GNSS

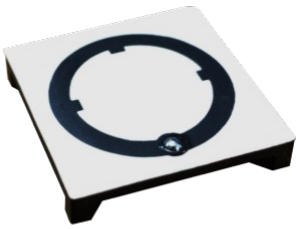
ST0543-11-N02-E

Amphenol

Datasheet

GNSS Patch Antenna

Embedded



25 x 25 x 4.5 mm

GNSS Antenna

Features:

The patch antenna has much higher efficiency and small form factor, easy mounting with pin-connector, suitable for mounting inside device.

Applications:

- GNSS enabled devices
- Portable Handsets
- Automotive Navigation
- Marine buoys
- Tracking and Positioning

RoHS

Electrical Specifications

Antenna Characteristics By Range Of Receiving Frequency		
Frequency (MHz)	1176.5 ± 1	1575.42 ± 1
Return Loss (dB)	< -10	< -10
Gain (dBic) @Zenith at 100mm x 100mm ground	2.7	4.5
Efficiency (%) @Center Frequency	35	70
Axial Ration (dB)	3 Typ.	3 Typ.
Polarization	RHCP	RHCP
Impedance (Ω)	50	50

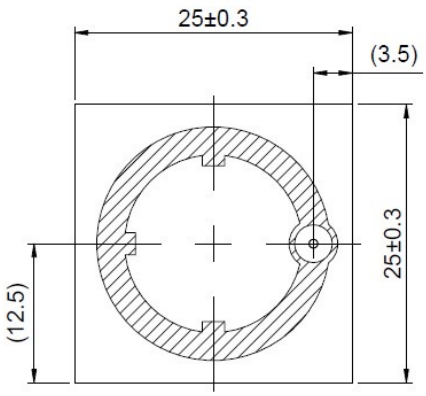
Mechanical Specifications

Mechanical	
Dimension (mm)	25.0 x 25.0 x 4.5
Material	Ceramic
Weight (g)	10.0

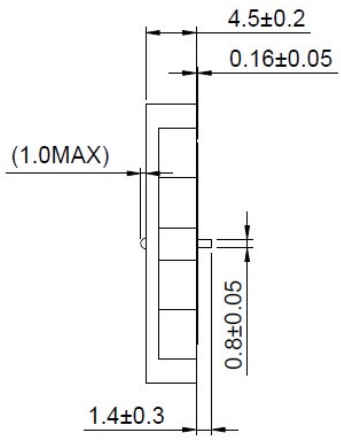
Environmental	
Temperature Range (˚C)	-40 to 85
Humidity	10% to 70% RH
RoHS Compliant	

