BAT WIRELESS

Antenna Datasheet

Passive Ceramic Antenna

Model:

BWGNSCNX20-20W4

Description:

BeiDou/GPS Passive Ceramic Antenna

Features:

1575±5MHz Frequency Range
1561±5MHz Frequency Range

360º Omnidirectional Radiation
Dimensions: 20mm x 20mm x 4mm
Compliant with RoHS & REACH Regulations

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BWGNSCNX20-20W4

Part Number Explanation

BW	Company	Bat Wireless
GNS	Frequency	GNSS / GNSS
C	Name	Ceramic Antenna
N	Type	Internal
X	Constant	X
20-20	Dimensions	20-20mm
W	Type	Passive Antenna
4	Thickness	4mm

1. Description

Bat Wireless BWGNSCNX20-20W4 is a ceramic antenna, operating in the 1575 MHz and 1561 MHz frequency bands. It adopts a special ceramic dielectric material to reduce antenna size while maintaining good performance, featuring low dielectric loss and high radiation efficiency. With low loss and high stability, the ceramic dielectric minimizes signal attenuation and ensures excellent temperature stability, making it suitable for in-vehicle, outdoor, and other harsh environments, as well as for low-power applications.

The right-hand circular polarization design matches the polarization mode of BeiDou satellite signals, providing strong anti-multipath interference capability and improving positioning accuracy. It is easy to integrate, typically featuring an ANT connection pin and a ground pin for convenient soldering or modular design.

Classic Application Scenarios:

Automotive and Transportation: Vehicle navigation systems, commercial fleet management, intelligent transportation facilities

Consumer Electronics and Portable Devices: Smartphones/tablets, outdoor sports devices, shared-economy devices

IoT and Asset Tracking: Logistics tracking, agricultural IoT

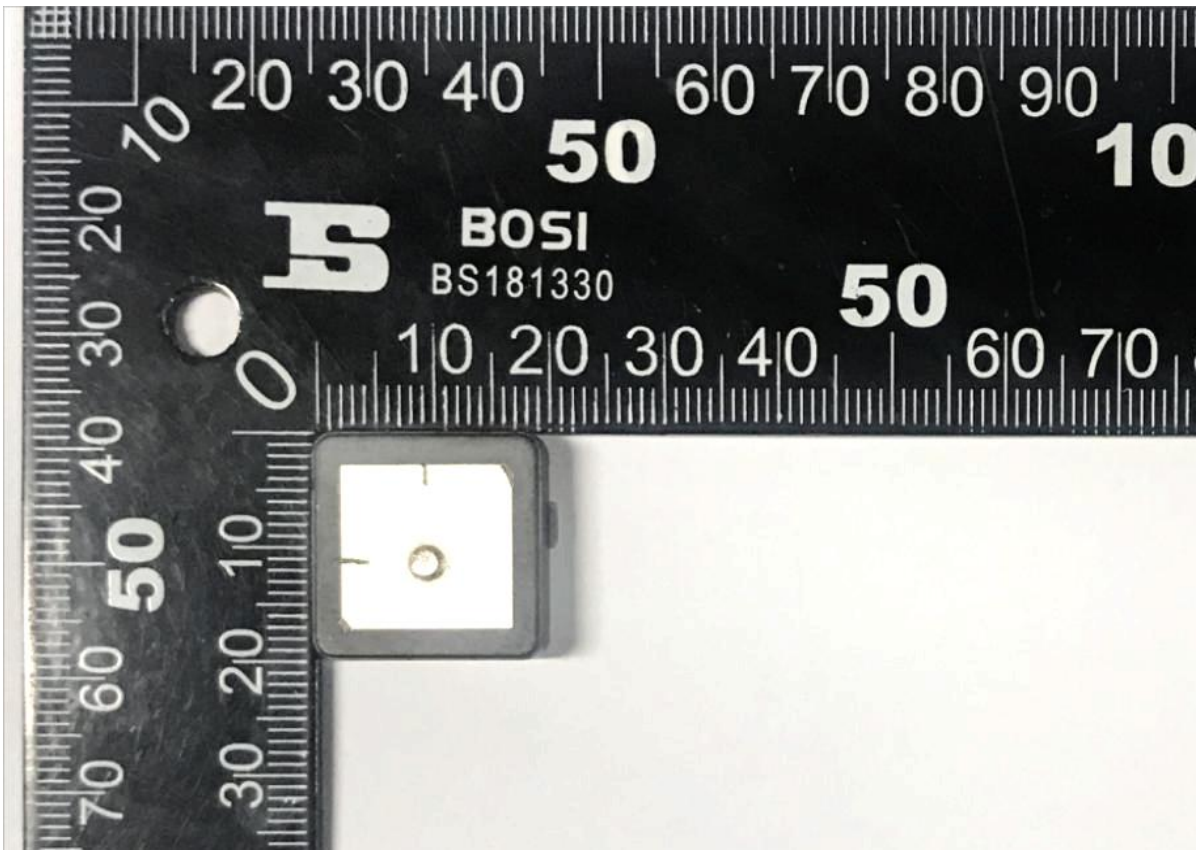
Aerospace and Defense: UAVs, satellite communication terminals, military equipment

