

# TEGUAR<sup>®</sup>



## **TMD-25-15**

15.6" Healthcare  
Display

User's Manual

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## Trademarks

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## FCC and DOC Statement on Class B

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 when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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 the 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.

## Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.
3. Power supply is part of ME EQUIPMENT.
4. Do not place the product where it is difficult to disconnect the power.
5. Do not disassemble, repair, or alter the monitor for it could cause risk of fire, electric shock or injury.  
Contact an authorized service organization in your area if necessary.
6. When a professional is servicing the product, disconnect the power and keep away from the patient.
7. Only wipe with a dry cloth to clean up the monitor's enclosures and panel.

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## About this Manual

This manual can be downloaded from the website, or acquired as an electronic file included in the optional CD/DVD. The manual is subject to change and update without notice, and may be based on editions that do not resemble your actual products. Please visit our website or contact our sales representatives for the latest editions.

## Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.
2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.
3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.
4. We will not be liable for any indirect, special, incidental or consequential damages to the product that has been modified or altered.

## For the customers in U.S.A. and Canada

Please use the following power supply cord.

Plug Type	HOSPITAL GRADE*
Cord Type	Min. Type SJT Min. 18 AWG
Minimum Rating for Plug and Appliance Couplers	10A/125V
Safety Approval	UL Listed and CSA



### Important:

Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

## Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.
2. Wear an antistatic wrist strap.
3. Do all preparation work on a static-free surface.
4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

## Safety Measures

- To avoid damage to the system, use the correct AC input voltage range.
- To reduce the risk of electric shock, unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.
- The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.
- To prevent injuries, firmly fix the unit to the floor or wall following the installation manual.
- If this product should be used adjacent to or stacked with other equipment, it should be observed to verify normal operation in the configuration in which it will be used.
- When you dispose of the unit or accessories, you must obey the laws in the relative area or country and the regulations in the relative hospital regarding environmental pollution.
- When installing, the installation space must be secured in consideration of the ventilation and service operation. Leave a space 4 cm (1 5/8 inches) or more behind, 10 cm (4 inches) or more from the left and right sides of, 6 cm (2 3/8 inches) or more from the bottom side of, and 30 cm (11 7/8 inches) or more above the unit.
- Use a proper power cord for your local power supply. Use the approved Power Cord (3-core mains lead) / Appliance Connector / Plug with earthing-contacts that conforms to the safety regulations of each country if applicable. Use the Power Cord (3-core mains lead) / Appliance Connector / Plug conforming to the proper ratings (Voltage, Ampere). If you have questions on the use of the above Power Cord / Appliance Connector / Plug, please consult qualified service personnel.

## About the Package

The package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- Display
- AC Adapter: EM10681B
- Power Cord
- HDMI Cable
- USB Cable for Touch

## Optional Items

- Cable Clamp x 3 pcs
- VESA Desk Stand

The main body and accessories in the package may not come similar to the information listed above. This may differ in accordance with the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

