

IPC BOARD USER'S MANUAL

2011

TECHNICAL MANUAL
Of
Intel HM67 Express Chipset
Based Mini-ITX M/B

No: G03-NC9B-F

Revision: 1.0

Release date: July, 2011

Trademark:

- * Specifications and Information contained in this documentation are furnished for information use only, and are subject to change at any time without notice, and should not be construed as a commitment by manufacturer.



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.

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Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	July, 2011

Item Checklist

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

Chapter 1

Introduction of the Motherboard

1-1 Feature of motherboard

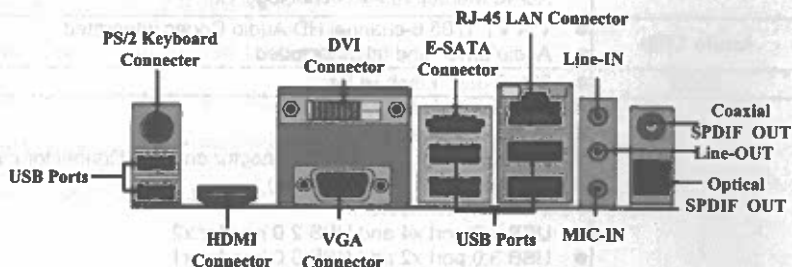
- Intel HM67 express chipset
- Intel rPGA988B CPU socket supporting compatible Intel Core™ i3, i5, i7 Mobile Processors
- Support DDRIII DIMM 1066/1333 up to 16 GB and dual channel function
- Onboard Intel 82579 LM Gigabit Ethernet LAN
- Integrated VIA VT 1705 6-channel HD Audio Codec
- Support USB 2.0 data transport demands
- Support USB 3.0 data transport demands
- Support PCIE 2.0 by 16 Lane slot
- Compliance with ERP Standard.
- Support Watchdog Timer Technology

1-2 Specification

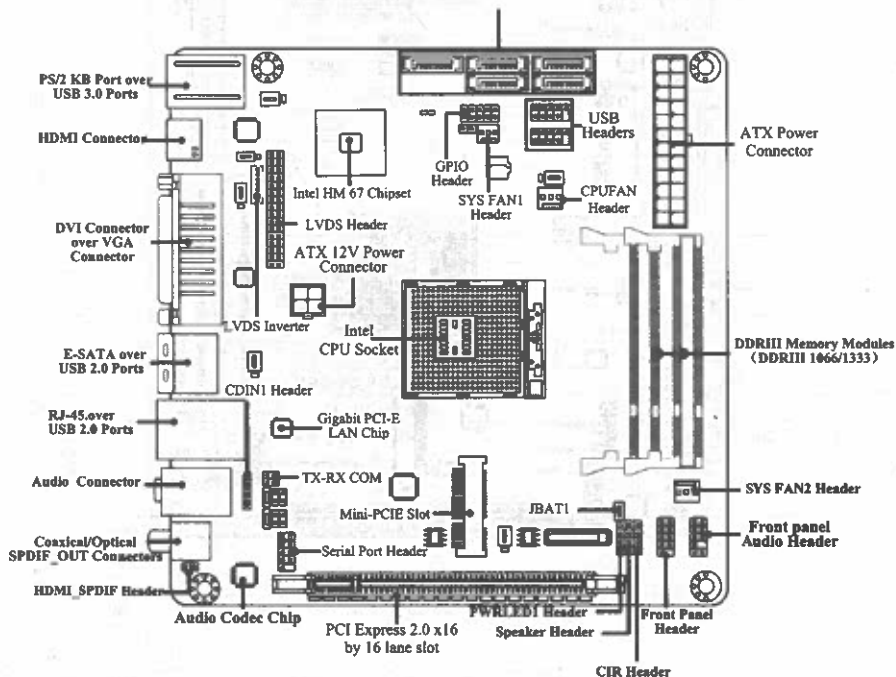
Spec	Description
Design	<ul style="list-style-type: none"> ● Mini-ITX form factor 6 layers ; PCB size: 17.0x17.0cm
Chipset	<ul style="list-style-type: none"> ● Intel HM67 Express Chipset
CPU Socket	<ul style="list-style-type: none"> ● Intel socket G (rPGA 988B) ● Support up to Intel Core™ i3, i5, i7 Mobile Processors
Memory Socket	<ul style="list-style-type: none"> ● 2 * SODIMMs Sockets ● Support two DDRIII 1333/1066 MHz SODIMMs expandable to 16 GB ● Support dual channel function
Expansion Slot	<ul style="list-style-type: none"> ● PCIE 2.0 by 16 lane slot x1 ● Mini-PCIE slot x1
LAN Chip	<ul style="list-style-type: none"> ● Integrated Intel 82579LM Gigabit Ethernet LAN chip that supports Fast Ethernet LAN function of providing 10Mb/100Mb/1000Mb Ethernet data transfer rate ● Intel 82579LM Gigabit Ethernet LAN chip supports Intel Active Management Technology 7.0
Audio Chip	<ul style="list-style-type: none"> ● VIA VT 1705 6-channel HD Audio Codec integrated ● Audio driver and utility included
BIOS	<ul style="list-style-type: none"> ● 32MB SMT Flash ROM
Multi I/O	<ul style="list-style-type: none"> ● PS/2 keyboard connector x1 ● HDMI connector x 1 ● DVI connector x1 (HDMI Connector and DVI Connector can not be used at the same time) ● VGA port connector x1 ● USB 2.0 port x4 and USB 2.0 header x2 ● USB 3.0 port x2 and USB 3.0 header x1 ● E-SATA connector x1 ● RJ-45 LAN connector x1 ● Audio connector x1 (Line-in, Line-out, MIC) ● Coaxial S/PDIF Connector x1 ● Optical S/PDIF Connector x1 ● Front panel audio header x1

