Product Brief

ANT-GNSSCP-TH25L1
Ceramic Patch GNSS Antenna

The GNSSCP-TH25L1 is a 25 mm x 25 mm square ceramic patch antenna for GPS/GLONASS/GALILEO/BeiDou global navigation satellite system (GNSS) operation. It provides excellent 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-TH25L1 offers an extended temperature range to +105 °C for compliance to automotive standard AEC-Q200 Grade 2. The antenna is mounted via attached adhesive patch and has a solder pin signal connection.

Features

- Performance at 1593.31 MHz to 1608.68 MHz
  - VSWR: ≤ 1.7
  - Peak Gain: 4.0 dBi
  - Efficiency: 83%
- Directional radiation pattern orthogonal to antenna surface
- Right-hand circularly polarized (RHCP)
- Extended operation to +105 °C
- AEC-Q200 Grade 2 compliance
- Adhesive mounting to PCB
- Solder pin signal connection

Applications

- Global navigation GNSS
  - GPS L1
  - Galileo E1
  - GLONASS I L1
  - GLONASS II L1
  - Beidou B1-BOC
  - Beidou B1-2
  - QZSS L1
- Timing solutions
- Automotive location

Ordering Information

Part Number	Description
ANT-GNSSCP-TH25L1	GNSS ceramic patch antenna with pin-type solder connection

Available from Linx Technologies and select distributors and representatives.

Electrical Specifications

GNSSCP-TH25L1	GPS L1, GALILEO E1, GLONASS II L1, Beidou B1-BOC, QZSS L1	Beidou B1-2	GLONASS II L1
Center Frequency	1575.42 MHz	1589.74 MHz	1602 MHz
Frequency Range	1567.24 MHz to 1583.60 MHz	1587.69 MHz to 1591.79 MHz	1593.31 MHz to 1608.68 MHz
VSWR (max)	5.6	2.1	1.7
Peak Gain (dBi)	3.5	4.0	4.0
10 Deg. Elevation (dBi)	2.5	1.7	1.3
Axial Ratio (dB)	20.9	15.3	9.3
Average Gain (dBi)	-2.4	-1.0	-0.9
Efficiency (%)	62	80	83

Polarization	RHCP	Impedance	50 Ω
Radiation	Omnidirectional	Connection	Pin Type (Through hole)
Max Power	8 W	Weight	9.2 g (0.32 oz)
Wavelength	1/4-wave	Electrical Type	Ceramic Patch
Operating Temp. Range	-40 °C to +105 °C		
Dimensions	25.1 mm x 25.1 mm x 4.0 (0.99 in x 0.99 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 70 mm x 70 mm (2.76 in x 2.76 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.

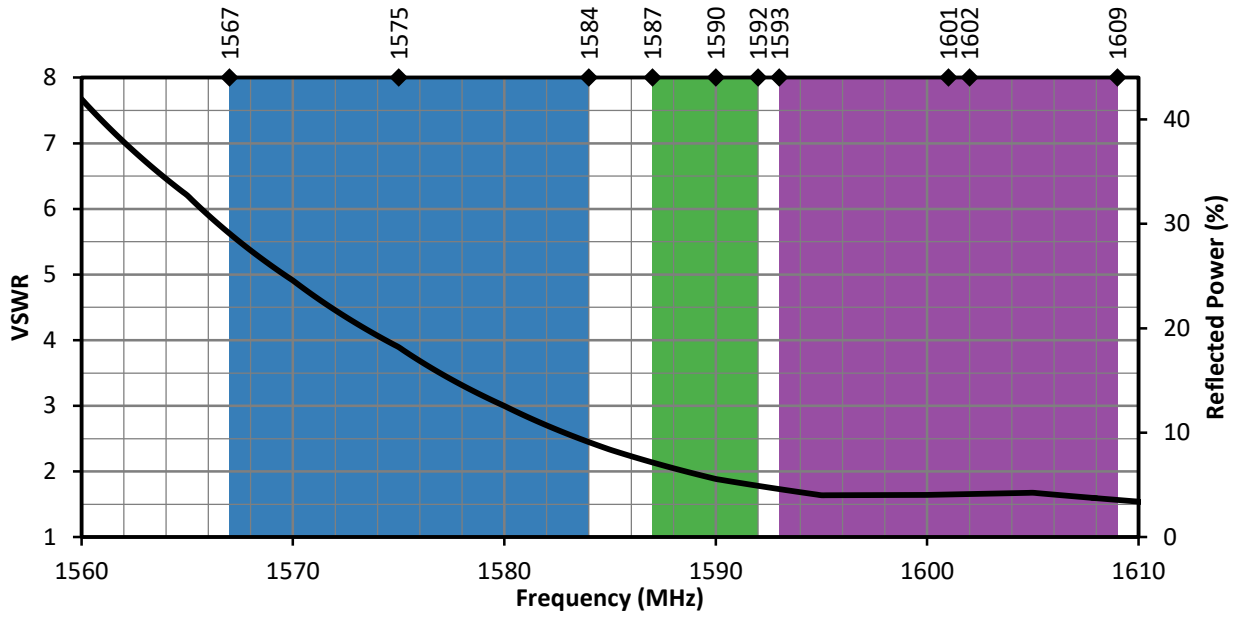

Figure 1. GNSSCP-TH25L1 VSWR

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