MB-X71 Series

**Socket 478 Network Security
Appliance Control Board
(2xGBe, 4x10/100 LANs)**

COPYRIGHT©

This document is copyrighted by the original manufacture. The original manufacturer reserves the right to make modifications to the product(s) described in this manual at any time without notice. This manual may not, in whole or in part, be photocopied, reproduced, transcribed, translated, or transmitted in whatever form without the written consent of the manufacturer, except for copies retained by the purchaser for backup purposes. All rights are reserved.

TRADEMARKS

Pentium$^®$ is a registered trademark of Intel Corporation.

The following are trademarks or registered trademarks of their respective companies: IBM, Intel, AMD, Cyrix, Award, AMI, S3, Microsoft, Windows, Windows NT, Novell, SCO, PC/104, PICMG, ALI, UMC, SMC, Winbond. Products mentioned in this manual are for identification purposes only. All names of products or services appearing in this manual are the trademarks or registered trademarks of their respective organizations and companies.

 Copyright 2001

Ver. No. 1.0
LEI-UM-MB-X71 Series
Date: 2003/2/1

TABLE OF CONTENTS

TABLE OF CONTENTS

CHAPTER 1.

INTRODUCTION

The MB-X71 Series is a new socket 478 Pentium IIII Network security appliance control board with two Gigabit and four 10/100 Base-TX Ethernet ports specifically designed for Ethernet connectivity.

Designed for mainstream and high-end performance markets, the MB-X71 Series support Intel Pentium 4 /Celeron Processor up to a 2.4GHz, which is the best suited for applications requiring a powerful computing engine. Also the MB-X71Series is enhanced with Intel® 845GL chipset to maximize the efficiency of the processor, improving system performance and responsiveness.

To enhance network security appliance, the MB-X71 Series comes with Intel 82540EM & 82551QM Ethernet chips and six Ethernet LAN ports from 10/100M up to Gbe to provide an ideal price/performance solution for building a wide range of desktop and set top boxes to thin clients and web terminals powerful computing and multimedia performance for all the most popular productivity and Internet applications.

Designed with the Plug-and-Serve concept in mind, the MB-X71 Series offers two DDR 200/266 DIMM Socket support up to 2GB RAM which provide full functionality and performance to be used "exactly" where you need it as well. In addition, one ATA mode CompactFlash type II socket used in installing OS avoiding service disruption caused by hard disk's mechanical/magnetic failures.

MB-X71 Series has many expansion functions such as one PCI and one 124-pin Mini-PCI slot , both PCI slots support ATA mode help designers and integrators improve system performance by retrieving and sending data faster. Also on the front panel for easy access is a 9-pin, RS-232 serial port for local system management, maintenance, and diagnostics. Everything you could need is on-board.

1.1 SPECIFICATIONS

❏ Processor   : Socket 478 for Intel® Pentium™ 4/Celeron Processor, up to 2.4GHz,400MHZ FSB

❏ Chipset   : Intel® 845GL chipset (pin-to-pin compatible with 845G series); 82801DB I/O Controller Hub 4 (ICH4)

❏ PCI bus   : A. Two Intel 82540EM 32bit Gb Ethernet Controller (Colay with 82551QM)

B. Four Intel 82551QM 10/100 Mb Ethernet Controller

C. One 124-pin Mini-PCI slot

D. One Standard PCI Slot

❏ System Memory/RAM   : Two DDR200/266 DIMM Socket, up to 2GB RAM

❏ IDE Drive Interface   : A. One 40-pin (2x20, 2.54mm) IDE connector that support Ultra ATA100, build in secondary master IDE Channel

B One 44-pin (2x22, 2mm) IDE connector that support Ultra ATA100, build in secondary slave IDE Channel

C. One CompactFlash type II socket, support ATA mode, build in primary master IDE Channel

❏ BIOS   : Award® licensed BIOS

❏ I/O Connector   : A. Six external RJ-45 connectors

B. One RS-232 DB-9 connector

❏ Reserved pin-header   : A. Keyboard/Mouse pin-header

B LAN LED pin deader l

C. Power/Status LED header

D. 16 pin non-standard PIO x 1 for LCM connection

E. One 1*4 pin-header (for control Keypad use)

F. On board 2 pin header for software reset

❏ RTC Battery   : A. Internal RTC with Li battery

B. Watchdog Timer Function

❏ Operating Temperature   : 0 °C~60 °C

❏ Storage Temperature   : -20 °C~70 °C

❏ Power   : On-Board 20 pin ATX power connector (AT function only)

❏ Humidity   : 5 %~95% RH, non-condensing

❏ Dimensions   : 305 x 243 mm

❏ Model Extension   : MB-X71A: Two 82540+Four 82551

1.2 PACKING CHECK LIST

Inspect the product package for the following items before installation. If there is anything missing, please contact our authorized reseller.

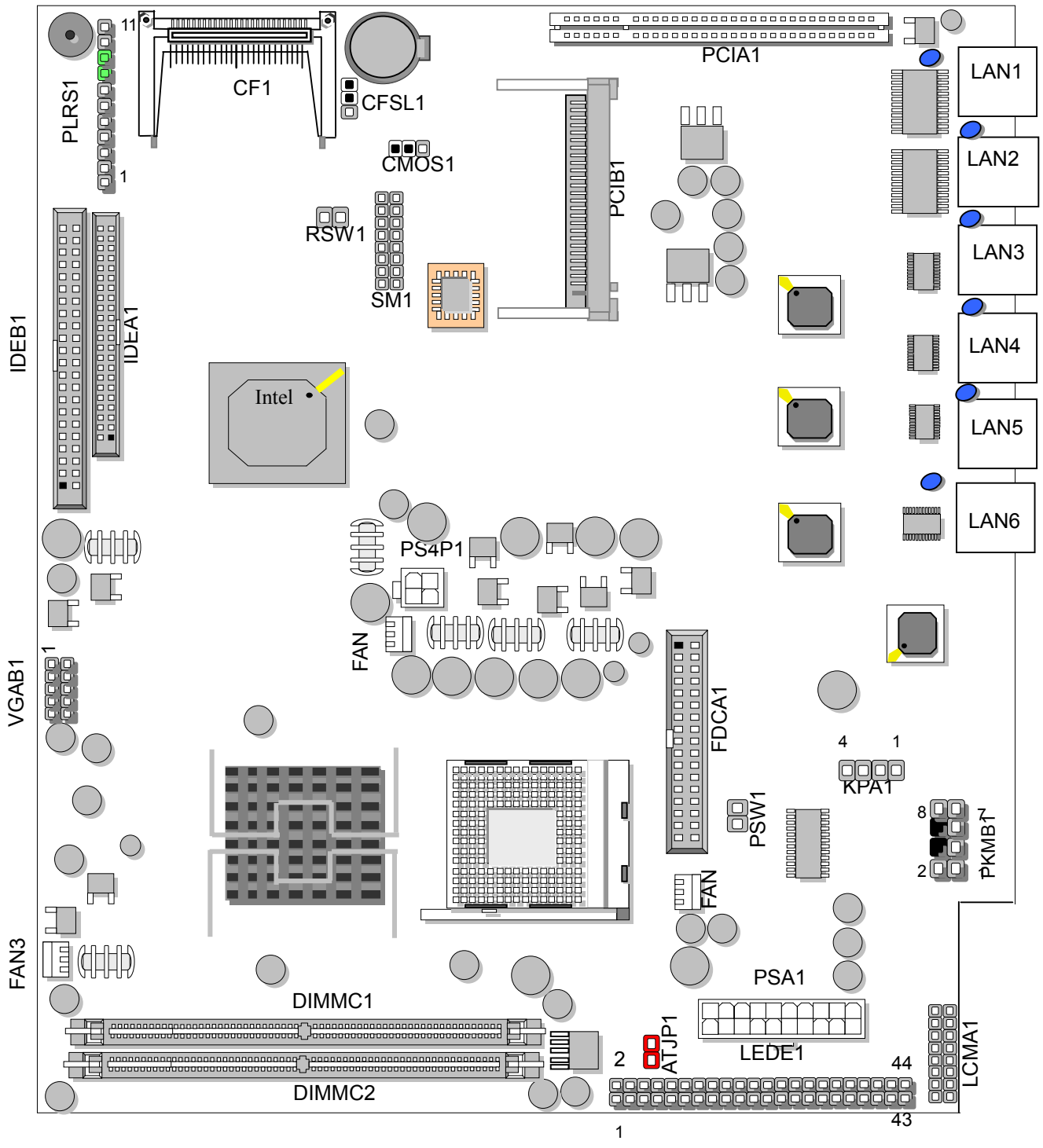| Item	Qty	Remark
MB-X71	1 pc	MB-X71 Socket 478 Network security appliance control board
User's manual	1 pc	MB-X71 user's manual

CHAPTER 2.

JUMPER SETTING AND CONNECTORS

The figure below shows the jumpers and connectors location on the MB-X71 Series. The PCB version may differ for slight changes without notice.

2.1 Board Outline of MB-X71 Series

2.2 INSTALLING AND UPGRADING THE CPU

To upgrade to a higher power CPU, simply remove the old CPU and install a new one. Make sure to set the jumpers for the new CPU type and speed.

WARNING!

