

**F1A55-V PLUS**



**Motherboard**

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## Notices

### Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



---

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

---

### Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

### ASUS Recycling/Takeback Services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to <http://csr.asus.com/english/Takeback.htm> for the detailed recycling information in different regions.

## REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <http://csr.asus.com/english/REACH.htm>.



**DO NOT** throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.



**DO NOT** throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

## Safety information

### Electrical safety

- To prevent electric shock hazard, disconnect the power cable from the electric outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Ensure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

### Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, ensure that all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

# About this guide

This user guide contains the information you need when installing and configuring the motherboard.

## How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**

This chapter describes the features of the motherboard and the new technology it supports.

- **Chapter 2: BIOS information**

This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

## Conventions used in this guide

To ensure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



**DANGER/WARNING:** Information to prevent injury to yourself when trying to complete a task.



**CAUTION:** Information to prevent damage to the components when trying to complete a task.



**IMPORTANT:** Instructions that you **MUST** follow to complete a task.



**NOTE:** Tips and additional information to help you complete a task.

## Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

## Typography

### **Bold text**

Indicates a menu or an item to select.

### *Italics*

Used to emphasize a word or a phrase.

### **<Key>**

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.

Example: <Enter> means that you must press the Enter or Return key.

### **<Key1>+<Key2>+<Key3>**

If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).

Example: <Ctrl>+<Alt>+<D>



## F1A55-V PLUS specifications summary

<b>APU</b>	<p>AMD® A- &amp; E2- series accelerated processor with AMD® Radeon™ HD 6000 series graphics, up to 4 CPU cores, FM1 package</p> <p>DirectX® 11 support</p> <p>AMD® Turbo Core Technology 2.0 support</p> <p>* The AMD® Turbo Core Technology 2.0 support depends on the APU types.</p> <p>** Refer to <a href="http://www.asus.com">www.asus.com</a> for the AMD® CPU support list</p>
<b>Chipset</b>	AMD® A55 FCH (Hudson D2)
<b>Memory</b>	<p>Dual-channel memory architecture</p> <p>2 x 240-pin DIMM slots support maximum 16GB unbuffered non- ECC DDR3 1866 /1600 MHz memory modules</p> <p>* The maximum 16GB memory capacity can be supported with 8GB or above DIMMs. ASUS will update the memory QVL once the DIMMs are available in the market.</p> <p>** Refer to <a href="http://www.asus.com">www.asus.com</a> for the latest Memory QVL (Qualified Vendors List).</p> <p>*** When you install a total memory of 4GB capacity or more, Windows® 32-bit operating system may only recognize less than 3GB. We recommend a maximum of 3GB system memory if you are using a Windows® 32-bit operating system.</p>
<b>Graphics</b>	<p>Integrated AMD® Radeon™ HD 6000 series graphics in Llano APU</p> <p>VGA output support: D-Sub port</p> <p>Supports D-Sub with max. resolution up to 1920 x 1600 @60Hz</p> <p>Supports Microsoft® DirectX 11</p> <p>Supports AMD® Dual Graphics technology</p> <p>* Refer to <a href="http://www.amd.com">www.amd.com</a> for the discrete GPUs that support Dual Graphics.</p>
<b>Expansion slots</b>	<p>1 x PCIe 2.0 x16 slot</p> <p>3 x PCIe 2.0 x1 slots</p> <p>3 x PCI slots</p>
<b>Storage / RAID</b>	<p>AMD® A55 FCH southbridge:</p> <ul style="list-style-type: none"> <li>- 6 x Serial ATA 3.0Gb/s connectors support RAID 0, RAID 1, RAID 10, and JBOD configurations</li> </ul>
<b>LAN</b>	Realtek® 8111E-VB-GC Gigabit LAN controller

(continued on the next page)

# F1A55-V PLUS specifications summary

Audio	Realtek ALC887 3-jack 8-channel High Definition Audio CODEC
USB	AMD® A55 FCH southbridge: <ul style="list-style-type: none"><li>- 10 x USB 2.0/1.1 ports (4 ports at the front panel, 6 ports at the back panel)</li></ul>
ASUS unique features	<b>ASUS Exclusive Features</b> <ul style="list-style-type: none"><li>- EPU Lite with 4+2 power phase design</li><li>- ASUS iCafe Memory Anti-theft</li><li>- AI Suite II</li><li>- Ai Charger</li><li>- ASUS UEFi BIOS EZ Mode featuring user-friendly graphics interface</li></ul> <b>ASUS Quiet Thermal Solutions</b> <ul style="list-style-type: none"><li>- Stylish heatsink solution, Chipset and Mosfet</li><li>- ASUS Q-Fan</li></ul> <b>ASUS EZ DIY</b> <ul style="list-style-type: none"><li>- ASUS CrashFree BIOS 3</li><li>- ASUS EZ Flash 2</li><li>- ASUS MyLogo 2™</li></ul>
Special features	100% All high-quality conductive polymer conductors
Back Panel I/O ports	1 x PS/2 keyboard port 1 x PS/2 mouse port 1 x D-Sub output port 1 x COM 1 x LAN (RJ-45) port 6 x USB 2.0 ports 3 x Audio jacks

(continued on the next page)

# F1A55-V PLUS specifications summary

Internal I/O connectors / buttons / switches	2 x USB 2.0 connectors support additional 4 USB 2.0 ports 1 x High-definition front panel audio connector 6 x SATA 3.0Gb/s connectors 1 x System Panel connector (10 pin) 1 x Internal speaker connector 1 x CPU fan connector (4 pin) 1 x Chassis fan connector (3 pin) 1 x chassis intrusion connector 1 x 24-pin EATX power connector 1 x 4-pin ATX 12V power connector
BIOS	32Mb Flash ROM, AMI BIOS, PnP, DMI 2.0, WfM 2.0, ACPI 2.0a, SM BIOS 2.6
Accessories	2 x Serial ATA 3.0Gb/s cables 1 x I/O shield 1 x User Manual 1 x Support DVD
Support DVD	Drivers ASUS utilities ASUS Update Anti-Virus software (OEM version)
Form factor	ATX form factor: 12.0 in x 8.1 in (30.5 cm x 20.6 cm)

*\*Specifications are subject to change without notice.*

[illegible]

# Chapter 1

## Product introduction

### 1.1 Welcome!

Thank you for buying an ASUS® F1A55-V PLUS motherboard!

The motherboard delivers a host of new features and latest technologies, making it another standout in the long line of ASUS quality motherboards!

Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below.

### 1.2 Package contents

Check your motherboard package for the following items.

Motherboard	ASUS F1A55-V PLUS motherboard
Cables	2 x Serial ATA 3.0Gb/s cables
Accessories	1 x I/O shield
Application DVD	ASUS motherboard Support DVD
Documentations	User Manual



If any of the items is damaged or missing, contact your retailer.

### 1.3 Special features

#### 1.3.1 Product highlights



#### **AMD® A- & E2- series accelerated processors with AMD® Radeon™ HD 6000 series graphics APU**

This motherboard supports AMD® A- & E2- series accelerated processor with AMD® Radeon™ HD 6000 series graphics. This revolutionary APU (Accelerated Processing Unit) combines processing power and advanced DirectX 11 graphics in one small, energy-efficient design to enable accelerated performance and an industry-leading visual experience. It features Dual-channel DDR3 memory support and accelerates data transfer rate up to 5GT/s.



### AMD® A55 (Hudson D2) FCH Chipset

AMD® A55 FCH (Hudson D2) is designed to support up to 5GT/s interface and PCI Express 2.0 x 16 (at x4 speed) graphics.



### ATI® CrossFireX™ Technology

ATI's CrossFireX™ boosts image quality along with rendering speed, eliminating the need to scale down screen resolution to get high quality images. CrossFireX™ allows higher antialiasing, anisotropic filtering, shading, and texture settings. Adjust your display configurations, experiment with the advanced 3D settings, and check the effects with a real-time 3D-rendered previews within ATI Catalyst™ Control Center.

## 1.3.2 ASUS Exclusive Features



### 100% All High-quality Conductive Polymer Capacitors

This motherboard uses all high-quality conductive polymer capacitors for durability, improved lifespan, and enhanced thermal capacity.

### Ai Charger

Ai Charger is ASUS fast-charging software that supports iPod, iPhone, and iPad.



- 
- Check your USB mobile device if it fully supports the BC 1.1 function.
  - The actual charging speed may vary with your USB device's conditions.
- 



### ASUS UEFI BIOS (EZ Mode)

The new ASUS UEFI BIOS is an Unified Extensible Firmware Interface that offers a user-friendly interface that goes beyond traditional keyboard-only BIOS controls to enable more flexible and convenient mouse input. Users can easily navigate the new UEFI BIOS with the same smoothness as their operating system. It natively supports hard drives larger than 2.2TB in 64-bit, with full storage space utilization, helping deliver far more exciting computing than traditional BIOS versions.

The exclusive EZ Mode displays frequently-accessed setup info, while the Advanced Mode is for experienced performance enthusiasts that demand far more intricate system settings.



### ASUS Q-Fan

ASUS Q-Fan technology intelligently adjusts the CPU fan speed according to system loading to ensure a quiet, cool, and efficient operation.



### AI Suite II

With its fast user-friendly interface, ASUS AI Suite II consolidates all the exclusive ASUS features into one simple to use software package. It allows you to supervise overclocking, energy management, fan speed control, and voltage and sensor readings. This all-in-one software offers diverse and ease to use functions, with no need to switch back and forth between different utilities.



### ASUS EZ Flash 2

ASUS EZ Flash 2 is a user-friendly utility that allows you to update the BIOS without using a bootable floppy disk or an OS-based utility.



### ASUS MyLogo 2™

Turn your favorite photos into 256-color boot logos to personalize your system.



### ASUS CrashFree BIOS 3

ASUS CrashFree BIOS 3 is an auto-recovery tool that allows you to restore a corrupted BIOS file using the bundled support DVD or a USB flash disk that contains the BIOS file.



### C.P.R. (CPU Parameter Recall)

The BIOS C.P.R. feature automatically restores the CPU default settings when the system hangs due to overclocking failure. C.P.R. eliminates the need to open the system chassis and clear the RTC data. Simply shut down and reboot the system, and the BIOS automatically restores the CPU parameters to their default settings.



### ErP ready

The motherboard is European Union's Energy-related Products (ErP) ready, and ErP requires products to meet certain energy efficiency requirements in regards to energy consumptions. This is in line with ASUS vision of creating environment-friendly and energy-efficient products through product design and innovation to reduce carbon footprint of the product and thus mitigate environmental impacts.

## 1.4 Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.



- 
- Unplug the power cord from the wall socket before touching any component.
  - Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
  - Hold components by the edges to avoid touching the ICs on them.
  - Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
  - Before you install or remove any component, switch off the ATX power supply and detach its power cord. Failure to do so may cause severe damage to the motherboard, peripherals, or components.
-



## 1.5 Motherboard overview

### 1.5.1 Placement direction

When installing the motherboard, ensure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

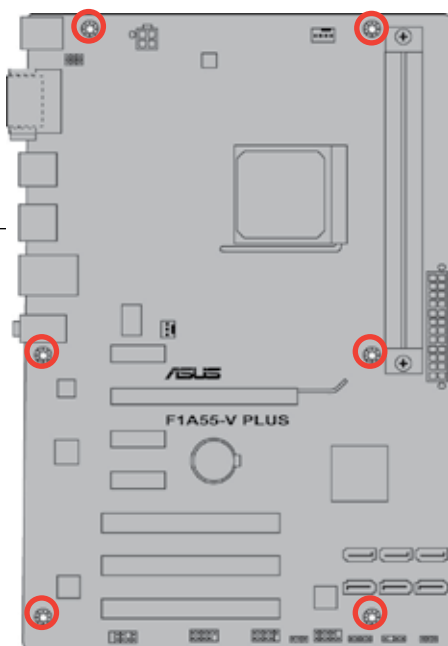
### 1.5.2 Screw holes

Place six screws into the holes indicated by circles to secure the motherboard to the chassis.

