

## e-medice™ Silence TP-24MD User Manual

### V1.0

Photographs and Schematic diagrams used in this document are for illustration purposes only.  
The actual product may vary. Technical changes and errors accepted. Rev.1 11.2022

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# Version Change History

Date	Version	Description	Remark
2022/10/19	1.0	First Release	

## **Acknowledgments**

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## FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 18 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment.

This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user manual, it may cause harmful interference to radio communications.

Note that even when this equipment is installed and used in accordance with this user manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, 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 to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

### **Warning:**

*Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.*

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

*Do not modify this equipment without authorization of the manufacturer.*

### **Avertissement:**

*Tous les changements ou modifications apportés à l'équipement qui ne sont pas expressément approuvés par l'autorité de normalisation compétente peuvent annuler votre droit d'utiliser l'équipement.*

*Pour éviter tout risque de choc électrique, cet équipement ne doit être connecté qu'à un réseau d'alimentation avec terre de protection.*

*Ne modifiez pas cet équipement sans l'autorisation du fabricant.*

# **Safety Instructions**

## **Intended use**

The TP-24MD is intended to serve as a medical monitor which is designed for general purpose for hospital environment. It shall not be used for life-supporting system.

## **Intended User profile**

The equipment is intended for infant or adults by profession Health care professionals.

## **Greeting & Setup**

Thank you for purchasing the TP-24MD unit. We wish that this unit will be durable and reliable in providing your medical application needs. Please follow the instructions below to ensure the unit continues to have high performance.

## **Unpacking**

After opening the carton, there will be a medical panel PC unit with an accessory box. Examine the contents to see if there are damages to the unit and if all accessories are present.

## **Setting up**

Please read this manual carefully and remember to keep this manual for future reference.

## **Safety Instructions & Cleaning**

The unit has undergone various tests in order to comply with safety standards. Inappropriate use of the open frame unit may be dangerous. Please remember to follow the instructions below to insure your safety during the installation and operating process.

## **Transporting & Placement of unit**

1. When moving the unit on a cart; be very cautious. Quick stops, excessive forces and uneven surfaces may cause the cart to overturn thus risking the unit to fall to the ground.

2. If the medical panel PC unit does fall to the ground, immediately turn the power off and disconnect cords. Then contact a service technician for repairs. Continual use of the unit may result cause a fire or electric shock. Also, do not repair the unit on your own.
3. Having two or more people transporting the display unit is recommended. In addition, when installing the unit by suspending it also requires two or more people.
4. Before suspending the unit, make sure the material used for suspension is sturdy and stable. If not properly suspended, the display unit may fall and cause serious injury to people standing nearby as well as to the unit itself.
5. If you wish to mount the display unit, remember to use only the mounting hardware recommended by the manufacturer.

### **Electrical and Power Source Related**

1. This medical panel PC unit must operate on a power source as shown on the specification label. If you are not sure what type of power supply used in the area, consult your dealer or local power supplier.
2. The power cords must not be damaged. Applied pressure, added heat, and tugging may damage the power cord.
3. The power cord must be routed properly when setup takes place. We advise that this aspect measure is to prevent people from stepping on the cords or while the unit is suspended to prevent flying objects from getting tangled with the unit.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Do not overload the AC outlets or extension cords. Electrical shocks or fires may occur from overloading.
6. Do not touch the power source during a thunderstorm.
7. If your hands are wet, do not touch the plug.

8. Use your thumb and index finger, grip firmly on the power cord to disconnect from the electrical socket. By pulling the power cord, may result in damaging it.
9. If the unit is not going to be in use for an extended period of time, remember to disconnect the unit.
10. The medical panel PC unit uses voltage between 100-240VAC. Connect the unit to a power source with the same numerical value as shown. Please use only the power cord provided by the dealer to ensure safety and EMC compliance.

### **Various Factors of Environment**

1. Do not insert objects into the openings.
2. Do not have liquids seep into the internal areas of the medical panel PC unit.
3. Having liquids seep in or inserting objects into the unit may result in electric shocks from taking and/or short circuiting the internal parts.
4. Do not place the medical panel PC unit in the presence of high moisture areas.
5. Do not install the medical panel PC unit in a wet environment.
6. Do not place near unit near heat generating sources.
7. Do not place the unit in a location where it will come in contact with fumes or steam.
8. Remember to keep the medical panel PC unit away from the presence of dust.
9. If water has flow in or seep in, immediately disconnect the open frame unit. Then contact a service technician for repairs.

