15", 12.1", & 10.4" OPtima Touch PC

CE

Contents

Figures

Appendixes

Important Information
Regarding the OPtima Touch PC

1. Due to compatibility issues between Internet Explorer 7.0 (released fall 2006) and Wonderware, do NOT install IE 7.0 at this time.

2. READ the Readme.txt file that appears in the C: directory or on the desktop following powerup!

3. If a password is required, the factory default has been set to: password. (It can be changed from within the operating system.)

4. To calibrate the touchscreen, select the touch utility menu under START\PROGRAMS.

5. Set the clock to the time zone relevant to your area.

6. For units that require WindowsXP initialization, a CUSTOMER account (no password required) will appear following this setup, along with any user defined profiles made during the initialization process. The customer account has been set to a more "classic" look (Windows 98/NT 4.0 style), giving an example for users that may be more familiar with that style.

   The customer account can be renamed or deleted (from System\Control\ User Accounts) if so desired.

   For Windows 2000 units, an Administrator profile has been created. Profiles can be modified from Control Panel/Users and Passwords.

7. Microsoft has discontinued OEM CD support for Windows 2000, which prevents us from shipping a Windows 2000 CD with those units (although Windows 2000 IS installed). However, the WindowsXP license allows OEM's to ship legacy versions (like Windows 2000) by putting the WindowsXP license on the unit. Although no Windows 2000 CD's can be shipped, a Windows 2000 recovery image (back to an initialization state) is included on the hard drive. In addition, a WindowsXP CD is shipped with the unit.

1. Introduction

The OPtima Touch Panel is a rugged, compact industrial computer combined with either a 10.4", 12.1" or 15" TFT touch screen monitor in one housing. It is designed to serve as a general purpose human machine interface (HMI) and can be ordered pre-configured with several HMI software packages.

2. Installation

Installation must be performed by a qualified technician.

This is an Installation Category 3 and Pollution Degree 2 device. The wiring guidelines outlined in this manual are to be used in addition to all applicable electrical and safety codes. Be sure to follow all requirements of such codes as well as other recognized safety practices.

2.1 CE EMC Compliance

The OPtima Touch PC meets CE EMC requirements. For additional wiring information, refer to the following publications:

Recommended Guideline for Wiring & Grounding Machine Controls
Society of the Plastics Industry, Inc.
1275 K Street, N.W.– Suite 400
Washington, D.C. 20005
(202) 371-5200

IEEE Guide for the Installation of Electrical Equipment to Minimize Electrical Noise Inputs to Controllers from External Sources
(IEEE Std 518-1982)

2.2 Mounting

Do not enclose the operator station in a small or tightly sealed cabinet or panel which would cause the surrounding temperature to exceed the rated temperature. Do not expose to direct sunlight or corrosive gas. Consideration must also be given to protecting the display surface. Do not mount the operator station so that the display is subject to mechanical damage or dust and dirt particles. Periodic cleaning using a soft, water-dampened cloth is recommended. Do NOT spray liquid cleaning agents directly onto the operator station. Allow adequate room for vibration, air circulation and easy access. Pay particular attention to the accessibility of cable connectors.

2.3 Wiring

All three sizes are equipped with a 115-230 Vac autosensing, 200W power supply. Note that inadvertent power loss (or shutdown) may cause application problems. A battery-backed power supply (or UPS) is recommended in order to keep the OPtima running during times of power loss.

2.4 Adding Hardware

Observe proper ESD precautions (use an appropriately grounded wrist strap or similar device) when installing any device.

2.4.1 Adding Boards

The OPtima Touch PC has 1 PCI expansion slot. PCI cards must be the standard 4-3/4" (120mm) length – longer cards will not fit.

Card options that should function in the OPtima PC include network (ethernet, etc.), modem, and serial cards. PCI serial cards that autodetect addressing may work best.

Include a switch or circuit breaker in the installation. It must be placed in close proximity to the equipment, within easy reach of the operator and must be marked as the disconnecting device for the equipment.

Figure 1. 15" Mounting Dimensions

Figure 2. 10.4" Mounting Dimensions

Note that Com4 is shipped with jumpers set to RS-485 operation.

Figure 3. Port Locations on 10.4"and 15"

