AXIOMTEK

OPS882-HM Series

Intel Open Pluggable Specification Box

User's Manual

RoHS

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Safety Approvals

CE Marking

- FCC Class A

◆ FCC Compliance

This equipment has been tested in compliance with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are meant to provide reasonable protection against harmful interference in a residential installation. If not installed and used in accordance with proper instructions, this equipment might generate or radiate radio frequency energy and cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

1. Increase the separation between the equipment and receiver.
2. . Connect the equipment to another outlet of a circuit that doesn't connect with the receiver.
3. Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with the emission limits.

Safety Precautions

Before getting started, please read the following important safety precautions.

1. The OPS882-HM series does not come equipped with an operating system. An operating system must be loaded first before installing any software into the computer.
2. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
3. Disconnect the power cord from the OPS882-HM series before any installation. Be sure both the system and external devices are turned OFF. A sudden surge of power could ruin sensitive components that the OPS882-HM series must be properly grounded.
4. Make sure it is the correct voltage of the power source before connecting the equipment to the power outlet.
5. The brightness of the flat panel display will be getting weaker as a result of frequent usage. However, the operating period varies depending on the application environment.
6. The flat panel display is not susceptible to shock or vibration. When assembling the OPS882-HM series, make sure it is securely installed.
7. Do not leave this equipment in an uncontrolled environment where the storage temperature is below 0℃ or above 45℃. It may damage the equipment.
8. External equipment intended for connection to signal input/out or other connectors shall comply with relevant UL/IEC standard.
9. Do not open the back cover of the system. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
10. Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
11. When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

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Table of Contents

Disclaimers ii

Safety Approvals iii

Safety Precautions iv

CHAPTER 1 INTRODUCTION 1

1.1 General Description 1

1.2 System Specifications 2

1.2.1 Main CPU Board 2

1.2.2 I/O System 2

1.3 Mechanical Assembly 4

1.3.1 Dimensions 4

1.3.2 I/O outlet 5

1.3.3 Mechanical Specifications 6

1.3.4 Reference Design 11

1.4 Package List 12

CHAPTER 2 HARDWARE INSTALLATION 13

2.1 Storage, DRAM,Wireless & 3G module Installation 13

2.2 Pluggble Module Method 26

CHAPTER 3 CONNECTORS 27

3.1 Connectors 27

3.1.1 JAE TX25 Connector (CN1) 29

3.1.2 SATA 4 & SATA 4 Power Connector (SATA1) 30

3.1.3 Mini Card Slot (Half Size) (SCN2) 30

3.1.4 Sim Slot (CN4) 32

3.1.5 m-SATA Slot& Mini Card Slot (SCN4) 32

3.1.6 Power Button& Reset Button (CN7) 33
3.1.7 HDMI Connector (CN6) 33
3.1.8 CPU FAN (CN3) 33
3.1.9 Audio Mic-In Connector(SCN5) 34
3.1.10 Audio Line-Out Connector (SCN6) 34
3.1.11 Battery 2 Pin (BAT1) 34
3.1.12 ATX Auto Power ON/ Clear CMOS/PCIE & mSATA Switch/SLP_S3_Docking (SSW1-Pin8) 34
3.1.13 RJ45 (I210IT) (LAN1) 35
3.1.14 USB Port 0/1 /3(SUSB1、SUSB2、SUSB3) 36
3.1.15 COM Port (COM2) 36
3.1.16 HDD Activity LED 36
3.1.17 Power LED 36
CHAPTER 4 DRIVERS INSTALLATION 37
4.1 System 37
`CHAPTER 5 AMI BIOS SETUP UTILITY 39
5.1 Starting 39
5.2 Navigation Keys 39
5.3 Main Menu 40
5.4 Advanced Menu 41
5.5 Chipset Menu 51
5.6 Boot Menu 57
5.7 Security Menu 58
5.8 Save & Exit Menu 59
APPENDIX A REFERENCE DOCUMENTS 61
APPENDIX B WATCHDOG TIMER 63

CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the OPS882-HM series. Chapter 1 includes the following sections:

- **General Description**
- **Specification**
- **Michanical Assembly**
- **Package List**

1.1 General Description

Intel Open Pluggable Specification (OPS) Compliance

OPS882-HM series is based on the 4th generation Intel® Core™ processor on board with Mobile Intel® 8 Series Express Chipset platform and also future products. The Pluggable Module is targeted to provide an interchangeable solution to the digital signage media players with compatible connector. This document provides the module form factor, connector specification, reference thermal solution, and boundary conditions in order to ensure the functionally of the module in all compatible display panel system.

OPS882-HM series meets Intel Open Pluggable Specification for design and development, simplifying system upgrade maintenance for manufacturers and developers that supports not only Intel® 4th Generation Core i family , which is high flexible and user-friendly digital signage applications.

Easy maintenance

OPS882-HM series offers a best solution for digital signage market. Compliant with Intel OPS architecture, digital signage players are capable of deploying interchangeable systems faster and easing upgrading/maintenance, while lowering costs for development and implementation. Additionally, having the ability to simply slot-in and out the unique pluggable engine box makes daily hassle easier and faster for users.

OPS882-HM series has pluggable engine box design; you can change storage, DRAM and update configurations more easily

1.2 System Specifications

1.2.1 Main CPU Board

- **CPU**
  - The OPS882-HM series has four reference solutions as BGA type with 4th generation Intel® Core™ i5 Processor onboard
- **System Chipset**
  - Intel® HM86 PCH
- **BIOS**
  - AMI® BIOS
- **System Memory**
  - Two socket 204-pin DDR3L SODIMM 1600 system memory up to 16GB

Caution: please note the system memory supports DDR3L type (1.35V)

- **Wireless Module (Optional)**
  - Optional IEEE802.11 b/g/n, Bluetooth 2.0

1.2.2 I/O System

- **Standard I/O**
  - One HDMI
  - Three USB ports 3.0
  - One RS-232
  - One Power on /Off button
  - One Reset button
- **Ethernet**
  - 10/100/1000Mbps Ethernet (with Intel® I210, supports AVB (Audio Video Bridging) feature
- **Audio**
  - Line-out/ Mic-in
- **Expansion**
  - One Full-size PCI Express Mini card (Optional for mSATA or SIM slot)
  - One Half-size PCI Express Mini card
- **Storage**
  - One. 2.5" SATA HDD tray
- **Net Weight**
  - 0.9Kg(1.99 lb) without cooler

- **Dimension (Main Body Size)**
  - 200 mm x 119 mm(D) x 30 mm(H)
- **Operation Temperature**
  - 0℃ to 45℃ (with airflow 1.2 m/s)

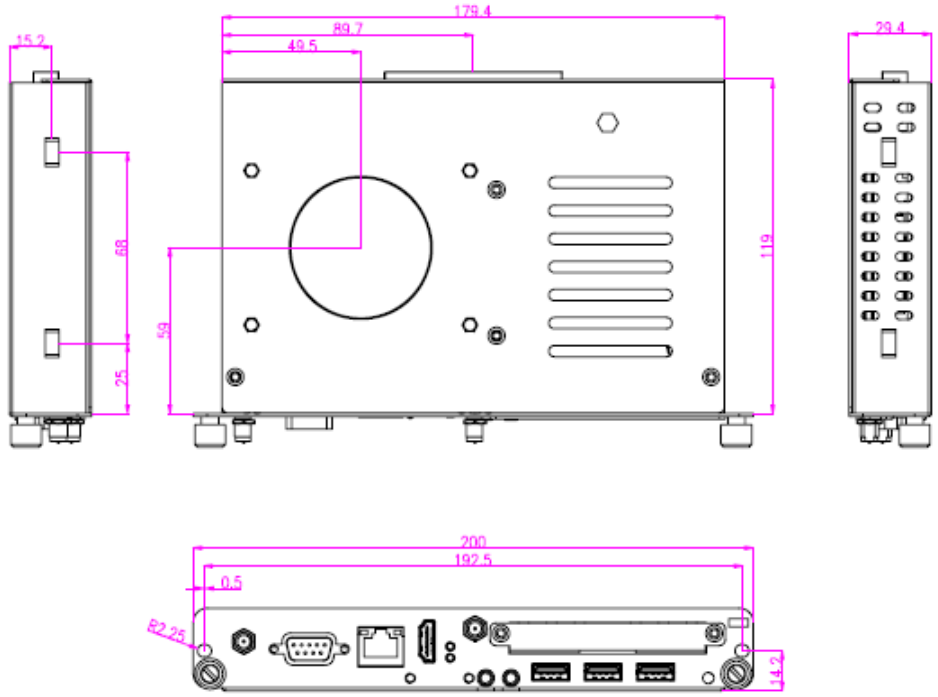
NOTE: All specifications and images are subject to change without notice.

1.3 Mechanical Assembly

1.3.1 Dimensions

This diagram shows you dimensions and outlines of the OPS882-HM series

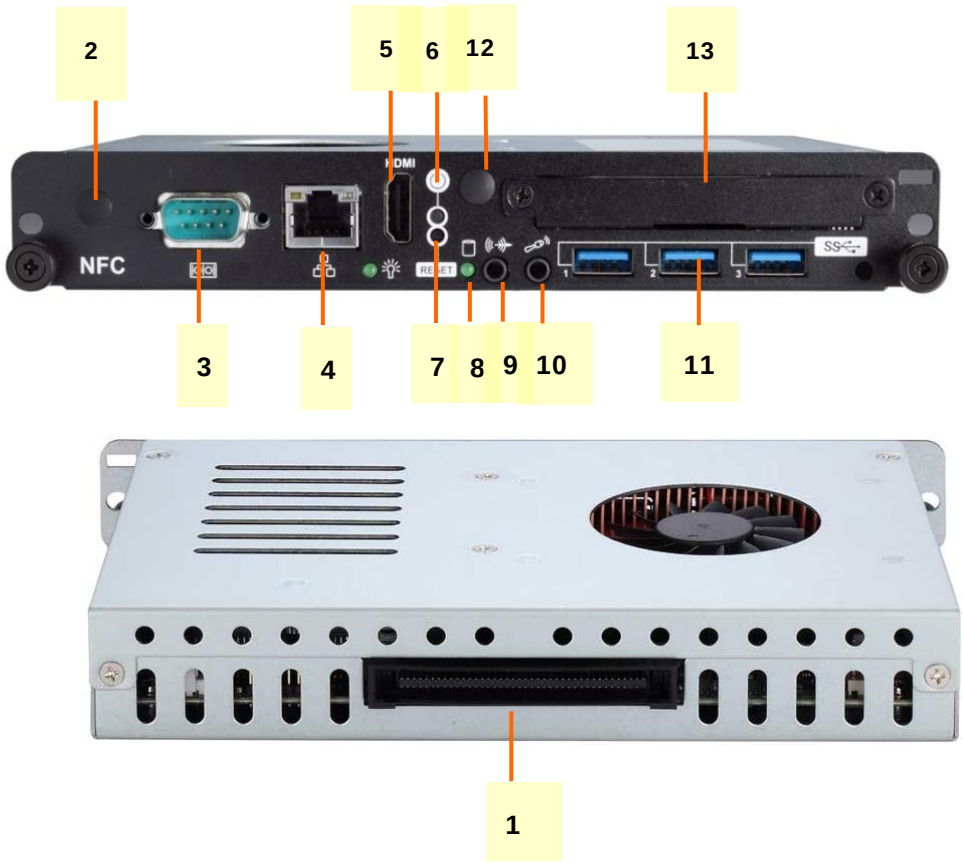
The overall dimension of the module including the mounting frame is 200mm x 119mm x 30mm and also shows the location of the front panel screw holes as well as the security lock.



While plugging the OPS module, please make sure the heat sink side of OPS module toward the outside. Axiomtek will be out of reasonability if there is any damage occurred due to it.

1.3.2 I/O outlet

The following figures show you the locations of the OPS882-HM series I/O outlets.



No.	Connector	No.	Connector
1	JAE TX-25	8	HDD indicator
2	Optional NFC	9	Audio(Line-out)
3	RS-232	10	Audio(Mic.-in)
4	Ethernet	11	3 x USB 3.0
5	HDMI Output	12	Optional Antenna
6	Power Switch	13	2.5" SATA HDD tray
7	Reset		

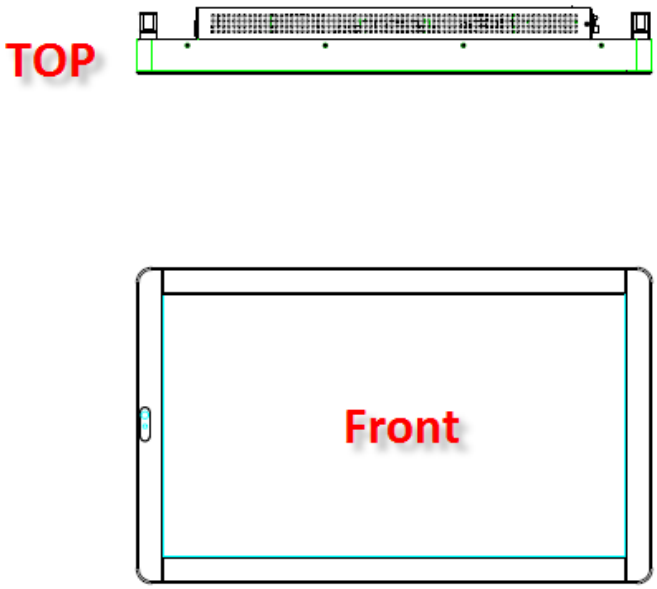
1.3.3 Mechanical Specifications

OPS882-HM series is docked in the reference display panel

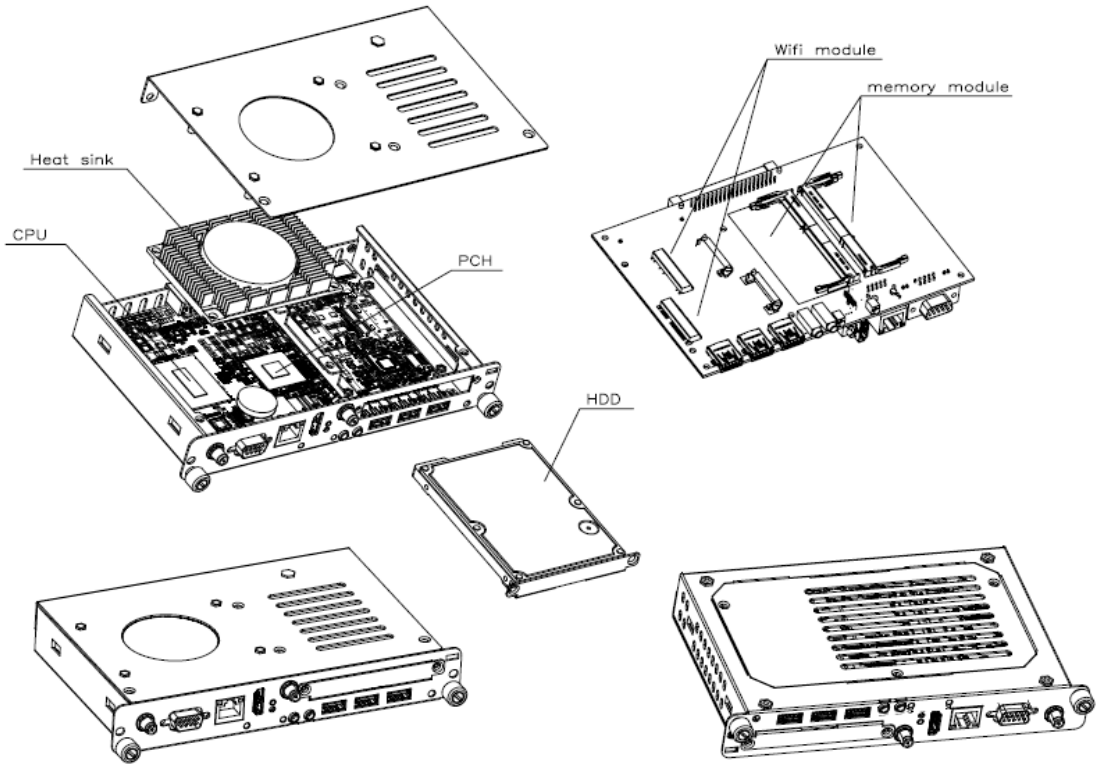
The OPS882-HM Pluggable Module docked at a display panel system.

In this reference design, the module is docked and undocked in the vertical direction.

NOTE: ***Please contact Axiomtek for available option display panel.***

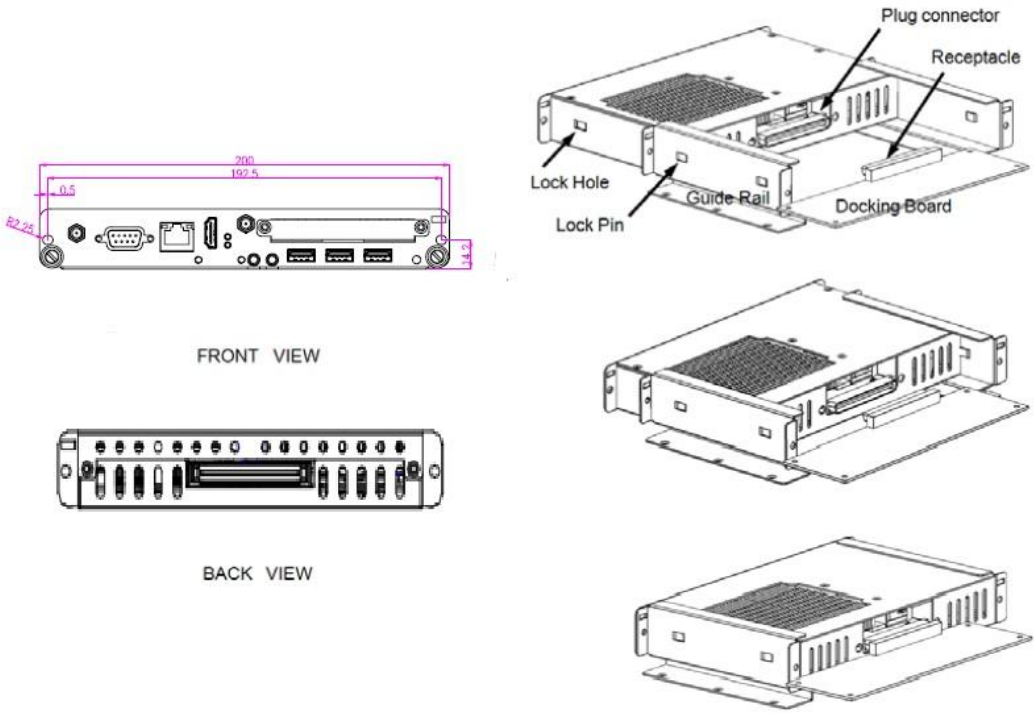


Exploded View of the Pluggable Module

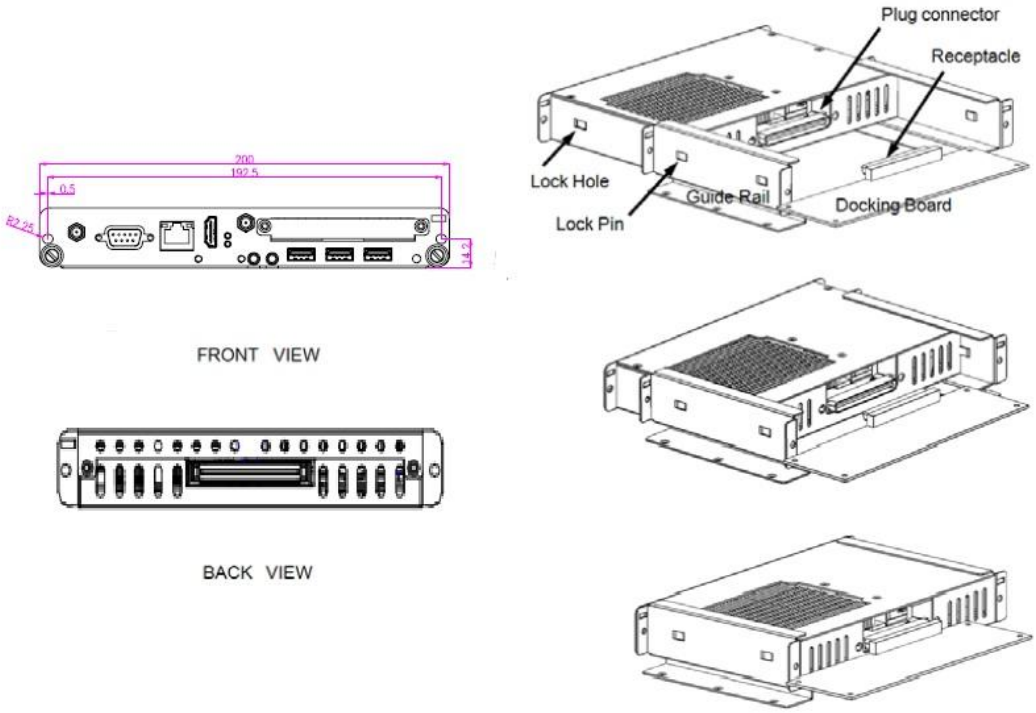


The Guide Rail Mechanism for the OPS882-HM series Module

You can use the rails alongside of OPS882-HM series Module to dock and undock the plug connector at the back of the module to connect with docking board. There are two lock pins on each side of the rail which serve as the locking mechanism to attach the lock holes on the series module.

