Pro-face
Human Machine Interface

Pro-face

PL3000 Series

Reference Manual

NOTES

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(3) Regardless of article (2), the Digital Electronics Corporation shall not be held responsible for any damages or third party claims resulting from the use of PL.

(4) Differences may occur between the descriptions found in this manual and the actual functioning of PL. Therefore, the latest information on PL is provided in data files (i.e. Readme.txt files, etc.) and in separate documents. Please consult these sources as well as this manual prior to using the product.

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Information Symbols

This manual uses the following icons:

IMPORTANT	Indicates a warning or a product limitation. Be sure to follow the instructions given with this icon to ensure the safe operation of the PL.
NOTE	Contains additional or useful information.
(1) (2)	Indicates steps used to accomplish a given task. Be sure to follow these steps in the order they are written.
*	Indicates useful or important supplemental information.
SEE → ☞	Indicates pages containing related information.

About Pre-installed OS

The following Operating Systems are provided as the Pre-installed OS for PL3000 Series.

OS		Language			
Windows® XP	Japanese	Japanese			
	ML	Chinese (Simplified)	French	Portuguese (Brazil)	Estonian
		Chinese (Traditional)	German	Russian	Latvian
		Czech	Greek	Spanish	Lithuanian
		Danish	Hungarian	Swedish	Romanian
		Dutch	Italian	Turkish	Slovak
		English	Polish	Bulgarian	Slovenian
		Finnish	Portuguese	Croatian	Thai
Windows® 2000	Japanese	Japanese			
	ML	Chinese (Simplified)	English	Hungarian	Russian
		Chinese (Traditional)	Finnish	Italian	Spanish
		Czech	French	Polish	Swedish
		Danish	German	Portuguese	Turkish
		Dutch	Greek	Portuguese (Brazil)	-
Windows® XP Embedded	ML	**SEE →** "Windows® XP Embedded Reference Manual"			

Contents

Chapter 5 Troubleshooting

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Setup operation flow

The following shows the flow of the setup operation from the purchase of the PL to the completion of the required setup before use.

■ PL with no pre-installed OS

1	Connect peripheral devices and wiring to the PL unit. Connect a commercially available USB keyboard and, when no CD/DVD drive is pre-installed, a commercially available USB CD-ROM drive to the PL unit.	**SEE→**	*PL3000 Series Hardware Manual "Installation and Wiring"*

NOTE • When connecting a Digital FP as a multi-display to the PL3000 series, refer to the following page.

SEE→ *Connecting a Digital FP as a multi-display to the PL3000 series (page 9)*

2	Turn the PL's power ON.	Set the power switch on the rear of the PL to ON.

3	Configure the BIOS settings. Under [Boot priority order] on the [Boot] menu, move [IDE CD/DVD] (when using the pre-installed CD/DVD drive) or [USB CD/DVD] (when using a commercially available USB CD/DVD-ROM drive) to the top of the list. Save the setting and exit the BIOS setting screen.	**SEE→**	*2.1 System Setup Screen Operation (page2-2) 2.2.4 Boot (page2-28) 2.2.5 Exit (page2-29)*

4	Insert the OS setup media into the drive. Install the OS by following the messages on the screen.	**SEE→**	*Refer to the manual of the OS to be installed.*

5	Download and install the necessary drivers and utility software.	**SEE→**	*Visit the download page at the Otasuke Pro! site.* URL http://www.pro-face.com/otasuke/ *1.4 PL Dedicated Software (page1-13)*

6	Install the necessary application programs.	**SEE→**	*Refer to the manual of the software to be installed.*

7	Install the PL unit.	

NOTE • When connecting a Digital FP as a multi-display to the PL3000 series, refer to the following page and configure the settings.

SEE→ *Connecting a Digital FP as a multi-display to the PL3000 series (page 9)*

■ PL with pre-installed OS

| 1 | Connect peripheral devices and wiring to the PL unit. Connect a USB keyboard (commercially available). | **SEE →** | *PL3000 Series Hardware Manual*
 Installation and Wiring |

NOTE • When connecting a Digital FP as a multi-display to the PL3000 series, refer to the following page.

SEE → *Connecting a Digital FP as a multi-display to the PL3000 series (page 9)*

| 2 | Turn the PL's power ON. | Set the power switch on the rear of the PL to ON. |

| 3 | To change the BIOS settings, go to the system setting screen. Skip this step when you use the factory (default) settings. | **SEE →** | *2.1 System Setup Screen Operation (page2-2)* |

| 4 | Set up the pre-installed OS. | **SEE →** | *1.3.1 Setting Up OS (page1-8)* |

| 5 | Install the PL unit. | |

NOTE • When connecting a Digital FP as a multi-display to the PL3000 series, refer to the following page and configure the settings.

SEE → *Connecting a Digital FP as a multi-display to the PL3000 series (page 9)*

IMPORTANT
- After hardware setup is completed, the OS must be used to create partitions and format (initialize) the HDD before any data or applications can be saved to the PL unit drive. For details concerning these procedures, refer to the OS manufacturer's instruction manual.
- Whenever you turn the PL unit's power OFF, wait until the internal HDD stops spinning (approximately 5 seconds) before turning the power ON again.
- The PL's hard disk is designed for use with the Windows®2000, Windows®XP. Other operating systems do not support this driver software, etc

NOTE • Use of an uninterrupted power supply is recommended to protect your data from accidental power failures.
An uninterrupted power supply that supports Windows® will give you sufficient time to shut down your system safely by changing into the power supply for the backup in case of a power failure, and can even be set up to automatically shut down your Windows® OS.
The PL unit, however, cannot be used with a 2-Step Inverter Output type uninterrupted power supply. Be sure the unit is a sine-output type power supply. For details, consult your local UPS system dealer.

Connecting a Digital FP as a multi-display to the PL3000 series

You can use a DVI-D/RGB splitter cable (type: CA7-CBLCVDVI-D/RGB-01) to connect two monitors. By doing so, you can display the same screen or different information on both monitors. For each PL3000 series type, when using a Digital DP display as a multi-display, the connection procedure depends on the type of monitor.

NOTE
    • With the PL3000 series box type, when connecting a Digital FP as a monitor, you may need to configure the FP dip switches depending on the display signal of the connected device and the touch panel data communication cable. For details about configuring dip switches, refer to the FP instruction manual.

■ Selecting a display function

Configure the Digital FP as a multi-display monitor and the display functions to be shown.

(1) Open [Control Panel] from the Start menu.

(2) Open [Display]. (In Windows XP, this is in the [Appearance and Themes] category.)

(3) In the Settings tab, click [Advanced].
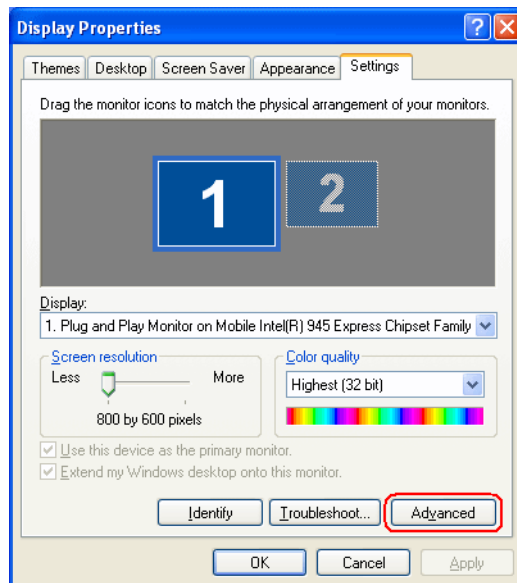
(4)　In the Intel(R) Graphics Media Accelerator Drive for Mobile tab, click [Graphics Properties].
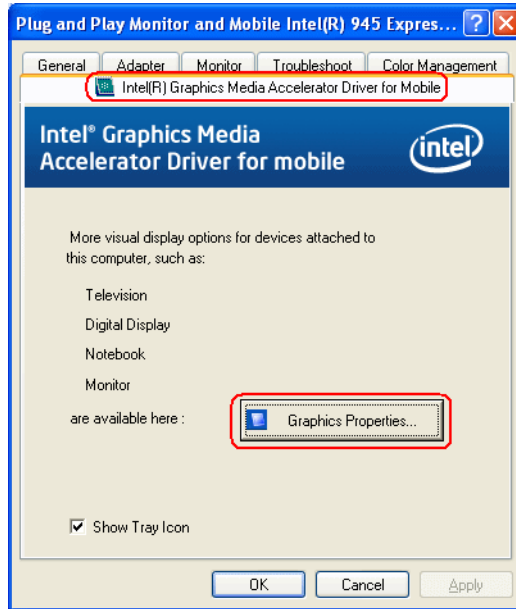
(5)　In the properties window that appears, select the menu to display using [Multi-display]*. Select the main monitor for the primary device and the extended monitor for the secondary device.

* For details about each menu, refer to " ■ Multi-display function types (page 11)".
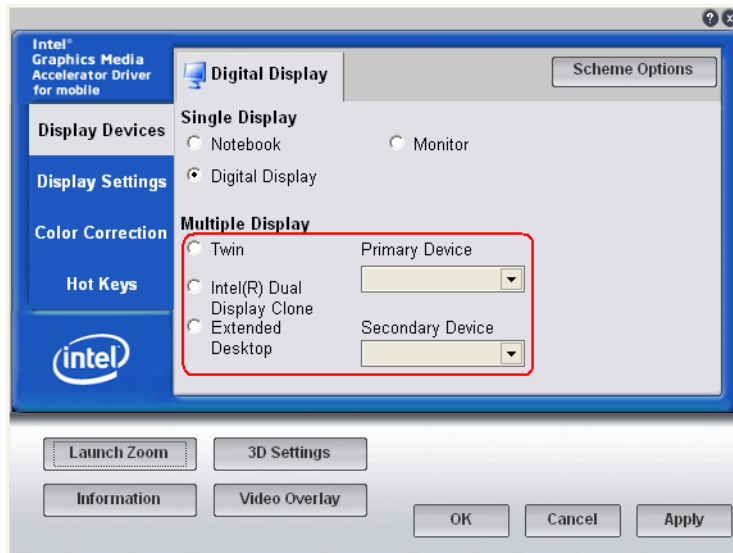
[Notebook]	Select this option when using the PL3000 Series TFT type. Do not select this option when using the PL3000 Series box type as the image signal output will stop.
[PC monitor]	This is the monitor connected with an analog RGB cable.
[Digital display]	This is the monitor connected with a DVI cable.

(6)　Click [Apply].

■ Multi-display function types

◆ Twin

This allows the same information to be displayed on two monitors.

◆ Intel® Dual Display Clone

NOTE • Like the Twin type, this allows the same information to be displayed on two monitors, however, display may differ according to the selected resolution.
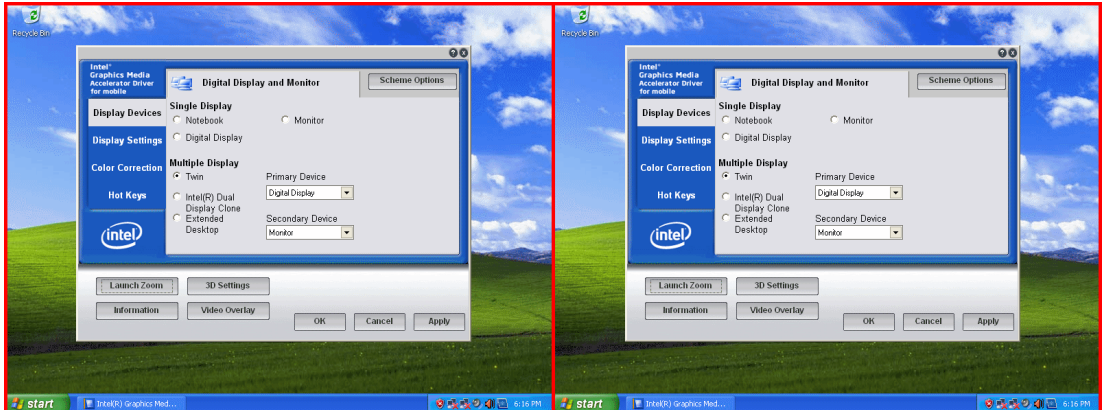
Primary Device   Secondary Device

NOTE • When using the TFT type or keypad type of the PL3000 series, if you use the Digital FP as a dual clone monitor, use an RGB cable to connect the PL unit and the monitor. The TFT type and keypad type of the PL series can output only RGB signals. To perform touch control on the screen while dual clone display is active, use an RS232C cable to connect the PL unit and the monitor, as well. Establishing a connection using an RS232C cable enables touch control on the screen.

• When using the PL3000 series, if you are using a Digital FP with front USB terminal as a dual clone/twin display monitor, you must use a USB cable, an RGB and an RS232C cable to connect the PL unit and monitor.

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◆ Extended desktop

You can divide one desktop to be displayed on two monitors.
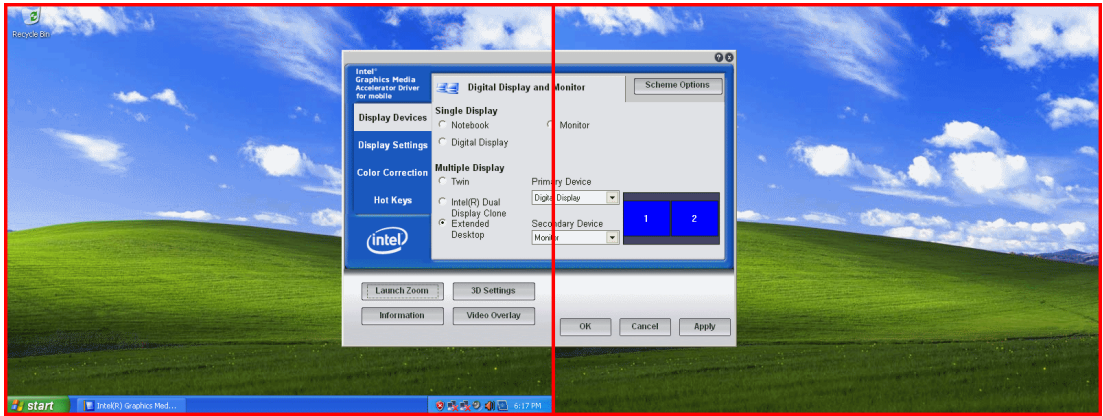
Primary Device   Secondary Device

NOTE

• When using the TFT type or keypad type of the PL3000 series, if you use the Digital FP as a monitor for an extended desktop, use an RGB cable to connect the PL unit and the monitor. The TFT type and keypad type of the PL series can output only RGB signals. Touch control on the screen cannot be performed while using the extended desktop function.

1 | Setting Up Software

This chapter describes the setting procedures for the PL dedicated programs and the setting parameters.

1.1   Software Configuration

If you purchased a PL unit with the OS pre-installed, the software has been pre-installed.

If you purchased a PL unit without the OS pre-installed, you can download each software program from the

Pro-face support site "Otasuke Pro!".

$\overline{\text{SEE} \rightarrow}$ *1.2.2 Setting Up the PL Dedicated Software (page1-3)*

1.2   Setting Up an HDD with no Pre-installed OS

First, when you use a PL with no pre-installed OS, you will need to install either Windows$^{\circledR}$ 2000 or

Windows$^{\circledR}$ XP. You also need to install any required utility software.

1.2.1   Setting Up the OS

Install your operating system. For the setup procedures about the OS, refer to that product's installation man-

ual.

IMPORTANT

- Specify [Disabled] for the USB2.0 Controller of the BIOS when you install

  commercial Windows$^{\circledR}$ 2000, using a USB CD/DVD-ROM drive.

  $\overline{\text{SEE} \rightarrow}$ ■ *USB Controller Configuration (page2-23)*

- The PL unit supports Windows$^{\circledR}$ 2000 Service Pack 4 and Windows$^{\circledR}$ XP Service

  Pack 2. The PL unit performance cannot be guaranteed when any other operating

  system is used. Download the Intel$^{\circledR}$ Matrix Storage Manager from "Otasuke Pro!,"

  the Digital support site.

- Installing the OS with [AHCI Configuration] set to [Enable] requires Intel$^{\circledR}$ Matrix

  Storage Manager. Download the Intel$^{\circledR}$ Matrix Storage Manager from "Otasuke

  Pro!," the Digital support site.

  $\overline{\text{SEE} \rightarrow}$ *AHCI Configuration (page2-19)*

1.2.2   Setting Up the PL Dedicated Software

Download the necessary drivers and utility software from the Pro-face support site "Otasuke Pro!".

URL http://www.pro-face.com/otasuke/ ⟨Click here!⟩

IMPORTANT
- Do not install the battery driver when a battery unit is not mounted; otherwise, the Battery Unit Disconnected Error will be displayed. To recover the error, the battery driver should be uninstalled.

  For procedure to uninstall the battery driver, refer to the following section.

  SEE → *5.1 Problems and Countermeasures (page5-2)*

NOTE
- The setup requires a USB keyboard.
- For details about the drivers and utility software, refer to the following section.

  SEE → *1.4 PL Dedicated Software (page1-13)*

■ [Proface] Folder Configuration

The following diagram describes the configuration of this folder. (For all Windows® versions)

[Proface]

— [API]	API-DLL
— [Backlight]	Backlight Control Console Application
— [KeyClick]	Keyboard Emulator
— [Shutdown]	
└─ [Client]	Remote Shutdown Client
— [Sysmon]	System Monitor/RAS Application

NOTE

• When a LAN or a printer is added, you need to change the Windows® system configuration using the following procedure.

(1) When the Windows® system configuration settings are changed, the following message appears. When your media is DVD-ROM, replace "CD-ROM" with "DVD-ROM".

> Insert the CD labeled "Windows® xx*1 Professional CD-ROM" in the CD-ROM drive (D:), and click [OK].
>
> When copying the file from other locations such as a floppy disk or network server, also click the [OK] button.

*1   "xx" is your OS.

Example) When using Windows® XP: "Windows® XP Professional CD-ROM"

(2) Select the folder where you will change the system configuration and click [OK].

Double-click the [I386] folder in the Windows® installation media.

D:\I386 (When the drive is "D")

1.3   Setting Up an HDD with Pre-installed OS

In the PL with pre-installed OS, the following software has been installed in advance.

■ PL with Windows® 2000 Pre-installed

- Windows® 2000 Professional operating system manufactured by Microsoft Corporation

- PL dedicated utility software and drivers manufactured by Pro-face

■ PL with Windows® XP Pre-installed

- Windows® XP Professional operating system manufactured by Microsoft Corporation

- PL dedicated utility software and drivers manufactured by Pro-face

| NOTE | • Each pre-installed operating system is designed specially for PL3000. |
| | • For details about the drivers and utility software, refer to the following section. |

SEE→ *1.4 PL Dedicated Software (page1-13)*

■ [Proface] Folder Configuration

A [Proface] folder is prepared on the C drive. The following diagram describes the configuration of this folder. (For all Windows® versions)

```
[Proface]
        ├── [API]              API-DLL
        ├── [Backlight]        Backlight Control Console Application
        ├── [KeyClick]         Keyboard Emulator
        ├── [Setup]            Media Image
        ├── [Shutdown]
        │        └── [Client]  Remote Shutdown Client
        ├── [SysCfg]           System configuration monitoring software
        └── [Sysmon]           System Monitor/RAS Application
```

NOTE

- When a LAN or a printer is added, you need to change the Windows® system configuration using the following procedure.

  (1) When the Windows® system configuration settings are changed, the following message appears. When your media is DVD-ROM, replace "CD-ROM" with "DVD-ROM".

  > Insert the CD labeled "Windows® xx[*1] Professional CD-ROM" in the CD-ROM drive (D:), and click [OK].
  >
  > When copying the file from other locations such as a floppy disk or network server, also click the [OK] button.

  [*1] "xx" is your OS.

  Example) When using Windows® XP: "Windows® XP Professional CD-ROM"

  (2) Select the folder where you will change the system configuration and click [OK].

  C:\Proface\Setup\I386

• The UPDD device driver has a driver to connect to USB devices built in by default setting. UPDD settings are disabled by default setting for the PL3000 series box type. When connecting the unit to the FP Series, these setting should be enabled.
<Procedure for enabling the setting>

(1) Click the icon shown above.

(2) Change the Enabled check mark from ✖ to ✔.
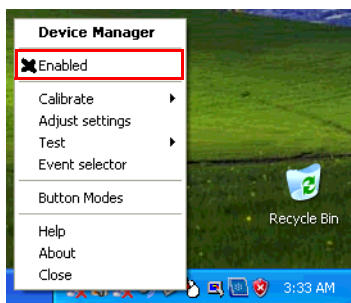
UPDD [USB Connection] settings disabled   UPDD [USB Connection] settings enabled
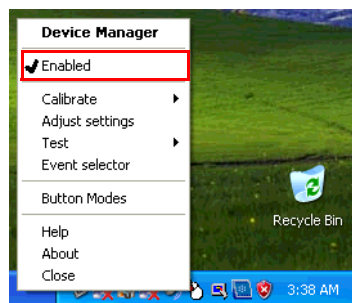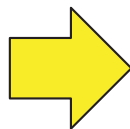
It is necessary to install the UPDD Serial driver when using the PL unit with a serial connection.
<Procedure for installing the UPDD Serial driver>
(1) From the [Start] menu, click [Programs], [UPDD], and then [Settings].

(2) Click [Add].
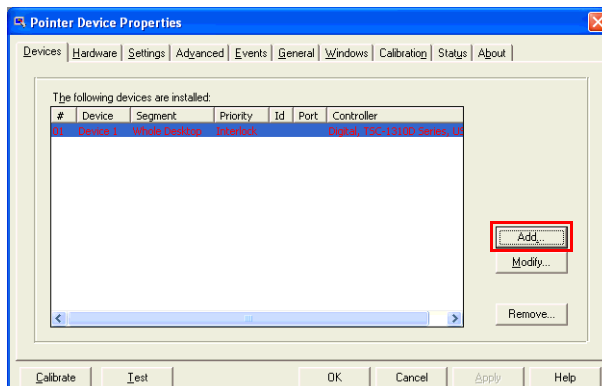
(3) Select [Digital TSC-1310D Series, Serial], and click [Next].

Follow the on-screen instructions to install the driver.
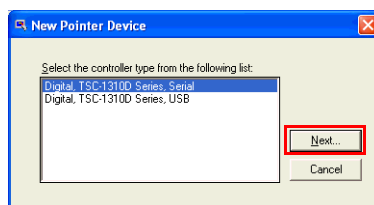
1.3.1   Setting Up OS

Set up the Pre-installed OS in the PL unit.

■ Windows® 2000 Setup Procedure

This section describes the setup procedure for Windows® 2000. The setting parameters vary depending on your environment. Ask your network administrator for the appropriate parameters.

NOTE
- When setup is completed, a README file is created on the desktop. The README file contains details regarding software and information released since the creation of this manual. Read the README file first after setup is completed.
- The OS setup operation requires a keyboard.

(1)   Once the PL unit's power is turned ON, this HDD unit's [Windows 2000 Professional Setup] screen, and then the [Welcome to the Windows 2000 Setup Wizard] will appear. Click the [Next] button.

(2)   The [License Agreement] screen will appear.

After reading the contracts, press [I accept this agreement] if you agree, and click the [Next] button.

(3)   The [Regional Settings] screen will appear.

After entering the data for your area, click the [Next] button.

(4)   The [Personalize Your Software] screen will appear.

After entering your name [Name] and [Organization], click the [Next] button.
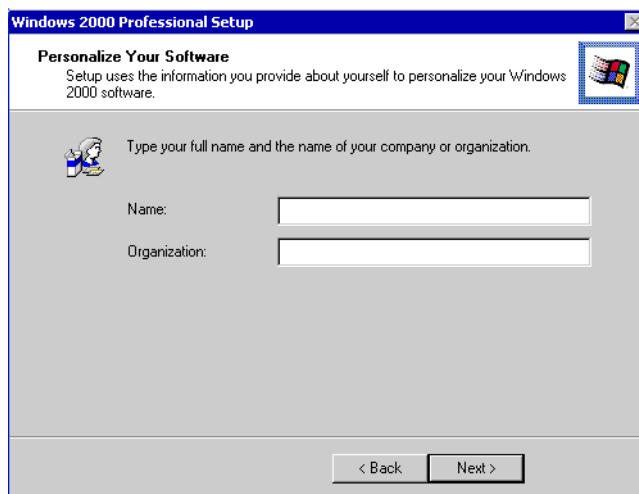
(5)   The [Your Product key] screen will appear.

After entering the product key data on the license sticker, click the [Next] button.

(6)   The [Computer Name and Administrator Password] screen will appear.

Enter the [Computer Name and Administrator Password], and [Confirm Password], then click the [Next] button.

When entering the [Computer Name], if the name shown on the display is not correct, you can enter another name. When the computer is connected to a network, be sure to ask your network manager what is the correct name for this field.

(7)   The [Date and Time Settings] screen will appear.

After entering these settings, click the [Next] button.

(8) The [Network Settings] screen will appear.

Choose whether to use typical or custom settings depending on your PC circumstantce.
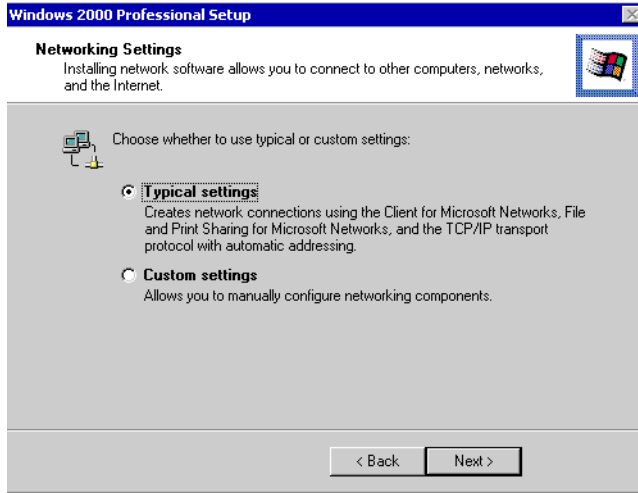
(9) The [Workgroup or Computer Domain] screen will appear.

Choose whether to make your PC on a network or not depending on your PC circumstance.

(10) [Performing Final Tasks] is automatically done by the PL.

The [Completing the Windows 2000 Setup Wizard] will appear. Press the [Finish] button and the system will automatically restart.

(11) When the [Network Identification Wizard] and the [Welcom to the Network Identification Wizard] is started, please press the [Next] button. The [Users of This Computer] screen will appear. After entering the desired settings, press the [Next] button and then press the [Finish] button.

■ Windows® XP Setup Procedure

This section describes the setup procedure for Windows® XP. The setting parameters vary depending on your environment. Ask your network administrator for the appropriate parameters.

NOTE
- When setup is completed, a README file is created on the desktop. The README file contains details regarding software and information released since the creation of this manual. Read the README file first after setup is completed.
- The OS setup operation requires a keyboard.

(1) Once the power of the PL unit with Windows® XP pre-installed is turned ON, the [Welcome to Microsoft Windows] screen will appear. Click [Next].

(2) The [The End User License Agreement] screen will appear.

After reading the contents, press [Yes, I accept] if you agree, and click [Next] to continue.

(3) The [Help protect your PC] screen will appear.

Choose whether to update Windows® automatically. To enable the Automatic Updates, check on [Help protect my PC by turning on Automatic Updates now (recommended)]. To disable it, check [Not right now]. Click [Next] to continue.

(4)   The [What's your computer's name?] screen will appear.

After entering the computer's name, click [Next] to continue. At default setting, the computer's name has been entered. If it's not necessary to change it, click [Skip].

(5)   The [What's your Administrator password?] screen will appear.

If the password is set, enter the password in [Administrator password:] and [Confirm password:] and click [Next]. If the password is not set, click [Skip].

(6)   The [Is this computer in a domain?] screen will appear.

To join the domain, select [Yes, make this computer a member of the following domain:] and enter the domain's name. Not to join the domain, click [Next] to continue.

(7)   The [Checking your internet connectivity?] screen will appear and your internet connectivity will be automatically checked.

(8)   The [Ready to register with Microsoft?] screen will appear. If you register, check [Yes, I'd like to register with Microsoft now]. If not, check [No, not at this time]. Press [Next].
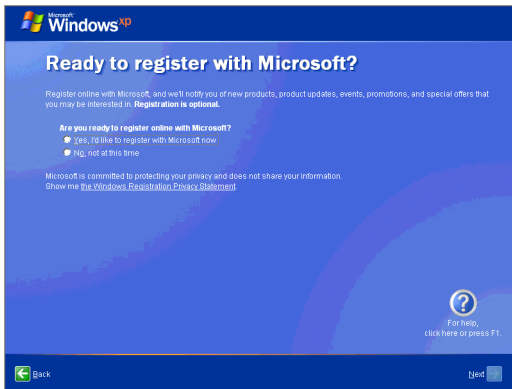
(9)   The [Who will use this computer?] will appear. Up to 5 names can be entered for a user's name. After entering the user's name, click [Next] to continue.

