Fleet and Transportation Brochure

THE Antenna Authority

Laird™ CONNECTIVITY

Transportation and fleet industries today rely on the very latest communication technologies to keep everyone safe and seamlessly connected everywhere.

Access to real-time data and being contactable at any time while in transit is critical. This means delivering reliable public safety communications in the vehicle hub with FirstNet and ESN. It means providing intelligent sub systems in public transit, giving passengers and dispatchers connectivity for scheduling, navigation, and location. It allows better passenger experience on rail and contracted transport, such as bussing. And it opens up accurate location and tracking service for improved productivity for courier businesses on time-critical deliveries where every second counts.

The expectation of constant connectivity in all aspects of our lives has become a critical differentiator in private and public transportation organizations. Antennas from Laird Connectivity help meet and exceed that demand for the connectivity that makes or breaks the demands of modern fleet and transportation businesses.

Applications

	Public Safety, and national security including ESN and FirstNet
	Broadband Evolution and the networks now being utilized to enhance Transportation & Fleet
	Multi Radio coordination and need for MIMO, allowing multiple concurrent wireless protocols in one vehicle
	Evolution of user experience and the digital expectation of traveling business and private customers

This Brochure presents an exciting range of multi and single port antennas which are suitable for a range of transportation and fleet applications.
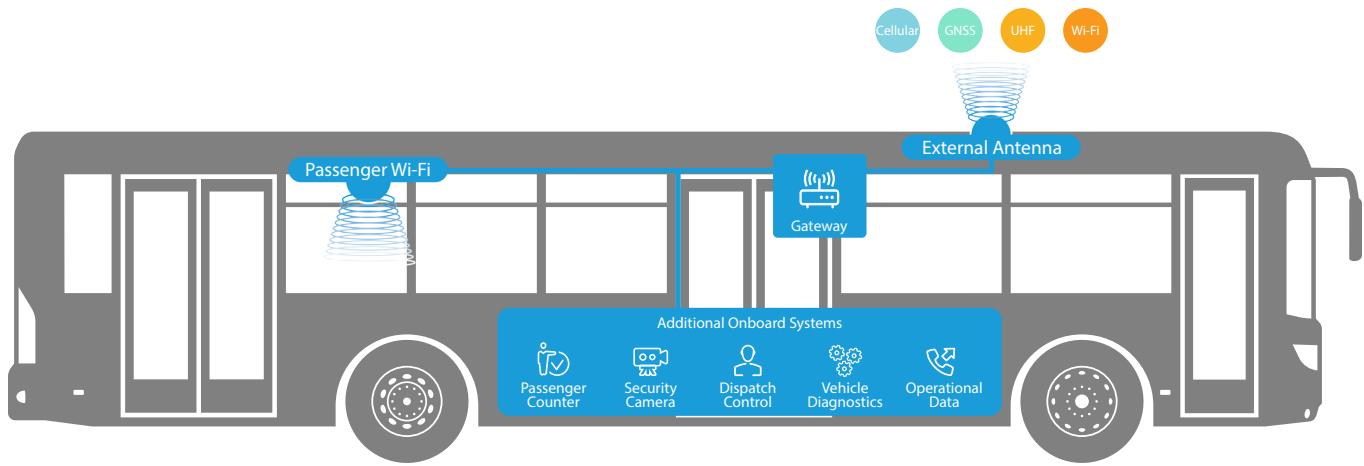
Multiport Antennas

Part lines indicate supported antenna bands. The ✔ represents the number of ports for each frequency.