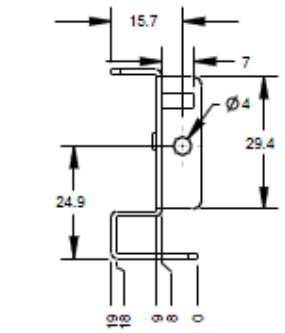


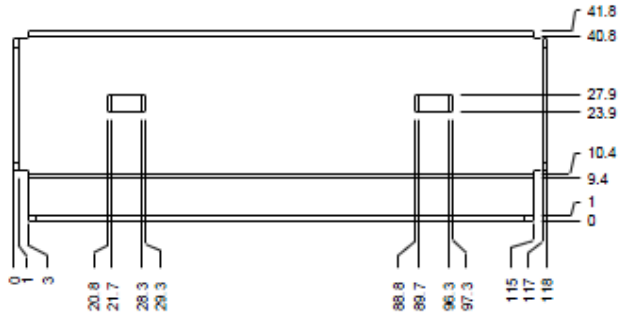
Location of Lock Hole on the Pluggable Module

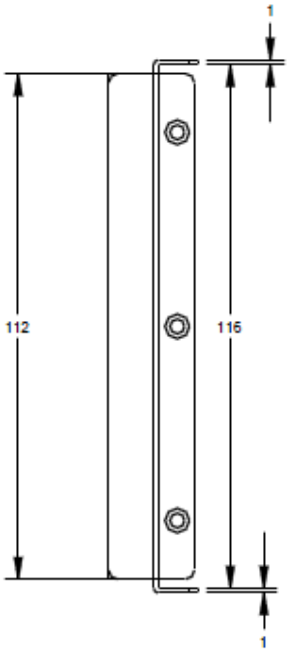


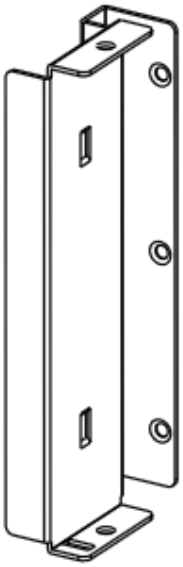
*The drawing is base on Intel Open Pluggable Specification

Dimensions of the Guide Rail



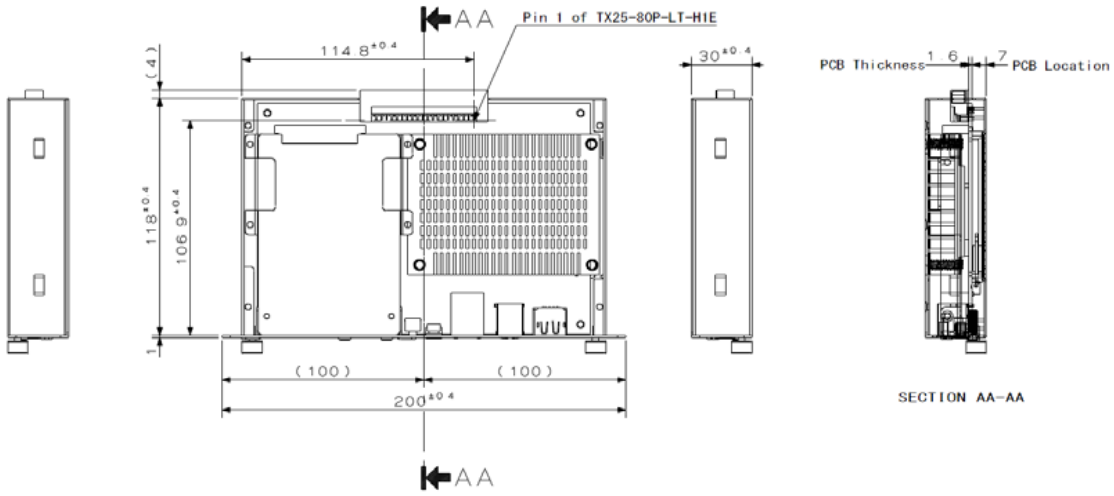






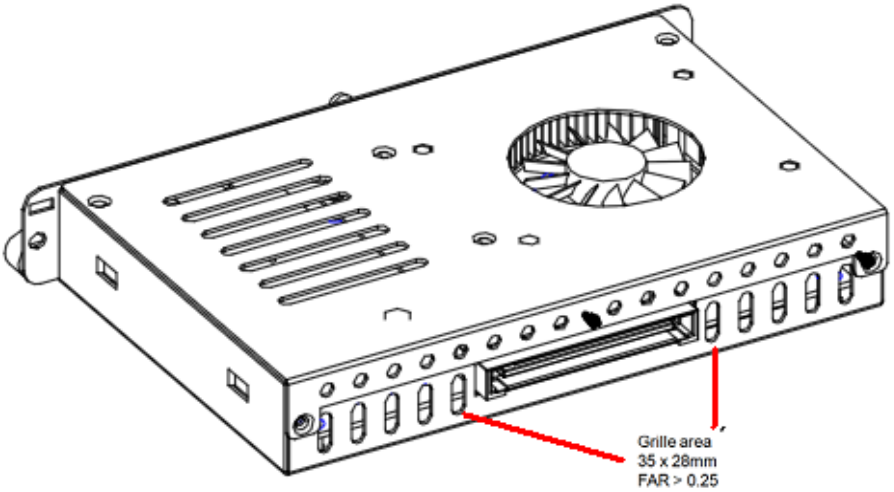
Location of JAE TX25 Plug Connector

Please refer to the following drawing for location of the JAE TX25 plug connector. Pin 1 of the connector is located at 114.8 mm from the edge of the module, and 106.9 mm from the inner side of the front panel. For mating tolerance of TX25 plug connector and TX24 receptacle connector, please refer to the JAE specification



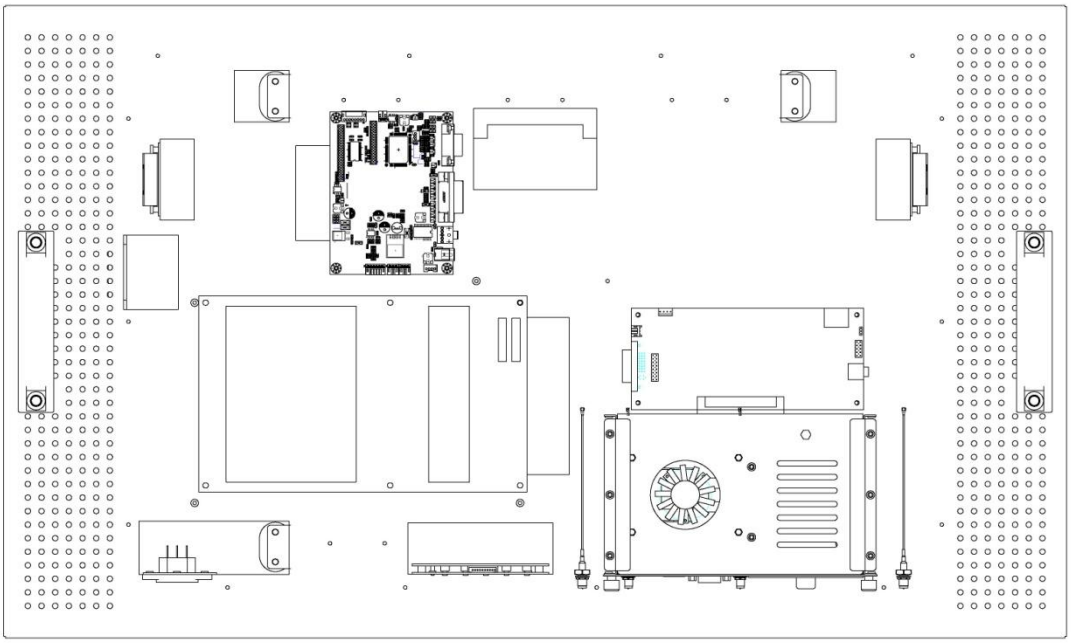
Vent Holes at the Pluggable Module Back Panel

On the OPS882-HM series module, it is recommended by Intel that some vent holes be opened at the back so that hot air can escape more easily from the module that the FAR in on both sides of the module back panel should be greater than 0.25.



1.3.4 Reference Design

Display Panel Rear View – Internal



The digital signage OPS882-HM series prototype is based on a 32" display panel with the functional blocks illustrated. It is mainly a 3-board partitioning design consisting of the pluggable module, docking board and the panel control board.

1.4 Package List

When you receive the OPS882-HM series, the bundled package should contain the following items:

- **OPS882-HM device x 1**
- **CD x 1**
- **THERMAL GREASE(Syringe 1G)**
- **M2 x 5 screw x 2**
- **M4 x 6 screw x 2**

If you cannot find the package or any items are missing, please contact Axiomtek distributors immediately.

CHAPTER 2
HARDWARE INSTALLATION

The OPS882-HM series is convenient for your various hardware configurations, such as Storage, Memory Module.

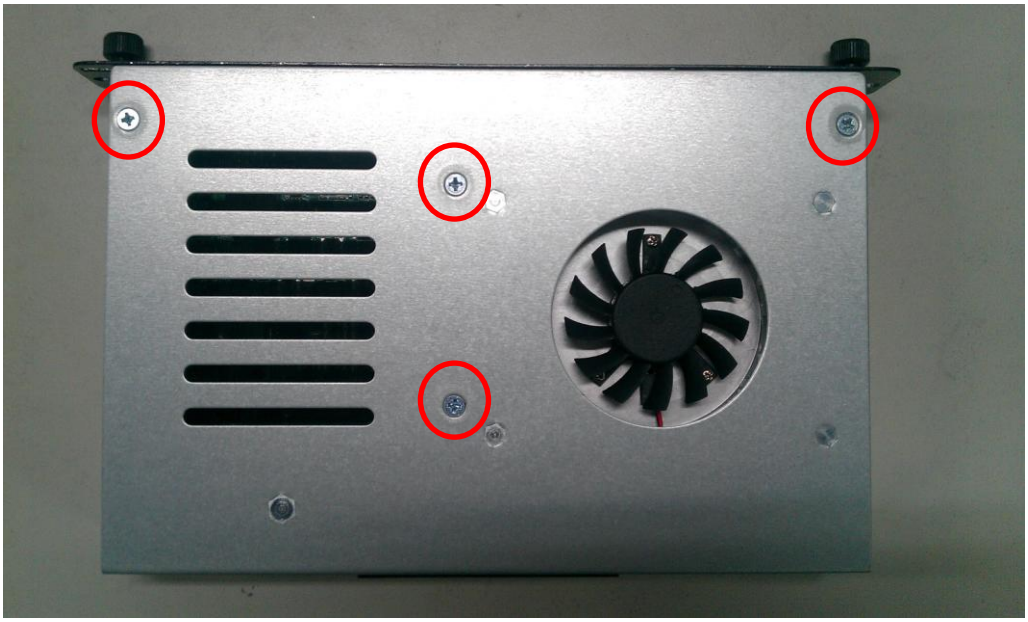
The chapter 2 will show you how to install the hardware. It includes:

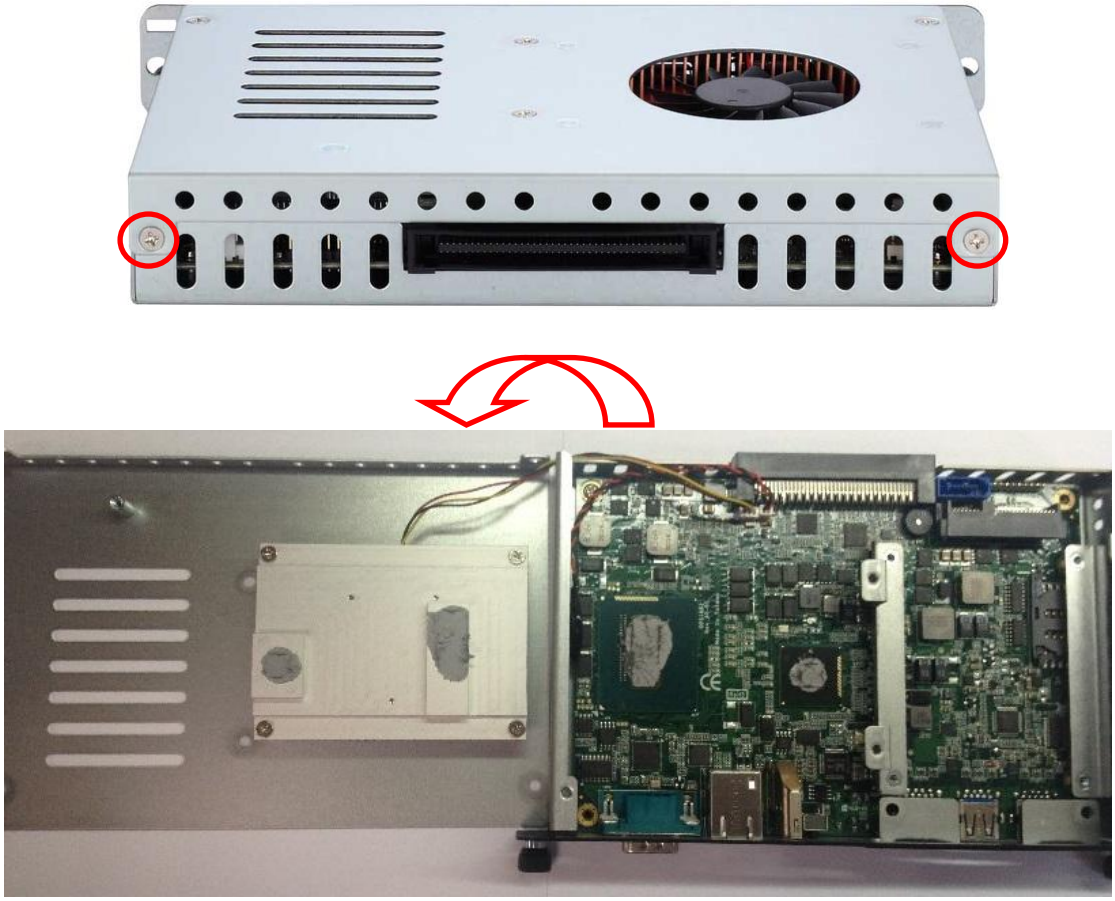
- **Storage , DRAM, Wireless & 3G module Installation**
- **Pluggable Module Method**

2.1 Storage, DRAM,Wireless & 3G module Installation

The OPS882-HM series model offers a convenient drive bay module for users to install Storage, DRAM, wireless & 3G module. Please follow the steps:

Step 1 Turn off the system, Loosen the screws as illustrated.

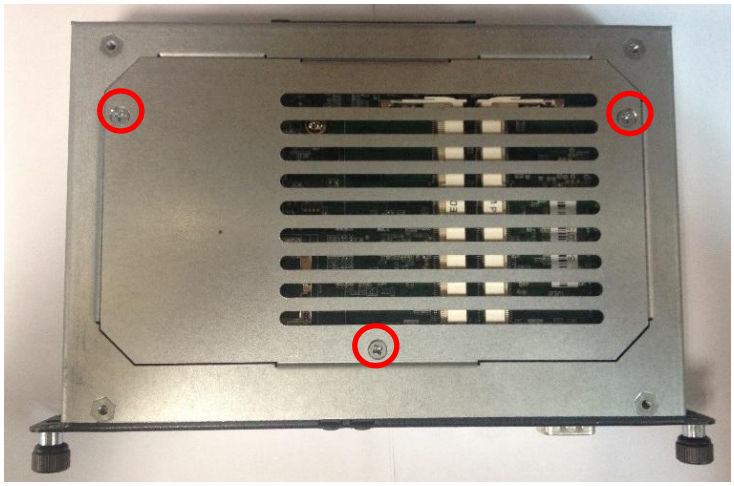




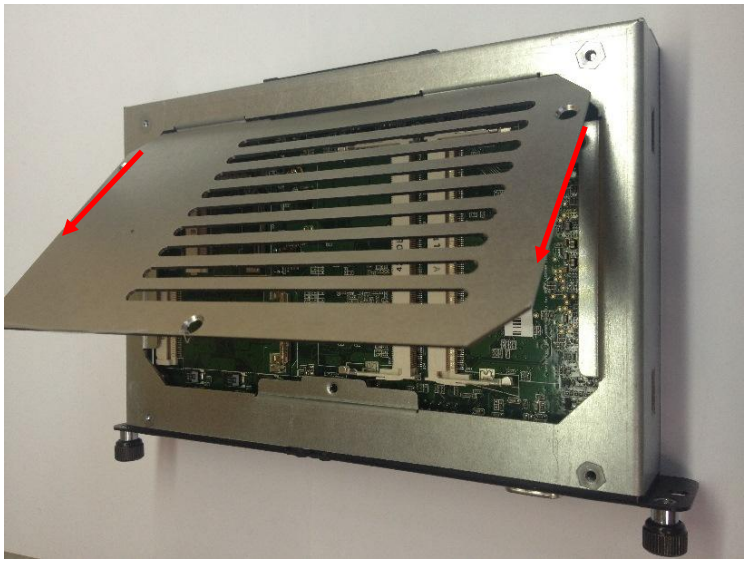
NOTE: ***Please pull out power cable of system fan while installation***

Step 2 Install DRAM

Loosen the screws on the real of chassis as illustrated.

