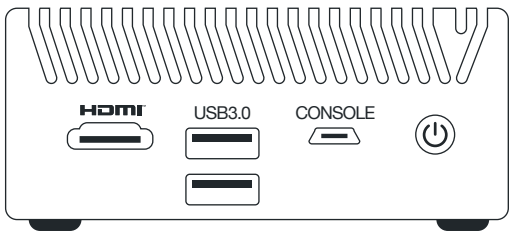
1000 SERIES

extremeEDGE Server™



Products Overview

The 1000 series brings powerful processing to the extreme edge, enabling remote system monitoring and management via the built-in NANO-BMC (Baseboard Management Controller).

The fanless enclosure offers scalability with memory and storage configurations.

These products can be powered using a standard DC Input or the optional PoE+ input.

The EE-1000 offers memory and storage configurations, while the EE-1100 series offers memory, storage, WiFi, and LTE configurations.

Common IO features include USB-A 3.2 and 2.0, as well as HDMI, Dual 2.5GbE, and Dedicated BMC GbE Ports.

Control at the extremeEDGE...

The first of its kind, offering NANO-BMC out-of-band management in a small form factor enables remote management of edge devices at the extremeEDGE.

Functionality Overview: Monitor, control, and manage hardware health and performance.

NANO-BMC Features:

Features	Function	Notes
Remote Console Access:	Accessing the system console for diagnostics and troubleshooting	Serial over IP
Remote Power Management:	Power-on/off control, power cycling reset	Hard & soft
Virtual Drive:	Make a local file or directory appear as a Drive on the Remote System	This allows updating the BIOS, installing an OS, or loading files remotely onto the Remote System
Firmware Updates	Updating firmware remotely	N/A

BMC Benefits:

- **Remote access to hardware even when the main system is powered off (useful for troubleshooting).**
- **Increased system uptime and faster problem resolution.**
- **Improved power management and resource utilization.**
- **Remote Management reduces support cost.**

Remote Access Methods:

- **Dedicated BMC management interface.**
- **Integration with system management software.**
- **In-Band management through OS applications (SSH, Telnet, etc).**

Architecture

Featuring advanced Intel processors, the 1000 series delivers exceptional performance.

Features	EE-1000	EE-1110	EE-1130	EE-1170
Processor	Intel N5105	Intel N100	Intel N100	Intel N100
BMC	MOS-BMC	NANO-BMC	NANO-BMC	NANO-BMC
Console Port	1x Micro-USB	1x Mini-USB	1x Mini-USB	1x Mini-USB
TPM (Discrete)	TPM 2.0	TPM 2.0	TPM 2.0	TPM 2.0
Max Memory	32 GB	32 GB	32 GB	32 GB
Max Storage	2 TB	8 TB	8 TB	8 TB
Max Drives	1x 2242	1x 2280	1x 2280	1x 2280
USB	2x USB-A 3.0	2x USB-A 3.2 3x USB-C 2.0	2x USB-A 3.2 3x USB-C 2.0	2x USB-A 3.2 3x USB-C 2.0
Network	2x 2.5GbE, 1x 1GbE BMC	2x 2.5GbE, 1x 1GbE BMC	2x 2.5GbE, 1x 1GbE BMC	2x 2.5GbE, 1x 1GbE BMC
Wifi-AC + Bluetooth	N/A	N/A	Included	Included
4G / 5G Modem	N/A	N/A	N/A	Included
POE+ PD	Optional	Optional	Optional	Optional
Display Out	1x HDMI	1x HDMI 1x USB-C (DP) 1x mDP	1x HDMI 1x USB-C (DP) 1x mDP	1x HDMI 1x USB-C (DP) 1x mDP
Video Chipset	Intel UHD 24EUs 1x 4096x2160@60Hz Hardware Accelerators	Intel UHD 24EUs 1x 4096x2160@60Hz Hardware Accelerators	Intel UHD 24EUs 3x 4096x2160@60Hz Hardware Accelerator	Intel UHD 24EUs 3x 4096x2160@60Hz Hardware Accelerators
AI Accelerator	N/A	Optional	N/A	Optional*
Operating Temperature	-40°C to 60°C	Standard: 0°C to 40°C Extended: -40°C to 60°C (Optional)		
Mounting (Optional)	DIN-Rail	DIN-Rail	DIN-Rail	DIN-Rail

