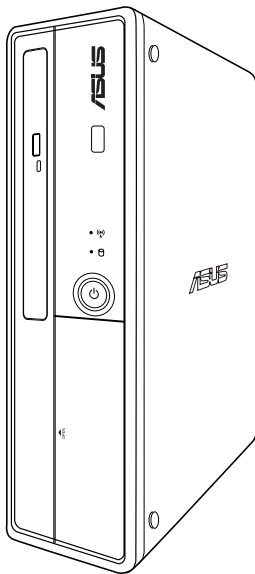




S1-AT5NM10E

ASUS PC (Desktop Barebone)

User Manual



E5860

First Edition

June 2010

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Online support	support.asus.com

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

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Notices

Federal Communications Commission Statement

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

- This device may not cause harmful interference.
- 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.



WARNING! 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.

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://green.asus.com/english/REACH.htm>.

Safety information

Electrical safety

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

Operation safety

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



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.



CAUTION: Risk of explosion if the RTC battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.



Test Data:

- Motherboard (ASUSTeK Computer Inc / AT5ION3L / CS6110 / DT_MB), Power Adapter (DELTA / SADP-65KB BFJB&ADP-65JH BB F), one CPU fan (AVC / DS05020R12HP015), one ODD (HLDS / GSA-T50N(RR07)), one HDD (HITACHI / HDT721032SLA380).
-

About this guide

Audience

This guide provides general information and installation instructions about the ASUS S1-AT5NM10E barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. Chapter 1: System introduction

This chapter gives a general description of the ASUS S1-AT5NM10E. The chapter lists the system features, including introduction on the front and rear panel, and internal components.

2. Chapter 2: Starting up

This chapter helps you power up the system and install drivers and utilities from the support DVD.

3. Chapter 3: Motherboard info

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

4. Chapter 4: BIOS setup

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Conventions used in this guide



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 aid in completing a task.

Where to find more information

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

1. **ASUS Websites**

The ASUS websites worldwide provide 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.

System package contents

Check your S1-AT5NM10E system package for the following items.

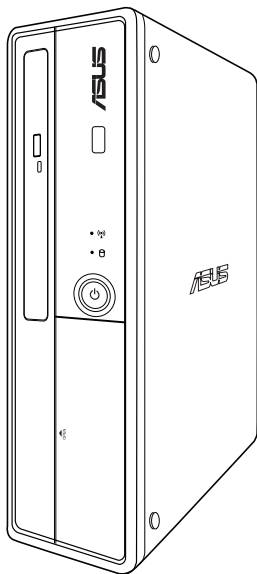


If any of the items is damaged or missing, contact your retailer immediately.

Item description	
1.	ASUS S1-AT5NM10E barebone system with • ASUS motherboard • ASUS ODD (<i>slim type</i>) • ASUS chassis • CPU fan • Chassis fan
2.	Accessories • SATA HDD signal cable x1 • HDD screw x4 • Power adapter x1 • Power cord x1 • ODD bezel x1
3.	Support DVD (<i>user manual, drivers, utilities</i>)
4.	Quick Installation Guide

Chapter 1

This chapter gives a general description of the ASUS S1-AT5NM10E. The chapter lists the system features including introduction on the front and rear panel, and internal components.



System introduction

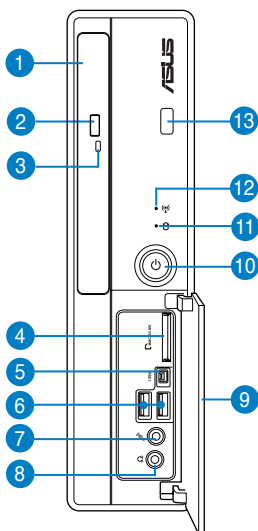
1.1 Welcome!

Thank you for choosing the ASUS S1-AT5NM10E!

The ASUS S1-AT5NM10E is a slimline barebone system with rich home entertainment features.

The system supports up to 4 GB of system memory using DDR3 SO-DIMMs, HDMI display output, Serial ATA 3Gb/s, USB 3.0, 8-channel audio configuration, and wireless connectivity (WiFi, Bluetooth, and Infrared).

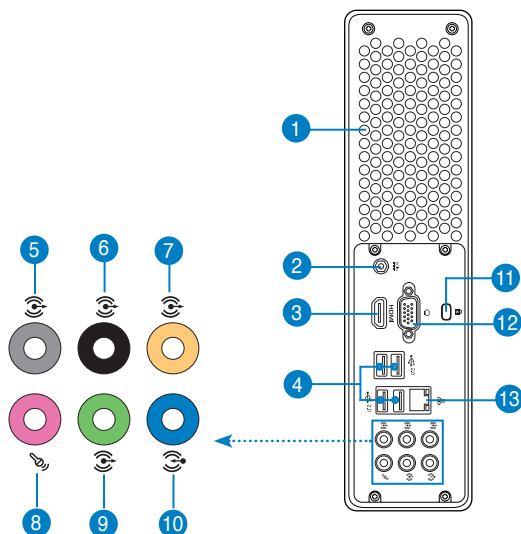
1.2 Front panel



1. **Optical disk drive (ODD) (*slim type*).**
2. **ODD tray eject button.** Push this button to eject the ODD tray.
3. **ODD LED.**
4. **Multimedia Card / Secure Digital™ / MemoryStick™ card slot.**
5. **6-pin IEEE 1394a port.** This port connects to an IEEE 1394a device such as a digital camcorder.
6. **USB 3.0 ports.** These Universal Serial Bus 3.0 (USB 3.0) ports connect to USB 3.0 / 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.
7. **Microphone port.** This port connects to a microphone.
8. **Headphone port.** This port connects to a pair of headphones or a speaker.

9. **Front I/O ports cover.** Open this cover to show the front I/O ports.
10. **Power button (with LED).** Press this button to turn the system on.
11. **HDD LED.**
12. **Network LED.** This network LED is for WiFi / Bluetooth / infrared connections.
13. **Infrared (IR) port.** Transfer data between the barebone system and an infrared-enabled device using this infrared port.

1.3 Rear panel



1. **Chassis air vents.** These vents are for ventilation inside the system chassis.



DO NOT cover the air vents, and use this system in environments with an ambient temperature between 5°C ~ 35°C.

2. **DC IN port.** This port connects to the DC output plug of an AC power adapter.
3. **HDMI port.** This port connects to a HDMI monitor or other HDMI compatible devices.
4. **USB 2.0 ports.** These Universal Serial Bus 2.0 (USB 2.0) ports connect to USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.

5. **Side Speaker Out port (gray).** This port connects to the side speakers in an 8-channel audio configuration.
6. **Rear Speaker Out port (black).** This port connects to the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration.
7. **Center / Subwoofer port (orange).** This port connects to the center/subwoofer speakers in a 6-channel or 8-channel audio configuration.
8. **Microphone port (pink).** This port connects to a microphone.
9. **Line Out port (lime).** This port connects to a pair of headphones or a speaker. In 4-channel, 6-channel, and 8-channel audio configuration, the function of this port becomes Front Speaker Out.
10. **Line In port (light blue).** This port connects to the tape, CD, DVD player, or other audio sources.



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

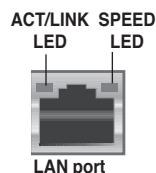
Audio 2, 4, 6, or 8-channel configuration

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

11. **Kensington® lock slot.** Secure the barebone system to an immovable object using a Kensington® security product.
12. **VGA port.** This port connects to a VGA monitor or other VGA compatible devices.
13. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

LAN port LED indications

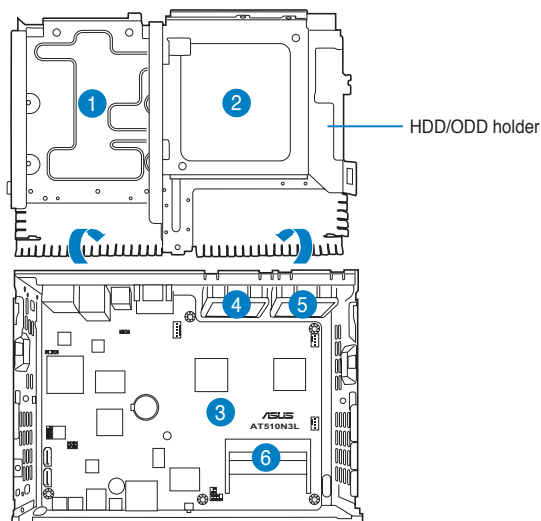
Activity/Link LED		Speed LED	
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
ORANGE	Linked	ORANGE	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection



1.4 Internal components



The illustration below shows the internal view of the system when you remove the system covers and the HDD/ODD holder.