Bat Wireless provides customized services to optimize your equipment. We have a mature R&D team that can respon d quickly to meet your needs. If you have any requirements, please contact our sales and FAE.

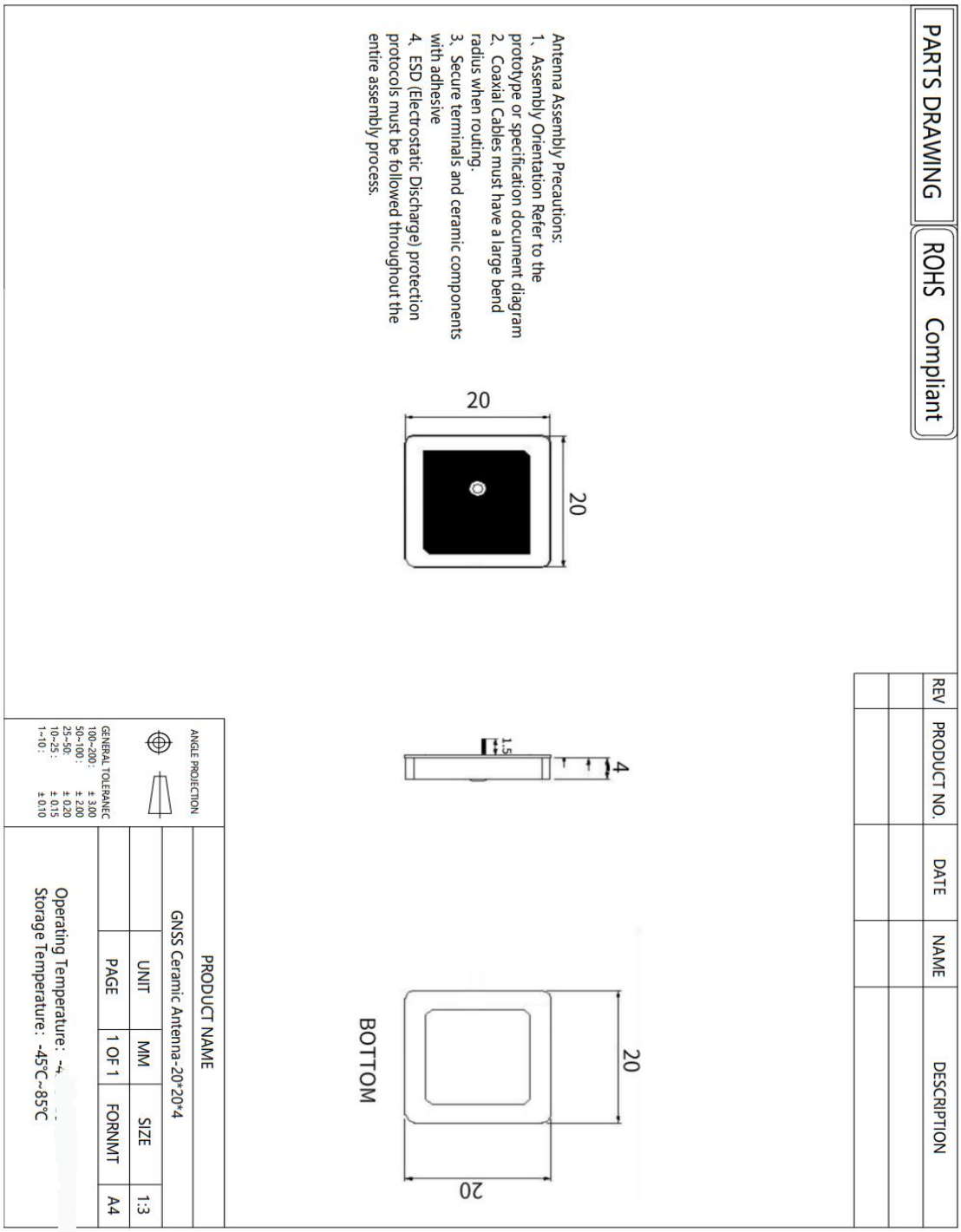
2. Specification

Parameters	Typ.	Unites	Notes
Electrical Characteristics			
Antenna Type	Ceramic Antenna		
Frequency Range	1575±5，1561±5	MHz	
Input Impendence	50	Ω	
V.S.W.R	<2		
Gain	1	dBi	
Polarization Type	RHCP		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
Mechanical Characteristics			
Dimensions	20 x 20 x 4	mm	
Connector Type	-		
Cable Type	-		
Cable Length	-	mm	
Mount way	-		
Color	Sliver White		
Meterial	Ceramic		
