

DSA-3400

Dual Core

**Network Digital Signage
Platform**

User Manual

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This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class B

Note: This equipment has been tested and found to comply with the limits for a Class B 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 own expense.

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Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

DSA-3400 Series Model

There are 4 sub-models in DSA-3400 series listed below:

Part Number	CPU	RAM	HDD	Wireless module	TV tuner
DSA-3400-NT56E	Intel Core™ 2 Duo T5600 1.83 GHz	2 x 512 MB	40G	None	None
DSA-3400-WT56E	Intel Core™ 2 Duo T5600 1.83 GHz	2 x 512 MB	40G	802.11b/g	None
DSA-3400-HT56E (project upon request)	Intel Core™ 2 Duo T5600 1.83 GHz	2 x 512 MB	40G	None	DVB-T and Analog
DSA-3400-AT56 (project upon request)	Intel Core™ 2 Duo T5600 1.83 GHz	2 x 512 MB	40G	None	Analog

Table A. DSA-3400 Model List

The Windows® XP Embedded, TV tuner and Signage software are optional choice.

Packing List

Before installing your board, make sure that the following materials have been received:

Part Number	Description	Qty
2190000902	CARDBOARD-WARRANTY REV. A2	1
2062340000	Utility CD	1
1700060202	Keyboard and mouse Y cable Power adapter	1
1700001394	DC Jack with 2-pin pluggable terminal block	1
1757000799	AC to DC Adapter , 19V DC@3.16A , 60W , 100-240V	1
1960007897	Mounting Accessory	2

Table B. DSA-3400 Model List

Important Safety Information

SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Please keep this User's Manual for later reference.
3. Please disconnect this equipment from power outlet before cleaning. Don't use liquid or sprayed detergent for cleaning.
4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
5. Please keep this equipment from humidity.
6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
7. Do not leave this equipment in an environment unconditioned, storage temperature above 50°C, it may damage the equipment.
8. The openings on the enclosure are for air convection hence protects the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source when connect the equipment to the power outlet.
10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not use for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
13. Never pour any liquid into ventilation openings; this could cause fire or electrical shock.
14. Never open the equipment. For safety reason, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The Power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment has not work well or you can not get it work according to user's manual.
 - e. The equipment has dropped and damaged.
 - f. If the equipment has obvious sign of breakage

16. Never open the equipment. For safety reason, qualified service personnel should only open the equipment. *The customer forbid to change the battery and fuse of DSA-3400.*

17. **CAUTION:** The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions.

18. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

1. To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
2. Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

CHAPTER 1

Overview

This chapter gives background information on the DSA-3400 series. It shows you the DSA-3400 overview and specifications.

Sections include :

- Introduction
- Hardware Specifications
- DSA-3400 Series Model and Packing List
- Chassis Dimension

Chapter 1 Overview

1.1 Introduction

DSA-3400 is a small profile; all-in-one Windows® XPE ready network appliance and control box for Digital Signage Application. The compact, easy-to-implement network appliance that enables centralized control, scheduling and delivery of multimedia content for digital signage through IP/Ethernet networks. Built on x86 platform and standards I/O, it is easy for application developing and can be integrated with PDPs (Plasma Display Panel), LCDs with a multi-vendor networking environment. A wireless option is available for locations where a wiring infrastructure is not available for network connectivity. A TV-tuner option is also available for integrate the TV function into the signage application. DSA-3400 combines with the EWF, WDT and Boot schedule SDK give the maximum reliability for digital signage application.

1.2 Features & Benefits

1.2.1 High Performance & Network-manageable

- The DSA-3400 series incorporates an Intel Core™ 2 Duo Mobile processor for smooth program playback, and includes 2 x 512 MB Dual channel of base memory and a default 40 GB hard disk drive for program and storage of media files. The Core™ 2 Duo technology gives DSA-3400 a solid basis for high density video decoding, multiple video decoding with better video quality. DSA-3400 series functions as the IP-addressable client so that it can be connected locally through a local area network or remotely through a wide area network.

1.2.2 Compact & Low noise

- The small foot-print and low-profile case design of DSA-3400 series is designed to facilitate different types of mounting and installation. The low power mobile CPU reduces noise for signage applications.

1.2.3 Wireless & Tuner Options

- DSA-3400 series can be connected to the network either via a wireless connection or through a standard Ethernet cable. DSA-3400 also comes with a tuner-integrated option which incorporates live TV programs as part of the presentation media.

1.2.4 Enhanced Reliability

- DSA-3400 series integrates the EWF (Enhanced Write Filter) function, WDT (Watch Dog Timer) and scheduled boot-up SDK. Running under Microsoft Windows XP Embedded OS, EWF provides a facility for protecting a partition from write accesses. It allows the system to maintain its original state to maximum system reliability.

1.2.5 Enhanced Reliability

- DSA-3400 series integrated the EWF (Enhanced Write Filter) function, WDT (Watch Dog Timer) and schedule boot SDK. Running under Microsoft Windows® XP Embedded OS, EWF provides a facility for protecting a partition from write accesses. It makes the system always keep in its original state to maximum the system reliability.

1.3 Hardware Specification

1.3.1 Processor Core Logic System

CPU Type : Intel Core™ 2 Duo / Core™ Duo / Core™ Solo Mobile processor, PGA 478 Package

Part Number	Intel® CPU Type	Intel® Chipset	Wireless module	TV tuner
DSA-3400-NT56E	Intel Core™ 2 Duo T5600 1.83 GHz	Intel 945GM / ICH7M	None	None
DSA-3400-WT56E	Intel Core™ 2 Duo T5600 1.83 GHz	Intel 945GM / ICH7M	802.11b/g	None
DSA-3400-HT56E (project upon request)	Intel Core™ 2 Duo T5600 1.83 GHz	Intel 945GM / ICH7M	None	DVB-T and Analog
DSA-3400-AT56 (project upon request)	Intel Core™ 2 Duo T5600 1.83 GHz	Intel 945GM / ICH7M	None	Analog

Table 1.1: DSA-3400 Model List

BIOS: AWARD 4M bit BIOS

System Memory

- One 200 pin SO-DIMM sockets, supports DDRII SDRAM Up to 2GB, DDR 400/533/667 DRAM

1.3.2 Display

Chipset

- Integrated graphics built-in Intel Graphics Media Accelerator 950

Display Memory

- Dynamic video memory allocation up to 224 MB

Display Interface support

- VGA and DVI Interface

1.3.3 Ethernet

- Ethernet Controller: Marvel 88E8053
- Speed: 10/100/1000Mbps
- Support WOL(Wake On LAN)

1.3.4 Other

- Watchdog Timer: 255 levels timer interval, setup by software
- Serial Port: One RS-232 port (COM1) and One RS-485/422 port (COM2) (default RS-232)
- Keyboard/Mouse: One PS/2 Port to support PS/2 Mouse and PS/2 Keyboard
- USB: 4 USB 2.0 compliant universal serial bus port

1.3.5 Storage

- Support a drive bay space for 2.5' HDD Tray (40G default)

1.3.6 Mechanical

- Construction: Metal housing
- Mounting: Easy Mounting Kits for LCD or Plasma
- Dimension (W x H x D):

DSA-3400: 222 x 135 x 47 mm (8.7" x 5.3" x 1.85" inches) ; Weight: 1.47 KG

1.3.7 Power Supply

- Maximum Output Rating 45 W
- Input Voltage: 12 ~ 24V DC,

Typical:

- 12V DC @ 4.14 A ,
- 24 DC @ 2.07 A,

1.3.8 Environment Specifications

- Operating Temperature: -10 to 40° C

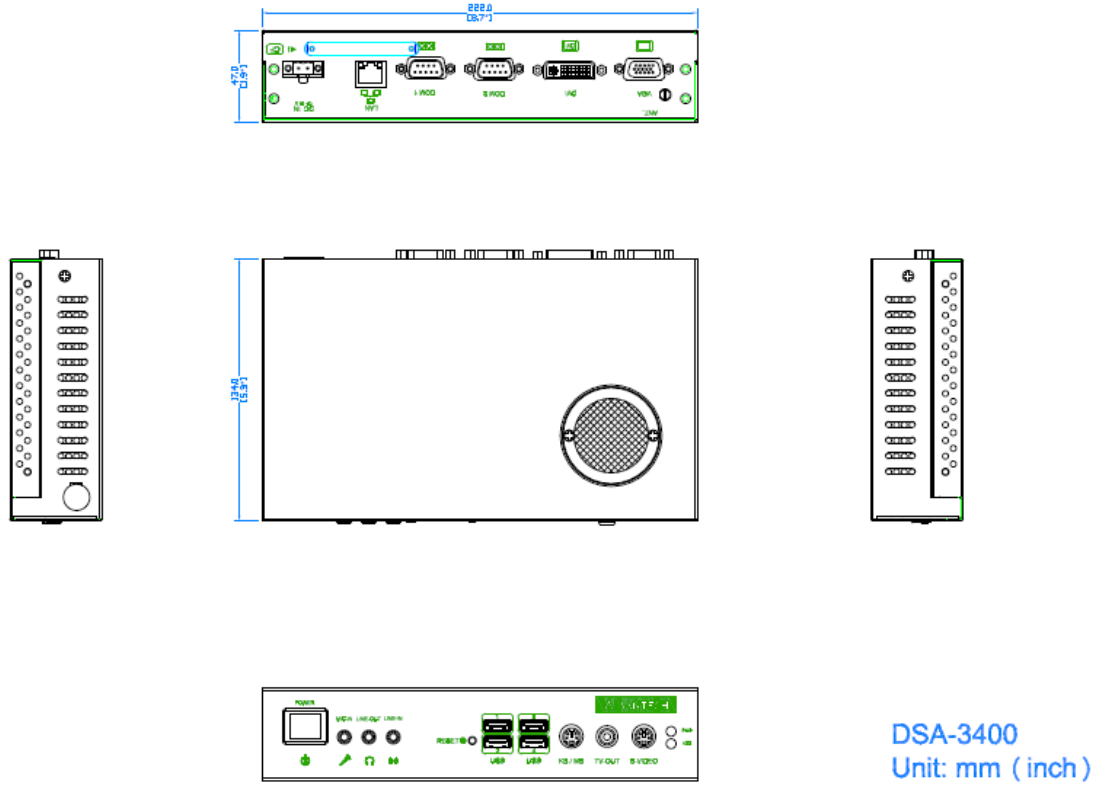
Warning: Please do not keep DSA-3400 working in a closed environment. The temperature in a closed environment might get higher over the operation temperature.

