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Dichiarazione di conformità sintetica

Ai sensi dell'art. 2 comma 3 del D.M. 275 del 30/10/2002

Si dichiara che questo prodotto è conforme alle normative vigenti e soddisfa i requisiti essenziali richiesti dalle direttive 2004/108/CE, 2006/95/CE e 1999/05/CE quando ad esso applicabili

Short Declaration of conformity

We declare this product is complying with the laws in force and meeting all the essential requirements as specified by the directives 2004/108/CE, 2006/95/CE and 1999/05/CE whenever these laws may be applied

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# Chapter 1: Introduction

## 1.1 Before You Start

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

- Prepare a dry and stable working environment with sufficient lighting.
- Always disconnect the computer from power outlet before operation.
- Before you take the motherboard 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 motherboard 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 computer from dangerous area, such as heat source, humid air and water.
- The operating temperatures of the computer should be 0 to 45 degrees Celsius.
- To avoid injury, be careful of:
  - Sharp pins on headers and connectors
  - Rough edges and sharp corners on the chassis
  - Damage to wires that could cause a short circuit

## 1.2 Package Checklist

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

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### ►Note

»»» The package contents may be different due to the sales region or models in which it was sold.  
For more information about the standard package in your region, please contact your dealer or sales representative.

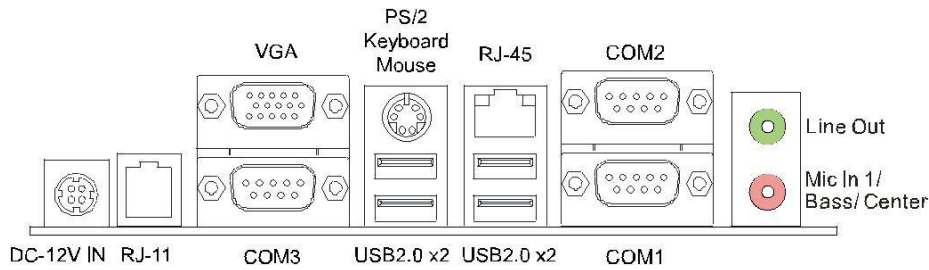
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### 1.3 Specifications

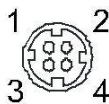
CPU	Intel Celerin J1900(2.0GHz@10W) 4T/4C 2M L2 cache
Graphic	Integrated Intel® HD Graphics series graphic engine supports: Graphics Frequency: Intel Graphics HD 321MHz-750MHz Dual independent displays (Extended mode) as below two: -- Integrated VGA D-Sub -- Integrated LVDS dual channel 18-24Bits support by RTD2136R Realtek
Super I/O	FINTEK F81866AD Provides the most commonly used legacy Super I/O functionality. 128pin type Environment Control initiatives, H/W Monitor, Fan Speed Controller
Main Memory	2x SO-DIMM (204pin) slot, DDR3L 1333/1066 MHz, Max 8GB Registered DIMM or ECC DIMM is not supported * DIMMB1 slot is optional.
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 8111G 10 / 100 / 1000 Mb/s auto negotiation, Half / Full duplex capability
Sound Codec	Realtek Codec ALC662, supports Line-out/Mic-in
Expansion Slots	1x Mini PCI-E slot (Height @ 8mm), Mini PCI-E or mSATA function can be selected by BIOS
Back Panel I/O	1x 2x2 Pin DC Jack 1x DC jack (RJ11), 12V/24V input select by jumper 1x VGA D-Sub 4x USB 2.0 1x RJ-45 (Gigabit LAN) 1x PS2 for KB/Mouse 3x COM - COM1 (RS232/422/485) support RI/5V/2V power select - COM2/3 (RS232), support RI/5/12V power select 1x Audio Connectors (for Line-out/MIC-in)

On Board Connectors & Headers	<b>SATA</b> 2x SATA II up to 3Gb/s HDD connector (SATA2 is shared with mini PCI-E slot) <b>Display</b> 1x 2*20 pins, LCD LVDS connector support Dual Channel 1x 1*8 pins, LCD Backlight Inverter power connector 1x 1*3 pins, LCD Backlight power select jumper(3.3V/5V) 1x 1*3 pins, LCD Inverter power select jumper(5V/12V) 1x 1*3 pins, Backlight control mode select jumper 1x 1*3 pins, Backlight PWM signal select jumper <b>Speaker</b> 2x 1*2 pins for Amplifier output ALC105 class D 3Watt/Channel Amplifier 1x buzzer <b>Power</b> 1x 2*2 pins + 12V DC-in connector(Share with rear DC Jack) 2x 1*4 pins for HDD power 5V <b>I/O</b> 1x 2*5 pins, USB2.0 pin header support 2 USB devices 1x 2*5 pins, USB3.0 pin header support 1 USB device 4x 2*5 pins COM3/4/5/6, RS232, support Ring/5/12V 2*3 pins power select 1x 2*5 pins header, digital IO support 4 in 4 out 1x 2*13 pins, parallel header for printer 2x 1*3 pins, system fan and CPU smart fan header 1x 2*5 pins front panel as Power/Reset/HDD/LAN header 1x 1*6 pins box header, internal cash drawer 1 x 1*6 pins MSR pin header 2 x 1*3 pins jumper, MSR definition change 1 x 1*6 pins header, SIM card
	Board Size
	Operation Temperature
	Storage Temperature
	Relative Humidity
	OS Support

1.4 Rear Panel Connectors

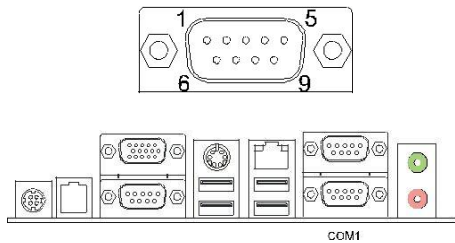


JP2: DC-12V Input Connector



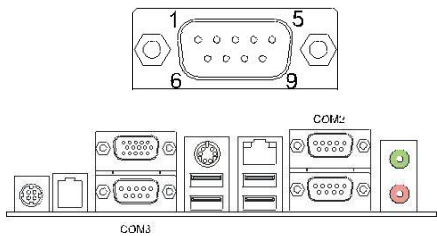
Pin	Assignment
1	+12V DC_IN
2	+12V DC_IN
3	GND
4	GND

COM1 Serial Port Connectors



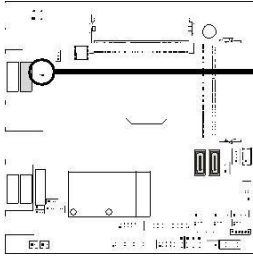
Pin	Assignment
1	Carrier detect (DCD)
2	Received data (RXD)
3	Transmitted data (TXD)
4	Data terminal ready (DTR)
5	Signal ground (GND)
6	Data set ready (DSR)
7	Request to send (RTS)
8	Clear to send (CTS)
9	Ring / 5V / 12V * (selected by BIOS setting)

COM2/3 Serial Port Connectors (RS232)



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

### JPC3: COM3 Serial Port Voltage Switch Jumper



Pin 1-2 Close: Pin9=Ring



Pin 3-4 Close: Pin9= 5V

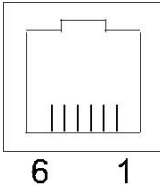


Pin 5-6 Close: Pin9=12V

#### Note

»»» Note1: COM1/2 voltage selection is controlled by BIOS setup. Please see page-23 & 24 for detail setting.

