

user manual

# EPIA-N800

Nano-ITX Mainboard

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## Regulatory Compliance

### FCC-A Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his personal expense.

#### Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.



Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

## Battery Recycling and Disposal



Only use the appropriate battery specified for this product.  
Do not re-use, recharge, or reheat an old battery.  
Do not attempt to force open the battery.  
Do not discard used batteries with regular trash.  
Discard used batteries according to local regulations.

## Safety Precautions



### Do's

- Always read the safety instructions carefully.
- Keep this User's Manual for future reference.
- All cautions and warnings on the equipment should be noted.
- Keep this equipment away from humidity.
- Lay this equipment on a reliable flat surface before setting it up.
- Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
- Place the power cord in such a way that people cannot step on it.
- Always unplug the power cord before inserting any add-on card or module.
- If any of the following situations arises, get the equipment checked by authorized service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment has not worked well or you cannot get it work according to User's Manual.
  - The equipment has dropped and damaged.
  - The equipment has obvious sign of breakage.



### Don'ts

- Do not leave this equipment in an environment unconditioned or in a storage temperature above 70°C (158°F). The equipment may be damaged.
- Do not leave this equipment in direct sunlight.
- Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- Do not place anything over the power cord.
- Do not cover the ventilation holes. The openings on the enclosure protect the equipment from overheating

## **Box Contents**

- 1 x EPIA-N800 Nano-ITX mainboard
- 1 x SATA cable
- 1 x SATA power cable
- 1 x USB cable
- 1 x DC-In cable
- 1 x Driver utility CD

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# 1

## Product Overview



The VIA EPIA-N800 is a compact and highly integrated Nano-ITX mainboard. The Nano-ITX form factor is 50% smaller than the Mini-ITX form factor — enabling the creation of an exciting new generation of small, ergonomic, innovative and affordable embedded systems.

The VIA EPIA-N800 Nano-ITX mainboard is rich in I/O integration and comes with an integrated VIA Nano 1.3+ GHz NanoBGA2 processor that boasts of ultra-low power consumption and cool operation.

## KEY COMPONENTS

### VIA Nano 1.3+ GHz Processor

Due to its ultra cool, ultra quiet, and reliable performance, the VIA Nano 1.3+ GHz NanoBGA2 processor is a perfect fit for compact embedded systems that need a good performance per watt ratio.

With a maximum power envelope of 15 W, the VIA Nano processor offers impressive power efficiency and highly effective heat dissipation all within an ultra compact NanoBGA2 package measuring just 21 mm x 21 mm.

### VIA VX800 All-in-one System Processor

The VIA VX800 integrates a premium graphics engine, an HD audio controller, a DDR2 memory controller, a 400MHz FSB processor interface, and extensive I/O support in a single -chip design.

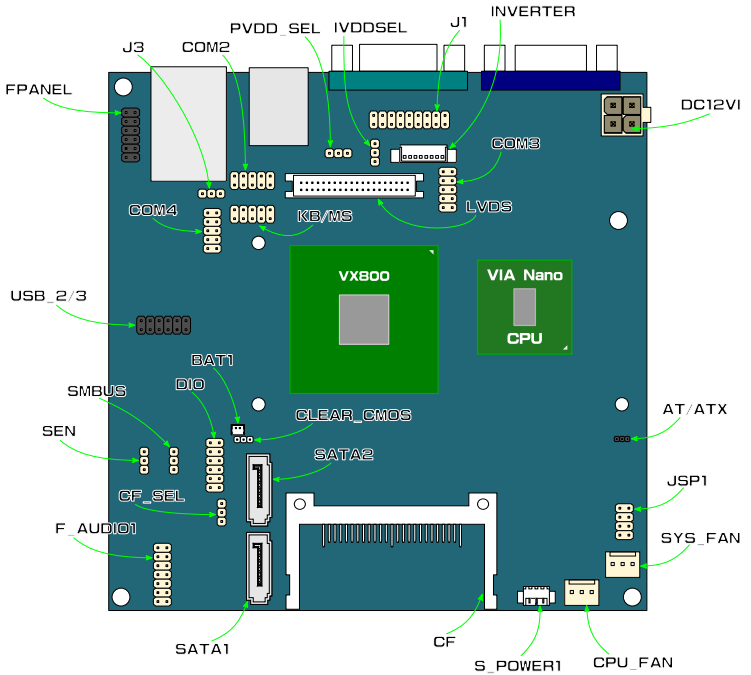
Complementing the power-efficient VIA Nano processor, the VX800 is based on a highly sophisticated power efficient architecture that enables rich integration in a compact package with a maximum power envelope of just 2.3 W.

# MAINBOARD SPECIFICATIONS

<b>CPU</b>	VIA Nano 1.3+ GHz NanoBGA2 processor <ul style="list-style-type: none"> <li>• NanoBGA2 package</li> <li>• 800 MHz Front Side Bus</li> </ul>
<b>Chipset</b>	VIA VX800 All-in-One System Processor
<b>Graphics</b>	Integrated VIA Chrome9™ HC IGP with 3D/2D and unified video decoding accelerators
<b>System Memory</b>	One DDR2 533/667 SODIMM slot (up to 2 GB)
<b>Onboard Storage</b>	Two SATA 3Gb/s connectors Two SATA power connectors One CF Type 1 socket
<b>Audio</b>	VIA VT1708S High Definition Audio Codec
<b>LAN</b>	One VIA VT6130 PCIe Gigabit Ethernet controller
<b>Onboard I/O Connectors</b>	One Audio pin connector for Line-out, Line-in and Mic-in One dual-channel LVDS connector (5V/3V) One Backlight control pin header One SMBus pin connector One DIO pin connector(4 GPI & 4 GPO) Two fan connectors: CPU and system One PS2 mouse/keyboard pin header One USB pin header One SPDIF pin header One SPI pin header One Front panel pin header Three RS-232 port pin headers (one with 5V/12V select) One power mode select connector One +12V DC-in 2-pin connector
<b>I/O Ports</b>	One VGA port One GigaLAN port Two USB ports One RS-232/422/485 port
<b>Expansion</b>	One Mini PCI slot
<b>System Monitoring and Management</b>	Wake-On-LAN and Keyboard Power-on RTC Timer Watch Dog Timer System power management, AC power failure
<b>BIOS</b>	Award BIOS with SPI 4/8 Mbit flash memory
<b>Operating System</b>	Windows 2000/XP/CE/XPe and Linux
<b>Operating Environment</b>	Temperature: 0°C up to 60°C Humidity: 0% ~ 95% (relative humidity; non-condensing)
<b>Form Factor</b>	Nano-ITX 12 cm x 12 cm

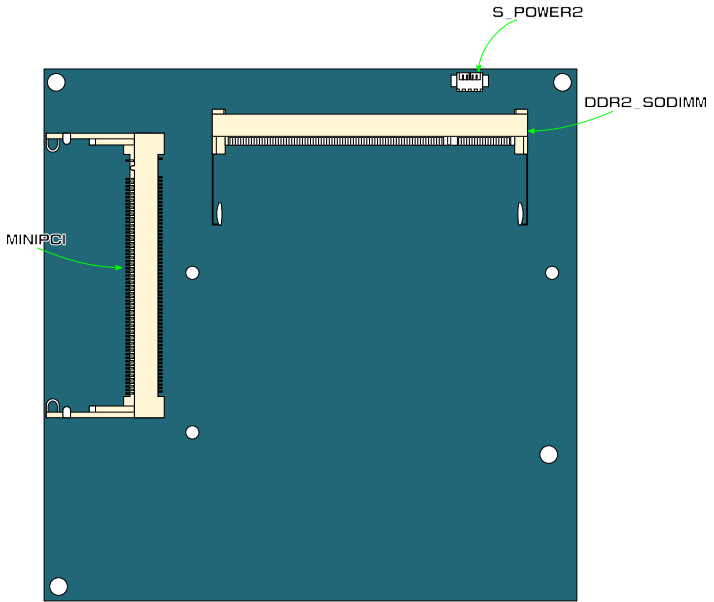
# EPIA-N800 LAYOUT

## Top View



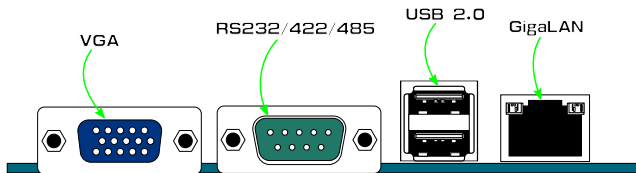
Symbol	Page	Symbol	Page
AT/ATX	23	J1	24
BAT1	7	J3	25
CF	14	JSP1	9
CLEAR_CMOS	21	KB/MS	11
COM2	12	LVDS	14
COM3	12	PVDD_SEL	22
COM4	12	S_POWER1	11
CPU_FAN	8	SATA_DOM1	23
DC12VI	7	SATA1	13
DIO	10	SATA2	13
F_AUDIO1	11	SEN	9
FPANEL	8	SMBUS	10
INVERTER	15	SYS_FAN	8
IVDDSEL	22	USB_2/3	12

## Bottom View



Symbol	Page	Symbol	Page
DDR2_SODIMM	17	S_POWER2	11
MINIPCI	16		

## Side View



Symbol	Page	Symbol	Page
GigaLAN	27	USB 2.0	27
RS-232/422/485	27	VGA	27

# 2

## Onboard Connectors, Slots and Pin Headers

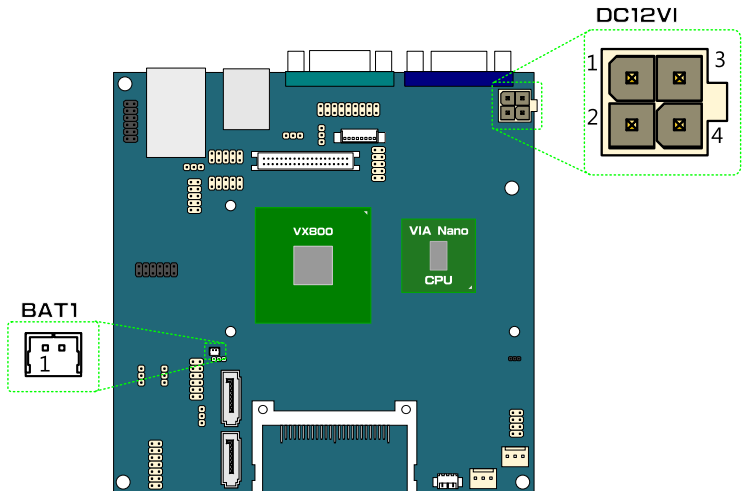
This chapter provides you with information about hardware installation procedures. It is recommended to use a grounded wrist strap before handling computer components. Electrostatic discharge (ESD) can damage some components.