### **Ventilation Spacing**

1. Do not cover or block the openings on the top and back sides of the display unit. Inadequate ventilation may cause overheating thus reducing the lifespan of the unit.



2. Unless proper ventilation is present, do not place unit in an enclosed area; such as a built-in shelf. Keep a minimum distance of 10 cm between the display unit and wall.

## **Operating principle**

- A Medical Panel PC has four main components: the arithmetic logic unit (ALU), the control unit, the memory, and the input and output devices (collectively termed I/O). These parts are interconnected by buses, often made of groups of wires.
- The control unit, ALU, and registers are collectively known as a central processing unit (CPU).
- Inside each of these parts are thousands to trillions of small electrical circuits which can be turned off or on by means of an electronic switch. Each circuit represents a bit (binary digit) of information so that when the circuit is on it represents a "1", and when off it represents a "0" (in positive logic representation). The circuits are arranged in logic gates so that one or more of the circuits may control the state of one or more of the other circuits.

## **Cleaning the unit**

1. Remember to turn off the power source and to unplug the cord from the outlet before cleaning the unit.
2. Carefully dismount the unit or bring the unit down from suspension to clean.
3. Please use a dry soft cloth to clean the unit.
4. Take a dry cloth and wipe the unit dry. Remember to avoid having liquids seep into the internal components and areas of the medical panel PC unit.
5. Cleaning unit each time before use.





## **Error message / Troubleshooting**

No power	1. Connect the AC adapter to the computer, and then plug it into an AC outlet.
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2. Turn on the computer.
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## **Servicing, Repairing, Maintenance & Safety Checks**

1. If the unit is not functioning properly, observe the performance level of the display closely to determine what type of servicing is needed.
2. Do not attempt to repair the medical panel PC unit on your own. Disassembling the cover exposes users' to high voltages and other dangerous conditions. Notify and request a qualified service technician for servicing the unit.
3. To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
4. If any of the following situations occur turn the power source off and unplug the unit. Then contact a qualified service technician.
  - (a) A liquid was spilled on the unit or objects have fallen into the unit.
  - (b) The unit is soaked with liquids.
  - (c) The unit is dropped or damaged.
  - (d) If smoke or strange odor is flowing out of the operating unit.
  - (e) If the power cord or plug is damaged.
  - (f) When the functions of the unit are dysfunctional.
5. When replacement parts are needed for the medical panel PC unit, make sure service technicians use replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. If unauthorized parts are used it may result in starting a fire, electrical shock and/or other dangers.

	ISO 7000-0434: Caution
	IEC 60417 -5009: STAND-BY.
	IEC 60417-5031: Direct current.
	<p>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, or if applicable, follow any agreements made between yourself.</p> <p>The mark on electrical and electronic products only applies to the current European Union Member States.</p>

**Caution:**

*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). THIS MAY DAMAGE THE EQUIPMENT.*

*This equipment shall not be used in life support systems.*

*The user is not to touch SIP/SOPs and the patient at the same time.*

*Caution – Use suitable mounting apparatus to avoid risk of injury.*

*Caution - Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions. (If battery pack is not used for 1 month, it is recommended to remove the battery pack from equipment.)*

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70dB (A).

- A) Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".
- B) 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.
- C) Caution: This adapter Sinpro HPU180A-108 is a forming part of the medical device (TP-24MD)

**Mise en garde:**

*NE LAISSEZ PAS CET ÉQUIPEMENT DANS UN ENVIRONNEMENT NON CONTRÔLÉ OÙ LA TEMPÉRATURE DE STOCKAGE EST INFÉRIEURE À -20 ° C (-4 ° F) OU SUPÉRIEURE À 60 ° C (140 ° F). CELA POURRAIT ENDOMMAGER L'ÉQUIPEMENT.*

*Cet équipement ne doit pas être utilisé dans les systèmes de survie.*

*L'utilisateur ne doit pas toucher les SIP / SOP et le patient en même temps.*

*Attention - Utilisez un appareil de montage approprié pour éviter tout risque de blessure.*

*Attention - Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées conformément aux instructions.*

