

1. General

ORG9802 is a miniature antenna assembly, comprising four components:

1. Ceramic patch antenna element
2. Adaptor PCB
3. Coaxial cable (option)
4. Connector (option)

2. Mechanical Specifications

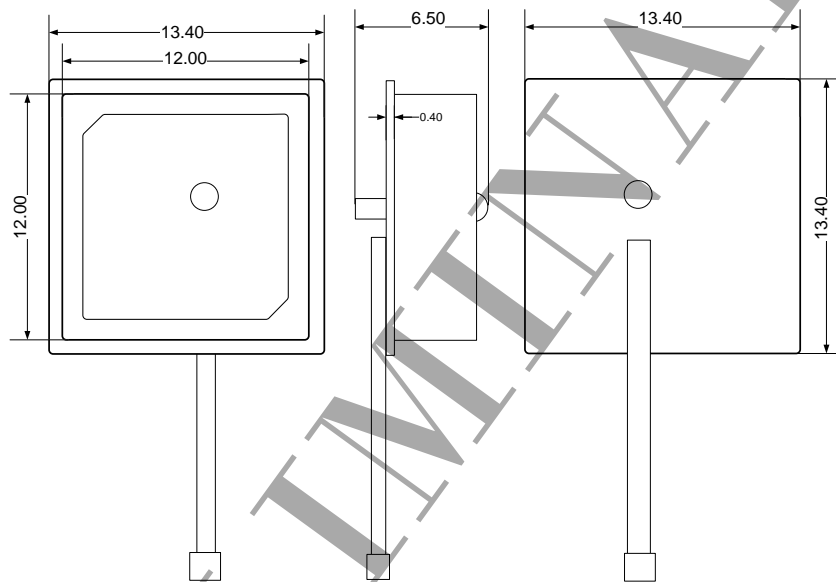


Figure 1-1: Mechanical outline

| Dimensions | Length | Width | Thickness | Weight | |
|------------|---------------|---------------|---------------|-----------|------|
| | mm | 13.4 ± 0.2 | 13.4 ± 0.2 | 6.5 ± 0.1 | gr |
| inch | 0.528 ± 0.008 | 0.528 ± 0.008 | 0.256 ± 0.004 | oz | 0.14 |

Table 1-1: Mechanical summary

3. Specifications

3.1. Electrical Characteristics

| Parameter | Value | Unit | Notes |
|-----------------------------|---------------|------------|---------------------------------------|
| Center frequency (f_c) | 1575 ± 3 | MHz | |
| Return Loss (S_{11}) | -15 (min) | dB | @ f_c |
| Bandwidth (BW) | 7 (min) | MHz | @ $f(S_{11}=-9\text{dB})$ |
| VSWR | 1.2 (max) | | |
| Impedance (Z_A) | 50 | Ω | |
| Axial Ratio (AR) | 2.5 (max) | dB | |
| Gain @ f_c | 90° Elevation | -1.0 (typ) | dBic Properties of antenna element |
| | 10° Elevation | -6.5 (typ) | |
| Polarization | R.H.C.P | | |
| Insertion Loss (S_{21}) | 3 | dB/m | Property of coaxial cable |
| Operating Temperature | -40 to +85 | °C | |

Table 2-1: Electrical Specifications

3.2. Typical S_{11} ¹

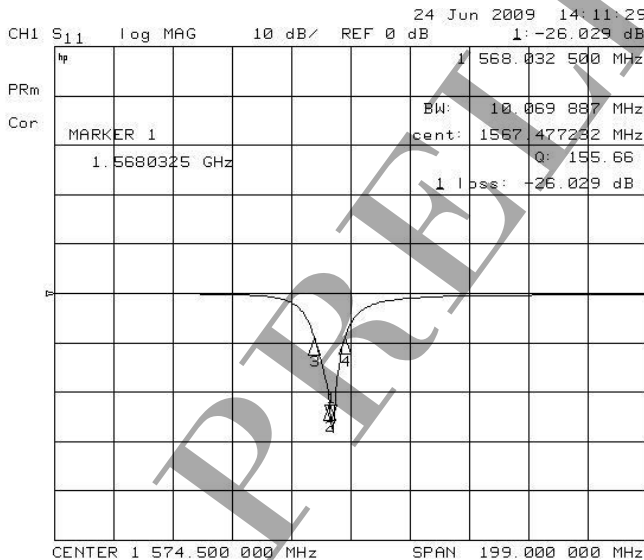


Figure 2-1: S_{11} Log Magnitude

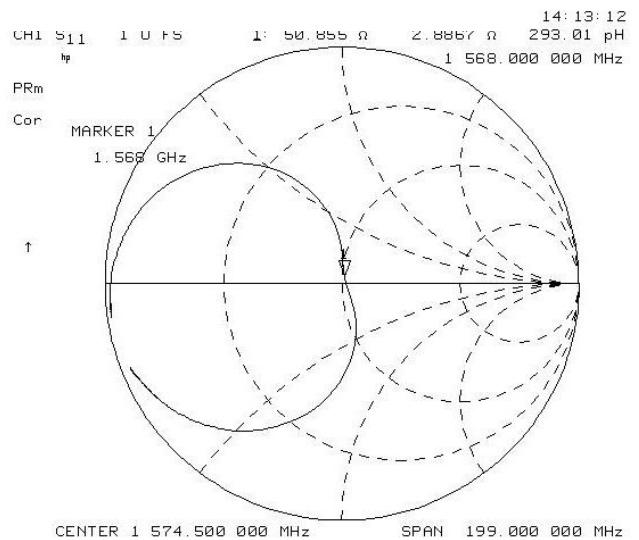


Figure 2-2: S_{11} Smith Chart

Note:
1. Measured with 38mm length cable and W.FL connector

4. Assembly

Antenna assembly without connector is intended for manual RoHS Pb-Free iron soldering with Sn:Ag:Cu 96.5:3.0:0.5. Soldering temperature is $300 \pm 5^{\circ}\text{C}$, 5 sec. max
Antenna assembly with connector is intended for manual assembly process.

5. Storage

Avoid intentional shock or drop to prevent cracking of antenna.

6. Compliance

Antenna assembly was designed and being manufactured and handled to comply with and according with Pb-Free/RoHS Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Antennas are manufactured in ISO 9001:2000 accredited facility.



PRELIMINARY