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# Table of Contents

# CHAPTER 1: INTRODUCTION

## 1.1 BEFORE YOU START

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

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

## 1.2 PACKAGE CHECKLIST

- Serial ATA Cable X 6
- Rear I/O Panel for ATX Case X 1
- User's Manual X 1
- Fully Setup Driver CD X 1
- SLI Bridge X 1
- CrossFireX Bridge X 1

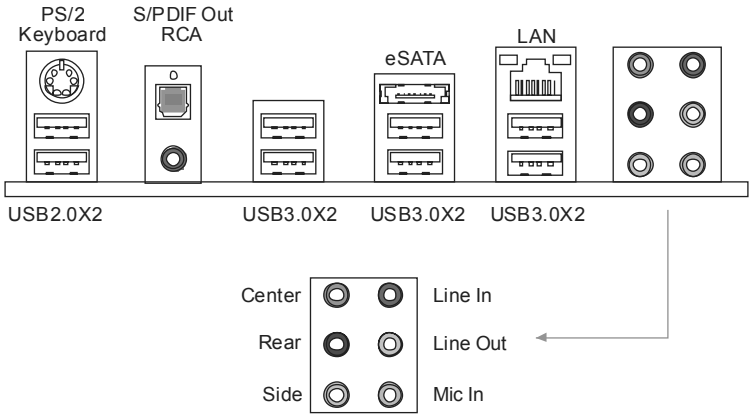
***Note:*** The package contents may be different due to area or your motherboard version.

## 1.3 MOTHERBOARD FEATURES

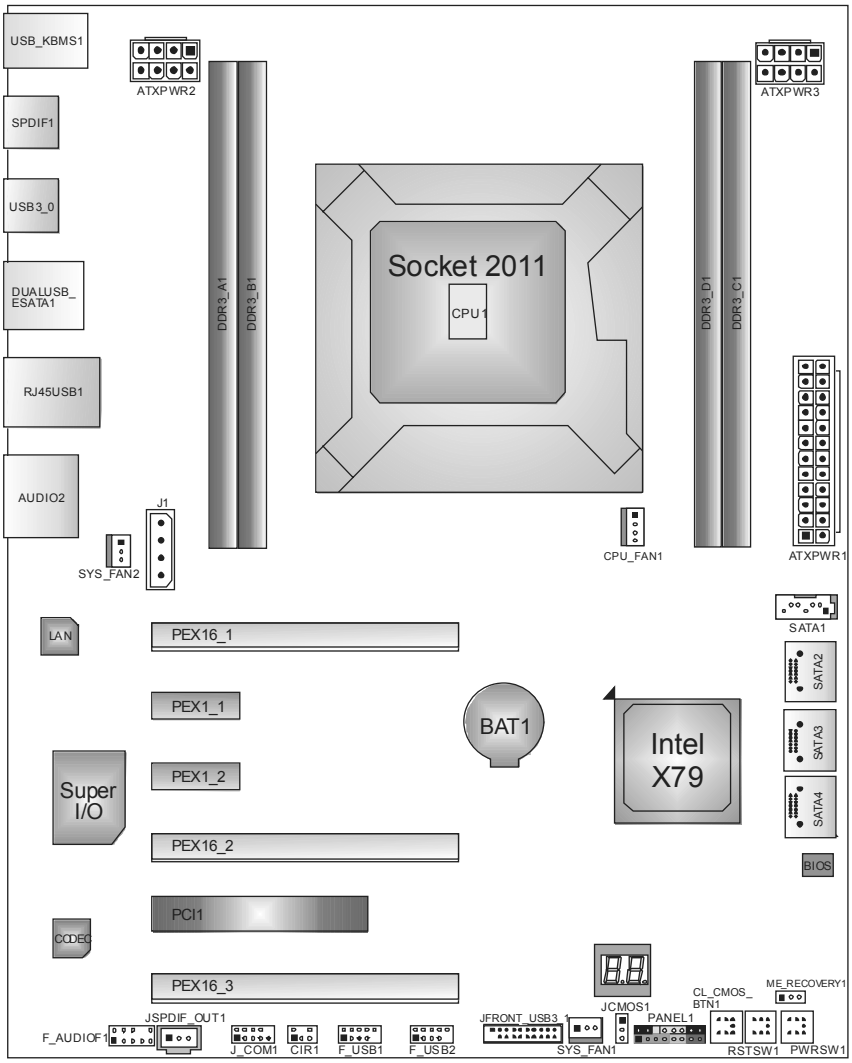
| SPEC | | |
|---|---|---|
| CPU | SOCKET 2011<br>Intel Sandybridge-E series / Core i7 Extreme / Core i7 processor | Supports Execute Disable Bit / Enhanced Intel SpeedStep® / Intel Architecture-64 / Extended Memory 64 Technology / Virtualization Technology / Hyper Threading |
| Chipset | Intel X79 | |
| Super I/O | IT8728<br>Provides the most commonly used legacy Super I/O functionality.<br>Low Pin Count Interface | Environment Control initiatives,<br>Hardware Monitor Controller<br>Fan Speed Controller<br>ITE's "Smart Guardian" function |
| Main Memory | DIMM Slots x 4<br>Each DIMM supports 1GB / 2GB / 4GB / 8GB DDR3<br>Max Memory Capacity 32GB | Quad Channel Mode DDR3 memory module<br>Supports DDR3 2400(OC)/2133(OC)/1866(OC)/1600/1333 /1066/800<br>Registered DIMM and ECC DIMM is not supported |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | * Data transfer rates up to 3 Gb/s.<br>Support RAID 0 / 1 / 5 / 10 and Intel SRT<br>* Data transfer rates up to 6 Gb/s.<br>Support RAID 0 / 1 / 5 / 10 and Intel SRT<br>* Data transfer rates up to 6 Gb/s.<br>Support AHCI |
| eSATA | eSATA x 1 (by Intel X79) | Data transfer rates up to 3 Gb/s.<br>Support RAID 0 / 1 / 5 / 10 and Intel SRT |
| LAN | Realtek RTL 8111E | 10 / 100 Mb/s / 1Gb/s auto negotiation<br>Half / Full duplex capability |
| Sound Codec | ALC898 | 7.1 channels audio out<br>High Definition Audio |
| Slots | PCI slot x1<br>PCI Express Gen3 x16 slot (x16) x2<br>PCI Express Gen3 x16 slot (x8) x1<br>PCI Express Gen2 x1 slot x2 | Supports PCI expansion cards<br>Supports PCI-E Gen3 x16 expansion cards, Nvidia SLI and AMD CrossFireX<br>Supports PCI-E Gen3 x16 expansion cards, Nvidia SLI and AMD CrossFireX<br>Supports PCI-E Gen2 x1 expansion cards |

| SPEC | | | |
|---|---|---|---|
| On Board Connector | SATA3 Connector | x4 | Each connector supports 1 SATA device |
| | SATA2 Connector | x3 | Each connector supports 1 SATA device |
| | Front Panel Connector | x1 | Supports front panel facilities |
| | Front Audio Connector | x1 | Supports front panel audio function |
| | S/PDIF out Connector | x1 | Supports digital audio out function |
| | CPU Fan Header | x1 | CPU Fan power supply (with Smart Fan function) |
| | System Fan Header | x2 | System Fan Power supply |
| | Clear CMOS Header | x1 | Restore CMOS data to factory default |
| | USB3.0 Connector | x1 | Each connector supports 2 front panel USB3.0 ports |
| | USB2.0 Connector | x2 | Each connector supports 2 front panel USB2.0 ports |
| | Power Connector (24pin) | x1 | Connects to Power supply |
| | Power Connector (8pin) | x2 | Connects to Power supply |
| | Serial Port Connector | x1 | Connects to RS-232 Port |
| | Consumer IR Connector | x1 | Supports infrared function |
| Back Panel I/O | PS/2 Keyboard | x1 | Connects to PS/2 Keyboard |
| | LAN Port | x1 | Connect to RJ-45 ethernet cable |
| | USB2.0 Port | x2 | Connect to USB devices |
| | USB3.0 Port | x6 | Connect to USB devices |
| | Audio Jack | x6 | Provide Audio-In/Out and microphone connection |
| | eSATA Port | x1 | Connect to SATA devices |
| | Optical +coaxial S/PDIF Out | x1 | Provides digital audio out function |
| Board Size | 244 (W) x 305 (L) mm | | ATX |
| OS Support | Windows XP / Vista / 7 | | Biostar Reserves the right to add or remove support for any OS with or without notice |

## 1.4 Rear Panel Connectors



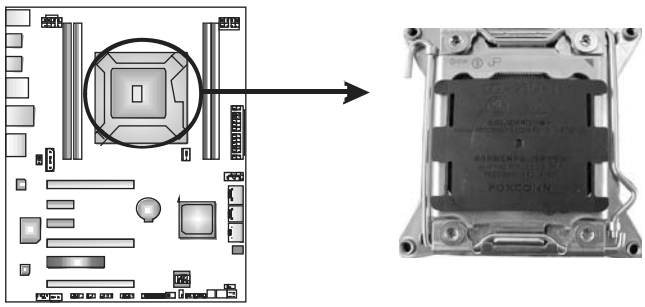
## 1.5 MOTHERBOARD LAYOUT



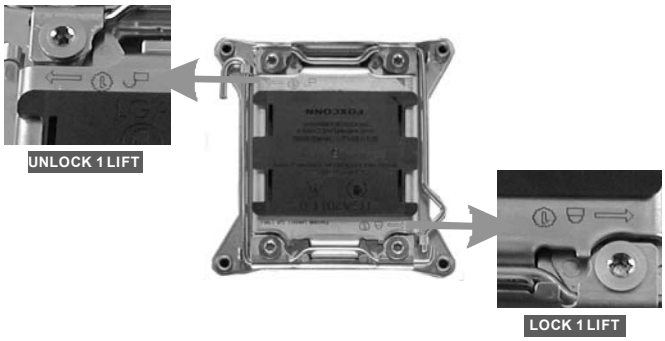

***Note:*** ■ represents the 1st pin.

# CHAPTER 2: HARDWARE INSTALLATION

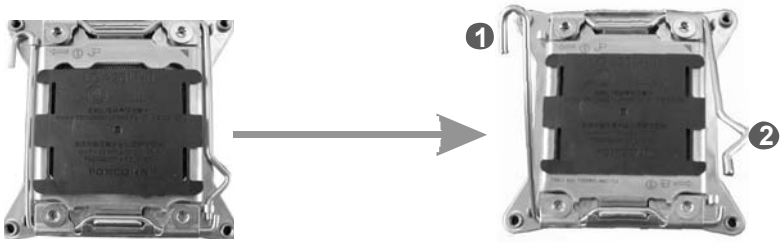
## 2.1 INSTALLING CENTRAL PROCESSING UNIT (CPU)



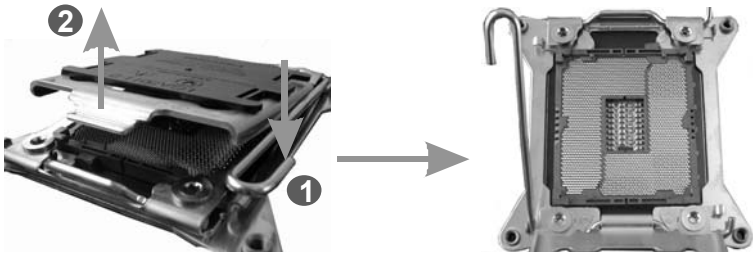
**Step 1:** Locate and identify the locking lever, UNLOCK 1 LIFT and LOCK 1 LIFT.




**Step 2:** First, pull the locking lever UNLOCK 1 LIFT out from the socket; next, pull the LOCK 1 LIFT out from the socket.



**Step 3:** Pushing down the hook of left locking lever to lift the load plate, and then remove the Protection Cap.

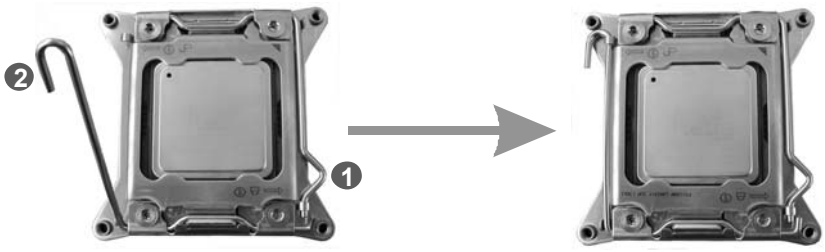



**Step 4:** Locate the triangular cut edge on the socket, and hold the CPU firmly, orientating the golden dot on the CPU forwards to this socket triangular cut edge. The CPU will fit only in the correct orientation.

*Special Notice:*

**After the CPU installation, please make good preservation of the Protection Cap for future use. When the CPU is removed, cover the Protection Cap on the empty socket to ensure pin legs won't be damaged.**

**Step 5:** Reversely, lower the locking lever LOCK 1 LIFT to locked position, next the UNLOCK 1 LIFT to locked position, and then complete the installation.

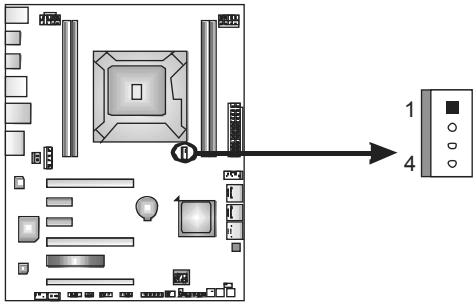


**Step 6** Put the CPU Fan and heatsink assembly on the CPU and buckle it on the retention frame. Connect the CPU FAN power cable into the CPU_FAN1 to complete the installation.

