Declaration of conformity

CE

QUANTUM DESIGNS(HK) LTD.
5/F Somerset House, TaiKoo Place 979 Kings Road,
Quarry Bay, Hong Kong

declares that the product

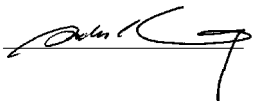
Mainboard
Superb 2

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

☑	EN 55022	Limits and methods of measurements of radio disturbance characteristics of information technology equipment
☑	EN 50081-1	Generic emission standard Part 1: Residential, commercial and light industry
☑	EN 50082-1	Generic immunity standard Part 1: Residential, commercial and light industry

European Representative:

QDI COMPUTER (UK) LTD	QDI COMPUTER (SCANDINAVIA) A/S
QDI SYSTEM HANDEL GMBH	QDI COMPUTER (NETHERLANDS) B. V.
QDI COMPUTER (FRANCE) SARL	QDI COMPUTER HANDELS GMBH
QDI COMPUTER (ESPANA) S.A.	QDI COMPUTER (SWEDEN) AB

Signature :  Place / Date : HONG KONG/1999

Printed Name : Anders Cheung Position/ Title : President

Declaration of conformity

Trade Name:	QDI Computer (U. S . A.) Inc.
Model Name:	Superb 2
Responsible Party:	QDI Computer (U. S. A.) Inc.
Address:	41456 Christy Street Fremont, CA 94538
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Equipment Classification:	FCC Class B Subassembly
Type of Product:	Mainboard
Manufacturer:	**Quantum Designs (HK) Inc.**
Address:	5/F, Somerset House, TaiKoo Place 979 Kings Road, Quarry Bay, HONG KONG

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 interference received, including interference that may cause undesired operation.

Signature : _____ Date : 1999

CONTENTS

CONTENTS

As widely known, SpeedEasy has been an advanced innovation of QDI.

As the development of Intel' s new processor, the bus ratio of the processor has been locked, it' s not necessary to setup the bus ratio either by hardware jumper or software BIOS. After installing the Intel Celeron™ processor, setup the bus speed in "Chipset Features Setup" section of the BIOS.

We provide users with CPU overclock feature. The bus speed can be set as 66/75/83/100/112MHz. However, whether or not your system can be overclocked depends on your processor' s capability. We do not guarantee the overclock system to be stable.

"CPU Clock Ratio Jumpless" option is reserved for bus ratio unlocked processor. For bus ratio locked processor, this option doesn' t work.

For detailed information, please refer to "Chipset Features Setup" section of the BIOS.

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Chapter 1
Introduction

Overview

The Superb 2 green mainboard utilizes the SiS620 chipset which integrates 2D/3D graphics and video acceleration, providing a highly integrated solution for fully compatible, high performance and cost-effective PC/microATX platform. It provides 66/100MHz system bus support for all Intel Celeron™ PPGA 370 processors. Both 66MHz and 100MHz SDRAMs are supported. It also provides advanced features such as wake-up on LAN, wake-up on internal/external modem and keyboard password power-on function. The mainboard also offers optionally integrated Yamaha PCI audio for an exceptional AC' 97 audio subsystem. The green function is in compliance with the ACPI specification.

Key Features

Form factor

- MicroATX form factor of 244mm x 201mm.

Microprocessor

- Supports Intel Celeron™ PPGA 370 processors at 300A/333/366/400/433/466MHz and future processors.
- Supports 66/100MHz host bus speed.
- CPU core supply voltage adjustable from 1.3V to 3.5V through on- board switching voltage regulator with VID(Voltage ID).

Chipset

- SiS620 :System Controller Integrated 3D Graphics
- SiS5595:PCI-to-ISA Bridge

System memory

- Provides three 168 pin 3.3V unbuffered DIMM sockets.
- Supports both 66MHz and 100MHz SDRAMs.
- Minimum memory size is 8MB, maximum memory size is 768MB.
- SDRAM 64 bit data interface with ECC support.

Onboard IDE

- Supports two PCI PIO and Bus Master IDE ports.
- Two fast IDE interfaces supporting four IDE devices including IDE hard disks and

CD - ROM drives.

- Supports up to PIO Mode 4 timing.
- Supports "Ultra DMA/33" and "Ultra DMA/66" Synchronous DMA mode transferring up to 33/66 Mbytes/sec.
- Integrated 16x32bit buffer for IDE PCI Burst Transfers.

Onboard I/O

- Use SiS6801 super I/O chip.
- One floppy port supporting up to two 3.5' ' or 5.25" floppy drives with 360K/720K/1.2M/1.44M/2.88M format.
- Two high speed 16550 compatible UARTs(COM1/COM2/COM3/COM4 selective) with 16-byte send/receive FIFOs.
- One enabled parallel port at the I/O address 378H/278H/3BCH with additional bi-direction I/O capability and multi-mode as SPP/EPP/ECP (IEEE 1284 compliant).
- Circuit protection provided, preventing damage to the parallel port when a connected printer is powered up or operates at a higher voltage.
- Supports LS-120 floppy disk drive.
- Supports ZIP drives.
- All I/O ports can be enabled/disabled in the BIOS setup.

Onboard AGP

- Based on the onchip AGP graphics controller, integrated 2D/3D graphics and video accelerators.
- AGP 1.0/2.0 specification compliant.
- Onboard 8MB SDRAM display memory achieves optimum 2D/3D performance (manufacturing option).
- Supports shared memory to 8MB when no display memory is on board.
- Supports a maximum resolution of 1600x1200 at 85Hz when having 8MB onboard video SDRAM.

Onboard Audio

- Based on Yamaha YMF740 PCI audio controller and AC 97 audio decoder.
- Compatible with Sound Blaster™, Sound Blaster Pro™ and Windows Sound System ™.
- PC97/PC98 specification compliant.
- Provides onboard Line-in Jack, Speaker-out Jack and Microphone-in Jack.

Advanced features

- PCI 2.2 specification compliant.
- Provides Anti-Virus function.
- Provides on-board PS/2 mouse and PS/2 keyboard ports.
- Two USB ports supported.

- Provides infrared interface.
- Supports Windows 95/98 software power-down.
- Supports wake-up on LAN and wake-up on internal/external modem.
- Supports auto fan off when the system enters suspend mode.
- Provides onboard 3.3V regulator to support ATX power supply without 3.3V output.
- Supports system monitoring (integrated in SiS5595), monitors system voltages and fan speed.
- Provides management application such as ManageEasy and LDCM(LANDesk® Client Manager). (manufacturing option)
- Supports keyboard password power-on function.

BIOS

- Licensed advanced AWARD BIOS, supports flash ROM with 2MB memory size, plug and play ready.
- Supports IDE CD-ROM or SCSI boot up.

Green function

- Supports ACPI (Advanced Configuration and Power Interface) and ODPM (OS Directed Power Management).
- Supports three green modes: Doze, Standby and Suspend.

Expansion slots

- 2 ISA slots and 3 PCI slots.

