TECHNICAL MANUAL

Of

Intel Cedar Trail-D & NM10 Chipset

Based

Mini-ITX M/B for ATOM Processor

NO. G03-NF9D-F

Revision: 2.0

Release date: March 20, 2012

Trademark:

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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.
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</tbody>
</table>
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        January 12, 2012

Item Checklist

☑ Motherboard
☑ User’s Manual
☑ DVD for motherboard utilities
☑ Cable(s)
☑ I/O Back panel shield
Chapter 1
Introduction of the Motherboard

1-1 Feature of Motherboard

- Intel Cedar Trail-D and NM10 chipset, with low power consumption never denies high performance
- Support two DDRIII 800/1066MHz SO-DIMM up to 4GB
- Support 2 * Serial ATAII (3Gb/s) Devices and 2 * Serial ATAlIII (6Gb/s) Devices
- Onboard dual Realtek RTL 8111EVL Gigabit Ethernet LAN chip
- Integrated ALC662-GR 6-channel HD audio CODEC
- Support USB 2.0 data transport demands
- Support PCI slot and mini-PCIE slot
- Support daughter board expansion
- Support Watchdog function
- Support Smart Fan function
- Compliance with ErP standard
## 1-2 Specification

<table>
<thead>
<tr>
<th>Spec</th>
<th>Description</th>
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<tr>
<td>Design</td>
<td>• Mini-ITX form factor; PCB size: 17.0x17.0cm</td>
</tr>
<tr>
<td>Chipset</td>
<td>• Intel®NM10 Express chipset</td>
</tr>
<tr>
<td>Embedded CPU</td>
<td>• Intel Cedar Trail-D Processor</td>
</tr>
</tbody>
</table>
| Memory Slot | • DDRIII SO-DIMM slot x 2  
• Support two DDRIII 800/1066 MHz SO-DIMM with memory capacity expandable to 4GB                                                      |
| Expansion Slot | • 32-bit PCI slot x 1  
• Mini-PCIE slot x1                                                                 |
| Dual LAN Chip | • Integrated with two Realtek RTL8111EVL PCI-E Gigabit LAN chips  
• Support Fast Ethernet LAN function of providing 10/100/1000Mbps Ethernet data transfer rate |
| Audio Chip  | • Realtek ALC662-GR 6-channel Audio Codec integrated  
• Audio driver and utility included                                                                 |
| BIOS       | • AMI 16MB DIP Flash ROM                                                                                                                    |
| Multi I/O  | • PS/2 keyboard/ mouse combo connector x1  
• VGA port connector x1  
• Serial port connector x 1  
• USB 2.0 port connector x4  
• RJ-45 LAN connector x2  
• HDMI port connector x1  
• Audio connector x3 (Line-in, Line-out, MIC)  
• SATAII port connector x2  
• SATAIII port connector x2  
• Front panel audio header x1  
• CDIN header x 1  
• HDMI_SPDIF header x1  
• Serial port header x1  
• RS232/422/RS485 header x1  
• 4-pin USB 2.0 header x1 |
- 9-pin USB 2.0 header x1
- GPIO header x1
- LVDS inverter x1
- 24-bit single channel LVDS header x1
- PWRLED header x1
- Speaker header x1
- Front panel header x1
- Parallel header x1
- Jetway daughter board header x 2

1-3 Layout Diagram
### Jumper

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JBAT</td>
<td>CMOS RAM Clear Function Setting</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>JP1</td>
<td>K/B, USB Power On Function Setting</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>JP2</td>
<td>LVDS PVCC 5V/3.3V Select</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>JP3</td>
<td>Inverter12V/5V Select</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>JP5</td>
<td>USB 2/3 Header Power On Function Setting</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>JP6</td>
<td>MINIPCIE Power SB 3.3V/3.3V Select</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>JP7</td>
<td>COM2 RS232 Power Select</td>
<td>6-pin Block</td>
</tr>
<tr>
<td>JP8</td>
<td>COM2 RS232/422/485 Function Select</td>
<td>6-pin Block</td>
</tr>
</tbody>
</table>

