CMOS
Setup Procedure

for Dispense System Motherboard PN 2025-0064

CMOS Setup Procedure

Use this procedure to set computer CMOS parameters for dispense system motherboard (PN 2025-0064) with CPU, memory, and fan.

1. Activate BIOS/CMOS Setup Utility

With the CPU board installed in the dispenser, boot the dispenser and then press the DEL key when you hear the startup beep sound. The BIOS/CMOS setup utility is now activated.

Main Menu

The main menu displays when the BIOS/CMOS setup utility is activated. Examples of all the screens you can select from the main menu are available from the Screens Appendix (pg 6).
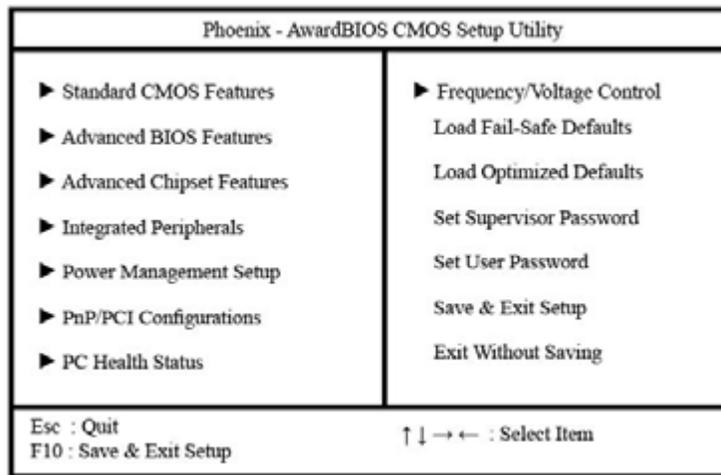
User Interface

User interface tools are noted at the bottom of each screen of CMOS parameters. Commonly used keys:

arrow keys	moves cursor, highlights values
ENTER	selects highlighted value
+ / -	increases/decreases value
F10	save
ESC	exit current level

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2. Preset Motherboard

Before proceeding with the 3. Computer CMOS Parameters section, be sure to set the motherboard so it can locate the hard drives:

1. From the main menu, select *Integrated Peripherals* and then press ENTER. Integrated Peripherals (pg 11) displays.

2. Use the arrow keys to highlight *OnChip IDE Device* and press ENTER to activate the selection. CPU Feature (pg 9) displays.

3. Highlight *OnChip Serial ATA* using the arrow keys, and then press ENTER.

4. In the On-Chip Serial ATA screen that displays, highlight *Auto*, and then press ENTER.

5. Press ESC to return to the *Integrated Peripherals* screen.

6. Press ESC again to return to the main menu.

7. To save changes, press F10 and then select Y to confirm. The dispenser will boot automatically.

8. When you hear the startup beep sound, press the DEL key.

3. Computer CMOS Parameters

Follow the setup option that applies to your situation:

For this setup option:	do this:
To change only the default parameters that need to be set for proper motherboard operation...	...go to Set Non-Default Parameters (pg 3).
To reset all parameters to the default value...	...use this troubleshooting procedure: Reset Defaults (pg 2).
To verify the parameter values displayed on the monitor are correct...	...compare them to the values illustrated under each topic in the Screens Appendix (pg 6).

Reset Defaults

If you need to start over at any time while changing parameter values, you can easily re-establish all original default settings using these simple steps:

1. Use the arrow keys to select (highlight) *Load Optimized Defaults* in main menu.

2. Press ENTER. All settings are reset to the default value.

Set Non-Default Parameters

For the motherboard to operate properly, several parameters need to be set to a non-default value.

HINT: To change a parameter value:

(1) Use the arrow keys to highlight a parameter.
(2) Press ENTER to activate the selection.
(3) Use the arrow keys to highlight the correct parameter and then press ENTER.
(4) Press ESC to return to the main menu.

