

QN-ORNX16 (QN-ORNXD-SI)

Quick Start Guide

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Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
System kit	1
19V / 65W adapter	1
Power cord (May vary based on local distribution)	1
VESA mount	1
VESA screws (M4-10L x 4pcs, M3-3L x 2pcs)	1

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

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the GIGAIPC.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.

13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
17. If any of the following situations arises, please the contact our service personnel:
 - i. Damaged power cord or plug
 - ii. Liquid intrusion to the device
 - iii. Exposure to moisture
 - iv. Device is not working as expected or in a manner as described in this manual
 - v. The device is dropped or damaged
 - vi. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

FCC Statement

Warning!



This device complies with Part 15 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.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements

产品中有毒有害物质或元素名称及含量

GIGAIPC Main Board/ Daughter Board/ Backplane

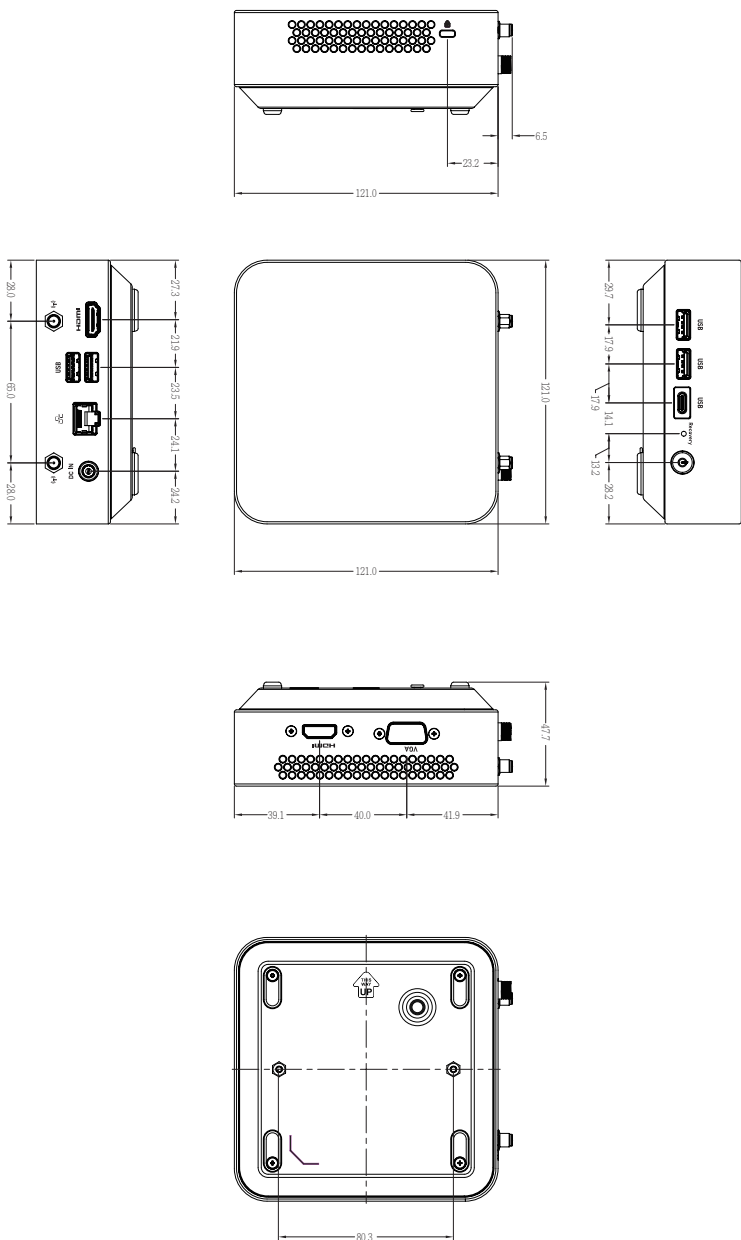
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr ⁺⁶)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
電路板總成	—	○	○	○	○	○
散熱器(含風扇)	—	○	○	○	○	○
無線網路卡	—	○	○	○	○	○
線材	—	○	○	○	○	○
外殼	—	○	○	○	○	○
電源供應器	—	○	○	○	○	○
備考1. “超出0.1 wt %” 及 “超出0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。 Note 1 : “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.						
備考2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。 Note 2 : “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.						
備考3. “—” 係指該項限用物質為排除項目。 Note 3 : The “—” indicates that the restricted substance corresponds to the exemption.						