Disconnect the power cord from your system when you intend to work on it or when you plan to open the chassis of your industrial computer. Do not make connections when the power is turned on because the sensitive electronic components could be damaged by the sudden rush of power. Please only allow experienced electronic technicians to do this job.

STATIC ELECTRICITY PRECAUTION!

Caution! Computer components are very sensitive to damage from static electric discharge. Always ground yourself to remove static charge build-up before touching the boards in the computer. Use a grounding wrist strap at all times. Place all electronic components on anti-static pad for static-dissipation or in static-shielded bag when they are not in the chassis.

CAUTION!

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the battery manufacturer's instructions or accepted environmental regulatory standards.

◎INSTALLING THE DIMM MODULE:

A DIMM module simply snaps into a socket on the system board. Pin1 of the DIMM module must correspond with Pin1 of the socket.
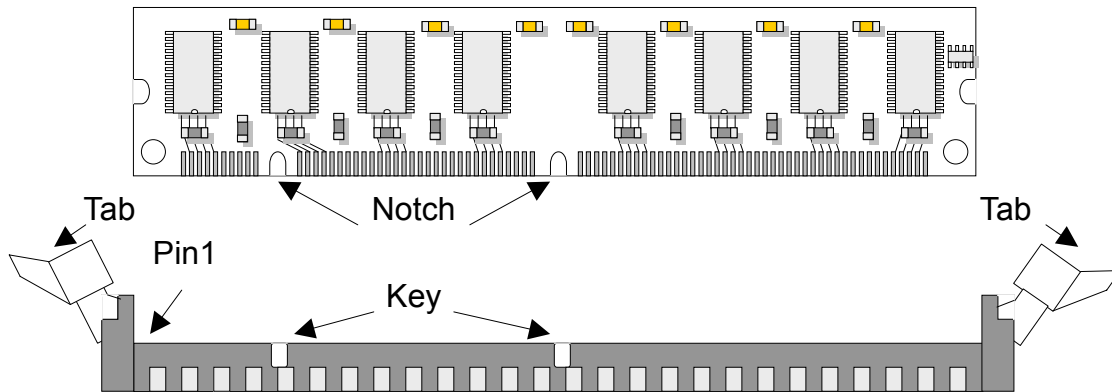
1. Pull the "tabs" which are at the ends of the socket to the side.
2. Position the DIMM above the socket with the "notches" in the module aligned with the "keys" on the socket.
3. Seat the module vertically into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

2.3 JUMPER SETTING OVERVIEW

In order to select the operation modes of your system, configure and set the jumpers on your SBC to match the needs of your applications. To set a jumper, a plastic cap containing metal contacts is placed over the jumper pins as designated by the required configuration as listed in this section.   A jumper is said to be " on " or " 1-2 " when the cap has been placed on two of its pins, as show in the figure below:
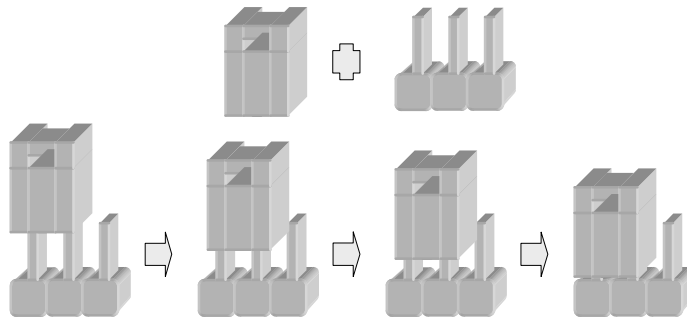
A pair of needle-nose pliers is recommended when working with jumpers.   If you have any doubts about the best hardware configuration for your application, contact our local sales representative before you make any changes.   In general, you simply need a standard cable to make most connections

2.4 JUMPER LOCATIONS FOR MB-X71 SERIES
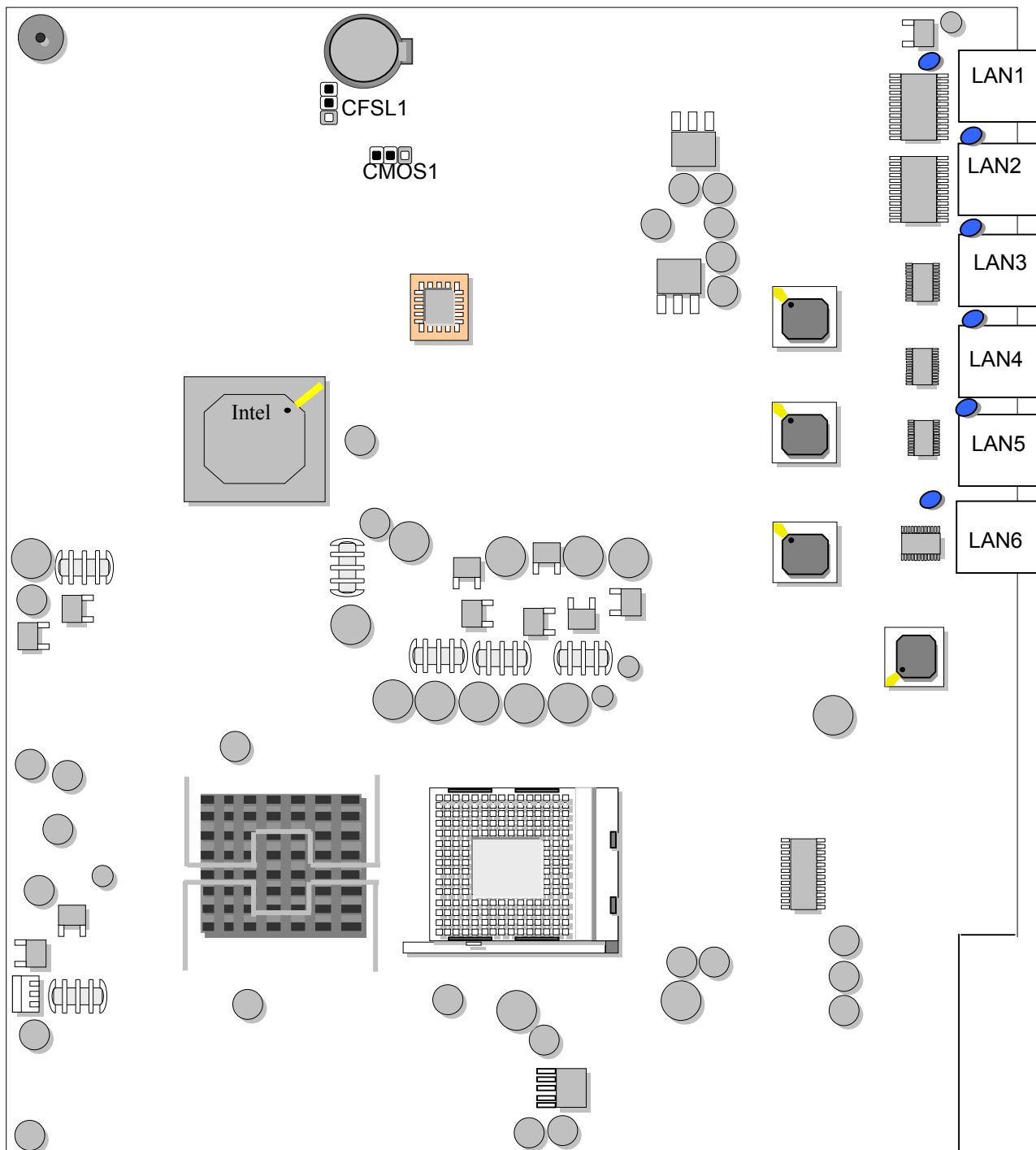
2.5 JUMPER SETTINGS SUMMARY FOR MB-X71 SERIES

JUMPER	FUNCTION
CMOS1	Clear CMOS Data
SCF1	Master/Slave Select

2.6 JUMPER SETTINGS FOR MB-X71 SERIES

● **CMOS1 : Clear CMOS Data**

CMOS1	Description
1-2	Normal (Default)
2-3	Clear CMOS
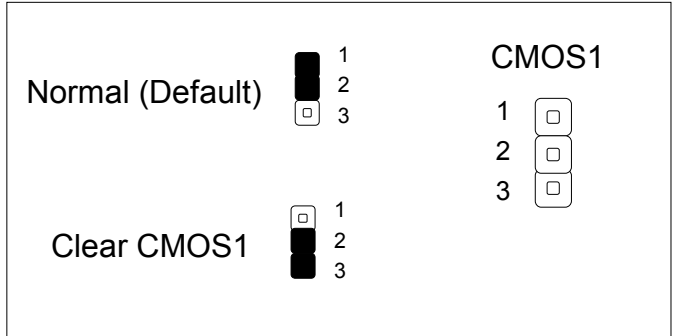
● **SCF1:Master/Slave Select**