Weight	9.14	g	
Environmental Characteristics			
Waterproof Rating	-		
ROHS Complaint	Compliant		
Operating Temperature	-45~ +85	℃	
Storage Temperature	-45~ +85	℃	

3. Product Picture



4. Mechanical Drawing

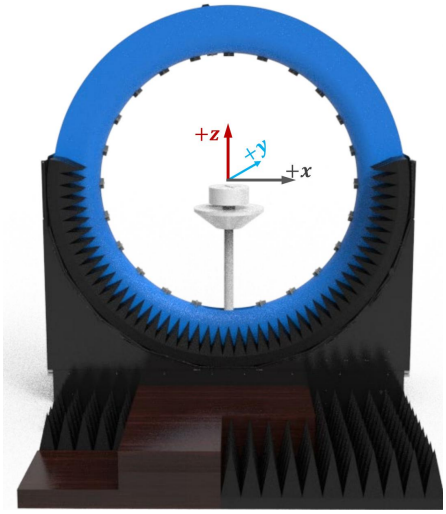


5. Test Equipment

Keysight/E5071C Network Analyzer

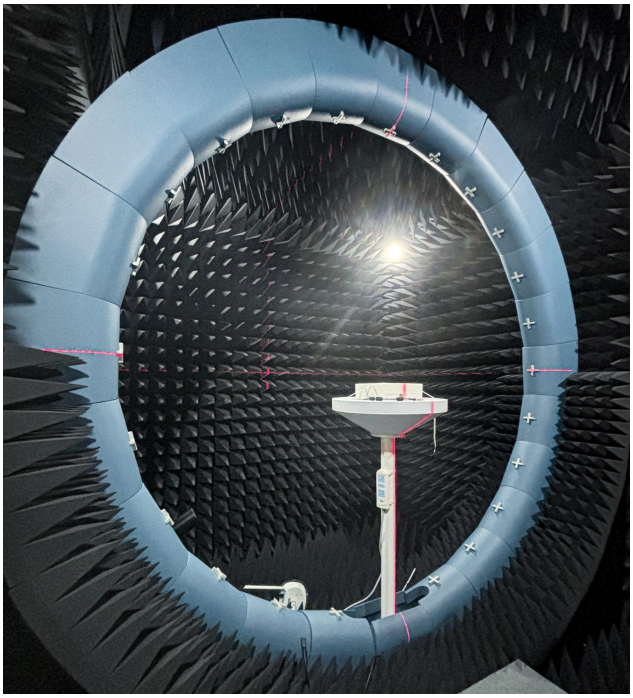
R&S/CMW500 Comprehensive Tester

R&S/SMBV100B Signal Generator



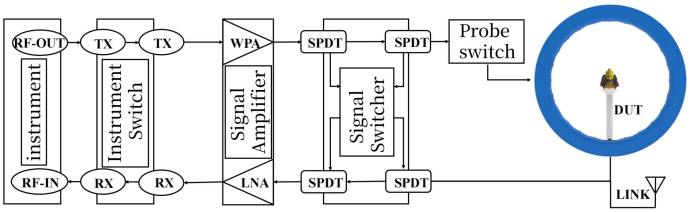
DT-3500 Datasheet	
Specification:	**Description**
Test Frequency	400MHz-8.5GHz
System Size	L*W*H=4*3.5*3.5m
Number of Probes	23 (Probe) + 1 (link)
Interval Angle	15º
Sampling Diameter	2200mm
Carring Capacity	≦40kg

