FSB-865G

Intel® Pentium® 4 & Celeron® Processors
Full-size CPU Card
With DDR, Ethernet,
CompactFlash™ & Mini PCI

FSB-865G Rev. A Manual 2nd Ed.
Dec. 2004

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Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 FSB-865G CPU Card
- 1 Floppy Cable
- 1 ATA-100 Cable
- 1 USB Cable
- 1 KB Cable
- 1 Serial + Parallel Cable
- 1 Serial Cable
- 1 ATX Cable
- 1 Quick Installation Guide
- 1 CD-ROM for manual (in PDF format) and drivers

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

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Chapter 1

General Information

1.1 Introduction

Introducing AAEON' s new FSB-865G, powered by Intel® Pentium®4/Prescott processor, full size form factor single board computer (SBC) with an onboard VGA, 10/100/1000Mb LAN optional and seven USB 2.0 ports.

FSB-865G successfully deployed Intel® most advanced 82865GV chipset, which supports high CPU frequency up to 3.2 GHz with front side bus running at 400/533/800MHz. FSB-865G supports Intel® Hyper-Threading Technology gives you the best overall Pentium® 4/Prescott processor performance available. FSB-865G also provides high memory capacity up to 4 GB DDR DRAM (DDR 200/266/333/400) and support Dual-channel (128 bits wide) DDR memory interface.

In addition to its powerful computing engine, the full functional design of the board includes features such as i82865GV on-chip integrated 2D/3D graphics engine, built-in USB 2.0 and on board CompactFlash™ Type II socket. FSB-865G delivers super graphic performance without additional cost on integrated Intel® 82865GV chipset, and provides unique Intel® Extreme Graphics architecture to maximize VGA performance capability.

Seven USB 2.0 ports provide an expandable, Plug and Play serial interface that ensures a standard low-cost connection for peripheral devices.

Industrial applications will benefit from the seven USB 2.0 by three pin-headers and one Type A connector onboard, offering 480Mbps high-speed efficiency and value without compromising performance.

Moreover, FSB-865G is also equipped with Dual Intel® Ethernet controllers. One of these provides superior 1 GB Mbps networking access ability for high speed networking applications such as gateway, VPN, Mini server.

In short, this product is a versatile Pentium® 4/ Prescott compact board with the best cost-performance for CTI, networking and mini-server markets.

1.2 Feature

- Support Intel® Pentium® 4 CPU up to 3.2GHz (Prescott CPU)
- Integrated AC-97 Codec Audio (Daughter Board optional)
- Support Ultra ATA100 & SATA & CompactFlash™ Type II Storage
- Support 7 USB 2.0 Port
- Support RS-232 x 1, RS-232/422/485 x 1
- Support 1 parallel port
- Support 1 IrDA port
- Integrated AGP 8X 2D/3D Graphics Accelerator, VGA Support
- Support DDR400 Memory up to 4GB
- Watchdog Function 1~255 sec.
- Support Dual Channel DDR Memory Interface

1.3 Specification

System

- CPU: Support Intel® Pentium® 4 and Celeron® Processors up to 3.2 GHz (400/533/800MHz FSB)
- Chipset: Intel® 865GV + Intel® 82801EB/ER (ICH5/ICH5R)
- I/O Chipset: Winbond W83627HF
- Ethernet: 10/100Mb or 10/100/1000Mb LAN optional, RJ-45 x 2 Intel® 82562EZ / 82547GI / 82551QM / 82541GI controller
- System Memory: 184 pins 2.5V DDR DIMM Socket x 4, total up to 4GB Support Dual Channel DDR memory (DDR266/333/400)
- BIOS: Award Plug & Play ISA BIOS – 4Mb ROM
- Watchdog Timer: 1~255 step, can be set with software on Super I/O
- SSD: Type II CompactFlash™ slot x 1
- Expansion Interface: Type III Mini PCI socket x 1

- Battery: Lithium battery
- Power Supply Voltage: +12V ATX, other supply from Backplane
- VGA Controller: Integrated on Intel® 865GV, AGP, Core frequency up to 266MHz
- LCD Controller: Chrontel CH7017A support TV-Out and LVDS output
- Audio Daughter board: (Optional) Realtek ALC655 AC97 Codec, MIC-in/Line-in/Line-out/CD-IN
- IDE Interface: ATA-100 x 2 channel (Suppport two ATAPI devices)
  SATA-150 x 2 (Support two SATA devices, Raid function optional)
- Universal Serial Bus: USB 2.0 Port x 7
  5 x 2 pin header for internal x 3
  Type-A connector onboard x 1
- IR Interface: Support IrDA header x 1
- RTC: Internal RTC
- Operation Temp: 0℃~60℃

Display

- Chip: Intel® 82865GV

- Memory size: Shared memory up to 64 MB
- Resolutions: Up to 2048 X 1536 @ 75MHz for CRT

I/O

- Enhanced IDE Interface: ATA-100 x 2 channel (support 4 ATAPI devices)
- FDD Interface: Standard FDD port x 1 (support up to 2 floppy devices)
- Serial Ports: COM 1: RS-232
  COM 2: RS-232/422/485
- Parallel Port: Support SPP/EPP/ECP mode
- KB & Mouse connector: Mini-DIN for PS/2 KB and mouse connector x 1
  Internal keyboard pin header x 1
- IrDA: IrDA Tx/Rx header x 1
- USB: Three 5 x 2 pin headers (support 7 USB 2.0 ports)

Chapter 2

Quick Installation Guide

Notice:

The Quick Installation Guide is derived from Chapter 2 of user manual. For other chapters and further installation instructions, please refer to the user manual CD-ROM that came with the product.