- Relative humidity 95 % @ 40 ° C (non-condensing)

1.3.9 Certificate Approved

- EMC Approved: CE, FCC Class B (include Wireless module, EU and US announce)
- Safety Approved: UL, CB, CCC
- Environmental protection: RoHS, WEEE

1.4 Dimensions Diagram



Hardware Functionality

This chapter shows how to set up the DSA-3400 hardware functions, including connecting peripherals, switches and indicators.

Sections include :

- Introduction of External I/O Connectors
- Front plate external I/O Connectors
- Power Connector
- LED Indicators
- Video Input Connectors
- Isolated Digital I/O
- Audio Connectors
- Rear plate external I/O Connectors
- COM1 Connector
- COM2 Connector
- Ethernet Connector
- Reset Button
- PS2 Keyboard/Mouse Connector

Chapter 2 Hardware Functionality

2.1 Introduction of DSA-3400 External I/O Connectors

The following two figures show the external I/O connectors on DSA-3400. The following sections give you detailed information about the function of each I/O connector.



Figure 2.1: DSA-3400 front metal face plate external I/O connectors



Figure 2.2: DSA-3400 rear metal face plate I/O connectors

2.2 DSA-3400 front plate external I/O connectors

2.2.1 Power ON/OFF Button

The DSA-3400 comes with a Power On/Off button, that Support dual function Soft Power - On/Off (Instant off or Delay 4 Second), and Suspend.



Figure 2.3: DSA-3400 power button

2.2.2 LED Indicators

There are two LEDs on the DSA-3400 front face plate for indicating system status: PWR LED is for power status and flash in green color; and HDD LED is for hard disk and compact flash disk status, which flash in red color.



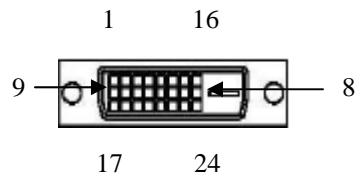
Figure 2.4: DSA-3400 LED indicators

2.2.3 DVI Connector



Figure 2.5: DVI Connector

The DSA-3400 can support DVI input. The pin definition of video connector and video cable is following:



CN1 PIN NO#		CN2 PIN NO#		CN1 PIN NO#		CN2 PIN NO#	
1		17		13		-	
2		19		14		2	
3		4		15		16	
4		-		16		10	
5		-		17		1	
6		14		18		3	
7		12		19		-	
8		-		20		-	
9		9		21		-	
10		11		22		-	
11		-		23		18	
12		-		24		20	

Table 2.1 DVI Video Input Connector

2.2.4 MIC-in, Line-out



Figure 2.6: MIC-in and Line out

2.3 DSA-3400 rear plate external I/O connectors

2.3.1 Power Input Connector

The DSA-3400 comes with a Phoenix connector that carries 12~24 VDC external power input.



Figure 2.7: power input connector

Pin	Definition	Pin	Define
1	Grand	2	+12~24 VDC

Table 2.2 Power connector pin assignments

2.3.2 COM1 Connector

The DSA-3400 provides a D-sub 9-pin connector, which offers one standard RS-232 serial communication interface port of COM1.

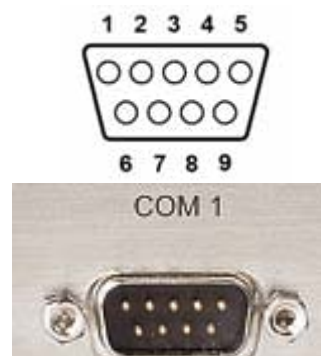


Figure 2.8: COM1 connector

Pin	Definition	Pin	Definition
1	DCD	6	DSR
2	RxD	7	RTS
3	TxD	8	CTS
4	DTR	9	RI
5	GND	N/A	N/A

Table 2.3 COM1 connector pin assignments

2.3.3 COM2 Connector (Default RS-232)

The DSA-3400 provides a D-sub 9-pin connector, which offers one RS-485/RS-232 serial communication interface port for COM2. The default setting of COM2 is RS-232. The figure of below is the sample of setting for RS485.



Figure 2.9: COM2 connector

Pin	RS-485
1	DATA-
2	DATA+
3	No Connection
4	No Connection
5	GND
6	No Connection
7	No Connection
8	No Connection
9	No Connection

Table 2.4 COM2 connector pin assignments

2.3.4 Ethernet Connector (LAN)

The DSA-3400 is equipped with an Intel 82551QM(WOL supported) Fast Ethernet controller

that is fully compliant with IEEE 802.3u 10/100Base-T CSMA/CD standards. The Ethernet port provides a standard RJ-45 jack connector with LED indicators on the front side to show its Active/Link status (Green LED) and Speed status (white LED).

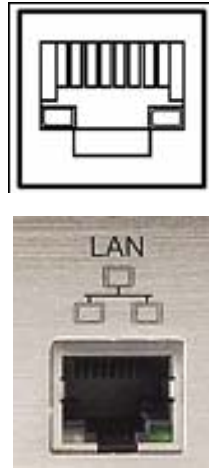


Figure 2.10: Ethernet connector

Pin	10/100 Base Signal Name
1	XMT+
2	XMT-
3	RCV+
4	No Connection
5	No Connection
6	RCV-
7	No Connection
8	No Connection

Table 2.5 Ethernet connector pin assignments

2.3.5 PS2 Keyboard/Mouse Connector

The DSA-3400 provides a PS/2 keyboard/mouse connector. A 6-pin mini-DIN connector is located on the rear face plate. It comes with an external Y cable to convert from the 6-pin mini-DIN connector to PS/2 keyboard and PS/2 mouse connection.

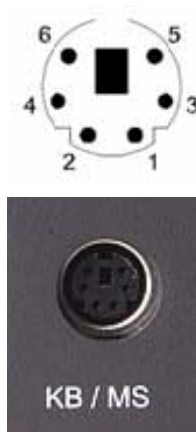


Figure 2.11: PS2 Keyboard/Mouse connector

Pin	Definition
1	PS2_KBDAT
2	PS2_MS DAT
3	GND
4	VCC
5	PS2_KBCLK
6	PS2_MSCLK

Table 2.6 PS2 Keyboard/Mouse connector pin assignments

2.3.7 VGA Connector

The DSA-3400 provides a high resolution VGA interface by a D-sub 15-pin connector to support a VGA CRT monitor. It supports VGA and VESA, up to 1600 x 1200 @85-Hz resolution and up to 64 MB shared memory.

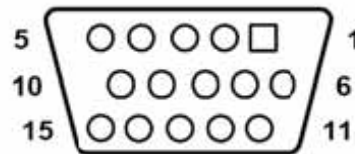


Figure 2.12: VGA connector

Pin	Definition	Pin	Definition
1	Red	9	No Connection
2	Green	10	GND
3	Blue	11	No Connection
4	No Connection	12	No Connection
5	GND	13	H-SYNC
6	GND	14	V-SYNC
7	GND	15	No Connection
8	GND	N/A	N/A

Table 2.7 VGA connector pin assignments

2.3.8 USB Connector

The DSA-3400 provides 4 connectors for USB interface, which gives complete Plug & Play

and hot swapping for up to 127 external devices. The USB interface complies with USB UHCI, Rev. 2.0 compliant. The USB interface can be disabled in the system BIOS setup. The USB connector is used for connecting any device that conforms to the USB interface. Many recent digital devices conform to this standard. The USB interface supports Plug and Play, which enables you to connect or disconnect a device whenever you want, without turning off the computer.

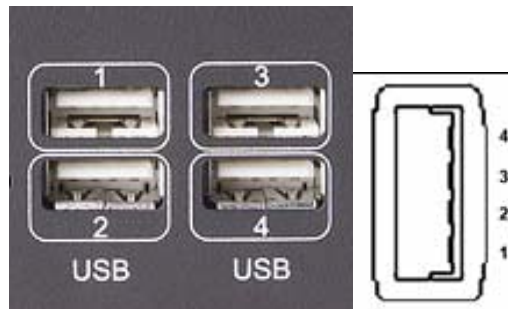


Figure 2.13: USB connector

Pin	Definition	Pin	Definition
1	VCC	3	USB_P+
2	USB_P-	4	GND

Table 2.8 USB connector pin assignments

Hardware Installation and Upgrade

This chapter introduces how to initialize the DSA-3400.

Sections include:

- Installing the DDR SDRAM Memory Module
- Inserting a Compact Flash Card
- Installing the 2.5" Hard Disk Drive (HDD)
- Connecting Power

Chapter 3 Hardware Installation and Upgrade

3.1 Jumpers and Connectors

The DSA-3400 Embedded/Mobile Video System consists of a PC-based computer that is housed in a aluminum top cover, a metal bottom case with accessed bottom cover and front with rear metal face plate. The HDD, SDRAM, are accessible by removing the accessed bottom cover. Any maintenance or hardware upgrades can be easily completed after removing the top cover, front and rear plates.



Warning!

Do not remove any mechanical parts, such as the top cover, bottom cover and front with rear face plate until you have verified that no power is flowing within the embedded box computer. Power must be switched off and the power cord must be unplugged. Every time you service the embedded box computer, you should be aware of this.

3.2 Setting jumpers

You can configure your DSA-3400 to match the needs of your application by setting jumpers. A jumper is the simplest kind of electrical switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or pins 2 and 3.

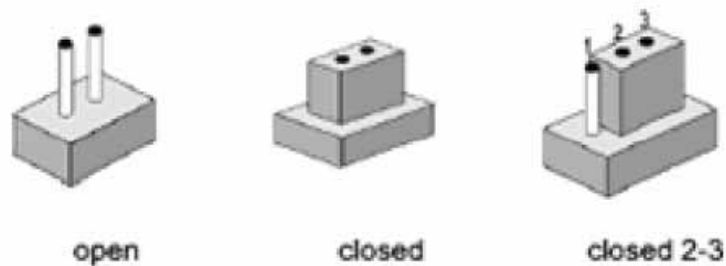


Figure 3.1: Jump type-1

The jumper settings are schematically depicted in this manual as follows:

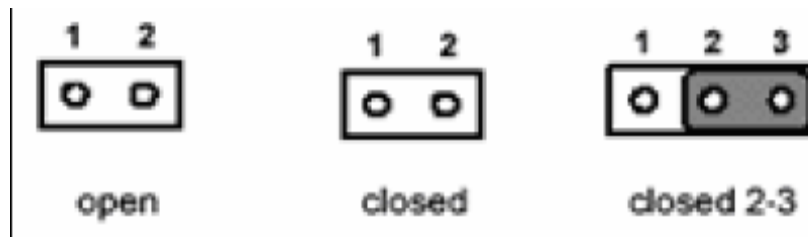


Figure 3.2: Jump type-2

A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

3.3 COM2 RS-232/485 Jumper setting (JP2)

The COM2 port located on front metal face plate of DSA-3400 unit which can be configured to operate in RS-232 (default setting) or RS-485 mode by setting up the Jumper Pins of JP2 located on internal motherboard of DSA-3400 unit.