Mechanical Drawing

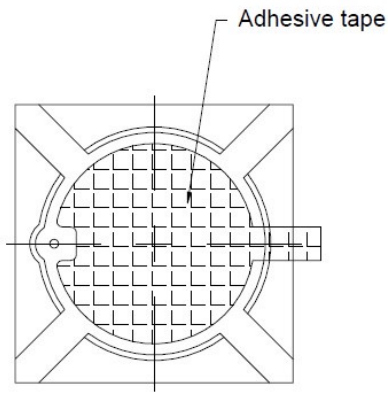
Unit : mm



Front View

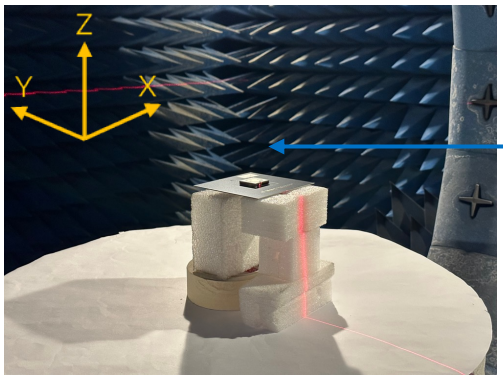


Side View

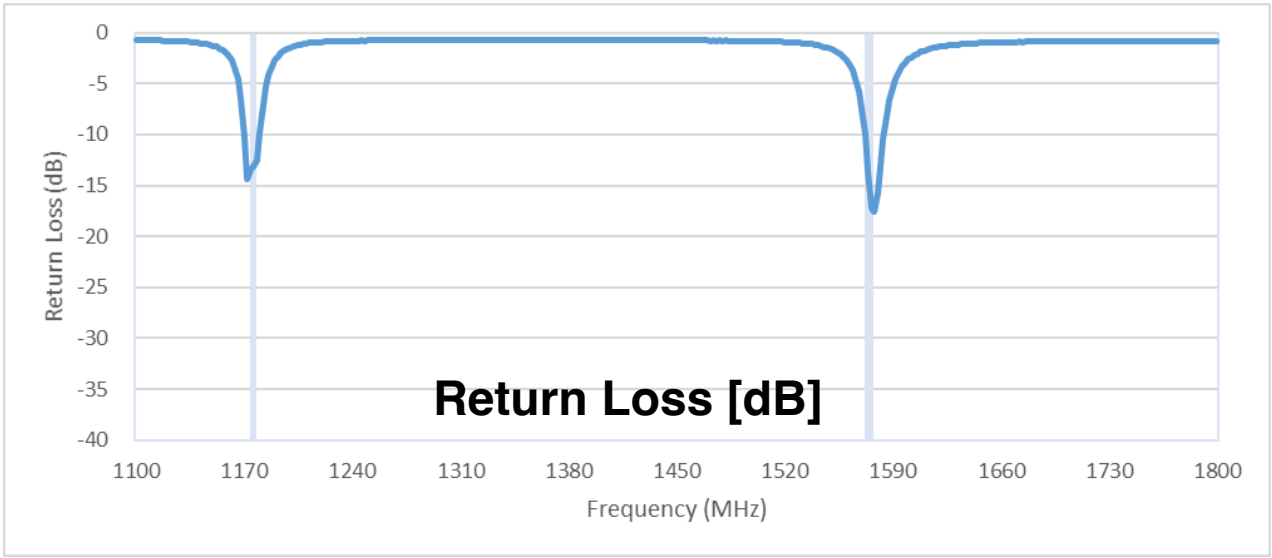


Back View

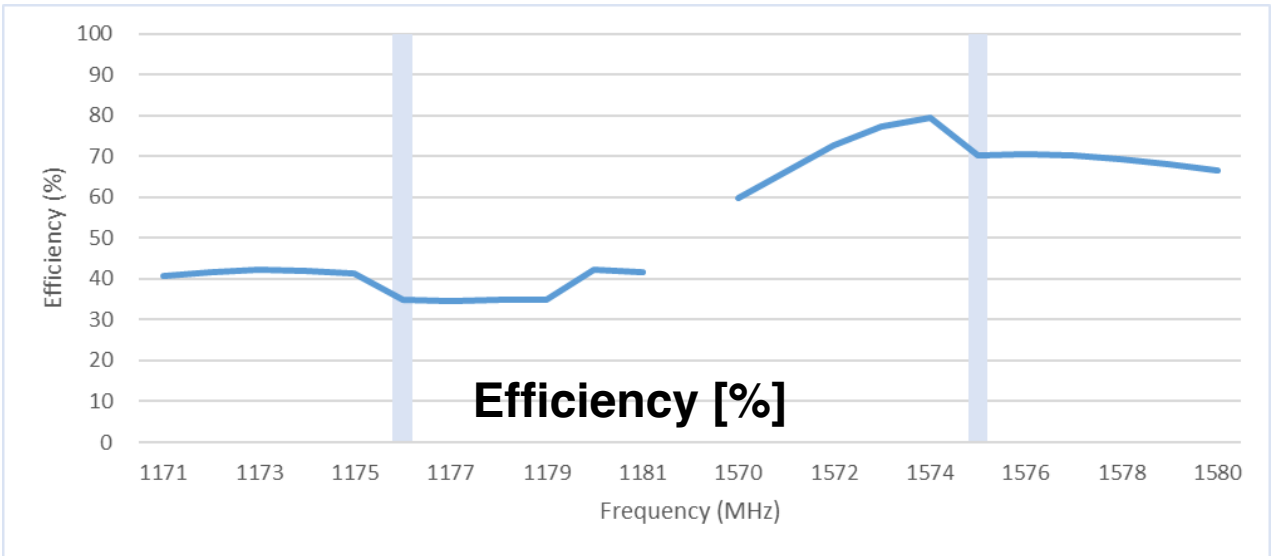
Antenna Testing Includes Evaluation Board



Test setup, measurement performed in 3D anechoic chamber.

