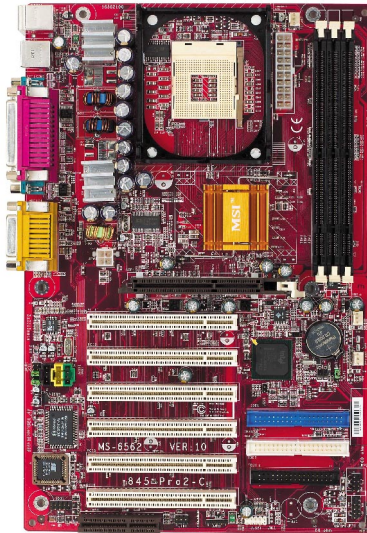


MSI 845 Pro2-C

MICRO-STAR INTERNATIONAL

MS-6562 (v1.X) ATX Mainboard



Version 1.0
G52-MA00497

Manual Rev: 1.0
Release Date: Jan. 2002



FCC-B Radio Frequency Interference Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

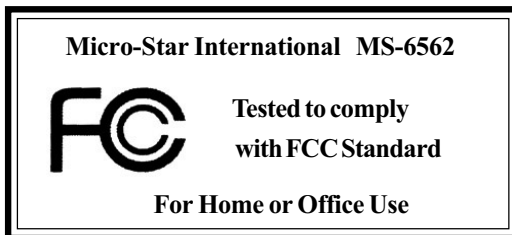
Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



Edition

Jan. 2002

Copyright Notice

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Award® is a registered trademark of Phoenix Technologies Ltd.

AMI® is a registered trademark of American Megatrends Inc.

Revision History

Revision	Revision History	Date
V1.0	First release	Jan. 2002

Safety Instructions

1. Read the safety instructions carefully.
2. Save this User's Guide for possible use later.
3. Keep this equipment away from humidity.
4. Lay this equipment on a stable and flat surface before setting it up.
5. The openings on the enclosure are used for air convection and to prevent the equipment from overheating. Note: Do not cover the openings.
6. Make sure that the power voltage is within its safety range and has been adjusted properly to the value of 110/220V before connecting the equipment to the power inlet.
7. Place the power cord in a way that people are unlikely to step on it. Do not place anything on the power cord.
8. Always unplug the power cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage the equipment or cause an electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
 - the power cord or plug is damaged
 - liquid has penetrated into the equipment
 - the equipment has been exposed to moisture
 - the equipment has not work well or you can not get it work according to User's Guide
 - the equipment was dropped and damaged
 - the equipment has obvious signs of breakage
12. Do not leave the equipment in an unconditioned environment with a storage temperature of 60⁰ C (140⁰F) or above, which may damage the equipment.



CAUTION: To prevent explosion caused by improper battery replacement, use the same or equivalent type of battery recommended by the manufacturer only.

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Getting Started

1

Thank you for purchasing the 845 Pro2-C v1.X ATX mainboard. The 845 Pro2-C mainboard is based on Intel® 82845 & ICH2 chipsets for optimal system efficiency. Designed to fit the advanced Intel® Pentium® 4 processors in the 478 pin package, the 845 Pro2-C v1.X delivers a high performance and professional desktop platform solution.

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Mainboard Specification

CPU

- Support Socket 478 for Intel® Pentium® 4 Willamette/Northwood processor
- Support 1.3GHz, 1.4GHz, 1.5GHz, 1.6GHz, 1.7GHz, 1.8GHz, 1.9GHz, 2GHz, 2.2GHz and up* (*not tested yet)

Chipset

- Intel® 845 chipset (593 FC-BGA)
 - Support 100MHz FSB
 - Support 400MHz Intel NetBurst micro-architecture bus
 - 1.5V AGP interface with 4x data transfer and 4x fast write capability
- Intel® ICH2 chipset (360 EBGA)
 - AC'97 Controller Integrated
 - 2 full IDE channels, up to ATA 100
 - Low pin count interface for SIO

MainMemory

- Support three PC133 SDRAM sockets
- Support up to 3 GB memory size

Slots

- One AGP (Accelerated Graphics Port) 4x slot (1.5V only)
- Six PCI 2.2 32-bit Master PCI bus slots
- One CNR (Communication Network Riser) slot
- Support 3.3V/5V PCI bus Interface

