- . Bexecute Batch. batch "batch file name.txt" and press excute. This time, must write full path if there is not batch file's path under GProbe5.

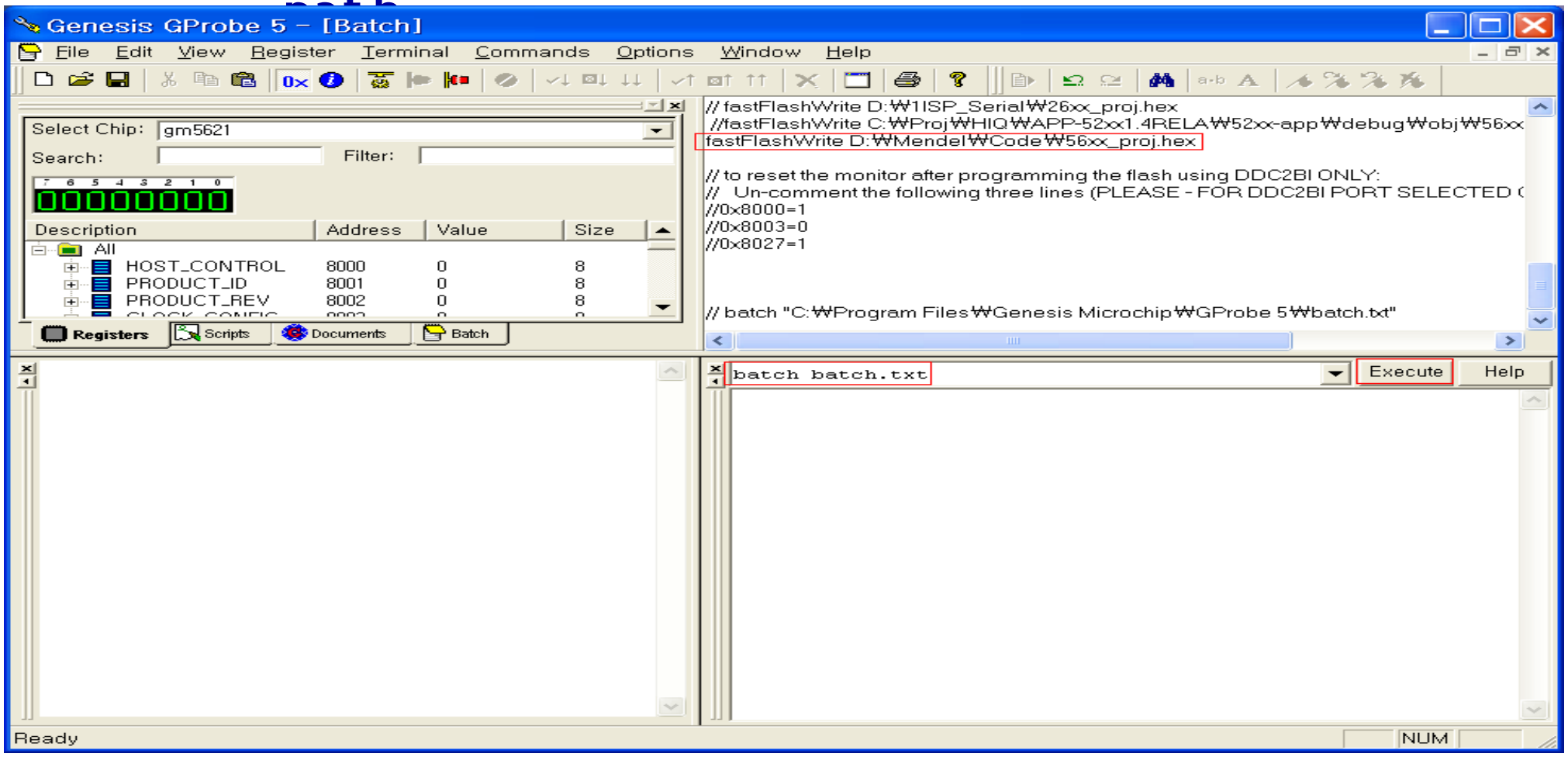
Entering MICOM Data

Config Setting

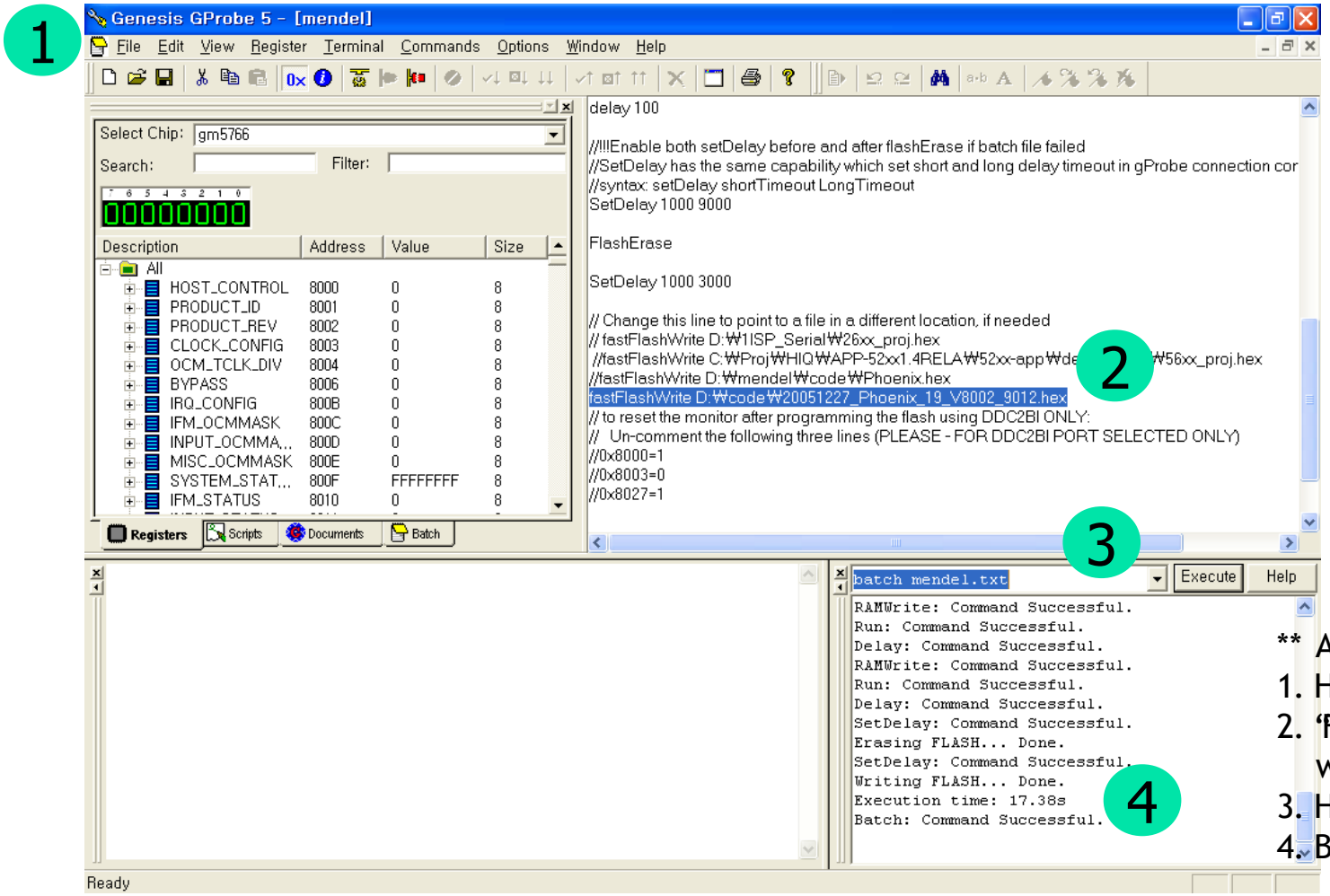


Entering MICOM Data

Change the Batch File path



Entering MICOM Data



1: Open file

2: File name and path modification by Hex to receive down.

3: batch batchfile.txt
Select Execute

4: Successful
→ Hard Power Off

** At Error,
1. Hard Power Off
2. 'Forcesa" input in Command window.
3. Hard Power On
4. Batch rerun

FDM, BIOS Update

1. Updating via a PXE Server

1> Booting up with a PXE Server

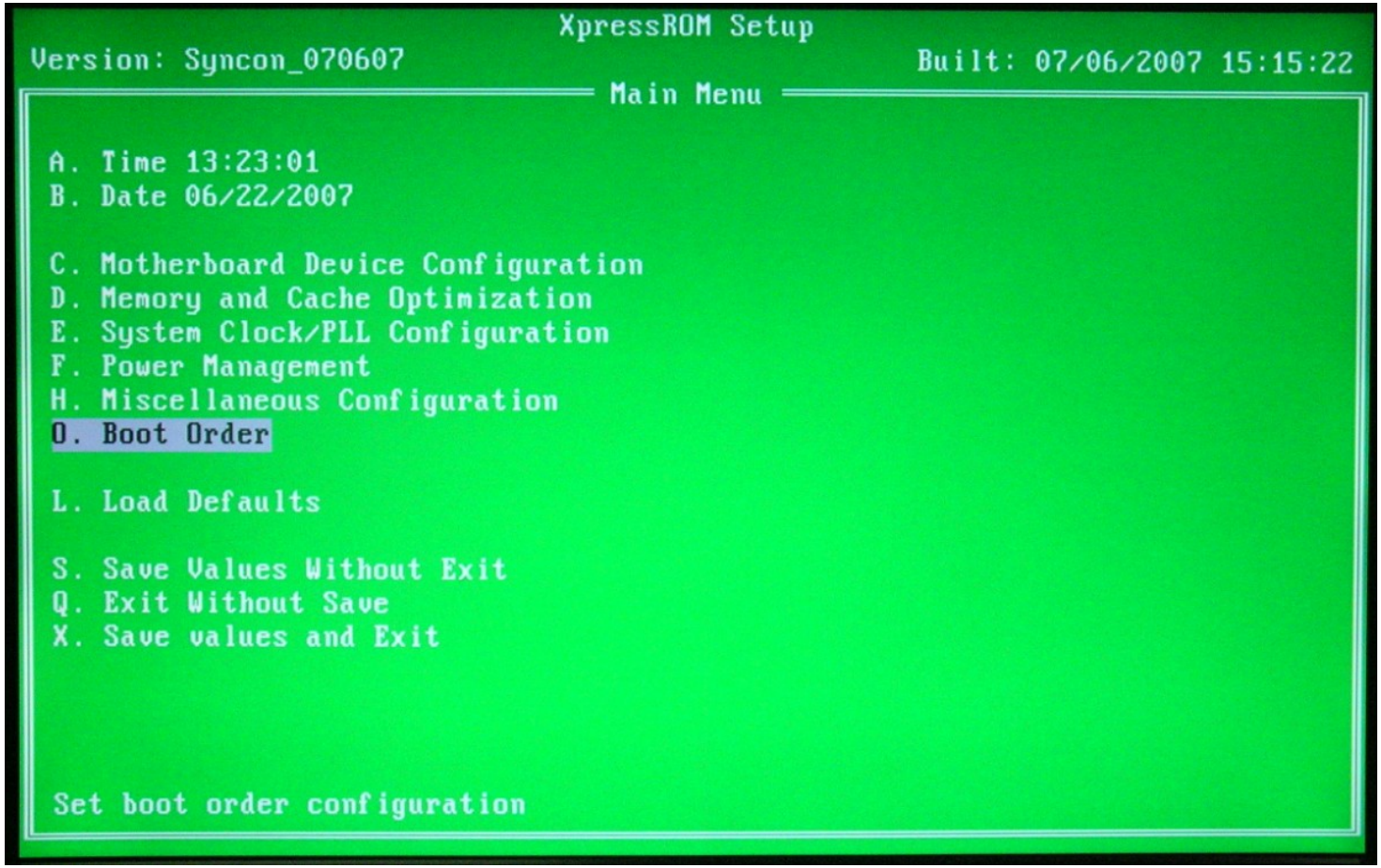
Configure a PXE Server by referencing the PXE Server section below.

Enter the BIOS screen by pressing the F1 key when the Samsung logo is being displ

FDM, BIOS Update

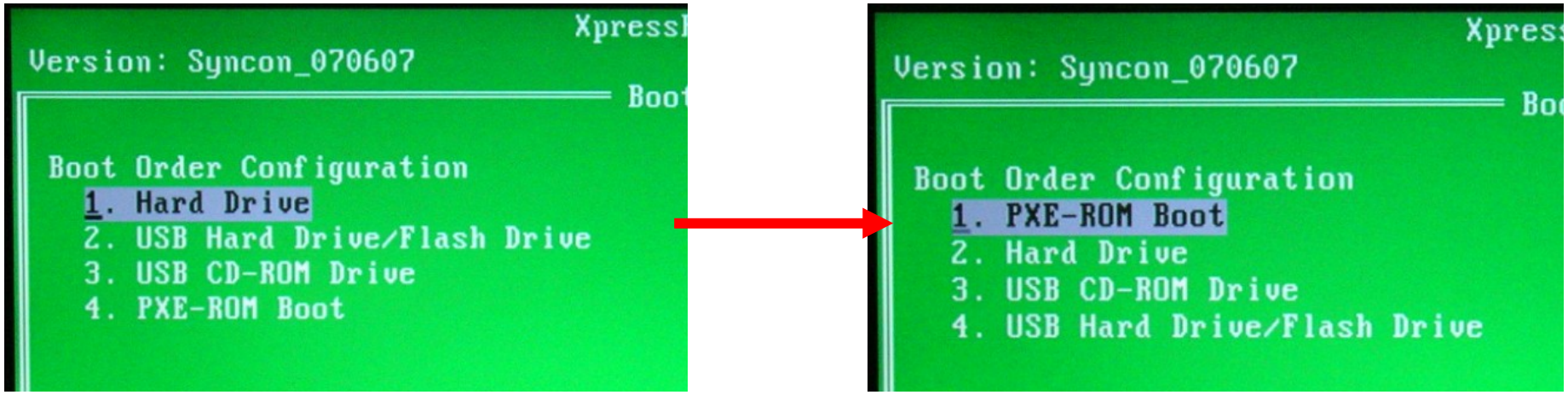
<BIOS Screen>

FDM, BIOS Update



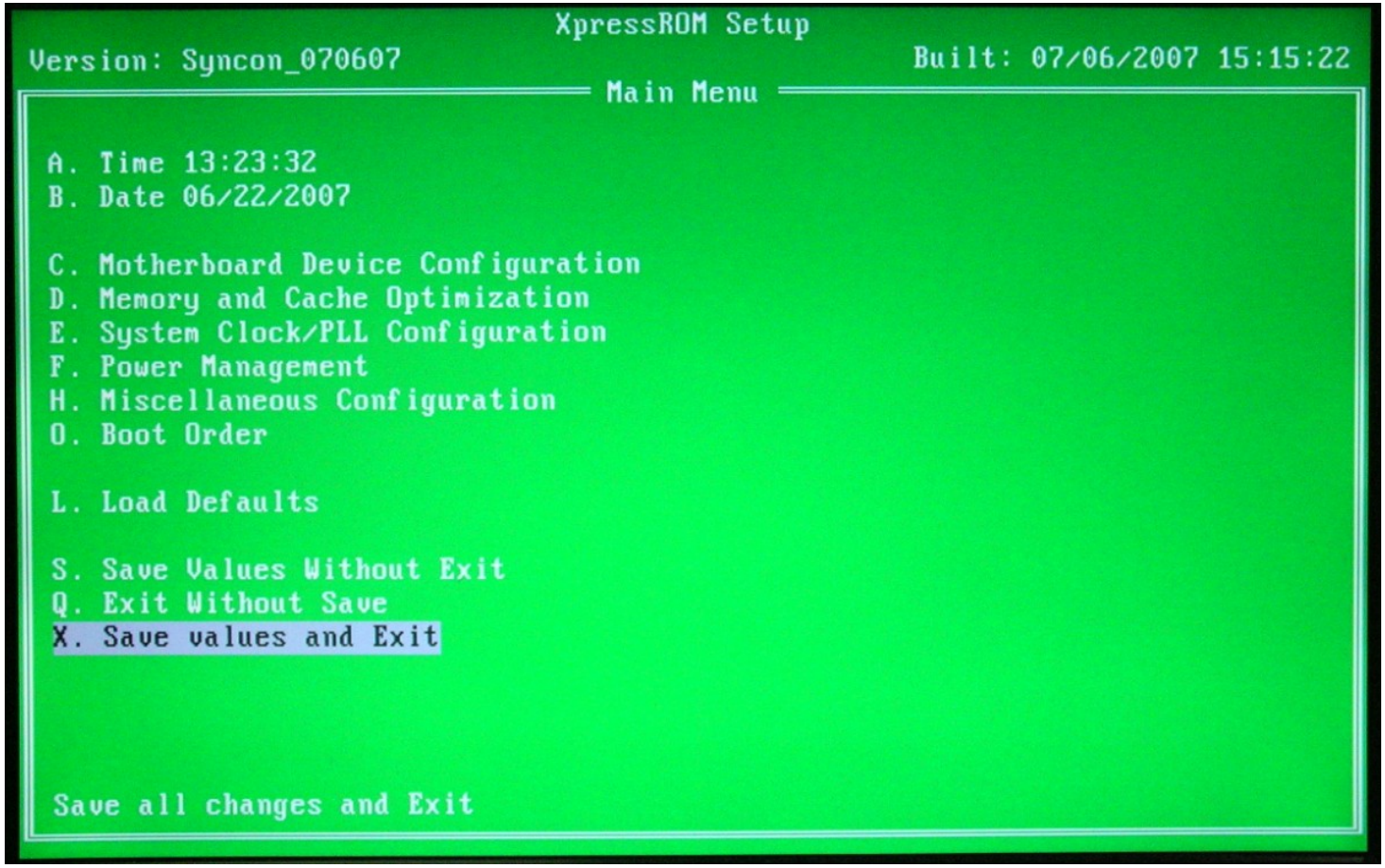
Select Boot Order from the Boot menu.

FDM, BIOS Update



Change the boot sequence using the Up, Down and Enter Key.
And exit the screen by Pressing ESC key.

FDM, BIOS Update



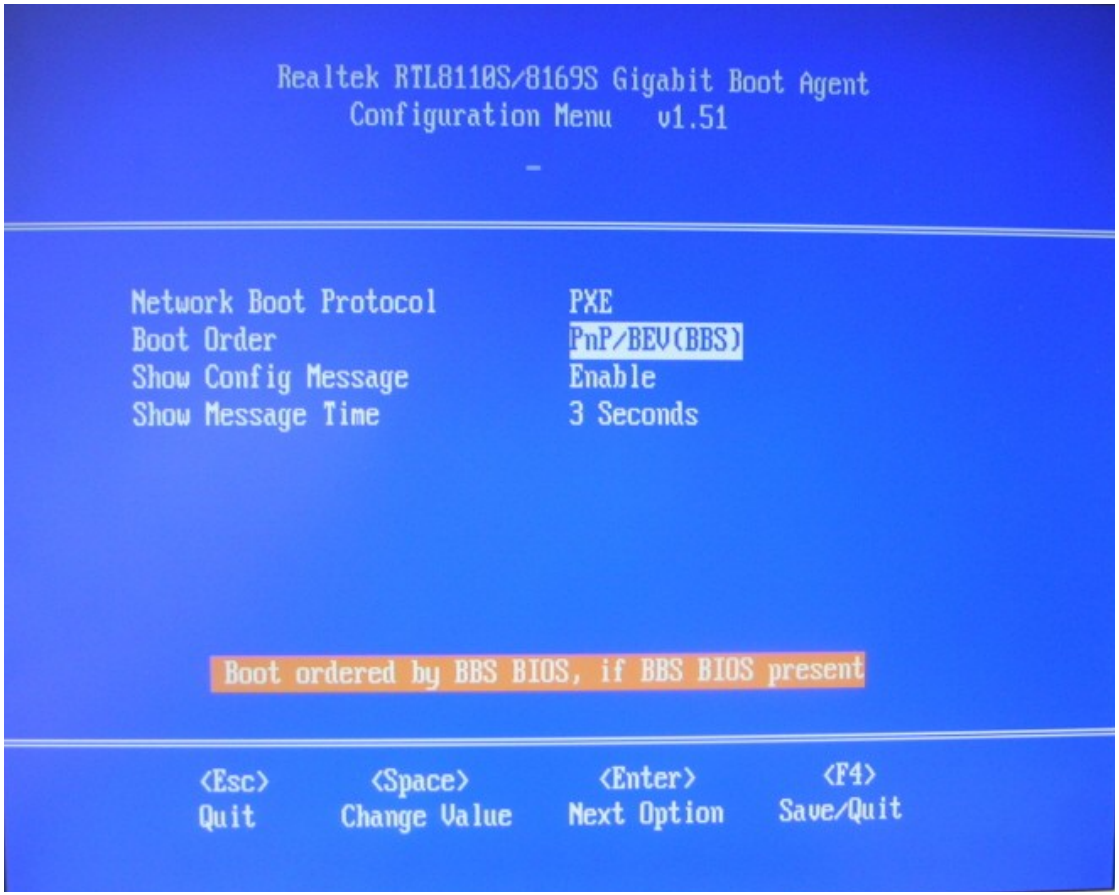
Exit the BIOS screen by selecting Save values and Exit from the Exit menu.

FDM, BIOS Update

Reboot the monitor, and the following screen will be displayed.

