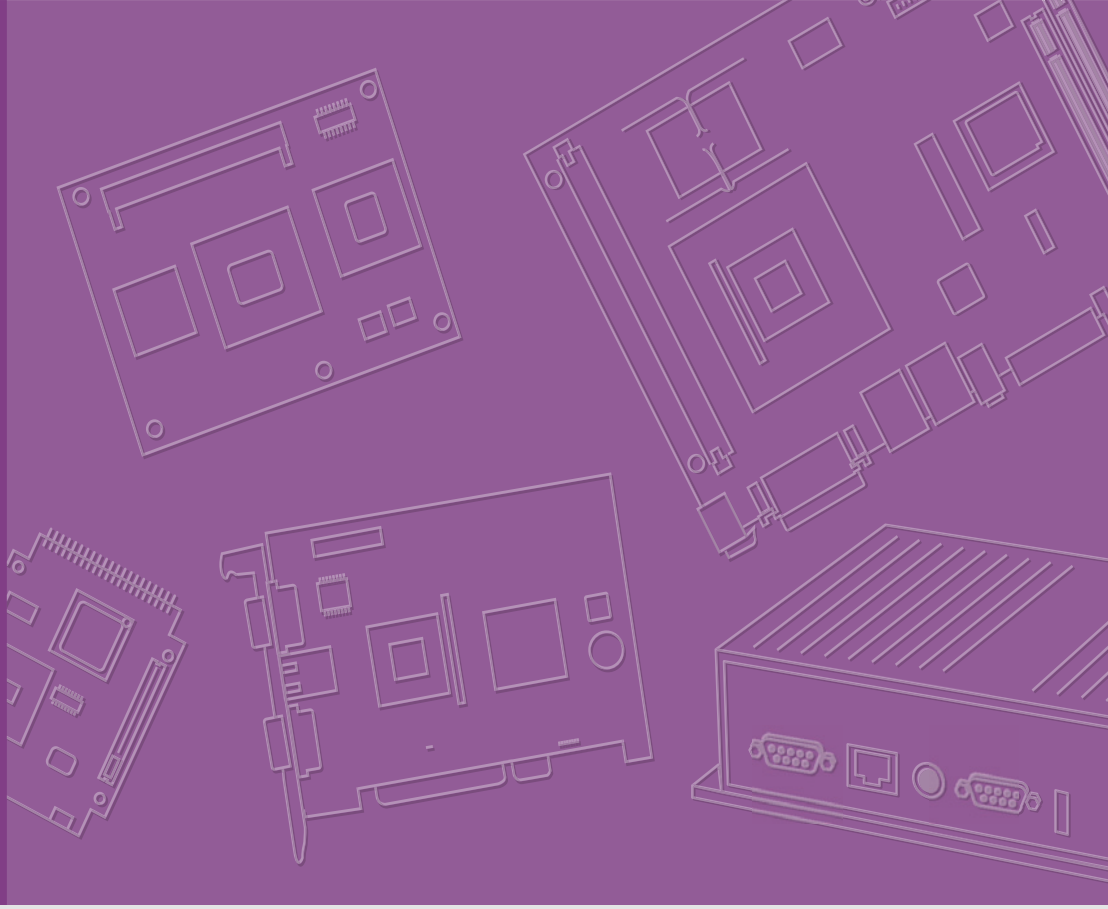

User Manual

AIMB-201DS

Intel® Core™ i7/i5/i3/Celeron uFC-PGA988 Mini-ITX with 3 HDMI(CEC) - Digital Signage

ADVANTECH

Enabling an Intelligent Planet

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

FCC Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may 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 measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CPU Compatibility

CPU Family	Speed	Core Stepping	TDP	L3 cache
Intel i7-3610QE	2.3 GHz	D-4	45 W	6 MB
Intel i7-2710QE	2.1 GHz	D-4	45 W	6 MB
Intel i5-3610ME	2.7 GHz	D-2	35 W	3 MB
Intel i5-2510E	2.5 GHz	D-2	35 W	3 MB
Intel i3-3120ME	2.4 GHz	D-2	35 W	3 MB
Intel i3-2330	2.2 GHz	D-2	35 W	3 MB
Intel Celeron B810	1.6 GHz	D-2	35 W	2 MB

Memory Compatibility

Test Item	Description						Result	Remark
Brand	Size	Speed	Type	ECC	Vendor PN	Memory		
Transcend	1GB	DDR3 1066	SODIMM DDR3	N	TS128MSK64V1U	SEC K4B1G0846G-BCH9	PASS	
Transcend	2GB	DDR3 1066	SODIMM DDR3	N	TS128MSK64V1U	SEC HCH9 K4B1G0846D (128x8)	PASS	
Transcend	4GB	DDR3 1066	SODIMM DDR3	N	TS7KSN28420-1Y	HYNIX H5TQ2G83BFR (256x8)	PASS	
Apacer	4GB	DDR3 1066	SODIMM DDR3	N	78.B2GC8.AF1	HYNIX H5TQ2G83BFR (256x8)	PASS	
Transcend	1GB	DDR3 1333	SODIMM DDR3	N	TS128MSK64V3U	ELPIDA J1108BFBG-DJ-F	PASS	
Transcend	2GB	DDR3 1333	SODIMM DDR3	N	TS256MSK64V3N	HYNIX H5TQ2G83CFR	PASS	
Transcend	4GB	DDR3 1333	SODIMM DDR3	N	TS512MSK64V3N	HYNIX H5TQ2G83BFR (256x8)	PASS	
Transcend	8GB	DDR3 1333	SODIMM DDR3	N	TS1GSK64V3H	MICRON IVD22 D9PBC	PASS	
Apacer	1GB	DDR3 1333	SODIMM DDR3	N	78.02GC6.AF0	HYNIX H5TQ1G83DFR-H9C	PASS	
	1GB	DDR3 1333	SODIMM DDR3	N		HYNIX H5TQ1G83TFR-H9C	PASS	
Apacer	2GB	DDR3 1333	SODIMM DDR3	N	78.A2GC9.4200C	ELPIDA J2108BCSE-DJ-F	PASS	
Apacer	4GB	DDR3 1333	SODIMM DDR3	N	78.B2GC9.AF1	HYNIX H5TQ2G83BFR (256x8)	PASS	
Apacer	4GB	DDR3 1333	SODIMM DDR3	N	78.B2GC9.4210C	ELPIDA J2108BCSE-DJ-F	PASS	
DSL	4GB	DDR3 1333	SODIMM DDR3	N	D3SH56082XH15AA	HYNIX H5TQ2G83BFR (256x8)	PASS	
DSL	2GB	DDR3 1600	SODIMM DDR3	N	D3SS56081XH12AA	SEC 113 HCK0 K4B2G0846C (256x8)	PASS	
DSL	4GB	DDR3 1600	SODIMM DDR3	N	D3SS56082XH12AA	SEC 113 HCK0 K4B2G0846C (256x8)	PASS	
Transcend	2GB	DDR3 1600	SODIMM DDR3	N	TS256MSK64V6N	MICRON IVM77 D9PFJ	PASS	
Transcend	4GB	DDR3 1600	SODIMM DDR3	N	TS512MSK64N6N	MICRON IRM72 D9PFJ	PASS	

Ordering Information

Part Number	Chipset	HDMI	CRT	USB	COM	LAN	STOREAGE
AIMB-201VG-DSA1E	QM77	3	(1)	3	1	1	1*SATA 3.0, CFast, MiniPCIe

Technical Support and Assistance

1. Visit the Advantech website at http://support.advantech.com where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Warnings, Cautions and Notes

Warning! *Warnings indicate conditions, which if not observed, can cause personal injury!*

Caution! *Cautions are included to help you avoid damaging hardware or losing data. e.g.*

There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! *Notes provide optional additional information.*

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated into the equipment.
    - The equipment has been exposed to moisture.
    - The equipment does not work well, or you cannot get it to work according to the user's manual.
    - The equipment has been dropped and damaged.
    - The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Packing List

Before installation, please ensure the following items have been shipped:

- 1 x AIMB-201DS motherboard
- 2 x I/O port bracket
- 1 x Startup manual
- 1 x Driver CD

Optional Power Cord & Accessories

Part Number	Description
1757003734	ADAPTER 100-240V 65W 19V 3.42A
1700019384	SATA power cable 30cm
1700017999	SATA power cable 17cm
1960057850T001	Heat Pipe
1960051292N001	CPU Cooler
1700003195	USB cable with two ports, 17.5 cm
1700002204	USB cable with two ports, 27 cm

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Chapter 1

General Introduction

This chapter gives background information of AIMB-201DS series.

1.1 Introduction

AIMB-201DS is powered by 3rd Gen Intel® Core™ i7/i5/i3 processors with Intel® HD Graphics for Full HD video playback performance. AIMB-201DS is a media player that delivers advanced graphics performance for all your signage applications.

AIMB-201DS has 3 HDMI video output interfaces with CEC function to provide multi display outputs simultaneously. For better connectivity, it supports internal 1 x Mini PCIe interface for add-on functions such as wireless network and TV tuner cards to fulfill different requirements. And it also supports 1 x USB 3.0, 2 x USB 2.0, 1 x COM (RS-232) ports for system integration and applications.

1.2 Product Features

1.2.1 General

- Supports 3rd Gen. Intel® Core™ i7/i5/i3 mobile CPUs. Socket type is rPGA 988B (CPU TDP up to 45W)
- Supports 3 HDMI (w/ CEC) ports for multiple displays
- Supports 1 x GbE , 1 x USB 3.0, 2 x USB 2.0 and 1 x COM (RS-232)
- Internal 2.5-inch SATA HDD drive bay and Cfast slot for storage devices.
- Built-in MiniPCIe slot for easy expansion e.g. WiFi, TV-tuner, etc
- Easy integration and easy maintenance

1.2.2 Display

- Multi-display support; up to 2x1080P and 1x 720P video playback performance (but subject to the video media format and playback software)

