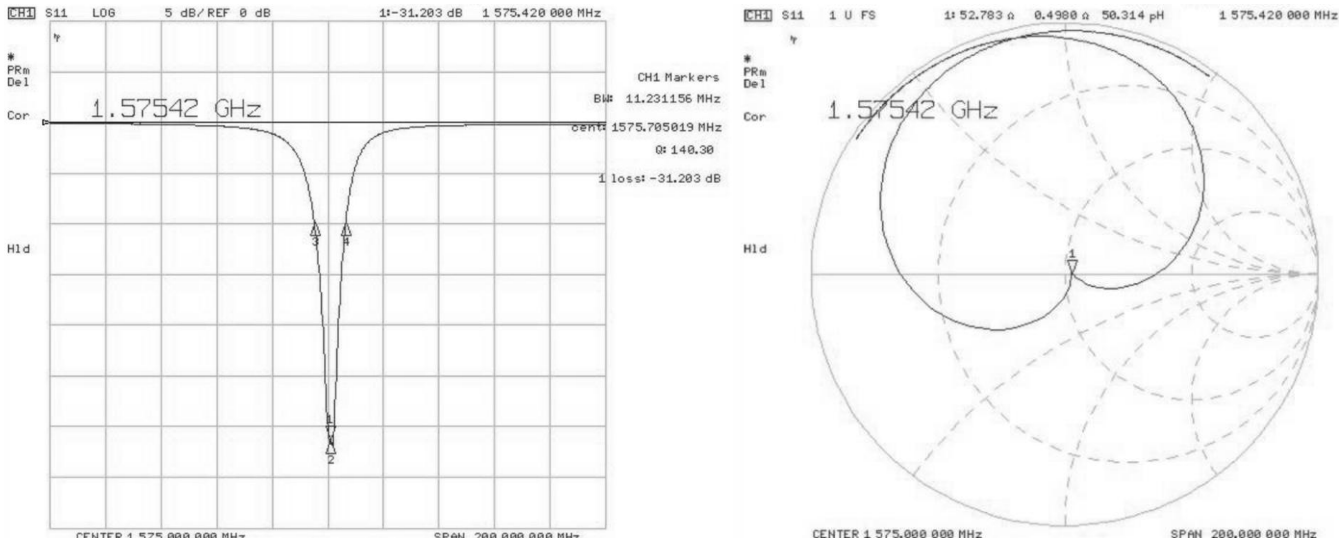
1. Specifications

1.1. Electrical Characteristics

Parameter		Value	Unit	Notes
Center Frequency (f_C)		1573 ± 3	MHz	18mm x 18mm GP
Return Loss (S_{11})		-20 (min)	dB	@f_C
Bandwidth (BW)		11 (min)	MHz	@ f(S_{11}=-9dB)
VSWR		1.5 (max)		
Impedance (Z_A)		50	Ω	
Axial Ratio (AR)		3.0 (max)	dB	
Gain @ f_C	@ zenith	0.3 (typ.)	dBic	18mm x 18mm GP
Polarization		R.H.C.P		
Temperature Factor (tF)		0±20	ppm/°C	-40°C to +85°C

