

## Datasheet

## GNSS

## Chip Antenna

Features:

This antenna is designed to cover GPS/GLONASS/QZSS/BDS/Galileo frequency band. High performing and compact size with low profile.

Applications:

- Public Safety, Search and Rescue
- IoT tracker
- GPS Navigator
- Asset tracking
- Navigation devices
- Location based services
- Drones, Robotics and Vehicles

 $3.2 \times 1.6 \times 0.5 \text{ mm}$ 

## Chip Antenna



## Electrical Specifications

## Antenna Characteristics

Antenna Type	Radiation Pattern	Polarization	Max. Input Power	Impedance
Chip Antenna	Omni	Linear	2W	50Ω
Frequency (GHz)		1.56~1.606		
Return Loss (dB) @Center Frequency		< -10 Typ.		
Peak Gain (dBi)		2.9		
Average Gain (dB)		-1.7		
Efficiency (%)		67		

## Mechanical Specifications

## Mechanical

Dimension (mm)	$3.2 \times 1.6 \times 0.5$
Material	Ceramic
Weight (g)	0.01

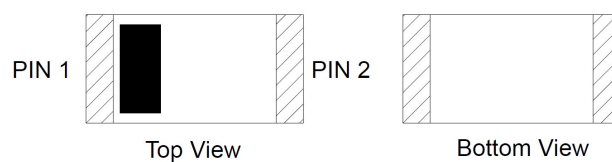
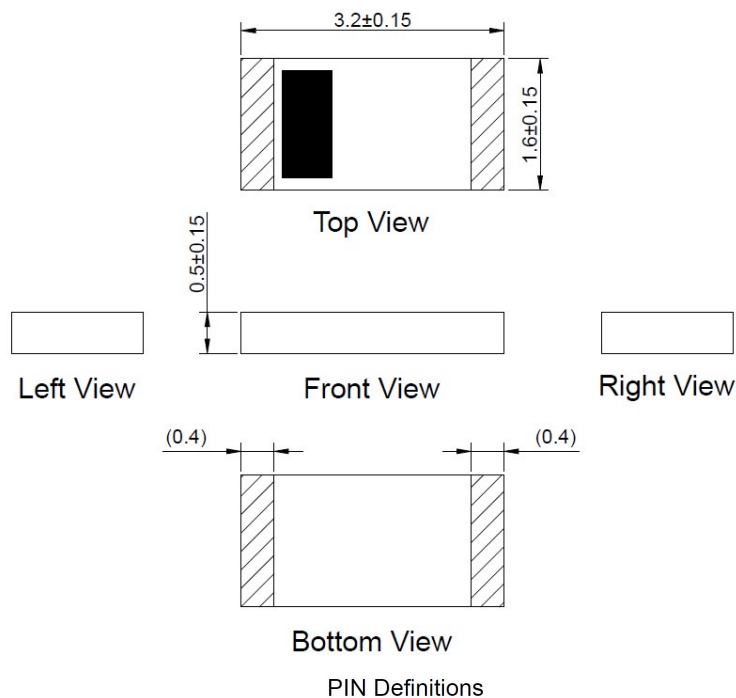
## Environmental

