

FWS-2250

Desktop

Network Appliance Platform

CompactFlash™ Socket

4 LAN Ports

2 USB2.0, 1 COM for Console

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Caution

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

Packing List

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

- FWS-2250
- DVD-ROM for manual (in PDF format) and drivers
- Rubber Feet
- 40W Power Adapter

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

FWS-2250 adopts the Intel® Dual Core Atom™ E3815 1.46 GHz SoC. The system memory features two 204-pin single channel DDR3L 1066MHz SODIMM slots up to 8GB. It deploys four Gigabit Ethernet LAN ports with optional one pair LAN bypass function. FWS-2250 condensed appearance features desktop form factor that fits nicely into a space-limited environment.

This compact FWS-2250 is equipped with CF socket. In addition, it offers flexible expansion with network products and features one optional Mini-Card socket, two USB2.0 ports and one RJ-45 console port. 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 platform 4 LAN ports Network Appliance
- Onboard Intel® Atom™ E3815 1.46 GHz/ E3825 1.33 GHz SoC
- Two 204-pin Single Channel DDR3L 1066MHz SODIMM, Up to 8GB
- 10/100/1000Base-TX Ethernet Port x 4 With Optional One Pair LAN Bypass Function
- CF Socket
- RJ-45 Console x 1, USB2.0 x 2
- DC 12V Power Input Requirement
- Mini-Card Socket x 1 (Optional)

1.3 Specifications

System

Form Factor	Desktop 4 LAN ports Network Appliance
Processor	Onboard Intel® Atom™ E3815 1.46 GHz/ E3825 1.33 GHz SoC
System Memory	204-pin single channel DDR3L 1066MHz SODIMM slot x 2, up to 8GB
Ethernet	Intel® I211 controller, Gigabit Ethernet x 4 (optional 1 pair LAN bypass function)
BIOS	AMI BIOS
Serial ATA	Onboard SATA2 port x 1 (Optional)
Expansion Interface	Mini Card socket x 1 (Optional)
Watchdog Timer	System reset: 1~255 steps by software programming
RTC	Internal RTC
Storage	CompactFlash™ socket x 1
System Fan	—
Front I/O Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1, LAN LED x 8
Rear I/O Panel	USB2.0 port x 2, RJ-45 x 4, RJ-45 console x 1, 12V DC power input x 1, Software Reset Switch x 1
Color	White
Power Supply	12V DC power in connector/ 40W power

	adapter x 1, 4-pin DC power out connector for HDD (optional)
Dimension	6.3"(W) x 1.37"(H) x 4.13"(D) (160mm x 35mm x 105mm)

Display

Chipset	Intel® Atom™ E3815 1.46 GHz/ E3825 1.33 GHz SoC
Graphic Engine	Gen 7 with 4 Eus
Resolution	2560x1600
Output Interface	VGA internal box header

I/O

Serial Port	RJ-45 console x 1
Keyboard & Mouse	Reserved pin header
USB	USB2.0 Type A on I/O side x 2

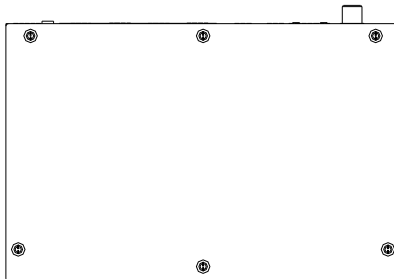
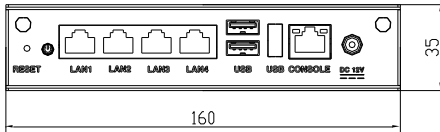
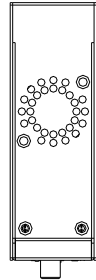
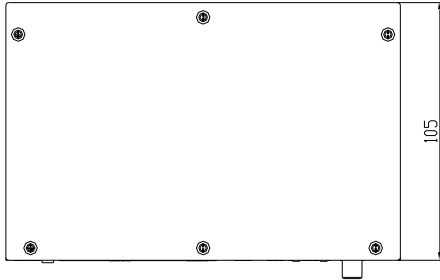
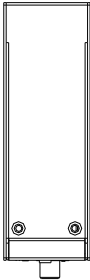
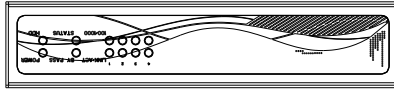
Environment

Operating Temperature	32°F~104°F (0°C ~40°C)
Storage Temperature	-4°F~104°F (-20°C ~60°C)
Operating Humidity	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @ 40°C, non-condensing
Vibration	0.5g rms/5~500Hz/ operation

Shock

1.5g rms/5~500Hz/ non-operation
10G peak acceleration (11m sec.
duration), operation
20G peak acceleration (11m sec.
duration), non operation

1.4 General System Information



Chapter

2

**Quick
Installation
Guide**

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!



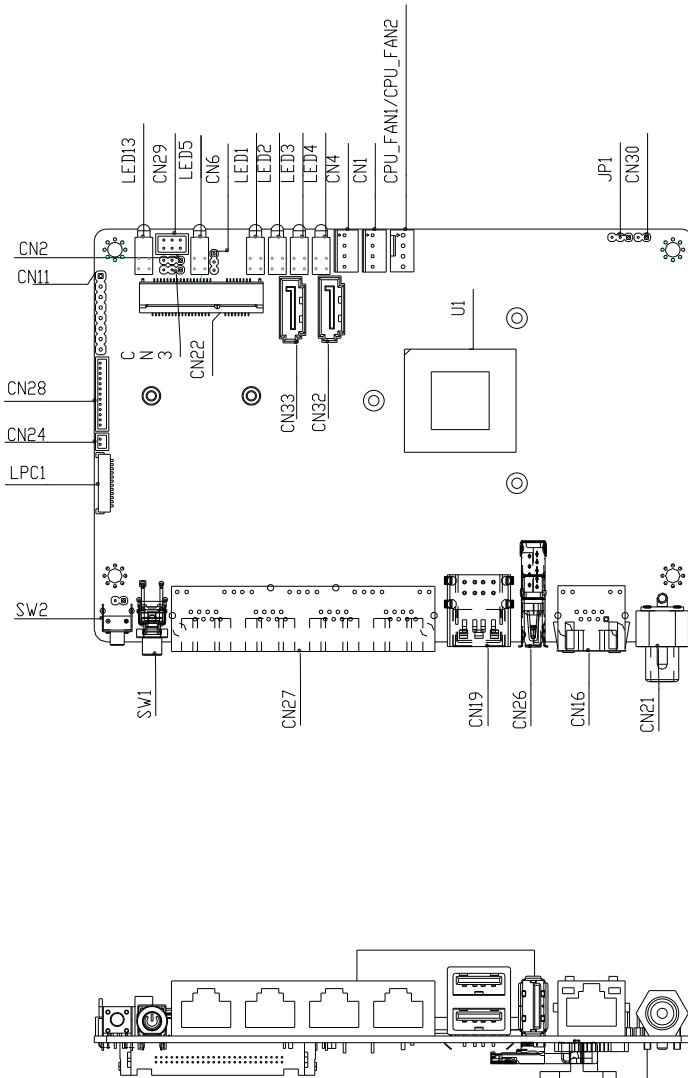
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

