IEI Integration Corp.

MODEL:

ICECARE-10W Series

10.1” Mobile Sales Assistant with Intel® Core™ i7/Atom™/Celeron® CPU, DDR3 SDRAM, 802.11b/g/n Wireless, Bluetooth, RFID, USB, Micro HDMI, MSR, SCR, RoHS Compliant, IP 54 Compliant Front Panel

User Manual

Rev. 1.01 – 2 April, 2014

RoHS Lead Free

Revision

Date	Version	Changes
2 April, 2014	1.01	Modified the CPU specifications of the model with Intel® Celeron® processor. Modified Section 3.7: Testing Smart Card Reader
18 December, 2013	1.00	Initial release

Copyright

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TRADEMARKS

All registered trademarks and product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective owners.

WARNING

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/ TV technician for help.

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void your authority to operate such equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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Introduction

1.1 Overview

Figure 1-1: ICECARE-10W Series

The ICECARE-10W Series is a mobile sales assistant with a 10.1 inch touchscreen and an IP 54 compliant front panel. The ICECARE-10W Series features an Intel® Atom™ processor N2600, Intel® Celeron® processor 1007U or Intel® Core™ i7-3517U processor with DDR3 SDRAM memory.

Storage needs are met by the preinstalled 32 GB mSATA PCIe Mini module with Windows Embedded Standard 7 P operating system.

Wireless networking is enabled through an 802.11b/g/n wireless adapter. A Bluetooth v3.0 module provides a connection to Bluetooth devices. Two USB 2.0 ports and one Micro HDMI port are available on the side panel for peripherals.

The ICECARE-10W Series also features an RFID reader, an optional barcode scanner, an optional magnetic stripe card reader and an optional smart card reader for advanced data acquisition.

1.2 Features

Some of the standard features of the ICECARE-10W Series include:

- 10.1” TFT XGA LCD
- Intel® Core™ i7-3517U processor, Intel® Atom™ processor N2600 or Intel® Celeron® processor 1007U supported
- Support RFID reader
- Support Bluetooth and Wi-Fi wireless connection
- Optional 1D/2D barcode scanner, optional magnetic stripe reader and optional smart card reader
- IP 54 compliant front panel protection
- Windows® Embedded Standard 7 P OS
- RoHS compliant

1.3 Model Variations

There are six models of the ICECARE-10W Series. All of the models support 802.11b/g/n wireless and Bluetooth connection and are equipped with the multi-touch projected capacitive touchscreen and a 32 GB SSD module. The model numbers and model variations are listed below.

ICECARE-10W	CPU	Memory	Barcode	MSR	SCR	IPS Panel
-R10	Intel® Atom™ N2600 1.6GHz	2.0 GB	1D/2D	Yes	Yes	N/A
-ET-R10	Intel® Atom™ N2600 1.6GHz	2.0 GB	N/A	N/A	N/A	N/A
-CE-R10	Intel® Celeron® 1007U 1.5GHz	4.0 GB	1D/2D	Yes	Yes	N/A
-CE-ET-R10	Intel® Celeron® 1007U 1.5GHz	4.0 GB	N/A	N/A	N/A	N/A
-I7-R10	Intel® Core™ i7-3517U 1.9GHz	4.0 GB	1D/2D	Yes	Yes	Yes
-I7-ET-R10	Intel® Core™ i7-3517U 1.9GHz	4.0 GB	N/A	N/A	N/A	Yes

Table 1-1: Model Variations

1.4 Front Panel

The front panel of the ICECARE-10W Series has a 10.1” TFT LCD with a multi-touch proected capacitive touchscreen. Four LED indicators are also located on the front panel.

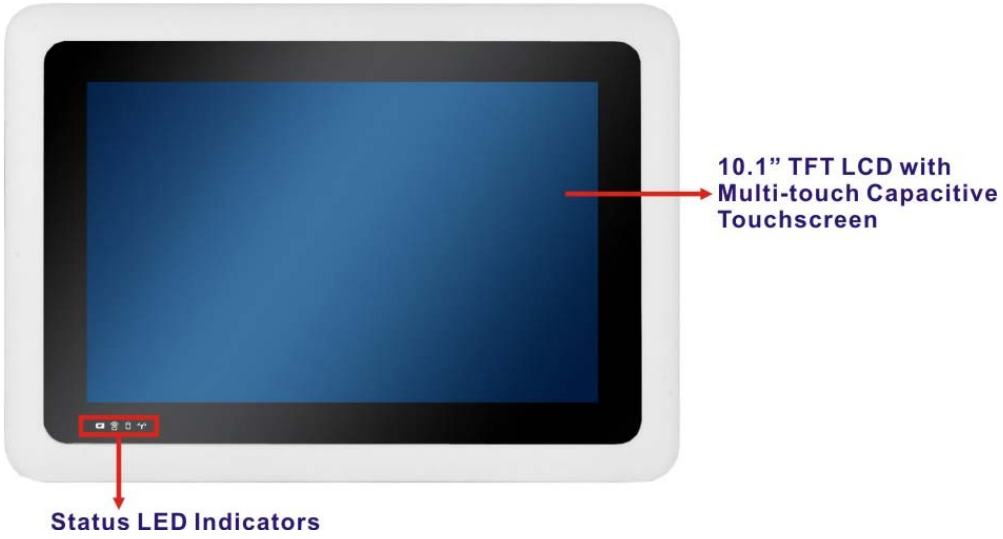


Figure 1-2: Front Panel

1.4.1 Status Indicators

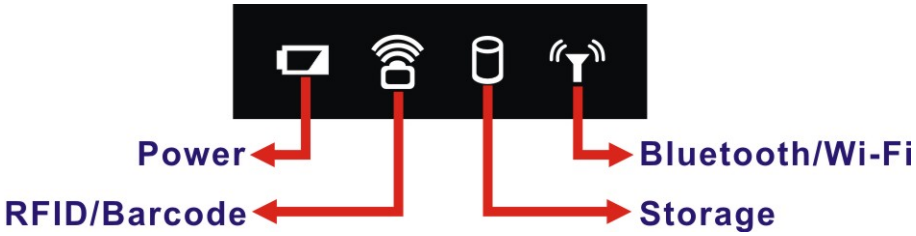


Figure 1-3: Front Panel LED Indicators

There are four LED indicators on the front panel of the ICECARE-10W Series as show in the figure above. Following are descriptions of their functions:

Status Indicator	Description
Power/Battery 	**Off:** the system is off or the system is fully charged **Solid red:** the system is being charged. **Blinking red:** the battery is low (below 9%). **Solid blue:** the system is turned on. **Solid purple**: the system is turned on and being charged.
RFID/Barcode 	**Off:** the barcode scanner or the RFID reader is off **Solid red:** the barcode scanner is turned on **Solid blue:** the RFID reader is turned on **Solid purple**: the barcode scanner and the RFID reader are both turned on
Storage 	**Off:** the hard drive is not accessed (when the system is on) or the system is off without standby power (AC power off). **Solid red:** the hard drive is accessed **Solid blue:** the system is off and being charged (or with standby power) **Blinking blue:** The system suspends to RAM (S3)
Bluetooth/Wi-Fi 	**Off:** Bluetooth RF is off or Wi-Fi RF is not active **Solid red:** Bluetooth RF is turned on **Solid blue:** Wi-Fi RF is active **Solid purple**: Bluetooth and Wi-Fi are both turned on

Table 1-2: Status Indicators

1.5 Rear Panel

The rear panel has an RFID reader, a speaker and an optional barcode scanner.

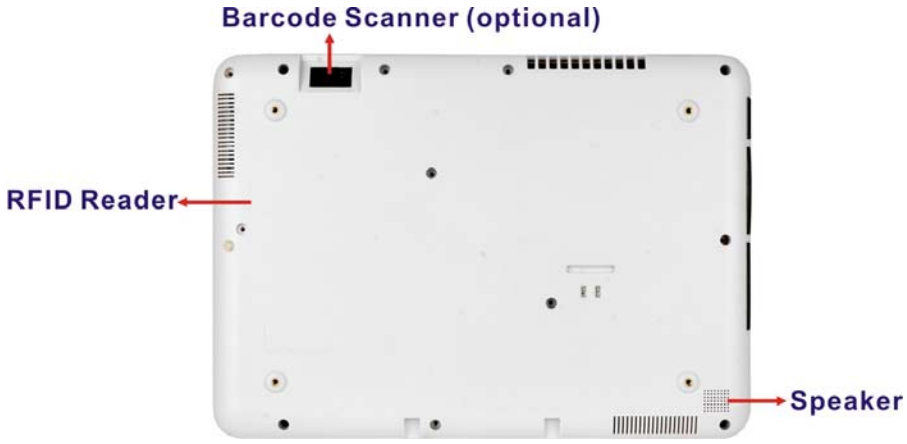


Figure 1-4: Rear Panel

1.6 Side Panels

The side panels have connectors, button and readers as shown in Figure 1-5.

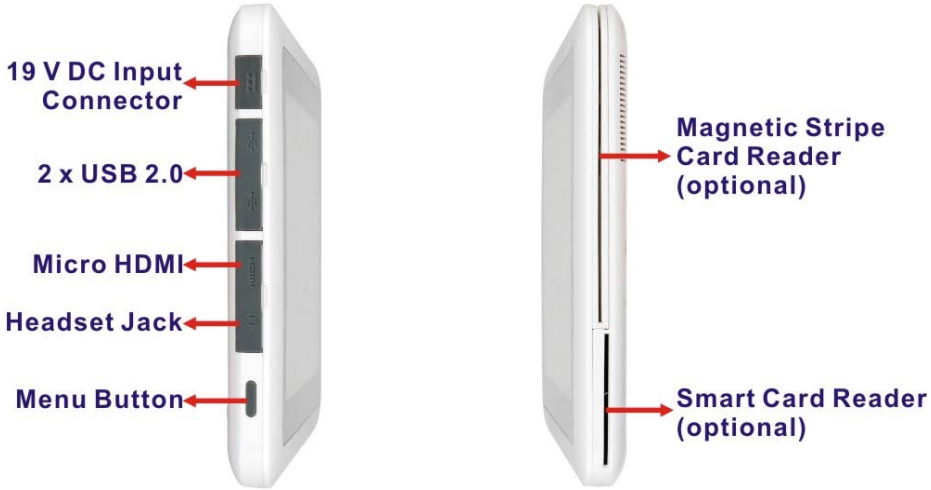


Figure 1-5: Side Panels

The menu button has two functions:

- Short press: turn on the barcode scanner
- Long press: act as a Ctrl+ Alt+Del key combination

1.7 Top Panel

The power button is located on the top panel. To power-up the system, long press the power button for few seconds until the power status LED on the front panel lights up in blue.

Figure 1-6: Top Panel

1.8 Technical Specifications

The technical specifications for the ICECARE-10W Series are listed in the table below.

System	ICECARE-10W Series
CPU and Chipset	1.6GHz Intel® Atom™ processor N2600 with Intel® NM10 chipset, 1.5GHz Intel® Celeron® processor 1007U with Intel® HM76 chipset or 1.9GHz Intel® Core™ i7-3517U processor with Intel® HM76 chipset
Memory	On-board 4.0 GB 1333 MHz DDR3 SDRAM (2.0 GB for N2600 models)
OS	Microsoft Windows Embedded Standard 7 P (WES7P)
Storage	1 x 32 GB mSATA PCIe Mini module with 3Gb/s data transfer rate
Audio	1 x Speaker
Barcode Scanner	1D laser/2D imager barcode scanner (optional)
MSR	1 x Magnetic stripe card reader with hardware encryption (optional)
SCR	1 x Smart card reader (optional)
Display	
LCD	10.1” TFT LCD with projected capacitive touchscreen
Max. Resolution	1280 x 800 (WXGA)
Brightness	250 cd/m^2 (350 cd/m^2 for I7 models)
Viewing Angle (H/V)	150/145
Backlight	LED backlight
Touchscreen	Multi-touch capacitive screen with five simultaneous-detection points

Communication	
Wireless LAN	802.11b/g/n
Bluetooth	Bluetooth v3.0
RFID	13.56 MHz RFID compliant with 14443A and 14443B
Power	
Power Input	19 V DC input
Power Adapter	Input AC: 100 V ~ 240 V Output DC: 19 V DC, 2.1 A
Battery	14.8 V 3500 mAh Lithium Ion Battery (non-removable)
Physical Character	
Construction Material	Plastic
Dimensions (W x H x D)	290.0 mm x 206.5 mm x 22.5 mm
Operation Temperature	0ºC ~ 40ºC
Storage Temperature	-20ºC ~ 60ºC
Humidity	5% ~ 95% non-condensing
Net weight	1.2 kg
IP level (front panel)	IP 54
Drop Survival	1.2 m with optional protective cover
Safety	CE, FCC Class B, FCC ID
Connectors and Buttons	
I/O Ports and Buttons	1 x 19 V DC input connector 2 x USB 2.0 ports 1 x Micro HDMI port 1 x Headset jack 1 x Menu button 1 x Power button 1 x Magnetic stripe card reader (optional) 1 x Smart card reader (optional)
Front Panel LED Indicators	1 x Power/Battery status LED 1 x Barcode/RFID status LED 1 x Storage LED 1 x Wi-Fi LED

Table 1-3: Technical Specifications

1.9 Dimensions

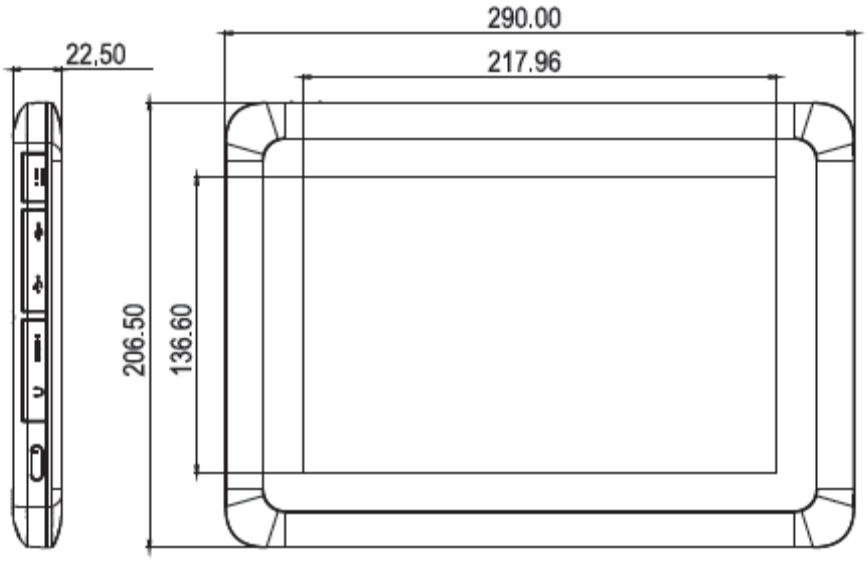


Figure 1-7: Dimensions (units in mm)

Chapter

2

Unpacking

2.1 Unpack the System

To unpack the ICECARE-10W Series, follow the steps below:

WARNING!

Only remove the protective plastic cover stuck to the front screen after installation. The plastic layer protects the monitor surface during installation process.

Step 1: Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

Step 2: Open the box.

Step 3: Lift the ICECARE-10W Series out of the boxes.

Step 4: Remove the peripheral parts box from the main box.

2.2 Packing List

NOTE:

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor the ICECARE-10W Series was purchased from or contact an IEI sales representative directly by sending an email to sales@ieiworld.com.tw.

The ICECARE-10W Series is shipped with the following components:

Quantity	Item	Image
1	ICECARE-10W Series mobile sales assistant	
1	Power adapter	
1	Utility CD	
1	Recovery CD	

Table 2-1: Packing List

Chapter

3

Hardware Installation

3.1 Installation Considerations

NOTE:

The following installation notices and installation considerations should be read and understood before installation. All installation notices must be strictly adhered to. Failing to adhere to these precautions may lead to severe damage and injury to the person performing the installation.

WARNING:

The installation instructions described in this manual should be carefully followed in order to prevent damage to the components and injury to the user.

Before and during the installation please **DO** the following:

- **Read the user manual**:
  The user manual provides a complete description of the ICECARE-10W Series installation instructions and configuration options.
- **Wear an electrostatic discharge cuff (ESD)**:
  Electronic components are easily damaged by ESD. Wearing an ESD cuff removes ESD from the body and helps prevent ESD damage.
- **Place the ICECARE-10W Series on an antistatic pad**:
  When installing or configuring the motherboard, place it on an antistatic pad. This helps to prevent potential ESD damage.
- **Turn all power to the ICECARE-10W Series off**:
  When working with the ICECARE-10W Series, make sure that it is disconnected from all power supplies and that no electricity is being fed into the system.

Before and during the installation of the ICECARE-10W Series **DO NOT:**

- Remove any of the stickers on the PCB board. These stickers are required for warranty validation.
- Use the product before verifying all the cables and power connectors are properly connected.
- Allow screws to come in contact with the PCB circuit, connector pins, or its components.

3.2 Charge the Sytem

To charge the ICECARE-10W Series, follow the steps below.

Step 1: Connect the ICECARE-10W Series with a power source through the power adapter came with the package.

Step 2: The system starts to charge the battery and the power status LED lights up in red indicating the battery is being charged. When the battery is fully charged, the power status LED turns off.

Figure 3-1: Power Input Connector and Power LED Indicator

Step 3: The user can also turn on the system to check the battery capacity via the Windows Embedded 7 power management screen (**Figure 3-2**).

Figure 3-2: Windows Embedded 7 Power Management Screen

3.3 Power-up the System

To power-up the system, push the power button on the top panel for few seconds until the power status LED on the front panel lights up in blue.

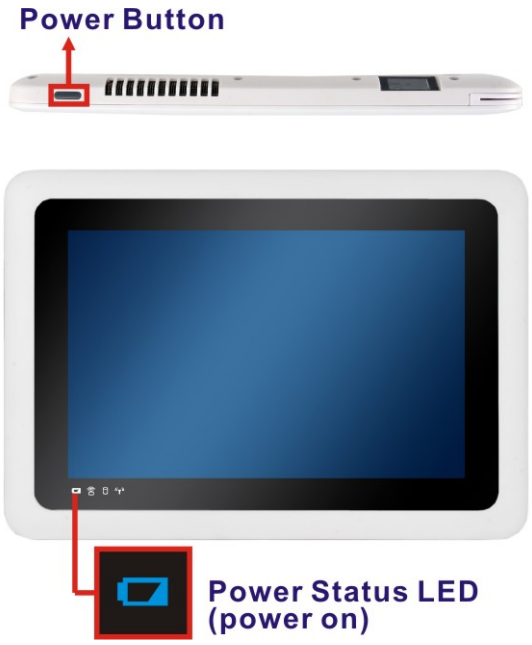


Figure 3-3: Power Button and Power LED Location

NOTE:

When the battery is low (below 9%), the power status LED blinks in red. Please refer to the instruction described in Section 3.1 to charge the sytem.

3.4 Using RFID Reader

There is a RFID reader on the rear panel. To use the RFID reader, follow the steps below.

Step 1: Check the RFID status indicator on the front panel to make sure the RFID function is enabled (see **Section 1.4.1**). The RFID function is enabled by default in the BIOS menu. If the RFID reader is disabled, please go to **Chipset** → **PCH-IO Configuration** BIOS menu to enable it (refer to **Section 5.4.1**).

Step 2: Follow the instruction described in **Section 4.7** to install the RFID driver.

Step 3: Double click the **PcscTool** icon in the RFID folder in the driver CD.

