

# Rugged MIL/COTS SWaP-C Server Solution

## conductive cooled, with Intel® Xeon™ CPU

### General Description

The MIL/COTS SWaP-C Server Solution was designed with the target to meet the MIL-STD-810 as well as parts of the DO-160 standards. The solution is installed in a compact IP67 housing with a total of eight D-38999 connectors including a dual fiber optical 10Gbit LAN port.

The MPL engineering approach has been taken very differently to most rugged solution in the market. The internal wiring has been eliminated as much as possible. The D38999 MIL connectors are soldered on special MPL designed rigid-flex PCBs. The EMI protection in each interface is integrated directly the connector on the PCBs. This will give best EMI efficiency and interface quality.

The MXCS-15xxML-C1 comes with numerous interfaces like DVI-D, USB 2.0, serial lines, LAN, 10Gbit fiber LAN as well as a wide power input. Additional expansions (CAN, 1553, ARINC...) can be done over the internal expansion interfaces such as mPCIe, m.2, PCIe or PCIe/104, These expansions can be done easy and quickly be integrated into the system.



To interface to the standard embedded CPU board from MPL, mating interfaces boards (ICC) have been designed. The flex part of the connector PCBs are connected to the ICC which is interfacing cable free directly to the CPU board.

With this concept, the MXCS can basically meet any specification in rugged computing environments specified in various MIL standards. The CPU board as well as the ICC and connector PCBs can be coated and bonded to increase the robustness even further.

### Technical Features

Board Key Data	MXCS-1548ML	MXCS-1577ML	MXCS-1587ML
Processor	Intel Xeon D-1548	Intel Xeon D-1577	Intel Xeon D-1587
Clock speed	2.0 / 2.6GHz	1.3 / 2.1GHz	1.7 / 2.3GHz
Cores / threads	8 / 16	16 / 32	16 / 32
Smart Cache	12 MB	24 MB	24 MB
TPM 2.0	TPM 2.0 with EAL4.0 optionally supported		
Memory	Up to 128 GB ECC DDR4 can be installed		
Mass Storage	The solution provides the following interfaces: 2 x m.2, 2 x mSATA, 2 x SATA (removable or fixed). If a RAID configuration is needed, then this can be configured as well.		
BMC	The MXCS-ML has integrated an independent BMC. The system comes with redundant AMI Boot Flash.		
<b>Interfaces</b>			
The selected connectors in this solution are: (other connectors or interfaces are possible)			
Power	TVP02RW-9-35PN ( 6-pin )	LAN	TVP02RW-15-35SN ( 37-pin )
Serial	TVP02RW-13-35SN ( 22-pin )	LAN	RJFTV22G00 ( RJ45)
USB2.0	USBFTV71ZN (USB)	LAN	RJFTV22G00 ( RJ45)
BMC	TVP02RW-15-35SA ( 37-pin )	10Gbit LAN	M28876/1B1S1
<b>Power</b>			
Input Voltage	19 - 36VDC input voltage range, ESD and EMC protected / Ignition input specifically for vehicles Optional MIL-STD-1275D and/or MIL STD-704F Optional internal UPS system, optional galvanic separation, other voltage possible		
Power Consumption	Complete system 40-100 Watt (depending on CPU and RAM), Enhanced Intel Speed Step Technology.		
<b>Environment</b>			
Storage Temperature	-45°C up to +85°C		
Operating Temperature	-20°C to +60°C, fanless (extended temperature are optionally possible)		
Relative Humidity	5% to 95% non condensing, optional coating available		
Schock	3 shocks in each dir. of the 3 axes, 35g, 18ms, half sine/ final peak saw tooth/ trapezoidal Vibration broad-band random (operating) 10Hz-250Hz, 5.4m/s <sup>2</sup> , 10 minutes Vibration broad-band random (operating after shock) 10Hz-250Hz, 42.5m/s <sup>2</sup> , 5 hours		
Dimension	296 mm x 220 mm x 66 mm		

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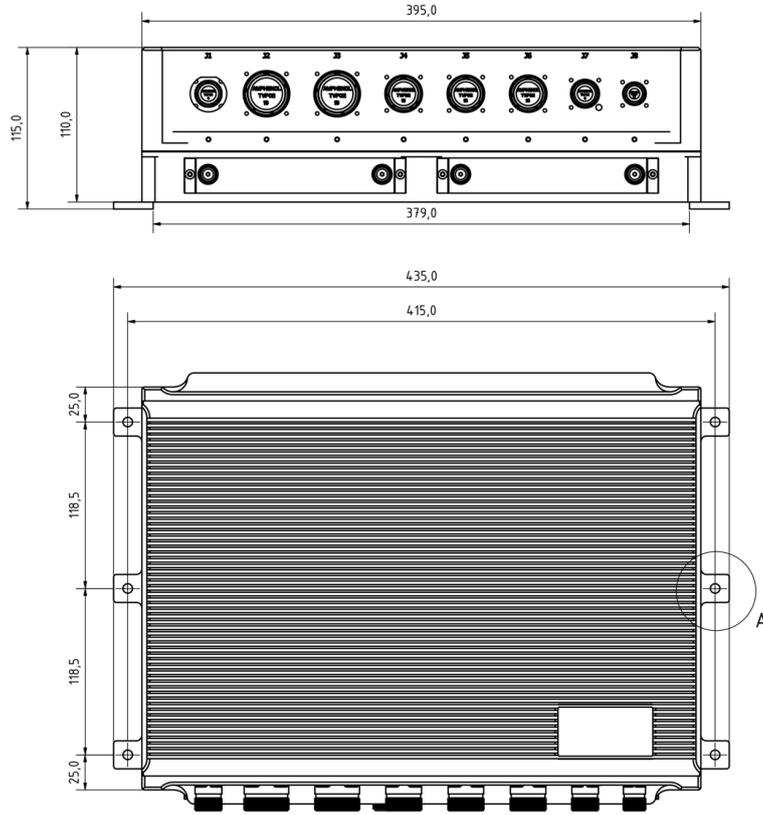
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## Dimensional drawing of the MXCS-15xxML-C1



## Block diagram MXCS-15xxML

