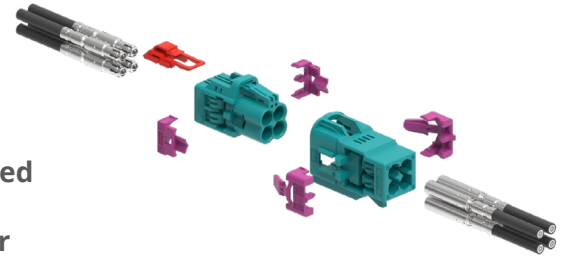


High-Speed FAKRA-Mini (HFM®) Interconnect System >

Designed to provide high-speed data connectivity for advanced automotive systems including cameras and telematics, High-Speed FAKRA-Mini (HFM) connectors deliver data rates of up to 28Gbps at frequencies up to 20 GHz in a compact, lightweight form factor optimized for rugged reliability and space efficiency.



ADVANTAGES AND FEATURES

Optimizes space and weight

The compact design is up to 80% smaller than FAKRA connectors, significantly reducing weight and saving installation space. This maximizes limited PCB real estate, enhancing overall efficiency.

Enables real-time communication with high-performance devices

The HFM system provides reliable, fully shielded coaxial cable connections, enabling high-speed communication with high-resolution cameras, telematics, and infotainment devices.

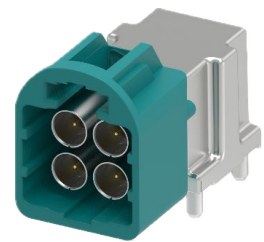
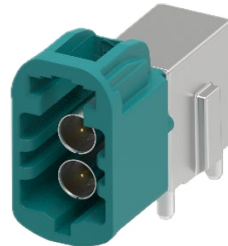
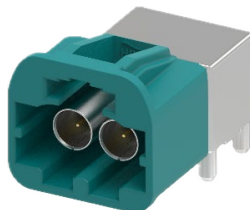
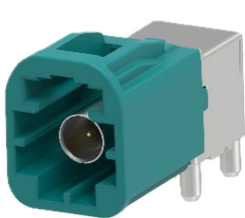
Frequencies	Up to 20 GHz
Data Rate	Up to 28Gbps
Impedance	50 Ohms
Operating Temperatures	-40 to +105°C
Protocols	APIX, ASA-ML, Ethernet, FPD-Link III/IV, GMSL 2/3, GVIF, HDBase-T, MIPI A-PHY, PCIe
Validations	USCAR-49, USCAR-2

Prevents accidental disconnection in high-vibration applications

The integrated secondary lock (ISL) and available connector position assurance (CPA) provide robust terminal and connector retention.

Improves flexibility and supports future upgrades

The versatile, modular system aids in future-proofing vehicle architectures with single, dual, dual-stack and quad connectors for wire-to-wire, wire-to-module and wire-to-device solutions.



High-Speed FAKRA-Mini (HFM) Interconnect System >

MARKETS AND APPLICATIONS

Automotive

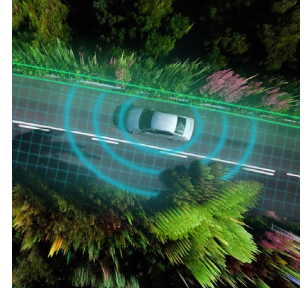
Advanced driver assistance systems (ADAS)
 Autonomous driving systems
 Camera systems
 (including surround view, driver monitor, lane assist and other systems)
 High-resolution (4K) displays
 High-speed cable networks
 Infotainment systems
 Internet connections
 Radar systems
 Rear-seat entertainment devices
 Sensor-to-device connections
 Telematics solutions, including:
 5G
 Bluetooth
 Global position satellite (GPS)
 Satellite radio
 Vehicle-to-everything (V2X)
 Wi-Fi and WiGig



Advanced Driver Assistance Systems (ADAS)



Infotainment Systems



Telematics Solutions

SPECIFICATIONS

Reference Information

Packaging: Bag, reel, or tape and reel
 Designed in: Millimeters
 RoHS: Yes

Electrical

Impedance: 50 Ohms
 Frequency: DC to 20 GHz
 Center Contact Resistance: <15 milliohms
 Outer Contact Resistance: <5 milliohms
 Power Current (max.): 1.0A DC
 Return Loss (max.): 12 to 25 dB, depending on frequency
 Crosstalk (max.): -60 dB up to 10 GHz

Mechanical

Engagement Force (max.): 15N (single), 30N (dual and dual stack), 45N (quad)
 Disengagement Force (min.): 2N (single, dual and dual stack), 5N (quad)
 Durability (max.): 25 mating cycles

Physical

Housing: HTN or PBT
 Center Contact: Phosphor bronze
 Outer Contact:
 Interface—bronze
 Solder or crimp area—zinc alloy or stainless steel
 Plating:
 Interface—gold
 Solder or crimp area—tin
 Dielectric: nylon or LCP
 Cable Type: RG174, RTK031 or RTK044* coaxial cable
 Operating Temperatures: -40 to +105°C

* RTK044 terminals not yet available

<https://www.heilind.com/cms/manufacturers/molex/>