

# **IAC-H670 Series**

## **Half-size SBC**

with VGA and LAN for  
Socket 370 Pentium III Processor

## **User's Manual**



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Ver. No. V1.1

Date: 2002/11/21



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## Chapter 1 . Introduction

### 1.1 Introduction

The IAC-H670 Series is a half-size Pentium® III/Celeron Single Board Computer (SBC) CPU card. With integrated Intel 82562EN 10/100Base-TX Ethernet chip, the IAC-H670 is targeting on the rapid growing networking, and telecommunication markets. The supporting Intel DVMT (Dynamic Video Memory Technology) makes IAC-H670 suitable for advanced 2D/3D graphic applications.

Its 8-layer printed circuit board combining with noise-tolerant and low power consumption CMOS technology enables the IAC-H670 Series to withstand any harsh industrial environments very well.

The IAC-H670 Series SBC comes with enhanced hardware monitoring that monitors system and CPU temperature, system voltages, and CPU/chassis fan speeds to prevent unexpected system failures by warning the user of adverse conditions. The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen or stopping the HDD spindle motor to conserve energy.

Other standard features include two serial ports (one RS-232 and one RS-232/422/485 selectable), one multi-mode (ECP/EPP/SPP) parallel port, one floppy drive controller, and one PS/2 keyboard / mouse interface. The built-in PCI Enhanced IDE controller supports two IDE devices in Ultra ATA 100/66/33 bus master modes.

Carefully designed to be a feature-rich CPU card at a reasonable price, this board elegantly meets industry needs and saves time and money by waiving the hassle of going through the extra effort and cost of additional I/O cards. Being standards-compliant, it is proved to be a quality product with high performance and stability in a long run.

### 1.2 Features

- Various FSB (Front Side Bus) Support: 66/100/133MHz
- Integrated VGA/LAN Functions (Intel 815E Chipset)
- DVMT (Dynamic Video Memory Technology) Enables Optimum Graphic And Memory Performance For 2D/3D Graphics
- Display Resolution Up to 1600\*1200\*256 Colors @ 85Hz
- Remote Control Ability by Wake on LAN/Wake on MODEM Function
- PC/104 Expansion Possible
- High Reliability by Enhanced Hardware Monitoring Function
- Multiple Serial Port Type (RS-232/422/485) For Flexible Serial Communication
- 4 USB Ports Supporting Extra Peripheral Connections

## 1.3 Specification

### IAC-H670 Series

<b>Processor</b>	Intel® Tualatin (1.13/1.2/1.26GHz) & Coppermine Pentium III/Celeron™ Processor in Socket 370
<b>Chipset</b>	Intel® 815E chipset, IT8712F I/O Chipset, IT8888 PCI to ISA Bridge
<b>System Memory / RAM</b>	One 168-pin DIMM socket, support 100/133 MHz SDRAM
<b>BIOS</b>	AMI licensed BIOS
<b>Flash Memory Disk</b>	Reserved socket for DiskOnChip from M-System, support up to 288 MB flash memory disk
<b>Graphics Controller</b>	Internal graphic controller with Intel's Dynamic Video Memory Technology, resolution up to 1600 x 1200 x 256 colors @ 85 Hz, with VGA connector
<b>Ethernet Controller</b>	Intel 82562ET chip, support 10/100 Base-Tx Ethernet, Wake On LAN supported via ATX power supply
<b>IDE Drive Interface</b>	One PCI IDE port that support up to two IDE devices and Ultra ATA/100/66/33
<b>Floppy Drive Interface</b>	One FDD port, support up to two floppy devices
<b>Serial Port</b>	Two COM ports, one RS-232 and one RS-232/422/485
<b>Parallel Port</b>	One multi-mode parallel port (SPP / EPP / ECP)
<b>Bus Interface</b>	ISA bus and PC/104 expansion bus
<b>RTC</b>	Internal RTC with Li battery
<b>Keyboard/Mouse</b>	6-pin mini-Din PS/2 keyboard/mouse connector and 5-pin keyboard header
<b>Watchdog Timer</b>	16-level time-out intervals
<b>Digital I/O</b>	4-bit digital I/O header
<b>Universal Serial Bus</b>	Support 4 USB ports
<b>IR Interface</b>	Support IrDA header
<b>Health Monitoring</b>	Enhanced hardware monitor functions
<b>Power interface</b>	4-pin ATX feature connector
<b>Operating Temperature</b>	0 °C~60 °C
<b>Storage Temperature</b>	-20 °C~70 °C
<b>Humidity</b>	5 %~95% RH, non-condensing
<b>Dimensions</b>	185 x 122 mm ± 0.5 mm
<b>Ordering Information</b>	IAC-H670A: VGA/LAN
<b>Optional</b>	USB Y Cable with bracket (0800100100002)

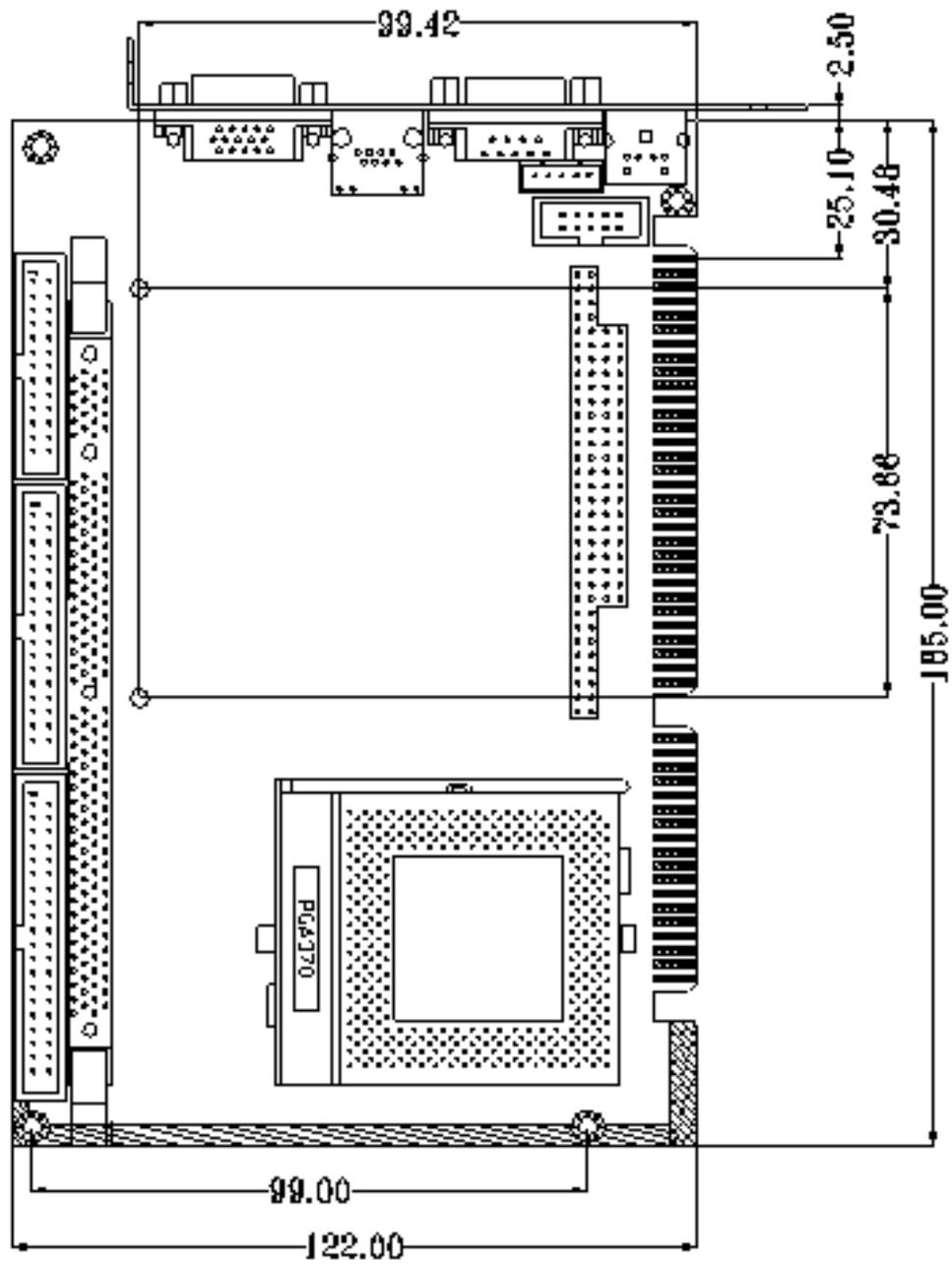
**Note:** CPU didn't support PPGA processor .

## 1.4 Unpack your IAC-H670 and Accessory

Before you begin to install your card, please make sure that you received the following materials as listed below:

- IAC-H670 Series SBC x 1 pc
- Keyboard and Mouse Cable x 1 pc
- LPT/COM cable x 1 pc
- ATX Feature Cable x 1 pc
- IDE Cable x 1 pc
- FDD Cable x 1 pc
- Driver Utility CD-ROM x 1 pc
- User's Manual x 1 pc
- Single Board Computer
- 6pin Mini-Din PS/2 connector to 6pin PS/2 K/B+6pin PS/2 Mouse Cable
- 26-pin to 25-pin with 10-pin to 9-pin D-Sub Cable
- 4-pin 40cm cable
- DMA-66 80pin IDE Cable
- 34 to 34-pin Standard Header Flat Ribbon Cable
- Drivers & Utilities
- This User's Manual