### Connectors

<table>
<thead>
<tr>
<th>Connector</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATXPWR1</td>
<td>ATX Power Connector</td>
<td>24-pin Connector</td>
</tr>
<tr>
<td>KB &amp; MS combined connector from UK1</td>
<td>PS2 Keyboard &amp; Mouse Connector</td>
<td>6-pin Female</td>
</tr>
<tr>
<td>VGA</td>
<td>Video Graphic Attach Connector</td>
<td>15-pin Female</td>
</tr>
<tr>
<td>COM1</td>
<td>Serial Port Connector</td>
<td>9-pin Connector</td>
</tr>
<tr>
<td>HDMI</td>
<td>High-Definition Multimedia Interface</td>
<td>10-pin Connector</td>
</tr>
<tr>
<td>USB from UK1,UL1</td>
<td>USB Port Connector</td>
<td>4-pin Connector</td>
</tr>
<tr>
<td>LAN from LAN1, UL1</td>
<td>RJ-45 LAN Connector</td>
<td>8-pin Connector</td>
</tr>
<tr>
<td>AUDIO</td>
<td>Line-in/Line-out/MIC</td>
<td>3-phone Jack</td>
</tr>
<tr>
<td>SATA1,2</td>
<td>Serial AATII Connector</td>
<td>7-pin Connector</td>
</tr>
<tr>
<td>SATA3/SATA4</td>
<td>Serial AATIII Connector</td>
<td>7-Pin Connector</td>
</tr>
</tbody>
</table>

### Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP-AUDIO1</td>
<td>Front Panel Audio Header</td>
<td>9-pin block</td>
</tr>
<tr>
<td>CDIN1</td>
<td>CD Audio-In Header</td>
<td>4-pin block</td>
</tr>
<tr>
<td>SPDIF</td>
<td>SPDIF Out header</td>
<td>2-pin block</td>
</tr>
<tr>
<td>USB2</td>
<td>USB 2.0 Header</td>
<td>4-pin Block</td>
</tr>
<tr>
<td>USB3</td>
<td>USB 2.0 Header</td>
<td>9-pin Block</td>
</tr>
<tr>
<td>GPIO_CON</td>
<td>GPIO Header</td>
<td>10-pin Block</td>
</tr>
<tr>
<td>Port</td>
<td>Description</td>
<td>Block</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>COM2</td>
<td>Serial Port Header</td>
<td>9-pin Block</td>
</tr>
<tr>
<td>TX_RX COM</td>
<td>RS 232/422/485 port headers</td>
<td>4-pin block</td>
</tr>
<tr>
<td>PWR LED</td>
<td>Power LED</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>SPEAK</td>
<td>Speaker Header</td>
<td>4-pin Block</td>
</tr>
<tr>
<td>JW_FP</td>
<td>Front Panel Header (PWR LED/HD LED/Power Button/Reset)</td>
<td>9-pin Block</td>
</tr>
<tr>
<td>LVDS</td>
<td>LVDS Header</td>
<td>32-pin Block</td>
</tr>
<tr>
<td>INVERTER</td>
<td>LVDS Inverter Connector</td>
<td>7-pin Block</td>
</tr>
<tr>
<td>CPUFAN,SYSFAN1/2</td>
<td>FAN Speed Headers</td>
<td>3-pin Block</td>
</tr>
<tr>
<td>PARALLEL</td>
<td>Parallel Port Header</td>
<td>25-pin Block</td>
</tr>
<tr>
<td>CN1; CN2</td>
<td>Jetway Daughter Card Connector</td>
<td>50-pin *2 Block</td>
</tr>
</tbody>
</table>

# Chapter 2

## Hardware Installation

### 2-1 Jumper Setting

(1) **JBAT (3-pin): Clear CMOS**

![Diagram showing JBAT jumper settings](image)

- 1-2 closed: Normal;
- 2-3 closed: Clear CMOS
(2) JP1 (3-pin): K/B, USB Power on Function Setting

1-2 Closed: K/B, USB Power-On Disabled (default)

