

# GPC

# 1000MX



Workstation-grade 9th/8th Gen Intel® Xeon®/Core™ i7/i5/i3 Processor  
Dual GPU AI Computing System



▲ Rolling Stock

- 8 Cores 9th Gen Intel® Xeon®/Core™ i7/i5/i3 Processor with Workstation-grade Intel® C246 Chipset
- 1500W power budget supports max dual 750W NVIDIA® Tesla®/Quadro®/GeForce® or AMD Radeon™ 3-slot graphics card
- Supports multiple rugged X-coded/A-coded M12 connections for GigE LAN, COM RS-232/422/485, and CAN Bus A/B
- Supports 5G/WiFi/BT/4G/LTE/GPRS/UMTS wireless communication
- Expansion : 2 PCIe x8, 2 PCIe x4, 1 Mini PCIe, 1 M.2 Key E, 1 M.2 Key B
- DC 12V to 55V Power Input, Ignition Power Control, TPM 2.0
- Optional VHub AIoT Solution Service supports OpenVINO based AI accelerator and advanced Edge AI applications

▼ Railway Security



▲ Industrial EV

intel partner  
Gold IoT Solutions



VHub

Vecow

# Specifications

## System

Processor	8-core 9th/8th Gen Intel® Xeon®/Core™ i7/i5/i3 Processor (Coffee Lake Refresh)
Chipset	Intel® C246
BIOS	AMI
SIO	IT8786E
Memory	4 DDR4 2133MHz SO-DIMM, up to 128GB (ECC/Non-ECC)
OS	Windows 10, Linux

## I/O Interface

Serial	4 COM RS-232/422/485, A-coded M12 Connector
CAN Bus	2 CAN Bus 2.0 A/B, A-coded M12 Connector
USB	- 2 USB 3.1 Gen 2 - 4 USB 3.1 Gen 1
LED	Power, HDD, PoE, Wireless
SIM Card	2 External SIM Card Socket

## Expansion

Mini PCIe	1 Mini PCIe sockets for PCIe/USB/SIM Card/Optional mSATA
PCIe	4 PCIe Slot : - 2 PCIe x16 slot with x8 signal - 2 PCIe x16 slot with x4 signal
M.2	- 1 M.2 Key B Socket (2280/3042/3052, PCIe x2/USB3(Default)/USB2) - 1 M.2 Key E Socket (2230, PCIe x2/USB)

## Graphics

Graphics Processor	Intel® UHD Graphics 630 <b>Independent Graphics 1</b> : By request <b>Independent Graphics 2</b> : By request
Interface	Multiple independent displays : - 1 DisplayPort : Up to 4096 x 2304 @60Hz - By requested Graphics Card

## Storage

SATA	2 SATA III (6Gbps) support software RAID 0, 1
mSATA	1 SATA III (Mini PCIe Type, 6Gbps)
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Storage Device	2 Front-access 2.5" SSD/HDD Tray

## Audio

Audio Codec	Realtek® ALC888S-VD, 7.1 Channel HD Audio
Audio Interface	1 Mic-in, 1 Line-out

## Ethernet

LAN 1 to LAN 4	Intel® I210 GigE LAN, X-Coded M12 Connector
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## Power

Power Input	DC 12V to 55V
Power Interface	4-pin Terminal Block : V+, V+, V-, V-
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Terminal Block

## Others

TPM	Infineon SLB9665 supports TPM 2.0, LPC Interface
Watchdog Timer	Reset : 1 to 255 sec./min. per step
Smart Mgmt.	Wake on LAN, PXE supported
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.

## Mechanical

Dimensions	375.0mm x 243.0mm x 215.8mm (14.76" x 9.57" x 8.50")
Weight	9.1 kg (20.06 lb)
Mounting	Wallmount by mounting bracket

## Environment

Operating Temp.	-25°C to 45°C (-6°F to 113°F)
Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @60°C
Shock/Vibration	- IEC 61373 : 2010 - Railway Applications : Rolling Stock Equipment, Shock and Vibration Tests
EMC	CE, FCC, EN50155, EN50121-3-2

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# Order Information

Model	M12 LAN	M12 COM	M12 CAN Bus	PCIe x8	PCIe x4	SSD Tray	USB	SIM
GPC-1000MX	4	4	2	2	2	2	6	2

## CPU List

Series	CPU	Cores	GHz	TDP (W)	CPU	Cores	GHz	TDP (W)	ECC RAM
Intel® Xeon®	E-2176G	6	4.6	80	E-2278GE	8	4.7	80	Yes
					E-2278GEL	8	3.9	35	
	E-2124G	4	4.5	71	E-2226GE	6	4.6	80	
Intel® Core™	i7-8700	6	4.6	65	i7-9700E	8	4.4	65	N/A
	i7-8700T	6	4	35	i7-9700TE		3.8	35	
	i5-8500	6	4.1	65	i5-9500E	6	4.2	65	
	i5-8500T	6	3.5	35	i5-9500TE		3.6	35	
	i3-8100	4	3.6	65	i3-9100E	4	3.7	65	
	i3-8100T	4	3.1	35	i3-9100TE		3.2	35	

## Optional Software

VHub AI Developer	AI Developer Kit
VHub ROS	AMR Developer Kit
VHub EtherCAT	I/O Control Platform

## Accessories

DDR4 32G	Certified DDR4 32GB 2666MHz RAM
DDR4 16G	Certified DDR4 16GB 2666MHz RAM
DDR4 8G	Certified DDR4 8GB 2666MHz RAM
DDR4 4G	Certified DDR4 4GB 2666MHz RAM
PWS-600W1	600W, 24V, 90V AC to 264V AC Power Supply
PWS-1000W-24V	1000W, 24V, 90V AC to 264V AC Power Supply
PWS-1500W-24V	1500W, 24V, 90V AC to 264V AC Power Supply
TMK2-20P-100	Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm
TMK2-20P-500	Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm
TMB-TMBK-20P	Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting
M.2 Storage Module	M.2 Key M Storage Module
5G Module	5G Module with Antenna
4G Module	4G/GPS Module with Antenna
WiFi & Bluetooth	WiFi & Bluetooth Module with Antenna
4G Module	4G/GPS Module with Antenna
WiFi & Bluetooth	WiFi & Bluetooth Module with Antenna

# Dimensions & Drawing

Unit : mm (inch)