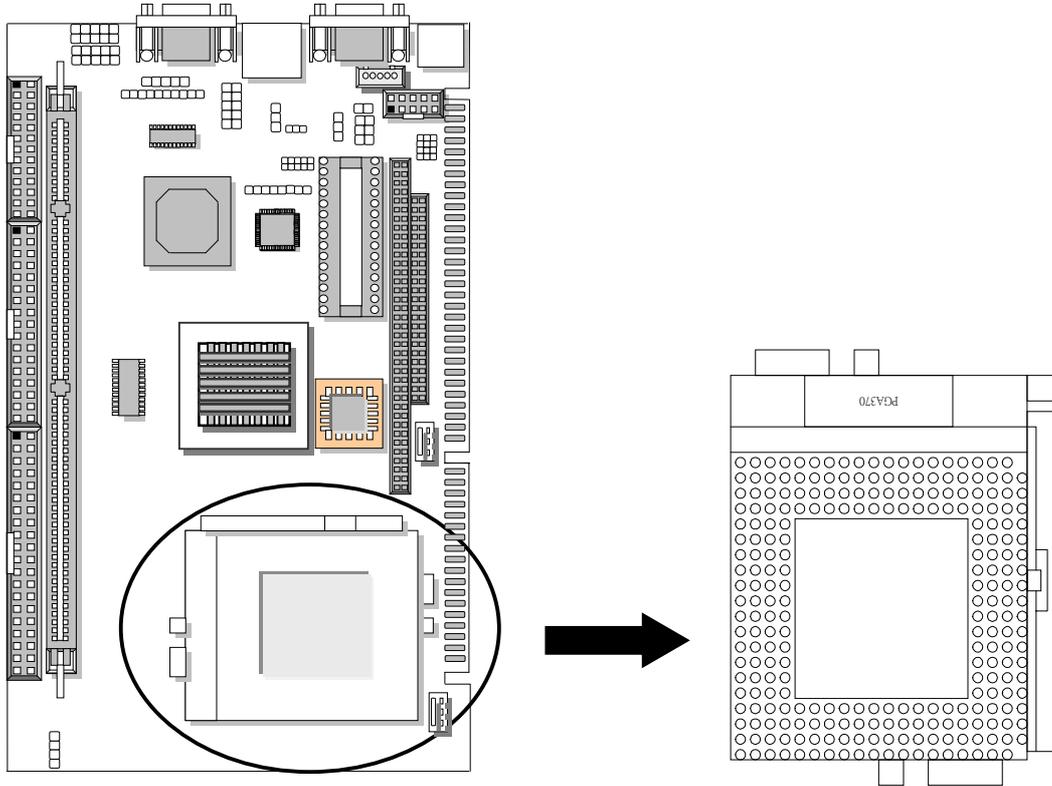
## 1.5 Board Layout



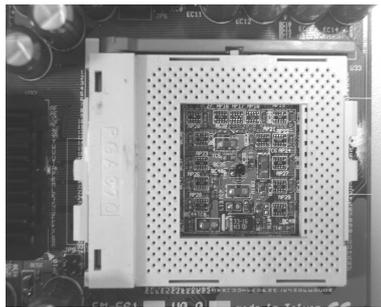
## Chapter 2 . Installation

### 2.1 Hardware Setup and Installation

#### 2.1.1 CPU Installation and Upgrading

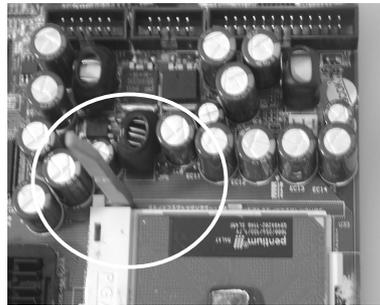


**Step 1** Locate the ZIF socket and open it by first pulling the lever of socket upward.

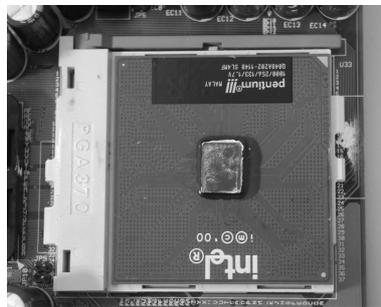


**Step 2** Insert the CPU into the socket. Please keep the lever right angle when inserting CPU.

**Step 3** When inserting the CPU please note the correct orientation as shown. The notched corner should point toward the end of the lever.

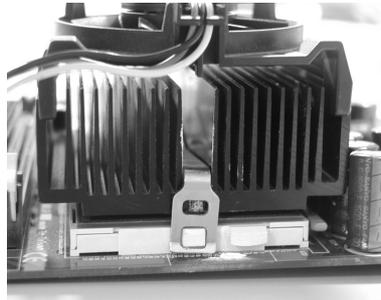


**Step 4** Push the lever down to close the socket.

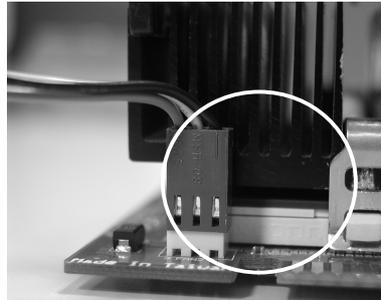


**Step 5** Attach the heatsink onto the CPU.

**Step 6** Push the clip of heatsink downward to hook the ear of socket firmly.

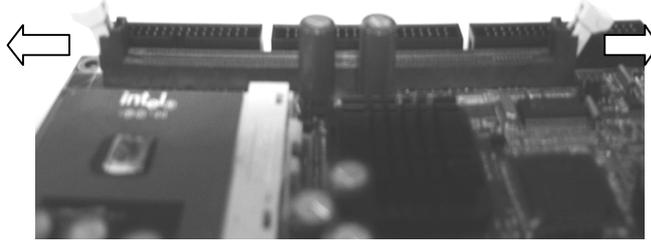


**Step 7** Finally attach the fan cable to the CPU fan header.

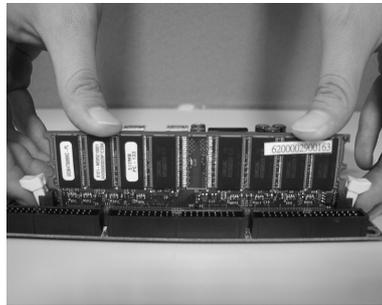


### 2.1.2 System Memory Installation

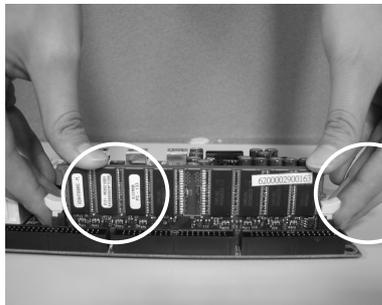
**Step 1** Open latches of DIMM socket.



**Step 2** Insert the RAM module into the DIMM socket.

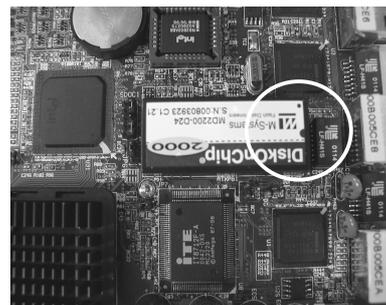
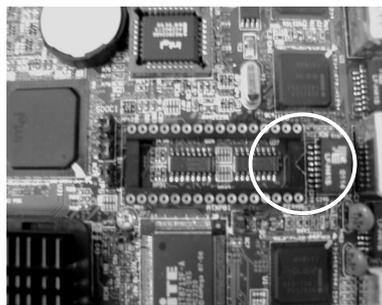


**Step 3** Press the latches into the notches of the RAM module.



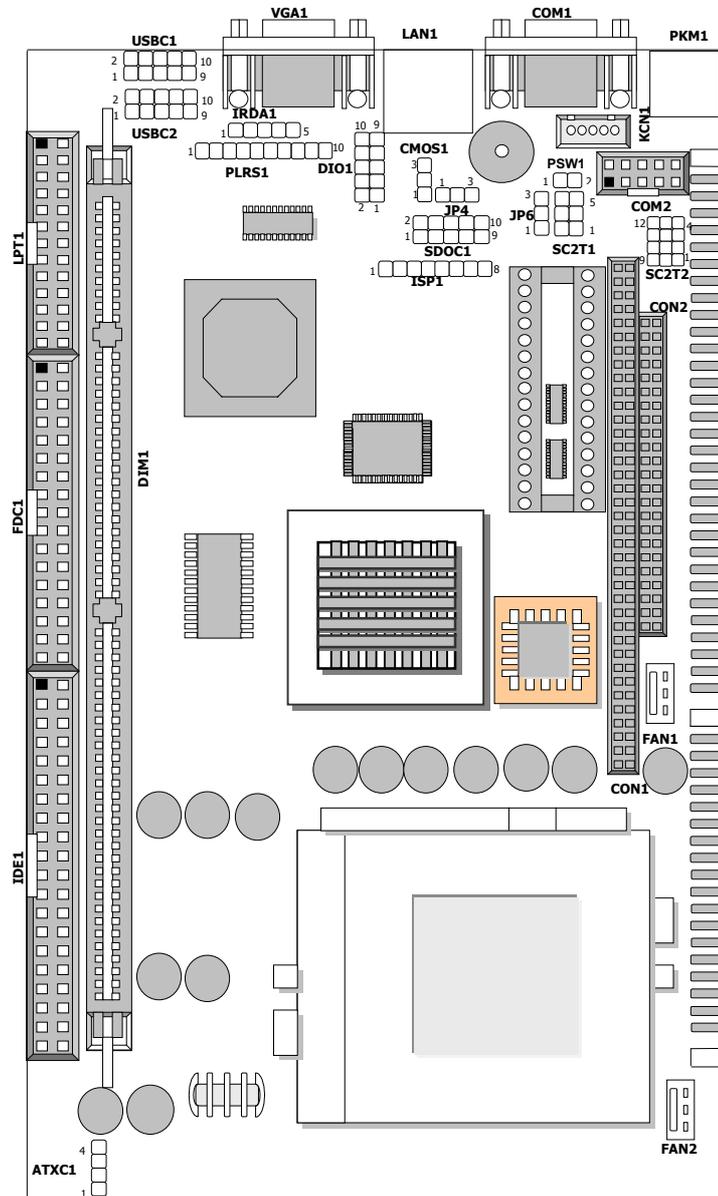
### 2.1.3 DiskOnChip Installation

Please make sure the central polarization key on the socket, and place the DiskOnChip as the same direction.



## 2.2 Jumper Settings and Connectors

### 2.2.1 Board Outline of IAC-H670

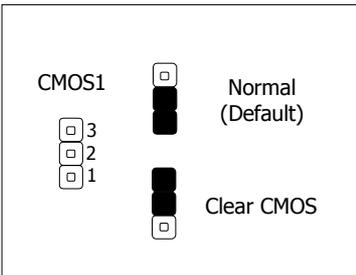


**2.2.2 Jumper Setting Summary of IAC-H670**

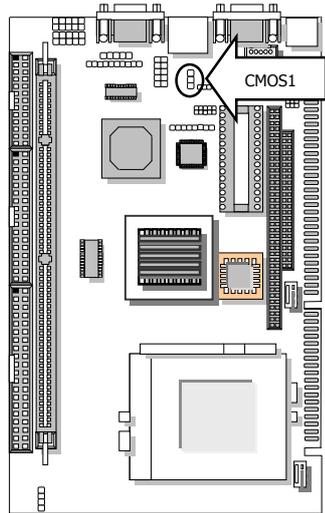
LOCATION	FUNCTION
CMOS1	Clear CMOS
SDOC1	Select DiskOnChip (Flash Disk) Address
SC2T1 / SC2T2	Select COM2 Type
JP4, JP6	Factory Use Only

**■ CMOS1:Clear CMOS**

COMS1 States	CMOS1
Normal (Default)	1-2
CLEAR CMOS	2-3

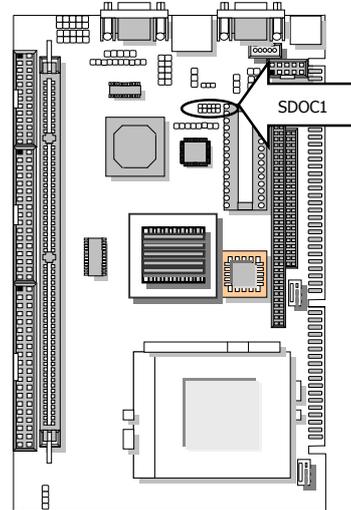
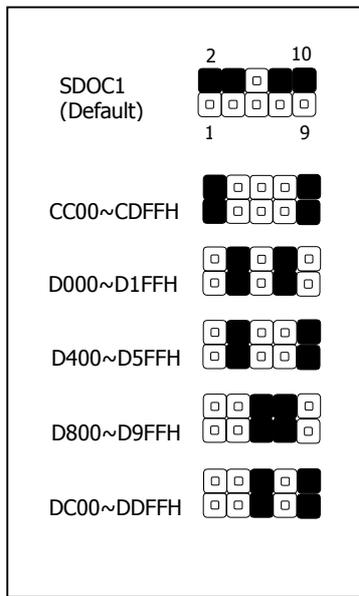


**Note:** If you forget your password, the only way to solve this problem is to discharge the CMOS memory by turning power off and placing a shunt on the COMS1 (2-3) for 5 seconds, then removing the shunt.



