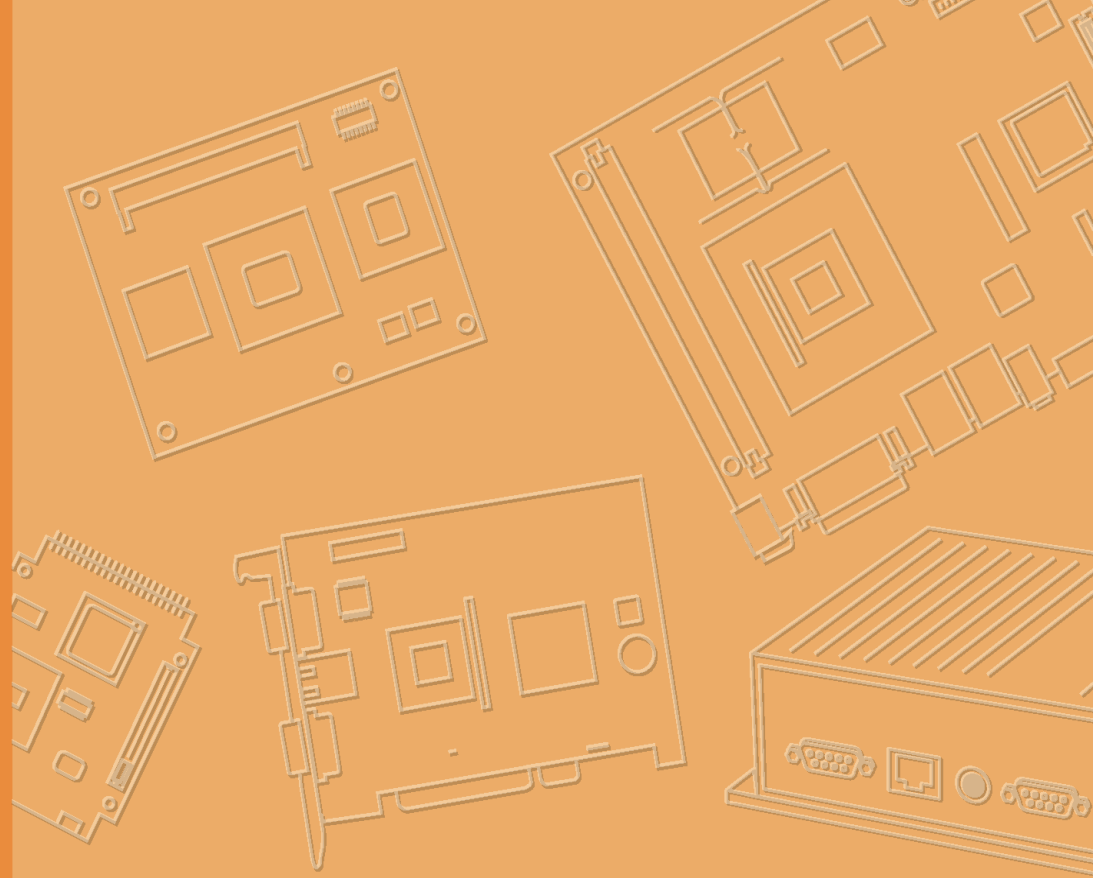


User Manual



DSA-3020

Trusted ePlatform Services

ADVANTECH

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

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.

CE

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 A

Note: 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 own expense.

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FM

This equipment has passed the FM certification. According to the National Fire Protection Association, work sites are classified into different classes, divisions and groups, based on hazard considerations. This equipment is compliant with the specifications of Class I, Division 2, Groups A, B, C and D indoor hazards.

Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. 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

Warnings, Cautions and Notes

Warning! *Warnings indicate conditions, which if not observed, can cause personal injury!*



Caution! *Cautions are included to help you avoid damaging hardware or losing data. e.g.*



There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! *Notes provide optional additional information.*



Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

- DSA-3020
- CD-ROM
- VESA Mounting Bracket
- DVI-D to HDMI Converter
- Power Adaptor

Accessory List

- TV tuner
- WiFi module
- USA power cord
- European power cord
- UK power cord

Power Code Option

| | |
|------------|--------------------------------|
| 1700001524 | Power cord, 180cm, 180D, US/UL |
| 170203183C | Power cord, 183cm, 180D, EU |
| 170203180A | Power cord, 180cm, 180D, UK |

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 15. The power cord or plug is damaged.
 16. Liquid has penetrated into the equipment.
 17. The equipment has been exposed to moisture.
 18. The equipment does not work well, or you cannot get it to work according to the user's manual.
 19. The equipment has been dropped and damaged.
 20. The equipment has obvious signs of breakage.
21. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
22. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Wichtige Sicherheitshinweise

1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlussteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim. Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlusbleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 15. Netzkabel oder Netzstecker sind beschädigt.
 16. Flüssigkeit ist in das Gerät eingedrungen.
 17. Das Gerät war Feuchtigkeit ausgesetzt.
 18. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 19. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 20. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
21. **VORSICHT:** Explosionsgefahr bei unsachgemäßen Austausch der Batterie.Ersatz nur durch denselben oder einem vom Hersteller empfohlene-mähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.
22. **ACHTUNG:** Es besteht die Explosionsgefahr, falls die Batterie auf nicht fachmännische Weise gewechselt wird. Verfangen Sie die Batterie nur gleicher oder entsprechender Type, wie vom Hersteller empfohlen. Entsorgen Sie Batterien nach Anweisung des Herstellers.
23. Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.

Haftungsausschluss: Die Bedienungsanleitungen wurden entsprechend der IEC-704-1 erstellt. Advantech lehnt jegliche Verantwortung für die Richtigkeit der in diesem Zusammenhang getätigten Aussagen ab.

Safety Precaution - Static Electricity

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

- 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.
- 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.

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Chapter 1

Overview

1.1 Introduction

DSA-3020 is a small profile, all-in-one Windows XPE ready network appliance and control box. For digital signage applications the Intel Silverthorne XL processor provides the power for HDTV decoding and multiple media processing. This easy-to-implement network appliance enables centralized control, scheduling and delivery of multimedia content through IP/Ethernet networks. Built on an x86 platform and XP Embedded OS, it is easy for application development. The compact -size design and the standard mounting bracket of DSA-3020 means it can be easily mounted behind signage display devices.

1.2 Specifications

1.2.1 Processing System

- **CPU:** Intel® Atom™ Processor Z530P (Silverthorne XL), 1.6 GHz
- **Chipset:** Intel Poulsbo XL
- **L2 Cache:** 521 KB
- **BIOS:** AWARD 8M bit BIOS
- **Front Side Bus:** 533 MHz

1.2.2 Graphic

- **Chipset:** Poulsbo XL, with Intel® Graphics Media Accelerator 500, 200MHz GFX Freq.
- **Memory Size:** Shared system memory up to 8 MB

1.2.3 Memory

- **Technology:** Single DDR2 533 SO-DIMM
- **Max. Capacity:** 2 GB

1.2.4 Network

- **LAN:** GigaLAN 1 x RJ45
- **Wireless:** Optional (via MiniPCIe module)

1.2.5 I/O Ports

- **Display:** 1 x DVI-D
- **Audio:** Azalia compatible audio codec to provide 1 x LINE-IN and 1 x LINE-OUT
- **Mini-PCI:** 1 x Mini-PCIe
- **USB 2.0:** 2 x USB connector
- **Serial:** 1 x RS-232
- **PSW:** External power switch connector

1.2.6 Media formats

- **Video codec**:** WMV, H.264, MPEG 4 (With AP)
- **Video format:** WMV, MOV, AVI (With AP)
- **Audio codec:** 2 channels, MPEG-1 Layers I, II and III (MP3), 16-bit PCM, bit rate up to 384 kbps, sample rate up to 48 KH, AC3, AAC..., etc (depends on S/W codec)

- **Still image format:** JPEG, BMP, TIFF, GIF, PNG
 - **Flash format:** SWF
 - **Text:** Fixed Text, Live RSS Feed
- ** (limity on CPU performance & decoder from 480P to 1080P)

1.2.7 Display Compatibility

- **Aspect ratio:** 4:3, 16:9, 3:4, 9:16
- **Output resolution:** 4:3 ratio - 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024
16:9 - 1280 x 720 (720p), 1920 x 1080 (1080p)
- **Display connector:** DVI-D (with DVI-D to HDMI convertor)

1.2.8 Player Function

- **Program update:** Through LAN, WAN or USB storage
- **Scrolling text:** Variable scrolling speed and position
- **Playlist:** Scheduling playback, endless loop playback, auto play after power on

1.2.9 Storage

- **IDE-0:** CF Card with Type II Slot
- **IDE-1:** Optional 2.5" SATA HDD (with PATA to SATA adapter board)

1.2.10 Power

- **Power consumption:** Average 12 W
- **Power supply:** 12 V DC ~ 19 V DC
- **System alarm:** N/A

1.2.11 Environment

- **Temperture:** 0 ~ 40°C, 0 ~ 55°C Optional
- **Relative humidity:** 95% @ 40°C (non-condensing), Operating
- **Viration resistance:** 1 Grms, IEC 60068-2-64, Random, 5 ~ 500 Hz, 1hr/axis

1.2.12 Physical

- **Dimension:** 170 x 110.6 x 32 mm
- **Weight:** 0.8 kg (1.76 lb)

1.2.13 Watchdog timer

- **Output:** Interrupt, system reset
- **Interval:** Programmable 1 ~ 255 sec.

