4. BIOS CONFIGURATION

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS SRAM so that it retains the Setup information when the power is turned off.

4.1. ENTERING SETUP

Power ON the computer and press <Del> immediately will allow you to enter Setup. If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" bottom on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Del> keys.

4.2. CONTROL KEYS

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Change color from total 16 colors
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4.3. GETTING HELP

4.3.1. Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

4.3.2. Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

4.4. THE MAIN MENU

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 4.1) will appear on the screen. The Main Menu allows you to select from nine setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI / ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	USER PASSWORD
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
PNP/PCI CONFIGURATION	
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	

ESC : Quit	¡ Õ ¡ Ō ¡ : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Time, Date, Hard Disk Type, ...

Figure 4.1: Main Menu

- Standard CMOS setup

  This setup page includes all the items in standard compatible BIOS.

- BIOS features setup

  This setup page includes all the items of Award special enhanced features.

- Chipset features setup

  This setup page includes all the items of chipset special features.

- Power management setup

  This setup page includes all the items of Green function features.

- PNP/PCI configuration

  This setup page includes all the configurations of PCI & PNP ISA resources.

- Integrated peripherals

  This setup page includes all onboard peripherals.

- Load setup defaults

  Setup defaults indicates the most appropriate value of the system parameter which the system would be in safe configuration.

- User password

  Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

- IDE HDD auto detection

  Automatically configure hard disk parameter.

- Save & exit setup

  Save CMOS value changes to CMOS and exit setup.

- Exit without saving

Abandon all CMOS value changes and exit setup.

4.5. STANDARD CMOS SETUP MENU

The items in Standard CMOS Setup Menu (Figure 4.2) are divided into 9 categories. Each category includes no, one or more than one setup items. Use the arrows to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
                    ROM PCI / ISA BIOS
                   STANDARD CMOS SETUP
                   AWARD SOFTWARE, INC.

    Date (mm:dd:yy) Mon, Aug 25 1997
    Time (hh:mm:ss)  16 : 45 : 02


      HARD DISKS       TYPE   SIZE  CYLS  HEAD  PRECOMP  LANDZ   SECTOR MODE

    Primary Master    : Auto    0     0     0       0       0        0    Auto
    Primary Slave     : None    0     0     0       0       0        0    ---------
    Secondary  Master : None    0     0     0       0       0        0    ---------
    Secondary  Slave  : None    0     0     0       0       0        0    ---------

    Drive A   : 1.44M , 3.5 in.
    Drive B   : None
    Floppy 3 Mode Support   : Disabled           Base Memory:      640 K
                                             Extended Memory:   15360 K
    Video   : EGA/VGA                           Other Memory:     384 K
    Halt On   : No Errors
                                                 Total Memory:    16384 K


