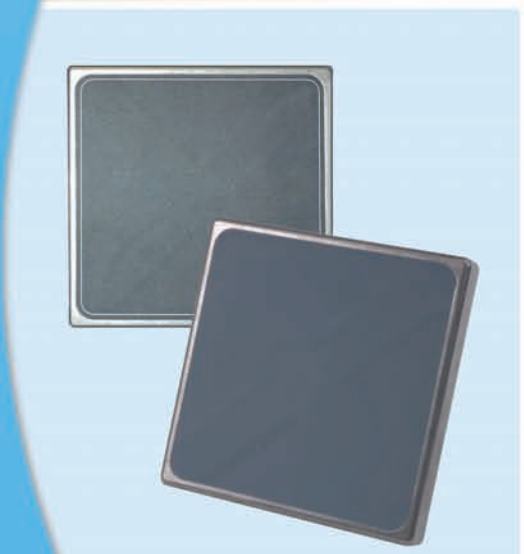
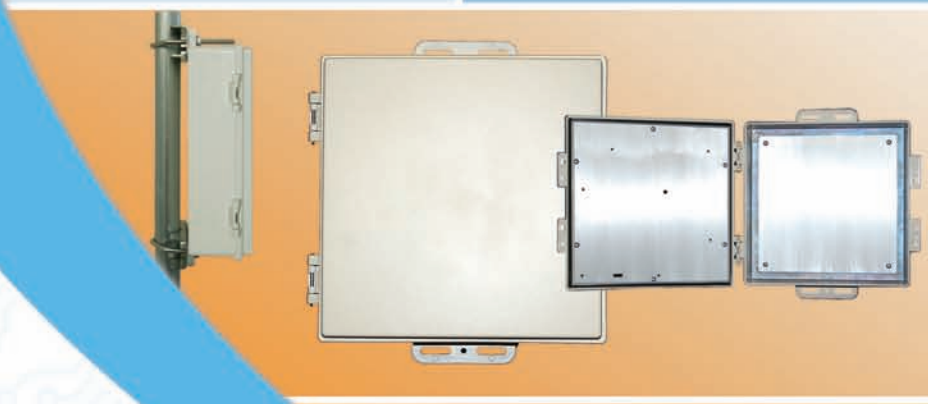
Industrial Wireless - RFID Antenna

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

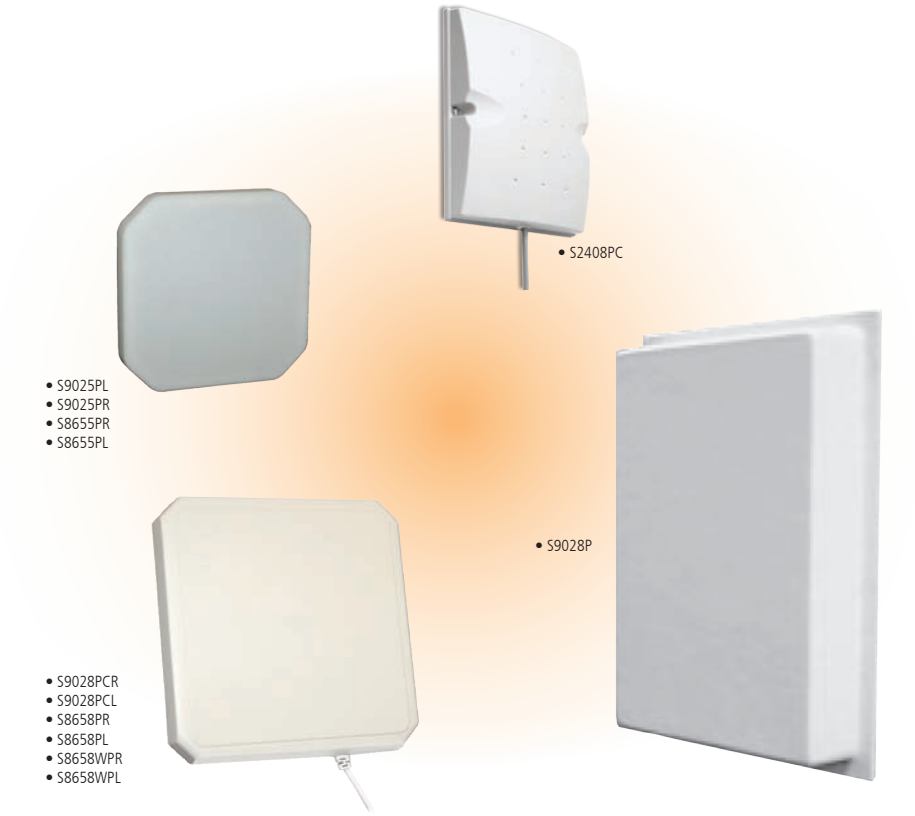
RFID antennas are used to read RFID tags in warehouses, production lines, retail stores, medical facilities, etc.
Benefits include:

- 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)

Industrial Wireless 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.



