F1A75-V PRO

Motherboard

E6630

First Edition (V1)
May 2011

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Contents

Contents

Contents

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://crs.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 electrical shock hazard, disconnect the power cable from the electrical 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 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: Hardware information**

  This chapter lists the hardware setup procedures that you have to perform when installing system components. It includes description of the switches, jumpers, and connectors on the motherboard.

- **Chapter 3: BIOS setup**

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

- **Chapter 4: Software support**

  This chapter describes the contents of the support DVD that comes with the motherboard package and the software.

- **Chapter 5: ATI® CrossFireX™ technology support**

  This chapter describes the ATI® CrossFireX™ feature and shows the graphics card installation procedures.

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.

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.

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> + <Del>

F1A75-V PRO specifications summary

APU	AMD® A-Series and E2-Series Accelerated Processors with AMD Radeon™ HD 6000 Series Graphics, up to 4 CPU cores, FM1 Package Supports AMD® Turbo Core 2.0 technology Supports Microsoft® DirectX® 11 * Support for AMD® Turbo Core 2.0 technology depends on the APU types.
Chipset	AMD® A75 FCH (Hudson-D3)
Memory	Dual-channel memory architecture 4 x 240-pin DIMM slots support maximum 64GB unbuffered non-ECC DDR3 1866 / 1600 / 1333 /1066MHz memory modules * When you install a total memory of 4GB 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. ** The 64GB maximum memory capacity can be supported with 16GB DIMMs or above. ASUS will update the Memory QVL (Qualified Vendors List) once the DIMMs are available on the market. *** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List).
Graphics	Integrated AMD Radeon™ HD 6000 Series Graphics in Llano APU Multi-VGA output support: DisplayPort, HDMI, DVI-D, D-Sub port - Supports DisplayPort with maximum resolution 2560x1600@60Hz - Supports HDMI with maximum resolution 1920x1200@60GHz - Supports single-link DVI with maximum resolution 1920x1200@60GHz - Supports D-sub with maximum resolution 1920x1600@60GHz - Supports Microsoft® DirectX 11 Supports AMD® Dual Graphics technology * Refer to www.amd.com for the discrete GPUs that support the Dual Graphics technology.
Expansion slots	2 x PCIe 2.0 x16 slots with ATI® CrossFireX™ support (Single@x16 or dual@x16/x4 mode) 2 x PCIe 2.0 x1 slots 3 x PCI slots * The PCIe x1_2 slot shares the bandwidth with the PCIe x16_2 slot. Due to the CrossFireX™ limitation, DO NOT use the PCIe x1_2 slot when you install two CrossFireX™ graphics cards on both the PCIe x16 slots to set up a CrossFireX™ configuration.
Storage / RAID	AMD® A75 FCH: - 6 x Serial ATA 6.0Gb/s connectors (gray) support RAID 0, RAID 1, RAID 10, and JBOD configurations Asmedia® PCIe SATA 6Gb/s controller - 1 x Serial ATA 6.0Gb/s connector (navy blue) - 1 x eSerial ATA 6.0Gb/s at the back I/O

(continued on the next page)

F1A75-V PRO specifications summary

LAN	Realtek® RTL8111E PCIe Gigabit LAN controller
Audio	ALC892 supports 8-channel High Definition Audio - Optical S/PDIF Out port at the back I/O - Supports Jack-detection, Multi-streaming, and Front Panel Jack-Retasking
USB	AMD® A75 FCH: - 4 x USB 3.0 ports (2 ports at the back panel, 2 ports at the front panel [blue]) - 10 x USB 2.0 ports (2 ports at the back panel, 8 ports at the front panel) Asmedia® PCIe USB3.0 controller: - 2 x USB 3.0 ports at the back panel

ASUS unique features	**ASUS Dual Intelligent Processors 2 with DIGI+VRM:**
	ASUS EPU
	    - EPU
	    - EPU switch
	ASUS TPU
	    - Auto Tuning
	    - TurboV
	    - GPU Boost
	    - TPU switch
	ASUS Digital Power Design
	- Industry leading Digital 6+2 Phase Power Design
	ASUS Exclusive Features
	- MemOK!
	- AI Suite II
	- AI Charger+
	- Anti-Surge Protection
	- ASUS UEFI BIOS EZ Mode featuring user-friendly graphics interface
	ASUS Quiet Thermal Solutions
	- ASUS Fanless Design: Stylish heat pipe solution
	- ASUS Fan Xpert
	ASUS EZ DIY
	ASUS Q-Slot, Q-Shield, Q-Connector
	- ASUS CrashFree BIOS 3
	- ASUS EZ Flash 2
	- ASUS MyLogo 2™
	- Multi-language BIOS

(continued on the next page)

F1A75-V PRO specifications summary

ASUS exclusive overclocking features	**Intelligent overclocking tools:** - TPU - GPU Boost - Auto Tuning **Precision Tweaker 2** - vCore: Adjustable CPU voltage at 0.00625V increment - vDRAM: Adjustable DRAM voltage at 0.01V increment - vFCH: Adjustable FCH voltage at 0.01V increment **SFS (Stepless Frequency Selection):** - PCIe frequency tuning from 100MHz to 200MHz at 1MHz increment **Overclocking Protection:** - ASUS C.P.R
Other features	100% All high quality conductive polymer capacitors
Back panel I/O ports	1 x PS/2 Keyboard / Mouse Combo port 1 x DisplayPort 1 x HDMI port 1 x DVI port 1 x D-Sub port 1 x Optical S/PDIF out port 1 x LAN (RJ-45) port 1 x eSATA port 2 x USB 2.0 ports 4 x USB 3.0 ports 8-channel audio I/O ports
Internal connectors / switches / buttons	1 x 19-pin USB connector supports additional 2 USB 3.0 ports 4 x USB connectors support additional 8 USB 2.0 ports 1 x S/PDIF output connector 1 x High-definition front panel audio connector 7 x SATA 6.0Gb/s connectors (6 x gray; 1 x blue) 1 x COM connector 1 x EPU switch 1 x TPU switch 1 x MemOK! button 1 x 20-pin System panel connector 1 x 4-pin CPU fan connector 2 x 4-pin Chassis fan connectors 1 x 3-pin Power fan connector 1 x 24-pin EATX power connector 1 x 8-pin EATX 12V power connector

BIOS features	32Mb Flash ROM, UEFI BIOS, PnP, DMI2.0, WfM2.0, ACPI2.0a, SM BIOS 2.6, ASUS EZ Flash 2, ASUS CrashFree BIOS 3
Support DVD contents	Drivers ASUS Update ASUS utilities Anti-Virus software (OEM version)
Accessories	2 x Serial ATA 6.0Gb/s cables 1 x 2-in-1 Q-connector (retail version only) 1 x Q-Shield 1 x User Manual 1 x Support DVD
Form factor	ATX form factor: 12.0 in x 9.6 in (30.5 cm x 24.4 cm)

*Specifications are subject to change without notice.

Chapter 1

1.1   Welcome!
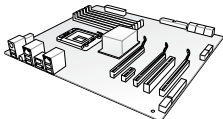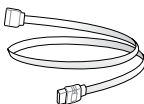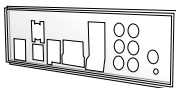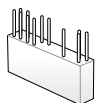
Thank you for buying an ASUS® F1A75-V PRO motherboard!

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.

ASUS F1A75-V PRO motherboard	**User guide**	**Support DVD**
2 x Serial ATA 6.0 Gb/s cables with 6.0 Gb/s label		**1 x ASUS Q-Shield**
1 x 2-in-1 ASUS Q-Connector kit		

> • If any of the above items is damaged or missing, contact your retailer.
>
> • The illustrated items above are for reference only. Actual product specifications may vary with different models.

1.3 Special features

1.3.1 Product highlights

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

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® A75 FCH (Hudson D3) Chipset

AMD® A75 FCH (Hudson D3) is designed to support up to 5GT/s interface speed and PCI Express™ 2.0 x 16 (at x4 speed) graphics. It supports 6 x SATA 6Gb/s ports and 4 x USB 3.0 Ports.

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.

USB 3.0 support

Experience ultra-fast data transfer at 4.8Gbps with USB 3.0 – the latest connectivity standard. Built to connect easily with next-generation components and peripherals, USB 3.0 transfers data 10x faster and is also backward compatible with USB 2.0 components.

Native SATA 6.0 Gb/s support

The AMD® A75 FCH natively supports next-generation Serial ATA (SATA) storage interface, this motherboard delivers up to 6.0 Gb/s data transfer rates. Additionally, get enhanced scalability, faster data retrieval, double the bandwidth of current bus systems.

100% All High-quality Conductive Polymer Capacitors

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

1.3.2 Dual Intelligent Processors 2 – DIGI+ VRM

The world's first Dual Intelligent Processors from ASUS pioneered the use of two onboard chips - TPU (TurboV Processing Unit) and EPU (Energy Processing Unit). Its new generation of Dual Intelligent Processor 2 with DIGI+ VRM launches power delivery into a digital standard with a programmable microprocessor that perfectly serves power signal, eliminating digital-to-analog conversion lag. It is the most precise power delivery available providing the best in class power efficiency, greater performance, and rock solid stability. With ASUS DIGI+VRM, you can easily adjust power phase performance and system voltages via diverse settings to maximize overall performance and overclocking potential.

TPU

Unleash your performance with ASUS' simple onboard switch or AI Suite II utility. ASUS Auto tuning feature can automatically optimize the system for fast, yet stable clock speeds, and the TurboV gives you the freedom to adjust APU Multiplier to optimize performance under varied system conditions.

EPU

Tap into the world's first real time PC power saving engine through a simple onboard switch or AI Suite II utility. Get total system-wide energy optimization by automatically detecting current PC loadings and intelligently moderating power consumption. This also reduces fan noise and extends component longevity.

1.3.3   ASUS Digital Power Design

DIGI+ VRM

The world's first Dual Intelligent Processors from ASUS pioneered the use of two onboard chips - TPU (TurboV Processing Unit) and EPU (Energy Processing Unit). New generation Dual Intelligent Processor 2 with DIGI+ VRM launches power delivery into a digital standard. It features an onboard digital programmable microprocessor to perfectly match digital power signal, eliminating digital-to-analog conversion lag. The precise power delivery minimizes power transfer loss to provide the highest power efficiency, greater performance, and rock solid stability with the most flexible power adjustment than traditional analog power design. With ASUS DIGI+VRM, you can easily adjust power phase management voltages and frequency modulation via diverse settings through BIOS tunings and the exclusive user interface. It increases overclocking range while maximizing overall performance.

1.3.4   ASUS Exclusive Features

GPU Boost

GPU Boost overclocks the integrated GPU in real time for the best graphics performance. User-friendly UI facilitates flexible frequency and voltage adjustments. Its ability to deliver multiple overclocking profiles also provides rapid and stable system-level upgrades.

ASUS TurboV

Feel the adrenaline rush of real-time OC-now a reality with the ASUS TurboV. This easy OC tool allows you to overclock without exiting or rebooting the OS; and its user-friendly interface makes overclock with just a few clicks away. Moreover, the ASUS OC profiles in TurboV provides the best O.C. settings in different scenarios.

Auto Tuning

Auto Tuning is an intelligent tool that automates overclocking to achieve a total system level up. This tool also provides stability testing. Even O.C. beginners can achieve extreme yet stable overclocking results with Auto Tuning!

MemOK!

MemOK! guickly ensures memory boot compatibility. This remarkable memory rescue tool requires a mere push of the button to patch memory issues. MemOK! determines failsafe settings and dramatically improves your system boot success. Get your system up and running in no time.

ASUS UEFI BIOS (EZ Mode)

The new ASUS UEFI BIOS, a user-friendly Unified Extensible Firmware Interface (UEFI), goes beyond the traditional-keyboard only BIOS input to enable more flexible and convenient mouse controls. You can easily navigate the new UEFI BIOS with the same smoothness as navigating through the operating system's interface. The exclusive EZ Mode displays frequently-accessed information, while the Advanced Mode is for the experienced performance enthusiasts who demand a more intricate system setup. Refer to Chapter 3 for details.

ASUS Anti-Surge Protection

This special design protects expensive devices and the motherboard from damage caused by power surges from switching power supply unit (PSU).

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.

Ai Charger+

ASUS Ai Charger+, the latest Ai Charger* version, brings you to a new level of USB3.0 fast charging experience. With its easy and user-friendly interface, you can not only easily charge iPod, iPhone and iPad, but also BC 1.1** standard mobile devices three times*** as fast as before.

> * Ai Charger is ASUS unique fast-charging software which supports iPod, iPhone and iPad.
>
> ** Check your USB mobile device manufacturer if it fully supports the BC 1.1 function.
>
> *** The actual charging speed may vary with your USB device's conditions.

Fanless Design: stylish heat pipe solution

The stylish heat pipe features a 0-dB thermal solution that offers users a noiseless PC environment. Not only the beautiful shape upgrades the visual enjoyment for motherboard users, but also the heat pipe design lowers the temperature of the chipset and power phase area through high efficient heat-exchange. Combined with usability and aesthetics, the ASUS stylish heat pipe will give users an extremely silent and cooling experience with the elegant appearance!

Fan Xpert

ASUS Fan Xpert intelligently allows you to adjust the CPU fan speed according to different ambient temperatures caused by different climate conditions in different geographic regions and your PC's loading. The built-in variety of useful profiles offer flexible controls of fan speed to achieve a quiet and cool environment.

ASUS Q-Design

ASUS Q-Design enhances your DIY experience. All of Q-Slot, Q-Shield and Q-Connector design speed up and simplify the DIY process!

ASUS Q-Shield

ASUS Q-Shield's special design makes it convenient and easy to install on your motherboard. With better electric conductivity, it ideally protects your motherboard against static electricity and shields it against Electronic Magnetic Interference (EMI).

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.

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.

Chapter 2

2.1   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, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.

2.2 Motherboard overview

2.2.1 Motherboard layout

Refer to **2.8 Connectors** for more information about rear panel connectors and internal connectors.
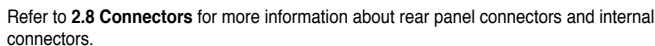
2.2.2 Layout contents

Connectors/Jumpers/Slots	Page
1. CPU, chassis, and power fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN, 3-pin PWR_FAN)	2-30
2. ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)	2-32
3. AMD APU Socket	2-5
4. DDR3 DIMM slots	2-10
5. TPU LED (ELED730)	2-36
6. EPU LED (ELED740)	2-36
7. EPU switch	2-19
8. TPU switch	2-18
9. MemOK! switch	2-20
10. DRAM LED (DRAM_LED)	2-35
11. USB 3.0 front panel connector (20-pin USB3_56)	2-29
12. SATA 6.0 Gb/s connectors (7-pin SATA6G_E1, SATA6G_1~6)	2-27
13. Standby power LED (SB_PWR)	2-35
14. System panel connector (20-8 pin PANEL)	2-33
15. Clear RTC RAM (3-pin CLRTC)	2-17
16. USB connectors (10-1 pin USB78, USB910, USB34, USB56)	2-29
17. Serial port connector (10-1 pin COM1)	2-28
18. Front panel audio connector (10-1 pin AAFP)	2-31
19. Digital audio connector (4-1 pin SPDIF_OUT)	2-28

Chapter 2

2.2.3   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.

2.2.4   Screw holes

Place nine 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.

F1A75-V PRO
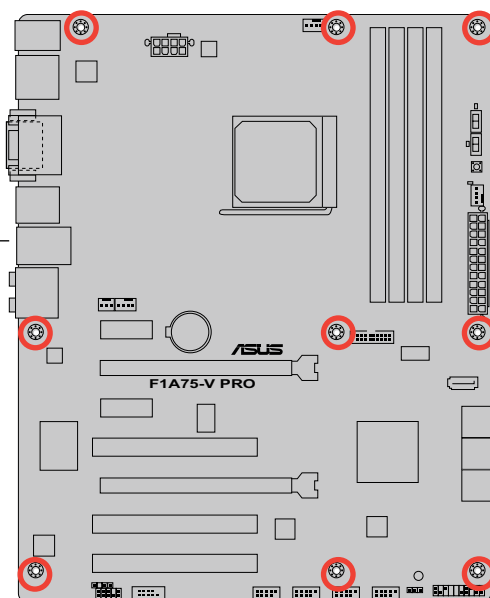
2.3 Accelerated Processing Unit (APU)

This motherboard comes with an FM1 socket designed for AMD™ A-Series and E2-Series Accelerated processors.

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!