  ESC  : Quit             ¡Ô¡ ¯O¡ ÷  : Select Item        PU/PD/+/-     : Modify

  F1   : Help            (Shift)F2     : Change Color
```
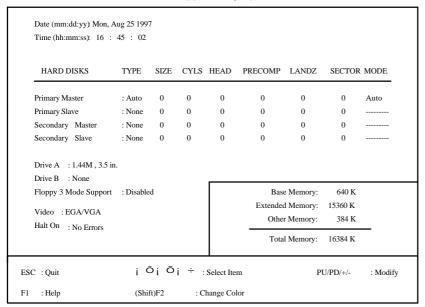
Figure 4.2: Standard CMOS Setup Menu

- Date

   The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
date	The date, from 1 to 31 (or the maximum allowed in the

	month)
month	The month, Jan. through Dec.
year	The year, from 1994 through 2079

- Time

  The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- Primary HDDs / Secondary HDDs

  The category identifies the types of hard disk drive C drives F 4 devices that has been installed in the computer. There are two types: auto type, and user definable type. User type is user-definable; Auto type which will automatically detect HDD's type.

  Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

  If you select User Type, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. Those information should be provided in the documentation form your hard disk vendor or the system manufacturer.

CYLS.	Number of cylinders
HEADS	number of heads
PRECOMP	write precomp
LANDZONE	landing zone
SECTORS	number of sectors

  If a hard disk has not been installed select NONE and press <Enter>.

- Drive A type / Drive B type

  The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

None	No floppy drive installed
360K, 5.25 in.	5.25 inch PC-type standard drive; 360K byte capacity.

1.2M, 5.25 in.	5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
720K, 3.5 in.	3.5 inch double-sided drive; 720K byte capacity
1.44M, 3.5 in.	3.5 inch double-sided drive; 1.44M byte capacity.
2.88M, 3.5 in.	3.5 inch double-sided drive; 2.88M byte capacity.

- Floppy 3 Mode Support (for Japan Area)

Disabled	Normal Floppy Drive.
Drive A	Drive A is 3 mode Floppy Drive.
Drive B	Drive B is 3 mode Floppy Drive.
Both	Drive A & B are 3 mode Floppy Drives.

- Video

  The category detects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, 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

  The category determines whether the computer will stop if an error is detected during power up.

NO Errors	The system boot will not stop for any error that may be detected
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted
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

- Memory

  The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

  Base Memory

  The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

  The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

  Extended Memory

  The BIOS determines how much extended memory is present during the POST.

  This is the amount of memory located above 1 MB in the CPU's memory address map.

  Expanded Memory

  Expanded Memory in memory defined by the Lotus/Intel/Microsoft (LIM) standard as EMS.
  Many standard DOS applications can not utilize memory above 640 K; the Expanded Memory Specification (EMS) swaps memory, which not utilized by DOS with a section, or frame, so these applications, can access all of the system memory.

  Memory can be swapped by EMS is usually 64 K within 1 MB or memory above 1 MB, depends on the chipset design.

  Expanded memory device driver is required to use memory as Expanded Memory.

  Other Memory

  This refers to the memory located in the 640 K to 1024 K

address space. This is memory that can be used for different applications.

DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

4.6. BIOS FEATURES SETUP

ROM PCI / ISA BIOS
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	: Disabled	D0000 - D3FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D4000 - D7FFF Shadow	: Disabled
CPU Update Data	: Enabled	D8000 - DBFFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	DC000 - DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot Up NumLock Status	: On		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250	ESC : Quit ¡ Ô¡ Ō¡ ÷: Select Item	
Security Option	: Setup	F1 : Help PU/PD/+/- : Modify	
PCI/VGA Palette Snoop	: Disabled	F5 : Old Values (Shift)F2 : Color	
OS Select For DRAM >64MB	: Non-OS2	F7 : Load Setup Defaults	

Figure 4.3: BIOS Features Setup

- Virus Warning

This category flashes on the screen during after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run anti-virus program to locate the problem. Default value is Disabled.

Enabled	Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table
Disabled	No warning message to appear when anything attempts to access the boot sector or hard disk partition table

- CPU Internal Cache / External Cache

These two categories speed up memory access. However, it depends on CPU / chipset design. The default value is Enabled.

Enabled	Enable cache
Disabled	Disable cache

- CPU L2 Cache ECC Checking

The default value is Disabled.

Enabled	Enable CPU L2 Cache ECC Checking
Disabled	Disable CPU L2 Cache ECC Checking

- Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

The default value is Enabled.

Enabled	Enable quick POST
Disabled	Normal POST

- CPU Update Data

The default value is Enabled.

Enabled	Enable CPU Update Data
