MB-X61 Series

Pentium III ATX Mainboard
with VGA/LCD,
Dual 100Base-T Ethernet
for Socket 370 Processors

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LEI-UM-MB-X61 Series
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CHAPTER 1.

INTRODUCTION

The MB-X61 Series are series of high quality, high performance and function enhanced Socket 370 ATX form-factor system motherboards. Equipped with Pentium III CPU, VGA/LCD and dual 10/100Base-T Ethernet ports, MB-X61 is definitely an industrial standards fully compatible board with many additional technical enhancements. The MB-X61 Series use Intel-440BX chipset technology supports Ultra DMA-33 for faster hard drive transmission speeds and provides support for hardware health monitoring function. The health monitoring IC keeps an eye on the CPU and releases an audio alarm whenever abnormal operating voltage & temperature or malfunction of the cooling fans is detected. To boost the efficiency of operation, this motherboard is also equipped by Flash Disk socket and four sockets for DIMMs up to 1 GB. Its on-board VGA/LCD chip supports display resolution up to 1600x1200 at 256 colors

Other on-board features include four serial ports (three RS-232 and one RS-232/422/485), two multi-mode parallel (ECP/EPP/SPP) ports, a floppy drive controller, a keyboard interface and a PS/2 mouse interface. The built-in high speed PCI IDE controller supports both PIO and bus master modes. Besides supporting up to two floppy disks, this board also can connect up to four IDE devices like large hard disk, CD-ROM drive, tape backup drive and/or other IDE devices. Its 6-layer printed circuit board combined with noise-tolerant and low power consumption CMOS technology allows the MB-X61 Series to withstand many harsh industrial environments.

MB-X61 Series are carefully designed to satisfy the needs for cost effective motherboard. Being a feature-rich motherboard, this product is more than meets industry needs. It also saves time and money by waiving the hassle of going through the extra effort and cost of additional I/O cards. As a standards-compliant motherboard, it is proved to be a quality product, which guarantees long term high performance and stability.

1.1 SPECIFICATIONS

- Processor : Intel Pentium III / Celeron Processor in Socket 370
- Chipset : Intel 440BX chipset, and Winbond 977TF I/O Chipset
- System Memory/RAM : Four 168-pin DIMM sockets, support up to 1 GB SDRAM
- BIOS : Award Licensed BIOS (2MB Flash ROM)
- Flash Memory Disk : Reserved socket for DiskOnChip from M-System, support up to 144 MB Flash memory disk
- Graphic Controller : C&T 69030 chip, embedded 4 MB SDRAM display memory, resolution up to 1280 x 1024 x 24 bit, with VGA and 50-pin connector, VGA function can be disable and reserve AGP slot for expansion .
- Ethernet Controller : Two Intel 82559 chips, support two 10/100M Base-T, on-board RJ-45 connector, support wake-on-LAN function
- IDE Drive Interface : Two PCI IDE ports, support up to four IDE devices and Ultra DMA33
- Floppy Drive Interface : One FDD port, support up to two floppy devices
- Serial Port : Four COM ports, three RS-232 (COM3, COM4 by pin header) and one RS-232/422/485(COM2 by pin header).
- Parallel Port : Two multi-mode parallel port (SPP / EPP / ECP), one external connector and one internal connector (2.54 mm)
- Bus Interface : 6-ISA bus (slot #1 ~ #6), 1- PCI bus (share slot #6), 1-AGP bus(Slot #7).
- RTC Battery : Internal RTC with Li battery
- Keyboard/Mouse Connector: one 6-pin mini-Din PS/2 keyboard connector, one 6-pin mini-Din PS/2 mouse connector and 5-pin keyboard header
- Watchdog Timer : 16-level time-out intervals
- Digital I/O : 4-bit digital I/O header
- Universal Serial Bus : Support two USB connectors
- IR Interface : Support one IrDA header
- Health Monitoring : On-board Genesys 518SM Monitoring IC
- Operating Temperature : 0C~60C
- Storage Temperature : -20 C~70 C
- Humidity : 5 ~95 RH, non-condensing

- Dimensions : ATX form factor 305 X 244 mm ± 5%(12.0” X 9.6”)
- EMI/EMS : EN 50081-1/1994>EN 55022/1997>EN 61000-3-2/1995>EN 61000-3-3/1995, EN 50082-1/1994>IEC 1000-4-2/1995, IEC 1000-4-3/1995, IEC 1000-4-4/1995

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.

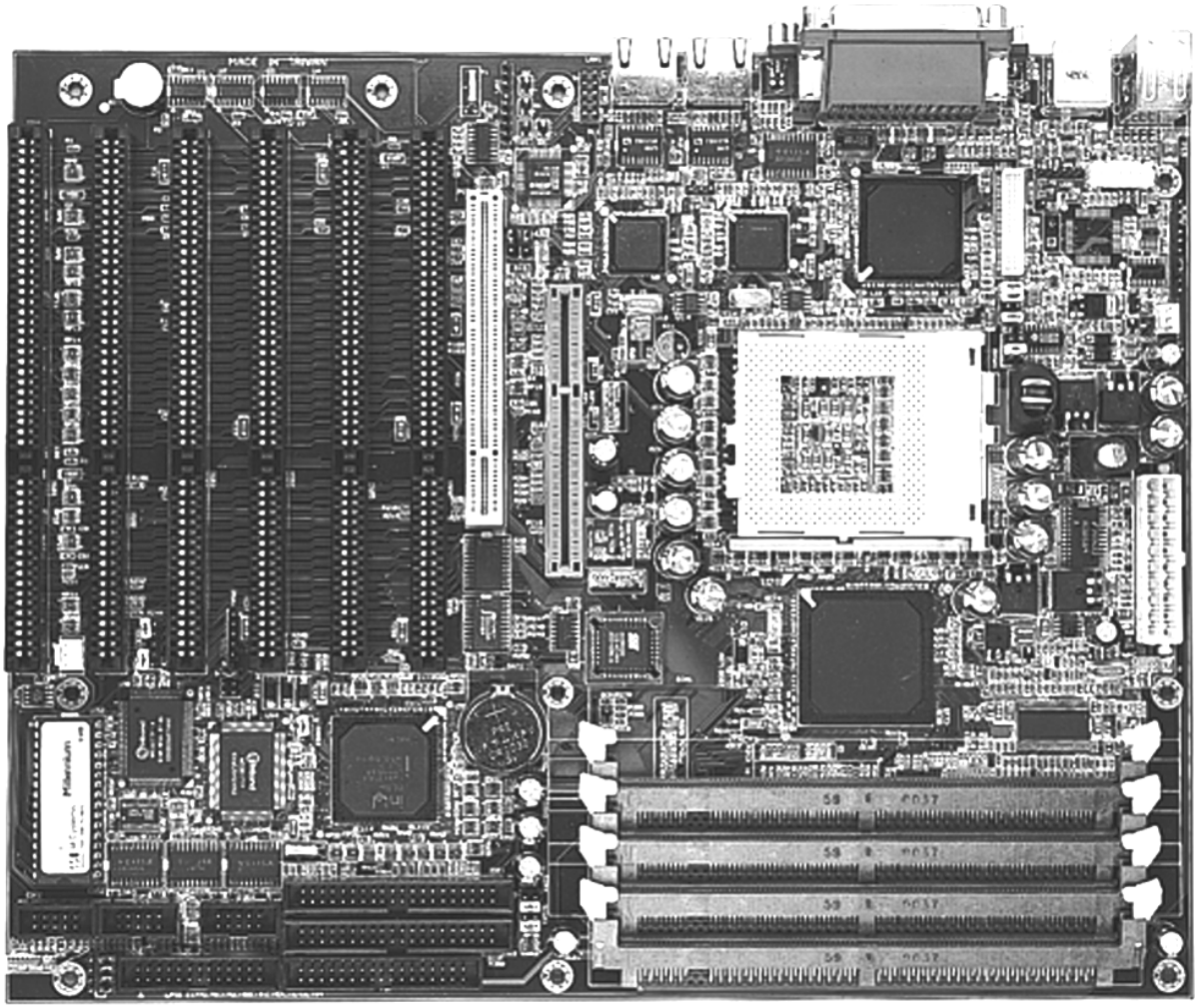
Item	*Qty*	*Remark*
MB-X61	1 pc	MB-X61 Pentium III ATX Mainboard
FDD cable	1 set	34-pin to 34-pin standard header flat ribbon cable
LPT and COM2 port cable	1 set	26-pin female flat connector header to 25-pin female D-Sub and 10-pin female flat connector header to 9-pin male D-Sub connector with bracket
IDE Cable	1 pc	IDE cable 45cm
COM3 and COM4 cable	1 set	Two 10-pin female flat connector header to 9-pin male D-Sub connector with bracket.
Drivers Utility	1 pc	CD-ROM
User‘ s manual	1 pc	MB-X61 user’ s manual
*Optional Item		
FAN with Heat-sink (For 1U application)	1 pc	0820103M00001

CHAPTER 2.