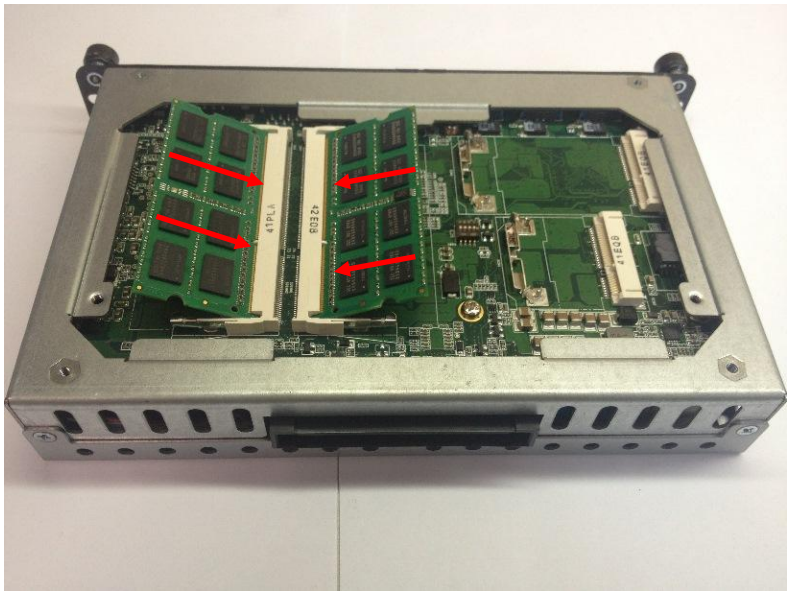


After losing the screws, extract the real of chassis out of the module.



Install DRAM module.

Put DRAM. Place the memory module into the socket and press it firmly. The socket latches are levered upwards and clipped on to the edges of the DIMM.

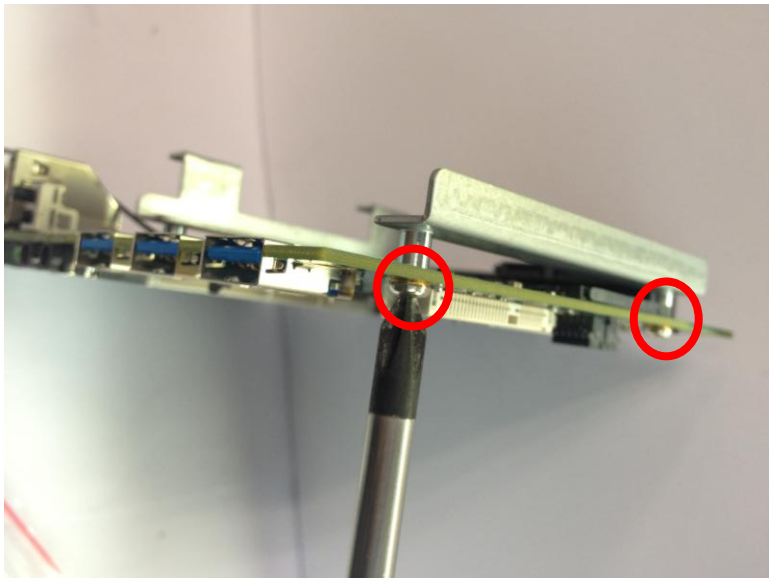


Step 3 Install 2.5" SATA HDD

The OPS882-HM series provides one 2.5" SATA HDD tray to install 2.5" HDD. When please refer to the following instructions and illustration

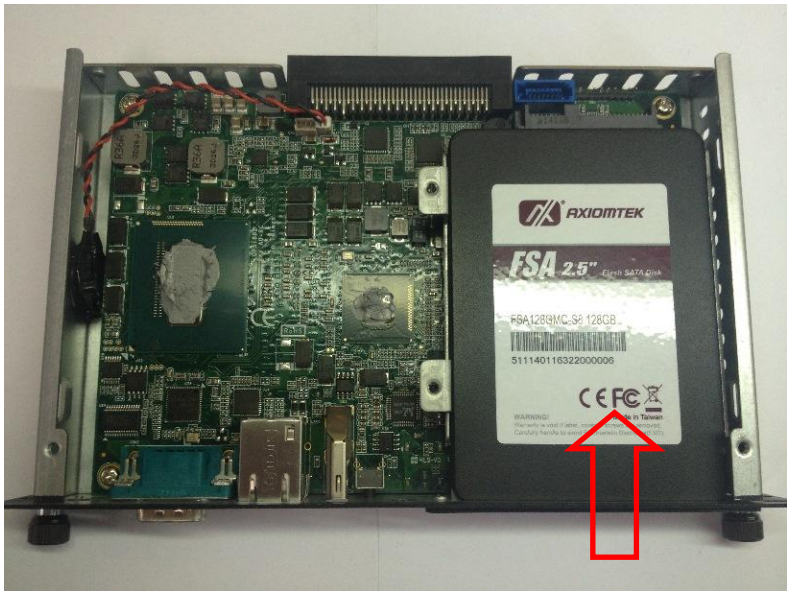
Loosen the screws per illustrated.

Affix the HDD bracket to the M/B firmly

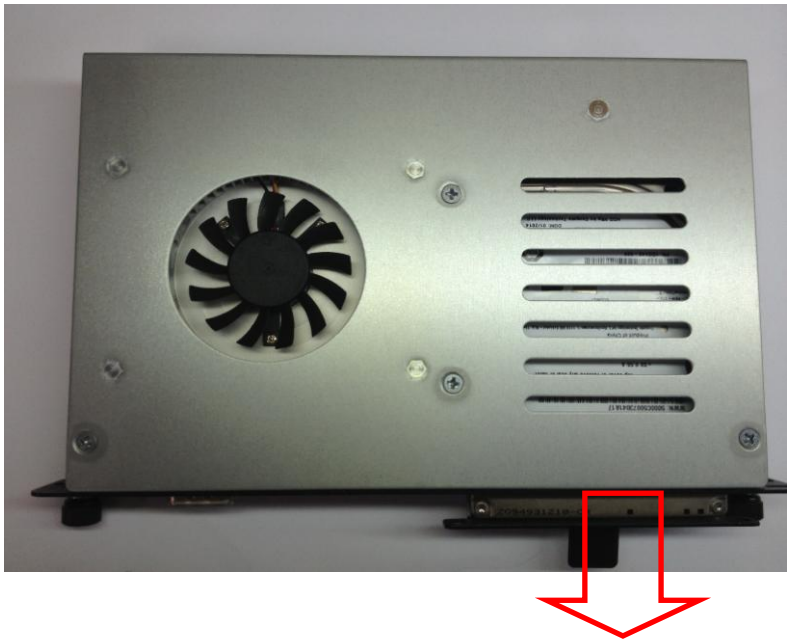


Affix the HDD Mylar sheet to the HDD drive

Plug HDD drive in to HDD connector



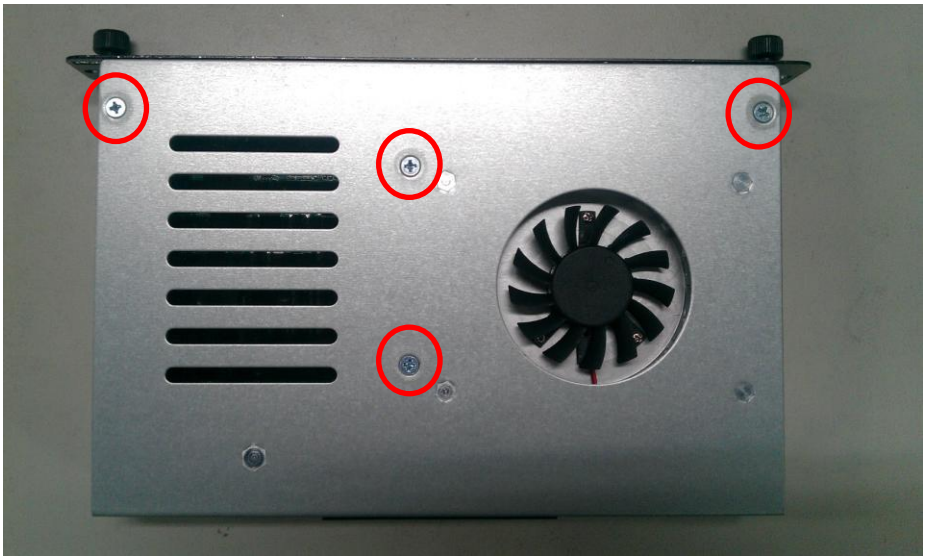
Pull the HDD Mylar to slot-out the HDD drive and fix the screws on HDD cover.

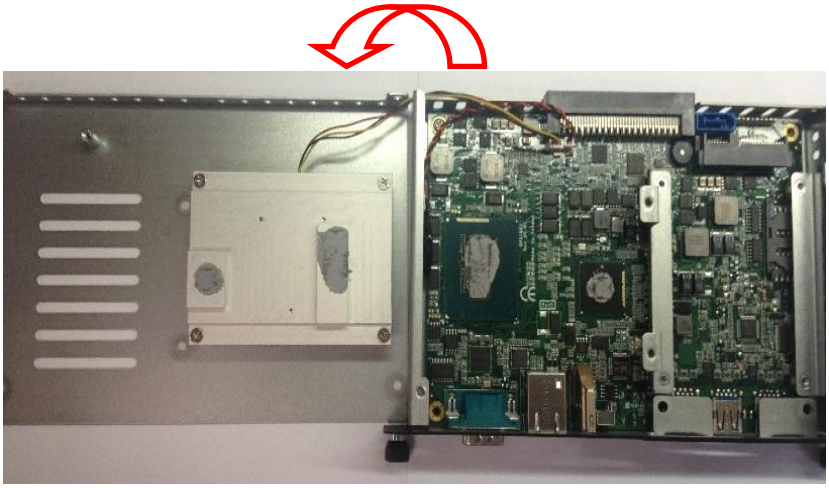


Step 3 Install mSATA

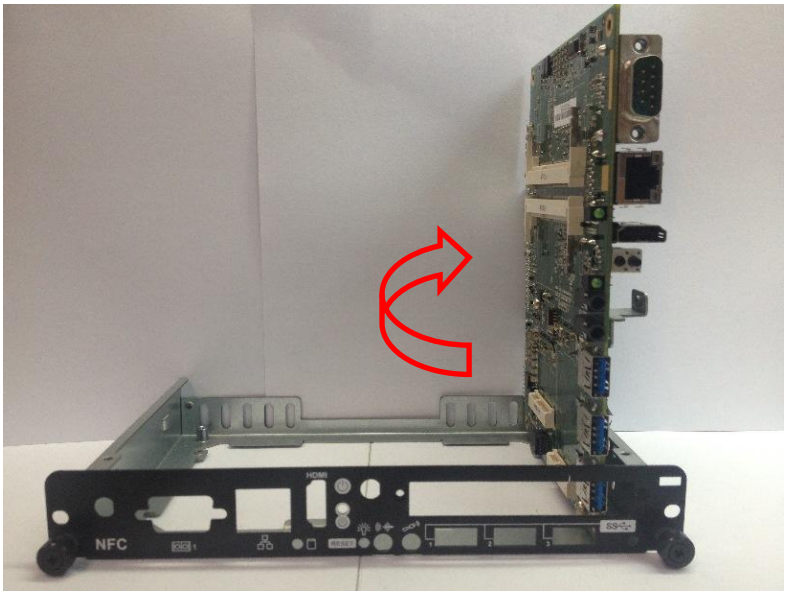
The OPS882-HM series provides one Mini card slot for user to install mSATA., please refer to the following instructions and illustration

Loosen the screws per illustrated.

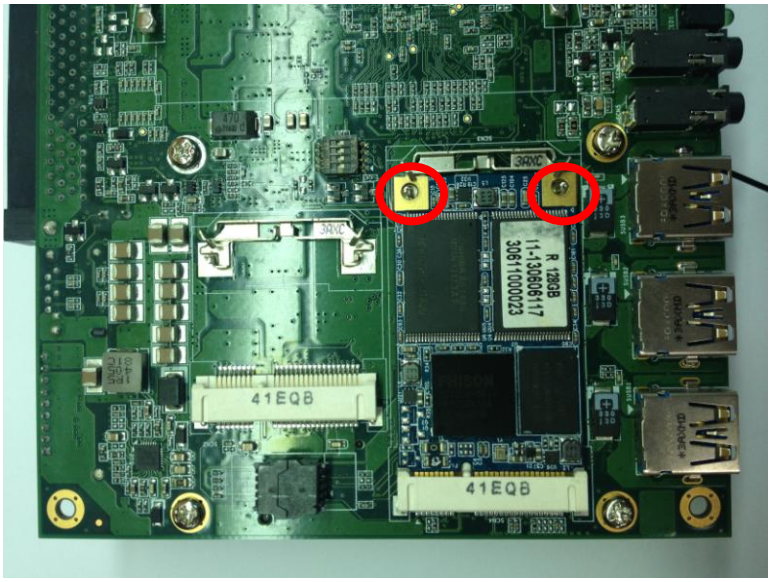




Please loosen the screws of the chassis and PCB board. Turn over the PCB board



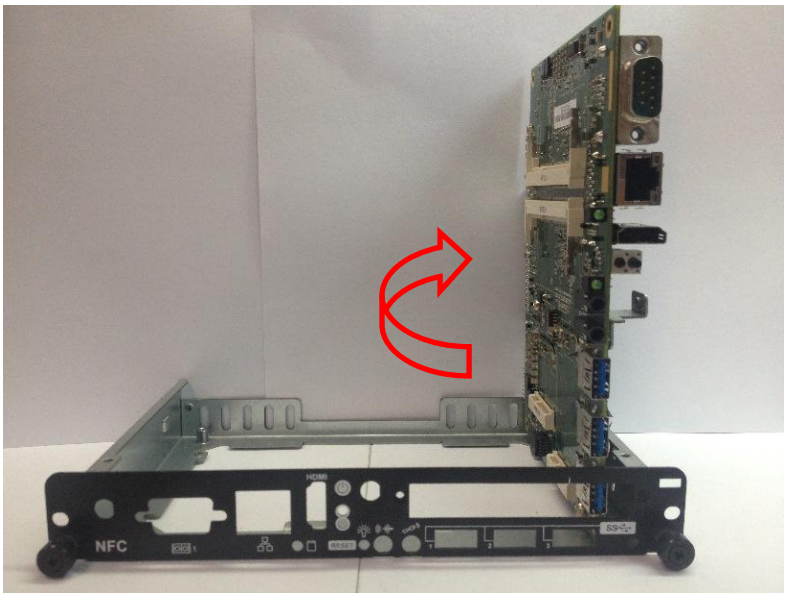
Install mSATA module. Place the mSATA module into the socket and press it firmly down until it is fully located.



Step 4 Install Wireless Modules

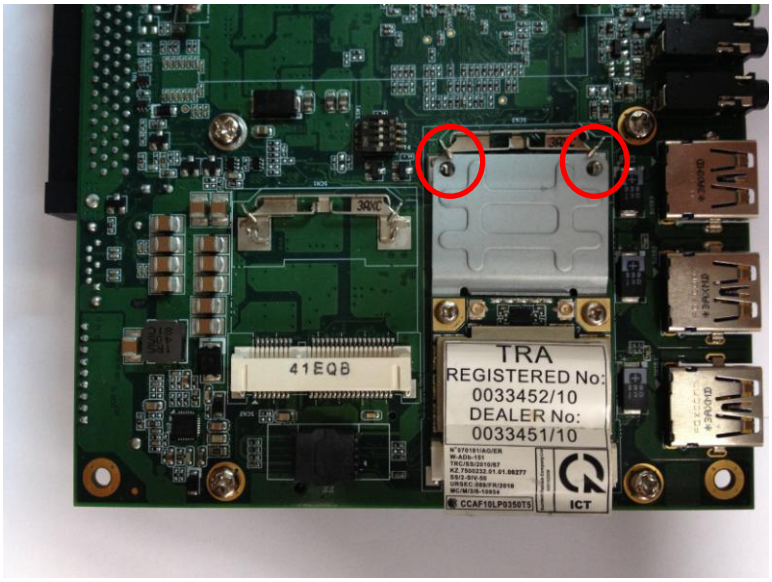
The OPS882-HM series provides two Mini card slot for user to install one wireless LAN card. When installing the wireless LAN card, refer to the following instructions and illustration

Please refer to loosen the screws of the chassis and PCB board. Turn over the PCB board

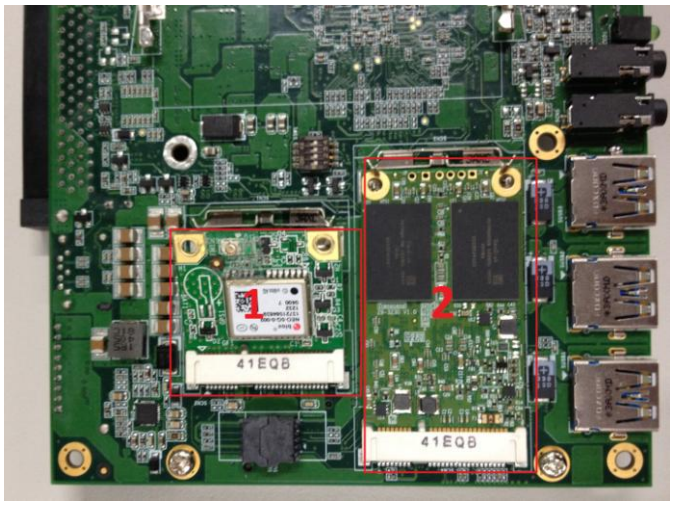


Find the Antenna cable and connect it wireless LAN card.

