User Manual

POC-824

Point-of-Care Terminal with an Intel® Core™ i7/i5/i3 Processor and 23.8" TFT LCD

ADVANTECH

Enabling an Intelligent Planet

Instructions for the User

The document combines text and illustrations, providing a comprehensive overview of the system. The information is presented as sequential steps, allowing the user to learn directly how to use the device.

The text provides explanations and instructs the user step-by-step in the practical use of the product, with short, clear instructions in an easy-to-follow sequence.

Definitions

Warning! *A WARNING statement provides important information about a potentially hazardous situation which, if not avoided, could result in death or serious injury.*

Caution! *A CAUTION statement provides important information about a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or in damage to the equipment or other property.*

Note! *A NOTE provides additional information intended to avoid inconveniences during operation.*

Safety Instructions

1. Strictly follow these safety instructions and please read them carefully.
2. Please keep this user manual for later reference. Any use of the product requires a full understanding and strict observation of all portions of these instructions. Observe all WARNINGS and CAUTIONS as rendered throughout this manual and on labels on the equipment.
3. Repair of the device may only be carried out by trained service personnel. Advantech recommends that a service contract be obtained with Advantech Service and that all repairs be carried out by them. Otherwise, the correct functioning of the device may be compromised.

Warning! *Due to the danger of electric shock, never remove the cover of a device while it is in operation or connected to a power outlet.*

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4. If one of the following situations arises, get the equipment checked by service personnel:
   - The power cord or plug is damaged.
   - Liquid has penetrated into the equipment.
   - The equipment has been exposed to moisture.
   - The equipment does not work well, or you cannot get it to work according to the user manual.
   - The equipment has been dropped and damaged.
   - The equipment has obvious signs of breakage.
5. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning and keep this equipment away from humidity.

Caution! *To avoid short-circuiting and otherwise damaging the device, do not allow fluids to come in contact with the device. If fluids are accidentally spilled on the equipment, remove the affected unit from service as soon as possible and contact service personnel to verify that patient safety is not compromised.*

6. Keep this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

Caution! *To prevent overheating, do not cover the openings or place the device in direct sunlight or near radiant heaters.*

7. Make sure the voltage of the power source is correct before connecting the equipment to a power outlet. Position the power cord so that people cannot step on it. Do not place anything over the power cord. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

Caution! *Do not leave this equipment in an uncontrolled environment where the storage temperature is below 0 °C (32 °F) or above 50 °C (122 °F). This may damage the equipment.*

8. If your computer clock shows the wrong time or the BIOS configuration resets to the default, the battery has no power.

Caution! *Do not replace the battery yourself. Please contact a qualified technician or your retail outlet.*

The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same (CR2032) or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions

Caution! *A battery charging indicator is not Included with this device. An indicator can be added as part of the system assembly.*

9. Improper installation of a VESA mount can result in serious personal injury! VESA mount installation should be done by a professional technician. Please contact a service technician or your retail outlet if you need this service. The detailed installation procedure is specified in Appendix A.
10. CLASSIFICATION:
    1). Class I externally powered
    2). No applied parts
    3). Continuous operation
    4). Not in the AP or APG categories

Warning! *This device is not suitable for use in the presence of a flammable anesthetic mixture with air, oxygen, nitrous oxide, or as part of a life support system.*

11. Environmental protection: follow national requirements to dispose of the unit.
12. Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with a dry applicator.

Caution! *When servicing the device, always use replacement parts that meet Advantech standards. Advantech Medical cannot warrant or endorse the safe performance of third-party replacement parts for use with our medical devices.*

13. Make sure the user does not contact SIP/SOPs and the patient at the same time.
14. When networking with electrical devices, the operator is responsible for ensuring that the resulting system meets the requirements set forth by the following standards:
    – EN 60601-1 (IEC 60601-1)
      Medical electrical equipment
      Part 1: General requirements for safety
    – EN 60601-1-2 (IEC 60601-1-2)
      Medical electrical equipment
      Part 1-2: General requirements for safety
      Collateral standard: Electromagnetic compatibility; Requirements and tests
15. Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore, all configurations shall comply with the system standard IEC 60601-1. Anyone who connects additional equipment to the signal input part or signal output part of a medical system is responsible to ensure that the system complies with the requirements of the system standard IEC 60601-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in a patient environment and IEC 60XXX certified equipment outside of a patient environ-

ment. If in doubt, consult the technical services department or your local representative.

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

16. Reliable grounding can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".
17. 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.

Note! *Environmental protection*

Follow national requirements to dispose of the unit.

18. WARNING - Do not modify this equipment without authorization of the manufacturer.
19. WARNING - To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
20. In the case of a serious incident, please contact the manufacturer and local authorities immediately where applicable. Allow healthcare professionals to verify if the device is suitable and select the appropriate software.
21. It is recommended to install the appropriate software. If you have any questions, please contact the manufacturer for further assistance.
22. Notice: To prevent unauthorized access, it is recommended to install suitable anti-virus software and to not connect to unsafe external networks.
23. CAUTION: the adapter is an integral part of the medical device.
24. Remove the power cord to fully turn off the device.
25. Only use a power cord with the following specifications: UL/CSA listed, 18AWG min., 3m max length, hospital grade if for the USA/Canada market.
26. The device is intended to be kept upright when operating. Do not lay it on either side of the LCD Panel or flat on its back on any surface when operating.
27. Avoid touching the backside of the device when operating. If it is necessary, do not touch it for more than one second to avoid risk of injury.
    If there is a need to touch the backside for cleaning, turn off the device first.

Explanation of Graphical Symbols

IEC 60878 and ISO 3864-B.3.6: Warning: high voltage

ISO 7000-0434: Caution, consult ACCOMPANYING DOCUMENTS

IEC 60417 -5009: STAND-BY

IEC 60417-5032: Alternating Current

IEC 60417-5031: Direct Current

ISO 7010-M002: Follow the instructions for use

ISO 7010-M002: Follow the instructions for use

Disposing of Your Old Product

Within the European Union

EU-wide legislation, as implemented in each member state, requires that waste electrical and electronic products carrying the symbol (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.

The symbol on electrical and electronic products only applies to the current European Union Member States.

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

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

List of Accessories

Before installing your Point-of-Care Terminal, ensure that the following materials have been received:

- POC-824 Point-of-Care Terminal
- Power adapter
- 4 x M4x8L screws

Warning! *There are no user-serviceable parts inside. Servicing should only be done by qualified personnel. Only the accessories indicated on the list of accessories above have been tested and approved to be used with the device. It is strongly recommended that only these accessories be used in conjunction with the device. Otherwise, the correct functioning of the device may be compromised.*

Additional Information and Assistance

Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages
- This equipment is a source of electromagnetic waves. Before using, please make sure that there are no EMI-sensitive devices nearby which may malfunction.