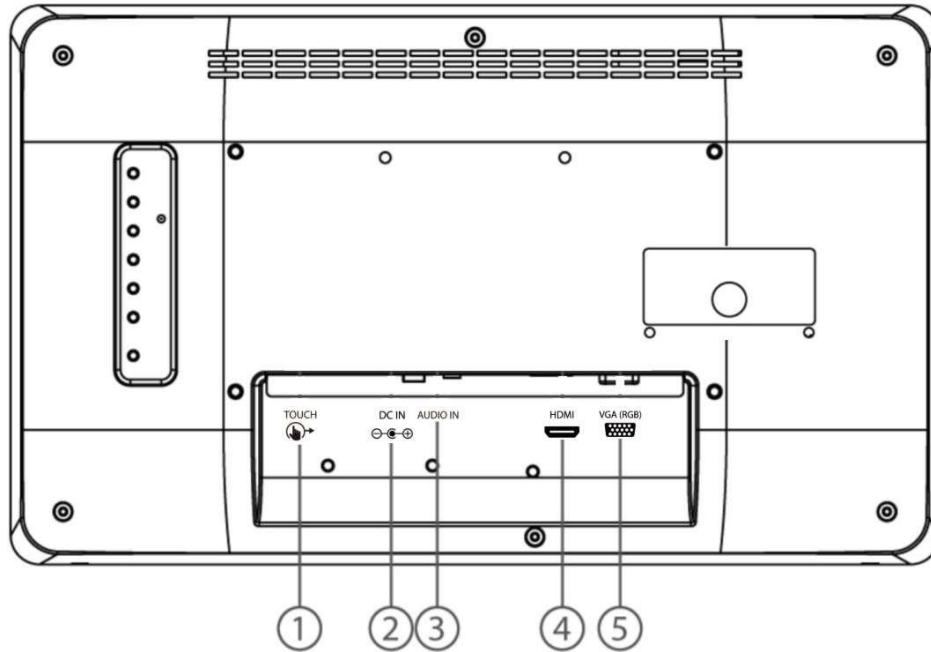
## Chapter 1 - Introduction

### ► Specifications

<b>Display</b>	<b>Size/Type</b>	15.6" TFT	<b>Mechanical Specification</b>	<b>Mounting</b>	VESA Mount (75 x 75 mm, 100 x 100 mm, 200 x 100 mm), VESA Screws M4x4L, (75x75mm, 100 x 100mm) flat head VESA Screws M4x8L, (200 x 100mm) flat head	
	<b>Resolution</b>	1920 x 1080		<b>Dimensions (W x H x D)</b>	387.8 x 232.9 x 38.45 (mm)	
	<b>Brightness</b>	400 nits		<b>Housing</b>	Back cover white color, plastic casing	
	<b>Contrast Ratio</b>	800:1		<b>OSD Buttons</b>	Menu, Input, Right, Left, Up, Down, Power	
	<b>Response Time</b>	30ms		<b>Environment Considerations</b>	<b>Operating Temperature</b>	0°C to 40°C
	<b>Viewing Angle</b>	~85~85 (H); ~85~85 (V)		<b>Storage &amp; Transport Temperature</b>	-10°C to 60°C	
	<b>Max Colors</b>	16.2M		<b>Humidity</b>	10%~90% (non-condensing)	
	<b>Touch</b>	Projected Capacitive Touch		<b>Altitude</b>	800 ~ 1060 hPa (2000m)	
<b>Input/ Output</b>	<b>Input Ports</b>	1 x VGA 1 x HDMI 1 x Audio 1 x USB for Touch	<b>LCD Panel Lifetime</b>	50, 000 hours		
	<b>OSD Membrane</b>	7 x Control buttons on the rear side	<b>Testing and Certifications</b>	<ul style="list-style-type: none"> <li>• IEC 60601-1:2005 + A1:2015 (Ed. 3.1)</li> <li>• IEC 60601-1-6:2010 + A1:2013 (Ed. 3.1)</li> <li>• IEC 62366:2007 + A1:2014 (Ed. 1.1)</li> <li>• ANSI/AAMI ES60601-1:2005/</li> </ul>		
	<b>Speaker</b>	2 x 1W Speaker		A1:2012and C1:2009/(R)2012and A2:2010/(R)2012		
	<b>Power Input</b>	12V DC 2.5 mm, with External AC to DC Adapter (comply with Level VI efficiency standard)		<ul style="list-style-type: none"> <li>• CAN/CSA-C22.2 No.60601-1:14</li> <li>• EN60601-1-2 (Ed. 4.0)</li> </ul>		
<b>Power Specifications</b>	<b>Power Consumption</b>	3A, 6.3W typical, normal operation		<ul style="list-style-type: none"> <li>• EN55032/EN55024, FCC part 15B</li> <li>• EN60950-1</li> </ul>		
	<b>Adapter</b>	EDAC Power Electronics Co Ltd. model EM10681B		<ul style="list-style-type: none"> <li>• RoHS-2, REACH, WEEE compliant</li> </ul>		

► Description of Parts

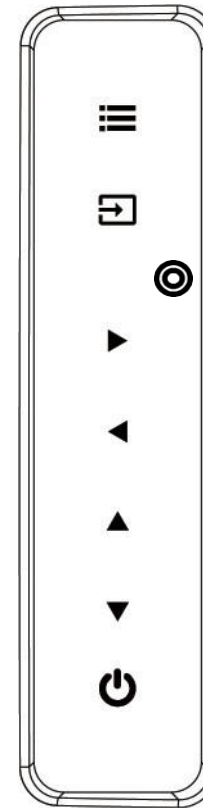
Rear View



1	Touch	Connects USB for touch capabilities.
2	DC IN	Provides power for the monitor, accepts 12V DC. Example: AC
3	Audio IN (Optional)	Transmits audio input signal. Example: Computer audio to be played through the monitor speakers.
4	HDMI	Transmits and protects copyrighted digital video and audio. Example: An HD tuner to an HD ready TV.
5	VGA(RGB)	Transmits video from a PC to a monitor. Example: A notebook PC to a monitor.