Include a switch or circuit breaker in the installation. It must be placed in close proximity to the equipment, within easy reach of the operator and must be marked as the disconnecting device for the equipment.
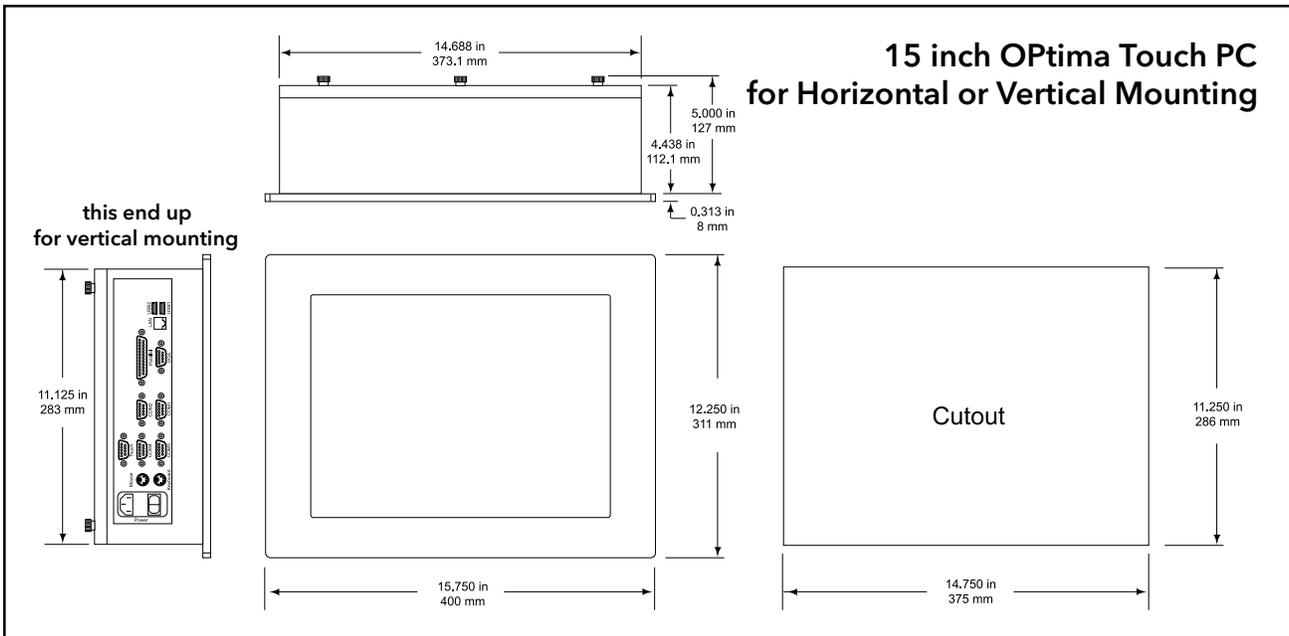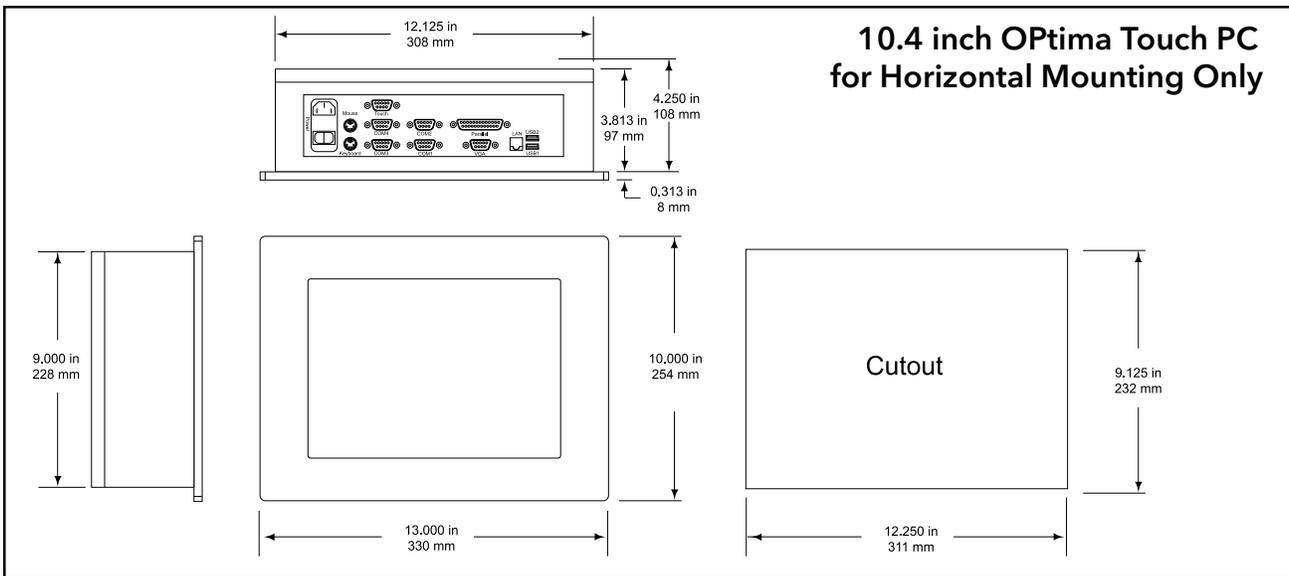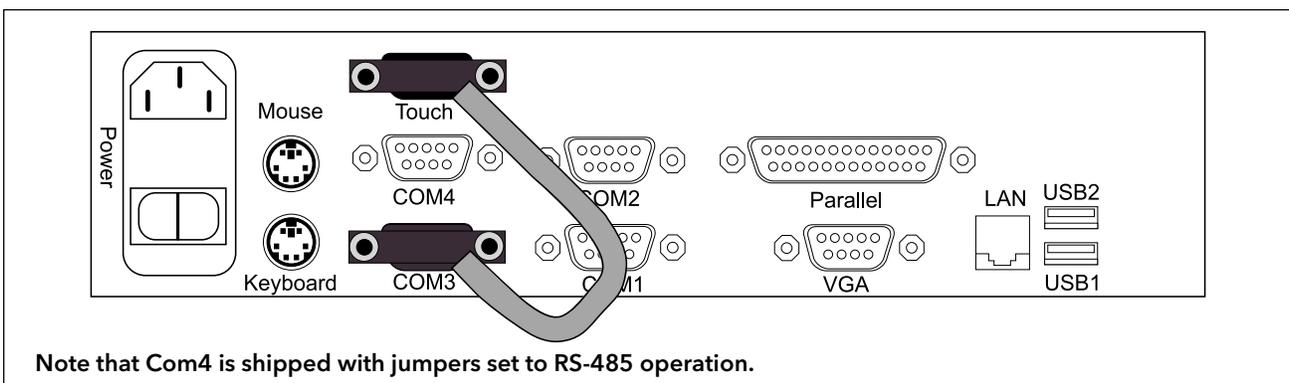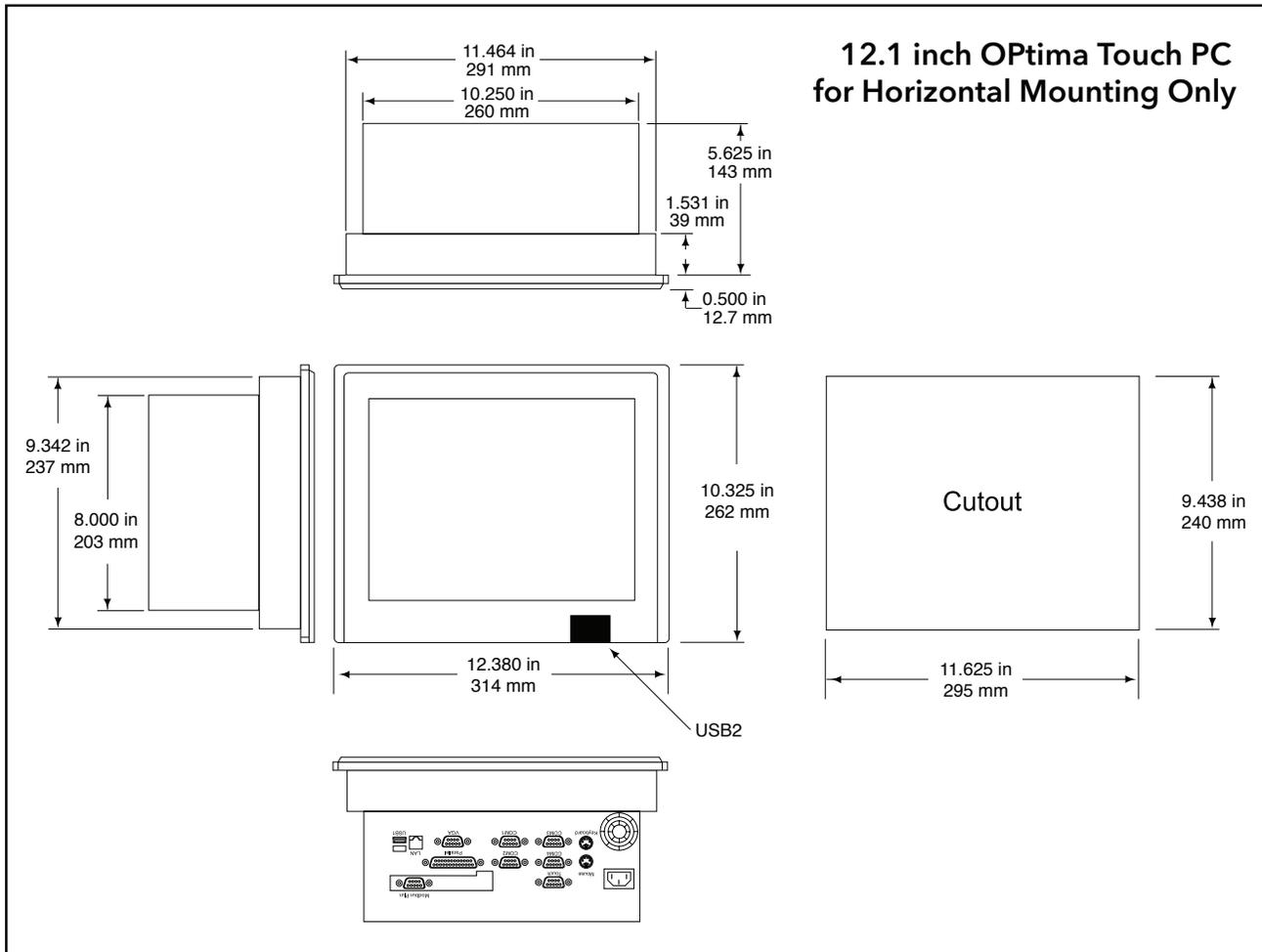

Figure 4. 12.1" Mounting Dimensions
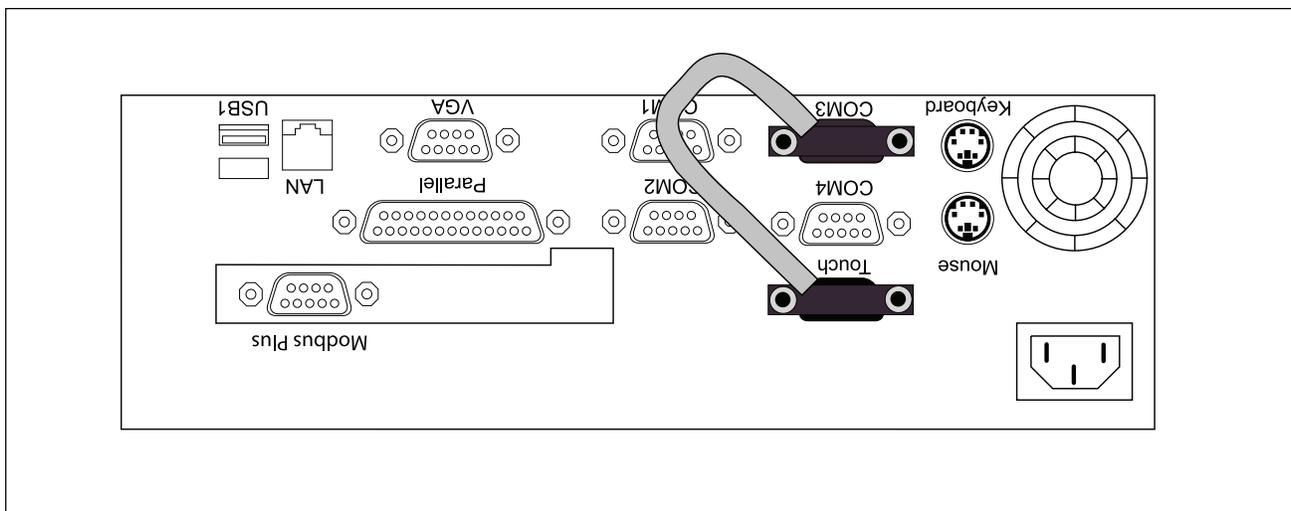
Figure 5. Port Locations on 12.1"

A single 72 pin SIMM (Single In-line Memory Module) socket is available for onboard system DRAM. The socket will contain a 512M memory module.

To remove the SIMM, support it with a finger and use a pen or similar shaped object to press one retaining clip down. Repeat for the other side. When released, the clips will push the SIMM up and out of its upright position. Remove the SIMM from the socket.

To insert a SIMM, place it in at a moderate angle. Note that it fits in the socket in only one direction. Push it in from an angle to an upright position. The retaining clips will grab and click into place. When positioned properly, the pins on the top of the vertical pins should rest in the holes of the SIMM modules.

Memory Module

Lithium Battery

90° Header for PCI Card

VORSICHT
Gefahr der Explosion, wenn Batterie nach einer falschen Art ersetzt wird. Entledigen Sie sich benutzte Batterien entsprechend den Anweisungen.

ATTENTION
Il y a danger d'explosion s'il ya remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

CAUTION!
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

If necessary, replace battery with BR2032 or equivalent.