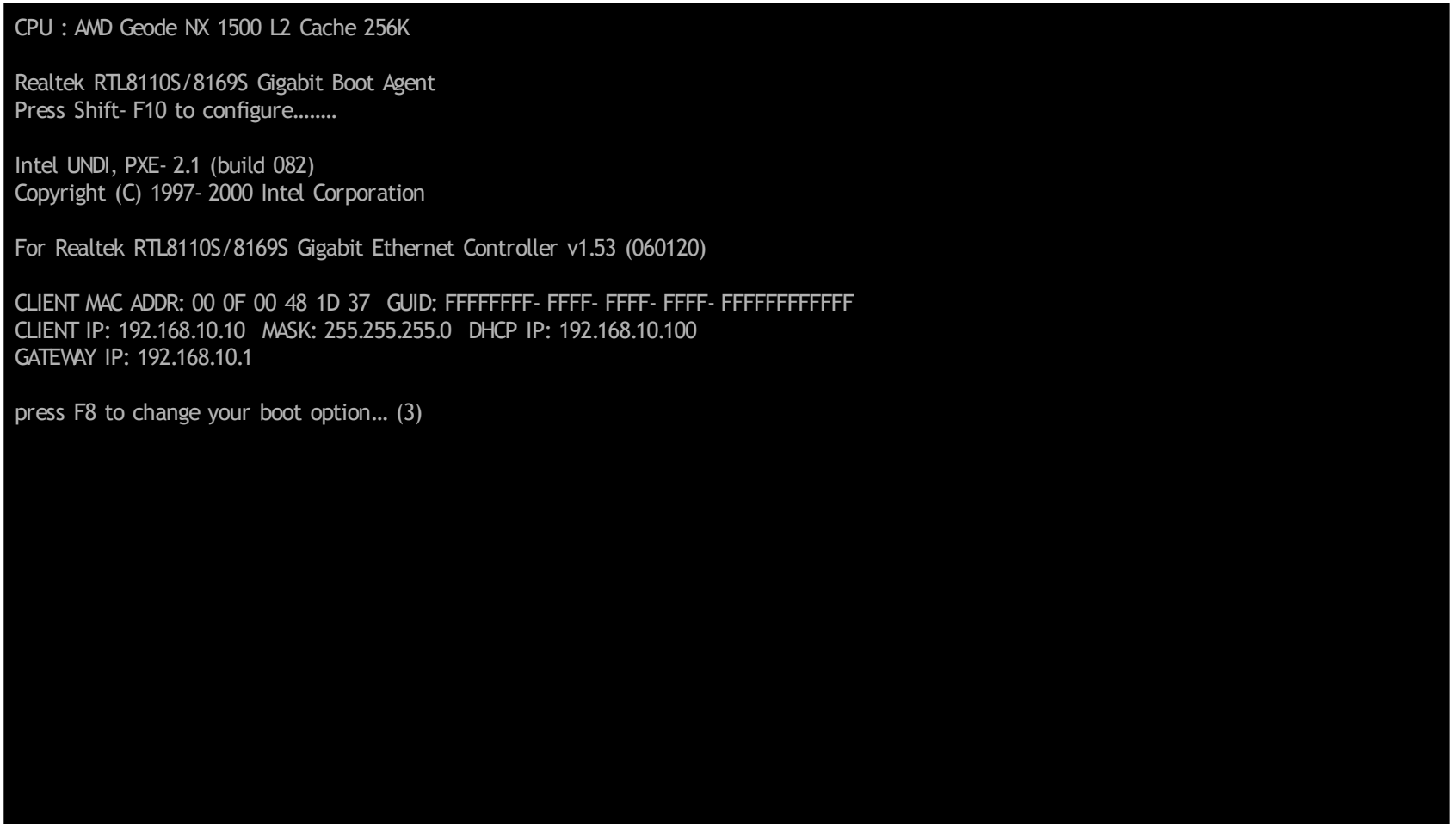
Press the Shift+F10 keys on this screen to enter the Ethernet controller configuration screen.

FDM, BIOS Update



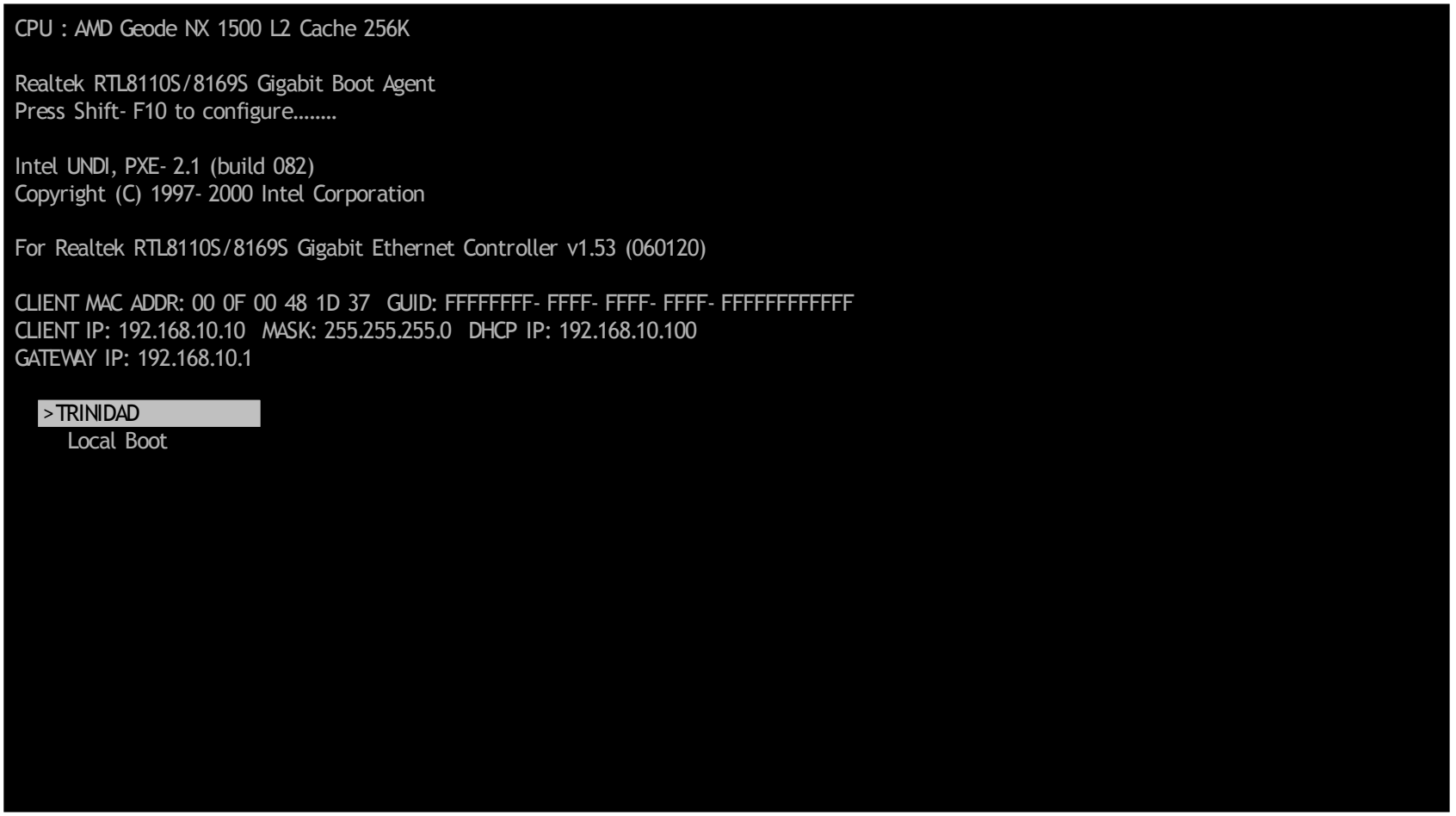
Check that the Boot Order is set to PnP/BEV(BBS) as shown in the figure above, and then exit from the Ethernet controller configuration screen by pressing the F4 key.

FDM, BIOS Update



Press the F8 key to check the Boot Option.
(If a specified time has elapsed, booting proceeds with the top boot option.)

FDM, BIOS Update



Boot by selecting an item from the menu created while configuring the PXE server, or boot using local boot (FDM).

FDM, BIOS Update

```
For Realtek RTL8110S/8169S Gigabit Ethernet Controller v1.53 (060120)

CLIENT MAC ADDR: 00 0F 00 48 1D 37  GUID: FFFFFFFF- FFFF- FFFF- FFFF- FFFFFFFFFFFF
CLIENT IP: 192.168.10.10  MASK: 255.255.255.0  DHCP IP: 192.168.10.100
GATEWAY IP: 192.168.10.1

    TRINIDAD

BOOT SERVER IP: 192.168.10.100
Starting Windows 98...



Network Line Speed in 100 Mbps / Full_Duplex Mode
Realtek RTL8169/8110 Family Gigibit Ethernet Adapter



Ethernet Adapter driver (V1.11) [2006/01/17] is installed
Microsoft DOS TCP/IP Protocol Driver 1.0a
Copyright (c) Microsoft Corporation, 1991.  All rights reserved.
Copyright (c) Hewlett- Packard Corporation, 1985- 1991.  All rights reserved.
Copyright (c) 3Com Corporation, 1985- 1991.  All rights reserved.
The command completed successfully.
MS- DOS LAN Manager v2.1 Netbind
Ethernet board's Ethernet Address:000F00481D37
Copyright (c) Samsung Electronics, 2006. All rights reserved.Initializing TCP/IP
 via DHCP....
Microsoft DOS TCP/IP 1.0a
The command completed successfully.
The command completed successfully.
F:\>
```

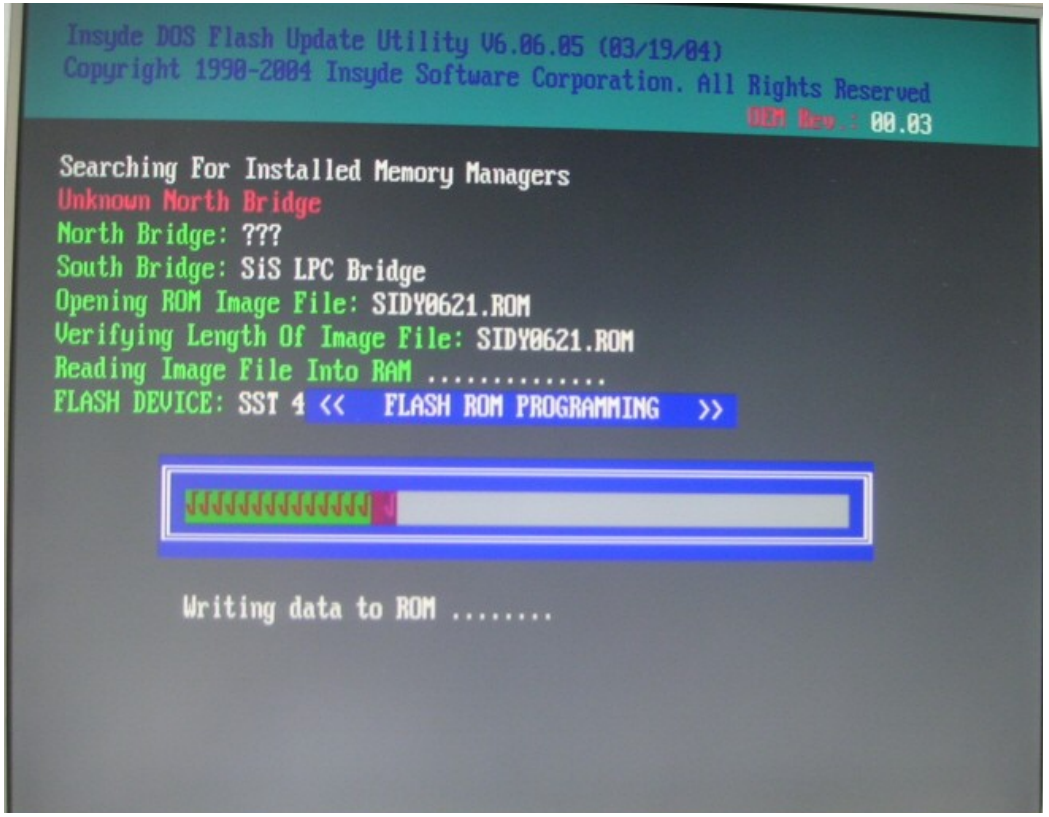
When booting is finished, the following screen is displayed.

FDM, BIOS Update

2> BIOS Update

```
F:\>flashit sidy0630.rom
```

Update the BIOS using Flashit, as shown in the figure above.



* Preparations: If the network booting through the PXE server is finished, copy the Flashit program and the ROM file to update to the mapped shared folder.

* The system will reboot automatically when the update is finished.

FDM, BIOS Update

3> FDM Update

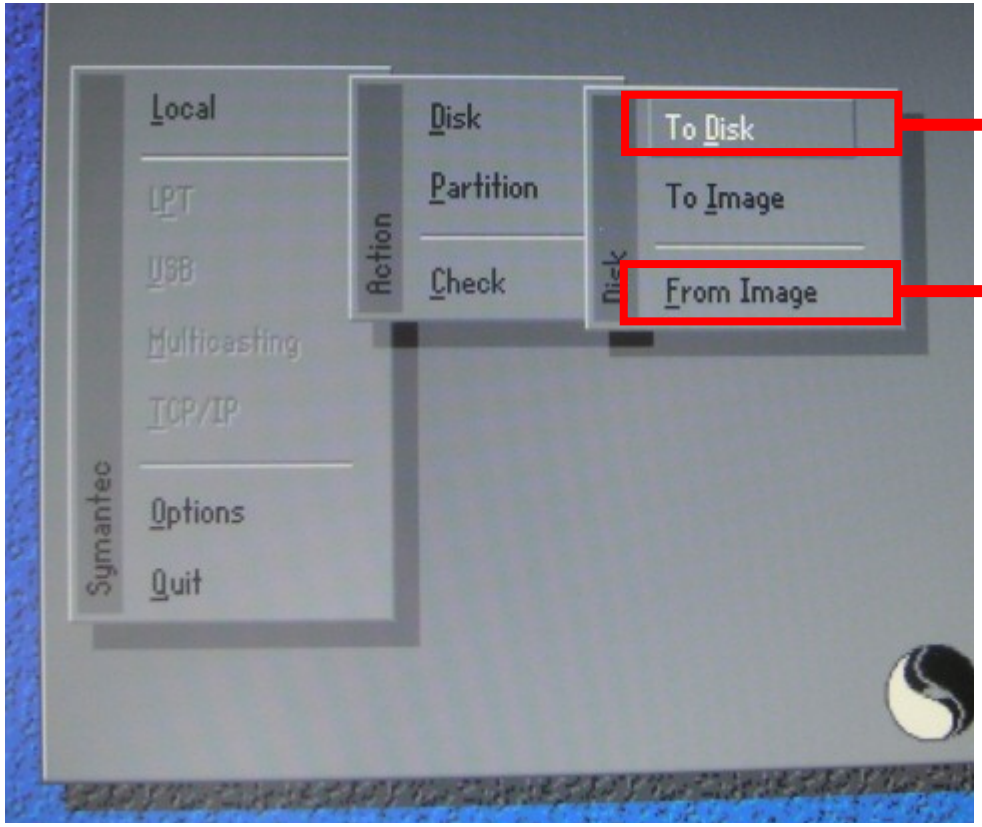
```
F:\>ghost
```

Update the FDM using ghost, as shown in the figure above.

* Preparations: If the network booting through the PXE server is finished, copy the ghost program and the image file to update into the mapped shared folder.

FDM, BIOS Update

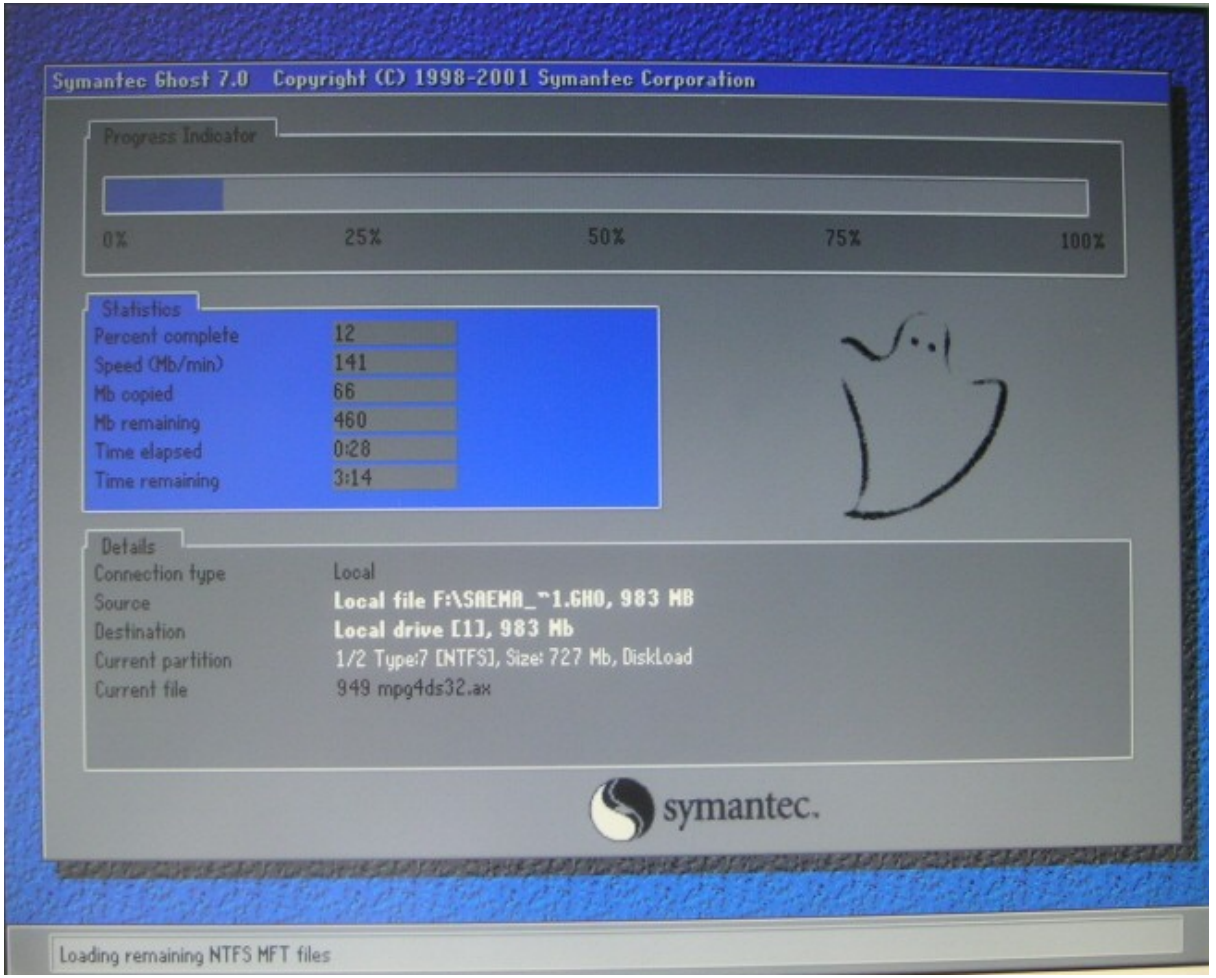
A screen of Ghost for DOS



Backup the present image of the FDM to your PC.

Update the FDM with the new image.

FDM, BIOS Update

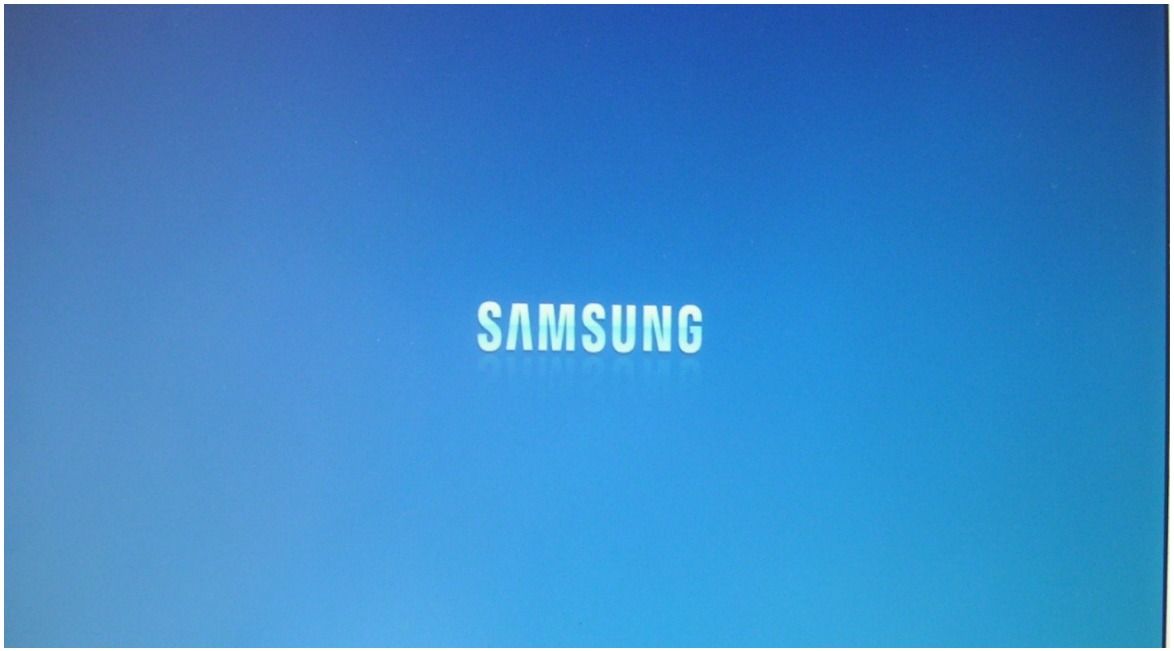


The screen for updating the FDM with the new image

FDM, BIOS Update

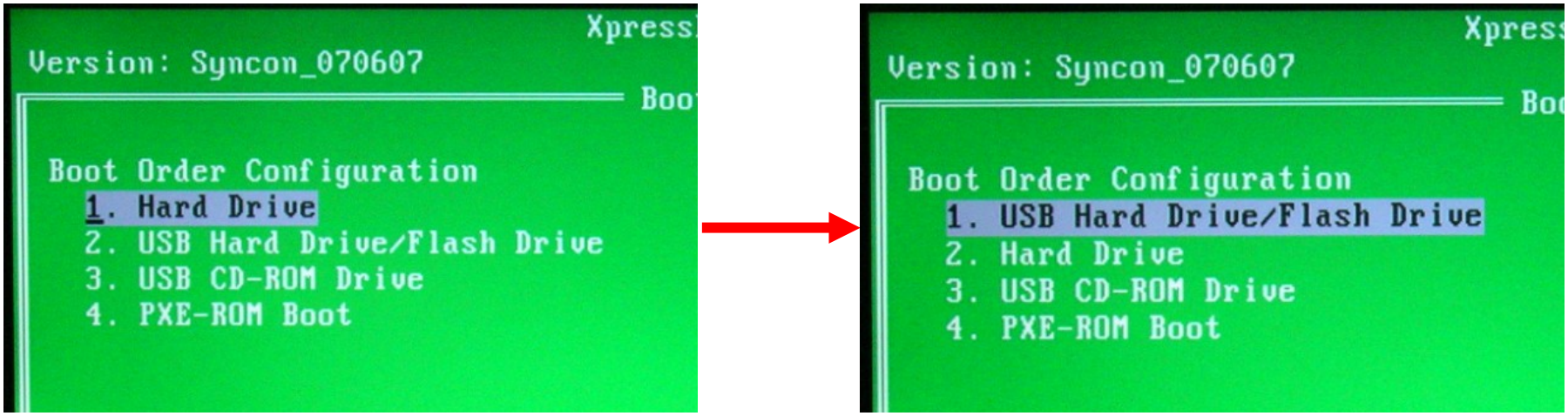
2. Updating via a USB Memory Stick

1> Booting up via a USB memory stick



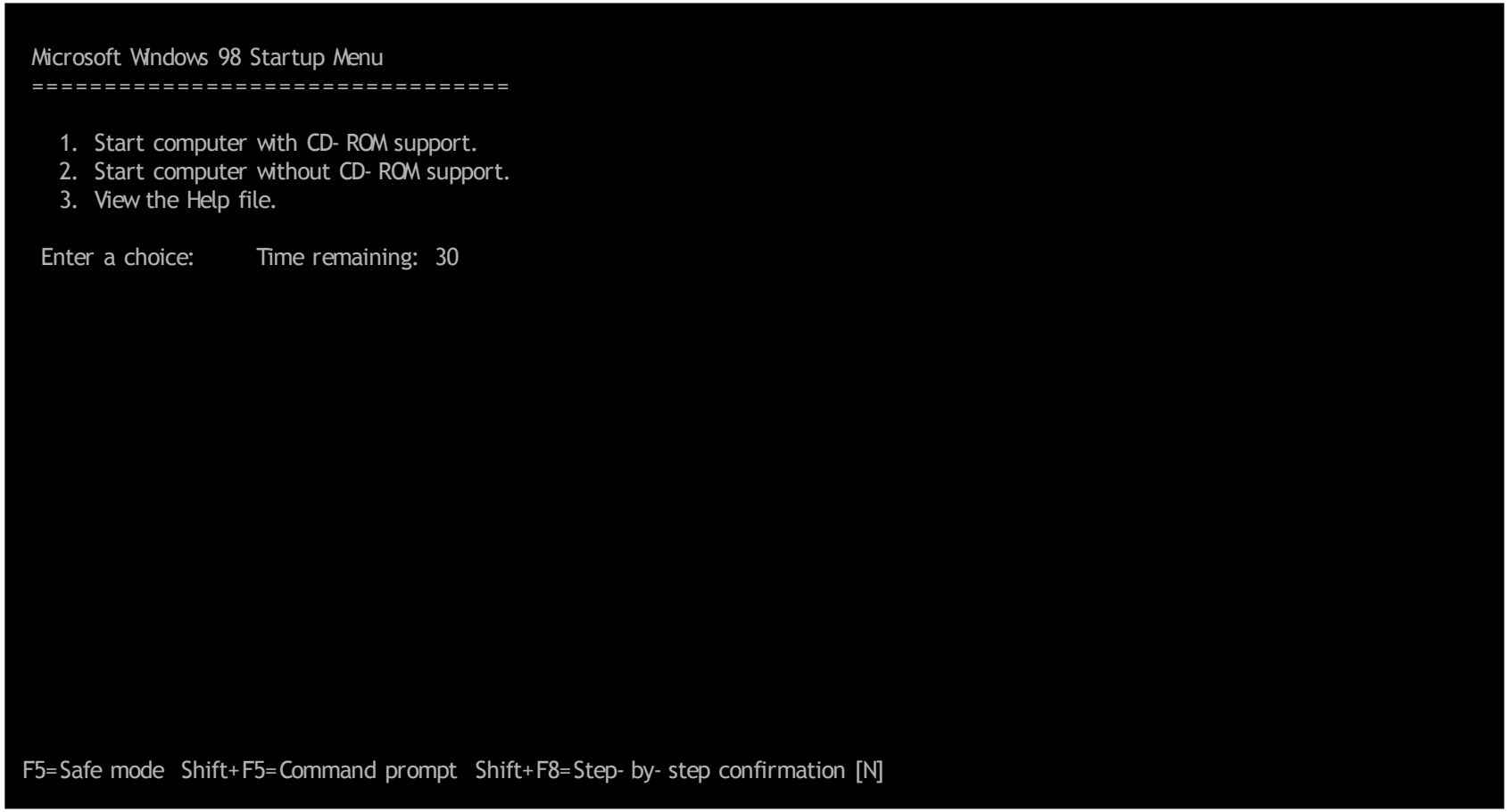
Enter the BIOS screen by pressing the F1 key when the Samsung logo is being displayed.