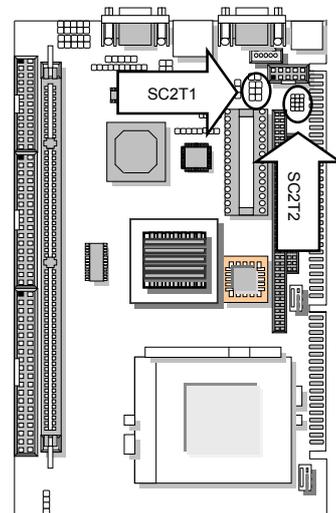
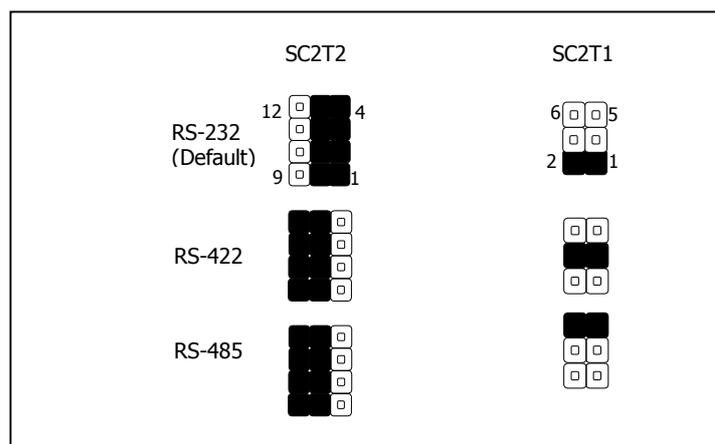
■ **SDOC1: Select DiskOnChip (Flash Disk) Address**

Flash Disk Address	SDOC1
CC00~CDFFH	1-2,9-10
D000~D1FFH	3-4,7-8
D400~D5FFH	3-4,9-10
D800~D9FFH	5-6,7-8
DC00~DDFFH	5-6,9-10
OFF (Default)	2-4,8-10



■ **SC2T1/SC2T2: Select COM2 Type**

COM2 Type	SC2T2	SC2T1
RS-232 (Default)	1-5,2-6,3-7,4-8	1-2
RS-422	5-9,6-10,7-11,8-12	3-4
RS-485	5-9,6-10,7-11,8-12	5-6



**2.2.3 I/O Connector Summary**

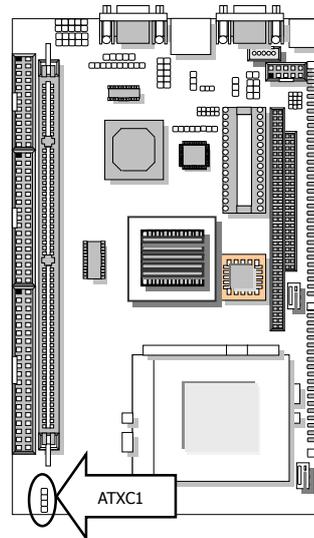
Connector	Function
ATXC1	ATX Power Expansion (Header) ATX Power ON Switch (Header)
KCN1	5pin Keyboard Cable Connector
PKM1	PS/2 Keyboard & Mouse Connector (Mini Din)
ISP1	Program ISP GAL Connector (Factory Only)
PLRS1	Connector for Power LED, Reset, Speaker Connector, HD LED
COM1	RS-232 Serial Port#1 Connector (D-Sub)
FAN1	System FAN Connector
FAN2	CPU FAN Connector
IRDA1	Consumer Remote Control IR (CIR)
VGA1	VGA Connector
USBC 1,2	USB Header
COM2	RS-232 Serial Port#2 Connector (Header)
IDE1	Primary IDE Cable Connector (Header)
DIO1	4bit Digital I/O Connector
LPT1	Parallel Port Connector (Header)
FDC1	Floppy Cable Connector (Header)
LAN1	LAN Connector
CON1	PC/104 Connector
CON2	PC/104 Connector

■ **ATXC1: ATX Power Expansion Header**

Pin No.	Description
1	Ground
2	5V Standby
3	Ground
4	Power ON

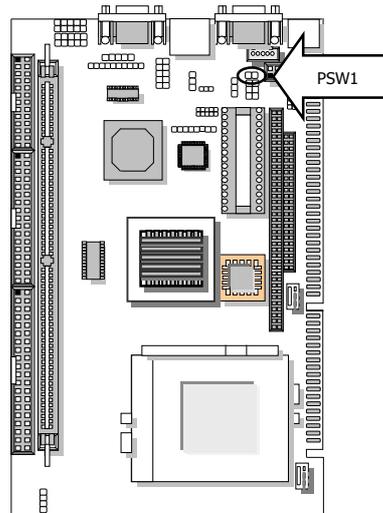


**Note:** To have full features from ATX power, the ATXC1 should be wired to the connectors with the same function on the Backplane. Please refer to the connector definition and description for more information.



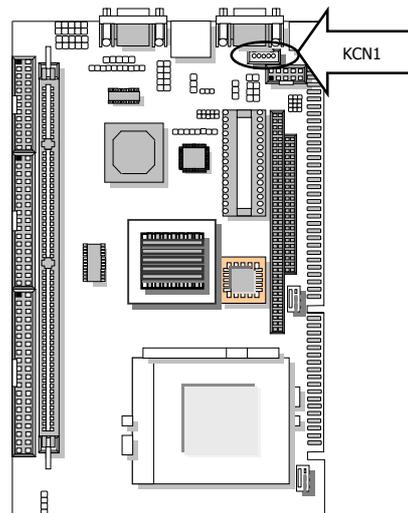
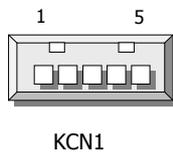
### ■ PSW1: ATX Power ON Switch (Header)

Pin No.	Description
1	SWON-
2	Ground



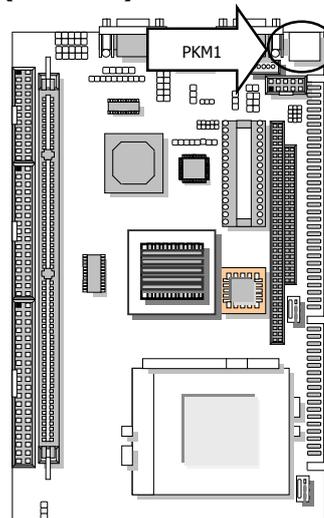
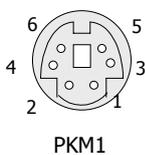
### ■ KCN1: 5pin Keyboard Cable Connector

Pin No.	Description
1	Keyboard Clock
2	Keyboard Data
3	NC
4	Ground
5	Stand By 5V



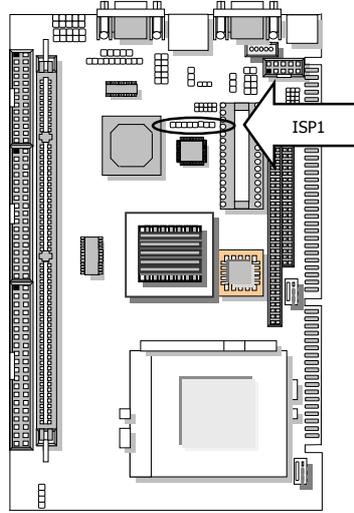
### ■ PKM1: PS/2 Keyboard & Mouse Connector(Mini Din)

Pin No.	Description
1	PS/2 Keyboard Data
2	PS/2 Mouse Data
3	Ground
4	Stand By 5V
5	PS/2 Keyboard Clock
6	PS/2 Mouse Clock



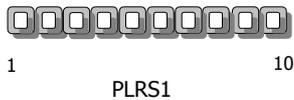
■ **ISP1: Program ISP GAL Connector (Factory Only)**

Pin No.	Description
1	Vcc
2	SDO
3	SDI
4	ISP
5	NC
6	MODE
7	Ground
8	SCLK

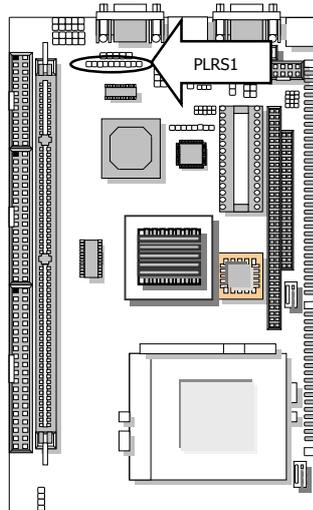


■ **PLRS1: Power LED, Reset, Speaker Connector**

Pin No.	Description
1	Power LED+
2	GND
3	HDD LED+
4	HDD LED-
5	RESET SW+
6	RESET SW-(GND)
7	External Speaker-
8	Internal Buzzer-
9	NC
10	External Speaker+

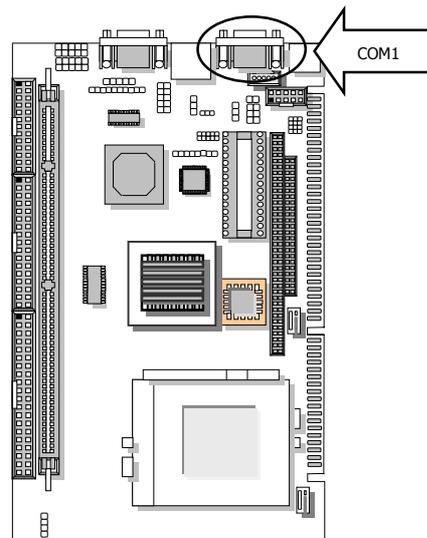
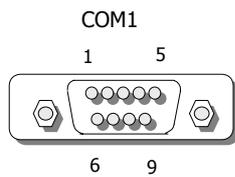


Default:7-8



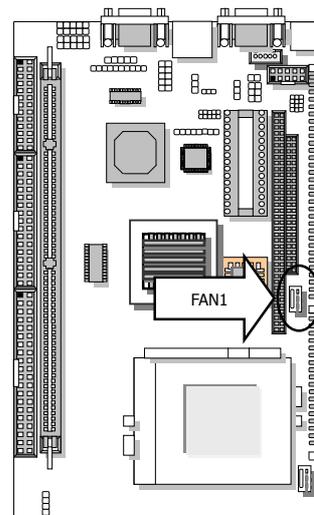
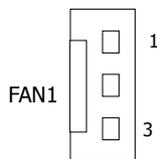
■ **COM1: RS-232 Serial Port#1 Connector (D-Sub)**

