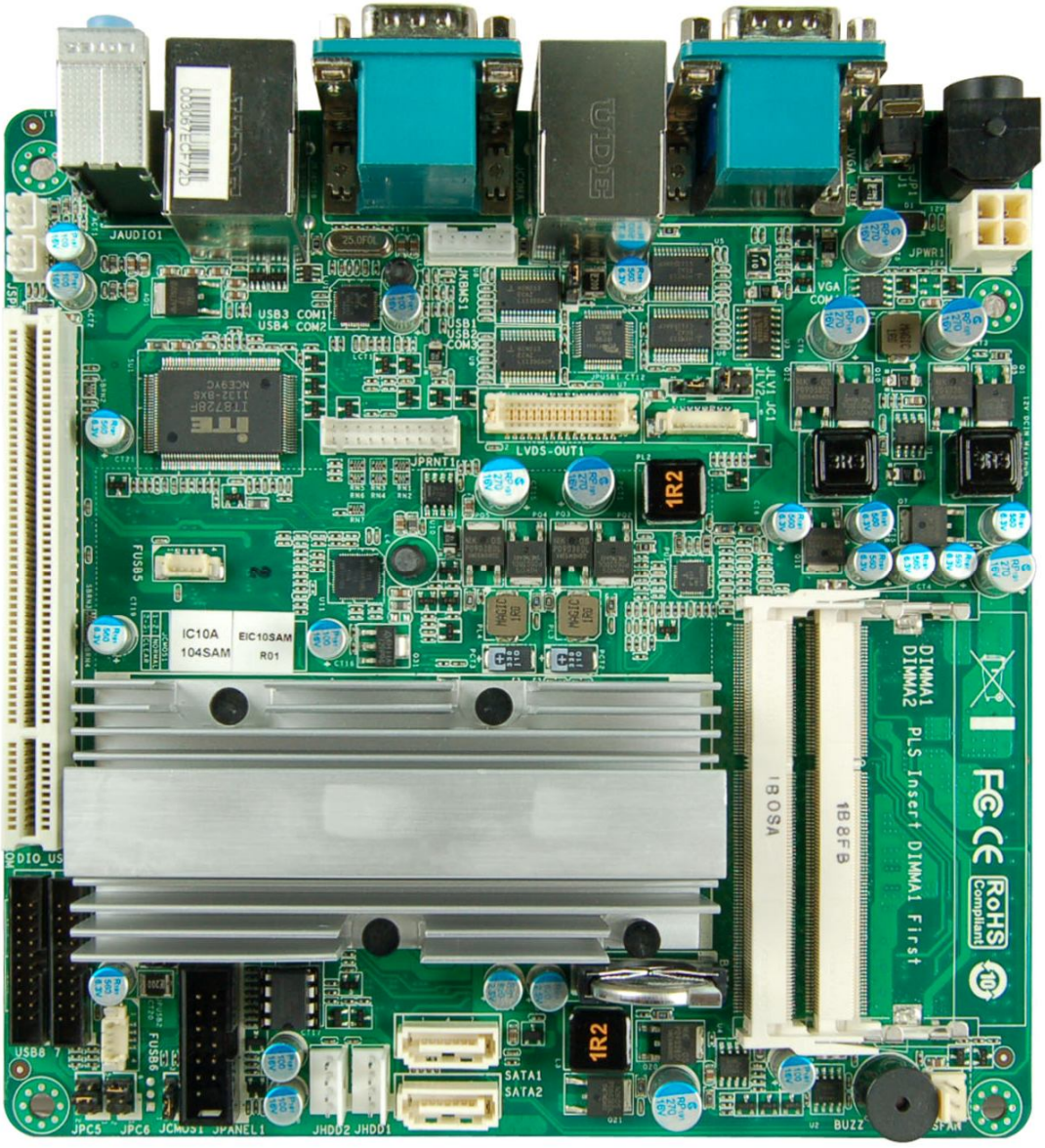
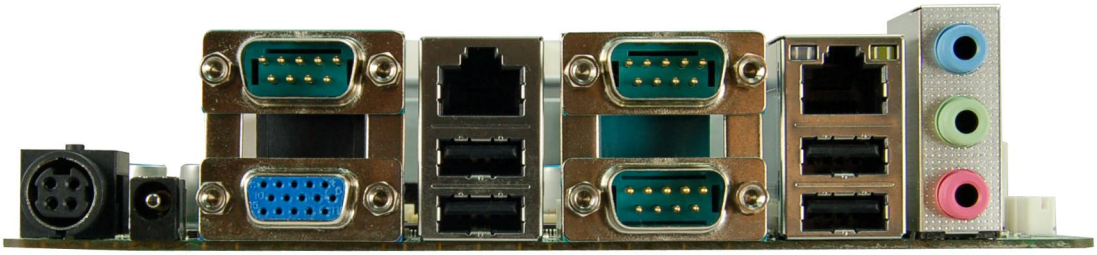
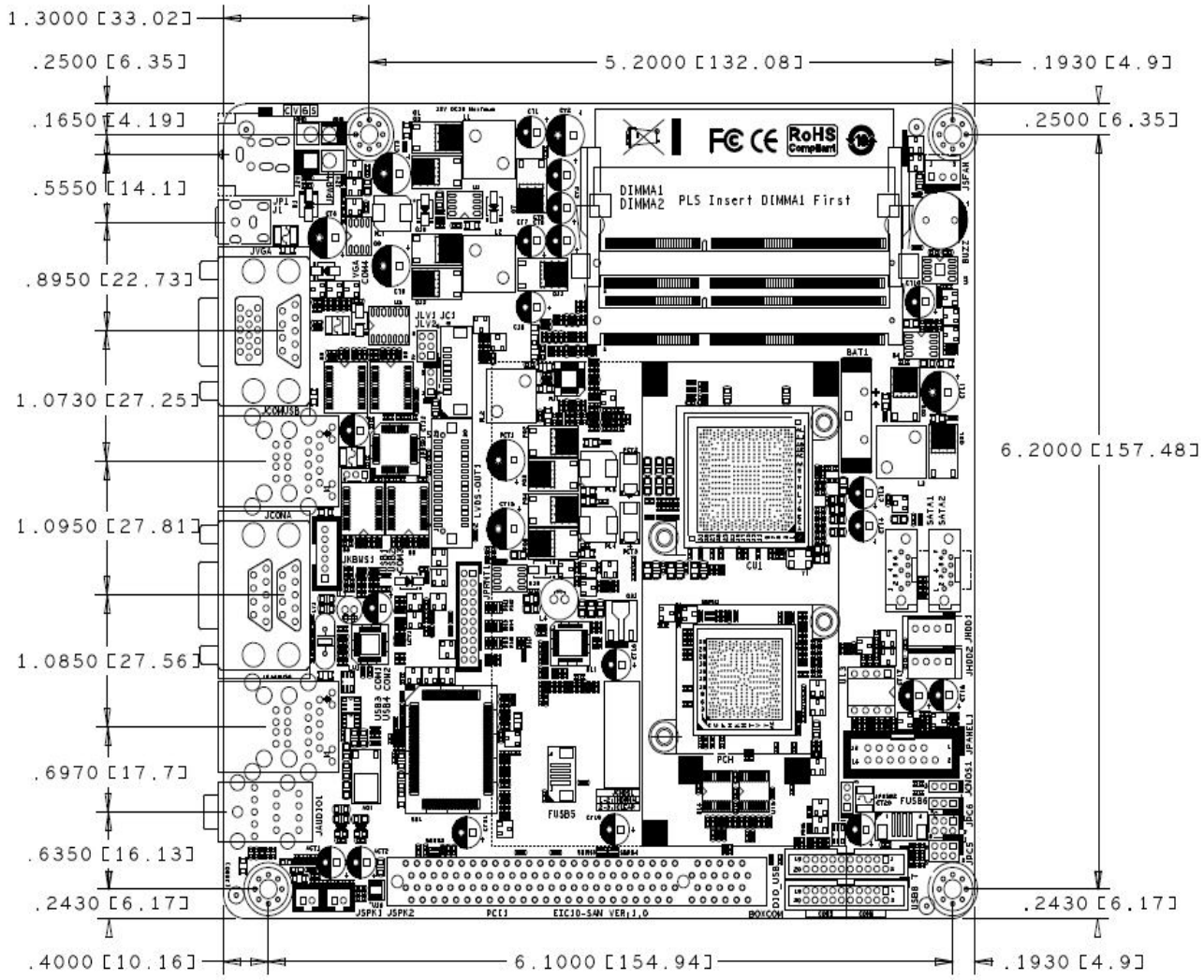
1. MAINBOARD PICTURE





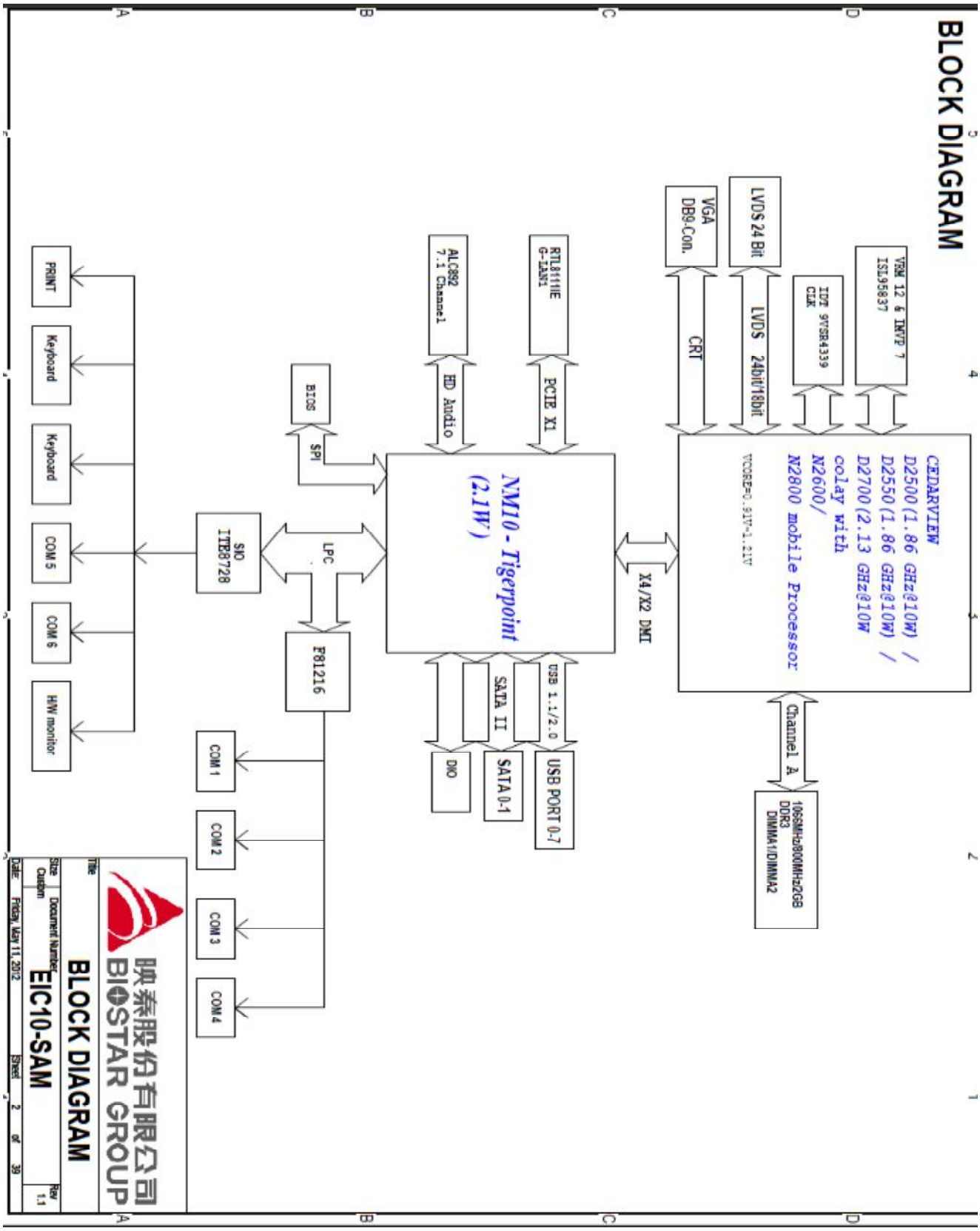
2. MAINBOARD MECHANICAL

UNITS: INCH [MM]



