DSA-3300

Network Digital Signage Platform
User Manual

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Contents

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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.

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3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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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.

Technical Support and Assistance

Step 1. Visit the Advantech web site at http://www.advantech.com/support

where you can find the latest information about the product. 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

DSA-3300 Series Model

There are 4 sub-models in DSA-3300 series listed below:

Part Number	CPU	RAM	Hard Disc	Wireless module
DSA-3300-M5E	Celeron M 1.5GHz	512 RAM DDR333	40G	None
DSA-3300-WM5E	Celeron M 1.5GHz	512 RAM DDR333	40G	802.11b/g
DSA-3300-S6E	Pentium M 1.6GHz	512 RAM DDR333	40G	None
DSA-3300-WS6E	Pentium M 1.6GHz	512 RAM DDR333	40G	802.11b/g

Table A. DSA-3300 Model List

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

* Cerelon M 1.5 GHz can support 2 MPEG-4 Video @ D1 resolution under 65 % CPU

utilization rate.

* Pentium M 1.6 GHz approximate to P4 2.8GHz performance

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
2062330000	Utility CD	1
1700060202	Keyboard and mouse Y cable Power adapter	1
1700001394	DC Jack with 2-pin pluggable terminal block	1
9689000450	AC to DC Adapter , 19V DC@3.16A , 60W , 100-240V	1
1960006001	Mounting Accessory	2

Table B. DSA-3300 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-3300.*

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.

Overview

This chapter gives background information on the DSA-3300 series. It shows you the DSA-3300 overview and specifications.
Sections include:
- Introduction
- Hardware Specifications
- DSA-3300 Series Model and Packing List
- Chassis Dimension

Chapter 1 Overview

1.1 Introduction

DSA-3300 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-3300 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

· DSA-3300 series incorporate an Intel® Celeron M 1.5GHz/ Intel® Pentium M 1.6GHz processor for smooth program playback, and include 512 MB of base memory and a default 40GB hard disk drive for program and storage of media files.

1.2.2 Compact & Robust Form Factor

· The small foot-print and low-profile case design of DSA-3300 series was designed to facilitate different types of mounting and installation.

1.2.3 Network-Manageable

· DSA-3300 series function as the IP-addressable client so that they can be connected locally through a Local Area Network or remotely through Wide Area Network.

1.2.4 Wireless & Tuner Options

· DSA-3300 series can be connected to the network either via a wireless connection or through standard Ethernet cable. DSA-3300 also come with a tuner-integrated option which enable the incorporating live TV programs as part of presentation material.

1.2.5 Enhanced Reliability

· DSA-3300 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.

1.2.6 Options for Expansion

· DSA-3300 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.

1.3 Hardware Specification

1.3.1 Processor Core Logic System

CPU Type: Intel® Ultra Low Voltage Celeron® M or Intel® Pentium® M Low Voltage Processor, µFC-BGA 479 Package:

Part Number	Intel® CPU Type	Intel® Chipset	Wireless module
DSA-3300-WM5E	Intel ULV Celeron® M 1.5GMHz	Intel® 852GM / ICH4	802.11b/g
DSA-3300-M5E	Intel ULV Celeron® M 1.5GMHz	Intel® 852GM / ICH4	None
DSA-3300-S6E	Intel LV Pentium® M 1.6GHz	Intel® 852GM / ICH4	None
DSA-3300-WS6E	Intel LV Pentium® M 1.6GHz	Intel® 852GM / ICH4	802.11b/g

Table 1.1: DSA-3300 Model List

BIOS: 4Mbit Flash BIOS supports Plug & Play, APM 1.2

System Memory
- One 200 pin SO-DIMM sockets, support ECC DDR SDRAM Up to 1GB, DDR200/266 DRAM

1.3.2 Display

Chipset
・ Integrated graphics built-in Intel® 852GM GMCH, utilizing Intel® Extreme Graphics 2 technology

Display Memory
・ Dynamic video memory allocation up to 64 M

Display Interface support

・ VGA and DVI Interface

1.3.3 Ethernet

・ Ethernet Controller: Intel® 82551QM Fast Ethernet Multifunction PCI/Card Bus Controller

・ Speed: 10/100MBps, IEEE 802.3u (100 BASE-T) protocol compatible

・ 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

・ Supports a drive bay space for 2.5' HDD Tray (40G default)

・ Supports a Compact Flash socket for Type I/II Compact Flash disk (internal)

1.3.6 Mechanical

・ Construction: Metal housing

・ Mounting: Easy Mounting Kits for LCD or Plasma

・ Dimension (W x H x D):

DSA-3300: 222 x 135 x 43 mm (8.7 x 5.3 x 1.7 inches) ; Weight: 1.8 KG (TBD)

1.3.7 Power Supply

・ Maximum Output Rating 45 W

・ Inside Fuse Rating 7 A

・ 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 45° C

Warning: Please do not keep DSA-3300 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

・ Environmental protection: RoHS, WEEE

1.4 Dimensions Diagram

Hardware Functionality

This chapter shows how to set up the DSA-3300 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-3300 External I/O Connectors

The following two figures show the external I/O connectors on DSA-3300. The following sections give you detailed information about the function of each I/O connector.

Figure 2.1: DSA-3300 front metal face plate external I/O connectors

Figure 2.2: DSA-3300 rear metal face plate I/O connectors

2.2 DSA-3300 front plate external I/O connectors

2.2.1 Power ON/OFF Button

The DSA-3300 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-3300 power button

2.2.2 LED Indicators

There are two LEDs on the DSA-3300 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-3300 LED indicators

2.2.3 DVI Connector

Figure 2.5: DVI Connector

The DSA-3300 can support DVI input. The pin definition of video connector and video cable is following:
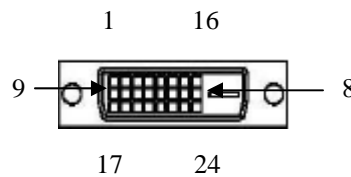
CN1		CN2	CN1		CN2
PIN NO#		PIN NO#	PIN NO#		PIN NO#
1		17	13		-
2		19	14		2
3		4	15		16
4		-	16		10
5		-	17		1
6		14	18		3
7		12	19		-
8		-	20		-
9		9	21		-
10		11	22		-
11		-	23		18
12		-	24		20

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-3300 rear plate external I/O connectors

2.3.1 Power Input Connector

The DSA-3300 comes with a Phoenix connector that carries 12~24 VDC external power input.
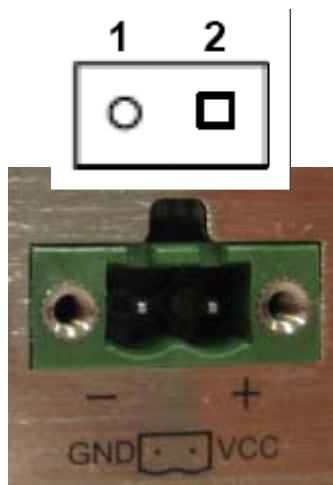
Figure 2.7: power input connector

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

Table 2.2 Power connector pin assignments

2.3.2 COM1 Connector

The DSA-3300 provides a D-sub 9-pin connector, which offers one standard RS-232 serial communication interface port of COM1.
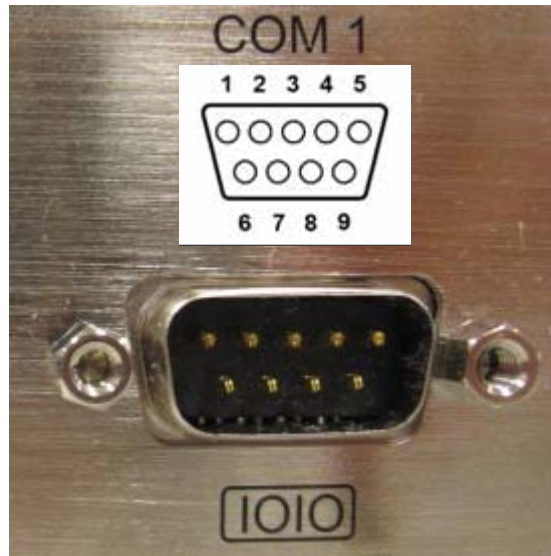
Figure 2.8: COM1 connector