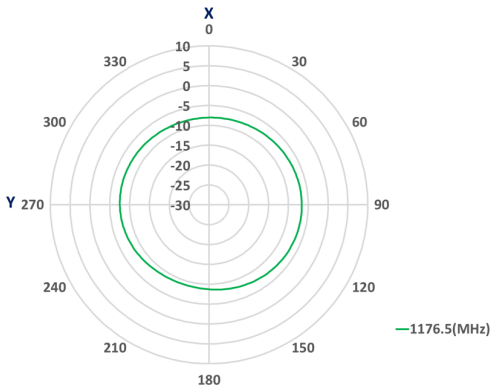


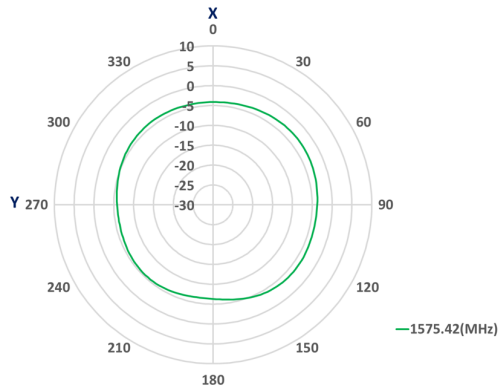
Blue background represents frequency response.



