

**MFI-5GXM**  
**(MILLENNIUM-I)**

**Book Size PC**

**MFII-5GXM**

**Slim Size PC**

**User's Manual**

# Table of contents

<b>Chapter 1</b>	<b>Introduction</b>	<b>page 03</b>
<b>Chapter 2</b>	<b>Getting Started</b>	<b>page 04</b>
<b>Chapter 3</b>	<b>Specification</b>	<b>page 06</b>
3.1	Motherboard specification	page 06
3.2	The MFI-5GXM Book Size and MFII-5GXM Slim Size PC Specification	page 08
<b>Chapter 4</b>	<b>Installation</b>	<b>page 11</b>
4.1	MFII-5GXM Slim Size PC system installation	page 11
4.2	MFI-5GXM Book Size PC system installation	page 14
4.3	Motherboard jumper location and setting	page 15
4.4	Motherboard jumper installation	page 16
4.5	System memory installation	page 18
<b>Chapter 5</b>	<b>Award BIOS setup</b>	<b>page 19</b>
5.1	Standard CMOS Setup	page 22
5.2	BIOS Features Setup	page 25
5.3	Advanced Chipset Features Setup	page 30
5.4	Integrated Peripherals	page 32
5.5	Power Management Setup	page 36
5.6	PNP/PCI Configuration Setup	page 36
5.7	Default Menu	page 39
5.8	Supervisor/User Password Setting	page 41
5.9	Exit Selecting	page 43
5.10	POST Messages	page 44
5.11	POST Codes	page 54
<b>Chapter 6</b>	<b>MFI-5GXM Book Size PC/ MFII-5GXM Slim Size PC</b>	<b>page 63</b>

## **Software Installation**

- 6.1 How to install windows 95 or 98 OS page 63
- 6.2 How to install windows NT OS page 67

## **Chapter 7 Onboard 10/100 Mbits Fast Ethernet installation page 68**

- 7.1 Hardware installation page 68
- 7.2 Software installation page 69

## **Chapter 8 Award BIOS utility page 76**

- 8.1 BIOS update utility page 76

## **FEDERAL COMMUNICATIONS COMMISSION**

### **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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

### **CAUTION:**

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

# CHAPTER 1 INTRODUCTION

## Introduction

This manual is suitable for both MFI-5GXM Book Size PC and MFII-5GXM Slim Size PC.

The motherboard is all-in-one designed with Cyrix Geode GX1-233/300 CPU on board along with VGA and 10/100M Network chip build-in. This motherboard is designed for both MFI-5GXM Book Size PC and MFII-5GXM Slim Size PC. This motherboard has also designed with Audio sound and Com3/4 serial port onboard optional.

The difference between MFI-5GXM and MFII-5GXM are listed in the following:

- **Case size different**  
MFI Case Size: 30cm(W) x 23cm(L) x 6cm(H)  
MFII Case Size: 32cm(W) x 30cm(L) x 8cm(H)
- **Riser card different**  
MFI Riser card: 1 slot ISA (if FDD installed) or 1 slot PCI (if FDD not installed)  
MFII Riser card: 3 Slots (2 slots PCI and 1 slot ISA)

# CHAPTER 2 GETTING STARTED

Once you have received the MFI-5GXM/MFII-5GXM Book Size or Slim Size PC, please check the following items:

## 1. What's included

- \* Book Size or Slim size case with power supply installed.
- \* The all-in-one motherboard pre-installed inside the Book size or Slim size case.
- \* 1 ISA Slots Riser card pre-installed for MFI-5GXM and 3 Slots PCI/ISA mixed Riser card pre-installed for MFII-5GXM
- \* One 40 pins flat cable for HDD Pre-installed on the all-in-one motherboard.
- \* One 34 pins flat cable for FDD pre-installed on the all-in-one motherboard.
- \* GX1-233 or GX1-300 CPU pre-installed on the all-in-one motherboard.
- \* 8 MB memory on board by option, if requested by the order for manufacturer pre-installed.
- \* 168 pins DIMM memory from 32MB up to 512MB, If you have order the system with main memory together.
- \* One set screw pack which including the following:
  - a. M3 X0.5 screws 4 pcs for FDD installation.
  - b. M3 X1 screws 4 pcs for HDD installation.
  - c. Robber feet 4 pcs.
- \* User's manual 1 pcs.
- \* Power code.
- \* CD-ROM disk of software driver 1 pcs.

## 2. Installing the memory DIMM module, if you order the system without memory DIMM module installed.

You can install the 168 pins DIMM memory module into DIMM slot on your motherboard. Since 168 pins DIMM module is 64 bits wide, therefore 1 piece of DIMM module may match a 64 bits system.

## 3. Please refer to chapter 5 of this manual for the detailed

**BIOS CMOS Setup.**

- 4. Please Refer to chapter 7 “On board RTL 8139C 10/100Mbps Fast Ethernet installation” of this manual for the network software driver installation for windows 95/98 and windows NT. You can down load the most updated RTL 8139C network driver from the chip set manufacturer web site at <http://www.realtek.com.tw/> and copy the most updated driver to the floppy diskette, then install it from the floppy diskette.**
- 5. Installing the I/O card, If necessary.**

The MFI-5GXM Book Size PC has 1 I/O slot free and the MFII-5GXM Slim Size PC has 3 I/O Slots free (PCI/ISA mixed) for you to install any I/O cards either PCI or ISA or any combinations. Due to the case size limitation, the MFI-5GXM Book size PC can only install one ISA slot, if FDD is installed. Or, one PCI slot, if FDD is not installed.
- 6. Installing the hard disk drive, If necessary.**
- 7. Installing the floppy disk drive, If necessary.**

# CHAPTER 3 SPECIFICATION

## 3.1. Motherboard specification

The motherboard is a all-in-one designed with GX1-233/300 CPU, VGA and 10/100Mbps Network chip build-in. The motherboard has also feature Audio sound and COM3/4 extra 2 serial port as an optional for user to select before the order. The following is the detailed features of the motherboard.

### FEATURES

- **Motherboard core logic**
  - NS Geode GX1-233/GX1-300 CPU + NS CS5530 + RTL 8139C 10/100Mbps FAST Ethernet
- **Speed**
  - 33 MHz system speed
- **Processor supports**
  - NS Geode GX1-233 or GX1-300
- **Main memory**
  - Provides 1 DIMM socket to support 32MB memory modules up to 512MB
  - PC100 (100MHz) compliant SDRAM Interface
  - Optional 8MB SDRAM on board
- **BIOS**
  - Licensed AWARD BIOS, 2MB FLASH ROM.
- **I/O Port**
  - On board PCI Enhanced IDE interface supports 2 IDE devices with 1 PCI bus master, supports PIO mode 0 to mode 4 and Ultra ATA/33 with maximum transfer rate of 33MB/sec.
  - On board floppy disk controller supports 1.44MB floppy drive
  - On board supports two high speed UARTS 16C550x2 and multi-mode parallel port for standard, Enhanced EPP and high speed ECP modes.
  - PS/2 mouse port
  - PS/2 keyboard port.
  - 2 USB port
- **Network**



- Built in RTL 8139C 10/100Mbps PCI FAST Ethernet on board with RJ-45 connector
- **Onboard VGA**
  - Integrated a high performance and high quality 2D engine
  - Support up to 1900 x 1600 resolution (CS5530A chip) or 1024 x 768 resolution (CS5530 chip)
  - Shared display memory with Main memory from 1.5MB, 2.5MB (default) to 4MB, selected by BIOS setup.
  - Support DirectX5 / DirectX6 & software MPEG XING driver
  - Windows 95/98 VGA drivers with auto-installation
- **Disk on Chip**
  - Disk on chip socket provided for user to install the M-System disk on chip memory module.
- **Onboard Audio sound chip installed (optional)**
  - The motherboard has already designed the on board sound chip, but it is an optional feature. So, it should be specify before the order.
- **Onboard COM3/4 extra 2 serial installed (optional)**
  - The motherboard has already designed the on board COM3/4 chip, but it is an optional feature. So, it should be specify before the order. Then, you can have total 4 COM port at your system
  - .Pin 9 of DB9 connector for COM3/4 can be jumper selected for either + 5V voltage or NORMAL Ring signal .