Setting	Function
JP1(5-6 closed) , (7-9 closed) , (8-10 closed) , (13-15 closed) , (14-16 closed)	RS-232
JP2(1-2 closed) , (9-11 closed) , (10-12closed) , (15-17 closed) , (16-18 closed)	RS-485

Table 3.1 COM2 Jumper setting

3.4 Installing the DDR SDRAM Memory Module

The DSA-3400 provides one 200-pin SODIMM (Small Outline Dual Inline Memory Module) socket and supports 2.5V DDR SDRAM. You can install from 64 MB up to 2 GB of DDR SDRAM memory. The procedure of installing a DDR SDRAM SODIMM into the DSA-3400 is detailed below, please follow these steps carefully.

1. Remove the power line first.
2. Unscrew the 2 screws from the left and right with top cover of the DSA-3400.

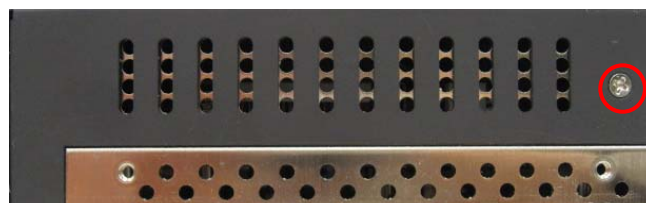


Figure 3.2: The left side of DSA-3400

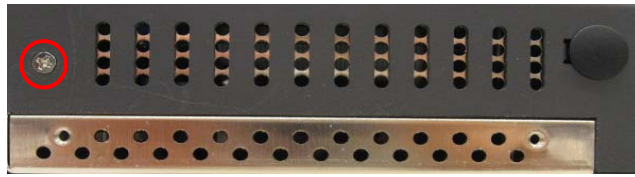


Figure 3.3: The right side of DSA-3400

3. Remove the top cover.

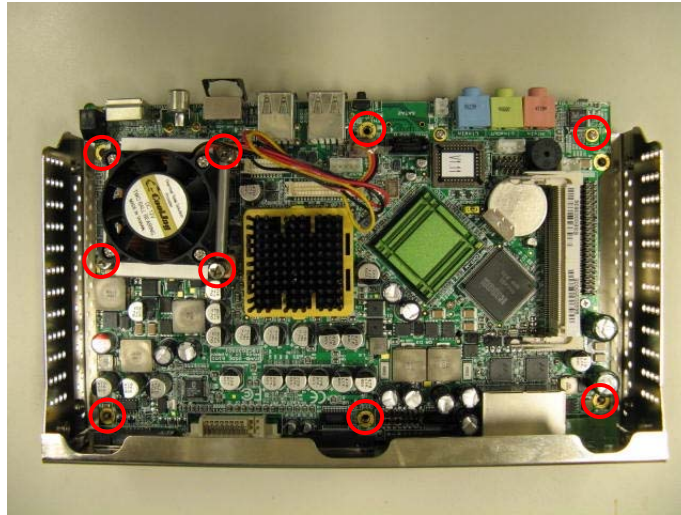


Figure 3.4: The bottom inside of DSA-3400

4. Unscrew the 10 screws from mother board to the bottom.(refer the Figure 3.4: The bottom inside of DSA-3400)



Figure 3.5: The back I/O side of DSA-3400

5. Use Hexagon socketscrew keys remove the back D-sub Hexagon screw of bottom.

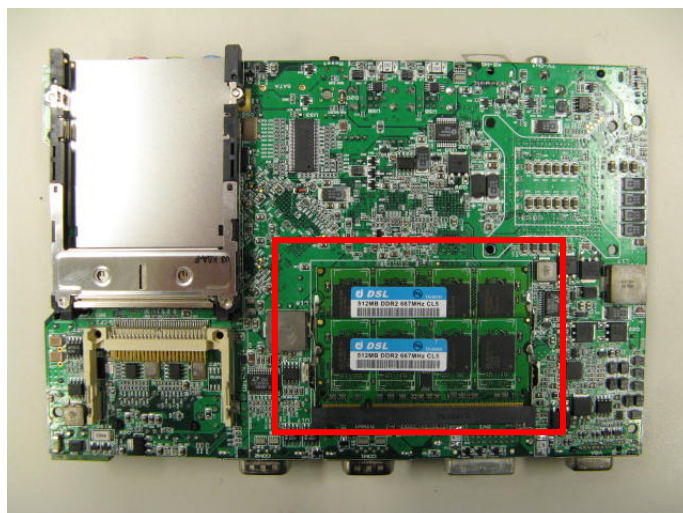


Figure 3.6: The mother downside of DSA-3400

6. Plug and Push a DDR SODIMM SDRAM (200pin) into a socket on board.
6. Press down the DRAM module and you will hear the "Click".
7. One reverse the steps could restore the DSA-3400.

3.5 Installing the 2.5" Hard Disk Drive (HDD)

You can attach one enhanced Integrated Device Electronics (IDE) hard disk drive to the DSA-3400's internal controller which uses a PCI local bus interface. The advanced IDE controller supports faster data transfer and allows the IDE hard drive to exceed 528 MB.

For the automotive application and harsh (high temperature) environment installation, we STRONGLY suggest users to use the wide-range 2.5" hard disk driver designed and manufactured specifically for this application.

The following are instructions for installation:

1. Remove the power line first.
2. Unscrew the 4 screws on HDD mounting top cover of the DSA-3400(refer *Figure 3.4: The Hard Disc of DSA-3400*)

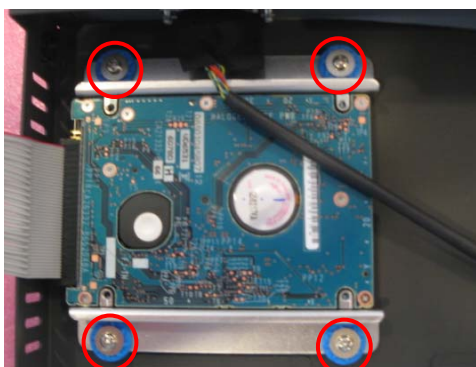


Figure 3.7: The Hard Disc mount the top cover of DSA-3400

3. Remove the HDD mounting bottom cover of the DSA-3400.

4. Unscrew the 4 screws on rim of HDD mounting top cover of the DSA-3400

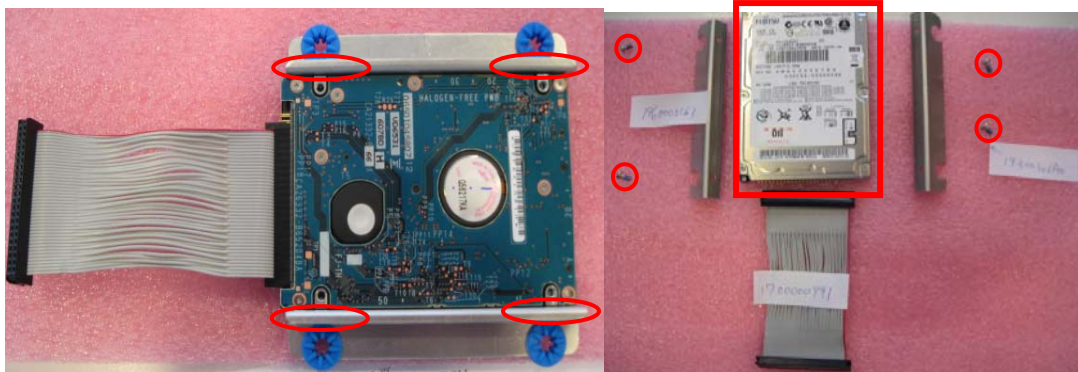


Figure 3.8: Unscrew the 4 screws on rim of HDD

4. Fixing your HDD with 4 screws on rim and HDD mounting top cover by using the 4 screws stored in accessories box.
5. Connect the IDE flat cable to the connector on the hard disk.
6. Make sure the tight connection between the flat cable and the hard disc drive.
7. Screw back the bottom cover with the 2 screws.

3.7 Connecting Power

Connect the DSA-3400 to a 12~24V DC power source. The power source can either be from a power adapter or an in-house power source.

Warning: For the automotive application, the power voltage is very unstable during the key ignition and might be lower to 12V DC. Please make sure the system is not under booting or operating. The unstable power source might cause the shot-down to the system and the data loss.

Award BIOS Setup

- 4-2-1 Main Menu**
- 4-2-2 Standard CMOS Features**
- 4-2-3 Advanced BIOS Features**
- 4-2-4 Advanced BIOS Features**
- 4-2-5 Integrated Peripherals**
- 4-2-6 Power Management Setup**
- 4-2-7 PnP/PCI Configurations**
- 4-2-8 PC Health Status**
- 4-2-9 Frequency/Voltage Control**
- 4-2-10 Load Optimized Defaults**
- 4-2-11 Set Password**
- 4-2-12 Save & Exit Setup**
- 4-2-13 Exit Without Saving**

Chapter 4 BIOS Operation

4.1 BIOS Introduction

Advantech provide full-featured AwardBIOS 6.0 and delivers the superior performance, compatibility and functionality that manufactures of Industry PC and Embedded boards, it's many options and extensions let you customize your products to a wide range of designs and target markets.

The modular, adaptable AwardBIOS 6.0 supports the broadest range of third-party peripherals and all popular chipsets, plus Intel, AMD, nVidia, VIA, and compatible CPUs from 386 through Pentium and AMD Geode, K7 and K8 (including multiple processor platforms), and VIA Eden C3 and C7 CPU.

You can use Advantech's utilities to select and install features to suit your designs for customers need.

4.2 BIOS Setup

The _____ Series system has build-in AwardBIOS with a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS RAM of the motherboard. When the power is turned off, the battery on the board supplies the necessary power to the CMOS RAM.

