



KEY FEATURES



High Performance CPU

Intel® Coffee Lake Core i7 processor



802.3af PoE Ports

4 x RJ45 type PoE ports at 15W



AI Accelerated

Support up to 115W GPU MXM module without active fan



Scalability

Multiple expansion slots for 4G/LTE/5G cellular support



Support 5G Communication

Support M.2 B key 3042/3052 5G-NR module

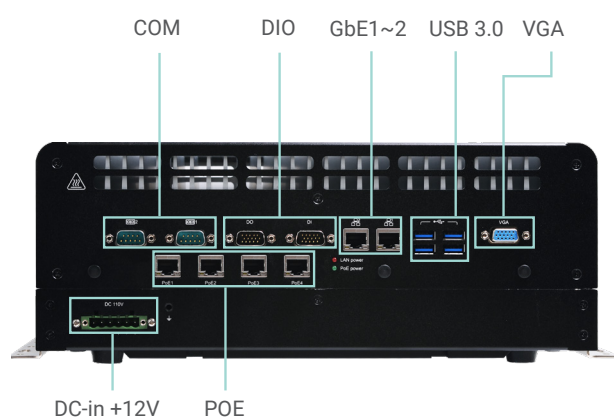


Wide-Temperature

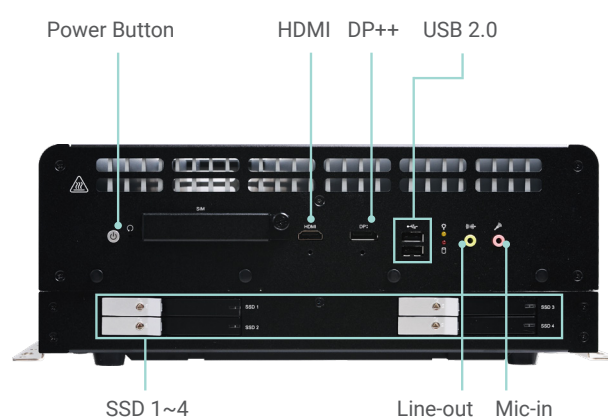
Up to -25°C~70°C operation without active fan