Part No. 2007865010 Printed in Taiwan Nov. 2004

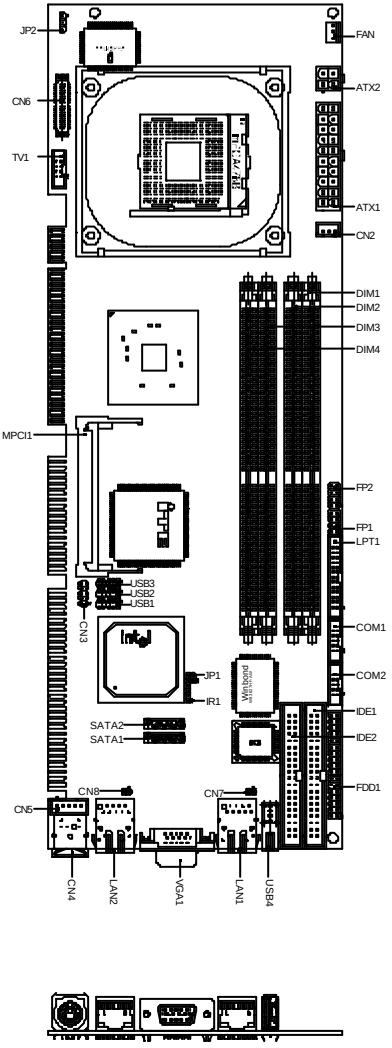
2.1 Safety Precaution

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

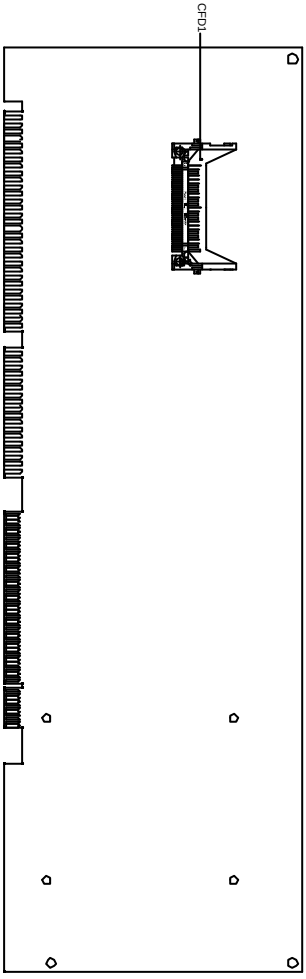
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Location of Connectors and Jumpers

Component Side

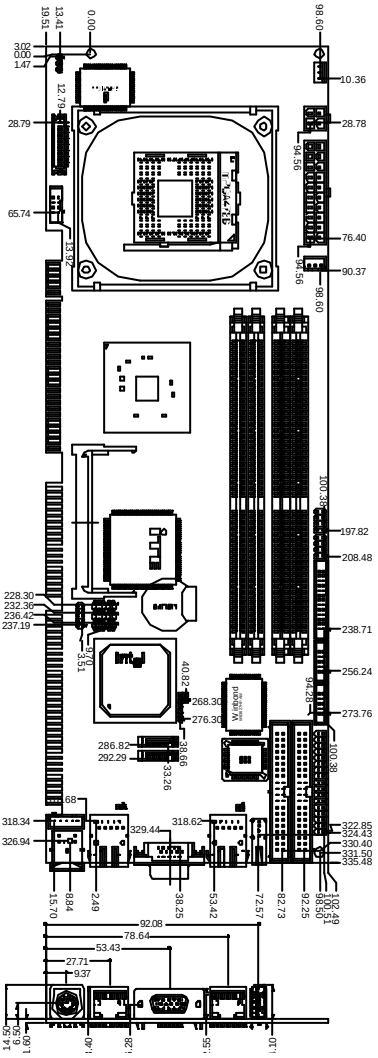


Solder Side

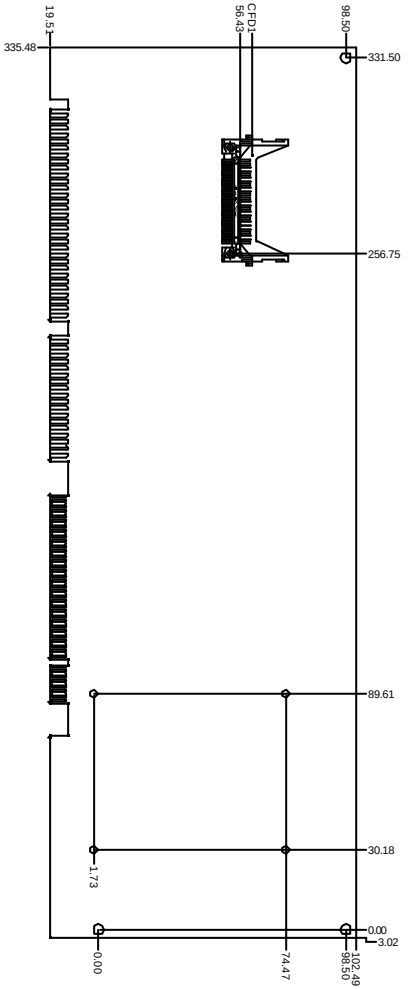


2.3 Mechanical Drawing

Component Side



Solder Side


19.51
CFD1
56.43
98.50
335.48
331.50
256.75
89.61
30.18
1.73
0.00
3.02
0.00
74.47
102.49
98.50

2.4 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

Jumpers

Label	Function
JP1	Clear CMOS
JP2	LCD Voltage Selection

2.5 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

Connectors

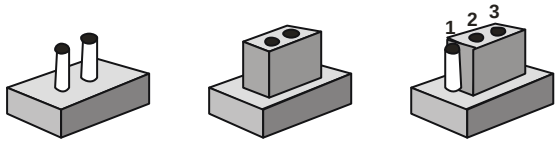
Label	Function
FAN	Fan Connector
CN2	ATX Power Control Connector
CN3	AC97 Connector
CN4	PS/2 keyboard/Mouse Connector
CN5	Internal keyboard Connector
CN6	LVDS Channel Connector
CN7	LAN 1 Active LED Connector
CN8	LAN 2 Active LED Connector
FP1	Front Panel Connector 1
FP2	Front Panel Connector 2
ATX1	ATX Power Connector
ATX2	ATX Power_12V Connector
VGA1	VGA Display Connector
TV1	TV_Out Connector
FDD1	Floppy Connector
IDE1~2	EIDE Connector
SATA1~2	Serial ATA Connector

CFD1	CompactFlash Slot
COM1	RS-232 Serial Port Connector
COM2	RS-232/422/485 Serial Port Connector
IR1	IrDA Connector
LPT1	LPT Port Connector
USB1~3	USB Connector
USB4	USB Connector
LAN1	10/100 or 100/1000Base-Tx Ethernet Connector
LAN2	10/100 or 100/1000Base-Tx Ethernet Connector
MPCI1	Mini PCI Slot
DIMM1~4	DIMM Slot

2.6 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip.

