



SMART DRIVING SOLUTIONS

DRIVER ASSISTANCE SYSTEMS - AUTONOMOUS DRIVING - 5G CONNECTIVITY

— All about sensors assembly and protecting solutions

Self-driving cars, flying taxis, drone deliveries... It's clear that we are in the midst of a global mobility transformation. It's driven by the need to improve vehicle safety, reduce accidents on roadways, improve transportation efficiencies, and increase profitability with new mobility models.

POPULAR KEYWORDS:

- Driver Assistance Systems (ADAS)
- Autonomous driving (AD)
- 5G connectivity: enables vehicles-to-vehicles (V2V) and vehicle-to-everything (V2X) communication



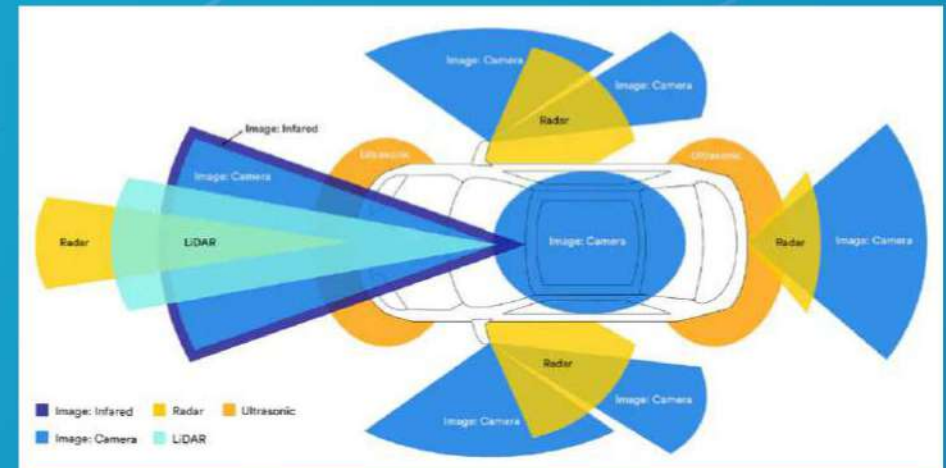
⚡ What made these functions available: **SENSOR**

