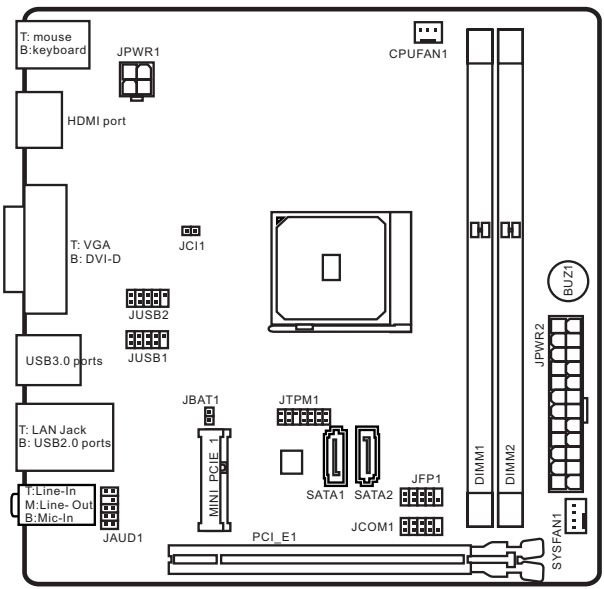
# English

Thank you for choosing the AM1I Series (MS-7865 v2.X) Mini-ITX motherboard. The AM1I Series motherboards are designed to fit the advanced AMD AM1 processor, the AM1I Series motherboards deliver a high performance and professional desktop platform solution.



## Layout



## Motherboard Specifications

| | |
|---|---|
| **Processor** | ■ AMD Socket AM1 Processors |
| **Memory Support** | ■ 2x DDR3 memory slots supporting up to 32GB<br>■ Supports DDR3 1600/ 1333/ 1066 MHz<br>■ Single channel memory architecture<br>■ Supports non-ECC, un-buffered memory |
| **Expansion Slots** | ■ 1x PCIe 2.0 x16 slot, supports x4 speed<br>■ 1x Mini-PCIe slot |
| **Onboard Graphics** | ■ 1x VGA port, supporting a maximum resolution of 1920x1200<br>■ 1x HDMI port, supporting a maximum resolution of 4096x2160<br>■ 1x DVI-D port, supporting a maximum resolution of 1920x1200 |
| **Storage** | ■ 2x SATA 6Gb/s ports |
| **USB 3.0** | ■ 2x USB 3.0 ports on the back panel |
| **USB 2.0** | ■ 6x USB 2.0 ports (2 ports on the back panel, 4 ports available through the internal USB connectors) |
| **Audio** | ■ Realtek® ALC887 Codec |
| **LAN** | ■ Realtek® RTL8111G Gigabit LAN controller |
| **Back Panel Connectors** | ■ 1x PS/2 keyboard port<br>■ 1x PS/2 mouse port<br>■ 1x VGA port<br>■ 1x DVI-D port<br>■ 1x HDMI port<br>■ 2x USB 3.0 ports<br>■ 2x USB 2.0 ports<br>■ 1x LAN (RJ45) port<br>■ 3x audio jacks |
| **Internal Connectors** | ■ 1x 24-pin ATX main power connector<br>■ 1x 4-pin ATX 12V power connector<br>■ 2x SATA 6Gb/s connectors<br>■ 2x USB 2.0 connectors (supports additional 4 USB 2.0 ports)<br>■ 1x 3-pin CPU fan connector<br>■ 1x 4-pin system fan connector<br>■ 1x Front panel audio connector<br>■ 1x Serial port connector<br>■ 1x TPM connector<br>■ 1x System panel connector<br>■ 1x Chassis Intrusion connector<br>■ 1x Clear CMOS jumper |