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-3300 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.
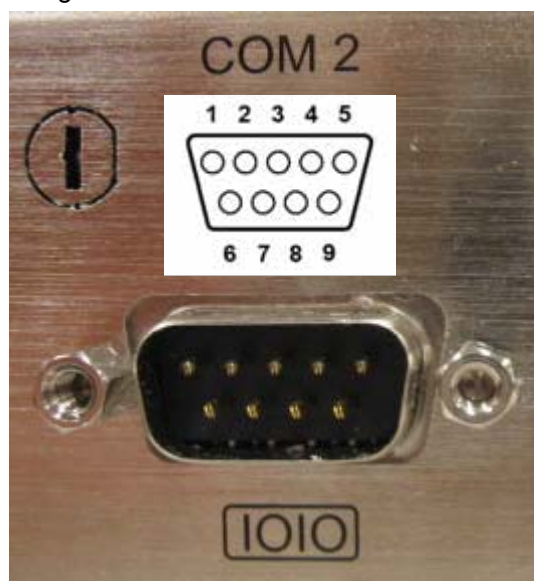
Figure 2.9: COM2 connector

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-3300 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).
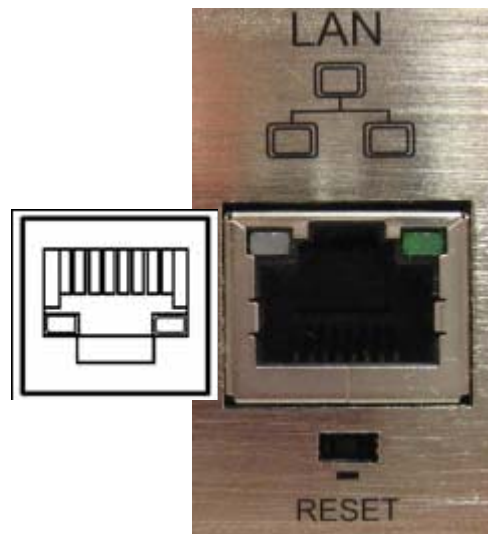
Figure 2.10: Ethernet connector

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-3300 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.
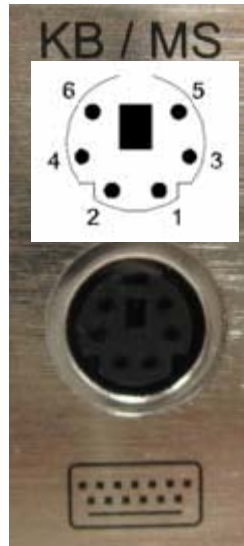
Figure 2.11: PS2 Keyboard/Mouse connector

Pin	Definition
1	PS2_KBDAT
2	PS2_MSDAT
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-3300 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.
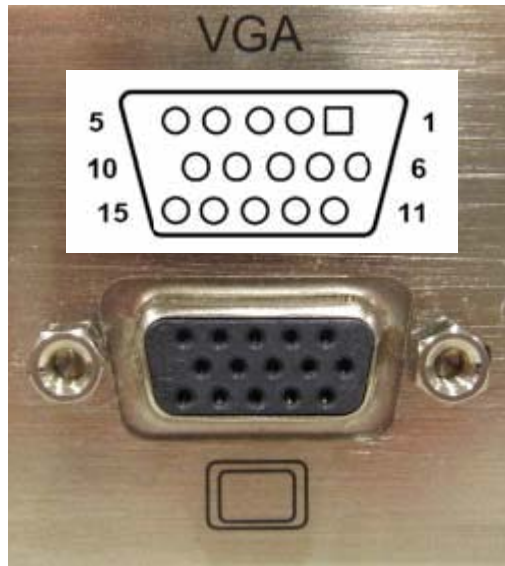
Figure 2.12: VGA connector

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-3300 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.
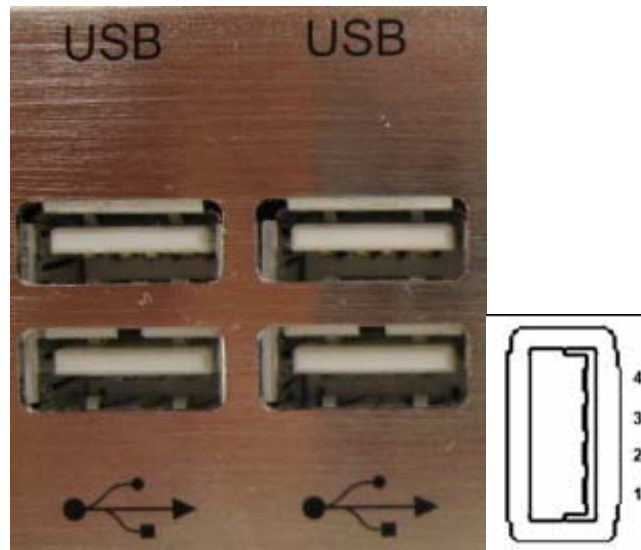
Figure 2.13: USB connector

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-3300.

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-3300 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 lightning bolt symbol]

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-3300 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.
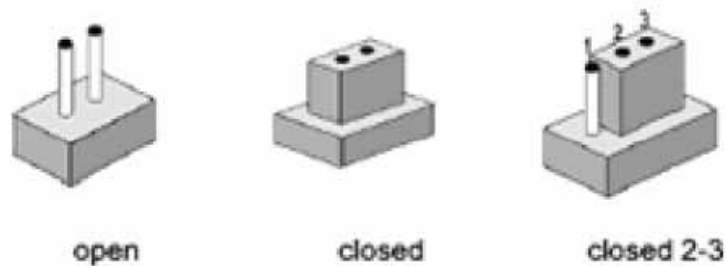
Figure 3.1: Jump type-1

The jumper settings are schematically depicted in this manual as follows:
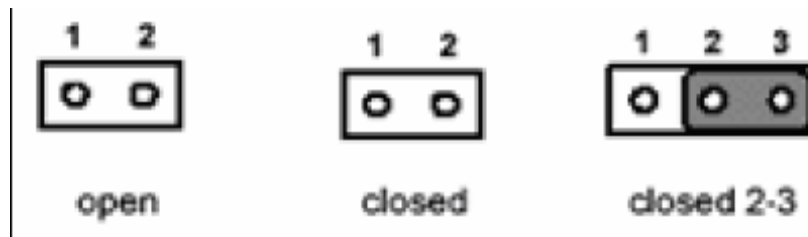
Figure 3.2: Jump type-2

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-485/232 Jumper setting (JP2)

The COM2 port located on front metal face plate of DSA-3300 unit which can be configured to operate in RS-485 (default setting) or RS-422 mode by setting up the Jumper Pins of JP2 located on internal motherboard of DSA-3300 unit.

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

Table 3.1 COM2 Jumper setting

3.4 Installing the DDR SDRAM Memory Module

The DSA-3300 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 1 GB of DDR SDRAM memory. The procedure of installing a DDR SDRAM SODIMM into the DSA-3300 is detailed below, please follow these steps carefully.