FDM, BIOS Update



Change the boot sequence using the Up, Down and Enter Key.
And exit the screen by Pressing ESC key.

FDM, BIOS Update



Connect a bootable USB memory stick to your monitor and reboot it. The screen shown in the figure above will be displayed. In this screen, press the Shift+F5 key to boot into Command prompt mode.

FDM, BIOS Update

The screen when booting up into DOS mode is completed

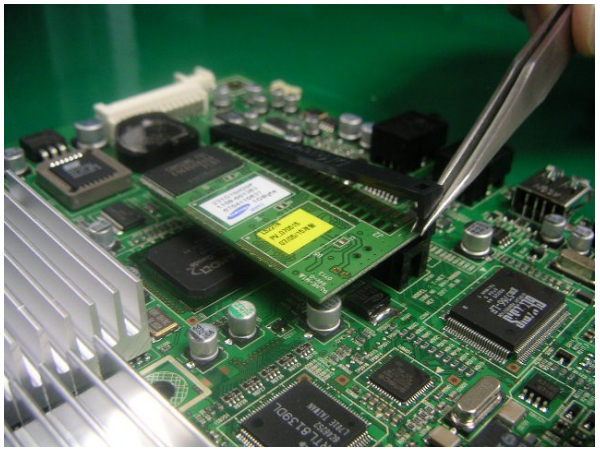
2>FDM, BIOS Update

If booting in DOS mode is finished as shown in the figure above, you can update the BIOS and FDM using the same update method as for a PXE server, which is described above.

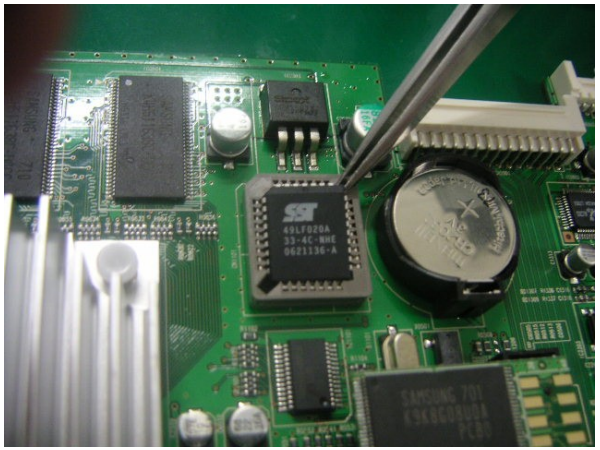
FDM, BIOS Update

3. Replace the FDM and BIOS with new ones

1> FDM



2> BIOS



* Replace the FDM and BIOS with new ones, as shown in the figures.

MUST Check Items after Replacement of the Main PBA

Make sure to check:

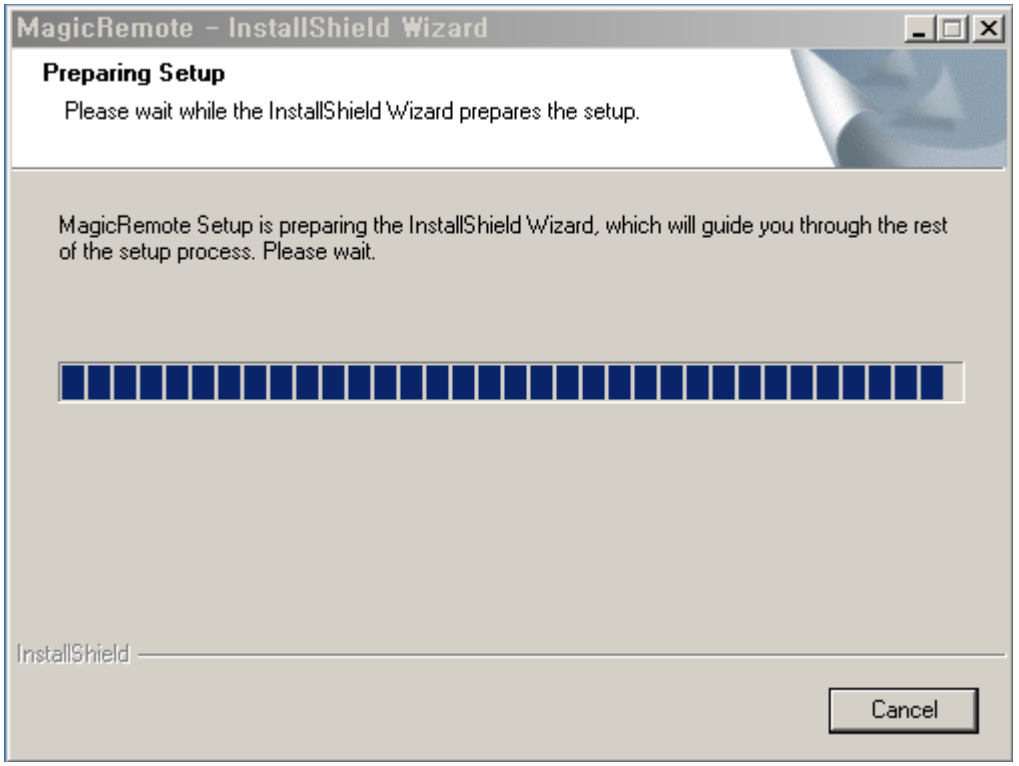
- EDID input (Analog)
- Factory Reset

  - . Press the menu key in the power- on state and then hold
    down the Enter key for an extended time.
    The screen will blink once and the factory reset will proceed.

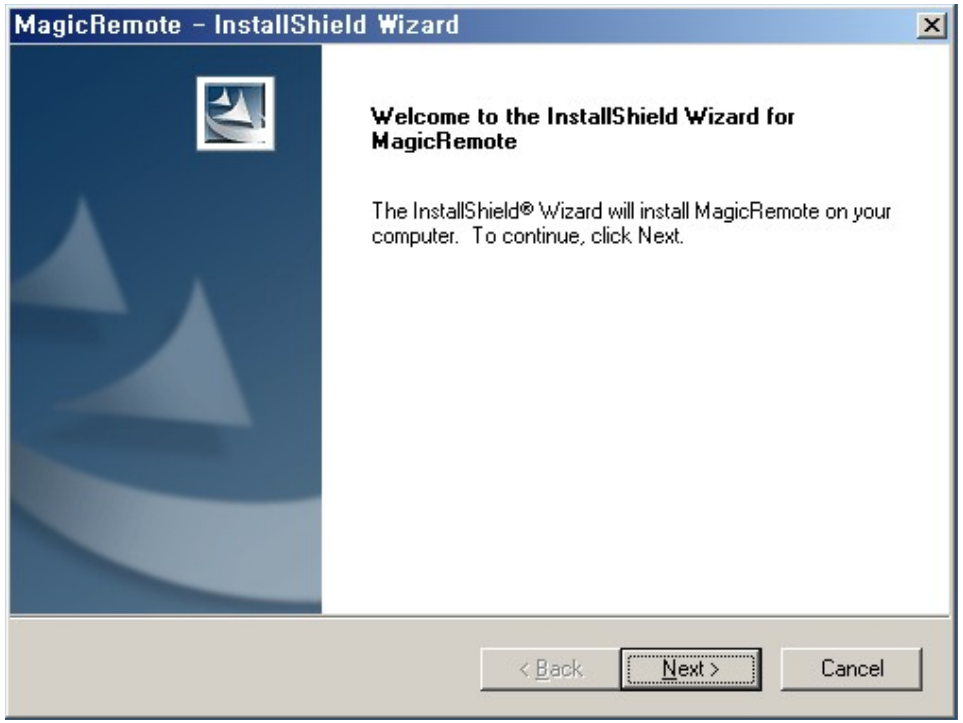
- Check the battery on the main board. Check that the FDM and BIOS ICs exist.
- Check service mode.

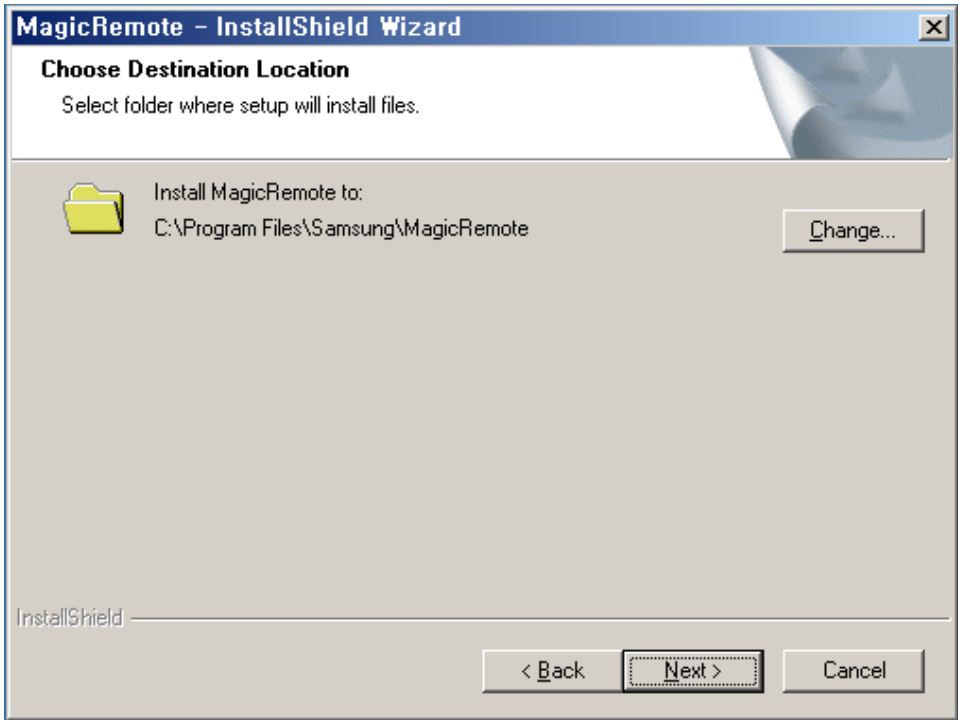
PXE Server

* Run the PXE Server Setup file



PXE Server

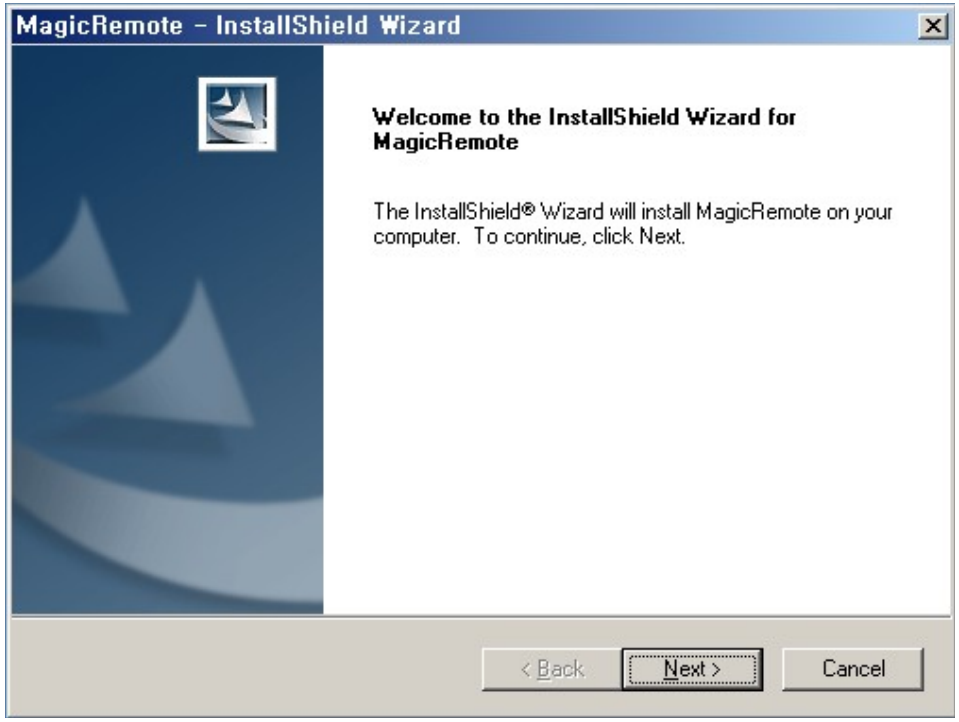


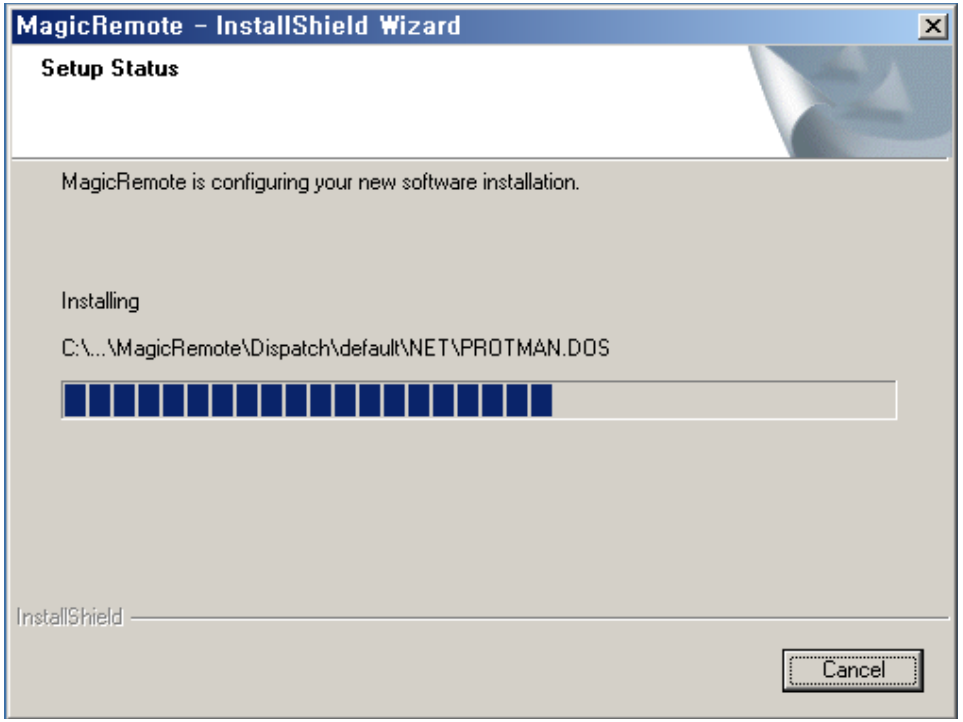


* Click Next

* Specify the installation folder and click Next.

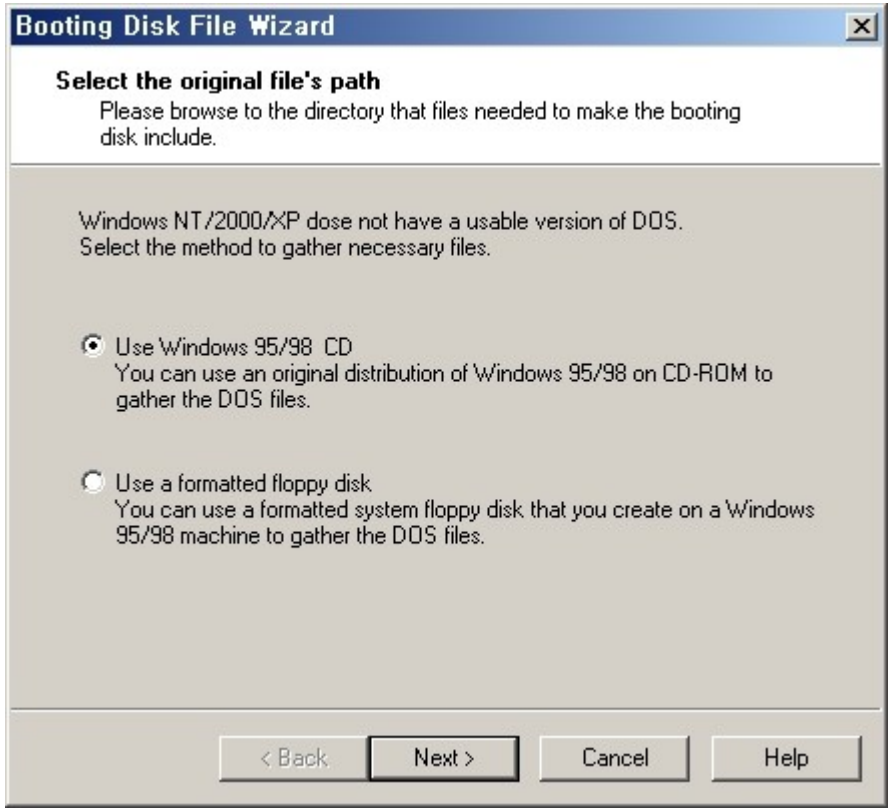
PXE Server

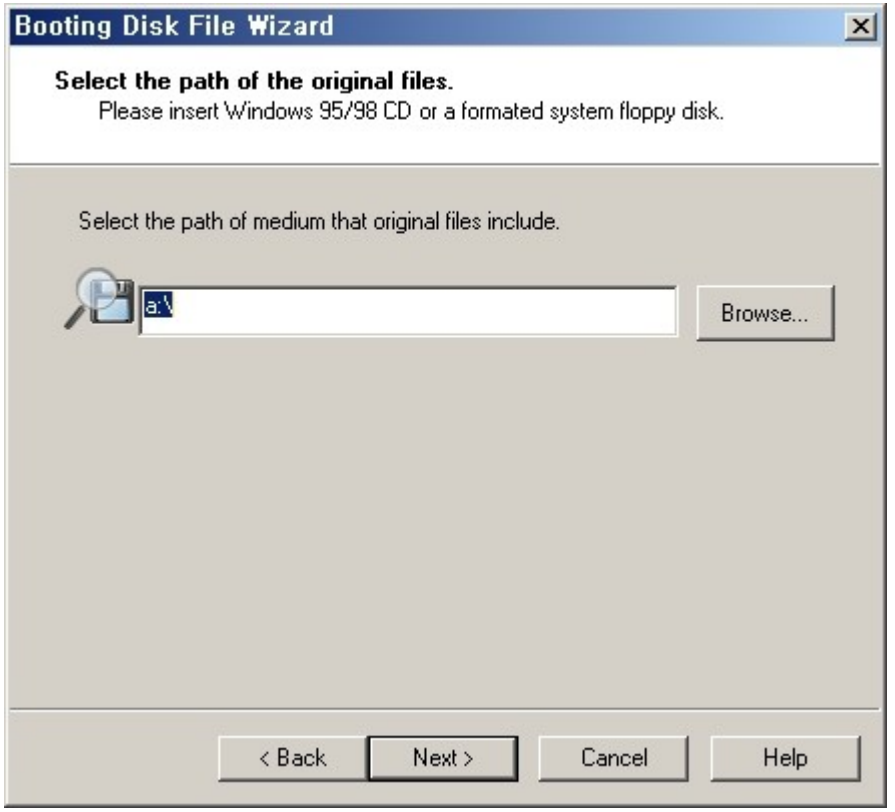




* Click Next

PXE Server

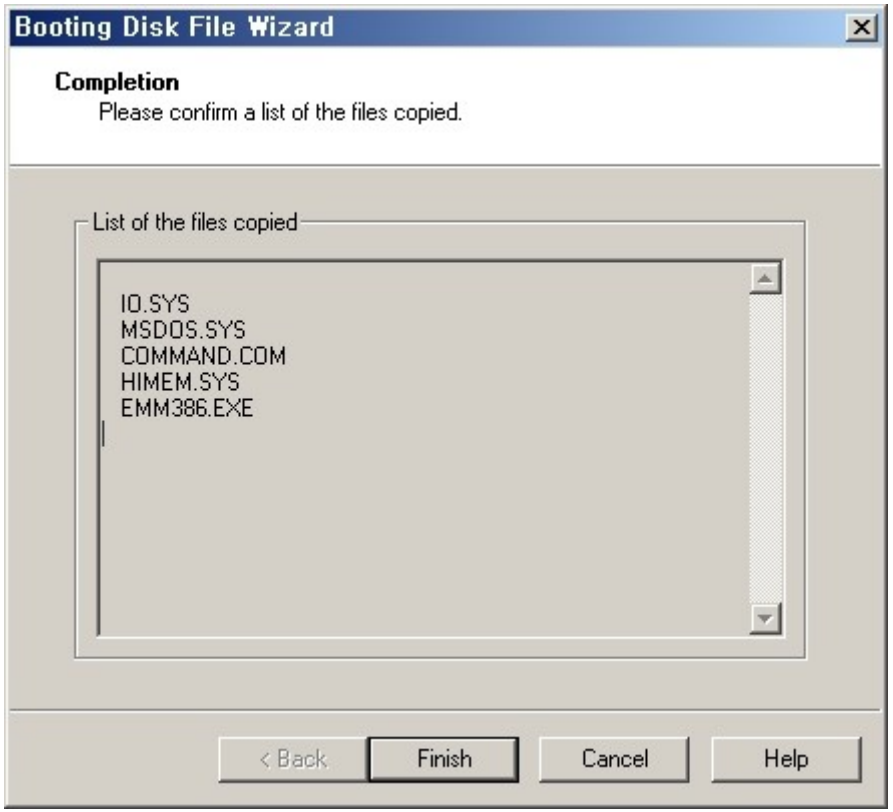




Select the method to retrieve the necessary DOS files.

