ACCEL-VM1000

Intel® 13th Generation Core™

Medical AI Computing Platform

ACCEL-VM1000 Manual 3.0 Ed
Jun., 2023

Copyright Notice

Acknowledgments

Packing List

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

- ACCEL-VM1000
- Utility DVD-ROM, which contains Drivers and user manual
- 15A US Power Cord x 1, 15A EU Power Cord x 1, 15A UK Power Cord and PSE Power Cord x 1 for ACCEL-VM1000 with 1500W PSU only,

For twin graphic card configuration, please use the power cord that can withstand high power current in the accessary box in order to prevent any system damage.

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

*** Use power cord should follow then specification below:**

UL Listed, CSA approval, Detachable, Type SJT or above. 125/250 V minimum, 18 AWG/3C mini-mum, 3.0 m long maximum. One end terminates in 125 V, 10 A, with NEMA 5-15P or 250 V, 10 A with NEMA 6-15P, grounding type, the other end with an appliance coupler. Hospital grade.

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Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. **Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**
9. **WARNING: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth**
   AVERTISSEMENT : Pour éviter tout risque de choc électrique, cet équipement doit uniquement être connecté à une alimentation secteur avec mise à la terre de protection.
10. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, unplug the power cord to

disconnect it from the power source to avoid damage by transient over-voltage.

13. Never pour any liquid into an opening. This could cause fire or electrical shock.
14. For safety reason, never open the equipment without authorization of the manufacturer.
15. **Warning: Do not modify this equipment without authorization of the manufacturer.**
    (Avertissement : Ne modifiez pas cet équipement sans l'autorisation du fabricant.)
16. **If any of the following situations arises, get the equipment checked by service personnel:**
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the users manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
17. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.**
18. **External equipment intended for connection to signal**

input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 60950-1 for IT equipment and ANSI/AAMI ES 60601-1: 2005 AND CAN/CSA-C22.2 No. 60601-1:08) Any person who connects external equipment to signal input, signal output, or other connectors has formed a system and is therefore responsible for the system to comply with the standard IEC 60601-1, safety requirements for medical electrical systems.

19. **Warning : The device intends to be used in the highly sensitive medical environments and these environments are prevented from access by general hospital staff, and the device should be installed in a suitable and safe location to avoid unauthorized contact. The top cover of device is allowed to be opened by manufacturer's authorized for professional service purpose only.**

   (*Avertissement : L'appareil est destiné à être utilisé dans des environnements médicaux hautement sensibles et ces environnements sont interdits d'accès au personnel hospitalier général, et l'appareil doit être installé dans un endroit approprié et sûr pour éviter tout contact non autorisé. Le couvercle supérieur de l'appareil peut être ouvert par le fabricant autorisé à des fins de service professionnel uniquement).*

20 **ACCEL-VM1000 is applying for the medical instruments main system but without the medication analysis, disease detection,**

and medical diagnosis function.

21. Do not touch the device and Patient at the same times.

Classification

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

FCC

This device complies with Part 18 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Cet appareil est conforme à la partie 18 des règles FCC. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas provoquer d'interférences nuisibles, et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant provoquer un fonctionnement indésirable.

Safety Symbol Description

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

	*Follow operating instructions.*
	*Ground wire* *Protective Ground wire.*
	*Alternating current*
	*Equipotentiality* To identify the terminals, when connected together, bring the various parts of an equipment or of a system to the same potential.
	Stand-by switch (PC power button)
I/O	Power supply switch (on/off)

Contents

Chapter 1

General Information

1.1 Introduction

Powerful AI Computing Unit

ACCEL-VM1000 leverages NVIDIA Technology to provide two high end GPU solutions with equipping 13th Generation i9 Intel processor and up to 128GB ECC or Non-ECC memory to provide the maximum AI computing power in medical image application. ACCEL-VM1000 not only provides three expansion slots to integrate 2 graphic cards including NVIDIA RTX 6000 Ada and 1 x capture card, but also excellent thermal solution to ensure reliability of the system, it makes ACCEL-VM1000 to be the best solution for AI Medical image computing platform.