(10) The [Thank you!] screen will appear. Click [Finish] to complete the setting.

1.4 PL Dedicated Software

1.4.1 Driver

Six types of dedicated PL drivers (AHCI, Chipset, Audio, Graphic Accelerator, LAN and Touch Panel Driver (Mouse Emulator)) are available.

If you purchased the PL with no pre-installed OS, download the drivers from the Pro-face support site "Otasuke Pro!". (A PL unit that has been recovered using the Recovery Media will have all the required drivers installed). The explanation given in this section assumes that the [Proface] folder has been created on drive C.

IMPORTANT
- Once drivers are installed in the PL unit, they cannot be uninstalled.

NOTE
- For the installation procedure and cautions, refer to the download page at the Otasuke Pro! site. URL http://www.pro-face.com/otasuke/

■ AHCI Driver

AHCI driver made by Intel®.

Installing the driver enables PL with no pre-installed OS to install OS.

■ Chipset Driver

Chipset driver made by Intel®.

Installing the Chipset driver adds the Chipset feature to the OS.

Double-click on the "Setup.exe" file located in the following folder. Follow the instructions given on the screen to install the driver.

■ Audio Driver

High Definition Audio driver made by Realtek.

Installing the Audio driver enables the OS' Audio feature.

Double-click on the "Setup.exe" file located in the following folder. Follow the instructions given on the screen to install the driver.

■ Graphic Accelerator Driver

Display driver made by Intel®.

Installing the Graphic Accelerator Driver will accelerate the screen refresh speed, using special hardware features.

■ LAN Driver

This is a driver for the IntelR Ethernet Controller.

Installing the Ethernet Controller Driver enables LAN1 and LAN2 to be available.

NOTE
• For instructions on how to start a PL unit over LAN, refer to the following.

SEE→ *3.7 Restarting/Shutting Down the PL from a Remote Server (page3-27)*

■ Touch Panel Driver (Mouse Emulator)

Install the Touch Panel Driver in the PL unit. It's necessary to agree to DMC's Mouse Emulator Software (TSC-1310D/DD) License in advance.

SEE→ *Appendices 4 License Agreement (pageA-6)*

NOTE
• You can open "Touch Panel Property" by selecting the [Start] -> [Programs] -> [UPDD] -> [Settings]. In this dialog box, you can specify the details of the touch panel operation.

• If the touch position recognized in the panel deviates from the actual touch, you need to calibrate the touch panel. Select the [Start] -> [Programs] -> [UPDD] -> [Calibration]. When a cross appears on the screen, press it. Then click [OK] in the [Confirmation after calibration] dialog box to finish the calibration.

1.4.2   Special Application Program Features

The special programs designed for the PL unit are located in the following folders. The file storage locations given in the table below assume that the [Proface] folder already exists on drive C.

File Name	Windows®XP	Windows®2000
BlCtrl.exe	C:\Proface\Backlight\	
BlSaver.scr	C:\Windows\System32	C:\Winnt\System32
BlBright.cpl		
Keyclick.exe	C:\Proface\Keyclick	
Ioctl.dll	C:\Windows\System32	C:\Winnt\System32
Smonras.dll		
SmSRvCPL.cpl		
Sysmon.sys	C:\Windows\System32\Drivers	C:\Winnt\System32\Drivers
SystemMonitor.exe	C:\Proface\Sysmon\GUI	

■ Backlight Control Console Application: BlCtrl.exe

This command line utility is used to turn OFF both the PL backlight and display. This program runs on the command prompt.

Settings Used   BlCtrl.exe [ON/OFF] ↵

Option Switch   ON: Displayed / OFF: Not Displayed

Return Value   0: Completed Normally / -1: Option Switch Error

IMPORTANT
- If your application requires that the OS continuously turn the backlight display ON and OFF, be sure to use the RAS Features dll, Ioctl.dll.

NOTE
- Not available with the box type of the PL3000 series.

■ Backlight OFF Screen Saver: BlSaver.scr

This software is used to turn OFF the PL backlight after a specified period of inactivity. The use of this feature will help to extend the life of the PL backlight. This program runs on Windows®.

NOTE
- Certain application programs may not allow the PL backlight to turn OFF. Test each program individually to check if the screen saver will operate correctly before use.
- Not available with the box type of the PL3000 series.

■ Backlight Brightness Adjustment: BlBright.cpl

Backlight brightness can be set to one of four levels: Level 0, Level 1, Level 2 or Level 3.

Brightness level 0: Very dark

Brightness level 1: Somewhat dark

Brightness level 2: Somewhat bright

Brightness level 3: Very bright

To use this program when you use Windows®2000, click the [Backlight Brightness] icon of the [Control Panel], when using Windows® XP click the [Backlight Brightness] icon of the [Control Panel]'s [Appearance and Themes]. The default setting is Brightness level 3.

■ Keyboard Emulator: Keyclick.exe

This program allows the User's mouse operation to perform keyboard-like data input. When this program is executed on Windows®, a keyboard is displayed on the screen of the PL unit.

This is a software keyboard provided by IN-flNITY soft (KeyClick32). Be sure to read the license agreement in the Appendix before use.

(SEE→) *Appendices 4 License Agreement (pageA-6)*

NOTE
- Certain application programs may not support this keyboard emulator. Test each application individually to check if the keyboard emulator will operate correctly.
- This program cannot be used to enter Windows® startup screen User Name and Password information.
- To change the Keyclick program's font size a keyboard is required.

■ API-DLL

These dynamic link libraries allow users to access RAS features that operates on the PL via custom-made applications. The following two types are available.

For details, refer to the API Reference Manual which can be downloaded from the Pro-face support site "Ota-suke Pro!" (URL http://www.pro-face.com/otasuke/).

◆ RAS Features: Ioctl.dll

This dynamic link library allows users to access RAS features that operates on the PL via custom-made PL applications.

◆ Shared Memory Access: Smonras.dll

This dynamic link library allows users to access shared memory via remote RAS features.

■ System Monitor Property: SmSRvCPL.cpl

This program allows the user to set the notification method used in event of an error/alert while the RAS feature monitors the system.

■ System File: Sysmon.sys

This system file allows use of the RAS and System Monitoring features. This file should not be modified. If it is modified, the RAS and System Monitoring features may not operate correctly.

■ System Monitoring/RAS Application: SystemMonitor.exe

The RAS and System Monitoring features allow users to monitor temperature, voltage, and fan operation errors/alerts. This program is started automatically at the same time as the OS.

◆ System Monitoring Program: SystemMonitor.exe

SEE → *3.3.3 When an Error Occurs (page3-14)*
3.3.4 When an Alert Occurs (page3-15)

◆ Watchdog Parameter Setup Program: System Monitor Property

SEE → *3.3.1 Description (page3-11)*

2 | System Setup

1. System Setup Screen Operation
2. System Parameters Setting

This chapter describes how to operate the system setup screen and how to set system parameters.

2.1   **System Setup Screen Operation**

This section describes the operation of the BIOS setup screen.

   •   Normally, use only the factory (default) settings.

(1)   Connect a USB keyboard to the PL.

(2)   Turn the PL's power ON.

(3)   After the boot-up screen comes up, press the [F2] key. The setup utility starts and the following screen appears.

Menu
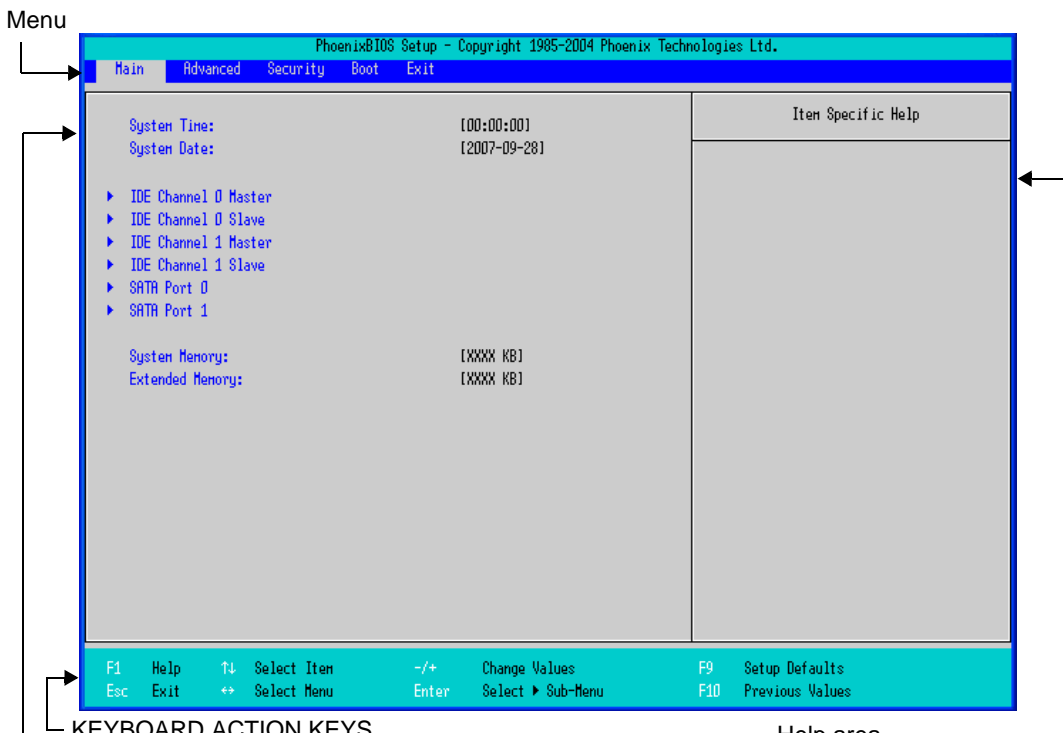
KEYBOARD ACTION KEYS
Provides a summary of the keyboard keys used to carry out the set-up.
Press the [F1] key to display the help for the system setup.
Press the [F9] key to reset all settings to the default settings.
Press the [F10] key to save the settings and exit the system setup menu.

Help area
Shows the information of the items you selected.

SYSTEM SETTING SELECTION AREA
Each of the titles (areas) listed here contains system setting items.

(4)   To use the [←] [→] arrow keys, change the menu contents. A setting screen of each system will be displayed.

(5)   To use the [↑] [↓] arrow keys, move up and down the cursor to select an item of the system, then confirm it by the [Enter] key.

(6)   Change the value of the confirmed item with the [-] and [+] keys.

(7)   To return from the sub layer to the main layer, press the [Esc] key.

■ BIOS Setup Screen Configuration

MAIN
☞*2-4 page*
Specify the drive/date.

IDE Channel/SATA Port
☞*2-5 page*
Display the information for the connected devices.

Advanced
☞*2-7 page*
Set the system details.

Processor Configuration
☞*2-10 page*
Set the CPU.

CPU Thermal Configuration
☞*2-11 page*
Set the CPU temperature monitoring feature.

Power-ON Configuration
☞*2-12 page*
Set the PL operations at power-on.

Video (Intel IGD) Configuration
☞*2-14 page*
Set the graphics details.

Cache Memory
☞*2-16 page*
Set the cache memory-related items.

Integrated Device Configuration
☞*2-18 page*
Set the integrated devices.

I/O Device Configuration
☞*2-20 page*
Set the I/O address/interrupt No.

PCI Configuration
☞*2-21 page*
Set PCI.

USB Controller Configuration
☞*2-23 page*
Set the USB controller.

DMI Even Logging
☞*2-25 page*
Set the DMI event logging options.

Soft Mirror Status
☞*2-26 page*
Display the soft mirror status.

Security
☞*2-27 page*
Set the password/security options.

Boot
☞*2-28 page*
Specify the boot order of devices.

Exit
☞*2-29 page*
Exit the BIOS screen.

2.2   System Parameters Setting

Select the items to set up the system information. Here, we introduce the system parameters of each item.

IMPORTANT   • Normally, use only the factory (default) settings.

NOTE   • An item in **[ ]** indicates the factory default setting.

2.2.1   Main
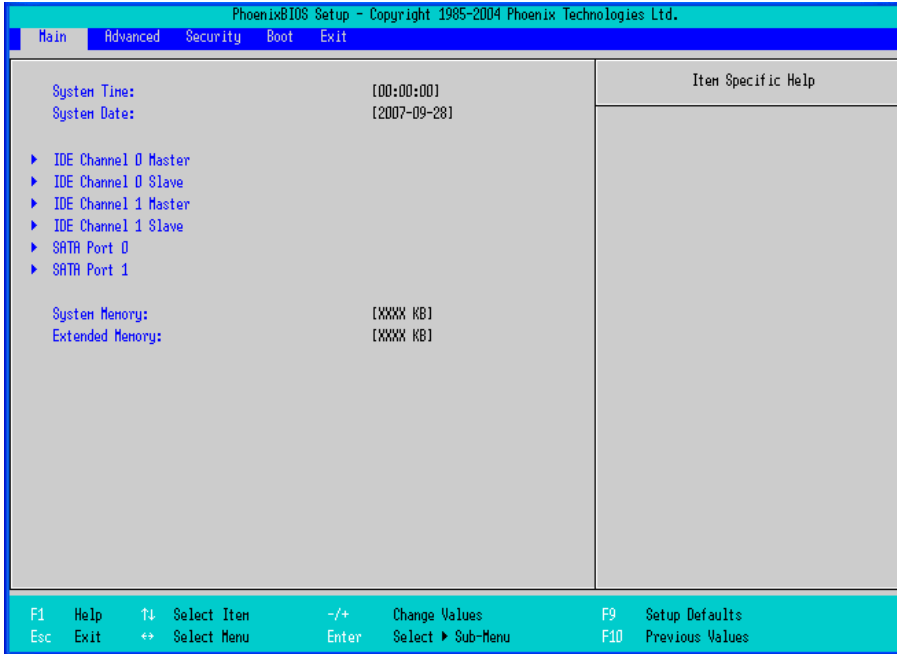
System Time

Shows the time which the PL currently recognizes. Move the cursor by the [Tab]key and set a proper time for the PL by the [Tab], [+] and [-] keys because the factory default setting is the Japan's Standard Time (GMT+09:00).

System Date

Shows the date which the PL currently recognizes. Set a proper date for the PL by the [+] and [-] keys.

IDE Master Channel 0 Master /

IDE Slave Channel 0 Slave /

IDE Channel 1 Master /

IDE Channel 1 Slave /

SATA Port 0 /

SATA Port 1

Displays the name of devices connected to the PL. Pressing the [Enter] key will call up the Parameter settings menu.

SEE → ■ *IDE Channel / SATA Port (page2-5)*

System Memory

Shows the capacity of the "System Memory".

Extended Memory

Shows the capacity of the "Extended Memory". It is the loaded memory - the size of the Video Memory.

■ IDE Channel / SATA Port

Point out the cursor at the [IDE Channel 0 Master], [IDE Channel 0 Slave], [IDE Channel 1 Master], [IDE Channel 1 Slave], [SATA Port 0], [SATA Port 1] on the "Main screen", and then press the [Enter] key, so that the following screen is shown.

```
              PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
    Main

                                                                Item Specific Help
      Type:

      Multi-Sector Transfers:        [Disabled]
      LBA Mode Control:              [Disabled]
      32 Bit I/O:                    [Disabled]
      Transfer Mode:                 [Standard]
      Ultra DMA Mode:                [Disabled]

    F1   Help    ↑↓  Select Item    -/+    Change Values      F9   Setup Defaults
    Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu  F10  Previous Values
```
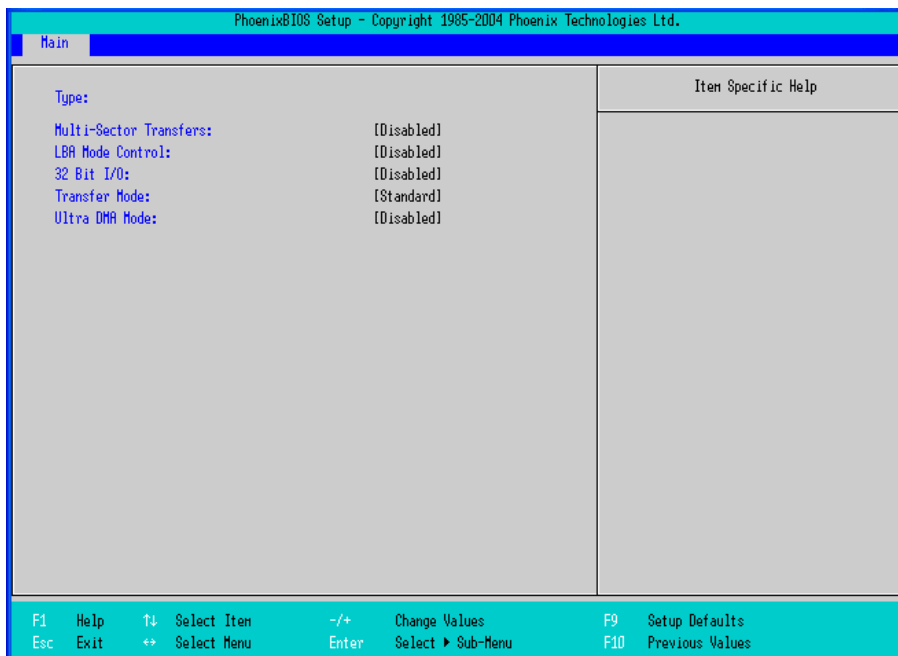
Type

Specifies a type of drive which you use.

[Auto]	Automatically specifies whether to connect to the drives and the type of drive that you use.
[None]	Specifies that all the drives are not used.
[ATAPI Removable]	Connects the ATAPI removable drive.
[CD-ROM]	Connects the CD-ROM drive.
[IDE Removable]	Connects the IDE removable drive.
[Other ATAPI]	Connects other ATAPI devices.
[User]	You can directly specify the number of cylinders, heads and sectors.

IMPORTANT • Select **[Auto]** to have the PL recognize the hardware properly.

Multi Sector Transfers

Specifies the number of sectors per block, which are transferred to the memory. When [Type] is [None] or [Auto], the selection is disabled.

[Disabled]	Transfers by sector.
[2 Sectors]	Transfers 2 sectors at a time.
[4 Sectors]	Transfers 4 sectors at a time.
[8 Sectors]	Transfers 8 sectors at a time.
[16 Sectors]	Transfers 16 sectors at a time.

LBA Mode Control

Enables or disables the Logical Block Address (LBA) instead of the Cylinders, Headers, and Sectors. When [Type] is [None] or [Auto], the selection is disabled.

[Disabled]	Does not use LBA mode.
[Enabled]	Uses LBA mode.

32 Bit I/O

Specifies an enabled/disabled state for the 32 bit transferring between CPU and IDE controller.

When the [Type] is [None], nothing is displayed.

[Enabled]	Uses 32 bit transfer.
[Disabled]	Does not use 32 bit transfer.

Transfer Mode

Specifies a method of transferring data. When the [type] is [None], nothing is displayed. When [Type] is [None] or [Auto], the selection is disabled.

[Standard]	Specifies Transfer Mode to PIO Mode 0.
[Fast PIO 0 to Fast PIO 4]	Specifies Transfer Mode to Fast PIO Mode 1 - Mode 4.
[FPIO 3/DMA 1]	Uses Fast PIO Mode 3 or DMA Mode 1.
[FPIO 4/DMA 2]	Uses Fast PIO Mode 4 or DMA Mode 2.

Ultra DMA Mode

Specifies a Ultra DMA mode for the Hard drive. When [Type] is [None] or [Auto], the selection is disabled.

[Disabled]	Does not use Ultra DMA mode.
[Mode 0 to Mode 5]	Specifies the Ultra DMA mode.

2.2.2   Advanced

```
                 PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
     Main    Advanced    Security    Boot    Exit

      ▶  Processor Configuration                                  Item Specific Help
      ▶  Power-ON Configuration
      ▶  Video (Intel IGD) Configuration
      ▶  Cache Memory Configuration
      ▶  Integrated Device Configuration
      ▶  DMI Event Logging
      ▶  Soft Mirror Status

         Installed O/S:                  [Win2K/XP]
         Reset Configuration Data:       [No]
         Large Disk Access Mode:         [DOS]
         Local Bus IDE adapter:          [Enabled]

         RAS Reset Port Mask:            [Disabled]
         Show CMOS Error:                [Disabled]
         Summary screen:                 [Disabled]
         Enable memory gap:              [Disabled]
         Extended Memory Testing         [Just zero it]




     F1   Help     ↑↓  Select Item    -/+    Change Values       F9   Setup Defaults
     Esc  Exit     ↔   Select Menu    Enter  Select ▶ Sub-Menu   F10  Previous Values
```

Processor Configuration

Point the cursor to [Advanced Processor Configuration] and press the [Enter] Key to go to the CPU set-up screen.

SEE→   ■ *Processor Configuration (page2-10)*

Power-ON Configuration

Point the cursor to [Power-ON Configuration] and press the [Enter] Key to go to the set-up screen for the PL operations at power-on.

SEE→   ■ *Power-ON Configuration (page2-12)*

Video (Intel IGD) Configuration

Point the cursor to [Video (Intel IGD) Configuration] and press the [Enter] Key to go to the display set-up screen.

SEE→   ■ *Video (Intel IGD) Configuration (page2-14)*

Cache Memory Configuration

Point the cursor to the [Cache Memory] and press the [Enter] Key, so that you can go to the set-up screen for Cache Memory.

SEE→   ■ *Cache Memory Configuration (page2-16)*

Integrated Device Configuration

Point the cursor to [Integrated Device Configuration] and press the [Enter] Key to go to the integrated device set-up screen.

SEE→   ■ *Integrated Device Configuration (page2-18)*

DMI Event Logging

Point the cursor to [DMI Event Logging] and press the [Enter] Key to go to the DMI event logging set-up screen.

(SEE →)   ■ *DMI Event Logging (page2-25)*

Soft Mirror Status

Point the cursor to [Soft Mirror Status] and press the [Enter] Key to go to the display screen for the soft mirror status.

(SEE →)   ■ *Soft Mirror Status (page2-26)*

Installed O/S

Specifies a type of OS of the unit.

[Other]	Set when using a non-Plug and Play OS.
[Win2K/XP]	Set when using a Plug and Play OS.

Reset Configuration Data

Specifies whether you want to reset the Plug & Play information which is recorded in the Extended System Configuration Data (ESCD) Block of the CMOS RAM, when the system boots up next time.

[Yes]	Initializes data the next time the system boots up.
	Automatically reset to [No] after the data is initialized.
[No]	Does not initialize data.

Even when [Yes] is selected, the selection automatically returns to **[No]** after the data is initialized.

Large Disk Access Mode

Specifies the access mode. When you use UNIX or NetWare for OS, the setting should be [Other].

[Dos]	Use this setting normally.
[Other]	Use this setting when using Linux, UNIX, or a similar OS.

Local Bus IDE adapter

Specifies whether to use the IDE adapter.

[Enabled]	Uses the Local Bus IDE adapter.
[Disabled]	Does not use the Local Bus IDE adapter.

RAS Reset Port Mask

Specifies whether to enable or disable the RAS Reset Port feature.

[Enabled]	Enables the Mask feature, and disables the RAS Reset Port feature.
[Disabed]	Disables the Mask feature, and enables the RAS Reset Port feature.

Show CMOS Error

Specifies whether to display the CMOS Checksum Error message when the error occurs.

[Enabled]	Shows error message.
[Disabled]	Does not show error message.

The error messages that can be shown/hidden in this setting are as follows:

CMOS Checksum Error

CMOS Battery Failure

CMOS Time Not Set

Summary Screen

Specifies whether the configuration information of the running system (Summary Screen) is displayed.

[Enabled]	Shows the Summary Screen.
[Disabled]	Does not show the Summary Screen.

Enable Memory gap

Specifies an enabled/disabled state for the Memory gap.

[Enabled]	Reserves a memory gap for an expansion card.
[Disabled]	Use this setting normally.

Extended Memory Testing

Specifies whether a test for the Extended Memory needs to be executed at the system starting-up. The test types are listed below.
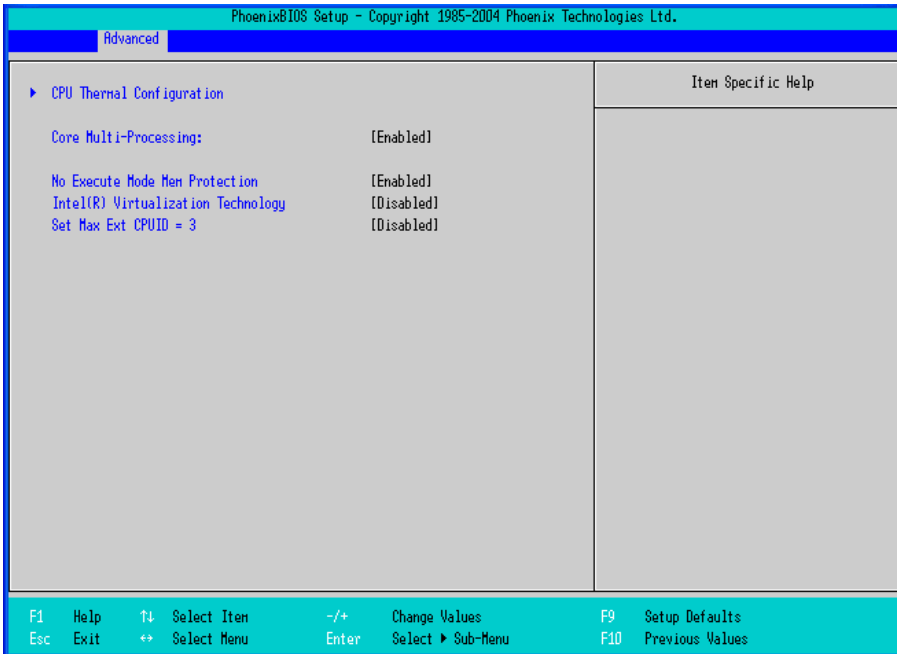
[Normal]	Normal test
[Just Zero it]	Simple test
[None]	No test

■ Processor Configuration

Specifies the settings for the CPU. Point the cursor to [Processor Configuration] on the [Advanced] screen and press the [Enter] Key to display the following screen.

```
PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
   Advanced

 ▶ CPU Thermal Configuration                              Item Specific Help

   Core Multi-Processing:            [Enabled]

   No Execute Mode Mem Protection    [Enabled]
   Intel(R) Virtualization Technology [Disabled]
   Set Max Ext CPUID = 3             [Disabled]




 F1   Help    ↑↓  Select Item    -/+    Change Values       F9   Setup Defaults
 Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu   F10  Previous Values
```

CPU Thermal Configuration

Point the cursor to [CPU Thermal Configuration] and press the [Enter] Key to go to the set-up screen for CPU temperature monitoring.

Core Multi-Processing

Specifies whether to distribute processing using multiple processor cores.

[Enabled]	Distributes processing.
[Disabled]	Does not distribute processing. Operates as a single core.

No Execute Mode Mem Protection

Specifies whether to use the data execution prevention feature.

[Enabled]	Uses the data execution prevention feature.
[Disabled]	Does not use the data execution prevention feature.

Intel(R) Virtualization Technology

Specifies whether to run multiple OSs simultaneously on the PL unit.

[Enabled]	Uses multiple OSs simultaneously.
[Disabled]	Does not use multiple OSs simultaneously.

Set Max Ext CPUID = 3
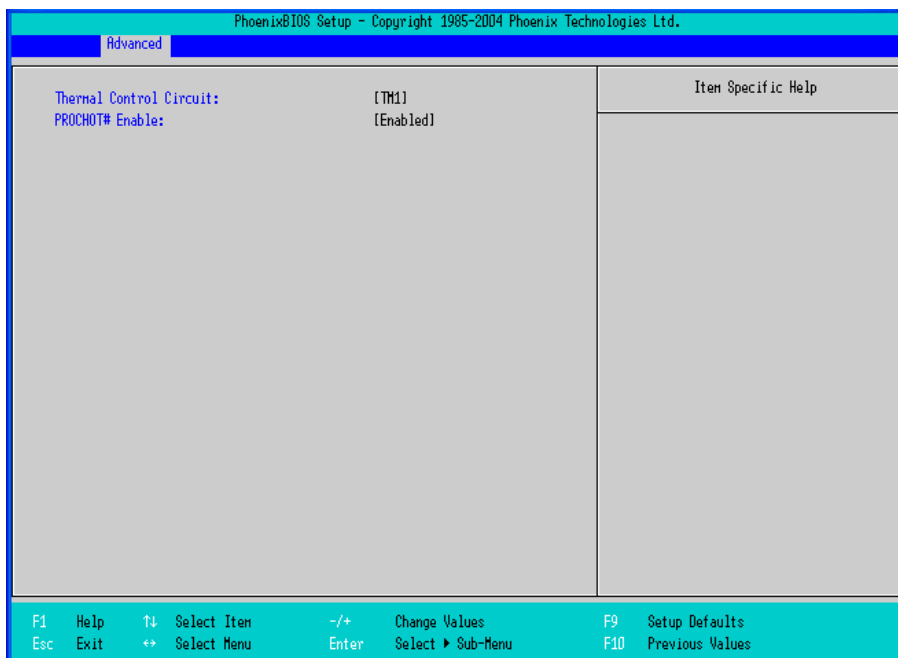
Specifies the maximum value of the CPUID basic information which can be recognized with the CPUID instruction.

