



MODEL:
IASO-W10B-N6210

**10.1" Medical Panel PC with Intel® Celeron® Processor N6210,
P-CAP Touchscreen, 4 GB DDR4, HDMI Output, USB 3.2,
COM, Wi-Fi 6E, 1GbE, RFID, PoE, Audio and RoHS**

User Manual

Revision

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April 29, 2024	1.03	Added Chapter 5: LED Bar Control Updated power adapter information
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October 26, 2022	1.01	Updated spec.
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Manual Conventions



WARNING

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously.



CAUTION

Cautionary messages should be heeded to help reduce the chance of losing data or damaging the product.



NOTE

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes.

Table of Contents

1 INTRODUCTION.....	1
1.1 OVERVIEW.....	2
1.2 MODEL VARIATIONS	3
1.3 FEATURES.....	3
1.4 FRONT PANEL.....	4
1.5 BOTTOM PANEL	5
1.6 REAR PANEL	6
1.7 SYSTEM SPECIFICATIONS.....	7
1.8 DIMENSIONS.....	10
2 UNPACKING	11
2.1 UNPACKING.....	12
2.2 PACKING LIST	13
2.3 OPTIONAL ATO ITEMS	13
3 INSTALLATION	14
3.1 SAFETY PRECAUTIONS	15
3.2 ANTI-STATIC PRECAUTIONS.....	17
3.3 INSTALLATION PRECAUTIONS.....	18
3.4 GbE CONNECTION	19
3.5 RS-232 SERIAL PORT CONNECTION	20
3.6 AT/ATX MODE SELECTION.....	20
3.7 VESA MOUNTING.....	21
3.8 POWERING ON THE SYSTEM.....	22
3.9 CLEAR CMOS.....	23
3.10 RESET THE SYSTEM.....	23
3.11 SYSTEM MAINTENANCE	24
4 DRIVER INSTALLATION.....	25
4.1 AVAILABLE DRIVERS.....	26
4.2 DRIVER DOWNLOAD	26

5 LED BAR CONTROL.....	28
5.1 OVERVIEW.....	29
5.2 PREPARATIONS	30
5.2.1.1 Install the Required Libraries.....	30
5.2.1.2 Driver Installation	31
5.3 LED CONTROL EXAMPLE.....	32
5.3.1 <i>Windows and Windows 11</i>	32
5.3.1.1 Preparations:	32
5.3.1.2 Call SMBus API (SMB_Open) and Initialize Required Data Structures .	33
5.3.1.3 Initialize the LED Status.....	34
5.3.1.4 Write to LED.....	35
5.3.1.4.1 Adjusting LED Brightness	35
5.3.1.4.2 Changing LED Color	35
5.3.1.5 Call the SMBus API (SMB_Close) to Close the Connection	41
5.3.2 <i>Ubuntu 22.04</i>	42
5.3.2.1 Install Packages.....	42
5.3.2.2 Compile and Run	43
5.3.2.3 Changing LED Color	44
5.3.2.4 OS Version & Result.....	45
5.4 LED BAR DEMO APP	46
A REGULATORY COMPLIANCE	48
B PRODUCT DISPOSAL	53
C MAINTENANCE AND CLEANING PRECAUTIONS.....	55
<i>C.1.1 Maintenance and Cleaning</i>	57
<i>C.1.2 Cleaning Tools</i>	57
D SYMBOL DEFINITIONS	58
E WATCHDOG TIMER.....	60
F ERROR BEEP CODE	63
F.1 PEI BEEP CODES	64
F.2 DXE BEEP CODES	64
G HAZARDOUS MATERIALS DISCLOSURE.....	65

IASO-W10B-N6210 Medical Panel PC

G.1 RoHS II DIRECTIVE (2015/863/EU)	66
G.2 CHINA RoHS.....	67

List of Figures

Figure 1-1: IASO-W10B-N6210 Medical Panel PC	2
Figure 1-2: Front View	4
Figure 1-3: Bottom Panel	5
Figure 1-4: Rear View	6
Figure 1-5: Dimensions (mm)	10
Figure 3-1: Ethernet Connector	19
Figure 3-2: AT/ATX Switch Location	20
Figure 3-3: VESA Mounting Retention Screw Holes	21
Figure 3-4: Power Input Connector and Power Button	22
Figure 3-5: Clear CMOS Button Location	23
Figure 3-6: Reset Button Location	23
Figure 4-1: IEI Resource Download Center	26

List of Tables

Table 1-1: Model Variations	3
Table 1-2: System Specifications.....	9
Table 3-1: Ethernet Connector Pinouts	19
Table 3-2: Connector LEDs.....	19
Table 3-3: RS-232 Serial Port Pinouts	20

Chapter

1

Introduction

1.1 Overview



Figure 1-1: IASO-W10B-N6210 Medical Panel PC

The IASO-W10B-N6210 is an Intel® Celeron® Processor N6210 powered medical-grade panel PC designed for easy and simplified integration into healthcare applications. The system is pre-installed with 4 GB of DDR4 memory, ensuring smooth data throughputs with reduced bottlenecks and fast system access.

One RS-232 serial port and two USB 3.2 Gen 1 ports provide simplified connectivity to a variety of external peripheral devices. Wi-Fi 6E high efficiency wireless and one GbE RJ-45 connector allow for smooth connection of the system to an external LAN. The GbE connector also supports IEEE802.3 PoE, making the panel PC a PoE powered device (PD).



NOTE:

The IASO-W10B-N6210 medical panel PC is intended to be used to display general purpose medical information. The device shall not be used for diagnosis purpose or life supporting system.

IASO-W10B-N6210 Medical Panel PC

1.2 Model Variations

There are two models in the IASO-W10B-N6210 series. All models are preinstalled with one 4 GB DDR4 memory module and a Wi-Fi 6E module. The model numbers and model variations are listed below.

	CPU	IEEE802.3 PoE
IASO-W10B-N6210/4G	Intel® Celeron® N6210	No
IASO-W10B-N6210/4G/PoE	Intel® Celeron® N6210	Yes

Table 1-1: Model Variations

1.3 Features

The IASO-W10B-N6210 features are listed below:

- Compact fanless medical-grade panel PC for easy installation
- P-CAP touchscreen with 10-point multi-touch and optical bonding
- Intel® Celeron® Processor N6210 platform
- Preinstalled with 4 GB of DDR4 memory
- Programmable LED light bars on both sides
- One HDMI output port supports an additional display
- One GbE RJ-45 with optional PoE
- Wi-Fi 6E high efficiency wireless
- Two internal speakers
- Two USB 3.2 Gen 1 (5Gb/s) ports
- One RS-232 DB-9
- RFID (NFC) reader (optional)

1.4 Front Panel

The front side of the IASO-W10B-N6210 is a flat-bezel panel with a 10.1" LCD screen surrounded by an ABS/PC plastic frame. The LED bars are located on both sides of the front panel. A digital microphone is located on the top frame. The bottom right surface contains an optional RFID reader.

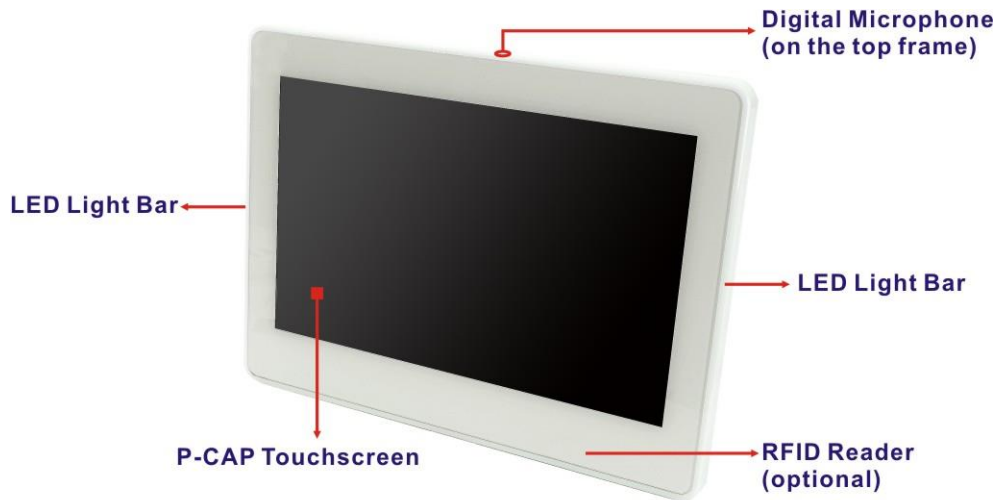


Figure 1-2: Front View



WARNING / AVERTISSEMENT

The LED light is only for aesthetic purpose, not for warning use. The LED color cannot be configured to red, yellow and green.

La lumière LED est uniquement à des fins esthétiques, pas pour une utilisation d'avertissement. La couleur des LED ne peut pas être configurée sur rouge, jaune et vert.

