

EM-563 Series

5.25" EMBEDDED SBC
WITH VGA & FOUR 10/100MBPS LAN
FOR SOCKET370 PENTIUM III PROCESSOR

USER'S MANUAL

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Version: 1.0
Date:2002/1/25

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Chapter 1 Introduction

1.1 Introduction

The new EM-563 Series embedded SBC is highly configurable with multiple features to suit different types of commercial and industrial needs. Three Ethernet capability of the EM-563 Series gives network administrators another tool to deal with today's changing application needs. The board comes with the top-of-the-line Intel 82559 LAN chips could act as a firewall that sits between the Internet and a company's internal network. This applies to Web (HTTP) servers, FTP servers, SMTP (E-mail) servers or DNS servers. The EM-563 can also be used as an inter-network gateway that connects a number of local networks. Once again, the three Ethernet capability and processing power of the EM-563 Series gives it the ability to perform these functions.

The new EM-563 Series is enhanced with Intel®815E chipset; one 168-DIMM socket support up to 100/133 MHz SDRAM and one **DiskOnChip** from M-System socket support up to 288MB flash memory disk which provide full functionality and performance to be used "exactly" where you need it as well. EM-563 also features high performance VGA display that support resolutions and color depths up to 1600x1200 x256 color at 85Hz.

EM-563 has many expansion function such as one PCI expansion connector with one PCI riser card; one FDD interface support up to two floppy devices ; two IDE ports that support up to four IDE devices and Ultra ATA/100/66/33 interface helps designers and integrators improve system performance by retrieving and sending data faster. Everything you could need is on-board.

In addition, it is equipped with two RS-232 serial ports; four USB ports; one multi-mode parallel port which supports SPP, ECP and EPP modes. It provides more flexible functions to satisfy all users' different application requirements.

The EM-563 also offers several industrial features such as a 16 -level watchdog time-out intervals and contains the health monitoring hardware. The health monitoring IC keeps an eye on the CPU and releases an audio alarm when detecting abnormal operating voltage & temperature or malfunction of the cooling fans. And with its industrial grade reliability, the EM-563 can operate continuously at temperatures up to 60° C (140° F). All these numerous features provide an ideal price/performance solution for commercial and industrial applications where stability and reliability are essential.

1.2 Features

- Supports Socket 370 Celeron/Intel® Pentium III Processor, 133MHz FSB
- Intel®815E chipset
- Built-in four 10/100BASE-TX Ports with RJ-45 connectors
- Socket for **DiskOnChip**
- With one PCI expansion slot
- 4 USB ports and supports 4 Ultra ATA 100 devices
- 5.25" Form Factor, special design for firewall and network applications

1.3 Specification

EM-563 Series

Processor	Intel® Pentium III Coppermine / Celeron™ Processor in Socket 370(66/100/133 MHz) and up to 1GB
Chipset	Intel® 815E chipset
System Memory / RAM	One 168-pin DIMM sockets, support 100/133 MHz SDRAM and up to 512 SDRAM
BIOS	Award® licensed BIOS
Flash Memory Disk	Reserved socket for DiskOnChip from M-System, support up to 288 MB flash memory disk
Graphics Controller	Internal graphic controller with Intel's Dynamic Video Memory Technology, resolution up to 1600 x 1200 x 256 colors @ 85 Hz, with VGA 2x6x2.54 mm pin header with housing
Network Interface	Three Intel 82559 chip, support three-10/100 Base-TX Ethernet, three RJ-45 external connectors with ACT LED, LNK LED
IDE Drive Interface	Two PCI IDE ports that support up to four IDE devices and Ultra ATA/100/66/33
Floppy Drive Interface	One FDD port, support up to two floppy devices
Serial Port	Two COM ports, one RS-232 DB-9 connector and one RS-232 2x5x2.54 mm pin header with housing
Parallel Port	One multi-mode parallel port (SPP / EPP / ECP)
Bus Interface	PCI bus slot
RTC	Internal RTC with Li battery
Keyboard/Mouse	6-pin keyboard/mouse pin header
Watchdog Timer	16-level time-out intervals
Universal Serial Bus	Support 4 USB ports (4x5 pin headers)
Health Monitoring	Enhanced hardware monitor functions with optical sensor
Operating Temperature	0 °C~60 °C
Storage Temperature	-20 °C~70 °C
Humidity	5 %~95% RH, non-condensing
Dimensions	203 x 146 x 25 mm ± 0.5 mm
EMI/EMS	EN 50081-1/1994>EN 55022/1997>EN 61000-3-2/1995 >EN 61000-3-3/1995, EN 50082-1/1994>IEC 1000-4-2/1995, IEC 1000-4-3/1995, IEC 1000-4-4/1995, EN55024
Remark	PCI Rev. 2.2 compliant
ORDERING INFORMATION	

1.4 Unpack your EM-563

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

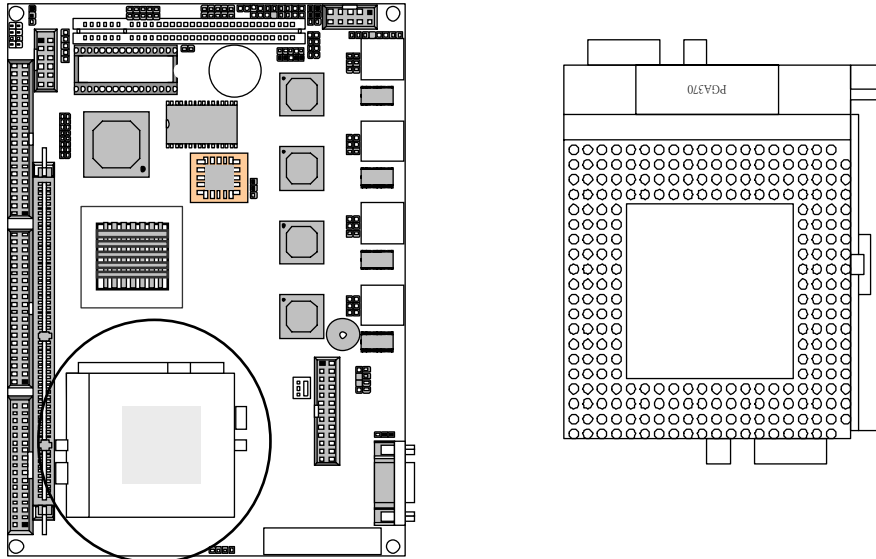
- EM-563 x 1 pc
 - FDD Cable x 1 pc
 - IDE Cable x 1 pc
 - VGA Cable x 1 pc
 - Keyboard and Mouse Cable x 1 set
 - Driver Utility CD-ROM x 1 pc
 - User's Manual x 1 pc
- 5.25" Embedded Single Board Computer
 - 34 to 34-pin Standard Header Flat Ribbon Cable
 - 40-pin IDE Cable
 - 12-pin Standard Header to 15-pin/3-Row D-Sub Cable
 - 8-pin connector to PS/2 Keyboard and Mouse Cable
 - Drivers & Utilities
 - This User's Manual

