

Datasheet

GNSS Patch Antenna

External Antenna

Features:

The patch antenna provides multiband with BDS B1, GPS L1/L5 and GLONASS G1 with RG-174 cable and SMA Plug. Certified with IP66.

Applications:

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



GNSS Antenna



Electrical Specifications

Antenna Characteristics By Range Of Receiving Frequency

Frequency (MHz)	1176 ± 5	1561 ± 2	1575.42 ± 1	1602 ± 5
Return Loss (dB)	< -10			
Gain (dBic) @Zenith at 70mm x 70mm ground	2.3	3.1	3.5	3.3
Efficiency (%) @Center Frequency	77	69	74	69
Axial Ration (dB) @Center Frequency	3 Typ.			
Polarization	RHCP			
Impedance (Ω)	50			

LNA Characteristics

Frequency (MHz)	1176± 5	1561± 2	1575.42 ± 1	1602 ± 5
Gain (dB) @3.0 V	29 Typ.	27 Typ.	27 Typ.	27 Typ.
Output Impedance (Ω)	50			
Output Return Loss (dB)	< -9.5			
Operation Voltage (V)	3~5			
Gain (dB)	29 ± 3	27 ± 3	27 ± 3	27 ± 3
Current Consumption (mA)	< 60			
Noise Figure (dB)	2 Typ.			

Total Characteristics

Frequency (MHz)	1176± 5	1561± 2	1575.42 ± 1	1602 ± 5
Gain (dBi) @Zenith	31.3 ± 3	30.1 ± 3	30.5 ± 3	30.3 ± 3
Return Loss (dB)	< -10			
Output Impedance (Ω)	50			
ESD (kV)	-			

Mechanical Specifications

Mechanical

Dimension (mm)	66.0 x 66.0 x 26.2
Connector Type	SMA (Plug)
Cable Type	RG-174
Adhesive	3M 5608N-GF
Material	PC+ABS
Weight (g)	161.3

