FWS-7810

1U Rackmount

Network Appliance Platform

2 SATA 6.0 Gb/s, 2 USB3.0

1 PCI-E[x8] (Optional)

1 NIM (Optional)

FWS-7810 Manual 2nd Ed.
March 12, 2015

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Packing List

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

- 1 FWS-7810
- 1 DVD-ROM for manual (in PDF format) and drivers
- 2 SATA HDD Cable
- 2 Serial ATA Cable
- 1 RJ-45 Console Cable
- 1 CPU Heatsink
- 1 Ear Bracket Module, Black

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

Contents

Chapter

1

General Information

1.1 Introduction

FWS-7810 adopts Intel® 4th generation Core™ / Xeon series processor. The chipset is equipped with Intel®C226. In addition, the system memory features four 240-pin ECC/non-ECC DDR3 1333/1600 MHz UDIMM up to 32GB and supports dual-channel. FWS-7810 deploys eight Gigabit Ethernet ports (optional up to 2 pairs LAN bypass function). The condensed appearance of FWS-7810 features 1U form factor that fits nicely into a space-limited environment.

This compact FWS-7810 is equipped with two SATA6.0 Gb/s (optional up to 3 SATA ports). In addition, it offers flexible expansion with network products and features one optional PCI-E[x8] slot and one optional Network Interface Module (NIM) slot, two USB3.0 ports and one RJ-45 for console. The console port deploys console re-direction that increases the network security via remote control. Moreover, there is a front panel support LCM with keypad control that allows for easy access and operation. All of these designs provide for a more user-friendly solution.

1.2 Features

- 1U Rackmount 8 LAN Ports Network Appliance
- Intel® 4th Generation Core™ /Xeon Processor
- 240-Pin Dual-Channel ECC/non-ECC DDR3 1333/1600MHz UDIMM x 4 (Up To 32 GB)
- Gigabit Ethernet x 8 with Optional 2-Pair LAN Bypass Function
- SATA 6.0 Gb/s x 2 (Optional 3 SATA Ports)
- Internal 3.5” SATA HDD x 1 or 2.5” SATA HDD x 2
- LCM with Keypad x 1
- RJ-45 for Console x 1, USB3.0 x 2
- 250W AC Type Power Input
- RAID 0,1 Support
- VGA Header x 1

1.3 Specifications

System

Form Factor	1U 8-port Network Appliance
Processor	Intel® 4th generation Core™/ Xeon
System Memory	240-pin Dual-Channel ECC/non-ECC DDR3 1333/1600 UDIMM Socket x 4, up to 32 GB
Chipset	Intel® C226
Ethernet (Optional)	Intel® 82574L controller, Gigabit Ethernet x 8 (optional up to 2 pairs LAN bypass function)
BIOS	AMI BIOS ROM
Serial ATA	SATA 6.0 Gb/s x 2 (optional 3 SATA ports)
Expansion Interface	Network Interface Module (NIM) x 1 (optional); PCI-E[x8] slot x 1 (optional)
Watchdog Timer	1~255 steps by software programming
RTC	Internal RTC
Storage	3.5" SATA HDD bay x 1 or 2.5" SATA HDD bay x 2
System Fan	4 cm Ball Bearing Fan x 2
Front I/O Panel	Power LED x 1 Bypass LED (Optional up to 2) Status LED x 1

	HDD Active LED x 1
	USB port x 2
	RJ-45 port with LED x 8
	RJ-45 console x 1
	LCM Display and 4 keypad x 1
	Software programming switch x 1
Rear I/O Panel	AC power input x 1
	Power switch x 1
	Expansion slot x 2 (optional PCI-E[x8] slot x 1)
Color	Black
LCM	16 x 2 characters with 4 keypad control
Power Supply	Flex ATX 250W
Dimension	16.9" x 12.01" x 1.73" (430mm x 305mm x 44mm)

Display

VGA Controller	Pin header reserved for Graphic display

I/O

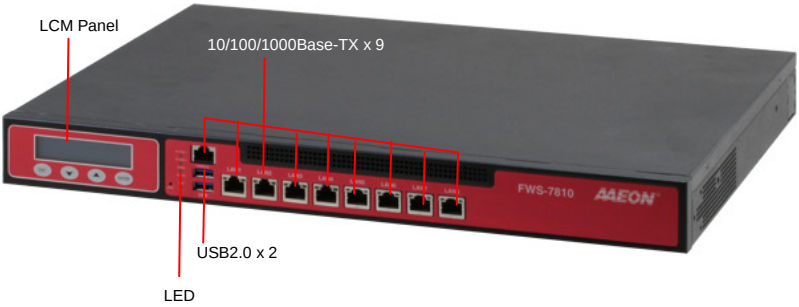
Serial Port	RJ-45 console x 1 (on front panel), RS-232 box header x 1 (optional)
Keyboard and Mouse	Reserved pin header (optional)
Universal Serial Bus	USB2.0 x 2

Environmental

Operating Temperature	32°F~104°F (0°C~40°C)
Storage Temperature	-4°F~140°F (-20°C~60°C)
Operating Humidity	10~80% relative humidity, non-condensing
Storage Humidity	10~80% @ 40°C, non-condensing
Vibration	0.5 g rms/ 5~500 Hz/ operation (2.5" Hard Disk Drive) 1.5 g rms/ 5~500 Hz/ non-operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation

1.4 General System Information

Front View



Rear View

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:

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.

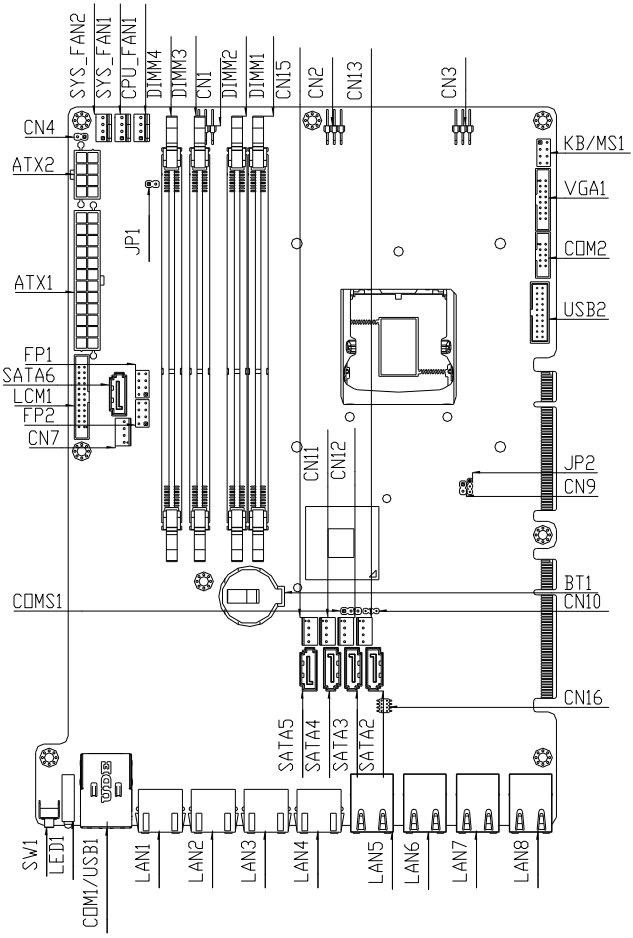
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

Risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

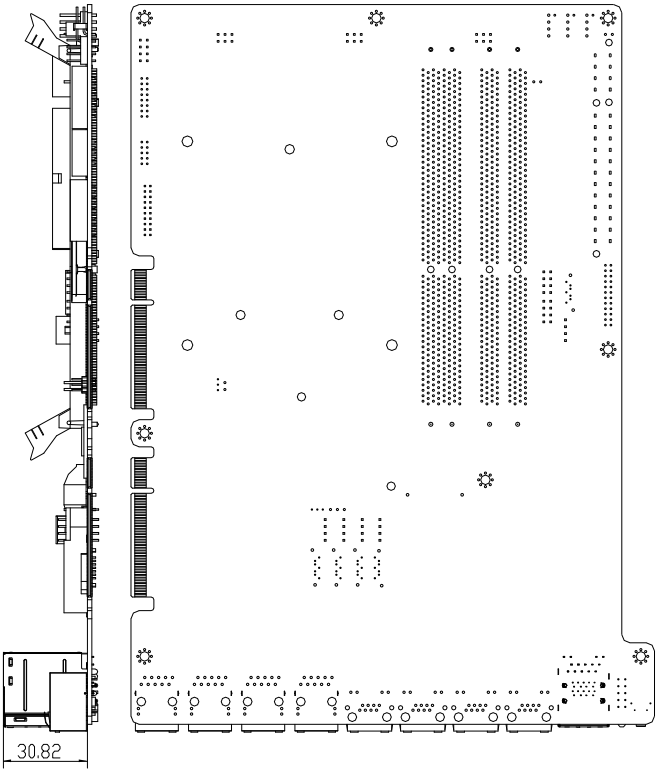
2.2 Location of Connectors

Board of FWS-7810

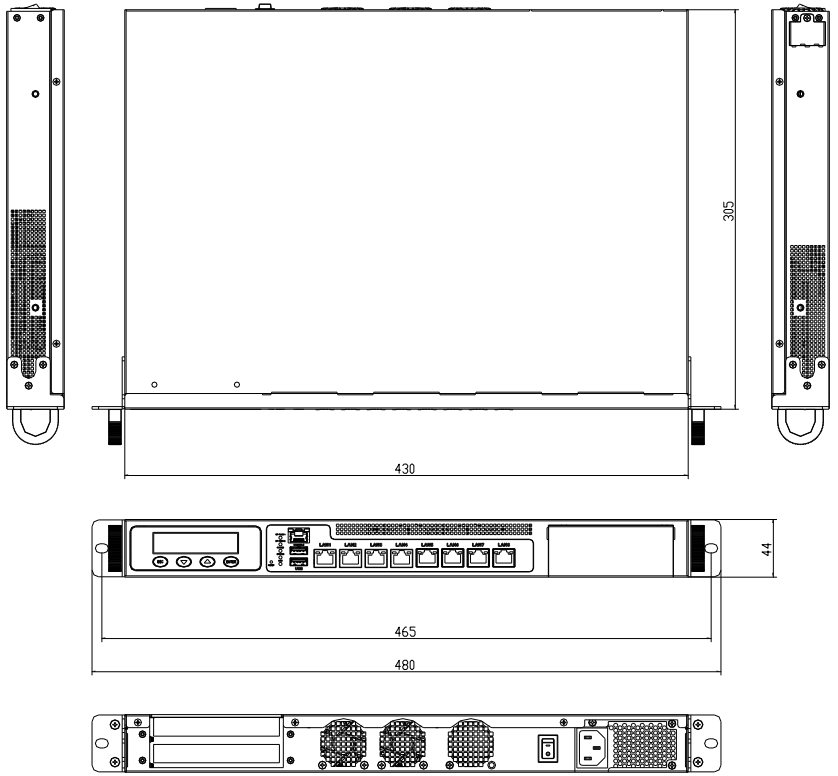
Component side



Solder Side



2.3 Mechanical Drawings of FWS-7810



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
JP2	Auto Power Button
CMOS	Clear CMOS

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:

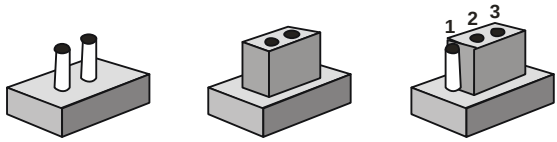
Label	Function
FP1	Front Panel Connector 1
FP2	Front Panel Connector 2
KB/MS1	PS2 KB/MS Pin Header
VGA1	VGA Pin Header
COM2	RS-232 Pin Header
USB2	USB 3.0 Pin Header
DIMM1	DDR3 DIMM Slot
DIMM2	DDR3 DIMM Slot
DIMM3	DDR3 DIMM Slot
DIMM4	DDR3 DIMM Slot
BT1	Battery
SATA1~SATA6	SATA Connector

LAN1	10/100/1000 Base-TX Ethernet Connector
LAN2	10/100/1000 Base-TX Ethernet Connector
LAN3	10/100/1000 Base-TX Ethernet Connector
LAN4	10/100/1000 Base-TX Ethernet Connector
LAN5	10/100/1000 Base-TX Ethernet Connector
LAN6	10/100/1000 Base-TX Ethernet Connector
LAN7	10/100/1000 Base-TX Ethernet Connector
LAN8	10/100/1000 Base-TX Ethernet Connector
CPU_FAN1	4-Pin Fan Connector
SYS_FAN1	4-Pin Fan Connector
SYS_FAN2	4-Pin Fan Connector
CN7	SATA Power Connector
CN11~CN15	SATA Power Connector
CN4	Power Bottom
LCM1	LCM Connector
ATX1	24-Pin ATX Power Connector
ATX2	8-Pin ATX Power Connector
COM1/USB1	COM/USB3 Connector
SW1	Reset Switch (By Control)

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 (CMOS)

CMOS	Function
1-2	Protected (Default)
2-3	Clear

2.8 Auto Power Button (JP2)

JP2	Function
1-2	Power ON by Button (Default)
2-3	Auto Power ON

2.9 Front Panel Connector (FP1)

Pin	Signal	Pin	Signal
1	External Speaker (+)	2	Key Board Lock (+)
3	NC	4	GND
5	Internal Buzzer (-)	6	I2C Bus SMB Clock
7	External Speaker (-)	8	I2C Bus SMB Data

