

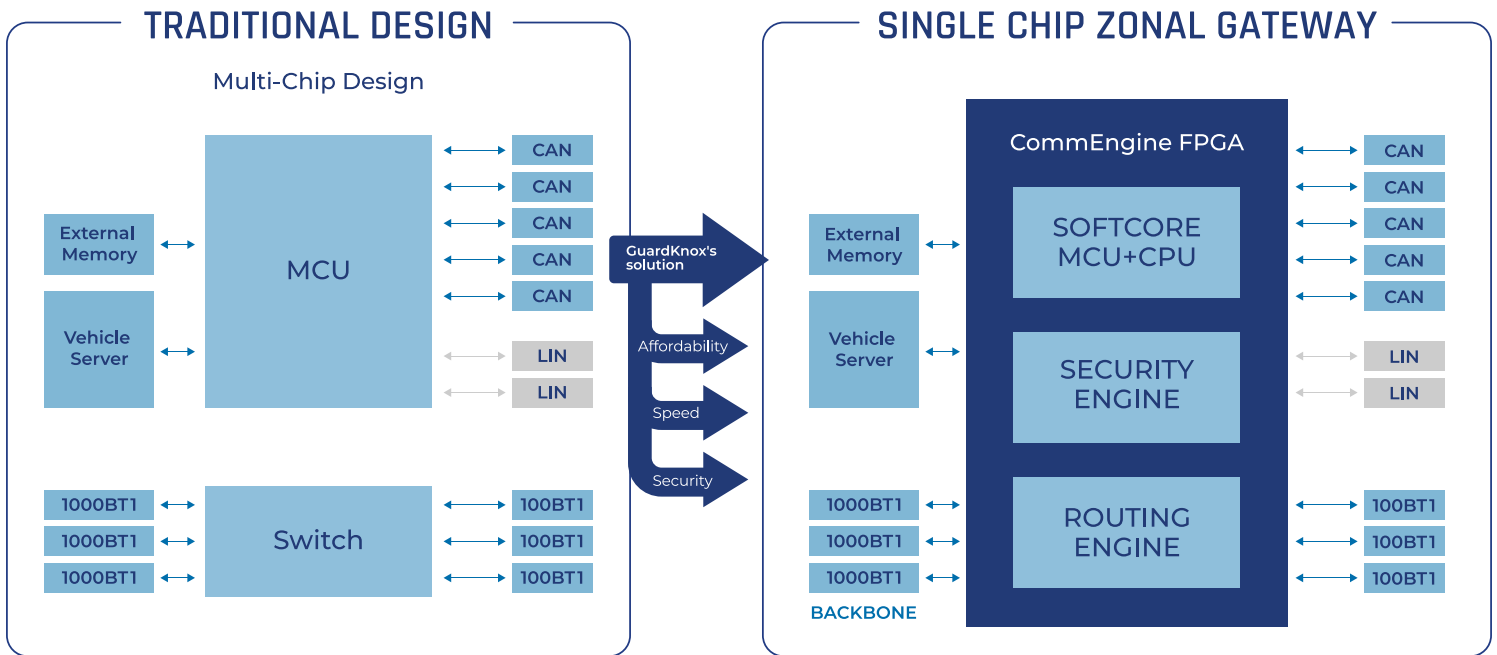


# F.A.S.T.E.R. COMMENGINE

## INTRO

GuardKnox CommEngine™ is a single-chip solution that implements Zonal Gateway (Zone Controller) functionality and enables high-performance and cost-effective communication routing. The safe and secure design performs routing actions using hardware to allow for ultra-low latency with multi-gigabit bandwidth, addressing current automotive needs in connectivity and scalability.

- E/E architecture is transitioning into the Zonal concept, increasing the need for low latency routing decisions (due to multi-hop routing) and in parallel supporting the increasing multi-gigabit traffic through the ring backbone.
- Backbone HPC are becoming high-performance routers that need to move traffic around the backbone with extremely low latency to allow proper operation of end-to-end processes between ECUs in different zones.
- Zonal Gateways are becoming communication bottlenecks, trying to balance cost-effective design with an ever-increasing amount of interfaces and traffic requirements in the zone.



\* This configuration can be built-to-spec or customized according to technical requirements

## KEY FEATURES

- Full communication routing between standard interfaces CAN/CAN-FD/LIN/Ethernet
- Automotive Ethernet Support - 10Base-T1s, 100Base-T1, 100Base-T1/1000Base-T1
- Standard Ethernet Support 10/100BaseTx, 10/100/1000BaseTx
- Supports built-in L3 Ethernet switch
- TSN Support on Ethernet interfaces
- Supports wide spectrum of AUTOSAR PDU routing capabilities
- Routing configuration from standard ARXML
- Custom interfaces supported - e.g. digital sensor interfaces, analog sensor interfaces, SPI, I2C, etc. Including transfer of custom interfaces into PDU internally
- Communication security and tamper-proofing capabilities
- Communication verification and firewalling
- Softcore µC support with ability to run control logic internally
- Support external RAM and Flash memory
- Support communication with external µP/µC
- Provided as IP core, FPGA or ASIC

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## PRODUCT USE CASES

Interfaces and cores could be added or removed per demand:

**Sub-Zonal Gateway** – targeted at localized aggregation of low bandwidth interfaces (CAN, LIN, sensors, I/O) into a single high bandwidth upstream interface (Ethernet) such as a sub-zonal door module.