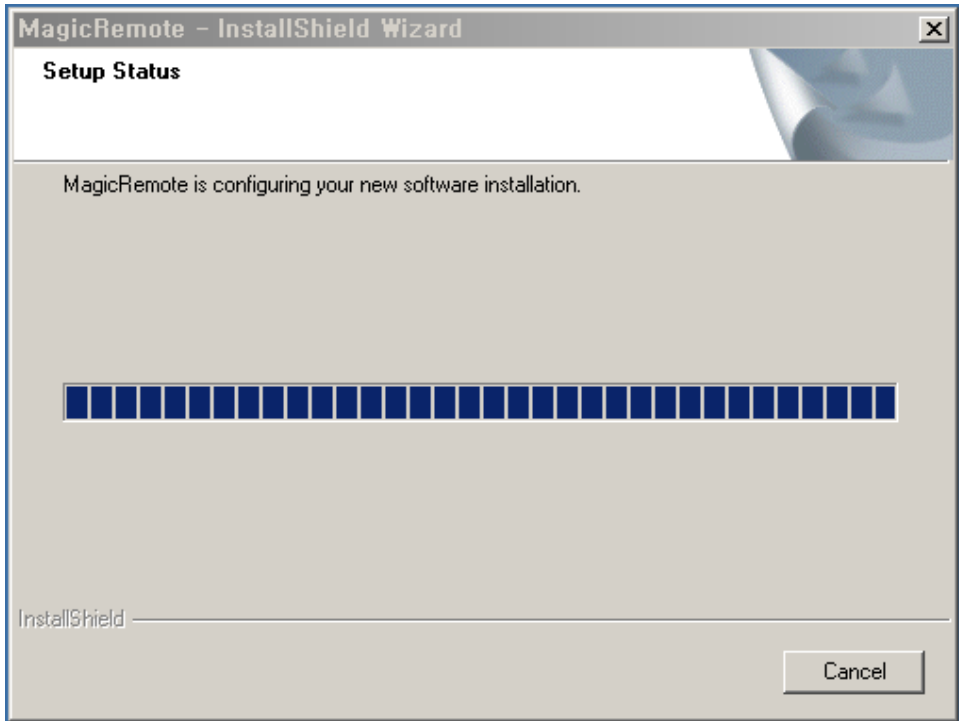
Specify the path containing the necessary DOS files and click Next.

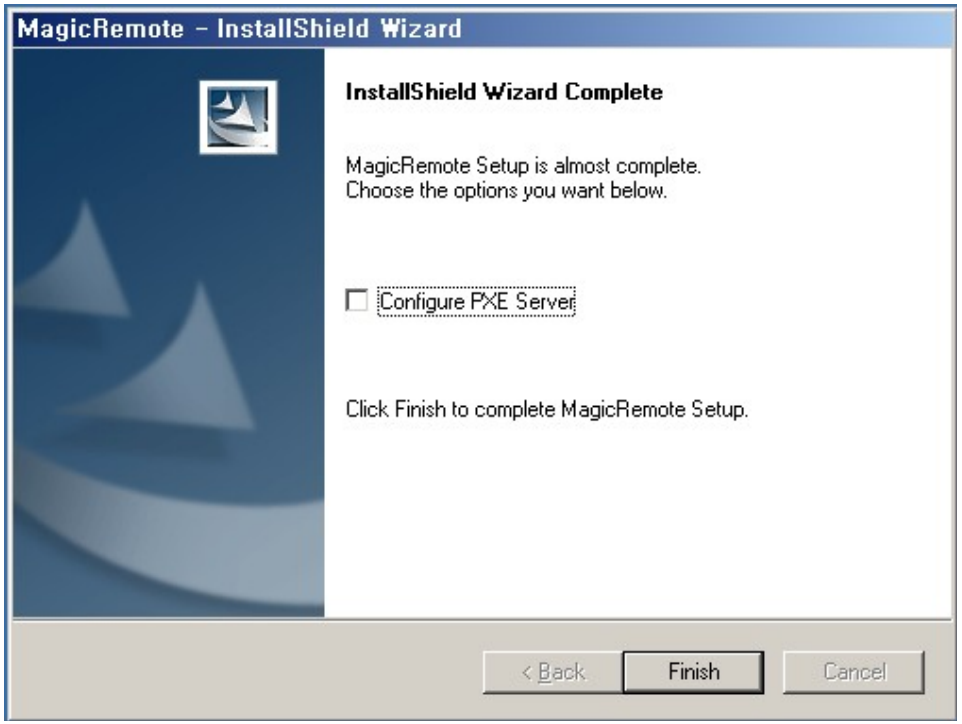
PXE Server



* Click Finish.

PXE Server



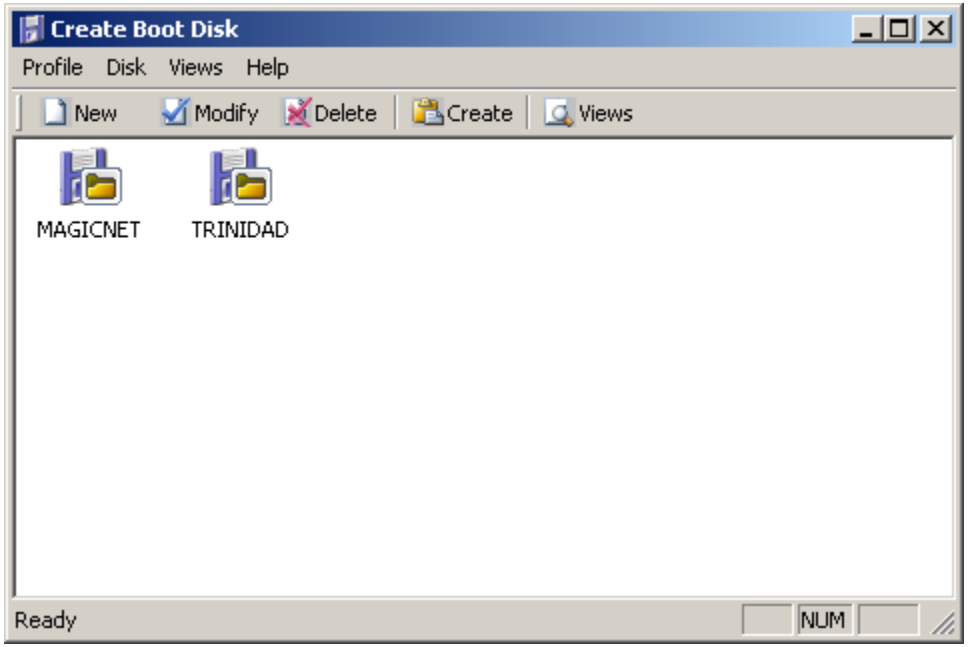


* Setup is completed.

PXE Server

1. **Create Boot Disk**

The Boot Disk Creator is a software tool for creating a boot image file used by a PXE server. You can create a boot image file by configuring the network environment for a client, creating a boot disk, and creating a boot image file from that boot disk.



PXE Server

Creating a New Profile

You can create a boot disk profile using the Create Boot Disk wizard, and create a boot disk using a floppy diskette.

- New Profile

  Type a name for the configuration and a brief description that helps identify that configuration.
  (*Example: 'Client that uses the RTL8110 network adapter')*

- Select the Network Adapter

  Select the network adapter from the list that matches the client that will use the boot image.

- Network IP Configuration

  Configure the IP settings that fit the TCP/IP protocol configuration of the client. You can select either dynamic allocation (DHCP) or static allocation (Static). In dynamic allocation, the DHCP server gives the client the IP address settings automatically. In static allocation, you have to manually type the IP address, subnet mask, gateway and DNS.

- Configure the Network Connection

  Type the network settings and information which are necessary for the client to connect to the file server.

- Map a Network Drive

  Configure a shared network folder where the boot image is to be stored by specifying the drive connection letter and the folder to share. To map a network drive to the shared folder named 'share' on the host named 'server', enter the following characters in the folder input text box: **\\server\share**

- View Summary

  Displays the summary of the settings you have configured. To change a setting, click the 'Back' button and change the setting. Formatting is required to create a new boot disk. If you do not wish to format your disk, unselect the corresponding checkbox and click 'Finish'. All files necessary for a boot disk will be copied to your disk.

PXE Server

Creating a Boot Disk

You can create a boot disk using a boot disk profile. First, format a floppy diskette and create it as a boot disk by selecting a boot disk profile which contains the network information.

Creating a Boot Image

You can create the boot image file using a floppy boot disk you have created. That created boot image file will be sent to each client from the PXE server. You can also create a new boot image by using the menu items in the 'PXE Server Configuration'.

Getting the Required DOS Files to Create a Boot Disk

When running the Boot Disk Creator program, a wizard is run if the disk does not contain the required DOS files. You can copy these DOS files from a Windows 98/95 CD or floppy diskette.

■ Using a Windows 98/95 CD

You can use your original Windows 98/95 CD, or you can specify the folder on your hard disk where the Windows 98/95 Setup CAB files are stored to access the required DOS files.

■ Using a Floppy Disk with System Files

You can use a floppy disk with system files formatted on a Windows 98/95 PC to access the required DOS files.

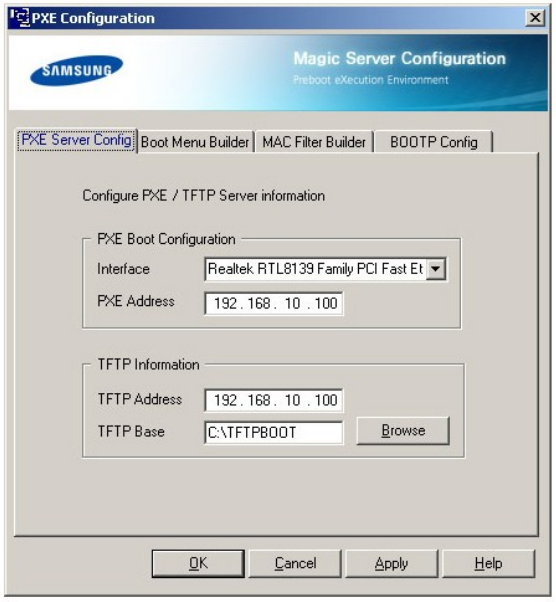
Required DOS files	Optional DOS files
MSDOS.SYS IO.SYS COMMAND.COM HIMEM.SYS	FORMAT.COM, FDISK.EXE, EDIT.COM, MEM.EXE, ATTRIB.EXE, MODE.COM, XCOPY32.EXE

PXE Server

2. PXE Configuration

PXE Configuration is an application that configures both the Magic PXE Service and the Magic TFTP Service which are services run from the PXE server. These consist of the PXE Server Configuration, Boot Menu Editing, MAC Filter Editing, and Bootp Configuration tabs.

(1) PXE Server Configuration



With the PXE Server Configuration tab, you can setup the PXE and TFTP configurations. You can configure the following settings.

Network Adapter

If more than one network adapter is installed on the server, you can select the adapter to use with the PXE server. If an adapter is selected, the server address configured for it is automatically input into the PXE Server Address text box.

PXE Server

PXE Server Address

Specify the address of the PXE server. The PXE server is used to provide network information when PXE boot is configured when the device is powered up.

> **•Nitice**
> The PXE Server processes services using UDP ports 67 and 68. These are the same ports used by the DHCP service. Therefore, if a user installs a PXE server on a server already using the DHCP service, services will not operate normally because the same ports are used. To ensure that a PXE server is not installed on the server where a DHCP service is running, check the running services using the **Administrative Tools > Services** menu in your Windows operating system.

TFTP Address

Specify the TFTP server from which the device downloads the boot image after it receives the network information from the PXE server.

TFTP Root Folder

Specify the folder where the image files to be used on the TFTP server are stored. There are two ways to specify the folder.

■ Type the folder directly
Type the full path of the folder in the TFTP Root Folder text box. The default is **'c:\tftpboot'**.

■ Click the Browse button
Click the Browse button. The Folder Browse dialog box is displayed. Using the Folder Browse dialog box, select the folder to use as the TFTP root folder and click OK. The selected folder will appear in the TFTP Root Folder text box. For more correct input, we recommend using the Folder Browse dialog box rather than typing the folder path directly.

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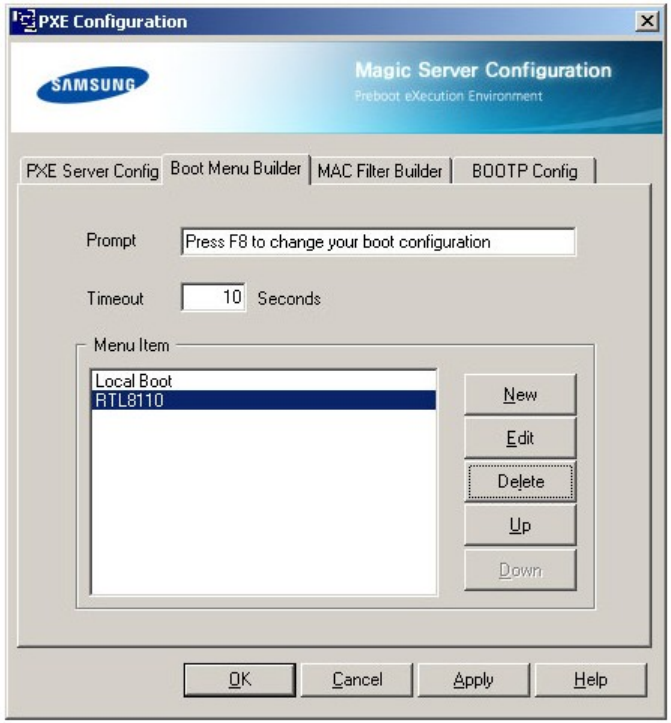
PXE Server

(2) Boot Menu Editing



The Boot Menu is the menu that the client displays. The client receives information on the boot menu from the PXE server together with the network information. The boot menu information is divided into the following three types of information.

Prompt

Specify the message to display with the boot menu. For compatibility, you must use Latin letters only. We recommend including the information on the F8 key as it is used to select a menu.

PXE Server

Waiting Time

Enter the period of time (seconds) into the Waiting Time box that the client waits after it receives information from the PXE server and displays the boot menu. The range of input values is between 0 to 255 (seconds).

Menu List

This is the boot menu that the client receives from the PXE server and which it displays to the user. If the user selects a menu item and presses the Enter key, the boot image corresponding to the selected menu item is received and processed. You can edit the listed menus using the Editing buttons (New, Edit, Delete, Up, Down) at the right of the menu list. The default menu is Local Boot, which cannot be edited or deleted.

If Local Boot is selected, the client does not boot via the network but boots up according to the boot sequence stored locally. If the booting function is corrupt on the client, it cannot boot up normally.

Editing Features

You can edit the boot menu using the editing buttons. By using these buttons, you can change the configuration and order of the boot menus items. The following editing features are provided:

- **New**

  When clicking New, the Menu Item Properties dialog is displayed. In the Menu Item Properties dialog box, specify the menu title, boot loader and boot image and click Apply. A new menu will be created.

  The default menu title is '*Untitled*'. You must type a new title before changes can be applied. Because menu titles are in English, only English (Latin) characters are permitted when specifying a menu title.

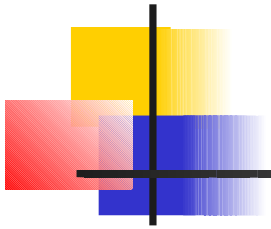
PXE Server

The boot loader is set to ‘boot.ldr’ by default. To use a new boot loader, copy it into the folder which is specified in the TFTF Root Folder text box of the PXE Server Configuration tab and restart PXE Configuration. The new boot loader is added to the list of boot loaders and you can select it from the list.

You can specify the boot image in two ways.

- Using an existing boot image
  A list of image files stored in the TFTP root folder is displayed in the Menu Item Properties dialog box. Click and select the Use existing boot image radio button and select the image file to use from the list box below.
- Using a new boot image
  You can create and use a new boot image other than the existing boot images stored in the TFTP root folder. To create a new boot image, select the New boot image radio button, type the name of the new image file, insert a floppy diskette into your floppy disk drive and click on Create. Then PXE Configuration will create a new boot image with the specified name and copy it to the TFTP root folder and use it for booting.

  You can view the progress while a new boot image is created. Click Cancel to stop the creation while processing.



PXE Server

By clicking Cancel to stop creating a new boot image or when it cannot be finished due to a system error, the following message is displayed:

Boot image creation aborted.

Because the boot image creation was not finished normally, you have to restart a new boot image as previously described.

- **Edit**

  The Edit button allows you to edit a created menu item using the New button. Select a menu item and click Edit. The Menu Item Properties dialog box is displayed and you can edit the content to display.

  With the Edit button, you can edit the boot loader and boot image files for the selected menu item. However; you cannot edit the menu title. If you need to edit the menu title, you have to delete the menu item and re-create a new menu item. Local Boot is the menu item used to allow users to boot the client locally, and you cannot edit the contents for this menu item.

- **Delete**

  Using the Delete button, you can delete a menu item from the menu list. To delete a menu item, select the menu item to delete and select Delete.

- **Up**

  Using the Up button, you can move up the order of the selected menu in the menu list. The topmost menu item is selected automatically to boot the client if there is no user input for the period of time specified in the Waiting Time box.

- **Down**

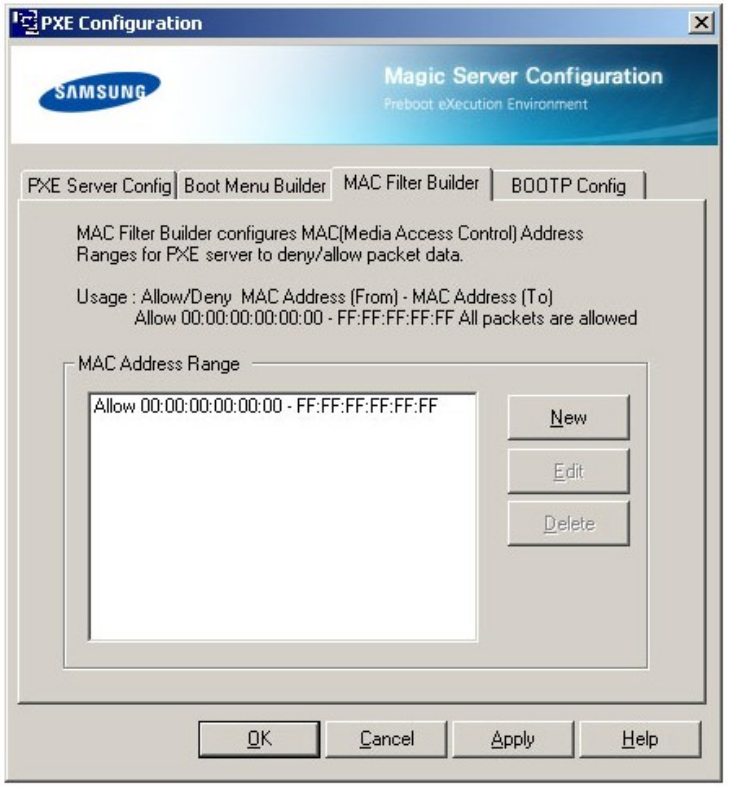
  Using the Down button, you can move down the order of the selected menu item in the menu list.

PXE Server

(3) MAC Filter Editing

Using the MAC (Media Access Control) Filter Editing tab, you can specify whether to allow or disallow a network adapter whose MAC address belongs to a range of specified MAC addresses to access the PXE server in order to prevent malicious access or packets from unauthorized clients.

The default setting is to allow all packets from all MAC addresses, as shown in the figure below.



PXE Server

The MAC Filter Editing tab contains three buttons: New, Edit, and Delete.

New

Using the New button, you can add a new MAC filter. By clicking the New button, the MAC Filter Item Editing dialog box is displayed. In this dialog box, specify a range of addresses to filter and whether to allow/deny access from these addresses, then click Apply. A new filter will be added to the MAC Address list.
When selecting the MAC address range checkbox, the Start and End boxes in the MAC Address Info box are activated so that you can type a MAC address. There are three address formats you can type:

xxxxxxxxxxxx
xx-xx-xx-xx-xx-xx
xx:xx:xx:xx:xx:xx

Where x denotes a hexadecimal number and is case-insensitive.
By unselecting the MAC address range checkbox, the End box is deactivated and you can type a specific address in the Start box.
You can specify whether to allow access or not by selecting Allow or Deny. Select Allow to grant access to the specified address or range of addresses. Select Deny to deny access.

Edit

Using the Edit button, you can edit the selected filter. To edit a filter, select it in the MAC Address list and click the Edit button.

You can edit the MAC addresses and whether to allow or deny access from them. Be careful that the edited addresses do not duplicate or overlap with existing MAC addresses. If duplicated or overlapped, you cannot apply them.