On-BoardIDE

- An IDE controller on the ICH2 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA33/66/100 operation modes
- Can connect up to four IDE devices

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88 Mbytes
 - 2 serial ports (COM A + COM B)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 4 USB ports (Rear * 2/ Front * 2)
 - 1 Line-In/Line-Out/Mic-In/Game port

Audio

- ICH2 chip integrated
- AC'97 codec supports 2 channel Audio

BIOS

- The mainboard BIOS provides “Plug & Play” function which detects the peripheral devices and expansion cards of the board automatically
- The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications

Dimension

- ATX Form Factor 30.5cm x 20cm

Mounting

- 6 mounting holes


Others

- Support Modem Wake-up function
- Support STR/STD
- PC 2001 Compliant

Quick Components Guide

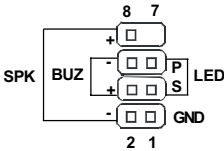
Component	Function
CONN1	ATX 20-pin power connector
JPW1	ATX 12V power connector
JBMS1	Mouse connector
KBMS1	Keyboard connector
USB Connectors	Connecting to USB devices
COM A & COM B	Serial port connector
LPT1	Parallel port connector
FDD1	Floppy disk drive connector
JGS1	Power saving switch connector
IDE1~ IDE2	Hard disk connectors
JCD1	CD-in connector
JAUX1	Aux line-in connector
JMD1	Modem-in connector
CFAN1/SFAN1/PSFAN1	Fan power connectors
JFP1/JFP2	Front panel connectors
JAUD1	Front panel audio connector
JUSB1	Front USB connector
JIR1	IrDA infrared module connector
JDB1	D-Bracket connector
JWR1	Wake on ring connector
JBAT1	Clear CMOS jumper
AGP Slot	Connecting to AGP cards
PCI Slots	Connecting to expansion cards
CNR Slot	Connecting to expansion cards

Connectors & Jumpers

JGS1 

Attach a power saving switch to this connector. Pressing the switch once will have the system enter the sleep/suspend state. Press any key to wake up the system.

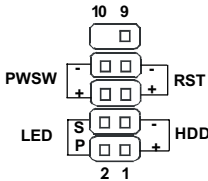
JFP2 (BUZ is optional)



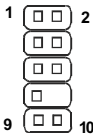
The mainboard provides two front panel connectors for establishing electrical connection to the front panel switches and LEDs.

Both JFP1 and JFP2 are compliant with Intel® Front Panel I/O Connectivity Design Guide.

JFP1

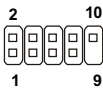


JAUD1



The JAUD1 front panel audio connector allows you to connect to the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.

JUSB1



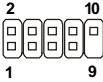
The mainboard provides one front Universal Serial Bus connector for users to connect to USB devices. JUSB1 is compliant with the Intel Front Panel I/O Connectivity Design Guide.

JIR1



The connector allows you to connect to the IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function. JIR1 is compliant with the Intel Front Panel I/O connectivity Design Guide.

JDB1



The mainboard comes with a JDB1 connector for you to connect to D-Bracket™. D-Bracket™ is a USB Bracket integrating four LEDs and allows users to identify system problem through 16 various combinations of LED signals.

JWR1



This connector allows you to connect to a modem card with Wake On Ring function. The connector will power up the system when a signal is received through the modem card.

JBAT1



A battery must be used to retain the mainboard configuration in CMOS RAM. Short 1-2 pins of JBAT1 to store the CMOS data.

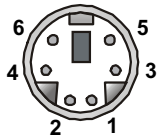
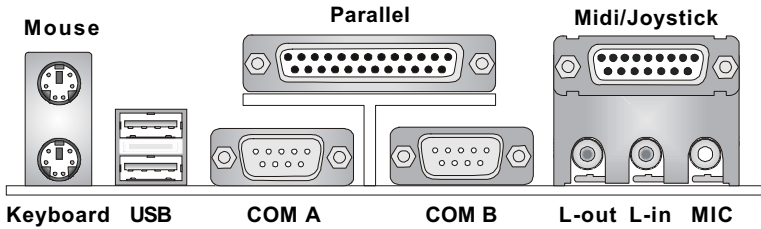


