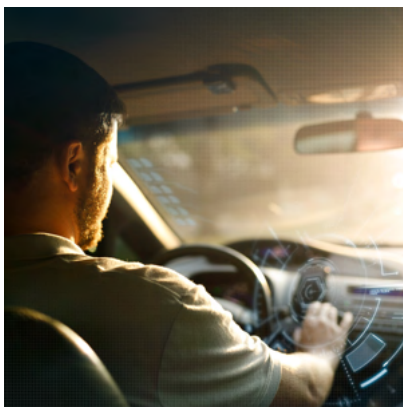
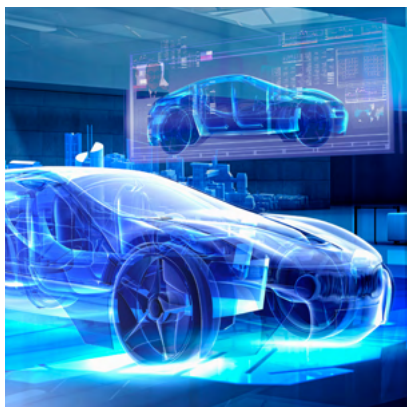


molex

ADVANCED INTERCONNECT SOLUTIONS FOR AUTOMOTIVE APPLICATIONS

Proven innovations for EV Charging Infrastructure, Automated Driving, In-Vehicle Experience and Next Generation Vehicle Architecture



Visit our website:
experience.molex.com/electronic-solutions/electrification/

Electric Vehicles Pull Ahead

The EV revolution is here. U.S. automakers are announcing more electric fleets and increasing their investments in new technologies and EV battery plants.

This playbook describes the sharp turn towards electric vehicles in the automotive industry and the pressures on engineering to keep up with demands for innovation and automation as designs rapidly evolve.

New requirements are multiplying in many directions at once: high-voltage charging stations and batteries, autonomous sensors and low-latency data lines, and digital driver controls and infotainment.

From all these cases, one takeaway is clear. The old way of extending electric infrastructure has reached its practical limit. The industry now looks towards a new architecture that includes both power and data—for a reliable, space efficient and high-performance electrical network.

Collaboration drives innovation

Since the 1950s, Molex has worked with auto makers to solve the unique engineering issues of on-board electronics. Our proven legacy of design, production expertise, advanced manufacturing capabilities and extensive supply chain management enables us to offer a broad portfolio of automotive solutions.

Today we are rising to new challenges in EVs ranging from battery packs to automated driving—but we are not going alone. Molex engineers collaborate with manufacturers like Ford and Tier-1 suppliers to create unexpected innovations.

Our mission is to serve as your expert partner in creating the innovations that move the industry forward. We invite you to join us on the journey.



Contents

CHARGING INFRASTRUCTURE

NEXT-GEN VEHICLE ARCHITECTURE

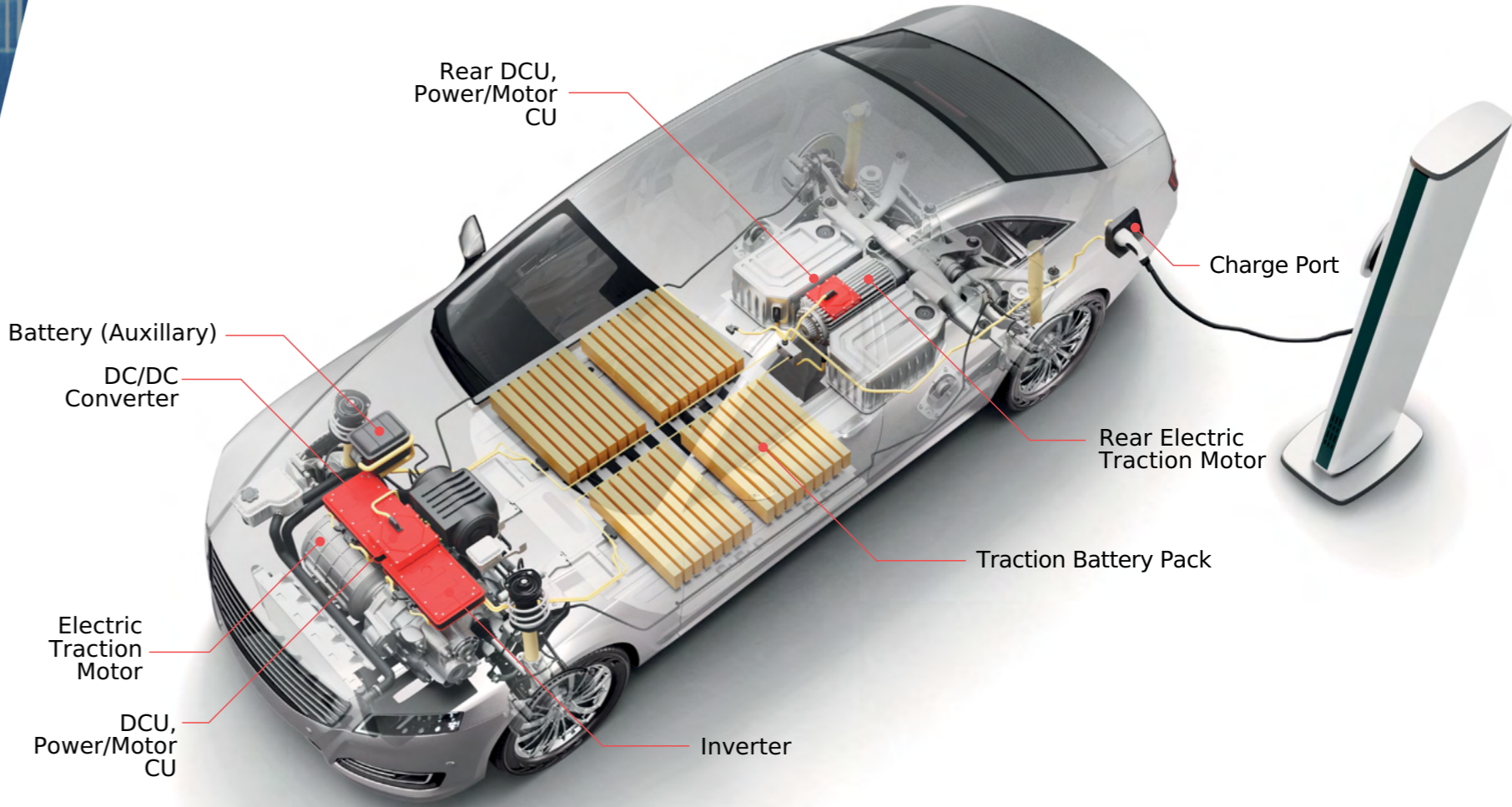
IN-VEHICLE EXPERIENCE

AUTOMATED DRIVING

Charging Infrastructure

EV charging can happen in a variety of locales: parking garages, highway rest stops or urban streets. Meeting the needs of diversifying form factors—and demand for faster charging—requires robust yet flexible power distribution.

