

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

Solving Complex Wireless Challenges

PCTEL is a leading global provider of wireless technology, including purpose-built Industrial IoT devices, antenna systems, and test and measurement solutions. Trusted by our customers for over 25 years, we solve complex wireless challenges to help organizations stay connected, transform, and grow.



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