### 3.2 The MFI-5GXM Book Size and MFII-5GXM Slim Size PC Specifications:

1. **CPU:** NS Geode GX1-233/300
2. **Chipset:** GX1 CPU and North bridge  
CS5530 South bridge  
RTL 8139C 10/100Mbps Fast Ethernet  
Winbond W83977F, W83877TF
3. **Memory:** Provides 1 DIMM socket to support 32MB/64MB/128MB/256MB SDRAM/EDO memory module up to 512MB.  
Supports Auto detection of memory type.  
Support ECC or parity configuration  
PC 100 (100MHz) compliant SDRAM Interface
4. **I/O port:** Supports two 16C550 compatible enhanced UARTs.  
( COM 1 & COM 2.)  
Supports Multi-mode high performance parallel port.  
Standard mode - Bi-directional SPP.  
Enhanced mode - EPP 1.7 and EPP 1.9 compatible.  
High speed mode – ECP  
Compatible (IEEE 1284 compliant).  
Supports PS/2 mouse interface.  
Supports PS/2 keyboard interface  
Supports two universal serial bus (USBx2)  
Optional 2 Serial ports, COM 3 & COM 4 optional.  
Optional AC97 Sound port

- 5. I/O slots:**           **Supports 3 slots PCI/ISA mixed for MFII<sup>+</sup>-5GXM model.**  
                                   1 ISA and 2 PCI slots  
**Support 1 slots PCI/ISA mixed for MFI<sup>+</sup>-5GXM model**  
                                   a. 1 ISA slot if FDD installed.  
                                   b. 1 PCI slot if FDD not installed.
- 6. Floppy disk:**        One 3.5" 1.44MB floppy disk drive with front bezel for MFI-5GXM model.  
                                   One 3.5" 1.44MB floppy disk drive without front bezel for MFII-5GXM model. (Hidden inside the case)
- 7. Hard disk:**         One 3.5" IDE interface hard disk drive for MFI-5GXM & MFII-5GXM model.
- 8. Video output:**     Resolution up to 1024 x 768 (CS5530)  
                                   Extended display resolution up to 1900\*1600 (CS5530A)
- 9. Network:**           Built in RTL8139C 10/100Mbps PCI FAST Ethernet on board with RJ-45 connector
- 10. Physical size:**   30CM(W) x 23CM(L) x 6CM(H) for MFI-5GXM model  
                                   32CM(W) x 30CM(L) x 8CM(H) for MFII-5GXM model.
- 11. Power supply:**   80W power supply 110V/230V Switchable from internal jumper post.  
                                   UL/CSA/TUV/VDE/DEMKO/  
                                   NEMKO/SEMKO/FIMKO/FI/CB/  
                                   CE/FCC approved.
- 12. Keyboard:**        84/85 keys mini keyboard or regular 101/102 keys keyboard or 105/106 keys WINDOWS 95 keyboard.

- PS/2 keyboard connector.
- 2MB flash EEPROM.
- 13. BIOS:**
- 14. Disk on chip:** Disk on chip socket provided for user to install the M-System Disk on chip memory.

# CHAPTER 4

## INSTALLATION

### 4.1 MFII-5GXM Slim Size PC system installation

The following is the Slim Size PC system installation procedure step by step which will guide you how to install the Slim size PC system as much as easier.

- Step1:** Open the case upper cover.
- Step2:** Installing the power supply by screw in the 4 screws.
- Step3:** Installing the power switch.
- Step4:** Installing the front bezel into the case by screw in the 5 screws.
- Step5:** Installing the motherboard into the case by slide in the motherboard horizontally with the base of the case until the printer port, 2 serial ports, VGA port, USB and Network port, PS/2 keyboard and mouse ports, 6 connectors matching up with holes of the back panel of this case, please make sure that the motherboard screw holes (total 6 screw holes) also matching up with base mounting holes of the case. Screw-in the 6 screw for the motherboard and also screw in the VGA connector, printer connector and 2 serial port screws.
- Step6:** Installing the hard disk drive, if necessary. To install the hard disk drive, please follows the step below:
  - a. Install the hard disk drive on the mounting bracket by screw in the 4 screws at the side.
  - b. Connects the 40 pins HDD flat cable into the hard disk, pin 1 close to DC power connector of the hard disk drive.
  - c. Connects the power cable to the hard disk. The power cable is only one way direction.
  - d. Slide the Hard disk drive with the mounting

bracket into the gap of the front panel.

- e. Solid the mounting bracket by screw in the 2 screws.

**Step7:** Installing the floppy disk drive, if necessary. To install the floppy disk drive, please follows the step below:

- a. Install the floppy disk drive on the mounting bracket by screw in the 4 screws at the bottom.
- b. Connects the 34 pins FDD flat cable into the floppy disk drive, pin 1 close to DC power connector of the floppy disk drive.
- c. Connects the power cable to the floppy disk drive. The power cable is only one way direction.
- d. Slide the floppy disk drive with the mounting bracket into the gap of the front panel.
- e. Solid the mounting bracket by screw in the 2 screws.

**Step8:** Installing the DIMM memory on the motherboard.

**Step9:** Connects the power supply connectors into the motherboard power connector J5, please make sure the direction should be correct.

**Step10:** Installing the COM3 cable between the motherboard and back panel of the case if necessary.

Inserting the 9 pins flat cable into the motherboard connector (COM3) and mounting the other side of this cable on the COM3 hole of the back panel of the case by screw in the 2 screws.

**Step11:** Installing the COM4 cable between the motherboard and back panel of the case if necessary. Inserting the 9 pins flat cable into the motherboard connector (COM4) and mounting the other side of this cable on the COM4 hole of the back panel of the case by screw in the 2 screws.

**Step12:** Installing the sound cable between the motherboard and back panel of the case if necessary. Inserting the 8 pins flat cable into the motherboard connector (J4) and mounting the other side of this cable on the

optional sound daughter board

- Step13:** Installing the PCI/ISA Riser card into the motherboard at the location J2.
- Step14:** Installing I/O cards on your Slim size PC if necessary. The Slim size PC has the ability to install 3 I/O cards either PCI or ISA or any combination. You can install any I/O card simply by taking the card horizontally and insert the gold finger inside the riser card, then screw in the card metal plate on the back slot windows mounting bracket tightly.
- Step15:** Connecting all the necessary cables. They could be the following items:
- a. Connects the front bezel power LED cable to LED2 connector of the motherboard.
  - b. Connects the front bezel HDD LED cable to the LED1 connector of the motherboard.
  - c. Connects the front bezel Network LED cable to the JP4 connector of the motherboard.
- Step16:** Close the upper case by screw in the 3 screws of the back panel of the case.
- Step17:** Up to now, you have finished the system installation of the Slim size PC and you are ready to turn on the power to operate your system. Hope everything is running well and you are very satisfy with your system. Congratulations !!
- Step18:** Installing the software driver, if necessary. There are software driver included in your system CD-ROM disc and you may need to install them when you are running your system. please refer to chapter 6 of this manual for drivers installation.
- Step19:** If you still have any problem to install your system, please consult your local distributor for the problems solving.