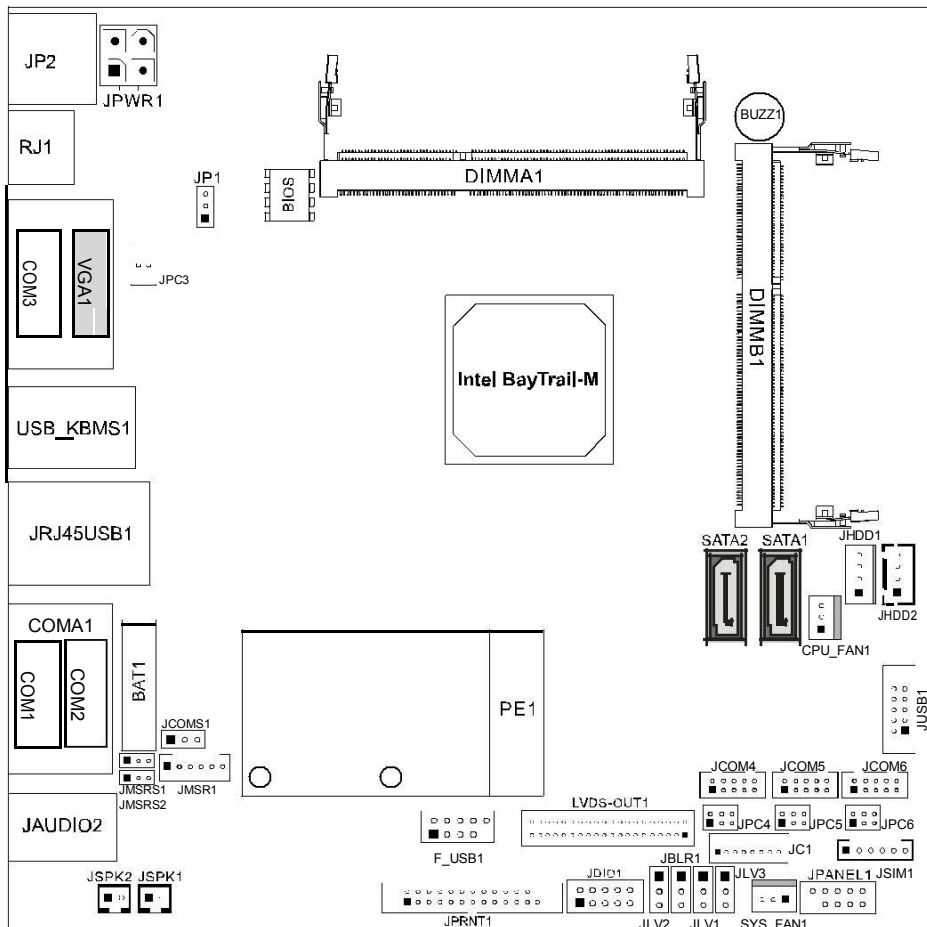
### RJ-11 pin define



Pin	Define	Function	GPIO	address (memory space)
1	CASE_OPEN2_N	Status Pin	S5_25	0XFED0E1B8 bit0
2	CASH1_P	Control Pin	S0_82	0XFED0C1D8 bit0
3	CASE_OPEN_N	Status Pin	S5_24	0XFED0E1C8 bit0
4	CASH_PWR (12/24V)	---	---	---
5	CASH2_P	Control Pin	S0_83	0XFED0C1B8 bit0
6	GND	---	---	---

»»» You could read the address value at dword (32 bits/4 bytes).

## 1.5 Motherboard Layout



### Note

- »»» represents the 1st pin.
- »»» DIMMB1 slot is optional.



## Chapter 2: Hardware installation

### 2.1 Central Processing Unit (CPU)

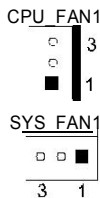
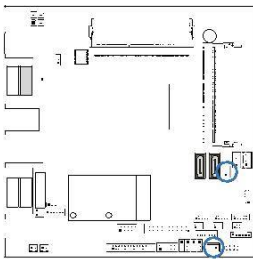
The mainboard includes an onboard Intel® SOC, and a cooler has been installed to provide sufficient cooling.

### 2.2 Connect Cooling Fans

These fan headers support cooling-fans built in the computer. The fan cable and connector may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to pin#1.

**CPU\_FAN1: CPU fan header**

**SYS\_FAN1: System fan header**



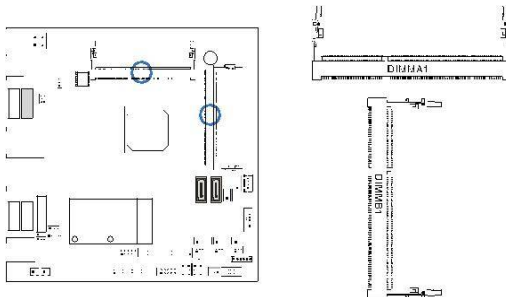
JCFAN1	
Pin	Assignment
1	Ground
2	Smart Fan Control
3	FAN RPM rate sense
JSFAN1	
Pin	Assignment
1	Ground
2	+12V
3	FAN RPM rate sense

#### Note

»»» System Fan Headers support 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 Installing System Memory

**DIMMA1/B1: DDR3L Memory Module (204pin SO-DIMM)**



#### Note

»»» The DIMM must be installed to DIMMA1 slot first. The DIMMB1 slot is optional.  
 »»» If the DIMM does not go in smoothly, do not force it. Pull it all the way out and try again.

- 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 clips snap back in place and the DIMM is properly seated.

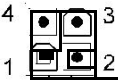
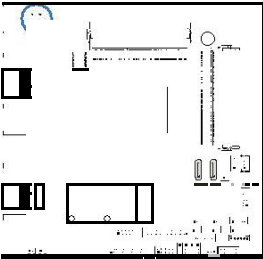
**Memory Capacity**

DIMM Socket Location	DDR3 Module	Total Memory Size
DIMMA1	512MB/1GB/2GB/4GB	Max is 8GB
DIMMB1	512MB/1GB/2GB/4GB	

**2.4 Power Supply**

**JPWR1: ATX Power Source Connector (4-pin)**

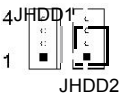
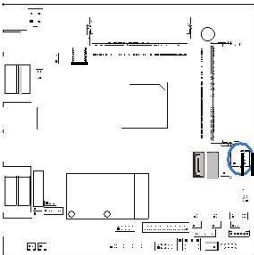
This connector provides or +12V input to system power circuit.



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

**JHDD1/JHDD2: HDD Power Connector**

This connector provides power connection of SATA devices.



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

## 2.5 Jumpers / Headers / Connectors

### Jumper Setting

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

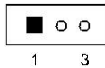
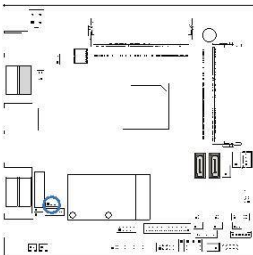


Pin 1-2 closed



### JCMOS1: Clear CMOS Jumper

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 motherboard.



Pin 1-2 Close: Normal Operation (Default)



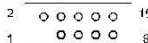
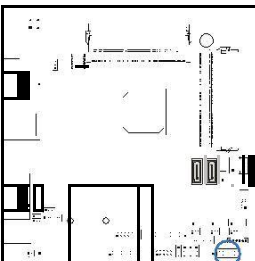
Pin 2-3 Close: Clear CMOS data

#### 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.

### JPANEL1: Front Panel Header

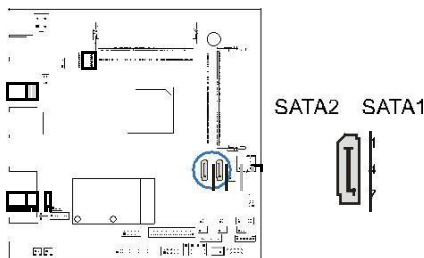
This 10-pin header includes Power-on, Reset, HDD LED, and Power LED connection. It allows user to connect the system case's front panel switch functions.



