

# Notebook PC

## Configuring the BIOS

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Product Name: **Notebook PC BIOS**  
Manual Revision: **1.00 E1129**  
Release Date: **September 2002**

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## BIOS Setup Program

This Notebook PC supports a programmable EEPROM that stores the BIOS software and can be updated using the provided flash memory writer utility. This Section will guide you through the BIOS setup program by providing clear explanations for all the options. A default configuration has already been set. If you are either installing new devices or expanding main memory, you will need to enter the BIOS Setup to reconfigure your Notebook PC.

A battery backed-up CMOS RAM is used to record some basic system hardware information: clock, date, time, the error handling, and etc., even when the power is off. When the Notebook PC is turned back on, the system is configured with the values stored in the CMOS RAM.

The settings made in the BIOS Setup program intimately affect how the Notebook PC performs. It is important, therefore, to first understand all the Setup options, and second, to make settings appropriate for the way you use the Notebook PC.

The BIOS (Basic Input and Output System) Setup is a menu driven software utility that enables you to make changes to the system configuration and tailor your Notebook PC to reflect installed hardware, alter performance, and setup power saving functions. BIOS setup is used if you are setting up the Notebook PC for the first time, reconfiguring your system, or prompted to “**Run Setup**” during bootup. This section describes how to configure your system using this utility.

Even if you are not prompted to use the Setup program, at some time in the future you may want to change the configuration of your Notebook PC. For example, you may want to enable the Security Password Feature or make changes to the power management settings. It will then be necessary to reconfigure your system using the BIOS setup program so that the computer can recognize these changes and record them in the CMOS RAM of the EEPROM.

The Setup program has been designed to make it as easy to use as possible. It is a menu-driven program, which means you can scroll through the various sub-menus and make your selections among the predetermined choices.

**When you start up the computer, press [F2] to call up the Setup utility.**



**NOTE: Because the BIOS software is constantly being updated, the following BIOS screens and descriptions are for reference purposes only and may not exactly reflect your BIOS screens.**

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## Updating your BIOS

This Notebook PC supports an easy-to-use BIOS update software called “WINFLASH” which is installed through the provided support CD. If you need help installing or using “WINFLASH”, refer to the “**Driver & Utility Manual**”.

## BIOS Menu Bar



The top of the screen has a menu bar with the following selections:

- MAIN**            Use this menu to make changes to basic system configurations.
- DISPLAY**       Use this menu to make changes to the Notebook PC’s LCD display.
- ADVANCED**    Use this menu to enable and make changes to the advanced features
- SECURITY**    Use this menu to set passwords and control access to the BIOS setup menu.
- POWER**        Use this menu to configure and enable Power Management features.
- BOOT**          Use this menu to configure system devices used to load the Operating System.
- EXIT**          Use this menu to load or save settings and to exit the BIOS setup program.

To access the menu bar items, press the right or left arrow key on the keyboard until the desired item is highlighted.

## BIOS Legend Bar

At the bottom of the Setup screen you will notice a legend bar. The keys in the legend bar allow you to navigate through the various setup menus. The following table lists the keys found in the legend bar and those that are not with their corresponding alternates and functions.

### Navigation Key(s)    Function Description

|                           |  |
|---------------------------|--|
| [F1] or [Alt H]           | Displays the General Help screen from anywhere in the BIOS Setup   |
| [Esc] or [Alt X]          | Jumps to the Exit menu or returns to the main menu from a sub-menu |
| ← or → (keypad arrow)     | Selects the menu item to the left or right                         |
| ↑ or ↓ (keypad arrows)    | Moves the highlight up or down between fields                      |
| – (minus) or [F5]         | Scrolls backward through the values for the highlighted field      |
| + (plus) or [F6] or space | Scrolls forward through the values for the highlighted field       |
| [Enter]                   | Brings up a selection menu for the highlighted field               |
| [Home] or [PgUp]          | Moves the cursor to the first field                                |
| [End] or [PgDn]           | Moves the cursor to the last field                                 |
| [F9]                      | Resets the current screen to its Setup Defaults                    |
| [F10]                     | Saves changes and exits Setup                                      |

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## General Help

In addition to the Item Specific Help window, the BIOS setup program also provides a General Help screen. This screen can be called up from any menu by simply pressing [F1] or the [Alt] + [H] combination. The General Help screen lists the legend keys with their corresponding alternates and functions.

## Scroll Bar

When a scroll bar appears to the right of a help window, it indicates that there is more information to be displayed that will not fit in the window. Use [PgUp] and [PgDn] or the up and down arrow keys to scroll through the entire help document. Press [Home] to display the first page, press [End] to go to the last page. To exit the help window, press [Enter] or [Esc].