## TOP SIDE CONNECTORS

### DC-In power connector: DC12VI

Power is delivered to the mainboard through a 4-pin 12V power connector.

Pin	Signal
1	Ground
2	Ground
3	+12 VDC
4	+12 VDC



### CMOS Battery: BAT1

The mainboard comes with external CMOS battery connector. This 2-pin connector used to connect the external cable battery for CMOS.

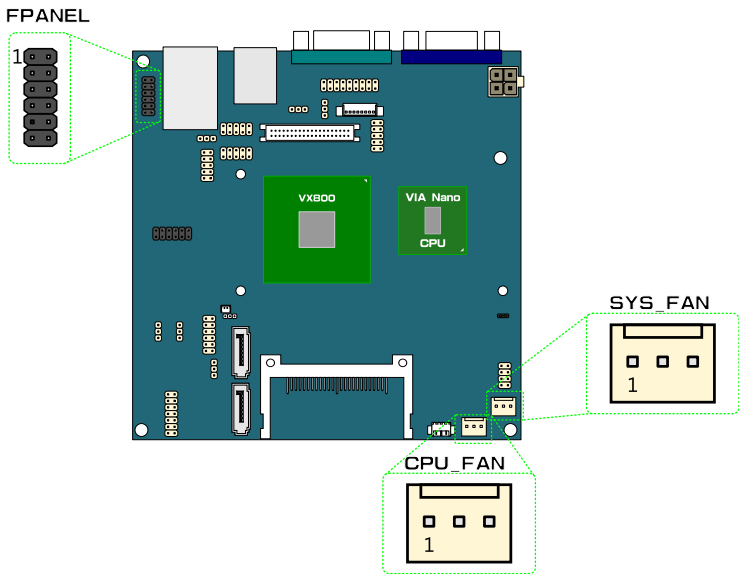
Pin	Signal
1	+3.3VBAT
2	GND



## Front Panel pin header: FPANEL

This pin header allows you to connect the power switch, reset switch, power LED, HDD LED, AND case speaker.

Pin	Signal	Pin	Signal
1	+PWR_LED	2	+HD_LED
3	+PWR_LED	4	-HD_LED
5	-PWR_LED	6	PW_BN
7	SPEAK+	8	GND
9	—	10	RST_SW
11	SPEAK-	12	GND



## Fan connector: CPU\_FAN, SYS\_FAN

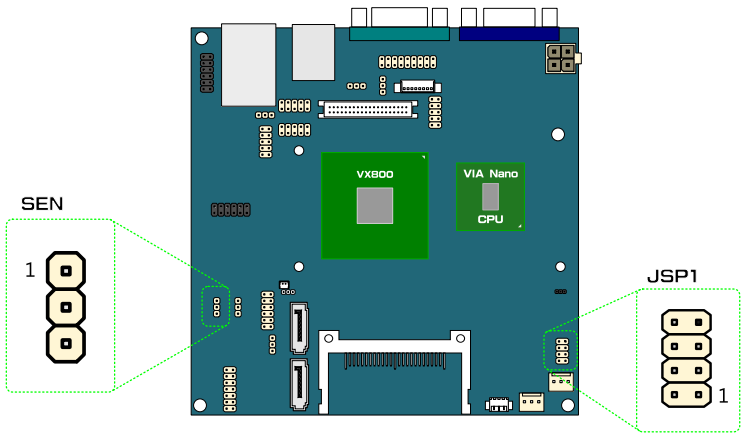
The fans run on +12V. When connecting the cable to the connector, always be aware that the red wire (positive wire) should be connected to pin 1. The black wire is the ground wire and should always be connected to GND.

Pin	Signal
1	F_IO
2	+12V
3	GND

## Temperature sensor: SEN

The mainboard comes with a system temperature sensor pin header. Connect a temperature sensor to the 3-pin header to enable the BIOS to monitor the system temperature. The recommended sensor model is NPN sensor MOS, 2N3904.

Pin	Signal
1	REMOTE I+
2	REMOTE I+
3	REMOTE I-



## SPI BIOS program pin header: JSP1

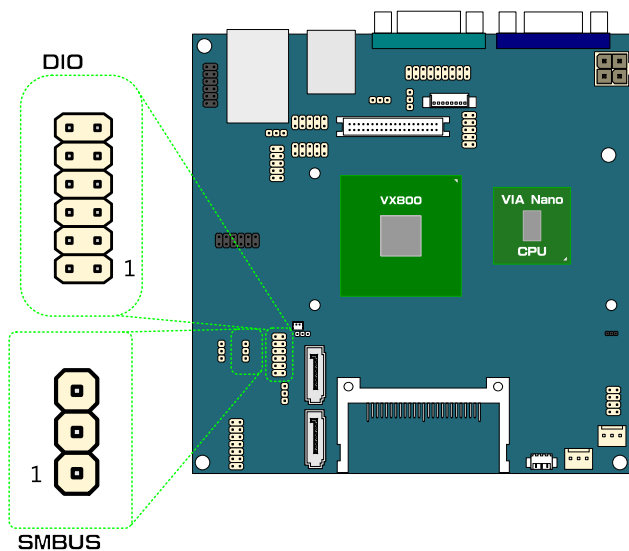
The mainboard comes with a SPI BIOS flashing interface.

Pin	Signal	Pin	Signal
1	SPI_VCC	2	Ground
3	SPI_SS0	4	SPI_CLK
5	SPI_DI	6	SPI_DO
7	—	8	RST_SW

## SMBus pin header: SMBUS

This pin header allows connection to SMBus devices.

Pin	Signal
1	SMBCK
2	SMBDT
3	Ground



## Digital I/O pin header: DIO

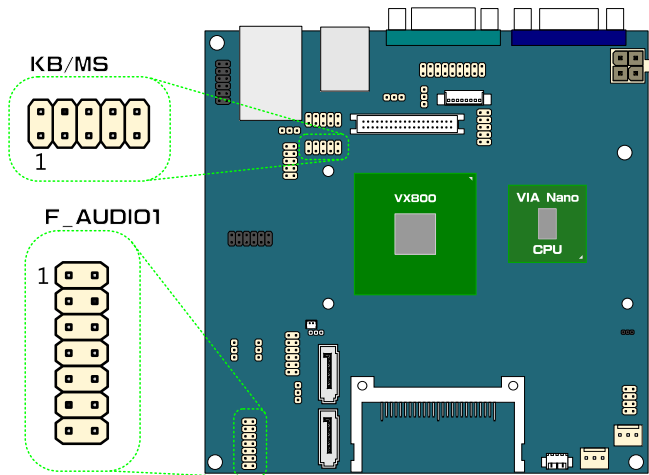
This pin header allows connection to DIO devices.

Pin	Signal	Pin	Signal
1	5V_DIO	2	12V_DIO
3	GPO_21	4	GPI_44
5	GPO_22	6	GPI_45
7	GPO_32	8	GPI_46
9	GPO_33	10	GPI_47
11	Ground	12	Ground

## Front Audio pin header: F\_AUDIO1

This pin header allows you to connect a front audio to the mainboard.

Pin	Signal	Pin	Signal
1	SPDIF_OUT	2	+5V
3	Ground	4	—
5	LINEOUT_R	6	LINEOUT_L
7	LINEIN_R	8	LINEIN_L
9	MIC1_RE_R	10	MIC1_RE_L
11	—	12	NC
13	Ground	14	Ground



## Keyboard and mouse: KB/MS

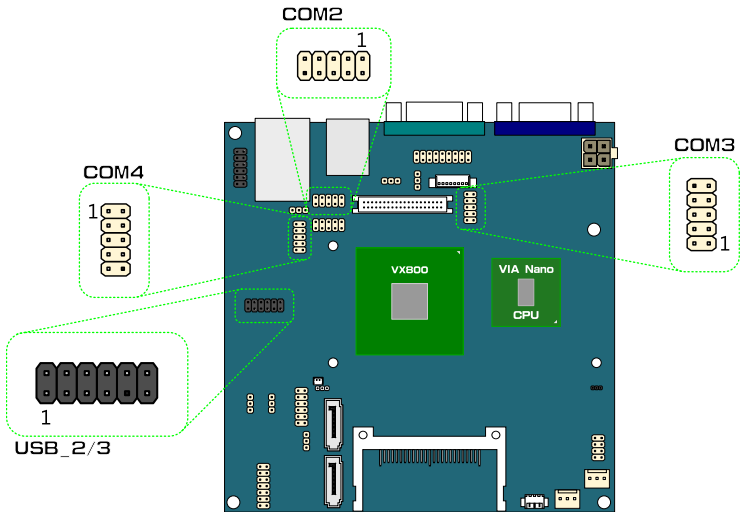
This pin header allows you to connect PS/2 keyboard and mouse ports.

Pin	Signal	Pin	Signal
1	VCCE	2	VCCE
3	NC	4	—
5	Ground	6	Ground
7	KB_DT	8	MS_DT
9	KB_CK	10	MS_CK

## Serial port: COM2, COM3, COM4

The mainboard has three COM pin headers. These three pin headers provide additional RS-232 support. Additionally, COM2 can change power modes between +5V and +12V. See page 25 for details.