1.2. Typical S_{11}



Figures 1-2: S_{11} Smith Chart

Note: Measured on 18x18mm FR4 based ground plane with adhesive tape

2. Mechanical Specifications

2.1. Dimensions

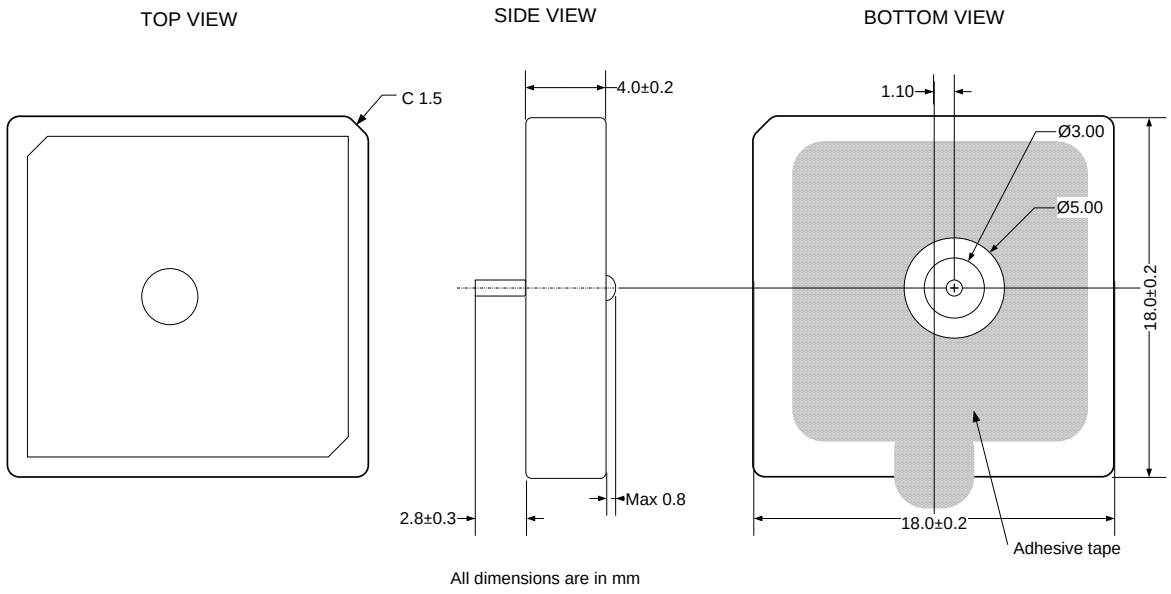


Figure 2-1: Mechanical outline

Dimensions	Length	Width	Thickness	Weight	
mm	18.0 ± 0.2	18.0 ± 0.2	4.0 ± 0.2	gr	7.6
inch	0.709 ± 0.008	0.709 ± 0.008	0.157 ± 0.008	oz	0.3

Table 2-1: Mechanical information

2.2. Materials

Item	**Material**
Electrode (Top and Bottom)	Silver
Probe	Silver Plated Brass
Probe pin solder material	Stannum
Dielectric constant	
Adhesive tape thickness	0.125mm (typ.)

Table 2-2: Materials

3. Soldering Condition

Wetability to IEC 68-2-58: ≥ 75% (after aging)
Manual iron soldering (Solder Sn/Ag/Cu 96.5/3.0/0.5)
Note: Soldering conditions must comply to prevent degradation of antenna performance.

4. Storage

Electrode metallization is unprotected silver and will tarnish after opening.
Elevated temperature and humidity will accelerate tarnishing process.
Typical floor life should not exceed 6 months after package has been opened.
Bulk antennas older than 6 months should be tested for solderability before use.
Avoid intentional shock or drop to prevent cracking of antenna.

5. Compliance

Antennas are designed and being manufactured and handled to comply with and according to 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 facilities.
Antennas are manufactured in ISO 14001:2004 accredited facilities.

6. Reliability

Parameter	Description	Pass Criteria
Drop Test	Place antenna on set 1.5m height Drop 5 times	1. No visible damage 2. S_{11} is acceptable ($\Delta f_c < 0.2\%$)
Vibration Test	Sine sweep 5Hz – 55Hz – 5Hz, 1 octave/min Amplitude = 1.5mm Acceleration = 2g Crossover frequency = 18Hz Hold time = 2hr.	1. No visible damage 2. S_{11} is acceptable ($\Delta f_c < 0.2\%$)
Humidity	60°C, 95% RH, 96hr.	1. No visible damage 2. S_{11} is acceptable ($\Delta f_c < 0.2\%$)
Thermal Shock	+80°C (30 min) → 5 min → -40°C (30 min) 10 cycles	1. No visible damage 2. S_{11} is acceptable ($\Delta f_c < 0.2\%$)
High Temperature Resistance	+90°C, 96hr.	1. No visible damage 2. S_{11} is acceptable ($\Delta f_c < 0.2\%$)
Low Temperature Resistance	- 40°C, 96hr.	1. No visible damage 2. S_{11} is acceptable ($\Delta f_c < 0.2\%$)
Adhesion Strength of Soldering	Use of pull-push gauge	Spec (min. 5kgf)
IEC Climatic Category (IEC88-1)	-40°C / +90°C / 56hr.	

Table 6-1: Reliability data

Notes:
1. Sample must satisfy the requirement after 24 hours of test
2. Based on IEC climatic category (IEC68-1) -40°C / +85°C / 56hr.