Environmental Protection

- Follow national requirements to dispose of the unit.

Manufacturer

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Instructions pour l'utilisateur

Le document combine du texte et des illustrations, offrant un aperçu complet du système. Les informations sont présentées sous forme d'actions séquentielles, permettant à l'utilisateur d'apprendre directement à utiliser le périphérique.

Le texte fournit des explications et informe l'utilisateur, étape par étape, de l'utilisation pratique du produit, avec des instructions courtes et claires, dans une séquence facile à suivre.

Définitions

Attention! *Une déclaration AVERTISSEMENT fournit des informations importantes sur une situation potentiellement dangereuse qui, si elle n'est pas évitée, pourrait entra?ner la mort ou des blessures graves.*

Mise en garde! *Une déclaration CAUTION fournit des informations importantes sur une situation potentiellement dangereuse qui, si elle n'est pas évitée, peut entra?ner des blessures mineures ou modérées à l'utilisateur ou au patient ou des dommages à l'équipement ou à d'autres biens.*

Remarque! *Une REMARQUE fournit des informations supplémentaires destinées à éviter les inconvénients en cours de fonctionnement.*

Consignes de sécurité

1. Suivez strictement ces instructions d'utilisation. veuillez lire attentivement ces consignes de sécurité.
2. Veuillez conserver ce manuel d'utilisation pour référence ultérieure; toute utilisation du produit nécessite une compréhension totale et une observation stricte de toutes les parties de ces instructions. Observez tous les AVERTISSEMENTS et PRÉCAUTIONS tels qu'ils apparaissent dans ce manuel et sur les étiquettes de l'appareil.
3. La réparation de l'appareil ne doit être effectuée que par du personnel de service qualifié. Advantech recommande qu'un contrat de service soit conclu avec le service de maintenance Advantech et que toutes les réparations soient également effectuées par ce dernier. Sinon, le bon fonctionnement de l'appareil pourrait être compromis.

Attention! *En raison du danger de choc électrique, ne retirez jamais le couvercle d'un appareil en cours de fonctionnement ou sur une prise secteur.*

4. Si l'une des situations suivantes se produit, faites vérifier l'équipement par le personnel de service:
   - Le cordon d'alimentation ou la fiche est endommagé.
   - Un liquide a pénétré dans l'appareil.
   - L'équipement a été exposé à l'humidité.
   - L'équipement ne fonctionne pas bien ou vous ne pouvez pas le faire fonctionner conformément au manuel d'utilisation.
   - L'équipement est tombé et a été endommagé.
   - L'équipement présente des signes évidents de rupture.
5. Débranchez cet appareil de toute prise secteur avant le nettoyage. Utilisez un chiffon humide. N'utilisez pas de détergents liquides ou en aérosol pour le nettoyage et conservez cet équipement à l'abri de l'humidité.

Mise en garde! *Pour éviter tout court-circuit ou tout autre dommage pour l'appareil, évitez tout contact des liquides avec celui-ci. En cas de déversement accidentel de liquides sur l'équipement, retirez dès que possible l'unité concernée du service et contactez le personnel de maintenance pour vérifier que la sécurité du patient n'est pas compromise.*

6. Placez cet équipement sur une surface fiable lors de l'installation. Le laisser tomber ou le laisser tomber peut causer des dommages. Pour les équipements enfichables, la prise de courant doit être située à proximité de l'équipement et doit être facilement accessible.

Mise en garde! *Pour éviter toute surchauffe, ne couvrez pas les ouvertures et ne placez pas l'appareil à la lumière directe du soleil ou à proximité de radiateurs.*

7. Assurez-vous que la tension de la source d'alimentation est correcte avant de connecter l'équipement à la prise de courant. Placez le cordon d'alimentation de sorte que personne ne puisse marcher dessus. Ne placez rien sur le cordon

d'alimentation. Si l'appareil n'est pas utilisé pendant une longue période, débranchez-le de la source d'alimentation pour éviter tout dommage d? à une surtension transitoire.

Mise en garde! *Ne laissez pas cet équipement dans un environnement non contrôlé où la température de stockage est inférieure à 0 °C ou supérieure à 50 °C. Cela pourrait l'endommager.*

8. Si votre ordinateur ne conserve pas l'heure exacte ou si la configuration du BIOS a été réinitialisée, la batterie peut ne pas avoir de charge.

Mise en garde! *L'ordinateur est équipé d'un circuit d'horloge temps réel alimenté par batterie. Il y a un risque d'explosion si la batterie est remplacée de manière incorrecte. Remplacez uniquement avec le même type recommandé par le fabricant.*

Jetez les piles usagées conformément aux instructions du fabricant.

9. Une installation incorrecte du montage VESA peut entra?ner des blessures graves! L'installation du support VESA doit être effectuée par un technicien professionnel. Veuillez contacter le technicien de maintenance ou votre revendeur si vous avez besoin de ce service. La procédure d'utilisation détaillée est spécifiée à l'annexe A.
10. Classification:
    1) Alimentation externe de classe I
    2) Aucune partie appliquée
    3) Opération continue
    4) Pas de catégorie AP ou APG

Attention! *Ce dispositif ne convient pas pour une utilisation en présence d'un mélange anesthésique inflammable avec de l'air, de l'oxygène, de l'oxyde nitreux ou pour des systèmes de survie.*

11. Protection de l'environnement: respecter les exigences nationales en matière d'élimination de l'appareil.
12. Entretien: pour bien entretenir et nettoyer les surfaces, utilisez uniquement les produits approuvés ou nettoyez-les avec un applicateur sec.