With decades of experience in high-power applications, Molex works closely with customers to create bespoke solutions for unique applications. As a leading manufacturer of automotive solutions, Molex is a one-stop shop for reliable power connections.



Charging Infrastructure

Busbar and Board Connections

Molex Busbar Solutions offer a wide array of customizable options, allowing EV charging station design to break free of boxy expectations.

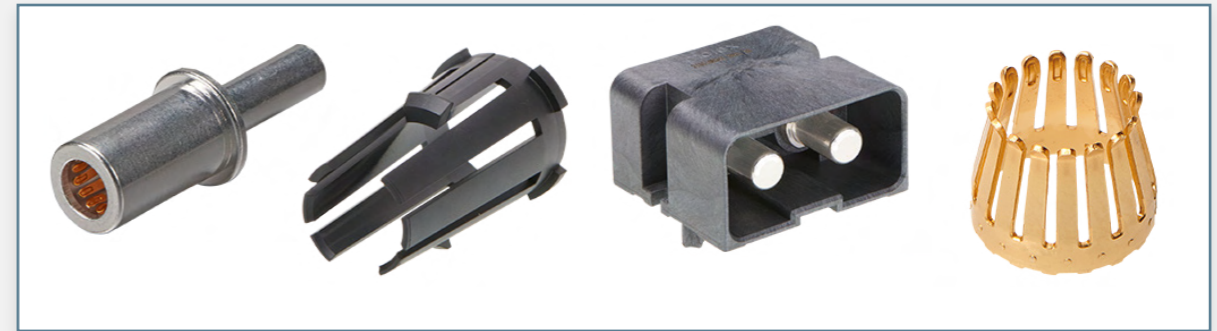
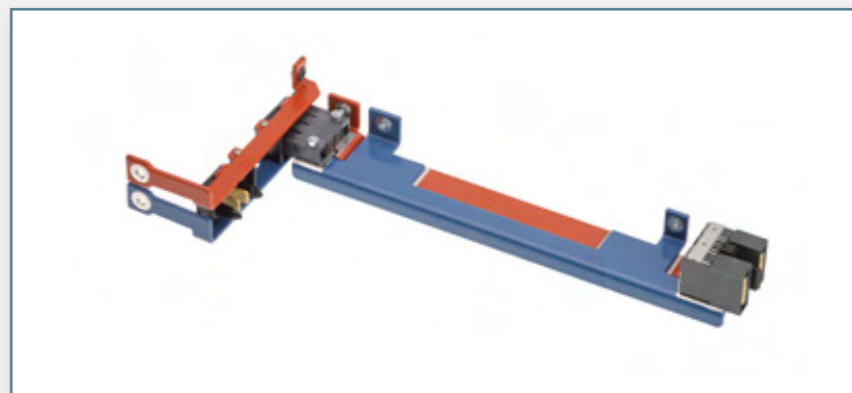
FLEXIBLE BUSBARS



RIGID BUSBARS



LAMINATED BUSBARS



Using our own COEUR socket technology to ensure low contact resistance and minimize heat generation, Molex has developed a line of high-voltage, high-current connectors ideal for new EV charging infrastructure: **PowerWize BMI Panel-to-Board/Busbar Interconnects**.