## **4.2 MFI-5GXM Book Size PC System installation**

The MFI-5GXM Book Size PC system installation procedure will be similar to the MFII-5GXM Slim Size PC, except that the hard disk drive and floppy drive need a mounting plate to mount the 2 drives above the motherboard.



### 4.3 Motherboard Jumper Location and Settings.

To setup the motherboard jumpers, please refer to the diagram (1) at this page for detailed jumper location.

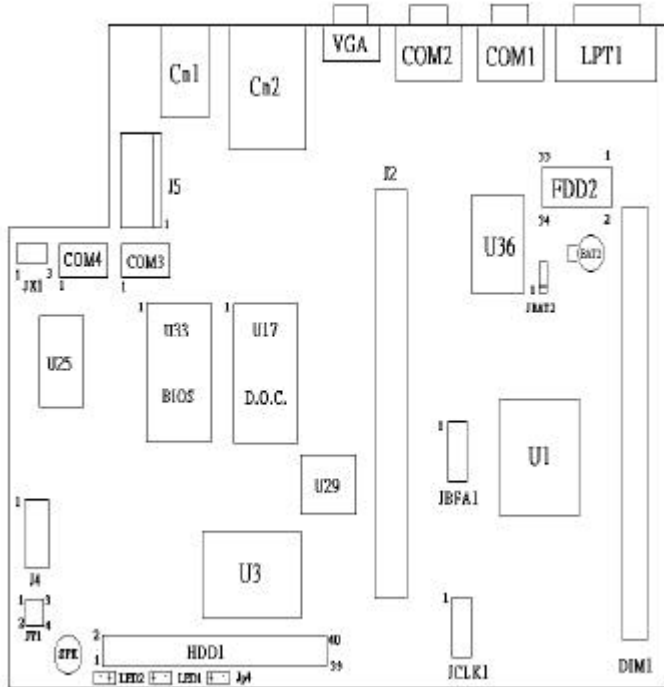


DIAGRAM (1)  
THE BOOK SIZE/SLIM SIZE PC ALL-IN-ONE  
MOTHERBOARD JUMPER LOCATION

## 4.4 Jumper installation

### 1. **JBFA1: CPU Speed Select**

Since the CPU is pre-soldering by manufacturer, So, there is no need to install this jumper. The manufacturer will pre-install this jumper correctly. Please do not change the setting of this jumper to prevent any damage of the CPU.

### 2. **JCLK1: PCI Clock**

2-4 : 33MHz

4-6 : 30MHz

### 3. **JBAT2 : CMOS**

1-2 : Normal, CMOS data keep. (Default)

2-3 : Clear CMOS

When you want to clear the CMOS, please put jumper at pin 2-3 and then move back to pin 1-2 for normal operation.

### 4. **LPT1** : Printer port connector

### 5. **COM1**: COM1 port connector

### 6. **COM2**: COM2 port connector

### 7. **VGA1**: VGA port connector

### 8. **CN2**: 2 x USB port and LAN port connector

### 9. **CN1**: PS/2 keyboard port and PS/2 mouse port connector

### 10. **COM3**: COM3 port connector for optional COM3

### 11. **COM4**: COM4 port connector for optional COM4

### 12. **J4**: Audio sound connector for optional sound

### 13. **U33**: System BIOS socket for 2MB EEPROM

### 14. **U17**: Disk on chip socket for MSystem disk on chip memory module.

### 15. **J2**: PCI/ISA mixed Riser card connector

### 16. **U3**: NS CS5530 (CS5530A) south bridge chip

### 17. **U1**: NS GX1-233/300 CPU

### 18. **HDD1**: 40 pins connector for hard disk cable connector

### 19. **FDD2**: 34 Pins connector for floppy disk cable connector

### 20. **DIM1**: 168 pins SDRAM memory module socket

21. **U6-U9:** Onboard 8MB memory location (optional)
22. **LED2:** Power LED for MFI-5GXM, Power LED connector for MFII-5GXM.
23. **LED1:** HDD LED for MFI-5GXM, HDD LED connector for MFII-5GXM.
24. **JP4:** Lan LED for MFI-5GXM, Lan LED connector for MFII-5GXM.
25. **J5:** Power supply connector
  - 1     -5V
  - 2     +5V
  - 3     +12V
  - 4     -12V
  - 5     Ground
  - 6     Ground
26. **JX1 : pin 9 of DB9 signal source selection for COM3/4**  
**JX1: 1-2 (ON) Ring (NORMAL)**  
**JX1: 2-3 (ON) +5V at pin 9 of DB9 connector for COM3/4 .**
27. **JY1: external speaker connector**  
**JY1: 1-2 (OFF) (NORMAL)**  
**3-4 (OFF)**  
**JY1: 1-2 (ON) (External speaker)**  
**3-4 (ON)**

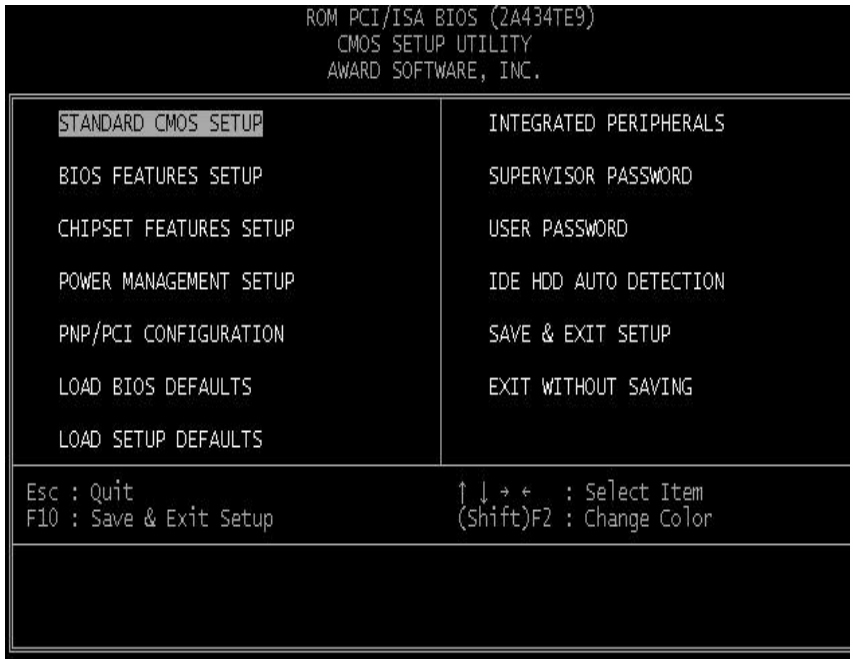
#### **4.5 System memory installation**

The Book size/Slim size PC system supports only one 168-pins DIMM memory module, one 168-pins DIMM module memory size can be 32MB,64MB,128MB or 256MB. There is 8 MB memory can be pre-soldering in the motherboard, But it is an optional and should be order in advance.

# CHAPTER 5

## AWARD BIOS SETUP

Once you enter the AwardBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.



**Figure 5-1**

Note that a brief description of each highlighted selection appears at the bottom of the screen.