Mise en garde! *Lors de l'entretien de l'appareil, utilisez toujours des pièces de rechange conformes aux normes Advantech. Advantech Digital Healthcare ne peut en aucun cas garantir ou garantir la sécurité des pièces de rechange tierces à utiliser avec notre dispositif médical.*

13. Assurez-vous que l'utilisateur n'autorise pas le contact simultané entre SIP / SOP et le patient.
14. Lors de la mise en réseau d'appareils électriques, il incombe à l'opérateur de s'assurer que le système résultant répond aux exigences définies par les normes suivantes:
    – EN 60601-1 (IEC 60601-1) Appareils électromédicaux
      Partie 1: Prescriptions générales pour la sécurité

– EN 60601-1-2 (IEC 60601-1-2) Appareils électromédicaux
Partie 1-2: Exigences générales pour la sécurité

15. Les équipements accessoires connectés aux interfaces analogiques et numériques doivent être conformes aux normes CEI harmonisées au niveau national (CEI 60950 pour les équipements de traitement de données, CEI 60065 pour les équipements vidéo, CEI 61010-1 pour les équipements de laboratoire et CEI 60601-1 pour équipement médical.)
De plus, toutes les configurations doivent être conformes à la norme système CEI 60601-1. Quiconque connecte un équipement supplémentaire à la partie d'entrée de signal ou à la partie de sortie de signal configure un système médical et est donc responsable de la conformité du système aux exigences de la norme système CEI 60601-1. L'unité est destinée à une interconnexion exclusive avec un équipement certifié IEC 60601-1 dans l'environnement du patient et un équipement certifié IEC 60XXX en dehors de l'environnement du patient.
En cas de doute, consultez le service technique ou votre représentant local.

Mise en garde! *Utilisez un appareil de montage approprié pour éviter tout risque de blessure.*

16. La fiabilité de la mise à la terre ne peut être obtenue que lorsque l'équipement est connecté à une prise équivalente portant la mention "Hospital Only" ou "Hospital Grade".
17. Utilisez un cordon d'alimentation qui correspond à la tension de la prise de courant, qui a été approuvé et est conforme à la norme de sécurité de votre pays particulier.

Remarque! *Protection environnementale*

Suivez les exigences nationales pour éliminer l'uni

18. AVERTISSEMENT - Ne modifiez pas cet équipement sans l'autorisation du fabricant."
19. AVERTISSEMENT - Pour éviter tout risque d'électrocution, cet équipement ne doit être connecté qu'à une alimentation secteur avec terre de protection.
20. En cas d'incident grave survenu, veuillez contacter immédiatement le fabricant et les autorités locales le cas échéant, informations permettant au professionnel de santé de vérifier si l'appareil est adapté et de sélectionner le logiciel et les accessoires correspondants.
21. Il est recommandé d'installer le logiciel approprié. Si vous avez des questions, veuillez contacter le fabricant pour obtenir de l'aide.
22. Avis: Pour empêcher tout accès non autorisé, il est recommandé d'installer un logiciel antivirus approprié ou de ne pas se connecter à des réseaux externes non sécurisés.
23. ATTENTION: L'adaptateur fait partie intégrante du dispositif médical.
24. Retirez le cordon d'alimentation pour éteindre complètement l'appareil.
25. Utilisez uniquement le cordon d'alimentation avec les spécifications suivantes: répertorié UL/CSA, 18 AWG min., 3 m max., qualité hospitalière si pour le marché américain/canadien.
26. L'appareil est uniquement destiné à être maintenu debout lors de son fonctionnement. Ne posez aucun côté du panneau LCD ou l'arrière à plat sur une surface quelconque lors de l'utilisation.

27. Ne touchez pas l'arrière de l'appareil lors de son fonctionnement. S'il est nécessaire de toucher le dos, ne touchez pas plus d'une seconde pour éviter tout risque de blessure. S'il est nécessaire de toucher l'arrière pour le nettoyer, éteignez d'abord l'appareil.

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Chapter 1

General Information

1.1 Introduction

The POC-824 is a multimedia Intel® Core™ i7 or i5 processor device designed for mobile computing as a Point-of-Care terminal (POC-824.) It is a PC-based system with a 23.8" wide TFT LCD display with HDMI and triple LAN connectivity. It has dual COM ports (RS232), 4 x USB 2.0 ports, and a 24-bit stereo audio controller. It also can be equipped with an optional 2.5" SSD secondary storage. For system integrators, this highly integrated multimedia system lets you easily build a Point-of-Care Terminal into your applications. The POC-824 is designed to be a user-friendly and safe point-of-care solution for patients and hospital practitioners. The POC-824 is specially designed to resist spills and water damage at the front panel, and ensures dust resistance with its protected LCD. The POC-824 is a reliable solution for your processing requirements for various healthcare applications.

Intended use - The POC-824 is intended to serve as a Point-of-Care terminal for integration with hospital systems. The POC-824 is designed for general-purpose medical computing in a hospital environment, for data collection, and for displaying information. It should not be used as a life-support system.

The latest version of this user manual is available for download from http://support.advantech.com.tw/support/

1.2 Specifications

Table 1.1: Specifications

Computing System	CPU	Intel® Core™ i7-9700E Processor (12M Cache, up to 4.40 GHz) Intel® Core™ i5-9500E Processor (9M Cache, up to 4.20 GHz)* Intel® Core™ i3-9100E Processor (6M Cache, up to 3.70 GHz)* *depending on the project
	Memory	supports up to 32GB DDR4 SODIMM
	Graphics	T1000 or RTX3000 MXM Graphics Module (optional)
Display	Display Size	23.8" wide TFT color LCD (16:9)
	Type	IPS
	Max. Resolution	1920 x 1080 (H x V)
	Max. Colors	16.7 M colors
	Luminance	250 cd/m2
	Backlight	LED
Touch	Type	Projected Capacitive 10-points (clear glass).
Expansion Slots	M.2 2242 B-Key (main storage)	1 (for M.2 SSD installation)
	M.2 2230 E-Key (Wi-Fi)	1 (for Wi-Fi Module installation)
	PCIe	1 x PCIe x16 (slot is reserved for an MXM graphics module)

