

LITE-ON Technology Corp.

NA130 845PE Series ATX Mainboard

USER'S MANUAL

Intel® Pentium® 4 Processor Motherboard

Rev. 1.0

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Chapter 1. Introduction

1-1 Features and Specifications

1. CPU

Supports single Intel Pentium® 4 & Celeron socket 478 processor

Supports 400MHz/533MHz System Data Bus

Supports Intel P4 from 1.5GHz up to 3.06GHz

2. Chipset

Intel 82845PE(MCH)+82801DB(ICH4)

3. AGP

1.5V AGP interface with 4x data transfer and 4x fast write capability.

Supports AGP 4X 1.5V device only



Warning

The AGP slot **DOES NOT support 3.3V AGP 2X card.**

Use of 3.3V AGP 2X card may cause damage to the mainboard.

4. Onboard IDE

2 x Ultra ATA/100 Bus Master IDE channel supported by ICH4

Supports 4 x ATA & ATAPI devices

1 x Ultra ATA/133 Bus Master IDE channel supported by Promise

PDC20375 (option)

Supports 2 x ATA devices ONLY

5. Memory

3 x 184-pin DIMM sockets (unbuffered Non-ECC DIMM)

Supports DDR 200/266/333 SDRAM (Max. 2GB)

6. Serial ATA

On board 2-channel Serial ATA150 interface supported by Promise

PDC20375 (Option)

7. Audio

Onboard Realtek ALC650 premium AC'97 6 channel sound output with SPDIF digital in.

8. USB 2.0

6 x USB 2.0 ports (2 onboard connectors & 4 headers)

9. LAN

Onboard Realtek RTL8100B 10/100BaseT PCI Fast Ethernet Controller (Option)

10. System BIOS

Licensed AMI BIOS, 4Mbit flash ROM

Supports Plug-and-Play (PNP)

Supports Advanced Configuration Power Interface (ACPI)

Support Desktop Management Interface (DMI) function

11. Internal Slots

1 x AGP (Accelerated Graphics Port) 4x slot (1.5V only).

6 x PCI 2.2 32-bit Master PCI bus slots (support 3.3V/5V PCI bus interface).

12. Back Panel I/O

1 x PS/2 Keyboard

1 x PS/2 Mouse

2 x USB ports

1 x RJ-45 LAN port (Option)

1 x Parallel port

2 x Serial ports

1 x MIDI/Game port

1 x Audio ports (Duplex Mic-In, Line-In, Speaker Out)

13. Onboard I/O Interface

1 x ATX power connector

1 x +12V power connector

1 x Floppy connector

1 x Front panel connector Switch, IRDA, LED

1 x Header for front side LINE-OUT and MIC-IN (option)

1 x Header to support SPDIF Out expansion bracket

4 x Fan headers for CPU, Northbridge, Chassis, and System

2 x ATAPI headers (CD IN, AUX IN)

2 x headers to support additional 4 USB2.0 ports

14. Miscellaneous

Keyboard/Mouse/USB wake up

Support S1, S3, S4 and S5 ACPI status

Hardware monitor capability – including Fan Speed, Voltages, CPU and system temperature.

15. Dimension

ATX form factor (305mm x 216mm)

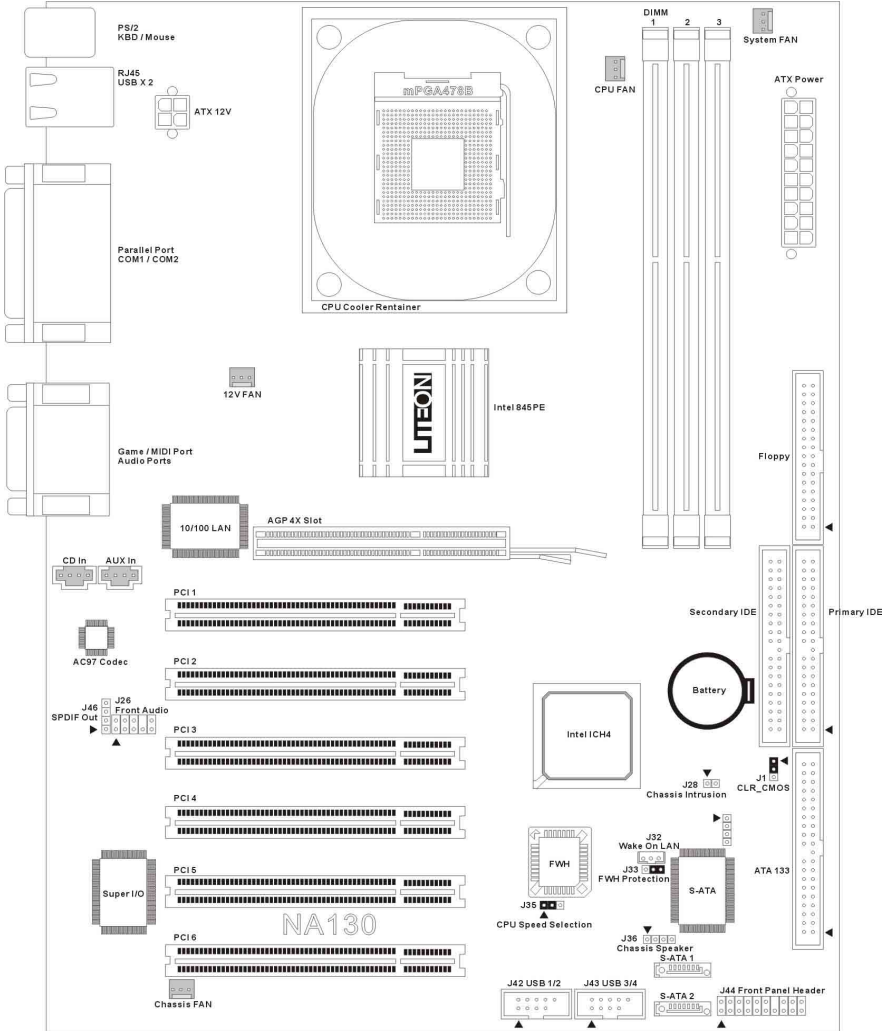


Note

Specifications and information contained herein are subject to change without notice.

1-2 Layout Diagram

NA130



Chapter 2. Hardware Installation

Before starting installing the mainboard, an ATX12V power supply is required to meet the power requirement of Intel Pentium® 4 processor. The mainboard, like other parts of your system, is subject to damage by static electricity. Be sure that you're properly grounded (LITE-ON Technology Corp. recommends that you wear an anti-static strap or touch a grounded object) and unplug your system before starting any hardware installation.

This chapter contains the following installation steps:

2-1 Install The Motherboard

2-2 Install the CPU and Heatsink

2-3 Install System Memory

2-4 Install Expansion Cards

2-5 Jumpers, Connectors, Headers and Switches

Warning



Before proceeding with the installation, turn the ATX12V power supply off (fully turn the +5V standby power off), or disconnect the power cord before you install or unplug any connectors or add-on cards. Failing to do so may cause the mainboard components or add-on cards to malfunction or damaged.

2-1 Install The Motherboard

Align the mainboard with the computer chassis. Remove any un-aligned studs to prevent from short-circuiting the mainboard. Install the back I/O shield onto the chassis first, and then align the mainboard with the I/O shield and the studs. Secure the mainboard by the correct screws.

Warning

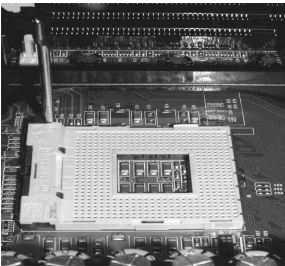


Failing to remove the un-aligned metal studs may cause shorting the PCB circuit. Please REMOVE the metal studs or spacers if they are already fastened on the chassis base and are without mounting-holes on the motherboard to align with.

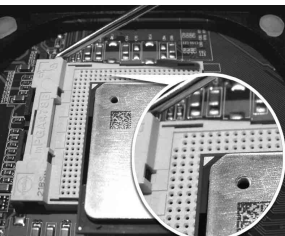
2-2 Install the CPU and Heatsink

This motherboard uses a CPU socket called Socket478 to install the 478 pin Intel[®] Pentium[®] 4 & Celeron[®] CPU. The PCU should always have a heatsink and cooling fan to prevent CPU from overheating.

- ✓ **Ensure the CPU type is supported by this mainboard.**
- ✓ **Please use an Intel approved CPU cooling fan to prevent CPU from overheating.**
- ✓ **Use proper thermal paste to provide better thermal transfer between CPU and heatsink.**
- ✓ **Ensure the CPU fan power cable is firmly plugged into the onboard CPU fan connector.**



1. Unlock the CPU socket by pulling the lever up to a 90-degree angle.



2. Position the CPU above the socket such as that the marked corner (pin 1) matches the corner near the base of the lever.

- Place the CPU into the socket. If the CPU is unable to insert properly, check its orientation and attempt to re-install.



Warning

DO NOT force the CPU into the socket. Installing the CPU with force will prompt bending of the pins and create damaged to the CPU.

- Close the socket by lowering the lever and locking the lever in place.
- Place the thermal paste evenly on the top of the CPU IHS (metal plate).

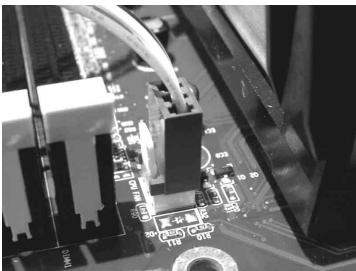


- Align and place the CPU heatsink on the top of the CPU IHS.
- Firmly secure the CPU heatsink onto the heatsink retainer.



Note

Use only Intel approved CPU coolers. Read the CPU heatsink user's manual for more installation procedures.



- Connect CPU fan power cable into the CPU fan connector on the motherboard to complete the CPU installation.

Warning



Always make sure the CPU cooling fan works properly to protect the CPU from overheating. Failing to do so will seriously damage the CPU and system.