1.5 Board Layout

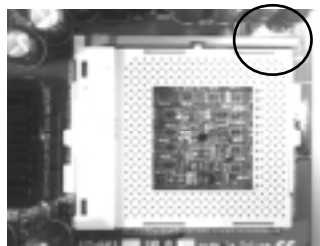
Chapter 2 Installation

2.1 Hardware Setup and Installation

2.1.1 CPU Installation and Upgrading

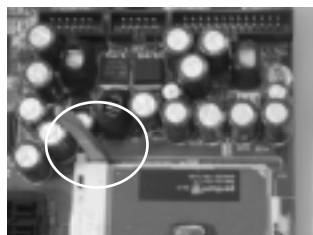


Step 1: Locate the ZIF socket and open it by first pulling the lever of socket upward.

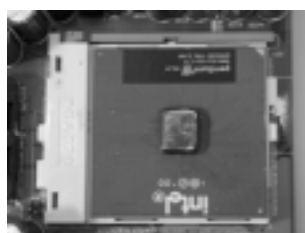


Step 2: Insert the CPU into the socket. Please keep the lever right angle when inserting CPU.

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

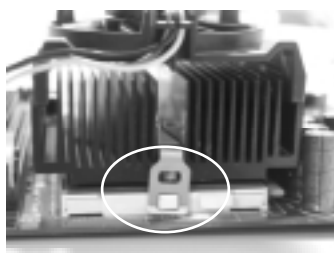


Step 4: Push the lever down to close the socket.

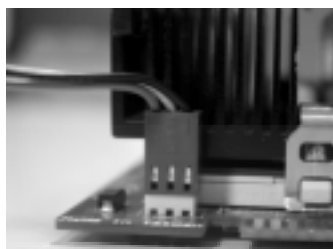


Step 5: Attach the heatsink onto the CPU.

Step 6: Push the clip of heatsink downward to hock 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.

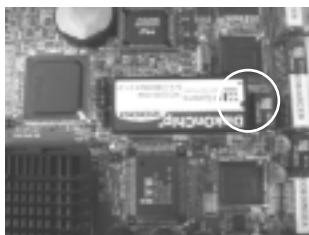
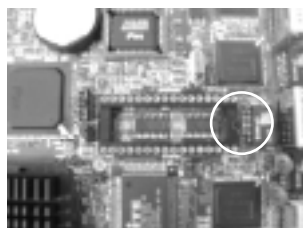


Step 3: Press the latches into the notches of the RAM module.



