

Antennas



PRODUCT BROCHURE

**Antennas for Fleet and
Transportation Industries**

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. For public safety applications this means delivering reliable 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 buses, trams and metro systems. 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 TE Connectivity help meet and exceed that demand for the connectivity that makes or breaks the demands of modern fleet and transportation businesses.

Applications

PASSENGER WIFI

GATEWAY


EXTERNAL ANTENNA

LTE

GNSS

UHF

WIFI



Additional Onboard Systems





PASSENGER COUNTER

SECURITY CAMERAS

DISPATCH

DIAGNOSTICS

OPERATIONAL DATA

	Public Safety, and national security including ESN and FirstNet
	Broadband Evolution & Next-Gen Networks in Transport & Fleet
	Multi-radio MIMO enables multiple wireless protocols in a vehicle
	Evolving digital expectations for business and private travellers.




Multiport Antennas

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

	Product family	LTE	WiFi	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)		●●●				
	VQJ69595B-92VC1 (Trigger Series)	●●	●				●
	VQJ69595B-92FAK (Trigger Series)	●●	●				●
	VPJ69595B-92VC1 (Trigger Series)	●●	●●				●
	VPJ69595B-92VC1 (Trigger Series)	●●	●●				●

Single Port Antennas

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

	Product family	LTE	WiFi	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)	●					

Gar & Barracuda

The VFx69383x family are multi-port/multi-band antenna solutions for turning your vehicle into a complete communications hub. They support MIMO/SISO or multi-SISO operations all under a single radome. 5G ready, configured for FirstNet MIMO operation and ESN ready, making them ideal for the critical communications marketplace.

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

Gar Antennas

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.



Part number	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length)	Connector	Colour
VFP69383x22JN-518x	5	LTE1/2	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
		WiFi1/2	698-960/ 1690-3800	2.5/2.1	-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	LTE1/2	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
		WiFi1	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
		WiFi1	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	LTE1/2	698-960/ 1690-3800	2.5/2.1	-10/-17	2.2/7.5	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	J or L- SMA male N- Mini UHF	B - Black W - White
		GNSS	1559-1606	2.0	-33	32	RG174 (5.2m/17ft)	J- SMA male L- RPSMA male N- RPTNC male	
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)	J or L- SMA male N- Mini UHF	B - Black W - White
		GNSS	1559-1606	2.0	-	32	RG174 (5.2m/17ft)	J- SMA male L- RPSMA male N- RPTNC male	
VFD69383x2NNN-518R	2	LTE1	698-960/ 1690-3800	2.5/2.1	-38/-26	2.0/7.0	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	J or L- SMA male N- Mini UHF	B - Black W - White

Barracuda Antennas

The Barracuda family shares the low-profile IP67 housing of the Gar but includes a whip antenna for UHF functionality, making it ideal for smaller vehicles e.g. police cars needing UHF and multi-radio applications.



Part number	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length)	Connector	Colour
VFH69383x23JW-518J	6	LTE1/2	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
		WiFi 1/2/3	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	LTE1/2	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 1/2	2400-2500/ 4900-6000	2.0/2.1	-14/-35	3.1/7.0	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	SMA- male	
		UHF	380-520	2.0	-39	32	LMR100 (0.3m/1ft); LMR195 (4.9m/16ft)	J - SMA male M - QMA male	
		GNSS	1559-1606	2.0	-39	-39	RG174 (5.2m/17ft)	SMA- male	

Trigger Covert Under-Dash Antennas

The innovative Trigger family of multi-port/multi-band antennas provide an excellent solution for transportation, aftermarket fleet, public safety and IoT applications. The incorporation of both vertically and horizontally polarized cellular radiating elements has shown to provide improved signal received power and signal received quality.