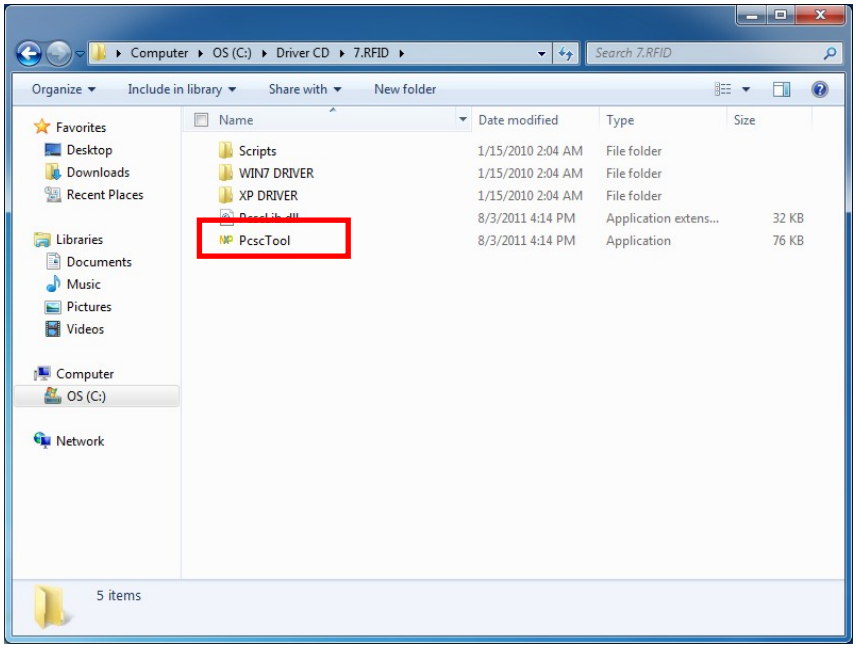


Figure 3-4: PcscTool Location

Step 4: The NXP PCSC Tool window appears (**Figure 3-5**).

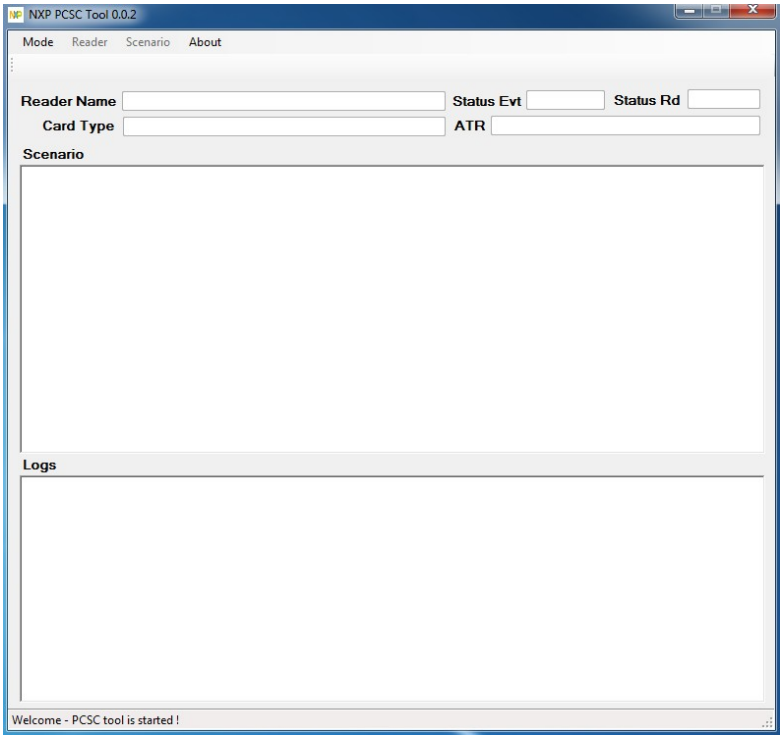


Figure 3-5: NXP PCSC Tool Screen

Step 5: Select **Automatic** from the Mode menu (**Figure 3-6**).

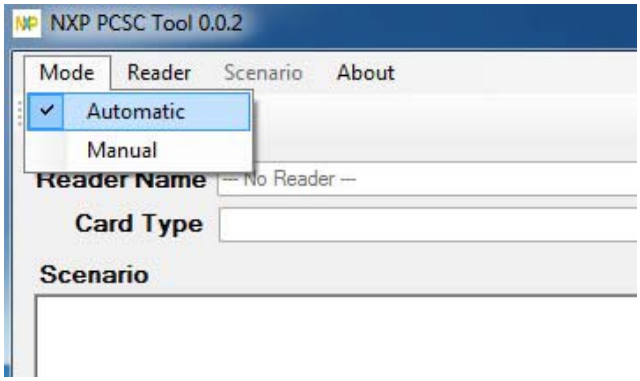


Figure 3-6: NXP PCSC Tool – Mode Selection

Step 6: Choose **Select a Reader** from the Reader menu (**Figure 3-7**).

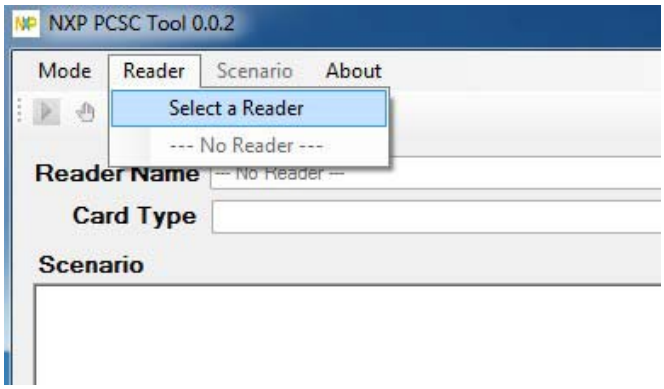


Figure 3-7: NXP PCSC Tool – Reader Selection

Step 7: The Select the reader window prompts. Select a RFID reader and click **OK**. See **Figure 3-8**.

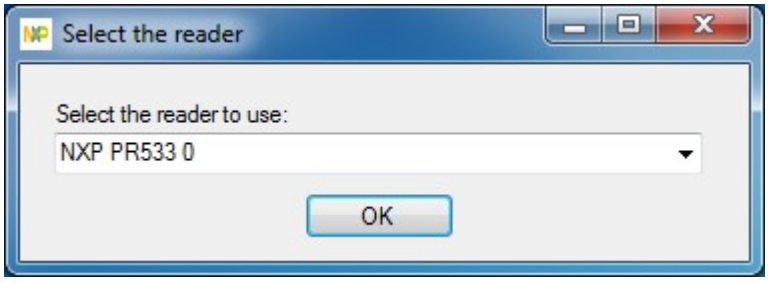


Figure 3-8: NXP PCSC Tool – Select the Reader

Step 8: Click the Arrow button shown in **Figure 3-9** to read RFID card.

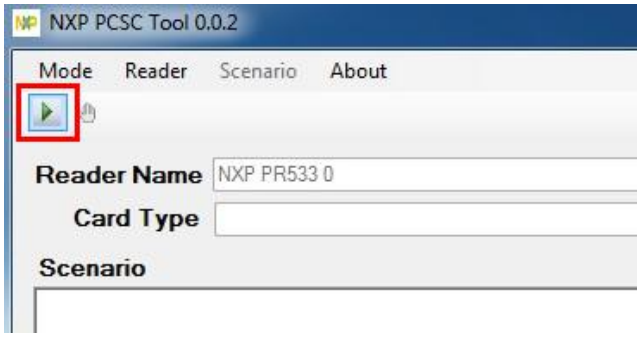


Figure 3-9: NXP PCSC Tool – Read RFID Card

Step 9: Use the RFID reader to read a RFID card. The RFID reader is located on the rear panel as shown in **Figure 3-10**. The card information will be shown in the Scenario and Logs columns of the PCSC Tool.

Figure 3-10: RFID Reader Location

3.5 Using Barcode Scanner

Some models of the ICECARE-10W Series have a barcode scanner on the rear panel. To use the barcode scanner, follow the steps below.

Step 1: Check the barcode status indicator on the front panel to make sure the barcode function is enabled (see **Section 1.4.1**). The barcode function is enabled by default in the BIOS menu. If the barcode scanner is disabled, please go to

Chipset → PCH-IO Configuration BIOS menu to enable it (refer to **Section 5.4.1**).

Step 2: Install EasySet barcode scanner program. Select **4.BARCODE** from the list of the driver CD as shown in **Figure 3-11**.

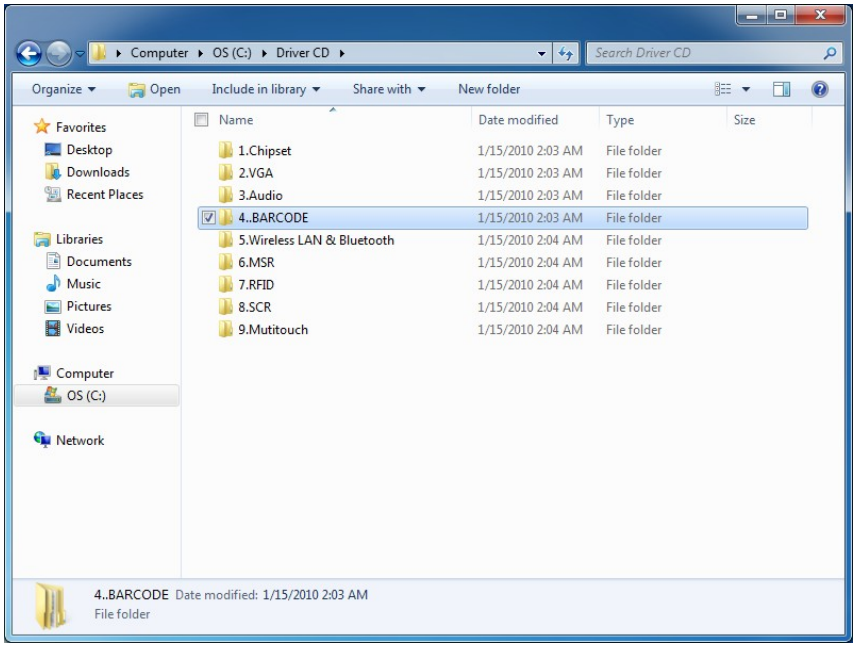


Figure 3-11: Barcode Scanner Program Location

Step 3: Double click the setup file in the folder. The Easyset InstallShield Wizard screen appears (**Figure 3-12**). Follow the step-by-step instruction of the installation wizard to install the EasySet barcode scanner program

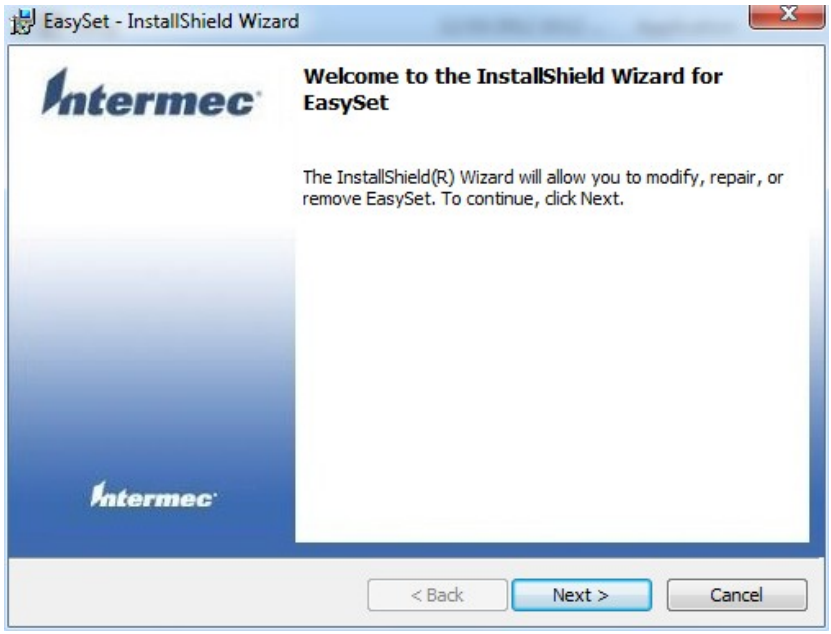


Figure 3-12: EasySet InstallShield Wizard

Step 4: Push the Menu button on the right side panel to turn on the barcode scanner. The barcode status indicator on the front panel lights up in red (if the RFID reader is enabled at the same time, the indicator will turns from blue to purple).

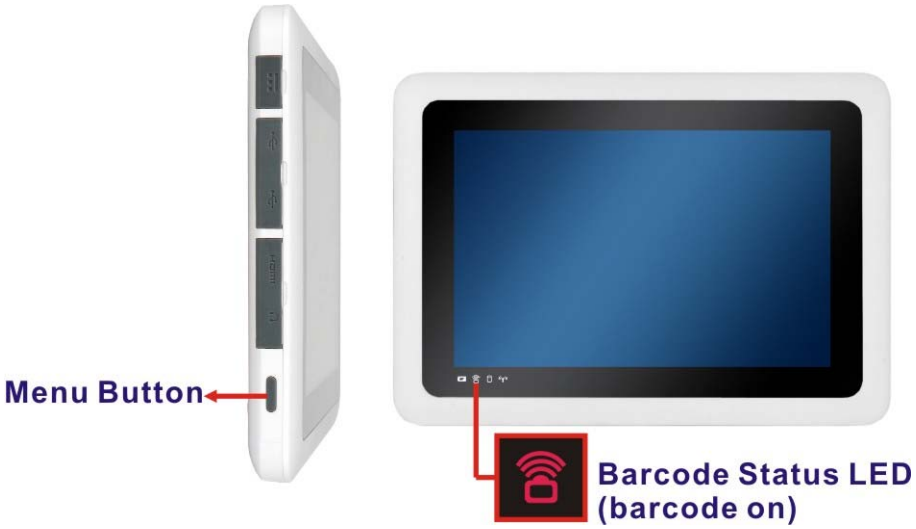


Figure 3-13: Menu Button and Barcode Status Indicator

Step 5: Double click the **EasySet** icon on the desktop. The EasySet window appears (**Figure 3-14**).

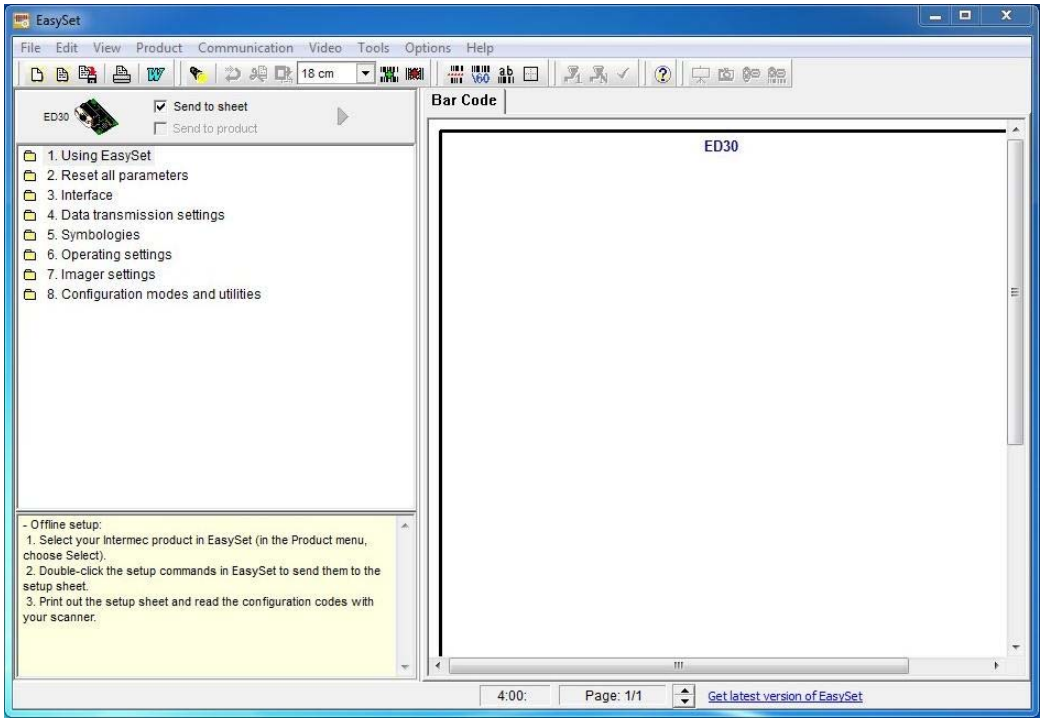


Figure 3-14: EasySet Window

Step 6: Click **Communication** on the tool bar and click **Select communication interface** from the drop-down menu (**Figure 3-15**).

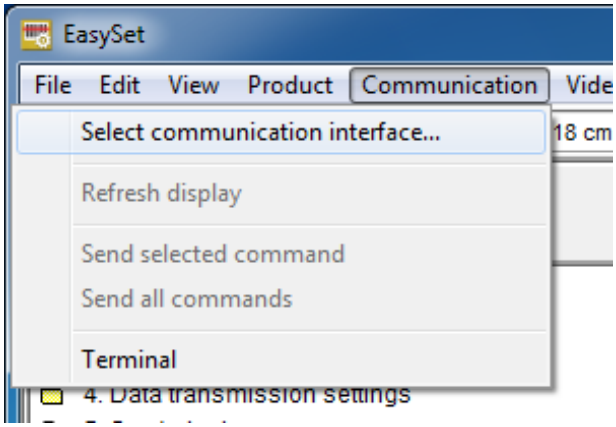


Figure 3-15: EasySet – Communication

Step 7: The Device Selection window appears (**Figure 3-16**). Select **Communication Port (COM2)** and click **OK**.

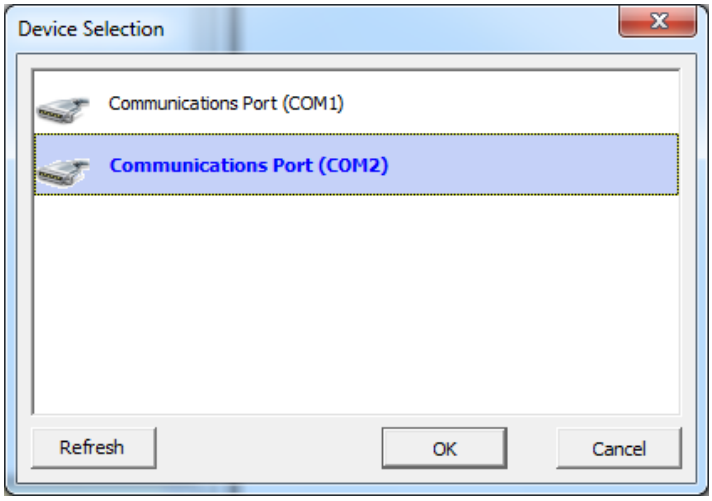


Figure 3-16: Device Selection Window

Step 8: To check if the barcode scanner is connected to the EasySet, click **Communication** again and see if the original option (Connect) has been changed to **Disconnect**.

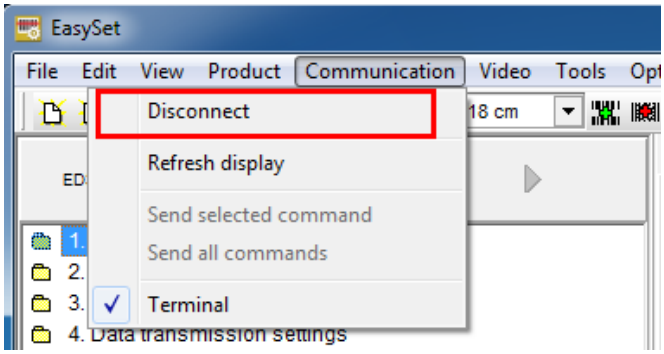


Figure 3-17: Communication – Disconnect

Step 9: Scan a barcode and the barcode number will be displayed on the right side (**Figure 3-18**).

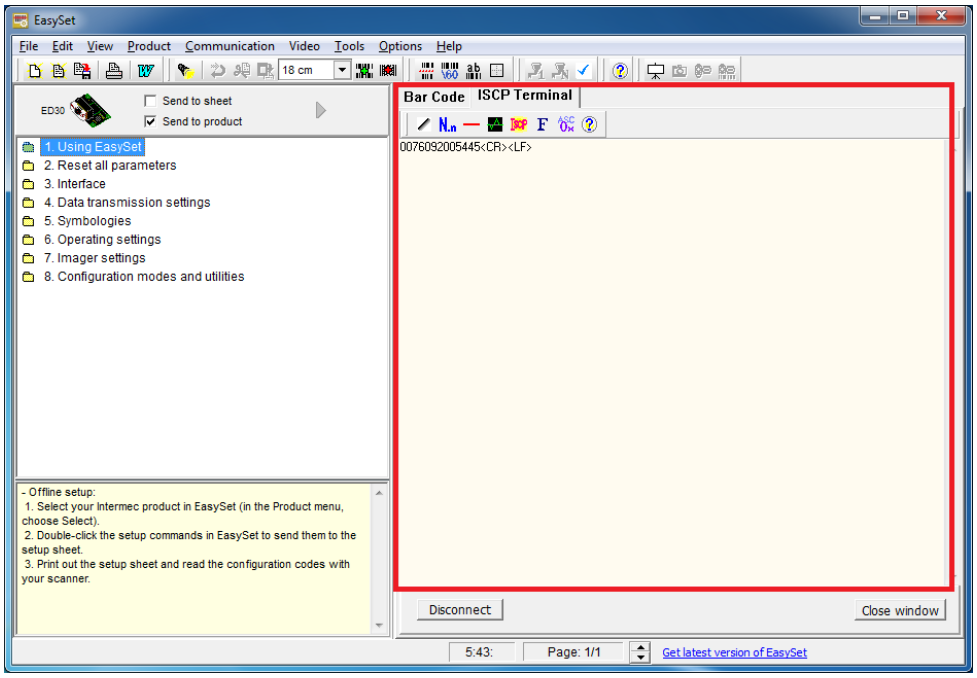


Figure 3-18: Barcode Information Display Area

3.5.1 Barcode Setting

All of the barcode parameters can be modified through EasySet. To be able to modify the parameters, please make sure to connect the EasySet with the barcode scanner (refer to **Section 3.5**). Follow the steps below to modify the parameters.