## Sub-Menu

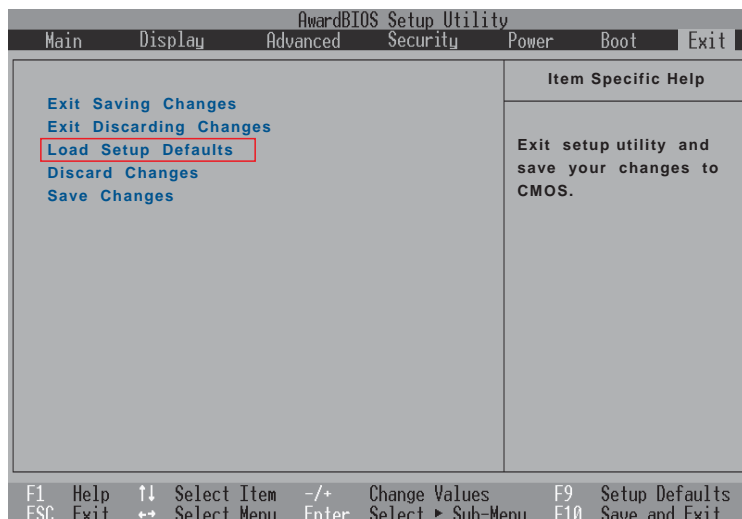


Note that a right pointer symbol (as shown in the left view) appears to the left of certain fields. This pointer indicates that a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. To call up a sub-menu, simply move the highlight to the field and press [Enter]. The sub-menu will then immediately appear. Use the legend keys to enter values and move from field to field within a sub-menu just as you would within a menu. Use the [Esc] key to return to the main menu.

Take some time to familiarize yourself with each of the legend keys and their corresponding functions. Practice navigating through the various menus and sub-menus. While moving around through the Setup program, note that explanations appear in the Item Specific Help window located to the right of each menu. This window displays the help text for the currently highlighted field.

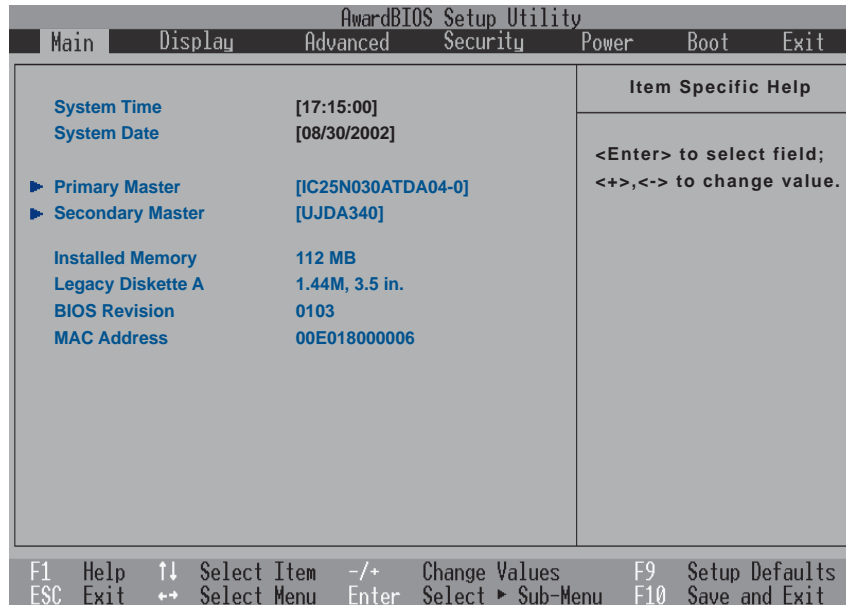
## Resetting Your BIOS

If you ever hear “resetting your BIOS”, it entails pressing [F2] on bootup to enter BIOS setup and then selecting **Load Setup Defaults** on the “Exit” menu.



## Main Menu

When the Setup program is accessed, the main menu screen appears as shown:



**NOTE:** In the following BIOS item descriptions, the item headings in square brackets represent the default settings for those fields.

### System Time

Sets your system to the time that you specify (usually the current time). The format is hour, minute, second. Insert the appropriate information. Use the [Tab] or [Shift Tab] keys to move between the hour, minute, and second fields.

### System Date

Sets your system to the date that you specify (usually the current date). The format is month, day, year. Type in the appropriate information. Use the [Tab] or [Shift Tab] keys to move between the month, day, and year fields.

**>Primary Master (described later)**

**>Secondary Master (described later)**

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### **Installed Memory [112 MB] (display field)**

This field displays the amount of extended memory as detected by the system after deducting any memory shared by the display. Unfortunately, this will not tell you how much is onboard and how much is added to the SO-DIMM socket. You must visually inspect the SO-DIMM socket if you are considering expanding your memory. You cannot make changes to this field. This is a display only field.

### **Legacy Diskette A [1.44M, 3.5 in.] (display field)**

Specifies the type of disk used as drive A. The configuration options are: [None] [1.44M, 3.5 in.]