Pin	Signal	Pin	Signal
1	DCD	2	SIN
3	SOUT	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI2	10	—



## USB pin header: USB\_2/3

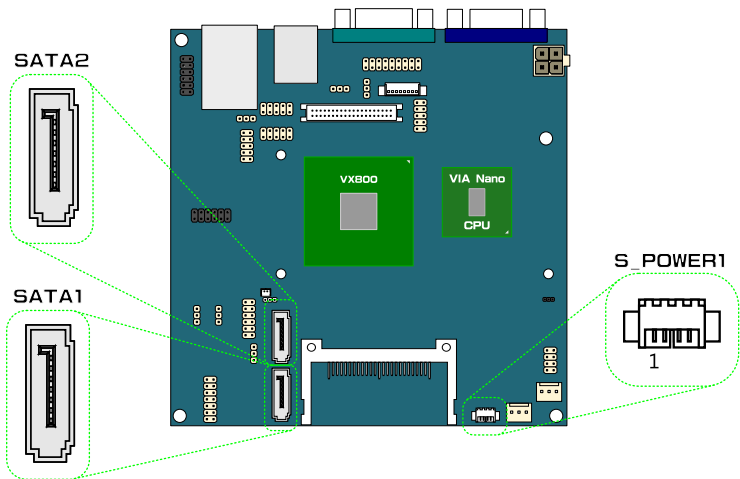
The USB pin header is for adding up to two additional USB 2.0 ports.

Pin	Signal	Pin	Signal
1	VUSB2	2	VUSB2
3	USBD_T2-	4	USBD_T3-
5	USBD_T2+	6	USBD_T3+
7	Ground	8	Ground
9	—	10	NC
11	Ground	12	GPO36

## SATA power: S\_POWER1

The mainboard has a 4-pin SATA power connector on the top side. Plug the SATA power cable into the SATA power connector. Make sure the power plug pins are aligned and inserted in the proper orientation.

Pin	Signal
1	+5V
2	+5V
3	Ground
4	Ground



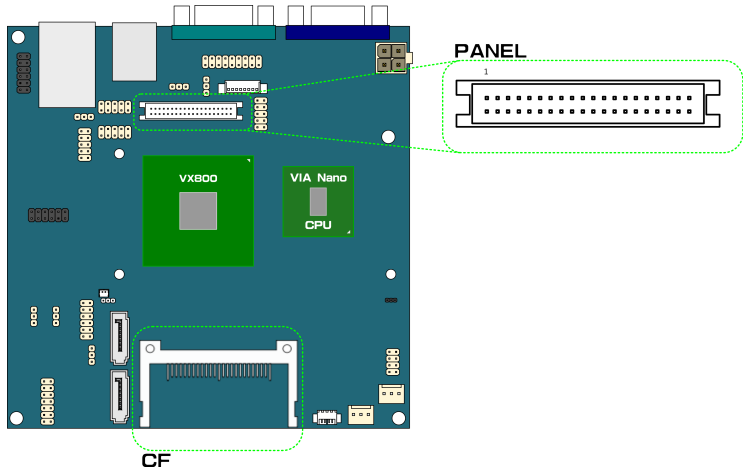
## SATA connector: SATA1, SATA2

The current SATA interface allows a data transfer rate of up to 300 MB/s — approximately 225% faster than Ultra DMA parallel ATA.

SATA1 has a 7<sup>th</sup> pin that is reserved for delivering +5V to a SATA DOM device. This power pin can be disabled if connecting a regular SATA device. See page 23 for more information.

## CompactFlash Type 1: CF

The mainboard provides support for one CF Type 1 device.



## LVDS Panel connector: PANEL

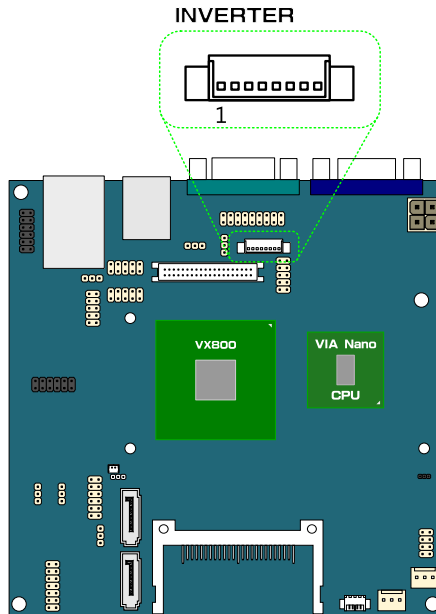
The dual-channel LVDS connector allows you to connect the panel's LVDS cable directly to support LVDS panel.

Pin	Signal	Pin	Signal
1	-A4_L	2	PVDD
3	A4_L	4	PVDD
5	Ground	6	Ground
7	-A5_L	8	Ground
9	A5_L	10	-A0_L
11	Ground	12	A0_L
13	-A6_L	14	Ground
15	A6_L	16	-A1_L
17	Ground	18	A1_L
19	-CLK2_L	20	Ground
21	CLK2_L	22	-A2_L
23	Ground	24	A2_L
25	-A7_L	26	Ground
27	A7_L	28	-CLK1_L
29	NC	30	CLK1_L
31	NC	32	Ground
33	NC	34	-A3_L
35	NC	36	A3_L
37	NC	38	SPCLK
39	NC	40	SPD

## LVDS backlight connector: INVERTER

The inverter connector allows you to connect a backlight control for the LVDS panel.

Pin	Signal
1	VCC
2	VCC
3	BAKLITE
4	PWM_OUT
5	BAKLITE
6	SMBUS_OUT
7	Ground
8	Ground

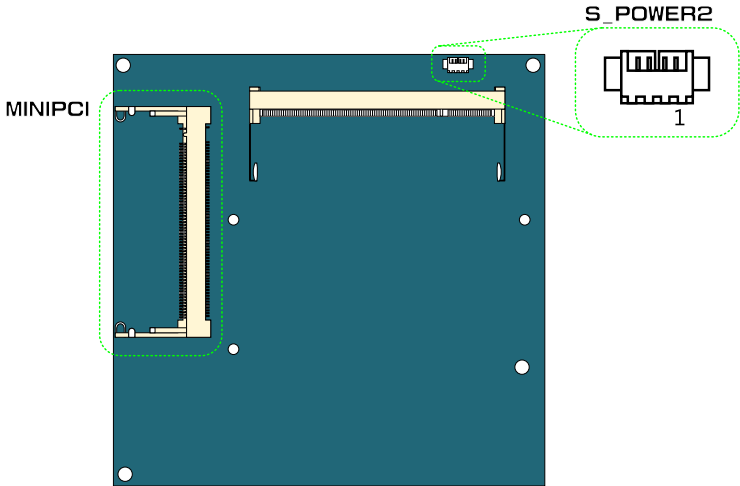




## BOTTOM SIDE CONNECTOR

### Mini PCI slot: MINIPCI

The mainboard has an onboard Mini PCI slot for using +3.3V



### SATA power: S\_POWER2

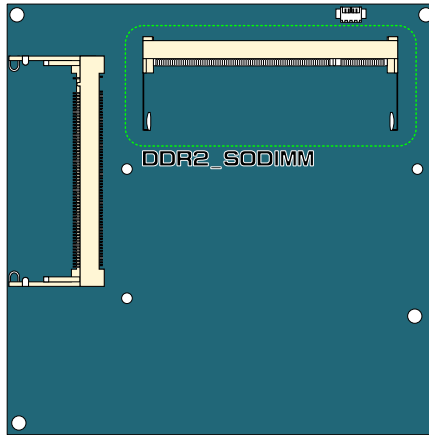
The mainboard also has a 4-pin SATA power connector on the bottom side. Plug the SATA power cable into the SATA power connector. Make sure the power plug pins are aligned and inserted in the proper orientation.

Pin	Signal
1	+5V
2	+5V
3	Ground
4	Ground

## Memory Module Installation

### Memory Slot: DDR2\_SODIMM

The VIA EPIA-N800 Pico-ITX mainboard has one 200-SODIMM slot for DDR2 667/533 SDRAM memory modules and supports memory sizes up to 2 GB.



### Available DDR2 SDRAM Configuration

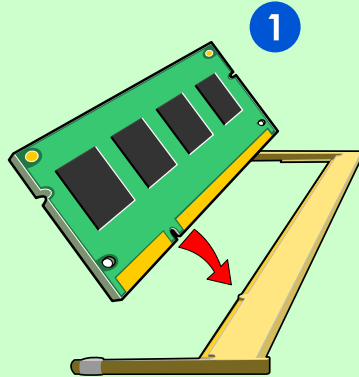
Refer to the table below for available DDR2 SDRAM configurations on the mainboard.

Slot	Module Size	Total
SODIMM	64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB	64 MB - 2 GB
Maximum supported system memory		2 GB

## Installing the memory

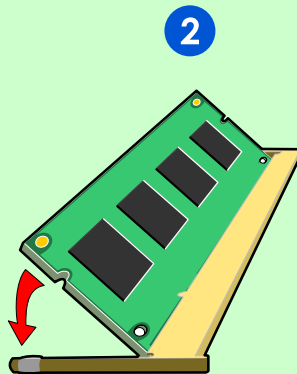
### Step 1

Locate the SODIMM slot in the mainboard and align the notch on the SODIMM with the memory slot.



### Step 2

Insert the SODIMM module at a 45 degree angle. Then push the SODIMM down until it snaps into the locking mechanism.





# 3

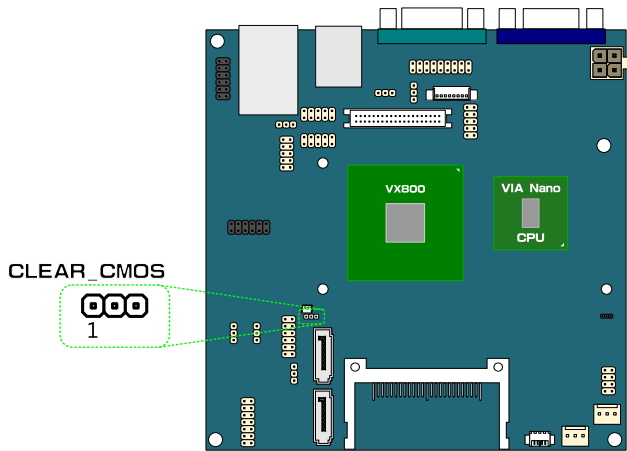
## Onboard Jumpers

# JUMPERS

## Clear CMOS jumper: CLEAR\_CMOS

The onboard CMOS RAM stores system configuration data and has an onboard battery power supply. To reset the CMOS settings, set the jumper on pins 2 and 3 while the system is off. Return the jumper to pins 1 and 2 afterwards. Setting the jumper while the system is on will damage the mainboard. The default setting is on pins 1 and 2.