Step 1: The left side of the EasySet window (**Figure 3-19**) displays all parameters that can be configured.

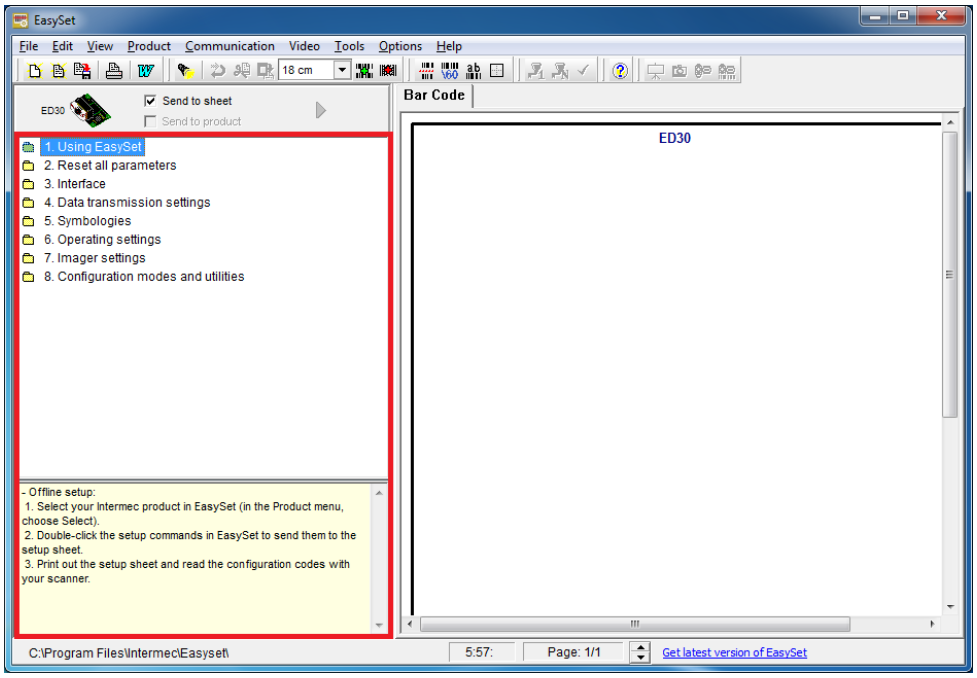


Figure 3-19: Barcode Parameters

Step 2: Use the **Symbologies** section to setup the format that can be read by the barcode scanner (EA15). In the default setting, only the PDF417 format of 2-D barcodes is enabled. If other formats are needed, the user must enable them here. Take Aztec as an example. The Aztec is disabled (the Disable option is checked). Double click the **Enable** option to enable Aztec format. See **Figure 3-20**.

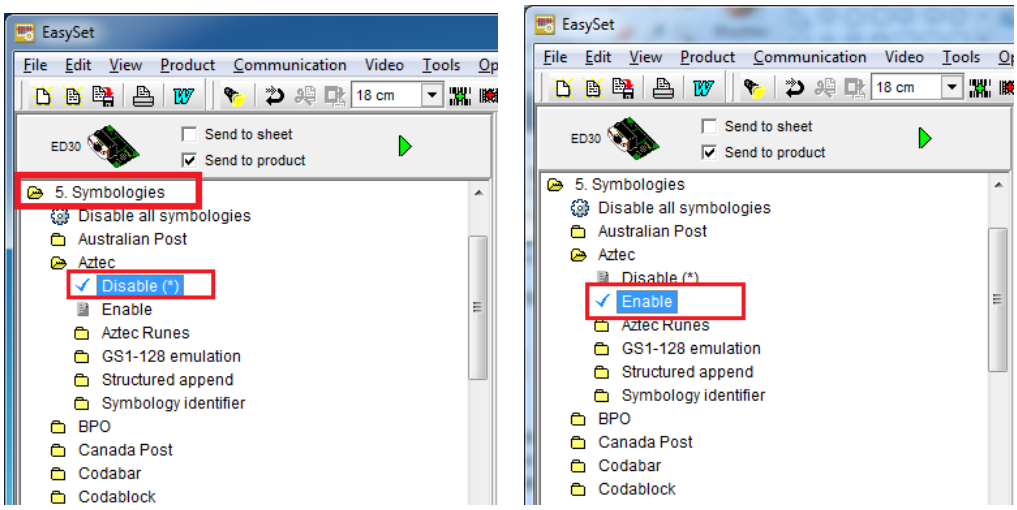


Figure 3-20: Symbologies

Step 3: Use the **Operating settings** section to configure barcode triggering modes, decoding security and beeps, etc.

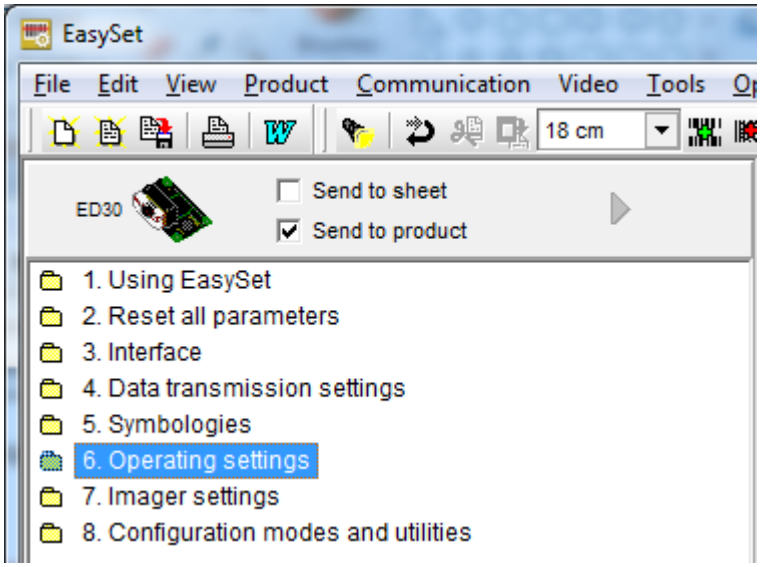


Figure 3-21: Operating Settings

Step 4: In the Scanning/Triggering section of operating settings, the user can set the triggering mode, continuous, level, etc.

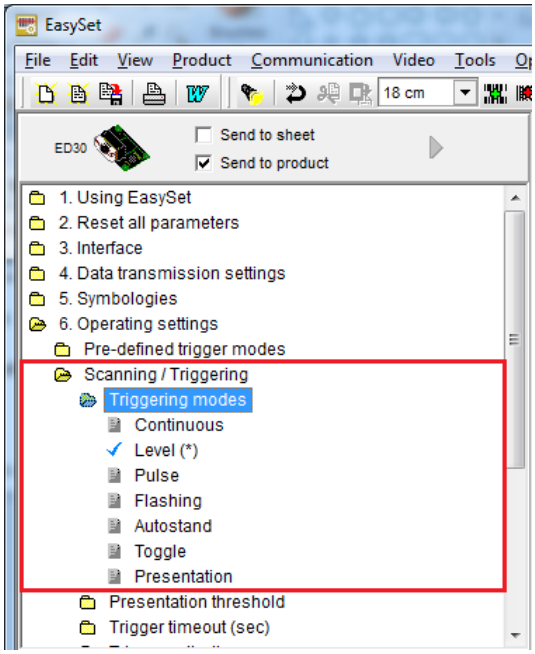


Figure 3-22: Scanning/Triggering

Step 5: In the Beeps/LEDs section of operating settings, the user can configure the beep sound of the barcode scanner.

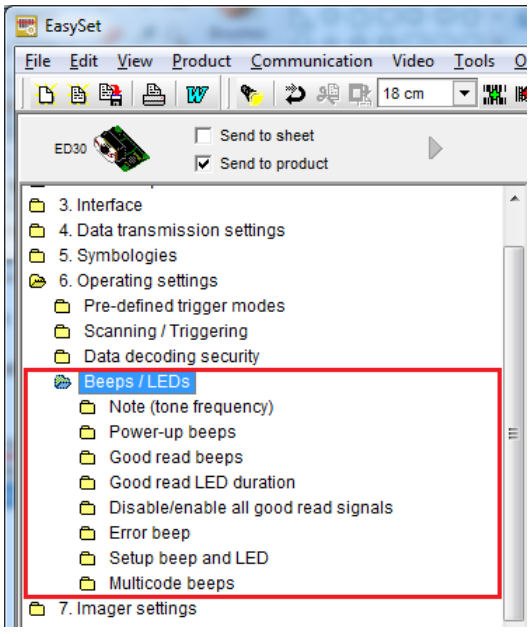
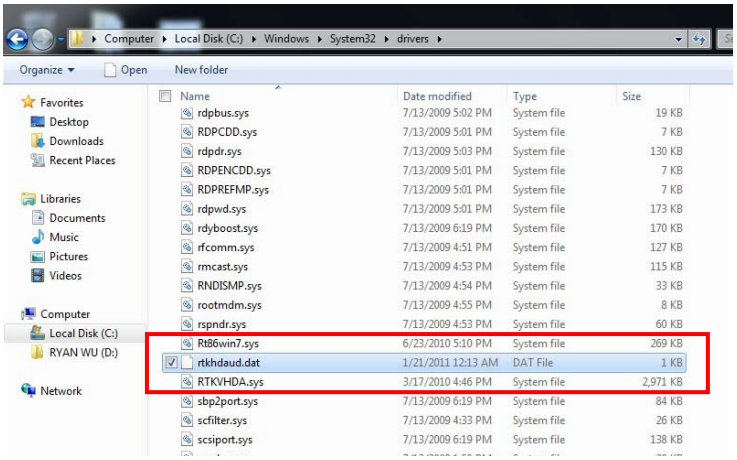


Figure 3-23: Beeps/Green Indicator LED

NOTE:

If no beep sound, please check if the "rtkhdaud.dat" file is in C:\windows\system32\drivers



3.6 Using Magnetic Stripe Reader

Some models of the ICECARE-10W Series have a magnetic stripe reader (MSR) on the left panel. To test the magnetic stripe reader, follow the steps below.

Step 1: **Check which COM port is used for the MSR connection**. Right click "**Computer**" from the start menu and select "**Manage**" (**Figure 3-24**). The Computer Management window appears. Select "**Device Manager**" from the left panel and look for the COM port information on the right panel.

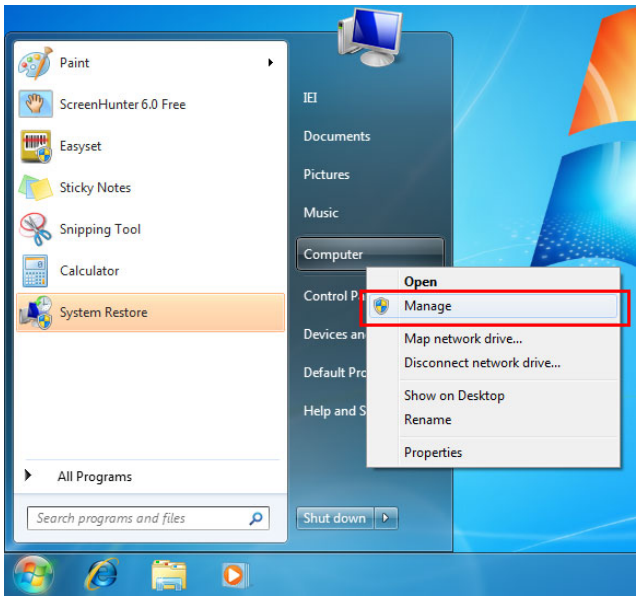


Figure 3-24: Check COM Port Information for MSR

Step 2: Launch the **3DesHeadV1.3** demo program. Select **6.MSR** from the list of the driver CD. Double click the **3DesHeadV1.3** icon from the 3DesHeadV1.3 folder to launch it (**Figure 3-25**).

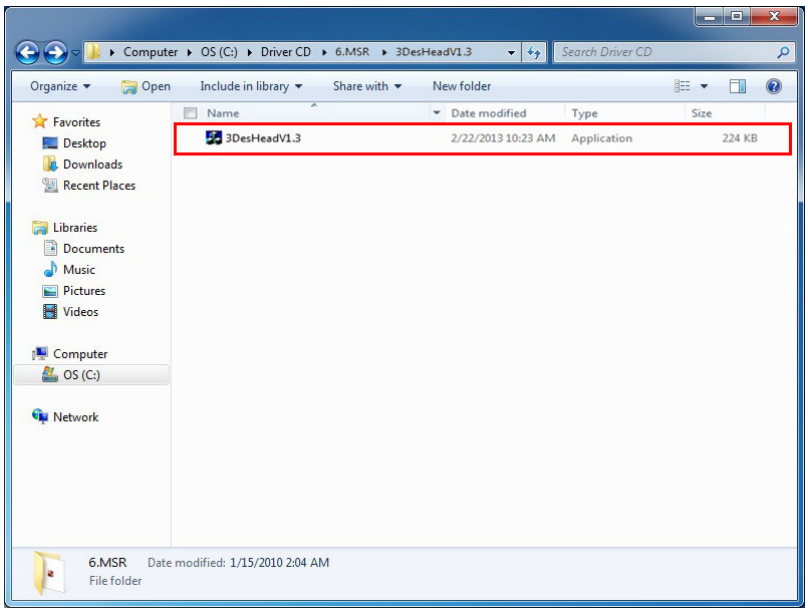


Figure 3-25: 3DesHeadV1.3 Demo Program Location

Step 3: Select the COM port connected to the MSR according to the information gained from **Step 2**. Then, click the **Open Com** button. See **Figure 3-26**.

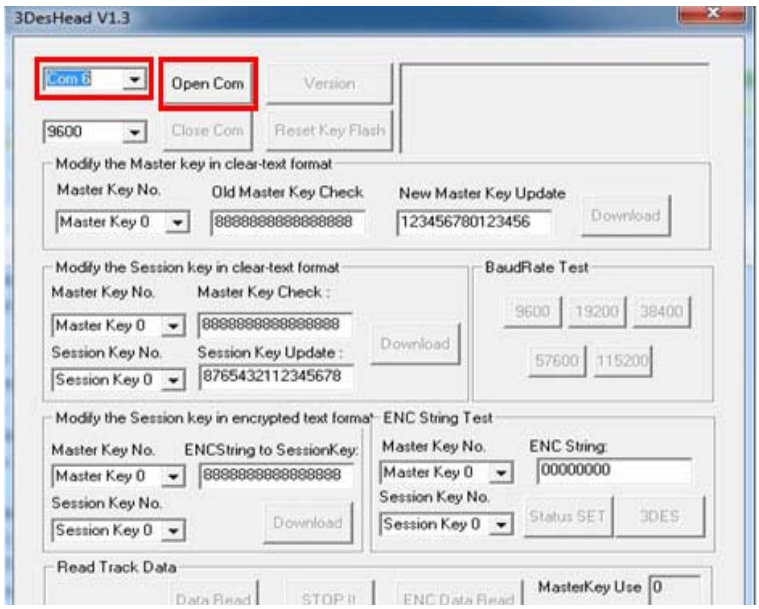


Figure 3-26: 3DesHeadV1.3 – Open COM

Step 4: Click the **Data Read** button to start reading the card information from the MSR.

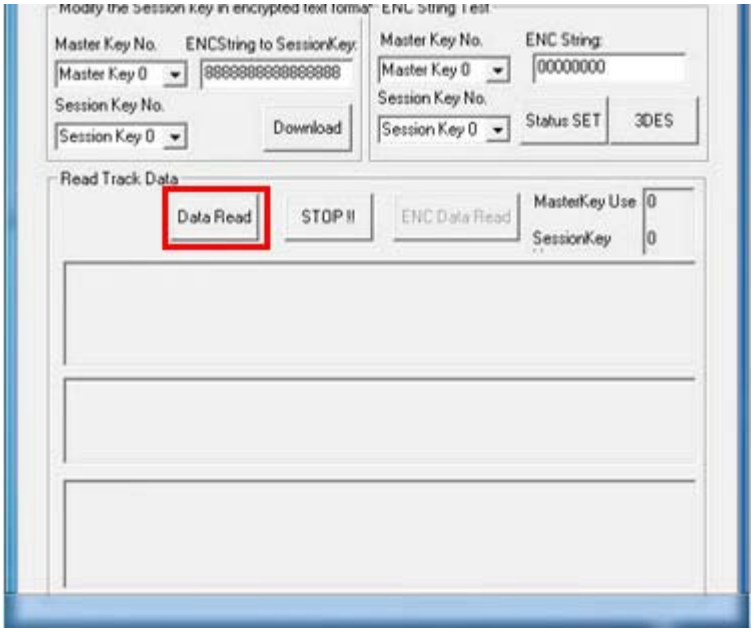


Figure 3-27: 3DesHeadV1.3 – Data Read

Step 5: Swipe a magnetic stripe card through the MSR (**Figure 3-28**).

Figure 3-28: Swipe a Magnetic Stripe Card

Step 6: The card information is shown in the bottom fields (**Figure 3-29**).

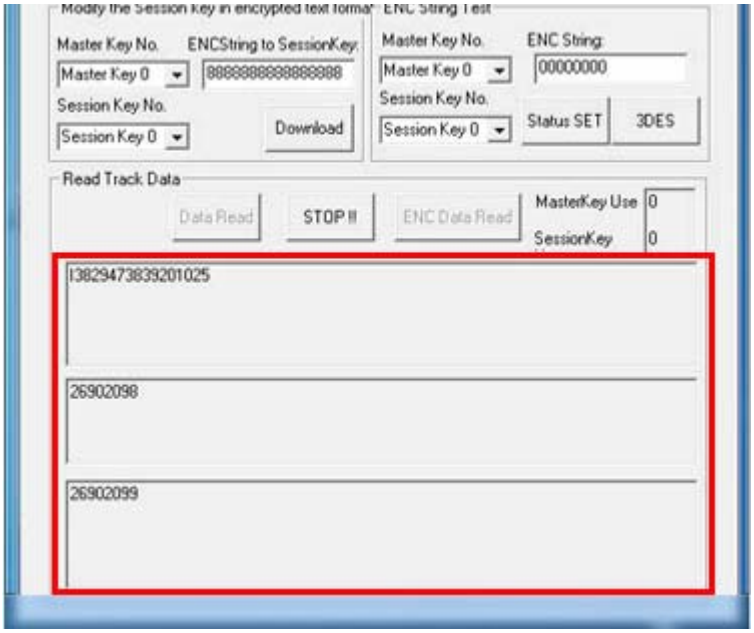


Figure 3-29: Magnetic Stripe Card Information

3.7 Testing Smart Card Reader

Some models of the ICECARE-10W Series have a smart card reader on the left panel.To test the optional smart card reader, please follow the steps below.

Step 1: Inset a smart card into the smart card reader on the side panel (**Figure 3-30**).

Figure 3-30: Insert Smart Card

Step 2: Select **8.SCR** from the list of the driver CD. Locate the **sixslot.exe** icon in the folder and double click the icon to launch the STD100 testing program.

Step 3: The STD100 testing program appears. Select **COM1** from the drop down menu as shown in **Figure 3-31**.

Figure 3-31: Smart Card Reader Testing 1

Step 4: The following screen appears. Check **Slot1** to test (all of the slots will be checked by default) and click the Slot1 testing button to start testing. The testing result will be shown (PASS or FAIL). See **Figure 3-32**.