* AI Accelerator displaces Wifi-AC+BT on EE-1170 if desired

Product Differentiating Features

Built for the Edge: Power and Efficiency in a Compact Design

The 1000 series thrives in edge computing applications where space is limited and on-site processing is crucial. Its ultra-compact size brings powerful computing to the edge of your network, while remote monitoring and management capabilities enhance security and simplify control.

Quiet Operation, Lower Costs

This fanless system operates silently and consumes minimal power – up to 16 watts under load, significantly less than a traditional server with a single CPU. This translates to lower energy costs and a reduced environmental footprint.

Flexible Mounting, Scalable Performance

The 1000 series adapts to diverse environments with its DIN rail compatibility, making installation a breeze. Additionally, it supports memory and storage configurations, allowing you to tailor the system to your specific data storage and management requirements.

NANO-BMC (Baseboard Management Controller)

The 1000 series of products incorporate a Patent Pending technology, which redefines remote management with its built-in NANO-BMC module. This module enables secure out-of-band access for monitoring, control, and power management, including remote power cycling, reboots, virtual drive and critical BIOS updates.

Display Support

The EE-1000 system supports Intel UHD Graphics and drives a single monitor up to 4096x2160@60Hz using an HDMI 2.1 connector.

The EE-1110, EE-1130, and EE-1170 systems support Intel UHD Graphics and drives three monitors up to 4096x2160@60Hz each using an HDMI 2.1, Mini DisplayPort (mDP) 2.1, and USB-C connectors.

Network Connectivity

All 1000 series systems support 2x RJ-45 2.5GbE for the Host and 1x RJ-45 GbE for the remote management and control through the BMC.

The EE-1130 and EE-1170 systems support wireless connectivity. Wireless-AC+BT radio and/or optional 4G Modem are supported as indicated below. Two RP-SMA and two SMA antennas complete the support for the wireless network.

Model	Description	Details
All Models	2x RJ-45 Ports, 2.5 Gb/s Intel i226	These Ethernet controllers support Base-T copper networking interface and provide standard IEEE 802.3 Ethernet interface for 2500BASE-T, 1000BASE-T, 100BASE-TX, and 10BASE-TE connections.
All Models	1x RJ-45 Port, 1 Gb/s (BMC)	The BMC feature offers a higher level of remote control and management. Supports remote power on/off, system reset, and the ability to push BIOS updates and OS images to the system.
EE-1110	1x 2230 M.2 E-Key	2230 AI Accelerator (Optional)
EE-1130 EE-1170	1x 2230 M.2 E-Key	WiFi-AC + Bluetooth 2230 AI Accelerator (Optional)
EE-1170	1x 3042 M.2 B-Key	LTE Modem w/ Dual-SIM slots

Expandable Memory & Storage

The 1000 Series of Products allows for a range of memory and storage configurations.

Memory

Model	Configurations	Supported Types
EE-1000	8 GB, 16 GB, or 32 GB	Soldered down LPDDR4-2933 4x DRAM / Dual-Channel
EE-1110	8 GB, 16 GB, or 32 GB	JEDEC Standard DDR5-4800 1x SODIMM / Single-Channel
EE-1130	8 GB, 16 GB, or 32 GB	JEDEC Standard DDR5-4800 1x SODIMM / Single-Channel
EE-1170	8 GB, 16 GB, or 32 GB	JEDEC Standard DDR5-4800 1x SODIMM / Single-Channel