2.3.1 Installing the APU

To install the APU:

1. Locate the APU socket on the motherboard.
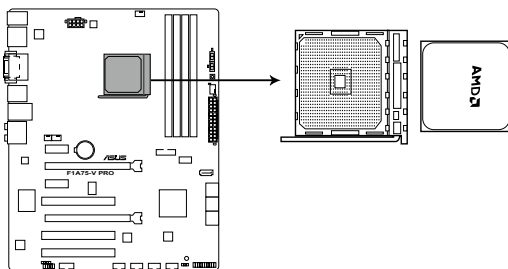
F1A75-V PRO APU socket FM1

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

Ensure that the socket lever is lifted up to a 90º angle. Otherwise, the APU will not fit in completely.
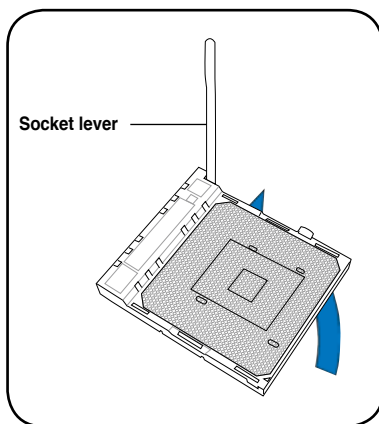
Socket lever

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.

Gold triangle

Small triangle
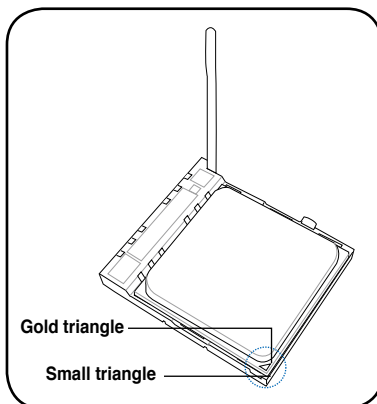
5. When the APU is in place, push down the socket lever to secure the APU. The lever clicks on the side tab to indicate that it is locked.
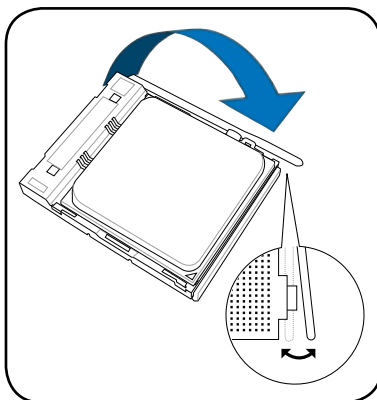
6. Apply some Thermal Interface Material to the exposed area of the APU that the heatsink will be in contact with, ensuring that it is spread in an even thin layer.

Some heatsinks come with pre-applied thermal paste. If so, skip this step.

The Thermal Interface Material is toxic and inedible. DO NOT eat it. If it gets into your eyes or touches your skin, wash it off immediately, and seek professional medical help.

To prevent contaminating the paste, DO NOT spread the paste with your finger.
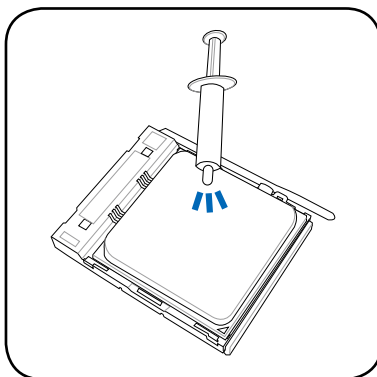
2.3.2   Installing the CPU heatsink and fan

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.

CPU fan

Retention bracket lock

CPU heatsink

Retention bracket

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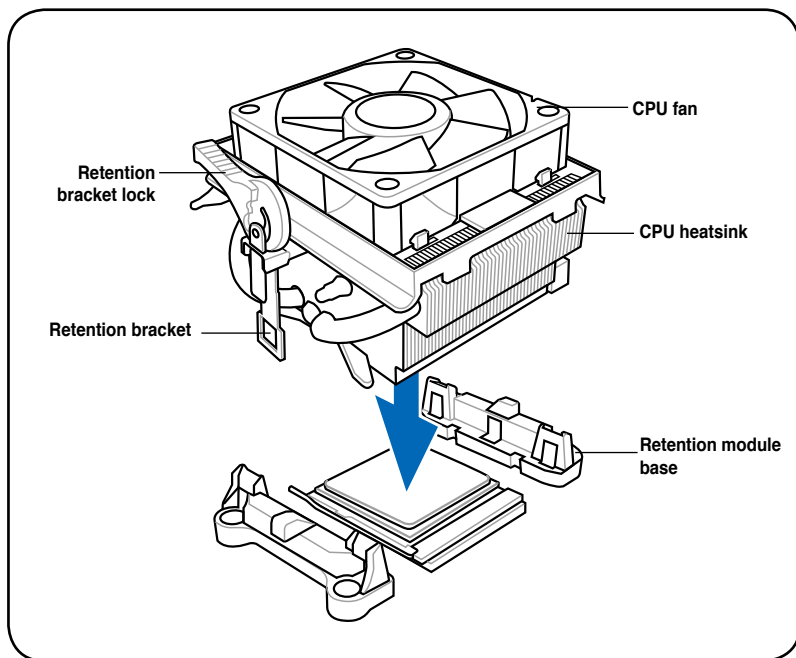
✎
Your boxed CPU heatsink and fan assembly should come with installation instructions for the CPU, heatsink, and the retention mechanism. If the instructions in this section do not match the CPU documentation, follow the latter.

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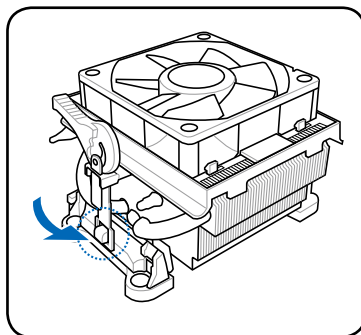
3. Align the other end of the retention bracket to the retention module base. A clicking sound denotes that the retention bracket is in place.

    Ensure that the fan and heatsink assembly perfectly fits the retention mechanism module base, otherwise you cannot snap the retention bracket in place.
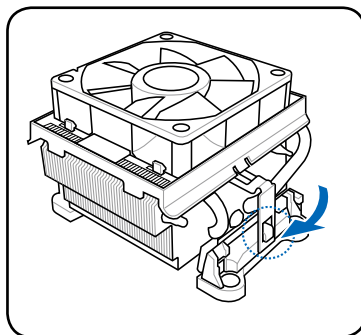
4. Push down the retention bracket lock on the retention mechanism to secure the heatsink and fan to the module base.
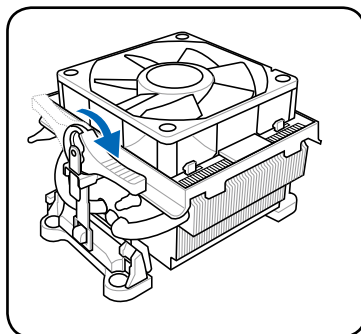
5. When the fan and heatsink assembly is in place, connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN.

CPU_FAN

CPU FAN PWM
CPU FAN IN
CPU FAN PWR
GND
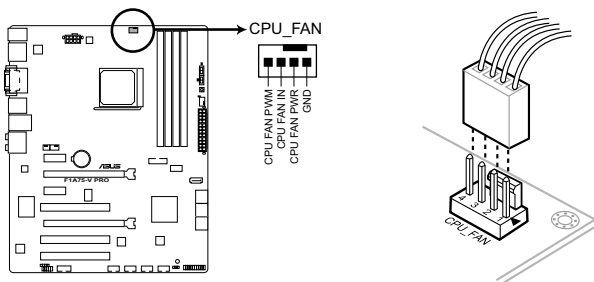
CPU_FAN

F1A75-V PRO CPU fan connector

- Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

- This connector is backward compatible with old 3-pin CPU fan.

2.4 System memory

2.4.1 Overview

The motherboard comes with four 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:
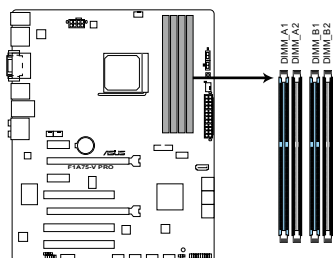
F1A75-V PRO 240-pin DDR3 DIMM sockets

Recommended memory configurations

One DIMM:

Install one memory module in any slot as a single-channel operation.

Two DIMMs (dual-channel operation):
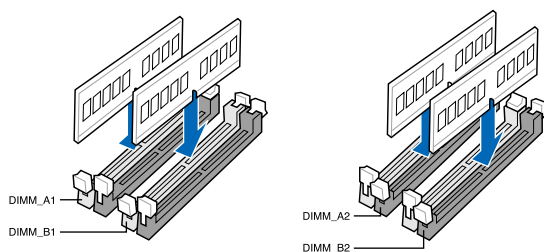
Four DIMMs (dual-channel operation):
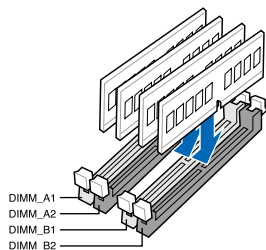
2.4.2   Memory configurations

You may install 512MB, 1GB, 2GB, and 4GB 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.

- • 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:
  - Use a maximum of 3GB system memory if you are using a 32-bit Windows OS.
  - Install a 64-bit Windows OS when you want to install 4GB or more on the motherboard. For more details, refer to the Microsoft® support site at http://support.microsoft.com/kb/929605/en-us.

- • This motherboard does not support DIMMs made up of 512Mb (64MB) chips or less (Memory chip capacity counts in Megabit, 8 Megabit/Mb = 1 Megabyte/MB).

- • 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. To operate at the vendor-marked or at a higher frequency, refer to section **3.5 Ai Tweaker menu** for manual memory frequency adjustment.

- • For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs) or overclocking condition.

- • Visit the ASUS website for the latest QVL.

Chapter 2

2.4.3   Installing a DIMM

⚠ Ensure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DIMM socket by pressing the retaining clips outward.

2. Align a DIMM on the socket such that the notch on the DIMM matches the DIMM slot key on the socket.

DIMM notch

Unlocked retaining clip   **DIMM slot key**
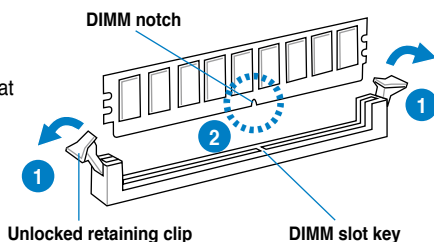
✎ A DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM.

3. Hold the DIMM by both of its ends, then insert the DIMM vertically into the socket. Apply force to both ends of the DIMM simultaneously until the retaining clip snaps back into place, and the DIMM cannot be pushed in any further to ensure proper sitting of the DIMM.

Locked Retaining Clip
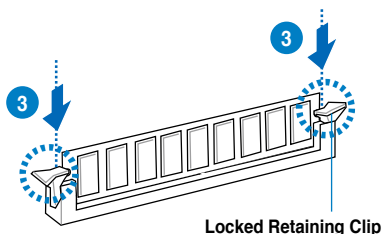
⚠ Always insert the DIMM into the socket VERTICALLY to prevent DIMM notch damage.

2.4.4   Removing a DIMM

1. Simultaneously press the retaining clip 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.
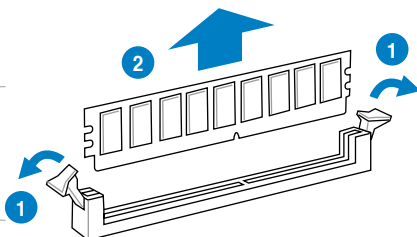
2. Remove the DIMM from the socket.

2.5 Expansion slots

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

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

2.5.1 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.

2.5.2 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 3 for information on BIOS setup.

2. Assign an IRQ to the card. Refer to the tables on the next page.

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. Refer to the table on the next page for details.

2.5.3   Interrupt assignments

Standard interrupt assignments

IRQ	Priority	Standard function
0	1	System Timer
1	2	Keyboard Controller
2	–	Redirect to IRQ#9
3	12	Communications Port (COM1)*
5	13	IRQ Holder for PCI Steering*
6	14	Reserved
7	15	Reserved
8	3	System CMOS/Real Time Clock
9	4	IRQ Holder for PCI Steering*
10	5	IRQ Holder for PCI Steering*
11	6	IRQ Holder for PCI Steering*
12	7	PS/2 Keyboard and Mouse
13	8	Numeric Data Processor
14	9	Primary IDE Channel

* These IRQs are usually available for PCI devices.

IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCIE x16_1	–	–	shared	–	–	–	–	–
PCIE x16_2	shared	–	–	–	–	–	–	–
PCIE x1_1	shared	–	–	–	–	–	–	–
PCIE x1_2	–	–	–	shared	–	–	–	–
PCI_1	–	–	–	–	shared	–	–	–
PCI_2	–	–	–	–	–	shared	–	–
PCI_3	–	–	–	–	–	–	shared	–
LAN	–	shared	–	–	–	–	–	–
Onboard USB 3.0 controller	–	–	shared	–	–	–	–	–
Onchip SATA Controller	–	–	–	shared	–	–	–	–
Onchip USB3.0 Controller_1	–	–	shared	–	–	–	–	–
Onchip USB3.0 Controller_2	–	shared	–	–	–	–	–	–
Onboard SATA Controller	–	shared	–	–	–	–	–	–
HD Audio	shared	–	–	–	–	–	–	–

2.5.4   PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. Refer to the figure below for the location of the slots.

2.5.5   PCI Express 2.0 x1 slots

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. Refer to the figure below for the location of the slots.

2.5.6   PCI Express 2.0 x16 slots

This motherboard has two PCI Express 2.0 x16 slots that support PCI Express 2.0 x16 graphics cards complying with the PCI Express specifications. Refer to the figure below for the location of the slots.

PCI slot 1

PCI slot 2

PCIe 2.0 x1_2 slot

PCI slot 3

PCIe 2.0 x16_2 slot (black, at x 4 link)

PCIe 2.0 x1_1 slot

PCIe 2.0 x16_1 slot (blue, at x 16 link)
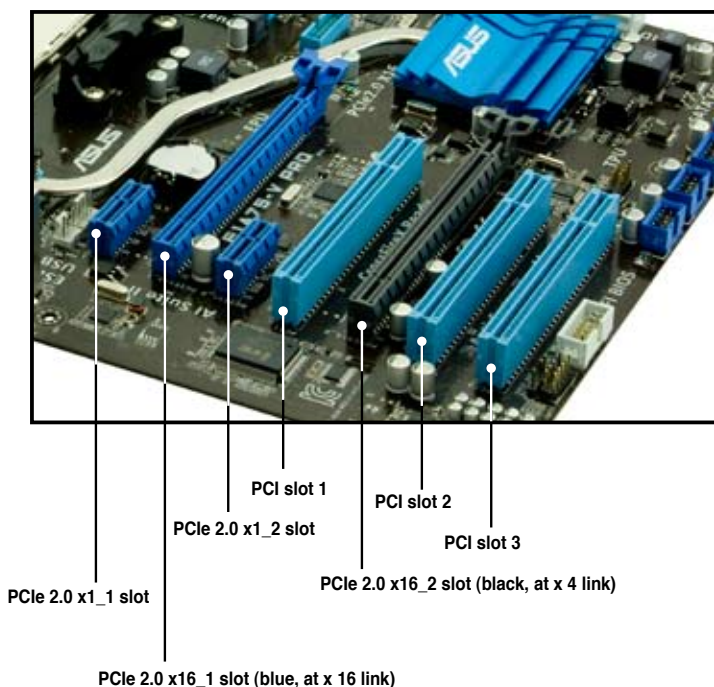
VGA configuration	PCI Express operating mode	
	PCIe x16_1	PCIe x16_2
Single VGA/PCIe card	x16 (Recommended for single VGA card)	N/A
Dual VGA/PCIe card	x16	x4

・ In single VGA card mode, use first the PCIe 2.0 x16_1 slot (blue) for a PCI Express x16 graphics card to get better performance.

・ We recommend that you provide sufficient power when running CrossFireX™ mode. See page 2-32 for details.

・ The PCIe x1_2 slot shares the bandwidth with the PCIe x16_2 slot. Due to the CrossFireX™ limitation, DO NOT use the PCIe x1_2 slot when you install two CrossFireX™ graphics cards on both the PCIe x16 slots to set up a CrossFireX™ configuration.

・ Connect a chassis fan to the motherboard connector labeled CHA_FAN when using multiple graphics cards for better thermal environment. See page 2-30 for details.