Setting	1	2	3
Normal Operation (default)	ON	ON	OFF
Clear CMOS setting	OFF	ON	ON



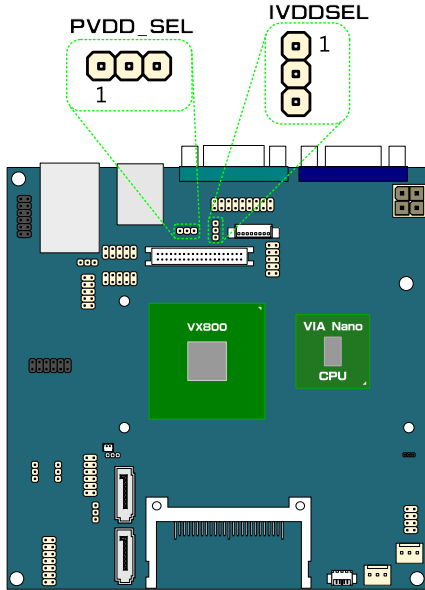
**Caution:**

Except when clearing the RTC RAM, never remove the cap from the CLEAR\_CMOS jumper default position. Removing the cap will cause system boot failure. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

## Panel power selector: PVDD\_SEL

This jumper determines the input voltage for the LCD connector. The default setting is +3.3V.

Setting	1	2	3
+3.3V	ON	ON	OFF
+5V	OFF	ON	ON



## Inverter power selector: IVDDSEL

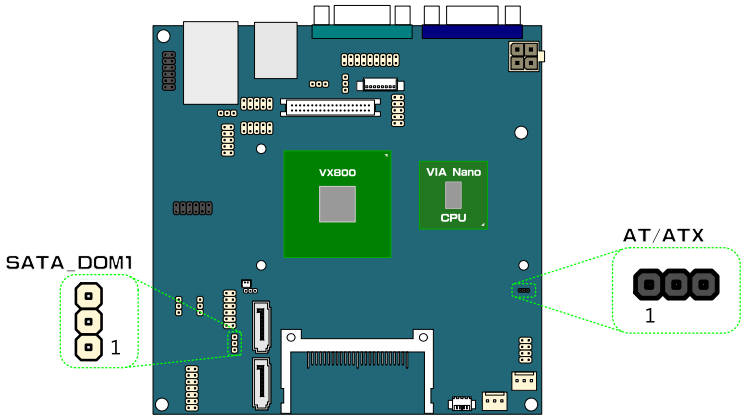
This jumper determines the input voltage for the LCD backlight inverter. The default setting is +5V.

Setting	1	2	3
+12V	ON	ON	OFF
+5V	OFF	ON	ON

## Power mode selector: AT/ATX

This jumper sets the mainboard to either the AT or ATX power profile. The default mode is ATX.

Setting	1	2	3
ATX	ON	ON	OFF
AT	OFF	ON	ON



## SATA DOM power selector: SATA\_DOM1

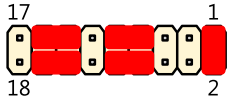
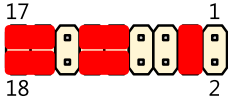
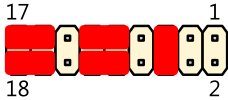
This jumper enables or disables the 7<sup>th</sup> power pin on SATA1. The default setting is “Normal”.

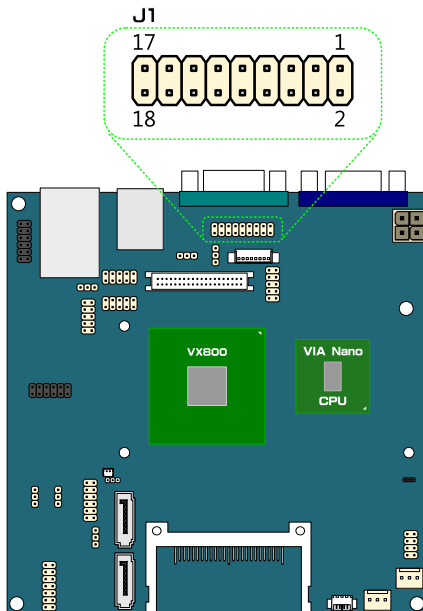
Setting	1	2	3
Normal (GND)	ON	ON	OFF
+5V	OFF	ON	ON



## COM1 serial mode selector: J1

This jumper sets the serial mode for COM1. Supported serial standards are RS-232, RS-422, and RS-485.

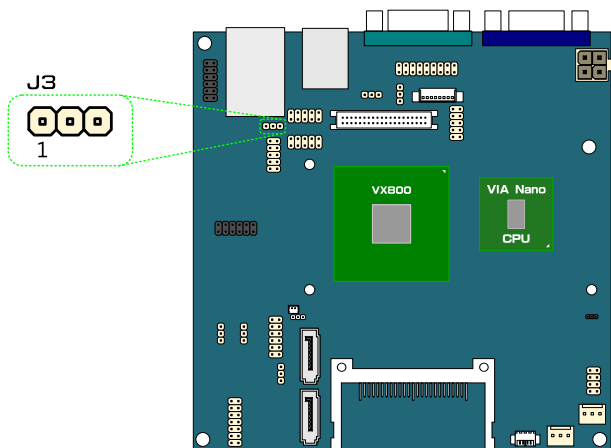
Setting	Cap pairs
RS-232	
RS-422	
RS-485	



## COM2 power selector: J3

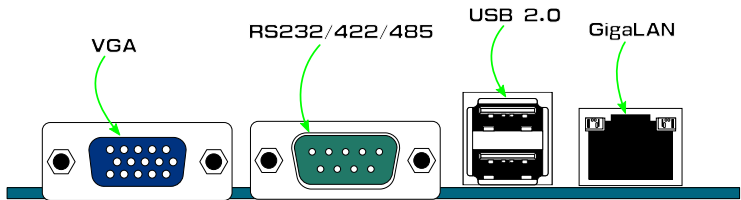
This jumper sets the power profile for COM2. The default setting is +5V.

Setting	1	2	3
+5V	ON	ON	OFF
+12V	OFF	ON	ON



# 4

## Back Panel Ports



### D-sub 15 display port: VGA

The D-sub 15 display port enables the mainboard to output graphics to standard analog VGA monitors.

### RS-232/422/485 port: COM1

COM1 is a convertible serial port. It can be switched between RS-232, RS-422, or RS-485 serial standards. See page 24 for details on jumper settings.

### USB 2.0 ports: USB\_0/1

Two standard USB 2.0 ports are provided on the back panel.

### Gigabit Ethernet RJ45 port: LAN

The mainboard provides one Gigabit Ethernet port controlled by the onboard VIA VT6130 PCIe Gigabit Ethernet controller.

# 5

## BIOS Setup

This chapter gives a detailed explanation of the BIOS setup functions.

## ENTERING THE BIOS SETUP MENU

Power on the computer and press <Delete> during the beginning of the boot sequence to enter the BIOS setup menu. If you missed the BIOS setup entry point, restart the system and try again.

## CONTROL KEYS

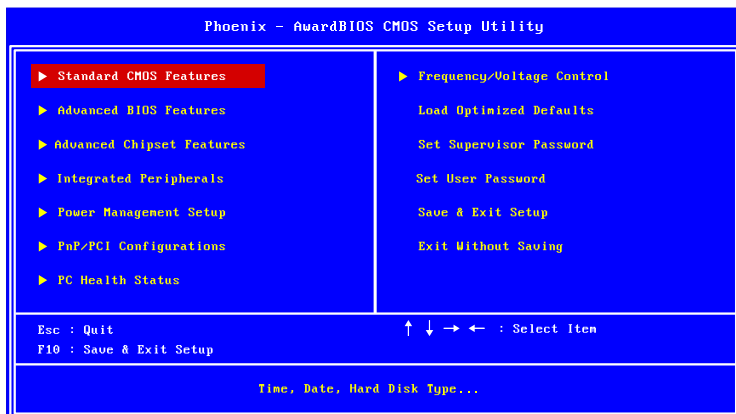
Keys	Description
Up	Move to the previous item
Down	Move to the next item
Left	Move to the left
Right	Move to the right
Enter	Select the item
Esc	Jumps to the Exit menu or returns to the main menu from a submenu
Page Up	Increase the numeric value or make changes
Page Down	Decrease the numeric value or make changes
+ (number pad)	Increase the numeric value
- (number pad)	Decrease the numeric value
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F5	Restore the previous CMOS value (only for option page setup menu)
F6	Load the Fail-safe CMOS values (only for option page setup menu)
F7	Load Optimized defaults
F10	Save all the changes and exit

## GETTING HELP

The BIOS setup program provides a “General Help” screen. You can display this screen from any menu/sub-menu by pressing <F1>. The help screen displays the keys for using and navigating the BIOS setup. Press <Esc> to exit the help screen.

## MAIN MENU

The Main Menu contains twelve setup functions and two exit choices. Use arrow keys to select the items and press <Enter> to accept or enter Sub-menu.



### Standard CMOS Features

Use this menu to set basic system configurations.

### Advanced BIOS Features

Use this menu to set the advanced features available on your system.

### Advanced Chipset Features

Use this menu to set chipset specific features and optimize system performance.

### Integrated Peripherals

Use this menu to set onboard peripherals features.

### Power Management Setup

Use this menu to set onboard power management functions.

### PnP/PCI Configurations

Use this menu to set the PnP and PCI configurations.



## PC Health Status

This menu shows the PC health status.

## Frequency/Voltage Control

Use this menu to set the system frequency and voltage control.

## Load Optimized Defaults

Use this menu option to load BIOS default settings for optimal and high performance system operations.