JP4
(LCD Voltage Select)

P12

JP2
(COM4 Mode Select)

JP3
(COM4 Signal Select)

(Jumpers as shipped for RS-485)

Figure 6. OPtima Touch PC Board

3. Peripheral Devices

The OPtima Touch PC has an on-board flat panel/CRT controller. An internal cable is used to connect the computer card to the flat panel screen. If desired, an external CRT can be connected to the CRT connector on the side of the unit. An external keyboard and mouse can also be plugged into the mini-DIN connectors on the side of the unit.
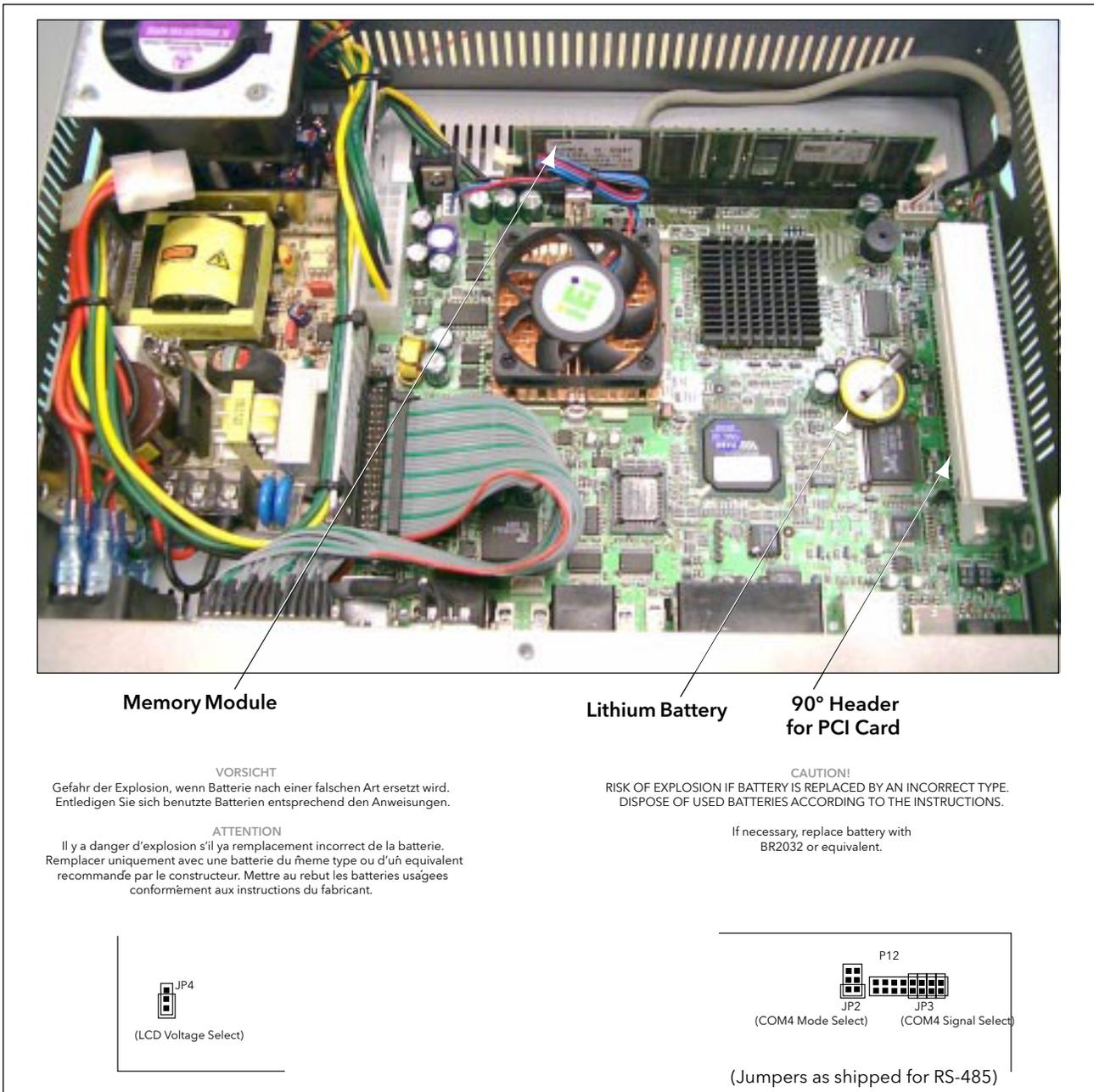
A high speed, local bus IDE controller as well as a floppy controller are also included. The IDE controller supports the internal hard drive. Depending on the size of the hard drive, it will be partitioned into several drives, with sequential letters assigned for each partition. To check partitions, go to Windows/My Computer and select a drive. The size of the drive partition and how much of it is used will be displayed in the lower part of the My Computer window. Be sure to verify how much hard drive space remains before installing software. Filling a hard drive partition to capacity can cause application anomalies. As a minimum, 50MB should be left as scratch pad space for an application's temporary files. If more room for an application is required, switch to a different drive partition.

The touchscreen is connected to COM3 by an external cable. Three additional serial ports (COM1, COM2 and COM4), a parallel port, an Ethernet interface and 2 USB ports are also available. Note that COM$ is jumpered internally for RS-485 operation.

4. The Operating System

The operating system for the OPtima Touch PC is Windows XP Professional or Windows 2000. The BIOS is Award FLASH BIOS.

4.1 BIOS Password Settings

It is not recommended that users change the factory defaulted BIOS settings. The computer's CMOS memory has an integral lithium battery that should last for ten years in normal service. However, one area that may be of importance is the password settings to allow changes in the BIOS. There are no default BIOS Supervisor/User password settings as shipped from the factory. The difference in supervisor and user passwords is that the supervisor can enter and change the options of the setup menus, while the user can only see the main BIOS screen and its options, but cannot select any of those options.

To set supervisor/user BIOS passwords, first connect an external keyboard (for the Page Up/Page Down function). Press Del on power up. This takes the computer into the AWARD BIOS setup. When the setup screen comes on, select the supervisor password. A small screen appears for password definition (up to eight characters), followed by a second screen to verify the entry. The method is the same for the user password. Once passwords are defined, password entry will be required before any BIOS settings can be changed.

IMPORTANT: There is no hidden entry into the BIOS settings! If the supervisor password is forgotten, no modifications will be allowed. If you chose to use passwords, make certain to record them.

To disable the password function, just press Enter when the Supervisor password option appears. Once the password is disabled, setup access is freely available. Consult the factory before making any significant BIOS settings. Making inappropriate modifications may disable the OPtima PC to the point of inoperation.

5. Setup

5.1 Windows Setup

5.1.1 Window Settings

The OPtima Touch PC will be delivered with almost all settings in their "default" mode. If you care to change any of these, or are unfamiliar with the appearance and operation of Windows XP, Microsoft includes a "tour" of the system that is both informative and helpful.

5.1.2 Regional Settings for Date

Windows is setup to use a four digit year for y2k compliance. The setting is found under Regional Settings (in Control Panel). Do not change this setting.

5.1.3 Date/Time Zone

The time zone is set for Greenwich Mean Time, with the option to adjust for daylight savings time disabled. In cases where SPC data is being gathered, an automatic adjust for the time can disrupt data being collected. This option can be changed by selecting Date/Time (in Control Panel) and changing the date/time to the preferred option.

5.1.4 Fonts

When creating screen sets for use with the InTouch development system, the user MUST use fonts that are also installed in the OPtima PC. It is recommended to download sample screens before developing an entire screen set, in order to make certain that fonts (and other items) appear as desired.

Installed Fonts include: Arial, Courier New, Lucida Console, Lucida Sans Unicoda, Marlett, Times New Roman.

Versions of the above include Baltic, Central European, Cyrillic, Greek, Turkish, and Western. If new fonts need to be installed, select Fonts (in Control Panel) and from the File menu, select Install New Font. Point the computer to the directory from which you are installing (i.e. A:\ ) and click OK.

5.2 Power Shutdown/Battery Backed Power Supply

Due to the way Windows operates, it is recommended that the OPtima Touch PC be powered down through the Start menu Shut Down sequence. Inadvertent power loss or shut down may cause application anomalies. A back up power source is recommended in order to keep the OPtima running in case of a power loss.

5.3 Backups

As with all computer files, we suggest you make backups of all applications and data. This can be accomplished by connecting to a computer network, or by connecting an external drive through one of the USB ports. It is best to have a mandatory backup plan in case of hard drive failure. Hard drives cannot be reconstructed without backup files. Scheduling software can be purchased to perform scheduled backups of critical files.

6. The Display

The 10.4" display is a standard flat panel screen with a resolution of 800 (horizontal) x 600 (vertical) pixels (SVGA). The12.1" and 15" displays have a resolution of 1024 (horizontal) x 768 (vertical) pixels (XVGA). All are shipped from the factory set for 65,535 colors.

6.1 The Touchscreen

The touchscreen uses an analog resistive technology. Care should be taken to not puncture or scratch the surface with rough objects. Cursor movement can be recalibrated at any time. To perform the calibration, go to Start , then Programs, and select the appropriate Touch Utility. A calibration window will eventually appear, asking you to touch a few areas on the screen. You will be prompted to respond if the cursor moves. If cursor movement is not satisfactory, perform the calibration sequence again.

7. Automatic Logon to Windows

Since the OPtima PC has no built-in keyboard functions, it is shipped from the factory with the Windows AutoLogon feature enabled. This has been accomplished by setting a username and password (under Start/Programs/Administrative Tools/User Manager) and matching that password with the DefaultPassword in the system registry (see below). For shipment the powerup user is "Administrator" and the Default Password is "password."

7.1 Disabling AutoLogon

Note that if autologon is to be disabled a keyboard will be required (for the CTL-ALT-DEL poweron sequence and to enter a user name and password). To disable the autologon function, enter a "0" (zero) for AutoAdminLogon (using the registry editor as described below).

8. Troubleshooting/Application Tips

Note: In ANY situation that requires the unit to be open, proper shutdown and ESD precautions MUST be followed.