- | | |
|-----------------------------|-------------------------------|
| 1. 3.5 inch SATA HDD bay | 4. CPU fan |
| 2. ODD (<i>slim type</i>) | 5. Chassis fan |
| 3. ASUS motherboard | 6. 204-pin DDR3 SO-DIMM slots |



- Refer to the bundled Quick Installation Guide for installing an SO-DIMM and a hard disk.
- Refer to Chapter 3&4 in this user guide for motherboard details.

1.5 SO-DIMM Qualified Vendors List (QVL)

DDR3 1333MHz capability

Vendor	Part No.	Size	DIMM support	
			A*	B*
HYNIX	HMT325S6BFR8C-H9(44NM)	2GB	•	•



DIMM support:

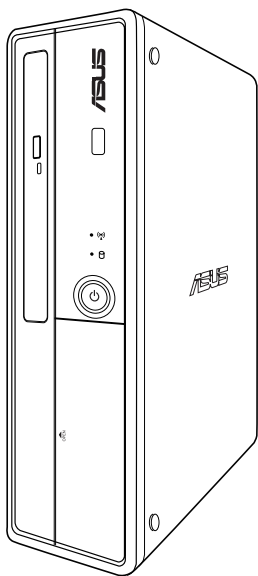
- A*: Supports one module inserted into either slot as Single-channel memory configuration.
- B*: Supports one pair of modules inserted into both slots as one pair of Dual-channel memory configuration.



Visit the ASUS website at www.asus.com for the latest QVL.

Chapter 2

This chapter helps you power up the system and install drivers and utilities from the support DVD.



Starting up

2.1 Installing an operating system

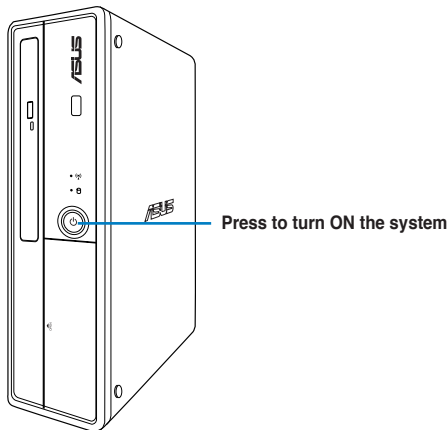
The barebone system supports Windows® XP/Vista/7 operating systems (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.



- Windows XP OS setup cannot recognize Serial ATA hard drives in AHCI mode or in a RAID set without the necessary drivers. Use a AHCI / RAID driver disk when installing Windows XP OS to a Serial ATA hard drive included in AHCI mode or in a RAID set.
- From the Windows XP setup screen, press F6 when prompted then follow succeeding screen instructions to install the SATA drivers.

2.2 Powering up

Press the system power button (⏻) to enter the OS.



2.3 Support DVD information

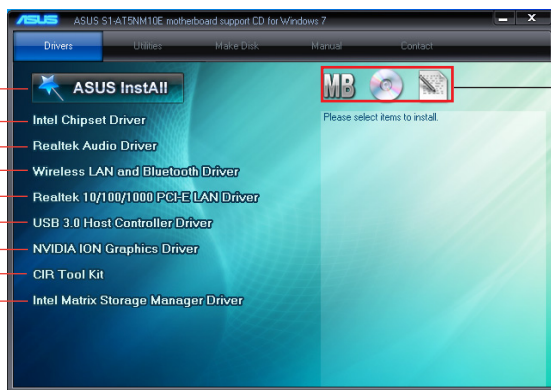
The support DVD that came with the system contains drivers and software applications that you can install to enhance the system features.



- Screen display and driver options may not be the same for different operating system versions.
- 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.

2.3.1 Running the support DVD

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



Click an icon to display support DVD/motherboard information

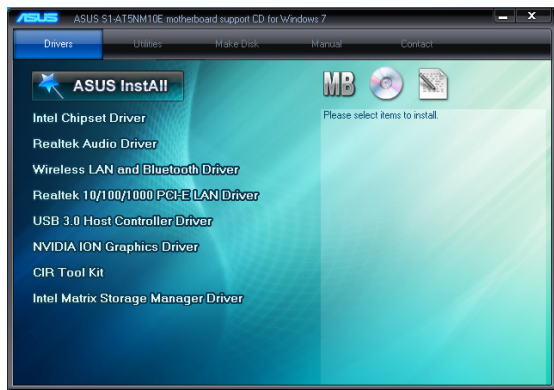
Click an item to install



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

2.3.2 Drivers menu

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



ASUS InstAll

Installs all of the drivers through an installation wizard.

Intel Chipset Driver

Installs the Intel® chipset driver.

Realtek Audio Driver

Installs the Realtek® audio driver and application.

Wireless LAN and Bluetooth Driver

Installs the wireless LAN and Bluetooth driver.

Realtek 10/100/1000 PCI-E LAN Driver

Installs the Realtek® 10/100/1000 PCI-E LAN driver.

USB 3.0 Host Controller Driver

Installs the USB 3.0 host controller driver.

NVIDIA ION Graphics Driver

Installs the NVIDIA® ION graphics driver.

CIR Tool Kit

Installs the CIR (Consumer Infrared) tool kit.

Intel Matrix Storage Manager Driver

Installs the Intel® Matrix Storage Manager driver.

2.3.3 Utilities menu

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



ASUS InstAll

Installs all of the utilities through an installation wizard.

ASUS Update

Allows you to download the latest version of the BIOS from the ASUS website.

ASUS AI Manager

Installs the ASUS AI Manager.

ASUS Express Gate Installer

Installs the ASUS Express Gate.

Realtek Ethernet Utility

Installs the Realtek® Ethernet utility.

Adobe Reader 9

Installs the Adobe® Reader that allows you to open, view, and print documents in Portable Document Format (PDF).

Internet Radio

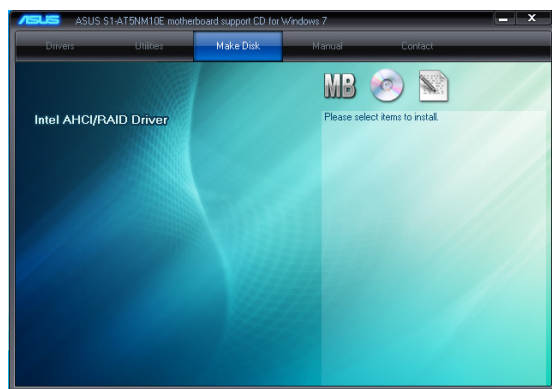
installs the Internet Radio utility.

PC-cillin 2010

Installs the PC-cillin utility.

2.3.4 Make Disk menu

The Make Disk menu allows you to make a AHCI/RAID driver disk.



Intel AHCI/RAID Driver

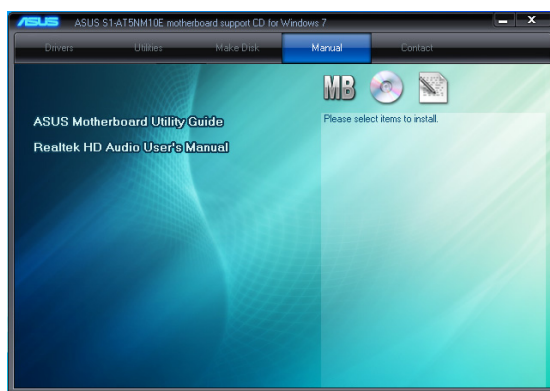
Creates an Intel® AHCI / RAID driver disk.

2.3.5 Manual menu

The Manual menu contains a list of supplementary user manuals.



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



2.3.6 ASUS Contact information

Click the Contact tab to display the ASUS contact information.

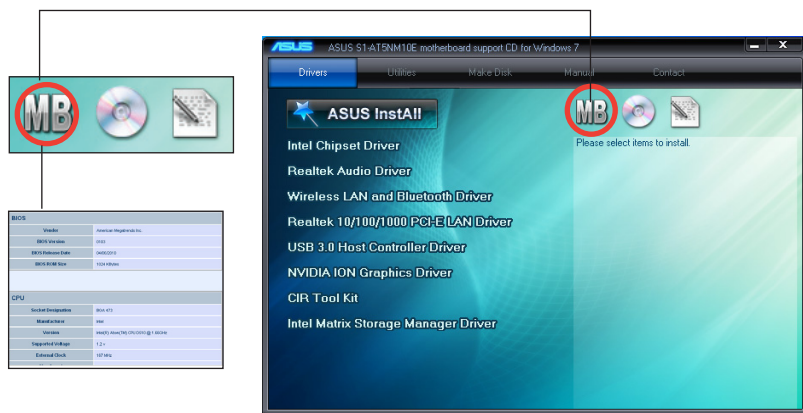


2.3.7 Other information

The icons on the top right corner of the screen give additional information on the motherboard and the contents of the support DVD. Click an icon to display the specified information.