IASO-W10B-N6210 Medical Panel PC

1.5 Bottom Panel

The bottom panel of the IASO-W10B-N6210 has the following connectors and components (**Figure 1-3**):

- 1 x 12 V DC input jack (standard)
- 1 x HDMI output connector
- 1 x 1GbE RJ-45 supporting PoE
- 1 x RS-232 DB-9 serial port
- 2 x USB 3.2 Gen 1 connector (5Gb/s)
- 1 x Audio-out connector
- 1 x Power button
- 1 x Reset button
- 1 x Clear CMOS button
- 1 x AT/ATX power mode switch

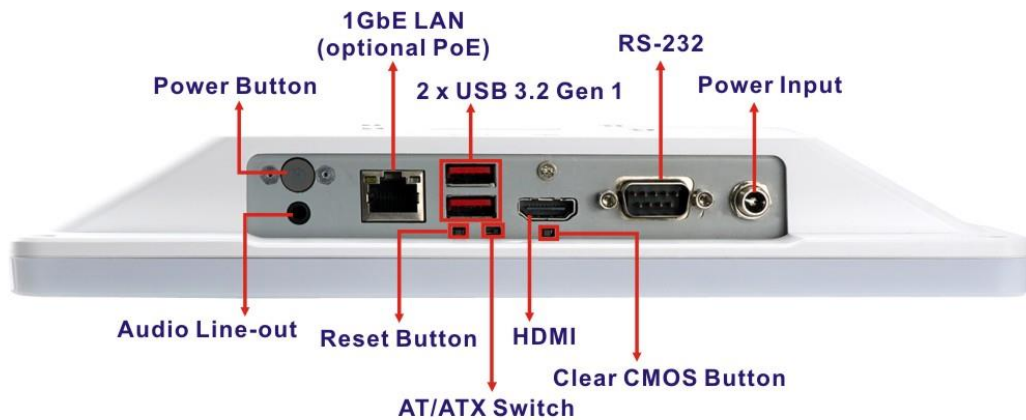


Figure 1-3: Bottom Panel

1.6 Rear Panel

The rear panel contains two internal speakers, and four retention screw holes that support VESA 75 mm mount (Figure 1-4).



Figure 1-4: Rear View

IASO-W10B-N6210 Medical Panel PC

1.7 System Specifications

The technical specifications for the IASO-W10B-N6210 systems are listed below.

LCD and Touchscreen	
LCD Size	10.1"
Max. Resolution	1280 (W) x 800 (H)
Brightness (cd/m²)	400
Contrast Ratio	800:1
LCD Color	16.7M RGB 6-bit (Hi-FRC)
Pixel Pitch (mm)	0.1695 (H) x 0.1695 (V)
Viewing Angle (H-V)	178°/178°
Backlight MTBF	30,000 hrs (LED backlight)
Touchscreen	Projected capacitive type with optical bonding
Multi-touch	10-point touch
Touch Controller	EETI
Surface Hardness	6H
System	
CPU	Intel® Celeron® N6210 (code-named Elkhart Lake, 6.5W TDP)
Memory	Preinstalled with 4 GB DDR4 SO-DIMM
GbE Controller	Intel® I225-V Ethernet controller
Wi-Fi and Bluetooth	IEEE 802.11ax 2T2R (Wi-Fi 6E) Bluetooth v5.0 (via M.2 2230 AE key)
I/O Ports & Buttons	1 x 12V DC input jack 1 x HDMI output 1 x 1GbE LAN (RJ-45) supporting PoE 1 x RS-232 (DB-9) 2 x USB 3.2 Gen 1 (5Gb/s) 1 x Audio jack (TRRS)

	1 x Reset button 1 x Clear CMOS button 1 x Power button 1 x AT/ATX power mode switch	
Storage	1 x M.2 2242 M-key slot (PCIe & SATA signal)	
Audio	AMP 1W + 1W (internal speaker)	
Microphone	1 x Digital microphone	
RFID	Mifare RFID reader, 13.56MHz (optional)	
Physical		
Construction Material	Front bezel: PC Rear cover: PC/ABS plastic	
Mounting	Wall, stand and arm VESA 75 mm x 75 mm	
Dimensions (W x H x D)	261 mm x 196.4 mm x 40 mm	
Weight (Net/Gross)	1.49 kg / 2.86 kg	
Environment		
Storage/Transportation	Temperature	-20°C - 60°C
	Humidity	10% - 95% (non-condensing)
	Pressure	700 hPa - 1060 hPa
Operating	Temperature	0°C - 40°C
	Humidity	20% - 80% (non-condensing)
	Pressure	700 hPa - 1060 hPa
Vibration	1G	
Shock	Operating Shock: 5G peak acceleration (11ms duration) Non-Operating Shock: 15G peak acceleration (11ms duration)	
Thermal	Fanless	

IASO-W10B-N6210 Medical Panel PC


EMC & Safety	CE, FCC Class B Part18
	EN 60601-1:2006/ A1:2013 / A12 :2014 / A2 :2021 (Edition 3.2)
	EN 60601-1-2: 2015 (Edition 4.0)
Power	
Power Input	12 V DC
Power Adapter	65 W FSP FSP065M-DHA medical-grade power adapter (P/N: 63040-010065-500-RS)
	Input: 100 V AC - 240 V AC, 50 Hz - 60 Hz, 2.0 A – 1.0 A
	Output: 12 V  5.42 A

Table 1-2: System Specifications

1.8 Dimensions

The IASO-W10B-N6210 dimensions are shown below.

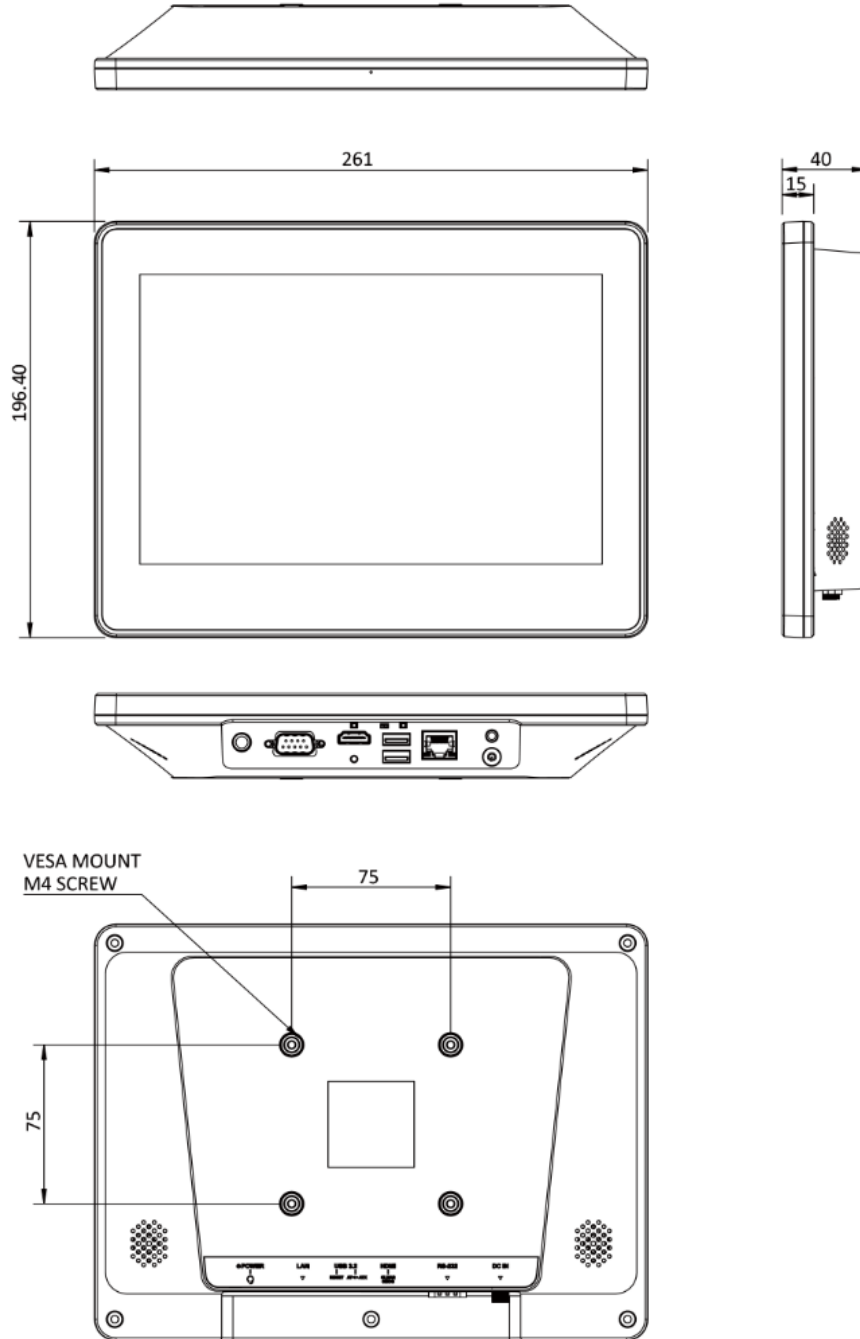


Figure 1-5: Dimensions (mm)

Chapter

2

Unpacking

2.1 Unpacking

To unpack the medical panel PC, follow the steps below:



WARNING / AVERTISSEMENT

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the medical panel PC has been properly installed. This ensures the screen is protected during the installation process.

L'écran LCD avant a un couvercle en plastique de protection collé à l'écran. Retirez le couvercle en plastique uniquement une fois que le Panel PC médical a été correctement installé. Cela garantit que l'écran est protégé pendant le processus d'installation.

-
- Step 1:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.
 - Step 2:** Open the external (second) box.
 - Step 3:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.
 - Step 4:** Lift the panel PC out of the boxes.
 - Step 5:** Remove both polystyrene ends, one from each side.
 - Step 6:** Pull the plastic cover off the medical panel PC.
 - Step 7:** Make sure all the components listed in the packing list are present.

