MATEnet Modular and Scalable Connectors

Enabling Automotive Ethernet
A growth in ADAS and infotainment technologies within vehicles is leading to an increased requirement for complex high-speed data networking architectures based on the IEEE Automotive Ethernet standard. This complexity is driving the need for economical cabling solutions for physical link technologies that can be seamlessly integrated into existing ECU interfaces.

**Supports up to 1Gbps**
*(with potential for 4 Gbps with alternative technologies)*

MATEnet is TE Connectivity’s modular and scalable connector system, developed for the latest generation of vehicle architectures. Based on proven standard miniaturized terminals and available in shielded (STP) and unshielded (UTP) versions, MATEnet meets data transmission requirements according to 100BASE-T1 and 1000BASE-T1.

In addition, MATEnet uses higher modulation data transmission technologies, enabling it to support data rates up to 4 Gbps.

### Example Applications

- **Body / Comfort**
  - Headlamps
  - Over the Air
  - Diagnosis
  - Ambient Light
  - ECU – ECU (Ethernet)

- **Instrumentation**
  - Head up Display
  - Control Panel
  - Instrument Cluster
  - Central Information
  - Passenger / RSE
  - ECU – ECU (Ethernet)

- **Powertrain**
  - Sensors and Actuators
  - Suspension
  - ECU – ECU (Ethernet)

- **Infotainment**
  - USB
  - RSE
  - ECU – ECU (Ethernet)

- **ADAS**
  - Distance / Speed Rec.
  - Blind Spot Detection
  - Emergency Braking
  - Pedestrian Warning
  - ECU – ECU (Ethernet)

- **Telematics**
  - Control Unit
  - ECU – ECU (Ethernet)

*Mainly Lidar and Radar*
**Features/Advantages**

- **Automotive grade robustness:** Based on proven NanoMQS terminals system.
- **Higher data-rate:** Supports up to 1Gbps (potential for 4 Gbps with alternative technologies).
- **More flexibility:** Available in Unshielded Twisted Pair (UTP) and Shielded Twisted Pair (STP).
- **Modular and scalable solution:** Integrates into existing automotive connectivity interfaces.
- **Cost efficient:** Design and process aligned for Automotive Ethernet.

**Market Compatibility**

- **IEEE conformance:**
  - 100BASE-T1 (100Mbps – IEEE802.3bw) and 1000BASE-T1 (1Gbps – IEEE802.3bp PoDL (Class 3 - 48 Volt)
  - A2B
  - HDBaseT

Single port MATEnet PCB header (above), compatible for both STP (left) and UTP (right) connectors.
## MATEnet

**Miniaturized Automotive Ethernet Connector System**

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Description</th>
<th>TE PN</th>
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</thead>
<tbody>
<tr>
<td><strong>Header and Frames</strong></td>
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<td>5 port Header</td>
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* xxx-1 Code A / xxx-2 Code B / xxx-3 Code C - further codings on request

**Application Specification**

Cable Assemblies and Components: 114-94431

Header: 114-94448

**Product Specification**

108-94568
MATEnet
Miniaturized Automotive Ethernet Connector System

Possible Configurations:
1 port Frame – 1 port Frame
1 port Frame – 1 port Inline Coupler
Female insert – Female insert
Female insert – Male insert

Available Cable Types:
UTP 100 Mbps / UTP 1 Gbps and STP 1 Gbps

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