

user manual

EPIA-M830

Mini-ITX Embedded Board

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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.

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

KC Korean Certificate Statement



KCC-REM-VNT-EPIA-M830 (B)
VIA Technologies, Inc.
EPIA-M830
2010/03
Made in China

B 급 기기
(가정용 방송통신기자재)

Class B Equipment
(For Home Use
Broadcasting & Communication
Equipment)

이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다 .

This electromagnetic wave equipment is suitable for home use (Class B) and may be used mainly at home and in other areas.

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 60°C (140°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 and Ordering Information

Model Number

EPIA-M830-13

Description

Standard kit

- 1 x SATA cable
- 1 x PS/2 cable
- 1 x I/O bracket
- 1 x Driver CD

EPIA-M830-10

Standard kit

- 1 x SATA cable
- 1 x PS/2 cable
- 1 x I/O bracket
- 1 x Driver CD

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1

Overview



The VIA EPIA-M830 Mini-ITX Mainboard is a compact native x86 mainboard optimized for entry level systems in embedded and productivity applications. It provides support for high fidelity audio with its onboard VIA VT1708S High Definition Audio codec. In addition it supports two SATA 3Gb/s storage devices as well as IDE.

The EPIA-M830 is based on the VIA VX800 Unified Digital Media IGP chipset featuring the VIA Chrome9™ HC3 with 2D/3D graphics and video accelerators for rich digital media performance.

KEY COMPONENTS

VIA Nano™ NanoBGA2 CPU

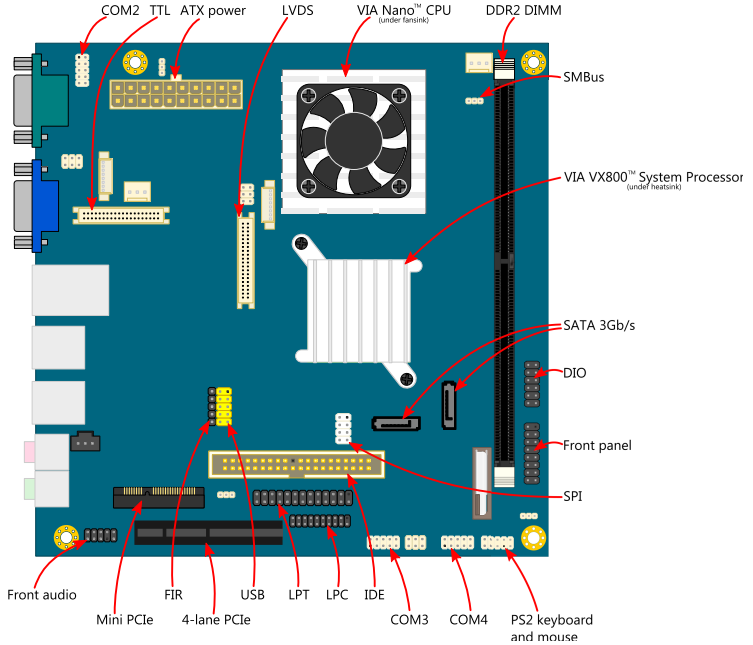
The VIA Nano is a 64-bit superscalar processor in x86 platform using a 65 nanometer process technology. It delivers an energy-efficient, powerful performance, with cool and quiet operation all within an ultra compact NanoBGA2 package measuring 21 mm x 21 mm. Perfectly fit for embedded system applications such as industrial PCs, test machines, measuring equipment, digital signage, medical PCs, monitoring systems, gaming machines, in-vehicle entertainment, and etc. The VIA Nano also boasts of immersive multimedia performance, connectivity and computing applications.

VIA VX800 System Processor

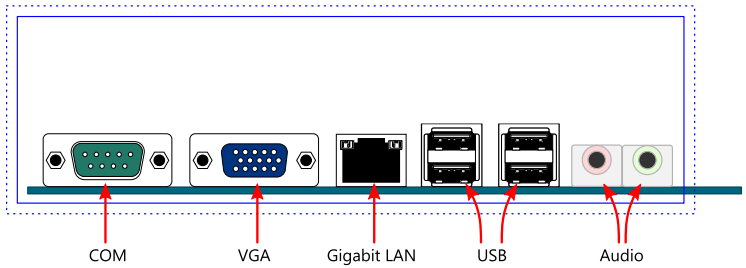
The VIA VX800 media system processor is an all-in-one, highly integrated digital media IGP chipset featuring the latest video, graphics and connectivity performance in a single chip measuring just 33x33mm.

LAYOUT

The EPIA-M830 includes a host of onboard connectors for expanding its I/O beyond that of the external I/O ports.



The external I/O face features one Gigabit LAN port, four USB ports, one VGA port, one RS232 COM port (configurable 5V/12V), and two audio ports.



SPECIFICATIONS

Processor	VIA Nano 1.3 GHz NanoBGA2 processor or VIA Nano 1.0 GHz NanoBGA2 processor
Chipset	VIA VX800 Advanced all-in-one system processor
Super I/O	VIA VT1211 (manufacturing option)
Memory	1 x DIMM slot (supports DDR2 533/667 MHz)
VGA	Integrated VIA Chrome9™ HC3 3D/2D graphics
Storage	1 x UDMA 133/100 40-pin connector 2 x SATA connectors with configurable pin 7 (GND/5V)
LAN	VIA VT1630 PCIe Gigabit Ethernet controller
Audio	VIA VT1708S High Definition audio codec
I/O	1 x USB pin header 1 x front audio pin header 1 x audio Line-in pin header 1 x PS2 keyboard/mouse pin header 1 x RS232 pin header (configurable 5V/12V) *2 x RS232 pin headers (configurable 5V/12V) *1 x LPT pin header 1 x LPC pin header 1 x SMBUS pin header 1 x S/PDIF Out connector *1 x FIR pin header *1 x Digital I/O pin header (GPI x 4, GPO x 4) 1 x front panel pin header 2 x fan connectors 1 x 18-bit TTL reserved (manufacturing option) 1 x 2-channel 24-bit LVDS 1 x ATX power connector
Expansion	1 x 4-lane PCIe slot 1 x 1-lane mini PCIe slot (for PCIe/USB device)
Back Panel I/O	1 x RS232 COM port 1 x VGA port 1 x RJ-45 LAN port 4 x USB ports 2 x Audio jacks (Line-out, Mic-in)
BIOS	Award BIOS 4/8Mbit SPI Flash ROM
Operating System	Windows CE, XPe, XP, Linux
System Monitoring	- Wake-on-LAN, keyboard power-on, RTC timer, Watch Dog timer - System power management - AC power failure recover
Operating environment	0°C ~ 50°C 0% ~ 95% (relative humidity, non-condensing)
Form Factor	Mini-ITX (17 cm x 17 cm)
Certifications	CE/FCC
Compliance	RoHS

*Only available with VT1211 manufacturing option.