1.2.3 Power Consumption

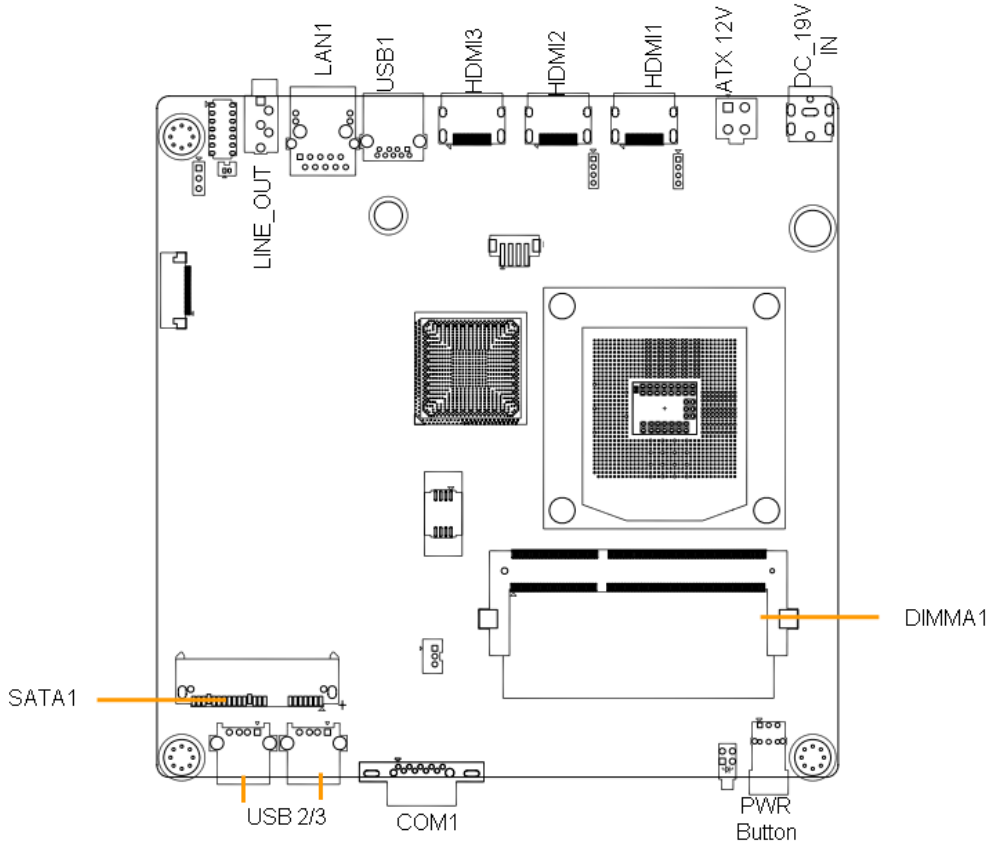
- Typical: 17.4 W (3rd Gen. Intel® Core™ i7-3610QE 2.3 GHz and w/o expansion)
- Max.: 43.8 W (3rd Gen. Intel® Core™ i7-3610QE 2.3 GHz and w/o expansion)

1.3 Hardware Specifications

- **CPU:** 3rd Gen. Intel® Core™ i7/i5/i3 mobile CPUs. Socket type is rPGA 988B
- **System Chipset:** Intel® QM77
- **BIOS:** AMI 16-Mbit Flash BIOS
- **System Memory:** 2 x DDR3 SO-DIMM sockets, support DDR3 1333 MHz up to 16 GB (Max. 8GB per each SO-DIMM socket)
- **Graphic chipset:** Integrated in Intel® Core™ i CPU
- **SSD:** Supports 1 x Cfast slot
- **HDD:** Supports 1 x 2.5" SATA HDD
- **Watchdog Timer:** Supported by Advantech SUSIAccess
- **I/O Interface:** 1 x RS-232
- **USB:** 1 x USB 3.0 and 2 x USB 2.0 compliant ports
- **Audio:** Supports one audio jack, default is line-out, supports jack sense

- **Ethernet Chipset:** 1 x Intel 82579LM (Gigabit LAN)
  - **Speed:** 10/100/1000 Mbps
  - **Interface:** 1 x RJ-45 jacks with LED
  - **Standard:** IEEE 802.3z/ab (1000 Base-T) or IEEE 802.3u 100 Base-T compliant
- **Expansion:**
  - miniPCIe: 1 socket internal
- **Resolution**
  - **HDMI:** Up to 1920 x 1080 at 60 Hz (1080P)

1.4 Board Layout



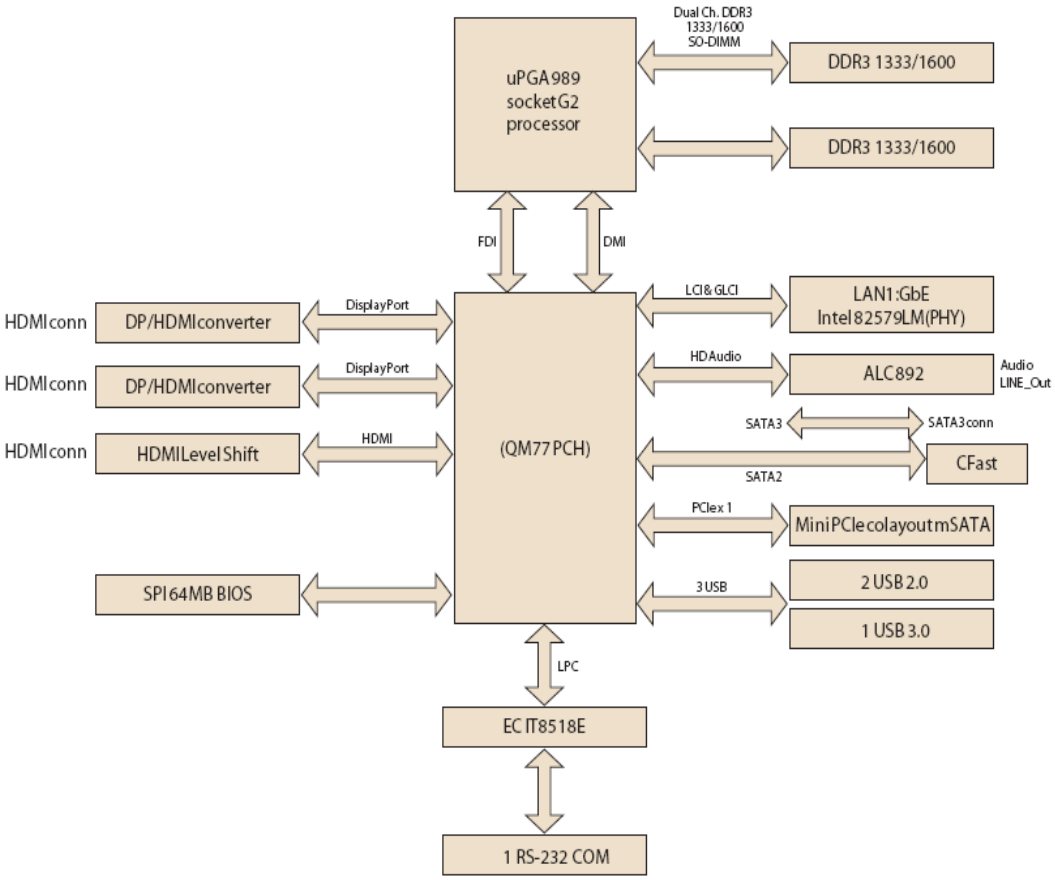
1.4.1 Dimensions

170 x 170 mm (6.69" x 6.69")

1.4.2 Weight

0.365 kg

1.5 AIMB-201DS Block Diagram



1.6 Power Requirements

1.6.1 System Power

Minimum power input: DC 19V, 4.74A

1.6.2 RTC Battery

3V/200 mAH BR2032

1.7 Environmental Specifications

1.7.1 Operating Temperature

0° C - 60° C (32~140° F, Depending on CPU)

1.7.2 Relative Humidity

95% @ 40° C (non-condensing)

1.7.3 Storage Temperature

-20~70° C (-4~167° F)

1.7.4 EMC

CE, FCC

1.8 Jumper Settings

This section provides instructions on how to configure your motherboard by setting the jumpers. It also includes the motherboards's default settings and your options for each jumper.

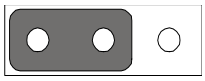
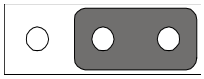
1.8.1 How to Set Jumpers

You can configure your motherboard to match the needs of your application by setting the jumpers. A jumper is a metal bridge that closes an electrical circuit. 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” (or turn ON) a jumper, you connect the pins with the clip. To “open” (or turn OFF) a jumper, you remove the clip. Sometimes a jumper consists of a set of three pins, labeled 1, 2, and 3. In this case you connect either pins 1 and 2, or 2 and 3. A pair of needle-nose pliers may be useful when setting jumpers.

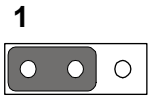
1.8.2 CMOS Clear (CMOS1)

The AIMB-201DS motherboard contains a jumper that can erase CMOS data and reset the system BIOS information. Normally this jumper should be set with pins 1-2 closed. If you want to reset the CMOS data, set CMOS1 to 2-3 closed for just a few seconds, and then move the jumper back to 1-2 closed. This procedure will reset the CMOS to its default setting.

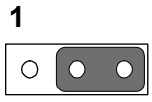
Table 1.1: CMOS1

Function	Jumper Setting	
*Keep CMOS data		1-2 closed
Clear CMOS data		2-3 closed

* Default



Linear brightness control
1-2 closed



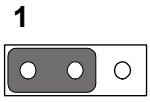
PWM brightness control
2-3 closed

1.8.3 PSON1: ATX, AT Mode Selector

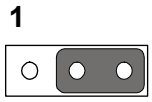
Table 1.2: PSON1: ATX, AT Mode Selector

Closed Pins	Result
1-2	AT Mode
2-3*	ATX Mode

*Default



AT Mode
1-2 closed



ATX Mode
2-3 closed

Chapter 2

Hardware Installation

This chapter introduces external I/O and the installation of AIMB-201DS Hardware.

2.1 AIMB-201DS I/O Connectors

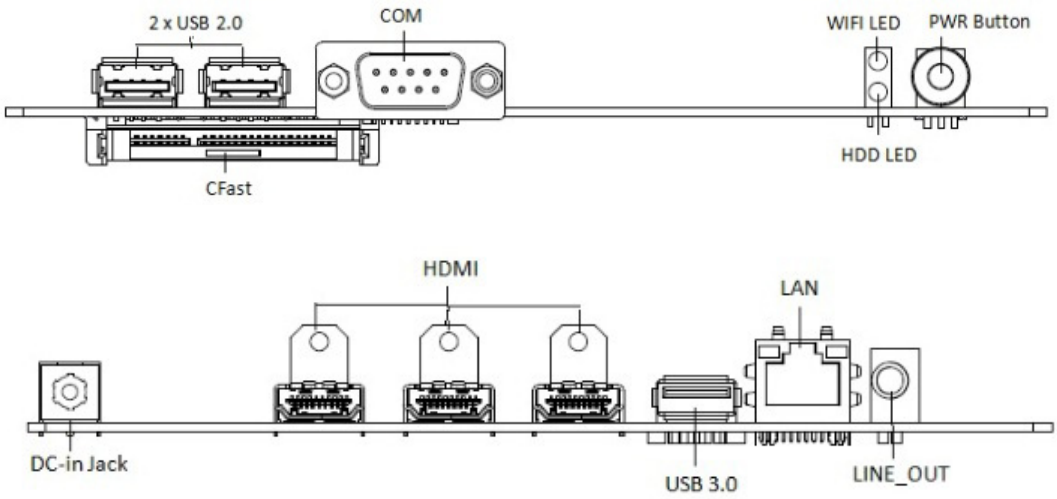


Figure 2.1 Front and rear view

2.2 AIMB-201DS Front Side External I/O Connectors

2.2.1 Power ON/OFF Button

AIMB-201DS has a power ON/OFF button on front side. Push this button to turn the system ON and OFF. It can also support 4 second delay soft power off.

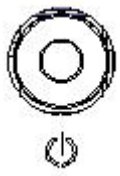


Figure 2.2 Power button

2.2.2 COM Connector

AIMB-201DS provides one D-sub 9-pin connector serial communication interface port. The port can support RS-232 mode communication.