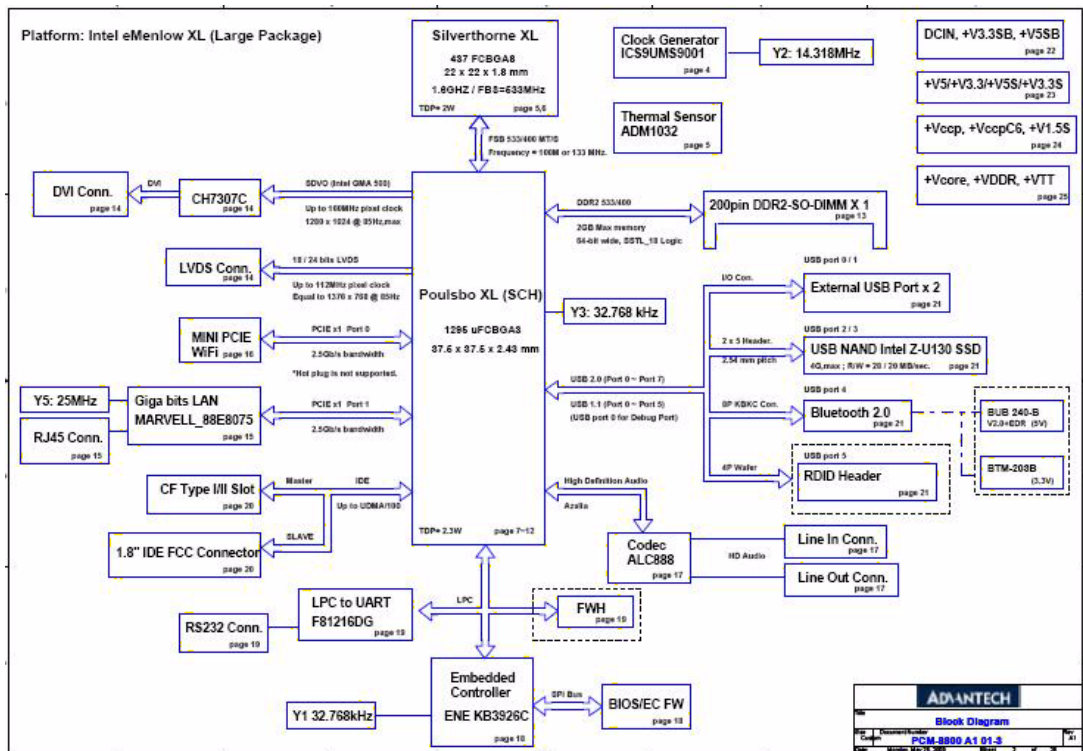
1.2.14 Certification

- **Electromagnetic:** CE, FCC
- **Safety:** UL, CB, CCC
- **Environmental protection:** RoHS, WEEE

1.3 Features

- Compact size for easy installation & mounting
- Fanless design for better reliability
- Supports Intel® Silverthorne XL processor
- Supports both landscape and portrait mode of display and dual display
- Supports Windows XPe & Linux
- Watchdog timer

1.4 System Architecture



1.5 Layout

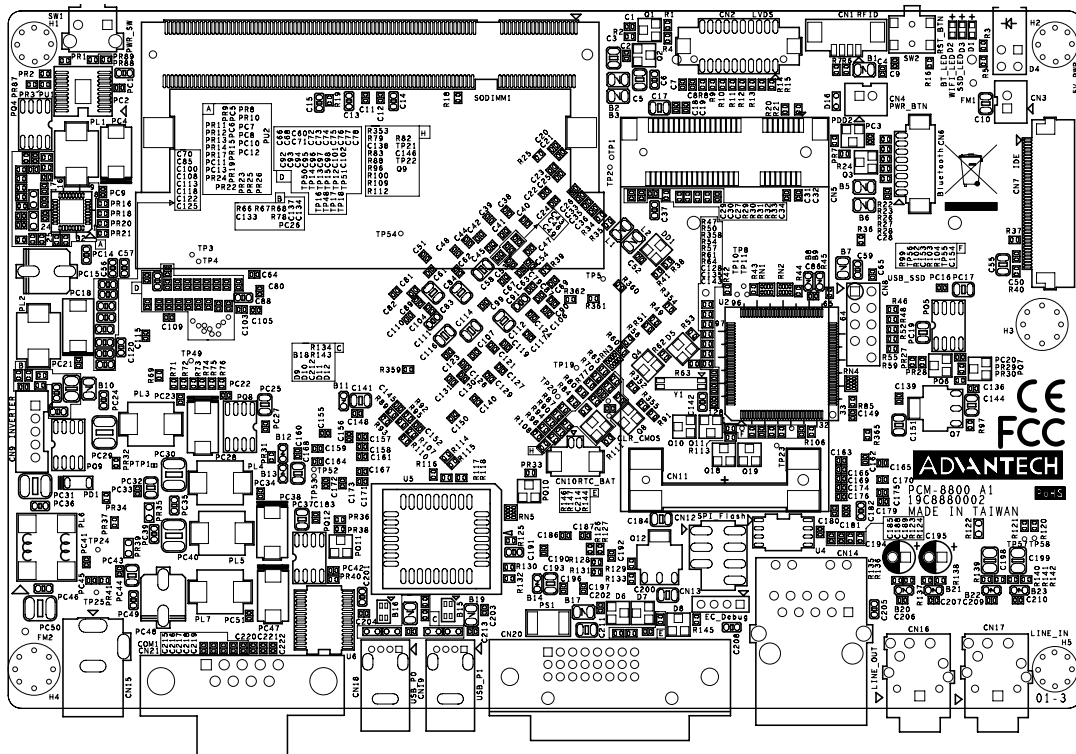


Figure 1.1 DSA-3020 Top View

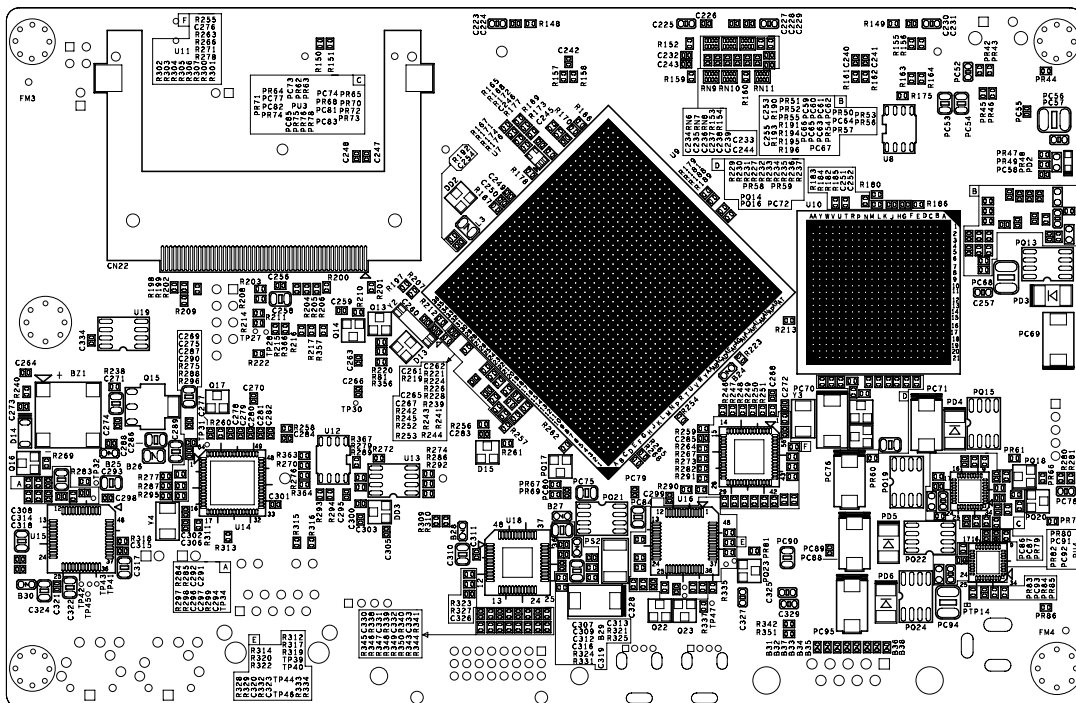


Figure 1.2 DSA-3020 Rear View

Chapter 2

Hardware
Functionality

2.1 Introduction of DSA-3020 External I/O Connectors

The following two figures show the external I/O connectors on DSA-3020. The following sections give you detailed information about the function of each I/O connector.