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Chapter 1

Chapter 1 - Product Specifications



1.1 Specifications

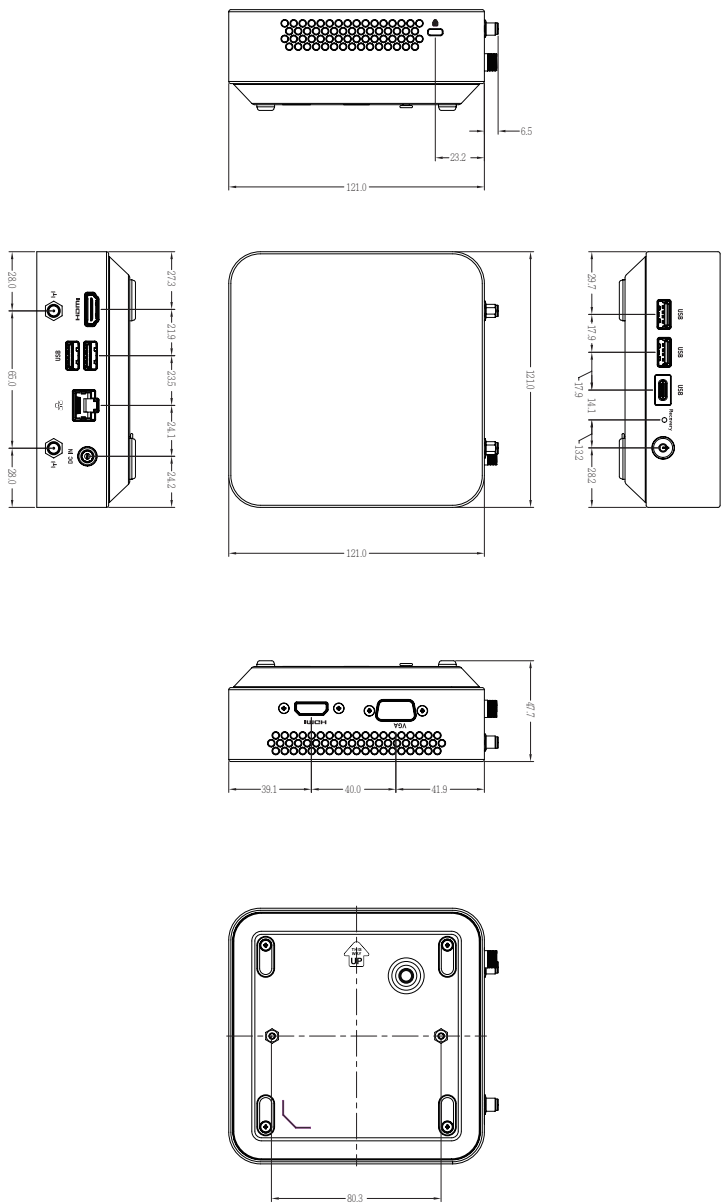
System	QN-ORN16 (QN-ORN1D-SI)
Dimension	System Size : 124W x 127.6D x 47.7H (mm)
AI Accelerator	NVIDIA® Jetson Orin™ NX Jetson Orin NX 16GB
AI Performance	Up to 100 TOPs
CPU	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
GPU	NVIDIA Ampere architecture GPU with 1024 NVIDIA CUDA® cores and 32 Tensor cores
Memory	16GB 128-bit LPDDR5 DRAM (Module)
Ethernet	1 x GbE LAN Port
Display output	1 x HDMI 2.0 port, supporting a maximum resolution of 4096x2160 @ 60Hz
Video input	1 x HDMI input (Optional) 1 x VGA input (Optional)
Storage	1 x 2280 M.2 SSD (PCIe Gen3x2)(M2M2)
Expansion Slots	1 x 2280 M.2 M-Key (PCIe Gen4x4, Support HDMI Capture card) (M2M1) 1 x 2230 M.2 E-Key
Front I/O	1 x USB 3.2 Gen 1 Type C, 5V/1A (not support USB to NVME dock) 2 x USB 2.0 1 x Power button with LED 1 x Recovery button
Rear I/O	1 x Scrw type DC Jack 1 x RJ45 LAN Port 1 x HDMI 2 x USB 3.2 Gen2x2 2 x External Antenna Holes (Optional)
Power	+19VDC