## Set Supervisor Password

Use this menu option to set the BIOS supervisor password.

## Set User Password

Use this menu option to set the BIOS user password.

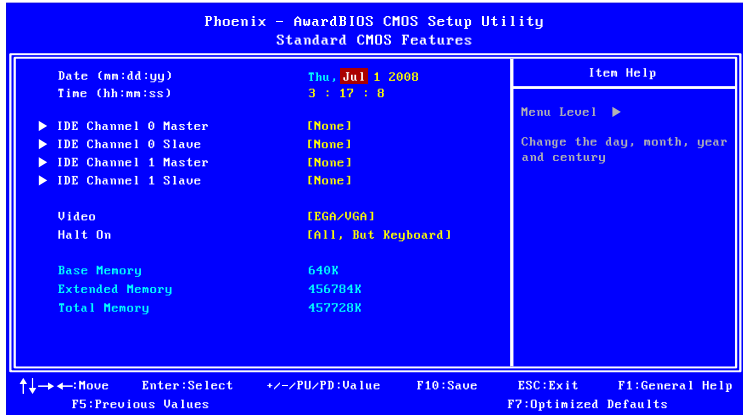
## Save & Exit Setup

Save BIOS setting changes and exit setup.

## Exit Without Saving

Discard all BIOS setting changes and exit setup.

# STANDARD CMOS FEATURES



## Date

The date format is [Day, Month Date, Year]

## Time

The time format is [Hour : Minute : Second]

## Video

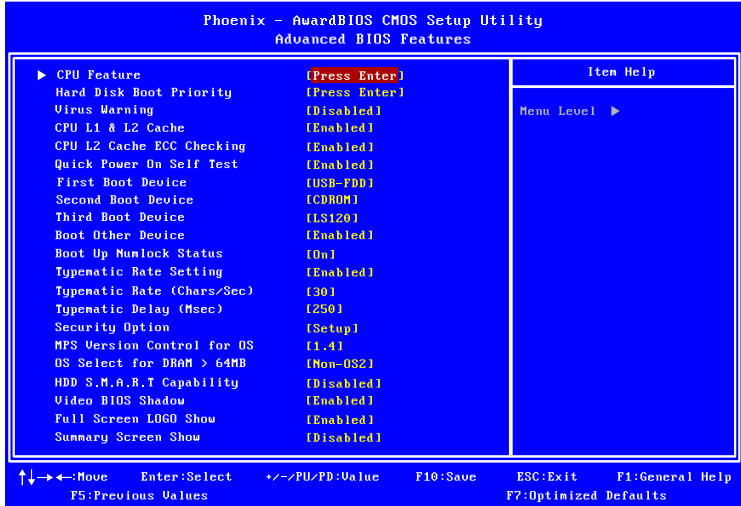
Settings: [EGA/VGA, CGA 40, CGA 80, MONO]

## Halt On

Set the system's response to specific boot errors. Below is a table that details the possible settings.

Settings	Description
All Errors	System halts when any error is detected
No Errors	System does not halt for any error
All, But Keyboard	System halts for all non-key errors

# ADVANCED BIOS FEATURES



## Virus Warning

Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection.

Settings	Description
Enabled	Turns on hard disk boot sector virus protection
Disabled	Turns off hard disk boot sector virus protection



**Note:**

If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on the screen and alarm beep.

## CPU L1 & L2 Cache

Settings	Description
Disabled	Turns off CPU L1 & L2 cache
Enabled	Turns on CPU L1 & L2 cache

## CPU L2 Cache ECC Checking

Settings: [Enabled, Disabled]

## Quick Power On Self-Test

Shortens Power On Self-Test (POST) cycle to enable shorter boot up time.

Settings	Description
Disabled	Standard Power On Self Test (POST)
Enabled	Shorten Power On Self Test (POST) cycle and boot up time

## First/Second/Third Boot Device

Set the boot device sequence as BIOS attempts to load the disk operating system.

Settings	Description
LS120	Boot from LS-120 drive
Hard Disk	Boot from the HDD
CDROM	Boot from CDROM
ZIP100	Boot from ATAPI ZIP drive
USB-FDD	Boot from USB Floppy drive
USB-ZIP	Boot from USB ZIP drive
USB-CDROM	Boot from USB CDROM
Legacy LAN	Boot from network drive
Disabled	Disable the boot device sequence

## Boot Other Device

Enables the system to boot from alternate devices if the system fails to boot from the “First/Second/Third Boot Device” lists.

Settings	Description
Disabled	No alternate boot device allowed
Enabled	Enable alternate boot device

## Boot Up NumLock Status

Set the NumLock status when the system is powered on.

Settings	Description
Off	Forces keypad to behave as arrow keys
On	Forces keypad to behave as 10-key

## Typematic Rate Setting

Enables “Typematic Rate” and “Typematic Delay” functions.

Settings: [Disabled, Enabled]

## Typematic Rate (Chars/Sec)

This item sets the rate (characters/second) at which the system retrieves a signal from a depressed key.

Settings: [6, 8, 10, 12, 15, 20, 24, 30]

## Typematic Delay (Msec)

This item sets the delay between, when the key was first pressed and when the system begins to repeat the signal from the depressed key.

Settings: [250, 500, 750, 1000]

## Security Option

Selects whether the password is required every time the System boots, or only when you enter Setup.

Settings	Description
Setup	Password prompt appears only when end users try to run BIOS Setup
System	Password prompt appears every time when the computer is powered on and when end users try to run BIOS Setup

## MPS Version Control for OS

Settings: [1.1, 1.4]

## OS Select for DRAM > 64MB

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

Settings: [Non-OS2, OS2]

## HDD S.M.A.R.T Capability

Settings: [Disabled, Enabled]

## Video BIOS Shadow

Enabled copies Video BIOS to shadow RAM Improves performance.

Settings: [Disabled, Enabled]

## Full Screen Logo Show

Show full screen logo during BIOS boot up process.

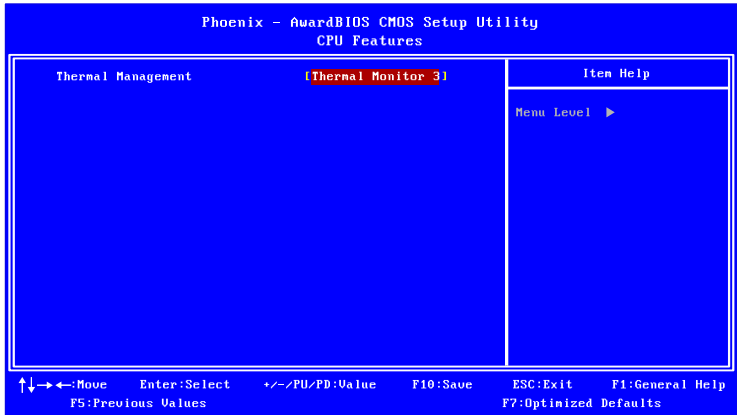
Settings: [Disabled, Enabled]

## Summary Screen Show

Show summary screen.

Settings: [Disabled, Enabled]

# CPU FEATURES

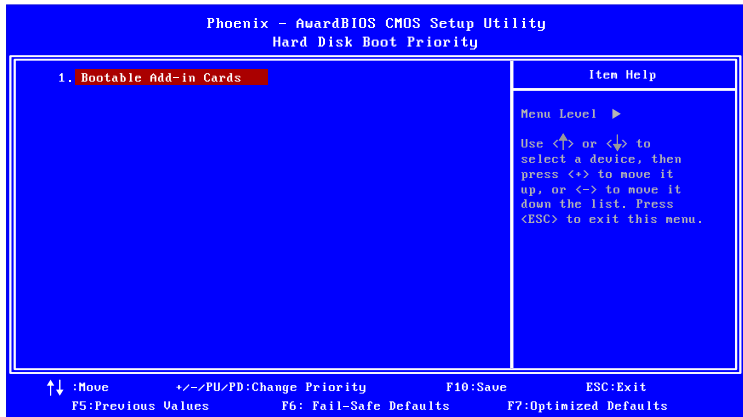


## Thermal Management

This item sets CPU's thermal control rule to protect CPU from overheat.

Settings	Description
Thermal Monitor ~	Dynamic Ratio and VID
Disabled	

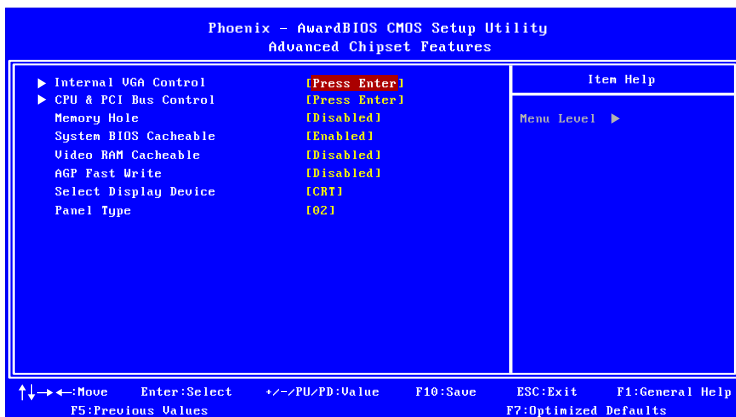
## HARD DISK BOOT PRIORITY



This is for setting the priority of the hard disk boot order when the “Hard Disk” option is selected in the “[First/Second/Third] Boot Device” menu item.



## ADVANCED CHIPSET FEATURES



### Caution:

The Advanced Chipset Features menu is used for optimizing the chipset functions. Do not change these settings unless you are familiar with the chipset.

