

Latest Embedded SWaP-C Fanless Solution with 9th Generation Intel CPUs

With the MILCOTS-4x, MPL presents a rugged, fanless, embedded computer based on the 9th Generation Intel processor. The design was developed with the goal to meet the MIL-STD-810 as well as parts of the DO160 specifications, next to other standards. The engineering approach has been taken very different to most rugged solution in the market.

Dättwil Switzerland, October 2020

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. To interface to the standard embedded CPU board from MPL, a mating interface board (ICC) has been designed. The flex part of the connector PCB is connected to the ICC which is interfacing cable free directly to the CPU board. With this concept MPL is able to meet basically any standard in the rugged computing environment. If required, the boards can be coated and bonded to increase the robustness even further.



What are the technical cornerstones of this solution?

The heart of the system are 9th Gen Intel CPUs soldered on board. For best heat dissipation, the CPU is conductive cooled without the need of a heat-pipe. The solution can be operated in any mounting direction.

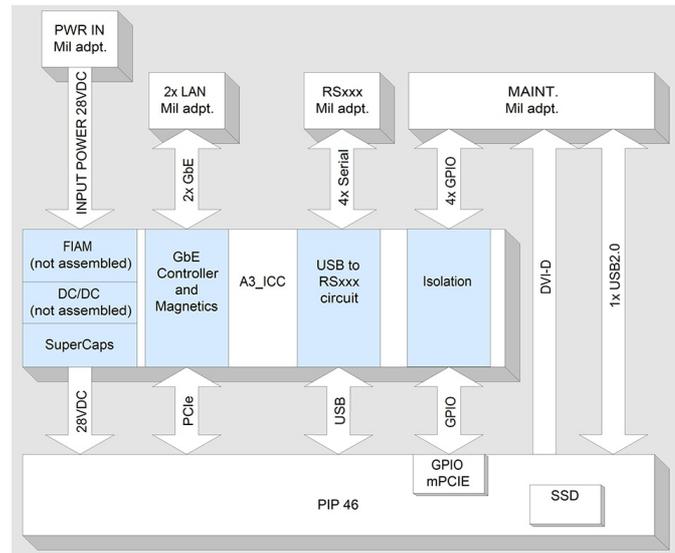
The MILCOTS-4x comes with interfaces like DVI-D, USB 2.0, GPIOs, serial lines, dual LAN, and a wide power input (10-36VDC). Additional expansions can be done over the internal expansion interfaces such as mPCIe, m.2, or PCIe/104, WLAN, LTE, GPIOs, CAN, 1553... These expansions can be done easy and quickly be integrated into the system. This makes the solution flexible and cost efficient customizable. As mass storage, SATA, mSATA, or NVMe can be chosen.

The selected connectors in this solution are:

- Power: TVP02RW-9-35PN (6-pin)
- Serial: TVP02RW-17-35SN (55-pin)
- LAN: TVP02RW-15-35SN (37-pin)
- DVI/USB: TVP02RW-15-35SA (37-pin)

This MILCOTS-4x can be put into various standby mode levels (even below 95 mW) and can also be started with Wake-on-LAN (WOL). The operational power consumption is between 5 and 65W and the power consumption level can be limited. This enables the use for power savings as well as for power hungry applications.

The MILCOTS-4x is 100% engineered & manufactured by MPL AG in Switzerland. All MPL products are designed for long-term availability and will be available for at least 10 years. MPL's own component stock guarantees repairs for up to 20 years. Wide temperature ranges can be fulfilled and are tested in MPL's own climatic chambers according customer's request.



typical block diagram

For more specific information, please visit www.mpl.ch/t2061.html or contact MPL AG directly.

About the Company

MPL AG is located in Switzerland and was founded in 1985. Since the beginning, MPL stands for robust designs, long-term availability, low power consumption, and fanless concepts. The products are designed from scratch to succeed in extended temperature and meeting the high demands of rugged environments.

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