- ◆ **Setup Items:** The main menu includes the following main setup categories. Recall that some systems may not include all entries.
- ◆ **Standard CMOS Features:** Use this menu for basic system configuration. See Section 2 for the details.
- ◆ **BIOS Features Setup:** Use this menu to set the Advanced Features available on your system. See Section 3 for the details.
- ◆ **Chipset Features Setup:** Use this menu to change the values in the chipset registers and optimize your system's performance. See section 4 for the details.
- ◆ **Power Management Setup:** Use this menu to specify your settings for power management. See section 5 for the details.
- ◆ **PnP / PCI Configuration:** This entry appears if your system supports PnP / PCI. See section 6 for the details.
- ◆ **Load BIOS Defaults:** Use this menu to load the BIOS default values that are factory settings for normal/stable performance system operations. While Award has designed the custom BIOS to normal/stable performance, the factory has the right to change these defaults to meet their needs.

See section 8 for the details.

- ◆ **Load Setup Defaults:** Use this menu to load the Optimal default values for the higher performance for your system to operate. See section 8 for the details.
- ◆ **Integrated Peripherals:** Use this menu to specify your settings for integrated peripherals. See section 4 for the details.
- ◆ **Supervisor / User Password:** Use this menu to set User and Supervisor Passwords. See section 9 for the details.
- ◆ **Save & Exit Setup:** Save CMOS value changes to CMOS and exit setup. See section 10 for the details.
- ◆ **Exit Without Save:** Abandon all CMOS value changes and exit setup. See section 10 for the details.

## 5.1 STANDARD CMOS SETUP

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

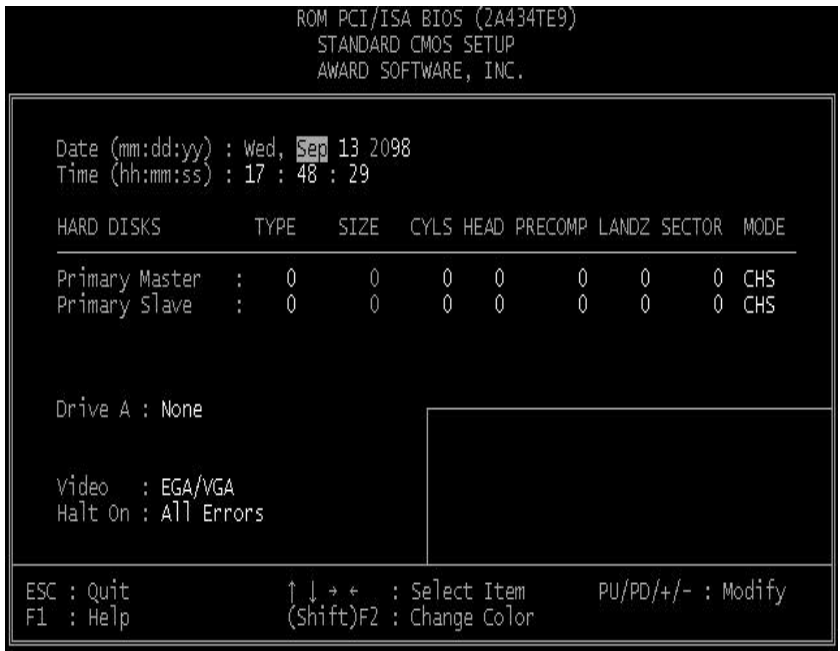


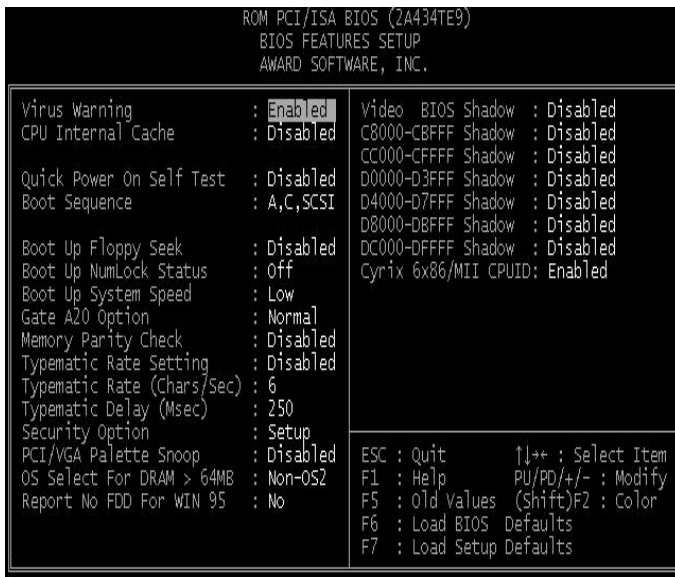
Figure 5-2

<b>Item</b>	<b>Options</b>	<b>Description</b>
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Primary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
Drive A	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system



## 5.2 BIOS FEATURES SETUP

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.



- ◆ **Virus Warning:** Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning

message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

- ◆ **CPU Internal Cache:** These two categories speed up memory access. However, it depends on CPU/chipset design. Select “ENABLE” for NS GX1-233/300 CPU.
- ◆ **Quick Power On Self Test:** This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

- ◆ **Boot Sequence:** The BIOS attempts to load the operating system from the devices in the sequence selected in these items.  
The Choice: Floppy, LS/ZIP, HDD, SCSI, and CDROM.  
Other Boot Device: If this option is enable the Bios will attempt to load operating system from other boot device that is available if the other fails.
- ◆ **Boot Up Floppy Seek:** Seeks disk drives during boot up. Disabling speeds boot up.  
The choice: Enabled/Disabled.
- ◆ **Boot Up NumLock Status:** Select power on state for NumLock.  
The choice: Enabled/Disabled.

- ◆ **Gate A20 Option:** Select if chipset or keyboard controller should control GateA20.

Normal	A pin in the keyboard controller controls GateA20
Fast	Lets chipset control GateA20

- ◆ **Typematic Rate Setting:** Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.  
The choice: Enabled/Disabled.

- ◆ **Typematic Rate (Chars/Sec):** Sets the number of times a second to repeat a keystroke when you hold the key down.  
The choice: 6, 8, 10, 12, 15, 20, 24, 30.

- ◆ **Typematic Delay (Msec):** Sets the delay time after the key is held down before it begins to repeat the keystroke.  
The choice: 250, 500, 750, 1000.

- ◆ **Security Option:** Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

- ◆ **PCI/VGA Palette Snoop:** Some display cards that are non-standard VGA, such as graphics accelerators

or MPEG Video Cards may not show colors properly. If setting Enabled will correct this problem. Otherwise just leave the setup in Disabled of the default setting.

- ◆ **OS Select For DRAM > 64MB:** Select the operating system that is running with greater than 64MB of RAM on the system.

The choice: Non-OS2, OS2.

- ◆ **Report No FDD For Win 95:** Whether report no FDD for Win 95 or not.

The choice: Yes, No.

- ◆ **Video BIOS Shadow:** It determines whether video BIOS will be copied to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

The choice: Enabled/Disabled.