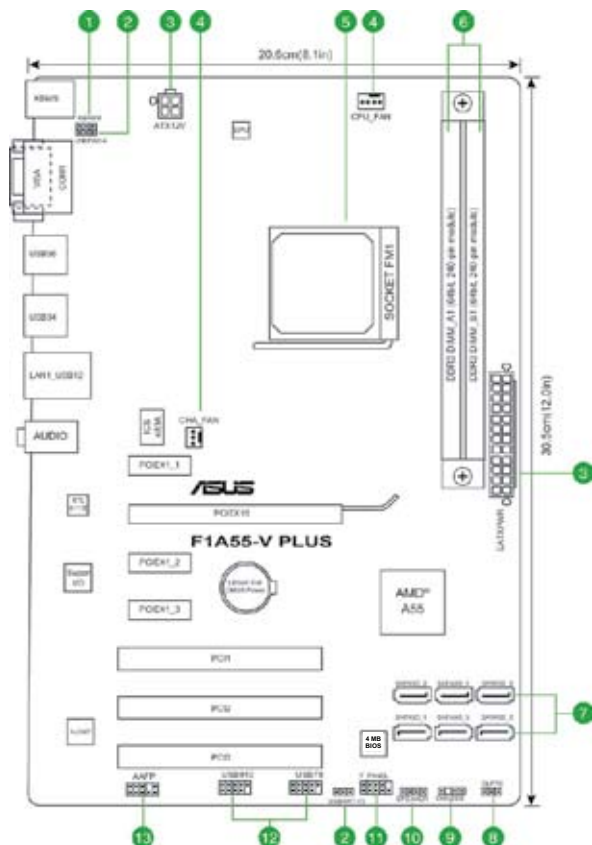


DO NOT overtighten the screws! Doing so can damage the motherboard.

Place this side towards  
the rear of the chassis.



## 1.5.3 Motherboard layout



## 1.5.4 Layout contents

Connectors/Jumpers/Slots/LED	Page	Connectors/Jumpers/Slots/LED	Page
1. Keyboard power connector (3-pin KBPWR)	1-23	8. Clear RTC RAM (3-pin CLRTC)	1-22
2. USB device wake-up (3-pin USBPW1-6, 3-pin USBPW7-10)	1-23	9. Chassis intrusion connector (4-1 pin CHASSIS)	1-27
3. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)	1-26	10. Speaker connector (4-pin SPEAKER)	1-26
4. CPU and chassis fan connectors (4-pin CPU_FAN, and 3-pin CHA_FAN)	1-25	11. System panel connector (10-1 pin F_PANEL)	1-28
5. AMD FM1 socket	1-7	12. USB 2.0 connectors (10-1 pin USB78, USB910)	1-29
6. DDR3 DIMM slots	1-10	13. Front panel audio connector (10-1 pin AAFP)	1-29
7. SATA 3.0Gb/s connectors (7-pin SATA3G_1~6)	1-27		

## 1.6 Accelerated Processing Unit (APU)

This motherboard comes with an FM1 socket designed for AMD® A- & E2- series accelerated processors with AMD® Radeon™ HD 6000 series graphics.

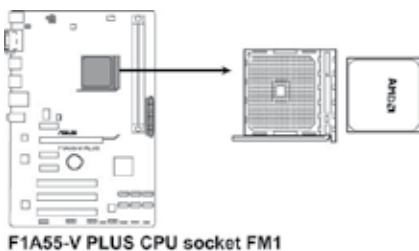


Ensure that you use a APU designed for the FM1 socket. The APU fits in only one correct orientation. DO NOT force the APU into the socket to prevent bending the pins and damaging the APU!

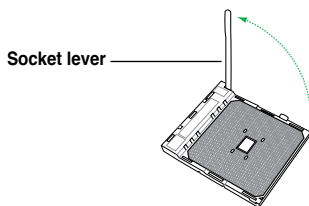
### 1.6.1 Installing the APU

To install a APU:

1. Locate the FM1 socket on the motherboard.



2. Press the lever sideways to unlock the socket, then lift it up to a 90°-100° angle.

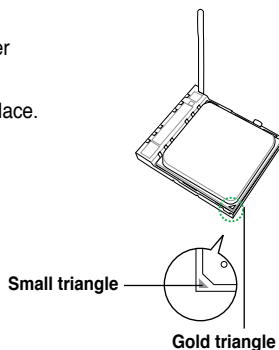


Ensure that the socket lever is lifted up to a 90°-100° angle; otherwise, the APU will not fit in completely.

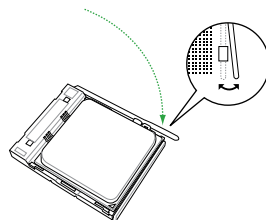
3. Position the APU above the socket such that the APU corner with the gold triangle matches the socket corner with a small triangle.
4. Carefully insert the APU into the socket until it fits in place.



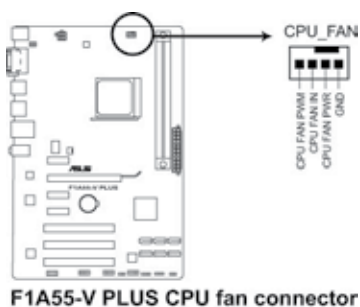
The APU fits only in one correct orientation. DO NOT force the APU into the socket to prevent bending the pins and damaging the APU!



5. When the APU is in place, push down the socket lever to secure the APU. The lever clicks on the side tab to indicate that it is locked.
6. Install a APU heatsink and fan following the instructions that comes with the heatsink package. You can also refer to section **1.6.2 Installing heatsink and fan** for instructions.



7. Connect the CPU fan cable to the CPU\_FAN connector on the motherboard.




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DO NOT forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

---

## 1.6.2 Installing the heatsink and fan



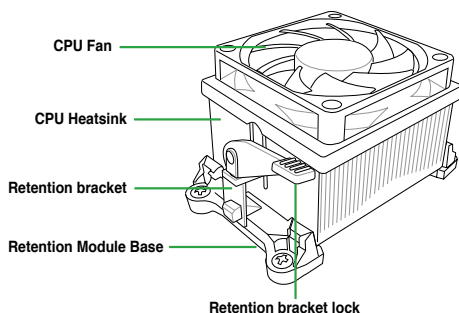
Ensure that you use only AMD-certified heatsink and fan assembly.

To install the CPU heatsink and fan:

1. Place the heatsink on top of the installed CPU, ensuring that the heatsink fits properly on the retention module base.

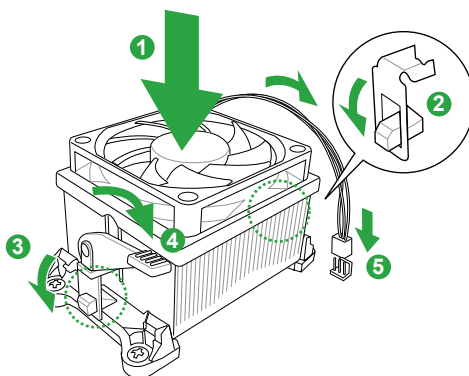


- The retention module base is already installed on the motherboard upon purchase.
- You do not have to remove the retention module base when installing the CPU or installing other motherboard components.
- If you purchased a separate CPU heatsink and fan assembly, ensure that a Thermal Interface Material is properly applied to the CPU heatsink or CPU before you install the heatsink and fan assembly.



Your boxed CPU heatsink and fan assembly should come with installation instructions for the CPU, heatsink, and the retention mechanism. If the instructions in this section do not match the CPU documentation, follow the latter.

2. Attach one end of the retention bracket to the retention module base.



3. Align the other end of the retention bracket to the retention module base. A clicking sound denotes that the retention bracket is in place.



Ensure that the fan and heatsink assembly perfectly fits the retention mechanism module base, otherwise you cannot snap the retention bracket in place.

4. Push down the retention bracket lock on the retention mechanism to secure the heatsink and fan to the module base.
5. When the fan and heatsink assembly is in place, connect the CPU fan cable to the connector on the motherboard labeled CPU\_FAN.

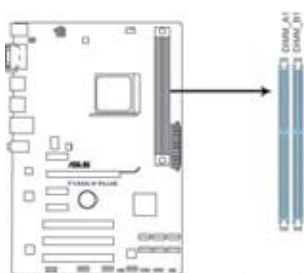


DO NOT forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

## 1.7 System memory

### 1.7.1 Overview

This motherboard comes with two Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets. A DDR3 module has the same physical dimensions as a DDR2 DIMM but is notched differently to prevent installation on a DDR2 DIMM socket. DDR3 modules are developed for better performance with less power consumption. The figure illustrates the location of the DDR3 DIMM sockets:



**F1A55-V PLUS 240-pin DDR3 DIMM sockets**

Channel	Sockets
Channel A	DIMM_A1
Channel B	DIMM_B1

## 1.7.2 Memory configurations

You may install 512MB, 1GB, 2GB, 4GB, and 8GB unbuffered non-ECC DDR3 DIMMs into the DIMM sockets.



- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- We recommend that you install the memory modules from the blue slots for better overclocking capability.
- Always install DIMMs with the same CAS latency. For optimum compatibility, we recommend that you obtain memory modules from the same vendor.
- When overclocking, some AMD CPU models may not support DDR3 1866 MHz or higher frequency DIMMs.
- Due to the memory address limitation on 32-bit Windows® OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following:
  - Install a maximum of 3GB system memory if you are using a 32-bit Windows® OS.
  - Use a 64-bit Windows® OS if you want to install 4GB or more memory on the motherboard.
- This motherboard does not support DIMMs made up of 512 megabits (Mb) chips or less.
- The maximum 16GB memory capacity can be supported with 8GB or above DIMMs. ASUS will update the memory QVL once the DIMMs are available in the market.



- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.
- For system stability, use a more efficient memory cooling system to support a full memory load (2 DIMMs) or overclocking condition.
- Visit the ASUS website at [www.asus.com](http://www.asus.com) for the latest memory modules' Qualified Vendors List (QVL).

## F1A55-V PLUS Motherboard Qualified Vendors Lists (QVL)

### DDR3-1866 MHz capability

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
A-Data	AX3U1866PB2G8-DP2(XMP)	2GB	DS	-	-	8-8-8-24	1.55V- 1.75V	•	
CORSAIR	aCMT4GX3M2A1866C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMT6GX3MA1866C9(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMZ8GX3M2A1866C9(XMP)	8GB(2 x 4GB)	DS	-	-	9-10-9-27	1.50V	•	•
G.SKILL	F3-14900CL9D-8GBXL(XMP)	8GB(2 x 4GB)	DS	-	-	9-10-9-28	1.5V	•	•
KINGSTON	KHX1866C9D3T1K3/3GX(XMP)	3GB(3 x 1GB)	SS	-	-	-	1.65V	•	•
KINGSTON	KHX1866C9D3T1K3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	-	1.65V	•	•
OCZ	OCZ3G1866LV4GK	4GB(2 x 2GB)	DS	-	-	10-10- 10-27	1.65V	•	•

### DDR3-1600MHz capability

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
A-Data	AX3U1600XB2G79-2X(XMP)	4GB(2 x 2GB)	DS	-	-	7-9-7-21	1.55V- 1.75V	•	•
A-Data	AX3U1600GC4G9-2G(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-24	1.55V- 1.75V	•	•
A-Data	AX3U1600XC4G79-2X(XMP)	8GB(2 x 4GB)	DS	-	-	7-9-7-21	1.55V- 1.75V	•	•
CORSAIR	TR3X3G1600C8D(XMP)	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65V	•	•
CORSAIR	CMD12GX3M6A1600C8(XMP)	12GB(6x2GB)	DS	-	-	8-8-8-24	1.65V	•	•
CORSAIR	CMP4GX3M2A1600C8(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.65V	•	•
CORSAIR	CMP4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMP4GX3M2C1600C7(XMP)	4GB(2 x 2GB)	DS	-	-	7-8-7-20	1.65V	•	•
CORSAIR	CMX4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMX4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	TR3X6G1600C8 G(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65V	•	•
CORSAIR	TR3X6G1600C8D G(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65V	•	•
CORSAIR	TR3X6G1600C9 G(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMP8GX3M2A1600C9(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMX8GX3M4A1600C9(XMP)	8GB(4 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
Crucial	BL25664BN1608.16FF(XMP)	6GB(3 x 2GB)	DS	-	-	-	-	•	•
G.SKILL	F3-12800CL9D-2GBNQ(XMP)	2GB(2 x 1GB)	SS	-	-	9-9-9-24	1.5V	•	•



Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
G.SKILL	F3-12800CL7D-4GBRH(XMP)	4GB(2 x 2GB)	SS	-	-	7-7-7-24	1.6V	•	•
G.SKILL	F3-12800CL7D-4GBECO(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-8-24	XMP 1.35V	•	•
G.SKILL	F3-12800CL7D-4GBRM(XMP)	4GB(2 x 2GB)	DS	-	-	7-8-7-24	1.6V	•	•
G.SKILL	F3-12800CL8D-4GBRM(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.60V	•	•
G.SKILL	F3-12800CL9D-4GBECO(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	XMP 1.35V	•	•
G.SKILL	F3-12800CL9D-4GBRL(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.5V	•	•
G.SKILL	F3-12800CL9T-6GBNQ(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5V- 1.6V	•	•
G.SKILL	F3-12800CL7D-8GBRH(XMP)	8GB(2 x 4GB)	DS	-	-	7-8-7-24	1.6V	•	•
G.SKILL	F3-12800CL8D-8GBECO(XMP)	8GB(2 x 4GB)	DS	-	-	8-8-8-24	XMP 1.35V	•	•
G.SKILL	F3-12800CL9D-8GBRL(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-24	1.5V	•	•
GEIL	GET316GB1600C9QC(XMP)	16GB ( 4x 4GB )	DS	-	-	9-9-9-28	1.6V	•	•
GEIL	GV34GB1600C8DC(XMP)	2GB	DS	-	-	8-8-8-28	1.6V	•	•
KINGMAX	FLGD45F-B8MF7 MAEH(XMP)	1GB	SS	-	-	7	-	•	•
KINGMAX	FLGE85F-B8KJ9A FEIS(XMP)	2GB	DS	-	-	-	-	•	•
KINGMAX	FLGE85F-B8MF7 MEEH(XMP)	2GB	DS	-	-	7	-	•	•
KINGSTON	KHX1600C9D3P1K2/4G	4GB(2 x 2GB)	SS	-	-	-	1.5V	•	•
KINGSTON	KHX1600C9D3K3/12GX(XMP)	12GB(3x4GB)	DS	-	-	9-9-9-27	1.65V	•	•
KINGSTON	KHX1600C9D3T1BK3/ 12GX(XMP)	12GB(3x4GB)	DS	-	-	9-9-9-27	1.65V	•	•
KINGSTON	KHX1600C9AD3/2G	2GB	DS	-	-	-	1.65V	•	•
KINGSTON	KVR1600D3N11/2G-ES	2GB	DS	KTC	D12 88J PND PLD 9U	11-11- 11-28	1.35V- 1.5V	•	•
KINGSTON	KHX1600C7D3K2/4GX(XMP)	4GB ( 2x 2GB )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX1600C8D3K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65V	•	•
KINGSTON	KHX1600C8D3T1K2/ 4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65V	•	•
KINGSTON	KHX1600C9D3K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9	1.65V	•	•
KINGSTON	KHX1600C9D3L2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9	XMP 1.35V	•	•
KINGSTON	KHX1600C9D3X2K2/ 4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-27	1.65V	•	•
KINGSTON	KHX1600C9D3T1K3/ 6GX(XMP)	6GB ( 3x 2GB )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX1600C9D3K3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	9	1.65V	•	•
KINGSTON	KHX1600C9D3T1BK3/ 6GX(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-27	1.65V	•	•

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
KINGSTON	KHX1600C9D3K2/8GX(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-27	1.65V	•	•
KINGSTON	KHX1600C9D3P1K2/8G	8GB(2 x 4GB)	DS	-	-	-	1.5V	•	•
OCZ	OCZ3G1600LV3GK	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65V	•	•
OCZ	OCZ3BE1600C8LV4GK	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.65V	•	•
OCZ	OCZ3BE1600LV4GK	4GB(2 x 2GB)	DS	-	-	7-7-7-24	1.65V	•	•
OCZ	OCZ3G16004GK	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.7V	•	•
OCZ	OCZ3G1600LV4GK	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.65V	•	•
OCZ	OCZ3OB1600LV4GK	4GB(2 x 2GB)	DS	-	-	-	1.65V	•	•
OCZ	OCZ3G1600LV6GK	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65V	•	•
Super Talent	WA160UX6G9	6GB(3 x 2GB)	DS	-	-	9	-	•	•
Asint	SLZ3128M8-EJ1D(XMP)	2GB	DS	Asint	312 8M8 -GJ 1D	9-9-9-24	1.6V	•	•
Elixir	M2P2G64CB8HC9N-DG(XMP)	2GB	DS	-	-	-	-	•	•
Kingtiger	KTG2G1600PG3	2GB	DS	-	-	-	-	•	•
Mushkin	998659(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	-	•	•
Mushkin	998659(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5V- 1.6V	•	•
PATRIOT	PGS34G1600LLKA	4GB(2 x 2GB)	DS	-	-	7-7-7-20	1.7V	•	•

## DDR3-1333MHz capability

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
A-Data	AD31333001GOU	1GB	SS	A-Data	AD30908C8D- 151C E0906	-	-	•	•
A-Data	AD6311B0823EV	2GB	SS	A-Data	3CCA-1509A	-	-	•	•
A-Data	AXDU1333GC2G9- 2G (XMP)	4GB(2 x 2GB)	SS	-	-	9-9-9- 24	1.25V- 1.35V (low voltage)	•	•
A-Data	AD31333G002GMU	2GB	DS	-	-	8-8-8- 24	1.65- 1.85V	•	•
A-Data	AD6311C1624EV	4GB	DS	A-Data	3CCA-1509A	-	-	•	•
Apacer	78.A1GC6.9L1	2GB	DS	Apacer	AM5D5808D EWSBG	-	-	•	•
Apacer	78.A1GC6.9L1	2GB	DS	Apacer	AM5D5808FE QSBG	9	-	•	•
Apacer	78.B1GDE.9L10C	4GB	DS	Apacer	AM5D5908CE HSBG	-	-	•	•

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
CORSAIR	CM3X1024-1333C9	1GB	SS	-	-	9-9-9-24	1.60V	•	•
CORSAIR	TR3X3G1333C9 G	3GB(3 x 1GB)	SS	-	-	9-9-9-24	1.50V		•
CORSAIR	TR3X6G1333C9 G	6GB(3x 2GB)	SS	-	-	9-9-9-24	1.50V	•	•
CORSAIR	CMD24GX3M6A1333C9(XMP)	24GB(6x4GB)	DS	-	-	9-9-9-24	1.60V	•	•
CORSAIR	TW3X4G1333C9D G	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.50V	•	•
CORSAIR	CMD8GX3M4A1333C7	8GB(4 x 2GB)	DS	-	-	7-7-7-20	1.60V	•	•
Crucial	CT12864BA133 9.8FF	1GB	SS	Micron	9FF22D9KPT	9	-	•	•
Crucial	CT25664BA133 9.16FF	2GB	DS	Micron	9KF27D9KPT	9	-	•	•
Crucial	BL25664BN1337.16FF (XMP)	6GB(3 x 2GB)	DS	-	-	7-7-7-24	1.65V	•	•
ELPIDA	EBJ10UE8EDF 0-DJ-F	1GB	SS	ELPIDA	J1108EDSE-DJ-F	-	1.35V (low voltage)	•	•
ELPIDA	EBJ21UE8EDF 0-DJ-F	2GB	DS	ELPIDA	J1108EDSE-DJ-F	-	1.35V (low voltage)	•	•
G.SKILL	F3-10600CL8D-2GBHK(XMP)	1GB	SS	G.SKILL	-	-	-	•	•
G.SKILL	F3-10600CL9D-2GBNQ	2GB(2 x 1GB)	SS	-	-	9-9-9-24	1.5V	•	•
G.SKILL	F3-10666CL7T-3GBPK(XMP)	3GB(3 x 1GB)	SS	-	-	7-7-7-18	1.5-1.6V	•	•
G.SKILL	F3-10666CL8D-4GBECO(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	XMP 1.35V	•	•
G.SKILL	F3-10666CL7T-6GBPK(XMP)	6GB(3 x 2GB)	DS	-	-	7-7-7-18	1.5-1.6V	•	•
G.SKILL	F3-10666CL7D-8GBRH(XMP)	8GB(2 x 4GB)	DS	-	-	7-7-7-21	1.5V	•	•
GEIL	GET316GB1333C9QC	16GB ( 4x 4GB )	DS	-	-	9-9-9-24	1.5V	•	•
GEIL	GV32GB1333C9DC	2GB(2 x 1GB)	DS	-	-	9-9-9-24	1.5V	•	•
GEIL	GG34GB1333C9DC	4GB(2 x 2GB)	DS	GEIL	GL1L128M88BA12N	9-9-9-24	1.3V (low voltage)	•	•
GEIL	GV34GB1333C9DC	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.5V	•	•
GEIL	GVP34GB1333C7DC	4GB(2 x 2GB)	DS	-	-	7-7-7-24	1.5V	•	•
Hynix	HMT112U6TFR8 A-H9	1GB	SS	Hynix	H5TC1G83TF RH9A	-	1.35V (low voltage)	•	•
Hynix	HMT325U6BFR8 C-H9	2GB	SS	Hynix	H5TQ2G83BF RH9C	-	-	•	•

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
Hynix	HMT125U6TFR8 A-H9	2GB	DS	Hynix	H5TC1G83TF RH9A	-	1.35V (low voltage)	•	•
Hynix	HMT351U6BFR8 C-H9	4GB	DS	Hynix	H5TQ2G83BF RH9C	-	-	•	•
KINGMAX	FLFD45F-B8KL9 NAES	1GB	SS	KINGMAX	KKB8FNWBF GNX-27A	-	-	•	•
KINGMAX	FLFE85F-C8KF9 CAES	2GB	SS	KINGMAX	KFC8FMXF- DXX-15A	-	-	•	•
KINGMAX	FLFE85F-C8KL9 NAES	2GB	SS	KINGMAX	KFC8FNLXF- DXX-15A	-	-	•	•
KINGMAX	FLFE85F-C8KM9 NAES	2GB	SS	KINGMAX	KFC8FNMXF- BXX-15A	-	-	•	•
KINGMAX	FLFE85F-B8KL9 NEES	2GB	DS	KINGMAX	KKB8FNWBF GNX-26A	-	-	•	•
KINGMAX	FLFF65F-C8KL9 NEES	4GB	DS	KINGMAX	KFC8FNLXF- DXX-15A	-	-	•	•
KINGMAX	FLFF65F-C8KM9 NEES	4GB	DS	KINGMAX	KFC8FNMXF- BXX-15A	-	-	•	•
KINGSTON	KVR133D3N9/1G	1GB	SS	ELPIDA	J1108BDB G-DJ-F	9	1.5V	•	•
KINGSTON	KVR133D3N9/2G	2GB	SS	Hynix	H5TQ2G83 AFRH9C	9	-	•	•
KINGSTON	KVR133D3S8N 9/2G	2GB	SS	Micron	I1D77 D9L GK	-	1.5V	•	•
KINGSTON	KVR133D3S8N9/2 G-SP	2GB	SS	ELPIDA	J2108BCS E-DJ-F	-	1.5V	•	•
KINGSTON	KVR133D3N9/2G	2GB	DS	ELPIDA	J1108BFB G-DJ-F	9	1.5V	•	•
KINGSTON	KVR133D3N9/2G	2GB	DS	KTC	D1288JPN DPLD9U	9	1.5V	•	•
KINGSTON	KVR133D3N9/2G	2GB	DS	ELPIDA	J1108BDS E-DJ-F	9	1.5V	•	•
KINGSTON	KVR133D3N9/2 G-SP	2GB	DS	KTC	D1288JEMF NGD9U	-	1.5V	•	•
KINGSTON	KVR133D3N 9/2G-SP	2GB	DS	KINGSTON	D1288JPSF PGD9U	-	1.5V	•	•
KINGSTON	KHX133C7D3K 2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	7	1.65V	•	•
KINGSTON	KHX133C9D3UK 2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9	XMP 1.25V	•	•
KINGSTON	KVR133D3N9/4G	4GB	DS	ELPIDA	J2108BCS E-DJ-F	9	1.5V	•	•
KINGSTON	KVR133D3N9/4G	4GB	DS	ELPIDA	J2108BCS E-DJ-F	-	1.5V	•	•
KINGSTON	KVR133D3N9/4G	4GB	DS	KTC	D2568JENC NGD9U	-	1.5V	•	•
KINGSTON	KVR133D3N9/4G	4GB	DS	Hynix	H5TQ2G83A FR	-	-	•	•
KINGSTON	KVR133D3N9/4 G-SP	4GB	DS	KINGSTON	D2568JENC PGD9U	-	1.5V	•	•
Micron	MT4JTF12864A Z-1G4D1	1GB	SS	Micron	QJD12D9LGQ	-	-	•	•