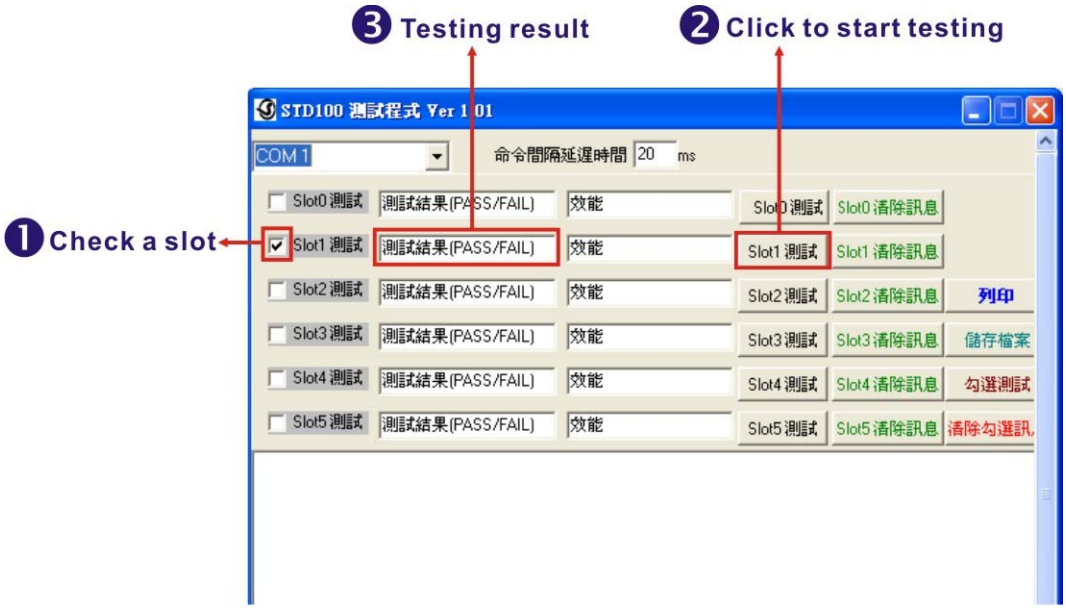


Figure 3-32: Smart Card Reader Testing 2

Chapter

4

Driver Installation

4.1 Available Software Drivers

NOTE:

The contents of the driver folder may vary throughout the life cycle of the product and is subject to change without prior notice. Visit the IEI website or contact technical support for the latest updates.

The following drivers can be installed on the system:

- Chipset driver
- Graphics driver
- Audio driver
- Bluetooth driver
- Wireless LAN driver
- RFID driver

Connect the Utility CD came with the ICECARE-10W Series to the system and follow the installation instructions given below to install the drivers.

4.2 Intel® Chipset Driver

To install the chipset driver, please follow the steps below.

Step 1: Select **1.Chipset** from the list of the driver CD shown in Figure 4-1.

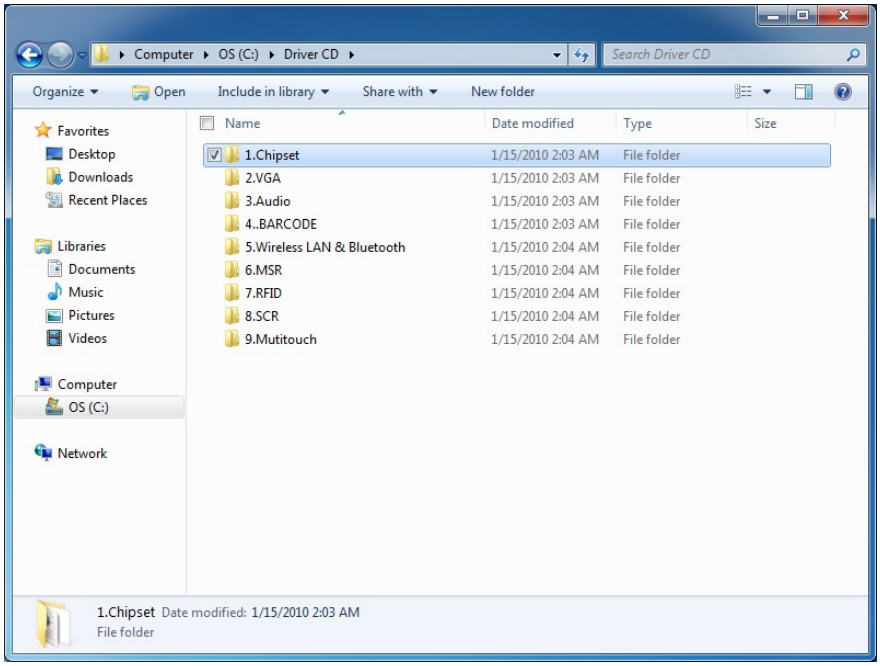


Figure 4-1: Chipset Driver Location

Step 2: Double click the setup file in the folder. The **Intel® Chipset Device Software** welcome screen appears (**Figure 4-2**).

Figure 4-2: Intel® Chipset Device Software

Step 3: Follow the step-by-step instruction of the installation wizard to install the graphics driver.

4.3 Intel® Graphics Driver

To install the graphics driver, please follow the steps below.

Step 1: Select **2.VGA** from the list of the driver CD shown in Figure 4-3.

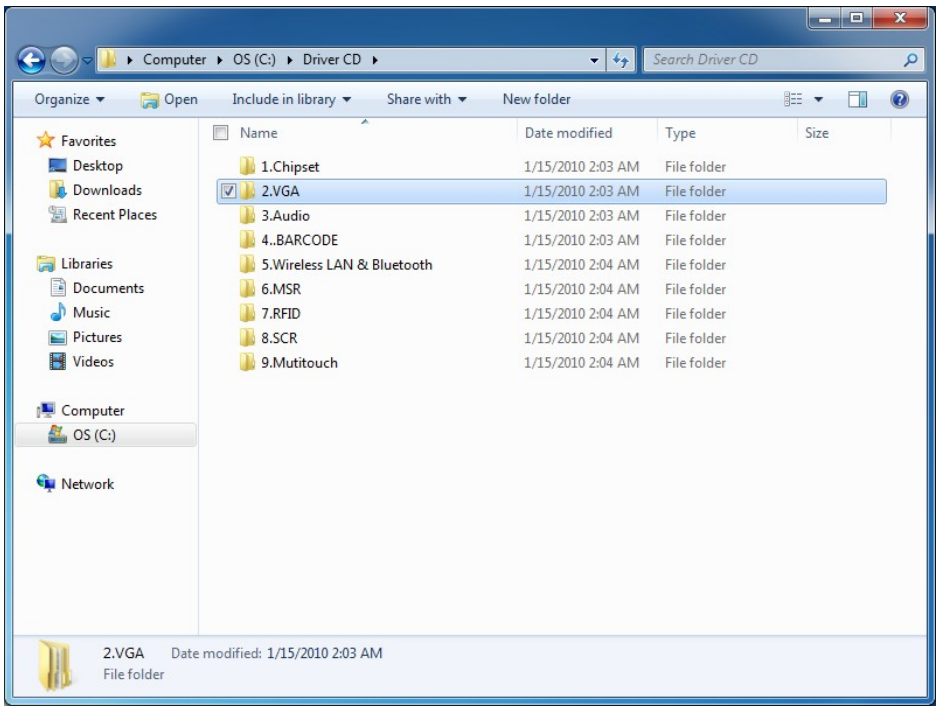


Figure 4-3: Graphics Driver Location

Step 2: Select the folder corresponding to the operating system.

Step 3: Double click the setup file in the folder. The **Intel® Graphics Driver InstallShield Wizard** appears (**Figure 4-4**).

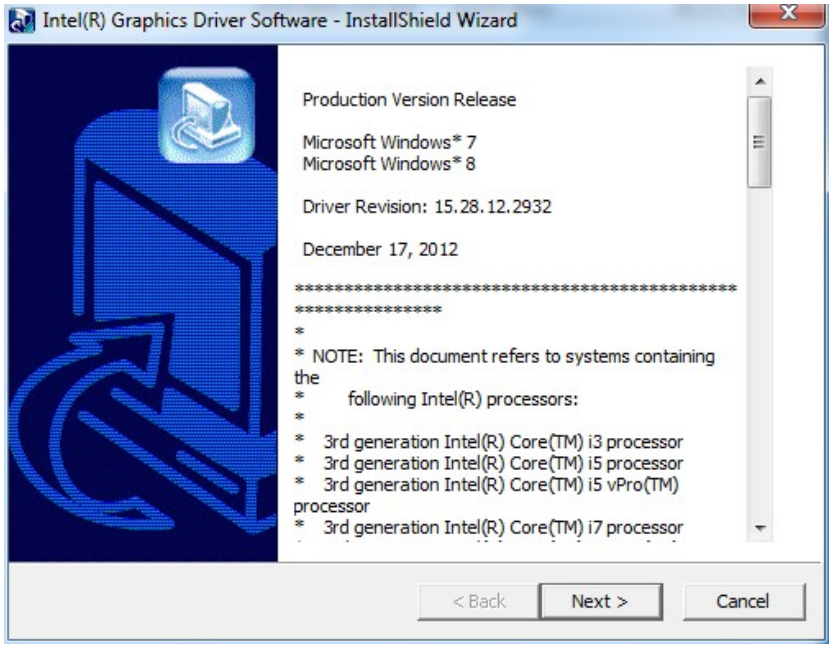


Figure 4-4: Intel® Graphics Driver InstallShield Wizard

Step 4: Follow the step-by-step instruction of the installation wizard to install the graphics driver.

4.4 Audio Driver

To install the driver for the speaker and the microphone, please follow the steps below.

Step 1: Select **3.Audio** from the list of the driver CD shown in **Figure 4-5**.

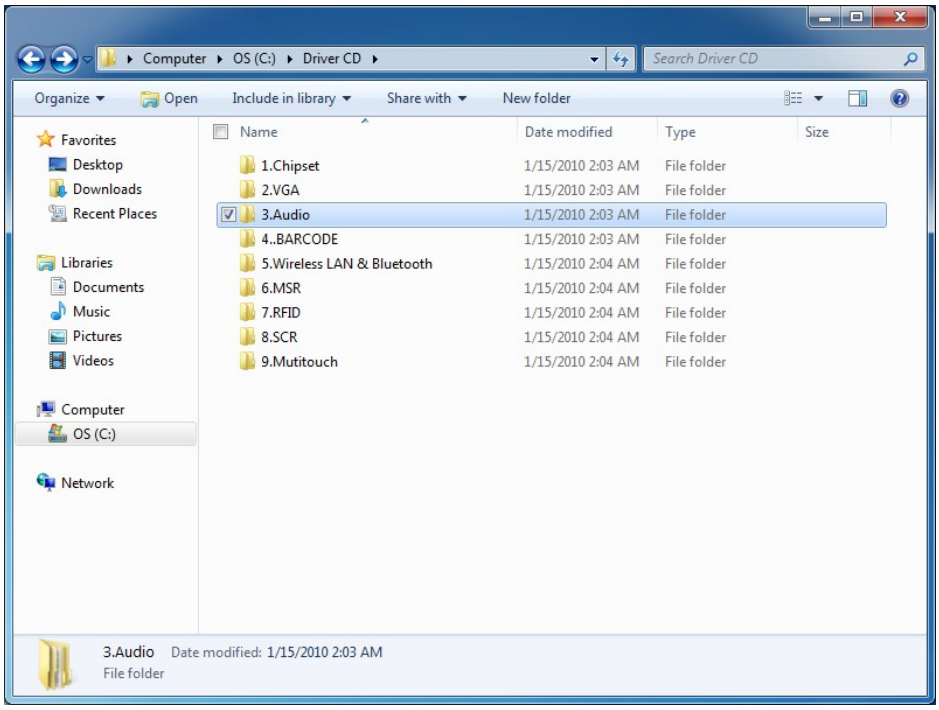


Figure 4-5: Speaker and Microphone Driver Location

Step 2: Double click the setup file in the folder. The **InstallShield Wizard** screen appears (**Figure 4-6**).

Figure 4-6: Realtek HD Audio Driver InstallShield Wizard

Step 3: Follow the step-by-step instruction of the installation wizard to install the HD Audio driver.

4.5 Bluetooth Driver

To install the Bluetooth driver, please follow the steps below.

Step 1: Select **5.Wireless LAN & Bluetooth** from the list of the driver CD shown in Figure 4-7. Select the Bluetooth folder.

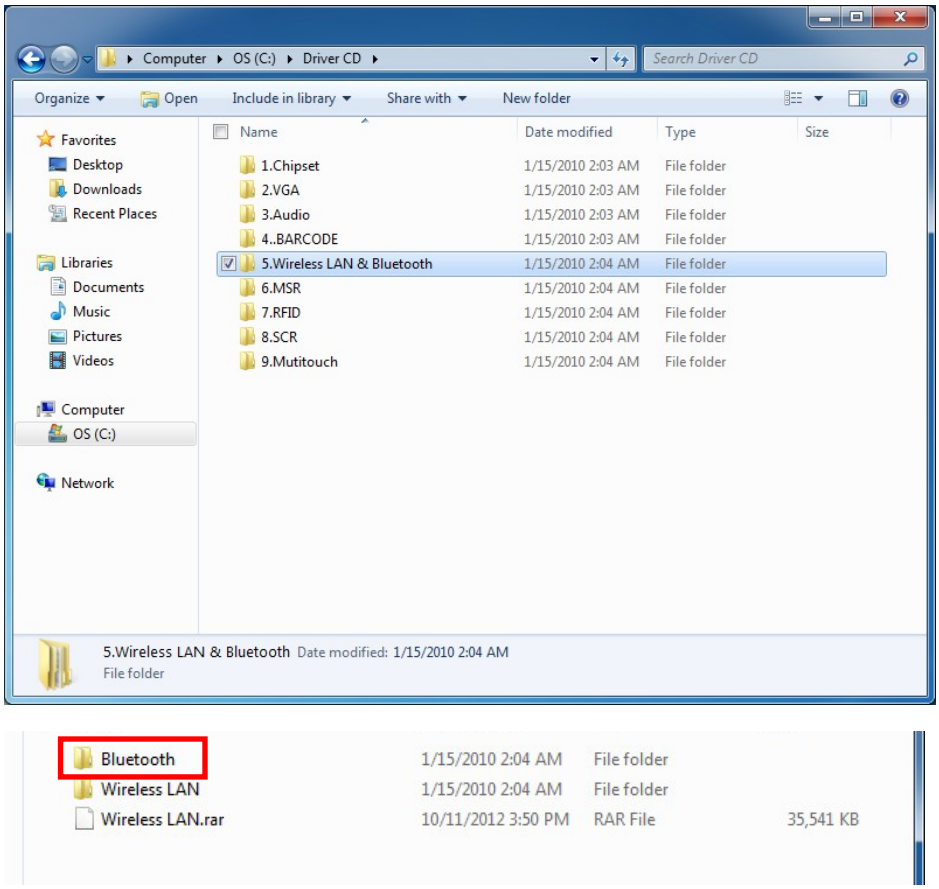


Figure 4-7: Bluetooth Driver Location

Step 2: Double click the setup file in the folder. The InstallShield Wizard screen appears.

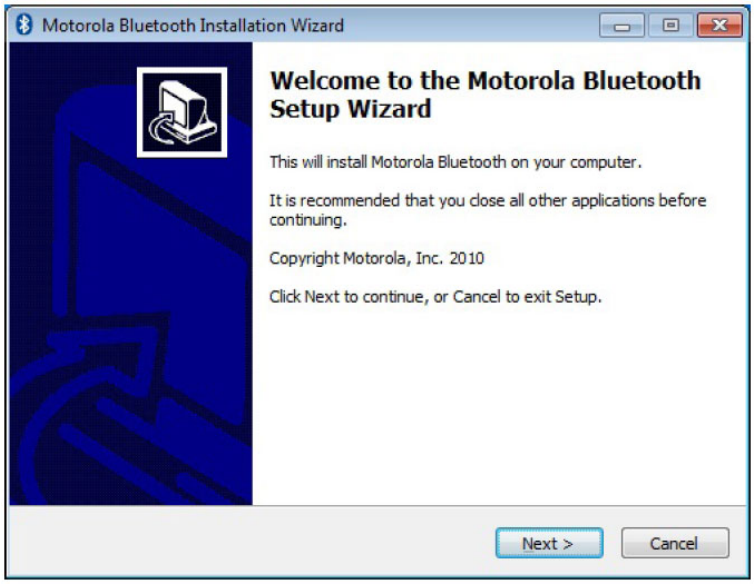


Figure 4-8: Bluetooth Driver InstallShield Wizard

Step 3: Follow the step-by-step instruction of the installation wizard to install the Bluetooth driver.

4.6 Wireless LAN Driver

To install the wireless LAN driver, please follow the steps below.

Step 1: Select **5.Wireless LAN & Bluetooth** from the list of the driver CD shown in **Figure 4-9**. Select the **Wireless** folder.

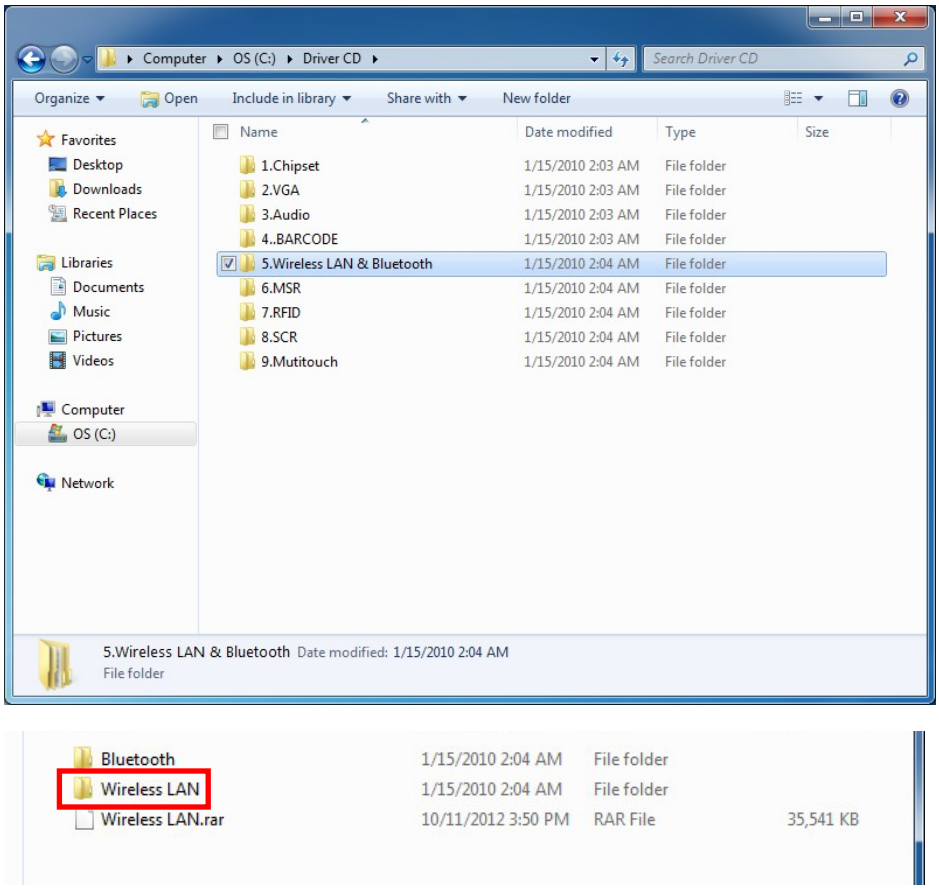


Figure 4-9: Wireless LAN Driver Location

Step 2: Double click the setup file in the folder. The InstallShield Wizard screen appears.