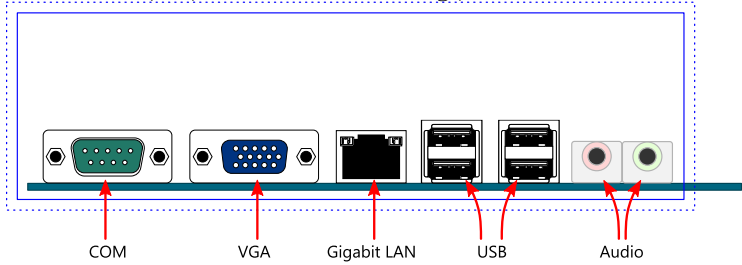
**Specifications are subject to change without notice.

2

Hardware Installation

EXTERNAL I/O

The external I/O panel has the following ports:



COM Port

The 9-pin COM port is for pointing devices or other serial devices.

VGA Port

The 15-pin VGA port is for connecting to analog displays.

Gigabit LAN Port

The mainboard provides one Gigabit Ethernet port controlled through the VIA VT1630 PCIe Gigabit Ethernet controller.

USB Ports

Four standard USB 2.0 ports are provided.

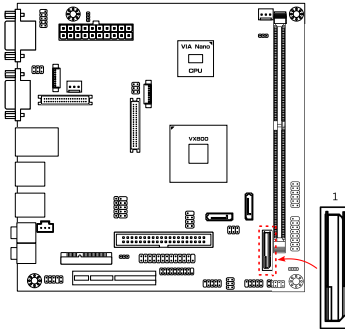
Audio Ports

Two 3.5 mm TRS jacks are provided for Line-out and Mic-in.

ONBOARD CONNECTORS

BAT1: CMOS Battery

The onboard battery provides power to the CMOS RAM. If disconnected all configurations in the CMOS RAM will be reset to factory defaults. When replacing the battery, use CR2032 coin batteries.

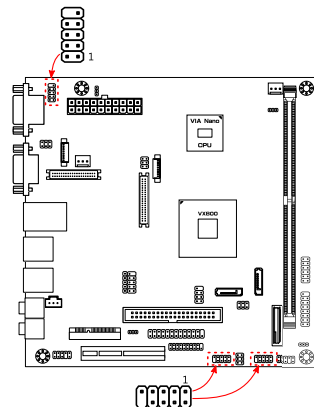


COM2, COM3, COM4: RS232 Pin Headers

The mainboard includes one COM pin header (COM2) onboard. With the VT1211 Super I/O manufacturing option, the mainboard can support two additional COM pin headers (COM3 and COM4).

The 9th pin can be configured as an RI pin or to deliver a 5V or 12V power supply. The default setting is 5V. Refer to pages 17 and 19 for the jumper settings for COM2 and COM3/4, respectively. To configure the pin as an RI pin, remove the jumper cap for the corresponding jumper.

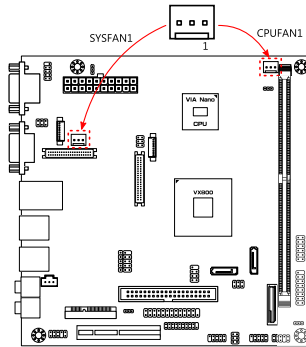
Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	—



CPUFAN1, SYSFAN: CPU Fan and System Fan Connectors

CPUFAN1 and SYSFAN1 run on +12V and maintains system cooling. When connecting the cable to the connector, always be aware that the red wire (positive wire) should be connected to the +12V pin. The black wire is the ground wire and should always be connected to GND.

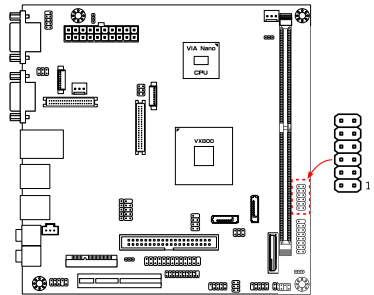
Pin	Signal
1	IO
2	PWM
3	GND



DIO1: Digital I/O Pin Header

The mainboard includes one Digital I/O pin header that supports four GPO and four GPI pins.

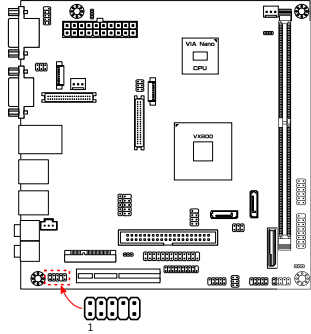
Pin	Signal	Pin	Signal
1	+5V	2	+12V
3	GPO_30	4	GPI_34
5	GPO_31	6	GPI_35
7	GPO_32	8	GPI_36
9	GPO_33	10	GPI_37
11	GND	12	GND



F_AUDIO1: Front Audio Pin Header

The mainboard has one pin header for connecting to front panel switches and status LEDs.

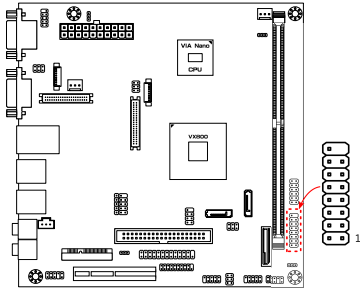
Pin	Signal	Pin	Signal
1	HPOUTR	2	HPOUTL
3	LINEINR	4	LINEINL
5	MIC2IN_R	6	MIC2IN_L
7	—	8	NC
9	AGND	10	AGND



F_PANEL1: Front Panel Pin Header

The mainboard has one pin header for connecting to front panel switches and status LEDs.

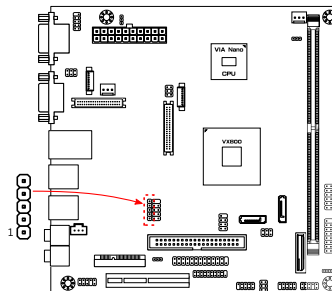
Pin	Signal	Pin	Signal
1	+5VDUAL	2	+5V
3	+5VDUAL	4	HD_LED
5	-PLED_2	6	PW_BN
7	+5V	8	GND
9	NC	10	RST_SW
11	NC	12	GND
13	SPEAK	14	+5V
15	—	16	-SLEEP_LED



FIR1: FIR Pin Header

The onboard FIR pin header enables connections to IR optics.

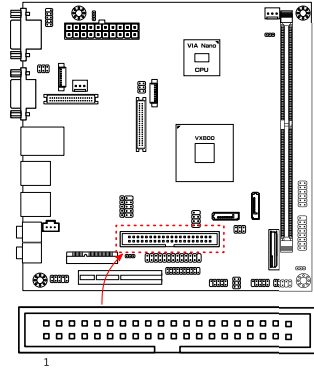
Pin	Signal
1	+5V
2	IRRX1
3	IRRX
4	GND
5	IRTX



IDE1: IDE Connector

The mainboard has one IDE connector that provides support for up to two IDE devices.

