

Multi-Band LTE MIMO & 802.11ac Antennas with High Rejection GPS/GLONASS

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.



TRP-20INT



Features

- No field tune, multi-band coverage: dual LTE, 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 protection*.

STANDARD CONFIGURATION

Model	Elements	Cable	Connector**	Mount	Housing Color
TRP-20INT-3-B	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 hole, 3/4-inch long (.75") zinc stud mount with jam nut	Black
TRP-20INT-5-B	LTE (2) Wi-Fi (2) GNSS (1)	Two-17 feet Pro-Flex™ Plus 195 (LTE) Two-17 feet Pro-Flex™ Plus 195 (802.11ac Wi-Fi) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) Reverse Polarity SMA Plug (Wi-Fi) SMA Plug (GNSS)		
TRP-20INT-6-B	LTE (2) Wi-Fi (3) GNSS (1)	Two-17 feet Pro-Flex™ Plus 195 (LTE) Three-17 feet Pro-Flex™ Plus 195 (802.11ac Wi-Fi) One-17 feet RG-174/U (GNSS)	SMA Plug (LTE) Reverse Polarity SMA Plug (Wi-Fi) SMA Plug (GNSS)		
TRPS-20INT-2458B	Wi-Fi (1) GNSS (1)	One-17 feet Pro-Flex™ Plus 195 (Wi-Fi) One-17 feet RG-174/U (GNSS)	QMA Male QMA Male		

ELECTRICAL SPECIFICATIONS - RF ANTENNAS

Elements	F1 (MHz)	F2 (MHz)	SWR***	Gain (dB)****			Efficiency****		Polarization	Nominal Impedance	Maximum Power
				Max	Typical	Range (±)	Avg	Range (±)			
LTE Primary (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%			
Wi-Fi	5150	5950	1.4	10.1	8.6	1.5	81%	13%			
	2400	2500	1.2	9.4	9.0	0.4	81%	3%			
	4900	5900	1.4	9.4	8.9	0.5	70%	12%			

* If installed according to PCTEL's installation instructions ** Consult Customer Service for other connector options
 *** SWR and isolation measured with 17-ft cables and 2-ft ground plane **** Gain and efficiency measured with no cable and 2-ft ground plane.



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ELECTRICAL SPECIFICATIONS - RF ANTENNAS, continued

Minimum Isolation (dB)***

Elements	LTE Primary (1&2)		Wi-Fi	
LTE Primary (1&2)	617-960 MHz	9.0	698-960 MHz	20.0
	1.71-2.7 GHz	15.0	1.71-2.7 GHz	17.0
	3.3-3.59 GHz	32.0	3.3-5.9 GHz	35.0
Wi-Fi			2.4-2.5 GHz	21.0
			4.9-5.9 GHz	27.0

ELECTRICAL SPECIFICATIONS - GNSS ANTENNA

Frequency Range	Amplifier Gain	Nominal Impedance	Output VSWR	DC Current	DC Voltage	Noise Figure
1565-1608 MHz	@ 3.0 VDC: 26 dB (typical)	50 ohms	2.0:1 (maximum)	25 mA (typical)	2.8-6.0 V (operating) ≤ 12.0 V (survivability)	< 2.0 dB (typical)

ELECTRICAL SPECIFICATIONS - GNSS ANTENNA, continued

Out-of-Band Rejection	Nominal Gain	Polarization
$f_0 = 1586 \text{ MHz} / f_0 \pm 50 \text{ MHz}: \geq 60 \text{ dBc} / f_0 \pm 60 \text{ MHz}: \geq 70 \text{ dBc}$	3 dBic @ 90° / -2 dBic @ 20°	Right hand circular

MECHANICAL SPECIFICATIONS

Dimensions (W x H)	Weight	Radome Construction	Operating/Storage Temperature	Gasket Design & Construction
4.05 W x 3.46 H in (10.3 x 8.8 cm)	2.6 lbs (TRP-20INT-3-B) 3.2 lbs (TRP-20INT-5-B) 3.4 lbs (TRP-20INT-6-B)	UV-Stable Rugged Thermoplastics	-40°C to +85°C	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.
4.05 W x 4.7 L x 2.75 H in (10.3 x 7 x 11.9 cm)				

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