

Rugged conductive cooled Computer with additional 3072 CUDA-Cores (NVIDIA RTX 5000)

General Description

With the special engineering know-how and many years of experience, MPL designed another milestone in its 35 years of engineering. The PIP49R, a conductive cooled Xeon E-2276 9th generation CPU system with integrated NVIDIA RTX 5000 GPU card with 3072 CUDA-Cores. The total solution is conductive cooled, requires no fan, and can be operated in an environment of -20°C up to +55°C..

PIP40 Family Highlights

The PIP housings offer sufficient space for 2.5" SSD or other expansions like UPS, RAID..). Two mPCIe and three m.2 slots allow to expand the system very easy. The internal expansion bus allows to integrate PCIe/104 or PCIe cards. These expansion possibilities give a maximum on customization for additional interfaces and features. Particular precautions during the design have been taken that the entire system EMC is within the CE and FCC limits and standards like EN50155, IEC 60945 or MIL-STD-810 can be met.

Key features are:

- Up to 64GB DDR4 memory
- Fanless operation, also from -40°C to +55°C
- Rugged design
- Long term availability
- Extremely flexible
- AMT / vPro support

The PIP40 Family has been designed to withstand any harsh environments and extreme temperature conditions. The special rugged design, combined with the best industrial-grade components, offer high reliability and long-term performance.



All MPL products are 100% engineered & manufactured in Switzerland (since 1985).



Technical Features

Board Key Data

Processor	Xeon E-2276ME
Cores/threads	6 / 12
Clock speed	2.8 / 4.5 GHz
Passmark	14397
L2 Cache	12 MB
TDP	45W
Chipset	Intel CM246
Memory	64GB, (2x 32GB ECC DDR4 SODIMM memory modules)
BIOS	On-board soldered 32MB Flash, MPL engineered BIOS (AMI), customizable
TPM	Trusted Platform Support TPM 2.0
Watchdog Timer	Config. granularity 1-255 sec. or 1-255 min.
Indicator LED	Power, HDD, LAN

Mass Storage

SATA	2x SATA 3.0 ports (removable)
mSATA	2x mSATA Full-Mini Card combo socket with SATA 3.0 & USB 2.0
m.2	1x NVMe or SATA SSD
RAID	RAID 0/1/5/10 on SATA or mSATA (Intel RST)

Interfaces

Graphics	2x SDI ports, up to 4096x2160 2x DVI-D (LVDS / eDP up to 1920 x 1200 ESD protected NVIDIA RTX 5000 graphic card.
LAN	3x 10GB LAN port, AMT / vPro support
CAN	2x CAN ports
Serial	2x RS232 ports
IOs	16x digital I/Os
Audio	1x audio port

Interfaces

Serial Ports	Internal 4x full modem TTL (optional RS232 or RS422/485 ports on DB9 connectors)
HDAudio	Intel HDAudio signals, available on a 1 mm header, sound card (HDSOUND-1) is avail.

Expansions

mPCIe	3x mPCIe PCI Express Gen3, x1 lane & USB 2.0 (combined with mSATA)
m.2	2x communication slot (1x Key-A, PCIe/USB 2.0 & 1x Key-B, USB 3.x/ PCIe/SATA), dual SIM connector

Power

Input Voltage	10 - 32 VDC input range, ESD and EMC protected input (optionally up to 110VDC) Protection against reverse polarity, up to 150V load dump Combinded power button and ignition input
Consumption	5-100 Watt (Enhanced Speed Step Tech.)

Environment

Storage Temperature	-45°C up to +85°C (-49°F to +185°F)
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Relative Humidity	5% to 95% non condensing, optional coating available

Specifications are subject to change without notice

Standard Compliance

The PIP40 Family is designed to meet or exceed the most common standards. Particular references are:

EMC	EN 55022, EN 55024, EN 61000, MIL-STD-461E
Shock & Vibration	EN 60068
Environmental & Safety	EN 50155, MIL-STD-810, EN 60601, IEC / EN 62368
Approval List	CE, IEC 60945, IACS E10

Packaging

Chassis version	length	width	heights
IP67 MIL PIP4x	324	x 220.5	x 66mm (min.) (custom housings and connectors available)

The aluminum housings are internally chromated, externally powder coated or anodized, no ventilation holes. The cooling plate for the open frame versions is chromated. Depopulated solutions with headers can be offered.