[Enabled]	The maximum value is fixed to "3". Select this option when you use an OS which does not support more than "3" pieces of extended CPUID basic information.
[Disabled]	The maximum value is set to the allowable maximum value of the CPU.

■ CPU Thermal Configuration

Specifies the settings for the CPU temperature monitoring. Point the cursor to [CPU Thermal Configuration] on the [Advanced Processor Configuration] screen and press the [Enter] Key to display the following screen.

```
                    PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
        Advanced

     Thermal Control Circuit:              [TM1]                        Item Specific Help
     PROCHOT# Enable:                      [Enabled]




     F1   Help    ↑↓  Select Item    -/+     Change Values      F9    Setup Defaults
     Esc  Exit    ↔   Select Menu    Enter   Select ▶ Sub-Menu  F10   Previous Values
```

Thermal Control Circuit

Specifies whether to use the CPU temperature protection feature.

| [Disabled] | The CPU temperature protection feature is not used. |
| **[TM1]** | The CPU is operated at 50% duty ratio. |

PROCHOT# Enable

Specifies whether to issue a "PROCHOT#" signal when the CPU's temperature reaches the maximum safe operating temperature.

| **[Enabled]** | Issues a "PROCHOT#" signal when the maximum safe operating temperature is reached. |
| [Disabled] | Does not issue a "PROCHOT#" signal when the maximum safe operating temperature is reached. |

■ Power-ON Configuration

Specifies the PL operations at power-on. Point the cursor to [Power-ON Configuration] on the [Advanced] menu and press the [Enter] Key to display the following screen.
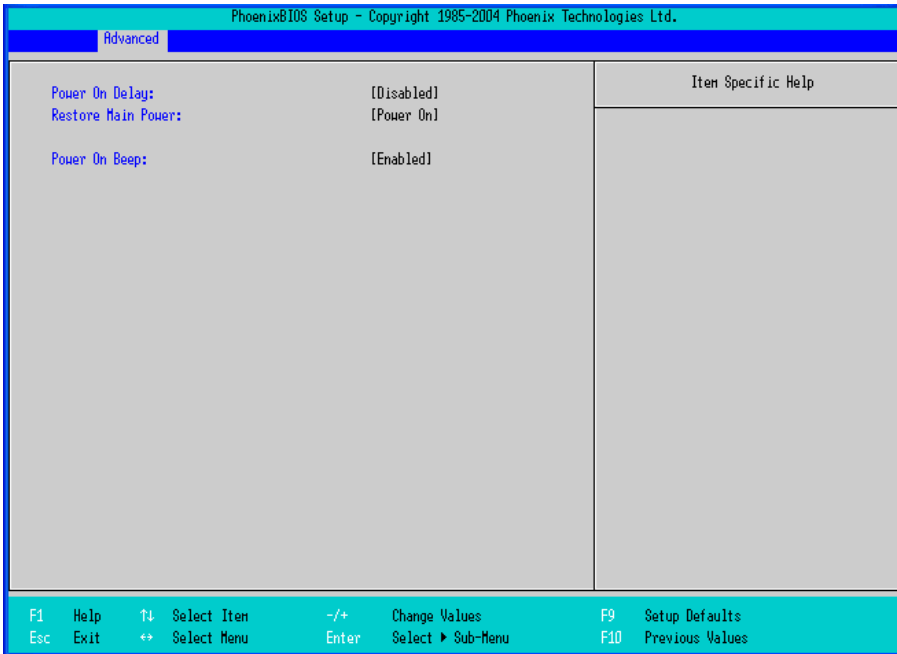
Power On Delay

Specify whether to set standby time before the system starts up.

[Enabled]   The system waits for 4 seconds before start-up.

[Disabled]   The system starts up normally.

NOTE
- If a USB device such as USB memory is connected to the PL when the PL is started, the following phenomenon may occur, depending on the device:
  - It takes about 1 minute before the OS starts up.
  - The PL does not recognize the USB device.

  These problems may be solved by setting [Power On Delay] to [Enable].

Restore Main Power

Specifies the operation when the main power is turned to ON. When [Power on Delay] is [Enabled], this option is not displayed.

[Stay Off]   The PL unit does not start when the reset switch is turned to ON.

                                  It starts when the reset switch is pressed.

[Power On]   The PL unit starts when the main power is turned to ON.

NOTE
- Normally, specify [Power On] for use.
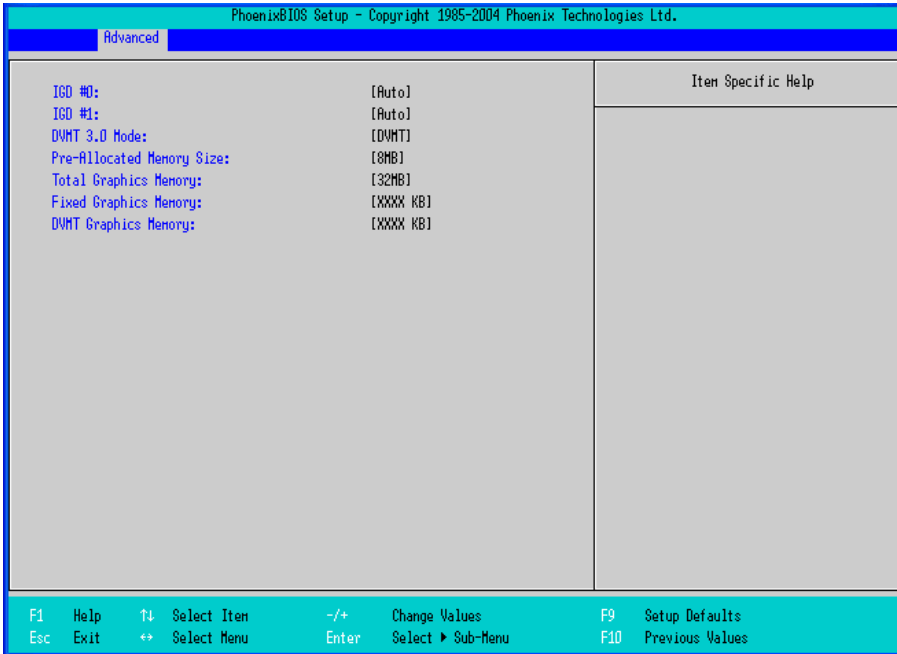- When you change the setting to [Stay off], launch the OS again without turning the main power OFF.

Power On Beep

Specify whether to sound a "beep" upon system boot-up.

[Enabled]　　　　　　　Sounds at start-up.

[Disabled]　　　　　　　Does not sound at start-up.

■ Video (Intel IGD) Configuration

Specifies graphic-related settings. Point the cursor to [Video (Intel IGD) Configuration] on the [Advanced]

screen and press the [Enter] Key to display the following screen.

```
                  PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
      ┌─────────┐
      │ Advanced│
      └─────────┘

        IGD #0:                          [Auto]                         Item Specific Help
        IGD #1:                          [Auto]
        DVMT 3.0 Mode:                   [DVMT]
        Pre-Allocated Memory Size:       [8MB]
        Total Graphics Memory:           [32MB]
        Fixed Graphics Memory:           [XXXX KB]
        DVMT Graphics Memory:            [XXXX KB]





      F1    Help     ↑↓  Select Item      -/+     Change Values       F9    Setup Defaults
      Esc   Exit     ↔   Select Menu      Enter   Select ▶ Sub-Menu   F10   Previous Values
```

IMPORTANT
- When using the PCI graphic board, make sure to set the IGD#0 setting to [Disabled].
- The PCI graphic board can be used only with the PL3000 series box type.

IGD #0

Shows an enabled/disabled state for graphics device 0 in the chipset.

[Disabled]   Shows that the embedded graphics device cannot be used.

[Auto]   Shows that the embedded graphics device can be used.

NOTE
- When you are using the PL3000 series box type, another graphic device embedded in the chipset, which is not displayed above, can be enabled or disabled. Select either [Disabled] or [Auto].

IGD #1

Specifies whether to enable or disable the graphics device 1 in the chipset.

When the IGD #0 is [Disabled], this option is not displayed.

[Disabled]   Does not use the embedded graphics device.

[Auto]   Uses the embedded graphics device.

DVMT 3.0 Mode

Specifies the form of the memory used by the graphic in the chipset.

When the IGD #0 is [Disabled], this option is not displayed.

[Fixed]	The fixed area is used as video memory.
[DVMT]	The DVMT (Dynamic Video Memory Technology) feature is used so that video memory is dynamically allocated from main memory.
[Combo]	Combination of [Fixed] and **[DVMT]**.

Pre-Allocated Memory Size

Specifies the video memory size which BIOS allocates in advance as a fixed area at start-up.

When the IGD #0 is [Disabled], this option is not displayed.

[1MB]	Allocates 1 MB as video memory.
[8MB]	Allocates 8 MB as video memory.

Total Graphics Memory

Specifies the total memory size allocated to video memory. When [DVMT 3.0 Mode] is set to [Fixed] or

[Combo], the fixed value is displayed and cannot be changed.

When the IGD #0 is [Disabled], this option is not displayed.

[64MB]	Allocates 64 MB as video memory.
[128MB]	Allocates 128 MB as video memory.
[MaxDVMT] (224MB)	Allocates 224 MB as video memory.

Fixed Graphics Memory

Specifies the size of the video memory used as a fixed area.

When the IGD #0 is [Disabled], this option is not displayed. Also, when [DVMT 3.0 Mode] is either [Fixed]

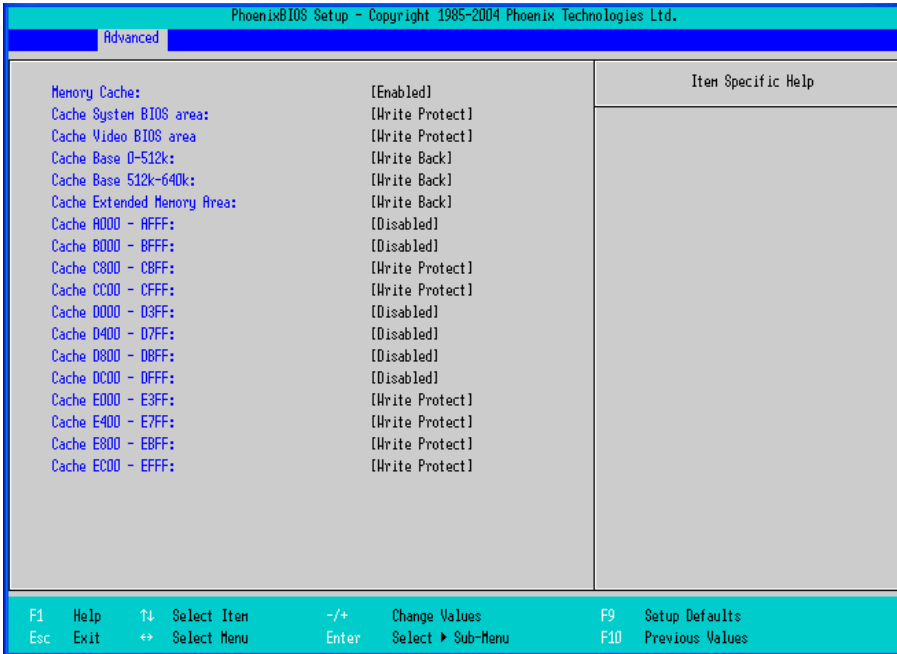or [DVMT], this option is not displayed.

DVMT Graphics Memory

Displays the size of the video memory which can be dynamically allocated by using the DVMT feature.

When the IGD #0 is [Disabled], this option is not displayed.

■ Cache Memory Configuration

Specifies the parameters for the cache memory. Point the cursor to the [Cache Memory] on the [Advanced]

screen and press the [Enter] Key, so that the following screen will be displayed.

```
                PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
      Advanced

                                                                        Item Specific Help
    Memory Cache:                    [Enabled]
    Cache System BIOS area:          [Write Protect]
    Cache Video BIOS area            [Write Protect]
    Cache Base 0-512k:               [Write Back]
    Cache Base 512k-640k:            [Write Back]
    Cache Extended Memory Area:      [Write Back]
    Cache A000 - AFFF:               [Disabled]
    Cache B000 - BFFF:               [Disabled]
    Cache C800 - CBFF:               [Write Protect]
    Cache CC00 - CFFF:               [Write Protect]
    Cache D000 - D3FF:               [Disabled]
    Cache D400 - D7FF:               [Disabled]
    Cache D800 - DBFF:               [Disabled]
    Cache DC00 - DFFF:               [Disabled]
    Cache E000 - E3FF:               [Write Protect]
    Cache E400 - E7FF:               [Write Protect]
    Cache E800 - EBFF:               [Write Protect]
    Cache EC00 - EFFF:               [Write Protect]




    F1   Help    ↑↓  Select Item    -/+    Change Values      F9    Setup Defaults
    Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu   F10   Previous Values
```

Memory Cache

Specifies an enabled/disabled state for the Memory Cache.

[Enabled]   Uses cache memory.

[Disabled]   Does not use cache memory.

Cache System BIOS area

Specifies the cache set-up for the System BIOS area.

[uncached]   Does not cache the System BIOS area.

[Write Protect]   Write protects the System BIOS area.

Cache Video BIOS area

Specifies the cache set-up for the VIDEO BIOS area.

[uncached]   Does not cache the System BIOS area.

[Write Protect]   Write protects the System BIOS area.

Cache Base 0-512k

Specifies the cache set-up for the Base Memory, 0 ~ 512k.

[uncached]   Does not cache the System BIOS area.

[Write Through]   Uses Write Through method.

[Write Protect]   Write protects the System BIOS area.

[Write Back]   Uses Write Back method.

Cache Base 512-640k

Specifies the cache set-up for the Base Memory, 512 ~ 620k.

[uncached]	Does not cache the System BIOS area.
[Write Through]	Uses Write Through method.
[Write Protect]	Write protects the System BIOS area.
[Write Back]	Uses Write Back method.

Cache Extended Memory Area

Specifies the cache set-up for the Extended Memory area.

[uncached]	Does not cache the System BIOS area.
[Write Through]	Uses Write Through method.
[Write Protect]	Write protects the System BIOS area.
[Write Back]	Uses Write Back method.

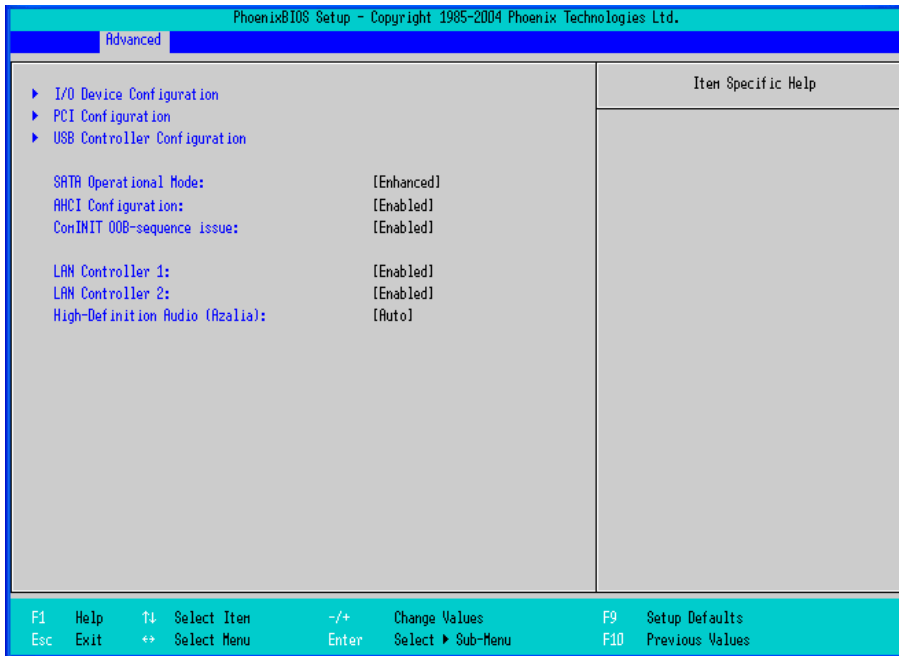Cache xxxx-xxxx

Specifies the cache setting for each address.

[uncached]	Does not cache the System BIOS area.
[USWC Caching]	Uses USWC (Uncached Speculative Write Combining) method.
	(Only addresses A000-AFFF and B000-BFFF are available.)
[Write Through]	Uses Write Through method.
[Write Protect]	Write protects the System BIOS area.
[Write Back]	Uses Write Back method.

The factory default setting is as follows.

A000 - AFFF	Disabled
B000 - BFFF	Disabled
C800 - CBFF	Write Protect
CC00 - CFFF	Write Protect
D000 - D3FF	Disabled
D400 - D7FF	Disabled
D800 - DBFF	Disabled
DC00 - DFFF	Disabled
E000 - E3FF	Disabled
E400 - E7FF	Write Protect
E800 - EBFF	Write Protect
EC00 - EFFF	Write Protect

■ Integrated Device Configuration

Specifies the settings for the integrated devices. Point the cursor to [Integrated Device Configuration] on the [Advanced] screen and press the [Enter] Key to display the following screen.

```
          PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
      Advanced

                                                              Item Specific Help
   ▶  I/O Device Configuration
   ▶  PCI Configuration
   ▶  USB Controller Configuration

      SATA Operational Mode:              [Enhanced]
      AHCI Configuration:                 [Enabled]
      ComINIT OOB-sequence issue:         [Enabled]

      LAN Controller 1:                   [Enabled]
      LAN Controller 2:                   [Enabled]
      High-Definition Audio (Azalia):     [Auto]




   F1    Help     ↑↓  Select Item      -/+    Change Values      F9   Setup Defaults
   Esc   Exit     ↔   Select Menu      Enter  Select ▶ Sub-Menu  F10  Previous Values
```

I/O Device Configuration

Point the cursor to [I/O Device Configuration] and press the [Enter] Key to go to the set-up screen for the I/O addresses and interrupt Nos. of the integrated devices.

$\boxed{\text{SEE} \rightarrow}$ ■ *I/O Device Configuration (page2-20)*

PCI Configuration

Point the cursor to [PCI Configuration] and press the [Enter] Key to go to the PCI resource set-up screen.

$\boxed{\text{SEE} \rightarrow}$ ■ *PCI Configuration (page2-21)*

USB Controller Configuration

Point the cursor to [USB Configuration] and press the [Enter] Key to go to the USB controller set-up screen.

$\boxed{\text{SEE} \rightarrow}$ ■ *USB Controller Configuration (page2-23)*

SATA Operational Mode

Specifies the operation mode of the SATA controller.

[Compatible]   Legacy mode is used.

[Enhanced]   Native mode is used.

AHCI Configuration

Specifies whether to use the AHCI mode for SATA. When [SATA Operational Mode] is [Compatible], this option is not displayed.

[Enabled]   Uses AHCI mode.

[Disabled]   Does not use AHCI mode.

IMPORTANT • When installing the OS with [AHCI Configuration] set to [Enable], download Intel Matrix Storage Manager from the Pro-face support site "Otasuke Pro!". For the detailed installation procedure, refer to the "Otasuke Pro!" site. http://www.pro-face.com/otasuke/

ComINIT OOB-sequence issue

Specifies whether to use an Intel BIOS Spec. 2.0. When [SATA Operation Mode] is [Compatible], or when [AHCI Configuration] is [Disabled], this option is not displayed.

[Enabled]   Uses Intel BIOS Spec. 2.0.

[Disabled]   Does not use Intel BIOS Spec. 2.0.

NOTE • In AHCI mode, be sure to use an Intel-manufactured AHCI driver. When installing Windows Vista (not supported OS) on the SATA drive (in AHCI mode) on user authority, using a Microsoft-manufactured AHCI driver (which is included in the Vista Installer) causes the PL to hang up during the OS start-up process for installing.

If you use a Microsoft-manufactured AHCI driver accidentally, change this setting to [Disabled] to install an Intel-manufactured AHCI driver, and then reset the setting to [Enabled].

LAN Controller 1

Displays the enabled/disabled status of the LAN controller 1.

[Enabled]   Indicates that LAN controller 1 is enabled.

[Disabled]   Indicates that LAN controller 1 is disabled.

LAN Controller 2

Specifies whether to use the LAN controller 2.

[Enabled]   Uses the LAN controller 2.

[Disabled]   Does not use the LAN controller 2.

High-Definition Audio (Azalia)

Specifies whether to use the HD audio feature.

[Auto]   Uses the HD audio feature.

[Disabled]   Does not use the HD audio feature.

■ I/O Device Configuration

Specifies the address and interrupt level of the I/O ports. Point the cursor to the [I/O Device Configuration] on

the [Integrated Device Configration] screen and press the [Enter] Key, so that the following screen will be

displayed.

```
┌──────────────────────────────────────────────────────────────────┐
│        PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.    │
│   ┌─────────┐                                                      │
│   │ Advanced │                                                     │
│   └─────────┘                                                      │
│                                                    Item Specific Help │
│      COM Port 1:                [Enabled]                          │
│      Base I/O address:          [3F8]                              │
│      Interrupt:                 [IRQ 4]                            │
│      COM Port 2:                [Enabled]                          │
│      Base I/O address:          [2F8]                              │
│      Interrupt:                 [IRQ 3]                            │
│      COM Port 3:                [Enabled]                          │
│      Base I/O address:          [3E8]                              │
│      Interrupt:                 [IRQ 11]                           │
│      COM Port 4:                [Enabled]                          │
│      Base I/O address:          [2E8]                              │
│      Interrupt:                 [IRQ 10]                           │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│ F1   Help    ↑↓  Select Item    -/+    Change Values    F9   Setup Defaults │
│ Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu  F10  Previous Values │
└──────────────────────────────────────────────────────────────────┘
```
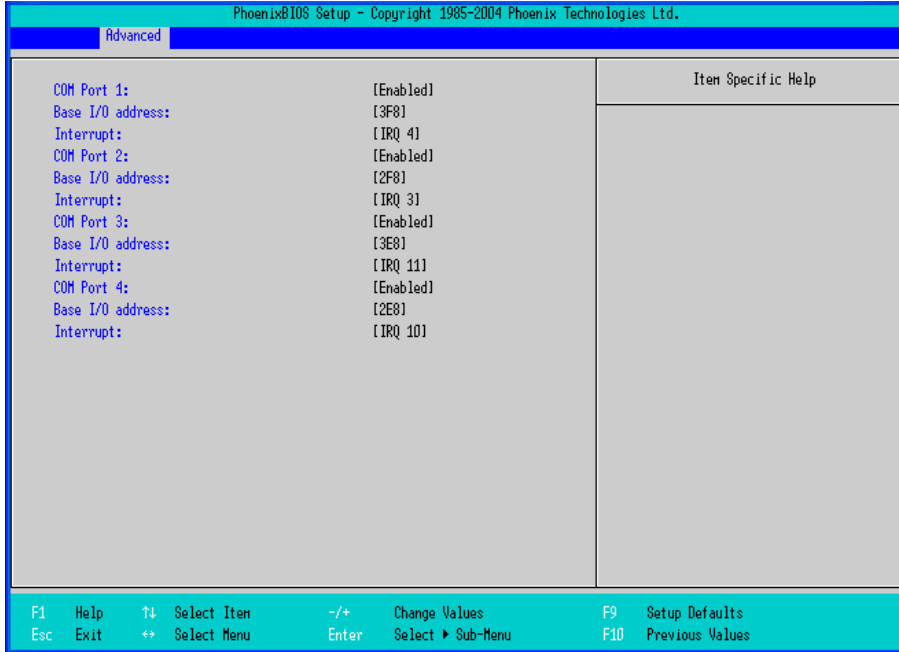
COM Port 1, 2, 3, 4

Specifies whether to use the COM port.

[Enabled]   Uses the COM port.

[Disabled]   Does not use the COM port.

Base I/O Address

Specifies the base I/O address of the COM port. The base I/O address must be unique among the COM ports.

When [COM Port] is [Disabled], this option is not displayed.

[3F8] (Factory default setting for COM1)   The base I/O address is set to 03F8h-03FF.

[2F8] (Factory default setting for COM2)   The base I/O address is set to 02F8h-02FF.

[3E8] (Factory default setting for COM3)   The base I/O address is set to 03E8h-03EF.

[2E8] (Factory default setting for COM4)   The base I/O address is set to 02E8h-02EF.

Interrupt

Specifies the interrupt No. of the COM port. The interrupt No. must be unique among the COM ports. When

[COM Port] is [Disabled], this option is not displayed.

[IRQ3] (Factory default setting for COM2)   The interrupt No. is set to 3.

[IRQ4] (Factory default setting for COM1)   The interrupt No. is set to 4.

[IRQ10] (Factory default setting for COM4) The interrupt No. is set to 10.

[IRQ11] (Factory default setting for COM3) The interrupt No. is set to 11.

■ PCI Configuration

Specifies the PCI IRQ parameters. Point the cursor to the [PCI Configuration] on the [Integrated Device

Configration] screen and press the [Enter] Key, so that the following screen will be displayed.

```
                    PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
        Advanced

                                                                      Item Specific Help
   ▶  PCI/PNP ISA IRQ Resource Exclusion

      PCI IRQ line 1:                    [Auto Select]
      PCI IRQ line 2:                    [Auto Select]
      PCI IRQ line 3:                    [Auto Select]
      PCI IRQ line 4:                    [Auto Select]
      PCI IRQ line 5:                    [Auto Select]
      PCI IRQ line 6:                    [Auto Select]
      PCI IRQ line 7:                    [Auto Select]
      PCI IRQ line 8:                    [Auto Select]










   F1   Help    ↑↓  Select Item   -/+    Change Values      F9   Setup Defaults
   Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu  F10  Previous Values
```
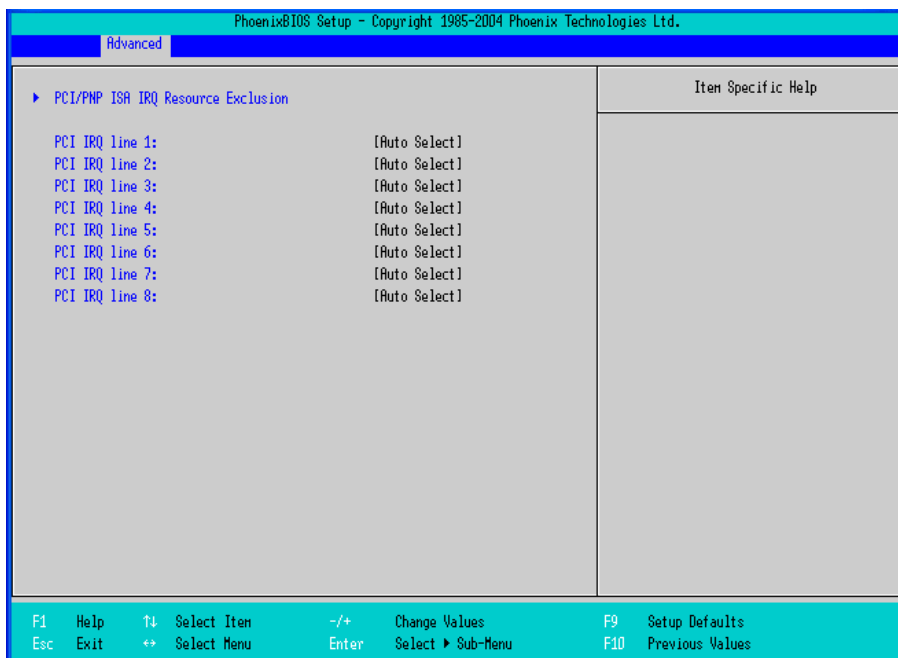
PCI/PNP ISA IRQ Resource Exclusion

Point the cursor to [PCI/PNP ISA IRQ Resource Exclusion] and press the [Enter] Key to go to the PCI/PNP

ISA IRQ screen.

PCI IRQ line 1 to PCI IRQ line 8

Specifies the interrupt No. of the PCI.

[Disabled]	The PCI is not used.
[Auto Select]	The interrupt No. is allocated automatically.
[3] to [15]	Each preset interrupt No. is used.

■ PCI/PNP ISA IRQ Resource Exclusion

Specifies the IRQ resource to be reserved for the ISA interrupt.

