DATASHEET

COMBINATION ANTENNA

Trooper™ Multiband 5G Cellular and 802.11ac Antennas with High Rejection GPS/GLONASS

Combination Antenna - GNSS, 5G Cellular and WiFi

GLHPD Platform

Description

Rugged multiband LTE MIMO and 802.11ac antennas with high rejection GPS/GLONASS, and compact footprint for high-speed Intelligent Transportation Systems and Industrial IoT applications.

Technologies

- 5G Cellular
- WiFi
- GPS L1 / GLONASS
- GLONASS

Features

- No tune, multiband coverage
- Superior out-of-band rejection
- Easy installation and/or replacement
- Weather proof, IP67 housing
- Meets AAR certification requirements

PCTEL

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The Trooper™ GLHPD antenna platform supports the high speed requirements of complex RF communication systems used for Intelligent Transportation Systems (ITS), and IIoT applications. Its compact footprint makes this antenna platform ideal for installation on surfaces with limited surface space, including leading public safety vehicle rooftops and Industrial IoT (IIoT) cabinet installations. These antennas feature two 5G elements compatible with the world's leading cellular routers supporting 600 MHz to 6 GHz frequencies. In addition, PCTEL's proprietary high-rejection multi-GNSS technology is included for high precision tracking and asset management.

Features

- No tune, multiband coverage – Dual LTE, 802.11ac WiFi and GPS L1/GLONASS frequencies
- Superior out-of-band rejection via proprietary filtering design
- Metal 3/4-inch stud mount with slotted jam nut provides single cable exit for easy installation and/or replacement
- IP67 compliant design provides maximum protection against water or dust ingress under severe environmental conditions[1]
- UV-resistant black or white housing options complement most vehicular aesthetic requirements
- Meets AAR certification requirements for rail applications

Certifications

RoHS COMPLIANT

[1] *When installed according to PCTEL's installation instructions.*

SPECIFICATIONS

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Standard Configurations

Model	Elements	Cable	Connector[2]	Mount	Housing Color
GLHPDLTE-LTB	LTE (2) GNSS (1)	Two-17 feet Pro-Flex™ Plus 195 (LTE) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) SMA Plug (GNSS)	1-inch (25.4 mm) hole, 3/4-inch long (19.05 mm) zinc stud mount with jam nut	Black
GLHPDLTE-LTW	LTE (2) GNSS (1)	Two-17 feet Pro-Flex Plus 195 (LTE) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) SMA Plug (GNSS)		White
GLHPDLTEMIMO-LTB	LTE (2) WiFi (2) GNSS (1)	Two-17 feet Pro-Flex Plus 195 (LTE) Two-17 feet Pro-Flex Plus 195 (802.11ac WiFi) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) Reverse Polarity SMA Plug (WiFi) SMA Plug (GNSS)		Black
GLHPDLTEMIMO-LTW	LTE (2) WiFi (2) GNSS (1)	Two-17 feet Pro-Flex Plus 195 (LTE) Two-17 feet Pro-Flex Plus 195 (802.11ac WiFi) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) Reverse Polarity SMA Plug (WiFi) SMA Plug (GNSS)		White
GLHPDM3-LTB	LTE (2) WiFi (3) GNSS (1)	Two-17 feet Pro-Flex Plus 195 (LTE) Three-17 feet Pro-Flex Plus 195 (802.11ac WiFi) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) Reverse Polarity SMA Plug (WiFi) SMA Plug (GNSS)		Black
GLHPDM3-LTW	LTE (2) WiFi (3) GNSS (1)	Two-17 feet Pro-Flex Plus 195 (LTE) Three-17 feet Pro-Flex Plus 195 (802.11ac WiFi) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) Reverse Polarity SMA Plug (WiFi) SMA Plug (GNSS)		White

Electrical Specifications – RF Antennas

F1 (MHz)	F2 (MHz)	SWR[3]	Gain (dB)[3] Max	Gain (dB)[3] Typical	Gain (dB)[3] Range (±)	Efficiency[3] Avg	Efficiency[3] Range (±)	Polarization	Nominal Impedance	Maximum Power
LTE Primary Port 1 & 2										
617	698	2.2	4.0	2.2	1.8	54%	19%	Linear	50 ohms	50 watts
698	802	1.4	5.0	4.0	0.9	68%	5%			
824	960	2.7	5.5	4.3	1.2	61%	5%			
1710	2200	1.7	6.5	5.5	0.9	78%	3%			
2300	2690	1.6	8.8	6.8	1.9	78%	4%			
3400	3800	1.9	6.8	6.1	0.7	73%	3%			
5150	5950	2.2	10.1	8.6	1.5	81%	13%			
WiFi Port 3										
2400	2500	1.2	9.4	9.0	0.4	81%	3%	Linear	50 ohms	50 watts
4900	5900	1.4	9.4	8.9	0.5	70%	12%			

Minimum Isolation (dB)[3]

	LTE Primary (1 & 2)		WiFi (3)	
LTE Primary (1 & 2)	690 - 960 MHz	9.0	698 - 960 MHz	20.0
	1.71 - 2.7 GHz	15.0	1.71 - 2.7 GHz	17.0
	3.3 - 5.9 GHz	32.0	3.3 - 5.9 GHz	35.0
WiFi (3)			2.4 - 2.5 GHz	21.0
			4.9 - 5.9 GHz	27.0

[1] When installed according to PCTEL's installation instructions.
[2] Consult Customer Service for other connector options.
[3] Measurements taken with 3-ft cables on a 2-ft ground plane.

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Electrical Specifications – GNSS Antenna

Frequency Range	1565 - 1608 MHz
Amplifier Gain	@ 3.0 VDC: 26 dB (typical)
Output VSWR	2.0:1 (maximum)
DC Current	25 mA (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 Specifications

Physical

Dimensions (W x H)		4.05 W x 3.46 H inches (10.3 x 8.8 cm)
Weight	**3-Port Models** GLHPDLTE-LTB GLHPDLTE-LTW	2.3 lbs (36.8 oz)
	5-Port Models GLHPDLTEMIMO-LTB GLHPDLTEMIMO-LTW	2.9 lbs (46.4 oz)
	6-Port Models GLHPDM3-LTB GLHPDM3-LTW	3.1 lbs (49.6 oz)
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.

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.

PCTEL, Inc.

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