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Chapter 2

Installation Instructions

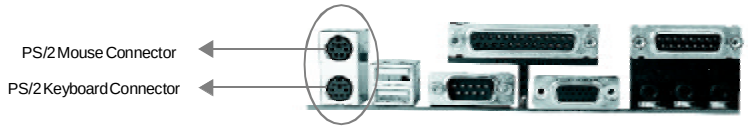
This section covers External Connectors, Jumper Settings and Memory Configuration. Refer to the mainboard layout chart for locations of all jumpers, external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The particular state of the jumpers, connectors and ports are illustrated in the following figures. Before setting the jumpers or inserting these connectors, please pay attention to the directions.

Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, otherwise your mainboard and expansion cards might be seriously damaged.

External Connectors

PS/2 Keyboard Connector, PS/2 Mouse Connector

PS/2 keyboard connector is for the usage of PS/2 keyboard. If using a standard AT size keyboard, an adapter should be used to fit this connector. PS/2 mouse connector is for the usage of PS/2 mouse.

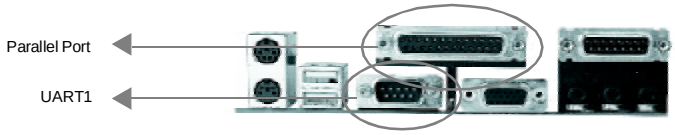


USB1, USB2

Two USB ports are available for connecting USB devices.

Parallel Port Connector and Serial Port Connector (UART1, UART2)

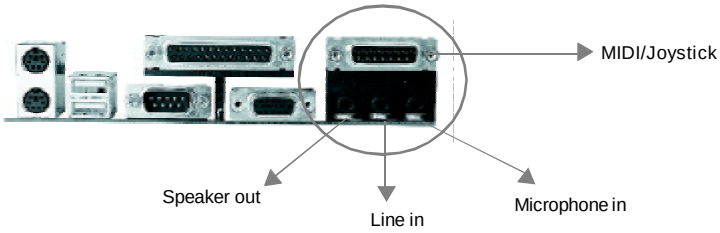
The parallel port connector can be connected to a parallel device such as a printer, while the serial port connectors can be connected to serial port devices such as a serial port mouse. You can enable/disable them and choose the IRQ or I/O address in "Integrated Peripherals" from AWARD BIOS SETUP.



The serial port UART2 is not available on the back panel. Therefore, we provide a 9-pin ribbon cable with bracket for UART2 port. (manufacturing option)

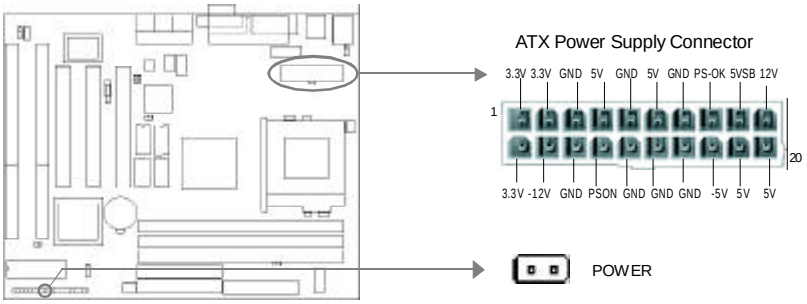
Line-in jack, Microphone-in jack, Speaker-out jack and MIDI/Joystick connector

The Line-in jack can be connected to devices such as a cassette or minidisc player for playback or recording. The Microphone-in jack can be connected to a microphone for voice input. The Speaker-out jack allows you to connect speakers or headphones for audio output from the internal amplifier.
The MIDI/Joystick connector allows you to connect a game joystick or a MIDI device.



ATX Power Supply Connector & Power Switch (POWER)

Be sure to connect the power supply plug to this connector in its proper orientation. The power switch (POWER) should be connected to a momentary switch. When powering up your system, first turn on the mechanical switch of the power supply (if one is provided), then push once the power switch. When powering off the system, you needn't turn off the mechanical switch, just ***Push once*** the power switch.



Note:

1. If you change "soft-off by PWR-BTTN" from default "Instant-off" to "Delay 4 Secs" in the "POWER MANAGEMENT SETUP" section of the BIOS, the power switch should be pressed for more than 4 seconds before the system powers down.

2. Push the power switch once, within 10 seconds, the AC power supply powers on, enabling the system to be powered on.

Hard Disk LED Connector (HD_LED)

The connector connects to the case' s IDE indicator LED indicating the activity status of IDE hard disk. The connector has an orientation. If one way doesn' t work, try the other way.

Reset Switch (RESET)

The connector connects to the case' s reset switch. Press the switch once, the system resets. However, press the switch for more than 4 seconds, the system will be powered off.

Speaker Connector (SPEAKER)

The connector can be connected to the speaker on the case.

Power LED Connector (PWR_LED)

The power LED has two status. When the system is in power-off status, the LED is off. When the system is powered up, the LED is on. The connector has an orientation.

Key-Lock Connector (KEY_L)

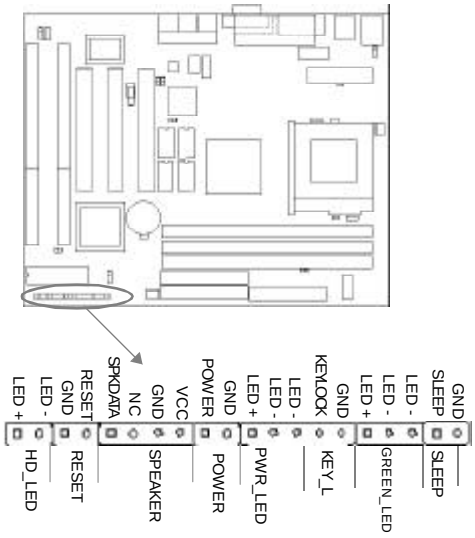
The connector can be connected to the keyboard lock switch on the case for locking the keyboard.

ACPI LED Connector (GREEN_LED)

The ACPI LED has three status. When the system is in power-off status, the LED is off. When the system is powered up, the LED is on. When the system enters suspend mode, the LED will flash. The connector has an orientation.

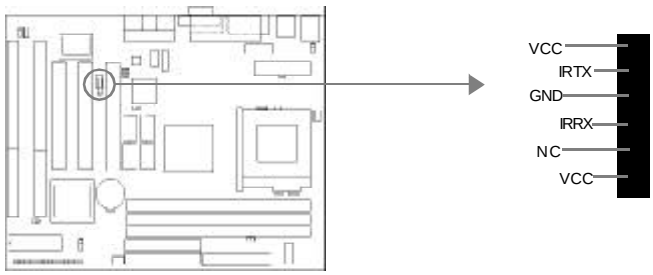
Hardware Green Connector (SLEEP)

Push once the switch connected to this header, the system enters suspend mode.



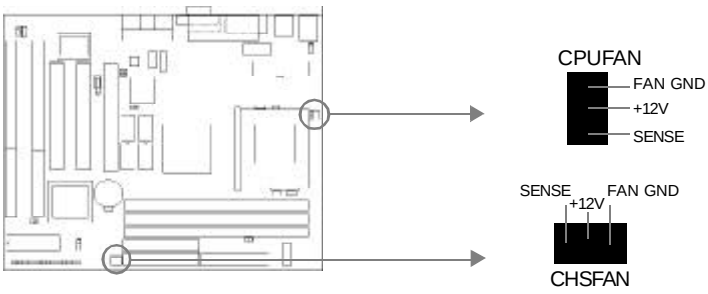
Infrared Header (IrDA)

This connector supports wireless transmitting and receiving. When using this function, configure the settings for IR Address, IR Mode and IR IRQ from the "INTEGRATED PERIPHERALS" section of the BIOS.