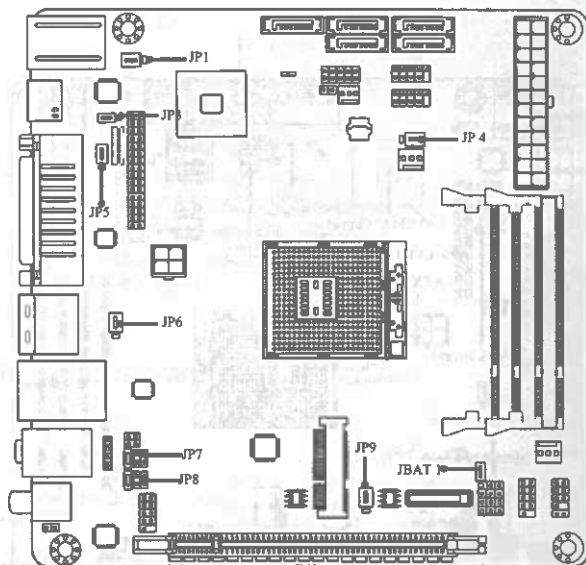
	<ul style="list-style-type: none"> ● SATAIII Connector x2 ● SATAII Connector x3 ● CDIN header x1 ● LVDS header x1 ● LVDS Inverter x1 ● HDMI_SPDIF header x1 ● Serial port header x1 ● RS422/RS485 header x1 ● Front panel header x1 ● CIR header x1 ● GPIO header x1 	
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1-3 Layout Diagram



3 SATAII Ports
—(SATA1/2/3/4/5)





Jumper

Jumper	Name	Description
JBAT1	CMOS RAM Clear Function Setting	3-pin Block

JP1	KB/MS Power On Function Setting	3-pin Block
JP3	LVDS PVCC 5V/3.3V Select	3-pin Block
JP4	USB Power On Function Setting	3-pin Block
JP5	Inverter power 5V/12V Select	3 pin Block
JP6	USB Power On Function Setting	3 pin Block
JP7	COM1 Header RS232/485/422 Function Select	6-pin Block
JP8	COM1 Header Pin9 function Select	6-pin Block
JP9	Mini PCI-E Slot Power 3.3V/3V Select	3-pin Block

Connectors

Connector	Name	Description
ATXPWR	ATX Power Connector	24-pin Block
ATX12V	ATX 12V Power Connector	4-pin Connector
KB(from UK1)	PS2 Keyboard Connector	6-pin Female
HDMI	High-Definition Multimedia Interface	19-pin Connector
VGA	Video Graphic Attach Connector	15-pin Female
DVI	Digital Visual Interface	24-pin Connector
USB (from US1,UL1)	USB Port Connectors	4-pin Connectors
USB (from UK1)	USB Port Connectors	5-pin Connector
RJ-45 LAN (from UL1)	RJ-45 LAN Connectors	8-pin Connector
ESATA(from US1)	External Serial ATAll Connector	7-pin Connector
SATA1/SATA2 SATA3/SATA4/ SATA5	Serial ATAll Connectors	7-pin Connectors
SPDIF_OUT	Coaxial/Optical SPDIF out Connectors	2 -phone Jack
AUDIO1	Line Out /Line In /MIC Audio Connector	3 -phone Jack

Headers

Header	Name	Description
FP_AUDIO	Front panel audio Headers	9-pin block

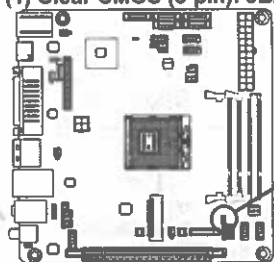
CDIN	CD Audio-In Header	4-pin Block
LVDS	LVDS Header	32-pin Block
INVERTER	LVDS Inverter Connector	7-pin Block
HDMI-SPDIF	SPDIF-Out header	2-pin Block
COM1	Serial Port Header	9-pin Block
TX-RXCOM	RS 232/422/485 port headers	4-pin block
USB1/USB2	USB Header	9-pin Block
PWR LED	Power LED	3-pin Block
CIR	CIR Header	4-pin Block
SPEAK	Speaker Header	4-pin Block
JW_FP (PWR LED/ HD LED/ /Power Button /Reset)	Front Panel Header (PWR LED/ HD LED/ /Power Button /Reset)	9-pin Block
CPUFAN, SYSFAN1/2	FAN Speed Headers	3-pin Block
GPIO_CON	GPIO Header	10-pin Block

