The Industry Leader in Antenna Performance and Reliability

Laird



# Why Choose Laird Connectivity As Your Antenna Supplier Of Choice?



State-of-the-Art Production and Testing Facilities, Specializing in PIM Performance



Broad Expertise from 5G Massive MIMO to Ultra-small Embedded Antennas



Custom OEM Solutions Simulation, Design and Manufacturing



Sest-In-Class 5-year Warranty



Extensive Support Materials and Guides

Industry Leading Antenna Performance and Reliability

Additional IoT Product
Development Services



## Accelerate Your Wireless Product Development

Laird Connectivity, the custom antenna supplier for many of the world's leading brands, offers turnkey OEM custom design services for a wide variety of antennas.

### **Our Capabilities**

- Extensive Antenna Design Portfolio
- Fastest Time to Market
- Leading Edge Simulation Tools
- 3D Antenna Test Chambers located Worldwide
- Low Cost, In-House Manufacturing



### Custom IoT Product Development and Antenna Design

Laird Connectivity offers state-of-the-art, turnkey OEM custom design services for a wide variety of radio technologies. With decades of design engineering and OEM manufacturing experience, our superior design, RF engineering, and testing practices have set the standard for high performance and reliability.

### **EMC Testing and Product Certifications**

Laird Connectivity has its own, independently-managed, certified FCC/IC/CE test laboratory. Whether your product needs compliance certification for the U.S., Canadian, or European markets, our in-house testing capabilities save an enormous amount of time, so you can bring your wireless solution to market faster.

### Design Expertise

Laird Connectivity's highly experienced team will work directly with you to evaluate antenna characteristics and performance factors critical to developing the optimal antenna solutions, including frequency band, gain and pattern shaping, radiation efficiency, and required form factors.

connectivity.lairdtech.com/rf-antennas/custom-antenna-design

# **Embedded Antennas**

Laird Connectivity offers a broad portfolio of cost-effective, embedded antenna solutions that provide unmatched connectivity for your wireless devices. Whether for Wi-Fi/Bluetooth or Multiband/Cellular IoT and M2M applications, the small size and form factor of our antennas make them easily concealable within a product's enclosure, eliminating any negative impact on product aesthetics.



#### FlexPIFA

The industry's first patented, flexible, adhesive-backed, PIFA-style antenna with 2.4 GHz & Dual-band options



mFlexPIFA

The Industry's first patented, flexible, adhesive-backed PIFA-style antenna, optimized for placement on metal



Nanoblade Dual-band, 2.4 GHz, & 5 GHz, 0.1 mm thick. Ideal for wearable and thin devices.



Nanoblue Patented Microsphere PCB technology with 2.4 GHz Wi-Fi or Bluetooth



FlexMIMO The world's first and only embedded dual-band PIFA MIMO antenna



**Revie Series** 

M2M and IoT antenna series supporting 868/900/1800/1900 MHz and UMTS bands

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# Cellular Antennas









#### **CFD/CMD Series MIMO**

- Ceiling Mount
- Ultra low profile/ low profile
- Aesthetics + performance
- Low PIM
- Wideband operation
- Flexible mounting options
- Carrier certified

#### CFSA Series Low PIM Ultra Low Profile Ceiling Mount

- Multi-band options
- Industry's thinnest, smallest ceiling mounted wideband antenna
- Indoor suitable
- Campus/hotels/hospitals/ malls/multi-tenant, multi-use buildings

#### OC Series Outdoor Omni

- 3G/4G/CBRS/LAA/ LTE-U/Wi-Fi
- Uniform omni coverage
- Indoor/outdoor suitable
- UV Stable
- Mast mounting hardware included

### 5G MMIMO

- Massive MIMO arrays
- 20-200 antenna elements
- Beam steering
- Beam scanning
- RF isolation
   between elements

# Infrastructure Wi-Fi Antennas



#### PDQ Series 4-port MIMO Directional Panel

- Four radiating elements optimized for 802.11 MIMO applications
- Horizontally and vertically polarized
- Articulating mast or wall mount can be oriented for maximum signal radiation
- IP67 dust & water ingress-rated

#### CMQ Series 2-4 Port MIMO

- Dual-band, 2.4 GHz, & 5 GHz
- 2-4 port omnidirectional
- Low-profile, ceiling mounted
- Ideal for high-density
   deployments

#### PDM Series 4-Port MIMO Panel

- Dual-band, 2.4 GHz, & 5 GHz
- 4-port vertically and horizontally polarized
- Ideal for high-density deployments
- Indoor and outdoor use
- Various mounting options

#### OP Series 3-Port MIMO

- Dual-band, 2.4 GHz, & 5 GHz
- 3-6 port omnidirectional
- Indoor and outdoor use
- Various pole mounting options

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# **RFID** Antennas





#### PAL Series Circular Polarity RFID Panel

- Operates in either 863-876 MHz or 902-928 MHz bands
- High gain 9.0 dBic performance
- Available in both lefthand and right-hand circular polarizations
- Heavy-duty articulating mount for maximum installation flexibility

#### S8658W Series Circular Polarity RFID Panel

- Broadband 865-960 MHz operation for EMEA and US applications in a single solution
- High gain 8.0 dBic performance
- Available in both lefthand and right-hand circular polarization
- Flush mount