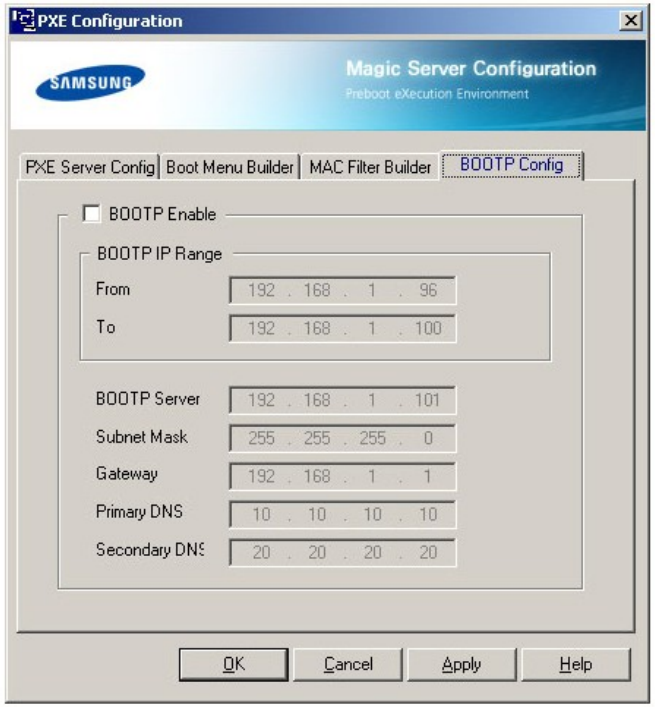
Delete

Using the Delete button, you can delete a filter you do not wish to apply.
To delete a filter, select it in the MAC Address list and click the Delete button.

PXE Server

(4) Bootp Configuration

Using the Bootp Configuration tab, you can allow the PXE server process the Bootp function when the client cannot configure the network settings because there is no DHCP server.



To enable Btoop functionality, select the Use Bootp checkbox and configure the network settings.

PXE Server

Bootp Address Range
Specify a range of IP addresses that the PXE server can allocate to the clients. If no address range is specified, the PXE server searches and sends an unused IP address to each client via the network. If there is no unused IP address, the PXE server cannot provide the client with an address. Therefore, consult your network administrator to check available IP addresses.

Bootp Server
The Bootp server has the same IP address as the PXE server because the PXE server performs the Bootp function. You cannot edit this address.

Subnet Mask

Specify the subnet mask for the client to use. The Subnet mask plays an important role when the client requests an image via TFTP. Therefore make sure to consult your network administrator to set the correct value.

Gateway

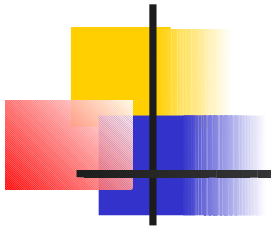
Specify the address of the gateway for the client.

Primary DNS Server

Specify the address of the primary DNS server for the client.

Secondary DNS Server

Specify the address of the secondary DNS server for the client.



PXE Server

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PXE Server

3. □□□□

BOOTP(BOOTstrap Protocol)

Bootp is a booting protocol defined by early IETF. It is less flexible than DHCP, but is a protocol (RFC 951) that allocates and manages the configuration information automatically via a network for devices such as an X Terminal that do not have a local storage media. Under a TCP/IP client-server environment, Bootp enables a client to receive the programs and information necessary for a system boot-up from the server via UDP. It maintains forwards compatibility against DHCP and both protocols can co-exist on the same local network.

Bootstrap

Bootstrap is also known as Initial Program Loader (IPL). This is a startup code that is loaded by the BIOS to initialize the operating environment of a client.

DHCP(Dynamic Host Configuration Protocol)

DHCP is a communications protocol (RFC 1534, 2131, 2132) that dynamically allocates communications related information, for example, the network configurations to the clients via a network at boot-up. It is an extension of Bootp. The DHCP server allocates an IP address according to the request of the client. It can also specify the period of leasing for the allocated IP address.

DNS(Domain Name System)

DNS is the name service system used in TCP/IP. It is a system that converts a domain name, which is composed of a group of characters with a meaningful name to humans, to the matching IP address, which is composed of numbers, so that the user can access a specific host on a specific network using its domain name instead of its IP address. DNS is composed of a group of distributed databases that have a hierarchical architecture, and uses the client-server model.

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PXE Server

PXE(Pre-boot eXecution Environment)
PXE is a client-server interface based on TCP/IP, DHCP, and TFTP. It provides a function that enables a manager at the remote location to configure and boot an operating system onto a client via the network. On a TCP/IP network, if a client requests data with a packet which contains PXE code, the client is provided with the network information via DHCP that enables it to access the server. The server also receives the PXE information and sends the boot information (server and operating system image information) to the client. The client then downloads the operating system image via TFTP and boots the downloaded operating system.

RFC(Request For Comment)
RFC is a technical document concerning Internet technology that is announced by the IETF (Internet Engineering Task Force). These documents describe the detailed procedures and architectures required to implement technologies on the Internet.

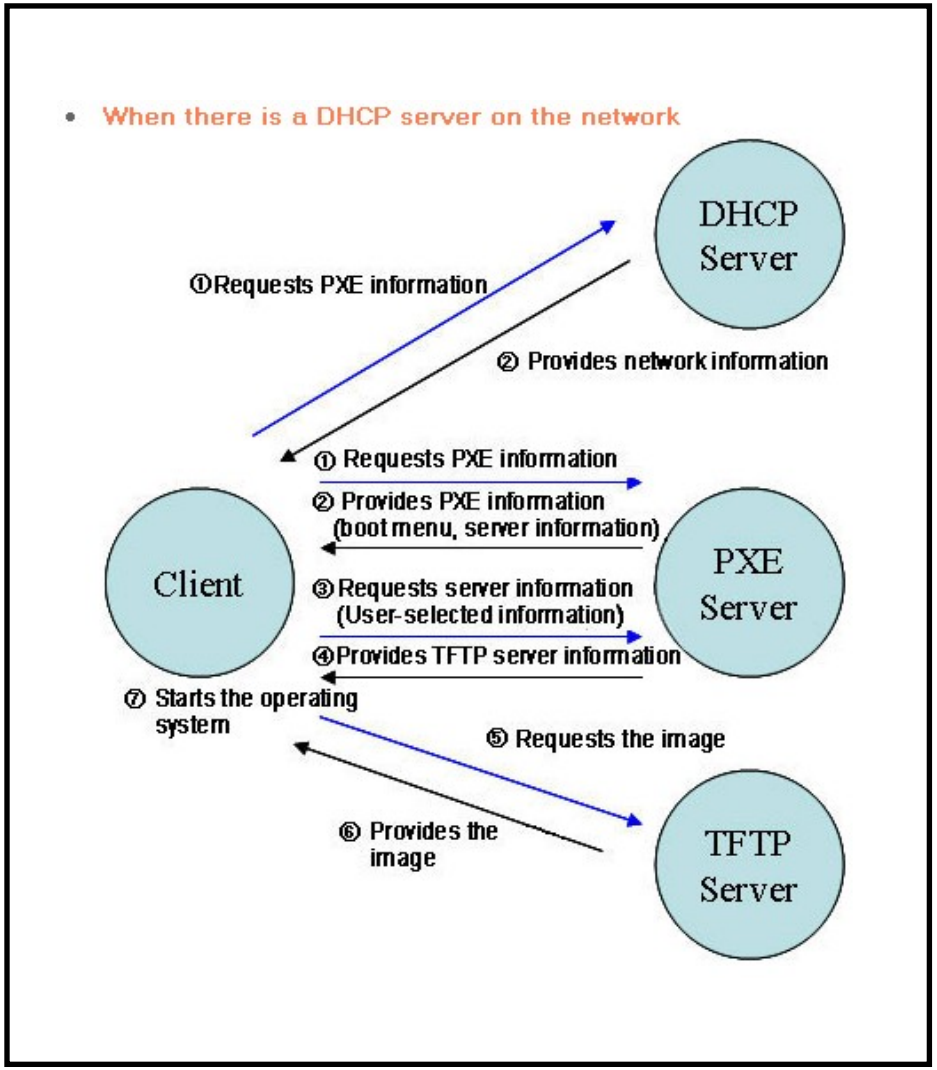
TCP(Transmission Control Procedure)
TCP is a protocol that corresponds to layer 4 of the OSI protocol stock. It, together with IP, makes up TCP/IP. It is a highly reliable transmissions protocol that, by using SEQ and ACK No., arranges the arrived packets according to the order of arrival and performs error correction on them.

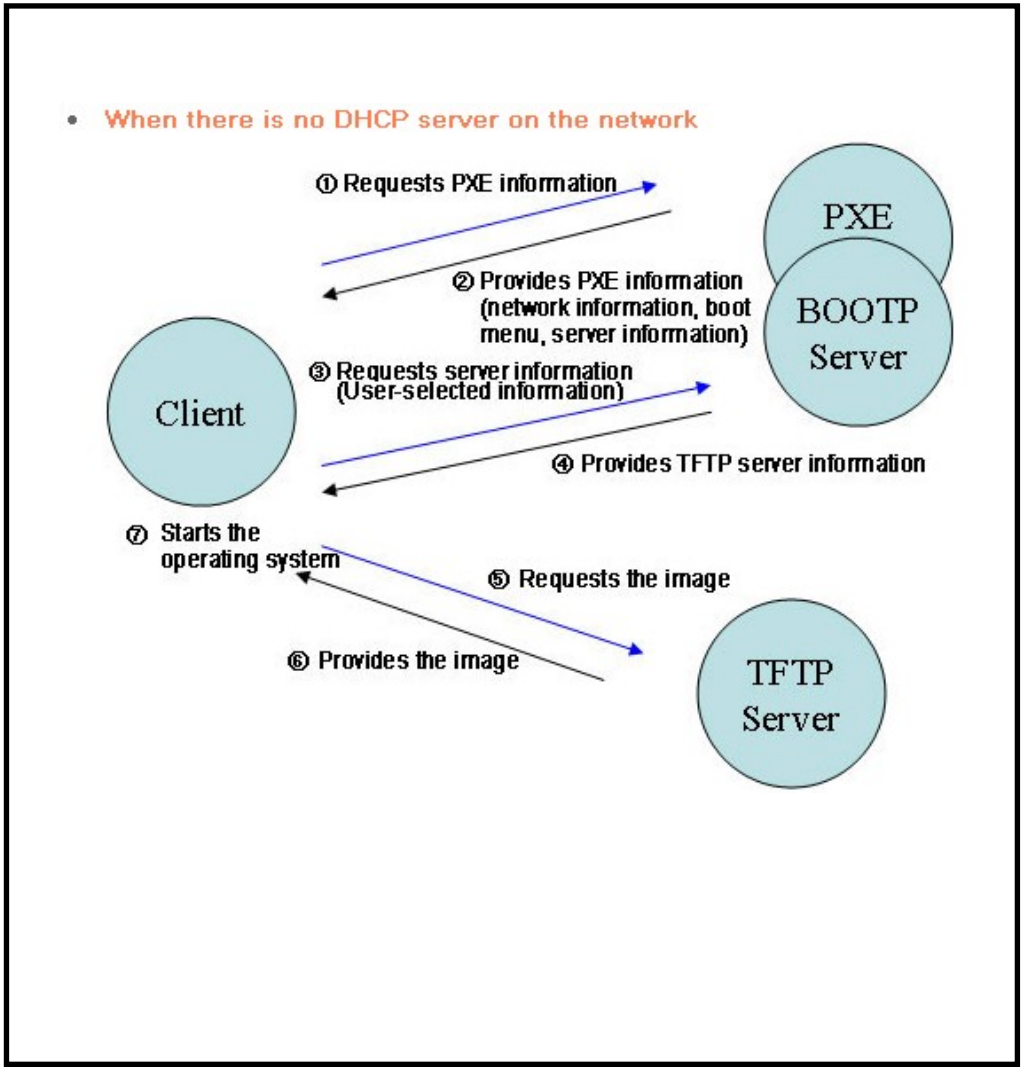
TFTP(Trivial File Transfer Protocol)
TFTP is a filer transfer protocol (RFC 1350) which simpler in usage and has more restricted functions than FTP (File Transfer Protocol). In TFTP, file transfer is processed like this: a client connects to a server and requests a file, the server transfers the requested file to the client, and the client acknowledges on receiving it. The file to be transferred is divided and transferred in a data unit called a ‘block’. If the client receives data with a size smaller than the block size, it processes it as meaning reception is completed. Hence, if a lot of data loss or fragmentation occurs in the network environment, the transfer is failed due to error.

UDP(User Datagram Protocol)
UDP is a communications protocol that corresponds to layer 4 of the OSI protocol stock. In UDP, the sender sends data one way without any signal that it is about to send data or without any signaling processes. Because the sender does not have any responsibility for the client receiving data, it has less reliability, but has a faster transfer speed than TCP.

PXE Server

PXE Boot Sequence Overview





Using Windows XPe

What is XPe Client?

An XPe client uses the Microsoft Windows XP embedded (XPe) operating system. When an XPe client is connected to a Citrix ICA server or another server that can provide the Microsoft RDP service, data for the keyboard, mouse, audio/video and display are transmitted through the network between the client and the server.

Connectable Servers

A Citrix ICA (Independent Computing Architecture) Server
- A Microsoft Windows 2003 Server where the terminal services and Citrix MetaFrame are installed
- A Microsoft Windows NT 4.0 Server where the Citrix MetaFrame is installed

A Microsoft RDP (Remote Desktop Protocol) Server
- A Microsoft Windows 2000 Server where the terminal services are installed
- A Microsoft Windows 2003 Sever
- A Microsoft Windows XP Professional

※ This manual describes the functions provided by the Windows XP Embedded Client. However, it does not explain general functionalities of Windows XP Embedded. For more general information on Windows XP Embedded, refer to Windows XP Embedded Help provided by Microsoft.

Logon

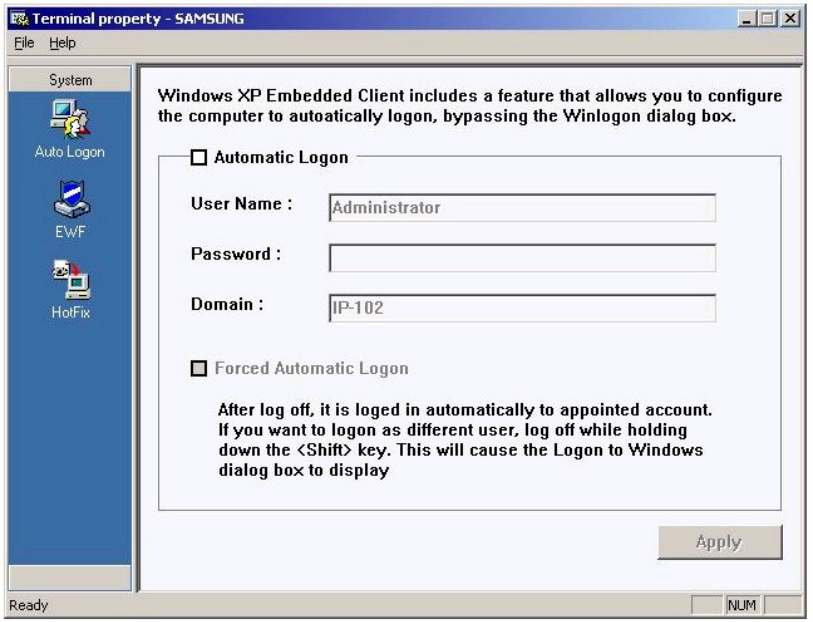
Logon

When the client starts, you can logon to the server by entering your username and password. The default usernames already configured are 'Administrator' and 'User', and their passwords are a space.

Auto Log On

The client can log onto the server using a predefined account without the user information having to be manually entered every time.

Only an administrator (that is, only when you logged on as an administrator) can specify the username, password, and domain for an account for which 'auto log on' is activated. At this time, the password cannot be left empty.



Using Windows XPe

Windows XP Embedded Desktop

User

When a user logs in, the User Desktop appears, as shown in the figure below. The default icons that appear on the User Desktop are Citrix Program Neighborhood, Remote Desktop Connection and Internet Explorer. You can also run this connection from the Start menu. The audio volume icon, VNC server icon and system time are displayed on the User Taskbar.
When logged on as a user, there are many restrictions that protect the system from incorrent user actions. You cannot access the system drives and there are restrictions on configuring properties for them. To configure the client's advanced and detailed settings, log on as an administrator.

Administrator

If you logon as Administrator, the Administrator Desktop appears, as shown in the figure below. The default icons that appear on the Administrator Desktop are My Computer, My Network Places, Citrix Program Neighborhood, Remote Desktop Connection, Internet Explorer, and Recycle Bin. You can also run the Citrix Program Neighborhood, Remote Desktop Connection, and Internet Explorer from the Start menu. The audio volume icon, VNC server icon, Enhanced Write Filter status icon, and system time are displayed on the Administrator Taskbar. The Administrator privilege is required for adding and removing programs.

Log off, Restart, Shut down

- To log off the current session, shut down or restart your client, use the Start menu. Click Start → Shut down. The Shut Down Windows dialog box is displayed. Select an operation from the combo box and click OK. You can also log off or shut down your client using the Windows Security dialog box displayed when pressing the Ctrl + Alt + Del keys. If 'Force Auto Log on' is activated, you will be immediately logged on after each log off.

- The Client Log off, Restart and Shutdown take effect on the operations of the EWF(Enhanced Write Filter). To keep the changed system configuration, you must save a cache for the current system session into flash memory. Failing to do so will cause the changed configuration to be lost when the client is shutdown or restarted. (In the case of logging off, the configuration is remembered when loggin in again.) For more information on the Enhanced Write Filter, refer to the Program Help.

Using Windows XPe

Programs

- XPe Client is a client/server-based computing platform. On this platform, the client accesses the server each time it needs a program and it only receives the user interface screens from the server. Hence, various programs, such as ICA, RDP, and VNC, which are installed on a XPe Client, are used to help the client access the server and perform user tasks.

Citrix Program Neighborhood

Independent Computing Architecture (ICA) allows you to use applications on the server through a wide range of platforms and networks regardless of their basis.
The ICA MetaFrame Server separates the application's internal logic from the user interface. Due to this separation, users only work with the user interface on the client. The actual application is 100% run on the server. In addition, running an application through ICA only uses approximately 10% bandwidth compared to running it locally. By using this feature of ICA, users can do more work on the client than working locally. The core technologies of ICA are as follows:

- Thin Resource
  - Low system requirements needed for running ICA; a computer equipped with an Intel 286 processor and 640K RAM is sufficient. This means ICA can be run on any computer that exists at present.
- Thin Wire
  - The default bandwidth required by ICA protocol is 20 kbps, on average. Therefore, even with a Dial-Up or ISDN connection, a consistent performance is maintained. Any program, however large it is, can be run stably at a low bandwidth.
- Universal Application Client
  - The Citrix ICA protocol separates the user interface from the application. While an application is running on the WinFrame multi-user application server, its user interface is running on the thin client software of WinFrame. Hence, in any environment, it is possible to run applications fast.
- Platform Independent
  - ICA is inherently being operated regardless of the operating system platform. Because the clients for UNIX, OS/2, Macintosh, and Non-DOS are already on the market, you can run Windows applications on these operating systems.

The Citrix Program Neighborhood is a program that manages these ICA connections.To start the Citrix Program Neighborhood, select Start → Programs → Citrix → MetaFrame Access Clients → Program Neighborhood, or double-click the Citrix Program Neighborhood icon.

Using Windows XPe

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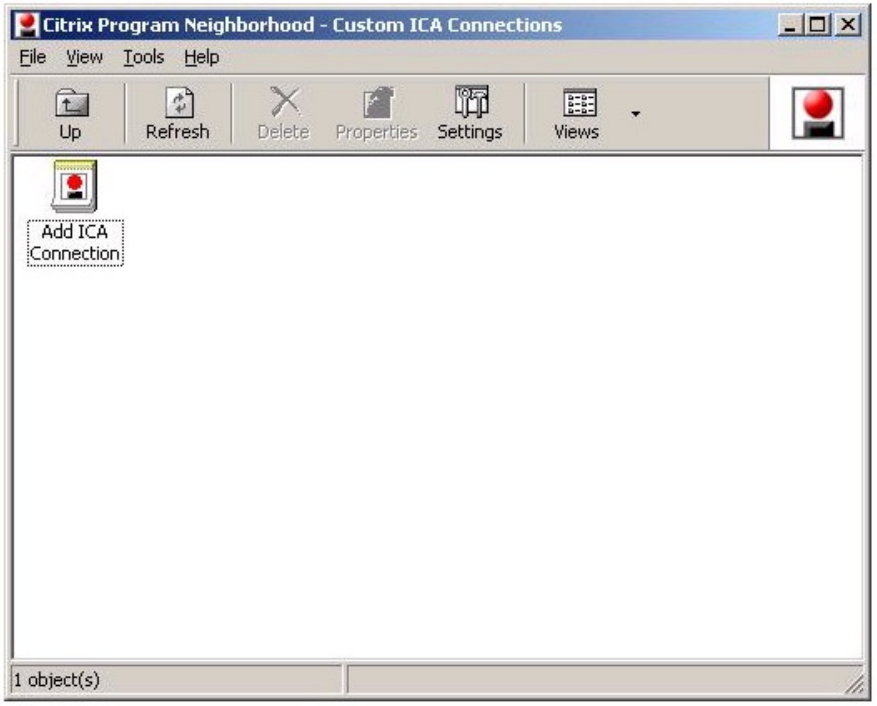
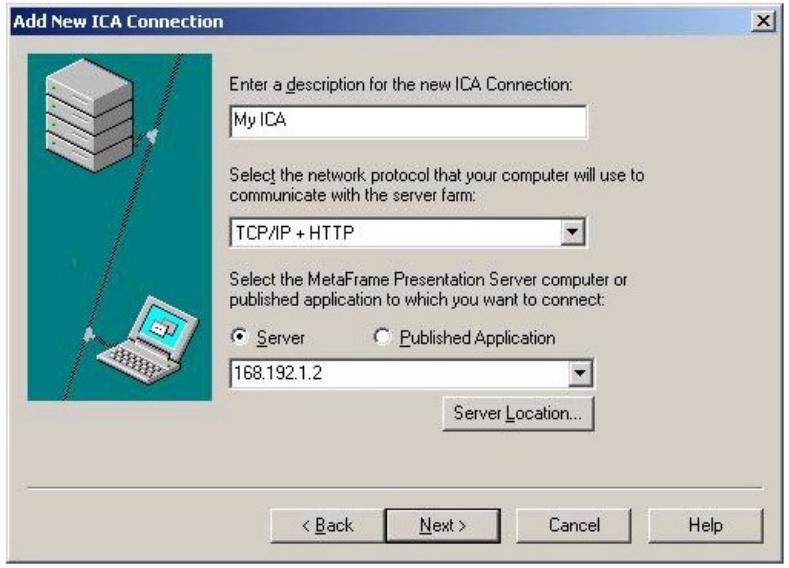
To create a new ICA connection, double-click the Add ICA Connection icon and follow these steps:



1. Select the type of connection to create.

Using Windows XPe

2. Type the connection name and the server name (IP address or DNS name).

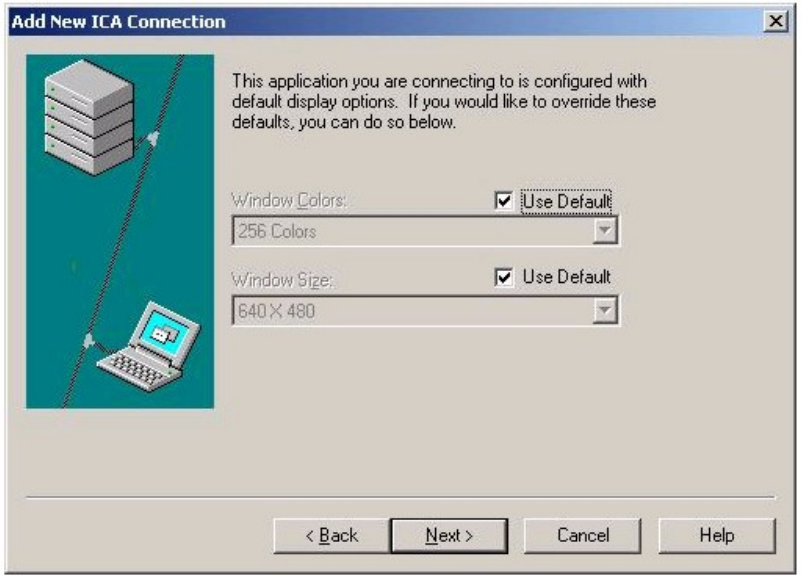


3. Configure the degree of compression for the data to be sent and received, and the degree of reliability for sessions.

Using Windows XPe

4. To login to the server automatically, enter your username, password and domain. If you do not enter them now, you will be prompted to enter them whenever you connect to the server.