System	QN-ORNX16 (QN-ORNXD-SI)
Operation Temperature	Operating temperature: 0°C to 40°C 工作溫度：0°C to 40°C Operating humidity: 0-90% (non-condensing) 工作濕度：0-90% (無凝結) Non-operating temperature: -20°C to 60°C 非工作溫度：-20°C to 60°C Non-operating humidity: 0%-95% (non-condensing) 非工作濕度：0%-95% (無凝結)
Mounting	VESA Mount 75/100 support
Packaging Content	Carton size: 360 x 306 x 220 (mm) Packing Capacity: 5pcs Single Box size: 286 x 178 x 66 (mm) Including: Power Cord : Optional (by region) PSU ADP 19V 65W 100-240VAC x 1 (P/N: 25EP2-10065Q-A3S) VESA Mount x 1 (P/N: 25HB1-TPL021-S8R) VESA Screws x1 (P/N: 25KSD-000002-COR)
Order Information	System: 9BQNORNXDMR-SI (Box packing)

Chapter 2

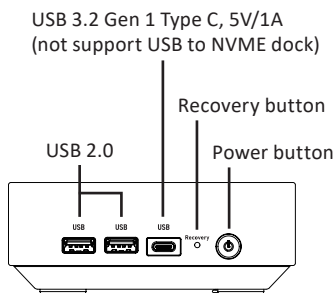
Chapter 2 – Quick Start Guide

2.1 Dimension

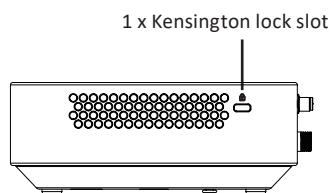


2.2 Getting Familiar with Your Unit

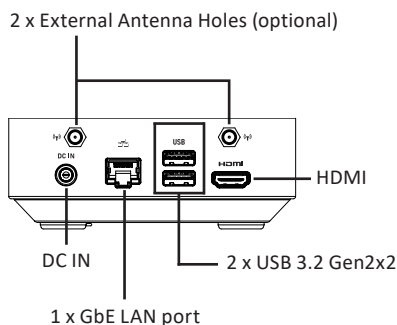
[Front I/O Side]



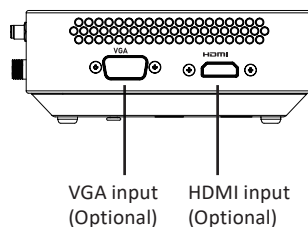
[Left Side]



[Rear I/O Side]

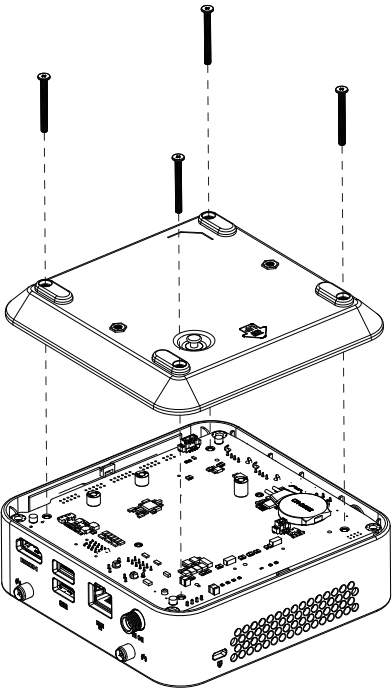


[Right Side]