### **BIOS Revision [0103] (display field)**

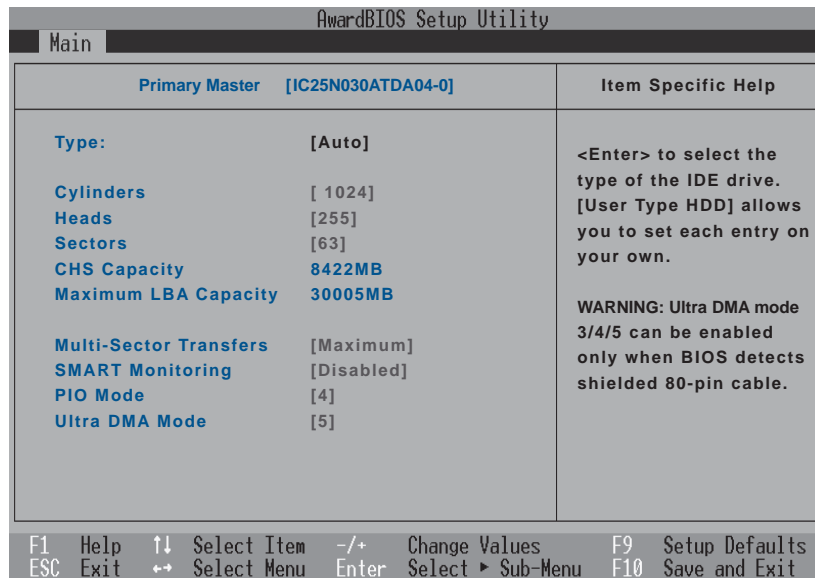
This displays the current BIOS version in the Notebook PC's flash EEPROM.

### **MAC Address [00E018000006] (display field)**

This displays the MAC address of the internal network device. The MAC address should be different on each computer or networking device.

## Primary Master (sub-menu)

This field is used to configure the primary IDE drive installed in the system. To configure a hard disk drive, select this sub-menu from the **Main** menu and press the Enter key to enter this sub-menu.



**NOTE:** Before attempting to configure a hard disk drive, make sure you have the configuration information supplied by the manufacturer of the drive. Incorrect settings may cause your system to not recognize the installed hard disk. To allow the BIOS to detect the drive type automatically, select **[AUTO]**.

### Type: [Auto]

Select **Auto** to automatically detect an IDE type drive. This option only works with standard built-in IDE drives. If automatic detection is successful, the correct values will be filled in for the remaining fields on this sub-menu.

To configure a drive manually, select **User Type HDD**. Manually enter the number of cylinders, heads and sectors per track for your drive. Refer to your drive documentation or look on the drive for this information. If no drive is installed or if you are removing a drive and not replacing it, select **None**. Set the type to **CD-ROM** to support a CD-ROM or DVD-ROM drive.

### Translation Method

Translation method allows you to select the sector addressing method. **Match Partition Table** is recommended if there is already an OS on the hard drive you are installing to this Notebook PC. **Manual** allows you to specify cylinders, heads, and sectors. **[LBA]** When Logical Block Addressing is enabled, 28-bit addressing of the hard drive is used without regard for cylinders, heads, or sectors. Note that Logical Block Access may decrease the access speed of the hard disk. However, LBA Mode is necessary for drives with greater than 504MB in storage capacity. The configuration options are: **[LBA]** **[LARGE]** **[Normal]** **[Match Partition Table]** **[Manual]**

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## Cylinders [ ]

This field configures the number of cylinders. Refer to your drive documentation to determine the correct value to enter into this field. **NOTE:** To make changes to this field, the **Type** field must be set to **User Type HDD** and “Translation Method” must be set to **Manual**.

## Heads [ ]

This field configures the number of read/write heads. Refer to your drive documentation to determine the correct value to enter into this field. **NOTE:** To make changes to this field, the **Type** field must be set to **User Type HDD** and “Translation Method” must be set to **Manual**.

## Sectors [ ]

This field configures the number of sectors per track. Refer to your drive documentation to determine the correct value to enter into this field. **NOTE:** To make changes to this field, the **Type** field must be set to **User Type HDD** and “Translation Method” must be set to **Manual**.

## CHS Capacity [ ]

This field shows the drive’s CHS capacity calculated automatically by the BIOS from the drive information you entered.

## Maximum LBA Capacity [ ]

This field shows the drive’s maximum capacity calculated automatically by the BIOS from the drive information you entered.

## Multi-Sector Transfers [Maximum]

This option automatically sets the number of sectors per block to the highest number supported by the drive. This field can also be configured manually. Note that when this field is automatically configured, the set value may not always be the fastest value for the drive. Refer to the documentation that came with your hard drive to determine the optimal value and set it manually. **NOTE:** To make changes to this field, the **Type** field must be set to **User Type HDD**. The configuration options are: [Disabled] [2 Sectors] [4 Sectors] [8 Sectors] [16 Sectors] [32 Sectors] [Maximum]

## SMART Monitoring [Disabled]

Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.) is an interface between a computer's BIOS and hard disk. It is a feature of the Enhanced Integrated Drive Electronics (EIDE) technology that controls access to the hard drive. If S.M.A.R.T is enabled, the BIOS can receive analytical information from the hard drive and determine whether to send the user a warning message about possible future failure of the hard drive. Ideally, this should allow you to take proactive actions to prevent impending disk crashes.