JUMPER SETTING AND CONNECTORS

The figure below shows the jumpers and connectors location on the MB-X61 Series. The PCB may slightly different across versions and subjected to changes without notice. .

2.1 Board Outline of MB-X61 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!

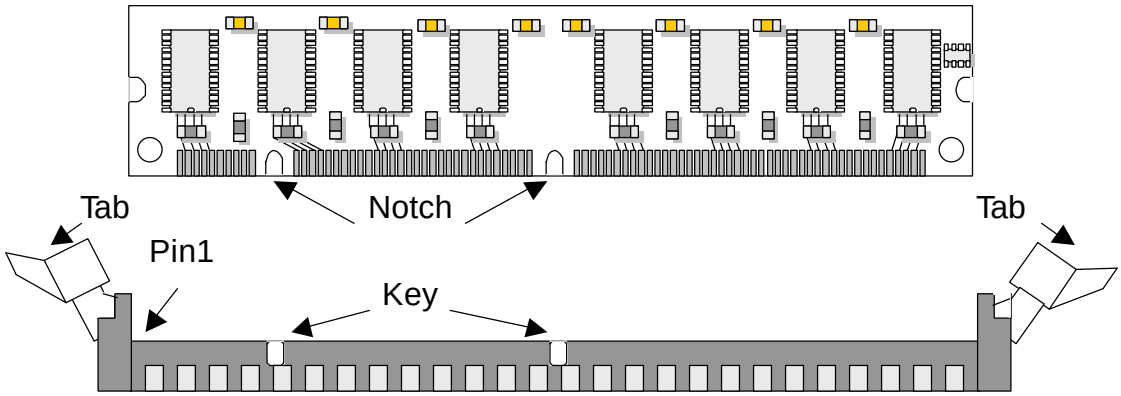
Caution! Computer components are very sensitive to damage from static electric discharge. Always ground yourself to remove static charge build-up before touching the boards in the computer. Use a grounding wrist strap at all times. Place all electronic components on anti-static pad for static-dissipation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

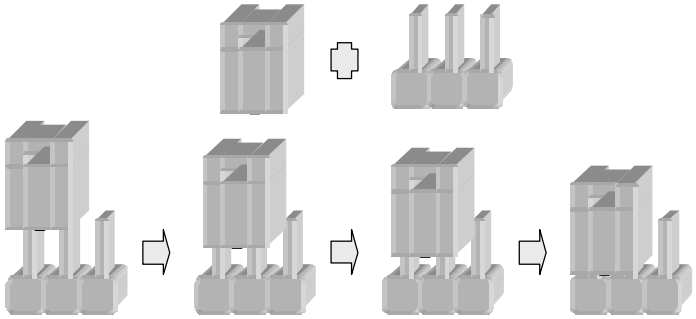
A DIMM module simply snaps into a socket on the system board. Pin1 of the DIMM module must correspond with Pin1 of the socket.



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.

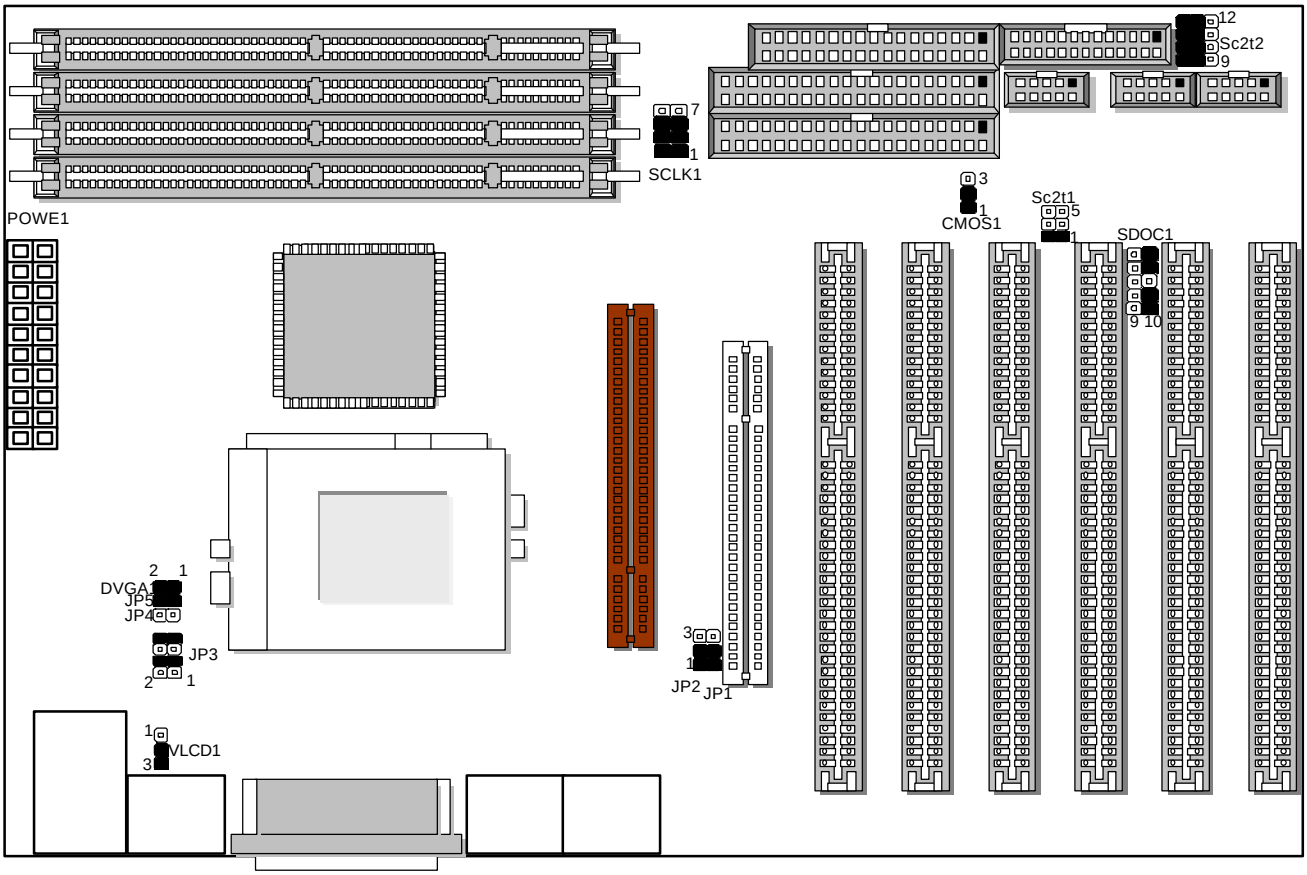
2.3 JUMPER SETTING OVERVIEW

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-X61 SERIES



2.5 JUMPER SETTINGS SUMMARY FOR MB-X61 SERIES

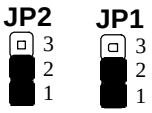
JUMPER	FUNCTION
JP1,JP2	Select ISP GAL Function（Manufacture Define）
JP3	Select Panel Type
JP4	Select CPU External Bus Clock
VLCD1	Select Panel Voltage
SC2T1	Select COM2 Type
SC2T2	Serial Port2,RS232/422/485 Select
SCLK1	Select Internal CPU Clock Ratio
SDOC1	Select Disk On Chip（Flash Disk）Address
CMOS1	Clear CMOS
DVGA1	Select VGA Type
JP5	Always On(Manufacturing Test Only)