Note:
Internal Buzzer Enable: Close Pin 5,7

2.10 Front Panel Connector (FP2)

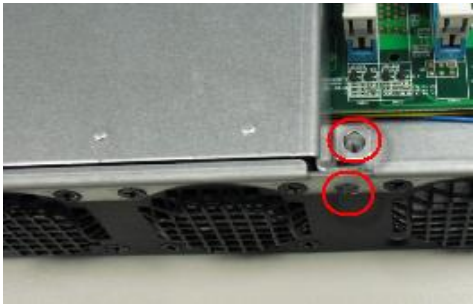
Pin	Signal	Pin	Signal
1	Power On Button (+)	2	Reset Switch (+)
3	Power On Button (-)	4	Reset Switch (-)
5	HDD LED (+)	6	Power LED (+)
7	HDD LED (-)	8	Power LED (-)

2.11 USB3.0 Port PIN Header

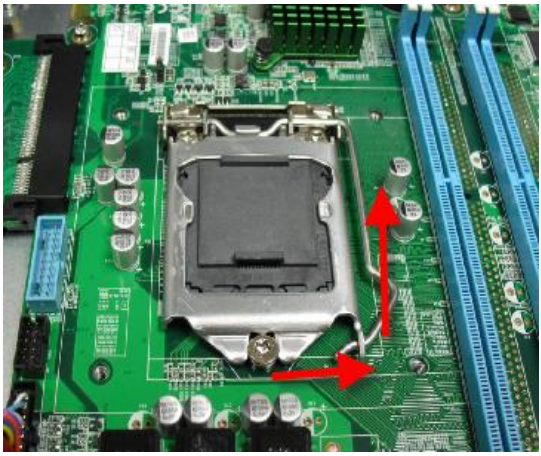
Pin	Signal	Pin	Signal
1	VCC	20	NC
2	USB3_RX1_DN_C	19	VCC
3	USB3_RX1_DP_C	18	USB3_RX2_DN_C
4	GND	17	USB3_RX2_DP_C
5	USB3_TX1_DN_C	16	GND
6	USB3_TX1_DP_C	15	USB3_TX2_DN_C
7	GND	14	USB3_TX2_DP_C
8	USBP_0N_C	13	GND
9	USBP_0P_C	12	USBP_1N_C
10	NC	11	USBP_1P_C

2.12 Installing the CPU and the Heat Sink

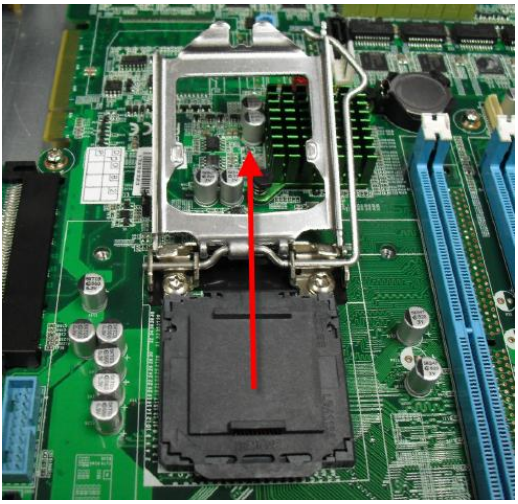
Step 1: Loosen the screws and remove the fan duct



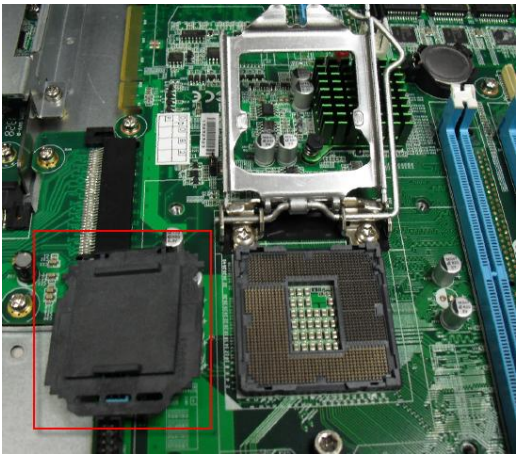
Step 2: Release the lock pole of the CPU bracket



Step 3: Lift up the CPU bracket

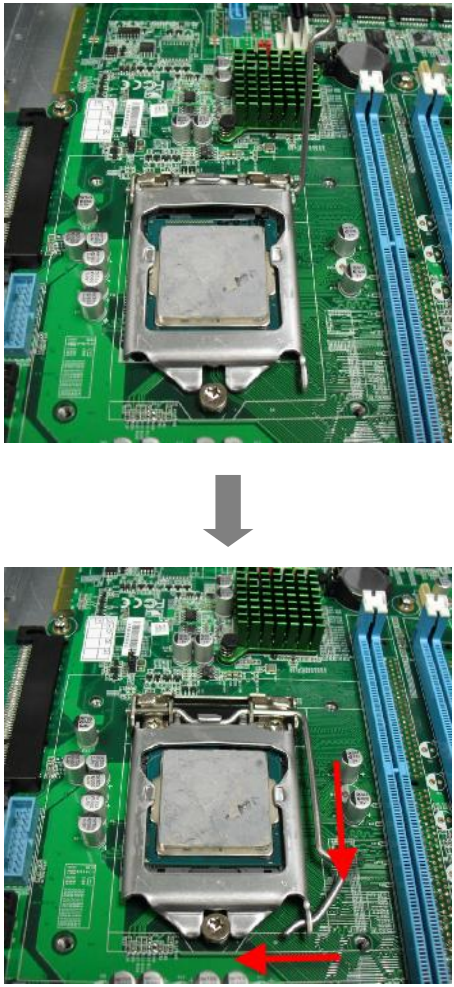


Step 4 : Lift up the CPU cover

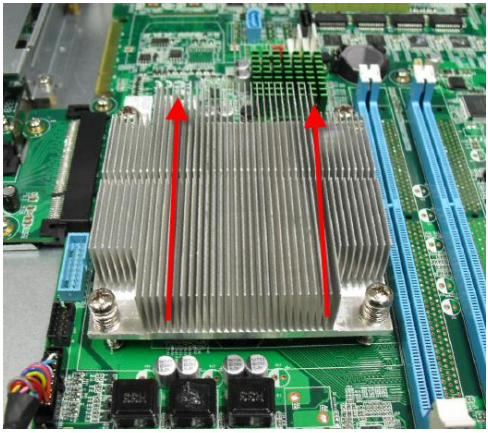


Step 5 : Place the CPU to the socket and have the two fillisters locked properly

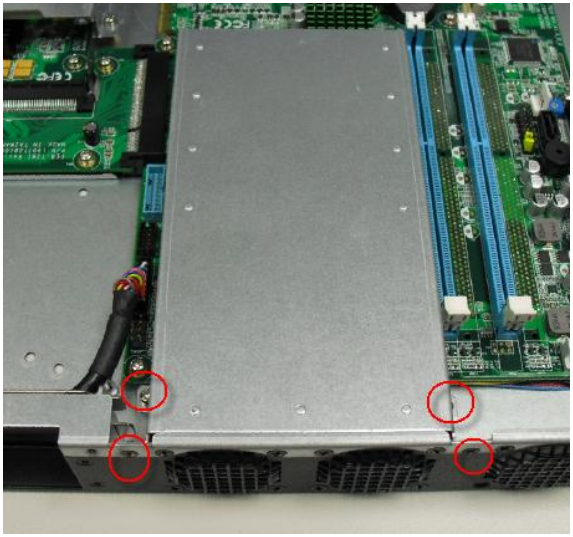
Step 6 : Close the CPU bracket and lock the pole to the position



Step 7 : Cover the Heatsink on the CPU and watch out the direction of the Heatsink that did not against the airflow



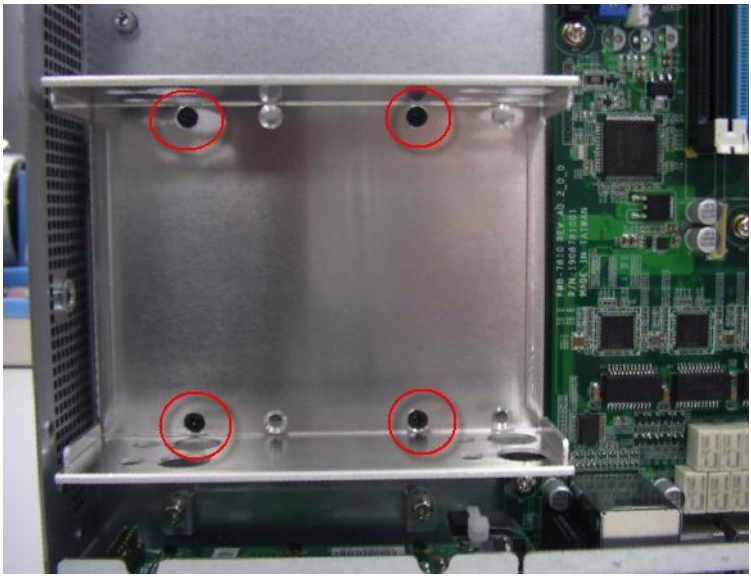
Step 8: Fasten the four screws to lock the air duct



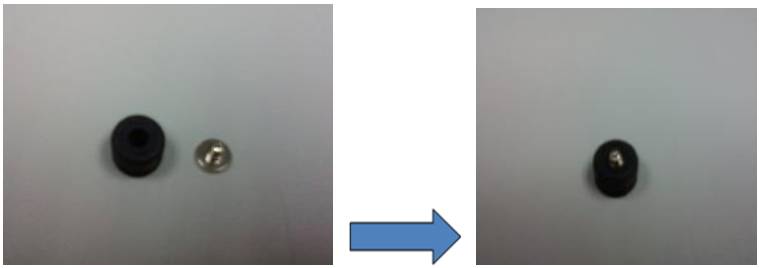
2.13 Installing the Two 2.5” Hard Disk Drive (HDD)

Step 1: Unscrew the upper lid

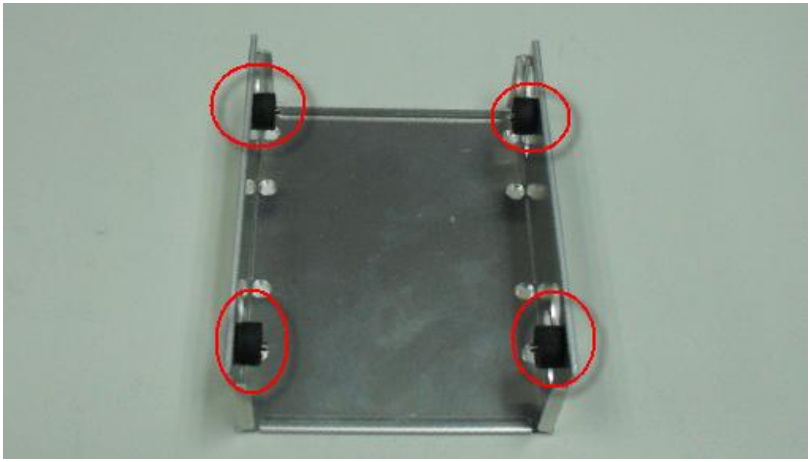
Step 2: Unfasten the four screws



Step 3: put the screw into cushion

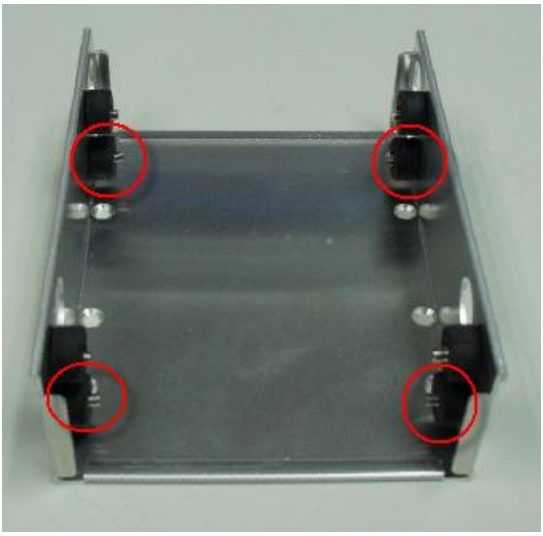


Step 4: put the assembled cushions to the upper place of the 2.5” HDD bracket

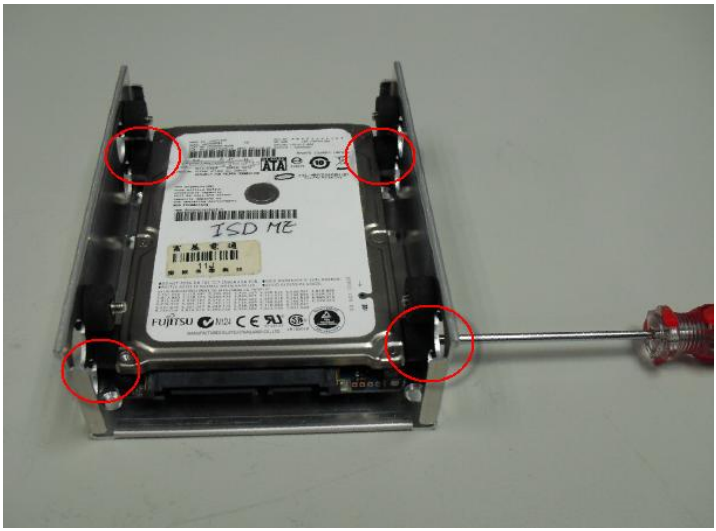


Step 5: put the assembled cushions to the lower place of the 2.5” HDD

bracket



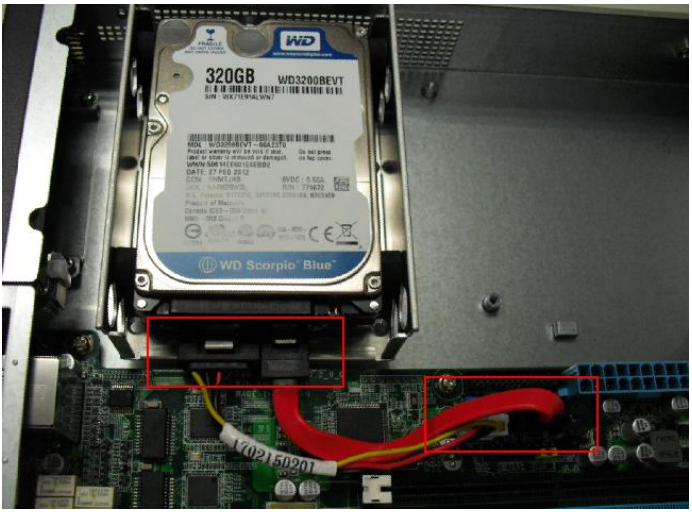
Step 6: Lock the HDD to the lower cushions with four screws