Figure 2.1 DSA-3020 front metal face plate external I/O connectors



Figure 2.2 DSA-3020 rear metal face plate

2.2 DSA-3020 front plate external I/O connectors

2.2.1 Power ON/OFF Button

The DSA-30 comes with a Power On/Off button, that supports On/Off (Instant off or 4 second delay), and Suspend.



Figure 2.3 DSA-3020 power button

2.2.2 LED Indicators

There are two LEDs on the DSA-3020 front face plate for indicating system status: PWR LED is for power status and flashes in green color; and HDD LED is for hard disk and compact flash disk status, which flashes in a red color.



Figure 2.4 DSA-3020 LED indicators

2.2.3 DVI Connector



Figure 2.5 DVI Connector

The DSA-3020 can support DVI-D output. The pin definition for the video connector and video cable follows:

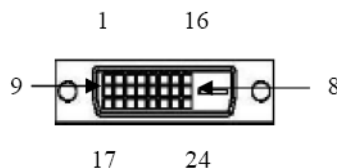


Table 2.1: DVI Video Connector

| PIN NO# | Signal | PIN NO# | Signal |
|---------|----------|---------|----------|
| 1 | TMDS2- | 2 | TMDS2+ |
| 3 | GND | 4 | NC |
| 5 | NC | 6 | DDCCLK |
| 7 | DDCDAT | 8 | NC |
| 9 | TMDS1- | 10 | TMDS1+ |
| 11 | GND | 12 | NC |
| 13 | NC | 14 | VCC |
| 15 | GND | 16 | DETECT |
| 17 | TMDS0- | 18 | TMDS0+ |
| 19 | GND | 20 | NC |
| 21 | NC | 22 | NC |
| 23 | TMDSCLK+ | 24 | TMDSCLK- |

2.2.4 Line-in, Line-out

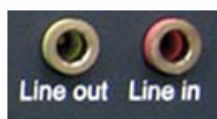


Figure 2.6 Line in, Line out

2.2.5 RS232

Pure RS-232 standard compliant, but does not support wake-up from ring function. and Pin 9 is for "Ring" only.



Figure 2.7 RS-232

2.2.6 Ethernet Connector (LAN)

The DSA-3020 is equipped with an Intel MARVEL 88E8071(WOL supported) Fast Ethernet controller that is fully compliant with 10/100/1000 IEEE 802.3. 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 2.8 Ethernet connector

Table 2.2: Ethernet connector pin assignments

| 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 |

2.2.7 USB Connector

The DSA-3020 provides 2 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. The USB interface can be disabled in the system BIOS setup. The USB interface supports Plug and Play, which enables you to connect or disconnect to a device whenever you want, without turning off the computer.

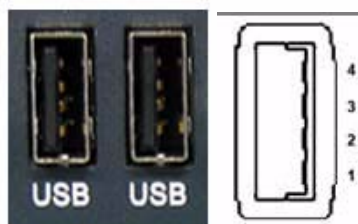


Figure 2.9 USB connector

Table 2.3: USB connector pin assignments

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

2.3 Connect the Power

1. Connect the power adapter cord with the AC power cord.



Figure 2.10 Power port

2. Connect the power adapter cable to the player's DC power port.
3. Plug the AC power cord into a power outlet and the PWR LED will be on when the main power(+3.3V) is established. If you plug the AC adapter in, the standby power is established but not the main power. The main power should be established after you press the power button!

Warning! Only use the power adapter packaged with the DSA-3020. Using a different power adapter could damage the device.



2.4 Connect to a Display

Connect to DVI-D LCD Panel or HDMI Panel via DVI-D to HDMI adapter.

Chapter 3

Hardware Installation and Upgrade

This chapter introduces how to initialize the DSA-3020.

Sections include:

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

3.1 Jumpers and Connectors

The DSA-3020 Embedded Video System consists of a PC-based computer that is housed in a aluminum top cover, and a metal bottom case with accessible bottom cover and front with rear metal face plate. The HDD, SDRAM, are accessible by removing the top 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 until you have verified that no power is flowing within the embedded box computer. Power must be switched off and the power cord unplugged. You must do this every time you service your embedded box computer.



3.2 Installing the DDR2 SDRAM Memory Module

The DSA-3020 provides one 200-pin SODIMM (Small Outline Dual Inline Memory Module) socket and supports DDR2, 1.8V, From 512MB to 2GB. You can install from 512 MB up to 2 GB of DDR2 SDRAM memory. The procedure for installing a DDR2 SDRAM SODIMM into the DSA-3020 is detailed below, please follow these steps carefully.