Point the cursor to [PCI/PNP ISA IRQ Resource Exclusion] on the [PCI Configuration] screen and press the

[Enter] Key to display the following screen.

```
┌──────────────────────────────────────────────────────────────────────────┐
│            PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.│
│   Advanced                                                                 │
├──────────────────────────────────────────────────────────────────────────┤
│                                                      Item Specific Help     │
│   IRQ 3:                      [Available]                                   │
│   IRQ 4:                      [Available]                                   │
│   IRQ 5:                      [Available]                                   │
│   IRQ 7:                      [Available]                                   │
│   IRQ 10:                     [Available]                                   │
│   IRQ 11:                     [Available]                                   │
│   IRQ 15:                     [Available]                                   │
│                               [Available]                                   │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
├──────────────────────────────────────────────────────────────────────────┤
│  F1   Help    ↑↓  Select Item    -/+    Change Values       F9   Setup Defaults│
│  Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu   F10  Previous Values│
└──────────────────────────────────────────────────────────────────────────┘
```
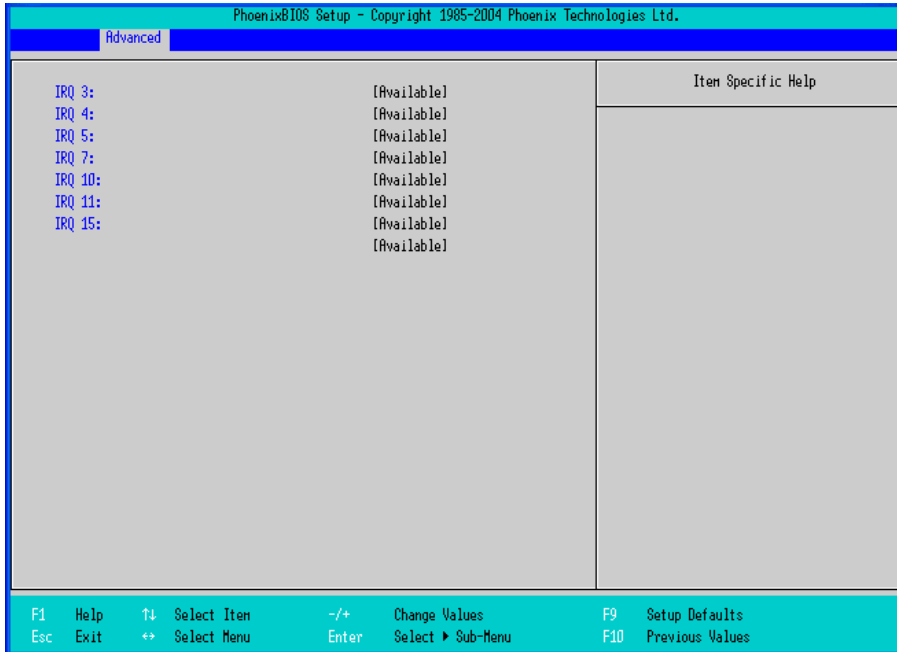
IRQ3, 4, 5, 7, 10, 11, 15

[Available]   IRQ is not reserved.

[Reserve]   IRQ is reserved.

■ USB Controller Configuration

Specifies the USB controller options. Point the cursor to [USB Controller Configuration] on the [Integrated Device Configuration] screen and press the [Enter] Key to display the following screen.

```
                    PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
        Advanced

        USB Controller #0:              [Enabled]                    Item Specific Help
        USB Controller #1:              [Enabled]
        USB Controller #2:              [Enabled]
        USB Controller #3:              [Enabled]

        USB 2.0 Controller:             [Enabled]



        F1   Help    ↑↓  Select Item     -/+    Change Values       F9   Setup Defaults
        Esc  Exit    ↔   Select Menu     Enter  Select ▶ Sub-Menu   F10  Previous Values
```
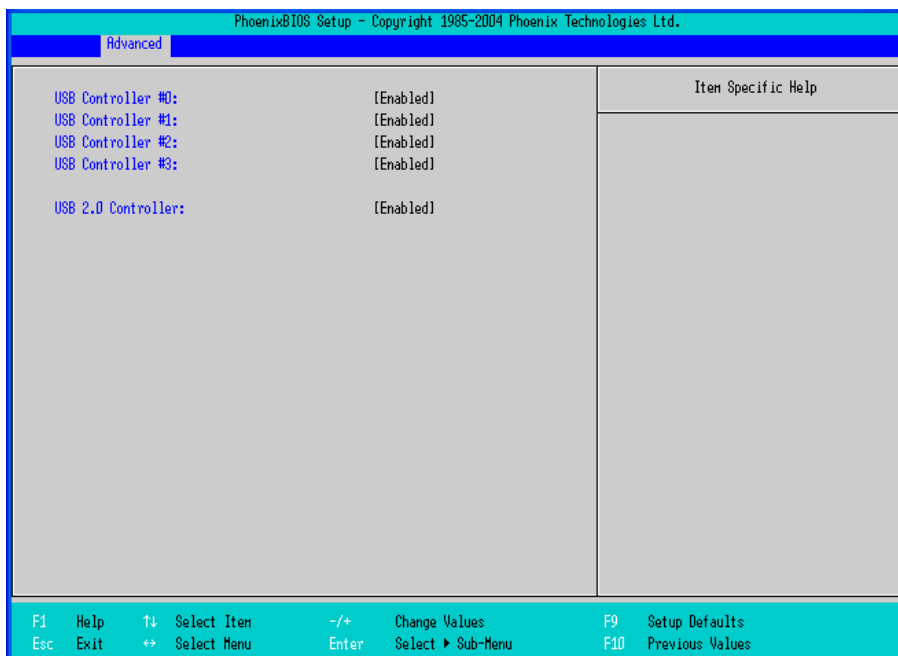
USB Controller #0

Displays the enabled/disabled status of the USB controller #0.

    [Enabled]   USB controller #0 is enabled.

    [Disabled]   USB controller #0 is disabled.

USB Controller #1

Specifies whether to use the USB controller 1.

When [USB Controller #0] is [Disabled], this option is fixed to [Disabled] and not displayed.

    [Enabled]   Uses the USB controller #1.

    [Disabled]   Does not use the USB controller #1.

USB Controller #2

Specifies whether to use the USB controller 2.

When [USB Controller #0] or [USB Controller #1] is [Disabled], this option is fixed to [Disabled] and not displayed.

    [Enabled]   Uses the USB controller #2.

    [Disabled]   Does not use the USB controller #2.

USB Controller #3

Specifies whether to use the USB controller 3.

When [USB Controller #0], [USB Controller #1] or [USB Controller #2] is [Disabled], this option is fixed to

[Disabled] and not displayed.

[Enabled]	Uses the USB controller #3.
[Disabled]	Does not use the USB controller #3.

USB 2.0 Controller

Specifies whether to use the USB 2.0 controller.

When [USB Controller #0] is [Disabled], this option is fixed to [Disabled] and not displayed.

[Enabled]	Uses the USB 2.0 controller.
[Disabled]	Does not use the USB 2.0 controller.

NOTE
- When installing Windows® 2000 using a USB CD-ROM drive compatible with USB 2.0, leaving this setting on [Enabled] causes the installation to fail with a blue screen error. This occurs because Windows® 2000 Installer does not support USB 2.0. To complete this installation successfully, change the setting to [Disabled].

■ DMI Event Logging

Specifies the parameters related to DMI event logging. Point the cursor to the [DMI Event Logging] on the [Advanced] screen and press the [Enter] Key, so that the following screen will be displayed.

```
                PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
      Advanced

                                                                    Item Specific Help
      Event log validity
      Event log capacity

      View DMI event log

      Event Logging                       [Enabled]
      ECC Event Logging                   [Enabled]

      Mark DMI events as read
      Clear all DMI event logs            [No]

 F1   Help    ↑↓  Select Item   -/+    Change Values      F9   Setup Defaults
 Esc  Exit    ↔   Select Menu   Enter  Select ▶ Sub-Menu  F10  Previous Values
```
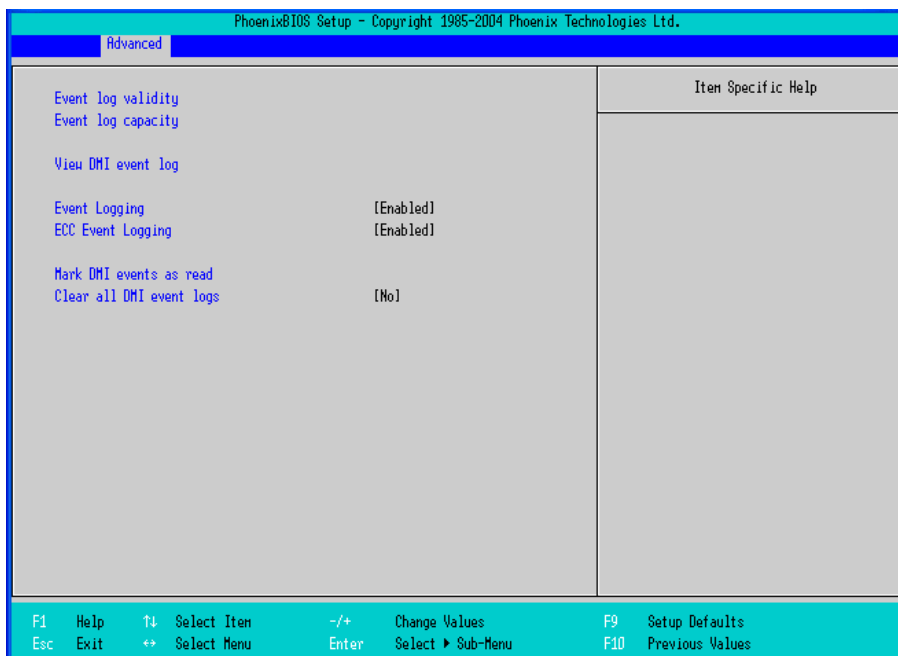
Event log validity

Shows the status of the event log storage area.

| [Valid] | The status is normal. |
| [Not valid] | The status is abnormal. |

Event log capacity

Shows the status of the area to which event logs are written.

| [Full] | The area is full. |
| [Space Available] | The area is not full. |

View DMI event log

Point the cursor to [View DMI event log] and press the [Enter] Key to view the DMI event logs.

Event Logging

Specifies whether event logs need to be recorded.

| **[Enabled]** | Records event logs. |
| [Disabled] | Does not record event logs. |

ECC Event Logging

Specifies whether the event logs related to memory ECC need to be recorded.

| **[Enabled]** | Records ECC error related event logs. |
| [Disabled] | Does not record ECC error related event logs. |

Mark DMI events as read

Point the cursor to [Mark DMI events as read] and press the [Enter] Key to mark unread event logs as read.

Clear all DMI event logs

Specifies whether all the recorded DMI event logs need to be deleted.

[No]   Does not delete event logs.

[Yes]   Deletes event logs.

                                Automatically reset to [No] after the data is initialized.

■ Soft Mirror Status

Displays and specifies the soft mirror status. Point the cursor to the [Soft Mirror Status] on the [Advanced] screen and press the [Enter] Key to display the following screen.

```
          PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
    Advanced

                                              Item Specific Help
   Mirror System:
   Active Disk:

   Clear Mirror Status:              [No]

  F1   Help    ↑↓  Select Item    -/+    Change Values      F9   Setup Defaults
  Esc  Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu  F10  Previous Values
```
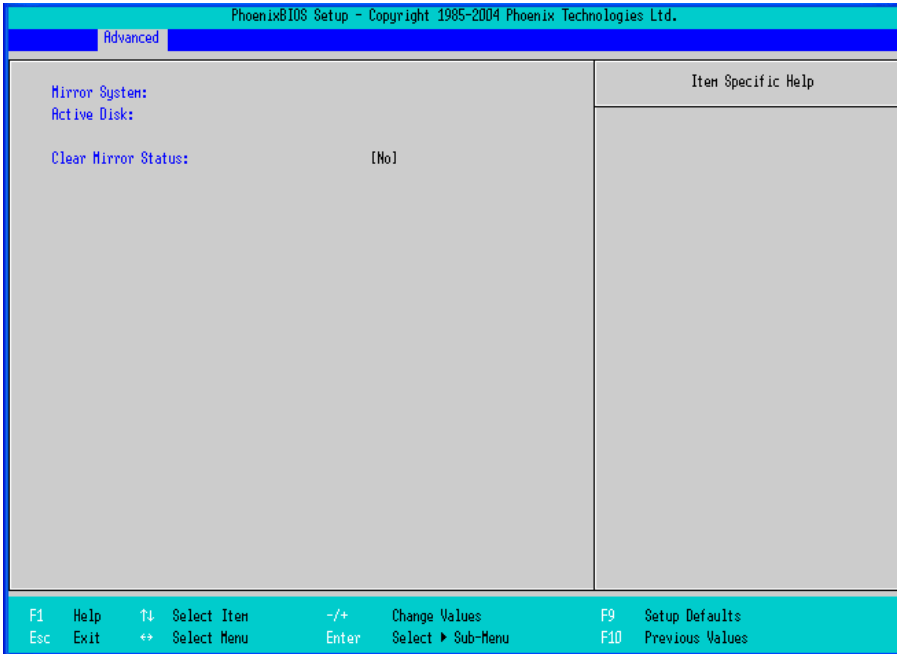
Mirror System

Displays the soft mirror status.

[Unknown]   Indicates the status that mirroring is not configured properly.

[Good]   Indicates the status that the mirroring feature has performed properly.

[Reduced]   Indicates the status that the mirroring feature has performed in only one HDD
                            because an error occurred in either of the two HDDs during normal operation.

Active Disk

Displays which drive is specified as the boot disk.

[Unknown]   Indicates the status that mirroring is not configured properly.

[HDD 0]   Indicates that DISK0(HDD0) is active.

[HDD 1]   Indicates that DISK1(HDD1) is active.

[Both]   Indicates that both HDD0(DISK0) and HDD1(DISK1) are active.

Clear Mirror Status

Specifies whether to delete the recorded soft mirror status at next boot-up.

[No]   The recorded status is not deleted.

[Yes]   The recorded status is deleted at next boot-up. The setting is reset automati-
                                cally to [No] after the status data is deleted. Normally, specify [No] for use.

2.2.3   Security

```
                    PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
   Main    Advanced   Security   Boot    Exit

                                                              Item Specific Help
     Set User Password
     Set Supervisor Password

     Password on boot:              [Disabled]
     Fixed disk boot sector:        [Normal]












   F1    Help    ↑↓  Select Item    -/+    Change Values       F9    Setup Defaults
   Esc   Exit    ↔   Select Menu    Enter  Select ▶ Sub-Menu   F10   Previous Values
```
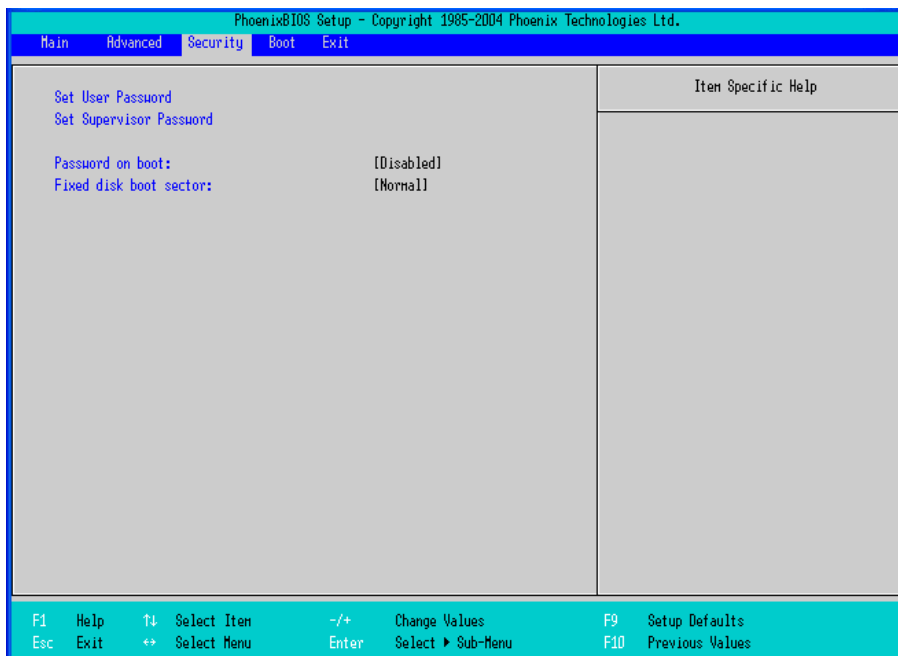
Set User Password / Set Supervisor Password

Allows a password to be set with a maximum of 8 characters. When any password is not needed, do not input

any values in the [Enter New Password] and press just the [Enter] key.

Password on boot

Specifies whether a password should be needed at the Start-Up.

When no password has been set for [Set User Password] or [Set Supervisor Password], the selection is

disabled.

[Enabled]   Requests password.

[Disabled]   Does not request password.

Fixed disk boot sector

Specifies whether writing into the boot sector on the drive is prohibited.

[Normal]   Does not prohibit writing into the boot sector.

[Write Protect]   Prohibits writing into the boot sector.

2.2.4   Boot

Specifies an order for boot-up devices. The boot-up devices are specified in the Boot priority order list and are searched for from the top of the list in sequence. By using the [+] or [-] keys, change its order. To change the device to be booted up, use the [x] key to move the device from the Boot priority order list to the Excluded from boot order list and vice versa.

NOTE
- When a new hard disk or commercial USB memory which does not require boot-up is connected and such a device is given high priority in the Boot priority order list, the system may not boot up properly. Be sure to check the order of the devices in the Boot priority order list after you connect a new device.

```
                PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
     Main     Advanced   Security   Boot   Exit

                                                        Item Specific Help
        Boot priority order:
          1:  STOR DEV:
          2:  SOFT MIRROR:
          3:  STOR DEV:
          4:  STOR DEV:
          5:  IDE CD/DVD:
          6:  USB CD/DVD:
          7:  USB FDC:
          8:  USB HDD:
        Excluded from boot order:
          :  STOR DEV:
          :  STOR DEV:
          :  PXE ROM: IBA GE
          :  PXE ROM: IBA FE
          :  PCI:




     F1    Help     ↑↓  Select Item     -/+    Change Values      F9    Setup Defaults
     Esc   Exit     ↔   Select Menu     Enter  Select ▶ Sub-Menu  F10   Previous Values
```

Boot priority order

Specifies the order of the boot-up devices. The factory default settings are as follows:

1:	STOR DEV	: Storage Device
2:	SOFT MIRROR	: Soft Mirror Boot
3:	STOR DEV	: Storage Device
4:	STOR DEV	: Storage Device
5:	IDE CD/DVD	: IDE CD/DVD Drive
6:	USB CD/DVD	: USB CD/DVD Drive
7:	USB FDC	: USB Floppy Disk Drive
8:	USB STOR	: USB Storage Device

Excluded from boot order

:	STOR DEV	: Storage Device
:	STOR DEV	: Storage Device
:	PXE ROM: IBA GE Slot 0200 v1260:	LAN1 PXE Boot ROM
:	PXE ROM: IBA FE Slot 0840 v4121 :	LAN2 PXE Boot ROM
:	PCI	: Other PCI device

2.2.5   Exit

```
                      PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
    Main     Advanced    Security    Boot    Exit

                                                                     Item Specific Help
       Exit Saving Changes
       Exit Discarding Changes
       Load Setup Defaults
       Discard Changes
       Save Changes












    F1    Help     ↑↓   Select Item     -/+     Change Values        F9    Setup Defaults
    Esc   Exit     ↔    Select Menu      Enter   Select ▶ Sub-Menu    F10   Previous Values
```
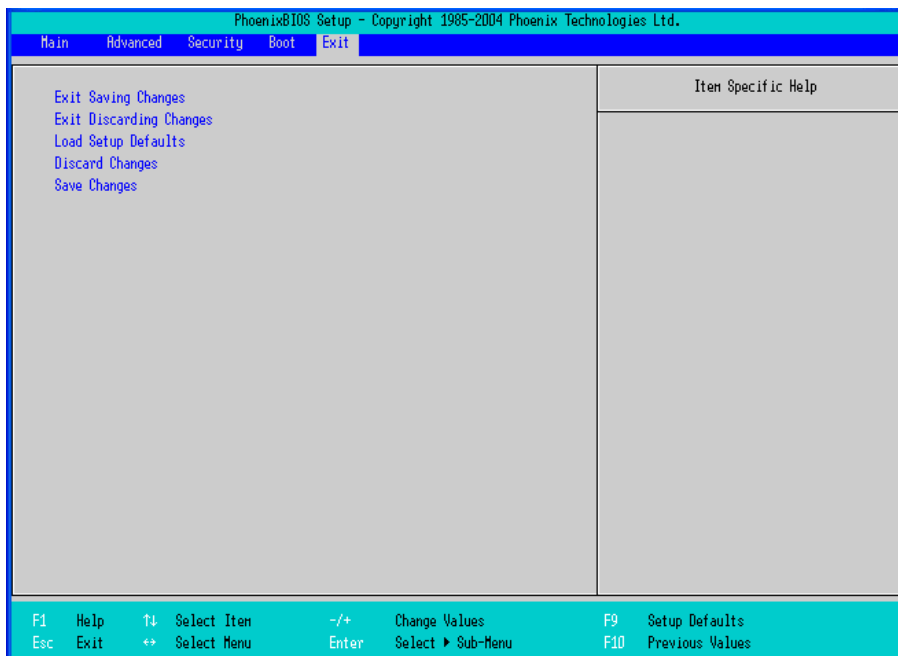
Exit Saving Changes

Point the cursor to the [Exit Saving Changes] on the [Exit] menu and press the [Enter] Key, the current

configuration is saved and the setting procedure is ended.

NOTE   • Pressing the [F10] key performs the same operation.

Exit Discarding Changes

Point the cursor to the [Exit Discarding Changes] on the [Exit] menu and press the [Enter] Key, the current

configuration is NOT saved but the setting procedure is ended.

Load Setup Defaults

Point the cursor to the [Load Setup Defaults] on the [Exit] menu and press the [Enter] Key, all of the current

configuration is back to the factory default settings.

NOTE   • Pressing the [F9] key performs the same operation.

Discard Changes

Point the cursor to the [Discard Changes] on the [Exit] menu and press the [Enter] Key, the current modified

configuration is canceled and the previous setting values are reloaded.

Save Changes

Point the cursor to the [Save Changes] on the [Exit] menu and press the [Enter] Key, the current configuration

which you modified is saved.

3 | PL Monitoring Features

This chapter describes various ways to monitor the status of the PL.

3.1 RAS Features

3.1.1   RAS Features

■ Errors/Alerts which can be Detected by RAS Features

RAS, which stands for Reliability, Availability, and Serviceability, is a device-level monitoring function that provides a variety of features to improve the reliability of your PL system.

Though the standard set of RAS features used will vary depending on the devices used, the following features are used to provide Error/Alert Monitoring and External Input Signal support.

NOTE
• For the setting procedures for Error/Alert Monitoring of RAS features, refer to the following.

SEE→ *3.8 Setup Guide for the system monitor property (page3-29)*

Error/Alert Monitoring	• Power Voltage Alarm Monitors the status of the PL unit's built-in power supply and internal CPU power supply. • Cooling Fan RPM Alarm Monitors the CPU cooling fan RPM speeds. • Internal Temperature Alarm Monitors the internal temperature of the PL unit and the ambient temperature of the CPU. • Watchdog Timer Timeup • Soft Mirror This monitoring is available when the optional Software Mirroring Utility is used. For details, refer to the manual of the Software Mirroring Utility. NOTE • The Software Mirroring Utility cannot be used with pre-installed OS type PL units that have SSD (solid-state drive) units. • Backlight Alarm Monitors whether the backlight goes it. If the backlight goes out, the LED will flash in red/orange. • SMART Alert Predicts the malfunction and life expectancy of the hard disk/SSD/CF. Recommends that the disk be exchanged before experiencing malfunction or reaching the end of its life. • Battery Monitors the operational status of the battery. NOTE • This feature is available on the PL-3000 series main unit with built-in battery. • Battery units cannot be used with pre-installed OS type PL units that have SSD (solid-state drive) units.
External Input Signal	General-Purpose Input [1] (DIN 2-bit) Remote Reset Input [2](1 lamp) SEE→ ◆ *External Input Signals (page3-6)*

*1: General Purpose Signal Input will maintain Input Information.

*2: The remote reset feature's input can be either enabled or disabled, however, the setting of DOUT output state cannot be set to trigger a forced system reset.

IMPORTANT
- An administrator Authentication is required for executing SMART Monitoring.
- PL units do not support monitoring of CF card life.

NOTE
- To enable the remote reset feature's input, specify [Disabled] for the RAS Reset Port Mask feature of the BIOS.

SEE→ *2.2.2 Advanced (page2-7)*

■ Error/Alert Notification

Also, when either the one of the above mentioned error/alert occurs, or an external signal input is received, the following types of alarm processing output signals and features are supported by the PL.

External Output Signal	• General-Purpose Output (DOUT 2-bit) (SEE →) ◆ *External Input Signals (page3-6)*
Various Processing Functions	• LED Indicator (2 colors, 1 lamp) The three-color LED on the front face is used to indicate the PL system conditions. It is also used as a power ON/OFF indicator. (SEE →) ◆ *LED Indicator (page3-6)* • Pop-up Message Output This feature displays the system status via a Windows® pop-up message. • Buzzer Output This feature uses the PL unit's built-in speaker to alert the operator about the system status. • System Shutdown This feature shuts down the PL unit's OS. • System Hibernation This feature sets the OS into hibernation mode. **NOTE** • This feature is available on the PL-3000 series main unit with built-in battery. with built-in battery. • System Reset This feature resets the system when the Watchdog Timer reaches "time up".

Use the included System Monitor feature (utility software) to enable/disable the monitoring features and to set the alarm processing details.

(SEE →) *3.3 Monitoring the PL Status (page3-11)*

In addition, you can use the included dynamic link library (API-DLL) to access the RAS features from user-created applications.

(SEE →) *Otasuke Pro! "PL3000 Series API Reference Manual"*
URL http://www.pro-face.com/otasuke/

■ RAS Feature Overview
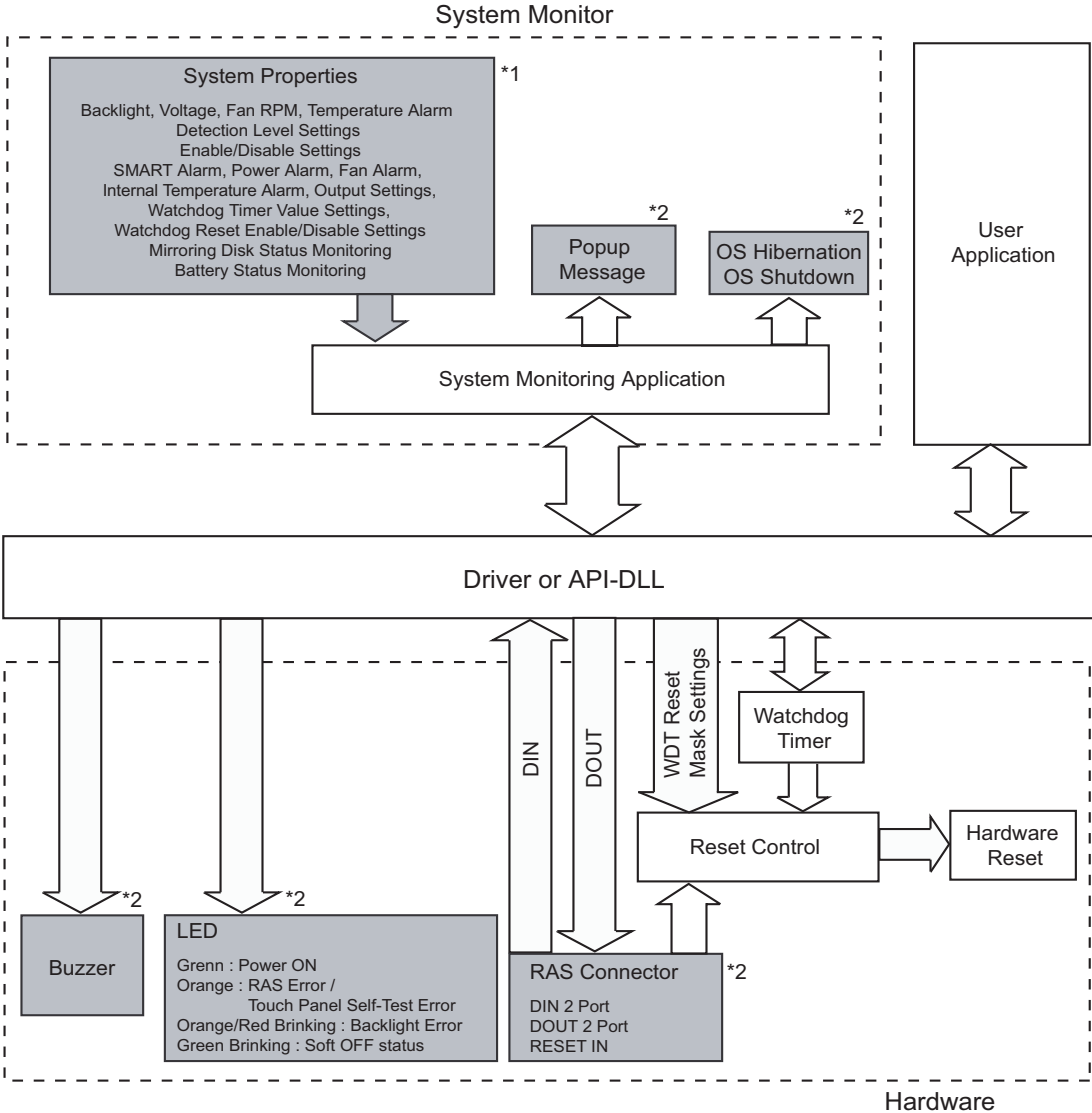
System Monitor

*1   Be sure to adjust these settings according to your system's specifications.

