

FWS-2150

Desktop

Network Appliance Platform

1 2.5" Internal Disk Drive bay

1 Ultra ATA-100, 2 SATA I

5 LAN Ports

2 Type A USB Ports

Copyright Notice

This document is copyrighted, 2008. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, AAEON assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

AAEON reserves the right to make changes in the product design without notice to its users.

Acknowledgments

All other products' name or trademarks are properties of their respective owners.

- Award is a trademark of Award Software International, Inc.
- CompactFlash™ is a trademark of the Compact Flash Association.
- VIA is a trademark of VIA Technologies, Inc.
- Microsoft Windows® is a registered trademark of Microsoft Corp.

All other product names or trademarks are properties of their respective owners.

Packing List

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

- FWS-2150
- Quick Installation Guide
- CD-ROM for manual (in PDF format) and drivers
- D-sub 9-pin Cable x 1
- Rubber Feet
- 60W Power Adapter
- 2.5" IDE Hard Disk Driver Cable
- 8-pin PS2 KB/MS Cable
- VGA Cable

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

Note:

Serial ATA Cables are optional accessories. Please purchase those cables according to the following item numbers.

1702151201 SATA Power Cable

1709070050 SATA Cable

Contents

Chapter 1 General Information

1.1 Introduction.....	1-2
1.2 Features	1-3
1.3 Specifications	1-4
1.4 General System Information	1-7

Chapter 2 Quick Installation Guide

2.1 Safety Precautions	2-2
2.2 Location of Connectors	2-3
2.3 Mechanical Drawing	2-5
2.4 List of Jumpers	2-7
2.5 List of Connectors	2-8
2.6 Setting Jumpers	2-9
2.7 Clear CMOS (JP1)	2-10
2.8 SM Bus (JP2)	2-10
2.9 CF Power Selection (JP3).....	2-10
2.10 Front Panel Connector (FP1).....	2-10
2.11 RS-232 Serial Port Connector (COM1/2).....	2-10
2.12 USB Connector (USB2)	2-11
2.13 Keyboard and Mouse Connector (CN1).....	2-11
2.14 VGA Connector (CN2).....	2-11
2.15 Installing the Hard Disk Drive.....	2-12

Chapter 3 Award BIOS Setup

- 3.1 System Test and Initialization3-2
- 3.2 Award BIOS Setup3-3

Chapter 4 Driver Installation

- 4.1 Installation4-3

Appendix A Programming the Watchdog Timer

- A.1 Programming A-2
- A.2 ITE 8712 Watchdog Timer Initial Program..... A-5

Appendix B I/O Information

- B.1 I/O Address Map B-2
- B.2 Memory Address Map B-3
- B.3 IRQ Mapping Chart B-4
- B.4 DMA Channel Assignments B-4

Appendix C Standard Firewall Platform Setting

- C.1 Standard Firewall Platform Setting C-2
- C.2 Status LED Sample Code C-2
- C.3 LAN Bypass Mode Sample Code C-5
- C.4 Console Redirection C-6

Chapter

1

**General
Information**

1.1 Introduction

FWS-2150 adopts the VIA C7/ Eden Processor, up to 2.0GHz with 400/800MHz Front Side Bus. (or onboard VIA Eden ULV 500MHz, FSB400MHz). Moreover, the chipset is equipped with VIA CN700 +VT8237R. The system memory features 240-pin DDRII 400/533 DIMM socket total up to 1GB. It deploys five LAN ports that consist of five PCI 10/100Base-TX Ethernet LAN ports with two ports bypass function. FWS-2150 condensed appearance features desktop form factor that fits nicely into a space-limited environment.

This compact FWS-2150 is equipped with one ATA-100, two SATA I and CompactFlash™ Type II connector with ATA mode. In addition, it offers flexible expansion with network products and features one Mini-PCI Type III expansion socket, two USB2.0 ports and one RS-232 console port on the rear panel. The console port deploys console re-direction that increases the network security via remote control. All of these designs provide for a more user-friendly solution.

1.2 Features

- Desktop 5 LAN Ports Network Appliance Platform
- VIA C7/ Eden CPU, Up to 2.0GHz
- 240-pin x 1 DDRII 400/533MHz Memory Support, Up to 1GB
- 10/100Base-TX Ethernet x 5 (2 Ports Bypass Function)
- Ultra ATA-100 Port x 1 & SATA-I x 2
- CompactFlash™ Type-II Connector & Mini PCI Slot
- USB2.0 Port x 2 & RS-232 Console x 1 in the Real Panel
- 60W AC/DC Power Adapter
- Watchdog Function 1~255 Sec.
- 2.5" Internal Disk Drive Bay x 1

1.3 Specifications

System

Form Factor	Desktop 5 LAN ports Network Appliance
Processor	VIA C7/Eden CPU, up to 2.0GHz (FSB 400/800MHz) onboard Eden ULV 500MHz (FSB 400MHz)
System Memory	240-pin DDRII 400/533 DIMM Socket x 1, total up to 1GB
Chipset	VIA CN700 + VT8237R+
LAN	PCI 10/100 w/ Realtek 8100C x 5 (2 ports bypass), RJ-45 x 5
BIOS	Award Plug & Play FWH BIOS – 512KB ROM
IDE	ATA-100 x 1 channel
SATA Interface	SATA I x 2
Solid Storage Disk	CFD Type II connector(ATA mode)
Expansion Interface	Mini PCI Type III Socket
Watchdog Timer	1~255 steps, can be set with software on Super I/O
RTC	Internal RTC
Storage	Internal: One 2.5" Hard Disk (SATA or IDE)
System Fan	Depends on processor options
Front I/O Panel	Power LED x 1, HDD Active LED x 1, Status LED x 1, Bypass LED x 1, LAN

