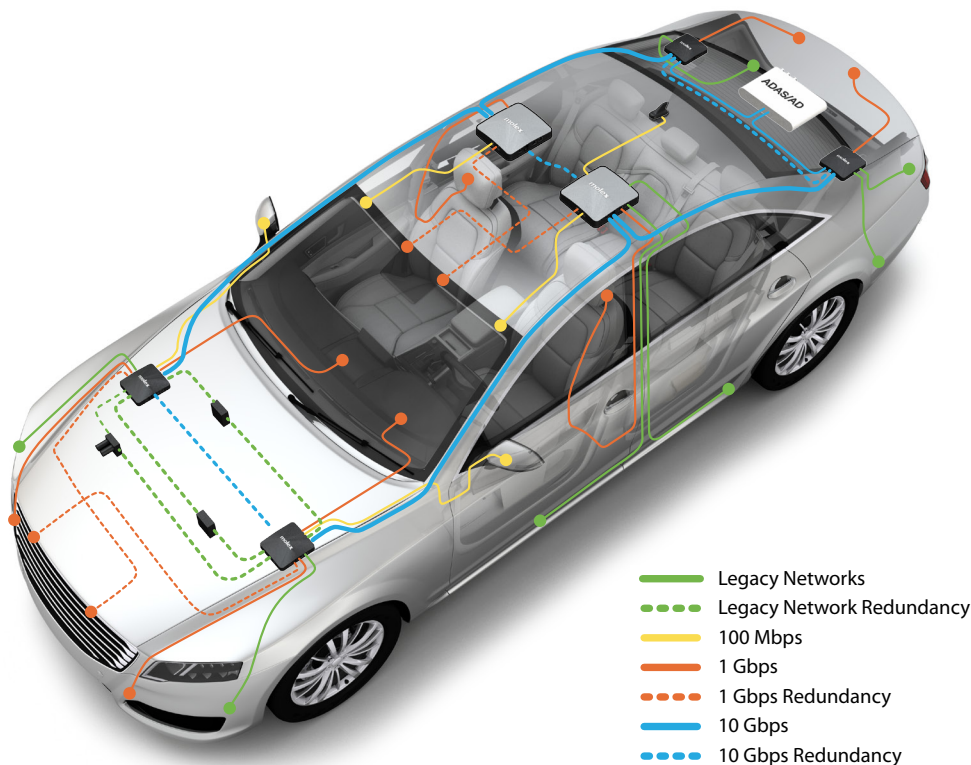# molex

Vehicle Gateway Solutions

Vehicle manufacturers are facing new challenges as they build next-generation, intelligent and autonomous vehicles. They require adaptive connectivity solutions with seamless end-to-end network integration for a myriad of hardware, software and services.

Molex Connected Mobility Solutions vehicle gateway delivers a 10 Gbps data rate and signal integrity performance while integrating mission-critical features, such as network traffic prioritization, system scalability and security.

Molex's new vehicle networking platform provides advanced virtualization, edge compute, network performance, flexibility, failover features and built-in security. Molex vehicle gateways connect legacy ECU devices to the in-vehicle Ethernet network, facilitate various Ethernet protocol communications throughout the chassis, and to the cloud. This uniquely scalable in-vehicle network solution can be rightsized to enable autonomous vehicle connectivity and address computer and bandwidth goals.

Multi-Zone Gateway Vehicle Architecture

Legend:
- Legacy Networks
- Legacy Network Redundancy
- 100 Mbps
- 1 Gbps
- 1 Gbps Redundancy
- 10 Gbps
- 10 Gbps Redundancy

CONNECTED MOBILITY SOLUTIONS

KEY CAPABILITIES

Automotive Ethernet Connectivity
Legacy Automotive Connectivity
PKI Authentication Certificate
Multi-Zone Fail Operational
Machine Learning Integration
Firewalls and VLAN Routing
Diagnostics: BiST, DIOP, Link QoS
AUTOSAR Classic
Time Sensitive Network (TSN) – AVB

NEXT GENERATION

Hypervisor VM Support
TSN: 802.1 AS, Qci, Qbv, Qav
Intrusion Detection and Protection System
AUTOSAR Adaptive
Secure Boot
Functional Safety – ISO 26262

KEY INTERFACES

10 Gbps 10GBase-TX Ethernet Ports
2.5 Gbps Base-TX Ethernet Port
1 Gbps 1000Base-T1 Ethernet Ports
100 Mbps 100Base-T1 Ethernet Ports
USB 2.0 OTG
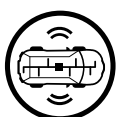CAN-FD ports
LIN Ports

NEXT GENERATION

USB 3.1 Gen1 (5 Gbps)
LVDS Inputs
HDBase-T Port
MOST, FlexRay

MARKETS

Automotive
Commercial Vehicles
Industrial Vehicle

KEY APPLICATION

ADAS – Advanced Driver Assistance Systems
AD – Autonomous Driving

Specifications

Software Stack

Certicom Key Manager					User App(s)

