OPS860-HM Series

Intel Open® Pluggable Specification Box

User's Manual

Disclaimers

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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. Connect the equipment to another outlet of a circuit that doesn't connect with the receiver.
2. 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 OPS860-HM 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 OPS860-HM 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 OPS860-HM 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 OPS860-HM, 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 40℃. 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:
   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.
   When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

Trademarks Acknowledgments

Table of Contents

MEMO:

CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the OPS860-HM Chapter 1 includes the following sections:

- General Description
- Specification
- Dimensions
- I/O Outlets
- Package List

1.1 General Description

Intel Open® Pluggable Specification (OPS) Compliance

OPS860-HM is based on the Intel® Core™ i5//i3 processor with Mobile Intel® 6 Series Express Chipset (HM65) 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.

OPS860-HM meets Intel Open® Pluggable Specification for design and development, simplifying system upgrade maintenance for manufacturers and developers that supports not only Intel® 2nd Generation Core i family , Pentium Mobile, Celeron Mobile but also next generation processor (Optional) which is high flexible and user-friendly digital signage applications.

Easy maintenance

OPS860-HM 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.
OPS860-HM has pluggable engine box design; you can change HDD, DRAM and CPU configurations more easily

1.2 System Specifications

1.2.1 Main CPU Board

- CPU

The OPS860-HM has four reference solutions as CPU socket type. Customer can choose what they need.

- Intel® Core™ i5-2510E Processor (3M Cache, 2.5 GHz)
- Intel® Core™ i3-2330E Processor (3M Cache, 2.2 GHz)
- Intel® Celeron® Mobile Processor B810(2M Cache, 1.60 GHz)

- System Chipset
  - Intel® HM65 PCH
- BIOS
  - AMI ® BIOS
- System Memory
  - One socket 204-pin DDR3 SODIMM 1333 system memory up to 4GB
- Wireless Module (Optional)
  - Optional IEEE802.11 b/g/n, Bluetooth 2.0

1.2.2 I/O System

- Standard I/O
  - One VGA
  - Two USB ports 2.0
  - 1 x Power on /Off button
  - 1 x reset button

- Ethernet
  - 10/100/1000Mbps Ethernet
- Audio
  - Line-out/ Mic-in
- Expansion
  - One PCI Express Mini Card slot is equipped for optional add on such as wireless LAN card for 802.11 b/g connections, GPS, Bluetooth application.
- Storage
  - One 2.5''SATA HDD
- Net Weight
  - 0.9Kg(1.99 lb) without cooler
- Dimension (Main Body Size)
  - 179.4 mm(W)x 120mm(D) x 29.4 mm(H)
- Operation Temperature
  - 0℃ to 40℃

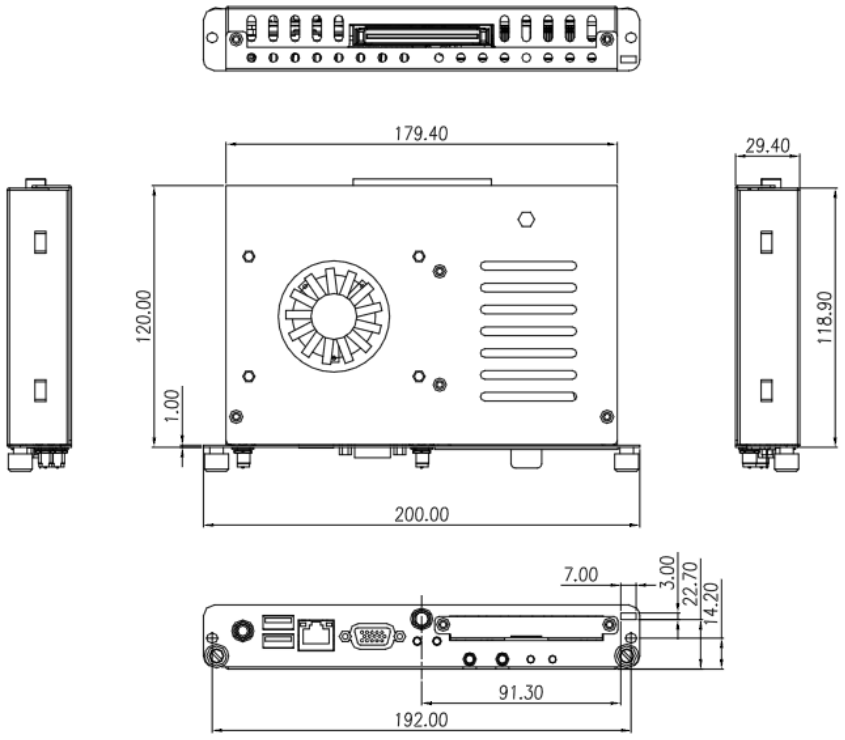
NOTE ***All specifications and images are subject to change without notice.***

1.3 Mechanical Assembly

1.3.1 Dimensions

This diagram shows you dimensions and outlines of the OPS860-HM

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.



1.3.2 I/O out let

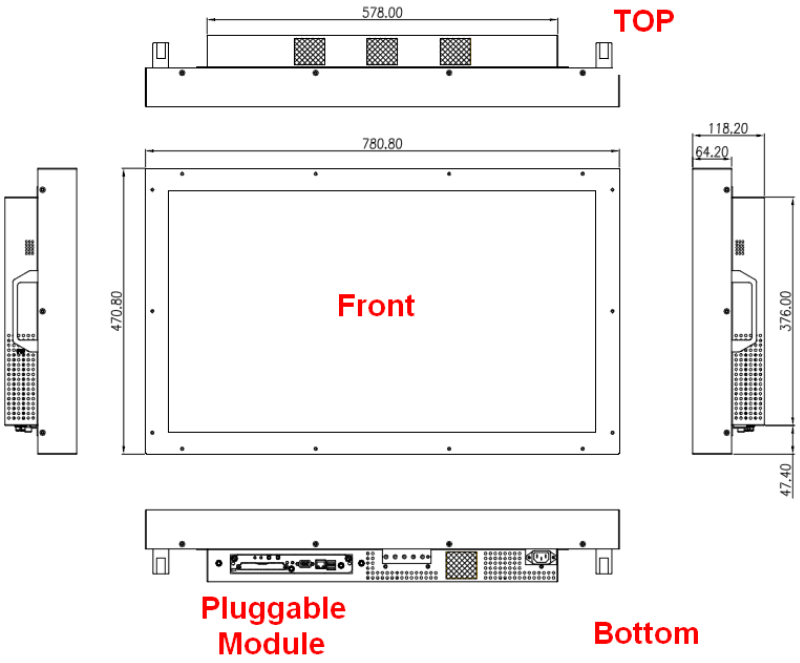
The following figures show you the locations of the OPS860-HM I/O outlets.

No.	Connector	No.	Connector
1	2.5"HDD slot	**7**	Audio(Line-out)
2	USB 2.0 x2	**8**	Audio(Mic.-in)
3	Ethernet	**9**	Power indicator
4	VGA	**10**	HDD indicator
5	Power Switch	**11**	JAE TX-25
6	Reset	**12**	Optional Antenna

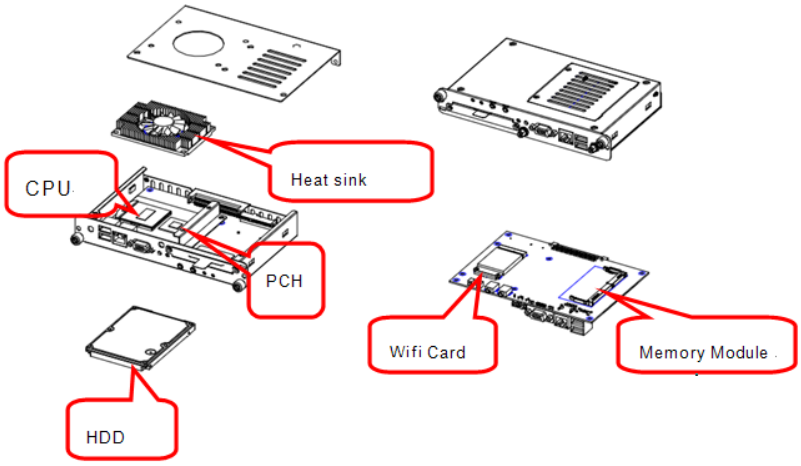
1.3.3 Mechanical Specifications

OPS860-HM Docked in the Reference Display Panel
The OPS 860 Pluggable Module docked at a display panel system. In this reference design, the module is docked and undocked in the vertical direction.

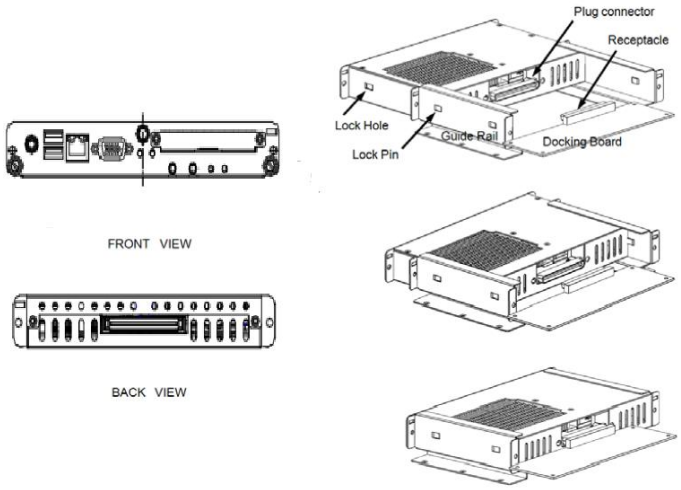
NOTE: Please contact Axiomtek for available option display panel.



