BE150/180

15.6”/18.5” Bedside Terminal

Intel® Atom™ N270 Processor

High Performance

Low Power Consumption

Wide LCD with Multimedia

BE150/180 Manual 1st Edition

June. 2010

Copyright Notice

Acknowledgments

Packing List

Before you begin installing your Bedside Terminal, please make sure that the following items have been shipped:

- BE150 or BE180 Bedside Terminal.
- VESA Mount Screws
- Utility CD-ROM (Please insert the ONYX-BE150/180 CD-ROM into external CD-ROM drive.) which Contains User's Manual (in PDF format), Drivers and Utilities

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

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Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. **Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

14. If any of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.**

16. **External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 1950 for IT equipment and UL 60601-1 / IEC 60601 series for systems – shall comply with the standard IEC 60601-1-1, Safety requirements for medical electrical systems. Equipment not complying with UL 60601-1 shall be kept outside the patient environment, as defined in the standard.**

Caution:
It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Classification

1. Degree of production against electric shock: not classified
2. Degree of protection against the ingress of water: IPX1
3. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
4. Mode of operation: Continuous
5. Type of protection against electric shock: Class I equipment

FCC

This device complies with Part 15 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.

UL Module Description

	BE150/180 AC modules are developed to suitable for the Classification Mark requirement

Safety Symbol Description

The following safety symbols are the further explanations for your reference.

	*Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, and CAN/CSA C22.2 NO. 601.1*
	*Attention, consult ACCOMPANYING DOCUMENTS.*
	*Ground wire* *Protective Ground wire.*
	*Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, and CAN/CSA C22.2 NO. 601.1*

Contents

Chapter

1

General Information

1.1 Introduction

—A bedside terminal solution for ultimate patient services that boosts patient satisfaction and well-beings.

BE150/180 offers the highly scalable bedside infotainment solution to enhance patient experiences within the hospital. Packaged with renowned software solution partners, 15.6" BE150 and 18.5" BE180 bedside terminals provides patients with capabilities like Entertainment on Demand, Online Access, VoIP Phone, Nurse Call, etc.

Clinical Applications

- Ward, Nursing Station/Cart

Service Capabilities – BE150/180

- **Hospital Information Access –**
  - Patient Record Access
  - Treatment Progress Reporting (i.e. Medical Charting)
  - Dietary/Meal Ordering Service
- **Monitoring/Communication –**
  - Doctor Consultation by Video Conference
  - Internet Access
  - VoIP Telephone Access

- **Entertainment on Demand**
  - Video-on-Demand
  - TV/Radio Broadcasting

1.2 Feature

- 15.6”/18.5” Wide Color TFT LCD display
- Intel® ATOM™ N270 Processor
- Fanless & Compact Design
- VoIP phone, Web Camera, and High Quality Speaker
- Emergency Call/Nurse Call (Optional)
- Multimedia Entertainment: TV, Game, VoIP, Web Radio
- Mini PCI 802.11a/b/g Internal Wireless Antenna (optional)

1.3 Specification

Model Number	
BE150/180	
Model Description	
15.6”/18.5” Low Power High Performance Bedside Terminal with Multimedia	
Main Specification	
CPU Processor	Intel® Atom™ N270 1.6GHz Processor
LCD Controller	Intel®945GSE, Shared memory up to 224MB
System Memory	Up to 2GB DDRII 400/533/667
Display	BE150: 15.6” Wide Color TFT LCD BE180: 18.5” Wide Color TFT LCD
OS Support	Windows® 7 (32 bit & 64 bit) Windows® XP Pro Windows® XP Embedded Fedora Core
Expansion	Internal Mini PCI for WLAN (Optional) TV Tuner Card (Optional) Magnetic Stripe Reader (Optional) Barcode Scanner (Optional) VoIP Phone Web Camera Bluetooth