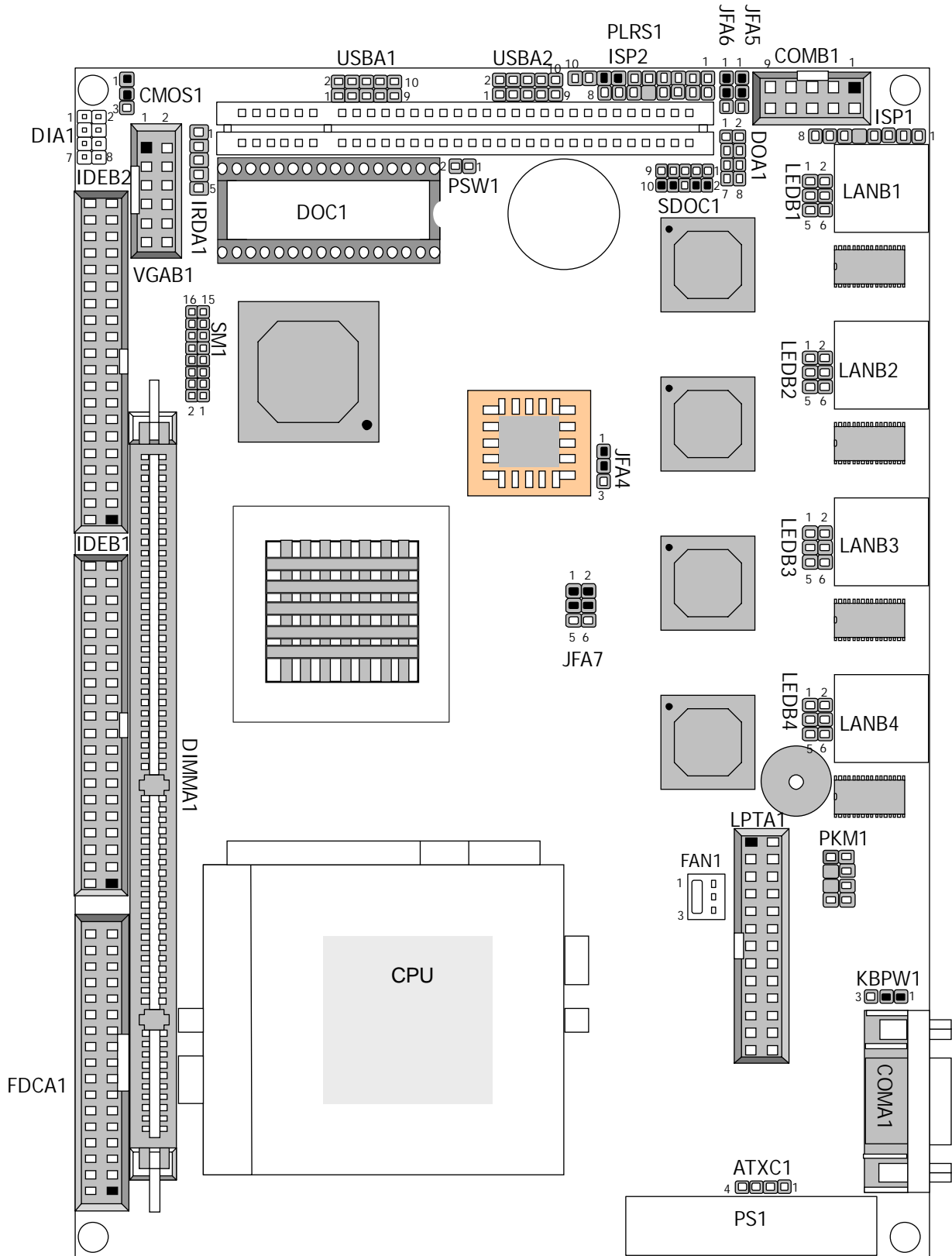
2.1.3 DiskOnChip Installation

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



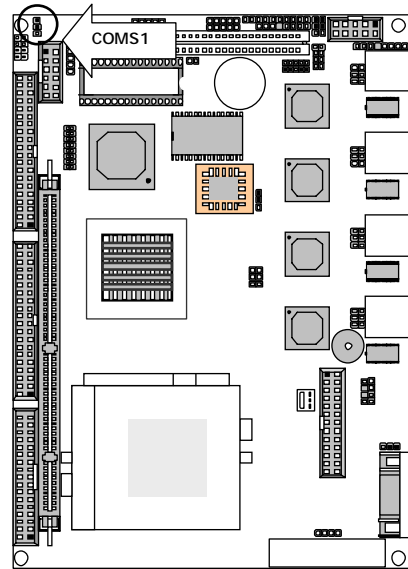
2.2.2 Jumper Settings Summary

LOCATION	FUNCTION
CMOS1	Clear CMOS Data
SDOC1	Select Flash Disk Address
KBPW1	PS/2 Keyboard & Mouse
JFA4	BIOS Locked
JFA7	5Vsb Select
JFA5/JFA6	Manufacturer Default

● CMOS1 : Clear CMOS Data

Description	CMOS1
Normal (Default)	1-2
Clear CMOS	2-3

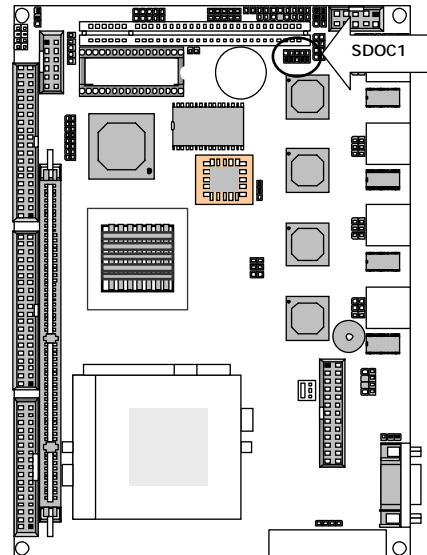
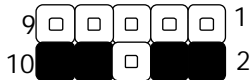
CMOS1



● SDOC1 : Select Flash Disk Address

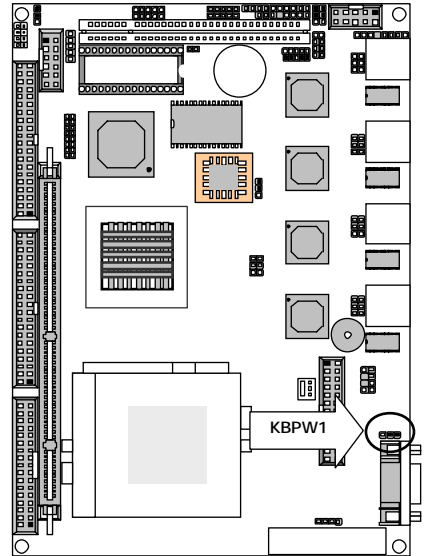
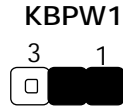
Flash Disk Address	Sdoc1
CC00H~CDFFH	1-2,9-10
D000H~D1FFH	3-4,7-8
D400h~D5FFH	3-4,9-10
D800H~D9FFH	5-6,7-8
DC00H~DDFFH	5-6,9-10

SDOC1



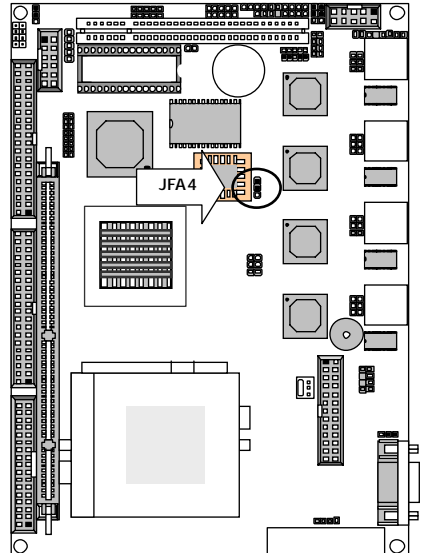
● KBPW1 : PS/2 Keyboard & Mouse

PS/2 Keyboard/Mouse	KBPW1
+5V (Default)	1-2
+5V STANDBY	2-3



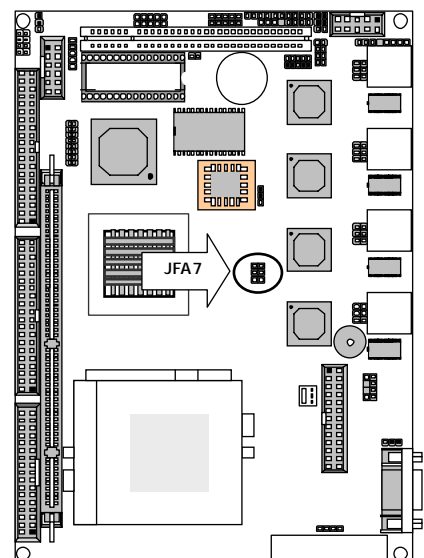
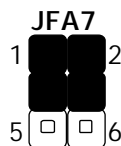
● JFA4 : BIOS Locked

Description	JFA4
Unlocked(Default)	1-2
Locked	2-3



● JFA7 : 5VSB Select

Description	JFA7
VCC(Default)	1-3,2-4
STB5V	4-6,3-5



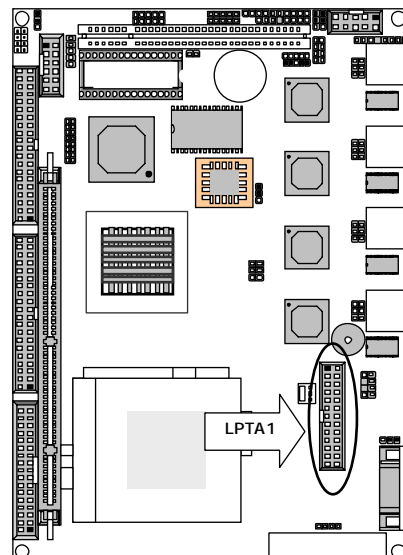
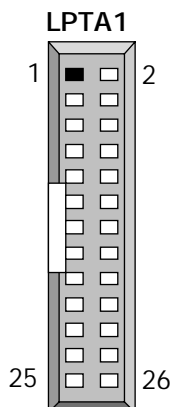
● JFA5/JFA6 : Manufacturer Default(1-2)