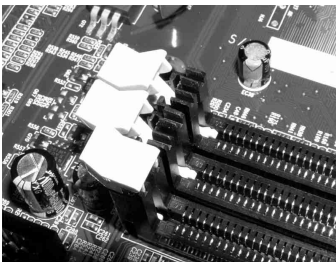
2-3 Install System Memory

This motherboard provides three 184-pin DDR DIMM slots for the memory expansion (DIMM2&DIMM3 are sharing). This mainboard supports a minimum of 64MB up to 2GB of unbuffered DDR333/266 SDRAM (**ECC is not supported by Intel 845 series chipsets**). In order to create memory array, certain rules must be followed. The following set of rules allows for optimum configurations.

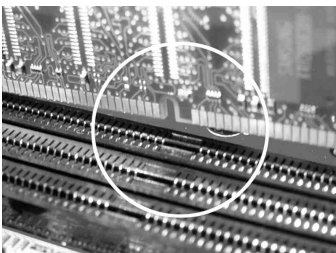
Warning



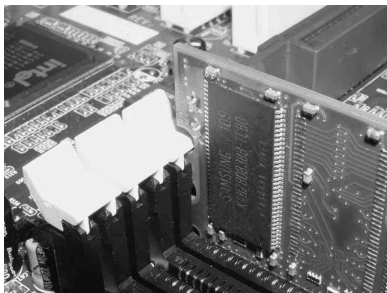
Static electricity can damage the electronic components of the computer or optional boards. Be sure that you're properly grounded and unplug your system before starting any hardware installation.



1. Locate the DDR DIMM slot.
2. Push the white retaining clips on each side of the DDR DIMM slot outward.



3. Matched the notches on the gold-finger of the memory module to the ridges in the DIMM socket.



4. Insert the memory module vertically into place. When properly inserted, the white retaining clips will move inward to lock in the module.



Note

DIMM2 and DIMM3 can only occupy by single side DDR module simultaneity (DIMM2: single side, DIMM3: single side)

Slot	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
DIMM 1	Single	Double	Single	Double	Single	Double
DIMM 2	Single	Single	Double	Double		
DIMM 3	Single	Single			Double	Double

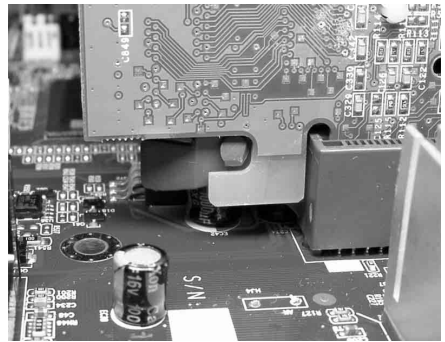
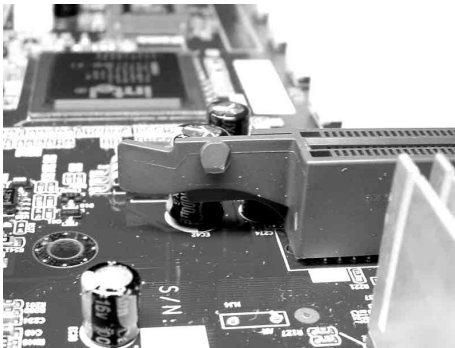
Total Memory Sizes With Unbuffered DDR DIMM

Devices used on DIMM	1 DIMM x 64	2DIMMs x 64
64 Mbit (2M x 8 x 4 banks)	128 MBytes	256 MBytes
64 Mbit (1M x 16 x 4 banks)	64 MBytes	128 MBytes
128 Mbit (4M x 8 x 4 banks)	256 MBytes	512 MBytes
128 Mbit (2M x 16 x 4 banks)	128 MBytes	256 MBytes
256 Mbit (8M x 8 x 4 banks)	512 MBytes	1 GBytes
256 Mbit (4M x 16 x 4 banks)	256 MBytes	512 MBytes
512 Mbit (16M x 8 x 4 banks)	1 GBytes	2 GBytes
512 Mbit (8M x 16 x 4 banks)	512 MBytes	1 GBytes

2-4 Install Expansion Cards

The mainboard supports one AGP 4X slot (support only 1.5V AGP card) and six PCI 2.2 32-bit Master PCI bus slots (support 3.3V/5V PCI bus interface).

1. Unpack the expansion cards that you are going to install. Read the expansion card's installation guide carefully before install the cards into the mainboard.
2. Disconnect the power or unplug the power cord from the power supply.
3. Remove the computer's chassis cover and the slot bracket form the chassis.



4. Firmly insert the AGP card downward until the AGP card is locked by the latch on the AGP slot. To remove the AGP card from the AGP slot, please push the latch sideways to release the AGP card. Ensure the expansion card's metal bracket is correctly seated in the intended place.
5. Fasten the expansion card with the correct screw.
6. Connect the necessary cables if required.

7. Close the computer chassis's cover and reconnect the power cord to the power supply.
8. Power up the computer, if necessary, setup BIOS utility of expansion card form BIOS.
9. Install related driver form the operating system.

2-5 Jumpers, Connectors, Headers and Indicators

Inside the case of any computer there are several cables and jumpers that have to be connected. These cables and jumpers are usually connected one-by-one to connectors located on the board. During the installation you have to pay attention to the orientation of the connectors, headers and the cables. Always locate the position of the first pin on the connector.

This section will show you all of the connectors, headers and indicators, and how to connect them. Please read the entire section for necessary information before attempting to finish all the hardware installation inside the computer. A complete layout diagram is shown in this manual for all the position of connectors and headers on the board that you may refer to.

Warning



Before proceeding with the installation. Turn the power supply off (fully turn the +5V standby power off), or disconnect the power cord before you install or unplug any connectors or add-on cards. Failing to do so may cause the mainboard components or add-on cards to malfunction or damaged.

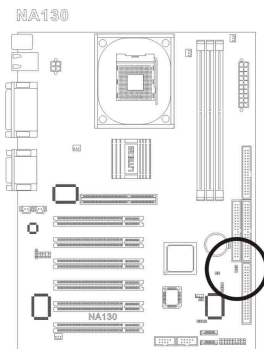
1. Jumpers

(1) J1 CLR_CMOS (Erase CMOS data)



This jumper can be used to clear the CMOS data to its default setting by shorting the pin 2 and pin 3. The default setting is pin 1 and pin 2 shorted – “*Normal*”. Remember to return the jumper back to pin 1 and pin 2 position after cleared the CMOS or the system will not boot up.

Pin 1-2 : Normal

Pin 2-3 : Clear CMOS



J1 CLR_CMOS

- 1  1-2 Short : Normal
- 1  2-3 Short : Clear CMOS



Note

In the cases of system not booting after changing BIOS setting or overclocking failed, try to clear the **CMOS** before re-boot the system.

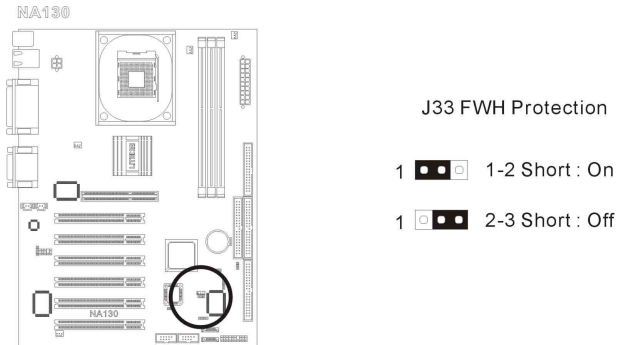


Warning

Before clearing the COMS. Turn the power supply off (fully turn the +5V standby power off), or disconnect the power cord before you install or unplug any connectors or add-on cards. Failing to do so may cause the mainboard components or add-on cards to malfunction or damaged.

(2) J33 : FWH hardware overwrite protection jumpers

Shorting the pin 1 and pin 2 to lock the FWH to prevent the BIOS from overwriting and virus attack. The default setting of this jumper is -“*Off*”.



Pin 1 and Pin 2 shorted – FWH overwrite protection On.

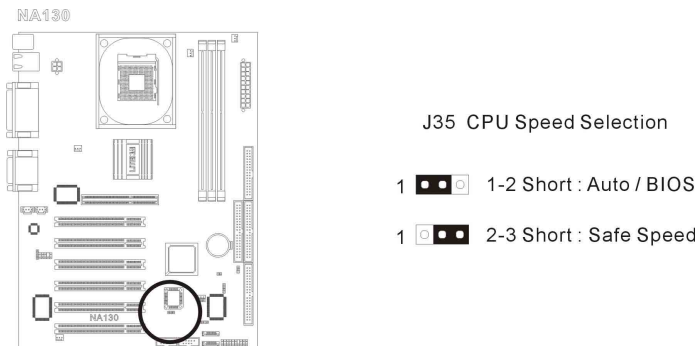
Pin 2 and Pin 3 shorted – FWH overwrite protection Off.

(3) J35 : CPU speed selection jumper

The default setting of this board is “*Auto*” CPU detection.

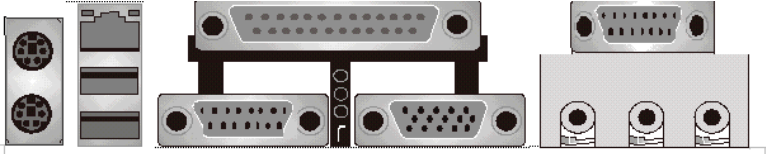
Pin 1 and Pin 2 shorted – Auto / BIOS

Pin 2 and Pin 3 shorted – Safe speed



2. Connectors

Back Panel Connectors



(1) PS/2 Keyboard and Mouse

This connector supports industry standard 6 pin PS/2 keyboard and 6 pin PS/2 mouse.



PS/2 Keyboard Connector (Green)

PS/2 Mouse Connector (Purple)

(2) USB2.0 and LAN connector

Before connecting device(s) into the USB connectors, please make sure if devices meet the standard USB interface. Make sure your computer Operating System (OS) supports the USB controller. If not, please acquire the correct driver or patch update. For more information please contact your OS or device(s) vendors.



USB 2.0

(3) On Board LAN function (optional)

Before connecting RJ45 networking wire into the LAN connectors, please make sure you install the correct driver for the onboard 10/100 baseT LAN controller. If not, please acquire the correct driver or update from the LITE-ON web site or the device vendors.