*(Si la batterie n'est pas utilisée pendant 1 mois, il est recommandé de retirer la batterie de l'équipement.)*

*Le niveau de pression acoustique au poste de l'opérateur selon CEI 704-1: 1982 n'est pas supérieur à 70 dB (A).*

*A) La fiabilité de la mise à la terre ne peut être obtenue que lorsque l'équipement est connecté à une prise équivalente marquée «Hospital Only» ou «Hospital Grade».*

*B) Utilisez un cordon d'alimentation qui correspond à la tension de la prise de courant, qui a été approuvée et conforme aux normes de sécurité de votre pays.*

*C) Attention: cet adaptateur Sinpro HPU180A-108 (TP-24MD) fait partie intégrante du dispositif médical*

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# Introduction

## Product Description

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The TP-24MD Medical Panel PC is based on 10th generation Core i CPU (Socket LGA1200) processor, it accommodates one M.2 M.Key 2280 PCIe X 4 SSD and Two up to 64GB DDR4 SODIMM.

The Fanless (TP-24MD) solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle computing applications.

The TP-24MD includes all the features of a powerful computer into a slim and attractive chassis.

The TP-24MD is compact, Giga LAN and selectable WLAN network compatible PC with full safety and medical approval and features to control a dedicated system with a wide variety of applications. Combining the TP-24MD into your system can achieve both cost-saving and efficient improvements.

Common applications include LIS (Lab Information Systems) and Electronic Medical Record. The TP-24MD are definitely your perfect choices.

## **Package list**

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

- The TP-24MD Medical Panel PC unit
- Power Adapter x 1 (Mf:Sinpro, type/model: HPU180A-108)
- User's manual, chipset drivers
- Power cord – Hospital grade used (US type), or other type in UK, EU...etc.
- Screw x4 (VESA 100 mm use)



## Features

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- *Anti-bacteria (MRSA) plastic housing*
- *23.8" full HD (1920X1080) MVA Diagnostic Panel*
- *High performance intel 10th generation COMET Lake Core i CPU (Socket LGA1200)*
- *Supports Dual Channel DDR4 SODIMM up to 64GB*
- *P.cap Multi-Touch Screen*
- *Fast booting with M.2 M.Key 2280 PCIe X 4 SSD (Support NVMe SSD) as drive disk*
- *Supports PCI-E x16 slot*
- *Fanless solution*
- *Support RAID 0,1*
- *Optional Full HD capture card*
- *LAN/COM/USB 4KV isolated module (optional order configuration)*
- *Optional DICOM part 14 compliance solution. (optional order configuration)*

# Specifications

## Hardware Specifications

Display	24" 250 nits 1920x1080 TFT LCD (TP-24MD)
CPU Support	LGA1200 package 10th generation Intel® Core i7/i5/i3/Pentium/Celeron processor (35W max.)
Disk Drive Space	M.2 M.Key 2280 PCIe X 4 SSD (Support NVMe SSD),3.3Vdc, 3A max. Optional 2.5" SATA SSD or HDD drive bay x 1 with doggy door (5Vdc, 1.5A max.)
Expansion	One M.2 Type E slot (optional connect to WiFi module); One M.2 Type B/M slot One PCI-E x 16 expansion slot (optional connected to Capture card board, for Standard version used only);
Button	Power // Audio adjustment (+)(-) // brightness (+)(-) // Reading Light // Video input selection // LCD on/off // Clean me(auto release after 1 minute) // Fn
TP-24MD I/O	<p><b>Standard version</b>            RS-232 port *1 + RS-232/422/485 port *1            USB 3.2 gen 2 port *4            Gigabit LAN RJ-45 Connectors *2            DP output *1            HDMI output *1            HDMI-IN *1            Sound:            Line-in *1            Line-out *1</p> <p><b>Isolated version</b>            Isolated 4KV GigaLAN *1            Isolated 4KV USB 2.0 *1            Isolated 4KV Isolated 4KV RS-232/422/485 *1 &amp; RS-232 port *1            (The isolated ports verified through Dielectric test 4000Vac only)            USB 3.2 gen 2 port *4            Gigabit LAN RJ-45 Connectors *2            DP output *1            HDMI output *1            HDMI-IN *1            Sound:            Line-in *1            Line-out *1</p>

## LCD Specifications

Model Name	TP-24MD
Display Type	23.8" LED
Max. Resolution	1920 x 1080
Contrast Ratio	3000 : 1 (Typ)
Pixel Pitch (mm)	274.5 (per one triad) x 274.5
Luminance (cd/m2)	250 (TYP)
Viewing Angle	178°(H)
	178°(V)

## Cautions:

Continuous displaying fixed pattern may induce image sticking. It's recommended to use screen saver or moving content periodically if fixed pattern is displayed on the screen.