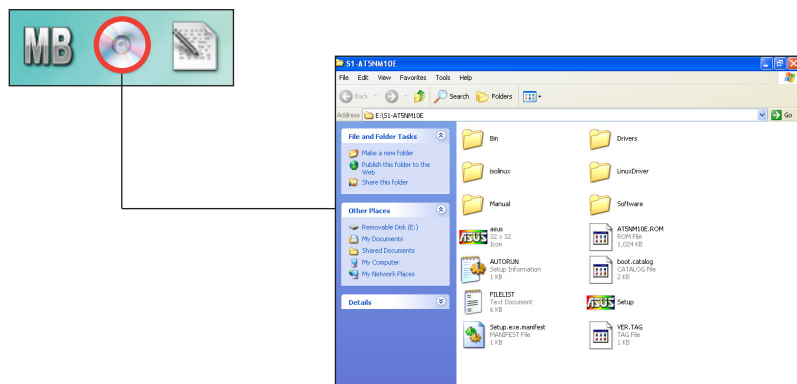
Motherboard Info

Displays the general specifications of the motherboard.



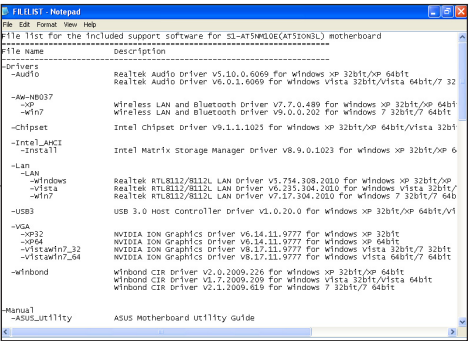
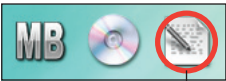
Browse this DVD

Displays the support DVD contents in graphical format.



Filelist

Displays the contents of the support DVD and a brief description of each in text format.



2.4 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 for more information.

2.4.1 ASUS AI Manager

ASUS AI Manager is a utility which gives you quick and easy access to frequently-used applications.

Installing AI Manager

To install AI Manager on your computer:

1. Place the support CD in the optical drive. If Autorun is enabled, the Drivers installation wizard appears.



If Autorun is not enabled in your computer, locate the setup.exe file from the ASUS AI Manager folder in the support CD. Double-click the setup.exe file to start installation.

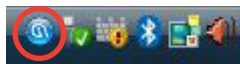
2. Click the **Utilities** tab, then click **ASUS AI Manager**.
3. Follow the screen instructions to complete the installation.

Launching AI Manager

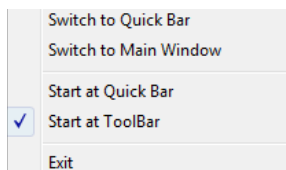
To launch the AI Manager from the Windows® desktop, click **Start > All Programs > ASUS > AI Manager 1.xx.xx > AI Manager**. The AI Manager quick bar appears on the desktop.



After launching the application, the AI Manager icon appears in the Windows® taskbar.

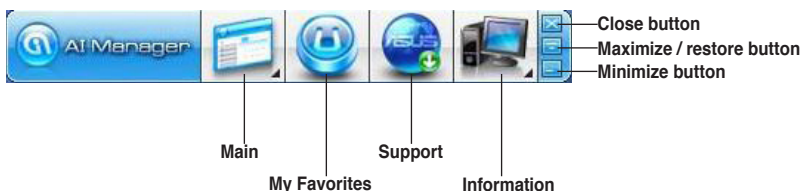


Right-click this icon to switch between quick bar and main window, and to launch the AI Manager either from the quick bar or taskbar.



AI Manager quick bar

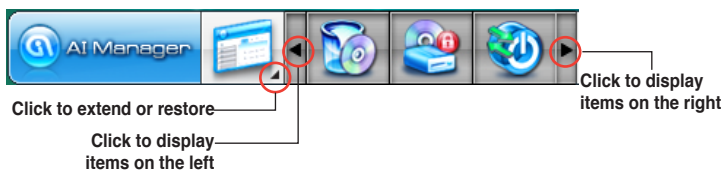
The AI Manager quick bar saves the desktop space and allows you to launch the ASUS utilities or display system information easily. Click any of the Main, My Favorites, Support or Information tab to display the menu's contents.



Click the Maximize/restore button  to switch between full window and quick bar. Click the Minimize button  to keep the AI Manager on the taskbar. Click the Close button  to quit the AI Manager.

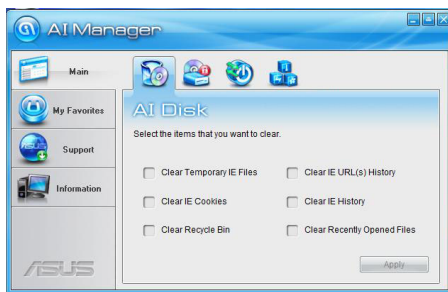
Main

The Main menu contains five utilities: **AI Disk**, **AI Security**, **AI Booting**, and **AI Probe**. Click the arrow on the Main menu icon to browse through the utilities in the main menu.



AI Disk

AI Disk allows you to easily clear temporary IE files, IE cookies, IE URLs, IE history, or the Recycle Bin. Click the AI Disk icon on the quick bar to display the full AI Disk window and select the items you want to clear. Click **Apply** when done.



AI Security

AI Security enables you to set a password to secure your devices, such as USB flash disks and CD/DVD disks, from unauthorized access.



To lock a device:

1. When using AI Security for the first time, you are asked to set a password. Enter a password with at most 20 alphanumeric characters.
2. Confirm the password.
3. Key in the password hint (recommended).
4. When done, click **Ok**.
5. Select the device you want to lock, then click **Apply**.
6. Key in the password you have set previously, then click **Ok**. The selected device is locked and not accessible.



To unlock the selected device:

1. Uncheck the checkbox of the selected device, then click **Apply**.
2. Key in the password you have set previously, then click **Ok**. The selected device is unlocked.

To change password:

Click **Change Password**, then follow the on-screen instructions to change the password.

AI Booting

AI Booting allows you to specify the boot device priority sequence.



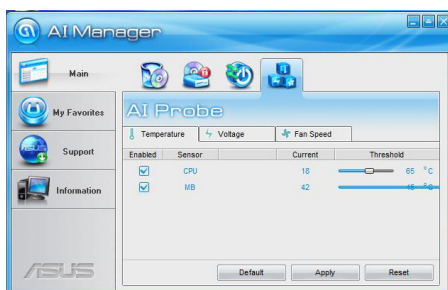
To specify the boot sequence:

1. Select a device, then click on the left/right button to specify the boot sequence.
2. When done, press **Apply**.

AI Probe

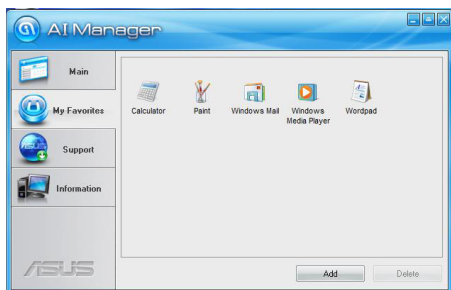
AI Probe automatically detects and displays the motherboard and CPU temperatures, CPU fan speed, and the voltage output. You can adjust the values as you need.

Click the **Temperature**, **Voltage**, or **Fan Speed** tab, then select an item to enable and change the value by dragging the bar.



My Favorites

My Favorites allows you to add applications that you frequently use, saving you from searching for the applications throughout your computer.



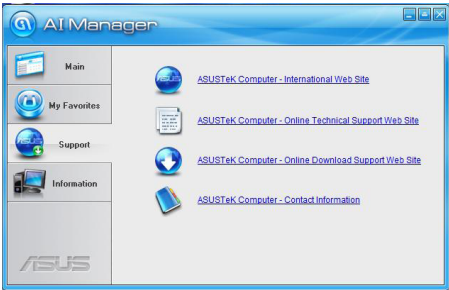
To add an application:

1. Click **Add**, then locate the application you want to add to **My Favorites**.
2. Click **Open** on the file location window. The application is added to **My Favorites** list.

Right click on the application icon to launch, delete, or rename the selected application. You can also double click to launch the selected application.

Support

Click any links on the **Support** window to go to the ASUS website, technical support website, download support website, or contact information.