	Active/Link LED x 5, LAN Speed LED x 5
Color	Blue
LCM	N/A
Power Supply	60W AC/DC power adapter
Dimension	7"(W) x 9.84" (D) x 1.73" (H) (178mm x 250mm x 44mm)—Chassis 8.46 (L) x 6.77" (W) (215mm x 172mm)—Board

Display

VGA Controller	Integrated UniChrome Pro graphics, VGA pin header
-----------------------	---

I/O

Serial Port	Two COM ports: (Internal Pin Header x 1, External D-sub x 1) COM 1: RS-232 COM 2: RS-232 (Pin Header)
Keyboard & Mouse	Reserve pin header
Universal Serial Bus	USB2.0 x 2, dual Type-A connector on the rear panel
Front I/O Panel	One Power LED One Bypass LED One Status LED One HDD Active LED Five LAN LEDs

Rear I/O panel USB port x 2, LAN port x 5, DB-9 connector x 1, Software Reset Switch x 1

Environmental

Operating Temp. 32°F ~ 104°F (0°C ~ 40°C)

Storage Temp. -4°F ~ 140°F (-20°C ~ 60°C)

Operating humidity: 10 ~ 80%

Storage humidity: 10 ~ 80% @ 40°C, non-condensing

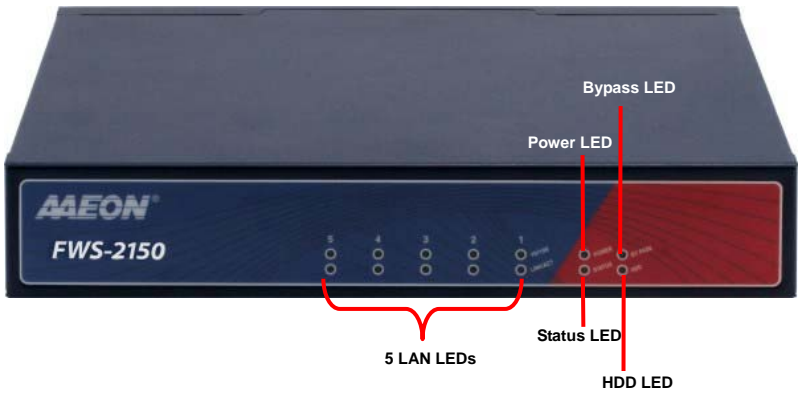
Vibration 0.5G / 5 ~ 500Hz / operation (2.5" Hard Disk Drive)

1.5G / 5 ~ 500Hz / non operation

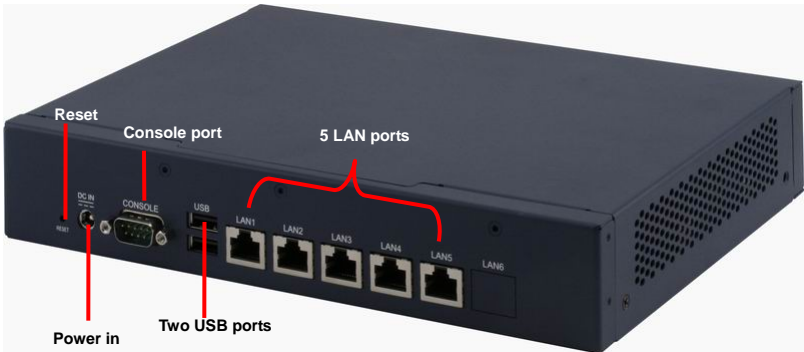
Shock 10G peak acceleration (11 m sec. duration), operation
20G peak acceleration (11 m sec. duration), non operation

1.4 General System Information

Front Panel



Rear Panel



Chapter

2

FWS-2150 Quick Installation Guide

Notice:

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



2.1 Safety Precautions

The installation is intended for technically qualified personnel who have experience installing and configuring system boards.

The equipment can be installed in a restricted access location (RAL) only.

A restricted access location is a site location for equipment where the following criteria apply:

01. Access can only be gained by service persons or by users who have been trained on the restrictions and the precautions for this specific site.

02. Access is by means of at least one of the following, special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.

Safety Precautions:

Warning!