Keep CMOS

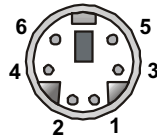


Clear CMOS

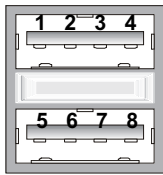
Back Panel



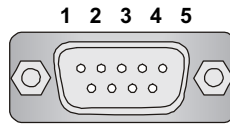
PS/2 Mouse (6-pin Female)



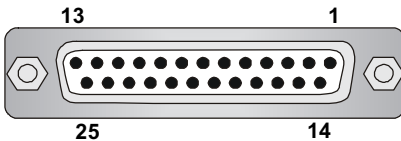
PS/2 Keyboard (6-pin Female)



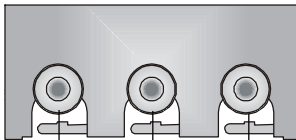
USB Ports



COM A & COM B (9-pin Male)

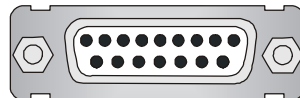


Parallel Port Connector



Line Out Line In MIC

Audio Port Connectors



MIDI/Joystick Connector

AMI BIOS Setup

2

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.

You may need to run the Setup program when:

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

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Entering Setup

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

DEL: Setup F11: Boot Menu F12: Network boot TAB: Logo

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Selecting the First Boot Device

You are allowed to select the 1st boot device without entering the BIOS setup utility by pressing <F11>. When the same message as listed above appears on the screen, press <F11> to trigger the boot menu.

The POST messages might pass by too quickly for you to respond in time. If so, restart the system and press <F11> after around 2 or 3 seconds to activate the boot menu similar to the following.

Select First Boot Device		
Floppy	:	1st Floppy
IDE-0	:	IBM-DTLA-307038
CDROM	:	ATAPI CD-ROM DRIVE 40X M
[Up/Dn] Select	[RETURN] Boot	[ESC] cancel

The boot menu will list all the bootable devices. Select the one you want to boot from by using arrow keys and then pressing <Enter>. The system will boot from the selected device. The selection will not make changes to the settings in the BIOS setup utility, so next time when you power on the system, it will still use the original first boot device to boot up.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load High Performance Defaults
<F7>	Load BIOS Setup Defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup utility, the first screen you see is the Main Menu.

Main Menu

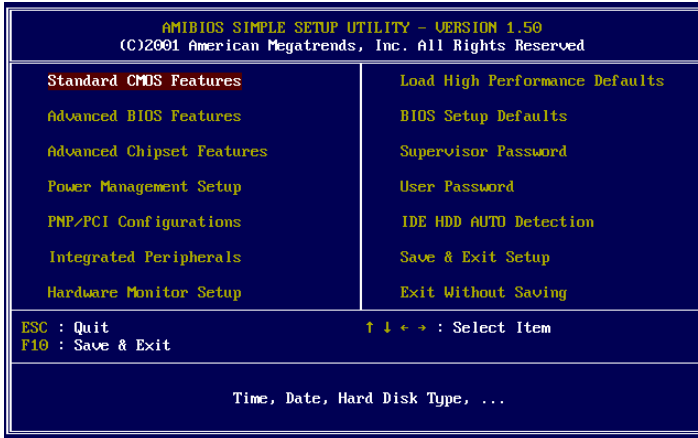
The main menu displays the setup categories the BIOS supplies. You can use the arrow keys (↑↓) to select the item. The on-line description for the selected setup category is displayed at the bottom of the screen.

Default Settings

The BIOS setup program contains two kinds of default settings: the BIOS Setup and High Performance defaults. BIOS Setup defaults provide stable but minimal performance settings for all devices and the system, while High Performance defaults provide the best system performance but may affect the system stability.

The Main Menu

Once you enter AMIBIOS SIMPLE SETUP UTILITY, the Main Menu will appear on the screen. The Main Menu displays twelve configurable functions and two exit choices. Use arrow keys to move among the items and press <Enter> to enter the sub-menu.



Standard CMOS Features

The items inside STANDARD CMOS SETUP menu are divided into 9 categories. Each category includes none, one or more setup items. Use the arrow keys to highlight the item you want to modify and use the <PgUp> or <PgDn> keys to switch to the value you prefer.


