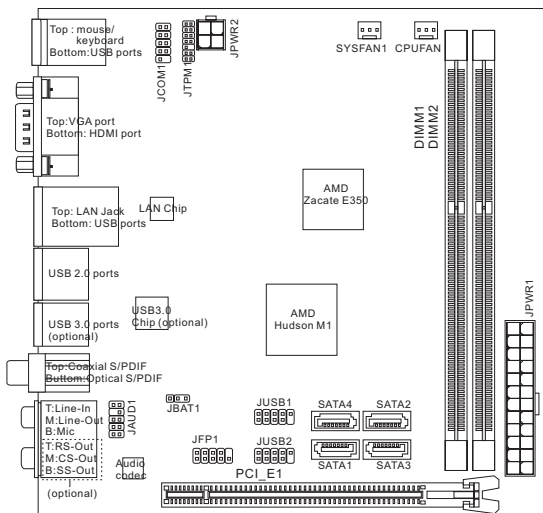


# ENGLISH

## GETTING START

Thank you for choosing the E350IA-E45/ E350IA-E44/ E350IS-E45 series (MS-7698 v1.x) Mini-ITX motherboard. The E350IA-E45/ E350IA-E44/ E350IS-E45 series are designed based on **AMD® Hudson M1** chipset and **Zacate-FT1** APU for optimal system efficiency. The E350IA-E45/ E350IA-E44/ E350IS-E45 series deliver a high performance and professional desktop platform solution.

### Layout



# SPECIFICATIONS

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## Processor Support

- Integrated AMD® Zacate-FT1™ APU
  - Zacate E350, dual core

## Chipset

- AMD® Hudson M1 chipset

## Memory Support

- 2 DDR3 DIMMs support DDR3 1066 SDRAM (total Max. 8GB)  
(For more information on compatible components, please visit <http://www.msi.com/index.php?func=testreport>)

## LAN

- Supports LAN 10/ 100/ 1000 by Realtek® RTL8111E

## Audio

- Chip integrated by Realtek® ALC887/ ALC892 (optional)
- Supports 7.1 channels audio out
- Compliant with Azalia 1.0 Spec

## SATA

- 4 SATA 6Gb/s ports by AMD® Hudson M1

## USB 3.0 (for E350IA-E45/ E350IA-E44)

- 2 USB 3.0 rear IO ports by NEC® uPD720200F1

## Connectors

- Back panel
  - 1 PS/2 mouse/ keyboard combo port
  - 1 VGA port
  - 1 HDMI port
  - 6 USB 2.0 ports
  - 2 USB 3.0 ports (for E350IA-E45/ E350IA-E44)
  - 1 Coaxial S/PDIF-out port
  - 1 Optical S/PDIF-out port
  - 1 LAN jack
  - 6 flexible audio jacks (for E350IA-E45/ E350IA-E44)/  
3 flexible audio jacks (for E350IS-E45)
- On-Board Connectors
  - 2 USB 2.0 connectors
  - 1 Front Panel Audio connector
  - 1 Serial Port connector
  - 1 TPM connector

**Slots**

- 1 PCIe x16 slot, supports up to PCIe x4 speed

**Form Factor**

- Mini-ITX (17.0 cm X 17.0 cm)

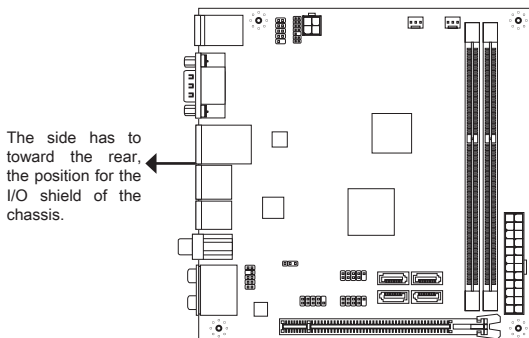
**Mounting**

- 4 mounting holes

If you need to purchase accessories and request the part numbers, you could search the product web page and find details on our web address below  
<http://www.msi.com/index.php>

## SCREW HOLES

When you install the mainboard, you have to place the mainboard into the chassis in the correct direction. The locations of screws holes on the mainboard are shown as below.



