



IP66 PHYSICAL AI COMPUTER

WCO-6000-THR-A

IP66 Physical AI Computer with NVIDIA® Jetson AGX Thor™, Holoscan-ready



Features

- IP66-Rated Water and Dust Protection
- NVIDIA® Jetson AGX Thor™ T5000 (128GB) & T4000 (64GB), Max 120W
- NVIDIA® Holoscan Ready
- 6x M12 LAN (4x 10GbE optional PoE+, 2x 2.5GbE)
- 2x USB 3.2 Gen 2 (10 Gbps)
- 8x Waterproof Fakra-z Connectors, supporting 8x GMSL2 cameras
- 1x M.2 M Key, 2x M.2 B Key, 1x M.2 E Key
- 7x DI + 7x DO with isolation
- 2x RS-232/422/485, 4x CAN FD (T5000 only)
- 24 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -20°C to 50°C
- UL62368-1, EMC Conformity with EN50155 & EN50121-3-2, E-mark (pending)

Specifications

System

Processor

NVIDIA® Jetson AGX Thor™ T4000 (64GB) & T5000 (128GB)
- T5000: 14-core Arm® Neoverse®-V3AE 64-bit CPU, 128GB LPDDR5X (120W/2070 TFLOPS, FP4-Sparse)
- T4000: 12-core Arm® Neoverse®-V3AE 64-bit CPU, 64GB LPDDR5X (70W/1200 TFLOPS, FP4-Sparse)

LAN Chipset LAN1 - LAN4: 10GbE Marvell AQR113 LAN Chip
LAN5 & LAN6: 2.5GbE Intel i226 LAN Chip
*Note: LAN1: T4000 not supported

Audio Codec ALC5640

TPM TPM 2.0

Display

Display Single Display

HDMI 1x HDMI

Storage

SIM Socket 1x Dual SIM Socket

SSD/HDD 1x M.2 M Key (2280, PCIe x4, NVMe), Default: 128GB

Expansion

M.2 1x M.2 B Key 2242 (PCIe x1 & USB 2.0) for Storage/Other expansion cards
1x M.2 B Key 3042/3052 (USB 3.2 Gen 1) for 4G/5G
1x M.2 E Key 2230 (PCIe x1, USB 2.0) for Wi-Fi/BT

I/O

Audio 1x Mic-in, 1x Line-out (3.5mm Audio Jack, M12 A-Coded)

CAN 4x CAN FD (M12 A-Coded)
*Note: T4000 not supported

COM 2x RS-232/422/485 (M12 A-Coded, Switchable by Software)

DIO 7 in/7 out (Isolated, M12 A-Coded)

GMSL 8x Waterproof Fakra-z Connectors, with two configurations:

- 4x GMSL2 Cameras
- 8x GMSL2 Cameras (Optional)

LAN 6x M12 LAN (X-Coded)

PoE 4x 10GbE 25W PoE+ for LAN1 - LAN4 (120W Module, Optional)

USB 2x USB 3.2 Gen 2 (10 Gbps, under service panel)

1x USB Type-C (For OS Flash, under service panel)

1x Micro USB (For Console, under service panel)

Others

- 6x Wi-Fi Antenna Holes
- 8x GMSL Antenna Holes

- Service Panel:
 - 1x Micro USB (For Console)
 - 1x USB Type-C (For OS Flash)
 - 1x AT/ATX SW (Default ATX)
 - 1x PC/CAR SW (Default PC)
 - 2x USB Type-A (USB 3.2 Gen2)
 - 1x HDMI
 - 1x Dual SIM Socket
 - 1x Recovery Button
 - 1x Reset Button

- 1x Power Switch with Blue LED
- 1x Remote Power Switch
- 1x CMOS Battery
- 2x 4-Pin FAN Connector (2.0 pitch)
- Integrated RTC
- 1x IMU6-Axis IMU
- 1x M4 Grounding Screw
- 1x Buzzer

MCU

MCU Function:

- LED Control
- GPIO Control
- Device Mode Status
- Buzzer Control
- COM Port Control
- IGN Power On/Off Delay Time Control
- Setting Save Control
- GPIO Configuration Control
- SSD Recovery
- Update FW under Linux OS (by I2C interface)
- PoE Power ON/OFF Control, Power Voltage & Current Sensing and DC IN 12V/24 Detect for PoE Output Power Management

Operating System

Linux Linux Ubuntu 24.04 with JetPack 7.2

Power

Power Adapter Optional AC/DC 48/7.5A, 360W at 220V
Optional AC/DC 48/12.5A, 600W

Power Mode AT, ATX (Default ATX)

Power Ignition Sensing Yes

Power Supply Voltage 24~48VDC
24V: PoE Power Budget Supports Up to 120W
48V: PoE Power Budget Supports Up to 120W

Power Connector M12 5-Pin K-Code

Power Protection OVP (Over Voltage Protection);
OCP (Over Current Protection)
Reverse Protection