SCF1	Compact Flash Card
1-2	Master (Default)
2-3	Slave
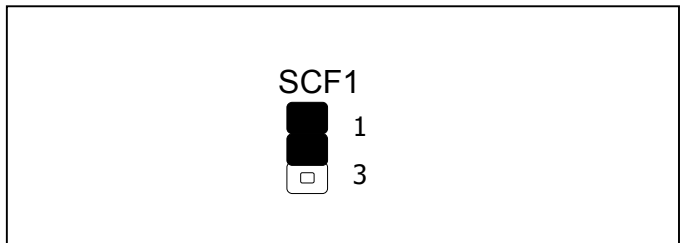
2.7 I/O CONNECTOR LOCATIONS FOR MB-X71 SERIES
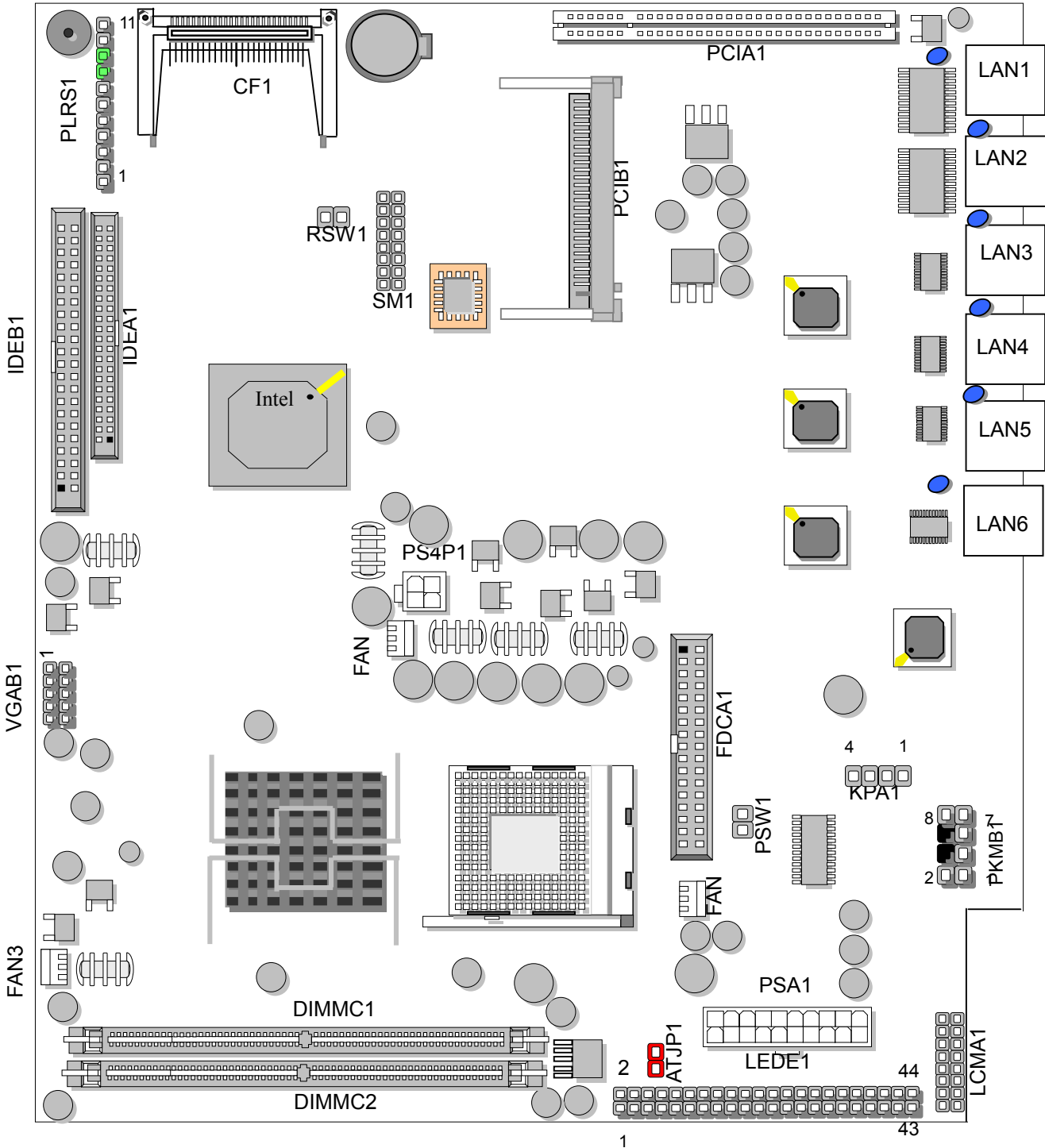
2.8 I/O CONNECTOR SUMMARY FOR MB-X71 SERIES

CONNECTOR	FUNCTION
FAN1-3	3 Pin Fan Connector
LANA1~2	Type 1 (RJ-45)
LANA3~6	:Type 1 (RJ-45)
COM1	RS232 Serial Port #1 Connector (D-Sub)
PKMB1	PS/2 Keyboard & Mouse Connector (2x4 Header 2.54mm)
PSA1	20 Pin ATX Power Connector
PS4P1	4-Pin Power Connector (P4-4P Male)
KPA1	LCM Keypad
LCMA1	LCM CONNECTOR
VGAB1	External VGA Connector (12 Pin Header)
IDEA1	IDE Interface Connector (44 Pin 2.0mm Pitch Header)
IDEB1	IDE Interface Connector (40 Pin 2.54mm Pitch Header)
PLRS1	Power LED, Reset, Speaker Connector
FDCA1	Floppy Interface Connector (34 Pin Header)
CF1	Compact Flash Connector
LEDE1	2x22 Pin
PCIB1	124 Pin Mini PCI Socket

2.9 I/O CONNECTORS DESCRIPTION

● **FAN1~3 : 3 Pin FAN Connector**

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

1 2 3
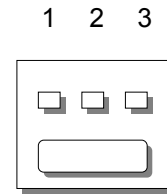
FAN1

● **LANA1~2 :Type 1 (RJ-45)**

Pin No.	Description	
	Fast Ethernet	Giga Ethernet
1	TX+	MD0+
2	TX-	MD0-
3	RX+	MD1+
4	T45	MD2+
5	T45	MD2-
6	RX-	MD1-
7	T78	MD3+
8	T78	MD3-
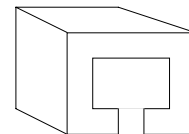
LANA1~2

● **LANA3~6 :Type 1 (RJ-45)**

Pin No.	Description
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78
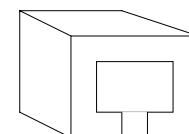
LANA3~6

- ## 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
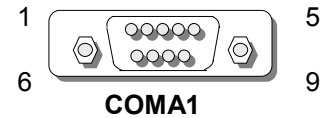
- ## PKMB1:PS/2 Keyboard & Mouse Connector (2x4 Header 2.54mm)

Pin No.	Description	Pin No.	Description
1	KBCLK	2	GND
3	NC	4	KBDATA
5	NC	6	MSDATA
7	MSCLK	8	VCC

PKMB1
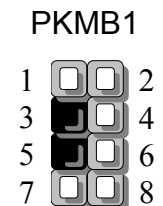
- ## PSA1:20 Pin ATX Power Connector

Pin No.	Description	Pin No.	Description
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	SWITCH
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	Power Good	18	-5V
9	Stand-By 5V	19	+5V
10	+12V	20	+5V

PSA1
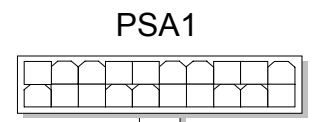
● **PS4P1:4-Pin Power Connector (P4-4P Male)**

Pin No.	Description
1	GND
2	GND
3	+12V
4	+12V

PS4P1
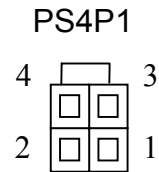
● **KPA1：LCM Keypad**

Pin	Description
1	KPA1
2	KPA2
3	KPA3
4	KPA4

KPA1
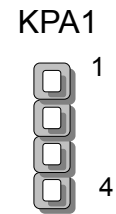
● **LCMA1：LCM CONNECTOR**

Pin	Description	Pin	Description
1	VCC	2	PGND
3	LSTIN-	4	VEE
5	LAFD-	6	LINIT-
7	LPD1	8	LPD0
9	LPD3	10	LPD2
11	LPD5	12	LPD4
13	LPD7	14	LPD6
15	LCD	16	VCC

LCMA1
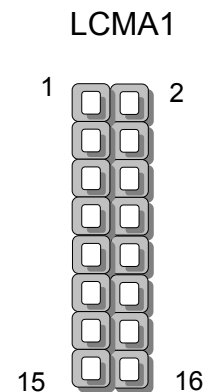
● **VGAB1 : External VGA Connector (12 Pin Header)**

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	Deteck-display CLOCK

VGAB1

● **IDEA1 : IDE Interface Connector (44Pin 2.0mm Pitch 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	Ground
29	DMA ACK #	30	Ground
31	Interrupt	32	NC
33	SA 1	34	NC
35	SA 0	36	SA 2
37	HDC CS 0#	38	HDC CS 1#
39	HDD Active	40	Ground
41	VCC	42	VCC
43	Ground	44	NC

IDEA1

- **IDEB1 : IDE Interface Connector (40Pin 2.54mm Pitch 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	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

IDEB1
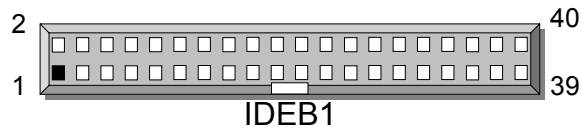
● **PLRS1:Power LED,HD LED,Reset,Speaker Connector(11 Pin 2.54mm)**

PIN NO.	DESCRIPTION
1	Power LED +
2	Power LED +
3	GND
4	HDD LED +
5	HDD LED -
6	RESET SW +
7	RESET SW – (GND)
8	External Speaker -
9	Internal Buzzer -
10	NC
11	External Speaker +