Part number	No. of Ports	Port Type	Frequency (MHz)	VSWR	Peak Gain (dBi)	Cable Type (Length)	Connector	Colour
VQJ69595B-92VC1	4	LTE1/2	698- 960/1710- 2700	<3.1:1	5	LMR100 (or equivalent) - Wi-Fi and LTE; RG174 - GNSS (Pigtail - 914 mm/3 ft.)	SMA- male	B - Black
		WiFi	2400-2500/4900-5900				RPSMA male	
		GNSS	1559-1606				SMA- male	
VQJ69595B-92FAK	4	LTE1/2	698- 960/1710- 2700	<3.1:1	5	LMR100 (or equivalent) - Wi-Fi and LTE; RG174 - GNSS (Pigtail - 914 mm/3 ft.)	Fakra Type D Jack (Purple)	B - Black
		WiFi	2400-2500/4900-5900				Fakra Type I Jack (Beige)	
		GNSS	1559-1606				Fakra Type C Jack (Blue)	
VPJ69595B-92VC1	5	LTE1/2	698- 960/1710- 2700	<3.1:1	5	LMR100 (or equivalent) - Wi-Fi and LTE; RG174 - GNSS (Pigtail - 914 mm/3 ft.)	SMA Male	B - Black
		WiFi 1	2400-2500				RPSMA Male	
		WiFi 1	4900-5900				RPSMA Male	
		GNSS	1559-1606				SMA Male	
VPJ69595B-92FAK	5	LTE1/2	698- 960/1710- 2700	<3.1:1	5	LMR100 (or equivalent) - Wi-Fi and LTE; RG174 - GNSS (Pigtail - 914 mm/3 ft.)	Fakra Type D Jack (Purple)	B - Black
		WiFi 1	2400-2500				Fakra Type D Jack (Beige)	
		WiFi 1	4900-5900				Fakra Type D Jack (Beige)	
		GNSS	1559-1606				Fakra Type D Jack (Blue)	

Phantom Fin

The 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 Services Network) and also for 700MHz first responder network (FirstNet) bands.



Part number	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length)	Connector	Colour
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	B - 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	B - 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.

Whip Antennas

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 pushpin contacts, injection molded bases, and in black and chrome.

Accessories

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.



Disk Puck

Disk Puck antennas feature a tough, UV-resistant radome and IP67 rating.

VH/VL Series - Large fleet vehicles (fire trucks, ambulances, buses, transit)

VM Series - Wi-Fi Multiport/MIMO solutions for any size vehicle

LPS Series - LTE SISO solution for any size vehicle



Part number	No. of Ports	Port Type	Frequency (MHz)	VSWR	Isolation (dB)	Peak Gain (dBi)	Cable Type (Length)	Connector	Colour
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			**	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 100 (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							
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 (L1)		*	30			
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 (L1)		**	26	RG174 (5.18 m/17.0 ft)		
VMT24493RSM-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	2	LTE	"698-960/ 1710-2700"		**	2.1/5.4			
LPS69863NT-61xxxx	3	LTE	"698-960/ 1690-2700"		**	4.0/6.6			

Mimo Phantom

This antenna is part of the industry-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. MIMO Phantom is ideal for high data rates, robust connections, and multiple radios.



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

Phantom Series

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.



Part number	Frequency (MHz)	VSWR	Peak Gain (dBi)	Mounting	Colour
TRA(B)18503	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	
TRAB3803P	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	470-490	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA58003(P)	4900-6000	<2.0:1	3.0	NMO (or P = Permanent [stud])	
TRA(B)7603	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	3.5/3.5	N - NMO, P - Permanent	B - Black W - White
TRA6927M3xx-001	698-960 / 1710-2700	<2.5:1	3.5/3.5	N - NMO, P - Permanent	
TRA6927M3Px-002	698-960 / 1710-2700	<2.5:1	3.5/3.5	Permanent (Extended Stud)	
TRA8063M3xx-001	806-896 / 1850-1990 / 2500-2700	<2.0:1	4.0/3.5/3.0	N - NMO, P - Permanent	

5G Phantom Series

5G Phantom antennas deliver global cellular coverage, even for regions where the lower 600 MHz band is required. They offer high levels of average efficiency, over 80% up to 4200 MHz, and gain up to 6.0 dBi in an IP67-rated, compact form factor. On ground (M5) or ground plane independent (M6) versions available.



Part number	Frequency (MHz)	VSWR	Peak Gain (dBi)	Mounting	Colour
FTRA6171M5PB-001	617-7125	<2.0:1	6.0	Permanent	Black
FTRA6171M5PW-001	617-7125	<2.0:1	6.0	Permanent	White
FTRA6971M5PB-001	617-7125	<2.0:1	6.0	Permanent	Black
FTRA6971M5PW-001	617-7125	<2.0:1	6.0	Permanent	White
FTRA6171M6PBN-001	617-7125	<2.0:1	6.0	Permanent	Black
FTRA6171M6PWN-001	617-7125	<2.0:1	6.0	Permanent	White
FTRA6971M6PBN-001	617-7125	<2.0:1	6.0	Permanent	Black
FTRA6971M6PWN-001	617-7125	<2.0:1	6.0	Permanent	White

Ultra Phantom

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.



Part number	Frequency (MHz)	VSWR	Peak Gain (dBi)	Mounting	Colour
UTRA4061S2NB-001	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	NOM	B - Black, W - White

Ready to find the right antenna for your fleet or transportation application?

Our team at Dalroad is here to help

Contact us today for product recommendations, expert advice, and a tailored quote on TE Connectivity's industry-leading antennas.

CONTACT OUR TEAM