- Operates in the 902-928 MHz band
- High gain, 5.5 dBic performance
- Available in both lefthand (S9025PL) and right-hand (S9025PR) circular polarizations
- Heavy-duty articulating mount for maximum installation flexibility



#### S8656XR Circular Polarity RFID Panel

- Operates in the 865-870 MHz band
- Meets all criteria for forklift applications
- All metal antenna. No exterior radome enclosure is required to protect critical components
- High gain, 6.0 dBic performance
- Flush mount

# **GPS** Antennas





#### GPSU15M Series GPS Antenna

- Operates from 1574.4 to 1576.4 MHz
- Active GPS with 3 dBic gain and a LNA gain of 27 dB
- Right hand, circular polarization
- Fully waterproof
   O-ring sealing
- NMO style

#### GPS1575P Mini GPS Antenna

- Operates from 1572.4 to 1578.4 MHz
- Active GPS with 2.5 dBic gain and an LNA gain of 25-31 dB
- Right hand circular polarization
- IP67-rated for use in highly demanding environments and operating conditions
- Rugged impact resistant housing
- Stud and nut mount



#### GPST Series Antenna

• Available in combinations that cover all primary cellular and GPS frequencies

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- Dual-band and tri-band models available covering UHF/Cellular/GPS
- 2-port antenna
- 27 dB active GPS patch



#### GPS15MG Series GPS Antenna

- Operates over 1574.4 to 1576.4 MHz
- Active GPS with 4 dBic gain and an LNA gain of 29 dB.
- Right hand circular polarization
- Magnetic and/or adhesive mount
- IP66 rated

connectivity.lairdtech.com/rf-antennas/gps-antennas

# Land Mobile Radio







#### CFSA Series Ultra-Low Profile Ceiling Mount

- Low PIM/Indoor suitable
- Industry's thinnest, smallest ceiling mounted wideband antenna with multi-band options
- Campus/hotels/ hospitals/malls/ multi-tenant, multi-use buildings
- New CFSA35606P operates at 350-520/600-6000 MHz for public safety/FirstNet applications

#### CMS38606P Ceiling Mount SISO Antenna

- Operates from 380-960/1395-6000 MHz
- Low PIM design mitigates interference, improving in-building wireless network coverage and capacity
- IP67-rated and ROHS compliant
- Compliant with in-building International Fire Code (IFC) & National Fire Protection Association (NFPA) regulations

#### EXM Series Multiband Antenna

- Covers 136-174 MHz, 380-520 MHz, 764-870 MHz, and 1560-1620 MHz
- Operates simultaneously in four frequency bands supporting VHF, UHF, 700/800 MHz and GNSS
- Slim profile with antenna length of 22 cm

#### YF Series Directional Yagi Antenna

- Weatherproof, internal matching
- Industry 1st IP67 dust & water ingress-rated
- Gold or fully black, anodized finish



#### Phantom Fin Multiband Roof Mount

- Four-port, multiband, 4G-LTE, Wi-Fi.
- UHF & GPS capability
- Single hole mount minimizes intrusion
- IP67 rated, aerodynamic housing

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### 2m 11

#### **Custom Antennas**

- Superior performance designed specifically for your product and application
- State-of-the-art simulation tools address challenges such as ambient noise, radio interference, and design/housing constraints
- Laird Connectivity's Artificial Intelligence Optimizer application ensures the smallest antenna design with optimal performance

#### Vandal Resistant Antenna

- Custom enclosure to withstand direct hit from a baseball bat
- Dual-band 868/900 MHz LoRA frequency bands
- Ultra-low profile design
- IP67 weatherproof enclosure

#### **EXC Series Antenna**

- Injection molded, 1/4 wave, flexible cable antenna
- High durability, high efficiency
- Textured finish with strain relief base
- Available in various standard connectors

#### OF86315-CS1 LoRA Omni Antenna

- Dual-band, 5 dBi at 863-928 MHz
- High density fiberglass, with protective, ultraviolet coating
- Phased to provide maximum gain in the horizontal plane
- Durable gold anodized sleeve and cap with N-female connector









# Bluetooth Antennas

- Extensive Embedded Portfolio
  - Patented FlexPIFA and mFlexPIFA series for flexible internal solutions
  - Low-cost Mini NanoBlade Flex
  - NanoBlue solutions
  - Certified with Laird Connectivity Wireless Modules
- Dipole and Yagi Solutions
- Custom OEM Solutions

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# 5G Technology Leader





### Advanced Antenna Solutions

- MMIMO assemblies
- Novel element technology, achieving best-in-class performance
- Suitable for high volume production
- Suitable for filter integration
- Unmatched production process

### iDAS

- CFSA/CFS
- SISO
- Slimmest aesthetics
- Excellent PIM and radiation performance
- 698 4000 MHz

#### CFD

- 2x2 MIMO
- Slimmest aesthetics
- Excellent PIM and radiation performance
- 698- 4000 MHz

### Industry Leading Antenna Performance and Reliability

Laird Connectivity simplifies the enablement of wireless technologies with market-leading wireless modules and antennas, integrated sensor and gateway platforms, and customer-specific wireless solutions.

Our best-in-class support and comprehensive engineering services help reduce risk and improve time to market. When you need unmatched wireless performance to connect electronics with security and confidence, Laird Connectivity delivers—no matter what.

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