• CAMERA

• RADAR

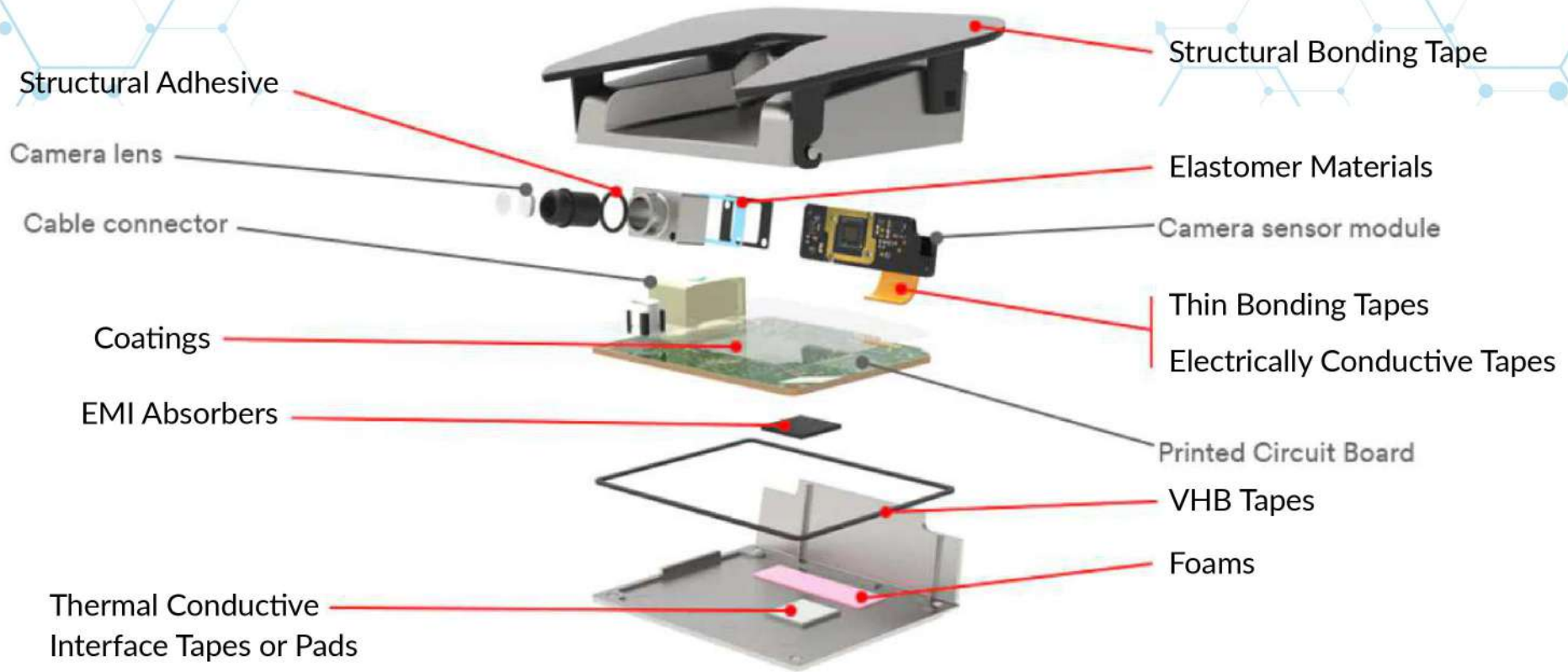
• LIDAR

• ULTRASONIC



1

Camera Sensor



Integrate Camera Sensors

Vibration-free imaging depends on strong bonds, stress relaxation and often a delicate balance of both. Camera brackets, lenses, image signal processors and many other crucial camera components must bond to a variety of substrates.

Protect Camera Sensors

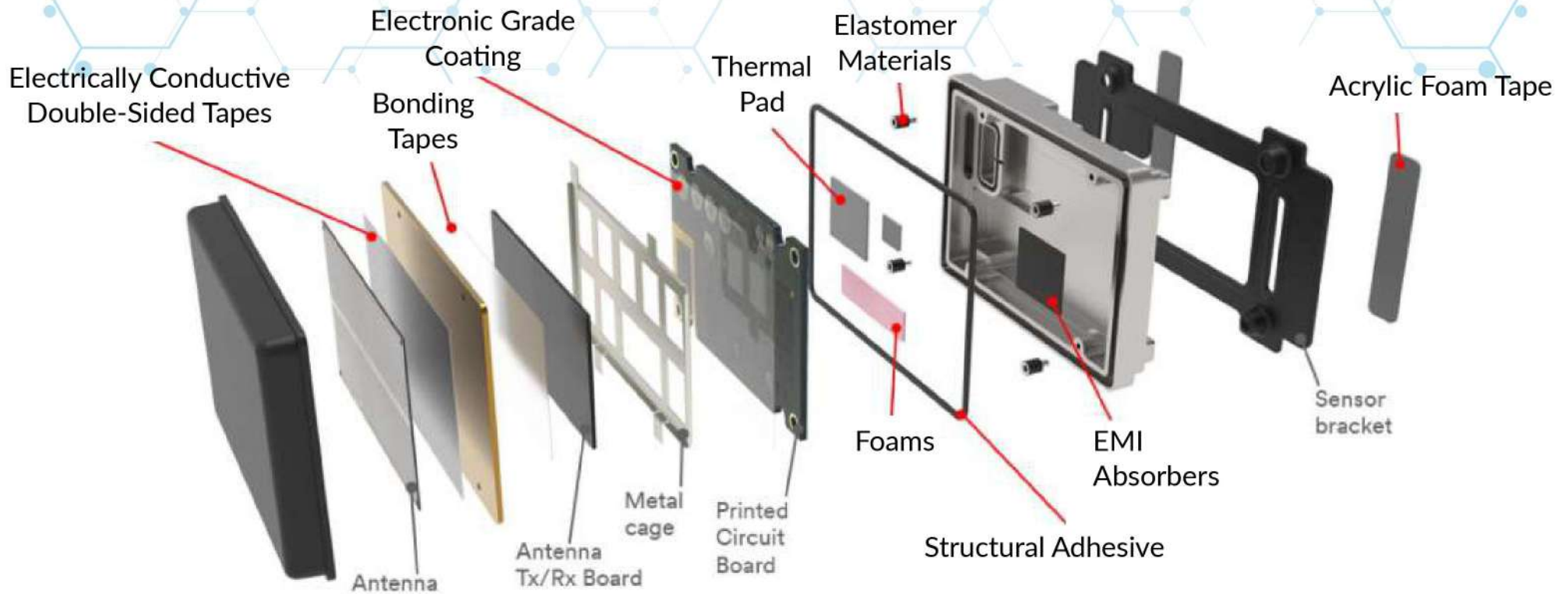
Protecting camera sensors from moisture and shock requires easily incorporated, highly-engineered solutions