Product Family	LTE	Wi-Fi	UHF	VHF	GPS	GNSS
VFH69383B23JW (Barracuda series)	✔✔	✔✔✔				✔
VFH69383B22JU (Barracuda series)	✔✔	✔✔	✔			✔
VFQ69383B2NJU (Barracuda series)	✔✔		✔			✔
VFP69383B22JN (Gar series)	✔✔	✔✔				✔
VFD69383B2NNN (Gar series)	✔✔					
VFD69383B1NJN (Gar series)	✔					✔
VFT69383B2NJN (Gar series)	✔✔					✔
VFT69383B11JN (Gar series)	✔	✔				✔
VFQ69383B21JN (Gar series)	✔✔	✔				✔
FHQ69273CD (Phantom Fin series)	✔	✔	✔		✔	
FHQ69273CE (Phantom Fin series)	✔	✔	✔		✔	
MTRA61274CB2 (MIMO Phantom series)	✔✔					
MTRA61274CW2 (MIMO Phantom series)	✔✔					
VHP69273B22G/VHP69273B22J (Disk Puck Series)	✔✔	✔✔			✔	✔
VLT69273B11G/VLT69273B11J (Disk Puck Series)	✔	✔			✔	✔
VLT69273B2NG/VLT69273B2NJ (Disk Puck Series)	✔✔				✔	✔
VLQ24593BN4N (Disk Puck Series)		✔✔✔✔				
VLQ69273B21G/VLQ69273B21J (Disk Puck Series)	✔✔	✔			✔	✔
VLQ69273B22N (Disk Puck Series)	✔✔	✔✔				
VMD24493 (Disk Puck Series)		✔✔				
VMG24493/VMJ24493 (Disk Puck Series)		✔✔			✔	✔
VMT24493 (Disk Puck Series)		✔✔✔				

Single Port Antennas

SISO (Single Input Single Output) antennas. Multiple ✔ show single band options in a family of antennas.

Product Family	LTE	Wi-Fi	UHF	VHF	GPS	GNSS
Phantoms	✔	✔	✔	✔		
TRA all series	✔	✔	✔	✔		
UTRA3802S1N (Ultra Phantom Series)			✔			
UTRA4061S2N (Ultra Phantom Series)			✔			
UTRA40301S3N (Ultra Phantom Series)			✔			
UTRA4502S3N (Ultra Phantom Series)			✔			
LPS69223NT (Disk Puck Series)	✔					
LPS69273NT (Disk Puck Series)	✔					
LPS69863NT (Disk Puck Series)	✔					

Note: LTE in any table refers to 3G/4G/5G/ISM/CBRS bands.

Gar and Barracuda

Laird Connectivity's VFx69383x antenna is a multiport, multiband solution for turning your vehicle into a complete communications hub. It supports MIMO/SISO or multi-SISO operations all under a single radome. It's 5G ready, configured for FirstNet MIMO operation and ESN ready, making it ideal for the critical communications marketplace.

It features an attractive IP67 low-profile aerodynamic housing that makes it a fantastic choice for aftermarket fleet and transportation. Single-hole mounting reduces vehicle damage in installation. These multiport antennas are divided into the Gar and Barracuda families, the difference being the additional whip antenna on the Barracuda antennas.

Gar Antennas   🌐www webpage

The Gar family offers up to 5 different port assignments including, MIMO and multiple ports of LTE/Cell, WiFi, GNSS & GPS. Suited to Fleet, lower profile applications or when UHF is not required.

Laird Connectivity Family	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length) *	Connector	Color
VFP69383x22JN-518x	5	LTE1/ LTE2	698-960/ 1690-3800	2.5/2.1	-11/-14	1.6/7.2	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	J or L- SMA male N- Mini UHF	B - Black W - White
		WiFi1/ WiFi2	2400-2500/ 4900-6000	2.0/2.0	-14/-32	3.1/7.5	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	J- SMA male L- RPSMA male N- RPTNC male	
		GNSS	1559-1606	2.0	-41	30	RG174 (5.2m/17ft)	J or L- SMA male N- TNC male	
VFQ69383x21JN-518L	4	LTE1/ LTE2	698-960/ 1690-3800	2.5/2.0	-10/-14	1.8/7.4	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		WiFi 1	2400-2500/ 4900-6000	2.0/2.1	-14/-35	3.1/7.0	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	RPSMA- male	
		GNSS	1559-1606	2.0	-39	32	RG174 (5.2m/17ft)	SMA- male	
VFT69383x11JN-518L	3	LTE1	698-960/ 1690-3800	2.5/2.0	-41/-24	2.3/7.3	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		WiFi 1	2400-2500/ 4900-6000	2.0/2.0	-24/-35	3.9/5.4	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	RPSMA- male	
		GNSS	1559-1606	2.0	-41	32	RG174 (5.2m/17ft)	SMA- male	
VFT69383x2NJN-518Q	3	LTE1/ LTE2	698-960/ 1690-3800	2.5/2.1	-10/-17	2.2/7.5	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		GNSS	1559-1606	2.0	-33	32	RG174 (5.2m/17ft)		
VFD69383x1NJN-518Q	2	LTE1	698-960/ 1690-3800	2.5/2.1	-38/-26	2.0/7.0	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		GNSS	1559-1606	2.0		32	RG174 (5.2m/17ft)		
VFD69383x2NNN-518R	2	LTE1/ LTE2	698-960/ 1690-3800	2.5/2.1	-11/-16	2.1/7.2	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White

* LMR or equivalent.