Default :
8-9   (ON)
Internal Buzzer

PLRS1
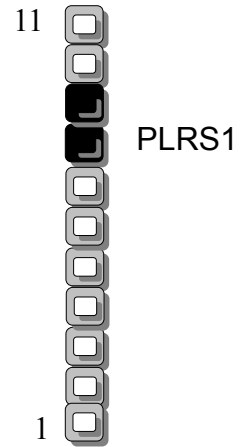
● **FDCA1 : Floppy Interface Connector (34 Pin Header)**

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 #

2   34

1   FDCA1   33
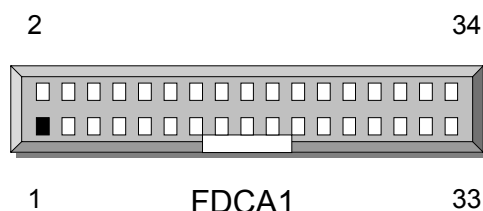
● **CF1:Compact Flash Connector**

Pin	Description	Pin	Description
1	GND	26	CD1-
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CE1#	32	CE2#
8	A10	33	VS1#
9	OE#	34	IOR#
10	A9	35	IOW#
11	A8	36	WE#
12	A7	37	READY#
13	CFVCC3	38	CFVCC3
14	A6	39	CSEL
15	A5	40	VS2#
16	A4	41	RESET
17	A3	42	WAIT#
18	A2	43	INPACK#
19	A1	44	REG#
20	A0	45	DASP#
21	DATA0	46	DIAG#
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	WP	49	DATA10
25	CD2-	50	GND

CF1

50   26

25   1
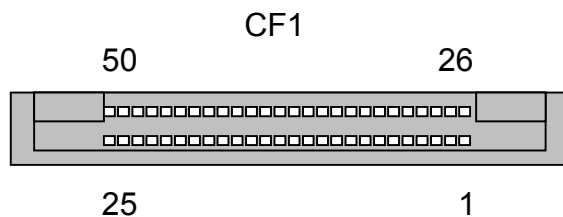
- **LEDE1：2x22 Pin**

Pin	Description	Pin	Description
1	POWER LED	2	POWER LED
3	POWER LED STATUS	4	POWER LED STATUS
5	Lan1 Link/Active LED-	6	Lan1 Link/Active LED+
7	Lan1 100 LED-	8	Lan1 100 LED+
9	Lan1 1G LED-	10	Lan1 1G LED+
11	Lan2 Link/Active LED-	12	Lan2 Link/Active LED+
13	Lan2 100 LED-	14	Lan2 100 LED+
15	Lan2 1G LED-	16	Lan2 1G LED+
17	Lan3 Link/Active LED-	18	Lan3 Link/Active LED+
19	Lan3 100 LED-	20	Lan3 100 LED+
21	Lan3 1G LED-	22	Lan3 1G LED+
23	Lan4 Link/Active LED	24	Lan4 Link/Active LED
25	Lan4 100 LED	26	Lan4 100 LED
27	Lan4 1G LED	28	Lan4 1G LED
29	Lan5 Link/Active LED	30	Lan5 Link/Active LED
31	Lan5 100 LED	32	Lan5 100 LED
33	Lan5 1G LED	34	Lan5 1G LED
35	Lan6 Link/Active LED	36	Lan6 Link/Active LED
37	Lan6 100 LED	38	Lan6 100 LED
39	Lan6 1G LED	40	Lan6 1G LED
41	NC	42	NC
43	NC	44	NC

LEDE1

2   43

1   44
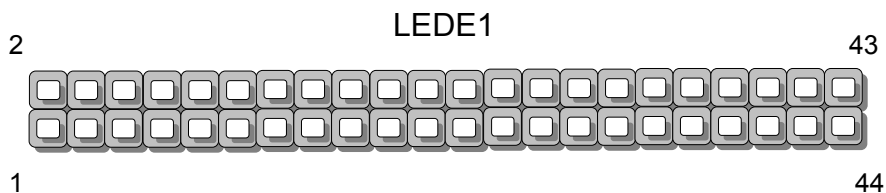
- **PCIB1:124 Pin Mini PCI Socket**

Pin No.	Description	Pin No.	Description
1	TIP	2	RING
3	8PMJ-3	4	8PMJ-1
5	8PMJ-6	6	8PMJ-2
7	8PMJ-7	8	8PMJ-4
9	8PMJ-8	10	8PMJ-5
11	LED1_GRNP	12	LED2_YELP
13	LED1_GRNN	14	LED2_YELP
15	CHSGND	16	RESERVED
17	INT-B	18	+5V
19	+3.3V	20	INT-A
21	RESERVED	22	RESERVED
23	GROUND	24	3.3VAUX
25	CLK	26	RST
27	GROUND	28	+3.3V
29	REO	30	GNT
31	+3.3V	32	GROUND
33	AD31	34	PME
35	AD29	36	RESERVED
37	GROUND	38	AD30
39	AD27	40	+3.3V
41	AD25	42	AD28
43	RESERVED	44	AD26
45	C_BE-3	46	AD24
47	AD23	48	IDSEL
49	GROUND	50	GROUND
51	AD21	52	AD22
53	AD19	54	AD20
55	GROUND	56	PAR
57	AD17	58	AD18
59	C_BE-2	60	AD16

PCIB1

● **PCIB1:124 Pin Mini PCI Socket(Continued last page)**

Pin No.	Description	Pin No.	Description
61	IRDY	62	GROUND
63	+3.3V	64	FRAME
65	CLKRUN	66	TRDY
67	SERR	68	STOP
69	GROUND	70	+3.3V
71	PERR	72	DEVSEL
73	C_BE-1	74	GROUND
75	AD14	76	AD15
77	GROUND	78	AD13
79	AD12	80	AD11
81	AD10	82	GROUND
83	GROUND	84	AD9
85	AD8	86	C_BE-0
87	AD7	88	+3.3V
89	+3.3V	90	AD6
91	AD5	92	AD4
93	RESERVED	94	AD2
95	AD3	96	AD0
97	+5V	98	RESERVED-WIP
99	AD1	100	RESERVED-WIP
101	GROUND	102	GROUND
103	AC_SYNC	104	M66EN
105	AC_SDATA_IN	106	AC_SDATA_OUT
107	AC_BIT_CLK	108	AC_CODEC_ID0
109	AC_CODEC_ID1	110	AC_RESET
111	MOD_AUDIO_MON	112	RESERVED
113	AUDIO_GND	114	GROUND
115	SYS_AUDIO_OUT	116	SYS_AUDIO_IN
117	SYS_AUDIO_OUT GND	118	SYS_AUDIO_IN GND
119	AUDIO_GND	120	AUDIO_GND
121	RESERVED	122	MPCIACT
123	VCC5VA	124	3.3AUX

AWARD BIOS SETUP

Award's ROM BIOS provides a built-in Setup program that allows users to modify the basic system configuration and settings. The modified data will be stored in a battery-backed CMOS RAM so that this data will be retained even when the power is turned off.   In general, the information saved in the CMOS RAM remains unchanged unless there is a configuration change in the system, such as hard drive replacement or new equipment installment

3.1 RUNNING AWARD BIOS

The Setup Utility is stored in the BIOS ROM.   When the power of the computer system is turned on, a screen message will appear 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 one of two ways, a series of short beeps or an error message on the screen.   There are two kinds of errors, fatal and non-fatal.   The system can usually continue the boot up sequence with 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 boot up 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 pressing 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.

3.2 CMOS SETUP UTILITY

To access the AWARD BIOS SETUP program, press the <DEL> key. The screen display will appears as shown below:

Main Program Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

► Standard CMOS Features	► PC Health Status
► Advanced BIOS Features	Load Optimized Defaults
► Advanced Chipset Features	Set Supervisor Password
► Integrated Peripherals	Set User Password
► Power Management Setup	Save & Exit Setup
► PnP/PCI Configurations	Exit Without Saving

Esc : Quit   ↑ ↓ → : Select Item
F10   : Save & Exit Setup

Time, Date, Hard Disk Type....

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

Listed below are 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.
<F1>   **:** General Help
<F5>   **:** Previous Values
<F6>   **:** Fail-Safe Defaults
<F7>   **:** Optimized Defaults
<F10>   **:** Saves all changes made to Setup and exits program.
+/-/PU/PD   **:** Change Value

Standard CMOS Setup: Use this menu for basic system configurations.

Advanced BIOS Features: Use this menu to set the Advanced Features available on your system.

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

Integrated Peripherals: Use this menu to specify your settings for integrated peripherals.

PnP/PCI Configuration: This entry appears if your system supports PnP/PCI.

PC Health Status: This entry shows your PC health status. If Hardware Monitor Chipset is installed.

Load Optimized Defaults: Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Set Supervisor Password: Use this menu to set Supervisor Passwords.

Set User Password: Use this menu to set User Passwords.

Save & Exit Setup: Save CMOS value changes to CMOS and exit setup.

Exit Without Saving: Abandon all CMOS value changes and exit setup.