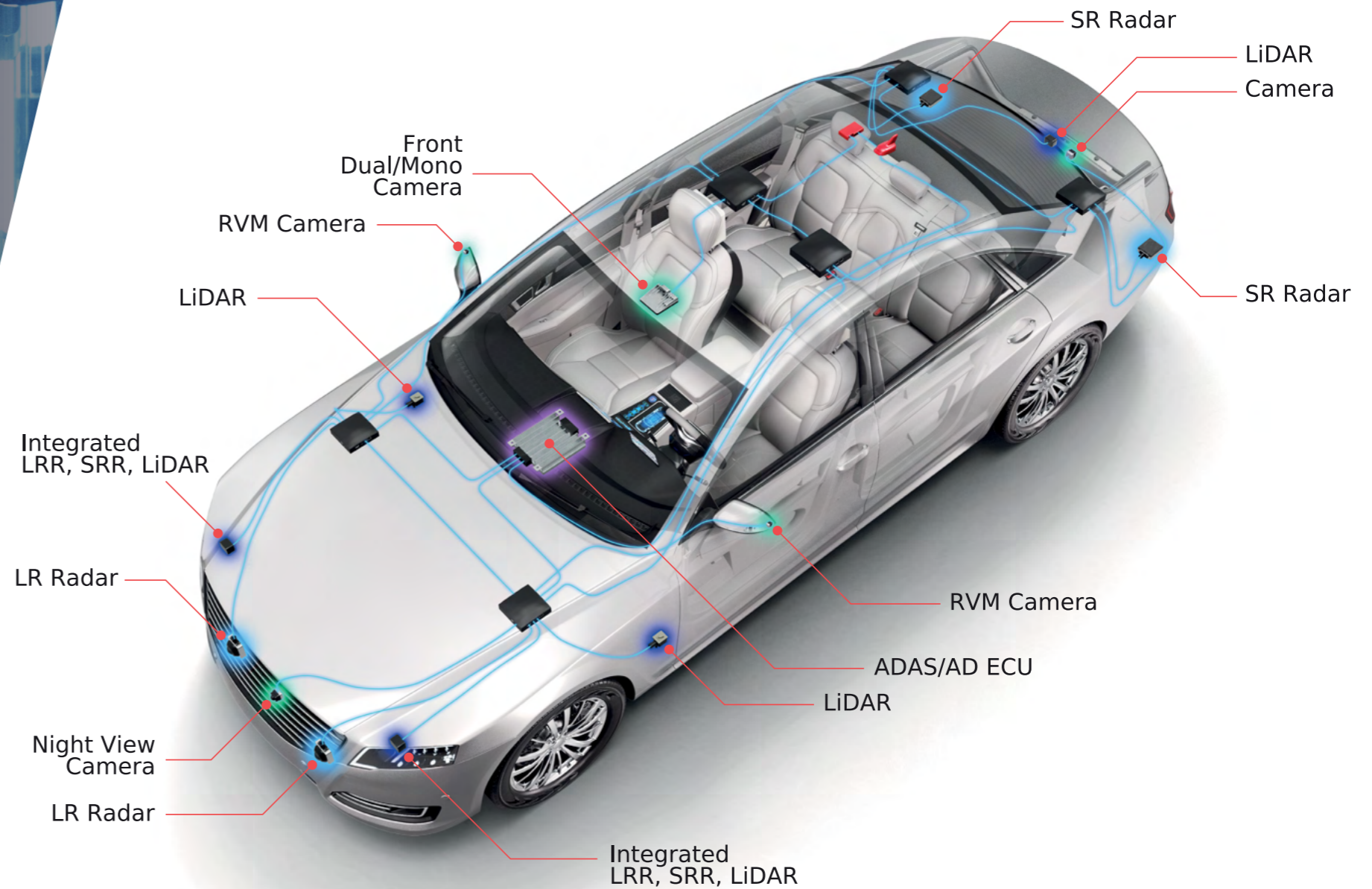


A reliable method to build connections between high-power busbars and boards in charging applications, the **Centrality Pin and Socket Interconnect System** was designed with a +/- 1.00mm radial self-alignment to overcome tolerance stack-up issues.

Next Generation Vehicle Architecture

To keep costs and weight down, in-vehicle communications are moving to zonal architectures that use fewer controllers and cables. At the same time, the emergence of V2X creates a need for sophisticated wireless connections.

Molex is currently the only tier-one vendor that can unite expertise in wired and wireless vehicle communication solutions. We collaborate with other tier-one suppliers and automakers in the development of zonal solutions.



