

**ZEUS-248/228/198**

24"/22"/19" LCD with LED Backlight  
Intel® Core™ i7 Dual Core Processor  
Smart View Medical Station

ZEUS-248/ZEUS-228/ZEUS-198 Manual 1st Ed  
Dec. 2016

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## **Packing List**

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

- ZEUS-248/228/198 Smart View Medical Station
- Medical Power Adapter 120W/24Vdc
- Utility DVD-ROM, which contains 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

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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. **Warning: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth. (Avertissement: Pour éviter tout risque de choc électrique, cet appareil doit être connecté à une alimentation secteur avec une prise de terre)**
10. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
11. All cautions and warnings on the equipment should be noted.

12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
13. Never pour any liquid into an opening. This could cause fire or electrical shock.
14. **Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.**
15. **Warning: Do not modify this equipment without authorization of the manufacturer. (Avertissement: Ne pas modifier cet équipement sans l'autorisation du fabricant)**
16. **Warning : It is necessary for checking or replacing the battery pack every year. (Avertissement: Il est nécessaire de vérifier ou de remplacer la batterie chaque année)**



**16. 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 users manual.
- e. The equipment has been dropped and damaged.
- f. The equipment has obvious signs of breakage.

**17. 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.**

**18. 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 ANSI/AAMI ES 60601-1: 2005 AND CAN/CSA-C22.2 No. 60601-1:08 / 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**

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1. Degree of protection against electric shock: not classified
2. Degree of protection against the ingress of water: IPX0
3. Mode of operation: Continuous
4. Type of protection against electric shock: Class I equipment
5. No Applied Part, No AP/APG

## FCC

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*Warning!*



This device complies with Part 18 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

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*ZEUS-248/228/198 modules are developed to  
suitable for the Classification Mark  
requirement*

## Safety Symbol Description

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

	<p><i>Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with <b>ANSI/AAMI ES 60601-1:2005 AND CAN/CSA-C22.2 No. 60601-1:08</b></i></p>
	<p><i>Attention, consult ACCOMPANYING DOCUMENTS.</i></p>
	<p><i>Stand-by</i></p>
	<p><i>Ground wire Protective Ground wire.</i></p>

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## Chapter

# 1

## General Information

## **1.1 Introduction**

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The ZEUS-248/228/198 Smart View Medical Stations are based on Intel® 6<sup>th</sup> Generation Core™ i7 Dual Core processor, which delivers a performance improvement of more than 100 percent compared to systems running traditional single-core processors. With two cores, or computing engines, ONYX can simultaneously execute two computing tasks. It accommodates one 2.5" SATA hard disk drive/SSD and two DDR4 SODIMM up to 32GB.

The high brightness LCD, Low Noise solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle computing applications.

The ZEUS-248/228/198 include all the features of a powerful computer into a slim and attractive chassis. The ZEUS-248 has a 24" 250 nits TFT display with 1920 x 1080 resolutions. ZEUS-228 has a 22" 250 nits TFT display with 1920 x 1080 resolutions. ZEUS-198 has a 19" 250 nits TFT display with 1280 x 1024 resolutions. Integrating with high brightness LCD is easier to analyze DICOM image. ZEUS series owns side mount USB 3.1 ports, slim DVD-RW drive and a smart card reader to support high speed data transfer and ID check by smart card reader. Combining the ZEUS-248/228/198 into your system can achieve both cost-saving and efficient improvements in common applications



including Surgical, Radiology, PACS (Picture Archiving Communication Systems), LIS (Lab Information Systems) and Electronic Medical Record. The ZEUS-248/228/198 are definitely your perfect choices.

## **1.2 Feature**

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- 24"/22"/19" Intel® Core™ i7 Dual Core Processor
- Supports Dual Channel DDR4 SODIMM up to 32GB
- Built-in RFID and Smart Card Security (optional)
- Supports Two PCI Express Expansion(optional)
- High Speed USB 3.1 Ports
- 10 Smart Function Keys
- DICOM Compliance(optional)
- 22Wh(14.6V/1500mAh) UPS battery(optional)

