

Land Mobile Radio Antenna

SOLUTIONS

www.lairdtech.com



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 Land Mobile Radio Antennas

Land Mobile Radio (LMR) antennas are utilized in two-way wireless communication systems. They ensure interoperable communications in situations like emergencies, where the user can either be in a vehicle (mobile) or on foot (portable). These antennas operate over a wide range of frequencies, and are ideal for simultaneous data transmission to the connected networks of multiple users in government, public safety, and commercial applications.

World-Leading Solutions

As the industry leader in antenna products, Laird Technologies produces antennas in a diverse number of styles while ensuring maximum efficiency, power handling, and high-performance. To meet its customers' specific requirements, select antennas can be individually tuned to a specific frequency.

Depend on Laird Technologies

Laird Technologies' LMR antennas are the industry standard for public safety agencies, fleet, and transportation networks. Established in-market presence and innovative molding techniques, with verified platforms and a variety of connection options adds to the reputation for rugged reliability in hazardous situations and harsh environments for these antennas. Benefits include:

- High durability
- Heavy-duty design
- Excellent quality and RF performance
- Easy installation



Portable Radio ANTENNAS

Portable radio antennas are used for wireless two-way communication by civil service, military, construction, and transportation organizations, with many custom applications.

Laird Technologies' portable radio antennas are the world standard for reliable, flexible antennas. Established in-market presence and innovative molding techniques, with verified platforms and a variety of connection options adds to the reputation for rugged reliability in hazardous situation and harsh environments for these antennas.

As the industry leader in radio antenna products, Laird Technologies produces antennas in a diverse number of styles. To ensure maximum performance, radio antennas can be individually tuned to frequency, while delivering high-performance in any environment.



Low-band 27 to 88 MHz



• A Series • EXL Series

FAMILY	FREQUENCY RANGES*	BANDWIDTH	BN	BNX	HT	KR	MD	MX	MXI	PL	SF	SFJ	SFU	SM	SMI	SMV	TN	TNX	LENGTH*	NOTES	
A Series	27 - 88 MHz	6 - 12 MHz *	•		•	•		•		•								•	6" - 10" *	Lower cost than other low band antennas, uses rugged heat shrink tubing for radome	
EXL Series	25 - 88 MHz	4 - 12 MHz *		•	•	•		•											•	10.75" - 11.1" *	Field tunable, more robust than A Series (used molded/machined radome)
EXW Series	30 - 88 MHz	58 MHz		•															•	12"	Broadbanded, most robust of the low band portable radio antennas

VHF 118 to 225 MHz



• EXR Series • EXB Series

FAMILY	FREQUENCY RANGES*	BANDWIDTH	BN	BNX	HT	KR	MD	MX	MXI	PL	SF	SFJ	SFU	SM	SMI	SMV	TN	TNX	LENGTH*	NOTES		
DR Series	118 - 225 MHz	107 MHz	•					•			•									19"	Broadbanded, uses rugged heat shrink tubing for radome, very flexible	
EXB Series	118 - 225 MHz	4 - 13 MHz *	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	4.1" - 7.8" *	Industry standard, wide range of connector options available
SXB Series	136 - 174 MHz	11 - 13 MHz *						•			•		•								5.5"	Lowest cost of the VHF antennas, rigid (uses sheath)
EXH Series	145 - 175 MHz	10 MHz	•			•	•	•	•	•	•		•	•	•	•	•	•			10.5"	High gain
EXR Series	136 - 225 MHz	10 MHz	•	•				•	•				•	•	•						7" - 8"	Flexible, rugged
EXS Series	118 - 225 MHz	4 - 15 MHz*	•	•	•	•		•	•		•	•	•	•	•	•	•	•			3.3" - 5.10"	Shorter, less performance
EXW Series	136 - 240 MHz	5 - 26 MHz*		•				•											•		8.75"	High gain, flexible, low cost
TS Series	118 - 174 MHz	56 MHz	•	•	•	•		•													17"	High gain, broadbanded
V Series	118 - 225 MHz	4 - 15 MHz*	•	•	•	•		•											•		17"	Low cost, flexible