Chapter 2

2.6   Jumper

Clear RTC RAM (3-pin 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.
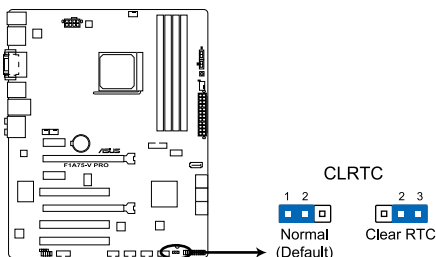
F1A75-V PRO Clear RTC RAM

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 re-enter 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 C.P.R. feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

2.7 Onboard switches

Onboard switches allow you to fine-tune performance when working on a bare or open-case system. This is ideal for overclockers and gamers who continually change settings to enhance system performance.

1. TPU switch

This switch allows you to enable or disable the TPU function.
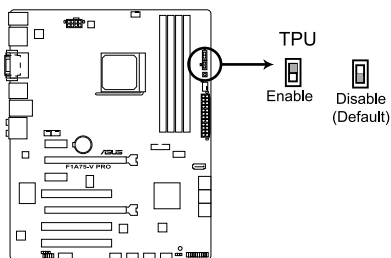
F1A75-V PRO TPU switch

- The TPU LED (ELED730) near the TPU switch lights when the switch setting is turned to **Enable**. Refer to section **2.9 Onboard LEDs** for the exact location of the TPU LED.

- If you clear the CMOS or load the BIOS setup defaults, the related overclocking items in the BIOS menu follow the current setting of the TPU switch.

- If you change the switch setting to **Enable** under the OS environment, the TPU function will be activated after the next system bootup.

- You may use the TurboV and Auto Tuning features in the TurboV EVO application, adjust the BIOS settings, or enable the TPU function at the same time. However, the system will use the last setting you have made.

2. **EPU switch**

   This switch allows you to enable or disable the EPU function.

   EPU

   Enable   Disable
             (Default)
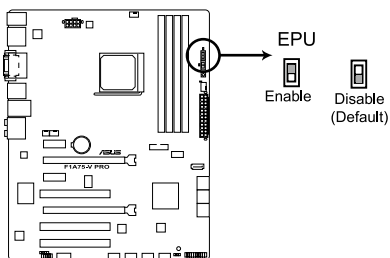
   F1A75-V PRO EPU switch

- The EPU LED (ELED740) near the TPU switch lights when the switch setting is turned to **Enable**. Refer to section **2.9 Onboard LEDs** for the exact location of the EPU LED.

- If you change the switch setting to **Enable** under the OS environment, the EPU function will be activated after the next system bootup.

- You may change the EPU settings in the EPU application, change the BIOS settings, and enable the EPU function at the same time. However, the system will use the last setting you have made.

Chapter 2

3.   MemOK! switch

Installing DIMMs that are incompatible with the motherboard may cause system boot failure, and the DRAM_LED near the MemOK! switch lights continuously. Press and hold the MemOK! switch until the DRAM_LED starts blinking to begin automatic memory compatibility tuning for successful boot.
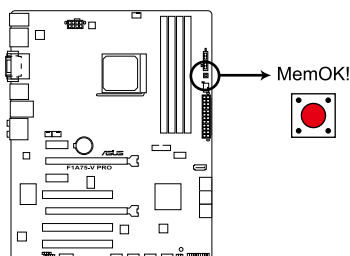
F1A75-V PRO MemOK! switch

• Refer to section **2.9 Onboard LEDs** for the exact location of the DRAM_LED.

• The DRAM_LED also lights when the DIMM is not properly installed. Turn off the system and reinstall the DIMM before using the MemOK! function.

• The MemOK! switch does not function under Windows® OS environment.

• During the tuning process, the system loads and tests failsafe memory settings. It takes about 30 seconds for the system to test one set of failsafe settings. If the test fails, the system reboots and test the next set of failsafe settings. The blinking speed of the DRAM_LED increases, indicating different test processes.

• Due to memory tuning requirement, the system automatically reboots when each timing set is tested. If the installed DIMMs still fail to boot after the whole tuning process, the DRAM_LED lights continuously. Replace the DIMMs with ones recommended in the Memory QVL (Qualified Vendors Lists) in this user manual or on the ASUS website at www.asus.com.

• If you turn off the computer and replace DIMMs during the tuning process, the system continues memory tuning after turning on the computer. To stop memory tuning, turn off the computer and unplug the power cord for about 5–10 seconds.

• If your system fail to boot due to BIOS overclocking, press the MemOK! switch to boot and load BIOS default settings. A message will appear during POST reminding you that the BIOS has been restored to its default settings.

• We recommend that you download and update to the latest BIOS version from the ASUS website at www.asus.com after using the MemOK! function.

2.8 Connectors

2.8.1 Rear panel connectors

USB compatible devices
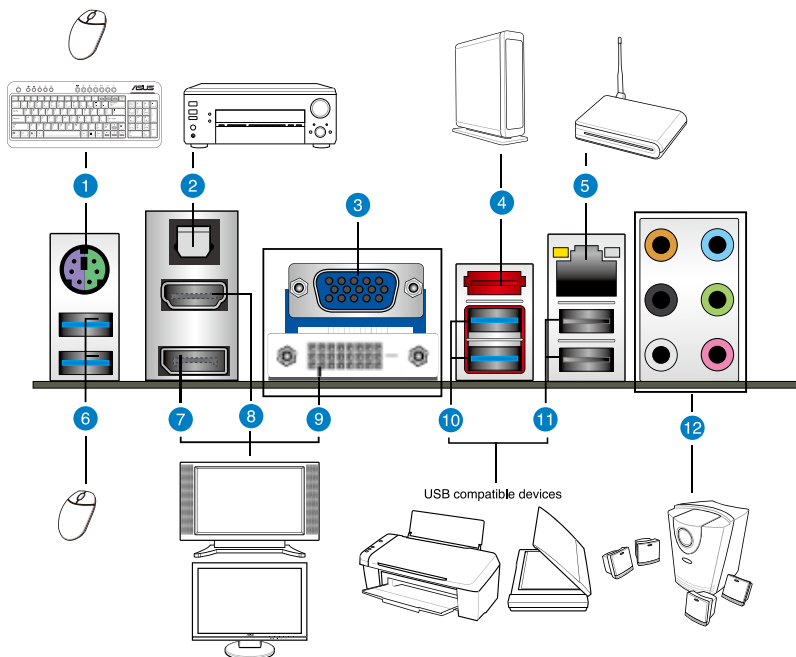
Rear panel connectors	
1. PS/2 keyboard/Mouse Combo port	7. DisplayPort
2. Optical S/PDIF Out port	8. HDMI Out port***
3. D-Sub Out port	9. DVI-D Out port
4. External SATA port	10. USB 3.0 ports 1 and 2
5. LAN (RJ-45) port*	11. USB 2.0 ports 1 and 2
6. USB 3.0 ports 3 and 4	11. Audio I/O ports**

*and **: Refer to the tables on the next page for LAN port and audio port definitions.
***: Refer to the notes and troubleshooting on HDTV overscaling or underscaling on the next pages.

- DO NOT insert a different connector to the external SATA port.

- To use hot plugging, set the **SATA Port1 - Port4** item in the BIOS to **[AHCI]**. Refer to **3.4.2 SATA Configuration** for details.

* LAN port LED indications

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

ACT/LINK   SPEED
LED   LED

LAN port
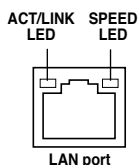
** Audio 2, 4, 6, or 8-channel configuration

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Orange	–	–	Center/Subwoofer	Center/Subwoofer
Black	–	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Gray	–	–	–	Side Speaker Out

Dual display table

This table indicates whether the dual display you want to use is supported or not.

Dual display output	Supported	Not supported
DVI + D-Sub	•	
HDMI + D-Sub	•	
DVI + HDMI		•
DVI + DisplayPort	•	
D-Sub + DisplayPort	•	
HDMI + DisplayPort	•	

Chapter 2

Playback of Blu-ray Discs

For better playback quality, we suggest that you follow the system requirements in the suggested list below.

Suggested list	
APU	AMD® A-Series
DIMM	DDR3 1333
BIOS setup	Frame Buffer Size – 256MB or higher
Playback software	CyberLink® PowerDVD 9

File format	Best resolution		
	Windows XP	Windows Vista	Windows 7
Non-protected clips	1920 x 1080p	1920 x 1080p	1920 x 1080p
Blu-ray	1920 x 1080p	1920 x 1080p	1920 x 1080p

Chapter 2

Troubleshooting on HDTV overscaling or underscaling:

If your desktop is extending beyond the viewable display area or the desktop or image is not filling the entire display area while using the onboard HDMI out port and the HDMI cable, you can resize the desktop appearing on your HDTV screen.

To resize your HDTV desktop:

1.   Install **AMD Chipset Driver** from the motherboard support DVD.

2.   Right-click the desktop and select **ATI CATALYST(R) Control Center**.

3.   From the **Graphics Settings** tree, expand **DTV (HDMI™) 1**.

4.   Click **Scaling Options**.

5.   Move the **Underscan/Overscan** slider to adjust the overall size of the display on the HDMI™ DTV.
      Using this slider increases or decreases any black borders that may be visible around the outside of the display.

6.   To ensure that forcing a custom display mode through the ATI Displays Manager does not create conflicting resolutions, select the **Use the scaling values instead of the customized settings when the desktop resolution does not match your DFP resolution** check box.

> The **Scaling Options** function of the **DTV (HDMI™) 1** item in the ATI CATALYST Control Center is adjustable only when you are using an HDTV compliance resolution such as 480i, 720i, or 1080i.

2.8.2   Audio I/O connections

Audio I/O ports
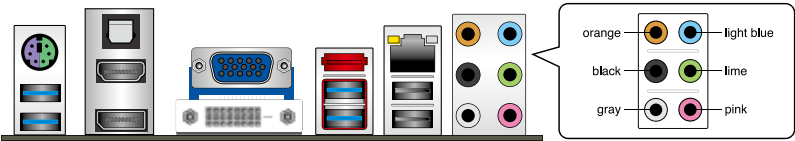
Connect to Headphone and Mic

Connect to Stereo / 2.1-channel Speakers

Chapter 2
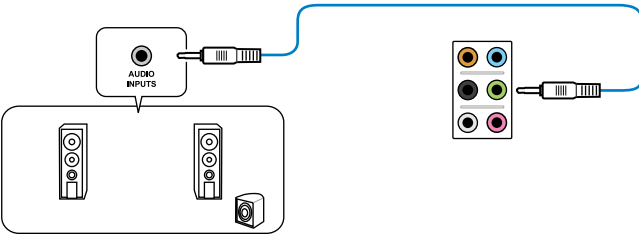
Connect to 4.1 channel Speakers
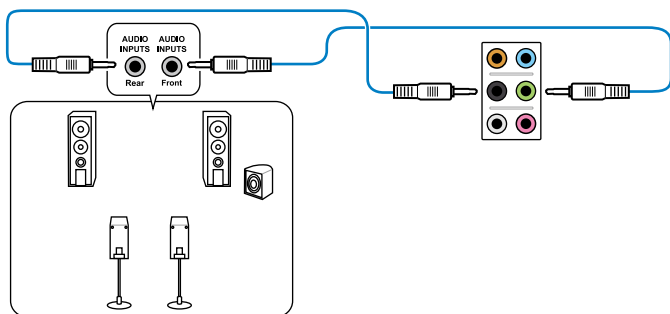
Connect to 5.1 channel Speakers
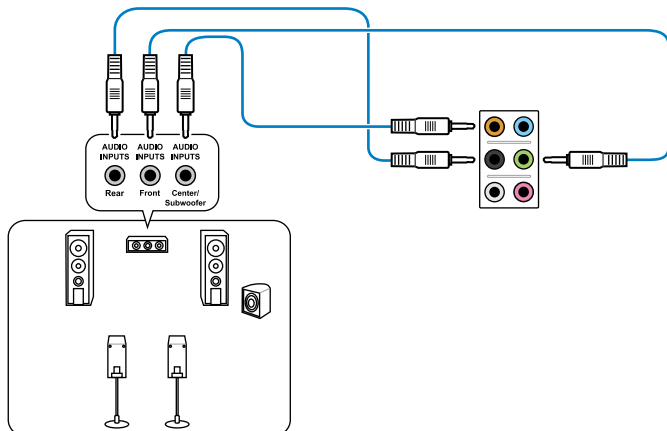
Connect to 7.1 channel Speakers
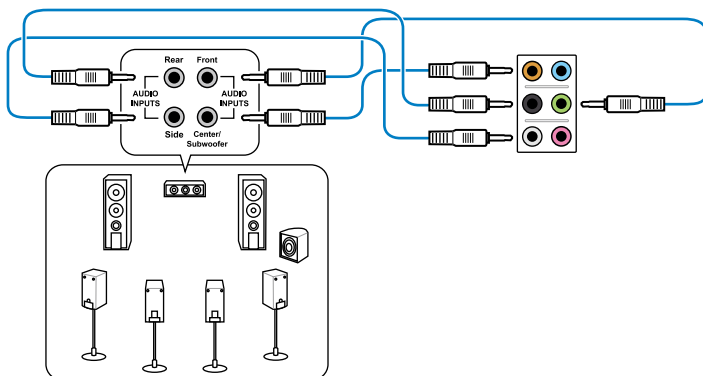
2.8.3 Internal connectors

1. SATA Serial ATA 6.0 Gb/s connectors (7-pin SATA6G_E1, SATA6G_1~6)

These connectors are for the Serial ATA 6.0 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 AMD® A75 FCH controller.

F1A75-V PRO SATA 6.0Gb/s connectors
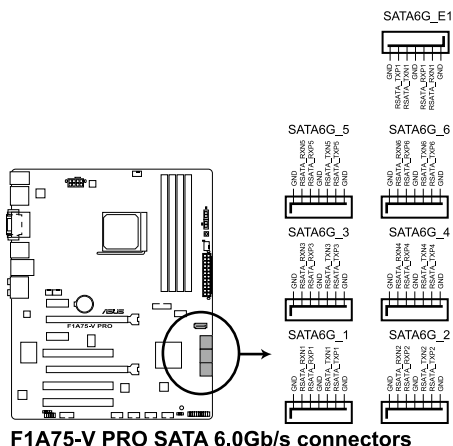
- These connectors are set to IDE mode by default. In IDE mode, you can connect Serial ATA boot/data hard disk drives to these connectors. If you intend to create a Serial ATA RAID set using these connectors, set the type of the SATA connectors to [RAID] in the BIOS. See section 3.4.2 SATA Configuration 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 to **[AHCI]** in the BIOS. See section **3.4.2 SATA Configuration** for details.

2. **Serial port connector (10-1 pin COM1)**

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.
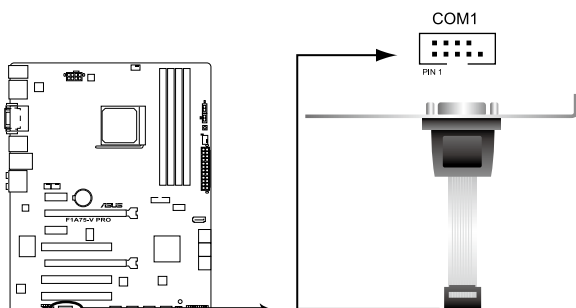
F1A75-V PRO Serial port (COM1) connector

The COM module is purchased separately.

3. **Digital audio connector (4-1 pin SPDIF_OUT)**

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port. Connect the S/PDIF Out module cable to this connector, then install the module to a slot opening at the back of the system chassis.
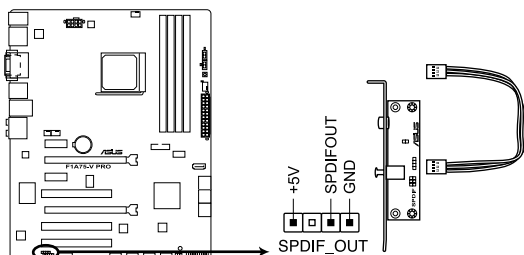
F1A75-V PRO Digital audio connector

The S/PDIF module is purchased separately.

4. **USB connectors (10-1 pin USB78, USB910, USB34, USB56)**

   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 480 Mbps connection speed.

   F1A75-V PRO USB2.0 connectors
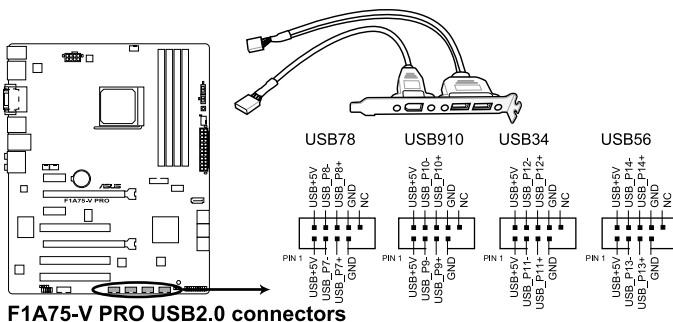
   Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

   You can connect the front panel USB cable to the ASUS Q-Connector (USB, blue) first, and then install the Q-Connector (USB) to the USB connector onboard if your chassis supports front panel USB ports.