Chapter 2

Hardware Installation

2-1 Jumper Setting

(1) Clear CMOS (3-pin): JBAT1



JBAT1

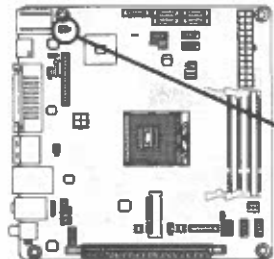
1-2 Short: Normal



2-3 Short: Clear CMOS

CMOS Clear Setting

(2) KB/MS Power On Function Setting (3-pin): JP1

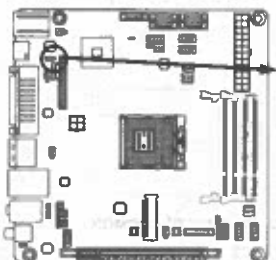


1-2 Closed: KB/MS Power-on Disabled(Default)

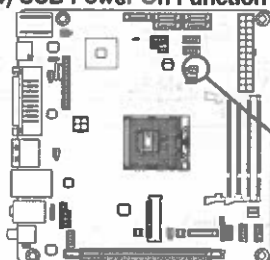


2-3 closed: KB/MS Power-on Enabled

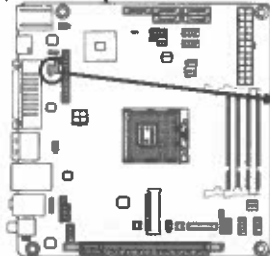
(3) LVDS PVCC 5V/3.3V Select (3-pin): JP3



(4) USB Power On Function Setting (3-pin): JP4



(5) Inverter power 5V/12V Select (3-pin):JP5



(6) USB Power On Function Setting (3-pin): JP6



1-2 closed : panel power 5v



2-3 closed: panel power 3.3v



1-2 closed : USB Power-on Disable (Default)