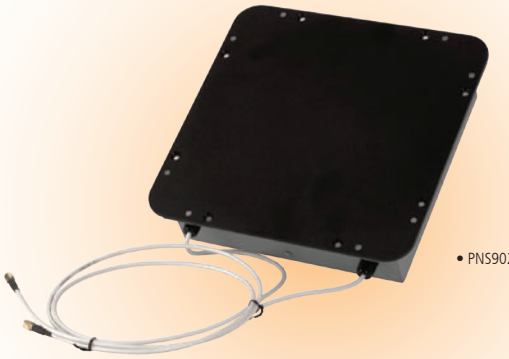
PART	FREQUENCY	GAIN	VSWR	POLARIZATION	BEAMWIDTH (3 DB, DEGREES)		AXIAL RATIO (DB)	DIMENSIONS (MM)	CONNECTORS	CONFIGURATION WITH MOUNTING OPTION		
					HORIZONTAL	ELEVATION						
S9028PCR	902-928 MHz	9 dBic	1.3:1	RH CP	70	70	1	259 x 259 x 33.5	pigtail with multiple choices	4-Post with HDMNT Mount	2-Post with Rack Mount	Flush with Flush Mount
S9028PCL	902-928 MHz	9 dBic	1.3:1	LH CP	70	70	1	259 x 259 x 33.5	pigtail with multiple choices			
S8658PR	865-868 MHz	8.5 dBic	1.5:1	RH CP	70	70	1	259 x 259 x 33.5	pigtail with multiple choices	4-Post with HDMNT Mount	2-Post with Rack Mount	
S8658PL	865-868 MHz	8.5 dBic	1.5:1	LH CP	70	70	1	259 x 259 x 33.5	pigtail with multiple choices			
S8658WPR	865-965 MHz	8.5 dBic	1.4:1	RH CP	70	70	1	259 x 259 x 33.5	pigtail with multiple choices	4-Post with HDMNT Mount	4-Post with VESA Mount	Flush with Flush Mount
S8658WPL	865-965 MHz	8.5 dBic	1.4:1	LH CP	70	70	1	259 x 259 x 33.5	pigtail with multiple choices			
S9025PL	902-928 MHz	5.5 dBic	1.5:1	LH CP	100	100	2	132 x 132 x 18	bulkhead with multiple choices	2-Post with HKIT-S9025P-001 Mount	2-Post with ALLPMTE Mount	
S9025PR	902-928 MHz	5.5 dBic	1.5:1	LH CP	100	100	2	132 x 132 x 18	bulkhead with multiple choices			
S8655PR	865-868 MHz	5.5 dBic	1.5:1	RH CP	100	100	2	132 x 132 x 18	bulkhead with multiple choices			
S8655PL	865-868 MHz	5.5 dBic	1.5:1	LH CP	100	100	2	132 x 132 x 18	bulkhead with multiple choices			
S2406MPC	2400-2500 MHz	6.5 dBic	1.5:1	RH CP	65	65	–	148 x 97 x 38	pigtail with multiple choices	Flush with Flush Mount		
S2408PC	2400-2500 MHz	8 dBic	1.5:1	RH CP	55	55	–	155 x 155 x 32	pigtail with multiple choices			
S9028P	902-928 MHz	8 dBi	1.5:1	Linear vertical	70	65	–	307 x 205 x 53	pigtail with multiple choices			
PAL90209H	902 - 928 MHz	9 dBic	1.3:1	RH CP	70	70	1	259 x 259 x 38.5	fixed N-female	4-Post with HDMNT Mount		
PAR90209H	902 - 928 MHz	9 dBic	1.3:1	LH CP	70	70	1	259 x 259 x 38.5	fixed N-female			

RoHS

Industrial Wireless 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.



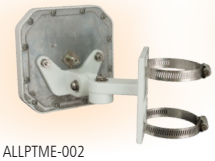
• PNS90206SC

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 multiple choices	Side entry
PNS90206BC	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 multiple choices	Bottom entry
PNL90206SC	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 multiple 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 multiple 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 multiple choices	Side entry
PNS86506BC	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 multiple choices	Bottom entry
PNL86506SC	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 multiple 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 multiple choices	Bottom entry

Mounting Options

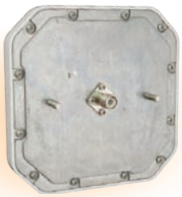
Laird Technologies offers various mounting options providing flexibility and maximum performance from your antenna.

• HDMNT with 4-Post Configuration

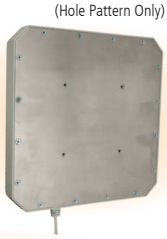


• ALLPTME-002

• Rack Mount



• VESA Mount (Hole Pattern Only)



• Flush Mount

• HKIT-S9025P-001

PART	OFFERED FOR	MECHANICAL FEATURES
HDMNT	S9028PR/L, S8658PR/L, S8658WPR/L, PAL90209H-FNF	IP54 with bottom exit cable, IP67 with Fixed N connector
ALLPMTE-002	S9025PR/L, S8655PR/L	Articulating mount
Rack Mount	S9028PCL/R, S8658PL/R	IP54 with bottom exit cable
VESA (Hole Pattern)	S8658WPR/L	IP54 with bottom exit cable
Flush Mount	S9028PR/L	IP54 with bottom exit cable
HKIT-S9025P-001	S9025PL/R, S8655PL/R	IP67 fixed connector
Fork Lift	S9026XRRN, S8656XRRN	IP67 with Fixed mount connector

Accessories

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

• Fork Lift Mount

Industrial Wireless RFID ANTENNAS

Special Application Antennas

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

• S9026X with Fork Lift Mount

• 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 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.

• PEL90206

• PEL86506

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
PEL86506	865-868 MHz	6 dBic	1.5:1	LH CP	100	100	1	Standoff	61 x 61 x 4	pigtail with multiple choices

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