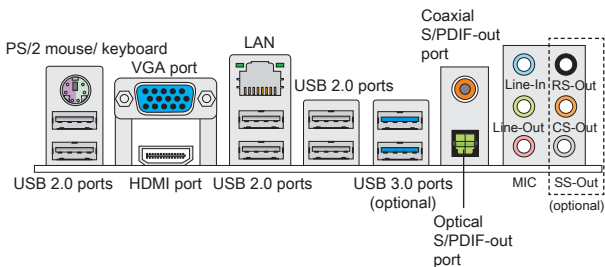
Refer above picture to install standoffs in the appropriate locations on chassis and then screw through the mainboard screw holes into the standoffs.

### IMPORTANT

- \* To prevent damage to the mainboard, any contact between the mainboard circuit and chassis or unnecessary standoffs mounted on the chassis is prohibited.
- \* Please make sure there is no metal components placed on the mainboard or within the chassis that may cause short circuit of the mainboard.

## REAR PANEL

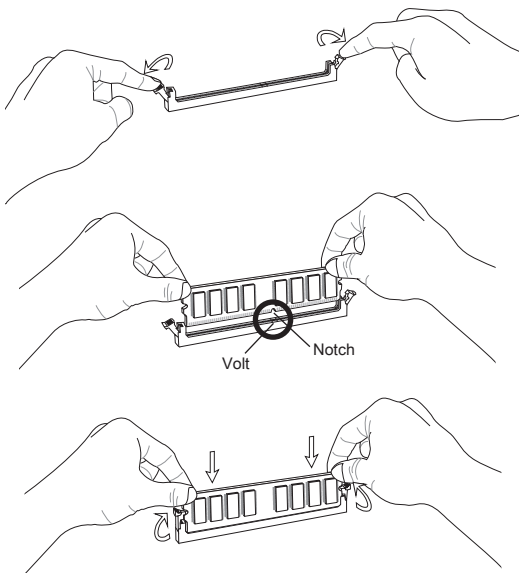
The rear panel provides the following connectors:



## HARDWARE SETUP

### Installing Memory Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot. **You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.**
3. The plastic clip at each side of the DIMM slot will automatically close.

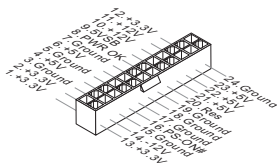


### **IMPORTANT**

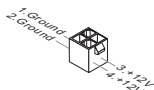
- \* *DDR3 memory modules are not interchangeable with DDR2 and the DDR3 standard is not backwards compatible. You should always install DDR3 memory modules in the DDR3 DIMM slots.*
- \* *To enable successful system boot-up, always insert the memory modules into the DIMM1 first.*

**ATX 24-Pin Power Connector: JPWR1**

This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

**ATX 4-Pin Power Connector: JPWR2**

This 12V power connector is used to provide power to the CPU.

**IMPORTANT**

*Make sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.*

**Serial ATA Connector: SATA1~4**

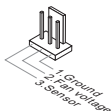
This connector is a high-speed Serial ATA interface port. Each connector can connect to one Serial ATA device.

**IMPORTANT**

*Please do not fold the Serial ATA cable into a 90-degree angle. Otherwise, data loss may occur during transmission.*

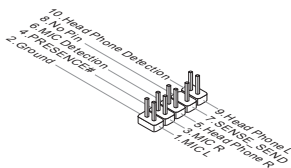
### Fan Power Connectors: CPUFAN, SYSFAN1

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always note that the red wire is the positive and should be connected to the +12V; the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



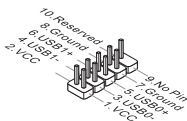
### Front Panel Audio Connector: JAUD1

This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.



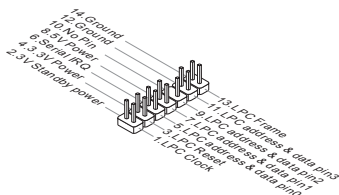
### Front USB Connector: JUSB1/ JUSB2

This connector, compliant with Intel® I/O Connectivity Design Guide, is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems and the like.

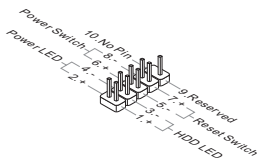


**TPM Module Connector: JTPM1**

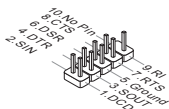
This connector connects to a TPM (Trusted Platform Module) module. Please refer to the TPM security platform manual for more details and usages.