1. Remove the power line first.

2. Unscrew the screws from the left and right with top cover of the DSA-3300.
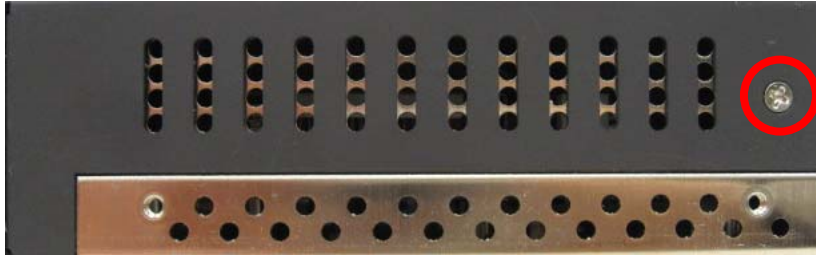
Figure 3.2: The left side of DSA-3300
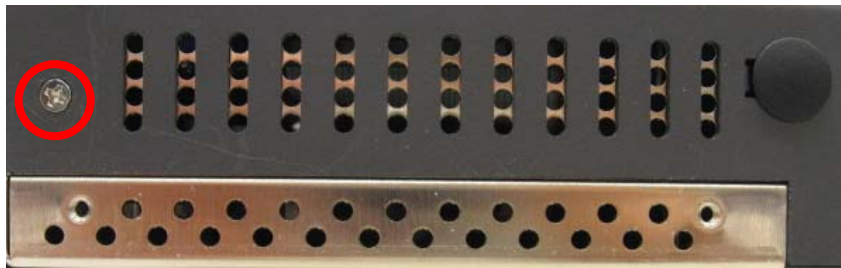
Figure 3.3: The right side of DSA-3300

3. Remove the top cover.

4. Unscrew the screws from the bottom cover of DDR SODIMM SDRAM

5. 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. Screw back the top cover of DDR SODIMM SDRAM with two screws and the bottom cover with four screws.

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-3300'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. As we know, **Seagate EE25 Series** hard drive and **Fujitsu MHT2020AC** hard drive can meet higher operating temperature (–30º to 85ºC) and vibration tolerance (Up to 2.0 Gs). For more information about the wide-range hard drives, we suggest you **Google** the "Seagate EE25 Series" and "Fujitsu MHT2020AC" on web. You should find some useful information from the internet.

The following are instructions for installation:

1. Remove the power line first.

2. Unscrew the screws on HDD mounting top cover of the DSA-3300

3. Remove the HDD mounting bottom cover of the DSA-3300.

4. Fixing your HDD to HDD mounting top cover by using the 4 screws stored in accessories box.

Figure 3.4: The Hard Disc of DSA-3300

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 four screws.

3.6 Inserting and Removing a Compact Flash Card(internal)

The procedure of installing a Compact Flash card into the DSA-3300 is detailed below, please follow these steps carefully:

1. Remove the power line first.

2. Unscrew the two screws from the CF Door located on rear face plate of the DSA-3300 embedded box computer.

3. Remove the CF cover.

4. Match the size of the slide on both sides of CF card first before inserting the CF card.

Figure 3.5: The Compact Flash of DSA-3300

5. Insert the Compact Flash card slightly into the CF socket.

6. DO NOT push the CF card too hard when the slide is not matching. It might cause damage to the CF card and the socket. When it's not easy to slide the CF card into the socket, you need to flip the CF card over and try again.

7. Use a screw tool to push the CF card inward to make sure a tight connection between CF card and socket.

Warning: Be careful not to touch and push any component on the PCB board.

Notice: The Compact Flash socket is allocated as Secondary IDE Master (IDE-1).

3.7 Connecting Power

Connect the DSA-3300 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

Chapter 4 Award BIOS Setup

4.1 Introduction

Award's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed memory (CMOS RAM) so that it retains the setup information when the power is turned off.

4.1.1 CMOS RAM Auto-backup and Restore

The CMOS RAM is powered by an onboard button cell battery. When you finish BIOS setup, the data in CMOS RAM will be automatically backed up to Flash ROM. If operation in harsh industrial environments causes a soft error, BIOS will recheck the data in CMOS RAM and automatically restore the original data in Flash ROM to CMOS RAM for booting.

Note: If you intend to change the CMOS setting without restoring the previous backup, you have to click on "DEL" within two seconds of the "CMOS checksum error..." display screen message appearing. Then enter the "Setup" screen to modify the data. If the "CMOS checksum error..."message appears again and again, please check to see if you need to replace the battery in your system.

4.2 Entering Setup

Turn on the computer and check for the "patch code". If there is a number assigned to the patch code, it means that the BIOS support your CPU. If there is no number assigned to the patch code, please contact Advantech's applications engineer to obtain an up-to-date patch code file. This will ensure that your CPU's system status is valid. After ensuring that you have a number assigned to the patch code, pressing <Del> to allow you to enter the setup
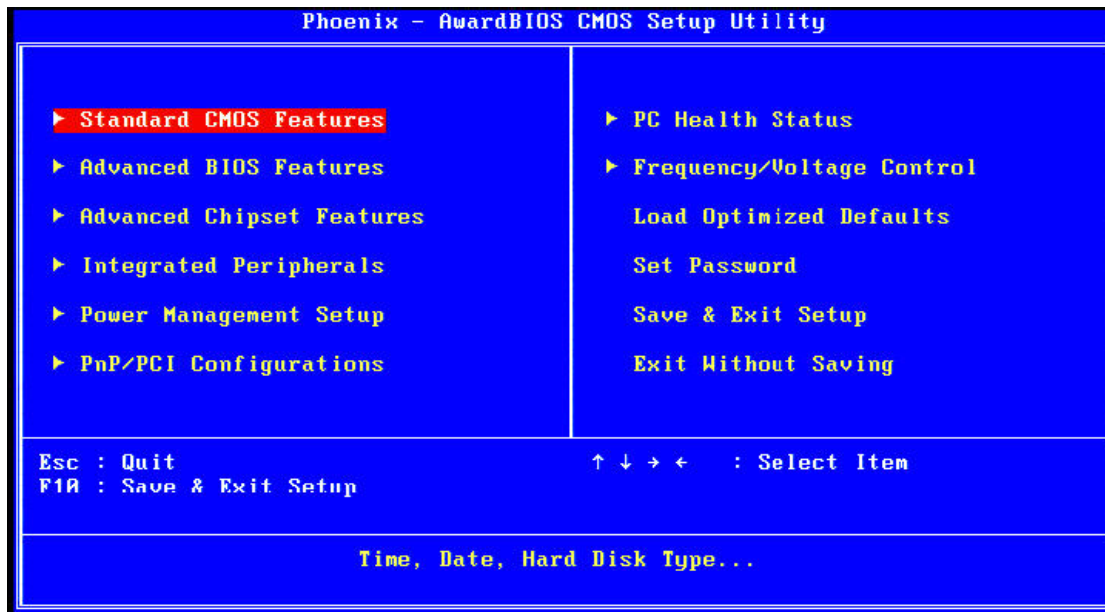
Figure 4.1: Award BIOS Setup initial screen