## Précautions:

L'affichage continu d'un motif fixe peut provoquer le collage de l'image. Il est recommandé d'utiliser l'économiseur d'écran ou de déplacer régulièrement du contenu si un motif fixe est affiché à l'écran.

## Power Adapter Specifications

Power	Close-frame
MFR	Sinpro
Type	HPU180A-108
Input Rating	AC 100 ~ 240 V, 2.2-0.9A, 47 ~ 63 Hz
Output Rating	DC 24V, 7.5A
MTBF	100,000 hrs operation at 25°C
Classification	Power by Class I certified power adapter. No applied part.
Mode of operation	Continuous operation
System input rating	DC 24V, 7.5A

## Mechanical Specifications

Architecture	Close-frame
Front Bezel	PCT touch
Color	Medical-white
Mounting / Holder	VESA 100mm

Construction	3mm ABS + PC TYPE Plastic housing
Dimension (WxHxD)	606 x 398 x 65.6 mm
Net Weight	TP-24MD: 9.7kg (w/o power adapter)
Packing Filler	PE

### Environmental Specifications

Temperature	Operating: AC 100-240V 0~35°C (32°F ~104°F) Storage, Transportation: -20°C to 60°C (-4°F ~140°F)
Humidity	Operating: 10% to 90% @ 30°C, non-condensing Storage, Transportation: 10% to 90%, non-condensing
Vibration	Operating: 15g/0.53 oz, 11 ms, half sine wave Non-operating: 50g/1.76 oz, 11 ms, half sine wave
Shock	Operating: 5 ~ 17 Hz , Amplitude : 0.117 ~ 500Hz , Acceleration : 1.0G Non-operating: 10~55Hz/0.15g, 55~500Hz/2.0g
Altitudes	Operational: up to 3000 m (9842 feet) Shipping: up to 12192 m (40000 feet)
Pressure	700 – 1060 hPa (Operation) 186 – 1060 hPa (Storage) 186 – 1060 hPa (Transportation)
EMI / Safety	CE / FCC / VCCI Class B
IP	IP65 at front side, IPx1 whole system

### Touch Screen

#### P.cap touch

Type	Full flat projective capacitive touch panel
Interface	Controller with USB interface, 5V
Resolution	100ppi to 25ppi Based WIN7 definition ppi (Pixel per inch)
Light Transmission	90% ± 3%
Life Time	100M times

**Guidance and manufacturer's declaration – electromagnetic emissions**

The model TP-24MD is intended for use in the electromagnetic environment specified below. The customer or the user of the model TP-24MD should assure that it is used in such an environment.

<b>Emissions test</b>	<b>Compliance</b>	<b>Electromagnetic environment – guidance</b>
RF emissions CISPR 11		The model TP-24MD 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		The model TP-24MD 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		
Voltage fluctuations/ flicker emissions IEC 61000-3-3		

**Recommended separation distances between portable and mobile RF communications equipment and the model TP-24MD**

The model TP-24MD is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the model TP-24MD can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model TP-24MD as recommended below, according to the maximum output power of the communications equipment.

<b>Rated maximum output power of transmitter</b> W	<b>Separation distance according to frequency of transmitter</b> m		
	<b>150 kHz to 80 MHz</b> $d = 1,2\sqrt{P}$	<b>80 MHz to 800 MHz</b> $d = 1,2\sqrt{P}$	<b>800 MHz to 2.7 GHz</b> $d = 2,3\sqrt{P}$
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 at a maximum output power not listed above, the recommended separation distance 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) according to 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.

**Guidance and manufacturer's declaration – electromagnetic immunity**

The model TP-24MD is intended for use in the electromagnetic environment specified below. The customer or the user of the model TP-24MD should assure that it is used in such an environment.