Coming Soon: 9-Port Antenna

- 9-port 5G Next Generation antenna solution to match the 5G MIMO chipsets.
- WiFi coverage expanded to include WiFi6e
- Global navigation
- Ports
  - 4x- 5G 600-960/1690-6000 MHz
  - 4x- WiFi 2400-2500/4900-7125 MHz
  - 1x- GNSS

Barracuda Antennas

The Barracuda family comes in the same low profile IP67 housing as the Gar but with an additional whip antenna. The whip antenna adds either UHF or additional Wi-Fi functionality. It is particularly suitable for smaller vehicles such as police cars, which will require UHF and multi-radio applications.

Laird Connectivity Family	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length) *	Connector	Color
VFH69383x23JW-518J	6	LTE1/LTE2	698-960/ 1690-3800	2.5/2.0	-11/-13	2.5/7.4	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		WiFi1/ WiFi2/ WiFi3	2400-2500/ 4900-6000	2.0/2.0	-13/32	4.0/6.4	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)		
		GNSS	1559-1606	2.0	-45	30	RG174 (5.2m/17ft)		
VFH69383x22JU-518x	6	LTE1/LTE2	698-960/ 1690-3800	2.5/2.0	-12/-12	2.1/7.4	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		WiFi1/ WiFi2	2400-2500/ 4900-6000	2.0/2.0	-12/-31	3.5/7.6	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	
		UHF	380-520	2.5	-18	2.3	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	J- SMA male M- QMA male	
		GNSS	1559-1606	2.0	-35	31.0	RG174 (5.2m/17ft)	SMA- male	
VFQ69383x2NJU-518S	4	LTE1/LTE2	698-960/ 1690-3800	2.5/2.2	-12/-16	2.8/3.9	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	B - Black W - White
		UHF	380-520	2.5	-11	2.3	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)		
		GNSS	1559-1606	2.0	-34	31	RG174 (5.2m/17ft)		

LMR or equivalent.

Phantom Fin

Laird Connectivity's Phantom Fin is a multiband/multiport antenna which integrates SISO solutions for UHF, Cellular LTE, WiFi and GPS into one aerodynamic IP67-rated housing. In addition it is ready for ESN (Emergency Service Network) and also for 700MHz first responder network (FirstNet) band.

Laird Connectivity Family	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length) *	Connector	Color
FHQ69273CE-518VCx	4	LTE	698-960/ 1710-2700	<2.0:1	-15	4.1/7.1	LMR 100 (5.18 m/17.0 ft)	SMA- male	Black
		WiFi	2400- 2500/ 4900- 5875		-20	7.3/8.2		3: SMA-male, 4: SMA-male, 5: RPSMA-male, 6: RPSMA-male	
		UHF	430- 520		-15	2.5		3: PL259, 4: FME Plug, 5: PL259, 6: FME Plug	
		GPS	1575.42 (L1)	< 1.5:1		27	RG174 (5.18 m/17.0 ft)	SMA-male	
FHQ69273CD-518VCx	4	LTE	698-960/ 1710-2700	<2.0:1	-18	4.0/6.4	LMR 100 (5.18 m/17.0 ft)	SMA-male	Black
		WiFi	2400- 2500/ 4900- 5875		-23	7.1/7.8		3: SMA-male, 4: SMA- male, 5: RPSMA-male, 6: RPSMA-male	
		UHF	380-430		-15	2.6		3: PL259, 4: FME Plug, 5: PL259, 6: FME Plug	
		GPS	1575.42 (L1)	< 1.5:1		27	RG174 (5.18 m/17.0 ft)	SMA- male	

LMR or equivalent.

Disk Puck

The Disk Puck antennas come in a mechanically robust, impact and UV resistant radome and are IP67-rated.