Information

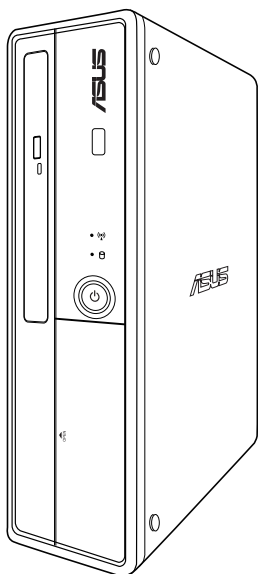
Click the tab on the **Information** window to see the detailed information about your system, motherboard, CPU, BIOS, installed device(s), and memory.



[illegible]

Chapter 3

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

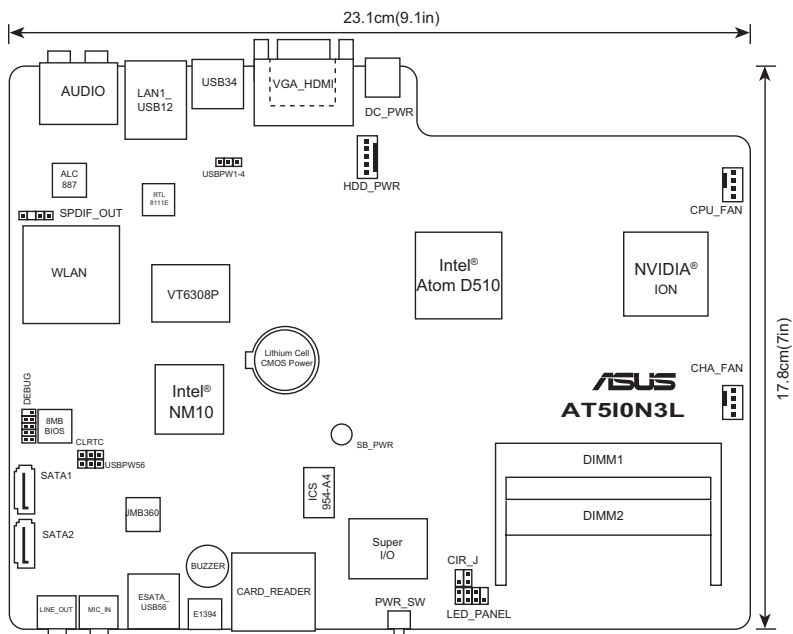


Motherboard info

3.1 Introduction

The barebone system comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

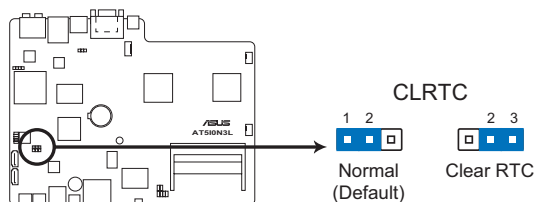
3.2 Motherboard layout



3.3 Jumpers

1. 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.



AT510N3L 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 **** key during the boot process and enter BIOS setup to re-enter data.



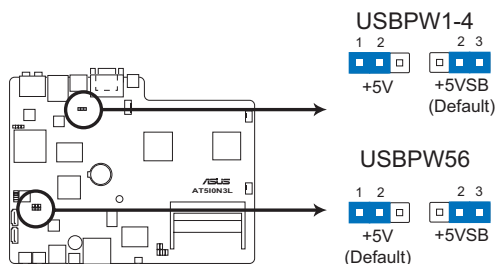
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



- 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 CPU Parameter Recall (C.P.R.) feature. Shut down and reboot the system, then the BIOS automatically resets parameter settings to default values.

2. USB device wake-up (3-pin USBPW1-4, USBPW56)

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

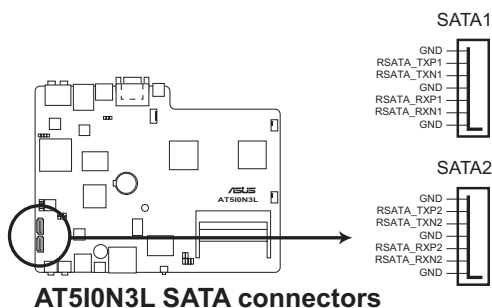


AT510N3L USB Device Wake Up

3.4 Connectors

1. Serial ATA connectors (7-pin SATA1, SATA2)

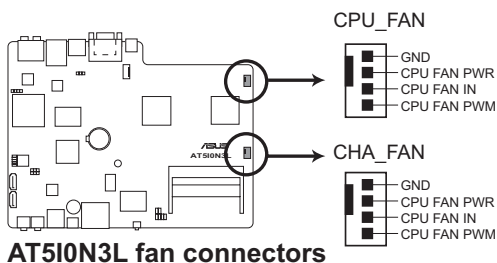
These connectors are for the Serial ATA signal cables for Serial ATA hard disk and optical disk drives.



Install the Windows® XP Service Pack 2 or later version before using Serial ATA.

2. CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN)

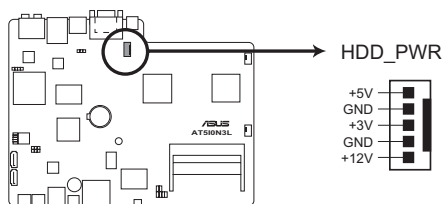
Connect the fan cables to the fan connectors on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector.



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!

3. SATA power connector (5-pin HDD_PWR)

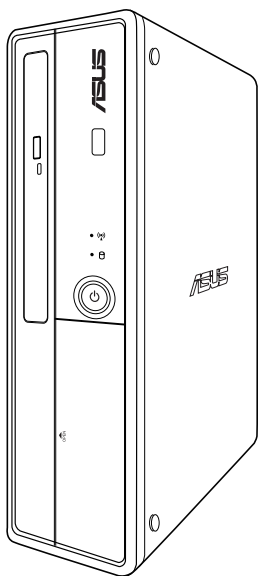
Connect the supplied SATA power cable splitter to this connector to power one optical disk drive and one hard disk drive.



AT510N3L SATA power connector

Chapter 4

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.



BIOS setup

4.1 Managing and updating your BIOS

BIOS (Basic Input and Output System) stores system 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. **DO NOT** change the default BIOS settings except in the following circumstances:

- An error message appears on the screen during the system startup and requests you to run the BIOS setup.
- You have installed a new system component that requires further BIOS settings or update.



-
- Inappropriate BIOS settings may result to system instability or boot failure. We strongly recommend that you change the BIOS settings with the help of a trained service personnel.
 - BIOS updating is potentially risky. If there is no problem in using the current BIOS version, **DO NOT** manually update the BIOS. Inappropriate BIOS updating may result to system boot failure.
-



-
- 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.
 - Download the latest BIOS file from the ASUS website at www.asus.com.
-

4.1.1 ASUS Update

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



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

Installing ASUS Update

To install ASUS Update:

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



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

Updating the BIOS

To update the BIOS:

1. From the Windows® desktop, click **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate** to launch the ASUS Update utility.
2. From the dropdown list, select any of the updating process:

Updating from the Internet

- a. Select **Update BIOS from the Internet**, then click **Next**.
- b. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select** then click **Next**.
- c. From the FTP site, select the BIOS version that you want to download then click **Next**.



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

Updating from a BIOS file

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

4.1.2 ASUS EZ Flash 2

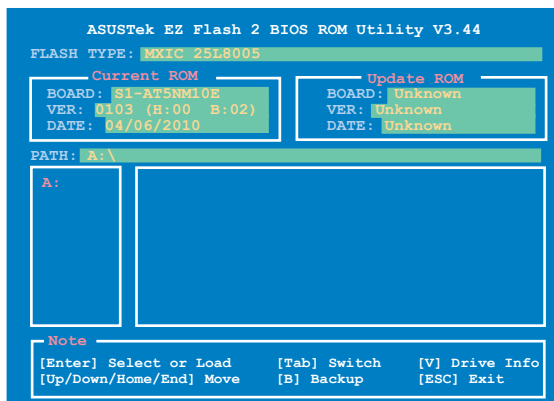
The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility.



Before you start using this utility, download the latest BIOS file from the ASUS website at www.asus.com.

To update the BIOS using EZ Flash 2:

1. Insert the USB flash disk that contains the latest BIOS file to the USB port, then launch EZ Flash 2 in any of these two ways:
 - Press **<Alt> + <F2>** during POST.
 - Enter the BIOS setup. Go to the **Tools** menu, select **EZ Flash 2**, and press **<Enter>** to enable it.
2. Press **<Tab>** to switch between drives until the correct BIOS file is found, then press **<Enter>**. EZ Flash 2 performs the BIOS updating process and automatically reboots the system when 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!