1. Turn-off the power first!
2. Unscrew the 5 screws from the left and right cover of DSA-3020.



Figure 3.1 The left side of DSA-3020



Figure 3.2 The right side of DSA-3020

3. Remove the top cover.

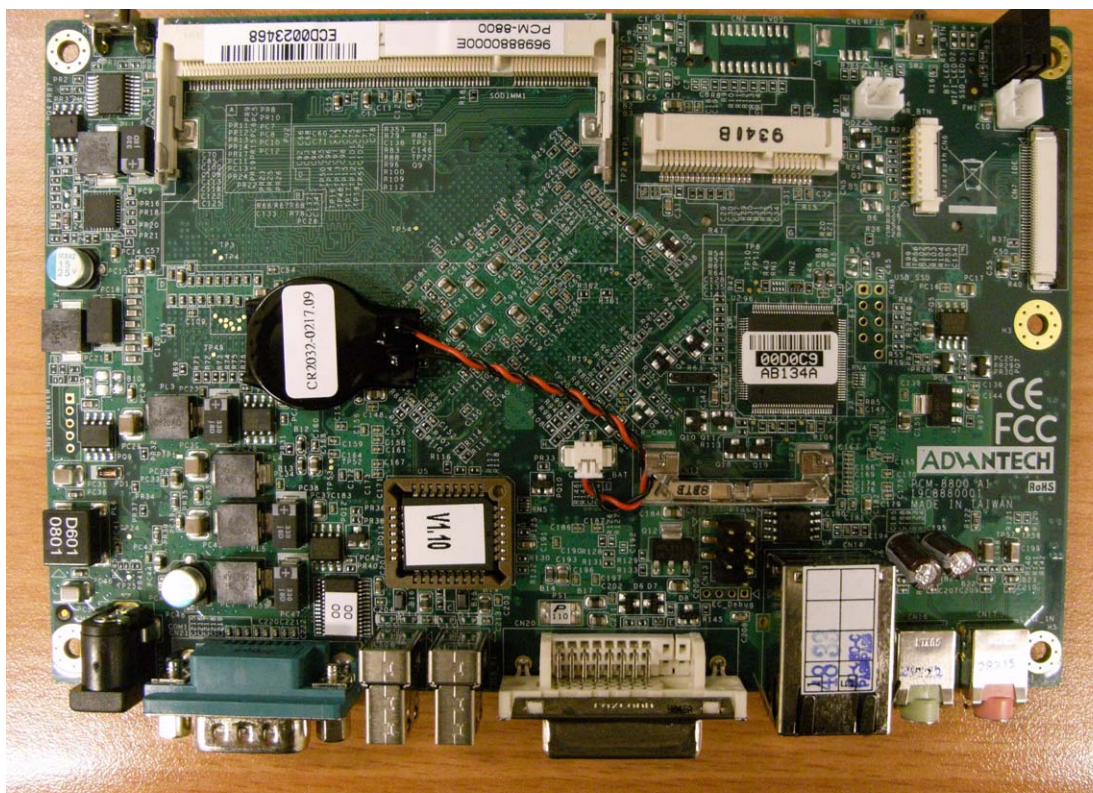


Figure 3.3 The top side of DSA-3020

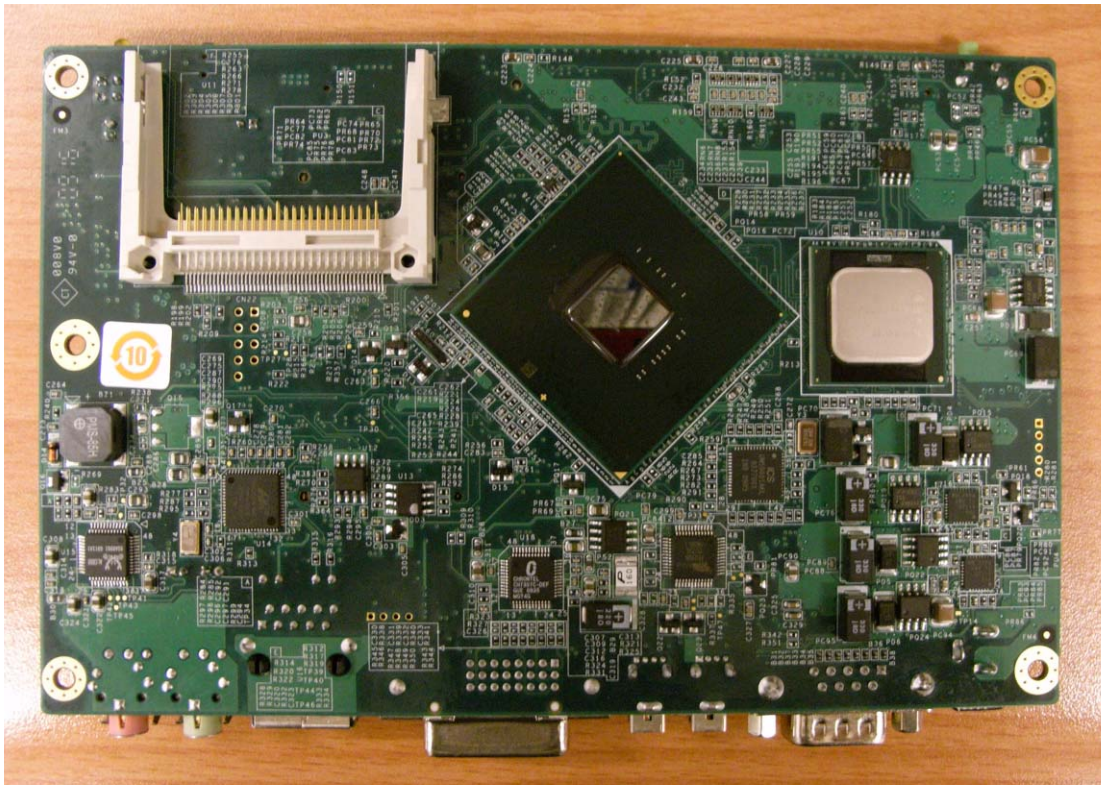


Figure 3.4 The bottom side of DSA-3020

4. Place the SDRAM (200 pin) module into the socket on the board.
5. Carefully press down the DRAM module until you hear a “click”.

3.3 Installing the 2.5" Hard Disk Drive (HDD)

You can attach one enhanced Integrated Device Electronics (IDE) hard disk drive to the DSA-3020’s internal controller which uses a local bus interface. The advanced IDE controller supports faster data transfer.

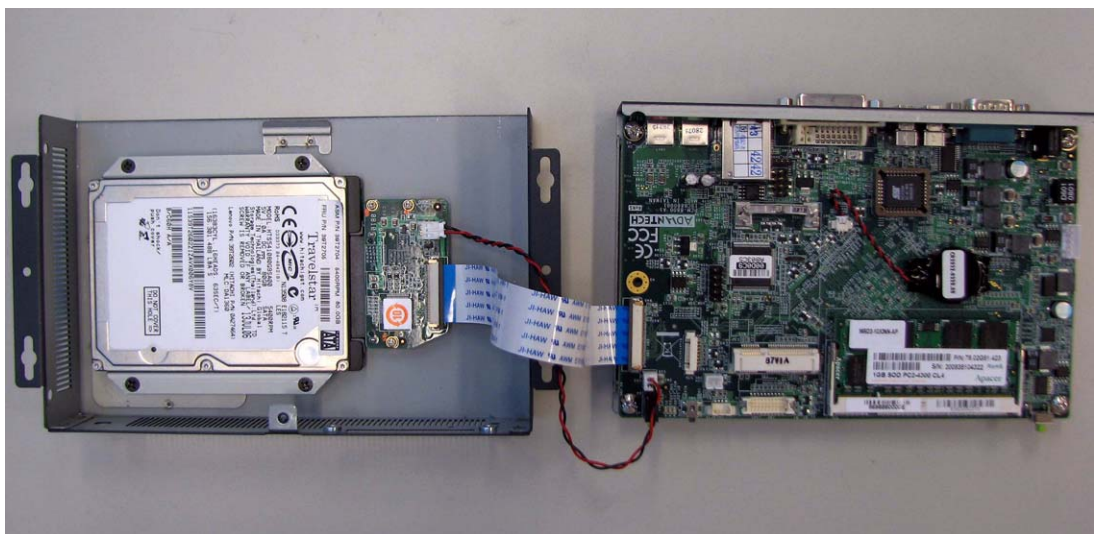


Figure 3.5 Installing the 2.5" Hard Disk Drive (HDD)

1. Fix your HDD on the rim to the HDD mounting top cover using the 4 screws found in accessories box.

2. Connect the IDE flat cable to the connector on the hard disk. There is also a two-wired PWR cable to provide the power which is needed by the PATA-to-SATA adapter board.
3. Make sure there's a good tight connection between the flat cable and the hard disc drive.
4. Screw back the bottom cover using the 4 screws.

Chapter 4

Award BIOS Setup

4.1 BIOS Introduction

Advantech provides the full-featured AwardBIOS 6.0 that delivers superior performance, compatibility and functionality that manufactures of Industrial PCs and Embedded boards demand. 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 to your customers needs.

4.2 BIOS Setup

The PS3520-910 has build-in AwardBIOS with a CMOS SETUP utility which allows users to configure the required settings or to activate certain system features.

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

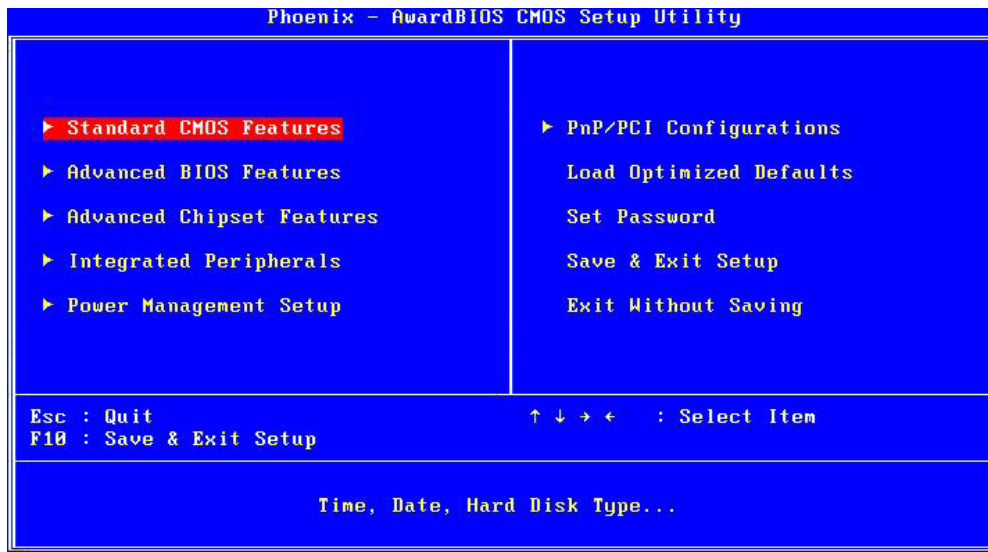
When the power is turned on, press the button during the BIOS POST (Power-On Self Test) to take you to the CMOS SETUP screen.

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 the Award BIOS enhanced features.
- **Advanced Chipset Features**
This setup page includes all the items of the Chipset configuration features.
- **Integrated Peripherals**
This setup page includes all onboard peripheral devices.
- **Power Management Setup**
This setup page includes all the items of the Power Management features.
- **PnP/PCI Configurations**
This setup page includes PnP OS and PCI device configuration.
- **Load SetUp Defaults**
This setup page includes the Load system optimized values, so the system performs at the best settings.
- **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 time format in <hour> <minute> <second>, based on 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.

■ Halt on

This 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 all other errors.