\*C8000-CBFFF Shadow:

CC000-CFFFF Shadow:

D0000-D3FFF Shadow:

D4000-D7FFF Shadow:

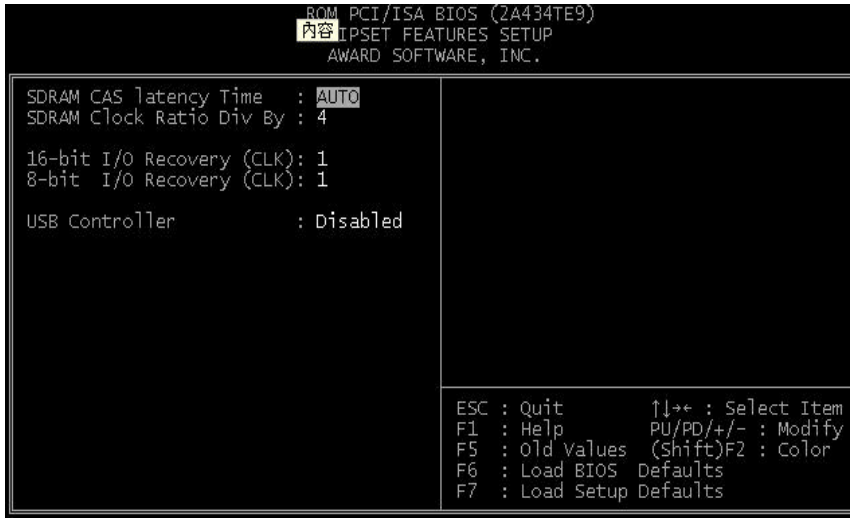
D8000-DBFFF Shadow:

DC000-DFFFF Shadow:

These categories determine whether optional ROM will be copied to RAM by 16K byte or 32K byte per/unit and the size depends on chipset.

The choice: Enabled/Disabled

## 5.3 Advanced CHIPSET FEATURES SETUP



This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

- ◆ **SDRAM CAS Latency Time:** When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on

the DRAM timing. You can select SDRAM CAS (Column Address Strobe) latency according to your SDRAM specification

The Choice:AUTO 2, 3

- ◆ **SDRAM Clock Ratio Div By :**

The Choice:3,4

3: for PC100 SDRAM (default)

4: for PC133 SDRAM

- ◆ **USB Controller:** Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

The choice: Enabled, Disabled.

## 5.4 Integrated Peripherals

ROM PCI/ISA BIOS (2A434TE9) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.			
IDE HDD Block Mode	: Disabled	Onboard Serial Port 3	: 3F8H
Primary IDE Channel	: Disabled	Serial Port 3 Use IRQ	: IRQ10
		Onboard Serial Port 4	: 3F8H
		Serial Port 4 Use IRQ	: IRQ10
IDE Primary Master UDMA	: Disabled	Build in CPU Audio	: Enabled
IDE Primary Slave UDMA	: Disabled	Audio I/O Base Address	: 220H
KBC input clock	: 6 MHz	MPU-401 I/O Base Address	: Disabled
Onboard FDC Controller	: Disabled	Audio IRQ Select	: Disabled
Onboard Serial Port 1	: Disabled	Audio Low DMA Select	: Disabled
Onboard Serial Port 2	: Disabled	Audio High DMA Select	: Disabled
Onboard Parallel Port	:	Multiple Monitor Support	: PCI First
Parallel Port Mode	:	Video Memory Size	: 1.5 M
ECP Mode Use DMA	:		
EPP Mode Select	: EPP1.9	ESC : Quit	↑↓↓+ : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

- ◆ **IDE HDD Block Mode:** Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select *Enabled* for automatic detection of the optimal number of block read/writes per sector the drive can support.  
The choice: *Enabled*, *Disabled*
- ◆ **Primary IDE Channel:** The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.  
The choice: *Enabled*, *Disabled*.

- ◆ **IDE PrimaryMaster/Slave UDMA:** Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

The Choice: Auto, Disabled.

- ◆ **Onboard FDC Controller:** Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

The choice: Enabled, Disabled.

- ◆ **Onboard Serial Port 1/Port 2:** Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

- ◆ **Onboard Parallel Port:** Select a logical LPT port name and matching address for the physical parallel (printer) port

The Choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled

- ◆ **Parallel Port Mode:** Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP or ECP mode.

The choice: SPP, ECP+EPP, EPP, ECP

- ◆ **ECP Mode Use DMA:** Select a DMA channel for the port.



Choices are 3, 1.

- ◆ **EPP mode Select:**

The choice: EPP1.7, EPP1.

- ◆ **Onboard Serial Port 3: (option)**

The choices: 3F8H, 2F8H, 3E8H, 2E8H, Disabled

- ◆ **Serial Port 3 Use IRQ: (option)**

The choices: IRQ 3,4,5,7,10,11

- ◆ **Onboard Serial Port 4: (option)**

The choices: 3F8H, 2F8H, 3E8H, 2E8H, Disabled

- ◆ **Serial Port 4 Use IRQ: (option)**

The choices: IRQ 3,4,5,7,10,11

- ◆ **Build in CPU Audio:**

The choices: enabled, Disabled

- ◆ **Audio I/O Base Address:**

The choices: 220H,240H, 260H, 280H

- ◆ **MPU-401 I/O Base Address:**

The choices: 300H, 330H, Disabled

- ◆ **Audio IRQ Select:**

The choices: IRQ5,7,10,Disabled

- ◆ **Audio Low DMA Select:**

The choices: DMA0,1,3,Disabled

- ◆ **Audio High DMA Select:**

The choices: DMA5,6,7,Disabled

- ◆ **Multiple Monitor Support:**

The choices: PCI First, M/B First, No Onboard

- ◆ **Video Memory Size:**

The choices: 1.5M, 2.5M, 4M

## 5.5 POWER MANAGEMENT SETUP

The system do not support ACPI funtion, so this funtions can't work

## 5.6 PnP/PCI CONFIGURATION SETUP

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own 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.

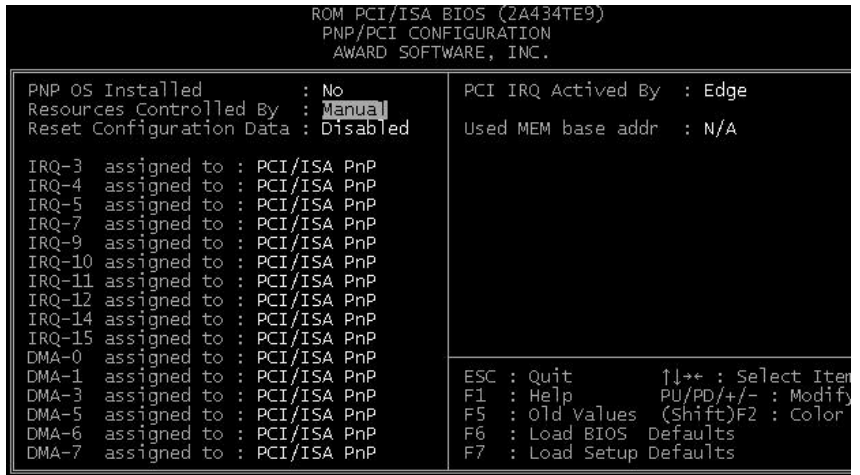


Figure 5-6

- ◆ **PnP OS Installed:** This item allows you to determine installed PnP OS or not.  
The choice: Yes, No.
- ◆ **Reset Configuration Data:** Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.  
The choice: Enabled, Disabled .
- ◆ **Resource controlled by:** Auto will allow the Award Plug and Play BIOS to automatically configure all of the boot and Plug and Play compatible devices. If you have trouble in assigning the interrupt resource automatically you can select “manual”, it will allow you to choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “>”).  
The choice: Auto(ESCD), Manual .
- ◆ **IRQ Resources:** When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.
- ◆ **IRQ3/4/5/7/9/10/11/12/14/15 assigned to:** This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.  
The Choice: *Legacy ISA* and *PCI/ISA PnP*.

- ♦ **DMA Resources:** When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DM channel.
- ♦ **DMA 0/1/3/5/6/7 assigned to:** Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

Choices are *Legacy ISA* and *PCI/ISA PnP*.

- ♦ **PCI/VGA Palette Snoop:** Leave this field at *Disabled*.