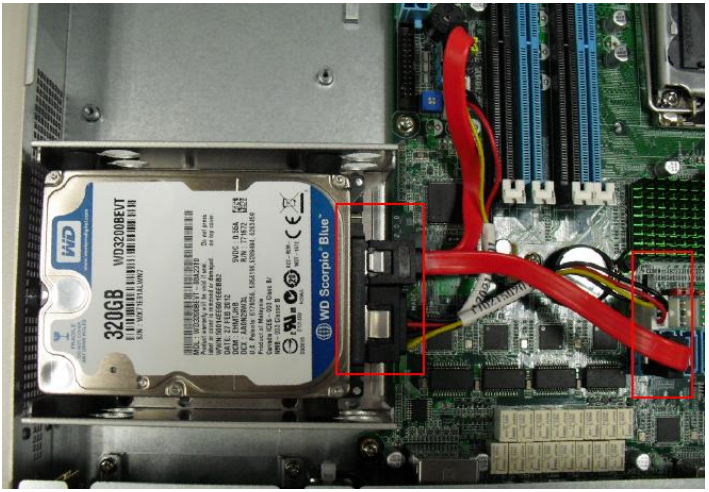
Step 7: Lock the second HDD to the upper cushions with four screws

Step 8: Lock the HDD bracket to the chassis with four screws

Step 9: Connect the SATA cable and power cable to the HDD in lower place

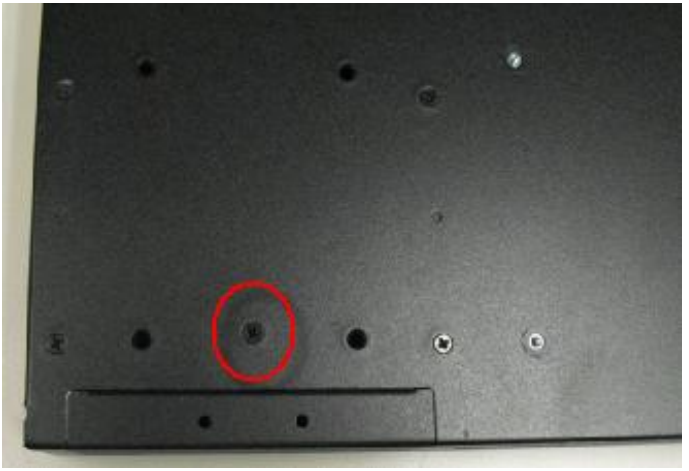


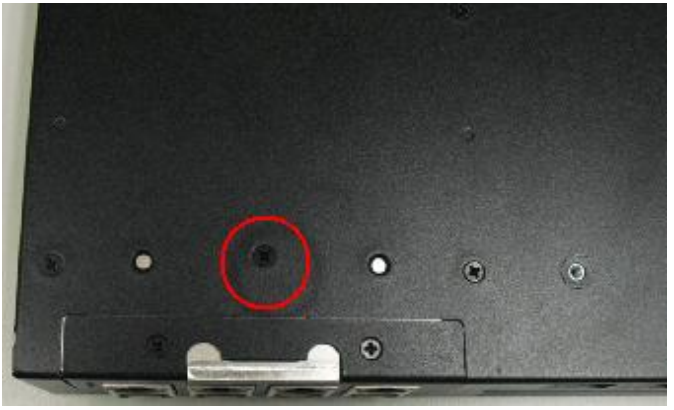
Step 10: Connect the SATA cable and power cable to the HDD in upper place



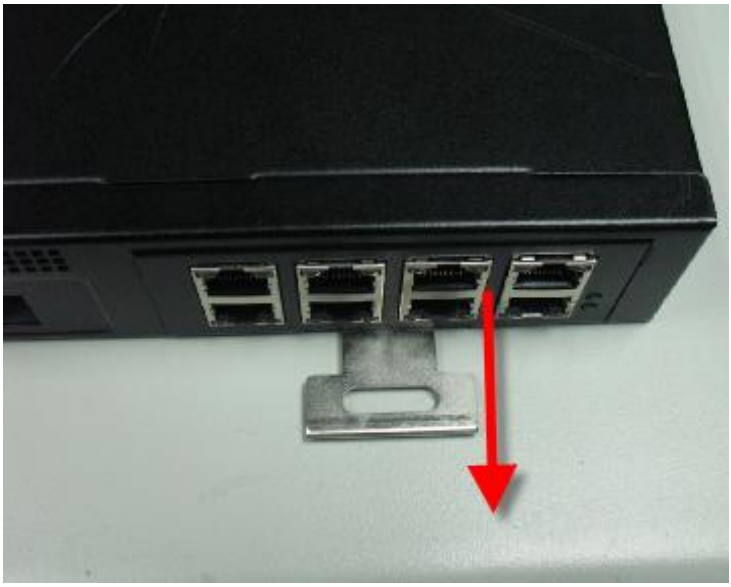
2.14 Installing the Network Interface Module (NIM)

Step 1: Unfasten the screws on the bottom of chassis

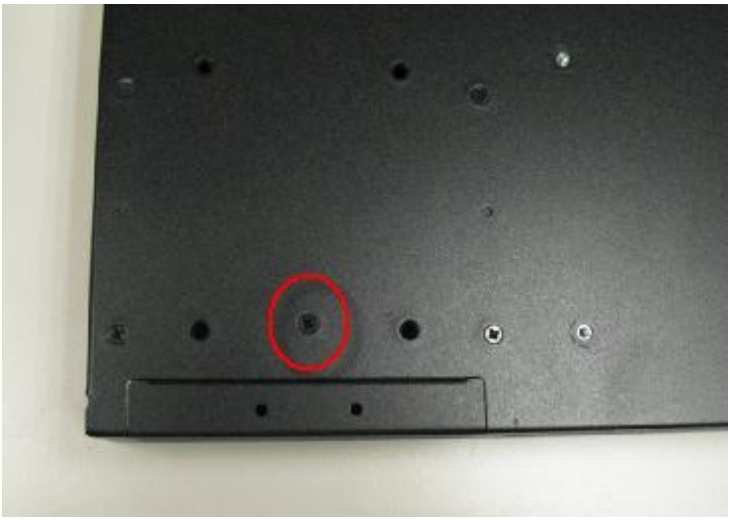


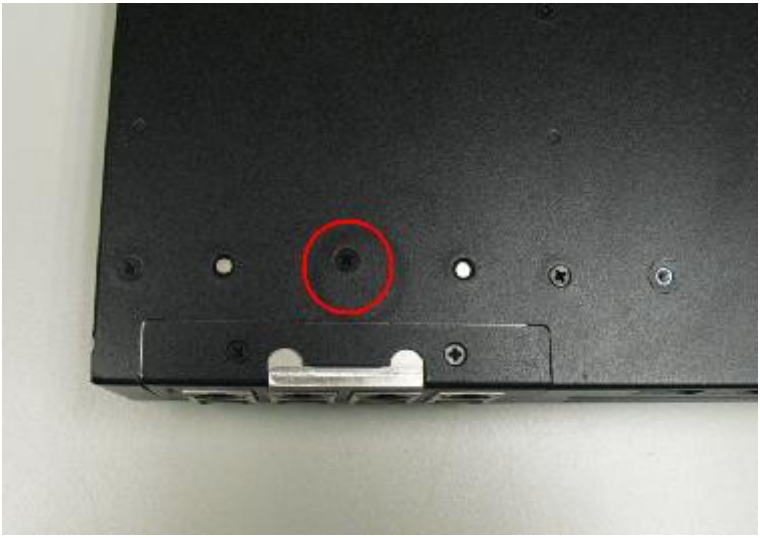


Step 2 : Remove the null Module cover or existing LAN module



Step 3 : Insert the LAN Module and fasten the screws on 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	×	○	○	○	○	○

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。

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。

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。

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 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-7810 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 so that it retains the Setup information when the power is turned off.

Entering Setup

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

Main

Set the date, use tab to switch between date elements.

Advanced

Enable disable boot option for legacy network devices.

Chipset

host bridge parameters.

Boot

Enables/disable quiet boot option.

Security

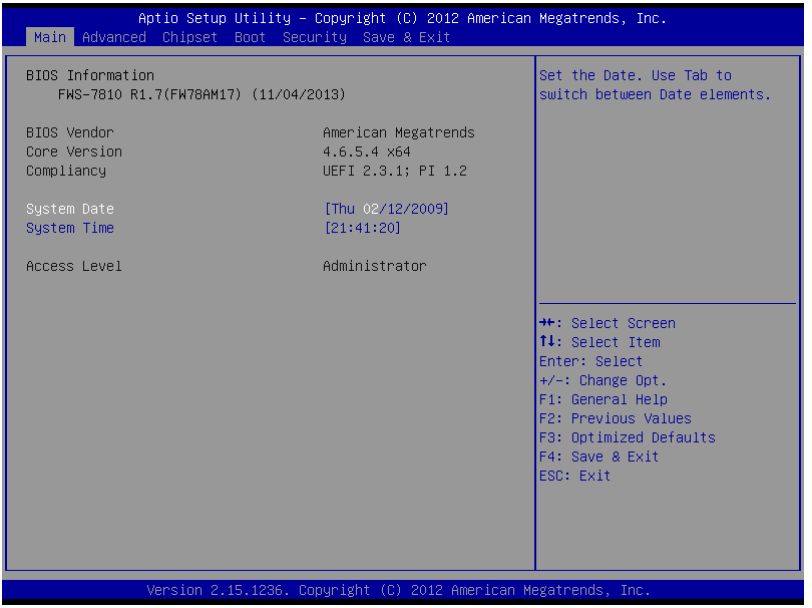
Set setup administrator password.

Save&Exit

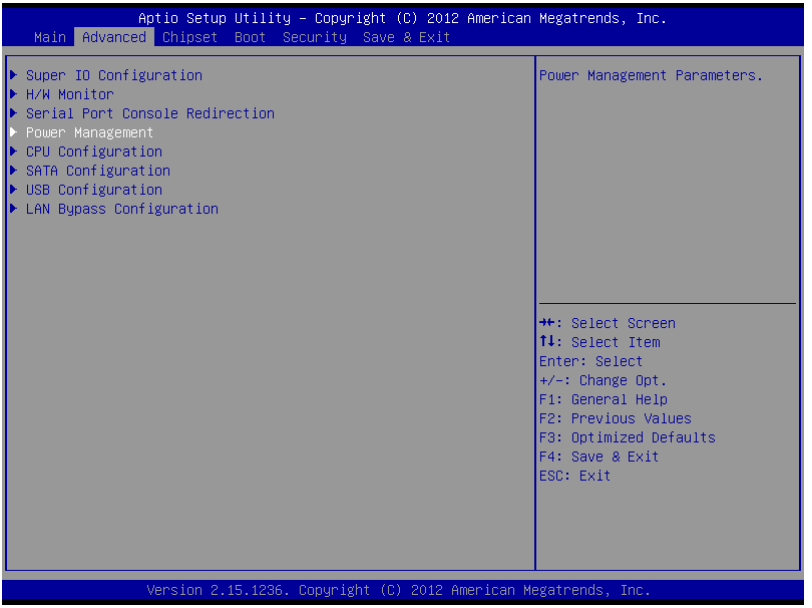
Exit system setup after saving the changes.