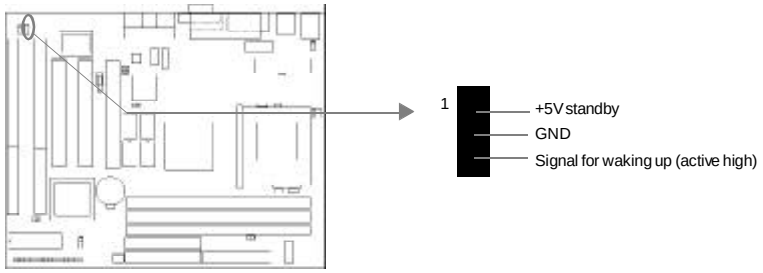
Fan Connector (CPUFAN, CHSFAN)

The fan speed of these two fans can be detected and viewed in "Integrated Peripherals" section of the BIOS. These two fans will be automatically turned off after the system enters suspend mode.



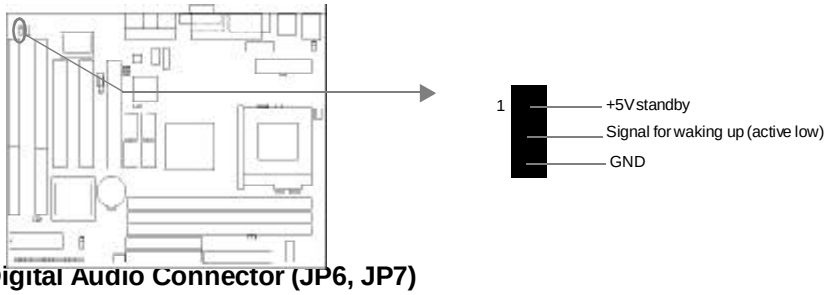
Wake-Up On LAN (WOL)

Through the Wake-Up On LAN function, a wake event occurring from the network can wake up the system. If this function is to be used, please be sure an ATX 2.01 power supply of which 5VSB line is capable of delivering 720mA, and a LAN adapter which supports this function is used. Then connect this header to the relevant connector on the LAN adapter, set "Ring/LAN Power Up Control" as Enabled in the "POWER MANAGEMENT SETUP" section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.



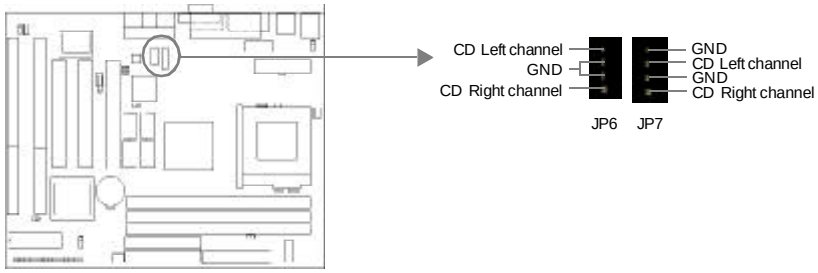
Wake-Up On Internal Modem (WOM)

Through the Wake-Up On Internal Modem function, the system which is in the power-off status can be powered on by a ring signal received from the internal modem. If this function is to be used, be sure an internal modem card which supports the function is used. Then connect this header to the relevant connector on the modem card, set "Ring/LAN Power Up Control" to Enabled in the "POWER MANAGEMENT SETUP" section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.



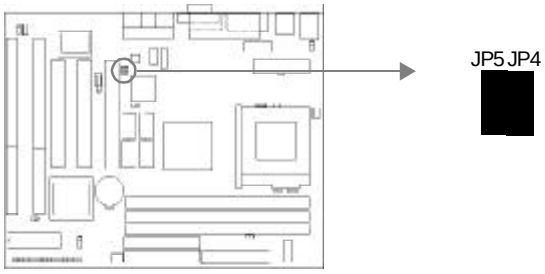
Digital Audio Connector (JP6, JP7)

JP6 is a Sony standard CD audio connector, and JP7 is a Mitsumi standard CD audio connector. They can be connected to a CD-ROM drive respectively through a CD audio cable.



Hardware Volume Control (JP4, JP5)

The onboard audio allows volume control with a push-switch operation. A single-push on the JP5 switch increases volume level by 1.5dB, while a single-push on the JP4 switch attenuates it by 1.5dB. Simultaneous pushing both switches S1 and S2 enables output muting.



Expansion Slots & I/O Ports description

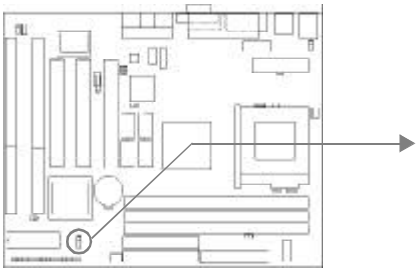
Slot / Port	Description
ISA 1	First ISA slot.
ISA2	Second ISA slot.
PCI1	First PCI slot.
PCI2	Second PCI slot.
PCI3	Third PCI slot.
IDE1	Primary IDE port.
IDE2	Secondary IDE port.
FLOPPY	Floppy Drive Port.

Jumper Settings

Jumpers are located on the mainboard, they represent, clear CMOS jumper JCC, enable keyboard password power-on function jumper JKB, and enable/disable onboard audio jumper JP3. Pin 1 for all jumpers are located on the side with a thick white line (Pin1→), referring to the mainboard' s silkscreen. Jumpers with three pins will be shown as to represent pin1 & pin2 connected and to represent pin2 & pin3 connected.

Clear CMOS (JCC)

If you want to clear CMOS, unplug the AC power supply first, close JCC (pin1 & pin2) once, set JCC back to the normal status with pin2 & pin3 connected, then power on the system.



Normal status:

JCC

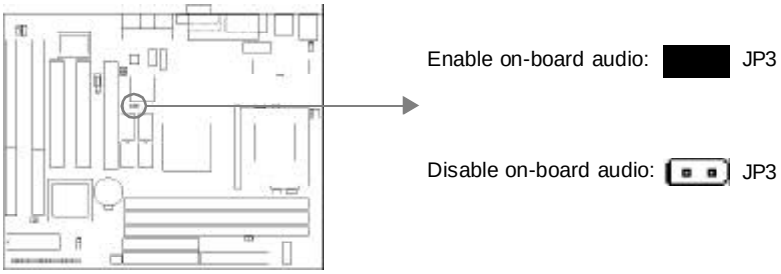
Clear CMOS:

JCC

(Unplug the AC power supply)

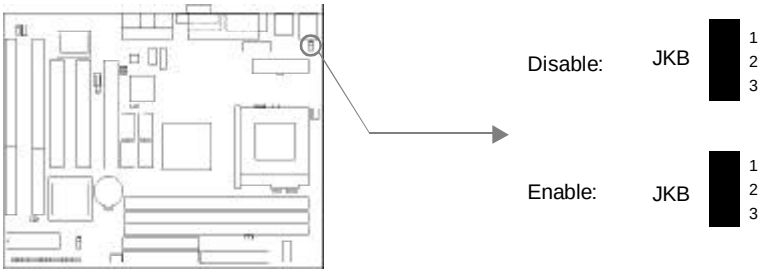
Enable/Disable on-board audio(JP3)

If you want to use the on-board audio, close JP3(default). Otherwise, set JP3 open to disable the on-board audio.