**Front Panel Connector: JFP1**

The connector is for electrical connection to the front panel switches and LEDs. This is compliant with Intel® Front Panel I/O Connectivity Design Guide.

**Serial Port Connector: JCOM1**

This connector is a 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial device.



### Clear CMOS Jumper: JBAT1

There is a CMOS RAM onboard that has a power supply from an external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the jumper to clear data.



Keep Data



Clear Data

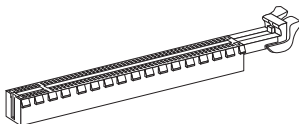
### IMPORTANT

*You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.*

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### PCI Express Slot

The PCI Express slot supports the PCI Express interface expansion card.



The PCIe x16 slot

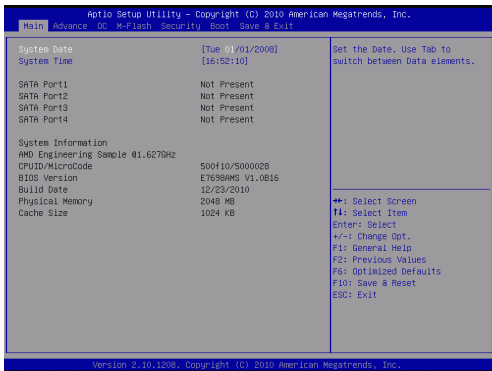
## BIOS SETUP

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

Press DEL to enter Setup Menu

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

### The Menu Bar



#### Main

Use this menu for basic system configurations, such as time, date etc.

#### Advance

Use this menu to set up the items of special enhanced features.

#### OC

Use this menu to specify the settings for DRAM timing and CPU features.

#### M-Flash

Use this menu to read/ flash the BIOS from storage drive (FAT/ FAT32 format only).

## Security

Use this menu to set supervisor and user passwords.

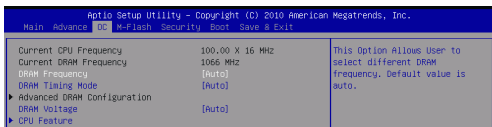
## Boot

Use this menu to specify the priority of boot devices.

## Save & Exit

This menu allows you to load the BIOS default values or factory default settings into the BIOS and exit the BIOS setup utility with or without changes.

## OC



### Current CPU / DRAM Frequency

These items show the current clocks of CPU and Memory speed. Read-only.

### DRAM Frequency

This setting controls the ratio of memory frequency to enable the memory to run at different frequency combinations.

### DRAM Timing Mode

Select whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to [Auto] enables DRAM timings and the following "Advanced DRAM Configuration" sub-menu to be determined by BIOS based on the configurations on the SPD. Selecting [Manual] allows users to configure the DRAM timings and the following related "Advanced DRAM Configuration" sub-menu manually.

### Advanced DRAM Configuration

Press <Enter> to enter the sub-menu. In this sub-menu you can adjust the advanced DRAM timing.

#### Command Rate

This setting controls the DRAM command rate.

#### tCL

This controls the CAS latency, which determines the timing delay (in clock cycles) before SDRAM starts a read command after receiving it.

**tRCD**

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance.

**tRP**

This setting controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refreshing may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system.

**tRAS**

This setting determines the time RAS takes to read from and write to memory cell.

**tRC**

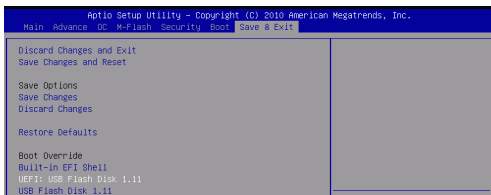
The rowcycle time determines the minimum number of clock cycles a memory row takes to complete a full cycle, from row activation up to the precharging of the active row.

**DRAM Voltage**

This item is used to adjust the DRAM voltage.

**CPU Feature**

Press <Enter> to enter the sub-menu. In this sub-menu you can adjust the CPU features.

**Save & Exit****Discard Changes and Exit**

Use this item to abandon all changes and exit setup.

**Save Changes and Reset**

Use this item to save changes and reset the system.

**Save Changes**

Use this item to save changes.

**Discard Changes**

Use this item to abandon all changes.

**Restore Defaults**

Use this item to load the optimized default values set by the BIOS vendor.

**== Boot Override ==**

The installed storage devices will appear on this menu, you can select one of them be a boot device.

**Built-in EFI Shell**

Use this item to enter the EFI Shell.