

• APTIV •

INTERCONNECT SOLUTIONS FOR

HIGH-PERFORMANCE MICROWAVE ASSEMBLIES



HERMETICS | RF & MICROWAVE | MICROMINIATURE | FIBER OPTICS | CABLE MANUFACTURING | CABLE ASSEMBLIES

You engineer the most challenging applications in the world. And you need fail-proof, innovative solutions, right now.

Aptiv designs, builds, and ships hermetic microwave packaging, cover assemblies using microwave absorber (PolyIron®) and hydrogen getter with integrated RF feedthroughs, multi-pin connector designs and more. With associated, innovative RF & microwave and microminiature connector and cable solutions, let Aptiv help with your most challenging application.



CERTIFICATIONS

AS9100

Aerospace Quality Management System

AS7003

National Aerospace & Defense Contractors Accreditation Program

ISO 13485:2003

Medical Device Quality Management System

IPC/WHMA-A-620 (Class 3)

Requirements & Acceptance Standards for Cable & Wire Harness Assemblies

ISO 9001:2008

Quality Management System

OHSAS 18001:2007

Occupational Health & Safety

ISO 14001:2004

Environmental Management System

Microminiature

BIG PERFORMANCE IN SMALL PACKAGES — MICRO & NANO D SOLUTIONS FOR HPM SYSTEMS

Aptiv's micro miniature interconnect solutions for HPM applications deliver high-density performance in compact, rugged designs. Our M83513-approved Micro D and M32139-approved Nano D connectors and assemblies are ideal for space-constrained systems, with options for hermetic mating, PCB/SMT configurations, and complete custom cable assemblies.

Micro D Connectors and Assemblies

- M83513 Approved
- Mates to Hermetic Micro Ds
- Custom Solutions available
- Can be supplied as complete Cable Assemblies
- PCB, SMT connectors also available
- Dual Row Micro Strip (in the box)

Nano D Connectors and Assemblies

- M32139 Approved
- Mates to Hermetic Nano Ds
- Custom Solutions available
- Can be supplied as complete Cable Assemblies
- PCB, SMT connectors also available
- Dual Row Nano Strip (in the box)



Hermetics

APTIV USES ADVANCED ENGINEERING AND MATERIAL SCIENCE TO PRODUCE INDUSTRY- LEADING HERMETIC CONNECTORS AND ELECTRONIC PACKAGING SOLUTIONS.

ADVANCED HERMETIC SEALING

- Ceramax™ material: A multiphase ceramic dielectric compound that replaces glass, offering exceptional reliability.
- Advanced technology: Industry-leading material science and hermetic sealing technology.
- Manufacturing: Vertically integrated, providing limitless design solutions.
- Precision: In-house machining, laser welding, vacuum brazing, and plating for tightly controlled hermetic solutions.
- Sealing and temperature: Achieves sealing beyond 1×10^{-9} and operates in extreme temperatures from -269°C to +450°C.

JOINING OF DISSIMILAR MATERIALS

- Core technology: Advanced processes for joining dissimilar metals, crucial for high-performance hermetic assemblies.
- Laser Beam Welding (LBW): Ideal for hermetic connectors, offering precise application with minimal heat impact, reducing thermal stress.
- Explosion Welding (EXW): Uses chemical explosives to weld metals by accelerating one metal into another, allowing hermetic connectors made from two or more dissimilar metals.
- Vacuum Brazing: A joining process using filler metal at temperatures above 450°C in a vacuum, ensuring an oxygen-free atmosphere for precise bonding between base materials.

APTIV'S HERMETIC SOLUTIONS FOR HIGH-POWER MICROWAVE (HPM) APPLICATIONS PROVIDE ROBUST PROTECTION AGAINST ENVIRONMENTAL AND PERFORMANCE THREATS WITHIN SEALED ELECTRONIC SYSTEMS.

Hermetic Microwave Packaging

Utilizing explosion/laser welding, vacuum brazing, and diffusion bonding technologies, Hermetic Microwave Packaging Solutions are available in stainless steel, aluminum, titanium, or any combination thereof.