Enable keyboard password power-on function (JKB)

The mainboard provides the advanced keyboard password power-on function. When wanting to use this function, set JKB with pin1 & pin2 closed.Otherwise, set JKB with pin2 & pin3 closed for disabling this function.



In order to implement this function, set "KB Power On Password" from the "Power Management Setup" section of the BIOS. Then you can power up the system either by using the keyboard or by the power switch.

Note:

1. If using this function, 5VSB line of the power supply should be capable of delivering enough current (eg. 200mA) for all the devices connected to the keyboard port, if not, you will be unable to power up the system using the keyboard.

2. If the AC power supply cuts off, the keyboard power on password should be set again when the AC power supply resumes, in order to implement this function.

Memory Configuration

This mainboard provides three 168 pin 3.3V un-buffered DIMM sockets to support a flexible memory size ranging from 8MB to 384MB. Both 66MHz and 100MHz SDRAMs are supported. The following set of rules allows optimum configurations.

- The DRAM Timing register, which provides the DRAM speed grade control for the entire memory array, must be programmed to use the timing of the slowest DRAMs installed.
- Possible SDRAM DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB in each DIMM socket.

Chapter 3
BIOS Description

Utility Support:

FLASH.EXE

This is a flash memory write/read utility used for the purpose of upgrading your BIOS when necessary. Before doing so, please note:

- **We strongly recommend you only upgrade BIOS when encountering problems.**
- **Before upgrading your BIOS, review the description below to avoid making mistakes, destroying the BIOS and resulting in a non-working system.**

When you are encountering problems, for example, you find your system doesn't support the new CPU which is released after our current mainboard, you may therefore upgrade the BIOS.

Follow the steps exactly for a successful upgrade.

1. Create a bootable system floppy diskette, by typing Format A:/s from the DOS prompt under DOS6.xx or Windows 9x environment.

2. Copy FLASH.EXE from the directory \Utility located on the QDI Mainboard Utility CD onto your new bootable diskette.

3. Download the updated BIOS file from the Website (http://www.qdigrp.com). Please be sure to download the suitable BIOS file for your mainboard.

4. Uncompress the file download, copy the BIOS file (xx.bin) onto the bootable diskette, and note the checksum of this BIOS which is located in readme file.

5. Reboot the system from the bootable diskette created.

6. Then run the FLASH utility at the **A:** prompt. During the process, the system will prompt : ' Do you want to save the BIOS(Y/N)' . If you type ' Y' , the system will prompt for the BIOS name. The system will also display the checksum which should be exactly the same as the checksum you copied from the readme file. Don't turn off power or reset the system until the BIOS upgrade has been completed.

Concerning how to run the FLASH utility, please refer to the following descriptions:

Usage: FLASH [BIOSfile] [/c[<command...>]][/n]

FLASH [BIOSfile] [/g]

/c: Flashing memory will clear previous settings. Default allows settings to remain.

<command> function definition:

c: clear CMOS;

p: clear PnP;

d: clear DMI.

/n: programs BIOS without prompting. If this option is chosen:

Be sure your new BIOS is compatible with your mainboard. If not, the system will be damaged.

/g: Retrieves BIOS file from BIOS ROM.

Examples:

A:\FLASH.EXE BIOSfile.bin

A:\FLASH.EXE BIOSfile.bin /cdpc/n

A:\FLASH.EXE BIOSfile.bin /g

Note: FLASH utility runs incorrectly at Windows DOS prompt.

AWARD BIOS Description

Entering Setup

Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press the <Ctrl> + <Alt> + <Esc> keys, to enter the AWARD BIOS CMOS Setup Utility.

Press <Del> to enter SETUP

Once you have entered, the Main Menu (Figure 1) appears on the screen. The main menu allows you to select from nine setup functions and two exit choices. Use the arrow keys to select among the items and press the <Enter> key to accept or enter the sub-menu.

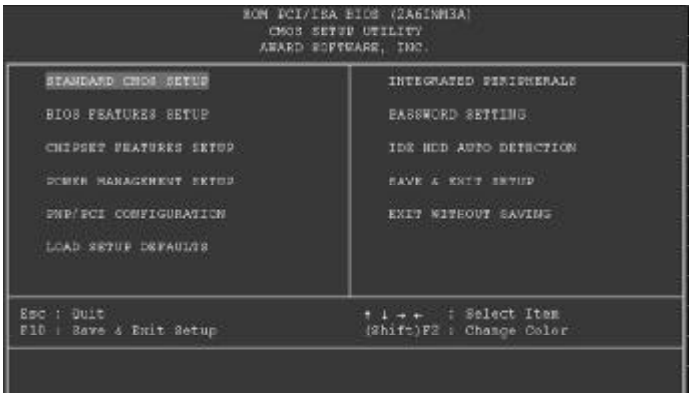


Figure-1 Main Menu

Load Setup Defaults

The Setup Defaults are common and efficient. It is recommended that users load the setup defaults first, then modify the needed configuration settings.

Standard CMOS Setup

The basic CMOS settings included in "Standard CMOS Setup" are Date, Time, Hard Disk Drive Types, Floppy Disk Drive Types, and VGA etc. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Figure-2 Standard CMOS Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

These categories identify the HDD types of 2 IDE channels installed in the computer system. There are three choices provided for the Enhanced IDE BIOS: None, Auto, and User. "None" means no HDD is installed or set; "Auto" means the system can auto-detect the hard disk when booting up; by choosing "user", the related information should be entered regarding the following items. Enter the information directly from the keyboard and press < Enter>:

CYLS	number of cylinders	HEAD	number of heads
PRECOMP	write pre-compensation	LANDZ	landing zone
SECTOR	number of sectors	MODE	HDD access mode

Video

Set this field to the type of video display card installed in your system.

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

Halt On

This category determines whether or not the computer will stop if an error is detected during powering up.

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

Memory

This is a Display-Only Category, 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.
Extended Memory	The BIOS determines how much extended memory is presented during the POST.
Other Memory	This is the memory that can be used for different applications. Shadow RAM is most used in this area.
Total Memory	Total memory of the system equals the sum of the above memory.

