

MB-X66 Series

**Socket 370 Processor (support
Tualatin) Network Security Appliance
Control Board, 6x Realtek 8139C
10/100M BASE-T Ethernet**

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CHAPTER 1.

INTRODUCTION

The MB-X66 Series is a Socket 370 Pentium III network control board with six 10/100 Base-TX Ethernet ports specifically designed for Ethernet connectivity. It is suitable for SOHO (Small Office, Home Office), SMB (Small Medium Business), ROBO (Remote Office, Branch Office), applications developers, system integrators, and service providers segments..

With the Intel Pentium® III processor, the MB-X66 Series support up to a blazing 1.26 GHz, to provide high performance and meets the requirements of network platform appliances.

Targeting on the rapid growing network platform market, the MB-X66 Series comes with six Realtek 8139C 10/100M Base-T Ethernet chips. Designed with the Plug-and-Serve concept in mind, the MB-X66 Series offers one 168-DIMM socket support up to 100/133 MHz SDRAM 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-X66 Series has many expansion functions such as one PCI and one 124-pin Mini-PCI slot , One 40-pin and One 44-pin IDE connector, both two IDE ports that support up to four IDE devices and Ultra ATA/100/66/33 interface help designers and integrators improve system performance by retrieving and sending data faster. For easy access, MB-X66 Series has a 9-pin, RS-232 serial port for local system management, maintenance, and diagnostics. Everything you could need is on-board.

1.1 SPECIFICATIONS

- o Processor : Intel® Pentium III/Celeron™ Processor in Socket 370(133 MHz), support B-stepping
- o Chipset : Intel® 815EP chipset, IT8712F I/O Chipset
- o Ethernet : Six Realtek 8139C 10/100M BASE-T Ethernet,6 X connector.
- o Expansion Bus : A One 124-pin Mini-PCI slot
B. One PCI Slot
- o System Memory/RAM : One 25° 168pin DIMM Socket, support PC-100/133 MHz SDRAM
- o IDE Drive Interface : A. One 40-pin 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
- o BIOS : AMI® licensed BIOS
- o I/O Connector : A. Six RJ-45 external connectors
B. One RS-232 DB-9 connector
- o Reserved pin-header : A. Keyboard/Mouse pin-header
B. LAN LED pin deader
C. Power/Status LED header
D. one parallel port pin header (for control LCM use)
E. One 1*4 pin-header (for control Keypad use)
- o RTC : Internal RTC with Li battery
- o Operating Temperature : 0 °C~60 °C
- o Storage Temperature : -20 °C~70 °C
- o Humidity : 5 %~95% RH, non-condensing
- o Power : On-board 12 pins AT power connector
- o Version : MB-X66A: Six Realtek 8139C 10/100M BASE-T Ethernet Adapter
MB-X66B: Four Realtek 8139C 10/100M BASE-T Ethernet Adapter

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.

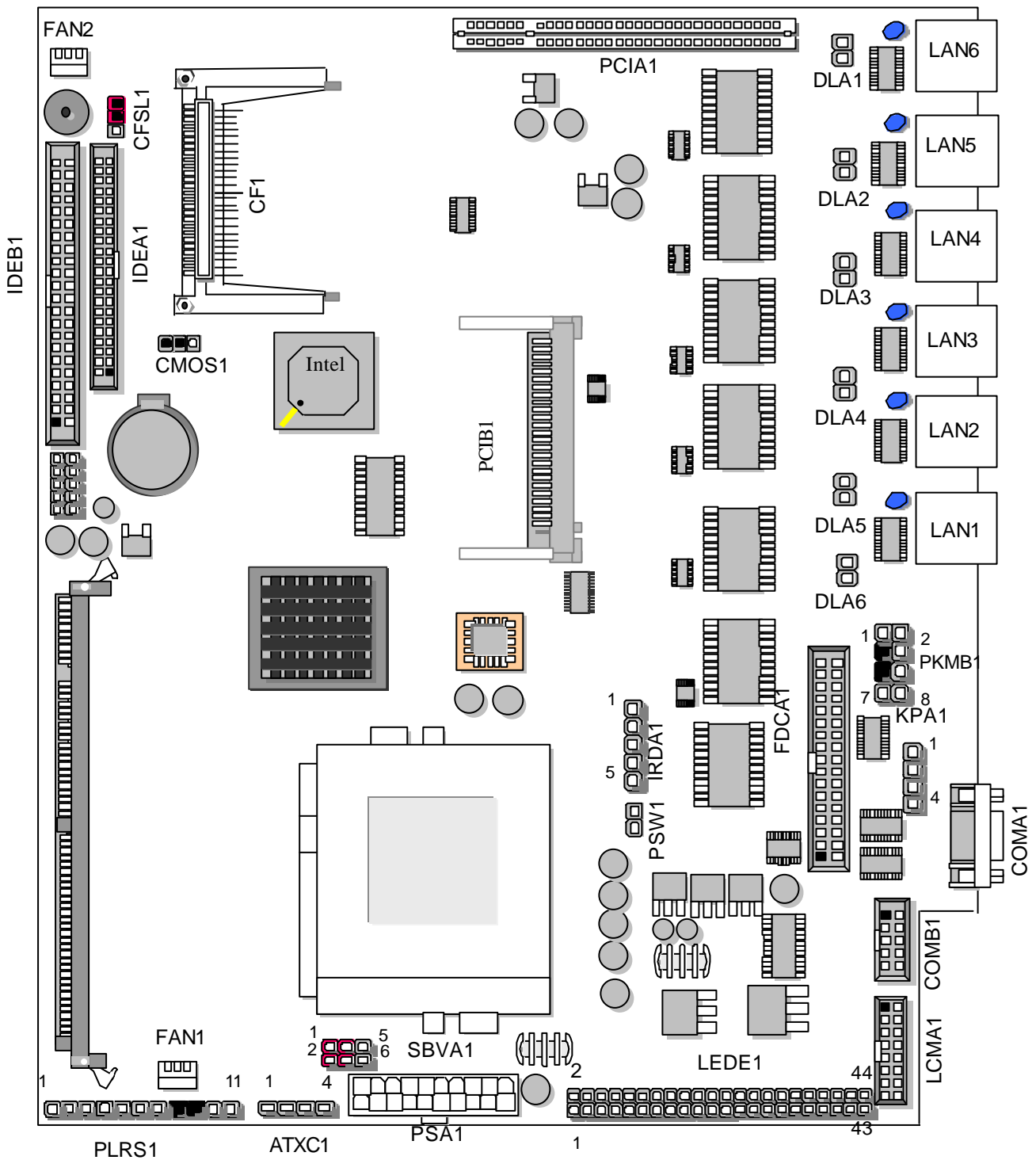
<i>Item</i>	<i>Qty</i>	<i>Remark</i>
MB-X66A	1 pc	MB-X66A Network Control Board
MB-X66B	1 pc	MB-X66B Network Control Board