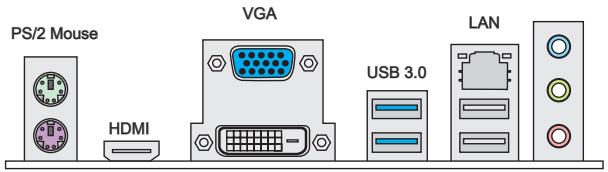
| | |
|---|---|
| **BIOS Features** | ■ UEFI AMI BIOS<br>■ ACPI 5.0, PnP 1.0a, SM BIOS 2.7, DMI 2.0<br>■ Multi-language |
| **Form Factor** | ■ Mini-ITX Form Factor<br>■ 6.7 in. x 6.7 in. (17.0 cm x 17.0 cm) |



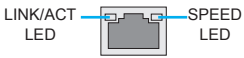
For the latest information about CPU, please visit http://www.msi.com/service/cpu-support/

For more information on compatible components, please visit http://www.msi.com/service/test-report/

## Back Panel




## LAN LED Indicator




| LED | LED Status | Description |
|---|---|---|
| Link/ Activity LED | Off | No link |
| | Yellow | Linked |
| | Blinking | Data activity |
| Speed LED | Off | 10 Mbps connection |
| | Green | 100 Mbps connection |
| | Orange | 1 Gbps connection |

## Audio 2, 4, 6 or 8-channel configuration

| Port | 2-channel | 4-channel | 6-channel | 8-channel |
|---|---|---|---|---|
| Blue | Line in | RS-Out | RS-Out | RS-Out |
| Green | Line out | FS-Out | FS-Out | FS-Out |
| Pink | Mic | Mic | CS-Out | CS-Out |
| Front audio | - | - | - | SS-Out |

## APU & Heatsink Installation

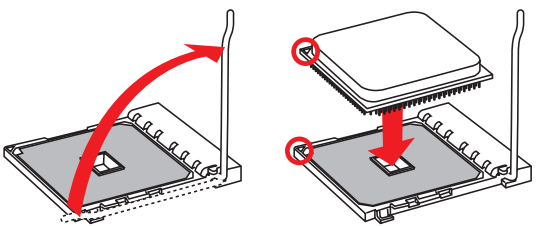
When installing an APU, always remember to install an APU heatsink. An APU heatsink is necessary to prevent overheating and maintain system stability. Follow the steps below to ensure correct APU and heatsink installation. Wrong installation can damage both the APU and the motherboard.

**Video Demonstration**

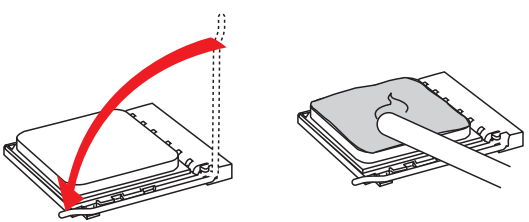
*Watch the video to learn how to install APU & heatsink at the address below.*

*http://youtu.be/s--YUBNkHc8*

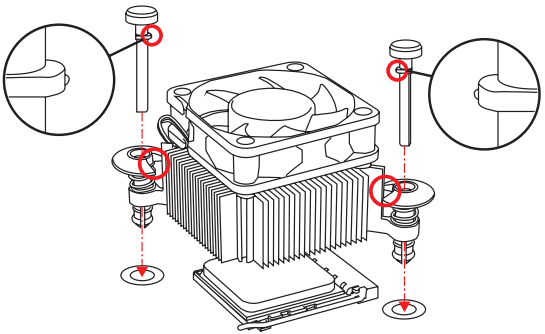
1. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.
2. Look for the gold arrow of the APU. The gold arrow should point as shown in the picture. The APU can only fit in the correct orientation.



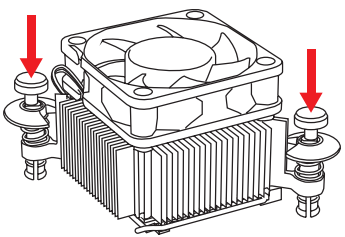
3. If the APU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damages to your motherboard.
4. Press the APU down firmly into the socket and close the lever. As the APU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the APU to make sure the APU is properly and completely embedded into the socket.
5. Evenly spread a thin layer of thermal paste (or thermal tape) on the top of the APU. This will help in heat dissipation and prevent APU overheating.