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
Micron	MT8JTF12864A Z-1G4F1	1GB	SS	Micron	9FF22D9KPT	9	-	•	•
Micron	MT8JTF25664A Z-1G4D1	2GB	SS	Micron	OJD12D9LGK	-	-	•	•
Micron	MT16JTF25664A Z-1G4F1	2GB	DS	Micron	9KF27D9KPT	9	-	•	•
Micron	MT16JTF51264A Z-1G4D1	4GB	DS	Micron	OLD22D9LGK	-	-	•	•
OCZ	OCZ3F13334GK	4GB(2 x 2GB)	DS	-	-	9-9-9- 20	1.7V	•	•
OCZ	OCZ3P13334GK	4GB(2 x 2GB)	DS	-	-	7-7-7- 20	1.8V	•	•
OCZ	OCZ3X13334GK (XMP)	4GB(2 x 2GB)	DS	-	-	7-7-7- 20	1.75V	•	•
OCZ	OCZ3P1333L V6GK	6GB(3 x 2GB)	DS	-	-	7-7-7- 20	1.65V	•	•
OCZ	OCZ3X1333L V6GK(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8- 20	1.60V	•	•
PSC	AL7F8G73F-D J2	1GB	SS	PSC	A3P1GF3FGF	-	-	•	•
PSC	AL8F8G73F-D J2	2GB	DS	PSC	A3P1GF3FGF	-	-	•	•
SAMSUNG	M378B2873F HS-CH9	1GB	SS	SAMSUNG	K4B1G0846F	-	-	•	•
SAMSUNG	M378B5773D H0-CH9	2GB	SS	SAMSUNG	K4B2G0846D	-	-	•	•
SAMSUNG	M378B5673F H0-CH9	2GB	DS	SAMSUNG	K4B1G0846F	-	-	•	•
SAMSUNG	M378B5273C H0-CH9	4GB	DS	SAMSUNG	K4B2G0846C	-	-	•	•
Super Talent	W1333UA1GH	1GB	SS	Hynix	H5TQ1G83T FR	9	-	•	•
Super Talent	W1333X2G8 (XMP)	1GB	SS	-	-	8	-	•	•
Super Talent	W1333UB2GS	2GB	DS	SAMSUNG	K4B1G0846F	9	-	•	•
Super Talent	W1333UB4GS	4GB	DS	SAMSUNG	K4B2G0846C	-	-	•	•
Super Talent	W1333UX6GM	6GB(3x 2GB)	DS	Micron	0BF27D9KPT	9-9-9- 24	1.5V	•	•
Transcend	JM1333KLN-2G	2GB	SS	Micron	0YD77D9LGK	-	-	•	•
Transcend	JM1333KLN-2G	2GB	SS	Hynix	H5TQ2G83BZ RH9C	-	-	•	•
Transcend	JM1333KLU-2G	2GB	DS	Transcend	TK243PDF3	-	-	•	•
Transcend	TS256MLK64V3U	2GB	DS	Micron	9GF27D9KPT	-	-	•	•
Century	PC3-10600 DD R3-1333 9-9-9	1GB	SS	Micron	8FD22D9JNM	-	-	•	•
Elixir	M2F2G64CB88 D7N-CG	2GB	SS	Elixir	N2CB2G80D N-CG	-	-	•	•
Elixir	M2F4G64CB8H B5N-CG	4GB	DS	Elixir	N2CB2G80B N-CG	-	-	•	•

Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
Elixir	M2F4G64CB8H D5N-CG	4GB	DS	Elixir	N2CB2G80D N-CG	-	-	•	•
KING SHARE	KSRPCD313332G	2GB	DS	PATRIOT	PM128M8D38 5-15	-	-	•	•
Kingtiger	2GB DIMM PC3- 10666	2GB	DS	SAMSUNG	SEC 904 HCH9 K4B1G0846D	-	-	•	•
Kingtiger	KTG2G1333PG3	2GB	DS	-	-	-	-	•	•
PATRIOT	PSD31G13332H	1GB	DS	-	-	9	-	•	•
PATRIOT	PSD31G13332	1GB	DS	PATRIOT	PM64M8D38 U-15	-	-	•	•
PATRIOT	PSD32G13332H	2GB	DS	-	-	-	-	•	•
RAMAXEL	RMR1870ED48E8 F-1333	2GB	DS	ELPIDA	J1108BDGB- DJ-F	-	-	•	•
RiDATA	C304627CB1AG22Fe	2GB	DS	RiDATA	N/A	9	-	•	•
RiDATA	E304459CB1AG32Cf	4GB	DS	RiDATA	N/A	9	-	•	•
SILICON POWER	SP001GBLTU133S01	1GB	SS	NANYA	NT5CB128M8 AN-CG	9	-	•	•
SILICON POWER	SP001GBLTU133S02	1GB	SS	Elixir	N2CB1680A N-C6	9	-	•	•
SILICON POWER	SP002GBLTU133S02	2GB	DS	Elixir	N2CB1680A N-C6	9	-	•	•
TAKEMS	TMS1GB364D081- 107EY	1GB	SS	-	-	7-7-7- 20	1.5V	•	•
TAKEMS	TMS1GB364D081- 138EY	1GB	SS	-	-	8-8-8- 24	1.5V	•	•
TAKEMS	TMS2GB364D081- 107EY	2GB	DS	-	-	7-7-7- 20	1.5V	•	•
TAKEMS	TMS2GB364D081- 138EY	2GB	DS	-	-	8-8-8- 24	1.5V	•	•
TAKEMS	TMS2GB364D082- 138EW	2GB	DS	-	-	8-8-8- 24	1.5V	•	•
UMAX	E41302GP0-73BDB	2GB	DS	UMAX	U2S24D30T P-13	-	-	•	•
V-Color	TD2G16C9-Z8	2GB	DS	Hynix	H5TQ1G83 AFP	-	-	•	•
WINTEC	3WVS31333-2G-CNR	2GB	DS	AMPO	AM34208 03-13H	-	-	•	•

DDR3-1066MHz capability

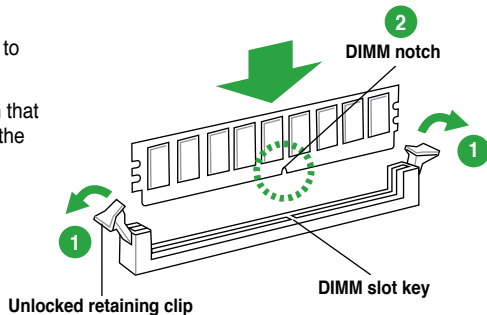
Vendors	Part No.	Size	SS/ DS	Chip Brand	Chip No.	Timing	Voltage	DIMM socket support (Optional)	
								1DIMM	2DIMM
Crucial	CT12864BA1067.8FF	1GB	SS	Micron	9GF22D9KPT	7	-	•	•
Crucial	CT25664BA1067.16FF	2GB	DS	Micron	9HF22D9KPT	7	-	•	•
ELPIDA	EBJ10UE8EDF0-AE-F	1GB	SS	ELPIDA	J1108EDSE-DJ-F	-	1.35V (low voltage)	•	•
ELPIDA	EBJ21UE8EDF0-AE-F	2GB	DS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	•	•
Kingtiger	2GB DIMM PC3-8500	2GB	DS	Hynix	H5TQ1G83AFP G7C	-	-	•	•
KINGSTON	KVR1066D3N7/1G	1GB	SS	ELPIDA	J1108BFSE-DJ-F	7	1.5V	•	•
KINGSTON	KVR1066D3N7/2G	2GB	DS	ELPIDA	J1108BDSE-DJ-F	7	1.5V	•	•
KINGSTON	KVR1066D3N7/4G	4GB	DS	Hynix	H5TQ2G83AFR	7	1.5V	•	•
Micron	MT8JTF12864AZ-1G1F1	1GB	SS	Micron	9GF22D9KPT	7	-	•	•
Micron	MT16JTF25664AZ-1G1F1	2GB	DS	Micron	9HF22D9KPT	7	-	•	•

## 1.7.3 Installing a DIMM



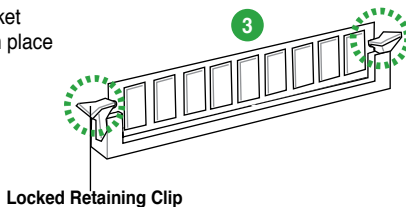
Unplug the power supply before adding or removing DIMMs or other system components. Failure to do so can cause severe damage to both the motherboard and the components.

1. Press the retaining clips outward to unlock a DIMM socket.
2. Align a DIMM on the socket such that the notch on the DIMM matches the DIMM slot key on the socket.



A DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM.

3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



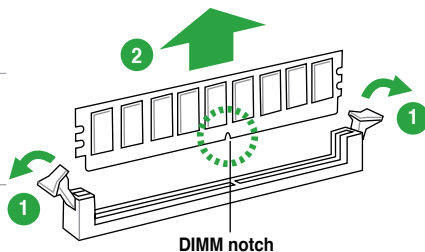
## 1.7.4 Removing a DIMM

To remove a DIMM:

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.



2. Remove the DIMM from the socket.



## 1.8 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.



Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

### 1.8.1 Installing an expansion card

To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

### 1.8.2 Configuring an expansion card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card.
3. Install the software drivers for the expansion card.



When using PCI cards on shared slots, ensure that the drivers support “Share IRQ” or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

### 1.8.3 PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.

### 1.8.4 PCI Express x1 slots

This motherboard supports PCI Express x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications.

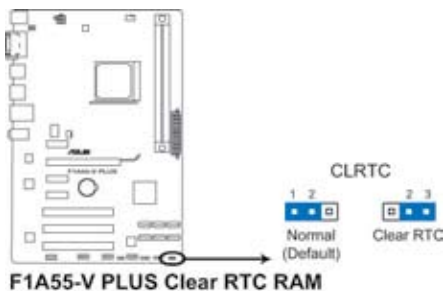
### 1.8.5 PCI Express x16 slot

This motherboard supports a PCI Express x16 graphics cards that complies with the PCI Express specifications.

## 1.9 Jumpers

### 1. Clear RTC RAM (CLRTC)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.



To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
3. Plug the power cord and turn ON the computer.
4. Hold down the **<Del>** key during the boot process and enter BIOS setup to reenter data.



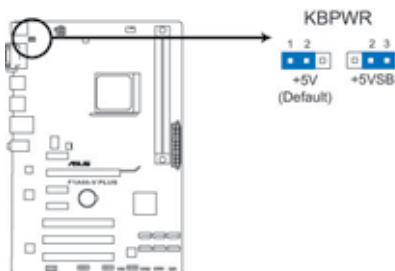
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



- If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.
- You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the CPU Parameter Recall (C.P.R) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

## 2. Keyboard power setting (KBPWR)

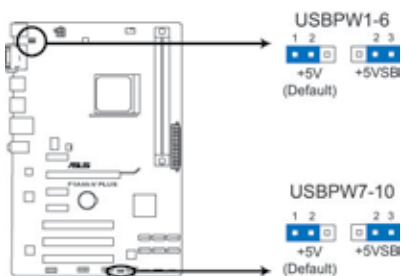
This jumper allows you to enable or disable the keyboard wake-up feature. When you set this jumper to pins 2-3 (+5VSB), you can wake up the computer by pressing a key on the keyboard. This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.



**F1A55-V PLUS Keyboard Power Setting**

## 3. USB device wake-up (3-pin USBPW1-6, 3-pin USBPW7-10)

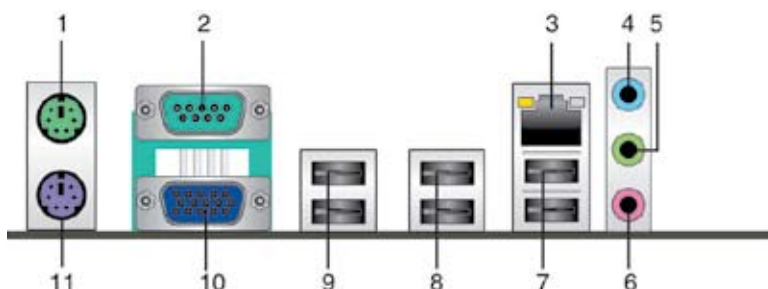
Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode).



**F1A55-V PLUS USB Device Wake Up**

## 1.10 Connectors

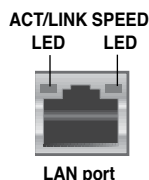
### 1.10.1 Rear panel ports



1. **PS/2 Mouse port (green).** This port is for a PS/2 mouse.
2. **COM port.** This port is used for connecting pointing devices or other serial services.
3. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

#### LAN port LED indications

Activity/Link LED		Speed LED	
Status	Description	Status	Description
OFF	No link	OFF	10Mbps connection
ORANGE	Linked	ORANGE	100Mbps connection
BLINKING	Data activity	GREEN	1Gbps connection



4. **Line In port (light blue).** This port connects to the tape, CD, DVD player, or other audio sources.
5. **Line Out port (lime).** This port connects to a headphone or a speaker. In the 4, 6 and 8-channel configurations, the function of this port becomes Front Speaker Out.
6. **Microphone port (pink).** This port connects to a microphone.



Refer to the audio configuration table below for the function of the audio ports in the 2, 4, 6, or 8-channel configuration.

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

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue (Rear panel)	Line In	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Lime (Rear panel)	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink (Rear panel)	Mic In	Mic In	Bass/Center	Bass/Center
Lime (Front panel)	-	-	-	Side Speaker Out



#### To configure an 8-channel audio output:

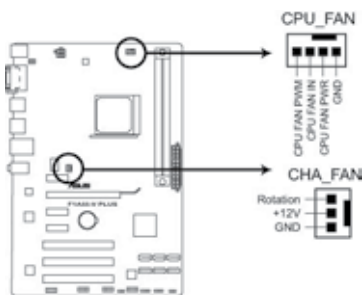
Use a chassis with HD audio module in the front panel to support an 8-channel audio output.