   The USB module cable is purchased separately.

5. **USB 3.0 front panel connector (19-pin USB3_56)**

   This connector supports several two additional USB 3.0 ports.

   F1A75-V PRO USB3.0 Front panel connector
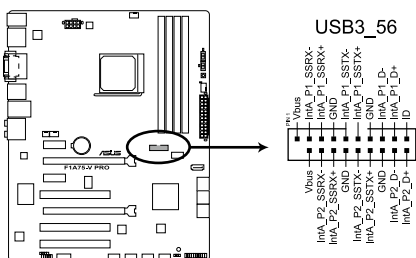
6. CPU, chassis, and power fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN, 3-pin PWR_FAN)

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.
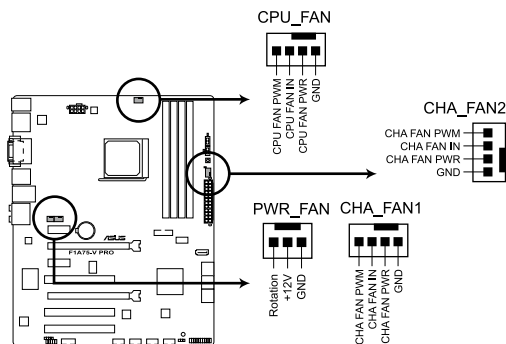
F1A75-V PRO fan connectors

⚠ 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 the CPU fan of maximum 2A (24 W) fan power.

• Only the 4-pin CPU_FAN and 4-pin CHA_FAN connectors support 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.

Chapter 2

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 HD Audio or legacy AC`97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.

F1A75-V PRO Front panel audio connector
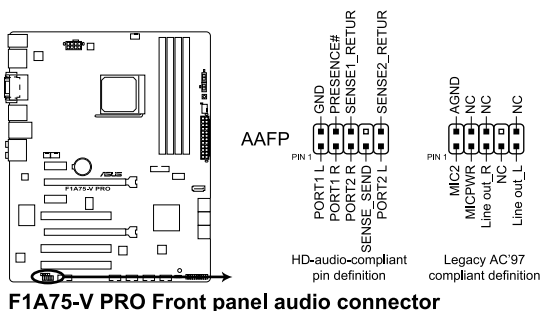
• We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

• If you want to connect a high-definition front panel audio module to this connector, set the **Front Panel Select** item in the BIOS setup to **[HD Audio]**; if you want to connect an AC'97 front panel audio module to this connector, set the item to **[AC 97]**. By default, this connector is set to [HD]. Refer to **3.6.3 Onboard Devices Configuration** for details.

8.   ATX power connectors (24-pin EATXPWR; 8-pin EATX12V)

These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.
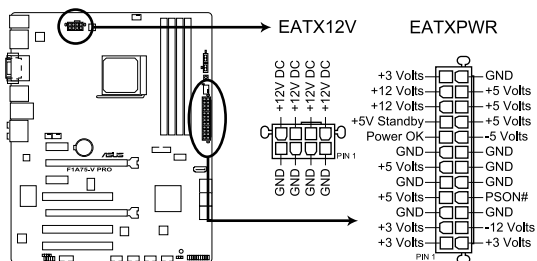
F1A75-V PRO ATX power connectors

- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 450 W.

- Do not forget to connect the 4-pin/8-pin EATX12 V power plug; otherwise, the system will not boot.

- We recommend that you use a PSU with higher power output when configuring a system with more power-consuming 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.

- If you want to use two high-end PCI Express x16 cards, use a PSU with 1000W power or above to ensure the system stability.

9. **System panel connector (20-8 pin PANEL)**

This connector supports several chassis-mounted functions.
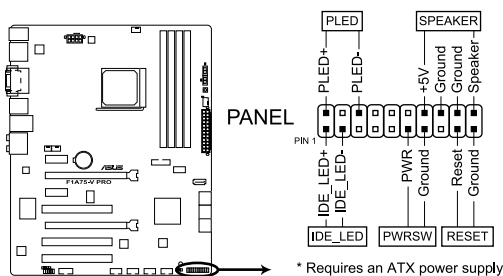
F1A75-V PRO System panel connector

* **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.

* **System warning speaker (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.

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

    This 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.

2.8.4.   ASUS Q-Connector (system panel)

Use the ASUS Q-Connector to connect/disconnect the chassis front panel cables.

To install the ASUS Q-Connector:

1.   Connect the front panel cables to the ASUS Q-Connector.

    Refer to the labels on the Q-Connector to know the detailed pin definitions, and then match them to their respective front panel cable labels.

    The labels on the front panel cables may vary depending on the chassis model.
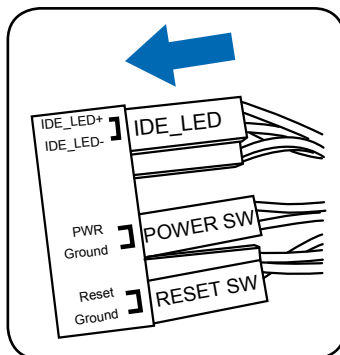
2.   Install the ASUS Q-Connector to the system panel connector, ensuring the orientation matches the labels on the motherboard.
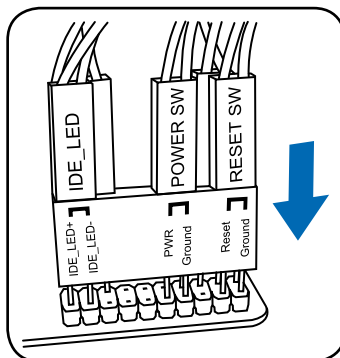
3.   The front panel functions are now enabled. The figure shows the Q-Connector is properly installed on the motherboard.
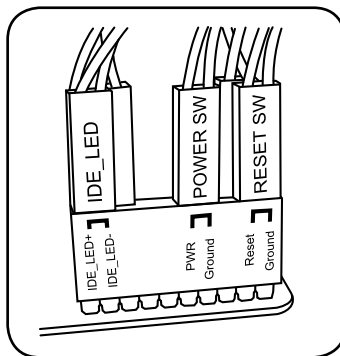
2.9   Onboard LEDs

1.   **Standby Power LED**

The motherboard comes with a standby power LED. The green LED lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.

SB_PWR

ON
Standby Power

OFF
Powered Off
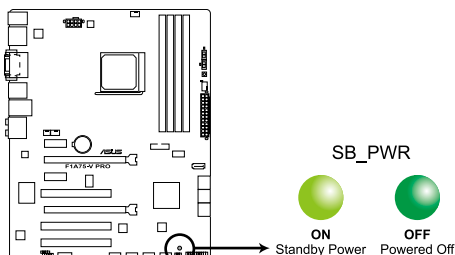
F1A75-V PRO Onboard LED

2.   **DRAM LED**

DRAM LED checks the DRAM in sequence during motherboard booting process. If an error is found, the LED next to the error device will continue lighting until the problem is solved. This user-friendly design provides an intuitional way to locate the root problem within a second.
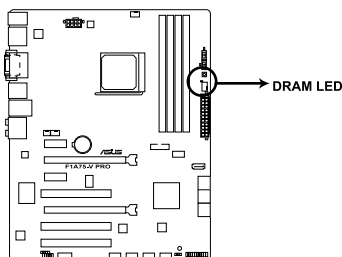
DRAM LED

F1A75-V PRO DRAM LED

3. **TPU LED**

    The TPU LED lights when the TPU switch is turned to **Enable**.

    ELED730
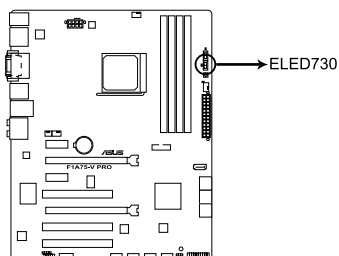
    F1A75-V PRO TPU LED

4. **EPU LED**

    The EPU LED lights when the EPU switch is turned to **Enable**.

    ELED740
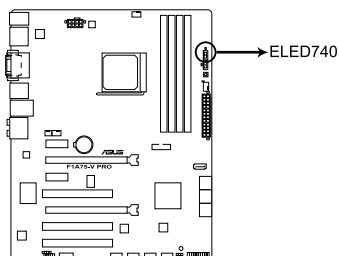
    F1A75-V PRO EPU LED

2.10   Starting up for the first time

1.   After making all the connections, replace the system case cover.

2.   Be sure that all switches are off.

3.   Connect the power cord to the power connector at the back of the system chassis.

4.   Connect the power cord to a power outlet that is equipped with a surge protector.

5.   Turn on the devices in the following order:

    a.   Monitor

    b.   External SCSI devices (starting with the last device on the chain)

    c.   System power

6.   After applying power, the system power LED on the system front panel case lights up. For systems with ATX power supplies, the system LED lights up when you press the ATX power button. If your monitor complies with the "green" standards or if it has a "power standby" feature, the monitor LED may light up or change from orange to green after the system LED turns on.

    The system then runs the power-on self tests or POST. While the tests are running, the BIOS beeps (see the BIOS beep codes table below) or additional messages appear on the screen. If you do not see anything within 30 seconds from the time you turned on

BIOS Beep	Description
One short beep	VGA detected Quick boot set to disabled No keyboard detected
One continuous beep followed by two short beeps then a pause (repeated)	No memory detected
One continuous beep followed by three short beeps	No VGA detected
One continuous beep followed by four short beeps	Hardware component failure

7.   At power on, hold down the <Delete> key to enter the BIOS Setup. Follow the instructions in Chapter 3.

2.11   Turning off the computer

While the system is ON, pressing the power switch for less than four seconds puts the system on sleep mode or soft-off mode, depending on the BIOS setting. Pressing the power switch for more than four seconds lets the system enter the soft-off mode regardless of the BIOS setting. Refer to section **3.7 Power menu** in Chapter 3 for details.

Chapter 3

3.1   Knowing BIOS

BIOS (Basic Input and Output System) stores system hardware settings such as storage device configuration, overclocking settings, advanced power management, and boot device configuration that are needed for system startup in the motherboard CMOS. In normal circumstances, the default BIOS settings apply to most conditions to ensure optimum performance. **We recommend that you not change the default BIOS settings** except in the following circumstances:

•   An error message appears on the screen during the system bootup and requests you to run the BIOS Setup.

•   You have installed a new system component that requires further BIOS settings or update.

> Inappropriate settings of the BIOS may result to instability or failure to boot. **We strongly recommend that you change the BIOS settings only with the help of a trained service personnel**.

3.2   Updating BIOS

The ASUS website publishes the latest BIOS versions to provide enhancements on system stability, compatibility, or performance. However, BIOS updating is potentially risky. If there is no problem using the current version of BIOS, **DO NOT manually update the BIOS**. Inappropriate BIOS updating may result in the system's failure to boot. Carefully follow the instructions of this chapter to update your BIOS if necessary.

> Visit the ASUS website at **www.asus.com** to download the latest BIOS file for this motherboard.

The following utilities allow you to manage and update the motherboard BIOS setup program.

1.   **ASUS Update:** Updates the BIOS in Windows® environment.

2.   **ASUS EZ Flash 2:** Updates the BIOS using a USB flash drive.

3.   **ASUS CrashFree BIOS 3 utility:** Restores the BIOS using the motherboard support DVD or a USB flash drive when the BIOS file fails or gets corrupted.

4.   **ASUS BIOS Updater:** Updates and backups the BIOS in DOS environment using the motherboard support DVD and a USB flash drive.

Refer to the corresponding sections for details on these utilities.

> 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.

3.2.1 ASUS Update utility

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

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet
- View the BIOS version information

This utility is available in the support DVD that comes with the motherboard package.

> ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Launching ASUS Update

After installing AI Suite II from the motherboard support DVD, launch ASUS Update by clicking **Update > ASUS Update** on the AI Suite II main menu bar.

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

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. From the ASUS Update screen, select **Update BIOS from Internet**, and then click **Next**.

2. Select the ASUS FTP site nearest you to avoid network traffic.

    If you want to enable the BIOS downgradable function and auto BIOS backup function, check the checkboxs before the two items on the screen.

3. Select the BIOS version that you want to download. Click **Next**.

4. You can decide whether to change the BIOS boot logo, which is the image appearing on screen during the Power-On Self-Tests (POST). Click **Yes** if you want to change the boot logo or **No** to continue.

5. Follow the onscreen instructions to complete the update process.

Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. From the ASUS Update screen, select **Update BIOS from file**, and then click **Next**.

2. Locate the BIOS file from the Open window, click **Open**, and click **Next**.

3. You can decide whether to change the BIOS boot logo. Click **Yes** if you want to change the boot logo or **No** to continue.

4. Follow the onscreen instructions to complete the update process.

- The screenshots in this section are for reference only. The actual BIOS information vary by models.

- Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.

3.2.2 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.

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.
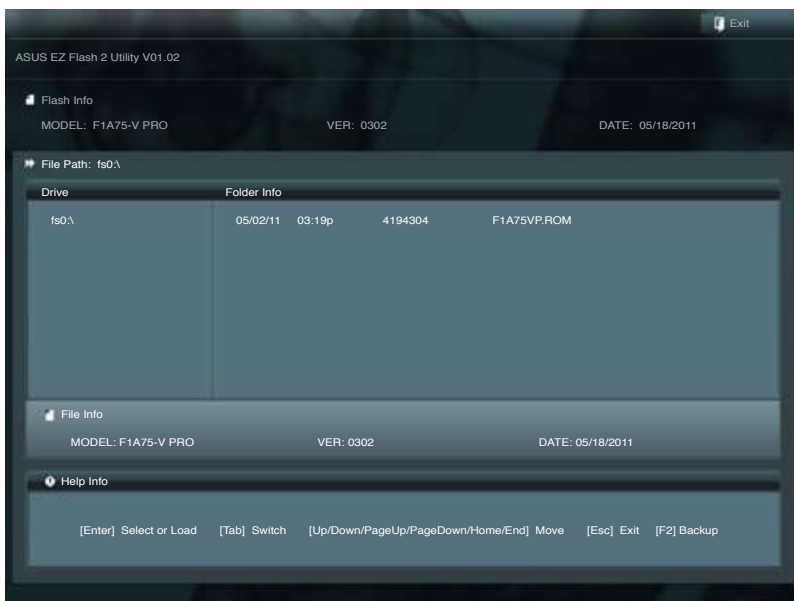
3. Press **<Tab>** to switch to the **Drive** field.

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!

3.2.3   ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 utility 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 BIOS file.

> • Before using this utility, rename the BIOS file in the USB flash drive into **F1A75VP.ROM**.
>
> • The BIOS file in the motherboard support DVD may be older than the BIOS file published on the ASUS official website. If you want to use the newer BIOS file, download the file at support.asus.com and save it to a USB flash drive.

Recovering the BIOS

To recover the BIOS:

1.   Turn on the system.

2.   Insert the motherboard support DVD to the optical drive, or the USB flash drive containing 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 starts flashing the corrupted BIOS file.

4.   Turn off the system after the utility completes the updating process and power on again.

5.   The system requires you to enter BIOS Setup to recover BIOS setting. To ensure system compatibility and stability, we recommend that you press <F2> to load default BIOS values.

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

3.2.4 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.

```
Please select boot device:

SATA:  XXXXXXXXXXXXXXX
USB  XXXXXXXXXXXXXXX
UEFI: XXXXXXXXXXXXXXX
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```
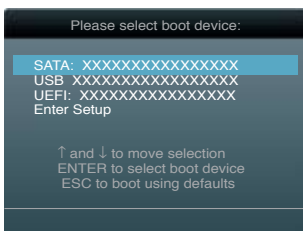
3.   When the **Make Disk** menu appears, select the **FreeDOS command prompt** item by pressing the item number.

4.   At the FreeDOS prompt, type `d:` and press <Enter> to switch the disk from Drive C (optical drive) to Drive D (USB flash drive).