Storage

Model	Interface	eMMC (Optional)	Capacity	Configuration
EE-1000	2242 M.2 M-Key	N/A	512GB, 1TB or 2TB	PCIe Gen 4
EE-1110	2280 M.2	Up to 512GB soldered down (required for AI option)	256GB, 512GB, 1TB, 2TB, 4TB, 8TB, or AI Accelerator	PCIe Gen 4
EE-1130	2280 M.2	Up to 512GB soldered down (required for AI option)	256GB, 512GB, 1TB, 2TB, 4TB, 8TB, or AI Accelerator	PCIe Gen 4
EE-1170	2280 M.2	Up to 512GB soldered down (required for AI option)	256GB, 512GB, 1TB, 2TB, 4TB, 8TB, or AI Accelerator	PCIe Gen 4

Note: the EE-1100 Series supports an access panel to easily remove the 2280 Device (SSD or AI Accelerator)

AI Support

The 2230 M.2 Slot supports an optional AI Acceleration module on the EE-1110 or EE-1170.

The optional eMMC version of the EE-1100 series supports an optional AI Acceleration module via the 2280 M.2 slot. This enables AI Compute Acceleration at a higher performance and lower power. Inferencing and Neural-Network processing can be performed using widely available AI Accelerators. User coding is required for your application.

Additional Product Protection

The 1000 series of products can be treated with a “Conformal Coating” at the PCBA level allowing for a higher level of protection against dust, moisture, and harsh chemical intrusion.

System Power Consumption (Runtime)

Model	Watts	Runtime Stimulus
EE-1000	Up to 16 Watts	Under System Stress Test
EE-1110	Up to 12 Watts	Under System Stress Test
EE-1130 (With Wifi)	Up to 20 Watts	Under System Stress Test
EE-1170 (With Wifi and LTE)	Up to 20 Watts	Under System Stress Test

Power Supply

Specification	Specification Limits	Notes
AC Input Range	100 - 240 VAc	50 Hz to 60 Hz
DC Voltage Out	12.0 VDc	+/- 5%
Amperage	4.0 Amps (EE-1000) 2.5 Amps (EE-1100 Series)	Maximum
Wattage Out	48 Watts (EE-1000) 30 Watts (EE-1100 Series)	Maximum
System Connection	5.5 x 2.1 mm	Lockable Barrel (5.5 mm)

System Dimensions & Weight

Dimensions	Weight
88.9 mm (W) x 88.9 mm (L) x 38 mm (H) 3.5” (W) x 3.5” (L) x 1.5” (H)	1Lb / 0.45 Kg

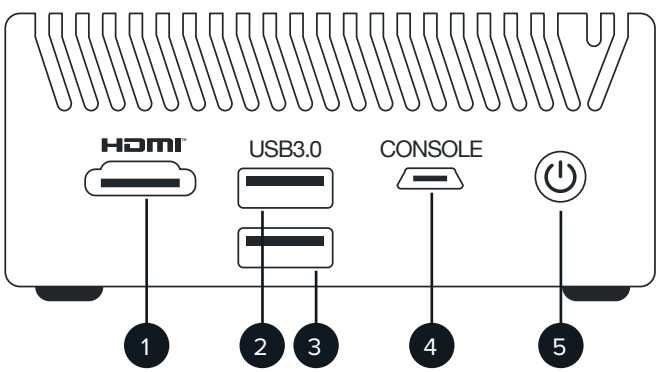
Certifications

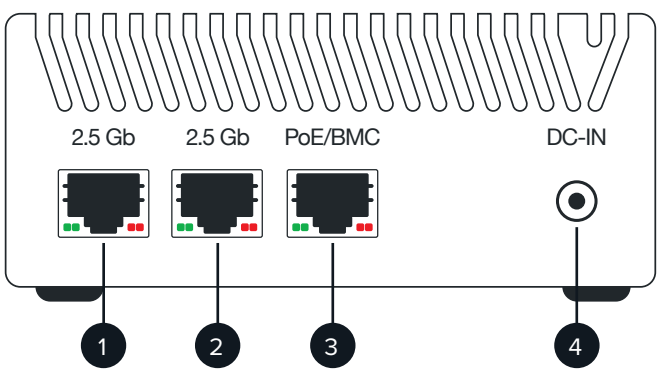
Certifications	Notes
FCC	Federal Communication Commission
CE	Consumer Electronics
ROHS	Restriction Of Hazardous Substances
REACH	Registration / Evaluation / Authorization / Restriction Of Chemicals