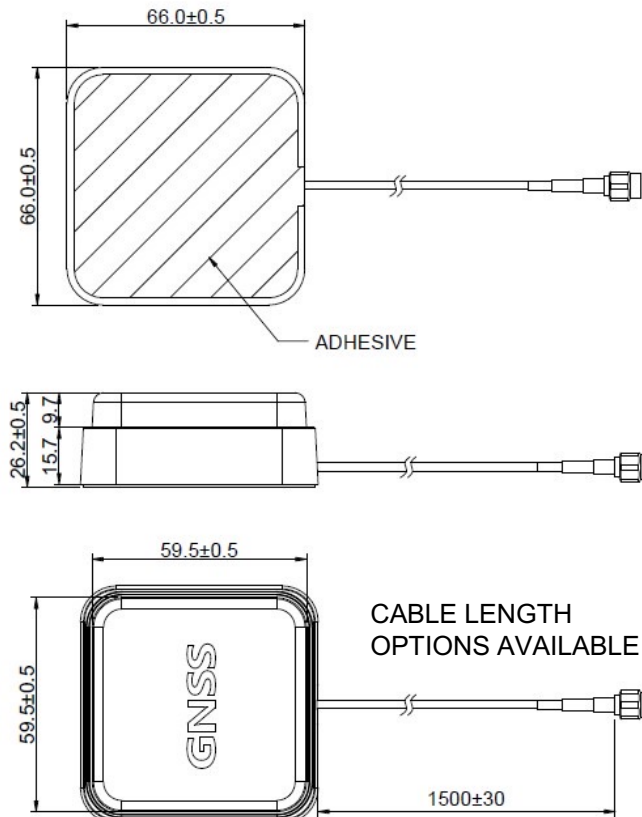
Environmental

Temperature Range (°C)	-40 to 70
IP Rating	IP66

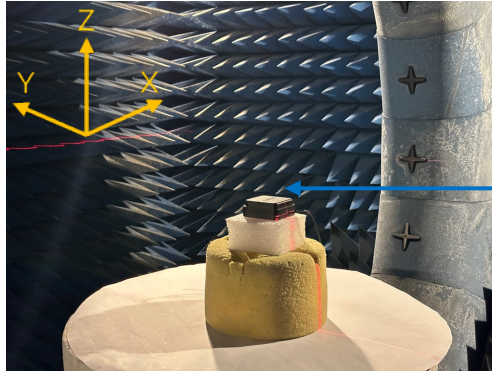
RoHS Compliant

Mechanical Drawing

Unit : mm

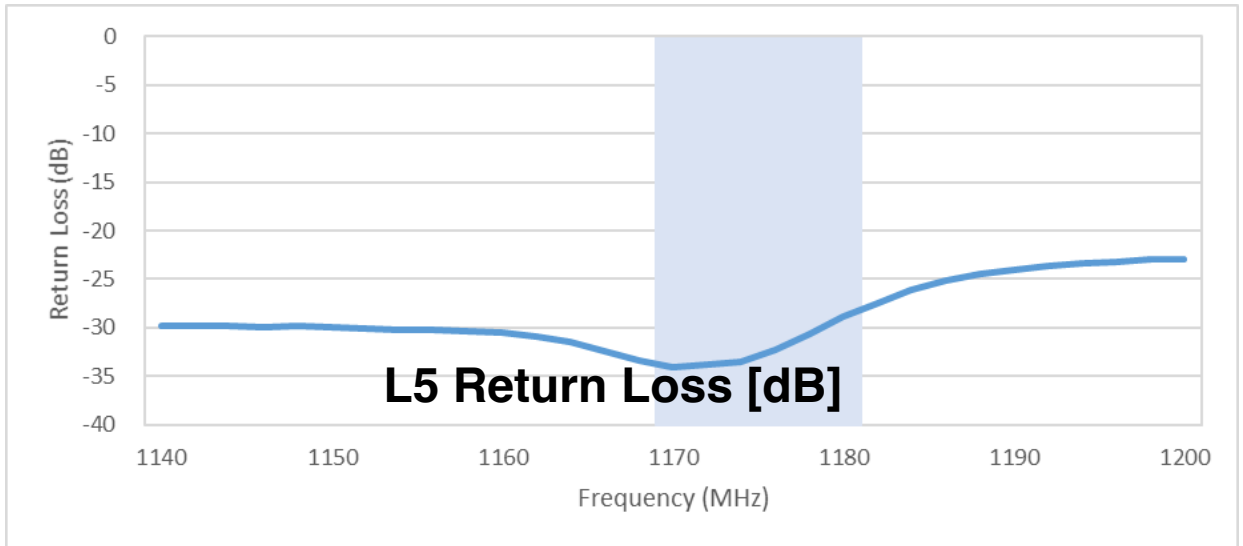