3. MAINBOARD BLOCK DIAGRAM & SPEC.

3.1 BLOCK DIAGRAM



3.2 MAINBOARD FEATURE

- Intel Atom Cedarview Series D2550 CPU(Dual Core 1.86GHz) onboard
- DDR3 1066 MHz SO-DIMM x 2 Horizontal socket

  support up to Max. 4GB
- Main Feature for POS application

  --- 12V DC-in power onboard

  --- 6 x COM w/ 5V or 12V power switch by BIOS or jumper select

  --- Dual View support via below two: VGA, 24bit LVDS

  --- 2W Amplifier
- 1 x GbE, 6 x COM, 2 x SATAII, 8 x USB 2.0, 1 x PCI

  1 x Printer port, 7.1CH HD Audio integrated

3.3 MAINBOARD SPECIFICATIONS

Processor System	
CPU	Intel Atom D2550 (Dual Core 1.86GHz) processor onboard
Chipset	Intel® NM10 Express Chipset
BIOS	AMI 8Mb Flash ROM
Memory	
Memory Slots	2 x SO-DIMM Horizontal socket
Memory Type	DDR3 800 MHz
Max. Capacity	4GB
Graphics	
On-Board Graphics	Intel Graphics Media Accelerator (GMA) 3650
Max.Share Memory	Shared system memory up to 384MB video memory
Display interface	LVDS (18/24bit Single CH, max up to 1400 x 900, D2500/D2700)
	VGA Support up to 2048 x1536
Expansion Slot	
PCI-E	1 x PCI , 1 x Mini PCIe connector
IDE / SATA	
Main Storage Controller	Intel® NM10 Express
Storage Supports	Chipset built-in Serial ATA controller support 2 x SATA, data transfer rates up to 3.0Gb/s
Audio	
Controller / CODEC	Realtek ALC892 HD Audio codec
Surround Support	7.1CH
LAN	
Controller	REALTEK RTL8111E Support Gigabit Ethernet
Interface	1 x 10/100/1000 Base-T
I/O Controller	
Controller	Super I/O controller ITE IT8728

Rear I/O	
DC Jack	1 x 4 Pin DC Jack
PS/2	1 x Keyboard
Serial port	3 x DB-9(COM1/2/4) + 1 x RJ45 (COM3) (RS232 with ring/5V/12V selection by BIOS)
VGA	1 x DB-15
LAN port	1 x RJ-45
USB port	4 X USB 2.0
Audio jacks	1 x Mic-in / 1 x Line-In/ 1 x Line-out
Internal I/O	
+12VDC-in connector	1 x 2*2 pins
speaker box header	1 x 1*4 pins
Amplifier Connectors	2 x 1*2 pins
PS/2 pin header	1 x 1*6 pins
SATA connector	2 x SATA ports
SATA power conn.	2 x 1*4 pins
Front Panel header	1 x 2*5 pin (support Power button / Power LED / HDD LED / Reset button)
Serial header	4 x 2*5 pin Lockable wafer (RS-232, pin #10 with 5V/12V switch by jumper select)
USB header	1 x 2*5 pin 2.54 pitch support 2 devices 2 x 1*4 pin 2.54 pitch support 2 devices
Parallel header	1 x 2*13 pin 2.0 pitch
Fan header	1 x 1*3 pin
LVDS connector	1 x 2*20 pins, single channel 18/24bit
Inverter connector	1 x 1*8 pins
LCD Backlight Inverter Power Select Header	1 x 1*3 pins, (5V/12V)
LCD Power Select Header	1 x 1*3 pins, (3.3V / 5V)
buzzer	1
Watchdog Timer	
Output	System reset

Interval	1~65535 level, can be set with software on Super I/O
Environment	
Operating Temp.	0~60^{0}C
Form Factor	
Mini-ITX	Dimensions: 170mm x 170mm (6.69” x 6.69”)

FCC Information and Copyright

This equipment has been tested and found to comply with the limits of 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. There is no guarantee that interference will not occur in a particular installation.

The vendor makes no representations or warranties with respect to the contents here and specially disclaims any implied warranties of merchantability or fitness for any purpose. Further the vendor reserves the right to revise this publication and to make changes to the contents here without obligation to notify any party beforehand.

The content of this user's manual is subject to be changed without notice and we will not be responsible for any mistakes found in this user's manual. All the brand and product names are trademarks of their respective companies.

Table of Contents

CHAPTER 1: INTRODUCTION

1.1 BEFORE YOU START

Thank you for choosing our product. Before you start installing the mainboard, please make sure you follow the instructions below:

- Prepare a dry and stable working environment with sufficient lighting.
- Always disconnect the system from power outlet before operation.
- Before you take the mainboard out from anti-static bag, ground yourself properly by touching any safely grounded appliance, or use grounded wrist strap to remove the static charge.
- Avoid touching the components on mainboard or the rear side of the board unless necessary. Hold the board on the edge, do not try to bend or flex the board.
- Do not leave any unfastened small parts inside the case after installation. Loose parts will cause short circuits which may damage the equipment.
- Keep the system from dangerous area, such as heat source, humid air, and water.
- Please switch on/off the machine normally. That is, DO NOT pull out power cord directly from the mainboard or the system may damage.

1.2 PACKAGE CHECKLIST

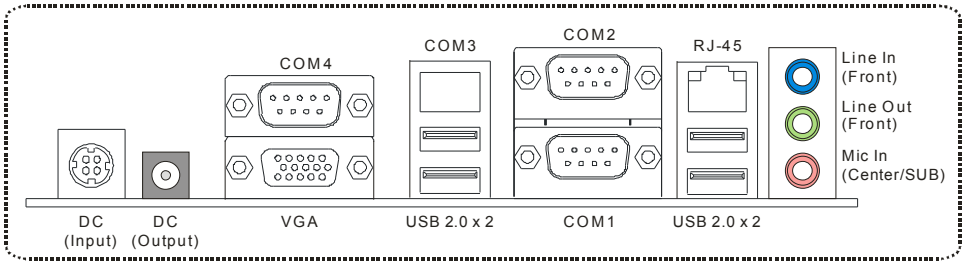
- Mini-ITX Mainboard x 1
- Fully Setup Driver DVD x 1
- I/O Bracket x 1 (Optional)
- SATA Cable x 1 (Optional)

1.3 MAINBOARD SPECIFICATION

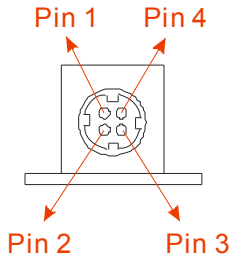
Specification			
CPU	Onboard Intel Cedarview dual core D2500 (1.86 GHz@10W) / D2700 (2.13 GHz@10W) colay with N2600 / N2800 mobile Processor		
Chipset	Intel NM10 Express Chipset		
Graphic	Intel Cedarview integrated graphics engine		Max Shared Video Memory is 384 MB Dual independent displays (Extended mode) as below two: -- Integrated LVDS (24/18 bit single CH, support up to 1440x900) -- Integrated VGA
Super I/O	ITE IT8728 + FINTEK F81216D Provides the most commonly used legacy Super I/O functionality.		128pin type Environment Control initiatives, H/W Monitor Fan Speed Controller
Main Memory	SO-DIMM (204pin) Slot x2 Supports DDR3 1066 MHz DIMM supports 512MB / 1GB / 2GB Max Memory Capacity 4GB		Registered DIMM or ECC DIMM is not supported
SATA	Chipset built-in Serial ATA controller		SATA Version 2.0 specification compliant Data transfer rates up to 3.0 Gb/s
LAN	Realtek RTL 8111E		10 / 100 / 1000 Mb/s auto negotiation Half / Full duplex capability
Sound Codec	Realtek ALC892		7.1 channels audio out High-Definition Audio support
Amplifier	Realtek ALC105		BTL(Bridge-Tied Load) output provides up to 3W per channel driving capability into 4Ω speaker load (5V power is supplied).
Slot	PCI slot	x1	
On Board Connectors & Headers	SATA2 Connector	x2	
	Power Connector for SATA	x2	
	Front Panel Header	x1	
	Parallel Connector	x1	
	Digital I/O Connector	x1	
	System Fan Header	x1	
	Clear CMOS Header	x1	
	Amplifier Connector	x2	

Specification			
	PS/2 Keyboard/Mouse Connector	x1	
	USB 2.0 Connector	x4	
	LVDS Connector	x1	
	LCD Power Select Header	x1	
	LCD Backlight Inverter Connector	x1	
	Inverter Power Select Header	x1	
	Serial Connectors (RS-232)	x2	(Max 500mA output for each port)
	Power Connector (4pin)	x1	
Back Panel I/O	DC Jack (Input)	x1	
	DC Jack (Output)	x1	
	Serial Port (RJ45 x1 + DB9 x3)	x4	(RS232, Max 500mA output for each port)
	VGA Port	x1	
	LAN Port (RJ-45)	x1	
	USB2.0 Port	x4	
	Audio Jack (Line-out/Mic)	x3	
Board Size	170 mm (W) x 170 mm (L)		Mini-ITX
OS Support	Windows 7 (32 bits), Windows Embedded Standards 7 (WES7)		Biostar reserves the right to add or remove support for any OS with or without notice.

1.4 REAR PANEL

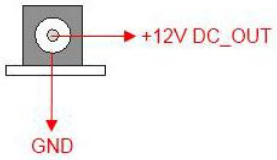


DC 12V-in pin define

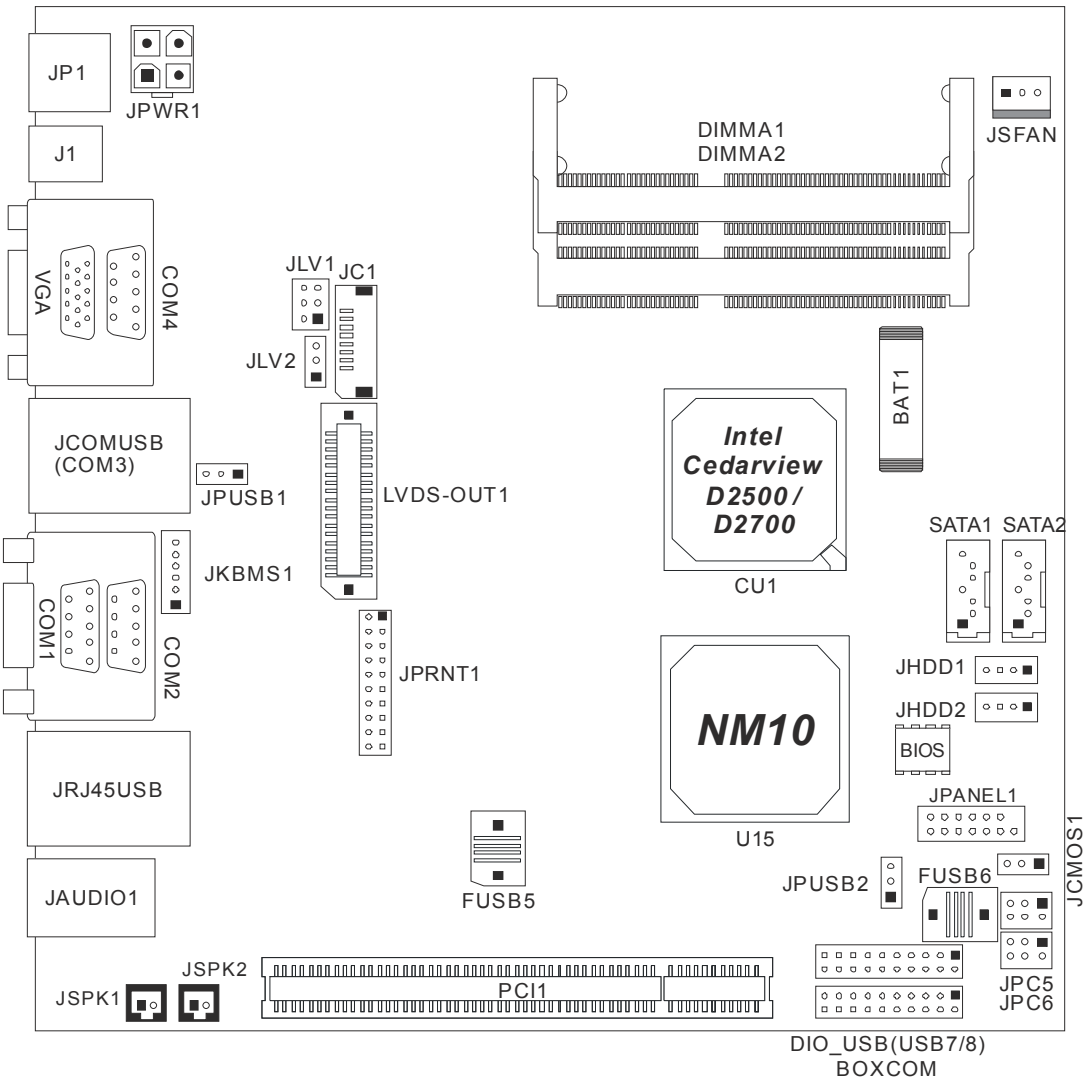


Pin	Assignment
1	+12V DC_In
2	GND
3	GND
4	+12V DC_IN

J1: 12V-Out pin define in IO side



1.5 MAINBOARD LAYOUT



Note: ■ represents the 1st pin.

CHAPTER 2: INSTALLATION

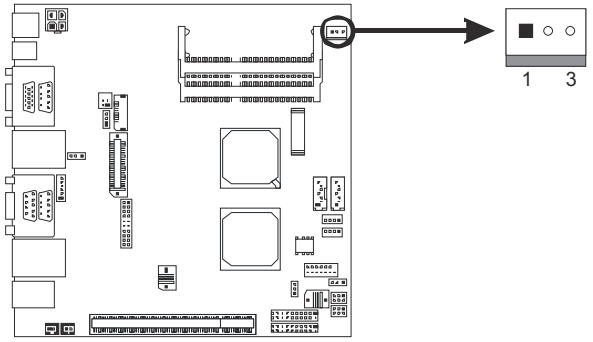
2.1 CPU

The mainboard includes an embedded Intel Cedarview D2500/D2700 processor, and a heatsink has been installed to provide sufficient cooling.