CHAPTER 2.

JUMPER SETTING AND CONNECTORS

The figure below shows the jumpers and connectors location on the MB-X66 Series. The PCB version may differ for slight changes without notice.

2.1 Board Outline of MB-X66 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!

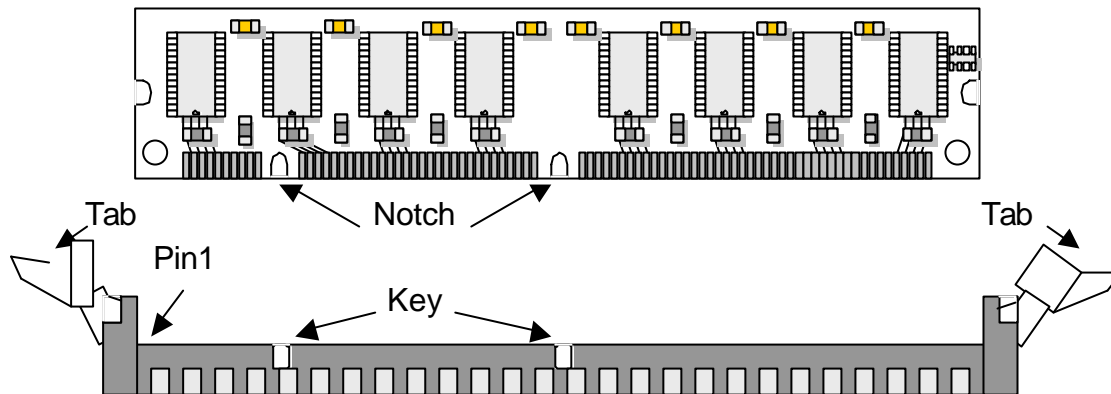
Caution! Computer components are very sensitive to damage from static electric discharge. Always ground yourself to remove static charge build-up before touching the boards in the computer. Use a grounding wrist strap at all times. Place all electronic components on anti-static pad for static-dissipation 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:

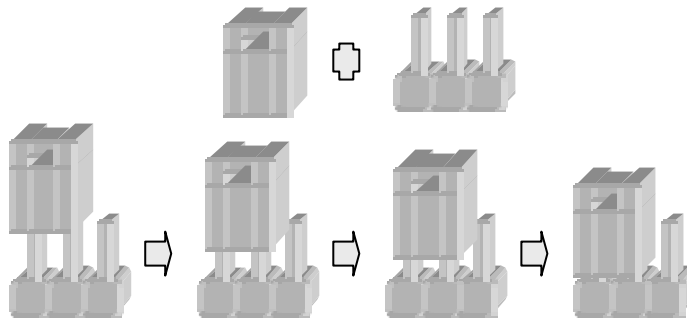
A DIMM module simply snaps into a socket on the system board. Pin1 of the DIMM module must correspond with Pin1 of the socket.



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.