2.6 JUMPER SETTINGS FOR MB-X61 SERIES

✦ JP1,JP2：Select ISP GAL Function（Manufacture Define）

	JP2	JP1
Program ISP GAL	2-3	2-3
USE Watch-Dog (Default)	1-2	1-2

Default:

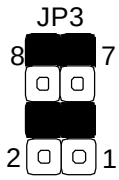


✦ JP3: Select Panel Type

JP3	Panel Type
1-2,3-4,5-6,7-8	1024×768 Dual Scan STN Color Panel
3-4,5-6,7-8	1280×1024 TFT Color Panel
1-5,5-6,7-8	640×480 Dual Scan STN Color Panel
5-6,7-8	800×600 Dual Scan STN Color Panel
1-2,3-4,7-8	640×480 Sharp TFT Color Panel
3-4,7-8	640×480 18-bit TFT Color Panel
1-2,7-8	1024×768 TFT Color Panel
7-8	800×600 TFT Color Panel
1-2,3-4,5-6	800×600 TFT Color Panel
3-4,5-6	800×600 TFT Color Panel
1-2,5-6	800x600 Dual Scan STN Color Panel
5-6	800x600 Dual Scan STN Color Panel
1-2,3-4	1024×768 TFT Color Panel
3-4	1280×1024 Dual Scan STN Color Panel
1-2	1024×600 Dual Scan STN Color Panel
OFF	1024×600 TFT Color Panel

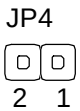
Default：3-4,7-8

Default:



✦ JP4：Select CPU External Bus Clock

CPU External Bus Clock	JP4
66.6MHz（Default）	ON
100MHz	OFF



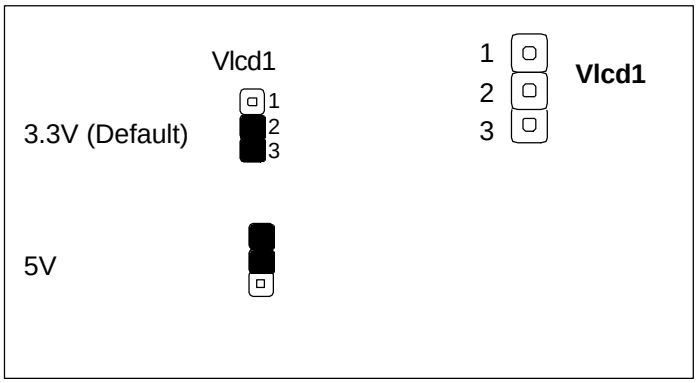
✦ JP5：Manufacturer Default Setup(1-2)

✦ VLCD1：Select Panel Voltage

Panel Voltage	VLCD1
3.3V(Default)	2-3
5V	1-2

Default :

Vlcd1



✦ SC2T1：Select COM2 Type

COM2 Type	SC2T1
RS-232（Default）	1-2
RS-422	3-4
RS-485	5-6

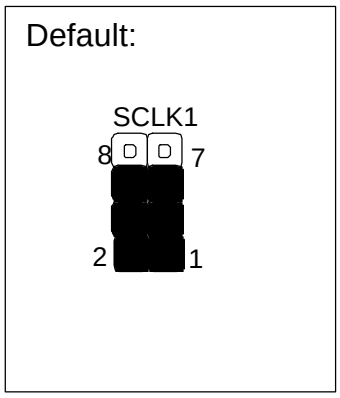
✦ SC2T2：Serial Port2,RS232/422/485 Select

Serial Port2	SC2T2
RS232（Default）	1-5,2-6,3-7,4-8
RS422	5-9,6-10,7-11,8-12
RS485	5-9,6-10,7-11,8-12

Default :

✦ SCLK1：Select Internal CPU Clock Ratio

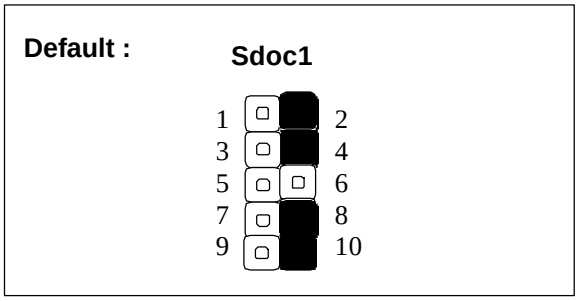
Clock Ratio	JP13
1.5 X	3-4
2.0 X	OFF
2.5 X	1-2,3-4,7-8
3.0 X	1-2,5-6,7-8
3.5 X	1-2,7-8
4.0 X	3-4,5-6,7-8
4.5 X	3-4,7-8
5.0 X	5-6,7-8
5.5 X	7-8
6.0X(Default)	1-2,3-4,5-6
6.5X	1-2,3-4
7.0X	1-2,5-6
7.5X	1-2
8.0X	3-4,5-6



✦ SDOC1：Select Disk On Chip（Flash Disk）Address

Flash Disk Address	SDOC1
D0000~D1FFFH	3-4,7-8
D4000~D5FFFH	3-4,9-10
D8000~D9FFFH	5-6,7-8
DC000~DDFFFH	5-6,9-10
CC00~COFFH	1-2,9-10