$\boxed{\text{SEE} \rightarrow}$ *3.3 Monitoring the PL Status (page3-11)*

*2   Output via the RAS feature.

◆ LED Indicator

LED Color	System Status	output condition
Green (Lit)	Normal Operation (Power is ON)	None
Green (Blinking)	System is NOT running (Soft OFF)	None
Orange (Lit)	A RAS error/alert occurred.	LED is enabled via System Monitor Property.
Orange/Red (Blinking)	Backlight burnout is detected.	None
Not Lit	Power is OFF	-

◆ External Input Signals

The PL's RAS interface connector uses the following input signals.

• General-Purpose Input (DIN 2 bits)

This standard digital input is used for error/alert detection in external devices. The input signal uses two bits. The System Monitor property of the control panel or the API-DLL can be used to enable or disable this feature, as well as designate what type of processing is to be performed once a signal is received. (Only the "ON" state of the DIN circuit is detected. The "OFF" state of the DIN circuit cannot be monitored.)

• Remote Reset Input

This is the reset signal sent from an external device to the PL. When this signal is enabled, a forced reset of the PL is performed.

The System Monitor property of the control panel or the API-DLL can be used to enable or disable this feature.

NOTE

• To enable Remote Reset Input, make sure to check the [Enable] in the Remote reset tab of System Monitor Property. For Remote reset of System Monitor Property, refer to the following.

SEE → *2.2.2 Advanced (page2-7)*
3.8.5 Remote reset (page3-35)

Input Voltage	DC12V to 24V
Input Method	Sink / Source Input
Input Current	10mA (DC24V)
Input Resistance	3.6kΩ
Input Points	2 points (common with external reset input)
Operation Range	ON voltage	DC10V or more
	OFF voltage	DC3V or less
Isolation Method	Photocoupler Isolation
Dielectric Strength Voltage	500V or more

(Interface Circuit)
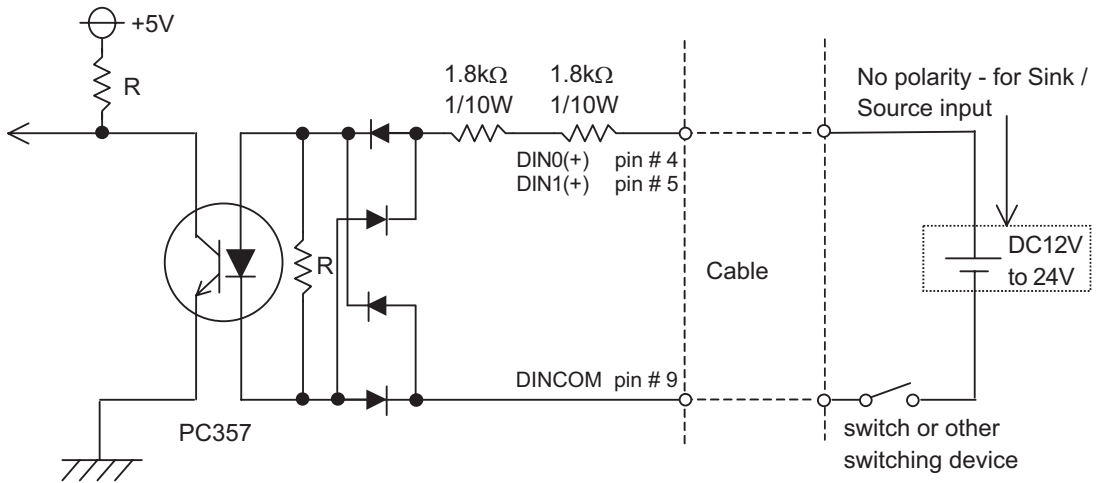
IMPORTANT	• General-Purpose Input (DIN) level must be 1.5 seconds or longer to be detected. It may not detect under 1.5 seconds.

• Be sure the voltage value between terminals is controlled via the input voltage, so that the PL is operated within its recommended range. If the input voltage exceeds this range, a malfunction or PL damage may occur.

• With Sink/Source input, even if the D(-), and RESET(-) are positive, and D(+), RESET(+) are negative, no problems are created. Be sure to operate the unit within the recommended voltage range.

NOTE	• For connection pin location details,

   (SEE→)   *PL3000 Series Hardware Manual "Specifications"*

◆ External Output Signal

The PL's RAS interface connector uses the following output signals.

• General-Purpose Output (DOUT 2 bits)

This general purpose digital output signal provides system condition information to external devices.

The System Monitor property of the control panel or the API-DLL is used by applications to control this signal.

The above mentioned general purpose digital output signals provide system condition information to external devices.

The System Monitor property can be used to enable or disable any of these output signals.

Rated Voltage	DC12V to 24V
Maximum Load Current	120mA/point
Out Voltage Drop	1.5V or less (at 100mA load current)
Output Points	2 points
Isolation Method	Photocoupler Isolation
Dielectric Strength Voltage	500V or more
External Power Supply	DC12V / 100mA

(Interface Circuit)
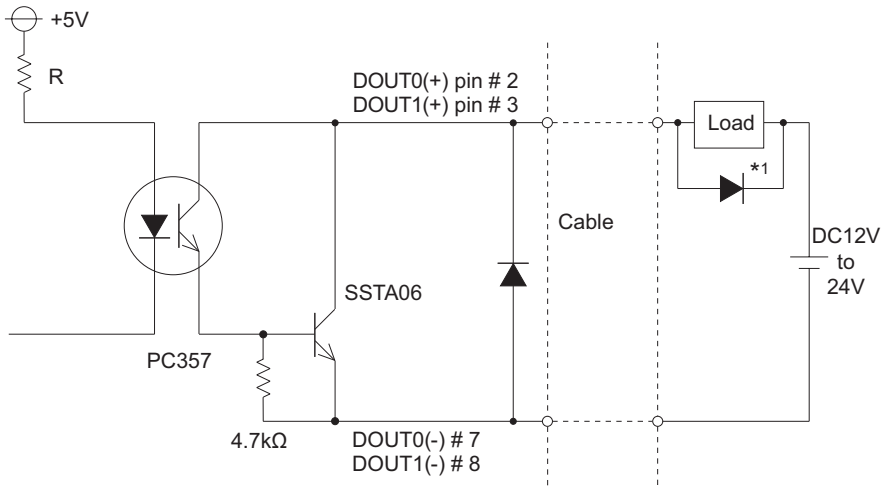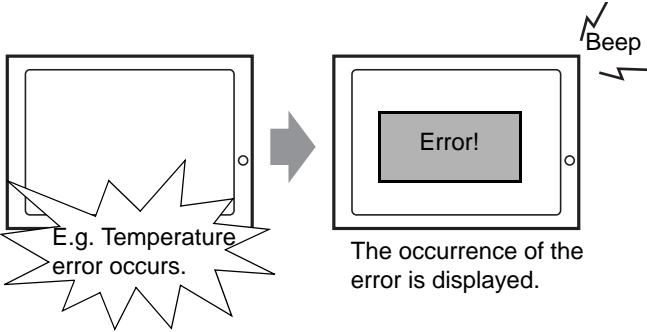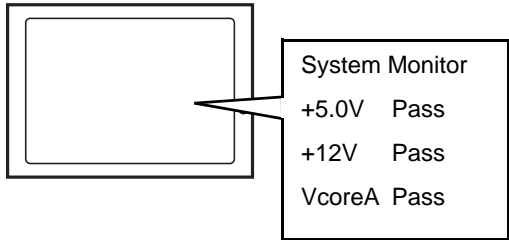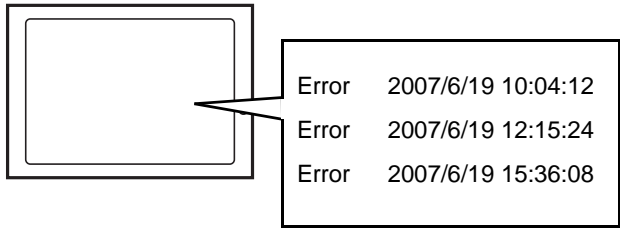
IMPORTANT
- Be sure to operate the unit within its maximum load current. If the maximum load current exceeds this range, a malfunction or PL damage may occur.
- Design your electrical system by adding the load current and voltage values to the terminal voltage. If load current value used is large, the voltage drop of 1.5V or less will occur between the terminals.
- When connecting an induction load, be sure to connect the above drawing's protection diode (*1).

NOTE
- For connection pin location details,

3.2 Setting Menus

Monitoring the PL Status

E.g. Temperature error occurs.

The occurrence of the error is displayed.

Error!

Beep

☞ Description (page3-11)

☞ Setup Procedure (page3-11)

Checking the Status of the PL Being Monitored

System Monitor

+5.0V   Pass

+12V   Pass

VcoreA Pass

☞ Description (page3-16)

☞ Setup Procedure (page3-16)

Checking the Error Log List

Error   2007/6/19 10:04:12

Error   2007/6/19 12:15:24

Error   2007/6/19 15:36:08

☞ Description (page3-17)

☞ Setup Procedure (page3-18)

Monitoring Errors from a Remote Server

) Description (page3-20)

) System Configuration (page3-21)

) Monitoring using Pro-Server with Pro-Studio or Pro-Server EX (page3-25)

Error/alert occurs.

Error/alert is checked.

The error can be checked even from a remote office.

Restarting/Shutting Down the PL from a Remote Server

Via the network

) Description (page3-27)

) Setup Procedure (page3-27)

Reset

Exit

Remote operation from an office in a different location

3.3 Monitoring the PL Status

3.3.1 Description
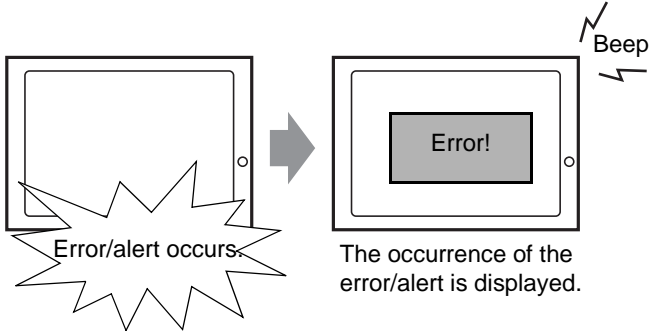
Before starting the setup procedure, specify the items you want to monitor with the RAS features.

When an error/alert occurs, notification is provided according to the specified method.

3.3.2 Setup Procedure

This section describes the procedures to set the PL to monitor specific items using the RAS features.

This section describes the procedure to set the PL to monitor a temperature error and provide notification with a buzzer and pop-up message.

NOTE
- For details about the setup procedure, refer to the Setup Guide.

    SEE → *3.9 Setup Guide for the System Monitor Screen (page3-38)*

(1) Double-click [System Monitor Property] in [Control Panel] to display the [System Monitor Property] screen.

(2) Select the [Temperature] tab.
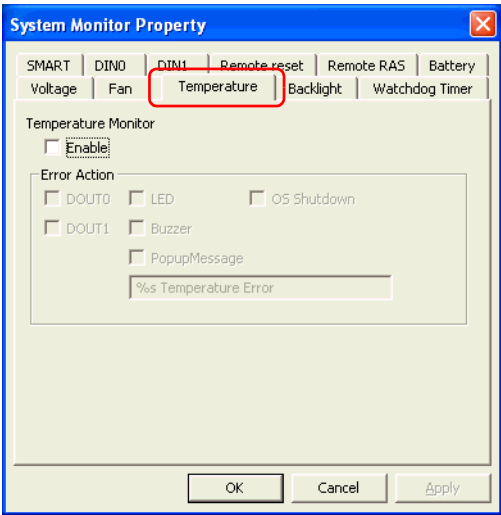
(3)   Check [Enable].
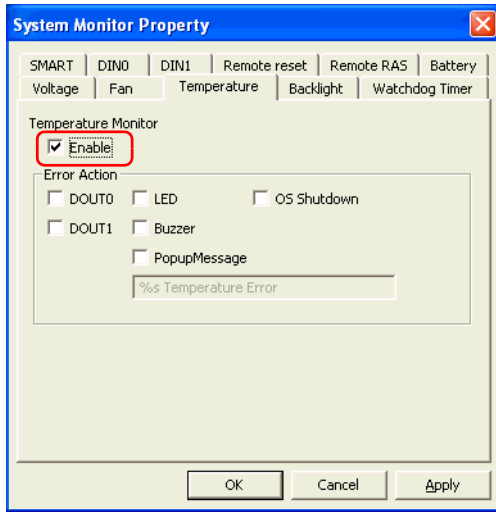
(4)   For [Error Action], check [Buzzer] and [PopupMessage].

Enter the character string you want to display as a pop-up message into the entry field.

(Example: Temperature Error)
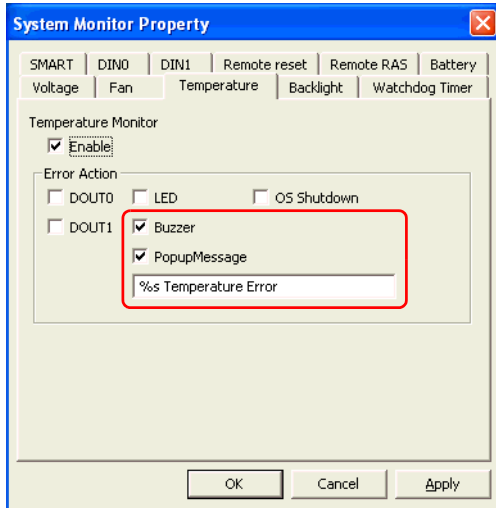
NOTE   •   For the details of the Buzzer and PopupMessage features, refer to the following section..

SEE → *■Error/Alert Notification (page3-4)*

(5)   Click [Apply].

(6)   Click [OK] to complete the setting.

When the monitoring starts, the System Monitor icon appears in the task tray.

NOTE • System Monitor also operates as Windows's Services. When System Monitor applications do not start, the System Monitor Service execute the RAS events setup in the System Monitor Property. You can check the System Monitor Service's operation state by selecting [Control Panel] -> [Administrative Tools] -> [Services].
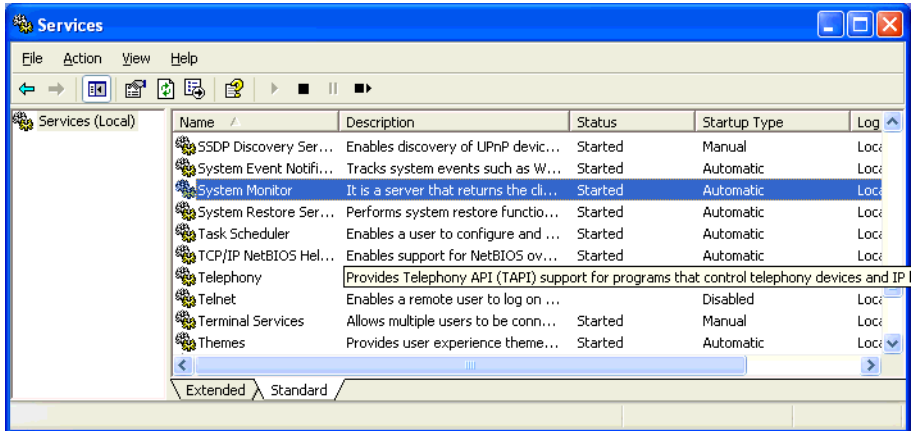
• The pop-up message displayed when the System Monitor Service detects an error/alert differs from ordinary ones.

3.3.3   When an Error Occurs

(1)   A buzzer sounds and a pop-up message is displayed.
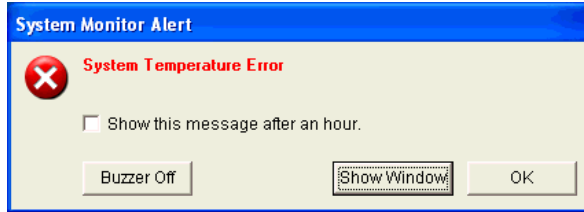
NOTE

• The Error Action is performed only one time when an error is detected for each monitoring item.

• To stop the buzzer, click the [Buzzer Off] button in the pop-up message dialog box.

If the pop-up message is hidden, click the [Buzzer Off] button displayed in the System Monitor

screen.

• You can also display the [System Monitor] screen by pressing [Show Window] on the pop-up

message window.

• When you check the [Show this message after an hour] check box and press the [OK] button, the

pop-up message window will close and will not open for an hour.

(2)   An "×" mark appears on the icon in the System Tray, which indicates an error status, and the icon blinks.

You can see the description of the error by double-clicking the icon.

Icon display on start-ups   Icon display when an error is detected.
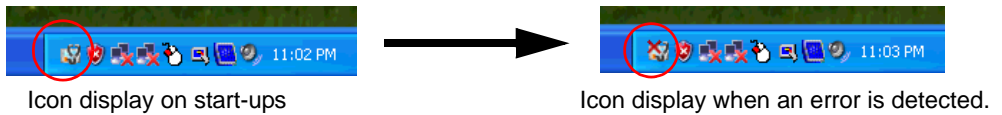
IMPORTANT

• Once an error is detected, the System Monitor holds the "error" status. (Icon

display indicating error detection) To recover from the error status, press the

[Reset] button on the System Monitor screen or turn off the PL. After that, perform

maintenance service for removing the cause of the error factor, and then turn on

the power again.

3.3.4   When an Alert Occurs

(1)   A buzzer sounds and a pop-up message is displayed.

NOTE
- The Alert Action is performed only one time when an alert is detected for each monitoring item.
- To stop the buzzer, click the [Buzzer Off] button in the pop-up message dialog box.

    If the pop-up message is hidden, click the [Buzzer Off] button displayed in the [System Monitor]

    screen.
- You can also display the [System Monitor] screen by pressing [Show Window] on the pop-up

    message window.
- If you do not wish to have the pop-up message displayed again, put a check mark in the [Do not

    show this message again] checkbox.

    Set the amount of days that the pop-up message will not be displayed in the * section of [Do not

    show this message for * days.] The amount of days can be set within a period ranging from 1 to

    65,535 days.

(2)   An "×" mark appears on the icon in the System Tray, which indicates an alert status, and the icon blinks.

    You can see the description of the alert by double-clicking the icon.
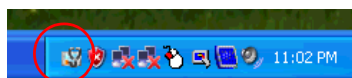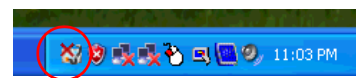
Icon display on start-ups   Icon display when an alert is detected.

IMPORTANT
- Once an alert is detected, the System Monitor holds the "alert" status (Icon display

    indicating alert detection). To recover from the error status, press the [Reset]

    button on the [System Monitor] screen or turn off the PL. After that, perform

    maintenance service for removing the cause of the alert factor, and then turn on

    the power again.

3.4   Checking the Status of the PL Being Monitored

3.4.1   Description
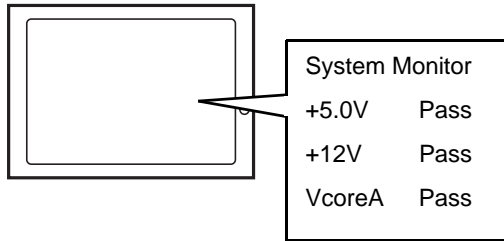
Check the status of the PL being monitored with the RAS features from the System Monitor screen.

You can also use this screen to check error/alert details.

3.4.2   Setup Procedure

NOTE
- For details about the setup procedure, refer to the Setup Guide.

(SEE→)   *3.9 Setup Guide for the System Monitor Screen (page3-38)*

(1)   When the System Monitor starts, the System Monitor icon appears on the task bar. Double-click the System Monitor icon to display the System Monitor screen.
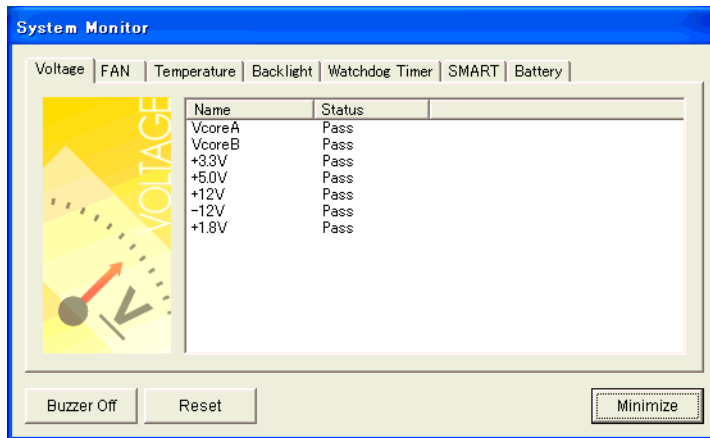
(2)   Click the tab of the item you want to check.

NOTE
- When an error/alert occurs, the color of the corresponding tab changes.
- As for Device No. of SMART, [0] means Master or DISK0(HDD0) and [1] means Slave or DISK1(HDD1).

3.5 Checking the Error Log List

3.5.1 Description

Error   2007/6/19 10:04:12

Error   2007/6/19 12:15:24

Error   2007/6/19 15:36:08
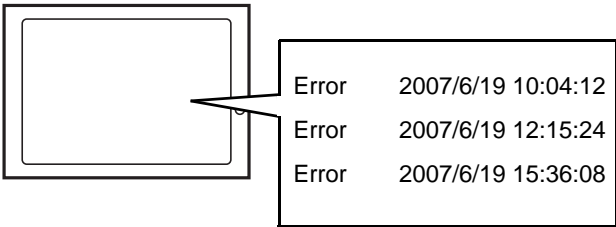
Check the location and action of the previous error/alert on the Event Viewer screen.

3.5.2   Setup Procedure

(1)   Select [Control Panel] - [Administrative Tools] - [Event Viewer] to display the Event Viewer screen.

Select [System] to display the system log list.
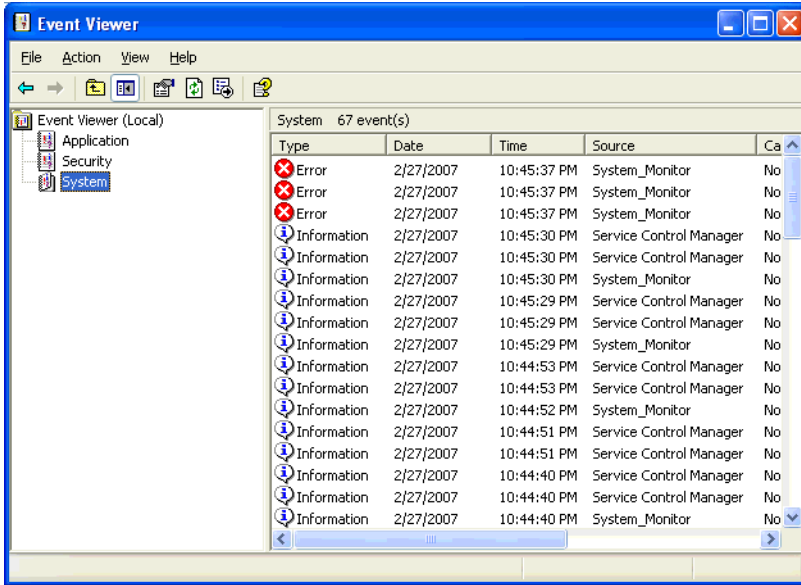
NOTE   •   The Hardware Reset from a Watchdog Timer Error and the reset input for the RAS port cannot be logged.

(2)   Error logs can be recognized by [System Monitor] displayed in the Source column.

Select the row of the error log you want to check and double-click it.
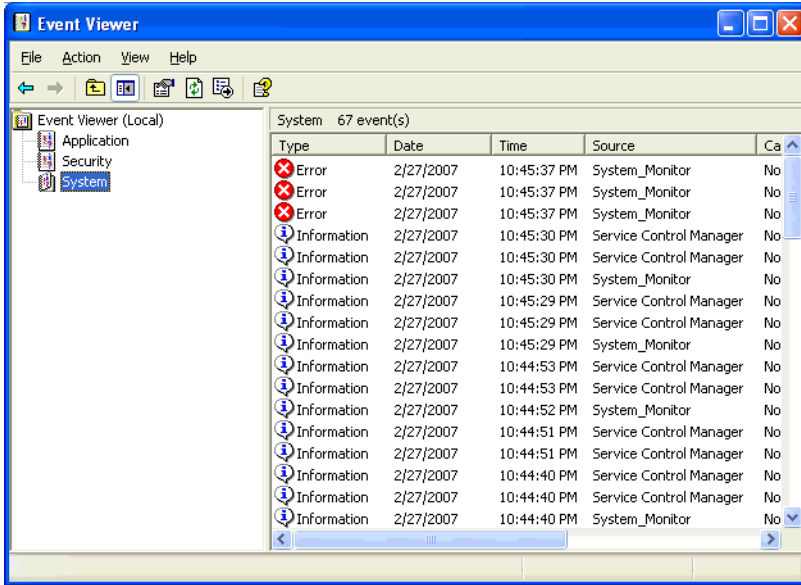
(3) The [Event Properties] screen appears.

The error message is displayed in the [Description] area.
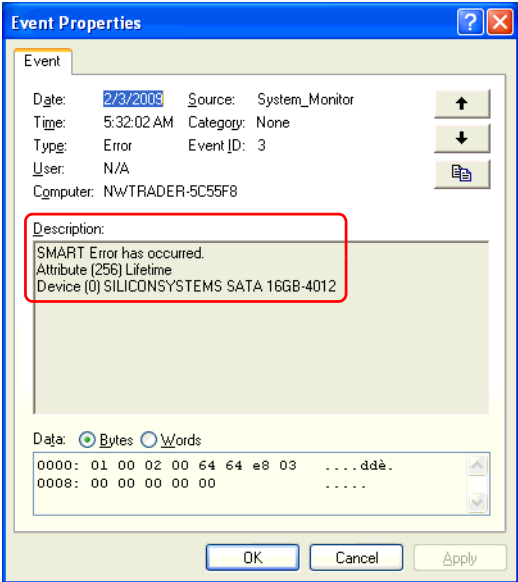
3.6   Monitoring Errors/Alerts from a Remote Server

3.6.1   Description
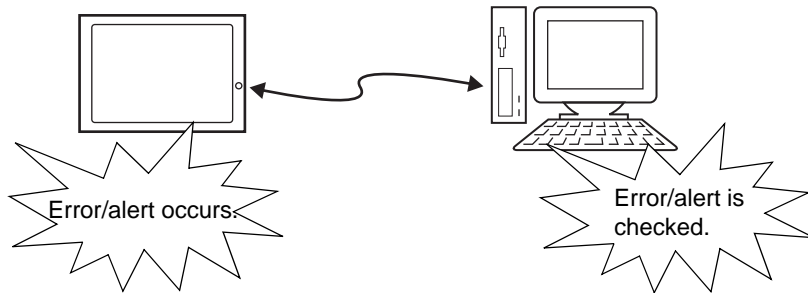
Monitor and control the System Monitor/RAS features remotely via the host PC in which Pro-face's Pro-Server with Pro-Studio (optional) or Pro-Server EX (optional) is installed.

To use this feature, you need Pro-Server with Pro-Studio Ver. 3.12 or higher, or, Pro-Server EX Ver.1.20 or higher. Please also refer to the manuals of the Pro-Server.

$\boxed{\text{SEE} \rightarrow}$ *3.6.3 Monitoring using Pro-Server with Pro-Studio or Pro-Server EX (page3-25)*

3.6.2　System Configuration

The system employing this feature is configured as illustrated below.