Pin No.	Description
1	Data Carrier Detect (DCDA#)
2	Receive Data (RXDA)
3	Transmit Data (TXDB)
4	Data Terminal Ready (DTRA#)
5	Ground (GND)
6	Data Set Ready (DSRA#)
7	Request To Send (RTSA#)
8	Clear To Send (CTSA#)
9	Ring Indicator (RIA#)



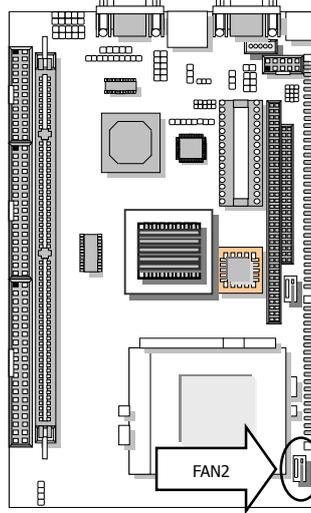
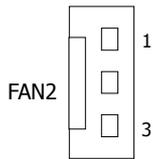
■ **FAN1: System FAN Connector**

Pin No.	Description
1	Ground
2	+12V
3	Fan Status Signal



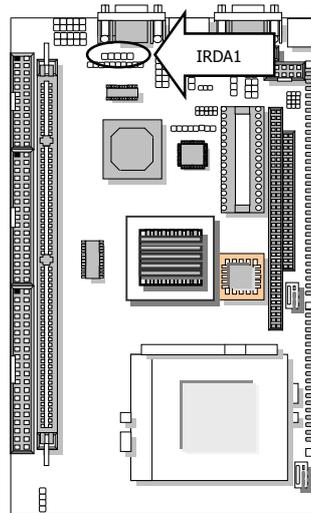
■ **FAN2: CPU FAN Connector**

Pin No.	Description
1	Ground
2	+12V
3	Fan Status Signal



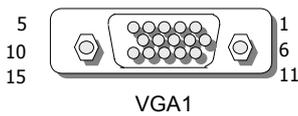
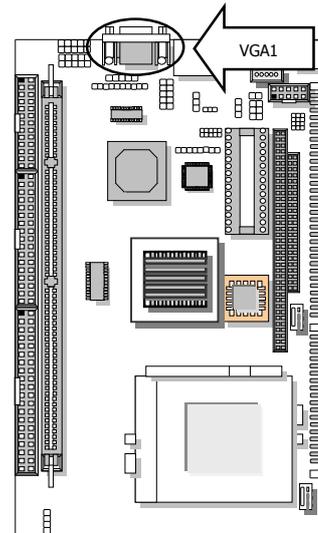
■ **IRDA1: Consumer Remote Control IR (CIR)**

Pin No.	Description
1	+5V
2	NC
3	CIRRX
4	Ground
5	CIRTX



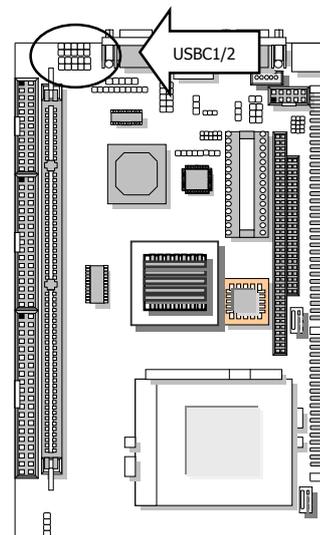
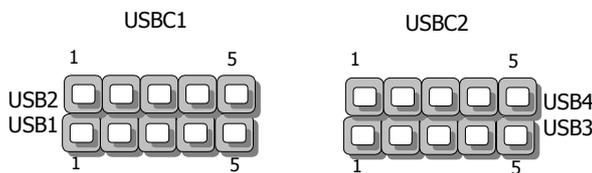
■ **VGA1: VGA Connector**

Pin No.	Description
1	Red Color Signal
2	Green Color Signal
3	Blue Color Signal
4	Pull High
5	Ground
6	Ground
7	Ground
8	Ground
9	+5V
10	Ground
11	Pull High
12	DDC-DATA
13	H-Sync.
14	V-Sync.
15	DDC-CLK



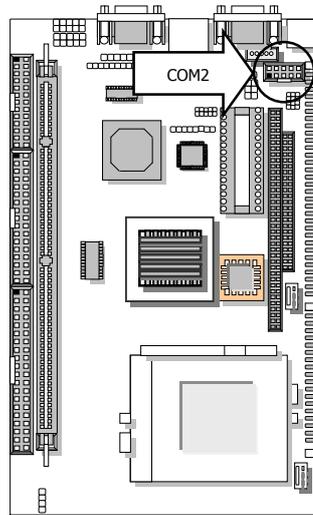
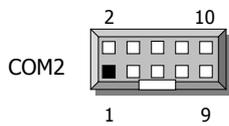
■ **USBC1,2: USB Header**

	Description			
	USBC1		USBC2	
	USB1	USB2	USB3	USB4
1	Standby 5V	Standby 5V	Standby 5V	Standby 5V
2	USB0-	USB1-	USB2-	USB3-
3	USB0+	USB1+	USB2+	USB3+
4	USB GND	USB GND	USB GND	USB GND
5	USB GND	USB GND	USB GND	USB GND



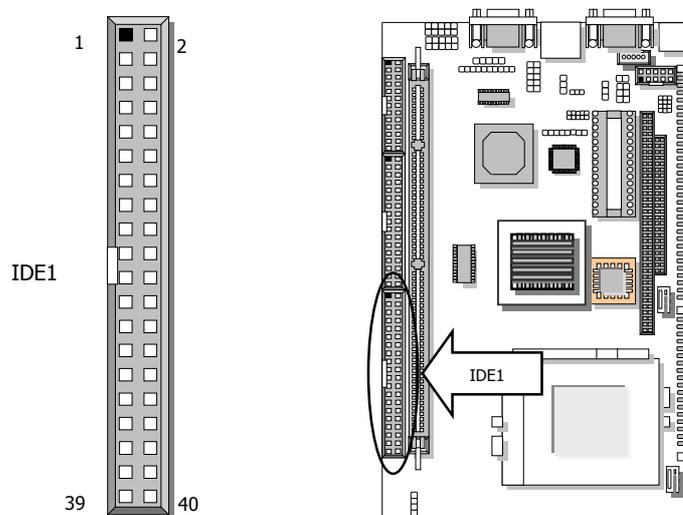
■ **COM2: RS-232 Serial Port#2 Connector (Header)**

Pin No.	Description		
	RS-232	RS-422	RS-485
1	Data Carrier Detect (DCDB #)	Transmit Data- (TXD-)	Data -
2	Data Set Ready (DSRB #)	NC	NC
3	Receive Data (RXDB)	Transmit Data+ (TXD+)	Data +
4	Request To Send (RTSB #)	NC	NC
5	Transmit Data (TXDB)	Receive Data+ (RXD+)	NC
6	Clear To Send (CTSB #)	NC	NC
7	Data Terminal Ready (DTRB #)	Receive Data- (RXD-)	NC
8	Ring Indicator (RIB #)	NC	NC
9	Ground	NC	NC
10	NC	NC	NC



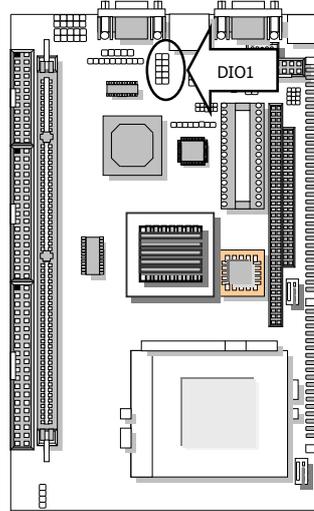
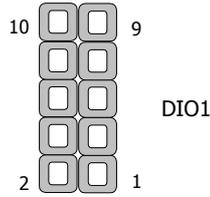
### ■ IDE1: Primary IDE Cable Connector (Header)

Pin No.	Description	Pin No.	Description
1	Reset #	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	NC
21	DMA REQ	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	NC
29	DMA ACK#	30	Ground
31	HD IRQ	32	NC
33	SA1	34	DMA 66/100 Detect
35	SA0	36	SA2
37	HDC CS1#	38	HDC CS3#
39	HDD Active LED#	40	Ground



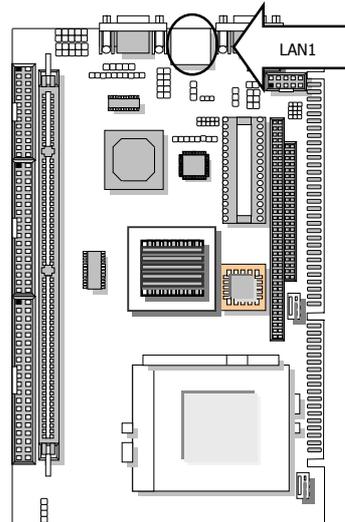
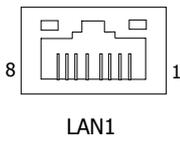
■ **DIO1: 4bit Digital I/O Connector**

Pin No.	Description	Pin No.	Description
1	In0	2	Out0
3	In1	4	Out1
5	In2	6	Out2
7	In3	8	Out3
9	GND	10	GND



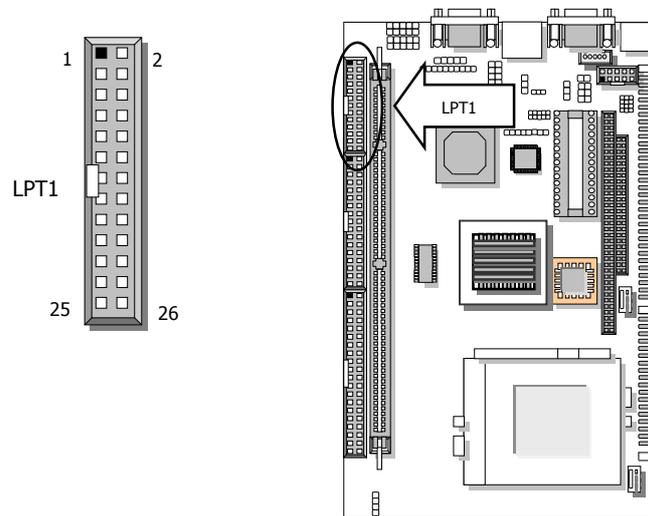
■ **LAN1: LAN CONNECTOR**

Pin No.	Description
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78



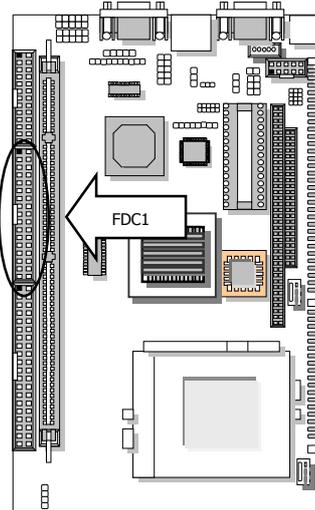
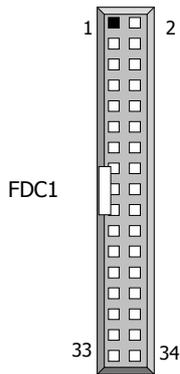
### ■ LPT1: Parallel Port Connector (Header)