Environment

Thermal Design Fanless

Operating Temperature 77W TDP Mode: -20°C to 50°C (With PoE 120W)
120W TDP Mode: -20°C to 40°C (With PoE 120W)
*Non-Throttling, with PoE Function, full CPU+GPU stressing, with 0.6 m/s airflow

Storage Temperature -30°C to 85°C

Relative Humidity 10% to 95% (non-condensing)

IP Rating IP66

Certification CE, FCC Class B, E-Mark 24, EMC Conformity with EN50155 & EN50121-3-2, UL 62368-1

Vibration With SSD: 5 Grms, 5 - 500 Hz, 0.5 hr/axis

Shock With SSD: 50G, half sine, 11ms

Physical

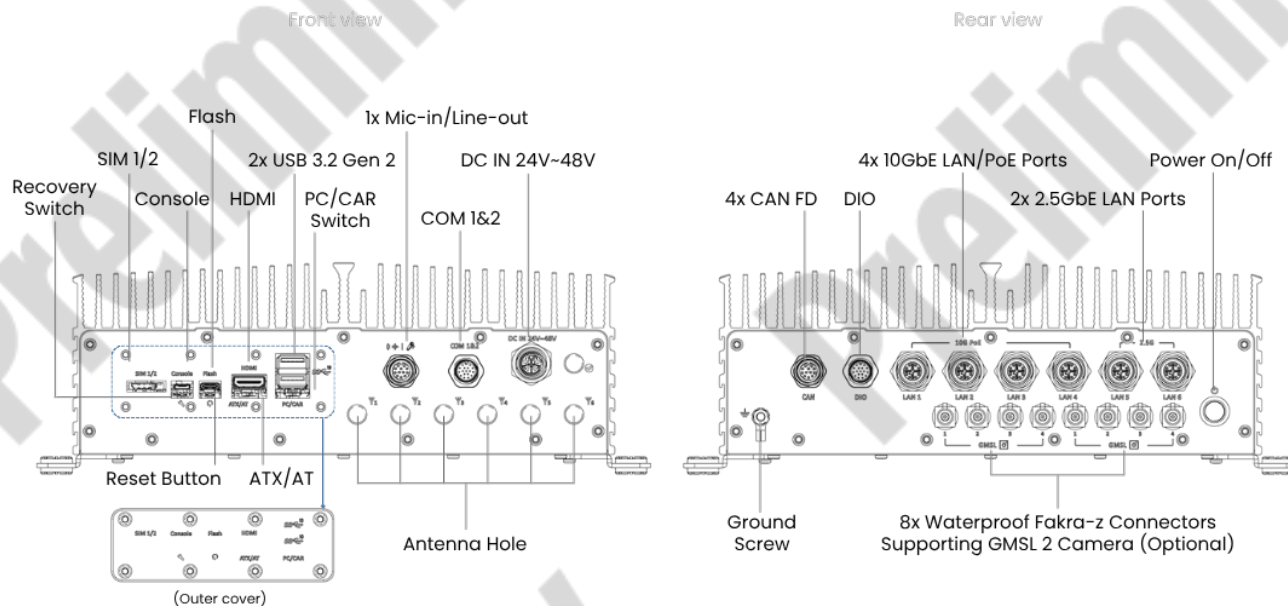
Dimensions 250 (W) x 89 (H) x 200 (D) mm