UHF 300 to 512 MHz



• G Series

FAMILY	FREQUENCY RANGES*	BANDWIDTH	BN	BNX	HT	KR	MD	MX	MXI	PL	SF	SFJ	SFU	SM	SMI	SMV	TN	TNX	LENGTH*	NOTES		
EXC Series	308 - 512 MHz	6 - 42 MHz*	•	•		•	•	•	•		•		•	•	•	•	•	•			5.9" - 7"	Low cost, flexible
EXD Series	308 - 512 MHz	6 - 42 MHz*	•	•	•	•	•	•	•		•		•	•	•	•	•	•			2.8" - 4.1"	Shorter, less performance
EXR Series	308 - 512 MHz	6 - 42 MHz*	•			•		•													6.62" - 6.95"	High gain, flexible
EXW Series	400 - 512 MHz	12 MHz		•																	9"	High gain, flexible, low cost
G Series	400 - 512 MHz	20 - 42 MHz*	•																		10"	High gain, flexible, broadbanded
SXD Series	420 - 470 MHz	30 MHz						•			•		•								3.5"	Low profile, rigid (uses sheath), low cost

Trunking and SMR Apps 806 to 960 MHz



• EXS Series • EXP Series

FAMILY	FREQUENCY RANGES*	BANDWIDTH	BN	BNX	HT	KR	MD	MX	MXI	PL	SF	SFJ	SFU	SM	SMI	SMV	TN	TNX	LENGTH*	NOTES				
EXC Series 806	806 - 866 MHz	60 MHz	•	•	•	•	•	•	•				•	•	•	•	•	•			3.7" - 4.6"	Low cost, rugged, flexible		
EXC Series 821	821 - 902 MHz	81 MHz	•	•				•													•	3.7" - 4.6"	Low cost, rugged, flexible	
EXC Series 902	902 - 960 MHz	58 MHz											•	•	•	•	•	•				3.5" - 3.65"	Low cost, rugged, flexible	
EXE Series	806 - 960 MHz	19 - 58 MHz*	•	•				•					•	•	•	•	•	•				8" - 8.9"	High gain, rigid	
EXP Series 806	806 - 869 MHz	63 MHz						•					•	•	•							6.9"	High gain, flexible, rugged	
EXP Series 902	896 - 940 MHz	44 MHz						•					•	•	•							6.9"	High gain, flexible, rugged, *SMS Connector	
EXR Series	806 - 960 MHz	58 - 81 MHz*	•																			9.16" - 9.5"	High gain, flexible	
EXR Series 1850	1850 - 1970 MHz	120 MHz	•																				9.25" - 9.5"	High gain, flexible
EXS Series	806 - 960 MHz	58 - 60 MHz*						•					•	•	•	•							2.25"	*SMS connector

2.4 GHz



• WRX Series • EXE Series

FAMILY	FREQUENCY RANGES*	BANDWIDTH	LENGTH*	NOTES
EXE Series	2400 - 2500 MHz	100 MHz	8"	Covered TNX - 1/2 wave, high gain, rigid, broadbanded
EXC Series	2400 - 2500 MHz	100 MHz	2.5" - 4"	SMA, Rev Pol TNC, TNC - 1/4 wave, rigid, low cost, broadbanded
EXR Series	2400 - 2500 MHz	100 MHz	Right Angle	Rev Pol SMA, SMA, Rev Pol BNC - 1/2 wave, broadbanded
EXR Series	2400 - 2500 MHz	100 MHz	Right Angle	Rev Pol TNC - 1/4 wave, broadbanded, high gain
EXS Series	2400 - 2500 MHz	100 MHz	4"	Rev Pol SMA - 1/4 wave, lower gain, low cost, low profile
WRX Series	2400 - 2500 MHz	100 MHz	4"	TNC - 1/2 wave

* varies by specific PN's



Mobile Radio ANTENNAS

Mobile radio antennas are used for wireless two-way communication with taxi dispatch, police, municipal, etc.; with many custom applications. Along with the use of mounting kits, these antennas can be mounted to any vehicle that is in any environment.