3.3 STANDARD CMOS SETUP

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

Standard CMOS Setup Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

Standard CMOS Setup

Date (mm:dd:yy)	Wed, Nov 6 2002	Item Help
Time (hh:mm:ss)	19 : 41 : 36	Menu Level ►
		Change the day,
► IDE Primary Master	None	month, year and
► IDE Primary Slave	None	century
► IDE Secondary Master	None	
► IDE Secondary Slave	None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Halt On	All, But Keyboard	
Base Memory	640K	
Extended Memory	515072K	
Total Memory	516096K	

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save   Esc: Exit   F1: General Help

F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

The Standard CMOS Setup utility is used to configure the following components such as date, time, hard disk drive, floppy drive, display and memory.   Once a field is highlighted, on-line help information is displayed in the left bottom of the Menu screen.

Set Date : Month, Date, Year.

Set Time : Hour, Minute and Second.   Use 24-hour clock format (for p.m. time, add 12 to the hour number, e.g. you would enter 4:30 p.m. as 16:30).   When you select the "STANDARD CMOS SETUP" on the main program, the screen display will appears as:

IDE Primary(Secondary) Master(Slave): Press PgUp / <+> or PgDn / <-> to select Manual, None, Auto type.   Note that the specifications of your drive must match with the drive table.   The hard disk will not work properly if you enter improper information for this category.   If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard.   This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

IDE Primary Master

		Item Help
IDE HDD Auto-Detection	Press Enter	
		Menu Level ►
IDE Primary Master	Auto	
Access Mode	Auto	To auto-detect the HDD's size, head…on this channel.
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save   Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

IDE Primary Slave

		Item Help
IDE HDD Auto-Detection	Press Enter	
		Menu Level ►
IDE Primary Slave	Auto	
Access Mode	Auto	To auto-detect the HDD's size, head…on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save   Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

IDE Secondary Master

IDE HDD Auto-Detection	Press Enter	Item Help
		Menu Level ►
IDE Secondary Master	Auto	
Access Mode	Auto	To auto-detect the HDD's size, head…on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

↑ ↓ → Move   Enter: Select +/-/PU/PD: Value F10: Save   Esc: Exit F1: General Help

F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

IDE Secondary Slave

IDE HDD Auto-Detection	Press Enter	Item Help
		Menu Level ►
IDE Secondary Slave	Auto	
Access Mode	Auto	To auto-detect the HDD's size, head…on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

↑ ↓ → Move   Enter: Select +/-/PU/PD: Value F10: Save   Esc: Exit F1: General Help

F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

Here is a brief explanation of drive specifications:

- **Access Mode:** The settings are Auto, Normal, Large, LBA.
- **Cylinder:** Number of cylinders
- **Head:** Number of heads
- **Precomp:** Write precom
- **Landing Zone:** Landing Zone
- **Sector:** Number of sectors

Drive A and Drive B : Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5in	3 1-2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3 1-2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3 1-2 inch double-sided drive; 2.88 megabyte capacity

Note : 1. Not Installed could be used as an option for diskless workstations..

2. Highlight the listing after each drive name and select the appropriate entry.

Halt On : During the power-on-self-test (POST), the computer stops if the BIOS detects a hardware error.   You can tell the BIOS to ignore certain errors POST and continue the boot-up process.   These are the selections:

No errors	Whenever the BIOS detects a non-fatal error the system will not be stopped and you will be prompted
All errors	The system boot will be stopped for any error that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error ; it will stop for all Other errors.
All, But Diskette	The system boot will not stop for a disk error ; it will stop for all other Errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error ; it will stop for all other errors.

3.4 BIOS Features Setup

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

BIOS Features Setup Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

Advanced BIOS Features

			Item Help
Virus warning	Disabled	▲	Menu Level ►
Quick Power On Self Test	Enabled		Allows you to
First Boot Device	Floppy		choose the VIRUS
Second Boot Device	HDD-0		warning feature for
Third Boot Device	CD-ROM		IDE Hard Disk boot
Boot Other Device	Enabled		sector protection. If
Swap Floppy Drive	Disabled		this function is
Hard Disk Write Protect	Disabled		enabled and
Floppy Disk Access Control	R/W		someone attempt to
Boot Up NumLock Status	On		write data into this
Security Option	Setup		area, BIOS will
PS/2 Mouse Function Control	Enabled		show a warning
HDD S.M.A.R.T. Capability	Enabled		message on screen
Video BIOS Shadow	Enabled		and alarm beep
C8000 – CBFFF Shadow	Disabled		
CC000 – CFFFF Shadow	Disabled		
D0000 – D3FFF Shadow	Disabled		
D4000 – D7FFF Shadow	Disabled		
D8000 – DBFFF Shadow	Disabled		
DC000 – DFFFF Shadow	Disabled	▼	
Full Screen LOGO Show	Disabled		

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save   Esc: Exit F1: General Help

F5: Previous Values F6: Fail-Safe Defaults   F7: Optimized Defaults

Virus Warning: The default setting of Virus Warning is "Disabled".   When it is enabled, any attempt to write the boot sector and partition table will halt the system and cause a warning message to appear.   If this happens, you can use an anti-virus utility on a virus free, bootable floppy diskette to reboot, to clean and to investigate your system.

Quick Power On Self Test : The default setting is "Enabled". This speeds up the Power On Self Test (POST) by skipping some items that are normally checked during the full POST. If your system is functioning normally, you can choose this feature to speed up the booting process.

First / Second / Third / Other Boot Device : The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, and Disabled

Swap Floppy Drive : The default setting is "Disabled". This setting gives you an option to swap A and B floppy disks. Normally, the floppy drive A is the one at the end of the cable and drive B is at the other end. If you set this option to "Enabled", the Drive A will function as Drive B, and vice-versa under the DOS.

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

Boot Up Numlock Status : The default setting is "On". If set "Off", the cursor controls will function on the numeric keypad.

Security Option : This setting controls the password in the main screen. The options are "Setup" and "System". Select "Setup" and it will protect the Setup Utility settings from being tampered with. Select "System" if you want to use password feature every time the system boots up. The default setting is "Setup". You can create your password by using the "SUPERVISOR/USER PASSWORD" utility on the main program screen.

PS/2 Mouse Function Control : 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.

HDD S.M.A.R.T. for Capability : 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.

Video BIOS Shadow : The default setting is "Enabled" which will copy the VGA display card BIOS into system DRAM to improve performance.

C8000-CBFFF Shadow to DC000-DFFFF Shadow : The default setting for the shadow feature is "Disabled".   When enabled, the ROM with the specific address is copied into system DRAM.   It will also reduce the size of memory available to the system.   After you have made your selection in the BIOS FEATURES SETUP, press the <ESC> key to go back to the main program screen.

3.5 CHIPSET FEATURES SETUP

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

Chipset Features Setup Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

Advanced Chipset Features

			Item Help
	Spread Spectrum	Disabled	Menu Level ▶
X	DRAM Timing Selectable	By SPD	
X	CAS Latency Times	2	
X	Active to Precharge Delay	6	
	DRAM RAS# to CAS# Delay	3	
	DRAM RAS# Precharge	3	
	Turbo Mode	Enabled	
X	Memory Frequency For	Auto	
	System BIOS Cacheable	Enabled	
	Video BIOS Cacheable	Enabled	
X	Memory Hole At 15M-16M	Disabled	
X	Delayed Transaction	Enabled	
	Delayed Prior to Thermal	16 Min	
	AGP Aperture Size(MB)	64	
	** OnChip VGA Setting **		
	OnChip VGA	Enabled	
	OnChip Frame Buffer Size	8MB	
	Boot Display	Auto	
	Status LED Control	DARK	

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save Esc: Exit   F1: General Help

F5: Previous Values F6: Fail-Safe Defaults   F7: Optimized Defaults

DRAM Clock : The chipset support synchronous and asynchronous mode between the host clock and DIMM clock.

Host CLK (default)	DIMM clock equal to host clock
66MHz	DIMM clock equal to 66MHz

SDRAM Cycle Length : This item allows you to select the SDRAM cycle length.   The settings are 2 or 3.

CAS latency Time: When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

DRAM RAS# to CAS# Delay: This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance. This field applies only when synchronous DRAM is installed in the system.

DRAM RAS# Precharge Time: If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

System BIOS Cacheable : Selecting "Enabled" allows caching of the system BIOS ROM at F0000h – FFFFFh, resulting in better system performance.   However, if any program writes to this memory area, a system error may result.   The settings are "Enabled" and "Disabled".

Video BIOS Cacheable: Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance.   However, if any program writes to this memory area, a system error may result.

Memory Hole At 15M-16M: You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

AGP Aperture Size : Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space.   Host cycles that hit the aperture range are forwarded to the AGP without any translation.

3.6 INTEGRATED PERIPHERALS

When you select the "INTEGRATED PERIPHERIALS" on the main program, the screen display will appears as:

Integrated Peripherals Setup Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

Integrated Peripherals

			Item Help
OnChip Primary PCI IDE	Enabled		Menu Level ►
OnChip Secondary PCI IDE	Enabled		
USB Controller	Enabled		
USB 2.0 Controller	Enabled		
USB Keyboard Support	Disabled		
USB Mouse Support	Disabled		
Init Display First	PCI Slot		
Onboard LAN1 Controller	Enabled		
Onboard LAN2 Controller	Enabled		
Onboard LAN3 Controller	Enabled		
Onboard LAN4 Controller	Enabled		
Onboard LAN5 Controller	Enabled		
X Onboard LAN6 Controller	Enabled		
X Onboard FDD Controller	Enabled		
Onboard Serial Port 1	3F8/IRQ4		

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save Esc: Exit   F1: General Help

F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

On-Chip (Primary/Secondary) PCI IDE : The Intel 82C440BX chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface.