## 2.2 FAN HEADERS

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

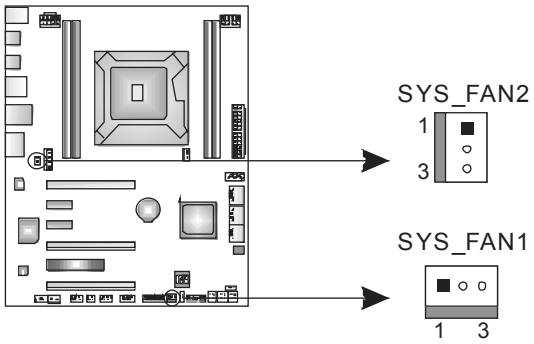
**CPU_FAN1: CPU Fan Header**




| Pin | Assignment |
|---|---|
| 1 | Ground |
| 2 | +12V |
| 3 | FAN RPM rate sense |
| 4 | Smart Fan Control |

**SYS_FAN1: NorthBridge Fan Header**

**SYS_FAN2: System Fan Header**



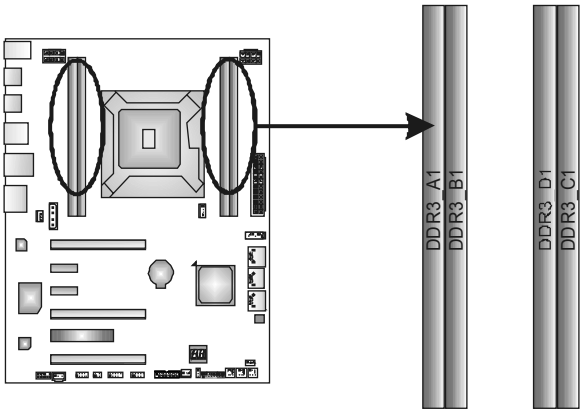

| Pin | Assignment |
|---|---|
| 1 | Ground |
| 2 | +12V |
| 3 | FAN RPM rate sense |

***Note:***

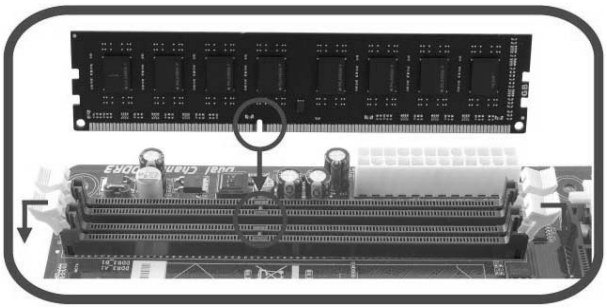
The SYSFAN1/SYSFAN2 support 3-pin head connectors, and the CPU_FAN1, 4-pin head connector. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to GND.

## 2.3 INSTALLING SYSTEM MEMORY

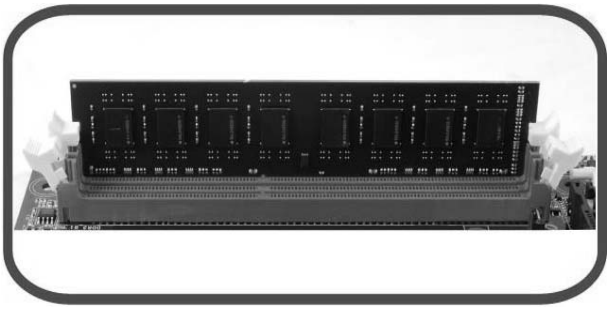
### *A. Memory Modules*




1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the Slot.



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



## *B. Memory Capacity*

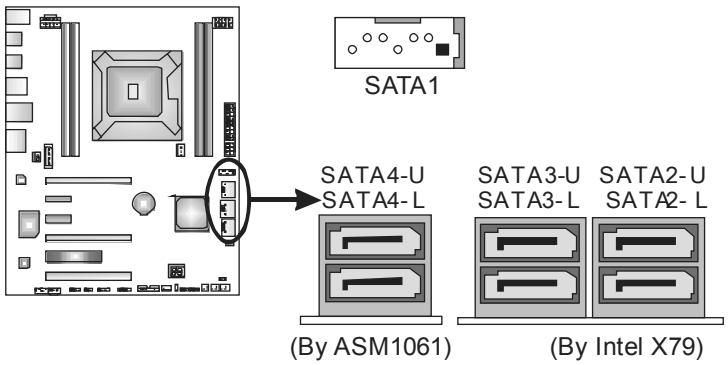
| DIMM Socket Location | DDR3 Module | Total Memory Size |
|---|---|---|
| DDR3_A1 | 512MB/1GB/2GB/4GB/8GB | Max is 32GB. |
| DDR3_B1 | 512MB/1GB/2GB/4GB/8GB | |
| DDR3_C1 | 512MB/1GB/2GB/4GB/8GB | |
| DDR3_D1 | 512MB/1GB/2GB/4GB/8GB | |

## 2.4 CONNECTORS AND SLOTS

### SATA1~SATA4: Serial ATA Connectors

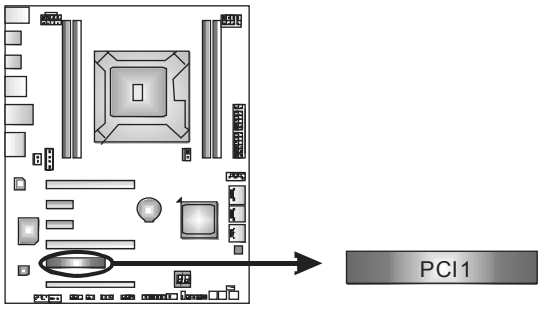
This motherboard provides several SATA controllers for connecting to SATA devices with respective spec and transfer rates as bellows:

| CONNECTOR | BY CHIP | SPEED | Support |
|---|---|---|---|
| SATA1/SATA2-U/SATA2-L | Intel X79 | 3 Gb/s. | RAID 0 / 1 / 5 / 10 and Intel SRT |
| SATA3-U/SATA3-L | Intel X79 | 6 Gb/s. | RAID 0 / 1 / 5 / 10 and Intel SRT |
| SATA4-U/SATA4-L | ASM1061 | 6 Gb/s. | AHCI |



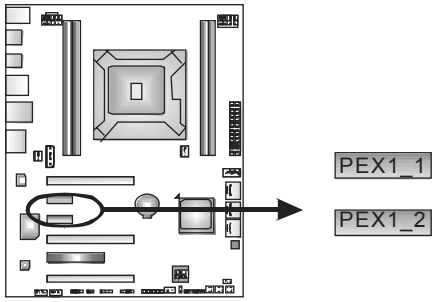
## PCI1: Peripheral Component Interconnect Slot

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




## PEX1_1: PCI-Express Gen2 x2 Slots

- PCI-Express 2.0 compliant.
- Data transfer bandwidth up to 500MB/s per direction; 1GB/s in total.



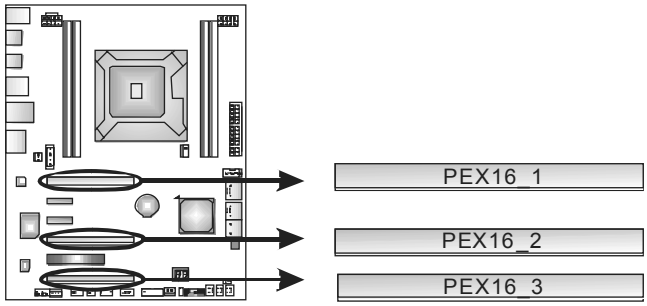
**PEX16_1 & PEX16_2: PCI-Express Gen3 x16 (x16) (Nvidia SLI and AMD CrossFireX) Slots**

**PEX16_3: PCI-Express Gen3 x16 (x8) (Nvidia SLI and AMD CrossFireX) Slot**

| Slot | Speed | PCIe Architecture | Bandwidth Per Direction | Bandwidth Total |
|---|---|---|---|---|
| PEX16_1 / PEX16_2 | X 16 | PCI-Express 3.0 | 16GB | 32GB |
| PEX16_3 | X 8 | PCI-Express 3.0 | 8GB | 16GB |

***Note:***

For more details about Nvidia SLI and AMD CrossFireX, please access the website, respectively: http://www.nvidia.com/page/support.html, and http://support.amd.com/us/Pages/AMDSupportHub.aspx .



# CHAPTER 3: HEADERS & JUMPERS SETUP

## 3.1 How to Setup Jumpers

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

Pin opened

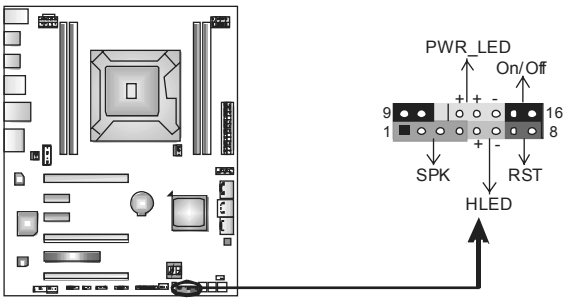
Pin closed


Pin1-2 closed

## 3.2 Detailed Settings

### JPANEL1: Front Panel Header

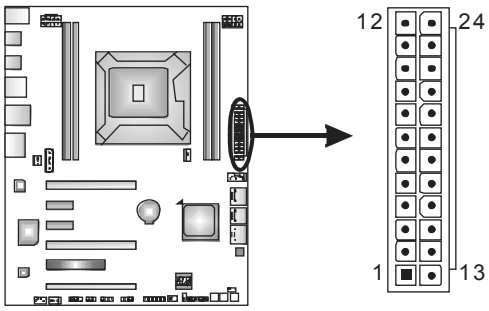
This 16-pin connector includes Power-on, Reset, HDD LED, Power LED, and speaker connection. It allows user to connect the PC case’s front panel switch functions.




| Pin | Assignment | Function | Pin | Assignment | Function |
|---|---|---|---|---|---|
| 1 | +5V | Speaker Connector | 9 | N/A | N/A |
| 2 | N/A | | 10 | N/A | |
| 3 | N/A | | 11 | N/A | N/A |
| 4 | Speaker | | 12 | Power LED (+) | Power LED |
| 5 | HDD LED (+) | Hard drive LED | 13 | Power LED (+) | |
| 6 | HDD LED (-) | | 14 | Power LED (-) | |
| 7 | Ground | Reset button | 15 | Power button | Power-on button |
| 8 | Reset control | | 16 | Ground | |

## ATXPWR1 (12V1): ATX Power Source Connector

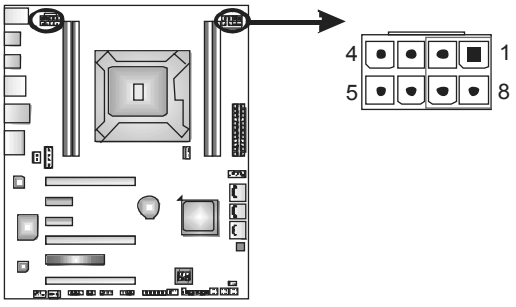
This connector allows user to connect 24-pin power connector on the ATX power supply. (**Note:** +12V Current Limit > 12A)




| Pin | Assignment | Pin | Assignment |
|---|---|---|---|
| 13 | +3.3V | 1 | +3.3V |
| 14 | -12V | 2 | +3.3V |
| 15 | Ground | 3 | Ground |
| 16 | PS_ON | 4 | +5V |
| 17 | Ground | 5 | Ground |
| 18 | Ground | 6 | +5V |
| 19 | Ground | 7 | Ground |
| 20 | NC | 8 | PW_OK |
| 21 | +5V | 9 | Standby Voltage+5V |
| 22 | +5V | 10 | +12V |
| 23 | +5V | 11 | +12V |
| 24 | Ground | 12 | +3.3V |

## ATXPWR2~3 (12V2): ATX Power Source Connectors

These connectors provide +12V to CPU power circuit. (**Note:** +12V Current Limit > 17A ~ 21A)




| Pin | Assignment |
|---|---|
| 1 | +12V |
| 2 | +12V |
| 3 | +12V |
| 4 | +12V |
| 5 | Ground |
| 6 | Ground |
| 7 | Ground |
| 8 | Ground |

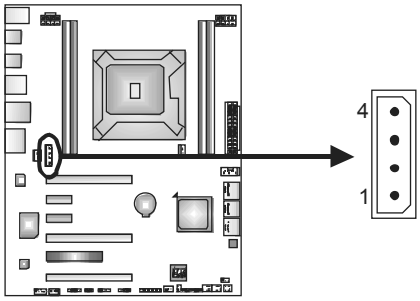
***Note:***

Plug in either ATXPWR2 or ATXPWR3 connector to power on the system. It is recommended that both ATXPWR2 and ATXPWR3 connectors should be plugged in when overclocking.