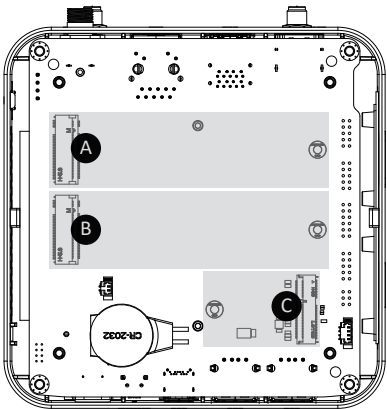
[Install]

- * Before opening the case, make sure to unplug the power cord.
- * Before Connecting the power, make sure to fasten the case securely.



[Bottom PCB Side]

	Information
A	1 x 2280 M.2 M-Key (M2M1)
B	1 x 2280 M.2 M-Key (M2M2)
C	1 x 2230 M.2 E-Key

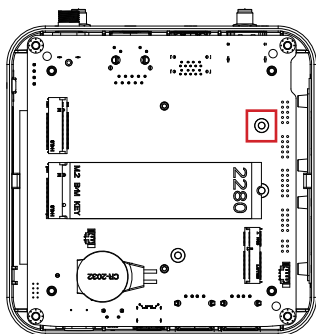


2.3 A) M.2 SSD Installation: How to safely install the M.2 2280 SSD (M2M1)

1

Remove the screw from the screw hole (Location : M2M1_S0)

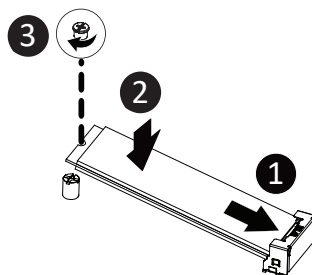
移除位置 M2M1_S0 的螺絲。



2

Carefully insert the M.2 SSD into the slot, and secure with the screw.

小心的安裝 M.2 SSD，並使用步驟 1 卸下的螺絲固定 M.2 SSD。

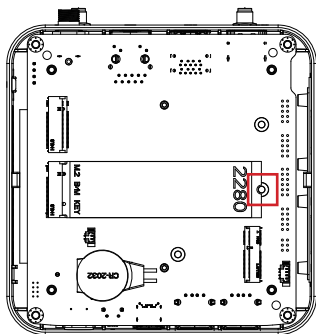


2.4 B) M.2 SSD Installation: How to safely remove the M.2 2280 SSD (M2M2)

1

Remove the screw from the screw hole (Location : M2M2_S0)

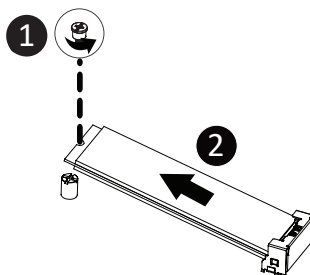
移除位置 M2M2_S0 的螺絲。



2

Carefully remove the screw and the M.2 SSD.

小心的將 M.2 SSD 從 M.2 插槽移除。

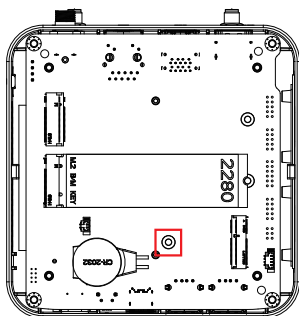


2.5 C) Wireless Module: How to safely install the Module (Wireless Module inclusion may vary based on local distribution)

1

Remove the screw from the screw hole (Location : M2E_SO)