Pin No.	Description	Pin No.	Description
1	Strobe #	2	Auto Form Feed #
3	Data 0	4	Error #
5	Data 1	6	Initialize #
7	Data 2	8	Printer Select In #
9	Data 3	10	Ground
11	Data 4	12	Ground
13	Data 5	14	Ground
15	Data 6	16	Ground
17	Data 7	18	Ground
19	Acknowledge#	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Printer Select	26	NC



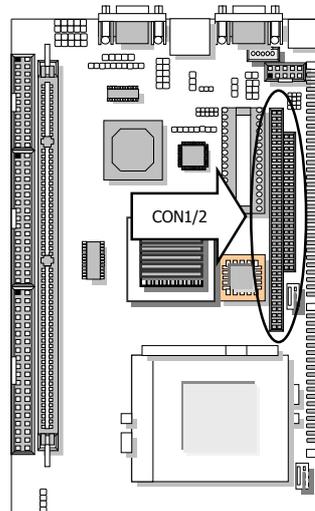
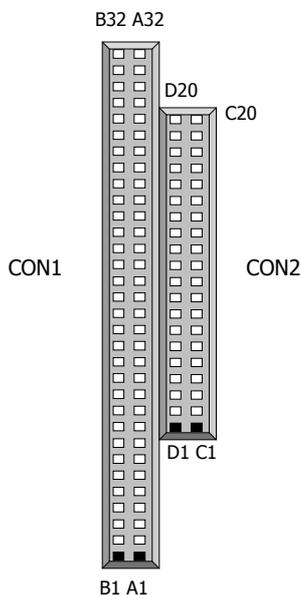
■ FDC1:Floppy Cable Connector (Header)

Pin No.	Description	Pin No.	Description
1	Ground	2	Density Select
3	Ground	4	NC
5	Ground	6	NC
7	Ground	8	Index #
9	Ground	10	Motor Enable A #
11	Ground	12	Drive Select B #
13	Ground	14	Drive Select A #
15	Ground	16	Motor Enable B #
17	Ground	18	Direction #
19	Ground	20	Step #
21	Ground	22	Write Data #
23	Ground	24	Write Gate #
25	Ground	26	Track 0 #
27	Ground	28	Write Protect #
29	NC	30	Read Data #
31	Ground	32	Head Side Select #
33	NC	34	Disk Change #



### ■ CON1, CON2: PC/104 Connector

Pin No.	Description			
	CON1		CON2	
	Row A	Row B	Row C	Row D
1	IOCHCK#	Ground	Ground	Ground
2	SD7	RSTDRV	SBHE#	MEMCS16#
3	SD6	+5V	LA23	IOCS16#
4	SD5	IRQ9	LA22	IRQ10
5	SD4	-5V	LA21	IRQ11
6	SD3	DRQ2	LA20	IRQ12
7	SD2	-12V	LA19	IRQ15
8	SD1	0 WS#	LA18	IRQ14
9	SD0	+12V	LA17	DACK0#
10	IOCHRDY	NC	MEMR#	DRQ0
11	AEN	SMEMW#	MEMW#	DACK5#
12	SA19	SMEMR#	SD8	DRQ5
13	SA18	IOW#	SD9	DACK6#
14	SA17	IOR#	SD10	DRQ6
15	SA16	DACK3#	SD11	DACK7#
16	SA15	DRQ3	SD12	DRQ7
17	SA14	DACK1#	SD13	+5V
18	SA13	DRQ1	SD14	MASTER#
19	SA12	REFRESH#	SD15	Ground
20	SA11	SYSCLK	NC	Ground
21	SA10	IRQ7	---	---
22	SA9	IRQ6	---	---
23	SA8	IRQ5	---	---
24	SA7	IRQ4	---	---
25	SA6	IRQ3	---	---
26	SA5	DACK2#	---	---
27	SA4	TC	---	---
28	SA3	BALE	---	---
29	SA2	+5V	---	---
30	SA1	OSC	---	---
31	SA0	Ground	---	---
32	Ground	Ground	---	---



## Chapter 3 . BIOS Setup

The AMI's ROM BIOS provides a built-in Setup program that allows user to modify the basic system configuration and settings. The modified data will be stored in a battery-backed CMOS RAM so that these data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM stay unchanged unless there is configuration change in the system, such as hard drive replacement or new equipment is installed. AMI is a registered trademark of the American Megatrends, Inc.

### 3.1 Running AMI BIOS

The Setup Utility is stored in the BIOS ROM. When the power of the computer system is turned on, a screen message appears to give you an opportunity to call up the Setup Utility; while the BIOS will enter the Power On Self Test (POST) routines. The POST routines perform various diagnostic checks while initializing the board hardware. If the routines encounter an error during the tests, the error will be reported in either of the two different ways – (1) hear a series of short beeps, or (2) see an error message on the screen display. There are two kinds of error: fatal or non-fatal. The system can usually continue to boot up sequence with the non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

“ Press <F1> to RESUME ”

Write down the message and press the F1 key to continue the bootup sequence. After the POST routines are completed, the following message appears:

“ Press DEL to enter SETUP ”

#### Entering Setup

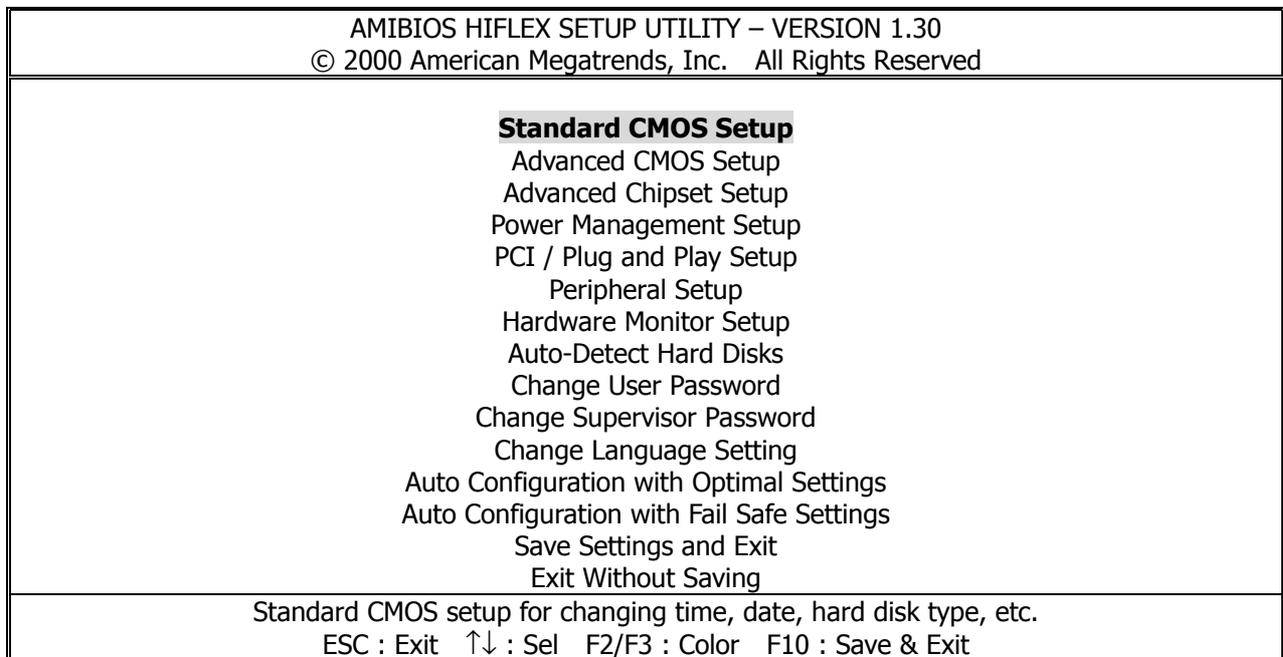
Turn on the power of the computer system and press <Del> immediately. If you don't have the chance to respond, reset the system by simultaneously typing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the ' Reset ' button on the system cabinet. You can also restart by turning the system OFF then ON.

**Note:** BIOS versions are regularly updated form time to time without notices. Therefore, the options available in your setup screen may differ from the options shown in this manual.

## 3.2 AMI BIOS HIFLEX Setup Utility

To access the AMI BIOS HIFLEX SETUP UTILITY program, press the <DEL> key. The screen display will appear as:

### Main Program Screen



This screen provides access to the utility's various functions.

Listed below are the explanation of the keys displayed at the bottom of the screen:

- <ESC> : Exit the utility.
- ↑ ↓ : Use arrow keys ↑ ↓ to move cursor to your desired selection.
- <F2> / <F3> : Changes background and foreground colors.
- <F10> : Saves all changes made to Setup and exits program.

**Standard CMOS Setup :** Use this menu for basic system configurations, such as time, date etc.

**Advanced CMOS Setup:** Use this menu to specify your settings for Advance CMOS.

**Advanced Chipset Setup:** Use this menu to change the values in the chipset registers and optimize your system's performance.

**Power Management Setup:** Use this menu to specify your settings for power management.

**PCI / Plug and Play Setup:** Use this menu to specify your settings for PCI/Plug and Play.

**Peripheral Setup:** Use this menu to specify your settings for integrated peripherals.

**Hardware Monitor Setup:** This entry shows your PC's current status, and allows you to adjust CPU clock, core voltage etc.

**Auto-Detect Hard Disks:** Use this menu to automatically detect the characteristics of most hard drives.

**Change User Password:** Use this menu to set User Password.

**Change Supervisor Password:** Use this menu to set Supervisor Password.

**Change Language Setting:** Use this menu to set language.

**Auto Configuration with Optimal Settings:** This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

**Auto Configuration with Fail Safe Settings:** This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

**Save Settings and Exit:** Save changes to CMOS and exit setup.

**Exit Without Saving:** Abandon all changes and exit setup.

### 3.3 Standard CMOS Setup

When you select the "STANDARD CMOS SETUP" on the main program, the screen display will appear as:

#### Standard CMOS Setup Screen

AMIBIOS SETUP – STANDARD CMOS SETUP										
© 2000 American Megatrends, Inc. All Rights Reserved										
Date (mm/dd/yyyy)	: Thu Nov 01, 2001					Base Memory	: 639KB			
Time (hh/mm/ss)	: 19:28:24					Extd Memory	: 510MB			
Floppy Drive A :	1.44 MB 3 <sup>1</sup> / <sub>2</sub>									
Floppy Drive B :	Not Installed									
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk Mode	PIO Mode	32 Bit Mode
Pri Master :	Auto	20417Mb	39560	16	0	63	On	On	4	Off
Pri Slave :	Not Installed									
Boot Sector Virus Protection	Disabled									
Month :	Jan	- Dec				ESC:Exit	↑↓ : Sel			
Day :	01	- 31				PgUp/PgDn: Modify				
Year :	1901	- 2099				F1: Help F2/F3:Color				

Standard CMOS Setup options are displayed by choosing the Standard field from the AMIBIOS HIFLEX SETUP menu. All Standard Setup options are described below.