Function	Pin	Assignment	Function	Pin	Assignment
N/A	1	Key	Power LED	2	Power LED+
HDD LED	3	HD LED+		4	Power LED+
	5	HD LED-		6	Power LED-
Reset	7	Reset GND	Power	8	Power
Button	9	Reset		10	Power GND

SATA1/2: Serial ATA 3.0 Gb/s Connectors

These connectors support the thin Serial ATA cable for primary internal storage devices.

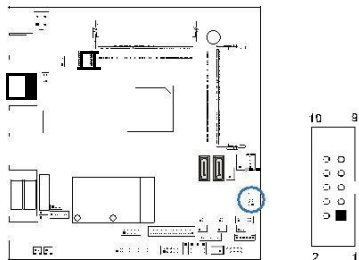


Pin	Assignment
1	Ground
2	TX+
3	TX-
4	Ground
5	RX-
6	
7	Ground

»»» SATA2 is optional and shared with Mini PCI-E slot.

JUSB1: USB 3.0 Vertical Connector

This connector allows you to connect one USB 3.0 port.

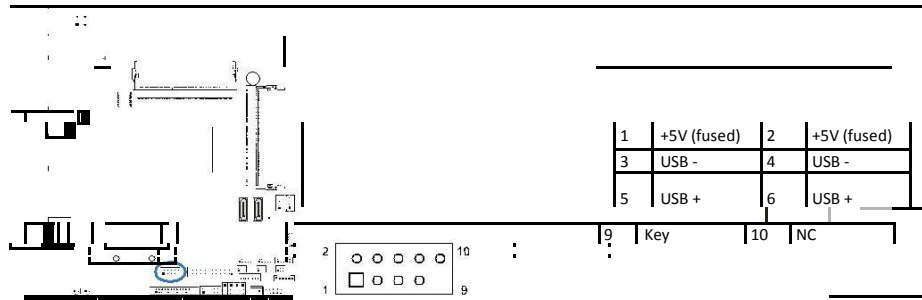


Pin	Assignment	Pin	Assignment
1	RX-	2	VCC
3	RX+	4	VCC
5	GND	6	GND
7	TX+	8	D+
9	TX-	10	D-

»»» This USB 3.0 connector is not backward compatible with USB 2.0 devices.

F\_USB1: Header for USB 2.0 Ports at Front Panel

This header allows you to connect two additional USB 2.0 ports.

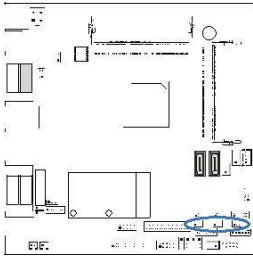


1	+5V (fused)	2	+5V (fused)
3	USB -	4	USB -
5	USB +	6	USB +
9	Key	10	NC

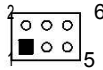


## Serial Port Connectors & Headers

### JPC4/5/6: JCOM4/5/6 Serial Port Voltage Switch Jumper



JPC4 JPC5 JPC6



Pin 1-2 Close: Pin9=Ring (Default)

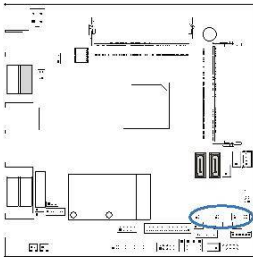


Pin 3-4 Close: Pin9= 5V

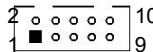


Pin 5-6 Close: Pin9=12V

### JCOM4/JCOM5/JCOM6: Serial Port Headers

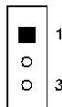
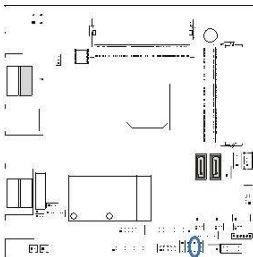


JCOM4 JCOM5 JCOM6



Pin	Assignment	Pin	Assignment
1	-PDCD	2	PSIN
3	PSOUT data	4	-PDTR
5	GND	6	-PDSR
7	-PRTS	8	-PCTS
9	Ring/ 5V / 12V*	10	NA

### JLV1: Backlight Control Mode Selection Jumper

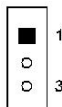
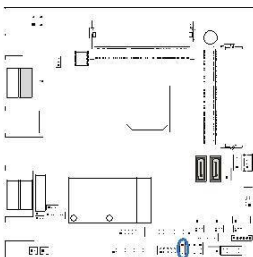


Pin 1-2 Closed: Voltage Level Mode



Pin 2-3 Closed: PWM Mode (Default)

### JLV2: LCD Panel Power Select Jumper

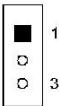
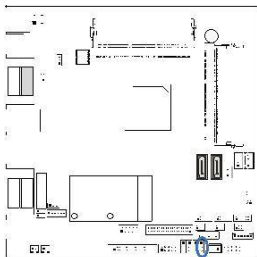


Pin 1-2 Close: Inverter Power=3.3V (Default)



Pin 2-3 Close: Inverter Power=5V

JLV3: LCD Backlight Inverter Power Select Jumper

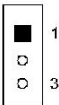
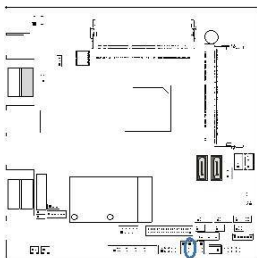


Pin 1-2 Close: Inverter Power=5V



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

JBLR1: Backlight PWM Signal Select Jumper



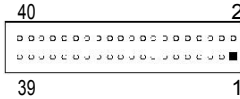
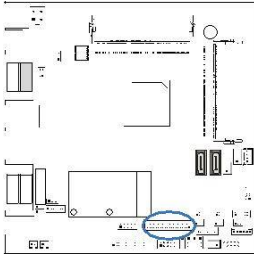
Pin 1-2 Close: Reverse



Pin 2-3 Close: Forward (Default)

## LVDS-OUT1: LVDS Connector

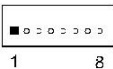
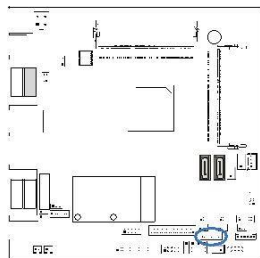
This connector supports 18/24 bit single-channel panels.