IDE Prefetch Mode : The onboard IDE drive interfaces supports IDE prefetching for faster drive accesses.   If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.   The settings are "Enabled" and "Disabled".

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

USB Keyboard Support : Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

Init Display First : This item allows you to decide to active whether PCI Slot of VGA card or AGP first.   The settings are "PCI Slot" and "AGP Slot".

Onboard FDD Controller : Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you want to use it.   If you install add-in FDC or the system has no floppy drive, select Disabled in this field.   The settings are "Enabled" and "Disabled".

Onboard Serial Port 1 : Select an address and corresponding interrupt for the first and second serial ports.   The settings are "3F8/IRQ4", "2E8/IRQ3", "3E8/IRQ4", "2F8/IRQ3", "Disabled", "Auto".

3.7 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 appears as:

Power Management Setup Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

Power Management Setup

			Item Help
► Power Management	User Define		Menu Level ►
Video Off Method	DPMS		
Video Off In Suspend	Yes		
Suspend Type	Stop Grant		
Suspend Mode	Disabled		
HDD Power down	Disabled		

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

Power Management :

		Item Help
Power Management	User Define	Menu Level ►
HDD Power Down	Disable	
Doze Mode	Disable	
Suspend Mode	Disable	

↑ ↓ → Move   Enter: Select +/-/PU/PD: Value   F10: Save   Esc: Exit F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are four selections for Power Management, three of which have fixed mode setting.

Disable (Default)	No power management. Disables all four modes.
Min. Power Saving	Minimum power management. Doze Mode=1hr. Standby Mode =1hr., Suspend Mode=1hr., and HDD Power Down=15min.
Max. Power Saving	Maximum power management. –Only available for SL CPU's. Doze Mode=1min., Standby Mode=1min., Suspend Mode=1min., and HDD Power Down=1min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disabled.

Video Off Option : This option is for choosing the setting in which the monitor will turn off. The default setting is "Suspend".

N/A	Always turn on.
Doze	During Doze mode, the monitor will be turned off.
Standby	During Standby mode, the monitor will be turned off.
Suspend	During Suspend mode, the monitor will be turned off.

Video Off Method : This determines the manner in which the monitor is blanked.   The default setting is "V/H SYNC+Blank".

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blank to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

Suspend Mode : Option are from "1 Min" to "1 Hour" and "Disable". The CPU clock will be stopped and the video signal will be suspended, if no Power Management events occur for a specified length of time. Full power function will return when a Wake-Up event is detected.

HDD Power Down: Options are from "1 Min". to "15 Min". and "Disable".   The IDE hard drive will spin down if it is not accessed within a specified length of time.

3.8 PNP/PCI CONFIGURATION

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 PnP/PCI Configuration Setup utility, otherwise the motherboard will not work properly.

PnP/PCI Configuration Setup Screen

CMOS Setup Utility – Copyright © 1984-2001 Award Software

PnP/PCI Configurations

			Item Help
PnP OS Installed	No		
Reset Configuration Data	Disabled		Menu Level ►
			Select Yes if you
Resources Controlled By	Manual		are using a Plug
► IRQ Resources	Press Enter		and Play capable
► DMA Resources	Press Enter		operating system.
► Memory Resources	Press Enter		Select No if you
			need the BIOS to
PCI/VGA Palette Snoop	Disabled		configure non-boot
PCI Latency Timer (CLk)	32		devices.
INT Pin 1 Assignment	Auto		
INT Pin 2 Assignment	Auto		
INT Pin 3 Assignment	Auto		
INT Pin 4 Assignment	Auto		
INT Pin 5 Assignment	Auto		
INT Pin 6 Assignment	Auto		
INT Pin 7 Assignment	Auto		
INT Pin 8 Assignment	Auto		

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save Esc: Exit   F1: General Help

F5: Previous Values F6: Fail-Safe Defaults   F7: Optimized Defaults

PnP OS Installed : When set to "Yes", BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI).   The rest of the cards will be initialized by the PnP operating system like Windows® 95 or 98.   When set to "No", BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware®), this option must set to "Yes".

Reset Configuration Data : Normally, you leave this field "Disabled", Select "Enabled" to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.
The settings are : "Enabled and Disabled".

Resource Controlled By : The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices.   However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®98.   If you set this field to "Manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is proceded by a "►"). The settings are "Auto(ESCD)", "Manual".

IRQ Resources : When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt.

IRQs Resources:

				Item Help
IRQ3	assigned to	Legacy	ISA	
IRQ4	assigned to	PCI/ISA	PnP	Menu Level ►►►
IRQ5	assigned to	PCI/ISA	PnP	Legacy ISA for devices
IRQ6	assigned to	Legacy	ISA	compliant with the original
IRQ7	assigned to	PCI/ISA	PnP	PC AT bus specification ,
IRQ8	assigned to	PCI/ISA	PnP	PCI/ISA PnP for devices
IRQ9	assigned to	PCI/ISA	PnP	compliant with the Plug and
IRQ10	assigned to	PCI/ISA	PnP	Play standard whether
IRQ11	assigned to	PCI/ISA	PnP	designed for PCI or ISA
IRQ12	assigned to	PCI/ISA	PnP	bus architecture.
IRQ13	assigned to	PCI/ISA	PnP	
IRQ14	assigned to	PCI/ISA	PnP	
IRQ15	assigned to	PCI/ISA	PnP	

↑ ↓ → Move   Enter: Select +/-/PU/PD: Value   F10: Save   Esc: Exit F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

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 configures 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.

DMA Resources : The sub menu can let you control the DMA resource.

DMA Resources : The sub menu can let you control the DMA resource.

				Item Help
DMA-0	assigned to	PCI/ISA	PnP	Menu Level ►►►
DMA-1	assigned to	PCI/ISA	PnP	Legacy ISA for devices
DMA-3	assigned to	PCI/ISA	PnP	compliant with the original
DMA-5	assigned to	PCI/ISA	PnP	PC AT bus specification ,
DMA-6	assigned to	PCI/ISA	PnP	PCI/ISA PnP for devices
DMA-7	assigned to	PCI/ISA	PnP	compliant with the Plug and
				Play standard whether
				designed for PCI or ISA
				bus architecture.

↑ ↓ → Move   Enter: Select +/-/PU/PD: Value   F10: Save   Esc: Exit F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

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.

Memory Resources:

		Item Help
Reserved Memory Base	N/A	Menu Level ►►►
Reserved Memory Length	8K	Legacy ISA for devices
		compliant with the original
		PC AT bus specification ,
		PCI/ISA PnP for devices
		compliant with the Plug and
		Play standard whether
		designed for PCI or ISA
		bus architecture.

↑ ↓ → Move   Enter: Select +/-/PU/PD: Value   F10: Save   Esc: Exit F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

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. 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.

PCI/VGA Palette Snoop : Leave this field at "Disabled".　The settings are "Enabled", "Disabled".

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.

3.9 PC HEALTH STATUS

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact your motherboard supplier to get proper value about your setting of the CPU temperature.

CMOS Setup Utility – Copyright © 1984-2001 Award Software

PC Health Status

		Item Help
VCORE	1.44V	Menu Level ►
+2.5v	2.46V	
+3.3V	3.40V	
+5V	5.08V	
+12V	12.03 V	
-12V	(-)12.11 V	
-5V	(-)5.00 V	
+1.5V	1.45V	
System Temperature	28℃	
CPU Temperature	31℃	
Fan 1 Speed	0 RPM	
Fan 2 Speed	0 RPM	
Fan 3 Speed	4963RPM	

↑ ↓ → Move   Enter: Select   +/-/PU/PD: Value   F10: Save Esc: Exit   F1: General Help

F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults

CPU Temperature, Fan1 Speed, Fan2 Speed , Fan2 Speed, VCORE, +2.5, +3.3V, +5V, +12V : These items display the current status of all monitored hardware devices/components such as system voltages, temperatures and fan speeds.

3.10 LOAD OPTIMIZED DEFAULTS

When you press "Enter" on this item, you get a confirmation dialog box with a message similar to :

Load Optimized Defaults (Y/N) ? N

Pressing "Y" loads the default values that are factory settings for optimal performance system operations.

3.11 SET SUPERVISOR / USER PASSWORD

The "SUPERVISOR/USER PASSWORD" utility sets the password. The SBC is shipped with the password disabled. If you want to change the password, you must first enter the current password, then at the prompt -- enter your new password. The password is case sensitive, and can be up to 8 alphanumeric characters. Press <Enter> after you have finished typing in the password. At the next prompt, confirm the new password by re-typing it and pressing <Enter> again. When you are done, the screen automatically reverts to the main screen. Remember that when you use this feature, the "Security Option" line in BIOS FEATURES SETUP will determine when entering the password will be required.

To disable the password, press the <Enter> key instead of entering a new password when the "Enter Password" in the dialog box appears. A message will appear confirming that the password is disabled.

If you have set both supervisor and user password, only the supervisor password allows you to enter the BIOS SETUP PROGRAM.
Note : If you forget your password, the only way to solve this problem is to discharge the CMOS memory.

