

• **APTIV** •

PRECISION CONNECTIVITY FOR

SPACE APPLICATIONS



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

Trusted at Every Stage

Aptiv delivers high-quality solutions that meet the rigorous demands of space applications, backed by a long flight heritage and deep technical expertise. We solve critical challenges like multipaction, venting, and outgassing, and specialize in main bus harnesses, hermetic connectors, and RF/microminiature products for LEO, GEO, and deep space missions. From satellites and launch vehicles to rovers and imaging systems, Aptiv supports every phase of space exploration. With a proven track record and mission-ready solutions, we help you go farther—faster.





LAUNCH VEHICLES

Aptiv equips space launch vehicles with rugged RF connectors, cable assemblies, and hermetic feedthroughs for guidance, comms, and payload systems. Built for shock, vibration, and multiple launches, our solutions ensure reliable performance from liftoff to mission success.



GROUND SYSTEMS

Rugged, custom solutions for satellite ground systems, including abrasion-resistant cables and high-performance RF connectors. Engineered for harsh environments, our technology ensures reliable comms and data transfer at mission-critical landing sites.



LOW EARTH ORBIT

Precision Micro-D, high-power, and high-frequency RF connectors and cable assemblies for LEO satellites—supporting optical terminals, SAR systems, and uplink/downlink comms. Rugged rack-and-panel solutions ensure reliable performance in demanding space environments.



LUNAR

High-performance RF connectors and cable harnesses for guidance, control, and robotics. From rack-and-panel connections to high-flex cables, our solutions ensure reliable data and power in the harshest lunar environments.



DEEP SPACE

Aptiv's RF connectors, cable assemblies, and hermetic feedthroughs power ocean sensing and comms systems with precise, reliable performance and airtight integrity in harsh environments.

Hermetics

HERMETIC HOUSING & INTERCONNECTS

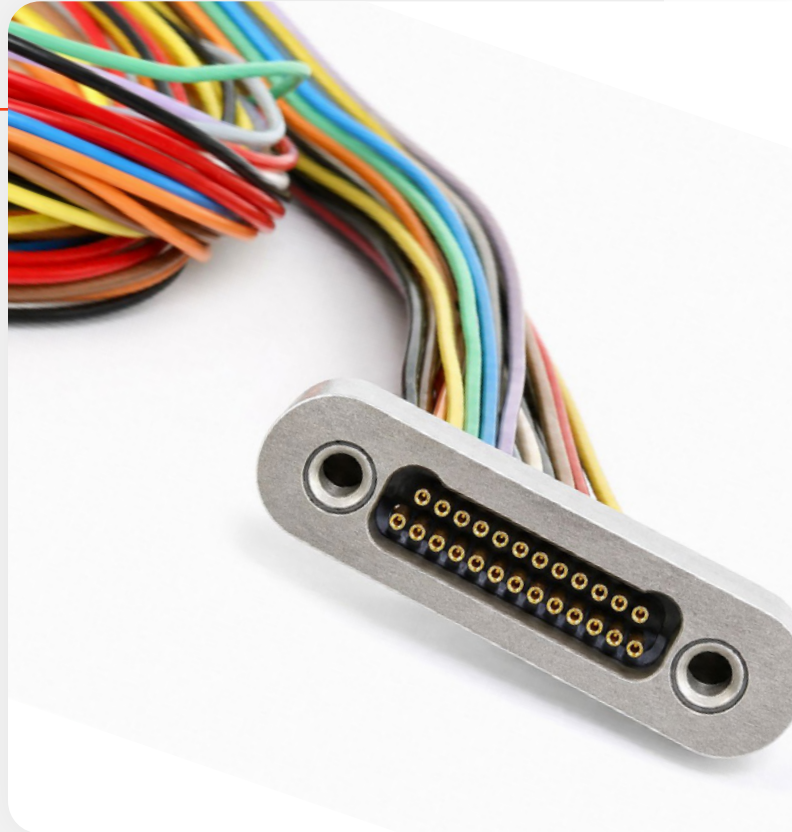
Aptiv's hermetic solutions offer standard, build to print, or fully custom connectors, engineered to withstand the harshest conditions of space. Built with our exclusive Ceramax® ceramic or glass dielectric, these interconnects deliver superior sealing and long-term reliability in environments exposed to:

- Shock and vibration
- Thermal cycling
- Radiation exposure

Designed for LEO, MEO, and GEO missions, Aptiv's hermetic housings and connectors protect mission-critical systems like satellites, payload interfaces, and onboard electronics—ensuring reliable performance where failure is not an option.