Touchscreen stops working:
Plug in an external keyboard (a Windows 95 keyboard will give you the Start key.) Using the Start , Tab and Arrow keys , go to Start/Programs/ Touch Utility Menu. Look to see that the COM Port is set to single touchscreen/Com 3. If it is not, set it to single touchscreen/Com3.

If the touchscreen still will not function, plug in a Windows 95 compatible keyboard. This will allow a user to move around the screen using keyboard functions.Start/Tab/Alt + alpha character and arrow keys should allow access to most functions. When the system can be shut off, open the unit and look for misconnection of power and cables.

When the System starts up, it performs a diskcheck:
This operation is generally performed if there was an improper shut down of the unit. This does not cause any application anomalies, just a longer power up while the disk is checked.

BIOS
Power Management must be set to ENABLED (if disabled, the might reset when attempting to load Windows).

Construction:
Heavy-duty steel chassis & plastic front panel with NEMA 12/IP54

LCD:
15" TFT 1024 x 768 (Horizontal or Vertical Mounting)
12.1" TFT 1024 x 768 (Horizontal Mounting Only)
10.4" TFT 800 x 600 (Horizontal Mounting Only)

Touch Screen:
Analog Resistive Continuous Resolution

Processor Speed:
1.36 GHz (minimum) Celeron, FSB 133MHz

DRAM:
512MB DIMM

BIOS:
Phoenix-Award

VGA Controller:
S3 ProSavage4 4xAGP 3D/2D SVGA up to 1600x1200 32 bit

VGA Memory:
32MB (shared)

VGA Port:
Supports simultaneous display with additional monitor

Ethernet:
(1) 10/100 Base-T Realtek RTL8139C RJ-45 connector

Serial Ports:
(3) RS-232 (COM1, COM2, COM3); (1) RS-232/422/485 (COM4)

Parallel Port:
(1) Parallel

USB Ports:
(2) USB

Storage:
40GB (standard)
512MB Flash Drive (optional)

Keyboard Port:
PS/2

Mouse Port:
PS/2

Expansion Slot:
(1) 32-bit PCI (half length)

Operating Systems:
Windows™ XP Professional (standard)
Windows™ XP Embedded (optional, required for flash drive)
Windows™ 2000 (standard)

Power Supply:
115 - 230 Vac, autosensing, 200 Watts

Temperature:
10.4":
Ambient: 0 to +40°C (32 to 104°F)
Storage: –20 to +60°C (-4 to 140°F)

12.1" and 15":
Ambient: 0 to +50°C (32 to 122°F)
Storage: –20 to +60°C (-4 to 140°F)

Operating Humidity:
10.4":
5-95% @ 40°C (104°F), non-condensing

12.1" and 15":
5-95% @ 50°C (122°F), non-condensing

Operating Shock:
5G, 11ms duration, half-sinewave

Operating Vibration:
10-58 Hz, 0.0375 mm 58-500 Hz; 0.5G

Protection Class (10.4" and 15"):
NEMA 12/IP54 (Front Side)
(IP65 attainable with additional mounting hardware - consult factory)

Battery:
Lithium battery for CMOS data retention
PC99 ACPI compliant (replace with BR2032 or equivalent - see Figure 6)

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Phoenix - AWARDBIOS™ 6.0

User Guide

Content

Introduction

This manual discusses Award™ Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The AwardBIOS™ installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel/Cyrix/AMD processors in a standard IBM-AT compatible input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

The AwardBIOS™ has been customized by adding important, but non-standard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The AwardBIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or

2. by pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

Table 1: Legend Keys

Navigating through the menu bar

Use the left and right arrow keys to choose the menu you want to be in.

To display a sub menu, use the arrow keys to move the cursor to the sub-menu you want. Then press <Enter>. A "▨▨" pointer marks all sub-menus.

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AwardBIOS™ supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum

performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

A Final Note About Setup

Not all systems have the same Setup. While the basic look and function of the Setup program remains the same for all systems, individual motherboard and chipset combinations require custom configurations. For example, you may find that your Setup main menu has a different number of entries from the main menu displayed in this manual. These are simply features not supported (or not user configurable) on your system.

The final appearance of the Setup program also depends on the Original Equipment Manufacturer (OEM) who built your system. If your OEM has decided that certain items should only be available to their technicians, those items may very well be removed from the Setup program.

SECTION **1**

Main Menu

Once you enter the AwardBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

```
Phoenix – AwardBIOS CMOS Setup Utility

        Standard CMOS Features         Load Fail-Safe Defaults
        Advanced BIOS Features         Load Optimized Defaults
        Advanced Chipset Features      Set Supervisor Password
        Integrated Peripherals         Set User Password
        Power Management Setup         Save & Exit Setup
        PnP/PCI Configurations         Exit Without Saving
        PC Health Status

    Esc : Quit                                 : Select Item
    F10 : Save & Exit Setup

              Time, Date, Hard Disk Type....
```

Figure 1: The Main Menu

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration. See Section 2 for the details.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system. See Section 3 for the details.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance. See section 4 for the details.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. See section 5 for the details.

Power Management Setup

Use this menu to specify your settings for power management. See section 6 for the details.

PnP / PCI Configuration

This entry appears if your system supports PnP / PCI. See section 7 for the details.

PC Health Status

This entry displays the current status of your PC. See section 8 for the details.

Load Fail -Safe Defaults

Use this menu to load the BIOS default values for the minimal/s table performance for your system to operate. See section 9 for the details.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs. See section 9 for the details.

Set Supervisor Password

Use this menu to set Supervisor Passwords. See section 10 for the details.

Set User Password

Use this menu to set User Passwords. See section 10 for the details.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup. See section 11 for the details.

Exit Without Saving

Abandon all CMOS value changes and exit setup. See section 11 for the details.

SECTION 2

Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
                  Phoenix – AwardBIOS CMOS Setup Utility
                          Standard CMOS Features

        Date (mm:dd:yy)            Mon, Mar 31 2003          Item Help
        Time (hh:mm:ss)            16 : 19 : 20

          IDE Primary Master      [ 2557 MB ]          Menu Level
          IDE Primary Slave       [ None ]
          IDE Secondary Master    [ None ]             Change the day, month,
          IDE Secondary Slave     [ None ]             year and century

        Drive A                   [ 1.44M, 3.5 in.]
        Drive B                   [ None ]

        Video                     [ EGA/VGA ]
        Halt On                   [ All, but Keyboard ]

        Based Memory               640K
        Extended Memory           64512K
        Total Memory              65536K


          : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
        F5: Previous Values       F6: Fail-safe defaults      F7: Optimized Defaults
```

Figure 2: Standard CMOS Features Menu

Main Menu Selections

This table shows the selections that you can make on the Main Menu

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Primary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

Table 2 Main Menu Selections

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive. Figure 3 shows the IDE primary master sub menu.

```
          Phoenix – AwardBIOS CMOS Setup Utility
                    IDE Primary Master
┌──────────────────────────────────────────┬──────────────────────────┐
│                                           │        Item Help         │
│  IDE HDD Auto-Detection    [ Press Enter ]├──────────────────────────┤
│                                           │  Menu Level              │
│  IDE Primary Master        [ Auto ]       │                          │
│  Access Mode          [ Auto ]            │  To auto-detect the HDD's │
│                                           │  size, head… on this hannel│
│  Capacity                  2557 MB        │                          │
│                                           │                          │
│  Cylinder                  4956           │                          │
│  Head                        16           │                          │
│  Precomp                      0           │                          │
│  Landing Zone              4955           │                          │
│  Sector                      63           │                          │
│                                           │                          │
├───────────────────────────────────────────────────────────────────────┤
│     : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help│
│   F5: Previous Values      F6: Fail-safe defaults    F7: Optimized Defaults  │
└───────────────────────────────────────────────────────────────────────┘
```

Figure 3: IDE Primary Master sub menu

Use the legend keys to navigate through this menu and exit to the main menu. Use Table 3 to configure the hard disk.

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detecting is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Access Mode	Normal LBA Large Auto	Choose the access mode for this hard disk
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Table 3: Hard disk selections

S E C T I O N **3**

Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

