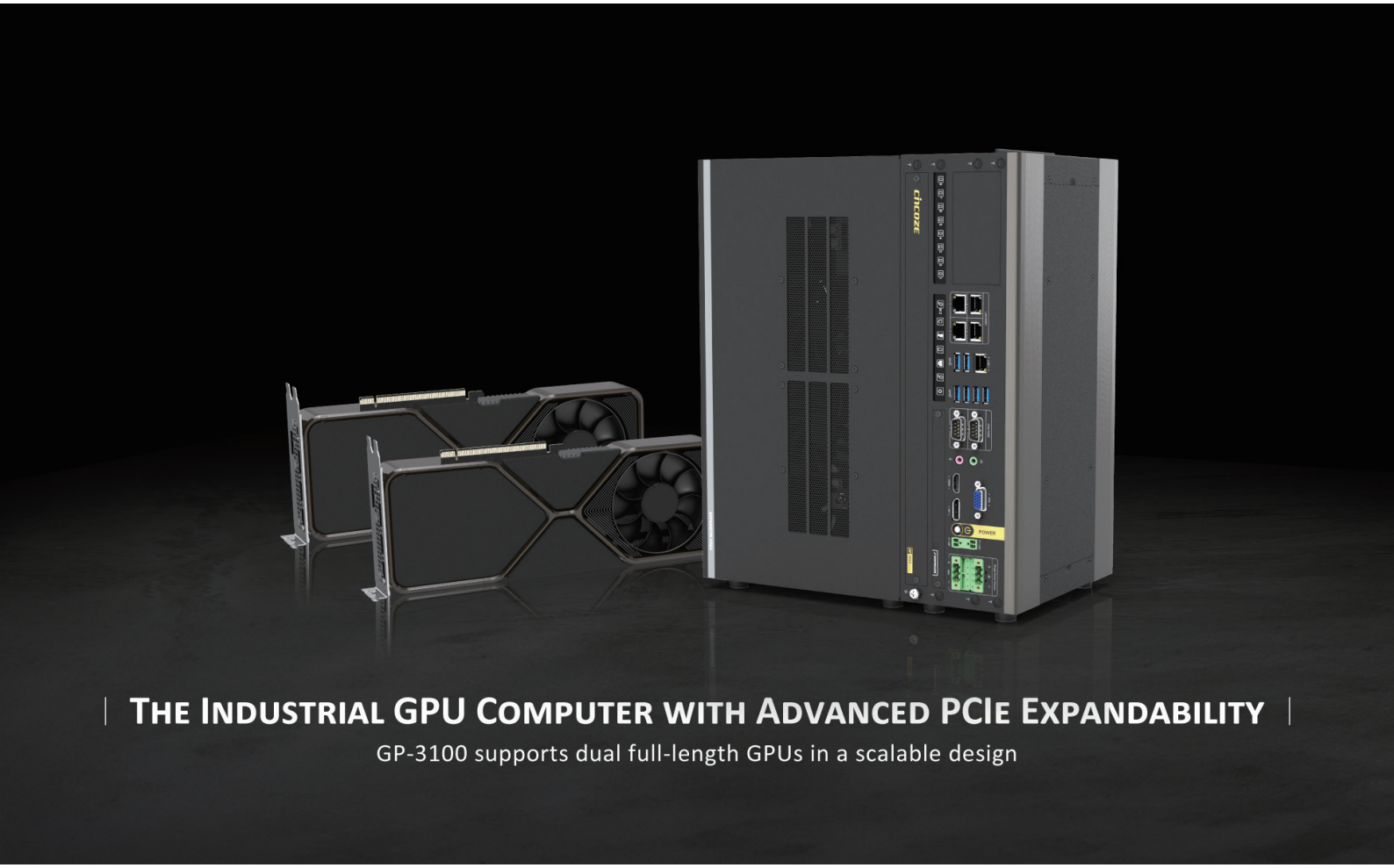
GP-3100

14/13/12th Gen Intel® Core™ Modular GPU Computer, Supports Dual Full-length GPU Expansion



Overview

CONTACT

The GP-3100 is a high-performance GPU computer for industrial AI and machine vision applications. It supports an Intel® Core™ processor, up to two 300W full-length GPU cards (@48VDC), high-capacity storage, and high-speed I/O. Three patented features, designed for specific customer needs, improve expansion, heat dissipation, and overall stability, making the GP-3100 an ideal choice for complex Edge AI applications.