2.2 FAN HEADER

The fan header supports cooling-fans built in the system. The fan cable and connector may be different due to the fan manufacturer.

JSFAN: System Fan Header



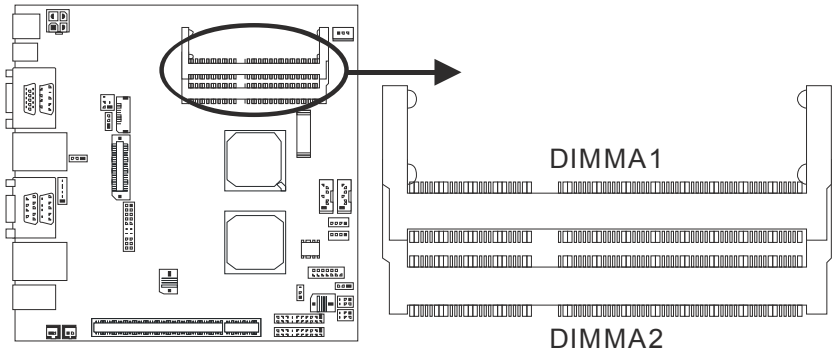
Pin	Assignment
1	Ground
2	+12V Smart Fan Control (By Fan)
3	FAN RPM rate sense

Note:

System Fan Header supports 3-pin head connectors. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to GND.

2.3 SYSTEM MEMORY

DIMMA1: Memory Module (204pin SO-DIMM)



1. Align a DIMM on the slot such that the notch on the DIMM matches the break on the Slot.

2. Insert the DIMM firmly into the slot until the retaining chip snap back in place and the DIMM is properly seated.

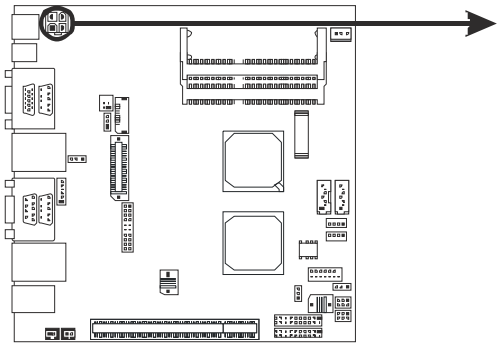
Memory Capacity

DIMM Socket Location	DDR3 Module	Total Memory Size
DIMMA1	512MB / 1GB / 2GB	Max is 4GB. (N2600 only support one DIMM max 2G).
DIMMA2	512MB / 1GB / 2GB	

2.4 POWER SUPPLY

JPWR1: ATX Power Source Connector (4-pin)

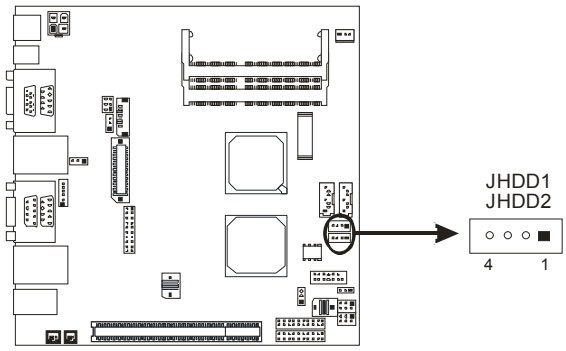
This connector provides +12V to system power circuit.



Pin	Assignment
1	+12V
2	+12V
3	Ground
4	Ground

JHDD1/JHDD2: SATA Power Connectors

These connectors provide power connection of SATA devices.

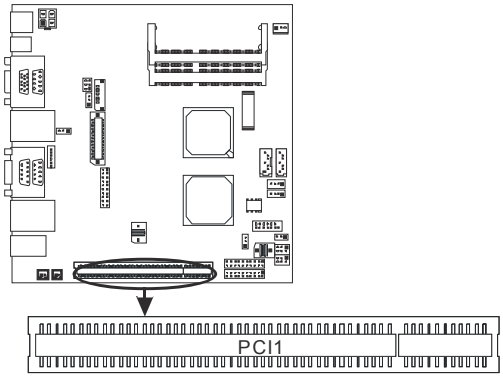


Pin	Assignment
1	+12V
2	GND
3	+3.3V
4	+5V

2.5 ONBOARD SLOT/CONNECTOR/HEADER/JUMPER

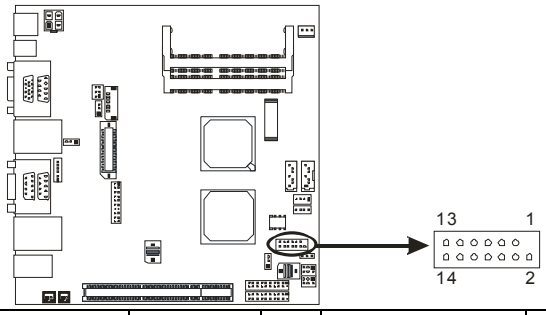
PCI1: Peripheral Component Interconnect Slot

This mainboard is equipped with 1 standard PCI slot. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designated as 32 bits.



JPANEL1: Front Panel Header

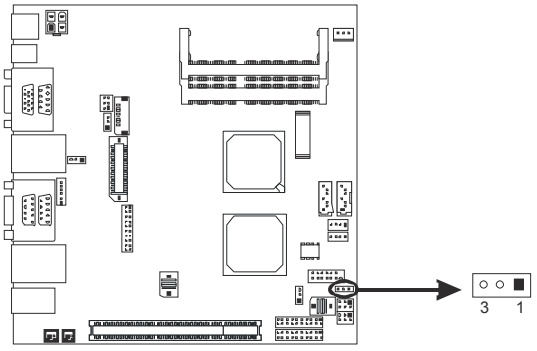
This 14-pin header includes Power-on, Reset, HDD LED, and Power LED connection. It allows user to connect the system case's front panel switch functions.



Pin	Assignment	Function	Pin	Assignment	Function
1	Key	N/A	2	Power LED+	Power LED
3	HD LED+	HDD LED	4	Power LED-	
5	HD LED-		6	GND	
7	Reset	Reset Button	8	Power	Power Button
9	Reset GND		10	Power GND	
11	Link LED	LAN LED	12	Net LED	LAN Mode
13	Link LED		14	Net LED	

JCMOS1: Clear CMOS Header *

Placing the jumper on pin2-3 allows user to restore the BIOS safe setting and the CMOS data. Please carefully follow the procedures to avoid damaging the mainboard.



Pin 1-2 Close: (Default)
Normal Operation.

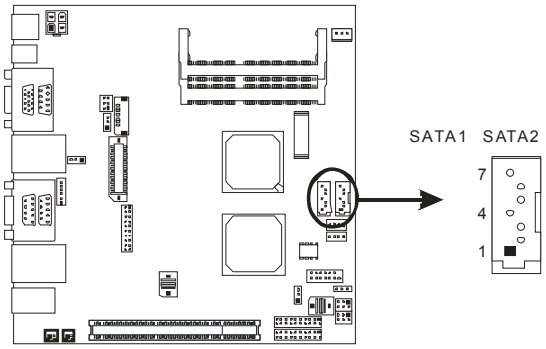
Pin 2-3 Close:
Clear CMOS data.

※ Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to “Pin 2-3 close”.
3. Wait for five seconds.
4. Set the jumper to “Pin 1-2 close”.
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.

SATA1/SATA2: Serial ATA Connectors

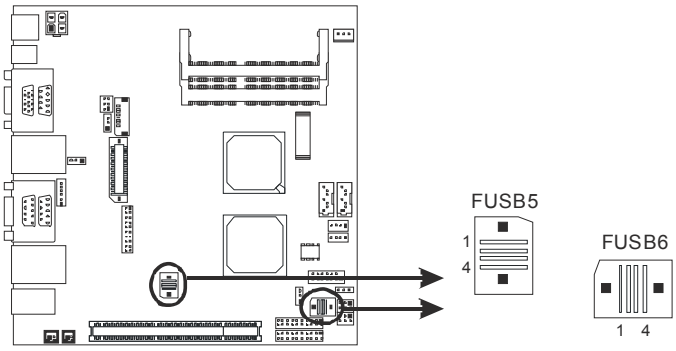
These next generation connectors support the thin Serial ATA cable for primary internal storage devices. The current Serial ATA interface allows up to 3.0 Gbit/s data transfer rate.



Pin	Assignment
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

FUSB5 / FUSB6: USB 2.0 Connectors

The mainboard provides 2 front USB pin connector, allowing up to 2 additional USB 2.0 ports up to maximum throughput of 480 Mbps. Connect the USB cable into the pin header for using high-speed USB interface peripherals.



Pin	Assignment
1	Power
2	D -
3	D+
4	GND

JPUSB1 / JPUSB2: Power Source Headers for USB Ports *

Pin 1-2 Close:

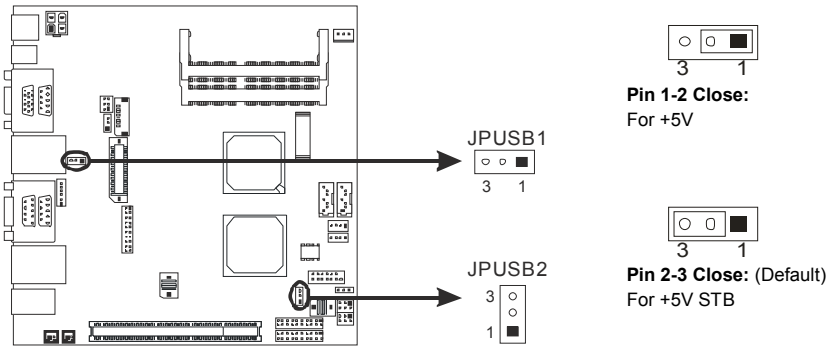
JPUSB1: +5V for USB ports at USB1/2/3/4.

JPUSB2: +5V for USB ports at USB6/7/8.

Pin 2-3 Close:

JPUSB1: +5V STB for USB ports at USB1/2/3/4.

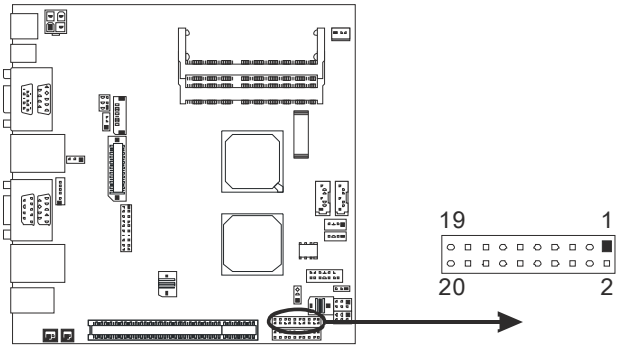
JPUSB2: +5V STB for USB ports at USB6/7/8.



Note: FUSB5 only supports +5V power

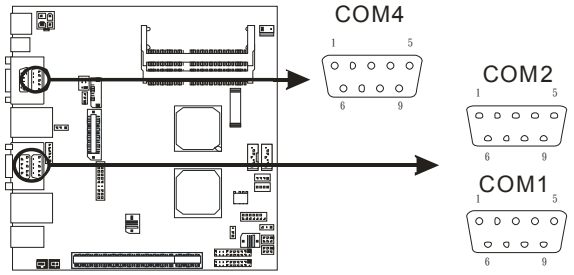
DIO_USB: Digital I/O and USB7/8 Connector

This connector provides DIO and USB7/8 functions.



Pin	Assignment		Pin	Assignment	
1	Power	USB7	2	Power	USB8
3	D-		4	D-	
5	D+		6	D+	
7	GND		8	GND	
9	NC		10	NC	
11	VCC12		12	NC	
13	GPO10		14	NC	
15	GPO13		16	GP18	
17	GPO14		18	GP19	
19	GPO15		20	GND	

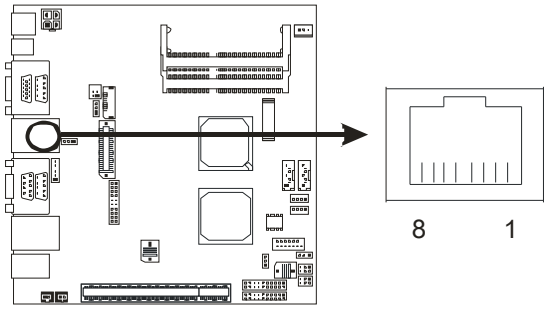
COM1/ 2/ 4: Serial Port Connector



Pin	Assignment
1	Carrier detect (DCD)
2	Received data (RXD)
3	Transmitted data (TXD)
4	Data terminal ready (DTR)
5	Signal ground (GND)
6	Data set ready (DSR)
7	Request to send (RTS)
8	Clear to send (CTS)
9	Ring, 5V or 12V

*Ring, 5V or 12V can be selected by BIOS setting

COM3: Serial Port Connector

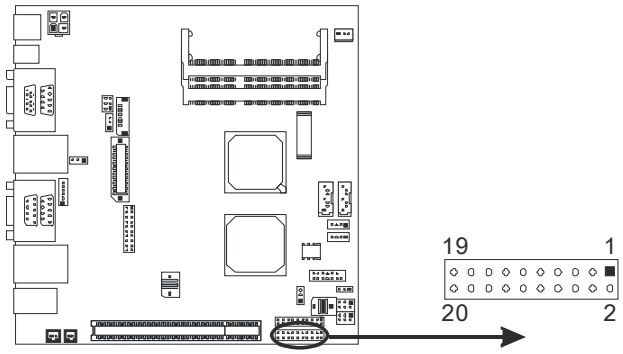


Pin	Assignment
1	NC
2	RI*
3	DSR
4	TX
5	RX
6	RTS
7	CTS
8	GND

*Ring, 5V or 12V can be selected by BIOS setting

BOXCOM: COM5/6 Connector

This connector provides 2 COM Ports.