I/O Ports	USB 3.0 Type-A	4
	HDMI	1
	DisplayPort	1
	LAN	3
	Line-Out	1
	Mic-In	1
	COM (RS232)	2
Power Supply	Input Voltage	1) Adapter Technology/ ATM250T-A120, 100-240 Vac, 50-60 Hz, 3.3-1.3A 2) Adapter Technology/ ATM300T-A120, 100-240 Vac, 50-60 Hz, 3.5-1.5A – optional 3) Adapter Technology/ ATM250T-P120, 100-240 Vac, 50-60 Hz, 3.3-1.3A – optional
	Output Voltage	1) 12Vdc, 20A (240 watts) 2) 12Vdc, 25A (300 watts) – optional 3) 12Vdc, 20A (240 watts) – optional
Certification	Standard	EN60601-1, CE & FCC Class B compliance
Environment	Temperature	Operating: 0 °C ~ +35 °C, Storage/Transportation: 0 °C ~ + 50 °C
	Humidity	Operating: 20% ~ 80% @40°C non-condensed, Storage/Transportation: 10% ~ 90% @40°C non-condensed,
	Shock Resistance	20G peak acceleration (11ms duration)
	Pressure	700-1060 hPa (Operation) 700-1060 hPa (Storage) 700-1060 hPa (Transportation)
Physical Characteristics	Dimensions (W x D x H)	583.38 x 386.74 x 59.95 mm (22.97" x 15.23" x 2.36")
	Weight (Bare system)	7.9 kg (17.42 lb)
	VESA Mount	100x100, 75x75
Optional Configuration	Operating System	Windows 10 LTSC 64-bit (optional)
	Memory	Up to 32GB DDR4 SODIMM
	Primary Storage	NVME M.2 2242 SSD 128/ 256GB or 512GB
	Secondary Storage	2.5" SSD 128/ 256G/ 512GB/ 1TB or 2TB
	WLAN	Intel® Wireless-AC9260 or Intel® AX210
	Bluetooth	5.1 (Intel® 9260) / 5.2 (Intel® AX210)
	RFID	RFIDEAS OEM-805N24KU-X (Dual-band card reader supports RFID frequency of 125kHz and 13.56MHz)

1.3 Dimensions

Dimensions: 583.38 x 386.74 x 59.95 mm (Unit: mm)