2.2.3 I/O Connectors Summary

LOCATION	FUNCTION
LPTA1	Parallel Connector
FAN1	FAN Connector
IDE1/2	IDE Interface Connector
FDCA1	Floppy Interface Connector
VGAB1	External VGA Connector
LANB1/2/3/4	LAN Connector
COMA1	RS-232 Serial Port#1 Connector
COMB1	RS-232 Serial Port#2 Connector
IRDA1	Alternate IrDA
USBA1/2	USB Port #1 & #2 Connector
PKM1	PS/2 Keyboard & Mouse Connector
PLRS1	Power LED,HD LED, Reset, Speaker Connector
DOC1	Disk-On Chip Socket
PSW1	ATX Power Button
ATXC1	ATX Function
LEDB1/2/3/4	Extension LAN Status LED
DIA1	Digital Input Ports
DOA1	Digital Output Ports
SM1	AC97 Codec and KB/MS with daughter board

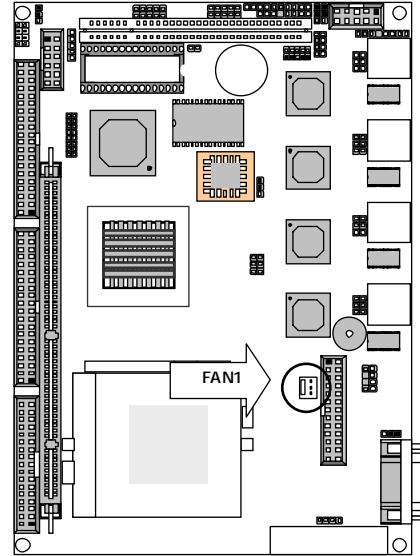
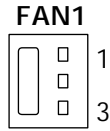
● LPTA1 : Parallel Connector (26 Pin 2.54mm Pitch Header)

Pin No.	Description	Pin No.	Description
1	Strobe #	2	Auto Form Feed
3	Data0	4	Error #
5	Data1	6	Initialize #
7	Data2	8	Printer Select IN #
9	Data3	10	Ground
11	Data4	12	Ground
13	Data5	14	Ground
15	Data6	16	Ground
17	Data7	18	Ground
19	Acknowledge #	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Printer Select	26	NC



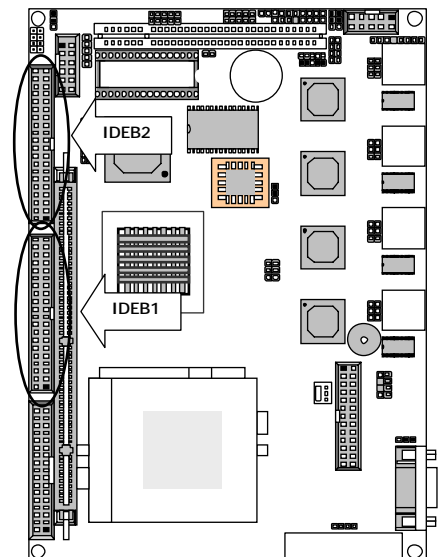
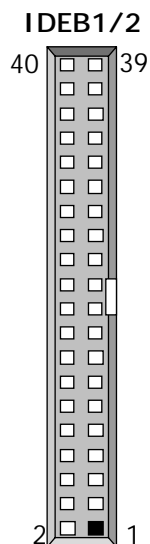
● FAN1 : FAN Connector

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



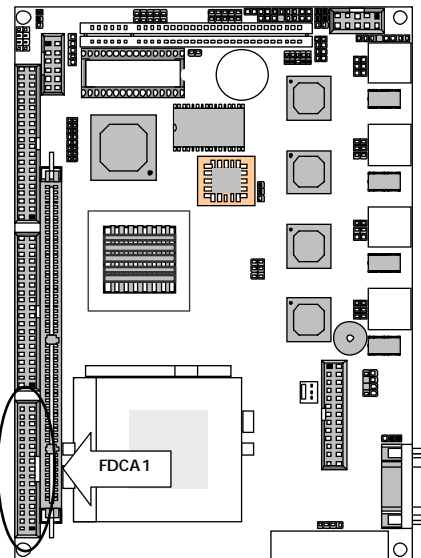
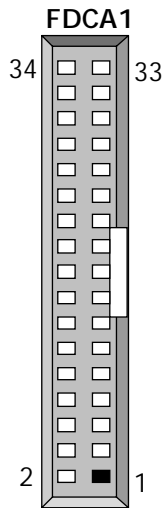
● IDEB1 · IDEB2 : IDE Interface Connector

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	Ground
29	DMA ACK #	30	Ground
31	Interrupt	32	NC
33	SA1	34	PD80P / SD80P
35	SA0	36	SA2
37	HDC CS0 #	38	HDC CS1 #
39	HDD Active LED #	40	Ground



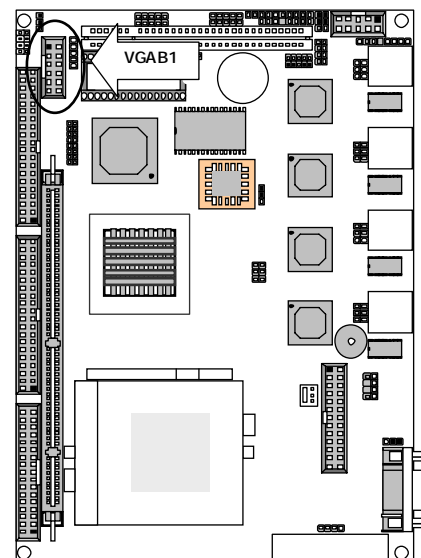
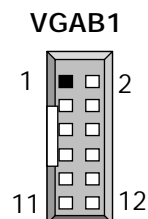
● **FDCA1 : Floppy Interface Connector**

Pin No.	Description	Pin No.	Description
1	Ground	2	Density Select
3	Ground	4	NC
5	Ground	6	DS1
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 #