4.3 Standard CMOS Setup

Choose the "Standard CMOS Features" option from the "Initial Setup Screen" menu, and the screen below will be displayed. This menu allows users to configure system components such as date, time, hard disk drive, floppy drive, display, and memory.
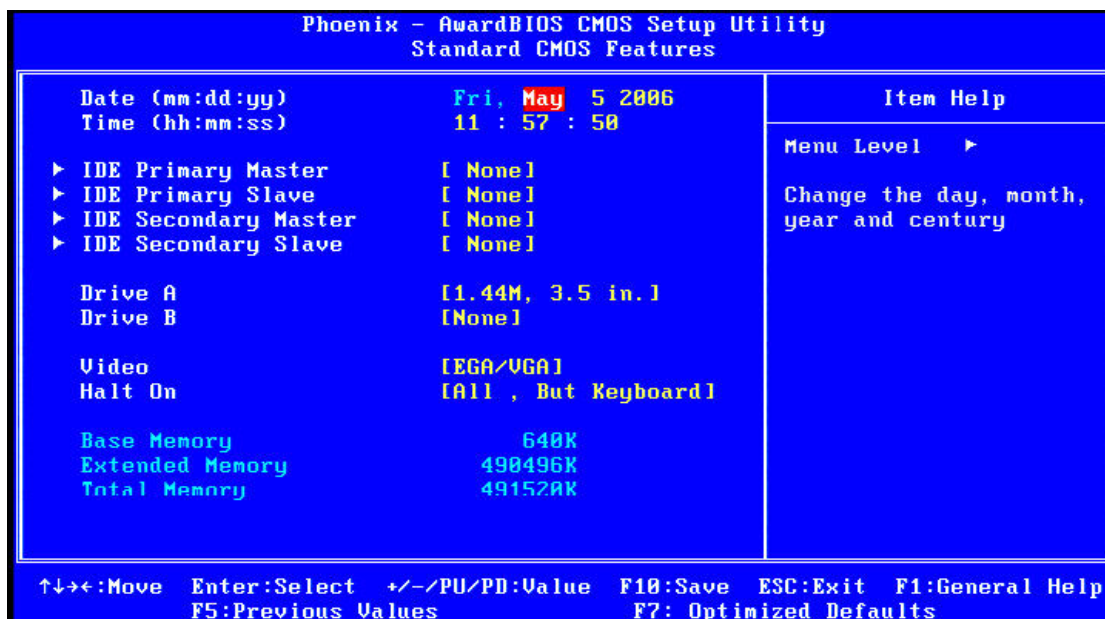
Figure 4.2: Standard CMOS features screen

4.4 Advanced BIOS Features

The "Advanced BIOS Features" screen appears when choosing the "Advanced BIOS Features" item from the "Initial Setup Screen" menu. It allows the user to configure the DSA-3300 according to his particular requirements. Below are some major items that are provided in the Advanced BIOS Features screen. A quick booting function is provided for your convenience. Simply enable the Quick Booting item to save yourself valuable time

```
         Phoenix - AwardBIOS CMOS Setup Utility
                  Advanced BIOS Features
 ┌──────────────────────────────────────────┬─────────────────────┐
 │ ► CPU Feature           [Press Enter]  ▲  │      Item Help      │
 │   Virus Warning         [Disabled]        │                     │
 │   CPU L1 & L2 Cache     [Enabled]         │  Menu Level    ►    │
 │   CPU L3 Cache          [Enabled]         │                     │
 │   Quick Power On Self Test [Enabled]      │                     │
 │   First Boot Device     [CDROM]           │                     │
 │   Second Boot Device    [HDD-0]           │                     │
 │   Third Boot Device     [LS120]           │                     │
 │   Boot Other Device     [Enabled]         │                     │
 │   Swap Floppy Drive     [Disabled]        │                     │
 │   Boot Up Floppy Seek   [Disabled]        │                     │
 │   Boot Up NumLock Status [On]             │                     │
 │   Gate A20 Option       [Fast]            │                     │
 │   Typematic Rate Setting [Disabled]       │                     │
 │ x Typematic Rate (Chars/Sec) 6            │                     │
 │ x Typematic Delay (Msec)    250           │                     │
 │   Security Option       [Setup]           │                     │
 │   APIC Mode             [Enabled]         │                     │
 │   MPS Version Control For OS[1.4]      ▼  │                     │
 ├──────────────────────────────────────────┴─────────────────────┤
 │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
 │          F5:Previous Values          F7: Optimized Defaults     │
 └─────────────────────────────────────────────────────────────────┘
```

Figure 4.3: Advanced BIOS features screen

4.4.1 CPU Feature

Press Enter to configure the settings relevant to CPU Feature.

4.4.2 Virus Warning

If enabled, a warning message and alarm beep activates if someone attempts to write here.

The commands are "Enabled" or "Disabled."

4.4.3 CPU L1 & L2 Cache

Enabling this feature speeds up memory access. The commands are "Enabled" or "Disabled."

4.4.4 Quick Power On Self Test

This option speeds up the Power-On Self Test (POST) conducted as soon as the computer is turned on. When enabled, BIOS shortens or skips some of the items during the test. When disabled, the computer conducts normal POST procedures.

4.4.5 First/Second/Third/ Boot Other Device

The BIOS tries to load the OS with the devices in the sequence selected. Choices are: Floppy, LS/ZIP, HDD, SCSI, CDROM, LAN, Disabled.

4.4.6 Swap Floppy Drive

Logical name assignments of floppy drives can be swapped if there is more than one floppy drive. The commands are "Enabled" or "Disabled."

4.4.7 Boot UP Floppy Seek

Selection of the command "Disabled" will speed the boot up. Selection of "Enabled" searches disk drives during boot up.

4.4.8 Boot Up NumLock Status

This feature selects the "power on" state for NumLock. The commands are "Enabled" or "Disabled."

4.4.9 Gate A20 Option

Normal: A pin in keyboard controller controls GateA20

Fast (Default): Chipset controls GateA20

The typematic rate is the rate key strokes repeat as determined by the keyboard controller. The commands are "Enabled" or "Disabled." Enabling allows the typematic rate and delay to be selected.

4.4.10 Typematic Rate (Chars/Sec)

BIOS accepts the following input values (characters/second) for typematic rate: 6, 8, 10, 12, 15, 20, 24, 30.

4.4.11 Typematic Delay (msec)

Typematic delay is the time interval between the appearance of two consecutive characters, when holding down a key. The input values for this category are: 250, 500, 750, 1000 (msec).

4.4.12 Security Option

This field allows you to limit access to the System and Setup. The default value is Setup. When you select System, the system prompts for the User Password every time you boot up. When you select Setup, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

4.4.13 APIC Mode

APIC stands for Advanced Programmable Interrupt Controller. The default setting is Enabled.

4.4.14 MPS Version Control For OS

This option specifies the MPS (Multiprocessor Specification) version for your operating system. MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. The default setting is 1.4.

4.4.15 OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is Non-OS/2.

4.4.16 Report No FDD For WIN 95

If you are using Windows 95/98 without a floppy disk drive, select Enabled to release IRQ6. This is required to pass Windows 95/98's SCT test. You should also disable the Onboard FDC Controller in the Integrated Peripherals screen when there's no floppy drive in the system. If you set this feature to Disabled, the BIOS will not report the missing floppy drive to Win95/98.

4.4.17 Small Logo (EPA) Show

The EPA logo appears at the right side of the monitor screen when the system is boot up. The default setting is Enabled.