```
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.

```
                     ASUSTek BIOS Updater for DOS V1.07

         ── Current ROM ──                    ── Update ROM ──
         BOARD: F1A75-V PRO                    BOARD: Unknown
         VER: 0209                             VER: Unknown
         DATE: 05/09/2011                      DATE: Unknown
      PATH: A:\

      ┌──────────────────────────────────────────────────────┐
      │     BIOS backup is done! Press any key to continue.   │
      └──────────────────────────────────────────────────────┘




         ── Note ──
      Saving BIOS:
```

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.

```
            ASUSTek BIOS Updater for DOS V1.07

        Current ROM                          Update ROM
   BOARD: F1A75-V PRO                   BOARD: Unknown
   VER: 0209                            VER: Unknown
   DATE: 05/09/2011                     DATE: Unknown

 PATH: A:\

  A:            F1A75VP.ROM     4194304 2011-05-02 17:30:48




     Note
   [Enter] Select or Load    [Tab] Switch    [V] Drive Info
   [Up/Down/Home/End] Move    [B] Backup      [Esc] Exit
```

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.

```
          Are you sure to update BIOS?
                    Yes      No
```

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.

3.3   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 **3.8 Boot menu** for details.

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/power 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

Loads optimized default

Displays the system properties of the selected mode on the right hand side

Normal mode

Turbo mode

Selects the boot device priority

> • The boot device options vary depending on the devices you installed to the system.
>
> • The **Boot Menu(F8)** button is available only when the boot device is 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**.

Back button   Menu items   Menu bar   Configuration fields

Submenu item   Pop-up window
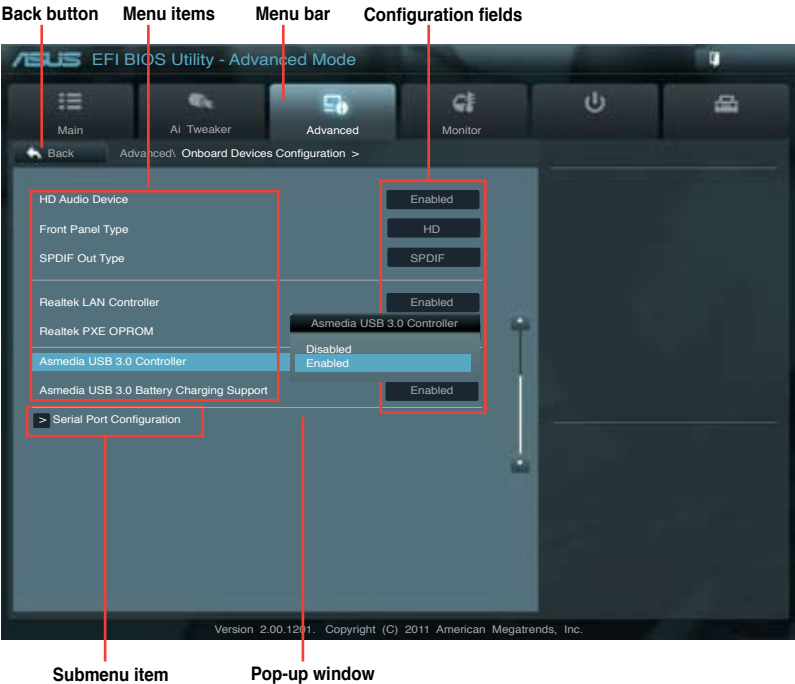
Menu bar

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

Chapter 3

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.

Chapter 3

3.4 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.
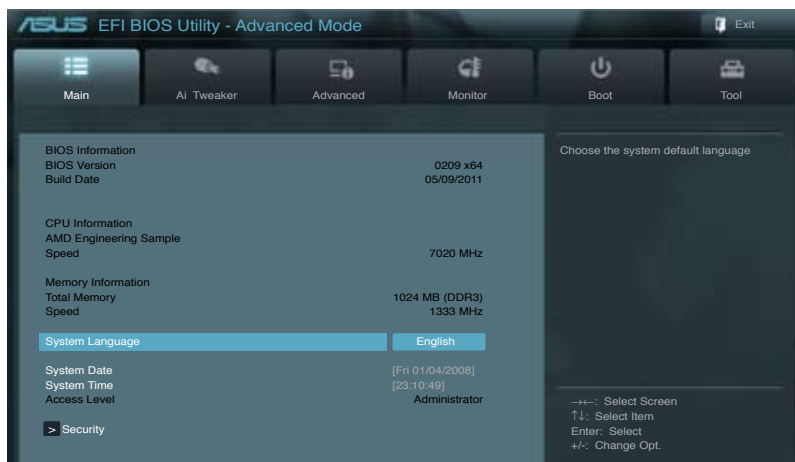
3.4.1 System Language [English]

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]

3.4.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

3.4.3 System Time [xx:xx:xx]

Allows you to set the system time.

3.4.4 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.
>
> • The **Administrator** or **User Password** items on top of the screen show the default **Not Installed**. After you set a password, these items show **Installed**.

Chapter 3

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**.

Chapter 3

3.5 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.

Chapter 3

Scroll down to display the following items:

DRAM Voltage	1.500V	Auto
SB 1.1V Voltage	1.100V	Auto
1.1Vsb Voltage	1.200V	Auto
APU1.2V Voltage	1.200V	Auto
VDDA Voltage	2.800V	Auto
Digi + VRM		
CPU Load Line Calibration		Auto
CPU/NB Load Line Calibration		Auto
CPU Current Capability		100%
CPU/NB Current Capability		100%
CPU Power Phase Control		Standard
CPU Voltage Frequency		Auto
VRM Spread Spectrum		Disabled
CPU Power Duty Control		T. Probe
APU Spread Spectrum		Auto

CPU Load Line Calibration is defined by AMD VRM spec and affects CPU voltage. The CPU working voltage will decrease proportionally to CPU loading. Higher value could get higher voltage and good overclocking performance but increase the CPU and VRM thermal.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F5: Optimized Defaults
F10: Save ESC: Exit

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Target CPU Speed : xxxxMHz

Displays the current CPU speed.

Target DRAM Speed : xxxxMHz

Displays the current DRAM speed.

3.5.1 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.

[Manual]   Allows you to individually set overclocking parameters.

[D.O.C.P.]   Allows you to select a DRAM O.C. profile, and the related parameters will be adjusted automatically.

APU Frequency [XXX]

This item appears only when you set the **Ai Overclock Tuner** item to [Manual]. Use the <+> and <-> keys to adjust the value. You can also key in the desired value using the numeric keypad. The values range from 90.0MHz to 300.0MHz.

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]

3.5.2 Memory Frequency [Auto]

Allows you to set the memory operating frequency. Configuration options: [Auto] [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.

3.5.3 APU Multiplier [Auto]

Allows you to set the ratio between the CPU Core Clock and the FSB Frequency. Use the <+> and <-> keys to adjust the ratio. The valid value ranges vary according to your CPU model.

3.5.4 EPU Power Saving Mode [Disabled]

Allows you to enable or disable the EPU power saving function.
Configuration options: [Disabled] [Enabled]

EPU Setting [Auto]
This item appears only when The EPU Power Saving Mode is set to [Enabled] and allows you to set power saving mode. Configuration options: [Auto] [Light Power Saving Mode] [Medium Power Saving Mode] [Max Power Saving Mode]

3.5.5 GPU Boost

Allows you to set the GPU overclocking mode. Configuration options: [Auto] [Turbo Mode] [Extreme Mode] [Manual Mode]

3.5.6 OC Tuner

OC Tuner automatically overclocks the frequency and voltage of CPU and DRAM for enhancing the system performance. Press <Enter> and select **OK** to start automatic overclocking.

3.5.7 DRAM Timing Control

The sub-items in this menu allow you to set the DRAM timing control features. Use the <+> and <-> keys to adjust the value. To restore the default setting, type [auto] using the keyboard and press <Enter>.

⚠️ Changing the values in this menu may cause the system to become unstable! If this happens, revert to the default settings.

3.5.8 CPU Voltage [Offset Mode]

[Offset Mode]   To offset the voltage by a positive or negative value.

[Manual Mode]   To set the voltage manually.

CPU Offset Mode Sign [+]

This item appears only when you set the **CPU Voltage** item to [Offset Mode].

[+]   To offset the voltage by a positive value.

[–]   To offset the voltage by a negative value.

CPU Offset Voltage [Auto]
Allows you to set the CPU Offset voltage. The values range from 0.00625V to 0.500V with a 0.00625V interval.

> Refer to the CPU documentation before setting the CPU voltage. Setting a high voltage may damage the CPU permanently, and setting a low voltage may make the system unstable.

VDDNB Offset Mode Sign [+]

This item appears only when you set the **CPU Voltage** item to [Offset Mode].

[+]   To offset the voltage by a positive value.

[–]   To offset the voltage by a negative value.

3.5.9   DRAM Voltage [Auto]

Allows you to set the DRAM voltage. The values range from 1.35V to 2.30V with a 0.01V interval.

3.5.10   SB 1.1V Voltage [Auto]

Allows you to set the Southbridge 1.1V voltage. The values range from 1.1V to 1.4V with a 0.01V interval.

3.5.11   1.1Vsb Voltage [Auto]

Allows you to set the 1.1Vsb voltage. The values range from 1.1000V to 1.2000V with a 0.1V interval.

3.5.12   APU1.2V Voltage [Auto]

Allows you to set the APU (Accelerated Processor Unit) 1.2V voltage. The values range from 1.2000V to 1.8000V with a 0.01V interval.

3.5.13   VDDA Voltage [Auto]

Allows you to set the VDDA voltage. The values range from 2.5000V to 2.8000V with a 0.1V interval.

> • The values of the **CPU Offset Voltage**, **VDDNB Offset Voltage**, **DRAM Voltage**, **SB 1.1V Voltage**, **1.1Vsb Voltage**, **APU1.2V Voltage**, and **VDDA Voltage** items are labeled in different color, indicating the risk levels of high voltage settings.
>
> • The system may need better cooling system to work stably under high voltage settings.

Chapter 3

3.5.14 DIGI+VRM

CPU Load Line Calibration [Auto]

CPU Load Line Calibration is based on AMD VRM specifications and affects CPU voltage. The CPU working voltage will decrease proportionally to CPU loading. Higher load line calibration would get higher voltage and better overclocking performance but will increase the CPU and VRM thermal conditions.

This item allows you to adjust the voltage range from the following percentages to boost the system performance: 0% (Regular), 25% (Medium), 50% (High), 75% (Ultra High), and 100% (Extreme). Configuration options: [Auto] [Regular] [Medium] [High] [Ultra High] [Extreme]

> The actual performance boost may vary depending on your CPU specification.

CPU/NB Load Line Calibration [Auto]

Allows you to select the CPU/NB Load Line Calibration mode. Configuration options: [Auto] [Regular] [High] [Extreme]

CPU Current Capability [100%]

This item provides wider total power range for overclocking. A higher value brings a wider total power range and extends the overclocking frequency range simultaneously. Configuration options: [100%] [110%] [120%] [130%] [140%]

CPU/NB Current Capability [100%]

This item provides wider total power range for overclocking. A higher value brings a wider total power range and extends the overclocking frequency range simultaneously. Configuration options: [100%] [110%] [120%] [130%]

CPU Power Phase Control [Standard]

Phase number is the number of working VRM phase. Increase the phase number under heavy system loading to get more transient and better thermal performance. Reduce the phase number under light system loading to increase VRM efficiency.

[Standard]   Proceeds to phase control depending on the CPU loading.

[Optimized]   Loads the ASUS optimized phase tuning profile.

[Extreme]   Proceeds to the full phase mode.

[Manual Adjustment]   Allows manual adjustment.

CPU Voltage Frequency [Auto]

Switching frequency will affect the VRM transient response and thermal condition. Setting a higher frequency gets a faster transient response.

[Auto]   Allows you to enable or disable the Spread Spectrum item.

[Manual]   Allows you to manually set the frequency with a 10k Hz interval.

> **VRM Spread Spectrum [Disabled]**
>
> This item appears only when you set the CPU Voltage Frequency item to [Auto] and allows you to enable the spread spectrum to enhance system stability.

VRM Fixed Frequency Mode [xxx]

This item appears only when you set the CPU Voltage Frequency item to [Manual] and allows you to set a fixed VRM frequency. Use the <+> and <-> keys to adjust the value. The values range from 200k Hz to 400k Hz with a 10k Hz interval.

CPU Power Duty Control [T-Probe]

[T-Probe]   Maintains the VRM thermal balance.

[Extreme]   Maintains the VRM current balance.

> Do not remove the thermal module while changing the DIGI+VRM parameters. The thermal conditions should be monitored.

3.5.15   APU Spread Spectrum [Auto]

[Auto]   Automatic configuration.

[Disabled]   Enhances the PCIE overclocking ability.

[Enabled]   Sets to [Enabled] for EMI control.

3.6 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.

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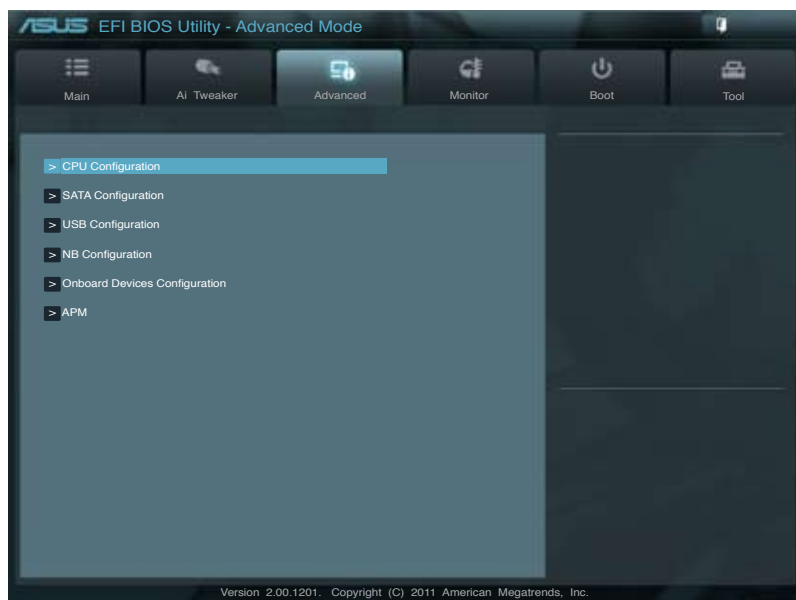
3.6.1 CPU Configuration

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]

3.6.2   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.

OnChip SATA MAX Speed [SATA 6.0Gb/s]

Sets the maximum onboard SATA port speed. Configuration options: [SATA 3.0Gb/s] [SATA 6.0Gb/s]

> *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]

3.6.3 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.

Legacy USB3.0 Support [Enabled]

[Enabled]   Enables the support for USB 3.0 devices on legacy operating systems (OS).

[Disabled]   Disables the function.

EHCI Hand-off [Disabled]

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

[Disabled]   Disables the function.

3.6.4 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 [PCIE / PCI Video]

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

Integrated Graphics [Auto]

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

HDMI/DVI Port Output [Auto]

Sets the HDMI/DVI port output type. Configuration options: [Auto] [HDMI] [DVI]

PCIex16_1/DP Output [Auto]

Sets the PCIex16_1 slot/DP port output type. Configuration options: [Auto] [PCIex16_1] [DP]

3.6.5 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 controller.

Realtek PXE OPROM [Disabled]

This item appears only when you set the **Realtek LAN Controller** item to [Enabled] and allows you to enable or disable the Rom Help of the Realtek LAN controller.
Configuration options: [Enabled] [Disabled]

Asmedia USB 3.0 Controller [Enabled]

[Enabled]   Enables the onboard USB 3.0 controller.

[Disabled]   Disables the controller.

Asmedia USB 3.0 Battery Charging Support [Enabled]

This item appears only when the Asmedia USB 3.0 Controller item is set to [Enabled].

[Enabled]   Enables the Asmedia USB 3.0 battery charging function.

[Disabled]   Disables this function.

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: [Ena bled] [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]

Chapter 3

3.6.6 APM

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 Mouse [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.