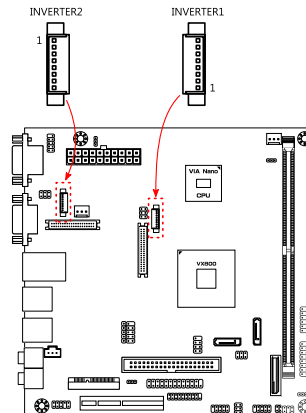
Pin	Signal	Pin	Signal
1	-IDE_RST	2	GND
3	PD_7	4	PD_8
5	PD_6	6	PD_9
7	PD_5	8	PD_10
9	PD_4	10	PD_11
11	PD_3	12	PD_12
13	PD_2	14	PD_13
15	PD_1	16	PD_14
17	PD_0	18	PD_15
19	GND	20	IDEV_SEL
21	PD_REQ	22	GND
23	-PD_IOW	24	GND
25	-PD_IOR	26	GND
27	PD_RDY	28	GND
29	-PD_ACK	30	GND
31	PD_IRO15	32	NC
33	PD_A1	34	-LID
35	PD_A0	36	PD_A2
37	-PD_CS1	38	-PD_CS3
39	-HD_LED1	40	GND



INVERTER1, INVERTER2: Inverter Connector

INVERTER1 corresponds to the LVDS panel connector. INVERTER2 corresponds to the TTL panel connector.

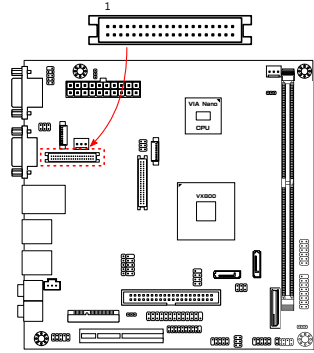
Pin	Signal
1	IVDD_CEN
2	IVDD_CEN
3	BLON
4	VX800PWM_CTL
5	BLON
6	BRIGHTNESS_CTL
7	GND
8	GND



J3: TTL Panel Connector

The mainboard has one TTL panel connector.

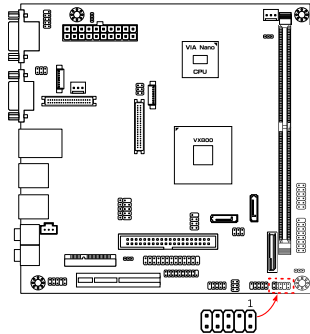
Pin	Signal	Pin	Signal
		M1	GND
1	GND	2	TTL_CLK
3	TTL_HS	4	TTL_VS
5	GND	6	TTL_R2
7	TTL_R3	8	TTL_R4
9	TTL_R5	10	TTL_R6
11	TTL_R7	12	GND
13	TTL_G2	14	TTL_G3
15	TTL_G4	16	TTL_G5
17	TTL_G6	18	TTL_G7
19	GND	20	TTL_B2
21	TTL_B3	22	TTL_B4
23	TTL_B5	24	TTL_B6
25	TTL_B7	26	GND
27	TTL_DE	28	PVDD2
29	PVDD2	30	NC
31	NC	32	T_B0
33	T_B1	34	T_G0
35	T_G1	36	T_R0
37	T_R1	38	GND
39	GND	40	GND
		M2	GND



JKB/MS1: PS/2 Keyboard and Mouse Pin Header

The mainboard includes one pin header for adding support for PS/2 keyboard and mouse.

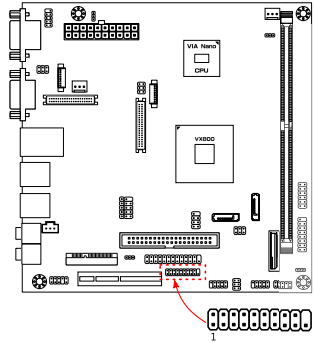
Pin	Signal	Pin	Signal
1	VCCE	2	VCCE
3	NC	4	—
5	GND	6	GND
7	KB_DT	8	MS_DT
9	KB_CK	10	MS_CK



LPC1: LPC Connector

The mainboard includes one LPC connector.

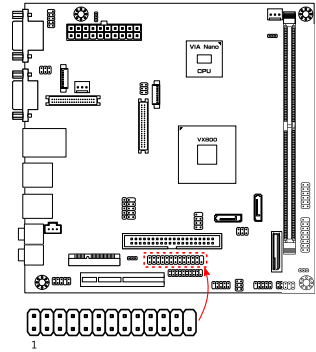
Pin	Signal	Pin	Signal
1	LPC_AD1	2	LPC_33_CLK
3	-PCL_RST-1	4	GND
5	LPC_AD0	6	LPC_48_CLK
7	LPC_AD2	8	-LPC_FRAME
9	SERIRQ	10	LPC_AD3
11	-LPC_DRQ1	12	-EXTSMI
13	+5V	14	+3.3V
15	+5V	16	+3.3V
17	GND	18	GND
19	GND	20	—



LPT1: LPT Connector

The mainboard includes one onboard LPT connector.

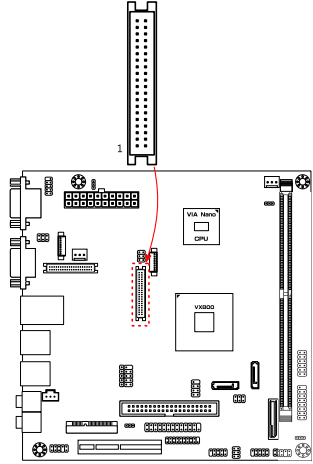
Pin	Signal	Pin	Signal
1	-LP_STB	2	-LP_AFD
3	LP_D0	4	-LP_ERR
5	LP_D1	6	-LP_INIT
7	LP_D2	8	-LP_SLIN
9	LP_D3	10	GND
11	LP_D4	12	GND
13	LP_D5	14	GND
15	LP_D6	16	GND
17	LP_D7	18	GND
19	-LP_ACK	20	GND
21	LP_BUSY	22	GND
23	LP_PE	24	GND
25	LP_SLCT		



LVDS1: LVDS Panel Connector

The mainboard has one LVDS panel connector.

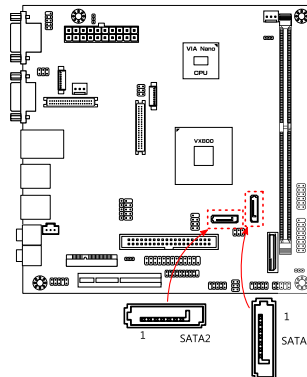
Pin	Signal	Pin	Signal
		M1	GND
1	-LD2C0	2	PVDD1
3	+LD2C0	4	PVDD1
5	GND	6	GND
7	-LD2C1	8	GND
9	+LD2C1	10	-LD1C0
11	GND	12	+LD1C0
13	-LD2C2	14	GND
15	+LD2C2	16	-LD1C1
17	GND	18	+LD1C1
19	-LCLK2	20	GND
21	+LCLK2	22	-LD1C2
23	GND	24	+LD1C2
25	-LD2C3	26	GND
27	+LD2C3	28	-LCLK1
29	NC	30	+LCLK1
31	GND	32	GND
33	NC	34	-LD1C3
35	NC	36	+LD1C3
37	NC	38	DVP1_SPCLK
39	NC	40	DVP1_SPD
		M2	GND



SATA1, SATA2: SATA Connectors

There are two onboard SATA connectors that support data transfers speeds up to 3 Gbps.

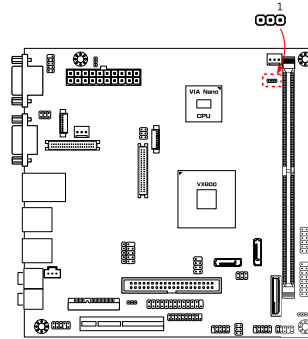
Pin	Signal
G1	GND
1	GND
2	STXP
3	STXN
4	GND
5	SRXN
6	SRXP
7	GND/+5V
G2	GND



SMBUS 1: SMBus Pin Header

The mainboard includes an SMBus pin header.

