

NVIDIA

## Conductive-cooled computer with two CAN interfaces

MPL designed the Milcots4x-GPU, a conductive-cooled Xeon E-2276ME and i7-9850HE CPU (central processing unit) system with integrated Nvidia RTX 5000 GPU (graphics processing unit) cards with 3072 Cuda Cores.

The Switzerland-based company provides computing and network solutions that work without the need of active cooling. The conductive-cooling solutions are not achieved by using heat pipes. The concept starts with the design of the CPU boards, its peripherals, and the selection of parts. This method allows to mount the solution in any orientation a customer needs or has space, compared to heat pipe solutions, said the company. Only low power consumption and long-term available parts are selected, they added.

The heat generating components are being placed without compromises on the back side of the base board. This, to connect all hot spots directly to the surface of the case. To achieve this, know-how is needed to allow changes of the reference design Intel provides. According to the company, most in the market available products are derived from the reference design of Intel, which are created for the commercial computers. Needless to point out that such designs are not ideal for a rugged environments, the company continued.

MPL designed the Milcots4x-GPU, a conductive-cooled Xeon i7 9<sup>th</sup> generation CPU system with integrated Nvidia RTX 5000 GPU card. Other GPU cards can be used in place of the RTX 5000. The total solution requires no fan and can be operated in an environment of -20 °C to +55 °C. The D38999 MIL connectors are soldered on the company's designed rigid-flex PCBs (printed circuit board). The product comes with two CAN interfaces.

In addition to the GPU card, the system comes with additional features like up to 128 GiB ECCDDR4, GigE ports, isolated serial ports, isolated digital I/Os, mounting of two 2,5-inch SSD, 12 V<sub>DC</sub> to 32 V<sub>DC</sub> input according to MIL-STD-1275D as well as an IP67-rated housing. The product has been designed to withstand harsh environments and extreme temperature conditions.



*The solution requires no fan and can be operated in an environment of -20 °C to +55 °C and comes with two CAN interfaces (Source: MPL)*

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