IASO-W10B-N6210 Medical Panel PC





2.2 Packing List



NOTE:

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor the IASO-W10B-N6210 was purchased from or contact an IEI sales representative directly by sending an email to iei_medical@ieiworld.com.

The IASO-W10B-N6210 medical panel PC is shipped with the following components:

Quantity	Item	Image
1	IASO-W10B-N6210 medical panel PC	
1	63040-010065-500-RS (FSP FSP065M-DHA, 65W)	
1	Power cord (EU, 183cm)*	
	Power cord (US/Canada, 183cm)*	

*Either one; shipped according to the country code of the order.

2.3 Optional ATO Items

The following is optional, assemble-to-order component:

Item	Part Number
RFID (RFID module, system Z699, 13.56MHz/125KHz, USB 2.0, CCL, RoHS)	19XS0Z699-0006301-000-RS

Chapter

3

Installation

IASO-W10B-N6210 Medical Panel PC

3.1 Safety Precautions

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

- **External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL /IEC standard** (e.g. IEC60950 -1/IEC62368 -1 for IT equipment and ANSI/AAMI ES60601-1 AND CAN/CSA- C22.2 No. 60601-1/IEC 60601 series for systems—shall comply with the standard IEC 60601-1, 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.
- **Remove the Power cord from A.C. MAINS if it will not to be used for a long time.**
- **To prevent the risk of electric shock, make sure power cord is unplugged from wall socket.** To fully disengage the power to the unit, please disconnect the power cord from the ac outlet. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.
- **Users must not allow the equipment and the patient to come into contact at the same time. Patient is not intended operator.**
- **Grounding reliability** can only be achieved when the equipment is connected to an equivalent receptacle marked “Hospital Only” or “Hospital Grade”.
- **Follow the electrostatic precautions** outlined below whenever the IASO-W10B-N6210 is opened.
- **Make sure the power is turned off and the power cord is disconnected** whenever the IASO-W10B-N6210 is being installed, moved or modified.
- **Do not apply voltage levels that exceed the specified voltage range.** Doing so may cause fire and/or an electrical shock. 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.
- **Electric shocks can occur** if the IASO-W10B-N6210 chassis is opened when the IASO-W10B-N6210 is running. To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

- **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.**
- ***If considerable amounts of dust, water, or fluids enter the IASO-W10B-N6210***, turn off the power supply immediately, unplug the power cord, and contact the IASO-W10B-N6210 vendor.
- ***Never replace or repair any components on your own.*** If the components of the IASO-W10B-N6210 fails or malfunctions it must be shipped back to IEI to be repaired. Please contact the system vendor, reseller or an IEI sales person directly.
- **DO NOT:**
 - Drop the IASO-W10B-N6210 against a hard surface.
 - Strike or exert excessive force onto the LCD panel.
 - Touch any of the LCD panels with a sharp object
 - In a site where the ambient temperature exceeds the rated temperature

IASO-W10B-N6210 Medical Panel PC

3.2 Anti-static Precautions



WARNING / AVERTISSEMENT

Failure to take ESD precautions during the maintenance of the IASO-W10B-N6210 may result in permanent damage to the IASO-W10B-N6210 and severe injury to the user.

Le fait de ne pas prendre des précautions contre les décharges électrostatiques pendant la maintenance du IASO-W10B-N6210 peut entraîner des dommages permanents au IASO-W10B-N6210 et des blessures graves pour l'utilisateur.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the IASO-W10B-N6210. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the IASO-W10B-N6210 is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- **Wear an anti-static wristband:** Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- **Use an anti-static pad:** When configuring the IASO-W10B-N6210, place it on an anti-static pad. This reduces the possibility of ESD damaging the IASO-W10B-N6210.

3.3 Installation Precautions

When installing the medical panel PC, please follow the precautions listed below:

- **Certified Engineers:** Only certified engineers should install and modify the hardware settings.
- **Power turned off:** When installing the medical panel PC, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Anti-static Discharge:** If a user open the rear panel of the medical panel PC, to plug in added peripheral devices, ground themselves first and wear an anti-static wristband.
- **AC power plug:** AC plug is used as a means and device to be separated from the mains, and must be installed in a location where it can be easily unplugged



WARNING / AVERTISSEMENT

1. DO NOT modify this equipment without authorization of manufacturer.

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

2. DO NOT power up the IASO-W10B-N6210 while the front panel is facing down on a sheet of conductive foam. Doing so may cause the touch panel to malfunction due to the large surface area of contact between the conductive form and the touch panel.

NE mettez PAS le IASO-W10B-N6210 sous tension lorsque le panneau avant est orienté vers le bas sur une feuille de mousse conductrice. Cela pourrait entraîner un dysfonctionnement de l'écran tactile en raison de la grande surface de contact entre la forme conductrice et l'écran tactile.

IASO-W10B-N6210 Medical Panel PC

3.4 GbE Connection

The RJ-45 connector on the bottom panel allows 1GbE connection to be made to a Local Area Network. It supports PoE function (only for the sku with PoE function), with power supply rated at 42.5–57V DC, 1A. Connect the Ethernet (PoE) port to the inline power from the power injector or a suitably powered switch port. The Ethernet cable must be a shielded outdoor rated Category 5e (CAT5e), or better, cable.

Pin	Description	Pin	Description
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+
3	MDIA2-	7	MDIA0-
4	MDIA1-	8	MDIA0+

Table 3-1: Ethernet Connector Pinouts

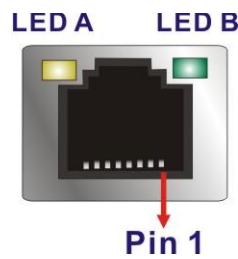


Figure 3-1: Ethernet Connector

LED	Description	LED	Description
A	on: linked blinking: data is being sent/received	B	off: 10 Mb/s green: 100 Mb/s orange: 1000 Mb/s

Table 3-2: Connector LEDs

3.5 RS-232 Serial Port Connection

The bottom panel of the IASO-W10B-N6210 has one DB-9 male connector for RS-232 connection. The pinouts of the DB-9 connector are listed below.

Pin	RS-232
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

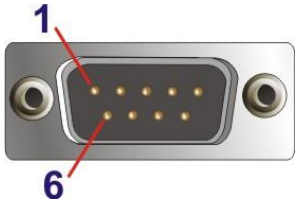


Table 3-3: RS-232 Serial Port Pinouts

3.6 AT/ATX Mode Selection

AT or ATX power mode can be used on the IASO-W10B-N6210. The selection is made through an AT/ATX switch located on the bottom panel (**Figure 3-2**).



Figure 3-2: AT/ATX Switch Location

IASO-W10B-N6210 Medical Panel PC

3.7 VESA Mounting

The IASO-W10B-N6210 is VESA (4 screws: M4 type, 6 mm length min.) compliant and can be mounted on a mounting device with a 75 mm interface pad. The IASO-W10B-N6210 VESA mount retention screw holes are shown below. Refer to the installation guide that came with the mounting device to mount the IASO-W10B-N6210.

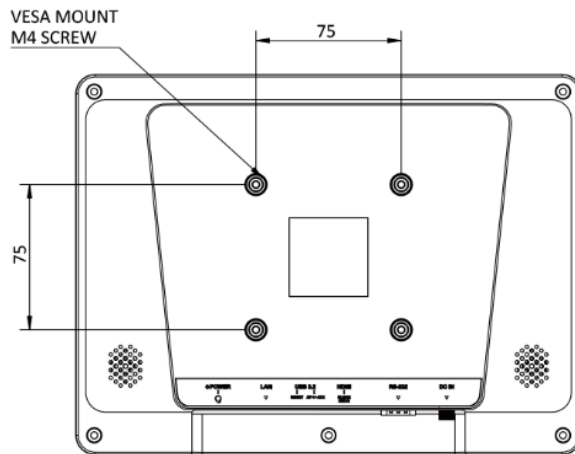


Figure 3-3: VESA Mounting Retention Screw Holes



WARNING / AVERTISSEMENT

Use suitable mounting apparatus and be sure to secure the screws of the mounting apparatus tightly to avoid risk of injury.

Utilisez un appareil de montage approprié et assurez-vous de bien fixer les vis de l'appareil de montage pour éviter tout risque de blessure.

3.8 Powering On the System



WARNING / AVERTISSEMENT

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

Pour éviter tout risque d'électrocution, cet équipement ne doit être connecté qu'au secteur avec mise à la terre de protection.

To power on the system, follow the steps below:

Step 1: Connect the power cord to the power adapter. Connect the other end of the power cord to a power source. Connect the power adapter to the power connector of the IASO-W10B-N6210. **NOTE:** The FSP065M-DHA power adapter came with the IASO-W10B-N6210 is a forming part of the medical device.



Figure 3-4: Power Input Connector and Power Button

Step 2: Locate the power button on the bottom panel (Figure 3-4).

Step 3: Long press the power button to turn on the IASO-W10B-N6210.

Step 4: To force shutdown the panel PC, long-press the power button for 10 seconds.

IASO-W10B-N6210 Medical Panel PC

3.9 Clear CMOS

If the IASO-W10B-N6210 fails to boot due to improper BIOS settings, the clear CMOS jumper clears the CMOS data and resets the system BIOS information. To do this, push the clear CMOS button for three seconds, then restart the system. The clear CMOS button location is shown in **Figure 3-5**.