```
           Phoenix – AwardBIOS CMOS Setup Utility
                   Advanced BIOS Features
┌──────────────────────────────────────────┬──────────────────────┐
│  Virus Warning              [ Enabled ]   │      Item Help       │
│  CPU Internal Cache         [ Enabled ]   ├──────────────────────┤
│  External Cache             [ Enabled ]   │ Menu Level           │
│  CPU L2 Cache ECC Checking [ Enabled ]    │                      │
│  Processor Number Feature   [ Enabled ]   │ Allows you to choose │
│  Quick Power On Self Test   [ Disabled ]  │ the VIRUS warning    │
│  First Boot device          [ Floppy ]    │ feature for IDE      │
│  Second Boot device         [ HDD-0 ]     │ Hard Disk boot sector│
│  Third Boot device          [ LS120 ]     │ protection. If this  │
│  Boot other device          [ Enabled ]   │ function is enabled  │
│  Swap Floppy Drive          [ Disabled ]  │ and someone attempt  │
│  Boot Up Floppy Seek        [ Enabled ]   │ to write data into   │
│  Boot Up NumLock Status     [ On ]        │ this area, BIOS will │
│  Gate A20 Option            [ Fast ]      │ show a warning       │
│  Typematic Rate Setting     [ Disabled ]  │ message on screen    │
│  Typematic Rate (Chars/Sec)    6          │ and  alarm beep      │
│  Typematic Delay (Msec)       250         │                      │
│  Security Option            [ Setup ]     │                      │
│  OS Select For DRAM > 64MB [ Non-OS2 ]    │                      │
│  Video BIOS Shadow          [ Enabled ]   │                      │
│  C8000-CBFFF Shadow         [ Disabled ]  │                      │
│  CC000-CFFFF Shadow         [ Disabled ]  │                      │
│  D0000-D3FFF Shadow         [ Disabled ]  │                      │
│  D4000-D7FFF Shadow         [ Disabled ]  │                      │
│  D8000-DBFFF Shadow         [ Disabled ]  │                      │
│  DC000-DFFFF Shadow         [ Disabled ]  │                      │
│  Small Logo(EPA) Show       [ Disabled ]  │                      │
├──────────────────────────────────────────┴──────────────────────┤
│  : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help│
│  F5: Previous Values    F6: Fail-safe defaults    F7: Optimized Defaults│
└──────────────────────────────────────────────────────────────────┘
```

Figure 4: Advanced BIOS Features menu

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

| Enabled | Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table. |
| Disabled | No warning message will appear when anything attempts to access the boot sector or hard disk partition table. |

CPU Internal Cache / External Cache

Cache memory is additional memory that is must faster than conventional DRAM (system memory). When the CPU requests data, the system transfers requested data from main DRAM into cache memory, for even faster access by the CPU. The settings enable/disable the internal cache (also known as L1 or level 1 cache) and external cache (also known as L2 or level 2 cache).
The choice: Enabled, Disabled.

CPU L2 Cache ECC Checking

This allows you to enable or disable the ECC (Error -Correcting Code) feature for error detection and correction when data passes through L2 cache memory.
The choice: Enabled, Disabled.

Processor Number Feature

This feature is for Pentium ® !!! onl y. When set to Enabled, the system will check CPU Serial Number. Set to Disabled if you don't want the system to know the CPU Serial Number.
The choice: Enabled, Disabled.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after y ou power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

| Enabled | Enable quick POST |
| Disabled | Normal POST |

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.
The Choice: Floppy, LS 120, HDD, SCSI, CDROM, ZIP, LAN, Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignments.
The choice: Enabled, Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot up. Disabling speeds boot up.
The choice: Enabled, Disabled.

Boot Up NumLock Status

This item is to set the Num Lock status when the system is powered on. Setting to On
will turn on the Num Lock key when the system is powered on. Setting to Off will
allow end users to use the arrow keys on the numeric keypad.
The choice: Enabled, Disabled.

Gate A20 Option

This item is to set the Gate A20 status. A20 refers to the first 64KB of extended
memory. When the default value Fast is selected, the Gate A20 is controlled by Port92
or chipset specific method resulting in faster system performance. When Normal is
selected, A20 is controlled by a keyboard controller or chipset hardware.
The choice: Fast, Normal.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the
typematic rate and typematic delay can be selected.
The choice: Enabled, Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to rep eat a key stroke when you hold the key down.
The choice: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.
The choice: 250, 500, 750, 1000.

Security Option

Select whether the password is required every time the system boots or only when you
enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but acces s to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you
will be asked to enter password. Do not type anything and just press <Enter>, it will
disable security. Once the security is disabled, the system will boot and you can enter
Setup freely.

OS Select For DRAM > 64MB

This allows you to run the OS/2 operating system with DRAM larger than 64 MB. When you choose Non-OS2, you cannot run the OS/2 operating system with DRAM larger than 64MB. But it is possible if you choose OS2.
The choice: Non-OS2, OS2.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.
The choice: Enabled, Disabled

C8000-CBFFF / CC000-CFFFF / D0000-D3FFF / D4000-D7FFF / D8000-DBFFF / DC000-CFFFF Shadow

These items specify whether the contents of the adapter ROM named in the items will be copied into RAM to improve the p erformance of ROM firmware for adapters. You need to know the address which adapter ROM occupies to shadow (copy) it into the correct area of RAM.
The choice: Enabled, Disabled

Small Logo(EPA) Show

This field enables the showing of the EPA logo located at the upper right of the screen during boot up.
The choice: Enabled, Disabled

SECTION **4**

Advanced Chipset Features


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

                                                          Item Help
      DRAM Timing By SPD        [ Enabled ]
      DRAM Clock                 Host CLK
      SDRAM Cycle Length         3                 Menu Level
      Bank Interleave            Disabled
      Memory Hole               [ Disabled ]
      P2C/C2P Concurrency       [ Enabled ]
      System BIOS Cacheable     [ Disabled ]
      Video RAM Cacheable       [ Disabled ]
      Frame Buffer Size         [ 16M ]
      AGP Aperture Size         [ 64M ]
      AGP-4X Mode               [ Enabled ]
      AGP Driving Control       [ Auto ]
      AGP Driving Value          DA
      Select Display Device     [ Auto ]
      Panel Type                [ 0A ]
      Onchip USB                [ Enabled ]
      USB Keyboard Support      [ Disabled ]
      Onchip Sound              [ Auto ]
      Onchip Modem              [ Disabled ]
      CPU to PCI Write Buffer   [ Enabled ]
      PCI Dynamic Bursting      [ Enabled ]
      PCI Master 0 WS Write     [ Enabled ]
      PCI Deley Transaction     [ Disabled ]
      PCI#2 Access #1 Retry     [ Enabled ]
      AGP Master 1 WS Write     [ Disabled ]
      AGP Master 1 WS Read      [ Disabled ]

      : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
   F5: Previous Values      F6: Fail-safe defaults    F7: Optimized Defaults
```

Figure 5: Advanced Chipset Features menu

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

DRAM Timing By SPD

Selects whether DRAM timing is configured by reading the contents of the SPD (Serial Presence Detect) device on the DRAM module. Setting to Enabled makes both SDRAM Cycle Length and DRAM Clock automatically determined by BIOS according to the configurations on the SPD.
The Choice: Enabled, Disabled.

DRAM Clock

The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency.

The settings are:

Hosk CLK	The DRAM clock will be equal to the Host Clock.
HCLK-33M	The DRAM clock will be equal to the Host Clock minus 33MHz. For example, if the Host Clock is 133MHz, the DRAM clock will be 100MHz.
HCLK+33M	The DRAM clock will be equal to the Host Clock plus 33MHz. For example, if the Host Clock is 100MHz, the DRAM clock will be 133MHz.

SDRAM Cycle Length

The option controls the CAS latency, which determines the timing delay before SDRAM starts a read command after receiving it. Settings: 2 and 3 (clock cycles). 2 increases system performance while 3 provides more stable system performance.
The Choice: 2, 3.

Bank Interleave

This item allows you to set how   many banks of SDRAM support in your mainboard.
The Choice: 2 Bank, 4 Bank, Disabled

Memory Hole

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below16MB. When this area is reserved, it cannot be cached.
The Choice: 15M -16M, Disabled

P2C/C2P Concurrency

This field enables or disables the PCI to CPU and CPU to PCI concurrency feature, which allows synchronous data transmission from PCI to CPU and vice versa. Selecting Enabled will increase system performance.
The Choice: Enabled, Disabled

System BIOS Cacheable

Selecting 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.
The choice: Enabled, Disabled.

Video RAM Cacheable

Selecting Enabled allows caching of the video memory (RAM) at A0000h- AFFFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.
The Choice: Enabled, Disabled.

AGP-4X Mode

This field is used to enable the AGP (Accelerated Graphics Port) 4x interface which transfers video data at 1066MB/sec.bandwidth thus delivering faster and better graphics to your PC. Make sure your graphics card supports the AGP 4x mode. See www.apgforum.org for AGP information.
The Choice: Enabled, Disabled.

Frame Buffer Size

Frame Buffer is the video memory that stores data for video display (frame). This field is used to determine the memory size for Frame Buffer. Larger frame buffer size increases video performance.
The Choice: 4M, 8M, 16M, 32M.

AGPAperture Size

Select the size of Accelerated Graphics Port (AGP) aperture. 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 Choice: 4M, 8M, 16M, 32M, 64M, 128M, 256M.

AGP Driving Control

This BIOS function allows you to adjust the control of the AGP driving force. It is set to Auto by default.
The Choice: Auto, Manual.

AGP Driving Value

When AGP Driving Control is set to Manual, use this item to set the AGP current driving value.
The Choice: 0000 ~ 00FF.

Select Display Device

Th is item allows you to   select the Display Devices.
The Choice: Auto, CRT, LCD, CRT+LCD, TV, CRT+TV, DVI, CRT+DVI

Panel Type

This field sets the panel type that is supported by the system. Below are the selections for the different panel types:

Panel Type 0	640x480	18bit	TFT
1	800x600	18bit	TFT
2	1024x768	36bit	TFT
3	1280x1024	36bit	TFT
4	640x480	16bit	DSTN
5	800x600	16bit	DSTN
6	1024x768	16bit	DSTN
7	1024x768	18bit	1CH LVDS
8	640x480	18bit	TFT
9	800x600	18bit	TFT
A	1024x768	18bit	TFT
B	1280x1024	18bit	TFT
C	1400x1050	36bit	2CH LVDS
D	800x600	16bit	DSTN
E	1024x768	16bit	DSTN
F	1280x1024	16bit	DSTN

Onchip USB

This is used to enable or disable the USB ports.
The Choice: Enabled, Disabled.

USB Keyboard Support

Set to Enabled if yo ur need to use an USB keyboard in the operating system that does not support or have any USB driver installed, such as DOS and SCO Unix.
The Choice: Enabled, Disabled.