Key Features

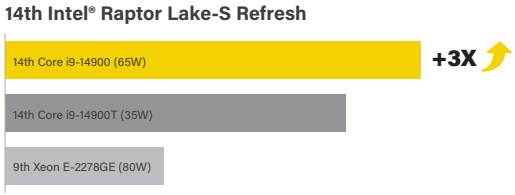
- 14/13/12th Gen. Core™ i9/i7/i5/i3 Processors (max 65 W TDP)
- 2 x DDR5 SO-DIMM Sockets, Supports ECC/non ECC type Memory, Up to 5600MHz, 96GB
- 4x 2.5GbE LAN and optional 2x 10GbE LAN
- 1x M.2 Key E Type 2230 Socket For Wireless/Bluetooth/Storage/Intel CNVi Module Expansion
- 1x M.2 Key B Type 3052/3042 Socket For 5G/GNSS/ Storage/Add-on card Expansion
- 1x M.2 Key B Type 2280 Socket For GNSS/Add-on card Expansion
- 1x M.2 Key M Type 2280 Socket For Storage/Add-on Card Expansion
- 4x 2.5" Hot Swappable SATA III HDD/SSD Bays (Max Height 15 mm)
- Optional CMI & CFM Modules for I/O Expansion & Power Ignition Sensing Function
- Versatile Mounting Methods (Tower Stand / Desktop / 19"Rack / Flat / Wall Mount)
- Wide Operating Temperature -40°C to 70°C (-40°F to 158°F)

Certifications

MIL-STD-810H EN 50121-3-2 EN 45545 EN 62368-1 CB c UL us LISTED E13

Ultimate CPU + GPU performance

Equipped with a 14th generation Intel® Core™ (Raptor Lake-S Refresh) processor, the GP-3100 is capable of three times the computing performance of its predecessor. The GP-3100 supports up to two 300W high-end GPU cards (@48VDC) and 5600MHz DDR5 memory with ECC for a complete AI computing solution.



Scalable and upgradeable GPU expansion box

The dual-patented GPU expansion box (GEB) supports up to two 328mm high-end full-length GPU cards and includes multiple built-in PCIe slots for flexible use with high-speed I/O or frame grabber cards. The patented adjustable 3D GPU Card Mounting Bracket is designed for high-vibration environments and can firmly lock all GPU cards. For flexible future upgrades, the GEB can be replaced to add a higher-end GPU card or an expansion card.

Patent No.: I779496, I763318

Comprehensive cooling design

To solve the power consumption and thermal challenges, the GP-3100's mechanical structure and isolated external smart fan kits on both sides of the chassis effectively dissipate heat under full workloads in extreme conditions.

Patent No.: I778522

Rich modular design and expandability

AI applications need high-speed transmission and high-capacity storage, so the GP-3100 has 4x 2.5GbE LAN, 6x USB 3.2, 4x front-accessible 2.5" HDD/SSD, and NVMe SSD. Rich scalability capabilities include exclusive modular technology (CMI and CFM) and an M.2 slot that supports CAN bus and other modules to meet various application needs.

International standards and certifications

Rugged design passes or complies with multiple industrial standards and certifications, including MIL-STD-810H US military shock resistance, E-mark, and EN 50155 (EN 50121-3-2 only), to ensure high reliability in various application environments.