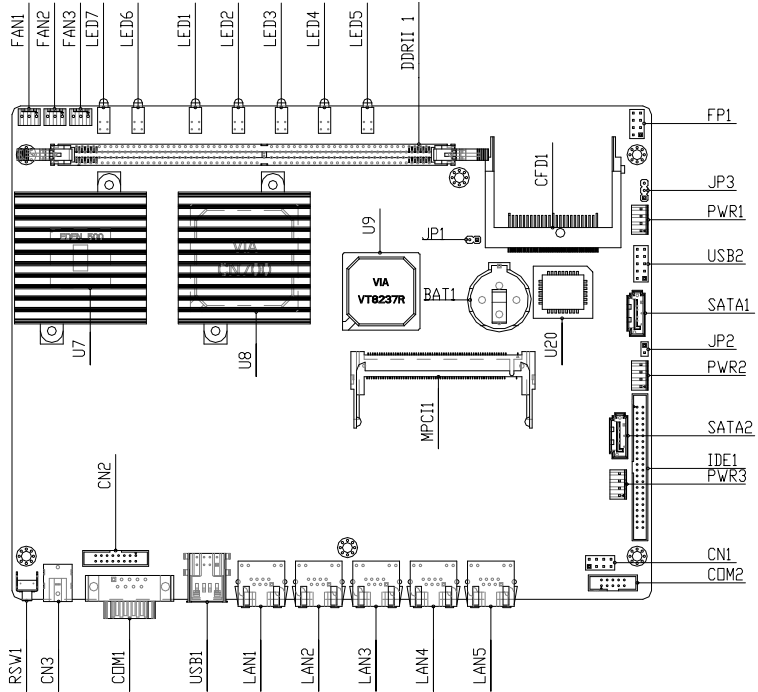
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

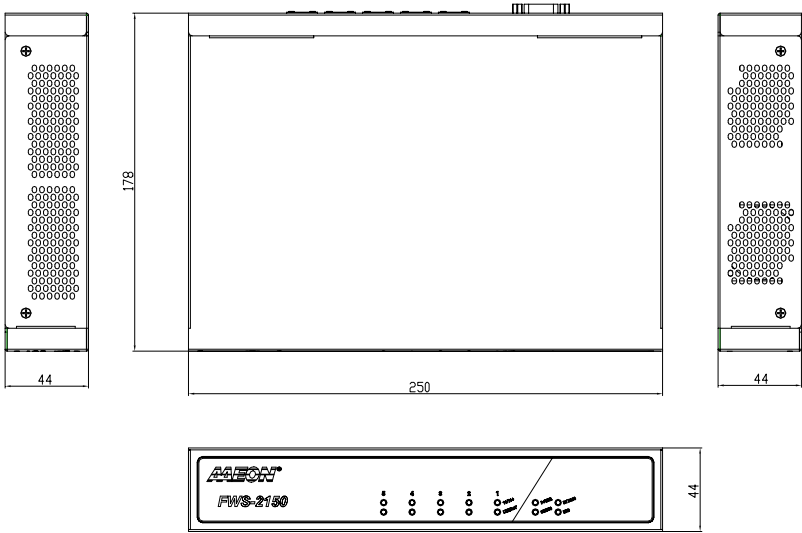
Caution!



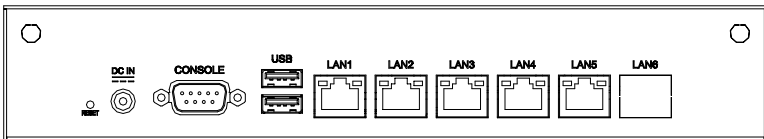
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors

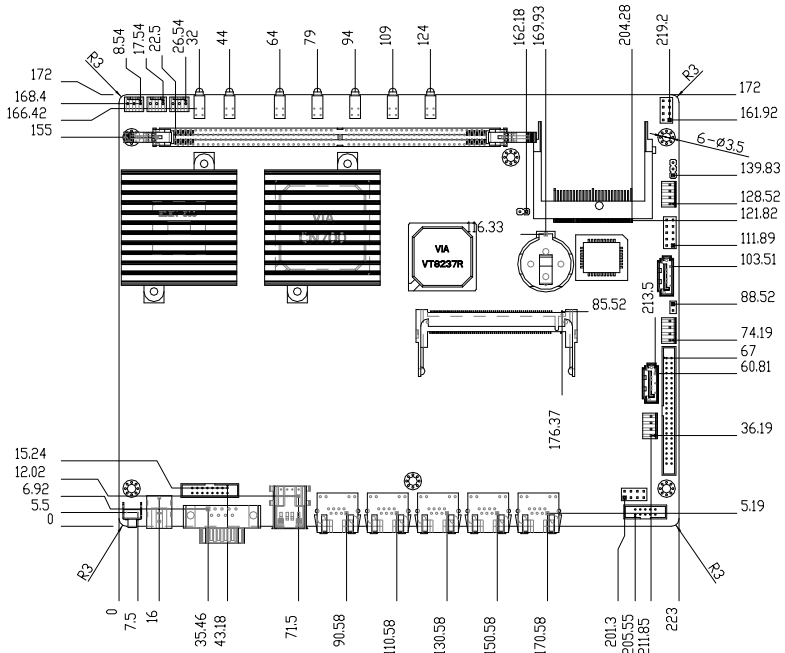


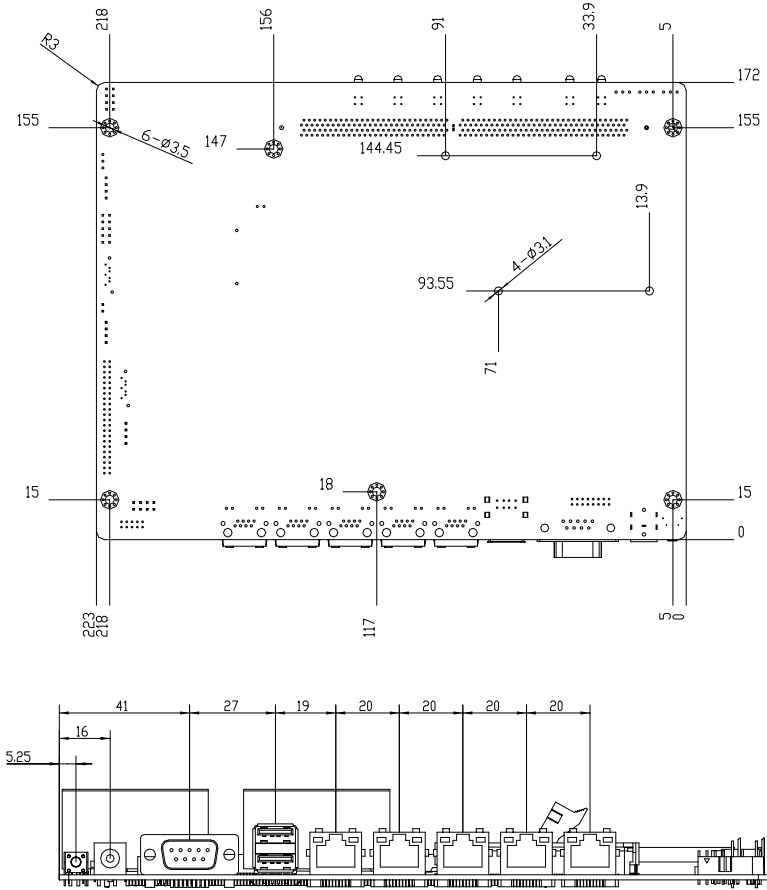


Connectors on Rear Panel of FWS-2150



2.3 Mechanical Drawing





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:

Label	Function
JP1	Clear CMOS
JP2	SM Bus
JP3	CF Power selection

2.5 List of Connectors

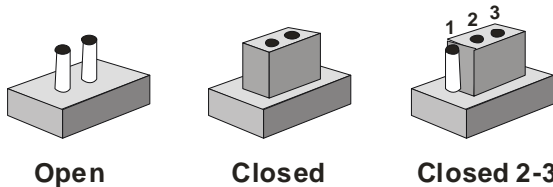
The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

Label	Function
FP1	Front Panel Connector 1
IDE1	44Pin pitch 2.0mm Connector
SATA1~2	Serial ATA Connector
COM1	RS-232 Serial Port Connector
COM2	RS-232 Serial Port Connector
USB1	USB Connector
USB2	USB Pin Header
DDR1 1	DDR1 DIMM Slot
FAN1~3	3-pin Fan Connector
CN1	Internal Keyboard/Mouse Connector
CN2	VGA Display Connector
CN3	DC 19V Adapter Connector
JP1 (2-Pin)	Clear CMOS
JP2 (2-Pin)	SM Bus
JP3 (3-Pin)	CF Power selection
RSW1	Soft ware Reset

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.



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
1-2	Clear CMOS
No Jumper	(Default)

2.8 SM Bus (JP2)

JP2	Function
1-2	SM Bus
No Jumper	(Default)

2.9 CF Power Selection (JP3)

JP3	Function
1-2	+5V (Default)
2-3	+3.3V

2.10 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 (-)

2.11 RS-232 Serial Port Connector (COM1/2)

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.

2.12 USB Connector (USB2)

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

2.13 Keyboard and Mouse Connector (CN1)

Pin	Signal	Pin	Signal
1	KB_DATA	2	KMVCC
3	KB_CLK	4	MSDAT
5	GND	6	MSCLK

2.14 VGA Connector (CN2)

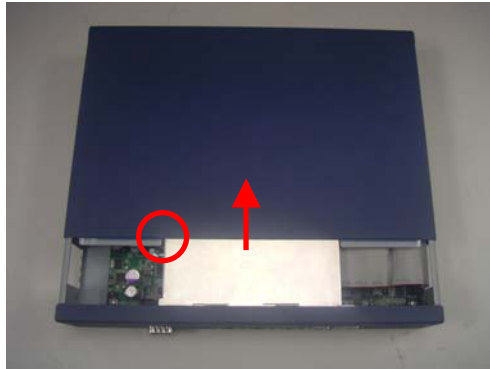
Pin	Signal	Pin	Signal
1	VGA R	2	VGA VCC
3	VGA G	4	GND
5	VGA B	6	N.C.
7	N.C.	8	VGA DATA
9	GND	10	VGA HS

11	GND	12	VGA VS
13	GND	14	VGA CLK
15	GND	16	N.C.

2.15 Installing the Hard Disk Drive

Step 1: Unscrew the upper cover and isolate the cover from the chassis

Note: Push and remove the upper cover until see the screw on the HDD box



Step 2: Take out the Hard Disk Drive Case from the chassis



Step 3: Turn the screw to open the HDD case



Step 4: Fasten the four rubber feet



Step 5: Fasten the four screws of the Hard Disk Drive Bracket



Step 6: Put the HDD with cable onto the HDD Bracket



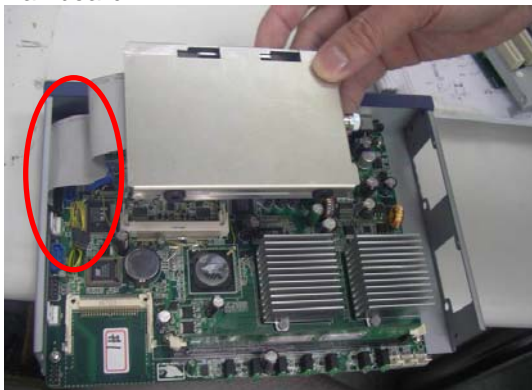
Step 7: Close the upper bracket of the HDD case and make sure the rubber feet are locked by the flutes on the brackets



