Jazz Up Your PC by
Octek Mainboard

Octek-
It Always
Delivers
Better Tech.

Rhino 12+
Pentium® Mainboard

English

PCI
LOCAL BUS

Octek Mainboard

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SYSTEM OVERVIEW

1.1 General Specifications Overview

Processor:

• Processor Type	Intel Pentium, Pentium with MMX Cyrix/IBM 6x86/6x86L/6x86MX, AMD K5/K6
• External CPU Clock	50/55/60/66/75 MHz
• CPU Voltage	Switching Voltage Regulator Support single/dual power plane

Chipset:

• Motherboard Chipset	VIA VT82C580VPX

Cache Architecture:

• External Cache	256K/512K Byte on-board Synchronous Pipelined Burst SRAM

Memory Subsystem:

• DRAM SIMM Sockets	2 x 72 pin 4MB/8MB/16MB/32MB/64MB modules
• SDRAM DIMM Sockets	2x168 pin 8MB/16MB/32MB/64MB Synchronous DRAM / EDO RAM modules
• Max. Memory Size	256MB
• DRAM Type	Fast Page Mode or EDO DRAM or Synchronous DRAM
• Enhancement	Mix of SDRAM or EDO DIMM supported

Input/Output Subsystem

• PCI Bus Slots	4 x 32-bit PCI bus slots (4 masters)
• ISA Bus Slots	3 x 16-bit ISA slots

Integrated IDE, Super I/O Subsystem

• IDE Support	Built-in PCI IDE controller 2 connectors supporting up to 4 IDE Drives Support Mode 3,4 IDE, Ultra DMA-33 IDE, LS-120 floppy drive, Internal ZIP ATAPI drive & ATAPI CD-ROM.
• On Board I/O	One Floppy Port supporting 2 floppy drives of 360KB / 720KB / 1.2MB/1.44MB/ 2.88MB capacity. Two serial ports (16550 Fast UART compatibles) One parallel Port (Standard, ECP, EPP support)

PS/2 Mouse

• PS/2 Mouse	Supports PS/2 Mouse through a 1x4 header

Power Management

- Green Functions   Support various Power Management schemes

BIOS Subsystem

- BIOS Type   AWARD
- BIOS Shadowing   Shadow RAM for System and Video BIOS
- BIOS Features   Built-in setup, Power-on self test, Drive table optimization, User-definable drive types, Password Protection, Shadowing options

Plug & Play / BIOS Update

- Plug & Play BIOS   Microsoft Windows95™ and Plug and Play BIOS compliant
- Flash EEPROM   Use Flash EEPROM (1M bits) to allow easy BIOS update

USB Devices

- USB Devices   USB v1.0 and Intel Universal HCI v1.0 compatible; 2 programmable USB ports

Other Features

- 3.3V/3.5V Supply   Maximum rating : 30 W.
- 1.8V~3.2V Supply   On board 1.8V~3.2V supply supports MMX grade CPUs
- Connectors   Reset, Keylock Switches, Suspend Switch, HDD LED, Power LED.
- Size   8.5" (W) x 8.5" (L)
- DMI Support

HARDWARE INSTALLATION & UPGRADE

2.1 Layout of RHINO 12+ Main Board

All factory settings are marked by * in the following sections.

2.2 CPU related settings

CPU Voltage Core Selection

RHINO 12+ supports Intel Pentium (P54C) & Pentium with MMX (P55C), AMD K5 & K6, Cyrix/IBM 6x86/6x86L/6x86MX. Both single & dual voltage CPUs are supported. For dual voltage CPUs, JCK1/2/3 must be set as 1-2 to separate the core voltage & I/O voltage. The voltage selection for core voltage is as follows :

CPU core voltage	JP1					JCK1/2/3
	1-2	3-4	5-6	7-8	9-10	
3.5	1	0	0	0	1	
3.4	1	0	0	0	0	2-3*
3.3*	0	1	1	1	1	
3.2	0	1	1	1	0	
3.1	0	1	1	0	1	
3.0	0	1	1	0	0	
2.9	0	1	0	1	1	
2.8	0	1	0	1	0	
2.7	0	1	0	0	1	
2.6	0	1	0	0	0	
2.5	0	0	1	1	1	1-2
2.4	0	0	1	1	0	
2.3	0	0	1	0	1	
2.2	0	0	1	0	0	
2.1	0	0	0	1	1	
2.0	0	0	0	1	0	
1.9	0	0	0	0	1	
1.8	0	0	0	0	0	

Note : "1" is close, "0" is open.

☞ Be careful to select the appropriate Core voltage for different CPU. Improper Core voltage supplied to CPU may result in "PERMANENT DAMAGE" to CPU !
☞☞ The Offical Name of P55C is "Pentium Processor with MMX Technology."

CPU Type

| JBF1	JBF2	JBF3	JCK5	JCK6	JCK7	CPU Clock	CPU TYPE
2-3	2-3	Open	2-3	2-3	2-3	50MHz	Intel P54C-75
1-2	2-3	Open	2-3	2-3	2-3		Cyrix 6x86-P120+
2-3	2-3	Open	2-3	2-3	2-3		AMD K5-PR75
1-2	2-3	Open	2-3	2-3	1-2	55MHz	Cyrix 6x86-P133+
2-3	2-3	Open	1-2	2-3	2-3	60MHz	Intel P54C-90
1-2	2-3	Open	1-2	2-3	2-3		Intel P54C-120
1-2	1-2	Open	1-2	2-3	2-3		Intel P54C-150
2-3	1-2	Open	1-2	2-3	2-3		Intel P54C-180
1-2	2-3	Open	1-2	2-3	2-3		Cyrix 6x86-P150+
1-2	1-2	Open	1-2	2-3	2-3		Cyrix/IBM 6x86MX-PR166
2-3	2-3	Open	1-2	2-3	2-3		AMD K5-PR90
2-3	2-3	Open	1-2	2-3	2-3		AMD K5-PR120
1-2	2-3	Open	1-2	2-3	2-3		AMD K5-PR150
2-3	2-3	Open	2-3	1-2	2-3	66MHz	Intel P54C-100
1-2	2-3	Open	2-3	1-2	2-3		Intel P54C-133
1-2	1-2	Open	2-3	1-2	2-3		Intel P54C-166,P55C-166
2-3	1-2	Open	2-3	1-2	2-3		Intel P54C-200, P55C-200
2-3	2-3	Open	2-3	1-2	2-3		Intel P55C-233
1-2	2-3	Open	2-3	1-2	2-3		Cyrix/IBM 6x86-P166+
1-2	1-2	Open	2-3	1-2	2-3		Cyrix/IBM 6x86MX-PR200
2-3	2-3	Open	2-3	1-2	2-3		AMD K5-PR100
2-3	2-3	Open	2-3	1-2	2-3		AMD K5-PR133
1-2	1-2	Open	2-3	1-2	2-3		AMD K5-PR166
1-2	1-2	Open	2-3	1-2	2-3		AMD K6/166
2-3	1-2	Open	2-3	1-2	2-3		AMD K6/200
2-3	2-3	Open	2-3	1-2	2-3		AMD K6/233
1-2	2-3	Open	1-2	2-3	1-2	75MHz	Cyrix/IBM 6x86-P200+
1-2	1-2	Open	1-2	2-3	1-2		Cyrix 6x86MX-PR233

2.3 CPU Cooling Fan and Heatsink

CPU cooling fan is inevitable to the functionality of high speed CPU. The higher the core frequency of CPU, the more heat will be generated. Poor ventilation of the CPU and the voltage regulator will cause overheat. Permanent damage to the motherboard or even damage to the CPU itself will be resulted in the worst case.

Besides, the orientation of the CPU cooling fan can improve the ventilation of the motherboard in the case. The conduction of the airflow can enhance the cooling effect to the voltage regulator and onboard heatsink by continuously keeping the air-stream flows.

☞ **Important :**
Make sure the fins of the heating beneath the CPU cooling fan is pointed to the direction of the voltage regulator.
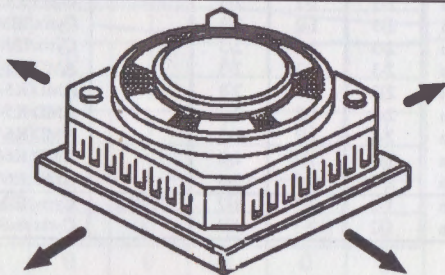
2.4 Voltage for DIMM Sockets

	JACK1, JACK2
3.3V*	1-2
5V	2-3

2.5 CMOS Reset (JBAT1)

JBAT1	CMOS Reset
1-2*	Normal
2-3	Reset

2.6 Connectors Pinout

Power LED Connector(CN1 5-9)

Pin	Signal Name
5	GND
7	NC
9	PW_LED

Suspend Mode Connector (CN1 10-12)

Pin	Signal Name
10	Suspend_switch
12	GND

Keylock Connector (CN1 1-3)

Pin	Signal Name
1	-KB_Lock
3	GND

HD LED Connector (CN1 22-24)

Pin	Signal Name
22	HD_LED-
24	VCC

Speaker Connector (CN1 13-19)

Pin	Signal Name
13	Speaker Data_Out
15	N.C.
17	N.C.
19	+5Vdc

PS/2 Mouse Connector (CN4)

Pin	Signal Name
1	+5V dc
2	GND
3	MDATA
4	MCLK

Reset Connector (CN1 18-20)

Pin	Signal Name
18	Reset
20	Ground

USB Connector (J3)

Pin	Signal Name	Pin	Signal Name
6	VCC	1	VCC
7	Port 1-	2	Port 0-
8	Port 1+	3	Port 0+
9	Ground	4	Ground
10	NC	5	NC

USB MODULE
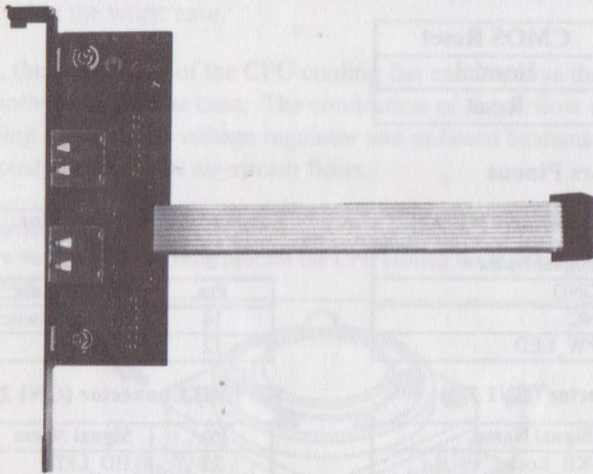
Power Connector (CN3)

Pin	Signal Name
1	Power Good
2	+5Vdc
3	+12Vdc
4	-12V dc
5	Ground
6	Ground
7	Ground
8	Ground
9	-5Vdc
10	+5Vdc
11	+5Vdc
12	+5Vdc

Keyboard Connector (KB1)

Pin	Signal Name
1	Keyboard clock
2	Keyboard data
3	Not used
4	Ground
5	VCC

MEMORY CONFIGURATION

3.1 SDRAM (Synchronous DRAM) / Fast Page mode / EDO DRAM Installation

There are two SIMM sockets and two DIMM sockets located on the RHINO 12+ motherboard, marked BANK 0, BANK 1 and BANK 2 which start from right to left consecutively. Only EDO or Fast Page Mode memory can install in BANK 2.

For SIMM Modules, either Single or Double sided memory module can be installed in pairs on each Memory Bank. For DIMM Modules, either Single or Double sided memory module can be installed. Please reference to the following tables.

Rhino 12+ supports up to 256MB memory . Both SIMMs and DIMM can be installed simultenously. Each SIMM and DIMM can support 4MB, 8MB, 16MB, 32MB, and 64MB. Any combinations of SIMM and DIMM installed should not exceed the maximum memory size.

The memory size installed can be calculated easily by applying the following formula : -

$$M = D \times B + S$$

where M is the Total Memory Installed
S is the Memory Size of the installed SIMM
B is the no. of Memory Bank installed with SIMM
D is the Memory Size of the installed DIMM.

For example : all SIMMs are installed with 8MB modules and two 8MB EDO is installed on DIMM socket. The total memory M is : -

$$S = 16MB ; \quad B = 2; \quad D = 8MB$$

$$M = 8 \times 2 + 16 = 32 \text{ MB}$$

3.3V SDRAM/5V EDO DIMM module can be used on Rhino 12+. System BIOS will automatically detect the memory type & size.

☞ For 3.3V SDRAM module, make sure to set JACK1, JACK2 to 1-2 for 3.3V supply. It is not recommended to mix 3.3V module with 5V module at the same time.

CMOS SETUP CONFIGURATION

BIOS Setup

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

It is possible that CMOS had a battery failure which cause data lose in CMOS RAM. If so, re_enter system configuration parameters become necessary.

This chapter explains the information contained in the Setup program and tell you how to modify the setting according to your system configuration.

The BIOS supports Software Turbo Speed features. Instead of processing the Turbo Speed Button on the front panel, simply press the <Ctrl>, <Alt>, and <+> keys at the same time to enable the Turbo Speed feature; and press the <Ctrl>, <Alt>, and <-> keys at the same time to disable the feature.

4.1 CMOS Setup Utility

Power on the computer and press <Del> key immediately will bring you into BIOS **CMOS SETUP UTILITY**.

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

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

ESC: QUIT   ↑↓→← : SELECT ITEM
F10: Save & Exit Setup   (Shift)F2: Change Color
Time, Date, Hard Disk Type..

The menu displays all the major selection items and allow user to select any one of shown item. The selection is made by moving cursor (press any direction key) to the item and press 'Enter' key. An on-line help message is displayed at the bottom of the screen as cursor is moving to various items which provides user better understanding of each function. When a selection is made, the menu of selected item will appear so the user can modify associated configuration parameters

4.2 Standard CMOS Setup

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

Date (mm:dd:yy) : Wed, May 8 1996
Time (hh:mm:ss) : 15:38:55

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

Drive A : 1.44M, 3.5 in.
Drive B : None
Video : EGA/VGA
Halt On : All Errors

Base Memory:	640K
Extended memory:	15360K
Other Memory:	384K
Total Memory:	16384K

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

The Standard CMOS Setup screen is displayed above. System BIOS automatically detects memory size, thus no changes are necessary. It has a few items for setting. Each item may have one or more option settings. It allows you to change the system Date and Time, IDE hard disk, floppy disk drive types for drive A: and B:, boot up video display mode, and POST error handling selection. Use the arrow keys to highlight the item and then use the <PgUp>, or <PgDn> keys to select the value you want in each item.

Hard Disk Configurations

TYPE:
Select from "1" to "45" to fill remaining fields with predefined values of disk drives. Select "User" to fill the remaining fields. Select "Auto" to detect the HDD type automatically.

SIZE:
The hard disk size. The unit is Mega Bytes.

CYLS:
The cylinder number of the hard disk.

HEAD:
The read/write head number of hard disk. The range is from "1" to "16".

PRECOMP:
The cylinder number at which the disk drive changes the write timing.

LANDZ:
The cylinder number that the disk drive heads (read/ write) are seated when the disk drive is parked.

SECTOR:

The sector number of each track defined on the hard disk. The range is from "1" to "64".

MODE:

Select "Auto" to detect the mode type automatically. If your hard disk supports the LBA mode, select "LBA" or "Large". However, if your hard disk cylinder is more than 1024 and does not support the LBA function, you have to set at "Large".
Select "Normal" if your hard disk supporting cylinders is below 1024.

4.3 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
 Quick Power On Self Test : Enabled  D0000 - D3FFF Shadow    : Disabled
 Boot Sequence          : A, C, SCSI D4000 - D7FFF Shadow    : Disabled
 Swap Floppy Drive      : Disabled   D8000 - DBFFF Shadow    : Disabled
 Boot Up Floppy Seek    : Disabled   DC000 - DFFFF Shadow    : Disabled
 Boot Up NumLock Status : On
 Boot Up System Speed   : High
 IDE HDD Block Mode     : Enabled
 Gate A20 Option        : Fast
 Memory Parity Check    : Enabled
 Typematic Rate Setting : Disabled
 Typematic Rate (Chars/Sec) : 6
 Typematic Delay (Msec) : 250
 Security Option        : Setup      ESC : Quit   ↑↓→←    : Select Item
 IDE Second Channel Check : Enabled  F1  : Help     PU/PD/+/- : Modify
 PCI/VGA Palette Snoop  : Disabled   F5  : Old Values (Shift) F2 : Color
 OS Select For DRAM > 64MB : Non-OS2 F6  : Load BIOS Defaults
                                     F7  : Load Setup Defaults
```

Moving around the BIOS and Chipset Features (refer to the next section) Setup programs shown works the same way as moving around the Standard CMOS Setup program. User are not encouraged to run the BIOS and Chipset Features Setup programs. Your system should have been fine-tuned before shipping. Improper Setup may cause the system to fail, consult your dealer before making any changes.

Virus Warning

When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

NOTE: Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you first disable the virus warning.

CPU Internal Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

External Cache

The External Cache field may not appear if your system does not have external cache memory.

Quick Power On Self Test

Select Enabled to reduce the amount of time required to run the power-on self-test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work.

Boot Sequence

The original IBM PCs loaded the DOS operating system from drive A (floppy disk), so IBM PC-compatible systems are designed to search for an operating system first on drive A, and then on drive C (hard disk). However, modern computers usually load the operating system from the hard drive, and may even load it from a CD-ROM drive.

Swap Floppy Drive

This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

Boot Up Floppy Seek

When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 720 KB, 1.2 MB, and 1.44 MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to Disabled to save time.

Boot Up NumLock Status

Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.

Boot Up System Speed

Select High to boot at the default CPU speed; select Low to boot at the speed of the AT bus. Some add-in peripherals or old software (such as old games) may require a slow CPU speed. The default setting is High.

Typematic Rate Setting

When Disabled, the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystrokes repeat at a rate determined by the keyboard controller in your system. When Enabled, you can select a typematic rate and typematic delay.

Typematic Rate (Chars/Sec)

When the typematic rate setting is enabled, you can select a typematic rate (the rate at which character repeats when you hold down a key) of 6, 8, 10,12, 15, 20, 24 or 30 characters per second.

Typematic Delay (Msec)

When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.

Security Option

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

PCI/VGA Palette Snoop

Your BIOS Setup many not contain this field. If the field is present, leave at Disabled.

OS Select for DRAM > 64MB

Select OS2 only if you are running OS/2 operating system with greater than 64 MB of RAM on your system.

Shadow

Software that resides in a read-only memory (ROM) chip on a device is called firmware. The Award BIOS permits shadowing of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals, such as, for example, a SCSI adaptor.
Shadowing copies firmware from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM bus. Firmware not shadowed must be read by the system through the 8-bit X-bus. Shadowing improves the performance of the system BIOS and similar ROM firmware for expansion peripherals, but it also reduces the amount of high memory (640 KB to 1 MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardware shadowing of the system BIOS and eliminate a System BIOS Shadow option.

Video BIOS Shadow

Video BIOS shadows into memory area C0000-C7FFF. The remaining areas shown on the BIOS Features Setup screen may be occupied by other expansion card firmware. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

4.4 Chipset Features Setup

```
                        ROM PCI/ISA BIOS
                      CMOS SETUP UTILITY
                     CHIPSET FEATURES SETUP

Auto Configuration      : 70ns      OnChip USB          : Disabled
Video BIOS Cacheable    : Enabled
System BIOS Cacheable   : Enabled
Memory Hole At 15Mb Addr. : Disabled
Sustained 3T Write      : Disabled
Read Pipeline           : Enabled
Write Pipeline          : Enabled
Cache Timing            : Fastest
DRAM Timing Control     : Turbo
Reduce DRAM leadoff cycle : Disabled
SDRAM Single/Burst Write : Single
SDRAM Cycle Length      : 3
SDRAM Bank Interleave    : Disabled

                                    ESC : Quit    ↑↓→←      : Select Item
                                    F1  : Help     PU/PD/+/- : Modify
                                    F5  : Old Values (Shift) F2 : Color
                                    F7  : Load Setup Defaults
```

Auto Configuration

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

Sytem BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h to FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video BIOS Cacheable

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

Memory Hole At 15Mb Addr

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it connot be cached,. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

OnChip USB

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

4.5 Power Management Setup

```
                        ROM PCI/ISA BIOS
                       CMOS SETUP UTILITY
                     POWER MANAGEMENT SETUP
┌─────────────────────────────────────────────────────────────────────┐
│ Power Management      : Disabled    IRQ5   (LPT 2)       : Primary     │
│ PM Control by APM     : Yes         IRQ6   (Floppy Disk) : Primary     │
│ Video off option      : Suspend -> off  IRQ7 (LPT 1)     : Primary     │
│ Video off Method      : V/H SYNC+Blank  IRQ8 (RTC Alarm) : Disabled    │
│ Conserve Mode         : Disabled    IRQ9   (IRQ2 Redir)  : Secondary   │
│ MODEM Use IRQ         : 3           IRQ10  (Reserved)     : Secondary   │
│         ** PM Timers **             IRQ11  (Reserved)     : Secondary   │
│ HDD Power Down        : Disabled    IRQ12  (PS/2 Mouse)   : Primary     │
│ Doze Mode             : Disabled    IRQ13  (Coprocessor)  : Primary     │
│ Suspend Mode          : Disabled    IRQ14  (Hard Disk)    : Primary     │
│                                     IRQ15  (Reserved)     : Disabled    │
│         ** PM Events **                                                 │
│ VGA                   : OFF                                             │
│ LPT & COM             : LPT/COM                                         │
│ HDD & FDD             : ON                                              │
│ DMA/master            : OFF        ┌──────────────────────────────────┐│
│ Primary INTR          : ON         │ ESC : Quit    ↑↓→←   : Select Item││
│ IRQ3  (COM 2)         : Primary    │ F1  : Help    PU/PD/+/- : Modify  ││
│ IRQ4  (COM 1)         : Primary    │ F5  : Old Values (Shift) F2 : Color││
│                                    │ F7  : Load Setup Defaults         ││
│                                    └──────────────────────────────────┘│
└─────────────────────────────────────────────────────────────────────┘
```

Power Management

This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. See the section PM Timers for a brief description of each mode.

This table describes each power management mode:

Max Saving	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minutes in each mode.
User Define	Set each mode individually. Select time-out periods in the PM Timers section, following.
Min Saving	Minimum power savings. Inactivity period is 1 hours in each mode.

PM Control by APM

If Advanced Power Management (APM) is installed on your system, selecting Yes gives better power savings.

Video Off Method

Determines the manner in which the monitor is blanked.

V/H SYNC+Blank   System turns off vertical and horizontal synchronization ports and writes blanks to the video buffer.

DPMS Support	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values.
Blank Screen	System only writes blanks to the video buffer.

Modem Use IRQ

This feature allows you to select the IRQ# to meet your modem's IRQ#.

HDD Power Management

HDD Off After

After the selected period of drive inactivity (1 to 15 minutes), the hard disk drive powers down while all other devices remain active. Selecting Suspend tells the drive to power down immediately.

Doze Mode

After the selected period of system inactivity (1 minutes to 1 hours), the CPU clock runs at slower speed while all other devices still operate at full speed.

Suspend Mode

After the selected period of system inactivity (1 minutes to 1 hours), all devices except the fixed disk drive and CPU shut off.

IRQn

When Enabled, any activity from the selected IRQ wakes up the system or resets the inactivity timer. The following is a list of IRQs assigned to common system peripherals.

IRQ3 (COM 2)	IRQ10 (Reserved)
IRQ4 (COM 1)	IRQ11 (Reserved)
IRQ5 (LPT 2)	IRQ12 (PS/2 Mouse)
IRQ6 (Floppy Disk)	IRQ13 (Coprocessor)
IRQ7 (LPT 1)	IRQ14 (Hard Disk)
IRQ9 (IRQ2 Redir)	IRQ15 (Reserved)

4.6 PnP/PCI Configuration

```
                    ROM PCI/ISA BIOS
                  PCI CONFIGURATION SETUP
                   AWARD SOFTWARE, INC.
┌─────────────────────────────────┬──────────────────────────────────┐
│ Resources Controlled By  : Auto │ CPU to PCI write Buffer  : Enabled│
│ Reset Configuration Data : Disabled│ PCI Dynamic Bursting   : Enabled│
│                                 │ PCI Master 0 WS Write    : Enabled│
│                                 │                                  │
│                                 │ PCI IRQ Activated By     : Level  │
│                                 │ PCI IDE IRQ Map To       : PCI-AUTO│
│                                 │   Primary   IDE INT#     : A      │
│                                 │   Secondary IDE INT#     : B      │
│                                 ├──────────────────────────────────┤
│                                 │ ESC : Quit    ↑↓→←   : Select Item│
│                                 │ F1  : Help    PU/PD/+/- : Modify  │
│                                 │ F5  : Old Values (Shift) F2 : Color│
│                                 │ F7  : Load Setup Defaults         │
└─────────────────────────────────┴──────────────────────────────────┘
```

Resources Controlled By
The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

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

IRQ n Assigned to
When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:
Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).
PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

DMA n Assigned to
When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:
Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel
PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

PCI IRQ Activated by
Leave the IRQ trigger set at Level unless the PCI device assigned to the interrupt specifies Edge-triggered interrupts.

PCI IDE IRQ Map to
This field lets you select PCI IDE IRQ mapping or PC AT (ISA) interrupts. If your system does not have one or two PCI IDE connectors on the system board, select values according to the type of IDE interface(s) installed in your system (PCI or ISA). Standard ISA interrupts for IDE channels are IRQ14 for primary and IRQ15 for secondary.

Primary/Secondary IDE INT#
Each PCI peripheral connection is capable of activating up to four interrupts: INT# A, INT# B, INT# C and INT# D. By default, a PCI connection is assigned INT# A. Assigning INT# B has no meaning unless the peripheral device requires two interrupt services rather than just one. Because the PCI IDE interface in the chipset has two channels, it requires two interrupt services. The primary and secondary IDE INT# fields default to values appropriate for two PCI IDE channels, with the primary PCI IDE channel having a lower interrupt than the secondary.

4.7 Integrated Peripherals

```
                     ROM PCI/ISA BIOS
                  INTEGRATED PERIPHERALS
                   AWARD SOFTWARE, INC.
┌────────────────────────────────────┬─────────────────────────────┐
│ OnChip IDE First Channel  : Enabled │                             │
│ OnChip IDE second Channel : Enabled │                             │
│ IDE Prefetch Mode         : Enabled │                             │
│ IDE Primary Master PIO    : Auto    │                             │
│ IDE Primary Slave PIO     : Auto    │                             │
│ IDE Secondary Master PIO  : Auto    │                             │
│ IDE Secondary Slave PIO   : Auto    │                             │
│ IDE Primary Master UDMA   : Enabled │                             │
│ IDE Primary Slave UDMA    : Enabled │                             │
│ IDE Secondary Master UDMA : Enable  │                             │
│ IDE Secondary Slave UDMA  : Enable  │                             │
│                                     │                             │
│ Onboard FDC Controller    : Enabled │                             │
│ Onboard UART 1            : 3F8/IRQ4│                             │
│ Onboard UART 2            : 2F8/IRQ3│                             │
│ Onboard UART 2 Mode       : Standard│                             │
│                                     ├─────────────────────────────┤
│                                     │ ESC : Quit  ↑↓→← : Select Item│
│ Onboard Parallel Port     : 378/IRQ7│ F1 : Help  PU/PD/+/- : Modify│
│ Parallel Port Mode        : Normal  │ F5 : Old Values (Shift) F2 : Color│
│                                     │ F7 : Load Setup Defaults    │
└────────────────────────────────────┴─────────────────────────────┘
```

IDE Primary/Secondary Master/Slave UDMA
The integrated peripheral controller contains an IDE interface with support for DMA33 mode. Select Enabled to activate each channel separately.

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

Onboard FDC Controller

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

Onboard UART 1/2

Select a logical COM port name and matching address for the first and second serial ports.

Onboard Parallel Port

Select a logical LPT port name and matching address for the physical parallel (printer) port.

Parallel Port Mode

Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP (Enhanced Parallel Port) or ECP (Extended Capabilities Port) mode.

Normal	PC AT parallel port
EPP	Fast, bi-directional port used primarily by non-printer peripherals, CD ROM, tape, hard drive, network adapters, etc.
ECP	Fast, buffered port, used primarily by new generation of printers and scanners.

4.8 Load Setup Defaults

Load the system default data directly from ROM and initialize associated hardware properly. This function will be necessary only when the system CMOS data is corrupted.

4.9 Supervisor Password

When you select this function, a message appears at the center of the screen:

```
ENTER PASSWORD:
```

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory.
Now the message changes:

```
CONFIRM PASSWORD:
```

Again, type the password and press Enter.
To abort the process at any time, press Esc.
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System	Enter a password each time the system boots and when ever you enter Setup.
Setup	Enter a password when ever you enter Setup.

☞ **NOTE:** To clear the password simply press Enter when asked to enter a password. Then the password function is disabled.

4.10 IDE HDD Auto Detection

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

HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
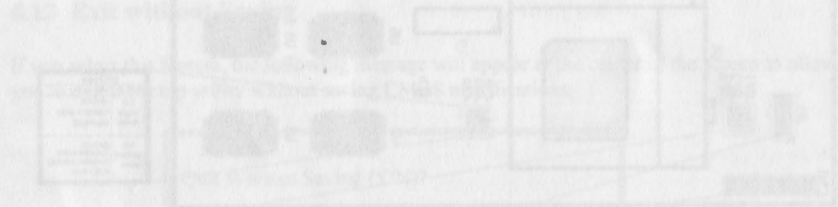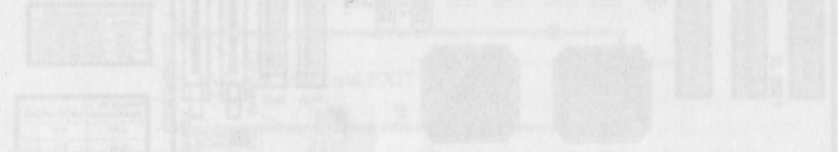
Primary Master :

Select Primary Master Option (N=Skip): N

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2(Y)	540	524	32	0	1047	63	LBA
1	540	1048	16	65535	1047	63	NORMAL
3	540	524	32	65535	1047	63	LARGE

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

The IDE Hard Disk Drive Auto Detection feature automatically configurations your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with "(Y)" are recommended by the system BIOS. You may also keys in your own parameters instead of setting by the system BIOS. After all setting, press ESC key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

4.11 Save and Exit Setup

After you have made changes under Setup, press <ESC> to return to the main menu. Move cursor to "Save and Exit Setup" or press "F10" and then press "Y" to change the CMOS Setup. If you did not change anything, press <ESC> again or move cursor to "Exit.Without Saving" and press "Y" to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility:

```
SAVE to CMOS and EXIT (Y/N)?
```

4.12 Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

```
Quit Without Saving (Y/N)?
```

Octek Mainboard