Choices are Enabled, Disabled.

## 5.7 Defaults Menu

Selecting “Defaults” from the main menu shows you two options which are described below

- ◆ **Load Setup Defaults:**



Pressing ‘Y’ loads the Optimal default values for the most stable, optimal performance system operations.

- ◆ **Load Standard Defaults**



:

Pressing 'Y' loads the Standard default values that are factory settings for normal performance system operations.

## 5.8 Supervisor/User Password Setting

You can set either supervisor or user password, or both of them. The differences between are:

**supervisor password** : can enter and change the options of the setup menus.

**user password** : just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

### ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

### PASSWORD DISABLED.

When a password has been enabled, 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 require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.



## 5.9 Exit Selecting

### Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

**Save to CMOS and EXIT (Y/N)?**

Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

### Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

**Quit without saving (Y/N)?**

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

## 5.10 POST Messages

During the Power On Self-Test (POST), if the BIOS detects an error requiring you to do something to fix, it will either sound a beep code or display a message.

If a message is displayed, it will be accompanied by:

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

### ◆ **POST Beep**

Currently there are two kinds of beep codes in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

### ◆ **Error Messages**

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

## **CMOS BATTERY HAS FAILED**

CMOS battery is no longer functional. It should be replaced.

## **CMOS CHECKSUM ERROR**

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

## **DISK BOOT FAILURE, INSERT SYSTEM DISK AND**

## **PRESS ENTER**

No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.

## **DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP**

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

## **DISPLAY SWITCH IS SET INCORRECTLY**

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

## **DISPLAY TYPE HAS CHANGED SINCE LAST BOOT**

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

# **EISA Configuration Checksum Error PLEASE RUN EISA CONFIGURATION UTILITY**

The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

# **EISA Configuration Is Not Complete PLEASE RUN EISA CONFIGURATION UTILITY**

The slot configuration information stored in the EISA non-volatile memory is incomplete.

Note: When either of these errors appear, the system will boot

in ISA mode, which allows you to run the EISA Configuration Utility.

# **ERROR ENCOUNTERED INITIALIZING HARD DRIVE**

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

## **ERROR INITIALIZING HARD DISK CONTROLLER**

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

## **FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT**

Cannot find or initialize the floppy drive controller. make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

## **Invalid EISA Configuration PLEASE RUN EISA CONFIGURATION UTILITY**

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

**NOTE:** When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

## **KEYBOARD ERROR OR NO KEYBOARD PRESENT**

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

## **Memory Address Error at ...**

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

## **Memory parity Error at ...**

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

## **MEMORY SIZE HAS CHANGED SINCE LAST BOOT**

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

## **Memory Verify Error at ...**

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

## **OFFENDING ADDRESS NOT FOUND**

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

## **OFFENDING SEGMENT:**

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

## **PRESS A KEY TO REBOOT**

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

## **PRESS F1 TO DISABLE NMI, F2 TO REBOOT**

When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

## **RAM PARITY ERROR - CHECKING FOR SEGMENT ...**

Indicates a parity error in Random Access Memory.

## **Should Be Empty But EISA**

## **Board Found PLEASE RUN EISA CONFIGURATION UTILITY**

A valid board ID was found in a slot that was configured as having no board ID.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

## **Should Have EISA Board But Not Found PLEASE RUN EISA CONFIGURATION UTILITY**

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

## **Slot Not Empty**

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

## **SYSTEM HALTED, (CTRL-ALT-DEL) TO**



## **REBOOT ...**

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

## **Wrong Board In Slot**

**PLEASE RUN EISA**

**CONFIGURATION UTILITY**

The board ID does not match the ID stored in the EISA non-volatile memory.

<p>NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.</p>
---

**FLOPPY DISK(S) fail (80) ®**

**Unable to reset floppy subsystem.**

**FLOPPY DISK(S) fail (40) ®**

**Floppy Type mismatch.**

**Hard Disk(s) fail (80)**

**® HDD reset failed**

**Hard Disk(s) fail (40)**

**® HDD controller**

**diagnostics failed.**

**Hard Disk(s) fail (20)**

**® HDD initialization error.**

**Hard Disk(s) fail (10)**

**® Unable to recalibrate fixed disk.**

**Hard Disk(s) fail (08)**

**® Sector Verify failed.**

**Keyboard is locked out -  
Unlock the key.**

BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

**Keyboard error or no  
keyboard present.**

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

**Manufacturing POST loop.**

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

**BIOS ROM checksum error -  
System halted.**

The checksum of ROM address F0000H-FFFFFFH is bad.

# **Memory test fail.**

BIOS reports the memory test fail if the onboard memory is tested error.

## 5.11 POST Codes

POST (hex)	Description
CFh	Test CMOS R/W functionality.
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
0h1	Expand the Xgroup codes locating in physical address 1000:0
02h	Reserved
03h	Initial Superio_Early_Init switch.
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved

<b>POST (hex)</b>	<b>Description</b>
0Ah	<ol style="list-style-type: none"> <li>1. Disable PS/2 mouse interface (optional).</li> <li>2. Auto detect ports for keyboard &amp; mouse followed by a port &amp; interface swap (optional).</li> <li>3. Reset keyboard for Winbond 977 series Super I/O chips.</li> </ol>
0Bh	Reserved
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reserved
16h	Initial Early_Init_Onboard_Generator switch.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).
19h	Reserved
1Ah	Reserved

<b>POST (hex)</b>	<b>Description</b>
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
1Ch	Reserved
1Dh	Initial EARLY_PM_INIT switch.
1Eh	Reserved
1Fh	Load keyboard matrix (notebook platform)
20h	Reserved
21h	HPM initialization (notebook platform)
22h	Reserved
23h	<ol style="list-style-type: none"> <li>1. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute.</li> <li>2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead.</li> <li>3. Prepare BIOS resource map for PCI &amp; PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.</li> <li>4. Onboard clock generator initialization. Disable respective clock resource to empty PCI &amp; DIMM slots.</li> <li>5. Early PCI initialization: <ul style="list-style-type: none"> <li>-Enumerate PCI bus number</li> <li>-Assign memory &amp; I/O resource</li> <li>-Search for a valid VGA device &amp; VGA BIOS, and put it into C000:0.</li> </ul> </li> </ol>
24h	Reserved
25h	Reserved
26h	Reserved
27h	Initialize INT 09 buffer
28h	Reserved

<b>POST (hex)</b>	<b>Description</b>
29h	<ol style="list-style-type: none"> <li>1. Program CPU internal MTRR (P6 &amp; PII) for 0-640K memory address.</li> <li>2. Initialize the APIC for Pentium class CPU.</li> <li>3. Program early chipset according to CMOS setup. Example: onboard IDE controller.</li> <li>4. Measure CPU speed.</li> <li>5. Invoke video BIOS.</li> </ol>
2Ah	Reserved
2Bh	Reserved
2Ch	Reserved
2Dh	<ol style="list-style-type: none"> <li>1. Initialize multi-language</li> <li>2. Put information on screen display, including Award title, CPU type, CPU speed ....</li> </ol>
2Eh	Reserved
2Fh	Reserved
30h	Reserved
31h	Reserved
32h	Reserved
33h	Reset keyboard except Winbond 977 series Super I/O chips.
34h	Reserved
35h	Reserved
36h	Reserved
37h	Reserved
38h	Reserved
39h	Reserved
3Ah	Reserved
3Bh	Reserved
3Ch	Test 8254
3Dh	Reserved
3Eh	Test 8259 interrupt mask bits for channel 1.
3Fh	Reserved
40h	Test 8259 interrupt mask bits for channel 2.
41h	Reserved

<b>POST (hex)</b>	<b>Description</b>
42h	Reserved
43h	Test 8259 functionality.
44h	Reserved
45h	Reserved
46h	Reserved
47h	Initialize EISA slot
48h	Reserved
49h	1. Calculate total memory by testing the last double word of each 64K page 2. Program writes allocation for AMD K5 CPU.
4Ah	Reserved
4Bh	Reserved
4Ch	Reserved
4Dh	Reserved
4Eh	1. Program MTRR of M1 CPU 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. 3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.
4Fh	Reserved
50h	Initialize USB
51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Reserved
54h	Reserved
55h	Display number of processors (multi-processor platform)
56h	Reserved
57h	1. Display PnP logo 2. Early ISA PnP initialization -Assign CSN to every ISA PnP device.