**Date:** This allows you to set the system to the date that you want (usually the current date). The format is <day><month><date><year>.

<b>Day</b>	Day of the week, from Sun to Sat, determined by BIOS. Real-only.
<b>Month</b>	The month from Jan. through Dec.
<b>Date</b>	The date from 1 to 31 can be keyed by numeric function keys.
<b>Year</b>	The year can be adjusted by users.

**Time:** This allows you to set the system time that you want (usually the current time). The time format is <hour><minute><second>.

**Pri Master/ Pri Slave:** Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

Type	Type of the device.
Size	Capacity of the device.
Cyln	Number of cylinders.
Head	Number of heads.
Wpcom	Write precompensation cylinder.
Sec	Number of sectors.
Mode	Access mode.

**Floppy Drive A, B :** Choose the Floppy Drive A or B field to specify the floppy drive type. The settings are 360 KB 5<sup>1</sup>/<sub>4</sub>", 1.2 MB 5<sup>1</sup>/<sub>4</sub>", 720 KB 3<sup>1</sup>/<sub>2</sub>", 1.44 MB 3<sup>1</sup>/<sub>2</sub>", or 2.88 MB 3<sup>1</sup>/<sub>2</sub>".

**Boot Sector Virus Protection:** The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. When *Enabled*, BIOS will issue a virus warning message and beep if a write to the boot sector or the partition table of the HDD is attempted. Setting options: *Disabled* and *Enabled*.

**Note:** This feature only protects the boot sector, not the whole hard disk.

### 3.4 Advanced CMOS Setup

When you select the "ADVANCED CMOS SETUP" on the main program, the screen display will appears as:

#### Advanced CMOS Setup Screen

AMIBIOS SETUP – ADVANCED CMOS SETUP ©2000 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	Available Options: Disabled ▶ Enabled
1st Boot Device	FLOPPY	
2nd Boot Device	Disabled	
3rd Boot Device	Disabled	
Try Other Boot Devices	Yes	
Initial Display Mode	BIOS	
Display Mode at Add-On ROM Init	Force BIOS	
Floppy Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Enabled	
BootUp Num-Lock	On	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
System Keyboard	Present	
Primary Display	VGA/EGA	
Password Check	Setup	
L1 Cache	WriteBack	
L2 Cache	WriteBack	
System BIOS Cacheable	Enabled	
C000, 16K Shadow	Cached/WP	
C400, 16K Shadow	Cached/WP	
C800, 16K Shadow	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

Note : The above page of the Advanced CMOS Setup only shows part of the related options. To proceed to the next options, please move your cursor downwards.

Advanced Setup options are displayed by choosing the Advanced icon from the WINBIOS Setup main menu. All Advanced Setup options are described in this section.

**Quick Boot:** Setting the item to Enabled allows the system to boot within 5 seconds by skipping some check items. Settings: Enabled and Disabled.

**1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> Boot Device:** The items allow you to set the sequence of boot devices where AMIBIOS attempts to load the operation system. Possible settings are:

IDE-0	The system will boot from the first HDD.
IDE-1	The system will boot from the second HDD.
IDE-2	The system will boot from the third HDD.
IDE-3	The system will boot from the fourth HDD.
Floppy	The system will boot from floppy drive.
ARMD-FDD	The system will boot from any ARMD device, such as LS-120 or ZIP drive, that functions as a floppy drive.
ARMD-HDD	The system will boot from ARMD device, such as MO or ZIP drive, that functions as hard disk drive.
CDROM	The system will boot from the CD-ROM.
SCSI	The system will boot from the SCSI.
NETWORK	The system will boot from the Network drive.
BBS-0	The system will boot from the first BBS (BIOS Boot Specification) compliant device.
BBS-1	The system will boot from the second BBS (BIOS Boot Specification) compliant device.
BBS-2	The system will boot from the third BBS (BIOS Boot Specification) compliant device.
BBS-3	The system will boot from the fourth BBS (BIOS Boot Specification) compliant device.
Disabled	Disable this sequence.

**Note:** Available settings for "1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> Boot Device " vary depending on the bootable devices you have installed. For example, if you did not install a floppy drive, the setting " Floppy" does not show up.

**Try Other Boot Devices :** Setting the option to yes allows the system to try to boot from other devices if the system fails to boot from the 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> Boot Device.

**Initial Display Mode:** Set this option to Silent to enable the AMIBIOS SilentBoot feature. This option specifies the initial display mode when the system boots. The settings are:

Setting	Description
BIOS	The standard BIOS boot messages displayed before booting the system will appear on the system monitor.
Silent	The standard messages will not appear on the system monitor and the system will boot to the operating system immediately. Only BIOS error messages will appear.

**Display Mode at Add-On ROM Init:** This option specifies the system display mode that is set at the time that AMIBIOS POST initializes an optional adapter ROM. The settings are:

Setting	Description
Force BIOS	The display mode currently being used by AMIBIOS is used.
Keep Current	The current display mode is used.

**Floppy Access Control:** This option specifies the read/write access that is set when booting from a floppy drive. The settings are Read/Write or Read-Only. The Optimal and Fail-Safe default settings are Read/Write.

**S.M.A.R.T. for Hard Disks :** This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data to a safe place before the hard disk becomes offline. Settings: Enabled and Disabled.

**BootUp Num-Lock :** Set this option to *Off* to turn the Num Lock key off when the computer is booted so you can use the arrow keys on both the numeric keypad and the keyboard. The settings are *On* or *Off*. The default setting is *On*.

**Floppy Drive Seek :** Set this option to *Enabled* to specify that floppy drive A: will perform a Seek

operation at system boot. The settings are *Disabled* or *Enabled*. The Optimal and Fail-safe default settings are *Disabled*.

**PS/2 Mouse Support:** When this option is set *Enabled*, AMIBIOS supports a PS/2 type mouse. The settings are *Enabled* or *Disabled*. The default setting is *Disabled*. System Boot Up Sequence.

**System Keyboard:** This option permits you to configure system with no keyboards. It specifies if error messages are displayed if a keyboard is not attached.

**Primary Display:** This option specifies the type of display monitor and adapter in the computer. The settings are *Mono*, *CGA40*, *CGA80*, *EGA/VGA* or *Absent*. The Optimal and Fail-Safe default settings are *EGA/VGA*.

**Password Check:** This option enables password checking every time the computer is powered on or every time WINBIOS Setup is executed. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if WINBIOS is executed. The Optimal and Power-On defaults are *Setup*.

**L1/L2 Cache:** The item enables or disables the L1/L2 (Internal ) cache memory for CPU. Setting to *Enabled* will speed up the system performance.

**System BIOS Cacheable:** When this option is set to *Enabled*, the contents of the F0000h system memory segment can be read from or written to L2 secondary cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution.

The settings are *Enabled* or *Disabled*. The Optimal default setting is *Enabled*. The Fail-Safe default setting is *Disabled*.

C000,16K Shadow	D000,16K Shadow
C400,16K Shadow	D400,16K Shadow
C800,16K Shadow	D800,16K Shadow
CC00,16K Shadow	DC00,16K Shadow

These options control the location of the contents of the 16KB of ROM beginning at the specified memory location. If no adaptor ROM is using the named ROM area, this area is made available to the local bus. The settings are:

Setting	Description
Shadow	The contents of C0000h - C3FFFh are written to the same address in System memory (RAM) for faster execution.
Cache	The contents of the named ROM area are written to the same address in system memory (RAM) for faster execution, if an adaptor ROM will be using the named ROM area. Also, the contents of the RAM area can be read from and written to cache memory.
Disabled	The video ROM is not copied to RAM. The contents of the video ROM cannot be read from or written to cache memory.

The default setting is *Cache*.

In the AMIBIOS for the Intel Triton chipset, the E000h page is used as ROM during POST, but shadowing is disabled and the ROM CS# signal is disabled to make the E000h page available on the local bus.

### 3.5 Advanced Chipset Setup

When you select the "ADVANCED CHIPSET SETUP" on the main program, the screen display will appear as:

#### Advanced Chipset Setup Screen

AMIBIOS SETUP – ADVANCED CHIPSET SETUP © 2000 American Megatrends, Inc. All Rights Reserved		
CPU Ratio Selection	Safe Mode	Available Options:
ICH Delayed Transaction	Enabled	▶ Safe Mode
DMA Collection Buffer Enable	Disabled	5.5X
DRAM Page Closing Policy	Open	6.0X
Memory Hole	Disabled	6.5X
SDRAM Timing by SPD	Enabled	7.0X
DRAM Refresh	15.6 us	7.5X
DRAM Cycle time (SCLKs)	5/7	8.0X
CAS# Latency (SCLKs)	3	8.5X
RAS to CAS delay (SCLKs)	2	9.0X
SDRAM RAS# Precharge (SCLKs)	2	9.5X
Internal Graphics Mode Select	1 MB	10.0X
Display Cache Window Size	64 MB	10.5X
AGP Aperture Window	64 MB	11.0X
Initialize Display Cache Memory	Enabled	11.5X
Paging Mode Control	Closed	12.0X
RAS-to-CAS	Default	
CAS Latency	Slow	
RAS Timing	Slow	
RAS Precharge Timing	Slow	
CPU Latency Timer	Disabled	
USB Function	Disabled	
USB Device Legacy Support	Disabled	
Port 64/60 Emulation	Disabled	
		ESC : Exit           ↑↓ : Sel
		PgUp/PgDn :       Modify
		F1:Help            F2/F3 : Color

In the 'Advanced Chipset Setup' page, all options are predefined by the system board designer. Any attempt to change the parameter of the fields are not recommended.

**CPU Ratio Selection:** The item is used to adjust the CPU clock multiplier(ratio). The item enables you to overclock the processor.

**ICH Delayed Transaction:** The ICH was designed to provide high performance support to PCI peripherals using its data prefetch capabilities. If a PCI master is burst reading and is disconnected by the ICH to prefetch the requested cache line, the ICH will Delay Transaction the cycle while it prefetches more data, and give the bus to another agent.

**DMA Collection Buffer Enable:** Enable RMA Collection Buffer for LPC I/F and PC/PCI DMA. Settings are Disabled and Enabled.

**DRAM Page Closing Policy:** If this setting is open, GMCH will tend to leave the DRAM pages open. Settings are Open and Closed.

**Memory Hole:** This option allows the end user to specify the location of a memory hole for memory space requirement from ISA-bus cards.

**SDRAM Timing by SPD:** Selects whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to SPD enables CAS# Latency, RAS# Precharge, RAS# to CAS# Delay and Precharge Delay automatically to be determined by BIOS based on the configurations on the SPD. Selecting Manual allows users to configure these fields manually.