6. Locate the CPUFAN connector on the motherboard.
7. Place the heatsink on the motherboard with the fan's cable facing towards the fan connector and the fasteners matching the holes on the motherboard.
8. Align the protrusion of the push-pin with the notch of the fastener as shown in the picture. Insert the two push-pins into the two fasteners.



9. Push down the push-pins until the two fasteners get wedged into the holes on the motherboard. Press the two fasteners down to fasten the heatsink. As each fastener locks into position a click should be heard.
10. Inspect the motherboard to ensure that the fastener-ends have been properly locked in place.
11. Attach the fan cable to the CPUFAN connector on the motherboard.

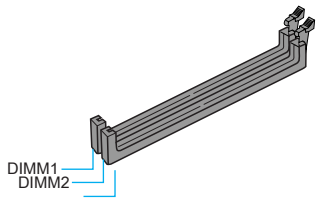


**Important**

- *Confirm that the APU cooler has formed a tight seal with the APU before booting your system.*
- *Please refer to the documentation in the APU cooler package for more details about APU cooler installation.*

## Memory

These DIMM slots are used for installing memory modules. For more information on compatible components, please visit http://www.msi.com/service/test-report/




**Video Demonstration**

*Watch the video to learn how to install memories at the address below.*
*http://youtu.be/76yLtJaKICQ*

**Important**

- *DDR3 memory modules are not interchangeable with DDR2, and the DDR3 standard is not backward compatible. Always install DDR3 memory modules in DDR3 DIMM slots.*
- *Due to chipset resource usage, the system will only detect up to 31+ GB of memory (not full 32 GB) when all DIMM slots have 8GB memory modules installed.*

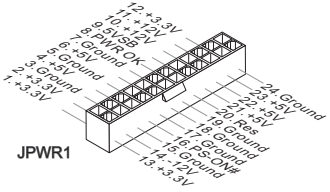
# Internal Connectors

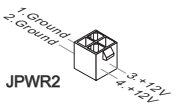
## JPWR1~2: ATX Power Connectors

These connectors allow you to connect an ATX power supply. To connect the ATX power supply, align the power supply cable with the connector and firmly press the cable into the connector. If done correctly, the clip on the power cable should be hooked on the motherboard's power connector.

**Video Demonstration**

*Watch the video to learn how to install power supply connectors.*
*http://youtu.be/gkDYyR_83l4*



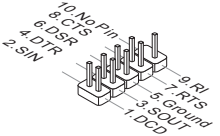




**Important**

*Make sure that all the power cables are securely connected to a proper ATX power supply to ensure stable operation of the motherboard.*

## JCOM1: Serial Port Connector

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



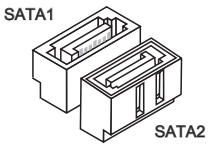
## SATA1~2: SATA Connectors

This connector is a high-speed SATA interface port. Each connector can connect to one SATA device. SATA devices include disk drives (HDD), solid state drives (SSD), and optical drives (CD/ DVD/ Blu-Ray).

**Video Demonstration**

*Watch the video to learn how to Install SATA HDD.*
*http://youtu.be/RZsMpqxythc*



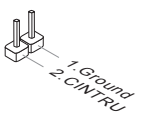



**Important**

- *Many SATA devices also need a power cable from the power supply. Such devices include disk drives (HDD), solid state drives (SSD), and optical drives (CD / DVD / Blu-Ray). Please refer to the device's manual for further information.*
- *Many computer cases also require that large SATA devices, such as HDDs, SSDs, and optical drives, be screwed down into the case. Refer to the manual that came with your computer case or your SATA device for further installation instructions.*
- *Please do not fold the SATA cable at a 90-degree angle. Data loss may result during transmission otherwise.*
- *SATA cables have identical plugs on either sides of the cable. However, it is recommended that the flat connector be connected to the motherboard for space saving purposes.*