User App(s)
Safety App(s)
Key Agent
Secure CAN
Secure COM
GPIO/Diag Drivers

AUTOSAR Adaptive
AUTOSAR Classic
OTA Diagnostics Client
UDS Client
UDS Server
Safety Supervisor

NEXT GENERATION
Switch Configuration TSN
Router Task → Router Task

AS | Qbv | Qci | Qav | Port VLAN
ETH Driver
CAN Drivers | LIN Drivers

VM RTOS | VM Safe OS | RTOS Native | AUTOSAR/RTOS

Hypervisor

HARDWARE

Application Processor | Gateway Processor
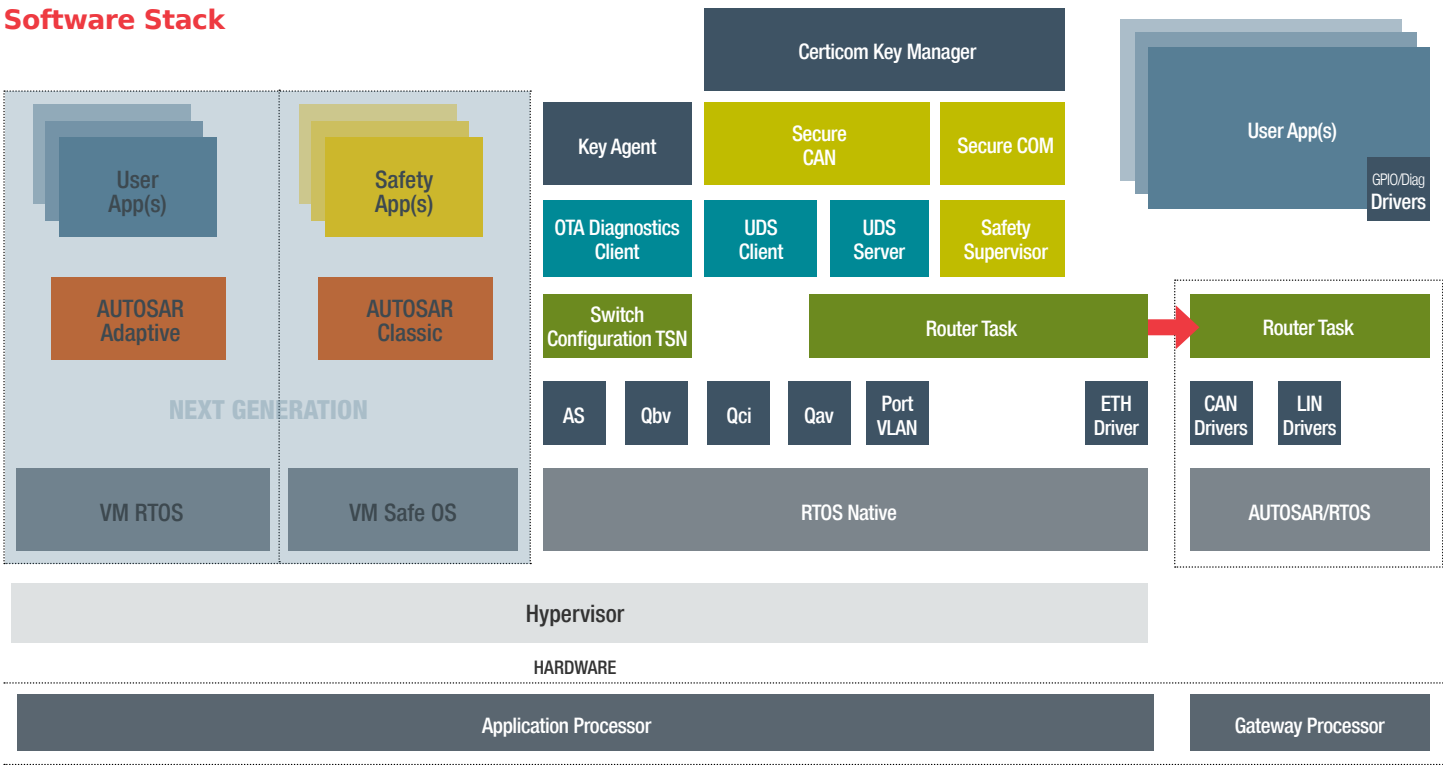
Gateway Connectivity Solutions

	HSAutoLink I	HSAutoLink II Hybrid	HSAutoLink II	HSD	FAKRA	Mini-FAKRA	HSAutoGig
Cable Type	STP	UTP/STP	STP	STQ	Coax	Coax	STP/Twinax
Circuit Size	5 (USB)	8 low speed 6 high speed	6, 12	4	1, 2 Port	1, 2, 4 Port	1 pair, 2 pair, 4 pair, 5 pair
Data Rates Supported	2 Gbps	Mini-50 1 Gbps HSAL2 6 Gbps	13 Gbps	8 Gbps	6 Gbps	20 Gbps	+ 20 Gbps

COMPLETE SOLUTIONS TO ACHIEVE YOUR VISION

Our capabilities are constantly evolving to meet the demanding requirements for autonomous driving, infotainment and connectivity. We take an holistic solution mentality to achieve end-to-end connectivity and optimal performance.

molex

www.molex.com/connected-mobility