

RFID Antenna

WIRELESS SOLUTIONS



Laird
TECHNOLOGIES®

Innovative Technology
for a Connected World



Innovative **Technology**
for a **Connected** World

About Laird Technologies

Laird Technologies designs and manufactures customized, performance-critical products for wireless and other advanced electronics applications.

The company is a global market leader in the design and supply of electromagnetic interference (EMI) shielding, thermal management products, mechanical actuation systems, signal integrity components, and wireless antennae solutions, as well as radio frequency (RF) modules and systems.

Laird Technologies partners with its customers to customize product solutions for applications in many industries including:

- Telecommunications
- Mobile Communications
- Network Equipment
- Automotive
- Industrial & Instrumentation
- Aerospace
- Defense
- Medical
- Consumer Electronics
- Food & Beverage

Laird Technologies offers customers unique product solutions, dedication to research and development, as well as a seamless network of manufacturing and customer support facilities across the globe.



A Brief Introduction to RFID

Radio frequency identification (RFID) is a generic term for technologies that use radio waves to automatically identify people or objects. There are several methods of identification, the most common being a stored serial number that identifies a person or object, and perhaps other information, on a microchip that is integrated with an antenna on an RFID "tag". The tag antenna enables the chip to transmit the identification information back to a reader. The reader then converts the radio waves reflected back from the RFID tag into digital information that can then be passed onto computers, which can then process that information.

World-Leading Solutions

Laird Technologies is the leading provider of RFID antennas for high-performance reader applications throughout the world. With end-to-end system knowledge, Laird Technologies adds value to their customers in every RFID antenna application by employing advanced and proprietary design tools, including Artificial Intelligence Optimization (AIO), bringing novel designs to market with unmatched performance.

Depend on Laird Technologies

The RFID technology platform provides the means to significantly enhance user rate accuracy via the use high-performance, optimized antennas. Laird Technologies supports RFID use at OEMs and their customers by better understanding the RFID environment and its challenges by testing the RFID antenna/reader system for optimization of read capability and range performance, and by providing test antennas and AIO analysis for application development.

Benefits of RFID Technology

RFID antennas are used to read RFID tags in warehouses, production lines, retail stores, medical facilities, etc.

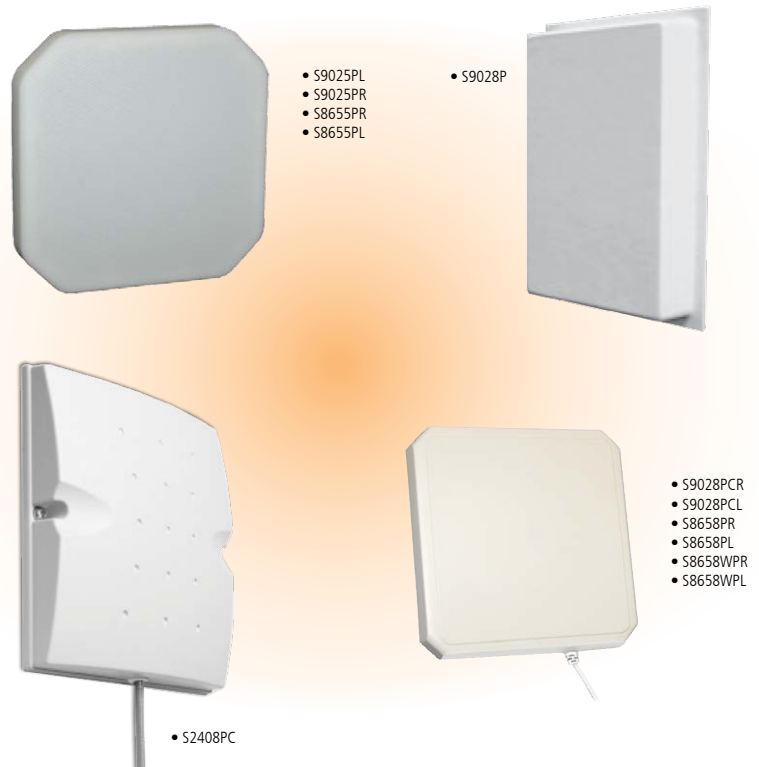
Benefits include:

- Multiple frequency bands
- Indoor/outdoor mounting options
- Low axial ratio - defines the quality of the circular polarization and improves RFID tag read reliability
- Rugged design - RFID antennas typically used in tough environments like warehouses and production lines
- All-metal construction
- Left-hand (LH) and right-hand (RH) circular polarization
- Vertical linear polarization (VPOL) and horizontal linear polarization (HPOL)

RFID ANTENNAS

General Purpose Antennas

Laird Technologies' robust general purpose RFID antennas provide high-performance functions across all popular domestic and international UHF RFID frequencies for indoor and outdoor use. Industry-renowned design methodology achieves maximum efficiency and performance across the entire frequency band.