■ Base Memory

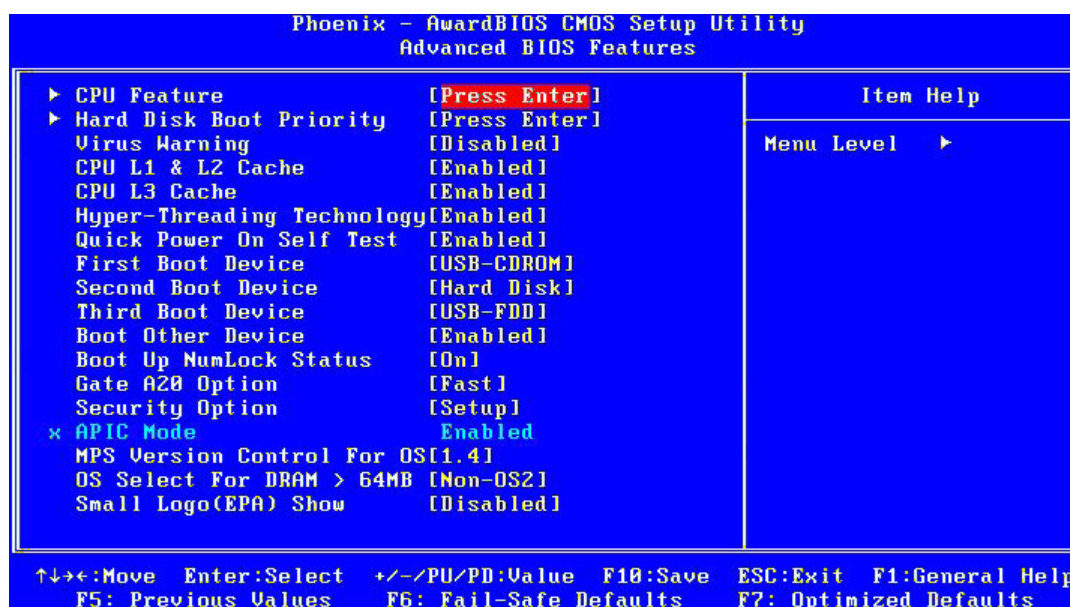
The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

■ 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.
- **EC Firmware version**
The current EC firmware version.

4.2.3 Advanced BIOS Features



- **CPU Feature**
This item allows the user to adjust CPU features, CPU ratio, VID and Thermal and special features like the XD flag.
- **Hard Disk Boot Priority**
This item allows the user to select the bootup sequence for system devices like HDD, SCSI, RAID.
- **Virus Warning** [Disabled]
This item allows the user to choose the VIRUS Warning feature for the IDE Hard Disk boot sector protection.
- **CPU L1 & L2 Cache** [Enabled]
This item allows the user to enable CPU L1 and L2 cache.
- **CPU L3 Cache** [Enabled]
This item allows the user to enable CPU L3 cache.
- **Hyper-Threading Technology** [Enabled]
This item allows the user to enable support, on the Intel Pentium. 4 Processor, for utilizing 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. Default setting 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 for:

- 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 is denied if the correct password is not entered at the prompt. (Default value)

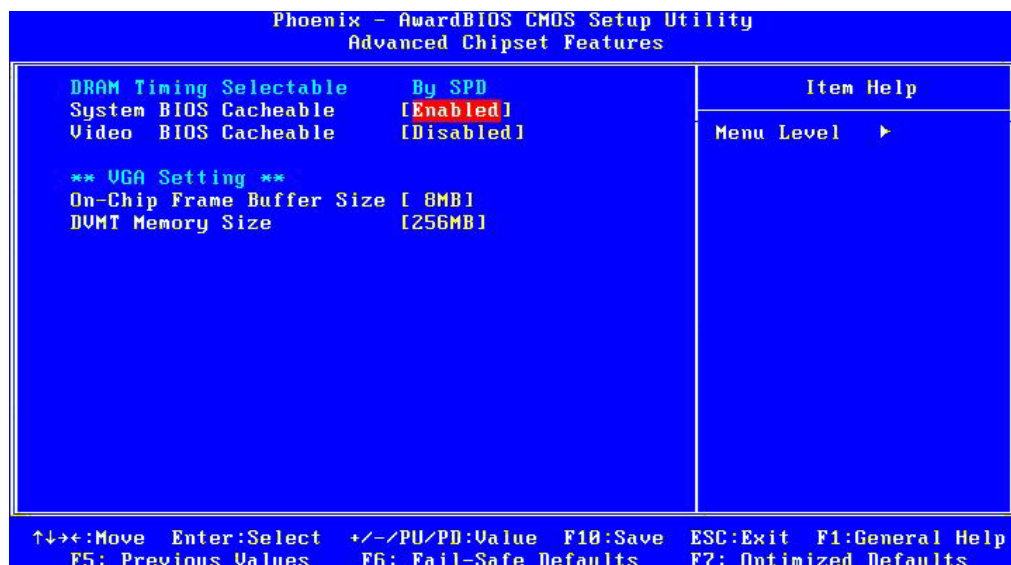
■ **MPS Version Control for OS [1.4]**

This item sets the operating system multiprocessor support version.

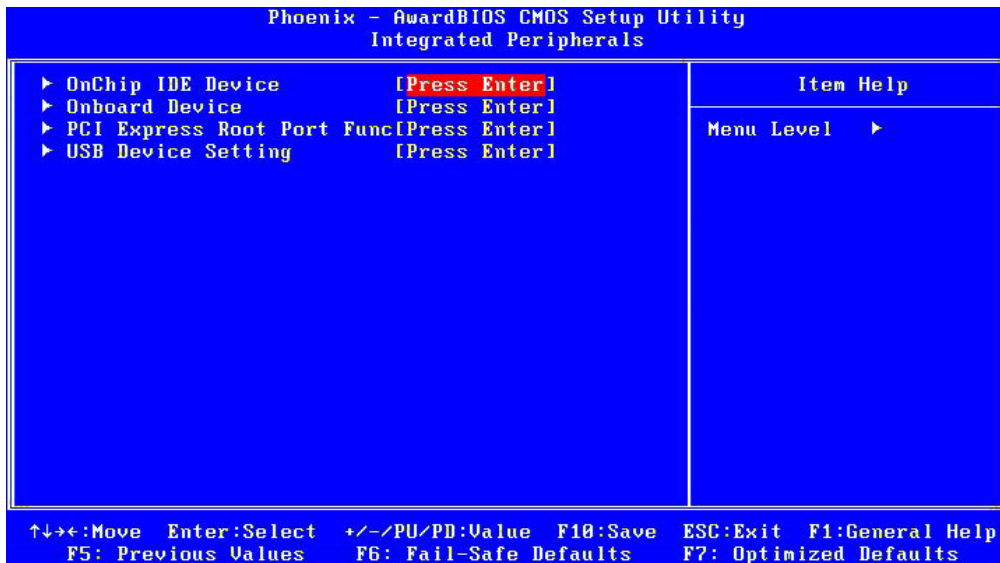
■ **APIC Mode**


This item allows the user to enable APIC Mode.