MIL-STD-810H

EN 50121-3-2

-40 – 70°C
-40 – 158°F

E13

Specifications

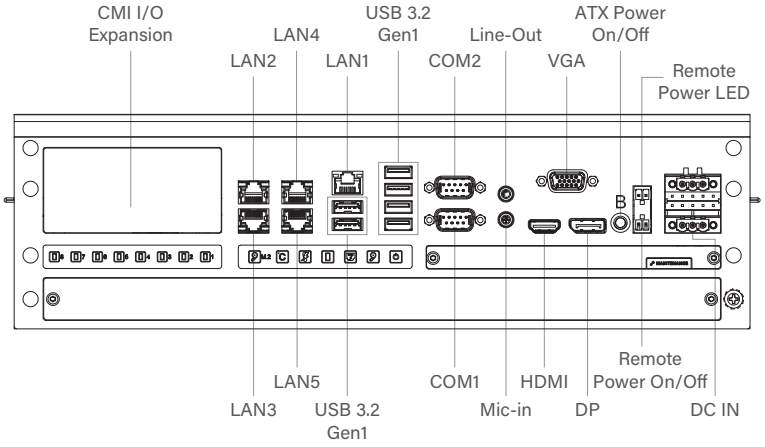
Model Name	GP-3100
System	
Processor	▪ 14th Generation Intel® Raptor Lake-S Refresh Series CPU: - Intel® Core™ i9-14900 24 Cores Up to 5.8 GHz, TDP 65W - Intel® Core™ i7-14700 20 Cores Up to 5.4 GHz, TDP 65W - Intel® Core™ i5-14500 14 Cores Up to 5.0 GHz, TDP 65W - Intel® Core™ i5-14400 10 Cores Up to 4.7 GHz, TDP 65W - Intel® Core™ i3-14100 4 Cores Up to 4.7 GHz, TDP 60W - Intel® Core™ i9-14901E 8 Cores Up to 5.6 GHz, TDP 65W - Intel® Core™ i7-14701E 8 Cores Up to 5.4 GHz, TDP 65W - Intel® Core™ i5-14501E 6 Cores Up to 5.2 GHz, TDP 65W - Intel® Core™ i5-14401E 6 Cores Up to 4.7 GHz, TDP 65W - Intel® Core™ i9-14900T 24 Cores Up to 5.5 GHz, TDP 35W - Intel® Core™ i7-14700T 20 Cores Up to 5.2 GHz, TDP 35W - Intel® Core™ i5-14500T 14 Cores Up to 4.8 GHz, TDP 35W - Intel® Core™ i5-14400T 10 Cores Up to 4.5 GHz, TDP 35W - Intel® Core™ i3-14100T 4 Cores Up to 4.4 GHz, TDP 35W - Intel® Core™ i9-14901TE 8 Cores Up to 5.5 GHz, TDP 45W - Intel® Core™ i7-14701TE 8 Cores Up to 5.2 GHz, TDP 45W - Intel® Core™ i5-14501TE 6 Cores Up to 5.1 GHz, TDP 45W - Intel® Core™ i5-14401TE 6 Cores Up to 4.5 GHz, TDP 45W - Intel® Processor 300 2 Cores Up to 3.9 GHz, TDP 46W - Intel® Processor 300T 2 Cores Up to 3.4 GHz, TDP 35W ▪ 13th Generation Intel® Raptor Lake-S Series CPU: - Intel® Core™ i9-13900E 24 Cores Up to 5.2 Ghz, TDP 65W - Intel® Core™ i7-13700E 16 Cores Up to 5.1 Ghz, TDP 65W - Intel® Core™ i5-13500E 14 Cores Up to 4.6 Ghz, TDP 65W - Intel® Core™ i5-13400E 10 Cores Up to 4.6 Ghz, TDP 65W - Intel® Core™ i3-13100E 4 Cores Up to 4.4 Ghz, TDP 65W - Intel® Core™ i9-13900TE 24 Cores Up to 5.0 Ghz, TDP 35W - Intel® Core™ i7-13700TE 16 Cores Up to 4.8 Ghz, TDP 35W - Intel® Core™ i5-13500TE 14 Cores Up to 4.5 Ghz, TDP 35W - Intel® Core™ i3-13100TE 4 Cores Up to 4.1 Ghz, TDP 35W ▪ 12th Generation Intel® Alder Lake-S Series CPU: - Intel® Core™ i9-12900E 16 Cores Up to 5 GHz, TDP 65W - Intel® Core™ i7-12700E 12 Cores Up to 4.8 GHz, TDP 65W - Intel® Core™ i5-12500E 6 Cores Up to 4.5 GHz, TDP 65W - Intel® Core™ i3-12100E 4 Cores Up to 4.2 GHz, TDP 60W - Intel® Core™ i9-12900TE 16 Cores Up to 4.8 GHz, TDP 35W - Intel® Core™ i7-12700TE 12 Cores Up to 4.7 GHz, TDP 35W - Intel® Core™ i5-12500TE 6 Cores Up to 4.3 GHz, TDP 35W - Intel® Core™ i3-12100TE 4 Cores Up to 4.0 GHz, TDP 35W - Intel® Pentium® G7400E 2 Cores Up to 3.6 GHz, TDP 46W - Intel® Pentium® G7400TE 2 Cores Up to 3.0 GHz, TDP 35W - Intel® Celeron® G6900E 2 Cores Up to 3.0 GHz, TDP 46W - Intel® Celeron® G6900TE 2 Cores Up to 2.4 GHz, TDP 35W
Chipset	▪ Intel R680E Chipset
Memory	▪ 2x DDR5 SO-DIMM sockets, support Un-buffered and ECC Type memory, up to 96GB. - Core™ i9/i7: Support 5600/4800 MHz with Single Rank memory and 5200/4800 MHz with Dual Rank memory. - Core™ i5/i3/Pentium®/Celeron®/Intel® Processor: Support 4800 MHz.
BIOS	▪ AMI BIOS
Graphics	
Graphics Engine	▪ Integrated Intel® UHD Graphics 770: Core™ i9/i7/i5 ▪ Integrated Intel® UHD Graphics 730: Core™ i3 ▪ Integrated Intel® UHD Graphics 710: Pentium®/Celeron®
Maximum Display Output	▪ Supports Triple Independent Display
HDMI	▪ 1x HDMI Connector (3840 x 2160@30Hz) * Verified maximum resolution: 3840x2160@30Hz
DP	▪ 1x DisplayPort Connector (4096 x 2304@60Hz) * Verified maximum DP resolution: 3840x2160@60Hz
VGA	▪ 1x VGA Connector (1920 x 1200@60Hz)

