

# FPC-5210-2M4/2P4

Intel® 12<sup>th</sup> Gen. Core™ Embedded GPU Computer supporting Nvidia® RTX-A4500 w/ 2x 10G POEs



## Features

- SMART FAN support
- 12<sup>th</sup> Generation Core™ i9/i7/i5/i3 Processor (Alder Lake-S)
- Up to 120W GPU MXM module expansion
- 802.3af (15.4W) / 802.3at(25.5W) Gigabit PoE ports
- Wide range DC power input (9~36V)
- DP x2 + HDMI x 1 and DVI x 1 (support 4 independent displays)
- Power on/off delay control / configurable ignition power control
- Supports TPM 2.0 and Time-Sensitive Networking (TSN)
- Two-mPCIe for optional WiFi/3G/4G/GPS or I/O expansion supported
- 1 x M.2 B-Key for storage or 5G / LTE +1 x M.2 E-Key for WiFi / BT
- 1 x M.2 M-Key for NVMe SSD

System	
CPU	Intel® 12 <sup>th</sup> generation Core™ i9/i7/i5/i3 processor in LGA1700 socket ( Max 65W CPU )
Memory	2 x 262-pin DDR5 SO-DIMM sockets, supporting 4800 MHz SDRAM up to 64GB (ECC/ Non-ECC)
Chipset	Intel® R680E
Graphics	Integrated Intel® HD Graphics 770
ATA	2 x Serial ATA ports with 600MB/s HDD transfer rate
LAN Chipset	1 x Intel® I219LM GbE controller w/ iAMT 16.0 3 x Intel® I226 2.5GbE controllers 2 x Intel® I226 2.5GbE controllers for PoE 2 x Marvell® 10GbE controllers for PoE
Watchdog Timer	1~255 levels reset
TPM	Infineon SLB9670 supports TPM 2.0
I/O	
Serial Port	2 x RS-232/422/485 configurable ports via DB-9 connectors (Default RS232, Switch via BIOS ) 2 x RS-232 ports via DB-9 connectors
USB Port	8 x USB 3.2 Gen2 ports
LAN	4 x RJ-45 connectors for GbE 4 x M12 X-coded connectors by 2 x Intel® I226(2.5GbE) + 2 x Marvell® 10GbE, max 60W supports 802.3at POE+ (For -2M4) 4 x RJ45 connectors by 2 x Intel® I226(2.5GbE) + 2 x Marvell® 10GbE, max 60W supports 802.3at POE+ (For -2P4)
Display	2 x DP 1.4a from MXM module or Intel Graphics 1 x HDMI 2.0b female connector 1 x DVI-I female connector for digital/analog video output * Support 4 independent displays
DIO Port	1 x DB15 connector for 8 x digital input ( Dry/ Wet contact ) with 2KV isolation 1 x DB15 connector for 8 x digital output with 2KV isolation
Audio	Mic-in/Line-out
Expansion Bus	1x MXM3.1 TYPE A/B GPU Slot (PCIe Gen5 x16) MXM A4500 Support 2 x mini-PCI Express Slots interconnected with SIM card sockets for optional WiFi/BT/3G/LTE/ GPS (PCIex1+USB2.0, Full Size) 3 x SIM socket ( 2 for mPCIe / 1 for M.2 B key ) 1 x M.2 B key (2242/3052/2280) w/ (PCIex2+USB3.0+SATA ) interconnected with SIM for 5G / LTE or for storage (either one) 1 x M.2 E key (2230) with PCIe1+USB2.0+CNVi for Wireless

All specifications are subject to change without notice.

## Environmental

Operating Temp.	-20 ~ 55°C (-4 ~ 131°F), ambient w/ air flow (w/ 65W TDP CPU, 115W GPU)
Storage Temp.	-40 ~ 85°C (-40 ~ 185°F)
Operating Humidity	10 ~ 95% @ 55°C (non-condensing)
Vibration	5~500Hz 2G rms X,Y,Z axis w/SSD, according to IEC 60068-2-64
Shock	30 Grms, Half-sine 11 m sec. duration w/ SSD, according IEC60068-2-27

## Qualification

Certification	CE, FCC Class A
Power Requirement	
Power Input	DC 9~36V input ( w/ 4-pin DC input terminal block ) ( V+ ,V+, V-, V- )
Ignition Switch	2-pin terminal block : IGN, GND
Power Consumption	Max. 280W

## Storage

Type	2 x 2.5" outside accessible drive bays 1 x M.2 B key ( 2242/2280 ) w/ (PCIex2+USB+SATA ) for storage or LTE expansion ( either one) 1 x M.2 2280 M key supports 2242,2280 devices (PCIe x4 & SATA signal, support boot up function)
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## Mechanical