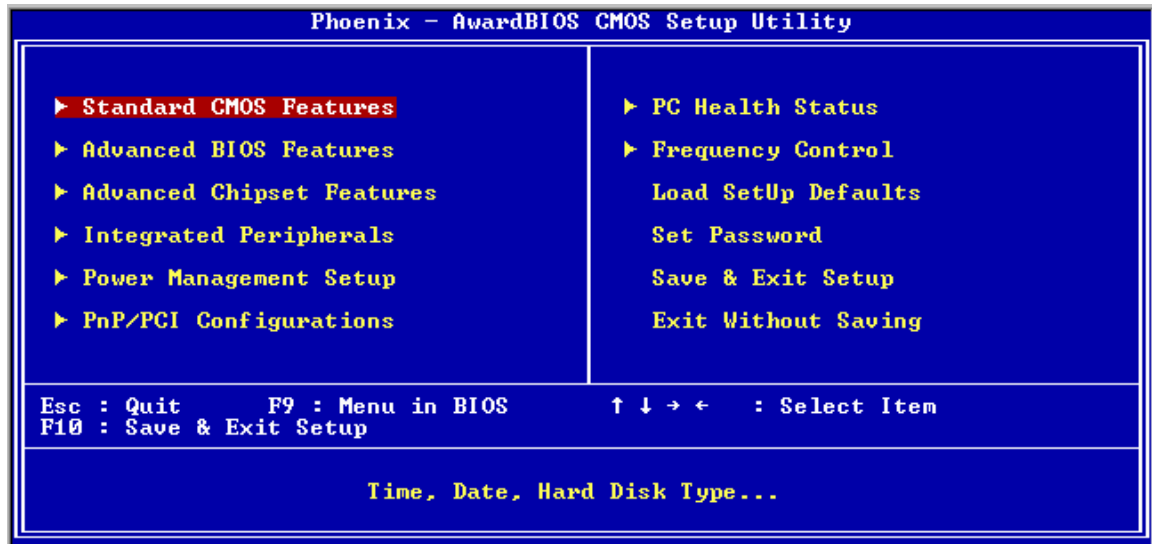
When the power is turned on, press the button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen.

CONTROL KEYS

< ↑ >< ↓ >< ← >< → >	Move to select item
<Enter>	Select Item
<Esc>	Main Menu - Quit and not save changes into CMOS Sub Menu - Exit current page and return to Main Menu
<Page Up/>>	Increase the numeric value or make changes
<Page Down/->	Decrease the numeric value or make changes
<F1>	General help, for Setup Sub Menu
<F2>	Item Help
<F5>	Load Previous Values
<F7>	Load Optimized Default
<F10>	Save all CMOS changes

4.2.1 Main Menu

Press to enter AwardBIOS CMOS Setup Utility, the Main Menu will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.



◆ Standard CMOS Features

This setup page includes all the items in standard compatible BIOS.

◆ Advanced BIOS Features

This setup page includes all the items of Award BIOS enhanced features.

◆ Advanced Chipset Features

This setup page includes all the items of Chipset configuration features.

◆ Integrated Peripherals

This setup page includes all onboard peripheral devices.

◆ Power Management Setup

This setup page includes all the items of Power Management features.

◆ PnP/PCI Configurations

This setup page includes PnP OS and PCI device configuration.

◆ PC Health Status

This setup page includes the system auto detect CPU and system temperature, voltage, fan speed.

◆ Frequency/Voltage Control

This setup page includes CPU host clock control, frequency ratio and voltage.

◆ **Load SetUp Defaults**

This setup page includes Load system optimized value, and the system would be in best performance configuration.

◆ **Set Password**

Establish, change or disable password.

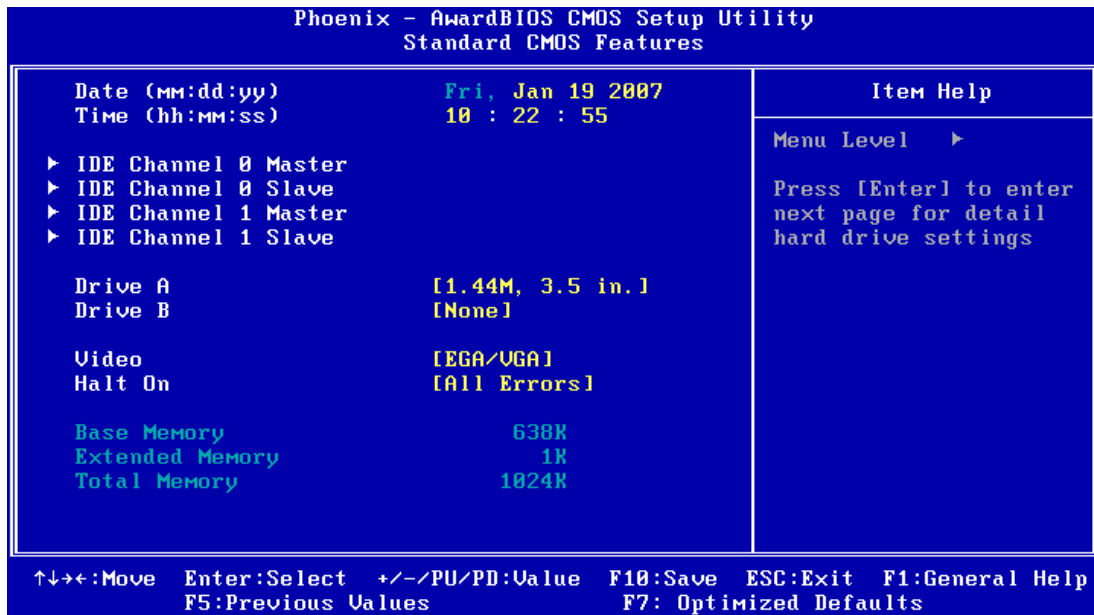
◆ **Save & Exit Setup**

Save CMOS value settings to CMOS and exit BIOS setup.

◆ **Exit Without Saving**

Abandon all CMOS value changes and exit BIOS setup.

4.2.2 Standard CMOS Features



▲ Date

The date format is <week>, <month>, <day>, <year>.

- › Week From Sun to Sat, determined and display by BIOS only
- › Month From Jan to Dec.
- › Day From 1 to 31
- › Year From 1999 through 2098

▲ Time

The times format in <hour> <minute> <second>, base on the 24-hour time

▲ IDE Channel 0 Master/Slave

- › IDE HDD Auto-Detection Press "Enter" for automatic device detection.

▲ IDE Channel 1 Master/Slave

- › IDE HDD Auto-Detection Press "Enter" for automatic device detection.

▲ Drive A / Drive B

The Item identifies the types of floppy disk drive A or drive B

- › None No floppy drive installed
- › 360K, 5.25" 5.25 inch PC-type standard drive; 360K byte capacity
- › 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2M byte capacity
- › 720K, 3.5" 3.5 inch double-sided drive; 720K byte capacity
- › 1.44M, 3.5" 3.5 inch double-sided drive; 1.44M byte capacity
- › 2.88M, 3.5" 3.5 inch double-sided drive; 2.88M byte capacity

▲ Halt on

The item determines whether the computer will stop if an error is detected during power up.

- | | |
|---------------------|--|
| › No Errors | The system boot will not stop for any error |
| › All Errors | Whenever the BIOS detects a non-fatal error the system will be stopped. |
| › All, But Keyboard | The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value) |
| › All, But Diskette | The system boot will not stop for a disk error; it will stop for all other errors. |
| › All, But Disk/Key | The system boot will not stop for a keyboard or disk error; it will stop for al other errors. |

▲ Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

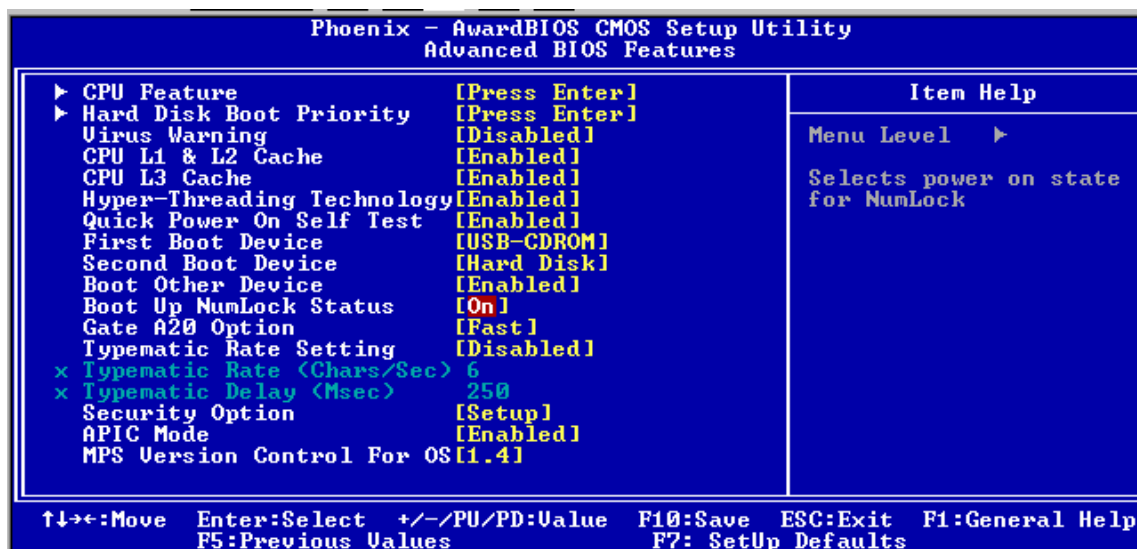
▲ Extended Memory

The POST of the BIOS will determine the amount of extended memory (above 1MB in CPU's memory address map) installed in the system.

▲ Total Memory

This item displays the total system memory size.

4.2.3 Advanced BIOS Features



▲ CPU Feature

This item allows user to adjust CPU features, CPU ratio, VID and Thermal and special feature like XD flag.

▲ Hard Disk Boot Priority

This item allows user to select boot sequence for system device HDD, SCSI, RAID.

▲ Virus Warning [Disabled]

This item allows user to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection.

▲ CPU L1 & L2 Cache [Enabled]

This item allows user to enable CPU L1 and L2 cache.

▲ CPU L3 Cache [Enabled]

This item allows user to enable CPU L3 cache.

▲ Hyper-Threading Technology [Enabled]

This item allows user to enable supported on the Intel® Pentium® 4 Processor with HT Technology.

▲ Quick Power On Self Test [Enabled]

This field speeds up the Power-On Self Test (POST) routine by skipping retesting a second, third and fourth time. Setup setting default is enabled.

▲ **First / Second / Third / Other Boot Drive**

- › Floppy Select boot device priority by Floppy.
- › LS120 Select boot device priority by LS120.
- › Hard Disk Select boot device priority by Hard Disk.
- › CDROM Select boot device priority by CDROM.
- › ZIP Select boot device priority by ZIP.
- › USB-FDD Select boot device priority by USB-FDD.
- › USB-ZIP Select boot device priority by USB-ZIP.
- › USB-CDROM Select boot device priority by USB-CDROM.
- › USB-HDD Select boot device priority by USB-HDD.
- › LAN Select boot device priority by LAN.
- › Disabled Disable this boot function.