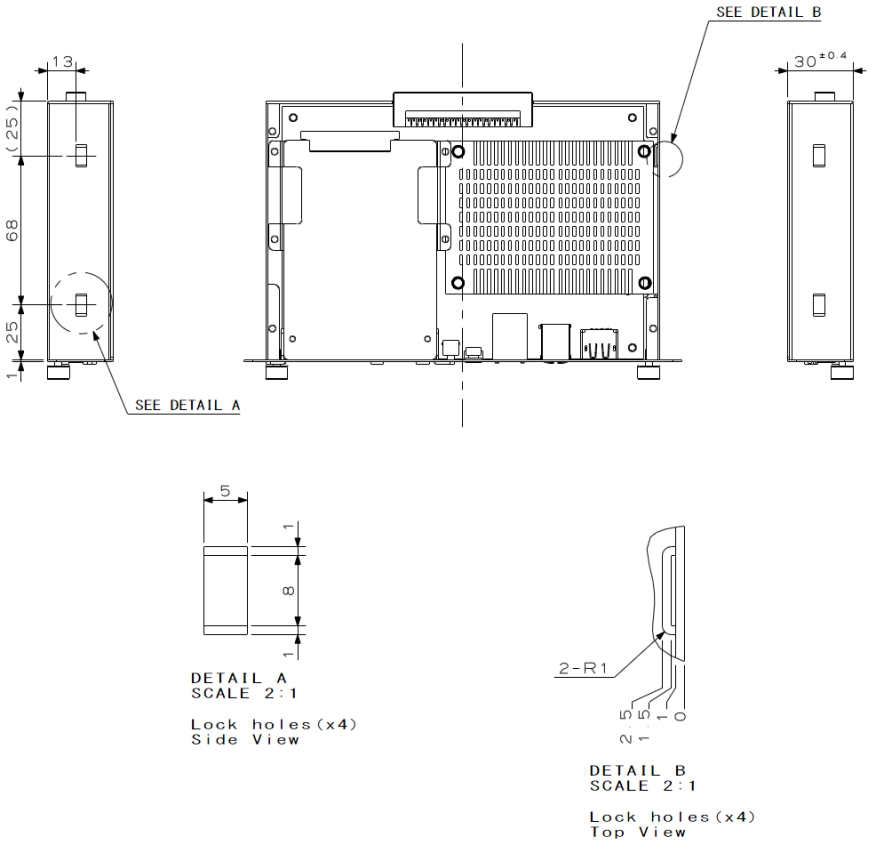
- Exploded View of the Pluggable Module



- The Guide Rail Mechanism for the OPS860-HM Module
  You can use the rails along side of OPS860-HM 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 OPS860-HM Module.

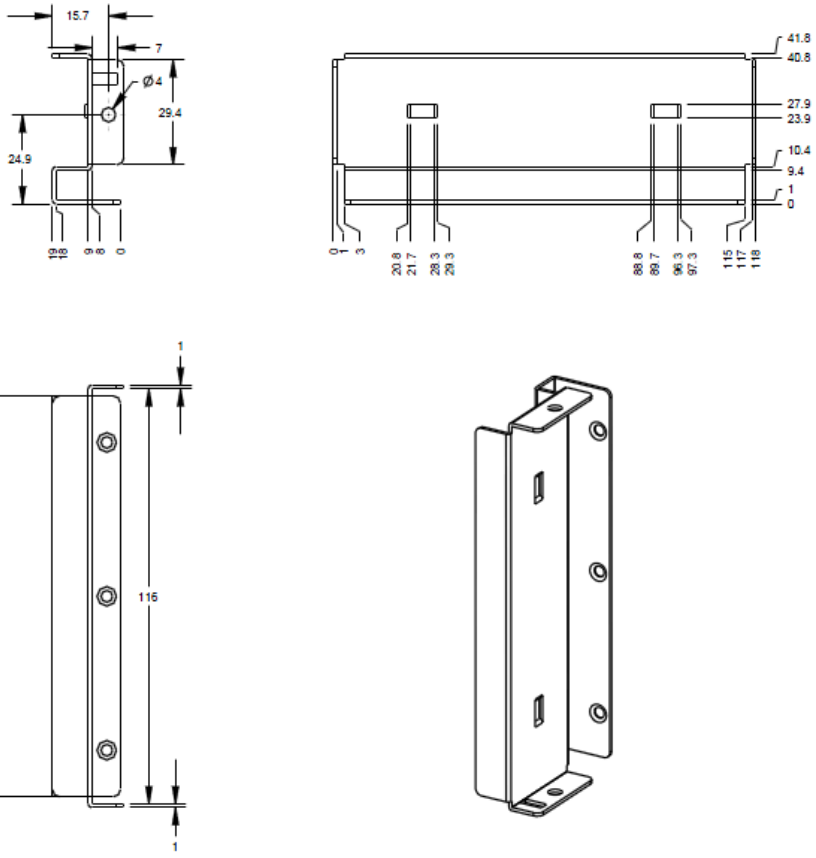


- Location of Lock Hole on the Pluggable Module

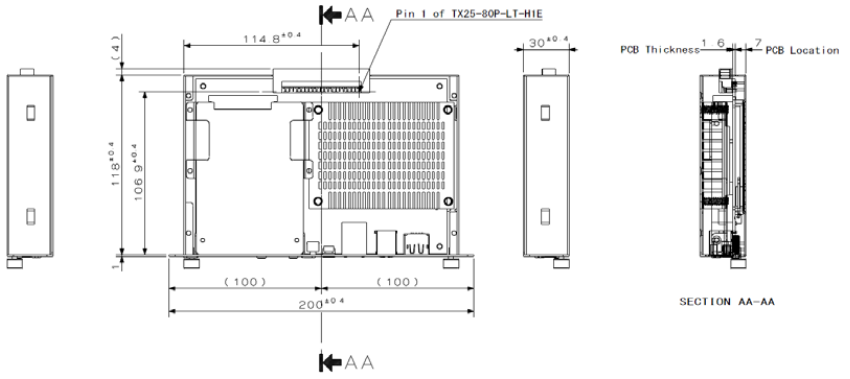


*The drawing is base on Intel Open Pluggable Specification

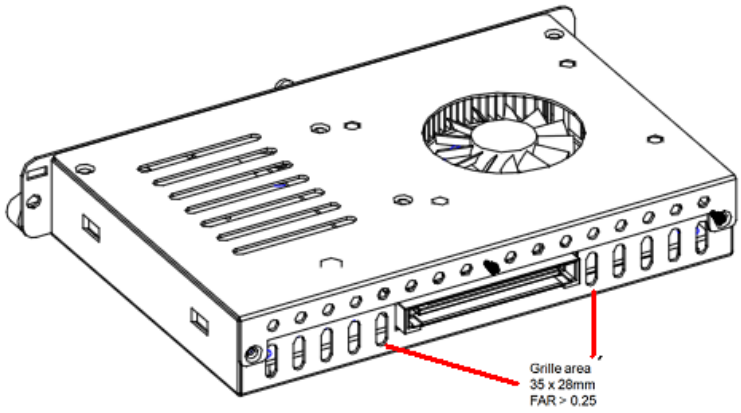
- Dimensions of the Guide Rail



- 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

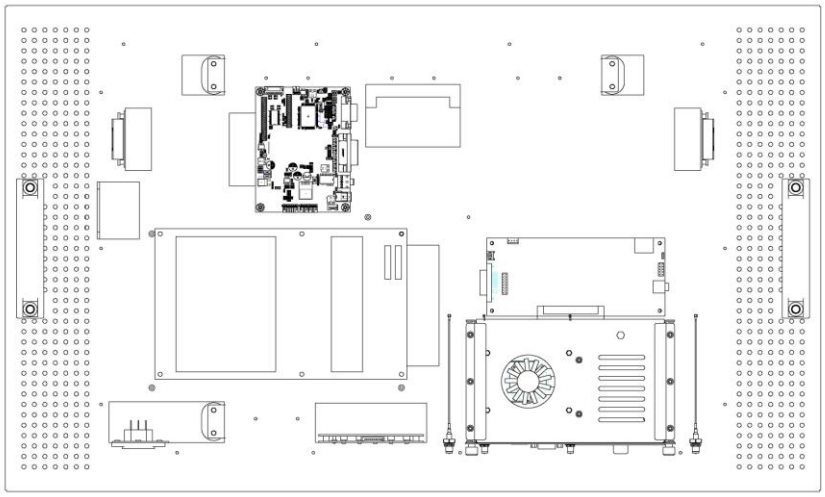


- Vent Holes at the Pluggable Module Back Panel
  On the OPS860-HM Module, it is recommended by Intel that some vent holes be opened at the back so that hot air can escape more easily from the module that the FAR in on both sides of the module back panel should be greater than 0.25.



1.3.4 Reference Design

Display Panel Rear View – Internal



The digital signage OPS860-HM prototype is based on a 32" display panel with the functional blocks illustrated in Figure 18. 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 OPS860-HM, the bundled package should contain the following items:

- OPS860-HM device x 1
- CD x 1
- HDD Mylar x 1
- THERMAL GREASE(Syringe 1G)
- M3 x 4 screw x 2
- M4 x 6 screw x 2

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

MEMO :

CHAPTER 2
HARDWARE INSTALLATION

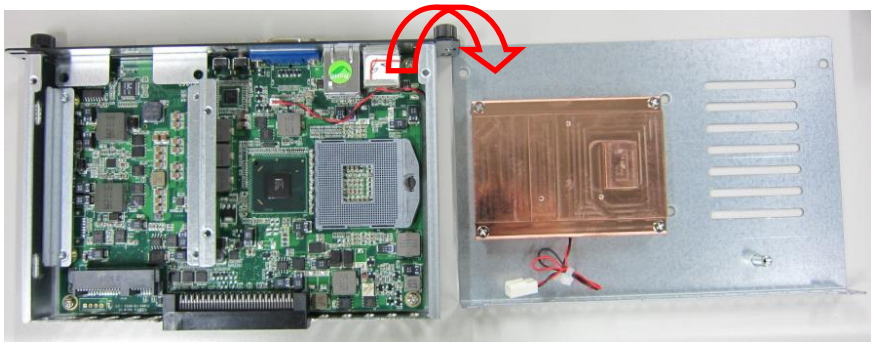
The OPS860-HM is convenient for your various hardware configurations, such as HDD (Hard Disk Drive), Memory Module. The chapter 2 will show you how to install the hardware. It includes:

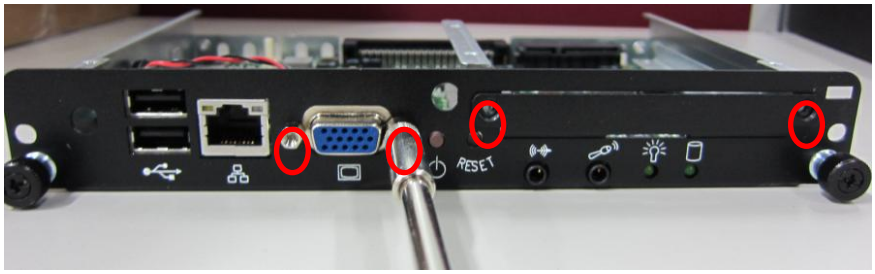
- CPU, Hard disk Drive and DRAM Installation
- Pluggable Module Method