<b>POST (hex)</b>	<b>Description</b>
58h	Reserved
59h	Initialize the combined Trend Anti-Virus code.
5Ah	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)
5Ch	Reserved
5Dh	1. Initialize Init_Onboard_Super_IO switch. 2. Initialize Init_Onboard_AUDIO switch.
5Eh	Reserved
5Fh	Reserved
60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
61h	Reserved
62h	Reserved
63h	Reserved
64h	Reserved
65h	Initialize PS/2 Mouse
66h	Reserved
67h	Prepare memory size information for function call: INT 15h ax=E820h
68h	Reserved
69h	Turn on L2 cache
6Ah	Reserved
6Bh	Program chipset registers according to items described in Setup & Auto-configuration table.
6Ch	Reserved
6Dh	1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".

<b>POST (hex)</b>	<b>Description</b>
6Eh	Reserved
6Fh	1. Initialize floppy controller 2. Set up floppy related fields in 40:hardware.
70h	Reserved
71h	Reserved
72h	Reserved
73h	(Optional Feature) Enter AWDFLASH.EXE if : -AWDFLASH is found in floppy drive. -ALT+F2 is pressed
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM.....
76h	Reserved
77h	Detect serial ports & parallel ports.
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Reserved
7Dh	Reserved
7Eh	Reserved
7Fh	1. Switch back to text mode if full screen logo is supported. -If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: ♦Clear EPA or customization logo.
80h	Reserved
81h	Reserved

<b>POST (hex)</b>	<b>Description</b>
82h	<ol style="list-style-type: none"> <li>1. Call chipset power management hook.</li> <li>2. Recover the text font used by EPA logo (not for full screen logo)</li> <li>3. If password is set, ask for password.</li> </ol>
83h	Save all data in stack back to CMOS
84h	Initialize ISA PnP boot devices
85h	<ol style="list-style-type: none"> <li>1. USB final Initialization</li> <li>2. NET PC: Build SYSID structure</li> <li>3. Switch screen back to text mode</li> <li>4. Set up ACPI table at top of memory.</li> <li>5. Invoke ISA adapter ROMs</li> <li>6. Assign IRQs to PCI devices</li> <li>7. Initialize APM</li> <li>8. Clear noise of IRQs.</li> </ol>
86h	Reserved
87h	Reserved
88h	Reserved
89h	Reserved
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code
94h	<ol style="list-style-type: none"> <li>1. Enable L2 cache</li> <li>2. Program boot up speed</li> <li>3. Chipset final initialization.</li> <li>4. Power management final initialization</li> <li>5. Clear screen &amp; display summary table</li> <li>6. Program K6 write allocation</li> <li>7. Program P6 class write combining</li> </ol>
95h	<ol style="list-style-type: none"> <li>1. Program daylight saving</li> <li>2. Update keyboard LED &amp; typematic rate</li> </ol>

<b>POST (hex)</b>	<b>Description</b>
96h	<ol style="list-style-type: none"> <li>1. Build MP table</li> <li>2. Build &amp; update ESCD</li> <li>3. Set CMOS century to 20h or 19h</li> <li>4. Load CMOS time into DOS timer tick</li> <li>5. Build MSIRQ routing table.</li> </ol>
FFh	Boot attempt (INT 19h)

# Chapter 6

## MFI-5GXM Book size PC MFII-5GXM Slim size PC

### Software Installation

#### 6.1 How to install windows 95 or 98 operation system

The MFI-5GXM Book size/Slim size PC do not have the space for mounting the CD-ROM drive inside the case; how to install windows 95/98 operating system from CD-ROM DISC to your hard disk ? There are 3 methods to be able to install the windows 95/98 operation system. Following are the procedure step by step to guide you how to install the software :

##### **A. Method 1:**

Install the windows 95/98 from the external CD-ROM which connects to the IDE primary-slave at the MFI-5GXM book size PC/slim size PC. Before doing this way you have to open the book size/slim size PC case and prepare a 40 pins IDE cable which capable to connect the hard disk drive at IDE-primary master and external CD-ROM drive at IDE-Primary slave. Now, you can install the windows 95/98 OS from the external CD-ROM to the hard disk. But if you are installing the windows

95 that it should be windows 95 OSR2.1 version, otherwise it will has the problem.

**B. Method 2:**

Install the windows 95/98 OS from the external CD-ROM which connects to the parallel port (parallel port to IDE external CD-ROM box) or USB port (USB port to IDE external CD-ROM box). Before doing this way you have to make sure the external CD-ROM vendor has provided the DOS driver which capable to boot the DOS from the floppy disk drive and reconized the external CD-ROM drive. (either parallel to IDE or USB to IDE external CD-ROM).

Now , you can install the windows 95 OSR2.1/98 OS from the external CD-ROM to the hard disk.

**C. Method 3 :**

Install the windows 95/98 OS from the hard disk itself. You need to prepare another system which be able to install the hard disk and CD-ROM in the same system. Then copy all the windows 95 OSR2.1/98 files from the CD-ROM disc to the hard disk, before copy the files that you need to prepare a formatted hard disk and create a directory for it. You also have to create another directory to copy the MFI-5GXM “all-in-one driver” from the povided CD-ROM disc to the hard disk. Now, you can remove this hard disk from this system to your MFI-5GXM book size/slim size PC and install it to the IDE primary master.

Then,install the windows 95 OSR2.1/98 OS from the hard disk itself.

### **6.1.1 How to install MFI-5GXM “all-in-one driver”**

After finished the windows 95 OSR2.1/98 operating system that you need to install MFI-5GXM “all-in-one driver” which provided on the CD-ROM disc along with your book size/slim size PC together.

Following is the procedure step by step for you to install the MFI-5GXM “all-in-one driver”.

Step 1 : found your MFI-5GXM “all-in-one driver”

and execute the command line

“National Geode win9x driver1.2”,

suppose the MFI-5GXM “all-in-one driver”

locate at your “X” drive.

X:\MF-5GXM\Win9X\All\National Geode

win9x driver 1.2

Step 2 : After installs the MFI-5GXM “all-in-one driver”, it will re-start your computer;

You just simply need to click “NEXT” to choose windows default driver.

Step 3 : After finished the installation of the MFI-5GXM “all-in-one driver” that it will

automatically install the Cyrix5530 bus master driver, but it will cause windows 95 OSR2.1/98 unable to boot. So, you have to remove the IDE driver which has installed by the “all-in-one driver”, and then install the IDE driver by using the windows 95 OSR2.1/98 provided default driver. Since windows NT does not support the bus master, so, it will not has such problem. So, you do not need to remove the IDE driver which has installed by the “all-in-one driver”

## **6.2 How to install windows NT operation system**

If you need to install windows NT operating system that you must update to service pack 4 or later version.