To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



Open Closed Closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.7 Clear CMOS (JP1)

JP1	Function
Close	Clear
Open	Protected (Default)

2.8 LCD Voltage Selection (JP2)

JP2	Function
1-2	+5V
2-3	+3.3 V (Default)

2.9 Front Panel Connector (FP1)

Pin	Signal	Pin	Signal
1	Power On Button (+)	2	Reset Switch (+)
3	Power On Button (-)	4	Reset Switch (-)
5	IDE LED (+)	6	Power LED (+)
7	IDE LED (-)	8	Power LED (-)

2.10 Front Panel Connector (FP2)

Close Pin 5-7: Internal Buzzer Enable

Close Pin 1-7: External Speaker Enable

Pin	Signal	Pin	Signal
1	External Speaker (+)	2	Keyboard Lock (+)
3	N.C.	4	GND
5	Internal Buzzer (-)	6	I2C Bus SMB Clock
7	External Speaker (-)	8	I2C Bus SMB DATA

2.11 TV-Out Connector (TV1)

Pin	Signal	Pin	Signal
1	Y	2	CVBS
3	GND	4	GND
5	C	6	N.C.
7	GND	8	N.C.

2.12 RS-232 Serial Port Connector (COM1)

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C.

2.13 RS-232/422/485 Serial Port Connector (COM2)

Pin	Signal	Pin	Signal
1	DCD (422TXD-/485DATA-)	2	RXD (422RXD+)
3	TXD (422TXD+/485DATA+)	4	DTR (422RXD-)
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C.

2.14 IrDA Connector (IR1)

Pin	Signal
1	+5V
2	N.C.
3	IRRX
4	GND
5	IRTX
6	N.C.

2.15 LPT Port Connector (LPT1)

Pin	Signal	Pin	Signal
1	#STROBE	2	#AFD
3	DATA0	4	#ERROR
5	DATA1	6	#INIT

7	DATA2	8	#SLIN
9	DATA3	10	GND
11	DATA4	12	GND
13	DATA5	14	GND
15	DATA6	16	GND
17	DATA7	18	GND
19	#ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SELECT	26	N.C.

2.16 USB Connector (USB1~3)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	USBD1-	4	GND
5	USBD1+	6	USBD2+
7	GND	8	USBD2-
9	GND	10	+5V

2.17 Fan Connector (CN1)

Pin	Signal
1	GND
2	+12V
3	Speed Sense

2.18 ATX Power Control Connector (CN2)

AT Power Use: Close Pin 2, 3

Pin	Signal
1	PS-ON
2	+5V
3	5VSB

2.19 Audio Connector (CN3)

Pin	Signal	Pin	Signal
1	AC_RST-	2	AC_SYNC
3	AC_DAIN2	4	AC_DAOUT
5	GND	6	AC_BCLK
7	GND	8	+5V
9	LOCK	10	+3.3V

2.20 PS/2 keyboard & Mouse Connector (CN4)

Pin	Signal
1	KB_DATA
2	MS_DATA
3	GND
4	+5V
5	KB_CLK
6	MS_CLK

2.21 Internal keyboard Connector (CN5)

Pin	Signal
1	KB_CLK
2	KB_DATA
3	N.C.
4	GND
5	+5V

2.22 LVDS Channel Connector (CN6)

Pin	Signal	Pin	Signal
1	BKLEN	2	BKLCTL
3	PPVCC	4	GND
5	CH1_CLK#	6	CH1_CLK
7	PPVCC	8	GND
9	CH1_TX0#	10	CH1_TX0
11	CH1_TX1#	12	CH1_TX1
13	CH1_TX2#	14	CH1_TX2
15	CH1_TX3#	16	CH1_TX3
17	I2C_DATA	18	I2C_CLK
19	CH2_TX0#	20	CH2_TX0
21	CH2_TX1#	22	CH2_TX1
23	CH2_TX2#	24	CH2_TX2
25	CH2_TX3#	26	CH2_TX3
27	PPVCC	28	GND
29	CH2_CLK#	30	CH2_CLK

2.23 LAN LED Connector (CN7~8)

Pin	Signal	Pin	Signal
1	Link_LED (-)	2	Active_LED (+)

Chapter

3

Award BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

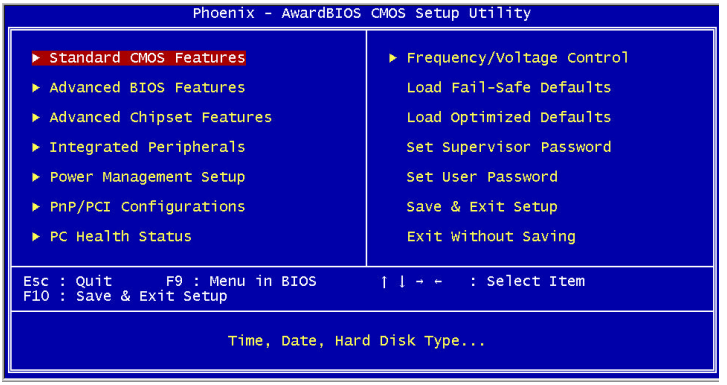
The FSB-865G CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 Award BIOS Setup

Awards BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.



Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set the advanced features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu shows you the status of PC.

Frequency/Voltage Control

This menu shows you the display of frequency/Voltage Control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

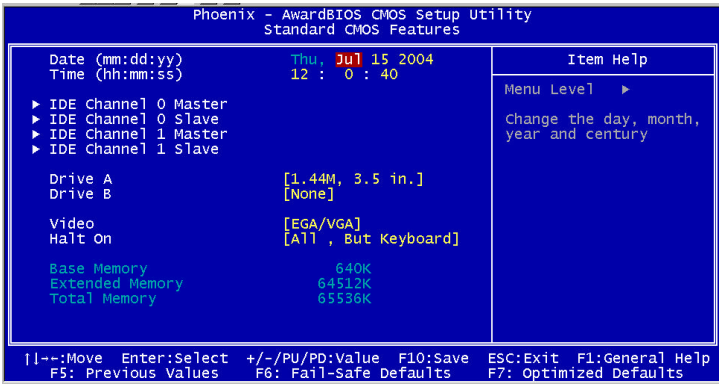
Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