RJ 45

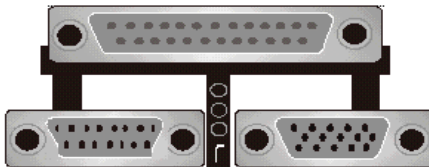
(4) Parallel Port and Serial Ports (COM1/COM2)

This connector set supports one industry standard 25 pin parallel port and two industry standard 9 pin serial ports.

Parallel port (Magenta)

Serial ports 1 (Green)

Serial ports 2 (Green)



(5) Game/MIDI Port

This 15 pin connector supports joystick and MIDI devices.

Game/MIDI Port (Yellow)



(6) Audio Connectors

This mainboard offers 6 channel audio out put. For the best audio quality, a 5.1 speaker system is recommended. However, various types of PC speaker systems are also supported through different wiring.

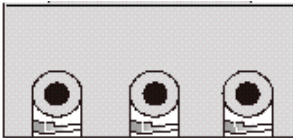
- ✓ For 5.1 speaker system please connect the front speaker to the Line Out jack (green), rear speaker to the Line In jack (blue), Center/Bass to the MIC In (magenta).



Note

When a 5.1 system is used, the MIC In function is temporary disabled.

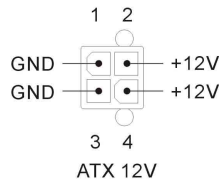
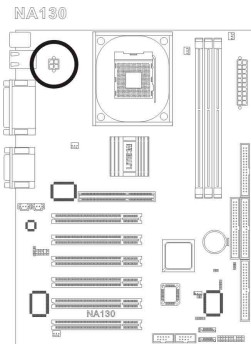
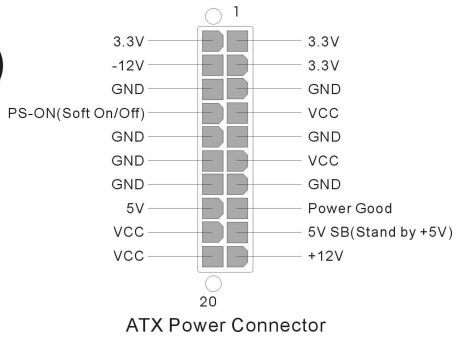
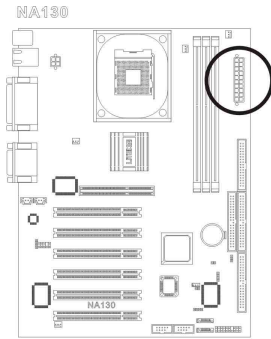
- ✓ For 4 or 4.1 speaker system please connect the front speaker to the Line Out jack (green), rear speaker to the Line In jack (blue).
- ✓ For 2 or 2.1 speaker system please connect the speaker to the Line Out jack (green).



Line Out Line In MIC In

(7) ATX Power Connectors and +12V Power Connector

The Pentium® 4 requires a power supply different from the regular one. It's a newly designed ATX12V power with 20A +5VDC capacity, and 720Ma +5VSB at least for supporting Wake-On-LAN function.



Note

Power Supply must meet **ATX 2.03** specification with ATA12V and AUX Power connectors.

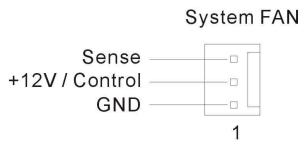
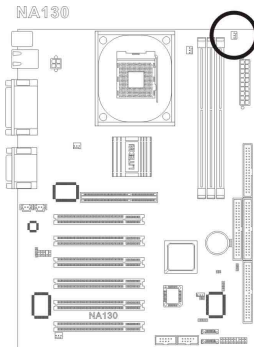
(8) FAN Connectors

FAN1 : System Fan

Pin 1 : GND

Pin 2 : Fan Power

Pin 3 : Fan Speed Sensor

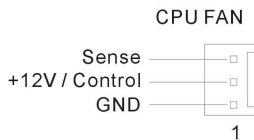
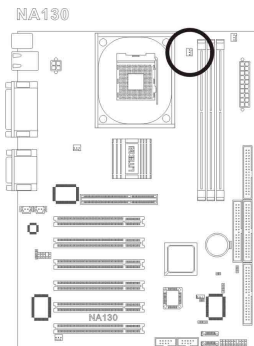


FAN2 : CPU Fan

Pin 1 : GND

Pin 2 : Fan Power

Pin 3 : Fan Speed Sensor

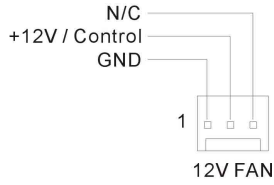
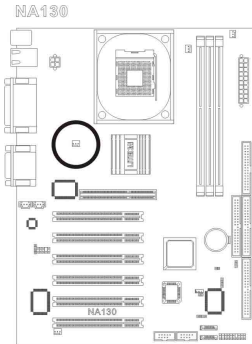


FAN3 : Northbridge Fan (No monitoring function)

Pin 1 : GND

Pin 2 : Fan Power

Pin 3 : N/C

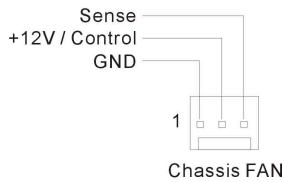
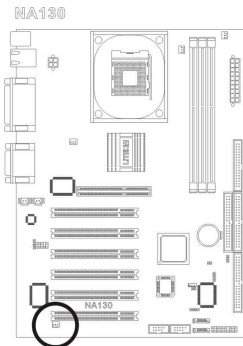


FAN4 : Chassis Fan

Pin 1 : GND

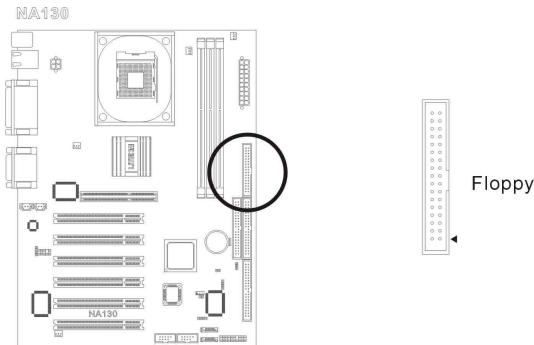
Pin 2 : Fan Power

Pin 3 : Fan Speed Sensor



(9) Floppy Connector

There are 34 wires and two connectors on each floppy cable providing two floppy disk drives connection. Connect the single end at the longer length of ribbon cable to this FDC1, and the two connectors on the other end to the floppy disk drives. Generally you need only one floppy disk drive in yours system.

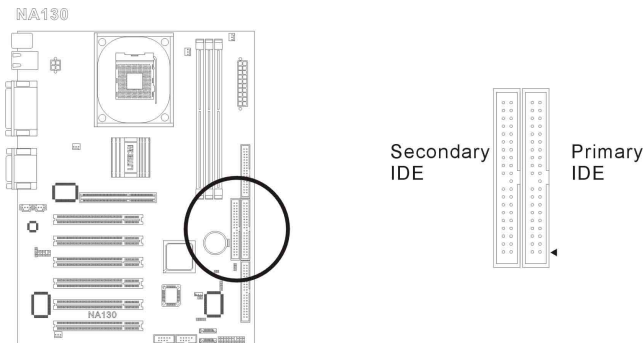


Note

The red line on the ribbon cable should be aligned with pin 1 on this connector.

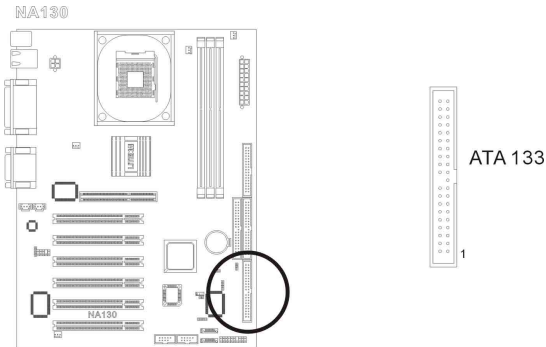
(10) Primary IDE1/ Secondary IDE2 Connectors

This motherboard provides two IDE ports to connect up to four IDE drives at Ultra ATA/100 mode by Ultra ATA/66 ribbon cables. Each cable has 40-pin 80-conductor and three connectors, providing two hard drives connection with motherboard. Connect the single end (Blue Connector) at the longer length of ribbon cable to the IDE port on motherboard, and the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors on hard drives. If you want to connect two hard drives together with one IDE channel, please configure the drives to Master & Slave accordingly or simply set the HDD's jumper to Cable Select. The first drive connected to IDE1 is usually referred to as "Primary Master", and the second drive as "Primary Slave". The first drive connected to IDE2 is referred to as "Secondary Master" and the second drives as "Secondary Slave". Please refer to the drives' documentation for jumper settings. Always connect the boot disk to the primary IDE connector (Blue) and the optical drive to the secondary IDE connector (Black). Keep away from connecting legacy slow speed drive, like CD-ROM, together with hard drive on the same IDE channel; this will resulting a drop in system performance.



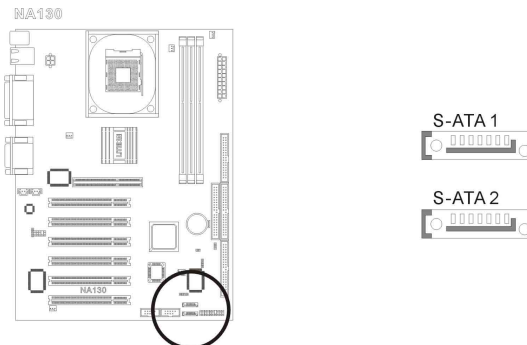
(11) IDE3 (ATA133) Connector

The IDE3 are extra devices controlled by Promise PDC20375 chipset. This additional feature allows extra 2 Ultra ATA/133 devices connection. This additional ATA133 connector (Yellow) supports ONLY ATA devices, such as HDD.



(12) Serial ATA150 Connectors

This mainboard can also supports two Serial ATA150 HDDs through the onboard Promise PDC20375 Serial ATA controller. Two connectors are provided to connect one Serial ATA HDD each.