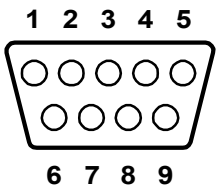


Figure 2.3 COM connector

Table 2.1: COM Port Pin Assignments	
Pin	**Signal Name**
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

2.2.3 USB Connectors

The AIMB-201DS provides two USB interface connectors (2 x USB 2.0 in front-side; and 1 x USB 3.0 in rear-side), which give complete Plug & Play and hot swapping capability for up to 127 external devices. The front side two USB interface is compliant with USB UHCI, Rev. 2.0. and the rear one is compliant with USB UHCI, Rev. 3.0. All the USB ports support Plug and Play, which enables you to connect or disconnect a device without turning off the computer.

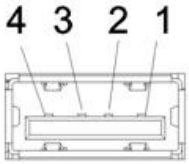


Figure 2.4 USB connector

Table 2.2: USB Port Pin Assignments	
Pin	**Signal Name**
1	VCC
2	USB Data-
3	USB Data+
4	GND

2.3 AIMB-201DS Rear Side External I/O Connectors

2.3.1 Audio Connector

Line-out: Stereo speakers, earphone or front surround speakers can be connected to the line out jack. It supports jack-sense and can be the Line-in or Mic-in input functions. Setting by driver UI)

Figure 2.5 Audio connector

2.3.2 Ethernet Connector (LAN)

AIMB-201DS provides one RJ45 LAN interface connector, it is fully compliant with IEEE 802.3u 10/100/1000 Base-T CSMA/CD standards. The Ethernet port provides a standard RJ-45 jack connector with LED indicators on the front side to show its Active/Link status and speed status.

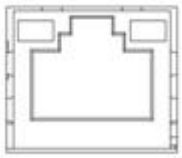


Figure 2.6 LAN connector

Table 2.3: LAN Connector Pin Assignments

Pin	Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	GND
6	GND
7	MDI2+
8	MDI2-
9	MDI3+
10	MDI3-
11	VCC
12	ACT
13	Link100#
14	Link1000#

2.3.3 HDMI Connector

AIMB-201DS provides 3 HDMI (High-Definition Multimedia Interface) connectors which provide an all-digital audio/video interface to transmit the uncompressed audio/video signals and are HDCP and CEC compliant. Connect HDMI audio/video devices to this port. HDMI technology can support a maximum resolution of 1920 x 1080p but the actual resolutions supported depends on the monitors being used.

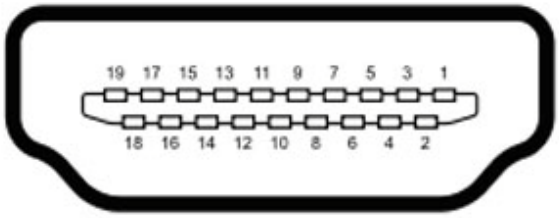


Figure 2.7 HDMI connector

Table 2.4: HDMI Connector Pin Assignments

Pin	Signal Name
1	TMDS Data2+
2	GND
3	TMDS Data2-
4	TMDS Data1+
5	GND
6	TMDS Data1-
7	TMDS Data0+
8	GND
9	TMDS Data0-
10	TMDS Clock+
11	GND
12	TMDS Clock-
13	NC
14	NC
15	SCL
16	SDA
17	GND
18	+5 V Power
19	Detect

2.3.4 Power Input Connector

AIMB-201DS comes with a DC-Jack header that takes 19 VDC external power input.

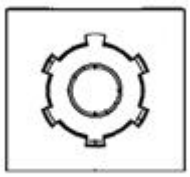


Figure 2.8 DC input connector

Chapter 3

BIOS Settings

This chapter introduces how to set BIOS configuration data.

3.1 BIOS Introduction

AMIBIOS has been integrated into many motherboards for over two decades. With the AMIBIOS setup program, you can modify BIOS settings and control various system features. This chapter describes the basic navigation of the AIMB-201DS series BIOS setup screens.

AMIBIOS's ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in battery-backed CMOS so it retains the setup information when the power is turned off.

3.2 Main Setup

When you first enter the BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Options in blue can be configured, and grayed-out options cannot be configured instead. The right frame displays the key legend. The key legend in the top is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

3.2.1 System Time / System Date

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

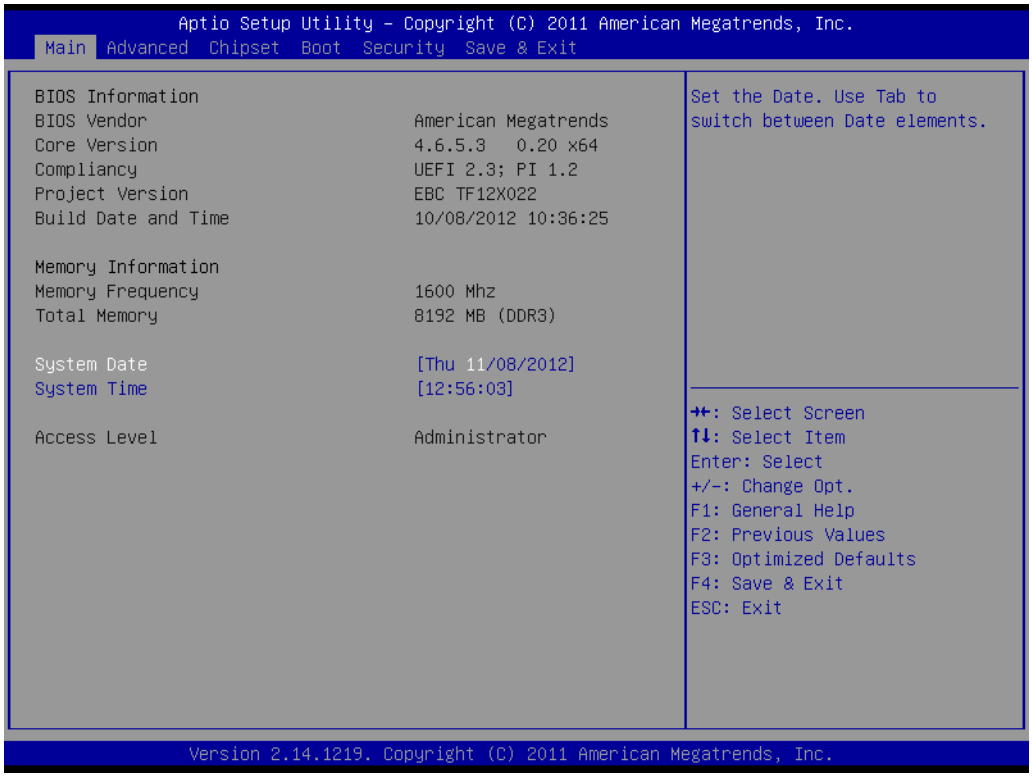


Figure 3.1 Main Setup Screen

3.2.2 Advanced BIOS Features Setup

Select the Advanced tab from the AIMB-201DS setup screen to enter the Advanced BIOS Setup screen. You can select any of the items in the left frame of the screen, such as CPU configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS setup options are described in this section. The Advanced BIOS setup screens are shown below. The sub menus are described on the following pages.

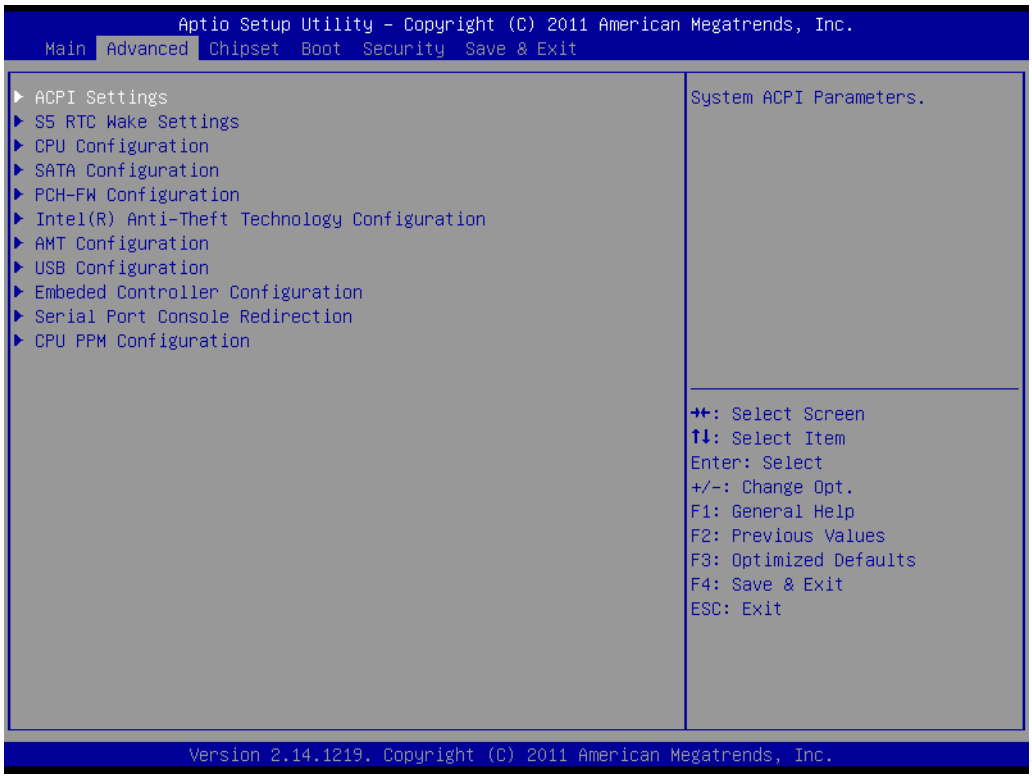


Figure 3.2 Advanced BIOS Features Setup Screen

- **ACPI Settings**

  This section allows you to control hardware monitoring and power management.