1.2 Feature

- Intel® Core™ i9-13900E Processor 30M Cache, up to 5.00 GHz
- Support 4 x ECC DDR4 3200 288 pin Long-DIMM up to 128GB
- Optional 7" Front Screen with P-Cap Touch
- Support front dual USB 3.0
- Support optional GPIO and Remote Power Switch design to embed the unit
- Support Dual Nvidia RTX 6000 Ada cards and additional capture card installation
- Support 4 x PCIe Gen4 Slots for high end graphic card and capture card integration
- Support Medical Grade 1500W PSU for Dual GPU Card and 700W PSU for Single GPU card
- Support TPM 2.0

1.3 Specification

Hardware Specifications

CPU	Intel® i9-13900E 5.2GHz / Core i7-13700E 5.0Ghz
Disk Drive Space	Main 2.5” Hard Disk Drive/Solid State Drive x 1 2nd 2.5” Hard Disk Drive/Solid State Drive x 1 or M.2 2280 M Key SSD (PCIe x 4/SATA3) x 1
System Memory	Support 4 x Non-ECC DIMM DDR4 3200 Mhz with up to 128GB
Rear I/O	5 x USB 3.2 Type A Gen 2 1 x USB 3.2 Type C Gen 2 3 x RJ-45 2.5G LAN 1 x HDMI 2.0b 1. x DP 1.4a 1 x VGA 2 x COM 1 x AC input 1 x Grounding Pin *Sound:* 1 x Line-out 1 x Mic-in 1 x Line-in
Speaker (Optional)	2 x 5W Built-in Speaker
Security	TPM 2.0 onboard

Front I/O	1 x Power Button 2 x USB 3.0
VGA	Up to 1920 x 1200 @60Hz
HDMI	Up to 4096 x 2160 @24Hz/2560 x 1600@60Hz, with Digital Audio
Display Port	Up to 4096 x 2160 @24Hz/3840 x 2160@60Hz, with Digital Audio
VGA	Up to 1920 x 1200@60Hz
Expansion Slot	● 1 x M.2 E Key 2230 for WiFi + BT ● 2 x PCIe Gen4 Slots (PCIE1/PCIE3:single at x16(PCIE1);dual at x8 (PCIE1) / x8 (PCIE3)) with x16 connector ● 2 x PCIe Gen Slot x 4
Optional Graphic card (Optional)	**Up to NVIDIA RTX 6000 Ada:**
Optional Capture Card (Optional)	**4K60 type:** 1 x HDMI 2.0 input or 1 x 12G SDI input
Power Supply	**Power Supply 1:** 90-264 VAC, 700W Medical ATX PSU **Power Supply 2:** 90-264 VAC AC-DC Configurable Power Supply 1500W

Touch Screen (Optional)

Display Type	7” LED
Max. Resolution	1280 x 800
Max Colors	16.7M
Luminance (cd/m2)	400nits
Back Light Life Time	30,000 hours.
Viewing angle	88/88/88/88
Touch Technology	Projective Capacitive
Touch Interface	USB

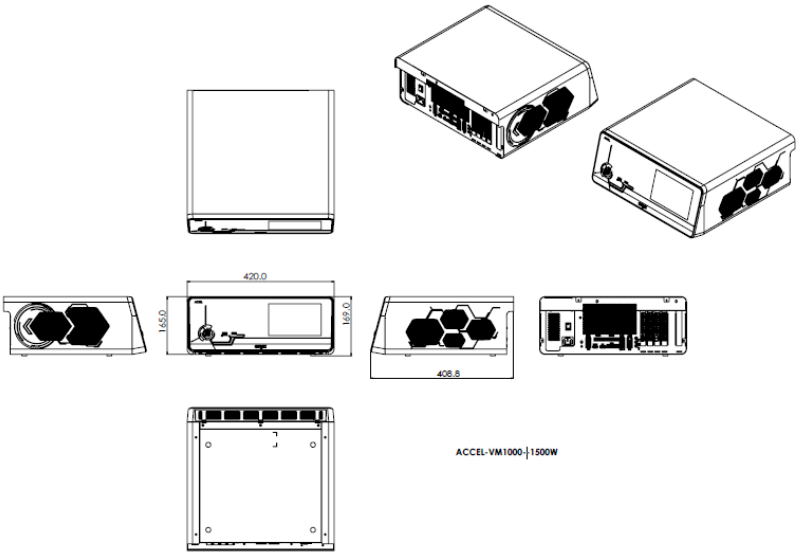
Mechanical Specifications

Construction	Metal chassis
Dimension	420 x 409 x 165 mm
Carton Dimension	600 x290 x510 mm
Net Weight	11 kg Max.
Gross Weight	12 kg Max.
Packing Filler	PE foam