## PIO Mode [ ]

When enabled, this option speeds up communication between the system and the IDE controller by using enhanced I/O transfer modes (PIO Modes). **NOTE:** To make changes to this field, the **Type** field must be set to **User Type HDD**. The configuration options are: [0] [1] [2] [3] [4]



## Ultra DMA Mode [ ]

This field auto detects Ultra DMA capability (for improved transfer speeds and data integrity) for compatible IDE (Integrated Disk Electronics) devices. Set to Disable to suppress Ultra DMA capability.

**NOTE:** To make changes to this field, the **Type** field must be set to **User Type HDD**. The configuration options are: [0] [1] [2] [3] [4] [5] [Disabled]. The following is for your reference:

|                            |                            |
|----------------------------|----------------------------|
| Mode 0 = 16.7MB/s          | Mode 1 = 25.0MB/s          |
| Mode 2 = 33.3MB/s (ATA/33) | Mode 3 = 44.4MB/s          |
| Mode 4 = 66.7MB/s (ATA/66) | Mode 5 = 100MB/s (ATA/100) |

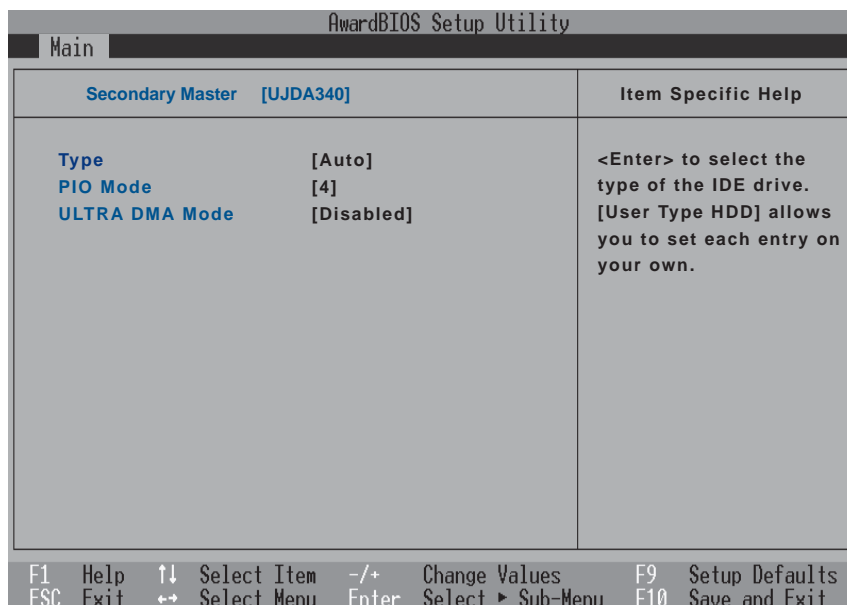


**NOTE:** After using the legend keys to make your selections on this sub-menu, press the [Esc] key to exit back to the Main menu. When the Main menu appears, you will notice that the drive size appears in the field for the hard disk drive that you just configured.

## Secondary Master (sub-menus)

This field is used to configure the secondary IDE drive installed in the system. To configure a hard disk drive, select this sub-menu from the **Main** menu and press the Enter key to enter this sub-menu.

The fields and options on this sub-menu are the same as the previous menu described earlier. Leave on the default setting of Auto.



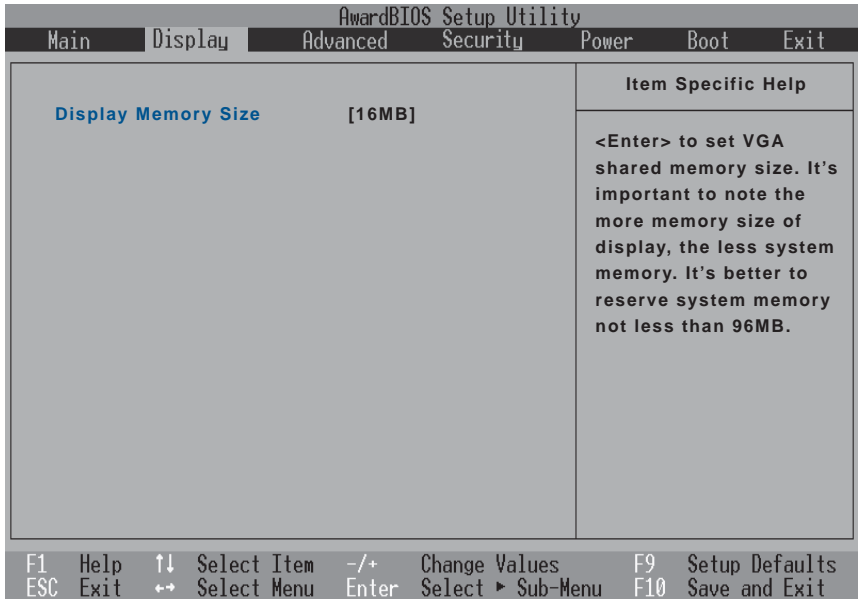
**NOTE:** The Secondary drive displayed here is for example only. The actual display will be dependent on the drive you have installed in your Notebook PC. After using the legend keys to make your selections in this sub-menu, press the [Esc] key to return to the Main menu.