Physical Buttons

Physical buttons (OSD Control Panel) are located on the rear side of the Display.



	<b>Menu</b>	Press to enable the main menu.
	<b>Input</b>	Press to ENTER/ Change video source.
	<b>Right</b>	Press to move right in the navigation menu/ Hot Key manual enable.
	<b>Left</b>	Press to move left in the navigation menu/ Hot Key information.
	<b>Up</b>	Press to Auto adjust settings.
	<b>Down</b>	Press to exit/ Auto color.
	<b>Power</b>	Press to power on or power off the device.
	<b>LED</b>	Power on/Power saving: Green light Power off: No light

## Chapter 2 - Hardware Installation

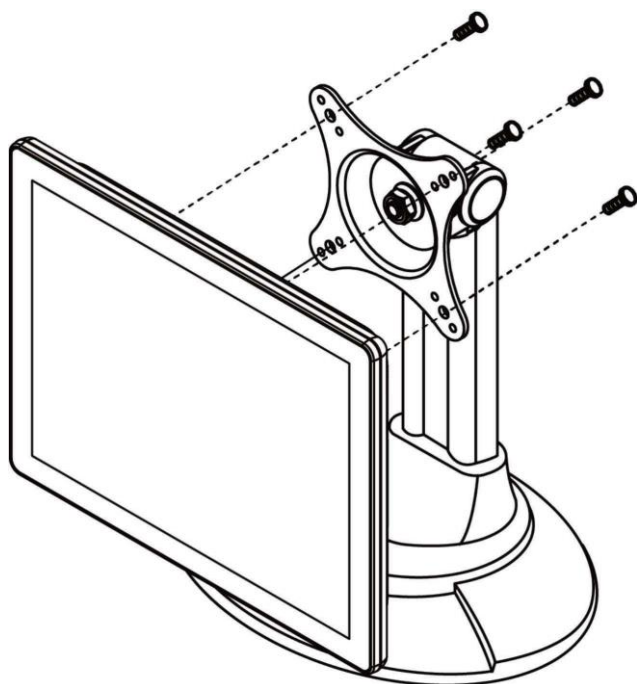
### VESA Mount

This device supports VESA mount and provides various types of mounting options to fit any industrial use.

Size	VESA Plate	Screw Size
15.6"	75x75 mm, 100x100 mm	M4 x 4L

#### Mounting Instruction

Use Philips M4x5 screws to fix the desk stand to VESA holes on the back cover of the device.

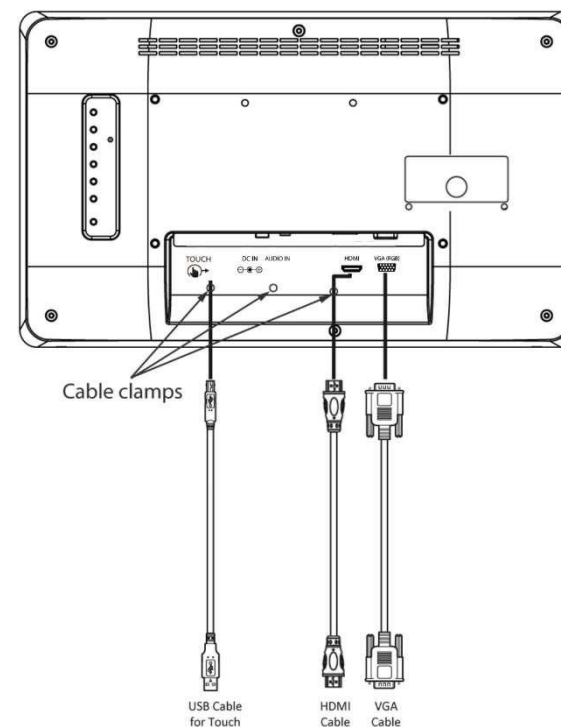


#### Important:

The picture is for demonstration purposes only. VESA Mount accessories are not supplied by default.