Chapter 3

3.7 Monitor menu

The Monitor menu displays the system temperature/power status, and allows you to change the fan settings.
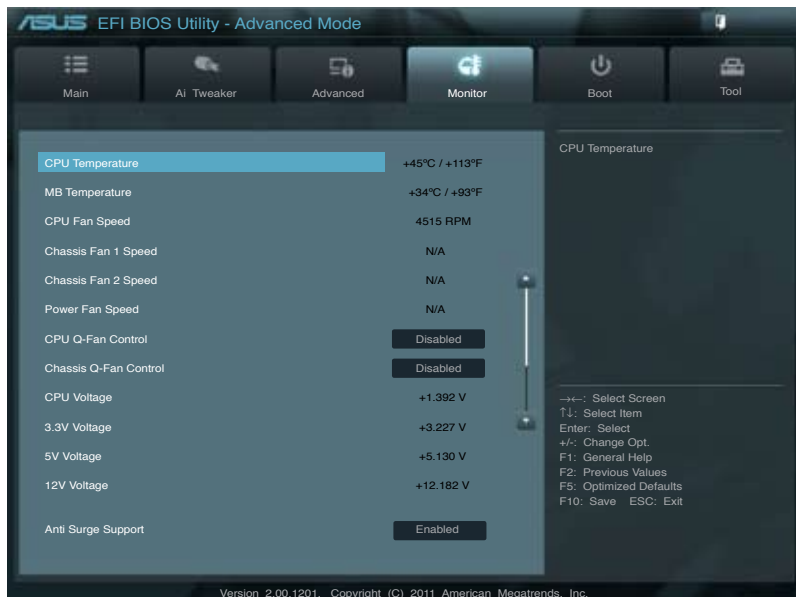
3.7.1 CPU Temperature / MB Temperature [xxxºC/xxxºF]

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.

3.7.2 CPU / Chassis / Power Fan Speed [xxxx RPM] or [Ignore] / [N/A]

The onboard hardware monitor automatically detects and displays the CPU / chassis / Power 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.

3.7.3 CPU Q-Fan Control [Disabled]

[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 [70ºC]
Use the <+> and <-> keys to adjust the upper limit of the CPU temperature. The values range from 20ºC to 90ºC.

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 [20ºC]

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

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.

3.7.4   Chassis Q-Fan Control [Disabled]

[Disabled]:   Disables the Chassis Q-Fan control feature.

[Enabled]:   Enables the Chassis Q-Fan control feature.

Chassis Fan Speed Low Limit [600 RPM]
This item appears only when you enable the **Chassis Q-Fan Control** feature and allows you to disable or set the chassis fan warning speed.
Configuration options: [Ignore] [200RPM] [300 RPM] [400 RPM] [500 RPM] [600 RPM]

Chassis Fan Profile [Standard]
This item appears only when you enable the **Chassis Q-Fan Control** feature and allows you to set the appropriate performance level of the chassis fan.

[Standard]   Sets to [Standard] to make the chassis fan automatically adjust depending on the chassis temperature.

[Silent]   Sets to [Silent] to minimize the fan speed for quiet chassis fan operation.

[Turbo]   Sets to [Turbo] to achieve maximum chassis fan speed.

[Manual]   Sets to [Manual] to assign detailed fan speed control parameters.

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

Chassis Upper Temperature [70ºC]

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

Chassis Fan Max. Duty Cycle(%) [100%]

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

Chassis Lower Temperature [20ºC]

Displays the lower limit of the chassis temperature.

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

Use the <+> and <-> keys to adjust the minimum chassis fan duty cycle. The values range from 40% to 100%. When the chassis temperature is under 40ºC, the chassis

fan will operate at the minimum duty cycle.

3.7.5 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.

3.7.6 Anti Surge Support [Enabled]

This item allows you to enable or disable the Anti Surge function.
Configuration options: [Disabled] [Enabled]

3.8 Boot menu

The Boot menu items allow you to change the system boot options.
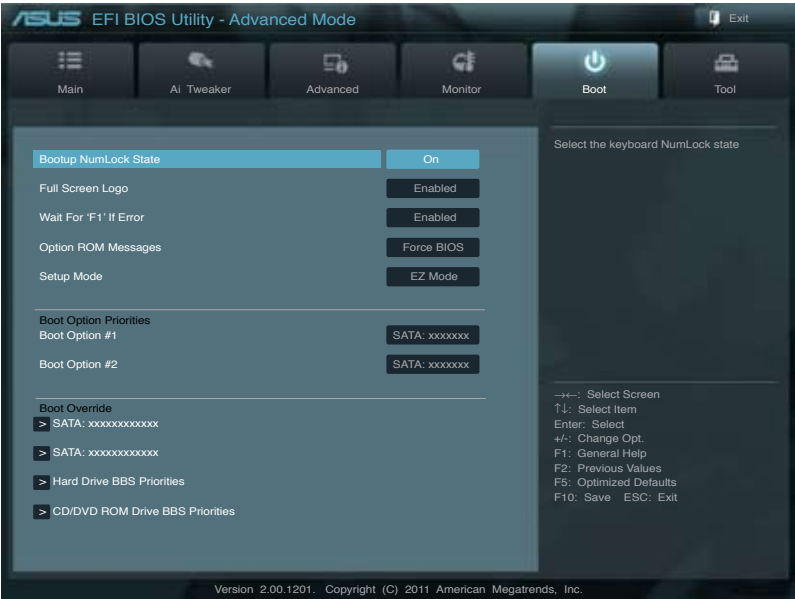
3.8.1 Bootup NumLock State [On]

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

3.8.2 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]

3.8.3 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]

3.8.4 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.

3.8.5 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.

3.8.6 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.

3.8.7 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.

3.9 Tools menu

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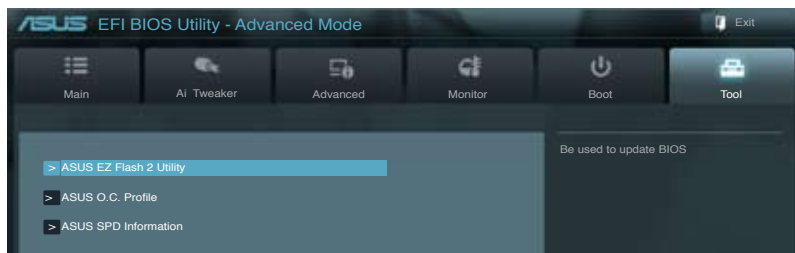
3.9.1 ASUS EZ Flash Utility

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

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

3.9.2 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.

3.9.3 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_A2] [DIMM_B1] [DIMM_B2]

3.10 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.

```
┌─────────────────────────────────────────────────────┐
│                        Exit                         │
│                                                     │
│            Load Optimized Defaults                  │
│                                                     │
│            Save Changes & Reset                     │
│                                                     │
│            Discard Changes & Exit                   │
│                                                     │
│                                                     │
│            ASUS EZ Mode                             │
│                                                     │
│      Launch EFI Shell from filesystem device        │
└─────────────────────────────────────────────────────┘
```
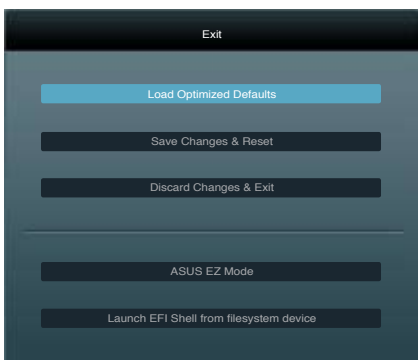
Load Optimized Defaults

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 EFI Shell application (shellx64.efi) from one of the available devices that have a filesystem.

Chapter 3

Chapter 4

4.1 Installing an operating system

This motherboard supports Windows® XP/ 64-bit XP/ Vista / 64-bit Vista / 7 / 64-bit 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. Use the setup procedures presented in this chapter for reference only. Refer to your OS documentation for detailed information.
>
> • Ensure that you install the Windows® XP Service Pack 3 or later versions before installing the drivers for better compatibility and system stability.

4.2 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 for updates.

4.2.1 Running the support DVD

Place the support DVD into the optical drive. The DVD automatically displays the Highlights menu if Autorun is enabled in your computer. Click each menu tab and select the items you want to install.

The Drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to use the devices.

The Make Disk menu contains items to create the RAID/AHCI driver disk.

The Manual menu contains the list of supplementary user manuals. Click an item to open the folder of the user manual.

The Utilities menu shows the applications and other software that the motherboard supports.

Click an item to install

Click the Highlights tab to display the software information

Click the Contact tab to display the ASUS contact information.

Click an icon to display DVD/ motherboard information

Click to obtain the corresponding software manuals

> If Autorun is NOT enabled in 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.

4.2.2   Obtaining the software manuals

The software manuals are included in the support DVD. Follow the instructions below to get the necessary software manuals.

The software manual files are in Portable Document Format (PDF). Install the Adobe® Acrobat® Reader from the Utilities menu before opening the files.

1.   Click the **Manual** tab. Click **ASUS Motherboard Utility Guide** from the manual list on the left.

2.   The **Manual** folder of the support DVD appears. Double-click the folder of your selected software.
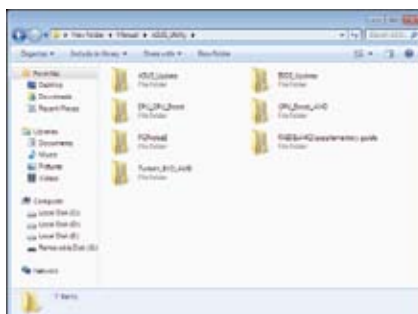
3.   Some software manuals are provided in different languages. Double-click the language to show the software manual.
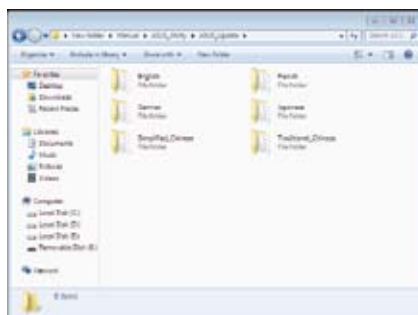
The screenshots in this section are for reference only. The actual software manuals containing in the support DVD vary by models.

4.3 Software information

Most of the applications in the support DVD have wizards that will conveniently guide you through the installation. View the online help or readme file that came with the software application for more information.

4.3.1 ASUS AI Suite II

ASUS AI Suite II is an all-in-one interface that integrates several ASUS utilities and allows users to launch and operate these utilities simultaneously.

Installing AI Suite II

To install AI Suite II on your computer:

1. Place the support DVD to the optical drive. The Drivers installation tab appears if your computer has enabled the Autorun feature.

2. Click the Utilities tab, then click **AI Suite II**.

3. Follow the onscreen instructions to complete installation.

Using AI Suite II

AI Suite II automatically starts when you enter the Windows® operating system (OS). The AI Suite II icon appears in the Windows® notification area. Click the icon to open the AI Suite II main menu bar.

Click each button to select and launch a utility, to monitor the system, to update the motherboard BIOS, to display the system information, and to customize the settings of AI Suite II.

Click to customize the interface settings

Click to show the system information

Click to update the motherboard BIOS

Click to monitor sensors or CPU frequency

Click to select a utility

Click to select HDMI/DVI display

Shortcut to the Auto Tuning Mode under TurboV EVO
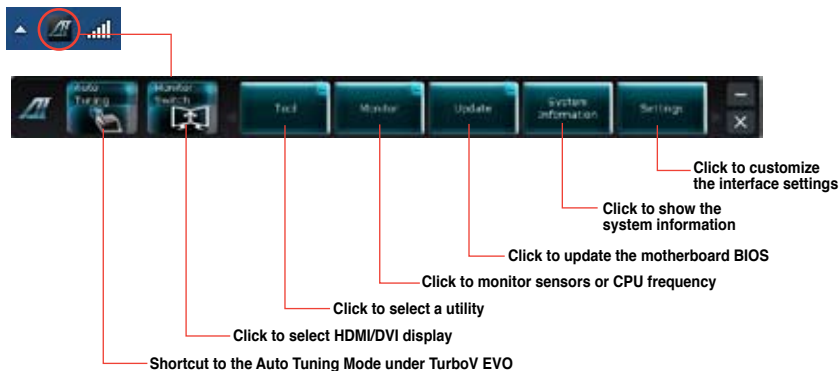
- The **Auto Tuning** button appears only on models with the TurboV EVO function.

- The applications in the Tool menu vary with models.

- The screenshots of AI Suite II in this user manual are for reference only. The actual screenshots vary with models.

Chapter 4

4.3.2 DIGI+ VRM

ASUS DIGI+ VRM allows you to adjust VRM voltage and frequency modulation to enhance reliability and stability. It also provides the highest power efficiency, generating less heat to longer component lifespan and minimize power loss.

After installing AI Suite II from the motherboard support DVD, launch DIGI+ VRM by clicking **Tool > DIGI+ VRM** on the AI Suite II main menu bar.

Configuration items and options

Help

Apply all changes immediately

Undo all changes without applying

Introduction on DIGI+ VRM Configuration Items

CPU Load Line Calibration

Load-line affects CPU voltage. The CPU working voltage will decrease proportionally to CPU loading. Higher load-line calibration could get higher voltage and good overclocking performance but increase the CPU and VRM thermal.

Adjust the voltage range to control CPU Load-Line. Select a higher value for system performance or a lower value for power efficiency.

- **Regular**: 0%
- **Medium**: 25%
- **High**: 50%
- **Ultra High**: 75%
- **Extreme**: 100%

> - The actual performance boost may vary depending on your CPU specification.
> - Do not remove the thermal module. The thermal conditions should be monitored.

Chapter 4

CPU Current Capability

CPU Current Capability provides wider total power range for overclocking. A higher value setting gets higher VRM power consumption delivery.

A higher value brings a wider total power range and extends the overclocking frequency range simultaneously.

> Suggestion: choose higher value when overclocking or under high CPU loading for extra power support.

CPU Voltage Frequency

Switching frequency will affect the VRM transient response and component thermal.

Enable **Auto Spread Spectrum** to enhance system stability, or select **VRM Fixed Frequency Mode** to assign a fixed VRM frequency.

Assign a high VRM frequency to increase O.C. range or a low VRM frequency for better system stability.

> Do not remove the thermal module when switching to **Manual** mode. The thermal conditions should be monitored.

CPU/NB Load Line Calibration

The behavior of the DRAM Controller is decided by CPU/NB Load-Line. Set to a higher value for system performance, or to a lower value for better thermal solution.

> • The actual performance boost may vary depending on your CPU and DRAM specification.
>
> • Do not remove the thermal module. The thermal conditions should be monitored.

Chapter 4

CPU/NB Current Capability

Setting CPU/NB Current Capability to a higher value increases simultaneously the adjustable power range and the overclocking frequency range of the DRAM Controller.

Suggestion: choose higher value when overclocking or under high CPU loading for extra power support.

CPU Power Phase Control

Phase number is the number of working VRM phase. Increase phase number under heavy system loading to get more transient and better thermal performance. Reduce phase number under light system loading to increase VRM efficiency.

- **Standard**: Phase control based on CPU command
- **Optimized**: ASUS optimized phase tuning profile
- **Extreme**: Full phase mode
- **Manual Adjustment**: Phase number adjusted by current(A) step

- Set **Manual Adjustment** to faster phase response to increase system performance or to slower phase response to increase CPU power efficiency.

- Do not remove the thermal module when switching to **Extreme** and **Manual** mode. The thermal conditions should be monitored.

CPU Power Duty Control

CPU Power Duty Control adjusts the current of every VRM phase and the thermal of every phase component. Select the [T.Probe] option to maintain VRM thermal balance or the [Extreme] option to maintain VRM current balance.

- **T.Probe:** Thermal balance
- **Extreme:** Current balance

Do not remove the thermal module. The thermal conditions should be monitored.

Chapter 4

4.3.3 TurboV EVO

ASUS TurboV EVO introduces **TurboV** that allows you to manually adjust the CPU frequency and related voltages as well as **Auto Tuning** function that offers automatic and easy overclocking and system level up. After installing AI Suite II from the motherboard support DVD, launch TurboV EVO by clicking **Tool > TurboV EVO** on the AI Suite II main menu bar.

> Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.

TurboV

TurboV allows you to overclock the BCLK frequency, CPU voltage, IMC voltage, and DRAM Bus voltage in WIndows® environment and takes effect in real-time without exiting and rebooting the OS.

> Refer to the CPU documentation before adjusting CPU voltage settings. Setting a high voltage may damage the CPU permanently, and setting a low voltage may make the system unstable.

> For system stability, all changes made in **TurboV** will not be saved to BIOS settings and will not be kept on the next system boot. Use the **Save Profile** function to save your customized overclocking settings and manually load the profile after Windows starts.

Auto Tuning Mode

TurboV
Load profile
Target values

Current values

Click to show / hide more settings

Click to restore all start-up settings

Save the current settings as a new profile

Voltage Adjustment bars

Undoes all changes without applying

Applies all changes immediately

> For advanced overclock ability, adjust first the BIOS items, and then proceed more detailed adjustments in **More Settings**.

Chapter 4

Using Advanced Mode

Click **More Settings**, and then click the **Advanced Mode** tab to adjust the advanced voltage settings.

Advanced mode
Target values

Current values

Click to restore
all start-up
settings

Voltage
Adjustment
bars

Undoes all changes
without applying

Applies all changes
immediately

GPU Boost

GPU Boost overclocks the integrated iGPU for the best graphics performance.