## 1.3 Specification

### Hardware Specifications

<b>Display</b>	ZEUS-248: 24" 1920x1080 LCD ZEUS-228: 22" 1920x1080 LCD ZEUS-198 19" 1280x1024 LCD
<b>CPU</b>	Intel® Core™ i7/i5/i3 Processor
<b>Disk Drive Space</b>	2.5" Hard Disk Drive/Solid State Drive Slim DVD-RW Drive (optional)
<b>Expansion</b>	One PCI Express[x4] + One PCI Express[x1](optional)
<b>Function Key</b>	Power On/Off, Speaker Volume Up/Down, LCD Brightness Up/Down, LCD On/Off, Touch Screen On/Off, Display Mode(optional), Reading Light On/Off
<b>I/O</b>	4x USB 3.0 ports 2x Isolated Gigabit LAN 2x Isolated RS-232 port(optional) 1x Isolated USB 2.0 port(optional)

### LCD Specifications

Model Name	ZEUS-248 series	ZEUS-228 series
<b>Display Type</b>	24" LCD	22" LCD
<b>Max. Resolution</b>	1920 x 1080	1920 x 1080
<b>Max. Colors</b>	16.7M	16.7M
<b>Pixel Pitch (um)</b>	0.274 x 0.274	0.248 x 0.248
<b>Luminance (cd/m2)</b>	250(TYP)	250 (TYP)
<b>Back Light Life Time</b>	30,000 Hrs	30,000 Hrs

<b>Model Name</b>	ZEUS-198 series
<b>Display Type</b>	19" LCD
<b>Max. Resolution</b>	1280 x 1024
<b>Max. Colors</b>	16.7M
<b>Dot Size (mm)</b>	0.294 x 0.294
<b>Luminance (cd/m2)</b>	250(TYP)
<b>Back Light Life Time</b>	30,000 Hrs

**Note:**

All ONYX 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. All 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.

## Mechanical Specifications

<b>Architecture</b>	Close-frame
<b>Front Bezel</b>	Plastic bezel with resistive touch screen
<b>Color</b>	White
<b>Mounting / Holder</b>	VESA 75/100mm, Screw type:M4*8mm
<b>Construction</b>	3mm ABS + PC TYPE Plastic housing
<b>Dimension (WxHxD)</b>	ZEUS-248: 600mmx 415mm x 65 mm ZEUS-228: 546mm x 351mm x 66mm ZEUS-198: 450mm x 388mm x 66mm
<b>Net Weight</b>	ZEUS-248: 21.4 lb (9.7 Kg) ZEUS-228: 17.6 lb (8.0 kg) ZEUS-198: 16.5lb (7.5Kg)

## Power Supply Specifications

<b>Model</b>	Adapter ATM120-P240
<b>Input Voltage</b>	100-240V AC, 2-1A @ 50-60 Hz
<b>Output Voltage</b>	24V, 5.A, 120W max.
<b>MTBF</b>	100,000 hrs operation at 25°C

### UPS Battery Specifications (Optional)

<b>Manufacturer/Model</b>	Gallopwire/ZEUS-BAT01
<b>Battery Capacity</b>	21.9Wh
<b>Output Voltage</b>	14.6V
<b>Sustaining Time</b>	10 minutes when all I/O ports are used 25 minutes when no I/O port is used