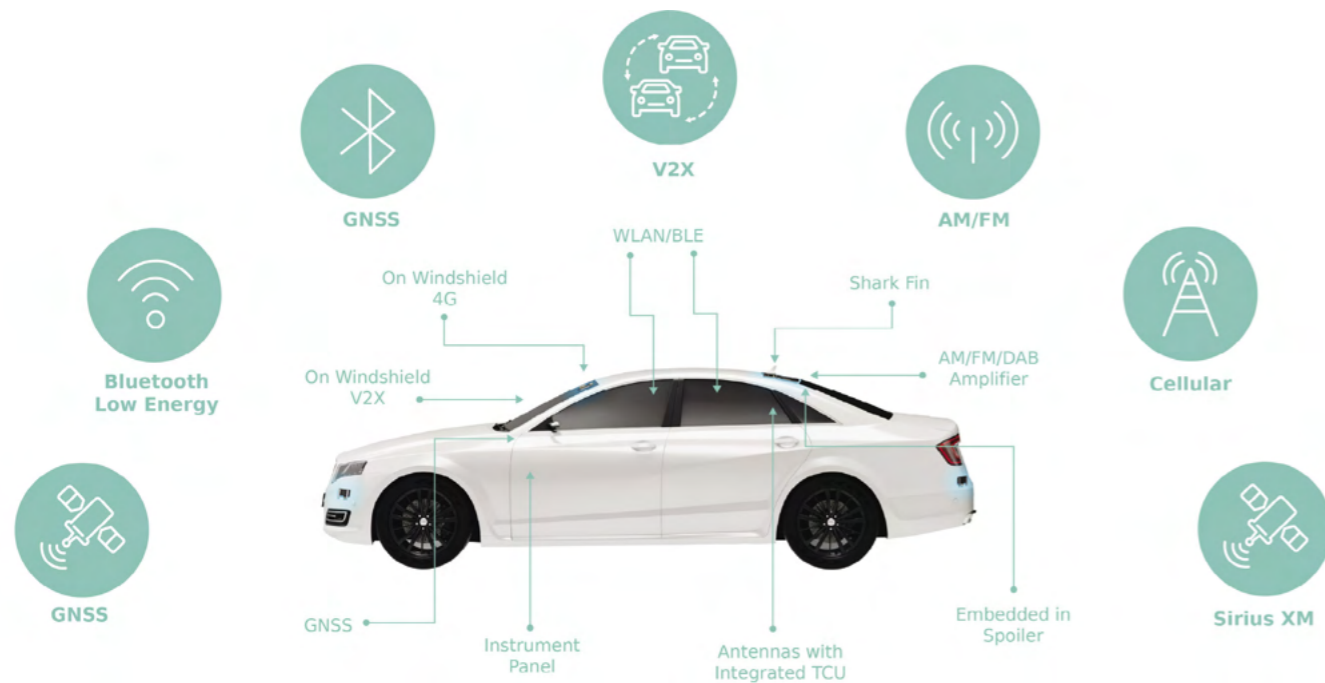
Next Generation Vehicle Architecture

Antennas, Networks

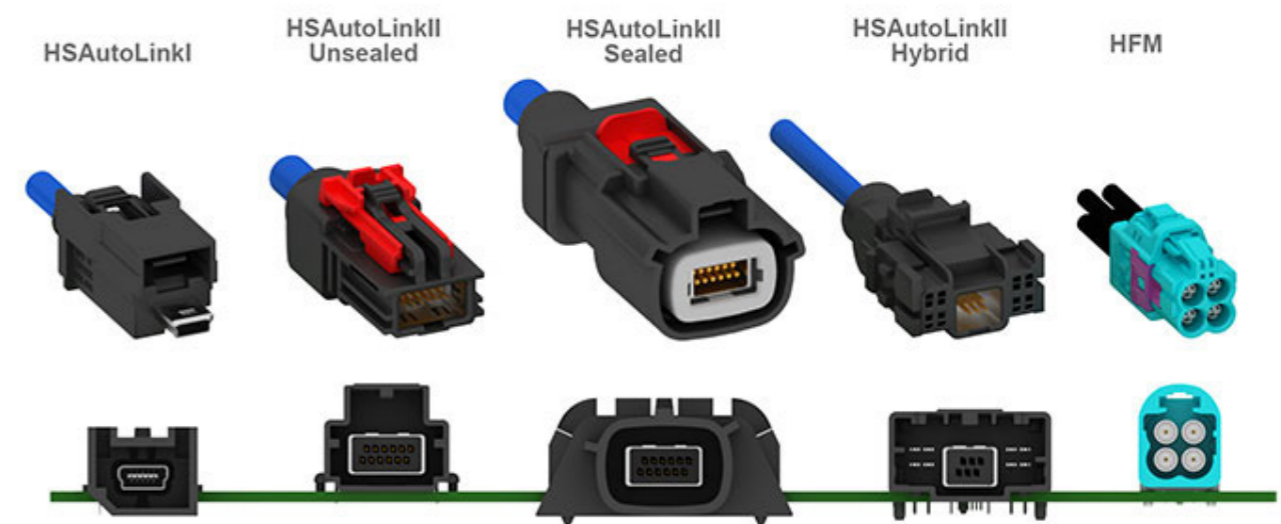
As the leader in the global shark-fin antenna market, Molex is at the forefront of vehicle-to-everything (V2X) technology—and our solutions cover the full spectrum of wireless requirements in the automobile.

Molex Transportation High Speed Networking Cables meet in-vehicle connectivity, infotainment and automated driving needs with a breadth of options designed to optimize performance, weight and size.

Antennas



Networking



Next Generation Vehicle Architecture

Control Units

As a leading supplier of advanced micro connectors, Molex supports customers in the development of power control units for next generation E/E vehicle architectures.

Designed specifically for EVs, the **High-Power 1.00mm-Pitch Floating Board-to-Board Connector** delivers tough, reliable connectivity in a small package—just one example of the many Molex Board-to-Board and FFC/FPC components built to automotive requirements.



In-Vehicle Experience

As in-car features multiply, the constraints on space, weight, power and electromagnetic compatibility (EMC) are growing tighter. And with software playing a more central role, automakers are looking for ways to integrate systems with reliable, high-bandwidth connections.

Molex works closely with OEMs and tier-one suppliers like Bosch to move in-vehicle computing forward. Our portfolio of miniaturized connectors, high-speed networking cabling and camera components supports the next generation of digital cockpits and in-vehicle infotainment.

Molex portfolio of Board-to-Board, FFC/FPC, I/O Camera and backshell solutions are designed to support next-generation information management in digital cockpit designs.