7. **USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices.
8. **USB 2.0 ports 3 and 4.** These two 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices.
9. **USB 2.0 ports 5 and 6.** These two 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices.
10. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
11. **PS/2 Keyboard port (purple).** This port is for a PS/2 keyboard.

## 1.10.2 Internal connectors

### 1. CPU and chassis fan connectors (4-pin CPU\_FAN, 3-pin CHA\_FAN)

Connect the fan cables to the fan connectors on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector.



**F1A55-V PLUS fan connectors**



DO NOT forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors.



- The CPU\_FAN connector supports a CPU fan of maximum 2A (24 W) fan power.
- Only the CPU\_FAN connector supports the ASUS Fan Xpert feature.
- If you install two VGA cards, we recommend that you plug the rear chassis fan cable to the motherboard connector labeled CHA\_FAN for better thermal environment.

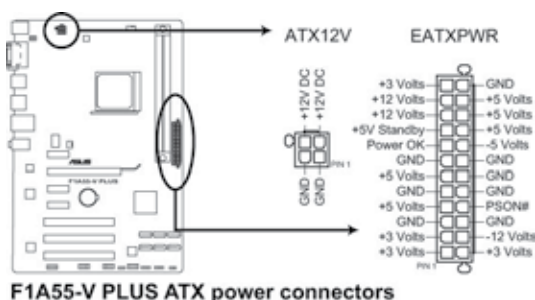
## 2. Speaker connector (4-pin SPEAKER)

This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.



## 3. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)

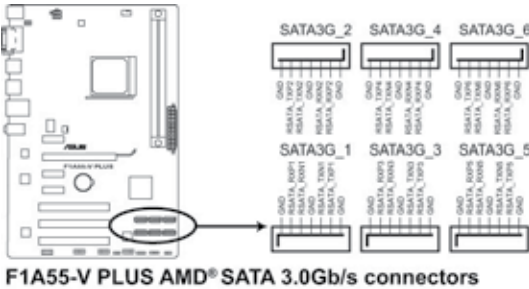
These connectors are for an ATX power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.



- We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 300W power rating. This PSU type has 24-pin and 4-pin power plugs.
- If you intend to use a PSU with 20-pin and 4-pin power plugs, ensure that the 20-pin power plug can provide at least 15 A on +12 V and that the PSU has a minimum power rating of 300W. The system may become unstable or may not boot up if the power is inadequate.
- DO NOT forget to connect the 4-pin ATX +12V power plug. Otherwise, the system will not boot up.
- We recommend that you use a PSU with higher power output when configuring a system with more power-consuming devices or when you intend to install additional devices. The system may become unstable or may not boot up if the power is inadequate.
- If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at <http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us> for details.

4. **Serial ATA 3.0 Gb/s connectors (7-pin SATA3G 1~6)**

These connectors are for the Serial ATA 3.0 Gb/s signal cables for Serial ATA hard disk drives and optical disc drives. If you installed Serial ATA hard disk drives, you can create a RAID 0, RAID 1, RAID 10, or JBOD configuration through the onboard controller.

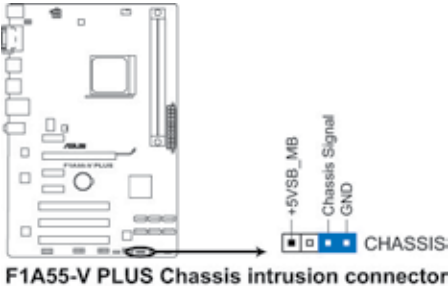


- These connectors are set to **IDE** mode by default. In IDE mode, you can connect Serial ATA boot/data hard disk drives to these connectors. If you intend to create a Serial ATA RAID set using these connectors, set the type of the SATA connectors in the BIOS to **[RAID]**. See section **2.5.2 SATA Configuration** for details.
- You must install Windows® XP Service Pack 3 or later version before using Serial ATA hard disk drives. The Serial ATA RAID feature is available only if you are using Windows® XP SP3 or later version.
- When using hot-plug and NCQ, set the type of the SATA connectors in the BIOS to **[AHCI]**. See section **2.5.2 SATA Configuration** for details.

5. **Chassis intrusion connector (4-1 pin CHASSIS)**

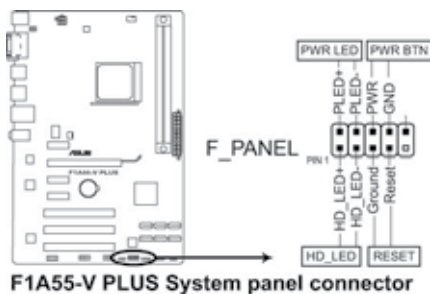
This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

Remove the jumper cap only when you intend to use the chassis intrusion detection feature.



## 6. System panel connector (10-1 pin F\_PANEL)

This connector supports several chassis-mounted functions.



- **System power LED (2-pin PLED)**

This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Hard disk drive activity LED (2-pin IDE\_LED)**

This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **ATX power button/soft-off button (2-pin PWRSW)**

This 2-pin connector is for the system power button.

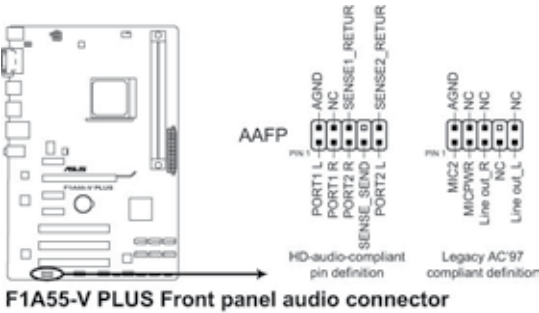
- **Reset button (2-pin RESET)**

This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.



7. **Front panel audio connector (10-1 pin AAFP)**

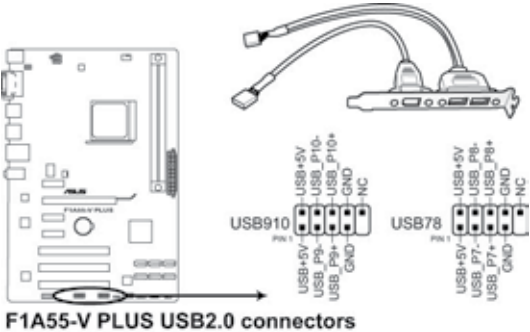
This connector is for a chassis-mounted front panel audio I/O module that supports either High Definition Audio or AC'97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.



- We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard high-definition audio capability.
- If you want to connect a high definition front panel audio module to this connector, set the **Front Panel Type** item in the BIOS to [HD]. See section 2.5.5 Onboard Devices Configuration for details.
- The front panel audio I/O module is purchased separately.

8. **USB 2.0 connectors (10-1 pin USB78, USB910)**

These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480Mbps connection speed.



Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!



The USB 2.0 module is purchased separately.

## 1.11 Software support

### 1.11.1 Installing an operating system

This motherboard supports Windows® XP / Vista / 7 Operating Systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.



- Motherboard settings and hardware options vary. Refer to your OS documentation for detailed information.
- Ensure that you install Windows® XP Service Pack 3 or later versions / Windows® Vista Service Pack 1 or later versions before installing the drivers for better compatibility and system stability.

### 1.11.2 Support DVD information

The Support DVD that comes with the motherboard package contains the drivers, software applications, and utilities that you can install to avail all motherboard features.



The contents of the Support DVD are subject to change at any time without notice. Visit the ASUS website at [www.asus.com](http://www.asus.com) for updates.

#### To run the Support DVD

Place the Support DVD into the optical drive. If Autorun is enabled in your computer, the DVD automatically displays the Specials screen. Click Drivers, Utilities, Make Disk, Manual, and Contact tabs to display their respective menus.



The following screen is for reference only.



Click an icon to display Support DVD/ motherboard information

Click an item to install



If Autorun is NOT enabled on your computer, browse the contents of the Support DVD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the DVD.

# Chapter 2

## BIOS information

### 2.1 Managing and updating your BIOS



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Save a copy of the original motherboard BIOS file to a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility.

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#### 2.1.1 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment.



- 
- ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).
  - This utility is available in the support DVD that comes with the motherboard package.
- 

#### Installing ASUS Update

To install ASUS Update:

1. Place the support DVD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **AI Suite II**.
3. Follow the onscreen instructions to complete the installation.



---

Quit all Windows® applications before you update the BIOS using this utility.

---

#### Updating the BIOS

To update the BIOS:

1. From the Windows® desktop, click **Start > Programs > ASUS > AI Suite II > AI Suite II X.XX.XX** to launch the AI Suite II utility. The AI Suite II Quick Bar appears.
2. Click **Update** button from the Quick Bar, and then click **ASUS Update** from the popup menu. The **ASUS Update** main screen appears. From the list, select either of the following methods:
  - Updating from the Internet
    - a. Select **Update BIOS from the Internet**, then click **Next**.
    - b. Select the ASUS FTP site nearest you to avoid network traffic, then click **Next**.
    - c. From the FTP site, select the BIOS version that you wish to download then click **Next**.



The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.

#### Updating from a BIOS file

- a. Select **Update BIOS from file**, then click **Next**.
  - b. Locate the BIOS file from the **Open** window, then click **Open**.
3. Follow the onscreen instructions to complete the updating process.

## 2.1.2 ASUS EZ Flash 2

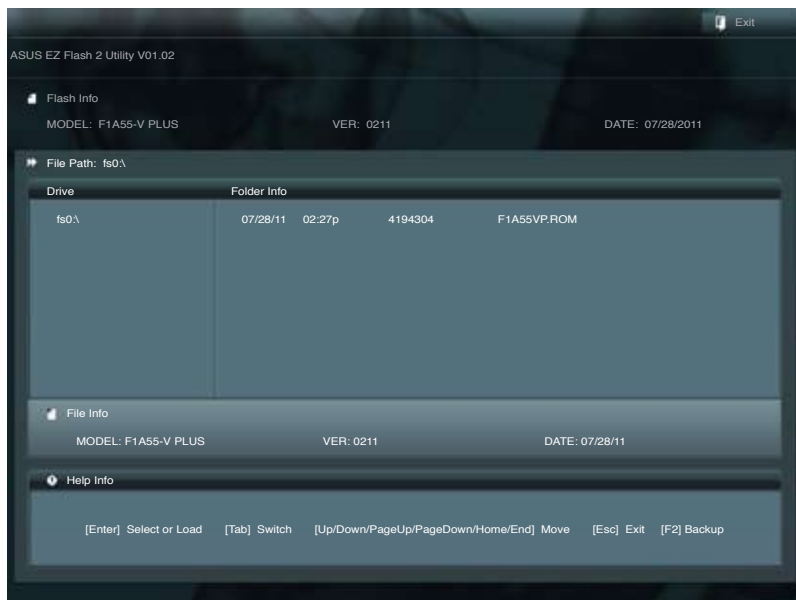
The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility.



Before you start using this utility, download the latest BIOS file from the ASUS website at [www.asus.com](http://www.asus.com).

To update the BIOS using EZ Flash 2:

1. Insert the USB flash disk that contains the latest BIOS file to the USB port.
2. Enter the Advanced Mode of the BIOS setup program. Go to the **Tool** menu to select **ASUS EZ Flash Utility** and press **<Enter>** to enable it.



3. Press **<Tab>** to switch to the **Drive** field.
4. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, and then press **<Enter>**.
5. Press **<Tab>** to switch to the **Folder Info** field.
6. Press the Up/Down arrow keys to find the BIOS file, and then press **<Enter>** to perform the BIOS update process. Reboot the system when the update process is done.



- This function supports USB flash disks with **FAT 32/16** format and single partition only.
- DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!

### 2.1.3 ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the updated BIOS file.



- Before using this utility, rename the BIOS file in the removable device into **F1A55VP.ROM**.
- The BIOS file in the support DVD may not be the latest version. Download the latest BIOS file from the ASUS website at [www.asus.com](http://www.asus.com).

### Recovering the BIOS

To recover the BIOS:

1. Turn on the system.
2. Insert the support DVD to the optical drive or the USB flash drive that contains the BIOS file to the USB port.
3. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash 2 utility automatically.
4. The system requires you to enter BIOS Setup to recover BIOS setting. To ensure system compatibility and stability, we recommend that you press **<F5>** to load default BIOS values.



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

## 2.1.4 ASUS BIOS Updater

The ASUS BIOS Updater allows you to update BIOS in DOS environment. This utility also allows you to copy the current BIOS file that you can use as a backup when the BIOS fails or gets corrupted during the updating process.



The succeeding utility screens are for reference only. The actual utility screen displays may not be same as shown.