Temperature Range (°C)	-40 to 85
Humidity	Non-condensing 65°C 95% RH

RoHS Compliant

## Mechanical Drawing

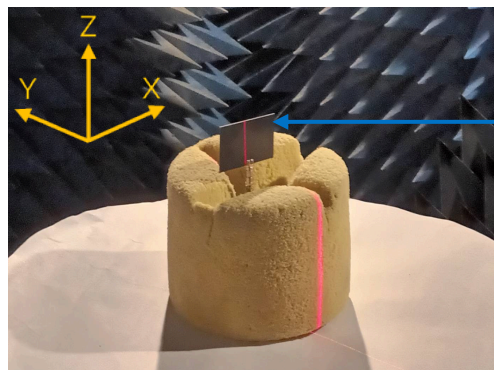
Unit : mm



Pin	Soldering PAD
1	Signal
2	Tuning/Ground

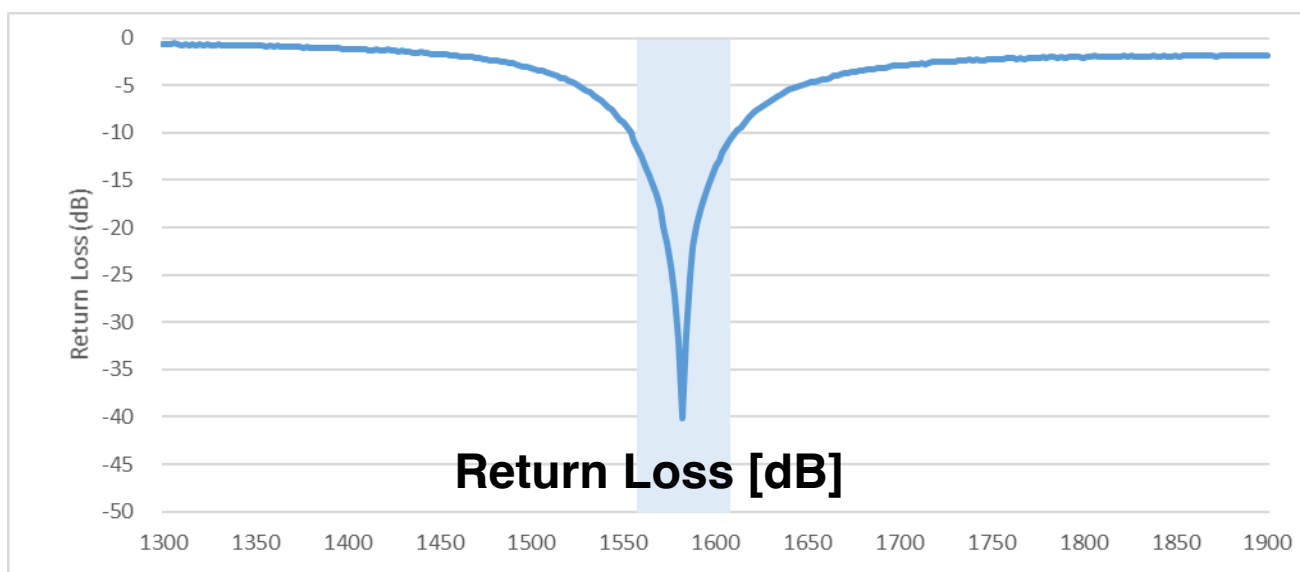
ST0543-00-N07-U

## Antenna Testing Includes Evaluation Board

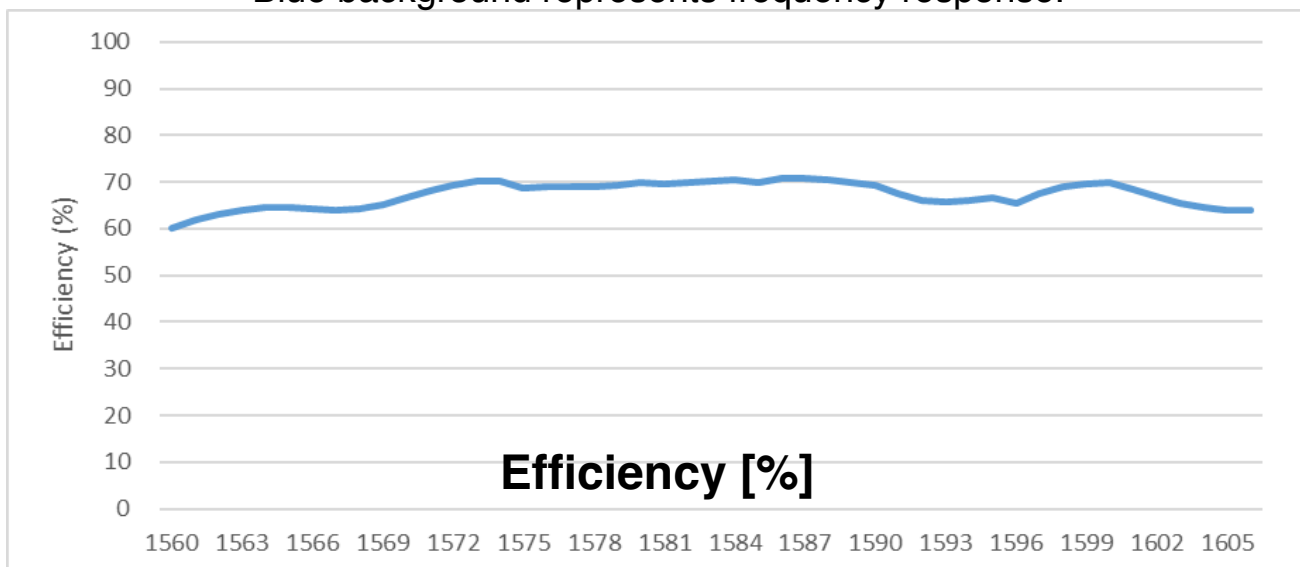


ST0543-00-N07-U

Test setup, measurement performed in 3D anechoic chamber.