### Memory Hole

Settings: [Disabled, 15M – 16M]

### System BIOS Cacheable

Settings: [Disabled, Enabled]

### Video RAM Cacheable

Settings: [Disabled, Enabled]

### AGP Fast Write

Settings: [Disabled, Enabled]

### Select Display Device

Settings: [CRT, LCD, CRT+LCD]

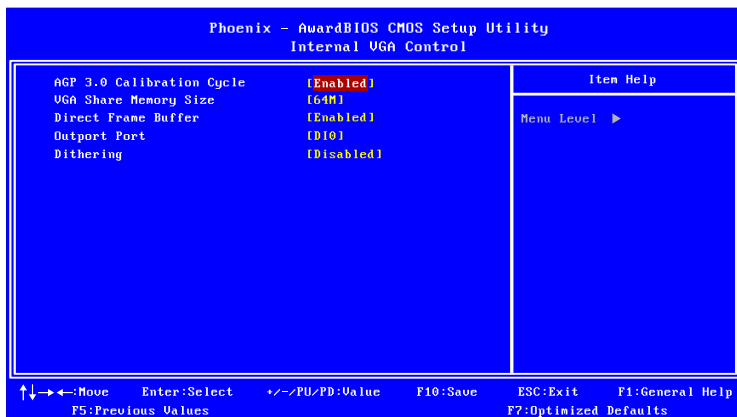
## Panel Type

Key in a HEX number.

Settings: [Min = 0000, Max = 000F]

<b>Resolution</b>	<b>Code</b>
640 x 480	0
800 x 600	1
1024 x 768	2
1280 x 768	3
1280 x 1024	4
1400 x 1050	5
1440 x 900	6
1280 x 800	7
800 x 480	8
1024 x 600	9
1366 x 768	A
1600 x 1200	B
1680 x 1050	C
1920 x 1200	D
640 x 240	E
480 x 640	F

## INTERNAL VGA CONTROL



### AGP 3.0 Calibration Cycle

Settings: [Disabled, Enabled]

### VGA Share Memory Size

This setting allows you to select the amount of system memory that is allocated to the integrated graphics processor.

Settings: [Disabled, 64M, 128M, 256M]

### Direct Frame Buffer

Settings: [Disabled, Enabled]

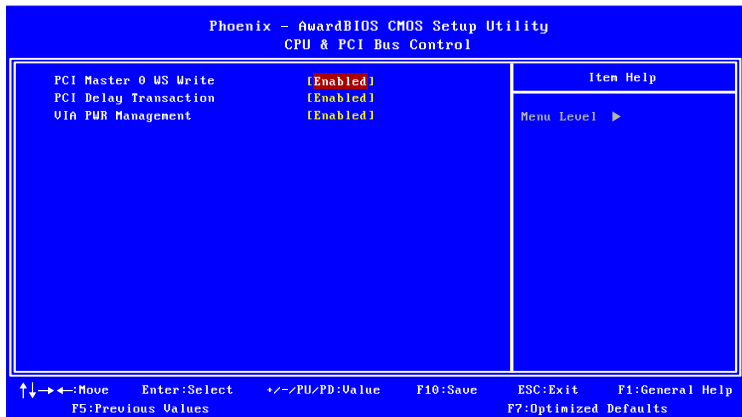
### Outport Port

Settings: [D10, D11]

### Dithering

Settings: [Disabled, Enabled]

# CPU & PCI BUS CONTROL



## PCI Master 0 WS Write

Settings: [Enabled, Disabled]

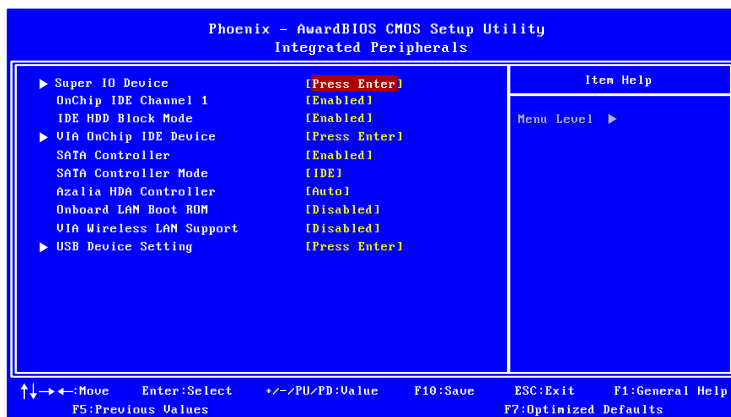
## PCI Delay Transaction

Settings: [Disabled, Enabled]

## VIA PWR Management

Settings: [Disabled, Enabled]

## INTEGRATED PERIPHERALS



### OnChip IDE Channel 1

Settings: [Disabled, Enabled]

### IDE HDD Block Mode

Settings: [Disabled, Enabled]

### SATA Controller

Settings: [Disabled, Enabled]

### SATA Controller Mode

Settings: [IDE, RAID]

### Azalia HDA Controller

Settings: [Auto, Disabled]

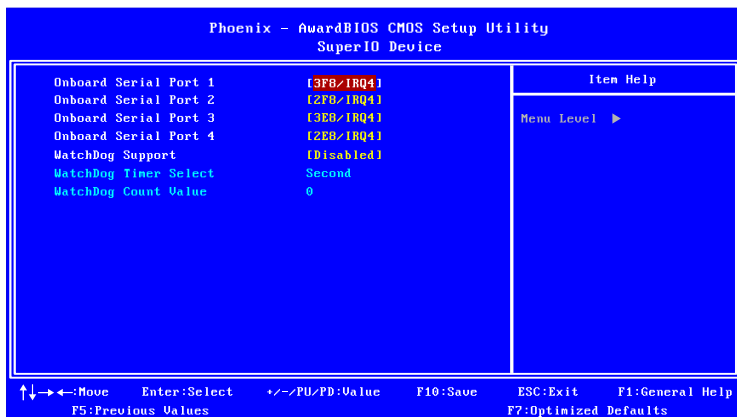
### Onboard LAN Boot ROM

Settings: [Enabled, Disabled]

### VIA Wireless LAN Support

Settings: [Enabled, Disabled]

## SUPER IO DEVICE



### Onboard Serial Port 1

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ4, 3E8/IRQ4, 2E8/IRQ4]

### Onboard Serial Port 2

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ4, 3E8/IRQ4, 2E8/IRQ4]

### Onboard Serial Port 3

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ4, 3E8/IRQ4, 2E8/IRQ4]

### Onboard Serial Port 4

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ4, 3E8/IRQ4, 2E8/IRQ4]

### WatchDog Support

Settings: [Enabled, Disabled]

### WatchDog Timer Select

This option is only available if “WatchDog Support” is enabled.

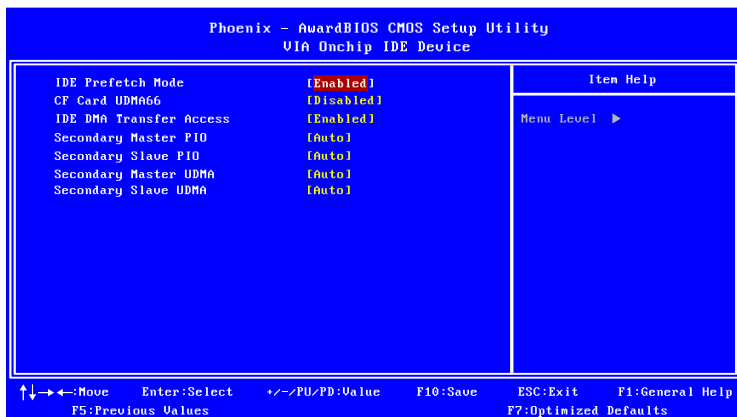
Settings: [Minute, Second]

### WatchDog Count Value

This option is only available if “WatchDog Support” is enabled.

Settings: Key in an integer between 0 and 255 inclusive.

## VIA ONCHIP IDE DEVICE



### IDE Prefetch Mode

Settings: [Disabled, Enabled]

### CF Card UDMA66

Settings: [Disabled, Enabled]

### IDE DMA Transfer Access

Settings: [Disabled, Enabled]

### Secondary Master PIO

Settings: [Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4]

### Secondary Slave PIO

Settings: [Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4]

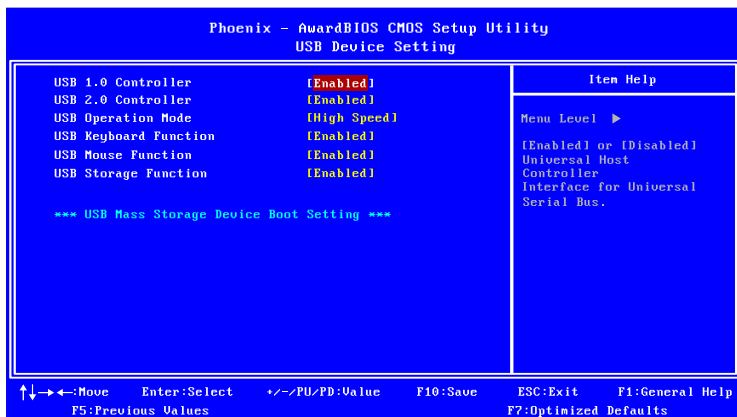
### Secondary Master UDMA

Settings: [Disabled, Auto]

### Secondary Slave UDMA

Settings: [Disabled, Auto]

## USB DEVICE SETTING



### USB 1.0 Controller

Enable or disable Universal Host Controller Interface for Universal Serial Bus.

Settings: [Disabled, Enabled]

### USB 2.0 Controller

Enable or disable Enhanced Host Controller Interface for Universal Serial Bus.

Settings: [Disabled, Enabled]

### USB Operation Mode

Auto decide USB device operation mode.

Settings	Description
Full/Low Speed	All of USB Device operated on full/low speed mode
High Speed	If USB device was high speed device, then it operated on high speed mode.

### USB Keyboard Function

Enable or disable Legacy support of USB Keyboard.