4.1.3 ASUS CrashFree BIOS 3

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



-
- Ensure that you rename the BIOS file in the USB flash disk to **AT5NM10E.ROM**.
 - Prepare the motherboard support DVD or the USB flash disk containing the updated motherboard BIOS before using this utility.
-

Recovering the BIOS

To recover the BIOS:

1. Turn on the system.
2. Insert the support DVD or USB flash disk with the BIOS file to the optical drive or USB port.
3. The utility automatically checks the devices for the BIOS file. When the BIOS file is found, the utility reads and starts flashing the corrupt BIOS file.
4. Turn off the system after the utility completes the updating process and turn it on again.



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

4.2 BIOS setup program

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

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

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

Entering BIOS Setup after POST

To enter BIOS Setup after POST, do any of the following:

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

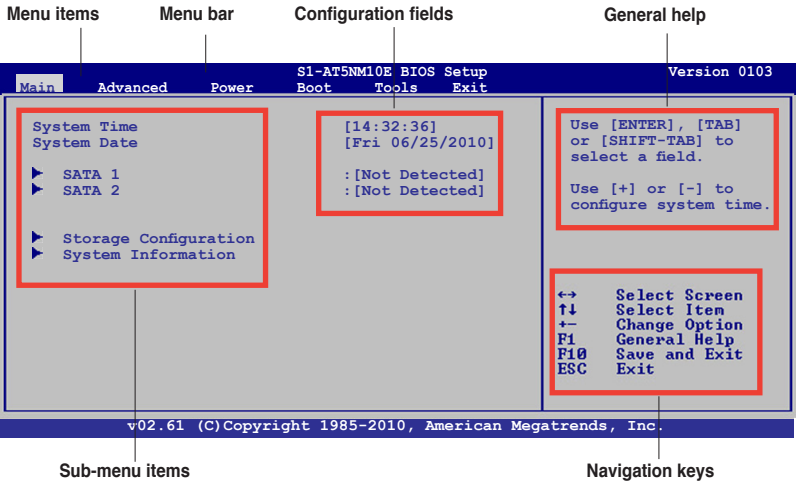


Using the **power button**, **reset button**, or the **<Ctrl>+<Alt>+** keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut-down the system properly from the operating system.



-
- The 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 Default Settings** item under the Exit Menu. See section **4.8 Exit Menu**.
 - The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
 - Visit the ASUS website at www.asus.com to download the latest BIOS file for this motherboard.
-

4.2.1 BIOS menu screen



4.2.2 Menu bar

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

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Power	For changing the advanced power management (APM) configuration
Boot	For changing the system boot configuration
Tools	For configuring options for special functions
Exit	For selecting the exit options and loading default settings

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

4.2.3 Navigation keys

At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings.

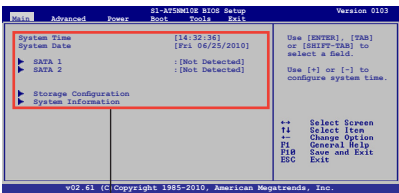


Some of the navigation keys differ from one screen to another.

4.2.4 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 (Advanced, Power, Boot, Tool, and Exit) on the menu bar have their respective menu items.



Main menu items

4.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the item has a sub-menu. To display the sub-menu, select the item and press <Enter>.

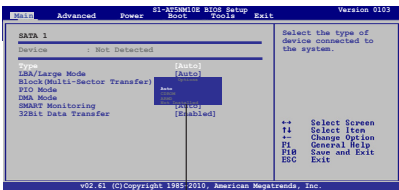
4.2.6 Configuration fields

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 enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to 4.2.7 Pop-up window.

4.2.7 Pop-up window

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



Pop-up window

4.2.8 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.

4.2.9 General help

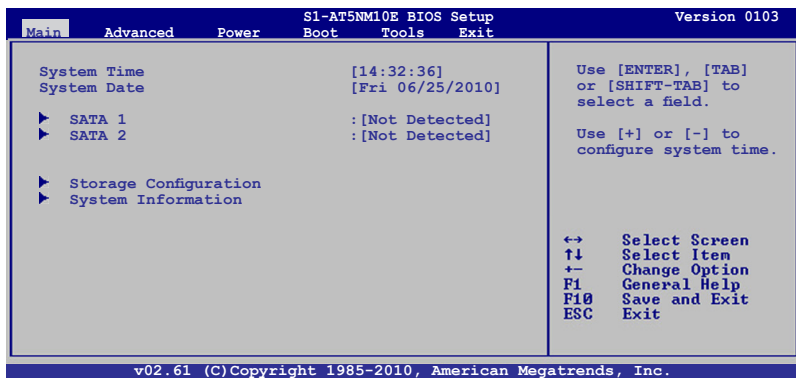
At the top right corner of the menu screen is a brief description of the selected item.

4.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.



Refer to section 4.2.1 BIOS menu screen for information on the menu screen items and how to navigate through them.



4.3.1 System Time [xx:xx:xx]

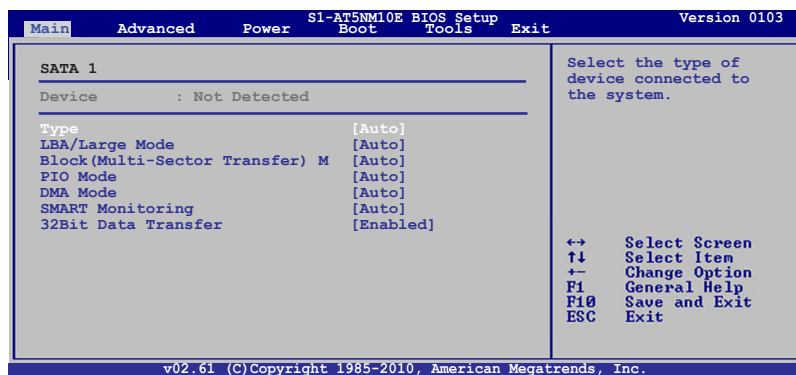
Allows you to set the system time.

4.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

4.3.3 SATA1~2

While entering Setup, the BIOS automatically detects the presence of SATA devices. There is a separate sub-menu for each SATA device. Select a device item then press <Enter> to display the SATA device information.



The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no SATA device is installed in the system.

Type [Auto]

Allows you to select the type of device connected to the system.

Configuration options: [Auto] [CDROM] [ARMD] [Not Installed]

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto]

Block (Multi-sector Transfer) M [Auto]

Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time.

Configuration options: [Disabled] [Auto]

PIO Mode [Auto]

Selects the PIO mode. Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects the DMA mode. Configuration options: [Auto]

SMART Monitoring [Auto]

Sets the Smart Monitoring, Analysis, and Reporting Technology.

Configuration options: [Auto] [Disabled] [Enabled]

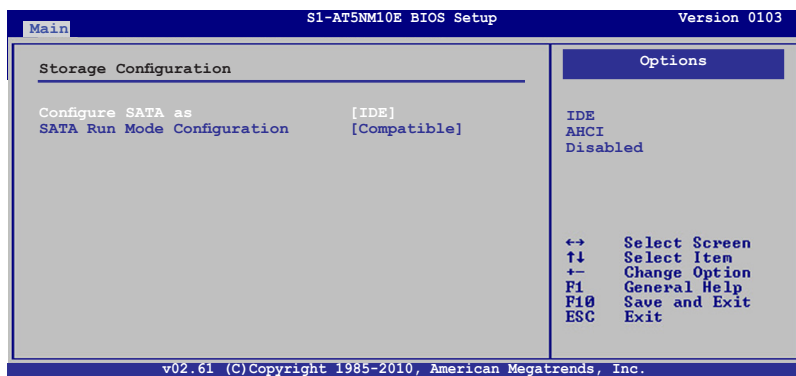
32Bit Data Transfer [Enabled]

Enables or disables 32-bit data transfer.

Configuration options: [Disabled] [Enabled]

4.3.4 Storage Configuration

The items in this menu allow you to set or change the configurations for the SATA devices installed in the system. Select an item then press <Enter> if you want to configure the item.



Configure SATA as [IDE]

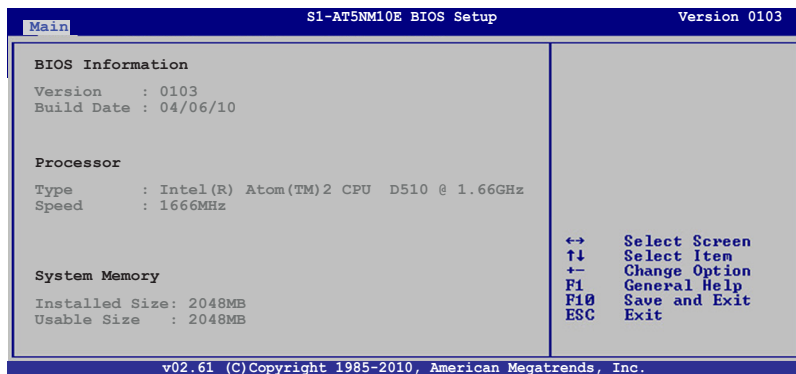
Sets the configuration for the Serial ATA connectors. Configuration options: [IDE] [AHCI] [Disabled]

SATA Run Mode Configuration [Compatible]

Sets the SATA run mode configuration. Configuration options: [Compatible] [Enhanced]

4.3.5 System Information

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.