- **S5 RTC Wake Settings**

  Enable system to wake from S5 using RTC alarm

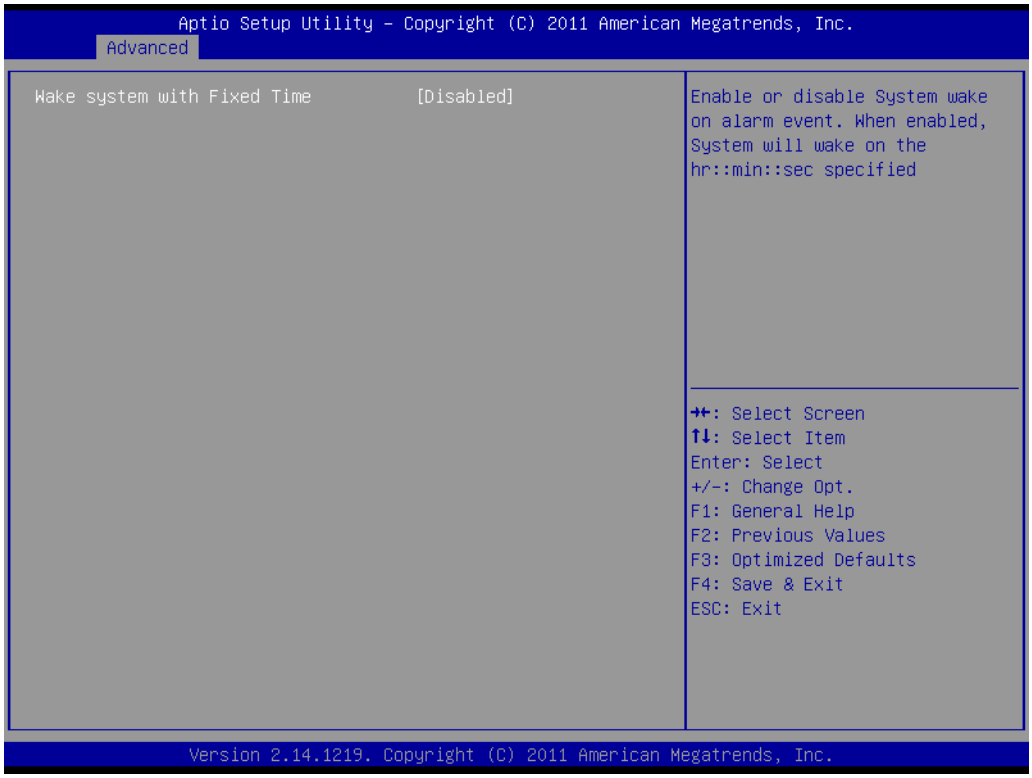


Figure 3.3 S5 RTC Setup Screen

- **CPU Configuration**
  - Hyper-threading: 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 one thread per enabled-core is enabled.
  - Active Processor Cores: Number of cores to be enabled in each processor package.
  - Limit CPUID Maximum: Disabled for Windows XP.
  - Execute Disable Bit: It can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 Sp1, Windows XP SP2, SuSE Linux 9.2 RedHat Enterprise 3 Update 3.).
  - Intel Virtualization Technology: When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.
  - Hardware Prefetcher: To turn on/off the Mid Level Cache (L2) streamer prefetcher.
  - Adjacent Cache Line Prefetch: To turn on/off prefetching of adjacent cache lines

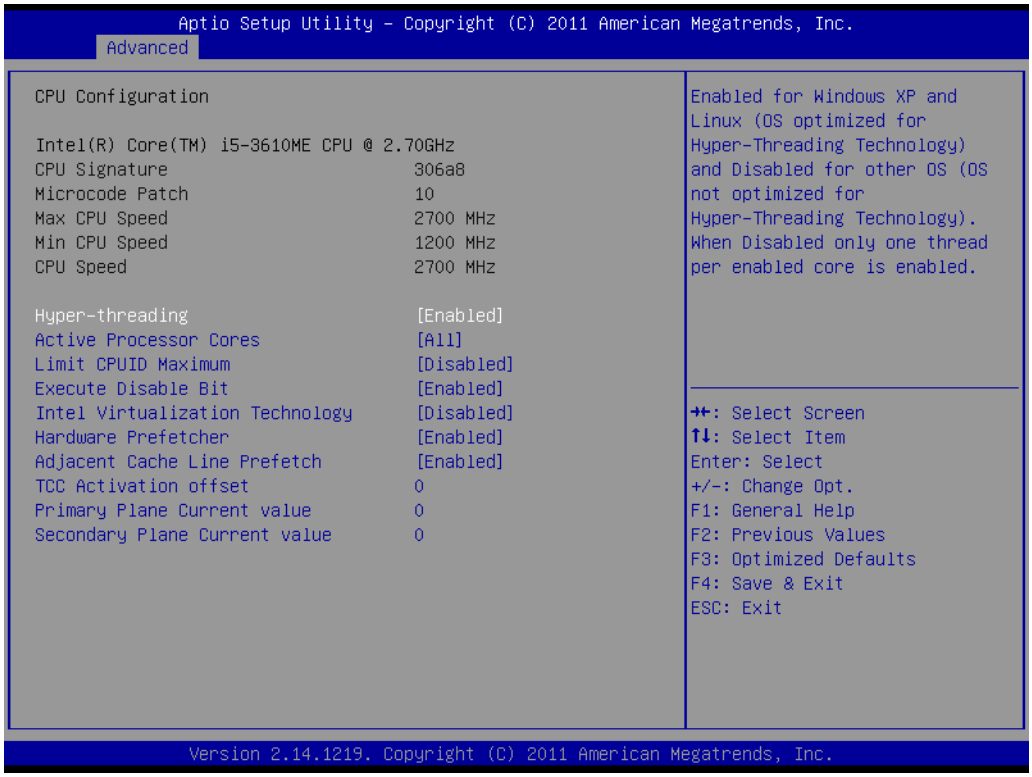


Figure 3.4 CPU Setup screen

- **SATA Configuration**

  This section allows you to set up SATA devices configuration.

  – SATA Controller(s): Enable or disable SATA Device.

  – SATA Mode Selection: Determines how SATA controller(s) operate. The choice: IDE, AHCI, RAID

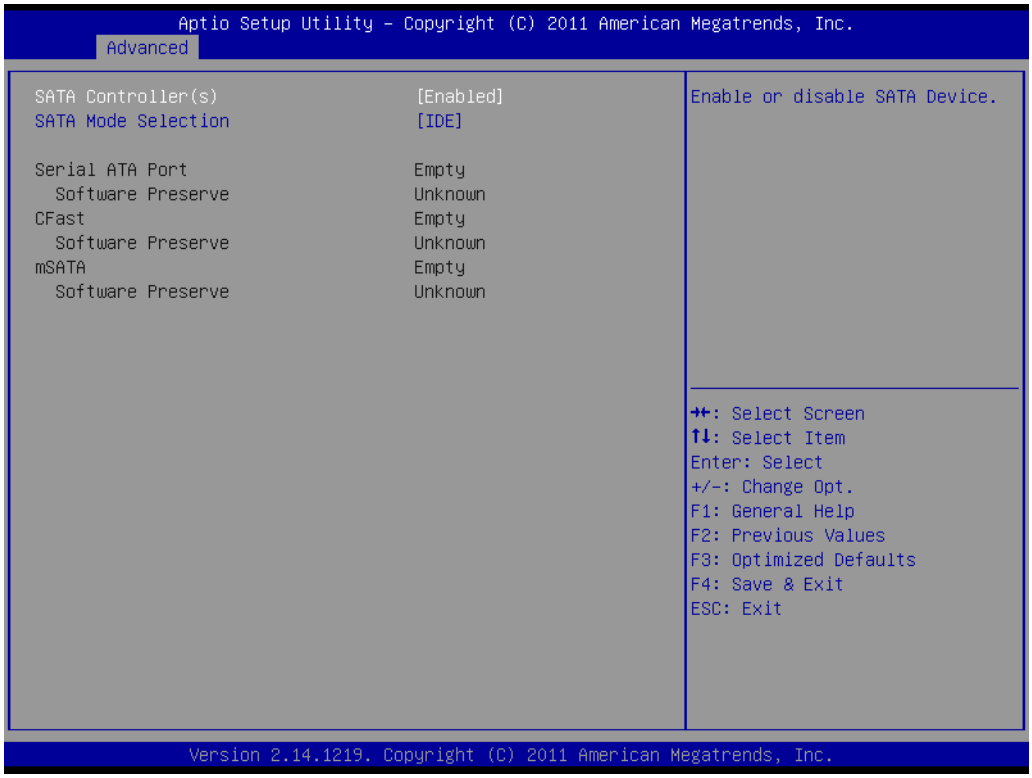


Figure 3.5 SATA Setup screen

- **PCH-FW Configuration**

  Configuration Management Engine Technology Parameters.
  Intel Anti-Theft Technology Configuration: Disabling Intel AT Allow user to login to platform. This is strictly for testing only. This does not disable AT Services in ME.

  – Intel Anti-Theft Technology: Enable/Disable Intel AT in BIOS for testing only.
  – Intel Anti-Theft Technology Recovery: Set the number of times Recovery attempted will be allowed. Range: 1- 64

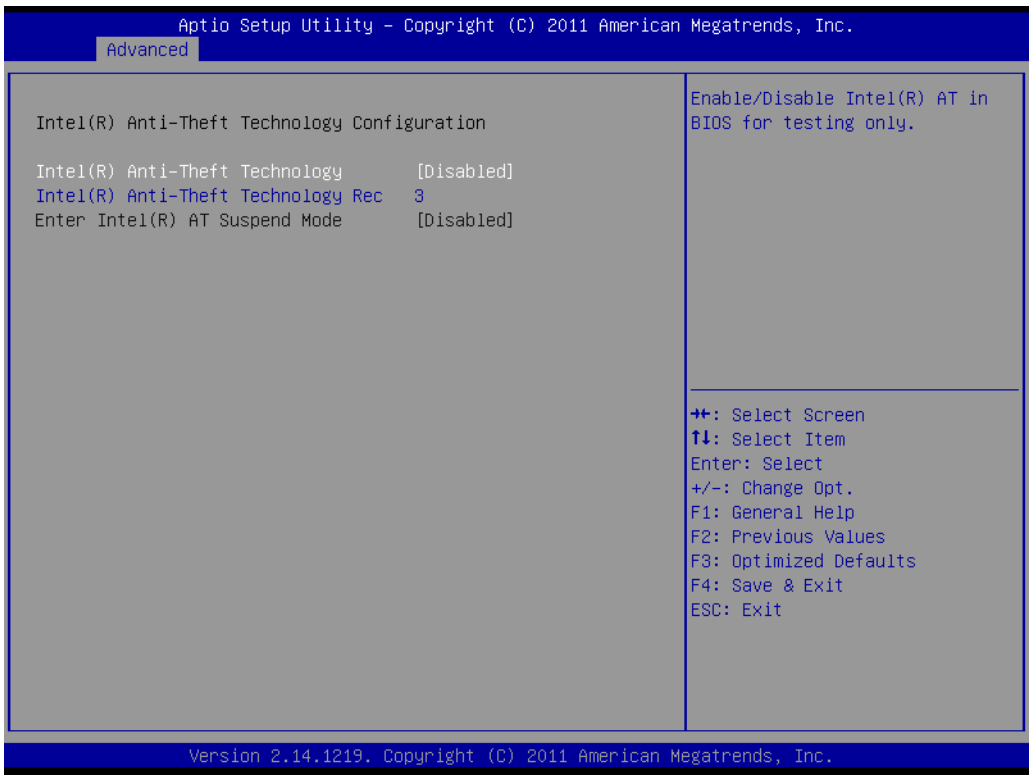


Figure 3.6 Intel Anti-Theft Technology Configuration

AMT Configuration

Configuration Active Management Technology parameters.

- Intel AMT: Enable/Disable Intel(R) Active Management Technology BIOS Extension.
- Note: iAMT H/W is always enabled. This option just controls the BIOS extension. If enabled, this requires additional firmware in the SPI device.
- BIOS Hotkey Pressed: OEMFLag Bit 1: Enable/Disable BIOS hotkey press.
- MEBx Selection Screen: OEMFLag Bit 2: Enable/Disable MEBx selection screen.
- Hide Un-Configure ME Confirmation: OEMFLag Bit 6: Hide Un-Configure ME without password Confirmation Prompt.
- MEBx Debug Message Output: OEMFLag Bit 14: Enable MEBx debug message Output.
- Un-Configure ME: OEMFLag Bit 15: Un-Configure ME without password.
- Amt Wait Timer: Set timer to wait before sending ASF_GET_BOOT_OPTIONS.
- ASF: Enable/Disable Alert Specification Format
- Activate Remote Assistance Process: Trigger CIRA boot.
- USB Configure: Enable/Disable USB Configure function.
- PET Progress: User can Enable/Disable PET Events progress to receive PET events or not.
- WatchDog: Enable/Disable WatchDog Timer.