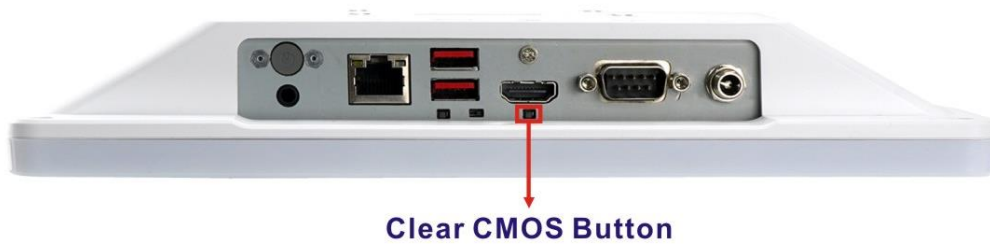


Figure 3-5: Clear CMOS Button Location

3.10 Reset the System

The reset button enables user to reboot the system when the system is on. The reset button location is shown in **Figure 3-6**. Press the reset button to reboot the system.



Figure 3-6: Reset Button Location

3.11 System Maintenance

If the components of the IASO-W10B-N6210 fail, they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts.

**NOTE:**

A user cannot replace a motherboard. If the motherboard fails it must be shipped back to IEI to be replaced. Please contact the system vendor, reseller or an IEI sales person directly.

Chapter

4

Driver Installation

4.1 Available Drivers

All the drivers for the IASO-W10B-N6210 are available on IEI Resource Download Center (<https://download.ieiworld.com>). Type IASO-W10B-N6210, and press Enter to find all the relevant software, utilities, and documentation.

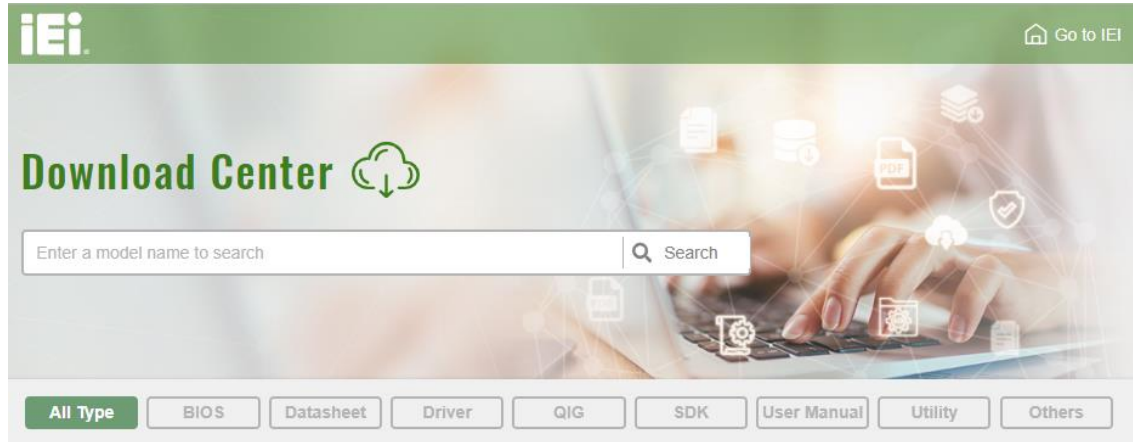
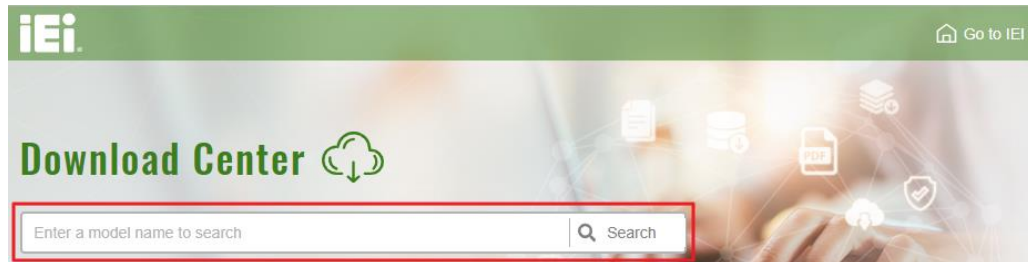


Figure 4-1: IEI Resource Download Center

4.2 Driver Download

To download drivers from IEI Resource Download Center, follow the steps below.

Step 1: Go to <https://download.ieiworld.com>. Type IASO-W10B-N6210, and press Enter.



Step 2: All product-related software, utilities, and documentation will be listed. You can choose **Driver** to filter the result.

IASO-W10B-N6210 Medical Panel PC

[All Type](#)
[BIOS](#)
[Datasheet](#)
[Driver](#)
[QIG](#)
[SDK](#)
[User Manual](#)
[Utility](#)
[Others](#)

WAFER-BT-i1 [Product Info](#)

[Embedded Computer](#) ▶ [Single Board Computer](#) ▶ [Embedded Board](#)
 3.5" SBC with Intel® 22nm Atom™/Celeron® on-board SoC

Driver

File Name	Published	Version	File Checksum
7B000-001033-RS V2.3.iso (2.23 GB)	2017/10/03	2.30	3B2DB1F792779A93A8F50DDBC3943E30

Step 3: Click the driver file name on the page and you will be prompted with the following window. You can download the entire ISO file (❶), or click the small arrow to find an individual driver and click the file name to download (❷).

7B000-001168-RS_V1.4.iso

❶ [Click here to download entire ISO file. \(2.99 GB\)](#)

* Download individual file *

- Docs
 - 1.Chipset
 - ❷ 10.1.1.12.zip (2.7 MB)
 - 2.VGA
 - 3.Audio
 - 4.Lan
 - 5.USB 3.0
 - 6.Serial IO
 - 7.TXE
 - 8.Manual



NOTE:

To install software from the downloaded ISO image file in Windows 8, 8.1 or 10, double-click the ISO file to mount it as a virtual drive to view its content.

Chapter

5

LED Bar Control

5.1 Overview



WARNING / AVERTISSEMENT

The LED light is only for aesthetic purpose, not for warning use. The LED color cannot be configured to red, yellow and green.

La lumière LED est uniquement à des fins esthétiques, pas pour une utilisation d'avertissement. La couleur des LED ne peut pas être configurée sur rouge, jaune et vert.

This chapter provides detailed instructions on how to control the LED bar. It is organized into the following sections:

LED Bar Overview

This section provides an overview of the LED bar, explaining its structure and capabilities. The LED bar consists of multiple segments arranged linearly, and each segment can be controlled independently to display various colors and patterns.

LED Control Examples

This section provides examples of LED control on two different operating systems: Windows and Ubuntu. Follow the instructions below to effectively control the LED bar on each system.

- LED Control on Windows:

Before you begin controlling the LED bar, ensure that you have all the necessary resources in place. In Section 5.3.1, you will find step-by-step instructions for controlling the LED bar on Windows 10 (x64) using C++. The instructions cover tasks such as initializing data structures, adjusting brightness, changing LED colors, and closing the connection using the SMBus API.

- LED Control on Ubuntu:

Before proceeding with LED control on Ubuntu 22.04, make sure you have completed the necessary preparations. In Section 5.3.2, you will learn how to compile and run the LED control code on Ubuntu 22.04. Additionally, you will discover how to customize the LED control code according to your specific requirements.

Follow the provided instructions carefully to effectively control the LED bar on your desired operating system.

LED Bar Demo App (Windows Only)

This section introduces a demo application designed exclusively for Windows users. The LED Bar Demo App allows you to explore and experience the various control capabilities of the LED bar. The following features are included:

- Initialization: Establish the necessary connections with the LED bar controller.
- Mode Selection: Choose the desired LED bar mode, such as color cycling, pattern display, or static color.
- Parameter Specification: Define the parameters for the selected mode, including color values, animation speed, or pattern configuration.
- Activation: Apply the settings to the LED bar to activate the desired visual effects.

Ensure that you have the necessary resources, such as the LED bar controller, and follow the instructions carefully to control the LED bar effectively. Refer to the specific documentation or user manual for further guidance.

5.2 Preparations

Before proceeding with the LED bar setup, ensure the following prerequisites are met.

5.2.1.1 Install the Required Libraries

Make sure to install the necessary libraries to support the LED bar functionality.

Step 1: Install the following two packages:

- EcSDK-Setup-x64-v14.msi
- SMBAPI-setup-x64-v14.msi

IASO-W10B-N6210 Medical Panel PC

Step 2: After installing the packages, restart your computer.

5.2.1.2 Driver Installation

Follow the steps below to install the "IEISMBDrv" device driver (version 1.0.0.6). Make sure to follow each step carefully for a successful installation.

Step 1: Open the command prompt in command line mode and run it as administrator.

Step 2: Unzip the **driver_SMBDRV_1.0.0.6.zip** file and locate the "install.bat" file.