Open the screen specified in each step and change the indicated parameters to the values shown:

1. Change the boot device parameters in Advanced BIOS Features (pg 9):

    | First Boot Device | [Floppy] |
    | Second Boot Device | [Hard Disk] |
    | Third Boot Device | [Disabled] |

2. If a graphics adapter/VGA card is present, you will need to change the chipset buffer parameter in Advanced Chipset Features (pg 10); otherwise, leave the default setting and skip to the next step. To determine whether or not a card is present, look at the rear of the computer. If Item A is open (no cable connected), then a graphics adapter/VGA card is present.
    –   If graphics adapter/VGA card is **present**, change On-Chip VGA to [Disabled].
    –   If graphics adapter/VGA card is **not present** (a cable is connected to Item A), leave On-Chip VGA set to [Enabled].
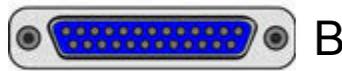
    Rear of Computer

    | ** On-Chip VGA Setting ** | |
    | On-Chip VGA | [Enabled] |

3. The presence or absence of a parallel port and/or a third Blastronix card may require you to change parameter settings:

   Parallel Port - To determine whether or not a parallel port is present, look at the rear of the computer. If item B is absent, then a parallel port is not present and you need to change the parallel port parameter in SuperIO Device (pg 12).
   – If a parallel port is **present**, leave Onboard Parallel Port set to [378/IRQ7].
   – If a parallel port is **not present**, change Onboard Parallel Port to [Disabled].

    B

Onboard Parallel Port	Disabled

   Blastronix Card - To determine whether or not a third Blastronix card is present, look at the rear of the computer. If three instances of item C are present, then three Blastronix cards are present and you need to change the parallel port parameter in SuperIO Device (pg 12).
   – If a third Blastronix card is **present**, change Onboard Parallel Port to [Disabled].
   – If a third Blastronix card is **not present**, leave Onboard Parallel Port set to [378/IRQ7].

    C

Onboard Parallel Port	Disabled
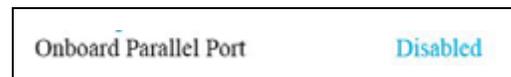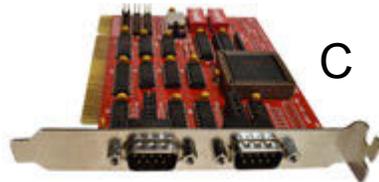
4. Change these values in the Onboard Device (pg 11) sub-menu

USB 2.0 Controller	[Disabled]
AC97 Audio	[Disabled]

5. If the dispenser is equipped with DigiBoard hardware (as evidenced by the presence of an "octopus" [truly "quadpus"] cable), then go to SuperIO Device (pg 12) and change this parameter to the value shown here; otherwise, skip to the next step.

Onboard Serial Port 2	[Disabled]

6. Change the power savings features in Power Management Setup (pg 13):

Power-Supply Type	[ATX]
ACPI Function	[Disabled]
Video Off Method	[V/H SYNC + Blank]
MODEM Use IRQ	[NA]

7. Configure the PCI slots in IRQ Resources (pg 15):

Resources Controlled By	[Manual]

8. Use the <u>IRQ Resources</u> (pg 15) sub-menu to change the pertinent parameter(s) using the values shown in Table 1 as a guide.

    For example:

    –   If the dispenser is equipped with a DigiBoard, change IRQ-3 to reserved.
    –   If the dispenser is equipped with an MEI, change IRQ-11 to reserved.

    NOTE: The dispenser may be equipped with various combinations of board hardware to accommodate various functions (scale, ClearVu™ Vision camera, etc.). One, several, or all of the boards in Table 1 may be present on the dispenser.