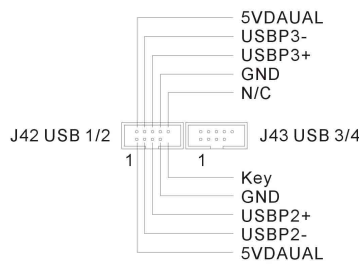
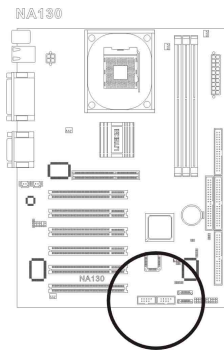


(13) USB2/3: Front USB2.0 Connector

This mainboard provides totally six USB 2.0 ports controlled by Intel ICH4. Two USB2.0 ports are located at the rear side I/O. The other four of them are supported through the onboard USB1/2 and USB3/4 headers. Check the polarity of the front USB2.0 connector or the USB2.0 bracket before installing it to the onboard USB2.0 headers. Incorrect match polarity will cause damage to the mainboard.

(14) USB3/4: Front USB2.0 Connector

This mainboard provides totally six USB 2.0 ports controlled by Intel ICH4. Two USB2.0 ports are located at the rear side I/O. The other four of them are supported through the onboard USB1/2 and USB3/4 headers. Check the polarity of the front USB2.0 connector or the USB2.0 bracket before installing it to the onboard USB2.0 headers. Incorrect match polarity will cause damage to the mainboard.



(15) CD In : Internal Audio Connector

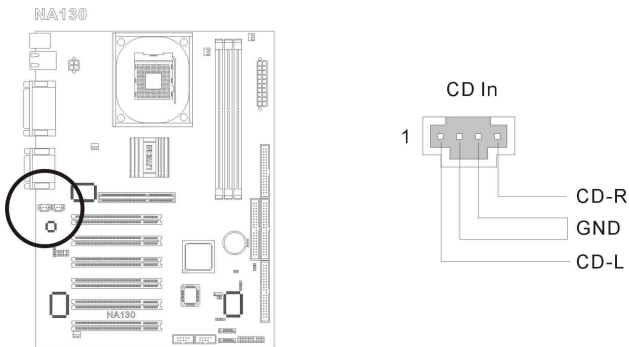
These connectors connect to the audio output of internal CD-ROM drive or add-on card.

Pin 1: CD-In L channel

Pin 2: GND

Pin 3: GND

Pin 4: CD-In R channel



(16) AUX1 : Internal Audio Connector

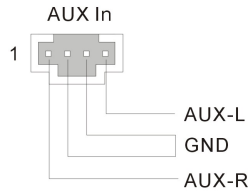
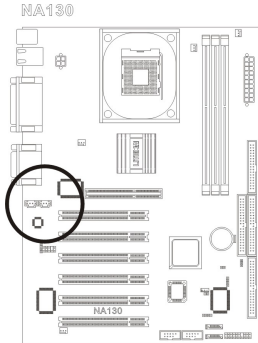
These connectors connect to the audio output of internal CD-ROM drive or add-on card.

Pin 1: AUX-In R channel

Pin 2: GND

Pin 3: GND

Pin 4: AUX-In L channel



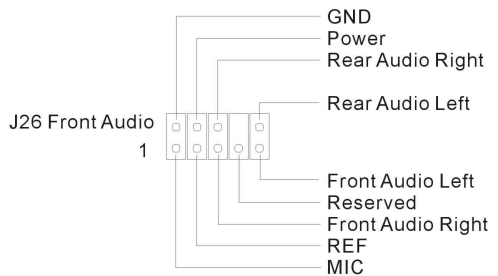
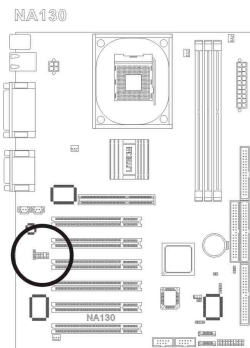
3. Headers and Indicators

(1) J26 : Front panel audio connection header

This header provides the connection to audio connector at front panel.

The default audio out put setting is set at rear. If you want to use the front panel audio connector, connect the front audio cable to this header via the extension cable to front panel.

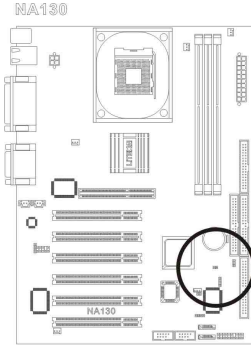
To use the audio connector at rear panel, simply disconnect the extension cable, and it will back to it's default setting.



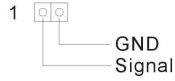
(2) J28 Chassis intrusion header

Pin 2 : GND

Pin 1 : Signal



J28 Chassis Intrusion

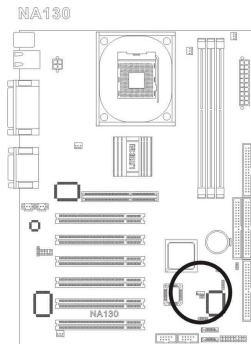


(3) J32 Wake On LAN header

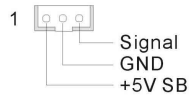
Pin 1 : SB5V

Pin 2 : GND

Pin 3 : Signal



J32 Wake On LAN



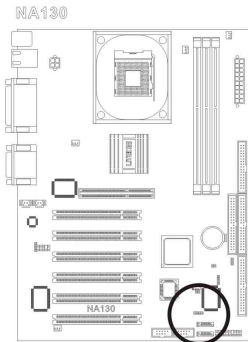
(4) J36 Chassis speaker out header (Mono)

Pin 1 : Speaker power

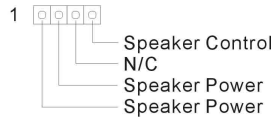
Pin 2 : Speaker power

Pin 3 : NC

Pin 4 : Speaker control



J36 Chassis Speaker



(5) J46 SPDIF header

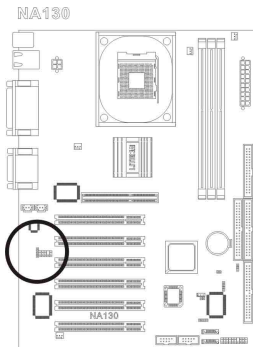
The SPDIF output is used to provide AC3 (digital audio signal) to the external Dolby Digital Decoder. This feature only works with an optional SPDIF output bracket.

Pin 1 : SPDIF Out

Pin 2 : +5V

Pin 3 : NC

Pin 4 : GND



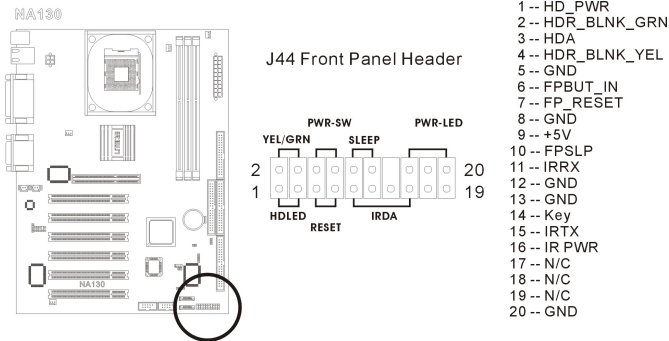
J46 SPDIF Out



(6) J44 Front Panel header

The header is used for connecting switches and LED indicators on the chassis front panel.

Watch the power LED pin position and orientation. The mark “+” align to the pin in the figure below stands for positive polarity for the LED connection. Please connect the power switch, rest switch, HDD LED connectors of the chassis to the Front Panel Header according to the pin assignment shown here. Please pay attention to connect these headers.



Warning

A wrong orientation will only cause the LED not lighting, but a wrong connection of the switches could cause system malfunction or damaged.

Chapter 3. BIOS Setup

The BIOS is a boot program located in a Flash Memory chip on the mainboard. It is used to communicate with the hardware before the operating system (OS) takes the control of the system. Its main function is to manage the setup of the motherboard and interface card parameters, including simple parameters such as time, date, hard disk drive, as well as more complex parameters such as hardware synchronization, device operating mode, and the operating speed of the CPU.

Warning



Don't change the parameters inside the BIOS unless you fully understand their meanings and consequences: The parameters inside the BIOS are used to setup the hardware synchronization or the device-operating mode. If the parameters are not correct, they will produce errors, the computer will crash, and sometimes you will not even be able to boot the computer after it has crashed. We recommend that you do not change the parameters inside the BIOS unless you are very familiar with them. If you are not able to boot your computer anymore, please refer to Chapter 2 Hardware Installation, section 2-5 Jumpers -**“Erase CMOS data”**.

Press to enter BIOS setup

Immediately press the key after power up the system. This will let you access into the BIOS Setup menu. If the post disappears before you response and the OS (operation system) starts, please restart the system by using the “Start” or “Reset” button on the chassis.

How to operate the BIOS menu

In the BIOS Setup menu, you can see several options. You will need the following function keys to operate the BIOS.

- ✓ Press <Esc> to exit the BIOS Setup menu.
- ✓ Press ↑ ↓ ← → (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- ✓ Press <F10> to save these parameters into the CMOS and to exit the BIOS Setup menu.
- ✓ Press <Page Up>/<Page> Down or <+/-> keys when you want to modify the BIOS parameters for the active option.

3-1 The Main Menu

After entering the BIOS, the main BIOS menu will appear on the screen. This main menu allows you to select twelve setup functions and two save/exit choices. Use the ↑ ↓ ← → keys to select the items and press <Enter> to confirm and enter the sub-menu.

```
AMI BIOS HIFLEX SETUP UTILITY - VERSION 1.54
(C)2001 Aerican Megatrends, Inc. All Rights Reserved

NA130 BIOS Rev: 0.00.09
Standard CMOS Features
Advanced CMOS Features
Advanced Chipset Features
Power Management Setup
PCI / Plug and Play Setup
Peripheral Setup
Hardware Monitor Setup
Auto-Detect Hard Disks
Change User Password
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC: Exit  ↑↓:Sel  F2/F3: Color  F10:Save & Exit
```



Note

The BIOS is being constantly updated to increase stability and performance, it is therefore the BIOS screens in this manual may not completely match your BIOS version.