AMIBIOS SETUP - STANDARD CMOS SETUP								
(C)2001 American Megatrends, Inc. All Rights Reserved								
Date (mm/dd/yyyy): Mon Dec 24, 2001								
Time (hh/mm/ss) : 04:31:30								
	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Pri Master : Auto								
Pri Slave : Auto								
Sec Master : Auto								
Sec Slave : Auto								
Floppy Drive A: 1.44 MB 3½					Base Memory : 0 Kb			
Floppy Drive B: Not Installed					Other Memory : 384 Kb			
Boot Sector Virus Protection Disabled					Extended Memory : 0 Mb			
					Total Memory : 1 Mb			
Month: Jan - Dec					ESC : Exit			
Day: 01 - 31					↑↓ : Select Item			
Year: 1901 - 2099					PG/PB/+/ - : Modify			
					(Shift)F2 : Color			

Advanced BIOS Features



Advanced Chipset Features



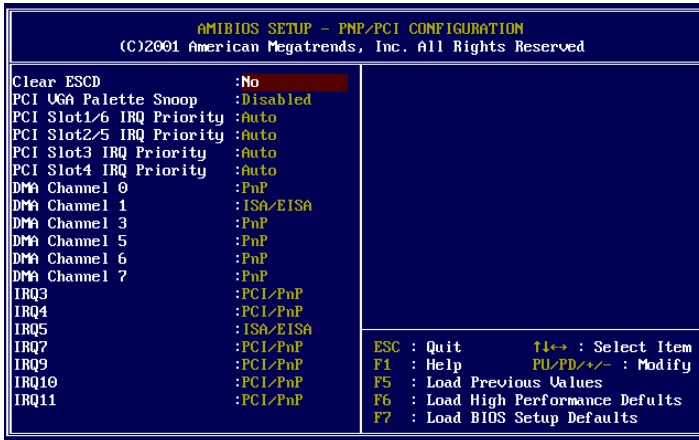
 **Note:** Change these settings only if you are familiar with the chipset.

Power Management Setup

AMIBIOS SETUP - POWER MANAGEMENT SETUP			
(C)2001 American Megatrends, Inc. All Rights Reserved			
IPCA Function	:Yes	RTC Alarm Second	:30
ACPI Standby State	:S1/PDS	Power Again	:Last State
USB Wakeup From S3	:Disabled		
Mouse Wakeup From S3	:Disabled		
Keyboard Wakeup From S3	:Disabled		
Specific Key for Wakeup	:N/A		
Power Management/APM	:Enabled		
Suspend Time Out (Minute)	:Disabled		
FDC/LPT/COM Ports	:Monitor		
Primary Master IDE	:Monitor		
Primary Slave IDE	:Ignore		
Secondary Master IDE	:Monitor		
Secondary Slave IDE	:Ignore		
Power Button Function	:On/Off		
Wake Up On Ring	:Enabled		
Wake Up On PME	:Disabled		
Resume By RTC Alarm	:Disabled	ESC : Quit	T4+ : Select Item
RTC Alarm Date	:15	F1 : Help	PU/PD/+/- : Modify
RTC Alarm Hour	:12	F5 : Load Previous Values	
RTC Alarm Minute	:30	F6 : Load High Performance Defaults	
		F7 : Load BIOS Setup Defaults	

PNP/PCI Configurations

This section describes configuring the PCI bus system and PnP (Plug & Play) feature. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