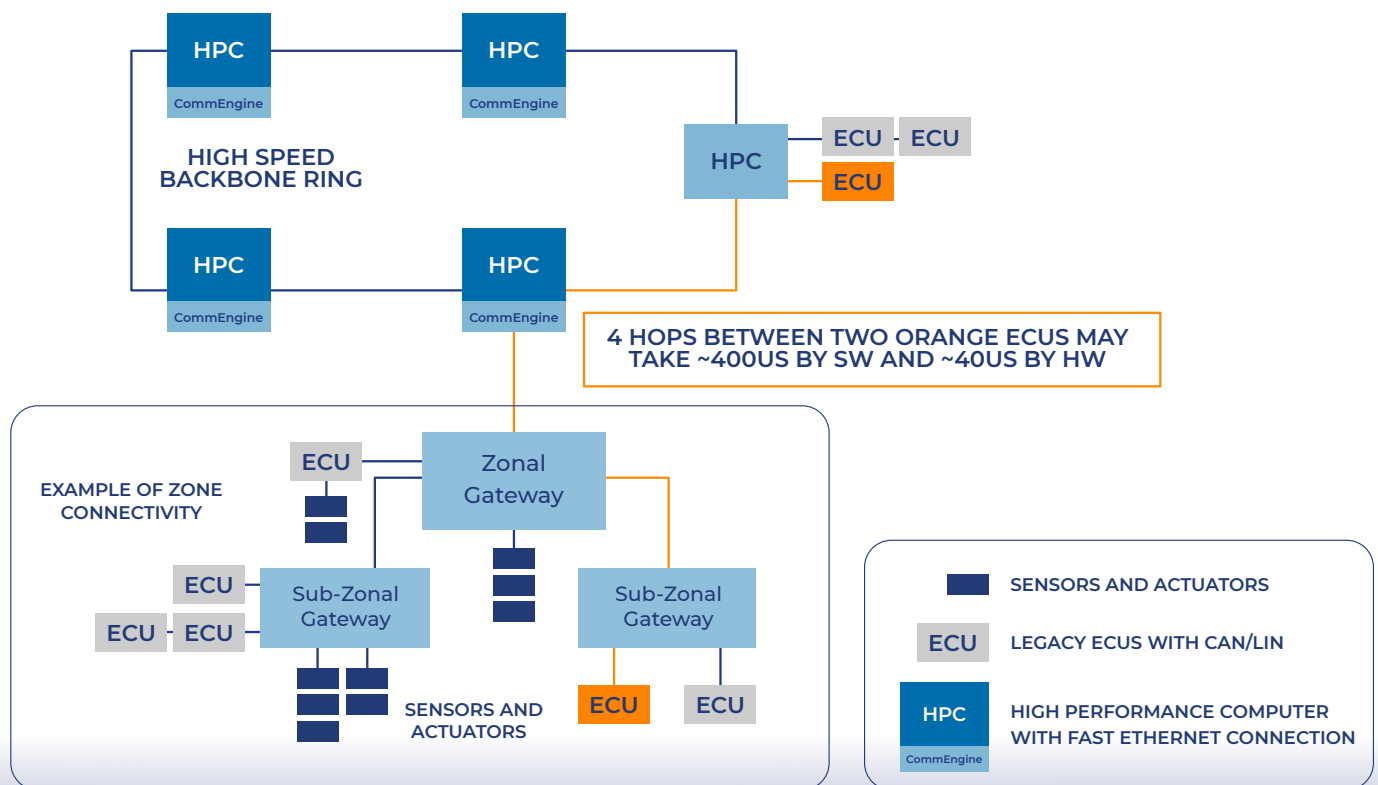
**Zonal Gateway** – targeted at Zonal GW application and used for routing between low-speed and high-speed interfaces, PDU construction and reconstruction, streaming, security and multi-gigabit switching. Additional computation cores MCU/CPU/GPU/NPU can be added or removed according to specific applications acceleration needs.

**HPC connectivity** – CommEngine can be also integrated in HPC for interconnection of high-bandwidth Backbone and external Sensors, ECUs and Gateways.

## KEY BENEFITS

- Networking and Applications acceleration
- Easy to integrate single chip solution
- Cost reduction from MCU + Switch solution
- Wiring harness reduction by enabling Zonal Architecture.

SEE ALL OUR PRODUCTS



Contact us at [info@guardknox.com](mailto:info@guardknox.com) to hear more!