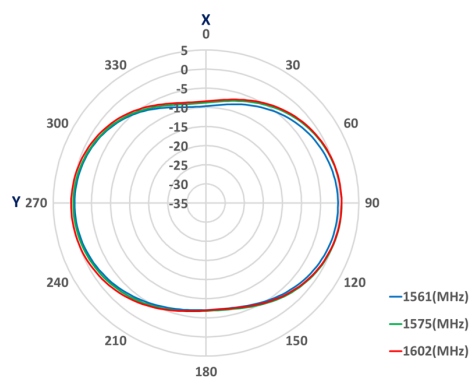


Blue background represents frequency response.

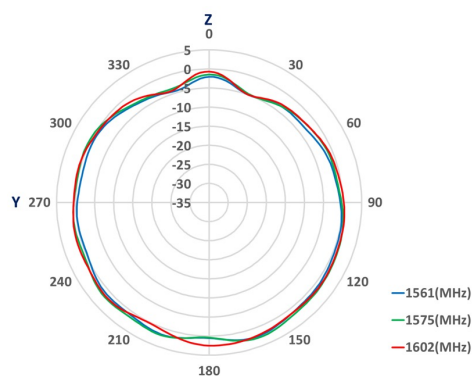


## Radiation Pattern - Free Space

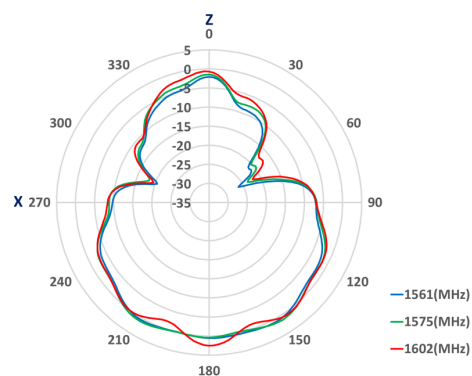
## XY - Plane



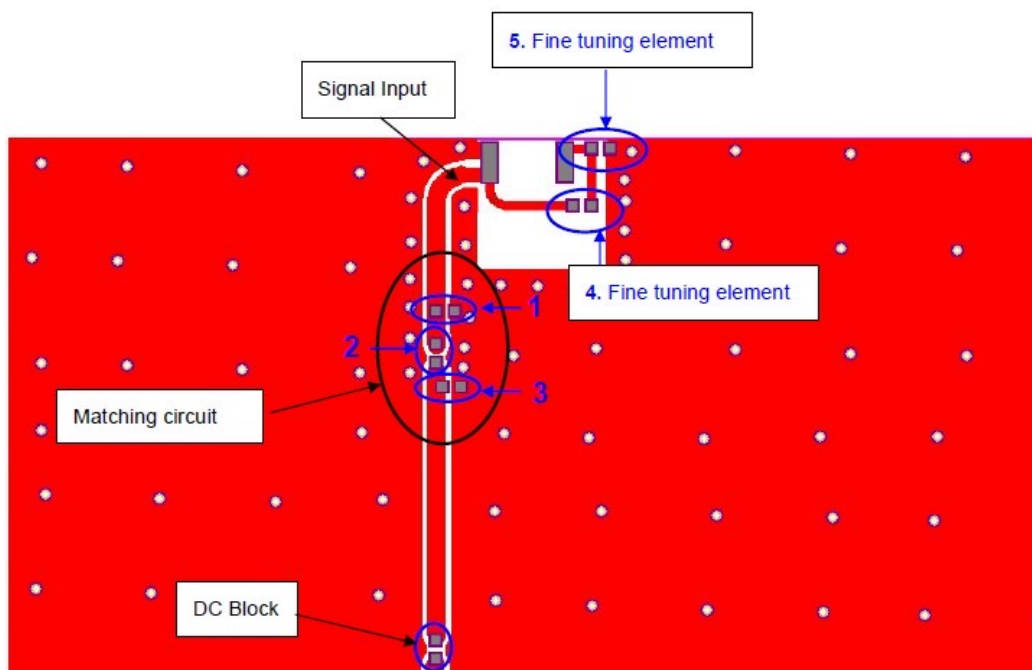
## YZ - Plane



## XZ - Plane



## Matching Circuit Design

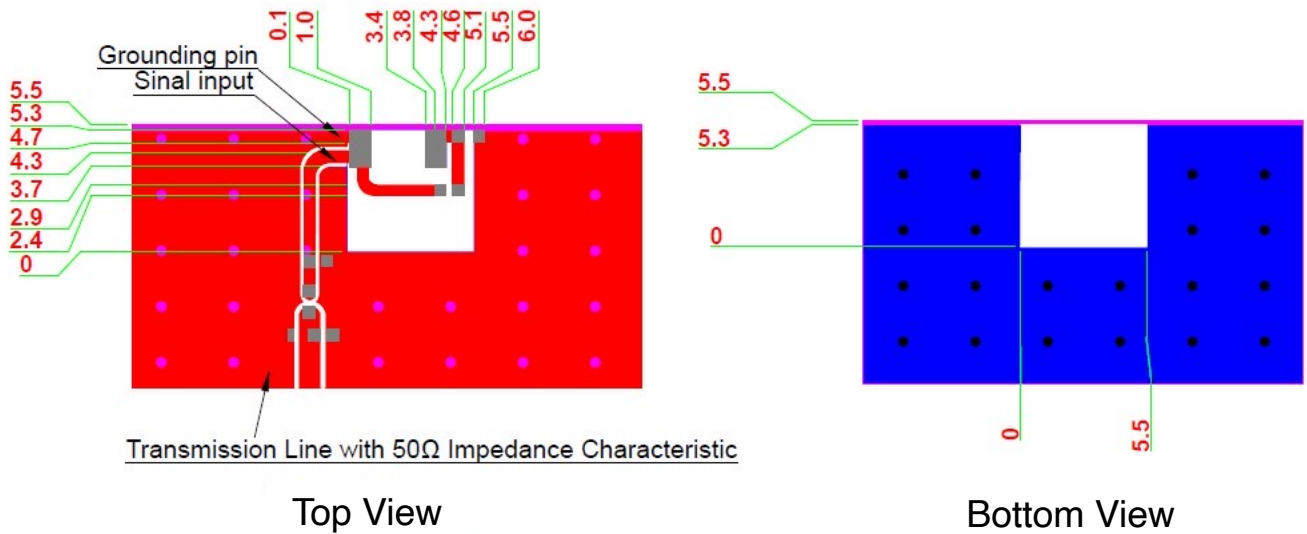


- \* To make the antenna have this resonance must be matched with the matching circuit.