Pin	Assignment	Pin	Assignment
1	LVDSB_DATA0_N	2	PVDD2, 3.3V/5V (selected by JLV2)
3	LVDSB_DATA0_P	4	PVDD2, 3.3V/5V (selected by JLV2)
5	GND	6	GND
7	LVDSB_DATA1_N	8	GND
9	LVDSB_DATA1_P	10	LVDSA_DATA0_N
11	GND	12	LVDSA_DATA0_P
13	LVDSB_DATA2_N	14	GND
15	LVDSB_DATA2_P	16	LVDSA_DATA1_N
17	GND	18	LVDSA_DATA1_P
19	LVDSB_CLK_N	20	GND
21	LVDSB_CLK_P	22	LVDSA_DATA2_N
23	GND	24	LVDSA_DATA2_P
25	LVDSB_DATA3_N	26	GND
27	LVDSB_DATA3_P	28	LVDSA_CLK_N
29	VCC5	30	LVDSA_CLK_P
31	LVDSA_DDC_CLK	32	GND
33	VCC3_3	34	LVDSA_DATA3_N
35	NC	36	LVDSA_DATA3_P
37	PVDD2, 3.3V/5V (selected by JLV2)	38	NC
39	PVDD2, 3.3V/5V (selected by JLV2)	40	LVDSA_DCC_DATA



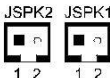
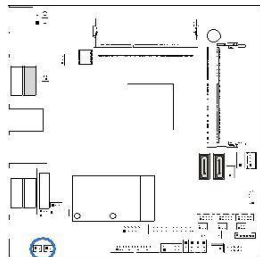
JC1: LCD Backlight Inverter Connector



Pin	Assignment
1	5V/12V*
2	5V/12V*
3	NC
4	NC
5	Backlight On(5V)/Off(0V)
6	Brightness Adjust (0-5V)
7	GND
8	GND

\* selected by JLV3

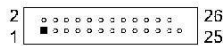
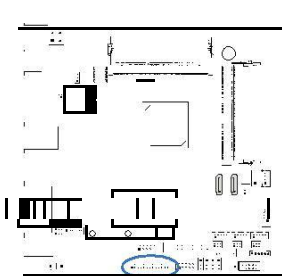
JSPK1/2: Audio Connector



RightSpeaker (JSPK1)	
Pin	Assignment
1	SPKRN
2	SPKRP
Left Speaker (JSPK2)	
Pin	Assignment
1	SPKLN
2	SPKLP

JPRNT1: Printer Port Connector

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

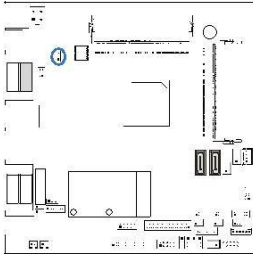


1	3
5	Data 1
7	Data 2
9	Data 3
11	Data 4
13	Data 5
17	Data 7
18	Ground
19	-ACK
20	Ground
21	Busy
22	Ground
23	PE
24	Ground
25	SCLT
26	Key



### JP1: Voltage Switch Jumper for Cash Draw Connector

This jumper is for controlling the Pin4 of RJ11 (JRJ11) to switch 12V or 24V.



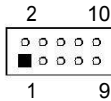
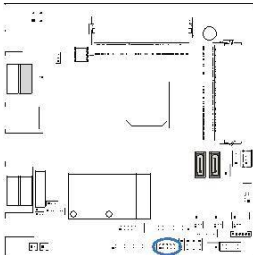
Pin 1-2 Close: Pin4 of RJ11(JRJ11)=24V  
(Default)



Pin 2-3 Close: Pin4 of RJ11(JRJ11)=12V

### JDIO1: Digital I/O Connector

This connector offers 4-pair of digital I/O functions and address is set in BIOS.

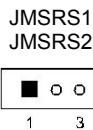
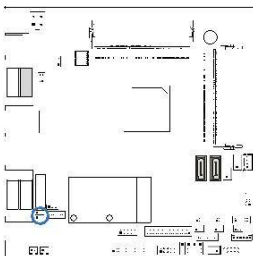


Pin	Assignment	address(I/O space)	address(memory space)	GPIO
1	5V	--	--	--
2	DI-01	528H bit23	--	S0_55
3	DO-01	--	0XFED0E348 bit 0	S5_40
4	DI-02	528H bit27	--	S0_59
5	DO-02	--	0XFED0E218 bit 0	S5_1
6	DI-03	548H bit28	--	S0_92
7	DO-03	--	0XFED0E168 bit 0	S5_26
8	DI-04	548H bit29	--	S0_93
9	DO-04	--	0XFED0E158 bit 0	S5_27
10	GND	--	--	--

»»» You could read the address value at dword  
(32 bits/4 bytes).

### JMSRS1/JMSRS2: MSR Jumper

The jumpers enable or disable MSR connector function.



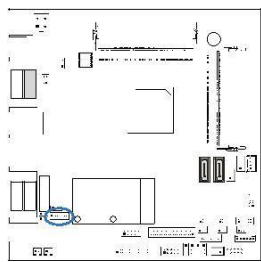
Pin 1-2 Close: JMSR1 Disabled (Default)

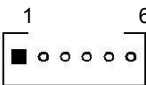


Pin 2-3 Close: JMSR1 Enabled

**JMSR1: MSR Connector**

The mainboard provides MSR connector.

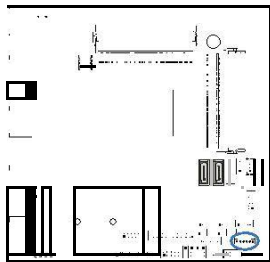





Pin	Assignment
1	PS2CLK
2	PS2DAT
3	KCLK
4	KDAT
5	GND
6	+5V

**JSIM1: SIM card header**

This mainboard is equipped with one SIM card header for Mini PCI-E Slot.



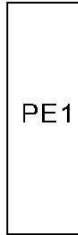
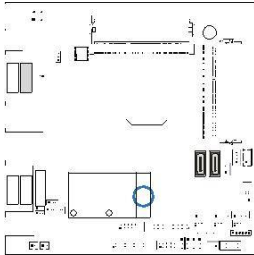


Pin	Assignment
1	GND
2	UIM_RESET
3	UIM_CLK
4	UIM_DATA
5	UIM_VDD
6	UIM_PWR

## 2.6 Expansion Slots

### PE1: Mini PCI-E Slot (Height @ 8mm)

This mainboard is equipped with 1 Mini PCI-E Slots.



### Install an Expansion Card

You can install your expansion card by following steps:

- Read the related expansion card's instruction document before install the expansion card into the computer.
- Remove your computer's chassis cover, screws and slot bracket from the computer.
- Place a card in the expansion slot and press down on the card until it is completely seated in the slot.
- Secure the card's metal bracket to the chassis back panel with a screw.
- Replace your computer's chassis cover.
- Power on the computer, if necessary, change BIOS settings for the expansion card.
- Install related driver for the expansion card.

# Chapter 3: BIOS Setup

## Introduction

The purpose of this manual is to describe the settings in the AMI UEFI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to NVRAM.

UEFI 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 UEFI BIOS.

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

## Plug and Play Support

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

## EPA Green PC Support

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

## ACPI Support

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

## DRAM Support

DDR3 SDRAM (Double Data Rate III Synchronous DRAM) is supported.

## Supported CPUs

This AMI UEFI BIOS supports the latest CPU.

## Using Setup

When starting up the computer, press <Del> during the Power-On Self-Test (POST) to enter the UEFI BIOS setup utility. In the UEFI 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.

---

### Note

»»» 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.

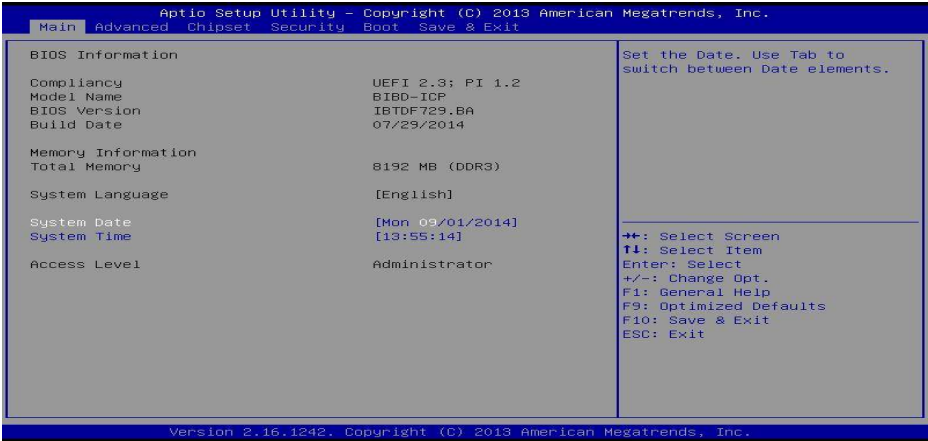
»»» For better system performance, the UEFI BIOS firmware is being continuously updated. The UEFI BIOS information described in this manual is for your reference only. The actual UEFI BIOS information and settings on board may be slightly different from this manual.