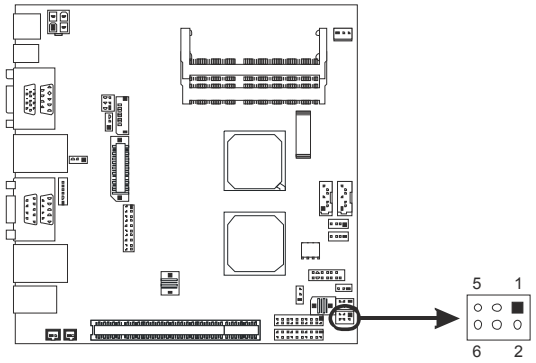


	Pin	Assignment	Pin	Assignment
COM6	1	DCD	2	RXD
	3	TXD	4	DTR
	5	GND	6	DSR
	7	RTS	8	CTS
	9	Ring, 5V or 12V *	10	NC
COM5	11	DCD	12	RXD
	13	TXD	14	DTR
	15	GND	16	DSR
	17	RTS	18	CTS
	19	Ring, 5V or 12V *	20	NC

*Ring, 5V or 12V can be selected by jumper setting

JPC5: Voltage Switch Header for COM5

This header is for controlling the Pin19 of COM5 to switch Ring, 5V, or 12V.



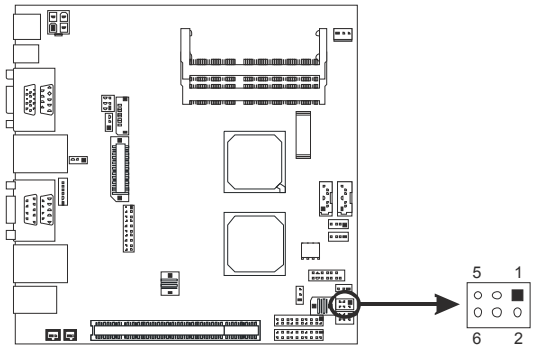
Pin 1-2 Close:
Pin9=Ring

Pin 3-4 Close:
Pin9=5V(Default)

Pin 5-6 Close:
Pin9=12V

JPC6: Voltage Switch Header for COM6

This header is for controlling the Pin 9 of COM6 to switch Ring, 5V, or 12V.



Pin 1-2 Close:
Pin9=Ring

Pin 3-4 Close:
Pin9=5V

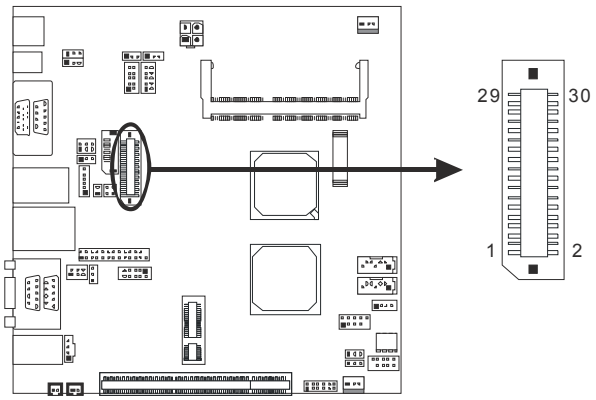
Pin 5-6 Close:
Pin9=12V(Default)

LVDS-CONN1: LVDS Connector

This connector is for devices requiring display interface such as LVDS.

This connector supports 18/24 bit single-channel panels up to 1366 x 768

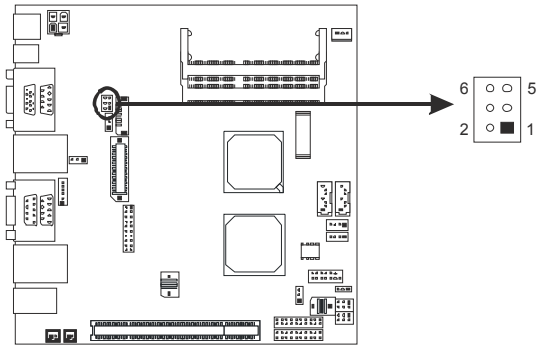
- It is strongly recommended to use the matching JOY DAY INDUSTRIAL - A1252WV-SF-2X20PD01 connector.



Pin	Assignment	Pin	Assignment
1	Inverter Power	2	PVDD2
3	Inverter Power	4	PVDD2
5	GND	6	GND
7	Enable Backlight	8	LVDS_ DATA0_N
9	Backlight Control	10	LVDS_ DATA0_P
11	GND	12	GND
13	+ 5V	14	LVDS_DATA1_N
15	GND	16	LVDS_DATA1_P
17	+ 3.3V	18	GND
19	GND	20	LVDS_DATA2_N
21	LVDS_DDC_DATA	22	LVDS_ DATA2_P
23	LVDS_ DDC_CLK	24	GND
25	GND	26	LVDS_CLK_N
27	LVDS_DATA3_N	28	LVDS_CLK_P
29	LVDS_DATA3_P	30	GND

JLV1: LCD Power Select Header

This header allows you to select LCD Power.



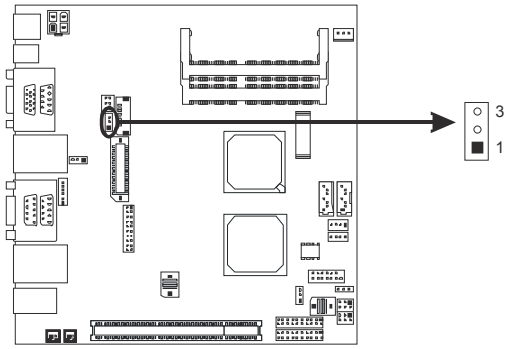
Pin 1-2 Close:
Inverter Power=3.3V (Default)

Pin 2-3 Close:
Inverter Power=5V

Pin 2-3 Close:
Inverter Power=12V

JLV2: LCD Backlight Inverter Power Select Header

This header is for selecting LCD Backlight Inverter Power.

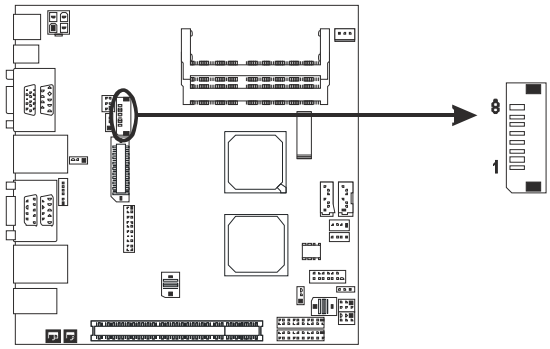


Pin 1-2 Close:
Inverter Power=5V

Pin 2-3 Close:
Inverter Power=12V (Default)

JC1: LCD Backlight Inverter Connector

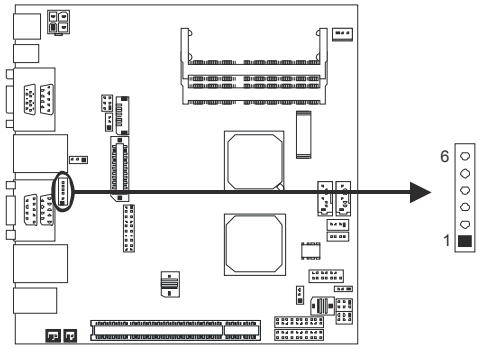
This connector is for connecting to LCD for providing backlight control function. It is strongly recommended to use the matching JOY DAY INDUSTRIAL — A1250WV-S-8P connector.



Pin	Assignment
1	5V/12V DC
2	5V/12V DC
3	NC
4	NC
5	Backlight On
6	Brightness Adjust
7	GND
8	GND

JKBMS1: Keyboard/Mouse Connector

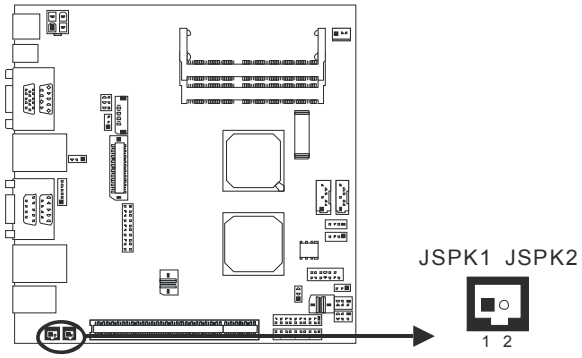
The mainboard provides a PS2 pin header to attach a PS2 keyboard/mouse.



Pin	Assignment
1	MS_CLK
2	MS_DATA
3	KB_CLK
4	KB_DATA
5	GND
6	JUSBLAN1_POWER

JSPK1/JSPK2: Amplifier Connectors

The mainboard provides 2 amplifier connectors.

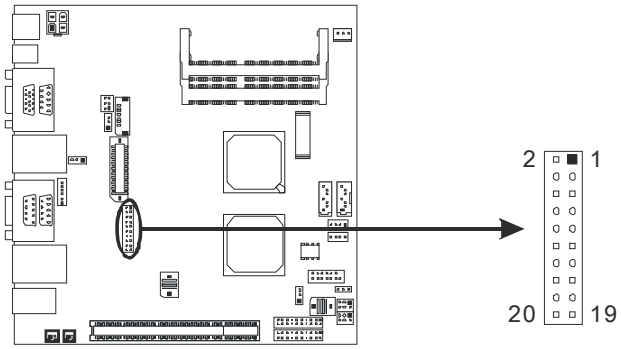


JSPK1	
Pin	**Assignment**
1	SPKRP
2	SPKRN

JSPK2	
Pin	**Assignment**
1	SPKLP
2	SPKLN

JPRNT1: Printer Port Connector

This header allows you to connect printer port on the PC.



Pin	Assignment	Pin	Assignment
1	STB	2	AFD
3	PRD0	4	P_-ERR
5	PRD1	6	-INIT
7	PRD2	8	SLIN
9	PRD3	10	GND
11	PRD4	12	GND
13	PRD5	14	GND
15	PRD6	16	P_BUSY
17	PRD7	18	P_PE
19	P_-ACK	20	P_SLCT

*How to Setup Jumpers

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is “close”, if not, that means the jumper is “open”.

Pin opened

Pin closed

Pin1-2 closed

CHAPTER 3: BIOS SETUP

Introduction

The purpose of this chapter is to describe the settings in the AMI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to CMOS RAM. The power of CMOS RAM is supplied by a battery so that it retains the Setup information when the power is turned off.

Basic Input-Output System (BIOS) determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in BIOS.

The rest of this manual will to guide you through the options and settings in BIOS Setup.

Plug and Play Support

This AMI BIOS supports the Plug and Play Version 1.0A specification.

EPA Green PC Support

This AMI BIOS supports Version 1.03 of the EPA Green PC specification.

ACPI Support

AMI ACPI BIOS support Version 1.0/2.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

PCI Bus Support

This AMI BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

DRAM Support

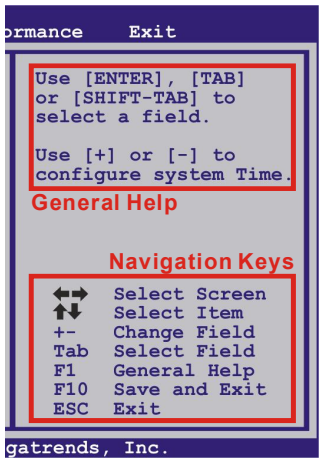
DDR2 SDRAM (Double Data Rate II Synchronous DRAM) is supported.

Supported CPUs

This AMI BIOS supports the Intel CPU.

Using Setup

When starting up the computer, press **<Del>** during the **Power-On Self-Test (POST)** to enter the BIOS setup utility.
In the BIOS setup utility, you will see **General Help** description at the top right corner, and this is providing a brief description of the selected item. **Navigation Keys** for that particular menu are at the bottom right corner, and you can use these keys to select item and change the settings.