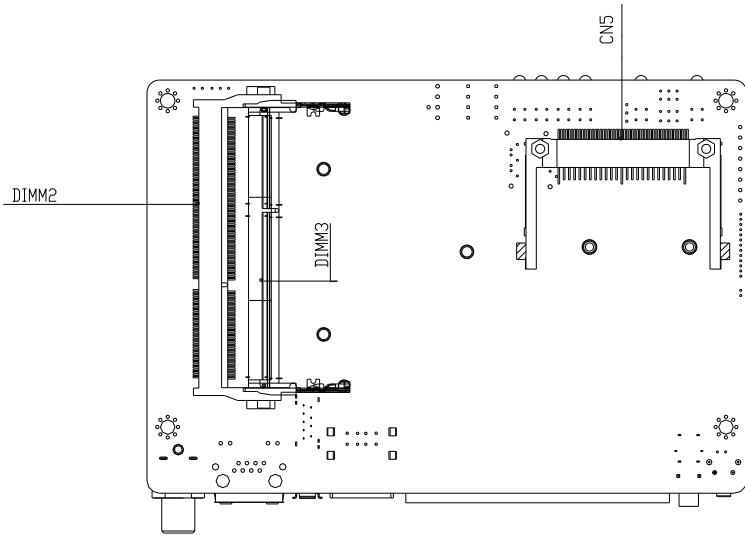
Caution!



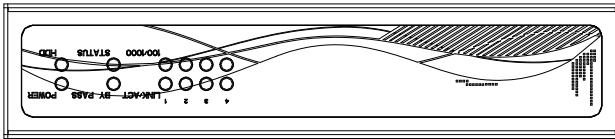
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors of Main Board

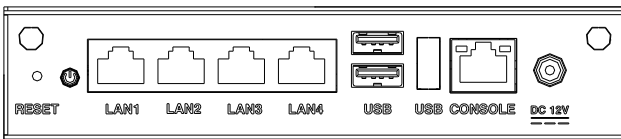




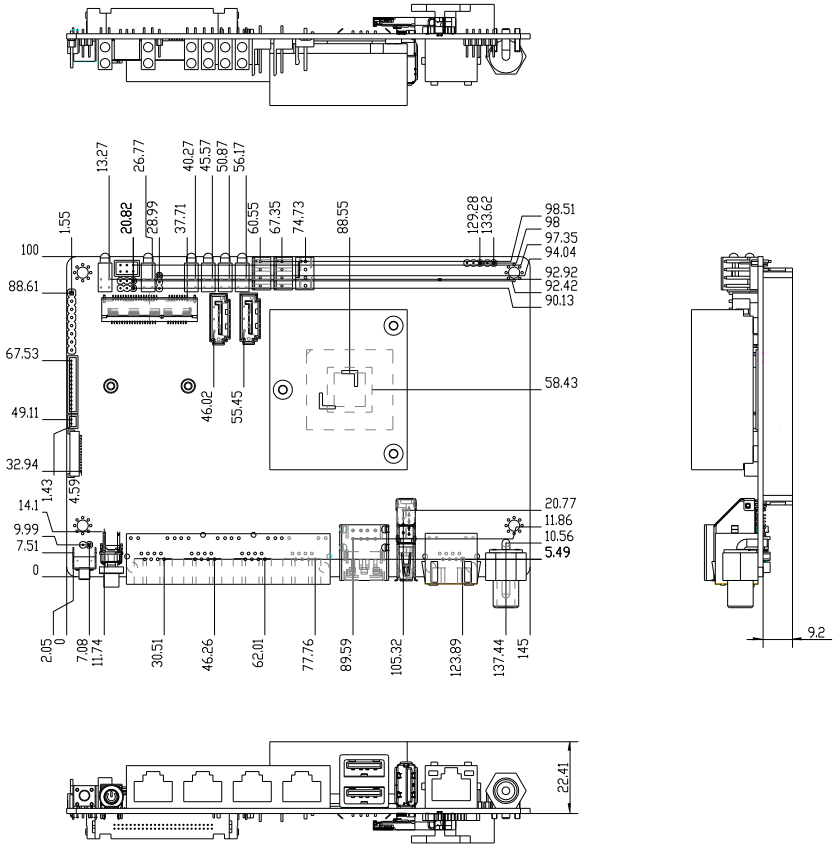
LEDs on Front Panel of FWS-2250

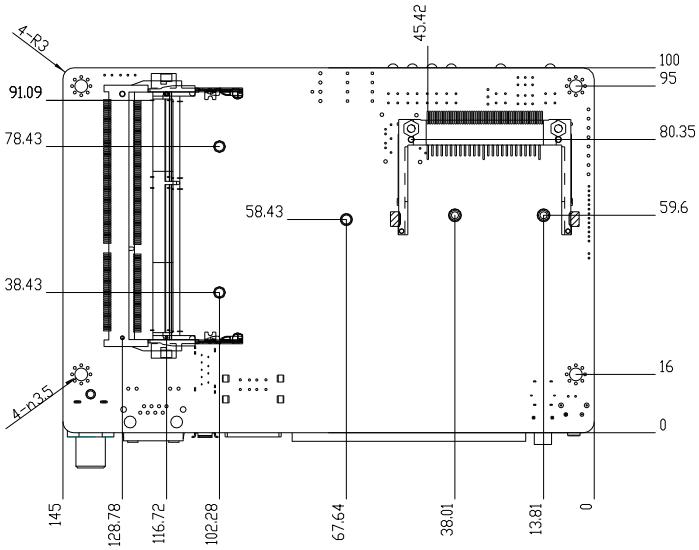


Connectors on Rear Panel of FWS-2250



2.3 Mechanical Drawing of Main Board





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
CN2	Clear CMOS
CN3	RTC TEST
CN6	CF Power Selection
JP1	Auto Power Button
CN30	Power Button
CN31	Software Reset

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:

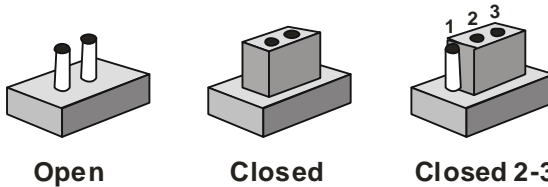
Label	Function
CN1	HDD POWER
CN4	HDD POWER
CN5	CF SOCKET
CN16	COM1
CN19	2*USB2.0
CN21	+12V POWER IN
CN22	Mini-card socket

CN24	Battery
CN26	USB3.0+USB2.0
CN27	LAN1~4
CN28	VGA Connector
CN29	PS2
CN32, CN33	SATA Connector
DIMM2	DDR3L SODIMM
DIMM3	DDR3L SODIMM
SW1	Power Button
SW2	Software Reset
SATA1	SATA Connector
LED13	POWER+HDD LED Instruction
LED5	BYPASS+STATE LED Instruction
LED1	LAN1 LED Instruction
LED2	LAN2 LED Instruction
LED3	LAN3 LED Instruction
LED4	LAN4 LED Instruction
CPU_FAN	FAN

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 Auto PWRBTN Selection (JP1)

JP1	Function
1-2	Don't use Auto PWRBTN (Default)
2-3	Use Auto PWRBTN

2.8 HDD POWER (CN1, CN4)

Pin	Signal	Pin	Signal
1	+12V	2	GND
3	GND	4	+5V

2.9 CMOS Setting Selection (CN2)

CN2	Function
1-2	Clear CMOS
2-3	Normal (Default)

2.10 RTCTEST Setting Selection (CN3)

CN3	Function
1-2	RTCTEST
2-3	Normal (Default)

2.11 CF Power Selection (CN6)

CN6	Function
1-2	5V
2-3	3.3V (Default)

2.12 VGA Connector (CN28)

Pin	Signal	Pin	Signal
1	VS	2	HS
3	GND	4	SCL
5	SDA	6	GND
7	BLUE	8	GND
9	GREEN	10	GND
11	RED	12	GND
13	5V		

2.13 PS2 Header (CN29)

Pin	Signal	Pin	Signal
1	KDAT	2	KCLK
3	GND	4	+5V
5	MDAT	6	KCLK

2.14 CPU FAN (CPU FAN)

Pin	Signal	Pin	Signal
1	GND	2	+12V
3	FANTAC	4	FANCONTROL

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:</p> <p>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。</p> <p>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

**AMI
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.

System configuration verification

These routines check the current system configuration stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or system configuration data error is detected, system will load optimized default and re-boot with this default system configuration automatically.