1.   Click **More Settings**, and then click the **GPU Boost** tab.

2.   Adjust the **iGPU Max Frequency** and **iGPU Voltage**, then you will be requested to restart the system. Click **Yes** to make the change take effect.

GPU Boost

Target values

Current values

Click to restore
all start-up
settings

Adjustment bars

Undoes all changes
without applying

Applies all changes
immediately

Chapter 4

CPU Ratio

Allows you to manually adjust the CPU ratio.

> The first time you use **CPU Ratio**, go to **AI Tweaker > CPU Power Management** in BIOS and set the **Turbo Ratio** item to **[Maximum Turbo Ratio setting in OS]**, or activate CPU Ratio by clicking the ON button on the CPU Ratio function screen.

1.   Click **More Settings**, and then click the **CPU Ratio** tab.

2.   Click the ON button to activate CPU Ratio.

3.   You will requested to restart the system. Click **Yes** to make the change take effect.

CPU Ratio

Click to activate the CPU Ratio

Applies all changes immediately

Click to restore all start-up settings

Undoes all changes without applying

4.   Drag the adjustment bar upwards or downwards to the desired value.

Adjustment bar

> • Set the **CPU Ratio Setting** item in BIOS to [Auto] before using the CPU Ratio function in TurboV. Refer to Chapter 3 of your motherboard user manual for details.
>
> • The CPU Ratio bars show the status of the CPU cores, which vary with your CPU model.

Chapter 4

Auto Tuning

ASUS TurboV EVO includes two auto tuning modes, providing the most flexible auto-tuning options.

- The overclocking result varies with the CPU model and the system configuration.

- To prevent overheating from damaging the motherboard, a better thermal environment is strongly recommended.

- **Fast Tuning**: fast CPU overclocking
- **Extreme Tuning**: extreme overclocking for CPU and memory

  Using Fast Tuning

    1. Click the **Auto Tuning** tab and then click **Fast**.

    2. Read through the warning messages and click **OK** to start auto-overclocking.

    3. TurboV automatically overclocks the CPU, saves BIOS settings and restarts the system. After re-entering Windows, a message appears indicating auto tuning success. Click **OK** to exit.

  Using Extreme Tuning

    1. Click the **Auto Tuning** tab and then click **Extreme**.

    2. Read through the warning messages and click **OK** to start auto-overclocking.

3. TurboV automatically overclocks the CPU and memory and restarts the system. After re-entering Windows, a message appears indicating the current overclocking result. To keep the result, click **Stop**.

4. If you did not click **Stop** in the previous step, TurboV automatically starts further system overclocking and stability test. An animation appears indicating the overclocking process. Click **Stop** if you want to cancel the Overclocking process.

5. TurboV automatically adjusts and saves BIOS settings and restarts the system. After re-entering Windows, a message appears indicating auto tuning success. Click **OK** to exit.

Chapter 4

4.3.4 EPU

EPU is an energy-efficient tool that satisfies different computing needs. This utility provides several modes that you can select to save system power. Selecting Auto mode will have the system shift modes automatically according to current system status. You can also customize each mode by configuring settings like CPU frequency, GPU frequency, vCore Voltage, and Fan Control.

Launching EPU

After installing AI Suite II from the motherboard support DVD, launch EPU by clicking **Tool > EPU** on the AI Suite II main menu bar.

Displays the following message if no VGA power saving engine is detected.

Displays current mode

The items lighting up means power saving engine is activated

Displays the amount of CO2 reduced

***Shifts between the display of Total and Current CO2 reduced**

Displays the current CPU power

Advanced settings for each mode

Displays the system properties of each mode

Multiple system operating modes

> *• Select **From EPU Installation** to show the CO2 that has been reduced since you installed EPU.
>
> *• Select **From the Last Reset** to show the total CO2 that has been reduced since you click the Clear button [Clear].

4.3.5   FAN Xpert

Fan Xpert intelligently allows you to adjust both the CPU and chassis fan speeds according to different ambient temperatures caused by different climate conditions in different geographic regions and your PC's system loading. The built-in variety of useful profiles offer flexible controls of fan speed to achieve a quiet and cool environment.

Launching FAN Xpert

After installing AI Suite II from the motherboard support DVD, launch FAN Xpert by clicking **Tool > Fan Xpert** on the AI Suite II main menu bar.

Using FAN Xpert

Click **Fan Name** to select a fan and then click **Setting** to select a preset mode for your selected fan.

Click to select a fan type   Click to select a fan profile

Click to apply the settings

Click to discard the settings
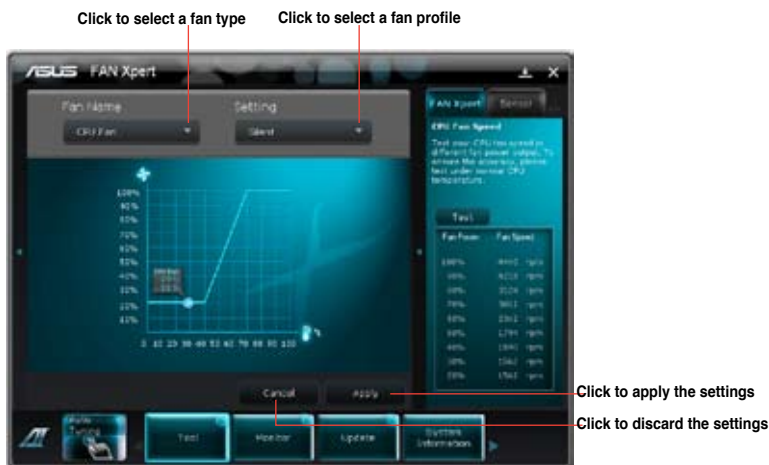
Fan setting

- **Disable:** disables the **Fan Xpert** function.
- **Standard:** adjusts fan speed in a moderate pattern.
- **Silent:** minimizes fan speed for quiet fan operation.
- **Turbo:** maximizes the fan speed for the best cooling effect.
- **User:** Allows you to configure the CPU fan profile under certain limitations.

Chapter 4

4.3.6 Probe II

Probe II is a utility that monitors the computer's vital components, and detects and alerts you of any problem with these components. Probe II senses fan rotations, CPU temperature, and system voltages, among others. With this utility, you are assured that your computer is always at a healthy operating condition.

Launching Probe II

After installing AI Suite II from the motherboard support DVD, launch Probe II by clicking **Tool > Probe II** on the AI Suite II main menu bar.

Configuring Probe II

Click the **Voltage/Temperature/Fan Speed** tabs to activate the sensors or to adjust the sensor threshold values. The **Preference** tab allows you to customize the time interval of sensor alerts, or change the temperature unit.

Saves your configuration

Loads your saved configuration

Loads the default threshold values for each sensor

Applies your changes

4.3.7 Ai Charger+

Battery Charging Version 1.1 (BC 1.1), a USB Implementers Forum (USB-IF) certified USB charging function, is designed to make USB charging faster than the standard USB devices. If your USB device supports the BC 1.1 function*, when you connect your USB device to your system, the system automatically detects your USB device and starts a fast USB charging. The charging speed may get 3 times faster than that of the standard USB devices**.

- * Check your USB device manufacturer if it fully supports the BC 1.1 function.
- ** The actual charging speed may vary with your USB device's conditions.
- Ensure to remove and reconnect your USB device after enabling or disabling Ai Charger+ to ensure normal charging function.

4.4 RAID configurations

The motherboard comes with the AMD® A75 chipset that allows you to configure Serial ATA hard disk drives as RAID sets. The motherboard supports the following RAID configurations: RAID 0, RAID 1, and RAID 10.

✎
- You must install Windows® XP Service Pack 3 or later versions before using Serial ATA hard disk drives. The Serial ATA RAID feature is available only if you are using Windows® XP SP2 or later versions.

- Due to Windows® XP / Vista / 7 limitation, a RAID array with the total capacity over 2TB cannot be set as a boot disk. A RAID array over 2TB can only be set as a data disk only.

- If you want to install a Windows® operating system to a hard disk drive included in a RAID set, you have to create a RAID driver disk and load the RAID driver during OS installation. Refer to section **4.6 Creating a RAID driver disk** for details.

4.4.1 RAID definitions

RAID 0 (Data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage. Use of two new identical hard disk drives is required for this setup.

RAID 1 (Data mirroring) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system. Use two new drives or use an existing drive and a new drive for this setup. The new drive must be of the same size or larger than the existing drive.

RAID 10 is data striping and data mirroring combined without parity (redundancy data) having to be calculated and written. With the RAID 10 configuration you get all the benefits of both RAID 0 and RAID 1 configurations. Use four new hard disk drives or use an existing drive and three new drives for this setup.

4.4.2 Installing Serial ATA hard disks

The motherboard supports Serial ATA hard disk drives. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

To install the SATA hard disks for a RAID configuration:

1. Install the SATA hard disks into the drive bays.

2. Connect the SATA signal cables.

3. Connect a SATA power cable to the power connector on each drive.

4.4.3 Setting the RAID item in BIOS

You must enable the RAID function in the BIOS Setup before creating RAID volume(s) using SATA HDDs. To do this:

1. Enter the BIOS Setup during POST.

2. Go to the **Main** menu > **SATA Configuration**, and then press **<Enter>**.

3. Set the type of the SATA connectors to **[RAID]**.

4. Save your changes, and then exit the BIOS Setup.

See section **3.6.2 SATA Configuration** for details.

Chapter 4

4.4.4   AMD® Option ROM Utility

To enter the AMD® Option ROM utility:

1.   Boot up your computer.

2.   During POST, press <Ctrl> + <F> to display the utility main menu.

```
Option ROM Utility (c) 2009 Advanced Micro Devices, Inc.
========================={ Main Menu }=========================


                View Drive Assignments  .......[ 1 ]

                LD View / LD Define Menu  .....[ 2 ]

                Delete LD Menu  ..............[ 3 ]

                Controller Configuration  .....[ 4 ]




========================{ Keys Available }=====================


  Press 1..4 to Select Option                        [ESC] Exit
```
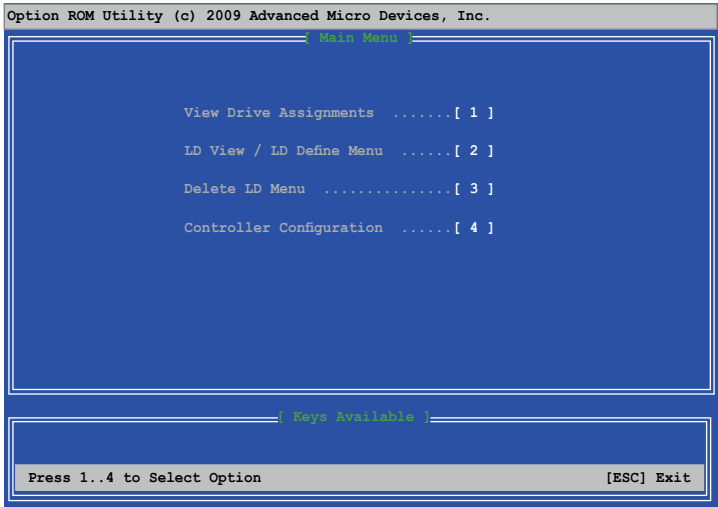
The Main Menu allows you to select an operation to perform. The Main Menu options include:

- **View Drive Assignments:** shows the status of the hard disk drives.
- **LD View / LD Define Menu:** displays the existing RAID set information / creates a RAID 0, RAID 1, or RAID 10 configuration.
- **Delete LD Menu:** deletes a selected RAID set and partition.
- **Controller Configuration:** shows the system resources configuration.

Press <1>, <2>, <3>, or <4> to enter the option you need; press <ESC> to exit the utility.

> The RAID BIOS setup screens shown in this section are for reference only, and may not exactly match the items on your screen.

> To create a RAID volume using more than four hard disk drives, ensure that the SATA connectors 5/6 are set to [RAID] mode.

Creating a RAID volume

To create a RAID volume:

1.   In the Main Menu, press <2> to enter the **LD View / LD Define Menu** function.

2.   Press <Ctrl> + <C>, and the following screen appears.

```
Option ROM Utility (c) 2009 Advanced Micro Devices, Inc.
                    =[ LD Define Menu ]=
   LD No   LD Name                    RAID Mode    Drv

   LD  1   Logical Drive 1            RAID 0       2

   Strip Block            64 KB       Fast Init    ON
   Gigabyte Boundary      ON          Cache Mode   WriteThru
                    =[ Drives Assignments ]=
   Port:ID  Drive Model      Capabilities   Capacity(GB)   Assignment
    01:00   xxxxxxxxx        xxxxxxx        xxxxxx         Y
    02:00   xxxxxxxxx        xxxxxxx        xxxxxx         Y
    03:00   xxxxxxxxx        xxxxxxx        xxxxxx         N
    04:00   xxxxxxxxx        xxxxxxx        xxxxxx         N



                    =[ Keys Available ]=
   [↑] Up  [↓] Down  [PaUp/PaDn] Switch page  [Space] Change Option
   [Ctrl-Y] Save  [ESC] Exit
```

3.   Move to the **RAID Mode** item and press <Space> to select a RAID mode to create.

4.   Move to the **Assignment** item by using the down arrow key and set **Y** to select the hard disk drives you want to include in the RAID set.

5.   Press <Ctrl> + <Y> to save the setting.

6.   The utility prompts the following message. Press <Ctrl> + <Y> to input the LD name.

```
Please press Ctrl-Y key to input the LD Name
or press any key to exit.
If you do not input any LD name, the default LD
name will be used.
```

7.   Enter an LD name, and then press any key to continue.

```
Enter the LD name here:
```

8.   Press <Ctrl> + <Y> to erase the MBR, or you may press any key to abort the settings.

```
Fast Initialization Option has been selected
It will erase the MBR data of the disks.
<Press Ctrl-Y Key if you are sure to erase it>
<Press any other key to ignore this option>
```

9.   Press <Ctrl> + <Y> to enter the screen to modify the array capacity, or press any key to use the maximum capacity.

Deleting a RAID configuration

⚠️ Take caution when deleting a RAID volume. You will lose all data on the hard disk drives when you delete a RAID volume.

To delete a RAID volume:

1. In the Main Menu, press <3> to enter the **Delete LD** function.

2. Select the RAID item you want to delete and press <Del> or <Alt> + <D>.

```
Option ROM Utility (c) 2009 Advanced Micro Devices, Inc.
════════════════════════[ Delete LD Menu ]════════════════════════

  LD No       RAID Mode      Drv      Capacity(GB)       Status

  LD  1        RAID 0         2          xxxxxx        Functional




═════════════════════════[ Keys Available ]═════════════════════════

[↑] Up   [↓] Down   [PaUp/PaDn] Switch page   [Del/Alt+D] Delete LD
```
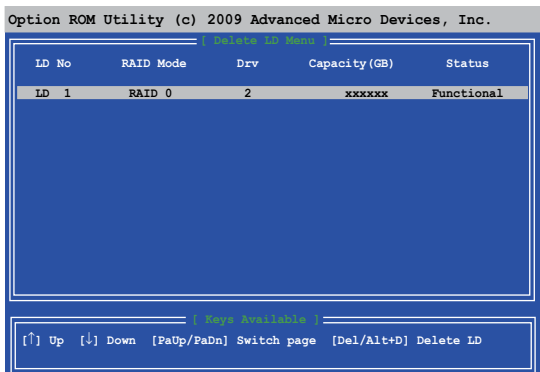
3. The utility prompts the following messages:

```
Press Ctrl-Y to delte the data in the disk!
or press any other key to abort...
```

Press <Ctrl> + <Y> to delete the RAID volume.

Displaying a RAID set information
To display a RAID set information:

1. In the Main Menu, press <2> to enter the "LD View / LD Define Menu" function.

2. Select a RAID item and press <Enter> to display its information.

```
Option ROM Utility (c) 2009 Advanced Micro Devices, Inc.
══════════════════════[ View LD Defination Menu ]══════════════════════

  LD No   LD Name                     RAID Mode    Drv   Capacity(GB)

  LD  1   xxxxx                        RAID 0        2        157.99

  Strip Block        64 KB         Cache Mode    WriteThru


══════════════════════[ Drives Assignments ]══════════════════════
  Port:ID   Drive Model        Capabilities    Capacity(GB)
   01:00   xxxxxxxxx            xxxxxxx          xxxxxx
   02:00   xxxxxxxxx            xxxxxxx          xxxxxx




              Any Key To Continue.......
```
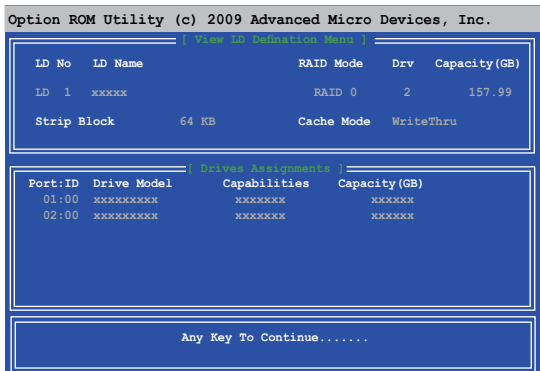
4.5 Creating a RAID driver disk

A floppy disk with the RAID driver is required when installing Windows® XP operating system on a hard disk drive that is included in a RAID set. For Windows® Vista or later operating systems, use either a USB flash drive with the RAID driver or the support DVD.