Main Specification (Cont.)	
Storage Disk Drive	1 x 2.5” HDD (SATA) 1 x Type II Compact Flash (internal on board socket) 1 x Smart Card Reader 1 x Smart Card Reader/RFID Module (Optional)
Button	Brightness: “+” / ”-“; Sound: “+” / ”-“; LCD On/Off; Barcode Trigger (optional) /Nurse Call Button (optional)
Accessory	1 x Web Camera (1.3M Pixel) 2 x Alarm Light (Can be removed by request) 1 x Nurse Call Connector (optional) 1 x Buzzer (GPIO Controllable – On/Off/Volume)
Accessory (Optional)	1 x MSR (TTL Interface) 1 x Bottom Barcode Reader (RS-232 Interface) 1 x RFID (USB Interface shared with Smart Card Reader)
Support Content	IP TV, Web Gaming, MPEG 2/3/4, Web Radio
I/O	
Audio	1 x Line out / MIC in (GPIO controllable, mute/volume)
USB	2 x External USB2.0 (on bottom I/O), 3 x Internal USB2.0

Serial port	1 x DIO Connector for Hardwire Nurse Call	
Ethernet	1 x Gigabit Ethernet (Support WOL)	
I/O (Cont.)		
Video	1 x Video-in through TV Tuner Card (Optional)	
Speaker	2 x 2W High Quality Speakers	
LCD Specification		
Model	BE150 Series	BE180 Series
Display Type	15.6” Color TFT LCD	18.5” Color TFT LCD
Max. Resolution	1366 x 768	
Max. Colors	16.7M	
Dot Size (mm)	0.252 x 0.252	0.3 x 0.3
Luminance (cd/m^2)	250 nits	300 nits
View Angle	55/55(H right/Left)	
	30/55 (V upper/lower)	
Contrast Ratio	500:1	1000:1
Back Light MTBF	50,000 Hrs	

Note:

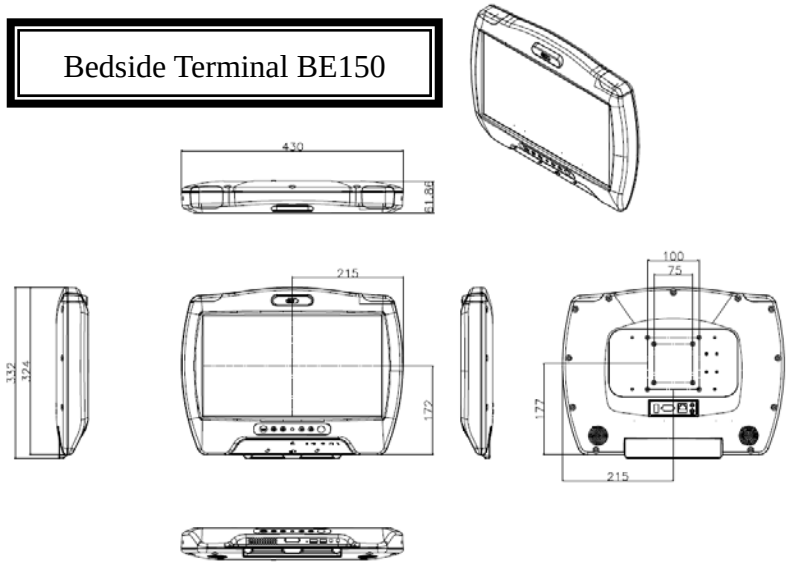
All ONYX's LCD products are manufactured with High precision technology. However, there are a small number of defective pixels in all LCD panels that are not able to change color. This is a normal occurrence for all LCD displays from all manufacturers and should not be noticeable or objectionable under normal operation. ONYX LCD panels are qualified for industry standard conditions in the following: total 7 dead pixels on a screen or if there are 3 within 1 inch square area of each other on the display.