5. You can specify the color and size of the window to be displayed.



Using Windows XPe

6. If a connection succeeds, the server's desktop appears on the client. In this step, you can make an application run automatically.

7. Click Finish to complete creating the new connection.

※ For more information on the ICA Client Program, visit the Citrix web site.

Using Windows XPe

The Remote Desktop Connection

You can control a running terminal server or another computer (Windows 95 or later) remotely through a remote desktop connection.

Remote Desktop

- Windows XP Professional or Windows 2000/2003 Server must be installed on the computer to be controlled remotely. This computer is called a host.
- A remote computer running on an operating system later than Windows 95 is required. This remote computer is called a client. The client software for the remote desktop connection must be installed on the client.
- You must also be connected to the Internet. A broadband Internet connection is good for high performance. However, because the remote desktop transmits a minimum set of data including the display data and keyboard data to control the host remotely, a broadband Internet connection is not required. You can run a remote desktop on a low bandwidth Internet connection.

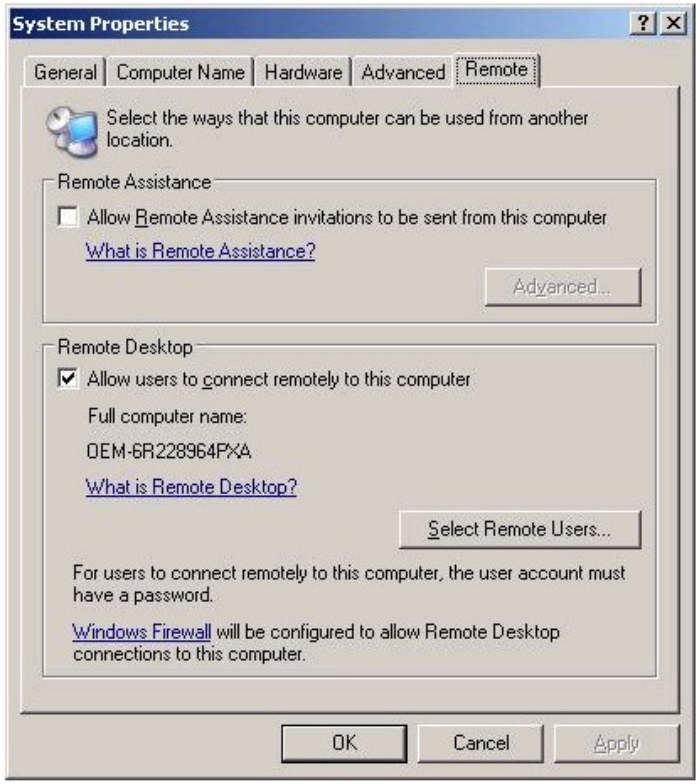
※ When running a remote desktop on Windows XP Professional, you cannot use the operating system of your computer.

Enabling Your Computer as the Host

You must enable the Remote Desktop feature to control it from another computer. You must be logged on as an administrator or a member of the Administrators group to enable Remote Desktop on your computer. Follow these steps:

- Open the System folder in the Control Panel. Click Start, point to Settings, click Control Panel, and then double-click the System icon.
- On the Remote tab, select the "Allow users to connect remotely to this computer" checkbox.
- Ensure that you have the proper permissions to connect to your computer remotely, and click OK.
- Leave your computer running and connected to the client's network with Internet access.

Using Windows XPe



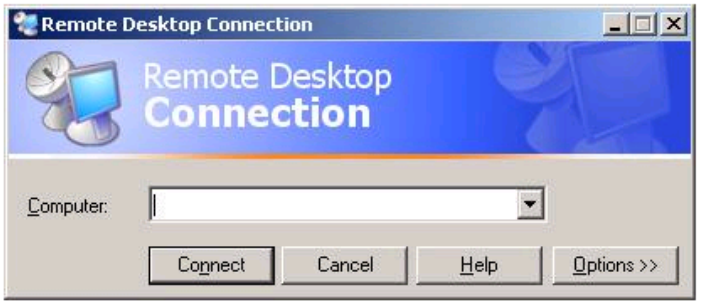
- **Start a Remote Desktop Session on the Client**

  Once you have enabled your host computer to allow remote connections and installed the client software on a Windows-based client computer, you are ready to start a Remote Desktop session. You must first establish a virtual private network connection or remote access service connection from your client computer to your host computer.

1. Click Start, point to Programs, and then click Remote Desktop Connection. Or double-click the Remote Desktop Connection icon.

   The Remote Desktop Connection window will open.

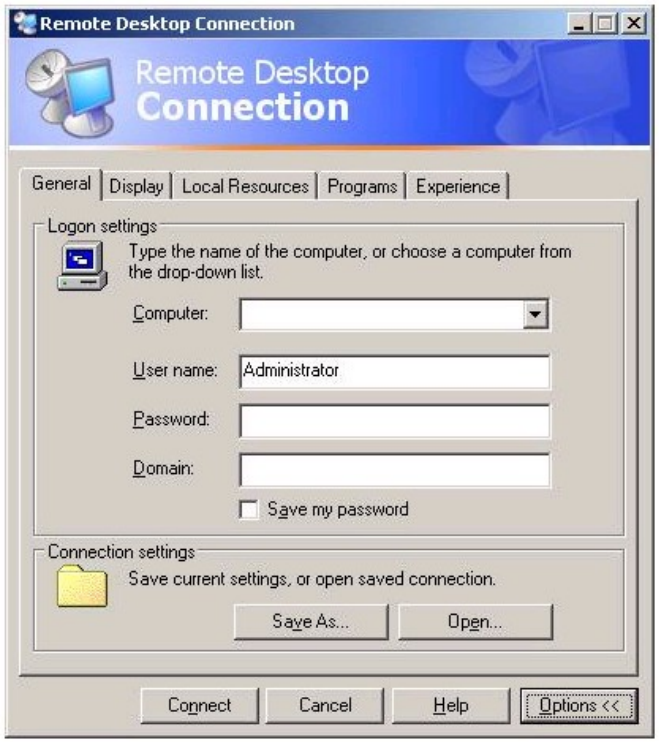
2. Enter the host computer name. You can configure detailed settings by clicking the Options button.



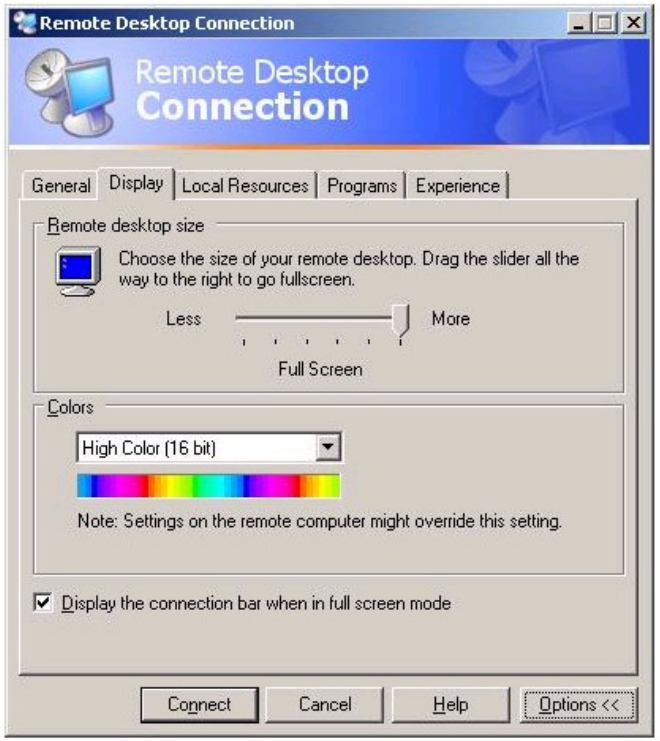
Using Windows XPe

3. Options

- General: Enter the login information to connect to the host computer. Enter your username and password to login to the host automatically.



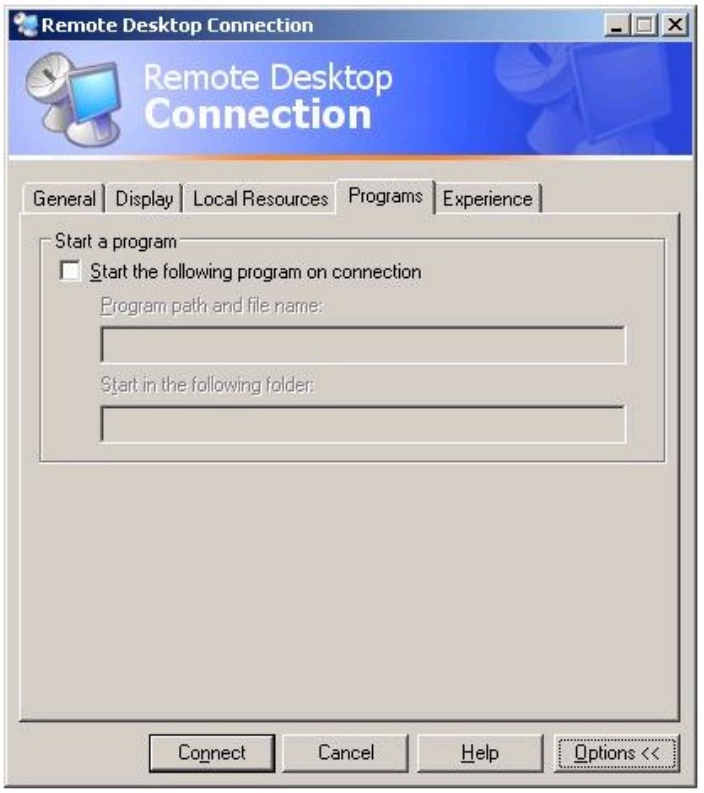
- Display: The Remote Desktop Connection sends and receives compressed screen data. If you set the resolution and color quality to the high option, the speed may become slow.



Using Windows XPe

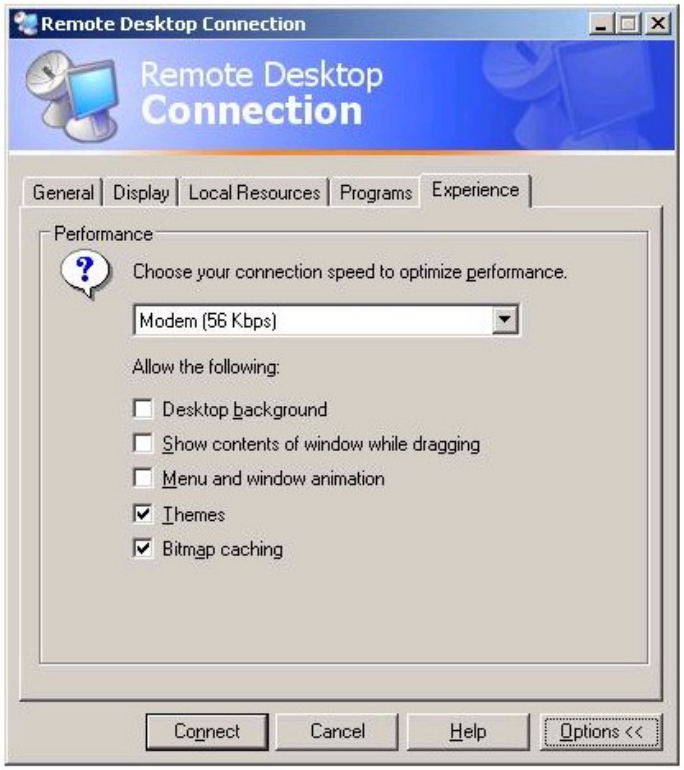
- Local Resource: Specify whether to use the hard disks and ports.

- Programs: Specify whether to display the Desktop or run an application whenever you are connected. The default is 'Desktop'.



Using Windows XPe

- Experience: You can select your connection speed, and select and share environmental options.



4. Click Connect. The Log On to Windows dialog box appears.
5. In the "Log On to Windows" dialog box, type your username, password, and domain (if required), and then click OK. The Remote Desktop window will open and you will see the desktop settings, files, and programs that are on the host computer.

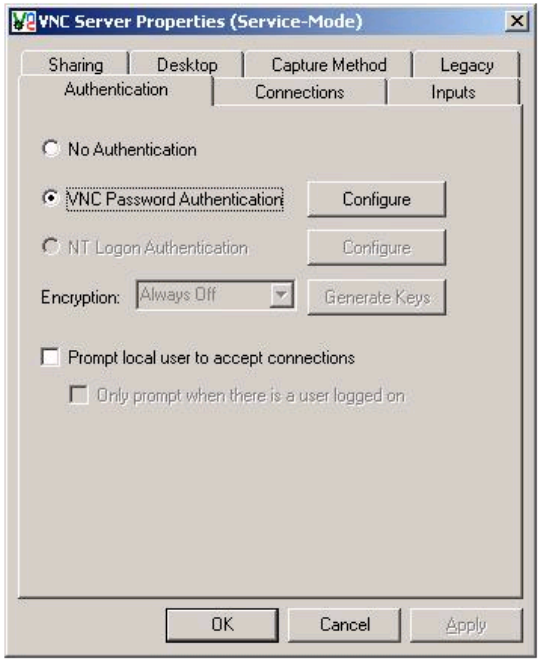
※ For more information on Remote Desktop Connections, visit the Microsoft web site.

Using Windows XPe

RealVNC Server

RealVNC (Virtual Network Computing) is a software program that allows you to connect to another computer on a network and control it remotely. Compared to the Windows terminal service which has a similar function, RealVNC allows only one administrator to connect to the server at a time. That is, if another is connected to the server as an administrator, the previous administrator connection will be disconnected.
In RealVNC, the server and the viewer communicate via the VNC protocol. You must install a RealVNC server on the computer you wish to control remotely, and a VNC viewer on the computer which remotely controls the computer where the RealVNC server is installed. Hence, the RealVNC server program is installed on a XPe client.

By using this program, you do not have to move directly to the client site to resolve its problems. Instead, you can connect to the client from the server and solve problems remotely. For this reason, RealVNC is being used very usefully.
Only administrators can configure the RealVNC server properties. To display the configuration dialog box for RealVNC, double-click the RealVNC icon in the system tray. From this dialog box, you can run a VNC server and configure a password and various properties. The default password is set to 'Administrator'. Note that it is case-sensitive.



Using Windows XPe

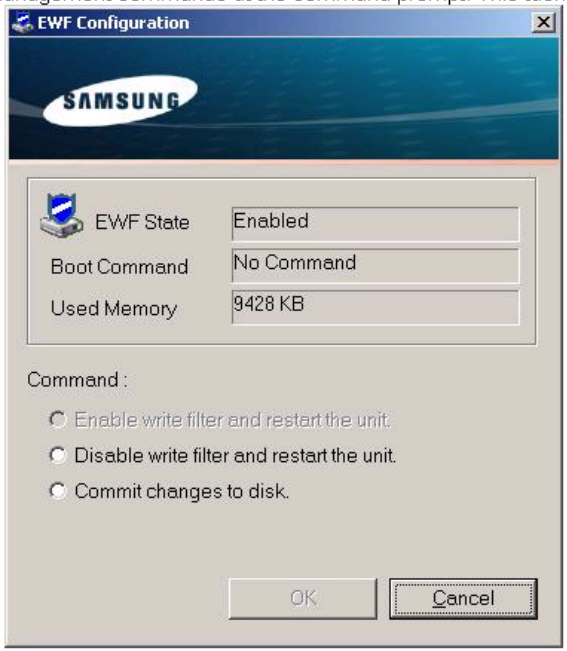
Internet Explorer

A XPe Client includes Internet Explorer. This program is permitted for all users. For more information on Internet Explorer, visit the Microsoft website.

Enhanced Write Filter

Enhanced Write Filter (EWF) protects a flash volume from write access and consequently, preserves the durability of the flash device. EWF provides read and write access through a cache to the client instead of allowing direct access to a flash volume.

If EWF is activated, data is not stored to the flash. The data stored in the cache is only effective while the client is operating. The cached data will be lost when restarting or shutting down your client. Therefore, to store the data written to the registry, favorites and cookie folders, etc., the content stored in the cache should be transferred to the flash. An error message is displayed when it is not possible to write to the cache due to a lack of memory. If this message is displayed, you have to deactivate EWF to flush the EWF cache. The user can double-click the EWF icon on the tray at the bottom right of the screen to call the EWF Manager. A user can also change the EWF configuration by entering EWF management commands at the command prompt. This task requires the administrator privilege.



Using Windows XPe

Enable disk write protection and restart your computer

- If the EWF is disabled, enable it. If this item is selected, the cache is flushed and the EWF is enabled. After restarting your computer, the configurations and file system information for the client are written to a cache. You can also perform this operation by entering "ewfmgr.exe c: -enable" at the command prompt and restarting your computer.

Disable disk write protection and restart your computer

- This item is activated when the EWF is running. If this item is selected, the current states of the client (saved in a cache) are saved to a flash volume and the EWF is disabled. After restarting your computer, the configurations and file system information for the client are written to a flash volume. You can also perform this operation by entering "ewfmgr.exe c: -commitanddisable" at the command prompt and restarting your computer.

Write the changes to a disk

- This item is activated when the EWF is running. If this item is selected, the current states of the client (saved in a cache) are saved to a flash volume. However, the state of EWF will not be changed. You can also perform this operation by entering "ewfmgr.exe c: -commit" at the command prompt.

※ You can view the configurations for the protected volumes by entering "ewfmgr.exe c:" at the command prompt.

In addition, the EWF icon in the system tray shows the current state of the EWF.

 The EWF is enabled.

 The EWF is disabled.

Windows Media Player

The XPe Client includes Windows Media Player 6.4. With Windows Media Player, you can play audio and video files on a website.

Using Windows XPe

Control Panel

The Windows Firewall

The Windows Firewall protect your client further. The Windows Firewall allows you to restrict incoming data to your client from other computers, thus helping to control your client data more effectively. In addition, it also provides a barrier between your client and network connections reducing unauthorized access, viruses, and worms across networks.
You can think of a firewall as a sentinel which identifies incoming data from the Internet and other networks. According to the firewall settings, incoming data to your computer is either permitted or rejected.
The Windows Firewall is, by default, installed and activated on your client. However, your administrator can turn it off. You can choose and select a different firewall. Therefore, it is not required for you to use the Windows Firewall. Estimate the functions of other firewalls and choose the best one to fit your requirements. To install and run a different firewall, you must turn off the Windows Firewall.

You must be logged on as administrator to turn the Windows Firewall on or off. Follow these steps to turn the Windows Firewall on or off.

1. Run the Windows Firewall.

2. Click on one of these options under the General tab.
    - **On (recommended)**: This is the recommended setting for normal use.
    - **On with no exceptions**: This settings blocks all unwanted access to your client, including all requests to programs and services selected in the Exceptions tab. Use this setting when you need to protect your client to the maximum extent.
    - **Off (Not recommended)**: Turning off the Windows Firewall may make your client and network more vulnerable to viruses and intruders.

Using Windows XPe

Configuring Utilities

Local Drive

C Drive

The C drive is used for the system. If there is less than 3MB of free space available, the client OS cannot operate. Therefore, always ensure that there is a sufficient amount of free space available. EWF can help maintain available space by preventing the C drive being written to directly.

D Drive

If the size of the flash memory is larger than 1 GB, the D drive (that is, the flash memory) is used as temporary file storage. By specifying the folder path on drive D to frequently used system files, you can manage the system drive effectively. We recommend using this feature for temporary files such as the paging file, temporary internet files, and event logs files.

Saving Files

Your client uses a fixed size of flash memory. Therefore, it is better to save files to the server rather than to your client.

Mapping a Network Drive

The administrator can map a folder to a network drive. To keep the mapping information after restarting the client, take note of these directions carefully.

- Select the **Reconnect at logon** checkbox in the **Map Network Drive** dialog box.
- If EWF is activated, save the changes to the disk.

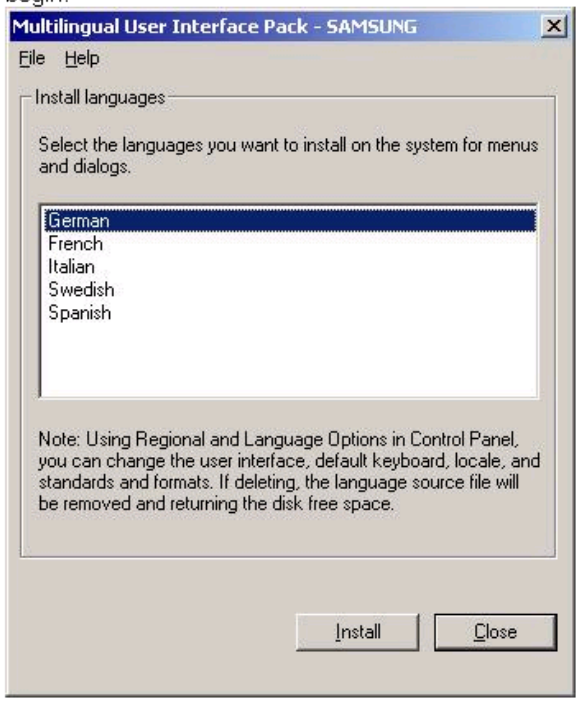
Using Windows XPe

Installing MUI (Multi-language User Interface)

The MUI Setup program helps you set up languages on the XPe client. In addition, you can delete an original language pack to extend the available free disk space. If you want to change the default language, standards or formats, use the **Regional Options** in the Control Panel.

To add a language to your XPe client, follow these steps:

- Log on as an administrator.
- If EWF is activated, you must deactivate it before starting the installation.
- Click **Start** and click **Run**. Type **muisetup.exe** in the Open box and click **OK**. A list of languages that can be installed is displayed as shown below.
- Select the language you want to install and click **Install** from the **File** menu. The installation will begin.



You can delete an original language pack using the **Delete** menu in the **File** menu.
This operation deletes the original language pack only and does not delete the copy installed on your XPe Client.