● **VGAB1 : External VGA Connector**

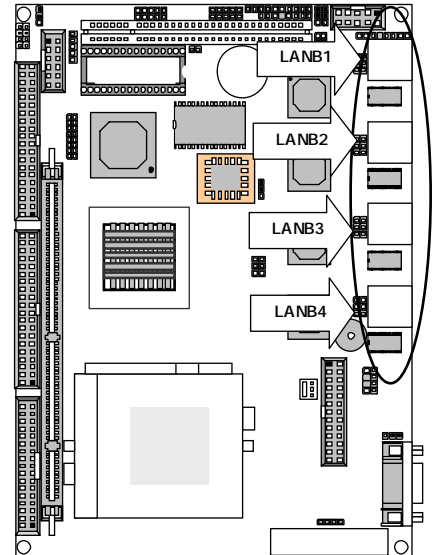
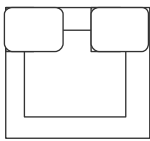
Pin No.	Description	Pin No.	Description
1	R	2	Ground
3	G	4	Ground
5	B	6	Ground
7	H-SYNC	8	Ground
9	V-SYNC	10	Ground
11	Detect-display Data	12	Detect-display CLOCK



● LANB1 · LANB2 · LANB3 · LANB4 : LAN Connector (RJ-45 with LED)

Pin No.	Description
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78
9	Link-
10	Link+
11	ACT-
12	ACT+

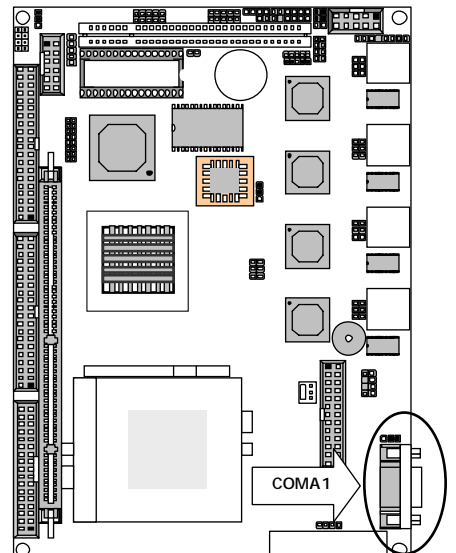
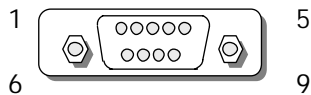
LANB1/2/3/4



● COMA1 : RS-232 Serial Port #1 Connector (D-Sub)

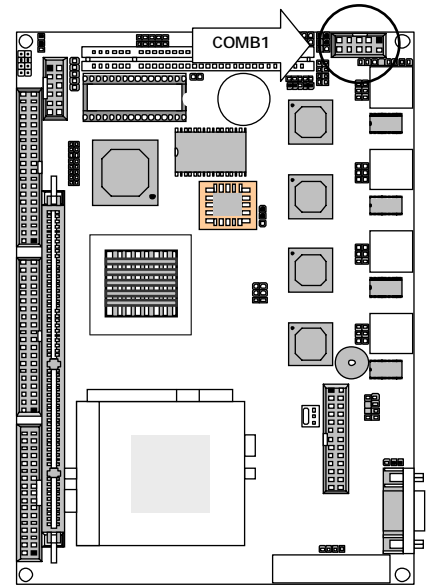
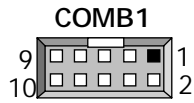
Pin No.	Description
1	Data Carrier Detect (DCDA #)
2	Receive Data (RXDA)
3	Transmit Data (TXDA)
4	Data Terminal Ready (DTRA #)
5	Ground (GND)
6	Data Set Ready (DSRA #)
7	Request To Send (RTSA #)
8	Clear To Send (CTSA #)
9	Ring Indicator (RIA #)

COMA1



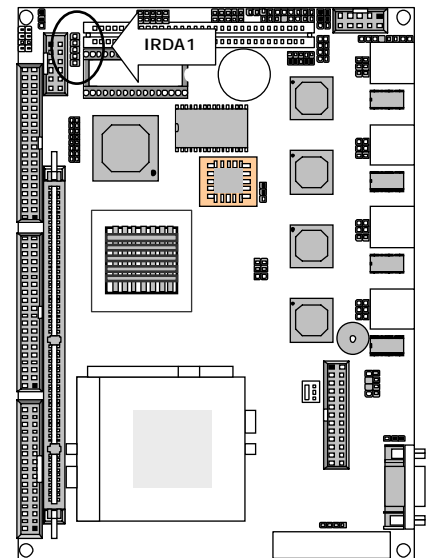
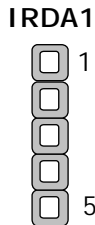
● COMB1 : RS-232 Serial Port #2 Connector (Header)

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



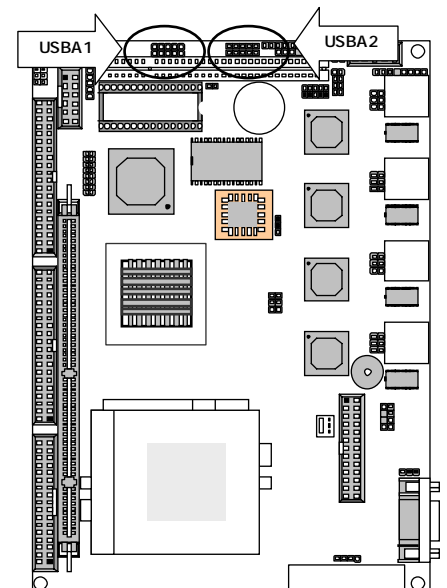
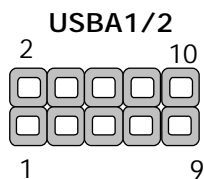
● IRDA1 : Alternate IRDA

Pin No.	Description
1	+5V
2	NC
3	IRRX
4	GND
5	IRTX



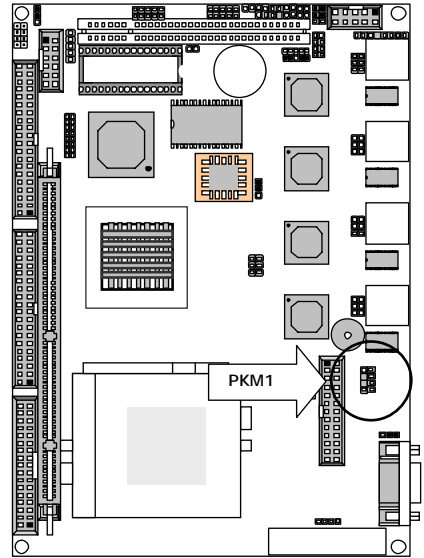
● USB A1 · USB A2:USB Port #1 & #2 Connector 2x5 Pin 2.54mm

Pin No.	Description	Pin No.	Description
1	USB_VCC	2	USB_VCC
3	USB D-	4	USB D0-
5	USB D+	6	USB D0+
7	Ground	8	Ground
9	USB Port#2Ground	10	USB Port#1 Ground