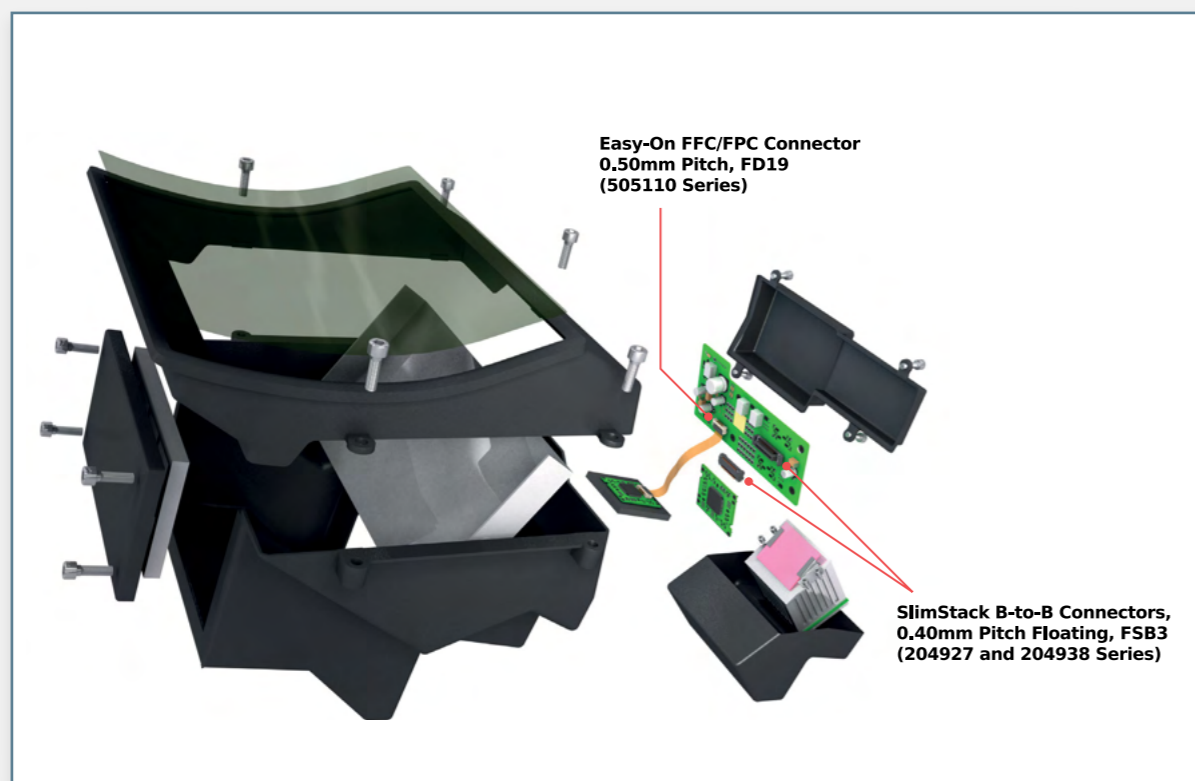
In-Vehicle Experience

Head-Up Display, Central Information Display, Driver Monitoring System

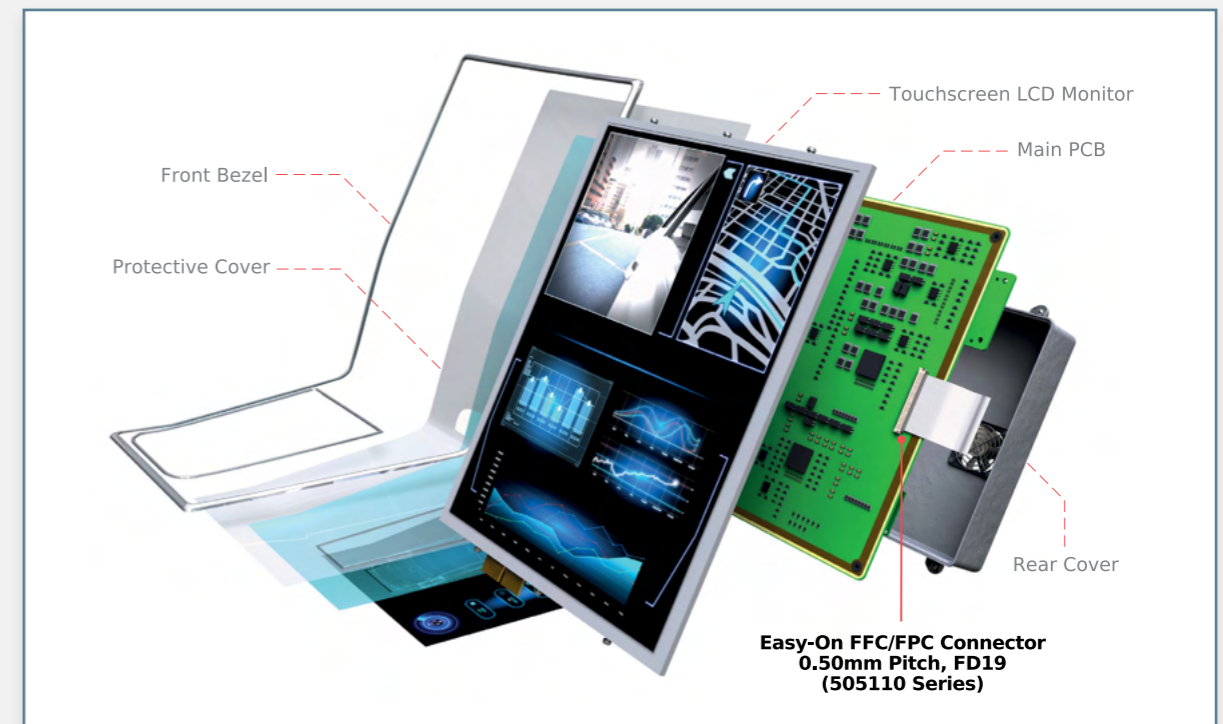
Safety, connectivity and user experience are driving future digital cockpit developments.

While vehicle manufacturers include instrument cluster applications as part of the digital cockpit domain controllers, Molex portfolio of **Board-to-Board, FFC/FPC, I/O camera and backshell solutions** offer variety of connectivity solutions supporting next-generation car cockpits.