Touch Screen		
Type	5 Wire Resistive	
Resolution	2048 x 2048	
Light Transmission	> 80%	
Lifetime	35 million activities	
Mechanical Specifications		
Model	BE150 Series	BE180 Series
Architecture	Close-Frame	
Front Bezel	Complete flat for ease of cleaning	
Color	White/Gray	
Mounting / Holder	VESA 75/100mm, Desk Top	
Construction	3mm ABS + PC Plastic Housing	
Dimension (WxHxD)	430 x 324 x 61.9 (mm)	510 x 385 x 60.9 (mm)
Carton Dimension	724 x 327 x 545 (mm)	806 x 327 x 612 (mm)
Net Weight	5.0 kg	6 kg
Gross Weight	8.0 kg	10 kg
Packing Filler	PE	
Buttons	On front bezel, membrane key design	
Telephone	Left side of Bedside Terminal	
Web Camera	Top Center Position on the Bedside Terminal	
MSR	Right side of Bedside Terminal (Optional)	
RFID Scanner	Bottom Center Position on the Bedside Terminal	
Smart Card Readers	1 x Bottom Smart Card Reader 2 x Bottom Smart Card Readers (Optional)	

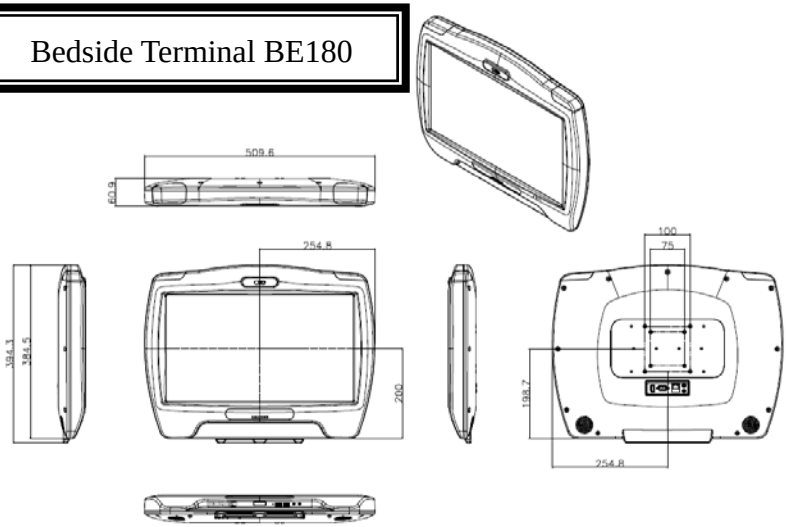
Power Supply Requirement	
Power Supply	FSP Group Inc. Adapter Mode: 120 W
Model No.	PMP120-14
Input Voltage	AC: 100 ~ 240V; 1.4A ~ 0.6A Max. @ 47 ~ 63Hz
Output Voltage	DC: 24V @ 5A
MTBF	150,000 hrs minimum at full load @ 25°C
Environmental Specification	
Temperature	10~35°C(Operating) / -20°C~60°C (Transport / Storage)
Humidity	30~75%(Operating) / 10°C~90°C (Transport / Storage)
Pressure	850~1000hPa(Operating) / 850~1000hPa(Transport / Storage)
Operating Temp.	0°C ~ 35°C (32°F ~ 95°F)
Storage Temp.	-20°C ~ 60°C (-4°F ~140°F)
Storage Humidity	5% ~ 95% @ 40°C, Non-Condensing
Mounting	VESA75/100
Vibration	Random Operation 0.5G, 5~500Hz
Shock	15G Peak Acceleration (11ms. Duration)
Degree of Protection	IP65 on Front Panel/IPX1 on Whole Unit
Noise	Fanless
EMC	CE/FCC Class B, UL 60601-1, EN60601-1