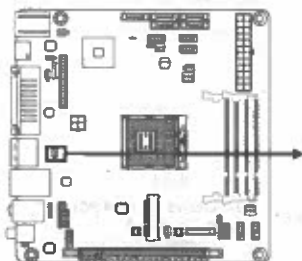
2-3 closed: USB Power-on Enable



1-2 closed: Inverter power 5V



2-3 closed : Inverter power 12V

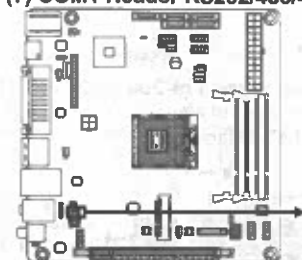


1-2 closed: USB Power On Disable



2-3 closed: USB Power On Enable

(7) COM1 Header RS232/485/422 Function Select (6-pin): JP7



JP7



1-2 closed: RS232

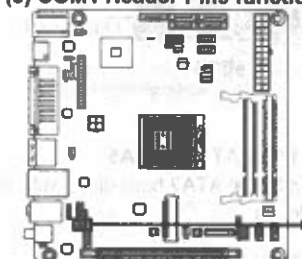


3-4 closed: RS485



5-6 closed: RS422

(8) COM1 Header Pin9 function Select (6-pin): JP8



JP8



1-2 closed: RS232

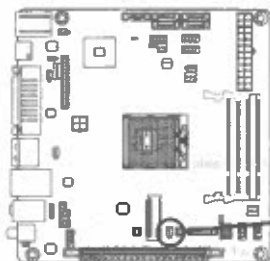


3-4 closed: +12V

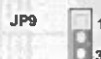


5-6 closed: +5V

(9) Mini PCI-E Slot Power 3.3V/3V Select (3-pin): JP9



1-2 closed : MINI PCI-E
Slot Power 3.3V

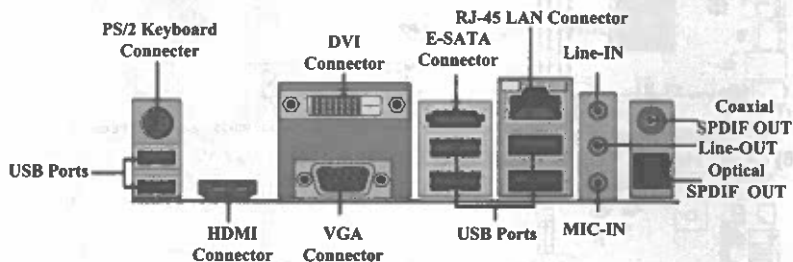


2-3 closed : MINI PCI-E
Slot Power 3VSB

2-2 Connectors and Headers

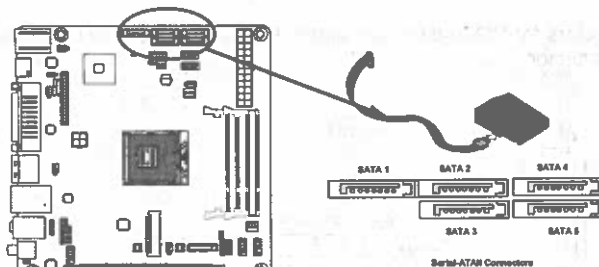
2-2-1 Connectors

(1) Rear Panel Connectors



(2) Serial-ATAII Port connector: SATA1/SATA2/SATA3/SATA4/SATA5

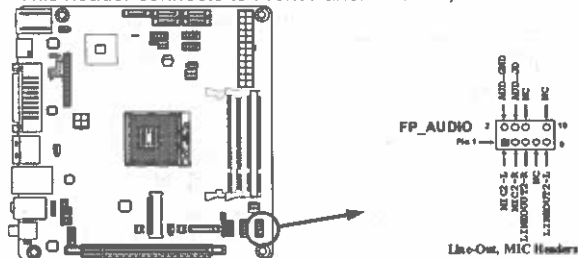
These connectors support the provided Serial ATA and Serial ATA2 hard disk cable to connect the motherboard and serial ATA2 hard disk drives.



2-2-2 Headers

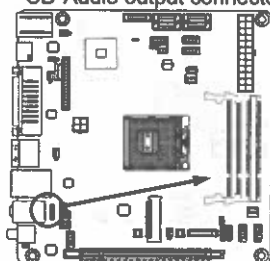
(1) Line-Out, MIC-In Header (9-pin): FP_AUDIO

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



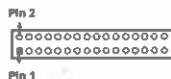
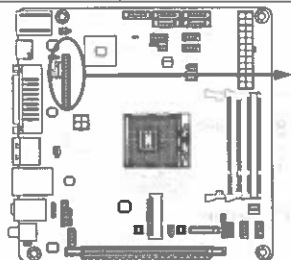
(2) CD AUDIO-In Headers (4-pin): CDIN

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



(3) LVDS Headers(32 Pin): LVDS

Pin NO.	Pin Define	Pin NO.	Pin Define
Pin 1	LVDSB_DATAN3	Pin 2	LVDSB_DATAP3
Pin 3	LVDS_CLKBN	Pin 4	LVDS_CLKBP
Pin 5	LVDSB_DATAN2	Pin 6	LVDSB_DATAP2
Pin 7	LVDSB_DATAN1	Pin 8	LVDSB_DATAP1
Pin 9	LVDSB_DATAN0	Pin 10	LVDSB_DATAP0
Pin 11	LVDS_DDC_DATA	Pin 12	LVDS_DDC_CLK
Pin 13	GND	Pin 14	GND
Pin 15	GND	Pin 16	GND
Pin 17	LVDSA_DATAP3	Pin 18	LVDSA_DATAN3
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



LVDS Header

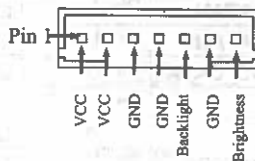
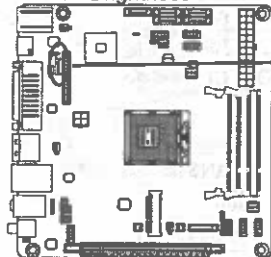
(4) LVDS Inverter headers: INVERTER

Pin 1 and pin2: VCC of inverter

Pin3, pin4 and pin6: GND

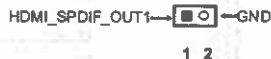
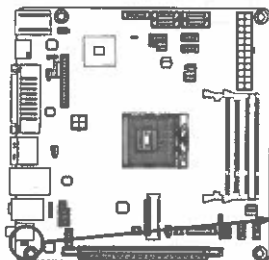
Pin5: Backlight

Pin7: Brightness



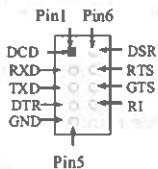
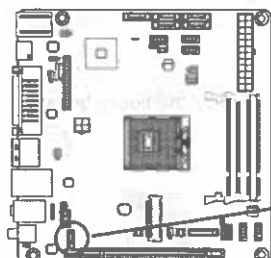
(5) HDMI SPDIF Out header (2-pin): HDMI_SPDIF

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder. Use this feature only when your stereo system has digital input function.



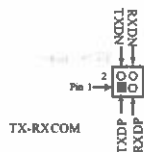
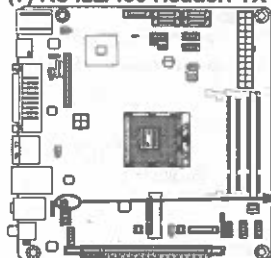
HDMI_SPDIF Header

(6) Serial Port Connectors (9-Pin female): COM1



Serial COM Port 9-pin Block

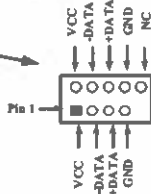
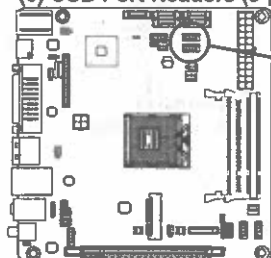
(7) RS422/485 Header: TX-RXCOM