<b>Immunity test</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment – guidance</b>
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)	±1 kV line(s) to line(s)  ±2 kV line(s)	Mains power quality should be that of a typical commercial or hospital environment.

	to earth	to earth	
interruptions and voltage variations on power supply input lines  IEC 61000-4-11	0% <i>UT</i> (100 % dip in <i>UT</i> ) for 0.5 cycle  0 % <i>UT</i> (100 % dip in <i>UT</i> ) for 1 cycles  70 % <i>UT</i> (30 % dip in <i>UT</i> ) for 25 cycles  0 % <i>UT</i> (100 % dip in <i>UT</i> ) for 250 cycles	0 % <i>UT</i> (100 % dip in <i>UT</i> ) for 0.5 cycle  0 % <i>UT</i> (100 % dip in <i>UT</i> ) for 1 cycles  70 % <i>UT</i> (30 % dip in <i>UT</i> ) for 25 cycles  0 % <i>UT</i> (100 % dip in <i>UT</i> ) for 250 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of the model TP-24MD requires continued operation during power mains interruptions, it is recommended that the model TP-24MD be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field  IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE <i>UT</i> is the a.c. mains voltage prior to application of the test level.			
<b>Guidance and manufacturer's declaration – electromagnetic immunity</b>			
The model TP-24MD is intended for use in the electromagnetic environment specified below. The customer or the user of the model TP-24MD should assure that it is used in such an environment.			
<b>Immunity</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment – guidance</b>
			Portable and mobile RF communications equipment should be used no closer to any part of the model TP-24MD, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.  <b>Recommended separation distance</b>

Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	Vrms	$d = 1,2 \sqrt[3]{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	V/m	$d = 1,2 \sqrt[3]{P}$ 80 MHz to 800 MHz $d = 2,3 \sqrt[3]{P}$ 800 MHz to 2.7 GHz
			<p>where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m).</p>
			<p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p>
			<p>Interference may occur in the vicinity of equipment marked with the following symbol:</p>
			

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.

<sup>a</sup> 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 model TP-24MD is used exceeds the applicable RF compliance level above, the model TP-24MD should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the model TP-24MD.

<sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.



## **Cleaning/Disinfecting**

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### **Steps:**

1. Wipe the TP-24MD with a dry clean cloth.
2. Operate with manufacturer's instructions or hospital protocol.

### **Cautions:**

- Do not immerse or rinse the TP-24MD and its peripherals. If you accidentally spill liquid on the device, disconnect the unit from the power source. Contact your Biomed regarding the continued safety of the unit before placing it back in operation.
- Do not spray cleaning agent on the chassis.
- Do not use disinfectants that contain phenol.
- Do not autoclave or clean the TP-24MD or its peripherals with strong aromatic, chlorinated, ketone, ether, or Esther solvents, sharp tools or abrasives. Never immerse electrical connectors in water or other liquids.

### **Précautions:**

- Ne plongez pas et ne rincez pas le TP-24MD et ses périphériques. Si vous renversez accidentellement du liquide sur l'appareil, débranchez l'appareil de la source d'alimentation. Contactez votre Biomed concernant la sécurité continue de l'appareil avant de le remettre en service.
- Ne vaporisez pas d'agent de nettoyage sur le châssis.
- N'utilisez pas de désinfectants contenant du phénol.
- Ne pas stériliser à l'autoclave ni nettoyer le TP-24MD ou ses périphériques avec des solvants forts aromatiques, chlorés, cétoniques, éthers ou Esther, des outils tranchants ou des abrasifs. Ne plongez jamais les connecteurs électriques dans l'eau ou d'autres liquides.

# Getting Started

## System Set Up

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The following is a summary of the steps in setting up the system for use.

- (1). You can fix the system to a mounting fixture using the screw holes on the sides of the system, use for the system is landscape mode
- (2). Make any required external connections such as the display, keyboard, and LAN.
- (3). Plug the appropriate end of the power cord into the power connector on the rear of the system and the plug to an electrical outlet.
- (4). ***Waiting for 3 seconds*** then press the power switch on the front panel of the system once to turn on the system power.
- (5). If necessary, run the BIOS SETUP programs to configure the system.

