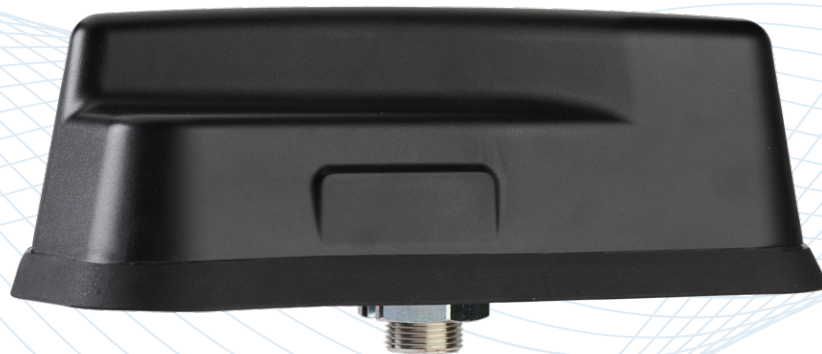


# Trooper™ II Slender 5G FR1 MIMO Cabinet Mount GNSS Multiband Antenna

Combination Antenna - GNSS and 5G Cellular

GL5G-7X1-TRB



## Description

Multiband 5G FR1 MIMO cabinet mount antenna with high rejection multi-GNSS compatibility, and slender footprint for high-speed Intelligent Transportation Systems and Industrial IoT applications.

## Technologies

- 5G Cellular
- Wi-Fi
- GNSS L1, L2, L5
- GLONASS L1, L2, L3
- GALILEO E5A/E5B/E6
- BEIDOU B1, B2, B3
- QZSS L6

## Features

- Six 5G FR1 elements
- Covers global GNSS systems
- Proprietary filtering design allows wideband coverage for all GNSS frequencies
- Slender footprint
- Easy installation and/or replacement
- Weather proof, IP67 housing
- Built-in ground plane for installation flexibility



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The Trooper™ II cabinet mount antenna supports the high speed requirements of complex Critical Communications cellular networks used for industrial IoT, intelligent transportation, public safety, and enterprise applications. This antenna is compatible with the leading 5G OEM routers, featuring six high-efficiency 5G FR1 elements that deliver fast and reliable connectivity for voice, video, and data transmissions. PCTEL's proprietary high-rejection, multi-constellation GNSS L1 L2 L5 technology is also included for high precision location tracking.

Offering a low profile silhouette with slender footprint, the Trooper II cabinet mount antenna is housed in an attractive, UV stable radome and is ideal for installations used to support indoor or outdoor, private or public 5G networks.

#### Features

- Six highly efficient 5G FR1 elements for fast and reliable RF connectivity
- Full multi-GNSS compatibility – covers global GNSS systems
- Slender 4.6-inch footprint ideal for industrial cabinet mount installations
- Metal 1-inch stud mount with slotted jam nut provides secure single hole cable exit for installation ease
- IP67 compliant design provides maximum protection against water or dust ingress<sup>1</sup>
- Built-in ground plane for maximum placement flexibility

#### Certifications



<sup>1</sup> When installed on a sealed cabinet according to PCTEL's installation instructions.

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### Standard Configurations

Model	Elements	Cable	Connector	Mount	Housing Color
GL5G-7X1-TRB	LTE (6 - All ports) GNSS (1)	Six-2m PFP195 One-2m PFP100	SMA Plug (Male) SMA Plug (Male)	1-inch OD (25.4 mm), 3/4-inch long (19.05 mm) zinc stud mount with jam nut	Black

### Electrical Specifications – RF Antennas

F1 (MHz)	F2 (MHz)	SWR <sup>2</sup>	Max	Gain (dB) <sup>2</sup>		Efficiency <sup>2</sup>		Polarization	Nominal Impedance	Maximum Power
				Typical	Range (±)	Avg	Range (±)			
<b>LTE Ports 1 &amp; 6</b>										
617	698	2.3	3.0	2.2	0.8	59%	2%	Linear	50 ohms	25 watts
698	802	1.9	4.4	3.1	1.3	62%	3%			
824	960	1.9	5.0	4.0	1.0	60%	4%			
1450	1500	1.9	3.8	3.4	0.5	47%	1%			
1710	2200	1.8	5.4	4.0	1.4	52%	2%			
2300	2690	1.6	5.1	4.4	0.6	53%	2%			
3300	4200	2.1	6.2	4.5	1.7	34%	5%			
4900	6000	2.4	5.1	2.9	2.2	19%	6%			
<b>LTE Ports 2, 3 &amp; 5</b>										
1450	1500	1.8	4.4	3.6	0.7	45%	5%	Linear	50 ohms	25 watts
1710	2200	1.6	6.5	4.8	1.7	52%	6%			
2300	2690	1.4	7.1	6.0	1.1	52%	5%			
3300	4200	1.5	7.5	5.2	2.4	45%	10%			
4900	6000	1.9	5.3	4.1	1.2	35%	4%			
<b>LTE Port 4</b>										
3300	5000	2.0	7.6	6.1	1.6	37%	6%	Linear	50 ohms	25 watts