1.4 Dimension

Bedside Terminal BE150



Bedside Terminal BE180



Chapter

2

Hardware Installation

2.1 Safety Precautions

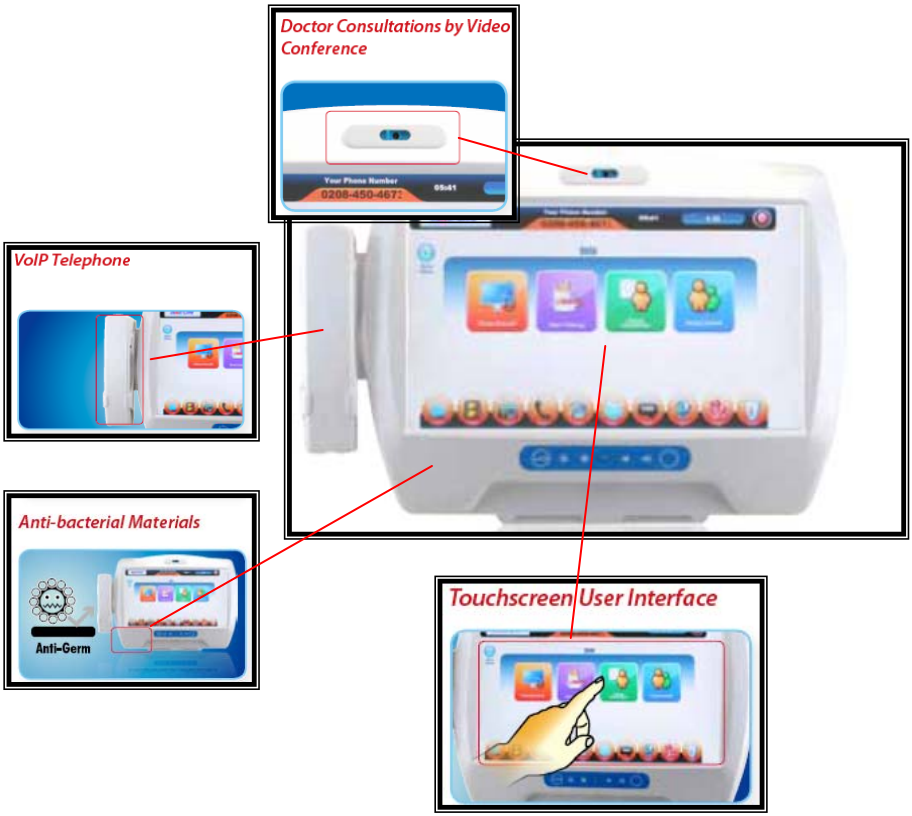
- *Always completely disconnect the power cord from your board whenever you are working on it.*
- *Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

- *Always ground yourself to remove any static charge before touching the board.*
- *Modern electronic devices are very sensitive to static electric charges; please remember to use a grounding wrist strap at all times.*
- *Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis.*

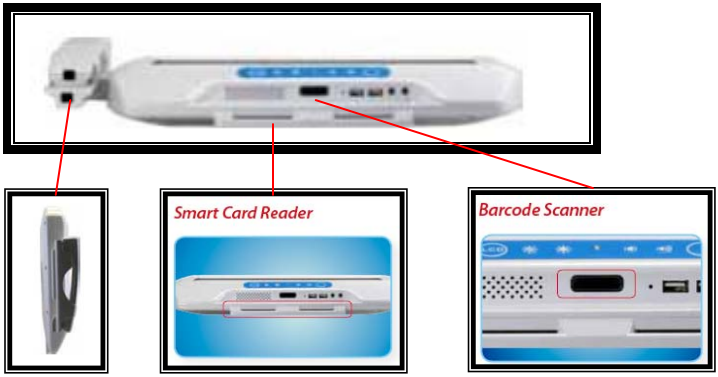
2.2 A Quick Tour of the BE150/180

Before you start to set up the BE150/180, please take a moment to familiarize yourself with the locations and purposes of the controls, drives, connections and ports. The following figures illustrate the fully loaded bedside terminal with all applicable options.