Service & Support

Global Support	
Integration Services	Custom Configuration Service - BIOS Settings, Imaging, System Configuration & Labeling
Deployment Services	Field Deployment Management
Support	In-region Technical Support

Illustrated I/O Port Overview EE-1000

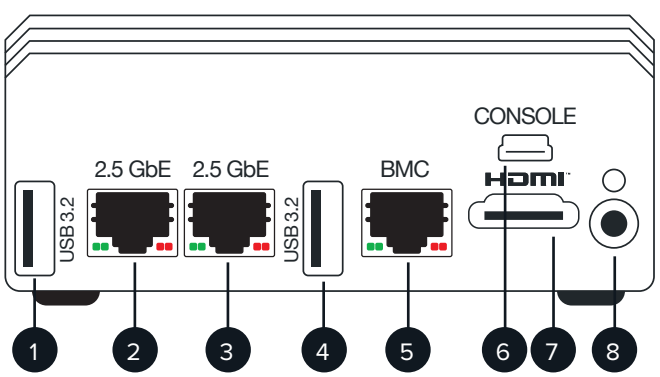


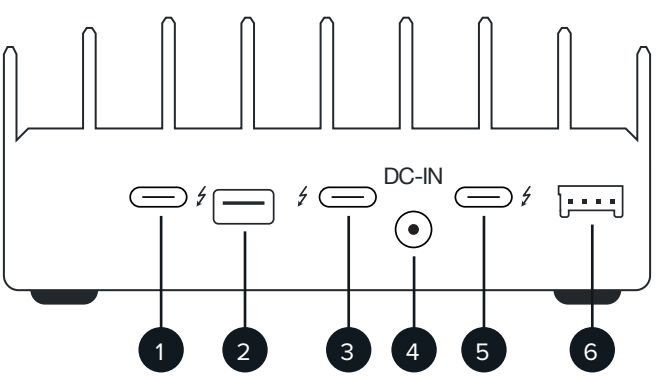


FRONT			
1	HDMI™	4	BMC CONSOLE
2	USB-A 3.0	5	POWER BUTTON
3	USB-A 3.0		

REAR			
1	2.5 GbE	3	POE/BMC
2	2.5 GbE	4	DC-IN

Illustrated I/O Port Overview EE-1110

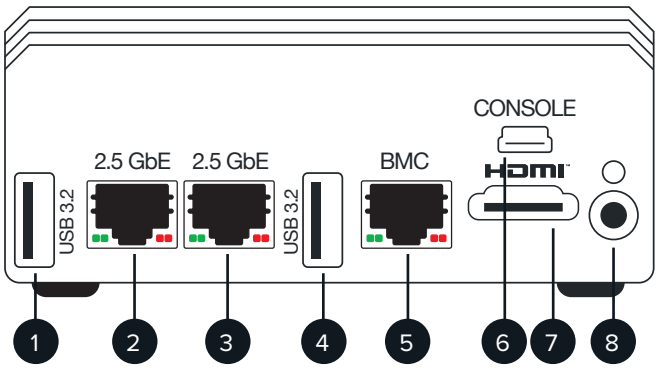


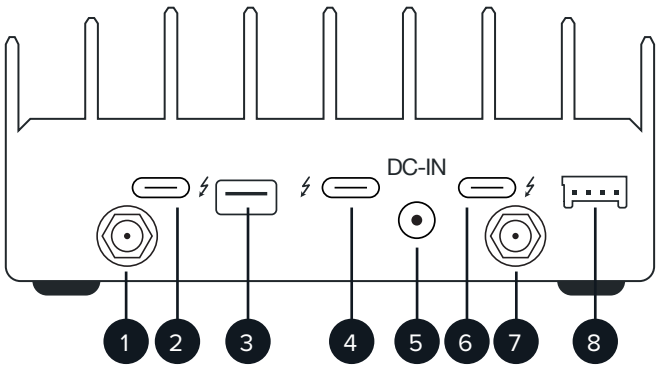


FRONT			
1	USB-A 3.2	5	BMC
2	2.5 GbE	6	BMC CONSOLE
3	2.5 GbE	7	HDMI™
4	USB-A 3.2	8	POWER BUTTON

RIGHT			
1	USB-C 2.0	4	DC-IN
2	MINI-DP	5	USB-C 2.0