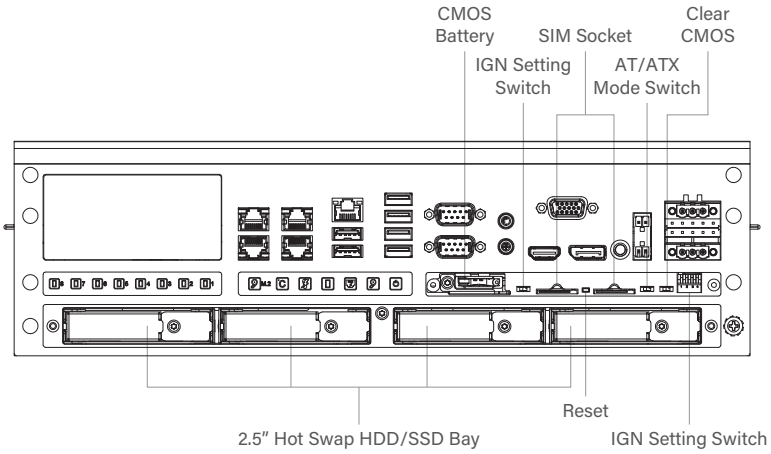
Audio	
Audio Codec	▪ Realtek® ALC888, High Definition Audio
Line-out	▪ 1x Line-out, Phone Jack 3.5mm
Mic-in	▪ 1x Mic-in, Phone Jack 3.5mm
I/O	
LAN	▪ 4x 2.5GbE LAN, RJ45 (Intel I225) ▪ 1x 1GbE LAN, RJ45 (Intel I219)
COM	▪ 2x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9
USB	▪ 6x USB 3.2 Gen1x1 (5Gbps), Type A
Storage / Expansion	
2.5" SSD/HDD	▪ 4x 2.5" Front Accessible SATA HDD/SSD Bay Supporting HotSwap Function (SATA 3.0) (Up to 15mm in Height)
M.2 M Key Socket	▪ 1x M.2 Key M Type 2280 Socket (PCIe Gen 4x4 / SATA), Support Storage/Add-on Card Expansion
M.2 E Key Socket	▪ 1x M.2 Key E Type 2230 Socket (PCIe Gen 3x2 / USB2.0), Support Wireless/Bluetooth/Storage/ Intel CNVi Module Expansion
M.2 B Key Socket	▪ 1x M.2 Key B Type 3052/3042 Socket (PCIe Gen 3x2 / USB3.2 Gen 2x1 / SATA), Support 5G/GNSS/ Storage/Add-on card Expansion ▪ 1x M.2 Key B Type 2280 Socket (PCIe Gen 3x1 / USB2.0), Support GNSS/Add-on card Expansion
PCIe	▪ Optional GPU Expansion Box - 1 x PCIe x 16 Slot (PCIe x 16 Signal) for GPU Card + 1 x PCIe x 4 Slot (Max. 25W) - 2 x PCIe x 16 Slot (PCIe x 8 Signal) for GPU Card + 1 x PCIe x 4 Slot (Max. 25W) + 1 x PCIe x 1 Slot (Max. 25W) * Single-GPU configuration: 300 W @ 24 VDC * Dual-GPU configuration: 500 W @ 24 VDC or 600 W @ 48 VDC (each GPU ≤ 300 W)
CMI (Combined Multiple I/O) Interface	▪ 1x High Speed CMI Interface for optional CMI Module Expansion ▪ 1x Low Speed CMI Interface for optional CMI Module Expansion
CFM (Control Function Module) Interface	▪ 1x CFM IGN Interface for optional CFM-IGN Module Expansion ▪ 1x CFM PoE Interface for optional CFM-PoE Module Expansion
Other Function	
RAID	▪ Support RAID 0/1/5/10
FAN	▪ 2x Fan Kits (Air-flow isolated from the electronics)
Power Ignition Sensing	▪ Support Power Ignition Sensing Function with Delay Time Management and Selectable 12V/24V (With Optional CFM Module)
Clear CMOS Switch	▪ 1x Clear CMOS Switch
Reset Button	▪ 1x Reset Button
Instant Reboot	▪ Support 0.2sec Instant Reboot Technology
Watchdog Timer	▪ Software Programmable Supports 256 Levels System Reset
Antenna Holes	▪ 7x Antenna Holes
Power	
Power Button	▪ 1x ATX Power On/Off Button
Power Input Voltage	▪ 9-48VDC, Single Power Input
Connector	▪ 2x 3-pin Terminal Block, Each Terminal Block Current Limitation is 15A - Dual power connect must be used at the same time due to 15A current limitation at each power connector.
Power Mode Switch	▪ 1x AT/ATX Mode Switch
Remote Power On/Off	▪ 1x Remote Power On/Off, 2-pin Terminal Block
Remote Power LED	▪ 1x Remote Power LED, 2-pin Terminal Block