BIOS Information

Displays the auto-detected BIOS information.

Processor

Displays the auto-detected CPU specification.

System Memory

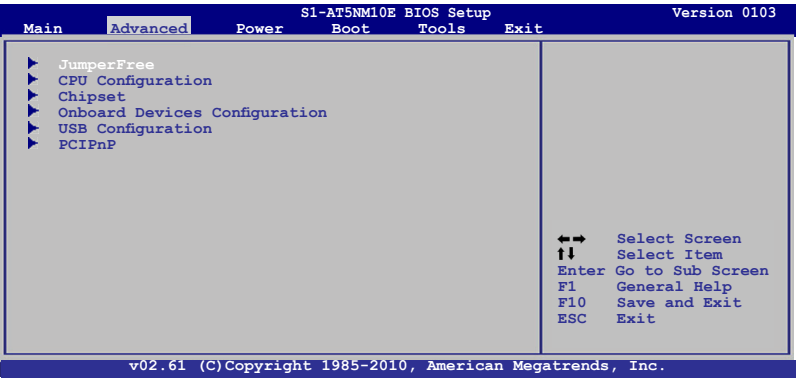
Displays the auto-detected system memory.

4.4 Advanced menu

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

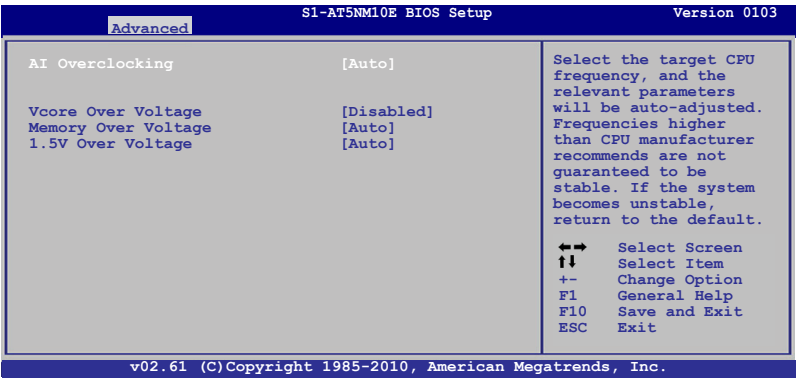


Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



4.4.1 JumperFree

The items in this menu allows you to adjust the system frequency/voltage.



AI Overclocking [Auto]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options:

Manual - allows you to individually set overclocking parameters.

Auto - loads the optimal settings for the system.



The following item appears only when you set **AI Overclocking** to **[Manual]**.

CPU Frequency [xxx]

Displays the frequency sent by the clock generator to the system bus and PCI bus. The value of this item is auto-detected by the BIOS. Use the <+> and <-> keys to adjust the CPU frequency. You can also type the desired CPU frequency using the numeric keypad. The values range from 150 to 250.

Vcore Over Voltage [Disabled]

Sets the Vcore over voltage. Selecting [Disabled] sets the Vcore over voltage to the default value. Selecting [Enabled] sets the Vcore over voltage to +50mV. Configuration options: [Enabled] [Disabled]

Memory Over Voltage [Auto]

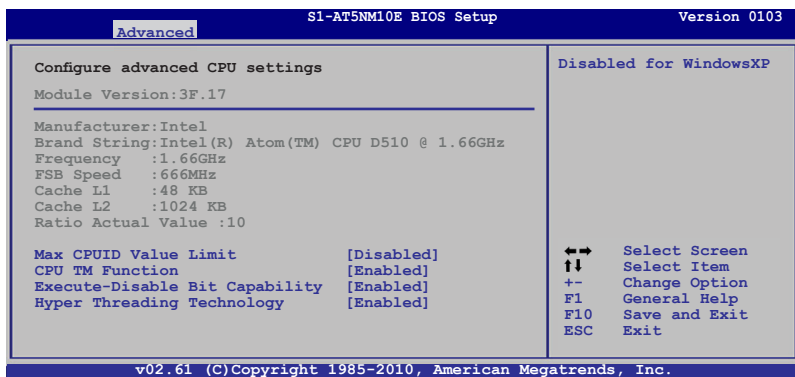
Sets the memory over voltage. The value ranges from 1.5000V to 1.9000V with a 0.0500V increment. Key in the value directly or use +/- to adjust the voltage.

1.5V Over Voltage [Auto]

Sets the 1.5V over voltage. The values range from 1.5000V to 1.6500V with a 0.0500V increment. Key in the value directly or use +/- to adjust the voltage.

4.4.2 CPU Configuration

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



Max CPUID Value Limit [Disabled]

Allows you to determine whether to limit CPUID maximum value. Set this item to [Disabled] for Windows XP operating system; set this item to [Enabled] for legacy operating system such as Windows NT4.0. (Default: Disabled)
Configuration options: [Disabled] [Enabled]

CPU TM Function [Enabled]

Enables or disables Intel® CPU Thermal Monitor (TM) function, a CPU overheating protection function. When enabled, the CPU core frequency and voltage are reduced when the CPU overheats. Configuration options: [Disabled] [Enabled]

Execute-Disable Bit Capability [Enabled]

Enables or disables Intel® Execute Disable Bit function. This function enhance protection of your computer, reducing exposure to viruses and malicious buffer overflow attacks when working with its supporting software and system. Configuration options: [Disabled] [Enabled]

Hyper Threading Technology [Enabled]

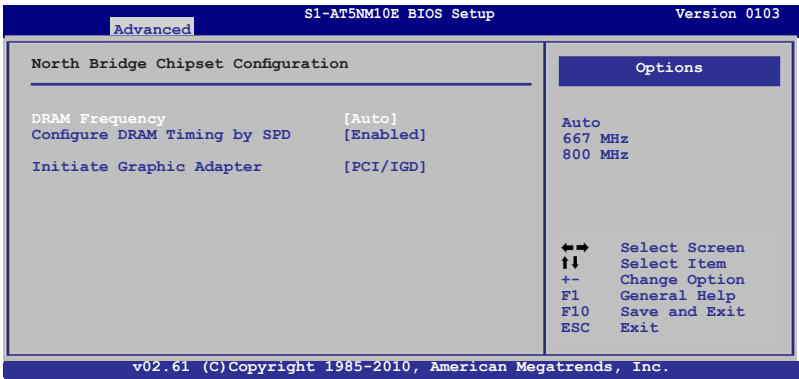
Allows you to enable or disable the Intel® Hyper Threading technology. Configuration options: [Disabled] [Enabled]

4.4.3 Chipset

The **Chipset** menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.



North Bridge Configuration



DRAM Frequency [Auto]

Allows you to set the DDR3 operating frequency. Configuration options: [Auto] [667MHz] [800MHz]

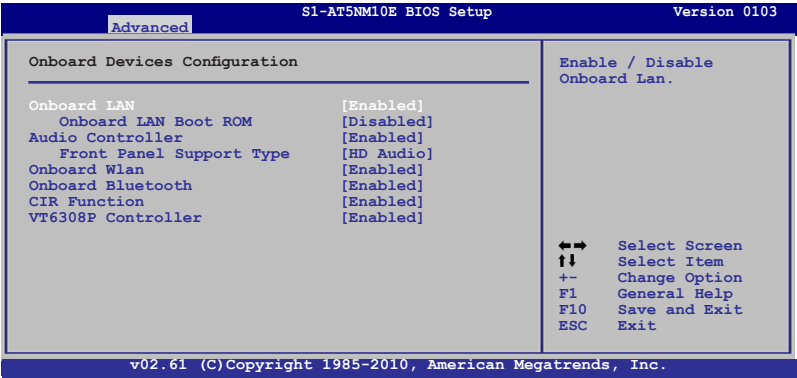
Configure DRAM Timing by SPD [Enabled]

Allows you to enable or disable configuring the DRAM Timing by SPD. Configuration options: [Enabled] [Disabled]

Initiate Graphic Adapter [PCI/IGD]

Allows you to decide which graphics controller to use as the primary boot device. Configuration options: [IGD] [PCI/IGD]

4.4.4 Onboard Devices Configuration



Onboard LAN [Enabled]

Allows you to enable or disable the onboard LAN controller.

