

Trooper™ TRP-20INT Multiband 5G Cellular & 802.11ac Antennas with High Rejection GPS/GLONASS

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

Police Vehicle Series



Description

Multiband high rejection antennas featuring two 5G elements compatible with the world's leading cellular routers supporting 600 MHz to 6 GHz frequencies used for critical communications in FirstNet® public safety and Intelligent Transportation Systems (ITS).

Technologies

- 5G Cellular
- Wi-Fi
- GPS L1 / GLONASS
- GLONASS

Features

- No field tune, multiband coverage
- Designed for raised rooftop rib installation
- Eliminates shadow interference
- Patent-pending flexible gasket geometry
- Watershed conformable gasket construction for ingress protection



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The Trooper™ TRP-20INT antenna platform supports the high speed requirements of complex RF communication systems used for Intelligent Transportation Systems (ITS), and IIoT applications. Their purpose-designed footprint allows seamless installation on new leading 2020 public safety sports utility vehicles with narrow ridged rooftops. 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 field tune, multiband coverage: 5G cellular, optional Wi-Fi, and GPS L1/GLONASS frequencies.
- Designed for raised rooftop rib installation - optimizes RF performance by eliminating the shadow interference from the rooftop ribs often experienced with recessed location installations.
- Patent-pending flexible gasket geometry – adds installation flexibility along the center rib of the vehicle's rooftop, with improved clearance for mounting hardware.
- Patent-pending, watershed conformable gasket construction – reduces freeze-thaw potential and optimizes the seal between the radome and baseplate for reliable ingress protection¹.

Certifications



¹ If installed according to PCTEL's installation instructions

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Standard Configurations

Model	Elements	Cable	Connector ²	Mount	Housing Color
TRP-20INT-3-B	5G (2) GNSS (1)	Two-17 feet RG-58 (DBL) (5G) One-17 feet RG-174/U (GNSS)	SMA Plug (5G) SMA Plug (GNSS)	1-inch (25.4 mm) hole, 3/4-inch long (19.05 mm) zinc stud mount with jam nut	Black
TRP-20INT-5-B	5G (2) Wi-Fi (2) GNSS (1)	Two-17 feet RG-58 (DBL) (5G) Two-17 feet RG-58 (DBL) (802.11ac Wi-Fi) One-17 feet RG-174/U (GNSS)	SMA Plug (5G) Reverse Polarity SMA Plug (Wi-Fi) SMA Plug (GNSS)		Black
TRP-20INT-6-B	5G (2) Wi-Fi (3) GNSS (1)	Two-17 feet RG-58 (DBL) (5G) Three-17 feet RG-58 (DBL) (802.11ac Wi-Fi) One-17 feet RG-174/U (GNSS)	SMA Plug (5G) Reverse Polarity SMA Plug (Wi-Fi) SMA Plug (GNSS)		Black
TRPS-20INT-2458B	Wi-Fi (1) GNSS (1)	One-17 feet RG-58 (DBL) (Wi-Fi) One-17 feet RG-174/U (GNSS)	QMA Male QMA Male		Black

Electrical Specifications – RF Antennas (all models)

F1 (MHz)	F2 (MHz)	SWR ³	Max	Gain (dB) ³		Efficiency ³		Polarization	Nominal Impedance	Maximum Power
				Typical	Range (±)	Avg	Range (±)			
5G Primary Port 1 & 2										
617	698	2.2	4.0	2.2	1.8	54%	19%	Linear	50 ohms	50 watts
698	802	1.6	5.0	4.0	0.9	68%	5%			
824	960	1.4	5.5	4.3	1.2	61%	5%			
1710	2200	1.4	6.5	5.5	0.9	78%	3%			
2300	2690	1.5	8.8	6.8	1.9	78%	4%			
3400	3800	1.8	6.8	6.1	0.7	73%	3%			
5150	5950	1.4	10.1	8.6	1.5	81%	13%			
Wi-Fi 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

	5G Primary (1 & 2)		Wi-Fi (3)	
5G Primary (1 & 2)	690 - 960 MHz		698 - 960 MHz	20.0
	1.71 - 2.7 GHz		1.71 - 2.7 GHz	17.0
	3.3 - 5.9 GHz		3.3 - 5.9 GHz	35.0
Wi-Fi (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 (all models)

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 - 5.5 VDC (operating)
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 L x H)	TRP-20INT-3-B	4.05 W x 3.46 H in (103 x 88 mm)
	TRP-20INT-5-B	4.05 W x 4.7 L x 2.75 H in (103 x 70 x 119 mm)
	TRP-20INT-6-B	4.57 W x 3.98 L x 2.86 H in (116 x 101 x 98 mm)
	TRPS-20INT-2458B	4.57 W x 3.98 L x 3.15 H in (116 x 101 x 80 mm)
Weight	TRP-20INT-3-B	2.6 lbs (41.6 oz)
	TRP-20INT-5-B	3.2 lbs (51.2 oz)
	TRP-20INT-6-B	3.4 lbs (54.4 oz)
Radome Construction	UV-Stable Rugged Thermoplastics	
Operating / Storage Temperature	-40°C to +85°C	
Gasket Design & Construction	Patent-pending flexible geometry gasket designed for optimal seal between the radome and the base plate. This thermoplastic-elastomer gasket is flexible and conformable for maximum placement flexibility along the middle ridges of the vehicle. Baseplate includes 3M® VHB mounting pad for more secure installations and rotation prevention.	

² Consult Customer Service for other connector options

³ SWR and isolation measured with 17-ft cables and 2-ft ground plane

⁴ Gain and efficiency measured with no cable and 2-ft ground plane.

CONTACT US

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this product contact your
sales representative or visit
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Solving Complex Wireless Challenges

PCTEL, an Amphenol company, is a leading global provider of wireless technology solutions, including purpose-built 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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