Antenna Testing Includes Evaluation Board

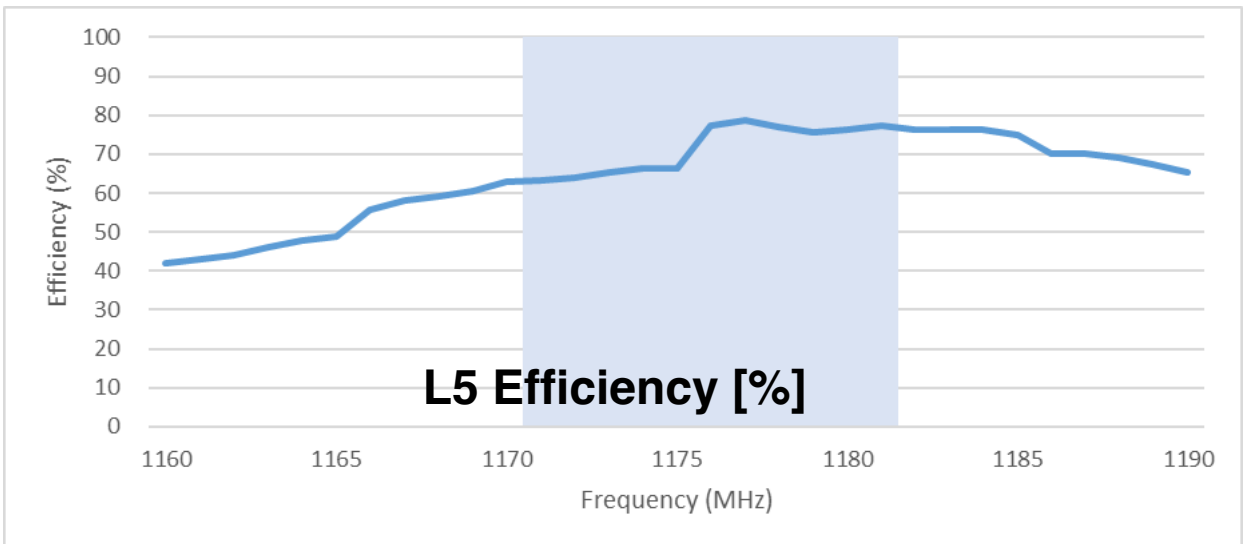


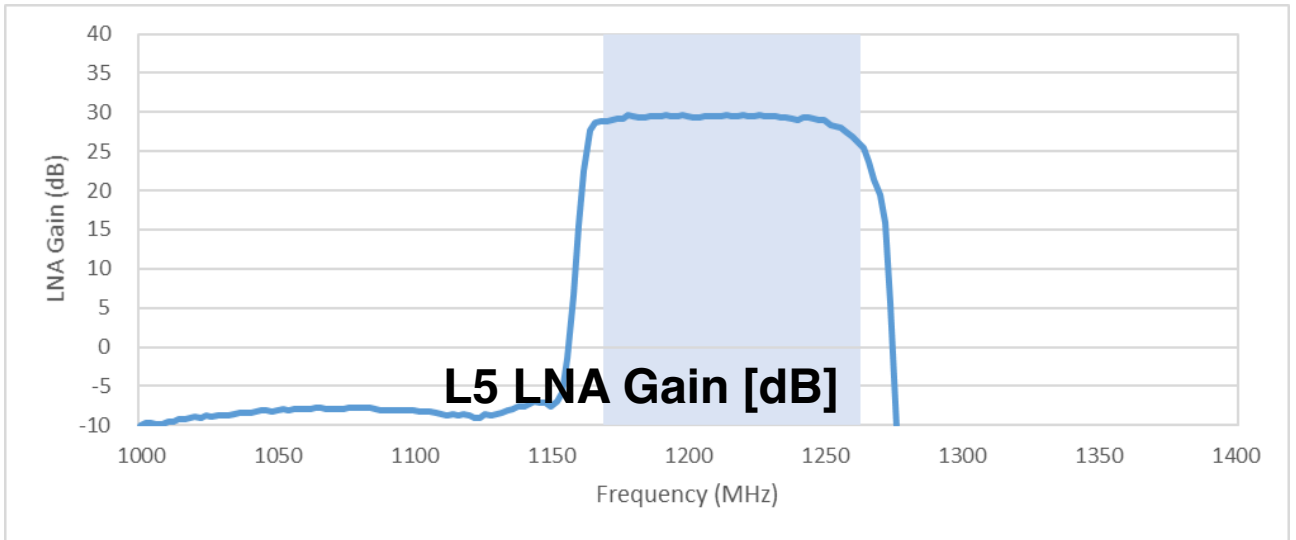
ST0504-22-001-A

Test setup, measurement performed in 3D anechoic chamber.