2-3 closed: K/B, USB Power-On Enabled

(3) JP2 (3-pin): LVDS PVCC 5V/3.3V Select

1-2 Closed: LVDS VCC = 5V;
2-3 Closed: LVDS VCC = 3.3V
(4) JP3 (3-pin): Inverter VCC 5V/12V select

1-2 Closed: Inverter 12V Select; 2-3 Closed: Inverter 5V Select

(5) JP5 (3-pin): USB2/3 Header Power on Function Setting

1-2 Closed: USB 2/3 Header Power-On Disabled (default)

2-3 Closed: USB 2/3 Header Power-On Enabled
(6) JP6(3-pin): Mini PCI-E Power VCC3.3V/ 3.3 V SB Select

1-2 Closed : MINI PCI-E VCC= 3.3V Select;

2-3 Closed : MINI PCI-E VCC= 3.3VSB Select

(7) JP7 (6-pin): COM2 Pin9 Function Select

1-2 Closed: RS232; 3-4 Closed : +12V; 5-6 Closed : +5V
(8) JP8 (6-pin): COM2 Port RS232/485/422 Function Select

1-2 Closed: RS232; 3-4 Closed: RS485; 5-6 Closed: RS422

(9) COPEN (2-pin): Case Open Message Display Function Select

Pin 1-2 shorted: Case open display function enabled. In this case if you case is removed, next time when you restart your computer a message will be displayed onscreen to inform you of this.
2-2 Connectors and Headers

2-2-1 Connectors

(1) I/O Panel Connector:

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>TXP</td>
</tr>
<tr>
<td>3</td>
<td>TXN</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
</tr>
<tr>
<td>5</td>
<td>RXN</td>
</tr>
<tr>
<td>6</td>
<td>RXP</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
</tbody>
</table>

(2) Serial-ATA Port connector: SATA1, SATA2, SATA3, SATA4

SATA1 and SATA2 connectors are SATAII connectors that support SATA 3Gb/s specification. SATA3 and SATA4 connectors are SATAIII connectors that support SATA 6Gb/s specification.
(3) Power Connector (24-pin block): ATXPWR

2-2-2 Headers

(1) Front Panel Audio Header (9-pin): FP_AUDIO1
This header connects to front panel Line-out, MIC-In connector with cable.
(2) CD AUDIO-In Header (4-pin): CDIN

(3) HDMI-SPDIF Out header (2-pin): SPDIF
(4) USB 2.0 Port Header (4-pin): USB2

(5) USB 2.0 Port Header (9-pin): USB3
(6) COM2 (9-pin): RS232 Header

Serial COM Port 9-pin Block

Pin 1
Pin2
Pin5
Pin6

(7) TX-RXCOM (4-pin): RS422/485 Header

TX-RXCOM Header

Pin 1
Pin 2

(8) Speaker Header (4-pin): SPEAK

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

(9) Power LED (3-pin): 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 header.
(10) Front Panel Header (9-pin): JW-FP

(11) FAN Speed Headers (3-pin): CPUFAN, SYSFAN1, SYSFAN2

Pin1: GND
Pin2: +12V fan power
Pin3: Fan Speed
(12) LVDS Inverter (7-Pin): INVERTER