**If the CPU power plug is 4-pin, please plug it into Pin 1-2-5-6 of ATXPWR2/3.**

## J1: Auxiliary Power for Graphics

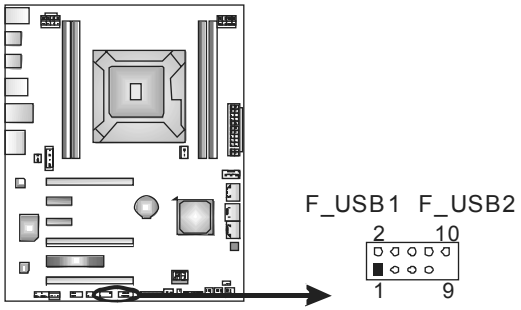
This connector is an auxiliary power connection for graphics cards. Exclusive power for the graphics card provides better graphics performance.




| Pin | Assignment |
|---|---|
| 1 | +12V |
| 2 | Ground |
| 3 | Ground |
| 4 | VCC |

## F_USB1/F_USB2: Headers for USB 2.0 Ports at Front Panel

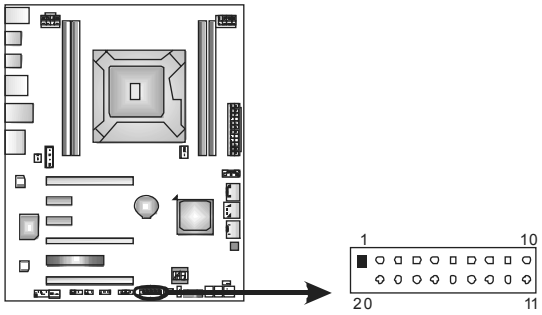
Theses headers allow user to connect additional USB cable on the PC front panel. They also can be connected with internal USB devices, like USB card reader.




| Pin | Assignment |
|---|---|
| 1 | +5V (fused) |
| 2 | +5V (fused) |
| 3 | USB- |
| 4 | USB- |
| 5 | USB+ |
| 6 | USB+ |
| 7 | Ground |
| 8 | Ground |
| 9 | Key |
| 10 | NC |

## JFRONT_USB3_1: Header for USB 3.0 Ports at Front Panel

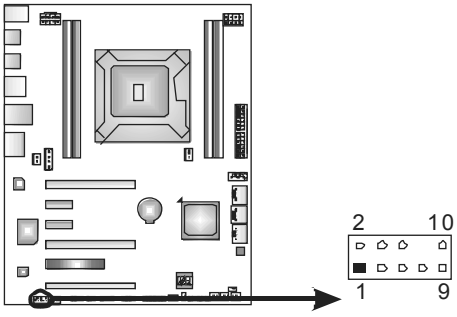
This header allows user to connect additional USB cable on the PC front panel, and also can be connected with internal USB devices, like USB card reader.




| Pin | Assignment | Pin | Assignment |
|---|---|---|---|
| 1 | VBUS0 | 11 | D2+ |
| 2 | SSRX1- | 12 | D2- |
| 3 | SSRX1+ | 13 | Ground |
| 4 | Ground | 14 | SSTX2+ |
| 5 | SSTX1- | 15 | SSTX2- |
| 6 | SSTX1+ | 16 | Ground |
| 7 | Ground | 17 | SSRX2+ |
| 8 | D1- | 18 | SSRX2- |
| 9 | D1+ | 19 | VBUS1 |
| 10 | ID | 20 | Key |

## F_AUDIOF1: Front Panel Audio Header

This header allows user to connect the front audio output cable with the PC front panel. This header supports HD and AC'97 audio front panel connector.

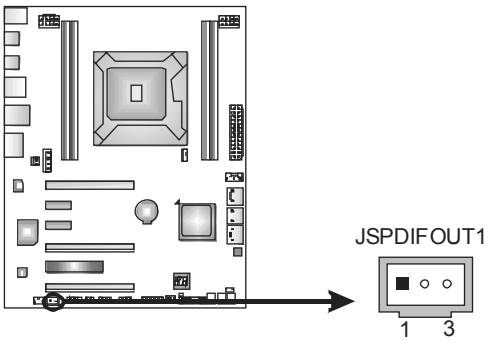



| | HD Audio | | AC'97 |
|---|---|---|---|
| **Pin** | **Assignment** | **Pin** | **Assignment** |
| 1 | Mic Left in | 1 | Mic In |
| 2 | Ground | 2 | Ground |
| 3 | Mic Right in | 3 | Mic Power |
| 4 | GPIO | 4 | Audio Power |
| 5 | Right line in | 5 | RT Line Out |
| 6 | Jack Sense | 6 | RT Line Out |
| 7 | Front Sense | 7 | Reserved |
| 8 | Key | 8 | Key |
| 9 | Left line in | 9 | LFT Line Out |
| 10 | Jack Sense | 10 | LFT Line Out |

**Note:** It is recommended that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high definition audio capability.

## JSPDIFOUT1: Digital Audio-out Connectors

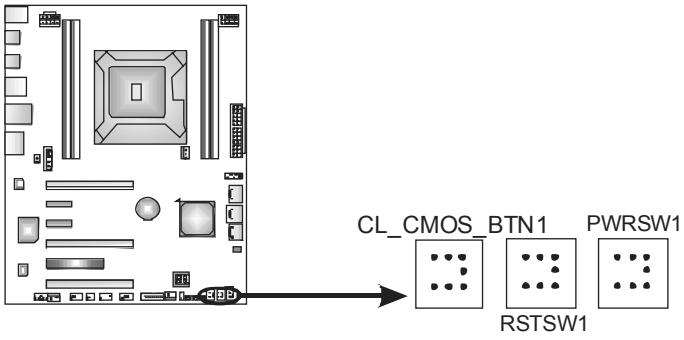
The JSPDIFOUT1 is for connecting the PCI bracket SPDIF output.




| Pin | Assignment |
|---|---|
| 1 | +5V |
| 2 | SPDIF_OUT |
| 3 | Ground |

## On-Board Buttons

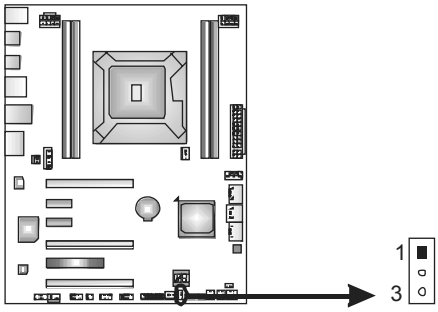
There are 3 on-board buttons.




**PWRSW1:**
This is an on-board Power Switch button.
**RSTSW1:**
This is an on-board Reset button.
**CL_CMOS_BTN1: Clear CMOS Header**
You can use this jumper to reset the BIOS to default.

## JCMOS1: Clear CMOS Header

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





**Pin 1-2 Close:**
Normal Operation (default).

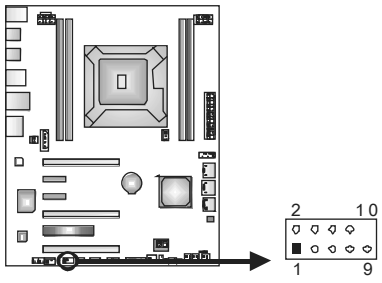

**Pin 2-3 Close:**
Clear CMOS data.

### ※ Clear CMOS Procedures:

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

## J_COM1: Serial Port Connector

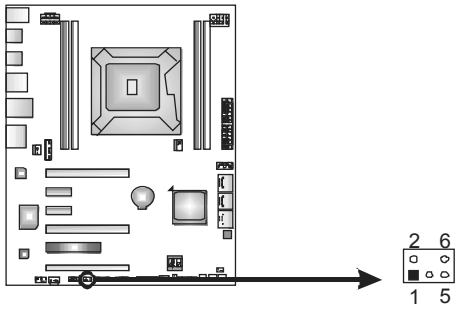
The motherboard has a Serial Port Connector for connecting RS-232 Port.




| Pin | Assignment |
|---|---|
| 1 | Carrier detect |
| 2 | Received data |
| 3 | Transmitted data |
| 4 | Data terminal ready |
| 5 | Signal ground |
| 6 | Data set ready |
| 7 | Request to send |
| 8 | Clear to send |
| 9 | Ring indicator |
| 10 | NC |

## CIR1: Consumer IR Connector

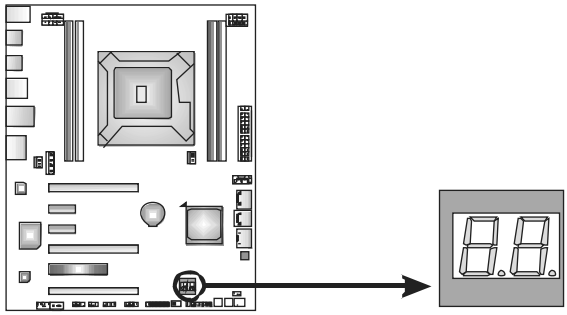
This header is for infrared remote control and communication.




| Pin | Assignment |
|---|---|
| 1 | IrDA serial input |
| 2 | Ground |
| 3 | Ground |
| 4 | Key |
| 5 | IrDA serial output |
| 6 | IR Power |

## BIOS POST Code/CPU Temperature Indicator

This indicator will show POST code while booting; after the booting sequence, it will show current CPU temperature. *Please refer to Chapter 5.5 for all the BIOS POST codes.*



# CHAPTER 4: RAID / AHCI FUNCTIONS

## 4.1 Operating System

| CHIP | SATA Controller Configuration | OS |
|---|---|---|
| Intel X79 RSTe SATA1/SATA2-U/ SATA2-L/SATA3-U/ SATA3-L/eSATA | AHCI | Windows XP SP2 (64bit)<br>Windows Vista SP2 (32 and 64 bit)<br>Windows 7 (32 and 64 bit) |
| Intel X79 RSTe SATA1/SATA2-U/ SATA2-L/SATA3-U/ SATA3-L/ eSATA | RAID | Windows XP SP2 (64bit)<br>Windows 7 (32 and 64 bit) |
| ASM1061 SATA4-U/SATA4-L | AHCI | Windows XP SP2 (32 and 64 bit)<br>Windows Vista SP2 (32 and 64 bit)<br>Windows 7 (32 and 64 bit) |

**The 'F6 Method'+ to enable RAID / AHCI Driver when installing Windows XP**

1. Before you start Windows installation, copy the proper files for the Windows version to any USB storage ( Windows XP 64 only could use a USB floppy drive)

| | Windows XP 32 | Windows XP 64 |
|---|---|---|
| SATA1/SATA2-U/ SATA2-L/SATA3-U/ SATA3-L/ eSATA AHCI/RAID Driver Path | No Support | x:\Driver\Chipset\Intel\SATA\ X79\F6flpy64\Driver\ |
| SATA4-U/SATA4-L AHCI Driver Path | x:\Driver\\SATA\ Asmedia_F6\Xp\ Driver\ | x:\Driver\\SATA\Asmedia_F6\ Xp\Driver\ |

2. When the operating system installation starts, follow Windows indication by pressing F6 to load the driver.

**Enable RAID / AHCI Driver when installing Windows 7/Vista**

1. Before you start Windows installation, copy the proper files for the Windows version to any USB storage.

| | Windows 7 32 | Windows 7 64 | Windows Vista 32 | Windows Vista 64 |
|---|---|---|---|---|
| SATA1/ SATA2-U/ SATA2-L/ SATA3-U/ SATA3-L/ eSATA AHCI/RAID Driver Path | x:\Driver\Chipset\ Intel\SATA\X79\F6flpy32\Driver\ | x:\Driver\Chipset\ Intel\SATA\X79\F6flpy64\Driver\ | x:\Driver\Chipset\ Intel\SATA\X79\F6flpy32\Driver\ | x:\Driver\Chipset\ Intel\SATA\X79\F6flpy64\Driver\ |
| SATA4-U/ SATA4-L AHCI Driver Path | x:\Driver\\SATA\ Asmedia_F6\Win7\ Driver\x86\ | x:\Driver\\SATA\ Asmedia_F6\Win7\ Driver\x64 | x:\Driver\SATA\ Asmedia_F6\Vista\ Driver\x86\ | x:\Driver\SATA\ Asmedia_F6\Vista\ Driver\x64\ |

2. Follow Window 7 / Vista indication to load the driver in the installation process.

## 4.2 RAID ARRAYS

| CONNECTOR | BY CHIP | SPEED | Support |
|---|---|---|---|
| SATA1/SATA2-U/SATA2-L/ eSATA | Intel X79 | 3 Gb/s. | RAID 0 / 1 / 5 / 10 and Intel SRT |
| SATA3-U/SATA3-L | Intel X79 | 6 Gb/s. | RAID 0 / 1 / 5 / 10 and Intel SRT |

RAID supports the following types of RAID arrays:

**RAID 0:** RAID 0 defines a disk striping scheme that improves disk read and write times for many applications.

**RAID 1:** RAID 1 defines techniques for mirroring data.

**RAID 10:** RAID 10 combines the techniques used in RAID 0 and RAID 1.

**RAID 5:** RAID 5 provides fault tolerance and better utilization of disk capacity.

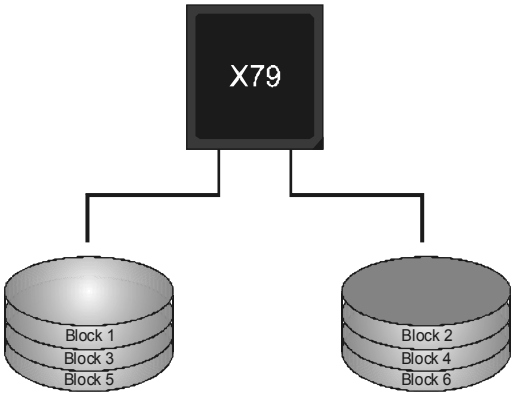
## 4.3 How RAID Works

***RAID 0:***

The controller “stripes” data across multiple drives in a RAID 0 array system. It breaks up a large file into smaller blocks and performs disk reads and writes across multiple drives in parallel. The size of each block is determined by the stripe size parameter, which you set during the creation of the RAID set based on the system environment. This technique reduces overall disk access time and offers high bandwidth.

