

Product Brief



ANT-GNSSCP-SM12L1 Surface-Mount Ceramic Patch GNSS Antenna

The GNSSCP-SM12L1 is a 12 mm x 12 mm square surface-mount ceramic patch antenna for embedded GPS/GLONASS/GALILEO/BeiDou global navigation satellite system (GNSS) operation. It provides gain and radiation pattern performance supporting solutions with high location accuracy, rapid satellite signal reception and lock, and quick time to first fix.

The GNSSCP-SM12L1 offers an extended temperature range to +105 °C for compliance to automotive standard AEC-Q200 Grade 2.

The GNSSCP-SM12L1 is available in tape and reel packaging and is designed for reflow-solder mounting directly to a printed circuit board for high-volume applications.



Features

- Performance at 1567.24 MHz to 1583.6 MHz
 - VSWR: ≤ 7.0
 - Peak Gain: 2.9 dBi
 - Efficiency: 53%
- Directional radiation pattern orthogonal to antenna surface
- Right-hand circularly polarized (RHCP)
- Extended operation to +105 °C
- AEC-Q200 Grade 2 compliance
- Omnidirectional radiation pattern
- Direct surface-mount PCB attachment
- Reflow- or hand-solder assembly

Applications

- Global navigation GNSS
 - GPS L1
 - Galileo E1
 - GLONASS II L1
 - Beidou B1-BOC
 - QZSS L1
- Timing solutions
- Automotive location

Ordering Information

Part Number	Description
ANT-GNSSCP-SM12L1	GNSS ceramic patch antenna with surface-mount solder connection

Available from LinX Technologies and select distributors and representatives.

Electrical Specifications

GNSSCP-SM12L1	GPS L1, GALILEO E1, GLONASS II L1, Beidou B1-BOC, QZSS L1	GLONASS II L1	
Center Frequency	1575.42 MHz	1602 MHz	
Frequency Range	1567.24 MHz to 1583.60 MHz	1593.31 MHz to 1608.68 MHz	
VSWR (max)	7.0	6.1	
Peak Gain (dBi)	2.9	1.0	
10 Deg. Elevation (dBi)	2.0	1.6	
Axial Ratio (dB)	19.7	18.4	
Average Gain (dBi)	-3.5	-3.4	
Efficiency (%)	53	51	
Polarization	RHCP	Impedance	50 Ω
Radiation	Omnidirectional	Connection	Surface-Mount
Wavelength	1/4-wave	Electrical Type	Ceramic Patch
Max Power	8 W	Weight	3.2 g (0.11 oz)
Operating Temp. Range	-40 °C to +105 °C		
Dimensions	12.0 mm x 12.0 mm x 4.0 (0.47 in x 0.47 in x 0.16 in)		
ESD Sensitivity	NOT ESD sensitive. As a best practice, Linx may use ESD packaging.		

Electrical specifications and plots measured with a 50 mm x 50 mm (1.97 in x 1.97 in) reference ground plane.

VSWR

Figure 1 provides the voltage standing wave ratio (VSWR) across the antenna bandwidth. VSWR describes the power reflected from the antenna back to the radio. A lower VSWR value indicates better antenna performance at a given frequency. Reflected power is also shown on the right-side vertical axis as a gauge of the percentage of transmitter power reflected back from the antenna.

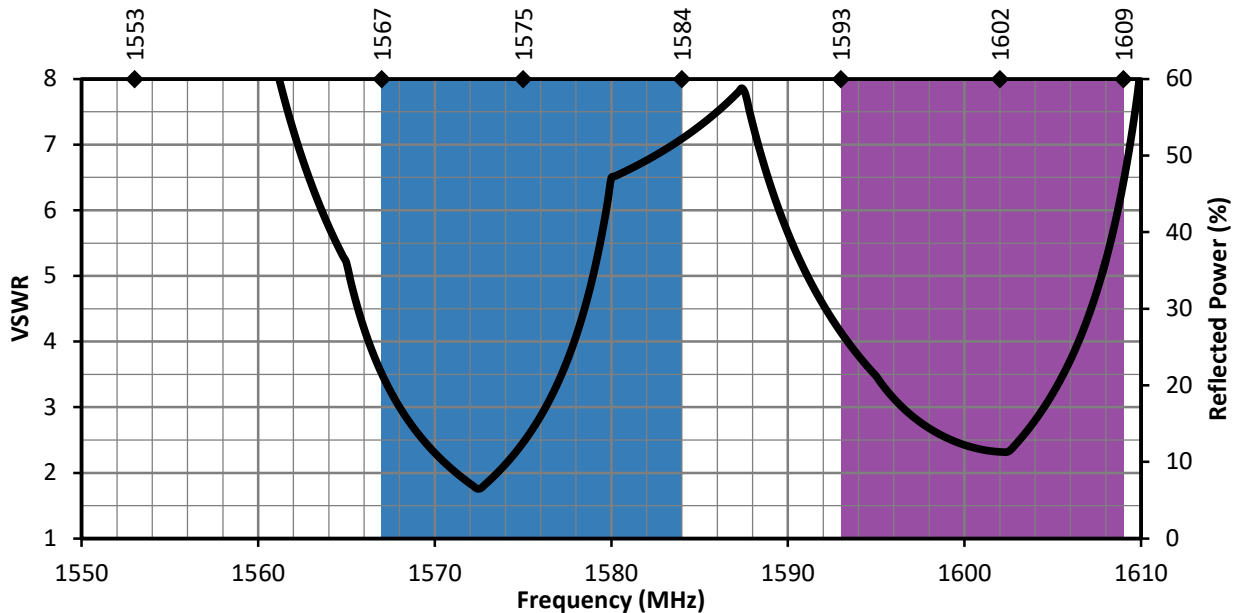


Figure 1. GNSSCP-SM12L1 VSWR

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