Setup Menu

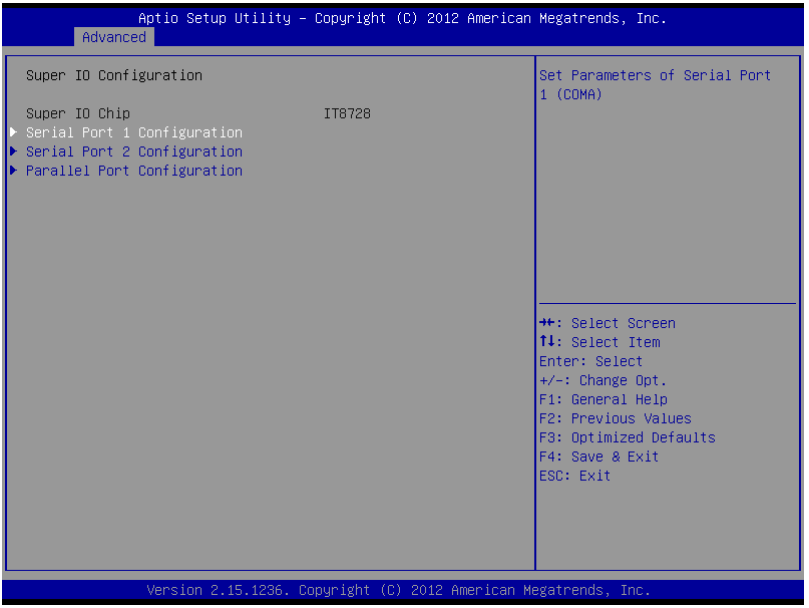
Setup submenu: Main



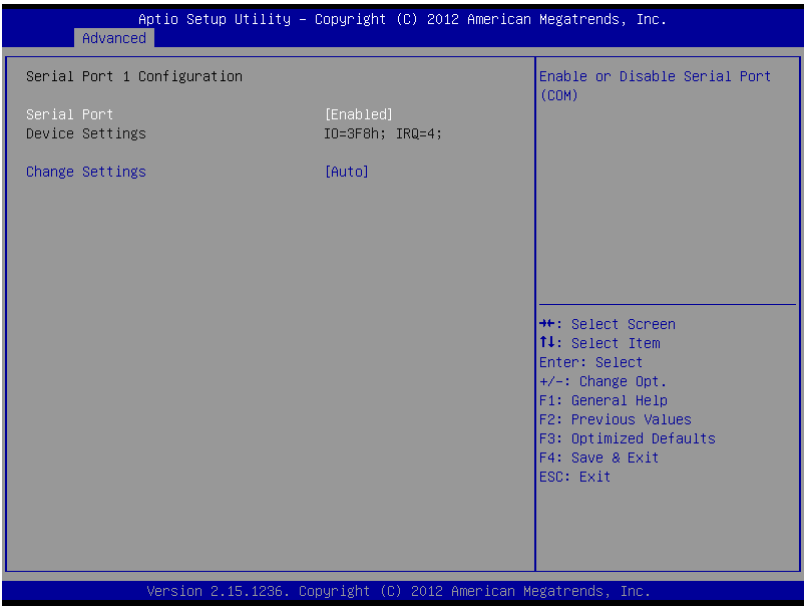
Setup submenu: Advanced



Super IO Configuration



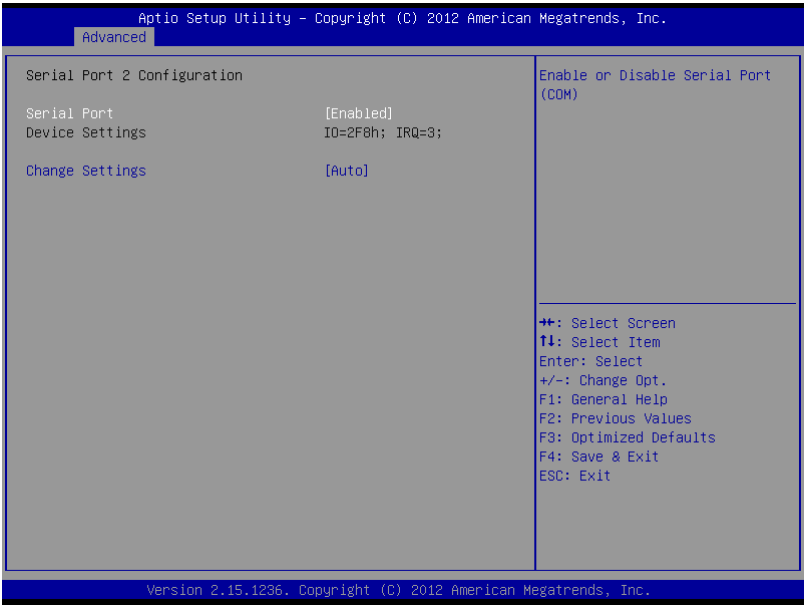
Serial Port 1 Configuration



Options summary:

Serial Port	Disabled
	Enabled
Enable or Disable Serial Port (COM)	
Serial Port	**Auto**
	IO=3F8h; IRQ=4;
	IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;
Select an optimal setting for Super IO device.	

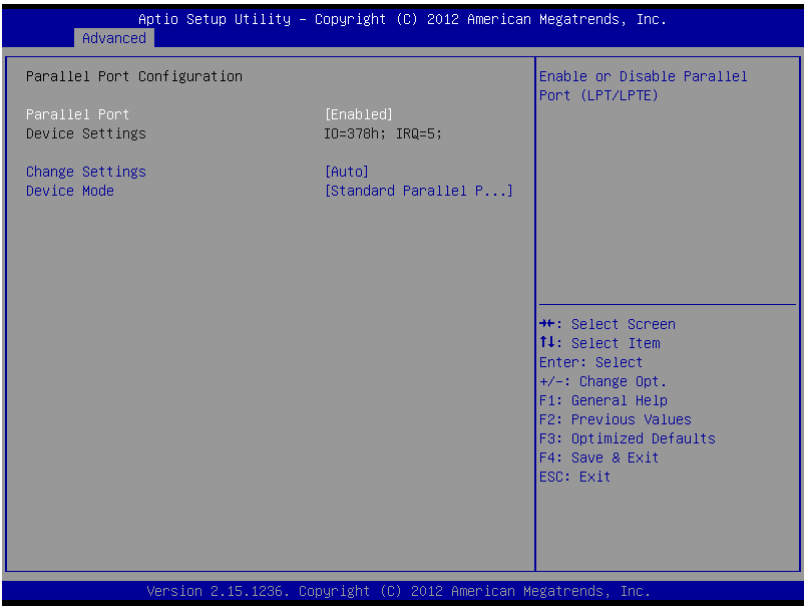
Serial Port 2 Configuration



Options summary:

Serial Port	Disabled
	Enabled
Enable or Disable Serial Port (COM)	
Serial Port	**Auto**
	IO=2F8h; IRQ=3;
	IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;
Select an optimal setting for Super IO device.	

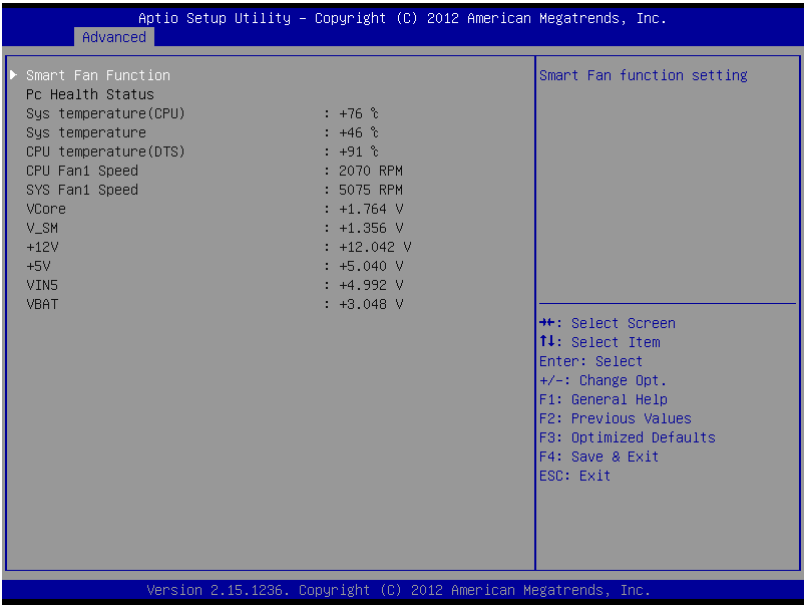
Parallel Port Configuration



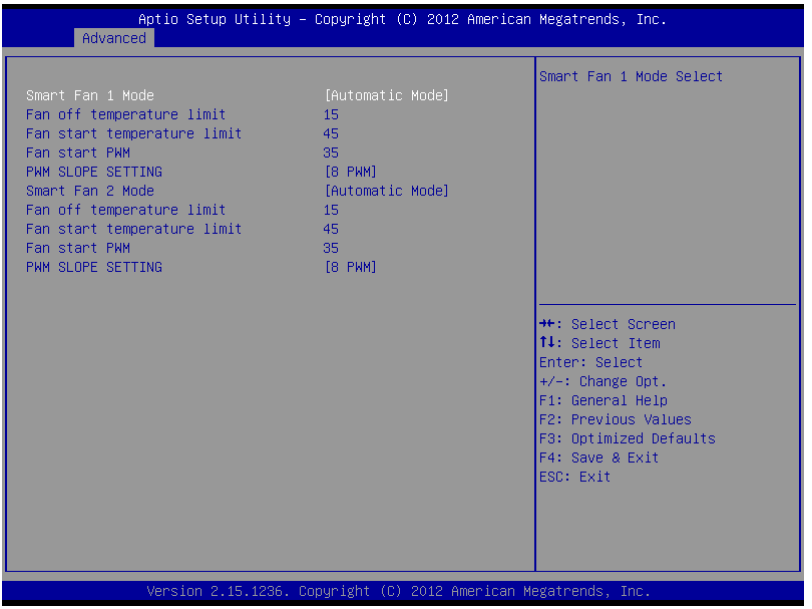
Options summary:

Parallel Port	Disabled
	Enabled
Enable or Disable Serial Port (COM)	
Change Settings	**Auto**
	IO=378h; IRQ=5;
	IO=378h; IRQ=5,6,7,9,10,11,12;
	IO=278h; IRQ=5,6,7,9,10,11,12;
	IO=3BCh;IRQ=5,6,7,9,10,11,12;
Select an optimal setting for Supoer IO device.	
Device Mode	**Standard Parallel Port Mode**
	EPP Mode
	ECP Mode
	EPP Mode & ECP Mode
Change the Printer Port mode.	

H/W Monitor


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
Smart Fan Function
Pc Health Status
Sys temperature(CPU) : +76 °C
Sys temperature : +46 °C
CPU temperature(DTS) : +91 °C
CPU Fan1 Speed : 2070 RPM
SYS Fan1 Speed : 5075 RPM
VCore : +1.764 V
V_SM : +1.356 V
+12V : +12.042 V
+5V : +5.040 V
VIN5 : +4.992 V
VBAT : +3.048 V
Smart Fan function setting
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Smart Fan Function

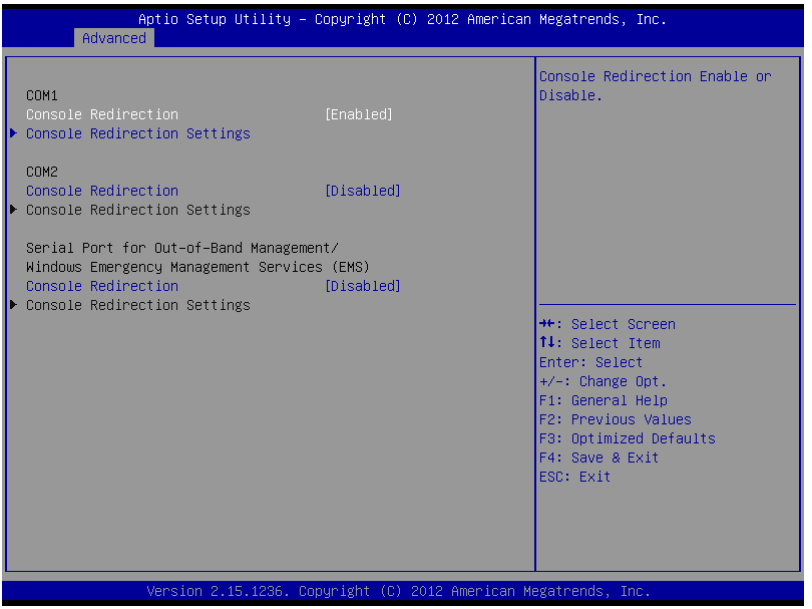


Options summary:

Smart Fan Mode	Full on Mode
	Automatic Mode
	Manual Mode
Smart Fan Mode Select	
Fan off temperature limit	**15 (0-127)**
Fan will of when temperature lower than this limit.	
Fan start temperature limit	**45 (0-127)**
Fan will work when temperature higher than this limit.	
Fan start PWM	**35 (0-255)**
Fan will start with this PWM value(Range 0-255).	

PWM SLOPE SETTING	0.125 PWM
	0.25 PWM
	0.5 PWM
	1 PWM
	2 PWM
	4 PWM
	8 PWM
	15.875 PWM
PWM SLOPE Selection	

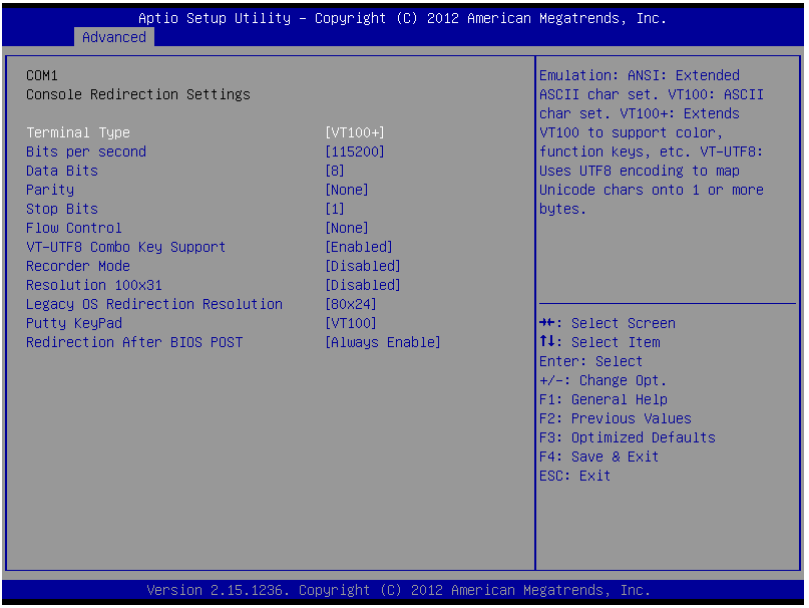
Serial Port Console Redirection



Options summary:

Console Redirection	Disabled **(COM2)**
	Enabled **(COM1)**
Console Redirection Enabled or Disabled.	