Weights TBD

Construction Extruded Aluminum with Heavy Duty Metal

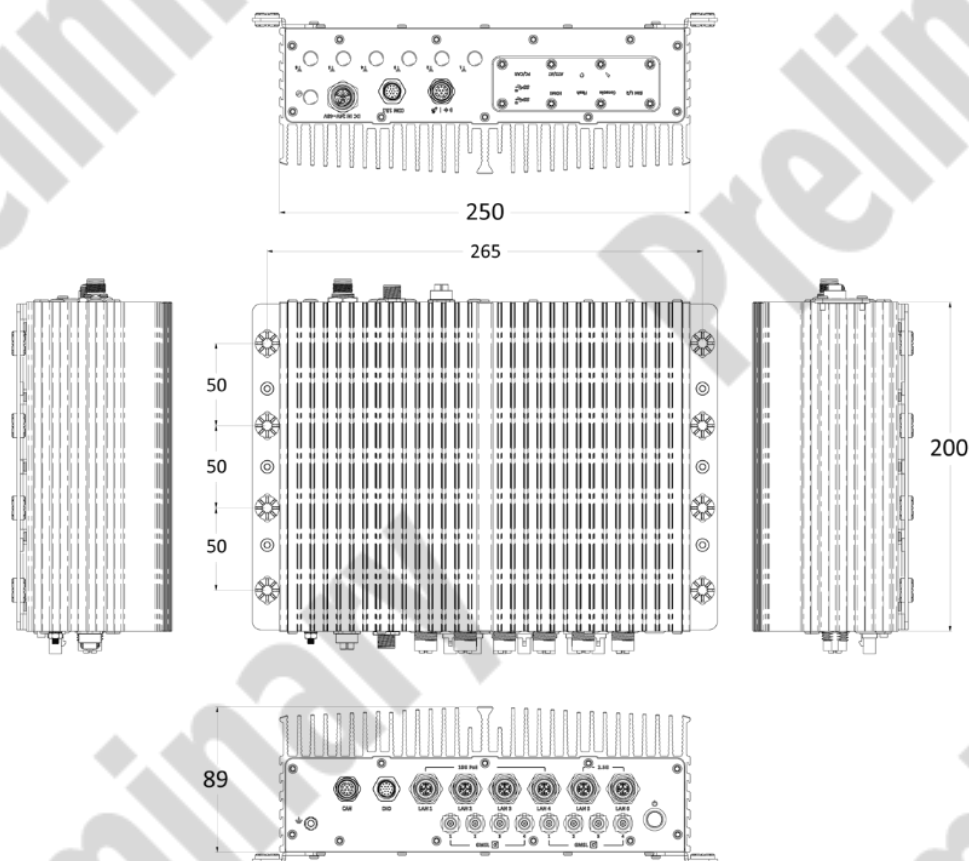
Mounting Options Wall Mounting

External I/O Mechanical Layout



Dimension

Unit: mm



Compliances and Standards

Vibration	With SSD: 5 Grms, 5 - 500 Hz, 0.5 hr/axis IEC60068-2-64:2008 Designed to comply with MIL-STD-810H Method 514.8 Procedure I
Shock	With SSD: 50G, half sine, 11ms IEC60068-2-27:2008 Designed to comply with MIL-STD-810H Method 516.8 Procedure I
Operating Temperature	77W TDP Mode: -20°C to 50°C (With PoE 120W) 120W TDP Mode: -20°C to 40°C (With PoE 120W) *Non-Throttling, with PoE Function, full CPU+GPU stressing, with 0.6 m/s airflow IEC60068-2-1:2007 (Cold test procedure) IEC60068-2-2:2007 (Dry heat test procedure) IEC60068-2-3:2007 (Damp heat, steady state, test procedure) IEC60068-2-14:2009 (Wide temperature range thermal shock)
EMC	- FCC Class B - CE - ICES-003 - UKCA - Railway EMC Compliance - EN 50121-1: 2017 - EN 50121-3-2: 2016 - Industrial EMC Compliance - EN 61000-4-2: 2009 - EN 61000-4-3: 2020 - EN 61000-4-4: 2012 - EN 61000-4-5: 2014 +A1: 2017 - EN 61000-4-6: 2014 - E-Mark (E24)
Safety	- UL Safety: UL62368-1, 3rd Ed., (cULus) - Test procedure: CB Scheme - Standard: IEC 62368-1:2018

Available Models

Model No.	Description
WCO-6000-THR-A-T5000	IP66 Physical AI Computer w/ NVIDIA Jetson AGX Thor T5000, 4x 10G POE, 2x LAN, 2x COM, 4x CAN
WCO-6000-THR-A-T4000	IP66 Physical AI Computer w/ NVIDIA Jetson AGX Thor T4000, 3x 10G POE, 2x LAN, 2x COM
WCO-6000-THR-A-T5000-P	IP66 Physical AI Computer w/ NVIDIA Jetson AGX Thor T5000, 4x 10G POE, 2x LAN, 2x COM, 4x CAN, w/ Power Adapter
WCO-6000-THR-A-T4000-P	IP66 Physical AI Computer w/ NVIDIA Jetson AGX Thor T4000, 3x 10G POE, 2x LAN, 2x COM, w/ Power Adapter

Optional Accessories

Model No.	Description
1-E09A36003	Adapter AC/DC 24V 7.5A 360W with 5-pin Terminal Block Plug 5.0mm Pitch
TBD	Adapter AC/DC 48V 12.5A 600W with 5-pin Terminal Block Plug 5.0mm Pitch
1-TPCD00005	Power Cord, 3-pin US Type, 180cm
1-TPCD00003	Power Cord, Japanese Type, 180cm
1-TPCD00001	Power Cord, UK Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TFAK00003	Waterproof Fakra-Z Extension Cable, 100cm
1-TFAK00002	Waterproof Fakra-Z Extension Cable, 300cm
1-TFAK00004	Waterproof Fakra-Z Extension Cable, 500cm
1-TFAK00005	Waterproof Fakra-Z Extension Cable, 1000cm
1-TFAK00006	Waterproof Fakra-Z Extension Cable, 1500cm

Packing List

1x WCO-6000-THR-A Series Physical AI Computer
1x Wall Mount Kit

US Exports And Tariff Codes

ECCN	5A992.c
HTS	8471.50.0150
ScheduleB	84.71

Premio Inc.

918 Radecki Ct., City of Industry
CA 91748, United States
Toll Free: 800.977.3646

Premio Taiwan Inc.

18F, No.176, Jianyi Road, Zhonghe District,
New Taipei City 235603, Taiwan
Toll Free: 886.2.7731.7888

Email: sales@premioinc.com
Website: <https://premioinc.com>