BIOS Features Setup

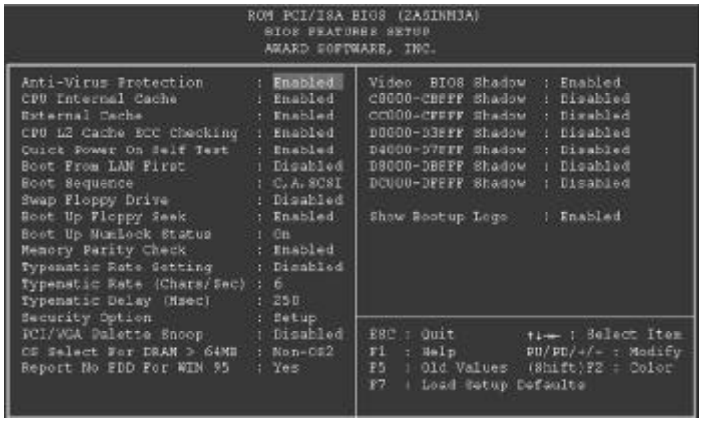


Figure-3 BIOS Features Setup Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
● Anti-Virus Protection	*Enabled*	Activated automatically when the system boots, causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
	Disabled	No warning message appears.
● CPU Internal Cache	*Enabled*	Enabling this option speeds up memory access.
	Disabled	However, it depends on CPU/chipset design.
● External Cache	*Enabled*	Enables external L2 cache. This allows better performance.
	Disabled	Disables external cache.
● CPU L2 Cache ECC Checking	*Enabled*	Enables CPU L2 Cache ECC (Error Checking and Correction) function.
	Disabled	Disables CPU L2 Cache ECC function.
● Quick Power On Self Test	*Enabled*	Enables quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer.
	Disabled	Normal POST.
● Boot From LAN First	*Enabled*	Boot from LAN is ahead of any boot sequence selection (LAN Adapter must support this function).
	Disabled	Does not boot from LAN first.

• Boot Sequence	*C,A,SCSI,... C,CDROM,A LS/ZIP, C*	Any of these search sequence can be chosen for booting.
• Swap Floppy Drive	*Enabled*	Exchanges the assignment of A&B floppy drives.
	Disabled	The assignment of A&B floppy drives are normal.
• Boot Up Numlock Status	*On*	Keypad is used as number keys.
	Off	Keypad is used as arrow keys.
• Memory Parity check	*Enabled*	Enables the Error Checking & Correction if ECC memory is used.
	Disabled	Disables the ECC function.
• Typermatic Rate Setting	*Enabled*	Enables typermatic rate and typermatic programming.
	Disabled	Disables typermatic rate and typermatic programming. The system BIOS will use the default value of these two items.
• Typermatic Rate (chars/sec)	*6-30*	Sets the speed of the typermatic rate (characters per second).
• Typermatic Delay (Msec)	*250-1000*	Sets the time of the typermatic delay.
• Security Option	*System*	The system will not boot and access to Setup will be denied if the correct password is not entered when prompted.
	Setup	The system will boot up, but access to Setup will be denied if the correct password is not entered when prompted.
• PCI/VGA Palette Snoop	*Enabled*	Non-standard VGA cards such as graphics accelerators or MPEG video cards may not show colors properly. Enabling this can solve this problem.
	Disabled	
• OS Select For DRAM>64MB	*Non-OS2*	If your operating system is not OS/2, please select this item.
	OS2	If system DRAM is more than 64MB and the operating system is OS/2, please select this item.
• Report NO FDD for WIN 95	*Yes*	Reports NO Floppy Disk Drive for WIN 95 to release IRQ6.
	No	Does not report No Floppy Disk Drive for WIN 95.
• Video BIOS Shadow	*Enabled*	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	Disabled	Video shadow is disabled.
• C8000~CBFFF Shadow: DC000-DFFFF Shadow:	*Enabled*	Optional ROM will be copied to RAM by 16K bytes per unit.
	Disabled	The shadow function is disabled.
• Show Bootup Logo	*Enabled*	Enables the Logo when system boots up.
	Disabled	Logo will not be shown when system boots up.

Chipset Features Setup

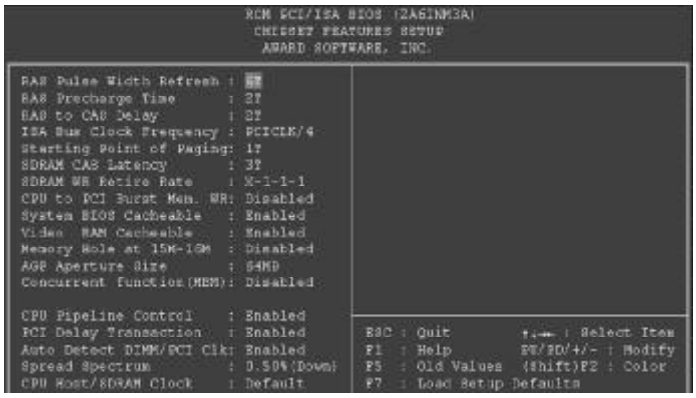


Figure-4 Chipset Features Setup Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
• RAS Pulse Width Refresh	*4T-7T*	Sets RAS pulse width. The smaller width enables higher performance.
• RAS Precharge Time	*2T-5T*	Default setting is suggested.
• RAS To CAS Delay	*2T-5T*	Adds a delay time between the assertion of RAS and CAS. Without additional delay time.
• ISA Bus Clock Frequency	*PCICLK/3-PCICLK/4 7.159MHz*	Chooses the ISA bus clock.
• Starting Point of Paging	*1T/2T/4T /8T*	Default setting is suggested.
• SDRAM CAS Latency	*2T* *3T*	Contains the information for SDRAM initialization procedure.
• SDRAM WR Retire Rate	*x-2-2-2* *x-1-1-1*	Controls the timing in which SIS620 writes data into SDRAM during burst cycles.
• CPU to PCI Burst Mem. WR	*Enabled* *Disabled*	Default setting is suggested.
• System BIOS Cacheable	*Enabled* *Disabled*	Besides conventional memory, the system BIOS area is also cacheable.
• Video RAM Cacheable	*Enabled*	Besides conventional memory, video RAM area is also cacheable.
	Disabled	Video RAM area is not cacheable.

● Memory hole at 15M-16M	*Enabled*	Memory hole at 15-16M is reserved for expanded ISA card.
	Disabled	Does not set this memory hole.
● AGP Aperture Size (MB)	*4~256*	Sets the effective size of the Graphics Aperture to be used in the particular PAC Configuration.
● Concurrent function (MEM)	*Enabled*	Default settiing is suggested.
	Disabled	
● CPU Pipeline Control	*Enabled*	There might be more than two pending cycles at one time depending on the CPU performance.
	Disabled	Only one pending cycle is allowed at one time.
● PCI Delay Transaction	*Enabled*	Default setting is suggested.
	Disabled	
● Auto Detect DIMM/PCI CLK	*Enabled*	Closes empty DIMM/PCI clock to reduce EMI.
	Disabled	Does not close empty DIMM/PCI clock.
● Spread Spectrum	*0.25%/0.50%*	Enables Spread Spectrum to reduce EMI.
	Disabled	Disables Spread Spectrum.
● CPU Host/SDRAM Clock	*Default*	Default setting is 66/66MHz.
	66/66MHz	Sets CPU Host Bus Clock and SDRAM clock as
	75/75MHz	66/66MHz, 75/75MHz, 83/83MHz, 100/100MHz
	83/83MHz	or 112/112MHz.
	100/100MHz	
	112/112MHz	
● CPU Clock Ratio Jumpless	*Enabled*	The CPU bus ratio can be selected from 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5 and 8.0. Sets the CPU bus ratio according to your processor type. For bus ratio locked processor, this option doesn' t work.
	Disabled	*Disables this* option.