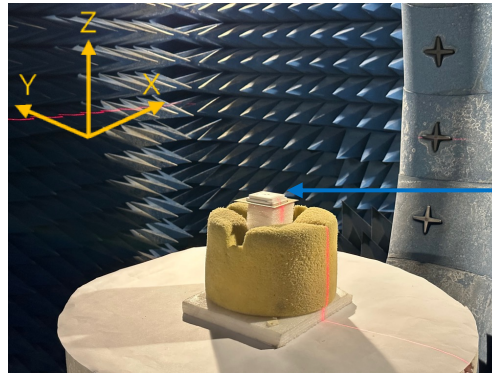
Blue background represents frequency response.





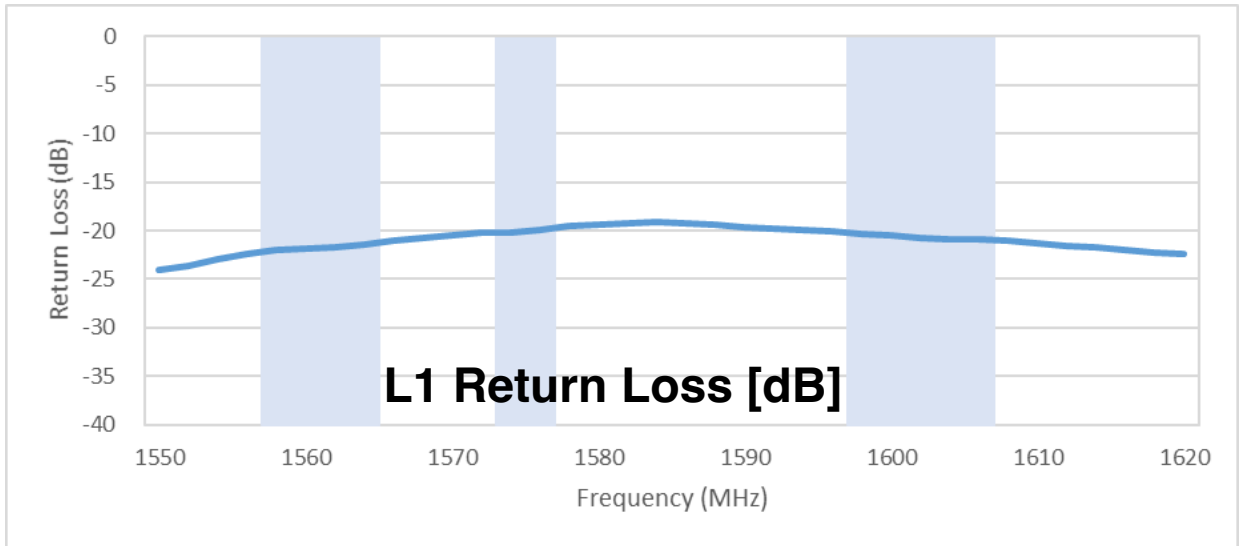
Blue background represents frequency response.