2.1 CPU,HDD,DRAM,Wireless Installation

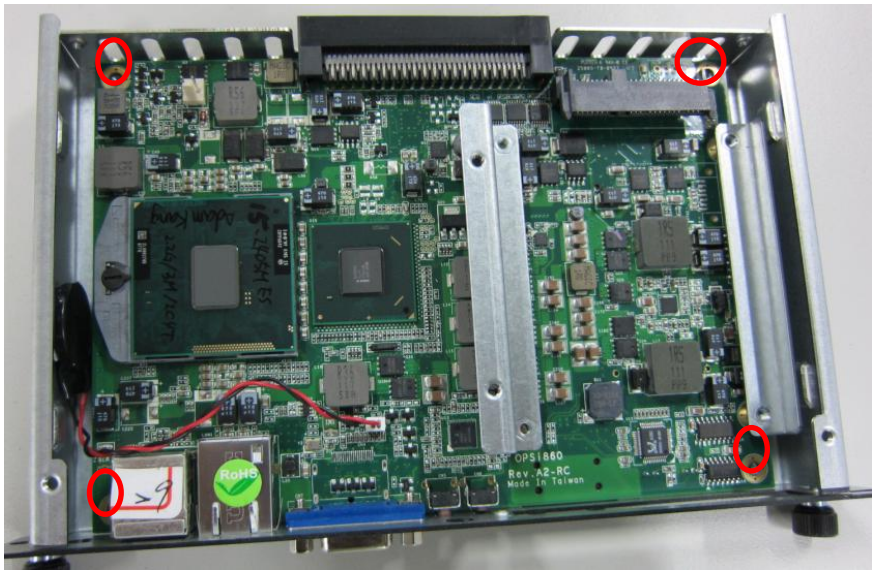
The OPS860-HM model offers a convenient drive bay module for users to install DRAM, CPU and HDD. Please follow the steps:

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

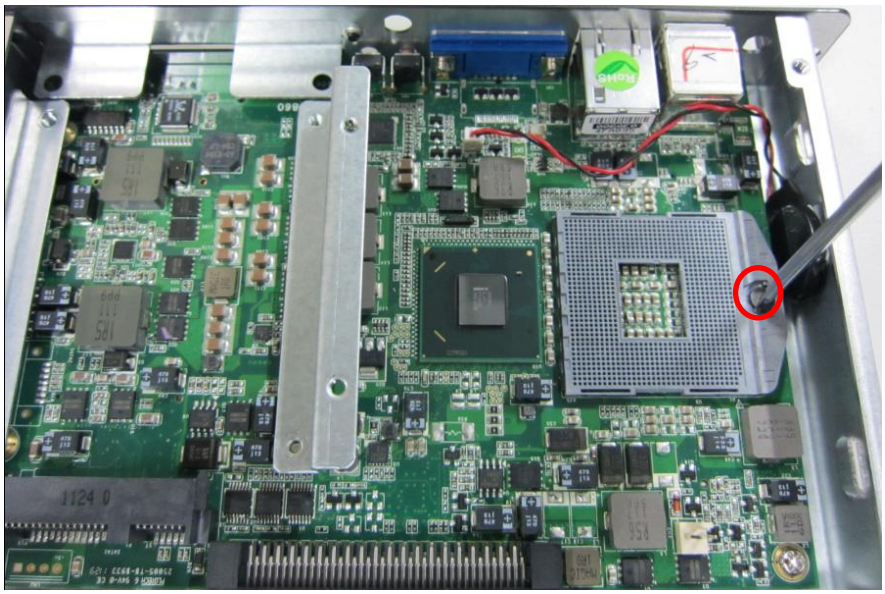




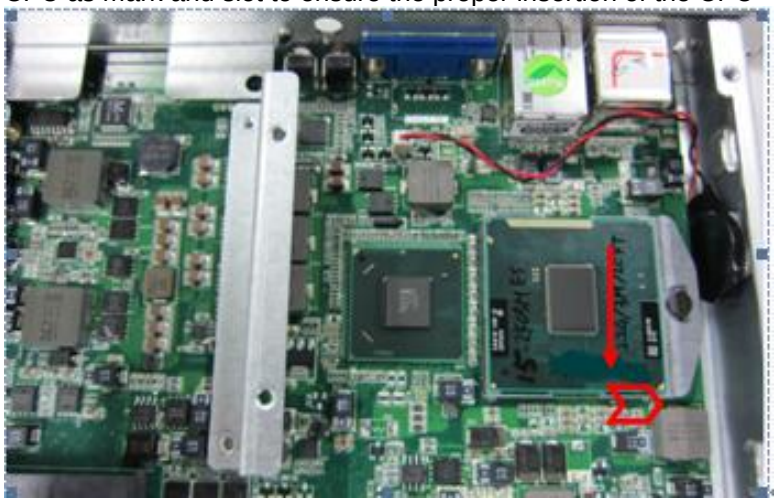
NOTE ***Please pull out power cable of system fan while installation***



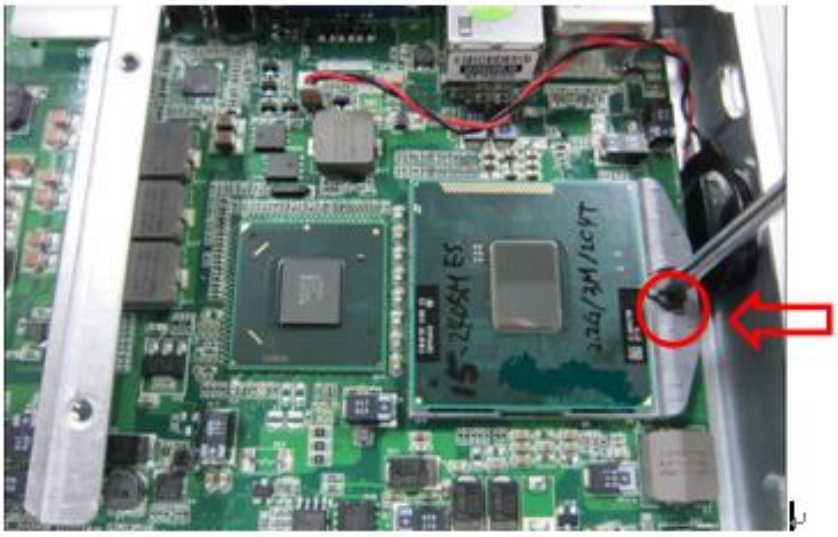
Step 2 Install CPU
Step 2.1 Loosen the screws of CPU socket



Step 2.2 Insert the CPU in to the slot. Please follow the indication on CPU as mark and slot to ensure the proper insertion of the CPU

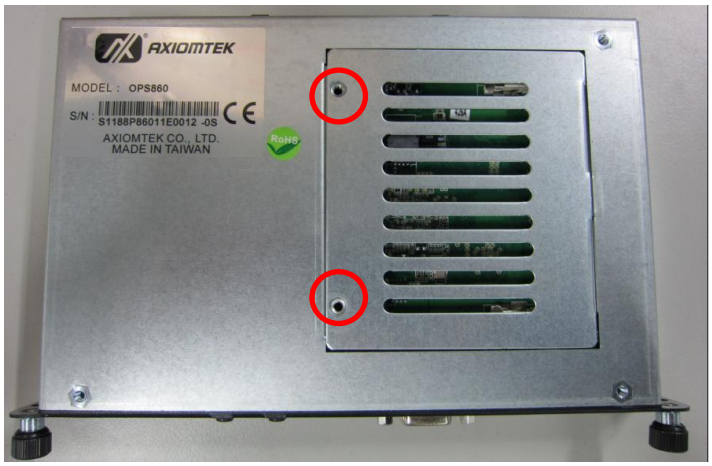


Step 2.3 CPU is inserted into the socket and the latch is closed.



Step 3 Install DRAM

Step 3.1 Loosen the screws on the real of chassis as illustrated.

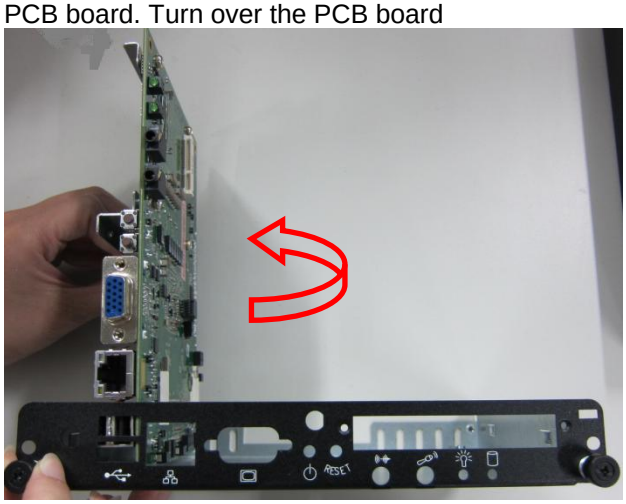


Step 3.2 After losing the screws, extract the real of chassis out of the module.

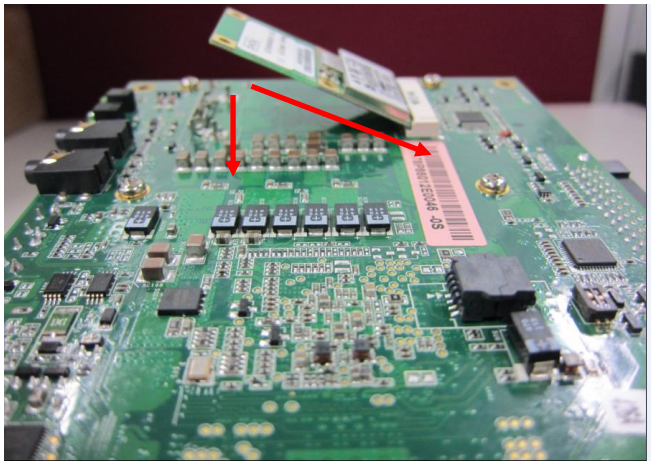
Step 3.3 Install DRAM module.
Put DRAM. Place the memory module into the socket and press it firmly. The socket latches are levered upwards and clipped on to the edges of the DIMM.