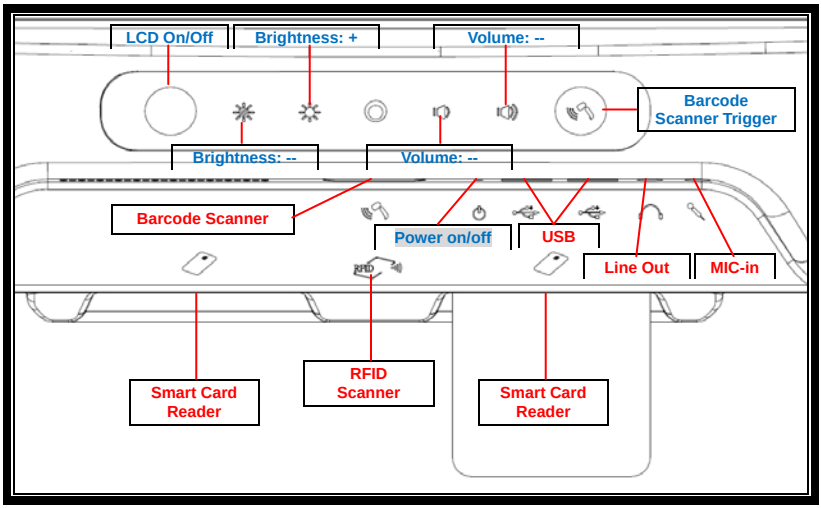
Picture 2.1: Bedside Terminal Front Panel View



Picture 2.2: Bedside Terminal Bottom-Up View

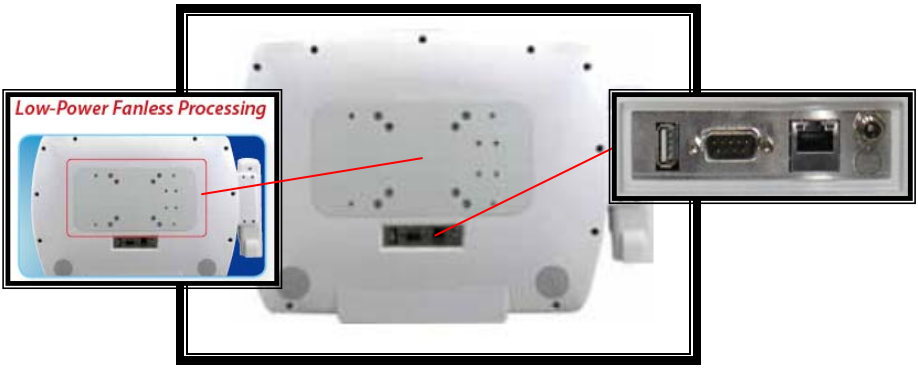


Picture 2.3: Front Panel Closer Up View



On the back of BE150/180 Bedside Terminal, the back I/O section (Digital IO, USB, LAN, and Power connector) is just below the VESA mounting area.

Picture 2.4: Bedside Terminal Rear View

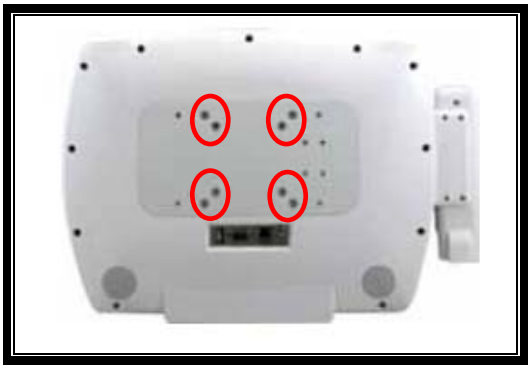


In addition, BE150/180 offers Magnetic Stripe Reader (MSR) option upon request. Please refer to the following figure for installation location on BE150/180 Bedside Terminals.