3	USB-C 2.0	6	REMOTE POWER

Illustrated I/O Port Overview EE-1130

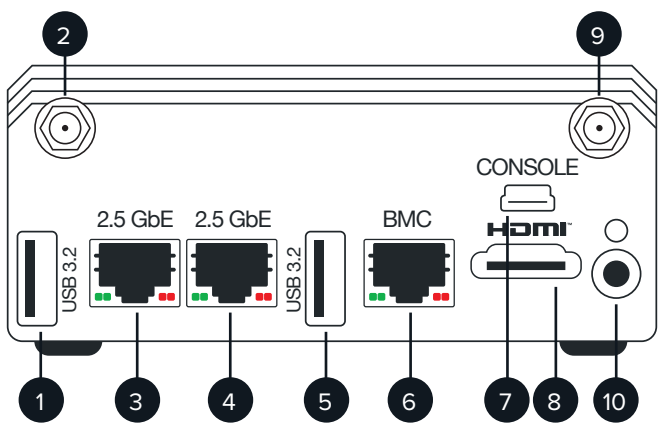


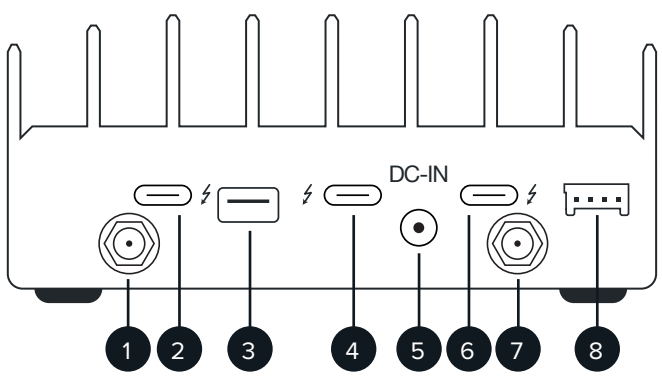


FRONT			
1	USB-A 3.2	5	BMC
2	2.5 GbE	6	BMC CONSOLE
3	2.5 GbE	7	HDMI™
4	USB-A 3.2	8	POWER BUTTON

RIGHT			
1	ANTENNA	5	DC-IN
2	USB-C 2.0	6	USB-C 2.0
3	MINI-DP	7	ANTENNA
4	USB-C 2.0	8	REMOTE POWER

Illustrated I/O Port Overview EE-1170





FRONT			
1	USB-A 3.2	6	BMC
2	LTE ANTENNA	7	BMC CONSOLE
3	2.5 GbE	8	HDMI™
4	2.5 GbE	9	LTE ANTENNA
5	USB-A 3.2	10	POWER BUTTON

RIGHT			
1	WIFI ANTENNA	5	DC-IN
2	USB C 2.0	6	USB-C 2.0
3	MINI-DP	7	WIFI ANTENNA
4	USB-C 2.0	8	REMOTE POWER

Learn more about SNUC BMC-ENABLED extremeEDGE Servers™

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