TX-RXCOM

TX-RXCOM Header

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



USB Port Header

(9) Power LED: PWR LED

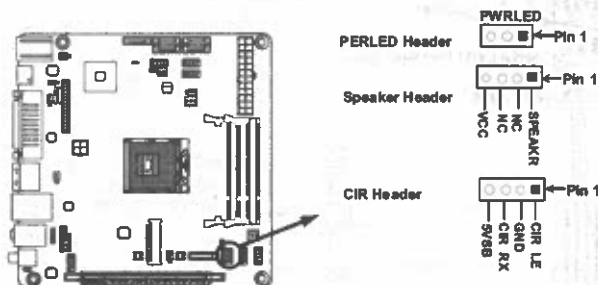
The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

(10) Speaker Header: SPEAK

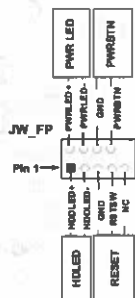
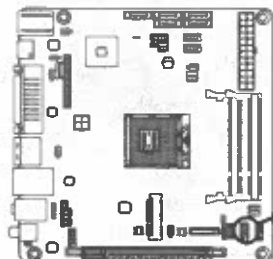
This 4-pin header connects to the case-mounted speaker. See the figure below.

(11) CIR Header: CIR

This 4-pin CIR header is to receive remote control signal.



(12) Front Panel Header: JW-FP



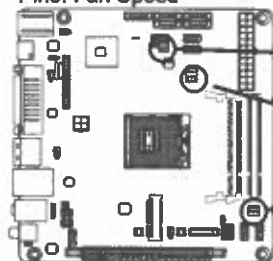
System Case Connections

(13) FAN Speed Headers (3-pin): CPUFAN1, SYSFAN1/SYSFAN2

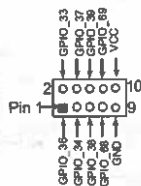
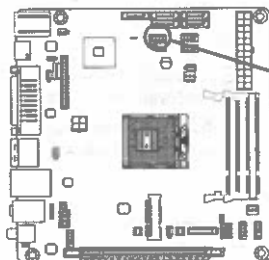
Pin1: GND

Pin2: +12V fan power

Pin3: Fan Speed



(14) GPIO Header (10-pin): GPIO_CON



GPIO_CON 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 from 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.

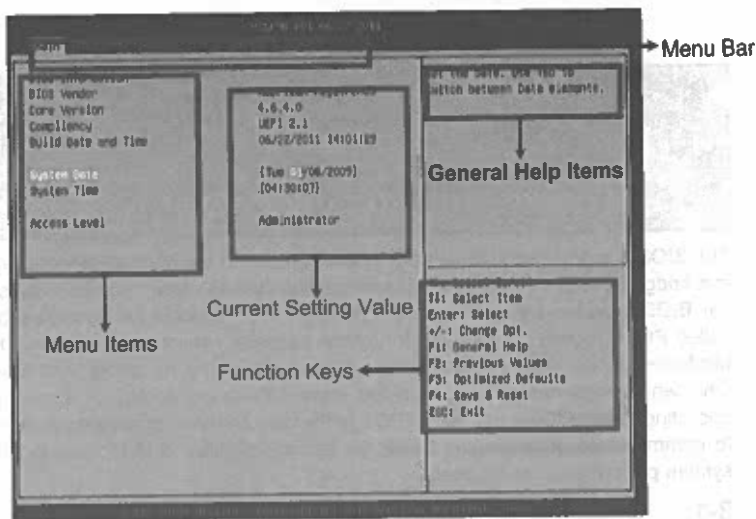
3-1 Entering Setup

Power on the computer and by pressing 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 to enter Setup

3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



BIOS Menu Screen

3-3 Function Key

In the above BIOS Setup main menu of, 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 ←→ (left, right) to select screen;
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<-> keys when you want to modify the BIOS parameters for the active option.

- [F1]: General help.
- [F2]: Previous value.
- [F3]: Optimized defaults.
- [F4]: Save or Reset
- Press <Esc> to quit the BIOS Setup.

3-4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner 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>.

3-5 Menu Bar

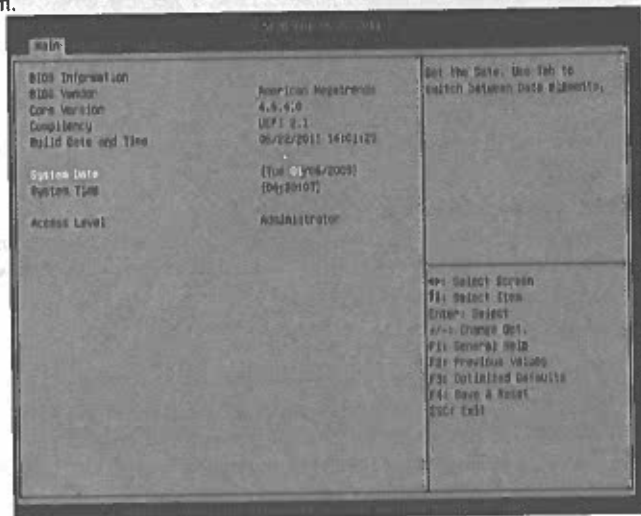
There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Boot	To change boot settings
Security	Password settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

3-6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.