## Environmental Specifications

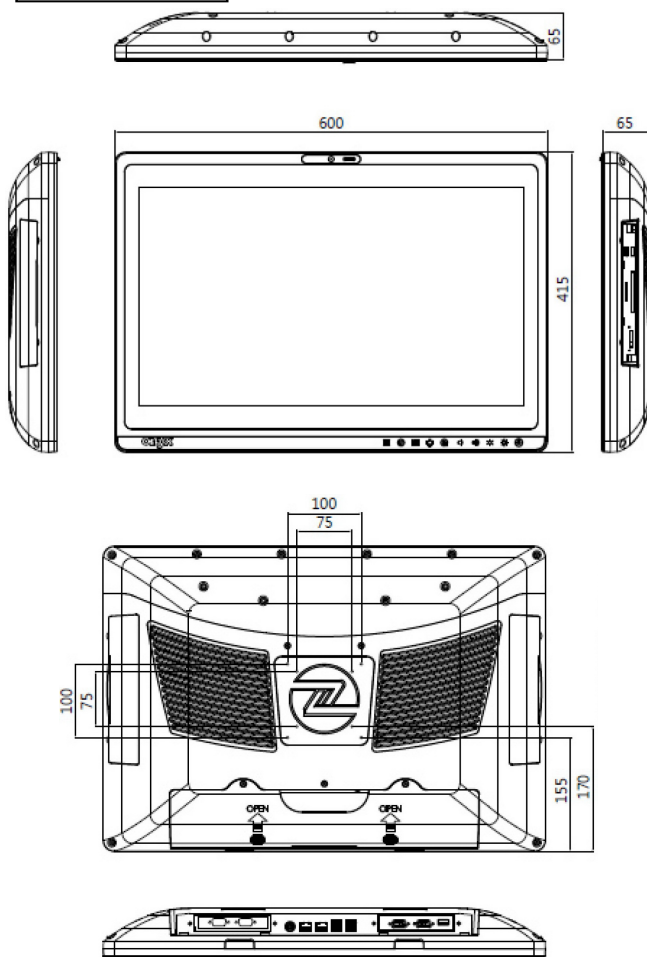
<b>Operating Temperature</b>	0°C to 40°C (32°F ~86°F)
<b>Operating Humidity</b>	30% to 75% RH, non-condensing
<b>Operating Pressure</b>	700 to 1033 hPa
<b>Storage Temperature</b>	-20°C to 60°C (-4°F ~140°F)
<b>Storage Humidity</b>	10% to 90%@ 40°C, non-condensing
<b>Storage Pressure</b>	700 to 1033 hPa
<b>Vibration</b>	0.5G / 5 ~ 500Hz (Random) / operation
<b>Shock</b>	15G peak acceleration (11 msec. duration) / operation
<b>Drop</b>	76cm (1 Corner, 3 Edge, 6 Surface)
<b>EMI / Safety</b>	CE / FCC Class B/ANSI AAMI ES60601-1/ EN 60601-1
<b>Noise</b>	0db (full operation)

## Touch Screen (Optional)

<b>Type</b>	Projective Capacitive / 5-wire Resistive
<b>Interface</b>	USB interface
<b>Light Transmission</b>	> 75%
<b>Life Time</b>	35 million activations