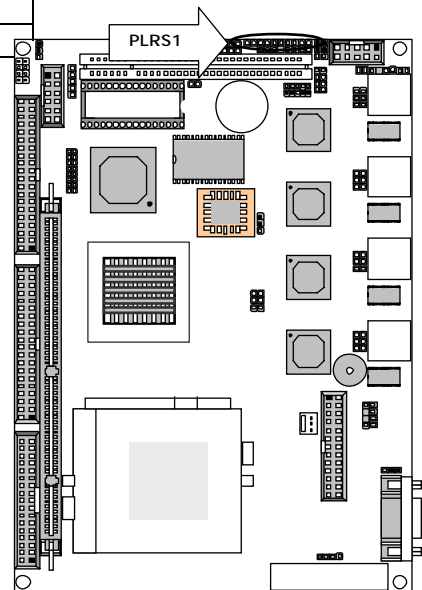
● PKM1 : PS/2 Keyboard & Mouse Connector

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



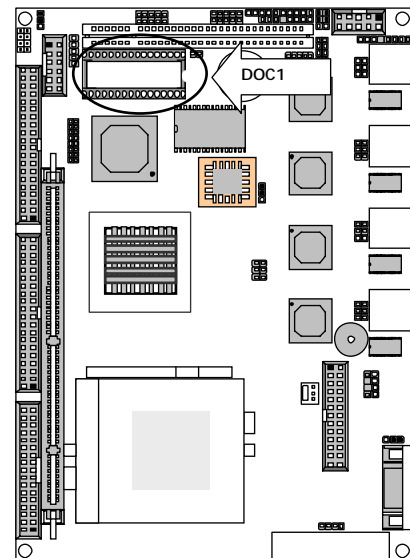
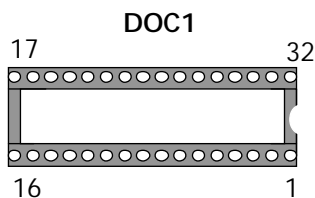
● PLRS1 : Power LED,HD LED,Reset, Speaker Connector

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+



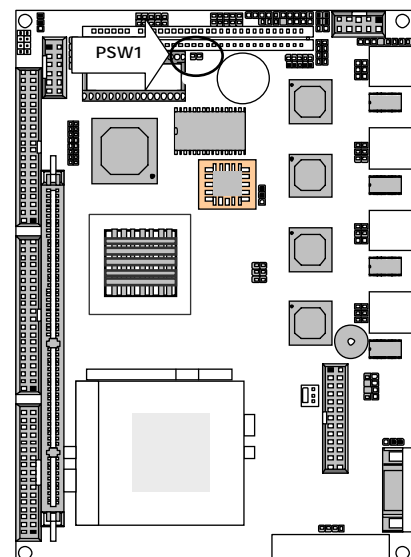
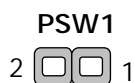
● DOC1 : Disk-On-Chip Socket

Pin No.	Description	Pin No.	Description
1	AEN	17	SD3
2	IOW#	18	SD4
3	SA15	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE#
7	SA5	23	SA10
8	SA4	24	SMEMR#
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	SA13
13	SD0	29	SA14
14	SD1	30	+5V
15	SD2	31	SMEMW#
16	GND	32	+5V



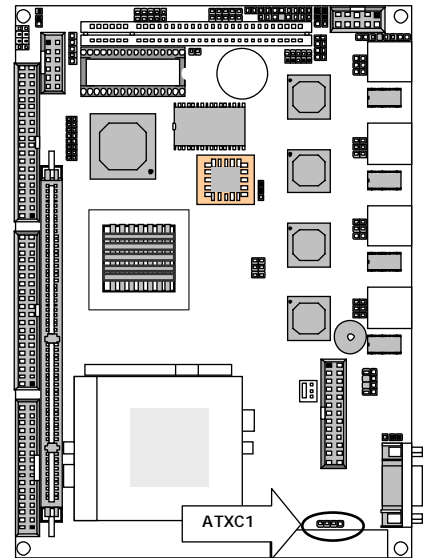
● PSW1: ATX Power Button

Pin No.	Description
1	PANSW
2	GND



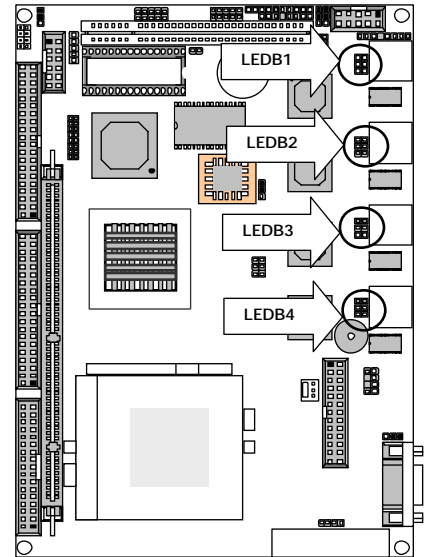
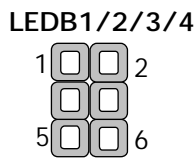
● ATXC1: ATX Function

Pin No.	Description
1	GND
2	+5V STANDBY
3	GND
4	PSON



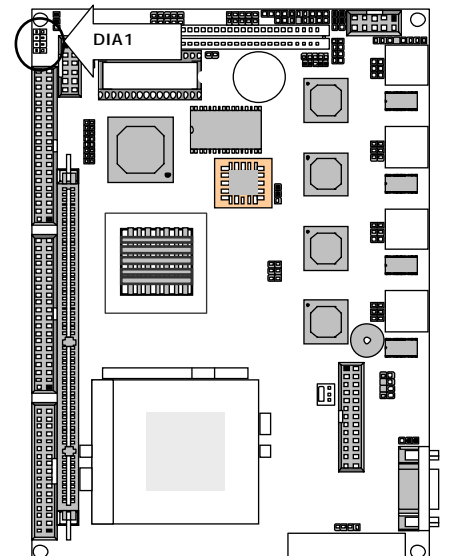
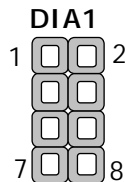
● LEDB1 / LEDB2 / LEDB3 / LEDB4: Extension LAN Status LED

Pin No.	Description	Pin No.	Description
1	10/100M-	2	10/100+
3	Link-	4	Link+
5	Active-	6	Active+