Onchip Sound

Auto allows the mainboard to detect whether an audio device is used. If the device is

detected, the onboard audio controller will be enabled; if not, the controller is disabled. Disable the controller if you want to use other controller cards to connect an audio device.
The Choice: Auto, Disabled.

Onchip Modem

Auto allows the mainboard to detect whether a modem is used. If a modem is detected, the onboard modem controller will be enabled; if not, the controller is disabled. Disable the controller if you want to use other controller cards to connect modems.
The Choice: Auto, Disabled.

CPU to PCI Write Buffer

When Enabled, CPU can write up to four words of data into the PCI write buffer before the CPU must wait for PCI bus cycles to finish. When Disabled, the CPU must wait after each write cycle until the PCI bus signals that it is ready to receive more data.
The Choice: Enabled, Disabled.

PCI Dynamic Bursting

When Enabled, every write transaction goes to the write buffer. Then burstable transactions burst on the PCI bus and nonburstable transactions do not.
The Choice: Enabled, Disabled.

PCI Master 0 WS Write

When Enabled, writes to the PCI bus are executed with zero wait state.
The Choice: Enabled, Disabled.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles so that transactions to and from ISA bus are buffered and PCI bus can perform other transactions while ISA transaction is underway. Select Enabled to support compliance with PCI specification version 2.1.
The Choice: Enabled, Disabled.

PCI #2 Access #1 Retry

When Disabled, PCI#2 will not be disconnected until access finishes. When Enabled, PCI#2 will be disconnected if max retries are attempted without success.
The Choice: Enabled, Disabled.

AGP Master 1 WS Write

When Enabled, writes to the AGP bus are executed with one wait state inserted.
The Choice: Enabled, Disabled.

AGP Master 1 WS Read

When Enabled, one wait state is inserted in the AGP read cycle.
The Choice: Enabled, Disabled.

SECTION 5

Integrated Peripherals

```
            Phoenix – AwardBIOS CMOS Setup Utility
                    Integrated Peripherals

                                                    Item Help

    Onchip IDE Channel0        [ Enabled ]
    IDE Prefetch Mode          [ Enabled ]          Menu Level
    Primary Master PIO         [ Auto ]
    Primary Slave PIO          [ Auto ]
    Primary Master UDMA        [ Auto ]
    Primary Slave UDMA         [ Auto ]
    Init Display First         [ AGP ]
    IDE HDD Block Mode         [ Enabled ]
    Onboard FDD Controller     [ Enabled ]
    Onboard Serial Port 1      [ 3F8/IRQ4 ]
    Onboard Serial Port 2      [ 2F8/IRQ3 ]
    UART 2 Mode                [ Standard ]
    IR Function Duplex          Half
    TX, RX Inverting Enable     No, Yes
    Onbaord Parallel Port      [ 378/IRQ7 ]
    Onboard Parallel Mode      [ Normal ]
    ECP Mode Use DMA            3
    Parallel Port EPP Type      EPP1.9
    Onboard Legacy Audio       [ Enabled ]
    Sound Blaster              [ Disabled ]
    SB I/O Base Address        [ 220H ]
    SB IRQ Select              [ IRQ5 ]
    SB DMA Select              [ DMA 1 ]
    MPU-401                    [ Disabled ]
    MPU-401 I/O Address        [ 330-333H ]

    : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
    F5: Previous Values       F6: Fail-safe defaults     F7: Optimized Defaults
```

Figure 6: Integrated Peripherals menu

OnChip IDE Channel0/1

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Choose Enabled to activate each channel separately.
The choice: Enabled, Disabled.

IDE Prefetch Mode

The onboard IDE drive interfaces supports prefetching, for faster drive accesses. Set to disabled if your primary and/or secondary add-in IDE interface does not support prefetching.

The choice: Enabled, Disabled.

Primary/Secondary Master/Slave PIO

The four fields allow you to set a PIO (Programmed Input/Output) mode for each of the four IDE devices that the onboard IDE interface supports. Modes 0~4 provide increased performance. In Auto mode, BIOS automatically determines the best mode for each IDE device.
The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA, select Auto to enable BIOS support.
The Choice: Auto, Disabled.

Init Display First

This item specifies which VGA card is your primary graphics adapter.
The Choice: PCI Slot, AGP.

IDE HDD Block Mode

This allows your hard disk controller to use the fast block mode to transfer data to and from the hard disk drive. Block mode is also called block transfer, multiple commands or multiple sector read/write. Enabled enables IDE controller to use block mode; Disabled allows the controller to use standard mode.
The Choice: Enabled, Disabled.

Onboard FDD Controller

Select Enabl ed if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.
The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

These items specify the base I/O port address and IRQ for the onboard Serial Port 1 (COM 1) / Serial Port 2 (COM 2). Selecting to Auto allows BIOS to automatically determine the correct base I/O port address.
The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART 2 Mode

The item allows you to specify the operation mode for serial port "COM 2".
Settings are:

Standard	RS -232C Serial Port
HPSIR	IrDA -compliant Serial Infrared Port
ASKIR	Amplitude Shift Keyed Infrared Port

IR Function Duplex

This field specifies a duplex value for the IR device connected to COM 2. Full-Duplex mode permits simultaneous two-direction transmission. Half-Duplex mode permits transmission in one direction only at a time.
The choice: Half , Full .

TX, RX inverting enable

This item allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.
The choice: "No, Yes", "Yes, No", "Yes, Yes", "No, No".

Onboard Parallel Port

This specifies the base I/O port address and IRQ of the onboard Parallel Port.
Note: If the onboard parallel port interrupt and ISA add-on card interrupt are in conflict, the parallel port will not work properly. Please disable one of the devices.
The choice: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, Disabled.

Onboard Parallel Mode

This item selects the operating mode for the parallel port.
The choice: Normal, EPP, ECP, ECP/EPP.

ECP Mode Use DMA

This item specifies an DMA chann el 1 or 3 for the Parallel Port when it is set to ECP or ECP/EPP mode.
The choice: 1, 3

Parallel Port EPP Type

The item selects the EPP version used by the parallel port if the port is set to EPP or ECP/EPP mode.
The choice: EPP1.7 and EPP1.9.

Onboard Legacy Audio

The item enables or disables the onboard audio features of the mainbaord and the following audio options in the BIOS.
The choice: Enabled, Disabled.

Sound Blaster

The item turns on/off the Sound Blaster feature of the board. If you want to play the Sound Blaster compatible games, you need to set the field to Enabled.
The choice: Enabled, Disabled.

SB I/O Base Address

This item specifies the I/O Base Address for the Sound Blaster.
The choice: 220H, 240H, 260H and 280H.

SB IRQ Select

This i tem specifies the IRQ for the Sound Blaster.
The choice: IRQ 5, IRQ 7, IRQ 9 and IRQ 10.

SB DMA Select

This item specifies the DMA channel for the Sound Blaster.
The choice: DMA 1, DMA 2, DMA 3 and DMA 0.

MPU-401

The field enables or disables the MPU-401 interface (the Yamaha Sound Blaster mode).
The choice: Enabled, Disabled.

MPU-401 I/O Address

This item selects the base I/O port address for the MPU-401 interface.
The choice: 330 -333H, 300-303H and 310-313H.

SECTION 6

Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.
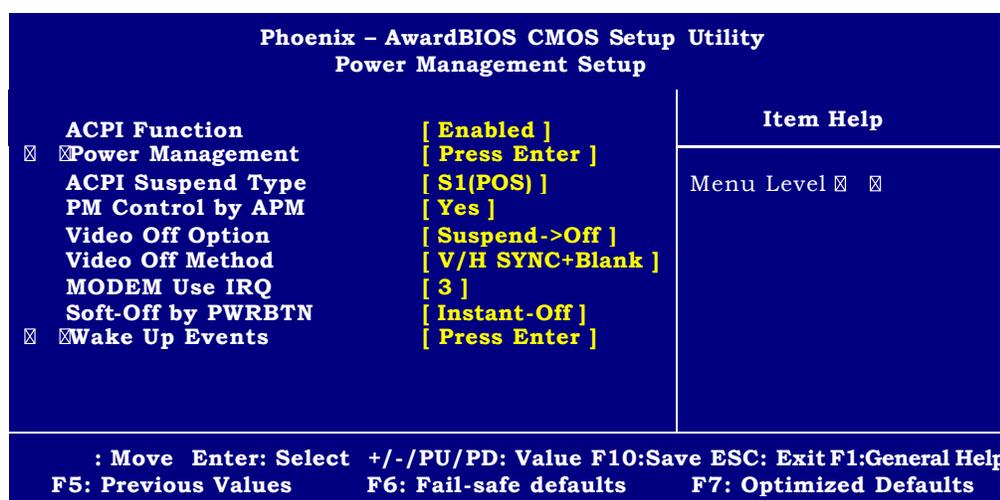
```
             Phoenix – AwardBIOS CMOS Setup Utility
                   Power Management Setup

                                                   Item Help
      ACPI Function            [ Enabled ]
   ⊠  ⊠Power Management        [ Press Enter ]
      ACPI Suspend Type        [ S1(POS) ]       Menu Level ⊠  ⊠
      PM Control by APM        [ Yes ]
      Video Off Option         [ Suspend->Off ]
      Video Off Method         [ V/H SYNC+Blank ]
      MODEM Use IRQ            [ 3 ]
      Soft-Off by PWRBTN       [ Instant-Off ]
   ⊠  ⊠Wake Up Events          [ Press Enter ]



       : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
      F5: Previous Values      F6: Fail-safe defaults      F7: Optimized Defaults
```

Figure 7: Power Management Setup menu

ACPI Function

This item allows you to enable/disable the ACPI (Advanced Configuration and Power Management) Function.
The choice: Enabled, Disabled.