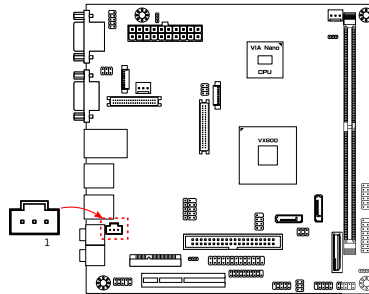
Pin	Signal
1	SMB_CLK
2	SMB_DAT
3	GND



SPDIF 1: SPDIF Connector

The mainboard includes one SPDIF connector.

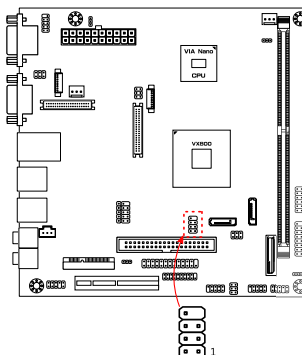
Pin	Signal
1	+5V
2	SPDIF_OUT
3	GND



SPI1: SPI Pin Header

The onboard SPI connector provides support for one full-duplex serial slave device.

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



USB_4/5: USB Pin Header

The onboard USB pin header enables the addition of a fifth USB 2.0 port (connected to the USB_5 data signals). USB_4 is rerouted to the PCIe x1 slot in order for the PCIe x1 slot to support both PCIe x1 and USB devices.

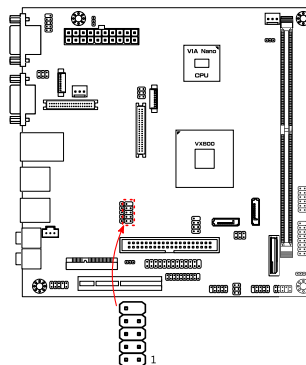
However, a manufacturing option to disable the rerouting is available. If this manufacturing option is used, then USB_4 will be available.

Regular pinout

Pin	Signal	Pin	Signal
1	VUSB4	2	VUSB4
3	USBD_T5-	4	NC
5	USBD_T5+	6	NC
7	GND	8	GND
9	—	10	GND

Pinout with manufacturing option

Pin	Signal	Pin	Signal
1	VUSB4	2	VUSB4
3	USBD_T5-	4	USBD_T4-
5	USBD_T5+	6	USBD_T4+
7	GND	8	GND
9	—	10	GND

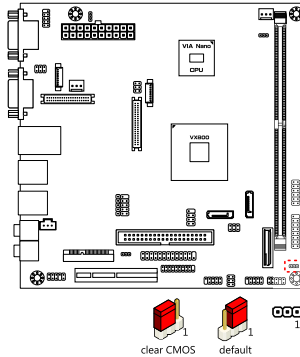


ONBOARD JUMPERS

CLEAR_CMOS1: Clear CMOS

The onboard CMOS RAM stores system configuration data and has an onboard battery power supply (see page 7). 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:

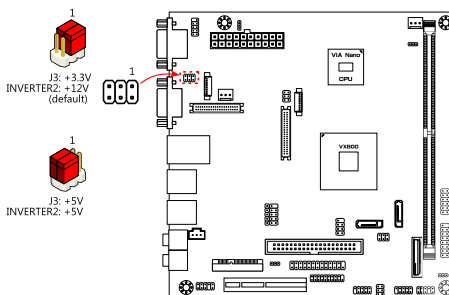
Except when clearing the RTC RAM, never remove the cap from the CLEAR_CMOS jumper default position. Removing the cap will cause system boot failure. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

J2: TTL Power Select

This jumper determines the input voltage for the TTL connector (J3: see page 11) and TTL inverter (INVERTER2: see page 10). Pins 1, 3, and 5 correspond to INVERTER2. Pins 2, 4, and 6 correspond to J3.

INVERTER2 Setting	1	3	5
+12V (default)	ON	ON	OFF
+5V	OFF	ON	ON

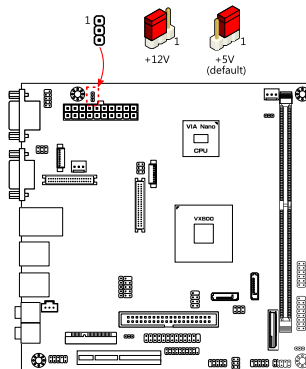
J3 Setting	2	4	6
+3.3V (default)	ON	ON	OFF
+5V	OFF	ON	ON



J4: COM2 Power Select

The J4 jumper enables the COM2 port (see page 7) to support either +5V or +12V power modes.

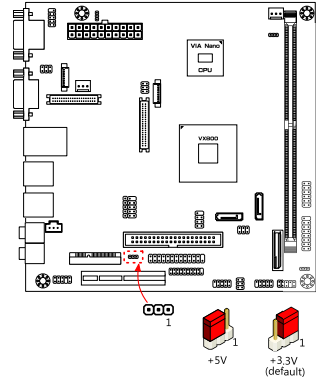
Setting	1	2	3
+5V (default)	ON	ON	OFF
+12V	OFF	ON	ON



J5: DOM Power Select

The J5 jumper enables the IDE port (see page 10) to support either +3.3V or +5V.

Setting	1	2	3
+3.3V (default)	ON	ON	OFF
+5V	OFF	ON	ON

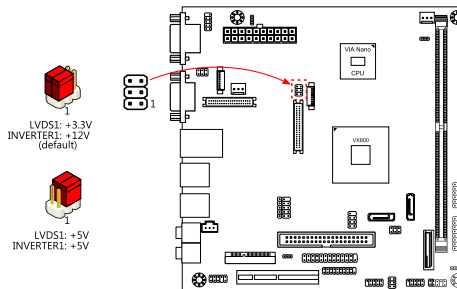


J6: LVDS Power Select

This jumper determines the input voltage for the LVDS connector (LVDS1: see page 13) and LVDS inverter (INVERTER1: see page 10). Pins 1, 3, and 5 correspond to INVERTER1. Pins 2, 4, and 6 correspond to LVDS1.

INVERTER1 Setting	1	3	5
+1.2V (default)	ON	ON	OFF
+5V	OFF	ON	ON

LVDS1 Setting	2	4	6
+3.3V (default)	ON	ON	OFF
+5V	OFF	ON	ON

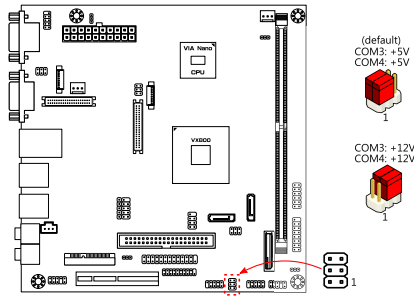


J7: COM3, COM4 Power Select

The J7 jumper enables COM3 and COM4 (see page 7) to support either +5V or +12V power modes.