- \* The matching component may be slightly different than that shown depending on the distance to the ground plane, the dielectric constant of the PCB, and PCB material thickness.

### Circuit Matching Components

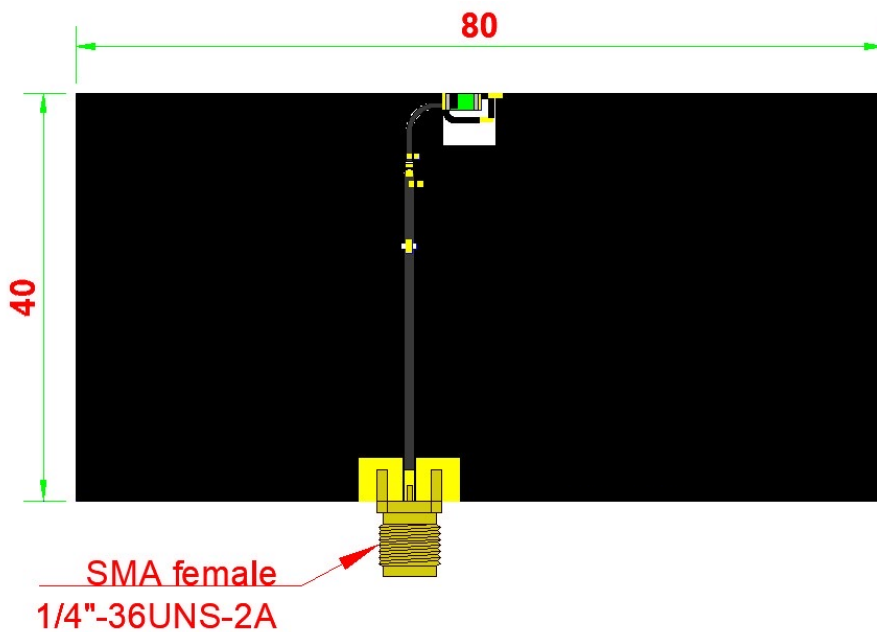
Circuit Symbol	Size	Description
1	0402	1.5 pF Capacitor
2	0402	0 Ohm Resistance
3	0402	3.3 pF Capacitor
4. Fine tuning element	0402	1 pF Capacitor
5. Fine tuning element	0402	2.7 pF Capacitor
DC Block	0402	22 pF Capacitor