4.2.4 Advanced Chipset Features

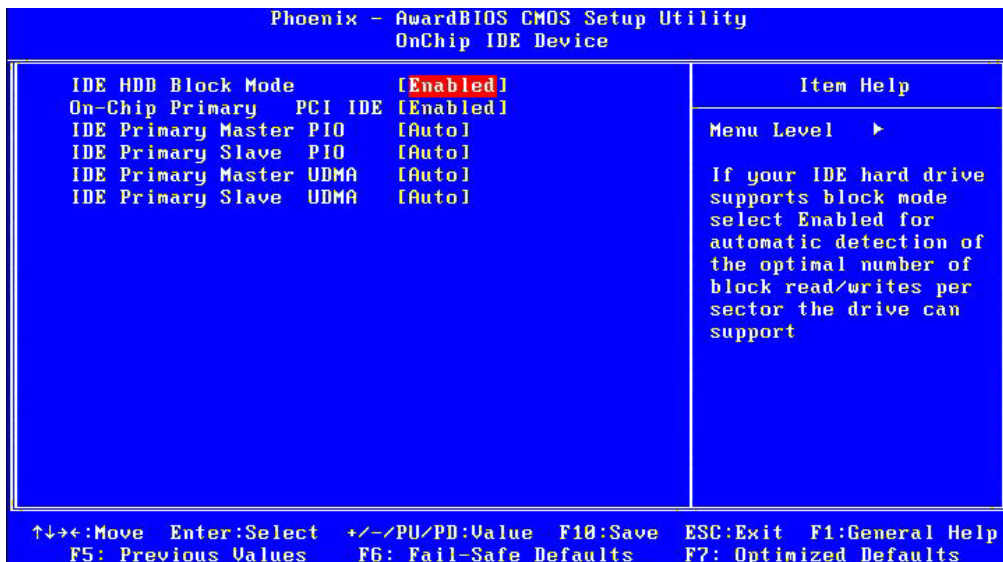


4.2.5 Integrated Peripherals

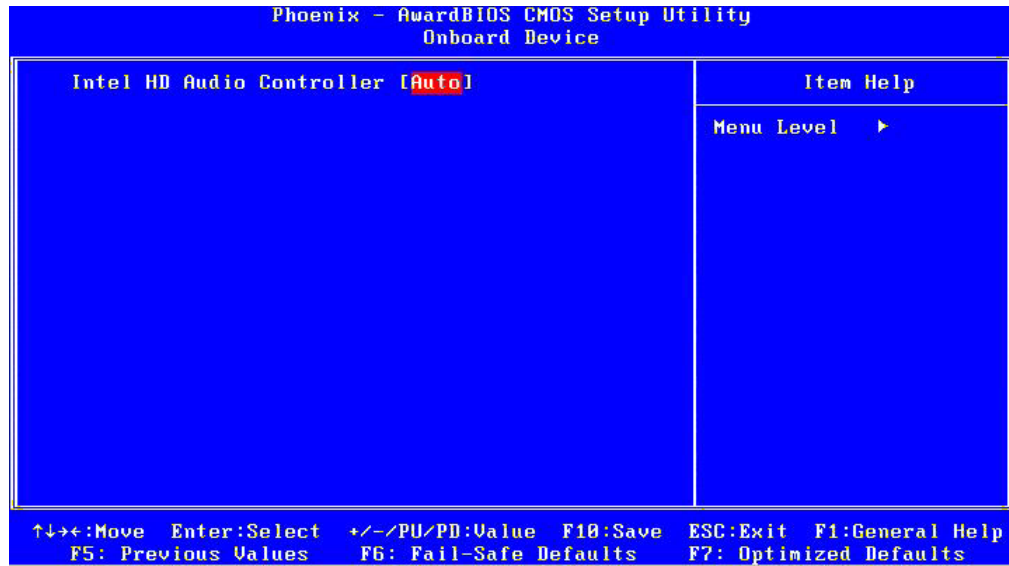


Note!  This "Integrated Peripherals" option controls the configuration of the board's chipset, includes IDE, ATA, SATA, USB, AC97, MC97 and Super IO and Sensor devices, this page changes depending on the Chipset.

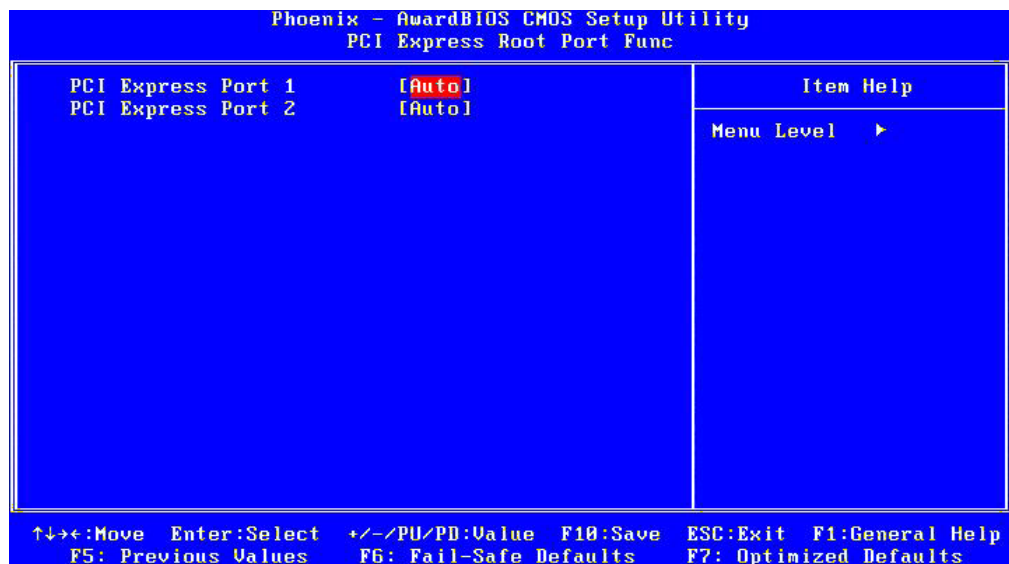
■ IDE HDD Block Mode



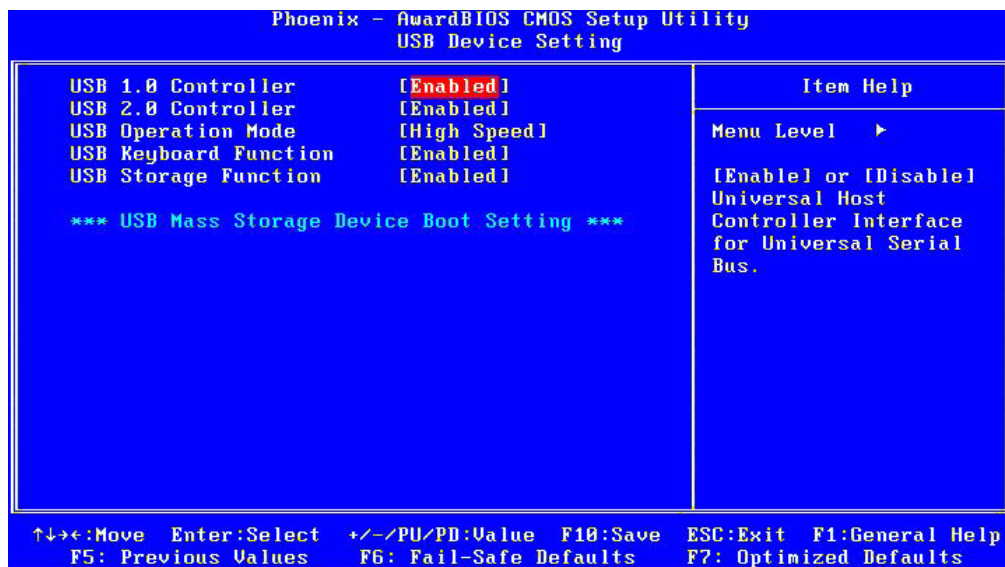
- Intel HD Audio Controller



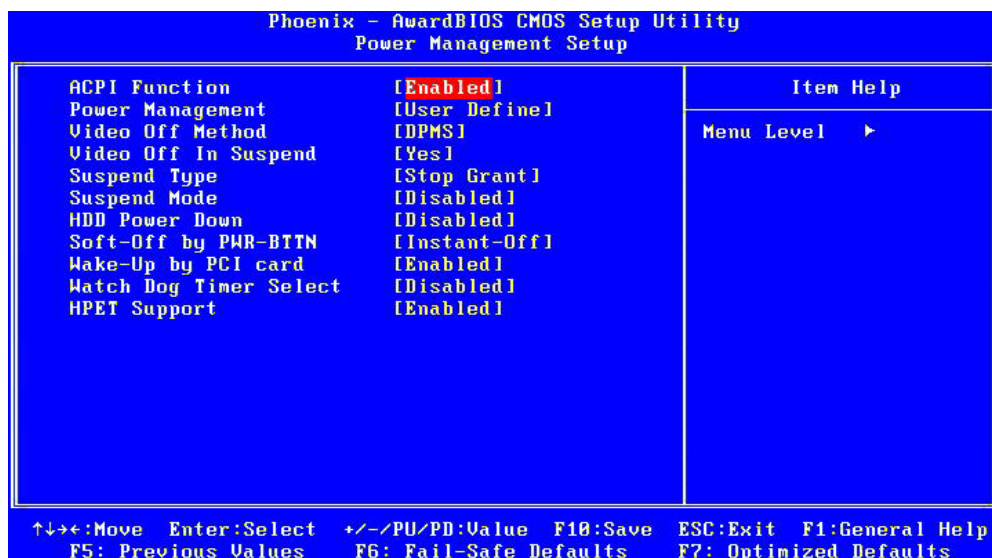
- PCI Express Port 1




■ USB 1.0 Controller



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 the 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 the user to set each mode individually. Suspend Mode= Disabled or 1 min ~1 hr.

■ **Video Off Method [DPMS]**

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

- V/H SYNC+Blank This option will cause the 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 the user to turn off Video during system enter suspend mode.

■ **Suspend Type [Stop Gran]**

This item allows the user to determine the suspend type.