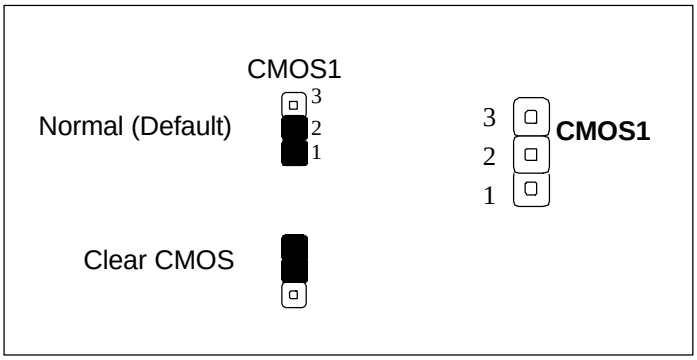
Default：2-4,8-10



✦ CMOS1：Clear CMOS

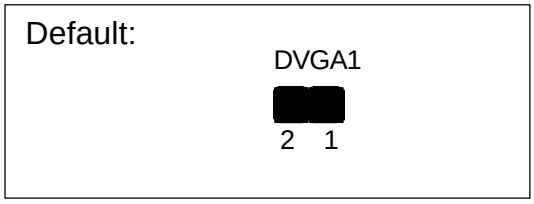
Clear CMOS	2-3
Normal	1-2

Default：1-2

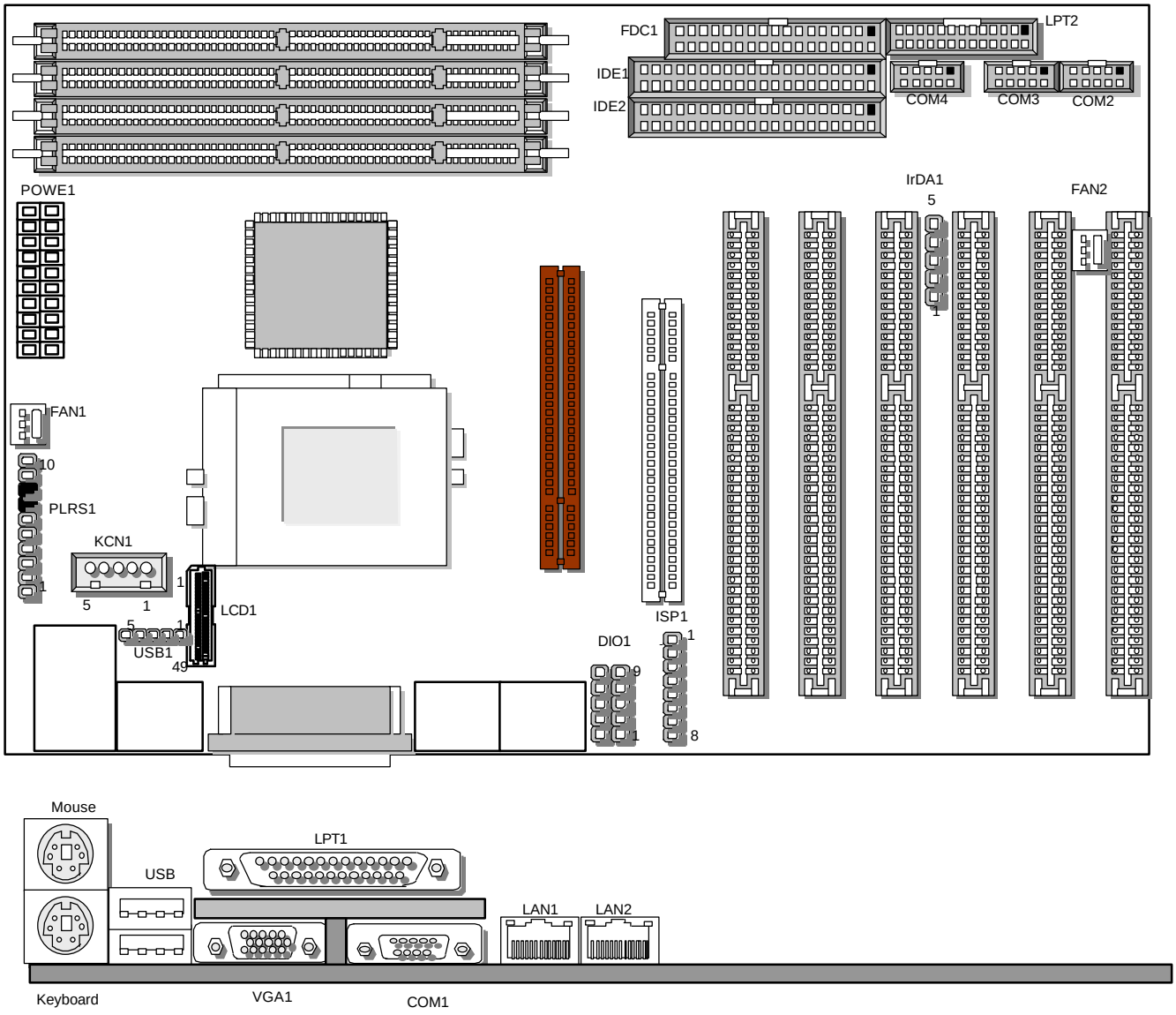


✦ DVGA1：Select VGA Type

DVGA1	Function
ON	On board VGA
OFF	AGP/PCI Slot VGA



2.7 I/O CONNECTOR LOCATIONS FOR MB-X61 SERIES



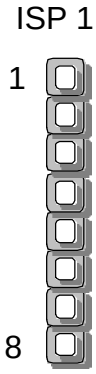
2.8 I/O CONNECTOR SUMMARY FOR MB-X61 SERIES

CONNECTOR	FUNCTION
ISP1	ISP GAL Connector (Factory only)
PKM1	KB/Mouse Connector（Dual Mini Din）
VGA1	VGA Connector
DIO1	Digital Input / Output Ports (Header)
IDE1 / IDE2	EIDE Interface Connector (Header)
COM1	RS232 Serial Port #1 Connector (D-Sub)
COM2	Serial Port #2 Connector (Header)
COM3	Serial Port #3 Connector (Header)
COM4	Serial Port #4 Connector (Header)
IRDA1	Alternate IrDA
LPT1	Parallel Port Connector (D-Sub)
LPT2	Parallel Cable Connector（Header）
FDC1	Floppy Interface Connector (Header)
POWE1	ATX Power Connector
PLRS1	Power LED, Reset, Speaker Connector
FAN1	Fan Connector
FAN2	Fan Connector
KCN1	KB Connector（5 Pin Water）
USB	Universal Serial Bus Connector
LCD1	LCD Panel Connector
USB1	USB Port#1 Connector

2.9 I/O CONNECTORS DESCRIPTION

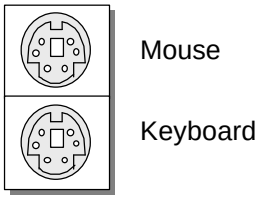
✦ ISP1: ISP GAL Connector (Factory only)

PIN NO.	DESCRIPTION
1	VCC
2	SDO
3	SDI
4	ISP
5	NC
6	MODE
7	Ground
8	SCLK



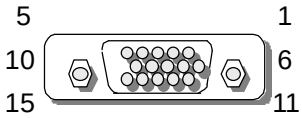
✦ PKM1：KB/Mouse Connector（Dual Mini Din）

PIN NO.	DESCRIPTION
1	KB Data
2	NC
3	Gnd
4	VCC
5	KB CLK
6	NC
7	MS Data
8	NC
9	Gnd
10	VCC
11	MSCLK
12	NC



✦ VGA1 : VGA Connector

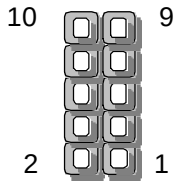
PIN NO.	DESCRIPTION
1	Red Color Signal
2	Green Color Signal
3	Blue Color Signal
4	NC
5	Ground
6	Ground
7	Ground
8	Ground
9	NC
10	Ground
11	NC
12	DDC-DATA
13	H-Sync.
14	V-Sync.
15	DDC-CLK



VGA1

DIO1: Digital Input/ Digital Output Ports (Header)

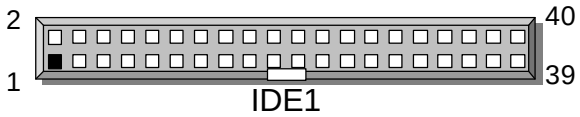
PIN No.	Description
1	IN0
2	OUT0
3	IN1
4	OUT1
5	IN2
6	OUT2
7	IN3
8	OUT3
9	Grand
10	Grand



DIO1

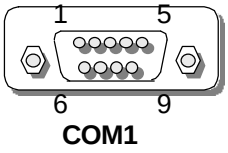
✦ IDE1/IDE2：EIDE Connector (Header)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Reset #	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	NC
21	DMA REQ	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	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

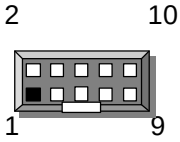


✦ COM1 : RS-232 Serial Port #1 Connector (D-Sub)

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 #)



COM1



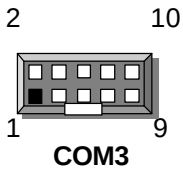
COM2

✦ COM2 : Serial Port #2 Connector (Header)

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

✦ COM3 : Serial Port #3 Connector (Header)

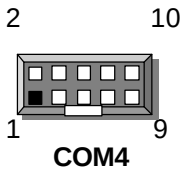
PIN NO.	DESCRIPTION
	RS-232
1	Data Carrier Detect (DCDB #)
2	Data Set Ready (DSRB #)
3	Receive Data (RXDB)
4	Request To Send (RTSB #)
5	Transmit Data (TXDB)
6	Clear To Send (CTSB #)
7	Data Terminal Ready (DTRB #)
8	Ring Indicator (RIB #)
9	Ground
10	NC



COM3

✦ COM4 : Serial Port #4 Connector (Header)

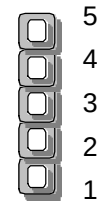
PIN NO.	DESCRIPTION
	RS-232
1	Data Carrier Detect (DCDB #)
2	Data Set Ready (DSRB #)
3	Receive Data (RXDB)
4	Request To Send (RTSB #)
5	Transmit Data (TXDB)
6	Clear To Send (CTSB #)
7	Data Terminal Ready (DTRB #)
8	Ring Indicator (RIB #)
9	Ground
10	NC



COM4

✦ IRDA1 : Alternate IrDA

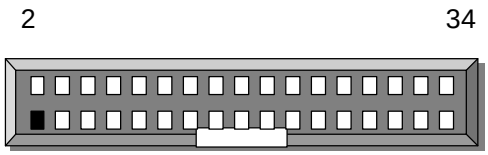
PIN NO.	DESCRIPTION
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX



IrDA1

✦ FDC1 : Floppy Interface Connector (Header)

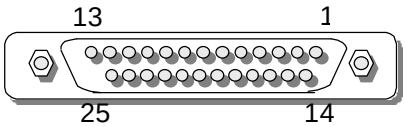
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Ground	2	Density Select
3	Ground	4	NC
5	Ground	6	DS1
7	Ground	8	Index #
9	Ground	10	Motor Enable A #
11	Ground	12	Drive Select B #
13	Ground	14	Drive Select A #
15	Ground	16	Motor Enable B #
17	Ground	18	Direction #
19	Ground	20	Step #
21	Ground	22	Write Data #
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 #



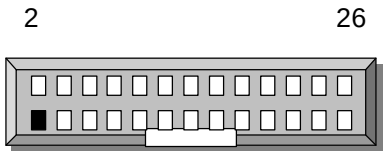
FDC1

✦ **LPT1：Parallel Port Connector (D-Sub)**

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



LPT1



LPT2

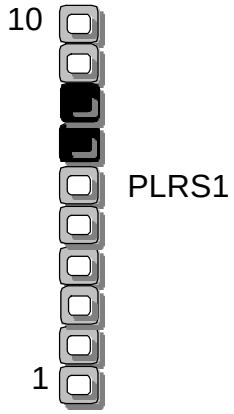
✦ **LPT2：Parallel Cable Connector（Header）**

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

✦ PLRS1 : Power LED, Reset, Speaker Connector

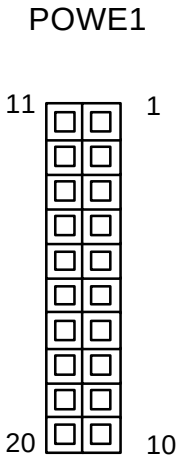
PIN NO.	DESCRIPTION
1	Power LED +
2	GND
3	HDD LED +
4	HDD LED -
5	RESET SW +
6	RESET SW – (GND)
7	External Speaker -
8	Internal Buzzer -
9	NC
10	External Speaker +

Default : 7-8 (ON)Internal Buzzer



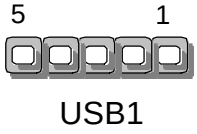
✦ POWE1：ATX Power Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC3	11	VCC3
2	VCC3	12	-12V
3	GND	13	GND
4	VCC	14	Power-ON
5	GND	15	GND
6	VCC	16	GND
7	GND	17	GND
8	Power Good	18	-5V
9	Stand-By 5V	19	VCC
10	+12V	20	VCC



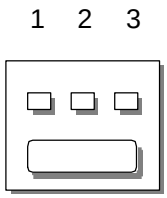
✦ USB1：USB Port＃1 Connector

PIN NO.	Description
1	USB Port＃1 Vcc
2	USB D0-
3	USB D0+
4	Ground
5	USB Port＃1 Ground



✦ FAN1: FAN Connector

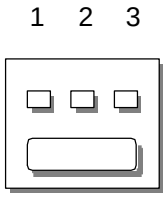
PIN NO.	Description
1	FAN Status
2	+12V
3	Gnd



FAN1

✦ FAN2: FAN Connector

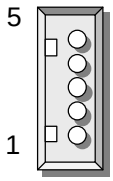
PIN NO.	Description
1	FAN Status
2	+12V
3	Gnd



FAN2

✦ KCN1：KB Connector（5 Pin Water）

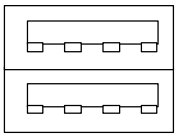
PIN NO.	DESCRIPTION
1	Keyboard Clock
2	Keyboard Data
3	NC
4	Gnd
5	VCC



KCN1

✦ USB：Universal Serial Bus Connector

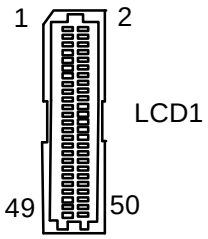
PIN NO.	Description
1	USB Port＃1 Vcc
2	USB D0-
3	USB D0+
4	Ground
5	USB Port＃2 Vcc
6	USB D1-
7	USB D1+
8	Ground



USB

✦ **LCD1： LCD Panel Connector**

PIN NO.	SIGNAL	PIN NO.	SIGNAL
1	VCC	2	VCC
3	LP	4	FLM
5	M/DE	6	ENABKL
7	ENAVEE	8	ENAVDD
9	SHFCLK	10	+12V
11	GND	12	GND
13	P0	14	P1
15	P2	16	P3
17	P4	18	P5
19	P6	20	P7
21	P8	22	P9
23	P10	24	P11
25	P12	26	P13
27	P14	28	P15
29	GND	30	P16
31	P17	32	P18
33	P19	34	P20
35	P21	36	P22
37	P23	38	GND
39	P24	40	P25
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35



CHAPTER 3.

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

ROM PCI / ISA BIOS (2A69KL7W) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP / PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
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.

<F10> **:** Saves all changes made to Setup and exits program.

<Shift> <F2> **:** Changes background and foreground colors.

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

ROM PCI / ISA BIOS(2A69KL7W)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm : dd : yy) : Wed , Jun 5 2000
Time (hh : mm : ss) : 15 : 48 : 56

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	AUTO
Primary Slave	: Auto	0	0	0	0	0	0	AUTO
Secondary Master	: Auto	0	0	0	0	0	0	AUTO
Secondary Slave	: Auto	0	0	0	0	0	0	AUTO

Drive A : 1.44M, 3.5 in.
Drive B : None

Video : EGA/VGA
Halt On : All , But Keyboard

Base Memory	:	640K
Extended Memory	:	64512K
Other Memory	:	384K
Total Memory	:	65526K

ESC : Quit ↑ ↓ ← → : Select Item PU / PD / + / - : Modify
F1 : Help (Shift) F2 : Change Color

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, 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:

Hard Disks: There are four hard disks listed: "Primary Master", "Primary Slave", "Secondary Master" and "Secondary Slave". For each IDE channel, the first device is "Master" and the second device is "Slave". Hard disk types from 1 to 45 are the standard ones. To select or change the configuration, move the cursor to the desired position and press <Page Up> or <Page Down> to change the option : (1) Press "Auto" for IDE HDD auto detection, (2) Press "User" for user definable, and Press "None" for not installed (e.g. SCSI). There are six categories of information that you must enter for a HDD: "CYLS." for (number of cylinders), "HEADS" for (number of heads), "PRECOMP" for (write pre-compensation), "LANDZ" for (landing zone), "SECTOR" for (number of sectors) and "MODE" for (Normal, LBA, LARGE and AUTO). The hard disk vendor' s or system manufacturer' s documentation should provide you with the drive specifications. For an IDE hard drive, you can set "TYPE" to "Auto" or use the "IDE HDD AUTO DETECTION" utility in the main program screen to enter the drive specifications.

Here is a brief explanation of drive specifications:

- **Type**: The BIOS contains a table of pre-defined drive types. Each defined drive type has specified number of cylinders, number of heads, write compensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any pre-defined type are classified as type USER.
- **Size**: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.
- **Cyls**: Number of cylinders.
- **Head**: Number of heads.
- **Precomp**: Write pre-compensation cylinder
- **Landz**: Landing zone.
- **Sector**: Number of sectors.
- **Mode**: Auto, Normal, Large, or LBA.
  - **Auto**: The BIOS automatically determines the optimal mode.
  - **Normal**: Maximum number of cylinders, heads, and sectors supported are 1024, 16, and 63.
  - **Large**: For drives that do not support LBA and have more than 1024 cylinders.
  - **LBA** (Logical Block Addressing): During drive accesses, the IDE controller transforms data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives which with greater 1024 cylinders.

The AWARD BIOS supports three HDD modes: NORMAL, LBA and LARGE.

NORMAL mode: This is Generic Access mode in which neither the BIOS nor the IDE controller will make any transformation during the accession. The maximum HDD size is supported by the NORMAL mode that is 528 Megabytes.