## Clearance Area Design



## Evaluation Board

Unit : mm

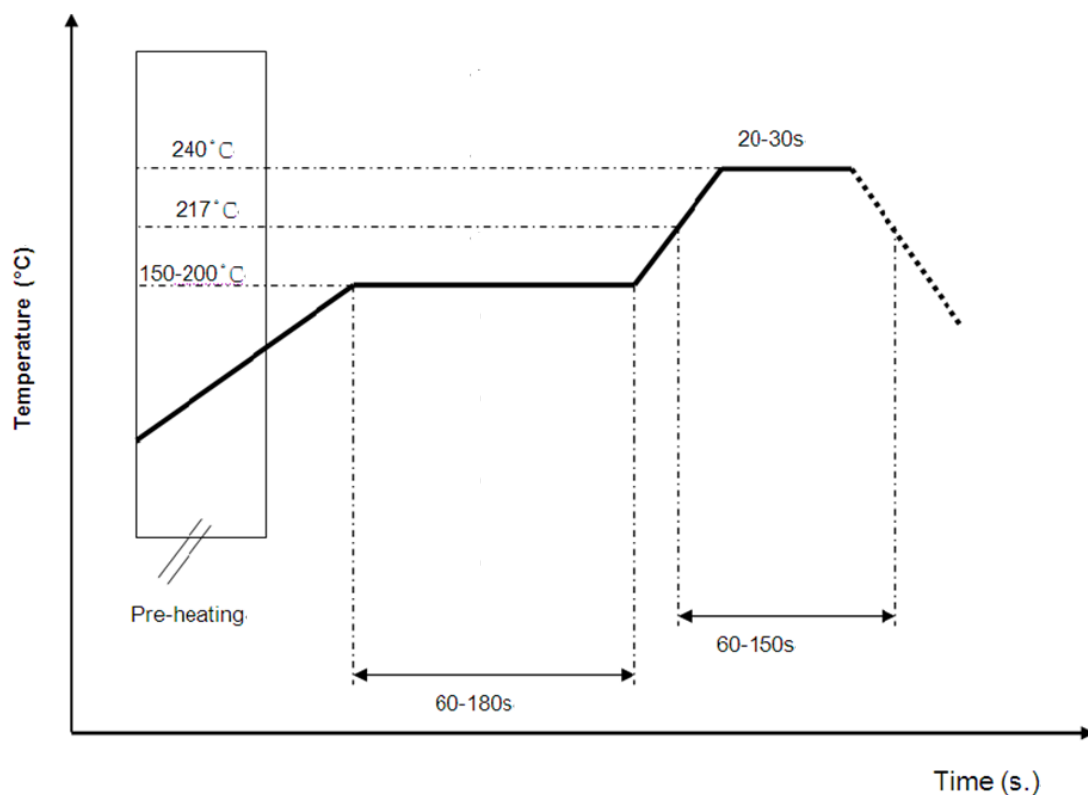


Base Material : FR-4, T=1.0

## Recommended Reflow Temperature Profile

Recommended solder paste alloy:

SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste



Revisions				
Rev.	Description	Date	ECN	Approval
A	Initial Release	2023-02-15	ST0543-00-N07-U-RA00	ATC

NOTICE - These drawings, specifications, or other data ( 1) are, and remain the property of Amphenol corp. (2) must be returned upon request; and (3) are confidential and not to be disclosed to any person other than those to whom they are given by Amphenol Corp. the furnishing of these drawings, specifications, or other data by Amphenol Corp., or to any other person to anyone for any purpose is not to be regarded by implication or otherwise in any manner licensing, granting rights to permitting such holder or any other person to manufacture, use or sell any product, process or design, patented or otherwise, that may in any way be related to or disclosed by said drawings, specifications, or other data.