Power Management Setup

Figure-5 Power Management Setup Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
• ACPI function	*Disabled*	Invalidates ACPI function.
	Enabled	Validates ACPI function.
• Power Management	*Disabled*	Global Power Management (PM) will be disabled.
	User Define	Users can configure their own Power Management Timer.
	Min Saving	Pre - defined timer values are used. All timers are in their MAX values.
	Max Saving	Pre - defined timer values are used. All timers are in their MIN values.
• PM Control by APM	No	System BIOS will ignore APM when Power Management is enabled.
	Yes	System BIOS will wait for APM' s prompt before entering any PM mode e.g. Standby or Suspend. **Note: If APM is installed, and there is a task running, even when the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode. But if APM is not installed, this option has no effect.**
• Video Off Option	*Susp,*	Screen blanks after the system enters suspend mode.
	Stby → Off	Screen blanks after the system enters standby mode.
	Always On	Screen is always on.

● Video Off Method	*Blank Screen*	The system BIOS will only blank off the screen when disabling video.
	V / H SYNC +	In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA cards to monitor.
	DPMS	This function is enabled only for the VGA card supporting DPMS. **Note: When the green monitor does not detect the V/H-SYNC signals, the electron gun will be turned off.**
● Switch Function	*Break/Wake* *Disabled*	Sleep BTTN Enable.
● Doze Speed (div by)	*1/8 ~ 8/8*	Selects the throttling duty cycle 12.5%, 25%..... 87.5%, 100% to slow down the processor speed when the system is in doze mode.
● Stdby Speed	*1/8 ~ 8/8*	Selects the throttling duty cycle 12.5%, 25%..... 87.5%, 100% to slow down the processor speed when the system is in standby mode.
● MODEM Use IRQ (div by)	3, 5, 7, 9, 10, 11 NA	Special wake-up event for Modem.
● Hot Key Function As	*Disabled*	Disables hot key.
	Suspend	Set hot key (CTRL+ALT+Backspace) as suspend /power off key.
	Power Off	
● HDD Off After	*1 ~ 15min*	Defines the continuous HDD idle time before the HDD enters the power saving mode(motor off).
	Disabled	HDD' s motor will not be off.
● Doze mode	*Disabled*	The system never enters Doze mode.
	1Min ~ 1 Hr	Defines the continuous idle time before the system enters Doze mode. If any items defined in " PM Events" are On and activated, the system will be woken up.
● Standby Mode	*Disabled*	The system never enters Standby mode.
	Min ~ 1Hr	Defines the continuous idle time before the system enters Standby mode. If any items defined in " PM Events" are On and activated, the system will be woken up.
● Suspend Mode	*Disabled*	The system never enters Suspend mode.
	Min ~ 1Hr	Defines the continuous idle time before the system enters Suspend mode. If any items defined in " PM Events" are On and activated, the system will be woken up.

• HDD Ports Activity	*Enabled*	HDD ports activity will wake up the system from Doze/Standby/Suspend mode.
	Disabled	HDD ports activity will not wake up the system from Doze/Standby/Suspend mode.
• COM Ports Activity	*Enabled*	COM ports activity will wake up the system from Doze/Standby/Suspend mode.
	Disabled	COM ports activity will not wake up the system.
• LPT Ports Activity	*Enabled*	LPT port activity will wake up the system from Doze/Standby/Suspend mode.
	Disabled	LPT port activity will not wake up the system.
• VGA Activity	*Enabled*	VGA activity reloads global timer.
	Disabled	VGA activity has no influence to global timer.
• IRQ [3-7, 9-15], NMI	*Enabled*	Enables the events which can reload global timer.
	Disabled	Does not influence the global timer.
• IRQ8 Break suspend	*Enabled*	Generates a clock event.
	Disabled	Does not generate a clock event.
• Power Button Over Ride	*Instant Off*	The system will power off immediately once the the power button is pressed.
	Delay 4 Sec	The system will not power off until the power button is pressed continuously for more than 4 seconds.
• Ring/LAN Power up Control	*Enabled*	Allows the system to be powered on when a ring indicator signal comes up to UART1 or UART2 from an external modem or comes up to WOM header from an internal modem card, or a remote wake up signal comes up to the WOL header from LAN adapter.
	Disabled	Does not allow wake up from internal/external modem or wake up on LAN.
• KB Power On Password	*Enter*	Set keyboard power on password.
• Power up by Alarm	*Enabled*	RTC alarm can be used to generate a wake event to power up the system. Set any date or time to power up the system.
	Disabled	RTC has no alarm function.

PNP/PCI Configuration Setup

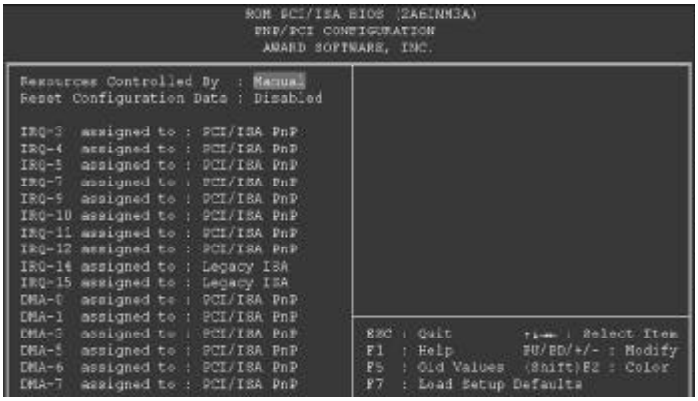


Figure-6 PNP/PCI Configuration Setup Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
● Resources Controlled By	*Manual*	Assigns the system resources (IRQ and DMA) manually .
	Auto	Assigns system resources (IRQ and DMA) automatically by BIOS.
● Reset Configuration Data	*Enabled*	The system BIOS will reset configuration data once, then automatically set this item as Disabled.
	Disabled	Disables the configuration data function.
● IRQ-3~IRQ-15 assigned to	*Legacy ISA*	The specified IRQ-x will be assigned to ISA only.
	PCI/ISA PnP	The specified IRQ-x will be assigned to PNP ISA or PCI.
● DMA-0~DMA-7 assigned to	*Legacy ISA*	The specified DMA-x will be assigned to ISA only.
	PCI/ISA PnP	The specified DMA-x will be assigned to PNP ISA or PCI.