Console Redirection Settings



Options summary:

Terminal Type	VT100
	VT100+
	VT-UTF8
	ANSI
Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.	
Bits per second	9600
	19200
	38400
	57600
	115200
Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.	
Data Bits	7
	8
Data Bits	

Parity	**None**
	Even
	Odd
	Mark
	Space
A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: parity bit is always 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection.	
Stop Bits	**1**
	2
Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.	
Flow Control	**None**
	Hardware RTS/CTS
Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.	

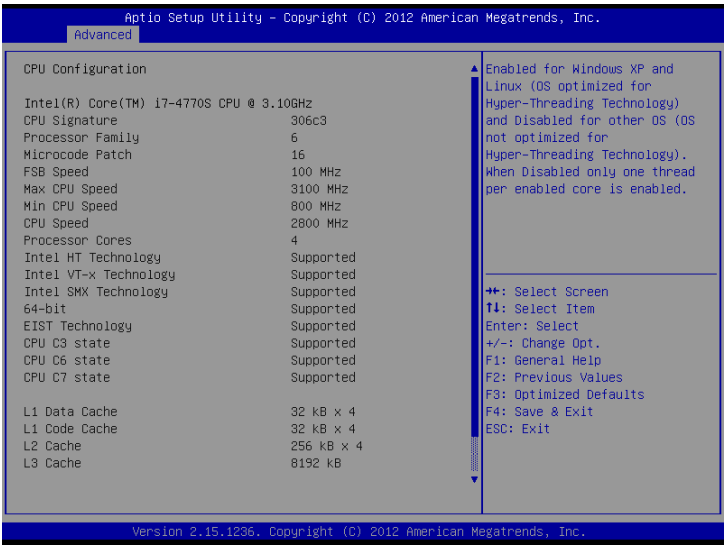
VT-UTF8 Combo Key Support	Disabled
	Enabled
Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals	
Recorder Mode	**Disabled**
	Enabled
On this mode enabled only text will be send. This is to capture Terminal data.	
Resolution 100x31	Disabled
	Enabled
Enables or disables extended terminal resolution	
Legacy OS Redirection Resolution	**80x24**
	80x25
On Legacy OS, the Number of Rows and Columns supported redirection	
Putty KeyPad	**VT100**
	LINUX
	XTERMR6
	SCO
	ESCN
	VT400
Select FunctionKey and KeyPad on Putty.	
Redirection After BIOS POST	**Always Enable**
	BootLoader
The Setting Specify if BootLoader is selected than Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enable which means Legacy console Redirection is enabled for Legacy OS.	

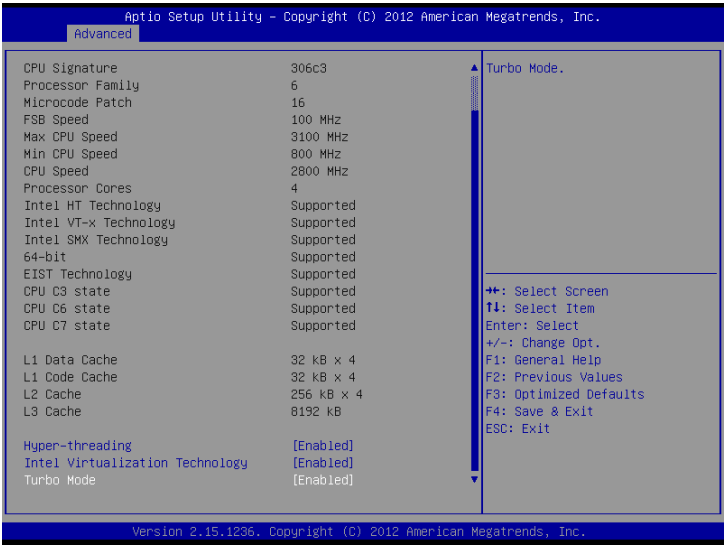
Power Management

Options summary:

Power Mode	**ATX Type**
	AT Type
Select Power Supply Mode.	
ACPI Sleep State	Suspend Disabled
	S3 only (Suspend to RAM)
Select ACPI sleep state the system will enter when the SUSPEND button is pressed.	
Restore AC Power Loss	Power Off
	Power On
	Last State
Select AC power state when power is re-applied after a power failure.	
Resume on Ring	Disabled
	Enabled
Enable/Disable Resume from RI# signal.	
Resume on PCIE	Disabled
	Enabled
Enable/Disable Resume from PCIE signal.	
Wake system with Fixed Time	**Disabled**
	Enabled
Enable or disable System wake on alarm event. When enable, System will wake on the hr::min::sec specified.	
Wake up day	**0**
Select 0 for daily system wake up, 1-31 for which day of month that you would like the system to wake up.	
Wake up hour	**0**
Select 0-23 For example enter 3 for 3am and 15 for 3pm.	
Wake up minute	**0**
0-59	
Wake up second	**0**
0-59	
Wake system with Dynamic Time	Disabled
	Enabled
Enable or disable System wake on alarm event. When enabled, System will wake on the current time + Increase minute(s).	
Wake up minute increase	1
1-5	

CPU Configuration

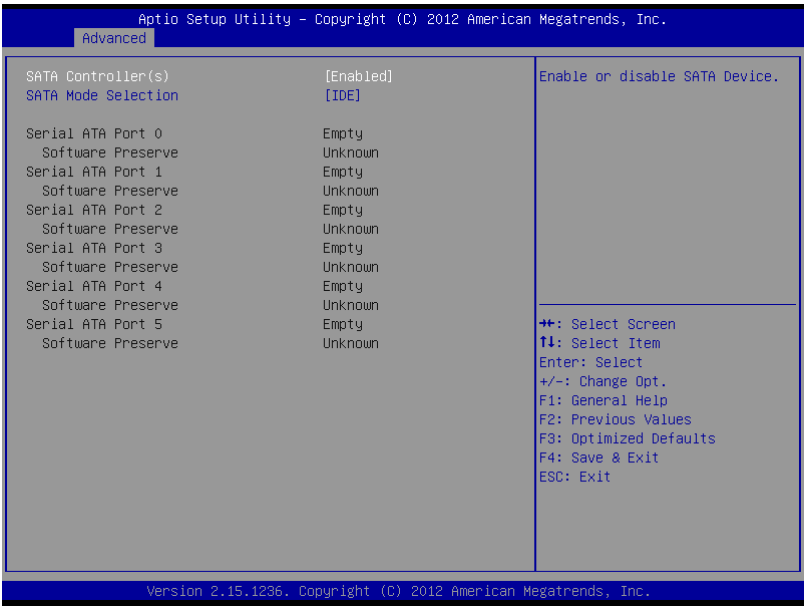




Options summary :

Hyper-threading	Disabled
	Enabled
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only on thread per enabled core is enabled.	
Intel Virtualization Technology	Disabled
	Enabled
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.	
Turbo Mode	Disabled
	Enabled
Turbo Mode	

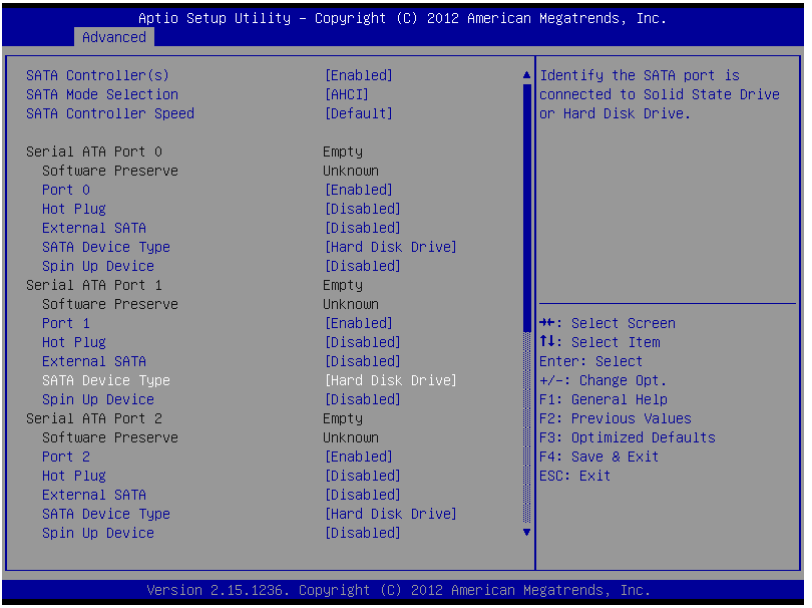
SATA Configuration (IDE)



Options summary :

SATA Controller(s)	Disabled
	Enabled
Enable or disable SATA Device.	
SATA Mode Selection	**IDE**
	AHCI
	RAID
Determines how SATA controller(s) operate.	

SATA Configuration (AHCI)

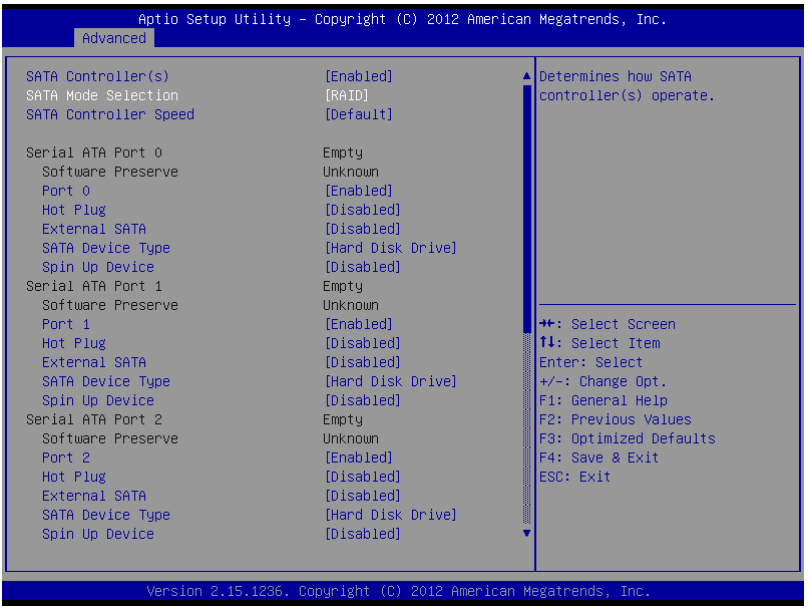


Options summary :

SATA Controller Speed	Disabled
	Enabled
Enable or disable SATA Device.	
SATA Mode Selection	**Default**
	Gen1
	Gen2
	Gen3
Indicates the maximum speed the SATA controller can support.	
Port	Disabled
	Enabled
Enable or Disable SATA Port	
Hot Plug	Disabled
	Enabled
Designates this port as Hot Pluggable.	
External SATA	Disabled
	Enabled
External SATA Support.	

SATA Device Type	**Hard Disk Drive**
	Solid State Drive
Indentify the SATA port is connected to Solid State Drive or Hard Disk Drive.	
Spin Up Device	**Disabled**
	Enabled
On an edge detect from 0 to 1, the PCH starts a COMRESET initialization sequence to device.	

SATA Configuration (RAID)

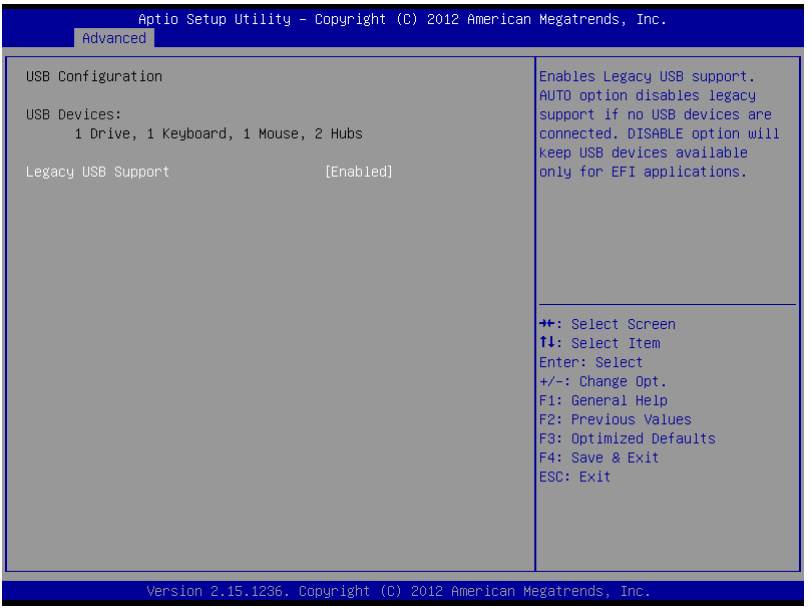


Options summary :

SATA Controller Speed	Disabled
	Enabled
Enable or disable SATA Device.	
SATA Mode Selection	**Default**
	Gen1
	Gen2
	Gen3
Indicates the maximum speed the SATA controller can support.	
Port	Disabled
	Enabled
Enable or Disable SATA Port	
Hot Plug	Disabled
	Enabled
Designates this port as Hot Pluggable.	
External SATA	Disabled
	Enabled
External SATA Support.	

SATA Device Type	**Hard Disk Drive**
	Solid State Drive
Indentify the SATA port is connected to Solid State Drive or Hard Disk Drive.	
Spin Up Device	**Disabled**
	Enabled
On an edge detect from 0 to 1, the PCH starts a COMRESET initialization sequence to device.	