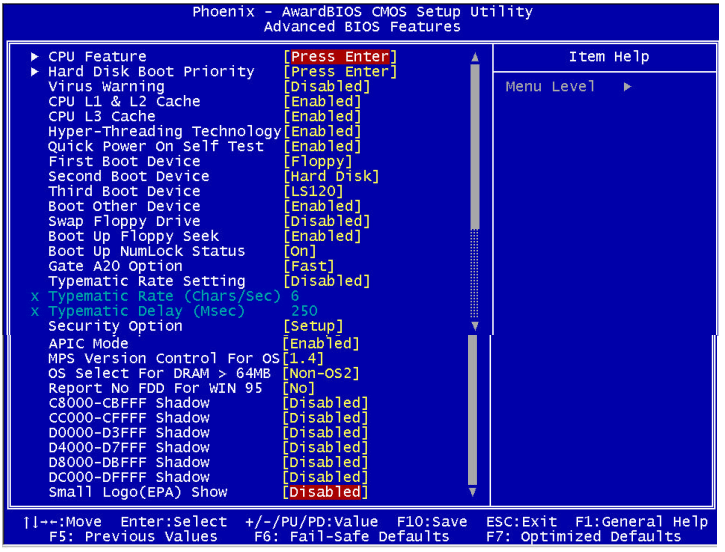
3.3 Standard CMOS Features

When you choose the Standard CMOS Features option from the INITIAL SETUP SCREEN menu, the screen shown below is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive and display. Once a field is highlighted, on-line help information is displayed in the right box of the Menu screen.

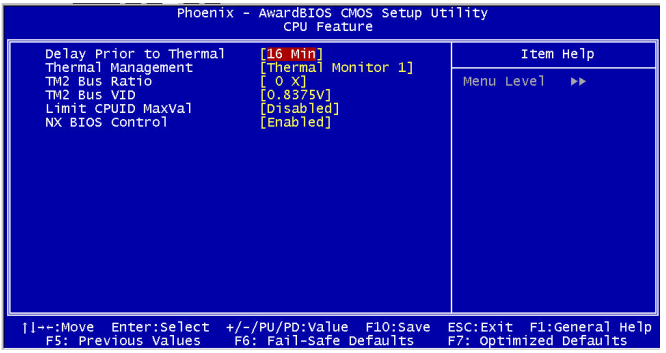


3.4 Advanced BIOS Features

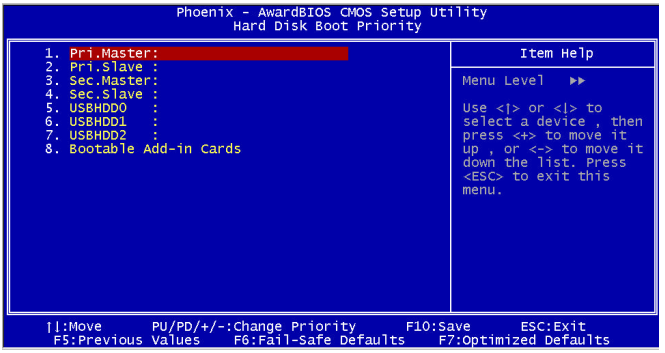
By choosing the Advanced BIOS Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G



- **CPU Feature**

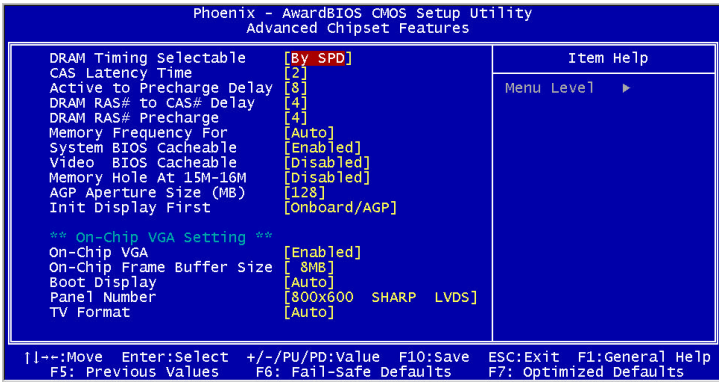


- **Hard Disk Boot Priority**



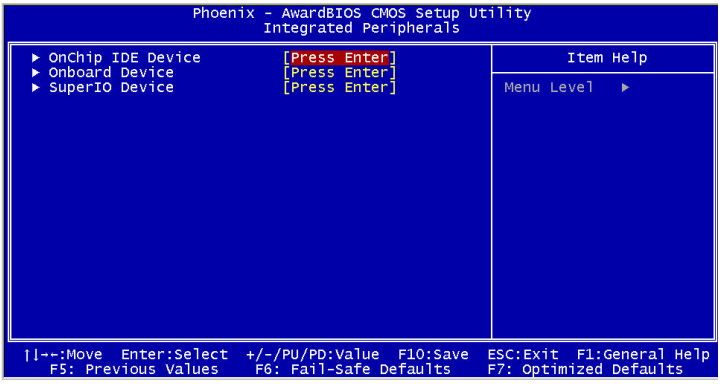
3.5 Advanced Chipset Features

By choosing the Advanced Chipset Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G.



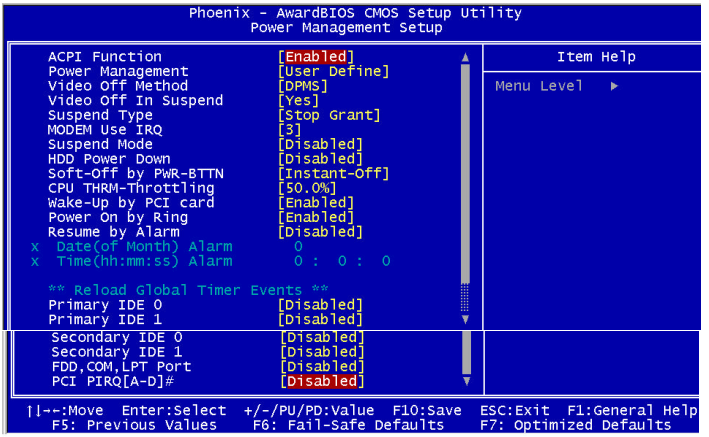
3.6 Integrated Peripherals

By choosing the Integrated Peripherals from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G.