Server PC

User Application

Pro-Server with Pro-Studio Ver. 3.12 or higher,
or Pro-Server EX Ver. 1.20 or higher
Remote RAS Server Program (IPC_RAS.npj)

Two-way feature

Ethernet

[System Monitor/RAS Feature]
• SystemMonitor.exe
• System Monitor Property
• Ioctl.dll
• Smonras.dll
• Sysmon.sys

Client PL
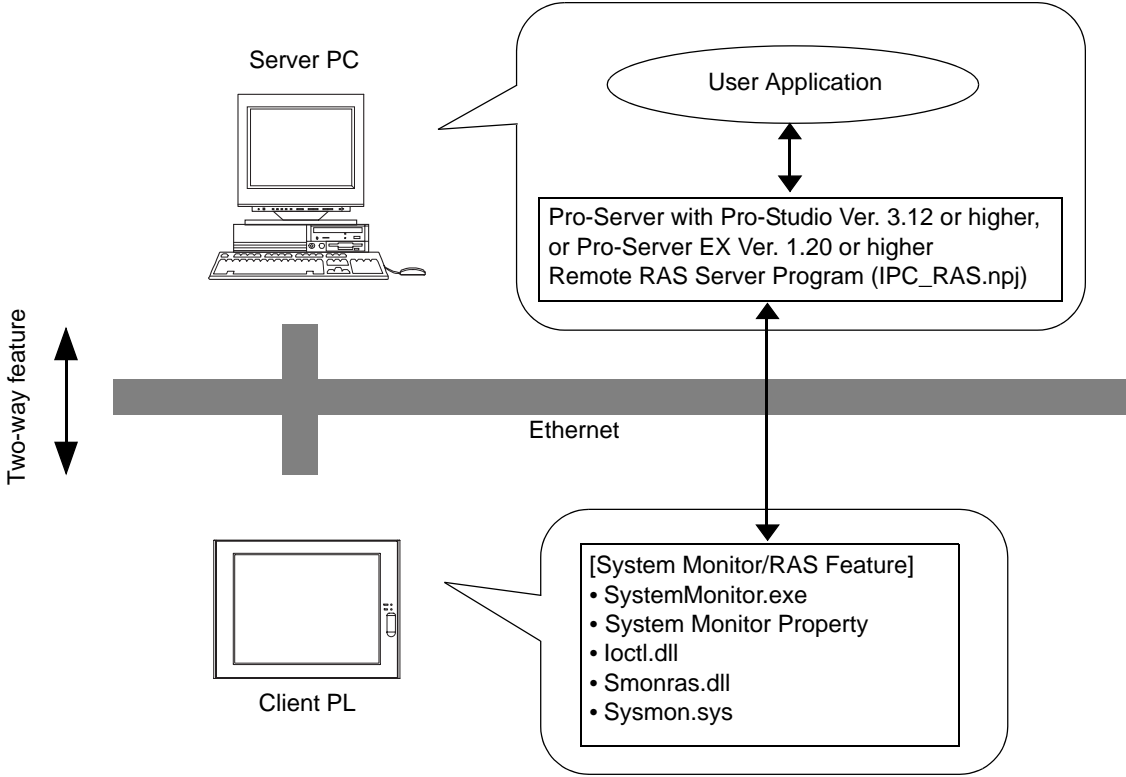
The status of the System Monitor/RAS feature is transferred to the Pro-Server via Ethernet from the System-Monitor.exe. This allows users to monitor errors/alerts by monitoring the device address assigned by Pro-Studio in which the shared memory has been stored.
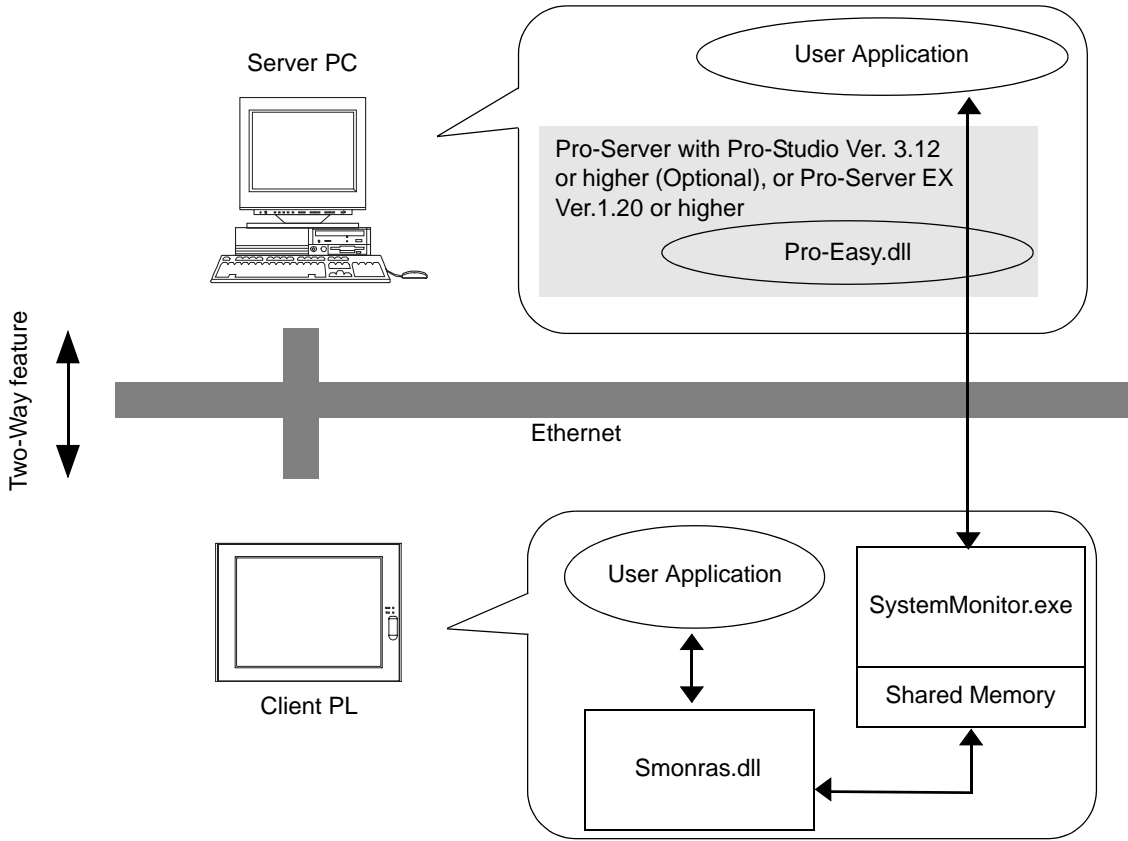
The user applications in the server PC monitors the RAS feature through the Pro-Easy.dll program provided from the Pro-Server.

The client PL shares the data with the user applications on the server PC by using the shared memory. The data transfers on both sides are processed via the Smonras.dll and Pro-Easy.dll programs.

■ List of Device Addresses

Device	Device Type	Device Symbol	Read/Write	Bit Access	16-bit Access	32-bit Access
VcoreA [1]	WORD	VLT	Read	-	VLT0	-
VcoreB [1]	WORD				VLT1	
+3.3V [1]	WORD				VLT2	
+5.0V [1]	WORD				VLT3	
+12V [1]	WORD				VLT4	
+1.8V [1]	WORD				VLT5	
-12V [1]	WORD				VLT6	
Number of Revolution of CPU FAN [2]	WORD	FAN			FAN0	
Number of Revolution of System FAN	WORD				FAN1	
System Temperature [3]	WORD	TMP			TMP0	
CPU Temperature [3]	WORD				TMP1	
System2 Temperature [3]	WORD				TMP2	
DIN	WORD	DIN		DIN00-DIN01	DIN0	
DOUT	WORD	DOUT	Read/Write	DOUT00-DOUT01	DOUT0	
Error Event	WORD	ERR	Read	ERR00-ERR10	ERR0 ERR1	
Internal Memory Area [4]	WORD	LS	Read/Write	LS00000-LS0000F to LS02550-LS0255F	LS0000 to LS0255	LS0000 to LS0254
Shared Memory	WORD	PL	Read/Write	PL00000-PL0000F to PL02550-PL0255F	PL0000 to PL0255	PL0000 to PL0254
Software Reset Port [5]	WORD	RST		-	RST0	-
Error Mask [6]	WORD	ERRM	Read	ERRM00-ERRM10	ERRM0 ERRM1	-

[1] When monitoring the voltage with the device monitor, the unit is "mV".

[2] When monitoring the number of revolutions with the device monitor, the unit is "rpm".

[3] When monitoring Temperature with the device monitor, the unit is "°C".

[4] Used for only the system to read/write the data and perform monitoring operation.

[5] Shuts down and restarts the operation system on the client PL.

[6] Indicates the error event that is being monitored by the PL.

IMPORTANT
- The client PL can be shut down/restarted by writing the following values to the Software Reset Port. When "Forced Shutdown" or "Forced Reboot" is written to the device address, the system automatically shuts down/restarts the operation system without prompting the confirmation for saving the data of currently running application programs. Take extra cautions when performing write operations so as to avoid accidental data loss.

Value to be Written		Operation
Decimal Number	Hexadecimal Number	
1	0001	Shutdown
2	0002	Reboot
257	0101	Forced Shutdown
258	0102	Forced Reboot

■ Bit Assign of Error Event, and Error Mask

Device Name	Item	Bit
DIN	DIN0	DIN0
	DIN1	DIN1
Error Event	VcoreA Voltage Error	ERR00
	VcoreB Voltage Error	ERR01
	+3.3V Voltage Error	ERR02
	+5.0V Voltage Error	ERR03
	+12V Voltage Error	ERR04
	+1.8V Voltage Error	ERR05
	-12V Voltage Error	ERR06
	CPU FAN Error	ERR07
	System FAN Error	ERR08
	Reserved	ERR09
	System Temperature Error	ERR0A
	CPU Temperature Error	ERR0B
	System2 Temperature Error	ERR0C
	Watchdog Timer Error	ERR0D
	Mirror disk Error	ERR0E
	Backlight Error	ERR0F
	SMART Alert	ERR10
Error Mask	VcoreA Voltage Error	ERRM00
	VcoreB Voltage Error	ERRM01
	+3.3V Voltage Error	ERRM02
	+5.0V Voltage Error	ERRM03
	+12V Voltage Error	ERRM04
	+1.8V Voltage Error	ERRM05
	-12V Voltage Error	ERRM06
	CPU FAN Error	ERRM07
	System FAN Error	ERRM08
	Reserved	ERRM09
	System Temperature Error	ERRM0A
	CPU Temperature Error	ERRM0B
	System2 Temperature Error	ERRM0C
	Watchdog Timer Error	ERRM0D
	Mirror disk Error	ERRM0E
	Backlight Error	ERRM0F
	SMART Alert	ERRM10

3.6.3   Monitoring using Pro-Server with Pro-Studio or Pro-Server EX

■ Setting Up the Client PL

    (1)   Double-click [System Monitor Property] in [Control Panel] to display the [System Monitor Property] screen.

    (2)   On the [Remote RAS] tab, put a check mark in the [Enable] checkbox.
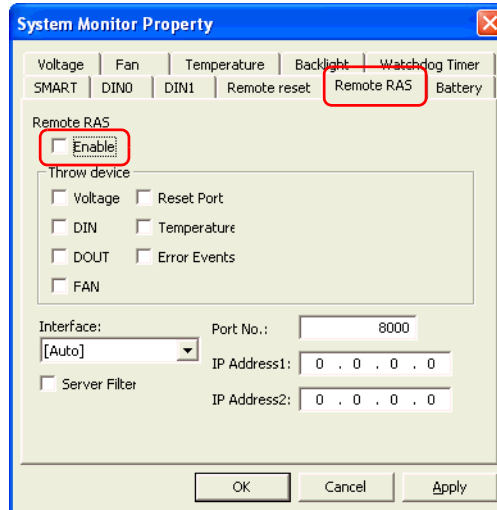
NOTE • For details about the setup procedure, refer to the Setup Guide.

       SEE → *3.8.3 Remote RAS (page3-33)*

    • In order to actually activate the Remote RAS feature, you are required to start up the System Monitor (SystemMonitor.exe) within the PL.

    (3)   Click [Apply].

       Click [OK] to exit the [System Monitor Property] screen.

■ Setting Up the Server PC

(1) On the server PC, download the software from the Pro-face support site "Otasuke Pro!". Follow the attached instructions to copy the downloaded file to the designated file.

(2) Start up the Pro-Studio.

(3) Register the PL you want to include in the network to the network station, and edit the participant stations.

SEE→   *Pro-Server with Pro-Studio for Windows Operation Manual*
Pro-Server EX Reference Manual

NOTE   • When using the Pro-studio's [Find Stations] command to register the PL to the network station, the System Monitor should be activated with the Remote RAS feature enabled in the PL.

(4) Select [PL, PS-A, PS-B] for the PLC type on the network station editing.

(5) Register the symbol. Refer to the following for the symbols that can be registered.

SEE→   ■*List of Device Addresses (page3-23)*

NOTE   • You are not required to transfer the network project file created with the Pro-Studio to the client PL.

3.7 Restarting/Shutting Down the PL from a Remote Server

3.7.1 Description

Via the network   Server on which Pro-Server is not installed

Restart

Exit
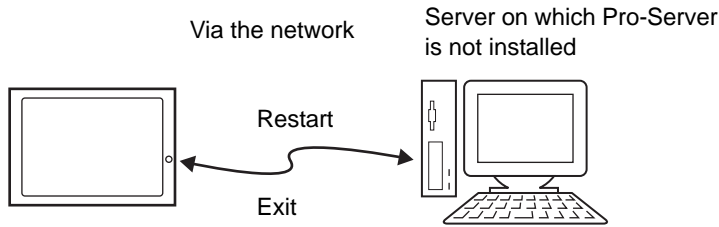
Restart or shut down the PL unit from a server on which Pro-Server is not installed.

It is assumed that the [Proface] folder has already been created on the unit at this location.

NOTE
- For the operation procedure of this feature, refer to the online help of the Remote Shutdown Application.
- Both applications (for server and client) can be installed on the PL to achieve self-control system. In such a case, however, the PL should be connected to a network.
- If the Remote Shutdown feature is executed, the PL unit will be in the Soft OFF Status. (Power is still supplied to a part of circuits.)

3.7.2 Setup Procedure

(1) Execute the application on the server as well as on the PL. The application is stored in the following folder.

	Application Name	File Name	Folder (For Windows® XP and Windows® 2000)
Server	Remote Shutdown	RSSvr.exe	C:\Proface\Shutdown\Client
PL	Remote Shutdown	RSClt.exe	C:\Proface\Shutdown\Server

NOTE
- When the application does not exist, download the installer from the Pro-face support site "Otasuke Pro!".

  http://www.pro-face.com/otasuke/

(2) Check the IP address of LAN2 on the PL.

(3) Shut down the OS of the PL. Make sure to keep the power supply to the PL.

(4) Send MagicPacket from the server to the IP address of the PL checked in (2). Select the IP address to which you want to send the MagicPacket, right-click on the mouse, and select [Boot].

NOTE
- Download [Remote Shutdown], a tool to send the MagicPacket from the Pro-face suppot site "Otasuke Pro!".

(5) The PL starts up.

■ Starting/Shutting Down the PL from the Standby or Sleep Mode

To start/shut down the PL from the standby or sleep mode, configuration of the [System] setting in the [Control Panel] is required.

NOTE

• To start/shut down the PL from the shut-down mode, it is not necessary to configure the [System] setting in the [Control Panel].

(1) Start [Control Panel] from the Start menu.

(2) Start the [System]. (With Windows® XP, it is in the [Performance and Maintenance] category.)

(3) Start the [Device Manager] on the Hardware tab.

(4) Double-click on [Realtek RTL8169/8110 Family] on the Network tab.

(5) Put a checkmark to the [Allow this device to bring the computer out of standby] box on the Power Management tab.

3.8 Setup Guide for the system monitor property

The System Monitor Property allows you to specify PL items you want to monitor with the RAS features and the notification method used when errors/alerts occur. When an error/alert occurs, notification is provided according to the method specified in the System Monitor Property.

NOTE
- For procedure to set up the System Monitor Property, refer to the following section.

    SEE → *3.3.2 Setup Procedure (page3-11)*

- You can check the status of the PL unit you are monitoring with the RAS features on the System Monitor screen.For details regarding the System Monitor screen, refer to the following.

    SEE → *3.9 Setup Guide for the System Monitor Screen (page3-38)*

The following table lists the operating settings that can be configured for each feature.

O: Setting available X: Setting not available

Feature	Operation						
	Buzzer	Popup Message	OS Shutdown	LED	DOUT 0,1	Reset	Timeout (sec):
Watchdog Timer	O	O	O	O	O	O	O
Voltage	O	O	O	O	O	X	X
Fan	O	O	O	O	O	X	X
Temperature	O	O	O	O	O	X	X
SMART	O	O	X	O	O	X	X
DIN0,1	O	O	O	O	O	X	X
Soft Mirror	O	O	X	O	O	X	X
Remote reset	X	X	X	X	X	O	X
Backlight	O	O	X	O	O	X	X
Battery	O	O	O	O	O	X	X

IMPORTANT
- Administrator Authentication is required for executing SMART Monitoring. When a user who does not have the administrator authentication logs in, nothing is displayed in the item of SMART.
- DIN1 and Reset operations cannot be used at the same time.

NOTE
- The Battery feature can be specified only when a battery unit is mounted.
- The Soft Monitor feature can be specified only when the Software Mirroring Utility is used.

The following shows the default settings of each feature.

O: Setting available X: Setting not available —: Not supported

Feature	Operation						
	Buzzer	Popup Message	OS Shutdown	LED	DOUT 0,1	Reset	Timeout (sec):
Watchdog Timer	X	O	X	O	X	X	O (5sec)
Voltage	X	O	X	O	X	—	—
Fan	X	O	X	O	X	—	—
Temperature	X	O	X	O	X	—	—
SMART	X	O	—	O	X	—	—
DIN0,1	X	O	X	O	X	—	—
Soft Mirror	X	O	—	O	X	—	—
Remote reset	—	—	—	—	—	X	—
Backlight	X	O	—	O	X	—	—
Battery	X	O	X	O	X	—	—

3.8.1 Voltage / Fan / Temperature / Backlight / DIN0 / DIN1

NOTE
- The Voltage, Fan, Temperature, Backlight and DIN1 tabs display the same setting items as the DIN0 tab.
- DIN1 tab cannot be set up when a checkmark is off in the [Enable] checkbox of Remote reset tab. Remote reset feature, refer to the following section.

SEE → *3.8.5 Remote reset (page3-35)*

Item		Operation
Enable		When this option is checked, monitoring of the item starts.
Error Action		Specifies the action(s) taken when the System Monitor detects that the allowable range is exceeded. You need to check [Enable] before you can select actions.
	LED	The front LED lights orange.
	Buzzer	Sounds a beep as an alarm. **NOTE** • Cannot be set up when a checkmark is put in the "OS Shutdown" checkbox.
	Popup Message	When PopupMessage is specified for the action, the string entered into the entry field (Example: DIN0 Error) will be displayed as a pop-up message. For the details about the PopupMessage feature, refer to the following section. **SEE →** *3.3.3 When an Error Occurs (page3-14)*
	DOUT0 to 1	Output from the RAS port.
	OS Shutdown	Shuts down the operating system. **NOTE** • The shutdown confirmation message is not displayed.

3.8.2   SMART

Item	Operation
Enable	When this option is checked, monitoring of SMART starts.
Alert Action	Specifies the action(s) taken when the System Monitor detects that the allowable range is exceeded. You need to check [Enable] before you can select actions.
DOUT0 to 1	Output from the RAS port.
LED	The front LED lights orange.
Buzzer	Sounds a buzzer as an alarm.
Pop-up Message	When [PopupMessage] is specified as an action, the characters entered in the field (e.g. SMART Alert) are displayed as a popup message. For the details about the PopupMessage feature, refer to the following section. **SEE→** *3.3.4 When an Alert Occurs (page3-15)*
Do not show alert message for 10 days.	Will not display the messege specified in [PopupMessage] for a certain number of days only. Sets the amount of days that the message will not be displayed. The amount of days can be set within a period ranging from 1 to 65,535 days.

3.8.3   Remote RAS

Item	Operation
Enable	When this option is checked, the remote RAS feature starts.
Throw device	Specifies the item(s) to be monitored.
Interface	Specifies the IP address used for the connection with the Pro-Server. **NOTE** • When 2 or more IP Addresses are allocated to the PL unit, the [Auto] cannot be selected. Enter settings that allow the reading of a fixed IP Address from a DHCP server. For details, contact your company's network administrator for getting the detailed information.
Server Filter	Check this option to communicate only with the server with a specific IP address.
Port No	Specifies the port No. of the server to communicate with.
IP	Specifies the IP address of the server to communicate with.

3.8.4   Watchdog Timer
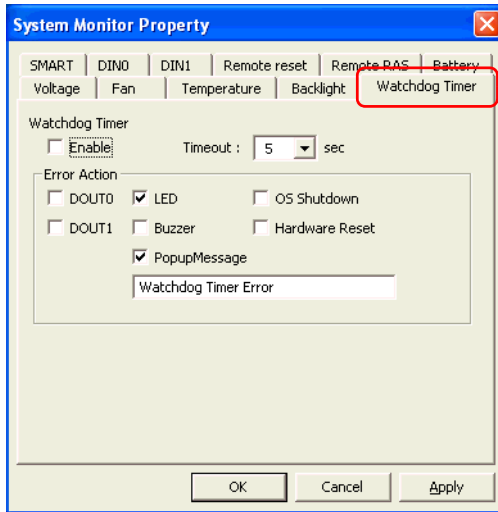
Item	Operation
Enable	When this option is checked, the Watchdog Timer is enabled.
Timeout(sec.);	Specifies the timer duration.
Error Action	Specifies the action(s) taken when the System Monitor detects that the allowable range is exceeded.
Popup Message	When [PopupMessage] is specified as an action, the characters entered in the field (e.g. Watchdog Timer Error) are displayed as a popup message. For the details about the PopupMessage feature, refer to the following section. $\boxed{\text{SEE} \rightarrow}$ *3.3.3 When an Error Occurs (page3-14)*

3.8.5   Remote reset
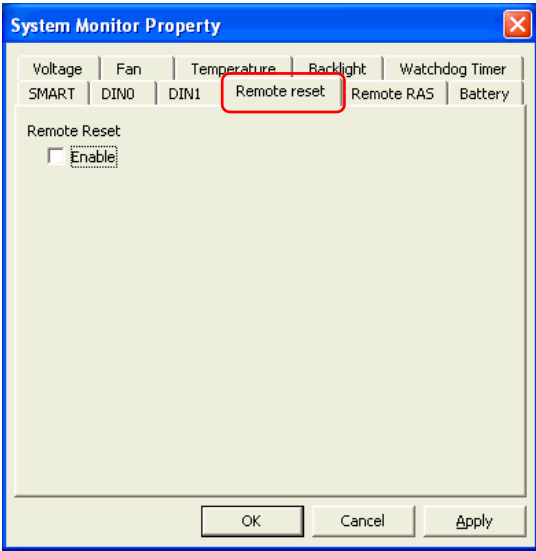
Item	Operation
Enable	When this option is checked, the Remote Reset is enabled.

3.8.6   Battery
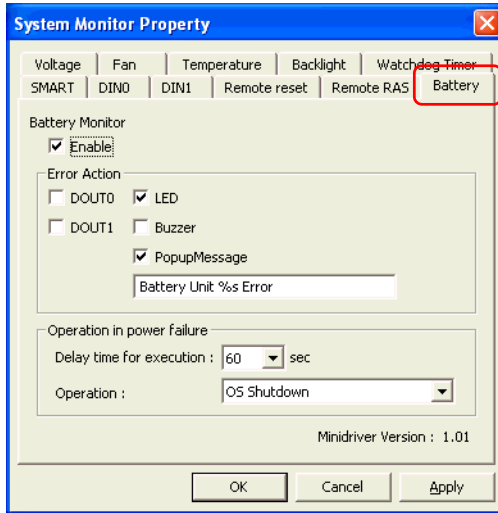
Item	Operation
Enable	When this option is checked, the Battery Monitoring is enabled.
Error Action	Specifies the action(s) taken when the System Monitor detects that the allowable range is exceeded.
PopupMessage	When [PopupMessage] is specified as an action, the characters entered in the field (e.g. Battery Unit %s Error) are displayed as a popup message. For the details about the PopupMessage feature, refer to the following section. (SEE→) *3.3.3 When an Error Occurs (page3-14)*
Operation in power failure	Specifies the shutdown actions to be taken when AC power supply is shut down.
Delay time for execution	Specifies the duration of delay time between the shutdown of AC power supply and the execution of the operation selected with the [Operation] option or shutdown. Setting range: 0 to 60 seconds The default setting is 60 seconds.
Operation	Shuts down the unit when the specified duration of delay time lapses after the AC power supply is shut down.

IMPORTANT
• Before selecting the [Hibernate] option, the Hibernate mode should be enabled. From [Start], select [Control Panel]-[Power Options], and on the [Hibernate] tab, put a checkmark to the [Enable Hibernate mode (H)] option.

NOTE
- The [Battery] tab is displayed only when a battery is mounted, allowing you to specify the Battery feature.
- Battery units cannot be used with pre-installed OS type PL units that have SSD (solid-state drive) units.
- When power failure is recovered within the delay time specified with the [Delay time for execution] option, the battery returns to normal operation. For the procedure to recover from a power failure, refer to the following section.

SEE→ *3.3.3 When an Error Occurs (page3-14)*

When the setting items are specified, the battery performs error actions as shown below.

Power failure occurred!

The action (Hibernate/Shut down) selected with the [Operation in power failure]-[Operation] option starts.

Power is shut down.

When power supply is recovered within this duration, the system can return to normal operation.

The delay time specified with the [Operation in power failure]-[Delay time for execution] option. 0 to 60 seconds
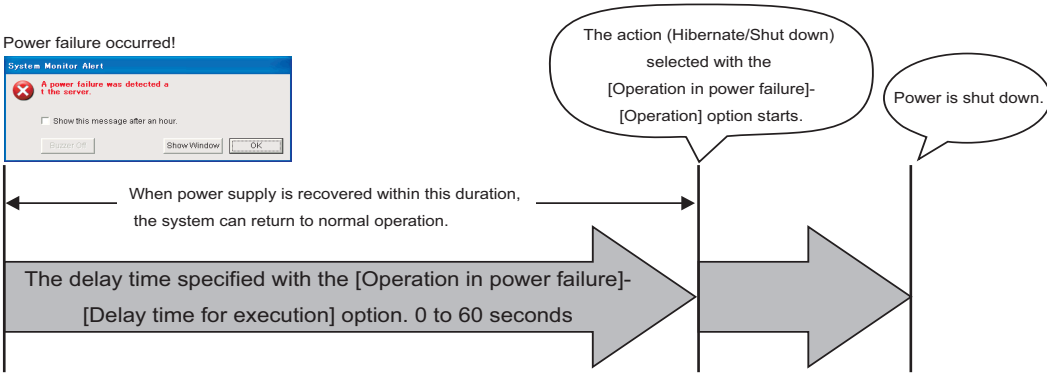
3.9   Setup Guide for the System Monitor Screen

You can check the status of the PL being monitored.

Click the tab of the item you want to check.

NOTE
- PL items you want to monitor with the RAS features and the notification method used when errors/alerts occur are set from the System Monitor Property.
  For the System Monitor Property settings, refer to the following.

3.9.1 Voltage / Fan / Temperature / Backlight / Watchdog Timer / Soft Mirror

NOTE
- The Temperature, FAN, and Soft Mirror tabs display the same items as the Voltage tab.
- The Backlight and Watchdog Timer tabs display [Status] only.
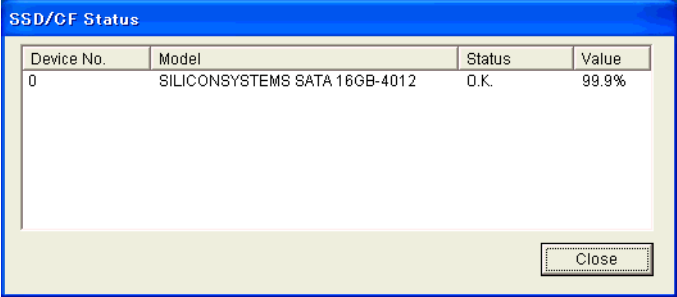
Item	Operation
Name	Displays the monitoring item.
Status	Specifies the item to be monitored. The status of each monitoring item is displayed. [Pass]: Normal [Error]: Abnormal [Disable]: Not monitored **NOTE** • When [Soft Mirror] is selected, different items are displayed. For details, refer to the manual of the Software Mirroring Utility.
Buzzer Off	When [Buzzer] is selected for the error notification method, you can stop the buzzer by clicking [Buzzer Off].
Reset	When an error is detected, clicking [Reset] recovers the System Monitor from the "error" status. **NOTE** • After an error is resolved, make sure to reset. If reset is not performed, the error history remains, which causes the error to be detected again even if it was resolved. For the procedure to recover from an error status, refer to the following section. **SEE →** *3.3.3 When an Error Occurs (page3-14)*
Minimize	Stores the System Monitor screen in the task tray.