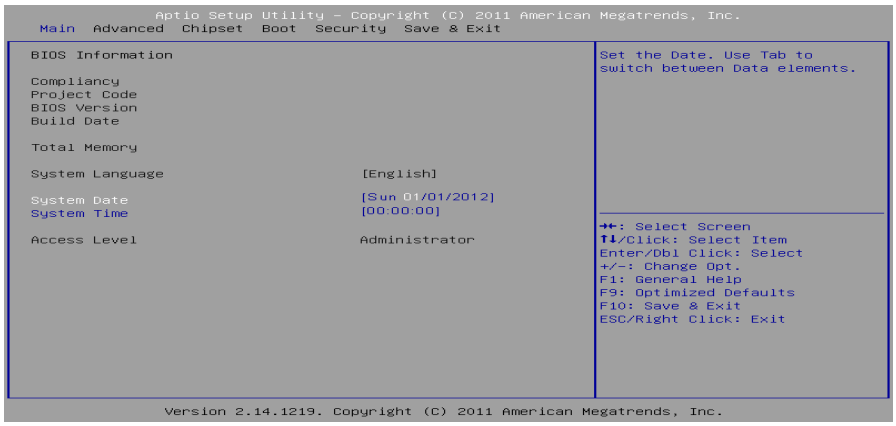


Notice

- The default UEFI BIOS settings apply for most conditions to ensure optimum performance of the motherboard. If the system becomes unstable after changing any settings, please load the default settings to ensure system's compatibility and stability. Use Load Setup Default under the Exit Menu.
- For better system performance, the UEFI BIOS firmware is being continuously updated. The UEFI BIOS information described in this manual is for your reference only. The actual UEFI BIOS information and settings on board may be slightly different from this manual.
- The content of this manual is subject to be changed without notice. We will not be responsible for any mistakes found in this user's manual and any system damage that may be caused by wrong-settings.

3.1 MAIN MENU

Once you enter AMI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.



AMI BIOS

Shows system information including BIOS version, built date, etc.

System Memory

Shows system memory size, VGA shard memory will be excluded..

System Time

Set the system internal clock.

System Date

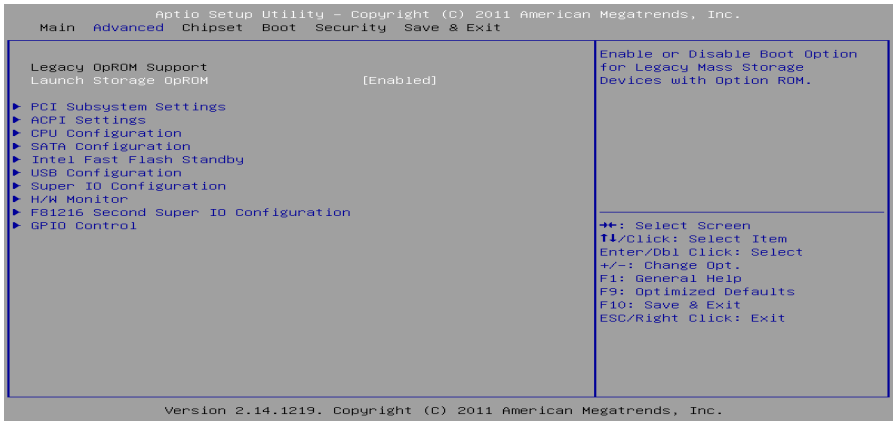
Set the system date. Note that the 'Day' automatically changes when you set the date.

3.2 ADVANCED MENU

The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.

Notice

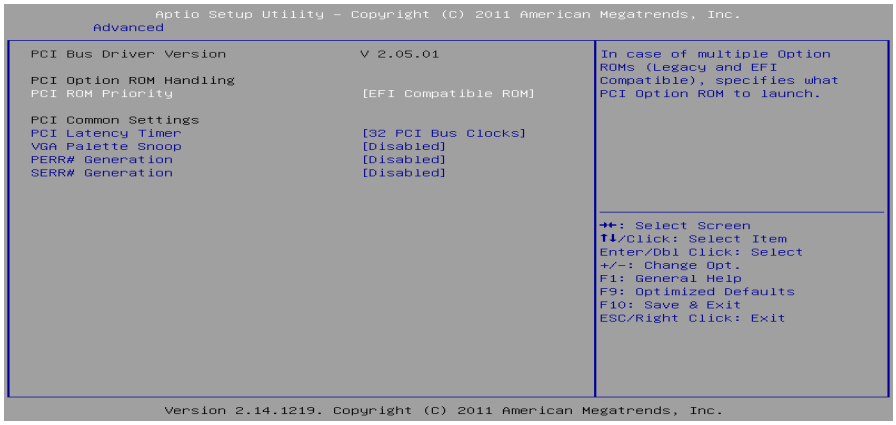
- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.



Launch Storage OpROM

This item allows you to enable or disable Boot Option for Legacy Mass Storage Devices with Option ROM.
Options: Enabled (Default) / Disabled

PCI Subsystem Settings



PCI ROM Priority

In case of multiple option ROMs (Legacy and EFI Compatible), this item specifies what PCI Option ROM to launch
Options: EFI Compatible ROM (Default) / Legacy ROM

PCI Latency Timer

This item sets the value to be programmed into PCI Latency Timer Register.
Options: 32 PCI Bus Clocks (Default) / 64 PCI Bus Clocks / 96 PCI Bus Clocks / 128 PCI Bus Clocks / 160 PCI Bus Clocks / 192 PCI Bus Clocks / 224 PCI Bus Clocks / 248 PCI Bus Clocks

VGA Palette Snoop

This item enables or disables VGA Palette Registers Snooping.
Options: Disabled (Default) / Enabled

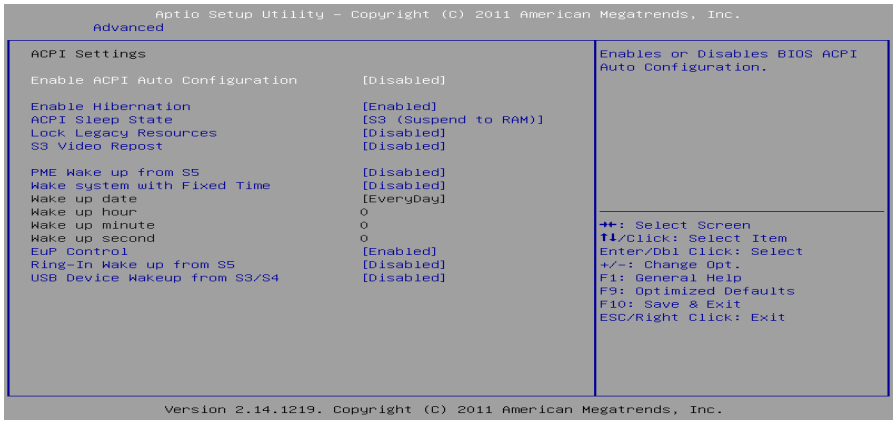
PERR# Generation

This item enables or disables PCI Device to generate PERR#.
Options: Disabled (Default) / Enabled

SERR# Generation

This item enables or disables PCI Device to generate SERR#.
Options: Disabled (Default) / Enabled

ACPI Settings



Enable ACPI Auto Configuration

The item enables or disables BIOS ACPI Auto Configuration.
Options: Disabled (Default) / Enabled

Enable Hibernation

The item enables or disables System ability to hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
Options: Enabled (Default) / Disabled

ACPI Sleep State

This item selects the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
Options: S1 (CPU Stop Clock) (Default) / Suspend Disabled

Lock Legacy Resources

This item enables or disables Lock of Legacy Resources.
Options: Disabled (Default) / Enabled

S3 Video Repost

The item enables or disables S3 Video repost.
Options: Disabled (Default) / Enabled

PME Wake up from S5

The item enables the system to wake from S5 using PME event.
Options: Disabled (Default) / Enabled

Wake system with Fixed Time

This item enables or disables the system to wake on by alarm event. When this item is enabled, the system will wake on the hr::min::sec specified.
Options: Disabled (Default) / Enabled

Wake up date

You can choose which date the system will boot up.

Wake up hour / Wake up minute / Wake up second

You can choose the system boot up time, input hour, minute and second to specify.

EuP Control

When EuP is enabled, the system will meet EuP requirement.
Options: Disabled (Default) / Enabled

Ring-In Wake up from S5

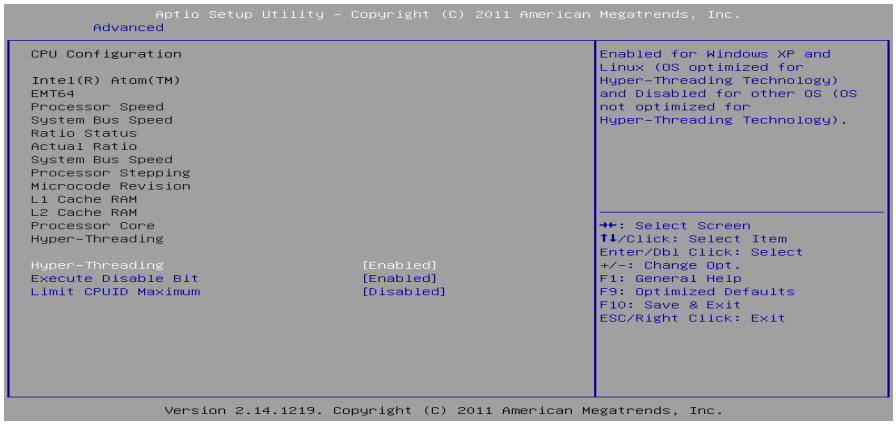
This item enables the system to wake from S5 using Ring-In event.
Options: Disabled (Default) / Enabled

USB Device Wake up from S3/S4

This item enables the system to wake from S3/S4 using USB device.
Options: Disabled (Default) / Enabled

CPU Configuration

This item shows the CPU information that the BIOS automatically detects.



Hyper Threading Technology

Enabled for Windows XP and Linux (OS optimized for Hyper Threading Technology) and disabled for other OS (OS not optimized for Hyper Threading Technology).
Options: Enabled (Default) / Disabled

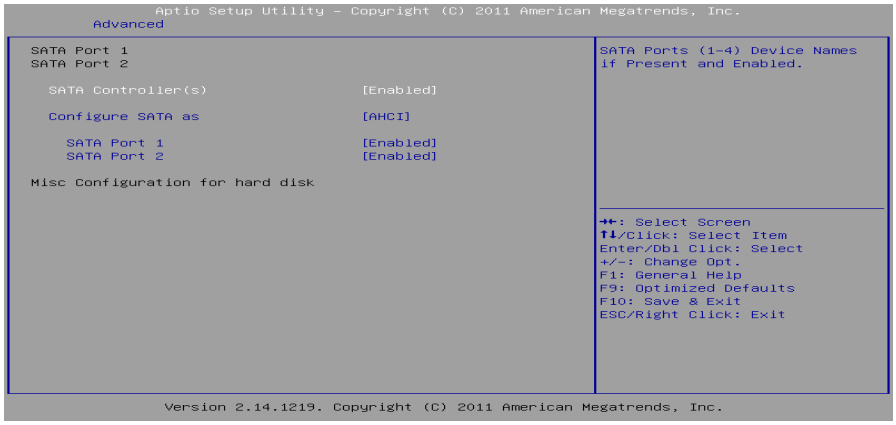
Execute Disable Bit

This item allows you to configure the Execute Disabled Bit function, which protects your system from buffer overflow attacks.
Options: Enabled (Default) / Disabled

Limit CPUID Maximum

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. This determines the kind of basic information CPUID can provide the operating system.
Options: Disabled (Default) / Enabled

SATA Configuration



SATA Port1

SATA Port2

SATA Controller (s)

This item enables/disables Serial ATA Controller (s).
Options: Enabled (Default) / Disabled

Configure SATA as

This item selects a configuration for SATA controller.
Options: AHCI (Default) / IDE

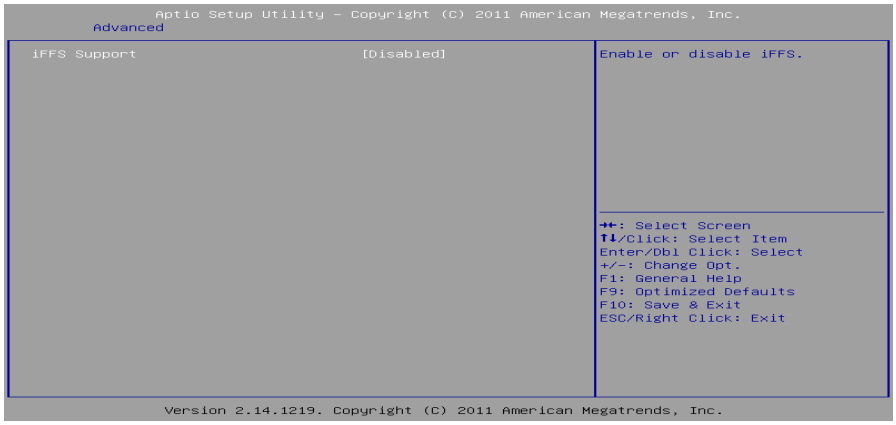
SATA Port1

Options: Enabled (Default) / Disabled

SATA Port2

Options: Enabled (Default) / Disabled

Intel Fast Flash Standby



iFFS Support

This item enables or disables iFFS.
Options: Disabled (Default) / Enabled

Entry on S3 RTC Wake

iFFS invocation upon S3 RTC.
Options: Enabled (Default) / Disabled

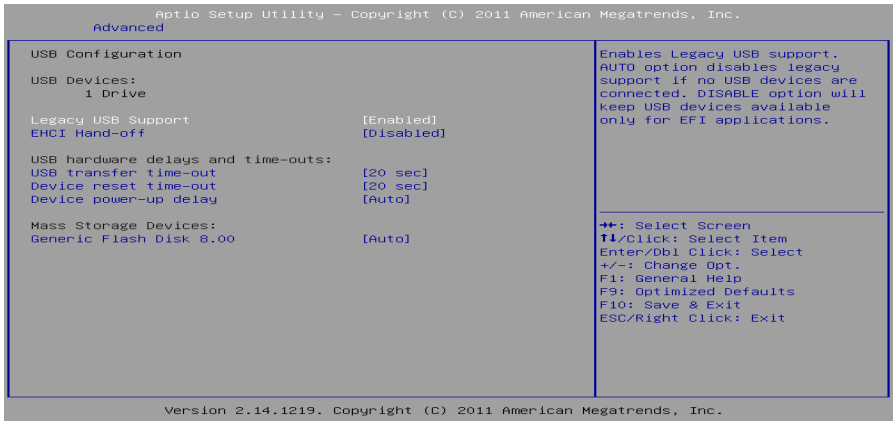
Entry After

Enable RTC wake timer as S3 entry
Options: Immediately (Default) /1 / 2 / 5 / 10 / 15 / 30 minute(s) / 1 / 2 hour(s)