Fix the screws between the WIFI module and bracket and fix the antenna connector at expansion I/O side and Install the antenna on the wireless LAN card



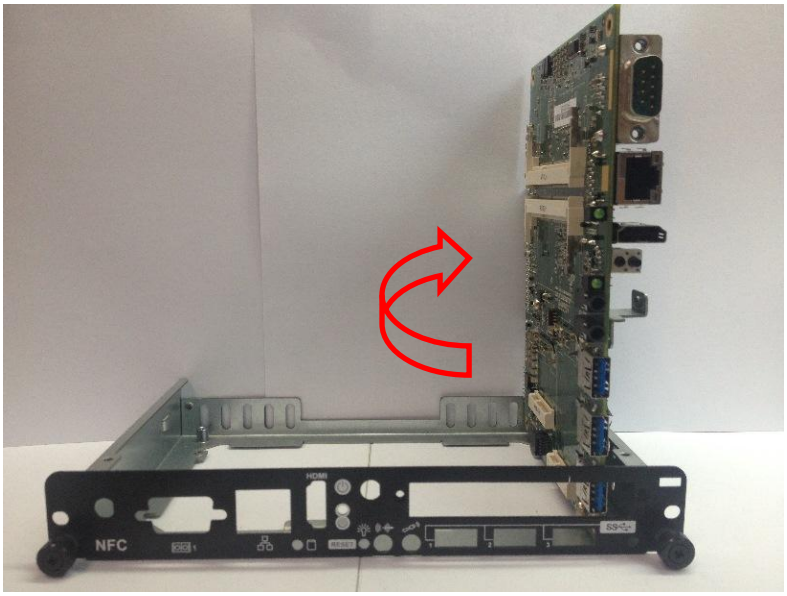
NOTE: Please install wireless module in the area 1 and mSATA at the area 2



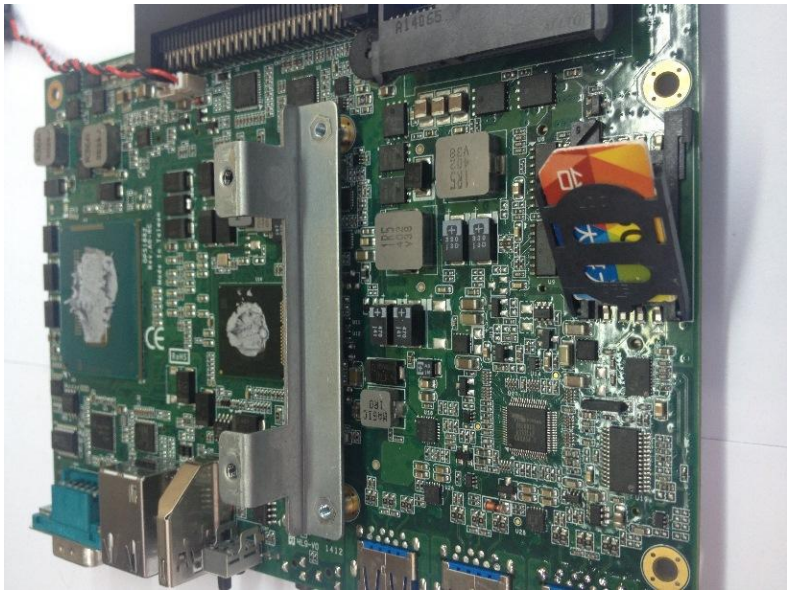
Step 5 Install 3G module

The OPS882-HM series provides one Mini card slot for user to install one 3G module. When installing the 3G module, refer to the following instructions and illustration

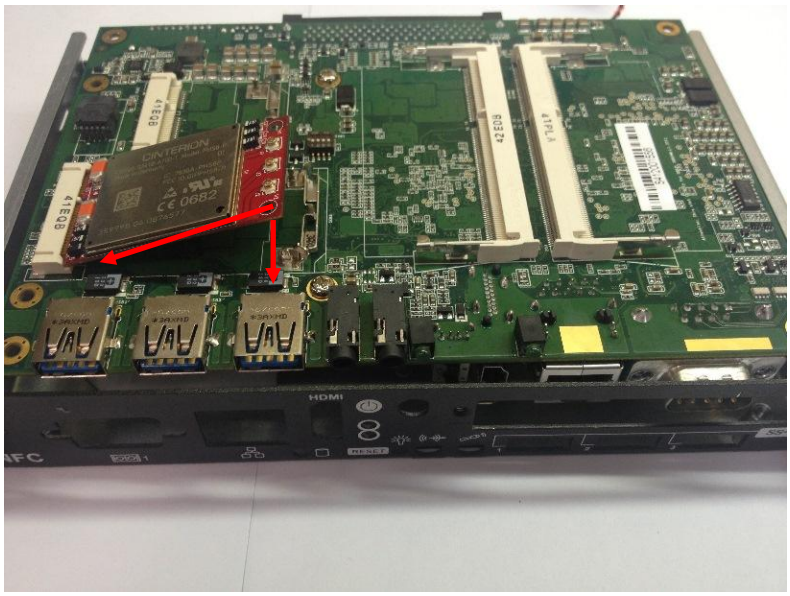
Please loosen the screws of the chassis and PCB board. Turn over the PCB board



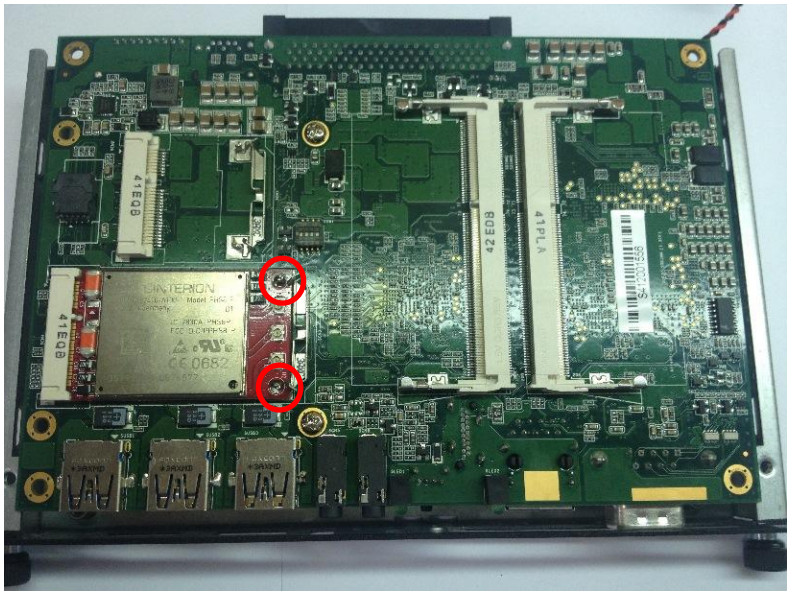
Install SIM Card module. Place the SIM Card module into the socket and press it firmly down until it is fully located.



Install 3G module. Place the 3G module into the socket and press it firmly down until it is fully located.

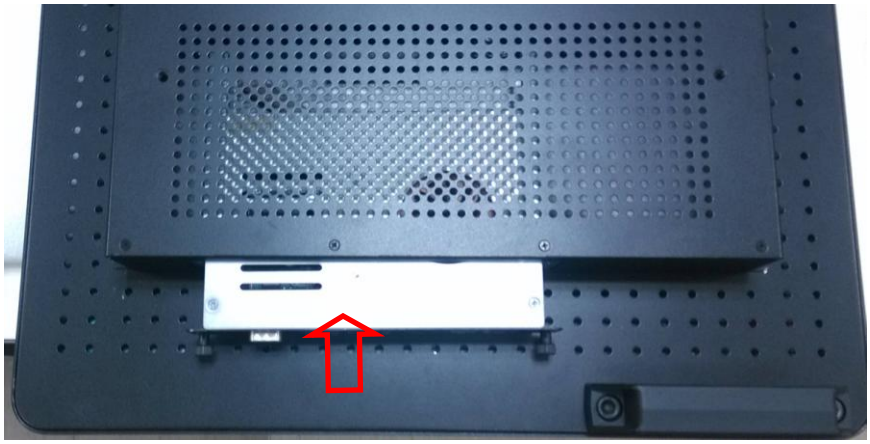


Affix the screws per illustrated



2.2 Pluggble Module Method

NOTE: ***Please contact Axiomtek for the available option display***



Step 1 Pluggable the box into display

Caution: When plugging OPS882-HM series module into an OPS display, make sure the module's heat sink is facing outside of the display. Axiomtek is not responsible for any damage caused by wrong installation.

Step 2 Fasten the screws as illustrated

CHAPTER 3
CONNECTORS

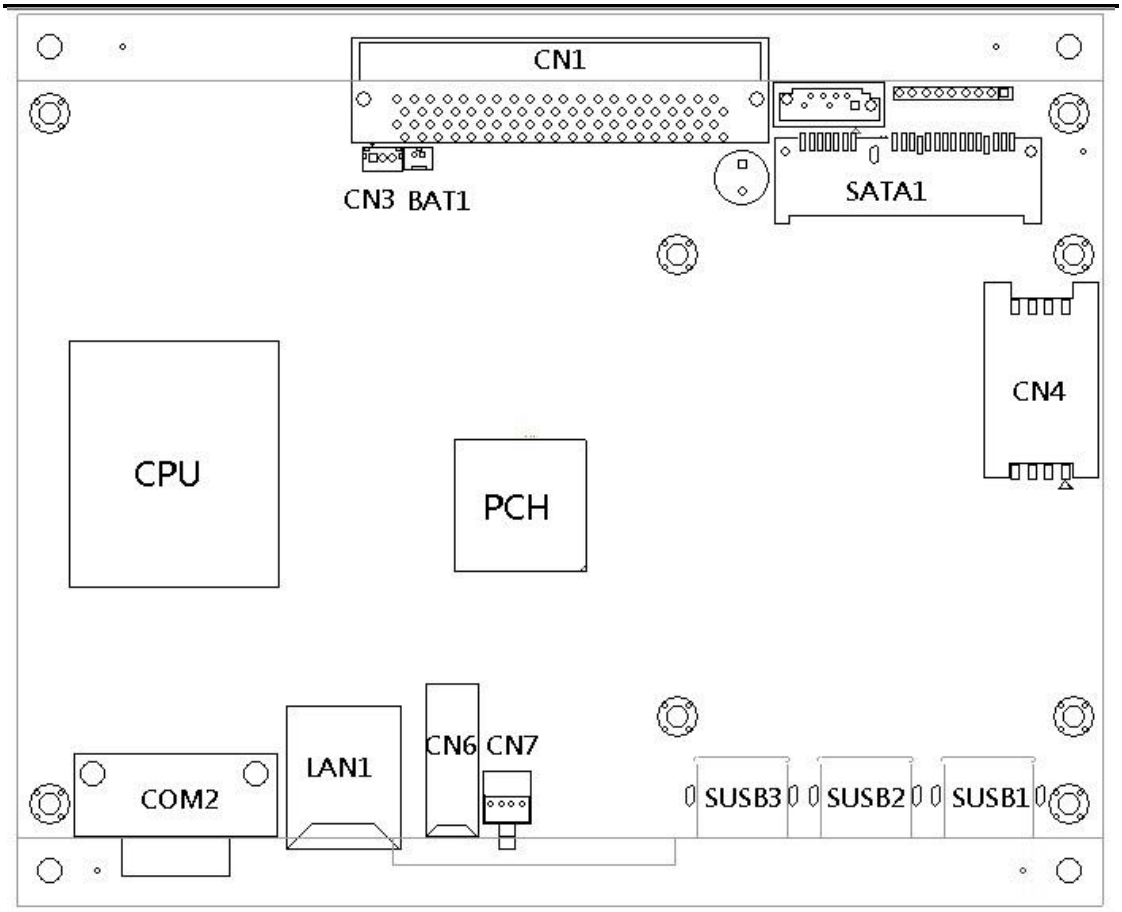
This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

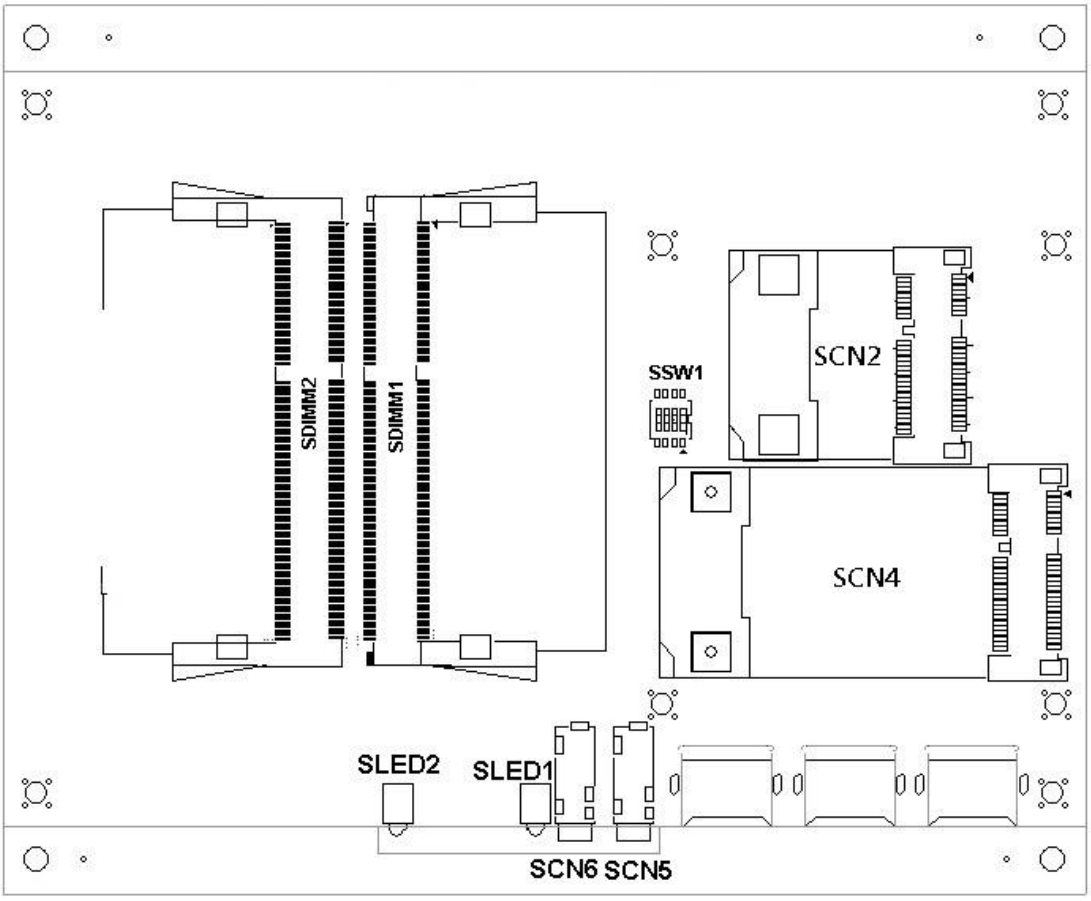
3.1 Connectors

Connectors connect this board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected.

Here is a summary table shows you all connectors on the board.

Connector	Label
JAE TX25 Connector	CN1
SATA 4 & SATA 4 Power	SATA1
Mini Card Slot (Half Size)	SCN2
SIM Card Slot	CN4
m-SATA Slot& Mini Card Slot	SCN4
Power Button& Reset Button	CN7
HDMI	CN6
CPU FAN	CN3
Audio MIC-IN Connector	SCN5
Audio LINE-OUT Connector	SCN6
Battery 2 PIN	BAT1
ATX Auto Power On	SSW1
Clear CMOS	
PCIE & mSATA Switch	
SLP_S3_Docking	
DDR3L Memory Slot	SDIMM1
DDR3L Memory Slot	SDIMM2
RJ45 (I210IT)	LAN1
USB3.0	SUSB1、SUSB2、SUSB3
COM Port	COM2
HDD LED	SLED1
POWER LED	SLED2

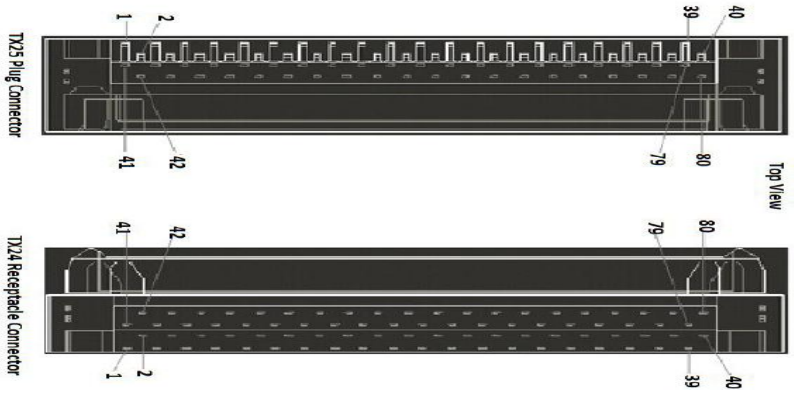

CN1
CN3 BAT1
SATA1
CN4
CPU
PCH
COM2
LAN1
CN6 CN7
SUSB3 SUSB2 SUSB1


SDIMM2
SDIMM1
SSW1
SCN2
SCN4
SLED2
SLED1
SCN6 SCN5

3.1.1 JAE TX25 Connector (CN1)

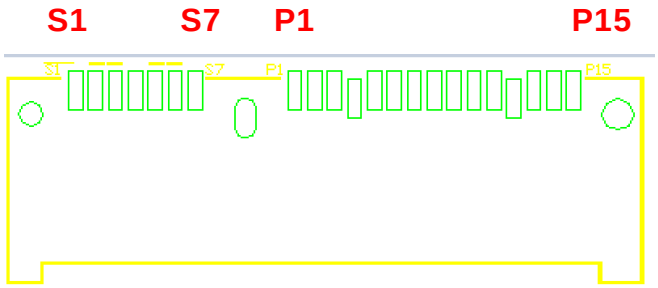
Connector JAE TX25 CN1 is for JAE interface support.