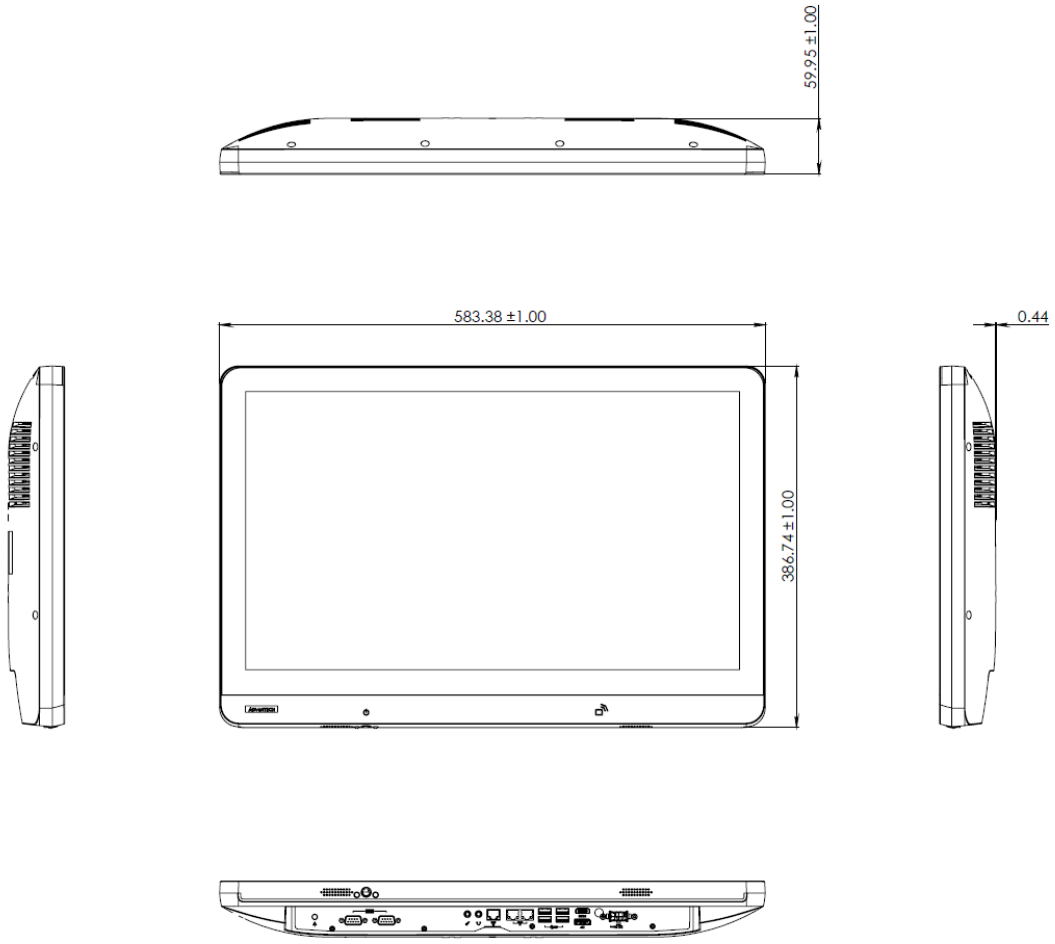


Figure 1.1 Dimensions of the POC-824

VESA Mounting: 75 x 75 mm; 100 x 100 mm

Note! *For VESA mounting, please see the installation steps in Appendix A.*

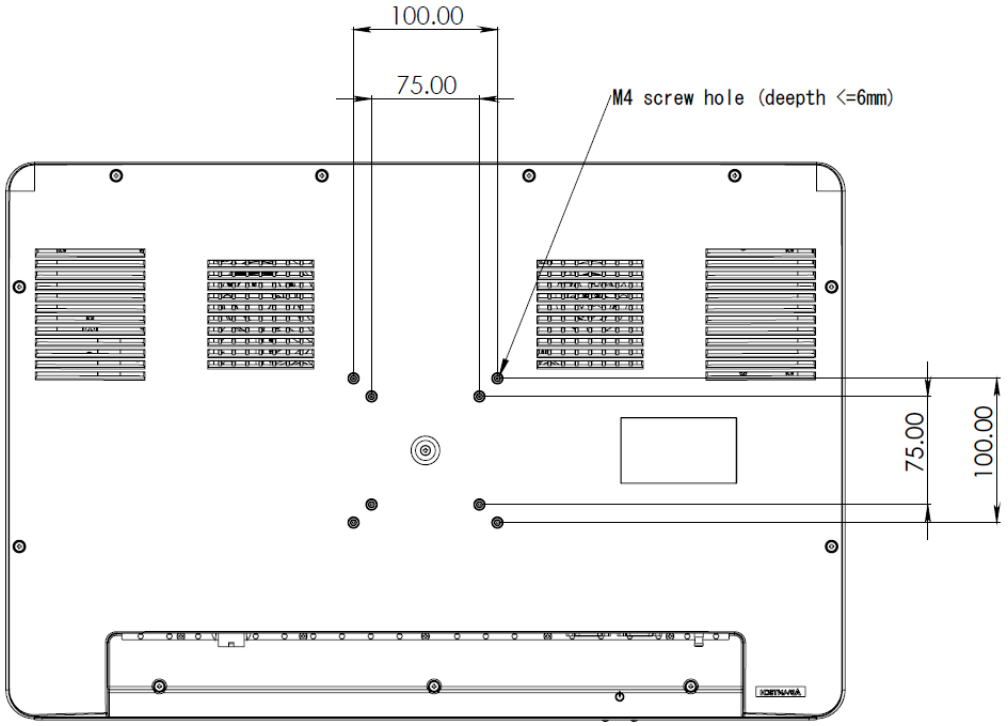


Figure 1.2 VESA Mounting of the POC-824

Warning! *Use suitable mounting apparatus to avoid risk of injury.*

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

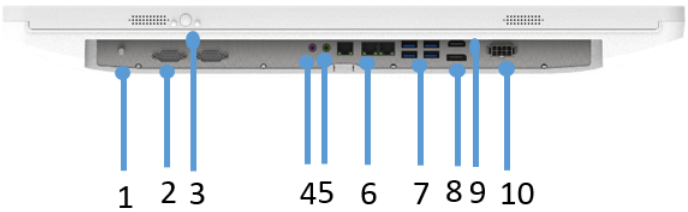


Figure 1.3 POC-824 Series Bottom Panel

1. Equipotential Terminal Pin
2. 2 x COM ports (RS232)
3. Power button
4. Line-Out
5. Mic-In
6. 3 x LAN ports
7. 4 x USB 3.0
8. DisplayPort
9. HDMI
10. DC-In

1.3.1 Optional modules

- Memory: up to 32GB DDR4 SODIMM
- Touch: Anti-Glare/ Anti-Reflection Touch by request
- Secondary SSD: 2.5" SSD
- Wi-Fi module: Intel® Wireless-AC9260, Intel® AX210
- RFID module: RFIDEAS OEM-805N24KU-X

1.3.2 Cleaning and disinfecting

During normal use of the POC (Point-of-Care Terminal) the device may become dirty and should be regularly cleaned.

Steps:

1. Prepare cleaning water.
2. Wipe the POC-824 with a clean cloth that has been moistened in the cleaning solution.
3. Wipe thoroughly with a clean dry cloth.

Caution!

- *Do not immerse or rinse the POC-824 or its peripherals. If you accidentally spill liquid on the device, disconnect the unit from the power source. Contact your IT support department 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 POC-824 or its peripherals with strong aromatic, chlorinated, ketone, ether or ether solvents, sharp tools, or abrasives. Never immerse electrical connectors in water or other liquids.*

1.4 Operating Principle

The device offers input options through the touch panel, as well as the hard keys positioned at the bottom of the unit. It can also receive input from accessories connected to USB ports, or via LAN/WLAN connections. Once the device receives the input data, it processes it and produces output data. This data can be directed to the LCD panel, connected accessories, or other devices through its I/O ports or LAN/WLAN connections. Even when the device is turned off, it retains the data within its memory units.

1.5 Intended User Profile

Intended user profile:

- Age: 18 to 65
- Weight: not relevant
- Health: not relevant
- Nationality: Global
- Patient state: the patient will not be the operator.
- Part of the body or type of tissue applied to or interacted with: hands and fingers, expected contact time shall be less than 1 min.
- Education level: at least 8 years intensive reading experience (school)
- Knowledge:
  At minimum – read and understand “westernized Arabic” numerals when written in Arial font.
  - can distinguish: every body part as described in the user manual.
  - trained and authorized by the manufacturer only.
- To be considered as trained and authorized, they must complete the training course of the manufacturer; see document number xxxxx for the qualification method. When considered necessary by the manufacturer, a technician shall be called back for retraining and annual training is also considered necessary.
- Language of operation: English, and whenever other languages are required, a professional translation company shall create a translation to be reviewed by the manufacturer. See SOP document number XXXXX
- Experience: The user should be mentally and physically competent, with specific medical training to understand the relevant symbols.
- Permissible impairments:
  - Mild reading vision impairment or vision corrected to log MAR 0,2 (6/10 or 20/32)
  - One arm/hand capable of guiding and holding the device
  - An average degree of aging-related short term memory impairment
  - Hearing impairment of 40%, resulting in 60% of normal hearing at 500 Hz to 2 kHz

Chapter 2

System Setup

2.1 A Quick Tour of the POC-824

Before you start to set up the POC-824, take a moment to become familiar with the locations and functions of the controls, drives, connections, and ports, which are illustrated in the figures below.

When you place the POC-824 upright on a desktop, its front panel appears as shown in Figure 2.1.

2.1.1 Front view

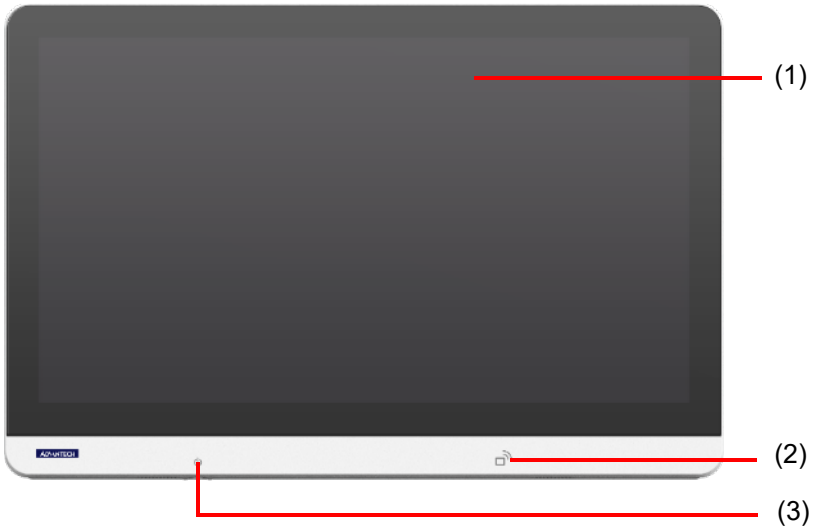


Figure 2.1 Front View of the Point-of-Care Terminal

Front Bezel View

(1) LCD panel with touchscreen module

(2) RFID symbol (optional)

(3) Power symbol with indicator light

2.1.2 Rear view

When you turn the Point-of-Care Terminal around and look at its rear cover, the sunken I/O section is at the bottom of the panel PC, as shown in Figure 2.2. while Figure 2.3 shows all of the ports at the bottom including serial ports, HDMI port, Ethernet port, USB ports, and so on.