Step 3: Run file: "install.bat".

```
C:\Users\ce\Desktop\Signed_1152921505696248896\drivers\SMBDRV>install.bat

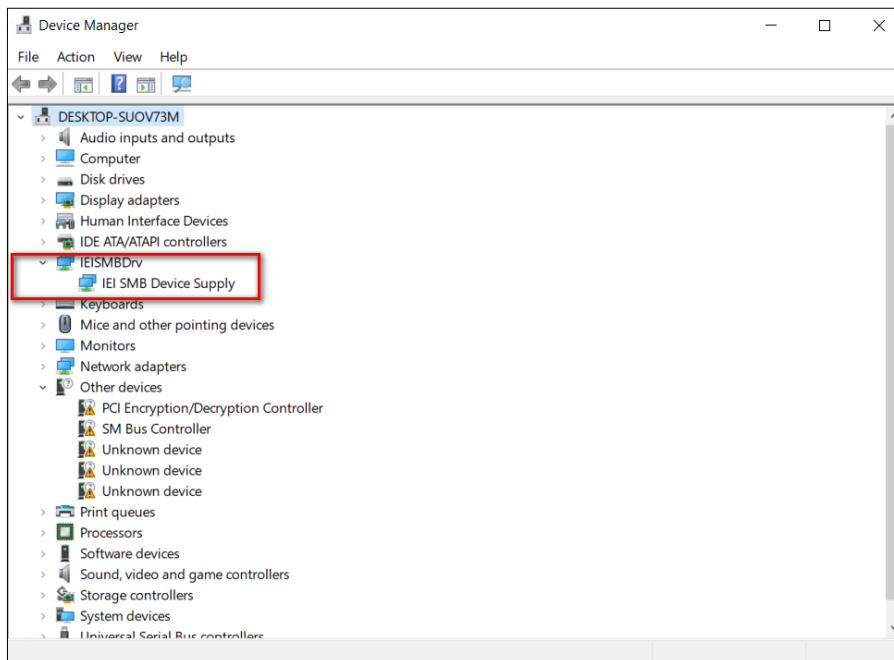
C:\Users\ce\Desktop\Signed_1152921505696248896\drivers\SMBDRV>devcon.exe install SMBDRV.inf Root\SMBDRV
Device node created. Install is complete when drivers are installed...
Updating drivers for Root\SMBDRV from C:\Users\ce\Desktop\Signed_1152921505696248896\drivers\SMBDRV\SMBDRV.inf.
Drivers installed successfully.

C:\Users\ce\Desktop\Signed_1152921505696248896\drivers\SMBDRV>_
```

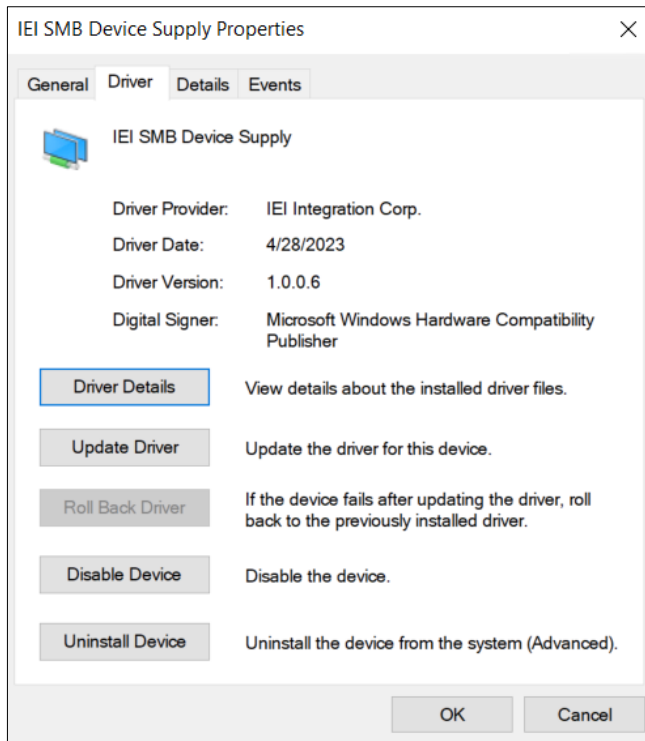
Step 4: Reboot your computer.

Step 5: After rebooting, you will be able to see the device named "IEISMBDrv" and its corresponding driver (version 1.0.0.6).

Device "IEISMBDrv" on Device Manager:



IEI SMB Device Driver is v1.0.0.6:



5.3 LED Control Example

5.3.1 Windows and Windows 11

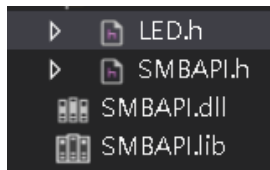
Use the following example program. For detailed information, please refer to the **DemoLED_example.cpp** file.

5.3.1.1 Preparations:

Before proceeding, make sure to complete the following preparations:

Step 1: Include the headers **SMBAPI.h** and **LED.h** (if using any necessary defines).

Step 2: Import the **SMBAPI.lib** and **SMBAPI.dll** files.



IASO-W10B-N6210 Medical Panel PC

Step 3: Prepare the data structures: **SMB_INFO** and **SMB_BLK_INFO**.

```
typedef struct _SMB_INFO {
    → UCHAR → count; → // reserved
    → USHORT → addr; → // SMBus slave device ID
    → USHORT → commad; → // SMBus command
    → ULONG → data; → // Read/Write data
} SMB_INFO, *PSMB_INFO;
```

Refer to the example below:

```
#include ".\your_folder\SMBAPI.h"
#include ".\your_folder\LED.h"
```

5.3.1.2 Call SMBus API (SMB_Open) and Initialize Required Data Structures

This function is used to open the SMBus driver. For detailed APIs and data structures, refer to the "SMB_API.doc" document.

```
m_hDev = SMB_Open();
if (m_hDev == NULL)
{
    printf("Can not open GPIDRV !");
}
```

This API function is provided by the DLL.

SMB_Open

```
HANDLE WINAPI SMB_Open(
    → void
);
```

This function is used to open the SMBus device driver. If the function succeeds, it will return the handle of the driver.

5.3.1.3 Initialize the LED Status

To initialize the LED status, follow the steps below, which are divided into three sections. Each section includes the following sub-steps:

- (1) Set the values for address, data, and command.
- (2) Call the function `SMB_WriteByte()`.

Refer to the process outlined below for detailed instructions on initializing the LED status.

```
SMB_INFO smbInfo;
smbInfo.addr = 0xD0;
smbInfo.data = 0x01;
smbInfo.command = 0x00;
SMB_WriteByte(m_hDev, &smbInfo);

smbInfo.addr = 0xD0;
smbInfo.data = 0xFF;
for (int ii = 0x14; ii <= 0x17; ii++)
{
    smbInfo.command = ii;
    SMB_WriteByte(m_hDev, &smbInfo);
}

smbInfo.command = 0x01;
smbInfo.data = 0x00;
SMB_WriteByte(m_hDev, &smbInfo);
```


IASO-W10B-N6210 Medical Panel PC

5.3.1.4 Write to LED

5.3.1.4.1 Adjusting LED Brightness

Ensure that the value provided for brightness is between 1 and 255.

- (1) Set the values for address and command.
- (2) Set data (Set the desired value for the LED brightness.)
- (3) Call the function `SMB_WriteByte()`.

Note: This step only needs to be performed once.

Refer to the example below:

```
SMB_INFO smbInfo;  
smbInfo.addr = 0xD0;  
smbInfo.command = 0x12;  
smbInfo.data = 196; // brightness  
SMB_WriteByte(m_hDev, &smbInfo);
```

5.3.1.4.2 Changing LED Color

Change the LED color using different writing modes, distinguishing between simultaneous changes to all LEDs or individual LED updates.

A. Changing Colors of All LEDs (Use writeblock API):

This method allows you to change the colors of all LEDs simultaneously. Ensure that the RGB values provided for both methods fall within the range of 1 to 255 to achieve the desired LED colors.

Step 1: Prepare the **smbBkInfo** Data Structure: Set the values for address, count, mode_i2c, and command. Here, 'count' represents the RGB values for 5 LEDs, making a total of 15 values (3 values per LED multiplied by 5).

```
SMB_BLK_INFO smbBlkInfo;  
smbBlkInfo.addr = 0xD0;  
smbBlkInfo.count = 15;  
smbBlkInfo.mode_i2c = 0;  
smbBlkInfo.command = 0xA1;
```

Step 2: Write RGB Data to `smbBlkInfo.data`.

Regarding RGB LED data and sequencing, the following information is provided:

Data Source:

The RGB data in the 'colorarray' mentioned here is simulated for a breathing (or color pattern) effect. However, you have the option to replace it with your own data.

Refer to the example below:

```
for (int LED = 0; LED < 5; LED++)  
{  
smbBlkInfo.data[LED * 3] = colorarray[LED].R;  
smbBlkInfo.data[LED * 3 + 1] = colorarray[LED].G;  
smbBlkInfo.data[LED * 3 + 2] = colorarray[LED].B;  
printf(" %d, %d, %d\n", colorarray[LED].R, colorarray[LED].G, colorarray[LED].B);  
}
```

LED Sequence and its Relation to colorarray:

There are a total of 15 LED values arranged in the following sequence:

colorarray[0].R, colorarray[0].G, colorarray[0].B,
colorarray[1].R, colorarray[1].G, colorarray[1].B,
colorarray[2].R, colorarray[2].G, colorarray[2].B,
colorarray[3].R, colorarray[3].G, colorarray[3].B,
colorarray[4].R, colorarray[4].G, colorarray[4].B.

IASO-W10B-N6210 Medical Panel PC

In this sequence, the first group of R, G, B values represents LED0, the second group represents LED1, and so on for LED2, LED3, and LED4. These LEDs correspond to the LED bar on both sides of the Panel PC, arranged from **top to bottom** (synchronized on both sides).