- **The motherboard does not provide a floppy drive connector**. You have to use a USB floppy disk drive when creating a SATA RAID driver disk.

- Windows® XP may not recognize the USB floppy disk drive due to Windows® XP limitation. To work around this OS limitation, refer to section **4.6.4 Using a USB floppy disk drive**.

4.5.1 Creating a RAID driver disk without entering the OS

To create a RAID driver disk without entering the OS:

1. Boot your computer.

2. Press <Del> during POST to enter the BIOS setup utility.

3. Set the optical drive as the primary boot device.

4. Insert the support DVD into the optical drive.

5. Save changes and exit BIOS.

6. When the **Make Disk** menu appears, press <1> to create a RAID driver disk.

7. Insert a formatted floppy disk into the USB floppy disk drive, then press <Enter>.

8. Follow the succeeding screen instructions to complete the process.

4.5.2 Creating a RAID driver disk in Windows®

To create a RAID driver disk in Windows®:

1. Start Windows®.

2. Plug the USB floppy disk drive and insert a floppy disk.

3. Place the motherboard support DVD into the optical drive.

4. Go to the **Make Disk** menu, and then click **AMD AHCI/RAID 32/64bit xxxx Driver** to create a RAID driver disk.

5. Select USB floppy disk drive as the destination disk.

6. Follow the succeeding screen instructions to complete the process.

Write-protect the floppy disk to avoid a computer virus infection.

Chapter 4

4.5.3 Installing the RAID driver during Windows® OS installation

If you use a SATA optical drive to run the OS installation disk, we strongly recommend that you install the optical dirve to the SATA connectors 5/6 and set them to [IDE] mode.

To install the RAID driver for Windows® XP:

1. During the OS installation, the system prompts you to press the F6 key to install third-party SCSI or RAID driver.

2. Press <F6>, and then insert the floppy disk with RAID driver into the USB floppy disk drive.

3. When prompted to select the SCSI adapter to install, select the RAID driver for the corresponding OS version.

4. Follow the succeeding screen instructions to complete the installation.

To install the RAID driver for Windows® Vista or later OS:

1. During the OS installation, click L**oad Driver** to allow you to select the installation media containing the RAID driver.

2. Insert the USB flash drive with RAID driver into the USB port or the support DVD into the optical drive, and then click **Browse**.

3. Click the name of the device you've inserted, go to **Drivers** > **RAID**, and then select the RAID driver for the corresponding OS version. Click **OK**.

4. Follow the succeeding screen instructions to complete the installation.

Before loading the RAID driver from a USB flash drive, you have to use another computer to copy the RAID driver from the support DVD to the USB flash drive.

4.5.4 Using a USB floppy disk drive

Due to OS limitation, Windows® XP may not recognize the USB floppy disk drive when you install the RAID driver from a floppy disk during the OS installation.

To solve this issue, add the USB floppy disk drive's Vendor ID (VID) and Product ID (PID) to the floppy disk containing the RAID driver. Refer to the steps below:

1. Using another computer, plug the USB floppy disk drive, and insert the floppy disk containing the RAID driver.

2. Right-click **My Computer** on the Windows® desktop or **start** menu, and then select **Manage** from the pop-up window.

   or

3. Select **Device Manager**. From the **Universal Serial Bus controllers**, right-click **xxxxxx USB Floppy**, and then select **Properties** from the pop-up window.

   The name of the USB floppy disk drive varies with different vendors.
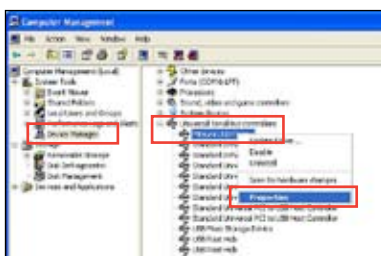
4. Click **Details** tab. The Vendor ID (VID) and Product ID (PID) are displayed.
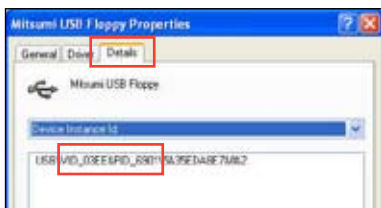
5. Browse the contents of the RAID driver disk to locate the file **txtsetup.oem**.

6. Double-click the file. A window appears, allowing you to select the program for opening the oem file.
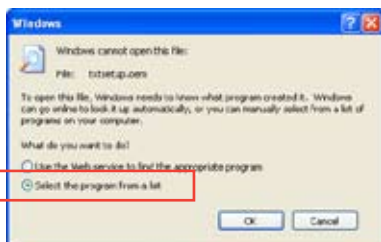
7.   Use Notepad to open the file.

8.   Find the **[HardwareIds.SCSI.Napa_i386_ahci8086]** and
      [HardwareIds.SCSI.Napa_amd64_ahci] sections in the **txtsetup.oem** file.

9.   Type the following line to the bottom of the two sections:
      id = "USB\VID_xxxx&PID_xxxx", "usbstor"

```
[HardwareIds.SCSI.Napa_i386_ahci8086]
id= "PCI\VEN_1002&DEV_4392&CC_0104","ahcix86"
id= "PCI\VEN_1002&DEV_4391&CC_0106","ahcix86"
id= "PCI\VEN_1002&DEV_4393&CC_0104","ahcix86"
id= "USB\VID_03EE&PID_6901", "usbstor"

[HardwareIds.SCSI.Napa_amd64_ahci]
id= "PCI\VEN_1002&DEV_4392&CC_0104","ahcix64"
id= "PCI\VEN_1002&DEV_4391&CC_0106","ahcix64"
id= "PCI\VEN_1002&DEV_4393&CC_0104","ahcix64"
id= "USB\VID_03EE&PID_6901", "usbstor"
```

Add the same line to both sections.

The VID and PID vary with different vendors.

10.   Save and exit the file.

5.1 AMD® CrossFireX™ technology

The motherboard supports the AMD® CrossFireX™ technology that allows you to install multi-graphics processing units (GPU) graphics cards. Follow the installation procedures in this section.

5.1.1 Requirements

- Prepare two identical CrossFireX-ready graphics cards or one CrossFireX-ready dual-GPU graphics card that are AMD® certified.

- Ensure that your graphics card driver supports the AMD CrossFireX technology. Download the latest driver from the AMD website at www.amd.com.

- Ensure that your power supply unit (PSU) can provide at least the minimum power required by your system. See Chapter 2 for details.

> • We recommend that you install additional chassis fans for better thermal environment.
>
> • Visit the AMD website for the latest graphics card support list.

5.1.2 Before you begin

For AMD CrossFireX to work properly, you have to uninstall all existing graphics card drivers before installing AMD CrossFireX graphics cards to your system.

To uninstall all existing graphics card drivers:

1. Close all current applications.

2. For Windows XP, go to **Control Panel > Add/Remove Programs**.
   For Windows Vista / 7, go to **Control Panel > Programs and Features**.

3. Select your current graphics card drivers.

4. For Windows XP, select **Add/Remove**.
   For Windows Vista / 7, select **Uninstall**.

5. Turn off your computer.

5.1.3   Installing two CrossFireX™ graphics cards

The following pictures are for reference only. The graphics cards and the motherboard layout may vary with models, but the installation steps remain the same.

1.   Prepare two CrossFireX-ready graphics cards.

2.   Insert the two graphics card into the PCIEX16 slots. If your motherboard has more than two PCIEX16 slots, refer to Chapter 2 in this user manual for the locations of the PCIEX16 slots recommended for multi-graphics card installation.

3.   Ensure that the cards are properly seated on the slots.

4.   Align and firmly insert the CrossFireX bridge connector to the goldfingers on each graphics card. Ensure that the connector is firmly in place.
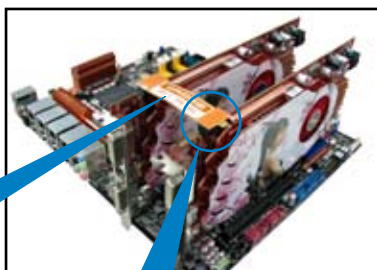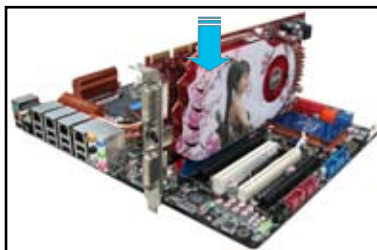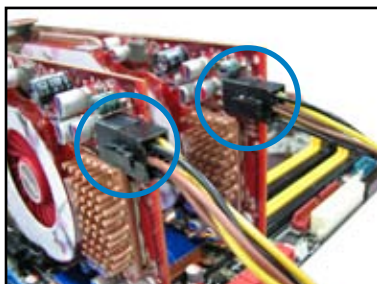
CrossFireX bridge (bundled with graphics cards)

Goldfingers

5.   Connect two independent auxiliary power sources from the power supply to the two graphics cards separately.

6.   Connect a VGA or a DVI cable to the graphics card.

5.1.4   Installing the device drivers

Refer to the documentation that came with your graphics card package to install the device drivers.

Ensure that your PCI Express graphics card driver supports the AMD® CrossFireX™ technology. Download the latest driver from the AMD website (www.amd.com).

5.1.5   Enabling the AMD® CrossFireX™ technology

After installing your graphics cards and the device drivers, enable the CrossFireX™ feature through the AMD Catalyst™ Control Center in Windows environment.

Launching the AMD Catalyst Control Center

To launch the AMD Catalyst Control Center:

1.   Right-click on the Windows® desktop and select **Catalyst(TM) Control Center**. You can also right-click the AMD icon in the Windows notification area and select **Cayalist Control Center**.
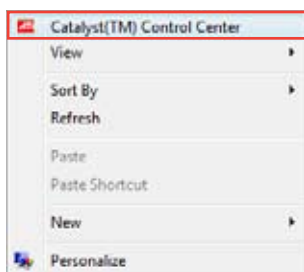
2.   The **Catalyst Control Center Setup Assistant** appears when the system detects the existance of multi-graphics cards. Click **Go** to continue to the **Catalyst Control Center Advanced View** window.

Enabling CrossFireX settings

1.   In the Catalyst Control Center window, click **Graphics Settings > CrossFireX > Configure**.

2.   From the Graphics Adapter list, select the graphics card to act as the display GPU.

3.   Select **Enable CrossFireX**.

4.   Click **Apply**, and then click **OK** to exit the window.

5.2 AMD® Dual Graphics technology

The motherboard supports the AMD® Dual Graphics technology that allows you to install multi-graphics processing units (GPU) CrossFireX cards.

5.2.1 System requirements

Before using AMD Dual Graphics, ensure that your system meets the following basic requirements:

- Operating System: Windows® 7
- Memory capacity: Minimum 1GB
- APU: A-Series
- On-board graphics card RAM: 256MB

> Visit the AMD website for the latest graphics card support list.

5.2.2 Before you proceed

Configure the BIOS settings for the graphics card to support AMD Dual Graphics.

To set Internal Graphics:

1. Press **<Del>** during the Power-On-Self-Test (POST) to enter the BIOS Setup utility.

2. Go to **Advanced > NB configuration > IGFX Multi-Monitor**, set **IGFX Multi-Monitor** to **[Enabled]**.

3. Press **<F10>** to save the changes and exit BIOS settings. Select **OK** to confirm.

5.2.3 Installing AMD Chipset Driver

To install the driver that supports Dual Graphics technology:

1. Insert the Support DVD that comes with your motherboard into the optical drive. The DVD automatically displays the Highlights menu if Autorun is enabled on your computer.

> If Autorun is NOT enabled in 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.

2. From the Drivers menu, click **AMD Chipset Driver** to install it. Follow the onscreen instructions to finish the installation.

3. Restart your computer after the installation is completed.

4. When the system restarts, wait for a few seconds for the driver to load automatically.

5.2.4 Using the AMD® CATALYST® Control Center

Using an add-on graphics card

1. Install a graphics card onto your motherboard. Refer to the User Guide that comes with your graphics card for details.

2. Right-click on the Windows® desktop, then click **AMD CATALYST(R) Control Center** from the shortcut menu. The AMD CATALYST Control Center screen appears.

3. Click **Graphics Settings** > **CrossFire™**, then select the **Enable CrossFire™** check box. When a confirmation message pops up, click **Yes**. The screen blacks out for about one minute.

4. Click **OK**. The add-on graphics card is set to be the main monitor.

Using the onboard graphics card

1. Right-click on the Windows® desktop, and then click **AMD CATALYST(R) Control Center** from the shortcut menu. The AMD CATALYST Control Center screen appears.

2. Click **Graphics Settings > CrossFire™**, then clear the **Enable CrossFire™** check box. When a confirmation message pops up, click **Yes**. The screen blacks out for about one minute.

3. Click **OK**.

4.   Right-click on the Windows® desktop, then click **Personalize** from the shortcut menu.

5.   Click **Display Settings**. Select **[Default Monitor] on ATI Radeon HD 4250 Graphics**, then select the check boxes of **This is my main monitor** and **Extend the desktop onto this monitor**. Click **OK**, and then **Yes** from the confirmation window.

6.   Restart the system. Right-click on the Windows® desktop, then click **AMD CATALYST(R) Control Center** from the shortcut menu. The AMD CATALYST Control Center screen appears.

7.   Click **Graphics Settings** > **CrossFire™**, then select the **Enable CrossFire™** check box. When a confirmation pops up, click **Yes**. The screen blacks out for about one minute.

8.   Click **OK**. The onboard graphics card is set to be the main monitor.

> If you are using both an add-on and the on-board graphics cards at same time and want to set the onboard graphics card as your main monitor, follow the below instructions.

1.   Follow steps 1 to 3 on **Using the onboard graphics card**.

2.   From the AMD CATALYST(R) Control Center screen, click **Display Manager** > **Graphics Adapter**. Select **AMD Radeon HD 4250 Graphics [Gabbs, G HW173]**. Click **OK**, and then **Yes** from the confirmation window.

3.   Follow steps 6 to step 8 on **Using the onboard graphics card** to complete the process of setting up the onboard graphics card as your main monitor.

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 : **F1A75-V PRO**

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 : ____May 23,2011____

Ver. 110101

EC Declaration of Conformity

We, the undersigned,

Manufacturer:	ASUSTek COMPUTER INC.
Address, City:	No. 150, LI-TE 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 :	F1A75-V PRO

conform with the essential requirements of the following directives:

☒2004/108/EC-EMC Directive

☒ EN 55022:2006+A1:2007
☒ EN 61000-3-2:2006
☒ EN 55013:2001+A1:2003+A2:2006

☒ EN 55024:1998+A1:2001+A2:2003
☒ EN 61000-3-3:2008
☐ EN 55020:2007

☐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 301 511 V9.0.2(2003-03)
☐ 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 50360:2001
☐ EN 50371:2002
☐ EN 50385:2002

☐ EN 301 489-1 V1.8.1(2008-04)
☐ EN 301 489-3 V1.4.1(2002-08)
☐ EN 301 489-4 V1.3.1(2002-08)
☐ EN 301 489-7 V1.3.1(2005-11)
☐ EN 301 489-9 V1.4.1(2007-11)
☐ EN 301 489-17 V2.1.1(2009-05)
☐ EN 301 489-24 V1.4.1(2007-09)
☐ EN 302 326-2 V1.2.2(2007-06)
☐ EN 302 326-3 V1.3.1(2007-09)
☐ 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 60065:2002+A1:2006+A11:2008

☐2009/125/EC-ErP Directive

Regulation (EC) No. 1275/2008
☐ EN 62301:2005
Regulation (EC) No. 642/2009
☐ EN 62301:2005

Regulation (EC) No. 278/2009
☐ EN 62301:2005

☒CE marking

(EC conformity marking)

Position : **CEO**

Name : **Jerry Shen**

Signature : _____

Declaration Date: May 23, 2011

Year to begin affixing CE marking:2011

Ver. 110101