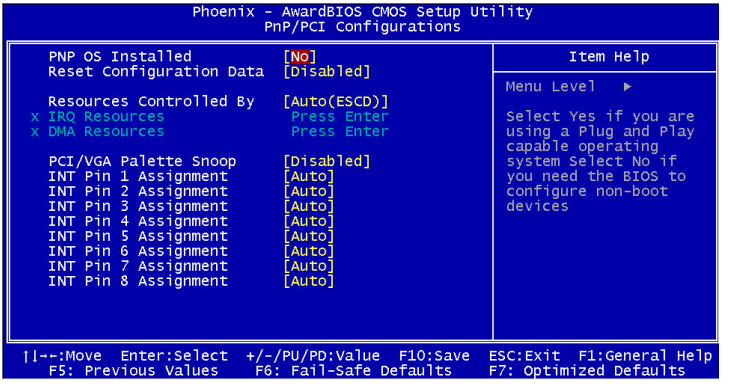
3.7 Power management Setup

By choosing the Power Management Setup from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G.



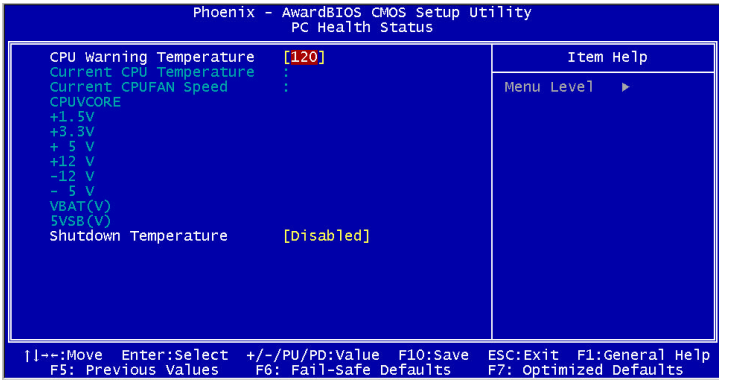
3.8 PnP/PCI configuration

By choosing the PnP/PCI configurations from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G.



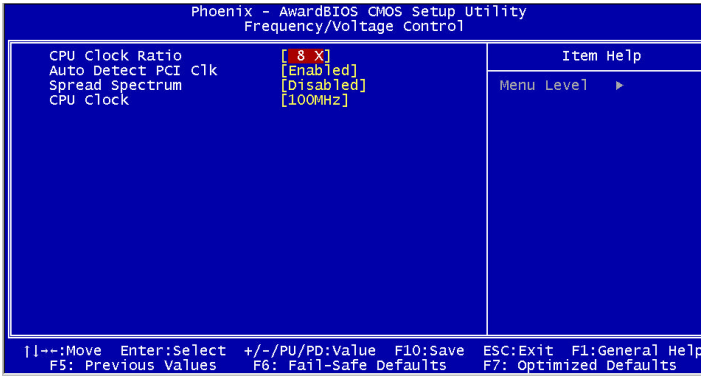
3.9 PC Health Status

By choosing the PC Health Status from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G.



3.10 Frequency / Voltage control

By choosing the Frequency/Voltage Control from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer' s default values for the FSB-865G.

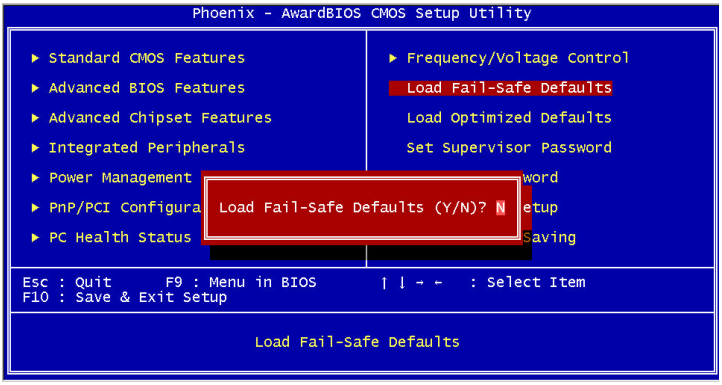


3.11 Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Default (Y/N)?

Pressing "Y" loads the BIOS default values for the most stable, minimal performance system operations.

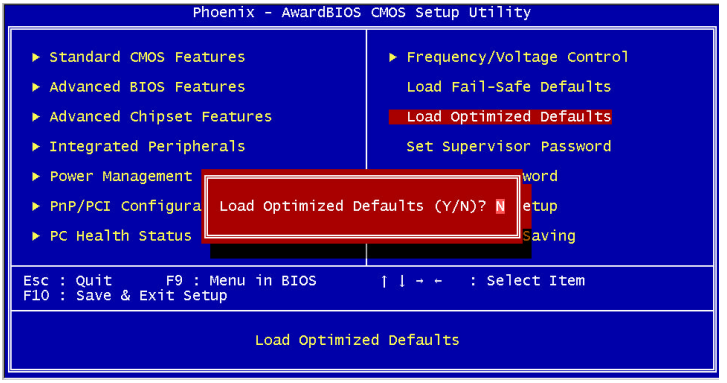


3.12 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)?

Pressing "Y" loads the default values that are manufacturer's settings for optimal performance system operations.



3.13 Set Supervisor / User Password

You can set either SUPERVISOR or USER PASSWORD, or both of them. The difference between the two is that the supervisor password allows unrestricted access to enter and change the options of the setup menus, while the user password only allows entry to the program, but not modify options.

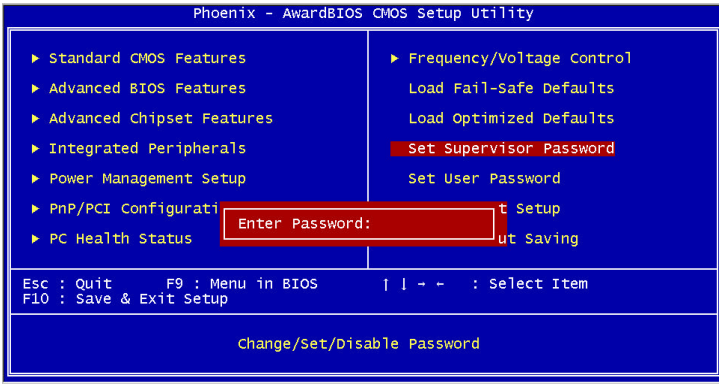
To abort the process at any time, press Esc.

In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System Enter a password each time the system boots and whenever you enter Setup.