Disabled	Normal CPU Update Data

- Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A, C, SCSI.

X1, X2, X3	System will first search for X1 disk drive then X2 disk drive and then X3 disk drive.

- Swap Floppy Drive

The default value is Disabled.

Enabled	Floppy A & B will be swapped under DOS
Disabled	Floppy A & B will be normal definition

- Boot Up Floppy Seek

  During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks 720 K, 1.2 M and 1.44 M are all 80 tracks. The default value is Enabled.

Enabled	BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 80 tracks
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 K

- Boot Up NumLock Status

  The default value is On.

On	Keypad is number keys
Off	Keypad is arrow keys

- Typematic Rate Setting

  The default value is Disabled.

Enabled	Enable Keyboard Typematic rate setting.
Disabled	Disable Keyboard Typematic rate setting.

- Typematic Rate (Chars / Sec)

  The default value is 6.

6-30	Set the maximum Typematic rate from 6 chars. Per second to 30 chars. Per second.

- Typematic Delay (Msec)

  The default value is 250.

250-1000	Set the time delay from first key to repeat the same key in to computer.

● Security Option

This category allows you to limit access to the system and Setup, or just to Setup. The default value is Setup.

System	The system can not boot and can not access to Setup page will be denied if the correct password is not entered at the prompt
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt

✪ **To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup page freely.**

● PCI/VGA Palette Snoop

The default value is Disabled.

Enabled	For having Video Card on ISA Bus and VGA Card on PCI Bus.
Disabled	For VGA Card only.

● OS Select For DRAM>64MB

The default value is Non-OS2.

Non-OS2	Using non-OS2 operating system.
OS2	Using OS2 operating system and DRAM>64MB.

● Video BIOS Shadow

It determines whether video BIOS is able to copy to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed. The default value is Enabled.

Enabled	Video shadow is enabled
Disabled	Video shadow is disabled

● C8000 - CFFFF Shadow / D0000 - DFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16 K byte. The default value are Disabled.

Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

4.7. CHIPSET FEATURES SETUP

ROM PCI / ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	CPU Temperature Select	: 70 ¢J/158 ¢K
DRAM Speed Selection	: Normal	Slow Down CPU Duty Cycle	: Normal
Memory Buffer Strength	: Middle	Alarm When Overheat	: Disabled
DRAM Data Integrity Mode	: Non-ECC	Fan Failure Control	: Disabled
Video RAM Cacheable	: Disabled	CPU Fan Status	: XXXX
16 Bit I/O Recovery Time	: 1	CPU Temperature	: OK
Memory Hole At 15M-16M	: Disabled	Power Supply +12V	: OK
Delayed Transaction	: Disabled	Power Supply -12V	: OK
SDRAM RAS-to-CAS Delay	: Fast	Power Supply +5V	: OK
SDRAM RAS Precharge Time	: Fast	Power Supply -5V	: OK
SDRAM CAS latency Time	: 2	Battery Status	: OK
		CPU VCore Voltage	: 2.8V

ESC : Quit   ¡Ô¡Õ¡ ÷Select Item
F1   : Help   PU/PD/+/-   : Modify
F5   : Old Values   (Shift)F2   : Color
F7   : Load Setup Defaults

Figure 4.4: Chipset Features Setup

- Auto Configuration

  The default value is Enabled.

Enabled	For 50 - 60ns EDO DRAM Timing.
Disabled	For slow speed DRAM Timing.

- DRAM Speed Selection

  The default value is Normal.

Normal	For normal DRAM operation.
Fast	For Fastest DRAM timing operation.

- Memory Buffer Strength

  The default value is Middle.

Middle	For Middle Memory Buffer strength.
Low	For Low Memory Buffer strength.
High	For High Memory Buffer strength.

- DRAM Data Integrity Mode

  The default value is Non-ECC.

Non-ECC	For 64bit standard type DIMM module.
ECC	For 72bit ECC type DIMM module.

- Video RAM Cacheable

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable this function to get better VGA performance; while some brands of VGA must be disabled this function (e.g.ET4000W32P).

- 16 Bit I/O Recovery Time

  The default value is 1.

1-4	Set 16 Bit I/O recovery time from 1 to 4.
NA	None.

- Memory Hole At 15M-16M

  The default value is Disabled.

Disabled	Normal Setting.
Enabled	Set Address=15~16MB remap to ISA BUS.

- Delayed Transaction

  The default value is Disabled.

Disabled	Normal operation.
Enabled	For slow speed ISA device in system.

- SDRAM RAS-to-CAS Delay

  The default value is Slow.

Slow	For 67 / 83 MHz SDRAM DIMM module.
Fast	For 100 MHz SDRAM DIMM module.

- SDRAM RAS Precharge Time

  The default value is Slow.

Slow	For 67 / 83 MHz SDRAM DIMM module.
Fast	For 100 MHz SDRAM DIMM module.

- SDRAM CAS latency Time

  The default value is 3.

3	For 67 / 83 MHz SDRAM DIMM module.
2	For 100 MHz SDRAM DIMM module.

- CPU Temperature Select

  The default value is 70°C / 158°F.

65°C / 149°F	Monitor CPU Temp. at 65°C / 149°F, if Temp. > 65°C / 149°F will cause system alarming & slow down CPU speed.
70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F, if Temp. > 70°C / 158°F will cause system alarming & slow down CPU speed.