### Features and Benefits

- ***Drives:*** Minimum 2, and maximum is up to 6 or 8. Depending on the platform.
- ***Uses:*** Intended for non-critical data requiring high data throughput, or any environment that does not require fault tolerance.
- ***Benefits:*** provides increased data throughput, especially for large files. No capacity loss penalty for parity.
- ***Drawbacks:*** Does not deliver any fault tolerance. If any drive in the array fails, all data is lost.
- ***Fault Tolerance:*** No.



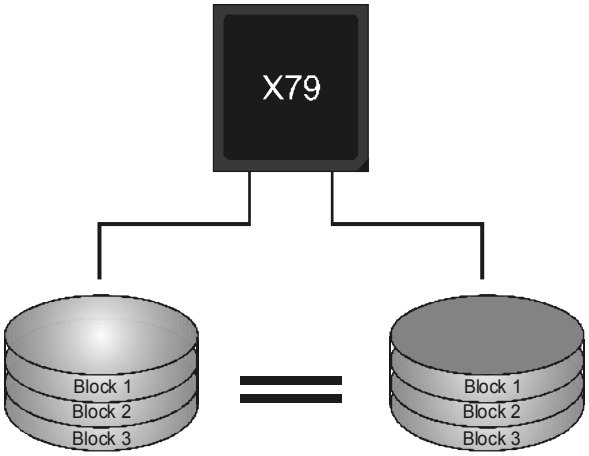
## *RAID 1:*

Every read and write is actually carried out in parallel across 2 disk drives in a RAID 1 array system. The mirrored (backup) copy of the data can reside on the same disk or on a second redundant drive in the array. RAID 1 provides a hot-standby copy of data if the active volume or drive is corrupted or becomes unavailable because of a hardware failure.

RAID techniques can be applied for high-availability solutions, or as a form of automatic backup that eliminates tedious manual backups to more expensive and less reliable media.

### Features and Benefits

- ***Drives:*** Minimum 2, and maximum is 2.
- ***Uses:*** RAID 1 is ideal for small databases or any other application that requires fault tolerance and minimal capacity.
- ***Benefits:*** Provides 100% data redundancy. Should one drive fail, the controller switches to the other drive.
- ***Drawbacks:*** Requires 2 drives for the storage space of one drive. Performance is impaired during drive rebuilds.
- ***Fault Tolerance:*** Yes.

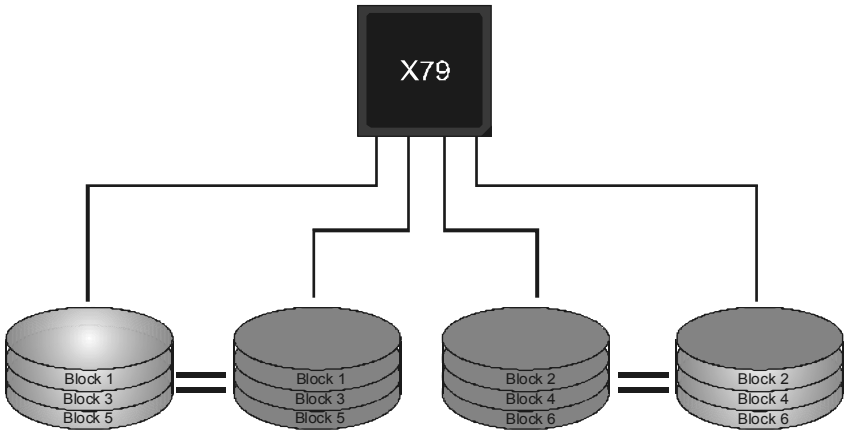


## *RAID 10:*

RAID 1 drives can be stripped using RAID 0 techniques. Resulting in a RAID 10 solution for improved resiliency, performance and rebuild performance.

### Features and Benefits

- ***Drives:*** Minimum 4, and maximum is 6 or 8, depending on the platform.
- ***Benefits:*** Optimizes for both fault tolerance and performance, allowing for automatic redundancy. May be simultaneously used with other RAID levels in an array, and allows for spare disks.
- ***Drawbacks:*** Requires twice the available disk space for data redundancy, the same as RAID level 1.
- ***Fault Tolerance:*** Yes.

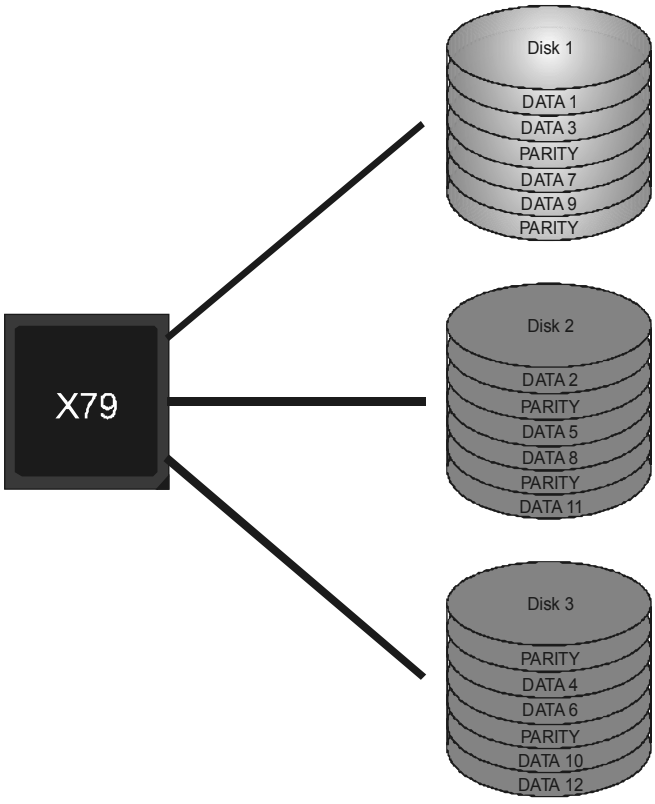


## *RAID 5:*

RAID 5 stripes both data and parity information across three or more drives. It writes data and parity blocks across all the drives in the array. Fault tolerance is maintained by ensuring that the parity information for any given block of data is placed on a different drive from those used to store the data itself.

### Features and Benefits

- ***Drives:*** Minimum 3.
- ***Uses:*** RAID 5 is recommended for transaction processing and general purpose service.
- ***Benefits:*** An ideal combination of good performance, good fault tolerance, and high capacity and storage efficiency.
- ***Drawbacks:*** Individual block data transfer rate same as a single disk. Write performance can be CPU intensive.
- ***Fault Tolerance:*** Yes.



## 4.4 SMART STORAGE CACHING

With Intel(R) Rapid Storage Technology, the performance of RAID with an Intel SSD drive can be improved better.

### *Installing Smart Sotrage Caching*

1. Install RAID drives (RAID 0, 1, 5) and an Intel SSD.
2. Activate RAID mode from BIOS, and install operating system.
3. Insert the Setup CD to the optical drive, and Install all drivers (including Intel(R) Rapid Storage Technology Driver). After all processes finish, reboot the system.
4. Intel(R) RST service icon will show in notification area. Double click it to open the main windows.
5. Select “Accelerate” page, and make sure the status of accelerated device has been enabled accelerated.

# CHAPTER 5: T-POWER BIOS & SOFTWARE

## 5.1 T-POWER BIOS

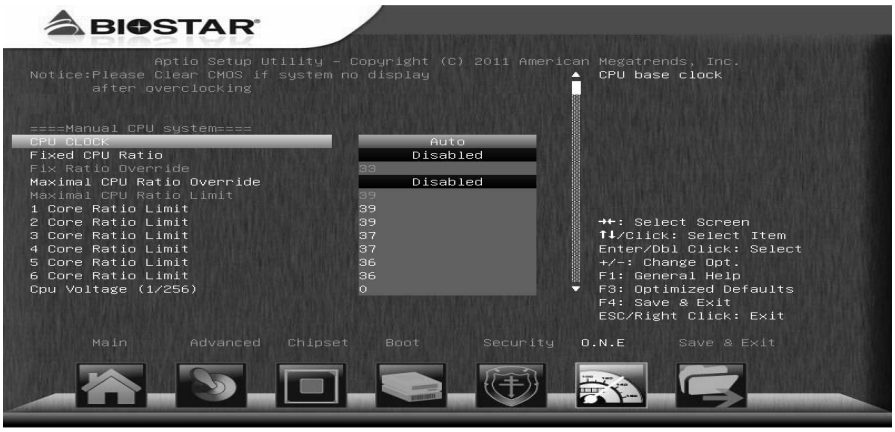
### T-Power BIOS Features

- Overclocking Navigator Engine (O.N.E.)
- Self Recovery System (S.R.S)
- Smart Fan Function
- BIO-Flasher: Update UEFI BIOS file from USB Flash Drive

> *!! WARNING !!*
>
> For better system performance, the UEFI BIOS firmware is being continuously updated. The UEFI BIOS information described below in this manual is for your reference only and the actual UEFI BIOS information and settings on board may be different from this manual. For further information of setting up the UEFI BIOS, please refer to the UEFI BIOS Manual in the Setup CD.

### *A. Overclocking Navigator Engine (O.N.E.)*

O.N.E provides several systems allowing users to customize personal overclock settings, such as Manual Voltage System, Manual Memory System, Manual MCT System, and Manual G.P.U System, etc.




***Notice:***

Not all types of Intel CPU perform above overclock setting ideally; the difference will be based on the selected CPU model.

*NOTE*

Overclock is an optional process, but not a "must-do" process; it is not recommended for inexperienced users. Therefore, we will not be responsible for any hardware damage which may be caused by overclocking. We also would not guarantee any overclocking performance.

## *B. Self Recovery System (S.R.S.)*

This function can't be seen under UEFI BIOS setup, and is always on whenever the system starts up.

However, it can prevent system hang-up due to inappropriate overclock actions.

When the system hangs up, S.R.S. will automatically log in the default UEFI BIOS setting, and all overclock settings will be re-configured.

## *C. Smart Fan Function*

Smart Fan Function is under "Smart Fan Control" in "Advanced Menu".

This is a brilliant feature to control CPU/System Temperature vs. Fan speed. When enabling Smart Fan function, Fan speed is controlled automatically by CPU/System temperature.

This function will protect CPU/System from overheat problem and maintain the system temperature at a safe level.


### CPU Smart FAN

This item allows you to control the CPU Smart Fan function.

### CPU FAN Calibrate

Press [ENTER] to calibrate CPU FAN.

### Control Mode

This item provides several operation modes of the fan.

### Fan Ctrl OFF(℃)

When CPU temperature is lower than this value, the CPU fan will keep lowest RPM. The range is from 0~127, with an interval of 1.

### Fan Ctrl On(℃)

When CPU temperature is higher than this value, the CPU fan controller will turn on. The range is from 0~127, with an interval of 1.

### Fan Ctrl Start Value

This item sets CPU FAN Start Speed Value. The range is from 0~127, with an interval of 1.

### Fan Ctrl Sensitive

The bigger the numeral is, the higher the FAN speed is. The range is from 0~127, with an interval of 1.

## 5.2 T-POWER SOFTWARE

### *Installing T-Power Software*

1. Insert the Setup CD to the optical drive. The drivers installation program would appear if the Auto-run function has been enabled.
2. Select **Software Installation**, and then click on the respective software title.
3. Follow the on-screen instructions to complete the installation.

### *Launching T-Power Software*

After the installation process is completed, you will see the software icon showing on the desktop. Double-click the icon to launch it.

### *TOverclocker*

TOverclocker presents a simple Windows-based system performance enhancement and manageability utility. It features several powerful and easy to use tools such as Overclocking for enhancing system performance, also for special enhancement on CPU and Memory. Smart-Fan management and PC health are for monitoring system status.This utility also allows you to make overclocking profiles saving unlimitedly, and pre-set OC modes are for easy OC. (The illustration below is for reference only)


The **CPU** tab provides information on the CPU and motherboard.


The **Memory** tab provides information on the memory module(s).

You can select memory module on a specific slot to see its information.