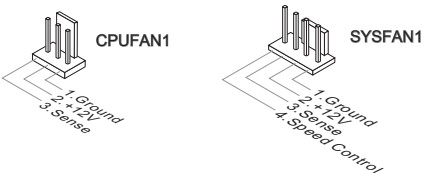
## JCI1: Chassis Intrusion Connector

This connector connects to the chassis intrusion switch cable. If the computer case is opened, the chassis intrusion mechanism will be activated. The system will record this intrusion and a warning message will flash on screen. To clear the warning, you must enter the BIOS utility and clear the record.



## CPUFAN1,SYSFAN1: Fan Power Connectors

The fan power connectors support system cooling fans with +12V. If the motherboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with a speed sensor to take advantage of the fan control. Remember to connect all system fans. Some system fans may not connect to the motherboard and will instead connect to the power supply directly. A system fan can be plugged into any available system fan connector.

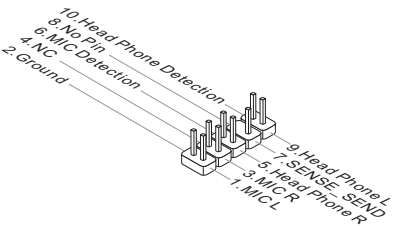



**Important**

- *Please refer to your processor's official website or consult your vendor to find recommended CPU heatsink.*
- *These connectors support Smart Fan Control with liner mode. The Command Center utility can be installed to automatically control the fan speeds according to the CPU's and system's temperature.*
- *If there are not enough ports on the motherboard to connect all system fans, adapters are available to connect a fan directly to a power supply.*
- *Before first boot up, ensure that there are no cables impeding any fan blades.*

## JAUD1: Front Panel Audio Connector

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

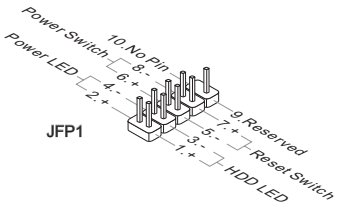


## JFP1: System Panel Connectors

These connectors connect to the front panel switches and LEDs. The JFP1 connector is compliant with the Intel® Front Panel I/O Connectivity Design Guide. When installing the front panel connectors, please use the optional M-Connector to simplify installation. Plug all the wires from the computer case into the M-Connector and then plug the M-Connector into the motherboard.

**Video Demonstration**

*Watch the video to learn how to Install front panel connectors.*
*http://youtu.be/DPELIdVNZUI*

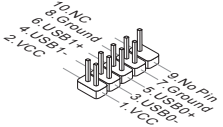



**Important**

- *On the connectors coming from the case, pins marked by small triangles are positive wires. Please use the diagrams above and the writing on the optional M-Connectors to determine correct connector orientation and placement.*
- *The majority of the computer case's front panel connectors will primarily be plugged into JFP1.*

## JUSB1~2: USB 2.0 Expansion Connectors

This connector is designed for connecting high-speed USB peripherals such as USB HDDs, digital cameras, MP3 players, printers, modems, and many others.

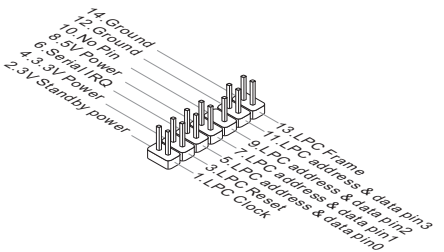



**Important**

*Note that the VCC and GND pins must be connected correctly to avoid possible damage.*

## JTPM1: TPM Module Connector

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




## JBAT1: Clear CMOS Jumper

There is CMOS RAM onboard that is external powered from a battery located on the motherboard to save system configuration data. With the CMOS RAM, the system can automatically boot into the operating system (OS) every time it is turned on. If you want to clear the system configuration, set the jumpers to clear the CMOS RAM.