Table 1: Board Hardware & Associated IRQ Resources

Hardware	IRQ Reservations			
	Description	IRQ Used	Determination	Setting
Blastronix 1	New excess serial ports which add 2 serial ports (ports 3 and 4).	10	Additional serial ports.	Reserved
Blastronix 2	New excess serial ports which add 2 serial ports (ports 5 and 6).	9	More additional serial ports.	Reserved
Blastronix 3	New excess serial ports which add 2 serial ports (ports 7 and 8). NOTE: Requires that Onboard Parallel Port (SuperIO Device) be disabled.	7	Even more additional serial ports.	Reserved
DigiBoard	Old, excess serial ports that replaced serial port 2 with 4 serial ports (ports 2 through 5). This hardware is replaced by Blastronix card(s). NOTE: Requires that Onboard Serial Port 2 (SuperIO Device) be disabled.	3	Octopus-like ("quadpus") cable.	Reserved
MEI	Old motion controller replaced by Precise Automation Controller.	11	Double ribbon cable.	Reserved
Ziatech	Old digital I/O controller replaced by FieldBus I/O.	5	Rainbow-colored ribbon cable.	Reserved

4. Save Changes

To save changes, press F10 and then select Y to confirm. The dispenser will boot automatically.

Screens Appendix

Main Menu

```
                Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features          ▶ Frequency/Voltage Control

  ▶ Advanced BIOS Features            Load Fail-Safe Defaults

  ▶ Advanced Chipset Features         Load Optimized Defaults

  ▶ Integrated Peripherals            Set Supervisor Password

  ▶ Power Management Setup            Set User Password

  ▶ PnP/PCI Configurations            Save & Exit Setup

  ▶ PC Health Status                  Exit Without Saving


  Esc  : Quit                       ↑ ↓ → ←  : Select Item
  F10 : Save & Exit Setup
```

Standard CMOS Features

NOTE: The data displayed in the various *IDE Channel* parameters may vary from system to system.

```
                       Standard CMOS Features

    Date (mm:dd:yy)            Tue, Jun  14 2011        Item Help
    Time (hh:mm:ss)             6 :  58  : 51
                                                   Menu Level    ▶
  ▶ IDE Channel 0 Master       [varies with model]
  ▶ IDE Channel 0 Slave        [NONE]               Change the day, month,
  ▶ IDE Channel 1 Master       [varies with model]  year and century
  ▶ IDE Channel 1 Slave        [NONE]

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

    Video                      [EGA/VGA]
    Halt On                    [All, But Disk/Key]

    Base Memory                   640K
    Extended Memory            522240K
    Total Memory               523264K
```

IDE Channel 0 Master

This screen is a sub-menu of Standard CMOS Features (pg 7).

```
                     IDE Channel 0 Master

    IDE HDD Auto-Detection      [Press Enter]        Item Help

    IDE Channel 0 Master        [Auto]           Menu Level    ▶
    Access Mode                 [LBA]
                                                 To auto-detect the
    Capacity                    160 GB           HDD's size, head... on
                                                 this channel
    Cylinder                    9729
    Head                         255
    Precomp                        0
    Landing Zone               38308
    Sector                        63
```

IDE Channel 0 Slave

This screen is a sub-menu of Standard CMOS Features (pg 7).

```
                         IDE Channel 0 Slave
┌─────────────────────────────────────────────┬──────────────────────┐
│  IDE HDD Auto-Detection      [Press Enter]   │      Item Help       │
│                                              │                      │
│  IDE Channel 0 Slave         [Auto]          │  Menu Level    ▶     │
│  Access Mode                 [Auto]          │                      │
│                                              │  To auto-detect the  │
│  Capacity                    0 MB            │  HDD's size, head... on│
│                                              │  this channel        │
│  Cylinder                    0               │                      │
│  Head                        0               │                      │
│  Precomp                     0               │                      │
│  Landing Zone                0               │                      │
│  Sector                      0               │                      │
└─────────────────────────────────────────────┴──────────────────────┘
```