3.9.2   SMART

Item	Operation
Device No.	Displays the number assigned to the hard disk/SSD/CF card to be monitored.
Model	Displays the model of the hard disk/SSD/CF card. **NOTE** • SMART monitoring can be executed only on drive that have been subjected to an operational inspection by Digital Electronics Corporation. The background of drives that have not been given an operational inspection is gray.
Status	Specifies the item to be monitored. The status of each monitoring item is displayed. [O.K.]: Normal [Alert]: Alert [Disable]: Not monitored [Not Supported]: Not supported **NOTE** • [Not Supported] is displayed when a drive that does not support SMART monitoring is detected.

Item	Operation
SSD/CF Status	Selecting [SSD/CF Status] displays the [SSD/CF Status] dialog box, which allows confirmation of remaining product life. Remaining product life is calculated according to the number of write operations made to the SSD, and is displayed as a percentage value with one decimal place. **SSD/CF Status** Device No.　Model　Status　Value 0　SILICONSYSTEMS SATA 16GB-4012　O.K.　99.9% Close **NOTE** • Monitoring of SSD life is only possible on pre-installed OS type PL units that have SSD units. PL units do not support monitoring of CF card life. • Monitoring of SSD card life is only possible with SSD units that have been subjected to an operational inspection by Digital Electronics Corporation. • When remaining life becomes 0.0%, the alert set in [Alert Action] under [System Monitor Property] is generated. When the remaining life reaches 0.0%, replace the SSD unit with a new one.
Buzzer Off	When [Buzzer] is selected for the alert notification method, you can stop the buzzer by clicking [Buzzer Off].
Reset	When an alert is detected, clicking [Reset] recovers the System Monitor from the "alert" status. **NOTE** • After an alert is resolved, make sure to reset. If reset is not performed, the alert history remains, which causes the alert to be detected again even if it was resolved. For alert recovery procedures, refer to the following section: **SEE →** *3.3.4 When an Alert Occurs (page3-15)*
Minimize	Stores the System Monitor screen in the task tray.

3.9.3   Battery

Item	Operation
Name	Displays the monitoring item.
Status	Specifies the item to be monitored. The status of each monitoring item is displayed. [Pass]: Normal [Disable]: Not monitored [Error]: Power failure occurred
Value	Displays the power supply method. [AC Power]: AC-powered [Battery]: Battery-powered
Buzzer Off	When [Buzzer] is selected for the error notification method, you can stop the buzzer by clicking [Buzzer Off].
Reset	When an error is detected, clicking [Reset] recovers the System Monitor from the "error" status. **NOTE** • After an error is resolved, make sure to reset. If reset is not performed, the error history remains, which causes the error to be detected again even if it was resolved. For the procedure to recover from an error status, refer to the following section. **SEE →** *3.3.3 When an Error Occurs (page3-14)*
Minimize	Stores the System Monitor screen in the task tray.

IMPORTANT

• Do not install the battery driver when a battery unit is not mounted; otherwise, the Battery Unit Disconnected Error will be displayed. To recover the error, the battery driver should be uninstalled.
For procedure to uninstall the battery driver, refer to the following section.

SEE → *5.1 Problems and Countermeasures (page5-2)*

• Remaining level of battery power supply cannot be monitored.
• The battery unit and driver communicate via COM2 port. From [Integrated Device Configuration] in the [Advanced] menu on the System Setup Screen, select [I/O Device Configuration], and set the [COM Port2:] option to [Enable]. (The factory default setting is [Enable].)
• The system may not enter standby or hibernation mode normally depending on your applications or other drivers being used.
• When using battery power, the external COM2 port cannot be used.

NOTE

• Monitoring of the Battery status is enabled only when a battery is mounted.

• Battery units cannot be used with pre-installed OS type PL units that have SSD (solid-state drive) units.

3.10 Displayed Messages

■ Error/Alert Pop-up Messages

When an error/alert occurs while the "Popup Message" option is enabled for Error Action/Alert Action, the following messages appear on the pop-up message output screen under the factory settings.

Error/Alert Type	Message
VcoreA	VcoreA Power Supply Error
VcoreB	VcoreB Power Supply Error
+3.3V	+3.3V Power Supply Error
+5.0V	+5.0V Power Supply Error
+12.0V	+12V Power Supply Error
-12.0V	-12V Power Supply Error
+1.8V	+1.8V Power Supply Error
CPU FAN	CPU Fan Error
System FAN	System Fan Error
System Temperature	System Temperature Error
CPU Temperature	CPU Temperature Error
System2 Temperature	System2 Temperature Error
DIN0	DIN0 Error
DIN1	DIN1 Error
Watchdog	Watchdog Timer Error
Backlight	Backlight Blowout Error
SMART	SMART Alert
Soft Mirror	Mirror Disk Error
Battery	Battery Error
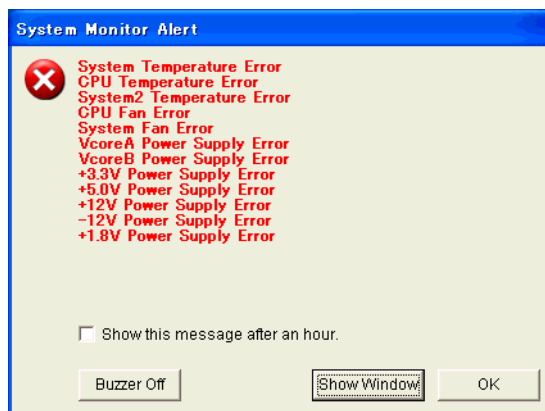
NOTE

• The messages displayed on the pop-up message output screen can be modified on the system monitor property.

SEE → *3.3.1 Description (page3-11)*

■ Messages Displayed on the Event Viewer Screen

The error types/locations shown by the Event Viewer are as follows.

Error/Alert Type	Message
VcoreA	VcoreA voltage Error has occurred.
VcoreB	VcoreB voltage Error has occurred.
+3.3V	+3.3V Error has occurred.
+5.0V	+5.0V Error has occurred.
+12.0V	+12V Error has occurred.
-12.0V	-12V Error has occurred.
+1.8V	+1.8V Error has occurred.
CPU FAN	CPU Fan Error has occurred.
System FAN	System Fan Error has occurred.
System Temperature	SystemTtemperature Error has occurred.
CPU Temperature	CPU Tempertature Error has occurred.
System2 Temperature	System2 Temperature Error has occurred.
DIN0	DIN0 Error has occurred.
DIN1	DIN1 Error has occurred.
Watchdog	Watchdog Timer Error has occurred.
Backlight	Backlight Error has occurred.
SMART	SMART Alert has occurred. Attribute (Attribute ID) (Attribute Name) Device (No.) (HD Model). The descriptions in the parentheses vary depending on details of occurring alerts and the device where alerts occur (0:Master, 1:Slave)
Soft Mirror	Mirror Disk Error has occurred.
Battery	Battery Error has occurred.

NOTE • The location and action of the previous error/alert can be checked on the Event Viewer Screen.

For the details of the Event Viewer, refer to the following section.

◆ Error/Alert Action

NOTE

• The data shown in the table's "□□" indicate the error/alert type/location.

• The actions to be taken after an error/alert occurs are set via the System Monitor Property.

Error/Alert Action	Message
Buzzer	Buzzer has sounded because of □□ error. Buzzer has sounded because of □□ alert.
Popup Message	Popup Message has been shown because of □□ error. Popup Message has been shown because of □□ alert.
OS Shutdown	Window has been shut down because of □□ error. Window has been shut down because of □□ alert.
DOUT0	DOUT0 has output because of □□ error. DOUT0 has output because of □□ alert.
DOUT1	DOUT1 has output because of □□ error. DOUT1 has output because of □□ alert.

■ Error Messages Displayed during Device Reading/Writing

Error Code		Error Message
Decimal Number	Hexadecimal Number	
9530	253Ah	RAS Initialization Error
9531	253Bh	Command not supported.
9532	253Ch	Access type not supported.
9533	253Dh	Read/Write type not supported.
9534	253Eh	Access to the device is rejected.
9535	253Fh	Value setting to the device/retrieval failed.
65535 (No Code)	FFFFh	Returned when read/write of invalid values or unsupported device is performed for Voltage, Temperature, and number of revolution of the FAN.

3.11 Restrictions

■ Supported Pro-Server Features

The following table lists the features of the Pro-Server that are supported by the PL. For the details of each feature, refer to "Pro-Server with Pro-Studio for Windows Operation Manual".

Pro-Server Feature	O: Supported X: Not Supported
DDE Feature	O
Simplified DLL Feature (ProEasy.dll)	**SEE→** ■ *Supported Simplified DLL Features (page3-48)*
OPC Server Interface	O
SRAM Backup Data	X
Action Feature	X
Distribution Feature	X
Data Viewer	O[*1]
VBA Feature Assist	O
Device Data Backup/Restore Feature	O
Capture Screen Save Feature	X
Security Feature	O
Device Monitor	O
Status Monitor	X
Read Time Measurement	O

*1: Pro-Server with Pro-Studio for Windows Ver.4.0 or higher is required.

■ Supported Simplified DLL Features

The simplified DLL features supported by the PL are as follows:

- Direct Read Function
- Direct Write Function
- Cache Read Function
- Retrieval of Multithreading Handle
- Release of Multithreading Handle
- Loading of Network Project File
- Error Code String Conversion.
- Participant Station Status Readout Function
- Initialization of Simplified DLL
- Termination of Simplified DLL

NOTE
- Note that the PL-supported OS and features supported by Pro-Server are different.
- When using the Remote RAS feature together with Pro-Server in PL, be sure to select different port numbers.

4 | Using Key Commands to Input Text and Operate Applications

1. About KeyPad Module
2. Features of KPM
3. Using KPM to Operate Applications from Shortcuts
4. Configuring the Keyboard Layout
5. Restrictions

This chapter describes the features of KeyPad Module, which is included with the PL-3∗00K Series.

4.1   About KeyPad Module

KeyPad Module (hereafter referred to as "KPM") is a keyboard module that is included with the PL-3∗00K

Series. You can operate the panels using the keypad and mouse pointer in the front panel of KPM. In addition

to the panel operation, the KPM also allows you to input text and activate shortcut operations of user applica-

tions running on the PL (by assigning a key code to each application).

Special function keys

Function keys
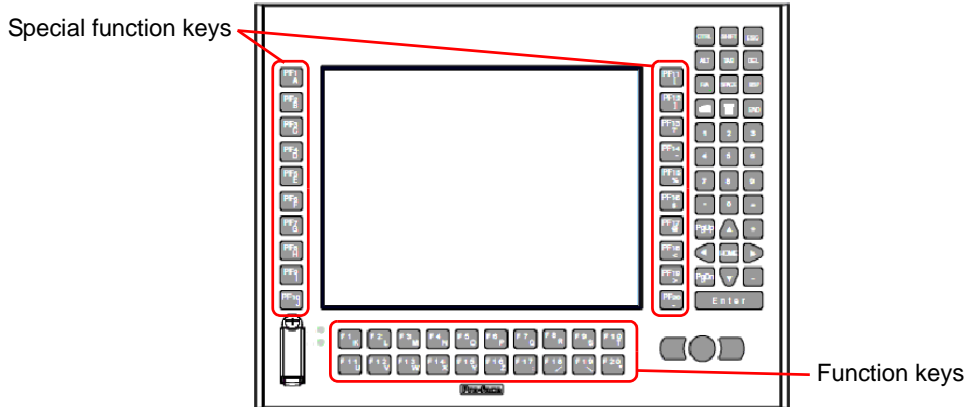
NOTE

• For details about each component of KPM and its function, refer to the following section.

(**SEE →**) *PL3000 Series Hardware Manual "Part Names and Functions"*

• For operating applications from shortcuts on KPM, refer to the following section.

(**SEE →**) *4.3 Using KPM to Operate Applications from Shortcuts (page 4-6)*

• KPM will operate normally with US keyboard layout. When inputting another language, change to the keyboard layout of that language. Furthermore, the pre-installed OS features multi-language keyboard layouts, the US layout is set as the default.

For details about configuring the keyboard layout, refer to the following section.

(**SEE →**) *4.4 Configuring the Keyboard Layout (page 4-10)*

• For details about each key's key code, refer to the following section.

(**SEE →**) *4.3.2 Scan Code List (page 4-8)*

• In Windows® Device Manager, KPM is recognized as a USB 2.0 device because the device is being connected via a USB hub. However, this will not affect performance.
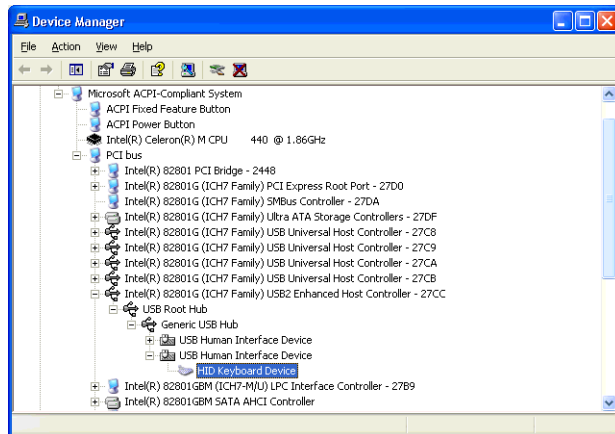
4.2 Features of KPM

KPM has function keys (F1/K to F20/*) and special function keys (PF1/A to PF20/~). These are used not only for text input but also as shortcut keys for applications. They can be used as shortcut keys by assigning key codes to each key in user applications.

4.2.1   Features of function keys and special function keys (About input mode)

In the input mode for function keys and special function keys, each has a Function mode and Alpha mode. You can switch between input modes by pressing the [F/A] key. Switch the mode based on the task.

Function mode   : Keys assigned in a user application (e.g. Shortcut operations)
Alpha mode   : Text/symbol input

NOTE
- You can check the mode by seeing whether the LED on the [F/A] key is on or off.
  For details about how to switch modes, refer to the following section.

  (SEE→)   *4.2.2 Switching between Function mode and Alpha mode (page 4-4)*

- Each key except for the [F/A] key can have key codes assigned to it for an application. Assign the key code based on the task. For details about key codes that can be assigned in applications, refer to the following section.

  (SEE→)   *4.3.2 Scan Code List (page 4-8)*

4.2.2   Switching between Function mode and Alpha mode

Use the [F/A] key to switch between input modes. Based on this, the function keys and special function keys will switch between Function mode and Alpha mode.

NOTE
- You can check the input mode by seeing whether the LED on the [F/A] key is on or off.
  LED off: Function mode
  LED on: Alpha mode

4.2.3   Function key and special function key output by mode

The table below shows the functions output by each key when the mode is switched between the Function

mode and Alpha mode.

	Key	Function mode	Alpha mode		Key	Function mode	Alpha mode
Function keys	F1/K	F1	K	Special function keys	PF1/A	F21	A
	F2/L	F2	L		PF2/B	F22	B
	F3/M	F3	M		PF3/C	F23	C
	F4/N	F4	N		PF4/D	F24	D
	F5/O	F5	O		PF5/E	F25	E
	F6/P	F6	P		PF6/F	F26	F
	F7/Q	F7	Q		PF7/G	F27	G
	F8/R	F8	R		PF8/H	F28	H
	F9/S	F9	S		PF9/I	F29	I
	F10/T	F10	T		PF10/J	F30	J
	F11/U	F11	U		PF11/ (	F31	(
	F12/V	F12	V		PF12/)	F32	)
	F13/W	F13	W		PF13/ ?	F33	?
	F14/X	F14	X		PF14/ ^	F34	^
	F15/Y	F15	Y		PF15/ %	F35	%
	F16/Z	F16	Z		PF16/ $	F36	$
	F17/ :	F17	:		PF17/ @	F37	@
	F18/ /	F18	/		PF18/ <	F38	<
	F19/ \	F19	\		PF19/ >	F39	>
	F20/ *	F20	*		PF20/ ~	F40	~

4.3   Using KPM to Operate Applications from Shortcuts

4.3.1   Procedure for setting up shortcut keys

Assign a key or key code to KPM for each user application to enable shortcut operations.

NOTE
- Key codes can be assigned to all keys except the F/A key; however, it is recommended to assign key codes to function keys and special function keys.

(1)   Create a shortcut to an application, folder or file that you want to assign a shortcut operation.

(2)   Select the shortcut you have created, and right click on the selected shortcut to open Properties.

(3)   To set up an option argument for the application that you want to assign a shortcut operation, enter the argument after the application name displayed in the Link field.

NOTE
- For the details of the arguments, refer to the specifications of each application.
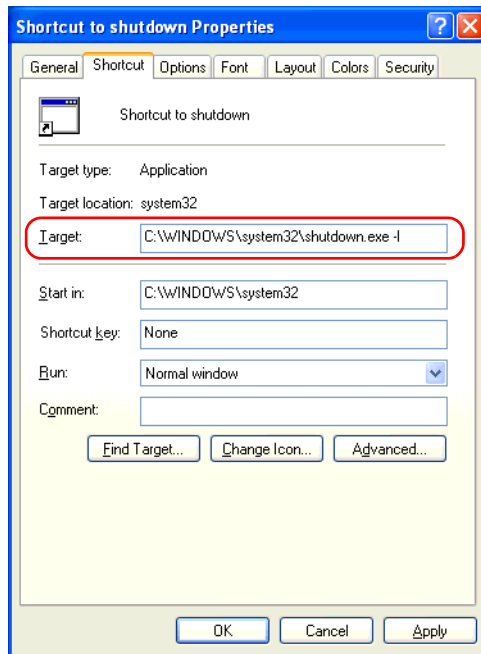
(4) Select the [Shortcut Key] tab. Press the function key or special function key you want to assign a short-cut operation. The [Shortcut Key] field displays an automatically-selected combination of function key(s) or special function key(s).

NOTE
- For the details of combination of function key(s) or special function key(s), refer to the following section.

SEE→ *4.3.2 Scan Code List (page 4-8)*
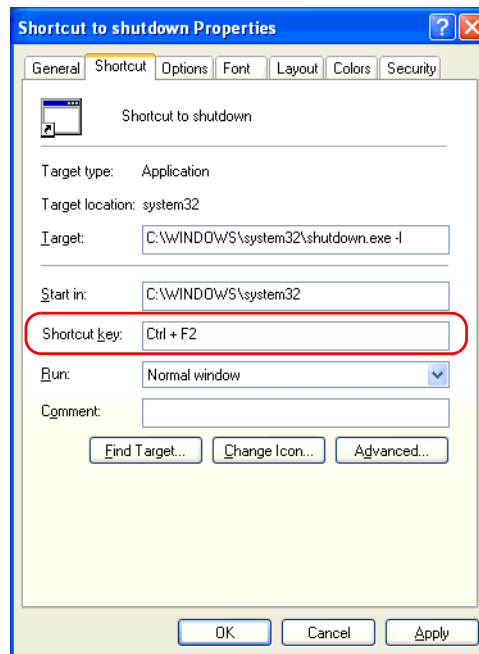
(5) Click the [OK] button. Now shortcut operations for user applications can be performed for the function key(s) or the special function key(s).

4.3.2   Scan Code List

Each key except for the [F/A] key can have key codes assigned to it for an application. Assign the key code based on the task.

NOTE
- Key codes can be assigned to all keys except the F/A key; however, it is recommended to assign key codes to function keys and special function keys.

■ Function keys/Special function keys (Function mode)

In Function mode, each function key and special function key can be assigned a function from F1 to F40. (Refer to the following table.) Assign the key code to the application based on the task.

	Key label	Function	Make code	Break code		Key label	Function	Make code	Break code
	\ multicolumn Function mode								

Function mode								
	Key label	Function	Make code	Break code	Key label	Function	Make code	Break code
Function keys	F1/K	F1	3B	BB	PF1/A	F21	1D 3B	9D BB
	F2/L	F2	3C	BC	PF2/B	F22	1D 3C	9D BC
	F3/M	F3	3D	BD	PF3/C	F23	1D 3D	9D BD
	F4/N	F4	3E	BE	PF4/D	F24	1D 3E	9D BE
	F5/O	F5	3F	BF	PF5/E	F25	1D 3F	9D BF
	F6/P	F6	40	C0	PF6/F	F26	1D 40	9D C0
	F7/Q	F7	41	C1	PF7/G	F27	1D 41	9D C1
	F8/R	F8	42	C2	PF8/H	F28	1D 42	9D C2
	F9/S	F9	43	C3	PF9/I	F29	1D 43	9D C3
	F10/T	F10	44	C4	PF10/J	F30	1D 44	9D C4
	F11/U	F11	2A 3B	AA BB	PF11/ (	F31	38 3B	B8 BB
	F12/V	F12	2A 3C	AA BC	PF12/)	F32	38 3C	B8 BC
	F13/W	F13	2A 3D	AA BD	PF13/ ?	F33	38 3D	B8 BD
	F14/X	F14	2A 3E	AA BE	PF14/ ^	F34	38 3E	B8 BE
	F15/Y	F15	2A 3F	AA BF	PF15/ %	F35	38 3F	B8 BF
	F16/Z	F16	2A 40	AA C0	PF16/ $	F36	38 40	B8 C0
	F17/ :	F17	2A 41	AA C1	PF17/ @	F37	38 41	B8 C1
	F18/ /	F18	2A 42	AA C2	PF18/ <	F38	38 42	B8 C2
	F19/ \	F19	2A 43	AA C3	PF19/ >	F39	38 43	B8 C3
	F20/ *	F20	2A 44	AA C4	PF20/ ~	F40	38 44	B8 C4

(Special function keys label for right half columns)

IMPORTANT
- F11/F12 on commercially available USB keyboards and KPM differ. When you press F11/F12 in KPM, the result is the same as pressing Shift+F1/ Shift+F2.
- In Function mode, when PF14/^ is pressed, the code for Alt+F4 on a commercially available USB keyboard is output. This is the code to terminate a Windows application so applications and other programs currently running will end.
- For details about function key/special function key operations, refer to the following section.

NOTE
- When entering keys using a commercially available USB keyboard, you can combine F1 to F10, Shift, Ctrl, and Alt to enter the same commands as F11 to F40 on KPM. For details about the key combinations and the key function that is output, refer to the following section.

■ Function keys/Special function keys (Alpha mode)

In Alpha mode, each function key and special function key can be assigned a character from A to Z and symbols. (Refer to the following table.)

Assign the key code to the application based on the task.

Alpha mode								
	Key label	Function	Make code	Break code	Key label	Function	Make code	Break code
Special function keys	PF1/A	A	1E	9E	F1/K	K	25	A5
	PF2/B	B	30	B0	F2/L	L	26	A6
	PF3/C	C	2E	AE	F3/M	M	32	B2
	PF4/D	D	20	A0	F4/N	N	31	B1
	PF5/E	E	12	92	F5/O	O	18	98
	PF6/F	F	21	A1	F6/P	P	19	99
	PF7/G	G	22	A2	F7/Q	Q	10	90
	PF8/H	H	23	A3	F8/R	R	13	93
	PF9/I	I	17	97	F9/S	S	1F	9F
	PF10/J	J	24	A4	F10/T	T	14	94
	PF11/ (	(	2A 0A	AA 8A	F11/U	U	16	96
	PF12/)	)	2A 0B	AA 8B	F12/V	V	2F	AF
	PF13/ ?	?	2A 35	AA B5	F13/W	W	11	91
	PF14/ ^	^	2A 07	AA 87	F14/X	X	2D	AD
	PF15/ %	%	2A 06	AA 86	F15/Y	Y	15	95
	PF16/ $	$	2A 05	AA 85	F16/Z	Z	2C	AC
	PF17/ @	@	2A 03	AA 83	F17/ :	:	2A 27	AA A7
	PF18/ <	<	2A 33	AA B3	F18/ /	/	35	B5
	PF19/ >	>	2A 34	AA B4	F19/ \	\	2B	AB
	PF20/ ~	~	2A 29	AA A9	F20/ *	*	2A 09	AA 89

(Function keys label applies to the right-hand column group)

■ Keys other than the function keys/special function keys

You can assign to the application a key code to keys other than the function keys and special function keys.
(Refer to the following table.) Assign the key code to the application based on the task.

Function mode/Alpha mode							
Key label	Function	Make code	Break code	Key label	Function	Make code	Break code
CTRL	CTRL	1D	9D	7	7	08	88
SHIFT	SHIFT	2A	AA	8	8	09	89
ESC	ESC	01	81	9	9	0A	8A
ALT	ALT	38	B8	.	.	34	B4
TAB	TAB	0F	8F	0	0	0B	8B
DEL	DEL	E0 2A E0 53	E0 D3 E0 AA	=	=	0D	8D
F/A	--	--	--	PgUp	PgUp	E0 2A E0 49	E0 C9 E0 AA
SPACE	SPACE	39	B9	↑	↑	E0 2A E0 48	E0 C8 E0 AA
BSP	BACKSPACE	0E	8E	+	+	4E	CE
Windows	Windows Start menu	E0 2A E0 5B	E0 DB E0 AA	← HOME	← HOME	E0 2A E0 4B E0 2A E0 47	E0 CB E0 AA E0 C7 E0 AA
Application	Windows pop-up menu	E0 2A E0 5D	E0 DD E0 AA	→ PgDn	→ PgDn	E0 2A E0 4D E0 2A E0 51	E0 CD E0 AA E0 D1 E0 AA
END	END	E0 2A E0 4F	E0 CF E0 AA	↓	↓	E0 2A E0 50	E0 D0 E0 AA
1	1	02	82	−	−	4A	CA
2	2	03	83	ENTER	ENTER	1C	9C
3	3	04	84				
4	4	05	85				
5	5	06	86				
6	6	07	87				

NOTE   • Note that you cannot assign a key code to the [F/A] key.

4.4 Configuring the Keyboard Layout

KPM is configured so that it will operate normally with US keyboard layout. When inputting text in Alpha mode, make sure that the keyboard layout is set to US. For the procedure to configure the keyboard layout, refer to the following.

| IMPORTANT | • Immediately after the Japanese language version of Windows® (preinstalled or otherwise) is installed, the keyboard layout is set to Japanese. |

| NOTE | • When the keyboard layout is set to the desired language, text input from KPM in that language is possible. However, some keyboard labels and key codes will differ. |

KPM will operate normally only with a US keyboard layout.

• Operation has been tested on Windows® XP/XP Embedded and Windows® 2000.

4.4.1   Configuring keyboard layout in Windows® XP

(1)   Select [Control Panel] and then [Date, Time, Language and Regional Options].

Start [Regional and Language Options].

| NOTE | • By default, the view setting for [Control Panel] is [Category View]. If the setting is [Classic View], select [Regional and Language Options]. |

• The pre-installed OS features multi-language keyboard layouts, the US layout is set as the default.

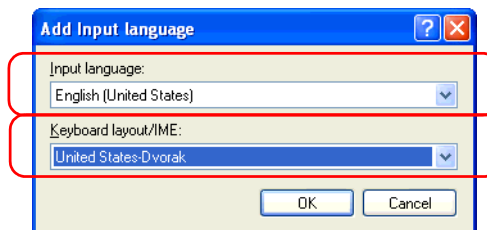(2)   Select the [Language] tab, then [Text services and input languages], and then [Details].
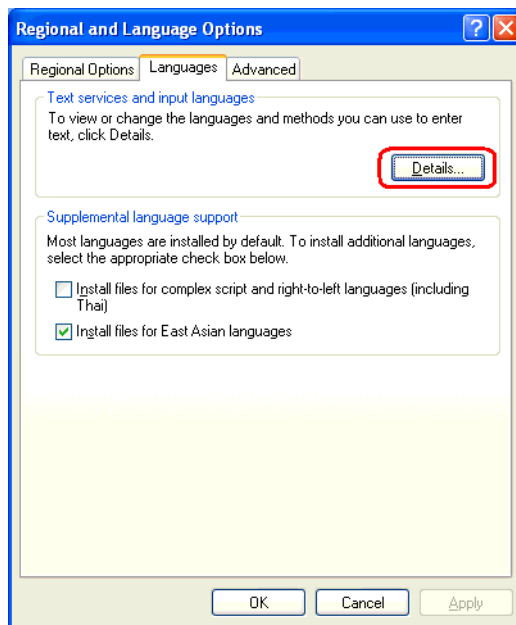
(3)   When the [Text Services and Input Languages] dialog box appears, select [Add] in [Installed services].
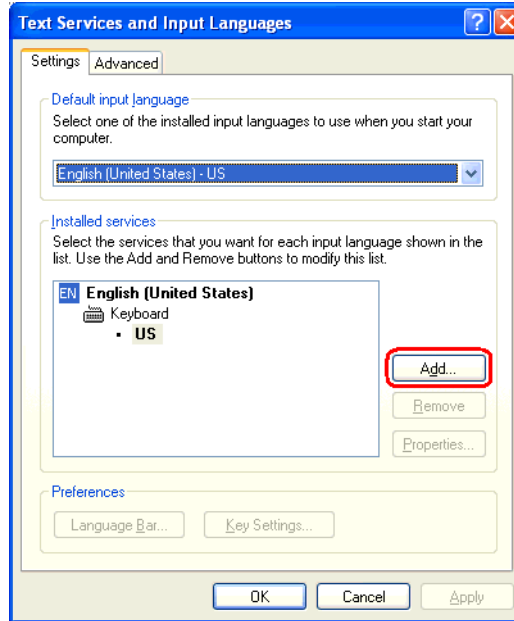
(4)   The [Add input language] dialog box appears. Select the desired language from the [Input language] combo box.