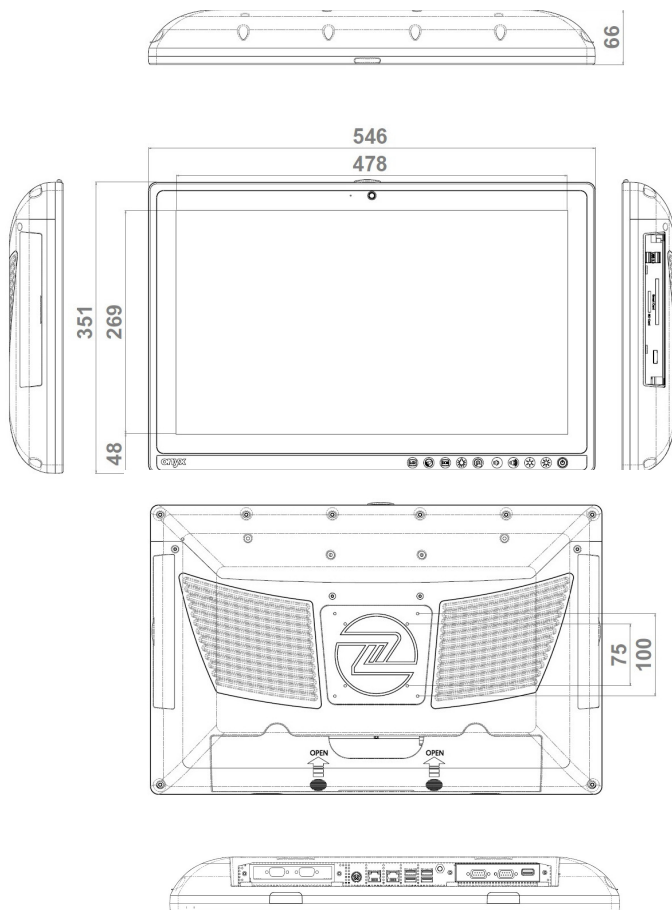
## 1.4 Dimension

### ZEUS-248

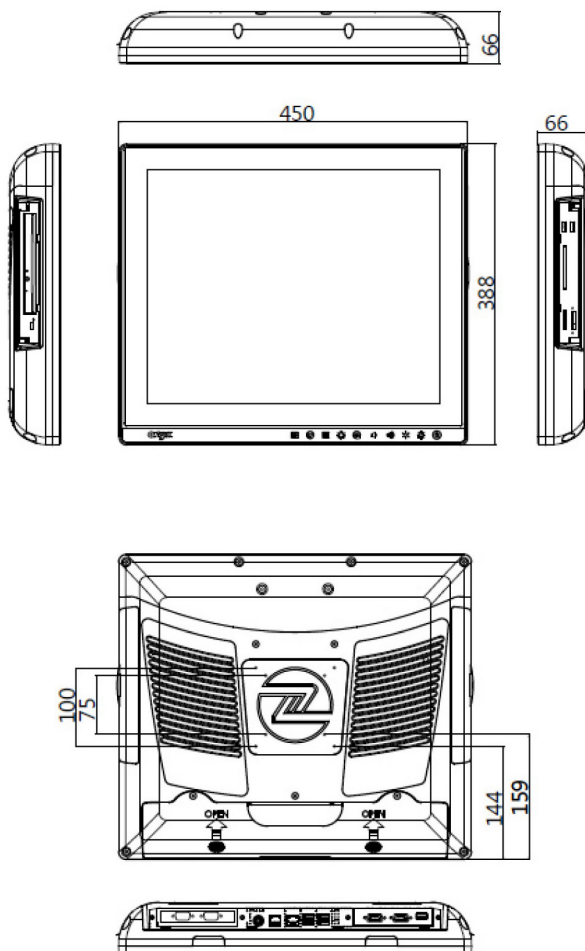




ZEUS-228



ZEUS-198



## Chapter

# 2

## Hardware Installation

## 2.1 Safety Precautions

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**Warning!**



*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.*

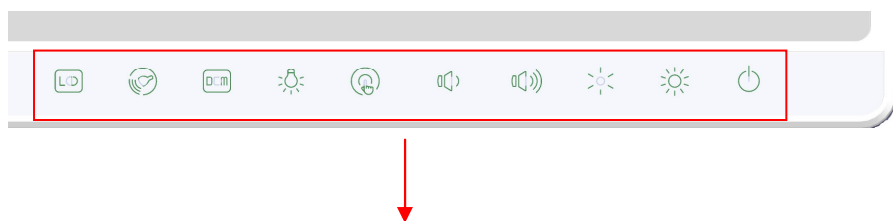
**Caution!**



*Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. 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 Quick Tour of the ZEUS-248/228/198

There are 10 control buttons in the front side of ZEUS-248/228/198.  
Please refer to table 2.1 for the function of each button.



Control Buttons

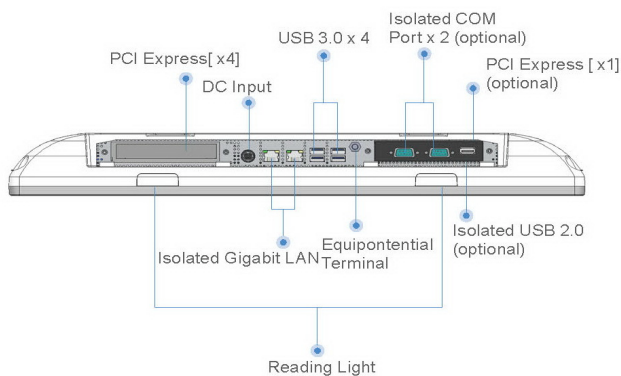
*Picture 2.1: Front View of the Zeus Series*

Control Button	Function
	Press 2 seconds to turn on the power
	Increase LCD brightness
	Decrease LCD brightness
	Increase speaker volume
	Decrease speaker volume
	Enable/Disable Touch Screen
	Enable/Disable Reading Light
	DICOM Compliance Mode Selection(DICOM off/DICOM 9300K/DICOM 6500K/DICOM 5600K)
	Enable Barcode Scanner
	Enable/Disable LCD

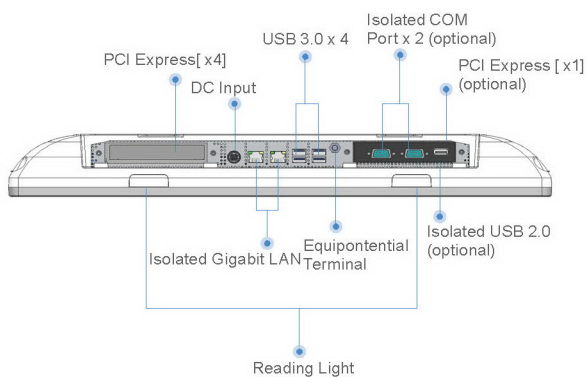
**Table 2.1: Functions of Control Buttons**

The sunken I/O section is at the bottom, as shown in Picture 2-2.