Keep Data

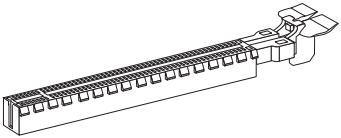

Clear Data

**Important**

*You can clear the CMOS RAM by shorting this jumper while the system is off. Afterwards, open the jumper . Do not clear the CMOS RAM while the system is on because it will damage the motherboard.*

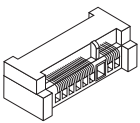
## PCI_E1: PCIe x16 Expansion Slot

The PCIe slot supports the PCIe interface expansion card.



## MINI_PCI_E1: Mini-PCIe Expansion Slot

The Mini-PCIe slot supports the Mini-PCIe interface expansion card.



***Important***

*When adding or removing expansion cards, always turn off the power supply and unplug the power supply power cable from the power outlet. Read the expansion card's documentation to check for any necessary additional hardware or software changes.*

# BIOS Setup

The default settings offer the optimal performance for system stability in normal conditions. You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run SETUP.
- You want to change the default settings for customized features.


- *Please load the default settings to restore the optimal system performance and stability if the system becomes unstable after changing BIOS settings. Select the "Restore Defaults" and press <Enter> in BIOS to load the default settings.*
- *If you are unfamiliar with the BIOS settings, we recommend that you keep the default settings to avoid possible system damage or failure booting due to inappropriate BIOS configuration.*

## Entering BIOS Setup

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

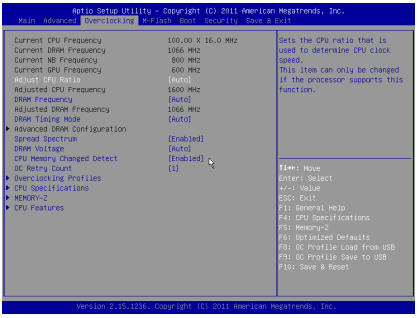
### Press DEL key to enter Setup Menu, F11 to enter Boot Menu

If the message disappears before you respond and you still need to enter BIOS, restart the system by turning the computer OFF then back ON or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

## Control Keys

| | |
|---|---|
| ↑ ↓ ← → | Move between items |
| Enter | Select an item |
| + - | Change the value of the selected item |
| ESC | Exit |
| F1 | Display the general help |
| F4 | Display CPU specifications |
| F5 | Memeory-Z |
| F6 | Load optimized defaults |
| F8 | Load an OC profile from USB |
| F9 | Save an OC profile to USB |
| F10 | Exit |

## OC Menu





- *Overclocking your PC manually is only recommended for advanced users.*
- *Overclocking is not guaranteed, and if done improperly, can void your warranty or severely damage your hardware.*
- *If you are unfamiliar with overclocking, we advise you to use OC Genie for easy overclocking.*

**▸ Current CPU/ DRAM/ NB/ GPU Frequency**

These items show the current frequencies of installed CPU, Memory and. Read-only.

**▸ Adjust CPU Ratio [Auto]**

Sets the CPU ratio that is used to determine CPU clock speed. This item can only be changed if the processor supports this function.

**▸ Adjusted CPU Frequency**

Shows the adjusted CPU frequency. Read-only.

**▸ DRAM Frequency [Auto]**

Sets the DRAM frequency. Please note the overclocking behavior is not guaranteed.

**▸ Adjusted DRAM Frequency**

Shows the adjusted DRAM frequency. Read-only.

**▸ DRAM Timing Mode [Auto]**

Selects the memory timing mode.

| | |
|---|---|
| [Auto] | DRAM timings will be determined based on SPD (Serial Presence Detect) of installed memory modules. |
| [Link] | Allows user to configure the DRAM timing manually for all memory channel. |

English

[UnLink] Allows user to configure the DRAM timing manually for respective memory channel.

▸ **Advanced DRAM Configuration**

Press <Enter> to enter the sub-menu. This sub-menu will be activated after setting [Link] or [Unlink] in “DRAM Timing Mode”. User can set the memory timing for each memory channel. The system may become unstable or unbootable after changing memory timing. If it occurs, please clear the CMOS data and restore the default settings. (Refer to the Clear CMOS jumper/ button section to clear the CMOS data, and enter the BIOS to load the default settings.)

