

# Transportation Trends Create Modularity Challenges

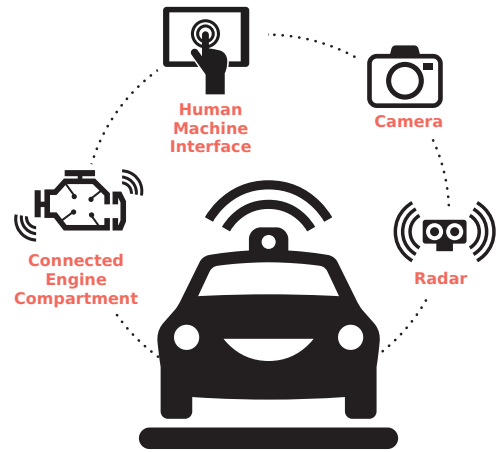
Do you have the right products to address those challenges?

## SITUATION

Yesterday's transportation applications were relatively straightforward. Today, a new technology paradigm is emerging. Vehicle systems are now connected with complex electronics that drive modularization, with a significant increase in the number of engine compartment systems, HMI, radars and cameras that require multiple printed circuit board (PCB) and flex assemblies. These assemblies require connectors with improved signal integrity for speed and robustness in harsh environments.

The latest move in the market is toward integrated, connected sensors, and the need for interconnectivity is creating a massive opportunity for suppliers.

**Do you know enough about the latest interconnectors to address modularity challenges?**



## TREND 1:

### Human Machine Interface (HMI) Demands Connections

- More applications are using interfaces for communication and most user interfaces have flex-to-board (F-to-B) connection points requiring a flexible printed circuit board (PCB) or board-to-board (B-to-B) connector.
- The demand for sensors, microphones, speakers and cameras is driving increased modularity that requires more (and better) flexible printed circuits (FPC), flexible flat cables (FFC), B-to-B and wire-to-board (W-to-B) signal connections.

## TREND 2:

### Harsh Environments Mandate Durability

- Flex assemblies and PCBs are becoming more complex. Harsh environments demand higher signal integrity performance and high retention force features to withstand shock and vibration – driving the need for better performing FPC, FFC, B-to-B and W-to-B signal connections.
- Consider the need for high-performing, durable interconnects early in the development process.

## TREND 3:

### Space-Constrained Profiles Require Flexibility

- The inside profile of transportation applications is becoming more space constrained. Increased modularity limits the space from the connector and other components, requiring more profile and mating orientation micro connector options.
- Having multiple profile and orientation micro connector options gives designers flexibility to address space, location and connector entry point challenges.

## WHAT'S TRENDING

# The Right Connector Addresses Modularity Challenges

Vehicle electronics now require greater speed and signal integrity to transfer data streams with higher bit rates. Crucial to success in this segment is a high-speed solution that supports the signal integrity (SI) margins needed for sensors, cameras, human interface and system communications.



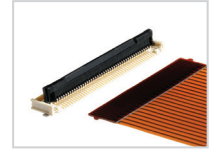
**Contact us** to learn how [Molex FFC/FPC Connectors and Cable Solutions](#) and [SlimStack Board-to-Board Connectors](#) can support your automotive electronic designs.

**Learn more** about Molex FFC/FPC Connectors at [www.molex.com/link/easyon.html](http://www.molex.com/link/easyon.html), and for more information on Molex SlimStack connectors, visit [www.molex.com/link/slimstack.html](http://www.molex.com/link/slimstack.html).

**Go to** [www.molex.com/link/microlockplus.html](http://www.molex.com/link/microlockplus.html) to get more details on our Micro-Lock Plus Wire-to-Board Connector System.

### SOLUTION:

#### Easy-On FFC/FPC Connector, 0.50/1.00mm Pitch FD19 Series



- Unique front flip actuator design with built in retention features to withstand high shock and vibration
- 125°C operating temperature
- Dual contact terminal design for signal assurance during high shock and vibration
- Latch-type FPC design for increased FPC-to-connector retention force

### SOLUTION:

#### SlimStack Board-to-Board Connectors, 0.40mm-Pitch Floating FSB3 and FSB5 Series, 0.635mm-pitch Floating Series



- Wide floating range in any direction for ease of mating and superior performance in high shock and vibration environments
- 125°C operating temperature
- High speed supports up to 6 Gbps (MIPI M-PHY, FSB3 & FSB5)
- Offered in multiple mating heights

### SOLUTION:

#### Camera I/O Module



- System solution, connectors and backshell assembly, mates with FAKRA cable
- Sealing class: IPX7, IPX9K
- Operation frequency: Up to 3 GHz
- 105°C operating temperature

### SOLUTION:

#### Micro-Lock Plus Wire-to-Board Connectors



- Design flexibility with multiple pitches, mating orientations, dual and single row options
- Robust low-profile mechanical locking system for optimal retention force
- 105°C operating temperature

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