Settings: [Disabled, Enabled]

### USB Mouse Function

Settings: [Disabled, Enabled]

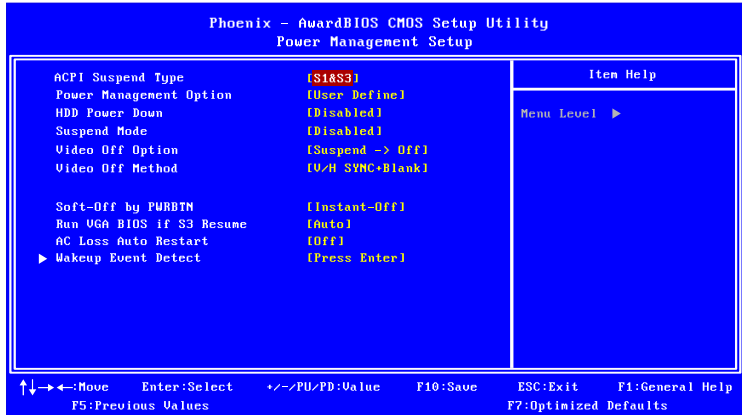


## USB Storage Function

Enable or disable Legacy support of USB Mass Storage.

Settings: [Disabled, Enabled]

# POWER MANAGEMENT SETUP



## ACPI Suspend Type

Settings	Description
S1(POS)	S1/Power On Suspend (POS) is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system contexts.
S3(STR)	S3/Suspend To RAM (STR) is a power-down state. In this state, power is supplied only to essential components such as main memory and wakeup-capable devices. The system context is saved to main memory, and context is restored from the memory when a "wakeup" event occurs.
S1 & S3	Depends on the OS to select S1 or S3.

## Power Management Option

Settings: [User Define, Min Saving, Max Saving]

## HDD Power Down

Set the length of time for a period of inactivity before powering down the hard disk.

Settings: [Disable, 1 Min, 2 Min, 3 Min, 4 Min, 5 Min, 6 Min, 7 Min, 8 Min, 9 Min, 10 Min, 11 Min, 12 Min, 13 Min, 14 Min, 15 Min]

## Suspend Mode

Sets the length of time for a period of inactivity before entering suspend mode.

Settings: [Disable, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, 1 Hour]

## Video Off Option

Select whether or not to turn off the screen when system enters power saving mode, ACPI OS such as Windows XP will override this option.

Settings	Description
Always On	Screen is always on even when system enters power saving mode
Suspend -> Off	Screen is turned off when system enters power saving mode

## Video Off Method

Settings: [Blank Screen, V/H SYNC+Blank, DPMS Support]

## Soft-Off by PWRBTN

This field configures the power button on the chassis.

Settings	Description
Delay 4 Sec	System is turned off if power button is pressed for more than four seconds.
Instant-Off	Power button functions as a normal power-on/-off button.

## Run VGABIOS if S3 Resume

Select whether to run VGA BIOS if resuming from S3 state. This is only necessary for older VGA drivers.

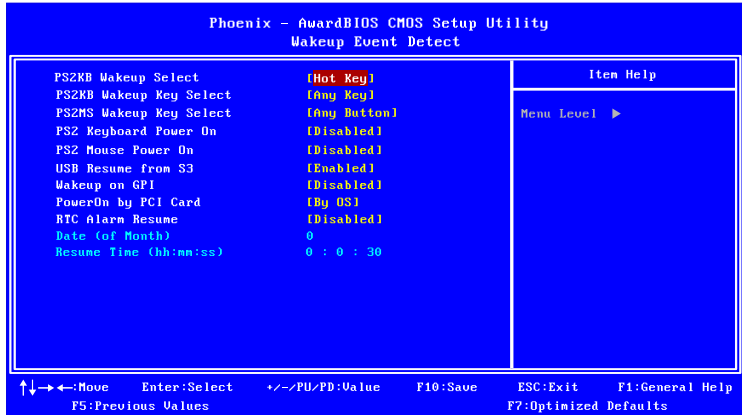
Settings: [Auto, Yes, No]

## AC Loss Auto Restart

The field defines how the system will respond after an AC power loss during system operation.

<b>Settings</b>	<b>Description</b>
Off	Keeps the system in an off state until the power button is pressed
On	Restarts the system when the power is back
Former-Sts	Former-Sts

# WAKEUP EVENT DETECT



## PS2KB Wakeup Select

When selecting “Password”, press <Page Up> or <Page Down> to change password. The maximum number of characters is eight. “PS2MS Wakeup from S3/S4/S5” and “PS2KB Wakeup from S3/S4/S5” will be disabled while changing the password.

Settings: [Hot Key, Password]

## PS2KB Wakeup Key Select

Sets a Hot Key to restore the system from the power saving mode to an active state.

Settings: [Ctrl+F1, Ctrl+F2, Ctrl+F3, Ctrl+F4, Ctrl+F5, Ctrl+F6, Ctrl+F7, Ctrl+F8, Ctrl+F9, Ctrl+F10, Ctrl+F11, Ctrl+F12, Power, Wake, Any Key]

## PS2MS Wakeup Key Select

Enables any mouse activity to restore the system from the power saving mode to an active state.

Settings: [Any Button, Left Button, Right Button]

## PS2 Keyboard Power On

Settings: [Disabled, Enabled]

## PS2 Mouse Power On

Settings: [Disabled, Enabled]

## USB Resume from S3

Settings: [Disabled, Enabled]

## Wakeup On GPI

Settings: [Disabled, Enabled]

## PowerOn by PCI Card

Enables activity detected from any PCI card to power up the system or resume from a suspended state. Such PCI cards include LAN, onboard USB ports, etc.

Settings: [By OS, Enabled]

## RTC Alarm Resume

Set a scheduled time and/or date to automatically power on the system.

Settings: [Disabled, Enabled]

## Date (of Month)

The field specifies the date for “RTC Alarm Resume”.

Key in a DEC number.

Settings: [Min = 0, Max = 31]

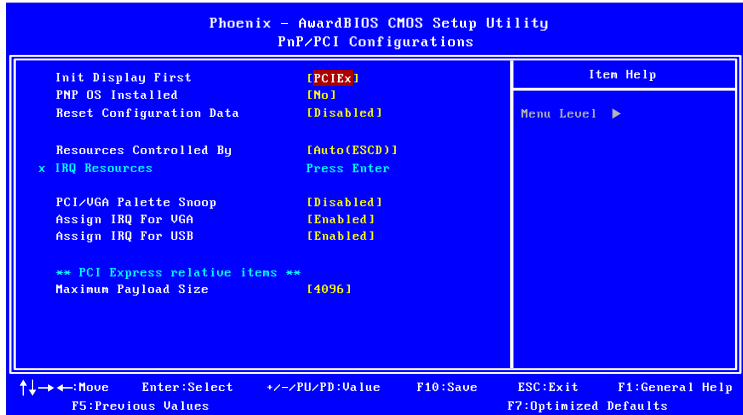
## Resume Time (hh : mm : ss)

The field specifies the time for “RTC Alarm Resume”.

Key in a DEC number.

Settings: [Min = 0, Max = 23]

## PNP/PCI CONFIGURATIONS



### Note:

This section covers some very technical items and it is strongly recommended to leave the default settings as is unless you are an experienced user.

## Init Display First

Settings: [PCI Slot, Onboard, AGP, PCIEx]

## PNP OS Installed

Settings	Description
No	BIOS will initialize all the PnP cards
Yes	BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system

## Reset Configuration Data

Settings	Description
Disabled	Default setting
Enabled	Resets the ESCD (Extended System Configuration Data) after exiting BIOS Setup if a newly installed PCI card or the system configuration prevents the operating system from loading

## Resources Controlled By

Enable the BIOS to automatically configure all the Plug-and-Play compatible devices.

Settings	Description
Auto(ESCD)	BIOS will automatically assign IRQ, DMA and memory base address fields
Manual	Unlocks "IRQ Resources" for manual configuration

## PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card. When disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

Settings: [Disabled, Enabled]

## Assign IRQ for VGA

Assign IRQ for VGA devices.

Settings: [Disabled, Enabled]

## Assign IRQ for USB

Assign IRQ for USB devices.

Settings: [Disabled, Enabled]

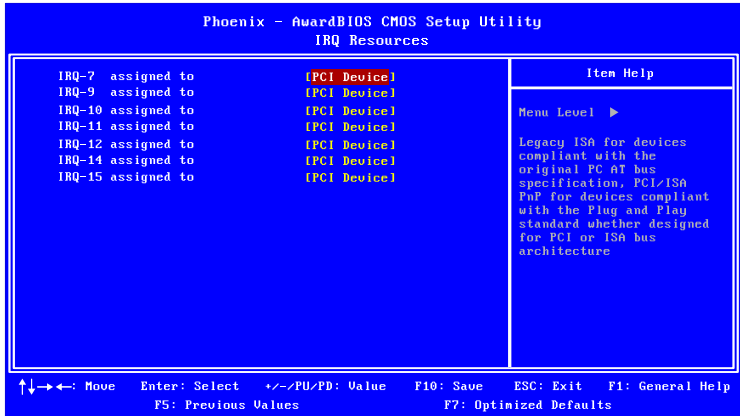
## Maximum Payload Size

Set maximum TLP payload size for the PCI Express devices. The unit is byte.

Settings: [128, 256, 512, 1024, 2048, 4096]



## IRQ RESOURCES



IRQ Resources list IRQ 7/9/10/11/12/14/15 for users to set each IRQ a type depending on the type of device using the IRQ. Settings:

- PCI Device*                      For Plug-and-Play compatible devices designed for PCI bus architecture
- Reserved*                        The IRQ will be reserved for further requests

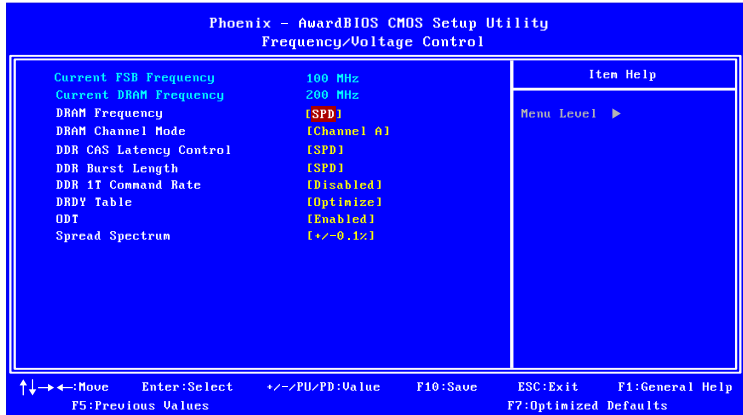
## PC HEALTH STATUS

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
PC Health Status		Menu Level ▶
SYSTEM Temp.	45°C	
3.30	3.300	
Ucore	1.600	
50	4.900	
120	11.940	
CPU Fan	4160 RPM	
System Fan	0 RPM	

↑↓←→:Move    Enter:Select    +/-/PU/PD:Value    F10:Save    ESC:Exit    F1:General Help  
 F5:Previous Values    F7:Optimized Defaults

The PC Health Status displays the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and fan speeds.