Configuration options: [Enabled] [Disabled]

Onboard LAN Boot ROM [Disabled]

Allows you to enable or disable the boot ROM in the onboard LAN controller.

This item appears only when the Onboard LAN item is set to Enabled.

Configuration options: [Disabled] [Enabled]

Audio Controller [Enabled]

Allows you to enable or disable the onboard audio controller.

Configuration options: [Enabled] [Disabled]

Front Panel Support Type [HD Audio]

Allows you to select the front panel audio type.

Configuration options: [AC97] [HD Audio]

Onboard WLAN [Enabled]

Allows you to enable or disable the onboard WLAN controller.

Configuration options: [Enabled] [Disabled]

Onboard Bluetooth [Enabled]

Allows you to enable or disable the Bluetooth function.

Configuration options: [Enabled] [Disabled]

CIR Function [Enabled]

Allows you to enable or disable the infrared function.

Configuration options: [Enabled] [Disabled]

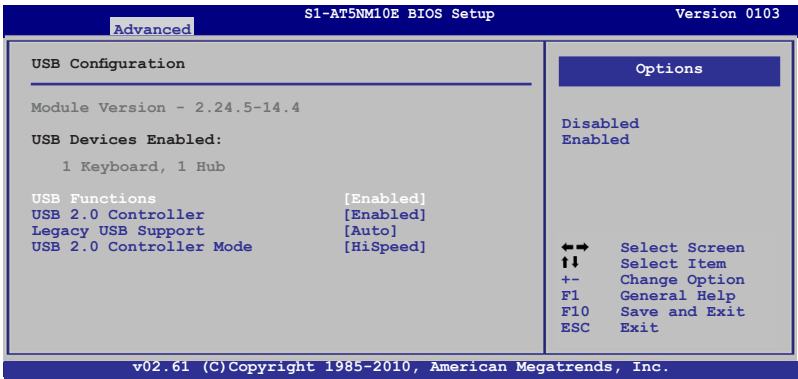
VT6308P Controller [Enabled]

Allows you to enable or disable the 1394 controller.

Configuration options: [Enabled] [Disabled]

4.4.5 USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options.



The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.

USB Functions [Enabled]

Allows you to enable or disable the USB functions.
Configuration options: [Disabled] [Enabled]

USB 2.0 Controller [Enabled]

Allows you to enable or disable USB 2.0 controller.
Configuration options: [Enabled] [Disabled]

Legacy USB Support [Auto]

Allows you to enable or disable support for USB devices on legacy operating systems (OS). Setting to 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.
Configuration options: [Disabled] [Enabled] [Auto]

USB 2.0 Controller Mode [HiSpeed]

Allows you to configure the USB 2.0 controller in HiSpeed (480Mbps) or Full Speed (12Mbps). Configuration options: [FullSpeed] [HiSpeed]



The following items may only appear when a USB storage device is plugged.

USB Mass Storage Device Configuration

USB Mass Storage Reset Delay [20 Sec]

Allows you to set the maximum time that the BIOS waits for the USB storage device to initialize. Configuration options: [10 Sec] [20 Sec] [30 Sec] [40 Sec]

Emulation Type [Auto]

Allows you to set the emulation type. Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CDROM]

4.4.6 PCI PnP

The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting IRQ and DMA channel resources for either PCI/PnP or legacy ISA devices, and setting the memory size block for legacy ISA devices.



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

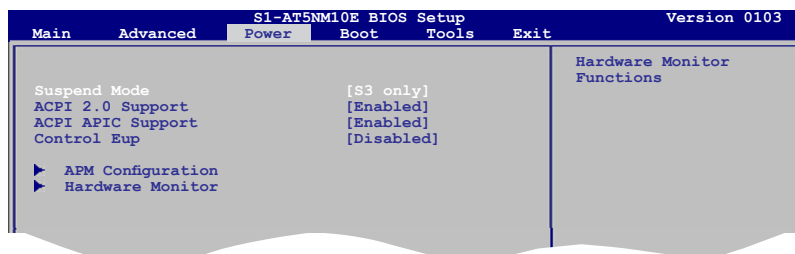


Plug And Play O/S [No]

When set to [No], BIOS configures all the devices in the system. When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. Configuration options: [No] [Yes]

4.5 Power menu

The Power menu items allow you to change the settings for the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.



4.5.1 Suspend Mode [S3 only]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend. Configuration options: [S3 Only]

4.5.2 ACPI 2.0 Support [Enabled]

Allows you to add more tables for Advanced Configuration and Power Interface (ACPI) 2.0 specifications. Configuration options: [Disabled] [Enabled]

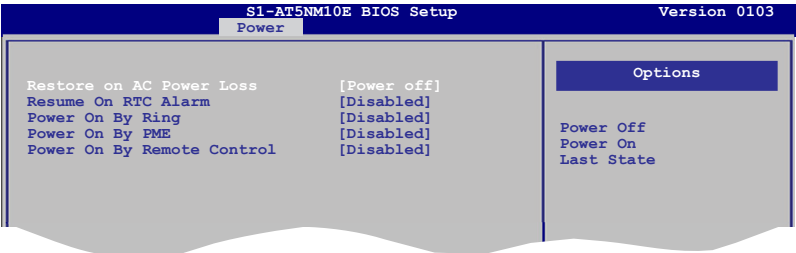
4.5.3 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

4.5.4 Control Eup [Disabled]

Allows you enable or disable Control Eup. Configuration options: [Enabled] [Disabled]

4.5.5 APM Configuration



Restore on AC Power Loss [Power Off]

When set to [Power Off], the system goes into off state after an AC power loss. When set to [Power On], the system goes on after an AC power loss. When set to [Last State], the system goes into either off or on state, whatever the system state was before the AC power loss. Configuration options: [Power Off] [Power On] [Last State]

Resume On By RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items RTC Alarm Date, RTC Alarm Hour, RTC Alarm Minute, and RTC Alarm Second appear with set values. Configuration options: [Disabled] [Enabled]

Power On By Ring [Disabled]

Allows you to enable or disable RI to generate a wake event. Configuration options: [Disabled] [Enabled]

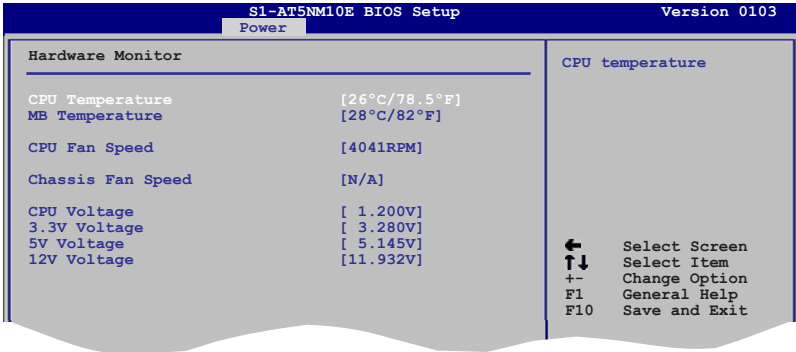
Power On By PME [Disabled]

Enables or disables PME wake from sleep states. Configuration options: [Disabled] [Enabled]

Power On By Remote Control [Disabled]

Enables or disables a remote control to power up the system or wake up the system from S3, S4, and S5 sleep states. Configuration options: [Enabled] [Disabled]

4.5.6 Hardware Monitor



CPU/MB Temperature [xxx°C/xxx°F] or [Ignored]

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

CPU/Chassis Fan Speed (RPM) [xxxxRPM] or [N/A] or [Ignored]

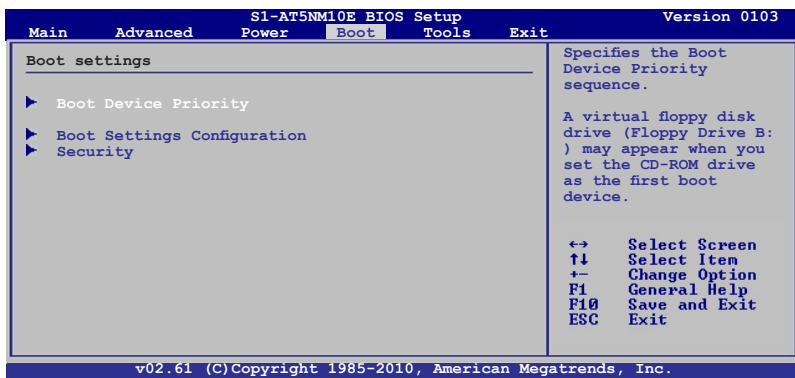
The onboard hardware monitor automatically detects and displays the CPU/ Chassis fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard or to the chassis, the field shows N/A. Select Ignored if you do not want the detected speed to be displayed.