**DRAM Refresh:** This option specifies the refresh rate frequency for the installed system memory SDRAM DIMMs. If you have good quality of DRAM, you can choose longer refresh rate to get better system performance.

**DRAM Cycle time (SCLKs):** Select the number of SCLKs for an access cycle. The setting are:5/7 and 7/9.

**CAS# Latency (SCLKs):** This controls the timing delay (in clock cycles) before SDRAM starts a read command after receiving it. Settings are 3 Clocks and 2 Clocks. 2 Clocks increases the system performance while 3 Clocks provides more stable performance.

**SDRAM RAS# to CAS# Delay (SCLKs):** This field allows you to set the number of cycles for a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from or refreshed. Fast speed offers faster performance while slow speed offers more stable performance. Settings: 3 Clocks and 2 Clocks.

**SDRAM RAS# Precharge (SCLKs):** The field specifies the idle cycles before precharging an idle bank. Settings: 7 Clocks, 6 Clocks and 5 Clocks.

**Internal Graphics Mode Select:** This setting allows the Internal Graphics mode to be modified. The Optimal and Fail-Safe default settings is Enabled, 1MB.

Option	Description
Enabled, 1MB	This option allows the Internal Graphic controller to allocate 1MB of system memory for video display use. This is the default setting.
Enabled, 512KB	This option allows the Internal Graphic controller to allocate 512KB of system memory for video display use.
Disabled	This option allocates no system memory for video display use.

**Display Cache Window Size:** This setting allows the Display Cache Window Size to be modified. The Optimal and Fail-Safe default settings is 64MB.

Option	Description
32MB	This option allows caching of up to 32MB.
64MB	This option allows caching of up to 64MB. This is the default setting.

**AGP Aperture Window:**The field selects the size of the Accelerated Graphics Port( AGP) aperture. 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. Settings are 4MB, 8MB, 16MB, 32MB, 64MB, 128MB and 256MB.

**Initialize Display Cache Memory:** This option will enabled or disable Local Memory (Display Cache) and UMA capable. Setting are Enabled and Disabled.

**Paging Mode Control:** Display cache paging mode. Setting are Open and Closed.

**RAS-to-CAS:** This field allows you to set the number of cycles for a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from or refreshed. Fast speed offers faster performance while slow speed offers more stable performance.

**CAS Latency:** This controls the timing delay before SDRAM starts a read command after receiving it.

**RAS Timing:** This item controls the timing for RAS. Settings are Fast and Slow.

**RAS Precharge Timing:** This item controls the number of cycles for RAS to be allowed to precharge.

Settings are Fast and Slow.

**CPU Latency Timer:** During Enabled, A deferrable CPU cycle will only be Deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. During Disabled, A deferrable CPU cycle will be Deferred immediately after the GMCH receives another ADS#.

**USB Function:** This option will enable on-chip USB function to support USB (Universal Serial Bus) peripheral devices if user chooses the "Enabled" setting.

**USB Device Legacy Support:** This field support Universal Serial Bus (USB) devices. If detected, USB controller legacy mode will be enabled. If not detected, USB controller legacy mode will be disabled.

**Port 64/60 Emulation:** Setting this option to allow a USB keyboard to act like a legally keyboard.

### 3.6 Power Management Setup

The "Power Management Setup" controls the CPU card's "Green" features. When you select the "POWER MANAGEMENT SETUP" on the main program, the screen display will appear as:

#### Power Management Setup Screen

AMIBIOS SETUP – POWER MANAGEMENT SETUP © 2000 American Megatrends, Inc. All Rights Reserved		
ACPI Function	Disabled	Available Options: ▶ Disabled Enabled
Power Management /APM	Enabled	
Video Power Down Mode	Stand By	
Hard Disk Power Down Mode	Stand By	
Standby Time Out	Disabled	
Keyboard & PS/2 Mouse	Monitor	
FDC / LPT/ COM Ports	Monitor	
Primary Master IDE	Monitor	
Primary Slave IDE	Ignore	
Power Button Function	On/Off	
Restore on AC/ Power Loss	Power On	
Wake up On PME/LAN	Enabled	
Resume By Alarm	Disabled	
Alarm Date	15	
Alarm Hour	12	ESC : Exit      ↑↓ : Sel
Alarm Minute	30	PgUp/PgDn :    Modify
Alarm Second	30	F1:Help        F2/F3 : Color

Power Management Setup options are displayed by choosing the Power Management field from the WINBIOS Setup main menu. All Power Management Setup options are described in this section.

**ACPI Function:** This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/2000/ME, select Yes. Settings: Yes and No.

**Power Management /APM:** Setting to Enabled will activate the Advanced Power Management (APM) feature to enhance power saving modes. Settings: Enabled and Disabled.

**Video Power Down Mode:** This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired.

**Hard Disk Power Down Mode:** This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The settings are Standby, or Suspend.

**Standby Time Out:** This option specifies the length of the period of system inactivity while the computer is in Full-On power state before the computer is placed in Standby mode. When this length of the time expires, the computer enters Standby Timeout state. In Standby mode, some power use is curtailed.

**Keyboard & PS/2 Mouse:** The item controls keyboard and PS/2 mouse to power on the system. Settings are Monitor and Ignore.

**FDC / LPT/ COM Ports, Primary Master IDE, Primary Slave IDE:** These items specify if the BIOS will monitor the activity of the listed hardware peripheral or component. If set to Monitor, any activity detected on the specified hardware peripheral or component will wake up the system or prevent the system from entering the power saving modes. Settings: Monitor and Ignore.

**Power Button Function:** This feature sets the function of the power button. Settings:

On/Off	The power button functions as normal on/off button.
Suspend	When you press the power button, the computer enters the suspend/sleep mode, but if the button is pressed for more than four seconds, the computer is turned off.

**Restore on AC/ Power Loss:** This item specifies whether your system will reboot after a power failure.

Available options:

Power Off	Leaves the computer in the power off before state.
Power On	Reboots the computer.
Last State	Restores the system to the previous status before the power failure.

**Resume On PME/LAN:** When setting to Enabled, this feature allow your system to be awakened from the power saving modes through an incoming can from a signal from the LAN, or any event on PME(Power Management Event). Settings: Enabled and Disabled.

**Note:** You need to install a LAN card supporting power on function for Resume On PME/ LAN function.

**Resume By Alarm:** This is used to enable or disable the feature of booting up the system on a schedule time/ date. Settings: Enabled and Disabled.

**Alarm Date/Hour/Minute/Second:** If Resume On RTC Alarm is set to Enabled, the system will automatically resume (boot up) on a specific date/hour/minute/second specified in these fields. Available settings for each item are:

Alarm Date	01~31, Every Day
Alarm Hour	00~23
Alarm Minute	00~59
Alarm Second	00~59

### 3.7 PCI Plug and Play Setup

Both the ISA and PCI buses on the CPU card use system IRQs & DMAs. You must set up the IRQ and DMA assignments correctly through the PCI / Plug and Play Setup utility, otherwise the SBC will not work properly.

When you select the "PCI / PLUG AND PLAY SETUP" on the main program, the screen display will appear as:

#### PCI / Plug and Play Setup Screen

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP © 2000 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options: ▶ No Yes
Reset Configuration Data	No	
PCI Latency Timer (PCI Clocks)	32	
Primary Graphics Adapter	External PCI	
Allocate IRQ to PCI VGA	Yes	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	ISA / EISA	
IRQ4	ISA / EISA	
IRQ5	PCI / PnP	
IRQ7	ISA / EISA	
IRQ9	PCI / PnP	
IRQ10	PCI / PnP	
IRQ11	PCI / PnP	
IRQ14	PCI / PnP	
IRQ15	PCI / PnP	
Reserved Memory Size	Disabled	
Reserved Memory Address	C8000	
		ESC : Exit      ↑↓ : Sel PgUp/PgDn :    Modify F1: Help        F2/F3 : Color

PCI/PnP Setup options are displayed by choosing the PCI/PnP Setup icon from the WINBIOS Setup main menu. All PCI/PnP Setup options are described in this section.

**Plug and Play Aware O/S:** Set this option to "Yes" if the operation system installed in the computer is Plug and Play-aware. BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this option to "No" if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP.

**Reset Configuration Data:** This option allows the BIOS to reset the Configuration Data in the BIOS. The Optimal and Fail-Safe default setting is No.

Option	Description
No	This setting preserves the PnP data. It does not force the PnP data to be cleared on boot. This is the default setting.
Yes	This option allows the PnP data to be rebuilt by the BIOS at every boot.

**PCI Latency Timer (PCI Clocks):** This option is used to control PCI latency timer period (follow PCI clocks). Based on PCI specification 2.1 or later and PCI bus frequency in system, user can select different timer to meet their PCI bus environment.

**Primary Graphics Adapter:** Initialize the PCI video display card on PCI slot before initializing any other display device on the system. Thus the PCI slot display card becomes the primary display. Available options are [PCI] and [AGP].

**Allocate IRQ to PCI VGA:** This option will be used to allocate IRQ for PCI VGA card. In general, some of PCI VGA cards needs IRQ support.

**DMA Channel 0/1/3/5/6/7:** These items specify the bus that the system DMA(Direct Memory Access) channel is used. The settings determine if AMIBIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the ESCD NVRAM. If more DMAs must be removed from the pool, the end user can reserve the DMA by assigning an ISA/EISA setting to it.

**IRQ3/4/5/7/9/10/11/14/15:** These items specify the bus where the specified IRQ line is used. The settings determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the IRQ pool, the end user can use these settings to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as PCI/PnP. If all IRQs are set to ISA/EISA, and IRQ14/15 are allocated to the onboard PCI IDE, IRQ9 will still be available for PCI and PnP devices. Settings: ISA/EISA and PCI/PnP.

**Reserved Memory Size :** This option specifies the size of the memory area reserved for legacy ISA adapter cards. The settings are Disabled, 16K, 32K, or 64K. The optimal and Fail-Safe default settings are Disabled.

**Reserved Memory Address :** This option specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards. The settings are C0000, C4000, C8000, CC000, D4000, D8000, or DC000. The Optimal and Fail-safe default settings are C0000.

### 3.8 Peripheral Setup

When you select the "PERIPHERAL SETUP" on the main program, the screen display will appear as:

#### Peripheral Setup Screen

AMIBIOS SETUP – PERIPHERAL SETUP		
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OnBoard FDC	Enabled	Available Options: Auto Disabled ► Enabled  ESC : Exit            ↑↓ : Sel PgUp/PgDn :        Modify F1:Help                F2/F3 : Color
OnBoard Serial Port 1	3F8/COM1	
OnBoard Serial Port 2	2F8/COM2	
Serial Port2 Mode	Normal	
Select Duplex Mode	N/A	
OnBoard Parallel Port	378	
Parallel Port Mode	Normal	
Parallel Port IRQ	7	
Parallel Port DMA Channel	N/A	
On-Chip IDE	Primary	
Onboard Lan	Enabled	

Peripheral Setup options are displayed by choosing the Peripheral Setup icon from the WINBIOS Setup main menu. All Peripheral Setup options are described in this section.