3.12 SAVE & EXIT SETUP

Select this option and press the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.

3.13 EXIT WITHOUT SAVING

Select this option and press the <Enter > key to exit the Setup Utility without recording any new values or changing old ones.

DRIVERS SUPPORT

4.1 USE YOUR DRIVER CD-ROM

This chapter provides information on how to install the drivers that come in the CD-ROM with the package. Please follow the instructions set forth in chapter 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
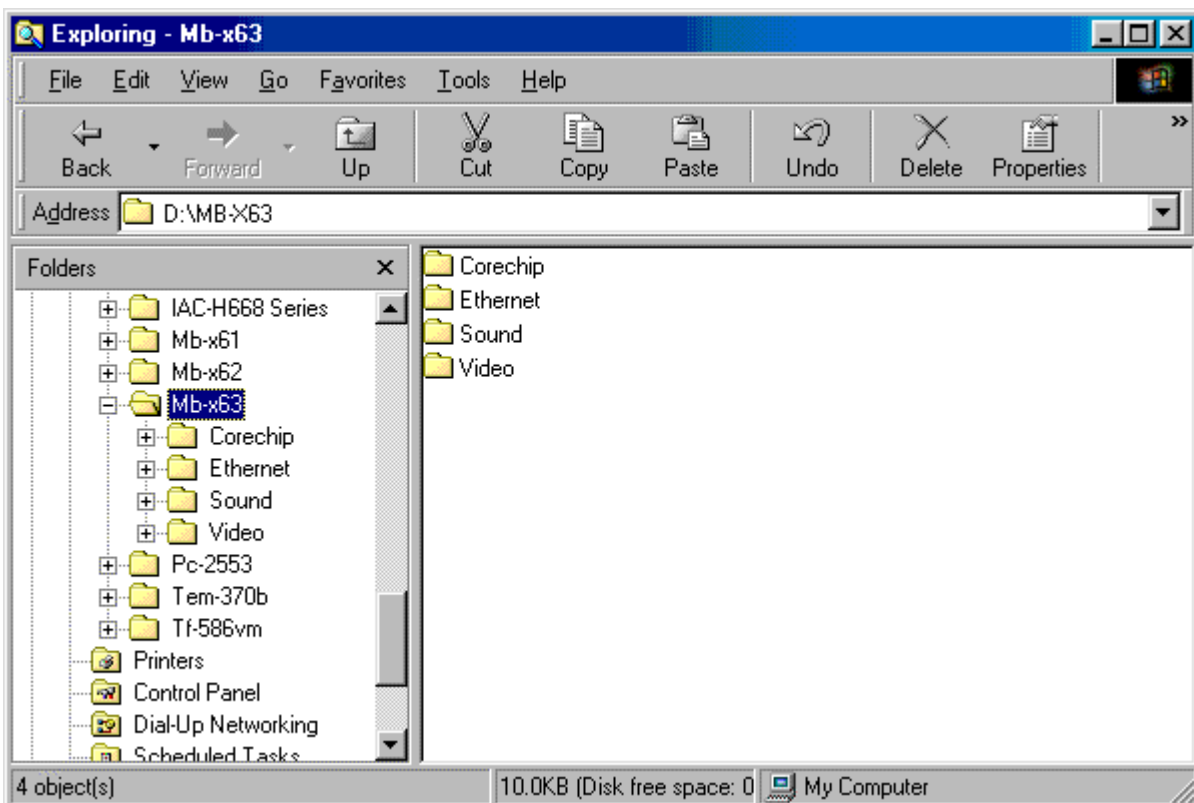
APPENDIX A

HOW TO USE WATCH-DOG TIMER

If you enable the watch-dog, the hardware timer will reboot your system if your software encounters an unexpected error, or stops responding. The watch-dog timer period (from enable to reset) was decided by the jumper setting of watch-dog time out period. Please refer to the chapter on jumper settings and connectors. During the period of enable to reset, you could still cancel reset by disabling the watch-dog.

EX.1: For DOS

Execute the **DEBUG.EXE** file under DOS, Then key-in **i443**. The system will reboot automatically according to the time-out you set.

For example, if you want to Set **4 seconds** for the time-out, you should set **JP5 (4-8)**

Enable   **Disable**
C:\DOS> DEBUG   C:\DOS>DEBUG
     -i443   -i43

EX.2: For assembly Language

       Enable :
             :
             :
     MOV   DX, 443H
     IN AL, DX
             :
             :

       Disable :
             :
             :
     IN AL, 43H
             :
             :

TECHNICAL REFERENCE

I/O PORT ADDRESS MAP

Address	Function
000 - 01F	DMA Controller #1
020 - 03F	Interrupt Controller #1
040 - 05F	Timer Chip
043	Disable Watch-Dog Times Operation (Read)
060 - 06F	Keyboard Controller
070 - 07F	Read Time Clock/NMI Mask
080 - 09F	DMA Page Register
0A0 - 0BF	Interrupt Controller #2
0C0 - 0DF	DMA Controller #2
0F0 - 0F1	Clear/Reset Math Coprocessor
1F0 - 1F7	Hard Disk Controller
200 - 210	Game Port
278 - 27F	Parallel Port #2
2E8 - 2EF	Serial Port #4 (COM 4)
2F8 - 2FF	Serial Port #2 (COM 2)
300 - 31F	Prototype Card/Streaming Tape Adapter
360 - 36F	PC Network
378 - 3FF	Parallel Port #1
380 - 38F	SDLC #2
3A0 - 3AF	SDLC #1
3B0 - 3BF	MDA Video Card (Including LPTO)
3C0 - 3CF	EGA Card
3D0 - 3DF	CGA Card
3E8 - 3EF	Serial Port #3 (COM 3)
3F0 - 3F7	Floppy Disk Controller
3F8 - 3FF	Serial Port #1 (COM 1)
443	Enable Watch-dog Timer Operation (read)

MEMORY ADDRESS MAP

Address Range (Hex)	Description
000000H - 09FFFFH	640 KB of Conventional RAM
0A0000H - 0BFFFFH	128 KB of Video RAM
0C0000H - 0EFFFFH	256 KB of I/O Expansion ROM
0F0000H - 0FFFFFH	64 KB of System BIOS ROM
0100000H - 7FFFFFFFH	1 MB ~ 128MB of User RAM

DMA CHANNELS

CHANNEL	Function
DMA 0	Reserved
DMA 1	Reserved
DMA 2	Floppy Disk Controller
DMA 3	ECP Parallel Port
DMA 4	Cascade for DMA #1
DMA 5	Reserved
DMA 6	Reserved
DMA 7	Reserved

INTERUPT CONTROLLER

IRQ	Function
IRQ 0	System timer output
IRQ 1	Keyboard
IRQ 2	Cascade for INTC #2
IRQ 3	Serial port #2
IRQ 4	Serial port #1
IRQ 5	Parallel port #2
IRQ 6	Floppy disk controller
IRQ 7	Parallel port #1
IRQ 8	Real time clock
IRQ 9	Software redirected to INT 0AH (IRQ 2)
IRQ 10	Reserved
IRQ 11	Reserved
IRQ 12	PS/2 Mouse
IRQ 13	Math Coprocessor (CPU Internal)
IRQ 14	Primary Hard disk
IRQ 15	Secondary Hard Disk
NMI	Parity Check Error

GLOSSARY

8-Bit Bus – Data is transmitted to expansion slots and other components on the bus only along 8 parallel data lines.

10Base-T – It is a 10Mbps IEEE 802.3/Ethernet standard that uses unshielded twisted pair cable specification.   10Base-T supports network configurations using the CSMA/CD access method over a twisted pair transmission system, up to a maximum of 100 meters in length without the use of a repeater.

16-Bit Bus or ISA Bus – Data is transmitted along either 8 or 16 data lines, depending on what kind of adapter card is used in an expansion slot.   ISA is the abbreviation of Industry Standard Architecture.

100Base-TX – It is a 100Mbps IEEE 802.3/Ethernet standard that uses UTP cable. Also called Fast Ethernet, it uses RJ-45 connectors and EIA/TIA T568B pinning. Maximum cable length from hub to node is 100 meters without a repeater.

Adapter – It is also called an expansion board, expansion card, or adapter card.   It is a small circuit board that is installed in the expansion slots on the motherboard.   You can install a particular adapter that connects a new device such as internal modem, sound card, or scanner.

AGP (Accelerated Graphic Port) – is a 32-bit, 66MHz external frequency data bus that transmits data at a maximum of 528MB/s (4 times the speed of PCI transmission); this design improves the speed of large video transactions.

BIOS (Basic Input /Output System) – This is a chip on the motherboard that contains the instructions for starting up, or booting, the computer, and more.

Bus – Data that travels in a computer along the circuits on the motherboard are called buses.   Although three main buses (data bus, address bus, and control bus) manage the computer's operation, these are often collectively called the bus.   The bus carries instructions back and forth between the CPU and other devices in the system.   ISA, EISA, VL-Bus, PCI and SCSI are examples of PC buses.

bps – Bits per second.   Also often preceded by k (kilo/thousands), **kbps** – Kilobits per second, and M (mega/million), **Mbps** – Megabits per second.

Bps – Bytes per second. (1 Byte is 8 Bits) **kbps** – kilobytes per second. **Mbps** – megabytes per second.