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCC</td>
</tr>
<tr>
<td>2</td>
<td>VCC</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
</tr>
<tr>
<td>5</td>
<td>Backlight</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
</tr>
<tr>
<td>7</td>
<td>Brightness</td>
</tr>
<tr>
<td>Pin NO.</td>
<td>Pin Definition</td>
</tr>
<tr>
<td>---------</td>
<td>------------------</td>
</tr>
<tr>
<td>Pin 1</td>
<td>NC</td>
</tr>
<tr>
<td>Pin 3</td>
<td>NC</td>
</tr>
<tr>
<td>Pin 5</td>
<td>NC</td>
</tr>
<tr>
<td>Pin 7</td>
<td>NC</td>
</tr>
<tr>
<td>Pin 9</td>
<td>NC</td>
</tr>
<tr>
<td>Pin 11</td>
<td>LVDS_DDC_DATA</td>
</tr>
<tr>
<td>Pin 13</td>
<td>GND</td>
</tr>
<tr>
<td>Pin 15</td>
<td>GND</td>
</tr>
<tr>
<td>Pin 17</td>
<td>LVDSA_DATAP3</td>
</tr>
<tr>
<td>Pin 19</td>
<td>LVDS_CLKAP</td>
</tr>
<tr>
<td>Pin 21</td>
<td>LVDSA_DATAP2</td>
</tr>
<tr>
<td>Pin 23</td>
<td>LVDSA_DATAP1</td>
</tr>
<tr>
<td>Pin 25</td>
<td>LVDSA_DATAP0</td>
</tr>
<tr>
<td>Pin 27</td>
<td>PVDD</td>
</tr>
<tr>
<td>Pin 29</td>
<td>PVDD</td>
</tr>
<tr>
<td>Pin 31</td>
<td>GND</td>
</tr>
</tbody>
</table>
(14) GPIO Header (10-pin): GPIO_CON
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 <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 BIOS Menu Screen
The following diagram show a general BIOS menu screen:
3-3  Function Keys

In the above BIOS Setup main menu, 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 the item you want to confirm or to modify in the main menu.
- Press <Enter> to select.
• Press <+-/<--> key when you want to modify the BIOS parameters for the active option.
• [F1]: Press to general help information.
• [F2]: Press to load previous value.
• [F3]: Press to load optimized defaults.
• [F4]: Save and 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
Advanced
Chipset
Boot
Security
Save & Exit

To change system basic configuration
To change system advanced configuration
To change chipset configuration
To change boot settings
Password settings
Save setting, loading and exit options.

User can press the ←/→ (left, right) 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 <+> / <-> key or 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

Slide down to view more setting items:

Launch External PXE OpROM/Launch LAN1 PXE OpROM/Launch LAN2 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.

**Onboard LAN 1 Controller**
Use the above items to enable or disable PCI Express root port 1.

**Onboard LAN 2 Controller**
Use the above items to enable or disable Mini-PCIE control.

**SATA 3.0 Controller**
Use the above items to enable or disable SATA 3.0 controller.

**Configure SATA 3.0 as**
Use this item to select an operative mode for SATA 3.0 controller.

**ERP Function**
Use this item to enable or disable ERP function for this board. This item should be set as [Disabled] if you wish to have Active All Wakeup Function.

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

**PCI ROM Priority**
In the case of multiple option ROMs (Legacy and EFI compatible), specifies what PCI option ROM to launch. The optional settings: [Legacy ROM]; [EFI Compatible ROM].

**PCI Common Settings:**

**PCI Latency Timer**
Use this item to set value to be programmed into PCI latency timer register.

**VGA Palette Snoop**
Use this item to enable or disable VGA palette register snooping.

**PERR# Generation**
Use this item to enable or disable PCI device to generate PERR#.

**SERR# Generation**
Use this item to enable or disable PCI device to generate SERR#. 
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. The optional settings are: [S1(CPU Stop Clock)]; [S3(Suspend to RAM)].

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.

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

PCI PME Wakeup
Use this item to enable or disable S3/S4/S5 PCI PME wakeup. This function is only supported when ERP function is set as [Disabled].

CPU Configuration

Hyper-Threading
The optional settings are: [Disabled]; [Enabled]. Set as [Enabled] for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and [Disabled] for other OS (OS not optimized for Hyper-Threading Technology).

Execute Disable Bit
The optional settings are: [Disabled]; [Enabled].

Limit CPUID Maximum
The optional settings are: [Disabled]; [Enabled].

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

SATA Configuration

SATA Controller(s)
The optional settings are: [Disabled]; [Enabled].
Configure SATA as
The optional settings are: [IDE Mode]; [AHCI].

USB Configuration

Legacy USB Support
The optional settings are: [Auto]; [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. The optional settings: [Auto]; [Manual]. Select [Manual] you can set value for the following sub-item:

Device Power-up delay in seconds, the delay range in from 1 to 40 seconds in one second increments.

Super I/O Configuration

COM1 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port
Use this item to enable or disable serial port (COM1).

