

Rugged MIL/COTS SWaP-C Server Solution conductive cooled, with Intel® Xeon™ CPU

General Description

The MXCS is a high performance, low power and highly integrated Rugged Embedded Server, built in a special designed MIL IP67 housing. This allows to operate the MXCS in any environment as no fan or air vents are implemented. The design allows to use the required MIL-38999 connectors for the projects. Therefore, the MXCS solution can be used for any server application, where a flexible rugged solution is needed.

MXCS Highlights

The MXCS housings offer space for up to 2 x 2.5" SSD and comes with internal expansion options over PCI/104-Express and mini PCI Express interfaces. The rugged server is available in a sealed IP67 MIL housing and is designed to meet various standards like MIL-STD-810G, MIL-STD-704F, MIL-STD-1275D, CE, EN50155 or IEC 60945.

Key features are:

- up to 16 cores / Intel Xeon CPU
- up to 128GB ECC DDR4
- two 10Gbit ports
- mSATA / M.2 ports
- mPCIe / PCIe ports
- up to 8x SAS/SATA with RAID configuration
- conductive cooling concept
- fanless, -20°C to +60°C
- long-term availability guarantee*

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

* Typically 10 years or more, 20+ years repairable



All MPL products are 100% designed and manufactured in Switzerland.

The MXCS is available for different Industries and is the perfect embedded computer solution for industrial environments, railway applications, MIL/COTS applications, or whenever a rugged long-term available computer with cooling concept is needed.



MXCS configuration samples



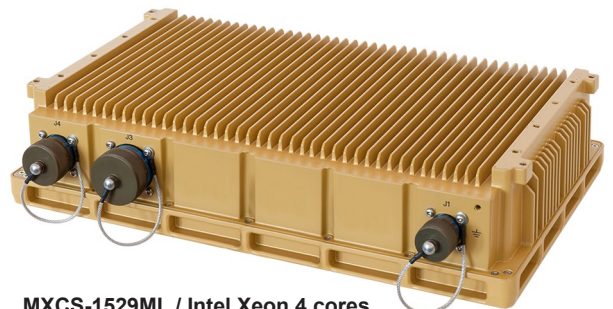
MXCS-1577ML / Intel Xeon 16 cores

- 4x 32GB DDR4 ECC (total 128GB)
- 2x 2.5" SATA SSD 1T
- 2x M.2 SSD 1T
- 1x BMC (1x RJ45 / 1x VGA)
- fanless / -20°C to +60°C
- 1x RS232
- 2x USB 3.0
- 3x LAN Gbit
- 1x GPGPU
- 19 - 110 VDC input



MXCS-1548ML / Intel Xeon 8 cores

- 2x 32GB DDR4 ECC (total 64GB)
- 2x 2.5" SATA SSD 1T
- 1x BMC (1x RJ45 / 1x VGA)
- fanless / -20°C to +60°C
- 2x RS232
- 2x LAN Gbit
- 2x 10Gbit SFP+ port
- 19 - 36 VDC input



MXCS-1529ML / Intel Xeon 4 cores

- 2x 8GB DDR4 ECC (total 16GB)
- 2x mSATA SSD 512GB
- 1x BMC (1x RJ45 / 1x VGA)
- fanless / -20°C to +60°C
- 2x LAN Gbit
- 2x RS232
- 19 - 110 VDC input

MPL AG is an ISO9001 certified company

Web: www.mpl.ch
Email: info@mpl.ch

MPL AG, Täfernstrasse 20, CH-5405 Dättwil
Phone +41 56 483 34 34 Switzerland

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Technical Features

Board Key Data	MXCS-1529ML	MXCS-1548ML	MXCS-1577ML
Processor	Intel Xeon D-1529	Intel Xeon D-1548	Intel Xeon D-1577
Clock speed	1.3 / 1.3GHz	2.0 / 2.6GHz	1.3 / 2.1GHz
Cores / threads	4 / 8	8 / 16	16 / 32
Smart Cache	6 MB	12 MB	24 MB
Memory	up to 128 GB DDR4 ECC memory in four RDIMM slots		
TPM	over separate module (INTEL or FPGA)		
Watchdog Timer	configurable granularity 10 ms, 1 s or 1 minute, results in a timeout from 2.5 seconds up to 4 hours.		
Indicator LEDs	power, reset, various others		
Interfaces			
Serial	1 x RS232 on connector 1 x RS232/422/485 on DB-9		
USB	4 x USB3.0 ports on type A		
LAN	2 x 1Gbit copper ports on RJ45 / 2 x 10Gbit SFP+ port (copper or fiber)		
Internal Expansions			
mPCIe	4 x mPCIe PCI Express Gen2		
PCI/104-Express	1 x PCIe x8		
PCIe x16	1 x PEG graphic expansion		
SATA	2 x mSATA / 2 x M.2 Key M ports		
RAID	optional RAID controller board with on-board memory and flash, up to 8 x SAS/SATA ports, RAID 0/1/5/10 support		
Baseboard Management Controller (BMC)			
Memory	DDR4-1600 up to 1GB		
Graphics	1 x VGA, ESD protected up to 1920 x 1200		
LAN	1 x GbE port, ESD protected		
BIOS	redundant AMI BIOS FLASH		
Power			
Input Voltage	19 - 36 VDC input range, ESD and EMC protected power input (redundant capability) reverse polarity protection, load dump protection reset & power button optional internal UPS system, optional galvanic separation, other voltage possible ignition input specifically for vehicles		
Power consumption	25 - 100 Watt (depending on CPU), Enhanced Intel Speed Step Technology		
Environment			
Storage Temperature	-45°C up to +85°C (-49°F to +185°F)		
Operating Temperature	-20°C to +60°C (Fanless)		
Relative Humidity	5% to 95% non condensing, optional coating available		
Standard Compliance			
The MXCS 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-810G, EN 60601, EN 60950		
Approval List	CE, IEC 60945, IACS E10		

Packaging

Chassis version	length	width	heights	weight	
MXCS-ML IP67 MIL version	TBD - to customer specifications				custom housings / connectors available
MXCS-CA Compact Aluminum	207mm	351mm	66mm	5 kg (11 lb.)	see housing specific datasheet MXCS-CA
MXCS-RK 19" Rack version	415mm	19"	2U	18.2 kg (40.1 lb.)	see housing specific datasheet MXCS-RK
MXCS-OF Open Frame	201mm	342mm	27mm	3.2 kg (7 lb.)	see housing specific datasheet MXCS-OF
The aluminum housings are internally chromated, externally powder coated or anodized, no ventilation holes					

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MPL AG, Täfernstrasse 20, CH-5405 Dättwil
Phone +41 56 483 34 34 Switzerland