Using Windows XPe

Recover the System

Overview

The XPe Client provides a recovery function which allows you to revert to a backed up system when encountering a serious problem. You can back up an OS image which is working normally to USB memory or the PXE server. You can revert to a backed up image when your client has one of these problems:

- **When a system file is deleted accidentally or is corrupted**
- **When the client computer is unstable or there is a problem with a device driver**
- **When problems occur, after installing a new program or device**
- **When the client computer is infected with a virus**
- **When Windows XP Embedded fails to start**

How to Recover the System

- **Recovery Using USB Memory**
  By following these steps, you can save all necessary files to USB memory, and boot up with the backed up system on the USB memory and recover the system.
  - Perform system formatting for your USB memory in order to make it bootable.
  - Save the Windows XP Embedded image and the Backup/Recovery Utility which will be recovered later to your USB memory.
  - Boot up with the USB memory.
  - Recover the system using the Windows XP Embedded image and the Backup/Recovery Utility in the USB memory.

- **Recovery Using Network Booting**
  This method is provided through the PXE (Preboot eXecution Environment) server. The PXE sever provides a client/server interface based on TCP/IP, DHCP, and TFTP. It allows an administrator at a remote location to configure and boot the operating system onto a client over a network.
  - Implement a PXE server.
  - Save the Windows XP Embedded image and the Backup/Recovery Utility which will be recovered later onto the PXE server.
  - Boot the client via the network.
  - Recover the system using the Windows XP Embedded image and the Backup/Recovery Utility saved on the PXE server via the network.

※ For more information, refer to the PXE Server User Manual.

Server Requirement

1. Server Requirements

	Connect Client No	CPU	RAM	OS
Minimum specifications	1	P3 400MHz	64Mbyte	Windows 2003 Server
Recommended specifications	1	P4 1.0GHz	256Mbyte	
	2~4	P4 2.4GHz	512Mbyte	
	5~7	P4 3.0GHz	1Gbyte	
	8~10	P4 3.2GHz	2Gbyte	

. Limitations on Windows 2000 server OS

1> Only low color (256 color) is supported for the screen color quality.
2> Auto Login is not supported.
3> The server PC cannot scan USB devices connected to the client monitors.

SynCon

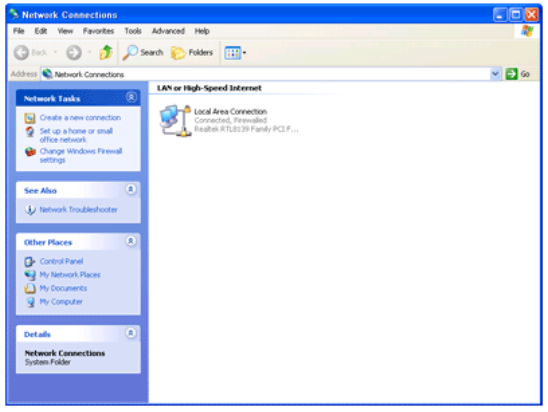
Configuring Your Network

Enabling Automated IP Address Assignment

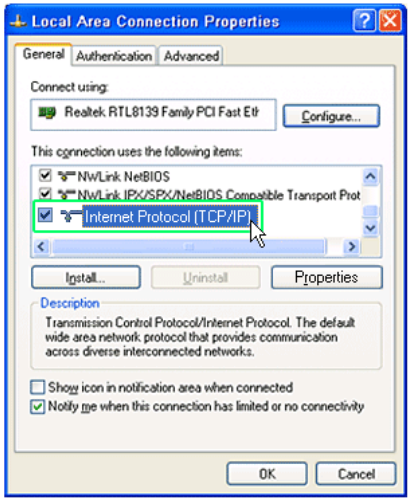
※ Before using **SYNCON**, you have to configure your network **IP** address settings, in order to use **SYNCON**.

1. Select and right-click **My Network Places** on the **Windows Desktop** and then select **Properties** from the displayed menu.

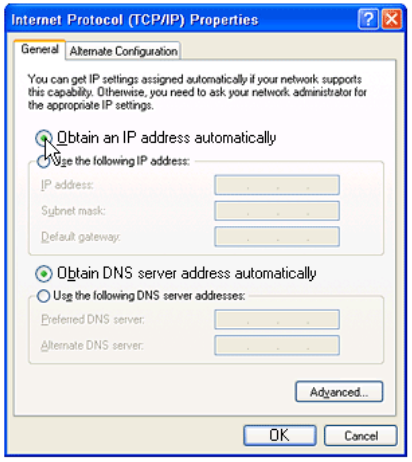
2. Select and right-click **Local Area Connection** and then select **Properties** from the displayed menu.



3. In the **Local Area Connection Properties** window, select **Internet Protocol (TCP/IP)** and click on **Properties**.



4. In the General tab in the **Internet Protocol (TCP/IP) Properties** window, select **Obtain an IP address automatically**, **Obtain DNS server address Automatically** and click **OK**, as shown in the figure below, to complete enabling automated **IP** address assignment.



※ To use a fixed IP address, consult your network administrator.

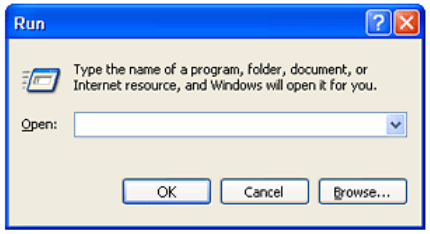
SynCon

Checking your Pc's IP Address

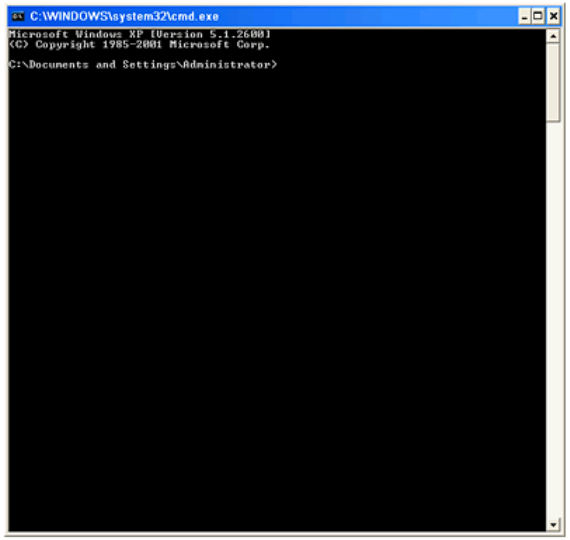
Check the IP address of your PC. If you do not know the IP address of your PC, you cannot use SYNCON's video call function.

1. Click **Start** and **Run**.

2. In the **Run** window, type **'cmd'** and click **OK**.



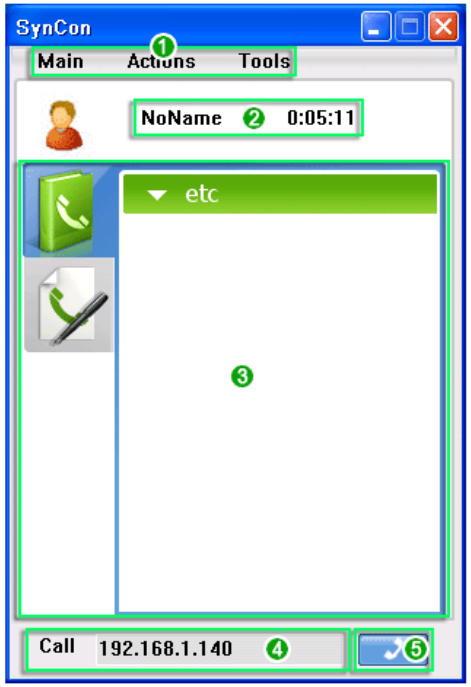
3. The window shown in the figure below is displayed. Type '**ipconfig**' and press Enter to view the IP address of your PC.



SynCon

The SYNCON Screen

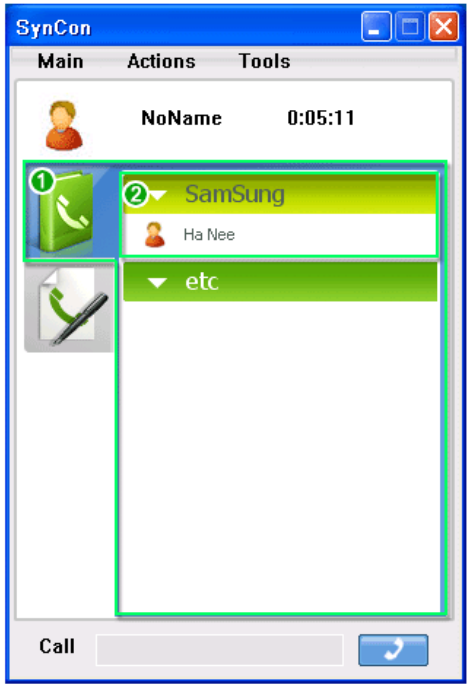
Main Screen



1. The main menu allows you to navigate the basic functions of SYNCON sequentially.
   (In addition, you can right-click the opposite party or group to start a conversation and use the functions available in the displayed menu.)
2. Your user name (conversation name) and call time are displayed when using Instant Messaging.
3. You can view your phonebook and call history.
4. Enter the IP address to which to make a call directly.
5. Click the Send button to connect to the IP address entered in step 4.

Phonebook and Call History Screens

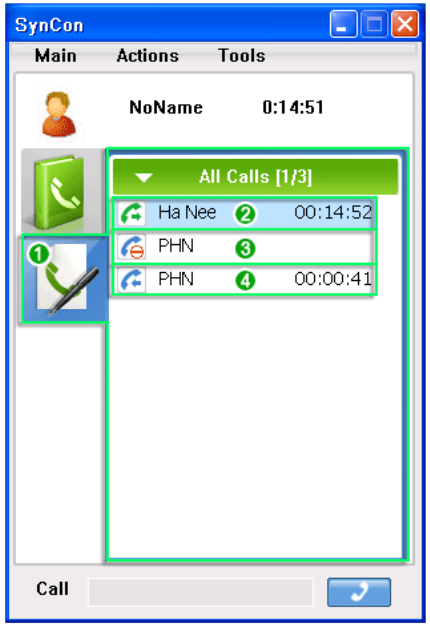
Phonebook Screen



1. Displays the persons registered to your phonebook.
2. Displays the groups in your phonebook.
   - Click a group to view the persons registered to it.

SynCon

- **Call History Screen**

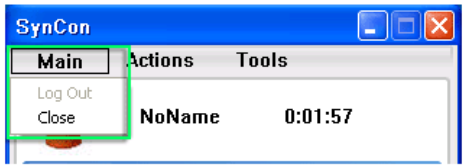


1. Displays the outgoing, incoming, and missed calls. They are sorted in the order of the time that the call was made.
2. Displays the time of calls made. (Outgoing calls)
3. Displays the time of missed calls. (Missed calls)
4. Displays the time of calls received. (Incoming calls)

SynCon

SYNCON Menus

Main

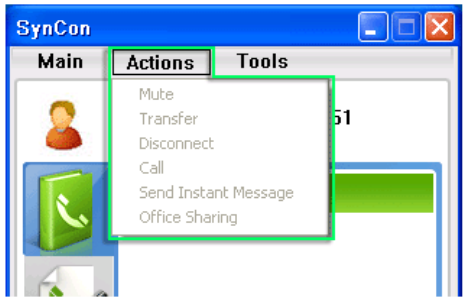


- **Log Out**
  - Logs out from the SYNCON system.
- **Close**
  - Minimizes SYNCON to an icon in the system tray.

※ To exit SYNCON , use the menu displayed when right-clicking the icon in the system tray.

Actions

You can use basic functions, such as making a call, instant messaging, and muting the sound, etc.

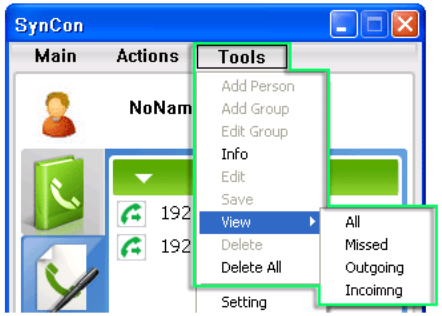


- **Mute**
  - Turns off the speaker sound.
- **Transfer**
  - Transfers an existing call to another user.
    (Unavailable if MCU is turned off in Tools > Settings.)
- **Disconnect**
  - Disconnects an existing call.
- **Call**
  - Makes a call to the opposite party.
- **Send Instant Message**
  - Sends a message to the opposite party.
- **Office Sharing**
  - Allows you to share office files with persons you are chatting to.

SynCon

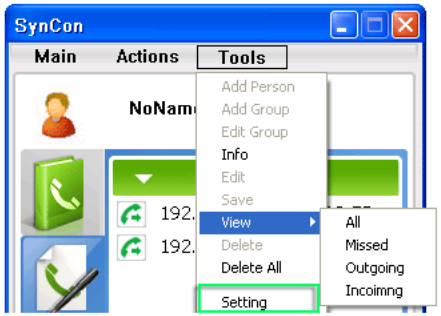
Tools

You can add, edit or delete a person or group and check the IP address of a registered person.

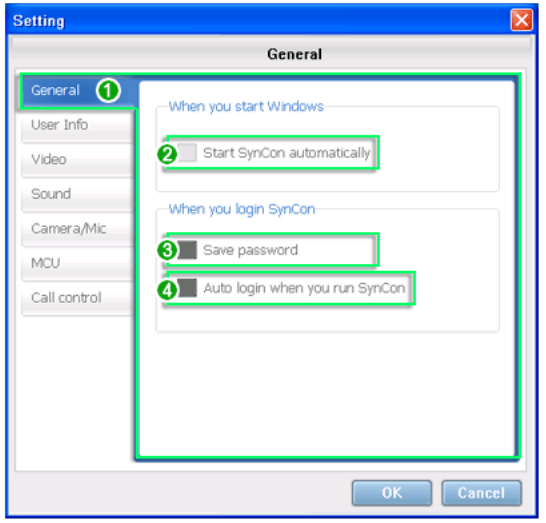


- **Add Person**
  - Adds a person to whom you wish to make a video call.
- **Add Group**
  - Adds a group of persons.
- **Edit Group**
  - Renames a group name.
- **Info**
  - If **Phonebook** is selected, the information for the user selected in the phonebook is displayed.
    If **Call history** is selected, the information for the user selected in the call history is displayed.
- **Edit**
  - Edits the information for the user selected in the phonebook.
    (This is only enabled if the Phonebook is selected.)
- **Save**
  - Saves the information stored in the call history to the phonebook.
    (This is only enabled if the Call history is selected.)
- **View**
  - All :Displays all calls.
  - Missed :Displays missed calls.
  - Outgoing :Displays outgoing calls.
  - Incoimng :Displays incoming calls.
- **Delete**
  - If the **Phonebook** is selected, the selected phonebook entry is deleted.
    If the **Call history** is selected, the selected call history entry is deleted.
- **Delete All**
  - Deletes all Call history entries.

Settings

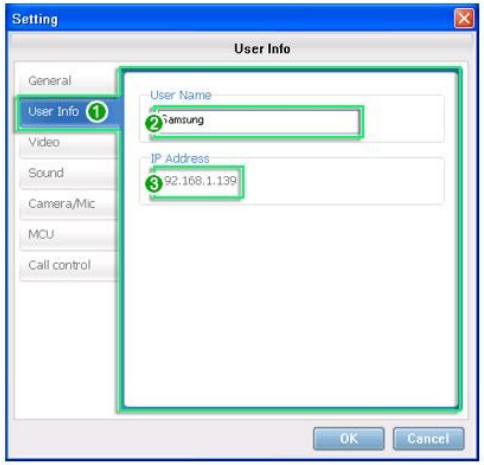


※ You can configure the basic SYNCON environment using the **Tools > Settings** menu item.

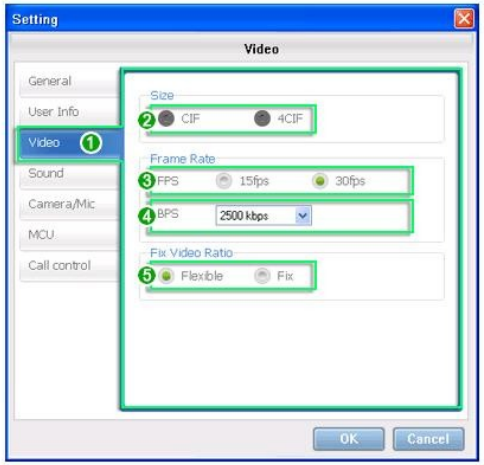


- **General**
  1. General settings
  2. When checked, SynCon starts automatically when Windows starts.
  3. When checked, your password is entered automatically in the Login screen.
  4. When checked, your SynCon is logged into the SynCon system automatically.

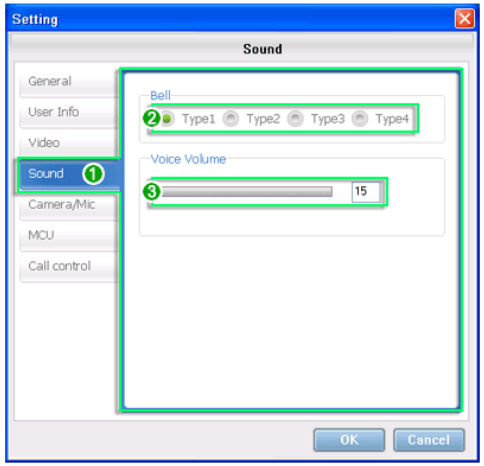
SynCon



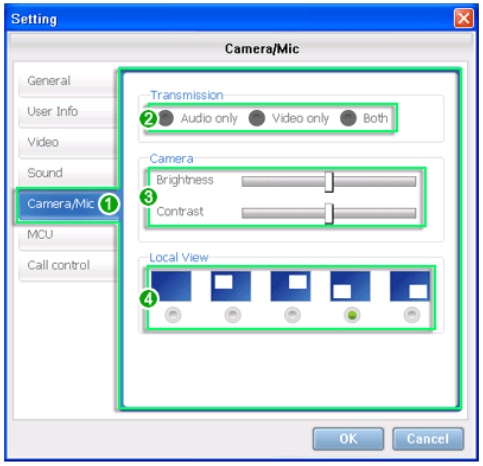
- **User Info**
  1. User information settings
  2. Specify your conversation name when using the instant messaging function.
  3. You can check the IP address of your PC.



- **Video**
  1. Video settings
  2. Set the video size.
  3. Set the video screen quality.
  4. Set the video sound quality.
  5. Set the video aspect ratio.

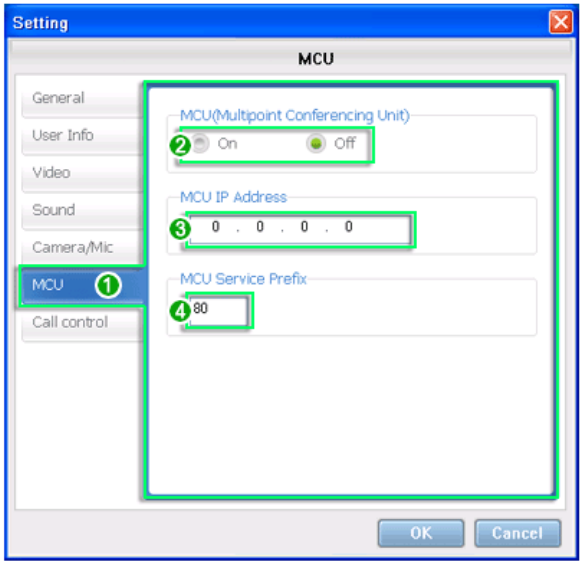


- **Sound**
  1. Bell sound settings.
  2. Set the bell type.
  3. Set the bell sound volume.

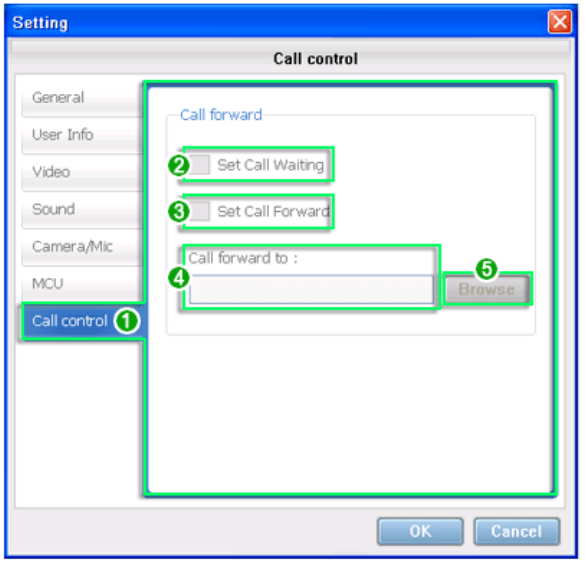


- **Camera/MIC**
  1. Camera/MIC settings
  2. Set the transmission type.
  3. Set the brightness and contrast for the camera.
  4. PIP Screen Location: Set the location of the PIP screen.
     (PIP Screen Off, Top Left, Top Right, Bottom Left, Bottom Right)

SynCon



- **MCU**
  1. MCU settings: You can hold video chatting with up to six persons at the same time.
  2. The MCU function is unavailable if MCU is turned Off.
  3. MCU IP Address: Enter the IP address for MCU.
  4. MCU Service Prefix



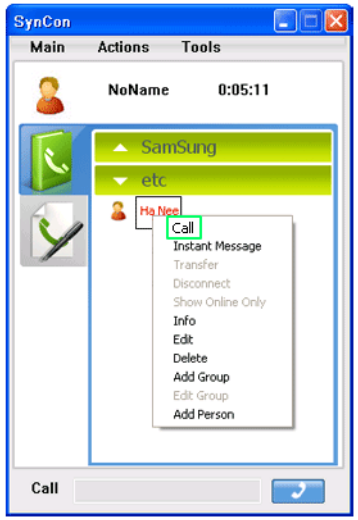
- **Call control**
  1. Call control settings
  2. When checked, call waiting is enabled.
  3. When checked, input field 4 is disabled.
  4. Displays the phone number to which you want forward calls to. You cannot enter a number directly.
  5. If you click Browse, a dialog box is opened.
     -Select a number and click OK. The selected number is displayed in input field 4.

SynCon

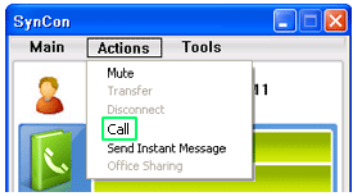
Making a Video Call

Sending/Receiving/Disconnecting a Call

Sending a Call



1. In the Phonebook screen, select and right-click the person to video call and select Call from the displayed menu.

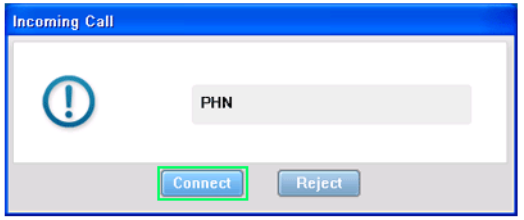


- **Some Ways to Make a Video Call**

  1.In the Phonebook screen, double-click the person to video call.
  2.In the Call history screen, double-click an entry of the person to video call, or right-click it and select Call from the displayed menu.
  3.Select the person to video call and select **Call** from the **Actions** menu in the **SYNCON** main screen.