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	DDP_3N	2	DDP_3P	3	GND	4	DDP_2N
5	DDP_2P	6	GND	7	DDP_1N	8	DDP_1P
9	GND	10	DDP_0N	11	DDP_0P	12	GND
13	DDP_AUXN	14	DDP_AUXP	15	DDP_HPD	16	GND
17	TMDS_CLK-	18	TMDS_CLK+	19	GND	20	TMDS0-
21	TMDS0+	22	GND	23	TMDS1-	24	TMDS1+
25	GND	26	TMDS2-	27	TMDS2+	28	GND
29	DVI_DDC_DATA	30	DVI_DDC_CLK	31	DVI_HPD	32	GND
33	+12V~+19V	34	+12V~+19V	35	+12V~+19V	36	+12V~+19V
37	+12V~+19V	38	+12V~+19V	39	+12V~+19V	40	+12V~+19V
41	RSVD	42	RSVD	43	RSVD	44	RSVD
45	RSVD	46	RSVD	47	RSVD	48	RSVD
49	SLP_S3	50	SYS_FAN	51	UART_RXD	52	UART_TXD
53	GND	54	StdA_SSRX-	55	StdA_SSRX+	56	GND
57	StdA_SSTX-	58	StdA_SSTX+	59	GND	60	USB_PN2
61	USB_PP2	62	GND	63	USB_PN1	64	USB_PP1
65	GND	66	USB_PN0	67	USB_PP0	68	GND
69	AZ_LINEOUT_L	70	AZ_LINEOUT_R	71	NC	72	PB_DET
73	PS_ON#	74	PWR_STATUS	75	GND	76	GND
77	GND	78	GND	79	GND	80	GND



3.1.2 SATA 4 & SATA 4 Power Connector (SATA1)

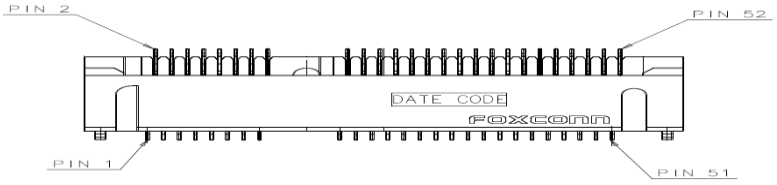
Pin	Signal	Pin	Signal
S1	GND	P1	+3.3V
S2	SATA4_TX+	P2	+3.3V
S3	SATA4_TX-	P3	+3.3V
S4	GND	P4	GND
S5	SATA0_RX-	P5	GND
S6	SATA0_RX+	P6	GND
S7	GND	P7	+5V
		P8	+5V
		P9	+5V
		P10	GND
		P11	GND
		P12	GND
		P13	NC
		P14	NC
		P15	NC



3.1.3 Mini Card Slot (Half Size) (SCN2)

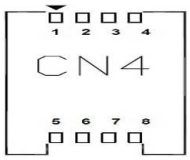
Pin	Signal	Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VAUX	3	RVD1
4	GND	5	RVD2	6	+1.5V
7	CLKREQ#	8	RVD19	9	GND
10	RVD18	11	REFCLK-	12	RVD16
13	REFCLK+	14	RVD15	15	GND
16	RVD14	17	RVD3	18	GND
19	RVD4	20	+3.3VAUX	21	GND

22	PERST#	23	PERN0	24	+3.3VAUX
25	PERP0	26	GND	27	GND
28	+1.5V	29	GND	30	SMB_CLK
31	PETN0	32	SMB_DATA	33	PETP0
34	GND	35	GND	36	USB_D-
37	RVD5	38	USB_D+	39	+3.3VAUX
40	GND	41	+3.3VAUX	42	LED_WWAN#
43	RVD8	44	LED_WLAN#	45	RVD9
46	LED_WPAN#	47	RVD10	48	+1.5V
49	RVD11	50	GND	51	RVD12
52	+3.3VAUX	53	NH1	54	NH2
55	NH3	56	NH4		



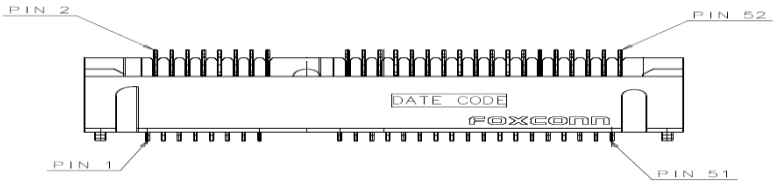
3.1.4 Sim Slot (CN4)

Pin	Signal
1	SIM_PWR
2	SIM_RESET
3	SIM_CLK
4	NC
5	GND
6	SIM_DATA
7	SIM_I/O
8	NC



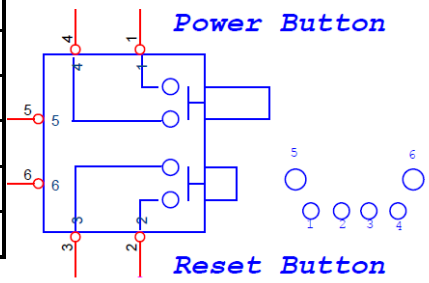
3.1.5 m-SATA Slot& Mini Card Slot (SCN4)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VAUX	3	RVD1	4	GND
5	RVD2	6	+1.5V	7	CLKREQ#	8	SIM Card_Power
9	GND	10	SIM Card_I/O	11	REFCLK-	12	SIM Card_CLK
13	REFCLK+	14	SIM Card_RST-	15	GND	16	SIM Card_VPP
17	RVD3	18	GND	19	RVD4	20	+3.3VAUX
21	GND	22	PERST#	23	m-SATA RXP	24	+3.3VAUX
25	m-SATA RXN	26	GND	27	GND	28	+1.5V
29	GND	30	SMB_CLK	31	m-SATA TXN	32	SMB_DATA
33	m-SATA TXP	34	GND	35	GND	36	USB_D-
37	RVD5	38	USB_D+	39	+3.3VAUX	40	GND
41	+3.3VAUX	42	LED_WWAN#	43	RVD8	44	LED_WLAN#
45	RVD9	46	LED_WPAN#	47	RVD10	48	+1.5V
49	+1.5V	50	GND	51	RVD12	52	+3.3VAUX
53	NH1	54	NH2	55	NH3	56	NH4



3.1.6 Power Button& Reset Button (CN7)

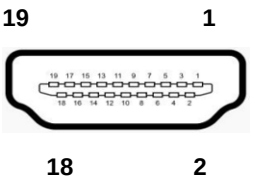
Pin	Signal
1	GND
2	GND
3	RST_BTN
4	PWR_BTN
5	GND
6	GND



3.1.7 HDMI Connector (CN6)

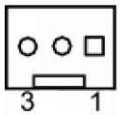
The HDMI (High-Definition Multimedia Interface) is a compact digital interface which is capable of transmitting high-definition video and high-resolution audio over a single cable. Its interface is available through connector CN8

Pin	Signal	Pin	Signal
1	HDMI OUT_DATA2+	2	GND
3	HDMI OUT_DATA2-	4	HDMI OUT_DATA1+
5	GND	6	HDMI OUT_DATA1-
7	HDMI OUT_DATA0+	8	GND
9	HDMI OUT_DATA0-	10	HDMI OUT Clock+
11	GND	12	HDMI OUT Clock-
13	N.C.	14	N.C.
15	HDMI OUT_SCL	16	HDMI OUT_SDA
17	GND	18	+5V
19	HDMI_HTPLG		



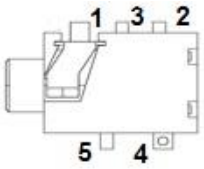
3.1.8 CPU FAN (CN3)

Pin	Signal
1	GND
2	FAN CTRL
3	VCC



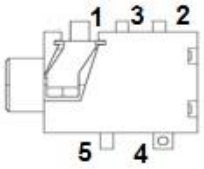
3.1.9 Audio Mic-In Connector(SCN5)

Pin	Signal
1	GND
2	MIC_IN_R
3	GND
4	MIC_IN_L
5	MIC_DETECT



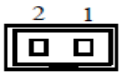
3.1.10 Audio Line-Out Connector (SCN6)

Pin	Signal
1	GND
2	LINE_OUT_R
3	GND
4	LINE_OUT_L
5	LINE_OUT_DETECT



3.1.11 Battery 2 Pin (BAT1)

Pin	Signal
1	+VBAT
2	GND



3.1.12 ATX Auto Power ON/ Clear CMOS/PCIE & mSATA Switch/SLP_S3_Docking (SSW1-Pin8)

AT or ATX Select (SSW1- Pin1)

Description	Settings
ATX	OFF (Default)
AT	ON

Clear CMOS (SSW1- Pin2)

Description	Settings
Clear CMOS	OFF (Default)
Clear CMOS	ON

PCIE & mSATA Switch (SSW1- Pin3)

Description	Settings
PCIE	OFF (Default)
mSATA	ON

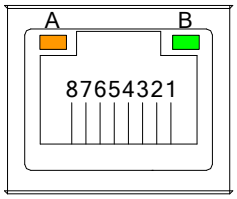
SLP_S3_Docking (SSW1- Pin4)

Description	Settings
NON-SLP_S3	OFF (Default)
SLP_S3	ON

3.1.13 RJ45 (I210IT) (LAN1)

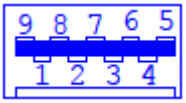
The RJ-45 connector LAN1 is for Ethernet. To connect the board to 100-Base-T or 1000-Base-T hub, just plug one end of the cable into LAN1 and connect the other end (phone jack) to a 100-Base-T hub or 1000-Base-T hub.

Pin	Signal
1	Tx+ (Data transmission positive)
2	Tx- (Data transmission negative)
3	Rx+(Data reception positive)
4	RJ-1(For 1000 base T-Only)
5	RJ-1(For 1000 base T-Only)
6	Rx- (Data reception negative)
7	RJ-1(For 1000 base T-Only)
8	RJ-1(For 1000 base T-Only)
A	Active LED
B	Speed LED



3.1.14 USB Port 0/1 /3(SUSB1、SUSB2、SUSB3)

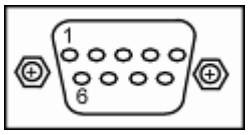
Pin	Signal
1	USB3_POWER
2	USB D0-
3	USB D0+
4	GND
5	USB3_SSRX0-
6	USB3_SSRX0+
7	GND
8	USB3_ SSTX0-
9	USB3_ SSTX0+



3.1.15 COM Port (COM2)

The COM Port connector is a standard DB-9 connector. The pin assignment of RS-232 is listed on the following table

Pin	Signal
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator



3.1.16 HDD Activity LED

This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed

3.1.17 Power LED

The Power LED lights up when the system is powered ON

CHAPTER 4
DRIVERS INSTALLATION

4.1 System

OPS882-HM series supports Window 7. To facilitate the installation of system driver, please carefully read the instructions in this chapter before start installing.

- Insert Intel Express Installer Driver CD and select the "\Driver\".
- Select your operating system driver to install.

- Select all files and follow the installing procedure.

NOTE: For latest system driver for installation, you may visit Axiomtek website at www.axiomtek.com

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`CHAPTER 5
AMI BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

5.1 Starting

To enter the setup screens, follow the steps below:

- **Turn on the computer and press the <Del> key immediately.**
- **After you press the <Del> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.**

5.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

These keys include <F1>, <F2>, <Enter>, <ESC>, <Arrow> keys, and so on.

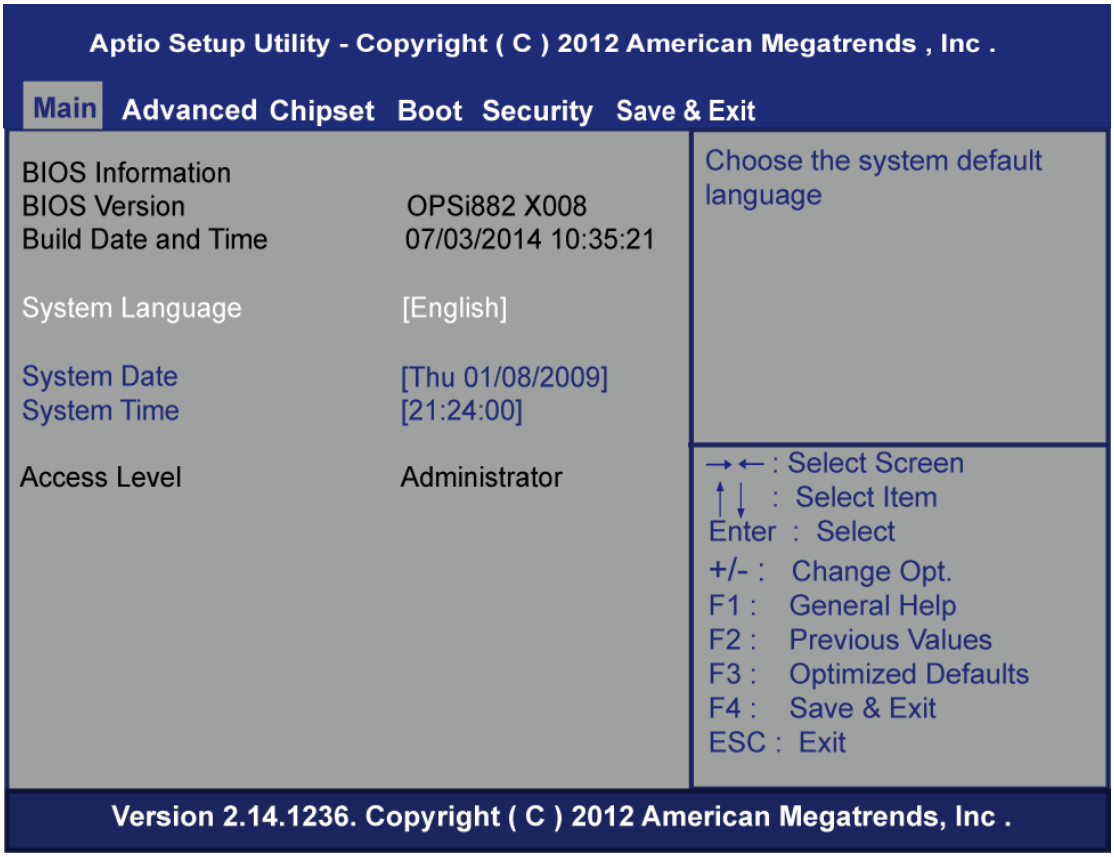
NOTE: Some of navigation keys differ from one screen to another.

Hot Key	Description
← →Left/Right	The Left <Arrow> keys allow you to select a setup screen.
↑↓ Up/Down	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to Load Previous Values.
F3	The <F3> key allows you to Load Optimized Defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.

5.3 Main Menu

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.

- **BIOS Information**



➢ **System Date/Time**

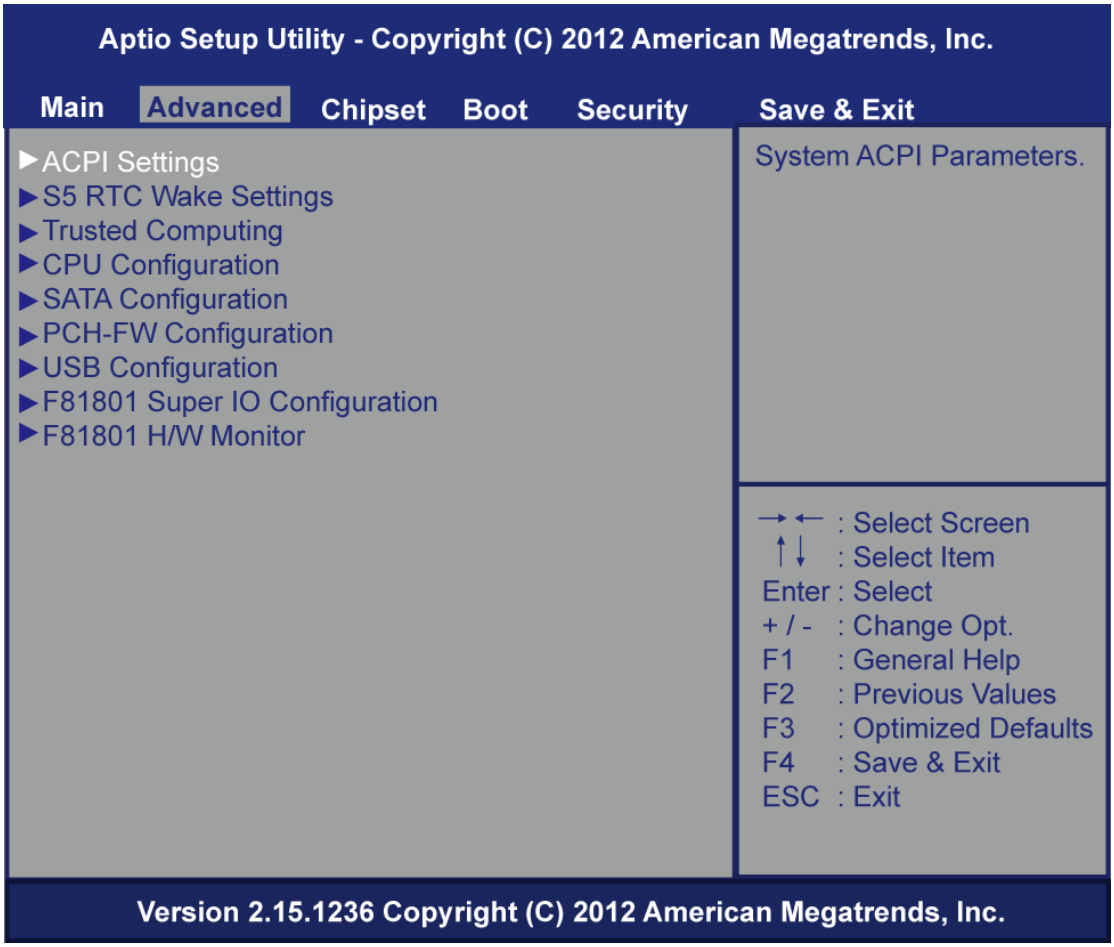
Use this option to change the system date and time. Highlight System Date or System Time using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Enter> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

5.4 Advanced Menu

The Advanced menu also allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

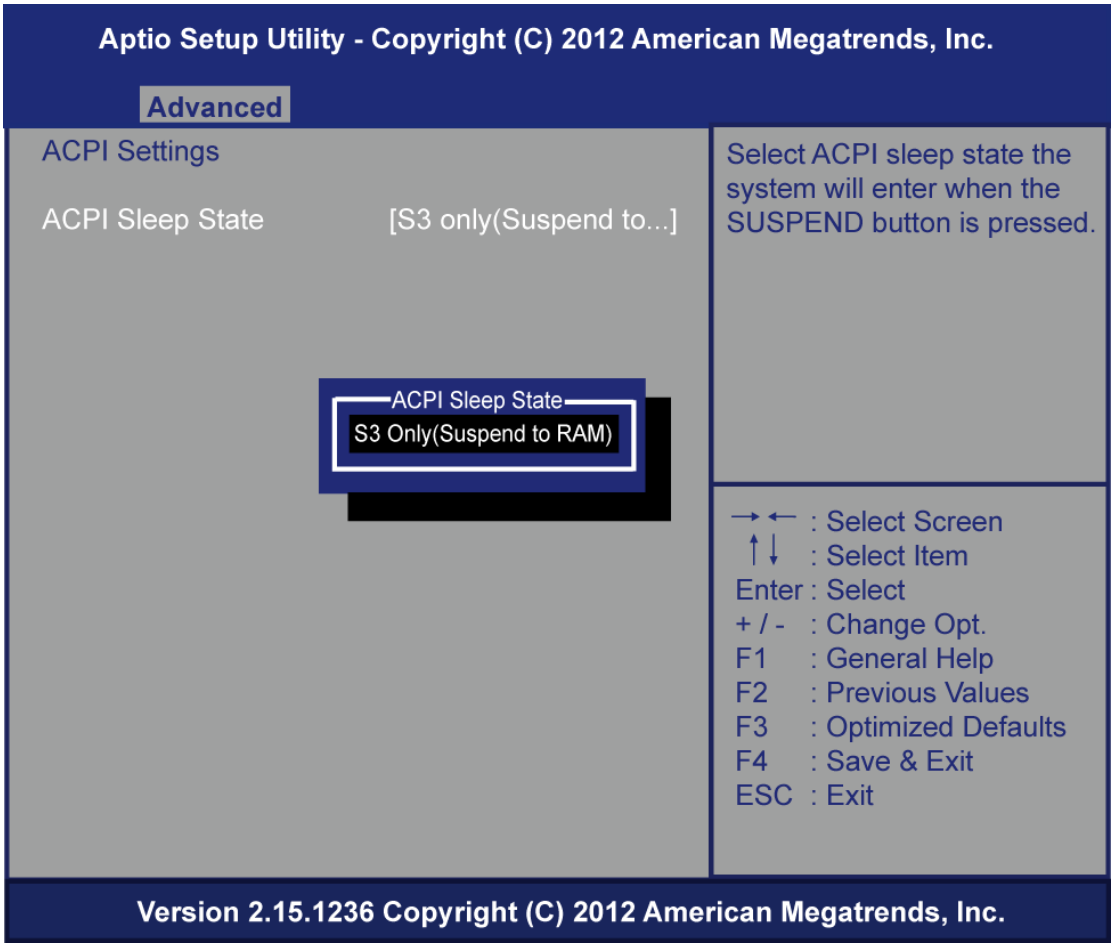
- **ACPI Settings**
- **S5 RTC Wake Settings**
- **Trusted Computing**
- **CPU Configuration**
- **SATA Configuration**
- **PCH-FW Configuration**
- **USB Configuration**
- **F81801 Super IO Configuration**
- **F81801 H/W Monitor**

For items marked with "►", please press <Enter> for more options.