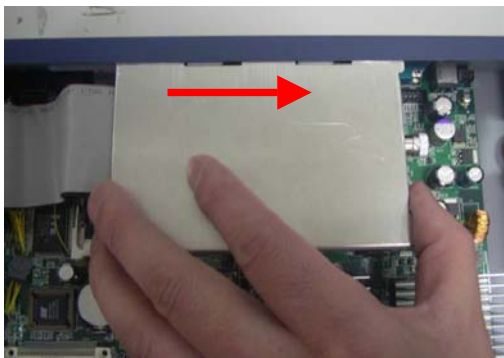
Step 8: Fasten the screw conversely to lock the HDD



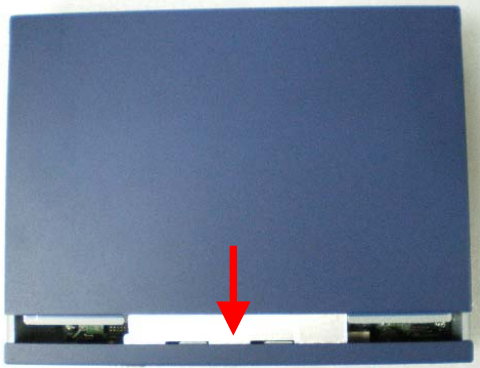
Step 9: Plug the IDE or SATA cable in the IDE or SATA socket on the mainboard



Step 10: Insert the HDD to the chassis horizontally and lock the HDD case



Step 11: Close and screw the upper cover of the chassis



Below Table for China RoHS Requirements

产品中有毒有害物质或元素名称及含量

AAEON Boxer/ Industrial System

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
中央处理器 与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
电源	×	○	○	○	○	○
<p>O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。</p> <p>备注: 一、此产品所标示之环保使用期限, 系指在一般正常使用状况下。 二、上述部件物质中央处理器、内存、硬盘、电源为选购品。</p>						

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 FWS-2150 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 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, KB wake up, etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu allows you to set the shutdown temperature for your system.

Frequency/Voltage Control

Use this menu to specify your settings for auto detect DIMM/PCI clock and spread spectrum.

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.

You can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

4

**Driver
Installation**

The FWS-2150 comes with an AutoRun CD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver CD, the driver CD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

Follow the sequence below to install the drivers:

Step 1 – Install VIA 4 IN 4 Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

USB 2.0 Drivers are available for download using Windows® Update for both Windows® XP and Windows® 2000. For additional information regarding USB 2.0 support in Windows® XP and Windows® 2000, please visit www.microsoft.com/hwdev/usb/.

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the FWS-2150 CD-ROM into the CD-ROM drive and install the drivers from Step 1 to Step 3 in order.

Step 1 – Install VIA 4 IN 1 Driver

1. Click on the **Step 1-VIA 4 IN 1** folder and double click on the **Setup.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 – Install VGA Driver

1. Click on the **Step 2 –VGA** folder and select the OS your system is
2. Double click on **Setup.exe** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 – Install LAN Driver

1. Click on the **Step 3 –LAN** folder and select the **Windows** folder
2. Double click on **Setup.exe**
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Appendix

A

Programming the Watchdog Timer

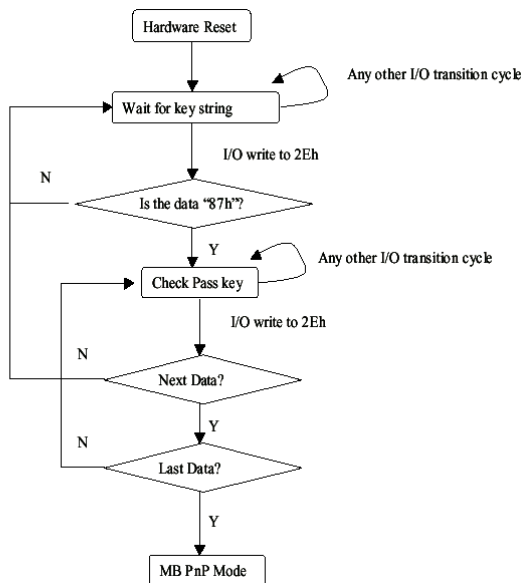
A.1 Programming

FWS-2150 utilizes ITE 8712 chipset as its watchdog timer controller. (K version)

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

Configuring Sequence Description

After the hardware reset or power-on reset, the ITE 8712 enters the normal mode with all logical devices disabled except KBC.



There are three steps to complete the configuration setup: (1) Enter the MB PnP Mode; (2) Modify the data of configuration registers; (3) Exit the MB PnP Mode. Undesired result may occur if the MB PnP Mode is not exited normally.