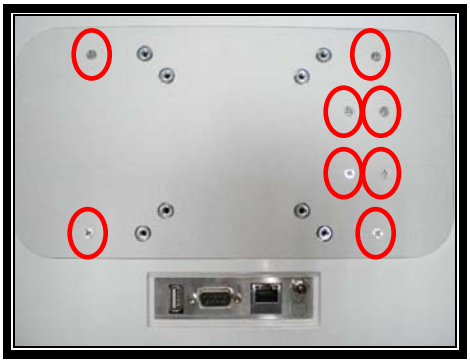
Picture 2.5: Bedside Terminal Right Hand View

2.3 Removing the rear maintenance cover

1. Unplug USB, DIO, LAN, and Power cables before removing the unit from the mounting arm.
2. Unscrew the VESA mount screws.

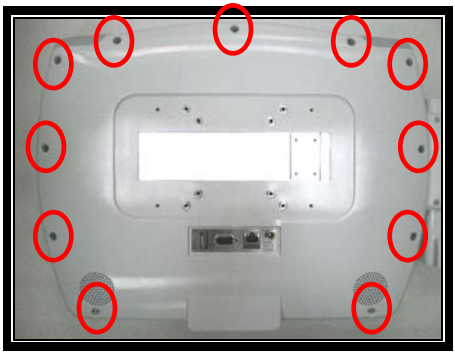


3. Unscrew the attachment screws used to hold the fanless design.



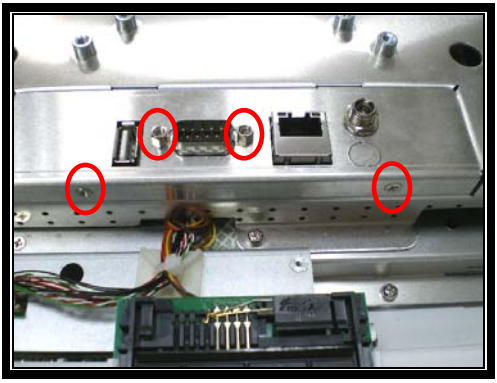
4. Unscrew the attachment screws used to hold the rear cover

and remove the rear cover.



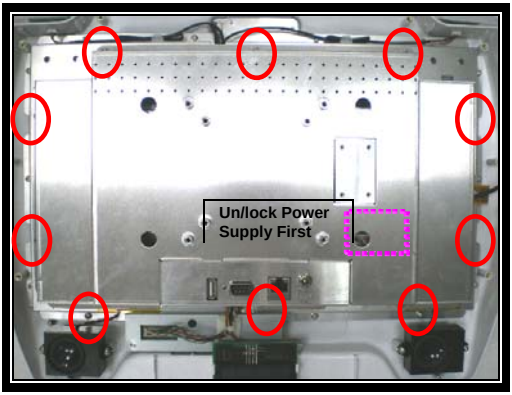
2.4 Hard Disk Drive (2.5” HDD) Installation

1. Remove the rear cover as previously instructed.
2. Unscrew the attachment screw on internal I/O section and remove internal I/O section cover.