Laird Technologies' mobile radio antennas are the industry standard for public safety agencies, fleet and transportation networks. The company designs and manufactures a wide variety of mobile antennas with a multitude of mounting options.

As the industry leader in mobile radio antenna products, Laird Technologies produces antennas in a diverse number of styles that can be mounted to any vehicle for any use. To ensure maximum performance, mobile radio antennas can be individually tuned to frequency, while delivering high-performance in any environment.

Low Band

CATEGORY	FAMILY	ITEM	FREQUENCY RANGES	BANDWIDTH	LENGTH	NOTES
Whip	C-Coil	C(B)**(S)	26.75 - 50 MHz	3 - 7 MHz *	52.5" - 67.5"*	Available in white or black, with or without shock spring
	Genesis™	CW(B)**(S)	26.75 - 48 MHz	3 - 9 MHz *	54" - 68" *	



• C-Coil

VHF

CATEGORY	FAMILY	ITEM	FREQUENCY RANGES	BANDWIDTH	LENGTH	NOTES
Low Profile	Phantom®	TRA(B)2100	210 - 225 MHz	15 MHz	2.9"	NMO only
	Phantom® – Tunable	TRA(B)****(P)	142 - 225 MHz	15 - 18 MHz*	2.9" - 3.5"*	NMO or permanent mount (P-mount only available on select models)
	Phantom Elite®	ETRA(B)****	144 - 225 MHz	4 - 15 MHz*	2.375"	NMO only (with NMO adaptor); available in black or white
Whip	A-Base	A(B)***(S)	118 - 896 MHz	Single Frequency	–	Available with spring, field tunable, dual-band available
	QW (Quarterwave)	QW(B)***	136 - 970 MHz	8 - 15 MHz*	12.5" - 22"*	Available in field tunable model
	B-Coil	B(B)****(W)(N)(S)(SG)	66 - 225 MHz	4 - 15 MHz*	23" - 59"*	Tunable, available with spring, certain frequencies available in no ground plane or wideband
	C-Coil	C(B)****(S)(SG)	27 - 50 MHz	3 - 7 MHz*	52.5" - 67.5"*	Available in chrome or black; available as field tunable; available with spring and spring guard
	Genesis™	CW(B)****(S)(SG)	27 - 470 MHz	3 - 30 MHz *	18" - 68" *	Available with spring and spring guard
GPS-based	Survivor™	GPSD(L)(S)****(PL)P	137 - 170 MHz	10 - 24 MHz	7.25" - 22.4"*	Available with magnetic base