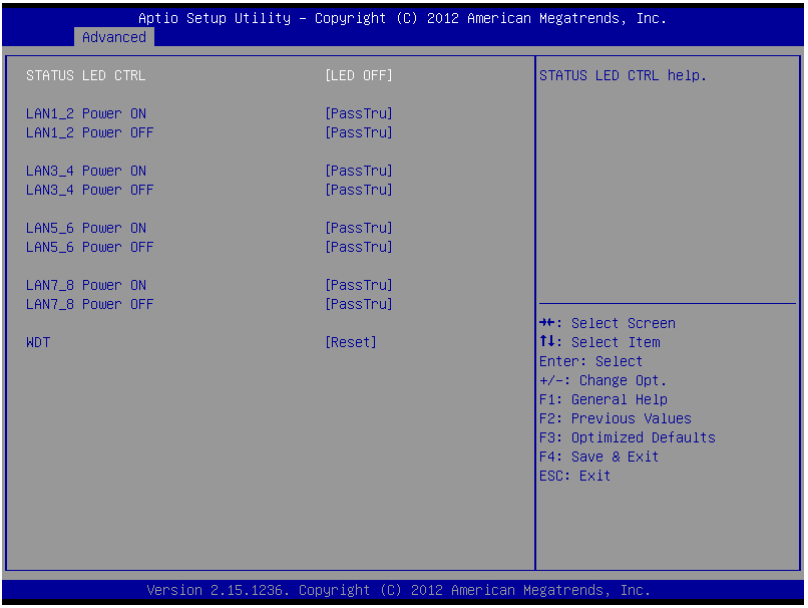
USB Configuration



Options summary:

Legacy USB Support	**Enabled**
	Disabled
	Auto
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB device available only for EFI applications.	

LAN Bypass Configuration

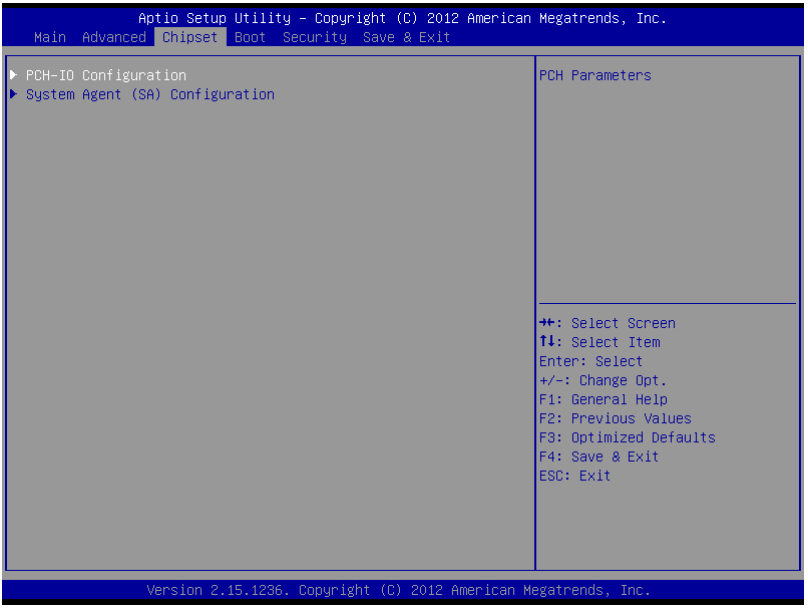


Options summary :

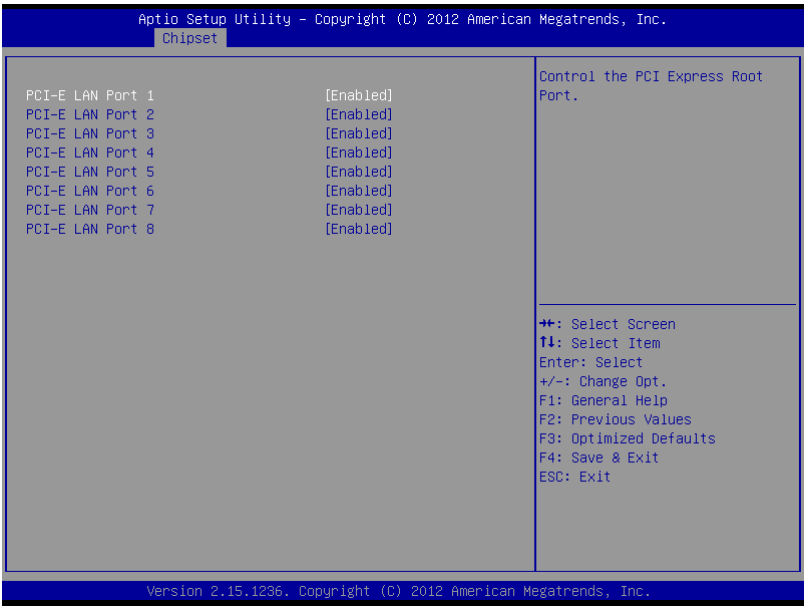
STATUS LED CTRL	**LED OFF**
	RED LED ON
	RED LED BLINK
	RED LED FAST BLINK
	GREEN LED ON
	GREEN LED BLINK
	GREEN LED FAST BLINK
STATUS LED CTRL help.	
LAN kit Power ON	Bypass
	PassTru
Setting LAN kit function behavior when power on.(Bypass/Pass Through)	
LAN kit Power Off	Bypass
	PassTru
Setting LAN kit function behavior when power off.(Bypass/Pass Through)	

WDT	Bypass
	Reset
WDT function select, Reset: Reset System. Bypass: Reset LAN kits to Bypass mode.	

Setup submenu: Chipset



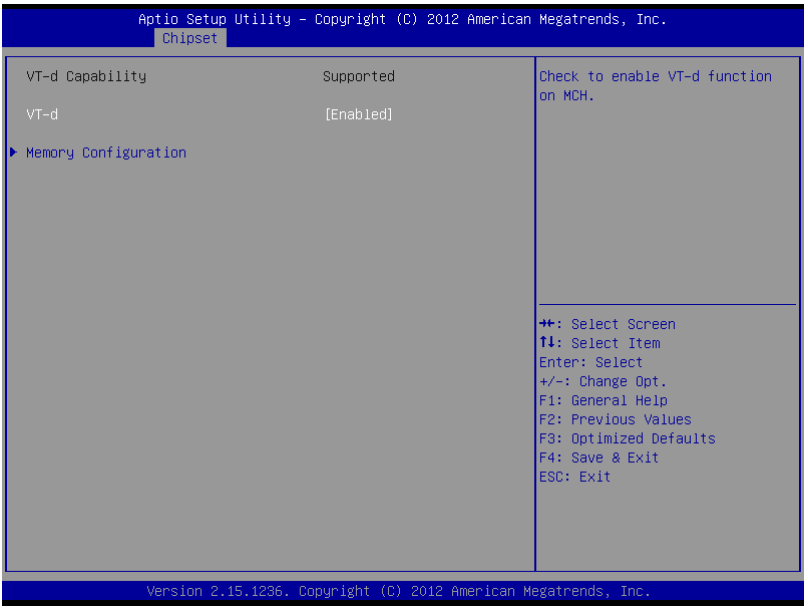
PCH-IO Configuration



Options summary:

PCI-E LAN Port n	Disabled
	Enabled
Control the PCI Express Root Port.	

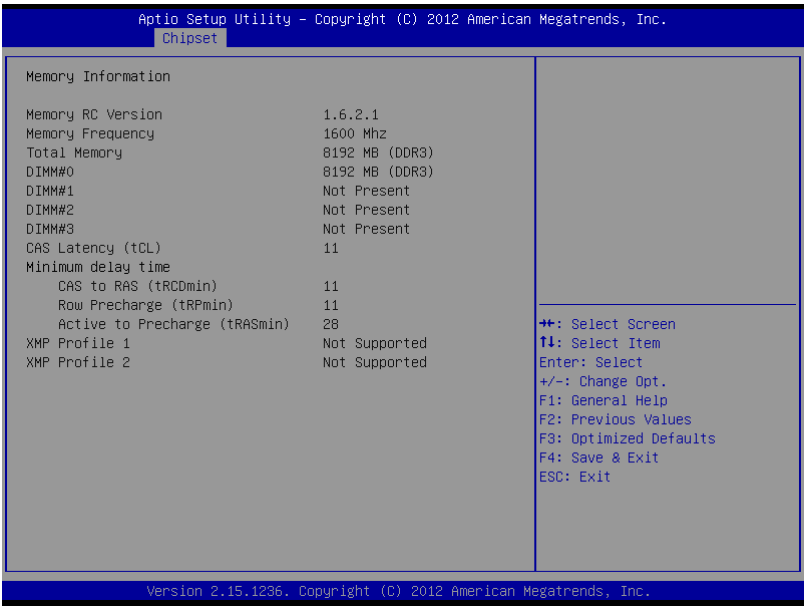
System Agent (SA) Configuration



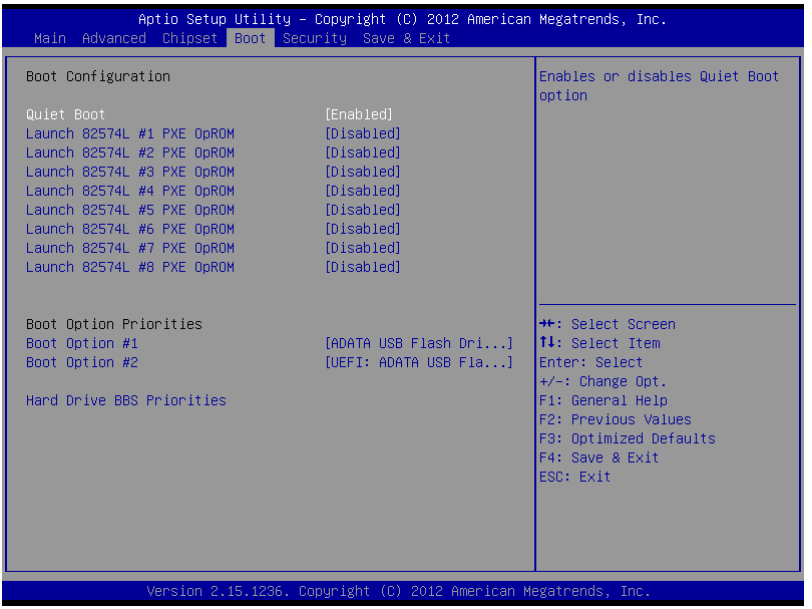
Options summary :

VT-d	Disabled
	Enabled
Check to enable VT-d function on MCH.	

Memory Configuration


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Chipset
Memory Information
Memory RC Version 1.6.2.1
Memory Frequency 1600 Mhz
Total Memory 8192 MB (DDR3)
DIMM#0 8192 MB (DDR3)
DIMM#1 Not Present
DIMM#2 Not Present
DIMM#3 Not Present
CAS Latency (tCL) 11
Minimum delay time
CAS to RAS (tRCDmin) 11
Row Precharge (tRPmin) 11
Active to Precharge (tRASmin) 28
XMP Profile 1 Not Supported
XMP Profile 2 Not Supported
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

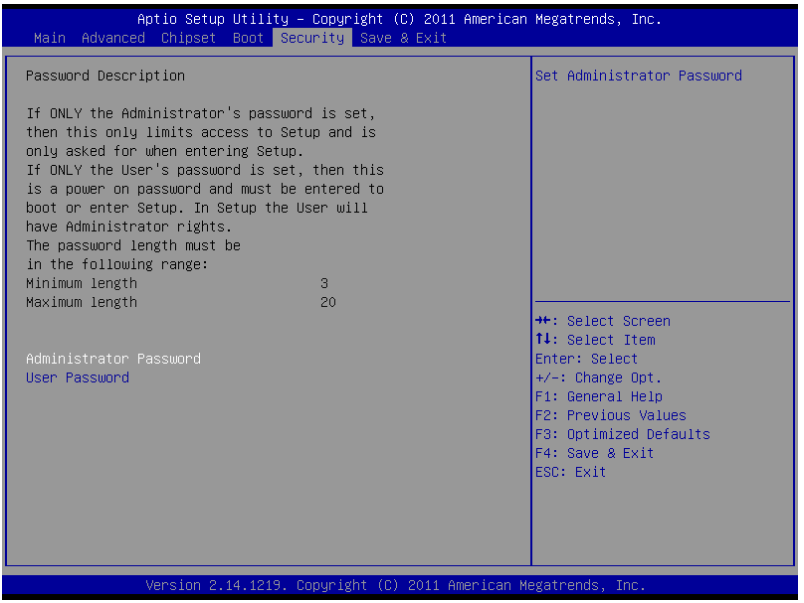
Boot



Options summary :

Quite Boot	Disabled
	Enabled
Enables or disables Quiet Boot option.	
Launch 82574L # PXE	**Disabled**
	Enabled
Enable or Disable Legacy Boot Option for 82574 # .	