# FREQUENCY/VOLTAGE CONTROL



## DRAM Frequency

Settings: [DDR2-400, DDR2-533, DDR-667, SPD]

## DRAM Channel Mode

Settings: [Channel A, Channel A&B, Channel A&C]

## DDR CAS Latency Control

Settings: [2T, 3T, 4T, 5T, 6T, SPD]

## DDR Burst Length

Settings: [4, 8, SPD]

## DDR 1T Command Rate

Settings: [Disabled, Enabled]

## DRDY Table

Settings: [Slowest, Optimize]

## ODT

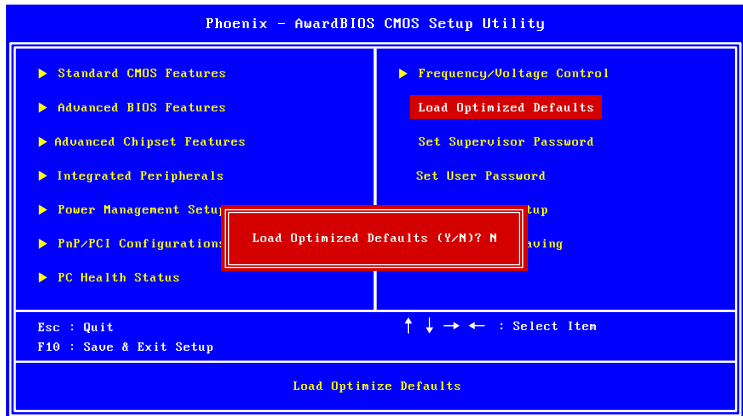
Settings: [Disabled, Enabled]

## Spread Spectrum

When the mainboard's clock generator pulses, the extreme values (spikes) of the pulses create EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves.

Settings: [Disabled, +/- 0.1%, +/- 0.2%, +/- 0.3%, +/- 0.4%, +/- 0.5%, +/- 0.6%, +/- 0.7%, +/- 0.8%, +/- 0.9%]

## LOAD OPTIMIZED DEFAULTS



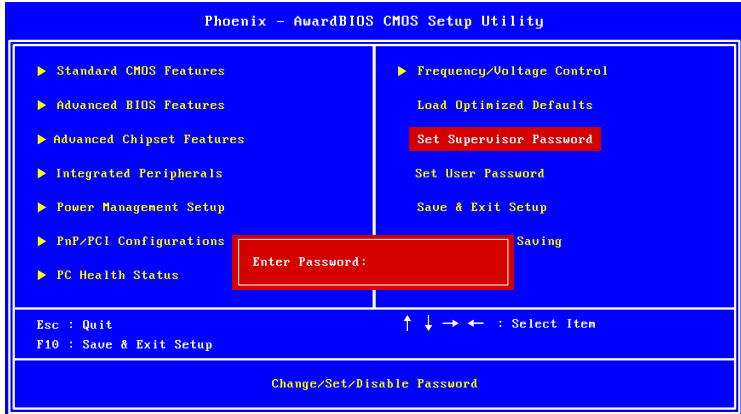
This option is for restoring all the default optimized BIOS settings. The default optimized values are set by the mainboard manufacturer to provide a stable system with optimized performance.

Entering "Y" and press <Enter> to load the default optimized BIOS values.

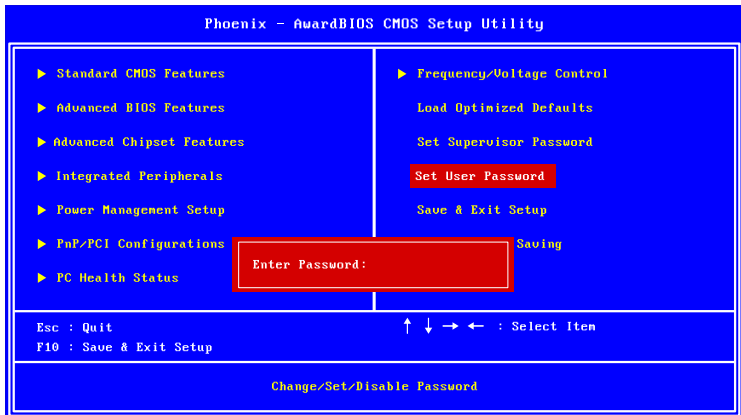
Entering "N" will cancel the load optimized defaults request.

# SET SUPERVISOR/USER PASSWORD

## Set Supervisor



## User Password



This option is for setting a password for entering BIOS Setup. When a password has been set, a password prompt will be displayed whenever BIOS Setup is run. This prevents an unauthorized person from changing any part of your system configuration.

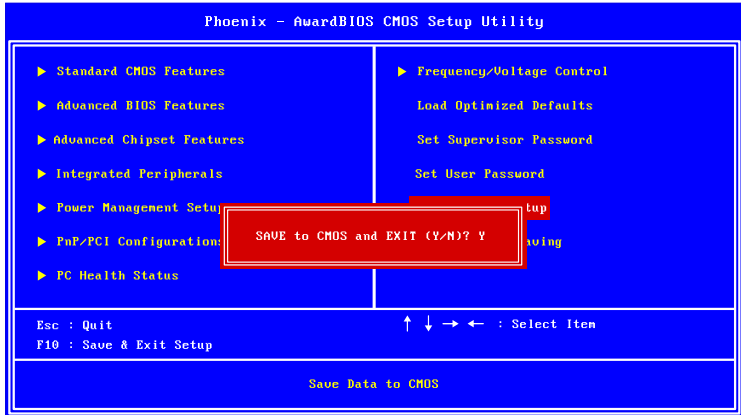
There are two types of passwords you can set. A supervisor password and a user password. When a supervisor password is used, the BIOS Setup program can be accessed and the BIOS settings can be changed. When a user password is used, the BIOS Setup program can be accessed but the BIOS settings cannot be changed.

To set the password, type the password (up to eight characters in length) and press <Enter>. The password typed now will clear any previously set password from CMOS memory. The new password will need to be reentered to be confirmed. To cancel the process press <Esc>.

To disable the password, press <Enter> when prompted to enter a new password. A message will show up to confirm disabling the password. To cancel the process press <Esc>.

Additionally, when a password is enabled, the BIOS can be set to request the password each time the system is booted. This would prevent unauthorized use of the system. See “Security Option” in the “Advanced BIOS Features” section for more details.

## SAVE & EXIT SETUP

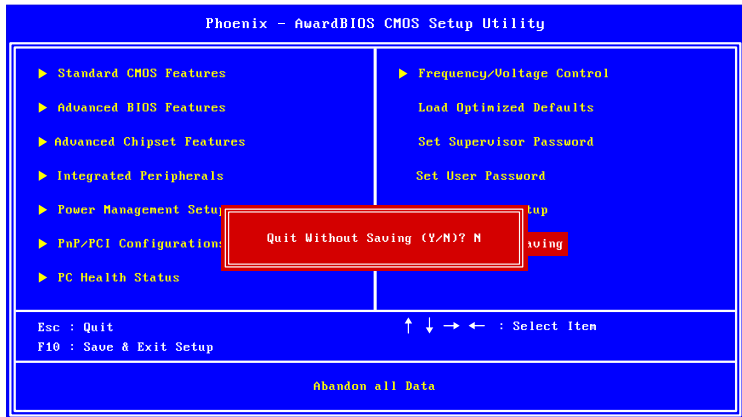


Entering “Y” saves any changes made, and exits the program.

Entering “N” will cancel the exit request.



## EXIT WITHOUT SAVING



Entering "Y" discards any changes made and exits the program.

Entering "N" will cancel the exit request.

# 6

## Driver Installation

This chapter gives you brief descriptions of each mainboard driver and application. You must install the VIA chipset drivers first before installing other drivers such as VGA drivers. The applications will only function correctly if the necessary drivers are already installed.

## DRIVER UTILITIES

### Getting Started

The VIA EPIA-N800 includes a driver CD that contains the drivers and software for enhancing the performance of the system. The drivers can also be downloaded from <http://www.via.com.tw>.

**Note:**

The driver utilities and software are updated from time to time. The latest updated versions are available at <http://www.via.com.tw>

### Running the Driver Utilities CD

To start using the CD, insert the CD into the CD-ROM or DVD-ROM drive. The CD should run automatically after closing the CD-ROM or DVD-ROM drive. The driver utilities and software menu screen should then appear on the screen. If the CD does not run automatically, click on the "Start" button and select "Run..." Then type: "D:\Setup.exe".

For Linux drivers, click the right button on mouse and click open. Linux drivers located in the "Driver" folder.

**Note:**

D: might not be the drive letter of the CD-ROM/DVD-ROM in your system.

## CD CONTENT

- VIA 4 in 1 Drivers
  - Contains VIA ATAPI Vendor Support Driver (enables the performance enhancing bus mastering functions on ATA-capable Hard Disk Drives and ensures IDE device compatibility), AGP VxD Driver (provides service routines to your VGA driver and interface directly to hardware, providing fast graphical access), IRQ Routing Miniport Driver (sets the system's PCI IRQ routing sequence) and VIA INF Driver (enables the VIA Power Management function).
  - Includes V-RAID and RAID tools.
- VIA Graphics Driver
  - Enhances the onboard VIA graphic chip.
  - Windows XP and Linux drivers are provided.
- VIA Audio Driver
  - Enables access to the onboard VIA HD audio codec.
- VIA USB 2.0 Driver
  - Enhances VIA USB 2.0 ports.
- VIA LAN Driver
- VIA GigaLAN Driver
- VIA RAID Driver
  - Support for SATA RAID devices