IDE Channel 1 Master

This screen is a sub-menu of Standard CMOS Features (pg 7).

```
                         IDE Channel 1 Master
┌─────────────────────────────────────────────┬──────────────────────┐
│  IDE HDD Auto-Detection      [Press Enter]   │      Item Help       │
│                                              │                      │
│  IDE Channel 1 Master        [Auto]          │  Menu Level   ▶▶     │
│  Access Mode                 [LBA]           │                      │
│                                              │  To auto-detect the  │
│  Capacity                    80 MB           │  HDD's size, head... on│
│                                              │  this channel        │
│  Cylinder                    9729            │                      │
│  Head                        255             │                      │
│  Precomp                     0               │                      │
│  Landing Zone                38308           │                      │
│  Sector                      63              │                      │
└─────────────────────────────────────────────┴──────────────────────┘
```

IDE Channel 1 Slave

This screen is a sub-menu of Standard CMOS Features (pg 7).

```
                         IDE Channel 1 Slave
┌─────────────────────────────────────────────┬──────────────────────┐
│  IDE HDD Auto-Detection      [Press Enter]   │      Item Help       │
│                                              │                      │
│  IDE Channel 1 Slave         [Auto]          │  Menu Level   ▶▶     │
│  Access Mode                 [Auto]          │                      │
│                                              │  To auto-detect the  │
│  Capacity                    0               │  HDD's size, head... on│
│                                              │  this channel        │
│  Cylinder                    0               │                      │
│  Head                        0               │                      │
│  Precomp                     0               │                      │
│  Landing Zone                0               │                      │
│  Sector                      0               │                      │
└─────────────────────────────────────────────┴──────────────────────┘
```

Advanced BIOS Features

```
                        Advanced BIOS Features

  ▶ CPU Feature                [Press Enter]            Item Help
  ▶ Hard Disk Boot Priority    [Press Enter]
    Virus Warning              [Disabled]
    CPU L1 & L2 Cache          [Enabled]         Menu Level      ▶
    Quick Power On Self Test   [Enabled]
    First Boot Device          [Floppy]
    Second Boot Device         [Hard Disk]
    Third Boot Device          [Disabled]
    Boot Other Device          [Disabled]
    Swap Floppy Drive          [Disabled]
    Boot Up Floppy Seek        [Enabled]
    Boot Up NumLock Status     [Off]
    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]
    OS Select For DRAM > 64MB  [Non-OS2]
    HDD S.M.A.R.T. Capability  [Disabled]
    Report No FDD For WIN 95   [No]
```

CPU Feature

This screen is a sub-menu of [Advanced BIOS Features](#) (pg 9).

```
                          CPU Feature

   Delay Prior to Thermal       [16 Min]              Item Help
   Thermal Management       Thermal Monitor 1
                                                Menu Level    ▶ ▶
```

Hard Disk Boot Priority

This screen is a sub-menu of [Advanced BIOS Features](#) (pg 9).

```
                      Hard Disk Boot Priority

   1. Ch0 M.    :   (varies with computer)          Item Help
   2. Ch1 M.    :   (varies with computer)
   3. Bootable Add-in Cards                    Menu Level    ▶ ▶

                                               Use <↑> or <↓> to
                                               select a device, then
                                               press <+> to move it
                                               up, or <–> to move it
                                               down the list.  Press
                                               <ESC> to exit this
                                               menu.
```

Advanced Chipset Features

Enter the value associated with the answer to each question as it applies to your situation:

Table 2: *Decision Table*

Decisions Needed		Applicable Value	
Question	*Answer*	*IRQ Affected*	*Setting*
Is VGA/graphics card hardware present?	Yes	Init Display First	PCI Slot
		On-Chip VGA	Disabled
		On-Chip Frame Buffer Size	16MB (automatic)
	No	Init Display First	Onboard/AGP
		On-Chip VGA	Enabled
		On-Chip Frame Buffer Size	8MB

```
                        Advanced Chipset Features
   DRAM Timing Selectable      [By SPD]                    Item Help
 x CAS Latency Time            2.5
 x Active to Precharge Delay   7               Menu Level    ▶
 x DRAM RAS# to CAS# Delay     3
 x DRAM RAS# Precharge         3
   Memory Frequency For        [Auto]
   System BIOS Cacheable       [Enabled]
   Video BIOS Cacheable        [Disabled]
   Memory Hole At 15M-16M      [Disabled]
   AGP Aperture Size (MB)      [128]
   Init Display First          Refer to Decision Table

   ** On-Chip VGA Setting **
   On-Chip VGA                 Refer to Decision Table
 x On-Chip Frame Buffer Size   Refer to Decision Table
```