Security



Change User/Supervisor Password

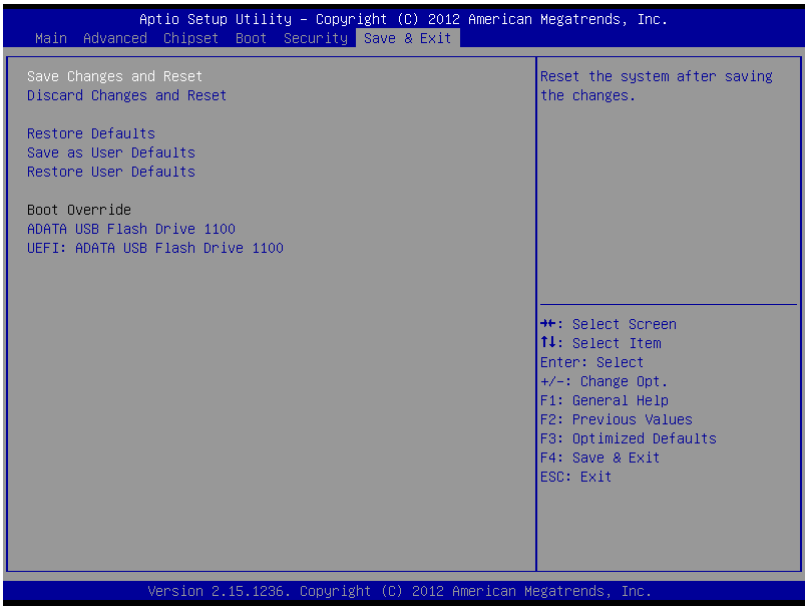
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

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: Exit



Chapter

4

Driver Installation

The FWS-7810 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 USB3.0 Driver

Step 4 – Install LAN Driver

Step 5 – Install ME Driver

Please read instructions below for further detailed installations.

4.1 Installation

Insert the FWS-7810 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 ***Step1 - Chipset*** folder and double click on the ***infinst_autol.exe*** file
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 ***Step2 - VGA*** folder and double click on the ***Setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 3 – Install USB3.0 Driver

1. Click on the ***Step3 - USB3.0*** folder and double click on the ***Setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 4 – Install LAN Driver

1. Click on the ***Step4 - LAN*** folder and double click on the ***Autorun.exe*** file

2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 5 – Install ME Driver

1. Click on the ***Step5 - ME*** folder and double click on the ***Setup.exe*** file
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)	**4**(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 procudure 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();
}
**********************************************************************************
```

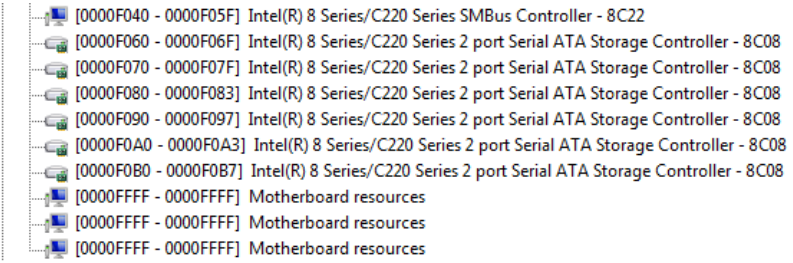
Appendix

B

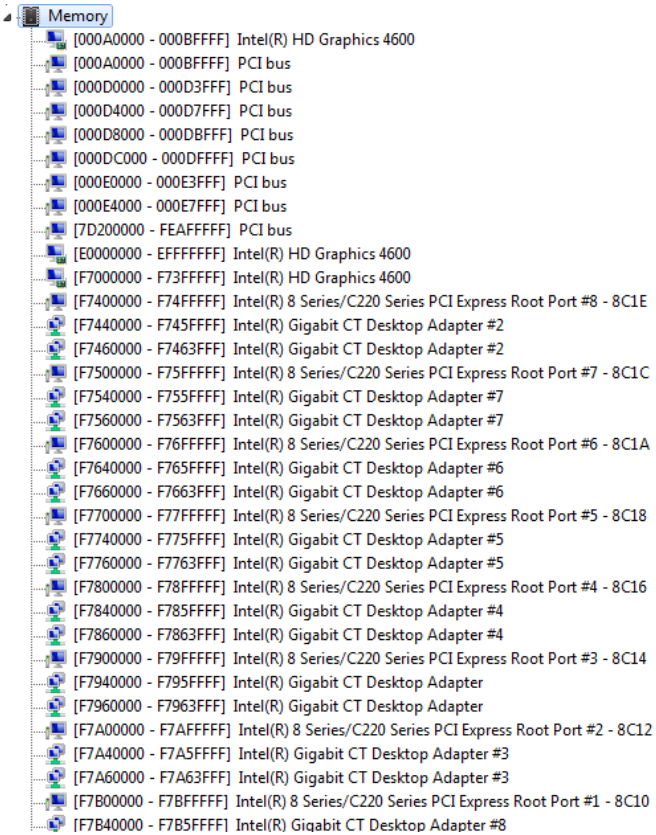
I/O Information

B.1 I/O Address Map

[00000090 - 0000009F] Motherboard resources
[00000092 - 00000092] Motherboard resources
[00000093 - 0000009F] Direct memory access controller
[000000A0 - 000000A1] Programmable interrupt controller
[000000A2 - 000000BF] Motherboard resources
[000000A4 - 000000A5] Programmable interrupt controller
[000000A8 - 000000A9] Programmable interrupt controller
[000000AC - 000000AD] Programmable interrupt controller
[000000B0 - 000000B1] Programmable interrupt controller
[000000B2 - 000000B3] Motherboard resources
[000000B4 - 000000B5] Programmable interrupt controller
[000000B8 - 000000B9] Programmable interrupt controller
[000000BC - 000000BD] Programmable interrupt controller
[000000C0 - 000000DF] Direct memory access controller
[000000E0 - 000000EF] Motherboard resources
[000000F0 - 000000F0] Numeric data processor
[000002F8 - 000002FF] Communications Port (COM2)
[00000378 - 0000037F] Printer Port (LPT1)
[000003B0 - 000003BB] Intel(R) HD Graphics 4600
[000003C0 - 000003DF] Intel(R) HD Graphics 4600
[000003F8 - 000003FF] Communications Port (COM1)
[000004D0 - 000004D1] Motherboard resources
[000004D0 - 000004D1] Programmable interrupt controller
[00000680 - 0000069F] Motherboard resources
[00000A00 - 00000A1F] Motherboard resources
[00000A20 - 00000A2F] Motherboard resources
[00000A30 - 00000A3F] Motherboard resources
[00000D00 - 0000FFFF] PCI bus
[0000164E - 0000164F] Motherboard resources
[00001800 - 000018FE] Motherboard resources
[00001854 - 00001857] Motherboard resources
[00001C00 - 00001CFE] Motherboard resources
[00001D00 - 00001DFE] Motherboard resources
[00001E00 - 00001EFE] Motherboard resources
[00001F00 - 00001FFE] Motherboard resources
[00007000 - 00007FFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #8 - 8C1E
[00008000 - 00008FFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #7 - 8C1C
[00009000 - 00009FFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #6 - 8C1A
[0000A000 - 0000AFFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #5 - 8C18
[0000B000 - 0000BFFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #4 - 8C16
[0000C000 - 0000CFFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #3 - 8C14
[0000D000 - 0000DFFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #2 - 8C12
[0000E000 - 0000EFFF] Intel(R) 8 Series/C220 Series PCI Express Root Port #1 - 8C10
[0000F000 - 0000F03F] Intel(R) HD Graphics 4600



B.2 Memory Address Map



- [F7B60000 - F7B63FFF] Intel(R) Gigabit CT Desktop Adapter #8
- [F7C00000 - F7C0FFFF] Intel(R) USB 3.0 eXtensible Host Controller
- [F7C10000 - F7C13FFF] High Definition Audio Controller
- [F7C15000 - F7C150FF] Intel(R) 8 Series/C220 Series SMBus Controller - 8C22
- [F7C16000 - F7C163FF] Intel(R) 8 Series/C220 Series USB Enhanced Host Controller #1 - 8C26
- [F7C17000 - F7C173FF] Intel(R) 8 Series/C220 Series USB Enhanced Host Controller #2 - 8C2D
- [F7C19000 - F7C1900F] Intel(R) Management Engine Interface
- [F7FDF000 - F7FDFFFF] Motherboard resources
- [F7FE0000 - F7FEFFFF] Motherboard resources
- [F8000000 - FBFFFFFF] Motherboard resources
- [FED00000 - FED003FF] High precision event timer
- [FED10000 - FED17FFF] Motherboard resources
- [FED18000 - FED18FFF] Motherboard resources
- [FED19000 - FED19FFF] Motherboard resources
- [FED1C000 - FED1FFFF] Motherboard resources
- [FED20000 - FED3FFFF] Motherboard resources
- [FED40000 - FED44FFF] System board
- [FED45000 - FED8FFFF] Motherboard resources
- [FED90000 - FED93FFF] Motherboard resources
- [FEE00000 - FEEFFFFF] Motherboard resources
- [FF000000 - FFFFFFFF] Intel(R) 82802 Firmware Hub Device
- [FF000000 - FFFFFFFF] Motherboard resources

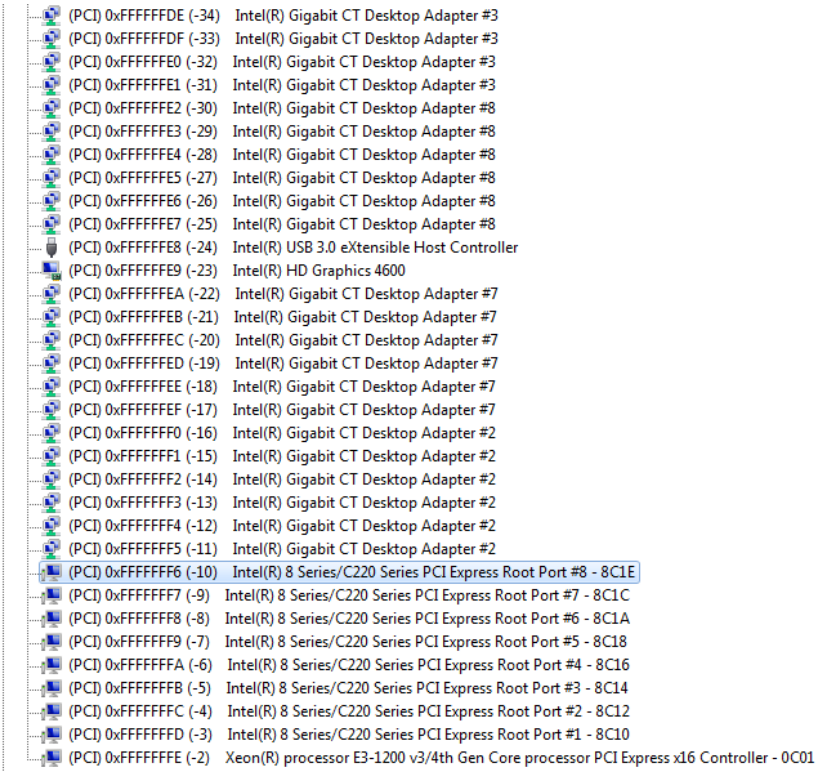
B.3 IRQ Mapping Chart

- Interrupt request (IRQ)
  - (ISA) 0x00000000 (00) System timer
  - (ISA) 0x00000001 (01) Standard PS/2 Keyboard
  - (ISA) 0x00000003 (03) Communications Port (COM2)
  - (ISA) 0x00000004 (04) Communications Port (COM1)
  - (ISA) 0x00000008 (08) System CMOS/real time clock
  - (ISA) 0x0000000C (12) Microsoft PS/2 Mouse
  - (ISA) 0x0000000D (13) Numeric data processor
  - (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

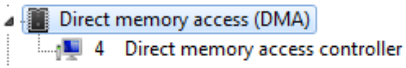
(ISA) 0x0000005D (93) Microsoft ACPI-Compliant System
(ISA) 0x0000005E (94) Microsoft ACPI-Compliant System
(ISA) 0x0000005F (95) Microsoft ACPI-Compliant System
(ISA) 0x00000060 (96) Microsoft ACPI-Compliant System
(ISA) 0x00000061 (97) Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98) Microsoft 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) 0x0000000A (10) Intel(R) 8 Series/C220 Series SMBus Controller - 8C22
(PCI) 0x00000010 (16) High Definition Audio Controller
(PCI) 0x00000010 (16) Intel(R) 8 Series/C220 Series USB Enhanced Host Controller #2 - 8C2D
(PCI) 0x00000010 (16) Intel(R) Management Engine Interface

(PCI) 0x00000013 (19) Intel(R) 8 Series/C220 Series 2 port Serial ATA Storage Controller - 8C08
(PCI) 0x00000017 (23) Intel(R) 8 Series/C220 Series USB Enhanced Host Controller #1 - 8C26
(PCI) 0xFFFFFFC4 (-60) Intel(R) Gigabit CT Desktop Adapter #6
(PCI) 0xFFFFFFC5 (-59) Intel(R) Gigabit CT Desktop Adapter #6
(PCI) 0xFFFFFFC6 (-58) Intel(R) Gigabit CT Desktop Adapter #6
(PCI) 0xFFFFFFC7 (-57) Intel(R) Gigabit CT Desktop Adapter #6
(PCI) 0xFFFFFFC8 (-56) Intel(R) Gigabit CT Desktop Adapter #6
(PCI) 0xFFFFFFC9 (-55) Intel(R) Gigabit CT Desktop Adapter #6
(PCI) 0xFFFFFFCA (-54) Intel(R) Gigabit CT Desktop Adapter #5
(PCI) 0xFFFFFFCB (-53) Intel(R) Gigabit CT Desktop Adapter #5
(PCI) 0xFFFFFFCC (-52) Intel(R) Gigabit CT Desktop Adapter #5
(PCI) 0xFFFFFFCD (-51) Intel(R) Gigabit CT Desktop Adapter #5
(PCI) 0xFFFFFFCE (-50) Intel(R) Gigabit CT Desktop Adapter #5
(PCI) 0xFFFFFFCF (-49) Intel(R) Gigabit CT Desktop Adapter #5
(PCI) 0xFFFFFFD0 (-48) Intel(R) Gigabit CT Desktop Adapter #4
(PCI) 0xFFFFFFD1 (-47) Intel(R) Gigabit CT Desktop Adapter #4
(PCI) 0xFFFFFFD2 (-46) Intel(R) Gigabit CT Desktop Adapter #4
(PCI) 0xFFFFFFD3 (-45) Intel(R) Gigabit CT Desktop Adapter #4
(PCI) 0xFFFFFFD4 (-44) Intel(R) Gigabit CT Desktop Adapter #4
(PCI) 0xFFFFFFD5 (-43) Intel(R) Gigabit CT Desktop Adapter #4
(PCI) 0xFFFFFFD6 (-42) Intel(R) Gigabit CT Desktop Adapter
(PCI) 0xFFFFFFD7 (-41) Intel(R) Gigabit CT Desktop Adapter
(PCI) 0xFFFFFFD8 (-40) Intel(R) Gigabit CT Desktop Adapter
(PCI) 0xFFFFFFD9 (-39) Intel(R) Gigabit CT Desktop Adapter
(PCI) 0xFFFFFFDA (-38) Intel(R) Gigabit CT Desktop Adapter
(PCI) 0xFFFFFFDB (-37) Intel(R) Gigabit CT Desktop Adapter
(PCI) 0xFFFFFFDC (-36) Intel(R) Gigabit CT Desktop Adapter #3
(PCI) 0xFFFFFFDD (-35) Intel(R) Gigabit CT Desktop Adapter #3
(PCI) 0xFFFFFFDE (-34) Intel(R) Gigabit CT Desktop Adapter #3
(PCI) 0xFFFFFFDF (-33) Intel(R) Gigabit CT Desktop Adapter #3
(PCI) 0xFFFFFFE0 (-32) Intel(R) Gigabit CT Desktop Adapter #3
(PCI) 0xFFFFFFE1 (-31) Intel(R) Gigabit CT Desktop Adapter #3
(PCI) 0xFFFFFFE2 (-30) Intel(R) Gigabit CT Desktop Adapter #8
(PCI) 0xFFFFFFE3 (-29) Intel(R) Gigabit CT Desktop Adapter #8
(PCI) 0xFFFFFFE4 (-28) Intel(R) Gigabit CT Desktop Adapter #8
(PCI) 0xFFFFFFE5 (-27) Intel(R) Gigabit CT Desktop Adapter #8
(PCI) 0xFFFFFFE6 (-26) Intel(R) Gigabit CT Desktop Adapter #8
(PCI) 0xFFFFFFE7 (-25) Intel(R) Gigabit CT Desktop Adapter #8
(PCI) 0xFFFFFFE8 (-24) Intel(R) USB 3.0 eXtensible Host Controller
(PCI) 0xFFFFFFE9 (-23) Intel(R) HD Graphics 4600
(PCI) 0xFFFFFFEA (-22) Intel(R) Gigabit CT Desktop Adapter #7
(PCI) 0xFFFFFFEB (-21) Intel(R) Gigabit CT Desktop Adapter #7
(PCI) 0xFFFFFFEC (-20) Intel(R) Gigabit CT Desktop Adapter #7
(PCI) 0xFFFFFFED (-19) Intel(R) Gigabit CT Desktop Adapter #7
(PCI) 0xFFFFFFEE (-18) Intel(R) Gigabit CT Desktop Adapter #7
(PCI) 0xFFFFFFEF (-17) Intel(R) Gigabit CT Desktop Adapter #7
(PCI) 0xFFFFFFF0 (-16) Intel(R) Gigabit CT Desktop Adapter #2
(PCI) 0xFFFFFFF1 (-15) Intel(R) Gigabit CT Desktop Adapter #2
(PCI) 0xFFFFFFF2 (-14) Intel(R) Gigabit CT Desktop Adapter #2
(PCI) 0xFFFFFFF3 (-13) Intel(R) Gigabit CT Desktop Adapter #2
(PCI) 0xFFFFFFF4 (-12) Intel(R) Gigabit CT Desktop Adapter #2
(PCI) 0xFFFFFFF5 (-11) Intel(R) Gigabit CT Desktop Adapter #2
(PCI) 0xFFFFFFF6 (-10) Intel(R) 8 Series/C220 Series PCI Express Root Port #8 - 8C1E



B.4 DMA Channel Assignments



Appendix

C

Standard LAN Bypass Platform Setting

C.1 Status LED

Introduction

FWS-7810 provides a LED indicator which can change the LED status by AAEON SDK. User is able to program the LED status to express different status.

Status LED Configuration

Table 1 : Turth Table of Status LED			
STA_LED2	**STA_LED1**	**STA_LED0**	**LED States**
0	0	0	LED Off
0	0	1	Red
0	1	0	Red Blinking (Slowly)
0	1	1	Red Blinking (Quickly)
1	0	0	Reserved
1	0	1	Green Blinking (Slowly)
1	1	0	Green Blinking (Quickly)
1	1	1	Green

Table 2 : Status LED relative register mapping table				
	Attribute	**Register(I/O)**	**BitNum**	**Value**
STA_LED2	R/W	0xA02(Note1)	5(Note4)	(Note7)
STA_LED1	R/W	0xA02(Note2)	4(Note5)	(Note7)
STA_LED0	R/W	0xA01(Note3)	2(Note5)	(Note7)

Sample Code