▲ **Gate A20 Option**

This item enables users to switch A20 control by port 92 or not.

▲ **Typematic Rate Setting**

This item enables users to set the two typematic controls items.

This field controls the speed at

- › Typematic Rate (Chars/Sec)

This item controls the speed at system registers repeated keystrokes.

Eight settings are 6, 8, 10, 12, 15, 20, 24 and 30.

- › Typematic Delay (Msec)

This item sets the time interval for displaying the first and second characters. Four delay rate options are 250, 500, 750 and 1000.

▲ **Security Option [Setup]**

- › System System can not boot and can not access to Setup page if the correct password is not entered at the prompt.

- › Setup System will boot, but access to Setup if the correct password is not entered at the prompt. (Default value)

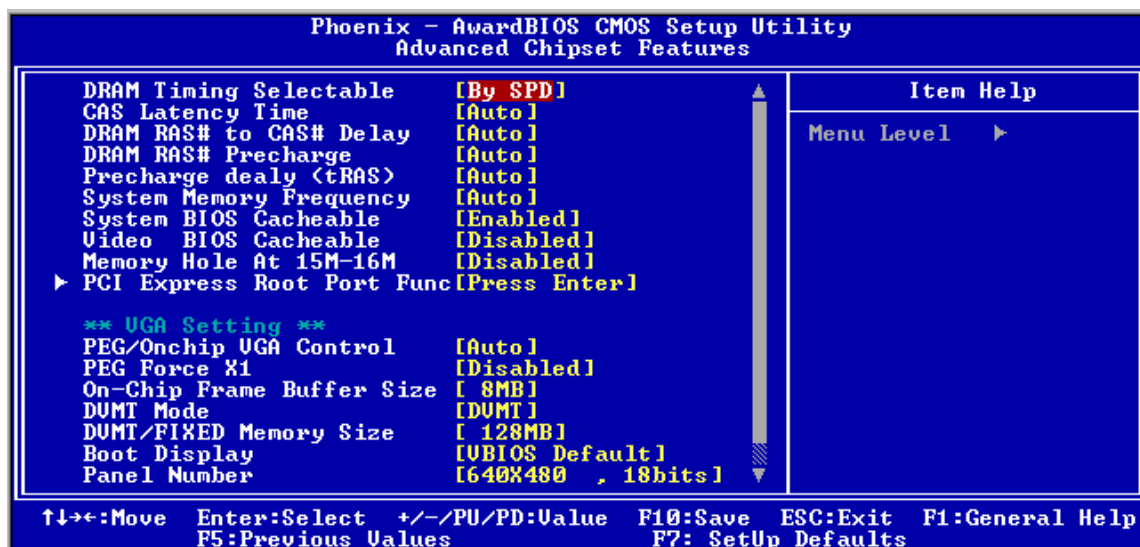
▲ **MPS Version Control for OS [1.4]**

This item sets the operating system multiprocessor support version.

▲ **APIC Mode**

This item allows user to enable APIC Mode.

4.2.4 Advanced Chipset Features



NOTE: This “Advanced Chipset Features” option controls the configuration of the board’s chipset, this page is developed by Chipset independent, for control chipset register setting and fine tune system performance. It is strongly recommended only technical users make changes to the default settings.

▲ DRAM Timing Selectable [By SPD]

This item enables users to set the optimal timings for items 2 through 5, system default setting of “By SPD” to follow the SPD information and ensure the system running in stable and optimal performance.

▲ CAS Latency Time [Auto]

This item enables users to set the timing delay in clock cycles before SDRAM start a read command after receiving it.

▲ DRAM RAS# to CAS# Delay [Auto]

This item enables users to set the timing of the transition from RAS (row address strobe) to CAS (column address strobe) as both rows and column are separately addressed shortly after DRAM is refreshed.

▲ DRAM RAS# Precharge [Auto]

This item enables users to set the DRAM RAS# precharge timing, system default is setting to “Auto” to reference the data from SPD ROM.

▲ Precharge delay<tRAS> [Auto]

Allow use to select delay time for tRAS

▲ System BIOS Cacheable [Enabled]

This item allows the system BIOS to be cached to allow faster execution and better performance.

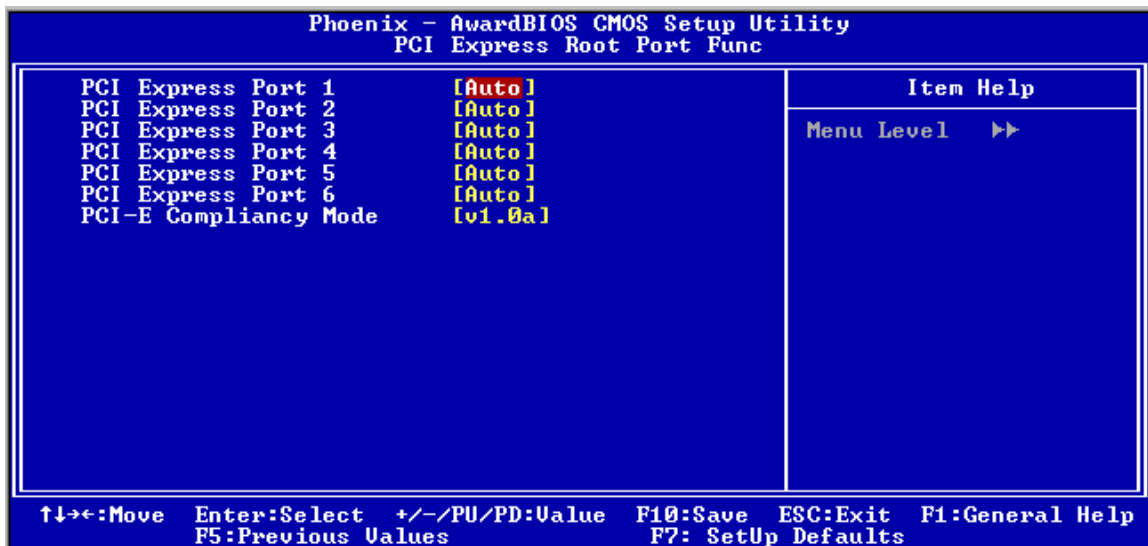
▲ Video BIOS Cacheable [Disabled]

This item allows the video BIOS to be cached to allow faster execution and better performance.

▲ Memory Hole At 15M-16M [Disabled]

This item reserves 15MB-16MB memory address space to ISA expansion cards that specifically require the setting. Memory from 15MB-16MB will be unavailable to the system because of the expansion cards can only access memory at this area.

▲ PCI Express Root Port Function



Allow User to Enable, Disable or Auto detect PCI Express Port function.

▲ PEG/Onboard VGA Control [Auto]

This item allows the user to select whether onboard graphics processor or the PCI Express card.

▲ PEG Force X1 [Disabled]

This item allows the user to convert a PCI Express X16 slot to PCI Express X1 slot.

▲ On-Chip Frame Buffer Size [8MB]

This item allows the user to adjust on-chip graphics of memory buffer.

▲ DVMT Mode [DVMT]

This item allows the user to adjust Intel's Dynamic Video Memory Technology (DVMT). Bios provide three options to choose (DVMT, FIXED and Both).

▲ DVMT/FIXED Memory Size [128MB]

This item allows the user to adjust DVMT/FIXED graphics memory size.

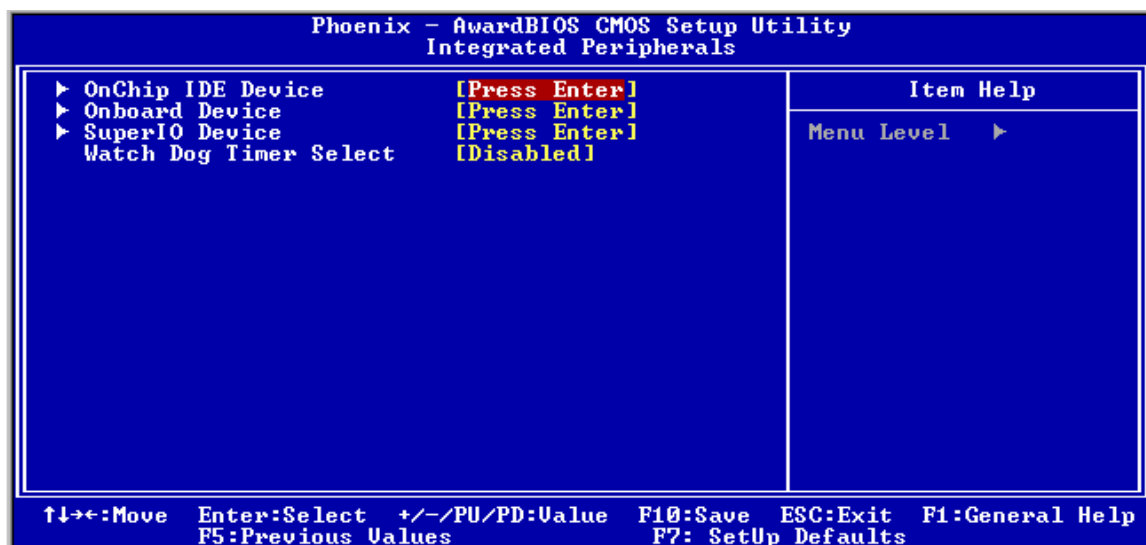
▲ Boot Display [Auto]

This item allows the user to decide that display mode.

▲ Panel Number [640X480]

This item allows the user to adjust panel resolution.