### Connecting Peripherals

Use VGA or HDMI cable to connect your display to external device. Connect USB cable for touch capabilities. Use cable clamps (optional accessory) to fix the position of cables.



#### Important:

Please adjust screen resolution to the native resolution. Recommended resolution is 1920 x 1080.

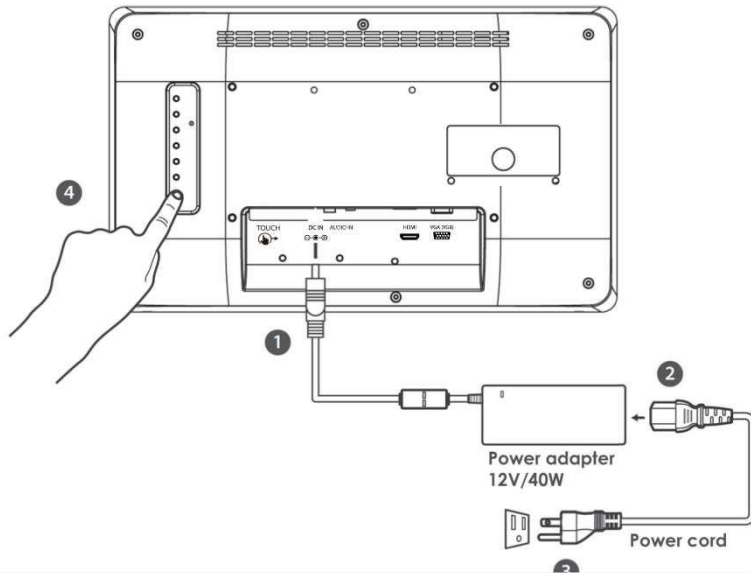
## Chapter 3 - Operating the Device

### ► Turning On and Off

Follow the following steps to turn on your device:

1. Connect the AC adapter (12V/40W) to the DC power connector located on the backside of the display.
2. Connect the power cord to AC adapter.
3. Plug the power cord to the AC outlet.
4. Press Power button on the rear OSD panel.

To turn off the device, please disconnect the power cord from an electric outlet.



**Important:**

To fully disengage the power, please disconnect the input plug from the AC outlet.

To avoid risk of electric shock, this equipment must only be connected to a supply main with protective earth.

### ► Frequency Table

Size	VESA Plate	Screw Size	HDMI
640 x 480	60	v	v
	72	v	v
	75	v	v
480P	60	v	v
	72	v	v
	75	v	v
800 x 600	60	v	v
	72	v	v
	75	v	v
1024 x 768	60	v	v
	72	v	v
	75	v	v
720P	60	v	v
	72	v	v
	75	v	v
1280 x 1024	60	v	v
	72	v	v
	75	v	v
1600 x 1200	60	v	v
	72	v	v
	75	v	v
1920 x 1080	60	v	v
	72	v	v

## ► Troubleshooting

Problem	Check the following
There is a black dot or dead pixel dot on the screen	A missing pixel does not constitute an out of spec. defective product
Cannot turn power on	Turn off the power supply, and check that the AC cord or DC cord are securely inserted. After checking, turn on the power supply again.
It takes time for image to appear	Since the monitor processes various signals digitally to reproduce beautiful images, it may take time before images appear when it is turned on, input is switched, or when the mode is switched to "Multi Window".
There are spots on the screen	There may be electrical distortion from vehicles, trains, high voltage lines or fluorescent lamps.
Bad color	Color density or tint control may not be adjusted properly. (See the adjusted value of image.)
Image appears and disappears	Input may not be connected properly.
When changing the scan size, the top and bottom part of the screen does not show images	When using a video software program (such as a cinema size program) with a screen wider than one in the 16:9 mode, blank areas separate from the images are formed at the top and bottom of the screen.
Image contour flickers	Due to the characteristics of the display control, contour of animated parts of images may seem to flicker, but that is not a breakdown.
Color is extremely bad	Input configuration "RGB"/"YPBPR" may not be selected properly.

## Chapter 4 - Indications for Use

### ► Definition

An electrically-powered LCD Monitor designed as an output device for displaying data (e.g., patient images, videos) from endoscopic/ laparoscopic camera systems and other compatible healthcare imaging systems. It is typically a mounted liquid crystal display (LCD) or light-emitting diode (LED) unit, and may include an antimicrobial material to prevent cross-contamination in healthcare environment. The Monitor is a widescreen, high-definition, healthcare grade for use during minimally invasive surgical procedures and is suitable for hospital operating rooms, surgical centers, clinics, doctors' offices and similar healthcare applications.