- **ACPI Settings**

You can use this screen to select options for the ACPI Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.

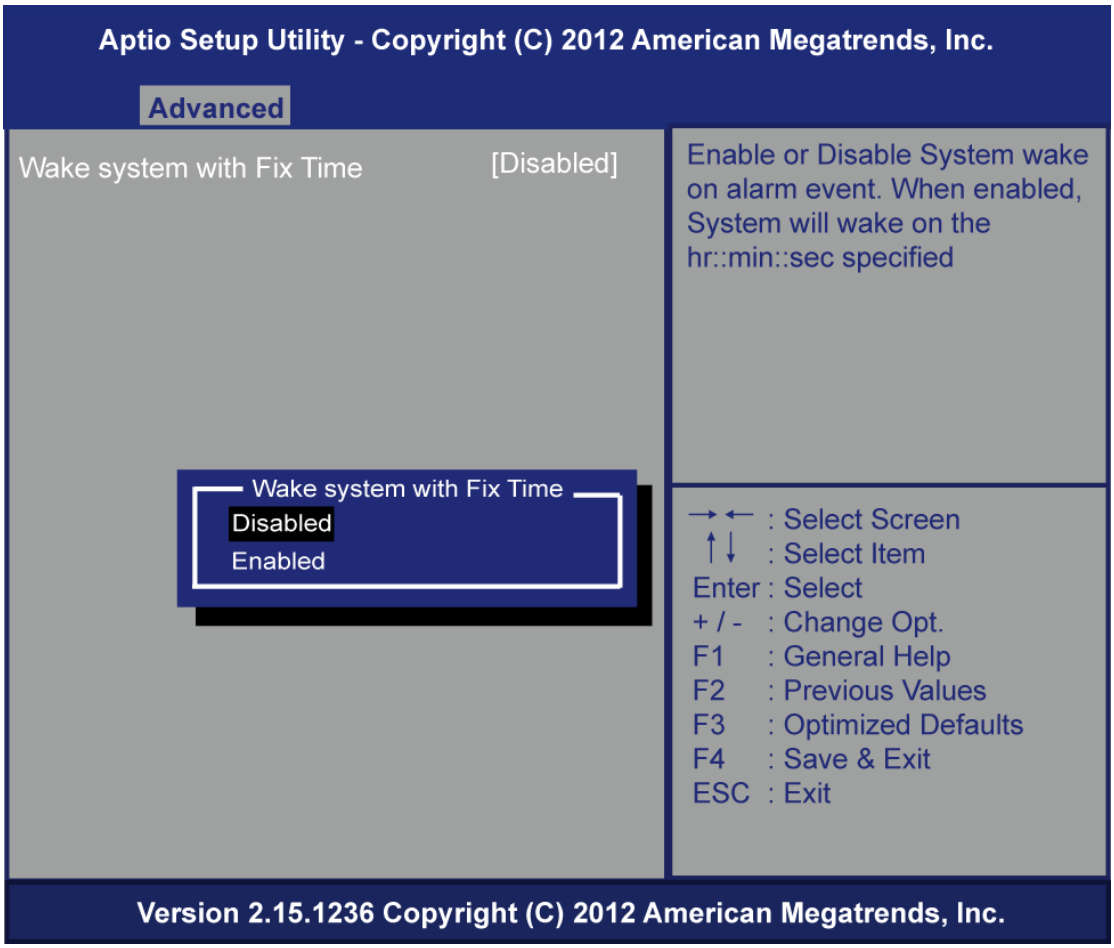


➢ **ACPI Sleep State**

Allow you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend. Here are the options for your selection, S3 (Suspend to RAM)

- **S5 RTC Wake Settings**

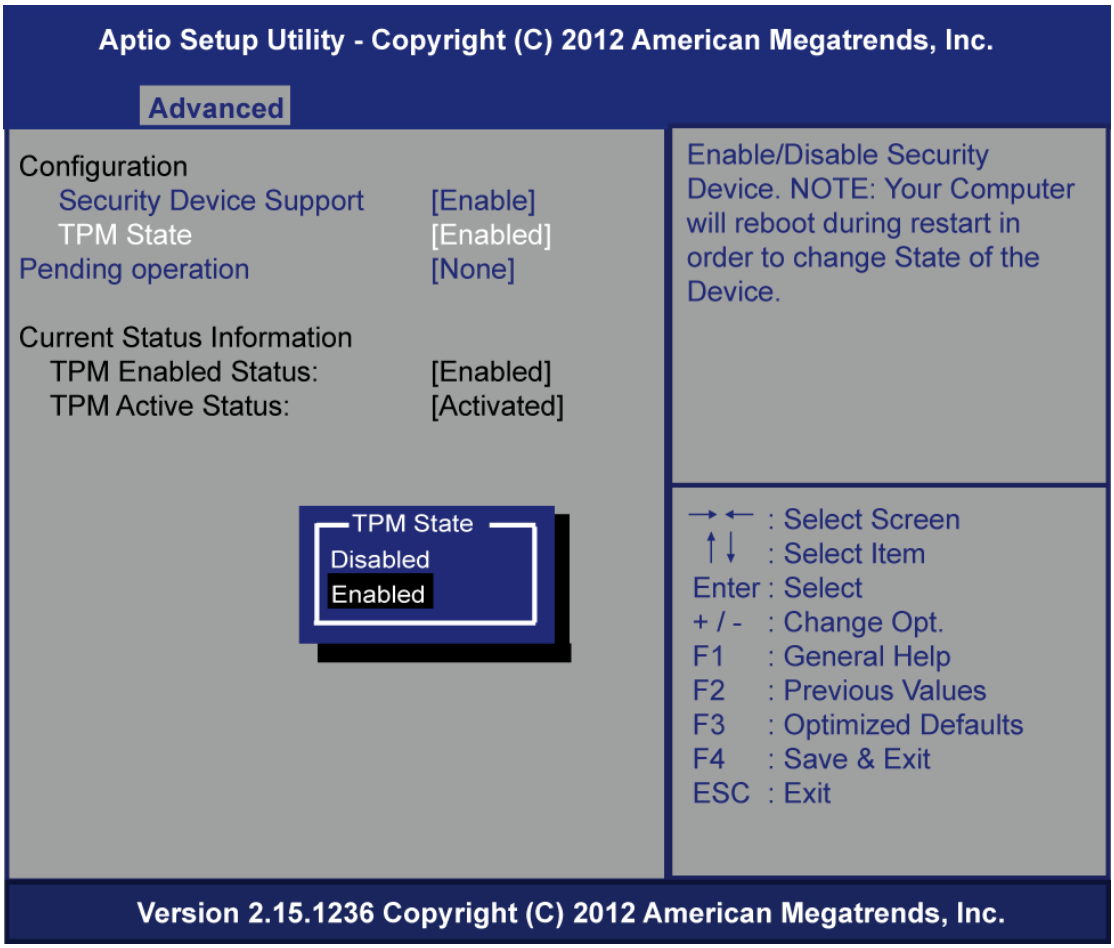
  Enable or disable system wake on alarm event. When enabled, System will wake on the hr:min::sec specified



- **Trusted Computing**

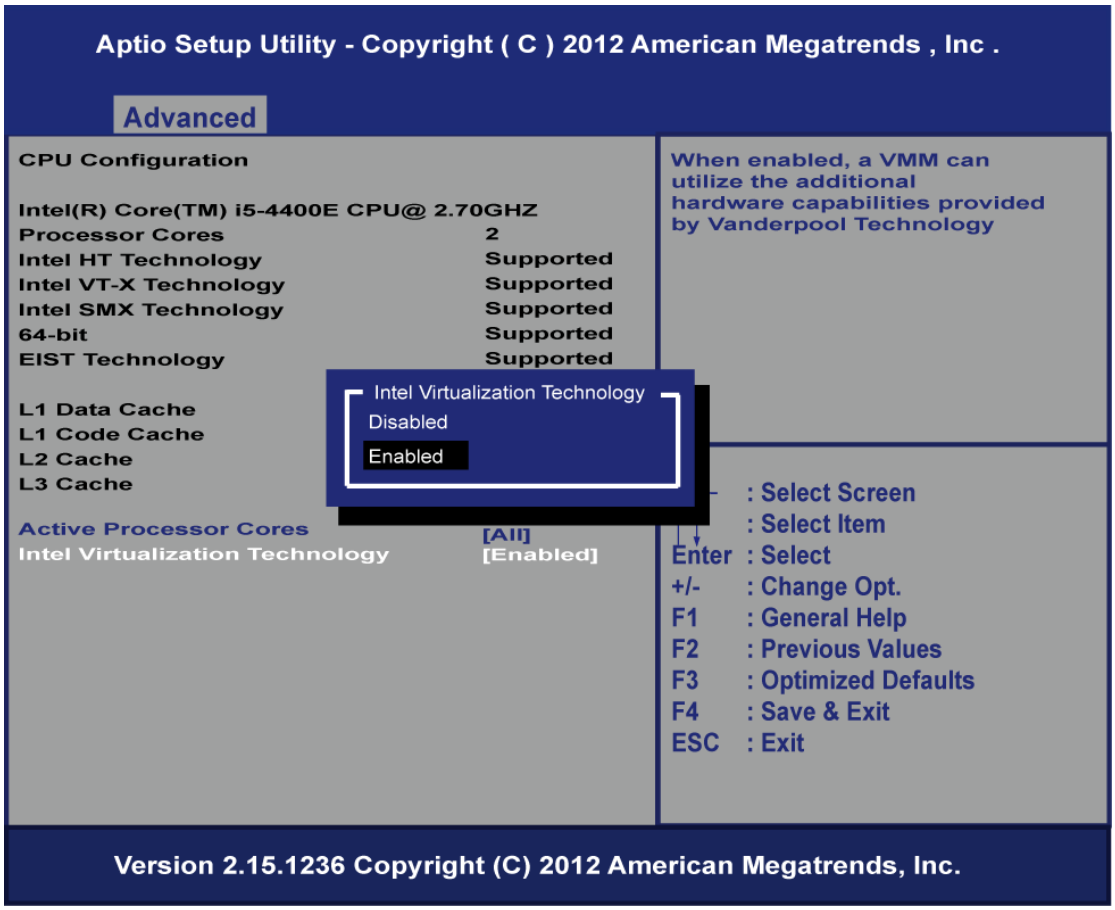
  Enables or disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

  TCG EFI protocol and INT1A interface will not be available.



- **CPU Configuration**

This screen shows the CPU Configuration, and you can change the value of the selected option.



- **Active Processor Cores**

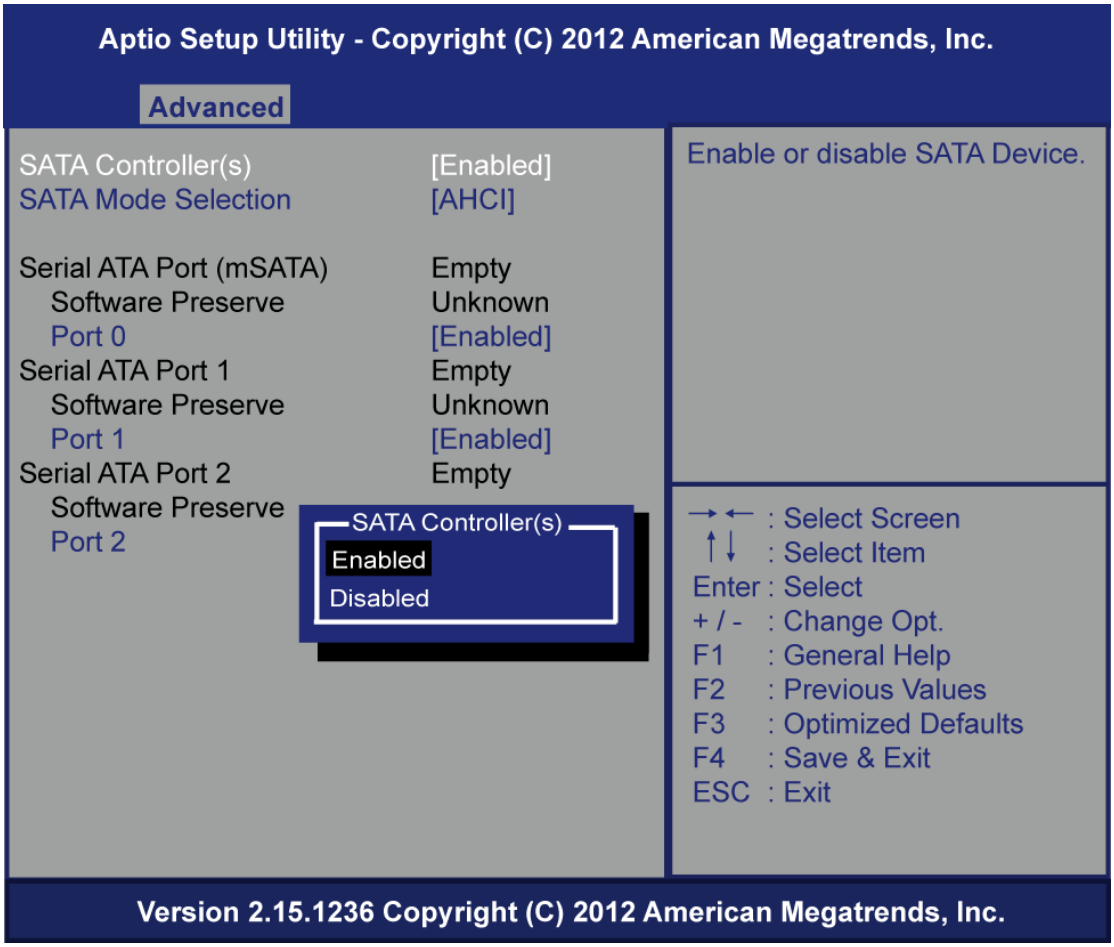
  To select number of cores is to enable in each processor package.

- **Intel Virtualization Technology**

  Allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems.

- **SATA Configuration**

  You can use this screen to select options for the SATA Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



- **Serial-ATA Controller(S)**

  Use this item to enable or disable the integrated SATA controllers. (Default: Enabled)

- **SATA Mode Selection**

  Use this item to choose the SATA operation mode. Here are the options for your selection, IDE Mode, AHCI Mode.(Default: AHCI)

- **Serial ATA Port (mSATA)**

  Enable or Disable SATA Port

- **Serial ATA Port 1**

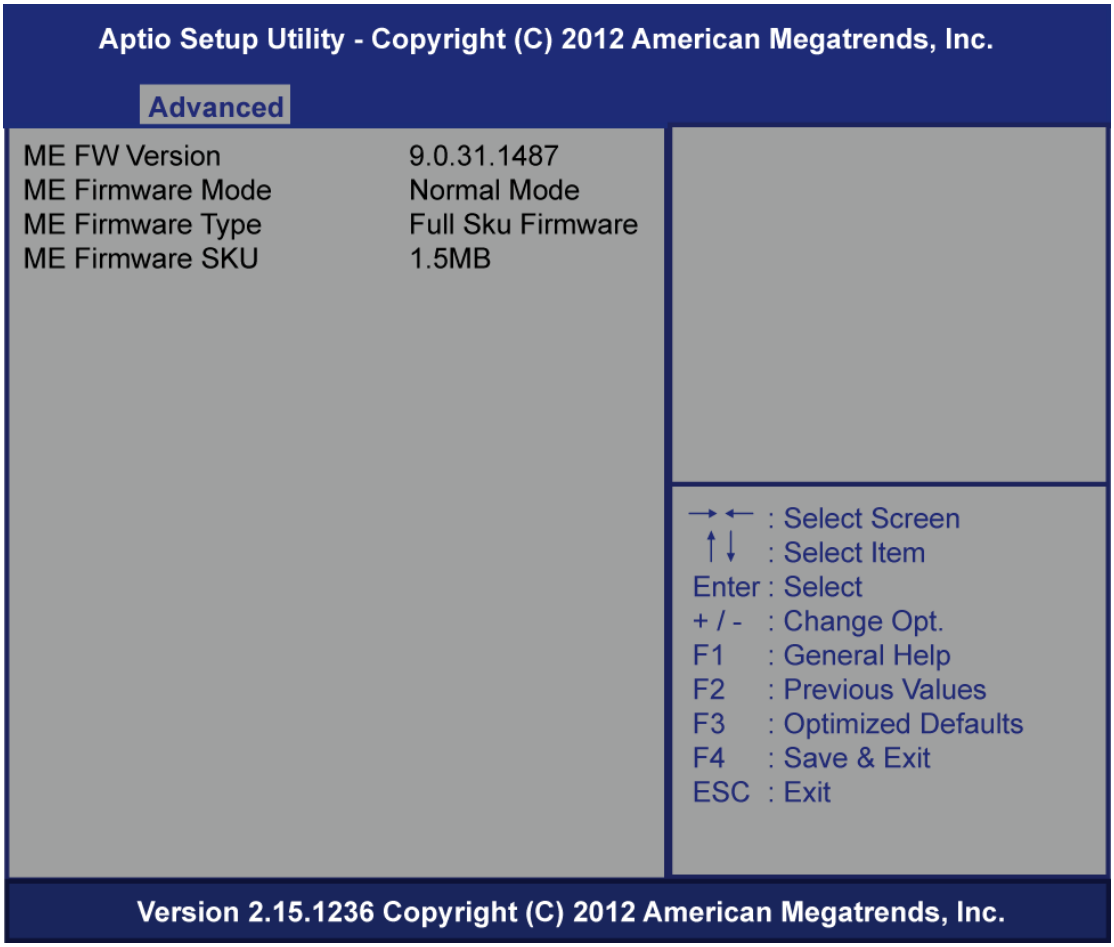
  Enable or Disable SATA Port

- **Serial ATA Port 2**

  Enable or Disable SATA Port

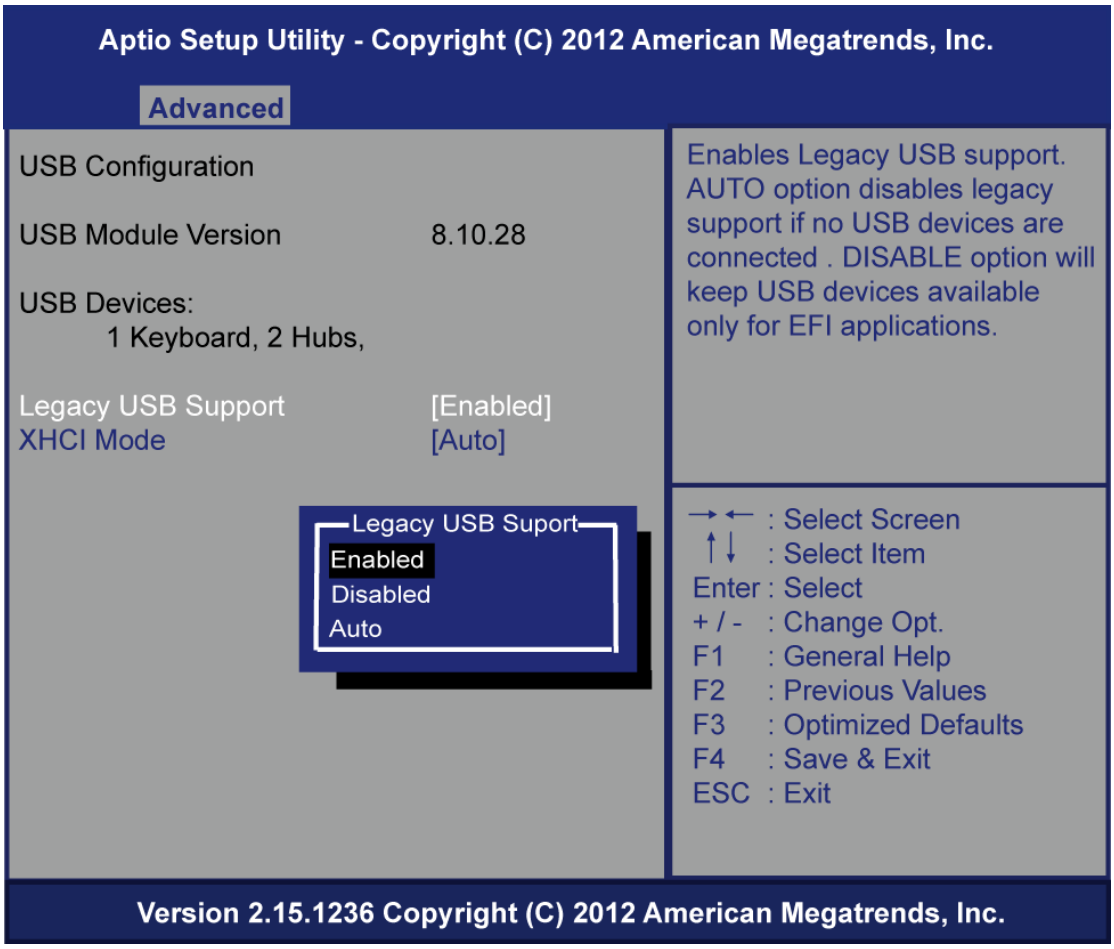
- **PCH-FW Configuration**

  You can use this screen to confirm ME Firmware version.



