

Coach™ II 5G Cellular GNSS Multiband Antenna

Combination Antenna - GNSS, 5G Cellular and Wi-Fi

GL125-DLTEMIMO-SM



Description

5G cellular multiband antenna with multi-GNSS compatibility and 802.11ac MIMO connectivity for Positive Train Control (PTC) networks and high precision location tracking.

Meets EN 50155:2007 requirements for rail and transit installations.

Technologies

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

Features

- Covers global GNSS systems
- Proprietary filtering design allows wideband coverage for all GNSS frequencies
- Easy installation and/or replacement
- IP67 compliant design protects against water or dust ingress
- EN 50155:2007; AAR compliant





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PCTEL's Coach™ II GL125-DLTEMIMO-SM multiband antenna meets the stringent requirements of complex RF communication systems in rail transportation applications. This antenna features two 4G LTE elements that facilitate the high-speed data transmissions needed in dense RF environments used for Positive Train Control (PTC) networks. The platform incorporates dual band 802.11ac Wi-Fi MIMO connectivity with two Wi-Fi elements. PCTEL's proprietary high-rejection, multi-constellation GNSS L1 L2 L5 technology is included for high precision location tracking. This antenna platform also meets EN 50155:2007 and AAR requirements for ITS rail and roadway applications.

Features

- Full multi-GNSS compatibility – covers global GNSS Systems
- Superior out-of-band rejection – proprietary filtering design allows wideband coverage for all GNSS frequencies
- Easy installation and/or replacement – metal stud mount with slotted jam nut provides single cable exit
- Withstands severe environmental conditions – IP67 compliant design with custom overmolded gasket protects against water or dust ingress
- Meets EN 50155:2007 and AAR certification requirements for rail applications

Certifications



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Standard Configurations

Model	Elements	Cable	Connector	Mount
GL125-DLTEMIMO-SM	LTE (All Ports) Wi-Fi (All Ports) GNSS	Two 2-ft RG-316 Two 2-ft RG-316 One 2-ft RG-316	SMA Plug (Male) Reverse Polarity SMA Plug (Male) SMA Plug (Male)	1-inch OD, 3/4-inch long (.75") zinc stud mount with jam nut (all models)

Electrical Specifications – RF Antennas

F1 (MHz)	F2 (MHz)	Max SWR ¹	Gain (dB) ¹			Efficiency ¹		Polarization	Nominal Impedance	Maximum Power
			Max	Typical	Range (±)	Avg	Range (±)			
LTE										
600	698	< 3.5	2.5	1.5	1.1	55%	7%	Linear, vertical	50 ohms	25 watts
698	802	< 3.0	2.5	2.0	0.5	55%	10%			
824	960	< 2.5	1.8	1.4	0.9	55%	10%			
1710	2200	< 2.5	5.5	3.5	2.0	65%	11%			
2300	2690	< 2.0	6.2	5.1	0.6	68%	9%			
3400	3800	< 2.0	4.1	3.1	1.0	55%	15%			
Wi-Fi										
2400	2500	< 2.0	5.0	2.7	2.2	55%	5%	Linear, vertical	50 ohms	25 watts
4900	5925	< 2.5	6.0	4.0	2.0	45%	25%			

Minimum Isolation (dB)

Elements	LTE Primary (1&3)		Wi-Fi	
LTE	600-960 MHz	11.5	600-960 MHz	20.0
	1.71-2.7 GHz	23.0	1.71-2.7 GHz	17.0
	3.3-3.8 GHz	24.0	3.3-3.59 GHz	35.0
Wi-Fi			2.4-2.5 GHz	19.0
			4.9-5.9 GHz	30.0

¹ Measurements taken with 3-ft cables and no 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	

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Mechanical and Environmental Specifications

All Models

Dimensions (W x H)	5.1 W x 3.6 H in (130 W x 92 H mm)
Weight	2.3 lbs (1.04 kg)
Housing Material	Black, UV-Stable Rugged Thermoplastics
Temperature Range	-40°C to +85°C

CONTACT US

For more information about
this product contact your
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