LBA mode: This is Logical Block Addressing mode which is a HDD accessing method that overcomes the 528 Megabytes restriction. The number of cylinders, heads and sectors that are shown in setup may not be the physical number contained in the HDD. During the HDD accessing, the IDE controller will transform the logical address that is described by the cylinder, head and sector numbers into its own physical address as contained inside the HDD. The maximum HDD size that is supported by the LBA mode is 8.4 Gigabytes.

LARGE mode: Some IDE HDD contains more than 1024 cylinders without the LBA support. This access mode tricks DOS (or other OS) with the number of cylinders that is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. A reverse transformation process will be made inside INT13H in order to access to the right HDD address. The maximum HDD size that is supported by the LARGE mode is 1 Gigabytes.

Note: 1. To support LBA or LARGE mode, there are softwares located in the AWARD HD Service Routine"INT13H". It may fail to access a HDD with LBA or LARGE modes selected if you are running under an Operating System that replaces the whole INT13H service routine.
2. Entering incorrect drive specifications will result in a hard disk drive that will function improperly or no function at all.

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.

Floppy 3 Mode Support: When enable, the BIOS supports a type of 3.5-inch diskette drive that can read 720-KB, 1.2-MB, and 1.44-MB diskettes.

Video: Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

Halt On: During the power-on-self-test (POST), the computer stops if BIOS detects a hardware error. You can tell 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

ROM PCI / ISA BIOS (2A69KL7W)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000 -CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000 -CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000 -D3FFF Shadow	: Disabled
		D4000 -D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000 -DBFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	DC000 -DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Disabled		
Boot Up NumLock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars Sec.)	: 6		
Typematic Delay (M/Sec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
OS Select For DRAM >64MB	: Non-OS/2	ESC : Quit	: Select Item
Report No FDD For WIN 95	: Yes	F1 : Help	PU /PD /+/ - : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Waring : The default setting of the Virus Warning is "Disabled". When it is enabled, any attempt to write to 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, clean and investigate your

system.

CPU Internal Cache : The default setting is "Enabled". This setting enables the CPU internal cache.

External Cache : The default setting is "Enabled". This setting enables the external cache.

CPU L2 Cache ECC Checking : The default setting is "Enabled". When you select Enabled, memory checking is enabled when the external cache contains ECC SRAMs.

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.

Boot Sequence: The default setting is "A:,C:,SCSI:"; the other options are "CDROM, C, A" and "A, C" and "C, CDROM, A". This setting determines where the computer looks first for an operating system, hard disk, floppy disk, or other. BIOS will load the operating system from the disk drives in the sequence as selected here.

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.

Boot Up Floppy Seek : The defaults setting is "Disabled". When enabled, the BIOS will check whether there is a floppy disk drive installed.

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

Gate A20 Option : The default setting is "Fast". This is the optimal setting for the CPU card. The other option is "Normal".

Typematic Rate Setting : The default setting is "Disabled". If enabled, you can set the typematic rate and typematic delay.

Typematic Rate (Chars/Sec) : This setting controls the speed at which the system registers the repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is "6" Chars/Sec.

Typematic Delay (M/Sec) : This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is "250" ms.

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.if you have set a password, select whether the password is required every time the System boots, or only when you enter Setup.

PCI/VGA Palette Snoop: The default setting is "Disabled". Set to "Enable" if any ISA adapter card installed requires VGA palette snooping.

OS Select For DRAM > 64MB : The default setting is "Non-OS2". Set to "OS2" if the system memory size is greater than 64MB and the operating system is OS/2.

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

ROM PCI / ISA BIOS (2A69KL7W)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Auto Detect DIMM/PCI CLK	: Enabled
EDO DRAM Speed Selection	: 60ns	Spread Spectrum	: Disabled
EDO CASx # MA Wait State	: 2	CPU Host Clock (CPU/PCI)	: Default
EDO RASx # Wait State	: 2	CPU Warning Temperature	: Disabled
SDRAM RAS-to-CAS Deley	: 3	Current CPU Temperature	: 24°C/75°F
SDRAM RAS Precharge Time	: 3	Current CPUFans1 Speed	: 0 RPM
SDRAM CAS Latency Time	: 3	Current CPUFans2 Speed	: 0 RPM
SDRAM Precharge Control	: Disabled	Current Vin3(V)	: 1.99V
DRAM Data Integrity Mode	: Non-ECC	Current Vin1(V)	: 3.28V
System BIOS Cacheable	: Disabled	Current Vin2(V)	: 11.80V
Video BIOS Cacheable	: Disabled	Current Vdd(V)	: 4.97 V
Video RAM Cacheable	: Disabled	Shutdown Temperature	: 60°C/140°F
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1	ESC : Quit	: Select Item
Memory Hole At 15M-16M	: Disabled	F1 : Help	PU /PD /+/ - : Modify
Passive Release	: Enabled	F5 : Old Values	(Shift) F2 : Color
Delayed Transaction	: Disabled	F6 : Load BIOS Defaults	
AGP Aperture Size (MB)	: 64	F7 : Load Setup Defaults	

Auto Configuration: The default setting is "Enabled" which will optimize DRAM timing automatically depending on whether the DRAM used is either 70ns or 60ns. The other option is "Disabled" which allows you to change DRAM timing manually.

EDO DRAM Speed Selection: The value in this field must correspond to the speed of the DRAM installed in your system. DO NOT change the default setting of this field, as determined by the system board manufacturer for the installed DRAM. This value is access speed, so a lower value means a faster system. This field applies only if EDO DRAM is installed in the system.

EDO CASx# MA Wait State: The board designer may elect to insert one additional wait state before the assertion of the first CASx# for the leadoff page hit cycle. Do not change the manufacturer's default unless you are getting memory addressing errors. This field applies only if EDO DRAM is installed in the system.

EDO RASx# Wait State: The system board desiger may elect to insert a wait state into EDO RASx# Memory addressing cycle, if necessary, RAS stand for Row Address Select.

SDRAM 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.

SDRAM 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.

SDRAM 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.

SDRAM Precharge Control: When Enabled, all CPU cycles to SDRAM result in an All Banks Precharge Command on the SDRAM interface.

DRAM Data Integrity Mode: Select Parity or ECC(error-correcting code), according to the type of installed DRAM.

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.

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.

Video RAM Cacheable: Selecting Enabled allows caching of the video memory(RAM) at A0000h to AFFFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.

8/16 Bit I/O Recovery Time: The I/O recovery mechanism adds bus clock cycles between PCI-originated I/O cycles to ISA bus. This delay takes place because PCI bus is so much faster than ISA bus. These two fields let you add recovery time (in bus clock cycles) for 16-bit and 8-bit I/O.

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.

Passive Release: When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

Delayed Transaction: The chipset has an embedded 32-bit posted write buffer to support delay transaction cycles. Select Enabled to support compliance with PCI specification version 2.1.

AGP Aperture Size(MB): 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. See www.agpforum.org for AGP information.

Auto Detect DIMM/PCI Clk: The default setting is “Enabled”. To reduce the occurrence of electromagnetic interference (EMI), BIOS detects the presence or absence of components of DIMM and PCI slots and turns off system clock generator pulses to empty slots.

Spread Spectrum: When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases but outweighed by problems with timing-critical devices, such as a clock-sensitive

SCSI device.

CPU Host Clock(CPU/PCI): Select Default or select a timing combination for the CPU and the PCI bus. When set to Default, BIOS uses the actual CPU and PCI bus clock values.

CPU Warning Temperature: The default setting is "66°C/151°F". Select the combination of lower and upper limits for the CPU temperature. If the CPU temperature extends beyond either limit, any warning mechanism programmed into your system will be activated.

Current CPU Temperature: The default setting is "32°C/89°F". This field displays the current CPU temperature, if your computer contains a monitoring system.

Current CPUFAN Speed: The default setting is "3934 RPM". This field displays the current speed of the CPU fan, if your computer contains a monitoring system.

Current VCORE (V), Current VCC3 (V), Current +V12 (V) and Current VCC (V): This field detects the voltage input of the board, if your computer contains a monitoring system.