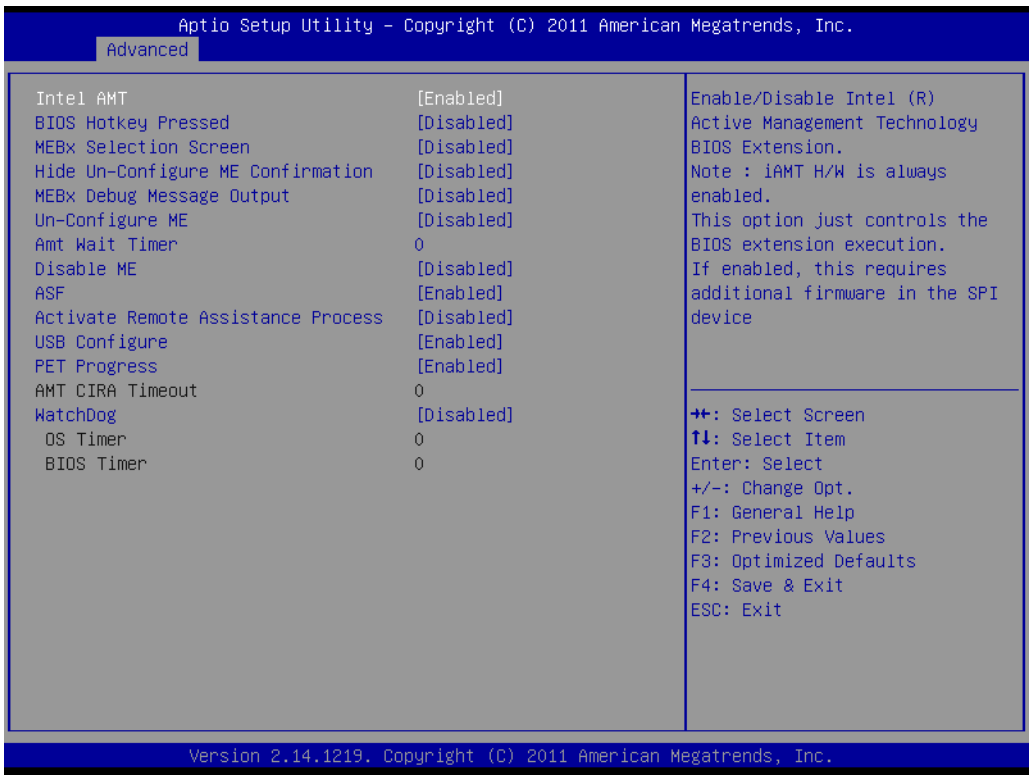


Figure 3.7 AMT Configuration setup screen

USB Configuration

USB Configuration Parameters.

- Legacy USB Support: Enable Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications
- EHCI Hand-off: This is a workaround for 0Ses without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
- USB transfer time-out: The time-out value for Control, Bulk, and Interrupt transfers. The choice: 1 sec, 5 sec, 10 sec, 20 sec
- Device reset time-out: USB mass storage device Start Unit Command time-out. The choice: 10 sec, 20 sec, 30 sec, 40 sec
- Device power-up delay: USB mass storage device Start Unit Command time-out.

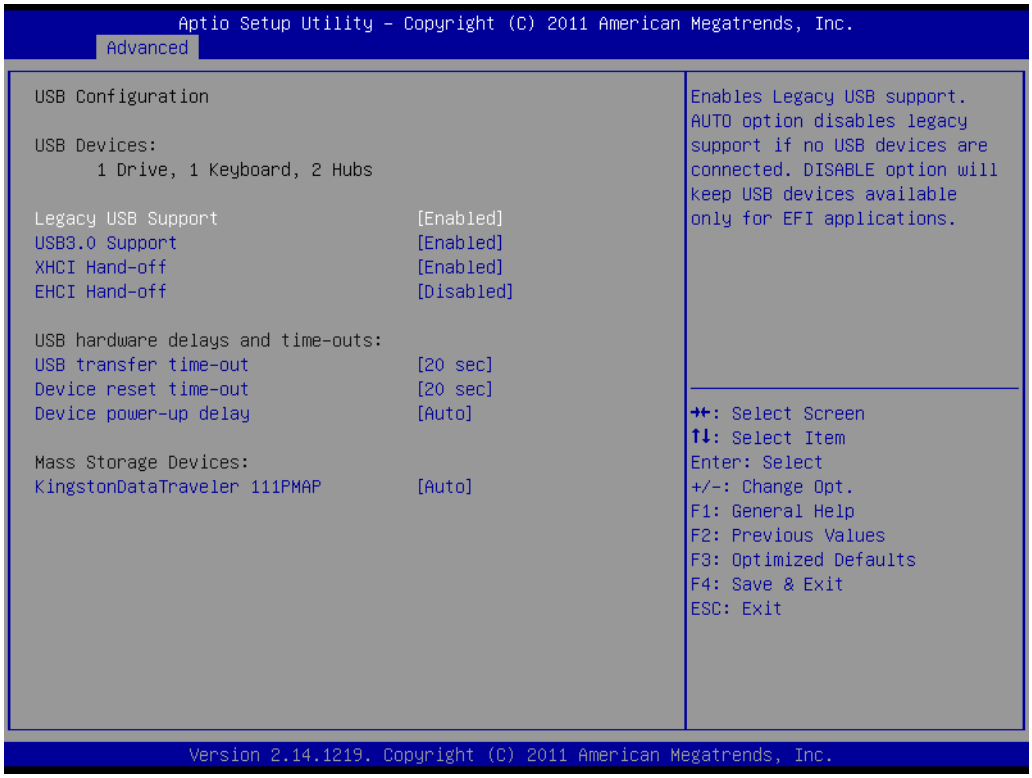


Figure 3.8 USB Configuration setup screen

- **Embedded Controller Configuration**
  System Embedded Controller Chip Parameters.
  - Power Saving Mode: Select ITE8518 Power Saving Mode. The choice: Normal, Deep Sleep
  - Resume on Ring: Enable/Disable Resume on Ring Function
  - Serial Port 0 Configuration: Set parameters of serial port 0 (COM)
  - Serial port: Enable/Disable
  - Change setting: Select an optimal setting for super IO device.
  - Device mode: Normal/High speed
  - H/W Monitor: Monitor hardware status

Figure 3.9 Embedded Controller Configuration setup screen

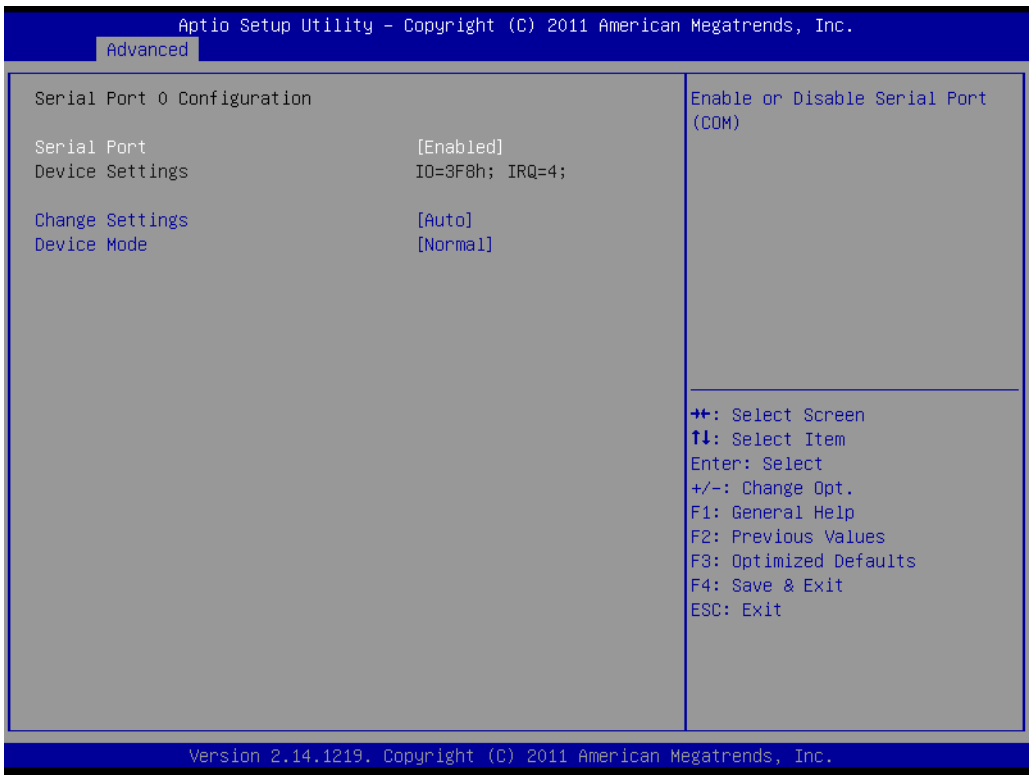


Figure 3.10 Serial Port 0 Configuration setup screen

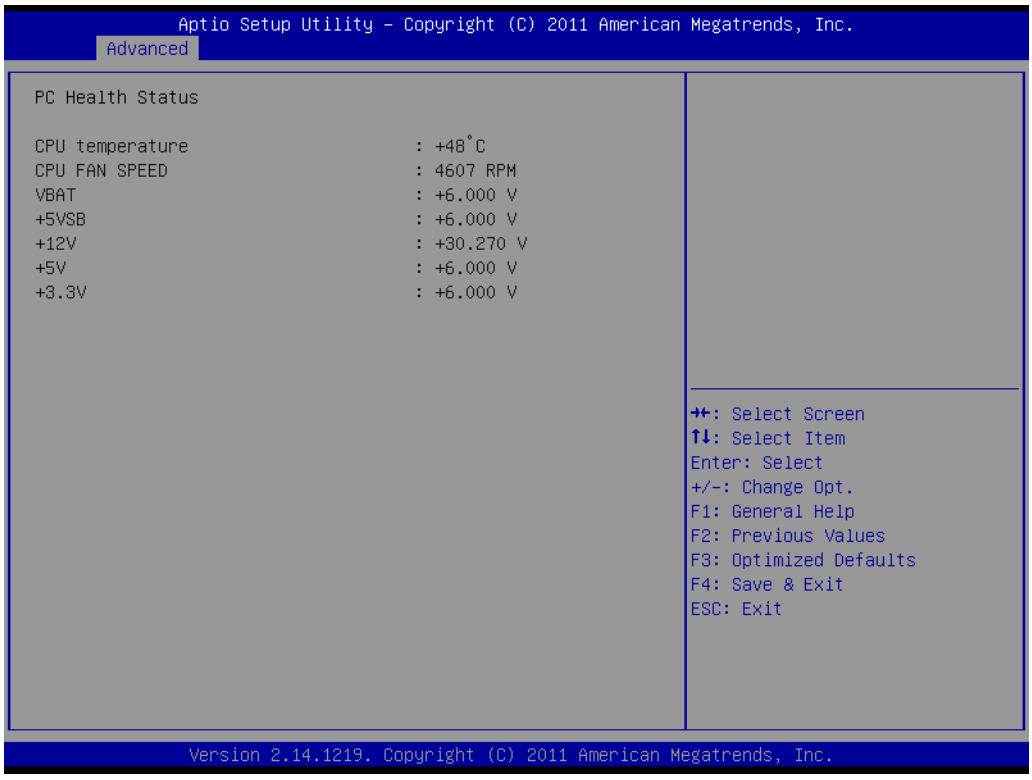


Figure 3.11 H/W monitor screen

- **Serial Port Console Redirection:**
  - Console Redirection: Enable/Disable
- **CPU PPM Configuration**