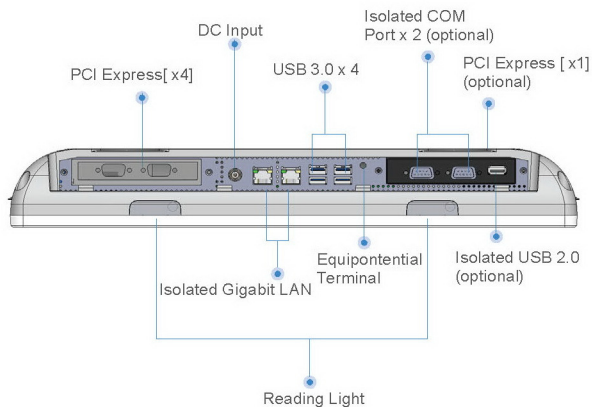
**ZEUS-248**



**ZEUS-228**



**ZEUS-198**



***Picture 2.2: Rear view of the Zeus Series***



When you turn ZEUS-248/228/198 around, two USB 3.1 ports and the smart card reader are on the right side and DVD-RW drive is on the left side as shown in Picture 2-3.



***Picture 2.3: Right and Left View of Zeus-248/228/198***

## **2.3 Turn On and Boot up into Windows OS**

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This section is for Windows operating system only. If you are installing a different operating system, please contact your vendor for installation details.

Your ZEUS will begin loading Windows OS once you push the power button to turn power on. After less than one minute, Windows desktop screen will appear.

You can select the programs from the start menu in the left-down corner of the desktop screen.

## **2.4 Turn off**

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Turning off ZEUS properly is important for system reliability. There are two ways to turn off the system.

1. On the start menu, click “shut down” and select “OK”
2. Push the power button and then the system will shut down automatically

## **2.5 DICOM compliance option**

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1. When DICOM compliance mode is selected, LCD brightness will be fixed and cannot be adjusted.
2. Because LCD backlight brightness decays by time, the LCD must be calibrated after a period of time to be compliant to DICOM. Please use OPM-V00T-A0 color calibrator to do calibration regularly.
3. “DICOM Compliance Mode Selection” touch button can switch color temperature between 9300K/6500K/5600K.

## Chapter

# 3

## Driver Installation

There are several installation ways depending on the driver package under different Operating Systems.

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

**For Windows 7 32-bit & 64-bit**

- Step 1 – Chipset Driver
- Step 2 – Graphics Driver
- Step 3 – LAN i211 Driver
- Step 4 – LAN i219 Driver
- Step 5 – Hotfix Patch
- Step 6 – ME Driver
- Step 7 – Audio Driver
- Step 8 – USB 3.1 Driver
- Step 9 – Resistive Touch Screen Driver(only for ET series)

**For Windows 8.1/10 64-bit:**

- Step 1 – Chipset Driver
- Step 2 – Graphics Driver
- Step 3 – LAN Driver
- Step 4 – ME Driver
- Step 5 – Serial IO Driver
- Step 6 – COM Driver
- Step 7 – USB 3.1 Driver
- Step 8 – Audio Driver
- Step 9 – Resistive Touch Screen Driver(only for ET series)

## Appendix

# A

## Miscellanea

## **A.1 General Cleaning Tips**

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You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

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. 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 ZEUS-248/ZEUS-228/ZEUS-198. Use of any

other disinfectants will void the warranty.

## A.2 Cleaning Tools

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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:**

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

**Please follow the steps below.**

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

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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.

The worldwide distributors show on the following website:

<http://www.onyx-healthcare.com.tw/Contact.php>

**Note:**

Follow the national requirement to dispose unit