Entry on S3 Critical Battery Wake

iFFS invocation upon critical battery wake.
Options: Enabled (Default) / Disabled

USB Configuration



Legacy USB Support

This item determines if the BIOS should provide legacy support for USB devices like the keyboard, mouse, and USB drive. This is a useful feature when using such USB devices with operating systems that do not natively support USB (e.g. Microsoft DOS or Windows NT).
Options: Enabled (Default) / Disabled / Auto

EHCI Hand-Off

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
Options: Disabled (Default) / Enabled

USB transfer time-out

The time-out value is for Control, Bulk, and Interrupt transfers.
Options: 20 sec (Default) / 1 sec / 5 sec / 10 sec

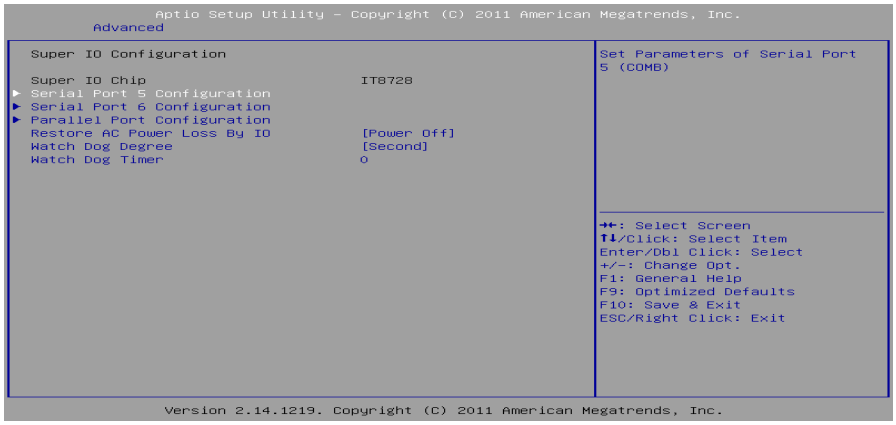
Device reset time-out

This is the USB mass storage device Start Unit command time-out.
Options: 20 sec (Default) / 10 sec / 30 sec / 40 sec

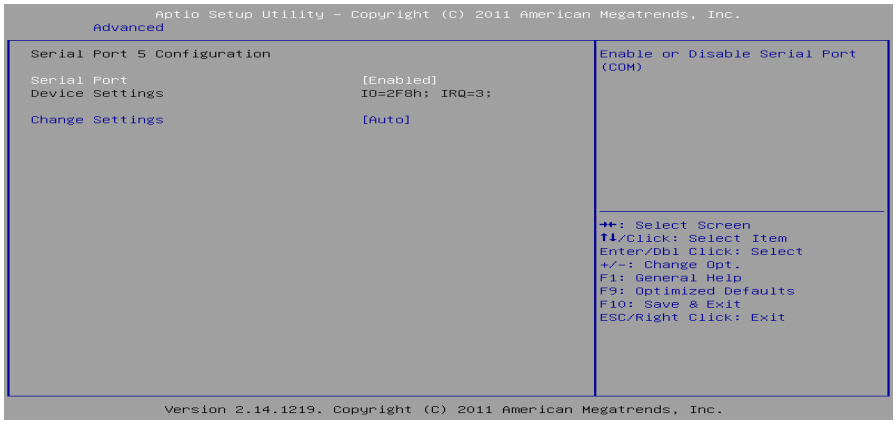
Device power-up delay

This is maximum time for the device to take before it properly reports itself to the Host Controller.
Options: Auto (Default) / Manual

Super IO Configuration



Serial Port 5 Configuration



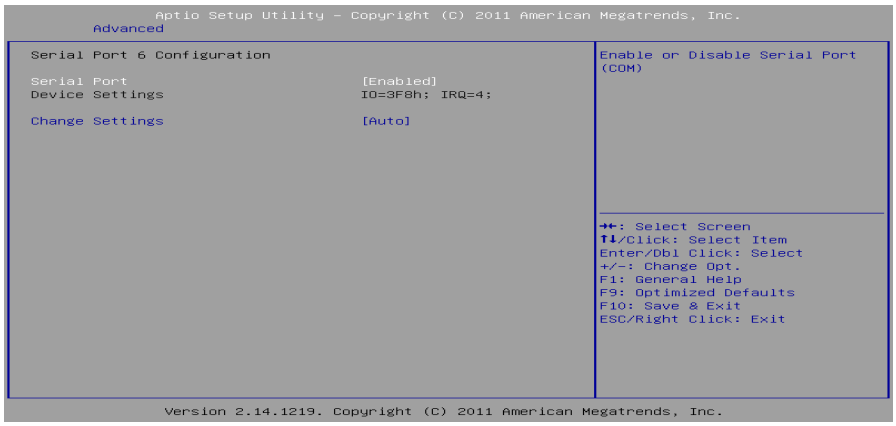
Serial Port
This item enables or disables Serial Port (COM).
Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: Auto (Default) / IO=2F8h; IRQ=3 / IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12

Serial Port 6 Configuration



Serial Port

This item enables or disables Serial Port (COM).

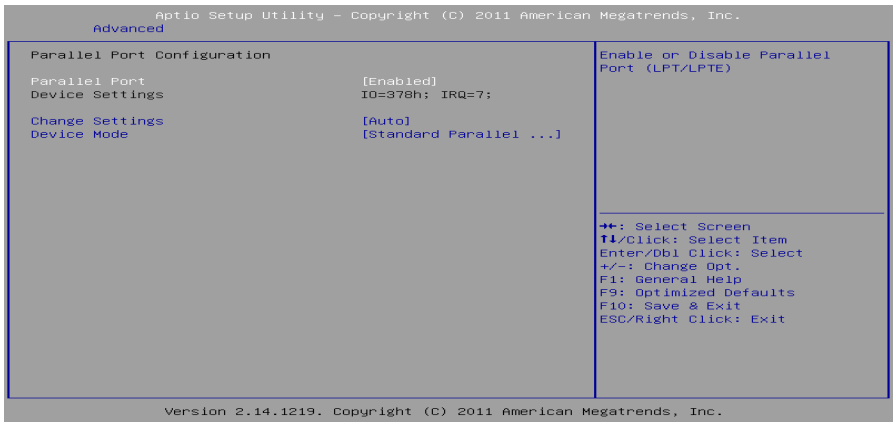
Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: Auto (Default) / IO=3F8h; IRQ=4 / IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12

Parallel Port Configuration



Parallel Port

This item enables or disables Parallel Port (LPT/LPTE).

Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: Auto (Default) / IO=378h; IRQ=7 / IO=378h; IRQ=6, 7, 9, 10, 11, 12 / IO=278h; IRQ=6, 7, 9, 10, 11, 12 / IO=3BCh; IRQ=6, 7, 9, 10, 11, 12

Device Mode

This item allows you to determine how the parallel port should function.

Options: Standard Parallel Port Mode (Default) (Using Parallel port as Standard Printer Port) /
EPP Mode (Using Parallel Port as Enhanced Parallel Port) /
ECP Mode (Using Parallel port as Extended Capabilities Port) /
ECP Mode & EPP Mode (Using Parallel port as ECP & EPP mode)

Restore AC Power Loss by IO

This setting specifies how your system should behave after a power fail or interrupts occurs. Power Off: Leaving the system in power-off status after power recovers. Power ON: Powering on the system immediately when power returns. Last State: 1. Leaving the system in power-off if the system shuts down at DC off status; 2. Powering on the system immediately if the system shuts down at DC on status.

Options: Power Off (Default) / Power On / Last State

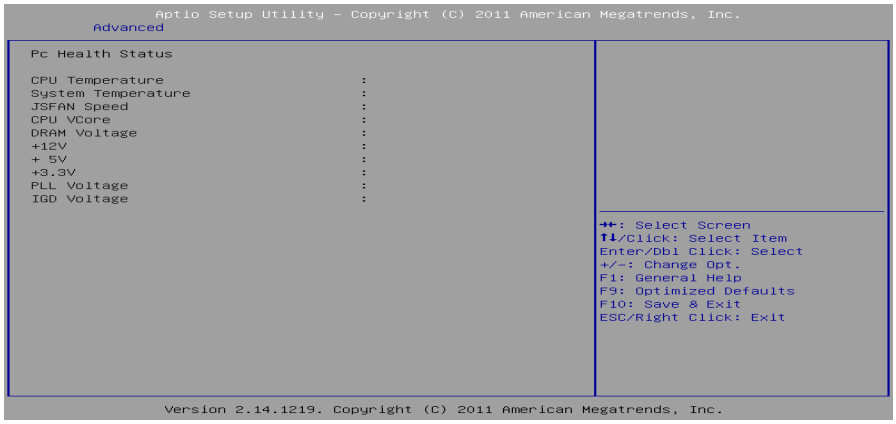
Watch Dog Degree

This item allows you to determine the functional degree of Watch Dog.
Options: Second (Default) / Minute

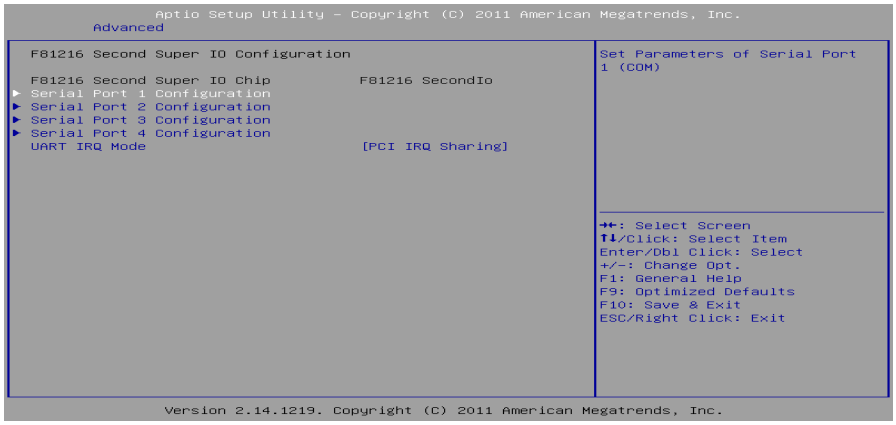
Watch Dog Timer

Options: 0 for disabled (Default) / Min=1, Max=65536

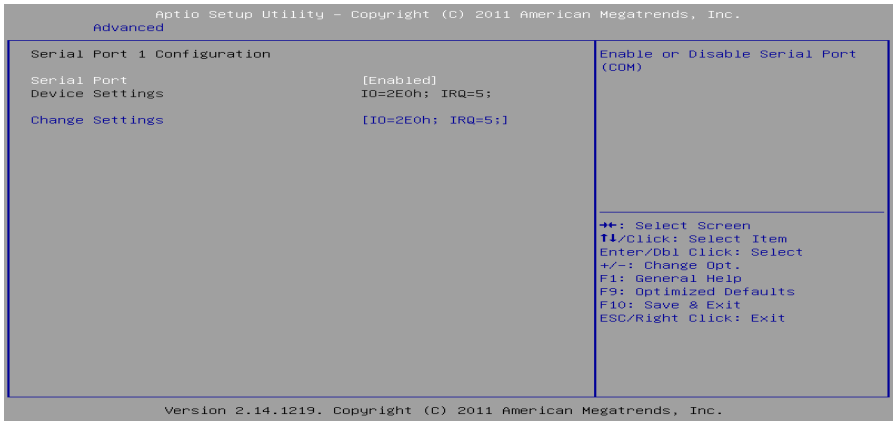
H/W Monitor



F81216 Second Super IO Configuration



Serial Port 1 Configuration



Serial Port

This item enables or disables Serial Port (COM).