Testing Capability	Description
Active measurement	**Capability :** TRP、TIS、EIRP、EIS,. etc **Mode :** 2G/3G/4G/5G、Wi-Fi b/g/n/a/ac/ax、BT、NB-IOT、Cat-M (eMTC)、GPS/BEIDOU/GLONASS、ZigBee、LoRa(Non-Signaling),.etc
Pasive measurement	**Test category :** Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio, ECC,Phase center,. etc **Polarization :** Circular polarization, linear polarization, elliptical polarization

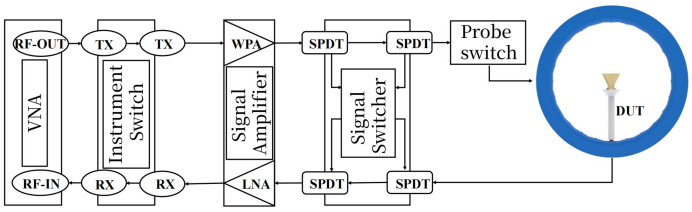


RF Link diaram of multi probe spherical near-field testing system

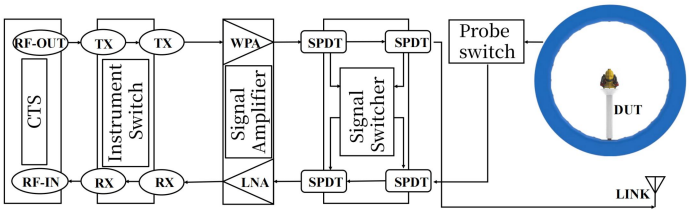
RF Link Overview



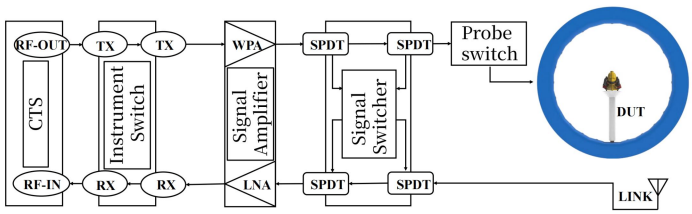
RF Link of Passive measurement



RF Link Overview

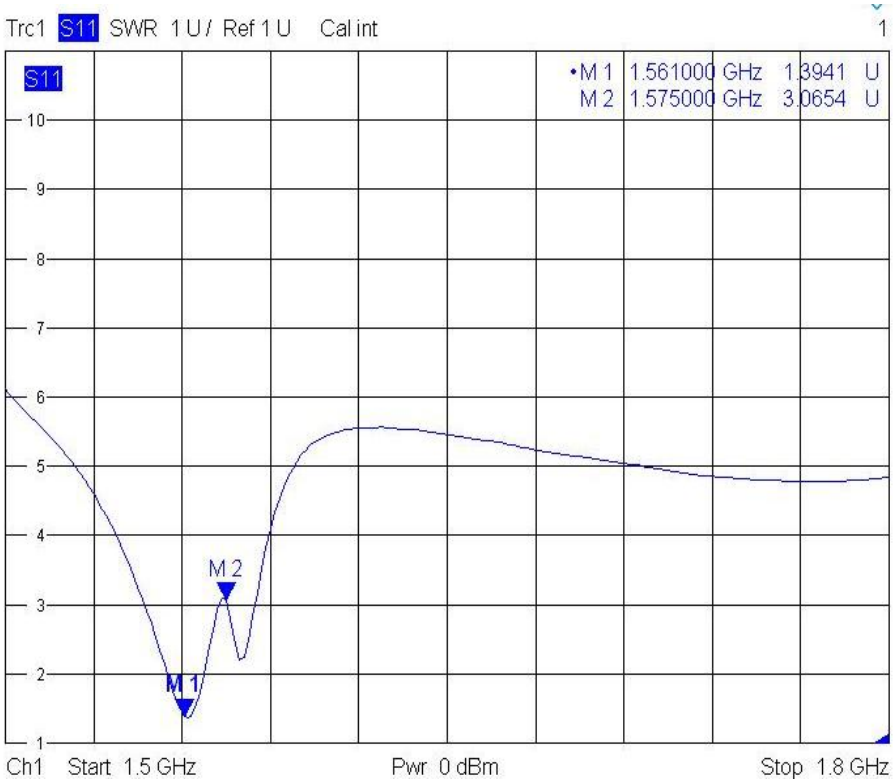


RF Link of Passive measurement



6. Performance Data