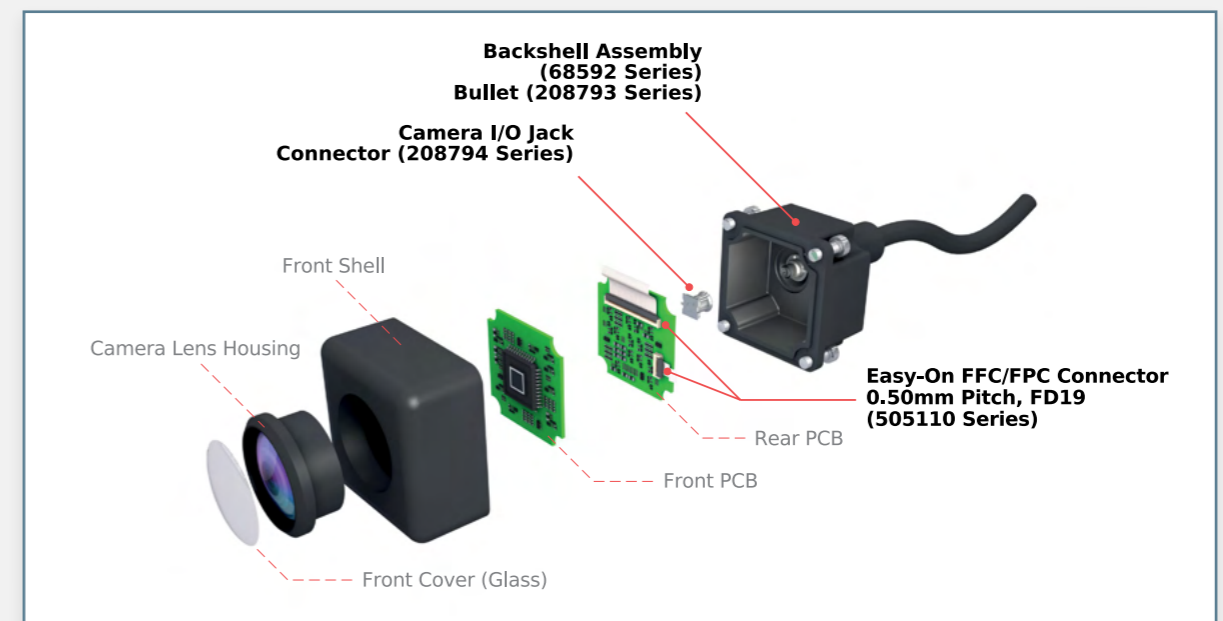
HEAD-UP DISPLAY



CENTRAL INFORMATION DISPLAY



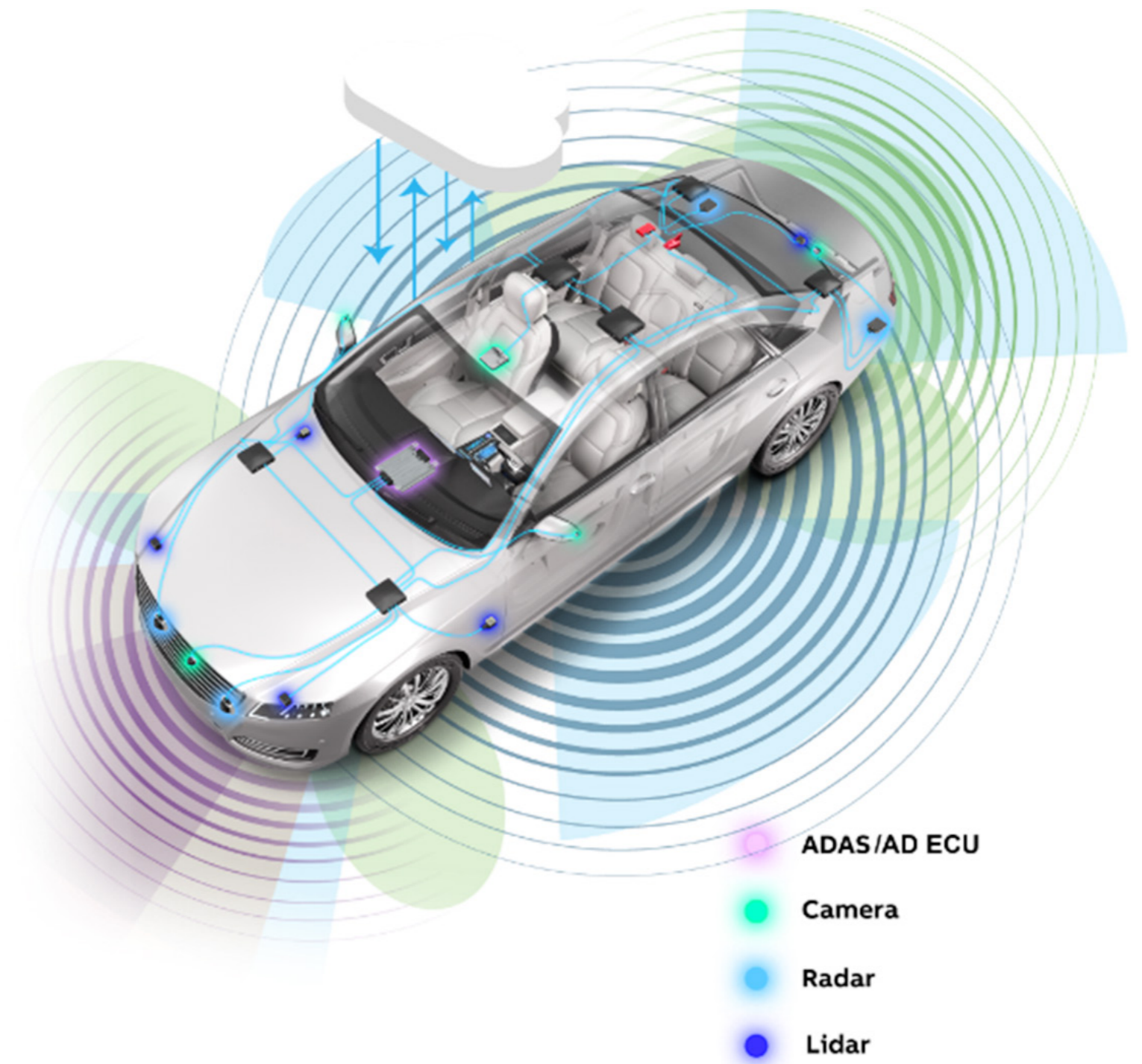
DRIVER MONITORING SYSTEM



Automated Driving

As driving becomes more automated, manufacturers need to find room for an ever-growing number of sensors and cameras—and they need to connect these systems in a high-bandwidth, ultra-reliable network.

With decades of experience in vehicle electronics, Molex works directly with auto manufacturers and tier-one suppliers to enable reliable camera, radar and LiDAR systems. And we've developed a V2X antenna system that is key to the next generation of automated driving.