Bus Mastering – A method of transferring data through a bus in which the device takes over the bus and directly controls the transfer of data to the computer's memory.   Bus mastering is a method of Direct Memory Access (**DMA**) transfer.

Cache – Cache RAM is an extra holding area for program instructions that need to be frequently used by the CPU or swapped in and out of RAM.   Your CPU can usually access those instructions from the cache more quickly than it could from a hard disk or even RAM, so a cache helps the system work more efficiently.   Most systems sold today offer either 256K or 512K cache.

CPU (Central Processing Unit) – executes all commands and controls the flow of data, providing the " brain " that enables the PC to calculate and perform the operations like sorting information more quickly than a human could.   The CPU makes perhaps the greatest contribution to a PC's speed and power.   Note: Any additional information is subject to change without prior revision from the supplier.

Table 1 -- CPU Speeds	
Processor type	Speed ratings (MHz)
486DX2	66, 80
486DX4	75, 100, 120
Pentium	75, 90, 100, 120, 133, 150, 166, 200
Pentium MMX	166, 200, 233
Pentium Pro	150, 166, 180, 200
Pentium II	233, 266, 300, 333, 350, 400, 450
Celeron	300, 333, 366, 400, 433, 466
Pentium III	450, 500, 550

EIDE (Enhanced IDE) – It is a hard drive controller that enables your system to be able to handle fast hard disk drives at a speed of 10MBPS.

EISA or MCA Bus – Data is transmitted along 32 data lines to adapter cards designed specifically to work with the 32-bit buses.   MCA expansion slots cannot accept 8-bit or 16-bit adapter cards.   EISA stands for Extended Industry Standard Architecture, while MCA stands for MicroChannel Architecture.   MCA is architecture used in IBM Microcomputer.

Expansion slots – Expansion slots are plug-in connectors that allow you to insert additional circuit boards that attach to the rest of the PC through special circuitry called the **bus**.   By inserting the right circuit board -- usually called an **adapter** or an **expansion card** – you can increase the resolution and the number of colors used by the display, or you can transform your PC into a machine for recording and playing music.

Fast SCSI – The common nomenclature associated with SCSI-2, the second generation of SCSI offering mandatory parity checking improvements over SCSI-1.

IDE (Integrated Drive Electronics) – It was developed from ST-506 type hard drive interface, utilizes BIOS INT 13h hard drive secondary software and supports two hard drives (Master and Slave).   Do not need extra software to drive since it is directly initiated in the BIOS.   Data transfer rate is 4.1 Mbps.   Take note that this interface cannot support other drives like the CD-ROM drive.

IEEE (Institute of Electrical and Electronic Engineers) – It is an international professional society that issues its own standards, and is a member of ANSI and ISO. Popular known standards is:

    IEEE802.3   –   is a physical layer standard for 10Base-T,
                       100Base-T, Ethernet, and StarLAN.
    IEEE802.5   –   is a physical layer standard for Token Ring.
    IEEE802.11 –   is a physical layer standard for Wireless
                       LAN/WAN compatibility.
    IEEE802.12 – is a physical layer standard for 100VG AnyLAN.

LAN (Local Area Network) – A data communications network spanning a limited area. It provides communications between three or more computers and peripherals, in most cases using a high-speed media as it's backbone.

Keyboard – This is a component that comes in direct contact for you with your PC.   The mechanism of keyboard converts a key cap's movement into a signal sent to the computer.   The most common key mechanisms are " **capacitate** " and " **hard contact** ".

Capacitate keyboard has a spring that causes the plastic and the metal plunger to move near two pads that have large plates (plated in tin, nickel, and copper).　These pads are connected to the keyboard's printed circuit board.　Hard contact keyboard causes the key cap to collapse a foam rubber dome that presses against a sheet of plastic on the bottom of which is metallic area connected to the rest of the keyboard's
circuit board.

LDCM (LANDesk Client Manager) – With the help of LDCM, PCs that are either stand-alone or on a network can not escape the control of a system administrator. Alerts will be sent to the user if an abnormal condition is encountered in a PC.　It allows the administrator to give each PC a thorough check-up.　Additionally, this feature is available to multiple OS's on the market today.　LDCM Key Features　include　the following : ①Health Monitoring，②Real-Time Alerting，③Remote Accessibility，④Extensive Instrumentation.　This is a product from Intel.

Mouse – Xerox Corporation first developed the concept of a pointing device, something a computer user could move with his or her hand, causing a corresponding move on screen.　Because of its size and tail like cable, the device was named a mouse.　Apple Computer made the mouse a standard feature of its Macintosh computers, and with the popularity of Windows, a mouse is becoming standard equipment on all PCs, as well. The " **Trackball** " provides an easier method of navigating than with the keyboard. " **Digitizing tablets** " are popular with architects and engineers who must translate precise movements of a pen into lines on the screen.　" Touch screens ", on which you press either your finger or special light pen to control the software, are too tiring to use for any length of time.

MMX™ – CPU's with MMX™ technology are optimized to run multimedia application, and therefore, offer faster multimedia playback than standard CPUs.

Parallel port – Parallel ports (labeled **LPT1**, **LPT2**, and so on) are usually used for plugging in printers.　The term **Centronics port** – has been almost synonymous with **printer port**.　Although a serial port can also be used to send data from a PC to some models of printers, the parallel port is faster.　A serial port sends data one bit at a time over a single one-way wire; a parallel port can send several bits of data across eight parallel wires simultaneously.　Take note that a serial connection sends a single bit, a parallel port send an entire byte.

PCI Bus (Peripheral Component Interconnect) – It is a connection slot in a motherboard that supports 32-bit bus transfer rates.   The now standard PCI Local Bus carries data along at least 32 lines, that is, at least 32 bits at a time.   Local bus computer designs add special buses so the CPU can communicate directly with key components like the monitor, resulting in much better performance.   You should look for PCI local bus capabilities in any system you buy, especially PCI local bus video (which helps the monitor display more quickly).

POST (Power-On Self-Test) – is the first thing your PC does when you turn it on, and it's your first warning of trouble with any of the components.   When the POST detects an error from the display, memory, keyboard, or other basic components, it produces an error warning in the form of a message on your display and — in case your display is part of the problem — in the form of a series of beeps.

RAM (Random Access Memory) – consists of a bank of chips that act as " working memory ", holding program instructions and data only while your computer's on.   Unless the instructions and data are saved to a disk, RAM forgets them when you turn your computer off.   RAM is measured in megabytes (M).   Most computers today come with 64M of RAM, though some sell with only 32M installed.   There are a few different types and speeds of RAM, as well.   One of the most prominent today is Extended Data Output (EDO) RAM, but an even faster type of RAM that has just hit the market is called **SyncDRAM**.

Serial port – Serial ports are also sometimes called **COM** (short for COMmunications) ports, and are labeled **COM1**, **COM2**, and so on.   It is simple in concept: one line to send data, another line to receive data, and a few other lines to regulate how data is sent over the other two lines – uses range from commonplace modems and printers to plotters and burglar alarms.   The most common use for serial port is with a **mouse** or **modem**.   The reason for this is that a serial port is not a very efficient way to transfer data, so little data that speed is not crucial, and perfect for modems because, with current technology, phone lines cannot transport more than one signal at a time anyway. The **serial port** is often referred to as an **RS-232 port**.

SCSI (Small Computer System Interface) – An intelligent bus for transmitting data commands between a variety of devices.   There are many implementations of SCSI, including Fast SCSI, Wide SCSI, Fast Wide SCSI, Fast-20, and Fast-40.

SCSI-2 – The second generation of SCSI; includes many improvements to SCSI-1, including Fast SCSI, Wide SCSI, and mandatory parity checking.

SCSI-3 – The third generation of SCSI; introduces Fast-20 and Fast-40 as improvements to the parallel bus. The standard also includes a number of specifications for high-speed serial bus architectures such as SSA, Fiber Channel, and IEEE 1394. Also known as Ultra SCSI.

Ultra SCSI – Also known as SCSI-3, is a third generation SCSI standard that introduced parallel bus speed improvements (FAST-20 and FAST-40), an the miniaturized 68-pin micro connector.

USB (Universal Serial Bus) – USB consolidates serial, parallel, keyboard, mouse, and game ports into one asynchronous and isochronous communications port with bandwidth for data transfer speeds up to 12 Mbps without termination. By daisy-chaining USB hubs, up to 127 I/O devices can be connected to one USB port on the PC. USB is completely plug-and play meaning peripherals can be correctly detected and configured automatically as soon as they are connected.

UTP (Unshielded Twisted Pair) – Twisted pair cable with neither individual nor overall shielding. **Twisted Pair** are two wires twisted together to reduce susceptibility to RF crosswalk.

VGA (Video Graphics Array) – A video adapter that supports 640x480 pixels color resolution. The Windows OS provides medium text & graphics standard.

VL-Bus – It is also known as Local Bus; this is an I/O interface that is directly connected to and dependant on the system CPU. The VL-Bus is an abbreviation of VESA Local Bus.

Terms and Conditions

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!!!

RMA No:	Reasons to Return: ☐ Repair(Please include failure details) ☐ Testing Purpose

Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:

Return Shipping Address: _____

Shipping by: ☐Air Freight   ☐Sea   ☐Express   :_____   ☐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**