### **Caution:**

*In order to boot up system from USB-CD/DVD drive, please connect USB-CD/DVD drive, turn on computer power, keep on pressing "F11" key, go into BIOS quick boot menu, select "USB-CD ROM", WAIT FOR 20 SECONDS, then press enter, system OS will boot up from USB-CD/DVD drive directly.*

### **Mise en garde:**

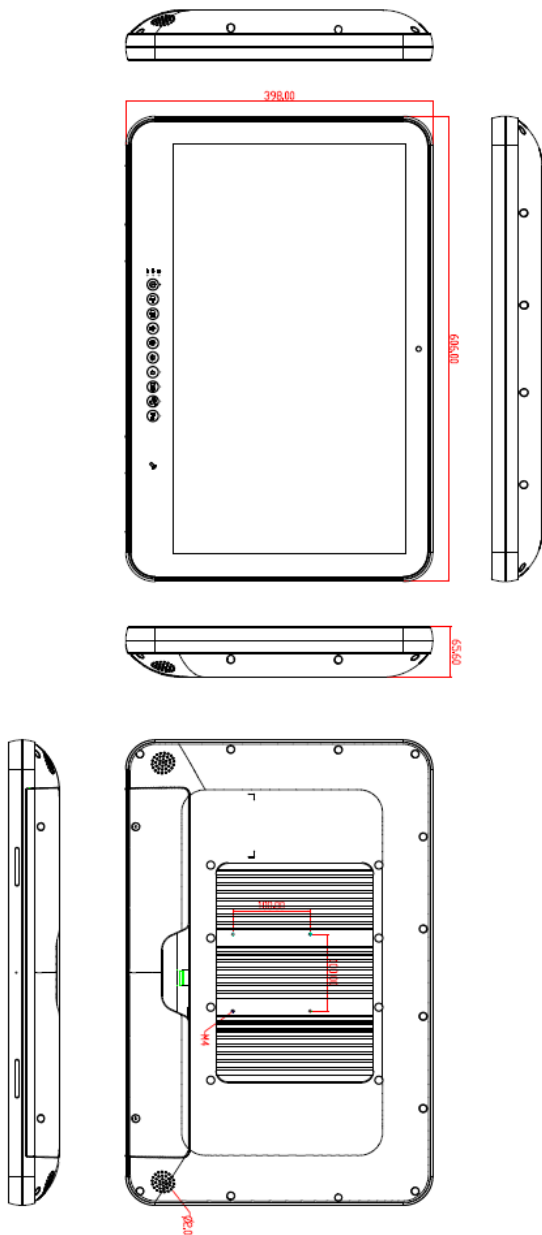
*Afin de démarrer le système à partir du lecteur USB-CD / DVD, veuillez connecter le lecteur USB-CD / DVD, allumez l'ordinateur, continuez à appuyer sur la touche "F11", allez dans le menu de démarrage rapide du BIOS, sélectionnez "USB-CD ROM", ATTENDEZ 20 SECONDES, puis appuyez sur Entrée, le système d'exploitation démarrera directement à partir du lecteur USB-CD / DVD.*

**Notice:**

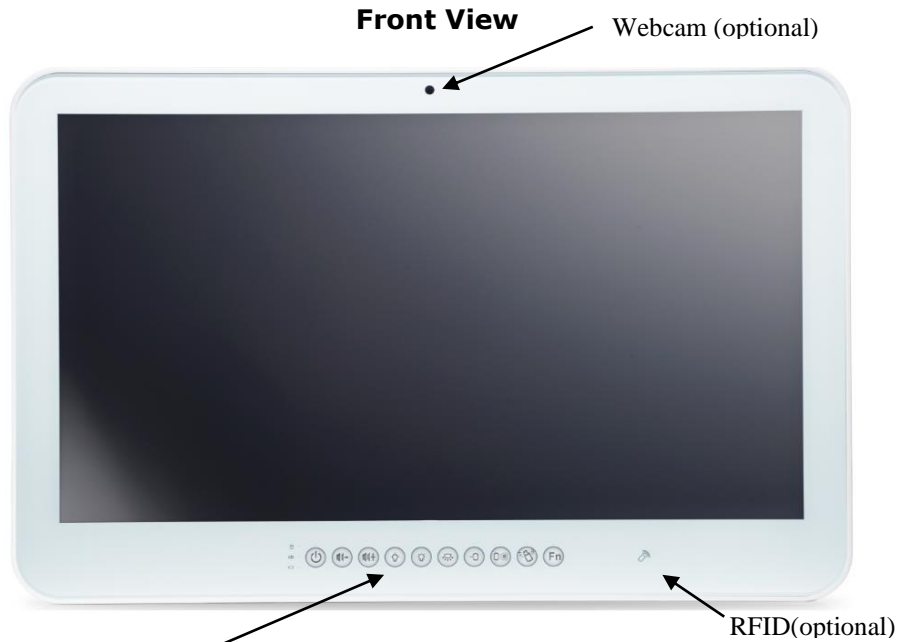
*The installation is only to be carried out by manufacturer trained and authorized personnel.*