Step 4 Install Wireless Modules
The OPS860-HM provides one Mini card slot for user to install one wireless LAN card. When installing the wireless LAN card, refer to the following instructions and illustration

Step 4.1 Please refer to Step 1 to loosen the screws of the chassis and PCB board. Turn over the PCB board

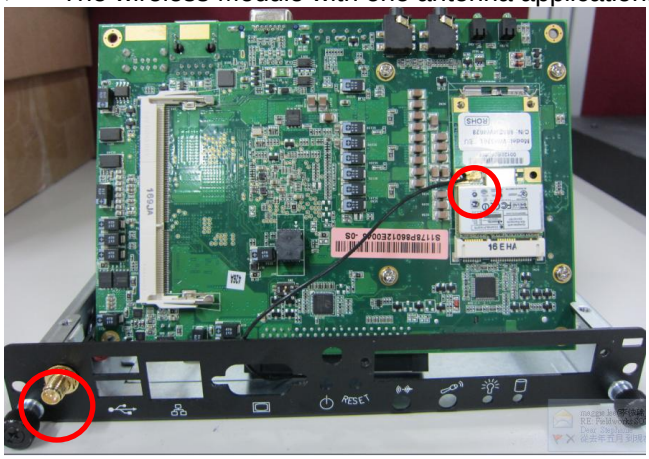


Step 4.2 Install Wi-Fi module. Place the Wi-Fi module into the socket and press it firmly down until it is fully located.

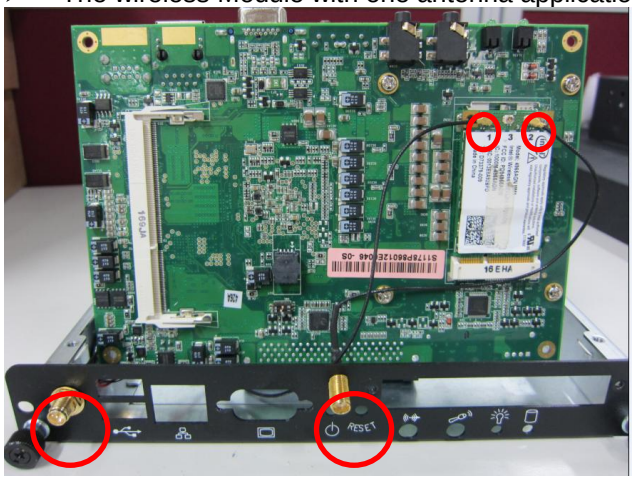


Step 4.3 Find the Antenna cable and connect it wireless LAN card.
Screw the antenna connector at expansion I/O side and Install the antenna on the wireless LAN card

- The wireless Module with one antenna application:



- The wireless Module with one antenna application:



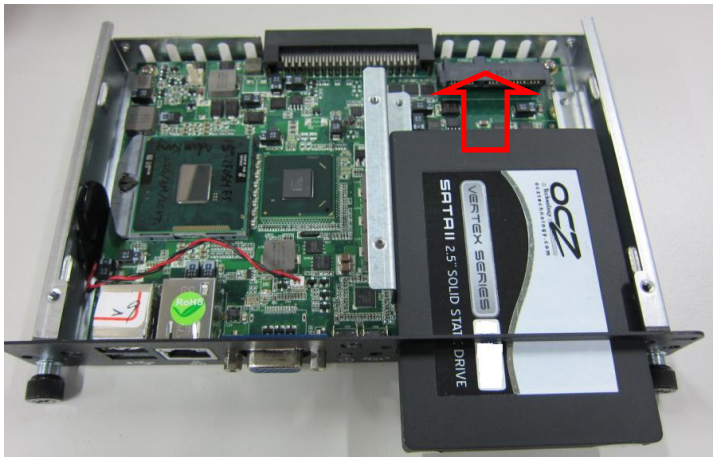
Step 5 Install HDD drive

To enable future remove of HDD drive affix the HDD Mylar sheet to the HDD drive so that it extends past the length of the HDD at the opposite end of the HDD to the Connector

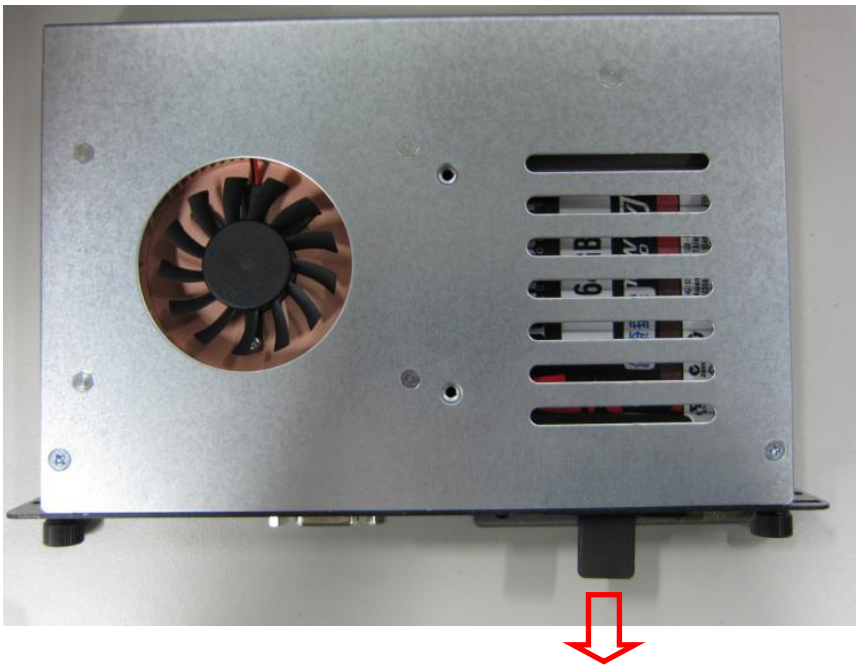
Step 5.1 Loosen the screw of HHD driver cover

Step 5.2 Affix the HHD Mylar sheet to the HDD drive

Step 5.3 Plug HDD drive in to HDD connector



Step 5.4 Pull the HDD Mylar to slot-out the HDD drive

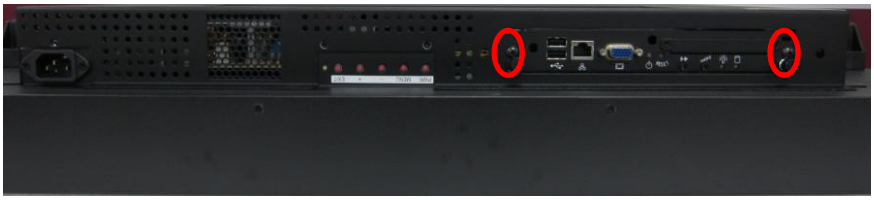


2.2 Pluggble Module Method

NOTE Please contact Axiomtek for the available option display

Step 1 Pluggable the box into display

Step 2 Fasten the screws as illustrated



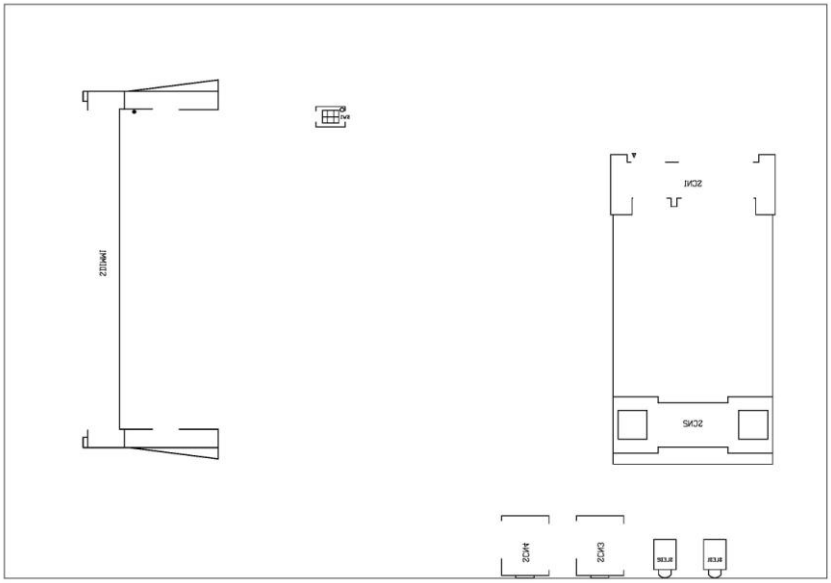
CHAPTER 3
CONNECTORS

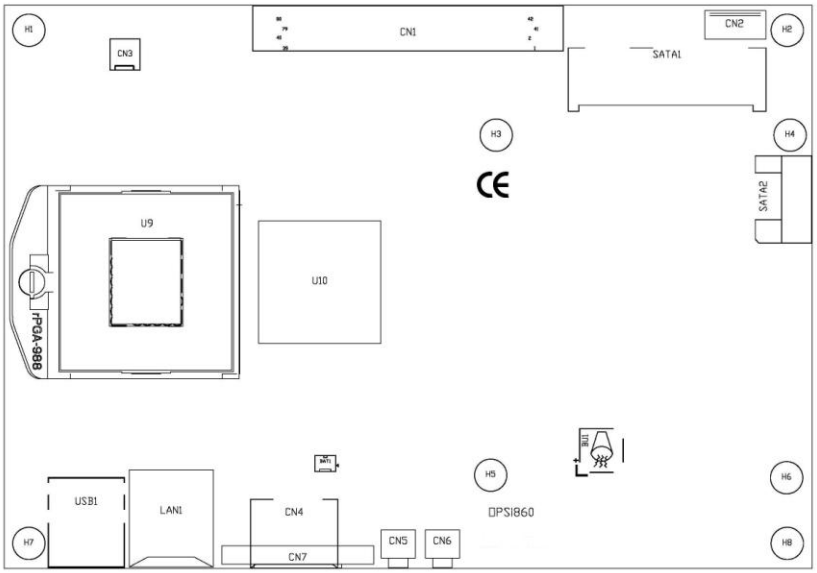
This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

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
CPU FAN	CN3
Display Port(Optional)	CN4
POWER BUTTON	CN5
RESET BUTTON	CN6
VGA Port	CN7
Mini Card Slot	SCN1
Audio MIC-IN Connector	SCN3
Audio LINE-OUT Connector	SCN4
Battery 2 PIN	BAT1
ATX Auto Power On (SW-1)	SW1
Clear CMOS (SW-2)	
RJ45 (WG82579LM)	LAN1
USB Port 0/1	USB1
HDD LED	SLED1
Power LED	SLED2



