



TRANSPORTATION

APPLICATION EXAMPLE

Modular system platform for rolling stock applications

The HeiSys system platform combines the advantages of available and established plug-on modules and offers on the one hand full scalability in computing power and on the other hand multidimensional modularity regarding communication and I/O interfaces.

Depending on the complexity of the design and the requirements for bandwidth, signal diversity, performance and power consumption, appropriate COM Express boards can be selected and thus the computing power scaled. By combining the COMe processor module with a standardized FPGA SMARC module and the associated FPGA design, the greatest possible variance of required interfaces can be mapped. This eliminates the need for complicated, time-consuming design or the complex coordination of a wide variety of components.

Full flexibility with regard to wireless transmission technologies is ensured by the use of standardized and future-oriented M.2 interfaces. The system platform is designed for the use of Wi-Fi, LTE, 5G, UMTS, GSM, LPWAN (LoRaWAN, etc.), Bluetooth, GPS GLONASS multi-band radio modules for use in railroad operations.

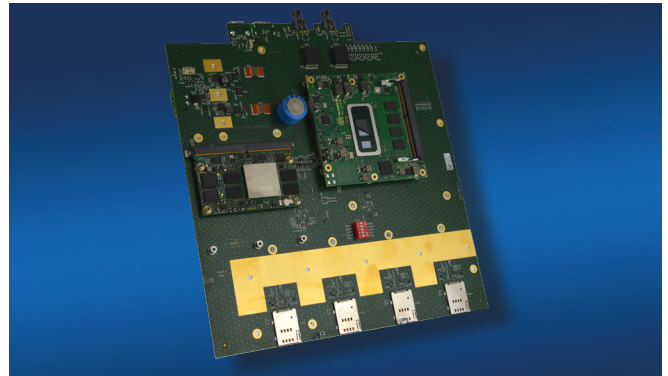
The EN 50155 approval means that the compact system is certified for mobile use as rolling stock or for wayside monitoring. Due to the absence of moving parts such as fans, the reliability and the MTBF is significantly increased. The system guarantees operation in the extended temperature range between $-40\text{ }^{\circ}\text{C}$ and $+85\text{ }^{\circ}\text{C}$. Here, the system can take over the tasks of a gateway, a passenger information system, a wireless access point, among other things, or even act as a diagnostic and monitoring tasks on the train. HeiSys supports Windows 10 / IoT as well as all Linux distributions with current kernels. The concept uses main line drivers or the drivers provided by the corresponding modules to ensure smooth commissioning and operation.

HEITEC offers its customers a flexible system platform that can be individually adapted and which, due to its upgradeability, is a secure and cost-efficient investment in the long term.

Rugged and reliable embedded system platform



Rear view of the closed case with 2.5" raid carrier, SIM card slots as well as display and peripheral interfaces.



Baseboard - customized combination of present and upcoming module standards possible.

Technical Summary

- › Intel® Core™ i7 on COM Express module
- › Up to 48 GB DDR4 RAM
- › 512 GB NVMe Storage NVMe via M.2
- › Four M.2 slots each with dual micro-SIM for GSM (2G), UMTS (3G), LTE (4G), 5G and GNSS
- › One M.2 slot for Wi-Fi/Bluetooth
- › Serial interfaces RS-232/422
- › Digital I/Os, relay outputs, optocoupler outputs and odometer input
- › 3x Gb Ethernet, 2x USB 3.0 and 2x DisplayPort
- › Wide range DC power supply (14.4-154 V) reg. EN 50155
- › Compliant with EN 50155, EN 60068, EN 50121, EN 50561/55024, EN 62368, EN 61373, EN 50153/50124, EN 45545 HL3, REACH and RoHS

Customer Benefits

- › Rugged and reliable system platform (no moving parts)
- › Scalable and multi-dimensional adaptable to requirements
- › Reusability of a major part of the components in case of upgrades
- › Possibility of using an AC power supply
- › EN 50155 compliant (incl. conformal coating)
- › Extended temperature -40 °C to +85 °C
- › Provides present and upcoming wireless modules

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