**Onboard FDC:** This option enables the floppy drive controller on the motherboard. The settings are Enabled or Disabled. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.

**Onboard Serial Port1:** This option enables serial port 1 on the motherboard and specifies the base I/O port address for serial port 1. The settings are 3F8h, 3E8h, or Disabled. The Optimal default setting is 3F8h. The Fail-Safe default setting is Disabled.

**Onboard Serial Port2:** This option enables serial port 2 on the motherboard and specifies the base I/O port address for serial port 2. The settings are 2F8h, 2E8h, or Disabled. The Optimal default setting is 2F8h. The Fail-Safe default setting is Disabled.

**Serial Port2 Mode:** This item sets the operation mode for Serial Port 2 (COM 2). Settings: Normal, 1.6 uS,3/16 Baud and ASKIR.

**Select Duplex Mode:** Two options are available: Full and Half. The default setting is Full. This item lets you choose the operation mode for your IR KIT. Some IR device only can work at half duplex mode. Refer to your IR KIT user's guide to find out which setting is correct.

**Onboard Parallel Port:** This option enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The settings are 378h, 278h, or Disabled. The Optimal default setting is 378h. The Fail-Safe default setting is Disabled.

**Parallel Port Mode :** This option specifies the parallel port mode. ECP and EPP are both bidirectional data transfer schemes that adhere to the IEEE P1284 specifications. The default setting is *Normal*. The other settings are:

Setting	Description
Normal	Normal The normal parallel port mode is used. This is the default setting.
<i>Cache</i>	Bi-Dir Use this setting to support bidirectional transfers on the parallel port.
<i>EPP</i>	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bidirectional data transfer driven by the host device.
<i>ECP</i>	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to Achieve transfer rates of approximately 2.5 Mbs. ECP provides symmetric Bidirectional communications.

**Parallel Port IRQ:** This option specifies the IRQ used by the parallel port. The Optimal and Fail-Safe default setting is 7.

Option	Description
5	This option allows the serial port to use Interrupt 3.
7	This option allows the serial port to use Interrupt 7. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

**Parallel Port DMA Channel:** This option is only available if the setting for the **Parallel Port Mode** option is ECP. The settings are Disabled, DMA CH (channel) 0, DMA CH 1, or DMA CH 3. The default setting is N/A.

**On-Chip IDE:** This allows you to enable or disable on-chip IDE controller. Settings are Disabled, Primary, Secondary and Both.

**Onboard LAN:** This is used to enabled or disable the onboard LAN controller. Settings are Enabled and Disabled.

### 3.9 Hardware Monitor Setup

When you select the "Hardware Monitor Setup" on the main program, the screen display will appear as:

#### Hardware monitor Setup Screen

AMIBIOS SETUP – HARDWARE MONITOR SETUP		
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Shut Down Temperature	Disabled	Available Options:
CPU Temperature	34°C/93°F	▶ Disabled
Fan1 Speed	6192 RPM	60°C /140°F
Fan2 Speed	5921 RPM	65°C /149°F
VCORE	+1.488V	70°C /158°F
+3.3V Standby	+3.264V	75°C /167°F
+3.3V	+3.264V	
+5V	+5.030V	
+12V	+12.144V	
-12V	-12.484V	
-5V	-5.040V	
+1.85V	+1.824V	
		ESC : Exit      ↑↓ : Sel
		PgUp/PgDn :    Modify
		F1:Help        F2/F3 : Color

**Shut Down Temperature:** This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system.

**CPU Temperature, Fan1 Speed, Fan2 Speed, VCORE, +3.3V Standby, +3.3V, +5V, +1.85V, -5V, -12V, +12V:** These items display the current status of all monitored hardware devices/components such as system voltages, temperatures and fan speeds.

### 3.10 Save & Exit Setup

When you want to quit the Setup menu, you can select this option to save the changes and quit. A message as below will appear on the screen.

AMIBIOS HIFLEX SETUP UTILITY	
© 2001 American Megatrends, Inc. All Rights Reserved	
Standard CMOS Setup	
Advanced CMOS Setup	
Advanced Chipset Setup	
Power Management Setup	
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;">           Save Current settings and exit (Y/N)? Y         </div>	
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	

Typing Y will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.  
Typing N will return to Setup Utility.

### 3.11 Utility

In the Utility, the following icons appear in this section of the WINBIOS Setup main screen --

**Color Set** : Color Set sets the Setup screen colors.

**Language** : If this feature is enabled, you can select WINBIOS Setup messages in different languages.

### 3.12 BIOS Defaults

The icons of BIOS Defaults in this section permit you to select a group of settings for all WINBIOS Setup options. Not only can you use these icons to quickly set system configuration parameters, you can choose a group of settings that have a better chance of working when the system is having configuration-related problems.

**Original** : Choose the Original icon to return to the system configuration values present in WINBIOS Setup when you first began this WINBIOS Setup session.

**Optimal** : You can load the optimal default settings for the WINBIOS by selecting the Optimal icon. The Optimal default settings are best-case values that should optimize system performance. If NVRAM is corrupted, the Optimal settings are loaded automatically.

**Fail-Safe BIOS Setup Settings** : You can load the Fail-Safe WINBIOS Setup option settings by selecting the Fail-Safe icon from the Default section of the WINBIOS Setup main menu.

The Fail-Safe settings provide far from optimal system performance, but are the most stable settings. Use this option as a diagnostic aid if the system is behaving erratically

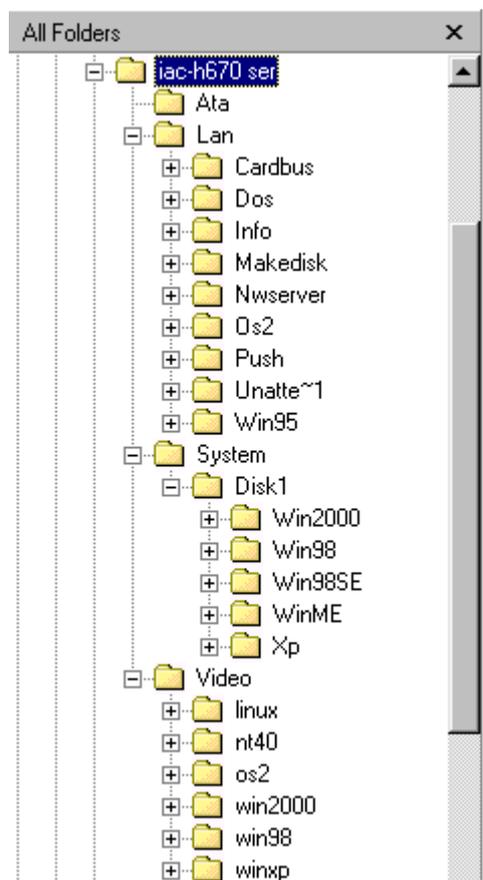
## Chapter 4 . Drivers Support

### 4.1 Use Your Driver CD-ROM

This chapter provides information on how to install the drivers in generally and related directory that come with the CD-ROM in the package. Please follow the instructions set forth on the screen carefully.

1. Find the directory for your O/S accordingly.
2. Always read the README.TXT. before installation.
3. Run the \*.EXE., and follow the installation prompt step by step.

### 4.2 File Directory



---

## APPENDIXA. Watch-Dog Timer

You can enable the watch-dog when your application software monitors an unexpected or not respond, then the timer generates a reset to reboot your system. During the period of enable to reset, you could still cancel reset by disabling the watch-dog. Decide the way you want to set the period for reset by selecting hardware or software watch-dog (if both of them are available). Software setting period, normally setting watch-dog timer period to 16 level.

### Software watch-dog using example

EX.1: For DOS

#### Enable

```
C:\DOS> DEBUG
-o443 D
```

#### Disable

```
C:\DOS>DEBUG
-o441 F
```

EX.2: For assemble Language

#### Enable :

```
MOV DX, 443H
MOV AL, 0FH
OUT DX, AL
```

#### Disable :

```
MOV DX, 441H
MOV AL, 0FH
OUT DX, AL
```

**Note:** "F" is the period of software watch-dog timer (normally "F" indicated 0 sec.). 0 to 9 and A to F are used for represent different period. Normally, the step is 2 sec. That means "E" is 2, "D" is 4, "2" is 26, "1" is 28 and "0" is 30 seconds.

# **Terms and Conditions**

---

**Date:1997.10.20**

## **Warranty Policy**

1. All products are warranted against defects in materials and workmanship for a period of two years from the date of purchase by the customer.
2. The buyer will bear the return freight charges for goods that are returned for repair within the warranty period whereas manufacturer will bear the return to user freight charges after repair.
3. The buyer will pay for repair (for the replaced materials plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service ", RMA goods will be returned at the customer expense.
5. The following conditions are excluded from this warranty :
  - A. Improper or inadequate maintenance by the customer.
  - B. Unauthorized modification or misuse.
  - C. Operation outside of the environmental specifications for the product.

## **RMA Service**

### **1. Request a RMA#:**

Complete and fax to Supplier the "RMA Request Form" to obtain a RMA number.

### **2. Shipping:**

- A. The customer is requested to fill up the problem code as listed. If none of the code is selected, please write the symptom description on the remark.
- B. Ship the defective units with freight prepaid.
- C. Mark the RMA # clearly on the box.
- D. Shipping damage as a result of inadequate packing is the customer's responsibility.
- E. Use the original packing materials whenever possible.

### **3. All RMA# are valid for 30 days only:**

When RMA goods are received after valid RMA# period, the goods will be rejected.

When requesting RMA service, please fill out this "RMA Service Request Form".  
**Without this form your RMA will be REJECTED!!!**

<b>RMA No:</b>	Reasons to Return: <input type="checkbox"/> Repair(Please include failure details) <input type="checkbox"/> Testing Purpose
Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:
Return Shipping Address: _____	
Shipping by: <input type="checkbox"/> Air Freight <input type="checkbox"/> Sea <input type="checkbox"/> Express: _____ <input type="checkbox"/> Others: _____	

Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

**\*Problem Code:**

- |                        |                              |                    |                          |
|------------------------|------------------------------|--------------------|--------------------------|
| 01: D.O.A.             | 07: BIOS Problem             | 13: SCSI           | 19: DIO                  |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port       | 20: Buzzer               |
| 03: CMOS Data Lost     | 09: Cache RMA Problem        | 15: PS2            | 21: Shut Down            |
| 04: FDC Fail           | 10: Memory Socket Bad        | 16: LAN            | 22: Panel Fail           |
| 05: HDC Fail           | 11: Hang Up Software         | 17: COM Port       | 23: CRT Fail             |
| 06: Bad Slot           | 12: Out Look Damage          | 18: Watchdog Timer | 24: Others (Pls specify) |

**Request Party**

**Confirmed By Supplier**

\_\_\_\_\_  
**Authorized Signatures / Date**

\_\_\_\_\_  
**Authorized Signatures / Date**