1. Standard CMOS Setup

This setup page includes all the basic configuration parameters of the BIOS. Including the date, VGA, FDD and the HDDs settings. Use the **←↑↓ →** keys to select the items and press **<Enter>** to confirm and enter the sub-menu.

AMIBIOS SETUP - STANDARD CMOS SETUP									
(C)2001 AMERICAN MEGATRENDS, INC. All Rights Reserved									
Date (mm/dd/yyyy): Wed Nov 28, 2001					Base Memory: 639KB				
Time (hh/mm/ss) : 03:26: 0					Extd Memory: 127MB				
Floppy Drive A: 1.44 MB 3½									
Floppy Drive B: Not Installed									
LBA BLK PIO 32Bit									
Type	Size	Cyln	Head	Wpcom	Sec	Mode	Mode	Mode	Mode
Pri Master: Not Installed									
Pri Slave : Not Installed									
Sec Master: User 40027Mb 19161 16 0.. 255 On On 4 On									
Sec Slave : CD-ROM 3 On									
Boot Sector Virus Protection Disabled									
Month: Jan-Dec					ESC: Exit ↑↓: Sel				
Day: 01-31					PgUp/PgDn: Modify				
Year: 1980-2099					F1: Help F2/F3:Color				

Date (mm: dd: yy):

You can set the date in this item: month (mm), date (dd) and year (yy).

Time (hh: mm: ss):

You can set the time in this item: hour (hh), minute (mm) and second (ss).

Drive A & Drive B:

If you have installed the floppy disk drive here, then you can select the type of floppy drive it can support. Available option: (None) (360K, 5.25 inch) (1.2M, 5.25 inch) (720K, 3.5 inch) (1.44M, 3.5 inch) (2.88M, 3.5 inch)

IDE Primary Master / Slave and IDE Secondary Master / Slave:

This section identifies the types of the FDD and HDDs that are installed in the system. You may manually define the parameters of the FDD and the HDDs used on your system by entering the information correctly from the keyboard. Please refer to the HDDs specification before entering the parameters. It is recommended to use “Auto Detect Hard Disk” form the BIOS main menu and let the BIOS detect your HDDs to speed up the booting time.

LBA Mode: Available option: On and Off.

Blk Mode: Available option: On / Off.

PIO Mode: Available option: Auto, 0, 1, 2, 3, 4, 5.

32Bit Mode: Available option: On / Off.

Virus Protection: Enabled / Disabled (the factory default is *Disabled*).

- ✓ Size: The HDD size based on Mega Byte.
- ✓ Cylinder: The total number of cylinders of the hard disk.
- ✓ Head: The total number of the read / write heads of the hard disk.
- ✓ Wpcom: Write precom. Ranging from 0 to the maximum of 65536.
- ✓ Sectors: The total number of the sectors defined on the hard disk.

Note



A new IDE HDD must be first formatted, otherwise it can not read/write. The basic step in using a HDD is to make a HDD low-level format, then run FDISK, and then FORMAT the drive. Most current HDDs have already been subjected to low-level format at the factory, so you can probably skip this operation. Remember though, the primary IDE HDD must have its partition set to active within the FDISK procedure. If you are using an old HDD that is already formatted, auto detection can detect the correct parameters. You may need to do a low-level format or set the parameters manually, and then check if the HDD is working.

2. Advanced CMOS Setup

This setup page includes user definable BIOS configuration parameters.

AMIBIOS SETUP - ADVANCED CMOS SETUP (C)2001 American Megatrends, INC. All Rights Reserved		
Quick Boot	Enabled	Available Options: Disabled Enabled
1st Boot Device	CD/DVD	
2nd Boot Device	Floppy	Available Options: Disabled Enabled
3rd Boot Device	IDE-0	
Try Other Boot Devices	Yes	
Initial Display Mode	BIOS	
S.M.A.R.T. for Hard Disks	Disabled	
BootUp Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Device Seek	Disabled	
PS/2 Mouse Support	Enabled	
System Keyboard	Present	
Password Check	Setup	
C000 , 32K Shadow	Cached	
C800 , 16K Shadwo	Disabled	
CC00 , 16K Shadow	Disabled	
D000 , 16K Shadow	Disabled	
D400 , 16K Shadow	Disabled	
D800 , 16K Shadow	Disabled	
DC00 , 16K Shadow	Disabled	
		ESC: Exit ↑↓: Sel
		PgUp/PgDn: Modify
		F1: Help F2/F3:Color

Quick Boot

This feature enables a faster booting time. The default setting is

Enabled.

Available option: Enabled / Disabled.

First Boot Device:

When the computer boots up, the BIOS attempts to load the operating system from the devices in sequence selected in these items: floppy disk drive A, LS/ZIP devices, hard drive C, SCSI hard disk drive or CD-ROM. There are various options for the boot sequence that you can choose (The default setting is *CD/DVD*).

Second Boot Device:

The description is the same as the *First Boot Device*. The default setting is *Floppy*.

Third Boot Device:

The description is same as the *First Boot Device*. The default setting is *IDE0*.

Other Boot Device:

This setting allows the BIOS to boot from other devices that are installed in the system, if the system failed to boot from 1st / 2nd / 3rd boot devices. The default setting is *Yes*.

Available option: Yes / No.

S.M.A.R.T: for Hard Disks:

This feature allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) function for the hard disk.

S.M.A.R.T. is a utility that constantly monitoring the HDD and predict the hard disk failure. This helps you to backup the valuable data in the hard disk to a safe area before the hard disk failed. The default setting is *Disabled*. Available option: Enabled / Disabled.

Boot Up NumLock:

On: At boot up, the Numeric Keypad is in numeric mode. (Default Settings)

Off: At boot up, the Numeric Keypad is in cursor control mode.

Floppy Drive Swap:

When this feature is enabled, you don't need to open the computer case to swap the position of floppy disk drive connectors. Drive A can be set as drive B and drive B can be set as drive A. The default setting is *Disabled*. Available option: Enabled / Disabled.

Floppy Drive Seek:

When the computer boots up, the BIOS detects if the system has an FDD or not. When this item is enabled, if the BIOS detects no floppy drive, it will display a floppy disk drive error message. If this item is disabled, the BIOS will skip this test.

The default setting is *Disabled*. Available option: Enabled / Disabled.

PS/2 Mouse Support:

This feature allows you to chose enable / disable PS/2 mouse support.

The default setting is *Enabled*.



Warning

If you are not familiar with each of the options listed in this BIOS section, it is recommend to use the default setting.

3. Advanced Chipset Setup

This setup page includes a chipset configuration parameters. This menu is used to modify the parameters of the chipset on the motherboard. Since these parameters are closely related to hardware, if the altered parameters are not correct, the mainboard will become unstable or not booting up.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP	
(C)2001 American Megatrends, INC. All Rights Reserved	
***** DRAM Timing *****	Available Options:
SDRAM Frequency	Auto
Configure SDRAM Timing by SPD	200Mhz
SDRAM CAS# Latency	266Mhz
SDRAM RAS# Precharge	333Mhz
SDRAM RAS# to CAS# Delay	▶ Auto
SDRAM Precharge Delay	
SDRAM Burst Length	
APIC Interrupt Mode	Enabled
MPS Revision	1.1
AGP Aperture Size	64MB
USB Controller	6 USB Ports
USB 1.1 Device Legacy Support	Disabled
	ESC: Exit ↑↓: Sel
	PgUp/PgDn: Modify
	F1: Help F2/F3: Color

SDRAM Frequency:

This section allows you to define the operating frequency of the SDRAM used on the system. There are four options to choice from:

- ✓ 200Mhz, set the DDR SDRAM to operate at 200Mhz.
- ✓ 266Mhz, set the DDR SDRAM to operate at 266Mhz.
- ✓ 333Mhz, set the DDR SDRAM to operate at 333Mhz.
- ✓ Auto, set the DDR SDRAM operating speed by SPD.

Configure SDRAM by SPD:

This feature allows BIOS to detect the DDR SDRAM information from the SDRAM's SPD.

SDRAM CAS Latency Time:

This item controls the latency between the DRAM read command and the time that the data becomes actually available. The options are: (1.5 Clocks) (2 Clocks) (2.5 Clocks)

SDRAM RAS# Precharge:

This item controls the idle clocks after issuing a pre-charge command to the DRAM. When an insufficient pre-charge time is given before the SDRAM to refresh, the refresh process may failed. Thus the data stored in SDRAM will be lost.

Available options: 2 Clocks / 3 Clocks.

SDRAM RAS to CAS# Delay:

This item controls the latency between the DRAM active command and read/write command. Shorter the cycle better the performance, while longer cycle offers more stable system performance. Available options: 2 Clocks / 3 Clocks

SDRAM Precharge Delay:

This section specifies the idle cycles before pre-charging an idle bank.

Available options: 7 Clocks / 6 Clocks / 5 Clocks.

SDRAM Burst Length:

This section specifies the size of the SDRAM burst length. SDRAM uses a technique described as “Bursting” to predict the address of the next memory location after the first address is accessed. Set the longer burst length to speed up the DRAM performance.

Available options: 4 / 8.

ACPI Interrupt Mode:

This feature allows use to enable or disable the power saving “Green” function of the system. Available options: Enabled / Disabled. The default setting is *Enabled*.

MPS Revision:

This section specifies the version of the MPS (Multi-Processor Specification) to be used for the operation system.

AGP Aperture Size:

The options are: 4, 8, 16, 32, 64, 128, and 256MB. The default setting is *64MB*. This option specifies the amount of system memory that can be used by the AGP device. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for more AGP information.

USB Controller:

This section allows you to have the control over the status of the onboard USB ports. This mainboard provides two Universal Serial Bus (USB) ports on the back I/O, four additional ports via the USB bracket. If you don't want to use USB devices, set it to *Disabled*, then the item *USB Keyboard Support & USB Mouse Support* will also be disabled. Available option: Disabled / 2 USB Ports / 4 USB Ports / 6 USB Ports. The default setting is **6 USB Ports**.