4.5 Advanced Chipset Features

The "Advanced Chipset Features" screen appears when choosing the "Advanced Chipset Features" item from the "Initial Setup Screen" menu. It allows the user to configure the system chipset according to his particular requirements. Below are some major items that are provided in the Advanced Chipset Features screen.

```
                  Phoenix - AwardBIOS CMOS Setup Utility
                         Advanced Chipset Features

    DRAM Timing Selectable    [By SPD]          ▲  │       Item Help
  x CAS Latency Time            2                  │
  x Active to Precharge Delay   6                  │  Menu Level    ►
  x DRAM RAS# to CAS# Delay     3                  │
  x DRAM RAS# Precharge         3                  │
    DRAM Data Integrity Mode    Non-ECC            │
    MGM Core Frequency        [Auto Max 266MHz]    │
    System BIOS Cacheable     [Enabled]            │
    Video  BIOS Cacheable     [Disabled]           │
    Memory Hole At 15M-16M     [Disabled]          │
    Delayed Transaction       [Enabled]            │
    Delay Prior to Thermal    [16 Min]             │
    AGP Aperture Size (MB)    [64]                 │

    ** On-Chip VGA Setting **                      │
    On-Chip VGA               [Enabled]            │
    On-Chip Frame Buffer Size [32MB]               │
    Boot Display              [CRT]                ▒
    Panel Number              [640X480]          ▼ │

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

Figure 4.4: Advanced Chipset features screen

4.5.1 DRAM Timing Selectable

This option refers to the method by which the DRAM timing is selected. The default is By SPD.

4.5.2 CAS Latency Time

You can configure CAS latency time in HCLKs as 2 or 2.5 or 3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

4.5.3 Active to Precharge Delay

The default setting for the Active to Precharge Delay is 7.

4.5.4 DRAM RAS# to CAS# Delay

This option allows you to insert a delay between the RAS (Row Address Strobe) and CAS (Column Address Strobe) signals. This delay occurs when the SDRAM is written to, read from or refreshed. Reducing the delay improves the performance of the SDRAM.

4.5.5 DRAM RAS# Precharge

This option sets the number of cycles required for the RAS to accumulate its charge before the SDRAM refreshes. The default setting for the Active to Precharge Delay is 3.

4.5.6 DRAM Data Integrity Mode

Select ECC if your memory module supports it. The memory controller will detect and correct single-bit soft memory errors. The memory controller will also be able to detect double-bit errors though it will not be able to correct them. This provides increased data integrity and system stability.

4.5.7 MGM Core Frequency

This field sets the frequency of the DRAM memory installed. The default setting is Auto Max 266MHz.

4.5.8 System BIOS Cacheable

The setting of Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

4.5.9 Video BIOS Cacheable

The Setting Enabled allows caching of the video BIOS ROM at C0000h-C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

4.5.10 Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB. The choices are Enabled and Disabled.

4.5.11 Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

4.5.12 Delay Prior to Thermal

This field activates the CPU thermal function after the systems boots for the set number of minutes. The options are 16Min and 64Min.

4.5.13 AGP Aperture Size (MB)

The field sets aperture size of the graphics. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The default setting is 64M.

4.5.14 On-Chip VGA

The default setting is Enabled.

4.5.15 On-Chip Frame Buffer Size

The default setting is 32MB. The options available include 1MB, 4MB, 8MB and 16MB.

4.5.16 Boot Display

The default setting is CRT+LVDS. The options available include CRT, LVDS, DVI and TV.

4.5.17 Panel Number

These fields allow you to select the LCD Panel type. The setting values for these ports are:

640 x 480 18bit SC

800 x 600 18bit SC

1024 x 768 18bit SC

1280 x 1024 24bit SC

1400 x 1050 18bit SC

1024 x 768 24bit SC

1600 x 1200 24bit SC

4.5.18 TV Standard

The default setting is PAL. The options available include PAL and NTSC.

4.6 Integrated Peripherals

This section sets configurations for your hard disk and other integrated peripherals. The first screen shows three main items for user to select. Once an item selected, a submenu appears. Details as follows.

```
         Phoenix - AwardBIOS CMOS Setup Utility
                 Integrated Peripherals

  ▶ OnChip IDE Device        [Press Enter]            Item Help
  ▶ Onboard Device           [Press Enter]
  ▶ SuperIO Device           [Press Enter]      Menu Level    ▶




 ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
             F5:Previous Values              F7: Optimized Defaults
```
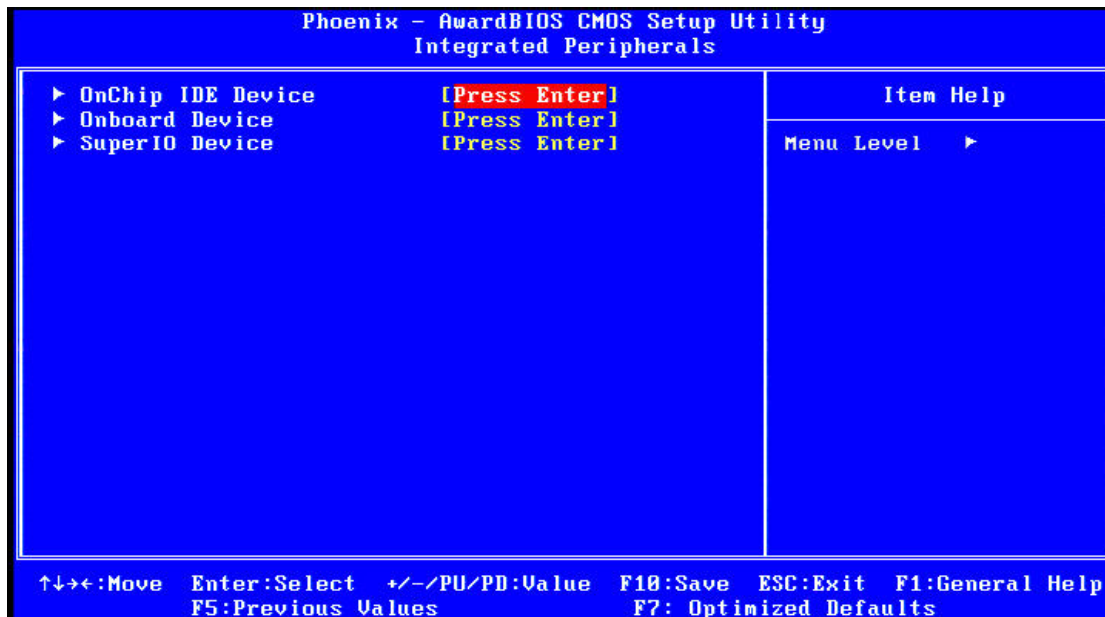
Figure 4.5: Integrated Peripherals

4.6.1 On-Chip Primary PCI IDE

Some UDMA cables use a hole in the ribbon cable as a cable detect mechanism to determine if a UDMA IDE or standard IDE cable is installed. The default setting is "Enabled".

4.6.2 IDE Master/Slave PIO/UDMA Mode,

IDE Primary (Secondary) Master/Slave PIO/UDMA Mode (Auto) Each channel (Primary and Secondary) has both a master and a slave, making four IDE devices possible. Because each IDE device may have a different Mode timing (0, 1, 2, 3, 4), it is necessary for these to be independent. The default setting "Auto" will allow auto-detection to ensure optimal performance.

4.6.3 On-Chip Secondary PCI IDE

If you enable IDE HDD Block Mode, the enhanced IDE driver will be enabled. Leave IDE HDD Block Mode on the default setting.

4.6.4 IDE HDD Block Mode

You can enable the Primary IDE channel and/or the Secondary IDE channel. Any channel not enabled is disabled. This field is for systems with only SCSI drives.
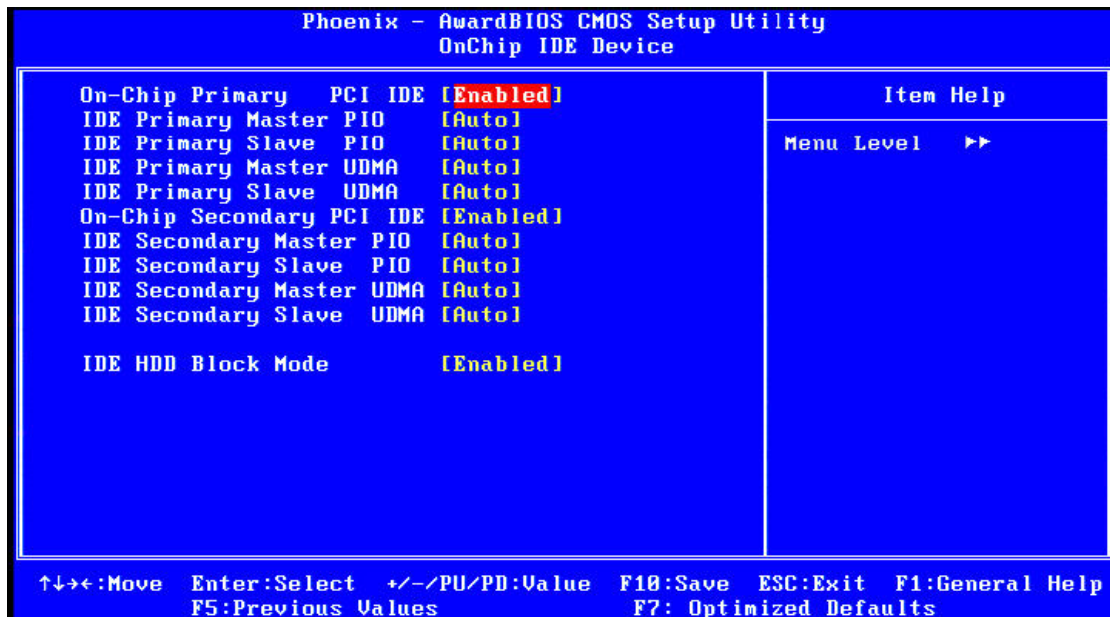
Figure 4.6: OnChip IDE Device

4.6.5 USB/USB 2.0 Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The choices: Enabled, Disabled.

4.6.6 USB Keyboard/Mouse Support

Select Enabled if user plan to use an USB keyboard. The choice: Enabled, Disable.

4.6.7 AC97 Audio/Modem

Select Disable if you do not want to use AC-97 audio/Modem. Option is Auto, Disable.

4.6.8 Init Display First

This item allows you to choose which one to activate first, PCI Slot or onchip VGA. The choices: PCI Slot, Onboard/AGP.