▸ **Spread Spectrum**

This function reduces the EMI (Electromagnetic Interference) generated by modulating clock generator pulses.

[Enabled] Enables the spread spectrum function to reduce the EMI (Electromagnetic Interference) problem.

[Disabled] Enhances the overclocking ability of CPU Base clock.


- *If you do not have any EMI problem, leave the setting at [Disabled] for optimal system stability and performance. But if you are plagued by EMI, select the value of Spread Spectrum for EMI reduction.*
- *The greater the Spread Spectrum value is, the greater the EMI is reduced, and the system will become less stable. For the most suitable Spread Spectrum value, please consult your local EMI regulation.*
- *Remember to disable Spread Spectrum if you are overclocking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your overclocked processor to lock up.*

▸ **DRAM Voltage [Auto]**

Sets the value for appointed voltage related to memory. If set to "Auto", BIOS will set the voltage automatically or you can set it manually.

▸ **CPU Memory Changed Detect [Enabled]**

Enables or disables the system to issue a warning message during boot when the CPU or memory has been replaced.

[Enabled] The system will issue a warning message during boot and than needs to load the default settings for new devices.

[Disabled] Disables this function and keeps the current BIOS settings.

▸ **OC Retry Count**

When overclocking has failed, setting this item as [1,3] will allow system to reboot 1/ 3 times with the same overclocked configuration. If overclocking has failed every time, the system will restore the defaults.

▸ **Overclocking Profiles**

Overclocking Profiles management. Press <Enter> to enter the sub-menu.

▸ **Overclocking Profile 1/ 2/ 3/ 4/ 5/ 6**

Overclocking Profile 1/ 2/ 3/ 4/ 5/ 6 management. Press <Enter> to enter the sub-menu.

▸ **OC Profile Save to USB**

Saves OC profile to the USB flash disk drive. The USB flash disk should be FAT32 format only.

▸ **OC Profile Load from USB**

Loads OC profile from the USB flash disk drive. The USB flash disk should be FAT32 format only.

▸ **CPU Specifications**

Press <Enter> to enter the sub-menu. This sub-menu displays the information of installed CPU. You can also access this information menu at any time by pressing [F4]. Read only.

▸ **CPU Technology Support**

Press <Enter> to enter the sub-menu. The sub-menu shows what the key features does the installed CPU support. Read only.

▸ **MEMORY-Z**

Press <Enter> to enter the sub-menu. This sub-menu displays all the settings and timings of installed memory.

▸ **CPU Features**

Press <Enter> to enter the sub-menu.

▸ **AMD Cool'n'Quiet [Auto]**

Enabled or disabled AMD Cool'n'Quiet function.

| | |
|---|---|
| [Auto] | Depends on AMD Design. |
| [Enable] | Enables AMD Cool'n'Quiet function. The Cool'n'Quiet technology can effectively and dynamically lower CPU speed and power consumption. |
| [Disabled] | Disables this function. |


*When adjust CPU Ratio setting then Cool'n'Quiet function will be disabled automatically. For CPU which supports the Turbo Core Tech., please set AMD Turbo Core Technology and AMD Cool'n'Quiet as Disabled to retain the default CPU core speed.*

▸ **SVM Mode [Enabled]**

Enables or disables CPU Virtualization.

| | |
|---|---|
| [Enabled] | Enables CPU Virtualization and allows a platform to run multiple operating systems in independent partitions. The system can function as multiple systems virtually. |
| [Disabled] | Disables this function. |

▸ **Core C6 State [Enabled]**

Enables or disables C6 state support.

| | |
|---|---|
| [Enabled] | When the CPU enters C6 state, all cores will save architectural state and reduce core voltages to zero volts. Wake up the CPU from C6 state will take a lot longer. |
| [Disabled] | Disables this function. |