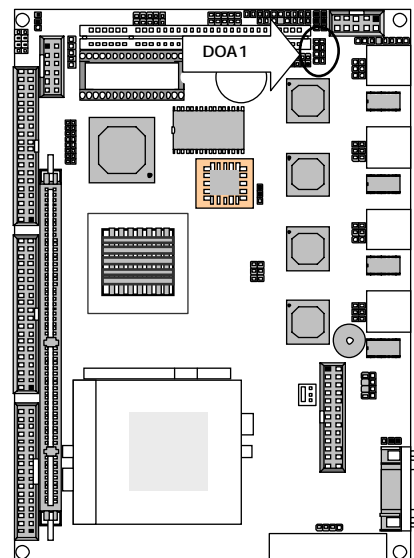
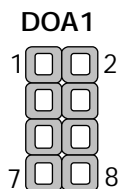
● DIA1: Digital Input Ports

Pin No.	Description	Pin No.	Description
1	GND	2	IN0
3	GND	4	IN1
5	GND	6	IN2
7	GND	8	IN3



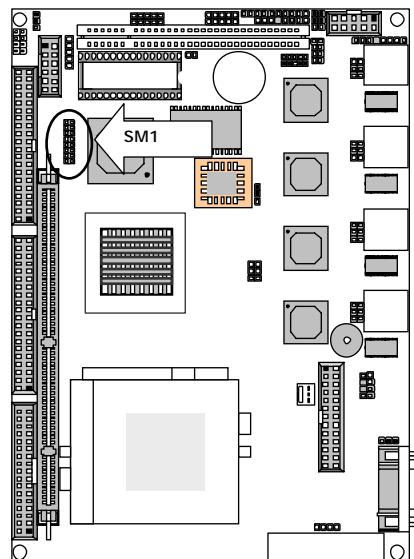
● DOA1: Digital Output Ports(2x4 Pin 2.54mm Header)

Pin No.	Description	Pin No.	Description
1	OUT0	2	VCC
3	OUT1	4	VCC
5	OUT2	6	VCC
7	OUT3	8	VCC



● SM1: AC97 Codec and KB/MS with daughter board

Pin No.	Description	Pin No.	Description
1	ICH_SPKR	2	AC97
3	AC_RST-	4	VCC
5	SYNC	6	GND
7	SDINO	8	+3.3V
9	NC	10	GND
11	BITCLK	12	+5V STANDBY
13	SDOUT	14	NC
15	MSDAT	16	MSCLK



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

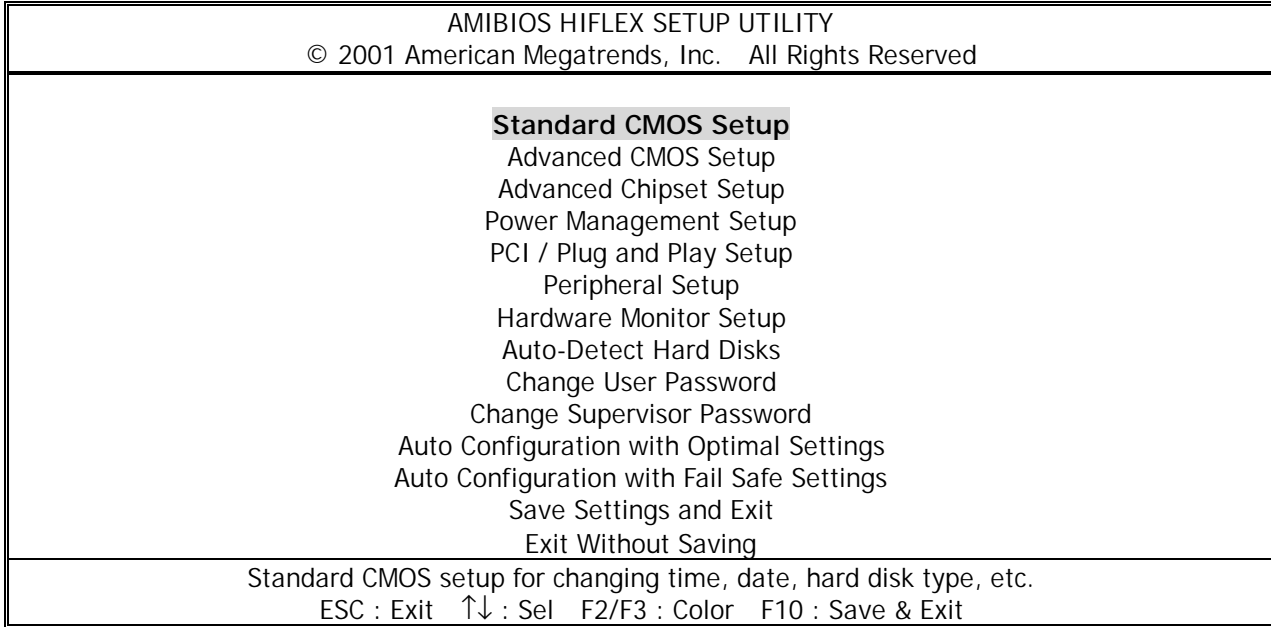
Turn on the power of the computer system and press immediately. If you don't have the chance to respond, reset the system by simultaneously typing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the ' Reset ' button on the system cabinet. You can also restart by turning the system OFF then ON.

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 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.

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										
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Date (mm/dd/yyyy)	: Wed Jan 23, 2002				Base Memory	: 639KB				
Time (hh/mm/ss)	: 22:22:32				Extd Memory	: 254MB				
Floppy Drive A :	1.44 MB 3 ¹ / ₂									
Floppy Drive B :	Not Installed									
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk Mode	PIO Mode	32 Bit Mode
Pri Master	: Auto									Off
Pri Slave	: Auto									Off
Sec Master	: Auto									Off
Sec Slave	: Auto									Off
Boot Sector Virus Protection	Disabled									
Month	: Jan	- Dec					ESC:Exit	↑↓ : Sel		
Day	: 01	- 31					PgUp/PgDn: Modify			
Year	: 1980	- 2099					F1: Help F2/F3:Color			

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>.

- Day** Day of the week, from Sun to Sat, determined by BIOS. Real-only.
- Month** The month from Jan. through Dec.
- Date** The date from 1 to 31 can be keyed by numeric function keys.
- Year** 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 5¹/₄", 1.2 MB 5¹/₄", 720 KB 3¹/₂", 1.44 MB 3¹/₂", or 2.88 MB 3¹/₂".

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 appear as:
Advanced CMOS Setup Screen

AMIBIOS SETUP – ADVANCED CMOS SETUP		
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Quick Boot	Enabled	Available Options: ▶ Disabled Enabled Cached
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 Driver Swap	Disabled	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
L1 Cache	WriteBack	
L2 Cache	WriteBack	
System BIOS Cacheable	Enabled	
C000, 16K Shadow	Enabled	
C400, 16K Shadow	Enabled	
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.