Integrated Peripherals

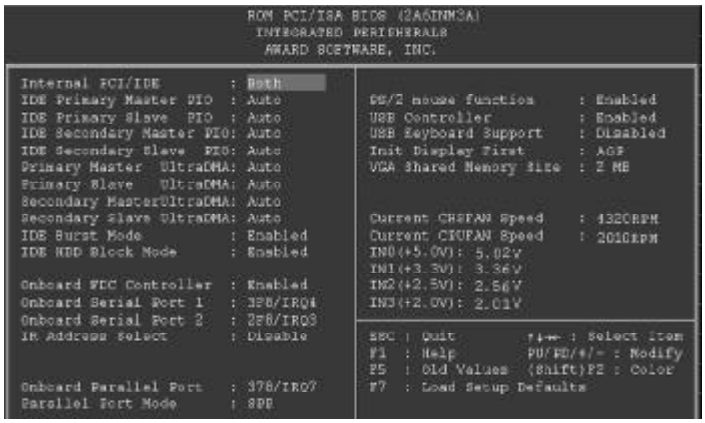


Figure-7 Integrated Peripherals Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
● Internal PCI/IDE	*Both*	Enables both primary and secondary IDE ports.
	Disabled	Disables both primary and secondary IDE ports.
	Primary	Enables the primary IDE port only.
	Secondary	Enables the secondary IDE port only.
● IDE Primary/ Secondary Master/Slave PIO	*Mode 0 - 4*	Defines the IDE primary/secondary master/ slave PIO mode.
	Auto	The IDE PIO mode is defined by auto -detection.
● IDE Primary/ Secondary Master/Slave UDMA	*Auto*	Ultra DMA mode will be enabled if Ultra DMA device is detected.
	Disabled	Disables this function.
● IDE Burst Mode	*Enabled*	Default setting is suggested.
	Disabled	
● IDE HDD Block Mode	*Enabled*	Allows IDE HDD to read/write several sectors at once.
	Disabled	IDE HDD only reads/writes a sector once.
● Onboard FDC Controller	*Enabled*	Onboard floppy disk controller is enabled.
	Disabled	Onboard floppy disk controller is disabled.
● Onboard Serial Port 1/2	*3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3,*	Defines the onboard serial port address and required interrupt number.
	Auto	Onboard serial port address and IRQ are automatically assigned.

	Disabled	Onboard serial port is disabled.
● IR Address Select	*Disabled* *2 E8H - 3E8F* *2F8H - 3F8H*	Defines the IrDA addresses, IRQ and IR mode.
● Onboard Parallel Port	*378/IRQ7,* *278/IRQ5,* *3BC/IRQ7*	Defines onboard parallel port address and IRQ channel.
	Disabled	Onboard parallel port is disabled.
● Parallel Port Mode	*SPP* *EPP* *ECP* *ECP+EPP*	Defines the parallel port mode as standard Parallel Port(SPP), Enhanced Parallel Port(EPP), or Extended Capabilities Port(ECP).
● PS/2 mouse Function	*Enabled*	Enables PS/2 mouse function when using PS/2 mouse.
	Disabled	If don' t use PS/2 mouse, disabling this option can release the resource.
● USB Controller	*Enabled*	Enables onchip USB controller.
	Disabled	Disables onchip USB controller.
● USB Keyboard Support	*Enabled*	USB keyboard support is enabled.
	Disabled	USB keyboard support is disabled.
● Init Display First	*PCI SLOT*	Initializes the PCI VGA first.
	AGP	Initializes the AGP first. For PCI VGA or AGP, the one initialized first functions.
● VGA Shared Memory Size	*2M/4M/8M*	If no onboard video memory is provided, part of main memory size(2M/4M/8M) can be set as shared video memory. Default setting is 8MB.
	None	None of main memory is shared as video memory.
● Current CHSFAN Speed	*4320RPM*	RPM(Revolution Per Minute) speed of fan connected to the fan header CPUFAN or CHSFAN.
Current CPUFAN Speed	*2010RPM*	Fan speed value is based on an assumption that tachometer signal is two pulses per revolution; In other cases, you should regard it relatively.
● INO(+5.0V) IN1(+3.3V) IN2(+2.5V) IN3(+2.0V)	*5.02V* *3.36V* *2.56V* *2.01V*	Displays current voltage values including the significant voltages of the mainboard. +5.0V is the voltage from the ATX power supply. +3.3V is from onboard regulator. +2.5V is the power supply for clock chip. +2.0V is the CPU core voltage from the onboard switching power supply.

Password Setting

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any 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.

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 BIOS Setup freely.

PASSWORD DISABLED

If you have selected "**System**" in "Security Option" of "BIOS Features Setup" menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected "**Setup**" at "Security Optio" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

IDE HDD Auto Detection

The Enhanced IDE features are included in all Award BIOS. Below is a brief description of these features.

ROM PCI/ISA BIOS (2A69KQ10)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE

Primary Master:

Select Primary Master Option (N=Skip): N

OPTION	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2(Y)	541	525	32	0	1049	67	LBA
1	541	1050	16	65535	1049	63	NORMAL
3	541	525	32	65535	1049	63	LARG

Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation

ESC: Skip

Figure-8 IDE HDD Auto Detection Menu

1. Setup Changes

With auto-detection

- BIOS setup will display all possible modes supported by the HDD including NORMAL, LBA and LARGE.
- If HDD does not support LBA modes, no "LBA" option will be shown.
- If number of physical cylinder is less than or equal to 1024, "LARGE" option may not be shown.
- Users can select their appropriate mode .

With Standard CMOS Setup

	CYLS	HEADS	PRECOMP	LAND ZONE	SECTOR	MODE
Drive C: User(516MB)	1120	16	65535	1119	59	Normal
Drive D: None(203MB)	684	16	65535	685	38	--------

When HDD type is in "user" type, the "MODE" option will be available for users to select their own HDD mode.

2. **HDD Modes**

The Award BIOS supports 3 HDD modes: NORMAL, LBA and LARGE.

NORMAL

Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum number of cylinders, heads and sectors for NORMAL mode are 1024,16 and 63.

If the user sets his HDD to NORMAL mode, the maximum accessible HDD size will be 528 megabytes even though its physical size may be greater than that.

LBA (Logical Block Addressing) mode

A new HDD accessing method to overcome the 528 Megabyte bottleneck. The number of cylinders, heads and sectors shown in setup may not be the number physically contained in the HDD.

During HDD accessing, the IDE controller will transform the logical address described by sector, head and cylinder number into its own physical address inside the HDD. The maximum HDD size supported by LBA mode is 8.4 Gigabytes.

LARGE mode

Some IDE HDDs contain more than 1024 cylinder without LBA support (in some cases, users do not want LBA). The Award BIOS provides another alternative to support these kinds of HDD.

BIOS tricks DOS (or other OS) into divising the number of cylinders 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 the right HDD address.

If using Auto detect, the BIOS will automatically detect the IDE hard disk mode and set it as one of the three modes.

3. **Remark**

To support LBA or LARGE mode of HDDs, there must be some softwares involved which are located in Award HDD Service Routine(INT13h).It may fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.

Boot with BIOS defaults

If you have made all the changes to CMOS values and the system can not boot with the CMOS values selected in setup, clear CMOS after power-down, then power on again. System will boot with BIOS default settings.

Chapter 4
YAMAHA Audio Description

Onboard audio system is based on the high performance Yamaha YMF740 PCI audio controller and AC97 audio decoder. It incorporates the best features of Sound Blaster™, Sound Blaster™Pro, Microsoft Windows Sound System and MPU-401 for all multimedia applications, entertainment, educational sound and business audio.

Features

- PC97/PC98 specification compliant.
- PCI Bus Power Management rev1.0 compliant.
- PCI Bus Master for audio:
  - Maximum 32-voice XG capital Wavetable.
  - Synthesizer including GM compatibility.
  - DirectSound Hardware Acceleration.
  - DirectMusic Hardware Acceleration.
  - Downloadable Sound (DSL) level-1.
- Supports PC/PCI for legacy DMAC(8237) emulation.
- Legacy Audio compatibility.
  - Genuine OPL3.
  - Hardware Sound Blaster Pro compatibility.
  - MPU401 UART mode MIDI interface.
- Provides onboard Mic-in jack, Line-in jack, speaker-out jack and MIDI/Joystick connector.
- Provides Hardware Volume Control.