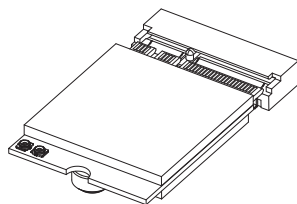
移除位置 M2E_SO 的螺絲。



2

Carefully insert the wireless module into the M.2 slot

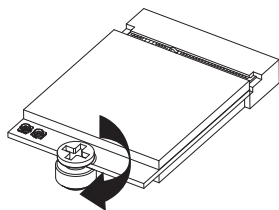
小心地將無線模組安裝於 M.2 插槽中。



3

Lock the screw in the middle

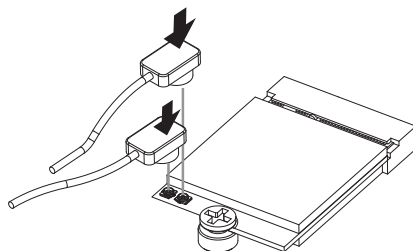
使用步驟 1 卸下的螺絲，將無線模組固定於插槽中。



4

Install the antenna on the left side of the connection wireless module

將天線安裝於無線模組上。

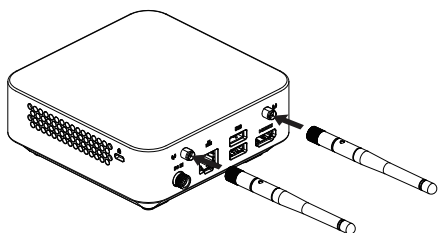


2.6 Antenna Installation (Antenna inclusion may vary based on local distribution)

1

Carefully insert the antennas into the connectors

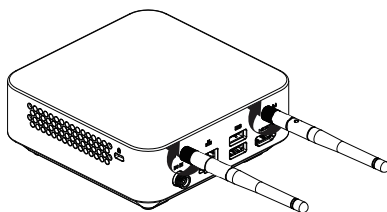
小心地安裝外接天線。



2

Turn the antennas clockwise until they are completely secure on the connectors

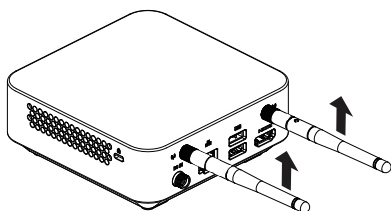
將外接天線依照順時鐘方向旋轉直到鎖緊。



3

Flip up the antenna heads so that they are perpendicular to the machine

將外接天線前端向上扳起與系統垂直。



2.7 VESA Bracket

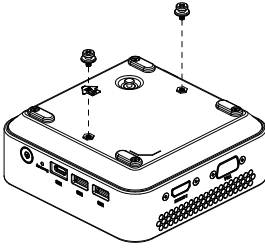
1

Attached the screws which provided with the QN-ORNX16.

使用包裝隨附的螺絲安裝於系統底蓋底部。

Screw type : M3-3L x 2pcs

螺絲尺寸：M3-3L x 2pcs



2

Attached the VESA mounting plate to the rear of compatible display using the screws provided with the QN-ORNX16.

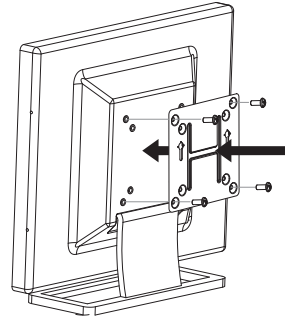
安裝隨附的 VESA 支撐架於支援 VESA 支撐架的電腦螢幕或電視機後背。

VESA hole patterns : 75 x 75mm and 100 x 100mm

Screws type : M4-10L x 4pcs

VESA 支援尺寸：75 x 75mm and 100 x 100mm

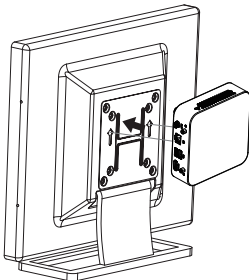
螺絲尺寸：M4-10L x 4pcs



3

The QN-ORNX16 can now be mounted by sliding the device into place.