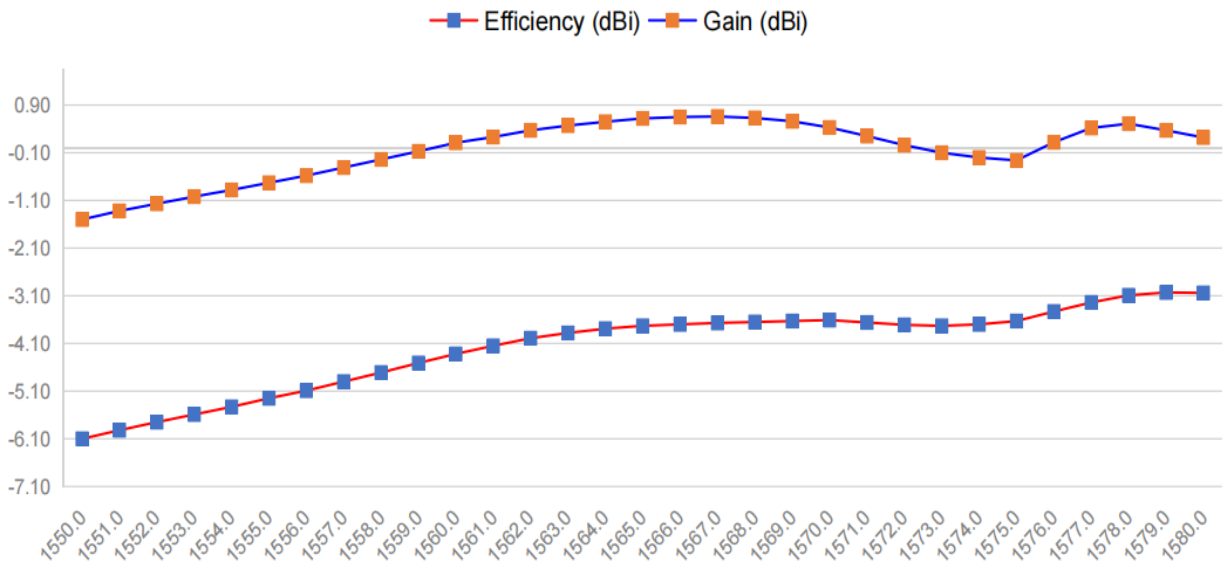
6.1 VSWR



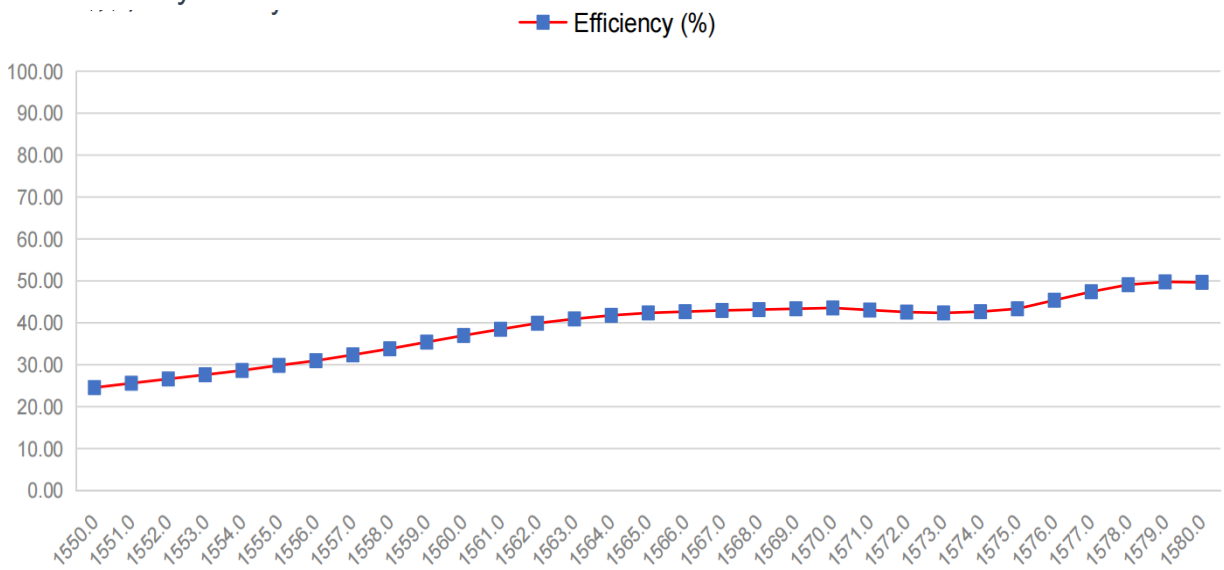
6.2 Return Loss

6. Performance Data

6.3 Gain



6.4 Efficiency

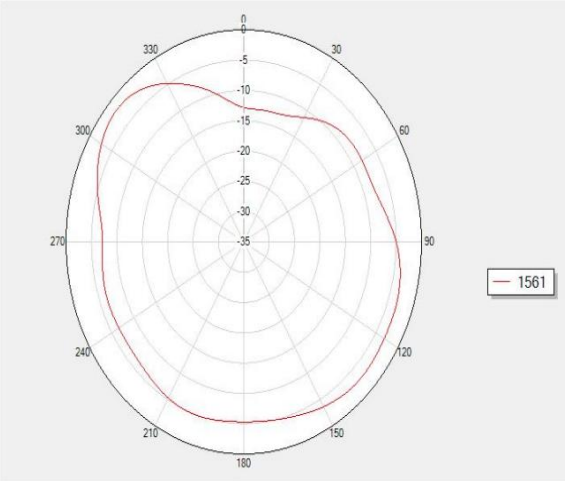


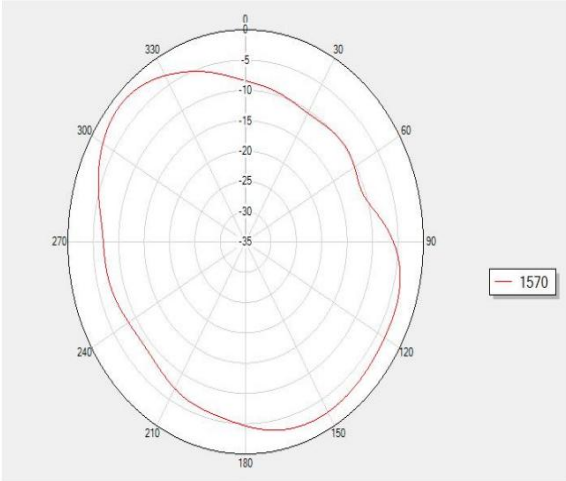
6.5 Gain and Efficiency

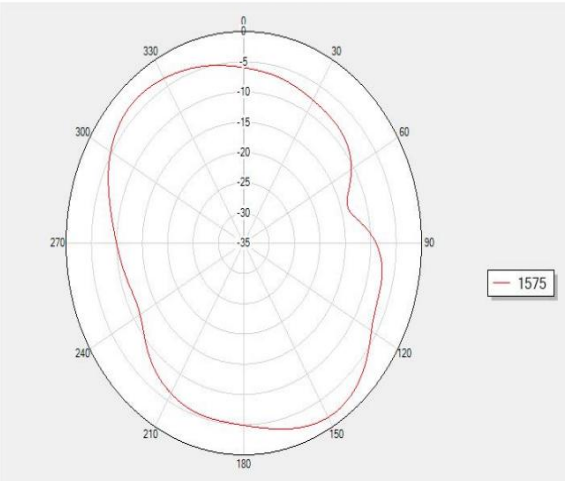
Frequency (MHz)	1561	1570	1575	1580
Gain (dBi)	0.47	0.43	-0.26	0.22
Efficiency (%)	40.93	43.55	43.35	49.66