The **OC Tweaker** tab allows you to change system clock settings and voltages settings. It also provides six pre-set modes for you:

**Six Pre-set Modes:** V3, V6, V9, V12, V15, AUTO for different overclocking experience.

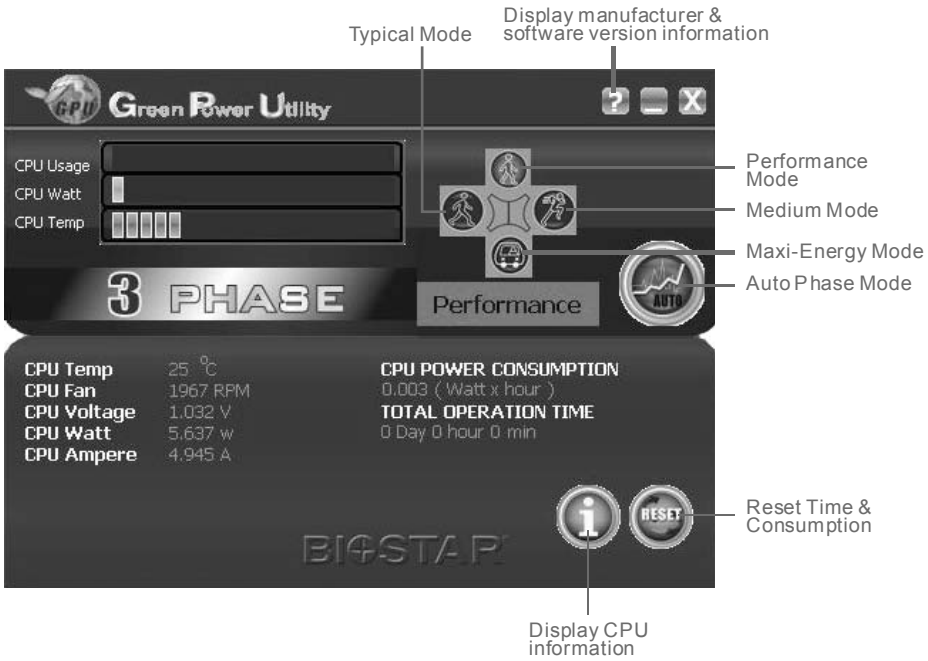


The **HW Monitor** tab allows you to monitor hardware voltage, fan speed, and temperature. Besides, you also can set related values for CPU Smart Fan.


Pressing **TOVERCLOCKER** logo will display information about manufacturer and software version. You can update currnet version by clicking the button “Live Update.”


## *Green Power II Utility*

BIOSTAR G.P.U II (Green Power Utility) is a new function. The utility enhances energy efficiency by disabling extra phases while CPU is on light loading; it features 4+1 power phases, current power saving, and toal power saving. This tool integrates a friendly GUI to monitor your CPU Usage, CPU Watt, and CPU Temperature. Moreover, it optimizes power saving and best power efficiency on your system. (The illustration below is for reference only)



**G.P.U Mode Setting**

This utility provides five modes, upon your requirements, to improve system performance or to save power consumption.

**Note:** Even if the modes saving more power consumption are chosen, the system still can keep excellent performance.

- **Auto Phase Mode**
  System switches the mode automatically according to current system loading condition.

- **Performance Mode**
  This is the mode saving power consumption most. Least energy will be used in the system.

- **Typical Mode**
  Compared with that in Performance Mode, energy consumption in this mode is a little bit more.

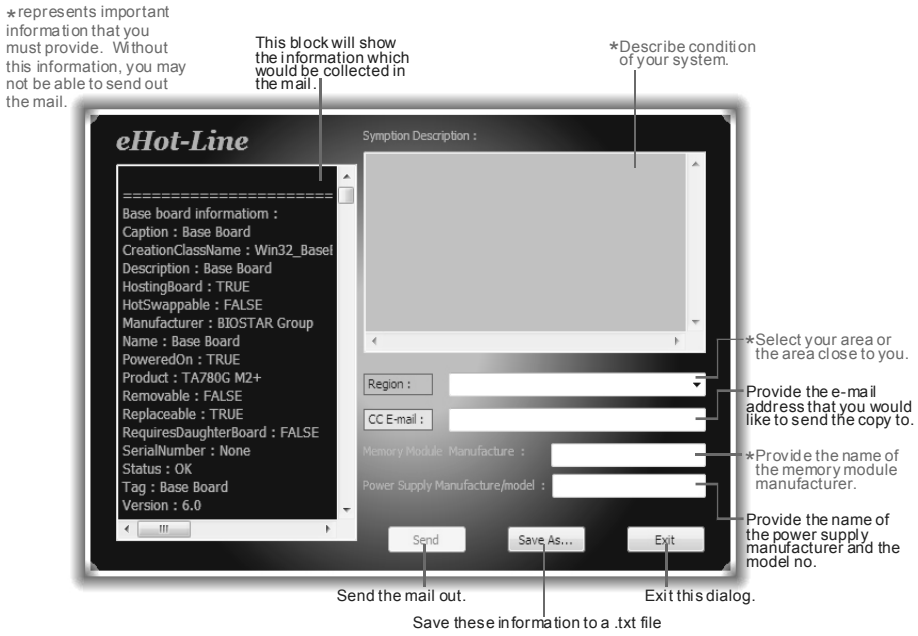
- **Medium Mode**
  This is the standard system power saving mode.

- **Maxi-Energy Mode**
  This is the best system performance mode.

## *eHot-Line (Optional)*

eHot-Line is a convenient utility that helps you to contact with our Tech-Support system. This utility will collect the system information which is useful for analyzing the problem you may have encountered, and then send these information to our tech-support department to help you fix the problem.

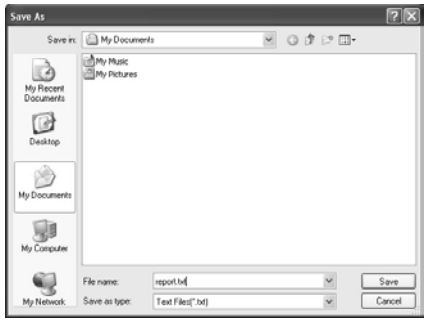
Before you use this utility, please set Outlook Express as your default e-mail client application program.



After filling up this information, click "**Send**" to send the mail out. A warning dialog would appear asking for your confirmation; click "**Send**" to confirm or "**Do Not Send**" to cancel.


If you want to save this information to a .txt file, click "**Save As…**" and then you will see a saving dialog appears asking you to enter file name.

Enter the file name and then click "**Save**". Your system information will be saved to a .txt file.




Open the saved .txt file, you will see your system information including motherboard/BIOS/CPU/video/ device/OS information. This information is also concluded in the sent mail.

**We will not share customer's data with any other third parties**, so please feel free to provide your system information while using eHot-Line service.

If you are not using Outlook Express as your default e-mail client application, you may need to save the system information to a .txt file and send the file to our tech support with other e-mail application. Go to the following web http://www.biostar.com.tw/app/en/about/contact.php for getting our contact information.

### *BIOS Update Utility*

BIOS Update Utility is a convenient utility which allows you to update your motherboard BIOS under Windows system. Please refer to the detailed instructions in the section 6.1 BIOS Update Utility of Chapter 6.

## 5.3 EXTRA INFORMATION

### *CPU Overheated*

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

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

In this case, please double check:

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

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

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

Or you can:

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

## 5.4 AMI BIOS BEEP CODE

### Boot Block Beep Codes

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

### POST BIOS Beep Codes

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

### Troubleshooting POST BIOS Beep Codes

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

## 5.5 AMI BIOS POST CODE

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

| Checkpoint | Description |
|---|---|
| 37 | Displaying sign-on message, CPU information, setup key message, and any OEM specific information. |
| 38 | Initializes different devices through DIM. See DIM Code Checkpoints section of document for more information. USB controllers are initialized at this point. |
| 39 | Initializes DMAC-1 & DMAC-2. |
| 3A | Initialize RTC date/time. |
| 3B | Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system. |
| 3C | Mid POST initialization of chipset registers. |
| 40 | Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, etc.) successfully installed in the system and update the BDA, EBDA…etc. |
| 52 | Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory. Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed. |
| 60 | Initializes NUM-LOCK status and programs the KBD typematic rate. |
| 75 | Initialize Int-13 and prepare for IPL detection. |
| 78 | Initializes IPL devices controlled by BIOS and option ROMs. |
| 7C | Generate and write contents of ESCD in NVRam. |
| 84 | Log errors encountered during POST. |
| 85 | Display errors to the user and gets the user response for error. |
| 87 | Execute BIOS setup if needed / requested. Check boot password if installed. |
| 8C | Late POST initialization of chipset registers. |
| 8D | Build ACPI tables (if ACPI is supported). |
| 8E | Program the peripheral parameters. Enable/Disable NMI as selected. |
| 90 | Initialization of system management interrupt by invoking all handlers. Please note this checkpoint comes right after checkpoint 20h. |
| A1 | Clean-up work needed before booting to OS. |
| A2 | Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed. |
| A4 | Initialize runtime language module. Display boot option popup menu. |
| A7 | Displays the system configuration screen if enabled. Initialize the CPU's before boot, which includes the programming of the MTRR's. |
| A9 | Wait for user input at config display if needed. |
| AA | Uninstall POST INT1Ch vector and INT09h vector. |
| AB | Prepare BBS for Int 19 boot. Init MP tables. |
| AC | End of POST initialization of chipset registers. De-initializes the ADM module. |
| B1 | Save system context for ACPI. Prepare CPU for OS boot including final MTRR values. |
| 00 | Passes control to OS Loader (typically INT19h). |

## 5.6 TROUBLESHOOTING

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

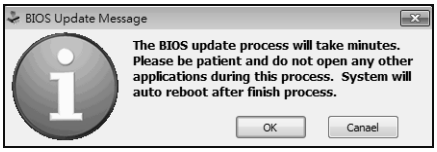
# CHAPTER 6: BIOS UPDATE

There are three ways to update the BIOS: BIOS Update Utility, BIOS Online Update Utility and BIOSTAR BIOS Flasher.

## 6.1 BIOS UPDATE UTILITY

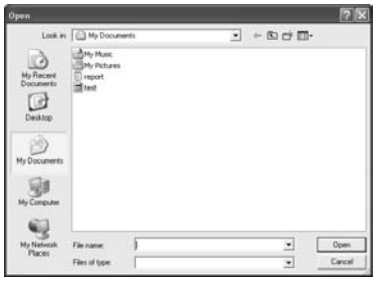
1. Installing BIOS Update Utility from the CD Driver.
2. Download the proper BIOS from www.biostar.com.tw .

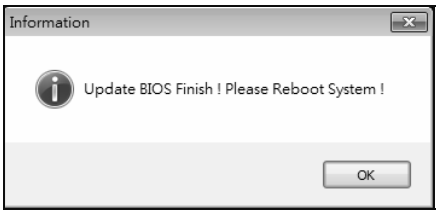
3. Open BIOS Update Utility and click the **Update BIOS** button on the main screen.


4. A warning message will show up to request your agreement to start the BIOS update. Click **Yes** to start the update procedure.

5. Choose the location for your BIOS file in the system. Please select the proper BIOS file, and then click on **Open**. It will take several minutes, please be patient.






6. After the BIOS Update process is finished, click on **OK** to reboot the system.

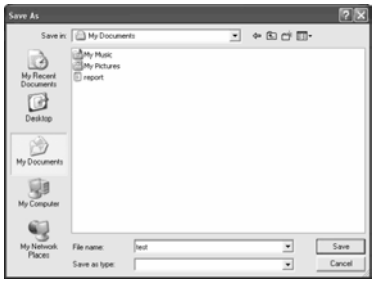
7. While the system boots up and the full screen logo shows up, please press the Del <Delete> key to enter BIOS setup.

After entering the BIOS setup, please go to the **Save & Exit**, using the **Restore Defaults** function to load Optimized Defaults, and select **Save Changes and Reset** to restart the computer. Then, the BIOS Update is completed.

All the information and content above about the software are subject to be changed without notice. For better performance, the software is being continuously updated. The information and pictures described above are for your reference only. The actual information and settings on board may be slightly different from this manual.

***<Backup BIOS>***

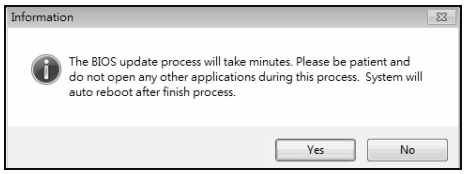
Click the Backup BIOS button on the main screen for the backup of BIOS, and select a proper location for your backup BIOS file in the system, and click **Save**.



## 6.2 ONLINE UPDATE UTILITY

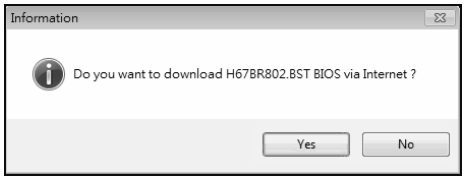
1. Installing BIOS Update Utility from the CD Driver.
2. Please make sure the system is connected to the internet before using this function.

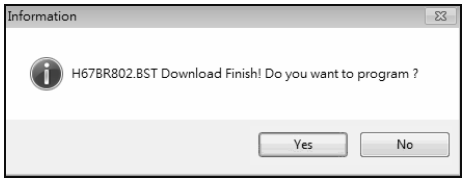
3. Open BIOS Update Utility and click the **Online Update** button on the main screen.


4. An open dialog will show up to request your agreement to start the BIOS update. Click **Yes** to start the online update procedure.

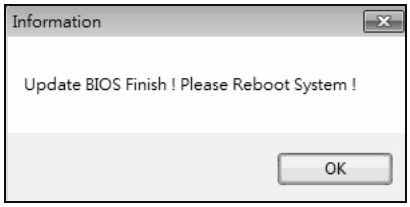
5. If there is a new BIOS version, the utility will ask you to download it. Click **Yes** to proceed.




6. After the download is completed, you will be asked to program (update) the BIOS or not. Click **Yes** to proceed.

7. After the updating process is finished, you will be asked you to reboot the system. Click **OK** to reboot.




8. While the system boots up and the full screen logo shows up, press 

<Delete> key to enter BIOS setup.

After entering the BIOS setup, please go to the **Save & Exit**, using the **Restore Defaults** function to load Optimized Defaults, and select **Save Changes and Reset** to restart the computer. Then, the BIOS Update is completed.

All the information and content above about the T-Series software are subject to be changed without notice. For better performance, the software is being continuously updated. The information and pictures described above are for your reference only. The actual information and settings on board may be slightly different from this manual.