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. Doze Mode
3. Suspend Mode

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

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management – ONLY AVAILABLE FOR SL CPU's. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	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.

ACPI Suspend Type

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 98SE, Windows ME and Windows 2000, you can choose to enter the Standby mode in S1(POS) or S3(STR) fashion through the setting of this field.

S1(POS)	The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context.
S3(STR)	The S3 sleep mode is a power - down state in which power is supplied only to essential components such as main memory and wake - capable devices, and all system context is saved to main memory. The information stored in main memory will be used to restore PC to previous state when an "wake up" event occurs.

PM Control by APM

Setting to Yes will activate an Advanced Power Management (APM) device to enhance Max Saving mode and stop CPU internal clock.
The choice: Yes, No.

Video Off Option

The settings are Always On, Suspend and All Modes. This option is for choosing the setting in which the monitor will turn off.

Always On	Always turn on .
Suspend → Off	During Suspend mode, the monitor will be turned off.
All Modes → Off	The monitor is turned off during Doze, Standby or Suspend mode.

Video Off Method

This determines the manner in which the monitor is blanked.

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

MODEM Use IRQ

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

Soft-Off by PWRBTN

This feature allows users to configure the power button as a normal power-on/-off button or a soft-off button.

Instant-Off	The power button functions as a normal power-on/-off button.
Delay 4 Sec	When you press the power button, the computer enters the suspend/sleep mode, but if the button is pressed for mode than four seconds, the computer is turned off.

Wake Up Events

Press <Enter> to enter the sub-menu and the following screen appears:

```
               Phoenix – AwardBIOS CMOS Setup Utility
                          Wake Up Events
                                              ┌─────────────────────────┐
                                              │        Item Help         │
    VGA                      [ OFF ]          ├─────────────────────────┤
    LPT & COM                [ LPT/COM ]      │
    HDD & FDD                [ ON ]           │ Menu Level
    PCI Master               [ OFF ]          │
    Modem Ring Resume        [ Disabled ]     │
    RTC Alarm Resume         [ Disabled ]     │
    Date (of Month)              0            │
    Resume Time (hh:mm:ss)    0 : 0 : 0       │
    Primary INTR             [ ON ]           │
     IRQs Activity Monitoring   [ Press Enter ]│

    : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
  F5: Previous Values      F6: Fail-safe defaults      F7: Optimized Defaults
```

Figure 8 : Wake Up Events menu

USB Resume from S3, VGA, LPT & COM, HDD & FDD, PCI Master, PowerOnly PCI Card, Modem Ring Resume

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

RTC Alarm Resume

This is to enable or disable the feature of booting up the system on a scheduled time/date.
The choice: Enabled, Disabled.

Date (of Month)

Specifies the date for RTC Alarm Resume.
The choice : 0~31.

Resume Time (hh:mm:ss)

Specifies the time for RTC Alarm Resume. Format is <hour><minute><second>.

Primary INTR

When this is set to ON, any event occurring will wake up the system which has been powered down.
The choice : On, Off

IRQs Activity Monitoring

Press <Enter> to enter the sub-menu that Enables or disables the monitoring of the specified IRQ line. If set to Enabled, the activity of the specified IRQ line will prevent the system from entering power saving modes or awaken it from power saving modes.

Note: IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals this by causing an IRQ to occur. After receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the I/O device.

S E C T I O N 7

PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

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

    PnP OS Installed            [ No ]              Item Help
    Reset Configuration Data    [ Disabled ]
                                                Menu Level
    Resources Controlled By     [ Manual ]
     IRQ Resources              [ Press Enter ]
     DMA Resources              [ Press Enter ]

    PCI/VGA Palette Snoop       [ Disabled ]
    Assign IRQ For VGA          [ Enabled ]
    Assign IRQ For USB          [ Enabled ]



      : Move   Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
    F5: Previous Values        F6: Fail-safe defaults      F7: Optimized Defaults
```

Figure 9: PnP/PCI Configurations menu

PNP OS Installed

This item allows you to determine install PnP OS or not. When set to YES, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operat -ing system like Windows 95/98. When set to NO, BIOS will initialize all the PnP cards. So, select Yes if the operating system is Plug & Play aware.
The choice: Yes, No.

Reset Configuration Data

The ESCD (Extended System Configuration Data) is a method that the BIOS uses to store resource information for both PNP and non PNP devices in a bit string format. When Enabled, the system will rebuild ESCD and you will see the message "ESCD Update Successfully" on boot up.

The choice: Enabled, Disabled.

Resourcecontrolled by

If select Aut o(ESCD), BIOS will automatically configure all the boot and PnP (Plug & Play) compatible devices and assigns system resources like IRQ to these devices. However, this feature means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95/98. If you want to configure by yourself, select Manual.
The choice: Auto(ESCD), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

IRQ3/4/5/7/9/10/11/12/14/15 assigned to

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.
The Choice: Legacy ISA and PCI/ISA PnP.

DMA Resources

When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DM channel.

DMA 0/1/3/5/6/7 assigned to

Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whetherdesigned for PCI or ISA bus architecture.
The Choice : Legacy ISA and PCI/ISA PnP.

PCI/ VGA Palette Snoop

PCI VGA palette is the set of colors currently used by the video device. Some special VGA cards may not show colors correctly and need to look into the video device's VGA palette to determine what colors are in use. Then you have to turn on the palette "snoop", permitting the palette registers of both VGA devices to be identical. The setting must be set to Enabled if any non-standard VGA adapter card, such as MPEG card, in -stalled in the system requires VGA palette snooping.
The Choice : Enabled, Disabled.

Assign IRQ For VGA/USB

Set to Enabled allows BIOS to assign an IRQ to VGA card / USB device. Choose

Disabled if you want to release the IRQ.
The Choice : Enabled, Disabled.

SECTION **8**

PC Health Status Menu

This section is to monitor the current hardware status including CPUtemperature, CPU Fan speed, Vcore etc. This is available only if there is hardware monitoring onboard.

```
           Phoenix – AwardBIOS CMOS Setup Utility
                      PC Health Status

                                                      Item Help
   Current CPU Temp          41  /105
   Current System Temp       22/71
   Current CPUFAN1 Speed     3523 RPM               Menu Level
   Current CPUFAN2 Speed        0 RMP
   Vcore                      1.50 V
     2.5V                     2.56 V
     3.3V                     3.39 V
      5V                      5.05 V
     12V                     12.18 V