USB 1.1 Device Legacy Support:

This mainboard supports both USB2.0 & USB1.1 specifications. Set this section to "All devices" if a USB1.1 device is going to be used on an operating system do not support or have USB driver installed, such as DOS. A mix use of USB2.0 and USB1.1 will drag the performance. Available options: Disabled / No Mice / All Devices. The default setting is **Disabled**.



Warning

If you are not familiar with each of the options listed in this BIOS section, it is recommend to use the default setting.

4. Power Management Setup

This setup page indicates the ACPI power management status, and can be setup to reduce power consumption. This mainboard supports S1, S3 (STR), S4 and S5 ACPI power saving mode. Before setting up the ACPI (Advanced Configuration and Power Interface) functions to the system. There are few things that you should beware of:

- ✓ **The operating system must support ACPI.**
- ✓ **All devices and add-on cards in your system must fully support ACPI, both hardware and software (drivers).**

Please contact your device or add-on card manufacturer for more information. Please go to the address below for more detailed ACPI information: <http://www.acpi.info/>

AMIBIOS SETUP - POWER MANAGEMENT SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
ACPI Standby State	S1/POS	Available Options:
USB Device Wakeup From S3	Disabled	▶ S1/POS
Video Power Down Mode	Suspend	S3/STR
Hard Disk Power Down Mode	Suspend	Auto
Suspend Time Out (Minute)	Disabled	
Throttle Slow Clock Ratio	50.00%	
Power Button Function	ON/Off	
Restore on AC/Power Loss	Last State	
Resume On LAN	Disabled	
Resume On PME#	Enabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	
		ESC: Exit ↑↓: Sel
		PgUp/PgDn: Modify
		F1: Help F2/F3: Color

ACPI Standby State:

Available options: (S1 / POS) (S3 / STR) (Auto).

The default setting is *S1*.

USB Device Wakeup From S3:

This section specifies whether the system will be wake up from power saving mode by a specified USB peripheral. The S3 STR function needs to be turned on before this feature is enabled.

Available options: Enabled / Disabled.

The default setting is *Disabled*.

Video Power Down Mode:

Available options: Enabled / Stand By / Suspend.

The default setting is *Suspend*.

Hard Disk Power Down Mode:

Available options: Enabled / Stand By / Suspend.

The default setting is *Suspend*.

Suspend Time Out:

Available options: Disabled / 1, 2, 4, 8, 10, 20, 30, 40, 50, 60.

The default setting is *Disabled*.

Throttle Slow Clock Ratio:

Available options: 87.5% / 75.0% / 62.5% / 50% / 37.5% / 25% / 12.5%.

The default setting is *50%*.

Power Button Function:

Available options: On / Off / Suspend.

The default setting is *On /Off*.

Restore on AC/Power Loss:

Available options: Power Off / Power On / Last State.

The default setting is *Last State*.

Resume On LAN:

This section specifies weather the system will be wake up from power saving mode by a specified peripheral.

Available options: Enabled / Disabled.

The default setting is *Disabled*.

Resume On PME#:

This section specifies weather the system will be wake up from power saving mode by a specified peripheral.

Available options: Enabled / Disabled.

The default setting is *Enabled*.

Resume On RTC Alarm:

Use this feature to set up the regular booting schedule from the S5 (soft off) state.

Available options: Enabled / Disabled.

The default setting is *Disabled*.

The scheduling table will enabled after “Resume On RTC Alarm” is set to Enabled.

Key in the figure into each section of Alarm Date / Alarm Hour / Alarm Minute / Alarm Second, accordingly to complete the setup.

5. PCI / Plug and Play Setup

This setup page describes the configuration of the PCI bus system. This section covers some technical terms and it is not recommended to alter by amateur users.

AMI BIOS SETUP - PCI/PLUG AND PLAY SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
Clear NVRAM	No	Available Options: No Yes ESC: Exit ↑↓: Sel PgUp/PgDn: Modify F1: Help F2/F3: Color
PCI Latency Timer (PCI Clocks)	32	
Init. Graphics Adapter Priority	AGP/Int-VGA	
PCI IDE BusMaster	Diabled	

Clear NVRAM:

The NVRAM (Non Volatile Random Access Memory) is where the BIOS stores the information for both PnP and non-PnP devices. When the item is set to “Yes”, the system will reset the NVRAM right away after the system is booted up, and then set the setting back to “No” automatically.

Available options: Yes / No.

The default setting is *No*.

PCI Latency Timer (PCI Clocks):

This section specifies how long each PCI device can occupies the bus before other PCI devices take over. Set the figure to higher value for better PCI performance.

Available options: 32 / 64 /96 / 128 / 160 / 192 / 224 / 248.

The default setting is 32.

Init Graphics Adapter Priority:

When you install an additional display card, you can choose either a PCI display card or an AGP display card to activate the display boot-up screen.

Available options: (AGP / PCI) (PCI / AGP)

The default setting is *AGP / PCI*.

PCI IDE Bus Master:

This feature allows an external PCI IDE controller slotted on PCI local bus to have bus mastering capability.

Available options: Enable / Disable.

The default setting is *Disabled*.

6. Integrated Peripheral Setup

This setup page describes the configuration of the onboard I/O devices, I/O port address and other hardware setting.

AMI BIOS SETUP - PERIPHERAL SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
OnBoard IDE	Both	Available Options: Disabled
OnBoard LAN	Enabled	
OnBoard Lan Chip Boot Rom	Disabled	Primary
OnBoard AC'97	Enabled	▶ Both
OnBoard FDC	Auto	
OnBoard Serial PortA	Auto	
OnBoard Serial PortB	Auto	
Serial PortB Mode	Normal	
IR Duplex Mode	Half Duplex	
IR Pin Select	IRRX/IRTX	
OnBoard Parallel Port	Auto	
Parallel Port Mode	ECP	
EPP Version	N/A	
Parallel Port IRQ	Auto	
Parallel Port DMA Channel	Auto	
OnBoard Midi Port	330	
Midi IRQ Select	5	
OnBoard Game Port	200	
Keyboard PowerOn Function	Disabled	ESC: Exit ↑↓: Sel
Specific Key for PowerOn	N/A	PgUp/PgDn: Modify
Mouse Power On Function	Disabled	F1: Help F2/F3: Color

Onboard IDE:

When this function enabled, it allows you to use the onboard Primary and Secondary IDE controller. If an additional IDE controller card is used to connect to the HDDs, set it to “Disabled”.

Available options: (Disabled) (Primary) (Secondary) (Both).

The default setting is **Both**.

Onboard LAN: (optional)

When this function enabled, it allows you to use the onboard 10/100baseT LAN controller. Available options: Enabled / Disabled.

The default setting is *Enabled*.

Onboard LAN Chip Boot Rom:

When this function enabled, it allows you to use remote boot function via the onboard 10/100baseT LAN controller.

Available options: Enabled / Disabled.

The default setting is *Disabled*.

Onboard AC'97 Audio:

When this function enabled, it allows you to use the onboard AC97 audio codec to deliver the 6 channel audio out put.

Available options: Enabled / Disabled.

The default setting is *Enabled*.

Onboard FDC:

This section is used to enabling or disabling the onboard floppy controller.

Available options: Auto / Enabled / Disabled.

The default setting is *Auto*.

Onboard Serial Port A / B:

This section specifies the base I/O port address of the onboard Serial Port A / B. Select “Auto” to automatically determine the appropriate I/O address.

Available options: (Auto) (3F8 / COM1) (2F8 / COM2) (3E8 / COM3) (2E8 / COM4) (Disabled).

The default setting is *Auto*.

Serial Port B Mode:

This section specifies the operation mode for Serial Port B.

Available options: (Normal) (1.6uS) (3/16 Baud) (ASKIR).

The default setting is *Normal*.

IR Pin Select:

Set to IRRX/IRTX when an internal IR module is used to connect to the IR header. Select SINB/SOUTB when an IR adapter is connected to COM B.

Available options: (IRRX / IRTX) (SINB / SOUTB)

The default setting is *IRRX/IRTX*.

Onboard Parallel Port:

This section specifies the base I/O port address of the Onboard Parallel Port. Select “Auto” to automatically determine the appropriate I/O address.

Available options: (Auto) (378) (278) (3BC) (Disabled).

The default setting is *Auto*.

Onboard MIDI / Game Port:

This section specifies the base I/O port address for the onboard MIDI /Game Port.

Keyboard PowerOn Function:

This function allows you to set the method of powering up the system.

- ✓ Disabled: Disable the function
- ✓ Password: Enter 1~5 characters to set the password for Keyboard Power On
- ✓ Keyboard 98: Select this to use standard Keyboard 98 (with Power Key) to power up the system.

The default setting is *Disabled*.

Mouse PowerOn Function:

This function allows you to use mouse to power up the system.

Available options are: Disable / Left –Button / Right-Button.

The default setting is *Disabled*.

7. Hardware Monitor Setup

This setup page describes the PC health status, including temperature (CPU, system), fan speed (CPU, system, chassis) and the voltage (CPU, AGP, system power).

AMI BIOS SETUP -HARDWARE MONITOR SETUP (C)2001 American Megatrends, Inc. All Rights Reserved	
CPU Ratio Selection	Lcooked
CPU Host Clock (CPU/PCI,Mhz)	Auto
CLK Spread Spectrum	Disabled
Chassis Intrusion	Disabled
Shutdown Temperature	Disabled
CPU Voltage Control	1.500V
Chipset Voltage Control	1.5V
Memory Voltage Control	2.5V
-== System Hardware Monitor ==-	
Current CPU Temperature	35°C/77°F
Current System Temperature	30°C/86°F
Current CPU Fan Speed	3950 RPM
Current Chassis Fan Speed	2650 RPM
Current Power Fan Speed	0 RPM
Vcore	1.500 V
+1.25V	1.121 V
+1.5V	1.532 V
+2.5V	2.417 V
+3.3V	3.264 V
+5V	5.113 V
+12V	11.437 V
+5V SB	4.945 V
Battery	2.816 V
ESC: Exit ↑↓: Sel PgUp/PgDn: Modify F1: Help F2/F3: Color	

CPU Ratio Selection:

This function allows user to adjust the CPU multiplier. The multiplier is used to determine the internal clock speed of the processor relative to the external clock speed. The number of clock ratio is depends on the CPU installed.



