

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

The GL9X1AX-SF antenna provides optimal 4G LTE and dual-band 802.11ac Wi-Fi coverage in a single, low-profile housing. The design includes proprietary high rejection GNSS technology for optimal performance and support of multi-carrier voice and data networks.

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



GL9X1AX-SF

STANDARD CONFIGURATION

Elements	Cable	Connectors	Mounting Method
4G LTE (All Ports)	Four-17 feet (2-ft RG-316/15-ft Pro-Flex™ Plus 195)	SMA Plug (Male)	1-inch OD, 3/4-inch long (.75") zinc stud mount with jam nut (all models)
Wi-Fi (All Ports)	Four-17 feet (2-ft RG-316/15-ft Pro-Flex™ Plus 195)	Reverse Polarity SMA Plug (Male)	
GNSS	One-17 feet RG-316	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

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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, 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