Antenna Testing Includes Evaluation Board

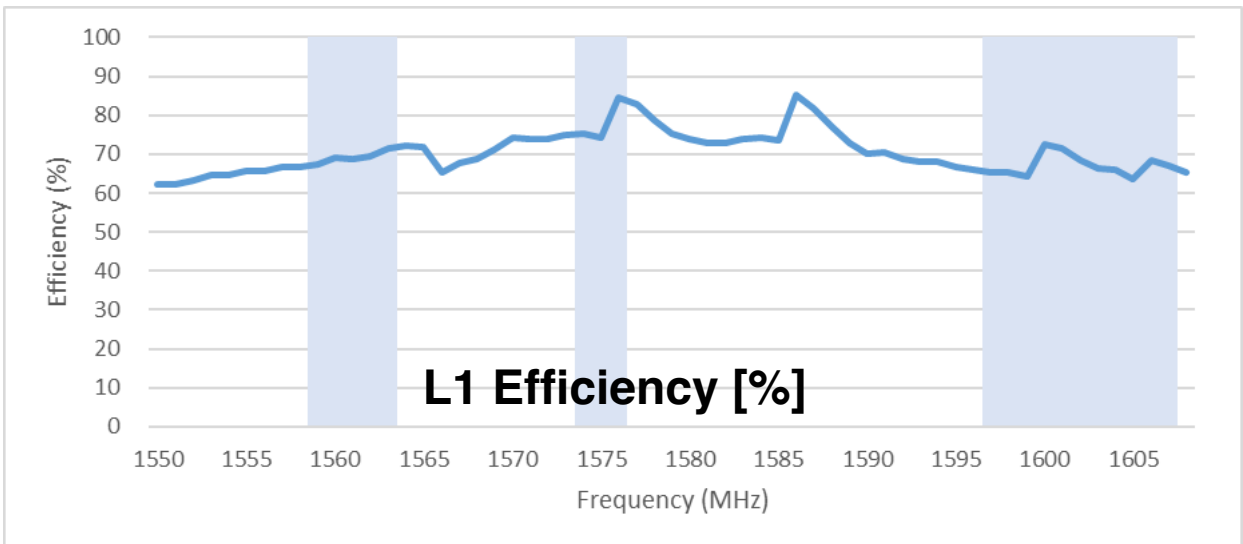


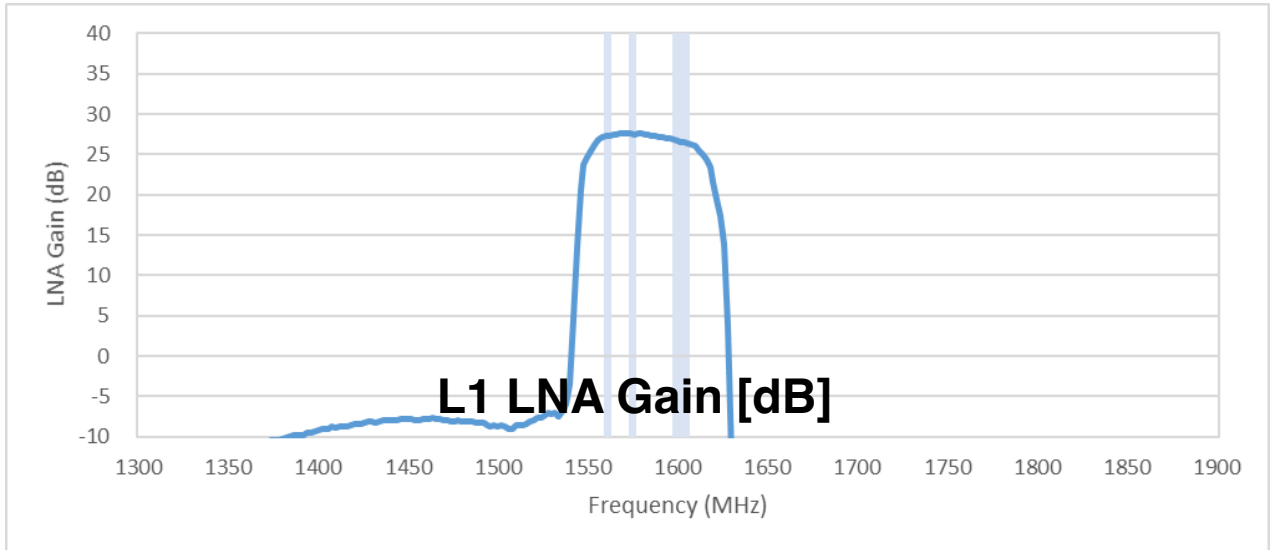
ST0543-11-N04-U

Test setup, measurement performed in 3D anechoic chamber.



Blue background represents frequency response.