Cover Assemblies

Hermetically sealed, laser welded covers with installed polyiron microwave absorber and hydrogen getter material provide a complete solution addressing potential EMI and hydrogen contaminant issues within the hermetically sealed electronic enclosure.

PolyIron magram absorber addresses potential EMI issues by absorbing it, not reflecting it. Hydrogen getter material captures hydrogen, which is often present and can damage electronics within the microwave package. Ideal for use with densely packed microwave packages where space is at a premium.

Titanium Aluminum Packaging (TAP)

When requirements for hermetic packaging include high thermal conductivity, a low coefficient of thermal expansion ("CTE"), and lightweight, Titanium-Aluminum Packaging (TAP) provides a great solution. TAP utilizes titanium as its main housing structure material while integrating aluminum into thermally sensitive areas to optimize heat dissipation.

Hermetic RF Feedthroughs

Laser-welded SMP, SMPM, SMA, SSMA, TNC and high frequency Centurion feedthroughs available in stainless steel, aluminum, and titanium with patented press-in design. Laser welded DC feedthroughs also available.

Hermetic Multi-Pin Connectors

Exclusive dielectric material, Ceramax, ceramic-to-metal laser-welded true hermetic Nano D, Micro D, Standard D and military circular connectors IAW Mil Specs including, but not limited to, M32139, M83513, M24308 and D38999.



RF & Microwave

PERFORM IN EXTREMES WITH CONFIDENCE AND CONTROL USING APTIV'S RF CONNECTORS AND CABLE ASSEMBLIES, ENGINEERED FOR RELIABILITY.

Aptiv's RF interconnect solutions—including our robust QDS and QRM Series connectors—are purpose-built for the demanding conditions of high-power microwave (HPM) applications. Designed with quick-disconnect functionality for seamless integration and maintenance, these connectors deliver exceptional durability and high-voltage performance.

Engineered to mitigate the risks of corona discharge and electrical arcing, our assemblies use optimized materials and precise creepage path control to preserve energy, ensure safety, and maintain system integrity even in the harshest environments.



When every connection counts, Aptiv helps you stay powered, protected, and mission-ready.

FROM ULTRA-LOW-PROFILE CABLE TO HIGH-POWER CONNECTORS AND SPACE-GRADE ASSEMBLIES, APTIV OFFERS A FULL SPECTRUM OF RF INTERCONNECTS ENGINEERED FOR PERFORMANCE, PRECISION, AND DURABILITY.

Comprehensive RF Solutions for Every Application

- ArcTite® - Ultra Low Profile Bends
- D-Flex - Flexible S/R Replacement
- SpaceFlex® - Space Grade Coaxial Cable Assemblies
- DynaFlex® - Weatherized, Ruggedized and High Temperature Coax
- PhaseTite® - Superior Phase Stability over Temperature
- SemiRigid
- TRUflex™ PWR Series - High Power Coaxial Cable
- Connector and Adapter Families
- Quick Disconnect Connectors
- Small Signal Connectors: Centurion, 1.0mm, 1.85mm, SMPS, SMPM, SMP, SSMA, 2.4mm, 2.9mm, BMAM, 3.5mm, SMA, QMA, BMA, TNC, Type N, MCX, MMCX
- High Power Connectors
- Custom Offerings
 - High Voltage Interfaces
 - Phase Delay & Matching
 - Build to Print



Market Solutions



Aerospace &
Defense



Automotive
& CV



Industrial &
Robotics



Marine
Subsea



Medical



Oil & Gas



Power & Data
Infrastructure



Rail Mass
Transit



Space

ABOUT APTIV:

Aptiv PLC (NYSE: APTV) is a global industrial technology leader delivering advanced solutions people trust when it matters most across automotive, commercial vehicle, aerospace and defense, telecom and datacom, and other diversified industrial end markets. Our differentiated portfolio enables devices and systems to sense, think, act, and continuously optimize performance. Building on decades of innovation, Aptiv brings global scale and a resilient, localized value chain to customers across the globe.

Learn more at www.aptiv.com.