| PART | FREQUENCY | GAIN | VSWR | POLARIZATION | BEAMWIDTH (3 DB, DEGREES) | | AXIAL RATIO (DB) | MOUNTING STYLE | DIMENSIONS (MM) | CONNECTORS |
|----------|---------------|----------|-------|-----------------|------------------------------|-----------|------------------------|-----------------------------------|--------------------|------------------------------|
| | | | | | HORIZONTAL | ELEVATION | | | | |
| S9028PCR | 902-928 MHz | 9 dBic | 1.3:1 | RH CP | 70 | 70 | 1 | Flush, optional mast/wall bracket | 259 x 259 x 33.5 | pigtail with mutple choices |
| S9028PCL | 902-928 MHz | 9 dBic | 1.3:1 | LH CP | 70 | 70 | 1 | Flush, optional mast/wall bracket | 259 x 259 x 33.5 | pigtail with mutple choices |
| S8658PR | 865-868 MHz | 8.5 dBic | 1.5:1 | RH CP | 70 | 70 | 1 | Flush, optional mast/wall bracket | 259 x 259 x 33.5 | pigtail with mutple choices |
| S8658PL | 865-868 MHz | 8.5 dBic | 1.5:1 | LH CP | 70 | 70 | 1 | Flush, optional mast/wall bracket | 259 x 259 x 33.5 | pigtail with mutple choices |
| S8658WPR | 865-965 MHz | 8.5 dBic | 1.4:1 | RH CP | 70 | 70 | 1 | Flush, optional mast/wall bracket | 259 x 259 x 33.5 | pigtail with mutple choices |
| S8658WPL | 865-965 MHz | 8.5 dBic | 1.4:1 | LH CP | 70 | 70 | 1 | Flush, optional mast/wall bracket | 259 x 259 x 33.5 | pigtail with mutple choices |
| S9025PL | 902-928 MHz | 5.5 dBic | 1.5:1 | LH CP | 100 | 100 | 2 | Flush, optional mast/wall bracket | 132 x 132 x 18 | bulkhead with mutple choices |
| S9025PR | 902-928 MHz | 5.5 dBic | 1.5:1 | LH CP | 100 | 100 | 2 | Flush, optional mast/wall bracket | 132 x 132 x 18 | bulkhead with mutple choices |
| S8655PR | 865-868 MHz | 5.5 dBic | 1.5:1 | RH CP | 100 | 100 | 2 | Flush, optional mast/wall bracket | 132 x 132 x 18 | bulkhead with mutple choices |
| S8655PL | 865-868 MHz | 5.5 dBic | 1.5:1 | LH CP | 100 | 100 | 2 | Flush, optional mast/wall bracket | 132 x 132 x 18 | bulkhead with mutple choices |
| S2406MPC | 2400-2500 MHz | 6.5 dBic | 1.5:1 | RH CP | 65 | 65 | | Flush, optional mast/wall bracket | 148 x 97 x 38 | pigtail with mutple choices |
| S2408PC | 2400-2500 MHz | 8 dBic | 1.5:1 | RH CP | 55 | 55 | | Flush, optional mast/wall bracket | 155 x 155 x 32 | pigtail with mutple choices |
| S9028P | 902-928 MHz | 8 dBi | 1.5:1 | Linear vertical | 70 | 65 | | Flush | 307 x 205 x 53 | pigtail with mutple choices |

RFID ANTENNAS

Near Field Antennas

Laird Technologies' RF system engineering and antenna design technologies improve RFID read rates by optimizing the reader-tag communication link in this unique application environment.



• Dual-slant Near Field Antenna

| PART | FREQUENCY | GAIN | VSWR | POLARIZATION | MOUNTING STYLE | DIMENSIONS (MM) | CONNECTORS | CABLE(S) |
|------------|-------------|-------|-------|-----------------------|--|-----------------|------------------------------|--------------|
| PNS90206SC | 902-928 MHz | 6 dBi | 1.5:1 | Dual-slant 45 degrees | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Side entry |
| PNS90206BC | 902-928 MHz | 6 dBi | 1.5:1 | LH CP | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Bottom entry |
| PNL90206SC | 902-928 MHz | 6 dBi | 1.5:1 | Dual-slant 45 degrees | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Side entry |
| PNL90206BC | 902-928 MHz | 6 dBi | 1.5:1 | LH CP | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Bottom entry |
| PNS86506SC | 865-868 MHz | 6 dBi | 1.5:1 | Dual-slant 45 degrees | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Side entry |
| PNS86506BC | 865-868 MHz | 6 dBi | 1.5:1 | LH CP | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Bottom entry |
| PNL86506SC | 865-868 MHz | 6 dBi | 1.5:1 | Dual-slant 45 degrees | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Side entry |
| PNL86506BC | 865-868 MHz | 6 dBi | 1.5:1 | LH CP | Table top, flush (in cut-out hole or underneath surface) | 261 x 261 x68 | pigtail with mutiple choices | Bottom entry |

Accessories

Laird Technologies supplies accessories that are the perfect complement to its antenna systems. Cable assemblies, surge suppressors, lightning arrestors, POE inserters and splitters, wall and roof-top antenna mounts, connector adapters and die-cast aluminum enclosures are available.

| PART | DESCRIPTION/ APPLICATION |
|---------|---|
| HDMNT | Heavy duty articulating mount for S9028PR/L, S8658PR/L, S8658WPR/L antennas |
| ALLPMTE | Articulating mount for S9025PR/L, S8655PR/L antennas |



• ALLPMTE

RFID ANTENNAS

Special Application Antennas

Laird Technologies offers innovative antenna systems that give the operator ultimate system flexibility.