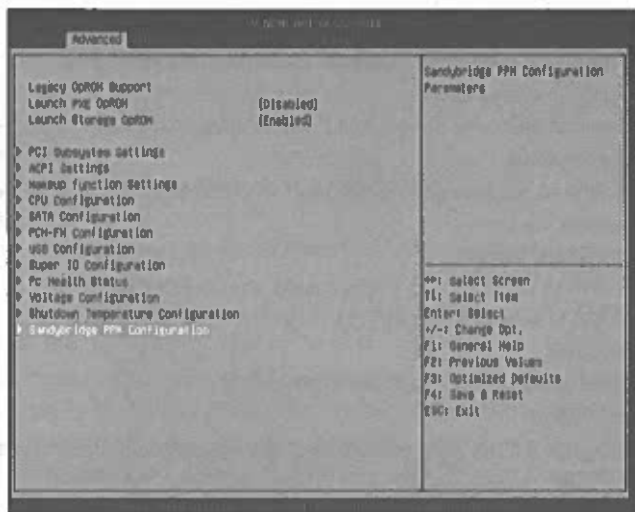
System Date

Set the date. Please use TAB to switch between data elements.

System Time

Set the time. Please use TAB to switch between time elements.

3-7 Advanced Menu



Launch PXE OpROM

Use this item to enable or disable boot option for legacy network devices.

Launch Storage OpROM

Use this item to enable or disable boot option for legacy mass storage devices with option ROM.

► PCI Subsystem Settings

Press [Enter] to enter and make settings for the following sub-items :

PCI ROM Priority

The optional settings: [Legacy ROM]; [EFI Compatible ROM].

Relaxed Ordering

Use this item to enable or disable PCI express device relaxed ordering.

Extended Tag

If set as [Enabled] it will allow device to use 8-bit tag filed as a requester.

No Snoop

Use this item to enable or disable PCI Express device No Snoop option.

Maximum Payload

Use this item to set maximum payload of PCI Express device or allow system BIOS to select the value.

Maximum Read Request

Use this item to set maximum read request size of PCI Express device or allow system BIOS to select the value.

ASPM Support

The optional settings: [Disabled]; [Auto];[Force L0].

Extended Synch

If set as [Enabled] it will allow generation of extended synchronization patterns.

► **ACPI Settings**

ACPI Sleep State

Use this item to select the highest ACPI sleep state the system will enter when the suspend button is pressed.

► **Wakeup Function settings**

Wake System with Fixed Time

Use this item to enable or disable system wake on alarm event. When set as Enabled, system will wake on the hour/min/sec specified.

Wake System with Dynamic Time

Use this item to enable or disable system wake on alarm event. When set as [Enabled], system will wake on the current plus increased minute(s).

CIR Wakeup

Use this item to enable or disable CIR wakeup.

PS2 KB/MS Wakeup

Use this item to enable or disable PS2 KB/MS wakeup function.

► CPU Configuration

Hyper-Threading

The optional settings are: [Disabled]; [Enhanced].

Active Processor Cores

Use this item to select number of cores to enable in each processor package.

Limit CPUIO Maximum

This item should be set as [Disabled] for Windows XP.

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 Update3.)

The optional settings are: [Disabled]; [Enhanced].

Hardware Prefetcher

Use this item to turn on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

Use this item to turn on/off prefetching of adjacent cache lines.

Intel Virtualization Technology

The optional settings: [Enabled]; [Disabled].

When set as [Enabled], a VHM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Local x 2APIC

Use this item to enable or disable Local x 2APIC, some OSES do not support this.

► **SATA Configuration**
SATA Controller(s)

Use this item to enable or disable SATA Device.

SATA Mode Selection

Use this item to determine how SATA controller(s) operate.

The optional settings are: [IDE Mode]; [AHCI Mode]; [RAID Mode].

► **PCH-FM Configuration**

Use this item to enable or disable Me FM Image Re-Flash function.

► **USB Configuration**

Legacy USB Support

The optional settings are: [Auto]; [Disabled]; [Enabled].

USB3.0 Support

The optional settings are: [Disabled]; [Enabled].

XHCI Hand-off

The optional settings are: [Disabled]; [Enabled].

EHCI Hand-off

The optional settings are: [Disabled]; [Enabled].

USB Transfer time-out

Use this item to set the time-out value for control, bulk, and interrupt transfers.

Device reset time-out

Use this item to set USB mass storage device start unit command time-out.

Device power-up delay

Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor.

► **Super I/O Configuration**

PS2 KB/MS Connect

Use this item to select the primary connect.

The optional settings are : [Keyboard First]; [Mouse First].

Serial Port

Use this item to enable or Disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port Mode Select

Use this item to set serial port as RS232 or RS485.

CIR Controller

Use this item to enable or disable CIR controller.

Change Settings

Use this item to select an optimal setting for super IO device.

ERP Support

Use this item to enable or disable Energy-Related Products function.

Disable ERP for active all Wakeup function. (Include PS2, RTC, AC Power Loss, etc...)

Watchdog Timer:

Use this item to enable or disable Watchdog Timer.