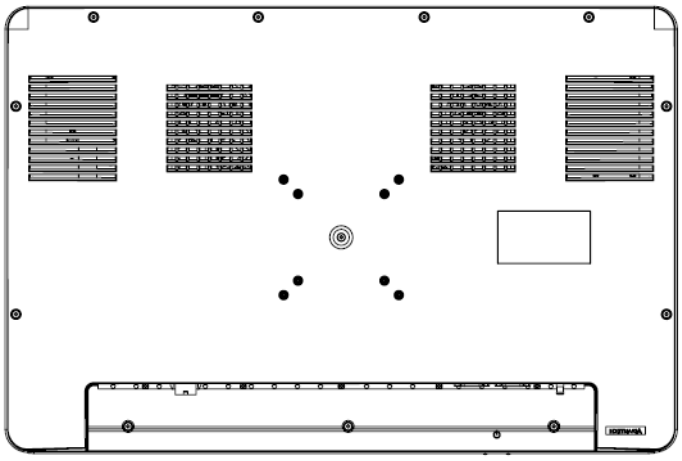


Figure 2.2 Rear View of the Point-of-Care Terminal

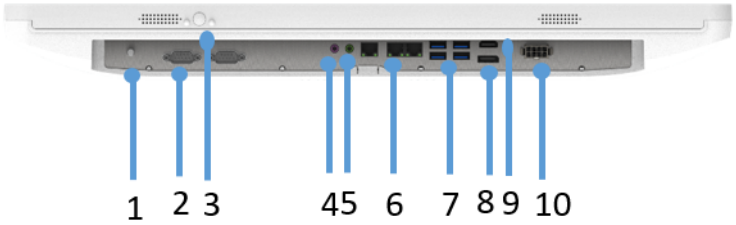


Figure 2.3 Bottom Panel with the Various I/O Ports

1. Equipotential Terminal Pin
2. 2 x COM ports (RS232)
3. Power button
4. Line-Out
5. Mic-In
6. 3 x LAN ports
7. 4 x USB 3.0
8. DisplayPort
9. HDMI
10. DC-In

2.2 Installation Procedures

2.2.1 Connecting the power cord

The POC-824 SERIES can only be powered by DC adapters as follows.

Adapter Technology / ATM250T-A120, 100-240 Vac, 50-60 Hz, 3.3-1.3A or
Adapter Technology / ATM300T-A120, 100-240 Vac, 50-60 Hz, 3.5-1.5A or
Adapter Technology / ATM250T-P120, 100-240 Vac, 50-60 Hz, 3.3-1.3A

When using ATM250T-A120 or ATM300T-A120, be sure to always handle the power cords by holding the plug ends only.

Follow these procedures in order:

1. Connect the female end of the power cord to the AC adapter.
2. Connect the 3-pin male plug of the power cord into an electrical outlet.

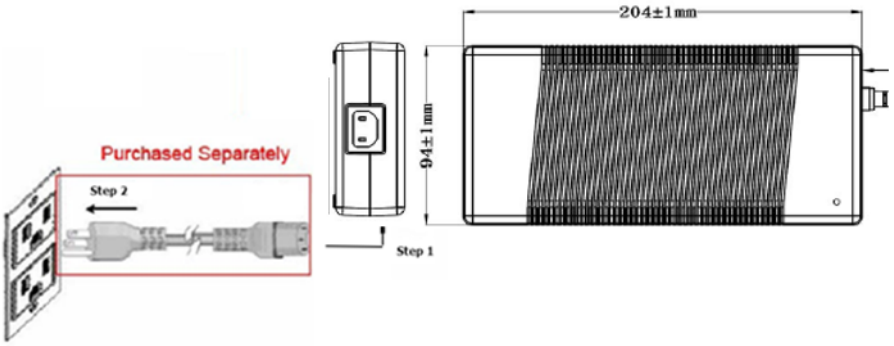
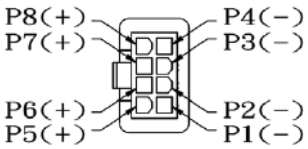


Figure 2.4 Connecting the Power Cord

2.2.2 Connecting the DC-In

Connect the AC Adapter output DC-In plug to the DC power for the POC system.

Caution! *The adapter DC-In plug has a specific orientation. Please align the plug and the DC-In connector correctly.*



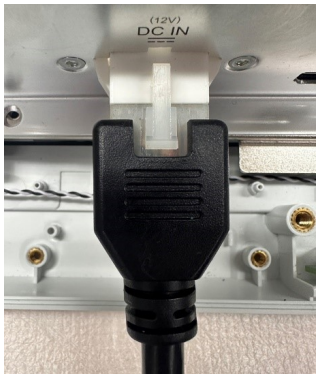
Warning! *Plugging in with the wrong orientation may damage the POC system or adapter.*

Attention! *La prise DCIN de l'adaptateur a une direction spécifique. Veuillez aligner correctement la fiche et le connecteur DC-In.*

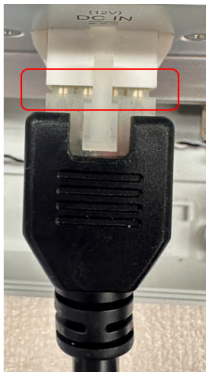
Attention! *Le plugin Miss direction peut endommager le système POC ou l'adaptateur.*

Caution! *The adapter DC-In plug must be properly and tightly connected to the POC System (as shown below) without any gap in between.*

Proper DC-In connection without a gap



Improper DC-In connection with a gap



Warning! *An improper DC-In connection may damage the POC system or adapter.*

Attention! *La prise DC-In de l'adaptateur doit être correctement connectée au système POC (illustré ci-dessous) sans aucun espace entre les deux.*

Attention! *Une mauvaise connexion DC-In peut endommager le système POC ou adaptateur.*

2.2.3 Connecting the ground pin

1. Locate the Equipotential Terminal on the bottom side of the POC. An Equipotential Terminal is provided to optionally connect the device to a hospital ground/ earth system.