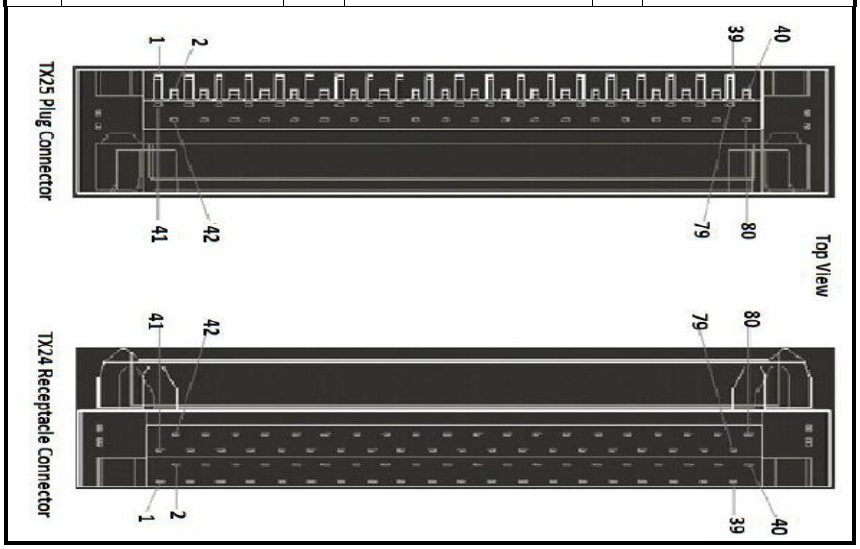

H1
CN3
CN1
CN2
H2
SATA1
H3
H4
SATA2
U9
U10
rPGA-988
USB1
LAN1
CN4
CN7
CN5
CN6
H5
H6
H7
H8
OPS1860

3.1.1 JAE TX25 Connector (CN1)

Connector JAE TX25 CN1 is for JAE interface support.

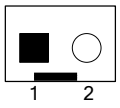
Pin	Signal	Pin	Signal	Pin	Signal
1	DDP_3N	2	DDP_3P	3	GND
4	DDP_2N	5	DDP_2P	6	GND
7	DDP_1N	8	DDP_1P	9	GND
10	DDP_0N	11	DDP_0P	12	GND
13	DDP_AUXN	14	DDP_AUXP	15	DDP_HPD
16	GND	17	TMDS_CLK-	18	TMDS_CLK+
19	GND	20	TMDS0-	21	TMDS0+
22	GND	23	TMDS1-	24	TMDS1+
25	GND	26	TMDS2-	27	TMDS2+
28	GND	29	DVI_DDC_DATA	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(Optional for PCIE_CN)	42	RSVD(Optional for PCIE_CP)
43	RSVD(Optional for PCIE_TP)	44	RSVD(Optional for PCIE_RP)	45	RSVD(Optional for PCIE_TN)
46	RSVD(Optional for PCIE_RN)	47	RSVD(Optional for DP CTRL CLK)	48	RSVD(Optional for DP CTRL DATA)
49	SLP_S3(Optional For PCIE RST)	50	SYS_FAN_CTL	51	UART_RXD
52	UART_TXD	53	GND	54	NC
55	NC	56	GND	57	NC
58	NC	59	GND	60	USB_PN2

Pin	Signal	Pin	Signal	Pin	Signal
61	USB_PP2	62	GND	63	USB_PN1
64	USB_PP1	65	GND	66	USB_PN0
67	USB_PP0	68	GND	69	LINEOUT_L
70	LINEOUT_R	71	NC (Optional For CEC)	72	PB_DET
73	PS_ON#	74	PWR_STATUS	75	GND
76	GND	77	GND	78	GND
79	GND	80	GND		



3.1.2 CPU FAN (CN3)

Pin	Description
1	GND
2	+5V

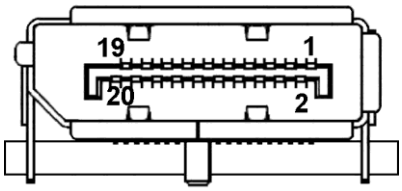


3.1.3 Display Port Connector (CN4)

CN4 is a standard Display Port Connector co-layout with CN7 (Optional)

Pin	Signal
1	DPB_LANE0
2	GND
3	DPB_LANE0#
4	DPB_LANE1
5	GND
6	DPB_LANE1#
7	DPB_LANE2
8	GND
9	DPB_LANE2#
10	DPB_LANE3
11	GND
12	DPB_LANE3#
13	Detect Pin
14	GND
15	DPB_AUX
16	GND
17	DPB_AUX#
18	DPB_HPD
19	GND
20	+3.3V

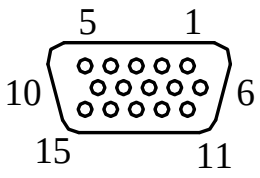
CN4



3.1.4 VGA Port (CN7)

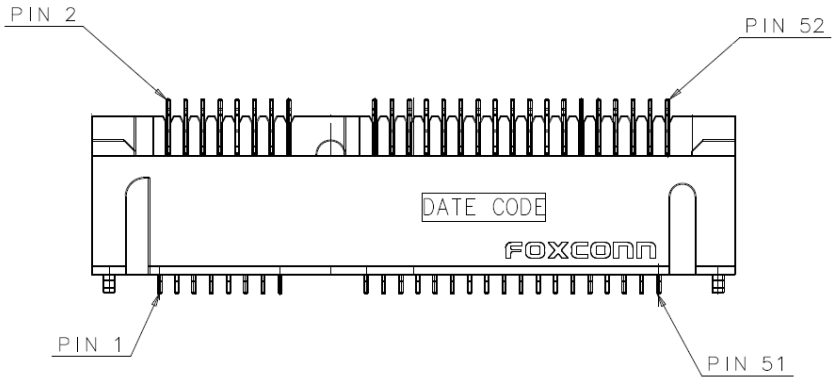
DB15 CRT Connector (CN7) Co-layout with CN4
CN7 is a DB15 connector commonly used for the CRT Monitor.

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	Green	3	Blue
4	N.C	5	GND	6	DETECT
7	GND	8	GND	9	VCC
10	GND	11	N.C	12	DDC DATA
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK

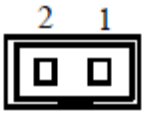


3.1.5 Min Card Slot (SCN1)

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		



3.1.6 Battery 2 PIN (BAT1)

Pin	Description	
1	+VBAT	
2	GND	

3.1.7 ATX Auto Power ON/ Clear CMOS (SW1)

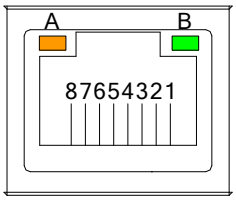
SW	On	Off
1	Auto On	ATX
2	Clear	Normal

Remark: The product which is shipped after 12/20/2011 is with the setting shown below. If you are not sure which date you received your product, please contact Axiomtek.

3.1.8 RJ45 (WG82579LM) (LAN1)

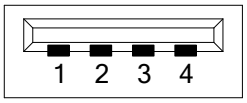
The RJ-45 connector LAN1 is for Ethernet. To connect the board to 100-Base-T or 1000-Base-T hub, just plug one end of the cable into LAN1 and connect the other end (phone jack) to a 100-Base-T hub or 1000-Base-T hub.

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



3.1.9 USB Port 0/1 (USB1)

Pin	Signal
1	USB_POWER
2	USB -
3	USB +
4	GND



CHAPTER 4
DRIVERS INSTALLATION

4.1 System

OPS860-HM supports Windows XP, Win Vista and Window 7. To facilitate the installation of system driver, please carefully read the instructions in this chapter before start installing.

1. Insert Intel Express Installer Driver CD and select the "\Driver\".

2. Select your operating system driver to install.

3. Select all files and follow the installing procedure.

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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 <F2> key immediately.

After you press the <F2> 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.

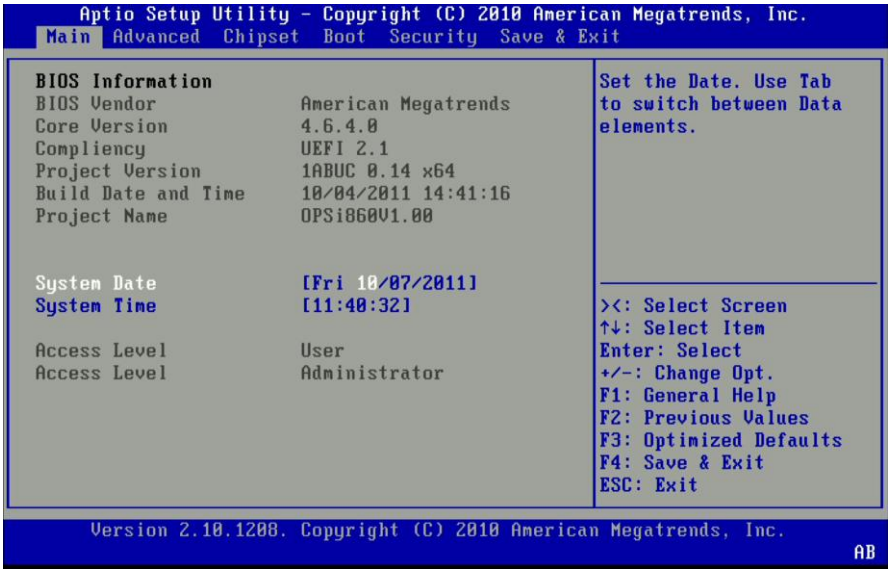
NOTE: Some of navigation keys differ from one screen to another.

← 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.



- 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

- Launch PXE OpROM

Use this item to enable or disable the Boot ROM function of the onboard LAN chip when the system boots up.