▶ PC Health Monitor

Press [enter] to view hardware health status.

▶ Voltage Configuration

CPU Vcore 7-Shift

Use this item to adjust CPU voltage by 7 step value.

CPU AGX Voltage

Use this item to adjust AGX voltage by 7 step value.

CPU PLL Voltage Select

Use this item to select a value for CPU PLL Voltage.

CPU IO Voltage Select

Use this item to select a value for CPU IO Voltage.

PCH Core Voltage select

Use this item to select a value for PCH core voltage.

CPU SA Voltage Select

Use this item to select a value for CPU SA Voltage.

DRAM Voltage select

Use this item to select a value for DDR3 DRAM voltage.

▶ **Shutdown Temperature Configuration**

Use this item to select system shutdown temperature.

▶ **Sandybridge PPM Configuration**

EIST

Use this item to enable or disable Intel Speedstep.

Turbo Mode

The optional settings: [Enabled]; [Disabled].

CPU C3 Report

Use this item to enable or disable CPU C3 (ACPI C2) report to OS.

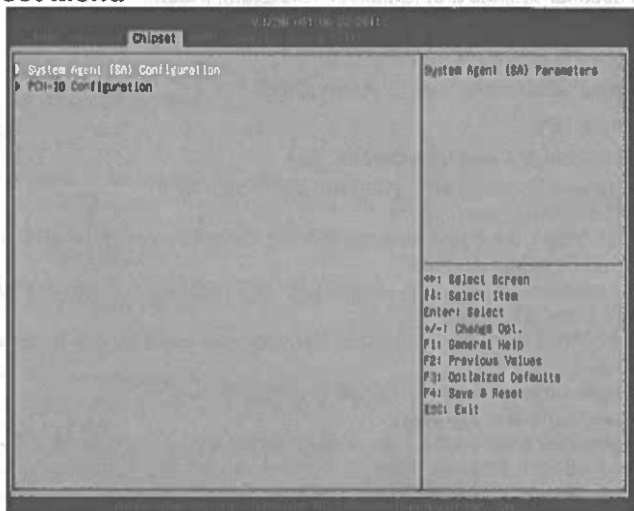
CPU C6 Report

Use this item to enable or disable CPU C6 (ACPI C3) report to OS.

CPU C7 Report

Use this item to enable or disable CPU C7 (ACPI C3) report to OS.

3-8 Chipset Menu



► **System Agent (SA) Configuration.**

VT-d

The optional settings: [Enabled]; [Disabled].

Enable NB CRIO

The optional settings: [Enabled]; [Disabled].

► **Intel IGFx Configuration**

Primary Display

Use this item to select which of IGFx/PEG/PCI Graphics device should be Primary Display or select SG for Switchable GFX.

Internal Graphics

Use this item to keep IGD enabled based on the setup option.

The optional settings are: [Enabled]; [Disabled]; [Auto].

GTT Size

Use this item to select the GTT Size

The optional selecting are: : [1MB]; [2MB].

Aperture Size

Use this item to select the Aperture Size

The optional selecting are: [128MB]; [256MB];[512MB].

DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

The optional selecting are: [32MB]; [64MB] [128MB]; [256MB];[512MB]

DVMT Total GFX Mem

Select DVMT 5.0 Total Graphics Memory size used by the Internal Graphics Device.

The optional selecting are: [128MB]; [256MB];[MAX]

Primary IGFX Boot Display

Use this item to select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

The optional selecting are: [VBIOS Default]; [CRI] [CRI+LVDS]; [HDMI]; [LVDS]

LVDS Control

Use this item to enable or disable LVDS.

Panel Color Depth

Use this item to select the LFP Panel Color Depth.

The optional selecting are: [18 Bit]; [24 Bit].

► NB PCIe Configuration

PEG0-Gen X

Use this item to Configure PEG0 B0:D1:F0 Gen1-Gen2

The optional selecting are: [Gen 1]; [Gen2]; [Auto].

Always Enable PEG

Use this item to enable the PEG slot.

The optional settings are: [Enabled]; [Disabled].

PEG ASPM

Use this item to control ASPM support for the PEG Device. This has no effect if PEG is not the currently active device.

The optional selecting are: [Disabled]; [Auto] [ASPM LOS]; [ASPM L1];[ASPM LOSL1].

De-emphasis Control

Use this item to configure the De-emphasis Control.

The optional selecting are: [-3.5db]; [-6db].

► **Memory Configuration**

DIMM profile

Use this item to select DIMM timing profile that should be used.

The optional settings are: [Default DIMM profile]; [XMP profile 1]; [XMP profile 2]

Memory Frequency

Use this item to select the Memory Frequency.

The optional selecting are: [AUTO]; [1066]; [1333].

NMode Support

Use this item to select the NMode Support Option.

The optional selecting are: [AUTO]; [1N Mode]; [2N Mode].

► **PCH-IO Configuration**

PCH LAN Controller

Use this item to enable or disable onboard NIC.

The optional settings are: [Enabled]; [Disabled].

Wake on LAN Enable

Use this item to enable or disable Integrated LAN to wake the system.