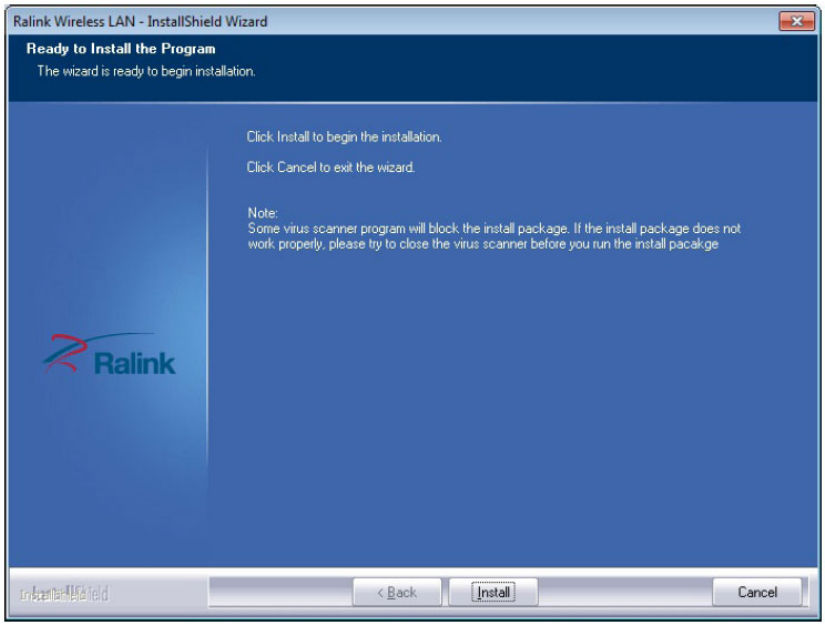


Figure 4-10: Bluetooth Driver InstallShield Wizard

Step 3: Follow the step-by-step instruction of the installation wizard to install the Wireless LAN driver.

4.7 RFID Driver

To install the RFID driver, please follow the steps below.

Step 1: Select **7.RFID** from the list of the driver CD shown in **Figure 4-11**.

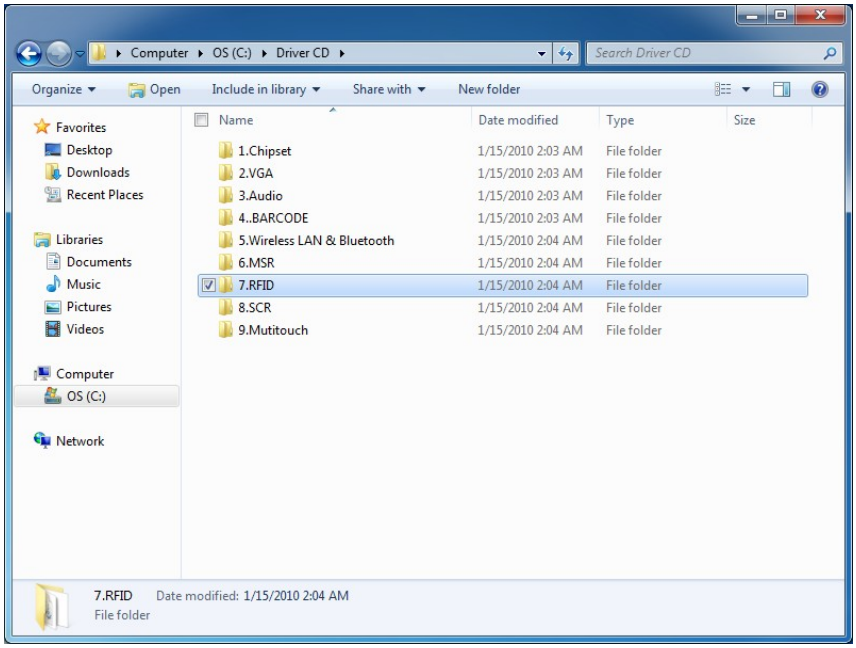


Figure 4-11: RFID Driver Location

Step 2: Double click the setup file in the **WIN7 Driver** folder to install the RFID driver (**Figure 4-13**).

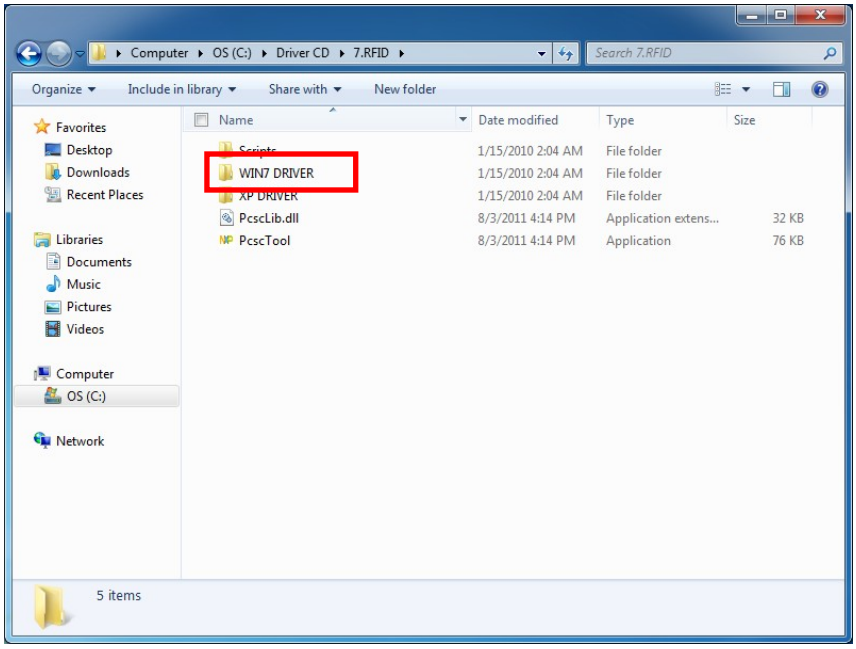


Figure 4-12: RFID Driver Folder

Step 3: Follow the step-by-step instruction of the installation wizard to install the RFID driver.

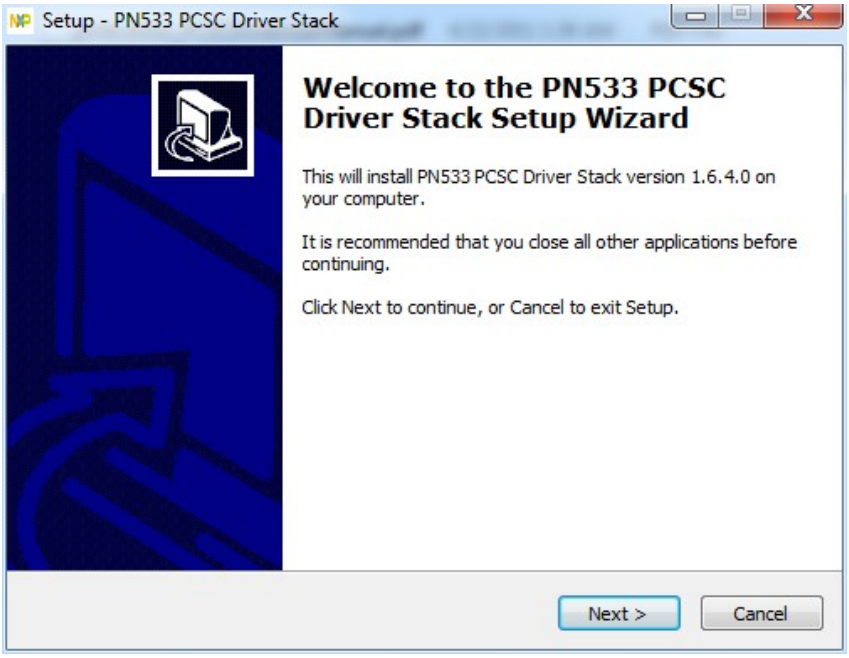


Figure 4-13: RFID Driver Installation

Chapter

5

BIOS Setup

5.1 Introduction

The BIOS is programmed onto the BIOS chip. The BIOS setup program allows changes to certain system settings. This chapter outlines the options that can be changed.

NOTE:

Some of the BIOS options may vary throughout the life cycle of the product and are subject to change without prior notice.

5.1.1 Starting Setup

The UEFI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. Press the DELETE key as soon as the system is turned on or
2. Press the DELETE key when the "**Press DELETE to enter SETUP**" message appears on the screen.

If the message disappears before the **DELETE** key is pressed, restart the computer and try again.

5.1.2 Using Setup

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. Navigation keys are shown in.

Key	Function
Up arrow	Move to the item above
Down arrow	Move to the item below
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side

Key	Function
+	Increase the numeric value or make changes
-	Decrease the numeric value or make changes
Page up	Move to the next page
Page down	Move to the previous page
Esc	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Load previous values
F3 key	Load optimized defaults
F4 key	Save changes and Exit BIOS

Table 5-1: BIOS Navigation Keys

5.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

5.1.4 BIOS Menu Bar

The **menu bar** on top of the BIOS screen has the following main items:

- Main – Changes the basic system configuration.
- Advanced – Changes the advanced system settings.
- Chipset – Changes the chipset settings.
- Boot – Changes the system boot configuration.
- Security – Sets User and Supervisor Passwords.
- Save & Exit – Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

5.2 Main

The **Main** BIOS menu (**BIOS Menu 1**) appears when the **BIOS Setup** program is entered.

The **Main** menu gives an overview of the basic system information.

```
      Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
  Main   Advanced   Chipset    Boot    Security   Save & Exit

BIOS Information                          Set the Time. Use Tab to
BIOS Vendor                 American Megatrends switch between Time
Core Version                4.6.5.3       elements.
Compliency                  UEFI 2.3; PI 1.2
Project Version             B263AR06.ROM
Build Date                  12/02/2013 13:48:19
iWDD Vendor                 IEI
iWDD Version                B2441024.bin

Processor Information
Name                        SandyBridge
Brand String                Intel(R) Celeron(R) CPU
Frequency                   1400MHz
Processor ID                206a7
Stepping                    D2
Number of Processors        1Core(s) / 1Thread(s)
Microcode Revision          28
GT Info                     GT2 (800MHz)

IGFX VBIOS Version          2143
Memory RC Version           1.2.2.0
Total Memory                4096 MB (DDR3)
Memory Frequency            1333 Mhz

PCH Information
Name                        PantherPoint
Stepping                    04/C1
LAN PHY Revision            N/A

                                      ----------------------
ME FW Version               8.1.2.1318 →←: Select Screen
ME Firmware SKU             1.5MB      ↑ ↓: Select Item
                                       Enter:  Select
SPI Clock Frequency                    +/-:  Change Opt.
DOFR Support                Unsupported F1:  General Help
Read Status Clock Frequency 33 MHz     F2:  Previous Values
Write Status Clock Frequency 33 MHz    F3:  Optimized Defaults
Fast Read Status Clock      33 MHz     F4:  Save & Exit
                                       ESC:  Exit
System Date                 [Tue 12/11/2013]
System Time                 [15:10:27]

Access Level                Administrator
      Version 2.15.1229. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Menu 1: Main

➔ **System Date [xx/xx/xx]**

Use the **System Date** option to set the system date. Manually enter the day, month and year.

➔ **System Time [xx:xx:xx]**

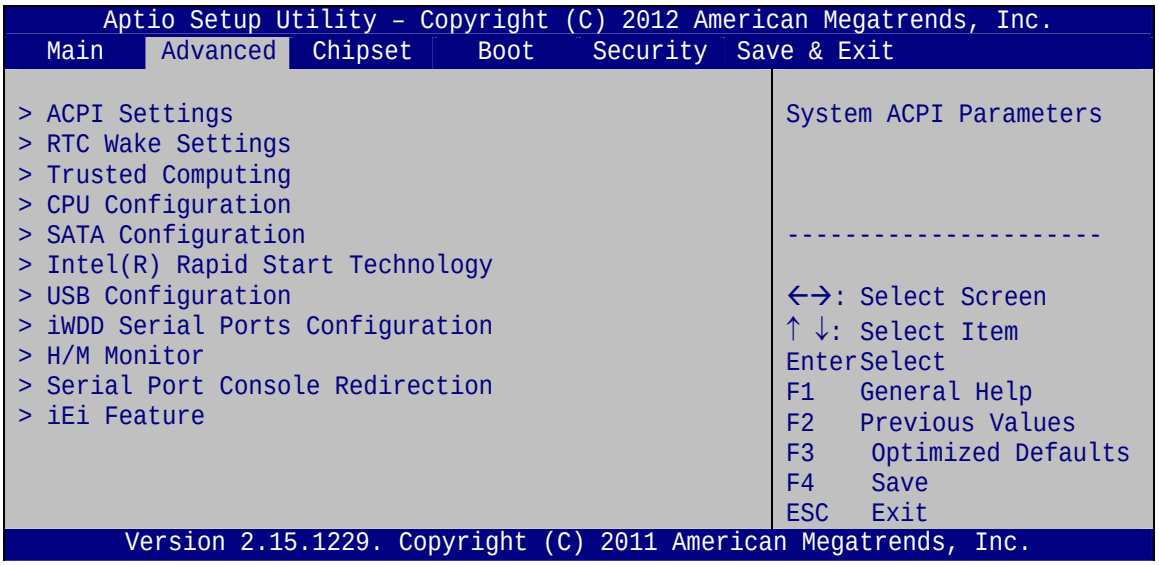
Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

5.3 Advanced

Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:

WARNING!

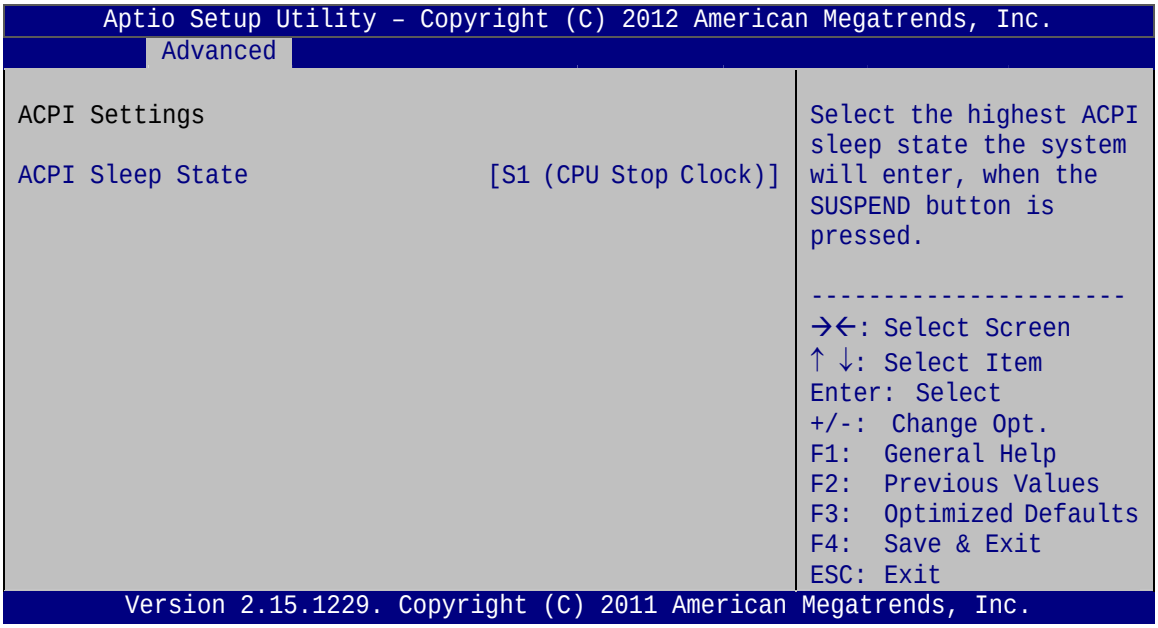
Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.



BIOS Menu 2: Advanced

5.3.1 ACPI Settings

The **ACPI Settings** menu (**BIOS Menu 3**) configures the Advanced Configuration and Power Interface (ACPI) options.



BIOS Menu 3: ACPI Configuration

➔ **ACPI Sleep State [S1 (CPU Stop Clock)]**

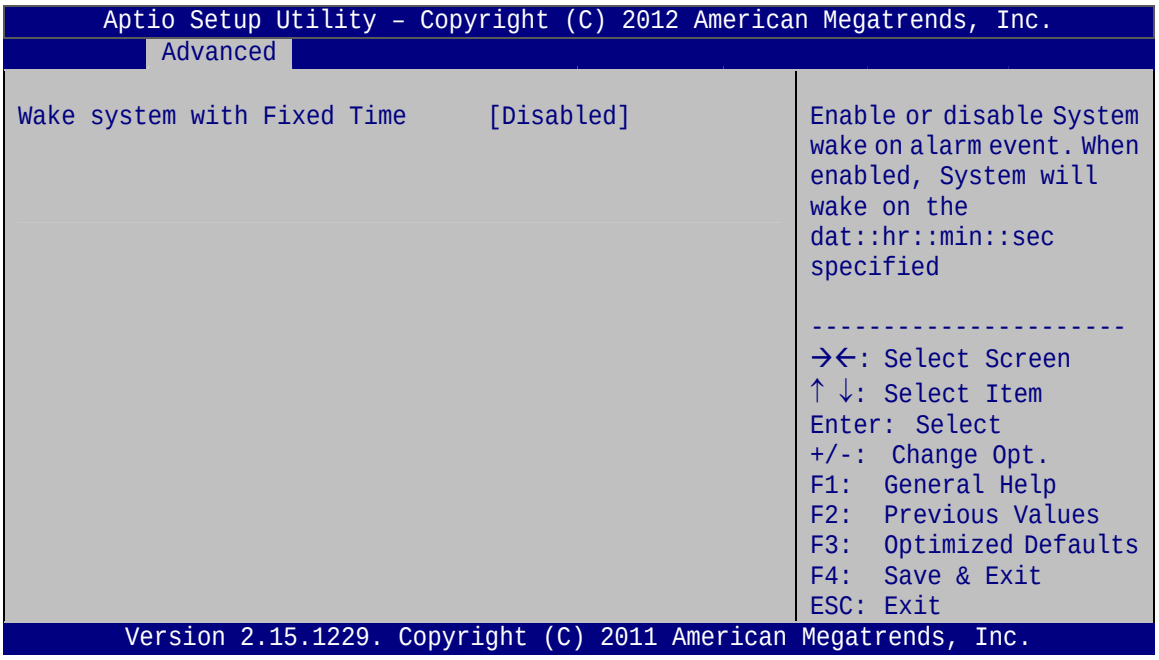
Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

➔ **S1 (CPU Stop Clock)** **DEFAULT** The system enters S1 (POS) sleep state. The system appears off. The CPU is stopped; RAM is refreshed; the system is running in a low power mode.

➔ **S3 (Suspend to RAM)** The caches are flushed and the CPU is powered off. Power to the RAM is maintained. The computer returns slower to a working state, but more power is saved.

5.3.2 RTC Wake Settings

The **RTC Wake Settings** menu (**BIOS Menu 4**) configures RTC wake event.



BIOS Menu 4: RTC Wake Settings

➔ **Wake System with Fixed Time [Disabled]**

Use the **Wake System with Fixed Time** option to specify the time the system should be roused from a suspended state.

➔ **Disabled** **DEFAULT** The real time clock (RTC) cannot generate a wake event

➔ **Enabled**

If selected, the following appears with values that can be selected:

*Wake up every day

*Wake up date

*Wake up hour

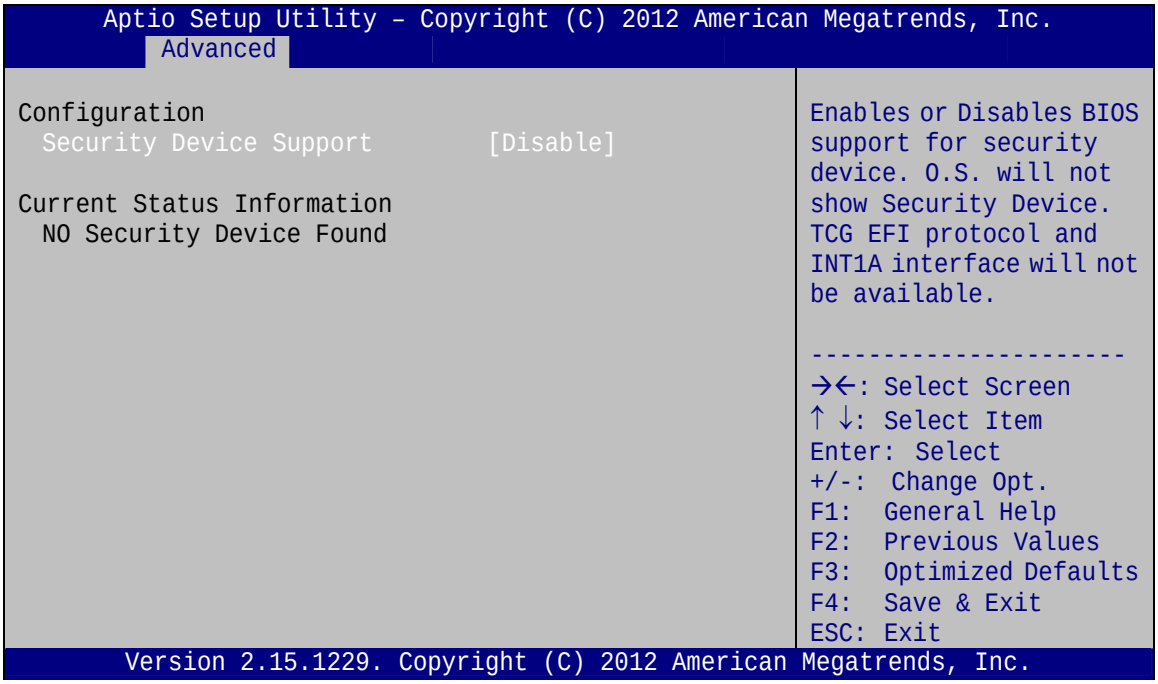
*Wake up minute

*Wake up second

After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

5.3.3 Trusted Computing

Use the **Trusted Computing** menu (**BIOS Menu 5**) to configure settings related to the Trusted Computing Group (TCG) Trusted Platform Module (TPM).



BIOS Menu 5: Trusted Computing

➔ **Security Device Support [Disable]**

Use the **Security Device Support** option to configure support for the TPM.

➔ **Disable** **DEFAULT** TPM support is disabled.

➔ **Enable** TPM support is enabled.

5.3.4 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 6**) to view detailed CPU specifications and configure the CPU.