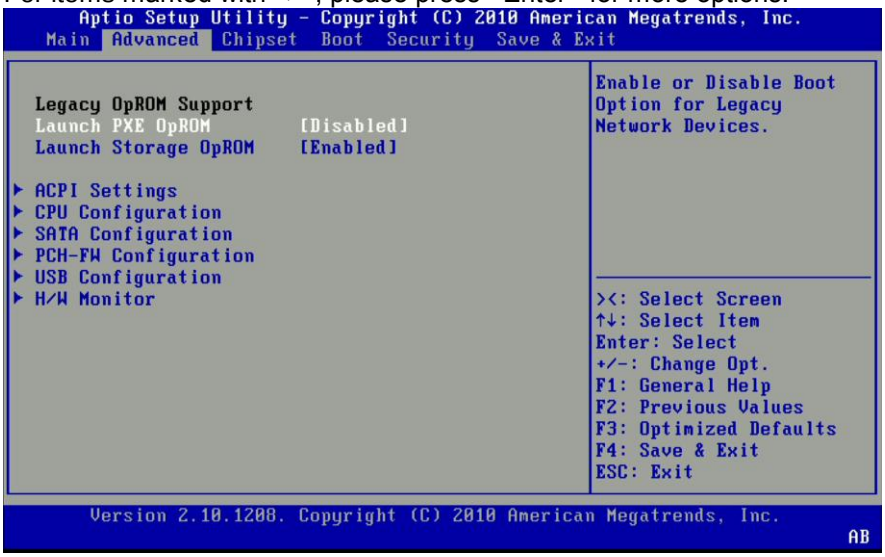
- Launch Storage OpROM

This item can set enable or disable the storage device option ROM with CF device.

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:

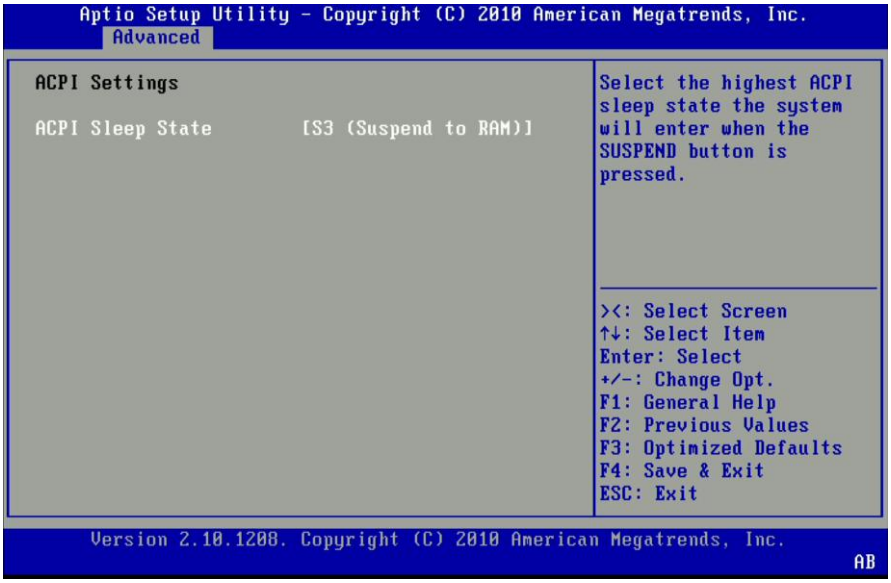
- ACPI Settings
- CPU Configuration
- SATA Configuration
- PCH-FW Configuration
- USB Configuration
- H/W Monitor

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.

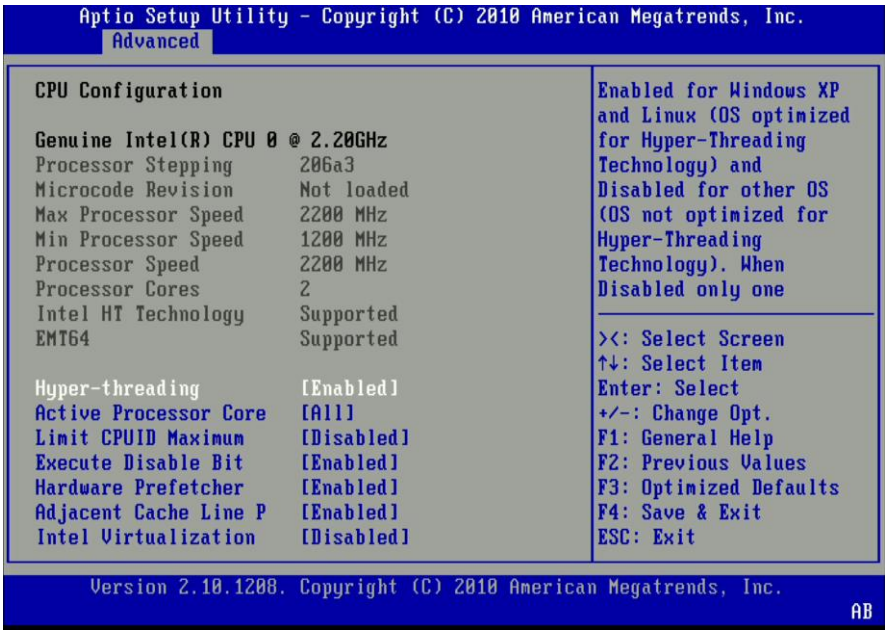


  - ACPI Sleep State

    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, S1 (CPU Stop Clock), S3 (Suspend to RAM) and Suspend Disable.

- CPU Configuration

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



- Active Processor Cores
  This feature controls the number of cores to enable in each processor package.
- Limit CPUID Maximum
- This determines the kind of basic information CPUID can provide the operating system. The maximum CPUID input value determines the values that operating system can write to the CPUID's EAX register to obtain information about processor.(When the computer is booted up, the operating system executes the CPUID instruction to identify the processor and its capabilities. Before it can do so, it must first query the processor to find out the highest input value CPUID recognizes.)

- Execute Disable Bit
- Execute Disable Bit is a hardware-based security feature that can reduce exposure to viruses and malicious-code attacks and prevent harmful software from executing and propagating on the server o network
- Hardware Prefetcher

  Enabling/disabling hardware prefetch mechanisms on discrete applications can help system integrators and software developers obtain optimal performance for solutions running on Intel® Core™ Microarchitecture-based processors.
- Adjacent Cache Line Prefetch

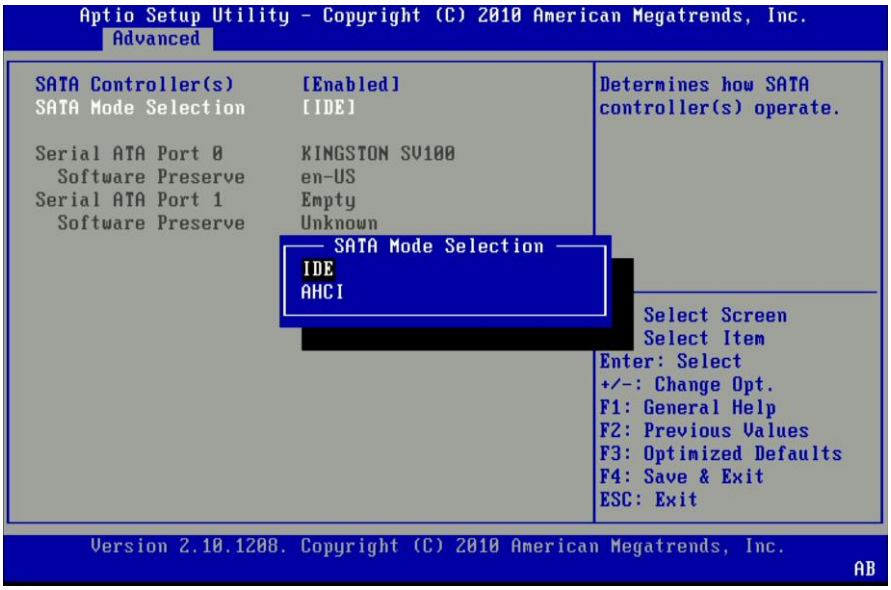
  When enabled, the processor will retrieve the currently requested cache line, as well as the subsequent cache line.

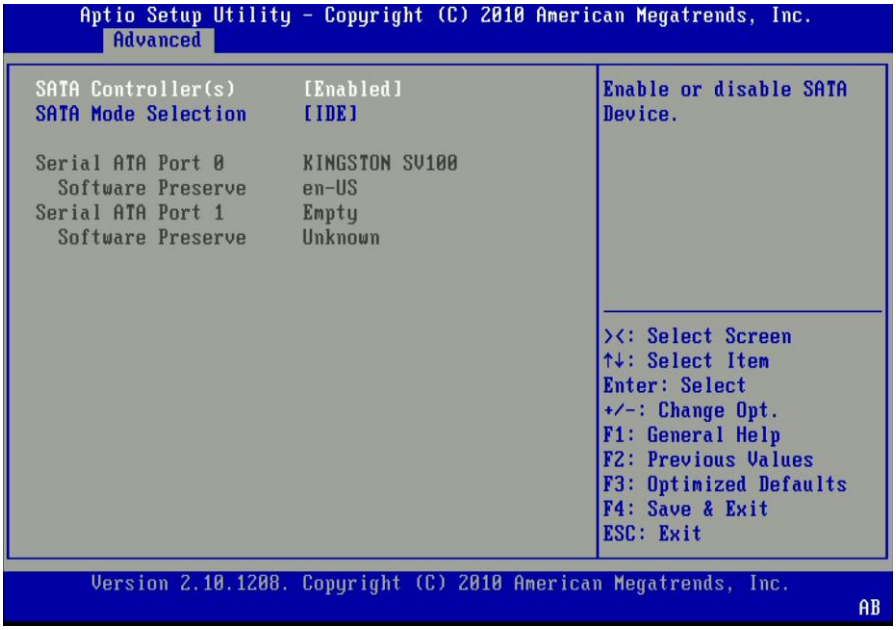
  When disabled, the processor will only retrieve the currently requested cache line
- Intel Virtualization Technology

  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.





- SATA Mode

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

- Serial-ATA Controller 0

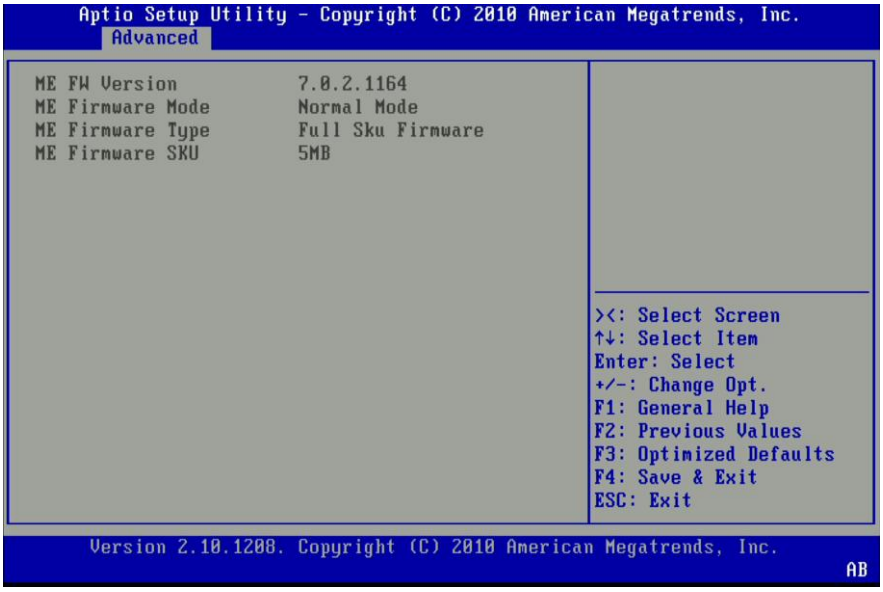
  Use this item to control the onboard SATA controller. Here are the options for your selection, Compatible, Enhanced and Disable.