Note

This function only works when an unlocked multiplier CPU is used. A production Intel Pentium 4 processor is shipped with multiplier locked.

CPU Host Clock (CPU/PCI,Mhz):

This function allows user to Auto or Manually adjust the CPU host clock (FSB) from 100Mhz to 200Mhz by 1 Mhz increment. Available options are: Auto / Semi-Auto.

The default setting is *Auto*.

Depending on the CPU used, a two stage FSB selection will be automatically set. Use + / - key to increase / decrease the FSB speed by 1 Mhz increment.

Pentium 4 with 100Mhz FSB – 100~133Mhz

Pentium 4 with 133Mhz FSB – 133~200Mhz

A smart safety feature is employed in this mainboard to set the system back to the CPU's default setting after the OverClocking failed.



Note

CPU Frequency Set Up Procedure

CPU core speed = Host Clock x Core/Bus ratio

For example: 2.53GHz CPU is derived from:

CPU Clock 133MHz X Core/Bus ratio 19

= 133MHz X 19 = 2.53GHz

Warning



This motherboard is designed with **overclocking** features. However, before attempting to overclock the CPU, please make sure your CPU and other components such as VGA card, PCI cards and HDDs are able to tolerate such out of spec setting. **LITE-ON Technology assumes no liability for the damages or risks caused by overclocking operation or operations beyond product specifications.**

CLK Spread Spectrum:

By enabling the Spread Spectrum function, it greatly reduces the EMI (Electromagnetic Interference) generated by the CLK (clock generator). Leave this setting at “Disabled” for optimal system performance, if you have no EMI concern.



Warning

When you are attempting to overclock your system, disabling the Spread Spectrum to increases the stability.

Chassis Intrusion:

This feature allows you to enabling or disabling the function of issuing an alarm, when the chassis had been opened. To clear the warning message, set this selection to “Reset”. It will return to “Enabled” later. Available options: Enabled / Reset / Disabled.

The default setting is ***Disabled***.

Shutdown Temperature:

This feature allows you to set the CPU shutdown temperature manually to offer extra thermal protection for your CPU.

Available options: (Disabled) (60°C / 140°F) (70°C / 150°F) (80°C / 160°F) (90°C / 170°F).

The default setting is ***Disabled***.

CPU Voltage Control:

This setting is used to enable or disable the ability to manually adjust the CPU Vcore for overclocking purpose.

Available options: 1.5V / 1.55V / 1.6V / 1.65V / 1.7V / 1.75V / 1.8V / 1.85V.

The default setting is ***Default to the CPU installed***.

Note



The Intel Socket 478 Pentium 4 shipped at different generations & stepping. The Vcore requirement of the P4 is vary from 1.5V ~ 1.85V depending from it's generations & stepping. This mainboard will auto detect the default value of the CPU. You may later, adjust the Vcore value manually.

Warning



Over voltage might cause permanent damage to the CPU, DRAM, AGP card & the mainboard. LITE-ON Technology assumes no liability for the damages or risks caused by overclocking operation or operations beyond product specifications.

Chipset / AGP Voltage Control:

This setting is used to enable or disable the ability to manually adjust the voltage of chipset (MCH) and AGP for overclocking purpose.

Available options: 1.5V / 1.6V / 1.7V / 1.8V.

The default setting is +/- **1.5V**.

Warning



Over voltage might cause permanent damage to the CPU, DRAM, AGP card & the mainboard. LITE-ON Technology assumes no liability for the damages or risks caused by overclocking operation or operations beyond product specifications.

Memory Voltage Control:

This setting is used to enable or disable the ability to manually adjust the voltage for system memory for overclocking purpose.

Available options: 2.5V / 2.6V / 2.7V / 2.8V

The default setting is +/- **2.5V**.

Warning



Over voltage might cause permanent damage to the CPU, DRAM, AGP card & the mainboard. LITE-ON Technology assumes no liability for the damages or risks caused by overclocking operation or operations beyond product specifications.

8. Auto Detect Hard Disk

This setup page auto detects and describes the hard disk status. Press the <Enter> key for the BIOS to auto detect all detailed parameters of the hard disk drives (HDD). If auto detection is successful, the correct values will be shown in this menu.



Note

A new IDE HDD must be first formatted, before it can be detected. Most current HDDs have already been subjected to low-level format at the factory, so you can probably skip this operation.

9. Change User Password

This setup page allows the change, set or disable the user password.

10. Change Supervisor Password

This setup page allows the change, set or disable the supervisor password.

11. Auto Configuration with Optimal Setting

This setup page allows user to load the best performance configuration set by the manufacture.

12. Auto Configuration with Fail Safe Setting

This setup page allows user to load the most stable system configuration.

13. Save Setting and Exit

Save the adjusted CMOS values to the CMOS and exit this setup menu.

14. Exits without Saving

Discard the adjusted CMOS value, and exit this setup menu.

Chapter 4. Driver & Utility Installation

The LITE-ON CD installer features an auto installation program that will automatically detect the model of the mainboard and automatically install the necessary drivers to it. All necessary drivers will be installed by just a “click” of the mouse. This feature greatly reduced the chance on installing the wrong drivers to the mainboard. A manually driver installation is also offered in this CD Installer, select this section to install the drivers manually.

The installation procedures and screen shots in this chapter are based on Windows XP operating system. Please follow the on-screen instruction for the other operating system.

Insert the Installation CD into the CD-ROM drive, the auto installation program will automatically executed. In the cases when the auto execution failed, entering the installation CD by double clicking the installation CD icon showing on my computer to start the installation.

4-1 Install Intel Chipset Driver Automatically

1. Click “Auto Setup” to begin the Auto Installation.
2. It will start to install the “Intel Chipset Software Installation Utility”.
3. A window will pop up and indicating that the driver has not been digitally signed by Microsoft. You will be asked if you want to continue the installation. Click on “*Continue Anyway*”.
4. Click “Finish”, the auto installation program will reboot the system and continue to install the next drivers.
5. After the reboot, auto installation program will continues to install the “Avance AC’97 Audio driver” on your system. Click “Next” to continue the installation.

6. Click “Finish”, the auto installation program will reboot the system and continue to install the next drivers.
7. After the reboot, auto installation program will continues to install the “RTL8139/810x Family NIC driver” on your system. Click “Next” to continue the installation.
8. Click “Finish”, to complete the installation.

4-2 Install Intel® Application Accelerator

1. Insert the driver CD to the CD-ROM drive.
2. Click “Utility Support” to enter the utility setup page.
3. Double click the “Intel I.A.A”. driver to begin the installation.
4. Click “Finish” to complete the installation and reboot the system.



Note

It is important to install the Intel® Application Accelerator first prior to installing the Intel® Application Accelerator. Some systems require the Intel® Chipset Software Installation Utility in order for the operating system to fully recognize the chipset.



Note

The Intel Chipset Software Installation Utility is not required on systems using Windows* NT* 4.0. Customers using Windows NT 4.0 should always try to obtain the latest Service Pack from Microsoft.

4-3 Install DirectX 8.1 Driver

1. Insert the driver CD to the CD-ROM drive.
2. Click “Utility Support” to enter the utility setup page.
3. Double click the “DirectX 8.1” driver to begin the installation.
4. Click “Finish” to complete the installation and reboot the system.

Note



The DirectX is the core Windows® technology that drives high-speed multimedia and games on the PC. DirectX 8.1 can be installed on the following operating systems: Windows 98 / Windows 98 Second Edition / Windows Millennium Edition (Windows Me) / Windows 2000 Professional and Windows 2000 Server. Windows XP is shipped with DirectX 8.1.

4-4 LITE-ON Diagnostic

LITE-ON Diagnostics is a Windows-based diagnostic program for IBM PC/AT-compatible computers with x86-compatible CPUs. LITE-ON Diagnostics could provide system information and test modules for examining your computer basically. The LITE-ON Diagnostics contains the following test modules.

1. System Configuration Files.

The test module could show the system configuration files: (Depend on your O/S)

- ✓ Win.INI
- ✓ System.INI
- ✓ Autoexec.BAT
- ✓ Config.SYS
- ✓ Autoexec.NT
- ✓ Config.NT

2. System Information.

This test module could provide you the following basic system information.

- ✓ O/S Version
- ✓ Process type
- ✓ Memory size
- ✓ BIOS version
- ✓ Video
- ✓ Audio
- ✓ Hard Disk Device

- ✓ Floppy Device
- ✓ Modem
- ✓ CD-ROM Device
- ✓ NIC Device
- ✓ Printer Device
- ✓ Software

3. **Processor Test.**

This test module could let you verify the following basic functions of processor.

- ✓ General Register
- ✓ Mathematical Calculation
- ✓ Math Performance
- ✓ MMX Arithmetic(for MMX CPU only)
- ✓ CPU Speed

4. **Memory Test.**

This test module could let you verify the following basic functions of memory.

- ✓ Data Pattern
- ✓ Walking Ones
- ✓ Moving Inversion
- ✓ Walking Zeros
- ✓ Random Memory Block Copy

5. Audio Test.

This test module could let you verify the following basic functions of Audio device.

- ✓ Play Wave File
- ✓ Play Midi File

6. Video Test.

This test module could let you verify the following basic functions of Video Device.

- ✓ Play AVI File
- ✓ Play MPEG File

7. Modem Test.

This test module could let you verify the following basic functions of Modem Device.

- ✓ Dial Tone
- ✓ Standard Command
- ✓ Advanced Command

8. Graphics Test.

This test module could let you verify the following basic functions of Graphics.

- ✓ DirectSound
- ✓ Direct3D
- ✓ DirectDraw
- ✓ Bitmap Stretching
- ✓ Bitmap Drawing
- ✓ Flood-Filled Drawing

- ✓ Pixel Drawing
- ✓ Line Drawing
- ✓ Filled Shape Drawing
- ✓ Bitmap Scrolling
- ✓ String Drawing

9. Hard Disk Test.

This test module could let you verify the following basic functions of Hard Disk.