The configuration for different platforms:

In the **DemoLED_example.cpp** file, the configuration of "is_reverse_led" and "is_separate_left_right" depends on the platform.

```
bool is_reverse_led = true;
bool is_separate_left_right = true;
```

- If "is_reverse_led" is set to False, the order of the LEDs will be as mentioned earlier in 2b.
- If "is_reverse_led" is set to True, the LED(i) order needs to be reversed.

For example,

(colorarray[0].R, colorarray[0].G, colorarray[0].B) corresponds to LED4, (colorarray[1].R, colorarray[1].G, colorarray[1].B) corresponds to LED3, and so on for LED2, LED1, and LED0. The LED order for the two-side Panel PCs is from top to bottom.

- If "is_separate_left_right" is set to True, the LED settings for the left and right sides need to be configured separately, using addresses 0xC2 and 0xC1.
- If "is_separate_left_right" is set to False, it indicates that the LEDs on both sides of display synchronously.
- The mentioned address refers to the 'addr' field within the SMB_BLK_INFO data structure.
- For the IASO-W08 platform, both "is_reverse_led" and "is_separate_left_right" should be set to True.
- For the IASO-10 platform, both "is_reverse_led" and "is_separate_left_right" should be set to False.

The correspondence between LED(i) and colorarray(i) is as follows:

```
//for Left LED
SMB_BLK_INFO smbBlkInfoLeft;
smbBlkInfoLeft.addr = 0xC2;
smbBlkInfoLeft.count = 15;
smbBlkInfoLeft.mode_i2c = 0;
smbBlkInfoLeft.command = 0xA1;

for (int LED = 0; LED < 5; LED++)
{
    sh = (LED) * 3;
    if (is_reverse_led==true)
    {
        i_led = 4 - LED;
    }
    else
    {
        i_led = LED;
    }
    smbBlkInfoLeft.data[sh] = colorarray[i_led].R;
    smbBlkInfoLeft.data[sh + 1] = colorarray[i_led].G;
    smbBlkInfoLeft.data[sh + 2] = colorarray[i_led].B;
    printf(" %d, %d, %d\n", colorarray[i_led].R, colorarray[i_led].G,
colorarray[i_led].B);
}

//for Right LED
SMB_BLK_INFO smbBlkInfoRight;
smbBlkInfoRight.addr = 0xC1;
smbBlkInfoRight.count = 15;
smbBlkInfoRight.mode_i2c = 0;
smbBlkInfoRight.command = 0xA1;

for (int LED = 0; LED < 5; LED++)
```

IASO-W10B-N6210 Medical Panel PC

```
{
    sh = (LED) * 3;
    if (is_reverse_led==true)
    {
        i_led = LED;
    }
    else
    {
        i_led = 4 - LED;
    }
    smbBlkInfoRight.data[sh] = colorarray[i_led].R;
    smbBlkInfoRight.data[sh + 1] = colorarray[i_led].G;
    smbBlkInfoRight.data[sh + 2] = colorarray[i_led].B;
    printf(" %d, %d, %d\n", colorarray[i_led].R, colorarray[i_led].G,
colorarray[i_led].B);
}
```

For more detailed usage, please refer to the content of the **DemoLED_example.cpp** file.

Step 3: The final step is to call the `SMB_WriteBlock()` function to write the values.

```
SMB_WriteBlock(m_hDev, &smbBlkInfo);
```

B. Changing Color of a Single LED (Use writebyte API):

This method enables you to change the color of a specific LED. Ensure that the RGB values provided for both methods fall within the range of 1 to 255 to achieve the desired LED colors.

Follow these steps to configure the LED settings:

Step 1: Setting the Address to 0xD0

Step 2: LED Index (led_i): Use the LED index to specify which LED to target. For example, LED0, LED1, LED2, LED3 and LED4. (from **top to bottom**).

Step 3: Set Data: Set the desired value for the R, G, or B component of the LED.

Step 4: Set Command: Select the appropriate command for the R, G, or B component.

Refer to the example below:

```
SMB_INFO smbInfo;
smbInfo.addr = 0xD0;
int led_i=0 //0,1,2,3,4

smbInfo.data = R_Value;
smbInfo.command = (0x02 + (led_i * 3)) + 0; //R
SMB_WriteByte(m_hDev, &smbInfo);

smbInfo.data = G_Value;
smbInfo.command = (0x02 + (led_i * 3)) + 1; //G
SMB_WriteByte(m_hDev, &smbInfo);

smbInfo.data = B_Value;
smbInfo.command = (0x02 + (led_i * 3)) + 2; //B
SMB_WriteByte(m_hDev, &smbInfo);
```

For the case when "is_reverse_led" is set to True and "is_separate_left_right" is set to True, please refer to the usage in the **DemoLED_example.cpp** file.

5.3.1.5 Call the SMBus API (SMB_Close) to Close the Connection

This function is used to close the SMBus driver. Refer to the example below:

```
SMB_INFO smbInfo;
smbInfo.addr = 0xD0;

for (int ii = 0x14 ; ii <= 0x17 ; ii++)
{
    smbInfo.command = ii;
    smbInfo.data = 0x00;
    SMB_WriteByte(m_hDev, &smbInfo);
}

smbInfo.command = 0x00;
smbInfo.data = 0x11;
SMB_WriteByte(m_hDev, &smbInfo);

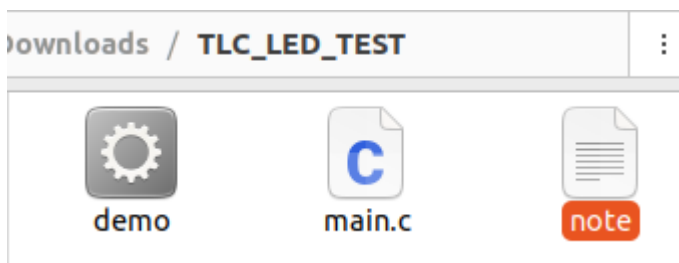
SMB_Close(m_hDev);
```

5.3.2 Ubuntu 22.04

Follow the instruction below to control the LED bar on Ubuntu 22.04.

5.3.2.1 Install Packages

Step 1: Ensure that you have the necessary files from the **TLC_LED_TEST.tgz** archive.



Step 2: Install the required packages, **i2c-tools** and **libi2c-dev**, using the following commands:

```
# sudo apt-get install -y i2c-tools
```

```
leisw@leisw-Z699:~/Downloads/TLC_LED_TEST$ sudo apt-get install -y i2c-tools
```

```
# sudo apt-get install -y libi2c-dev
```

```
leisw@leisw-Z699:~/Downloads/TLC_LED_TEST$ sudo apt-get install -y libi2c-dev
```

IASO-W10B-N6210 Medical Panel PC

5.3.2.2 Compile and Run

Step 1: Add the necessary includes in the **main.c** file.

```
12 #include <stdio.h>
13 #include <stdlib.h>
14 #include <unistd.h>
15 #include <fcntl.h>
16
17 #include <sys/ioctl.h>
18
19 #include <linux/i2c.h>
20 #include <linux/i2c-dev.h>
21 #include <i2c/smbus.h>
--
```

Step 2: Compile the code to create the '**main_app**' executable.

```
# gcc -o main_app main.c -li2c
```

```
leisw@leisw-Z699:~/Downloads$ gcc -o main_app main.c -li2c
```

Step 3: Run the executable file (**main_app**) as root.

```
# sudo ./main_app
```

```
leisw@leisw-Z699:~/Downloads$ sudo ./main_app
Open I2C device
Set SLAVE ADDRESS
ioctl return 0
Open device successfully. Write sequence - MODE0
Mode setting successfully. Write sequence - IREF
IREF setting successfully. Write sequence - LED
LED setting successfully. Write sequence - PWM
Close device. Write sequence - MODE0
Demo Sequence Complete
```

5.3.2.3 Changing LED Color

Step 1: Set the REG_PWM0 register to 0xA1.

```
33 #define SLAVE_ADDRESS          0xD0
34 #define REG_MODE1             0x00
35
36 #define REG_PWM0               0xA1
37 #define REG_LEDOUT0           0x14
38 #define REG_IREF               0x1C
```

Step 2: Set the desired values for the LED's R, G, and B components.