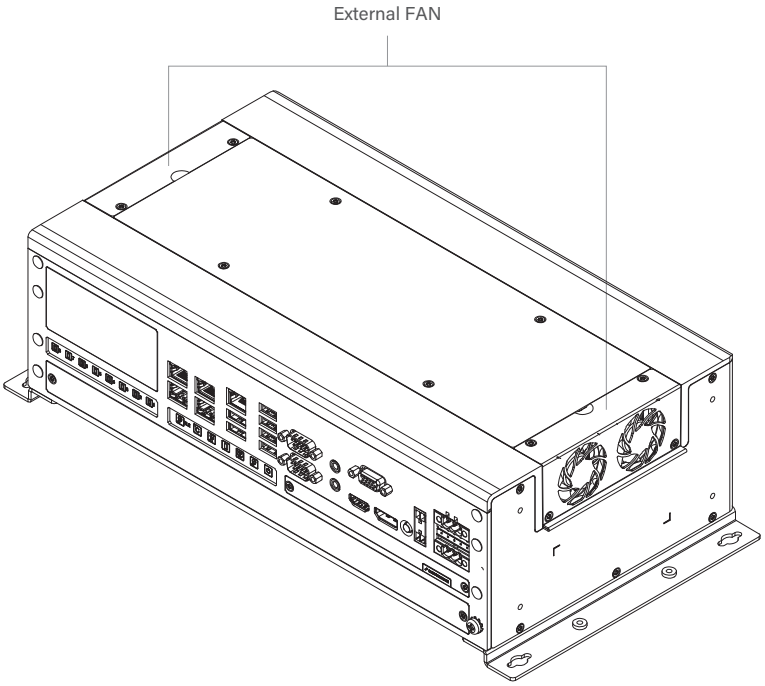
Max. Power Consumption	▪ 35W CPU: 201.05W ▪ 65W CPU: 306.48W - Test conducted with CPU, 1x RAM, and 1x storage - 100% load during burn-in testing.
Inrush Current (Peak)	▪ 35W CPU: 9.221 A@24V ▪ 65W CPU: 8.976 A@24V
Physical	
Dimension (W x D x H)	▪ 105 x 195 x 370 mm
Weight Information	▪ 7.7 kg
Mechanical Construction	▪ Extruded Aluminum with Heavy Duty Metal
Mounting	▪ Versatile Mounting Methods (Tower Stand / Desktop / 19"Rack / Flat / Wall Mount)
Physical Design	▪ Jumper-less Design ▪ Unibody Design
Reliability & Protection	
Reverse Power Input Protection	▪ Yes
Over Voltage Protection	▪ Protection Range: 51~58V ▪ Protection Type: shut down operating voltage, re-power on at the preset level to recover
Over Current Protection	▪ 30A
CMOS Battery Backup	▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation
MTBF	▪ 432,065 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3
Operating System	
Windows	▪ Windows®11, Windows®10
Linux	▪ Ubuntu Desktop 22.04 LTS
Environment	
Operating Temperature	▪ 35W TDP Processor: -40°C to 70°C (-40°F to 158°F) ▪ 45W TDP Processor: -40°C to 60°C (-40°F to 140°F) ▪ 65W TDP Processor: -40°C to 60°C (-40°F to 140°F) * PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling) * With extended temperature peripherals; Ambient with air flow * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14
Storage Temperature	▪ -40°C to 70°C (-40°F to 158°F)
Relative Humidity	▪ 95%RH @ 70°C (non-Condensing)
Shock	▪ MIL-STD-810H
Vibration	▪ MIL-STD-810H
EMC	▪ CE, UKCA, FCC, ICES-003 Class A ▪ EN 50155 (EN 50121-3-2 Only) ▪ E-mark
EMI	▪ CISPR 32 Conducted & Radiated: Class A ▪ EN/BS EN 50121-3-2 Conducted & Radiated: Class A ▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A ▪ EN/BS EN 61000-3-3 Voltage fluctuations & flicker ▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	▪ EN/IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV ▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 20 V/m ▪ EN/IEC 61000-4-4 EFT: AC Power: 2 kV; Signal: 2 kV ▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV ▪ EN/IEC 61000-4-6 CS: 10V ▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m ▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz

Fire Protection	▪ EN 45545-2
Safety	▪ UL, cUL , CB, IEC, EN 62368-1

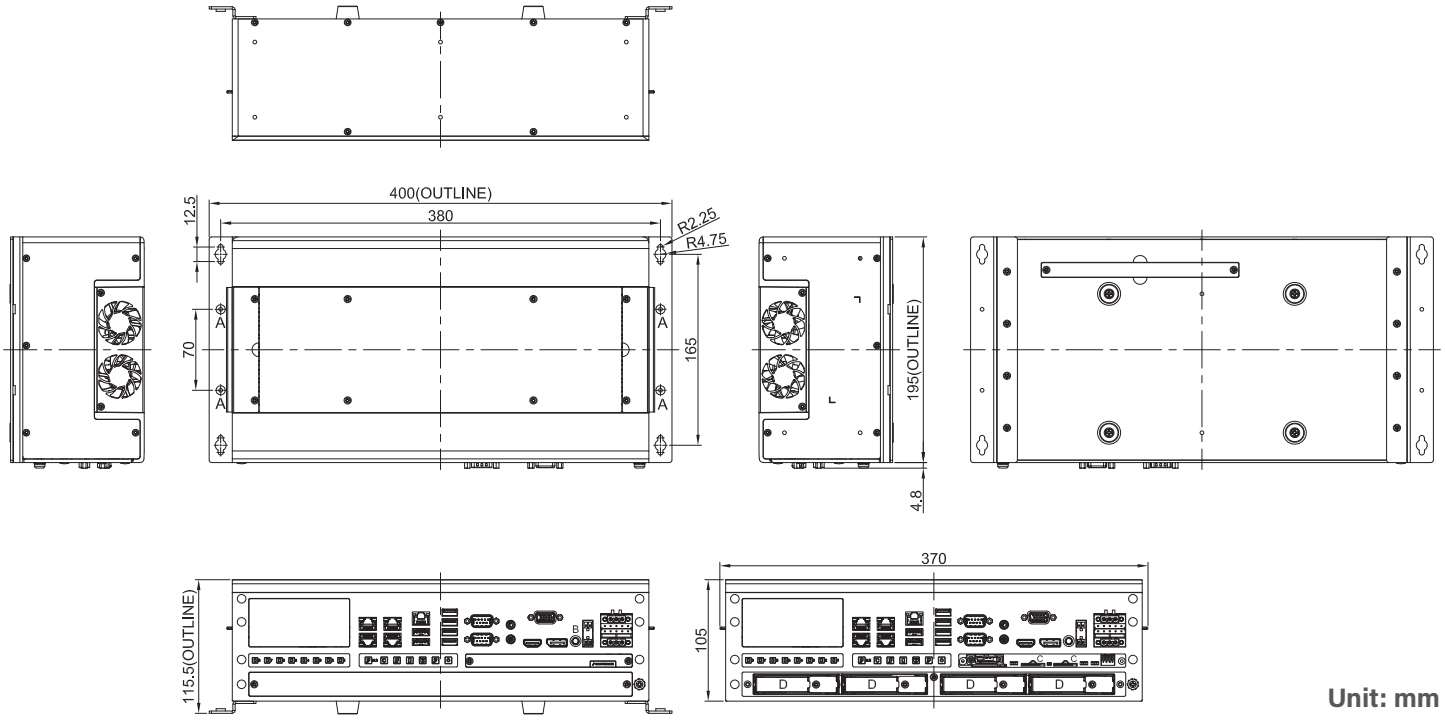
External Layout







Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
GP-3100-R10	14/13/12th Gen Intel® Core™ Modular GPU Computer, Supports Dual Full-length GPU Expansion

Optional GPU Expansion Box

Model No.	Description
GEB-3301-R10	GPU Expansion Box with 1x PCIex16 and 1x PCIe x4 Slots
GEB-3601-R10	GPU Expansion Box with 2x PCIex16 (PCIex8 Signal),1x PCIe x4, and 1x PCIe x1 Slot

Package Checklist

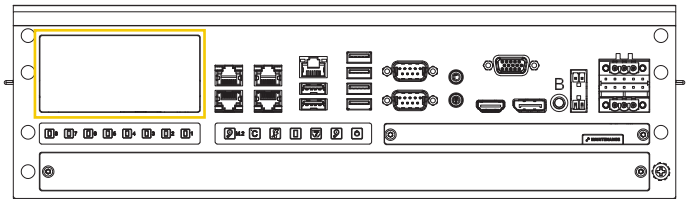
▪ GP-3100 GPU Computer x1	▪ Wall Mount Bracket x1
▪ Desktop Mount Kit x1	▪ Rubber Foot Kit x1
▪ CPU Heatsink and Thermal Pad Kit x1	▪ Power Terminal Block Connector x2
▪ Screw Pack x4	▪ Remote Function Terminal Block Connector x2
▪ M.2 Key B Type 3052 to 3042 Adapter Bracket x1	

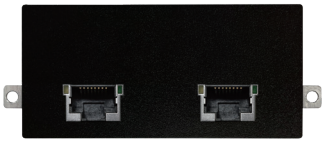
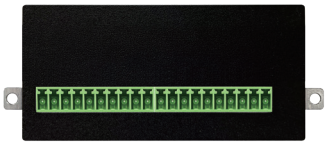
Optional Modules and Accessories

Model No.	Description
CMI-LAN01-R12	CMI Module with 4x Intel® I210 GbE LAN, RJ45 Port