YAMAHA Software Installation

Before you begin:

All of the installation instructions assume that the CD-ROM disk is located in drive D: and that Windows 95/98 is in C:\Windows. Replace either with the actual location if necessary.

1. Installation of Windows 95/98 Driver

There are two ways to install the Windows 95/98 drivers. One is by using normal PnP installation of Windows. Another is by using the Yamaha Driver Installer. Please note, if using normal PnP installation, the system will prompt you for the Yamaha audio driver during Windows 95/98 startup, direct the path to D:\DevDrv\Sound\Yamaha\Driver \Win95/98 and run setup.exe.

Installation using the Yamaha Driver installer.

- Under Windows 95/98, insert the QDI Mainboard Utility CD into the CD-ROM drive.
- Direct the path to D:\DevDrv\Sound\Yamaha\Driver\Inst95/98 and run Setup.exe.
  The Yamaha DS-XG Driver Setup will guide you through the setup process.

- Restart the computer when prompted.
- During Windows 95/98 startup, several New Hardware Found boxes will appear as shown below.

- After completing the installation, the sound, video and game controllers should be listed in Device Manager from System Properties as shown below.

For more information, please refer to the file inst95.pdf in the directory D:\DevDrv\Sound\Yamaha\Driver\Guide

2. Installation of Dos/Windows 3.1x Driver

Before installing the audio drivers from the CD-ROM, a CD-ROM drive must be installed and working properly in your system. If you have not yet installed a CD-ROM drive and associated driver, refer to your CD-ROM drive' s documentation for instructions. Use the diskette provided with the CD-ROM drive to install the needed driver.

To install the audio drivers from the CD-ROM:

- Start your system.
- Insert the QDI Mainboard Utility CD into your CD-ROM drive.
- At the DOS prompt, change to the drive containing your CD-ROM. For example, type D:.
- Change to the directory \DevDrv\Sound\Yamaha\Driver\RealDOS.
- Type INSTALL, then press <Enter>.
- Follow the instructions presented on the screen to complete the installation.

3. Installation of Windows NT 4.0 Driver

There are two ways to install the WindowsNT 4.0 drivers. One is by using normal audio installation of Windows NT4.0. Another is by using the Yamaha Driver Installer, direct the path to D:\DevDrv\Sound\Yamaha\ Driver\InstNT and run setup.exe.

Normal Audio Installation under Windows NT 4.0

- Log on to Windows NT 4.0.
- Insert the QDI Mainboard Utility CD into the CD-ROM drive.
- Double click the **Multimedia** icon in the **Control Panel**, then click on the **Devices** tab.
- Press the **ADD** button, and select "**Unlisted or Updated Drivers**", then press the **OK** button.
- A dialog box appears requesting the path of the location for the drivers. Click the **Browse** button and direct the path to D:\DevDrv\Sound\Yamaha\Driver\winNT.
- The *Add Unlisted or Updated Driver* window then appears prompting you to select a language. Click on the desired language in the list then click on the **OK** button.

- If the *Driver Exists* window appears as shown below, click the **New** button to overwrite the existing driver.

- Windows NT will now copy the necessary files to your computer. When the *YAMAHA DS-XG Audio Driver* window appears, verify that the MPU401 I/O address, IRQ and joystick I/O address settings are correct as shown in the figure below. Click the **OK** button to continue.

- You will be prompted to restart your computer now. Click the **Restart Now** button.

For more information, please refer to the file instnt.pdf in the directory D:\DevDrv\Sound\Yamaha\Driver\Guide

Appendix A

QDI Mainboard Utility CD-ROM

A QDI Mainboard Utility CD-ROM is supplied with each mainboard. The contents used for this mainboard are:

1. Chipset Drivers:
   SiS620 Chipset Driver included in the directory \ChipDrv\SiS/SiS620\Idedrv is used for this mainboard. First copy the file Uide100.exe to a user directory on the hard disk and extract it. Then install the SiS620 IDE driver accordingly:

   a. For Window95/98, run ...\Win9X\Setup.exe for installation.

   b. For Windows NT, follow the steps contained in the readme file (...\NT\Readme.txt), and install the SiS620 Chipset IDE driver.

2. Onchip VGA Drivers
   The VGA drivers included in the directory \DevDrv\VGA\SiS620\CD-VER are for the SiS620 onchip VGA.
   Run \DevDrv\VGA\SiS620\CD-VER\Win9X\Setup.exe to install Window 95/98 driver.
   For Windows NT driver, when the system prompts for the driver, direct the path to \DevDrv\VGA\SiS620\CD-VER\Winnt40.

3. Onboard Audio Drivers
   The audio drivers included in the directory\DevDrv\Sound\Yamaha\Driver are for the onboard Yamaha YMF 740 PCI audio.
   Run \DevDrv\Sound\Yamaha\Driver\Real Dos\Install.exe to install Dos/Windows 3.1x driver.
   Run \DevDrv\Sound\Yamaha\Driver\Inst 95&98\Setup.exe to install Windows95 & 98 driver.
   Run \DevDrv\Sound\Yamaha\Driver\InstNT\Setup.exe to install Windows NT 4.0 dirver.

4. PC-cillin Anti-Virus software:
   For Windows 95/98 English version, it is located in the directory \Pccillin\Win9X. Run Setup.exe for installation.
   For Windows NT English version, it is located in the directory \Pccillin\WinNT4.0. Run Setup.exe for installation. S/N is PNEF-9991-6558-5857-5535.

5. QDI Mainboard Utility:
   The utilities located in the directory \Utility are:
   FLASH.EXE
   CBLOGO.EXE
   LF.EXE
   Refer to the online help for information on how to use these utilities.

Appendix B.
Boot Logo

When you power on or reset your system, the picture shown below will appear on the screen.

If you press <**Esc**>, it switches to the booting message screen. Otherwise, it enters operating system directly. You can use "**cblogo.exe**" (included on the QDI Mainboard Utility CD) to replace it by any other logo which you prefer. Regarding the method of using **cblogo.exe** utility, please refer to it's online help. If you don't prefer the logo displayed on the screen during boot up, set the "Show Bootup Logo" option as Disabled in the 'BIOS FEATURES SETUP' section of the BIOS

*** We reserve the right of modifying the default full-logo of QDI without further notification.**

P/N : 430- 01016- 401- 00
Manual Superb 2 Ver 1.0

Item Checklist

Completely check your package. If you discover damaged or missing items, contact your retailer.

- ☑ Superb 2 mainboard
- ☑ QDI Mainboard Utility CD-ROM
- ☑ I/O shield
- ☑ 1 IDE ribbon cable
- ☑ 1 floppy ribbon cable
- ☐ 1 9-pin ribbon cable with bracket for serial port 2 (manufacturing option).
- ☑ User's manual

Notice

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If you need any further information, please visit our web-site: "www.qdigrp.com".

Board Layout of
Superb 2 V1.0