The product itself does not provide any therapeutic or diagnostic support and no essential performance is declared.

This LCD Monitor is intended for use by qualified nursing or medical personnel with intensive reading ability, above 18 years old.

Patient is not the intended user. Hand and fingers are part of body to interact with the product.

### ► Classification information

- Power by Class I power supply
- No protection against ingress of water (IPX0)
- No Applied part
- Mode of operation: Continuous operation
- Provides isolation: MOPP

### ► Customers in the U.S.A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

All interface cables used to connect peripherals must be shielded to comply with the limits for a digital device pursuant to Subpart B of part 15 of FCC Rules.

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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

### ► Customers outside the U.S.A

Inquiries related to product compliance based on European Union legislation shall be addressed to the authorized representative. For any service or guarantee matters, please refer to the addresses provided in the separate service or guarantee documents.

### ► Important safeguards/notices for use in the healthcare applications

1. All the equipment connected to this unit shall be certified per Standard IEC60601-1, IEC60950-1, IEC60065 or other IEC/ISO Standards applicable to the equipment.
2. Furthermore, all configurations shall comply with the system standard IEC60601-1. Everybody who connects additional equipment to the signal input part or signal output part configures a healthcare system, and is therefore, responsible that the system complies with the requirements of the system standard IEC60601-1.
3. If in doubt, consult the qualified service personnel.
4. The leakage current could increase when connected to other equipment.
5. For this equipment, all accessory equipment connected as noted above, must be connected to mains via an additional isolation transformer conforming to the construction requirements of IEC60601-1 and providing at least basic insulation.
6. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause interference to other equipment. If this unit causes interference (which can be determined by unplugging the power cord from the unit), try these measures: Relocate the unit with respect to the susceptible equipment. Plug this unit and the susceptible equipment into different branch circuit.

### ► Important EMC notices for use in the healthcare applications

The display needs special precautions regarding EMC and needs to be installed and put into service per the EMC information provided in the instructions for use.  
The portable and mobile RF communications equipment such as cellular phones can affect the display.



#### Warning:

The use of accessories and cables other than those specified, with the exception of replacement parts sold by Teguar, may result in increased emissions or decreased immunity of the device.

► **Guidance and manufacturer's declaration-electromagnetic emissions**

This product is intended for use in the electromagnetic environment specified below. The customer or the user should assure that it is used in such an environment.

Emission test	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The product uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The product is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	D	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

► **Guidance and manufacturer's declaration - electromagnetic immunity**

The product is intended for use in the electromagnetic environment specified below. The customer should assure that it is used in such as environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/ output lines	±2 kV for power supply lines ±1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% (> 95% dip in) for 0.5 cycle 40% (60% dip in) for 5 cycles 70% (30% dip in) for 25 cycles	< 5% (> 95% dip in) for 0.5 cycle 40% (60% dip in) for 5 cycles 70% (30% dip in) for 25 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of the product requires continued operation during power mains interruptions, it is recommended that the product powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m Power	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital

**INDICATIONS FOR USE**

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance			Recommended Separation Distance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms 150 kHz to 80 MHz	Portable and mobile RF communications equipment should be used no closer to any part of the product, including cables, than the recommended separation distance calculated from the equation appliance to the frequency of the transmitter.  Recommended separation distance: d  $d = \left[ \frac{3.5}{E_1} \right] \sqrt{P}$	Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz  3 V/m 80 MHz to 2.5 GHz	$d = \left[ \frac{3.5}{E_1} \right] \sqrt{P}$ 80 MHz to 800 MHz  $d = \left[ \frac{7}{E_1} \right] \sqrt{P}$ 80 MHz to 2.5 GHz  Where P is the maximum output power rating of the transmitter in watts (W) per the transmitter manufacturer and d is the recommended separation distance in meters (m).  Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, A should be less than the compliance level in each frequency range.  B Interference may occur near equipment marked with following symbol:

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the product is used exceeds the applicable RF compliance level above, the product should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the product.