※ If the opposite party does not accept the call or is not connected to SYNCON, you cannot hold a video call.

Receiving a Call

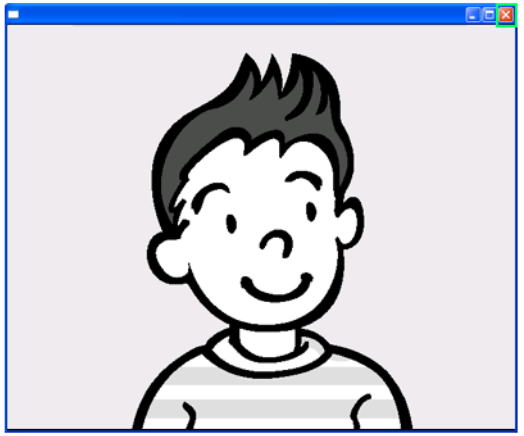


1. If the call rings while you are connected to SYNCON, click the Connect button. The video call will be connected.

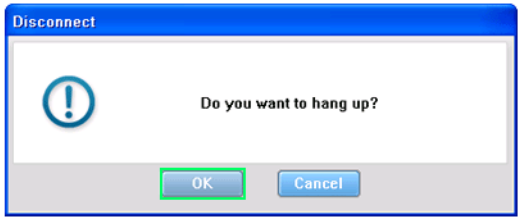
※ If you do not want to receive a call, click the Reject button.

Disconnecting a Call

- **Disconnecting a Call Using the Close Button**

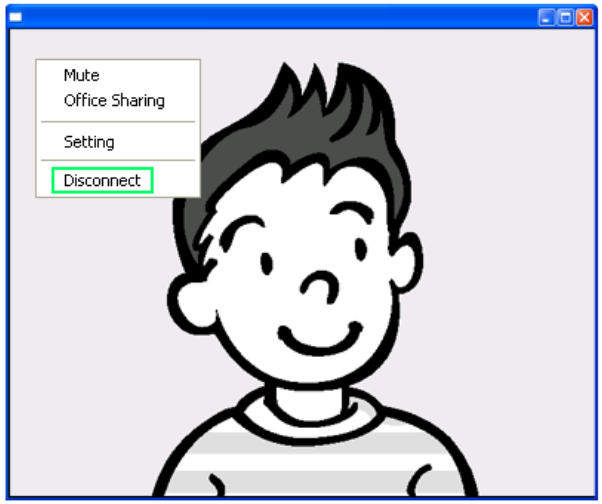


※ If you want to disconnect a video call, click the Close button. The Disconnect window is displayed as shown in the figure below. Click OK.

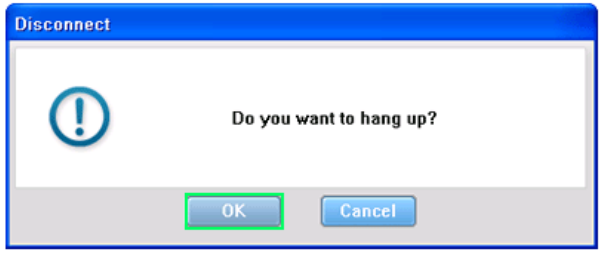


SynCon

- **Disconnecting a Call Using a Shortcut Menu**



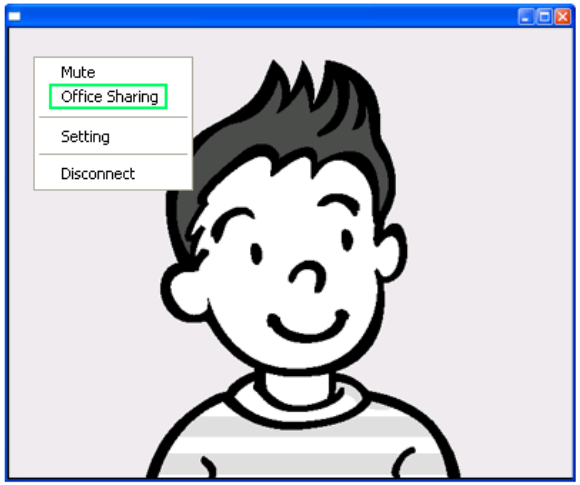
※ If you want to disconnect a video call, right-click on the Video Call screen. The Disconnect window is displayed as shown in the figure below. Click OK.



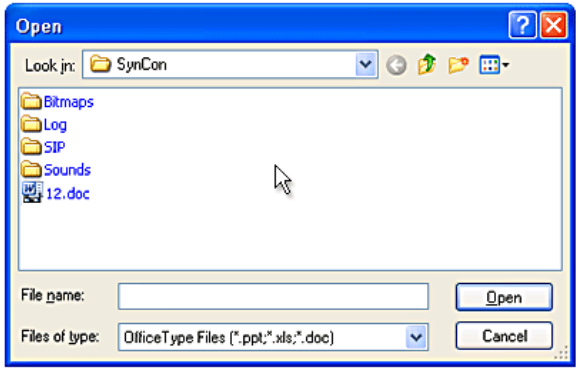
Sharing an Office File

Sharing an Office File with the Opposite Party

1. Right-click on the Video Call screen and select Office Sharing from the displayed menu.



2. The Open window is displayed as shown in the figure below. Select the file you want to share and click OK.



3. The Office Sharing window as shown in the figure below is displayed until the opposite party accepts sharing the office file. If you click Cancel, sharing the office file is cancelled.

※ File sharing can be activated by selecting **Office Sharing** from the **Actions** menu in the SYNCON main screen when a video call is connected to the opposite party.

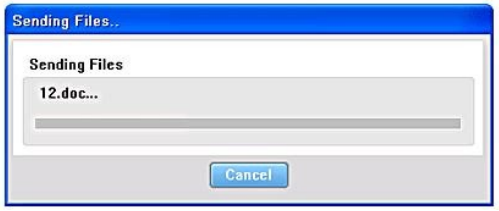
※ If you want to share a file by selecting **Office Sharing** from the **Actions** menu in the SYNCON main screen, they are enabled only if a video call is connected to the opposite party.

Accepting Office File Sharing

1. If the opposite party requests the sharing of an office file, the Office Sharing window as shown in the figure below is displayed. Click OK.

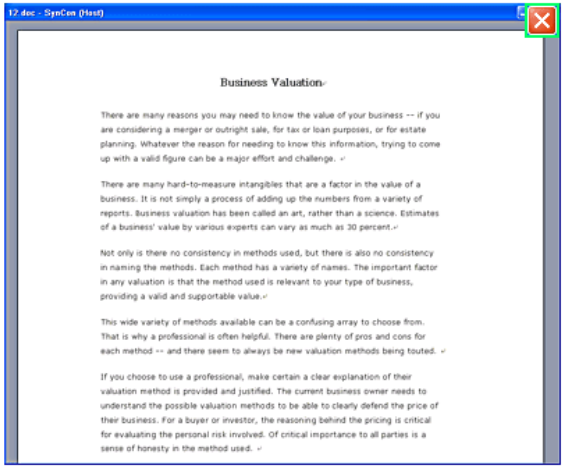
※ Click Cancel if you do not want to share and view the office file.

2. The '**Sending Files..**' window is displayed as shown in the figure below. The **Office Viewer** is run automatically and displays the shared office file.

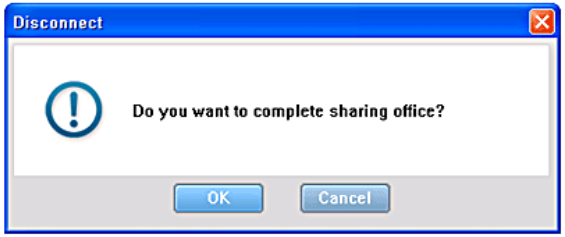


Exiting Office Viewer

1. Click the Close button of the Office Viewer.



2. The Disconnect window is displayed as shown in the figure below. Click OK.

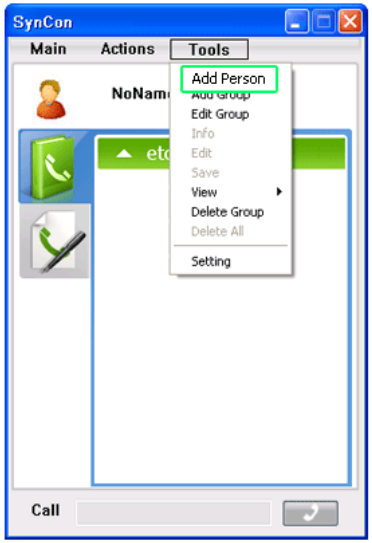


SynCon

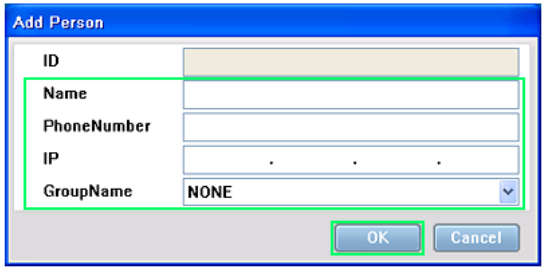
Managing Persons and Groups

Adding and Deleting a Person or Group Entry

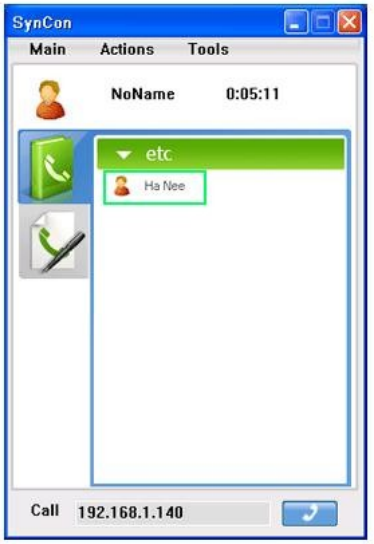
Adding a Person Entry



1. Select **Add Person** from the **Tools** menu.



2. In the Add Person window, enter the information for the person you wish to call and click OK.

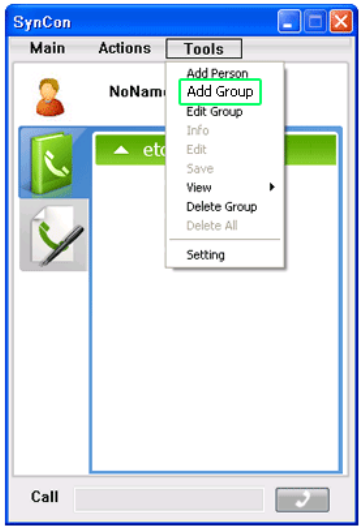


3. You can check that the person is added to the phonebook.

※ You can add a person using the menu displayed when right-clicking on the Phonebook screen.

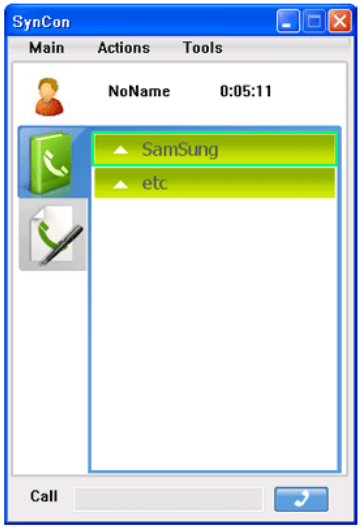
SynCon

Adding a Group Entry

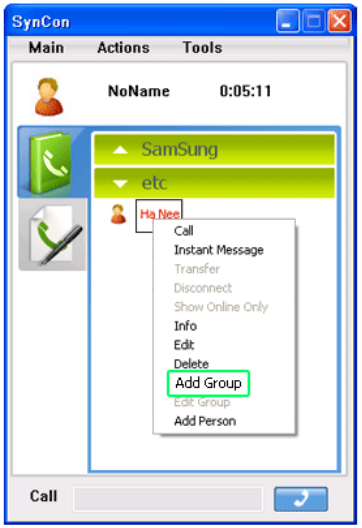


1. Select Add Group from the Tools menu.

2. In the Add Group window, enter a group name and click OK.



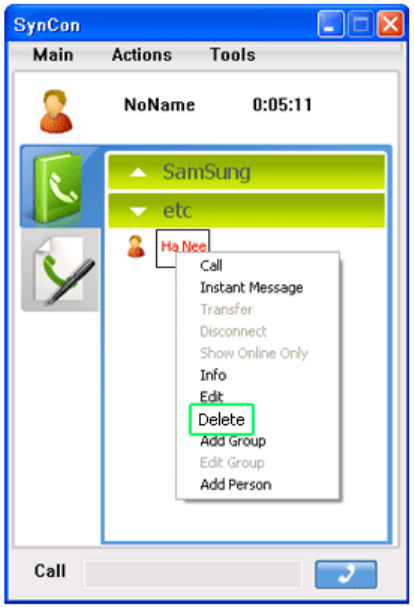
3. You can check that the group is added to the phonebook.



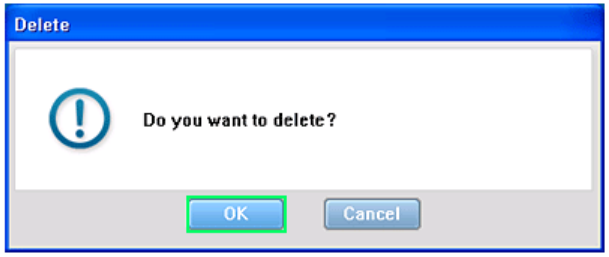
※ You can add a group using the menu displayed when right-clicking on the Phonebook screen.

SynCon

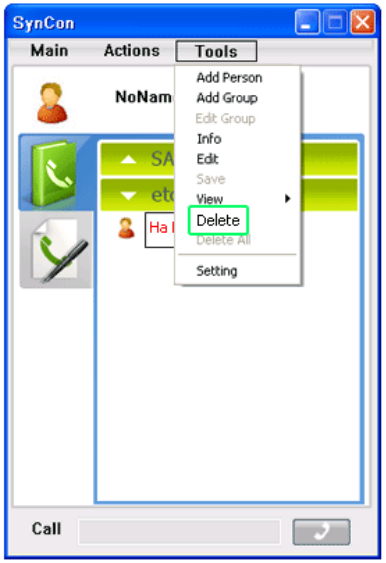
- **Deleting a Person Entry**



1. Select and right-click the entry you wish to delete and select Delete from the displayed menu.



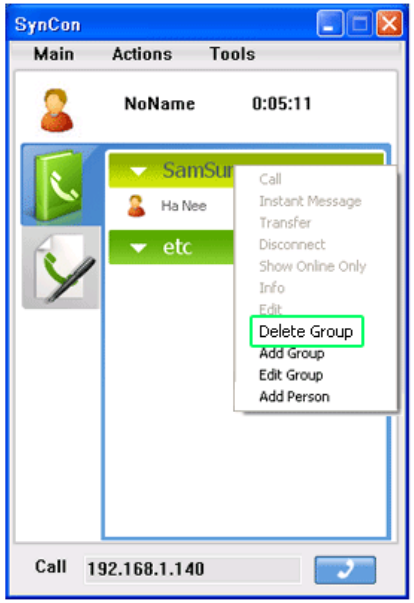
2. Click OK.



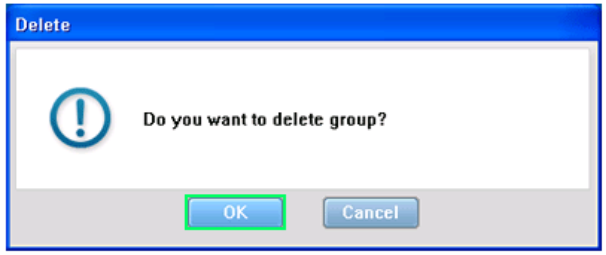
※ You can delete an entry by clicking on it and selecting Delete from the Tools menu.

SynCon

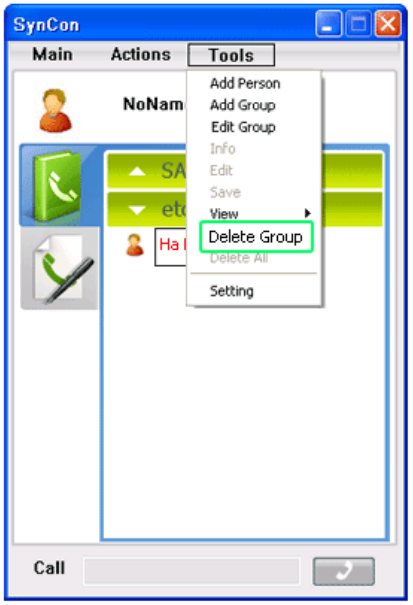
Deleting a Group



1. Select and right-click the group entry you wish to delete and select Delete Group from the displayed menu.



2. Click OK.

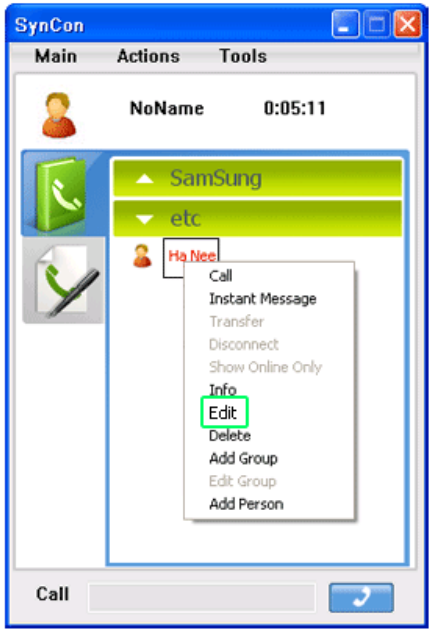


※ You can delete a group entry by clicking on it and selecting Delete Group from the Tools menu.

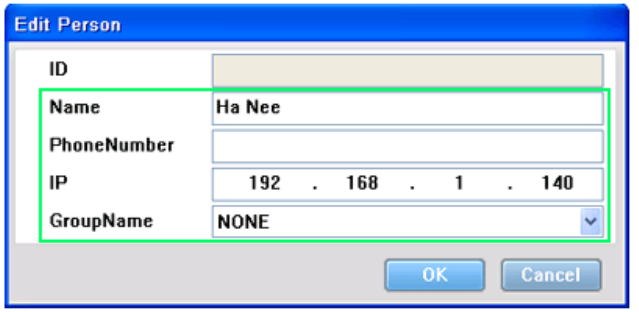
SynCon

Editing/Viewing the Information for a Person

Editing the Information for a Person



1. Select and right-click the entry you wish to edit and select Edit from the displayed menu.

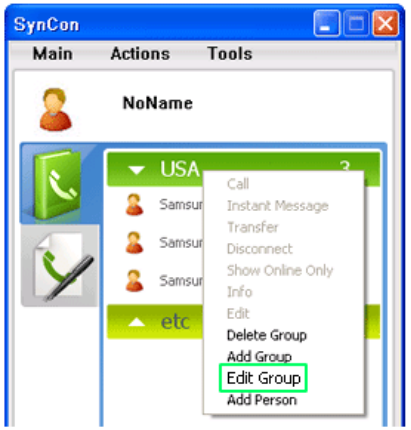


2. In the Edit Person window, change the information and click OK.

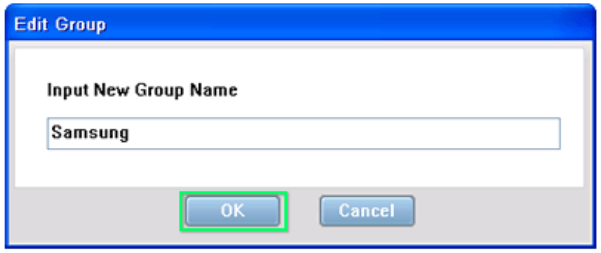
※ You can edit an entry by clicking on it and selecting Edit from the Tools menu.

SynCon

Renaming a Group

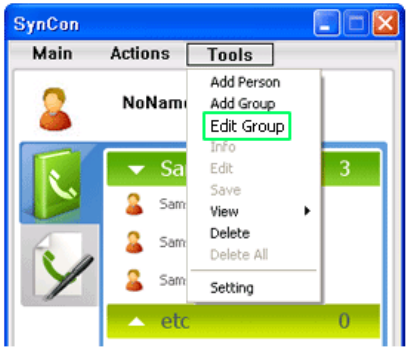


1. Select and right-click the group entry you wish to edit and select Edit Group from the displayed menu.



2. Change the group name and click OK.

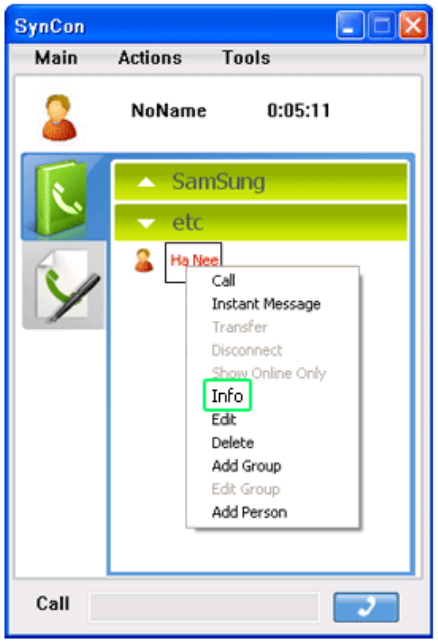
3 . The group's name is changed.



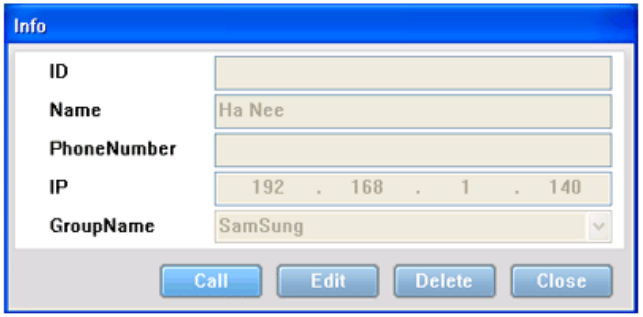
※ You can rename a group entry by clicking on it and selecting Edit Group from the Tools menu.

SynCon

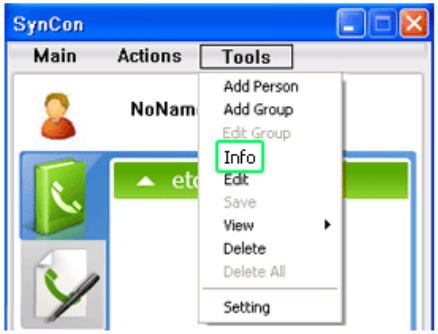
- **Viewing the Information for a Person**



1. Select and right-click an entry and select Info from the displayed menu.



2. The Info window displays the information for the selected person.



※ You can view the information for a person by clicking on that entry and selecting Info from the Tools menu.