COM4 Setting	1	3	5
+5V (default)	ON	ON	OFF
+12V	OFF	ON	ON

COM3 Setting	2	4	6
+5V (default)	ON	ON	OFF
+12V	OFF	ON	ON

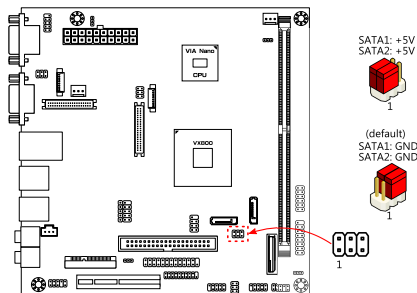


J8: SATA DOM Power Select

The J8 jumper enables SATA1 and SATA2 (see page 13) to support +5V on the seventh SATA pin.

SATA2 Setting	1	3	5
+5V	ON	ON	OFF
GND (default)	OFF	ON	ON

SATA1 Setting	2	4	6
+5V	ON	ON	OFF
GND (default)	OFF	ON	ON



3

BIOS Setup

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

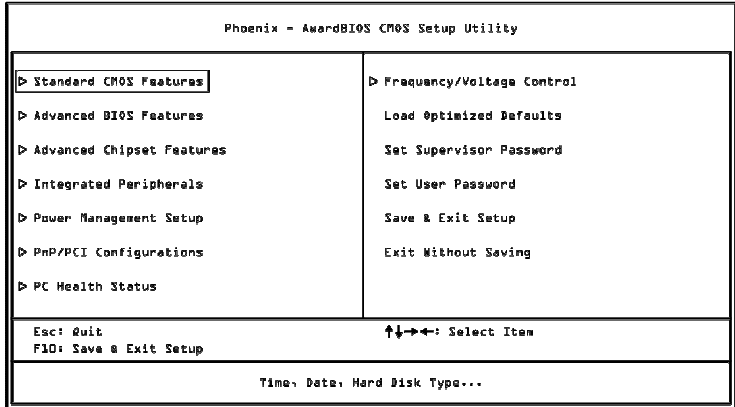
Keys	Description
Up	Move to the previous item
Down	Move to the next item
Left	Move to the left
Right	Move to the right
Enter	Select the item
Esc	Jumps to the Exit menu or returns to the main menu from a submenu
Page Up	Increase the numeric value or make changes
Page Down	Decrease the numeric value or 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.

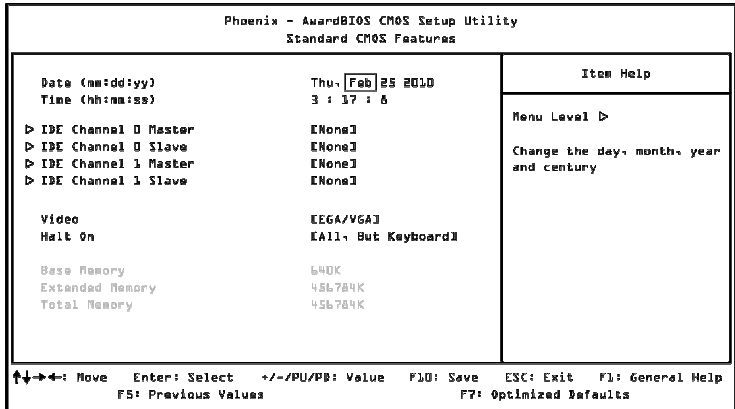
Save & Exit Setup

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

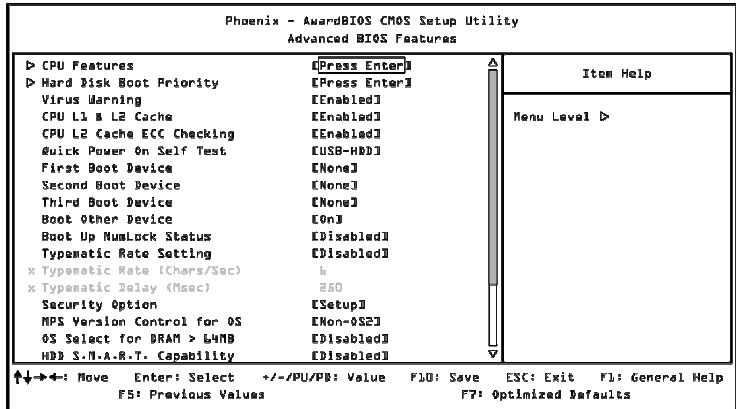
Settings: [EGA/VGA, CGA 40, CGA 80, MONO]

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

Enables boot sector protection for the hard disks.

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, the BIOS will sound off an audible alarm and show a warning message on the screen.

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 the Power On Self-Test (POST) cycle to enable a faster 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

Sets the boot device sequence as the 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

Sets 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

Copies the Video BIOS to the shadow RAM to improve performance.

Settings: [Disabled, Enabled]

Full Screen Logo Show

Show full screen logo during BIOS boot up process.

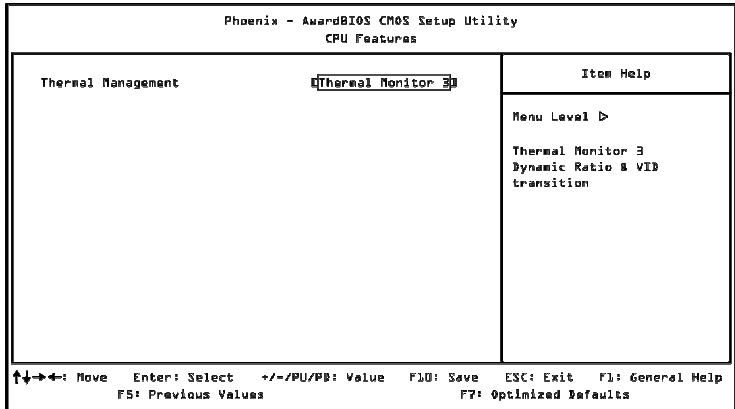
Settings: [Disabled, Enabled]

Summary Screen Show

Show summary screen.

Settings: [Disabled, Enabled]

CPU FEATURES

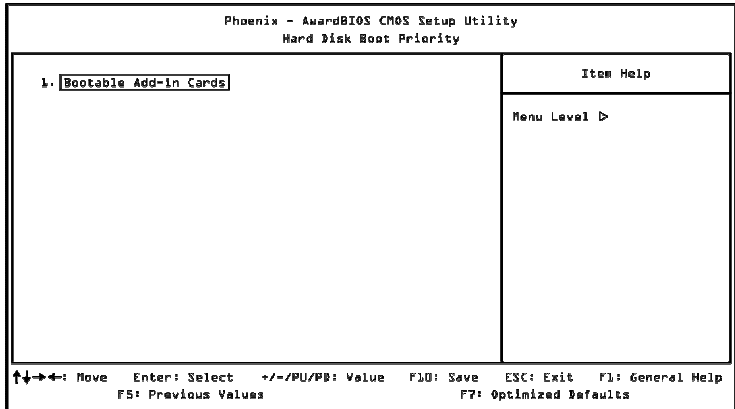


Thermal Management

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

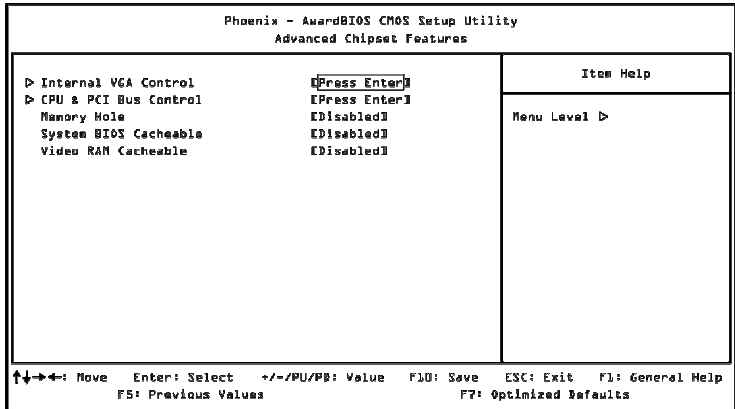
Settings	Description
Thermal Monitor 3	Dynamic Ratio and VID
Disabled	