### Before updating BIOS

1. Prepare the motherboard support DVD and a USB flash drive in FAT32/16 format and single partition.
2. Download the latest BIOS file and BIOS Updater from the ASUS website at <http://support.asus.com> and save them on the USB flash drive.

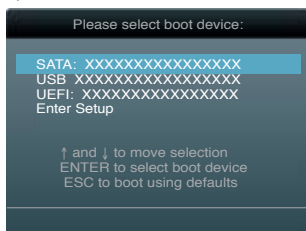


NTFS is not supported under DOS environment. Do not save the BIOS file and BIOS Updater to a hard disk drive or USB flash drive in NTFS format.

3. Turn off the computer and disconnect all SATA hard disk drives (optional).

### Booting the system in DOS environment

1. Insert the USB flash drive with the latest BIOS file and BIOS Updater to the USB port.
2. Boot your computer. When the ASUS Logo appears, press <F8> to show the **BIOS Boot Device Select Menu**. Insert the support DVD into the optical drive and select the optical drive as the boot device.



3. When the **Make Disk** menu appears, select the **FreeDOS command prompt** item by pressing the item number.
4. At the FreeDOS prompt, type **d:** and press <Enter> to switch the disk from

```
Welcome to FreeDOS (http://www.freedos.org) !
C:\>d:
D:\>
```

## Backing up the current BIOS

To backup the current BIOS file using the BIOS Updater



Ensure that the USB flash drive is not write-protected and has enough free space to save the file.

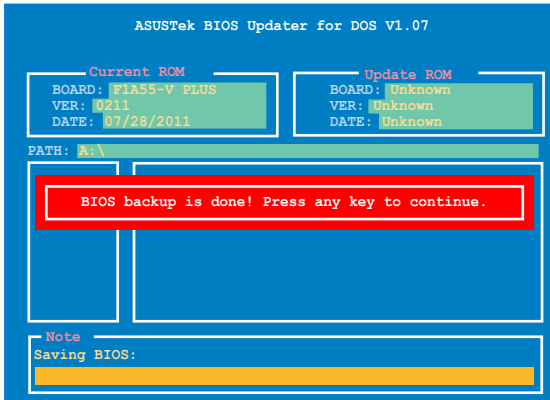
1. At the FreeDOS prompt, type `bupdater /o [filename]` and press <Enter>.

```
D:\>bupdater /oOLDBIOS1.rom
```

Filename    Extension

The [filename] is any user-assigned filename with no more than eight alphanumeric characters for the filename and three alphanumeric characters for the extension.

2. The BIOS Updater backup screen appears indicating the BIOS backup process. When BIOS backup is done, press any key to return to the DOS prompt.



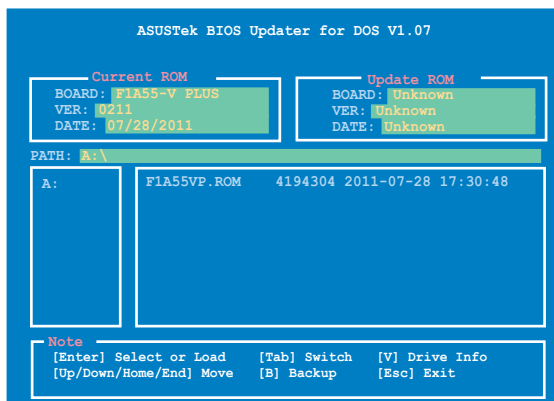
## Updating the BIOS file

To update the BIOS file using BIOS Updater

1. At the FreeDOS prompt, type `bupdater /pc /g` and press <Enter>.

```
D:\>bupdater /pc /g
```

2. The BIOS Updater screen appears as below.



3. Press <Tab> to switch between screen fields and use the <Up/Down/Home/End> keys to select the BIOS file and press <Enter>. BIOS Updater checks the selected BIOS file and prompts you to confirm BIOS update.



4. Select Yes and press <Enter>. When BIOS update is done, press <ESC> to exit BIOS Updater. Restart your computer.



DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!



- For BIOS Updater version 1.04 or later, the utility automatically exits to the DOS prompt after updating BIOS.
- Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the Exit menu. Refer to section 2.9 **Exit menu** for details.
- Ensure to connect all SATA hard disk drives after updating the BIOS file if you have disconnected them.



## 2.2 BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

### Entering BIOS Setup at startup

To enter BIOS Setup at startup:

- Press <Delete> during the Power-On Self Test (POST). If you do not press <Delete>, POST continues with its routines.

### Entering BIOS Setup after POST

To enter BIOS Setup after POST:

- Press <Ctrl>+<Alt>+<Del> simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.



---

Using the **power button**, **reset button**, or the <Ctrl>+<Alt>+<Del> keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut down the system properly from the operating system.

---



- 
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
  - Ensure that a USB mouse is connected to your motherboard if you want to use the mouse to control the BIOS setup program.
  - The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the Exit Menu. See section **2.9 Exit Menu**.
  - If the system fails to boot after changing any BIOS setting, try to clear the CMOS and reset the motherboard to the default value. Refer to section **1.9 Jumpers** on how to erase the RTC RAM.
  - The BIOS setup program does not support the bluetooth devices.
-

## BIOS menu screen

The BIOS setup program can be used under two modes: EZ Mode and Advanced Mode. You can change modes from the Exit menu or from the Exit/Advanced Mode button in the EZ Mode/Advanced Mode screen.

### EZ Mode

By default, the **EZ Mode** screen appears when you enter the BIOS setup program. The **EZ Mode** provides you an overview of the basic system information, and allows you to select the display language, system performance mode and boot device priority. To access the **Advanced Mode**, click **Exit/Advanced Mode**, then select **Advanced Mode**.



The default screen for entering the BIOS setup program can be changed. Refer to the **Setup Mode** item in section 2.7 **Boot menu** for details.

The screenshot shows the ASUS UEFI BIOS Utility - EZ Mode interface. The top section displays system information: F1A55-V PLUS, BIOS Version: 0211, Build Date: 07/28/2011, CPU Type: AMD Engineering Sample, Speed: 2400 MHz, and Total Memory: 1024 MB (DDR3 1333MHz). The middle section shows Temperature (CPU: +113.0°F/+45.0°C, MB: +75.2°F/+40.0°C), Voltage (CPU: 1.248V, 5V: 5.160V, 3.3V: 3.344V, 12V: 12.248V), and Fan Speed (CPU\_FAN: 3325RPM, CHA\_FAN: N/A). The bottom section shows Q-Fan Control with three modes: Quiet, Performance, and Energy Saving. The Boot Priority section shows a list of boot devices with a mouse cursor over the first device. The bottom right corner has a Default(F5) button.

Annotations:

- Selects the display language of the BIOS setup program
- Clicks to display all fan speeds if available
- Displays the CPU/motherboard temperature, CPU/5V/3.3V/12V voltage output, CPU/chassis fan speed
- Exits the BIOS setup program without saving the changes, saves the changes and resets the system, or enters the Advanced Mode
- Selects the boot device priority
- Silent mode
- Standard mode
- Loads optimized default
- Turbo mode
- Displays the system properties of the selected mode on the right hand side



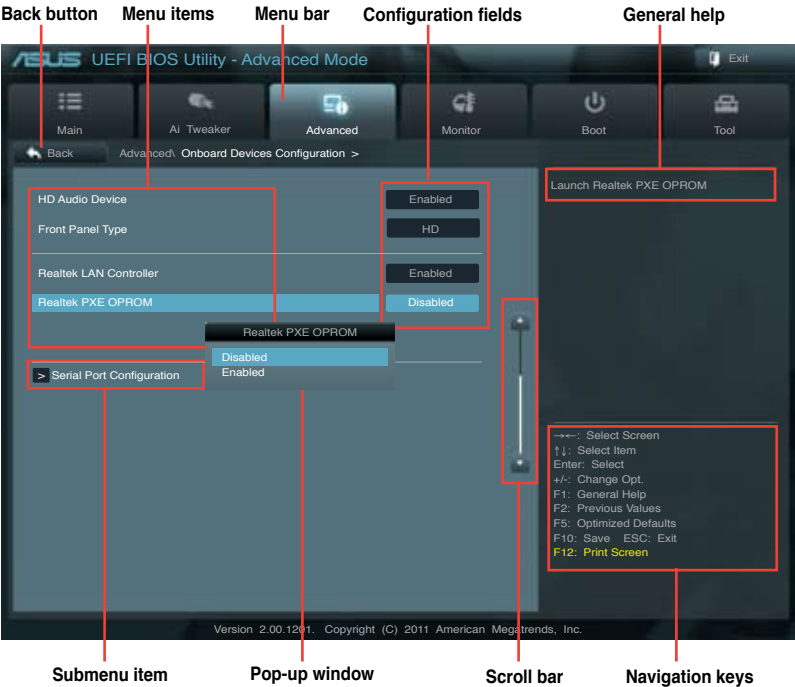
The boot device options vary depending on the devices you installed to the system.

## Advanced Mode

The Advanced Mode provides advanced options for experienced end-users to configure the BIOS settings. The figure below shows an example of the Advanced Mode. Refer to the following sections for the detailed configurations.



To access the EZ Mode, click **Exit**, then select **ASUS EZ Mode**.



## Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
AI Tweaker	For changing the overclocking settings
Advanced	For changing the advanced system settings
Monitor	For displaying the system temperature, power status, and changing the fan settings
Boot	For changing the system boot configuration
Tool	For configuring options for special functions
Exit	For selecting the exit options and loading default settings

## **Menu items**

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit) on the menu bar have their respective menu items.

## **Back button**

This button appears when entering a submenu. Press <Esc> or use the USB mouse to click this button to return to the previous menu screen.

## **Submenu items**

A greater than sign (>) before each item on any menu screen means that the item has a submenu. To display the submenu, select the item and press <Enter> or double-click the item.

## **Pop-up window**

Select a menu item and press <Enter> to display a pop-up window with the configuration options for that item.

## **Scroll bar**

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen.

## **Navigation keys**

At the bottom right corner of the menu screen are the navigation keys for the BIOS setup program. Use the navigation keys to select items in the menu and change the settings.

## **General help**

At the top right corner of the menu screen is a brief description of the selected item.

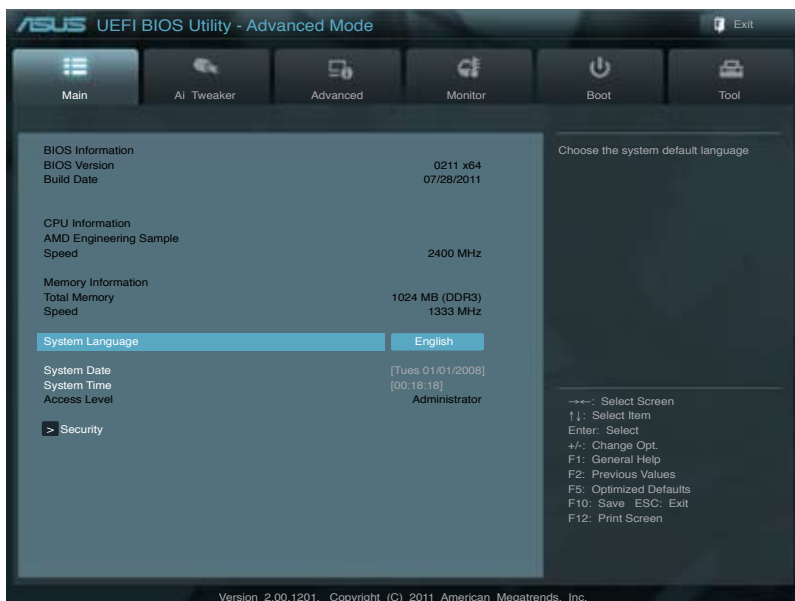
## **Configuration fields**

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is highlighted when selected. To change the value of a field, select it and press <Enter> or click on it to display a list of options.

## 2.3 Main menu

The Main menu screen appears when you enter the Advanced Mode of the BIOS Setup program. The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, language, and security settings.



### 2.3.1 System Language [English]

Allows you to choose the BIOS language version from the options. Configuration options: [English] [Français] [Deutsch] [简体中文] [繁體中文] [日本語]

### 2.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

### 2.3.3 System Time [xx:xx:xx]

Allows you to set the system time.

### 2.3.4 Security

The Security menu items allow you to change the system security settings.



- If you have forgotten your BIOS password, erase the CMOS Real Time Clock (RTC) RAM to clear the BIOS password. See section 1.9 **Jumpers** for information on how to erase the RTC RAM.

## Administrator Password

If you have set an administrator password, we recommend that you enter the administrator password for accessing the system. Otherwise, you might be able to see or change only selected fields in the BIOS setup program.