```
*********************************************************************************

#define Word LED2Add //This parameter is represented from Note1

#define Word LED1Add //This parameter is represented from Note2

#define Word LED0Add //This parameter is represented from Note3

#define Byte LED2Bit //This parameter is represented from Note4

#define Byte LED1Bit //This parameter is represented from Note5

#define Byte LED0Bit //This parameter is represented from Note6

#define Byte UnitVal //This parameter is represented from Note7

*********************************************************************************

VOID SET_Value (Word IoAddr, Byte BitNum,Byte Value){

BYTE TmpValue;

TmpValue = inportb (IoAddr);

TmpValue &= ~(1 << BitNum);

TmpValue |= (Value << BitNum);

outport(IoAddr, TmpValue);

}

*********************************************************************************

VOID Main(){

SET_Value (LED2Add, LED2Bit, UnitVal); //Setting STA_LED2

SET_Value (LED1Add, LED1Bit, UnitVal); //Setting STA_LED1

SET_Value (LED0Add, LED0Bit, UnitVal); //Setting STA_LED0

}

*********************************************************************************
```

C.2 LAN Bypass

Introduction

FWS-7810 provides LAN Bypass kit and allow uninterrupted network traffic even if a single in-line appliance is shut down or hangs. Customer can upgrade to 2 or 4 LAN Bypass kit with options.

LAN Bypass Configuration

Table 1 : ID Select table of LAN kit			
LAN_ID2	**LAN_ID1**	**LAN_ID0**	**LAN kit selected**
0	0	0	LAN Kit 1 Selected
0	0	1	LAN Kit 2 Selected
0	1	0	LAN Kit 3 Selected
0	1	1	LAN Kit 4 Selected
1	0	0	LAN Kit 5 Selected
1	0	1	LAN Kit 6 Selected
1	1	0	LAN Kit 7 Selected
1	1	1	LAN Kit 8 Selected

Table 2 : LAN Bypass relative register table	
Function	**Description**
LAN_ID2	Use for selecting which LAN kit will be configured, refert to Table 1 of ID Select table of LAN kit. They should be set before ACT_EN.
LAN_ID1	
LAN_ID0	

PWR_ON	Use for configuring LAN Bypass function behavior to LAN kit, when system power on. 1: Bypass 0: Pass Through
PWR_OFF	Use for configuring LAN Bypass function behavior to LAN kit, when system power off. 1: Bypass 0: Pass Through
WDT_EN	Use for configuring WDT function behavior to LAN kit, when WDT triggered. 0: Normal WDT reset (Default) 1: Force Bypass
ACT_EN	Use for activating programming of LAN kit. It is edge triggering (falling edge 1 to 0) and should be set to high(1) as its normal state.

Table 3 : LAN Bypass relative register mapping table

	Attribute	Register(I/O)	BitNum	Value
LAN_ID2	R/W	0xA05(Note1)	7(Note8)	(Note15)
LAN_ID1	R/W	0xA05(Note2)	6(Note9)	(Note15)
LAN_ID0	R/W	0xA00(Note3)	6(Note10)	(Note15)
PWR_ON	R/W	0xA00(Note4)	4(Note11)	(Note15)
PWR_OFF	R/W	0xA00(Note5)	2(Note12)	(Note15)
WDT_EN	R/W	0xA00(Note6)	1(Note13)	(Note15)

ACT_EN	R/W	0xA00(Note7)	5(Note14)	(Note15)

****

Sample Code

****

#define Word LAN_ID2 //This parameter is represented from **Note1**

#define Word LAN_ID1 //This parameter is represented from **Note2**

#define Word LAN_ID0 //This parameter is represented from **Note3**

#define Byte PWR_ON //This parameter is represented from **Note4**

#define Byte PWR_OFF //This parameter is represented from **Note5**

#define Byte WDT_EN //This parameter is represented from **Note6**

#define Byte ACT_EN //This parameter is represented from **Note7**

#define Byte LANID2 //This parameter is represented from **Note8**

#define Byte LANID1 //This parameter is represented from **Note9**

#define Byte LANID0 //This parameter is represented from **Note10**

#define Byte PWR_ON_R //This parameter is represented from **Note11**

#define Byte PWR_OFF_R //This parameter is represented from **Note12**

#define Byte WDT_EN_R //This parameter is represented from **Note13**

#define Byte ACT_EN_R //This parameter is represented from **Note14**

#define Byte UnitVal //This parameter is represented from **Note15**

****

VOID Bypass_Active **(Word IoAddr, Byte BitNum)**{ BYTE TmpValue;

TmpValue = inportb (IoAddr);

TmpValue &= ~(1 << BitNum);

outport(IoAddr, TmpValue);

```
delay100ms();
TmpValue |= (Value << BitNum);
outport(IoAddr, TmpValue);
}
*****************************************************************************
*****************************************************************************
VOID SET_Value (Word IoAddr, Byte BitNum,Byte Value){ BYTE TmpValue;
TmpValue = inportb (IoAddr);
TmpValue &= ~(1 << BitNum);
TmpValue |= (Value << BitNum);
outport(IoAddr, TmpValue);
}
*****************************************************************************
VOID Main(){
//Select LAN kit refer to table 1
SET_Value (LAN_ID2, LANID2, UnitVal);
SET_Value (LAN_ID1, LANID1, UnitVal);
SET_Value (LAN_ID0, LANID1, UnitVal);
//Set the PWR_ON parameter
SET_Value (PWR_ON, PWR_ON_R, UnitVal);
//Set the PWR_OFF parameter
SET_Value (PWR_OFF, PWR_OFF_R, UnitVal);
//Set the WDT_EN parameter
SET_Value (PWR_OFF, PWR_OFF_R, UnitVal);
//Active LAN Bypass setting
```

```
Bypass_Active (ACT_EN, ACT_EN_R);

}

*******************************************************************************
```

C.3 LCD Module

Introduction

FWS-7810 provides a LCM (LCD Module) to display information via standard parallel port. User is able to program the LCM to express different status.

Sample Code

```
void Display_Clear()
{
outportb(0x378, 0x01);
wait();
outportb(0x37A, 0xC8);
wait();
outportb(0x37A, 0xCA);
wait();
}
void Return_Home()
{
outportb(0x378, 0x02);
wait();
outportb(0x37A, 0xC8);
wait();
outportb(0x37A, 0xCA);
wait();
```

```
}
void Entry_mode_set()
{
outportb(0x378, 0x06);
wait();
outportb(0x37A, 0xC8);
wait();
outportb(0x37A, 0xCA);
wait();
}
void Display_Off()
{
outportb(0x378, 0x08);
wait();
outportb(0x37A, 0xC8);
wait();
outportb(0x37A, 0xCA);
wait();
}
void Display_On_Cursor_Off()
{
outportb(0x378, 0x0C);
wait();
outportb(0x37A, 0xC8);
```

```
wait();
outportb(0x37A, 0xCA);
wait();
}
void Display_On_Cursor_On()
{
outportb(0x378, 0x0E);
wait();
outportb(0x37A, 0xC8);
wait();
outportb(0x37A, 0xCA);
wait();
}
```

C.4 Software Reset button (General Propose Input)

Introduction

FWS-7810 provides a general propose input button which status can get by AAEON SDK.

Soft Reset Button Configuration

Table 2 : LAN Bypass relative register table	
Function	**Description**
BTN_STS	Reading this register returns the pin level status which is normal high active low. 0: Pin Level States Low. 1: Pin Level States High.

Table 1 : Soft Reset Button register mapping table				
	Attribute	**Register(I/O)**	**BitNum**	**Value**
BTN_STS	R	0xA05(Note1)	4(Note2)	(Note3)

Sample Code

```
**********************************************************************************
#define Word BTN_STS //This parameter is represented from Note1
#define Byte BTN_STS_R //This parameter is represented from Note2
**********************************************************************************
Byte GET_Value (Word IoAddr, Byte BitNum,Byte Value){ BYTE TmpValue;
```

```
TmpValue = inportb (IoAddr);
        return (TmpValue & (1 << BitNum))
}
*****************************************************************************
VOID Main(){
Byte RstBtn;
RstBtn = GET_Value (BTN_STS, BTN_STS_R); // Active Low
}
*****************************************************************************
```