In [Keyboard layout/IME], select the keyboard layout of the keyboard to be attached and click [OK].
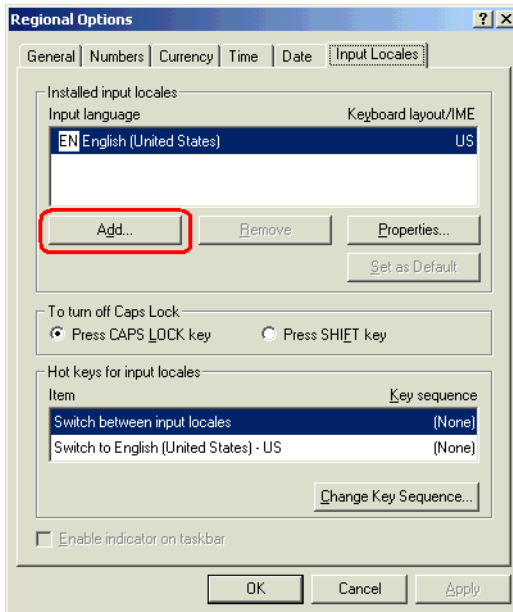
(5)   When the [Text Services and Input Languages] dialog box appears again, select the language from [Default input language]. Next, click [Apply] and then [OK]. Using this setting the selected language will be set as the default language.
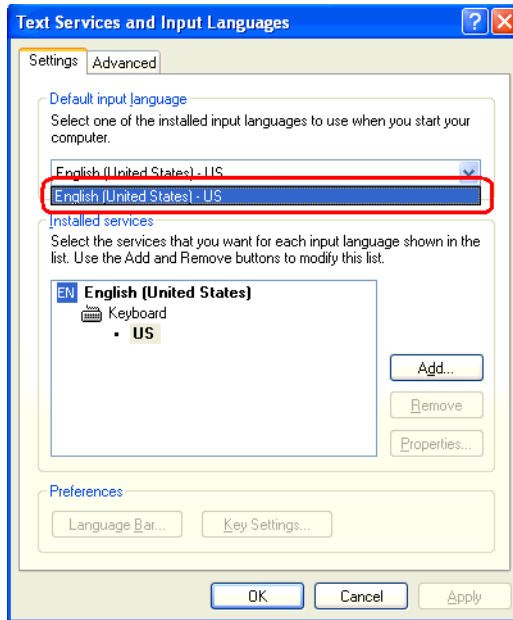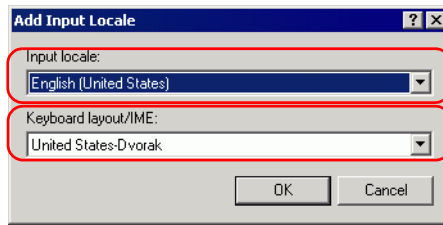

## 4.4.2   Configuring keyboard layout in Windows® 2000

(1)   Select [Control Panel] and then [Regional Options].

(2)   In the [Input Locales] tab, click [Add] in [Switch between input locales].

(3)   The [Add Input Locale] dialog box appears. Select a language from [Input locale].

In [Keyboard layout/IME], select the keyboard layout of the keyboard to be attached and click [OK].

(4)   The [Regional Options] window appears again. From [Installed input locales], select the language

selected earlier, and click [Set as Default]. Click [Apply] and then [OK]. Using this setting the selected

language will be set as the default language.
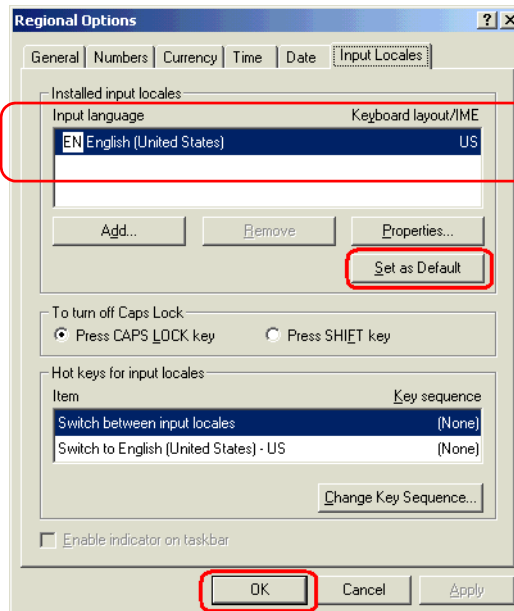
4.4.3   Key combinations and key functions in Funciton mode

By combining F1 to F10, Shift, Ctrl, and Alt, you can create key functions unique to KPM or have the same

operations as F11 to F40. For details about each key combination and the key function that is output, refer to

the following.

IMPORTANT   • In Function mode, when PF14/^ is pressed, the code for Alt+F4 on a
commercially available USB keyboard is output. This is the code to terminate a
Windows application so applications and other programs currently running will
end.

Function mode						
	Key combination	Function in KPM	Key label		Key combination	Function in KPM	Key label
Function keys	F1	F1	F1/K	Special function keys	Ctrl + F1	F21	PF1/A
	F2	F2	F2/L		Ctrl + F2	F22	PF2/B
	F3	F3	F3/M		Ctrl + F3	F23	PF3/C
	F4	F4	F4/N		Ctrl + F4	F24	PF4/D
	F5	F5	F5/O		Ctrl + F5	F25	PF5/E
	F6	F6	F6/P		Ctrl + F6	F26	PF6/F
	F7	F7	F7/Q		Ctrl + F7	F27	PF7/G
	F8	F8	F8/R		Ctrl + F8	F28	PF8/H
	F9	F9	F9/S		Ctrl + F9	F29	PF9/I
	F10	F10	F10/T		Ctrl + F10	F30	PF10/J
	Shift + F1	F11	F11/U		Alt + F1	F31	PF11/ (
	Shift + F2	F12	F12/V		Alt + F2	F32	PF12/)
	Shift + F3	F13	F13/W		Alt + F3	F33	PF13/ ?
	Shift + F4	F14	F14/X		Alt + F4	F34	PF14/ ^
	Shift + F5	F15	F15/Y		Alt + F5	F35	PF15/ %
	Shift + F6	F16	F16/Z		Alt + F6	F36	PF16/ $
	Shift + F7	F17	F17/ :		Alt + F7	F37	PF17/ @
	Shift + F8	F18	F18/ /		Alt + F8	F38	PF18/ <
	Shift + F9	F19	F19/ \		Alt + F9	F39	PF19/ >
	Shift + F10	F20	F20/ *		Alt + F10	F40	PF20/ ~

IMPORTANT   • F11/F12 on commercially available USB keyboards and KPM differ.

NOTE   • When using the key combinations in the previous table with a commercially available USB
keyboard, the result will be almost the same as the key functions in KPM.

4.5   Restrictions

- When inputting in Alpha mode with a keyboard that does not have US keyboard layout, some of the key labels will differ from what is output. Always use US keyboard layout except when inputting languages other than English.

- In KPM, the following key codes on a 101-key keyboard cannot be output.

Function	Make code	Break code	Function	Make code	Break code
`	29	A9	Num Lock	45	C5
!	2A 02	AA 82	Num 7	47	C7
#	2A 04	AA 84	Num 4	4B	CB
&	2A 08	AA 88	Num 1	4F	CF
-	0C	8C	Num /	E0 35	E0 B5
_	2A 0C	AA 8C	Num 8	48	C8
+	2A 0D	AA 8D	Num 5	4C	CC
[	1A	9A	Num 2	50	D0
{	2A 1A	AA 9A	Num 0	52	D2
]	1B	9B	Num *	37	B7
}	2A 1B	AA 9B	Num 9	49	C9
;	27	A7	Num 6	4D	CD
'	28	A8	Num 3	51	D1
"	2A 28	AA A8	Num .	53	D3
|	2A 2B	AA AB	Num Enter	E0 1C	E0 9C
,	33	B3	F11	57	D7
Right-Shift	36	B6	F12	58	D8
Right-Alt	E0 38	E0 B8	Print Screen	E0 2A E0 37	E0 B7 E0 AA
Right-Ctrl	E0 1D	E0 9D	Scroll Lock	46	C6
Insert	E0 2A E0 52	E0 D2 E0 AA	Pause	E1 1D 45 E1 D9 C5	

5 | Troubleshooting

1. Problems and Countermeasures
2. Recovery Procedure

This chapter describes the countermeasures for problems with the PL and the recovery procedure for the OS.

5.1 Problems and Countermeasures

Problem	Countermeasure and reference page
Nothing appears on the screen.	Is the power cable connected properly? **SEE→** *PL3000 Series Hardware Manual* *"Hardware Installation"*
	Is the power supply/voltage within the range of the specifications? **SEE→** *PL3000 Series Hardware Manual* *"Specifications"*
	Is the backlight on? Replace it if it is out. **SEE→** *PL3000 Series Hardware Manual* *"Maintenance"*
	Does the status LED illuminate in green? **SEE→** *If the status LED does not illuminate, contact your local PL distributor.* Is the image output cable connected correctly? Did you reconnect the image output cable and restart the PL unit? Did you disconnect the image output cable after starting the PL unit? - If the OS setup is not yet completed Connect the image output cable correctly, and recover the OS using the Recovery Media DVD. - If the OS setup is completed • If the analog RGB cable is connected correctly →Hold down [Ctrl] + [Alt] + [F1] at the same time for 1 second or longer. • If the DVI cable is connected correctly →Hold down [Ctrl] + [Alt] + [F4] at the same time for 1 second or longer.

Problem	Countermeasure and reference page
The OS does not operate properly.	Is [Type] set to [Auto] in the IDE Channel / SATA Port setting? **(SEE→)** ■ *IDE Channel / SATA Port (page2-5)*
	Did you connect a new hard disk drive or commercial USB memory which does not require boot-up? **(SEE→)** *2.2.4 Boot (page2-28)*
	If this symptom occurs, setting [Power on Delay] to [Enabled] may solve the problem. **(SEE→)** *Power On Delay (page2-12)*
"Delayed Write Failed" occurs frequently.	When some of the following conditions occur simultaneously, there is a high probability that the PL has failed while writing to files, resulting in this error. • The same file is frequently accessed (opened, read, written, etc.). • The amount of implemented memory is small and cache memory is insufficient. • The file is highly fragmented. • The I/O load to the disk is high. • Delay writing fails. Try performing maintenance on the drive. If the problem continues, replace the drive.
I want to use a LAN to recover the OS from standby or sleep mode.	Set the PL as follows: 1. Select [Control Panel] from the Start menu. 2. Double-click [System]. (With Windows XP, it is in the [Performance and Maintenance] category.) 3. Click [Device Manager] on the [Hardware] tab. 4. Double-click [Intel PRO/***] in [Network adapters]. 5. On the [Power Management] tab, check [Wake on Magic Packet.].
I did not shut down or reboot the unit, but the "CMOS CHECK SUM ERROR" occurred.	A possible cause is that clock data backup drained the battery. Replace the battery. Since the BIOS setting will be lost when the battery is removed, it should be configured again after replacing the battery. The following conditions may accelerate the battery drain. • The temperature of the surrounding environment frequently changes from low to high. • The connected expansion board consumes the clock data back-up battery quickly. **(SEE→)** *PL3000 Series Hardware Manual "Maintenance"*

Problem		Countermeasure and reference page
The OS does not operate properly.	When I start the PL unit, a popup message saying "[Battery Unit Disconnect Error]" is displayed.	Is a battery unit mounted? Installing the battery driver to a PL unit without mounting a battery unit will prevent the OS from operating properly. To make the OS operate properly, the battery driver must be uninstalled. Uninstall Procedure 1. From the Windows [Start] menu, select [Control Panel]. 2. Select [Add or Remove Programs]. 3. Select [Battery Unit for PL3000 Series] and click [Delete]. 4. A message asking if you are sure you want to remove the program from your system is displayed. Click [Yes]. 5. A dialog box confirming that the uninstall process is complete is displayed. 6. Click [Finish] to restart the system.
	I want to uninstall the battery driver.	
The connected peripheral device does not work.		Is the power cable connected properly? **SEE →** *PL3000 Series Hardware Manual* *"Hardware Installation"*
		Is the peripheral device connected properly? -> Refer to the manual for the connected device.
		Does the device require driver setup? -> Refer to the manual for the connected device and set the driver properly.
		Did you start the PL unit with a USB device connected? -> If the PL unit is started while USB memory or another USB device is connected, the following phenomenon may occur depending on the device. • It takes about 1 minute before the OS starts up. • If the USB device is not recognized, set [Power on Delay] to [Enable]. This may solve the problem.
The touch panel does not respond.		You need to install the touch panel driver when you use the PL with no pre-installed OS. **SEE →** ■ *Touch Panel Driver (Mouse Emulator) (page1-14)*

Problem	Countermeasure and reference page
The touch panel does not respond even after the touch panel driver is installed.	If the touch panel does not respond even after the touch panel driver is installed, possible causes are: • The connected external device (including a keyboard and a mouse) may not be compatible with the PL. -> Disconnect the external device and check the touch operation. • A touch panel driver (or drivers) other than the driver downloaded from the Pro-face support site "Otasuke Pro!" is installed in the PL. -> Uninstall such a driver(s) and make sure that only the driver downloaded from "Otasuke Pro!" is installed in the PL. Then check the touch operation. • The touch panel driver setting has been changed. -> If the touch panel driver setting has been changed, touch actions may not work properly. Please contact your local PL distributor.
The touch position recognized in the touch panel deviates from the actual touch.	Have you calibrated the touch panel? **SEE→** ■ *Touch Panel Driver (Mouse Emulator) (page1-14)*
The touch position recognized in the touch panel still deviates from the actual touch even after calibration.	If the touch position still deviates after calibration, possible causes are: • There are flaws or unevenness on the surface of the PL. -> If the bracket securing the PL is tightened too much, flaws or unevenness may result. Release the PL from the bracket and check whether the problem continues. • The touch panel calibration was not finished properly. -> Uninstall the touch panel driver once, and then install the latest driver. The latest driver can be downloaded from the Pro-face support site "Otasuke Pro!". • The hardware in the touch recognition section is faulty. -> Use the PL that operates properly and check whether the same problem occurs. If the problem occurs only with a specific unit, contact your local PL distributor for repair or replacement.
I want to know what the LED indicator indicates.	To find out the system status from the LED indicator **SEE→** ◆ *LED Indicator (page3-6)* To tell the difference between Function mode and Alpha mode in KPM (PL-3∗00K series only) **SEE→** *4.2.2 Switching between Function mode and Alpha mode (page4-4)*
A Touch Panel Self-Test Error occurred.	The touch panel is faulty. Please contact your local PL distributor.

Problem	Countermeasure and reference page
When inputting text in KPM, the text output is different from the text label.	Is the keyboard layout set to US? KPM is configured to operate normally with US keyboard layout. When inputting text in Alpha mode, make sure US keyboard layout is set. (SEE→) *4.4 Configuring the Keyboard Layout (page4-10)*
To input text other than English	Change the keyboard layout to the language to be input. (SEE→) *4.4 Configuring the Keyboard Layout (page4-10)*
A "Smart Alert" occurred	Predicts the malfunction and life expectancy of the hard disk/SSD/CF. It is recommended that the disk be replaced before experiencing malfunction or reaching the end of its life.

5.2 Recovery Procedure

5.2.1 PL with no Pre-installed OS

Refer to the manual for the installed OS and recover the OS.

When the OS is recovered, set up the software.

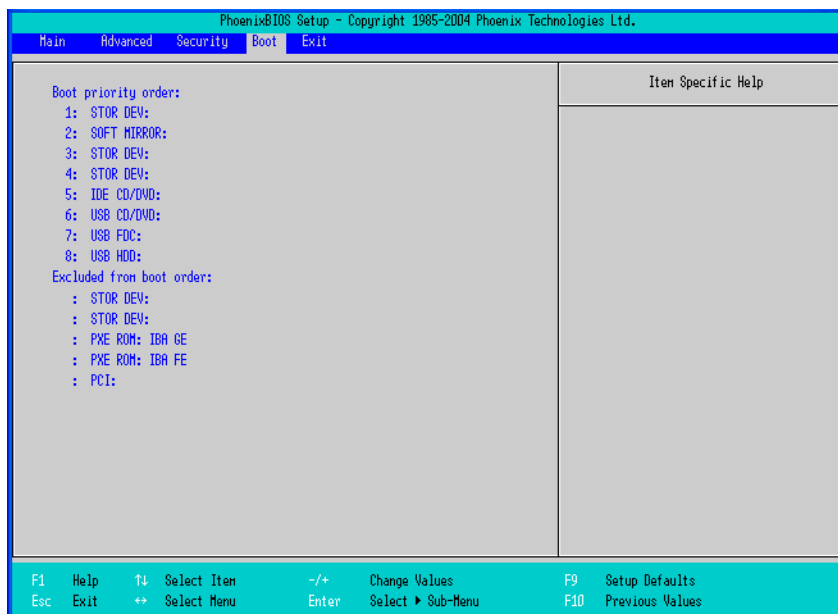**SEE→** *1.2.2 Setting Up the PL Dedicated Software (page1-3)*

5.2.2 PL with Pre-installed OS (Windows®2000/Windows® XP)

IMPORTANT

- After recovery, the PL unit is returned to its factory default condition.
- For recovery, a commercially-available USB keyboard is required. In addition, a commercially available USB DVD-ROM drive is also required when no DVD drive is pre-installed in the PL unit.
- Do not connect the external storage unit such as USB device and CF Card while the recovery.

Use the following steps to recover the system.

(1) Turn on the power of PL and immediately press the [F2] key to enter the BIOS setup screen. Insert the Recovery media into the DVD drive.

(2) Under [Boot priority order] on the [Boot] menu, use the [+] or [-] key to move [IDE CD/DVD] or [USB CD/DVD] to the top.

```
                    PhoenixBIOS Setup - Copyright 1985-2004 Phoenix Technologies Ltd.
    Main    Advanced    Security    Boot    Exit

                                                              Item Specific Help
    Boot priority order:
      1:  STOR DEV:
      2:  SOFT MIRROR:
      3:  STOR DEV:
      4:  STOR DEV:
      5:  IDE CD/DVD:
      6:  USB CD/DVD:
      7:  USB FDC:
      8:  USB HDD:
    Excluded from boot order:
       :  STOR DEV:
       :  STOR DEV:
       :  PXE ROM: IBA GE
       :  PXE ROM: IBA FE
       :  PCI:




    F1    Help     ↑↓  Select Item      -/+    Change Values       F9    Setup Defaults
    Esc   Exit     ↔   Select Menu      Enter  Select ▶ Sub-Menu   F10   Previous Values
```

(3) Press the [F10] key and select [Yes] for [Save configuration changes and exit now?] to save the settings and restart the PL unit.

(4) After the PL unit restarts, the Symantec Ghost™ will automatically start.

(5)   After the Symantec Ghost™ starts, the [Question] dialog box will appear.

"Partition sizes correct?"

NOTE   •   Touch operation is disabled on the Symantec Ghost™ screen. Operate the screen with the USB
keyboard or USB mouse.
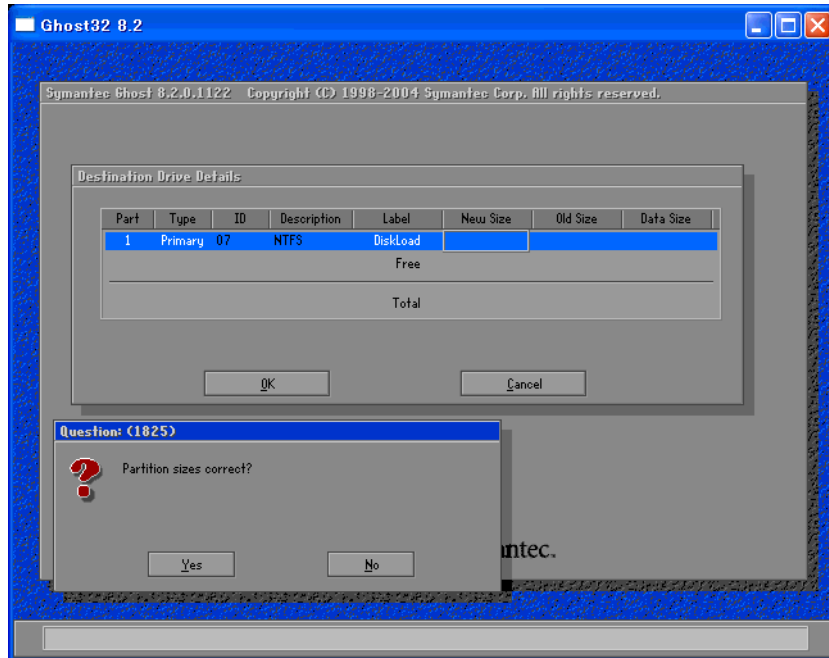
(6)   The volume displayed in New Size will be recovered. After confirming it, press the [Yes] button. To
change it, press the [No] button and go to the [Destination Drive Details] dialog box. In the [Destination
Drive Details] dialog box, change the size of the New Size and press the [OK] button.

(7) The [Question] dialog box will appear. Press the [Yes] button. It will be reconfirmed that the data is all reset to the original values at the time of delivery.

"Proceed with disk restore? Destination drive will be permanently overwritten."
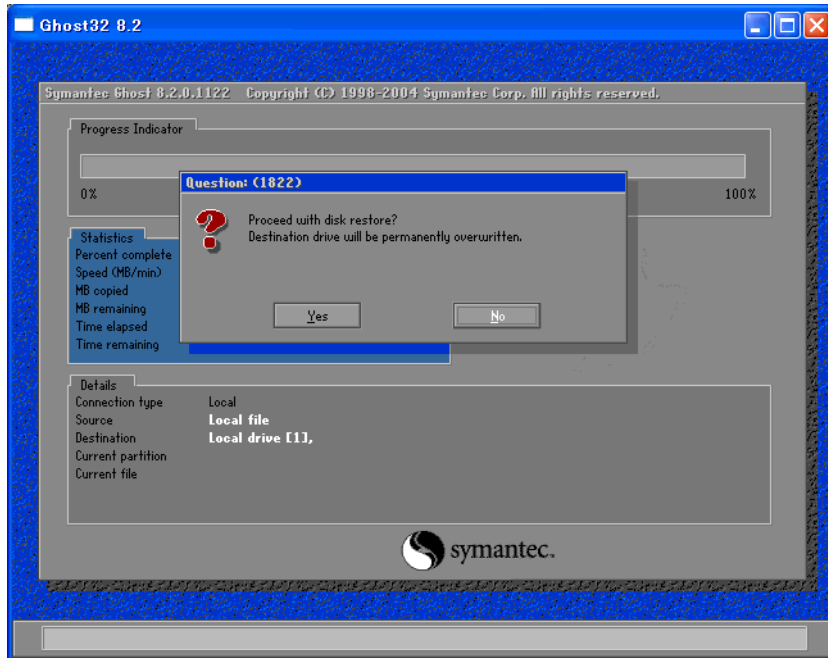
(8) The hard disk recovery program will start. After the recovery operation finishes, the Symantec Ghost™ also will finish. When the message "Please turn off computer" displayed, turn off the power of PL.

(9) Turn on the power of PL again and immediately press the [F2] key to enter the BIOS setup screen.

(10) Press the [F9] key and select [Yes] for [Load default configuration now?] to set the BIOS setting to the factory setting. Press the [F10] key to save the setting and restart the PL unit.

(11) After the unit restarts, set up your OS.

IMPORTANT

- If BIOS does not recognize the boot drive or if there is a hardware malfunction, the drive cannot be recovered with Symantec Ghost™. In such cases, Pro-face recommends that you contact your local PL distributor for instructions about drive recovery or replacement.

- Pro-face does not guarantee the preservation of any data stored on any hard disk/ SSD/CF card if the hard disk/SSD/CF card has an accident, malfunctions or is damaged in any way. Therefore, the regular backing up of all important data is strongly recommended.

A ▎ Appendices

1. I/O Map
2. Memory Map
3. Interrupt Map
4. License Agreement

This chapter describes the hardware configuration of the I/O map, memory map, and interrupt map.

1   I/O Map

Address	AT System Device	System Device
0000H-001FH	DMA controller (8237)	
0020H-003FH	Interrupt controller (8259A)	
0040H-005FH	System timer (8254)	
0060H-006FH	Keyboard controller	
0070H-007FH	Real time clock, NMI mask	
0080H-009FH	DMA page register	
00A0H-00BFH	Interrupt controller 2 (8259A)	
00C0H-00DFH	DMA controller 2 (8237)	
00F0H-00FFH	Numeric data processor	
01F0H-01FFH	Hard disk (IDE)	
0290H-0297H	Reserved	System monitor
029CH-029FH	Reserved	SRAM (Only when SRAM option is installed)
02E8H-02EFH	Reserved	Serial port 4 (COM4) : General use
02F8H-02FFH	Serial port 2 (COM2): General use	Battery (Not available only when battery is mounted.)
03B0H-03BBH	Video controller (VGA)	
03C0H-03DFH	Video controller (VGA)	
03E8H-03EFH	Reserved	Serial port 3 (COM3) : General use
03F8H-03FFH	Serial port 1 (COM1): General use	

2   Memory Map

SMRAM	MAXMEM
FrameBuffer	MAXMEM-1MB
	MAXMEM-9MB[*1]
Expanded Memory	
System BIOS	1MB
Expanded ROM Area	F000:0000
PXE BIOS, VGA BIOS	D000:0000
Video RAM	C000:0000
Conventional Memory	A000:0000
	0000:0000

*1   The capacity allocated by "IGD-Memory Size" of the "Video (Intel IGD) Configuration" screen of the
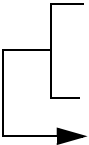BIOS setting is 1MB.

3   Interrupt Map

APIC MODE

Interrupt Level	Description	No.	Expansion Slot	Remark	Setting Change
NMI	Parity Error or I/O Channel Check				
IRQ0	System Timer				
IRQ1	Keyboard				
IRQ2	Slave PIC Cascade				
IRQ3	COM2				Possible
IRQ4	COM1				Possible
IRQ5	SMBUS				
IRQ6	Reserved				Possible
IRQ7	Available for users				Possible
IRQ8	Real Time Clock				
IRQ9	ACPI				
IRQ10	COM4				Possible
IRQ11	COM3				Possible
IRQ12	Reserved				
IRQ13	Coprocessor				
IRQ14	Primary IDE				
IRQ15	Secondary IDE				
IRQ16	USB UHCI #3 (Reserved) Display adapter	INTA			
IRQ17	PCI express	INTB	SLOT#1 [*1]	PCIe Type [*1]	
IRQ18	USB UHCI #2 (Reserved)	INTC			
IRQ19	USB UHCI #1 (Port3, 4) AHCI	INTD		USB 3/4 Port	
IRQ20	Built-in LAN2	INTE	SLOT#0		
IRQ21	Available for users	INTF	SLOT#1		
IRQ22	HDAudio	INTG	SLOT#2		Possible
IRQ23	USB EHCI (USB 2.0) USB UHCI #0 (Port1, 2)	INTH	SLOT#3	USB 1/2 Port	

*1 When an expansion slot supporting PCIe is included, the setting can be changed from the BIOS set-up menu.
The table above shows the allocation in the APIC mode. The PL unit is set to the APIC mode by default.

■ DMA Channel List

	Description	
DMA 0		For 8-bit transmission
1		
2		
3		
4	Cascade to controller 1	For 8-bit transmission
5		
6		
7		

4   License Agreement

■ IN-fINITY soft Keyclick32

Digital Electronics Corporation shall be in no case liable for any loss or damages to you or any third party whatsoever arising from any faulty performance of IN-fINITY soft, nor shall be responsible to correct such error of the software program in question.