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## Display Menu

Selecting Display from the main menu bar displays the Display menu as shown below.

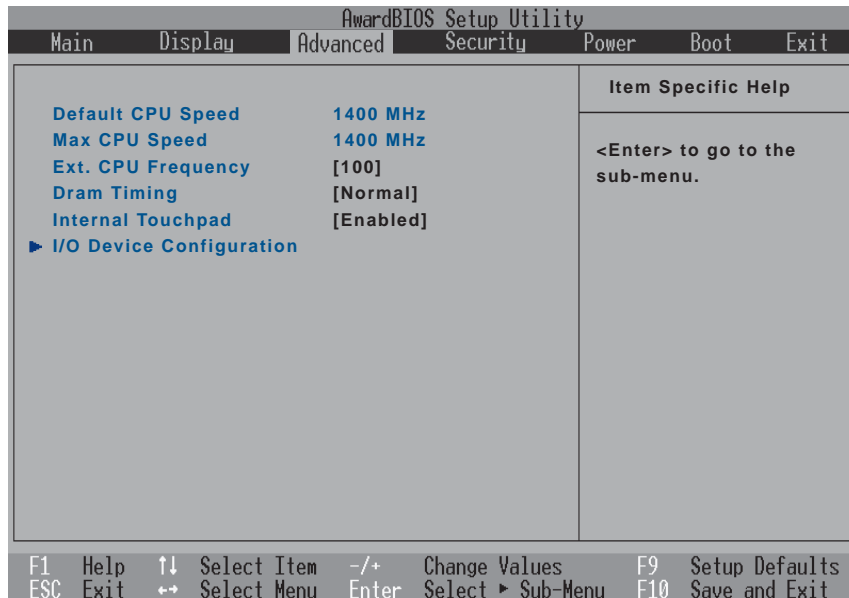


### Display Memory Size [16 MB]

The display memory is shared with the system memory. This sets the memory allocated to the display. The configuration options are: [16MB] [32MB] [64MB]

## Advanced Menu

Selecting Advanced from the main menu bar displays the Advanced menu as shown below.



### Default CPU Speed [1400 MHz] (display field)

This displays the normal speed of the Notebook PC's CPU.

### Max CPU Speed [1400 MHz] (display field)

This displays the current speed of the Notebook PC's CPU in case overclocking was made.

### Ext. CPU Frequency [100]

This sets the current external CPU frequency. You can select higher frequencies in order to overclock the CPU (increase performance). Be aware that overclocking the CPU will put increased stress on the CPU which may cause computer crashes or shortened life of the CPU. The configuration options are: [100]...[140]

### Dram Timing [Normal]

This sets the current memory frequency. You can select slower or faster frequencies in order to decrease or increase performance. Be aware that overclocking the memory will put increased stress on the memory which may cause computer crashes or shortened life of the memory. The configuration options are: [Safe] [Normal] [Fast] [Extreme]

### Internal Touchpad [Enabled]

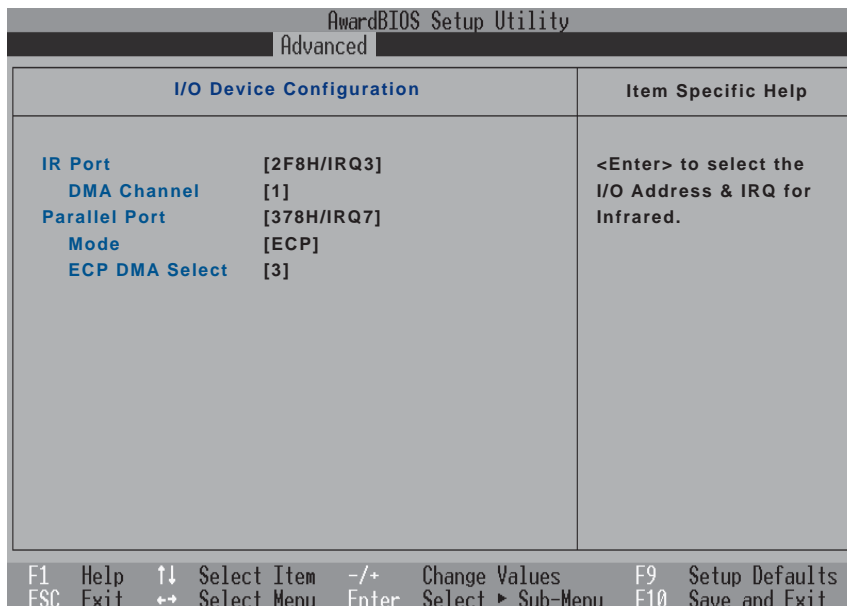
This allows you to turn ON or OFF the Notebook PC's built-in touchpad. Some external pointing devices have extra functions that may not function without turning OFF the Notebook PC's touchpad. The configuration options are: [Enabled] [Disabled]