After you have made your selections in the CHIPSET FEATURES SETUP, press the <ESC> key to go back to the main program screen.

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 appears as:

Power Management Setup Screen

CMOS Setup Utility – Copyright ©1984-2001 Award Software

ROM PCI / ISA BIOS (2A69KL7W)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function	: Enabled	**Reload Global Timer Events**	
Power Management	: User Define	IRQ [3-7 , 9-15] , NMI	: Disabled
PM Control by APM	: Yes	Primary IDE 0	: Disabled
Video Off Method	: V/H SYNC + Blank	Primary IDE 1	: Disabled
Video Off After	: Standby	Secondary IDE 0	: Disabled
MODEM Use IRQ	: 3	Secondary IDE 1	: Disabled
Doze Mode	: Disable	Floppy Disk	: Disabled
Standby Mode	: Disable	Serial Port	: Enabled
Suspend Mode	: Disable	Parallel Port	: Disabled
HDD Power Down	: Disable		
Throttle Duty Cycle:	: 62.5%		
PCI / VGA Act-Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Instant – off		
Power On by Ring	: Enabled	ESC : Quit	: Select Item
Power On on PCI Card	: Disabled	F1 : Help PU /PD/+/-	: Modify
Wake Up on LAN	: Disabled	F5 : Old Values (Shift) F2	: Color
IRQ 8 Break Suspend	: Disabled	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

ACPI Function : This item allows you to enable or disable the Advanced Configuration and Power Management (ACPI). The settings are "Enabled" and "Disabled".

Power Management: This setting controls the System Doze Mode, Standby Mode and Suspend Mode Timer features. There are four options namely --

- **User Define :** Allows you to customize all power saving timer features.
- **Optimize:** This is the recommended setting for general use.

- **Test/Demo :** This is for test/demonstration purpose.
- **Disable :** Disable the power management features.

PM Control by APM: The default setting is "No". If it is set to "Yes", the system BIOS will wait for APM' s prompt before it enters any PM mode.

Note : If your system power management is controlled by APM and there is a task running, the APM will not prompt the BIOS to enter any power saving mode after time out.

Video Off Method: This setting controls the Video off method in power saving mode. The default setting is "V/H SYNC+Blank". This setting disables V/H SYNC signals and blanks the screen into the power saving mode. Other options are "Blank Screen" and "DPMS".

Video Off After: As the system moves from lesser to greater power-saving modes, select the mode in which you want the monitor to blank. The default setting is "Standby".

MODEM Use IRQ: Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. The default setting is "NA".

Doze Mode: Options are from "1 Min." to "1 Hour" and "Disable", if no Power Management events occur for a specified length of time, the system speed will change from turbo to slow and the video signal will be suspended, Full power function will return when a Wake-Up event is detected.

Standby Mode: Options are from "1 Min" to "1 Hour" and "Disable". The system speed will change from turbo to slow 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.

Suspend Mode: Option are from "1 Min" to "1 Hour" and "Disable", if no Power Management events occur for a specified length of time, the CPU clock will be stopped and the video signal will be suspended, 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.

Throttle Duty Cycle: When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

PCI/VGA Act-Monitor: When Enabled, any video activity restarts the global timer for Standby mode. The default setting is "Disabled".

Soft-Off by PWR-BTTN: When Enabled, turning the system off with the on/off button places the system in a very low-power-usage states, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

PowerOn by Ring: When "Enabled", an input signal on the serial Ring Indicator (R1) line awakens the system from soft off state.

Power On on PCI card:

IRQ 8 Break Suspend: You can turn On or Off monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

Wake Up On LAN: To use this function, you need a LAN add-on card which support power on functions. The default setting is "Disabled".

Reload Global Timer Events: When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.

IRQ [3-7, 9-15], NMI
Primary IDE 0
Primary IDE 1
Secondary IDE 0
Secondary IDE 1
Floppy Disk
Serial Port
Parallel Port

After you have made your selection in the POWER MANAGEMENT SETUP, press the <ESC> key to go back to the main program screen.

3.7 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

ROM PCI / ISA BIOS (2A69KL7W)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: No	Used MEM base addr	: N/A
Resources Controlled By	: Manual		
Reset Configuration Data	: Disabled		
IRQ-3	Assigned to : Legacy ISA		
IRQ-4	Assigned to : Legacy ISA		
IRQ-5	Assigned to : PCI/ISA PnP		
IRQ-7	Assigned to : Legacy ISA		
IRQ-9	Assigned to : PCI/ISA PnP		
IRQ-10	Assigned to : PCI/ISA PnP		
IRQ-11	Assigned to : PCI/ISA PnP		
IRQ-12	Assigned to : PCI/ISA PnP		
IRQ-14	Assigned to : PCI/ISA PnP		
IRQ-15	Assigned to : PCI/ISA PnP		
DMA-0	Assigned to : PCI/ISA PnP		
DMA-1	Assigned to : PCI/ISA PnP		
DMA-3	Assigned to : PCI/ISA PnP	ESC : Quit	: Select Item
DMA-5	Assigned to : PCI/ISA PnP	F1 : Help	PU /PD/+/- : Modify
DMA-6	Assigned to : PCI/ISA PnP	F5 : Old Values	(Shift) F2 : Color
DMA-7	Assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults	
		F7 : Load Setup 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.

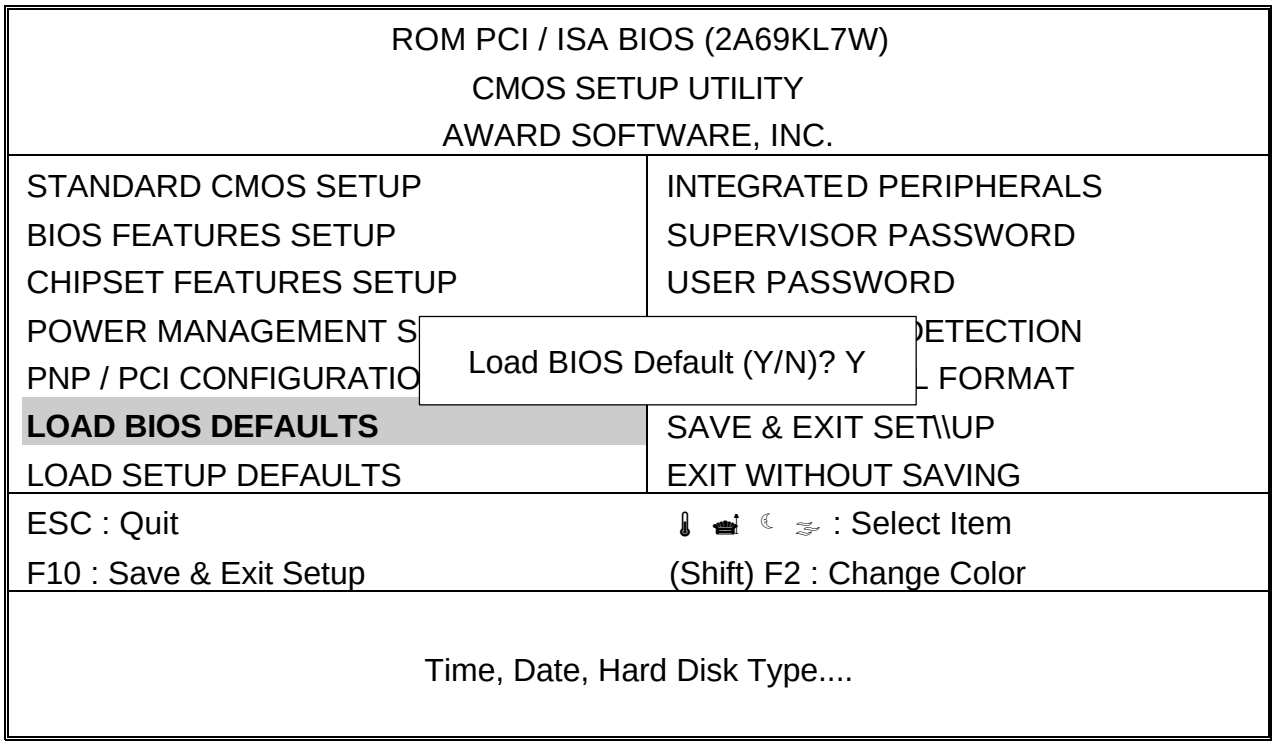
DMA Resources : The sub menu can let you control the DMA resource.