(1) Enter the MB PnP Mode

To enter the MB PnP Mode, four 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 four write operations to the Special Address port (2EH). Two different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
87h, 01h, 55h, 55h:	2Eh	2Fh

(2) Modify the Data of the Registers

All configuration registers can be accessed after entering the MB PnP 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 MB PnP Mode

Set bit 1 of the configure control register (Index=02h) to 1 to exit the MB PnP Mode.

WatchDog Timer Configuration Registers

LDN	Index	R/W	Reset	Configuration Register or Action
All	02H	W	N/A	Configuration Control
07H	71H	R/W	00H	WatchDog Timer Control Register
07H	72H	R/W	00H	WatchDog Timer Configuration Register
07H	73H	R/W	00H	WatchDog Timer Time-out Value (LSB) Register
07H	74H	R/W	00H	WatchDog Timer Time-out Value (MSB) Register

Configure Control (Index=02h)

This register is write only. Its values are not sticky; that is to say, a hardware reset will automatically clear the bits, and does not require the software to clear them.

Bit	Description
7-2	Reserved
1	Returns to the Wait for Key state. This bit is used when the configuration sequence is completed.
0	Resets all logical devices and restores configuration registers to their power-on states.

WatchDog Timer Control Register (Index=71h, Default=00h)

Bit	Description
7	WDT is reset upon a CIR interrupt
6	WDT is reset upon a KBC (Mouse) interrupt
5	WDT is reset upon a KBC (Keyboard) interrupt
4	WDT is reset upon a read or a write to the Game port base address
3-2	Reserved
1	Force Time-out. This bit is self-clearing
0	WDT status 1: WDT value reaches 0 0: WDT value is not 0

WatchDog Timer Configuration Register (Index=72h, Default=00h)

Bit	Description
7	WDT Time-out value select 1: Second 0: Minute
6	WDT output through KRST (pulse) enable
5	WDT Time-out value Extra select 1: 4s. 0: Determine by WDT Time-out value select (bit7 of this register)
4	WDT output through PWROK1/PWROK2 (pulse) enable
3	Select the interrupt level ^{note} for WDT

**WatchDog Timer Time-out Value (LSB) Register (Index=73h,
Default=00h)**

Bit	Description
------------	--------------------

7-0	WDT Time-out value 7-0
-----	------------------------

**WatchDog Timer Time-out Value (MSB) Register (Index=74h,
Default=00h)**

Bit	Description
------------	--------------------

7-0	WDT Time-out value 15-8
-----	-------------------------

A.2 ITE8712 Watchdog Timer Initial Program

```
.MODEL SMALL
```

```
.CODE
```

Main:

```
CALL Enter_Configuration_mode
```

```
CALL Check_Chip
```

```
mov cl, 7
```

```
call Set_Logic_Device
```

```
;time setting
```

```
mov cl, 10 ; 10 Sec
```

```
dec al
```

Watch_Dog_Setting:

```
;Timer setting
```

```
mov al, cl
```

```
mov cl, 73h
call Superio_Set_Reg
;Clear by keyboard or mouse interrupt
mov al, 0f0h
mov cl, 71h
call Superio_Set_Reg
;unit is second.
mov al, 0C0H
mov cl, 72h
call Superio_Set_Reg
; game port enable
mov cl, 9
call Set_Logic_Device
```

```
Initial_OK:
CALL Exit_Configuration_mode
MOV AH,4Ch
INT 21h
```

```
Enter_Configuration_Mode PROC NEAR
MOV SI,WORD PTR CS:[Offset Cfg_Port]
```

```
MOV DX,02Eh
MOV CX,04h
Init_1:
```

```
MOV AL,BYTE PTR CS:[SI]
OUT DX,AL
INC SI
LOOP Init_1
RET
Enter_Configuration_Mode ENDP
```

```
Exit_Configuration_Mode PROC NEAR
MOV AX,0202h
CALL Write_Configuration_Data
RET
Exit_Configuration_Mode ENDP
```

```
Check_Chip PROC NEAR
```

```
MOV AL,20h
CALL Read_Configuration_Data
CMP AL,87h
JNE Not_Initial
```

```
MOV AL,21h
CALL Read_Configuration_Data
CMP AL,12h
JNE Not_Initial
```

Need_Initial:

STC

RET

Not_Initial:

CLC

RET

Check_Chip ENDP

Read_Configuration_Data PROC NEAR

MOV DX,WORD PTR CS:[Cfg_Port+04h]

OUT DX,AL

MOV DX,WORD PTR CS:[Cfg_Port+06h]

IN AL,DX

RET

Read_Configuration_Data ENDP

Write_Configuration_Data PROC NEAR

MOV DX,WORD PTR CS:[Cfg_Port+04h]

OUT DX,AL

XCHG AL,AH

MOV DX,WORD PTR CS:[Cfg_Port+06h]

OUT DX,AL

RET

Write_Configuration_Data ENDP

Superio_Set_Reg proc near

```
push ax
MOV DX,WORD PTR CS:[Cfg_Port+04h]
mov al,cl
out dx,al
pop ax
inc dx
out dx,al
ret
Superio_Set_Reg endp.Set_Logic_Device proc near
```

```
Set_Logic_Device proc near
push ax
push cx
xchg al,cl
mov cl,07h
call Superio_Set_Reg
pop cx
pop ax
ret
Set_Logic_Device endp
```

```
;Select 02Eh->Index Port, 02Fh->Data Port
Cfg_Port DB 087h,001h,055h,055h
```

```
DW 02Eh,02Fh
```

END Main

Note: Interrupt level mapping

0Fh-Dh: not valid

0Ch: IRQ12

.