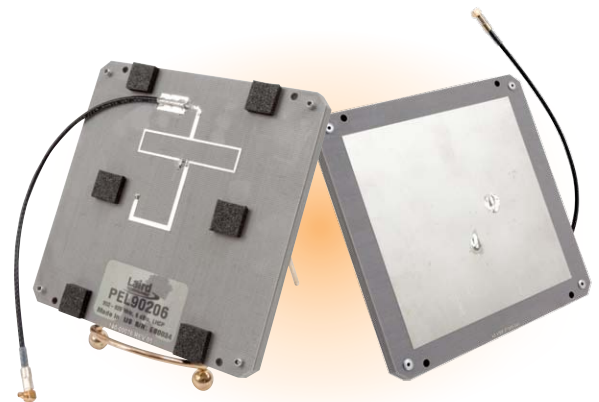


- DCE9028PLFSMF
- DCE9028PRFSMF
- DCE8658PLFSMF
- DCE8658PRFSMF
- DCE8658WPRFSMF
- DCE8658WPLFSMF

| PART | DESCRIPTION/ APPLICATION | FREQUENCY | GAIN | VSWR | POLARIZATION | BEAMWIDTH (3 DB, DEGREES) | | AXIAL RATIO (DB) | MOUNTING STYLE | DIMENSIONS (MM) | CONNECTORS |
|----------------|----------------------------------|-------------|----------|-------|--------------|------------------------------|-----------|------------------------|-------------------|-----------------|------------|
| | | | | | | HORIZONTAL | ELEVATION | | | | |
| DCE9028PLFSMF | Die-cast enclosure | 902-928 MHz | 9 dBic | 1.3:1 | LH CP | 70 | 70 | 1 | Mast, wall | 317 x 264 x 99 | SMA |
| DCE9028PRFSMF | Die-cast enclosure | 902-928 MHz | 9 dBic | 1.3:1 | RH CP | 70 | 70 | 1 | Mast, wall | 317 x 264 x 99 | SMA |
| DCE8658PLFSMF | Die-cast enclosure | 865-870 MHz | 8.5 dBic | 1.5:1 | LH CP | 70 | 70 | 1 | Mast, wall | 317 x 264 x 99 | SMA |
| DCE8658PRFSMF | Die-cast enclosure | 865-870 MHz | 8.5 dBic | 1.5:1 | RH CP | 70 | 70 | 1 | Mast, wall | 317 x 264 x 99 | SMA |
| DCE8658WPRFSMF | Die-cast enclosure | 865-960 MHz | 8.5 dBic | 1.4:1 | RH CP | 65 | 65 | 1 | Mast, wall | 317 x 264 x 99 | SMA |
| DCE8658WPLFSMF | Die-cast enclosure | 865-960 MHz | 8.5 dBic | 1.4:1 | LH CP | 65 | 65 | 1 | Mast, wall | 317 x 264 x 99 | SMA |
| S9026X | All metal/fork lift, high impact | 902-928 MHz | 6 dBic | 1.5:1 | RH CP | 80 | 80 | 3 | Flush | 192 x 192 x 24 | N |
| S8656X | All metal/fork lift, high impact | 865-868 MHz | 6 dBic | 1.5:1 | RH CP | 80 | 80 | 3 | Flush | 192 x 192 x 24 | N |

Internal Antennas (located inside device)

Laird Technologies provides advanced internal high-performance RFID antenna designs that function across all popular domestic and international UHF RFID frequencies for indoor and outdoor use.



| PART | FREQUENCY | GAIN | VSWR | POLARIZATION | BEAMWIDTH (3 DB, DEGREES) | | AXIAL RATIO (DB) | MOUNTING STYLE | DIMENSIONS (MM) | CONNECTORS |
|----------|-------------|--------|-------|--------------|------------------------------|-----------|------------------------|-------------------|--------------------|-------------------------------|
| | | | | | HORIZONTAL | ELEVATION | | | | |
| PEL90206 | 902-928 MHz | 6 dBic | 1.5:1 | LH CP | 90 | 90 | 1 | Standoff | 120 x 120 x 7 | pigtail with multiple choices |

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Americas: +1.888.246.9050

Europe: +46.31.420530

Asia: +86.755.2714.1166

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