## 6.3 BIOSTAR BIOS FLASHER

BIOSTAR BIOS Flasher is a BIOS flashing utility providing you an easy and simple way to update your BIOS via USB pen drive.

The BIOSTAR BIOS Flasher is built in the BIOS ROM. To enter the utility, **press <F12> during the Power-On Self Tests (POST)** procedure while booting up.

***Updating BIOS with BIOSTAR BIOS Flasher***

1. Go to the website to download the latest BIOS file for the motherboard.
2. Then, copy and save the BIOS file into a USB flash (pen) drive.
3. Insert the USB pen drive that contains the BIOS file to the USB port.
4. Power on or reset the computer and then press **<F12>** during the **POST** process.

5. After entering the POST screen, the BIOS-FLASHER utility pops out. Choose [fs0] to search for the BIOS file.


6. Select the proper BIOS file, and a message asking if you are sure to flash the BIOS file. Click Yes to start updating BIOS.

7. A dialog pops out after BIOS flash is completed, asking you to restart the system. Press the [Y] key to restart system.


8. While the system boots up and the full screen logo shows up, press 

<Delete> key to enter BIOS setup.

After entering the BIOS setup, please go to the **Save & Exit**, using the **Restore Defaults** function to load Optimized Defaults, and select **Save Changes and Reset** to restart the computer. Then, the BIOS Update is completed.

- This utility only allows storage device with FAT32/16 format and single partition.
- Shutting down or resetting the system while updating the BIOS will lead to system boot failure.

# APPENDIX: SPEC IN OTHER LANGUAGES

## GERMAN

| Spezifikationen | | |
|---|---|---|
| CPU | SOCKET 2011<br>Intel Sandybridge-E series /<br>Core i7 Extreme / Core i7 Prozessoren | Unterstützt Execute Disable Bit / Enhanced Intel SpeedStep® / Intel Architecture-64 / Extended Memory 64 Technology / Virtualization Technology / Hyper Threading |
| Chipsatz | Intel X79 | |
| Super E/A | IT8728<br>Bietet die häufig verwendeten alten Super E/A-Funktionen.<br>Low Pin Count-Schnittstelle | Umgebungskontrolle,<br>Hardware-Überwachung<br>Lüfterdrehzahl-Controller/-Überwachung<br>"Smart Guardian"-Funktion von ITE |
| Arbeitsspeicher | DDR3 DIMM-Steckplätze x 4<br>Jeder DIMM unterstützt 1GB / 2GB / 4GB / 8GB DDR3.<br>Max. 32GB Arbeitsspeicher | Quad Kanal DDR3 Speichermodul<br>Unterstützt DDR3<br>2400(OC)/2133(OC)/1866(OC)/1600/ 1333 /1066/800<br>registrierte DIMMs. ECC DIMMs werden nicht unterstützt. |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | * Datentransferrate bis zu 3Gb/s<br>Unterstützt RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Datentransferrate bis zu 6Gb/s<br>Unterstützt RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Datentransferrate bis zu 6Gb/s<br>Unterstützt ACHI |
| eSATA | eSATA x 1 (by Intel X79) | Datentransferrate bis zu 3Gb/s<br>Unterstützt RAID 0 / 1 / 5 / 10 & Intel SRT |
| LAN | Realtek RTL 8111E | 10 / 100 / 1000 Mb/s Auto-Negotiation<br>Halb-/ Vollduplex-Funktion |
| HD Audio-Unterstützung | ALC898 | Unterstützt High-Definition Audio<br>7.1-Kanal-Audioausgabe |
| Steckplätze | PCI-Steckplatz x1<br>PCI Express Gen3 x16 Steckplatz (x16) x2<br>PCI Express Gen3 x16 Steckplatz (x8) x1<br>PCI Express Gen2 x1 Steckplatz x2 | |

| Spezifikationen | | | |
|---|---|---|---|
| Onboard-Anschluss | SATA3-Anschluss | x4 | Jeder Anschluss unterstützt 1 SATA-Laufwerk |
| | SATA2-Anschluss | x3 | Jeder Anschluss unterstützt 1 SATA-Laufwerk |
| | Fronttafelanschluss | x1 | Unterstützt die Fronttafelfunktionen |
| | Front-Audioanschluss | x1 | Unterstützt die Fronttafel-Audioanschlussfunktion |
| | S/PDIF Ausgangsanschluss | x1 | Unterstützt die digitale Audioausgabefunktion |
| | CPU-Lüfter-Sockel | x1 | CPU-Lüfterstromversorgungsanschluss (mit Smart Fan-Funktion) |
| | System-Lüfter-Sockel | x2 | System-Lüfter-Stromversorgungsanschluss |
| | "CMOS löschen"-Sockel | x1 | |
| | USB3.0-Anschluss | x1 | Jeder Anschluss unterstützt 2 Fronttafel-USB3.0-Anschlüsse |
| | USB2.0-Anschluss | x2 | Jeder Anschluss unterstützt 2 Fronttafel-USB2.0-Anschlüsse |
| | Stromanschluss (24-polig) | x1 | |
| | Stromanschluss (8-polig) | x2 | |
| | Serieller Anschluss | x1 | |
| | Verbraucher-IR Anschluss | x1 | |
| Rückseiten-E/A | PS/2-Tastatur | x1 | |
| | LAN-Anschluss | x1 | |
| | USB2.0-Anschluss | x2 | |
| | USB3.0-Anschluss | x6 | |
| | Audioanschluss | x6 | |
| | eSATA Anschluss | x1 | |
| | Optisches +coaxial S/PDIF heraus | x1 | |
| Platinengröße | 244 mm (B) X 305 mm (L) | | ATX |
| OS-Unterstützung | Windows XP / Vista / 7 | | Biostar behält sich das Recht vor, ohne Ankündigung die Unterstützung für ein Betriebssystem hinzuzufügen oder zu entfernen. |

# FRENCH

| SPEC | | |
|---|---|---|
| UC | SOCKET 2011<br>Processeurs Intel Sandybridge-E series / Core i7 Extreme / Core i7 | Prend en charge les technologies d'exécution de bit de désactivation / Intel SpeedStep® optimisée/ d'architecture Intel 64 / de mémoire étendue 64 / de virtualisation / Hyper Threading |
| Chipset | Intel X79 | |
| Super E/S | IT8728<br>Fournit la fonctionnalité de Super E/S patrimoniales la plus utilisée.<br>Interface à faible compte de broches | Initiatives de contrôle environnementales,<br>Moniteur de matériel<br>Contrôleur /moniteur de vitesse de ventilateur<br>Fonction "Gardien intelligent" de l'ITE |
| Mémoire principale | Fentes DDR3 DIMM x 4<br>Chaque DIMM prend en charge des DDR3 de 1Go / 2Go / 4Go / 8Go<br>Capacité mémoire maximale de 35Go | Module de mémoire DDR3 à mode à quad voie<br>Prend en charge la DDR3 2400(OC)/2133(OC)/1866(OC)/1600/ 1333 /1066/800<br>Les DIMM à registres et DIMM avec code correcteurs d'erreurs ne sont pas prises en charge |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | * Taux de transfert jusqu'à 3 Go/s.<br>Prise en charge RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Taux de transfert jusqu'à 6 Go/s.<br>Prise en charge RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Taux de transfert jusqu'à 6 Go/s.<br>Prise en charge AHCI |
| eSATA | eSATA x 1 (by Intel X79) | Taux de transfert jusqu'à 3 Go/s.<br>Prise en charge Port-Miltiplier/ RAID 0 / 1 / 5 / 10 & Intel SRT |
| LAN | Realtek RTL 8111E | 10 / 100 / 1000 Mb/s négociation automatique<br>Half / Full duplex capability |
| Prise en charge audio HD | ALC898 | Prise en charge de l'audio haute définition<br>Sortie audio à 7.1 voies |
| Fentes | Fente PCI x1<br>Fente PCI Express Gen3 x16 (x16) x2<br>Fente PCI Express Gen3 x16 (x8) x1<br>Fente PCI Express Gen2 x1 x2 | |

| SPEC | | | |
|---|---|---|---|
| Connecteur embarqué | Connecteur SATA3 | x4 | Chaque connecteur prend en charge 1 périphérique SATA |
| | Connecteur SATA2 | x3 | Chaque connecteur prend en charge 1 périphérique SATA |
| | Connecteur du panneau avant | x1 | Prend en charge les équipements du panneau avant |
| | Connecteur Audio du panneau avant | x1 | Prend en charge la fonction audio du panneau avant |
| | Connecteur de sortie S/PDIF | x1 | Prend en charge la fonction de sortie audio numérique |
| | Embase de ventilateur UC | x1 | Alimentation électrique du ventilateur UC (avec fonction de ventilateur intelligent) |
| | Embase de ventilateur système | x2 | Alimentation électrique du ventilateur système |
| | Embase d'effacement CMOS | x1 | |
| | Connecteur USB3.0 | x1 | Chaque connecteur prend en charge 2 ports USB3.0 de panneau avant |
| | Connecteur USB2.0 | x2 | Chaque connecteur prend en charge 2 ports USB2.0 de panneau avant |
| | Connecteur d'alimentation (24 broches) | x1 | |
| | Connecteur d'alimentation (8 broches) | x2 | |
| | Connecteur de Port série | x1 | |
| | Connecteur de IR du consommateur | x1 | |
| E/S du panneau arrière | Clavier PS/2 | x1 | |
| | Port LAN | x1 | |
| | Port USB2.0 | x2 | |
| | Port USB3.0 | x6 | |
| | Fiche audio | x6 | |
| | Port eSATA | x1 | |
| | +coaxial optique sortie S/PDIF | x1 | |
| Dimensions de la carte | 244 mm (l) X 305 mm (H) | | ATX |
| Support SE | Windows XP / Vista / 7 | | Biostar se réserve le droit d'ajouter ou de supprimer le support de SE avec ou sans préavis. |

# ITALIAN

| *SPECIFICA* | | |
|---|---|---|
| CPU | SOCKET 2011<br>Processore Intel Sandybridge-E series / Core i7 Extreme / Core i7 | Supporto di Execute Disable Bit / Enhanced Intel SpeedStep® / Architettura Intel 64 / Tecnologia Extended Memory 64 / Tecnologia Virtualization / Hyper Threading |
| Chipset | Intel X79 | |
| Super I/O | IT8728<br>Fornisce le funzionalità legacy Super I/O usate più comunemente.<br>Interfaccia LPC (Low Pin Count) | Funzioni di controllo dell'ambiente:<br>Monitoraggio hardware<br>Controller / Monitoraggio velocità ventolina<br>Funzione "Smart Guardian" di ITE |
| Memoria principale | Alloggi DIMM DDR3 x 4<br>Ciascun DIMM supporta DDR3 1GB / 2GB / 4GB / 8GB<br>Capacità massima della memoria 32GB | Modulo di memoria DDR3 a canale quad<br>Supporto di DDR3 2400(OC)/ 2133(OC)/ 1866(OC)/1600/ 1333 /1066/800<br>DIMM registrati e DIMM ECC non sono supportati |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | * Velocità di trasferimento dei dati fino a 3Gb/s, Supporto RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Velocità di trasferimento dei dati fino a 6Gb/s, Supporto RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Velocità di trasferimento dei dati fino a 6 Gb/s, Supporto AHCI |
| eSATA | eSATA x 1 (by Intel X79) | Velocità di trasferimento dei dati fino a 3 Gb/s.<br>Supporto Port-Miltiplier RAID 0 / 1 / 5 / 10 & Intel SRT |
| LAN | Realtek RTL 8111E | Negoziazione automatica 10 / 100 / 1000 Mb/s<br>Capacità Half / Full Duplex |
| Supporto audio HD | ALC898 | Supporto audio High-Definition (HD)<br>Uscita audio 7.1 canali |
| Alloggi | Alloggio PCI x1<br>Alloggio PCI Express Gen3 x16 (x16) x2<br>Alloggio PCI Express Gen3 x16 (x8) x1<br>Alloggio PCI Express Gen2 x1 x2 | |

| SPECIFICA | | | |
|---|---|---|---|
| Connettori su scheda | Connettore SATA3 | x4 | Ciascun connettore supporta 1 unità SATA |
| | Connettore SATA2 | x3 | Ciascun connettore supporta 1 unità SATA |
| | Connettore pannello frontale | x1 | Supporta i servizi del pannello frontale |
| | Connettore audio frontale | x1 | Supporta la funzione audio pannello frontale |
| | Connettore output SPDIF | x1 | Supporta la funzione d'output audio digitale |
| | Collettore ventolina CPU | x1 | Alimentazione ventolina CPU (con funzione Smart Fan) |
| | Collettore ventolina sistema | x2 | Alimentazione ventolina di sistema |
| | Collettore cancellazione CMOS | x1 | |
| | Connettore USB3.0 | x1 | Ciascun connettore supporta 2 porte USB3.0 pannello frontale |
| | Connettore USB2.0 | x2 | Ciascun connettore supporta 2 porte USB2.0 pannello frontale |
| | Connettore alimentazione (24 pin) | x1 | |
| | Connettore alimentazione (8 pin) | x2 | |
| | Connettore Porta seriale | x1 | |
| | Connettore IR del consumatore | x1 | |
| I/O pannello posteriore | Tastiera PS/2 | x1 | |
| | Porta LAN | x1 | |
| | Porta USB2.0 | x2 | |
| | Porta USB3.0 | x6 | |
| | Connettore audio | x6 | |
| | Porta eSATA | x1 | |
| | +coaxial ottico S/PDIF fuori | x1 | |
| Dimensioni scheda | 244 mm (larghezza) x 305 mm (altezza) | | ATX |
| Sistemi operativi supportati | Windows XP / Vista / 7 | | Biostar si riserva il diritto di aggiungere o rimuovere il supporto di qualsiasi sistema operativo senza preavviso. |