Construction	Metal
Mounting	Wall-mount
Weight	4.68 Kg ( 10.32lb)
Dimensions (W x D x H)	285 x 230 x 130mm (11.2" x 9.05" x 5.12")

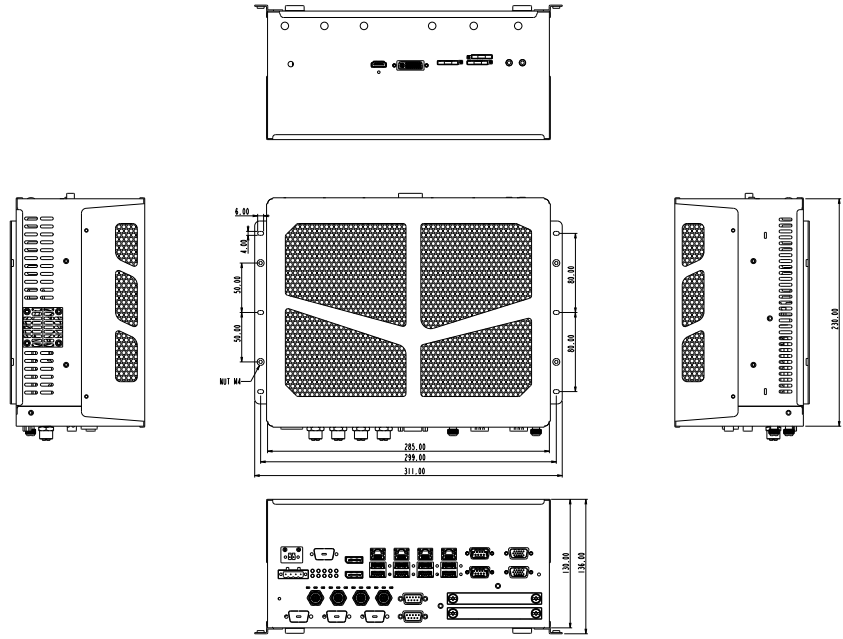
## OS Support

Windows 10 IOT Enterprise 64-bit  
Linux ( Ubuntu 20.04 )

## Ordering Information

FPC-5210-2M4	Embedded GPU Computer, Bare BOM, w/2x 10GbE POEs, M12 type
FPC-5210-2P4	Embedded GPU Computer, Bare BOM, w/2x 10GbE POEs, RJ45 type (BTO)

# Dimensions



## Standard Accessories

CPF-92Q0-C1 CPU Cooling for LGA1700 CPU

## Optional Accessories

WMK-5210 Wall-mount kit for FPC-521x Series



PAC-330W6B 330W AC/DC adapter kit w/ 4-pin terminal block



## Optional Configuration (CTOS\* Kit)

MXM-KIT-A4500-8GB MXM 3.1 Type B NVIDIA® Quadro® Embedded A4500-8GB GDDR6 MXM Kit with Heatsink

MXM-KIT-A4500-16GB MXM 3.1 Type B NVIDIA® Quadro® Embedded A4500-16GB GDDR6 MXM Kit with Heatsink

MXM-KIT-A2000-8GB MXM 3.1 Type A NVIDIA® Quadro Embedded A2000-8GB MXM Kit with Heatsink

MM-5C-8G/16G/32G DDR5-4800 8GB/16GB/32G SDRAM DIMM module



WIFI-IN2550 Intel AX200NGW M.2 Wi-Fi 6 module w/2x30cm internal wires



ANT-H11 1 x 2dBi HSUPA antenna



ANT-D11 1 x WiFi dual-band 2.4G/5G antenna

Core™ i9-12900E Intel® 12<sup>th</sup> Gen. Core™ i9-12900E processor, L3/30M, 2.3G

Core™ i9-12900TE Intel® 12<sup>th</sup> Gen. Core™ i9-12900TE processor, L3/30M, 1.1G

Core™ i7-12700E Intel® 12<sup>th</sup> Gen. Core™ i7-12700E processor, L3/25M, 2.1G

Core™ i7-12700TE Intel® 12<sup>th</sup> Gen. Core™ i7-12700TE processor, L3/25M, 1.4G

Core™ i5-12500E Intel® 12<sup>th</sup> Gen. Core™ i5-12500E processor, L3/18M, 2.9G

Core™ i5-12500TE Intel® 12<sup>th</sup> Gen. Core™ i5-12500TE processor, L3/18M, 1.9G

Core™ i3-12100E Intel® 12<sup>th</sup> Gen. Core™ i3-12100E processor, L3/12M, 3.2G

Core™ i3-12100TE Intel® 12<sup>th</sup> Gen. Core™ i3-12100TE processor, L3/12M, 2.1G



\*CTOS means Configure-to-Order Service.