VH/VL Series - Large fleet vehicles (fire trucks, ambulances, buses, transit) 🌐 **webpage**
VM Series - Wi-Fi Multiport/MIMO solutions for any size vehicle 🌐 **webpage**
LPS Series - LTE SISO solution for any size vehicle 🌐 **webpage**

Laird Connectivity Family	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length) *	Connector	Color
VHP69273x22G-518A	5	LTE 1	698- 960/ 1710- 2700	< 2.0:1	-14	4.1/5.9	LMR 195M (5.18 m/17.0 ft)	SMA- male	B - Black W - White
		LTE 2							
		WiFi 1	2300- 2700/ 4900- 5900		-18	6.2/6.5			
		WiFi 2							
		GPS	1575.42 (GPS L1)		**	30	RG174 (5.18 m/17.0 ft)		
VLQ69273x22N-518A	4	LTE 1	698- 960/ 1710- 2700	< 2.0:1	-14/-19	3.2/4.5	LMR 195M (5.18 m/17.0 ft)	SMA- male	B - Black W - White
		LTE 2							
		WiFi 1	2300- 2700/ 4900- 5900		-20/-26	5.5/6.3		RPSMA- male	
		WiFi 2							
VLQ69273x21G-518A	4	LTE 1	698- 960/ 1710- 2700	< 2.0:1	-14/-20	3.3/4.6	LMR 195M (5.18 m/17.0 ft)	SMA- male	B - Black W - White
		LTE 2							
		WiFi 1	2300- 2700/ 4900- 5900		-23/-27	5.0/5.3		RPSMA- male	
		GPS	1575.42 (GPS L1)		**	30	RG174 (5.18 m/17.0 ft)	SMA- male	
VLT69273x2NG-518A	3	LTE 1	698- 960/ 1710- 2700	< 2.0:1	-15/-20	2.6/4.7	LMR 195M (5.18 m/17.0 ft)	SMA- male	B - Black W - White
		LTE 2							
		GPS	1575.42 (GPS L1)		*	30	RG174 (5.18 m/17.0 ft)		
VLQ24593xN4N-518x	4	WiFi 1	2400- 2500/ 4900- 5925	<2.0:1	-20/-26	2.2/3.5	LMR 195M (5.18 m/17.0 ft)	B - RPSMA male G - SMA male	B - Black W - White
		WiFi 2			-21/-26				
		WiFi 3			-20/-26				
		WiFi 4			-20/-26				
VMT24493RSM-366	3	WiFi 1	2400- 2500/ 4900- 5875	<2.0:1	**	4.5/5.4	LMR 195 (3.65m/12 ft)	RPSMA- male	Black
		WiFi 2							
		WiFi 3							
VMG24493RSM-518	3	WiFi 1	2400- 2500/ 4900- 5875	<2.0:1	**	1.5/3.0	LMR240 (5.18 m/17.0 ft)	RPSMA- male	Black
		WiFi 2							
		GPS	1575.42 (GPS L1)		**	26	RG174 (5.18 m/17.0 ft)		
VMD24493RSM-366	2	WiFi 1	2400- 2500/ 4900- 5900	<2.0:1	**	3.0	LMR240 (3.65m/12 ft)	RPSMA- male	Black
		WiFi 2							
LPS69223NT-61xxxx	1	LTE	698-960/ 1710-2170	< 3.0:1	**	2.4/4.5	RG316 (0.61 m/ 2ft)	SMAM - SMA male RTNM - RTNC male	Black
LPS69273NT- 61xxxx	1	LTE	"698-960/ 1710-2700"		**	2.1/5.4			
LPS69863NT-61xxxx	1	LTE	"698-960/ 1690-2700"		**	4.0/6.6	LMR100 (0.61 m/ 2ft)		

LMR or equivalent.

MIMO Phantom 🌐 **webpage**

This antenna is part of the Laird Connectivity industrial leading Phantom Antenna range, offering 2x MIMO for Cellular, LTE and Wi-Fi into a low profile housing. For complex fleet applications requiring multiple radio connections, an appropriate antenna is critical. The Phantom MIMO is ideal for high data rates, robust connections, and multiple radios.

Laird Connectivity Family	Frequency (MHz)	VSWR	Peak Gain (dBi)	Cable Type (Length) *	Connector	Color
MTRA61274Cx2	617-960MHz & 1350-2700MHz	<2.5:1	4.2	LMR 195M (610mm / 24 in)	SMA Male	B - Black W - White

LMR or equivalent.