### >I/O Device Configuration (described on next page)

Pressing [Enter] when this field is highlighted calls up a sub-menu for configuring the Notebook PC's serial and parallel ports.

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## I/O Device Configuration (sub-menu)



**NOTE:** The presence of sub-items in this menu is dependent on certain relevant settings.



**WARNING!** Changing the default address and IRQ settings for Serial Port or Parallel Port can cause conflicts with other system devices or installed peripherals.

### IR Port [2F8H/IRQ3]

This field allows you to configure the Notebook PC's serial COM1 port. The configuration options are: [3F8H/IRQ4] [2F8H/IRQ3] [3E8H/IRQ4] [2E8H/IRQ3] [Disabled]

### DMA Channel: [1]

The **DMA Channel** field allows you to configure the Parallel port DMA Channel for the selected **ECP** mode. The configuration options are: [1] [3]

## **Parallel Port: [378H/IRQ7]**

This field allows you to configure the Notebook PC parallel port. The configuration options are: [Disabled] [3BCH/IRQ7] [378H/IRQ7] [278H/IRQ5]

### **Mode: [ECP]**

This field allows you to configure the Notebook PC parallel port transmission mode. The configuration options are: [Normal] [EPP] [ECP]

**EPP Mode:** When the **EPP** mode is selected, the standard and bidirectional modes are also available. The EPP operates on a two phase cycle. First, the host selects the register within a device for subsequent operations. Second, the host performs a series of read and/or write byte operations to the selected register. There are four operations supported by EPP: Address Write, Data Write, Address Read, and Data Read. All operations are performed asynchronously.

**ECP Mode:** The port is both software and hardware compatible with existing parallel ports so that it may be used as a standard printer mode if ECP is not required. ECP mode provides an automatic high burst-bandwidth channel that supports DMA for ECP in both the forward (host to peripheral) and reverse (peripheral to host) direction.

### **ECP DMA Select: [3]**

This field allows you to configure the Parallel port DMA Channel for the selected **ECP** mode. The configuration options are: [1] [3]



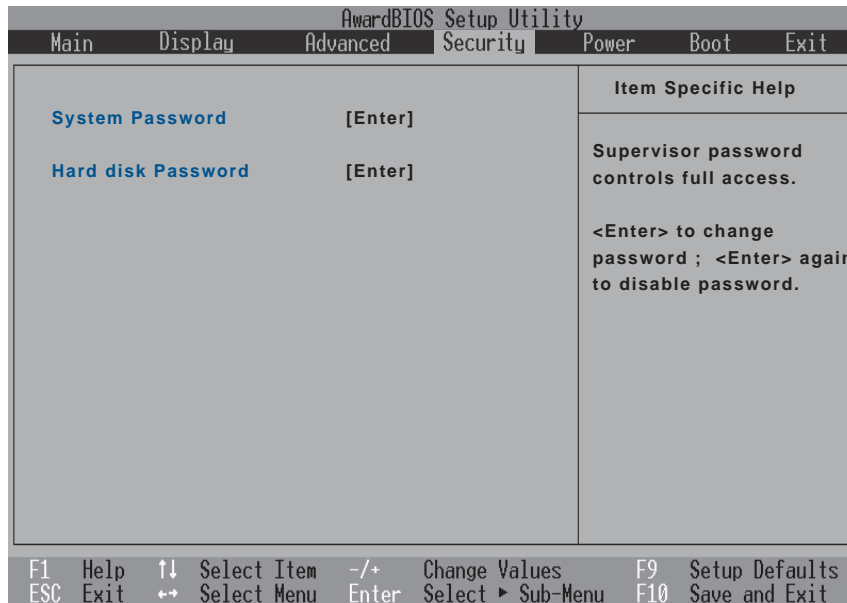
**NOTE:** After using the legend keys to make your selections for the I/O Device Configuration sub-menu, press the [Esc] key to exit back to the Advanced menu.

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## Security Menu

The Notebook PC's advanced system of security allows you to set a password to prevent unauthorized access to system resources, data, and the BIOS Setup Program. This Section covers each parameter of the Security Setup. Selecting Security from the menu bar displays the following menu:



The BIOS Setup program allows you to specify passwords in the Security menu. The passwords control access to the BIOS and certain Security menu options during system startup. The passwords are not case sensitive. In other words, it makes no difference whether you enter a password using upper or lowercase letters.

