



Dual Carrier GNSS Multi-Band Antenna, 5G & 4G LTE with 802.11ax

The Coach™ II dual-carrier antenna platform supports the high speed requirements of complex RF communication systems used for Intelligent Transportation Systems (ITS), and IIoT applications. These antennas feature four 5G elements compatible with the world's leading multi-carrier cellular routers that support 600 MHz to 3800 MHz frequencies. The platform also incorporates 802.11ax Wi-Fi MIMO connectivity, with four 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.



Coach™ II

Features

- Metal 1-inch stud mount with slotted jam nut provides single cable exit for easier installation and/or antenna replacement
- IP67 compliant design provides maximum protection against water or dust ingress under severe environmental conditions (when installed on sealed surface)
- Proprietary high rejection filtering allows wide-band coverage while achieving superior out-of-band rejection for all GNSS frequencies
- Meets AAR certification requirements for rail applications

STANDARD CONFIGURATION

Model	Elements	Cable	Connectors	Mounting Method
GL9X1AX-SF	4G LTE (All Ports) Wi-Fi (All Ports) GNSS	Four-17 feet (2-ft RG-316/15-ft Pro-Flex™ Plus 195) Four-17 feet (2-ft RG-316/15-ft Pro-Flex™ Plus 195) One-17 feet 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)
GL7X1AX-SF	4G LTE (All Ports) Wi-Fi (All Ports) GNSS	Four-17 feet (2-ft RG-316/15-ft Pro-Flex™ Plus 195) Two-17 feet (2-ft RG-316/15-ft Pro-Flex Plus 195) One-17 feet RG-316	SMA Plug (Male) Reverse Polarity SMA Plug (Male) SMA Plug (Male)	
GL4X4-SF-PLK	4G LTE (All Ports) GNSS	Four-17 feet (2-ft RG-316/15-ft Pro-Flex™ Plus 195) One-17 feet RG-316	SMA Plug (Male) SMA Plug (Male)	

ELECTRICAL SPECIFICATIONS - RF ANTENNAS

Elements	Frequency Range (MHz)	SWR**	Gain (dB)*		Efficiency*	Polarization	Nominal Impedance	Maximum Power
			Max	(Typ. +/- Range)	(Avg. +/- Range)			
LTE Primary (1&3)	600-698	2.5	2.6	0.6 +/-2.0	35% +/-18%	Linear, Vertical	50 ohms	25 watts
	698-802	2.0	4.3	2.5 +/-1.8	54% +/-12%			
	824-960	1.9	5.4	3.1 +/-2.2	60% +/-11%			
	1710-2200	1.6	7.6	5.7 +/-2.0	70% +/-11%			
	2300-2690	1.4	7.1	5.9 +/-1.1	74% +/-9%			
	3400-3800	1.2	6.9	6.3 +/-0.6	77% +/-2%			
LTE Secondary (2&4)	600-698	3.4	-0.5	-2.3 +/-1.8	17% +/-5%			
	733-802	2.2	2.3	0.8 +/-1.5	32% +/-9%			
	824-960	2.9	3.0	1.1 +/-1.9	29% +/-5%			
	1805-2200	1.6	6.4	5.2 +/-1.2	68% +/-8%			
	2300-2690	2.0	5.7	5.1 +/-0.7	57% +/-16%			
	3400-3800	1.7	8.2	6.5 +/-1.7	63% +/-11%			
Wi-Fi	2400-2500	1.3	9.1	7.2 +/-1.9	74% +/-4%			
	4900-5900	1.5	11.4	9.1 +/-2.3	59% +/-14%			

*Measured with 7-in cables and a 2-Ft ground plane **Measured with 17-ft cables and no ground plane

GNSS Multi-Band Antenna, Multi-Port 4G LTE and 802.11ac MIMO Connectivity

ELECTRICAL SPECIFICATIONS - RF ANTENNAS, continued

Minimum Isolation (dB)**

Elements	LTE Primary (1&3)		LTE Secondary (2&4)		Wi-Fi	
LTE Primary (1&3)	698-960 MHz	15	698-960 MHz	15.0	698-960 MHz	20.0
	1.71-2.7 GHz	25	1.71-2.7 GHz	25.0	1.71-2.7 GHz	17.0
					4.9-5.9 GHz	35.0
LTE Secondary (2&4)			698-960 MHz	20.0	698-960 MHz	22.0
			1.71-2.7 GHz	30.0	1.71-2.7 GHz	16.0
					4.9-5.9 GHz	32.0
Wi-Fi					2.4-2.5 GHz	25.0
					4.9-5.9 GHz	32.0

ELECTRICAL SPECIFICATIONS - GNSS ANTENNA

Frequency Band	Amplifier Gain	Output VSWR	DC Current	DC Voltage	Noise Figure:	Out-of-Band Rejection:
1565-1608 MHz	@ 3.0 VDC: 26 dB (typical)	2.0:1 (maximum)	25 mA (typical)	2.8-6.0 V (operating) ≤ 12.0 V (survivability)	< 2.0 dB (typical)	f ₀ = 1586 MHz f ₀ ± 50 MHz: ≥ 60 dBc f ₀ ± 60 MHz: ≥ 70 dBc

ELECTRICAL SPECIFICATIONS - GNSS ANTENNA

Frequency Band	Nominal Gain	Polarization	Nominal Impedance
1565-1608 MHz	3 dBic @ 90° -2 dBic @ 20°	Right hand circular	50 ohms

MECHANICAL SPECIFICATIONS AND ENVIRONMENTAL SPECIFICATIONS (ALL MODELS)

Dimensions	Housing Material	Temperature Range	Gasket Design & Construction
5.1 x 3.6 in (130 x 92 mm)	Black or White,**** UV-Stable Rugged Thermoplastics	-40°C to +85°C	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.

*** Measured with 17-ft cables and no ground plane **** For black radome, order P/N GL9X1AX-SF; for white radome, order P/N GL9X1AX-SFW.