- **USB Configuration**

  You can use this screen to select options for the USB Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



- **Legacy USB Support**

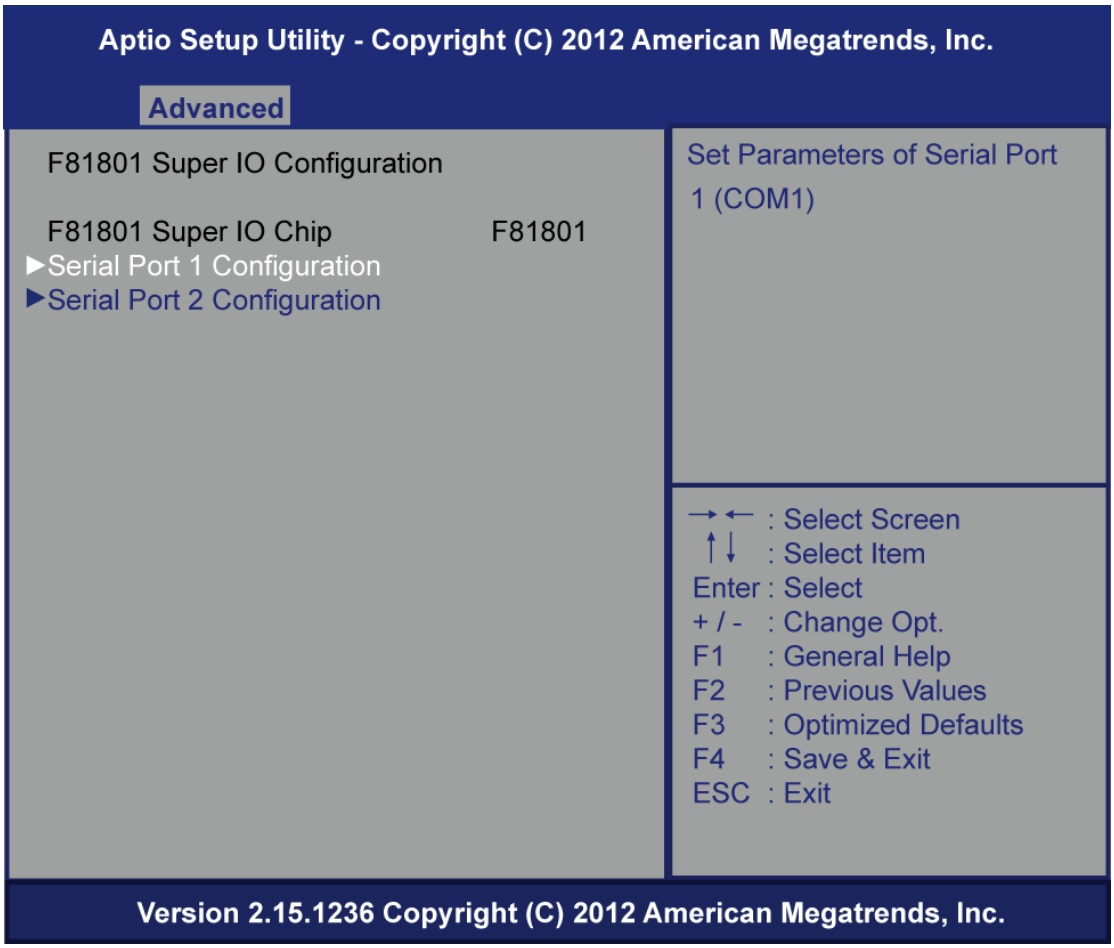
  This is for supporting USB device under legacy OS such DOS, when choosing AUTO", the system will automatically detect any USB device is plugged into the computer and enable USB legacy mode. when a USB device plugged and disable USB legacy mode, the USB device will not available in legacy O.S.

- **XHCI Mode**

  Mode of operation of XHCI controller

- **F81801 Super IO Configuration**

  Set parameters of Serial Port 1(COM1)/Serial Port 2(COM2)



- **Serial Port**

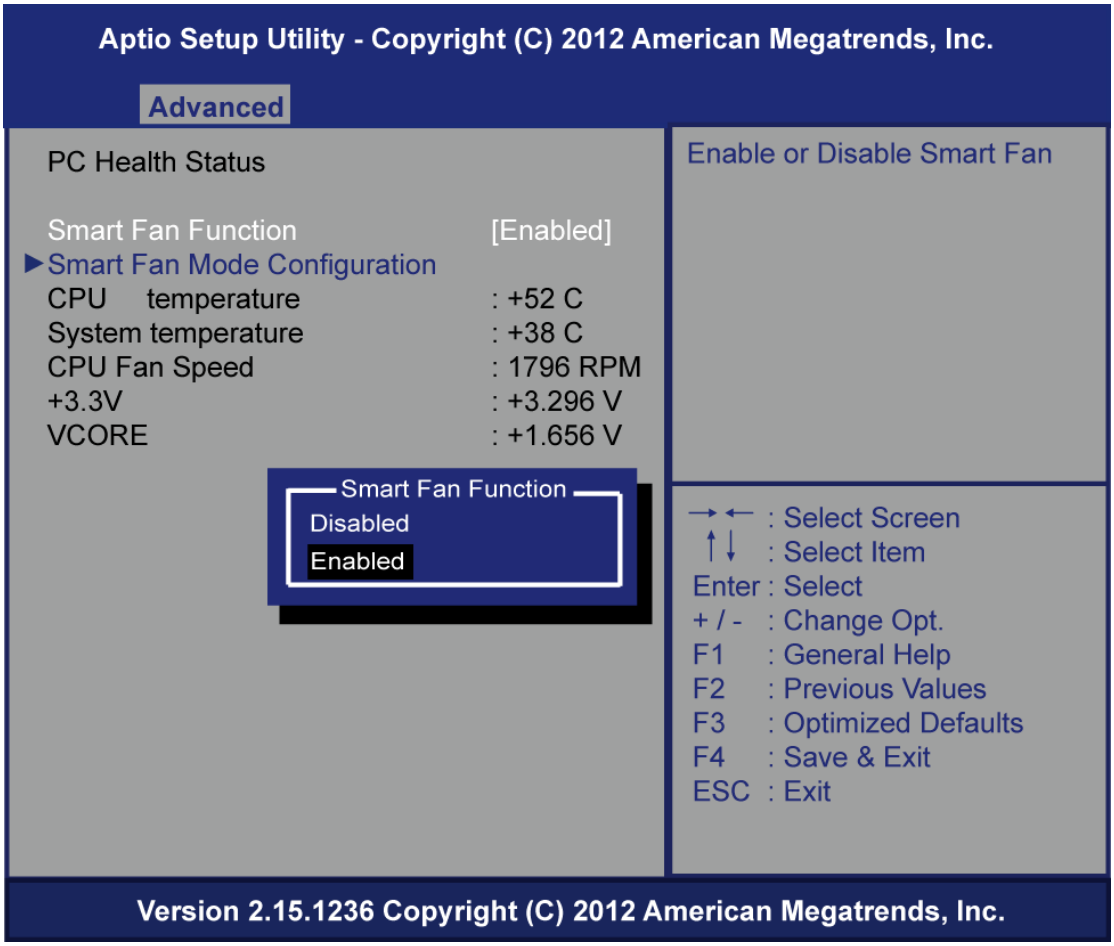
  Enable or Disable serial port .

- **Device Settings**

  Display the serial port resource.

- **PC Health Status**

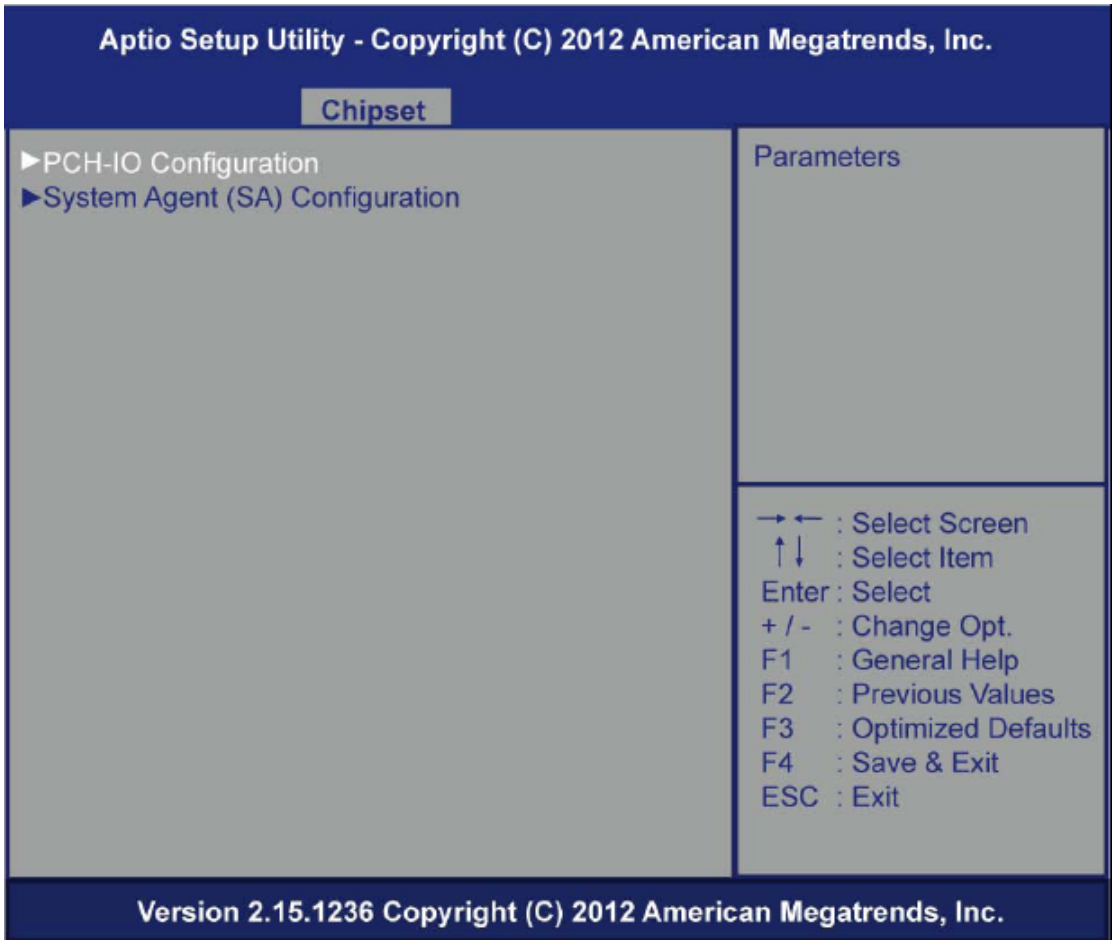
  This screen shows the Hardware Health Configuration, and enable or disable smart fan.



5.5 Chipset Menu

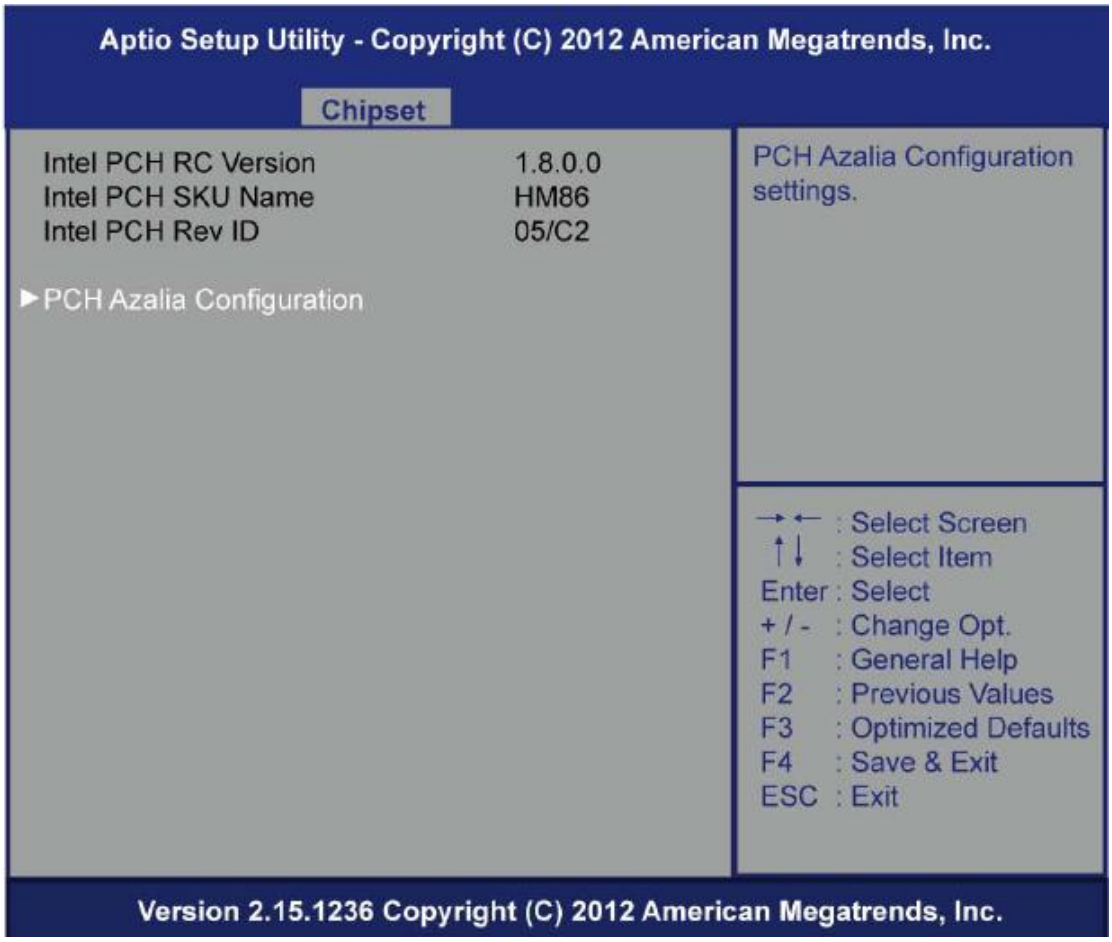
The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

- **PCH–IO Configuration**
- **System Agent(SA) Configuration**



- **PCH–IO Configuration**

  PCH Azalia Configuration settings



- **PCH Azalia Configuration**

  Contorl Detection of the Azalia device.

  - **Azalia**

    Enable or disable Azalia device.

- **System Agent(SA) Configuration**

  Enable or disable CPU SA Audio Device.

- **CPU SA Audio Device (BO:D3:F0)**

  Enable or disable CPU SA audio device

- **Graphics Configuration**

  Config graphics settings.

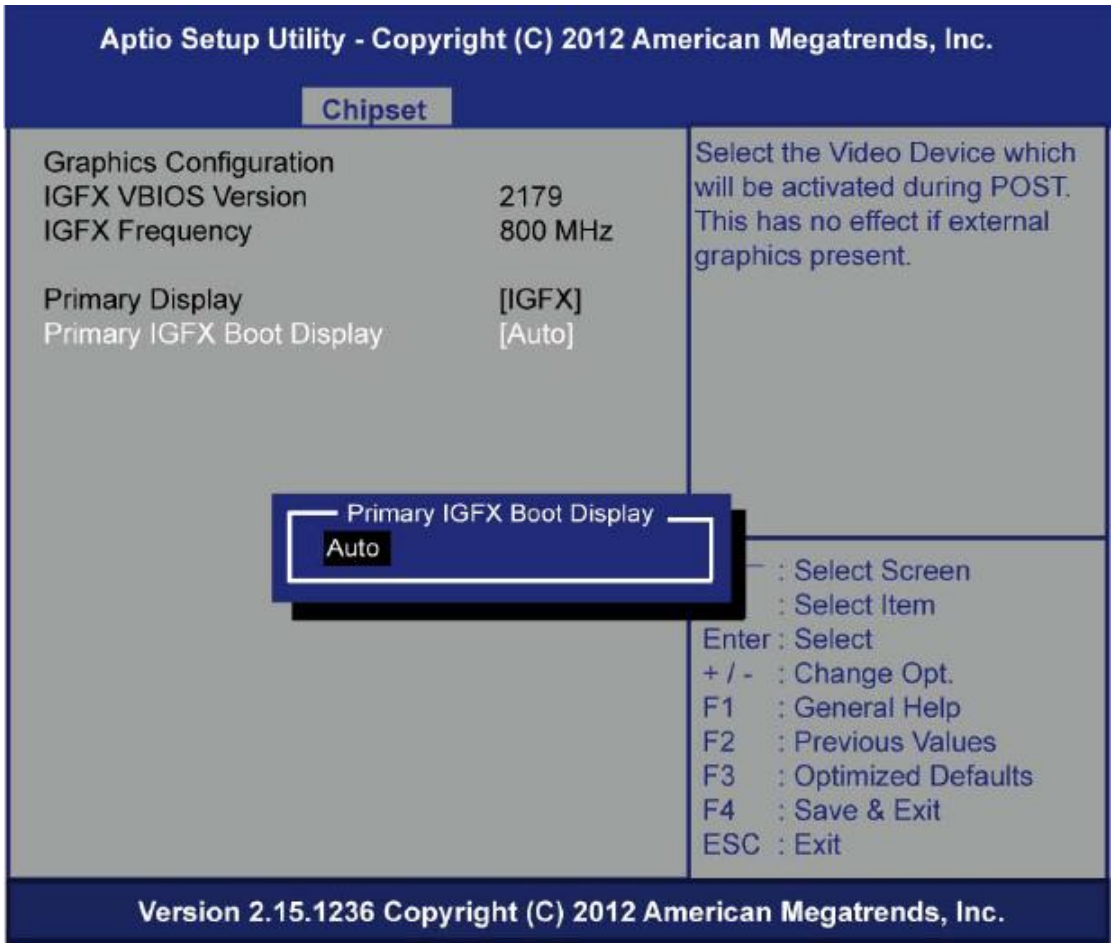
- **Memory Information**

  Memory configuration parameters

- **Graphics Configuration**

  Select the Video Device which will be activated druing POST.