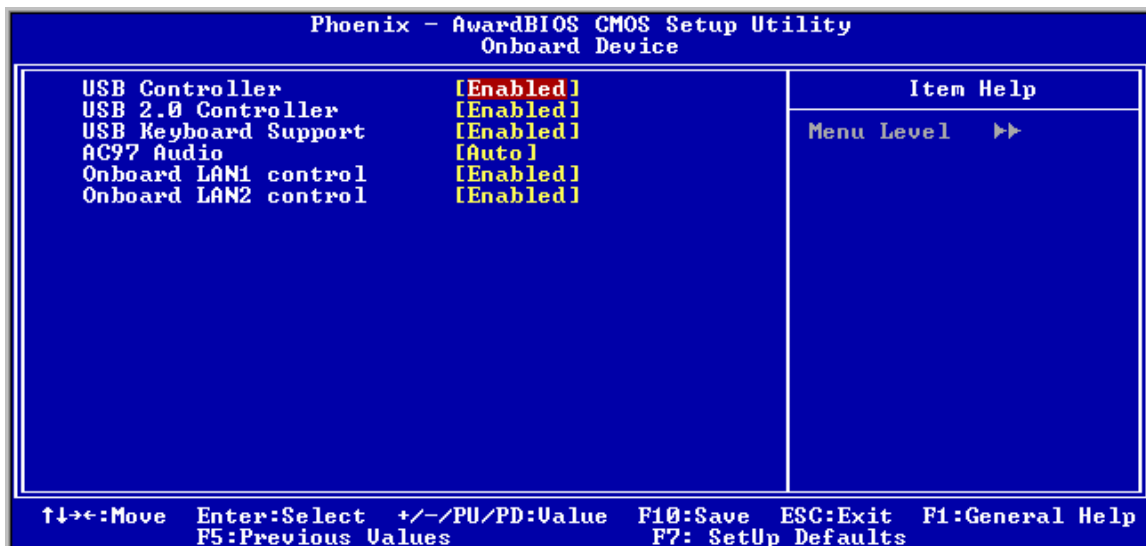
4.2.5 Integrated Peripherals



NOTE: This “Integrated Peripherals” option controls the configuration of the board’s chipset, includes IDE, ATA, SATA, USB, AC97, MC97 and Super IO and Sensor devices, this page is developed by Chipset independent.

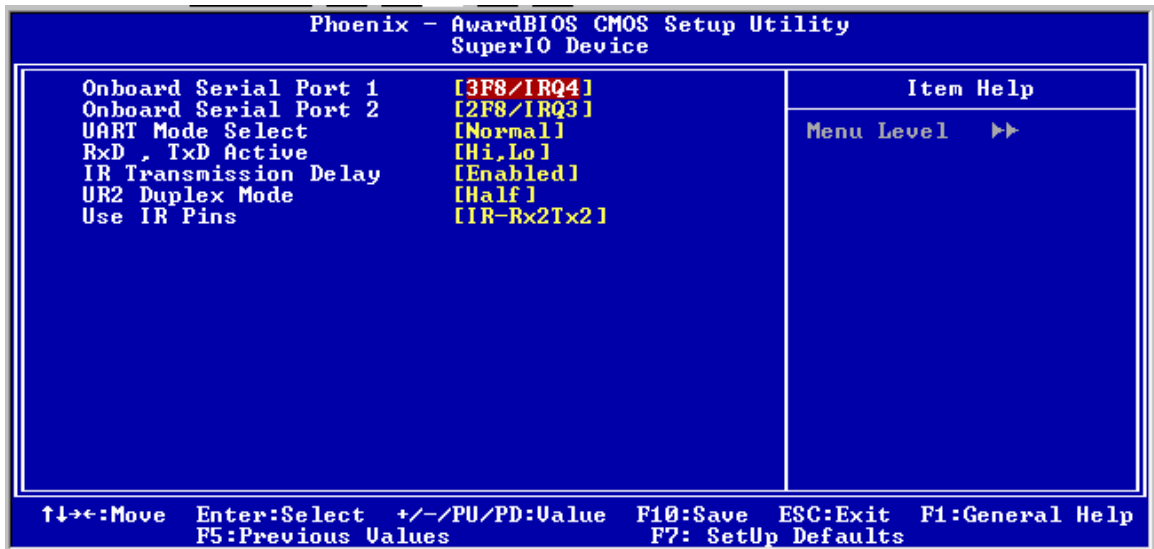
▲ Onboard Device

This item enables users to set the Onboard device status, includes enable USB, AC97, MC97 and LAN devices.



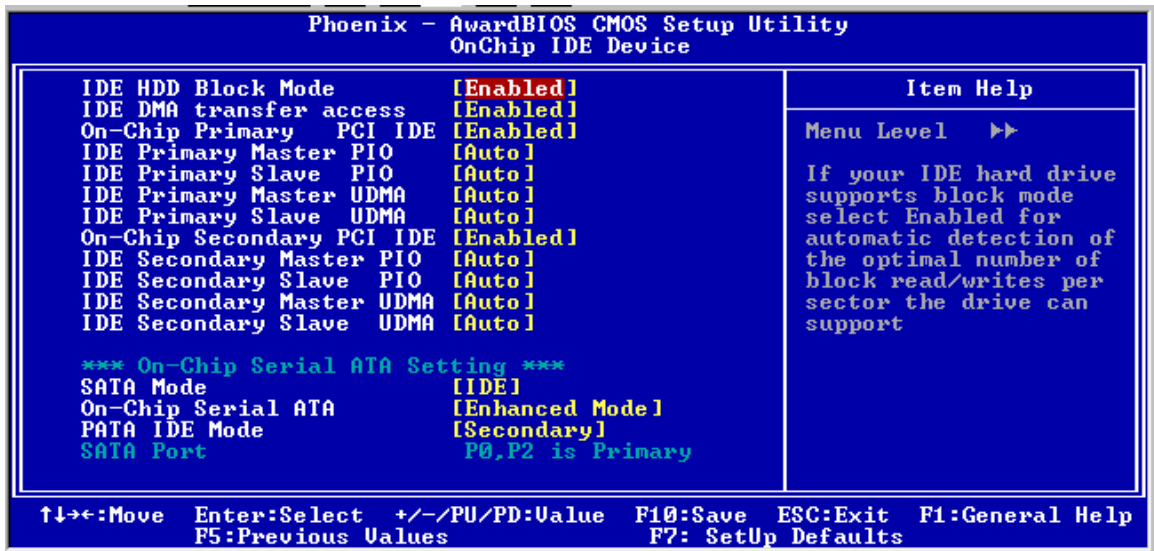
▲ Super IO Device

This item enables users to set the Super IO device status, includes enable Floppy, COM, LPT, IR and control GPIO and Power fail status.



▲ OnChip IDE Device

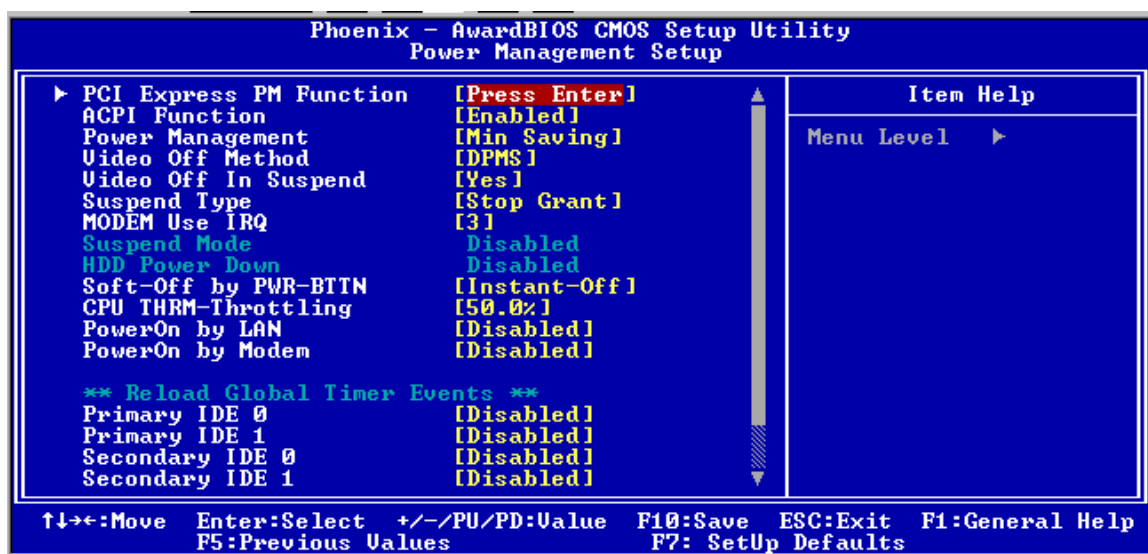
This item enables users to set the OnChip IDE device status, includes enable IDE devices and setting PIO and DMA access mode, and some of new chipset also support for SATA device (Serial-ATA)



▲ Watch Dog Timer Select

Allow User select watch Dog time or disable.

4.2.6 Power Management Setup



NOTE: This “Power management Setup” option configure system to most effectively saving energy while operating in a manner consistent with your computer use style.

▲ ACPI Function [Enabled]

This item defines the ACPI (Advanced Configuration and Power Management) feature that makes hardware status information available to the operating system, and communicate PC and system devices for improving the power management.

▲ Power Management [Min Saving]

This item allows user to select system power saving mode.

- › Min Saving Minimum power management. Suspend Mode=1 hr.
- › Max Saving Maximum power management. Suspend Mode=1 min.
- › User Define Allows user to set each mode individually. Suspend Mode= Disabled or 1 min ~1 hr.

▲ Video Off Method [DPMS]

This item allows user to determine the manner is which the monitor is blanked.

- › V/H SYNC+Blank This option will cause system to turn off vertical and horizontal synchronization ports and write blanks to the video buffer.
- › Blank Screen This option only writes blanks to the video buffer.
- › DPMS Initial display power management signaling.

▲ Video Off In Suspend [Yes]

This item allows user to turn off Video during system enter suspend mode.

▲ Suspend Type [Stop Grant]

This item allows user to determine the suspend type.

▲ Modem use IRQ 【3】

This item allows user to determine the IRQ which the MODEM can use.

▲ Suspend Mode 【1 Hour】

This item allows user to determine the time of system inactivity, all devices except the CPU will be shut off.

▲ HDD Power Down Mode 【15 Min】

This item allows user to determine the time of system inactivity, the hard disk drive will be powered down.

▲ Soft-Off by PWR-BTTN 【Enabled】

This item allows user to define function of power button.

- 》 Instant-Off Press power button then Power off instantly.
- 》 Delay 4 Sec Press power button 4 sec. to Power off.