75°C / 167°F	Monitor CPU Temp. at 75°C / 167°F, if Temp. > 75°C / 167°F will cause system alarming & slow down CPU speed.
80°C / 176°F	Monitor CPU Temp. at 80°C / 176°F, if Temp. > 80°C / 176°F will cause system alarming & slow down CPU speed.

Disabled	Disable monitors CPU Temp. (Overheat) function.

- Slow Down CPU Duty Cycle

  The default value is Normal.

Normal	Set Slow Down CPU Duty Cycle to Normal.
12.5%	Set Slow Down CPU Duty Cycle to 12.5%.
25.0%	Set Slow Down CPU Duty Cycle to 25.5%.
37.5%	Set Slow Down CPU Duty Cycle to 37.5%.
50.0%	Set Slow Down CPU Duty Cycle to 50.0%.
62.5%	Set Slow Down CPU Duty Cycle to 62.5%.
75.0%	Set Slow Down CPU Duty Cycle to 75.0%.

- Alarm When Overheat

  The default value is Disabled.

Disabled	Disable Alarm When Overheat.
Enabled	Enable Alarm When Overheat .

- Fan Failure Control

  The default value is Disabled.

Disabled	Disable monitor CPU FAN working status.
Enabled	Enable monitor CPU FAN working status.

- CPU Fan Status

  The default value depends on system monitoring CPU FAN status.

Fail	The CPU FAN fails to work.
OK	The CPU FAN works normally.
XXXX	Ignore

- CPU Temperature

  The default value is OK.

High	CPU overheats. (CPU Temperature is out of SPEC.)

OK	CPU Temp. is in SPEC.

- Power Supply ±12V / ±5V

The default value depends on system monitoring ±12V / ±5V voltage status.

Fail	The ±12V / ±5V voltage from Power supply is out of SPEC.
OK	The ±12V / ±5V voltage from Power supply is in SPEC.

- Battery Status

The default value depends on system monitoring Battery status.

Fail	The Battery (3V) voltage is out of SPEC.
OK	The Battery (3V) voltage is in SPEC.

- CPU VCore Voltage

1.8V~3.5V	The voltage is current setting for CPU.

4.8. POWER MANAGEMENT SETUP

ROM PCI / ISA BIOS
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Enable	* * Reload Global Timer Events * *	
PM Control by APM	: Yes	IRQ [3-7,9-15] ,NMI	: Enabled
		Primary IDE 0	: Disabled
		Primary IDE 1	: Disabled
Suspend Mode	: Disable	Secondary IDE 0	: Disabled
HDD Power Down	: Disable	Secondary IDE 1	: Disabled
Suspend Mode option	: PowerOn Suspend	Floppy Disk	: Enabled
VGA Active Monitor	: Disabled	Serial Port	: Enabled
Soft-off by PWR-BTTN	: Instant-off	Parallel Port	: Disabled
CPUFAN off In Suspend	: Disabled		
Power-Supply Type	: Auto		
* Resume by Alarm	: Disabled		

** Date (of Month) Alarm : 0
** Time (hh:mm:ss) Alarm : 00:00:00

ESC : Quit   ¡Ô¡Õ¡÷:¡Select Item
F1   : Help   PU/PD/+/-   : Modify
F5   : Old Values   (Shift)F2   : Color
F7   : Load Setup Defaults

Figure 4.5: Power Management Setup

* This item will show up when user uses ATX power supply.

* * These two items will show up when Resume by Alarm is enabled.
- Power Management

  The default value is Enabled.

Enabled	Enable Green function.
Disabled	Disable Green function.

- PM Control by APM

  The default value is Yes.

Yes	Enable software APM function.
No	Disable software APM function.

- Suspend Mode

  The default value is Disable.

Disabled	Disable Suspend Mode.
1 min - 1 Hour	Setup the timer to enter Suspend Mode.

- HDD Power Down

  The default value is Disable.

Disable	Disable HDD Power Down mode function.
1-15 mins	Enable HDD Power Down mode between 1 to 15 mins.

- Suspend Mode Option

  The default value : PowerOn Suspend

PowerOn Suspend	Set the system to PowerOn Suspend mode
Suspend to Disk	Set the system to Suspend to Disk mode

- VGA Active Monitor

  The default value is Disabled.

Disabled	Disable monitor VGA activity.
Enabled	Enable monitor VGA activity.

- Soft-off by PWR-BTTN

  The default value is Instant-off.

Instant-off	Soft switch ON/OFF for POWER ON/OFF
Delay 4 Sec.	Soft switch ON 4sec. for POWER OFF.

- CPUFAN off In Suspend

   The default value is Disabled.

Disabled	Disable this function.
Enabled	Stop CPU FAN when entering Suspend mode.

- Power-Supply Type

   The default value is Auto.

Auto	Auto-detect which type of power supply is used.
P8&P9	Power-Supply Type is P8&P9.
ATX	Power-Supply Type is ATX.

- Resume by Alarm

   The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable alarm function to POWER ON system.

   If the default value is Enabled.

Date (of Month) Alarm :	0~31
Time (hh: mm: ss) Alarm :	(0~23) : (0~59) : (0~59)

- IRQ [3-7,9-15] , NMI

   The default value is Enabled.

Disabled	Disable this function.
Enabled	Enable monitor IRQ [3-7,9-15] for Green event.

- Primary IDE 0/1

   The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable monitor Primary IDE 0/1 for Green event.

- Secondary IDE 0/1

The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable monitor Secondary IDE 0/1 for Green event.

- Floppy Disk

  The default value is Enabled.

Disabled	Disable this function.
Enabled	Enable monitor Floppy Disk for Green event.

- Serial Port

  The default value is Enabled.

Disabled	Disable this function.
Enabled	Enable monitor Serial Port for Green event.

- Parallel Port

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable monitor Parallel Port for Green event.

4.9. PNP/PCI CONFIGURATION