- Serial-ATA Controller 1

  Use this item to control the onboard SATA controller. Here are the options for your selection, Enhanced and Disabled.

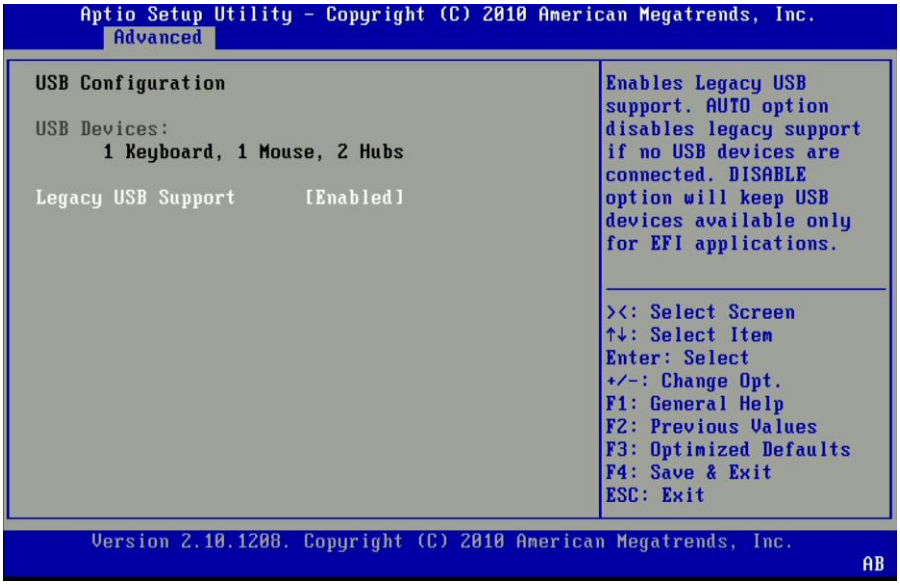
- PCH-FW Configuration

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.

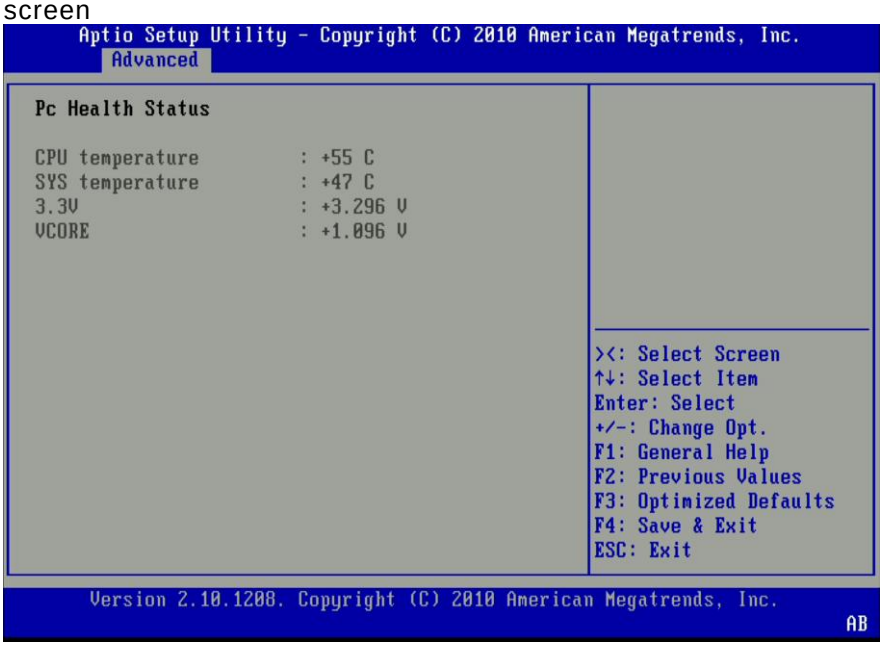


- Legacy USB Support

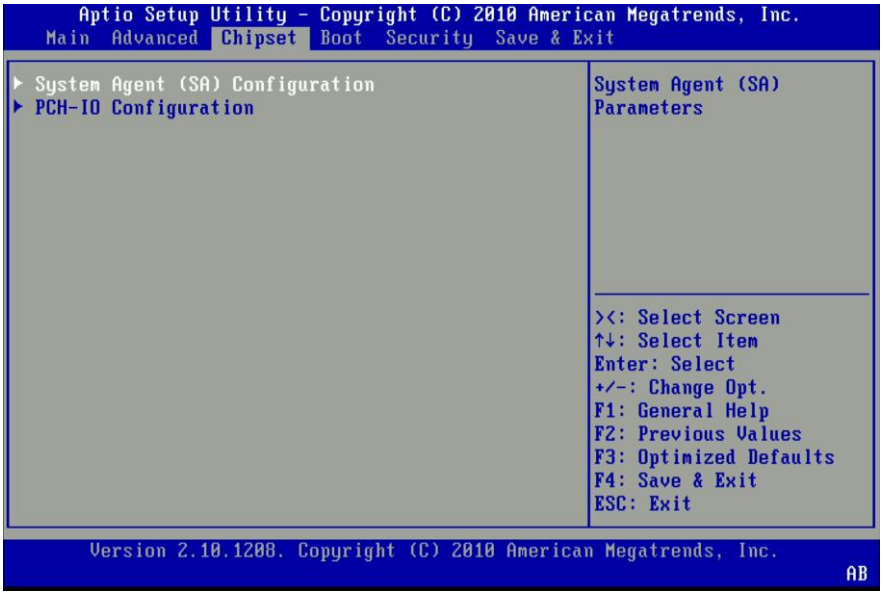
  This is for supporting USB device under legacy OS such DOS, when choosing AUTO", the system will automatically detect any USB device is plugged into the computer and enable USB legacy mode when a USB device plugged and disable USB legacy mode when no USB device is plugged.

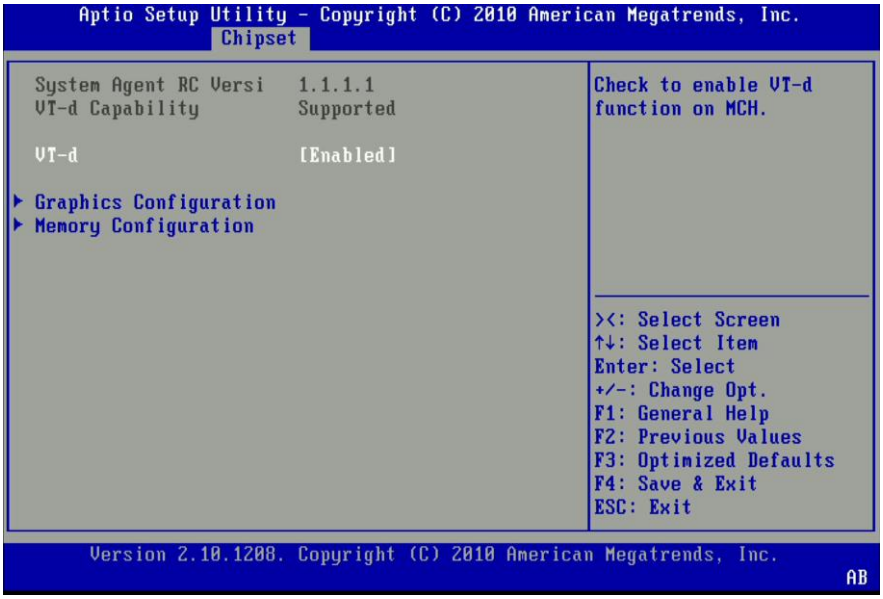
- H/W Monitor

This screen shows the Hardware Health Configuration, and a description of the selected item appears on the right side of the screen