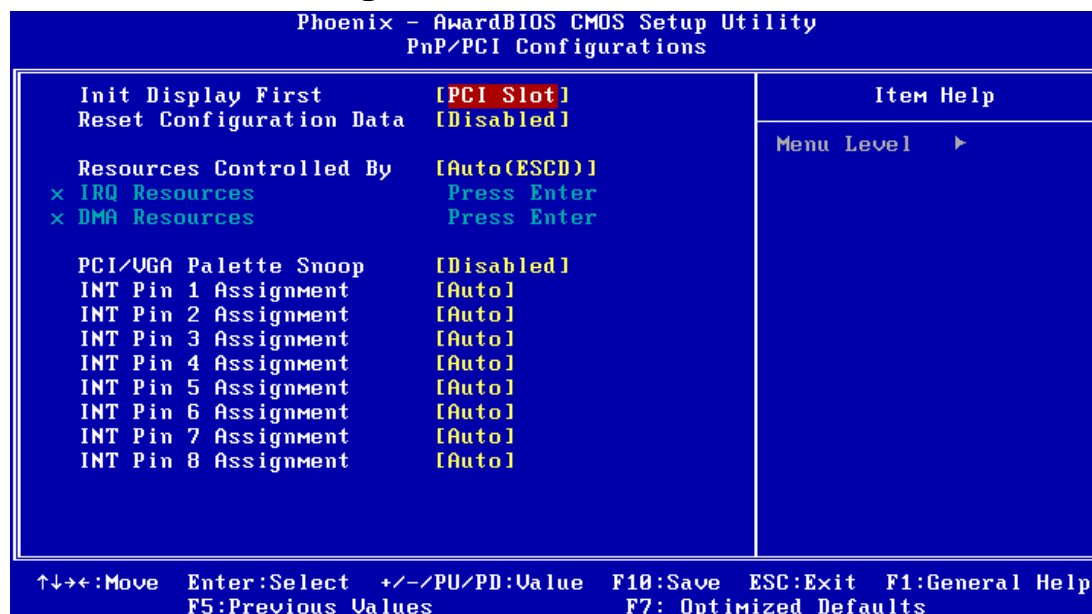
▲ PowerOn by LAN 【Enabled】

This item allows user to define the system will resume by activating of Lan.

▲ PowerOn by Modem 【Enabled】

This item allows user to define the system will resume by activating of modem ring.

4.2.7 PnP/PCI Configurations



NOTE: This “PnP/PCI Configurations” option is setting up the IRQ and DMA (both PnP and PCI bus assignments).

▲ Init Display First **[PCI Slot]**

This item is setting for start up Video output from PCI or Onboard device.

▲ Reset Configuration Data **[Disabled]**

This item allow user to clear any PnP configuration data stored in the BIOS.

▲ Resources Controlled By **[Auto (ESCD)]**

› IRQ Resources

This item allows you respectively assign an interruptive type for IRQ-3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

› DMA Resources

This item allows you respectively assign an interruptive type for DMA, 0, 1, 2, 3, 4, 5, 6, and 7.

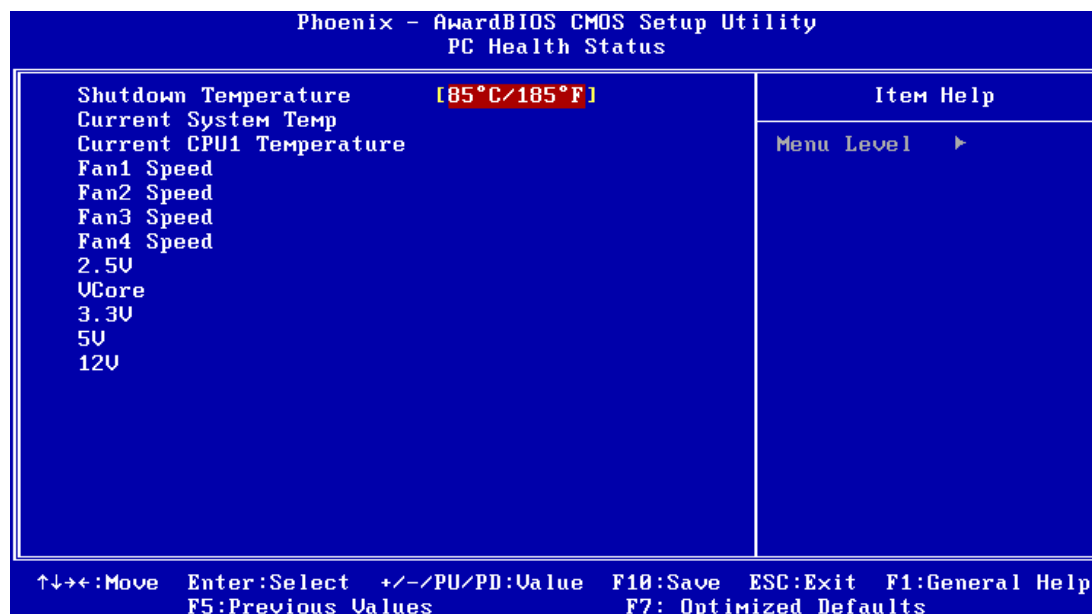
▲ PCI VGA Palette Snoop **[Disabled]**

The item is designed to solve problems caused by some non-standard VGA cards. A built-in VGA system does not need this function.

▲ INT Pin 1~8 Assignment **[Auto]**

The interrupt request (IRQ) line assigned to a device connected to the PCI interface on your system.

4.2.8 PC Health Status



NOTE: This “PC Health Status” option controls the Thermal, FAN and Voltage status of the board. this page is developed by Chipset independent.

▲ Shutdown Temperature [Disabled]

This item enables users to set the limitation of CPU temperature, the range is from 85°C through 100°C.

▲ Current System/CPU Temp [Show Only]

This item displays current system and CPU temperature.

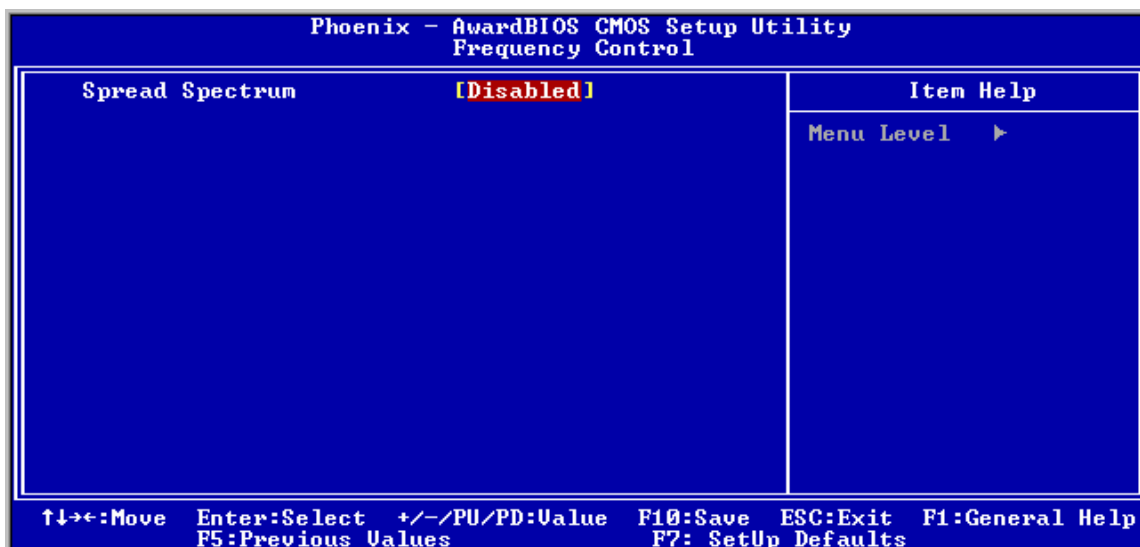
▲ FAN 1 / FAN2 / FAN3 / FAN4 Speed [Show Only]

This item displays current system FAN speed.

▲ 2.5V / 3.3V / 5V / 12V and VCore [Show Only]

This item displays current CPU and system Voltage.

4.2.9 Frequency/voltage Control

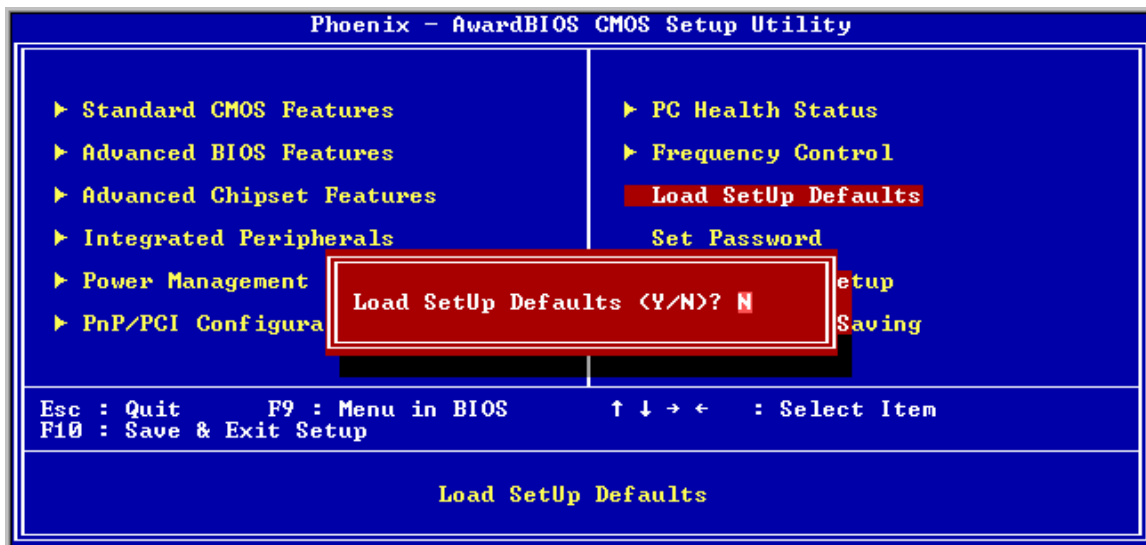


NOTE: This “Frequency/Voltage Control” option controls the CPU Host and PCI frequency, this page is developed by CPU and Chipset independent, some items will show up when you install a processor which supports this function.