```
                        ROM PCI / ISA BIOS
                     PNP/PCI  CONFGURATION
                      AWARD SOFTWARE, INC.
```

PNP OS Installed	: No	Used MEM base addr	: N/A
Resources Controlled by	: Manual	*Used MEM Length	: 8K
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	: Legacy ISA		
IRQ-14 assigned to	: Legacy ISA		
IRQ-15 assigned to	: Legacy ISA		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP		
DMA-3 assigned to	: PCI/ISA PnP	ESC : Quit	¡Ô¡ Ô¡ ÷ 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	F7 : Load Setup Defaults	

Figure 4.6: PCI Slot Configuration

* This item will show up when Used MEM base addr has been set.

- PNP OS Installed

  The default value is No.

Yes	Enable PNP OS Installed function.
No	Disable PNP OS Installed function.

- Resources Controlled by

  The default value is Manual.

Manual	User can set the PnP resource (I/O Address, IRQ & DMA channels) used by legacy ISA DEVICE.
Auto	BIOS automatically use these PnP rescuers.

- Reset Configuration Data

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable clear PnP information in ESCD.

- IRQ (3,4,5,7,9,10,11,12,14,15), DMA(0,1,3,5,6,7) assigned to

  The default value is "Legacy ISA" or "PCI/ISA PnP".

Legacy ISA	The resource is used by Legacy ISA device.
PCI/ISA PnP	The resource is used by PCI/ISA PnP device (PCI or ISA).

- Used MEM base addr

  The default value is N/A.

N/A	Disable the MEM. block using.
C800 ~ DC00	Select the MEM. block starting address.

- Used MEM Length

  The default value is 8K.

8K ~ 64K	Select the MEM. block size.

4.10. INTEGRATED PERIPHERALS

ROM PCI / ISA BIOS
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	PS/2 Mouse Power On	: Disabled
IDE Primary Master PIO	: Auto	Keyboard Power On	: Disabled
IDE Primary Slave PIO	: Auto	** KB Power On Multikey	: Enter
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
Onboard FDC Controller	: Enabled		
Onboard Serial Port1	: 3F8/IRQ4		
Onboard Serial Port2	: 2F8/IRQ3		
Onboard Parallel Port	: 378/IRQ7	ESC : Quit	¡Ó¡Õ¡÷ Select Item
Parallel Port Mode	: SPP	F1 : Help PU/PD/+/-	: Modify
* ECP Mode Use DMA	: 3	F5 : Old Values (Shift)F2	: Color
* EPP Mode Select	: EPP1.7	F7 : Load Setup Defaults	

Figure 4.7: Load Setup Defaults

* As ECP Mode is selected, two options can be defined:

1. ECP Mode Use DMA : 3
2. ECP Mode Use DMA : 1

As EPP Mode is selected, two options can be defined:

1. EPP 1.7
2. EPP 1.9

** This item will show up when "Keyboard Power On: Multikey" is selected.

● IDE HDD Block Mode

The default value is Enabled.

| Enabled | Enable IDE HDD Block Mode |
| Disabled | Disable IDE HDD Block Mode |

● IDE Primary Master PIO (for onboard IDE 1st channel).

The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Primary Slave PIO (for onboard IDE 1st channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Secondary Master PIO (for onboard IDE 2nd channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Secondary Slave PIO (for onboard IDE 2nd channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Primary Master UDMA.

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- IDE Primary Slave UDMA.

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- IDE Secondary Master UDMA.

    The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- IDE Secondary Slave UDMA.

    The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- On-Chip Primary PCI IDE

    The default value is Enabled.

Enabled	Enable onboard 1st channel IDE port.
Disabled	Disable onboard 1st channel IDE port.

- On-Chip Secondary PCI IDE

    The default value is Enabled.

Enabled	Enable onboard 2nd channel IDE port.
Disabled	Disable onboard 2nd channel IDE port.

- USB Keyboard Support

    The default value is Disabled.

Enabled	Enable USB Keyboard Support.
Disabled	Disable USB Keyboard Support.

- Onboard FDC Controller

    The default value is Enabled.

Enabled	Enable onboard FDD port.
Disabled	Disable onboard FDD port.

- Onboard Serial Port 1

  The default value is 3F8/IRQ4.

Auto	BIOS will automatically setup the port 1 address.
3F8/IRQ4	Enable onboard Serial port 1 and address is 3F8.
2F8/IRQ3	Enable onboard Serial port 1 and address is 2F8.
3E8/IRQ4	Enable onboard Serial port 1 and address is 3E8.
2E8/IRQ3	Enable onboard Serial port 1 and address is 2E8.
Disabled	Disable onboard Serial port 1.

- Onboard Serial Port 2