► **Recommended separation distances between portable and mobile RF communications equipment and the product**

The product is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the product can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the product as recommended below, per the maximum output power of the communications equipment.

Rated maximum output power [W] of transmitter	Separation distance per frequency of transmitter [m]		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	d = 1.2	d = 1.2	d = 2.3
	$d = \left[ \frac{3.5}{v_1} \right] \sqrt{P}$	$d = \left[ \frac{3.5}{E_1} \right] \sqrt{P}$	$d = \left[ \frac{7}{E_1} \right] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated a maximum output power not listed above, the recommended separation distance  $d$  in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) per the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

► **General Safety**

- product is a DC powered device. Use with the supplied AC adaptor. Operate the unit on 100-240V AC only.
- For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
- Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
- The nameplate indicating operating voltage, etc. is located on the AC adaptor.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- To disconnect the AC power cord, pull it out by grasping the plug. Never pull the cord itself.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

► **Healthcare use**

- Please do not touch patient and this healthcare device at the same time.
- Users must not allow SIP/ SOPs and the patient to come into contact at the same time.
- Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked “Hospital Only” or “Hospital Grade”.

► **Installation**

- This device can only be installed by manufacturer authorized and trained personnel.
- Prevent internal heat build-up allowing adequate air circulation.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not place the monitor near equipment which generates magnetism, such as a transformer or high voltage power lines.
- Use suitable mounting apparatus to avoid risk of injury.

► **Precautions for connecting this unit with other healthcare devices**

Before you utilize this device and/or connect this device to any other healthcare device, please be aware of and abide by the following precautions:

- Before actually using this device for healthcare practice, please check and confirm that you do not experience any discomfort in the use of this monitor
- If you experience or are likely to experience discomfort, please refrain from using this device.
- Generally, discomfort (such as eye strain, fatigue, nausea, or motion sickness) can be provoked by quick movements of video picture, focal positioning of video images, distances between moving objects and changing image colors.
- Before prolonged use, make sure the image of the connected healthcare device is displayed properly.

► **Use with an electrosurgical knife, etc.**

If this unit is used together with an electrosurgical knife, etc., the picture may be disturbed, warped or otherwise abnormal because of strong radio waves or voltages from the device. This is not a malfunction. When you use this unit simultaneously with a device from which strong radio waves or voltages are emitted, confirm the effect of this before using such devices, and install this unit in a way that minimizes the effect of radio wave interference.

► **Precautions for using this unit safely.**

- Some people may experience discomfort (such as eye strain, fatigue, or nausea) while watching video images. It is recommended that all viewers take regular breaks while watching video images. The length and frequency of necessary breaks will vary from person to person. You must decide what works best.
- Avoid watching the display in environments where your head may shake, because there is a higher possibility that you experience discomfort.

**Precautions modifications**

- No modification of this equipment is allowed.
- Do not modify this equipment without authorization of the manufacturer
- If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.
- If there is any other problem, please consult or return the device to your distributor. Do not try to repair a defective device.

**Recommendation to use more than one unit**

As problems, can occasionally occur, when the monitor is used under critical conditions, we strongly recommend you use more than one unit or prepare a spare unit for replacement.

**About the LCD Display Panel**

- The LCD panel fitted to this unit is manufactured with high precision technology, giving a functioning pixel ratio of at least 99.99%. Thus, a very small proportion of pixels may be “stuck”, either always off (black), always on (red, green, or blue), or flashing. In addition, over a long period of use, because of the physical characteristics of the liquid crystal display, such “stuck” pixels may appear spontaneously. These problems are not a malfunction.
- Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the unit by a window.
- Do not store the monitor FACE DOWN.
- Do not push or scratch the LCD screen.
- Do not place a heavy object on the LCD screen. This may cause the screen to lose uniformity.
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction. When the monitor becomes warm, the screen returns to normal.
- The screen and the cabinet become warm during operation. This is not a malfunction.

**Images that may cause burn-in**

- Masked / boarded images with aspect ratios other than 16:9
- Color bars or images that remain static for a long time
- Continuous characters or messages displaying on the screen

**To reduce the risk of burn-in**

Turn off the character displays from connected equipment.

**About the screen protect panel**

The screen protect panel is made of toughened glass, but there is a possibility that it may crack.

- Handle with care. Avoid strong impact, such as dropping from a high place or an object swinging into it.
- Do not scratch the panel with a sharp object or place it in harm's way.