## SPANISH

| *Especificación* | | |
|---|---|---|
| CPU | SOCKET 2011<br>Procesador Intel Sandybridge-E series / Core i7 Extreme / Core i7 | Admite Bit de deshabilitación de ejecución / Intel SpeedStep® Mejorado / Intel Architecture-64 / Tecnología Extended Memory 64 / Tecnología de virtualización / Hyper Threading |
| Conjunto de chips | Intel X79 | |
| Súper E/S | IT8728<br>Le ofrece las funcionalidades heredadas de uso más común Súper E/S.<br>Interfaz de cuenta Low Pin | Iniciativas de control de entorno,<br>Monitor hardware<br>Controlador/monitor de velocidad de ventilador<br>Función "Guardia inteligente" de ITE |
| Memoria principal | Ranuras DIMM DDR3 x 4<br>Cada DIMM admite DDR de 1GB / 2GB / 4GB / 8GB<br>Capacidad máxima de memoria de 32GB | Módulo de memoria DDR3 de canal Quad<br>Admite DDR3 de 2400(OC)/2133(OC)/1866(OC)/ 1600/ 1333 /1066/800<br>No admite DIMM registrados o DIMM compatibles con ECC |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | *Tasas de transferencia de hasta 3 Gb/s.<br>Admite RAID 0 / 1 / 5 / 10 & Intel SRT<br>*Tasas de transferencia de hasta 6 Gb/s.<br>Admite RAID 0 / 1 / 5 / 10 & Intel SRT<br>*Tasas de transferencia de hasta 6 Gb/s.<br>Admite AHCI |
| eSATA | eSATA x 1 (by Intel X79) | Tasas de transferencia de hasta 3 Gb/s.<br>Admite Port-Multiplier/RAID 0 / 1 / 5 / 10 & Intel SRT |
| Red Local | Realtek RTL 8111E | Negociación de 10 / 100 / 1000 Mb/s<br>Funciones Half / Full dúplex |
| Soporte de sonido HD | ALC898 | Soporte de sonido de Alta Definición<br>Salida de sonido de 7.1 canales |
| Ranuras | Ranura PCI X1<br>Ranura PCI Express Gen3 x16 (x16) X2<br>Ranura PCI Express Gen3 x16 (x8) X1<br>Ranura PCI Express Gen2 x1 X2 | |
| Conectores en placa | Conector SATA3 X4<br>Conector SATA2 X3 | Cada conector soporta 1 dispositivos SATA<br>Cada conector soporta 1 dispositivos SATA |

| *Especificación* | | | |
|---|---|---|---|
| | Conector de panel frontal | X1 | Soporta instalaciones en el panel frontal |
| | Conector de sonido frontal | X1 | Soporta funciones de sonido en el panel frontal |
| | Conector de salida S/PDIF | X1 | Soporta función de salida de sonido digital |
| | Cabecera de ventilador de CPU | X1 | Fuente de alimentación de ventilador de CPU (con función Smart Fan) |
| | Cabecera de ventilador de sistema | X2 | Fuente de alimentación de ventilador de sistema |
| | Cabecera de borrado de CMOS | X1 | |
| | Conector USB3.0 | X1 | Cada conector soporta 2 puertos USB3.0 frontales |
| | Conector USB2.0 | X2 | Cada conector soporta 2 puertos USB2.0 frontales |
| | Conector de alimentación (24 patillas) | X1 | |
| | Conector de alimentación (8 patillas) | X2 | |
| | Conector Puerto serie | X1 | |
| | Conector de IR del consumidor | X1 | |
| Panel trasero de E/S | Teclado PS/2 | X1 | |
| | Puerto de red local | X1 | |
| | Puerto USB2.0 | X2 | |
| | Puerto USB3.0 | X6 | |
| | Conector de sonido | X6 | |
| | Puerto eSATA | X1 | |
| | +coaxial óptico salida S/PDIF | x1 | |
| Tamaño de la placa | 244 mm. (A) X 305 Mm. (H) | | ATX |
| Soporte de sistema operativo | Windows XP / Vista / 7 | | Biostar se reserva el derecho de añadir o retirar el soporte de cualquier SO con o sin aviso previo. |

# PORTUGUESE

| ESPECIFICAÇÕE | | |
|---|---|---|
| CPU | SOCKET 2011<br>Processador Intel Sandybridge-E series / Core i7 Extreme / Core i7 | Suporta as tecnologias Execute Disable Bit / Enhanced Intel SpeedStep® / Intel Arquitecture -64 / Extended Memory 64 / Virtualization / Hyper Threading |
| Chipset | Intel X79 | |
| Especificação Super I/O | IT8728<br>Proporciona as funcionalidades mais utilizadas em termos da especificação Super I/O.<br>Interface LPC (Low Pin Count). | Iniciativas para controlo do ambiente<br>Monitorização do hardware<br>Controlador/Monitor da velocidade da ventoinha<br>Função "Smart Guardian" da ITE |
| Memória principal | Ranhuras DIMM DDR3 x 4<br>Cada módulo DIMM suporta uma memória DDR3 de 1GB / 2GB / 4GB / 8GB<br>Capacidade máxima de memória:32 GB | Módulo de memória DDR3 de canal quad-se<br>Suporta módulos DDR3 2400(OC)/2133(OC)/1866(OC)/1600/ 1333 /1066/800<br>Os módulos DIMM registados e os DIMM ECC não são suportados |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | *Velocidades de transmissão de dados até 3 Gb/s.<br>Suporta as funções RAID 0 / 1 / 5 / 10 & Intel SRT<br>*Velocidades de transmissão de dados até 6 Gb/s.<br>Suporta as funções RAID 0 / 1 / 5 / 10 & Intel SRT<br>*Velocidades de transmissão de dados até 6 Gb/s.<br>Suporta as funções AHCI |
| eSATA | eSATA x 1 (by Intel X79) | Velocidades de transmissão de dados até 3 Gb/s.<br>Suporta as funções Port-Multiplier/RAID 0 / 1 / 5 / 10 & Intel SRT |
| LAN | Realtek RTL 8111E | Auto negociação de 10 / 100 / 1000 Mb/s<br>Capacidade semi/full-duplex |
| Suporte para áudio de alta definição | ALC898 | Suporta a especificação High-Definition Audio<br>Saída de áudio de 7.1 canais |
| Ranhuras | Ranhura PCI x1<br>Ranhura PCI Express Gen3 x16(x16) x2<br>Ranhura PCI Express Gen3 x16(x8) x1<br>Ranhura PCI Express Gen2 x1 x2 | |

| ESPECIFICAÇÕE | | | |
|---|---|---|---|
| Conectores na placa | Conector SATA3 | x4 | Cada conector suporta 1 dispositivo SATA |
| | Conector SATA2 | x3 | Cada conector suporta 1 dispositivo SATA |
| | Conector do painel frontal | x1 | Para suporte de várias funções no painel frontal |
| | Conector de áudio frontal | x1 | Suporta a função de áudio no painel frontal |
| | Conector de saída S/PDIF | x1 | Suporta a saída de áudio digital |
| | Conector da ventoinha da CPU | x1 | Alimentação da ventoinha da CPU (com a função Smart Fan) |
| | Conector da ventoinha do sistema | x2 | Alimentação da ventoinha do sistema |
| | Conector para limpeza do CMOS | x1 | |
| | Conector USB3.0 | x1 | Cada conector suporta 2 portas USB3.0 no painel frontal |
| | Conector USB2.0 | x2 | Cada conector suporta 2 portas USB2.0 no painel frontal |
| | Conector de alimentação (24 pinos) | x1 | |
| | Conector de alimentação (8 pinos) | x2 | |
| | Conector da Porta série | x1 | |
| | Conector de IR do consumidor | x1 | |
| Entradas/Saídas no painel traseiro | Teclado PS/2 | x1 | |
| | Porta LAN | x1 | |
| | Porta USB2.0 | x2 | |
| | Porta USB3.0 | x6 | |
| | Tomada de áudio | x6 | |
| | Porta eSATA | x1 | |
| | +coaxial ótico saída S/PDIF | x1 | |
| Tamanho da placa | 244 mm (L) X 305 mm (A) | | ATX |
| Sistemas operativos suportados | Windows XP / Vista / 7 | | A Biostar reserva-se o direito de adicionar ou remover suporte para qualquer sistema operativo com ou sem aviso prévio. |

# POLISH

| SPEC | | |
|---|---|---|
| Procesor | SOCKET 2011<br>Procesor Intel Sandybridge-E series /<br>Core i7 Extreme / Core i7 | Obsługa Execute Disable Bit / Enhanced Intel SpeedStep® / Intel Architecture-64 / Extended Memory 64 Technology / Virtualization Technology / Hyper Threading |
| Chipset | Intel X79 | |
| Pamięć główna | Gniazda DDR3 DIMM x 4<br>Każde gniazdo DIMM obsługuje moduły 1GB / 2GB / 4GB / 8GB<br>Maks. wielkość pamięci 32GB | Moduł pamięci DDR3 z trybem quad ilość kanału<br>Obsługa DDR3 2400(OC)/2133(OC)/1866(OC)/1600/ 1333 /1066/800<br>Brak obsługi Registered DIMM oraz ECC DIMM |
| Super I/O | IT8728<br>Zapewnia najbardziej powszechne funkcje Super I/O.<br>Interfejs Low Pin Count | Funkcje kontroli warunków pracy,<br>Monitor H/W<br>Kontroler/Monitor prędkości wentylatora<br>Funkcja ITE "Smart Guardian" |
| SATA | SATA2 x 3 (by Intel X79)<br>SATA3 x 2 (by Intel X79)<br>SATA3 x 2 (by ASM1061) | * Transfer danych do 3 Gb/s.<br>Obsługa RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Transfer danych do 6 Gb/s.<br>Obsługa RAID 0 / 1 / 5 / 10 & Intel SRT<br>* Transfer danych do 6 Gb/s.<br>Obsługa AHCI |
| eSATA | eSATA x 1 (by Intel X79) | Transfer danych do 3 Gb/s.<br>Obsługa Port-Multiplier/RAID 0 / 1 / 5 / 10 & Intel SRT |
| LAN | Realtek RTL 8111E | 10 / 100 / 1000 Mb/s z automatyczną negocjacją szybkości<br>Działanie w trybie połowicznego / pełnego dupleksu |
| Obsługa audio HD | ALC898 | Obsługa High-Definition Audio<br>7.1 kanałowe wyjście audio |
| Gniazda | Gniazdo PCI x1<br>Gniazdo PCI Express Gen3 x16 (x16) x2<br>Gniazdo PCI Express Gen3 x16 (x8) x1<br>Gniazdo PCI Express Gen2 x1 x2 | |
| Złącza wbudowane | Złącze SATA3. x4<br>Złącze SATA2 x3<br>Złącze panela przedniego x1 | Każde złącze obsługuje 1 urządzenie SATA<br>Każde złącze obsługuje 1 urządzenie SATA<br>Obsługa elementów panela przedniego |

| SPEC | | | |
|---|---|---|---|
| | Przednie złącze audio | x1 | Obsługa funkcji audio na panelu przednim |
| | Złącze wyjścia S/PDIF | x1 | Obsługa funkcji cyfrowego wyjścia audio |
| | Złącze główkowe wentylatora procesora | x1 | Zasilanie wentylatora procesora (z funkcją Smart Fan) |
| | Złącze główkowe wentylatora systemowego | x2 | Zasilanie wentylatora systemowego |
| | Złącze główkowe kasowania CMOS | x1 | |
| | Złącze USB3.0 | x1 | Każde złącze obsługuje 2 porty USB3.0 na panelu przednim |
| | Złącze USB2.0 | x2 | Każde złącze obsługuje 2 porty USB2.0 na panelu przednim |
| | Złącze zasilania (24 pinowe) | x1 | |
| | Złącze zasilania (8 pinowe) | x2 | |
| | Złącze Port szeregowy | x1 | |
| | Złącze Konsument IR | x1 | |
| Back Panel I/O | Klawiatura PS/2 | x1 | |
| | Port LAN | x1 | |
| | Port USB2.0 | x2 | |
| | Port USB3.0 | x6 | |
| | Gniazdo audio | x6 | |
| | Port eSATA | x1 | |
| | Optyczny +coaxial wyjścia S/PDIF | x1 | |
| Wymiary płyty | 244 mm (S) X 305 mm (W) | | ATX |
| Obsługa systemu operacyjnego | Windows XP / Vista / 7 | | Biostar zastrzega sobie prawo dodawania lub odwoływania obsługi dowolnego systemu operacyjnego bez powiadomienia. |

