

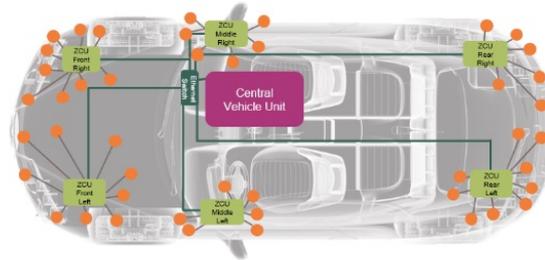
MICRO-CONTROLLER

CAN XL and CAN routing function integrated

At CES 2022, Infineon has launched the Aurix TC4x family intended for use in ADAS (advanced driver assistance system) control units. The MCU features CAN, Ethernet, and PCI connectivity.

The industry's rapid transition to e-mobility as well as the emergence of connected, smart, and automated cars, is having a tremendous impact on the architecture of tomorrow's vehicles. New features such as ADAS, autonomous driving, and electrification require a new level of system integration. This exponentially increases the complexity of networked ECUs (electronic control units) in the vehicle. Infineon is the first chipmaker announcing an MCU supporting CAN XL specified in CiA 610-1. Besides CAN XL and CAN FD, the Aurix TC4x family offers multiple high-speed interfaces such as PCIe 3.0, 5-Gbit/s Ethernet and xSPI as well as 10BASE-T1S Ethernet. CAN SIC XL transceivers as specified in CiA 610-3 will be also in Infineon's product portfolio, soon.

Special routing hardware accelerators, such as the DRE and CRE have also been integrated to further increase performance and reduce the load on the CPU during routing and frame formatting. These routing accelerators process the high number of incoming frames from the CAN interfaces and ensure subsequent routing to various possible destinations (memory, CAN, Ethernet or PCIe interface). The accelerators also support the integration of CAN frames that are "tunneled" into Ethernet frames as standardized in IEEE 1722. These hardware mechanisms enable the seamless transfer of latency-critical CAN frames via Ethernet without putting a load on the CPU. In addition to the CRE and DRE, the high-speed Ethernet bridge supports Ethernet packet forwarding, allowing link redundancy using daisy chain and ring topologies. As a result, the MCU can address safety-critical applications with low latency requirements.



Ethernet / PCIe	Network Interfaces			Accelerators
up to 5 Gbit Ethernet	HSSL	eMMC	PC	CAN Routing engine
10/100 Mbit Ethernet	CAN-XL	SENT	MSC	Data routing engine
PCIe 3.0	CAN-FD	SPI	PSI5	Ethernet bridge
	LIN	FlexRay	PSI5S	

The Aurix TC4x family is designed for ECUs with gateway functionality and provides therefore CAN XL and CAN FD ports as well as multiple Ethernet interfaces (Source: Infineon)

[hz](#)