1st/2nd/3rd 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 "1st/2nd/3rd 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 1st/2nd/3rd 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:

- 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 :

- 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 Driver Swap: This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

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.

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 Cache: The option enabled or disabled the internal cache memory in the processor.

L2 Cache: The option enables secondary cache memory. If enabled is selected, external cache memory is enabled. If disabled is selected, external cache memory is disabled.

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
C400, 16K Shadow
C800, 16K Shadow
CC00, 16K Shadow
D000, 16K Shadow
D400, 16K Shadow
D800, 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		
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CPU Ratio Selection	Safe Mode	Available Options:
CPU BIST Enable	Disabled	Safe Mode
ICH Delayed Transaction	Enabled	5.5x
DMA Collection Buffer Enable	Disabled	6.0x
DRAM Page Closing Policy	Open	6.5x
Memory Hole	Disabled	7.0x
Auto detect PCI Clock	Disabled	7.5x
ClkGen spread Spectrum	Disabled	8.0x
Setup CPU Host Clock	Default	8.5x
CPU/PCI Clock (Mhz)	N/A	9.0x
System memory Frequency	100 Mhz	9.5x
SDRAM Timing by SPD	Enabled	10.0x
DRAM Refresh	15.6 US	10.5x
DRAM Cycle time (SCLKs)	5/7	11.0x
CAS# Latency (SCLKs)	3	11.5x
RAS to CAS Delay (SCLKs)	2	12.0x
SDRAM RAS# Precharge (SCLKs)	2	
Internal Graphics Mode Select	1 MB	
Display Cache Window Size	64 MB	
AGP Aperture Window	64 MB	
Local memory Frequency	100 Mhz	
Initialize Display Cache Memory	Enabled	
Paging Mode Control	Closed	
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.

CPU BIST Enabled: CPU Build-In- Self-Test enabled. Settings are Disabled and Enabled.

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.

Auto detect PCI Clock: This is to enable or disable detect PCI Clock Frequency by auto.

ClkGen Spread Spectrum: This is to enable or disable Clock Generator's Spread Spectrum function, when overclocking the processor, always set it to Disabled.

Setup CPU Host Clock: This item allows you to set the CPU host clock.

CPU/PCI Clock(Mhz): When "Setup CPU Host Clock" is Enable, can select CPU and PCI Clock Frequency.

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.

Local memory Frequency: This item allows you to select the Memory Frequency.

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	
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ACPI Function	Disabled
Power Management /APM	Enabled
Video Power Down Mode	Disabled
Hard Disk Power Down Mode	Disabled
Standby Time Out	Disabled
Keyboard & PS/2 Mouse	Monitor
FDC / LPT/ COM Ports	Monitor
Primary Master IDE	Monitor
Primary Slave IDE	Ignore
Secondary Master IDE	Monitor
Secondary Slave IDE	Ignore
ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify 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 *Disabled*, *Standby*, or *Suspend*. The Optimal nad Fail-Sa

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 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, Secondary Master IDE, Secondary 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.

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		
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Plug and Play Aware O/S	No	
Reset Configuration Data	No	
PCI Latency Timer (PCI Clocks)	64	
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
		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 an Fail-Safe default settings 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 a PCI slot before initialize 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,32, 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. This option does not appear if the Reserved Memory Size option is set to Disabled. The settings are C0000,C4000,C8000,CC000,D0000,D4000,D8000,or DC000.

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		
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	Both		
Onboard Lan	Enabled		
		ESC : Exit	↑↓ : Sel
		PgUp/PgDn :	Modify
		F1:Help	F2/F3 : Color

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.
Cache	Bi-Dir Use this setting to support bidirectional transfers on the parallel port.
EPP	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.
ECP	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	1. 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 ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color
CPU Temperature	40.0/104.0	
Fan1 Speed	6192 RPM	
Fan2 Speed	5273 RPM	
VCORE	+1.632V	
+3.3V Standby	+3.264V	
+3.3V	+3.216V	
+5V	+4.761V	
+1.85V	+1.721V	
-5V	-5.040V	
-12V	-12.218V	
+12V	+11.782V	

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 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.

3.11 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

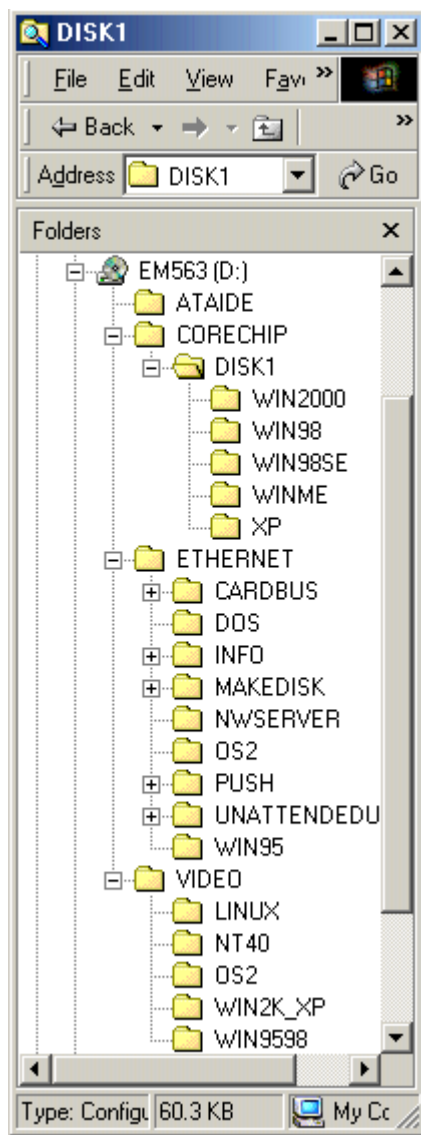
Chapter 4 Drivers Support

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



APPENDIX A. How to use watch-dog timer

To use the watch-dog timer :

- Step 1.** Enable and retrigger the Watch-Dog timer : Output port **443H**
Step 2. Disable : Output port **441H**

EX.1: For DOS

Execute the **DEBUG.EXE** file under DOS, Then key-in **O443**. The system will reboot automatically according to the time-out you set.

Enable
C:\DOS> DEBUG
O 443 0~F

Disable
C:\DOS> DEBUG
O 441 0~F

EX.2: For assemble Language

Enable :

```
:  
:  
MOV DX, 443H  
OUT DX, AL  
:  
:
```

Disable :

```
:  
:  
MOV DX, 441H  
OUT DX, AL  
:
```


Terms and Conditions

Date:1997.10.20

Warranty Policy

1. All products are warranted against defects in materials and workmanship on 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 other way 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.

RMA Service Request Form

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

RMA No:	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