DATASHEET COMBINATION ANTENNA

Coach™ II 5G Cellular GNSS Multiband Antenna

Combination Antenna - GNSS, 5G Cellular and Wi-Fi 6E

GL125-DLTEMIMO-SM

Description

5G cellular multiband antenna with multi-GNSS compatibility and 802.11ac Wi-Fi 6E MIMO connectivity for Positive Train Control (PTC) networks and high precision location tracking.

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

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Technologies

- 5G Cellular
- Wi-Fi 6E
- Covering GPS L1 L2 L5, GLONASS G1 G2 G3, Galileo E1 E5 E6, Beidou B1 B2 B3, QZSS L1 L2 L5 L6, Navic L5, L Band

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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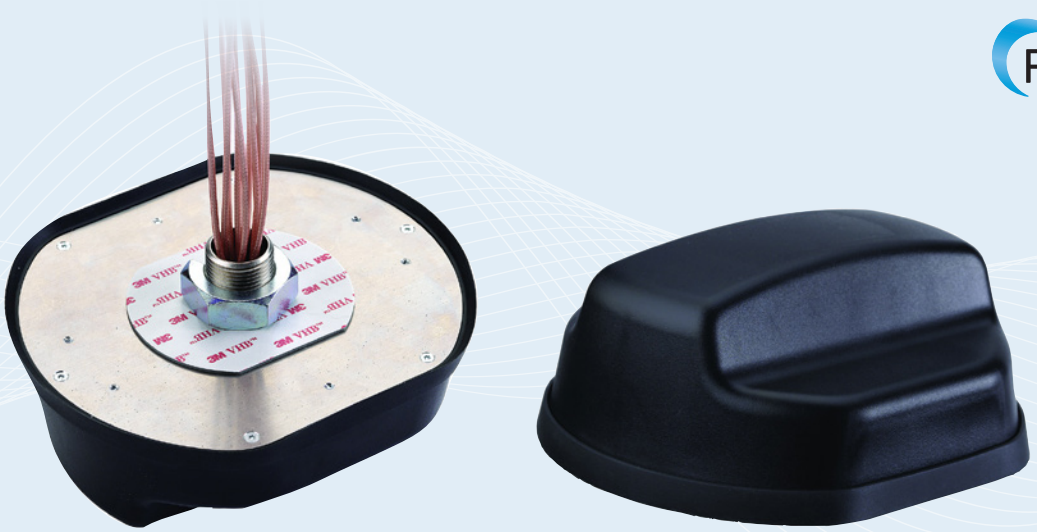
an **Amphenol** company



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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 6E 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 – Covering GPS L1 L2 L5, GLONASS G1 G2 G3, Galileo E1 E5 E6, Beidou B1 B2 B3, QZSS L1 L2 L5 L6, Navic L5, L Band
- 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

RoHS COMPLIANT

SPECIFICATIONS

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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) RPTNC(m) Plug 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 4G/5G										
617	698	< 3.5	2.0	0.8	1.4	45%	10%	Linear, vertical	50 ohms	25 watts
698	802	< 3.0	2.0	1.0	1.5	53%	9%			
824	960	< 3.0	3.0	2.0	1	50%	6%			
1710	2200	< 2.0	5.0	4.0	1	62%	5%			
2300	2690	< 2.0	6.0	5.0	1	65%	4%			
3400	3800	< 2.0	4.5	3.0	0.5	62%	2%			
5150	5950	< 2.5	4.0	2.7	1.3	54%	3%			
Wi-Fi 6E										
2400	2500	< 2.0	3.2	2.5	0.8	60%	5%	Linear, vertical	50 ohms	25 watts
4900	5925	< 2.25	5.5	4.2	1.6	45%	15%			
5925	7150	< 2.25	5.5	4.0	1.8	47%	10%			

Minimum Isolation (dB)

Elements	LTE Primary (1&3)		Wi-Fi	
LTE	617-960 MHz	11.5	617-960 MHz	20.0
	1.71-2.7 GHz	23.0	1.71-2.7 GHz	14.0
	3.3-3.8 GHz	24.0	3.3-3.59 GHz	25.0
	5.15-5.925 GHz	33.0	3.3-3.59 GHz	25.0
			5.15-5.925 GHz	25.0
Wi-Fi			2.4-2.5 GHz	30.0
			4.9-5.9 GHz	30.0

[1] *Measurements taken with 2-ft cables and no ground plane.*

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Electrical Specifications – GNSS Antenna (LNA and Filter PCBA)

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 sales representative or visit
> pctel.com/antenna-products

Solving Complex Wireless Challenges

PCTEL, an Amphenol company, is a leading global provider of wireless technology solutions, including purpose-built Industrial IoT devices, antenna systems, and test and measurement products. Trusted by our customers for decades, we solve complex wireless challenges to help organizations stay connected, transform, and grow.

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