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

COM2 Port Configuration

Press [Enter] to make settings for the following items:
Serial Port
Use this item to enable or disable serial port (COM2).

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

Serial Port Mode Select
Use this item to set COM2 port mode. The optional settings are: [RS232]; [RS422/485].

Parallel Port Configuration
Press [enter] to make settings for the following items:

Parallel Port
Use this item to enable or disable parallel port (LPT/LPTE).

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

Device Mode
Use this item to change the printer port mode.

PS2 KB/MS Connect
The optional settings are: [Keyboard First]; [Mouse First].

Case Open Select
This item is for system to detect if the case has already been opened or not. The optional settings are: [Disabled]; [Enabled].

PC Health Status
Press [Enter] to view hardware health status.

Clock Generator Configuration

Clockgen Spread Spectrum
Use this item to enable or disable spread spectrum function.

IO Output Voltage
Use this item to set IO output voltage.
Voltage Configuration
DIMM Voltage
The optional settings are: [Default]; [+50mV]; [+100mV]; [+150mV].

WatchDog Configuration
WatchDog Timer Control
Use this item to enable or disable WatchDog Timer Control. When set as [Enabled], the following sub-items shall appear:
WatchDog Timer Value
User can set a value in the range of 4 to 255.
WatchDog Timer Unit
The optional settings are: [Second]; [Minute].

Shutdown Temperature Configuration
Use this item to select system shutdown temperature.

SmartFan Configuration
CPUFAN1 / SYSFAN1/ SYSFAN2 Smart Mode
When set as [Enabled], the following sub-items shall appear:
CPUFAN1 / SYSFAN1/ SYSFAN2 Full Speed Temp
Use this item to set a degree for CPUFAN/SYSFAN1/SYSFAN2. FAN will run at full speed when above this temperature.
CPUFAN1 / SYSFAN1/ SYSFAN2 Idle Temp
Use this item to set a degree for CPUFAN/SYSFAN1/SYSFAN2. FAN will idle speed when below this temperature.
CPUFAN1 / SYSFAN1/ SYSFAN2 Stop Temp
Use this item to set a degree for CPUFAN/SYSFAN1/SYSFAN2. CPU FAN will stop when below this temperature.
Host Bridge
Press [Enter] to make settings for Intel IGD Configuration:

**Internal Graphics:**
Use this item to keep IGD enabled based on the setup options. The optional settings are: [Disabled]; [Auto].

**IGFX-Boot Type**
Use this item to set the video device which will be activated during POST. This has no effect if external graphics presents. The optional settings are: [VBIOS Default]; [CRT]; [LVDS]; [HDMI+LVDS]; [CRT+LVDS].
In the case IGFX-Boot Type is set as [LVDS], [HDMI+LVDS], [CRT+LVDS], the following setting item shall appear:

**LCD Panel Type:**
Use this item to select LCD panel resolution.

**Active LFP**
The optional settings are: [Disable LVDS]; [Enable LVDS].

**South Bridge**

**Azalia Controller**
The optional settings are: [Enabled]; [Disabled].

**UHCI #1 (Ports 0 and 1)/ UHCI #2 (Ports 2 and 3)/UHCI #3 (Ports 4 and 5)/UHCI #4 (Ports 6 and 7)**
Use this item to control the USB UHCI (USB 1.1) functions. The optional settings are: [Enabled]; [Disabled].

**USB 2.0 (EHCI) Support**
Use this item to enable or disable USB 2.0 (EHCI) support. The optional settings are: [Enabled]; [Disabled].

**High Precision Event Timer Configuration:**

**High Precision 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.

**Restore AC Power Loss**
Use this item to select AC power state when power is re-applied after a power failure. The optional settings are: [Power Off]; [Power On]; [Last State].
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
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 Changes and Reset
This item allows user to reset the system after saving the changes.

Discard changes and Reset
This item allows user to reset the system without saving any changes.

Restore Defaults
Use this item to restore /Load default values for all the setup options.

Save as User Defaults
Use this item to save the changes done so far as user defaults.

Restore User Defaults
Use this item to restore defaults to all the setup options.