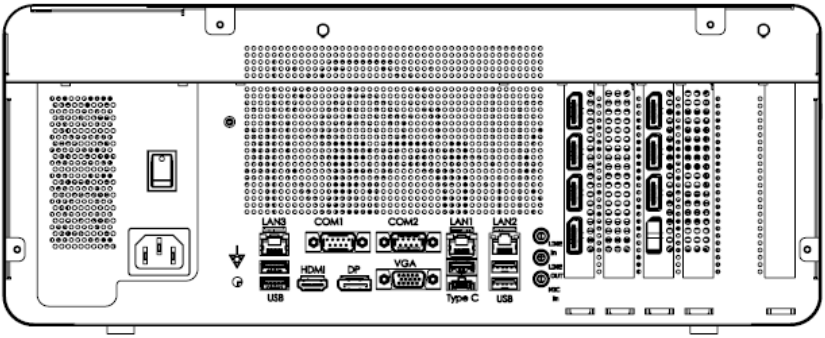
Environment Specifications

Operating Environment	0˚C to 35˚C (32 ˚F ~95˚F) 30% ~ 75% @ 40°C, Non-Condensing 700~1060 hPa
Storage / Transport Environment	-20˚C to 60˚C (-4˚F ~140˚F) 10% ~ 90% @ 40°C, Non-Condensing 700~1060 hPa
EMI / Safety	CE: EN 60601-1-2:2015+A1:2021 (V4.1) EN 60601-1:2007+A1:2013+A2:2021 (V3.2) EN 55032:2015/A1:2020 EN55035:2017/A11:2020 (ITE) IEC 62368-1:2020+A11:2020 (ITE) FCC: Part 15B/ Part 18 UL: ANSI/AAMI ES60601-1: 2005/A1:2012/A2:2021 (V3.2) cUL: CAN/CSA-C22.2 No. 60601-1:14 (IEC 60601-1:2005+A1:2012+A2:2020, MOD) (V3.2)

1.4 Dimension

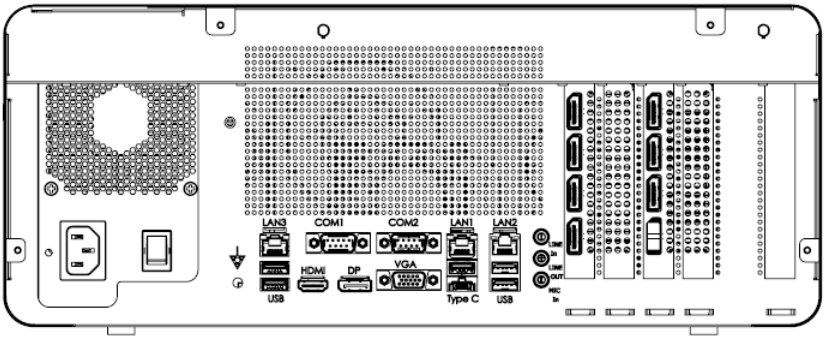


ACCEL-VM1000 1500W PSU



Or

ACCEL-VM1000 700W PSU



ACCEL-VM1000 provides 2 configurations of power supply for 1 GPU card solution and 2 GPU cards solution

Chapter 2

Hardware Introduction

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2.1 Safety Precautions

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Débranchez toujours complètement le cordon d'alimentation de votre carte lorsque vous travaillez dessus. N'effectuez pas de connexions lorsque l'appareil est sous tension, car une surtension soudaine peut endommager les composants électroniques sensibles .

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

Mettez-vous toujours à la terre pour éliminer toute charge statique avant de toucher la carte. Les appareils électroniques modernes sont très sensibles aux charges d'électricité statique. Utilisez un bracelet antistatique à tout moment. Placez tous les composants électroniques sur une surface antistatique ou dans un sac antistatique lorsqu'ils ne sont pas dans le chassis

2.2 A Quick Tour of the ACCEL-VM1000

Before you start to set up the ACCEL-VM1000, take a moment to become familiar with the locations and purposes of the controls, drives, connections and ports, which are illustrated in the figures below.

Please place the ACCEL-VM1000 upright on the desktop, its front side appears as shown in Picture 1.1.

Picture 1.1: Front View of the ACCEL-VM1000

When you turn the ACCEL-VM1000 around and look at its rear side, as shown in Picture 1.2.

Picture 1.2: Rear view of the ACCEL-VM1000

2.3 Turn On and Boot up into Windows OS

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

Your ACCEL-VM1000 will begin loading Windows OS once you push the power button) to turn power on (LED indicator light blue). After less than one minute, Windows desktop screen will appear.