There are four situations in which you will need to setup system configuration:

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

The FWS-2250 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 AMI BIOS Setup

AMI 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 and BIOS NVRAM so that it retains the Setup information when the power is turned off.

Entering Setup

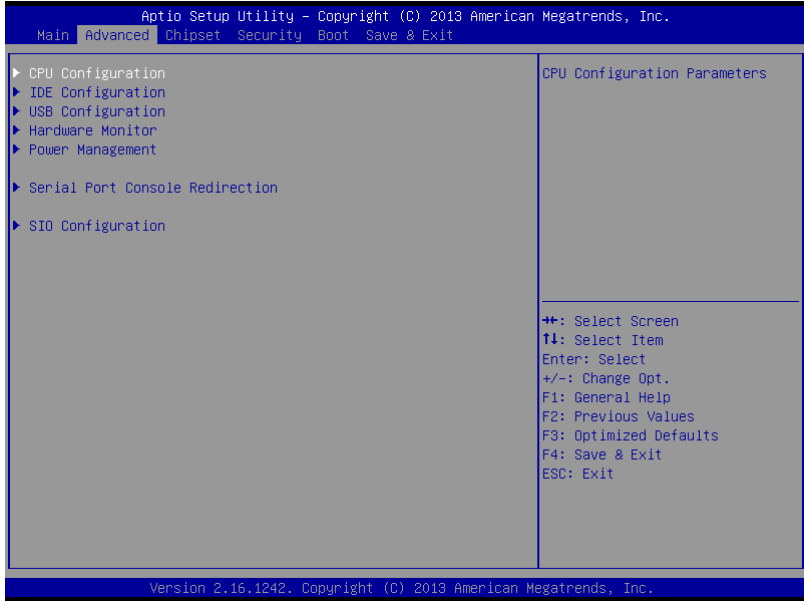
Power on the computer and press or <F2> immediately. This will allow you to enter Setup.

Setup Menu

Setup submenu: Main



Setup submenu: Advanced



CPU Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

<p>CPU Configuration</p> <p>Intel(R) Atom(TM) CPU E3826 @ 1.46GHz</p> <p>CPU Signature 30673</p> <p>Microcode Patch 31e</p> <p>BayTrail SoC B3 Stepping</p> <p>Max CPU Speed 1460 MHz</p> <p>Min CPU Speed 533 MHz</p> <p>Processor Cores 2</p> <p>Intel HT Technology Not Supported</p> <p>Intel VT-x Technology Supported</p> <p>L1 Data Cache 24 KB x 2</p> <p>L1 Code Cache 32 KB x 2</p> <p>L2 Cache 512 KB x 1</p> <p>L3 Cache Not Present</p> <p>Intel Virtualization Technology [Enabled]</p> <p>EIST [Enabled]</p>		<p>When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology</p> <p>++: Select Screen !: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</p>
--	--	---

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Options summary:

Intel Virtualization Technology	Disabled	
	Enabled	Optimal Default, Failsafe Default
EIST	Disabled	
	Enabled	Optimal Default, Failsafe Default

IDE Configuration (IDE)

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

IDE Configuration SATA Mode [AHCI Mode] SATA Port0 Not Present Compact Flash Not Present	Select IDE / AHCI ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
---	---

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Options summary:

SATA Mode	IDE Mode	Optimal Default, Failsafe Default
	AHCI Mode	

USB Configuration

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Advanced

<p>USB Configuration</p> <p>USB Devices: 1 Drive, 1 Keyboard, 1 Mouse, 1 Hub</p> <p>Legacy USB Support [Enabled]</p>	<p>Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	---

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Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	
Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional in legacy environment like DOS. AUTO option disables legacy support if no USB devices are connected		
Device Name (Emulation Type)	Auto	Optimal Default, Failsafe Default
	Floppy	
	Forced FDD	
	Hard Disk	
If Auto. USB devices less than 530MB will be emulated as Floppy and remaining as Floppy and remaining as hard drive. Forced FDD option can be used to force a HDD formatted drive to boot as FDD(Ex. ZIP drive)		
USB Port 0/1 function routing	FCH USB port 8/9	Optimal Default, Failsafe Default
	FCH USB port 0/1	

Hardware Monitor

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

Pc Health Status CPU Temperature : +40 % SYS Temperature : +39 % CPU FAN : N/A VDDRE : +0.792 V 1.35V : +1.368 V 12V : +11.856 V 5V : +4.980 V 1.8V : +1.812 V 5VSB : +4.968 V VBAT : +3.096 V CPU_FAN Smart Control [Disabled]		For En/Disable CPU FAN1 Smart Control Enabled: FAN is running in accordance with user settings Disabled: FAN is always running with full speed ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Options summary:

CPU_FAN Smart Control	Disabled	Optimal Default, Failsafe Default
	Enabled	

Power Management

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

<p>Power Management</p> <p>Power Mode [ATX Type] Restore AC Power Loss [Last State]</p> <p>Wake Configuration</p>	<p>Select power supply mode.</p> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
---	---

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Options summary:

Power Mode	ATX Type	Optimal Default, Failsafe Default
	AT Type	
Select power supply mode.		
Restore on Power Loss	Last State	Optimal Default, Failsafe Default
	Power On	
	Power Off	
Select power state when power is re-applied after a power failure.		

Serial Port Console Redirection

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Advanced

COM0 Console Redirection [Enabled] ▶ Console Redirection Settings Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS) Console Redirection [Disabled] ▶ Console Redirection Settings	Console Redirection Enable or Disable.
---	--

++: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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Options summary:

Console Redirection	Disabled	Optimal Default, Failsafe Default
	Enabled	

SIO Configuration

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Advanced

AMI SIO Driver Version : A5.03.03

Super IO Chip Logical Device(s) Configuration

- ▶ [*Active*] Serial Port
- ▶ [*Active*] PS2 Keyboard
- ▶ [*Active*] PS2 Mouse

WARNING: Logical Devices state showing at the left side of the controll, reflects current Logical Device state.
Cahnges made during Setup Session will be shown after you restart the system.

View and Set Basic properties of the SIO Logical device.
Like IO Base, IRQ Range, DMA Channel and Device Mode.