.

03h: IRQ3

02h: not valid

01h: IRQ1

00h: no interrupt selected

Appendix

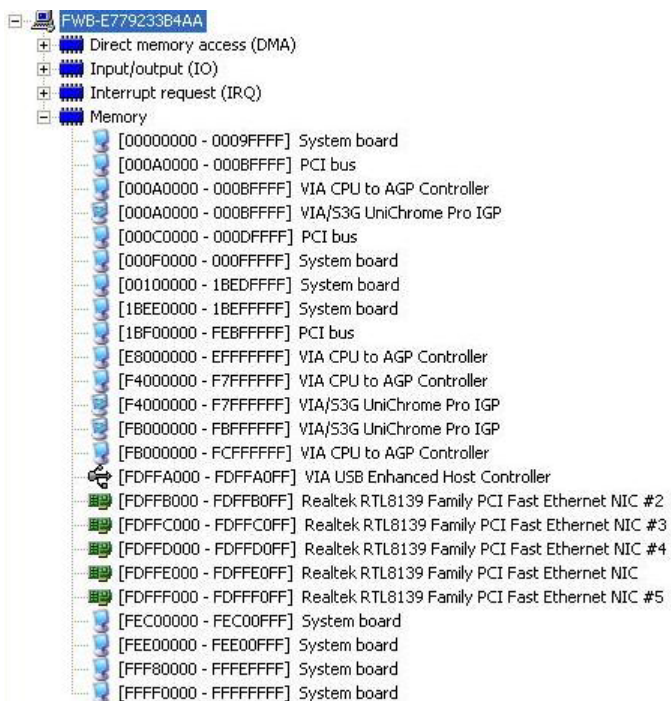
B

I/O Information

B.1 I/O Address Map

Address Range	Device Name
[00000000 - 0000000F]	Direct memory access controller
[00000000 - 00000CF7]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F]	Motherboard resources
[00000070 - 00000073]	System CMOS/real time clock
[00000074 - 0000007F]	Motherboard resources
[00000080 - 00000090]	Direct memory access controller
[00000091 - 00000093]	Motherboard resources
[00000094 - 0000009F]	Direct memory access controller
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000FF]	Numeric data processor
[00000170 - 00000177]	Secondary IDE Channel
[000001F0 - 000001F7]	Primary IDE Channel
[00000220 - 00000225]	Motherboard resources
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[00000290 - 0000029F]	Motherboard resources
[000002F8 - 000002FF]	Communications Port (COM2)
[00000376 - 00000376]	Secondary IDE Channel
[00000378 - 0000037F]	Printer Port (LPT1)
[00000380 - 0000038B]	VIA CPU to AGP Controller
[00000380 - 0000038B]	VIA/S3G UniChrome Pro IGP
[000003C0 - 000003DF]	VIA CPU to AGP Controller
[000003C0 - 000003DF]	VIA/S3G UniChrome Pro IGP
[000003F0 - 000003F5]	Standard floppy disk controller
[000003F6 - 000003F6]	Primary IDE Channel
[000003F7 - 000003F7]	Standard floppy disk controller
[000003F8 - 000003FF]	Communications Port (COM1)
[00000400 - 0000047F]	Motherboard resources
[000004D0 - 000004D1]	Motherboard resources
[00000500 - 0000050F]	Motherboard resources
[00000A79 - 00000A79]	ISAPNP Read Data Port
[00000D00 - 0000FFFF]	PCI bus
[0000D000 - 0000DFFF]	VIA CPU to AGP Controller
[0000EA00 - 0000EAFF]	Realtek RTL8139 Family PCI Fast Ethernet NIC #2
[0000EC00 - 0000ECFF]	Realtek RTL8139 Family PCI Fast Ethernet NIC #3
[0000EE00 - 0000EEFF]	Realtek RTL8139 Family PCI Fast Ethernet NIC #4
[0000F000 - 0000F0FF]	Realtek RTL8139 Family PCI Fast Ethernet NIC
[0000F200 - 0000F2FF]	Realtek RTL8139 Family PCI Fast Ethernet NIC #5
[0000F400 - 0000F4FF]	VIA Serial ATA Controller - 3149
[0000F600 - 0000F61F]	VIA Rev 5 or later USB Universal Host Controller
[0000F700 - 0000F71F]	VIA Rev 5 or later USB Universal Host Controller
[0000F800 - 0000F81F]	VIA Rev 5 or later USB Universal Host Controller
[0000F900 - 0000F91F]	VIA Rev 5 or later USB Universal Host Controller
[0000FA00 - 0000FA0F]	VIA Bus Master IDE Controller - 0571
[0000FB00 - 0000FB0F]	VIA Serial ATA Controller - 3149
[0000FC00 - 0000FC03]	VIA Serial ATA Controller - 3149
[0000FD00 - 0000FD07]	VIA Serial ATA Controller - 3149
[0000FE00 - 0000FE03]	VIA Serial ATA Controller - 3149
[0000FF00 - 0000FF07]	VIA Serial ATA Controller - 3149
[00000000 - 00000000]	Interrupt request (IRQ)
[00000000 - 00000000]	Memory