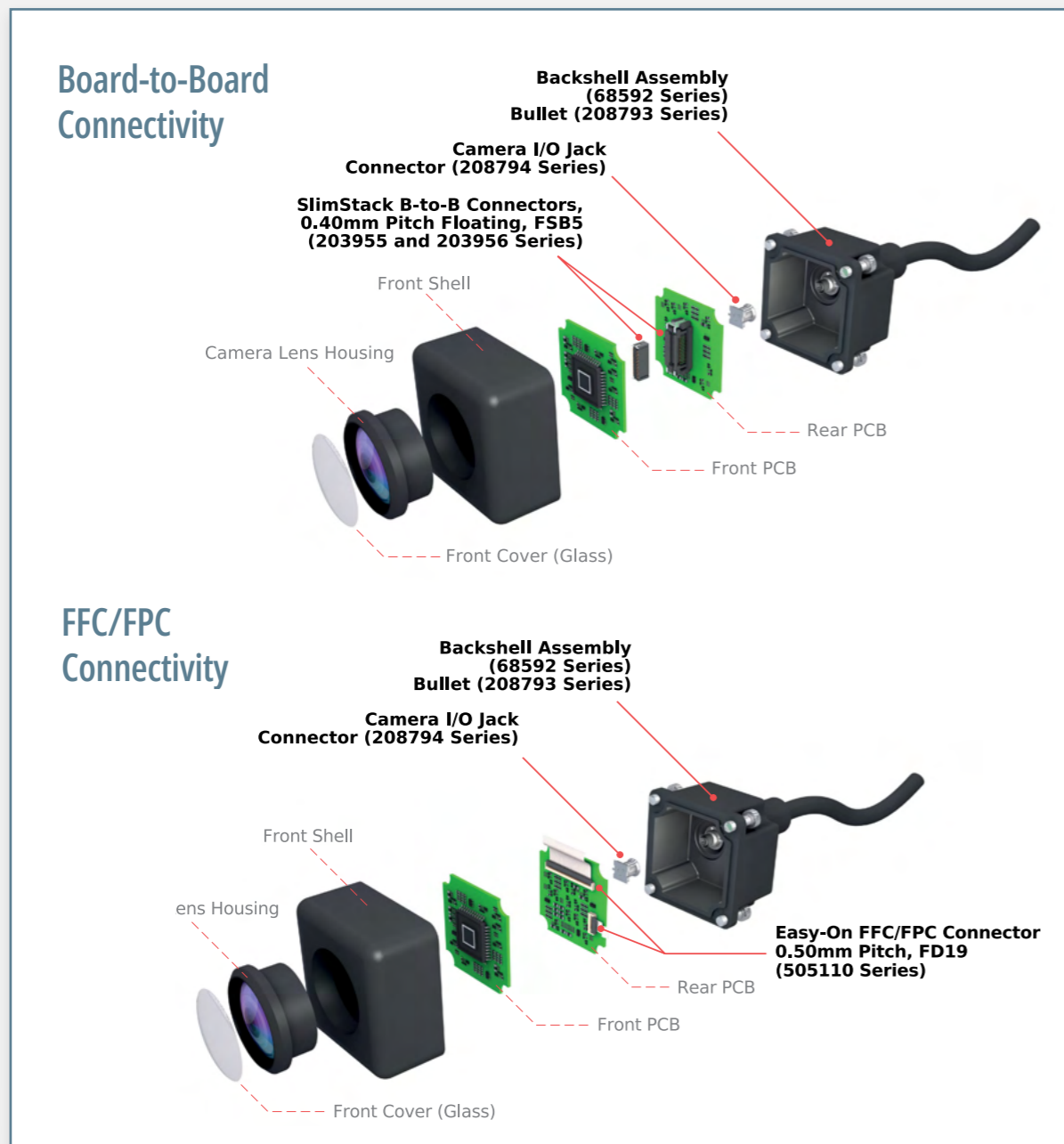


Automated Driving

Car Camera, ADAS/AD ECU

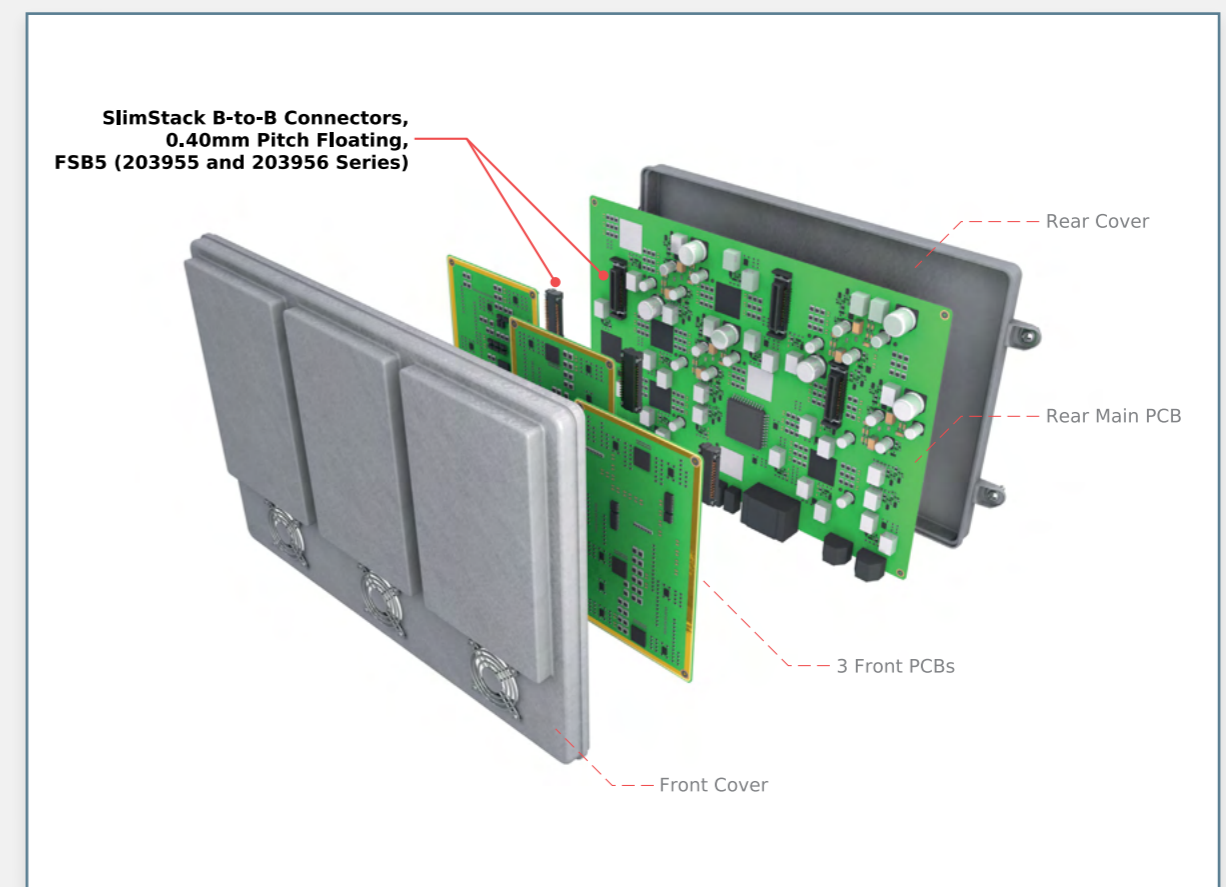
In support of the increased demand for car camera modules with high-speed video processing, Molex provides **camera I/O backshells** with coaxial bullet and jack interconnections supporting high-speed media protocols with frequency up to 3 GHz.

ADAS CAMERA BACKSHELL ASSEMBLY AND JACK



We are addressing the increased demand for flexible and reliable connections that can be robotically assembled by providing **Board-to-Board solutions** made of robust materials and are easy to mate due to exceptionally wide floating range.