## RUSSIAN

| СПЕЦ | | |
|---|---|---|
| CPU (центральный процессор) | SOCKET 2011<br>Процессор Intel Sandybridge-E series / Core i7 Extreme / Core i7 | Поддержка технологий Execute Disable Bit / Enhanced Intel SpeedStep® / Intel Architecture-64 / Extended Memory 64 Technology / технологии виртуализация / Hyper Threading |
| Набор микросхем | Intel X79 | |
| Основная память | Слоты DDR3 DIMM x 4<br>Каждый модуль DIMM поддерживает 1ГБ / 2ГБ / 4 ГБ / 8 ГБ DDR3<br>Максимальная ёмкость памяти 32ГБ | Модуль памяти с четырехъядерных-канал режимом DDR3<br>Поддержка DDR3 2400(OC)/2133(OC)/1866(OC)/ 1600/ 1333 /1066/800<br>Не поддерживает зарегистрированные модули DIMM and ECC DIMM |
| Super I/O | IT8728<br>Обеспечивает наиболее используемые действующие функциональные возможности Super I/O.<br>Интерфейс с низким количеством выводов | Инициативы по охране окружающей среды, Аппаратный монитор<br>Регулятор скорости вентилятора/ монитор<br>Функция ITE "Smart Guardian" (Интеллектуальная защита) |
| SATA | SATA2 x 3 (by Intel X79)<br><br>SATA3 x 2 (by Intel X79)<br><br>SATA3 x 2 (by ASM1061) | * скорость передачи данных до 3 гигабит/с. Поддержка RAID 0 / 1 / 5 / 10 & Intel SRT<br>* скорость передачи данных до 6 гигабит/с. Поддержка RAID 0 / 1 / 5 / 10 & Intel SRT<br>* скорость передачи данных до 6 гигабит/с. Поддержка AHCI |
| eSATA | eSATA x 1 (by Intel X79) | скорость передачи данных до 3 гигабит/с. Поддержка Port-Multiplier/RAID 0 / 1 / 5 / 10 & Intel SRT |
| Локальная сеть | Realtek RTL 8111E | Автоматическое согласование 10 / 100 / 1000 Мб/с<br>Частичная / полная дуплексная способность |
| Звуковая поддержка жесткого диска | ALC898 | Звуковая поддержка High-Definition<br>7.1канальный звуковой выход |

| СПЕЦ | | | |
|---|---|---|---|
| Слоты | Слот PCI | x1 | |
| | Слот PCI Express Gen3 x16 (x16) | x2 | |
| | Слот PCI Express Gen3 x16 (x8) | x1 | |
| | Слот PCI Express Gen2 x1 | x2 | |
| Встроенный разъём | Разъём SATA3 | x4 | Каждый разъём поддерживает 1 устройство SATA |
| | Разъём SATA2 | x3 | Каждый разъём поддерживает 1 устройство SATA |
| | Разъём на лицевой панели | x1 | Поддержка устройств на лицевой панели |
| | Входной звуковой разъём | x1 | Поддержка звуковых функций на лицевой панели |
| | Разъём вывода для S/PDIF | x1 | Поддержка вывода цифровой звуковой функции |
| | Контактирующее приспособление вентилятора центрального процессора | x1 | Источник питания для вентилятора центрального процессора (с функцией интеллектуального вентилятора) |
| | Контактирующее приспособление вентилятора системы | x2 | Источник питания для вентилятора системы |
| | Открытое контактирующее приспособление CMOS | x1 | |
| | USB3.0-разъём | x1 | Каждый разъём поддерживает 2 USB-порта на лицевой панели |
| | USB2.0-разъём | x2 | Каждый разъём поддерживает 2 USB-порта на лицевой панели |
| | Разъем питания (24 вывод) | x1 | |
| | Разъем питания (8 вывод) | x2 | |
| | Разъём Последовательный порт | x1 | |
| | Разъём едока ИКЫЙ | x1 | |
| Задняя панель средств ввода-вывода | Клавиатура PS/2 | x1 | |
| | Порт LAN | x1 | |
| | USB2.0-порт | x2 | |
| | USB3.0-порт | x6 | |
| | Гнездо для подключения наушников | x6 | |
| | eSATA порт | x1 | |
| | Оптически +coaxial вывода для S/PDIF | x1 | |
| Размер панели | 244 мм (Ш) X 305 мм (В) | | ATX |
| Поддержка OS | Windows XP / Vista / 7 | | Biostar сохраняет за собой право добавлять или удалять средства обеспечения для OS с или без предварительного уведомления. |

## ARABIC

| المواصفات | | |
|---|---|---|
| وحدة المعالجة المركزية | SOCKET 2011<br>معالجات Intel Sandybridge-E series / Core i7 Extreme / Core i7 بتردد يصل إلى | تدعم تقنيات Execute Disable Bit / Enhanced Intel SpeedStep® / Intel Architecture-64 / Extended Memory 64 Technology / Virtualization Technology / Hyper Threading |
| مجموعة الشرائح | Intel X79 | |
| الذاكرة الرئيسية | فتحة DDR3 DIMM عدد4<br>سعة DDR3 تدعم ذاكرة من نوع DIMM تدعم كل فتحة<br>غب8/غب4/غب2/غب1<br>سعة ذاكرة قصوى 32جيجا بايت | ذاكرة 3DDR قناة رباعية<br>سعات DDR3 نوع من الذاكرة تدعم<br>2400(OC)/2133(OC)/1866(OC)/1600/ 1333<br>/1066/800 بايت ميجا<br>ECC وتلك التي لا تتوافق مع DIMM لا تدعم رقائق الذاكرة |
| Super I/O | IT8728<br>الأكثر استخداماً. Super I/O توفر وظيفة<br>Low Pin Count Interface تدعم تقنية | وسائل التحكم في البيئة:<br>مراقب لمعرفة حالة الأجهزة<br>مراقب في سرعة المروحة<br>وظيفة "Smart Guardian" من ITE |
| SATA | SATA2 x 3 (Intel X79)<br>SATA3 x 2 (Intel X79)<br>SATA3 x 2 (ASM1061) | نقل البيانات بسرعات تصل إلى 3 جيجابت/ثانية.<br>RAID 0 / 1 / 5 / 10 & Intel SRT تدعم تقنية<br>نقل البيانات بسرعات تصل إلى 6 جيجابت/ثانية.<br>RAID 0 / 1 / 5 / 10 & Intel SRT تدعم تقنية<br>نقل البيانات بسرعات تصل إلى 6 جيجابت/ثانية.<br>AHCI تدعم تقنية |
| eSATA | eSATA x 1 (Intel X79) | نقل البيانات بسرعات تصل إلى 3 جيجابت/ثانية.<br>RAID 0 / 1 / 5 / 10 & Intel SRT تدعم تقنية |
| شبكة داخلية | Realtek RTL 8111E | تفاوض تلقائي 100/10 ميجا بايت / ثانية و1جيجا بت/ثانية<br>إمكانية النقل المزدوج الكامل/النصفي |
| دعم الصوت عالي التعريف | ALC898 | تدعم تقنية الصوت عالي التعريف من<br>7.1 قنوات لخرج الصوت |
| القحات | فتحة PCI عدد 1<br>فتحة PCI Express Gen3 x16 (x16) عدد 2<br>فتحة PCI Express Gen3 x16 (x8) عدد 1<br>فتحة PCI Express Gen2 x1 عدد 2 | |

| المواصفات | | | |
|---|---|---|---|
| المنافذ على سطح اللوحة | منفذ SATA3 | عدد 4 | يدعم كل منفذ واحد من أجهزة SATA |
| | منفذ SATA2 | عدد 3 | يدعم كل منفذ واحد من أجهزة SATA |
| | منفذ اللوحة الأمامية | عدد 1 | يدعم تجهيزات اللوحة الأمامية |
| | منفذ الصوت الأمامي | عدد 1 | يدعم وظيفة الصوت باللوحة الأمامية |
| | منفذ خرج S/PDIF | عدد 1 | يدعم وظيفة خرج الصوت الرقمي |
| | وصلة مروحة وحدة المعالجة المركزية | عدد 1 | لتوصيل الطاقة لمروحة وحدة المعالجة مع وظيفة Smart Fan |
| | وصلة مروحة النظام | عدد 2 | لتوصيل الطاقة لمروحة النظام |
| | وصلة مسح CMOS | عدد 1 | |
| ناقذ دخل/خرج اللوحة الخلفية | منفذ USB 3.0 | عدد 1 | يدعم كل منفذ فتحتي USB باللوحة الأمامية |
| | منفذ USB 2.0 | عدد2 | يدعم كل منفذ فتحتي USB باللوحة الأمامية |
| | منفذ توصيل الطاقة (24بنوس) | عدد 1 | |
| | منفذ توصيل الطاقة (8بنوس) | عدد 2 | |
| | منفذ تسلسلي | عدد 1 | |
| | منفذ الأحمر تحت مستهلكة | عدد 1 | |
| | لوحة مفاتيح PS/2 | عدد 1 | |
| | منفذ شبكة اتصل محلية | عدد 1 | |
| | منافذ USB2.0 | عدد 2 | |
| | منافذ USB3.0 | عدد 6 | |
| | مقبس صوت | عدد 6 | |
| | منفذ eSATA | عدد1 | |
| | محور مُتحد +بصريّة منفذ خرج S/PDIF | عدد 1 | |
| حجم اللوحة | 244 مم (عرض) X 305 مم (ارتفاع) | | ATX |
| دعم أنظمة التشغيل | Windows XP / Vista / 7 | | بحقها في إضافة أو إزالة الدعم لأي نظام تشغيل بإخطار Biostar تحتفظ أو بدون إخطار. |

## JAPANESE

| *仕様* | | |
|---|---|---|
| CPU | SOCKET 2011<br>Intel Sandybridge-E series /<br>Core i7 Extreme / Core i7 processor | Execute Disable Bit / Enhanced Intel SpeedStep® /<br>Intel Architecture-64 / Extended Memory 64<br>Technology / Virtualization Technology / Hyper<br>Threadingをサポートします |
| チップセット | Intel X79 | |
| メインメモリ | DDR3 DIMMスロット x 4<br>各DIMMは 1GB / 2GB / 4GB / 8GB DDR3<br>をサポート<br>最大メモリ容量32GB | クワッド チャンネルモードDDR3 メモリモジュール<br>DDR3 2400(OC)/2133(OC)/1866(OC)/1600/ 1333<br>/1066/800 をサポート<br>登録済みDIMMとECC DIMMはサポートされません |
| Super I/O | IT8728<br>もっとも一般に使用されるレガシーSuper I/O<br>機能を採用しています。<br>低ピンカウントインターフェイス | 環境コントロールイニシアチブ、<br>H/Wモニター<br>ファン速度コントローラ/ モニター<br>ITEの「スマートガーディアン」機能 |
| SATA | SATA2 x 3 (Intel X79)<br><br>SATA3 x 2 (Intel X79)<br><br>SATA3 x 2 (ASM1061) | * 最高3 Gb/秒のデータ転送速度<br>RAID 0 / 1 / 5 / 10 & Intel SRT のサポート<br>* 最高6 Gb/秒のデータ転送速度<br>RAID 0 / 1 / 5 / 10 & Intel SRT のサポート<br>* 最高6 Gb/秒のデータ転送速度<br>AHCIのサポート |
| eSATA | eSATA x 1 (Intel X79) | 最高3 Gb/秒のデータ転送速度<br>RAID 0 / 1 / 5 / 10 & Intel SRT のサポート |
| LAN | Realtek RTL 8111E | 10 / 100 / 1000 Mb/秒のオートネゴシエーション<br>半/全二重機能 |
| HDオーディオのサポート | ALC898 | ハイデフィニションオーディオのサポート<br>7.1 チャンネルオーディオアウト |
| スロット | PCIスロット x1<br>PCI Express Gen3 x16スロット<br>(x16) x2<br>PCI Express Gen3 x16スロット<br>(x8) x1<br>PCI Express Gen2 x1スロット<br>x2 | |
| オンボードコネクタ | SATA3コネクタ x4<br>SATA2コネクタ x3<br>フロントパネルコネクタ x1 | 各コネクタは1つのSATAデバイスをサポートします<br>各コネクタは1つのSATAデバイスをサポートします<br>フロントパネル機能をサポートします |

| 仕様 | | | |
|---|---|---|---|
| | フロントオーディオコネクタ | x1 | フロントパネルオーディオ機能をサポートします |
| | S/PDIFアウトコネクタ | x1 | デジタルオーディオアウト機能をサポートします |
| | CPUファンヘッダ | x1 | CPUファン電源装置(スマートファン機能を搭載) |
| | システムファンヘッダ | x2 | システムファン電源装置 |
| | CMOSクリアヘッダ | x1 | |
| | USB3.0コネクタ | x1 | 各コネクタは2つのフロントパネルUSB3.0ポートをサポートします |
| | USB2.0コネクタ | x2 | 各コネクタは2つのフロントパネルUSB2.0ポートをサポートします |
| | 電源コネクタ(24ピン) | x1 | |
| | 電源コネクタ(8ピン) | x2 | |
| | シリアルポートコネクタ | x1 | |
| | 消費者IRコネクタ | x1 | |
| 背面パネルI/O | PS/2キーボード | x1 | |
| | LANポート | x1 | |
| | USB2.0ポート | x2 | |
| | USB3.0ポート | x6 | |
| | オーディオジャック | x6 | |
| | eSATAポート | x1 | |
| | 光学+coaxial S/PDIFアウト | x1 | |
| ボードサイズ | 244 mm (幅) X 305 mm (高さ) | | ATX |
| OSサポート | Windows XP / Vista / 7 | | Biostarは事前のサポートなしにOSサポートを追加または削除する権利を留保します。 |

2011/12/02