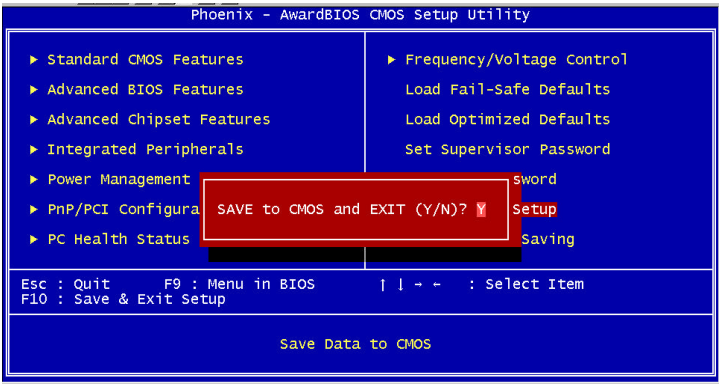
Setup Enter a password whenever you enter Setup.

NOTE: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.



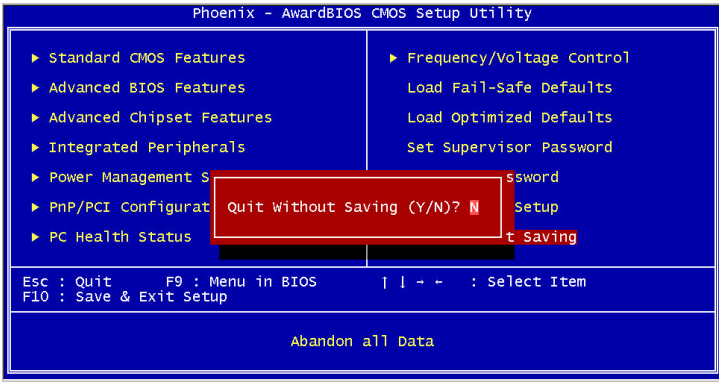
3.14 Save & Exit Setup

If you select this option and press <Enter>, the values entered in the setup utilities will be recorded in the chipset' s CMOS memory. The microprocessor will check this every time you turnon your system and compare this to what it finds as it checks the system. This record is required for the system to operate.



3.15 Exit without saving

Selecting this option and pressing <Enter> allows you to exit the Setup program without recording any new value or changing old one.



Chapter 4

Driver Installation

The FSB-865G comes with a CD-ROM that contains all drivers and utilities that meet your needs.

Follow the sequence below to install the drivers:

Step 1 – Install Intel® INF Update

Step 2 – Install Graphic Driver

Step 3 – Install Ethernet Driver

Step 4 – Install AC97 Audio Driver

Step 5 – Install Application Accelerator Driver

Step 6 – Utility (Optional)

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the FSB-865G CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 6 in order.

Step 1 – Install Intel® INF Update

1. Click on the **Intel® INF Update** folder and then double click on the **setup.exe.**
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.
4. Please re-start your computer.

Step 2 – Install Graphic Driver

1. Click on the **Graphic Driver** folder
2. Choose the OS folder that meets your system
3. Double click on the **setup.exe.** where is located on each OS foler.
4. Follow the instructions that the window will show you.
5. The system will help you install the driver automatically.
6. Please re-start your computer.

Step 3 – Install Ethernet Driver

1. Click on the **Ethernet Driver** folder and then double click on the **setup.exe.**
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.
4. Please re-start your computer.

Step 4 – Install AC97 Audio Driver

1. Click on the **AC97 Audio Driver** folder and then enter **ALC655** folder.
2. Choose the OS folder that meets your system and execute on the **setup. exe.**
3. Follow the instructions that the window will show you.
4. The system will help you install the driver automatically.
5. Please re-start your computer.

Step 5 – Install Application Accelerator driver (For RF version only)

1. Click on the **Application Accelerator** folder and then enter **IAA** folder.
2. Double click on the **setup. exe.**
3. Follow the instructions that the window will show you.
4. The system will help you install the driver automatically.
5. Please re-start your computer.

Step 6 – Utility driver (Optional)

1. Execute on the **setup. exe** after entering Utility driver folder.
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.
4. Please re-start your computer.

Note:

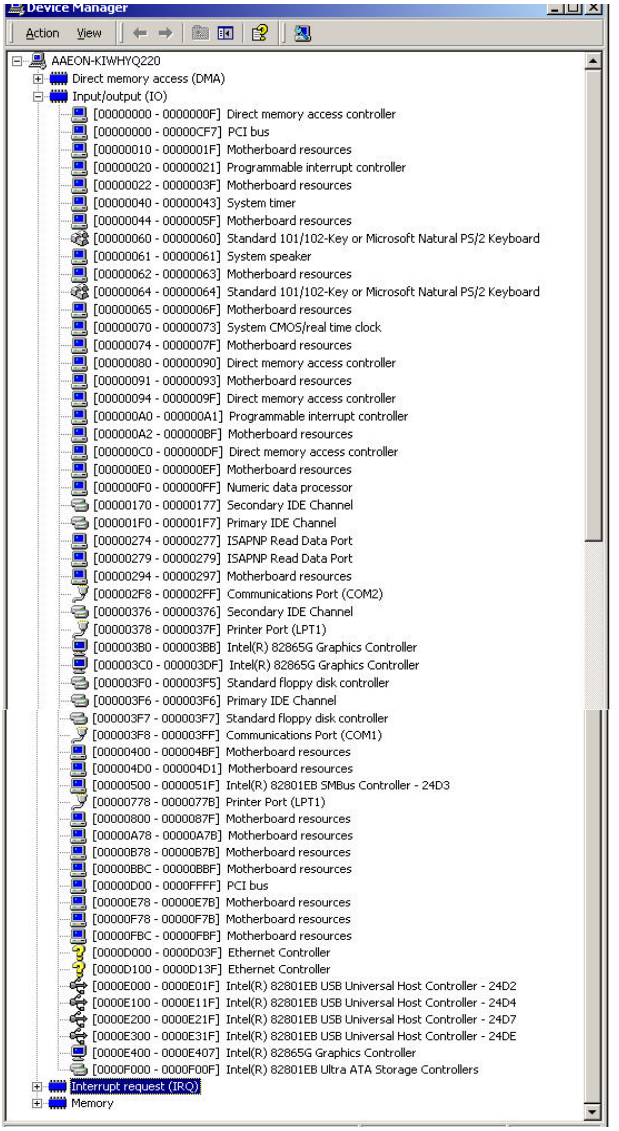
Under the Window® OS environment, if the CRT connector is connected to display monitor by the data switch device, the user need to set the color and resolution from Intel® Graphic utility (VGA driver) instead of setting from the control panel in case of the wrong display appearance.

