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Computer for railway applications

At Innotrans 2022 in Berlin (Germany), Syslogic presents its the latest generation of Intel Atom-based railway computers. The RML-R 82 is based on the x6000E processor platform and is suitable for real-time applications. It supports ISO 11898-2, ISO 11898-3, as well as CAN FD.

The RML-R 82 supplements the portfolio of X86-based embedded systems for railway application (Source: Syslogic)

The railway computer can be used as a vehicle-to-cloud unit, for collecting telemetry data, or as a train management system. The company is using the Intel Atom x6000E processor platform (Elkhart Lake) for the first time in the RML-R 82. Compared to the predecessor, it has almost twice the computing power with similar power consumption, said Syslogic. The product also supports time-sensitive networking (TSN), which enables real-time applications.

The product can be configured via power inputs for DC voltage between 16,8 V and 137,5 V. It has serial COM interfaces and is expandable with digital I/O or analog inputs. According to the company, the motherboard of the device is equipped with the latest generation CAN controller. Besides high-speed CAN (ISO 11898-2) and low-speed CAN (ISO 11898-3), it now also supports CAN FD. The two CAN (FD) interfaces can be configured without feedback, if required. Optionally, the railway computer can be configured with 5G, 4G, LTE (UMTS/GSM fallback). Among other things, it enables GNSS function. This feature gives the computer positioning accuracy of one to two centimeters via RTK (real time kinematic) surveying, said the company. Furthermore, the rotation angle of a vehicle can be determined using the heading function.

The computer was developed for railway applications. Accordingly, it meets standard EN 50155, OT4. Furthermore, it offers a failure bypass of at least 10 milliseconds according to EN 50155, class S2 as well as complete 50155 compliance with regard to shock and vibration (EN 61373), EMC (electromagnetic compatibility), and electrical insulation requirements, explained the company. In addition, the railway computer meets the fire protection standard for railway vehicles according to EN45545-2.

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