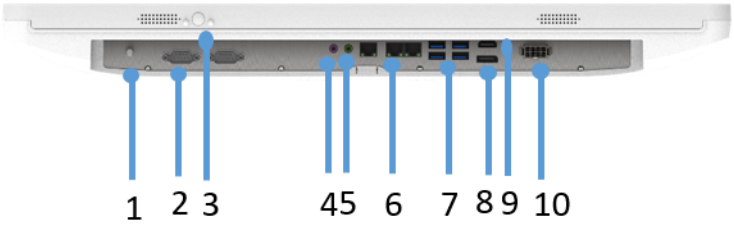


Figure 2.5 POC-824 Series Bottom Panel

1. Equipotential Terminal Pin
2. 2 x COM ports (RS232)
3. Power button
4. Line-Out
5. Mic-In
6. 3 x LAN ports
7. 4 x USB 3.0
8. DisplayPort
9. HDMI
10. DC-In

2. Connect the grounding cable and the terminal link to the hospital grounding/ earthing system.

Figure 2.6 Grounding Cable with Connector

3. Connect the grounding cable plug to the POC-824 SERIES Equipotential Terminal (See Figure 2.6).

2.3 Running the BIOS Setup Program

Your POC-824 was probably set up and configured by your dealer prior to delivery. You may still find it necessary to use the BIOS (Basic Input-Output System) setup program to change system configuration information, such as the current date and time or your type of hard drive. The setup program is stored in read-only memory. It can be accessed either when you turn on or reset the panel PC, by pressing the "F2" or "Del" key on your keyboard immediately after powering on the computer.

The settings you specify with the setup program are recorded in a special area of memory called CMOS RAM. This memory is backed up by a battery so that it will not be erased when you turn off or reset the system. Whenever you turn on the power, the system reads the settings stored in CMOS RAM and compares them to the equipment check conducted during the power on self-test (POST). If an error occurs, an error message will be displayed on the screen, and you will be prompted to run the setup program.

2.4 Installing System Software

Recent releases of operating systems from major vendors include setup programs which load automatically and guide you through hard disk preparation and operating system installation. The guidelines below will help you determine the steps necessary to install your operating system on the panel PC hard drive.

Note! *Some distributors and system integrators may have already pre-installed system software prior to shipment of your panel PC.*

If required, insert your operating system's installation or setup diskette into an external diskette drive until the release button pops out.

The BIOS supports system bootup directly from a CD-ROM drive. You may also insert your system installation CD-ROM disk into an external CD-ROM drive.

Power on or reset the system by pressing the "F2" or "Del" key to boot to the BIOS menu and adjust the boot device sequence.

You can also press the F12 key when booting. A bootable device popup menu will appear, and you can select the bootable device that you want. The Point-of-Care Terminal will automatically load the operating system from the diskette or CD-ROM.

If you are presented with the opening screen of a setup or installation program, follow the instructions on the screen. The setup program will guide you through preparation of your hard drive, and installation of the operating system.

2.5 Installing the Drivers

After installing your system software, you will be able to set up the chipset, graphics, Ethernet, audio, and touchscreen functions from your own external CD-ROM drive. All the drivers, except the CD-ROM drive driver, are available from the download link on the Advantech website. If you have any questions, please contact the Advantech AE team for further support.

The standard automatic installation procedures for installing the chipset, graphics, audio, Ethernet, TXE, and touch drivers are described in Appendix B.

Troubleshooting

This is for when the system behaves abnormally, such as:

1. Failure to power on.
2. Failure to power off.
3. The power LED is ON, but there is no DC power output.
4. The AC power in and all switches are ON, but the system doesn't power on.

Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages
- Symptoms, photo, or video if available

2.6 EMC Declaration

Guidance and manufacturer's declaration – electromagnetic emissions		
The POC-824 is intended for use in the electromagnetic environment specified below. The customer or the user of the POC-824 should assure that it is used in such an environment.		
Emissions Test	**Compliance**	**Electromagnetic Environment–Guidance**
RF emissions CISPR 11	Group 1	The POC-824 uses RF energy only for internal functions. Therefore, its RF emissions are very low and are not likely to cause any interference to nearby electronic equipment.
RF emissions CISPR 11	Class B	The POC-824 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 61000-3-2:2018	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Meets the requirements	

Recommended separation distances between portable and mobile RF communications equipment and the POC-824			
The POC-824 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the POC-824 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model POC-824 as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter (W)	**Separation distance according to the frequency of the transmitter (m)**		
	150 kHz to 80 MHz $d = 1{,}2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1{,}2\sqrt{P}$	**800 MHz to 2,5 GHz** $d = 2{,}3\sqrt{P}$
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 *d* in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) 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 POC-824 is intended for use in the electromagnetic environment specified below. The customer or the user of the POC-824 should assure that it is used in such an environment.

Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment–guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for powersupply lines ±1 kV for input/output lines	Main power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Main power quality should be that of a typical commercial or hospital environment.
Interruptions and voltage variations on power supply input lines IEC 61000-4-11	Voltage Dips 0% reduction for 0.5 / 1 cycle at 50Hz 70% reduction for 25 / 30 cycles at 50/60Hz Voltage Interruptions 0% reduction for 250 / 300 cycles at 50/60Hz	Voltage Dips 0% reduction for 0.5 / 1 cycle at 50Hz 70% reduction for 25 / 30 cycles at 50/60Hz Voltage Interruptions 0% reduction for 250 / 300 cycles at 50/60Hz	Main power quality should be that of a typical commercial or hospital environment. If the user of the POC-824 requires continued operation during main power interruptions, it is recommended that the POC-824 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 *U*T is the AC mains voltage prior to application of the test level.

Guidance and manufacturer's declaration – electromagnetic immunity			
The POC-824 is intended for use in the electromagnetic environment specified below. The customer or the user of the POC-824 should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 and 6 Vrms 150 kHz to 80 MHz and specific ISM, AM frequency 3V/m 80 MHz to 2.7GHz, and specific frequency	3 and 6 Vrms 150 kHz to 80 MHz and specific ISM, AM frequency 3 V/m 80 MHz to 2.7 GHz, and specific frequency	Portable and mobile RF communications equipment should be used no closer to any part of the POC-824, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1{,}2\sqrt{P}$ $d = 1{,}2\sqrt{P}$ 80 MHz to 800 MHz $d = 2{,}3\sqrt{P}$ 800 MHz to 2,5 GHz where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [a] should be less than the compliance level in each frequency range. [b] Interference may occur in the vicinity of equipment marked with the following symbol:
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

[a] 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 POC-824 is used exceeds the applicable RF compliance level above, the POC-824 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the POC-824.

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

Chapter 3

Operation and Safety

3.1 General Safety Guide

For your own safety and that of your equipment, always take the following precautions.

Disconnect the power plug (by pulling the plug, not the cord), from your computer if any of the following conditions exist:

- The power cord or plug becomes frayed or otherwise damaged.
- You spill something into the case.
- Your computer has been dropped or the case has been otherwise damaged.
- You suspect that your computer needs service or repair.
- You want to clean the computer or screen.
- You want to remove/install any parts.