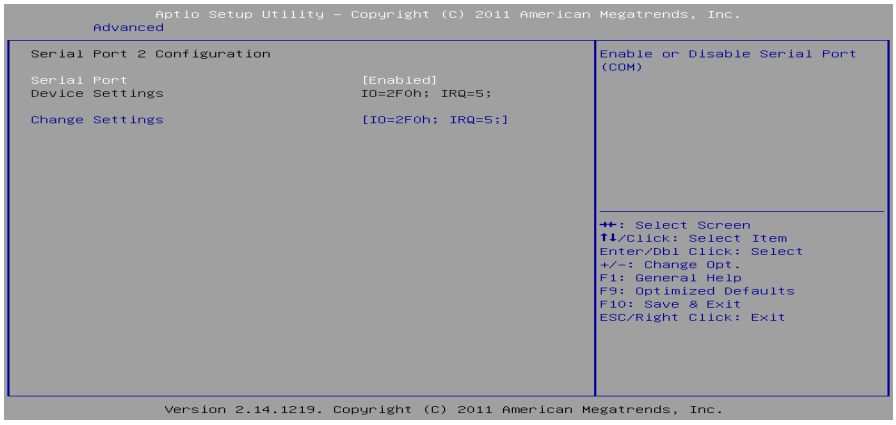
Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: IO=3E8h; IRQ=5 / IO=2E8h; IRQ=5 / IO=2F0h; IRQ=5 / IO=2E0h; IRQ=5 (Default)

Serial Port 2 Configuration



Serial Port

This item enables or disables Serial Port (COM).

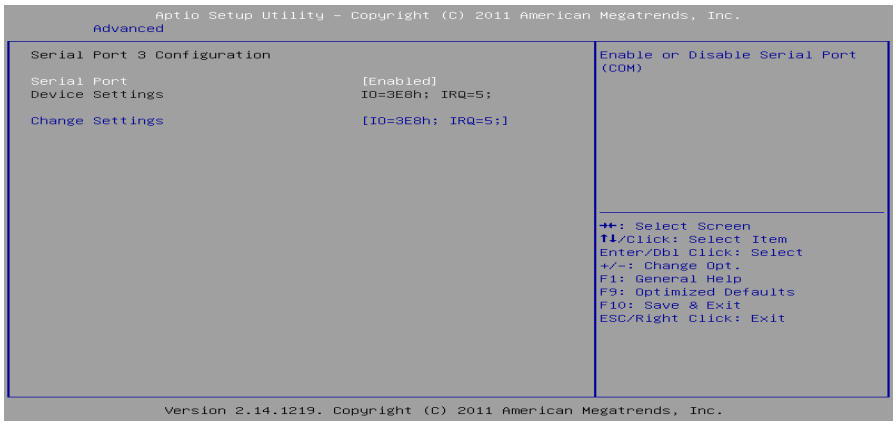
Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: IO=3E8h; IRQ=5 / IO=2E8h; IRQ=5 / IO=2F0h; IRQ=5 (Default)/ IO=2E0h; IRQ=5

Serial Port 3 Configuration



Serial Port

This item enables or disables Serial Port (COM).

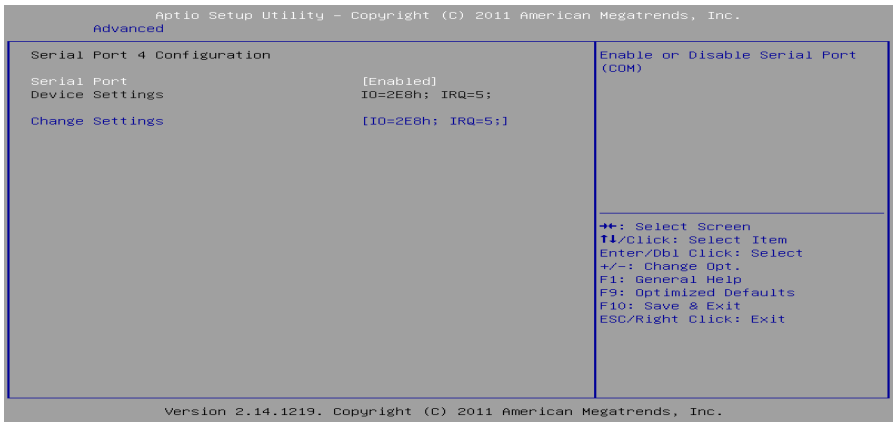
Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: IO=3E8h; IRQ=5 (Default)/ IO=2E8h; IRQ=5 / IO=2F0h; IRQ=5 / IO=2E0h; IRQ=5

Serial Port 4 Configuration



Serial Port

This item enables or disables Serial Port (COM).

Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

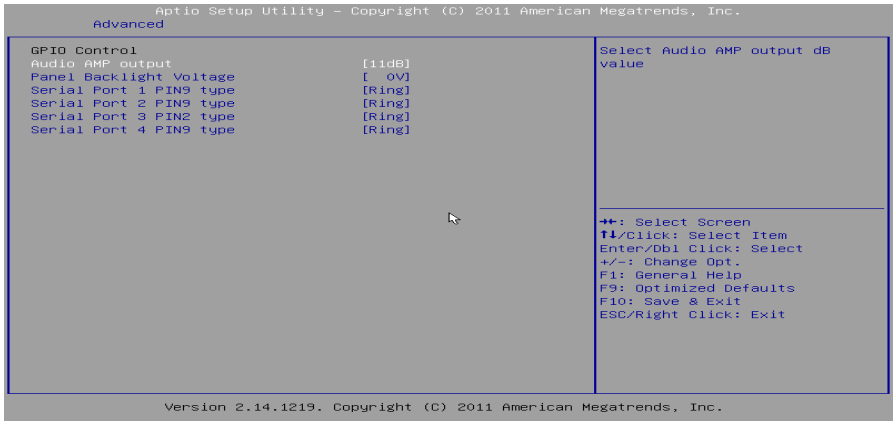
Options: IO=3E8h; IRQ=5 / IO=2E8h; IRQ=5 (Default)/ IO=2F0h; IRQ=5 / IO=2E0h; IRQ=5

UART IRQ Mode

This item allows you to select PCI IRQ Sharing for QS(Ex. Windows) and ISA IRQ for DOS.

Options: PCI IRQ Sharing (Default) / ISA IRQ

GPIO Control



Audio AMP output

This item allows you to select Audio AMP output dB value.
Options: 11dB (Default) / 14dB / 19dB / 25dB

Panel Backlight Voltage

This item allows you to select Panel Backlight voltage.
Options: 0V (Default) / 2.5V / 5V

Serial Port 1/2/4 PIN9 type

This item allows you to select Serial port pin 9 type is Ring, Vcc 5V, Vcc 12V.
Options: Ring (Default) / 5V / 12V

Serial Port 3 PIN2 type

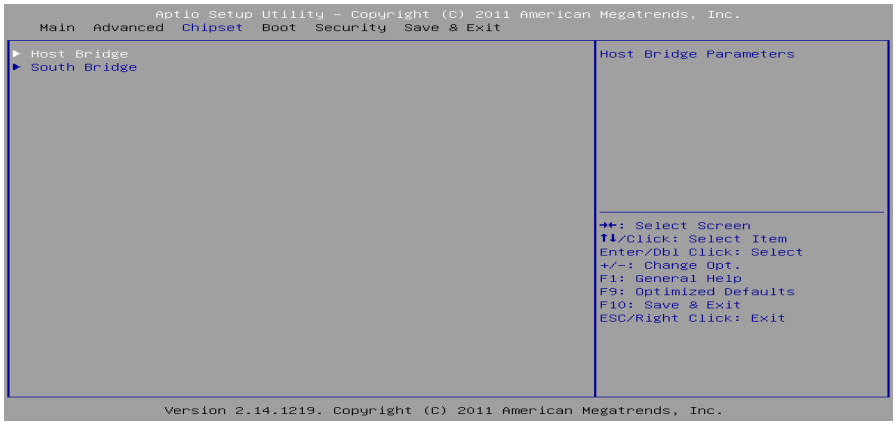
This item allows you to select Serial port pin 2 type is Ring, Vcc 5V, Vcc 12V.
Options: Ring (Default) / 5V / 12V

3.3 CHIPSET MENU

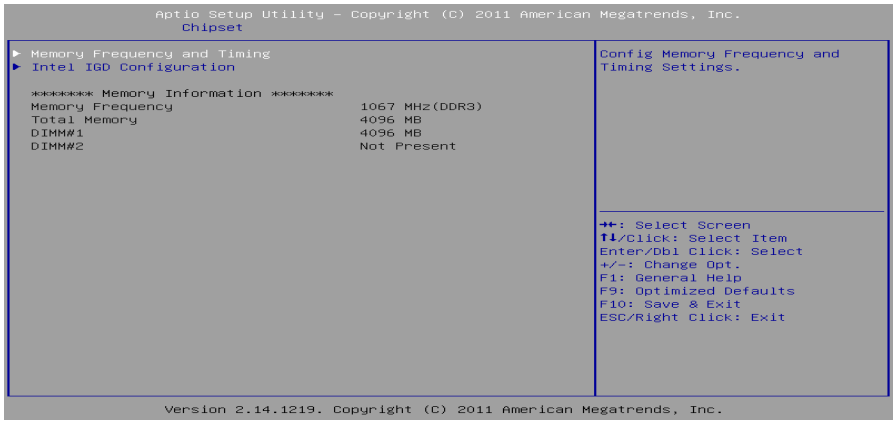
This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

Notice

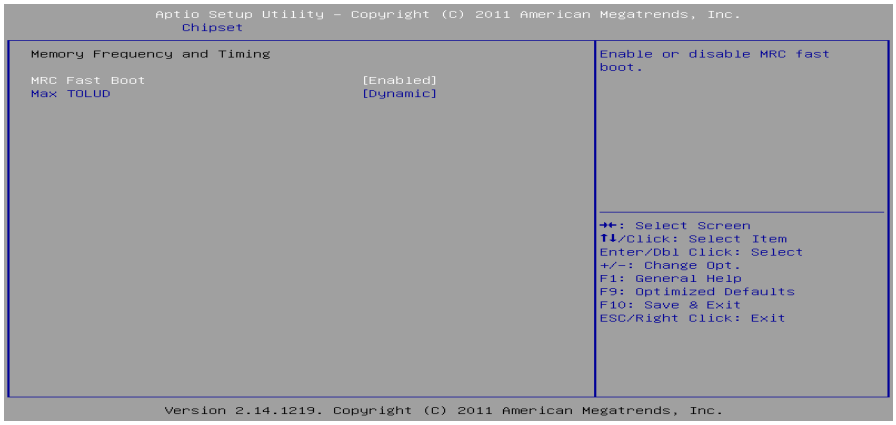
- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.



Host Bridge



Memory Frequency and Timing



MRC Fast Boot

This item enables or disables MRC fast boot.

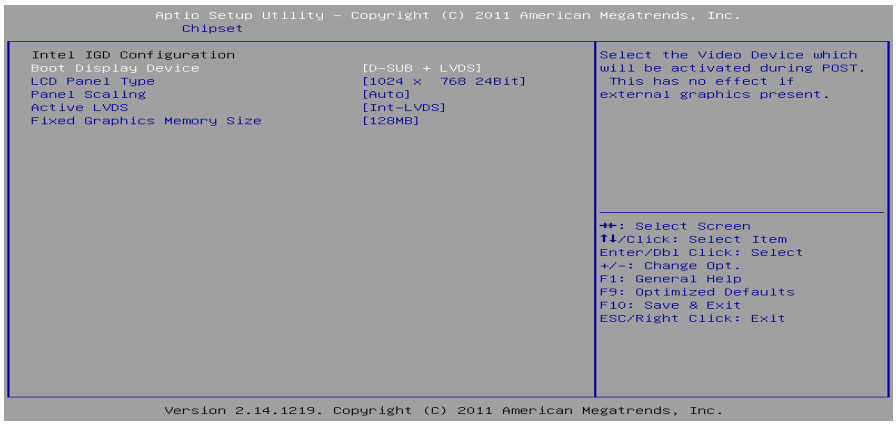
Options: Enabled (Default) / Disabled

Max TOLUD

This item sets maximum value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

Options: Dynamic (Default) / 1 GB / 1.25 GB / 1.5 GB / 1.75 GB / 2 GB / 2.25 GB / 2.5 GB / 2.75 GB / 3 GB / 3.25 GB

Intel IGD Configuration



Boot Display Device

This item selects the video device which will be activated during POST. This has no effect if external graphics present.

Options: D-SUB + LVDS (Default) / D-SUB / LVDS

LCD Panel Type

This item selects the LCD panel used by Internal Graphics Device by selecting the appropriate setup item.

Options: 1024 x 768 24Bit (Default) / 640 x 480 18Bit / 800 x 600 18Bit / 800 x 600 24Bit / 1024 x 768 18Bit / 1280 x 1024 18Bit / 1366 x 768 18Bit / 1024 x 600 18Bit / 1280 x 800 18Bit

Panel Scaling

This item selects the LCD panel scaling option used by the Internal Graphics Device.

Options: Auto (Default) / Force Scaling / Off / Maintain Aspect Ratio

Active LVDS

This item selects the Active LVDS Configuration. No LVDS: VBIOS does not enable LVDS; Int-LVDS: VBIOS enables LVDS driver by Integrated encoder.