PANEL

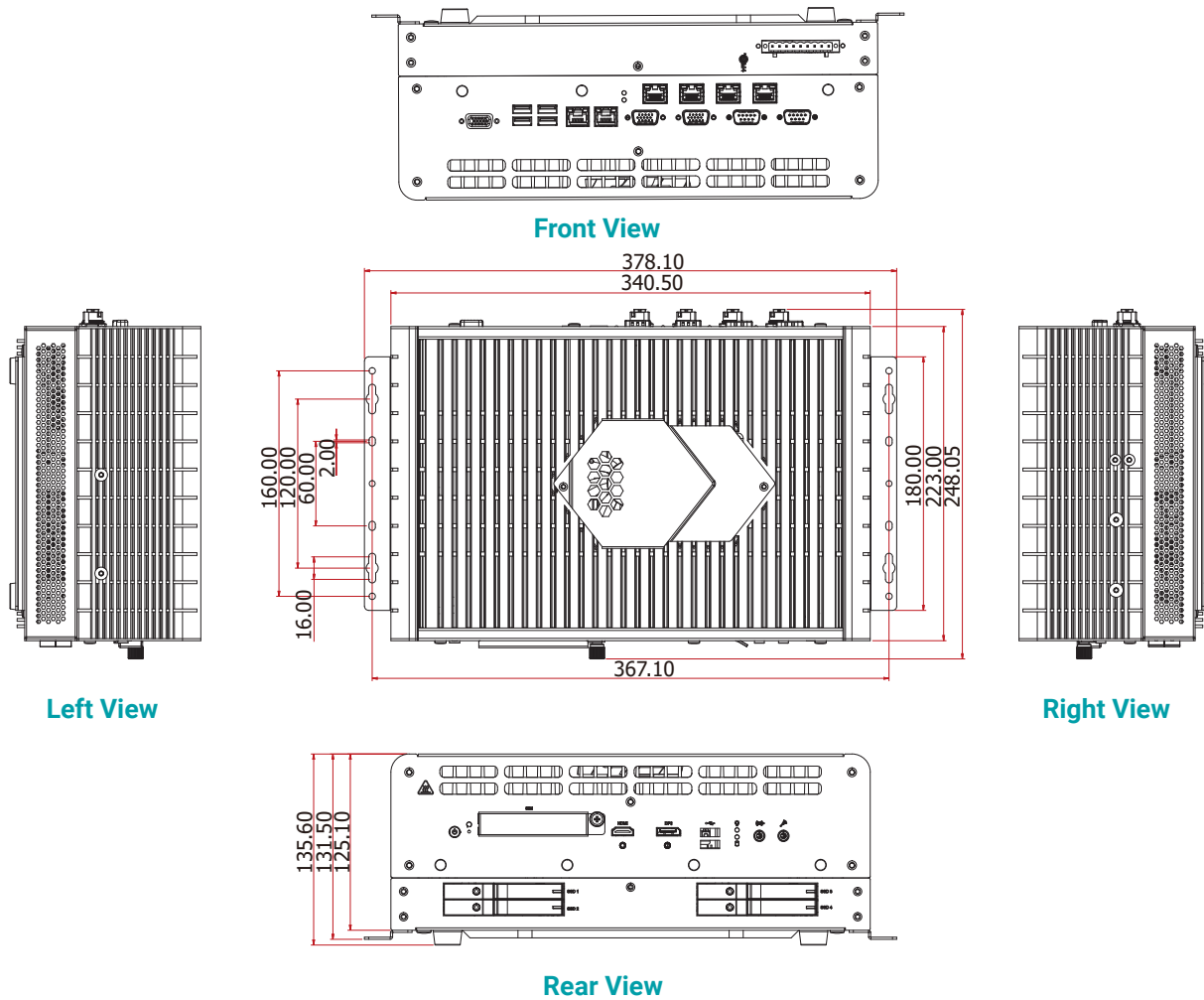


Front View

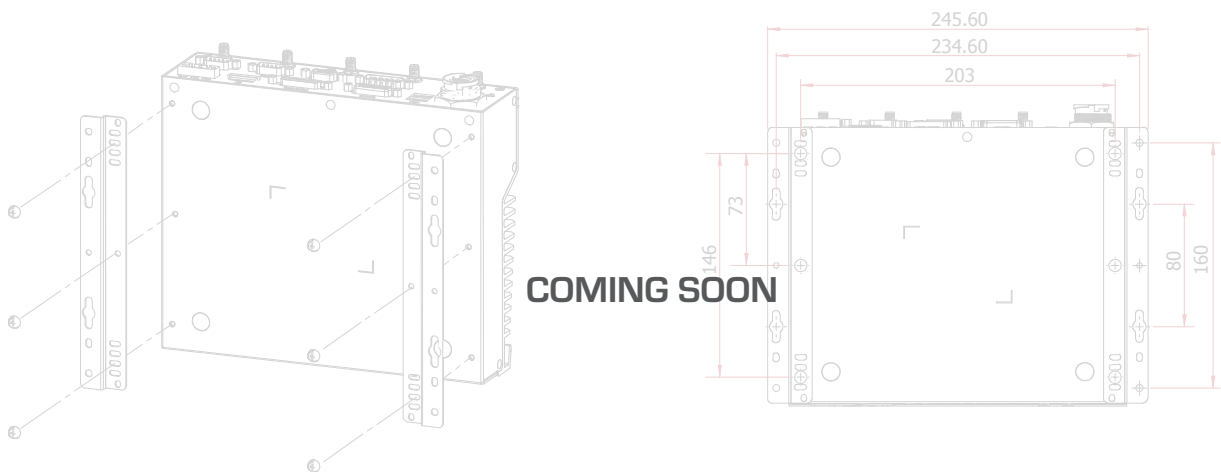


Rear View

DIMENSIONS



WALL MOUNTING



SPECIFICATION

SYSTEM	Processor	8th/9th Generation Intel® Core™ Processors, LGA 1151 Intel® Core™ i7-9700TE 8C/8T 1.8GHz 12MB cache, TDP 35W with Q370PCH Intel® Core™ i7-8700T 6C/12T 2.4GHz 12MB cache, TDP 35W with Q370PCH Intel® Core™ i7-9700E 8C/8T 2.6GHz 12MB cache, TDP 65W with Q370PCH Intel® Core™ i5-9500TE 6C/6T 2.2GHz 9MB cache, TDP 35W with Q370PCH (Other CPU support upon request)	
	Chipset	Intel® Q370 Chipset	
	Memory	Dual Channel DDR4 2666/2400 MHz by SODIMMs up to 64GB	
	BIOS	AMI SPI 128Mbit	
GRAPHICS	Controller	Intel® HD Graphics	
	Display	1 x VGA (display out by DB15 connector) 1 x HDMI (with screw lock) 1 x DP++ (standard display port connector DIP type with screw lock) support NVIDIA Optimus technology	VGA: resolution up to 1920x1200@60Hz HDMI: resolution up to 4096x2160@24Hz DP++: resolution up to 4096x2304@60Hz
AI ACCELERATOR	Interface	MXM Type A, B, C on x16 PCIe 3.0	
	Controller	Nvidia Quadro embedded/ Geforce series	
STORAGE	External	4 x Swappable 2.5" 7mm SSD storage bays with lock	
	Internal	1 x M.2 2280 M key supports SATA SSD	
EXPANSION	Interface	1 x Half-size Mini PCIe for WiFi/BT modules, with PCIe x1 & USB signal 2 x Full-size Mini PCIe support PCIe x1 & USB 2.0 signal with SIM of each (All SIM Cards can be external accessible with cover against vibration) 1 x M.2 B key supports 3042, 3052 devices or 5G module on PCIe x1, USB2.0, USB3.0 signal with SIM slot (SIM card can be external accessible with cover) 1 x M.2 2280 M key supports 2242, 2260 & 2280 devices (PCIe x4 & SATA signal, support boot up function)	