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]

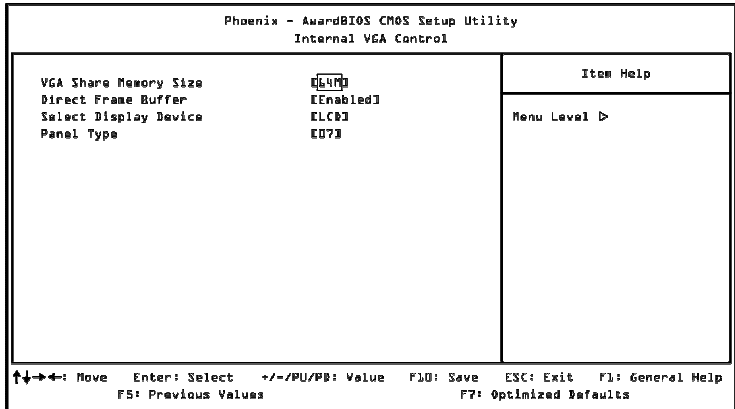
System BIOS Cacheable

Settings: [Disabled, Enabled]

Video RAM Cacheable

Settings: [Disabled, Enabled]

INTERNAL VGA CONTROL



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]

Select Display Device

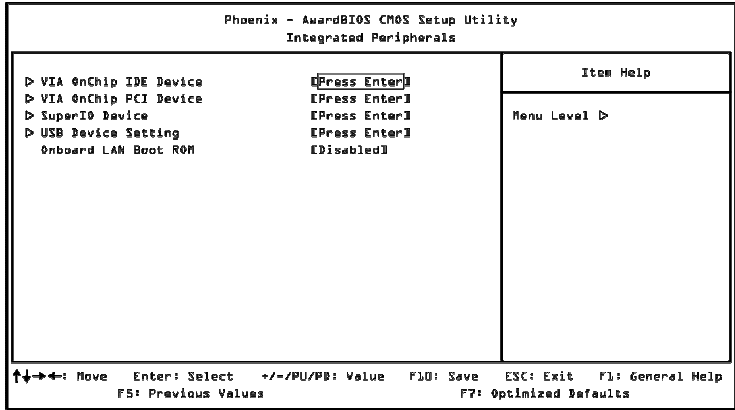
This feature enables choosing between different types of display outputs. The default setting is CRT+LCD. When set in the LCD mode, the CRT display must be connected before turning on the power. Otherwise, the CRT display will be ignored.

Settings: [CRT, LCD, CRT+LCD]

Panel Type

Panel ID	Resolution
0	640x480
1	800x600
2	1024x768
3	1280x768
4	1280x1024
5	1400x1050
6	1440x900
7	1280x800
8	800x480
9	1024x600
A	1366x768
B	1600x1200
C	1680x1050
D	1920x1200
E	640x240
F	480x640

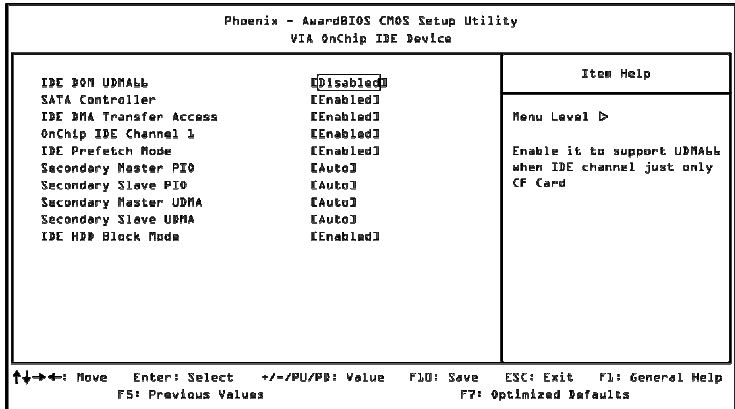
INTEGRATED PERIPHERALS



Onboard LAN Boot ROM

Settings: [Enabled, Disabled]

VIA ONCHIP IDE DEVICE



IDE DOM UDMA6

Settings: [Disabled, Enabled]

SATA Controller

Settings: [Disabled, Enabled]

IDE DMA Transfer Access

Settings: [Disabled, Enabled]

OnChip IDE Channel 1

Settings: [Disabled, Enabled]

IDE Prefetch Mode

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]

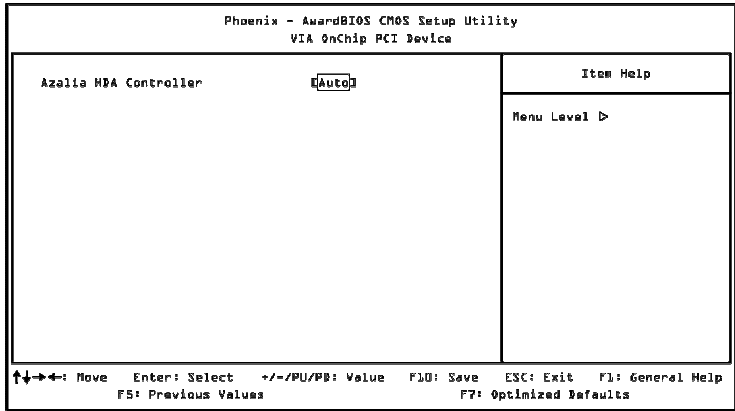
Secondary Slave UDMA

Settings: [Disabled, Auto]

IDE HDD Block Mode

Settings: [Disabled, Enabled]

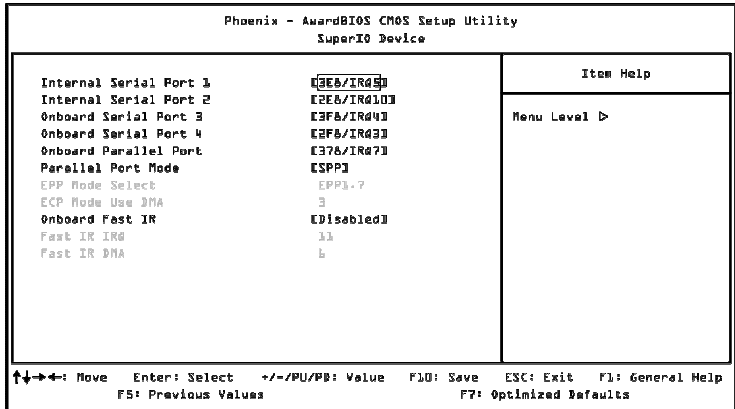
VIA ONCHIP PCI DEVICE



Azalia HDA Controller

Settings: [Auto, Disabled]

SUPERIO DEVICE



Internal Serial Port 1

Settings: [Disabled, 3E8/IRQ5, 2E8/IRQ10]

Internal Serial Port 2

Settings: [Disabled, 3E8/IRQ5, 2E8/IRQ10]

Onboard Serial Port 3

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ3]

Onboard Serial Port 4

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ3]

Onboard Parallel Port

This specifies the I/O port address and IRQ of the onboard parallel port.