  CPU PPM Configuration Parameters
  - EIST: Enable/Disable Intel SpeedStep
  - Turbo Mode: Turbo Mode
  - CPU C3 Report: Enable/Disable CPU C3(ACPI C2) report to OS
  - CPU C6 Report: Enable/Disable CPU C6(ACPI C3) report to OS
  - CPU C7 Report: Enable/Disable CPU C7(ACPI C3) report to OS
  - ACPI T State: Enable/Disable ACPI T State support

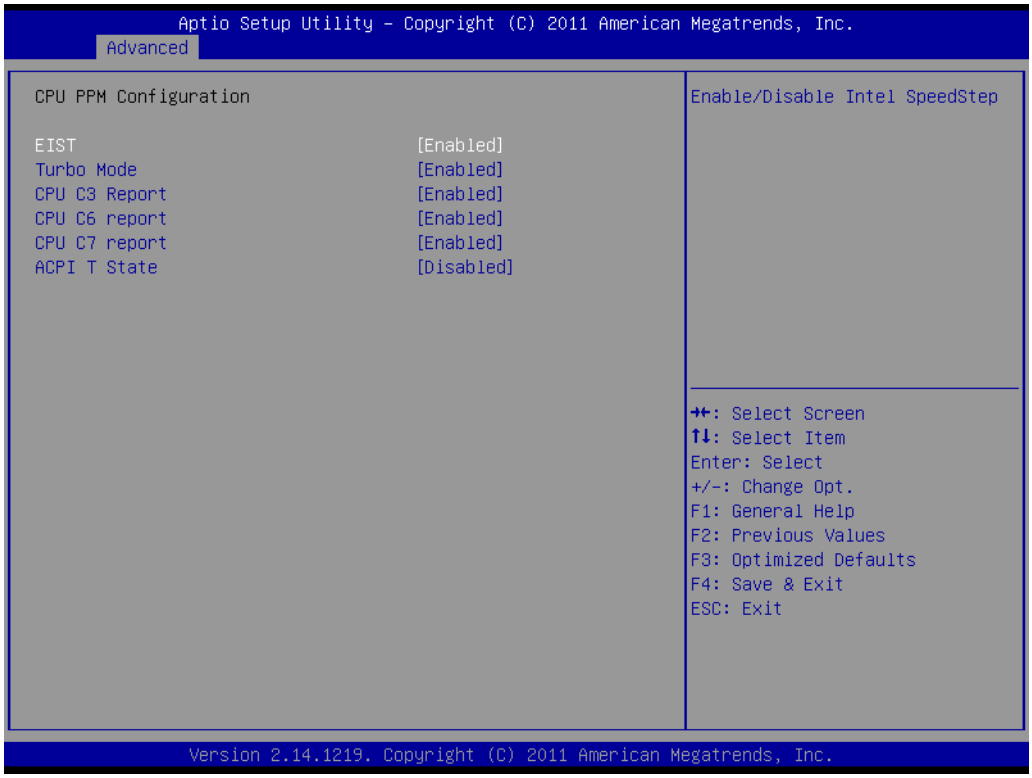


Figure 3.12 CPU PPM Configuration setup screen

3.2.3 Chipset BIOS Feature Setup

Select the Chipset tab from the AIMB-201DS setup screen to enter the Chipset BIOS Setup screen. Users can select any item in the left frame of the screen.

- **PCH-IO Configuration: PCH Parameters**
  - PCI Express Configuration: PCI Express configuration settings
  - USB Configuration: Enable or disable XHCI pre-boot driver support
  - PCH Azalia Configuration: Disable, Enable, Auto
  - PCH LAN Controller: Enable or disable on board NIC
  - Wake On LAN: Enable or disable integrated LAN to wake the system. (The Wake On LAN cannot be disabled if ME is on at Sx state)
  - Launch PXE OpROM: Enable or disable boot options for legacy network devices.
  - High Precision Timer: Enable or disable the high precision event timer.
  - SLP_S4 Assertion Width: Select a minimum assertion width of the SLP_S4# signal
  - Restore AC Power Loss: Select AC power state when power is re-applied after a power failure. The choice: Power Off, Power On, Last State
- **System Agent (SA) Configuration: System Agent (SA) Parameters**
  - VT-d: Check to enable VT-d function on MCH
  - Graphics Configuration: Config graphics settings
  - DMI Configuration: Control various DMI functions.
  - Memory Configuration: Memory configuration parameters

3.2.4 Boot BIOS Feature Setup

Select the Boot tab from the AIMB-201DS setup screen to enter the Boot BIOS Setup screen. Users can select any item in the left frame of the screen.

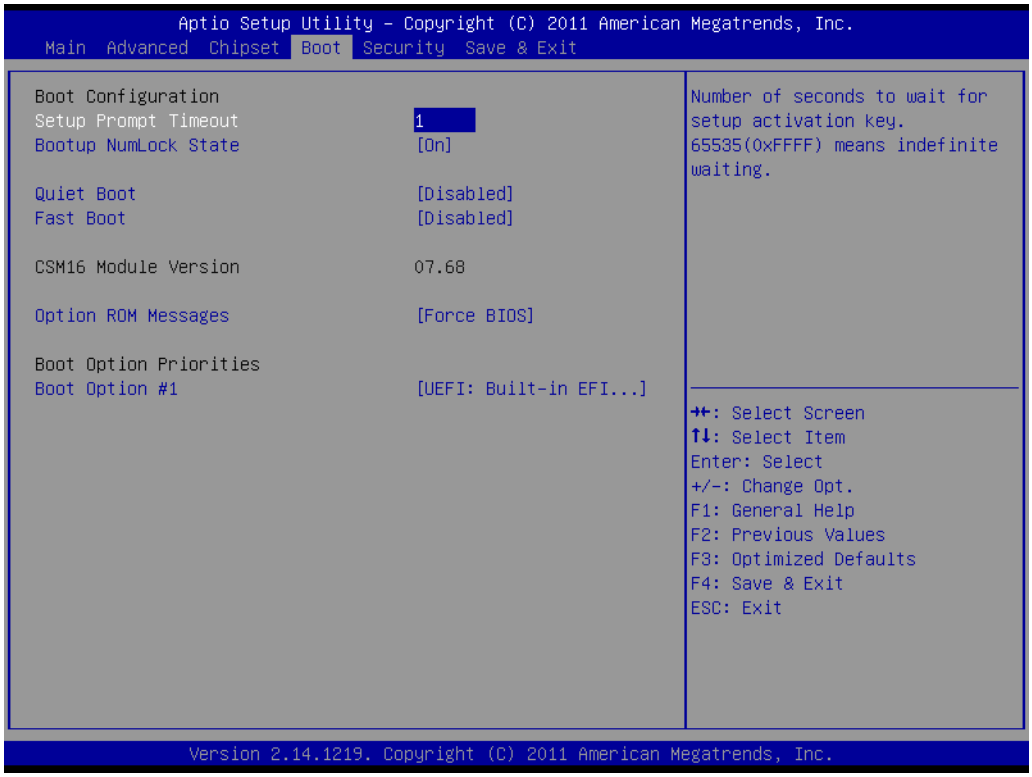


Figure 3.13 Boot configuration setup screen

- **Setup Prompt Timeout:** Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
- **Bootup NumLock State:** Select the keyboard NumLock state
- **Ouiet Boot:** Enable or disable Quiet Boot option
- **Fast Boot:** Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
- **Option ROM Messages:** Set display mode for option ROM. The choice: Force BIOS, Keep Current
- **Boot Option #1:** Set the system boot order
- **Hard Driver BBS Priorities:** Set the order of the legacy devices in this group

3.2.5 Security BIOS Feature Setup

Select the Security tab from the setup screen to enter the Security BIOS Setup screen.

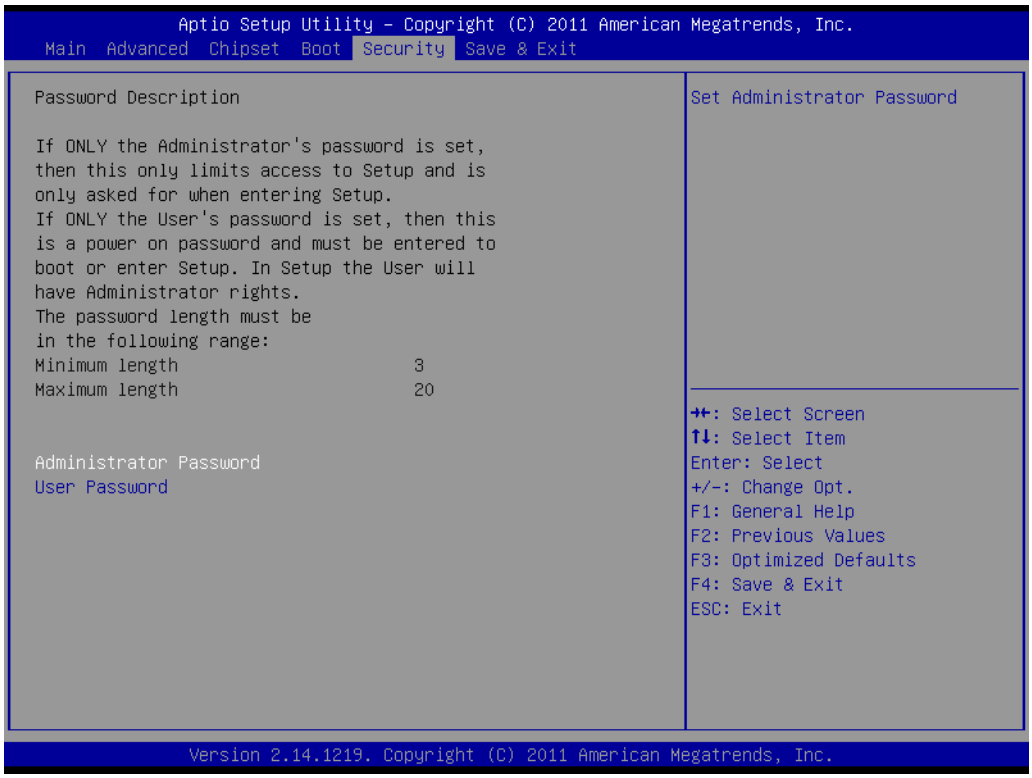


Figure 3.14 Security configuration setup screen

- **Administrator Password:** Set up Administrator Password.
- **User Password:** Set User Password.

3.2.6 Save & Exit BIOS Feature Setup

Select the Save & Exit tab from the setup screen to enter the Save & Exit BIOS Setup screen.