CMI-M12LAN01-R12	CMI Module with M12 A-Coded Connector, 4x Intel I210 GbE LAN Ports
CMI-XM12LAN01-R10	CMI Module with M12 X-Coded Connector, 4x Intel I210 GbE LAN Ports
CMI-2P5GLAN02-R10	CMI Module with 4x Intel 2.5GbE LAN, RJ45 Port
CMI-10GLAN02-R10	CMI Module with 2x Intel® X550 10GbE LAN, RJ45 Port
CMI-10GXM12LAN02-R10	CMI Module with 2x Intel 10GbE LAN, M12 X-Coded Connector
CMI-DIO04-R11	CMI Module with 16DIO (8in 8out)
CMI-COM04-R10	CMI Module with 2x RS232/422/485 (Support 5V/12V)
CFM-PoE01	CFM Module with PoE Control Function, Individual Port 25.5W (Enable PoE function for onboard LAN 2 to LAN 5)
CFM-PoE07-R10	CFM Module with PoE Control Function, Individual Port 25.5W (Enable PoE function for CMI-LAN Module) *Due to the height of the CFM-PoE07 module, the M.2 I/O expansion is not available when the CFM-PoE07 is installed.
CFM-IGN03-R11	CFM Module with Power Ignition Sensing Function, 12V/24V Selectable
UB1812-R10	Universal Bracket with 4x RJ45 Cutout
UB1828-R10	Universal Bracket with 2x RJ45 Cutout
UB1810-R10	Universal Bracket with 4x M12 Cutout
UB1830-R10	Universal Bracket with 4x M12 X-Coded Cutout