• Phantom® – Tunable

UHF & SHF

CATEGORY	FAMILY	ITEM	FREQUENCY RANGES	BANDWIDTH *	LENGTH	NOTES
Low Profile	Phantom® – AVL Style	DTRA****(P)	806 - 960 MHz	26 - 75 MHz*	1.25"	Available in P-mount
	Phantom®	TRA(B)****(N)(P)	300 - 6.0 GHz	Varies by specific PN	3.4" or 2.7"	Available as NMO or P-mount; available in black or white; some models available with no ground plane, some frequencies available as dual-band; other options may be available (wall/ceiling mount)
	Phantom Elite®	ETRA(B)****(N)(P)	410 - 2500 MHz	15 - 110 MHz*	2.7" - 4.025"*	
	Discadoo®	DISC(W)****(M)(PNSM)	760 - 2500 MHz	60 MHz - 1 GHz	0.75"	Available as NMO or P-mount w/ adhesive
GPS	GPS only	GPS***** †	1575.42 MHz	Single Frequency	0.43" - 1.875"*	Various form factors available; available in NMO mount, trunk mount, add on bracket, magnetic mount, adhesive mount, and standard AVL
	Dual-band & Tri-band GPS AVL	GPS(D)(T)****P	450 - 2500 MHz	20 - 100 MHz*	1.25" - 4.125"*	–
	Survivor™	GPSDS****(P)(LP)(G)	380 - 960 MHz	60 - 110 MHz *	6" - 26.9"*	Available with SS rod or "rubber duck" style antenna; available with mag mount option
	Internal Mercury™	GPST(3/5)****/*****	824 - 960 MHz / 1710 - 1990 MHz / 1575.42 MHz	72 - 80 MHz* / 130 - 170 MHz* / Single Frequency	–	–
	External Mercury™	GPST3E824/18503	824 - 896 MHz / 1850 - 1990 MHz / 1575.42 MHz	72 MHz / 140 MHz / Single Frequency	–	–
	Roof Mount Tri-band	GPSTR***/*****	824 - 896 MHz / 1850 - 1990 MHz / 1575.42 MHz	72 MHz / 140 MHz / Single Frequency	–	Available in most connector options
Whip	A-Base	A(B)****C(S)	450 - 2500 MHz	20 - 110 MHz*	–	Available with spring and close coil collinear, dual-band available
	QW (Quarterwave)	QW(B)***	406 - 970 MHz	20 - 110 MHz*	3" - 24"*	Available in field tunable model, 806 to 970 MHz model available with open coil flexible
	B-Coil	B(B)****(N)(S)	406 - 970 MHz	20 - 110 MHz*	4.875" - 39.5"*	Tunable, available with spring, available with closed coil collinear, certain frequencies available in no ground plane
	C-Coil	C(B)****C(S)	144 - 174 / 440 - 470 MHz	24 - 30 MHz*	35.5" - 37.5"*	Closed coil collinear, available with spring, dual-band or single band available
	Elevated Feed	E(B)****C	450 - 970 MHz	20 - 110 MHz*	25.375" - 40.25"*	–
MIMO	3-Port	–	2.4/5.0 GHz	–	1.5" height	Available as either dual band element or single band; also various cable and connector configs available
	2-Port w/ GPS	–	2.4/5.0 GHz	–		
	1-Port w/ GPS	–	2.4/5.0 GHz	–		



• Phantom®



• Phantom Elite®



• Survivor™



• Dual-band & Tri-band GPS AVL

* varies by specific PN's

† Inquire about various models/options available

Dispatch BASESTATION

Dispatch base station antennas offer unmatched, maximum null fill to ensure consistent gain close to the tower and extend out toward the horizon. These antennas are used mostly for public safety applications or private networks. The dispatch center coordinates and controls the dispatch units and tracks the location and ID of the dispatched units.

Laird Technologies' world class engineering teams utilize proprietary, state-of-the-art design tools to create dispatch base station antenna products that maximize total system performance and user satisfaction. These antennas consistently offer the industry's best value proposition.

VHF

CATEGORY	FAMILY	ITEM	FREQUENCY RANGES*	BANDWIDTH*	GAIN (dBi)	LENGTH*	MAXIMUM POWER (WATTS)	NOTES
Omnidirectional	Fiberglass	FG****	140 - 260 MHz	4 - 6 MHz*	2-7	68" - 107"**	150-200	-
	Voyager®	VG****	132 - 225 MHz	18 - 25 MHz*	4-8	55" - 102"	150-200	-
	Ringo	CR(S)(X)***	150 - 222 MHz	2 - 24 MHz*	4-9	30" - 162"**	150-200	-
Directional Yagis	Gold/Black Series (Rugged)	Y(B)****	136 - 250 MHz	14 - 30 MHz*	11-13	41.5" - 72"**	150-200	-
	Silver Series (Economy)	YS****	136 - 250 MHz	9 - 30 MHz*	11-13	41.5" - 72"**	150-200	-
	Heavy Duty PLC	PLC****(N)	129 - 220 MHz	2 - 8 MHz*	11-13	48" - 161"**	400	-
	Economy P	P****	130 - 222 MHz	2 - 4.5 MHz*	10	36" - 44"**	400	-
	Lowband	PLHC****(N)	30 - 75 MHz	45 MHz	7-11	42" - 136"**	-	-
Dipole Arrays	2 Bays	YDA***2	150 - 174 MHz	24 MHz	7	-	-	Single or replacement dipoles available
	4 Bays	YDA***4	136 - 174 MHz	14 - 24 MHz*	10-13	-	-	Single or replacement dipoles available
	Broadband Arrays	****S	140 - 222 MHz	10 - 12 MHz*	7-13	132" - 504"	500	-