To install windows NT operating system will be the same as windows 95/98, except the IDE bus master issue which has described on the above.



# CHAPTER 7 ONBOARD 10/100Mbps FAST ETHERNET INSTALLATION

## 7.1 Hardware installation

### 1. Installing the optional Boot ROM Chip.

The optional boot ROM can be purchased separately. Before executing any remote boot function, a boot ROM should be installed into the DOC socket on the all-in-one motherboard at the location U17. Be careful that the notch on the ROM should be carefully aligned with the socket in the same direction. Otherwise, it will burn out the ROM chip with the wrong direction.

### 2. The boot ROM can be boot from different operation system listed below:

- The Novell 3.X/4.X RPL server.
- The Microsoft Windows NTAS 3.5,3.51 RPL server.
- The Microsoft LAN Manager 2.1 Remote boot server.
- The IBM OS/2 LAN Server 4.0 Remote boot server.
- The IBM OS/2 LAN Server 4.0 Remote boot server.

## **7.2 Software Installation**

There are many different network operation system can be installed on the MFI/MFII book size/slim size PC. Such as Windows 95/98, Windows NT 3.X & 4.X, NOVEL 4.X, SCO UNIX 4.X & 5.X, LAN Server 2.0/3.0/4.0 .....,for the detailed of all the software driver installations, please refer to the fast Ethernet CD-ROM disc. Following we are listing the Windows 95/98 and Windows NT software driver installation for reference.

### **NOTE:**

The most updated network driver for the RTL8139C 10/100 Mbits Fast Ethernet Lan chip can be down load from the chip set manufacturer at the web site :  
“<http://www.realtek.com.tw>”

## 7.2-1 Installing the on board 10/100M FAST Ethernet driver for windows 95

### Introduction:

This document describes the procedure step by step to install

Windows 95 driver for Realtek

RTL8139C PCI Fast Ethernet Network.

Insert the CD-ROM disk to the CD-ROM drive.

Location of Driver: D:\R8139C\WIN95\RTL8139.SYS

(Where "D" is the CD-ROM drive)

### Installing driver procedure on Microsoft Windows 95 :

#### **Step1. Starting Windows 95**

Start

Settings

Control panel

System

Device manager

? Other devices

? PCI Ethernet controller

Click

Remove (This will remove the default Network driver which was pick up under windows 95 installation)

Click

OK

#### **Step2. Restart the computer**

New Hardware Found

PCI Ethernet controller

Ask you to select which driver you want to install, select "Driver

from disk provided by hardware manufacturer".

Click OK

Browse

D:\R8139C\WIN95

Click OK

Click OK

You must provide computer and workgroup names that will identify this computer on the network

Click OK

Computer name : xxx

Workgroup : xxx

Computer

Description : xxx

The file "netapi.dll" on windows 95 CD-ROM could not found

**Step3. Insert windows 95 CD-ROM into the driver**

Click OK

Click Yes

**Step4. Restart Windows 95**

User name : XXX

Click OK

Click OK

## 7.2-2 Installing the on board 10/100M FAST Ethernet driver for windows 98

### Introduction:

This document describes the procedure step by step to install

Windows 98 driver for Realtek  
RTL8139C PCI Fast Ethernet Network.  
Insert the CD-ROM disk to the CD-ROM drive.

Location of Driver: D:\R8139C\WIN98\RTL8139.SYS  
(Where "D" is the CD-ROM drive)

### Installing driver procedure on Microsoft Windows 98 :

#### **Step1. Starting Windows 98**

Start  
Settings  
Control panel  
System  
Device manager  
? Other devices  
? PCI Ethernet controller

Click

Remove (This will remove the default Network driver which was pick up under windows 98 installation)

Click

Close  
Start

Shut down

Reset

Click Ok

## **Step2. Restart the computer**

New Hardware Found

Click Next

Display a list of all the drivers in a specific location, so you can select the drive you want

## **Step3. Select: NetWare adapters**

Click Next

Click Have Disk

Click Browse

D:\R8139C\WIN98

Click Ok

Click Ok

Click Ok

D:\R8139\Win98

Click Ok

Insert Windows 95 CD-ROM into the driver

D:\WIN98

Click OK

Click Next

Click Finish, then restart computer.

## **7.2-3 Installing the on board 10/100M FAST Ethernet driver for Windows NT 3.5, 3.51, & 4.0**

### **Introduction**

This document describes the procedure to install Windows NT V3.5, V3.51 & V4.0 driver for RTL8139C PCI Fast Ethernet adapter.

Insert the CD-ROM disk to the CD-ROM drive.

Location of Driver:D:\R8139C\WINNT  
(Where “D” is the CD-ROM drive)

### **Installing driver procedure on Microsoft Windows NT:**

When you are in Windows NT:

- (1.) In the main group of NT, select the “Control Panel” icon.
- (2.) In the Control Panel window, choose the “Network” icon.
- (3.) In the list of network cards, select “<other> Requires disk from manufacturer”, and then press<Enter>button.
- (4.) In the list of network cards, select “<other> Requires disk from manufacturer”, and then press<Enter>button.
- (5.) Insert the Realtek driver disc in drive D, enter drive and pathname D:\R8139C\WINNT which is the path where the setup file OEMSETUP.INF is located, and then choose the OK button.
- (6.) The screen will appear “Select Line Speed” dialog box which is provide by RTL8139.SYS driver. The default value is “auto” so that the RTL8139 PCI Fast Ethernet adapter and its driver RTL8139.SYS will auto-detect the line speed, 10Mb or 100Mb, while the RTL8139.SYS is loading. The other values, “10” or “100”, are only used when you want to forced RTL8139 PCI Fast Ethernet adapter to 10Mb or 100Mb.
- (7.) The screen will appear “Input Ethernet ID” dialog box which is provide by RTL8139.SYS driver. This option is only required when you have more than one Realtek RTL8139 PCI Fast Ethernet adapters on this computer. Select “SKIP” if only one adapter is installed on this computer.

- (8.) “Bus Location” display in next screen. Your machine contains more than one hardware bus, please select the Bus type and Bus number on which your network adapter card is installed.
- (9.) NT will then perform the binding process. If any additional network software optional were installed, you may be prompted for specific information for these packages.
- (10.) Restarting your system you will acquire network service.

**NOTES:**

Installing Multiple LAN Adapters:

Enter Windows NT and following above setup procedure step 2, in the “Network Settings” dialog box, choose the “Configure Button”. The “Input Ethernet ID” dialog box appears and input adapter’s Ethernet ID. Last step to select OK and close Network Setup, select SKIP if only adapter is installed on this computer.



# CHAPTER 8 AWARD BIOS UTILITY

## 8.1 BIOS update utility

AWDFLASH.EXE is the AWARD BIOS update utility which will be able to update your new updated BIOS code. Following is the new BIOS code update procedure.

- Step1. Startup the MFI-5GXM Book Size PC or MFII-5GXM Slim Size PC under window 95/98/NT and copy the AWDFLASH.EXE file from the provided CD-ROM disk under directory “AWDUTIL” to the bootable DOS floppy diskette.
- Step2. Copy the new BIOS code to the same bootable DOS floppy diskette.
- Step3. Boot from the bootable DOS floppy diskette and run the AWDFLASH.EXE file and input the new BIOS code, as the following DOS command.  
>AWDFLASH NEWBIOS.BIN/Py/Sn (NewBIOS.BIN is the new BIOS code file name)
- Step4. When finish press “F1” to reboot the system.
- Step5. Enter BIOS setup function and LOAD SETUP DEFAULT then click “Save and Exit”.