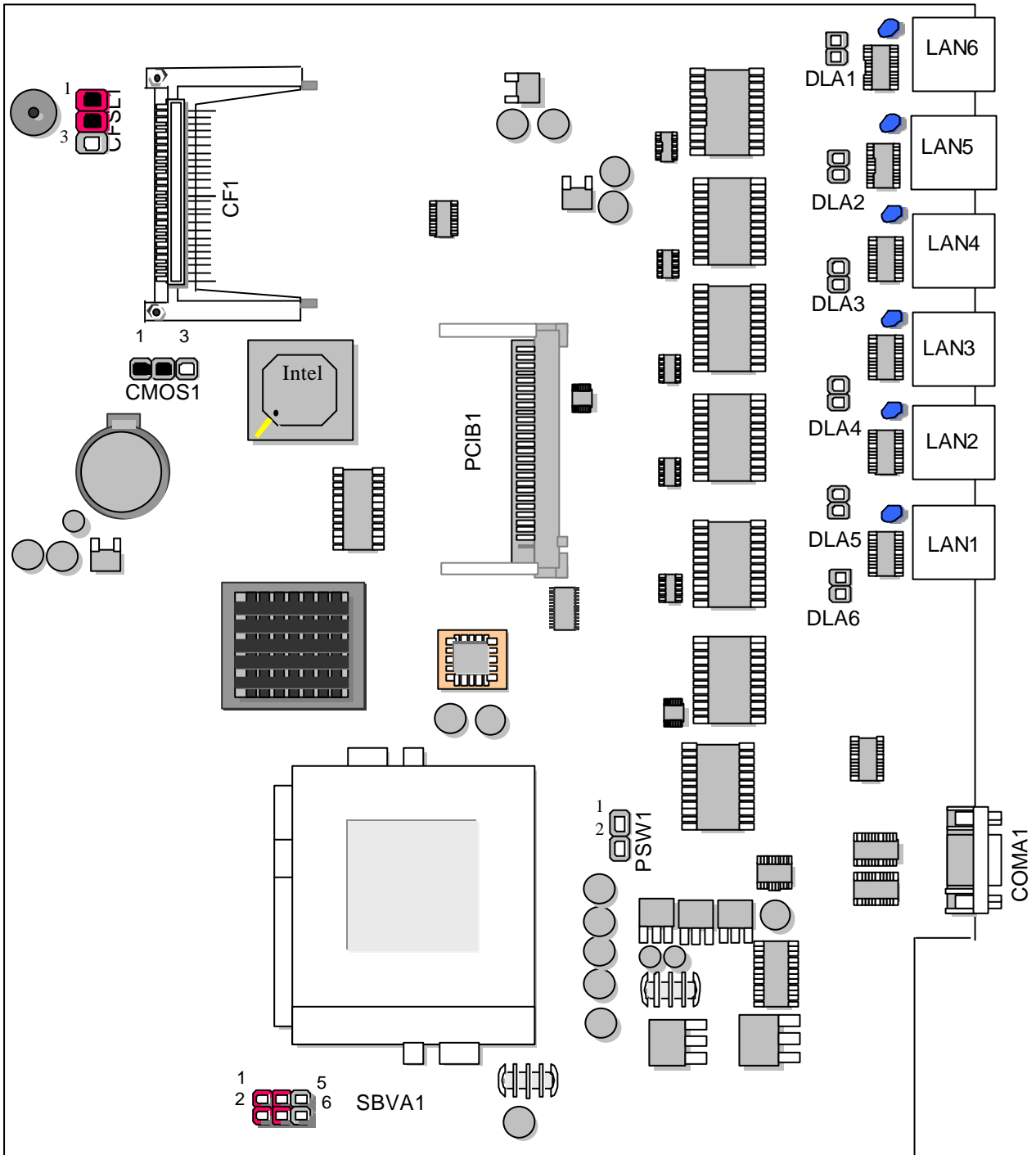
2.3 JUMPER SETTING OVERVIEW

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-X66 SERIES



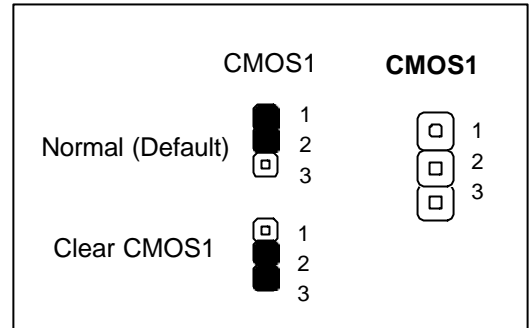
2.5 JUMPER SETTINGS SUMMARY FOR MB-X66 SERIES

JUMPER	FUNCTION
CMOS1	Clear CMOS Data
DLA1~DLA6	LAN Disable/Enable 1x2 Pin 2.54mm
SCF1	Select Master/Slave
SBVA1	Select AT/ATX power 2x3 Pin 2.54mm