Settings: [Disabled, 378/IRQ7, 278/IRQ5, 3BC/IRQ7]

Parallel Port Mode

Set the parallel port mode. To operate the onboard parallel port as Standard Parallel Port, choose SPP. To operate the onboard parallel port in the EPP mode, choose EPP. By choosing ECP, the onboard parallel port will operate in ECP mode. Choosing ECP + EPP will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

Settings: [SPP, EPP, ECP, ECP + EPP]

EPP Mode Select

EPP (Enhanced Parallel Port) comes in two modes: 1.9 and 1.7. EPP 1.9 is the newer version of the protocol and is backwards compatible with most EPP devices. If your EPP device does not work with the EPP 1.9 setting, try changing the setting to EPP 1.7.

Settings: [EPP 1.9, EPP 1.7]

ECP Mode Use DMA

ECP (Extended Capabilities Port) has two DMA channels that it can use. The default channel is 3. However, some expansion cards may use channel 3 as well. To solve this conflict, change the ECP channel to 1. Select a DMA channel for the port.

Settings: [1, 3]

Onboard Fast IR

Enables or disables the infrared port.

Settings: [Enabled and Disabled]

Fast IR IRO

Set this field to reserve an IRO for the Fast IR port. This field is only available if Onboard Fast IR is enabled.

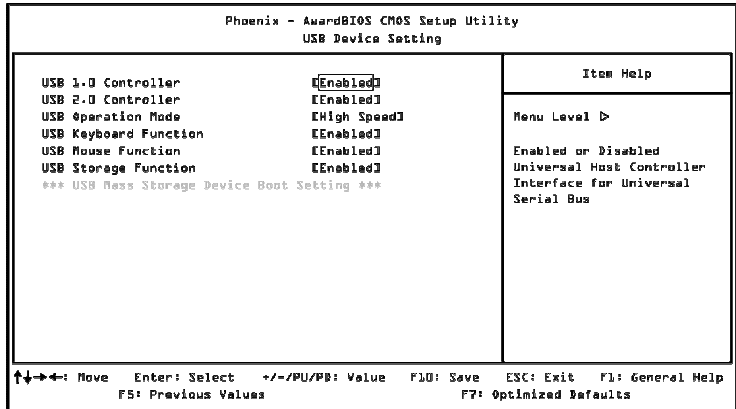
Settings: [1, 5, 3, 4]

Fast IR DMA

Set this field to choose the DMA channel. This field is only available if Onboard Fast IR is enabled.

Settings: [6, 5]

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

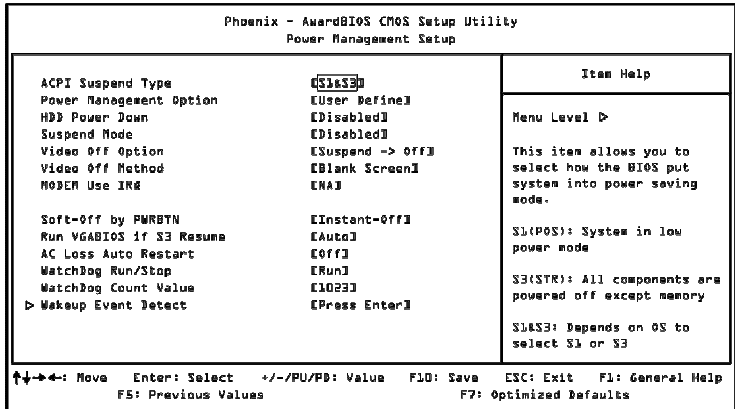
Settings: [Disabled, Enabled]

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

When set to "Max Saving", the HDD will power down if inactive for 5 minutes and the system will go into suspend mode if inactive for 30 seconds.

When set to "Min Saving", the HDD will power down if inactive for 15 minutes and the system will go into suspend mode if inactive for 1 hour.

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]

MODEM Use IRQ

Settings: [NA, 3, 4, 5, 7, 9, 10, 11]

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.

Settings	Description
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

WatchDog Run/Stop

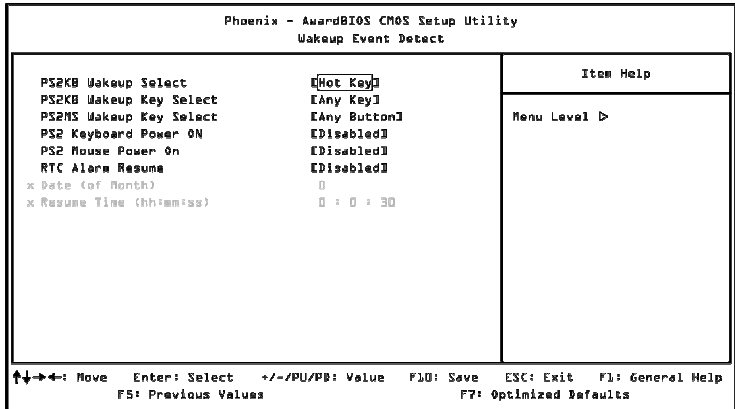
Settings: [Stop, Run]

WatchDog Count Value

Key in a DEC number.

Settings: [Min = 0, Max = 1023]

WAKEUP EVENT DETECT



PS2KB Wakeup Select

This feature has two settings: Hot Key and Password. To select the Password option, press <Page Up> or <Page Down>. To set the password, enter up to eight digits and press <Enter>.

Settings: [Hot Key, Password]

PS2KB Wakeup Key Select

This feature is only available when “Hot Key” is chosen in “PS2KB Wakeup Select”.

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

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

PS2 Keyboard Power ON

Settings: [Disabled, Enabled]

PS2 Mouse Power ON

Settings: [Disabled, 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]

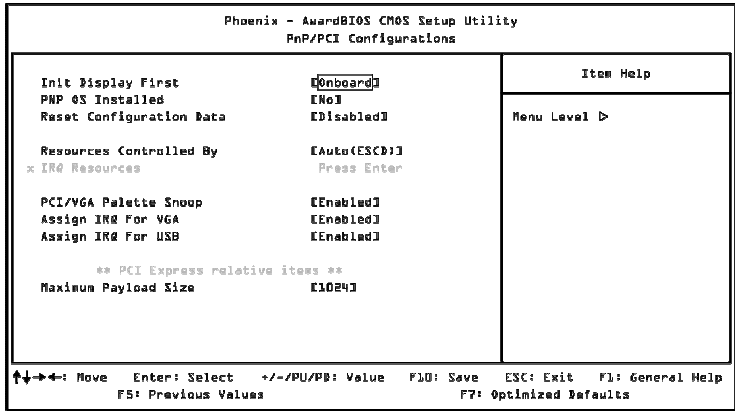
Resume Time (hh : mm : ss)