AUDIO	Audio Codec	Realtek ALC888	
	Interface	1 x Mic-in 1 x Line-out	
ETHERNET	Controller	5 x Intel® I210IT NIC (10/100/1000Mbps) 1 x Intel® I219LM PHY (10/100/1000Mbps)	
	Interface	2 x RJ45 GbE 4 x 802.3af 15W PoE ports	
LED	Indicators	1 x Power LED (green) 5 x Storage LED (red) 4 x PoE LED	
FRONT I/O	PoE	4 x RJ45 802.3af PoE Support 802.11af, max 15.4W (PSE side) NOT support Wake on Lan	
	Ethernet	2 x GbE (RJ-45) support wake on Lan	
	Serial	2 x High speed full RS-232/422/485 (DB-9) 2 x RS-232/422/485 (onboard)	
	DIO	1 x 8-bit isolated DI port by DB-9 connector 1 x 8-bit isolated DO port by DB-9 connector 2KV isolation	
	Display	1 x VGA display out by DB-15 connector	
	USB	4 x USB 3.0 (type A)	
	Power-in	1 x 9-pin 5.0mm terminal block	
REAR I/O	USB	2 x USB 2.0 (type A)	
	Display	1 x HDMI 1 x DP++	
	Audio	1 x Mic-in 1 x Line-out by 3.5mm 3P phone jack	
	Buttons	1 x Power button 1 x Reset button	
	SIM	3 x SIM sockets (external accessible with cover)	
	Antenna Holes	7 x SMA type antenna holes for GNSS, WWAN/LTE MIMO, WLAN/ BT MIMO, 5G	
WATCHDOG TIMER	Output & Interval	System reset, programmable via software from 1 to 255 seconds	
SECURITY	TPM	TPM 2.0	
POWER	Type	+12VDC Reverse polarity protection	
	Connector	9-pin 5.0mm terminal block	
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64 Bit	
	Linux	Ubuntu 18.04	
MECHANISM	Construction	Metal + Aluminum	
	Mounting	Wall mount	
	Dimensions (W x H x D)	340.5 x 132 x 223mm (3U height, excluding rubber foot)	
	Weight	9.85 kg	