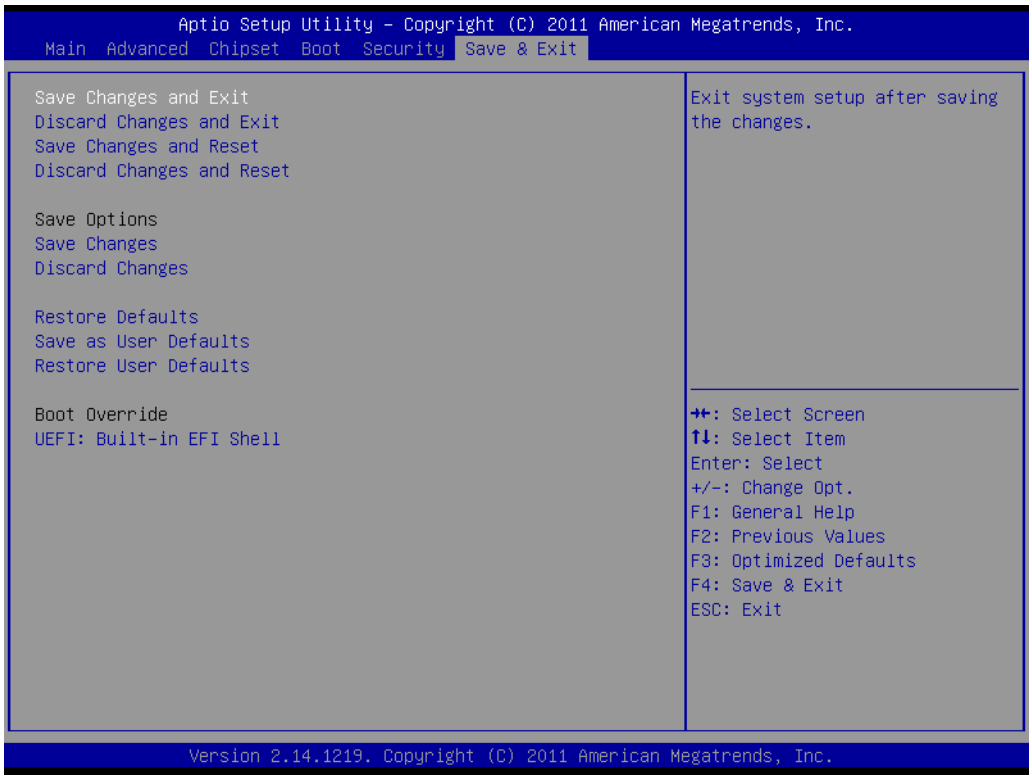


Figure 3.15 Save & Exit configuration setup screen

- **Save Changes and Exit:** Exit system setup after saving the changes.
- **Discard Changes and Exit:** Exit system setup without saving any changes.
- **Save Changes and Reset:** Reset the system after saving the changes.
- **Discard Changes and Reset:** Reset system setup without saving any changes.
- **Save Changes:** Save Changes done so far to any of the setup options.
- **Discard Changes:** Discard Changes done so far to any of the setup options.
- **Restore Defaults:** Restore/Load Defaults values for all the setup options.
- **Save as User Defaults:** Save the changes done so far as User Defaults.
- **Restore User Defaults:** Restore the User Defaults to all the setup options.

Chapter 4

Software Introduction & Service

4.1 Introduction

The mission of Advantech Embedded Software Services is to "Enhance quality of life with Advantech platforms and Microsoft® Windows® embedded technology." We enable Windows® Embedded software products on Advantech platforms to more effectively support the embedded computing community. Customers are freed from the hassle of dealing with multiple vendors (hardware suppliers, system integrators, embedded OS distributors) for projects. Our goal is to make Windows® Embedded Software solutions easily and widely available to the embedded computing community.

4.2 Value-Added Software Services

Software API: An interface that defines the ways by which an application program may request services from libraries and/or operating systems. Provides not only the underlying drivers required but also a rich set of user-friendly, intelligent and integrated interfaces, which speeds development, enhances security and offers add-on value for Advantech platforms. It plays the role of catalyst between developer and solution, and makes Advantech embedded platforms easier and simpler to adopt and operate with customer applications.

4.2.1 Software API

4.2.1.1 Control

GPIO

General Purpose Input/Output is a flexible parallel interface that allows a variety of custom connections. It allows users to monitor the level of signal input or set the output status to switch on/off the device. Our API also provide Programmable GPIO, which allows developers to dynamically set the GPIO input or output status.

SMBus

SMBus is the System Management Bus defined by Intel Corporation in 1995. It is used in personal computers and servers for low-speed system management communications. The SMBus API allows a developer to interface a embedded system environment and transfer serial messages using the SMBus protocols, allowing multiple simultaneous device control.

4.2.1.2 Display

Brightness Control

The Brightness Control API allows a developer to access embedded devices and easily control brightness.

Backlight

The Backlight API allows a developer to control the backlight (screen) on/off in embedded devices.

4.2.1.3 Monitor

Watchdog

A watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own. A watchdog timer can be programmed to perform a warm boot (restarting the system) after a certain number of seconds.

Hardware Monitor

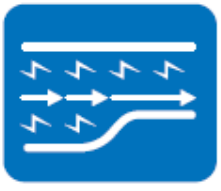
The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.

4.2.1.4 Power Saving

CPU Speed

Makes use of Intel SpeedStep technology to save power consumption. The system will automatically adjust the CPU speed depending on the system loading.

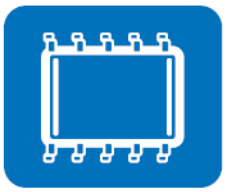
System Throttling



Refers to a series of methods for reducing power consumption in computers by lowering the clock frequency. This API allows the user to adjust the clock from 87.5% to 12.5%.

4.2.2 Software Utility

BIOS Flash



The BIOS Flash utility allows customers to update the flash ROM BIOS version, or use it to back up current BIOS by copying it from the flash chip to a file on customers' disk. The BIOS Flash utility also provides a command line version and an API for fast implementation into customized applications.

Embedded Security ID

The embedded application is the most important property of a system integrator. It contains valuable intellectual property, design knowledge and innovation, but it is easy to copy! Embedded Security ID utility provides reliable security functions for customers to secure their application data within the embedded BIOS.

Monitoring

The Monitoring is a utility for customer to monitor the system health, like voltage, CPU and system temperature and fan speed. These items are important to a device, if the critical errors occur and are not solved immediately, permanent damage may be caused.

eSOS

The eSOS is a small OS stored in BIOS ROM. It will boot up in case of a main OS crash. It will diagnose the hardware status, and then send an e-mail to the designated administrator. The eSOS also provide for remote connection via Telnet server and FTP server so the administrator can attempt to rescue the system. Note: This function requires BIOS customization.

Chapter 5

Chipset Software Installation Utility

5.1 Before You Begin

To facilitate the installation of the enhanced display drivers and utility software, read the instructions in this chapter carefully. The drivers for the AIMB-201DS are located on the software installation CD. The driver in the folder of the driver CD will guide and link you to the utilities and drivers under a Windows system. Updates are provided via Service Packs from Microsoft*.

Note! *The files on the software installation CD are compressed. Do not attempt to install the drivers by copying the files manually. You must use the supplied SETUP program to install the drivers.*

Before you begin, it is important to note that most display drivers need to have the relevant software application already installed in the system prior to installing the enhanced display drivers. In addition, many of the installation procedures assume that you are familiar with both the relevant software applications and operating system commands. Review the relevant operating system commands and the pertinent sections of your application software's user manual before performing the installation.

5.2 Introduction

The Intel® Chipset Software Installation (CSI) utility installs the Windows INF files that outline to the operating system how the chipset components will be configured. This is needed for the proper functioning of the following features:

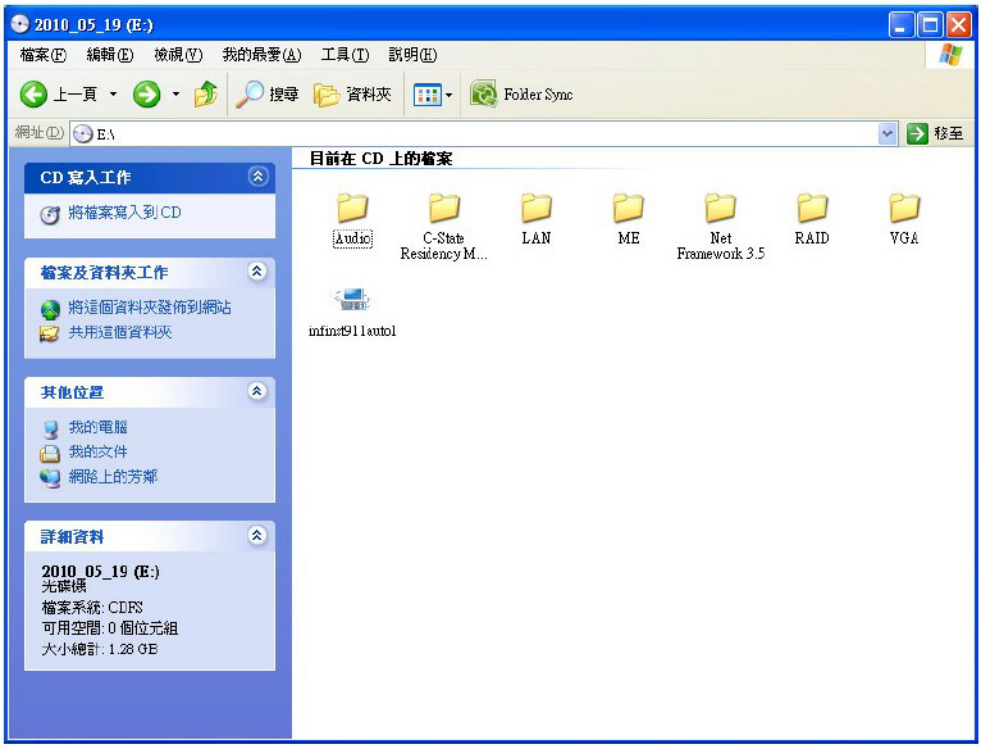
- Core PCI PnP services
- IDE Ultra ATA 100/66/33 and Serial ATA interface support
- USB 1.1/2.0 support (USB 2.0 driver needs to be installed separately for Win98)
- Identification of Intel® chipset components in the Device Manager

Note! *This utility is used for the following versions of Windows, and it has to be installed* ***before*** *installing all the other drivers:*

- *Windows 7 (32-bit)*
- *Windows 7 (64-bit)*
- *Windows XP professional edition (32-bit)*
- *Windows XP professional edition (64-bit)*

5.3 Windows XP/Windows 7 Driver Setup

1. Insert the driver CD into your system's CD-ROM drive. You can see the driver folder items. Navigate to the "Chipset" folder and click "infinst_autol.exe" to complete the installation of the driver.