**A long period of use**

- Due to the characteristics of LCD panel, displaying static images for extended periods, or using the unit repeatedly in a high temperature/high humidity environments may cause image smearing, burn-in, areas of which brightness is permanently changed, lines, or a decrease in overall brightness.
- In particular, continued displaying of an image smaller than the monitor screen, such as in a different aspect ratio, may shorten the life of the unit.
- Avoid displaying a still image for an extended period, or using the unit repeatedly in a high temperature/high humidity environment such as an airtight room, or around the outlet of an air conditioner.

**Moisture condensation**

If the unit is suddenly taken from a cold to a warm location, or if ambient temperature suddenly rises, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.

**Before cleaning**

Be sure to disconnect the AC power cord from the AC outlet.

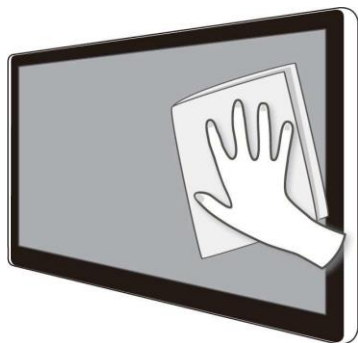
**Cleaning the monitor**

A material that withstands disinfection is used for the front protection plate of the healthcare use LCD monitor. The protection plate surface is specially treated to reduce reflection of light. When solvents such as benzene or thinner, or acid, alkaline or abrasive detergent or chemical cleaning cloth are used for the protection plate surface/monitor surface, the performance of the monitor may be impaired or the finish of the surface may be damaged. Take care with respect to the following:

- Never use solvents such as benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth for cleaning or disinfection, as they will damage the protection plate surface/monitor surface.
- Do not use unnecessary force to rub the protection plate surface/monitor surface with a stained cloth. The protection plate surface/monitor surface may be scratched.
- Do not keep the protection plate surface/monitor surface in contact with a rubber or vinyl resin product for a long period of time. The finish of the surface may deteriorate.
- Only wipe with a dry cloth to clean up the monitor's enclosures and panel.

**Flat surface for better maintenance**

The design allows the user to easily wipe liquids and gel off the LCD panel and control buttons – ensuring a high standard of cleanliness.



**Repacking**

Do not throw away the carton and packing materials. They can be used again to repack monitor. If you have any questions about this unit, contact your authorized dealer.

**Disposal of the unit**

Do not dispose of the unit with general waste. Do not include the monitor with household waste.

**Biological Hazard and Returns**

The structure and the specifications of this device as well as the materials used for manufacturing makes it easy to wipe and clean and therefore suitable to be used for various applications in hospitals and other healthcare environments, where procedures for frequent cleaning are specified.

However, normal use shall exclude biological contaminated environments, to prevent spreading of infections.

Therefore use of this device in such environments is at the exclusive risk of Customer. In case this device is used where potential biological contamination cannot be excluded.

Customer shall implement the decontamination process as defined in the latest edition of the ANSI/AAMI ST35 standard on each single failed Product that is returned for servicing, repair, reworking or failure investigation to Seller (or to the Authorized Service Provider). At least one adhesive yellow label shall be attached on the top site of the package of returned Product and accompanied by a declaration statement proving the Product has been successfully decontaminated.

Returned Products that is not provided with such external decontamination label, and/or whenever such declaration is missing, can be rejected by Seller (or by the Authorized Service Provider and shipped back at Customer expenses.

Meaning of symbols on the unit

Symbol	Description	Symbol	Description	Symbol	Description
	Potential equalization terminal (Sets other devices to same potential level).		This device complies with the Health-care Device Directive 93/42/EEC		Serial number
	Date of manufacture		Manufacturer		Direct current
	This way up		Stacking limit by number		Keep away from rain
	Fragile		Weight		Consult operating instruction for use.
	Temperature limits		Recycling symbol for corrugated cardboard used for pack-aging		General warning sign
	Indicates user need to read user manual before using the device		UL Listing Mark		UL Recognized Component Mark
	TUV SUD Mark		Indicates device is approved according To The UL DEMKO Regulation		Indicates device is approved according To The VCCI Regulation
	Indicates this device is compliance with Part 15 of FCC rules (Class A)		Indicates this device must not throw in the trash		Power stand by function
	UL classification mark				