  The default value is 2F8/IRQ3.

Auto	BIOS will automatically setup the port 2 address.
3F8/IRQ4	Enable onboard Serial port 2 and address is 3F8.
2F8/IRQ3	Enable onboard Serial port 2 and address is 2F8.
3E8/IRQ4	Enable onboard Serial port 2 and address is 3E8.
2E8/IRQ3	Enable onboard Serial port 2 and address is 2E8.
Disabled	Disable onboard Serial port 2.

- Onboard Parallel port

  The default value is 378/IRQ7.

378/IRQ7	Enable onboard LPT port and address is 378/IRQ7.
278/IRQ5	Enable onboard LPT port and address is 278/IRQ5.
Disabled	Disable onboard LPT port.
3BC/IRQ7	Enable onboard LPT port and address is 3BC/IRQ7.

- Parallel Port Mode

  The default value is SPP.

SPP	Using Parallel port as Standard Printer Port.
EPP	Using Parallel port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port.
ECP/EPP	Using Parallel port as ECP & EPP mode.

- PS/2 Mouse Power on

  The default value is Disabled.

Disabled	Disable PS/2 Mouse Power on .
Left Double	Click twice on PS/2 mouse left button to Power on system.
Right Double	Click twice on PS/2 mouse right button to Power on system.

- Keyboard Power on

  The default value is Disabled.

Disabled	Disable Keyboard Power on .
Any Key	Press any key to Power on system
Multikey	Enter multikey combination to Power on system.

4.11. LOAD SETUP DEFAULTS

ROM PCI / ISA BIOS
LOAD SETUP DEFAULTS
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	USER PASSWORD
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
PNP/PCI CONFIGU Load SETUP Defaults (Y/N)? N	
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	

ESC : Quit	¡Ô¡Õ¡÷¡ Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Load SETUP Defaults except Standard CMOS SETUP
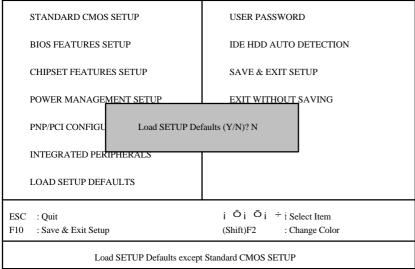
Figure 4.7: Load Setup Defaults

- Load SETUP Defaults

  To load SETUP defaults value to CMOS SRAM, enter "Y". If not, enter "N".

4.12. USER PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

ROM PCI / ISA BIOS
USER PASSWORD
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	USER PASSWORD
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
PNP/PCI CONFIGU Enter Password:	
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	

ESC : Quit	¡Ô¡Ō¡ ÷¡ Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Change / Set / Disable Password

Figure 4.8: Password Setting

Type the password, up to eight characters, and press <Enter>. The password typed now will clear and previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

4.13. IDE HDD AUTO DETECTION

ROM PCI / ISA BIOS
IDE HDDD AUTO DETECTION
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS.	HEAD	PRECOMP	LANDZ	SECTOR	MODE

Select Primary Master Option (N=Skip): N

OPTION	SIZE	CYLS.	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1 (Y)	521	530	32	0	1059	63	LBA
2	521	1060	16	65535	1059	63	NORMAL
3	521	530	32	65535	1059	63	LARGE

ESC   : Skip

Figure 4.9: IDE HDD Auto Detection

Type "Y" will accept the H.D.D. parameter reported by BIOS.

Type "N" will keep the old H.D.D. parameter setup. If the hard disk cylinder NO. is over 1024, then the user can select LBA mode or LARGER mode for DOS partition Larger than 528 MB.

4.14. SAVE & EXIT SETUP

ROM PCI / ISA BIOS
SAVE & EXIT SETUP
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	USER PASSWORD
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
PNP/PCI CONFIGU	SAVE to CMOS and EXIT (Y/N)? N
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	

ESC   : Quit   ¡ Ô¡ Õ¡ ÷¡ Select Item
F10   : Save & Exit Setup   (Shift)F2   : Change Color

Save Data to CMOS & Exit SETUP

Figure 4.10: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS SRAM.

Type "N" will return to Setup Utility.

4.15. EXIT WITHOUT SAVING

ROM PCI / ISA BIOS
EXIT WITHOUT SAVING
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	USER PASSWORD
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
PCI CONFIGURATI	Quit Without Saving (Y/N)? N
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	

ESC : Quit　　　　　　　　　　¡Ô¡Õ¡÷ : Select Item
F10 : Save & Exit Setup　　　　　(Shift)F2　　: Change Color
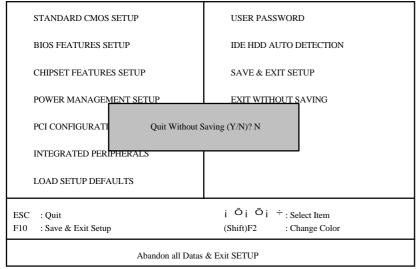
Abandon all Datas & Exit SETUP

Figure 4.11: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS SRAM.

Type "N" will return to Setup Utility.

5. AT TECHNICAL INFORMATION

5.1. I/O BUS CONNECTOR PIN OUT

5.1.1. ISA SLOT PIN OUT

GND	B01	A01	-I/O CH CHK
RESET	B02	A02	SD07
+5V	B03	A03	SD06
IRQ9	B04	A04	SD05