```
          Phoenix - AwardBIOS CMOS Setup Utility
                      Onboard Device
┌────────────────────────────────────────────┬──────────────────────┐
│ USB Controller            [Enabled]         │      Item Help       │
│ USB 2.0 Controller        [Enabled]         │                      │
│ USB Keyboard Support      [Disabled]        │ Menu Level    ►►     │
│ USB Mouse Support         [Disabled]        │                      │
│ AC97 Audio                [Auto]            │                      │
│ AC97 Modem                [Auto]            │                      │
│ Init Display First        [Onboard/AGP]     │                      │
│                                             │                      │
│                                             │                      │
│                                             │                      │
│                                             │                      │
│                                             │                      │
│                                             │                      │
│                                             │                      │
│                                             │                      │
├─────────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│           F5:Previous Values              F7: Optimized Defaults    │
└────────────────────────────────────────────────────────────────────┘
```
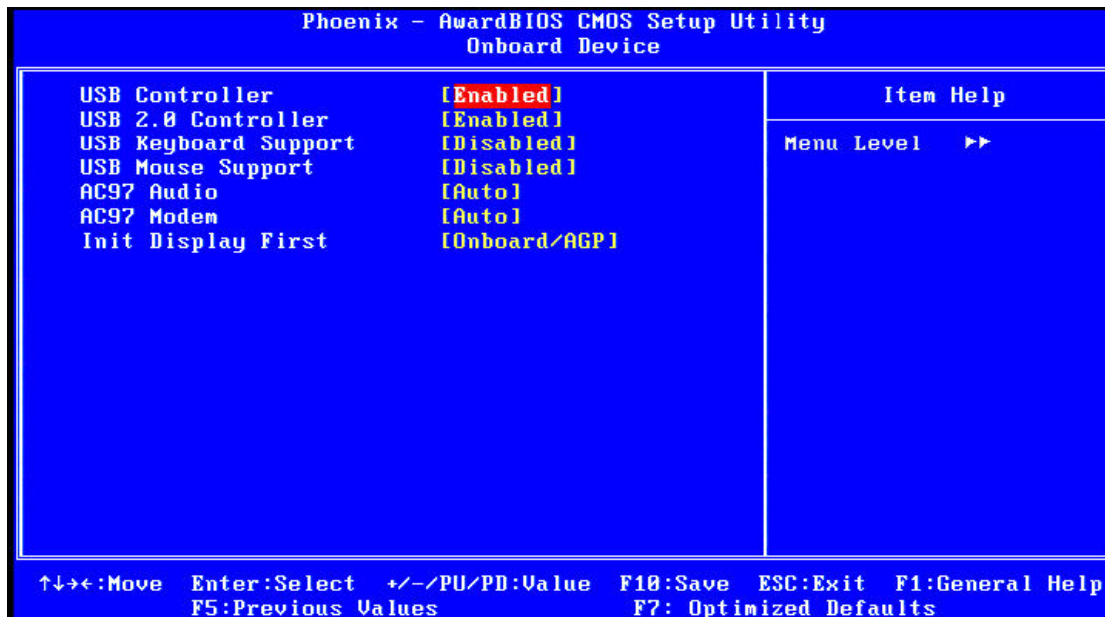
Figure 4.7: Onboard Device

4.6.9 Onboard LAN Control

Option is Enable and Disable. Select Disable if user does not want to use onboard LAN controller

4.6.10 Onboard FDC Controller

When enabled, this field allows you to connect your floppy disk drives to the onboard floppy disk drive connector instead of a separate controller card. If you want to use a different controller card to connect the floppy disk drives, set this field to Disabled.

4.6.11 Onboard Serial Port

For settings reference the Appendix for the serial resource allocation, and Disabled for the on-board serial connector.

4.6.12 UART Mode Select

This item allows you to select UART mode. The choices: IrDA, ASKIR, Normal.

4.6.13 RxD, TxD Active

This item allows you to determine the active of RxD, TxD. The Choices: "Hi, Hi," "Lo, Lo," "Lo, Hi," "Hi, Lo."

4.6.14 IR Transmission Delay

This item allows you to enable/disable IR transmission delay. The choices: Enabled, Disabled.

4.6.15 UR2 Duplex Mode

This item allows you to select the IR half/full duplex function. The choices: Half, Full.

4.6.16 Onboard Parallel Port

This field sets the address of the on-board parallel port connector. You can select either 3BCH/IRQ7, 378H/IRQ7, 278H/IRQ5 or Disabled. If you install an I/O card with a parallel port, make sure there is no conflict in the address assignments. The CPU card can support up to three parallel ports, as long as there are no conflicts for each port.

4.6.17 Parallel Port Mode

This field allows you to set the operation mode of the parallel port. The setting "Normal" allows normal speed operation, but in one direction only. "EPP" allows bi-directional parallel port operation at maximum speed. "ECP" allows the parallel port to operate in bi-directional mode and at a speed faster than the maximum data transfer rate. "ECP + EPP" allows normal speed operation in a two-way mode.

4.6.18 EPP Mode Select

This field allows you to select EPP port type 1.7 or 1.9. The choices: EPP1.7, 1.9.

4.6.19 ECP Mode Use DMA

This selection is available only if you select "ECP" or "ECP + EPP" in the Parallel Port Mode field. In ECP Mode Use DMA, you can select DMA channel 1, DMA channel 3, or Disable. Leave this field on the default setting.

```
          Phoenix - AwardBIOS CMOS Setup Utility
                      SuperIO Device

      Onboard FDC Controller      [Enabled]              Item Help
      Onboard Serial Port 1       [3F8/IRQ4]
      Onboard Serial Port 2       [2F8/IRQ3]      Menu Level    ▶▶
      UART Mode Select            [Normal]
    x RxD , TxD Active            Hi,Lo
    x IR Transmission Delay       Enabled
    x UR2 Duplex Mode             Half
    x Use IR Pins                 IR-Rx2Tx2
      Onboard Parallel Port       [378/IRQ7]
      Parallel Port Mode          [SPP]
    x EPP Mode Select             EPP1.7
    x ECP Mode Use DMA            3
      DIO Group 1/2 Direction     [Output/Input]




    ↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
                F5:Previous Values               F7: Optimized Defaults
```
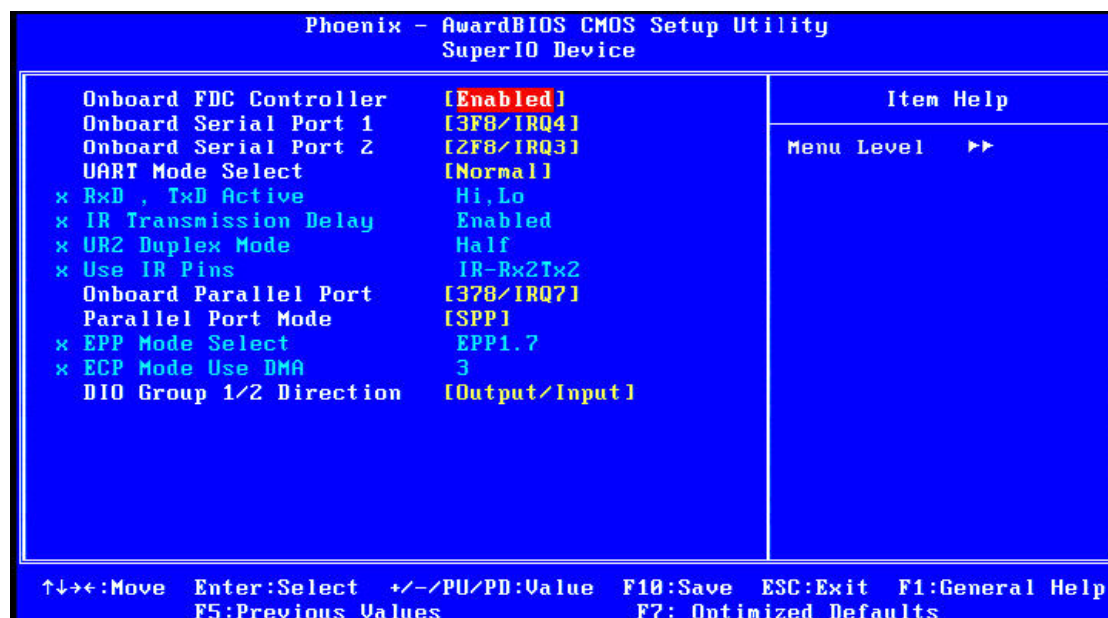
Figure 4.8: SuperIO Device

4.7 Power Management Setup

The power management setup controls the CPU card's "green" features to save power. The following screen shows the manufacturer's defaults:
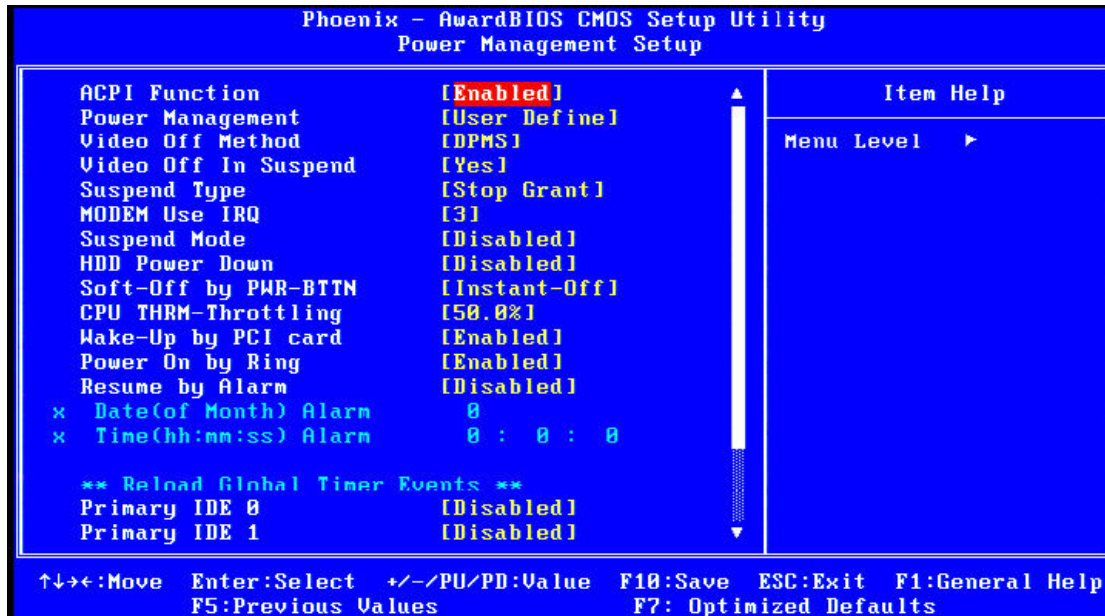
```
        Phoenix - AwardBIOS CMOS Setup Utility
                Power Management Setup

  ACPI Function          [Enabled]        ▲  │       Item Help
  Power Management        [User Define]       │
  Video Off Method       [DPMS]               │   Menu Level    ►
  Video Off In Suspend   [Yes]                │
  Suspend Type           [Stop Grant]         │
  MODEM Use IRQ          [3]                   │
  Suspend Mode           [Disabled]           │
  HDD Power Down         [Disabled]           │
  Soft-Off by PWR-BTTN   [Instant-Off]        │
  CPU THRM-Throttling    [50.0%]              │
  Wake-Up by PCI card    [Enabled]            │
  Power On by Ring       [Enabled]            │
  Resume by Alarm        [Disabled]           │
x  Date(of Month) Alarm       0               │
x  Time(hh:mm:ss) Alarm    0 :  0 :  0        │
                                              │
   ** Reload Global Timer Events **           │
  Primary IDE 0          [Disabled]           │
  Primary IDE 1          [Disabled]        ▼  │

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

Figure 4.6: Power management setup screen

4.7.1 ACPI function

The choice: Enabled, Disabled.

4.7.2 Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down

2. Suspend Mode

There are four selections for Power Management, three of which have fixed mode settings

Min. Power Saving	Minimum power management., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined (Default)	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

Table 4.1 BIOS Power Management setting

4.7.3 Video Off In Suspend

When system is in suspend, video will turn off.

4.7.4 Modem Use IRQ

This determines the IRQ in which the MODEM can use.The choices: 3, 4, 5, 7, 9, 10, 11, NA.

4.7.5 HDD Power Down

You can choose to turn the HDD off after one of the time intervals listed, or when the system is in "suspend" mode. If the HDD is in a power saving mode, any access to it will wake it up.

4.7.6 Soft-Off by PWR-BTTN

If you choose "Instant-Off", then pushing the ATX soft power switch button once will switch the system to "system off" power mode. You can choose "Delay 4 sec." If you do, then pushing the button for more than 4 seconds will turn off the system, whereas pushing the button momentarily (for less than 4 seconds) will switch the system to "suspend" mode.

4.7.7 CPU THRM-Throttling

This field allows you to select the CPU THRM-Throttling rate. The choices: 12.5%, 24.0%, 37.5%, 50.0%, 62.5%, 74.0%, 87.5%.

4.7.8 PowerOn By LAN

This item allows you to wake up the system via LAN from the remote host. The choices: Enabled, Disabled.

4.7.9 PowerOn By Modem

When Enabled an input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The choices: Enabled, Disabled.

4.7.10 PowerOn By Alarm

When Enabled, your can set the date and time at which the RTC (real time clock) alarm awakens the system from Suspend mode. The choices: Enabled, Disabled.

4.7.11 Primary IDE 0 (1) and Secondary IDE 0 (1)

When Enabled, the system will resume from suspend mode if Primary IDE 0 (1) or Secondary IDE 0 (1) is active. The choice: Enabled, Disabled.

4.7.12 FDD, COM, LPT PORT

When Enabled, the system will resume from suspend mode if FDD, COM port, or LPT port is active. The choice: Enabled, Disabled.

4.7.13 PCI PIRQ [A-D]#

When Enabled, the system will resume from suspend mode if interrupt occurs. The choice:
Enabled, Disabled.

4.8 PnP/PCI Configurations

4.8.1 PnP OS Installed

Select "Yes" if you are using a plug and play capable operating system.