■ **Modem use IRQ [3]**

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

■ **Suspend Mode [1 Hour]**

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

■ **HDD Power Down Mode [15 Min]**

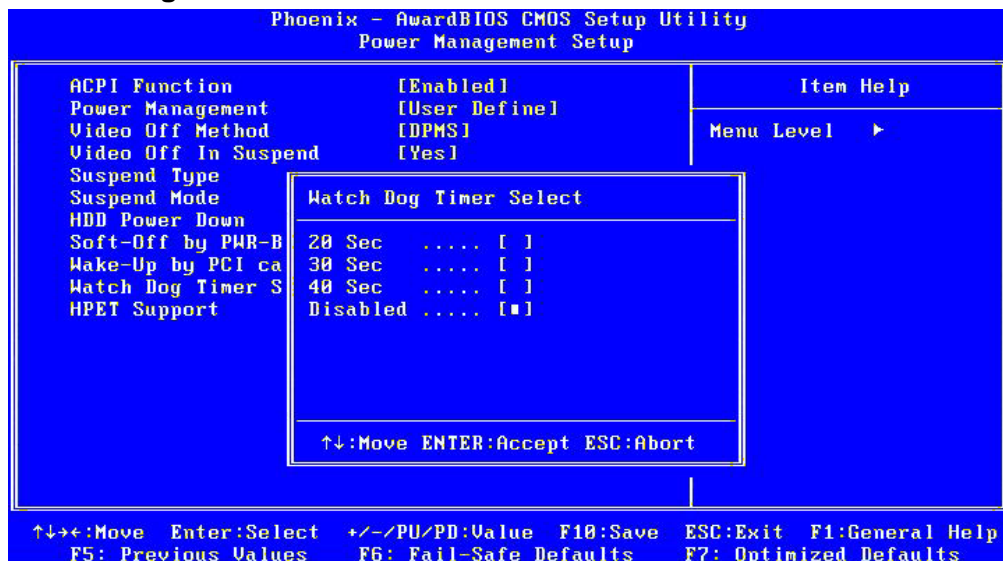
This item allows the user to determine the time of system inactivity, the hard disk drive will be powered down.

■ **Soft-Off by PWR-BTTN [Enabled]**

This item allows the user to define function of power button.

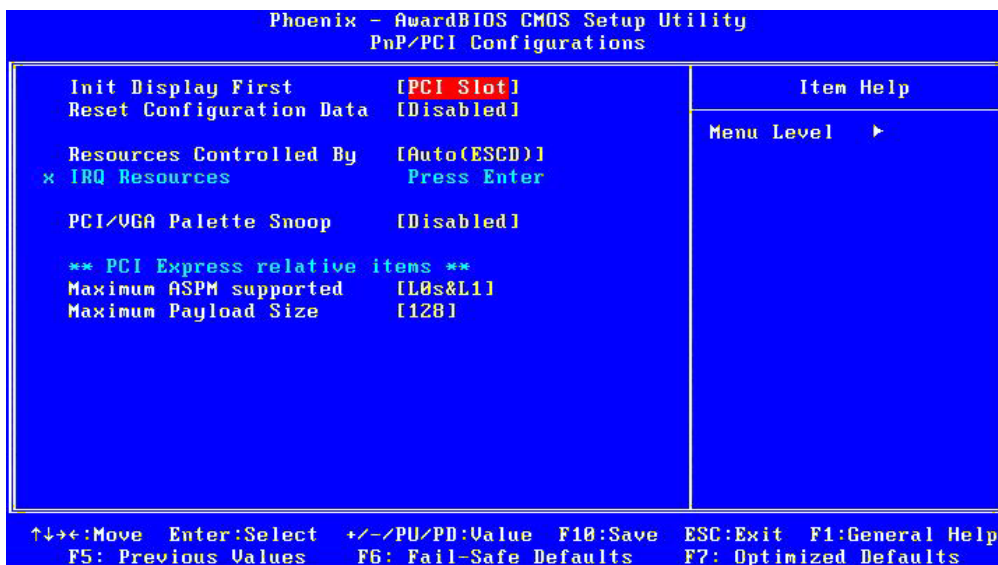
- Instant-Off Press power button then Power off instantly.
- Delay 4 Sec Press power button 4 sec. to Power off.

■ **Watch Dog Timer Function**



After choosing 20 sec if the system hangs on the POST screen, then the system will auto reset after 20 seconds.

4.2.7 PnP/PCI Configurations

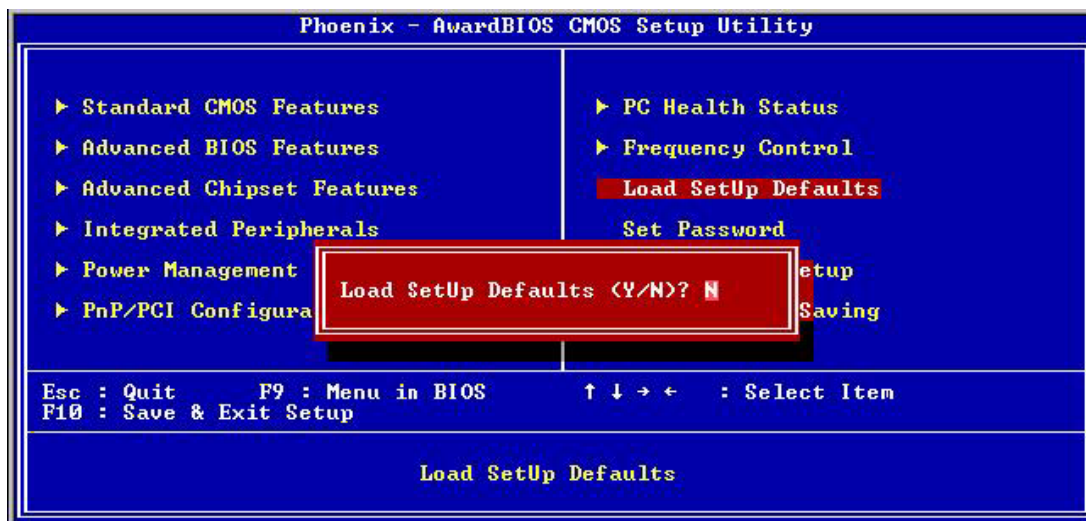


Note! This “PnP/PCI Configurations” option is setting up the IRQ and DMA (both PnP and PCI bus assignments).



- **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 the 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.

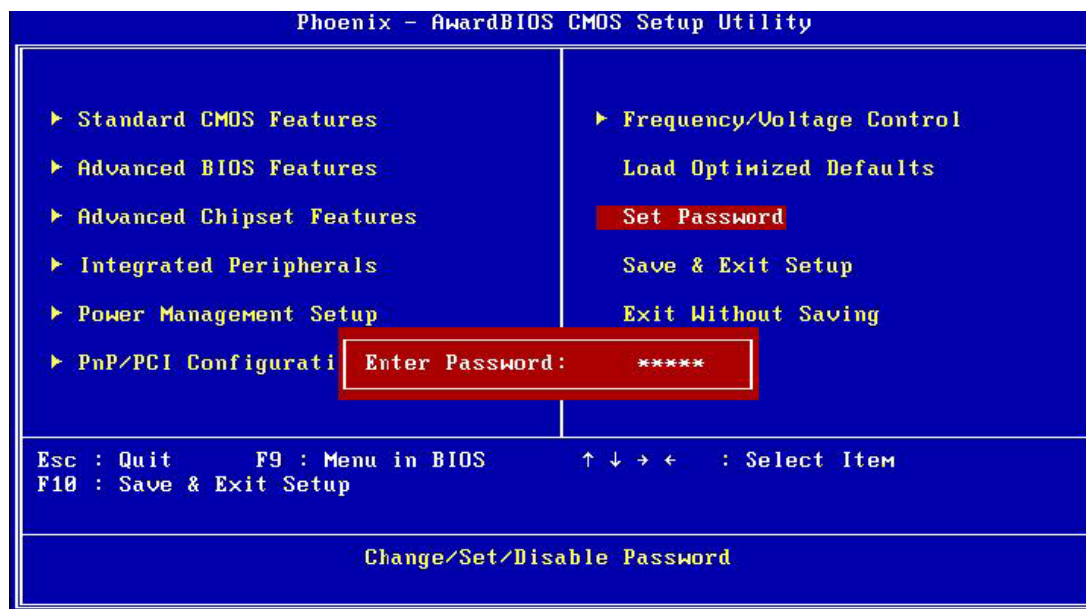
4.2.8 Load Setup Defaults



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.



4.2.9 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>.