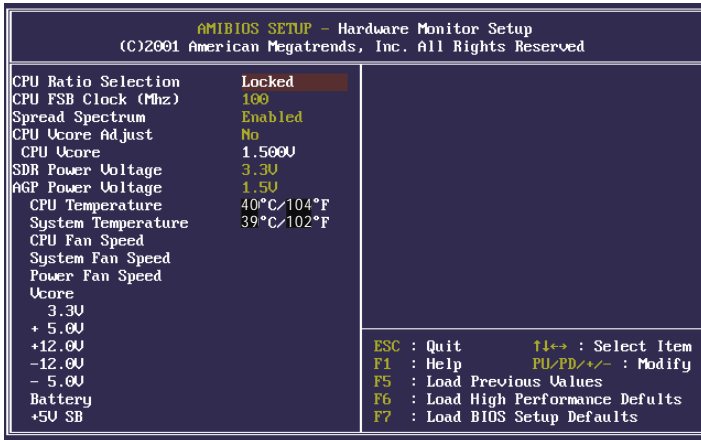


Integrated Peripherals

AMIBIOS SETUP - INTEGRATED PERIPHERALS (C)2001 American Megatrends, Inc. All Rights Reserved		
USB Controller	:All USB Port	
USB Legacy Support	:Disabled	
On-Chip IDE	:Both	
AC'97 Audio	:Auto	
AC'97 Modem	:Auto	
Floppy Controller	:Enabled	
Serial Port A	:Auto	
Serial Port B	:Auto	
Serial Port B Mode	:Normal	
IR Duplex Mode	:Half Duplex	
IR Pin Select	:IRRX/IRTX	
Parallel Port	:Auto	
Parallel Port Mode	:ECP	
EPP Version	:N/A	
IRQ	:Auto	
DMA Channel	:Auto	ESC : Quit F1<=> : Select Item
OnBoard Midi Port	:330	F1 : Help PU/PD/+/- : Modify
Midi IRQ Select	:5	F5 : Load Previous Values
OnBoard Game Port	:200	F6 : Load High Performance Defaults
		F7 : Load BIOS Setup Defaults

Hardware Monitor Setup

This section describes how to set the CPU FSB frequency, monitor the current hardware status including CPU/system temperatures, CPU/System Fan speeds, Vcore etc. Monitor function is available only if there is hardware monitoring mechanism onboard.



Load High Performance/BIOS Setup Defaults

The two options on the main menu allow users to restore all of the BIOS settings to High Performance defaults or BIOS Setup defaults. The High Performance Defaults are the default values set by the mainboard manufacturer for the best system performance but probably will cause a stability issue. The BIOS Setup Defaults are the default values also set by the mainboard manufacturer for stable performance of the mainboard.

When you select Load High Performance Defaults, a message as below appears:




Pressing 'Y' loads the default BIOS values that enable the best system performance but may lead to a stability issue.

When you select Load BIOS Setup Defaults, a message as below appears:



Pressing 'Y' loads the default values that are factory settings for stable system performance.



WARNING! *The option is for power or overclocking users only. Use of high performance defaults will tighten most timings to increase the system performance. Therefore, a high-end system configuration is a must, which means you need high-quality VGA adapter, RAM and so on. **We don't recommend that users should apply the high performance defaults in their regular systems.** Otherwise, the system may become unstable or even crash. If the system crashes or hangs after enabling the feature, please CLEAR CMOS DATA to resolve the problem.*

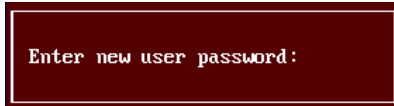
Supervisor/User Password

When you select Supervisor Password, a message as below will appear on the screen:



Enter current supervisor password:

When you select User Password, a message as below will appear on the screen:



Enter new user password:

Type the password, up to six characters in length, and press <Enter>. The password typed now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

When a password has been set, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also have AMIBIOS to request a password each time the system is booted. This would prevent unau-

thorized use of your computer. The setting to determine when the password prompt is required is the PASSWORD CHECK option of the ADVANCED BIOS FEATURES menu. If the PASSWORD CHECK option is set to *Always*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when you try to enter Setup.



About Supervisor Password & User Password:

Supervisor password: Can enter and change the settings of the setup menu.

User password: Can only enter but do not have the right to change the settings of the setup menu.

IDE HDD AUTO Detection

You can use this utility to AUTOMATICALLY detect the characteristics of most hard drives.

AMIBIOS SETUP - STANDARD CMOS SETUP							
(C)2001 American Megatrends, Inc. All Rights Reserved							
Date (mm/dd/yyyy): Thu Dec 06, 2001							
Time (hh/mm/ss) : 21:42:52							
TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Pri Master	: Auto						
Pri Slave	: Auto						
Sec Master	: Auto						
Sec Slave	: Auto						
Floppy Drive A:	1.44 MB 3½						
Floppy Drive B:	Not Installed						
Boot Sector Virus Protection	Disabled						
				Base Memory	: 0 Kb		
				Other Memory	: 384 Kb		
				Extended Memory	: 0 Mb		
				Total Memory	: 1 Mb		
Month:	Jan - Dec			ESC	: Exit		
Day:	01 - 31			F4	: Select Item		
Year:	1901 - 2099			PU/PD/+/-	: Modify		
				(Shift)F2	: Color		