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Serial Port Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

<p>Serial Port Configuration</p> <p>Use This Device [Enabled]</p> <p>Logical Device Settings: Current : IO=3F8h; IRQ=4;</p> <p>Possible: [Use Automatic Settings]</p> <p>WARNING: disabling SIO Logical Devices may have unwanted side effects. PROCEED WITH CAUTION.</p>	<p>Enable or Disable this Logical Devcie.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
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Options summary:

Use This Device	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable Serial Port (COM)		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=3F8; IRQ=4;	
	IO=2F8; IRQ=3;	
Select an optimal setting for IO device		

PS2 Keyboard

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

<p>PS2 Keyboard Configuration</p> <p>Use This Device [Enabled]</p> <p>Logical Device Settings: Current : IO=60h; IO=64h; IRQ=1;</p> <p>Possible: [Use Automatic Settings]</p> <p>WARNING: disabling SIO Logical Devices may have unwanted side effects. PROCEED WITH CAUTION.</p>	<p>Enable or Disable this Logical Devcie.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
---	---

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Options summary:

Use This Device	Disabled	Optimal Default, Failsafe Default
	Enabled	
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=60h; IO=64h; IRQ=1;	

PS2 Mouse

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

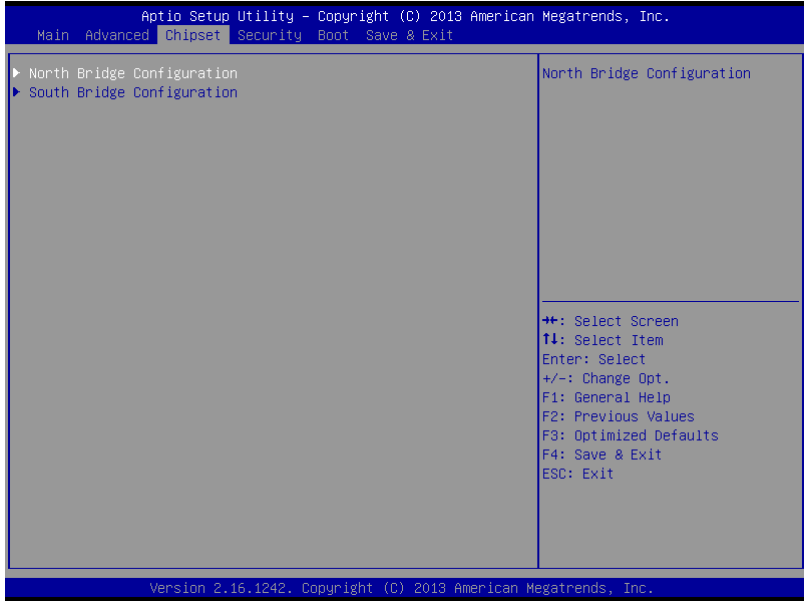
<p>PS2 Mouse Configuration</p> <p>Use This Device [Enabled]</p> <p>Logical Device Settings: Current : IRQ=12;</p> <p>Possible: [Use Automatic Settings]</p> <p>WARNING: disabling SIO Logical Devices may have unwanted side effects. PROCEED WITH CAUTION.</p>	<p>Enable or Disable this Logical Devcie.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
---	---

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Options summary:

Use This Device	Disabled	Optimal Default, Failsafe Default
	Enabled	
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IRQ=12;	

Setup submenu: Chipset



North Bridge

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Chipset

North Bridge Configuration	Display Control Configuration
Memory Information	
Total Memory	4096 MB (LPDDR3)
Memory Slot0	4096 MB (LPDDR3)
Memory Slot1	Not Present
▶ Display Control Configuration	
	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Display Control Configuration

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Chipset

<p>Display Control Configuration</p> <p>DVMT Pre-Allocated [64M]</p> <p>DVMT Total Gfx Mem [256MB]</p>	<p>Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.</p> <hr/> <p> ++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	--

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Options summary:

DVMT Pre-Allocated	64M	Optimal Default, Failsafe Default
	96M	
	128M	
	160M ...	
	512M	
DVMT Total Gfx Mem	128MB	Optimal Default, Failsafe Default
	256MB	
	Max	

South Bridge

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Chipset

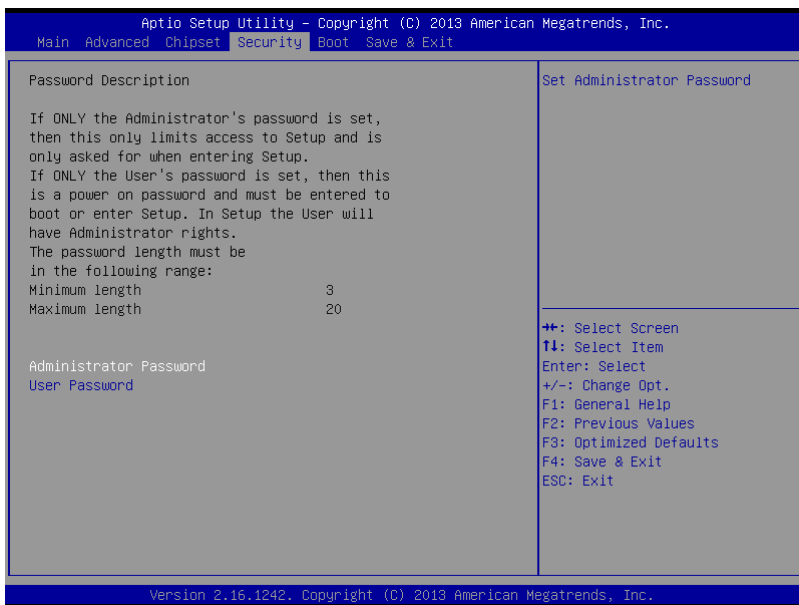
South Bridge Configuration		Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled. Auto = Azalia will be enabled if present disabled otherwise.
Audio Controller	[Enabled]	
XHCI Mode	[Disabled]	
USB 2.0(EHCI) Support	[Enabled]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options summary:

Audio Controller	Enabled	Optimal Default, Failsafe Default
	Disabled	
XHCI Mode	Disabled	Optimal Default, Failsafe Default
	Enabled	
EHCI Mode	Disabled	Optimal Default, Failsafe Default
	Enabled	

Security



Change User/Supervisor Password

You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

If you highlight these items and press Enter, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.

Removing the Password

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

Setup submenu: Boot

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Main Advanced Chipset Security **Boot** Save & Exit

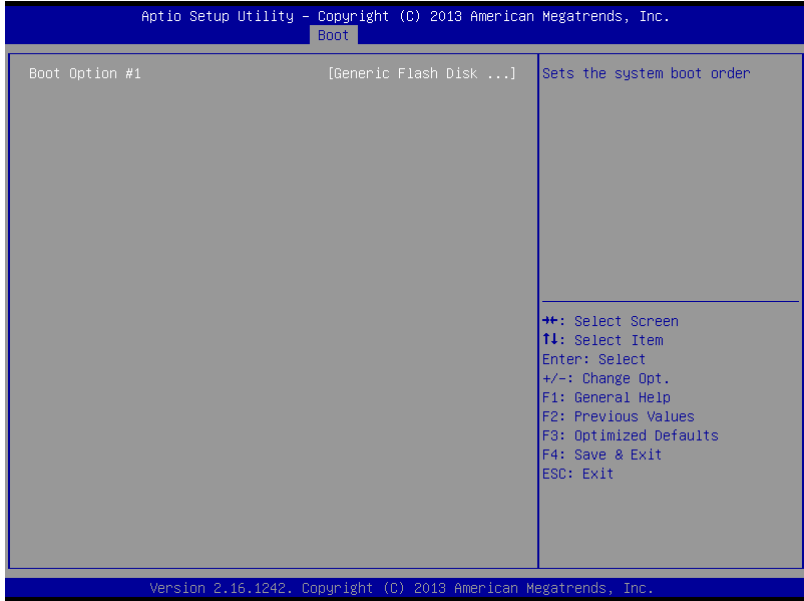
Boot Configuration		Enables or disables Quiet Boot option
Quiet Boot	[Enabled]	
Option ROM Messages	[Force BIOS]	
Launch PXE OpROM	[Disabled]	
Boot Option Priorities		
Boot Option #1	[UEFI: Generic Flash...]	
Boot Option #2	[Generic Flash Disk ...]	
Boot Option #3	[UEFI: Built-in EFI ...]	
Hard Drive BBS Priorities		
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Options summary:

Quiet Boot	Disabled	Default
	Enabled	
En/Disable showing boot logo.		
Option ROM Messages	Force BIOS	Default
	Keep Current	
Set display mode for Option ROM		
Launch PXE OpROM	Disabled	Default
	Enabled	
En/Disable Legacy Boot Option		

BBS Priorities



Setup submenu: Exit



Chapter

4

**Driver
Installation**

The FWS-2250 comes with an AutoRun DVD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver DVD, the driver DVD-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 Chipset Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install xHCI Driver

Step 5 – Trusted Execution Engine

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the FWS-2250 DVD-ROM into the DVD-ROM drive and install the drivers from Step 1 to Step 5 in order.

Step 1 – Install Chipset Driver

1. Click on the **Step 1 - Chipset** folder and double click on the **SetupChipset.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 - Graphics** folder and select the OS folder 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 - Network** folder and select the OS folder your system is
2. Double click on **19.1_20140410.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 4 – Install xHCI Driver

1. Click on the **Step 4 - xHCI** 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 5 – Install Trusted Execution Engine Driver

1. Click on the **Step 5 - Trusted Execution Engine** folder and double click on the **SetupTXE.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Appendix

A

Programming the Watchdog Timer

A.1 Watchdog Timer Initial Program

Table 1 : SuperIO relative register table		
	Default Value	Note
Index	0x2E ^(Note1)	SIO MB PnP Mode Index Register 0x2E or 0x4E
Data	0x2F ^(Note2)	SIO MB PnP Mode Data Register 0x2F or 0x4F

Table 2 : Watchdog relative register table					
	LDN	Register	BitNum	Value	Note
Timer Counter	0x07 ^(Note3)	0x73 ^(Note4)		(Note24)	Time of watchdog timer (0~255) This register is byte access
Counting Unit	0x07 ^(Note5)	0x72 ^(Note6)	7 ^(Note7)	1 ^(Note8)	Select time unit. 1: second 0: minute
Watchdog Enable (KRST)	0x07 ^(Note9)	0x72 ^(Note10)	6 ^(Note11)	1 ^(Note12)	0: Disable 1: Enable
Timeout Status	0x07 ^(Note13)	0x71 ^(Note14)	0 ^(Note15)	1	1: Clear timeout status

```
*****
// SuperIO relative definition (Please reference to Table 1)
#define byte SIOIndex //This parameter is represented from Note1
#define byte SIOData //This parameter is represented from Note2
#define void IOWriteByte(byte IOPort, byte Value);
#define byte IOReadByte(byte IOPort);
// Watch Dog relative definition (Please reference to Table 2)
#define byte TimerLDN //This parameter is represented from Note3
#define byte TimerReg //This parameter is represented from Note4
#define byte TimerVal // This parameter is represented from Note24
#define byte UnitLDN //This parameter is represented from Note5
#define byte UnitReg //This parameter is represented from Note6
#define byte UnitBit //This parameter is represented from Note7
#define byte UnitVal //This parameter is represented from Note8
#define byte EnableLDN //This parameter is represented from Note9
#define byte EnableReg //This parameter is represented from Note10
#define byte EnableBit //This parameter is represented from Note11
#define byte EnableVal //This parameter is represented from Note12
#define byte StatusLDN // This parameter is represented from Note13
#define byte StatusReg // This parameter is represented from Note14
#define byte StatusBit // This parameter is represented from Note15
*****
```



```
*****
VOID Main() {
    // Procedure : AaeonWDTConfig
    // (byte)Timer : Time of WDT timer.(0x00~0xFF)
    // (boolean)Unit : Select time unit(0: second, 1: minute).
    AaeonWDTConfig();

    // Procedure : AaeonWDTEnable
    // This procedure will enable the WDT counting.
    AaeonWDTEnable();
}
*****
```

```
*****
// Procedure : AaeonWDTEnable
VOID AaeonWDTEnable (){
    WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 1);
}

// Procedure : AaeonWDTConfig
VOID AaeonWDTConfig (){
    // Disable WDT counting
    WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 0);
    // Clear Watchdog Timeout Status
    WDTClearTimeoutStatus();
    // WDT relative parameter setting
    WDTParameterSetting();
}

VOID WDTEnableDisable(byte LDN, byte Register, byte BitNum, byte Value){
    SIOBitSet(LDN, Register, BitNum, Value);
}

VOID WDTParameterSetting(){
    // Watchdog Timer counter setting
    SIOByteSet(TimerLDN, TimerReg, TimerVal);
    // WDT counting unit setting
    SIOBitSet(UnitLDN, UnitReg, UnitBit, UnitVal);
}

VOID WDTClearTimeoutStatus(){
    SIOBitSet(StatusLDN, StatusReg, StatusBit, 1);
}
*****
```

```
VOID SIOEnterMBPnPMode(){
    Switch(SIOIndex){
        Case 0x2E:
            IOWriteByte(SIOIndex, 0x87);
            IOWriteByte(SIOIndex, 0x01);
            IOWriteByte(SIOIndex, 0x55);
            IOWriteByte(SIOIndex, 0x55);
            Break;
        Case 0x4E:
            IOWriteByte(SIOIndex, 0x87);
            IOWriteByte(SIOIndex, 0x01);
            IOWriteByte(SIOIndex, 0x55);
            IOWriteByte(SIOIndex, 0xAA);
            Break;
    }
}

VOID SIOExitMBPnPMode(){
    IOWriteByte(SIOIndex, 0x02);
    IOWriteByte(SIOData, 0x02);
}

VOID SIOSelectLDN(byte LDN){
    IOWriteByte(SIOIndex, 0x07); // SIO LDN Register Offset = 0x07
    IOWriteByte(SIOData, LDN);
}
```

VOID **SIOBitSet(byte LDN, byte Register, byte BitNum, byte Value){**

Byte TmpValue;

SIOEnterMBPnPMode();

SIOSelectLDN(byte LDN);

IOWriteByte(SIOIndex, Register);

TmpValue = IOReadByte(SIOData);

TmpValue &= ~(1 << BitNum);

TmpValue |= (Value << BitNum);

IOWriteByte(SIOData, TmpValue);

SIOExitMBPnPMode();

}

VOID **SIOByteSet(byte LDN, byte Register, byte Value){**

SIOEnterMBPnPMode();

SIOSelectLDN(LDN);

IOWriteByte(SIOIndex, Register);

IOWriteByte(SIOData, Value);

SIOExitMBPnPMode();

}

Appendix

B

I/O Information

B.1 I/O Address Map























































Input/output (I/O)	
[0000000000000000] - 000000000000006F	PCI bus
[0000000000000020] - 0000000000000021	Programmable interrupt controller
[0000000000000024] - 0000000000000025	Programmable interrupt controller
[0000000000000028] - 0000000000000029	Programmable interrupt controller
[000000000000002C] - 000000000000002D	Programmable interrupt controller
[000000000000002E] - 000000000000002F	Motherboard resources
[0000000000000030] - 0000000000000031	Programmable interrupt controller
[0000000000000034] - 0000000000000035	Programmable interrupt controller
[0000000000000038] - 0000000000000039	Programmable interrupt controller
[000000000000003C] - 000000000000003D	Programmable interrupt controller
[0000000000000040] - 0000000000000043	System timer
[000000000000004E] - 000000000000004F	Motherboard resources
[0000000000000050] - 0000000000000053	System timer
[0000000000000060] - 0000000000000060	Standard PS/2 Keyboard
[0000000000000061] - 0000000000000061	Motherboard resources
[0000000000000063] - 0000000000000063	Motherboard resources
[0000000000000064] - 0000000000000064	Standard PS/2 Keyboard
[0000000000000065] - 0000000000000065	Motherboard resources
[0000000000000067] - 0000000000000067	Motherboard resources
[0000000000000070] - 0000000000000070	Motherboard resources
[0000000000000070] - 0000000000000077	System CMOS/real time clock
[0000000000000078] - 000000000000007F	PCI bus
[0000000000000080] - 000000000000008F	Motherboard resources
[0000000000000092] - 0000000000000092	Motherboard resources
[00000000000000A0] - 00000000000000A1	Programmable interrupt controller
[00000000000000A4] - 00000000000000A5	Programmable interrupt controller
[00000000000000A8] - 00000000000000A9	Programmable interrupt controller
[00000000000000AC] - 00000000000000AD	Programmable interrupt controller
[00000000000000B0] - 00000000000000B1	Programmable interrupt controller
[00000000000000B2] - 00000000000000B3	Motherboard resources
[00000000000000B4] - 00000000000000B5	Programmable interrupt controller
[00000000000000B8] - 00000000000000B9	Programmable interrupt controller
[00000000000000BC] - 00000000000000BD	Programmable interrupt controller
[00000000000003B0] - 00000000000003BB	Intel(R) Atom(TM) Processor E3800 Series/Intel(R) Celeron(R) Processor N2920/J1900
[00000000000003C0] - 00000000000003DF	Intel(R) Atom(TM) Processor E3800 Series/Intel(R) Celeron(R) Processor N2920/J1900
[00000000000003F8] - 00000000000003FF	Communications Port (COM1)
[0000000000000400] - 000000000000047F	Motherboard resources
[00000000000004D0] - 00000000000004D1	Programmable interrupt controller
[0000000000000500] - 00000000000005FE	Motherboard resources
[0000000000000600] - 000000000000061F	Motherboard resources
[0000000000000680] - 000000000000069F	Motherboard resources
[0000000000000A00] - 0000000000000A2F	Motherboard resources
[0000000000000A30] - 0000000000000A3F	Motherboard resources
[0000000000000A40] - 0000000000000A4F	Motherboard resources
[0000000000000D00] - 000000000000FFFF	PCI bus
[000000000000A000] - 000000000000AFFF	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 4 - 0F4E
[000000000000B000] - 000000000000BFFF	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 3 - 0F4C
[000000000000C000] - 000000000000CFFF	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 2 - 0F4A
[000000000000D000] - 000000000000DFFF	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 1 - 0F48
[000000000000E000] - 000000000000E01F	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Platform Control Unit - SMBus Port - 0F12
[000000000000E020] - 000000000000E03F	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23
[000000000000E040] - 000000000000E043	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23
[000000000000E050] - 000000000000E057	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23
[000000000000E060] - 000000000000E063	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23
[000000000000E070] - 000000000000E077	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23

B.2 Memory Address Map

Memory	
[0000000000A0000 - 0000000000BFFFFF]	Intel(R) Atom(TM) Processor E3800 Series/Intel(R) Celeron(R) Processor N2920/J1900
[0000000000A0000 - 0000000000BFFFFF]	PCI bus
[0000000000C0000 - 0000000000DFFFFF]	PCI bus
[0000000000E0000 - 0000000000FFFFFF]	PCI bus
[00000000A0000000 - 00000000AFFFFFFF]	Intel(R) Atom(TM) Processor E3800 Series/Intel(R) Celeron(R) Processor N2920/J1900
[00000000A0000000 - 00000000B0A06FFE]	PCI bus
[00000000B0000000 - 00000000B03FFFFFFF]	Intel(R) Atom(TM) Processor E3800 Series/Intel(R) Celeron(R) Processor N2920/J1900
[00000000B0400000 - 00000000B04FFFFFFF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Trusted Execution Engine Interface - 0F18
[00000000B0500000 - 00000000B05FFFFFFF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Trusted Execution Engine Interface - 0F18
[00000000B0600000 - 00000000B061FFFFF]	Intel(R) I211 Gigabit Network Connection #4
[00000000B0600000 - 00000000B06FFFFFFF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 4 - 0F4E
[00000000B0620000 - 00000000B06233FFF]	Intel(R) I211 Gigabit Network Connection #4
[00000000B0700000 - 00000000B071FFFFF]	Intel(R) I211 Gigabit Network Connection #3
[00000000B0700000 - 00000000B07FFFFFFF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 3 - 0F4C
[00000000B0720000 - 00000000B07233FFF]	Intel(R) I211 Gigabit Network Connection #3
[00000000B0800000 - 00000000B081FFFFF]	Intel(R) I211 Gigabit Network Connection #2
[00000000B0800000 - 00000000B08FFFFFFF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 2 - 0F4A
[00000000B0820000 - 00000000B08233FFF]	Intel(R) I211 Gigabit Network Connection #2
[00000000B0900000 - 00000000B091FFFFF]	Intel(R) I211 Gigabit Network Connection
[00000000B0900000 - 00000000B09FFFFFFF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 1 - 0F48
[00000000B0920000 - 00000000B09233FFF]	Intel(R) I211 Gigabit Network Connection
[00000000B0A00000 - 00000000B0A03FFF]	High Definition Audio Controller
[00000000B0A04000 - 00000000B0A0401F]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Platform Control Unit - SMBus Port - 0F12
[00000000B0A05000 - 00000000B0A053FF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor EHCI USB - 0F34
[00000000B0A06000 - 00000000B0A067FF]	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23
[00000000E0000000 - 00000000EFFFFFFF]	Motherboard resources
[00000000FED00000 - 00000000FED003FF]	High precision event timer
[00000000FED01000 - 00000000FED01FFF]	Motherboard resources
[00000000FED03000 - 00000000FED03FFF]	Motherboard resources
[00000000FED04000 - 00000000FED04FFF]	Motherboard resources
[00000000FED08000 - 00000000FED08FFF]	Motherboard resources
[00000000FED1C000 - 00000000FED1CFFF]	Motherboard resources
[00000000FEE00000 - 00000000FEEFFFFFFF]	Motherboard resources
[00000000FEF00000 - 00000000FEFFFFFFF]	Motherboard resources
[00000000FF000000 - 00000000FFFFFFFF]	Intel(R) 82802 Firmware Hub Device