Phantom Series 🌐 webpage

Laird Connectivity's single and multi-band Phantom antennas are known industry-wide for their IP67 enclosure, rugged construction and excellent performance. They're the antenna of choice in many public safety, transportation and aftermarket fleet applications. The antenna integrates SISO solutions for UHF, Cellular LTE and Wi-Fi into a low profile housing.

Laird Connectivity Family	Frequency (MHz)	VSWR	Peak Gain (dBi)	Mounting	Color
TRA(B)18503(P)	1850-1990	<2.0:1	3.0	NMO (or P = Permanent [stud])	B - Black No B - White
TRA(B)24/49003(P)	2400-2500 / 4900-5850	<2.0:1	5.7	NMO (or P = Permanent [stud])	
TRA(B)24003	2400-2500	<2.0:1	3.0	NMO	
TRA(B)3803P	380-400	<2.0:1	0.0	Permanent (Stud)	
TRA(B)4103(P)	410-430	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)4303(P)	430-450	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)4503(P)	450-470	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)4703(P)	470-490	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)4903(P)	490-512	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)58003(P)	4900-6000	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)7463	746-796	<2.0:1	3.0	NMO	
TRA(B)7603	760-870	<2.0:1	3.0	NMO	
TRA(B)7643	760-870	<2.0:1	3.0	NMO	
TRA(B)806/17103(P)	806-960 / 1575.42 / 1710-2500	<2.0:1	5.9/5.1/4.4	NMO (or P = Permanent [stud])	
TRA(B)8063	806-870	<2.0:1	3.0	NMO	
TRA(B)821/18503(P)	821-896 / 1850-1990	<2.0:1	3.0/3.0	NMO (or P = Permanent [stud])	
TRA(B)8213(P)	821-896	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)8903(P)	890-960	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)9023(P)	902 - 928	<2.0:1	0.0	NMO (or P = Permanent [stud])	
TRA6927M3xx-003 (No Logo)	698-960 / 1710-2700	<2.5:1	3.5/5.5	N - NMO, P - Permanent	B - Black W - White
TRA6927M3xx-001	698-960 / 1710-2700	<2.5:1	3.5/5.5	N - NMO, P - Permanent	
TRA6927M3Px-002	698-960 / 1710-2700	<2.5:1	3.5/5.5	Permanent (Extended Stud)	
TRA8063M3xx-001	806-896 / 1850-1990 / 2500-2700	<2.0:1	4.0/3.5/3.0	N - NMO, P - Permanent	

Ultra Phantom 🌐 webpage

Our unique patented Ultra Phantom® single-band antenna is a rugged low-profile antenna for outdoor or indoor applications. The Ultra Phantom features vertical polarization, low visibility, wide bandwidth and a low angle radiation pattern that is superior to traditional gain antennas in most applications.

Laird Connectivity Family	Frequency (MHz)	VSWR	Peak Gain (dBi)	Mounting	Color
UTRA3802S1Nx	410	<2.5:1	2.0	NMO	B - Black, W - White
UTRA4061S2Nx	440	<2.5:1	2.9	NMO	B - Black, W - White
UTRA4301S3Nx	490	<2.5:1	3.6	NMO	B - Black, W - White
UTRA4502S3Nx	512	<2.5:1	4.1	NMO	B - Black, W - White

Whip Antennas 🌐 webpage

Our broad portfolio of single and multiband 1/4, 1/2, and 5/8 wave whip antennas covers 27 MHz - 2500 MHz. Types include base loaded, shock spring, elastomer spring, no ground plane, coil, and elevated feed. They're available with rugged construction, water-proof, with gold-plated push pin contacts, injection molded bases, and in black and chrome.

Accessories 🌐 webpage

Cables - Coaxial cable and cable assemblies optimized for a variety of locations, signal losses, and shielding requirements.

Connectors and Mounts - RF Connectors and mounts for a variety of applications and markets.

Connected. No Matter What.

Laird Connectivity simplifies wireless connectivity with market-leading modules, antennas, IoT devices, and customer-specific wireless solutions. Our products are trusted by companies around the world for their performance and reliability. With best-in-class support and comprehensive design services, we reduce your risk and improve your time-to-market. When you need unmatched wireless performance to connect your applications with security and confidence, Laird Connectivity Delivers – No Matter What.

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