Azalia

Use this item to control 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.

Azalia Internal HDMI Codec

Use this item to enable or disable internal HDMI codec for Azalia.

The optional settings are: [Enabled]; [Disabled].

Enable SB CRIO

Use this item to enable SB Compatible IO.

The optional settings are: [Enabled]; [Disabled].

High Precision Timer

Use this item to enable or disable the High Precision Event Timer.

The optional settings are: [Enabled]; [Disabled].

SLP_S4 Assertion width

Use this item to select a minimum assertion width of the SLP_S4# signal.

The optional settings are: [1-2 seconds]; [2-3 seconds]; [3-4 seconds]; [4-5 seconds].

Restore AC Power Loss

Use this item to select AC Power state when power is re-applied after power failure.

The optional settings are: [Power-off]; [Power-on]; [Last State].

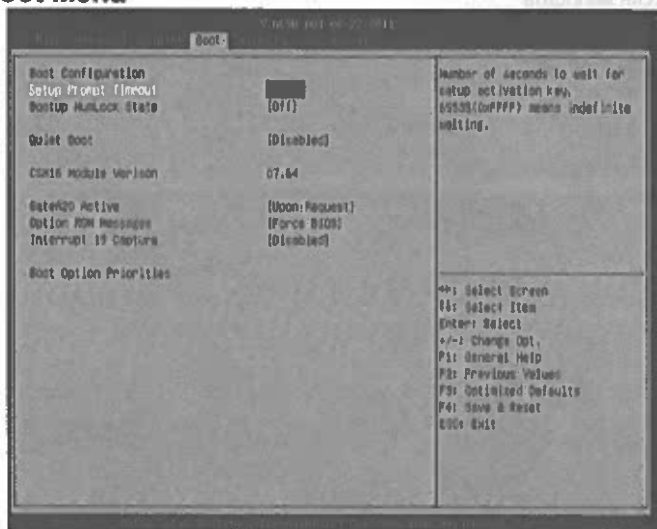
► **USB Configuration**

USB Ports Per-port Disable Control

Use this item to control each of the USB ports disabling.

The optional settings are: [Enabled]; [Disabled].

3-9 Boot Menu



Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key.

Bootup NumLock State

Use this item to select keyboard numlock state. The optional settings are: [On]; [Off].

Quiet Boot

Use this item to enable or disable Quiet Boot option.

The optional settings are: [Enabled]; [Disabled].

Gate A20 Active

The optional settings are: [Upon Request]; [Always].

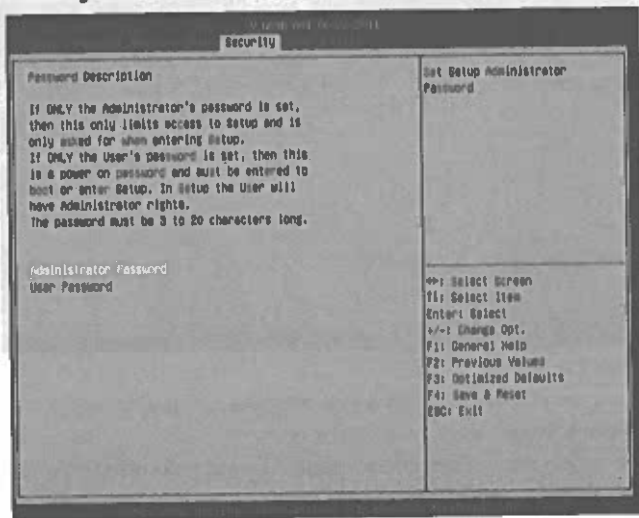
Option ROM Message

Use this item to set display mode for option ROM. The optional settings are: [Force BIOS]; [Keep Current].

Interrupt 19 Capture

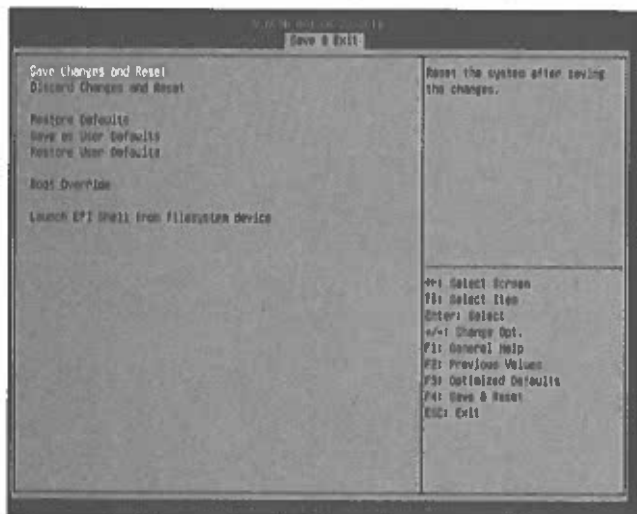
The optional settings are: [Enabled]; [Disabled].

3-10 Security Menu



Security menu allow users to change administrator password and user password settings.

3-11 Save & Exit Menu



Save & Exit menu allows user to load optimal defaults, save or discard your changes to BIOS items.