Please refer to the usage in the `main_ubuntu.cpp` file.

```
commandPWM[0] = 0xFF; //LED0 (R,G,B) - White
commandPWM[1] = 0xFF;
commandPWM[2] = 0xFF;

commandPWM[3] = 0xFF; //LED1 (R,G,B) - Orange
commandPWM[4] = 0xA5;
commandPWM[5] = 0x00;

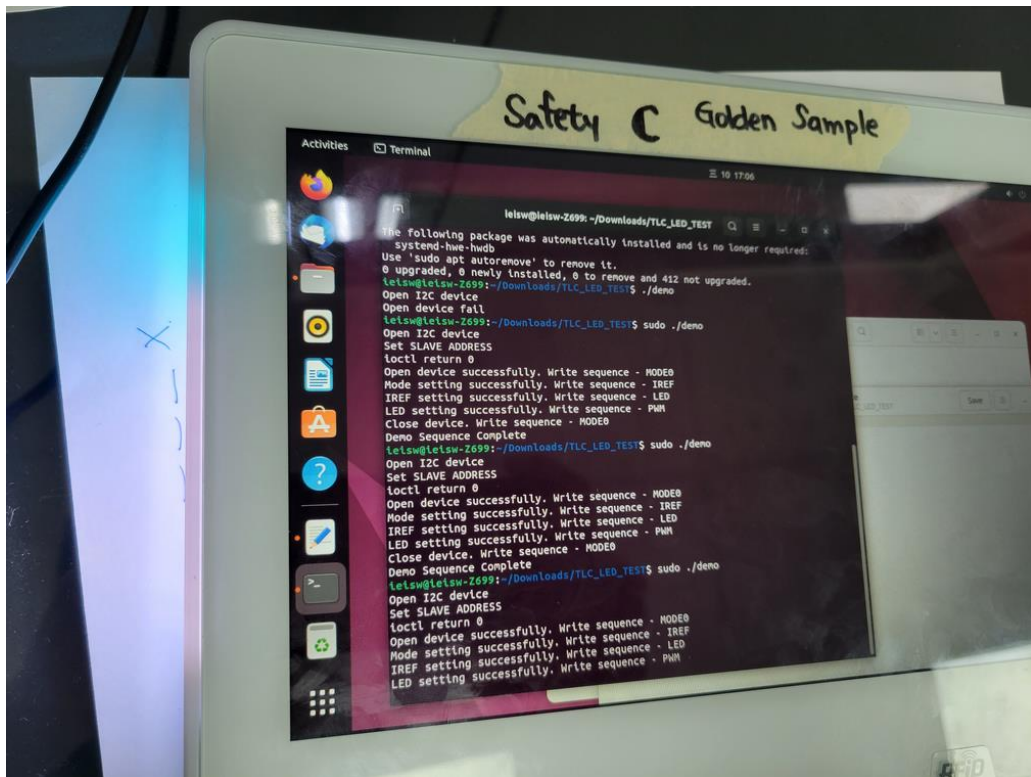
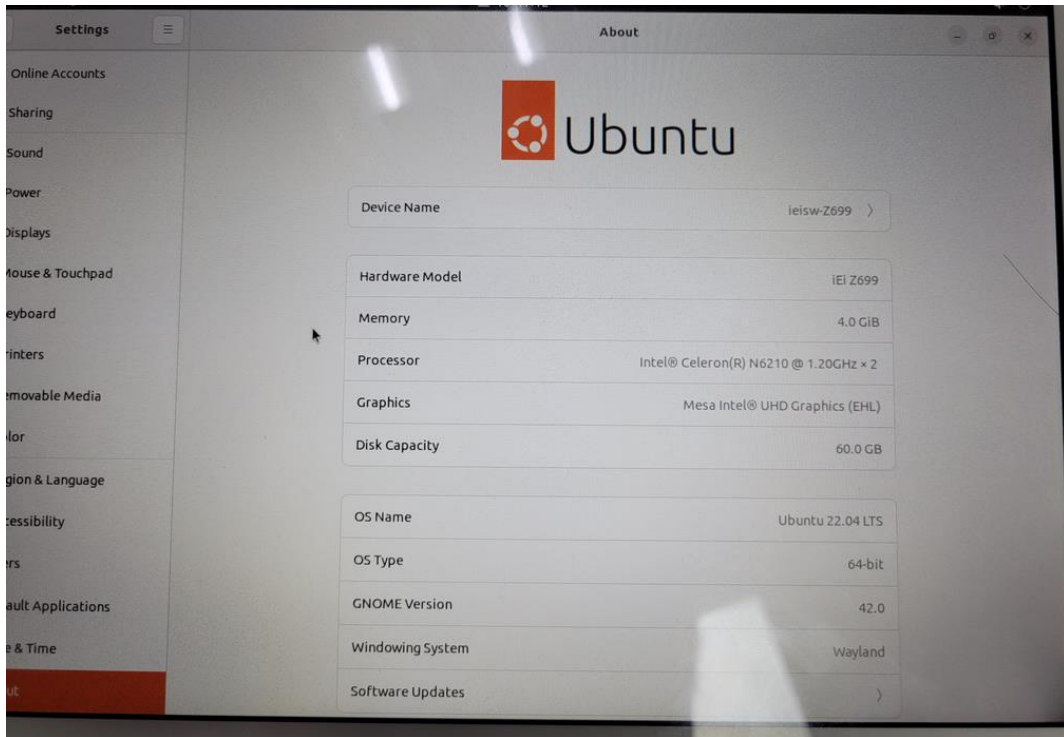
commandPWM[6] = 0x80; //LED2 (R,G,B) - Purple
commandPWM[7] = 0x00;
commandPWM[8] = 0x80;

commandPWM[9] = 0xFF; //LED3 (R,G,B) - Magenta
commandPWM[10] = 0x00;
commandPWM[11] = 0xFF;

commandPWM[12] = 0x00; //LED4 (R,G,B) - Blue
commandPWM[13] = 0x00;
commandPWM[14] = 0xFF;
```


IASO-W10B-N6210 Medical Panel PC

5.3.2.4 OS Version & Result



5.4 LED Bar Demo App

In this Demo GUI App, we provide three examples of LED variations, including:

1. Color Cycling (Breathing Effect):

This example demonstrates the gradual transition of the LED color from Color1 to Color2, and then back to Color1. To start the simulation, click the START button. Click the STOP button to stop.

2. Pattern Display (Wavelike LED Variation):

This example allows you to choose a specific color or a rainbow color effect.

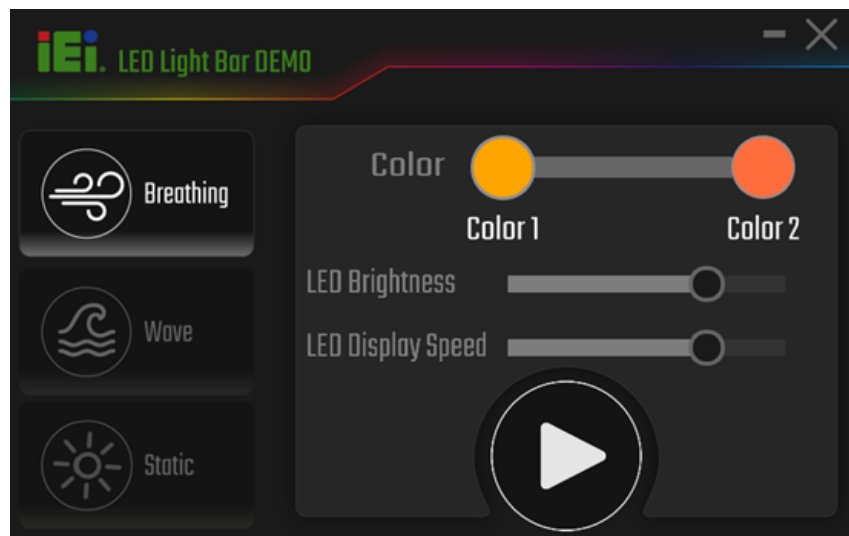
3. Static Color (Changing the Color of a Single LED):

This example enables you to change the color of a particular LED.

Additionally, you have control over the brightness and speed of color variations. Make your selections and follow the instructions to observe the desired LED variations.

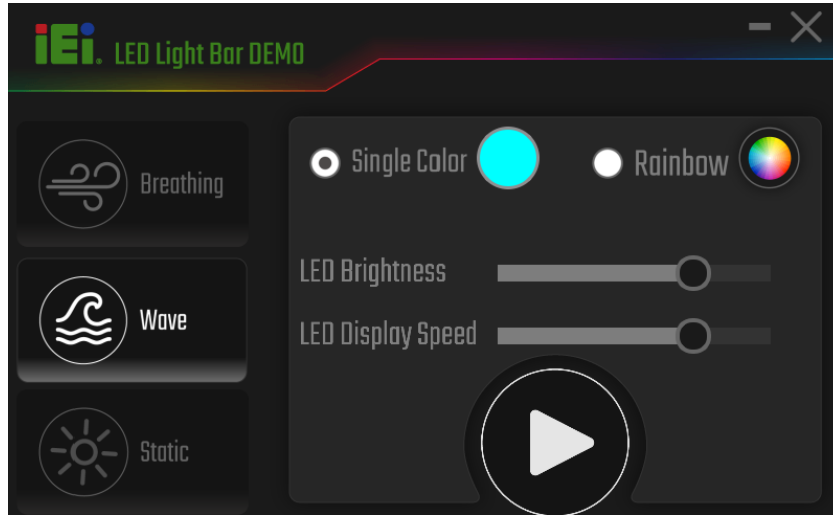
Color Cycling - Breathing Effect

Note: The terms Color1 and Color2 represent specific color values or presets that can be selected within the app.



IASO-W10B-N6210 Medical Panel PC

Pattern Display - Wavelike LED Variation



Static Color - Changing the Color of a Single LED



Appendix

A

Regulatory Compliance

DECLARATION OF CONFORMITY

This equipment is in conformity with the following EU directives:

- EMC Directive (2004/108/EC, 2014/30/EU)
- Low-Voltage Directive (2006/95/EC, 2014/35/EU)
- RoHS II Directive (2011/65/EU, 2015/863/EU)
- Medical Device Directive 93/42/EEC: EN 60601-1

If the user modifies and/or install other devices in the equipment, the CE conformity declaration may no longer apply.

If this equipment has telecommunications functionality, it also complies with the requirements of the Radio Equipment Directive 2014/53/EU.

English

IEI Integration Corp. declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Български [Bulgarian]

IEI Integration Corp. декларира, че този оборудване е в съответствие със съществените изисквания и другите приложими правила на Директива 2014/53/EU.