Integrated Peripherals

```
                        Integrated Peripherals

  ► OnChip IDE Device         [Press Enter]          Item Help
    Onboard Device            [Press Enter]
    SuperIO Device            [Press Enter]     Menu Level    ►
    Watch Dog Timer Select    [Disabled]
```

OnChip IDE Device

This screen is a sub-menu of Integrated Peripherals (pg 11).

```
                        OnChip IDE Device

    IDE HDD Block Mode          [Enabled]              Item Help
    IDE DMA transfer access     [Enabled]
    On-Chip Primary   PCI  IDE  [Enabled]       Menu Level    ► ►
    IDE Primary Master PIO      [Auto]
    IDE Primary Slave  PIO      [Auto]          If your IDE hard drive
    IDE Primary Master UDMA     [Auto]          supports block mode
    IDE Primary Slave  UDMA     [Auto]          select Enabled for
    On-Chip Secondary PCI IDE   [Enabled]       automatic detection of
    IDE Secondary Master PIO    [Auto]          the optimal number of
    IDE Secondary Slave  PIO    [Auto]          block read/writes per
    IDE Secondary Master UDMA   [Auto]          sector the drive can
    IDE Secondary Slave  UDMA   [Auto]          support

    ** On-Chip Serial ATA Setting **
  x SATA Mode                   IDE
    On-Chip Serial ATA          [Auto]
  x Serial ATA Port0 Mode       Primary Master
    Serial ATA Port1 Mode       Primary Slave
```

Onboard Device

This screen is a sub-menu of Integrated Peripherals (pg 11).

```
                        Onboard Device

    USB Controller          [Enabled]               Item Help
    USB 2.0 Controller      [Enabled]
    USB Keyboard Support    [Disabled]        Menu Level    ► ►
    USB Mouse Support       [Disabled]
    AC97 Audio              [Disabled]
```

SuperIO Device

This screen is a sub-menu of Integrated Peripherals (pg 11).

NOTE: The value for the *Onboard Serial Port 2* parameter depends on whether or not your dispenser is equipped with DigiBoard hardware (scale, ClearVu™ Vision camera, etc.).

Enter the value associated with the answer to each question as it applies to your situation:

Table 3: *Decision Table*

Decisions Needed		Applicable Value	
Question	*Answer*	*Setting*	*IRQ Affected*
Is Digiboard hardware present?	Yes	Onboard Serial Port 2	Disabled
	No		2F8/IRQ3
Is parallel port hardware present?	Yes	Onboard Parallel Port	378/IRQ7
	No		Disabled

<pre>
                        SuperIO Device

    Onboard FDC Controller   [Enabled] | Item Help
    Onboard Serial Port 1   [3F8/IRQ4] |
    Onboard Serial Port 2   Refer to Decision Table | Menu Level ▶▶
  x UART Mode Select   Normal |
  x RxD , TxD Active   Hi, Lo |
  x IR Transmission Delay   Enabled |
  x UR2 Duplex Mode   Half |
    Onboard Parallel Port   Refer to Decision Table |
  x Parallel Port Mode   SPP |
  x EPP Mode Select   EPP1.7 |
  x ECP Mode Use DMA   3 |
    PWRON After PWR-Fail   [On] |
</pre>