2.6 JUMPER SETTINGS FOR MB-X66 SERIES

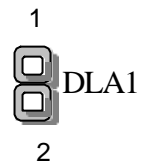
- **CMOS1:Clear CMOS Data**

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



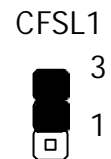
- **DLA1~DLA6 : LAN Disable/Enable 1x2 Pin 2.54mm**

Pin	Description
1	VCC3
2	GND



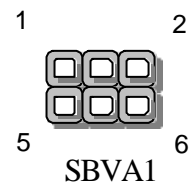
- **CFSL1: Master/Slave Select**

Compact Flash Card	ATA Disk Chip	SCF1
Master	Slave	1-2
Slave	Master	2-3 (Default)

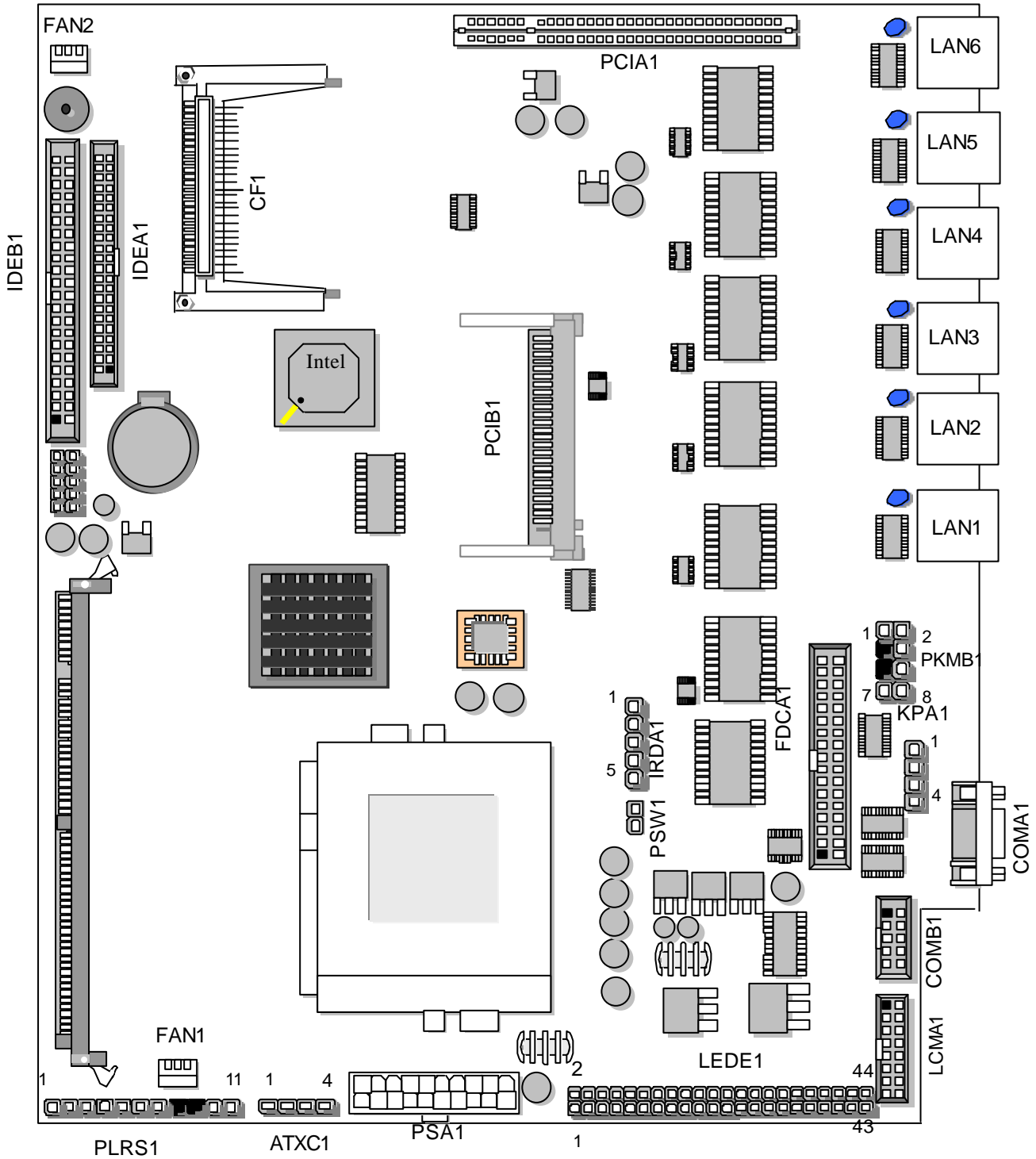


- **SBVA1 : Select AT/ATX power 2x3 Pin 2.54mm**

Pin No.	Description	Pin No.	Description
1	VCC	2	VCC
3	5VSB	4	5VSB
5	STB5V	6	STB5V