Česky [Czech]

IEI Integration Corp. tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.

Dansk [Danish]

IEI Integration Corp. erklærer herved, at følgende udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.

Deutsch [German]

IEI Integration Corp. erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 2014/53/EU.

Eesti [Estonian]

IEI Integration Corp. deklareerib seadme seadme vastavust direktiivi 2014/53/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

Español [Spanish]

IEI Integration Corp. declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU.

Ελληνική [Greek]

IEI Integration Corp. ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU.

Français [French]

IEI Integration Corp. déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU.

Italiano [Italian]

IEI Integration Corp. dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU.

Latviski [Latvian]

IEI Integration Corp. deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 2014/53/EU.

Lietuvių [Lithuanian]

IEI Integration Corp. deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 2014/53/EU Direktyvos nuostatas.

Nederlands [Dutch]

IEI Integration Corp. dat het toestel toestel in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.

Malti [Maltese]

IEI Integration Corp. jiddikjara li dan prodott jikkonforma mal-ftigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Direttiva 2014/53/EU.

Magyar [Hungarian]

IEI Integration Corp. nyilatkozik, hogy a berendezés megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.

Polski [Polish]

IEI Integration Corp. oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/EU.

Português [Portuguese]

IEI Integration Corp. declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU.

Româna [Romanian]

IEI Integration Corp. declară că acest echipament este în conformitate cu cerințele esențiale și cu celelalte prevederi relevante ale Directivei 2014/53/EU.

IASO-W10B-N6210 Medical Panel PC

Slovensko [Slovenian]

IEI Integration Corp. izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.

Slovensky [Slovak]

IEI Integration Corp. týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU.

Suomi [Finnish]

IEI Integration Corp. vakuuttaa täten että laitteet on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svenska [Swedish]

IEI Integration Corp. förklarar att denna utrustningstyp står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.

FCC WARNING



This equipment complies with part 18 of the FCC Rules.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

UL CLASSIFIED

The label on the product indicates this product complies with the requirements of ANSI/AAMI ES60601-1:2005/(R)2012 and A1:2012/(R)2012 and A2:2021; CAN/CSA-C22.2 No. 60601-1 (Amendment 2:2022 (MOD) to CAN/CSA-C22.2 No. 60601-1:14).

ROHS STATEMENT

The label on the product indicates this product conforms to European (EU) Restriction of Hazardous Substances (RoHS) that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

CHINA ROHS

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

Appendix

B

Product Disposal

**CAUTION / ATTENTION**

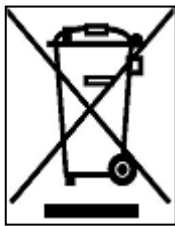
Risk of explosion if battery is replaced by an incorrect type. Only certified engineers should replace the on-board battery.

Risque d'explosion si la batterie est remplacée par un type incorrect.
Seuls les ingénieurs certifiés doivent remplacer la batterie embarquée.

Dispose of used batteries according to instructions and local regulations.

Jetez les piles usagées conformément aux instructions et aux réglementations locales.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union–The device that produces less waste and is easier to recycle is classified as electronic device in terms of the European Directive 2012/19/EU (WEEE), and must not be disposed of as domestic garbage.



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

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

Appendix

C

Maintenance and Cleaning Precautions

When maintaining or cleaning the IASO-W10B-N6210, please follow the guidelines below.



WARNING / AVERTISSEMENT

If you dropped any material or liquid such as water onto the panel PC when cleaning, unplug the power cable immediately and contact your dealer or the nearest service center. Always make sure your hands are dry when unplugging the power cable.

Si vous avez fait tomber du matériel ou du liquide tel que de l'eau sur le Panel PC lors du nettoyage, débranchez immédiatement le câble d'alimentation et contactez votre revendeur ou le centre de service le plus proche. Assurez-vous toujours que vos mains sont sèches lorsque vous débranchez le câble d'alimentation.



CAUTION / ATTENTION

- For safety reasons, turn-off the power switch and unplug the panel PC before cleaning.
Pour des raisons de sécurité, éteignez l'interrupteur d'alimentation et débranchez le Panel PC avant de le nettoyer.
 - Do not scratch or rub the screen with a hard object.
Ne rayez pas et ne frottez pas l'écran avec un objet dur.
 - Never use any of the following solvents on the medical panel PC. Harsh chemicals may cause damage to the cabinet and the touch sensor.
N'utilisez jamais l'un des solvants suivants sur le Panel PC médical. Les produits chimiques agressifs peuvent endommager le boîtier et le capteur tactile.
Thinner Spray-type cleaner, Benzene, Wax, Abrasive cleaner, Acid or Alkaline solvent.
Diluant nettoyant de type spray, benzène, cire, nettoyant abrasif, solvant acide ou alcalin.
-

IASO-W10B-N6210 Medical Panel PC

C.1.1 Maintenance and Cleaning

Prior to cleaning any part or component of the IASO-W10B-N6210, please read the details below.

- To clean the IASO-W10B-N6210,
 - remove dirt with a lightly moistened cloth. Then wipe the external chassis with a soft dry cloth.
 - use 75% ethanol alcohol to clean the external chassis.
- Cleaning frequency: follow the cleaning method guidelines of the hospital.
- The interior of the IASO-W10B-N6210 does not require cleaning. Keep fluids away from the IASO-W10B-N6210 interior.

C.1.2 Cleaning Tools

Some components in the IASO-W10B-N6210 may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the IASO-W10B-N6210.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the IASO-W10B-N6210.
- **Water/Ethanol alcohol** – A cloth moistened with water or 75% ethanol alcohol can be used to clean the IASO-W10B-N6210.
- **Using solvents** – The use of solvents is not recommended when cleaning the IASO-W10B-N6210 as they may damage the plastic parts.
- **Cotton swabs** - Cotton swabs moistened with water are excellent tools for wiping hard to reach areas.
- **Foam swabs** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.















Appendix

D

Symbol Definitions

IASO-W10B-N6210 Medical Panel PC

The following symbols appear on the product, its labeling, or the product packing. Each symbol carries a special definition, as defined below:

	Direct current		Fragile, handle with care
	AC current		Keep dry
	Protective earth (ground)		This side up
	Date of manufacture		Indicates the manufacturer
	Stand-by		Refer to instruction manual
	Indicates proof of conformity to applicable European Economic Community Council directives and to harmonized standards published in the official journal of the European Communities.		
	Tested to comply with FCC Class B standard.		
	This symbol indicates that the waste of electronic equipment must not be disposed as unsorted municipal waste and must be collected separately. Please contact the manufacturer or other authorized disposal company to decommission your equipment.		
	This product is recyclable.		

Appendix

E

Watchdog Timer

IASO-W10B-N6210 Medical Panel PC



NOTE:

The following discussion applies to DOS. Contact IEI support or visit the IEI website for drivers for other operating systems.

The Watchdog Timer is a hardware-based timer that attempts to restart the system when it stops working. The system may stop working because of external EMI or software bugs. The Watchdog Timer ensures that standalone systems like ATMs will automatically attempt to restart in the case of system problems.

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

INT 15H:

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

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

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

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



NOTE:

The Watchdog Timer is activated through software. The software application that activates the Watchdog Timer must also deactivate it when closed. If the Watchdog Timer is not deactivated, the system will automatically restart after the Timer has finished its countdown.

EXAMPLE PROGRAM:

; INITIAL TIMER PERIOD COUNTER

;

W_LOOP:

;

```

MOV      AX, 6F02H      ;setting the time-out value
MOV      BL, 30         ;time-out value is 48 seconds
INT      15H

```

;

; ADD THE APPLICATION PROGRAM HERE

;

```

CMP      EXIT_AP, 1     ;is the application over?
JNE      W_LOOP        ;No, restart the application

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

```

;

; EXIT ;

Appendix

F

Error Beep Code

F.1 PEI Beep Codes

Number of Beeps	Description
1	Memory not Installed
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

F.2 DXE Beep Codes

Number of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met



NOTE:

If you have any question, please contact IEI for further assistance.

Appendix

G

Hazardous Materials Disclosure

G.1 RoHS II Directive (2015/863/EU)

The details provided in this appendix are to ensure that the product is compliant with the RoHS II Directive (2015/863/EU). The table below acknowledges the presences of small quantities of certain substances in the product, and is applicable to RoHS II Directive (2015/863/EU).

Please refer to the following table.

Part Name	Toxic or Hazardous Substances and Elements									
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBBs)	Polybrominated Diphenyl Ethers (PBDEs)	Bis(2-ethylhexyl) phthalate (DEHP)	Butyl benzyl phthalate (BBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate (DIBP)
Housing	O	O	O	O	O	O	O	O	O	O
Display	O	O	O	O	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O	O	O	O	O
Battery	O	O	O	O	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in Directive (EU) 2015/863.

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in Directive (EU) 2015/863.

IASO-W10B-N6210 Medical Panel PC

G.2 China RoHS

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

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

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	○	○	○	○	○	○
显示	○	○	○	○	○	○
印刷电路板	○	○	○	○	○	○
金属螺帽	○	○	○	○	○	○
电缆组装	○	○	○	○	○	○
风扇组装	○	○	○	○	○	○
电力供应组装	○	○	○	○	○	○
电池	○	○	○	○	○	○
<p>○: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11364-2014 與 GB/T26572-2011 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11364-2014 與 GB/T26572-2011 标准规定的限量要求。</p>						