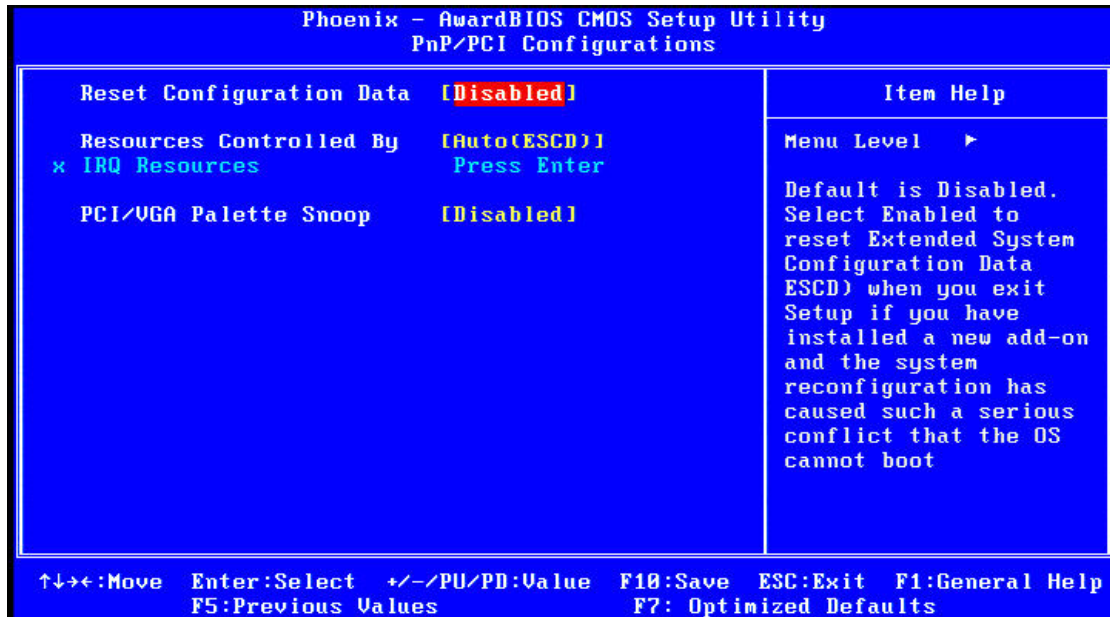Select No if you need the BIOS to configure non-boot device

```
          Phoenix - AwardBIOS CMOS Setup Utility
                 PnP/PCI Configurations

  Reset Configuration Data   [Disabled]              Item Help

  Resources Controlled By    [Auto(ESCD)]     Menu Level    ►
x IRQ Resources                Press Enter
                                               Default is Disabled.
  PCI/VGA Palette Snoop      [Disabled]        Select Enabled to
                                               reset Extended System
                                               Configuration Data
                                               ESCD) when you exit
                                               Setup if you have
                                               installed a new add-on
                                               and the system
                                               reconfiguration has
                                               caused such a serious
                                               conflict that the OS
                                               cannot boot


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

Figure 4.7: PnP/PCI configurations screen

4.8.2 Reset Configuration Data

Default is Disable. Select Enable to reset Extended System Configuration Data (ESCD) if you
have installed a new add-on and system configuration has caused such a conflict that OS
cannot boot.

4.8.3 Resources controlled by:

The commands here are "Auto" or "Manual." Choosing "manual" requires you to choose
resources from each following sub-menu. "Auto" automatically configures all of the boot and
Plug and Play devices but you must be using Windows 95 or above.

4.8.4 PCI/VGA Palette Snoop

This is left at "Disabled."

4.9 Password Setting

To change the password:

1. Choose the "Set Password" option from the "Initial Setup Screen" menu and press <Enter>.
The screen will display the following message:

Please Enter Your Password

Press <Enter>.

2. If the CMOS is good or if this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen will display the following message:

Please Confirm Your Password

Enter the current password and press <Enter>.

3. After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password must be no longer than eight (8) characters.

Remember, to enable the password setting feature, you must first select either "Setup" or "System" from the "Advanced BIOS Features" menu.

4.10 Save & Exit Setup

If you select this and press <Enter>, the values entered in the setup utilities will be recorded in the CMOS memory of the chipset. The microprocessor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.

4.11 Exit Without Saving

Selecting this option and pressing <Enter> lets you exit the setup program without recording any new values or changing old ones.

System Setup

This chapter details the needed driver installation for DSA-3300

Sections include:

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

Chapter 5 System Setup

5.1 Introduction

The system has an onboard Intel 852GM 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 1920 x 1440 @60 Hz.

5.1.1 CMOS setting for panel type

The DSA-3300 system BIOS and custom drivers are located in a Flash ROM device, designated U26 of system motherboard of DSA-3300. 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.
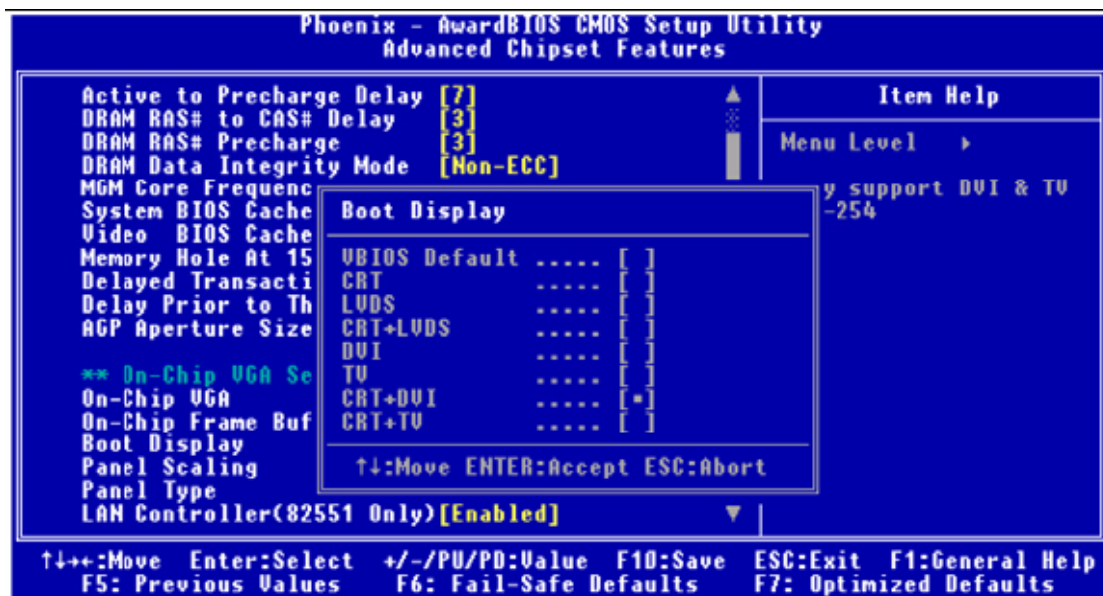

Figure 5.1: Advanced Chipset features screen

5.1.2 Display type

The DSA-3300 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-3300 uses an Intel 852GM 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-3300 Utility CD：\DSA-3300 Driver\Intel_855GME_852GM\Chipset

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-3300 Utility CD**：\

 DSA-3300 Driver\Intel_855GME_852GM\Graphic

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-3300 Utility CD**：\

DSA-3300 Driver \Lan-Intal Pro1000MT\82551QM

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-3300 Utility CD**：\

DSA-3300 Driver\Audio Driver\Realtek_AC97_ALC202\WDM_A386

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 Wireless option)

Find the wireless module driver from CD at the directory of **DSA-3300 Utility CD：**

DSA-3300 Option Model Driver\ RAlink Wireless Network Card Driver

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 TV tuner option)

Find the TV tuner driver from CD at the directory of **DSA-3300 Utility CD：**

DSA-3300 Option Model Driver\TV Tuner Driver

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