The BIOS Setup program allows you to specify two separate passwords: a Supervisor password and a User password. When disabled, anyone may access all BIOS Setup program functions. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full access to all Security menu options.

### **System Password [Enter]**

The system password protects the BIOS settings. When “Enabled”, you will be prompted for a password after you press [F2] to enter BIOS setup.

**To Enable:** Select “Enter” and press [Enter], type a password and press [Enter], type the same password again and press [Enter] to confirm. (You can type up to eight alphanumeric characters. Symbols and other keys are ignored.)

**To Disable:** Select “Set” and press [Enter] without entering a password.

### **Hard Disk Password [Enter]**

A hard disk password places a protection on the hard disk drive so that a password is necessary in order to access the hard disk drive. When “Enabled”, the hard disk drive will be protected as follows:

- The protected hard disk drive will prompt for a password when accessed on the Notebook PC.
- The protected hard disk drive cannot be used as a master or slave drive on another computer.
- The protected hard disk drive cannot be formatted.

**To Enable:** Select “Enter” and press [Enter], type a password and press [Enter], type the same password again and press [Enter] to confirm. (You can type up to eight alphanumeric characters. Symbols and other keys are ignored.)

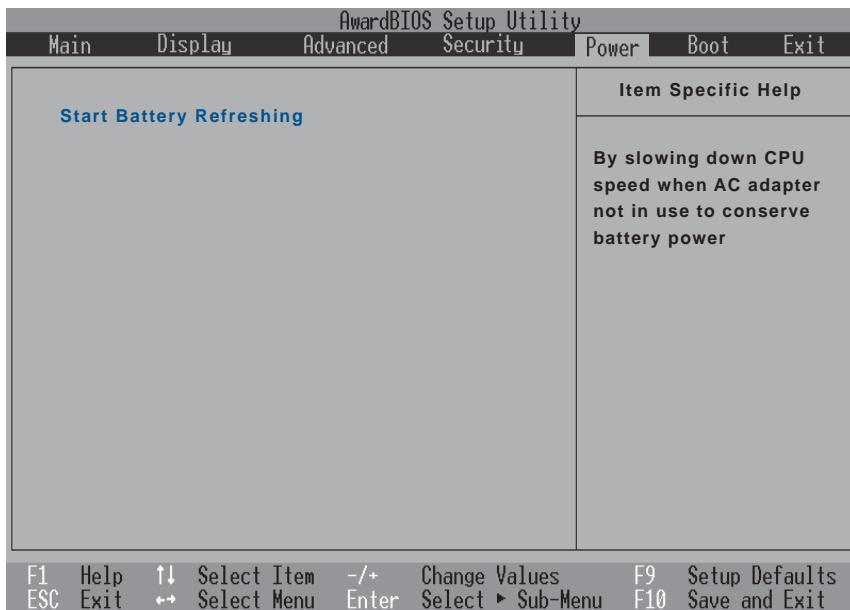
**To Disable:** Select “Set” and press [Enter], enter the password and press [Enter].

**NOTE:** If “Password on Boot” and “Hard Disk Password” are both “Enabled”, the “Hard Disk Password” will be required first.

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## Power Menu

The power management settings are controlled by the operating system. This menu only has one function as follows:



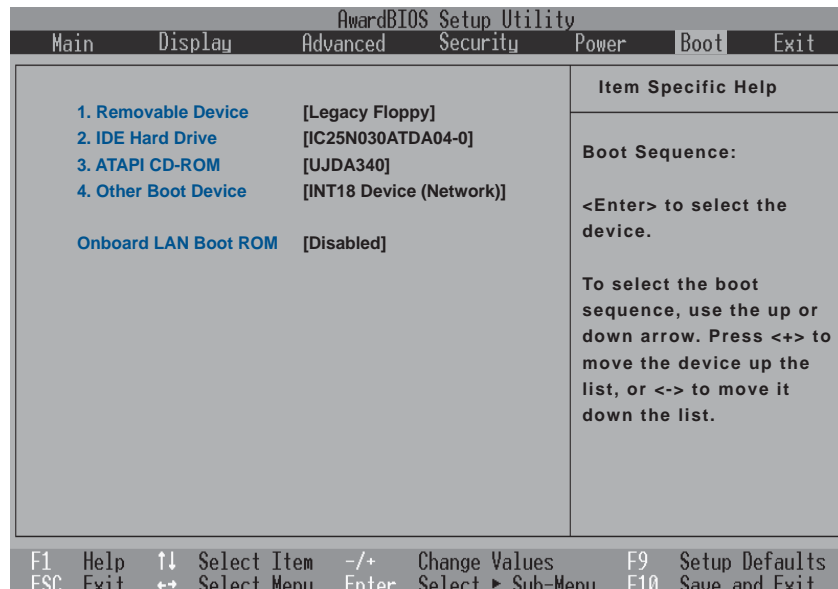
### Start Battery Refreshing

This function will start a software program to remove memory effects in the battery and recalibrate the battery gauge. Even though this Notebook PC uses a Lithium-Ion battery which is not prone to memory effects, memory effects will still occur at the end of the battery's life cycle. Remember that all rechargeable batteries only have a definite number of charge and discharge cycles depending on environment and quality of the battery pack. **Follow the instructions shown on the screen.**