»»» 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 UEFI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.



#### BIOS Information

Shows system information including UEFI BIOS version, model name, marketing name, built date, etc.

#### Memory Frequency

Shows the system memory frequency.

#### Total Memory

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

#### System Date

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

#### System Time

Set the system internal clock.

#### Access Level

Shows the access level of current user.

### 3.2 Advanced Menu

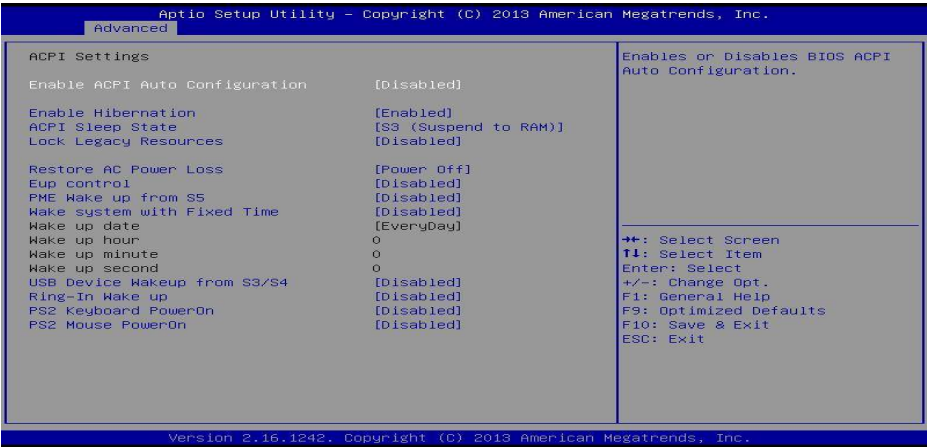
The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.

**Note**

»»» Beware of that setting inappropriate values in items of this menu may cause system to malfunction.  
»»» The options and default settings might be different by RAM or CPU models.



### ACPI Settings



#### Enable ACPI Auto Configuration

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

#### Enable Hibernation

This 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: S3 (Suspend to RAM)(Default) / Suspend Disabled

**Lock Legacy Resources**

This item enables or disables Lock of Legacy

Resources. Options: Disabled (Default) / Enabled

**Restore AC Power Loss**

This item enables the system to wake from S5 using Ring-In event. Options: Power Off (Default) / Power On / Last State

**EuP Control**

When EuP is enabled, the system will meet EuP requirement.

Options: Disabled (Default) / Enabled

**PME Wake up from S5**

This item enables the system to wake from S5 using PEM 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.

**USB Device Wakeup from S3/S4**

This item allows you to enable or disabled the USB resume from S3/S4 function. 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

**PS2 Keyboard PowerOn**

This item allows you to control the keyboard power on function.

Options: Disabled (Default) / Ctrl + Esc / Ctrl + F1 / Ctrl + Space / Any key / Wake Key / Power Key / Ctrl + Alt + Space / Space

**PS2 Mouse PowerOn**

This item allows you to control the mouse power on function. Options: Disabled (Default) / Enabled

# 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 selects an optimal setting for Super IO device.

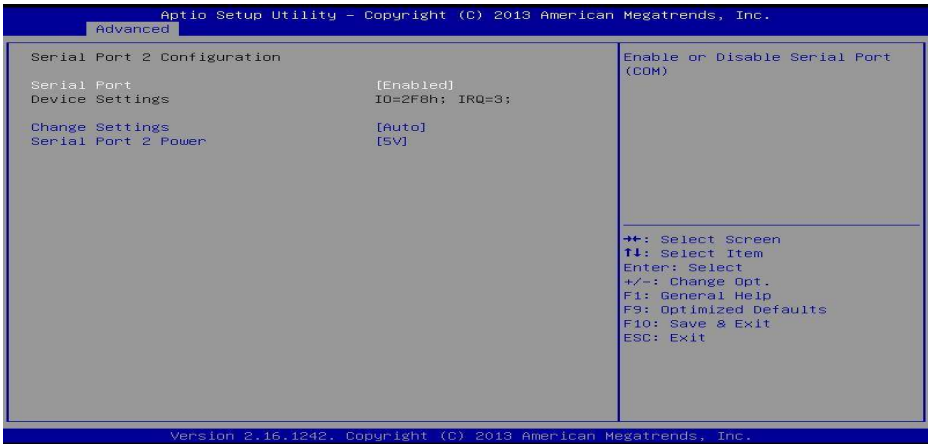
Options: Auto (Default) / IO=3F8h; IRQ=4 / IO=3F8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2F8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=3E8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2E8h; IRQ= 3,4,5,6,7,9,10,11,12

### Serial Port 1 Power

This item sets serial port 1 power.

Options: Ring / 5V / 12V (Default)

## Serial Port 2 Configuration



### Serial Port

This item enables or disables Serial Port (COM).

Options: Enabled (Default) / Disabled

### Change Settings

This item selects 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 2 Power

This item sets serial port 1 power.

Options: Ring / 5V (Default) / 12V

## Serial Port 3 Configuration



### Serial Port

This item enables or disables Serial Port (COM).

Options: Enabled (Default) / Disabled

**Change Settings**

This item selects an optimal setting for Super IO device.

Options: Auto (Default) / IO=2C0h; IRQ=6 / IO=2C0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2C8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D8h; IRQ= 3,4,5,6,7,9,10,11,12

**Serial Port 4 Configuration**



**Serial Port**

This item enables or disables Serial Port (COM).

Options: Enabled (Default) / Disabled

**Change Settings**

This item selects an optimal setting for Super IO device.

Options: Auto (Default) / IO=2C8h; IRQ=6 / IO=2C0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2C8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D8h; IRQ= 3,4,5,6,7,9,10,11,12

**Serial Port 5 Configuration**



**Serial Port**

This item enables or disables Serial Port (COM).

Options: Enabled (Default) / Disabled

## Change Settings

This item selects an optimal setting for Super IO device.

Options: Auto (Default) / IO=2D0h; IRQ=6 / IO=2C0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2C8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D8h; IRQ= 3,4,5,6,7,9,10,11,12

## Serial Port 6 Configuration



## Serial Port

This item enables or disables Serial Port (COM).