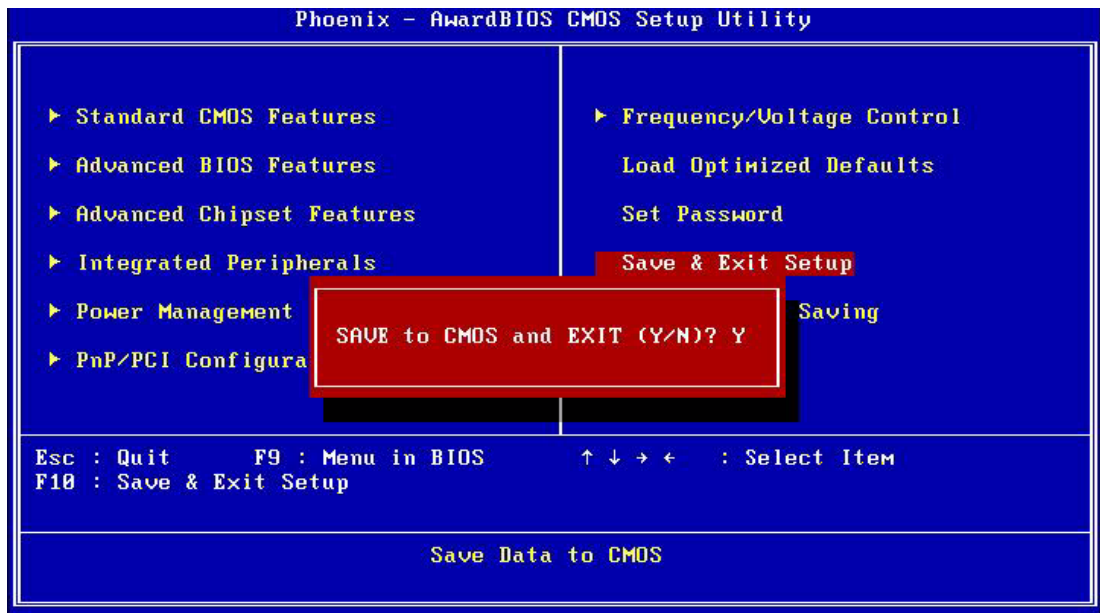
To Change Password

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, 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>.

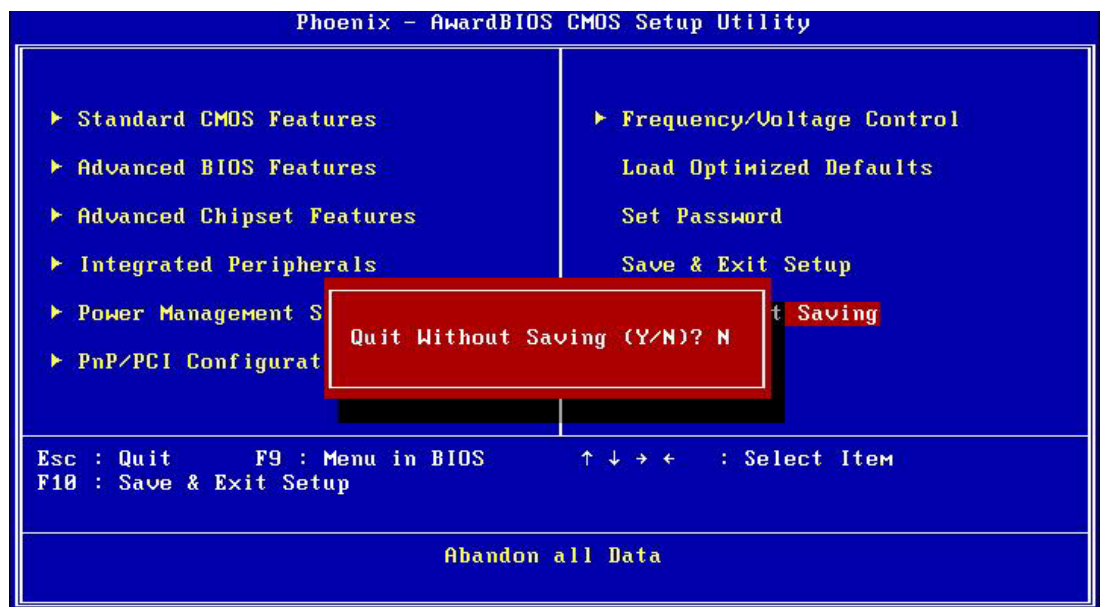
4.2.10 Save & Exit Setup



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



4.2.11 Quit Without Saving



Note! Type "Y" will quit the BIOS Setup Utility without saving to CMOS. Type "N" will return to BIOS Setup Utility.



4.3 Update BIOS

4.3.1 Update BIOS in DOS mode

1. Prepared the "Awdflash.EXE" and the latest ".BIN" files.
2. Boot to DOS mode, type the command as the following:
awdflash 8800v110.bin /cd /cp /wb /py /sn /smi, where the "8800v110.bin" should be replaced by the latest .BIN file name.

```

Pri. Master Disk : None          Display Type       : EGA/VGA
Pri. Slave  Disk : None          Serial Port(s)    : 3F8
                                          Parallel Port(s) : None
                                          DDR2 at Bank(s)  : 0 1

USB Storage Device : KINGMAX USB2.0 Flashdisk1.00...High Speed device 2.X

PCI device listing ...
Bus No. Device No. Func No. Vendor/Device Class Device Class      IRQ
-----
0      2          0      8086  8108  0300  Display Cntrlr      10
0      27         0      8086  811B  0403  Multimedia Device   10
0      29         0      8086  8114  0C03  USB 1.0/1.1 UHCI Cntrlr 10
0      29         1      8086  8115  0C03  USB 1.0/1.1 UHCI Cntrlr 11
0      29         2      8086  8116  0C03  USB 1.0/1.1 UHCI Cntrlr  5
0      29         7      8086  8117  0C03  USB 2.0 EHCI Cntrlr   3
0      31         1      8086  811A  0101  IDE Cntrlr          14
2      0          0      8086  10D3  0200  Network Cntrlr     11
                                          ACPI Controller     9

Verifying DMI Pool Data .....

C:\>
C:\>awdflash 8800v111.bin /py /sn /wb /cd /cp /smi

```

3. When the program finished, press "F1" to restart.



4. When system restart, press "Del" to enter the BIOS setup screen and load the BIOS default setting then exit.
5. When the program finished, the system will shutdown by itself.

```
● Phoenix - AwardBIOS v6.00PG, An Energy Star Ally
✦ Copyright (C) 1984-2007, Phoenix Technologies, LTD

(8800X027) EVALUATION ROM FOR V1.11 - NOT FOR SALE

Main Processor : Intel(R) Atom(TM) 1.60GHz(133x12)
Memory Testing : 2087872K OK + 8M shared memory
CPU Brand Name : Intel(R) Atom(TM) CPU 2530 @ 1.60GHz
C1E BIOS Supported
Hyper-Threading Technology CPU Detected (Hyper-Threading Technology Enabled)

Memory Frequency For DDR2 533
IDE Channel 0 Master : None
IDE Channel 0 Slave : None

06/18/2009-POULSBO-8A79RAK2C-00
```

6. Push the Button to boot the system.

Chapter 5

System Setup

This chapter details the driver installation for DSA-3020.

Sections include:

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

5.1 Introduction


Intel Serial DVO (SDVO) Display

The SCH has a digital display channel capable of driving SDVO adapters that provide interfaces to a variety of external display technologies (e.g., DVI).

Up to 160 MHz pixel clock supported

Equates to 1280 x 1024 @ 85 Hz or 1600 X 1200 @ 60

Note that SDVO only works with the Intel® GMA 500.

 **Note!** *This is only an example. Resolution will depend on hardware configuration, OS and definition type. The maximum resolution for each display can be calculated from the max pixel clock on each port while not exceeding 60~70% of memory bandwidth usage at any time.*

5.1.1 Display type

The DSA-3020 can be set only in a VBIOS Default, CRT and TV mode. The system is initially set to "VBIOS Default".

5.2 Driver Installation

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 Vista) first.

5.2.2 Installation of chipset driver.

The chipset driver is under the path:


**DSA-3020 Utility CD: **

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-3020 Utility CD: **

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

 **Note!** *There are two kinds of graphic driver. One is GMA500, the other is IEGD. If you installed the GMA500 driver, you might need to press "Ctrl+Alt+F4" to switch the display output to DVI when the first time you restart the system. (Because this driver default will switch to LVDS output.)*

5.2.4 Install the LAN driver

Find the LAN driver from CD at the directory of **DSA-3020 Utility CD: **

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-3020 Utility CD: **

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)

Find the wireless module driver from CD at the directory of **DSA-3020 Utility CD: **

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)

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

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