## Boot Menu

The Boot menu allows the user to specify the order in which the Notebook PC is to check for a device to boot the system. To make changes, select **Boot** from the menu bar and the following screen appears:



### Boot Sequence

1. **Removable Device**
2. **IDE Hard Drive**
3. **ATAPI CD-ROM**
4. **Other Boot Device**

**Onboard LAN Boot ROM** - Select Network drive bootup capability as [Disabled] or [Enabled].

The Boot menu allows you to select among the three possible boot devices listed using the up and down arrow keys. By using the [+] or [Shift =] keys, you can promote devices and by using the [-] key, you can demote devices. Press [Enter] to select the specific device or **Disabled** to never boot from that device.

Promotion or demotion of devices alters the priority which the system uses to search for a boot device on system power up. The following are explanations of the devices listed in the boot sequence:

**Removable Device** refer to the floppy disk used in the internal or USB floppy disk drive.

**IDE Hard Drive** refers to the internal built-in hard disk drive.

**ATAPI CD-ROM** refers to either the built-in CD-ROM drive or DVD-ROM drive.

**Other Boot Device** currently refers to booting from a network drive.

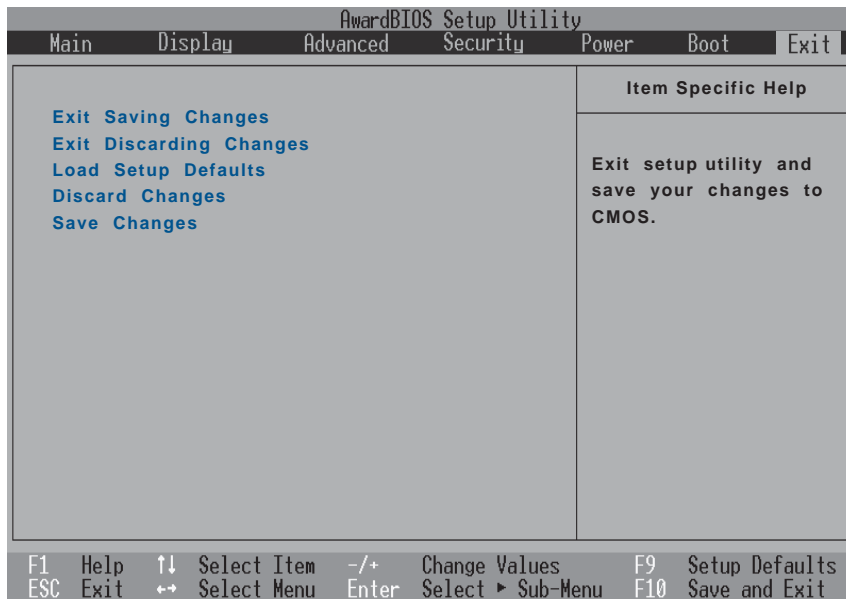
**NOTE:** To boot from LAN, set this item to the top and Enable “Onboard LAN Boot ROM”.

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## Exit Menu

Once you have made all of your selections from the various menus in the Setup program, you should save your changes and exit Setup. Select **Exit** from the menu bar to display the following menu:



**NOTE:** Pressing the [Esc] key does not exit this menu. You must select one of the options from this menu or a menu bar item to exit this menu.

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### Exit Saving Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the Notebook PC is turned off. Once this option is selected, a confirmation is asked. Select **Yes** to save changes and exit.

### Exit Discarding Changes

This option should only be used if you do not want to save the changes you have made to the Setup program. If you have made changes to the fields other than system date, system time, and password, the system will ask for confirmation before exiting.

### **Load Setup Defaults**

This option allows you to load the default values for each of the parameters on the Setup menus. When this option is selected or if [F9] is pressed, a confirmation is requested. Select **Yes** to load default values programmed into the BIOS file (the default values may change from one BIOS version to another). You can now select **Exit Saving Changes** or make other changes before saving the values to the EEPROM.

### **Discard Changes**

This option allows you to discard the selections you made and restore the values you previously saved. After selecting this option, all selections are updated and a confirmation is requested. Select **Yes** to discard any changes and load the previously saved values.

### **Save Changes**

This option saves your selections without exiting the Setup program. You can then return to other menus and make changes. After selecting this option, all selections are saved and a confirmation is requested. Select **Yes** to save any changes to the EEPROM.