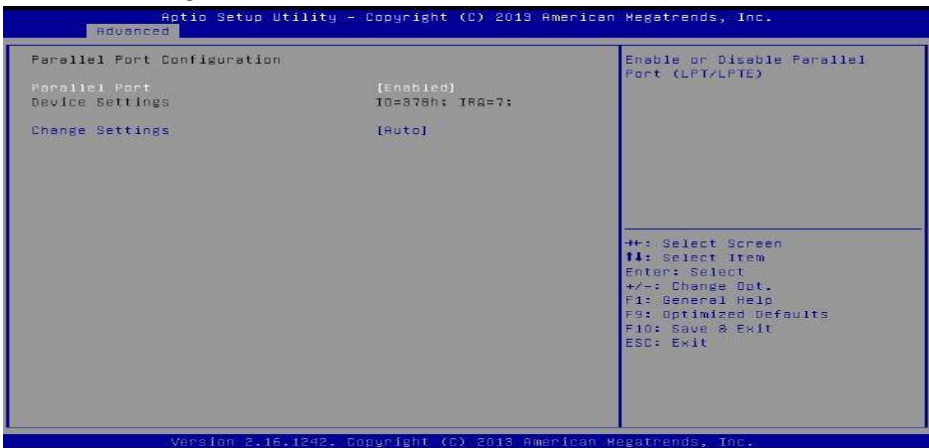
Options: Enabled (Default) / Disabled

## Change Settings

This item selects an optimal setting for Super IO device.

Options: Auto (Default) / IO=2D8h; IRQ=6 / IO=2C0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2C8h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D0h; IRQ= 3,4,5,6,7,9,10,11,12 / IO=2D8h; 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=5,6,7,9,10,11,12 / IO=278h;  
IRQ=5,6,7,9,10,11,12 / IO=3BCh; IRQ=5,6,7,9,10,11,12

**UART IRQ Mode**

This item sets PCI IRQ Sharing for OS(EX. Windows) or ISA IRQ for Dos.  
Options: PCI IRQ Sharing (Default) / ISA IRQ

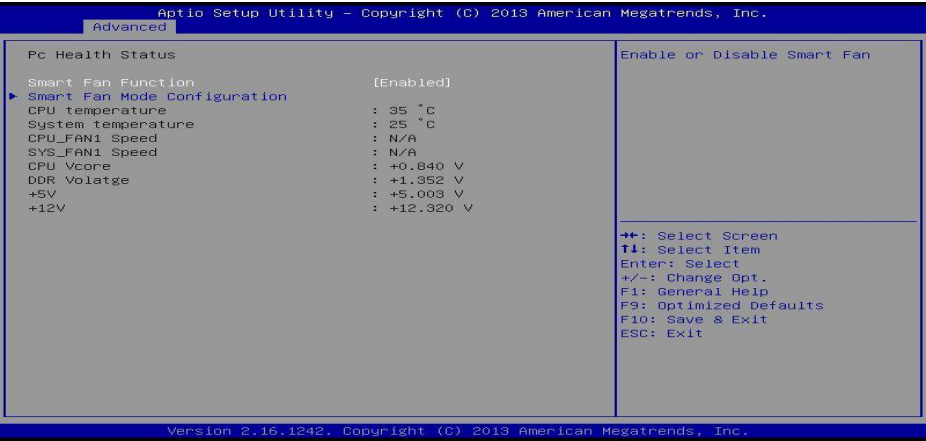
**Watch Dog Degree**

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=255

**H/W Monitor**



**Smart Fan Function**

This item allows you to control the CPU Smart Fan function.  
Options: Enabled (Default)/ Disabled

## Smart Fan Mode Configuration



### CPU\_Fan 1 Smart Fan Control

This item selects Smart Fan Mode.

Options: Manual RPM Mode (Default) / Manual Duty Mode / Auto RPM Mode / Auto Duty\_cycle Mode

## CPU Configuration



### Active Processor Cores

This item sets number of cores to enable in each processor package.

Options: All (Default) / 1

### 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

### **Execute-Disable Bit**

XD 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.).

Options: Enabled (Default) / Disabled

### **Hardware Prefetcher**

The processor has a hardware prefetcher that automatically analyzes its requirements and prefetches data and instructions from the memory into the Level 2 cache that are likely to be required in the near future. This reduces the latency associated with memory reads.

Options: Enabled (Default) / Disabled

### **Adjacent Cache Line Prefetch**

The processor has a hardware adjacent cache line prefetch mechanism that automatically fetches an extra 64-byte cache line whenever the processor requests for a 64-byte cache line. This reduces cache latency by making the next cache line immediately available if the processor requires it as well.

Options: Enabled (Default) / Disabled

### **Intel Virtualization Technology**

Virtualization Technology can virtually separate your system resource into several parts, thus enhance the performance when running virtual machines or multi interface systems.

Options: Enabled (Default) / Disabled

### **Power Technology**

This item enables or disables the power management features.

Options: Custom (Default) / Disable / Energy Efficient

### **EIST**

This item enables or disables Intel SpeedSteps.

Options: Enabled (Default) / Disabled

### **Turbo Mode**

This item enables or disables Turbo Mode.

Options: Enabled (Default) / Disabled

### **P-STATE Coordination**

This item changes P-STATE Coordination. Options:

HW\_ALL (Default) / SW\_ALL / SW\_ANY

### **CPU C6 Report**

This item enables or disables CPU C6 (ACPI C3) report to OS.

Options: Enabled (Default) / Disabled

### **CPU C7 Report**

This item enables or disables CPU C7 (ACPI C3) report to OS.

Options: Enabled (Default) / Disabled

### **Package C state limit**

This item enables or disables package C state limit.

Options: No Limit (Default) / C0 / C1 / C3 / C6 / C7



## PPM Configuration



### EIST

This item enables or disables Intel SpeedSteps.

Options: Enabled (Default) / Disabled

### CPU C state Report

This item enables or disables CPU C state report to OS.

Options: Enabled (Default) / Disabled

### Enhanced C state

This item enables or disables Enhanced CPU C state.

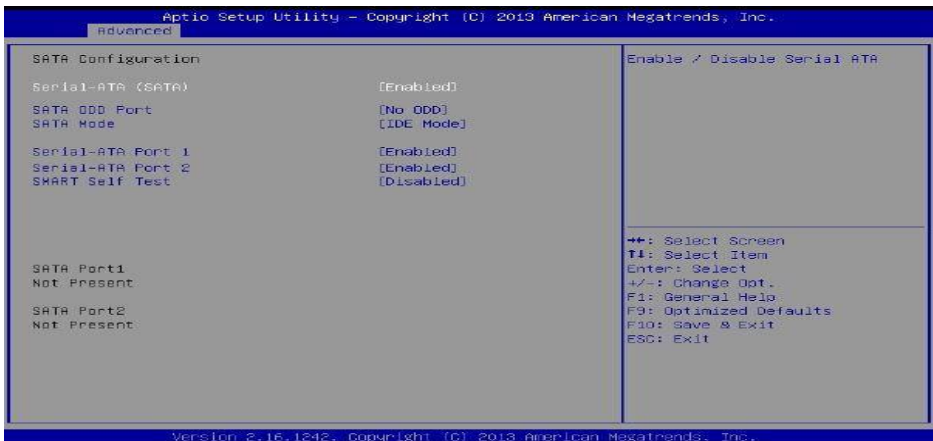
Options: Enabled (Default) / Disabled

### Max CPU C-state

This option controls Max C state that the processor will support.

Options: C7 (Default) / C6 / C1

## SATA Configuration



### Serial-ATA (SATA)

This item enables/disables Serial ATA Device.

Options: Enabled (Default) / Disabled

### SATA ODD Port

This item selects SATA ODD Port

Options: No ODD (Default) / Port0 ODD / Port1 ODD

### SATA Mode

This item determines how SATA controller(s) operate.

Options: IDE (Default) / AHCI

### Serial-ATA Port 1/2

This item enables/disables Serial ATA Port 1/2

Options: Enabled (Default) / Disabled

### SMART Self Test

Run SMART Self Test on all HDDs during POST.

Options: Disabled (Default) / Enabled

## Network Stack



### Network Stack

This item enables or disables UEFI network stack

Options: Disabled (Default) / Enabled

»»» Note: The following items appear only when you set the Network Stack to [Enabled]

#### IPv4 PXE Support

This item enables or disables IPv4 PXE Boot Support. If disabled IPv4 booth option will not be created.

Options: Enabled (Default) / Disabled

#### IPv6 PXE Support

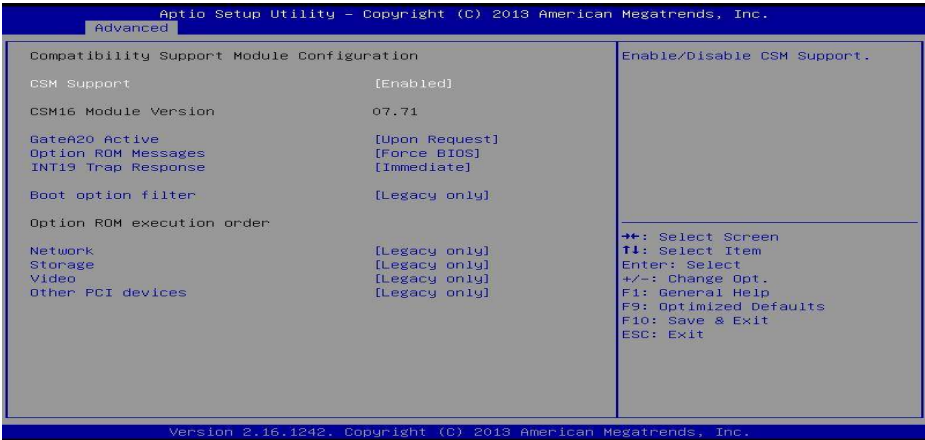
This item enables or disables IPv6 PXE Boot Support. If disabled IPv6 booth option will not be created.

Options: Enabled (Default) / Disabled

#### PXE boot wait time

Wait time to press ESC key to abort the PXE boot.

## CSM Configuration



### CSM Support

This item enables or disables CSM Support

Options: Enabled (Default) / Disabled

### GateA20 Active

Upon Request – FA20 can be disabled using BIOS services. Always – do not allow disabling GA20; this option is useful when any RT code is executed above

1MB Options: Upon Request (Default) / Always

### Option ROM Messages

This item sets the display mode for option ROM.

Options: Force BIOS (Default) / Keep Current

### INT19 Trap Response

BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.

Options: Immediate (Default) / Postponed

### Boot option filter

This option controls what devices system can boot to. Options:

Legacy only (Default) / UEFI and Legacy / UEFI only

### Network

This option controls the execution of UEFI and Legacy PXE OpROM

Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

### Storage

This option controls the execution of UEFI and Legacy Storage OpROM

Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

### Video

This option controls the execution of UEFI and Legacy Video OpROM

Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

### Other PCI devices

For PCI devices other than Network, Mass storage or video defines which OpROM to launch. Options: Legacy only (Default) / UEFI first

# 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

## XHCI Hand-Off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

Options: Enabled (Default) / Disabled

## 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 Mass Storage Driver Support

The item allows you to enable or disable USB Mass Storage Driver Support.

Options: Enabled (Default) / Disabled

## USB transfer time-out

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

## Device reset time-out

The item sets USB mass storage device Start Unit command time-out. Options: 20 sec (Default) / 10 sec / 30 sec / 40 sec

## Device power-up delay

“Auto” uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

Options: Auto (Default) / Manual

### Device power-up delay in seconds

Delay range is 1 ~ 40 seconds, in one second increments.

Options: 5 (Default)

### 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.

#### Note

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



#### North Bridge



## Intel IGD Configuration



### Integrated Graphics Device

Enable: Enable Integrated Graphics Device (IGD) when selected as the Primary Video Apaptor. Disable: Always disable IGD.  
Options: Enabled (Default) / Disabled

### IGD Turbo Enable

Enable: Enable IGD Turbo Enable. Disable: Enable IGD Turbo Disable.  
Options: Enabled (Default) / Disabled

### Primary Display

This item selects which of IGD/PCI Graphics device should be Primary Display.  
Options: IGD (Default) / Auto / PCI / SG

### GFX Boost

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

### PAVC

This item enables or disables Protected Audio Video Control  
Options: LITE Mode (Default) / Disabled / SERPENT Mode

### DVMT Pre-Allocated

This item selects DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.  
Options: 64M (Default) / 96M / 128M / 160M / 192M / 224M / 256M / 288M / 320M / 352M / 384M / 416M / 448M / 480M / 512M

### DVMT Total Gfx Mem

This item selects DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.  
Options: 256MB (Default) / 128MB / MAX

### Aperture Size

This item selects the Aperture Size.  
Options: 256MB (Default) / 128MB / 512MB

### GTT Size

This item selects the GTT Size.  
Options: 2MB (Default) / 1MB

**VCC\_Vnn Config for Power state2**

This item enables or disables Vcc Vnn Config for power state2

Options: Disabled (Default) / Enabled

**RC6 (Render Standby)**

This item enables or disables render standby support.

Options: Enabled (Default) / Disabled

**LCD Control****Boot Display Device**

This item allows you to select the display device.

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

**LCD Panel Type**

This item selects the LCD panel type.

Options: 1440 x 900 2CH (Default) / 800 x 600 1CH / 1024 x 768 1CH / 1280 x 1024 2CH / 1366 x 768 1CH / 1600 x 900 2CH / 1600 x 1200 2CH / 1920 x 1080 2CH / 1920 x 1200 2CH

**LVDS Output**

This item selects the LVDS Output is 18 or 24

Bit. Options: 24 BIT (Default) / 18 BIT

**Panel backlight brightness**

This item selects the LVDS panel

brightness. Options: 5 (Default)

**Max TOLUD**

This item sets maximum value of TOLUD.

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

South Bridge



Azalia HD Audio



Azalia Controller

This item controls detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled. Auto = Azalia will be enabled if present, disabled otherwise.

Options: Enabled (Default) / Disabled

Audio AMP output

This item selects Audio AMP output dB value.

Options: 11dB (Default) / 14dB / 19dB / 25dB



## USB Configuration



### xHCI Mode

The item selects Mode of operation of xHCI controller.

Options: Smart Auto (Default) / Auto / Enabled / Disabled

### USB 2.0(EHCI) Support

This item controls the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

Options: Disabled (Default) / Enabled

»»» Note: The following items appear only when you set the USB 2.0(EHCI) Support to [Enabled]

#### USB RMH Mode

This item enables or disables PCH USB Rate Matching Hubs mode.

Options: Enabled (Default) / Disabled

#### USB ECHI jebug

This item enables or disables PCH EHCI debug capability.

Options: Disabled (Default) / Enabled

### USB Per Port Control

Control each of the USB ports (0-3). Enable: Enable USB per port; Disable: Use USB port X settings.

Options: Enabled (Default) / Disabled

#### USB Port 0/1/2/3

This item enables or disables USB Port 0.

Options: Enabled (Default) / Disabled

## PCI Express Configuration



### Onboard LAN

This item enables or disables Onboard PCIE LAN.

Options: Enabled (Default) / Disabled

### Onboard LAN Option ROM

This item enables or disables the Boot Option for Legacy Network Devices.

Options: Disabled (Default) / Enabled

### High Precision Timer

This item enables or disables the High Precision Event Timer.

Options: Enabled (Default) / Disabled

### 3.4 Security Menu



#### Administrator Password

This item sets Administrator Password.

#### User Password

This item sets User Password.