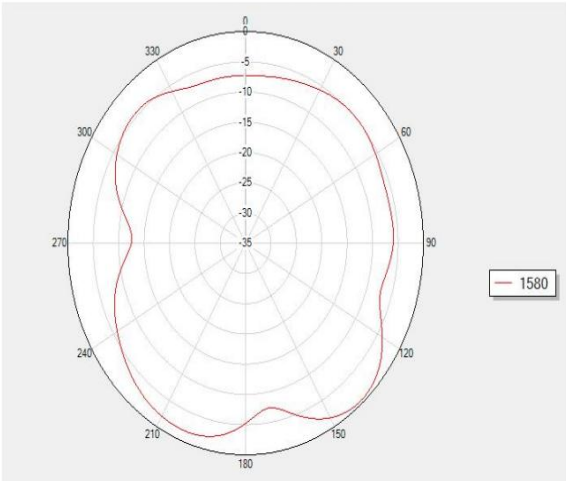
7. Radiation Patterns

7.1 2 D Radiation Patterns

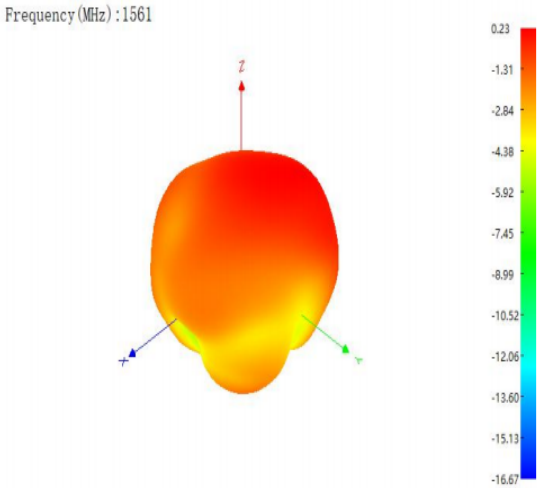


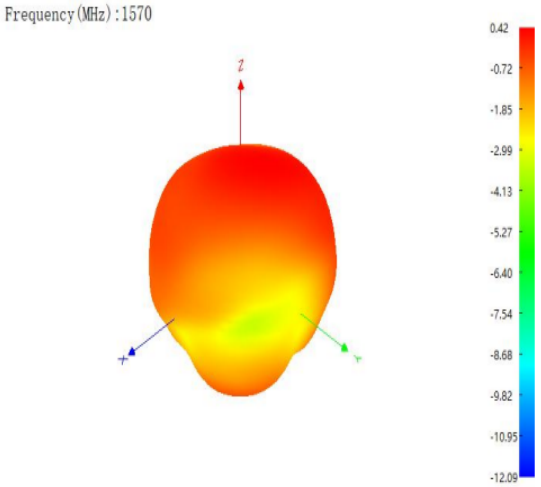


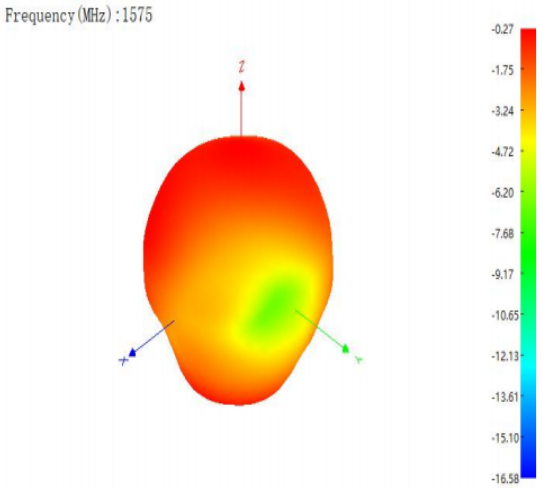


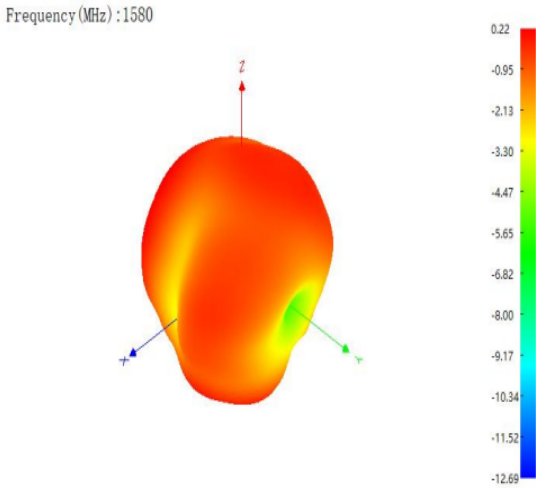


7.2 3D Radiation Patterns









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