3.2 Thermal

The vent hole of the POC-824 rear cover functions as a cooling airflow inlet and outlet. These air inlets and outlets transfer heat from inside the computer to the cooler air outside. Do not block these holes/vents with any soft material.

When using your POC-824, it is normal for the inside of the metal heatsink to get warm. Do not touch the backside of the device when operating. If it is necessary to touch the backside, do not touch it for more than one second to avoid risk of injury. If there is any need to touch the backside for cleaning, turn off the device first.

Warning! *Do not place your POC-824 on a pillow or other soft material when it is on, as the material may block the airflow and cause the computer to overheat.*

The device is intended to be kept upright when operating. Do not lay either side of the LCD Panel or backside flat on any surface when operating.

3.3 Disconnecting the Power

The only way to disconnect power completely is to unplug the power cord. Make sure at least one end of the power cord is within easy reach so that you can unplug the computer when you need to.

Warning! *Your AC cord came equipped with a three-wire grounding plug (a plug that has a third grounding pin). This plug will only fit a grounded AC outlet. If you are unable to insert the plug into an outlet because the outlet is not grounded, contact a licensed electrician to replace the outlet with a properly grounded outlet.*

Do not defeat the purpose of the grounding plug.

Warning! *Never push objects of any kind into this product through the openings in the case. Doing so may be dangerous and result in fire or a dangerous electric shock.*

Never place anything on the system case before turning off the computer.

Never turn on your computer unless all of its internal and external parts are in place.

Operating the computer when it is open or with parts missing can be dangerous and may cause damage.

Appendix A

Installing a VESA Mount

A.1 Installing a VESA Mount

The POC-824 also provides standard VESA mounting to help system integrators conveniently integrate the panel PC into their systems.

Never use mounting brackets except as provided by Advantech to prevent unreliable mounting of the POC-824. VESA mount installation should be carried out by a professional technician. Please contact a service technician or your retailer if you need this service.

Installation instructions:

1. First attach the wall-mount to the back cover of the POC-824, then secure it in place with the four Phillips-head screws provided.

Note! *Please use M4x8L (Maximum) screws and use 4 screws for VESA mounting.*

Remarque! *Veuillez utiliser des vis M4x8L (maximum) et utiliser des vis 4pcs pour le montage VESA.*

2. Mount the unit on the wall, stand, or other flat surface.

Note! *The VESA plate for mounting should be between 2mm and 4mm thick.*

Remarque! *L'exigence minimale de plaque VESA pour le montage doit être 2 mm d'épaisseur et maximum 4 mm d'épaisseur*

Warning! *Be sure to secure the screws of the mounting bracket tightly. A loose joint between the POC-824 and the mounting bracket may lead to injury.*

Attention! *Assurez-vous de bien serrer les vis du support de montage. Un joint lâche entre la série POC-824 et le support de montage peut créer un risque de blessure.*

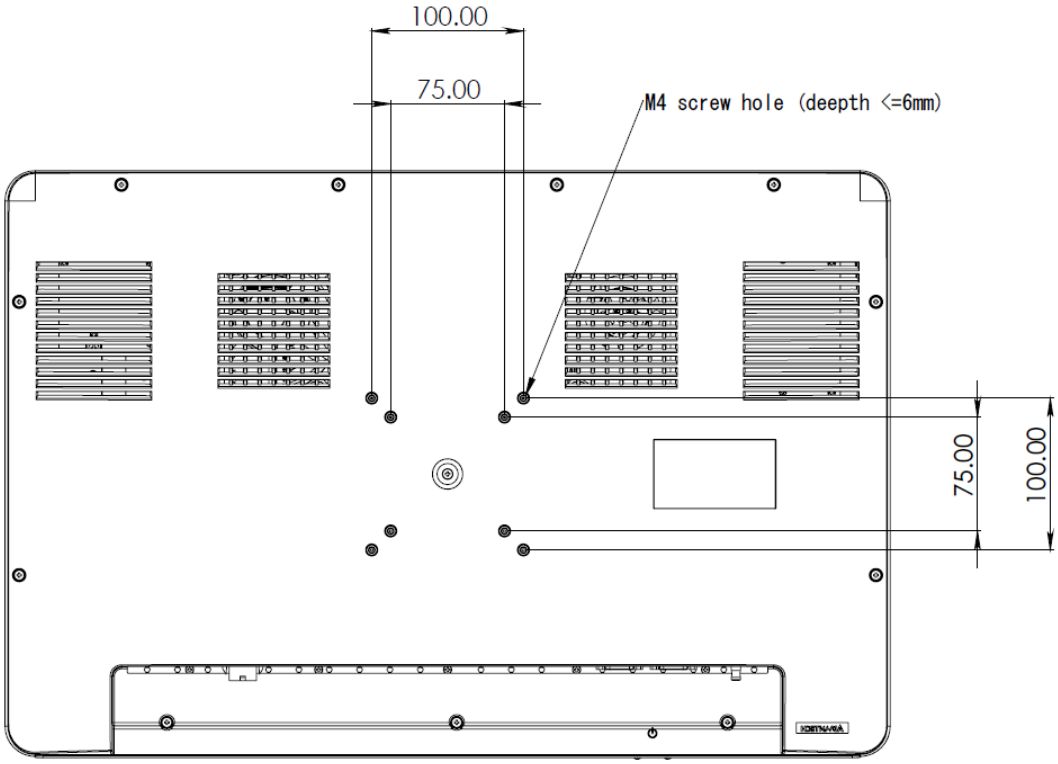


Figure A.1 VESA Mounting

Appendix B

Driver Installation

B.1 Driver installation

The POC-824 supports Windows **WIN10 IOT/RS5** versions or later, 64-bit only. There is no longer support for 32-bit drivers.

Warning! *Please use a clean OS installation before installing the drivers; otherwise, unexpected errors may occur.*

Attention! *Veuillez utiliser un système d'exploitation propre pour installer le pilote, sinon cela pourrait provoquer une erreur inattendue.*

Windows Driver List:
Please follow your OS version to install the appropriate drivers.

Please follow the below sequence to install the drivers:

Installation Sequence	Folder Name	Notes
1	Chipset	Please install the chipset driver first.
2	Graphics	This is because IGCC (Intel Graphics Command Center) is no longer combined with the driver. After the graphics driver installation is complete, please install IGCC by powershell.
3	Audio	
4	LAN	
5	AMT	Intel Management Engine Driver
6	RST	Intel Rapid Storage Technology
7	Wireless Card (Wi-Fi + Bluetooth)	Optional
8	RFID	Optional

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