To set an administrator password:

1. Select the **Administrator Password** item and press <Enter>.
2. From the **Create New Password** box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change an administrator password:

1. Select the **Administrator Password** item and press <Enter>.
2. From the **Enter Current Password** box, key in the current password, then press <Enter>.
3. From the **Create New Password** box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the **Administrator Password** item on top of the screen shows **Not Installed**.

## User Password

If you have set a user password, you must enter the user password for accessing the system. The **User Password** item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a user password:

1. Select the **User Password** item and press <Enter>.
2. From the **Create New Password** box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change a user password:

1. Select the **User Password** item and press <Enter>.
2. From the **Enter Current Password** box, key in the current password, then press <Enter>.
3. From the **Create New Password** box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

To clear the user password, follow the same steps as in changing a user password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the **User Password** item on top of the screen shows **Not Installed**.

## 2.4 Ai Tweaker menu

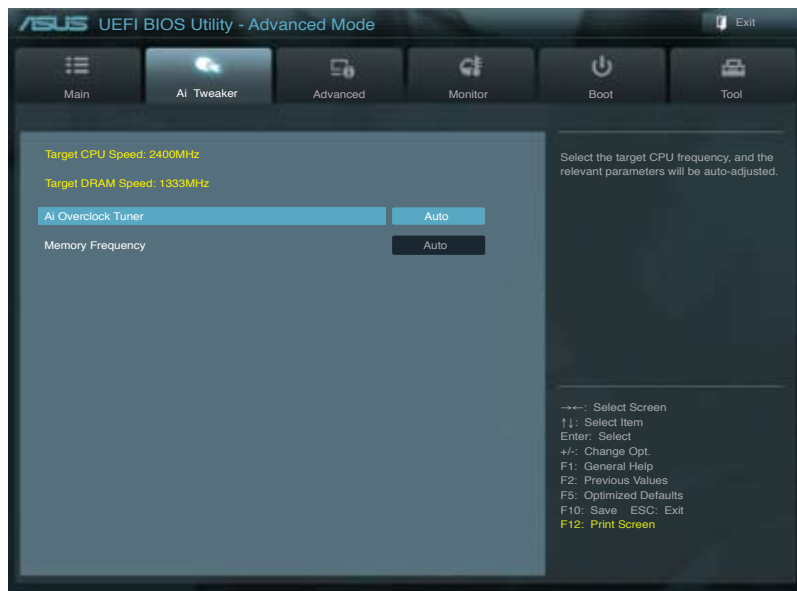
The Ai Tweaker menu items allow you to configure overclocking-related items.



Be cautious when changing the settings of the Ai Tweaker menu items. Incorrect field values can cause the system to malfunction.



The configuration options for this section vary depending on the CPU and DIMM model you installed on the motherboard.



**Target CPU Speed : xxxxMHz**

Displays the current CPU speed.

**Target DRAM Speed : xxxxMHz**

Displays the current DRAM speed.

### 2.4.1 Ai Overclock Tuner [Auto]

Allows you to select the CPU overclocking options to achieve the desired CPU internal frequency. Select any of these preset overclocking configuration options:

- [Auto] Loads the optimal settings for the system.
- [D.O.C.P.] Allows you to select a DRAM O.C. profile, and the related parameters will be adjusted automatically.

#### DRAM O.C. Profile [DDR3-1600MHz 9-9-9-24 1.65V]

This item appears only when you set the **Ai Overclock Tuner** item to [D.O.C.P.], and allows you to select a DRAM O.C. profile, which applies different settings to DRAM frequency, DRAM timing and DRAM voltage. Configuration options: [DDR3-1600MHz 9-9-9-24 1.65V] [DDR3-1800MHz 9-9-9-24 1.65V] [DDR3-1866MHz 9-9-9-24 1.65V] [DDR3-2000MHz 9-9-9-24 1.65V] [DDR3-2133MHz 9-9-9-24 1.65V] [DDR3-2200MHz 9-9-9-24 1.65V] [DDR3-2400MHz 9-9-9-24 1.65V]

### 2.4.2 Memory Frequency [Auto]

Allows you to set the memory operating frequency. Configuration options: [Auto] [DDR3-800MHz] [DDR3-1066MHz] [DDR3-1333MHz] [DDR3-1600MHz] [DDR3-1866MHz]



---

Selecting a very high memory frequency may cause the system to become unstable! If this happens, revert to the default setting.

---



## 2.5 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.



Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



### 2.5.1 CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.



The items shown in submenu may be different due to the CPU you installed.

#### Limit CPUID Maximum [Disabled]

[Enabled] Allows legacy operating systems to boot even without support for CPUs with extended CPUID functions.

[Disabled] Disables this function.

#### C6 Mode [Auto]

Enables or disables C6 mode. Configuration options: [Auto] [Enabled] [Disabled]

#### CPB Mode [Auto]

Disables the CPB (Core Performance Boost) mode or set it to [Auto] for automatic configuration. Configuration options: [Disabled] [Auto]

### **AMD PowerNow function [Enabled]**

Enables or disables the AMD PowerNow function. Configuration options: [Enabled] [Disabled]

### **SVM [Enabled]**

Enables or disables CPU virtualization. Configuration options: [Disabled] [Enabled]

### **C-state Pmin [Enabled]**

Enables or disables the C-state Pmin. Configuration options: [Disabled] [Enabled]

## **2.5.2 SATA Configuration**

While entering Setup, the BIOS automatically detects the presence of SATA devices. The SATA Port items show **Not Present** if no SATA device is installed to the corresponding SATA port.

### **OnChip SATA Channel [Enabled]**

Enables or disables onboard channel SATA port. Configuration options: [Disabled] [Enabled]

### **OnChip SATA Type [IDE]**

Allows you to set the SATA configuration.

- |        |  |
|--------|--|
| [IDE]  | Set to [IDE] when you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices.  |
| [RAID] | Set to [RAID] when you want to create a RAID configuration from the SATA hard disk drives.   |
| [AHCI] | Set to [AHCI] when you want the SATA hard disk drives to use the AHCI (Advanced Host Controller Interface). The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands. |

#### SATA Port 5 - Port 6 [AHCI or RAID]

This item only appears when the previous item is set to [RAID] or [AHCI]. If Port 5-6 are configured as [AHCI or RAID], the ports can only be used under OS with driver installed. Set to [IDE] instead of [AHCI or RAID] to access devices on Port 5-6 before entering OS. Configuration options: [AHCI or RAID] [IDE]

### **S.M.A.R.T. Status Check [Enabled]**

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a monitor system. When read/write of your hard disk errors occur, this feature allows the hard disk to report warning messages during the POST. Configuration options: [Enabled] [Disabled]

### 2.5.3 USB Configuration

The items in this menu allow you to change the USB-related features.



---

The **USB Devices** item shows the auto-detected values. If no USB device is detected, the item shows None.

---

#### Legacy USB Support [Enabled]

- [Enabled] Enables the support for USB devices on legacy operating systems (OS).
- [Disabled] The USB devices can be used only for the BIOS setup program.
- [Auto] Allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

#### EHCI Hand-off [Disabled]

- [Enabled] Enables the support for operating systems without an EHCI hand-off feature.
- [Disabled] Disables the function.

### 2.5.4 NB Configuration

#### IGFX Multi-Monitor [Disabled]

Enables or disables the Internal Graphics Device Multi-Monitor support for add-on VGA devices. And the memory size of Internal Graphics Device will keep memory reserved.  
Configuration options: [Disabled] [Enabled]

#### Primary Video Device [PCI-E / PCI Video]

Selects the primary display device. Configuration options: [IGFX Video] [PCI-E / PCI Video]

#### Integrated Graphics [Auto]

Enables the integrated graphics controller. Configuration options: [Auto] [Force]

### 2.5.5 Onboard Devices Configuration

#### HD Audio Device [Enabled]

- [Enabled] Enables the High Definition Audio Controller.
- [Disabled] Disables the controller.



---

The following two items appear only when you set the **HD Audio Device** item to [Enabled].

---

#### Front Panel Type [HD]

- Allows you to set the front panel audio connector (AAFP) mode to legacy AC'97 or high-definition audio depending on the audio standard that the front panel audio module supports.
- [HD] Sets the front panel audio connector (AAFP) mode to high definition audio.
  - [AC97] Sets the front panel audio connector (AAFP) mode to legacy AC'97.

## Realtek LAN Controller [Enabled]

[Enabled] Enables the Realtek LAN controller.

[Disabled] Disables the Realtek LAN controller.

## Realtek PXE OPROM [Disabled]

This item appears only when you set the previous item to [Enabled] and allows you to enable or disable the Rom Help of the Realtek LAN controller.

Configuration options: [Enabled] [Disabled]

## Serial Port Configuration

The sub-items in this menu allow you to set the serial port configuration.

### Serial Port [Enabled]

Allows you to enable or disable the serial port (COM).

Configuration options: [Enabled] [Disabled]

### Change Settings [IO=3F8h; IRQ=4]

Allows you to select the Serial Port base address. Configuration options: [IO=3F8h; IRQ=4] [IO=2F8h; IRQ=3] [IO=3E8h; IRQ=4] [IO=2E8h; IRQ=3]

## 2.5.6 APM

### EuP Ready [Disabled]

[Disabled]

Disables the Energy Using Products (EuP) Ready function.

[Enabled]

Allows BIOS to switch off some power at S5 state to get system ready for the EuP requirement. When set to [Enabled], all other PME options will be switched off.

### EPU Lite [Disabled]

[Disabled]

Vcore phase fixes on 4-phase

[Auto]

Allows you to change the Vcore phase between 2-phase to 4-phase based on CPU loading.

### Restore AC Power Loss [Power Off]

[Power On]

The system goes into on state after an AC power loss.

[Power Off]

The system goes into off state after an AC power loss.

[Last State]

The system goes into either off or on state, whatever the system state was before the AC power loss.

### Power On By PS/2 Keyboard [Disabled]

[Disabled]

Disables the Power On by a PS/2 keyboard.

[Space Bar]

Sets the Space Bar on the PS/2 keyboard to turn on the system.

[Ctrl-Esc]

Sets the Ctrl+Esc key on the PS/2 keyboard to turn on the system.

[Power Key] Sets Power key on the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

### **Power On By PS/2 Mouse2 [Disabled]**

[Disabled] Disables the Power On by a PS/2 mouse.

[Enabled] Enables the Power On by a PS/2 mouse. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

### **Power On By PME [Disabled]**

[Disabled] Disables the PME to wake up by PCI/PCIE devices.

[Enabled] Allows you to turn on the system through a PCI/PCIE LAN or modem card. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.

### **Power On By Ring [Disabled]**

[Disabled] Disables Ring to generate a wake event.

[Enabled] Enables Ring to generate a wake event.

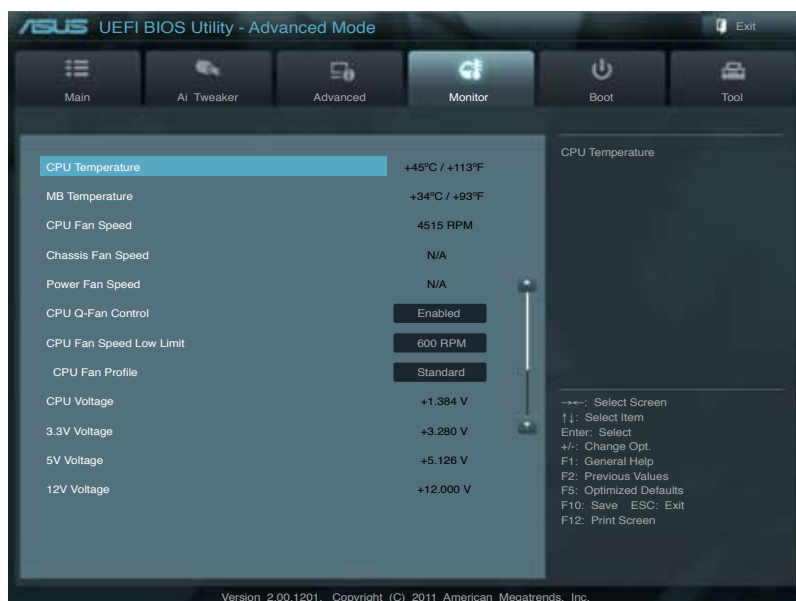
### **Power On By RTC [Disabled]**

[Disabled] Disables RTC to generate a wake event.

[Enabled] When set to [Enabled], the items **RTC Alarm Date (Days)** and **Hour/Minute/Second** will become user-configurable with set values.

## 2.6 Monitor menu

The Monitor menu displays the system temperature/power status, and allows you to change the fan settings.



### 2.6.1 CPU Temperature / MB Temperature [xxx°C/xxx°F]

The onboard hardware monitor automatically detects and displays the CPU and motherboard temperatures. Select **Ignore** if you do not wish to display the detected temperatures.