  This has no effect if external grpahis present.

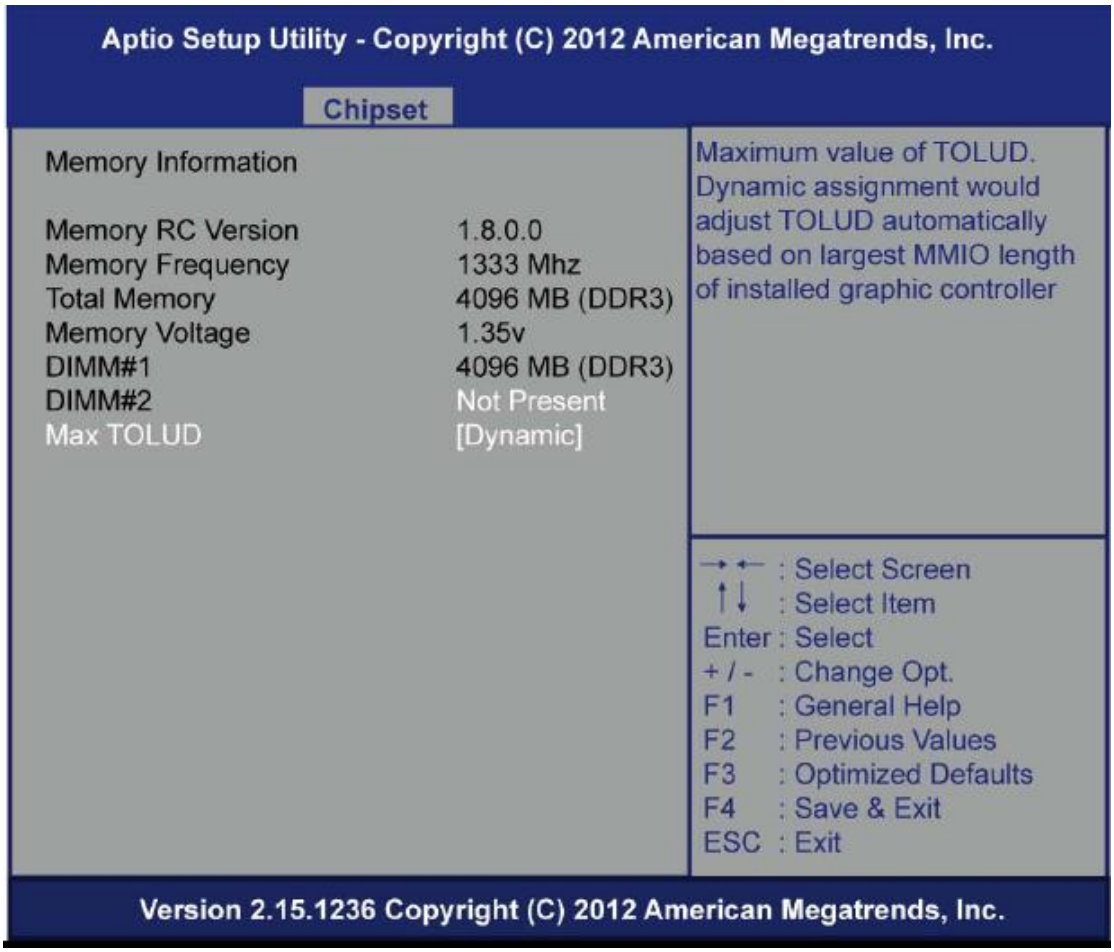


➢ **Primary IGFX Boot Display**

Select the video device which will be activated during POST.This has no effect if external graphics presents VGA modes will be supported only on primary display

- **Memory Information**

  Memory configuration parameters



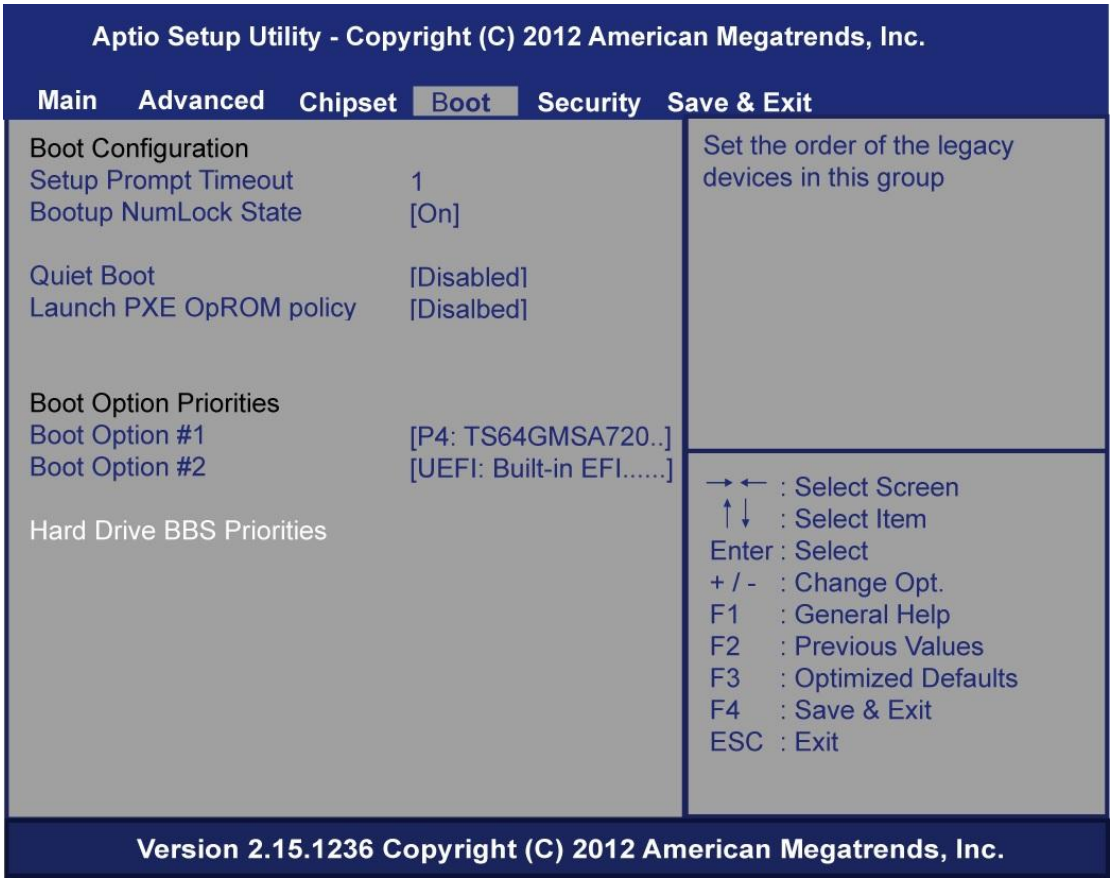
- **Max TOLUD**

  This item allows you to set Maximum Value of TOLUD

5.6 Boot Menu

The Boot menu allows users to change boot options of the system. You can select any of the items in the left frame of the screen to go to the sub menus:

- **Setup Prompt Timeout**
- **Boot up Num Lock State**
- **Quiet Boot**
- **Launch PXE OpROM policy**
- **Boot Option Priorities**
- **Hard Drive BBS Priorities**



➢ **Setup Prompt Timeout**

Set the number of seconds to wait for Setup activation key.

➢ **Boot up Mum Lock State**

Use this item to select the power-on state for the Mum Lock. The default setting is on.

➢ **Quiet Boot**

Use this item to enable or disable the Quite Boot state. The default setting is disabling.

➢ **Launch PXE OpROM policy**

➢ **Controls the execution of UEFI and Legacy PXE OpROM**

- **Boot Option Priorities**

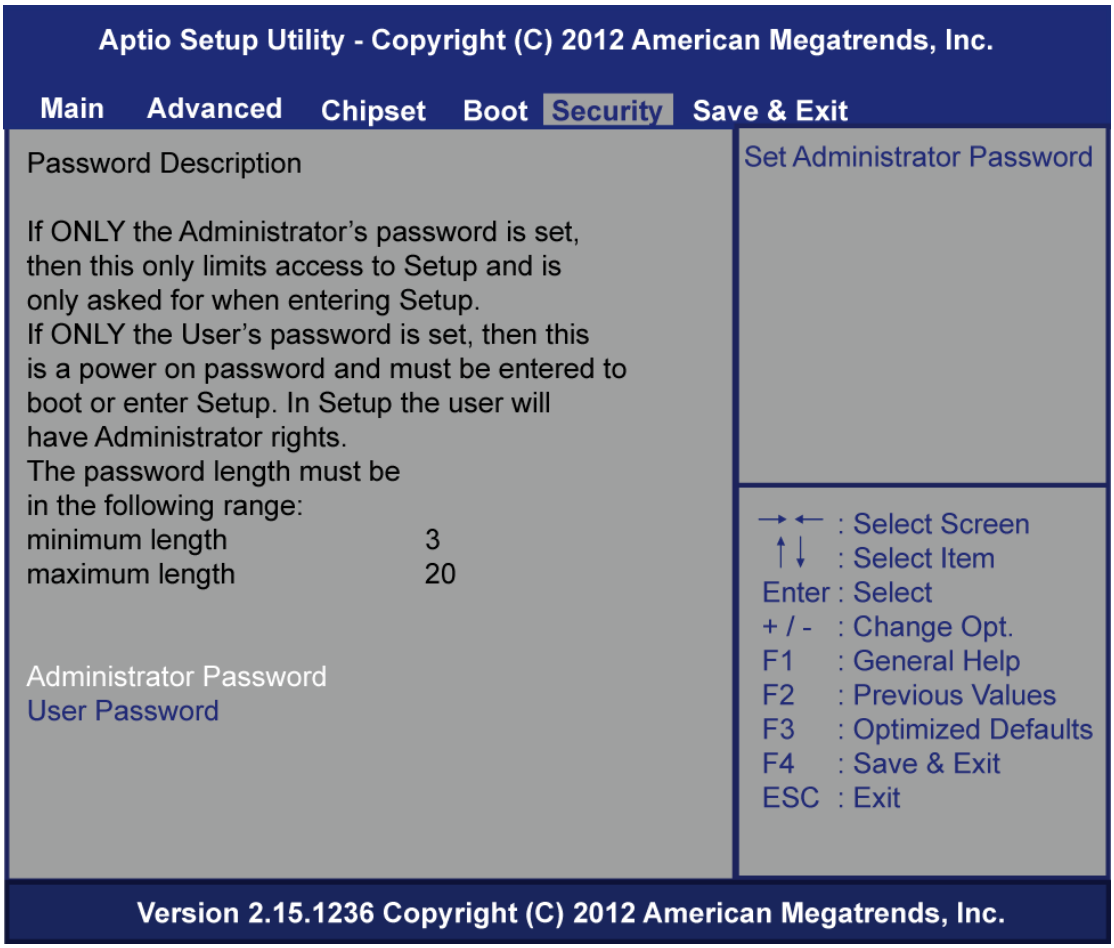
  Sets the system boot order

- **Hard Drive BBS Priorities**

  Set the order of the legacy devices in this group.

5.7 Security Menu

The Security menu allows users to change the security settings for the system.



- **Administrator Password**

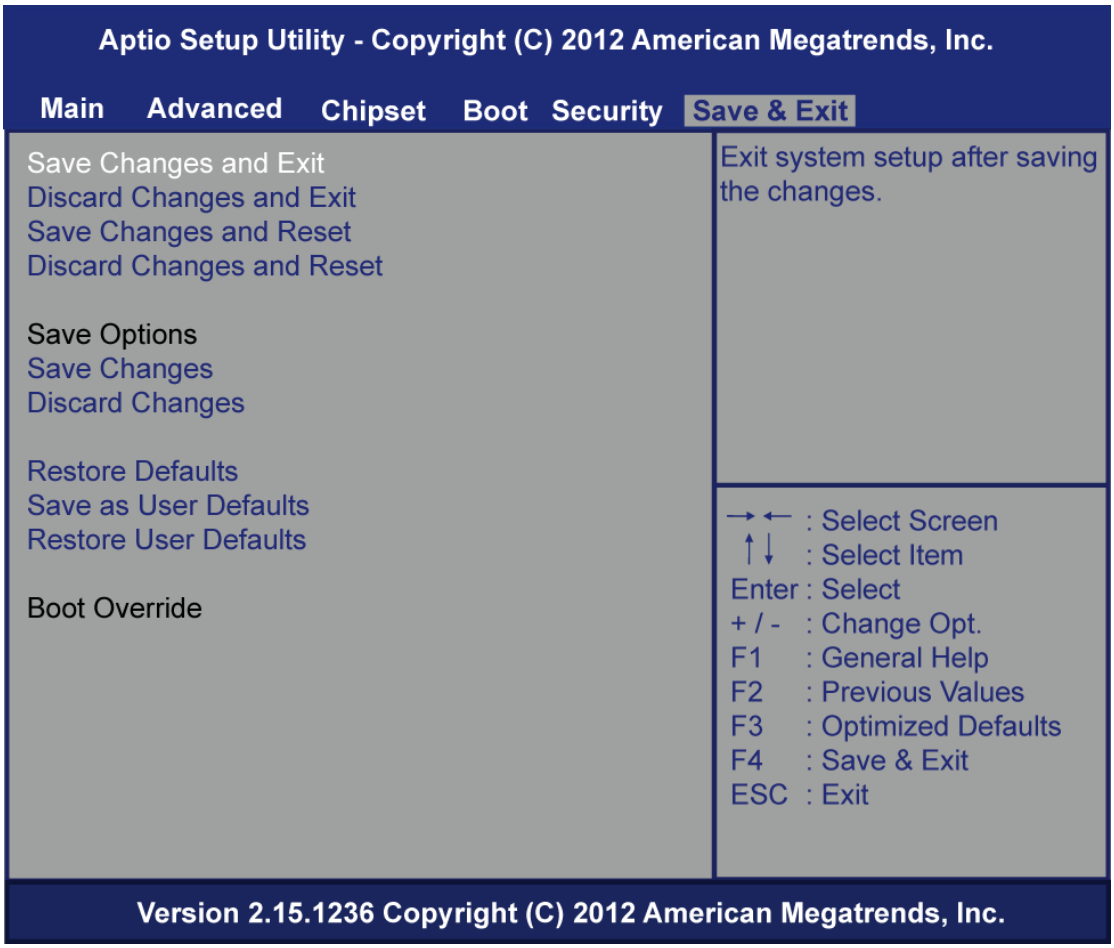
  This item indicates whether an administrator password has been set. If the Administrator password is set, BIOS will ask and wait for administrator password entered.

- **User Password**

  This item indicates whether a user password has been set. If the password is set, BIOS will ask and wait for User password entered

5.8 Save & Exit Menu

The Save & Exit menu allows users to load your system configuration with optimal or failsafe default values.



- **Save Changes and Exit**

  When you have completed the system configuration changes, select Save Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to save changes and exit BIOS Setup.

- **Discard Changes and Exit**

  This option provide quit Setup without making any permanent changes to the system configurationSelect Discard Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to discard changes and exit BIOS Setup.

- **Save Changes and Reset**

  When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to save changes and reset.

- **Discard Changes and Reset**

  Select this option to quit Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to discard changes and reset.

- **Save Changes**

  When you have completed the system configuration changes, select this option to save changes. Select Save Changes from the Save & Exit menu and press <Enter>. Select Yes to save changes.

- **Discard Changes**

  Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes from the Save & Exit menu and press <Enter>. Select Yes to discard changes.

- **Restore Defaults**

  It automatically sets all Setup options to a complete set of default settings when you select this option. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications. In particular, do not use the Optimal Setup options if your computer is experiencing system configuration problems. Select Restore Defaults from the save & Exit menu and press <Enter>.

- **Save as User Defaults**

  Select this option to save system configuration changes done so far as User Defaults. Select Save as User Defaults from the Save & Exit menu and press <Enter>.

- **Restore User Defaults**

  It automatically sets all Setup options to a complete set of User Defaults when you select this option. Select Restore User Defaults from the Save & Exit menu and press <Enter>.

APPENDIX A
REFERENCE DOCUMENTS

Document	Document No./Location
Digital Signage Open Pluggable Specification	324427
JAE TX24/TX25 connector product brief	http://jae-connectors.com/en/pdf/2008-40-TX24TX25.pdf
JAE plug connector details and drawing	http://jae-connectors.com/en/product_en.cfm?l_code=EN&series_code=TX24/TX25&product_number=TX25-80P-LT-H1E
JAE receptacle connector details and drawing	http://jae-connectors.com/en/product_en.cfm?l_code=EN&series_code=TX24/TX25&product_number=TX24-80R-LT-H1E

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APPENDIX B
WATCHDOG TIMER

Watchdog Timer Setting

After the system stops working for a while, it can be auto-reset by the Watchdog Timer. The integrated Watchdog Timer can be set up in the system reset mode by program.

Using the Watchdog Function Start

1.Enable configuration(Following is example to enable configuration by using debug)

-O 2E 87

-O 2E 87

2. Select Logic device:

-O 2E 07

-O 2F 07

3. WDT Device Enable

-O 2E 2B

-O 2F 00

-O 2E 30

-O 2F 01

4. Activate WDT:

-O 2E F0

-O 2F 80

5. Set base timer:

-O 2E F6

-O 2F 0A ➔Set Reset Time (Ex. A: 10 Sec)

6. Set timer unit

-O 2E F5

-O 2F 71(1: Sec ; 9: Minute)

7. Disable WDT

-O 2E 30

-O 2F 00

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