SPECIFICATION

ENVIRONMENT	Operating Temperature	-25°C to 70°C with when CPU+GPU<100W, up to +85°C for 10min -25°C to 55°C with when CPU+GPU<160W, up to +70°C for 10min CPU & GPU will be throttling at high temperature
	Storage Temperature	-40 to 85°C
	Relative Humidity	10% to 90% (non-condensing)
STANDARDS AND CERTIFICATIONS	Shock (SSD/HDD)	EN61373: 2010, Category 1 Class A & Class B
	Vibration	EN61373: 2010, Category 1 Class B
	IP rating	IP40
	Certification	CE, FCC Class B (tested with adapter)

Compatible MXM modules

Type	Model	CUDA cores	Power	Support operating temperature
Quadro	P1000	512	47W	-20°C to +70°C
	P2000	768	58W	-20°C to +70°C
	T1000	896	50W	-20°C to +70°C
	RTX3000	1920	80W	-20°C to +55°C
	RTX5000	3072	150W	-20°C to +55°C (external air flow needed)
Geforce	GTX1060	1280	78W	-20°C to +55°C
	GTX1070	2048	115W	-20°C to +55°C
	RTX2060	1920	80W	-20°C to +55°C
	RTX2070	2304	115W	-20°C to +55°C
	RTX2080	2944	150W	-20°C to +55°C (external air flow needed)

OPTIONAL ITEMS

Optional Items	Part Number	Description
2.5" SSD	785-S251TBG	2.5" SATA SSD, 1TB MLC, -40 to 85°C, RoHS
	785-S25512G	2.5" SATA SSD, 512GB MLC, -40 to 85°C, RoHS
	785-S25256G	2.5" SATA SSD, 256GB MLC, -40 to 85°C, RoHS
	785-S25128G	2.5" SATA SSD, 128GB MLC, -40 to 85°C, RoH
M.2 SATA SSD	785-M2SATA64G	64GB, M.2 2280 SSD, SATA3 B+M Key, MLC, Wide Temp.
	785-M2SATA128G	128GB, M.2 2280 SSD, SATA3 B+M Key, MLC, Wide Temp.
	785-M2SATA256G	256GB, M.2 2280 SSD, SATA3 B+M Key, MLC, Wide Temp.
	785-M2SATA512G	512GB, M.2 2280 SSD, SATA3 B+M Key, 3D TLC, PE: 3K, 30u" -20~75°C
Memory	138-580004-104G	8GB DDR4 2666Mhz SO-DIMM 1Rx8 IND 1Gx8 CL19 1.2V
	138-540002-121G	4GB DDR4 2666Mhz SO-DIMM, -40 to 85C
WiFi/BT module kit	761-AP1235-000G	WiFi/Bluetooth Module AP12356, antenna *2, 200mm SMA cables*2, Mini PCIe Bracket, screws
LTE module kit	761-RC3000-001G	EG25GGB CAT4 miniPCIe module, antenna*2, 300mm SMA cables*2
5G module kit	761-RC3000-100G	SIM8202G-M2 M.2 module, antenna*4, 184mm SMA cables *4
M12 Cable	A81-005038-054G	8-pin M12 X-coded to RJ45 PoE cable
CAN bus module	770-MPE21-100G	MPE-CAN2 MiniPCIe Full CAN Module Card Asssembly

PACKING LIST

1 EC300-CS system unit
1 Power connector
1 Mounting bracket