-5V	B05	A05	SD04
DRQ2	B06	A06	SD03
-12V	B07	A07	SD02
0WS	B08	A08	SD01
+12V	B09	A09	SD00
GND	B10	A10	-I/O CH RDY
-SMEMW	B11	A11	AEN
-SMEMR	B12	A12	SA19
-IOW	B13	A13	SA18
-IOR	B14	A14	SA17
-DACK3	B15	A15	SA16
-DRQ3	B16	A16	SA15
-DACK1	B17	A17	SA14
-DRQ1	B18	A18	SA13
-REFRESH	B19	A19	SA12
BCLK	B20	A20	SA11
IRQ7	B21	A21	SA10
IRQ6	B22	A22	SA09
IRQ5	B23	A23	SA08
IRQ4	B24	A24	SA07
IRQ3	B25	A25	SA06
-DACK2	B26	A26	SA05
T/C	B27	A27	SA04
BALE	B28	A28	SA03
+5V	B29	A29	SA02
OSC	B30	A30	SA01
GND	B31	A31	SA00

-MEMCS16	D01	C01	SBHE
-I/OCS16	D02	C02	LA23
IRQ10	D03	C03	LA22
IRQ11	D04	C04	LA21
IRQ12	D05	C05	LA20
IRQ15	D06	C06	LA19
IRQ14	D07	C07	LA18
-DACK0	D08	C08	LA17
DRQ0	D09	C09	-MEMR
-DACK5	D10	C10	-MEMW
DRQ5	D11	C11	SD08
-DACK6	D12	C12	SD09
DRQ6	D13	C13	SD10
-DACK7	D14	C14	SD11
DRQ7	D15	C15	SD12
+5V	D16	C16	SD13
-MASTER	D17	C17	SD14
GND	D18	C18	SD15

5.1.2. PCI - BUS SLOT PIN OUT

-12V	B01	A01	NC					
NC	B02	A02	+12V					
GND	B03	A03	NC					
NC	B04	A04	NC					
VCC	B05	A05	VCC					
VCC	B06	A06	INTA#					
INTB#	B07	A07	INTC#					
INTD#	B08	A08	VCC					
PST#1	B09	A09	NC					
NC	B10	A10	VCC					
PST#2	B11	A11	NC					
GND	B12	A12	GND					
GND	B13	A13	GND					
NC	B14	A14	NC					
GND	B15	A15	RST#					
CLK	B16	A16	VCC					
GND	B17	A17	GNT#					
REQ#	B18	A18	GND					
VCC	B19	A19	NC					
AD_31	B20	A20	AD_30	NC	B41	A41	SBO#
AD_29	B21	A21	NC	SERR#	B42	A42	GND
GND	B22	A22	AD_28	NC	B43	A43	PAR
AD_27	B23	A23	AD_26	CBE#1	B44	A44	AD_15
AD_25	B24	A24	GND	AD_14	B45	A45	NC
NC	B25	A25	AD_24	GND	B46	A46	AD_13
CBE#3	B26	A26	IDSEL	AD_12	B47	A47	AD_11
AD_23	B27	A27	NC	AD_10	B48	A48	GND
GND	B28	A28	AD_22	GND	B49	A49	AD_09
AD_21	B29	A29	AD_20				
AD_19	B30	A30	GND	AD_08	B52	A52	CBE#0
NC	B31	A31	AD_18	AD_07	B53	A53	NC
AD_17	B32	A32	AD_16	NC	B54	A54	AD_06
CEB#2	B33	A33	NC	AD_05	B55	A55	AD_04
GND	B34	A34	FRAME#	AD_03	B56	A56	GND
IRDY#	B35	A35	GND	GND	B57	A57	AD_02
NC	B36	A36	TRDY#	AD_01	B58	A58	AD_00
DEVSEL#	B37	A37	GND	VCC	B59	A59	VCC
GND	B38	A38	STOP#	NC	B60	A60	NC
LOCK#	B39	A39	NC	VCC	B61	A61	VCC
PERR#	B40	A40	SDONE	VCC	B62	A62	VCC

5.2. I/O & MEMORY MAP

MEMORY MAP:

[0000000-009FFFFF]	System memory used by DOS and application program.
[00A0000-00BFFFF]	Display buffer memory for VGA/ EGA/CGA/MONOCHROME adapter.
[00C0000-00DFFFF]	Reserved for I/O device BIOS ROM or RAM buffer.
[00E0000-00EFFFF]	Reserved for PCI device ROM.
[00F0000-00FFFFF]	System BIOS ROM.
[0100000-BFFFFFF]	System extension memory.

I/O MAP:

[000-01F]	DMA controller.(Master)
[020-021]	INTERRUPT controller.(Master)
[022-023]	CHIPSET control registers I/O ports.
[040-05F]	TIMER control registers.
[060-06F]	KEYBOARD interface controller.(8042)
[070-07F]	RTC ports & CMOS I/O ports.
[080-09F]	DMA register.
[0A0-0BF]	INTERRUPT controller.(Slave)
[0C0-0DF]	DMA controller.(Slave)
[0F0-0FF]	MATH COPROCESSOR
[1F0-1F8]	HARD DISK controller.
[278-27F]	PARALLEL port-2.
[2B0-2DF]	GRAPHICS adapter controller.
[2F8-2FF]	SERIAL port-2.
[360-36F]	NETWORK ports.
[378-37F]	PARALLEL port-1
[3B0-3BF]	MONOCHROME & PRINTER adapter.
[3C0-3CF]	EGA adapter.
[3D0-3DF]	CGA adapter.
[3F0-3F7]	FLOPPY DISK controller.
[3F8-3FF]	SERIAL port-1.

5.3. TIMER & DMA CHANNELS MAP

TIMER MAP: TIMER Channel-0 System timer interrupt

                           TIMER Channel-1 DRAM REFRESH request

                           TIMER Channel-2 SPEAKER tone generator

DMA CHANNELS: DMA Channel-0 Available

                           DMA Channel-1 IBM SDLC

                           DMA Channel-2 FLOPPY DISK adapter

                           DMA Channel-3 Available

                           DMA Channel-4 Cascade for DMA controller 1

                           DMA Channel-5 Available

                           DMA Channel-6 Available

                           DMA Channel-7 Available

5.4. INTERRUPT MAP

NMI: Parity check error

IRQ (H/W):   0 System TIMER interrupt from TIMER-0

                  1 KEYBOARD output buffer full

                  2 Cascade for IRQ 8-15

                  3 SERIAL port 2

                  4 SERIAL port 1

                  5 PARALLEL port 2

                  6 FLOPPY DISK adapter

                  7 PARALLEL port 1

                  8 RTC clock

                  9 Available

                  10 Available

                  11 Available

                  12 Available

                  13 MATH coprocessor

                  14 HARD DISK adapter

                  15 Available