     : Move  Enter: Select  +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
   F5: Previous Values       F6: Fail-safe defaults    F7: Optimized Defaults
```

Figure 10: PC Health Status menu

Current CPU Temp., Current System Temp., Current CPU/System Fan Speed, Vcore, 2.5/3.3/5/12V

These items display the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and all fans's speed.

SECTION 9

Defaults Menu

The two options on the main menu allow users to restore all of the BIOS settings to the default Fail -Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for the optimal performance of the mainboard. The Fail -Safe Defaults are the default values set by the BIOS vendor for the stable system performance.

Load Fail -Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail -Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal -performance system operations.

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

S E C T I O N **10**

Supervisor / User Password Setting

You can set either supervisor or user password, or both of then. The differences between are:

Supervisor password: can enter and change the options of the setup menus.

User password: just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

  ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password. To disable a password, just press <Enter> when you are prompted to enter the password.
A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

  PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it everytime you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.
Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.
You determine when the password is required within the BIO S Features Setup Menu and its Security option (see Section 3). If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

S E C T I O N **11**

Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)?   Y

Pressing "Y" stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to theSetup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)?   Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

POST Messages

During the Power On Self-Test (POST), if the BIOS detects an error requiring you to do something to fix, it will either sound a beep code or display a message.

If a message is displayed, it will be accompanied by:

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER

No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make

sure the controller is inserted correctly and all cables are properly attached. Also be sure the d isk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

DISPL AY SWITCH IS SET INCORRECTLY

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. determine which setting is correct, and then either turn off the syst em and change the jumper, or enter Setup and change the VIDEO selection.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

EISA Conf iguration Checksum Error
PLEASE RUN EISA CONFIGURATION UTILITY

The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

EISA Configuration Is Not Complete
PLEASE RUN EISA CONFIGURATION UTILITY

The slot configuration information stored in the EISA non-volatile memory is incomplete.

> **Note:** When either of these errors appear, the system will boot in ISA mode,which allows you to run the EISA Configuration Utility.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct harddrive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard driv e type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT

Cannot find or initialize the floppy drive controller. make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

Invalid EISA Configuration
PLEASE RUN EISA CONFIGURATION UTILITY

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

> **NOTE:** When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

KEYBOARD ERROR OR NO KEYBOARD PRESENT

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.
If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

Memory Address Error at...

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

Memory parity Error at...

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

Memory Verify Error at...

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT:

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT

When BIOS detects a Non-maskable Interrupt condition duringboot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR - CHECKING FOR SEGMENT...

Indicates a parity error in Random Access Memory.

Should Be Empty But EISA Board Found
PLEASE RUN EISA CONFIGURATION UTILITY

A valid board ID was found in a slot that was configured as having no board ID.

> **NOTE:** When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Should Have EISA Board But Not Found
PLEASE RUN EISA CONFIGURATION UTILITY

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

> **NOTE:** When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot Not Empty

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

> **NOTE:** When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

SYSTEM HALTED, (CTRL-ALT -DEL) TO REBOOT...

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

Wrong Board In Slot
PLEASE RUN EISA CONFIGURATION UTILITY

The board ID does not match the ID stored in the EISA non-volatile memory. NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

FLOPPY DISK(S) fail (80)   **Unable to reset floppy subsystem.**

FLOPPY DISK(S) fail (40)   **Floppy Type dismatch.**

Hard Disk(s) fail (80)   **HDD reset failed**

Hard Disk(s) fail (40)   **HDD controller diagnostics failed.**

Hard Disk(s) fail (20)   **HDD initialization error.**

Hard Disk(s) fail (10)   **Unable to recalibrate fixed disk.**

Hard Disk(s) fail (08)   **Sector Verify failed.**

Keyboard is locked out - Unlock the key.

BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

Keyboard error or no keyboard present.

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop.

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

BIOS ROM checksum error - System halted.

The checksum of ROM address F0000H -FFFFFH is bad.

Memory test fail.

BIOS reports the memory test fail if the onboard memory is tested error.

(end of file)

P15 P6 P2 P16 P9 P8 P12 PS1

P10 PCI1 JP2 JP3

LED2
LED3

P17 J1

P4

P7
J2
J3

P1

ATX1

P14

JP4
JP5

JFAN1

P11 P3
JP6 JP7

DIMM1

P1 : CMOS Voltage Select
P2 : USB Connector
P3 : LCD Inverter
P4 : FDD Connector
P6 : MIC Jack
P7 : IDE Connector
P8 : COM1 & COM2 Connector
P9 : PARALLEL & CRT Connector
P10 : LINE Input
P11 : LVDS Connector
P12 : COM3 & COM4 Connector
P14 : LCD Connector
P15 : Audio Out Jack
P16 : LAN Connector
P17 : EXT POWER LED
PS1 : KB / MS

J1 : IR Connector
J2 : POWER S/W
J3 : RESET S/W
JP2 : COM4 Mode select
JP3 : COM4 RS−232/422/485 Signal Select
JP4 : LCD Voltage Select
JP5 : PANEL TYPE
JP6 : PANEL ENABLE
JP7 : CPU TYPE
LED2 : LAN ACT LED
LED3 : LAN LINK LED
ATX1 : ATX POWER
JFAN1 : CPU FAN
PCI1 : PCI_SLOT
DIMM1 : DIMM_168P

186.55MM
162.03MM
126.81MM
81.82MM
45.13MM
27.58MM
14.80MM
4.54MM

AUDIO MIC

USB

LAN

VGA/PARALLEL

COM1/COM2

COM3/COM4

KEYBOARD

(190.5MM , 132.08MM)

4.42MM

PCI

LCD

(109.49MM , 76.16MM)

FDD

IDE

ATX

115.98MM
132.08MM
157.48MM
157.97MM

LVDS

4.42MM 12.49MM

MEMORY

5.61MM

190.5MM
200MM

P1: CMOS Voltage Select

P1 CMOS Clear	
PIN	**SIGNAL**
1-2	NORMAL
2-3	CMOS CLEAR

P2: USB CONNECTOR

PIN	SIGNAL	PIN	SIGNAL
1	GND	5	GND
2	DATA1+	6	DATA2+
3	DATA1-	7	DATA2-
4	USB VCC	8	USB VCC

P3: LCD Inverter

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	GND
3	PANELDEN	4	VCC
5	+12V		

P4: FDD Connector

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	DRVDEN0
3	GND	4	NC
5	GND	6	DRVDEN1
7	GND	8	INDEX#
9	GND	10	MTR0#
11	GND	12	DS1#
13	GND	14	DS0#
15	GND	16	MTR1#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TRAK00#
27	GND	28	WRTPRT#
29	GND	30	RDATA#
31	GND	32	HDSEL#
33	GND	34	DSKCHG#

P6: MIC JACK

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	MICIN
3	NC	4	NC
5	NC		

P7: IDE Connector

PIN	SIGNAL	PIN	SIGNAL
1	IDERST#	2	GND
3	IDE7	4	IDE8
5	IDE6	6	IDE9
7	IDE5	8	IDE10
9	IDE4	10	IDE11
11	IDE3	12	IDE12
13	IDE2	14	IDE13
15	IDE1	16	IDE14
17	IDE0	18	IDE15
19	GND	20	NC
21	DREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IORDY	28	GND
29	DACK#	30	GND
31	IRQ	32	NC
33	IDEA1	34	PD33_-66
35	IDEA0	36	IDEA2
37	IDECS1#	38	IDECS3#
39	HDLED	40	GND

P8: COM1 & COM2 Connector

COM1 Connector			
PIN	SIGNAL	PIN	SIGNAL
1	DCD1	2	SIN1
3	SOUT1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

COM2 Connector			
11	DCD2	12	SIN2
13	SOUT2	14	DTR2
15	GND	16	DSR2
17	RTS2	18	CTS2
19	RI2		

P9: PARALLEL & CRT Connector

PARALLEL Connector			
PIN	**SIGNAL**	**PIN**	**SIGNAL**
1	TSTB#	2	PDD0
3	PDD1	4	PDD2
5	PDD3	6	PDD4
7	PDD5	8	PDD6
9	PDD7	10	TACK#
11	TBUSY	12	PE
13	SLCT	14	TAFD#
15	ERR#	16	INIT#
17	SLIN	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND		
CRT Connector			
26	RED	27	GREEN
28	BLUE	29	NC
30	GND	31	GND
32	GND	33	GND
34	VCC	35	GND
36	V_SDA	37	NC
38	V_HSYNC	39	V_VSYNC
40	V_SCL		

P10: LINE Input

PIN	SIGNAL	PIN	SIGNAL
1	Line input Right	2	GND
3	Line input Left	4	GND

P11: LVDS Connector

PIN	SIGNAL	PIN	SIGNAL
1	Y2P	2	YCP
3	Y2M	4	YCM
5	GND	6	GND
7	GND	8	GND
9	Y0P	10	Y1P
11	Y0M	12	Y1M
13	GND	14	GND
15	LCDVDD	16	GND
17	LCDVDD	18	GND
19	LCDVDD	20	GND

COM4 Connector/RS-422/485

PIN	SIGNAL	PIN	SIGNAL
1	NC	2	NC
3	TXD-	4	RXD-
5	GND	6	NC
7	NC	8	TXD+
9	RXD+		

P14: TFT LCD Connector

PIN	SIGNAL	PIN	SIGNAL
1	+12V	2	+12V
3	GND	4	GND
5	VCCLCD	6	VCCLCD
7	NC	8	GND
9	BLUE0	10	BLUE1
11	BLUE2	12	BLUE3
13	BLUE4	14	BLUE5
15	BLUE6	16	BLUE7
17	GREEN0	18	GREEN1
19	GREEN2	20	GREEN3
21	GREEN4	22	GREEN5
23	GREEN6	24	GREEN7
25	RED0	26	RED1
27	RED2	28	RED3
29	RED4	30	RED5
31	RED6	32	RED7
33	GND	34	GND
35	SHFTCLK	36	PVSYNC
37	PDISEN	38	PHSYNC
39	NC	40	NC
41	GND	42	GND
43	NC	44	NC

P15: AUDIO OUT JACK

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	Audio out Left
3	NC	4	Audio out Right
5	NC		

P16: LAN Connector

PIN	SIGNAL	PIN	SIGNAL
1	TX+	2	TX-
3	RX+	4	NC
5	NC	6	RX-
7	NC	8	NC

PS1: KB/MS

DOWN			
PIN	SIGNAL	PIN	SIGNAL
1	KDATA	2	NC
3	GND	4	VCC_PS2
5	KCLK	6	NC
UP			
7	MDATA	8	NC
9	GND	10	VCC_PS2
11	MCLK	12	NC

J2: POWER SW

J3: RESET SW

JP2: COM4 MODE SELECT

PIN	SIGNAL
1-2	RXD232
3-4	RXD422
5-6	RXD485

JP3: COM4 RS-232/422/485 Signal Select

PIN	SIGNAL
1-2/3-4/5-6/7-8	RS-232
9-10/11-12/13-14/15-16	RS-422/485

JP4: LCD Voltage Select

PIN	SIGNAL
1-2	VCC
2-3	VCC3

JP6: PANEL ENABLE

OPEN	Enable
CLOSE	Disable

JP7: CPU TYPE

OPEN	CORPERMINE
CLOSE	TUALATIN

LED2: LAN ACT LED

PIN	SIGNAL	PIN	SIGNAL
1	ACT LED	2	VCC

LED3: LAN LINK LED

PIN	SIGNAL	PIN	SIGNAL
1	LINK LED	2	VCC

ATX1: ATX POWER

PIN	SIGNAL	PIN	SIGNAL
1	VCC3	2	VCC3
3	GND	4	VCC
5	GND	6	VCC
7	GND	8	PWRGD
9	5VSB	10	+12V
11	VCC3	12	-12V
13	GND	14	5VSB
15	GND	16	GND
17	GND	18	NC
19	VCC	20	VCC

JFAN1: CPU FAN

PIN	SIGNAL	PIN	SIGNAL
1	SENSOR	2	+12V
3	GND		

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