# Dimension

## TP-24MD (VESA Mount Screw type: M4)



# System View



## Hotkey and LED definition at front panel



Located on Touch screen bottom side, from left to right, front view

1-1. Up. HDD: Amber

1-2 Down. Battery1(Green) & Battery2(Amber):

	LED 1	LED 2
	(Charge/Discharge/Low)	(Batt present/ not present)
In charge	blinking	ON
Discharge	OFF	ON
Full charge	ON	ON
Low battery	blinking	blinking
No battery	OFF	OFF

2. Power Button (with LED status indicator: ON: Green, OFF: dark)

*Operation: always on.*

*Suspend: Flash 2(light)/2(dark) sec.*

3. *Volume adjustment (-)*

4. *Volume adjustment (+)*

5. *Brightness (-)*

6. *Brightness (+)*

7. *Reading light*

8. *Video input selection (with LED status indicator: ON: Green->*

*Video input, OFF: dark->PC mode)*

	<i>PC mode</i>	<i>Video input</i>	<i>Remark</i>
<i>Sys power off</i>	<i>No any message</i>	<i>1. No connect - 60S message off (no connection) 2. No signal -60S message off (cable connected, but no signal input) 3. Video input - message for 3 sec.</i>	
<i>Sys power on</i>	<i>PC mode forcibly</i>	<i>Switch to PC mode when sys power on</i>	
<i>In Windows</i>	<i>Message for 3 sec</i>	<i>Same as power off</i>	

9. *LCD on/off (with LED status indicator: LCD ON: dark, LCD OFF: Green)*

10. *Clean me (with LED status indicator: ON: Amber, OFF: dark)*

*a. Keep on contacting 5 seconds to active*

*b. keep contacting 5 seconds to release*

*c. auto release after 60 seconds*

11. *Fn: Function key (with LED status indicator: ON: Green, OFF: dark)*

### Side View

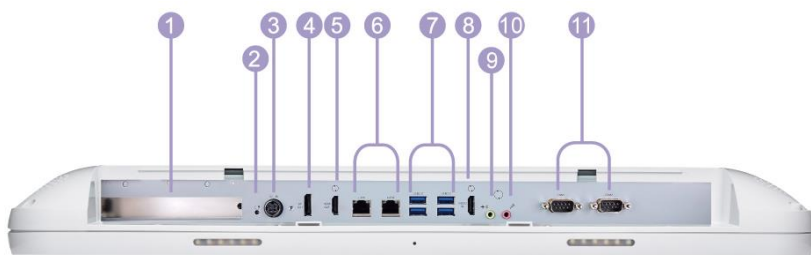
<b>Standard model without door</b>	<b>Customized model with DVD (or Smart card reader)</b>
 A side view of a white, rectangular device. The front edge is slightly curved. There are two small circular indentations on the side surface, one near the top and one near the bottom. The bottom edge has a small, recessed area.	 A side view of a white, rectangular device, similar to the standard model but with a vertical slot on the left side. This slot is a DVD or Smart card reader. The device has two small circular indentations on the side surface, one near the top and one near the bottom. The bottom edge has a small, recessed area.

### Rear View

**TP-24MD (Fanless)**

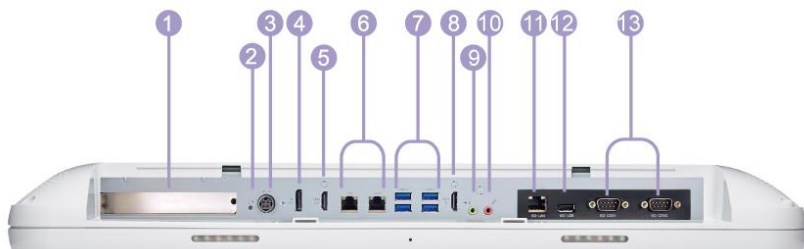


## I/O parts (Standard version)



- |   |                 |   |             |    |            |
|---|-----------------|---|-------------|----|------------|
| 1 | PCI-E Expansion | 5 | HDMI out    | 9  | Line-out   |
| 2 | Reset           | 6 | LAN x 2     | 10 | Microphone |
| 3 | DC-in           | 7 | USB 3.2 x 4 | 11 | COM x 2    |
| 4 | DP out          | 8 | Video in    |    |            |