B.3 IRQ Mapping Chart

Interrupt request (IRQ)	Device
(ISA) 0x00000000 (00)	System timer
(ISA) 0x00000001 (01)	Standard PS/2 Keyboard
(ISA) 0x00000004 (04)	Communications Port (COM1)
(ISA) 0x00000008 (08)	High precision event timer
(ISA) 0x0000000C (12)	PS/2 Compatible Mouse
(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
(ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
(ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
(ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
(ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
(ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
(ISA) 0x0000005F (95)	Microsoft ACPI-Compliant System
(ISA) 0x00000060 (96)	Microsoft ACPI-Compliant System
(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
(ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
(ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
(ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
(ISA) 0x0000006B (107)	Microsoft ACPI-Compliant System
(ISA) 0x0000006C (108)	Microsoft ACPI-Compliant System
(ISA) 0x0000006D (109)	Microsoft ACPI-Compliant System
(ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
(ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
(ISA) 0x00000070 (112)	Microsoft ACPI-Compliant System
(ISA) 0x00000071 (113)	Microsoft ACPI-Compliant System
(ISA) 0x00000072 (114)	Microsoft ACPI-Compliant System
(ISA) 0x00000073 (115)	Microsoft ACPI-Compliant System
(ISA) 0x00000074 (116)	Microsoft ACPI-Compliant System
(ISA) 0x00000075 (117)	Microsoft ACPI-Compliant System
(ISA) 0x00000076 (118)	Microsoft ACPI-Compliant System
(ISA) 0x00000077 (119)	Microsoft ACPI-Compliant System
(ISA) 0x00000078 (120)	Microsoft ACPI-Compliant System
(ISA) 0x00000079 (121)	Microsoft ACPI-Compliant System
(ISA) 0x0000007A (122)	Microsoft ACPI-Compliant System
(ISA) 0x0000007B (123)	Microsoft ACPI-Compliant System
(ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
(ISA) 0x0000007D (125)	Microsoft ACPI-Compliant System
(ISA) 0x0000007E (126)	Microsoft ACPI-Compliant System
(ISA) 0x0000007F (127)	Microsoft ACPI-Compliant System

 (ISA) 0x00000080 (128)	Microsoft ACPI-Compliant System
 (ISA) 0x00000081 (129)	Microsoft ACPI-Compliant System
 (ISA) 0x00000082 (130)	Microsoft ACPI-Compliant System
 (ISA) 0x00000083 (131)	Microsoft ACPI-Compliant System
 (ISA) 0x00000084 (132)	Microsoft ACPI-Compliant System
 (ISA) 0x00000085 (133)	Microsoft ACPI-Compliant System
 (ISA) 0x00000086 (134)	Microsoft ACPI-Compliant System
 (ISA) 0x00000087 (135)	Microsoft ACPI-Compliant System
 (ISA) 0x00000088 (136)	Microsoft ACPI-Compliant System
 (ISA) 0x00000089 (137)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008A (138)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008B (139)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008C (140)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008D (141)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008E (142)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008F (143)	Microsoft ACPI-Compliant System
 (ISA) 0x00000090 (144)	Microsoft ACPI-Compliant System
 (ISA) 0x00000091 (145)	Microsoft ACPI-Compliant System
 (ISA) 0x00000092 (146)	Microsoft ACPI-Compliant System
 (ISA) 0x00000093 (147)	Microsoft ACPI-Compliant System
 (ISA) 0x00000094 (148)	Microsoft ACPI-Compliant System
 (ISA) 0x00000095 (149)	Microsoft ACPI-Compliant System
 (ISA) 0x00000096 (150)	Microsoft ACPI-Compliant System
 (ISA) 0x00000097 (151)	Microsoft ACPI-Compliant System
 (ISA) 0x00000098 (152)	Microsoft ACPI-Compliant System
 (ISA) 0x00000099 (153)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009A (154)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009B (155)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009C (156)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009D (157)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009E (158)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A1 (161)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A4 (164)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A5 (165)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A6 (166)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A7 (167)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AA (170)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AB (171)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AC (172)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AE (174)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AF (175)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B0 (176)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B1 (177)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B2 (178)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B3 (179)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B4 (180)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B5 (181)	Microsoft ACPI-Compliant System
(ISA) 0x000000B6 (182)	Microsoft ACPI-Compliant System
(ISA) 0x000000B7 (183)	Microsoft ACPI-Compliant System
(ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
(ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System

(ISA) 0x000000BA (186)	Microsoft ACPI-Compliant System
(ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
(ISA) 0x000000BC (188)	Microsoft ACPI-Compliant System
(ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
(ISA) 0x000000BE (190)	Microsoft ACPI-Compliant System
(PCI) 0x00000005 (05)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Trusted Execution Engine Interface - 0F18
(PCI) 0x0000000A (10)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Platform Control Unit - SMBus Port - 0F12
(PCI) 0x00000010 (16)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 1 - 0F48
(PCI) 0x00000011 (17)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 2 - 0F4A
(PCI) 0x00000012 (18)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 3 - 0F4C
(PCI) 0x00000013 (19)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor AHCI - 0F23
(PCI) 0x00000013 (19)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 4 - 0F4E
(PCI) 0x00000016 (22)	High Definition Audio Controller
(PCI) 0x00000017 (23)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor EHCI USB - 0F34
(PCI) 0xFFFFFEE (-18)	Intel(R) I211 Gigabit Network Connection #4
(PCI) 0xFFFFFEF (-17)	Intel(R) I211 Gigabit Network Connection #4
(PCI) 0xFFFFFFF0 (-16)	Intel(R) I211 Gigabit Network Connection #4
(PCI) 0xFFFFFFF1 (-15)	Intel(R) I211 Gigabit Network Connection #4
(PCI) 0xFFFFFFF2 (-14)	Intel(R) I211 Gigabit Network Connection #3
(PCI) 0xFFFFFFF3 (-13)	Intel(R) I211 Gigabit Network Connection #3
(PCI) 0xFFFFFFF4 (-12)	Intel(R) I211 Gigabit Network Connection #3
(PCI) 0xFFFFFFF5 (-11)	Intel(R) I211 Gigabit Network Connection #3
(PCI) 0xFFFFFFF6 (-10)	Intel(R) I211 Gigabit Network Connection #2
(PCI) 0xFFFFFFF7 (-9)	Intel(R) I211 Gigabit Network Connection #2
(PCI) 0xFFFFFFF8 (-8)	Intel(R) I211 Gigabit Network Connection #2
(PCI) 0xFFFFFFF9 (-7)	Intel(R) I211 Gigabit Network Connection #2
(PCI) 0xFFFFFFFA (-6)	Intel(R) I211 Gigabit Network Connection
(PCI) 0xFFFFFFFB (-5)	Intel(R) I211 Gigabit Network Connection
(PCI) 0xFFFFFFFC (-4)	Intel(R) I211 Gigabit Network Connection
(PCI) 0xFFFFFFFD (-3)	Intel(R) I211 Gigabit Network Connection
(PCI) 0xFFFFFEE (-2)	Intel(R) Atom(TM) Processor E3800 Series/Intel(R) Celeron(R) Processor N2920/J1900

Appendix

C

Standard Firewall Platform Setting

C.1 Standard Firewall Platform Setting

Status LED Control Table.

	IO 0XA04 BIT4	IO 0XA03 BIT0	IO 0XA01 BIT2
LED Off	0	0	0
Red LED On	0	0	1
Red LED Blink	0	1	0
Red LED Fast Blink	0	1	1
Green LED Blink	1	0	1
Green LED Fast Blink	1	1	0
Green LED On	1	1	1

LAN ByPass Config Table

Item		IO 0XA00 BIT5	IO 0XA00 BIT6	IO 0XA00 BIT4	IO 0XA00 BIT2	IO 0XA00 BIT1
LAN1~2	Power On	Bypass	Negedge	0	1	0(WDT_RESET) 1(BYPASS)
		Pass Through	Negedge	0	0	
LAN1~2	Power Off	Bypass	Negedge	0	1	
		Pass Through	Negedge	0	0	

Note : "IO 0XA00 BIT5" will be activated when "0XA00 BIT6.4.2.1" is ready.