### 2.6.2 CPU / Chassis Fan Speed [xxxx RPM] or [Ignore] / [N/A]

The onboard hardware monitor automatically detects and displays the CPU / chassis fan speeds in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows **N/A**. Select **Ignore** if you do not wish to display the detected speed.

### 2.6.3 CPU Q-Fan Control [Enabled]

[Disabled] Disables the CPU Q-Fan control feature.

[Enabled] Enables the CPU Q-Fan control feature.

#### CPU Fan Speed Low Limit [600 RPM]

This item appears only when you enable the **CPU Q-Fan Control** feature and allows you to disable or set the CPU fan warning speed.

Configuration options: [Ignore] [200RPM] [300 RPM] [400 RPM] [500 RPM] [600 RPM]

#### CPU Fan Profile [Standard]

This item appears only when you enable the **CPU Q-Fan Control** feature and allows you to set the appropriate performance level of the CPU fan.

- [Standard] Sets to [Standard] to make the CPU fan automatically adjust depending on the CPU temperature.
- [Silent] Sets to [Silent] to minimize the fan speed for quiet CPU fan operation.
- [Turbo] Sets to [Turbo] to achieve maximum CPU fan speed.
- [Manual] Sets to [Manual] to assign detailed fan speed control parameters.

---

The following four items appear only when you set **CPU Fan Profile** to [Manual].

---



#### **CPU Upper Temperature [70°C]**

Use the <+> and <-> keys to adjust the upper limit of the CPU temperature. The values range from 20°C to 90°C.

#### **CPU Fan Max. Duty Cycle(%) [100%]**

Use the <+> and <-> keys to adjust the maximum CPU fan duty cycle. The values range from 40% to 100%. When the CPU temperature reaches the upper limit, the CPU fan will operate at the maximum duty cycle.

#### **CPU Lower Temperature [20°C]**

Use the <+> and <-> keys to adjust the lower limit of the CPU temperature. The values range from 20°C to 75°C

#### **CPU Fan Min. Duty Cycle(%) [40%]**

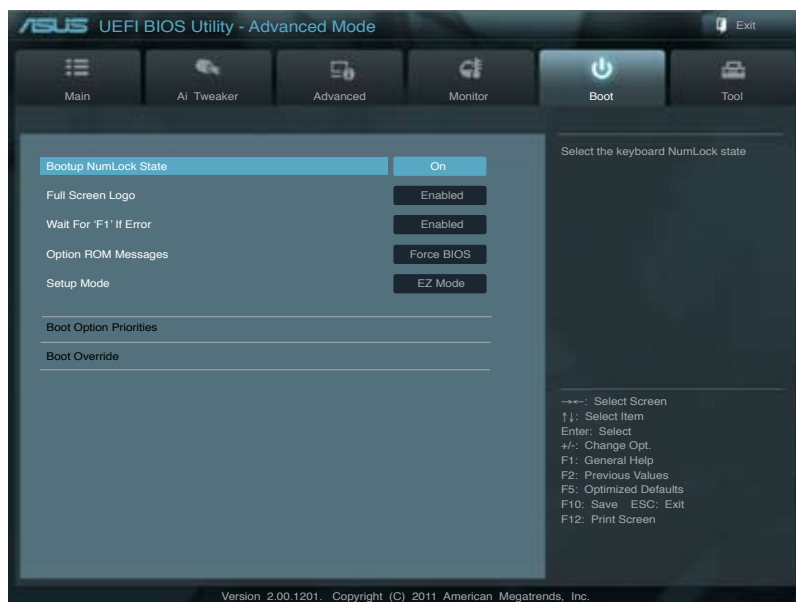
Use the <+> and <-> keys to adjust the minimum CPU fan duty cycle. The values range from 40% to 100%. When the CPU temperature is under the lower limit, the CPU fan will operate at the minimum duty cycle.

## **2.6.4 CPU Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage**

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select **Ignore** if you do not want to detect this item.

## 2.7 Boot menu

The Boot menu items allow you to change the system boot options.



### 2.7.1 Bootup NumLock State [On]

[On] Sets the power-on state of the NumLock to [On].

[Off] Sets the power-on state of the NumLock to [Off].

### 2.7.2 Full Screen Logo [Enabled]

[Enabled] Enables the full screen logo display feature.

[Disabled] Disables the full screen logo display feature.



---

Set this item to [Enabled] to use the ASUS MyLogo 2™ feature.

---

### Post Report [5 sec]

This item appears only when the Full Screen Logo item is set to [Disabled] and allows you to set the waiting time for the system to display the post report. Configuration options: [1 sec] [2 sec] [3 sec] [4 sec] [5 sec] [6 sec] [7 sec] [8 sec] [9 sec] [10 sec] [Until Press ESC]

### 2.7.3 Wait for 'F1' If Error [Enabled]

When this item is set to [Enabled], the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled]



### 2.7.4 Option ROM Messages [Force BIOS]

- [Force BIOS] The third-party ROM messages will be forced to display during the boot sequence.
- [Keep Current] The third-party ROM messages will be displayed only if the third-party manufacturer had set the add-on device to do so.

### 2.7.5 Setup Mode [EZ Mode]

- [Advanced Mode] Sets Advanced Mode as the default screen for entering the BIOS setup program.
- [EZ Mode] Sets EZ Mode as the default screen for entering the BIOS setup program.

### 2.7.6 Boot Option Priorities

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.



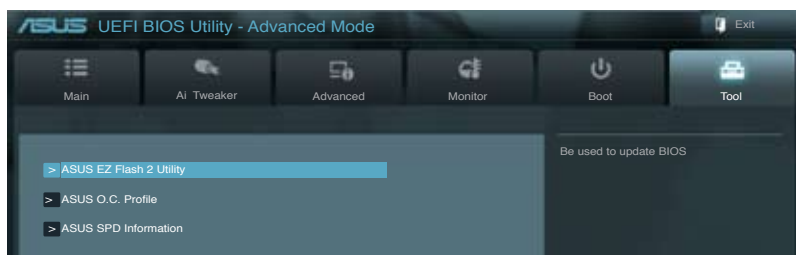
- 
- To select the boot device during system startup, press <F8> when ASUS Logo appears.
  - To access Windows OS in Safe Mode, press <F8> after POST.
- 

### 2.7.7 Boot Override

These items displays the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system. Click an item to start booting from the selected device.

## 2.8 Tools menu

The Tools menu items allow you to configure options for special functions. Select an item then press <Enter> to display the submenu.



### 2.8.1 ASUS EZ Flash 2 Utility

Allows you to run ASUS EZ Flash 2. Press [Enter] to launch the ASUS EZ Flash 2 screen.



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For more details, see section 2.1.2 **ASUS EZ Flash 2**.

---

### 2.8.2 ASUS O.C. Profile

This item allows you to store or load multiple BIOS settings.



---

The **Setup Profile Status** items show **Not Installed** if no profile is created.

---

#### Save to Profile

Allows you to save the current BIOS settings to the BIOS Flash, and create a profile. Key in a profile number from one to eight, press <Enter>, and then select **Yes**.

#### Load from Profile

Allows you to load the previous BIOS settings saved in the BIOS Flash. Key in the profile number that saved your CMOS settings, press <Enter>, and then select **Yes**.



- 
- DO NOT shut down or reset the system while updating the BIOS to prevent the system boot failure!
  - We recommend that you update the BIOS file only coming from the same memory/CPU configuration and BIOS version.
- 

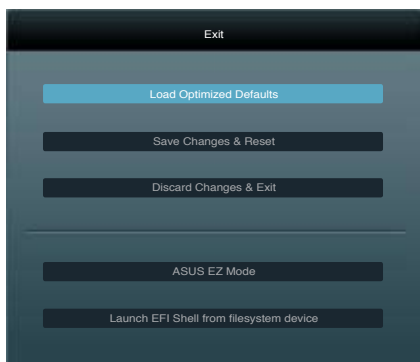
### 2.8.3 ASUS SPD Information

#### DIMM Slot # [DIMM\_A1]

Displays the Serial Presence Detect (SPD) information of the DIMM module installed on the selected slot. Configuration options: [DIMM\_A1] [DIMM\_B1]

## 2.9 Exit menu

The Exit menu items allow you to load the optimal default values for the BIOS items, and save or discard your changes to the BIOS items. You can access the **EZ Mode** from the Exit menu.



### Load Optimized Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select **Yes** to load the default values.

### Save Changes & Reset

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved. When you select this option or if you press <F10>, a confirmation window appears. Select **Yes** to save changes and exit.

### Discard Changes & Exit

This option allows you to exit the Setup program without saving your changes. When you select this option or if you press <Esc>, a confirmation window appears. Select **Yes** to discard changes and exit.

### ASUS EZ Mode

This option allows you to enter the EZ Mode screen.

### Launch EFI Shell from filesystem device

This option allows you to attempt to launch the UEFI Shell application (shellx64.efi) from one of the available devices that have a filesystem.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# ASUS contact information

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Support Fax	+49-2102-9599-11
Online support	support.asus.com

\* EUR 0.14/minute from a German fixed landline; EUR 0.42/minute from a mobile phone.

# DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



Responsible Party Name: Asus Computer International

Address: 800 Corporate Way, Fremont, CA 94539.

Phone/Fax No: (510)739-3777/(510)608-4555

hereby declares that the product

Product Name : Motherboard

Model Number : F1A55 - V PLUS

Conforms to the following specifications:

- ☒ FCC Part 15, Subpart B, Unintentional Radiators
- ☐ FCC Part 15, Subpart C, Intentional Radiators
- ☐ FCC Part 15, Subpart E, Intentional Radiators

## Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name : Steve Chang / President

Signature :

Date : Jul. 01, 2011

Ver. 110101

# EC Declaration of Conformity



We, the undersigned,

Manufacturer: ASUSTeK COMPUTER INC.  
No. 150, LITE RD., PEITOU, TAIPEI 112, TAIWAN R.O.C.  
Country: TAIWAN  
Authorized representative in Europe: ASUS COMPUTER GmbH  
Address, City: HARKORT STR. 21-23, 40880 RATINGEN  
Country: GERMANY

declare the following apparatus:

Product name : Motherboard  
Model name : F1A55-V PLUS

conform with the essential requirements of the following directives:

☒ 2004/108/EC-EMC Directive  
☒ EN 55024:1997  
☒ EN 61000-3-2:2006  
☒ EN 55013:2001+A1:2003+A2:2006  
☐ 1999/5/EC-R & TTE Directive  
☐ EN 300 328 V1.7.1(2006-05)  
☐ EN 300 440-1 V1.4.1(2008-05)  
☐ EN 300 440-2 V1.2.1(2008-03)  
☐ EN 300 486-1 V1.3.1(2002-08)  
☐ EN 300 486-2 V1.3.1(2002-08)  
☐ EN 301 908-1 V3.2.1(2007-05)  
☐ EN 301 908-2 V3.2.1(2007-05)  
☐ EN 301 893 V1.4.1(2005-03)  
☐ EN 301 488-24 V1.4.1(2007-09)  
☐ EN 302 326-2 V1.2.1(2007-06)  
☐ EN 302 344-2 V1.1.1(2009-01)  
☐ EN 50171:2002  
☐ EN 50371:2002  
☐ EN 50985:2002

☒ 2006/95/EC-LVD Directive  
☐ EN 60950-1:2006  
☐ EN 60950-1:2006/A11:2009  
☐ EN 60950-1:2006/A11:2009  
☐ EN 301 488-1 V1.8.1(2008-04)  
☐ EN 301 488-3 V1.4.1(2002-08)  
☐ EN 301 488-4 V1.3.1(2002-08)  
☐ EN 301 488-5 V1.3.1(2002-08)  
☐ EN 301 488-6 V1.3.1(2002-08)  
☐ EN 301 488-9 V1.4.1(2007-11)  
☐ EN 301 488-17 V2.1.1(2009-05)  
☐ EN 301 488-24 V1.4.1(2007-09)  
☐ EN 302 326-2 V1.2.1(2007-06)  
☐ EN 302 344-2 V1.1.1(2009-01)  
☐ EN 301 357-2 V1.3.1(2006-05)  
☐ EN 302 623 V1.1.1(2009-01)

☐ 2006/95/EC-LVD Directive  
☐ EN 60950-1:2006  
☐ EN 60950-1:2006/A11:2009  
☐ EN 60950-1:2006/A11:2009

☒ 2009/125/EC-ErP Directive  
Regulation (EC) No. 1275/2008  
☐ EN 62301:2005  
Regulation (EC) No. 642/2009  
☐ EN 62301:2005

CE marking



(EC conformity marking)

Position : CEO  
Name : Jerry Shen

Declaration Date: Jul. 01, 2011  
Year to begin affixing CE marking:2011

Signature : \_\_\_\_\_