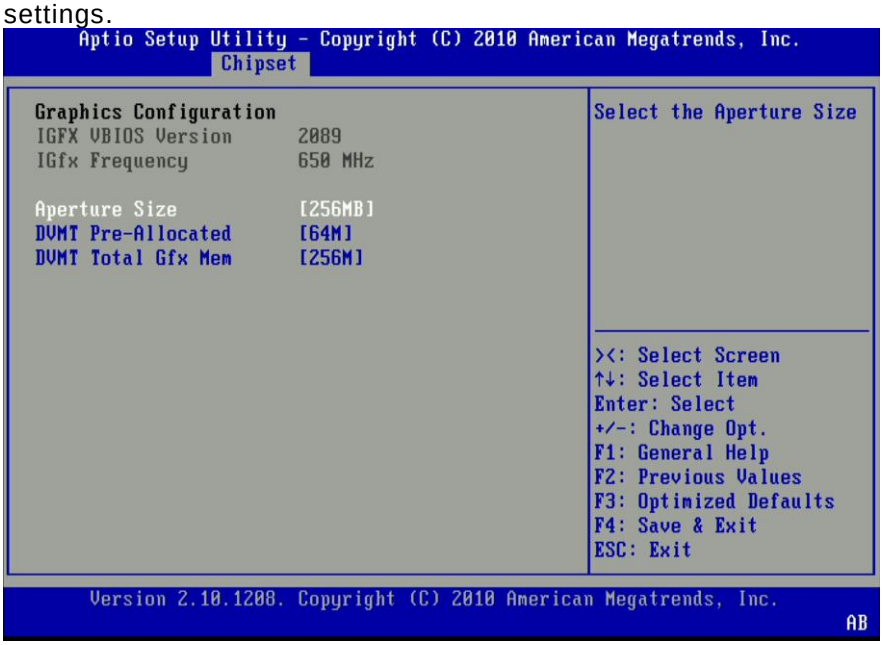
5.5 Chipset Menu





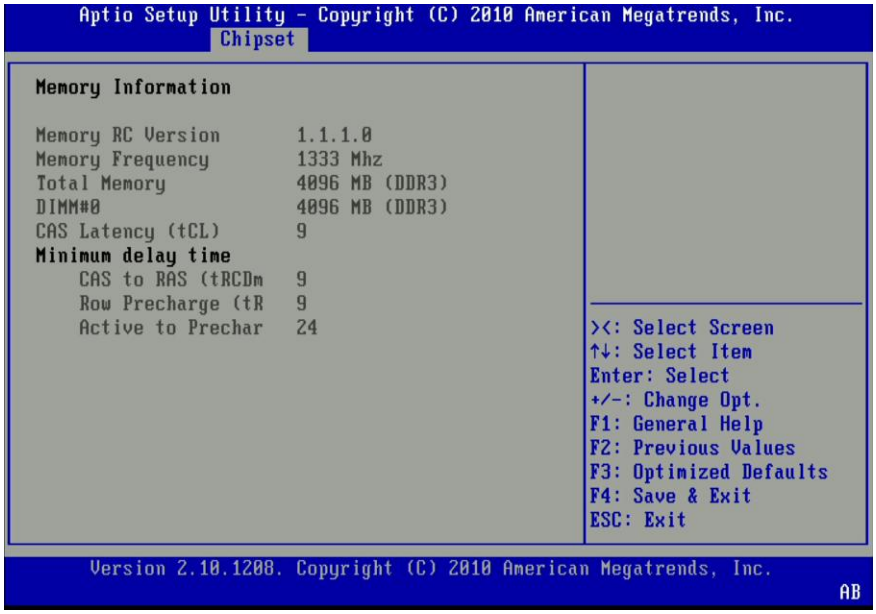
- Graphics Configuration

This option allows users to change the integrated graphic device settings.



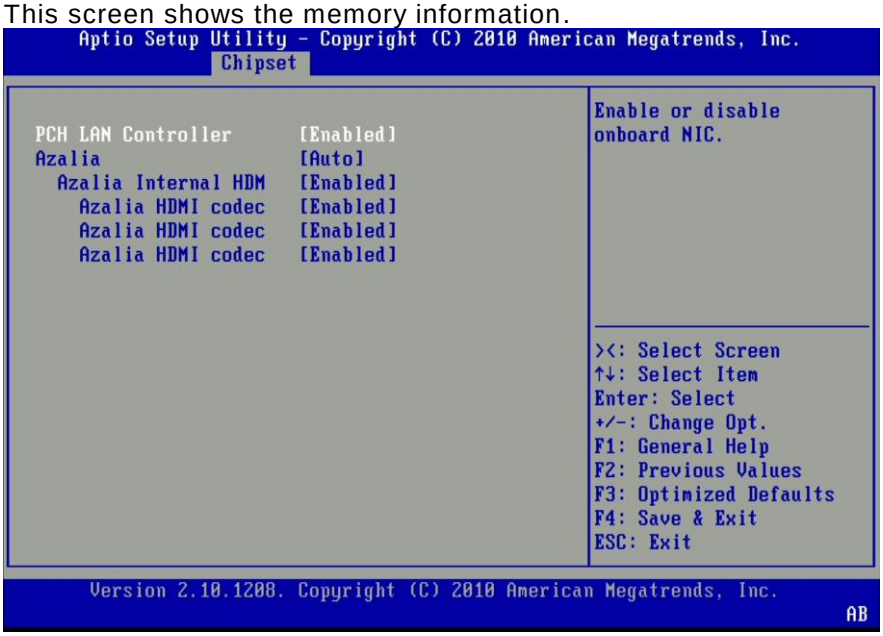
- Aperture Size
  Aperture Size is a video configuration option that determines the amount of system memory available for direct access by the graphics device.
- DVMT Pre-Allocated
  Pre-allocated memory is the small amount of system memory made available at boot time by the system BIOS for video. Pre-allocated memory is also known as locked memory. This is because it is "locked" for video use only and as such, is invisible and unable to be used by the operating system.
- DVMT Total GFx Mem.
  Allow you to allocate a fixed amount of system memory as graphics memory. Here are the options for your selection, 128MB, 256MB and Maximum DVMT

- Memory Information



- Memory Configuration

This screen shows the memory information.

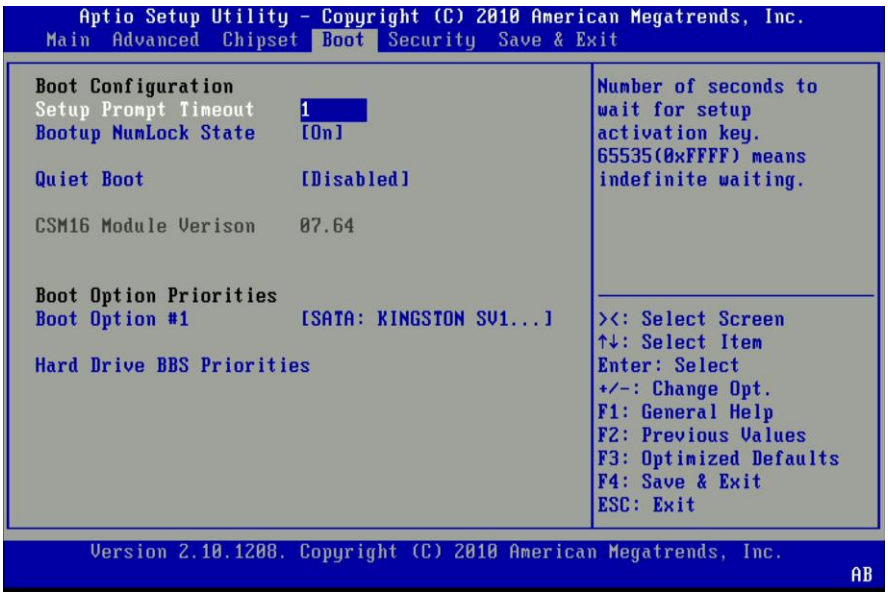


  - USB Configuration
    You can use this item to set the USB Configuration.

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 Mum Lock State
- Quiet Boot
- CSM16 Module Version
- GateA20 Active
- Boot Option Priorities



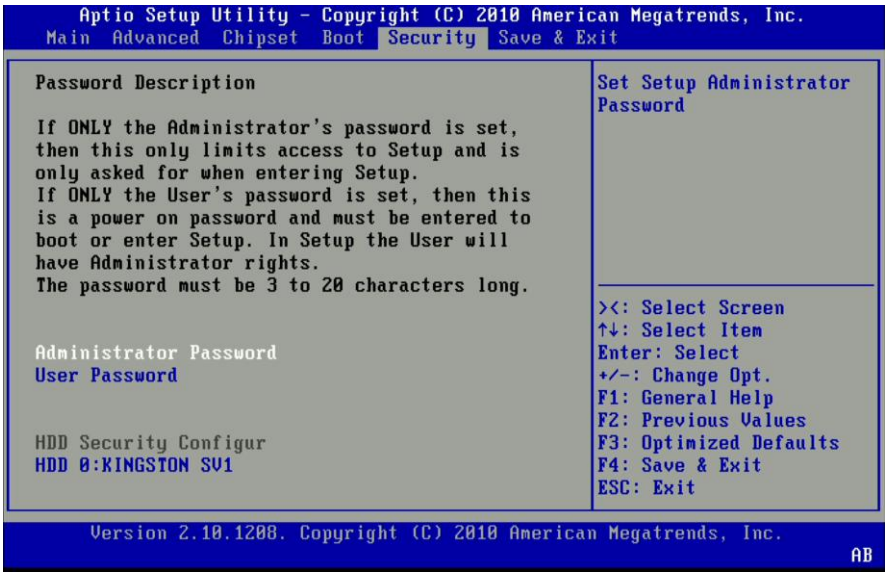
- Setup Prompt Timeout

Set the Timeout for wait press key to enter Setup Menu

- 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.
- Boot Option #1
- First Boot Device
- Hard Drive BBS Priorities
- Prioritize the booting hard drive.

5.7 Security Menu

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



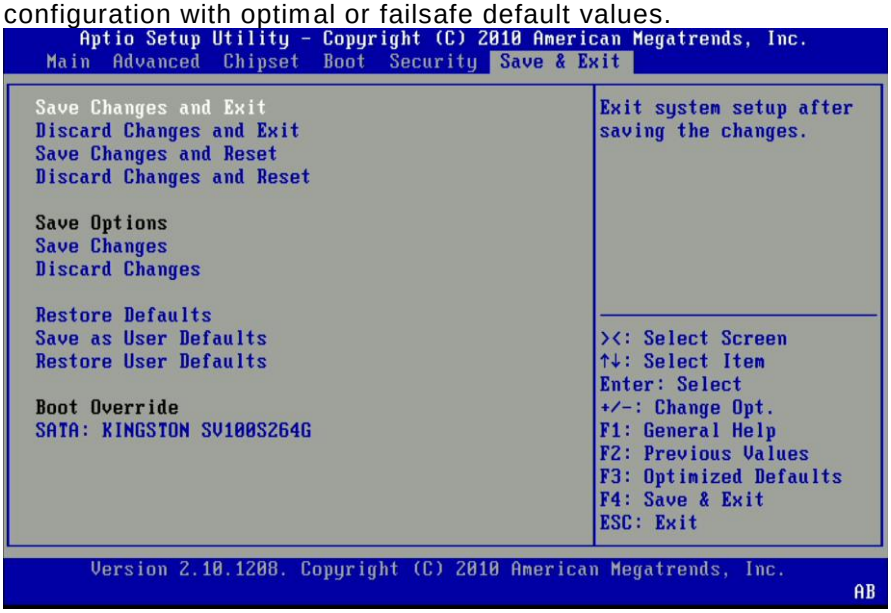
- Administrator Password

This item indicates whether an administrator password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.

- User Password
  This item indicates whether a user password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.
- HDD Security Configuration

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 this option to leave Setup and return to Main Menu. Select Save Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to save changes and exit.

- Discard Changes and Exit

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

- 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
- Restore User Default

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
WATCH DOG 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 30
-O 2F 01

2. Activate WDT:

-O 2E F0
-O 2F 80

3. Set base timer:

-O 2E F6
-O 2F 0A ➔Set Reset Time (Ex. A: 10 Sec)

4. Set timer unit

-O 2E F5
-O 2F 71(1: Sec ; 9: Minute

MEMO: