# TECHNICAL MANUAL
## Of

# Intel Pine Trail-D & NM10 Chipset

# Based

# Mini-ITX M/B for ATOM Processor

**NO.G03-NC94-F**

**Rev 3.0**

**Release date: August, 2010**

# Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.

# TABLE OF CONTENT

# Environmental Safety Instruction

- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.

- 0 to 60 centigrade is the suitable temperature. (The figure comes from the request of the main chipset)

- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.

- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.

- Attention to the heat sink when you over-clocking. The higher temperature may decrease the life of the device and burned the capacitor.

## USER'S NOTICE

## Manual Revision Information

| Reversion | Revision History | Date |
|---|---|---|
| 2.0 | Second Edition | June, 2010 |

## Item Checklist

- ☑ Motherboard
- ☑ Cable(s)
- ☑ DVD for motherboard utilities
- ☑ Motherboard User's Manual
- ☑ I/O Back panel shield

# Chapter 1

# Introduction of the Motherboard

## 1-1 Feature of motherboard

- Intel Pine Trail-D & NM10 Chipset.
- Onboard Intel Atom CPU, with low power consumption never denies high performance.
- Support CPU CLK 166 MHz
- Support DDRII DIMM 667/800 up to 4GB.
- Support PCI-Ex16 (by 4 lane) card.
- Onboard INTEL 82552V Megabit Ethernet LAN PHY Chip.
- Integrated ALC662 6-channel HD audio CODEC.
- Support USB2.0 data transport demands.
- Support RS232/422/485 and watchdog.

# 1-2    Specification

| Spec | Description |
|---|---|
| **Design** | ● Mini-ITX form factor ; PCB size: 17.0x17.0cm |
| **Chipset** | ● Intel Pine Trail-D + NM10 Chipset |
| **Embedded CPU** | ● ATOM CPU |
| **Memory Socket** | ● 240-pin DDRII DIMM slot x2<br>● Support DDRII 667/800 MHz DDRII memory modules<br>● Expandable to 4 GB |
| **Expansion Slots** | ● PCI Expressx16(by 4) slot x 1 |
| **LAN** | ● Integrated INTEL 82552V Megabit Ethernet LAN that supports Fast Ethernet LAN function of providing 10Mb/100Mb Ethernet data transfer rate |
| **Audio** | ● ALC662 6-channel Audio Codec integrated<br>● Audio driver and utility included |
| **BIOS** | ● AMI 8MB DIP Flash ROM |
| **Multi I/O** | ● PS/2 keyboard connector x1<br>● PS/2 mouse connector x1<br>● Serial port connector x1<br>● VGA port connector x1<br>● Parallel port Connector x1<br>● Floppy Disk Drive Connector x1<br>● USB port connector x4 and USB header x2<br>● RJ-45 LAN connector x1<br>● Audio connector x1 (Line-in, Line-out, MIC)<br>● SATAII Connector x2<br>● Front panel audio header x1<br>● Serial port header x1<br>● RS232/422/RS485 header x1<br>● LVDS header x1<br>● LPC header x1<br>● GPIO header x1 |

# 1-3    Layout Diagram

Parallel port Connector

RJ-45 LAN Connector

Line-IN

PS/2 Mouse

Line-OUT

PS/2 Keyboard

MIC-IN

COM Connector

VGA Connector

USB Connector

JP1    SFAN1    CPU FAN1

Keyboard & Mouse Connector

JCOMP1

Inverter

LVDS Header

JP2

JP4

ATX Power Conn

Parallel Port over Serial Port & VGA Port

Inter CPU

Floppy Disk Drive Connector

DDRII DIMM Slot x2

(DDRII 800 / DDRII 667)

USB Port Connector

Intel NM 10 Chipset

Power LED Header

GPIO Header

Front Panel Header

RJ-45 over USB Connector

LPC Header

JBAT    JP5

Speaker Header

Intel 82552 Megabit

COM2 Header

LAN PHY Chip

Audio Connector

8 Mbit DPI Flash Rom BIOS

JCOM2

JCOMP2

CDIN Header

SATAII Connector (1, 2)

Audio Header for front Panel

USB1/2 Header

TX-RX COM2

SFAN2

ALC662 Audio Codec

PCI Express x16(by 4)

## *Jumper*

| Jumper | Name | Description |
|--------|------|-------------|
| JBAT1 | CMOS RAM Clear Function Setting | 3-pin Block |
| JP2 | LVDS PVCC 5V/3.3V Select | 3-pin Block |
| JP4 | Inverter12V/5V Select | 3-pin Block |
| JP5 | USB 1/2 Power On Function Setting | 3-pin Block |
| JCOM2 | COM2 RS232/422/485 Function Select | 6 pin Block |
| JCOMP1 | Power RS232 Function Select | 6 pin Block |
| JCOMP2 | Power RS232 Function Select | 6 pin Block |

## *Connectors*

| Connector | Name | Description |
|-----------|------|-------------|
| ATXPWR1 | ATX Power Connector | 20-pin Connector |
| KB1 | PS2 Keyboard & Mouse Connector | 6-pin Female |
| COM1 | Serial Port COM Connector | 9-pin Connector |
| PARALLEL | Parallel   Port Connector | 25-pin Connector |
| VG1 | Video Graphic Attach Connector | 15-pin Female |
| USB 3 | USB Port Connectors | 4-pin Connectors |
| USB from UL1 | USB Port Connectors | 4-pin Connectors |
| LAN from UL1 | RJ-45 LAN Connectors | 8-pin Connectors |
| AUDIO1 | Line Out /Line In /MIC Audio Connector | 3 Phone JACK |
| SATA1/SATA2 | Serial ATAII Connectors | 7-pin Connector |
| FLOPPY1 | Floppy Disk Drive Connector | 33-pin Block |

## *Headers*

| Header | Name | Description |
|---|---|---|
| AUDIO2 | Front panel audio Headers | 9-pin block |
| CDIN1 | CD Audio-In Header | 4-pin Block |
| LVDS1 | LVDS Header | 32-pin Block |
| INVERTER1 | LVDS Inverter Connector | 7-pin Block |
| COM2 | Serial Port Header | 9-pin Block |
| TX-RX COM2 | RS 232/422/485 port headers | 4-pin block |
| USB1; USB2 | USB Headers | 9-pin Block |
| JW_FP1 (PWR LED/ HD LED/ /Power Button /Reset) | Front Panel Header (PWR LED/ HD LED/ /Power Button /Reset) | 9-pin Block |
| PWR LED1 | Power LED | 3-pin Block |
| SPEAK | Speaker Header | 4-pin Block |
| CPUFAN1,SFAN1/2 | FAN Speed Headers | 3-pin Block |
| GPIO1 | GPIO Header | 10-pin Block |
| LPC1 | LPC1 Header | 11-pin Block |

# Chapter 2
# Hardware Installation

## 2-1 Jumper Setting

### (1) Clear CMOS (3-pin): JBAT1
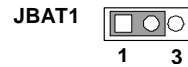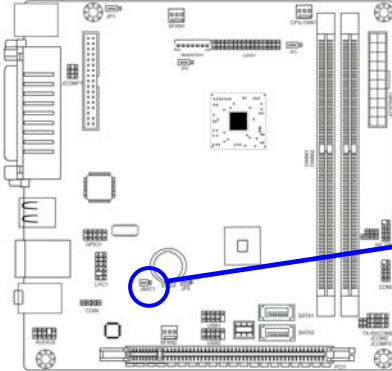
JBAT1  `1  3`  **1-2 closed  Normal**
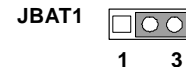
JBAT1  `1  3`  **2-3 closed  Clear CMOS**

**CMOS RAM Clear Setting**

### (2) KB/USB Power On Function Setting: JP1

JP1  `1  3`
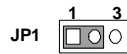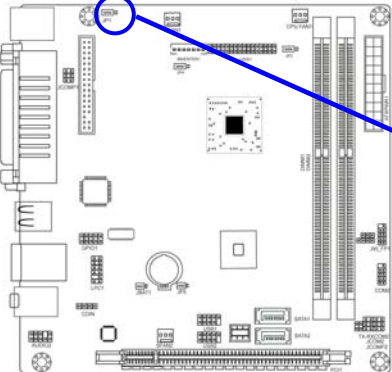
**1-2 Closed: K.B&USB POWER-ON Disacled(default)**

JP1  `1  3`
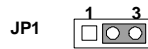
**2-3 closed: K.B& USB POWER-ON Enabled**

## (3) JP2: LVDS PVCC 5V / 3.3V Function setting (3-pin)



JP2
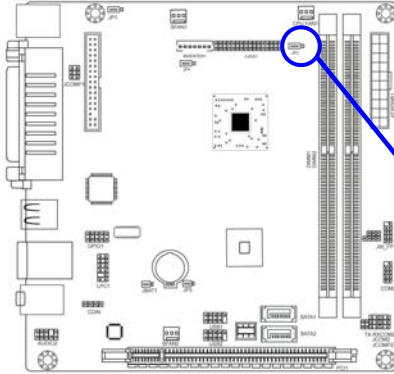
**1-2 closed: LVDS PVCC 5V**

JP2
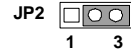
**2-3 closed : LVDS PVCC 3.3V**

## (4) JP4: Inverter 5V/12V Select (3-pin)



JP4
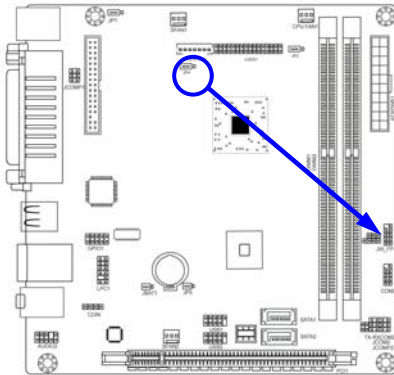
**1-2 closed
Inverter 12V selected**

JP4

**2-3 closed
Inverter 5V select**

## (5) JP5: USB1/2 Power On Function Setting: JP5



JP5
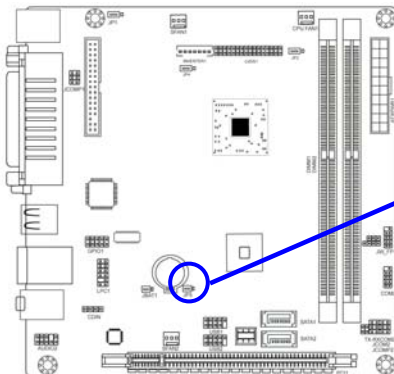
**1-2 closed : USB 1/2 Header POWER-ON Disacled(default)**

JP5
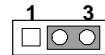
**2-3 closed: USB 1/2 Header POWER-ON Enabled**

## (6) JCOM2: COM2 Port RS232/485/422 Function Select



**JCOM2**

**1-2 closed: RS232**   **3-4 closed : RS485**   **5-6 closed : RS422**
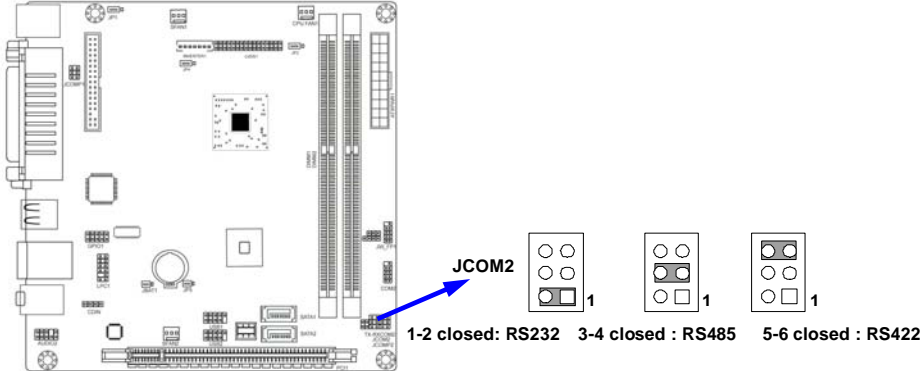
## (7) JCOMP1: COM1 Pin9 function select



**JCOMP1**

**1-2 closed: RS232**   **3-4 closed : +12V**   **5-6 closed : +5V**
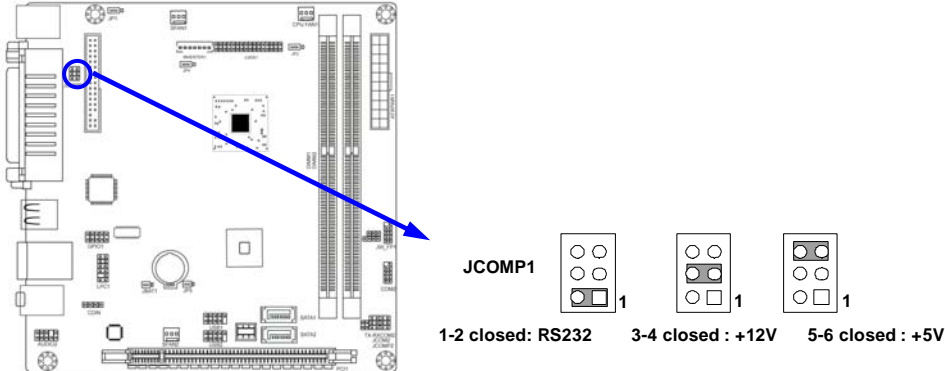
## (8) JCOMP2: COM2 Pin9 function select



**JCOMP2**

**1-2 closed: RS232**   **3-4 closed : +12V**   **5-6 closed : +5V**
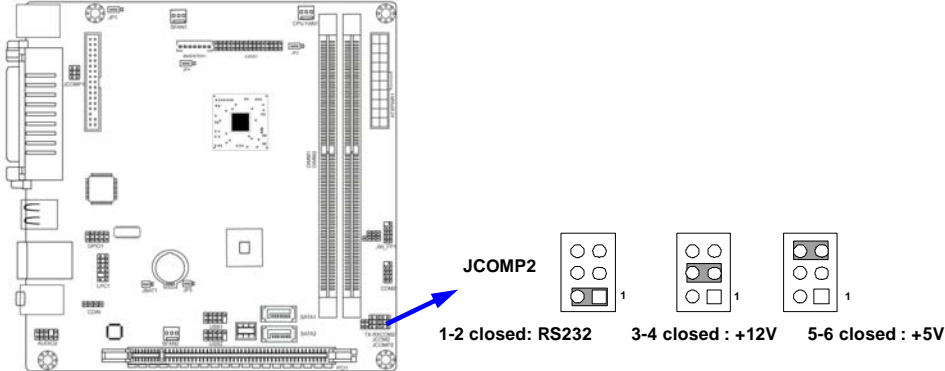
## 2-2   Connectors and Headers
## 2-2-1 Connectors

### (1) Audio Connector:   (Line-IN/ Line-Out/ MIC-In)
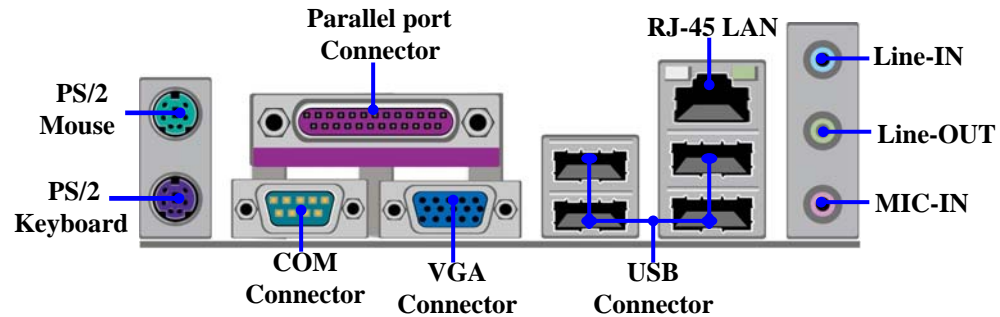


### (2) Serial-ATA Port connector: SATA1/SATA2



SATA1

SATA2

Serial-ATA Connectors
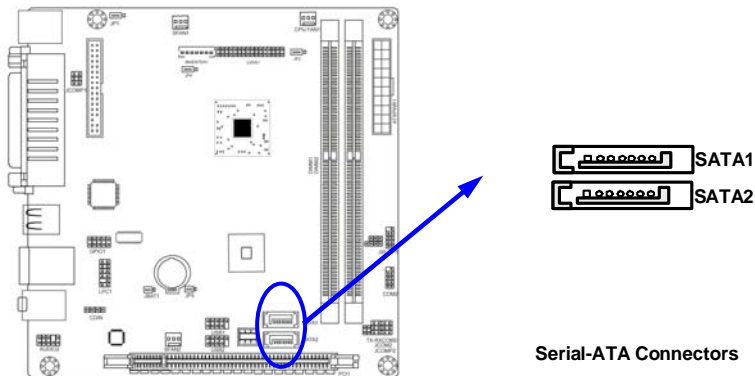
## (4) Floppy drive Connector (33-pin block): FLOPPY1



**FLOPPY1**

**Pin 1**

**Floppy Drive Connector**
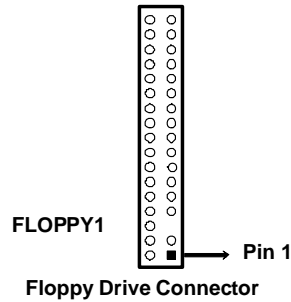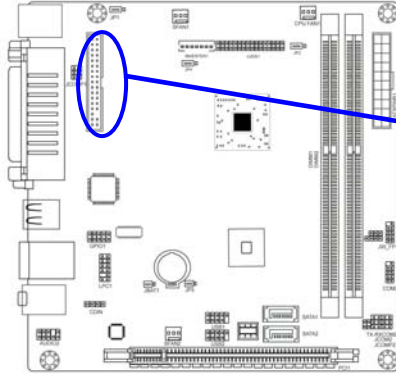
## 2-2-2 Headers

## (1) Line-Out, MIC-In Header (9-pin): Front Panel Audio Header: AUDIO2

This header connects to Front Panel Line-out, MIC-In connector with cable.



**AUDIO**

Pin 1

AUD-GND
AUD-JD 9
AUD-GND
AUD-GND

MIC2-L
MIC2-R
LINEOUT2-R
SENSE-FB
LINEOUT2-L
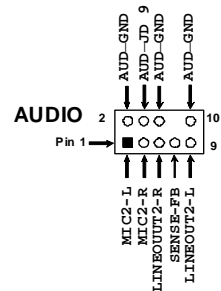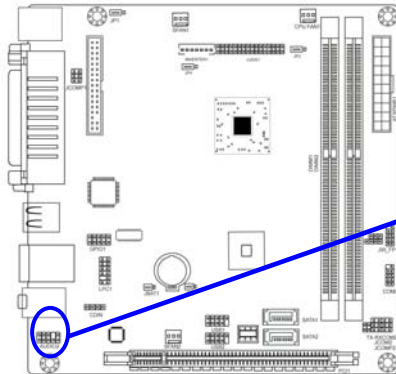
**Line-Out, MIC Headers**

## (2) CD AUDIO-In Headers (4-pin): CDIN1

CDIN are the connectors for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.

CD-R GND GND CD-L

**CDIN1**

4      1

**CD Audio-In Headers**
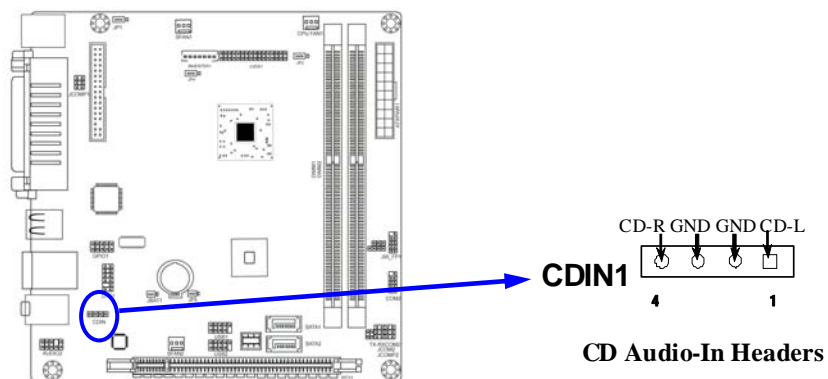
## (3) LVDS Headers（32 Pin）: LVDS1

| Pin NO. | Pin Define | Pin NO. | Pin Define |
|---------|------------|---------|------------|
| Pin 1 | NC | Pin 2 | NC |
| Pin 3 | NC | Pin 4 | NC |
| Pin 5 | NC | Pin 6 | NC |
| Pin 7 | NC | Pin 8 | NC |
| Pin 9 | NC | Pin 10 | NC |
| Pin 11 | LVDS_DDC_DATA | Pin 12 | LVDS_DDC_CLK |
| Pin 13 | GND | Pin 14 | GND |
| Pin 15 | GND | Pin 16 | GND |
| Pin 17 | NC | Pin 18 | NC |
| Pin 19 | LVDS_CLKAP | Pin 20 | LVDS_CLKAN |
| Pin 21 | LVDSA_DATAP2 | Pin 22 | LVDSA_DATAN2 |
| Pin 23 | LVDSA_DATAP1 | Pin 24 | LVDSA_DATAN1 |
| Pin 25 | LVDSA_DATAP0 | Pin 26 | LVDSA_DATAN0 |
| Pin 27 | PVDD | Pin 28 | PVDD |
| Pin 29 | PVDD | Pin 30 | PVDD |
| Pin 31 | GND | Pin 32 | GND |
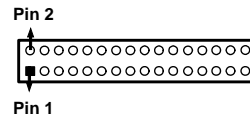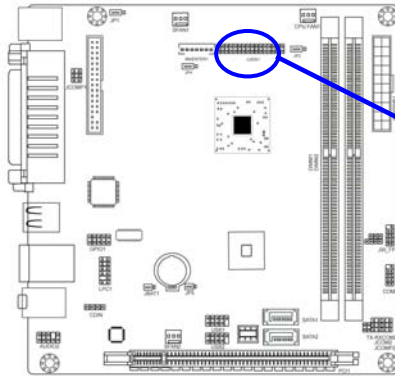
**Pin 2**

**Pin 1**

**LVDS1**

## (4) LVDS Inverter headers: Inverter1

Pin 1 and pin2: VCC of inverter

Pin3, pin4 and pin6:　GND

Pin5:　Backlight

Pin7:　Brightness



Pin 1

VCC　VCC　GND　GND　Backlight　GND　Brightness
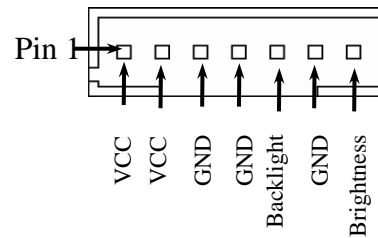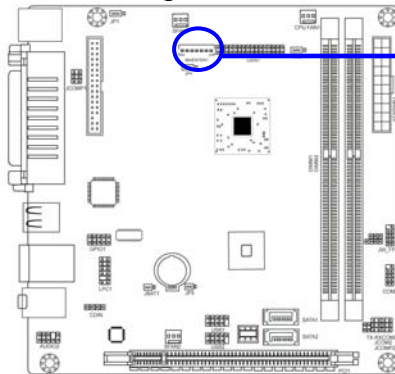
## (5) Serial Port Connectors (9-Pin female): COM2



Pin5

RI
GTS
RTS
DSR

GND
DTR
TXD
RXD
DCD

Pin6  Pin1
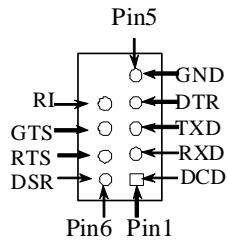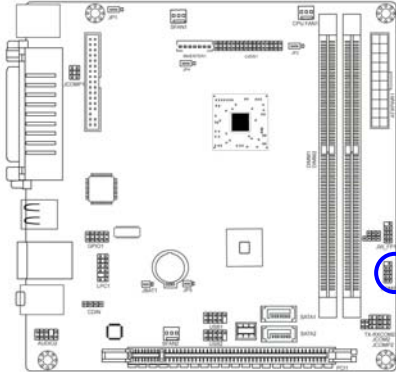
**Serial COM Port 9-pin Block**

## (6) RS232/422/485 Header: TX-RXCOM2



TX-RXCOM2

TXDN  RXDN

2

Pin 1

TXDP  RXDP
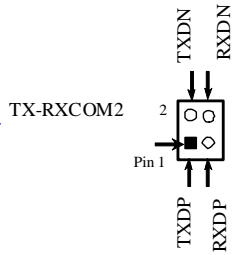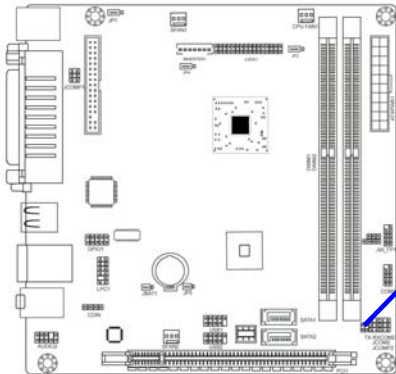
**TX-RXCOM2 Header**

## (7) USB Port Headers (9-pin): USB1/USB2



VCC  -DATA  +DATA  GND  NC

Pin 1

VCC  -DATA  +DATA  GND
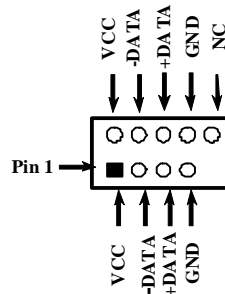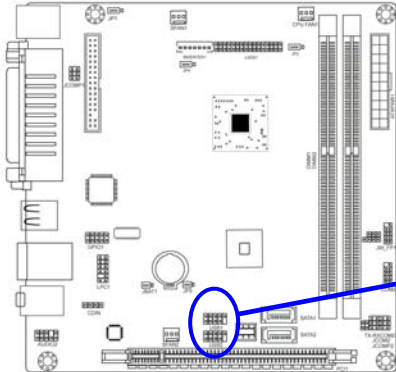
USB Port Header

## (8) Speaker connector: SPEAK1

This 4-pin connector connects to the case-mounted speaker. See the figure below.

## (9) Power LED: PWR LED

The Power LED is light on while the system power is on.　Connect the Power LED from the system case to this pin.



**PWRLED**

Pin 1 ➔

**SPEAK**

Pin 1 ➔

VCC NC NC SPEAK
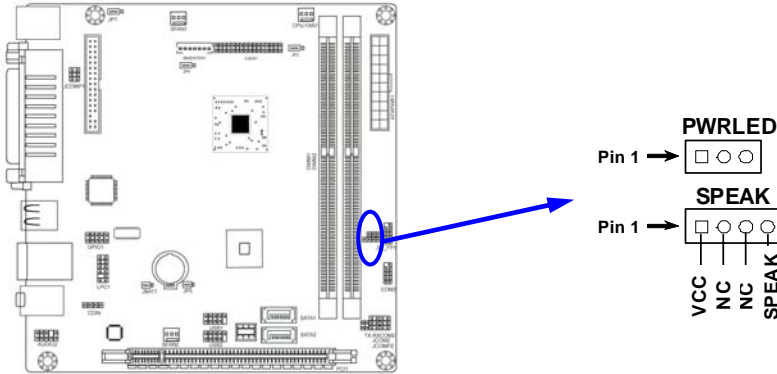
## (9) Front Panel Header: JW-FP1



PWR LED    PWRBTN

PWRLED    GND    PWRBTN    GND

**JW_FP1**

Pin 1 ➔

VCC5    HDDLED    RSTSW    GND    NC

HDLED    RESET
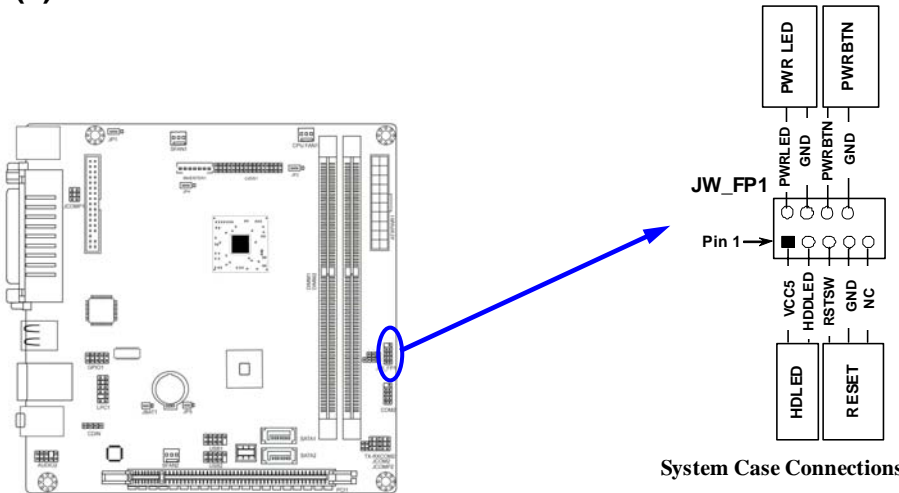
**System Case Connections**

## （10）FAN Speed Headers (3-pin): CPUFAN1, SFAN1/SFAN2

Pin1: GND

Pin2: +12V fan power

Pin3: Fan Speed



CPUFAN 1

1    3

SFAN 1

1    3

SFAN 2

1    3
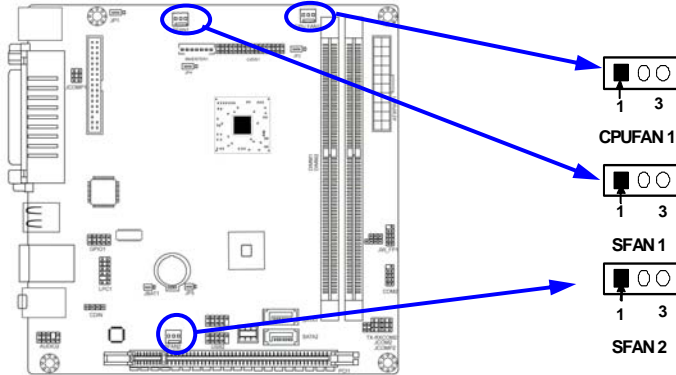
## (11) GPIO Header (10-pin): GPIO1



GPIO 1

GPIO_14  GPIO_63  GPIO_16  GPIO_17  VCC

2    10

Pin 1    9

GPIO_10  GPIO_11  GPIO_12  GPIO_13  GND
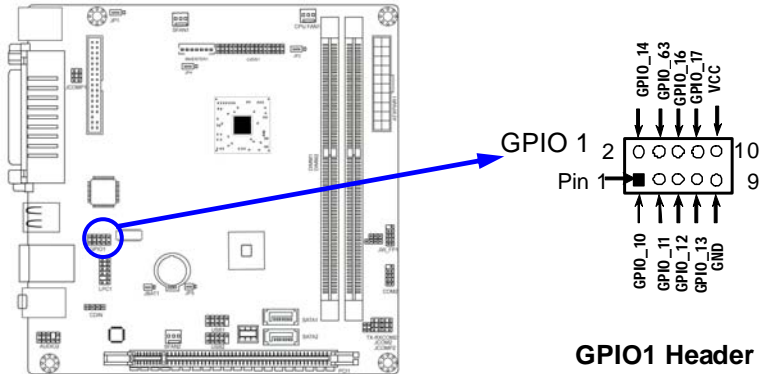
**GPIO1 Header**

## (12) LPC Header (11-pin): LPC1



GND  NC  VCC  LAD2  LAD1  GND

2

Pin 1    11

LPC_CLOCK  LFRAME-  LPCRST-  LAD3  VCC3  LAD0
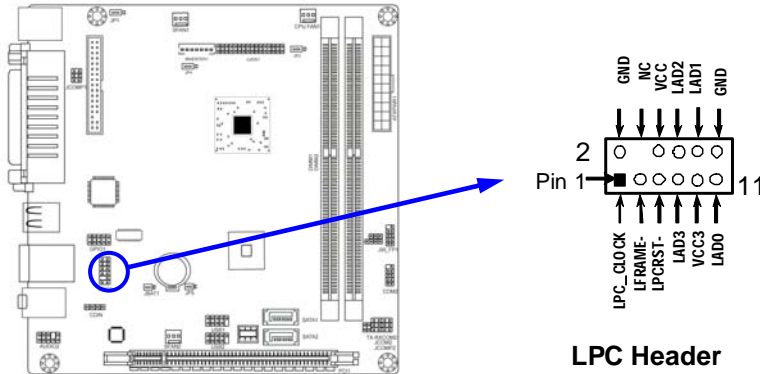
**LPC Header**

# Chapter 3
## Introducing BIOS

| | |
|---|---|
| Notice! | The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version form our official website. |

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS).  Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

In the BIOS Setup main menu of Figure 3-1, you can see several options.  We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press <Esc> to quit the BIOS Setup.
- Press ↑↓←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press <F10> when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press Page Up/Page Down or +/− keys when you want to modify the BIOS parameters for the active option.

## 3-1    Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.   If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

**Press <Del> to enter Setup**

## 3-2    Getting Help

**Main Menu**

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

**Status Page Setup Menu/Option Page Setup Menu**

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item.   To exit the Help Window, press <Esc>.

## 3-3    The Main Menu

Once you enter AMI ® BIOS CMOS Setup Utility, the Main Menu (Figure 3-1) will appear on the screen.   The Main Menu allows you to select from fourteen setup functions and two exit choices.   Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.
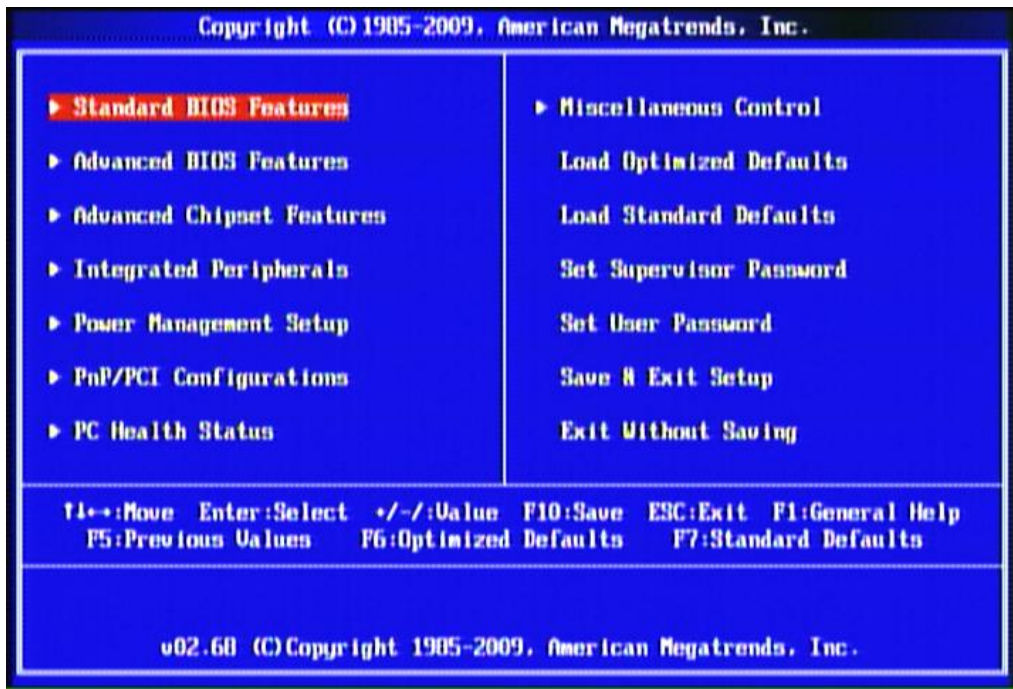
**Figure 3-1**

**Standard BIOS Features**

Use this Menu for basic system configurations.

**Advanced BIOS Features**

Use this menu to set the Advanced Features available on your system.

**Advanced Chipset Features**

Use this menu to change the values in the chipset registers and optimize your system's performance.

**Integrated Peripherals**

Use this menu to specify your settings for integrated peripherals.

**Power Management Setup**

Use this menu to specify your settings for power management.

**PnP/PCI Configurations**

Use this menu to specify your settings for PnP and PCI configurations.

**PC Health Status**

This entry shows your PC health status.

**Miscellaneous Control**
Use this menu to specify your settings for Miscellaneous Control.
**Load Optimized Defaults**
Use this menu to load the BIOS default values these are setting for optimal performances system operations for performance use.
**Load Standard Defaults**
Use this menu to load the BIOS default values for the minimal/stable performance system operation
**Set Supervisor Password**
Use this menu to set supervisor password.
**Set User Password**
Use this menu to set user password.
**Save & Exit Setup**
Save CMOS value changes to CMOS and exit setup.
**Exit Without Saving**
Abandon all CMOS value changes and exit setup.

# 3-4    Standard BIOS Features
The items in Standard CMOS Setup Menu are divided into several categories.   Each category includes no, one or more than one setup items.   Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
            Copyright (C) 1985-2009, American Megatrends, Inc.
                      Standard BIOS Features

  System Date              Thu 12/10/2009         Help Item
  System Time              00:02:35
                                            Use [ENTER], [TAB]
                                            or [SHIFT-TAB] to
  ▶ SATA Channel 1 Master   Not Detected      select a field.
  ▶ SATA Channel 2 Master   Not Detected
                                            Use [+] or [-] to
                                            configure system Date.
  Floppy A                 1.44 MB 3½"


  System Memory
  Size      : 503MB




  ↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
        F5:Previous Values    F6:Optimized Defaults    F7:Standard Defaults
```

**Date**

The date format is <day><month><date><year>.

**Day**    Day of the week is from Sun to Sat, determined by BIOS. Read-only.

**Month**  The month is from Jan. through Dec.

**Date**   The date from 1 to 31 can be keyed by numeric function keys.

**Year**   The year depends on the year of the BIOS.

**Time**

The time format is <hour><minute><second>.

**SATA Channel 1/2 Master**

While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices.

**Type:** The optional settings are: Not Installed; Auto; CD/DVD and ARMD

**LBA/Large Mode:** The optional settings are Auto; Disabled.

Disabled: disables LBA mode.

Auto: enables LBA Mode if the devices support it and the device is not already formatted with LBA Mode disabled.

**Block (Multi-Sector Transfer):** The optional settings are: Disabled and Auto.

Disabled: The Data transfer from and to the device occurs one sector at a time.

Auto: The Data transfer from and to the device occurs multiple sectors at a time if the device supports it.

**PIO Mode: the optional settings are:** Auto, 0, 1, 2, 3 and 4.

**DMA MODE:** the optional settings are Auto, SWDMAn, MWDMAn , UDMAn.

**S.M.A.R.T.:** This option allows you to enable the HDD S.M.A.R.T Capability (Self-Monitoring, Analysis and Reporting Technology). The optional settings are Auto; Disabled; and Eabled.

**32 Bit Data Transfer:** the optional settings are: Disabled and Enabled.

**Floppy A**

This item is for specific floppy disk drive settings. Select according to the specification of the floppy disk you use.

# 3-5 Advanced BIOS Features
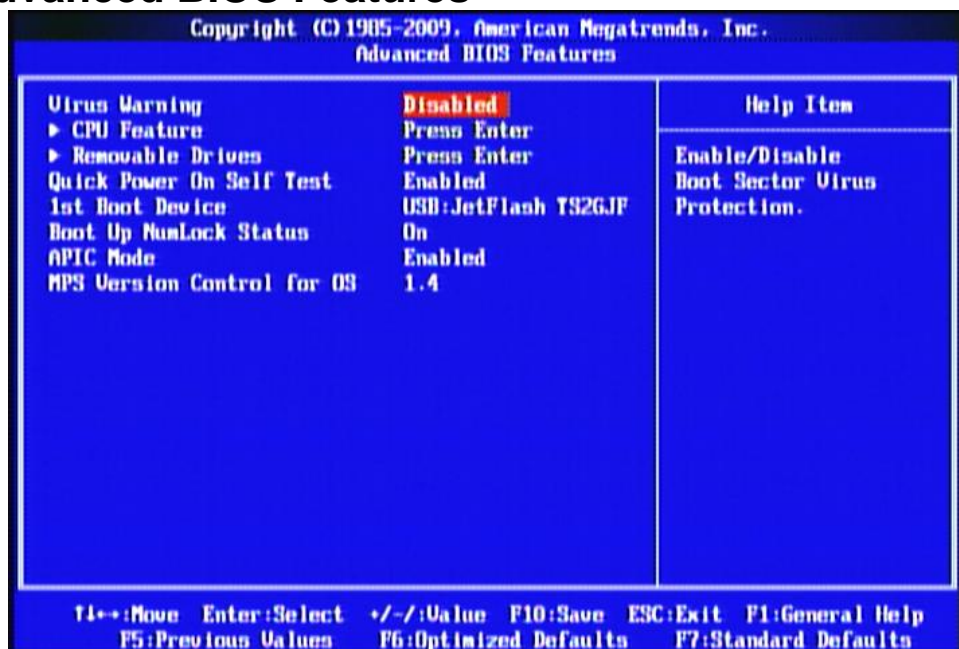
**Virus Warning**

The selection Allow you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

**Disabled** (default)  No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

**Enabled**  Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

**Removable Drives**

Use this item to specify the boot device priority sequence from available removable drives.

**Quick Power On Self-Test**

Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

**1st Boot Devices**

Specify the boot sequence from the available devices. A device enclosed in parenthesis has been disabled in corresponding type menu.

**Boot Up NumLock Status**

The default value is On.

**On** (default)  Keypad is numeric keys.

**Off**  Keypad is arrow keys.

**MPS Version Control for OS**

This option is only valid for multiprocessor motherboards as it specifies the version of The Multiprocessor Specification (MPS) that the motherboard will use.

## 3-5-1 CPU Feature
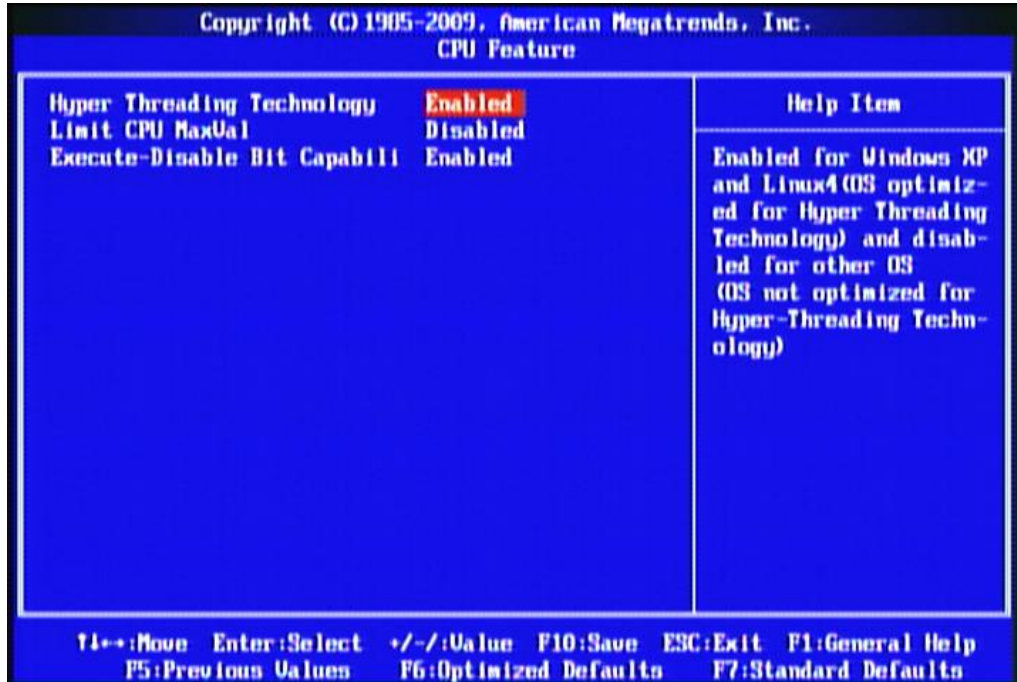


**Hyper Threading Technolegy**
Enabled for Windows XP and Linux4(OS optimized for Hyper Threading Technology) and disabled for other OS (OS not optimized for Hyper –Threading Technology)
**Limit CPU MaxUal**
The optional settings are: Disabled; Enabled.
**Execute-Disable Bit Capabill**
The optional settings are: Disabled; Enabled. When disabled, force the XD feature Flag to always return 0.

# 3-6 Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.



```
          Copyright (C)1985-2009, American Megatrends, Inc.
                    Advanced Chipset Features
  DRAM Timing Settings by SPD   Enabled           │      Help Item
                                                  │
  Initate Graphic Adapter       IGD               │        Options
  IGD Mode Select               Enabled, 8MB      │
  DVMT Mode Select              DVMT Mode         │  Enabled
    DVMT/FIXED Memory           256MB             │  Disabled
  LVDS Support                  Disabled          │




  ↑↓→←:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
          F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults
```

**DRAM Timing Settings by SPD**

The optional settings are: Disabled; Enabled.

**Initate Graphic Adapter**

The optional settings are: 1GD; PCIE/IGD. Select which graphic controller to use as the primary boot device.

**1GD Mode Select**

The optional settings are: Disabled; Enabled, 4MB; Enabled, 8MB. Select the amount of system memory used by the Internal graphic device.

**DVMI/FIXED Memory**

The optional values are: 128MB; 256 MB; Maximum DVMT.

**LVDS Suppor**t

The optional settings are: Disabled; Enabled.

# 3-7 Integrated Peripherals
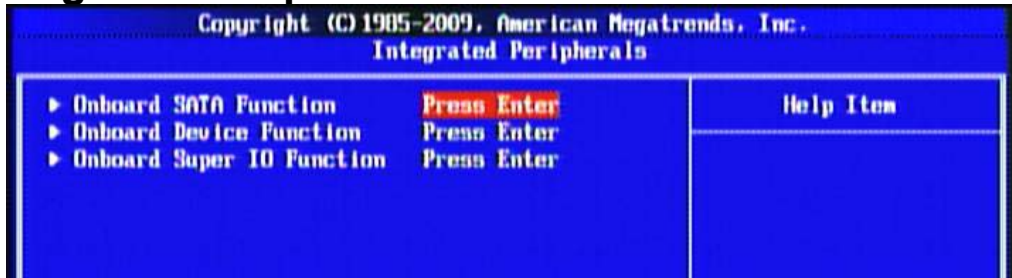


# 3-7-1 Onboard SATA Function
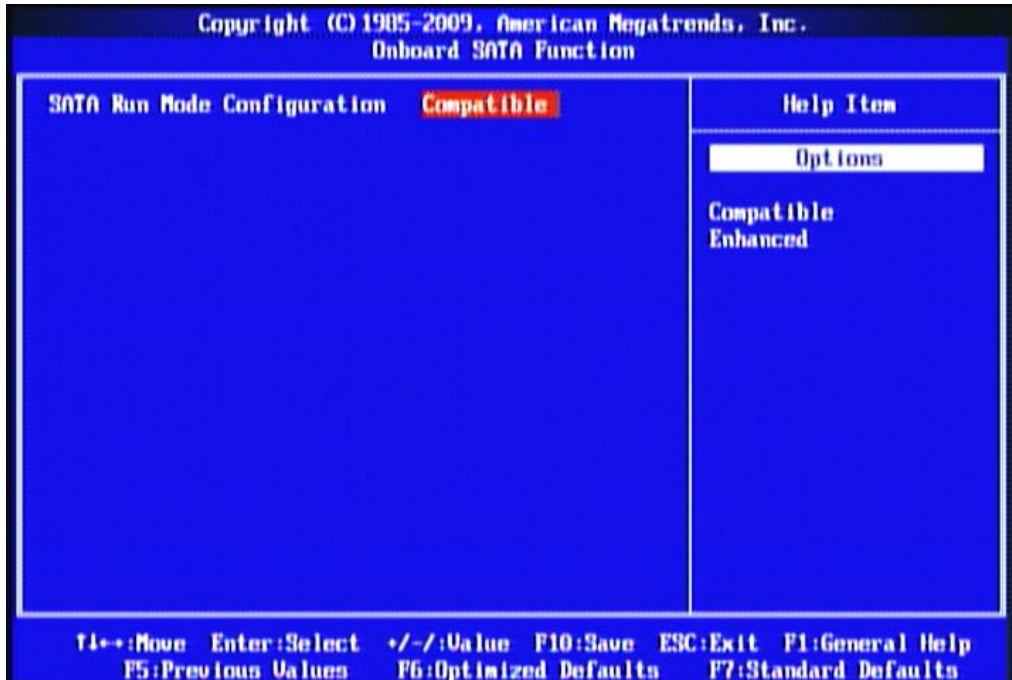


**SATA Run Mode Configuration**

The optional settings are: Compatible; Enhanced.

## 3-7-2 Onboard Device Function

```
          Copyright (C)1985-2009, American Megatrends, Inc.
                      Onboard Device Function

   Onboard LAN Controller        Enabled              Help Item
      Onboard LAN BootROM         Disabled
   High Definition Audio         Auto                    Options
   USB Host Controller           Enabled
   USB 2.0 Function              Enabled           Enabled
   USB 2.0 Operation Mode        HiSpeed           Disabled
   USB Keyboard Legacy Support   Enabled
   USB Mouse Legacy Support      Enabled
   USB Storage Legacy Support    Enabled


   USB Mass Storage Device Configuration
   _____

    Device #1          JetFlash TS2GJFV10
    Emulation Type          Auto




   ↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help
        F5:Previous Values    F6:Optimized Defaults    F7:Standard Defaults
```

**High Definition Audio**

This item allows you to decide to auto /disable the chipset family to support HD Audio.
The settings are: Auto, Disabled.

**USB 2.0 Operation Mode**

The settings are: FullSpeed; HiSpeed.

**USB 2.0 Function / Keyboard Legacy/Mouse Legacy /Storage Legacy Support**
Select enabled if your system contains a Universal Serial Bus (USB) controller and
you have a USB mouse /keyboard/USB storage device. The settings are: Enabled,
Disabled.

## 3-7-3 Onboard Super IO Function



**OnBoard Floppy Controller**

Use this item to allow BIOS to enable or disable Floppy Controller.

**Serial Port 1/2 Address**

The optional settings are：Disabled, 3F8/IRQ4, 3E8/IRQ4，2E8/IRQ3.

**Serial Port 2 Mode**

The optional settings are: Normal, IrDA (1.6us), IrDA (3/16 bit)

**Serial Port 2 RS485 Select**

The optional settings are：Disabled(RS232); Enabled(RS485)

**Parallel Port Address**

Use this item to allow BIOS to select parallel port base adresses

The optional settings are: Disabled; 378; 288; 3BC

**Parallel Port Mode**

The optional settings are: Normal; Bi-Directional; ECP; EPP; ECP & EPP.

**Watchdog Timer Select**

This item is used to activate the watchdog function. The optional settings are: Enabled; Disabled.

# 3-8    Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy saving while operating in a manner consistent with your own style of computer use.
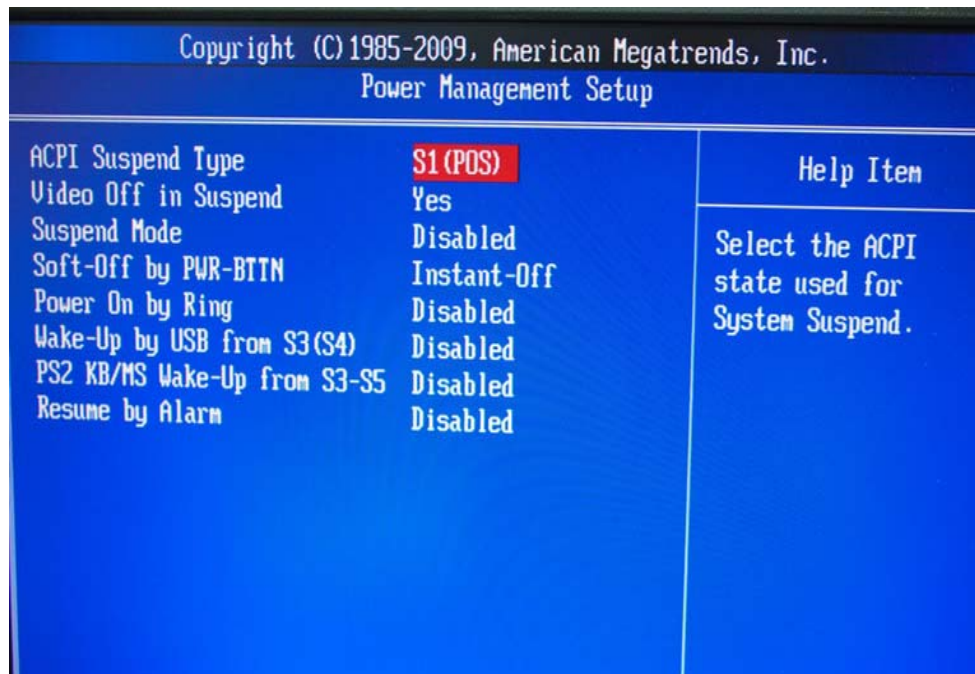


**Video Off in Suspend**

The optional settings are: No; Yes.

**Suspend Mode**

The optional settings are: Disabled;1Min,2 Min;4 Min;8 Min;10 Min;20 Min;30 Min;40 Min;50 Min;60 Min.

**Soft-Off by PWR-BTTN**
Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake up Alarms. This item lets you install a software power down that is controlled by the power Button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec, then you have to hold the power button down for four seconds to cause a software power down.

# 3-9 PnP/PCI Configurations



**IRQ Resources**
Names the interrupt request (IRQ) line assigned to the USB on your system. Activity of the selected IRQ always awakens the system.

**PCI/VGA Palette Snoop**
This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

# 3-10 PC Health Status

This section shows the Status of you CPU, Fan, and Warning for overall system status. This is only available if there is Hardware Monitor onboard.

```
              Copyright (C) 1985-2009, American Megatrends, Inc.
                             PC Health Status
    ┌─────────────────────────────────────────────┬──────────────────────────┐
    │ Shutdown Temperature        Disabled       ▲│        Help Item          │
    │ CPU Thermal-Throttling      Disabled        │├──────────────────────────┤
    │ ▶ Smart FAN Configurations  Press Enter     │         Options           │
    │ +5V OUT                     10%             │                           │
    │ +12V OUT                    10%             │ Disabled                  │
    │ Vcc3V OUT                   20%             │ 60°C/140°F                │
    │ CPU Temperature             61°C/141°F      │ 65°C/149°F                │
    │ System Temperature          47°C/116°F      │ 70°C/158°F                │
    │                                             │ 75°C/167°F                │
    │ CPUFAN Speed                N/A             │                           │
    │ SYSFAN1 Speed               N/A             │                           │
    │ SYSFAN2 Speed               N/A             │                           │
    │                                             │                           │
    │ Vcore                       1.056 V         │                           │
    │ NB 1.05V                    1.048 V         │                           │
    │ 5VSB                        4.972 V         │                           │
    │ VDIMM                       1.811 V         │                           │
    │  + 5V                       4.972 V         │                           │
    │  + 12V                      11.704 V       ▼│                           │
    ├─────────────────────────────────────────────┴──────────────────────────┤
    │  ↑↓←→:Move  Enter:Select  +/-/:Value  F10:Save  ESC:Exit  F1:General Help│
    │      F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults  │
    └─────────────────────────────────────────────────────────────────────────┘
```

**Shutdown Temperature**

This item can let users setting the Shutdown temperature, when CPU temperature over this setting the system will auto shutdown to protect CPU.

**CPU Thermal Throttling**

The optional settings are: Disabled; Enabled. When it is set as Enabled user could set value for CPU Thermal-Throttling Temp.; CPU Thermal-Throttling Duty and CPU Thermal-Throttling Beep.
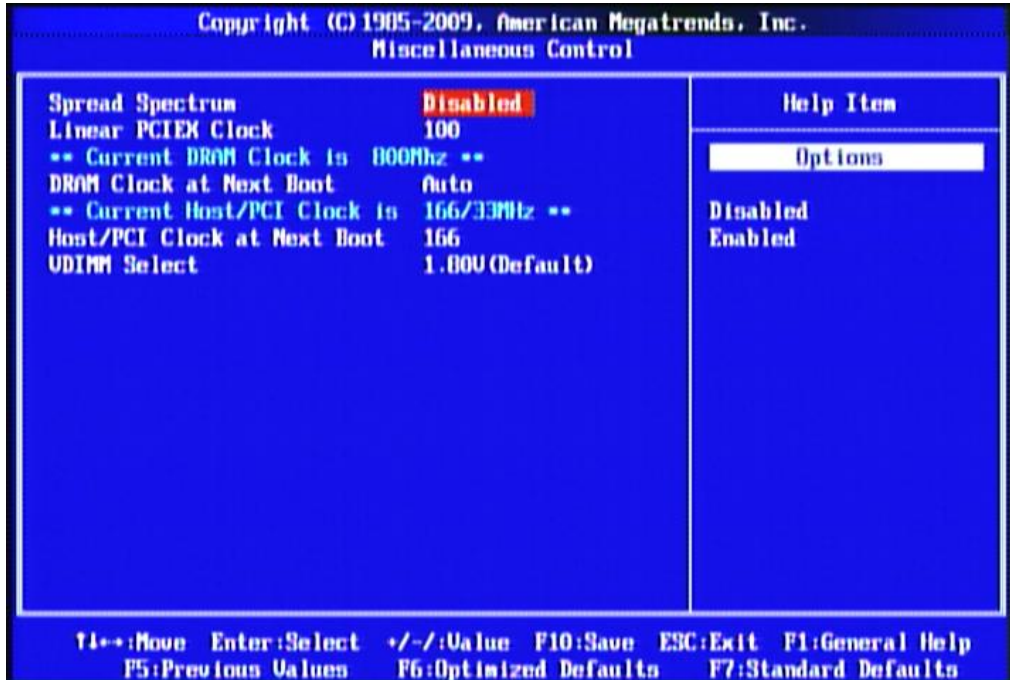
**Smart Fan Configuration**

Press Enter to set certain values for the following three items: CPUFAN Smart Mode; SYSFAN1 Smart Mode; SYSFAN2 Smart Mode.

**5V OUT/12V OUT/Vcc3V OUT/Vcore/ /NB1.05V/5V/12V/5 USB/VDIMM/ / CPU Temperature/ System Temperature/CPUFAN/ SYSFAN1/SYSFAN2 Speed**

This will show the CPU/FAN/System voltage chart and FAN Speed, etc.

## 3-11 Miscellaneous Control



**Spread Spectrum**

The optional settings are: Enabled; Disabled.

**DRAM Clock at Next Boot**

This item allows you to set DRAM clock. The optional settings are: Auto; 667MHz; 800MHz

**VDIMM Select**

The optional settings are: 1.80v (Default); 1.90v; 1.95v; 2.00v.

## 3-12 Password Setting

You can set either supervisor or user password, or both of them. The differences are:

**Supervisor password:** Can enter and change the options of the setup menus.
**User password:** Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

### ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password. To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm that the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

### PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

# 3-13 Load Optimized /Standard Defaults

**Load Optimized Defaults**

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Optimized Defaults?

【OK】　　　　【Cancel】

Pressing <OK> loads the default values that are factory settings for optimal performance system operations.

**Load Standard Defaults**

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Standard Defaults?

【OK】　　　　【Cancel】

Pressing <OK> loads the default values that are factory settings for stable performance system operations.

# 3-14 Save and Exit Setup/ Exit Without Saving

**Save and Exit Setup**

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Save configuration changes and exit setup?

【OK】　　　　　　　　　　【Cancel】

Pressing <OK> save the values you made previously and exit BIOS setup.

**Exit Without Saving**

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Discard Changes and Exit Setup?

【OK】　　　　　　【Cancel】

Pressing <OK> to leave BIOS setting without saving previously set values.