B.2 Memory Address Map



B.3 IRQ Mapping Chart



B.4 DMA Channel Assignments



Appendix

C

Standard Firewall Platform Setting

C.1 Standard Firewall Platform Setting

Status LED	Disable	I/O PORT B2h I/O PORT FAh	set bit 2 and bit 3 to 0, set bit 0-7 to 0
	Red LED ON	I/O PORT B2h I/O PORT FAh	set bit 2 to 1, set bit 0-7 to 0
	Red LED Blink	I/O PORT B2h I/O PORT FAh	set bit 2 to 1, set bit1,bit3,bit4 to 1
	Green LED ON	I/O PORT B2h I/O PORT FAh	set bit 3 to 1, set bit 0-7 to 0
	Green LED Blink	I/O PORT B2h I/O PORT FAh	set bit 3 to 1, set bit0,bit1,bit3,bit4 to 1
LAN Bypass	Disable	I/O PORT B2h I/O PORT B2h	set bit 0 to 1, set bit 1 to 0
	Force Mode	I/O PORT B2h	set bit 0 to 1
	Watch Dog Mode	I/O PORT B2h I/O PORT B2h	set bit 0 to 1, set bit 1 to 1
Software Reset		Press Software Reset button I/O PORT: B2h bit 7 will be set 1	

C.2 Status LED Sample Code

Status LED Sample code

[Disabled LED Function]

```

mov dx,B2h          ;( IO_PORT = B2h)
in  al,dx
and  al,11110011b   ;Clear GPIO32&GPIO33
out dx,al

mov dx,FAh         ;( IO_PORT = FAh)
in  al,dx
mov  al,00000000b   ;Clear GPIO32&GPIO33

```

blink

```
out dx,al
```

[RED LED ON]

```
mov dx,B2h          ;( IO_PORT = B2h)
```

```
in al,dx
```

```
or al,00000100b ;GPIO32 bit2
```

```
out dx,al
```

```
mov dx,FAh          ;( IO_PORT = FAh)
```

```
in al,dx
```

```
mov al,00000000b   ;Clear GPIO32&GPIO33
```

blink

```
out dx,al
```

[RED LED BLINK]

```
mov dx,B2h          ;( IO_PORT = B2h)
```

```
in al,dx
```

```
or al,00000100b ;GPIO32 bit2
```

```
out dx,al
```

```
mov dx,FAh          ;( IO_PORT = FAh)
```

```
in al,dx
```

```
mov al,00011010b   ;GPIO32 blink
```

```
out dx,al
```

[GREEN LED ON]

```
mov dx,B2h      ;( IO_PORT = B2h)
in  al,dx
or  al,00001000b ;GPIO33 bit3
out dx,al
```

```
mov dx,FAh      ;( IO_PORT = FAh)
in  al,dx
mov  al,00000000b ;Clear GPIO32&GPIO33 blink
out dx,al
```

[GRN LED BLINK]

```
mov dx,B2h      ;( IO_PORT = B2h)
in  al,dx
or  al,00001000b ;GPIO33 bit3
out dx,al
```

```
mov dx,FAh      ;( IO_PORT = FAh)
in  al,dx
mov  al,00011011b ;GPIO33 blink
out dx,al
```


C.3 LAN Bypass Mode Sample Code

LAN BYPASS MODE Sample code

[Disable Function]

```
mov dx,B2h          ;( IO_PORT = B2h)
in  al,dx
or  al,00000001b ;set bit 0-->Low
out dx,al
```

```
mov dx,B2h          ;( IO_PORT = B2h)
in  al,dx
and al,11111101b ;set bit 1-->High
out dx,al
```

[Force Mode]

```
mov dx,B2h          ;( IO_PORT = B2h)
in  al,dx
and al,11111110b ;set bit 0-->High
out dx,al
```

[Watch Dog Mode]

```
mov dx,B2h          ;( IO_PORT = B2h)
in  al,dx
or  al,00000001b ;set bit 0-->Low
```

```
out dx,al
```

```
mov dx,B2h      ;( IO_PORT = B2h)
```

```
in  al,dx
```

```
or  al,00000010b ;set bit 1-->Low
```

```
out dx,al
```

C.4 Console Redirection

Console redirection allows you to maintain a system from a remote location by re-directing keyboard input and text output through the serial port. This section will tell you how to use the console redirection.

1. Please insert console cable between on FWS-2150 and remote client system.

2. Setup BIOS in FWS-2150

BIOS >> advanced BIOS features >> Baud Rate:

19200(Default)

BIOS >> advanced BIOS features >> Console Redirection:

Enable (Default)

Enabled	Attempt to redirect console via COM port
Disabled	Console redirection function disabled

3. Configure Console redirection on client system. This example is for Windows platform.
-

- Step1 - Click the Start button, point to programs >> Accessories >> Communication, and click Hyper Terminal
- Step2 - Enter any name for the new connection and select any icon
- Step3 - Click OK
- Step4 - From the connect to pull-down menu, select a COM port available on your client system and click OK
- Step5 - Select Baud Rate >> 19200, Flow control >> None, Data bit >>8, Parity cheek >> None, Stop bit>>1
4. Power on FWS-2150 and it will display the BIOS information on the client system.