### Minimum Isolation (dB)<sup>2</sup>

	LTE (2)		LTE (3)		LTE (4)		LTE (5)		LTE (6)	
LTE (1)	617-960 MHz	15.0	617-960 MHz	23.7	617-960 MHz	21.5	617-960 MHz	20.7	617-960 MHz	13.6
	1.45-2.7 GHz	12.4	1.45-2.7 GHz	27.0	1.45-2.7 GHz	21.8	1.45-2.7 GHz	19.7	1.45-2.7 GHz	27.9
	3.3-5.95 GHz	27.4	3.3-5.95 GHz	37.3	3.3-5.95 GHz	27.0	3.3-5.95 GHz	33.6	3.3-5.95 GHz	41.0
LTE (2)			617-960 MHz	27.8	617-960 MHz	26.8	617-960 MHz	27.8	617-960 MHz	23.8
			1.45-2.7 GHz	24.3	1.45-2.7 GHz	18.2	1.45-2.7 GHz	23.6	1.45-2.7 GHz	28.0
			3.3-5.95 GHz	27.6	3.3-5.95 GHz	30.5	3.3-5.95 GHz	29.9	3.3-5.95 GHz	38.6
LTE (3)					617-960 MHz	35.8	617-960 MHz	20.8	617-960 MHz	16.0
					1.45-2.7 GHz	27.8	1.45-2.7 GHz	15.2	1.45-2.7 GHz	11.8
					3.3-5.95 GHz	28.4	3.3-5.95 GHz	23.8	3.3-5.95 GHz	25.7
LTE (4)							617-960 MHz	30.6	617-960 MHz	28.8
							1.45-2.7 GHz	19.6	1.45-2.7 GHz	22.3
							3.3-5.95 GHz	26.4	3.3-5.95 GHz	30.1
LTE (5)									617-960 MHz	14.8
									1.45-2.7 GHz	20.3
									3.3-5.95 GHz	25.8

<sup>2</sup> Measurements taken with 8-ft cables on a 2-ft ground plane.

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### Electrical Specifications – GNSS Antenna (all bands)

Specification	Measurement
Frequency Range	1150-1290 MHz 1500-1615 MHz
LNA Gain	28dB±3 dB
Nominal Impedance	50 ohms
Polarization	Right hand circular
ESD	> 15kV
VSWR	< 3.0 (L2-L5 bands) < 2.5 (L1 band)
Noise Figure	3.0 dB (typical)
Nominal Gain	3 dBic @ 90° -2 dBic @ 20°
DC Voltage	2.5-12.0 VDC
DC Current	37mA (typical) < 50mA (max.)
Out-of-Band Rejection	< 1050MHz > 80 dB <1450MHz > 70 dB < 1125MHz > 30 dB > 1690MHz > 30 dB > 1350MHz > 70 dB > 1730MHz > 80 dB

### Electrical Specifications – GNSS Antenna

Band	Gain @ 10° Elevation	Gain @ 90° Elevation	Axial Ratio @ 90° Elevation
GPS L1	-5 dBic	2 dBic	≤ 2.5 dB
GPS L2	-6 dBic	3 dBic	
GPS L5	-7 dBic	1 dBic	
GLONASS L1	-7 dBic	0 dBic	
GLONASS L2	-8 dBic	0 dBic	
GLONASS L3	-4 dBic	3 dBic	
GALILEO E1	-5 dBic	2 dBic	
GALILEO E5	-4 dBic	3 dBic	
GALILEO E6	-4 dBic	3 dBic	
BEIDOU B1	-4 dBic	3 dBic	
BEIDOU B1-2	-4 dBic	3 dBic	
BEIDOU B2	-5 dBic	2 dBic	
BEIDOU B3	-8 dBic	0 dBic	
QZSS L6	-4 dBic	3 dBic	

# Trooper™ II Slender 5G FR1 MIMO Cabinet Mount GNSS Multiband Antenna

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### Mechanical Specifications

#### Physical

Dimensions (L x W x H)	10.5 L x 4.6 W x 3.5 H in (267 x 117 x 90 mm)
Weight	2 lbs (.91 kg)
Radome Construction	UV-Stable Rugged Thermoplastics
Operating / Storage Temperature	-40°C to +85°C
Gasket Design & Construction	Contour matching, conformable, thermoplastic-elastomer gasket designed to seal between radome and baseplate. Gasket flexes and conforms to contoured surfaces. Baseplate has a 3M® VHB mounting pad for anti-rotation.

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