Chapter 6

VGA Setup

6.1 Introduction

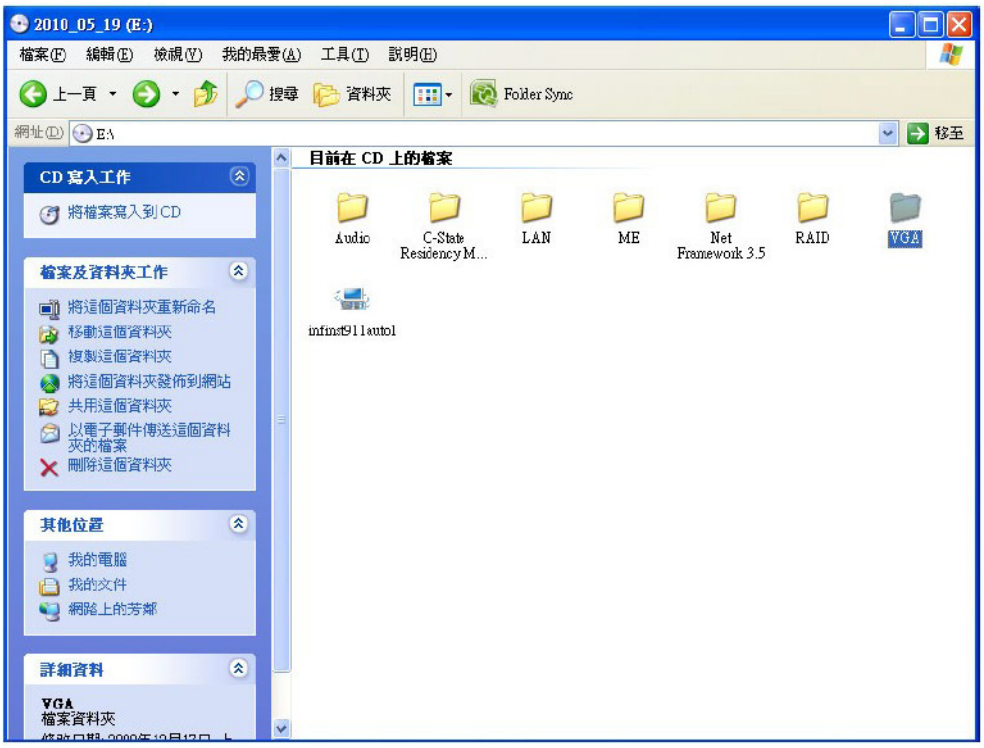
The Intel mobile Core i7-3610QE, Core i5-3610ME, Core i3-3120ME, Celeron B810 CPUs with dual core are embedded with an integrated graphics controller. You need to install the VGA driver to enable the function.

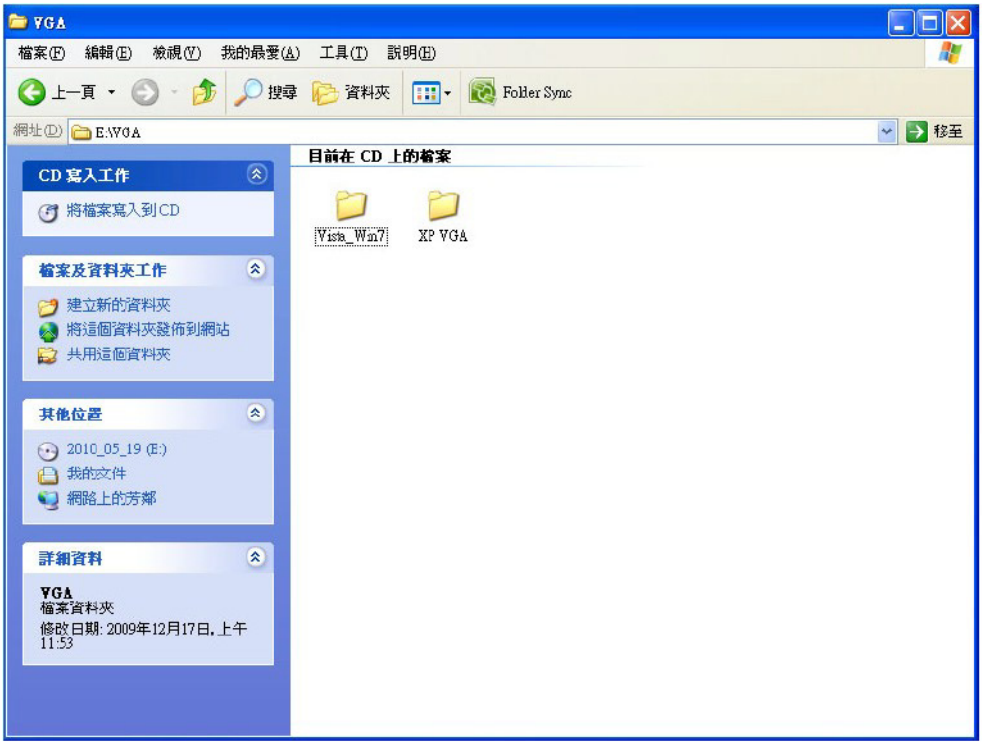
Optimized integrated graphic solution: With Intel Graphics Flexible, it supports versatile display options and 32-bit 3D graphics engine. Dual independent display, enhanced display modes for widescreen flat panels for extend, twin, and clone dual display mode, and optimized 3D support deliver an intensive and realistic visual experience.

6.2 Windows 7/XP

Note! *Before installing this driver, make sure the CSI utility has been installed in your system. See Chapter 5 for information on installing the CSI utility.*

Insert the driver CD into your system's CD-ROM drive. You can see the driver folders items. Navigate to the "VGA" folder and click "setup.exe" to complete the installation of the drivers for Windows 7 and Windows XP.




VGA
檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)
上一頁 搜尋 資料夾 Folder Sync
網址(D) E:\VGA
移至
CD 寫入工作
將檔案寫入到CD
檔案及資料夾工作
建立新的資料夾
將這個資料夾發佈到網站
共用這個資料夾
其他位置
2010_05_19 (E:)
我的文件
網路上的芳鄰
詳細資料
VGA
檔案資料夾
修改日期: 2009年12月17日, 上午 11:53
目前在 CD 上的檔案
Vista_Win7
XP VGA

Chapter 7

LAN Configuration

7.1 Introduction

The AIMB-201DS has dual Gigabit Ethernet LANs via dedicated PCI Express x1 lanes (Intel 82579LM) that offer bandwidth of up to 500 MB/sec, eliminating the bottleneck of network data flow and incorporating Gigabit Ethernet at 1000 Mbps.

7.2 Features

- Integrated 10/100/1000 Mbps transceiver
- 10/100/1000 Mbps triple-speed MAC
- High-speed RISC core with 24-KB cache
- On-chip voltage regulation
- Wake-on-LAN (WOL) support
- PCI Express X1 host interface

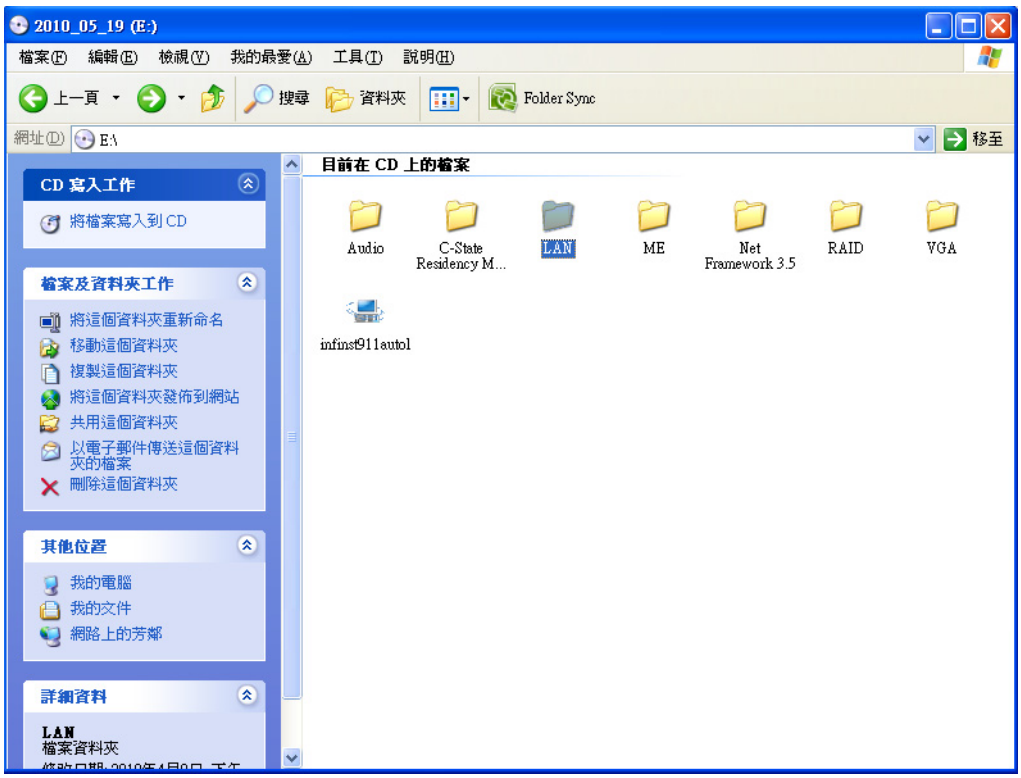
7.3 Installation

Note! *Before installing the LAN drivers, make sure the CSI utility has been installed on your system. See Chapter 5 for information on installing the CSI utility.*

The AIMB-201DS's Intel 82579LM Gigabit integrated controllers support all major network operating systems. However, the installation procedure varies from system to system. Please find and use the section that provides the driver setup procedure for the operating system you are using.

7.4 Windows® 7/XP Driver Setup (Intel 82579LM)

Insert the driver CD into your system's CD-ROM drive. Select the LAN folder then navigate to the directory for your OS.



Appendix A

SUSIAccess Introduction

A.1 SUSIAccess® - Remote Device Management

Advantech has designed an industrial remote management program to provide our customers with remote device monitoring, desktop connection, system recovery and system protection features that will help customers to access multiple clients through a single console for remote device management. SUSIAccess will immediately recognize sudden equipment malfunctions and provide real-time equipment maintenance, as well as system security protection mechanisms that significantly improve maintenance efficiency. Plus, an active update feature will improve system stability and reliability.

- **Remote Monitoring:** Monitors system status of remote devices, including hard disk temperature, hard drive health, network connection, system / CPU temperatures, system / CPU fan speeds and system voltages. Support for email alarms and function logs so that managers can regularly keep on top of their remote devices.
- **Remote On/Off:** Control on/off times according to each device, or pre-set time cycles to switch a device on/off. For example, a public service machine can be set for 6:00 am start and 23:00 pm shutdown. Ideal for night time and energy saving applications.
- **Remote KVM:** Controls the desktops of remote devices. IT technicians or maintenance engineers can manipulate a remote computer directly for maintenance and updates. Pre-configure settings without the need to enter individual IP, username and passwords—providing significant reduction in service times required.

- **System Recovery:** Controls system backup and restore of remote devices, or pre-set system backup types and restore times. For example, a bank ATM machine is set for system backup every Monday at 1:00 am. If a system crashes, you can immediately gain access via the remote console, and perform a system recovery so that the equipment maintains normal operation. (System recovery programs use Acronis True Image backup and restore technology which must be installed before use.)
- **System Protection:** Controls remote equipment, system protection and monitoring, and security. If a machine is threatened by a virus, the program will automatically detect and prevent intrusions.
  *System Saver program integrates McAfee's Embedded Security System Protection program which must be installed before use.

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