Optimize Camera Sensors

Dissipating heat from signal processing units, reducing electromagnetic interference (EMI) and providing an effective bond on flexible printed circuitry are essential to optimizing camera system performance.

2

Radar Sensor



Integrate Radar Sensors

Radar sensors perform well in all types of weather, and must have bonding solutions to match. This requires a blend of permanent adhesion and viscoelastic stress relaxation under load for internal and external applications.

Protect Radar Sensors

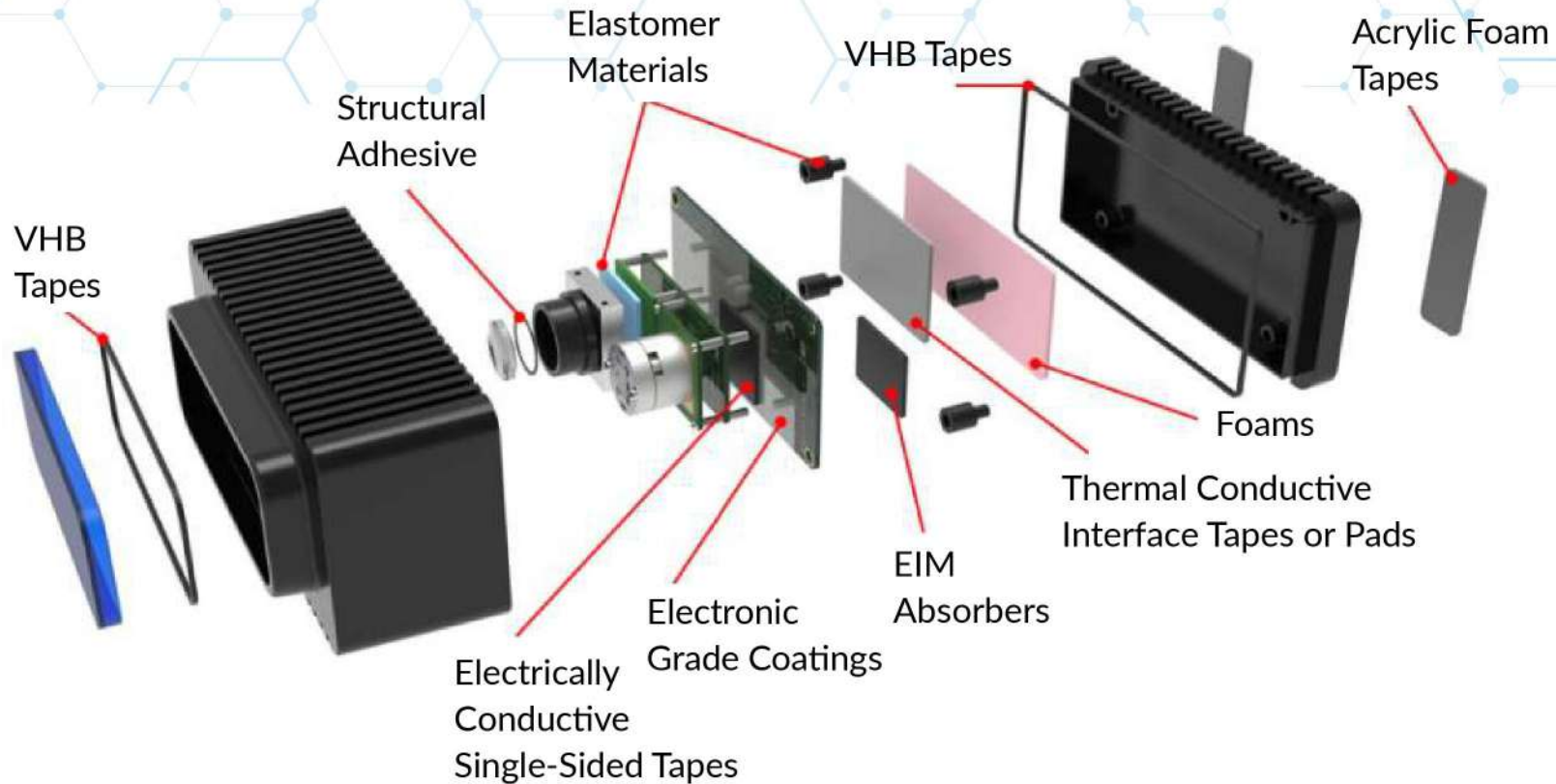
Corrosion and weathering are particular concerns for protecting radar sensor components, especially PCBs.