- ✓ Sequential Read/Write
- ✓ Random Read/Write

10. Floppy Disk Test.

This test module could let you verify the following basic functions of Floppy.

- ✓ Sequential Read/Write
- ✓ Random Read/Write

4-5 Install LITE-ON Diagnostic

1. Insert the driver CD to the CD-ROM drive.
2. Click “Utility Support” to enter the utility setup page.
3. Double click the “LITE-ON Diagnostic” to begin the installation.
4. Click “Finish” to complete the installation and reboot the system

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Chapter 5. Serial ATA Installation

(NA130-S / NA130-SN ONLY)

About Serial ATA

Serial ATA is an evolutionary replacement of the parallel ATA storage interface in the desktop as well as the cost-sensitive server and network storage market segments. The spec allows for thinner, more flexible cables and lower pin counts. This will allow computer manufacturers to design systems with cables that are simpler to route and install, improving thermal designs and facilitating smaller form factor systems. It also enables easier, more flexible motherboard routing and the use of smaller connectors than is possible with the existing parallel ATA technology. The technology, will provide a storage interface that meets the needs of computers for the next decade.

Important Data Protection Information

You should back up all data before installing any drive controller or storage peripheral. LITE-ON Technology is not responsible for any loss of data resulting from the use, disuse or misuse of this or any other LITE-ON Technology products.

Warning



The mainboard, like other parts of your system, is subject to damage by static electricity. Be sure that you're properly grounded (LITE-ON recommends that you wear an anti-static strap or touch a grounded object) and unplug your system before starting any hardware installation.

5-1 Installing the Hard Drives

The onboard SATA150 Controller (Promise PDC20375) supports up to two Serial ATA150 hard drives and two Parallel ATA133 hard drives.

Important



If you wish to include your current bootable Serial or Parallel ATA drive using the Windows NT 4.x, Windows 2000, or Windows XP operating system onto the onboard SATA150 Controller.

You **MUST** install the SATA Windows NT4, 2000, or XP driver software first onto this drive while it is still attached to your existing hard drive controller.

Note



Do not connect any ATAPI devices such as CD-ROM, DVD-ROM or CD-RW to the additional ATA133 IDE slot. This additional ATA133 channel only support ATA hard drives.

1. Installing Parallel ATA Hard Drive

- (1) Configure the jumpers of the **Parallel** ATA hard drive that you're preparing to connect to the onboard ATA133 controller using the proper Master, Slave, or Cable-Select settings. For more information, refer to the manual that came with your hard drive.
- (2) Install all of the hard drives into the hard drive bays of your system, including their power cables.
- (3) Attach the **Parallel** ATA cable to the hard drive(s) and to the Parallel ATA connector on the mainboard. The colored edge of the cable indicates pin 1. Connect the blue headed cable to the connector (yellow colored) on the mainboard.

2. Installing Serial ATA drive

- (1) No jumper configuration is required for the **Serial ATA** hard drive. For more information, refer to the manual that came with your hard drive.
- (2) Install all of the hard drives into the hard drive bays of your system, including their power cables.
- (3) Attach **Serial ATA** data cable to each hard drive. Then attach the other ends of the cables to one of the Serial ATA150 ports on the mainboard. All of the connectors are keyed so they will only attach one way.



Note

The onboard SATA150 controller is a PCI Plug-n-Play (PnP) device. No changes are necessary in the Motherboard CMOS Setup for resources or drive types in most applications.

5-2 Installing the Drivers

You must install the appropriate SATA150 driver for your current operating system. Instructions are given below. If you are re-installing an operating system see the manual listed below for the instructions and procedures.

Important



If you wish to include your current bootable Serial or Parallel ATA drive using the Windows NT 4.x, Windows 2000, or Windows XP operating system onto the onboard SATA150 Controller.

You **MUST** install the SATA Windows NT4, 2000, or XP driver software first onto this drive while it is still attached to your existing hard drive controller.

1. Windows XP

Installing Driver During New Windows XP Installation

- (1) Locate the files under CD_Disk:\SATA\NA130\.. from the CD installer and copy it all down to a empty floppy disk.
- (2) Start the installation:
 - a. Floppy Install: Boot the computer with the Windows XP installation diskettes.
 - b. Floppyless Install: Boot from floppy and type “WINNT”. After files have been copied, the system will reboot. On the reboot, press <F6> after the message “Setup is inspecting your computer’s hardware configuration...” appears.
 - c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message “Press F6 if you need to install third party SCSI or RAID driver” appears.
- (3) When the “Windows XP Setup” window is generated, press “S” to Specify an Additional Device(s).
- (4) Insert the pre-made driver diskette into drive A: and press “Enter” key.
- (5) Choose “WinXP Promise SATA150 TX2Plus (tm) IDE Controller” from the list that appears on screen, and then press the “Enter” key.

- (6) The Windows XP Setup screen will appear again saying “Setup will load support for the following mass storage devices”. The list will include “WinXP Promise SATA150 TX2Plus (tm) IDE Controller”.

Note



If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to the next step.

If you are using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on “*Continue Anyway*”.

Installing Driver in Existing Windows XP System

Warning



If you are going to moving the current boot drive containing the existing Windows XP operating system to the onboard SATA150 ports, the SATA150 TX2Plus driver **MUST** be loaded on to this hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the SATA150 ports before completing this step.

- (1) Insert the LITE-ON installer CD into the CD drive.
- (2) Click “**Manual Setup\Serial ATA Driver**” to start the installation.

- (3) If using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on “*Continue anyway*”.
- (4) When the New Hardware Wizard has finished installing the SATA150 TX2Plus software, click on “Finish” to reboot the system.
- (5) Disconnect the hard disk cable and re-connect it to the onboard ATA133 connector (yellow colored) and rebooting your system. Windows XP setup will show a “New Hardware Found” dialog box, and “WinXP Promise SATA150 TX2Plus (tm) IDE Controller” will be displayed under “mass storage devices”.

Confirming Windows XP Installation

- (1) From Windows XP, open the Control Panel from the My Computer icon.
- (2) Click on Performance and maintenance.
- (3) Click on the System icon.
- (4) Click the Hardware tab, then click the Device Manager tab.
- (5) Click the “+” in front of SCSI controllers. WinXP Promise SATA150 TX2Plus (tm) IDE Controller should appear.

2. Windows 2000

Installing Driver During New Windows 2000 Installation

- (1) Locate the files under CD_Disk:\SATA\NA130\.. from the CD installer and copy it all down to a empty floppy disk.
- (2) Start the installation:
 - a. Floppy Install: Boot the computer with the Windows 2000 installation diskettes.
 - b. Floppyless Install: Boot from floppy and type “WINNT”. After files have been copied, the system will reboot. On the reboot, press <F6> after the message “Setup is inspecting your computer’s hardware configuration...” appears.
 - c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message “Press F6 if you need to install third party SCSI or RAID driver” appears.
- (2) When the “Windows 2000 Setup” window is generated, press “S” to Specify an Additional Device(s)
- (3) Insert the pre-made driver diskette into drive A: and press “Enter” key.
- (4) Choose “*Win2000 Promise SATA150 TX2Plus (tm) IDE Controller*” from the list that appears on screen, and then press the “Enter” key.
- (6) The Windows 2000 Setup screen will appear again saying “Setup will load support for the following mass storage devices:” The list will include “*Win2000 Promise SATA150 TX2Plus (tm) IDE Controller*”.

From the Windows 2000 Setup screen, press the “Enter” key. Setup will now load all device files and then continue the Windows 2000 installation.

Note



If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to the next step.

If you are using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on “Continue” anyway.

Installing Driver in Existing Windows 2000 System

Warning



If you will be moving the boot drive containing existing Windows 2000 operating system to the SATA150 TX2Plus controller, the SATA150 TX2Plus driver MUST be loaded on to this hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the SATA150 TX2Plus controller before completing this step.

- (1) Choose *Add New Hardware Wizard* from the list, and then press “Enter”.
- (2) Choose *Add/Troubleshoot a device* and click “Next”. The new hardware wizard will show device list
- (3) Choose Mass Storage controller and click Next. At the following screen click “Finish”.

- (4) Choose “Display list the known drivers” for this device so that you can choose a specific driver then click “Next”.
- (5) When the Windows 2000 supported SCSI adapter drivers list appears, click “Have disk”.
- (6) Insert the LITE-ON installer CD into CD drive.
- (7) Click “**Manual Driver Setup\Serial ATA Driver**” to start the installation.
- (8) Click “Yes” to confirm continue the installation and copy the driver to system.
- (9) If you are using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on “*Continue anyway*”.
- (10) Remove the CD and click “Finish” to restart the system. Windows 2000 will then restart for the driver installation to take effect.

Confirming Windows 2000 Installation

- (1) From Windows 2000, open the Control Panel from My Computer icon followed by the System icon.
- (2) Choose the Hardware tab, and then click the Device Manager tab.
- (3) Click the “+” in front of SCSI controllers. “*Win2000 Promise SATA150 TX2Plus (tm) IDE Controller*” should appear.

3. Windows ME

Installing Driver in Existing Windows Me System

After installing the SATA150 TX2Plus controller and rebooting your system, Windows ME setup will show a “New Hardware Found” dialog box. Under Windows ME, “PCI Mass Storage Controller” will be displayed.

- (1) Insert the LITE-ON installer CD into CD drive.
- (2) Choose “Automatic Search” for better driver (Recommended) and click “Next”.
- (3) Click “Yes” to confirm continue the installation and copy the driver to system.
- (4) Choose “Win98-Me Promise SATA150 TX2Plus (tm) IDE Controller” from the list that appears on screen, then Click “OK”.
- (5) When the New Hardware Wizard has finished installing the SATA150 TX2Plus software, click on Finish.

Confirming Driver Installation in Windows Me

To confirm that the driver has been properly loaded in Me, perform the following steps:

- (1) Choose *Settings* from the Start menu.
- (2) Choose Control Panel, then double-click on the System icon.
- (3) Choose the Device Manager tab, then click the “+” in front of SCSI & RAID controllers. “Win98-ME Promise SATA150 TX2Plus (tm) IDE Controller” should appear.

NTOE:

NTOE:
