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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 Byle on-board Synchronous Pigelined Burst

SRAM

# **Memory Subsystem:**

DRAM SIMM Spekels
 SDRAM DIMM Spekels

2 x 72 pin 4MB/8MB/15MB/32MB/64MB modules

2x188 pln 8MB/16MB/32MB/84MB Synchronous

DRAM / EDO RAM modules

+ Max. Memory Size

256MB

DRAM Type
 Enhancement

Fast Page Mode or EDO DRAM or Synchronous DRAM

Mix of SDRAM or EDO DIMM supported

# Input/Output Subsystem

• PCI Bus Slots

4 x 32-bit PCI bus alola (4 masters)

+ ISA Bus Slots 3 x 16-bit ISA slots

# Integrated IDE, Super I/O Subsystem

• IDE Support

Built-in PCI IDE controller

Z connectors supporting up to 4 IDE Drives Support Mode 3,4 IDE, Ultra DMA-33 IDE, LS-120 Roppy 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

# CHAPTER 2

# **Power Management**

+ Green Functions

Support various Power Management schemes

# **BIOS Subsystem**

• BIOS Type

AWARD

BIOS Shadowing
 BIOS Features

Shadow RAM for System and Video BIOS Built-in setup. Power-on self test. Orive 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

updata

# **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

• 1 6V-3.2V Supply

Maximum rating : 30 W On board 1.6V~3.2V supply supports MMX grade CPUs

Connectors

Reset, Keylock Switches, Suspend Switch, HDD LED.

Power LED.

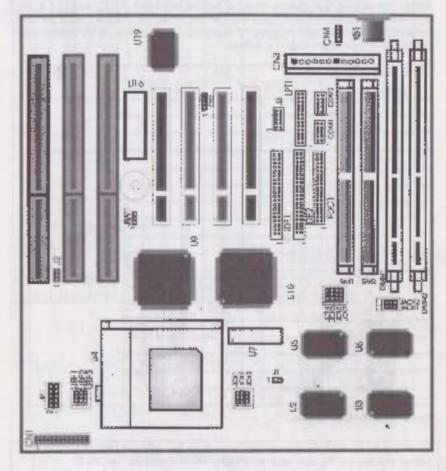
· Size

B.5" (W) x 8.5" (L)

DMI Support

# HARDWARE INSTALLATION & UPGRADE

# 2.1 Luyout of RHINO 12+ Main Bourd



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

# 2.2 CPU related settings

# CPU Voltage Core Selection

RUIDNO 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	144		JCK1/2/3			
	1-2	3-4	5-6	7-8	9-10	
3.5	1	0	0	0	1	2-3*
3.4	1	.0	.0	0	0	
3,3*	0	1	-1	-1		
3.2	0	15	1	1	0	
3.1	0	1	1	0	1	
3.0	0	1	1	-0	0	
2.9	0	13	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	21	1	0	
2.3	0	0	-1	0	1	
2.2	0	0	- 11	0	-0	
2.1	0	0	0	1	1	
2.0	()	0	0	1	0	
1.9	()	0	0	0.	1	
1.8	0	0	0	0	0	

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

# CPU Type

JHFI	1862	JBF3	JCK5	JCRE	JCK7	Circk	CPI/TYPE
2-3	7-3	Open	2-3	2.5	3-3	SONDE	land PS4C-75
1-3	2-3	Open	3-3	2-3	2-3		Cyrix 6x80-P170+
2-1	2-3	Cloen	2-3	2-3	2-3		AMD K5-PR75
14	3-3	Open	2-3	3-5	1.2	25MHz	Cynx 6x36-P133+
2-3	2-3	Open	1-2	2-3	3-3	\$0MHz	Intel P54C-90
1-7	23	Open	1-2	2-3	2-3	Security	Intel PS4C-120
1-2	14	Open	1-2	2-3	2-3		Intel P54C-150
2.1	9-2	Opni	1.2	2-3	2-3	120	Imit P54C-180
142	2-3	Opes	1-2	2-3	2-3		Cytin SKR6-P130+
141	1-2	Open	142	2-3	3-3		Cycix/BM 6x86MX-PR166
2-3	3.3	Oper	1-2	2-3	2-3		AMD K5-P9.90
2-5	2.3	Opes	1-2	2-3	3-3		AMD K5-PR120
1-2	2-3	Open	1-2	2-3	2-1		AMD K5-PR150
23	2-3	Opes	24	1-7	2-1	665dHz	Jami P54C-100
1-2	2-3	Open	2-3	1-2	2-3		Intel P54C-133
1-2	142	Open	2-3	1-2	3-3		Inhit P54C-166,P55C-166
23	1-2	Open	2-3	1-2	2-3	-	Intel P54C-300, P55C-200
23	24	Open	2.5	197	盐	_	Jone P15C-233
SUL	2-3	Open	20	1-1	3:3-	_	Cynt/IBM Ex86-P166+
1-2	1-2	Open.	2-3	10	70	100	CFINITISM INDIMX-PR20
2-3	2-3	Open		1-2	3.5		AMD K5-PR100
2.3	3-3	Opes	2-3	1-2	2-1		AMD K5-PR333
1-2	1-2	Open	23.	1-2	2-3	10000	AMD K5-PRIME
1-2	1-2	Open	2-3	1-2	2-3	100	AMD K6/166
2-3	14	Open	2-3	14	5-3	100	AMD K6/200
2-3	3-3	Opin	2-3	1-2	2-3	-	AMD K6/233
14	2/3	Open	1-1	2:3	1-2	75MHz	Cyrts/IRM 6x86-P200+
142	1-2	Open	1-2	2-3	1-12	2001	Cyrix 6x86MX-PRZ13

Be careful to select the appropriate Core voltage for different CPU. Improper Core voltage supplied to CPU may result in "PERMANENT DAMAGE" to CPU!

<sup>\*\*</sup> The Official Name of P55C is "Pentium Processor with MMX Technology."

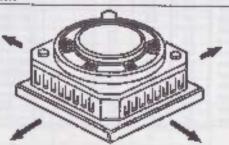
# 2.3 CPU Cooling Fau and Heatsink

CPU cooling fan is inevitable to the functionality of high speed CPU. The higher the core frequency of CPU, the more hear will be generated. Pour ventilation of the CPU and the voltage regulator will cause overhear. 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

	JACKI, 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)

Fin	Signal Name	
5	GND	
7	NC	
9	PW_LED	

# Keylock Connector (CNI 1-3)

Pio	Signal Name	
Plo	-KB_Lock	
3	GND	

# Speaker Connector (CN1 13-19)

Pin	Segnal Name
13	Speaker Data_Out
1.5	N C
17	N.C.
19	+5Vdc

# Reset Connector (EN1 18-20)

Pin	Signal Name
18	Reset
20	Ground

# Suspend Mode Connector (CN1 10-12)

Pin	Signal Name
10	Suspend_switch
12	GND

# HD LEB Connector (CN: 28:26)

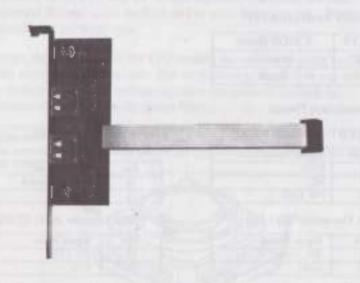
Pio	Signal Name
25	HD_LED-
24	-Vec

# PS/2 Mouse Connector (CN4)

Piu	Signal Name	
1	+5V dc	
2	GND	
3	MDATA	
4	MCLR	

# USB Connector (J3)

Pio	Signal Name	Pin	Signal Name
6	V(II)	1	VOC
7	Pert 1-	2	Port 0-
R	Pert 1+	3	Port 0+
Ä	Ground	4	Ground
10	NC		NC



# Power Connector (CN3)

Pill	Signal Name
I	Power Good
2	15Vdc
3	+12Vdc
4	-12V de
5	Ground
fi fi	Ground
7	Ground
R	Ground
9	-5Vdc
10	+5Vde
[]	+5Vde
1.3	+5Vde

# Keyboard Connector (KR1)

Pin	Signal Name
L,	Keyboard clock
2	Keyboard data
3	Nor used
4	Gruund
5	VCC

### MEMORY CONFIGURATION

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

There are two SIMM spekers and two DIMM spekers 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 instabled in pairs on each Methory Bank. For DIMM Modules, either Single or Double sided memory module can be installed. Please reference to the following tables.

Nhino 12+ supports up to 256MR memory. Both SIMMs and DIMM can be listalled simultaneously. Fach 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 formuln : -

M = DaB + 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 SMB modules and two SMB EDO is installed on DIMM scalet. The total inchery M is : -

S = 16MB; B = 2; D = 8MB

M = 8x2 + 16 - 32 MB

3.3V SDRAM/SV EDQ DIMM module can be used on Rhino 12+. System BIOS with automatically detect the memory type & size.

For 3.3V SDRAM module, make sure to set JACK1, JACK2 to 1-2 for 3.JV 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 and a battery failure which cause data line in CMOS RAM. If so, rejenter 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 RIFDS supports Software Turbo Speed features, Instead of processing the Turbo Speed Botton on the front panel, singly pross the <Ctrl>, <AU>, and <+> keys at the same time to enable the Turbo Speed feature; and pross the <Ctrl>, <AU>, 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 late BIOS CMOS SETTP UTILITY.

CMOS	FEMALE BIOS SETUP UTILITY SOFTWARE, INC.
STANDARD CMOS SETUP HIDS FEATURES SETUP CHIPSET FEATURE SETUP POWER MANAGEMENT SETUP PNPIPCI CONFIGURATION DITEGRATED PERIPHERALS LOAD SETUP DEFAULTS	SUPERVISOR PASSWORD USER PASSWORD IDE HDD AITTO DELECTION SAVE & EXIT SETUP FAIT WITHOUT SAVING
ESC: QLTT F10. Save & Fxit Serap	f ↓ >← : SELECT ITEM (Shift)F2: Clauge Color
Time. Do	ite. Hard Disk Type

The income displays oil 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 analine help nessage is displayed at the bottom of the screen as cursor is moving to various items which provides user befor understanding of each function. When a selection is made, the mention of selected item will appear so the user can mudify associated configuration parameters.

# 4.2 Standard CMOS Setup

			STAND		A BIOS FOS SETUP VARE, INC.			
Date (nim:dd/yy) : Tittle (hh:mm/ss) ; HARD DISKS	15:38:5	15		DEAD	PRECOME	LANDZ	SECTOR	моює
Primary Mester	'Auto	0	0	0	ıl	0	0	Aprilo
Printary Slave	:Auto	0	0	0	0	0	0	Allro
Secondary Muster	Auto		0		n	0	0	Auto
Secondary Slave	:Auto.	0	0	0	0	n.	0	Anno
Imve A: 1.44M, Imve B: Nune					Exten	asc Memor dod memni	ry I	640K 5360K
Video : EGA/Vi						tter Memor		384K 6384K
ESC. Quit Ft : Hely			?+→+ (Shift)F3	: Scleat	Item e Color	PU/PD	+V- : Madi	ify

The Standard CMOS Sciup screen is displayed above. System BIOS autumatically detects numberly 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 dist, flooply disk drive types for drive A: and B:, have up video display mode, and POST error handling selection. Use the arrow keys to highlight the Item and then use the <PgUp>, or <PgUp> keys to select the value you want in each item.

# Hard Disk Configurations

### TYPE:

Select from "1" or "45" to fell remaining fields with predefined values of disk drives. Select "Quer" to fell the remaining fields. Select "Autu" 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 minuber 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 sented 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" of "Large". However, if your band disk cylinder is more than 1924 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

I	ROM PODIS				
BIOS FEATURES SHIUP					
l	AWARD SOFTW	ARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow ; Ennhled			
CPU Internal Caulic	: Enabled	CB000 - CBFFF Shadow : Disobled			
Extensal Cache	: Enabled	CC000 - CFFFF Shadow : Disabled			
Quick Power On Self Lost	: Enabled	D0000 - D3FFF Shakow : Disabled			
Boot Sequence	FA, C, SCSI	D4000 - D7FFF Sliedow : Disabled			
Swap Ploppy Drive	. Dønbled	D8000 - DBFFF Shadow : Disabled			
Bont Up Floppy Seek	: Desabled	DC000 - DFFFF Shadow : Disabled			
Bont Lip NumLock Status	: On				
Boat Up System Speed	: Hìgh				
EDE FIDD Block Mode	: Enabled				
Gate A20 Option	: Fest				
Memory Parity Check	: Enabled				
Typemskie Rate Setting	: Disabled				
If ypeniatic Rate (Chars/Sec)	: 6				
Typemacic Delay (Msec)	; 250				
Security Option	: Secup	ESC : Qual 14-24 : Solder Item			
IDE Scoond Channel Check	: Enabled	Fit : Help PD/PD/H : Modify			
PCI/VGA Palette Scoop	: Disabled	F5 : Old Values (Shift) F2 ; Color			
OS Select For DRAM > 64MB	: Non-082	F6 : Load BIOS Defaults			
		F7 : Load Sctup Defaults			

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

### Virus Worning

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 on 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 hoot sector table can trigger the virus warning message. If you plan to run such a program, we recurremend that you first disable the virus warning.

### CPU Internal Cache

Cache memory is additional minimity that is much feater than university; LDRAM (system memory). CPUs from 486-type on up contain internal cache memory, and must, 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 fascer access by the CPU.

### External Cache

The Extenset Cache field may not appear if your system does not have external coche mentury.

### Quick Power On Self Test

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

### Boot Sequence

The original IBM PCs kinded the IXXS operating system from drive A (fluppy disk), so IBM PC-compatible systems are designed to search for an operating system first un 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 η from a CD-ROM drive.

### Swap Floppy Drive

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

### Boot Up Floppy Seek

When Enabled, the BIOS tests (seeks) Roppy 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 low modern PCs have 40-track floppy drives, we recommend that you set this fleid to Disabled to save time.

### Boot Up Numbock Status

Tuggle between Oit or Oil' to control the state of the Numbook key when the system buots. When toggled Oil, the numeric keypad generates numbers instead of controlling cursor operations.

### Boot Up System Speed

Select High to boof at the default CPU speed; select Low to bane 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 fligh.

Typematic Rate Setting

When Disabled, the following two items (Typernatic Rate and Typernatic Delay) are irrelevant. Keystrokes repeat at a rase determined by the beyboard controller in your system. When Enabled, you can select n typernatic rate and typernatic delay.

Typematic Rate (Chars/Sec)

When the typematic rate souting is crabbled, you can select a typematic rate (the rate as 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 experience cate setting is enabled, you can select a typermatic delay (the delay before key strokes begin to repent) 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 bouts, or only when you enter Setup.

PCL/VGA Palette Snoop

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

OS Select for DRAM > 64MB

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

Shadow

Software that resides in a read-only numbery (ROM) only on a device is called firmware. The Award BIOS penalts shadowing of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some copension peripherals, such as, for example, a SC91 adaptor.

Shadowing copies firmwere from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM has. Firmwere not shadowed must be read by the system through the 8-bit X-has. Shadowing improves the performance of the system BIOS and similar ROM firmwere 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 apparately. Many system designers hardware shadowing of the system BIOS and climitate a System BIOS Shadow option.

Video BIOS Shadow

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

# 4.4 Chipset Features Setup

	CUIPSET FEAT		
Auto Configurarian Video BIOS Cachenble System BIOS Cachenble Memory Bale At 15Mb Addr. Sustained 3T Write Read Pipeline Write Pipeline Cache Timing DRAM Timing Control Reduce DRAM leadoff cycle SDRAM Single/Burst Write SDRAM Cycle Length SDRAM Rank Interleave	: 70ns : Enabled : Enabled : Disabled : Fnabled : Fnabled : Fnabled : Fastesr : Turbo : Disabled : Single : 3 : Disabled	OvClap USB	: Disabled
		ESC : Quit Fy to FI : Hetp PU F2 : Old Values (Sh F7 : Lond Setup Def	PD/W+ : Mndlfy i(i) F2 : Coler

Auto Configuration

The value in this field must correspond to the speed of the DRAM installed in your system. DO NAT change the default setting of this field, as determined by the system broard monufactures for the installed DRAM. This value is access speed, so a lower value menna in faster system.

Sytem BION Cacheable

Selecting Enabled allows catching 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 area may result

Video BIOS Cuchenble

Scienting Enabled allows eaching of the video BIOS ROM at C0000th to C7FFFh, resulting in better video performance. However, if any program wates to this memory area, a system error may result.

Memory Hole At 15Mb Addr

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

OnChip USB

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

# 4.5 Power Management Sctup

	ROM PCIVIS. CMOS SETUP POWER MANAGE	CTILITY	
Power Management PM Centrol by APM Video off option Video off Method Conserve Mode MODEM Tise IRQ * PM T HDD Power Down Doze Mode Suspend Mode	: Disabled : Yes : Suspend -> off : VALSYNC+Blank : Disabled : I Tomers ** : Disabled : Disabled : Disabled : Disabled : Disabled	IRQS (LPT 2) IRQ6 (Floppy Disk) IRQ7 (LPT 1) IRQ8 (RTC Alarm) IRQ9 (IRQ2 Redic) IRQ10 (Reserved) IRQ11 (Reserved) IRQ12 (PS/2 Mnuse) IRQ13 (Coprocessor) IRQ14 (Hard Disk) IRQ15 (Reserved)	: Primary : Primary : Primary : Disabled : Secondary : Secondary : Secondary : Primary : Primary : Primary : Primary : Disabled
** PMT	vents **		
VGA LPT & COM HDD & FUU	: OFF : LPT/COM : ON		
DMA/moster Primary INTR IRQ4 (COM 2) IRQ4 (COM 1)	: OFF : ON : Primary : Primary	ESU ; Quit Two c F1 ; Help PLDP F5 : Old Values (Shill F7 : Load Setup Defer	D/-/- : Modify I) F2 : Color

### 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 n brief description of each mode.

This table describes each power management mode:

Man Saving	Maximum power savings. Only Available for S1, CP1fs. 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 Suving	Minimum, power savings. Inactivity pariod is 1 books 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 ponts and writes bipnes 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.

### Hignit Sergen

System only writes blanks to the video butler.

### Modem Use IRO

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

### **BDD Power Management**

### TIND Off After

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

### Daze Mode

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

### Suspend Mode

After the selected period of system functivity (I minutes to I hours), all devices except the fixed disk drive and CPC shut off.

### IRQn

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

IRQ3 (COM 2.) IRQ10 (Reserved)	٧.
1019 00 (000001100	
IRQ5 (LPT 2) IRQ12 (PS/2 Mos	
IRQ6 (Floppy Disk) IRQ13 (Coprocess	
IRQ7 (I.PT I) IRQ14 (Hard Dis)	0
TRQ9 (IRQ2 Redir) IRQ15 (Reserved)	)

# 4.6 PnP/PCI Configuration

	PCI CONFIG	CIVISA BIOS URATION SETUP DETWARE, INC.	
Resources Controlled By Reset Configuration Data	: Auto : Disabled	CPU to PCI write Buffer PCI Dynamic Bursting PCI Mester 0 WS Write PCI IRQ Activated By PCI IDE IRQ Map To Primary IDE IN IP Secondary IDE INTX	: Enabled : Enabled : Enabled : Level : PCI-AUTO : A : B
		ESC : Quit ↑↓→← F1 : Help PUPI F5 : Old Values (Shi0) F7 : Lond Setup Defaul	0/+/- : Medity ) F2 : Color

### Resources Controlled By

The Award Plug and Play 0105 can automationly configure all the box and Plug and Play computible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields divoppear, 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 Semp if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot book.

### IRQ a Assigned to

When resources are controlled mannelly, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Logacy (SA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCUISA PoP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus prohitecture.

### DMA n Assigned to

When resources are controlled manually, assign coals system DMA channel as one of the following types, depending on the type of device using the interrupt

Leggey 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 has prohitecture.

### 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 IDC IRQ mapping or PC AT (ISA) interrupts. If your system does not have one or two PCI IDE connectors on the system bound, 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: INTA A, INTA B, INTA C and INTA D. By default, a PCI connection is assigned INTA A. Assigning INTA B has no meaning unless the peripheral device requires two interrupt services rather than just one. Because the PCI IDE linerface in the chipset has two channels, it requires two interrupt services. The primary and accondary IDE INTA fields default to values appropriate for two PCI IDE channels, with the primary PCI IDE channel baving a lower interrupt than the secondary.

# 4.7 Integrated Peripherals

	ROM POWS	
T.	TEGRATED M	ERIPHTRALS
	AWARD SOFT	MARE, INC.
Onl, hip little First Charmel	: Ennbled	1
OnChip IDE second Channel	: Enobled	the state of the state of
1DF Prefetch Mode	: T.nahled	
IDF Primary Muster PIO	: Auto	
IDE Primary Slave PIO	: Auto	
IDE Secondary Master P(t)	: Auto	
IDE Secondary Slove Plr.I	: Auto	
IDE Primary Master LTDMA	: Enabled	-
IDE Primary Slave UDMA	: Emabled	
IDE Secondary Master UDMA	: Enable	
IDE Secondary Stave UDMA	Enable	
Onhoard FUX: Controller	: Enabled	
Onhourd (IART 1	: 3FB/IRO4	
Onbeard HART 2	: 2FB4RO3	
Onbeard UART 2 Mnde	: Standard	
		ESC : Quit 1 - : Softer [ter
Omboard Parellel Port	: 378/LRQ7	F1 : Help PUVPD/=/ Modify
Parallel Port Mode	; Normal	F5 : Old Values (Shift) F2 : Color
		F7 : Load Setup Defaults

# IDE Primary/Secondary Muster/Slave UDMA

The integrated peripheral controller contains an IDE interface with support for DMA31 mode. Select Enabled to activate englichentel separately.

# IDE Primary/Secundary Muster/Slave P10

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 outboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system entomatically determines the bestmodeforeachdevice.

University FDC Controller

Select Enabled if your system has a fluppy disk counteller (FDC) installed on the system haard 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 metching address for the first and second serial ports

Onboard Parallel Port

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

Parallel Port Mode

Select an operating made 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

KPP

Fast, bi-directional portused permarily by non-printer puripherals, CD

ROM, tape, bard drive, network adapters, etc.

ECP

Fast, bulliored port, used primarily by new generation of printers and

scariners.

# 4.8 Load Setup Defaults

Local 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 fluorilon, a message appears at the scener of the screen:

ENTER PASSWORD:

Type the presword, up to eight characters, and press Enter. Typing a password clears may previously entered password from CMOS menucy. Now the message changes.

CONFIRM PASSWORD:

Again, type the password and press Enter. To about the process of any time, press Esc.

In the Security Option item in the BIOS Features Scrup screen, soloct System or Setup:

System

Enter a password each time the system books and when ever you enter

Secup.

Setup

Enter a passward 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 PETANA HIGS STANDARD CMOS SETUP AWARD SOFTWARE, INC.

HARD DASKS TYPE SIZE CYLS HEAD PRECOMP LAND? SECTOR MODE Primary Master:

Select Primary Master Option (N=Skip): N							
OPTIONS	\$17 F.	CVLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2(11)	540	524	32	1)	1047	63	LBA
1	540	1048	16	65535	1047	63	NURMAI
3	540	524	12	65535	1047	63	LARGE

The IDE Hard Disk Drive Actu Detection feature automntically configurations your new bard disk. Use it for a quick configuration of new land drives. This feature allows you to set the parameters of up to feat IDE IDDa. 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 mean. For confirmation, once the Standard CMOS Setup feature.

# 4.11 Save and Exit Sctup

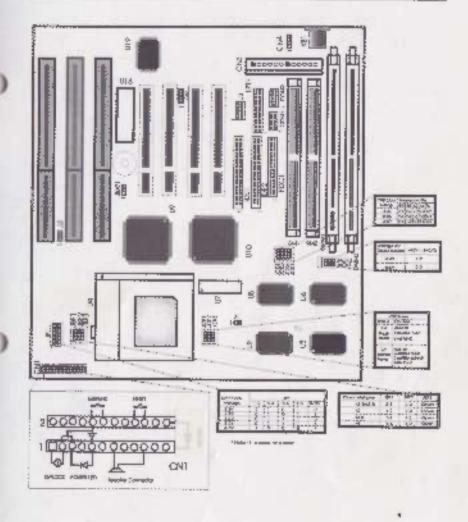
After you have made changes under Setup, press <#SC> to return to the main menu. Move cursur to "Save and Exit Setup" or press "F10" and then press "V" to change the CMOS Sesup II you did not change anything, press <ESC> again or move cursor to "Exit Without Soving" and press "Y" to retain the Setup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

SAVE in CMOS and EXIT (YOU?

# 4.12 Exit without Saving

If you select this teature, the following message will opport at the center of the screen to allow you to exit the setup utility without saving CMOS medifications:

Quit Without Saving (Y/N)?



# Octek Mainboard