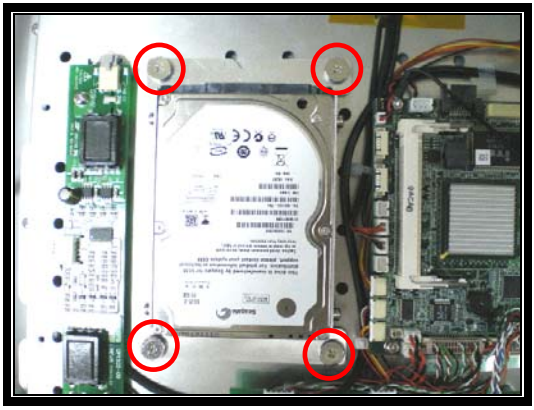


3. Unscrew the attachment screws on internal rear cover and

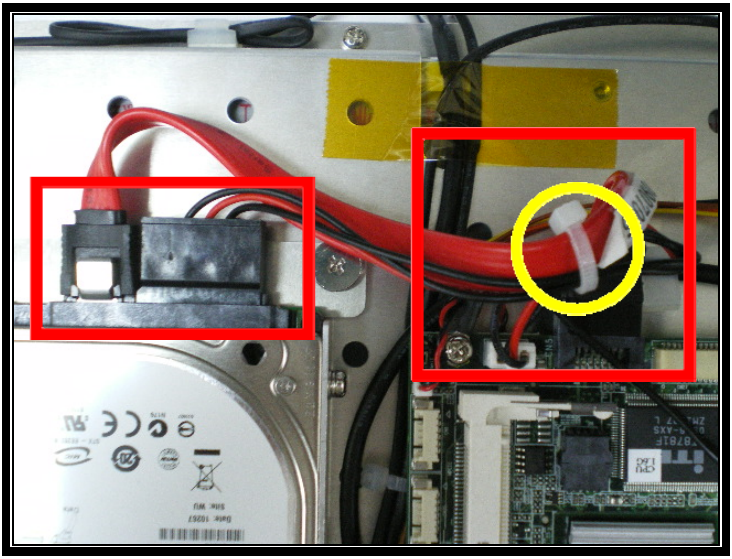
remove internal rear cover. (Note: Please un/lock power supply first during disassemblying or assemblying process.)



4. Lay the HDD over the HDD bracket and fasten the four screws



5. Insert one side connector of SATA cable to the SATA socket on main board and other side of SATA cable to the SATA port on HDD. After SATA cable is successfully connected, please then connect the power cable to the HDD power socket.
   (Note: Please remember to fasten the SATA and power cable to avoid short circuit.)



Chapter

3

Award BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

The ONYX-BE150/180 SD CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 Award BIOS Setup

Awards BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set the advanced features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu shows you the status of PC.

Frequency/Voltage Control

This menu shows you the display of frequency/Voltage Control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/ stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

3.3 Standard CMOS Features

Choosing the Standard CMOS Features option from the INITIAL SETUP SCREEN menu, and the standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive and display. Once a field is highlighted, on-line help information is displayed in the right box of the Menu screen.

3.4 Advanced BIOS Features

Choosing the Advanced BIOS Features option from the INITIAL SETUP SCREEN menu, and you will see this screen contains the manufacturer's default values for the ONYX-BE150/BE180.

3.5 Advanced Chipset Features

Choosing the Advanced Chipset Features option from the INITIAL SETUP SCREEN menu, and you will see the screen contains the manufacturer's default values for the ONYX-BE150/BE180.

3.6 Integrated Peripherals

Choosing the Integrated Peripherals from the INITIAL SETUP SCREEN menu, and you will see the screen contains the manufacturer's default values for the ONYX-BE150/BE180.

3.7 Power management Setup

Choosing the Power Management Setup from the INITIAL SETUP SCREEN menu, and the screen contains the

manufacturer's default values for the ONYX-BE150/BE180.

3.8 PnP/PCI configuration

Choosing the PnP/PCI configurations from the Initial Setup Screen menu, and you will see the screen contains the manufacturer's default values for the ONYX-BE150/BE180.

3.9 PC Health Status

Choosing the PC Health Status from the Initial Setup Screen menu, and you will see the screen contains the manufacturer's default values for the ONYX-BE150/BE180.

3.10 Frequency/Voltage control

Choosing the Frequency/Voltage Control from the Initial Setup Screen menu, and you will see the screen contains the manufacturer's default values for the ONYX-BE150/BE180.

3.11 Load Fail-Safe Defaults

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

Load Fail-Safe Default (Y/N)?

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

3.12 Load Optimized Defaults

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

Load Optimized Defaults (Y/N)?

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

3.13 Set Supervisor/User Password

You can set either SUPERVISOR or USER PASSWORD, or both of them. The difference between the two is that the supervisor password allows unrestricted access to enter and change the options of the setup menus, while the user password only allows entry to the program, but not modify options.

To abort the process at any time, press Esc.

In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System Enter a password each time the system boots and whenever you enter Setup.

Setup Enter a password whenever you enter Setup.

NOTE: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.