ADAS/AD ECU



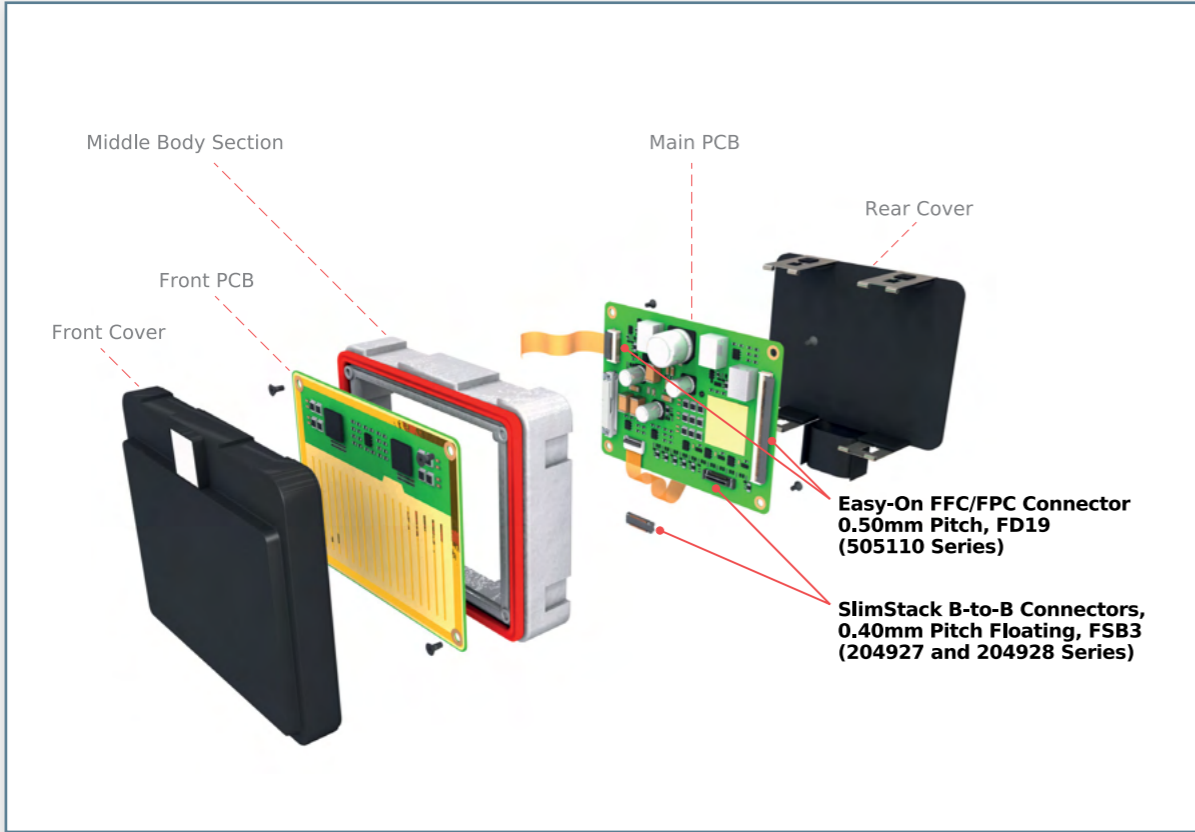
Automated Driving

Radars, LiDARs

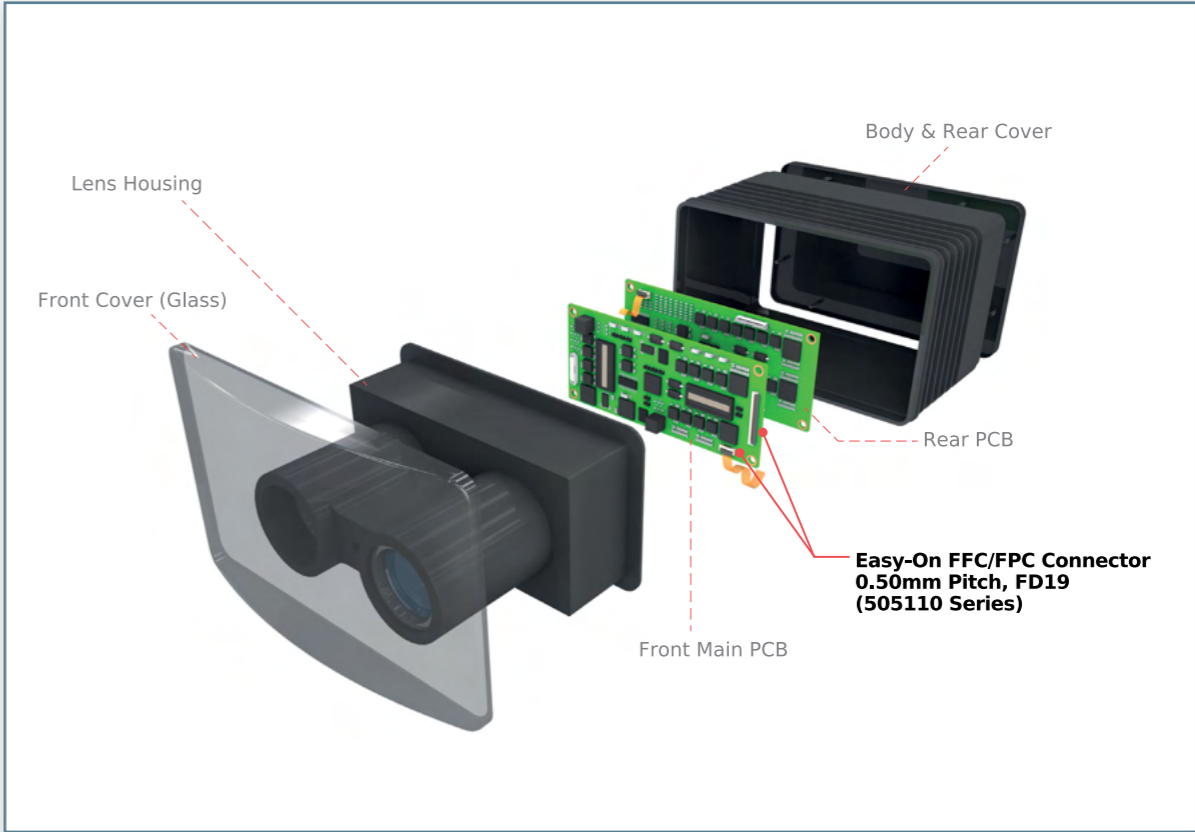
In support of the increased demand for car cameras, radars and LiDARs Molex offers a **broad range of solutions** in a wide variety of circuit sizes along with high operating temperatures, contact reliability, low heights and robustness.

Reliable and robust connections for ADAS applications providing positive locking features and a dual-contact design. Wide variety of actuator options, including zero insertion force (ZIF), slider and flip, help establish a secure connection between the **FFC/FPC connectors** and terminals.

RADAR



LIDAR



creating connections for life

Molex makes a connected world possible by enabling
technology that transforms the future and improves lives
experience.molex.com/electronic-solutions/electrification/

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