



Smart Technology. Delivered.™

Industrial Wireless RFID Antenna Solutions

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





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About Laird

Laird is the leading provider of RFID antennas for high-performance reader applications throughout the world. From proprietary testing systems to our high standards for quality and services, including Artificial Intelligence Optimization (AIO) bringing novel designs to market with unmatched performance; compatibility with any reader, our RFID antennas are designed to work with virtually any reader available ; products for a variety of applications, we have a solution that will fit your needs, no matter what your requirements are; global functionality, our products come in a wide range of frequencies and standards that will ensure your RFID antennas will work across all of your locations around the world; industry leading quality of service, all of our products are backed by a worldwide service and support network.

Laird provides systems, components and solutions that protect electronics from electromagnetic interference and heat, and that enable connectivity in mission critical systems through wireless applications and antenna systems.

We are a leader in the design, development and delivery of innovative technologies that enable people, organizations and applications to connect efficiently and effectively. With a proud history stretching back to 1824, Laird has been at the forefront of technological innovation for almost two centuries. And we continue to deliver.

Our reputation has been built on three guiding principles:

- Innovation- putting our in-depth knowledge of the latest materials and processes to work in creating outstanding products for our customers.
- Reliable fulfillment – delivering what our customers need to their exact specifications, on time and on budget, and in the quantities required.
- Speed- rationalizing the design and delivery cycle to minimize the time from initial concept to final implementation.

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.

Depend on Laird

The RFID technology platform provides the means to significantly enhance user rate accuracy via the use highperformance, optimized antennas. Laird supports RFID use at OEMs and their customers by better understanding the RFID environment and its challenges. We will test the RFID antenna/reader systems 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's 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 NUMBER	FREQUENCY (MHZ)	GAIN	VSWR	POLARIZATION	BEAMWIDTH (3 DB, DEGREES)		AXIAL RATIO (DB)	DIMENSIONS (MM)	CONNECTORS	CONFIGURATION WITH MOUNTING OPTION			
					HORIZ	ELEV				4-Post with HDMNT Mount	2-Post with Rack Mount	Flush with Flush Mount	
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	4-Post with HDMNT Mount		2-Post with Rack Mount	
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				
PAV90209H	902-928 MHz	9 dBi	1.3:1	Linear	70	—	—	259 x 259 x 33.53	fixed N-female/N-male	Threaded Stud			



Industrial Wireless RFID Antennas

Near Field Antennas

Laird's 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 NUMBER	FREQUENCY (MHZ)	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 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

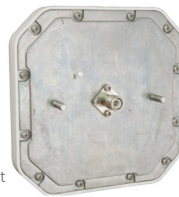
Laird offers various mounting options providing flexibility and maximum performance from your antenna.



• Fork Lift Mount



• HDMNT with 4-Post Configuration



• Rack Mount



• VESA Mount (Hole Pattern Only)



• Flush Mount

PART NUMBER	FREQUENCY (MHZ)	GAIN
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



• HKIT-S9025P-001



• ALLPMTE-002

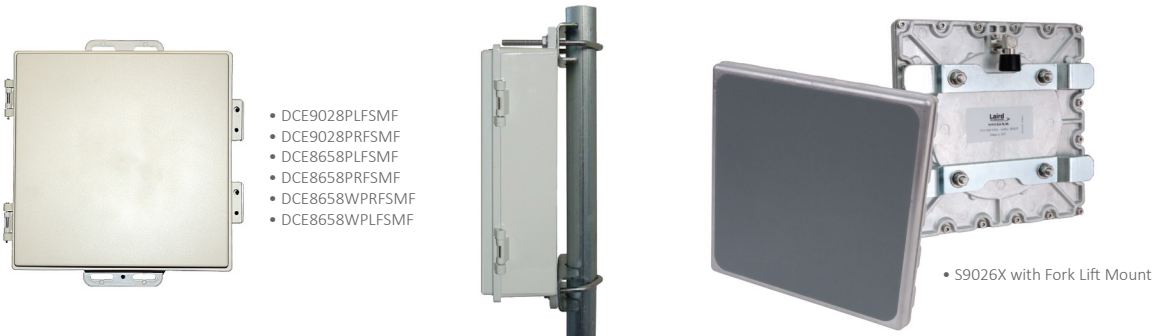
Accessories

Laird supplies accessories that compliment its antennas systems. Cable assemblies, surge suppressors, lightning arrestors, POE inserters and splitters, connector adapters and die-cast aluminum enclosures are available.

Industrial Wireless RFID Antennas

Special Application Antennas

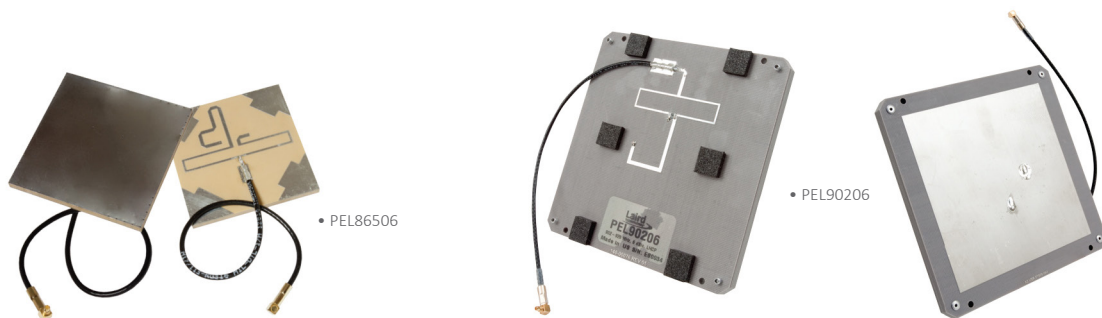
Laird offers innovative antenna systems that give the operator ultimate system flexibility.



PART NUMBER	DESCRIPTION/ APPLICATION	FREQUENCY	GAIN	VSWR	POLAR- IZATION	BEAMWIDTH (3 DB, DEGREES)		AXIAL RATIO (DB)	MOUNTING STYLE	DIMENSIONS (MM)	CONNECTORS
						HORIZ	ELEV				
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 x99	SMA
DCE8658PLFSMF	Die-cast enclosure	865-870 MHz	8.5 dBic	1.5:1	LH CP	70	70	1	Mast, wall	317 x 264 x99	SMA
DCE8658PRFSMF	Die-cast enclosure	865-870 MHz	8.5 dBic	1.5:1	RH CP	70	70	1	Mast, wall	317 x 264 x99	SMA
DCE8658WPRFSMF	Die-cast enclosure	865-960 MHz	8.5 dBic	1.4:1	RH CP	65	65	1	Mast, wall	317 x 264 x99	SMA
DCE8658WPLFSMF	Die-cast enclosure	865-960 MHz	8.5 dBic	1.4:1	LH CP	65	65	1	Mast, wall	317 x 264 x99	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 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 NUMBER	FREQUENCY	GAIN	VSWR	POLAR- IZATION	BEAMWIDTH (3 DB, DEGREES)		AXIAL RATIO (DB)	MOUNTING STYLE	DIMENSIONS (MM)	CONNECTORS
					HORIZ	ELEV				
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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