#### Secure Boot

Secure Boot can be enabled if 1. System running in user mode with enrolled Platform Key(PK) 2. CSM function is disabled.

Options: Disable (Default) / Enabled

»»» Note: The following items appear only when you set the Secure Boot Mode function to [Custom]

## Key Management



### Enroll All Factory Default Keys

It allows you to immediately load/clear the default Security Boot keys, Platform key (PK), Key-exchange Key (KEK), Signature database (db), and Revoked Signatures (dbrx). The Platform Key (PK) state will change from Unloaded mode to Loaded mode. The settings are applied after reboot or at the next reboot.

### Platform Key (PK)

Delete PK – Allows you to delete the PK file from your system. Set new PK – Allows you set new PK file.

### Key Exchange Key Database (KEK)

Delete KEK – Allows you to delete the KEK file from your system. Set new KEK – Allows you set new KEK file. Append Var to KEK – Allows you append Var to KEK.

### Authorized Signature Database (DB)

Delete DB – Allows you to delete the DB file from your system. Set new DB – Allows you set new DB file. Append Var to DB – Allows you append Var to DB.

### Authorized Timestamps Database (DBT)

Delete DBT – Allows you to delete the DBT file from your system. Set new DBT – Allows you set new DBT file. Append Var to DBT – Allows you append Var to DBT.

### Forbidden Signature Database (DBX)

Delete DBX – Allows you to delete the DBX file from your system. Set new DBX – Allows you set new DBX file. Append Var to DBX – Allows you append Var to DBX.

### 3.5 Boot Menu

This menu allows you to setup the system boot options.



#### Setup Prompt Timeout

This item sets number of seconds to wait for setup activation key. Options: 2 (Default)

#### Bootup NumLock State

This item selects the keyboard NumLock state. Options: On (Default) / Off

#### Full Screen Logo Display

This item allows you to enable/disable Full Screen Logo Show function. 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

#### Boot Option

The items 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.

### 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.

## Chapter 4: Useful help

### 4.1 Driver Installation

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

You will see the following window after you insert the DVD



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

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**Note**

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

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#### A. Driver Installation

To install the driver, please click on the Driver icon. The setup guide will list the compatible driver for your motherboard 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 DVD. Click on the Manual icon to browse for available manual.

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**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>

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## 4.2 AMI BIOS Beep Code

### Boot Block Beep Codes

Number of Beeps	Description
Continuing	Memory sizing error or Memory module not found

### POST BIOS Beep Codes

Number of Beeps	Description
1	Success booting.
8	Display memory error (system video adapter)

## 4.3 AMI BIOS post code

Checkpoint	Description
03	Disable NMI, Parity, video for EGA, and DMA controllers. Initialize BIOS, POST, Runtime data area. Also initialize BIOS modules on POST entry and GPNV area. Initialize CMOS as mentioned in the Kernel Variable "wCMOSFlags."
04	Check CMOS diagnostic byte to determine if battery power is OK and CMOS checksum is OK. Verify CMOS checksum manually by reading storage area. If the CMOS checksum is bad, update CMOS with power-on default values and clear passwords. Initialize status register A. Initializes data variables that are based on CMOS setup questions. Initializes both the 8259 compatible PICs in the system
05	Initializes the interrupt controlling hardware (generally PIC) and interrupt vector table.
06	Do R/W test to CH-2 count reg. Initialize CH-0 as system timer. Install the POSTINT1Ch handler. Enable IRQ-0 in PIC for system timer interrupt. Traps INT1Ch vector to "POSTINT1ChHandlerBlock."
07	Fixes CPU POST interface calling pointer.
08	Initializes the CPU. The BAT test is being done on KBC. Program the keyboard controller command byte is being done after Auto detection of KB/MS using AMI KB-5.
C0	Early CPU Init Start -- Disable Cache -- Init Local APIC.
C1	Set up boot strap processor information.
C2	Set up boot strap processor for POST.
C5	Enumerate and set up application processors.
C6	Re-enable cache for boot strap processor.
C7	Early CPU Init Exit.
0A	Initializes the 8042 compatible Key Board Controller.
0B	Detects the presence of PS/2 mouse.
0C	Detects the presence of Keyboard in KBC port.
0E	Testing and initialization of different Input Devices. Also, update the Kernel Variables. Traps the INT09h vector, so that the POST INT09h handler gets control for IRQ1. Uncompress all available language, BIOS logo, and Silent logo modules.
13	Early POST initialization of chipset registers.
20	Relocate System Management Interrupt vector for all CPU in the system.
24	Uncompress and initialize any platform specific BIOS modules. GPNV is initialized at this checkpoint.
2A	Initializes different devices through DIM. See DIM Code Checkpoints section of document for more information.
2C	Initializes different devices. Detects and initializes the video adapter installed in the system that have optional ROMs.
2E	Initializes all the output devices.
31	Allocate memory for ADM module and uncompress it. Give control to ADM module for initialization. Initialize language and font modules for ADM. Activate ADM module.
33	Initializes the silent boot module. Set the window for displaying text information.
37	Displaying sign-on message, CPU information, setup key message, and any OEM specific information.
38	Initializes different devices through DIM. See DIM Code Checkpoints section of document for more information. USB controllers are initialized at this point.
39	Initializes DMAC-1 & DMAC-2.
3A	Initialize RTC date/time.
3B	Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system.
3C	Mid POST initialization of chipset registers.



Checkpoint	Description
40	Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, etc.) successfully installed in the system and update the BDA, EBDA...etc.
52	Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory. Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
60	Initializes NUM-LOCK status and programs the KBD typematic rate.
75	Initialize Int-13 and prepare for IPL detection.
78	Initializes IPL devices controlled by BIOS and option ROMs.
7C	Generate and write contents of ESCD in NVRam.
84	Log errors encountered during POST.
85	Display errors to the user and gets the user response for error.
87	Execute BIOS setup if needed / requested. Check boot password if installed.
8C	Late POST initialization of chipset registers.
8D	Build ACPI tables (if ACPI is supported).
8E	Program the peripheral parameters. Enable/Disable NMI as selected.
90	Initialization of system management interrupt by invoking all handlers. Please note this checkpoint comes right after checkpoint 20h.
A1	Clean-up work needed before booting to OS.
A2	Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed.
A4	Initialize runtime language module. Display boot option popup menu.
A7	Displays the system configuration screen if enabled. Initialize the CPU's before boot, which includes the programming of the MTRR's.
A9	Wait for user input at config display if needed.
AA	Uninstall POST INT1Ch vector and INT09h vector.
AB	Prepare BBS for Int 19 boot. Init MP tables.
AC	End of POST initialization of chipset registers. De-initializes the ADM module.
B1	Save system context for ACPI. Prepare CPU for OS boot including final MTRR values.
00	Passes control to OS Loader (typically INT19h).

## 4.4 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.

### CPU Overheated

If the system shutdown automatically after power on system for seconds, that means the CPU protection function has been activated.

When the CPU is over heated, the motherboard will shutdown automatically to avoid a damage of the CPU, and the system may not power on again.

In this case, please double check:

1. The CPU cooler surface is placed evenly with the CPU surface.
2. CPU fan is rotated normally.
3. CPU fan speed is fulfilling with the CPU speed.

After confirmed, please follow steps below to relief the CPU protection function.

1. Remove the power cord from power supply for seconds.
2. Wait for seconds.
3. Plug in the power cord and boot up the system.

Or you can:

1. Clear the CMOS data. (See "Close CMOS Header: JCMOS1" section)
2. Wait for seconds.
3. Power on the system again.

»»» Release Date: 2015/03/13