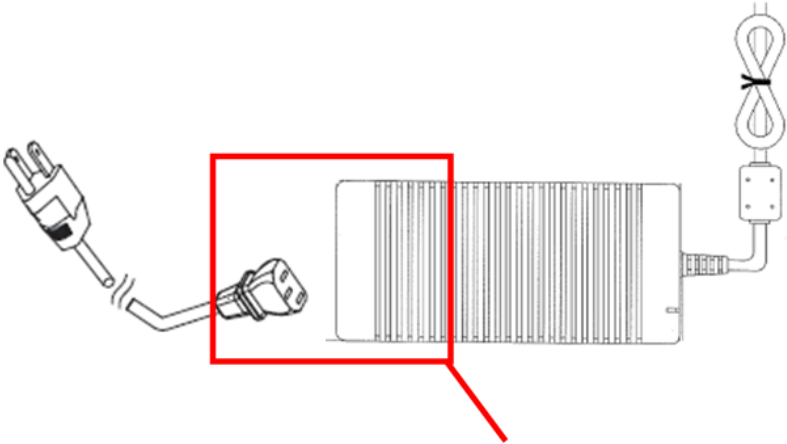
## I/O parts (Isolated version)



- |   |                 |   |             |    |             |    |             |
|---|-----------------|---|-------------|----|-------------|----|-------------|
| 1 | PCI-E Expansion | 5 | HDMI out    | 9  | Line-out    | 13 | ISO COM x 2 |
| 2 | Reset           | 6 | LAN x 2     | 10 | Microphone  |    |             |
| 3 | DC-in           | 7 | USB 3.2 x 4 | 11 | ISO LAN x 1 |    |             |
| 4 | DP out          | 8 | Video in    | 12 | ISO USB x 1 |    |             |



# Disconnect Device



Unplug the power cord from the power adapter jack to disconnect the device.

## Turn off the system:

Turning off TP-24MD properly is important for system reliability.

1. On the start menu, click "Shut down" and select "OK"

## A. Battery Pack Specifications (optional kit)

Battery Model	BP-WMP226 22/3900 SA
Battery Type	Li-ion 2S2P
Minimum Capacity	3900 mAh
Nominal Voltage	7.2 V
Max. Charge Voltage	8.4V
Cut Off Voltage	6.0v
Suggested Charge Current (Max.)	2A
System Continuous Discharging Current (Max.)	16.6 A
The End of Charge Condition	150 mA/min
Discharge Protection	UVP/OCP
Charge Protection	OVP/OTP
Self-discharge Rate	10uA ~800 uA
Dimensions	133 x 47 x 21mm
Weight	220g+/-20g
Ambient Temperature	0°C ~ +45°C
Storage Temperature	-20°C ~ +60°C
Energy	28.08Wh
Backup	100 W/ 10 min

### **Alarm!**

Battery mode only support 100W.

If System power consumption more than 100W, Adapter mode change to Battery mode, there is a chance to will shutdown.

## B. 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.

The worldwide distributors show on the following website:

<https://e-mediac.com>

### **Note:**

Follow the national requirement to dispose unit

PS1. Expected Service Life: 3.1 years

If the computer has exceeded the Expected Service Life and you want to continue using it, it is recommended to contact the manufacturer/distributors to confirm whether maintenance is required.

PS2.CAUTION:

If any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user is established.

PS3.Notice:

It is recommended to install the appropriate software, if have any question, please contact the manufacturer for further assistance. Notice: To prevent unauthorized access, it is recommended to install suitable anti-virus software or do not connect to unsafe external networks.

PS4.RTC battery:

The computer is provided with a battery- powered, real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced.

Replace only with same (CR2032) type recommended by the manufacturer. Discard used batteries according to the each nation's instructions.

PS5.Display operation :

The panel is only intended to be used with SIP/SOP facing downward.