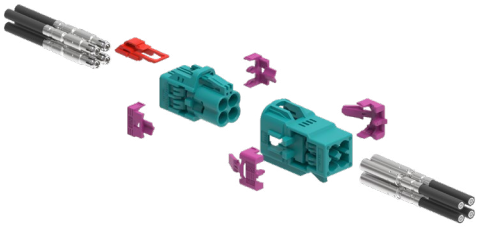
DATASHEET

High-Speed FAKRA-Mini (HFM) Connectors and Cable Assemblies›



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, minimizing latency and interference while enabling high-speed communication with high-resolution cameras, telematics and infotainment devices.

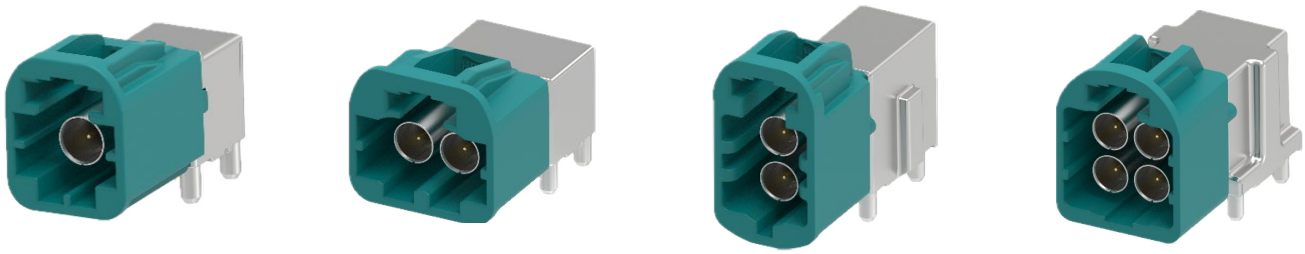
Frequencies	Up to 20 GHz
Data Rate	Up to 28Gbps
Impedance	50 Ohms
Operating Temperatures	-40 to +105°C
Protocols	APIX, ASA-ML, Ethernet, FPD-Link III/IV, GMSL 2/3, GVIF, HDBase-T, MIPI A-PHY, PCIe
Validations	USCAR-49, USCAR-2

Prevents accidental disconnection in high-vibration applications

The integrated secondary lock and available connector position assurance provide robust terminal and connector retention.

Supports future upgrades by improving flexibility and minimizing the need for redesigns

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.



HFM® is a registered trademark of Rosenberger

DATASHEET

High-Speed FAKRA-Mini (HFM) Connectors and Cable Assemblies›

Molex HFM Off-the-Shelf (OTS) Cable Assemblies are standardized, pre-validated and pre-terminated coaxial cables that are miniaturized and automotive grade. These cables enable accelerated prototyping and testing to support fast-paced automotive design programs.

ADVANTAGES AND FEATURES

Accelerates development processes

Short lead times and immediate access to cable assemblies enable rapid prototyping, faster iteration cycles, immediate design verification and quicker time to market, avoiding roadblocks and bottlenecks during product development.

OTS Cable Configurations	HFM to HFM, HFM to FAKRA, HFM to terminal, HFM to blunt-cut ends
OTS Cable Types	RG174, RTK031
OTS Cable Lengths	0.5 to 5.0m
Operating Temperatures	-40 to +105°C

Improves workflows

Enabling contingency options and accommodating last-minute changes reduces administrative burdens and streamlines engineering and verification processes.

Delivers cost efficiencies

Supporting small-quantity testing and eliminating rush fees helps reduce development costs.

Streamlines and simplifies the design process

Using OTS components can lower risks, improve design flexibility and create opportunities to standardize system components.





DATASHEET

High-Speed FAKRA-Mini (HFM) Connectors and Cable Assemblies›

MARKETS AND APPLICATIONS

Automotive

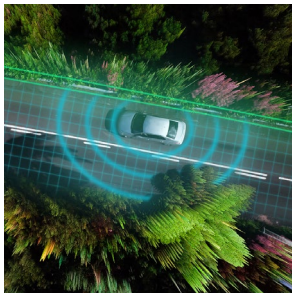
Advanced driver assistance systems (ADAS)
Autonomous driving systems
Camera systems
  (including surround view, driver monitor, lane assist and other systems)
Gateway/switch modules
High-resolution (4K) displays
High-speed cable networks
Infotainment systems
Internet connections
Navigation/GPS systems
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 Wi-Gig systems



ADAS



Infotainment Systems



Telematics Solutions

SPECIFICATIONS

Reference Information

Packaging: Bag, box, reel, or tape and reel
  (dependent on component)
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
OTS Cable Lengths: 0.5 to 5.0m
Operating Temperatures: -40 to +105°C

* RTK044 terminals not yet available

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