Appendix

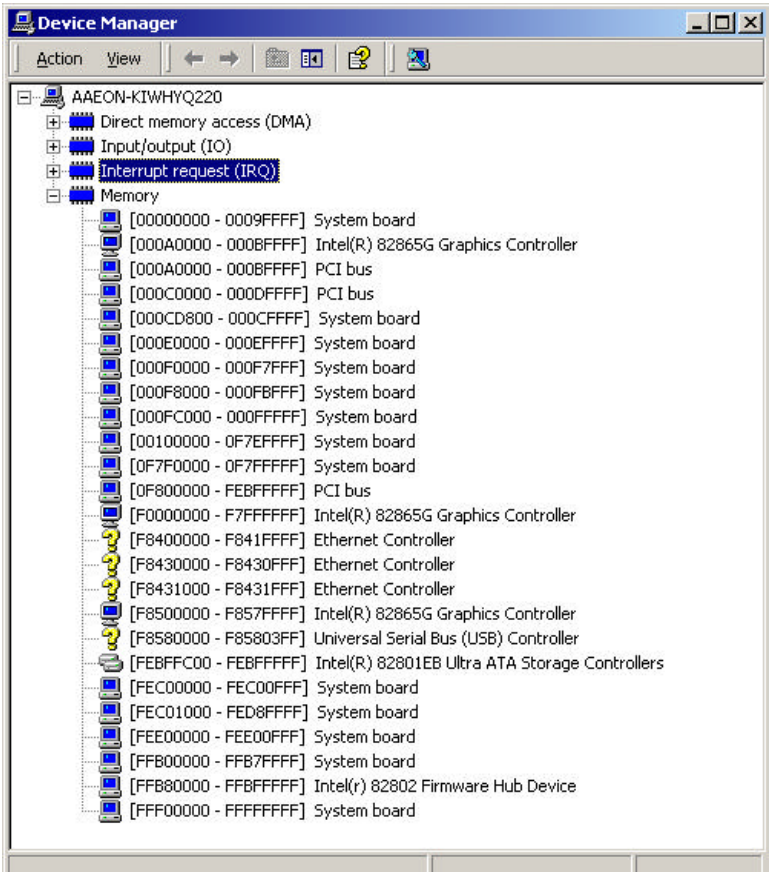
A

I/O Information

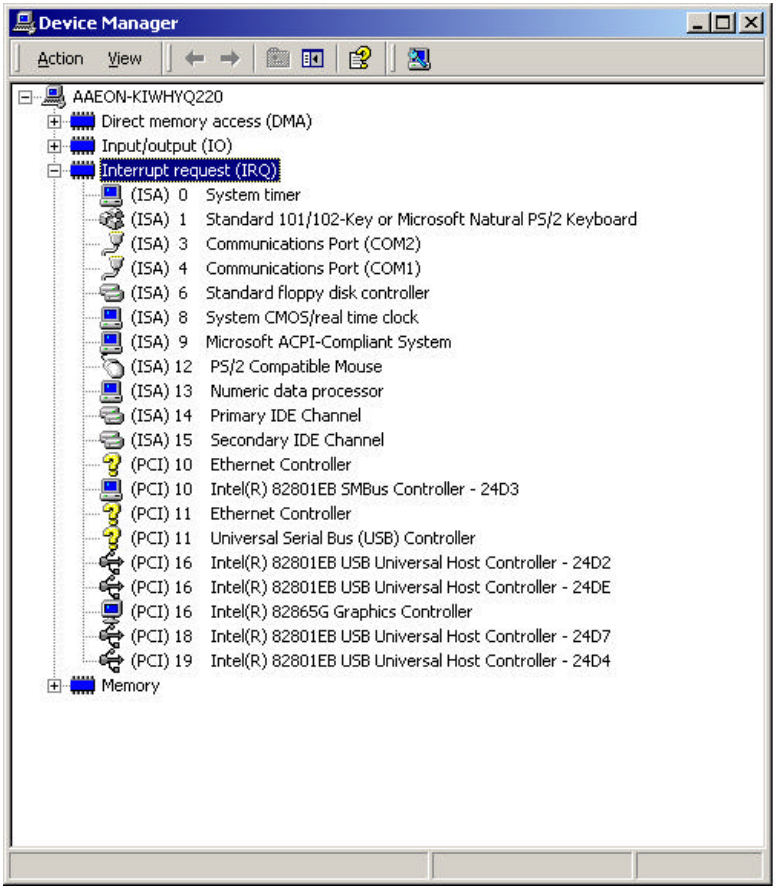
A.1 I/O Address Map



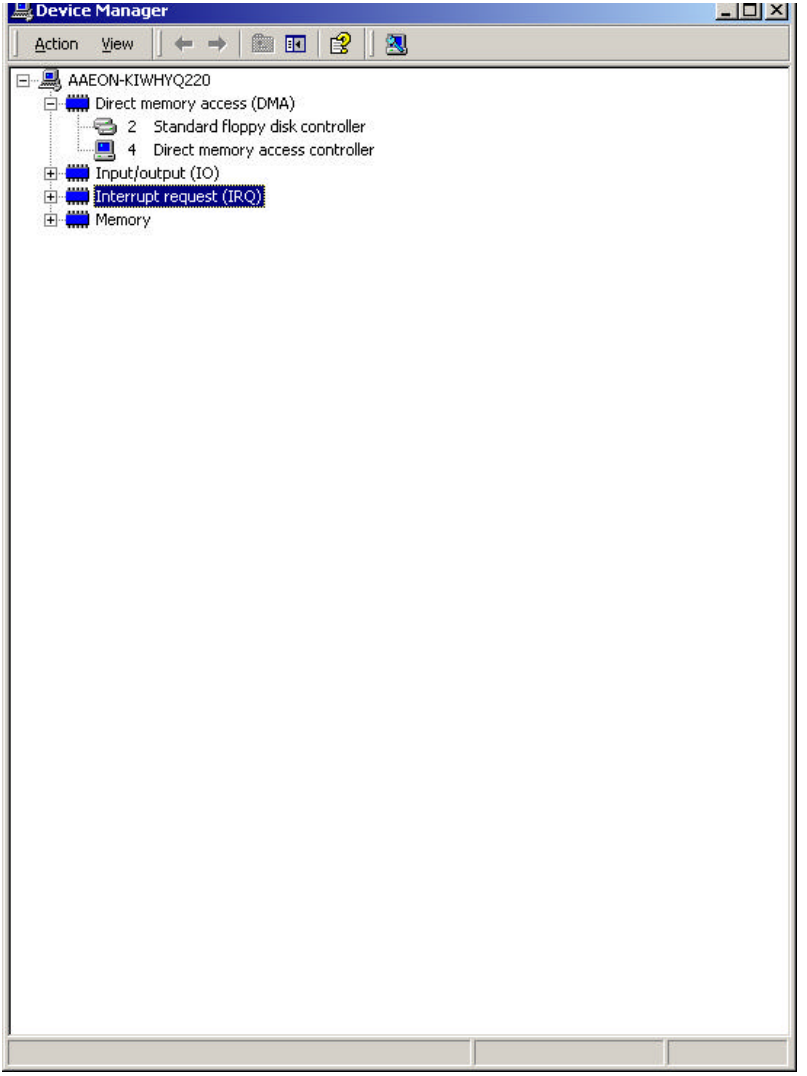
A.2 1st MB Memory Address Map



A.3 IRQ Mapping Chart



A.4 DMA Channel Assignments



Appendix B

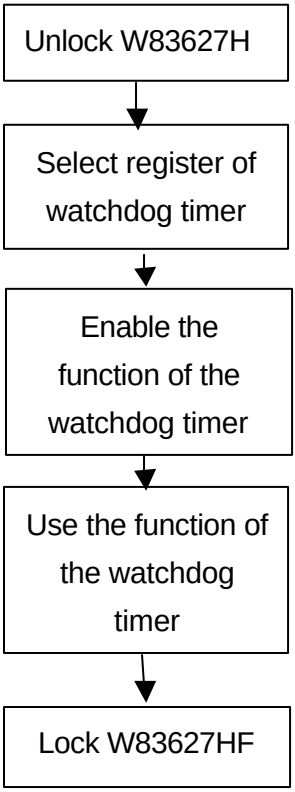
Programming the Watchdog Timer

B.1 Programming

FSB-865G utilizes W83627HF chipset as its watchdog timer controller.

Below are the procedures to complete its configuration and the AAEON intial watchdog timer program is also attached based on which you can develop customized program to fit your application.

Configuring Sequence Description



There are three steps to complete the configuration setup:

(1) Enter the W83627HF config Mode

(2) Modify the data of configuration registers

(3) Exit the W83627HF config Mode. Undesired result may occur if the config Mode is not exited normally.

(1) Enter the W83627HF config Mode

To enter the W83627HF config Mode, two special I/O write operations are to be performed during Wait for Key state. To ensure the initial state of the key-check logic, it is necessary to perform two write operations to the Special Address port (2EH). The different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
87h,87h:	2Eh	2Fh

(2) Modify the Data of the Registers

All configuration registers can be accessed after entering the config Mode. Before accessing a selected register, the content of

Index 07h must be changed to the LDN to which the register

belongs, except some Global registers.

(3) Exit the W83627HF config Mode

The exit key is provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
0aah:	2Eh	2Fh

WatchDog Timer Register I (Index=F5h, Default=00h)

CRF5 (PLED mode register. Default 0 x 00)

Bit 7-6 : select PLED mode

= 00 Power LED pin is tri-stated.

= 01 Power LED pin is drived low.

= 10 Power LED pin is a 1Hz toggle pulse with 50 duty cycle.

= 11 Power LED pin is a 1/4Hz toggle pulse with 50 duty cycle.

Bit 5-4 : Reserved

Bit 3 : select WDTO count mode.

= 0 second

= 1 minute

Bit 2 : Enable the rising edge of keyboard Reset (P20) to force Time-out event.

= 0 Disable

= 1 Enable

Bit 1-0 : Reserved

WatchDog Timer Register II (Index=F6h, Default=00h)

Bit 7-0 = 0 x 00 Time-out Disable