將已安裝 VESA 支撐架螺絲的 QN-ORNX16 插入 VESA 支撐架的滑軌孔，向下壓至定位點後即可固定。



Note : If need to use the VESA mounting plate, the total weight of the system and monitor should be less than 7kg.

懸掛裝置 / 設備（被掛的設備，例如 Monitor...等）總重量不可超過 7 公斤。

2.8 Recovery button

Following instructions will help you to re-program NVIDIA® Jetson Orin NX module.

1. Please make sure to power off QN-ORN16 system.
2. Prepare a USB cable to connect between your host system and QN-ORN16 system.
For the host system : plug into any USB port
For QN-ORN16 : plug into USB Micro B 2.0 port
3. Power on QN-ORN16 system, then press Recovery button for 3 seconds, and back to the host system clicks "flash" to start re-program process on QN-ORN16 system. After installation is complete, follow the instructions to install BSP.
4. Back to QN-ORN16 System, complete the informations which the system requires you to fill-in.
5. After filling in all the information, the system will reboot automatically, your re-program process is complete.

2.9 Safety and Regulatory Information

1. This product must be grounded with the plug on the adapter's power cord connected to a power socket with a grounding connection. 這款產品必須接地，並且電源變壓器的電源線插頭需連接到具有接地連接的電源插座。
2. Risk of explosion if the battery is replaced with an incorrect type. Batteries should be recycled where possible. Disposal of used Batteries must be in accordance with local environmental regulations. 若以不正確類型的電池進行更換，可能有爆炸的危險。應儘可能回收電池。應依照當地環保法規棄置使用過的電池。
3. Before you open chassis to exchange an internal component, you need to power off the device and let the device cool down at least 10 minutes. 打開機殼更換內部元件前，必須先關閉裝置電源，並讓裝置降溫至少 10 分鐘。
4. Failure to use the included Model QN-ORXN16 Power Adapter may violate regulatory compliance and may expose the user to safety hazards. 若未使用隨附的 QN-ORXN16 型號電源變壓器，可能會違反規範合規性，並讓使用者暴露在危險中。



At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.



<p>⚠ WARNING</p> <p>• INGESTION HAZARD: This product contains a button cell or coin battery.</p> <p>• DEATH or serious injury can occur if ingested.</p> <p>• A swallowed button cell or coin battery can cause Internal Chemical Burns in as little as 2 hours.</p> <p>• KEEP new and used batteries OUT OF REACH OF CHILDREN</p> <p>• Seek immediate medical attention if a battery is suspected to be swallowed or inserted inside any part of the body.</p>		
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<p>⚠ WARNING</p> <p>THIS PRODUCT CONTAINS A BUTTON BATTERY</p> <p>If swallowed, a lithium button battery can cause severe or fatal injuries within 2 hours.</p> <p>Keep batteries out of reach of children.</p> <p>If you think batteries may have been swallowed or placed inside any part of the body, seek immediate medical attention.</p>
--

- Battery type : CR2032, voltage rating : +3VDC.
電池型號 : CR2032, 額定電壓 : +3VDC.
- Non-rechargeable batteries are not to be recharged.
非充電電池不得進行充電。
- Remove and immediately recycle or dispose of used batteries, batteries from equipment not used for an extended period of time according to local regulations and keep away from children. DO NOT dispose of batteries in household trash or incinerate.
請按照當地法規，立即回收或妥善處理用過的電池，以及長時間未使用設備中的電池，並遠離兒童。請勿將電池丟入家庭垃圾或焚燒處理。
- Even used batteries may cause severe injury or death.
即使是已使用的電池也可能導致嚴重傷害或死亡。
- Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
請勿強行放電、充電、拆解、加熱超過（製造商指定的溫度範圍）或焚燒。否則可能會導致氣體釋放、洩漏或爆炸，從而引發化學灼傷或其他傷害。
- For treatment information, call a local poison control center.
如需處理相關資訊，請聯絡當地毒物控制中心。
- The product contains non-replaceable batteries.
本產品含有不可更換的電池。