2.7 I/O CONNECTOR LOCATIONS FOR MB-X66 SERIES



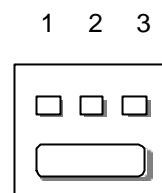
2.8 I/O CONNECTOR SUMMARY FOR MB-X66 SERIES

CONNECTOR	FUNCTION
FAN1	3 Pin Fan Connector
FAN2	Fan Connector
LAN1-6	LAN Connector
PSW1	For ATX Power Button
ATXC1	For ATX Function
KPA1	LCM Keypad
IrDA1	Alternate IrDA
PLRS1	Power LED, Reset, Speaker Connector
COMB1	Serial Port #2 Connector (Header)
COMA1	RS232 Serial Port #1 Connector (D-Sub)
PSA1	20 Pin ATX Power Connector
PSB1	12 Pin Power Connector
LCMA1	LCM CONNECTOR
CF1	Compact Flash Connector
LEDE1	2x22 Pin
IDEA1	IDE Connector (Header)
IDEB1	IDE Connector (Header)
PKMB1	PS/2 Keyboard & Mouse Connector

2.9 I/O CONNECTORS DESCRIPTION

- **FAN1/2 : 3 Pin FAN Connector**

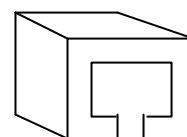
Pin No.	Description
1	Ground
2	+12V
3	FAN Status



FAN1/2

- **LANA1~LAN6 :Type 1 (RJ-45)**

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



LANA1

- **PSW1: For ATX Power Button**

Pin No.	Description
1	PANSW
2	GND



- **ATXC1: For ATX Function**

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



- **KPA1: LCM Keypad**

Pin	Description
1	KPA1
2	KPA2
3	KPA3
4	KPA4



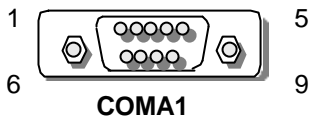
● **IRDA1:Alternate IRDA**

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



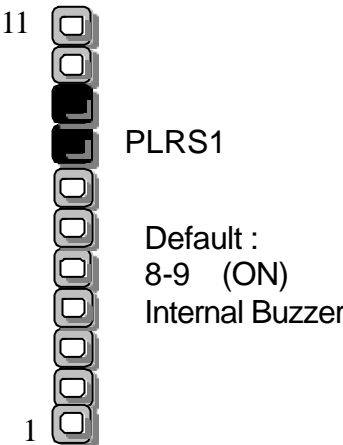
● **COMA1: RS-232 Serial Port #1 Connector (D-Sub)**

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 #)



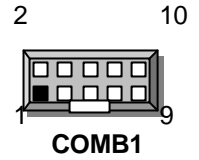
● **PLRS1:Power LED,HD LED,Reset,Speaker Connector(11 Pin 2.54mm)**

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 +



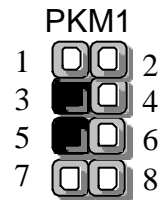
● **COMB1: Serial Port #2 Connector (Header)**

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



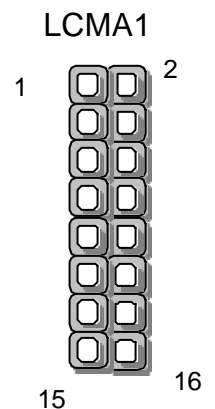
● **PKMB1: PS/2 Keyboard & Mouse Connector (2x4 Header 2.54mm)**

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



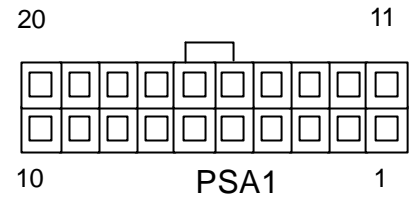
● **LCMA1: LCM Connector**

Pin No.	Description	Pin No.	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



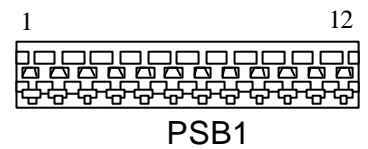
● **PSA1:20 Pin ATX Power Connector**

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



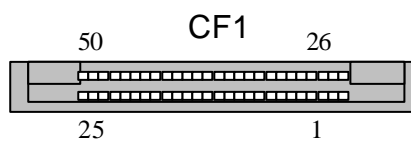
● **PSB1: 12 Pin Power Connector**

Pin No.	Description
1	PWG
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V



● **CF1: Compact Flash Connector**

Pin No.	Description	Pin No.	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