▲ Spread Spectrum [Disabled]

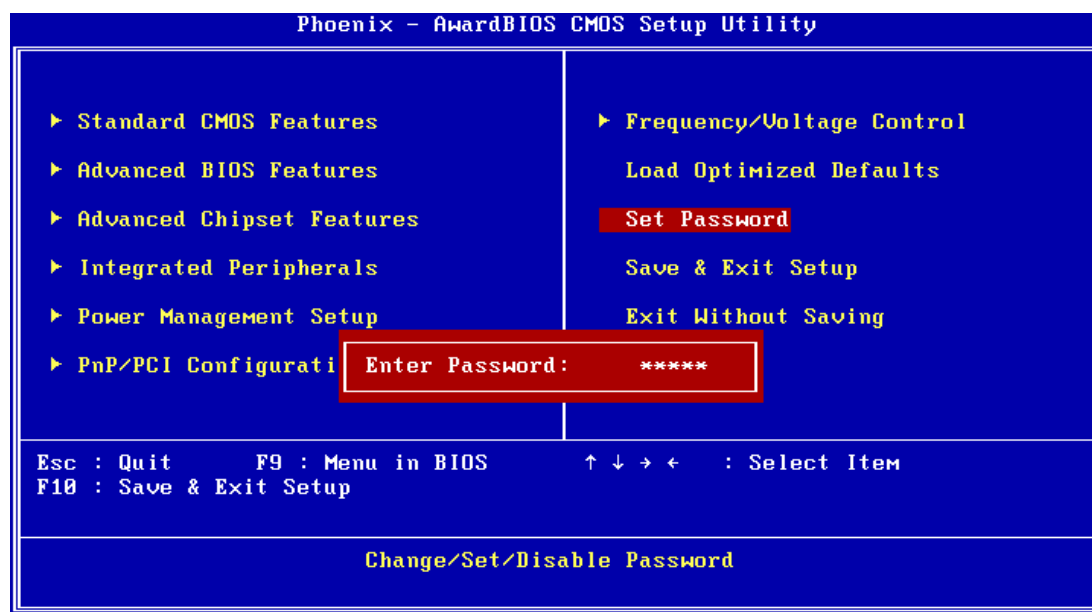
This item enables users to set the spread spectrum modulation.

4.2.10 Load Setup Defaults



NOTE: Load Setup Defaults loads the default system values directly from ROM. If the stored record created by the Setup program should ever become corrupted (and therefore unusable). These defaults will load automatically when you turn the **DVMB355** Series system on.

4.2.11 Set Password



NOTE: To enable this feature, you should first go to the Advanced BIOS Features menu, choose the Security Option, and select either Setup or System, depending on which aspect you want password protected. Setup requires a password only to enter Setup. System requires the password either to enter Setup or to boot the system. A password may be at most 8 characters long.

To Establish Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see “Enter Password”, enter the desired password and press <Enter>.
3. At the “Confirm Password” prompt, retype the desired password, then press <Enter>.
4. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Change Password

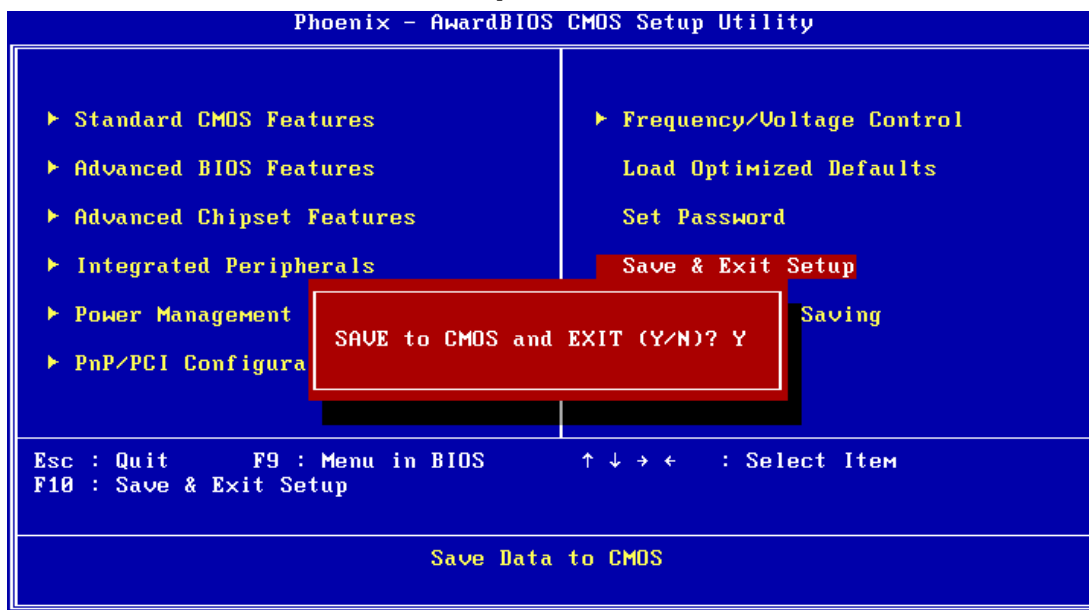
1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see “Enter Password”, enter the existing password and press <Enter>.
3. You will see “Confirm Password”. Type it again, and press <Enter>.
4. Select Set Password again, and at the “Enter Password” prompt, enter the new password and press <Enter>.
5. At the “Confirm Password” prompt, retype the new password, and press <Enter>.
6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Disable Password

1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
2. When you see “Enter Password”, enter the existing password and press <Enter>.

3. You will see "Confirm Password". Type it again, and press <Enter>.
4. Select Set Password again, and at the "Enter Password" prompt, please don't enter anything; just press <Enter>.
5. At the "Confirm Password" prompt, again, don't type in anything; just press <Enter>.
6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

4.2.12 Save & Exit Setup

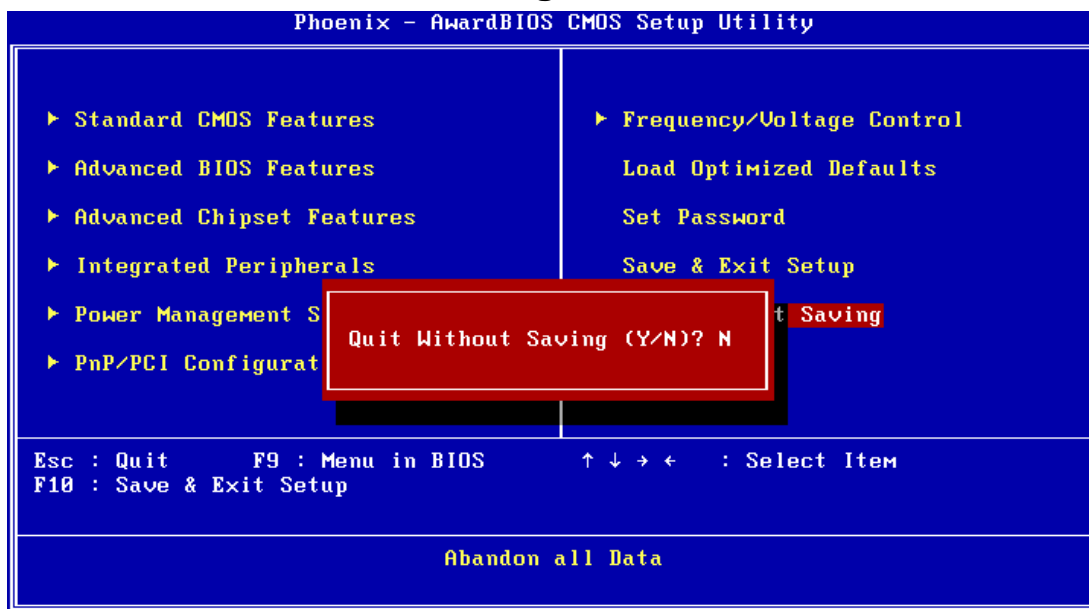


NOTE:

Type "Y" will quit the BIOS Setup Utility and save user setup value to CMOS.

Type "N" will return to BIOS Setup Utility.

4.2.13 Quit Without Saving



NOTE:

Type "Y" will quit the BIOS Setup Utility without saving to CMOS.

Type "N" will return to BIOS Setup Utility.

System Setup

This chapter details the needed driver installation for DSA-3400

Sections include:

- Installation of chipset driver
- Installation of graphic driver
- Installation of LAN driver
- Installation of audio driver

5.1 Introduction

The system has an onboard Intel 852GME chipset for its graphic controller. It supports conventional analog CRT monitors and LCD displays with 64MB frame buffer shared with system memory. The VGA controller can drive CRT displays with resolutions up to 1600 x1200@85 Hz and 2048 x 1536 @ 75 Hz.

5.1.1 CMOS setting for panel type

The DSA-3400 system BIOS and custom drivers are located in a Flash ROM device, designated U26 of system motherboard of DSA-3400. A single Flash chip holds the system BIOS, VGA BIOS and network Boot ROM image. The display can be configured via CMOS settings. This method Choice of “Boot display” selection items of Advanced Chipset Features sections of Award BIOS Setup.



Figure 5.1: Advanced Chipset features screen

5.1.2 Display type

The DSA-3400 can be set only in a VBIOS Default, CRT and TV mode. The system is initially set to “VBIOS Default”.

5.1.3 Disable of Dual Independent Display

The DSA-3400 uses an Intel 852GME controller that is capable of providing multiple views and simultaneous display with mixed video and graphics on a flat panel and CRT.

5.2 Installation of needed driver

5.2.1 Installation of a licensed Windows OS

Before installing the needed driver, you should complete the installation of a licensed Windows operating system –Windows®XP, Windows®XP embedded or Win®2K first.

5.2.2 Installation of chipset driver.

The chipset driver is under the path:

**DSA-3400 Utility CD : **

DSA-3400 Driver/01_INF / infst_autol.exe

Please follow and pay attention to the installation instructions which appear on your screen, and complete the chipset driver installation.

5.2.3 Install the graphic driver

Find the graphic driver from CD at the directory of **DSA-3400 Utility CD : **

DSA-3400 Driver/02_VGA / win2k_xp1429 / Setup.exe

Please follow and pay attention to the installation instructions which appear on your screen, and complete the graphic driver installation.

5.2.4 Install the LAN driver

Find the LAN driver from CD at the directory of **DSA-3400 Utility CD : **

DSA-3400 Driver/ 03_LAN /

Please follow and pay attention to the installation instructions which appear on your screen, and complete the LAN driver installation.

5.2.5 Install the audio driver

Find the audio driver from CD at the directory of **DSA-3400 Utility CD : **

DSA-3400 Driver / 04_AUDIO / WDM_A399.exe

Please follow and pay attention to the installation instructions which appear on your screen, and complete the audio driver installation.

5.2.6 Install the Wireless module driver (only optional Wireless model , DSA-3400-WT56E)

Find the wireless module driver from CD at the directory of **DSA-3400 Utility CD : **
05_OPTION WIRELESS / DSA-3400-WT56E wireless driver / QCOM MKG2

Please follow and pay attention to the installation instructions which appear on your screen, and complete the wireless module driver installation.

5.2.7 Install the TV Tuner driver (only optional TV tuner model , DSA-3400-AT56 or DSA-3400-HT56E)

Find the TV tuner driver from CD at the directory of **MPC788 CD : \setup**

Please follow and pay attention to the installation instructions which appear on your screen, and complete the TV tuner driver installation.