CAN FD in vehicle networking

The Star Cooperation Group has expanded its product family in vehicle networking technology with the Flex Device-L. The development tool for vehicle networking supports non-ISO CAN FD.

The Flex Device-L is delivered with CAN FD-compatible transceivers (Photo: Star Cooperation)

FLEX DEVICE-L OFFERS SOLUTIONS FOR ELECTRONIC electronic control units and associated components in vehicle networking to car manufacturers and their suppliers. The multifunctional bus control unit and its variable interfaces support current and upcoming bus systems, e.g. non-ISO CAN FD, Ethernet, and Broad R-Reach. The tool is suitable especially in application fields where communication runs across different bus systems. Combined with the software range Flex Config RBS, Flex Device-L facilitates the implementation of control unit environments for developers, from prototyping up to testing.

The Flex Device-L lets users implement complex gateway topologies, because it comes with ten configurable bus channels that can be allocated flexibly. In addition to the hitherto existing bus interfaces high-speed CAN and Flexray, it now also serves non-ISO CAN FD and Ethernet. Due to an integrated FPGA, the following bus configurations are feasible: 10 CAN, 8 Flexray (4 + 4 A/B channels) or 8 CAN FD, up to 7 ETH or BRR, as well as combinations of each of those. In addition, 2 of both Ethernet and high-speed CAN controllers are built in independently from the FPGA. The included FPGA image comprises the following configuration: 4 Flexray, 2 + 2 high-speed CAN, 1 Ethernet, and 1 Gigabit-Ethernet. Further FPGA images are generated on request.

A Gigabit-Ethernet interface is available for communication with the personal computer. This interface can also be used as a bus interface. The data traffic of up to 7 Ethernet bus interfaces can be forwarded to a corresponding transceiver via the integrated Gigabit-Ethernet switch (fast uplink connection). With the performance of the new processor type ARM Cortex-A9 dual core (800 MHz) including a 1 GiB DDR3 memory a higher data throughput can be reached, which is especially tangible in complex applications. Configurations, signal manipulations, and bus analyses can be wirelessly conducted via the optional WLAN/Bluetooth module. This extension will be particularly interesting as soon as the analyzing application Flex Confic Analyzer is also available for Android devices, since then no additional measurement equipment will be necessary any more.

Due to its robust construction, this device is suitable for operations in rough environments at -40 °C to +85 °C with IP67. It boots up in a split second and comes with both wake-up and sleep support. Therefore, it can be used as a fully-fledged alternative for control units in bus communication. Analog input and digital I/O ports (ADI, DIO) for data logging and trigger signal processing increase the flexibility of the device. A Micro-SD card slot is built-in for recording the entire data traffic, and the device contains a USB interface for reading the measured data via USB. Another internal slot can be used freely, e.g. for an additional CPU in case of computationally intensive tasks.

About the Star Cooperation

For almost 20 years, the Star Cooperation (Germany) has been offering operative services paired with consulting and engineering competence. The result is three divisions: Consulting & Business IT, Engineering & EE-Solutions, as well as Media & Logistics. Last year, the Star Cooperation Group acquired the Goeppingen-based company Eberspaecher Electronics. Now, the two Star companies Eberspaecher Electronics und Berger Elektronik have merged their solutions portfolio into one offering for the automotive electronics development of car manufacturers and their suppliers.

The EE-solutions portfolio comprises practical standardized products for the networking, energy, as well as sensor/actor technologies, and the development by proxy of special products, test benches, testing boards, and applications/embedded software. The production line is equipped with a fully automated PCB assembly. In addition, the workshops produce cable sets and install and modify vehicles to order.