● LEDE1: 2x22 Pin

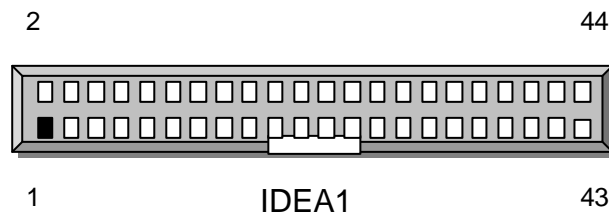
Pin No.	Description	Pin No.	Description
1	POWER LED	2	POWER LED
3	POWER LED STATUS	4	POWER LED STATUS
5	Lan1 Link/Active LED-	6	Lan1 Link/Active LED+
7	Lan1 100 LED-	8	Lan1 100 LED+
9	Lan1 1G LED-	10	Lan1 1G LED+
11	Lan2 Link/Active LED-	12	Lan2 Link/Active LED+
13	Lan2 100 LED-	14	Lan2 100 LED+
15	Lan2 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	Lan7 Link/Active LED	42	Lan7 Link/Active LED
43	Lan7 100 LED	44	Lan7 100 LED

LEDE1



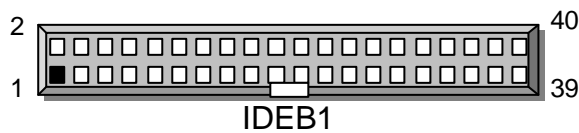
● **IDEA1 : IDE Interface Connector (44Pin 2.0mm Pitch Header)**

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



● 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



CHAPTER 3.

AMI 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

AMIBIOS HIFLEX SETUP UTILITY Version 1.38 ©2001 American Megatrends, Inc. All Rights Reserved
MB-X66 Ver.A 2003-01-08
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup Hardware Monitor Setup Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

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											
©2001 American Megatrends, Inc. All Rights Reserved											
Date (mm/dd/yyyy)	:Wed Jan 08, 2003					Base Memory	: 639KB				
Time (hh/mm/ss)	: 00:01:25					Ext' d Memory	: 127MB				
Floppy Drive A :	1.44 MB 3 ¹ / ₂										
Floppy Drive B :	Not Installed										
						LBA	Blk	PIO	32 Bit		
	Type	Siz	Cyln	Head	WPcom	Sec	Mode	Mode	Mode	Mode	
		e									
Pri Master	: Auto										Off
Pri Slave	: Not Installed										
Pri Master	: Auto										Off
Pri Slave	: Not Installed										
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	<div style="display: flex; align-items: center;"> <div style="border-left: 1px dashed black; width: 10px; height: 100%; margin-right: 5px;"></div> <div style="flex-grow: 1;"> <p>Available Options: Disabled ▶ Enabled</p> <p>Available Options: ▶ Disabled Enabled Cached / WP</p> <p>ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1: Help F2/F3: Color</p> </div> </div>
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	
Hard Disk Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Enabled	
BootUp Num-Lock	On	
PS/2 Mouse Support	Enabled	
System keyboard	Present	
Password Check	Setup	
Wait For ' F1 ' If error	Enabled	
Hit ' DeL' Message Display	Enabled	
System BIOS Cacheable	Enabled	
C000, 16K Shadow	Cached / WP	
C400, 16K Shadow	Cached / WP	
C800, 16K Shadow	Disabled	
CC00, 16K Shadow	Disabled	
D000, 16K Shadow	Disabled	
D400, 16K Shadow	Disabled	
D800, 16K Shadow	Disabled	
DC00, 16K Shadow	Disabled	

***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:

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

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

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

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

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

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

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.

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

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

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

The default setting is Cache.

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

3.5 ADVANCED CHIPSET SETUP

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

Advanced Chipset Setup Screen

AMIBIOS SETUP – ADVANCED CHIPSET SETUP		
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CPU BIST Enable	Disabled	Available Options: ▶ Disabled Enabled ▶ Dark Red 0.1s blink Red 0.5s blink Red blight always Green 0.1us blink Green 0.5s blink Green blight always ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color
ICH Delayed Transaction	Enabled	
DMA Collection Buffer Enable	Disabled	
DRAM Page Closing Policy	Open	
Memory Hole	Disabled	
ClkGen Spread Spectrum	Disabled	
SDRAM Timing by SPD	Enabled	
DRAM Refresh	15.6 uS	
DRAM Cycle time (SCLKs)	5/7	
CAS# Latency (SCLKs)	3	
RAS to CAS delay (SCLKs)	2	
SDRAM RAS# Precharge (SCLKs)	2	
Internal Graphics Mode Select	1 MB	
Display Cache Window Size	64 MB	
AGP Aperture Window	64 MB	
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	
LED Status	Dark	

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.

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.

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

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 are 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 are 64MB.

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

AGP Aperture Window: The field selects the size of the Accelerated Graphics Port(AGP) aperture. Aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. Settings are 4MB, 8MB, 16MB, 32MB, 64MB, 128MB and 256MB.

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

Paging Mode Control: Display cache paging mode. Settings 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#.