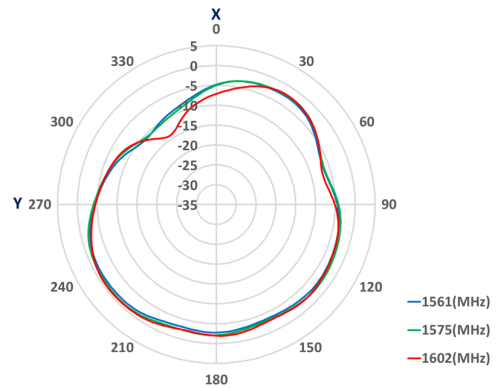
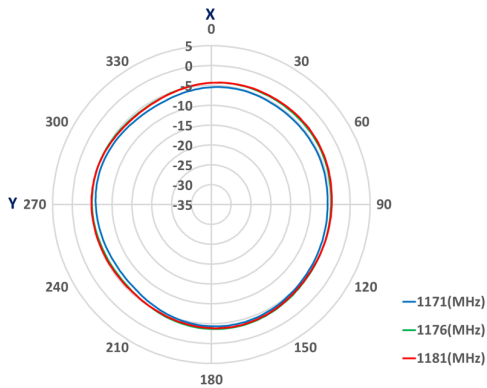




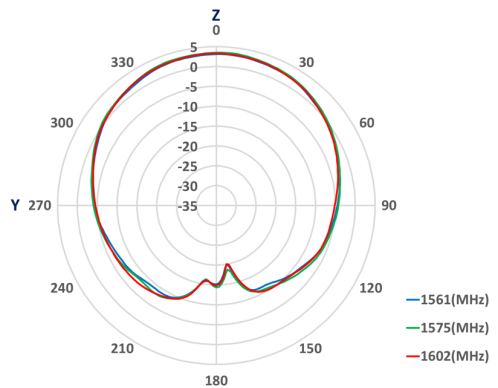
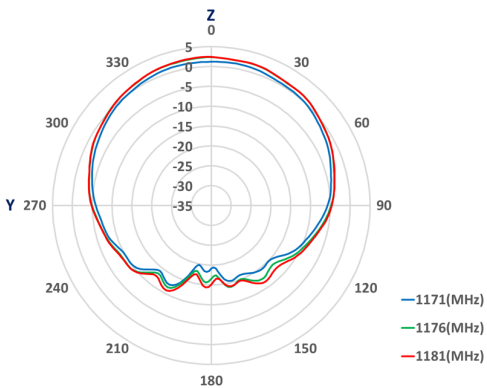
Blue background represents frequency response.

Radiation Pattern - Free Space

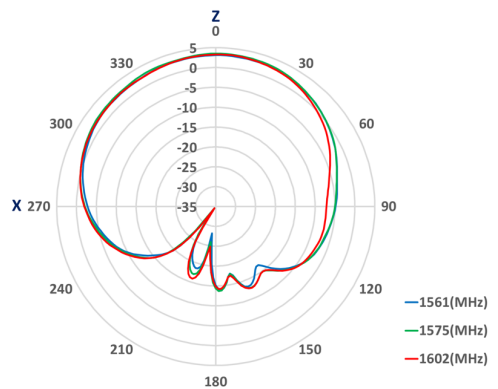
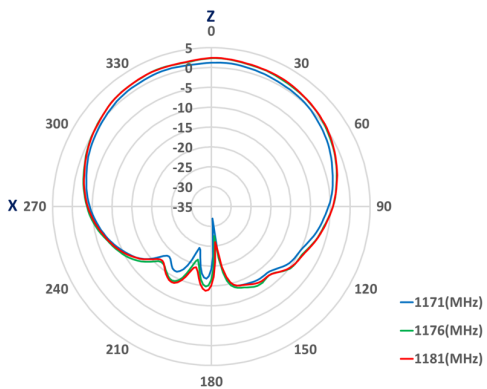
XY - Plane



YZ - Plane



XZ - Plane



Revisions

Rev.	Description	Date	ECN	Approval
A	Initial Release	2023-09-28	ST0504-22-001-A-RA00	ATC

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