Hermetic Connectors, Packaging, and Feedthroughs:

- Laser weldable Micro D/Nano D connectors with high-reliability
- Laser weldable multipin connectors, RF feedthroughs
- Ceramax™ ceramic dielectric sealing material
- Turnkey hermetic microwave packaging and assemblies
- Vacuum flange and vacuum headers
- Metallurgical bonded material, bonding dissimilar metals that support weight reduction and thermal management



Connectors

Aptiv's micro connectors are purpose-built for the size, weight, and performance demands of modern space systems. Available in standard and custom build to print, these connectors are smaller than traditional backshells and deliver:

- Significant weight savings—ideal for LEO satellite and small payload platforms
- 360° EMI shielding for maximum signal protection
- Low-profile design that won't increase connector footprint
- Strong cable retention in high-vibration and launch environments
- Fewer BOM line items and simplified assembly
- Customizable exit angles to fit tight or complex routing needs
- Cost-effective solutions without sacrificing reliability

Built for space. Backed by experience. Engineered to perform.

MICROMINIATURE CONNECTORS

- Micro D (M83513) and Nano D (M32139) connectors
- Micro D and Nano D cable assemblies & PCB connectors
- Overmolded cable assemblies
- Integrated Micro D and Nano D backshells
- Custom micro and nano connectors

NEW MODULAR CONNECTORS

Modulus™ Connectors combine high-speed SPE and modular power in a rugged, space-saving connector platform engineered for aerospace-grade performance and up to 30% cost savings through modularity.



RF & Microwave

Aptiv's wide range of RF connector and cable solutions solve the most difficult challenges found in space applications across the electromagnetic spectrum. Aptiv's RF connector and cable assemblies are optimized to address space radar and communication in the Ku and Ka frequency bands as well as specialized designs to the W band.

Aptiv offers a series of interconnect products specifically designed to address:

- Corona / multipaction free connector designs - ideal for wedge interfaces
- ETFE jacketed flexible & semi-rigid cables
- Condensable, Non-outgassing Materials
- TVAC - vented designs
- Radiation hardened
- MIL-STD-202 Vibration & Shock
- J-STD-001 Class 3 Space Addendum Soldering
- (110GHz) to high power (kW)
- Low loss, phase stable constructions
- High density gangmate & blindmate designs
- Quick-turn RF cable assemblies
- QPL connectors - M39012 (Coax), M55339 (Coax Adapters), M49142 (Triax)

Connectors:

- 1mm - EIA line sizes
- Board mount, end launch, thru hole, R/A configurations
- Quick connect / disconnect
- Blindmate

Cable:

- Flexible (.047 - ~1.0")
- Semi-rigid (.047 - .25")
- High VP, Phase stable, low loss
- Durable, crush resistant
- SpaceFlex™ Cable

Cable Assemblies:

- Semi-rigid (balun / wireline)
- Flexible - >90dB Shielding
- Harsh Environment 10^{-5} ATM
- Space rated
- Arc-Tite ultra-low profile bends
- Instrument & production test cables

ADDITIONAL SOLUTIONS

MIL-SPEC and Machining:

- MIL-SPEC products, including:
 - M28876, M28840, M28748, M55302, M28804
- Rectangular COTs connectors, including:
 - JF connectors
 - MRE & XMRE
- Rack and Panel connectors
- Snap-on power connectors up to 40 amps
- Explosion-proof connectors
- AS9100 CNC machining facility for build to print components

Cable, Cable Assemblies, & Wire Harnesses:

- Spaceflight harnesses
- Complex, custom wire harnesses
- Electro-mechanical assemblies
- Ruggedized cable for launch sites and retrieval vehicles
- Build-to-Print cable assemblies to customer specifications, utilizing mil-Spec connectors, cable and accessories
- Custom bulk cable
- Overmolded cable assemblies of various materials - thermoset and thermoplastic, neoprene, EPDM, viton, etc.
- **NEW LiteSPEEd™ Cable - up to 10 Gbps high-speed data in a compact Single Pair Ethernet format, reducing size, weight, and installation complexity for aerospace, industrial, and automotive platforms.**



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.

OUR ACCREDITATIONS & QUALIFICATIONS:

- AS 9100:2016 – Quality Management Systems for Aviation, Space and Defense Organizations
- NASA-STD-8739.4
- NADCAP - National Aerospace and Defense Contractors Accreditation Program
- European Space Agency (ESA) within ECSS-Q-ST-70-02 C
- IPC-A-610 & J-STD-001 Class 3 (Space Addendum - Resistive Soldering)
- Gold Removal / Gold embrittlement
- Tin Whiskers
- TVAC Chambers
- Condensable material (Non-Outgassing)
- Corona / Multipaction Testing