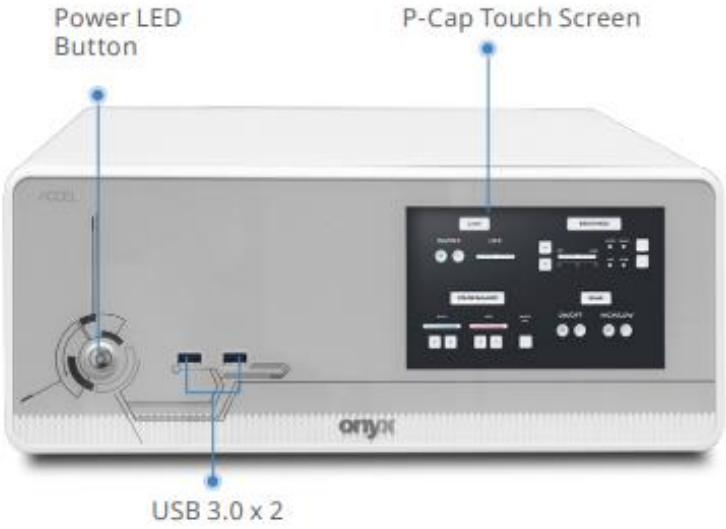
You can select the programs from the start menu in the left-down corner of the desktop screen.

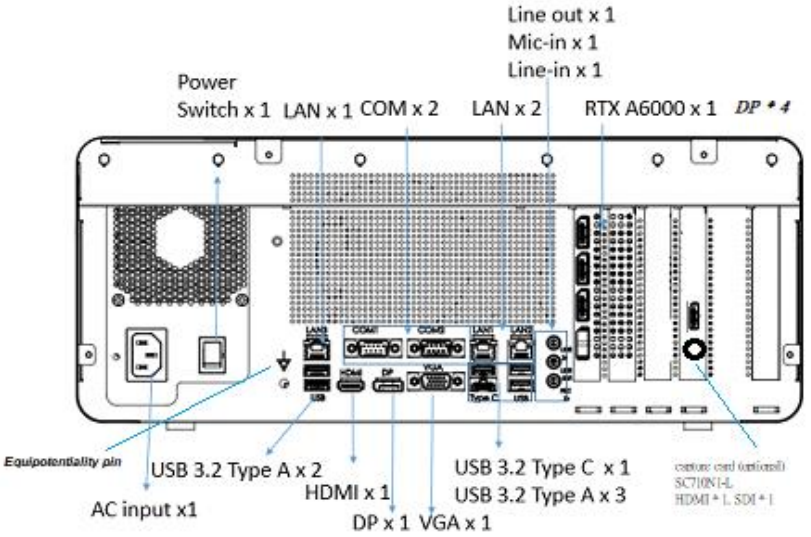
2.4 Turn off

Turning off ACCEL-VM1000 properly is important for system reliability.

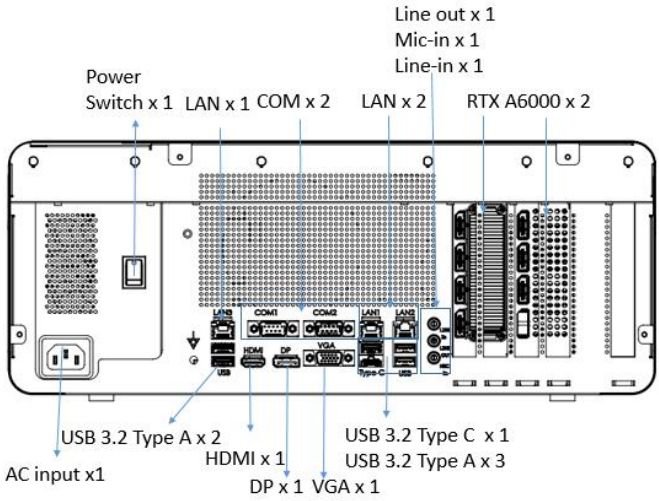
1. On the start menu, click “shut down” and select “OK”
2. And then the system will shut down automatically

2.5 I/O Connectors





Rear I/O (Single Graphic Card)



Rear I/O (Twin Graphic Cards)

Chapter 3

Driver Installation

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

Please follow the sequence below to install the drivers:

3.1 Installation

Insert the ACCEL-VM1000 DVD into the DVD-ROM drive. And install the drivers from Step 1 to Step 6 in order.

Step 1 - INF

Step 2 - VGA

Step 3 - LAN

Step 4 - Audio

Step 5 - ME

Step 6 - Intel HID Event Filter

Wifi&BT Driver (optional)

RapidStorage Driver–only for when Intel RST is needed

Appendix A

Miscellanea

A.1 General Cleaning Tips

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

1. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
3. Turn the system off before you start to clean up the component or computer.
4. Never drop the components inside the computer or get circuit board damp or wet.
5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drink or cigarette around the computer.

A.2 Cleaning tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

Note:

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

Please follow the steps below.

1. Close all application programs.
2. Close operating software.
3. Turn off power switch
4. Remove all device
5. Pull out power cable

A.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling

.

The worldwide distributors show on the following website:

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

Note:

Follow the national requirement to dispose unit