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	Available Options: ▶ Disabled Enabled ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color
Power Management /APM	Enabled	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Disabled	
Suspend Time Out (Minute)	Disabled	
Keyboard & PS/2 Mouse	Monitor	
FDC / LPT/ COM Ports	Monitor	

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

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

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

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

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

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

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

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

3.7 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		
©2001 American Megatrends, Inc. All Rights Reserved		
OnBoard IDE	Both	Available Options: Disabled Primary Second ▶ Both ESC : Exit ↑↓ : Sel PgUp/PgDn : Modify F1:Help F2/F3 : Color
OnBoard FDC	Enabled	
OnBoard Serial Port 1	3F8/COM1	
OnBoard Serial Port 2	2F8/COM2	
Serial Port 2 Mode	Normal	
Select Duplex Mode	N/A	
OnBoard Parallel Port	378	
Parallel Port Mode	ECP	
Parallel Port IRQ	7	
Parallel Port DMA Channel	3	

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

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 *ECP*. 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.
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.

PS:Parallel Port Mode default setting is for LCM.

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

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

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

3.8 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 appears 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	Available Options: ▶ No Yes
Reset Configuration Data	No	
PCI Latency Timer (PCI Clocks)	32	Available Options: ▶ Disabled 16k 32k 64k
Primary Graphics Adapter	Add-on Card	
PCI VGA Palette Snoop	Disabled	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ Priority	Auto	
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	ESC : Exit ↑↓ : Sel
Reserved Memory address	C8000	PgUp/PgDn : Modify F1: Help F2/F3 : Color

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

Plug and Play Aware O/S: Set this option to “ Yes” if the operation system installed in the computer is Plug and Play-aware. BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables

all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this option to “ No” if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP.

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

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

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

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

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

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

onboard PCI IDE, IRQ9 will still be available for PCI and PnP devices. Settings: ISA/EISA and PCI/PnP.

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

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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CPU Temperature Detected by	Disabled	Available Options:
CPU Temperature	35 /90	▶ Disabled
Fan1 Speed	0 RPM	50 /122
Fan2 Speed	4753 RPM	60 /140
VCORE	+1.584 V	70 /158
+3.3V Standby	+3.344 V	
+3.3V	+3.264 V	
+5V	+4.815 V	
+12V	+11.951 V	
-12V	-12.051 V	ESC : Exit ↑↓ : Sel
-5V	-5.392 V	PgUp/PgDn : Modify
+1.85V	+1.667V	F1:Help F2/F3 : Color

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 AUTO-DETECT HARD DISKS

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											
©2001 American Megatrends, Inc. All Rights Reserved											
Date (mm/dd/yyyy) : Wed Jan 08, 2003				Base Memory : 639KB							
Time (hh/mm/ss) : 00:04:06				Ext' d Memory : 127MB							
Floppy Drive A :		1.44 MB 3 ¹ / ₂									
Floppy Drive B :		Not Installed									
						LBA		Blk		PIO 32 Bit	
		Type		Siz e		Cyln		Head		WPcom Sec	
Pri Master		: Not Installed								Off	
Pri Slave		: Not Installed									
Pri Master		: Not Installed								Off	
Pri Slave		: Not Installed									
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.*

3.11 CHANGE SUPERVISOR/USER PASSWORD

When you select this function, a message as below will appear on the screen:

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.38 ©2001 American Megatrends, Inc. All Rights Reserved
MB-X66 Ver.A 2003-01-08 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Enter new user password:
Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Change the user password ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

<p>AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.38 ©2001 American Megatrends, Inc. All Rights Reserved</p>
<p>MB-X66 Ver.A 2003-01-08 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup</p> <div style="border: 1px solid black; width: 40%; margin: 10px auto; padding: 5px; text-align: center;"> <p>Enter corrent supervisor password:</p> </div> <p>Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving</p>
<p>Change the user password ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit</p>

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

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

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

Additionally, when a password is enabled, you can also have AMIBIOS to request a password each time the system is booted. This would prevent unauthorized use of your computer. The setting to determine when the password prompt is required is the PASSWORD CHECK option of the ADVANCED BIOS FEATURES menu. If the PASSWORD CHECK option is set to Always, the password is required both at boot and at entry to Setup. If set to Setup, password prompt only occurs when you try to enter Setup.