Power Management Setup

Power Management Setup

Power-Supply Type	[ATX]		Item Help
ACPI Function	[Disabled]		
Power Management	[User Defined]		Menu Level ▶
Video Off Method	[V/H SYNC + Blank]		
Video Off In Suspend	[No]		
Suspend Type	[Stop Grant]		
MODEM Use IRQ	[NA]		
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]		
Wake Up On LAN	[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]		
Secondary IDE 0	[Disabled]		
Secondary IDE 1	[Disabled]		
FDD, COM, LPT Port	[Disabled]		
PCI PIRQ[A-D]#	[Disabled]		

PnP/PCI Configuration

PNP/PCI Configurations

		Item Help
PNP OS Installed	[No]	
Reset Configuration Data	[Disabled]	Menu Level ▶
Resources Controlled By	[Manual]	Select Yes if you are
▶ IRQ Resources	[Press Enter]	using a Plug and Play
▶ Memory Resources	[Press Enter]	capable of operating
		system Select No if
PCI/VGA Palette Snoop	[Disabled]	you need the BIOS to
INT Pin 1 Assignment	[Auto]	configure non-boot
INT Pin 2 Assignment	[Auto]	devices
INT Pin 3 Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	

IRQ Resources

This screen is a sub-menu of PnP/PCI Configuration (pg 14).

NOTE: The value for the *IRQ-3 assigned to* parameter depends on whether or not your dispenser is equipped with Blastronix, DigiBoard, or other hardware (scale, ClearVu™ Vision camera, etc.).

Enter the value associated with the answer to each question as it applies to your situation:

***Table 4:** Decision Table*

Decisions Needed		Applicable Value	
Question	*Answer*	*IRQ Affected*	*Setting*
Is Blastronix 1 hardware present?	Yes	IRQ-10 assigned to	Reserved
	No		PCI Device
Is Blastronix 2 hardware present?	Yes	IRQ-9 assigned to	Reserved
	No		PCI Device
Is Blastronix 3 hardware present?	Yes	IRQ-7 assigned to	Reserved
	No		PCI Device
Is DigiBoard hardware present?	Yes	IRQ-3 assigned to	Reserved
	No		PCI Device
Is MEI hardware present?	Yes	IRQ-11 assigned to	Reserved
	No		PCI Device
Is Ziatech hardware present?	Yes	IRQ-5 assigned to	Reserved
	No		PCI Device

.

Memory Resources

This screen is a sub-menu of PnP/PCI Configuration (pg 14).

```
                          Memory Resources

  IDE Auto- Detection        [Press Enter]           Item Help

  Extended IDE Drive         [Auto]          Menu Level    ▶
  Access Mode                [Auto]
                                             To auto-detect the
  Capacity                      0 MB         HDD's size, head... on
  Reserved Memory Base       [N/A]           this channel
x Reserved Memory Length       8K

  Cylinder                      0
  Head                          0
  Precomp                       0
  Landing Zone                  0
  Sector                        0
```

PC Health Status

```
                              PC Health Status
┌────────────────────────────────────────────┬─────────────────────────┐
│ CPU Warning Temperature    [Disabled]       │        Item Help        │
│ Current System Temp        51° C/123° F      ├─────────────────────────┤
│ Current CPUDIE Temp        30° C/86° F       │                         │
│ Current CPU Temperature    51° C/123° F      │ Menu Level    ▶         │
│ CPU Fan Speed              3835 RPM          │                         │
│ System Fan Speed           2636 RPM          │                         │
│ Vcore                      1.50 V            │                         │
│ + 1.5  V                   1.53 V            │                         │
│ + 3.3  V                   3.34 V            │                         │
│ + 5  V                     4.89 V            │                         │
│ +12 V                      12.09 V           │                         │
│ -12  V                     -12.52 V          │                         │
│ -  5  V                    -61.98 V          │                         │
│ VBAT(V)                    3.02 V            │                         │
│ 5VSB(V)                    4.82 V            │                         │
│ Shutdown Temperature       [Disabled]        │                         │
└────────────────────────────────────────────┴─────────────────────────┘
```

Frequency/Voltage Control

Frequency/Voltage Control		
Spread Spectrum	[Disabled]	Item Help
		Menu Level ▶