```
Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
        Advanced

CPU Configuration                                  When enabled, a VMM can
                                                   utilize the additional
Intel(R) Celeron(R) CPU 1007U @ 1.50GHz            hardware capabilities
CPU Signature                    206a7             provided by Vanderpool
Microcode Patch                  28                Technology
Max CPU Speed                    1400 MHz
Min CPU Speed                    800 MHz
CPU Speed                        1400 MHz
Processor Cores                  1
Intel HT Technology              Not Supported     ----------------------
Intel VT-x Technology            Supported         →←: Select Screen
Intel SMX Technology             Not Supported     ↑ ↓: Select Item
64-bit                           Supported         Enter: Select
                                                   +/-: Change Opt.
L1 Data Cache                    32 kB x 1         F1: General Help
L1 Code Cache                    32 kB x 1         F2: Previous Values
L2 Cache                         256 kB x 1        F3: Optimized Defaults
L3 Cache                         1536 kB           F4: Save & Exit
                                                   ESC: Exit
Intel Virtualization Technology  [Disabled]
        Version 2.15.1229. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Menu 6: CPU Configuration

➔ **Intel Virtualization Technology [Enabled]**

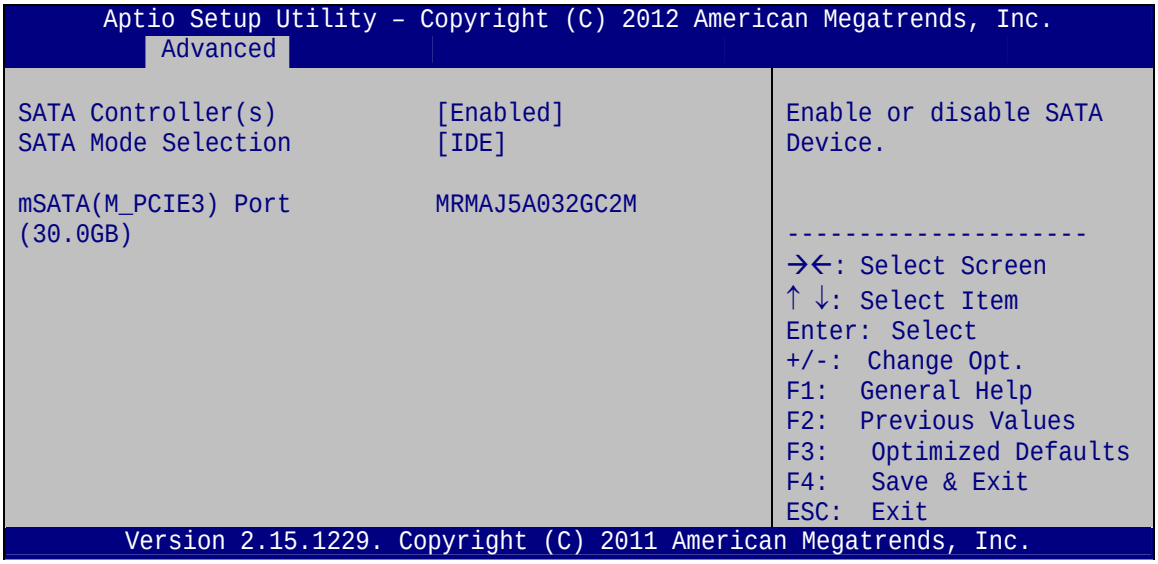
Use the **Intel Virtualization Technology** to enable or disable the Intel® Hyper-Threading Technology.

➔ **Disabled** Disables the Intel® Hyper-Threading Technology.

➔ **Enabled** **DEFAULT** Enables the Intel® Hyper-Threading Technology.

5.3.5 SATA Configuration

Use the **SATA Configuration** menu (**BIOS Menu 7**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 7: SATA Configuration

➔ **SATA Controller(s) [Enabled]**

Use the **SATA Controller(s)** option to configure the serial ATA controller.

➔	**Enabled**	**DEFAULT**	Enables the on-board SATA controller.
➔	**Disabled**		Disables the on-board SATA controller.

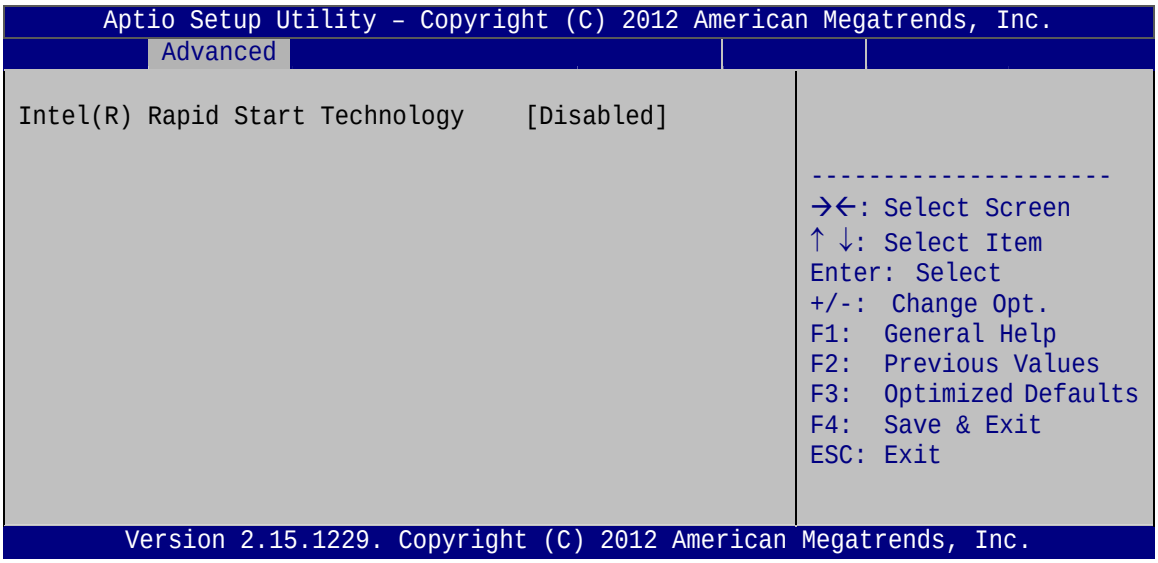
➔ **Configure SATA as [AHCI]**

Use the **Configure SATA as** option to configure SATA devices as normal IDE devices.

➔	**IDE**		Configures SATA devices as normal IDE device.
➔	**AHCI**	**DEFAULT**	Configures SATA devices as AHCI device.

5.3.6 Intel(R) Rapid Start Technology

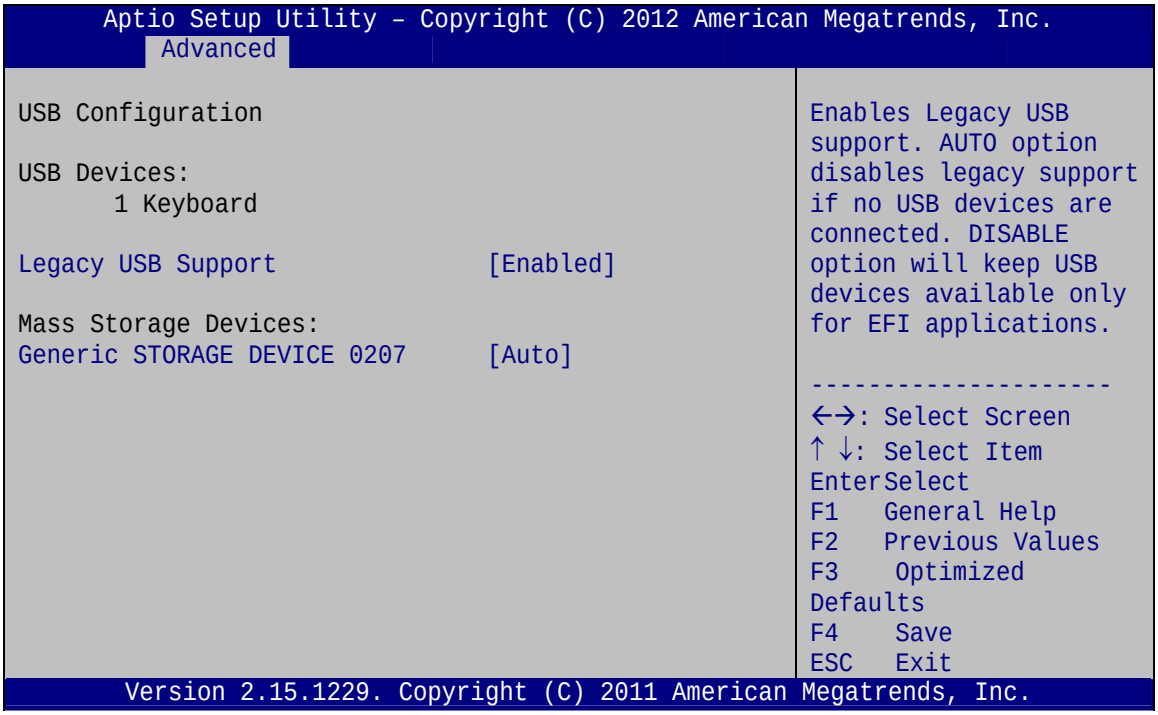
Use the **Intel(R) Rapid Start Technology** (**BIOS Menu 8**) menu to configure Intel® Rapid Start Technology support.



BIOS Menu 8: Intel(R) Rapid Start Technology

5.3.7 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 9**) to read USB configuration information and configure the USB settings.



BIOS Menu 9: USB Configuration

➔ **USB Devices**

The **USB Devices Enabled** field lists the USB devices that are enabled on the system

➔ **Legacy USB Support [Enabled]**

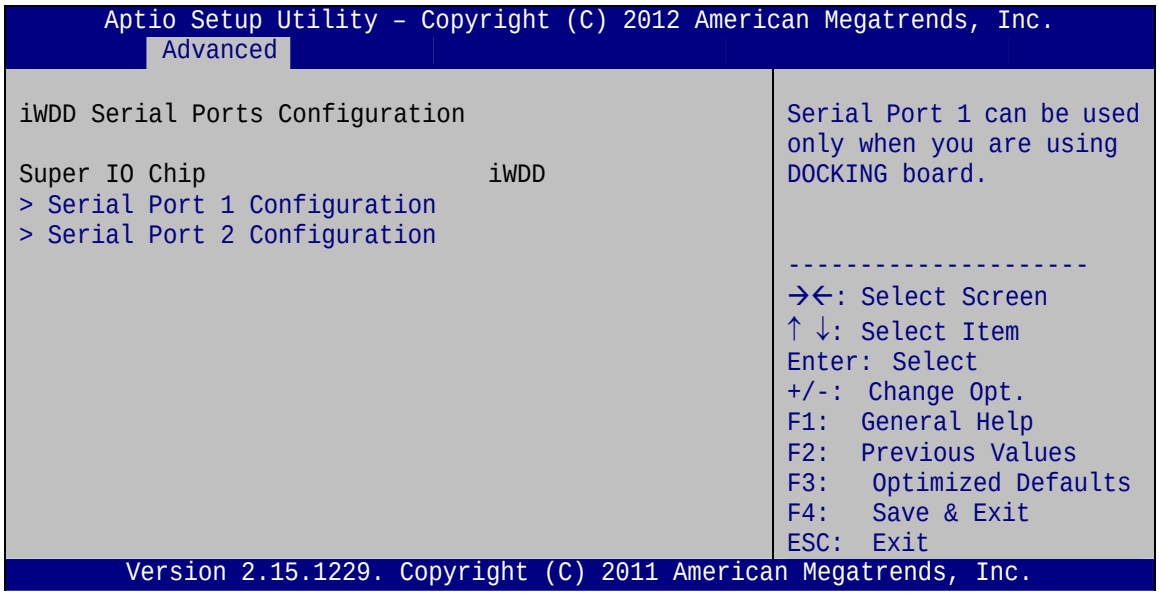
Use the **Legacy USB Support** BIOS option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.

➔ **Enabled** **DEFAULT** Legacy USB support enabled

➔	**Disabled**	Legacy USB support disabled
➔	**Auto**	Legacy USB support disabled if no USB devices are connected

5.3.8 iWDD Serial Ports Configuration

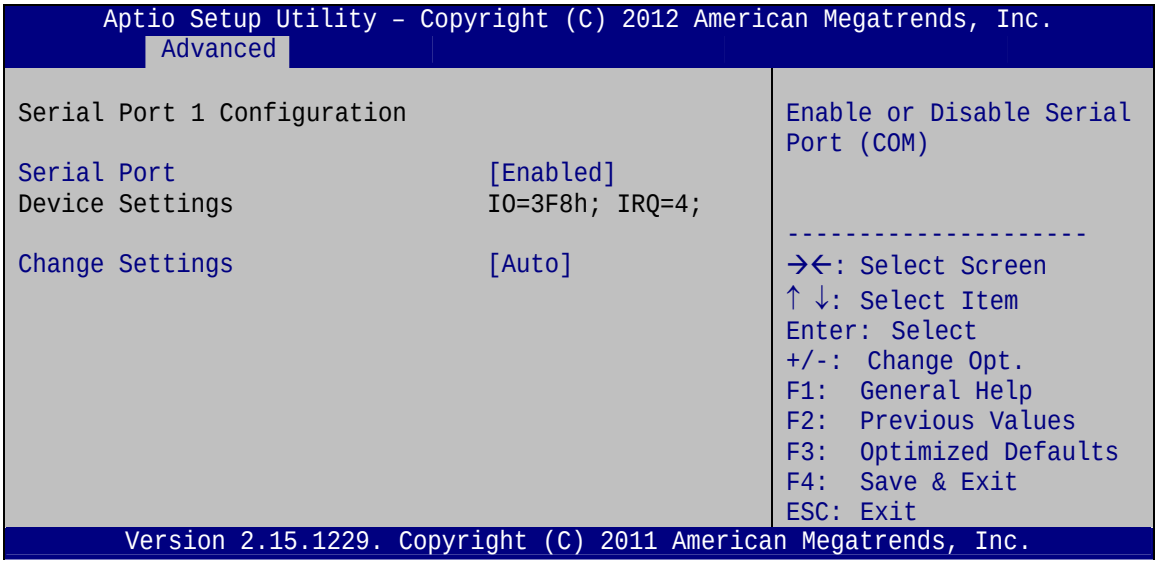
Use the **iWDD Serial Ports Configuration** menu (**BIOS Menu 10**) to set or change the configurations for the serial ports.



BIOS Menu 10: iWDD Serial Ports Configuration

5.3.8.1 Serial Port 1 Configuration

Use the **Serial Port n Configuration** menu (**BIOS Menu 11**) to configure the serial port 1 on the docking station.



BIOS Menu 11: Serial Port 1 Configuration Menu

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

➔ **Disabled**		Disable the serial port
➔ **Enabled**	**DEFAULT**	Enable the serial port

➔ **Change Settings [Auto]**

Use the **Change Settings** option to change the serial port IO port address and interrupt address.

➔ **Auto**	**DEFAULT**	The serial port IO port address and interrupt address are automatically detected.
➔ **IO=3F8h; IRQ=4**		Serial Port I/O port address is 3F8h and the interrupt address is IRQ4

- ➔ **IO=3F8h; IRQ=3, 4** — Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
- ➔ **IO=2F8h; IRQ=3, 4** — Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4
- ➔ **IO=3E8h; IRQ=3, 4** — Serial Port I/O port address is 3E8h and the interrupt address is IRQ3, 4
- ➔ **IO=2E8h; IRQ=3, 4** — Serial Port I/O port address is 2E8h and the interrupt address is IRQ3, 4

5.3.8.2 Serial Port 2 Configuration

➔ **Serial Port [Enabled]**

Use the **Serial Port** option to enable or disable the serial port.

- ➔ **Disabled** — Disable the serial port
- ➔ **Enabled** **DEFAULT** — Enable the serial port

➔ **Change Settings [Auto]**

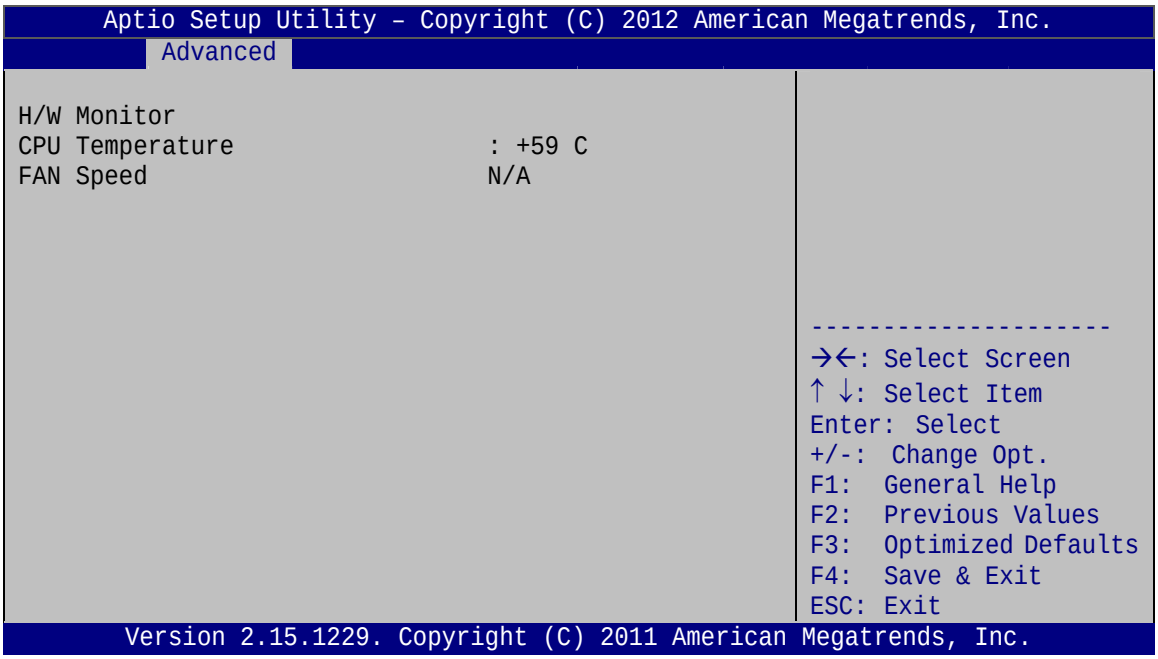
Use the **Change Settings** option to change the serial port IO port address and interrupt address.