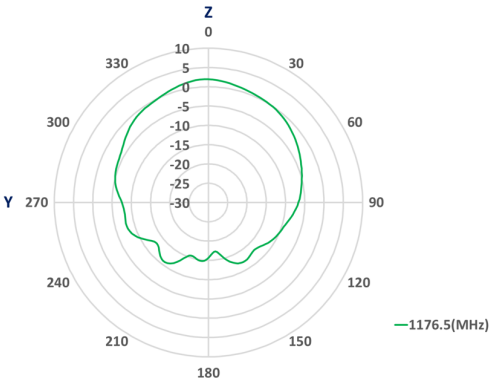
Radiation Pattern - Free Space

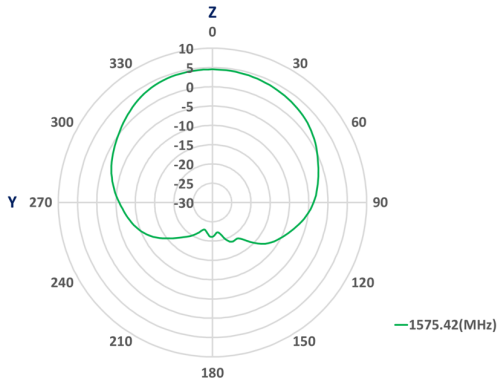
XY - Plane



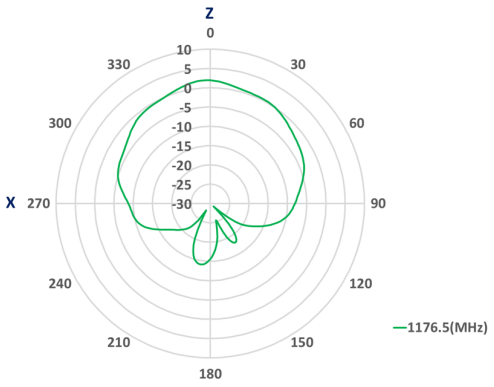


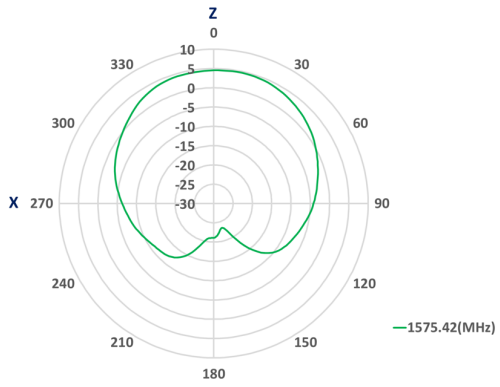
YZ - Plane



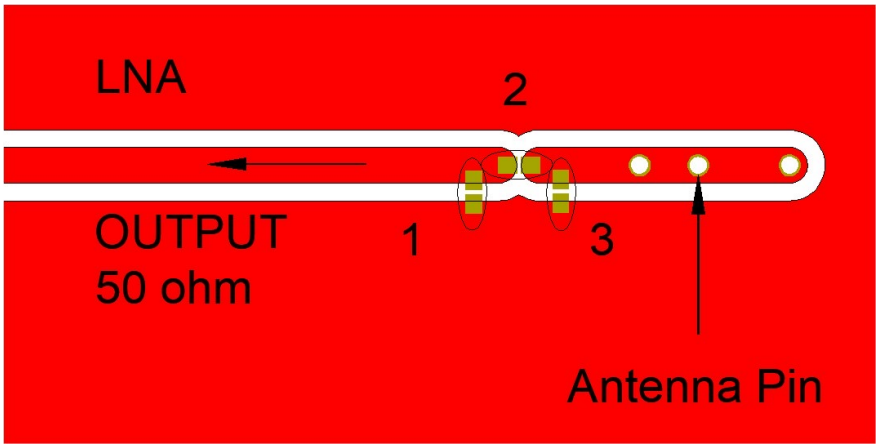


XZ - Plane





Matching Circuit Design



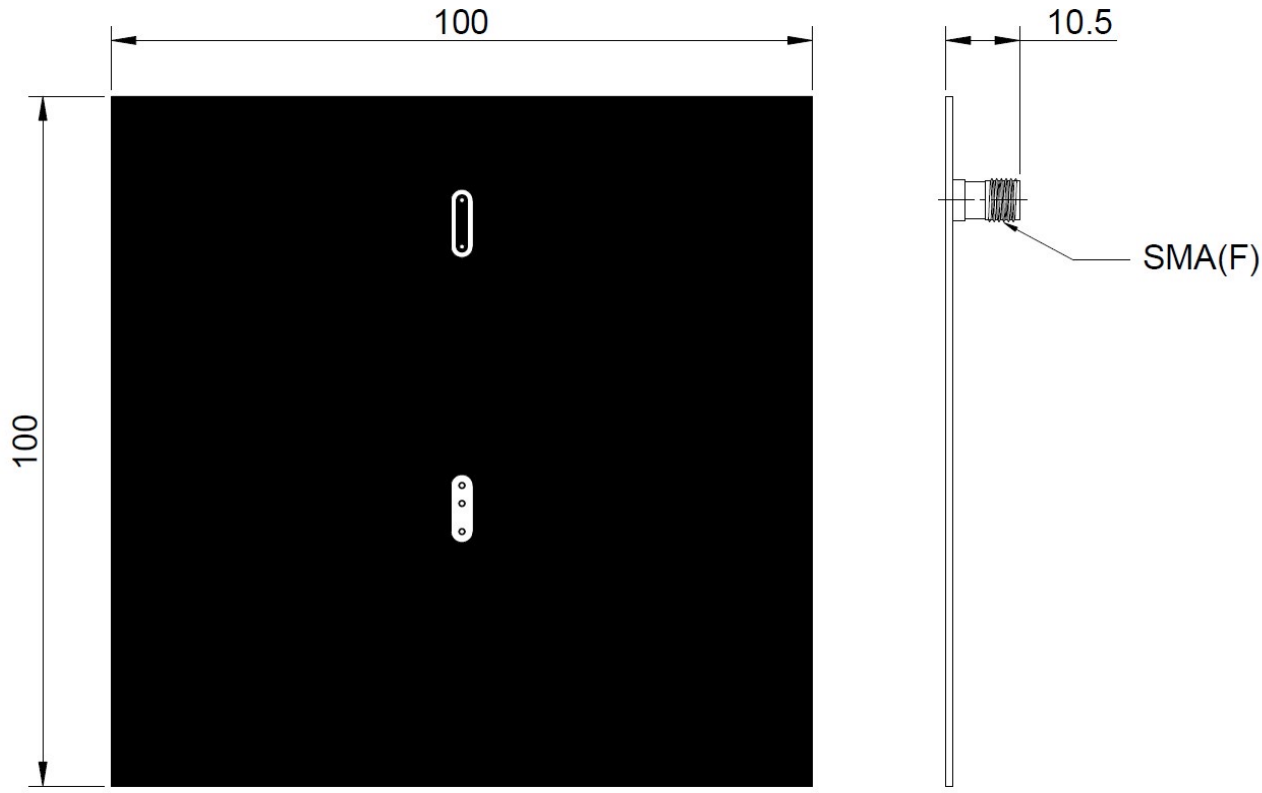
* To make the antenna have this resonance must be matched with the matching circuit.
* The matching component may be slightly different than that shown depending on the distance to the ground plane, the dielectric constant of the PCB, and PCB material thickness.

Circuit Matching Components

Circuit Symbol	Size	Description
1	0402	4.7 nH Inductor
2	0402	0 Ohm Resistance
3	NA	NA

Evaluation Board

Unit : mm



Base Material : FR-4, T=1.0

Revisions				
Rev.	Description	Date	ECN	Approval
A	Initial Release	2023-06-19	ST0543-11-N02-E-RA00	ATC