DATASHEET COMBINATION ANTENNA

Coach™ 5G Cellular Multiband and 802.11ac Antennas With High Rejection GPS/GLONASS

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

GLHPDLTE-SF Series

Description

5G cellular multiband antenna with 802.11ac and PCTEL's unique high rejection GPS/GLONASS technology for high performance and support of carrier voice and data networks.

Technologies

- 5G cellular,
- Wi-Fi 6E
- GPS L1
- GLONASS L1

Features

- No tune, multiband coverage
- Proprietary filtering design allows wideband coverage for all GNSS frequencies
- UV-resistant black or white housing options
- Easy installation and/or replacement
- IP67 compliant design provides maximum protection against water or dust ingress

PCTEL

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PCTEL's Coach™ GLHPDLTE-SF series multiband antenna platform supports the high speed requirements of complex RF communication systems used for Intelligent Transportation Systems (ITS), and industrial IoT applications. These antennas feature two 5G elements compatible with the world's leading cellular routers that support 600 MHz to 6 GHz frequencies. The platform also incorporates 802.11ac Wi-Fi MIMO connectivity, with dual band 2.4/5 GHz Wi-Fi elements supporting DSRC 5.99 GHz applications. In addition, PCTEL's proprietary high-rejection multi GNSS technology is included for high precision tracking and asset management.

Features

- No tune, multiband coverage – 5G cellular, Wi-Fi 6E, GPS L1, and GLONASS L1 frequencies
- RF system efficiency – High performance, low loss cable and high quality connectors
- Superior out-of-band rejection – Proprietary filtering design allows wideband coverage for all GNSS frequencies
- Withstands severe environmental conditions – IP67 compliant design protects against water or dust ingress
- Easy installation and/or replacement – Metal stud mount with slotted jam nut provides single cable exit

Certifications

RoHS COMPLIANT

SPECIFICATIONS

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Standard Configurations

Model	Elements	Cable	Connector	Mount
GLHPDLTEMIMO-SF	LTE (1 & 2) Wi-Fi GNSS	Two-17 feet Pro-Flex™ Plus 195 (LTE Elements) Two-17 feet Pro-Flex Plus 195 (802.11ac Wi-Fi Elements) One-17 feet RG-174/U (GNSS Element)	SMA Plug (LTE) Reverse Polarity SMA Plug (Wi-Fi) SMA Plug (GNSS)	1-inch OD, 3/4-inch long (.75") zinc stud mount with jam nut (all models)
GLHPDLTE-SF	LTE (1 & 2) GNSS	Two-17 feet Pro-Flex Plus 195 (LTE Elements) One-17 feet RG-174/U (GNSS Element)	SMA Plug (LTE) SMA Plug (GNSS)	
GLHPDM3-SF	LTE Wi-Fi GNSS	Two-17 feet Pro-Flex Plus 195 (LTE Elements) Three-17 feet Pro-Flex Plus 195 (802.11ac Wi-Fi Elements) One-17 feet RG-174/U (GNSS Element)	SMA Plug (LTE) Reverse Polarity SMA Plug (Wi-Fi) SMA Plug (GNSS)	

Electrical Specifications – RF Antennas

F1 (MHz)	F2 (MHz)	SWR[1]	Gain (dB)[2]			Efficiency[2]		Polarization	Nominal Impedance	Maximum Power
			Max	Typical	Range (±)	Avg	Range (±)			
LTE 1 & 2										
617	698	2.4	3.8	2.4	1.4	55%	19%	Linear	50 ohms	50 watts
698	802	1.7	5.2	4.1	1.1	68%	6%			
824	960	1.3	6.2	4.3	1.9	61%	12%			
1710	2200	15	7.5	6.0	15	78%	11%			
2300	2690	1.6	8.9	7.1	1.8	78%	8%			
3400	3800	1.9	5.4	4.7	0.6	57%	5%			
5150	5950	1.7	8.1	6.8	1.3	59%	10%			
Wi-Fi										
2400	2500	1.1	9.4	9.0	0.4	81%	3%	Linear	50 ohms	50 watts
4900	5925	1.4	9.4	8.9	0.5	70%	12%			

Minimum Isolation (dB)[1]

Elements	LTE Primary (1&3)		Wi-Fi	
LTE 1 & 2	617-960 MHz	9	617-960MHz	20.0
	1.71-2.7 GHz	15	1.71-2.7GHz	17.0
	3.3-3.8 GHz	32	3.3-5.9 GHz	35.0
Wi-Fi			2.4-2.SGHz	25.0
			4.9-5.9GHz	32.0

[1] *Measurements taken with 17-ft cable and 2-ft ground plane.*
[2] *Measurements taken with at the base of the antenna (no cable included).*

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Electrical Specifications – GNSS Antenna (all bands)

Specification	Measurement
Frequency Range	1565-1608 MHz
Amplifier Gain	@ 3.0VDC: 26 dB (typical)
Output VSWR	2.0:1 (maximum)
DC Current	25mA (typical)
DC Voltage	2.8-6.0 V (operating) 12.0 V (survivability)
Noise Figure	< 2.0 dB (typical)
Out-of-Band Rejection	f0= 1586 MHz f0 ± 50 MHz: ≥ 60 dBc f0 ± 60 MHz: ≥ 70 dBc
Nominal Gain	3 dBic @ 90° -2 dBic @ 20°
Polarization	Right hand circular
Nominal Impedance	50 ohms

Mechanical and Environmental Specifications

Specification		Measurement
Dimensions (W x H)	All models	5.38 W x 3.53 H in (136.5 W x 89.7 H mm)
Weight	5 ports: GLHPDLTEMIMO-SF 3 ports: GLHPDLTE-SF	3 lbs (1.4 kg) 2.6 lbs (0.9 kg)
Housing Material		White or Black, UV-Stable Rugged Thermoplastics
Temperature Range		-40°C to +85°C
Gasket Design and Construction		Contour matching, conformable, thermoplasticelastomer 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.

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 solutions, including purpose-built Industrial IoT devices, antenna systems, and test and measurement products. Trusted by our customers for over 25 years, we solve complex wireless challenges to help organizations stay connected, transform, and grow.

PCTEL, Inc.

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