- ➔ **Auto** **DEFAULT** — The serial port IO port address and interrupt address are automatically detected.
- ➔ **IO=2F8h; IRQ=3** — Serial Port I/O port address is 2F8h and the interrupt address is IRQ3
- ➔ **IO=3F8h; IRQ=3, 4** — Serial Port I/O port address is 3F8h and the interrupt address is IRQ3, 4
- ➔ **IO=2F8h; IRQ=3, 4** — Serial Port I/O port address is 2F8h and the interrupt address is IRQ3, 4

➔	**IO=3E8h; IRQ=3, 4**	Serial Port I/O port address is 3E8h and the interrupt address is IRQ3, 4
➔	**IO=2E8h; IRQ=3, 4**	Serial Port I/O port address is 2E8h and the interrupt address is IRQ3, 4

5.3.9 H/W Monitor

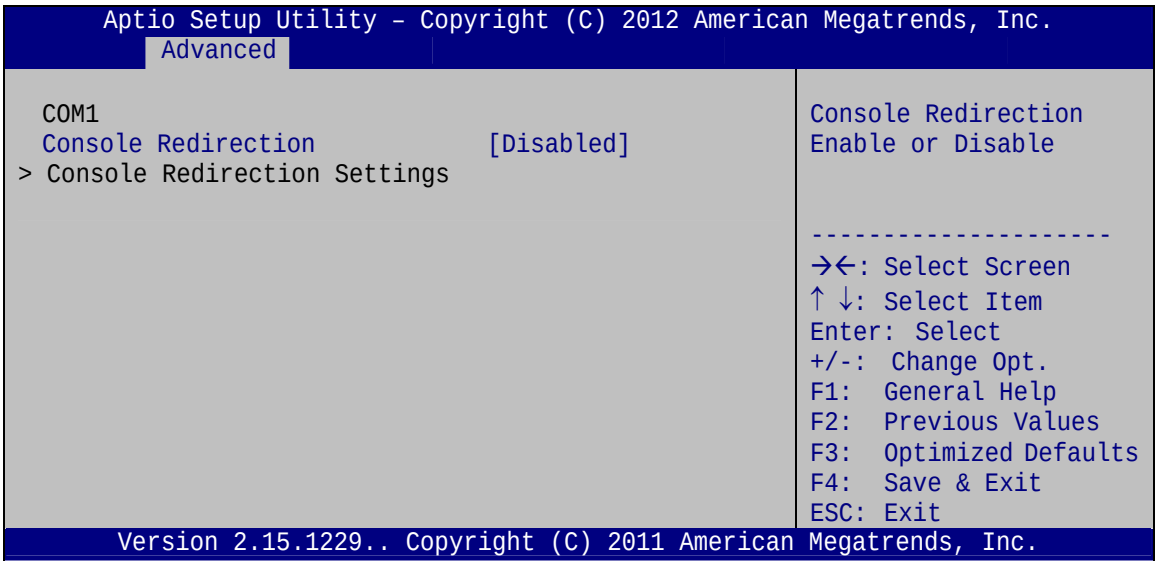
The H/W Monitor menu (**BIOS Menu 12**) shows the operating temperature.



BIOS Menu 12: Hardware Health Configuration

5.3.10 Serial Port Console Redirection

The **Serial Port Console Redirection** menu (**BIOS Menu 13**) allows the console redirection options to be configured. Console redirection allows users to maintain a system remotely by re-directing keyboard input and text output through the serial port.



BIOS Menu 13: Serial Port Console Redirection

➔ **Console Redirection [Disabled]**

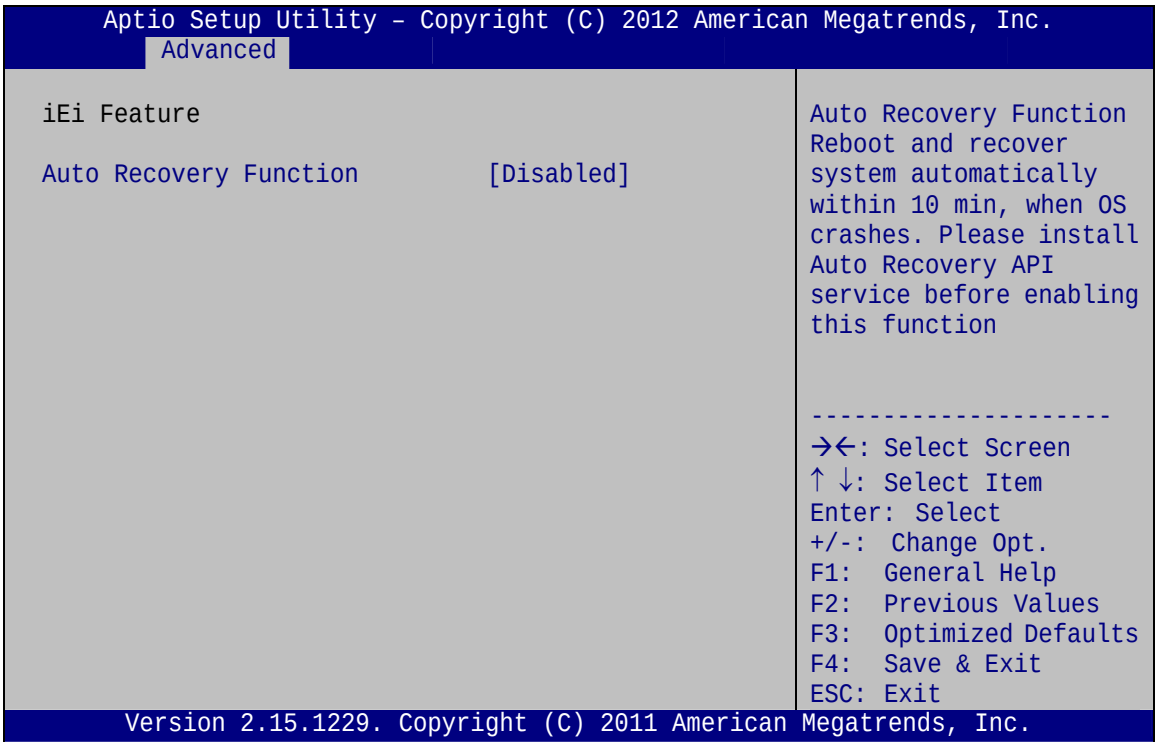
Use **Console Redirection** option to enable or disable the console redirection function.

➔ **Disabled** **DEFAULT** Disabled the console redirection function

➔ **Enabled** Enabled the console redirection function

5.3.11 IEI Feature

Use the **IEI Feature** menu (**BIOS Menu 14**) to configure One Key Recovery function.



BIOS Menu 14: IEI Feature

➔ **Auto Recovery Function [Disabled]**

Use the **Auto Recovery Function** BIOS option to enable or disable the auto recovery function of the IEI One Key Recovery.

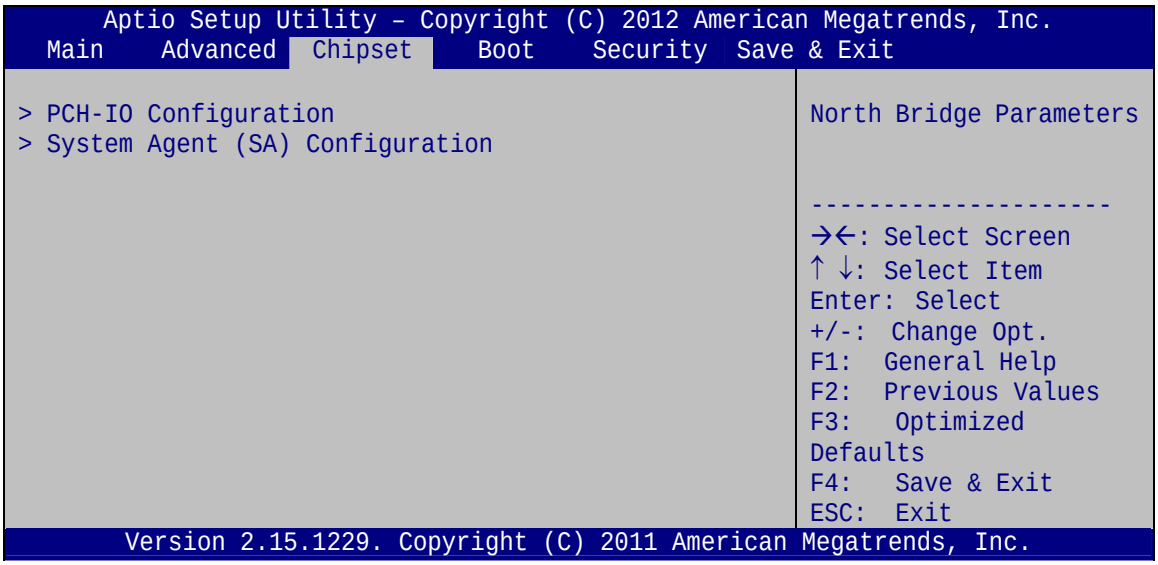
➔	**Disabled**	**DEFAULT**	Auto recovery function disabled
➔	**Enabled**		Auto recovery function enabled

5.4 Chipset

Use the **Chipset** menu (**BIOS Menu 15**) to access the PCH-IO and System Agent (SA) configuration menus

WARNING!

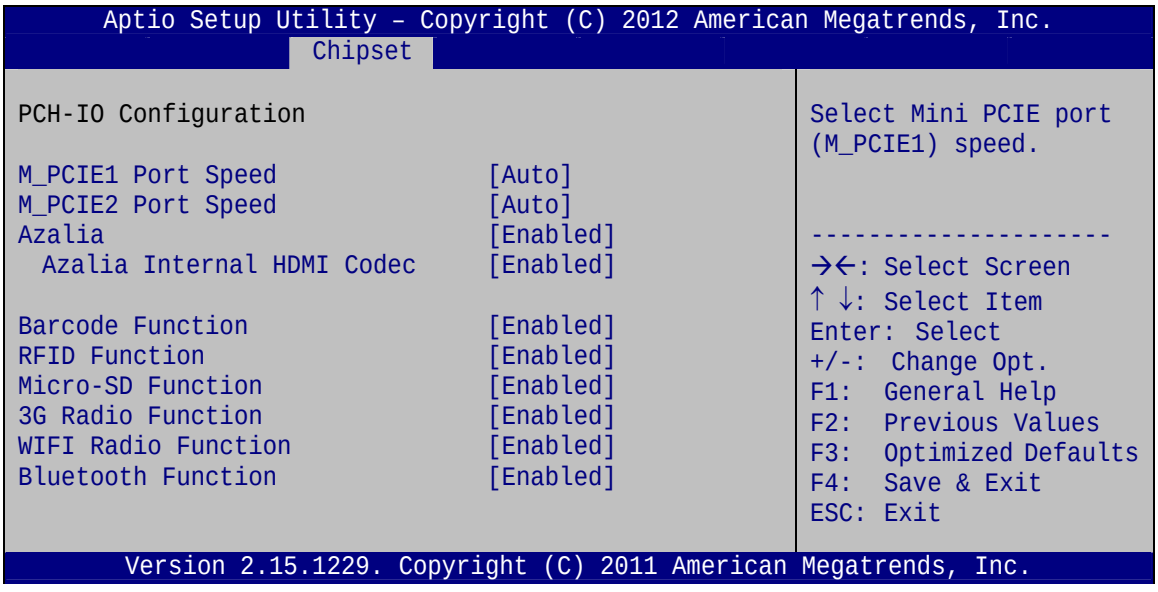
Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.



BIOS Menu 15: Chipset

5.4.1 PCH-IO Configuration

Use the **PCH-IO Configuration** menu (**BIOS Menu 16**) to configure the Southbridge chipset.



BIOS Menu 16: PCH-IO Configuration

➔ **M_PCIE# Port Speed [Auto]**

Use the **M_PCIE# Port Speed** option to select the support type of the PCIe Mini card slot. The following options are available:

- Auto **Default**
- Gen1
- Gen2

➔ **Azalia [Enabled]**

Use the **Azalia** option to enable or disable the High Definition Audio controller.

➔ **Disabled** The onboard High Definition Audio controller is disabled

➔ **Enabled** **DEFAULT** The onboard High Definition Audio controller is detected automatically and enabled

➔ **Azalia internal HDMI codec [Enabled]**

Use the **Azalia internal HDMI codec** option to enable or disable the internal HDMI codec for High Definition Audio.

➔ **Disabled** Disables the internal HDMI codec for High Definition Audio

➔ **Enabled** **DEFAULT** Enables the internal HDMI codec for High Definition Audio

➔ **Barcode Function [Enabled]**

Use the **Barcode Function** option to enable or disable the optional barcode function. Not every model is preinstalled with a Barcode module. Make sure the Bluetooth function is supported in the system before enable this BIOS option.

➔ **Disabled** Barcode function disabled

➔ **Enabled** **DEFAULT** Barcode function enabled

➔ **RFID Function [Enabled]**

Use the **RFID Function** option to enable or disable the RFID function.

- ➔ **Disabled** RFID function disabled
- ➔ **Enabled** **DEFAULT** RFID function enabled

➔ **Micro-SD Function [Enabled]**

Use the **Micro-SD Function** option to enable or disable the microSD card.

- ➔ **Disabled** microSD card disabled
- ➔ **Enabled** **DEFAULT** microSD card enabled

➔ **3G Radio Function [Enabled]**

Use the **3G Radio Function** option to enable or disable the 3G function. Not every model is preinstalled with a 3G module. Make sure the 3G connection is supported in the system before enable this BIOS option.

- ➔ **Disabled** 3G function disabled
- ➔ **Enabled** **DEFAULT** 3G function enabled

➔ **WIFI Radio Function [Enabled]**

Use the **WIFI Radio Function** option to enable or disable the Wi-Fi function.

- ➔ **Disabled** Wi-Fi function disabled
- ➔ **Enabled** **DEFAULT** Wi-Fi function enabled

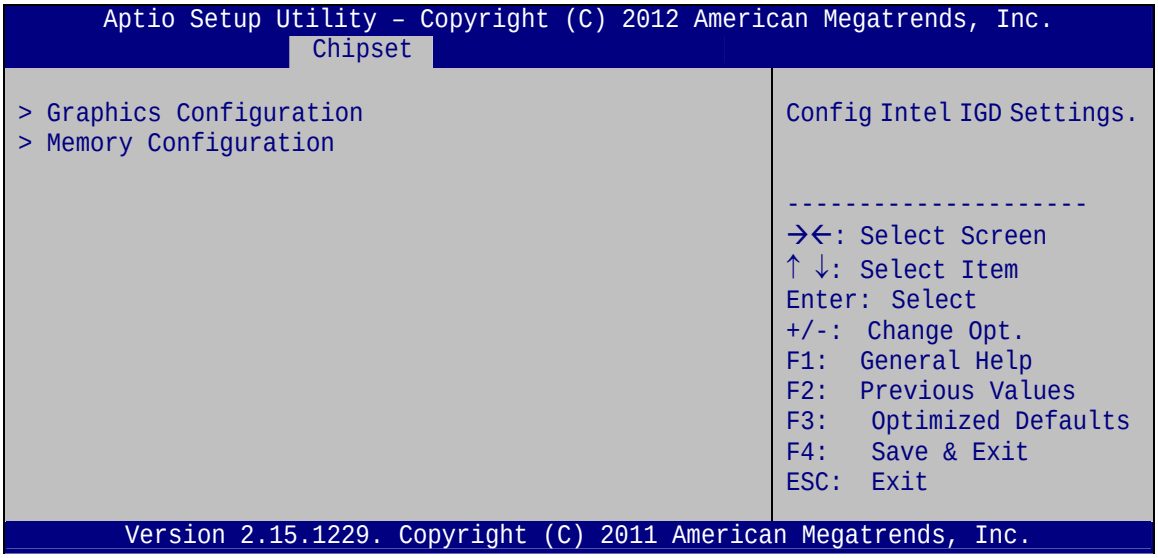
➔ **Bluetooth Function [Enabled]**

Use the **Bluetooth Function** option to enable or disable the bluetooth function.

- ➔ **Disabled** Bluetooth function disabled
- ➔ **Enabled** **DEFAULT** Bluetooth function enabled

5.4.2 System Agent (SA) Configuration

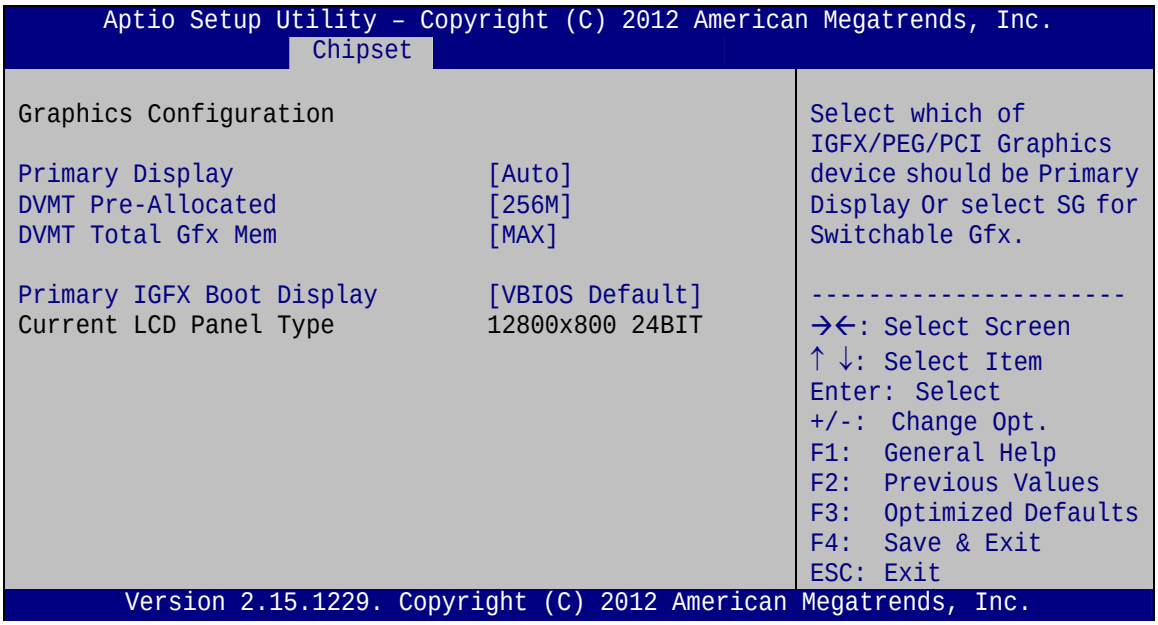
Use the **System Agent (SA) Configuration** menu (**BIOS Menu 17**) to configure the System Agent (SA) parameters.



BIOS Menu 17: System Agent (SA) Configuration

5.4.2.1 Graphics Configuration

Use the **Graphics Configuration** (**BIOS Menu 18**) menu to configure the video device connected to the system.



BIOS Menu 18: Graphics Configuration

➔ **Primary Display [Auto]**

Use the **Primary Display** option to select the primary graphics controller the system uses. The following options are available:

- Auto **Default**
- IGFX
- PEG

➔ **DVMT Pre-Allocated [256M]**

Use the **DVMT Pre-Allocated** option to set the amount of system memory allocated to the integrated graphics processor when the system boots. The system memory allocated can then only be used as graphics memory, and is no longer available to applications or the operating system. Configuration options are listed below:

- 32M
- 64M
- 128M
- 256M **Default**
- 512M

➔ **DVMT Total Gfx Mem [MAX]**

Use the **DVMT Total Gfx Mem** option to select DVMT5.0 total graphic memory size used by the internal graphic device. The following options are available:

- 128M
- 256M
- MAX **Default**

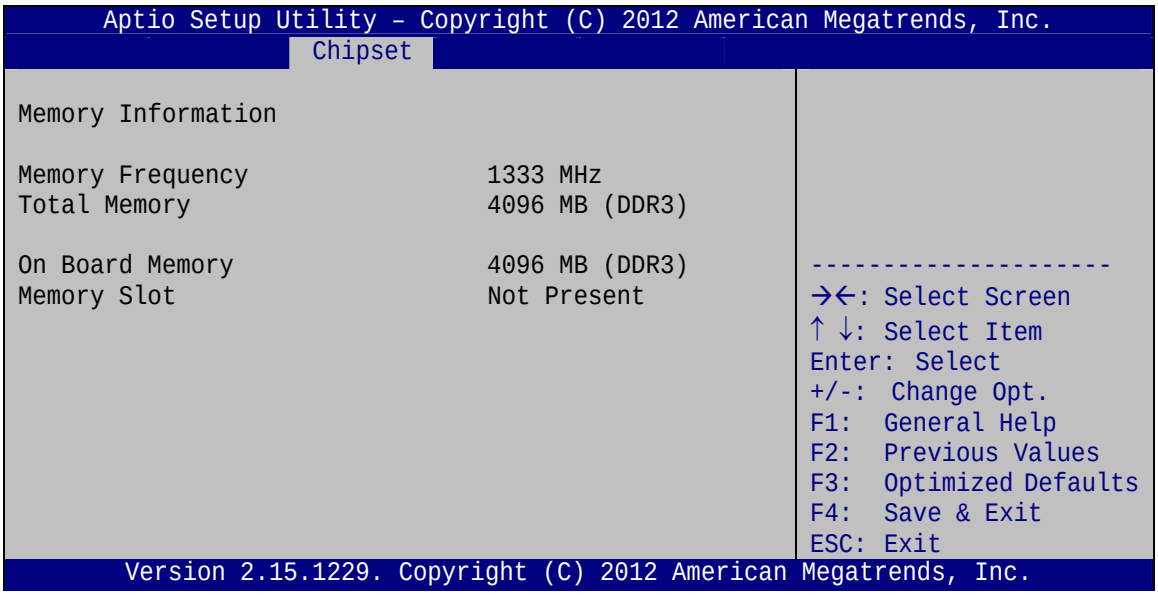
➔ **Primary IGFX Boot Display [VBIOS Default]**

Use the **Primary IGFX Boot Display** option to select the display device used by the system when it boots. Configuration options are listed below.