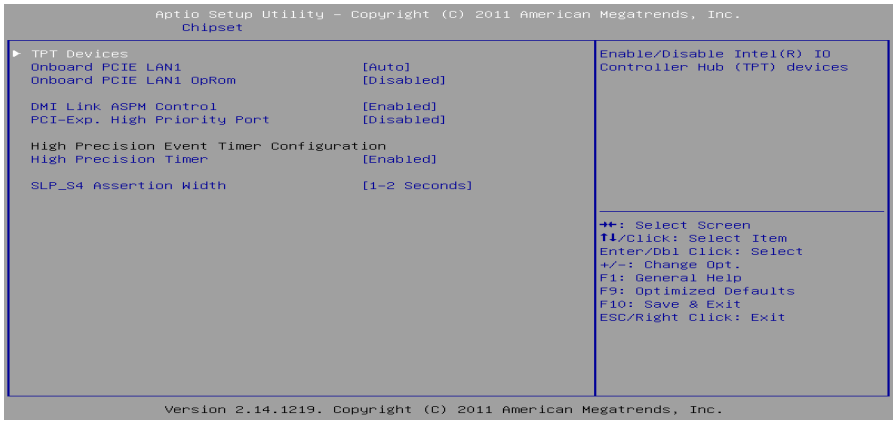
Options: Int-LVDS (Default) / No LVDS

Fixed Graphics Memory Size

This item configures the Fixed Graphics Memory Size.

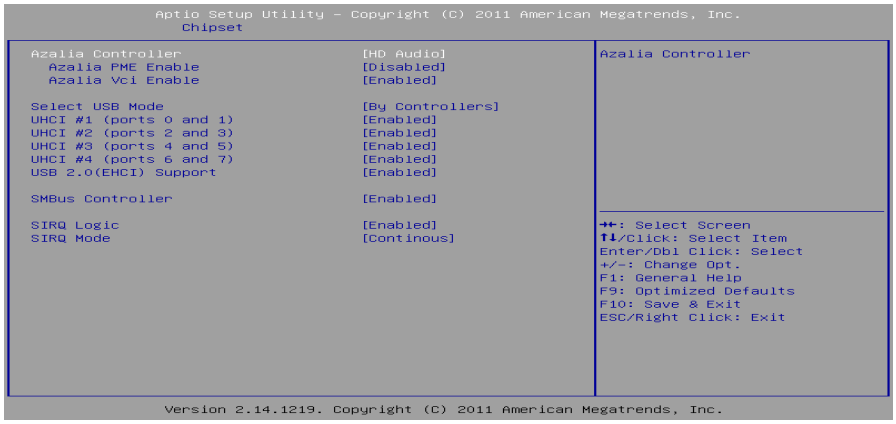
Options: 128MB (Default) / 256MB

South Bridge



TPT Device

This item enables or disables Intel (R) IO Controller Hub (TPT) device.



Azalia Controller

You can use this item to select the Azalia Controller.

Options: HD Audio (Default) / Disabled

Azalia PME Enable

You can use this item to enable or disable Power Management capability of Audio Controller.

Options: Disabled (Default) / Enabled

Azalia Vci Enable

Azalia supports 1 extended VC, which will override ICH VCp settings when enabled.

Options: Enabled (Default) / Disabled

Select USB Mode

This item selects USB mode to control USB ports.

Options: By Controllers (Default) / By Ports

UHCI #1 (ports 0 and 1) / UHCI #2 (ports 2 and 3) / UHCI #3 (ports 4 and 5) / UHCI #4 (ports 6 and 7)

You can use these items to control USB UHCI (USB 1.1) function, but disable the controllers from highest to lowest.

Options: Enabled (Default) / Disabled

USB Function

8 USB Ports (Default) / 7 USB Ports / 6 USB Ports / 5 USB Ports / 4 USB Ports / 3 USB Ports / 2 USB Ports / 1 USB Ports / Disabled

USB 2.0 (EHCI) Support

You can use this item to enable or disable USB 2.0 (EHCI) Support.
Options: Enabled (Default) / Disabled

SMBus Controller

You can use this item to enable or disable OnChip SMBus Controller.
Options: Enabled (Default) / Disabled

SIRQ Logic

You can use this item to enable or disable SIRQ logic.
Options: Enabled (Default) / Disabled

SIRQ Mode

You can use this item to set SIRQ mode.
Options: Continuous (Default) / Quiet

Onboard PCIE LAN1

This item enables or disables Onboard PCIE LAN1.
Options: Auto (Default) / Disabled / Enabled

Onboard PCIE LAN1 OpROM

This item enables or disables the Boot Option for Legacy Network Devices.
Options: Disabled (Default) / Enabled

DMI Link ASPM Control

This item enables or disables the control of Active State Power Management on both NB and SB sides of the DMI Link.
Options: Enabled (Default) / Disabled

PCI-Exp. High Priority Port

This item selects a PCI Express High Priority Port.
Options: Disabled (Default) / Port 0 ~ 3

High Precision Timer

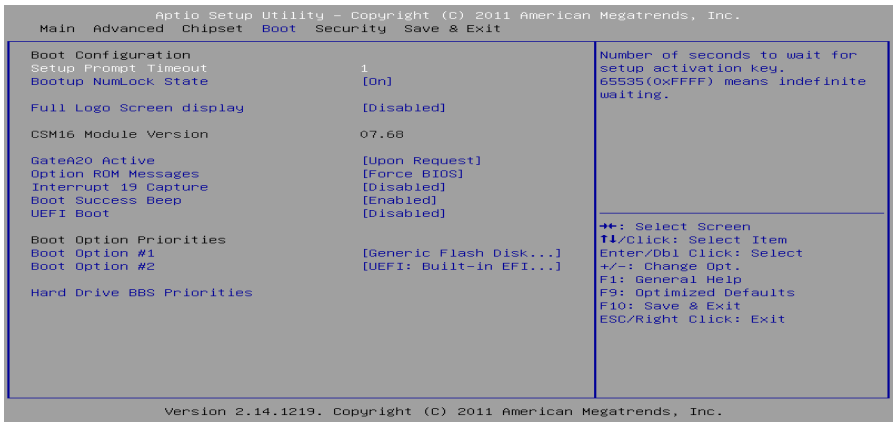
This item enables or disables the High Precision Event Timer.
Options: Enabled (Default) / Disabled

SLP_S4 Assertion Width

This item selects a minimum assertion width of the SLP_S4# signal.
Options: 1-2 Seconds (Default) / 2-3 Seconds / 3-4 Seconds / 4-5 Seconds

3.4 BOOT MENU

This menu allows you to setup the system boot options.



Setup Prompt Timeout

You can use this item to set the number of seconds waiting for setup activation key.

Bootup Num-Lock State

You can use this item to select the keyboard NumLock State after the system has been switched on.
Options: On (Default) / Off

Full Screen LOGO Disaply

This item allows you to enable or disable Full Screen LOGO Show function.
Options: Disabled (Default) / Enabled

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services.
ALWAYS – it doesn't allow disabling the GA20; this option is useful when any RT code is executed above 1MB.
Options: Upon Request (Default) / Always

Option ROM Messages

This item can set the display mode for Option ROM.
Options: Force BIOS (Default) / Keep Current

Interrupt 19 Capture

Interrupt 19 is the software interrupt that handles the boot disk function. When this item is set to Enabled, it allows the Option ROMs to trap Interrupt 19.
Options: Disabled (Default) / Enabled

Boot Success Beep

When this item is set to Enabled, BIOS will let user know boot success with beep.
Options: Enabled (Default) / Disabled

UEFI Boot

This item enables or disables boot from the UEFI Devices.
Options: Disabled (Default) / Enabled

Boot Option Priorities

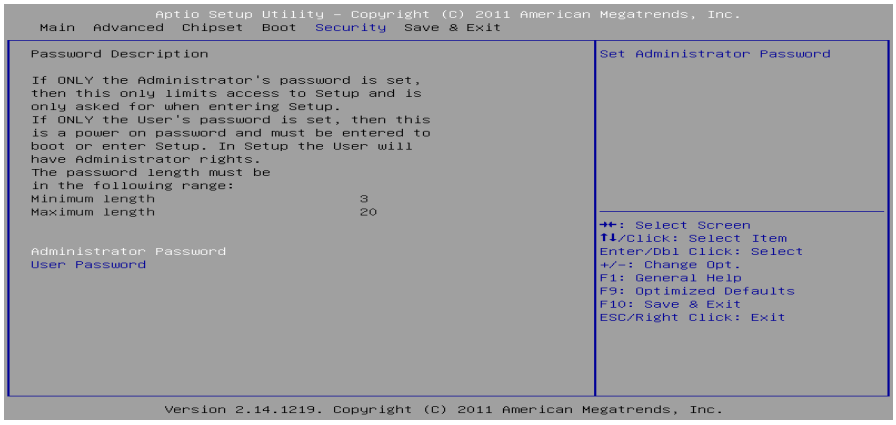
Items in this sub-menu specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

Hard Disk Drive BBS Priorities

The BIOS will attempt to arrange the hard disk boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.

3.5 SECURITY MENU

This menu allows you to provide/revise supervisor and user password.



Administrator Password

This item sets Administrator Password.

User Password

This item sets User Password.

3.6 EXIT MENU

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.

Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

Save Changes and Reset

Reset the system after saving the changes.

Restore Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

Boot Override

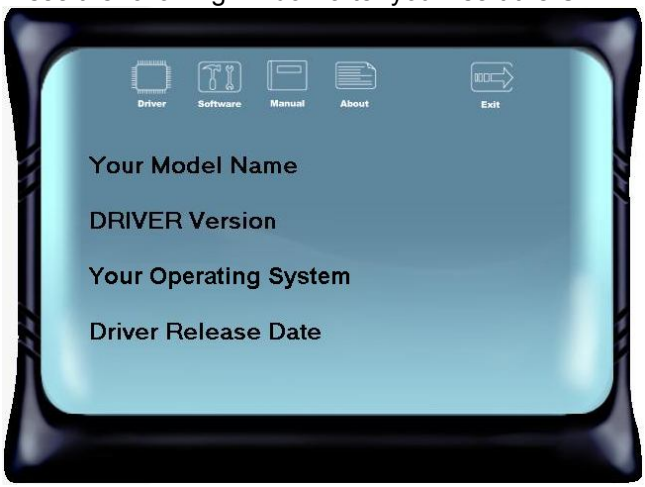
This item allows you to exit the system setup without saving any changes.

CHAPTER 4: USEFUL HELP

4.1 DRIVER INSTALLATION NOTE

After you installed your operating system, please insert the Fully Setup Driver CD into your optical drive and install the driver for better system performance.

You will see the following window after you insert the CD



The setup guide will auto detect your mainboard and operating system.

> ***Note:***
> If this window didn't show up after you insert the Driver CD, please use file browser to locate and execute the file ***SETUP.EXE*** under your optical drive.

A. Driver Installation

To install the driver, please click on the Driver icon. The setup guide will list the compatible driver for your mainboard and operating system. Click on each device driver to launch the installation program.

B. Software Installation

To install the software, please click on the Software icon. The setup guide will list the software available for your system, click on each software title to launch the installation program.

C. Manual

Aside from the paperback manual, we also provide manual in the Driver CD. Click on the Manual icon to browse for available manual.

> ***Note:***
> You will need Acrobat Reader to open the manual file. Please download the latest version of Acrobat Reader software from
> ***http://www.adobe.com/products/acrobat/readstep2.html***

4.2 AMI BIOS BEEP CODE

Boot Block Beep Codes

Number of Beeps	Description
1	No media present. (Insert diskette in floppy drive A:)
2	"AMIBOOT.ROM" file not found in root directory of diskette in A:
3	Insert next diskette if multiple diskettes are used for recovery
4	Flash Programming successful
5	File read error
7	No Flash EPROM detected
10	Flash Erase error
11	Flash Program error
12	"AMIBOOT.ROM" file size error
13	BIOS ROM image mismatch (file layout does not match image present in flash device)

POST BIOS Beep Codes

Number of Beeps	Description
1	Memory refresh timer error
3	Base memory read/write test error
6	Keyboard controller BAT command failed
7	General exception error (processor exception interrupt error)
8	Display memory error (system video adapter)

Troubleshooting POST BIOS Beep Codes

Number of Beeps	Troubleshooting Action
1, 3	Reseat the memory, or replace with known good modules.
6, 7	Fatal error indicating a serious problem with the system. Consult your system manufacturer. Before declaring the motherboard beyond all hope, eliminate the possibility of interference by a malfunctioning add-in card. Remove all expansion cards except the video adapter. ● If beep codes are generated when all other expansion cards are absent, consult your system manufacturer's technical support. ● If beep codes are not generated when all other expansion cards are absent, one of the add-in cards is causing the malfunction. Insert the cards back into the system one at a time until the problem happens again. This will reveal the malfunctioning card.
8	If the system video adapter is an add-in card, replace or reseat the video adapter. If the video adapter is an integrated part of the system board, the board may be faulty.

4.3 TROUBLESHOOTING

Probable	Solution
1. There is no power in the system. Power LED does not shine; the fan of the power supply does not work 2. Indicator light on keyboard does not shine.	1. Make sure power cable is securely plugged in. 2. Replace cable. 3. Contact technical support.
System is inoperative. Keyboard lights are on, power indicator lights are lit, and hard drives are running.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.
System does not boot from a hard disk drive, but can be booted from optical drive.	1. Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup. 2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.
System only boots from an optical drive. Hard disks can be read, applications can be used, but system fails to boot from a hard disk.	1. Back up data and applications files. 2. Reformat the hard drive. Re-install applications and data using backup disks.
Screen message shows “Invalid Configuration” or “CMOS Failure.”	Review system’s equipment. Make sure correct information is in setup.
System cannot boot after user installs a second hard drive.	1. Set master/slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.

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