

## 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

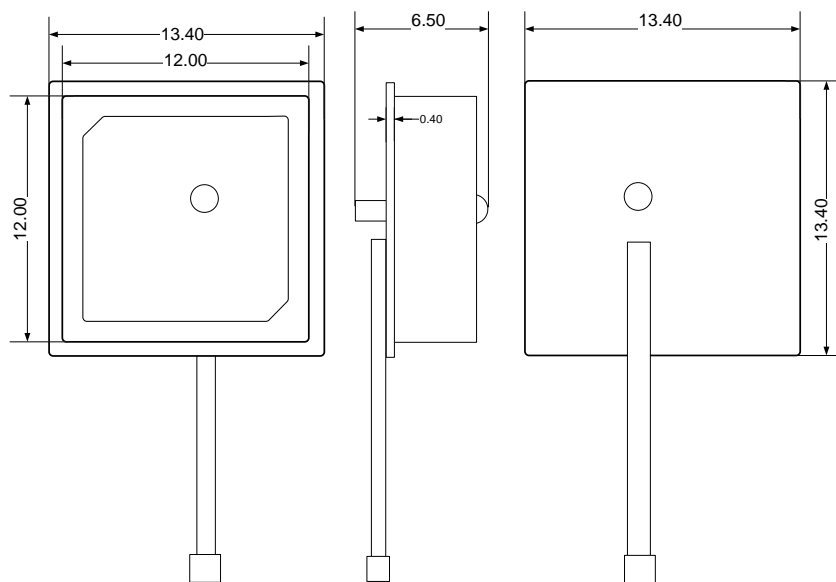


Figure 1-1: Mechanical outline

Dimensions	Length	Width	Thickness	Weight	
mm	$13.4 \pm 0.2$	$13.4 \pm 0.2$	$6.5 \pm 0.1$	gr	4.0
inch	$0.528 \pm 0.008$	$0.528 \pm 0.008$	$0.256 \pm 0.004$	oz	0.14

Table 1-1: Mechanical summary

### 3. Specifications

#### 3.1. Electrical Characteristics

Parameter		Value	Unit	Notes
Center frequency ( $f_c$ )		1575 $\pm$ 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	$\Omega$	
Axial Ratio (AR)		2.5 (max)	dB	Properties of antenna element
Gain @ $f_c$	90° Elevation	-1.0 (typ)	dBic	
	10° Elevation	-6.5 (typ)	dBic	
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 $S_{11}$ <sup>1</sup>

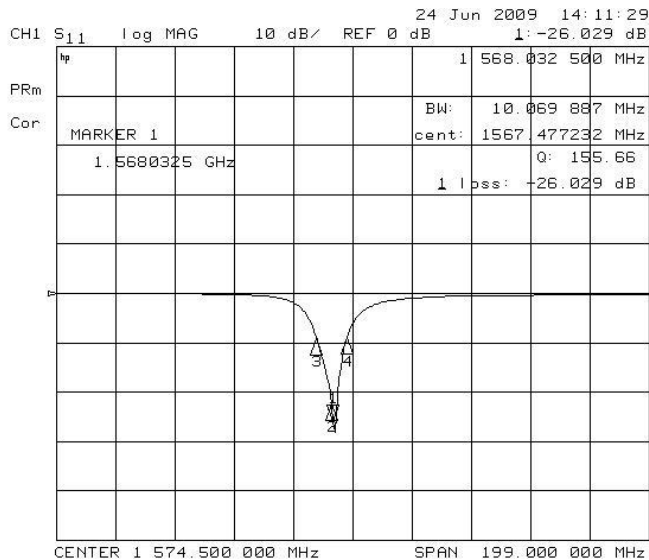


Figure 2-1:  $S_{11}$  Log Magnitude

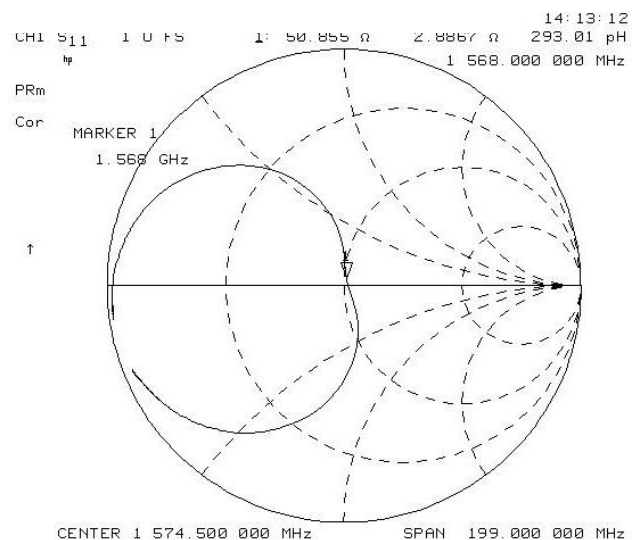


Figure 2-2:  $S_{11}$  Smith Chart

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.