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: [Onboard, 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]

PC HEALTH STATUS

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
PC Health Status		Menu Level ▶
System Fan Speed	0 RPM	
CPU Fan Speed	6124 RPM	
5VSB	5.029 V	
+5V	5.123 V	
CPU Vcore	1.056 V	
+3V	3.371 V	
+12V	12.163 V	

↑↓→←: Move Enter: Select +/-/PU/PB: 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

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Frequency/Voltage Control		
Current FSB Frequency	800 MHz	
Current DRAM Frequency	266 MHz	
DRAM Frequency	[SPD]	Menu Level ▸
DDR CAS Latency Control	[SPD]	
DDR Burst Length	[SPD]	
DDR 1T Command Rate	[Disabled]	
DRDY Table	[Optimize]	
ODT	[Enabled]	
Spread Spectrum	[+/-0.1%]	

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

DRAM Frequency

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

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

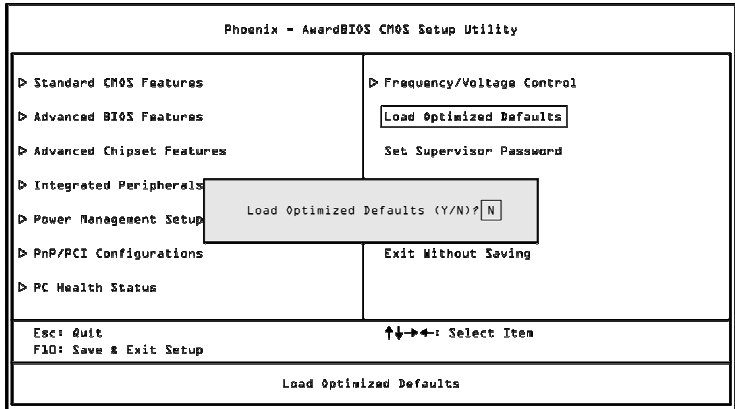
Settings: [Disabled, Enabled]

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

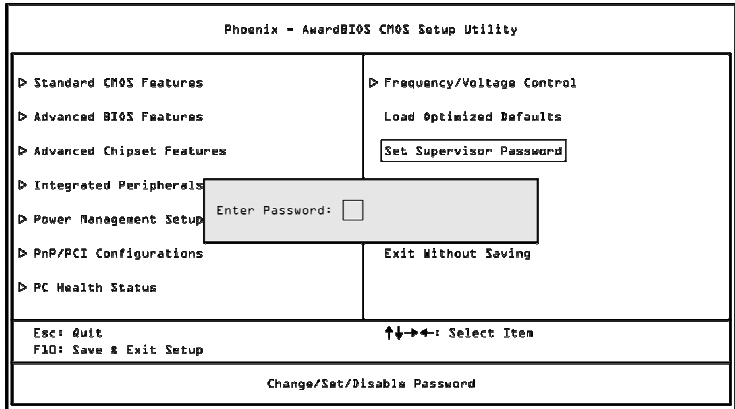


This option is for restoring all the default optimized BIOS settings. The default optimized values are set by the mainboard manufacturer to provide a stable system with optimized performance.

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



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.

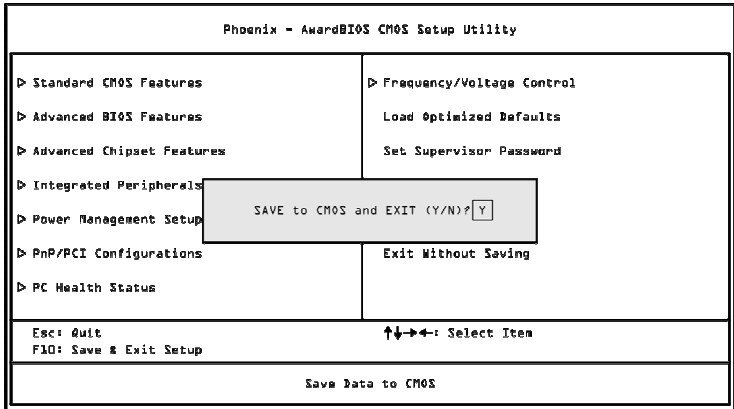
There are two types of passwords you can set. A supervisor password and a user password. When a supervisor password is used, the BIOS Setup program can be accessed and the BIOS settings can be changed. When a user password is used, the BIOS Setup program can be accessed but the BIOS settings cannot be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

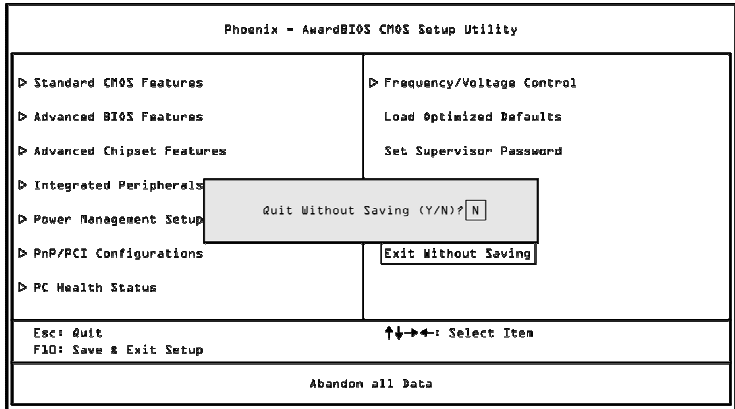
SAVE & EXIT SETUP



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.

4

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-M830 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".

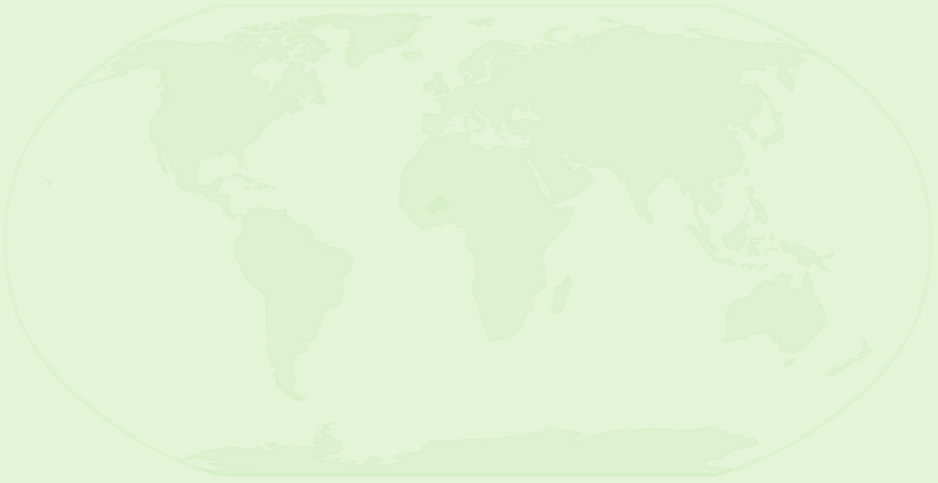
For Linux drivers, click the right button on mouse and click open. Linux drivers located in the "Driver" folder.

**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), IRO Routing Miniport Driver (sets the system's PCI IRO 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



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