3.14 Save & Exit Setup

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

3.15 Exit without saving

Selecting this option and pressing <Enter> allows you to exit the Setup program without recording any new value or changing old one.

For more detailed information, you can refer to the "ONYX BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

4

Driver Installation

There are several installation ways depending on the driver package under different Operating System application. Please insert the BE-150/180 Utility CD-ROM into the UL approved external CD-ROM drive.

Please follow the sequence below to install the drivers***:***

Step 1 – Install Intel INF Update for Windows 9x-2003 Driver

Step 2 – Install Intel Graphics Media Accelerator Driver

Step 3 – Install Intel LAN Driver

Step 4 – Install Realtek AC97 codec Driver

Touch Screen Driver Installation

Card Reader Driver Installation

Smart Card Driver Installation

Barcode scanner Driver Installation

USB 2.0 Drivers are available for download using Windows Update for both Windows XP and Windows 2000. For additional information regarding USB 2.0 support in Windows XP and Windows 2000, please visit www.microsoft.com/hwdev/usb/.

For installation procedures of each driver, you may see the details in the following.

4.1 Installation

Applicable for Windows 9x-2003

1. Place the CD into DVD-ROM. The CD automatically displays the drivers menu if Autorun is enabled in your computer. If Autorun is NOT enabled in your computer, browse the contents of the support to locate the file AUTORUN.EXE to run the CD.

2. A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence and click on the **Next** button.

3. Click on the **Finish** button to finish installation process. And allow the system to reboot.

The LCD signal may be turned off automatically after the VGA driver is installed, please press "Ctrl+Alt+F3" to enable LCD signal again.

4.2 LAN Driver Installation

We strongly recommend that you shall not install LAN driver by clicking on Autorun Exe. Please follow the steps in order to finish the process of installation.

1. Click on **Start** button → **Settings** → **Control Panel** → **System**
2. Select **Device Manager** under the **Hardware** category.
3. Double click on the **Ethernet controller** and select **update Driver** button under the **Driver** category.
4. Click **Next** twice and tick the **Specify a location** option.
5. Click **Next** and choose a route where you want place the folders on before you click on **open**.

Click **Next** → **Yes** → **Finish** and the window will show you how to finish the installation process.

4.3 Card Reader Driver Installation

1. Click on the ***Card_Reader driver*** folder and then double click on the ***setup.exe***
2. Follow the instructions that the window shows you
3. The system will help you install the driver automatically

4.4 Touch Screen Driver Installation

1. Click on the ***Touch*** folder and select an appropriate OS
2. Double click on ****exe*** file and follow the instructions that the window shows you
3. The system will help you install the driver automatically

4.5 Smart Card Driver Installation

1. Click on the ***Smart_Card*** folder
2. Double click on ***Setup*** file and follow the instructions that the window shows you
3. The system will help you install the driver automatically

Appendix

A

Miscellaneous

A.1 General Cleaning Tips

Please refer to the following precautions and fully understand the warning details prior to cleaning the device.

1. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
3. Turn the system off before you start to clean up the component or computer.
4. Never drop the components inside the computer or get circuit board damp or wet.
5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drink or cigarette around the computer.
7. Please remember to clean up the computer by weekly.
8. ONYX Healthcare Inc. has tested and verified these cleaning disinfectants, CIDEX, Viraguard, Control III Disinfectant Germicide, Caviwipes, Dispatch Disinfectant Cleaner CLH69101, Puregreen 24 Disinfectant, can be used with the BE150/180. Use of any other disinfectants will void the warranty.

A.2 Cleaning Tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Water or rubbing alcohol** – You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.

- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

Note:

1. We strongly recommended that you should shut down the system before you start to clean any components.

2. Please remember to clean up your computer every day.

Please follow the steps below before cleaning the device.

1. Close all application programs.
2. Close operating software.
3. Turn off power switch
4. Remove all device
5. Pull out power cable

A.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

Note:

Please follow the national requirement for unit disposal.