Product brief

24V Automotive gateway

Automotive/CAV Ethernet gateway evaluation board

Infineon has combined its wealth of experience in microcontroller design to create a new 24V Automotive Gateway evaluation board that can cover a broad range of automotive and CAV applications. Either for gateway, sensor fusion or telematics systems, this new evaluation board is the ideal solution for bringing projects out of the paper, being the right environment for rapid prototyping while minimizing R&D efforts and time to market.

Gateway in CAV:
Trailer and tractor E/E overview
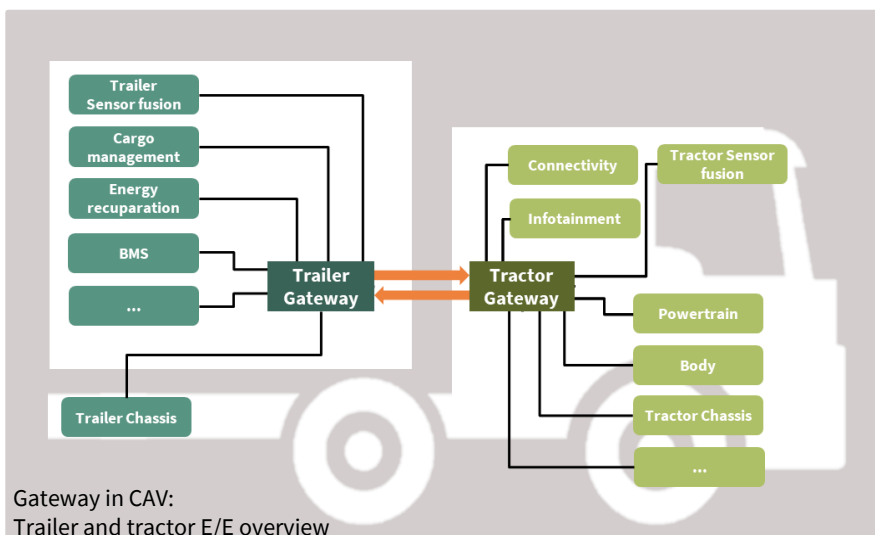
The new 24V Automotive gateway board features two powerful AURIXTM TC397 microcontrollers combined with the RTL9047AA automotive Ethernet switch from Realtek. The two AURIX™TC397 bring the well-known multicore computing performance, flexibility, scalability, integrated safety and security support of the AURIX™ 2nd generation family, while supporting the latest communications interfaces, featuring a Gigabit Ethernet interface, multiple ISO 11898-1-compliant CAN FD channels, as well as LIN and Flexray channels. An additional eMMC interface for external flash interfacing enables local data storage, supporting software-over-the-air update concepts. Realtek's RTL9047AA automotive Ethernet switch controller features five integrated

Key features

> 2x AURIX™ TC397 connected via 2 HSSL connections

> 24 V compliant with high level of integration (can also operate in 12V)

> Realtek RTL9047AA Automotive Eth. switch

> 16x CAN-FD, 4x LIN, 4x Flexray channels

> 5x Ethernet 100Mbit with PoDL

> 1x Ethernet 1 Gigabit

> Raspberry pi like extension header

> OPTIREG™ PMIC (TLF30682)

Key benefits

> AURIX™ Computing Performance, flexibility, scalability, integrated safety and security support

> Specially designed for 24V architecture systems (CAV)

> Fast prototyping and minimization of R&D resources

> Multiple connectivity capabilities

Applications

> Gateway

> Sensor Fusion

> Telematics systems

> Multipurpose CAV applications

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100Base-T1 PHY transceivers, one fast Ethernet PHY and up to two full featured xMII interfaces to provide access via an external CPU or to a cascade switch. The RTL9047AA switch is AEC grade 1 qualified. The new 24V Automotive Gateway board is prepared to address the most challenging E/E architectures. The AURIX™TC397 is connected with a 1Gbps RGMII port to the Ethernet Switch for data transfer and a SPI channel for managing the Switch. The RTL9047AA provide five 100Base-T1 Ports together with the Rosenberger H-MTD® connector set provide the right feature set to connect the Automotive Gateway Board to an In Vehicle Network. 16 CAN-FD connections, 4 LIN and 4 FlexRay channels in total, half on each CPU allow bridging of different network topologies. CPU A offers in addition a PSI5-S connection with 4 channels. CPU B provides a raspberry pi like extension header to add extension Boards like pHAT. Both CPUs are connected with two high speed HSSL channels and one SPI channel.

AURIX™ TC3xx safety architecture was combined with Infineon's OPTIREG™ PMIC (TLF30682) muiti-rail supply to efficiently meet ASIL-D requirements.

The board also does not compromise on security. The second generation of the programmable Hardware Security Module (HSM) is available across the AURIX™ TC3xx family for secure on-board communications and to prevent hardware manipulation such as tuning. Infineon's Trusted Platform Module (TPM) SLB9670 is the latest product featuring a fully TCG TPM 2.0 standard compliant module connected via SPI to the AURIX™.

For more Information about components contact these companies direct

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Additional information
For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

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