C.2 Status LED Sample Code

```
#define LED_BASE_ADDR    0x48E

// LED Off
VOID LED_OFF()
{
    UINT16    TEMP16;

    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;
    IoOut16(LED_BASE_ADDR, TEMP16);
}

// Red LED On
VOID RED_LED_ON()
{
    UINT16    TEMP16;

    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;
    TEMP16 |= 0x0002;
    IoOut16(LED_BASE_ADDR, TEMP16);
}

// Red LED Blink
VOID RED_LED_BLINK()
```

```
{  
    UINT16    TEMP16;  
  
    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;  
    TEMP16 |= 0x0800;  
    IoOut16(LED_BASE_ADDR, TEMP16);  
}  
  
// Red LED Fast Blink  
VOID RED_LED_FBLINK()  
{  
    UINT16    TEMP16;  
  
    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;  
    TEMP16 |= 0x0802;  
    IoOut16(LED_BASE_ADDR, TEMP16);  
}  
  
// Green LED On  
VOID GREEN_LED_ON()  
{  
    UINT16    TEMP16;  
  
    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;  
    TEMP16 |= 0x0812;
```

```
    IoOut16(LED_BASE_ADDR, TEMP16);
}

// Green LED Blink
VOID GREEN_LED_BLINK()
{
    UINT16    TEMP16;

    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;
    TEMP16 |= 0x0012;
    IoOut16(LED_BASE_ADDR, TEMP16);
}

// Green LED Fast Blink
VOID GREEN_LED_FBLINK()
{
    UINT16    TEMP16;

    TEMP16 = IoIn16(LED_BASE_ADDR) & 0xF7ED;
    TEMP16 |= 0x0810;
    IoOut16(LED_BASE_ADDR, TEMP16);
}
```

C.3 LAN Bypass Mode Sample Code

```
#define LANBP_BASE_ADDR      0x48C
#define PAIR_SEL_BASE_ADDR   0x4B8

/*
Select LAN Pair I or II
PAIR_NUM =      0x00 - PAIR I
              0x01 - PAIR II
*/
VOID SEL_PAIR(
    IN  UINT8    PAIR_NUM;
)
{
    UINT8    TEMP8;

    PAIR_NUM = PAIR_NUM << 5;
    TEMP8 = IoIn8(PAIR_SEL_BASE_ADDR) & 0xDF;
    TEMP8 |= PAIR_NUM;
    IoOut8(PAIR_SEL_BASE_ADDR, TEMP8);
}

/*
Execute LAN ByPass Settings
*/
```



```
*/  
VOID EXE_SET()  
{  
    UINT8    TEMP8;  
  
    TEMP8 = IoIn8(LANBP_BASE_ADDR + 3) | 0x10;  
    IoOut8(LANBP_BASE_ADDR + 3, TEMP8);  
    Sleep(500);  
    IoOut8(LANBP_BASE_ADDR + 3, TEMP8 & 0xEF);  
}
```

```
/*  
LAN1 & 2 Power On ByPass Mode Set  
BP_MODE = 0x00 - Pass Through Mode  
          = 0x01 - By Pass Mode
```

```
*/  
VOID LAN12_PWRON_BP()  
{  
    UINT8    TEMP8;  
  
    SEL_PAIR(0x00);    // Select Pair I  
    TEMP8 = IoIn8(LANBP_BASE_ADDR + 1) & 0xFE;  
    TEMP8 |= BP_MODE;
```

```
IoOut8(LANBP_BASE_ADDR + 1, TEMP8);

EXE_SET();           // Execute Set
}

/*
LAN1 & 2 Power Off ByPass Mode Set
BP_MODE = 0x00 - Pass Through Mode
          = 0x01 - By Pass Mode
*/
VOID LAN12_PWROFF_BP()
{
    UINT8    TEMP8;

    SEL_PAIR(0x00) ;    // Select Pair I
    TEMP8 = IoIn8(LANBP_BASE_ADDR) & 0x7F;
    TEMP8 |= BP_MODE << 7;
    IoOut8(LANBP_BASE_ADDR, TEMP8);

    EXE_SET();           // Execute Set
}

/*
```

LAN3 & 4 Power On ByPass Mode Set

BP_MODE = 0x00 - Pass Through Mode

= 0x01 - By Pass Mode

*/

VOID LAN34_PWRON_BP()

{

 UINT8 TEMP8;

 SEL_PAIR(0x01); // Select Pair II

 TEMP8 = IoIn8(LANBP_BASE_ADDR + 1) & 0xFE;

 TEMP8 |= BP_MODE;

 IoOut8(LANBP_BASE_ADDR + 1, TEMP8);

 EXE_SET(); // Execute Set

}

/*

LAN3 & 4 Power Off ByPass Mode Set

BP_MODE = 0x00 - Pass Through Mode

= 0x01 - By Pass Mode

*/

VOID LAN34_PWROFF_BP()

{

 UINT8 TEMP8;

```
SEL_PAIR(0x01) ;      // Select Pair II
TEMP8 = IoIn8(LANBP_BASE_ADDR) & 0x7F;
TEMP8 |= BP_MODE << 7;
IoOut8(LANBP_BASE_ADDR, TEMP8);

EXE_SET();            // Execute Set
}

/*
Set Watch Dog as LAN1 & 2 By Pass mode
*/
VOID WDT_LAN12_BP()
{
    UINT8    TEMP8;

    SEL_PAIR(0x00) ;      // Select Pair I
    TEMP8 = IoIn8(LANBP_BASE_ADDR) | 0x40;
    IoOut8(LANBP_BASE_ADDR, TEMP8);

    EXE_SET();            // Execute Set
}
```

```
/*  
Set Watch Dog as LAN3 & 4 By Pass mode  
*/  
VOID WDT_LAN34_BP()  
{  
    UINT8    TEMP8;  
  
    SEL_PAIR(0x01) ;    // Select Pair II  
    TEMP8 = IoIn8(LANBP_BASE_ADDR) | 0x40;  
    IoOut8(LANBP_BASE_ADDR, TEMP8);  
  
    EXE_SET();          // Execute Set  
}
```

```
/*  
Set Watch Dog as system reset mode  
*/  
VOID WDT_RESET()  
{  
    UINT8    TEMP8;  
  
    SEL_PAIR(0x00) ;    // Select Pair I  
    TEMP8 = IoIn8(LANBP_BASE_ADDR) & 0xBF;  
    IoOut8(LANBP_BASE_ADDR, TEMP8);  
}
```

```
SEL_PAIR(0x00) ;      // Select Pair II
IoOut8(LANBP_BASE_ADDR, TEMP8);

EXE_SET();            // Execute Set
}
```

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-2250 and remote client system.

2. Setup BIOS in FWS-2250

BIOS >> Advanced >> Serial Port Console Redirection >>

Console Redirection: Enabled (Default)

Enabled Attempt to redirect console via COM port

Disabled Console redirection function

BIOS >> Advanced >> Serial Port Console Redirection >> Serial Redirection Settings >> Bits per second: 115200 (Default)

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-2250 and it will display the BIOS information on the client system.