UB1818-R10	Universal Bracket with DIO Cutout
UB1803-R10	Universal Bracket with 2x DB9 Cutout
UB1837-R10	Universal Bracket with 2x M12 X-coded Cutout
RM01-R10	19" Rack Mount Kit for GP-3000
RM02-R10	19" Rack Mount Kit for GP-3000/GEB-33 Series
RM03-R10	19" Rack Mount Kit for GP-3000/GEB-36 Series
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, Level VI
GST360A24-CIN	Adapter AC/DC 24V 15A 360W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, Level VI
SDR-480-24	DIN Rail Power Supply 480W 24V, SDR-480-24
HEP-1000-24	Power Supply 1000W 24V, HEP-1000-24
US Power Cord	1.8M US Power Cord, Stripped and Tinned End with Tube
EU Power Cord	1.8M EU Power Cord, Stripped and Tinned End with Tube
Power Cable	1M Power Cable with 3-Pin Terminal Block Plug, Stripped and Tinned End with Tube

Optional Module Configuration



Model No.	Description
CMI-LAN01-R12/UB1812 	CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout
CMI-M12LAN01-R12/UB1810 	CMI Module with M12 A-Coded Connector, 4x Intel I210 GbE LAN / 1x Universal Bracket with 4x M12 Cutout
CMI-XM12LAN01-R10/UB1830 	CMI Module with M12 X-Coded Connector, 4x Intel I210 GbE LAN Ports / 1x Universal Bracket with 4x M12 X-coded Cutout
CMI-2P5GLAN02-R10 / UB1812 	CMI Module with 4x Intel 2.5GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout
CMI-10GLAN02-R10/UB1828 	CMI Module with 2x Intel X550 10GbE LAN, RJ45 Port / 1x Universal Bracket with 2x RJ45 Cutout
CMI-10GXM12LAN02-R10/UB1837-R10 	CMI Module with 2x Intel 10GbE LAN, M12 X-Coded Connector / Universal Bracket with 2x M12 X-coded Cutout
CMI-COM04-R10/UB1803 	CMI Module with 2x RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 2x DB9 Cutout
CMI-DIO04-R11/UB1818 	CMI Module with 16DIO (8in 8out) / 1x Universal Bracket with DIO Cutout

Compatible GPU List

Model	Architecture	Dimesion (D x W mm)	Slot	Power Consumption
RTX PRO 6000 Blackwell Max-Q Workstation Edition	Blackwell	266.7 x 111.8	dual slot	300W
RTX PRO 5000 Blackwell	Blackwell	266.7 x 111.8	dual slot	300W
RTX PRO 4500 Blackwell	Blackwell	241.3 x 111.8	dual slot	200W
RTX PRO 4000 Blackwell	Blackwell	266.7 x 111.8	single slot	140W
RTX PRO 4000 SFF Blackwell	Blackwell	167.6 x 68.6	dual slot	70W
RTX PRO 2000 Blackwell	Blackwell	167.6 x 68.6	dual slot	70W
RTX 6000	Ada Lovelace	266.7 x 111.8	dual slot	300W
RTX 5000	Ada Lovelace	266.7 x 111.8	dual slot	250W
RTX 4500	Ada Lovelace	266.7 x 111.8	dual slot	210W
A800 40GB Active	Ampere	266.7 x 111.8	single slot	130W
RTX A6000	Ampere	266.7 x 111.8	dual slot	70W
RTX A5500	Ampere	266.7 x 111.8	dual slot	230W
RTX A5000	Ampere	266.7 x 111.8	dual slot	230W
RTX A4500	Ampere	266.7 x 111.8	dual slot	200W
RTX A4000	Ampere	241.3 x 111.8	single slot	140W
RTX A2000 | RTX A2000 12GB	Ampere	167.6 x 68.6	dual slot	70W

**An optional GPU expansion box is required for GPU usage.

Updated: Jan. 9, 2026.