Used MEM base addr : Select a base address for the memory area used by any peripheral that require high memory.

3.8 LOAD BIOS DEFAULTS

The BIOS defaults have been set by the manufacturer which represent settings provided with the minimum requirements for your system to operate. " **Load BIOS Defaults** " loads the troubleshooting default values permanently recorded in the BIOS ROM. These settings are non-optimal and turn off all high performance features.

The Standard CMOS Setup screen is not affected. To use this feature, highlight it on the main screen and press <Enter>. A line will appear asking if you want to load the BIOS default values. Press the <Y> key and the <Enter>. The default settings will load. Press <N> if you do not want to proceed.



3.9 LOAD SETUP DEFAULTS

"**LOAD SETUP DEFAULTS**" loads the optimal settings which are stored in BIOS ROM. The defaults loaded affect only the BIOS Features Setup, Chipset Features Setup, Power Management Setup, PnP/PCI configuration setup and Integrated Peripherals Setup. There is no effect on the Standard CMOS Setup. To use this feature, highlight the entry on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the Setup default values. Press the <Y> key and then press the <Enter> key if you want to load the Setup defaults. Press <N> if you do not want to proceed.

3.10 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

ROM PCI / ISA BIOS (2A69KL7W)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled		
IDE Primary Master PIO	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Primary Slave PIO	: Auto	Parallel Port Mode	: SPP
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto	Onboard Serial Port 3	: 3E8H
IDE Secondary Master UDMA	: Auto	Serial Port 3 Use IRQ	: IRQ4
IDE Secondary Slave UDMA	: Auto	Onboard Serial Port 4	: 2E8H
On-chip Primary PCI IDE	: Enabled	Serial Port 4 Use IRQ	: IRQ3
On-chip Secondary PCI IDE	: Enabled	Onboard Parallel Port 2	: 278H
USB Keyboard Support	: Disabled	Parallel Port 2 Use IRQ	: IRQ10
Init Display First	: PCI slot	Parallel Port 2 Mode	: Normal
KBC input clock	: 8MHz	ESC : Quit	: Select Item
Onboard FDC Controller	: Enabled	F1 : Help PU /PD/+/-	: Modify
Onboard Serial Port 1	: 3F8/IRQ4	F5 : Old Values (Shift) F2	: Color
Onboard Serial Port 2	: 2F8/IRQ3	F6 : Load BIOS Defaults	
UART Mode Select	: Normal	F7 : Load Setup Defaults	

IDE HDD Block Mode: Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

IDE Primary/Secondary Master/Slave PIO: There are four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for

each device.

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

On-Chip Primary/Secondary PCI IDE: The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

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

Init Keyboard Support: Initialize the AGP video display before initializing any other display device on the system Thus the AGP display become the primary display.

KBC input clock: The system designer must select the correct frequency for the keyboard controller input clock. Do not change this value from default value.

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

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

UART Mode Select: Select an operating mode for the second serial port: They can be assigned as follows:

Normal	RS-232C serial port
IrDA	Infrared Port
ASKIR	Amplitude Shift Keyed Infrared Port

Onboard Parallel Port: This option is used to assign the I/O address for the onboard parallel port. The option are "378/IRQ7" (defaults), "278/IRQ7", "3bc/IRQ7" and "Disabled" (disable the onboard parallel port).

Note: Printer port always use IRQ7 when set to "378/IRQ7" or "278/IRQ7, or from "3BE/IRQ7" to "Enabled".

Parallel Port Mode: There are four option "Normal" (default), "ECP", "ECP/EPP" and "EPP/SPP". Change the mode from "Normal" to the enhanced mode only if your peripheral device can support it. When it is set to ECP mode, the printer port always uses DMA3.

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 IDE HDD AUTO DETECTION

If your system has an IDE hard drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

If the auto-detected parameters displayed do not match the ones that should used for your hard drive, do not accept them. Press the <N> key to reject the values and enter the correct ones manually on the Standard CMOS Setup screen.

Note : If you are setting up a new hard disk drive (nothing on it) that supports LBA mode, more than one line will appear in the parameter box, choose the line that lists LBA for an LBA drive.

Do not choose Large or Normal if the hard disk drive is already fully formatted when you install it, choose the mode " HDD Low Level Format" to format it.

3.13 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.

3.14 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.

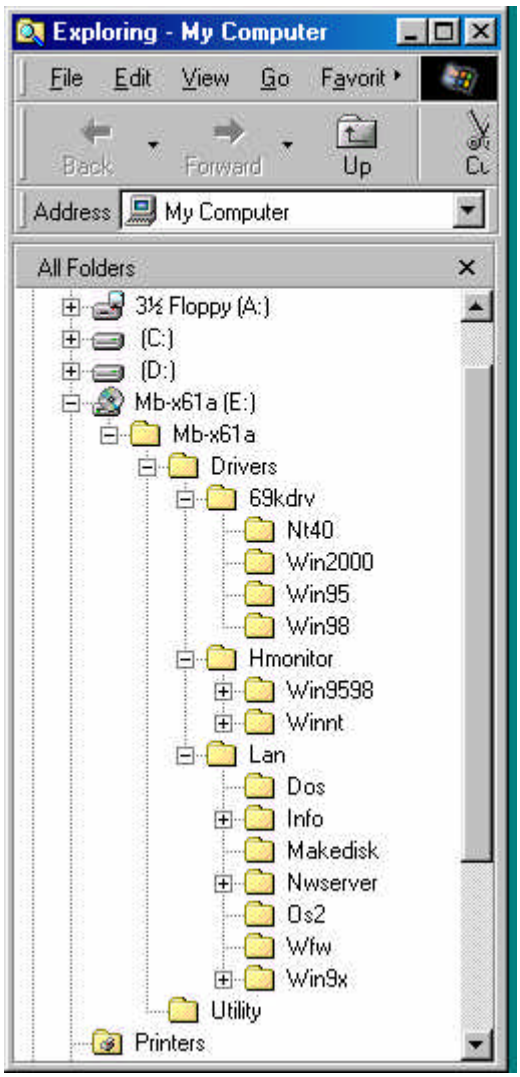
CHAPTER 4.

DRIVERS SUPPORT

4.1 DRIVER CD-ROM LIST

The table below shows the drivers supported for MB-X61 Series.

Directory	Driver Function
Drivers/69kdr.EXE	Display driver
Drivers/humonitor/setup	Monitor driver
Drivers/LAN/setup	Network driver



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

```
C:\DOS> DEBUG
        -i443
```

Disable

```
C:\DOS>DEBUG
        -i43
```

EX.2: For assembly Language

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

Disable :
        :
        :
IN AL, 43H
        :
        :
```

APPENDIX B

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 : 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 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

Date:1997.10.20

Warranty Policy

1. All products are warranted against defects in materials and workmanship for a period of two years from the date of purchase by the customer.

2. The buyer will bear the return freight charges for goods that are returned for repair within the warranty period whereas manufacturer will bear the return to user freight charges after repair.

3. The buyer will pay for repair (for the replaced materials plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.

4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service" , RMA goods will be returned at the customer expense.

5. The following conditions are excluded from this warranty：

   A. Improper or inadequate maintenance by the customer.

   B. Unauthorized modification or misuse.

   C. Operation outside of the environmental specifications for the product.

RMA Service

1. Request a RMA# **:**

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

2. Shipping:

A. The customer is requested to fill up the problem code as listed . If none of the code is selected, please write the symptom description on the remark.

B. Ship the defective units with freight prepaid.

C. Mark the RMA # clearly on the box.

D. Shipping damage as a result of inadequate packing is the customer's responsibility.

E. Use the original packing materials whenever possible .

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

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

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

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**