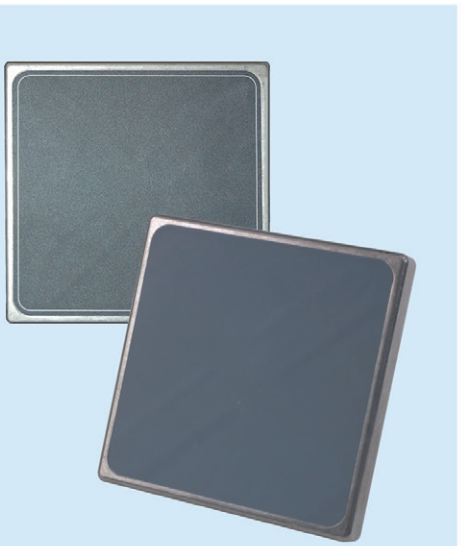
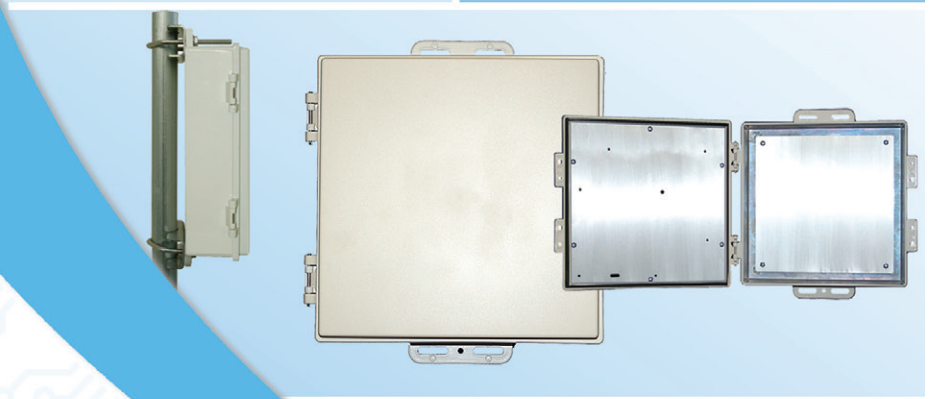
RFID Antenna

WIRELESS SOLUTIONS





Laird TECHNOLOGIES®

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

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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

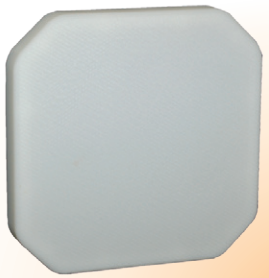
RFID antennas are used to read RFID tags in warehouses, production lines, retail stores, medical facilities, etc.
Benefits include:

- 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.



- S9025PL
- S9025PR
- S8655PR
- S8655PL

- S9028P

- S2408PC

- S9028PCR
- S9028PCL
- S8658PR
- S8658PL
- S8658WPR
- S8658WPL

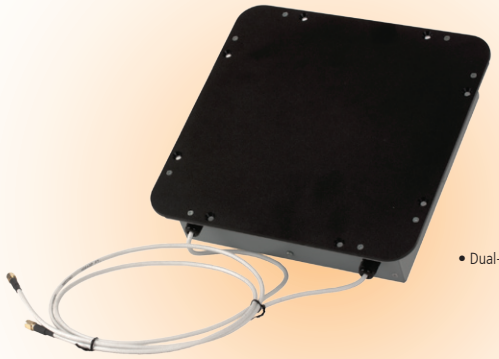
PART	FREQUENCY	GAIN	VSWR	POLARIZATION	BEAMWIDTH (3 DB, DEGREES)		AXIAL RATIO (DB)	MOUNTING STYLE	DIMENSIONS (MM)	CONNECTORS
					HORIZONTAL	ELEVATION				
S9028PCR	902-928 MHz	9 dBic	1.3:1	RH CP	70	70	1	Flush, optional mast/wall bracket	259 x 259 x 33.5	pigtail with mutiple choices
S9028PCL	902-928 MHz	9 dBic	1.3:1	LH CP	70	70	1	Flush, optional mast/wall bracket	259 x 259 x 33.5	pigtail with mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple 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 mutiple choices
S9028P	902-928 MHz	8 dBi	1.5:1	Linear vertical	70	65		Flush	307 x 205 x 53	pigtail with mutiple choices

RoHS

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	CABLES(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

• ALLPTME

RFID ANTENNAS

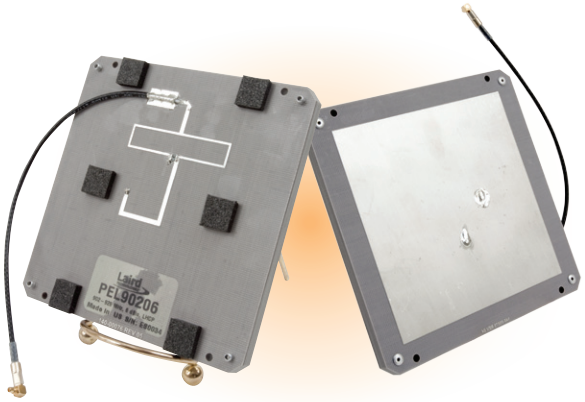
Special Application Antennas

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

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 x99	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 mutiple choices

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Americas: +1.888.246.9050
Europe: +46.31.420530
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