• Fiberglass Omnidirectional

UHF & SHF

CATEGORY	FAMILY	ITEM	FREQUENCY RANGES*	BANDWIDTH*	GAIN (dBi)	LENGTH*	MAXIMUM POWER (WATTS)	NOTES
Omnidirectional	Fiberglass	FG****	360 - 2400 MHz	10 - 90 MHz*	2-11	15" - 107"**	200	Dual-band also available
	FR Series	FR(X)***	380 - 512 MHz	20 - 24 MHz*	5-7	77.79" - 118.75"**	150	-
	Voyager®	VG****	406 - 512 MHz	44 - 62 MHz*	7-8	25" - 35"	200	-
	Ringo	CR(S)(X)***(B)	406 - 512 MHz	14 - 22 MHz*	4-9	17" - 54"**	250	-
Yagis	Gold/Black Series (Rugged)	Y(B)****	406 - 970 MHz	20 - 90 MHz*	11-15	16.75" - 68.0625"**	150 - 200	-
	Silver Series (Economy)	YS****	406 - 970 MHz	20 - 90 MHz*	10-15	16.75" - 72"**	150 - 200	-
	Heavy Duty PLC	PLC****(N)	300 - 512 MHz	14 - 22 MHz*	11-15	31.25" - 66"**	250	-
	Economy P and PE	P(E)****	406 - 495 MHz	20 - 55 MHz*	10-12	15.25" - 36"**	250	-
	Enclosed Yagi	YE*****	2.4 - 5.8 GHz	100 - 900 MHz	-	-	-	-
Dipole Arrays	2 Bays	YDA***2	450 - 470 MHz	20 MHz	7-10	-	-	Single or replacement dipoles available
	4 Bays	YDA***4	450 - 512 MHz	20 - 22 MHz*	10-13	-	-	Single or replacement dipoles available
	Broadband Arrays	****(S)(P)	350 - 512 MHz	10 - 22 MHz*	8-13	50.4" - 288"**	500	-

* varies by specific PN's



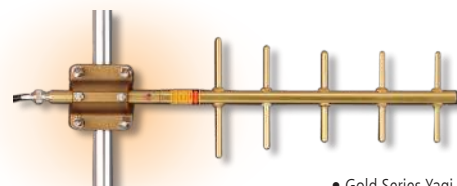
• 4 Bay Dipole Array



• Voyager®



• Enclosed Yagi



• Gold Series Yagi

global solutions: local support.™

Americas: +1.888.246.9050

Europe: +46.31.420530

Asia: +86.755.2714.1166

www.lairdtech.com

ANTENNAS & RECEPTION

WIRELESS AUTOMATION & CONTROL

EMI SOLUTIONS

THERMAL MANAGEMENT

WIRELESS M2M & TELEMATICS



Innovative Technology
for a Connected World

IAS-BRO-LMR 0212

Any information furnished by Laird Technologies, Inc. and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird Technologies materials rests with the end user. Laird Technologies makes no warranties as to the fitness, merchantability, suitability or non-infringement of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2012 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Technologies Logo, and other marks are trade marks or registered trade marks of Laird Technologies, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird Technologies or any third party intellectual property rights.