- VBIOS Default **DEFAULT**
- CRT
- LVDS
- HDMI

5.4.2.2 Memory Configuration

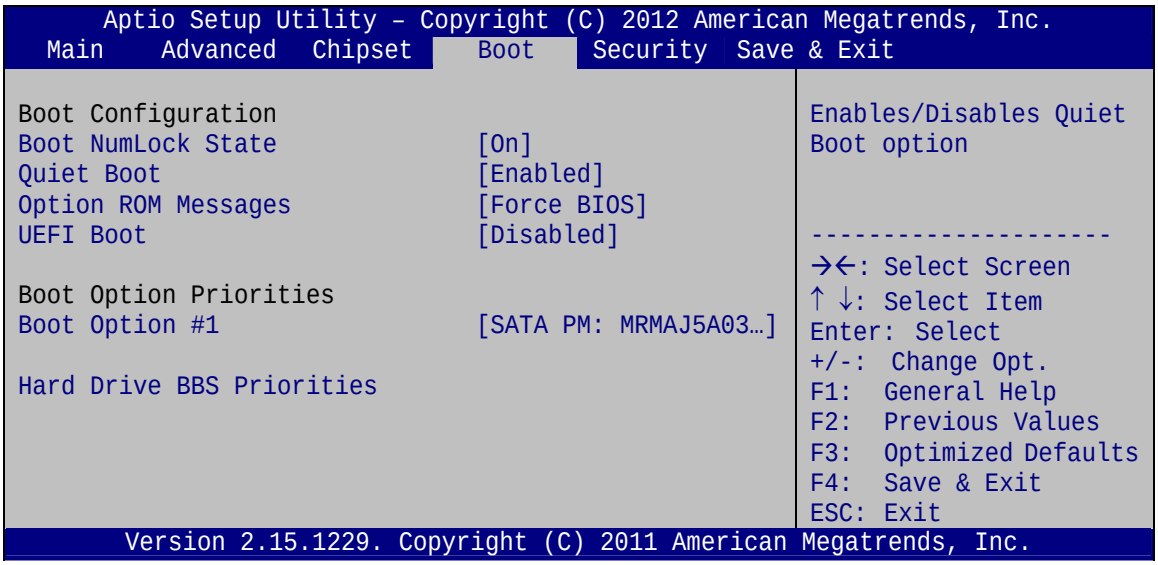
Use the **Memory Configuration** submenu (**BIOS Menu 19**) to view memory information.



BIOS Menu 19: Memory Configuration

5.5 Boot

Use the **Boot** menu (**BIOS Menu 20**) to configure system boot options.



BIOS Menu 20: Boot

➔ **Bootup NumLock State [On]**

Use the **Bootup NumLock State** BIOS option to specify if the number lock setting must be modified during boot up.

➔ **On** **DEFAULT** Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

➔ **Off** Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.

➔ **Quiet Boot [Enabled]**

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

➔	**Disabled**		Normal POST messages displayed
➔	**Enabled**	**DEFAULT**	OEM Logo displayed instead of POST messages

➔ **Option ROM Messages [Force BIOS]**

Use the **Option ROM Messages** option to set the Option ROM display mode.

➔	**Force BIOS**	**DEFAULT**	Sets display mode to force BIOS.
➔	**Keep Current**		Sets display mode to current.

➔ **UEFI Boot [Disabled]**

Use the **UEFI Boot** option to enable or disable to boot from the UEFI devices.

➔	**Enabled**		Boot from UEFI devices is enabled.
➔	**Disabled**	**DEFAULT**	Boot from UEFI devices is disabled.

➔ **Boot Option #1 [SATA PM: MRMAJ5A03…]**

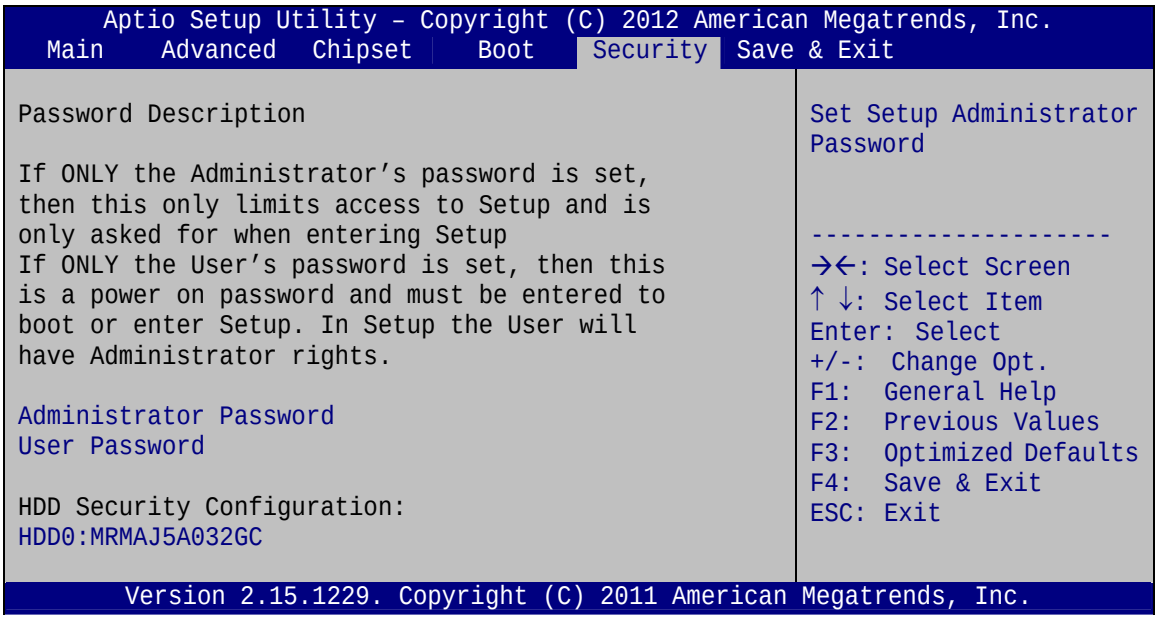
Use the **Boot Option #1** option to specify the boot priority from the available devices.

➔ **Hard Drive BBS Priorities**

Use the **Hard Drive BBS Priorities** option to set the order of the legacy devices in this group.

5.6 Security

Use the **Security** menu (**BIOS Menu 21**) to set system and user passwords.



BIOS Menu 21: Security

➔ **Administrator Password**

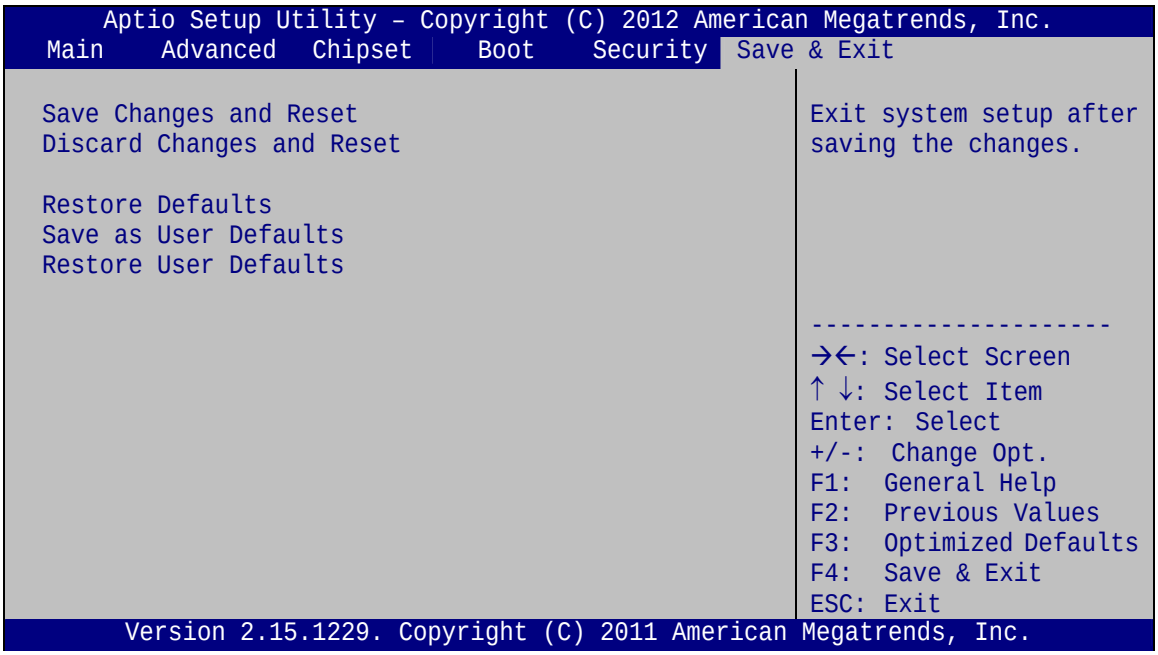
Use the **Administrator Password** to set or change a administrator password.

➔ **User Password**

Use the **User Password** to set or change a user password.

5.7 Exit

Use the **Exit** menu (**BIOS Menu 22**) to load default BIOS values, optimal failsafe values and to save configuration changes.



BIOS Menu 22: Exit

➔ **Save Changes and Reset**

Use the **Save Changes and Reset** option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

➔ **Discard Changes and Reset**

Use the **Discard Changes and Reset** option to exit the system without saving the changes made to the BIOS configuration setup program.

➔ **Restore Defaults**

Use the **Restore Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F3 key can be used for this operation.**

➔ **Save as User Defaults**

Use the **Save as User Defaults** option to save the changes done so far as user defaults.

➔ **Restore User Defaults**

Use the **Restore User Defaults** option to restore the user defaults to all the setup options.

Appendix

A

Safety Precautions

WARNING:

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the ICECARE-10W Series.

A.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

A.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the ICECARE-10W Series is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the ICECARE-10W Series is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range***. Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the ICECARE-10W Series chassis is opened when the ICECARE-10W Series is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the ICECARE-10W Series.
- ***If considerable amounts of dust, water, or fluids enter the ICECARE-10W Series***, turn off the power supply immediately, unplug the power cord, and contact the ICECARE-10W Series vendor.
- **DO NOT**:
  - Drop the ICECARE-10W Series against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object
  - In a site where the ambient temperature exceeds the rated temperature

A.1.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the installation of the ICECARE-10W Series may result in permanent damage to the ICECARE-10W Series and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the ICECARE-10W Series. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the ICECARE-10W Series is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding***: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: When configuring or working with an electrical component, place it on an antic-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component***: When handling the electrical component, hold the electrical component by its edges.

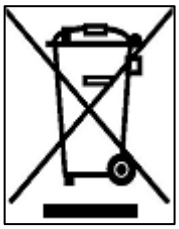
A.1.3 Product Disposal

CAUTION:

Risk of explosion if battery is replaced by and incorrect type. Only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the ICECARE-10W Series, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the ICECARE-10W Series, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior of the ICECARE-10W Series does not require cleaning. Keep fluids away from the ICECARE-10W Series interior.
- Be cautious of all small removable components when vacuuming the ICECARE-10W Series.
- Turn the ICECARE-10W Series off before cleaning the ICECARE-10W Series.
- Never drop any objects or liquids through the openings of the ICECARE-10W Series.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the ICECARE-10W Series.
- Avoid eating, drinking and smoking within vicinity of the ICECARE-10W Series.

A.2.2 Cleaning Tools

Some components in the ICECARE-10W Series may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the ICECARE-10W Series.

- ***Cloth*** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the ICECARE-10W Series.
- ***Water or rubbing alcohol*** – A cloth moistened with water or rubbing alcohol can be used to clean the ICECARE-10W Series.
- ***Using solvents*** – The use of solvents is not recommended when cleaning the ICECARE-10W Series as they may damage the plastic parts.
- ***Vacuum cleaner*** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the ICECARE-10W Series. Dust and dirt can restrict the airflow in the ICECARE-10W Series and cause its circuitry to corrode.
- ***Cotton swabs*** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.

- ***Foam swabs*** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

B

BIOS Options

Below is a list of BIOS configuration options in the BIOS chapter.

Appendix

C

Terminology

AC '97	Audio Codec 97 (AC'97) refers to a codec standard developed by Intel® in 1997.
ACPI	Advanced Configuration and Power Interface (ACPI) is an OS-directed configuration, power management, and thermal management interface.
AHCI	Advanced Host Controller Interface (AHCI) is a SATA Host controller register-level interface.
ATA	The Advanced Technology Attachment (ATA) interface connects storage devices including hard disks and CD-ROM drives to a computer.
ARMD	An ATAPI Removable Media Device (ARMD) is any ATAPI device that supports removable media, besides CD and DVD drives.
ASKIR	Amplitude Shift Keyed Infrared (ASKIR) is a form of modulation that represents a digital signal by varying the amplitude ("volume") of the signal. A low amplitude signal represents a binary 0, while a high amplitude signal represents a binary 1.
BIOS	The Basic Input/Output System (BIOS) is firmware that is first run when the computer is turned on and can be configured by the end user
CODEC	The Compressor-Decompressor (CODEC) encodes and decodes digital audio data on the system.
CompactFlash®	CompactFlash® is a solid-state storage device. CompactFlash® devices use flash memory in a standard size enclosure. Type II is thicker than Type I, but a Type II slot can support both types.
CMOS	Complimentary metal-oxide-conductor is an integrated circuit used in chips like static RAM and microprocessors.
COM	COM refers to serial ports. Serial ports offer serial communication to expansion devices. The serial port on a personal computer is usually a male DB-9 connector.
DAC	The Digital-to-Analog Converter (DAC) converts digital signals to analog signals.
DDR	Double Data Rate refers to a data bus transferring data on both the rising and falling edges of the clock signal.

DMA	Direct Memory Access (DMA) enables some peripheral devices to bypass the system processor and communicate directly with the system memory.
DIMM	Dual Inline Memory Modules are a type of RAM that offer a 64-bit data bus and have separate electrical contacts on each side of the module.
DIO	The digital inputs and digital outputs are general control signals that control the on/off circuit of external devices or TTL devices. Data can be read or written to the selected address to enable the DIO functions.
EHCI	The Enhanced Host Controller Interface (EHCI) specification is a register-level interface description for USB 2.0 Host Controllers.
EIDE	Enhanced IDE (EIDE) is a newer IDE interface standard that has data transfer rates between 4.0 MBps and 16.6 MBps.
EIST	Enhanced Intel® SpeedStep Technology (EIST) allows users to modify the power consumption levels and processor performance through application software. The application software changes the bus-to-core frequency ratio and the processor core voltage.
FSB	The Front Side Bus (FSB) is the bi-directional communication channel between the processor and the Northbridge chipset.
GbE	Gigabit Ethernet (GbE) is an Ethernet version that transfers data at 1.0 Gbps and complies with the IEEE 802.3-2005 standard.
GPIO	General purpose input
HDD	Hard disk drive (HDD) is a type of magnetic, non-volatile computer storage device that stores digitally encoded data.
ICH	The Input/Ouput Control Hub (ICH) is an Intel® Southbridge chipset.
IrDA	Infrared Data Association (IrDA) specify infrared data transmission protocols used to enable electronic devices to wirelessly communicate with each other.
L1 Cache	The Level 1 Cache (L1 Cache) is a small memory cache built into the system processor.
L2 Cache	The Level 2 Cache (L2 Cache) is an external processor memory cache.

LCD	Liquid crystal display (LCD) is a flat, low-power display device that consists of two polarizing plates with a liquid crystal panel in between.
LVDS	Low-voltage differential signaling (LVDS) is a dual-wire, high-speed differential electrical signaling system commonly used to connect LCD displays to a computer.
POST	The Power-on Self Test (POST) is the pre-boot actions the system performs when the system is turned-on.
RAM	Random Access Memory (RAM) is volatile memory that loses data when power is lost. RAM has very fast data transfer rates compared to other storage like hard drives.
SATA	Serial ATA (SATA) is a serial communications bus designed for data transfers between storage devices and the computer chipsets. The SATA bus has transfer speeds up to 1.5 Gbps and the SATA II bus has data transfer speeds of up to 3.0 Gbps.
S.M.A.R.T	Self Monitoring Analysis and Reporting Technology (S.M.A.R.T) refers to automatic status checking technology implemented on hard disk drives.
UART	Universal Asynchronous Receiver-transmitter (UART) is responsible for asynchronous communications on the system and manages the system's serial communication (COM) ports.
UHCI	The Universal Host Controller Interface (UHCI) specification is a register-level interface description for USB 1.1 Host Controllers.
USB	The Universal Serial Bus (USB) is an external bus standard for interfacing devices. USB 1.1 supports 12Mbps data transfer rates and USB 2.0 supports 480Mbps data transfer rates.
VGA	The Video Graphics Array (VGA) is a graphics display system developed by IBM.

Appendix

D

Watchdog Timer

NOTE:

The following discussion applies to DOS environment. IEI support is contacted or the IEI website visited for specific drivers for more sophisticated operating systems, e.g., Windows and Linux.

The Watchdog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMIs or a software bug. When the CPU stops working correctly, Watchdog Timer either performs a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state.

A BIOS function call (INT 15H) is used to control the Watchdog Timer.

INT 15H:

AH – 6FH Sub-function:	
AL – 2:	Sets the Watchdog Timer's period.
BL:	Time-out value (Its unit-second is dependent on the item "Watchdog Timer unit select" in CMOS setup).

Table D-1: AH-6FH Sub-function

Call sub-function 2 to set the time-out period of Watchdog Timer first. If the time-out value is not zero, the Watchdog Timer starts counting down. When the timer value reaches zero, the system resets. To ensure that this reset condition does not occur, calling sub-function 2 must periodically refresh the Watchdog Timer. However, the watchdog timer is disabled if the time-out value is set to zero.

A tolerance of at least 10% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time-consuming.

NOTE:

When exiting a program it is necessary to disable the Watchdog Timer, otherwise the system resets.

Example program:

```
; INITIAL TIMER PERIOD COUNTER
;
W_LOOP:

        MOV     AX, 6F02H       ;setting the time-out value
        MOV     BL, 30          ;time-out value is 48 seconds
        INT     15H
;
; ADD THE APPLICATION PROGRAM HERE
;
        CMP     EXIT_AP, 1      ;is the application over?
        JNE     W_LOOP          ;No, restart the application

        MOV     AX, 6F02H       ;disable Watchdog Timer
        MOV     BL, 0           ;
        INT     15H
;
; EXIT ;
```

Appendix

E

Hazardous Materials Disclosure

E.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	O	O	O	O	O	O
Display	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有"环境友好使用期限"的标签，此期限是估算这些物质"不会有泄漏或突变"的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	O	O	O	O	O	O
显示	O	O	O	O	O	O
印刷电路板	O	O	O	O	O	O
金属螺帽	O	O	O	O	O	O
电缆组装	O	O	O	O	O	O
风扇组装	O	O	O	O	O	O
电力供应组装	O	O	O	O	O	O
电池	O	O	O	O	O	O
O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。						