5.5. RTC & CMOS RAM MAP

RTC & CMOS:	00	Seconds
	01	Second alarm
	02	Minutes
	03	Minutes alarm
	04	Hours
	05	Hours alarm
	06	Day of week
	07	Day of month
	08	Month
	09	Year
	0A	Status register A
	0B	Status register B
	0C	Status register C
	0D	Status register D
	0E	Diagnostic status byte
	0F	Shutdown byte
	10	FLOPPY DISK drive type byte
	11	Reserve
	12	HARD DISK type byte
	13	Reserve
	14	Equipment byte
	15	Base memory low byte
	16	Base memory high byte
	17	Extension memory low byte
	18	Extension memory high byte
	19-2d	
	2E-2F	
	30	Reserved for extension memory low byte
	31	Reserved for extension memory high byte
	32	DATE CENTURY byte
	33	INFORMATION FLAG
	34-3F	Reserve
	40-7f	Reserved for CHIPSET SETTING DATA

APPENDIX A: PROBLEM SHEET

1. Customer Data

Name   Tel. No.

Address   Fax. No.

                                                              Purchase Date

2. Mainboard Date

Model NO.   GA-   Rev. No.

Serial No.

3. System Configuration

CPU Type:

CPU Brand:

CPU Speed:

DRAM Type:	❏ 1	❏ 2	❏ 4	❏ 8	❏ 16	❏ 32 MB
DRAM Speed:	❏ 80	❏ 70	❏ 60 ns			

DRAM Total Size: MB

DRAM Brand:

SRAM Size:	❏ 64KB	❏ 128 KB	❏ 256 KB		❏ 512 KB

SRAM Part No.   TAG: DATA:

Video Card:

Video Chip or Brand:

Floppy Drive A Capacity & Brand:

Floppy Drive B Capacity & Brand:

Storage Controller Type	❏ MFM	❏ RLL	❏ IDE	❏ EDSI	❏ SCSI

Hard Drive C Brand & Type:

Hard Drive D Brand & Type:

LAN Controller Type:

LAN Card Brand & Model:

Serial / Parallel Chip Brand & Model:

Mouse Brand & Model:

O.S.	❏ DOS	❏ OS/2	❏ NETWARE	❏ UNIX / XENIX Ver.:

4. AUTOEXEC.BAT & CONFIG.SYS File:

5. Problem Description:

R-10-02-071106

APPENDIX B: FCC DOCUMENT

DECLARATION OF CONFORMITY
Per FCC Part 2 Section 2. 1077(a)

FC

Responsible Party Name: G.B.T. INC.

**Address: 18305 Valley Blvd., Suite#A
LA Puent, CA 91744**

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Mother Board

Model Number: GA686BLX

Conforms to the following specifications

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a),
Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the
following two conditions: (1) This device may not cause harmful interference
and (2) this device must accept any inference received, including interference
that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: *Eric Lu*

Date: Aug. 14, 1997

FCC Compliance Statement:

This equipment has been tested and found to comply with limits for a Class B digital device , pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna

-Move the equipment away from the receiver

-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

-Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.

This device complies with Part 15 of the FCC Rules. Operation is subjected to the following two conditions 1) this device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Trading GMBH
Ausschlager Weg 41, 1F, 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Mother Board
GA-686BLX

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM high frequency equipment	☐ **EN 61000-3-2*** ☒ **EN60555-2**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics"
☐ **EN55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN61000-3-3*** ☒ **EN60555-3**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ **EN 50081-1**	Generic emission standard Part 1: Residual, commercial and light industry
		☒ **EN 50082-1**	Generic immunity standard Part 1: Residual, commercial and light industry
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Generic emission standard Part 2: Industrial environment
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 55082-2**	Generic immunity standard Part 2: Industrial environment
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunity requirements for household appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ **EN 50091- 2**	EMC requirements for uninterruptible power systems (UPS)

☒ **CE marking** $C\epsilon$ (EC conformity marking)

The manufacturer also declares the conformity of above mentioned product
with the actual required safety standards in accordance with LVD 73/23 EEC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	Safety for information technology equipment including electrical business equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

Signature : _Rex Lin_

(Stamp)   Date :   Oct. 25, 1997   Name   :   Rex Lin

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