CPU Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

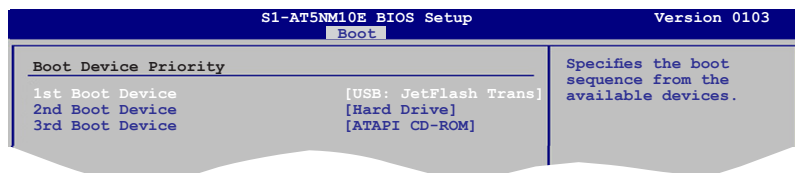
The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

4.6 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



4.6.1 Boot Device Priority



1st ~ xxth Boot Device [Removable Dev.]

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. Configuration options: [Hard Drive] [ATAPI CD-ROM] [Removable Dev.] [Disabled]



- To select the boot device during system startup, press <F8> when ASUS logo appears.
- To access Windows OS in Safe Mode, do any of the following:
 - Press <F5> when ASUS logo appears.
 - Press <F8> after POST.

4.6.2 Boot Settings Configuration

S1-AT5NM10E BIOS Setup		Version 0103
Boot		
Boot Settings Configuration		
Quick Boot	[Enabled]	Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
Full Screen Logo	[Enabled]	
AddOn ROM Display Mode	[Force BIOS]	
Bootup Num-Lock	[On]	
Wait For 'F1' If Error	[Enabled]	
Hit 'DEL' Message Display	[Enabled]	

Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items. Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

This allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled]



Set this item to [Enabled] to use the ASUS MyLogo2™ feature.

Add On ROM Display Mode [Force BIOS]

Sets the display mode for option ROM. Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock. Configuration options: [Off] [On]

Wait for 'F1' If Error [Enabled]

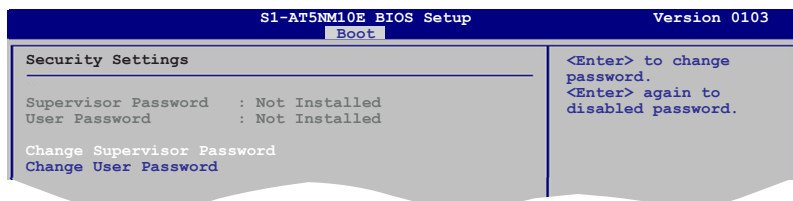
When set to [Enabled], the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled]

Hit 'DEL' Message Display [Enabled]

When set to [Enabled], the system displays the message "Press DEL to run Setup" during POST. Configuration options: [Disabled] [Enabled]

4.6.3 Security

The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options.



Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed.

To set a Supervisor Password:

1. Select the Change Supervisor Password item and press <Enter>.
2. On the password box, key in a password containing up to six letters or numbers, or both, then press <Enter>.
3. Confirm the password when prompted.

The message "Password Installed" appears after you successfully set your password.

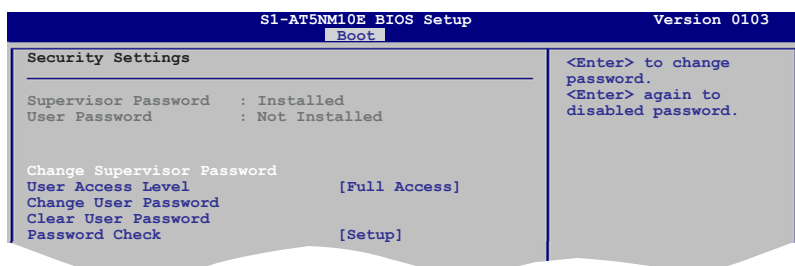
To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the Change Supervisor Password then press <Enter> twice. The message "Password Uninstalled" appears.



If you forget your BIOS password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section 3.3 Jumpers for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.



User Access Level [Full Access]

This item allows you to select the access restriction to the Setup items. Configuration options: [No Access] [View Only] [Limited] [Full Access]

No Access prevents user access to the Setup utility.

View Only allows access but does not allow change to any field.

Limited allows changes only to selected fields, such as Date and Time.

Full Access allows viewing and changing all the fields in the Setup utility.

Change User Password

Select this item to set or change the user password. 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 Change User Password item and press <Enter>.
2. On the password box, key in a password containing up to six letters or numbers, or both, then press <Enter>.
3. Confirm the password when prompted.

The message “Password Installed” appears after you set your password successfully.

To change the user password, follow the same steps as in setting a user password.

Clear User Password

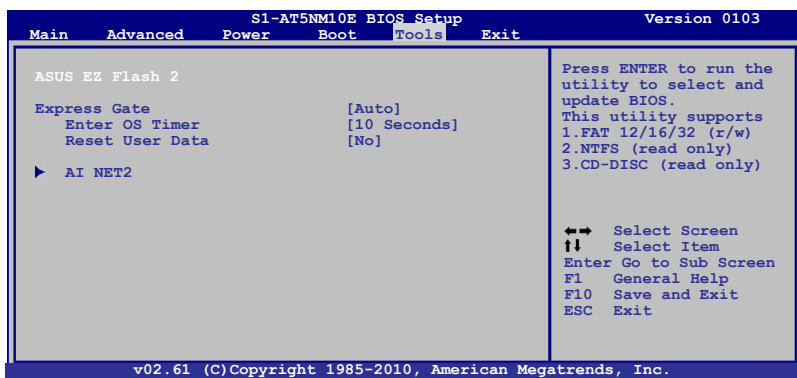
Select this item to clear the user password.

Password Check [Setup]

When set to [Setup], BIOS checks for user password when accessing the Setup utility. When set to [Always], BIOS checks for user password both when accessing Setup and booting the system. Configuration options: [Setup] [Always]

4.7 Tools menu

The Tools menu items allow you to launch special functions. Select an item then press <Enter> to display the sub-menu.



4.7.1 ASUS EZ Flash 2

Allows you to run ASUS EZ Flash 2. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice. See 4.1.2 ASUS EZ Flash 2 for details.

4.7.2 Express Gate [Auto]

Allows you to enable or disable the ASUS Express Gate feature. ASUS Express Gate is a unique instant-on environment that provides quick access to the Internet and Skype. Configuration options: [Auto] [Enabled] [Disabled]

Enter OS Timer [10 Seconds]

Sets countdown duration that the system waits at the Express Gate's first screen before starting Windows or other installed OS. Choose **[Prompt User]** to stay at the first screen of Express Gate for user action. Configuration options: [Prompt User] [1 second] [3 seconds] [5 seconds] [10 seconds] [15 seconds] [20 seconds] [30 seconds]

Reset User Data [No]

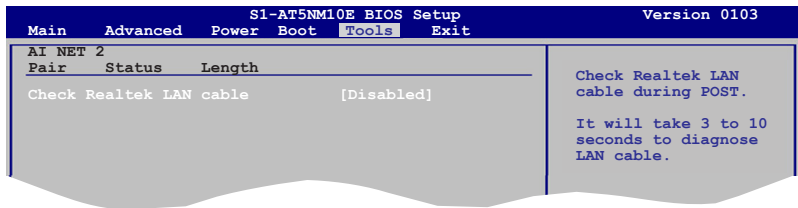
Allows you to clear Express Gate's user data. Configuration options: [No] [Reset]

When setting this item to **[Reset]**, ensure to save the setting to the BIOS so that the user data will be cleared the next time you enter the Express Gate. User data includes the Express Gate's settings as well as any personal information stored by the web browser (bookmarks, cookies, browsing history, etc.). This is useful in the rare case where corrupt settings prevent the Express Gate environment from launching properly.



The first time wizard will run again when you enter the Express Gate environment after clearing its settings.

4.7.3 AI NET 2

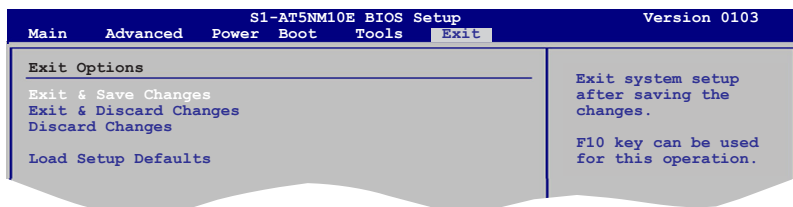


Check Realtek LAN cable [Disabled]

Enables or disables checking of the Realtek LAN cable during the Power-On Self-Test (POST). Configuration options: [Disabled] [Enabled]

4.8 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.



Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **OK** to save changes and exit.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select **OK** to discard any changes and load the previously saved values.

Load Setup 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 **OK** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.

[illegible]