Optimize Radar Sensors

A big challenge for radar sensors: their construction requires engineered thermal management solutions that direct heat away from signal processing units and the components needed to generate radio frequencies.

3

LiDAR Sensor



Integrate LiDAR Sensors

LiDAR units require robust solutions for sealing as well as bonding and joining.

Protect LiDAR Sensors

Perhaps the foremost challenge for LiDAR, the protection of valuable components requires uncommon solutions designed specifically for resistance to impact and moisture.

Optimize LiDAR Sensors

As LiDAR technology progresses, sensors process much faster and at greater load. They must also work with other sensor technologies such as radar and camera units without signal disruption.

4 Ultrasonic Sensor

Dependable and proven for short range, ultrasonic sensors require precise placement on the vehicle for optimal performance. Our bonding and joining solutions can help to reliably and securely attach these sensors anywhere on the vehicle.

Integrate LiDAR Sensors

Our Acrylic Foam Tapes have continually set the standard for permanent bonding to a wide range of vehicle surfaces. Today this technology is available as a reliable solution for bonding ultrasonic sensors in a wide range of locations to meet your vehicle design and production specifications – and to enable new designs for the road ahead.



5 Advanced Materials Enabling 5G Connectivity and Autonomous Driving

Challenges

- Due to 5G Connectivity and Autonomous Driving, vehicles will generate and process more data at higher speeds and frequencies.
- Sensors and other automotive electronics designs are smaller, higher-performing – and produce a lot more heat.
- As signal transmission and frequencies increase, especially in the millimeter wave spectrum, the risk of signal loss intensifies

PROSTECH Solutions

Advanced materials to help improve dielectric properties and thermal conductivity:

- Colling Fillers
- Thermal Management Materials: Thermal Pad, Thermal Paste
- Glass Bubbles



HUMAN MACHINE INTERFACE (HMI) SOLUTIONS

DRIVER MONITORING - HEAD-UP DISPLAY - INFORMATION DISPLAYS - E-MIRROR - CABIN EXPERIENCE

All about high-tech display and end-user interior experience.

● **Driver Monitoring**

● **Head-Up Displays**

● **Information Displays**

● **eMirror**

● **Cabin Experience**

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New safety standards and increased automation have propelled innovations of in-vehicle monitoring. From driver monitoring systems (DMS) to occupant monitoring, these systems are not only essential to increasing road safety and achieving autonomous driving but can also add value by monitoring for passenger wellness. Whether they are integrated into the dashboard, information displays, or other locations in the automotive interior, where and how they are integrated can impact their performance.

Placing sensors where they'll be most effective doesn't always align with where they'll be most appealing. To prioritize performance without compromising the aesthetics of your vehicle interior, PROSTECH has developed a breadth of solutions: from sensor design and concealment to component bonding and optimization. Explore how PROSTECH solutions can innovate your interior.



Design & Concealment

- Brightness Enhancement Films
- Advanced Light Control Films



Protect Radar Sensors

- Optically Clear Adhesive
- Thin Bonding Tapes
- Flexible PCB Bonding Solutions
- Structural Adhesive



Protection & Optimization

- Electrically Conductive Single-Sided Tapes
- EMI Absorbers
- Thermally Conductive Interface Pads
- Confor Foams



PROS TECHNOLOGY
Specialty Materials & Manufacturing Solutions

Thank you!