Note: About Supervisor Password & User Password

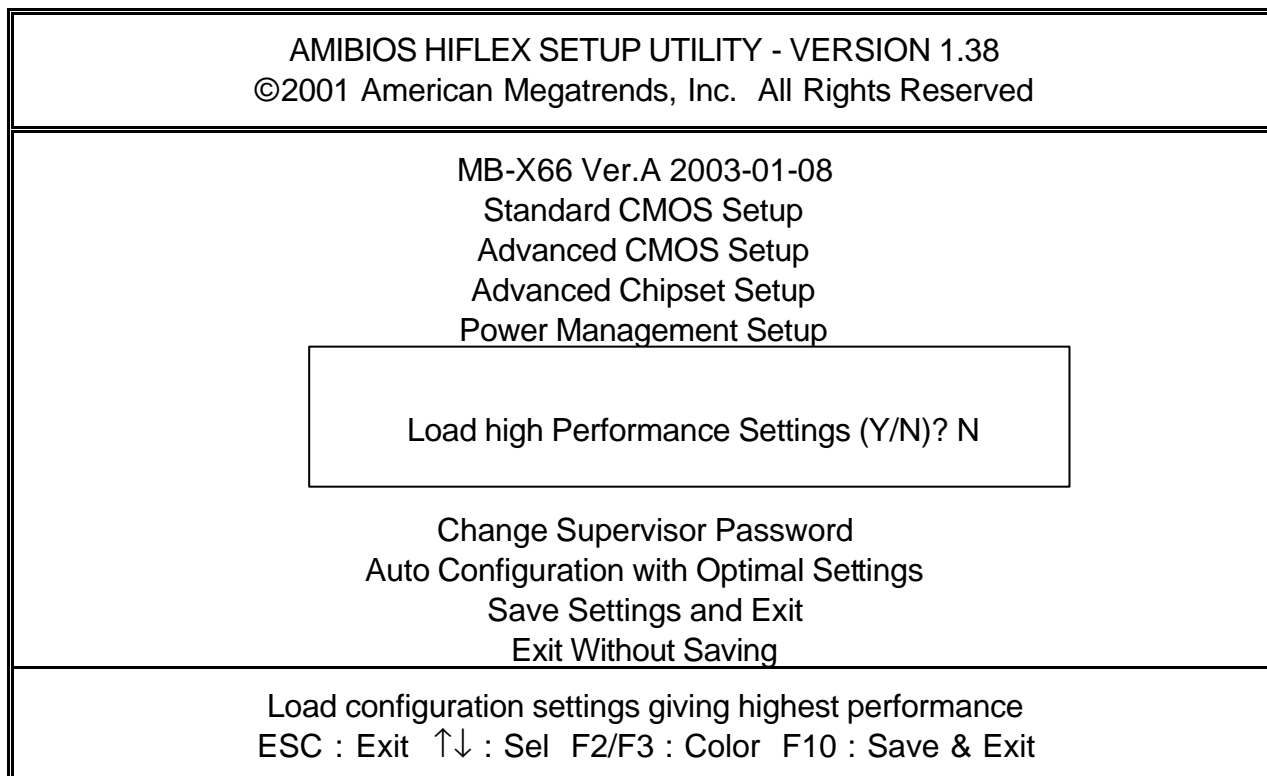
Supervisor Password : Can enter and change the settings of the setup menu.

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

3.12 Load High Performance Setup Defaults

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

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



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

3.13 SAVE & EXIT SETUP

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

AMIBIOS HIFLEX SETUP UTILITY ©2001 American Megatrends, Inc. All Rights Reserved
MB-X66 Ver.A 2003-01-08 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Save Current settings and exit (Y/N)? Y
Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Write the current settings to CMOS and exit ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

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

Typing N will return to Setup Utility.

3.14 EXIT WITHOUT SAVING

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

AMIBIOS HIFLEX SETUP UTILITY ©2001 American Megatrends, Inc. All Rights Reserved
MB-X66 Ver.A 2003-01-08 Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup
Quit without saving (Y/N)? N
Change Supervisor Password Auto Configuration with Optimal Settings Save Settings and Exit Exit Without Saving
Exit without saving the current settings ESC : Exit ↑↓ : Sel F2/F3 : Color F10 : Save & Exit

Typing Y will allow you to quit the Setup Utility without saving any changes to RTC CMOS.

Typing N will return to the Setup Utility.

CHAPTER 4.

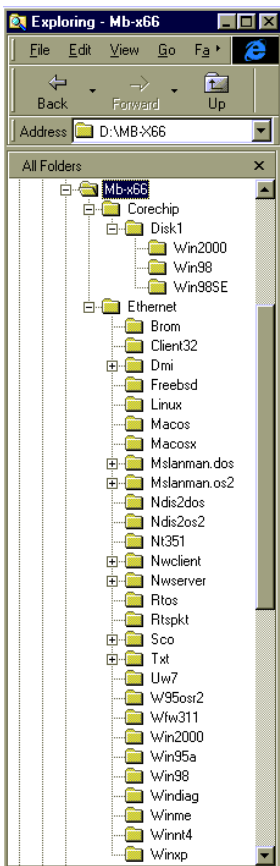
DRIVERS SUPPORT

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

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 LPT0)
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 - 0FFFFFFH	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)
Celeron	1.2GHz,850,733,566MHz
Pentium III	,1G,933,866,850,800,750,733,700 ,667MHz and 650MHz
Pentium III(Tualatin)	1.26GHZ

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** ”.

Capacitance 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 : ←Health Monitoring , ↑Real-Time Alerting , →Remote Accessibility, ↓Extensive 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 COM munications) 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 variability 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), and 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

Date:1997.10.20

Warranty Policy

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

RMA Service

1. **Request a RMA#:**

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

2. **Shipping:**

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

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

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

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:	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