= 0 x 01 Time-out occurs after 1 second/minute

= 0 x 02 Time-out occurs after 2 second/minutes

= 0 x 03 Time-out occurs after 3

second/minutes

……..

= 0 x FF Time-out occurs after 255

second/minutes

WatchDog Timer Register III (Index=F7h, Default=00h)

Bit 7 : Mouse interrupt reset Enable or Disable

= 1 Watchdog Timer is reset upon a Mouse interrupt

= 0 Watchdog Timer is not affected by Mouse interrupt

Bit 6 : Keyboard interrupt reset Enable or Disable

= 1 Watchdog Timer is reset upon a Keyboard interrupt

= 0 Watchdog Timer is not affected by Keyboard interrupt

Bit 5 : Force Watchdog Timer Time-out. Write Only

= 1 Force Watchdog Timer time-out event: this bit is self-clearing

Bit 4 : Watchdog Timer Status. R/W

= 1 Watchdog Timer time-out occurred

= 0 Watchdog Timer counting

Bit 3-0 : These bits select IRQ resource for Watchdog. Setting of 2 selects SMI.

B.2 W83627HF Watchdog Timer Initial Program

Example: Setting 10 sec. as Watchdog timeout interval

```
;////////////////////////////////////////////////////////////////////////////////
Mov dx,2eh              ;Enter W83627HF config mode
Mov al,87h              (out 87h to 2eh twice)
Out dx,al
Out dx,al
;////////////////////////////////////////////////////////////////////////////////
Mov al,07h
Out dx,al
Inc dx
Mov al,08h              ;Select Logical Device 8 (GPIO Port 2)
Out dx,al
;////////////////////////////////////////////////////////////////////////////////
Dec dx
Mov al,30h              ;CR30 (GP20~GP27)
Out dx,al
Inc dx
Mov al,01h              ;Activate GPIO2
Out dx,al
;////////////////////////////////////////////////////////////////////////////////
```

```
Dec dx
Mov al,0f5h             ;CRF5 (PLED mode register)
Out dx,al
Inc dx
In al,dx
And al,not 08h          ;Set second as counting unit
Out dx,al
;////////////////////////////////////////////////////////////////////////////////
Dec dx
Mov al,0f6h             ; CRF6
Out dx,al
Inc dx
Mov al,10               ;Set timeout interval as 10 sec.
Out dx,al
;////////////////////////////////////////////////////////////////////////////////
Dec dx                  ;Exit W83627HF config mode
Mov al,0aah             (out 0aah to 2eh once)
Out dx,al
;////////////////////////////////////////////////////////////////////////////////
```