SYNZEN

DATASHEET

CALLISTO1 | SZW-N-5L40 | IP65 External Antenna| 5G NR

Features:

5G RedCap: 617-7125MHz

Dimensions: 197.8 x 32.1mm
Connector: SMA Male
IP 65
RoHs Compliant

TW24/00000226

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Introduction

CALLISTO1 is a high efficiency ultra-wideband external antenna engineered to deliver reliable sub 6 GHz wireless connectivity across 617 to 6000MHz. The antenna supports modern 5G NR, 4G LTE, LTE M, NB IoT, RedCap, and Wi-Fi 6E platforms within a single compact solution, enabling global multi band operation without the need for multiple antenna variants. The rugged IP65 rated enclosure and integrated SMA male connector ensure dependable performance in outdoor and industrial environments where mechanical durability and stable RF characteristics are required. Its broadband design provides consistent gain and radiation behaviour across low band and mid band cellular frequencies, making CALLISTO1 suitable for professional wireless and IoT systems that demand robust and predictable performance.

Features

- Ultra-wideband frequency coverage from 617 to 6000 MHz
- Supports 5G NR, 4G LTE, LTE M, NB IoT, RedCap, and Wi-Fi 6E bands
- Single antenna solution for global cellular deployments
- High radiation efficiency and stable gain across low and mid bands
- External paddle style form factor for improved radiation performance
- IP65 rated waterproof and dust resistant enclosure for outdoor use
- Slim and low profile mechanical design
- RoHS compliant materials and construction

Applications

- 5G and LTE routers and gateways
- Industrial IoT devices and controllers
- Smart metering and remote monitoring equipment
- Asset tracking and telematics systems
- Outdoor customer premises equipment and fixed wireless terminals
- Security cameras and surveillance infrastructure
- Smart kiosks, vending machines, and connected infrastructure
- Agricultural, energy, and utility telemetry systems

Mechanical Specifications

Parameter	
Part Number	SZW-N-5L40
Name	CALLISTO1
Dimensions (mm)	197.8 x 32.1
Dimensions (mm) 90°	174.7 x 32.1
Connector	SMA Male
Antenna Type	Terminal Hinged

Electrical / RF Specifications

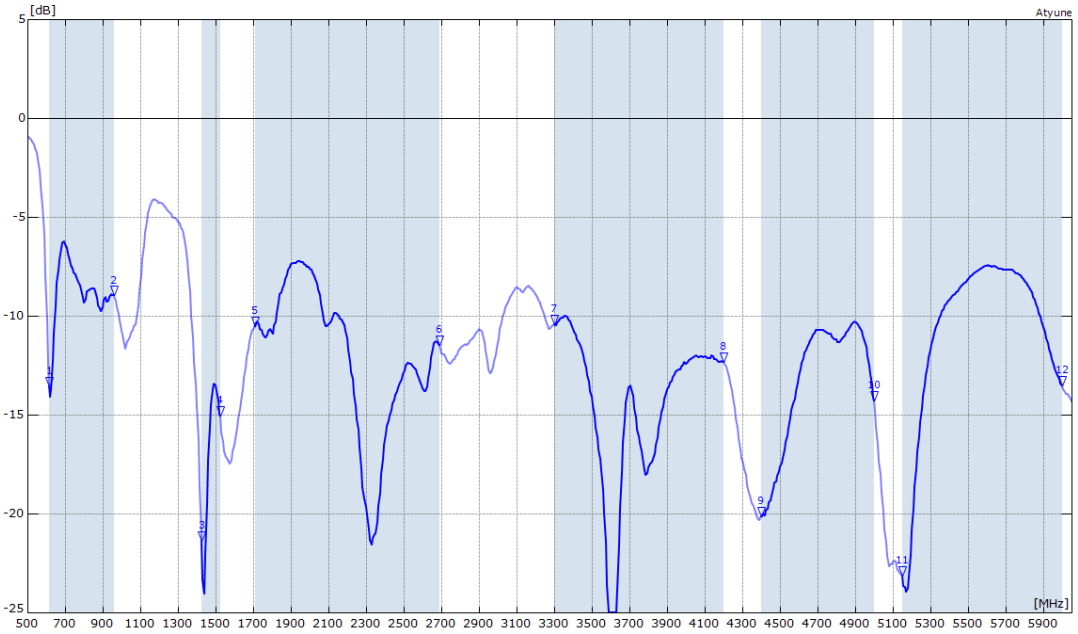
Band	Frequency Range (MHz)	Average Efficiency (%)	Peak Gain (dBi)	VSWR (worst case)	Impedance
5GNR/4G LTE B5,8,12,13,14,17,18,20,26,27,28,29,71	698-960	54.3	3.98	2.89:1	50 Ω
5GNR/4G LTE B24	1427-1525	61.7	1.14	1.57:1	
5GNR/4G LTE B1,2,3,4,9,23,35,39,66,40,7,38,41	1710-2690	55.0	2.99	2.55:1	
5GNR/4G LTE B22,42,43,48,77,78	3300-4200	71.0	4.55	1.93:1	
5GNR/4G LTE B40	4400-5000	61.0	4.15	1.85:1	
5GNR/4G LTE B47, LTE5200, Wi-Fi 5800	5150-6000	50.2	5.09	2.47:1	

Environmental

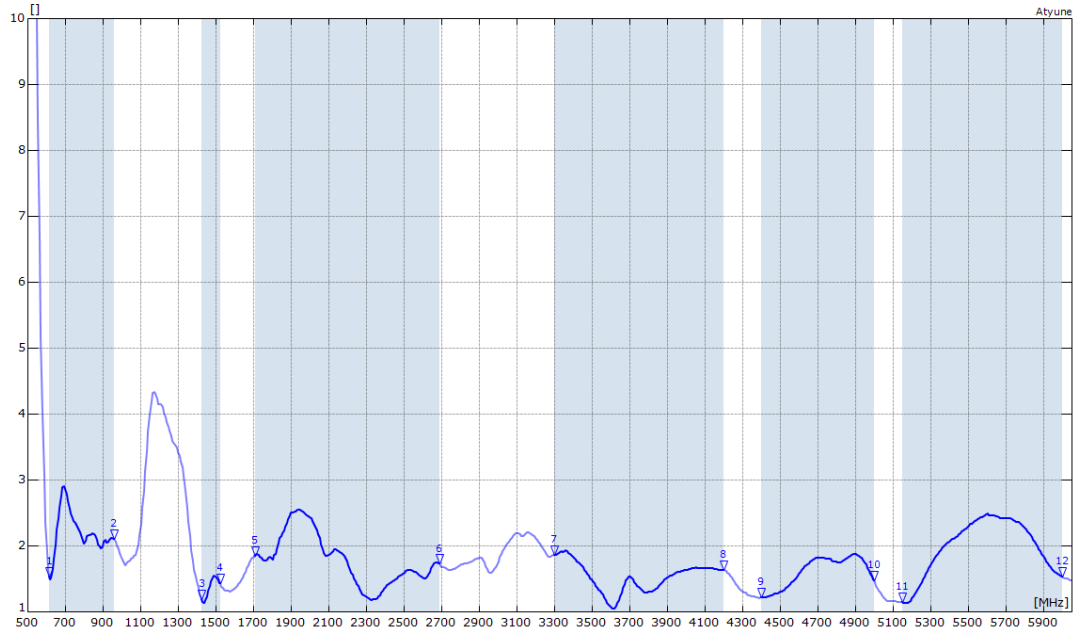
Parameter	
Operational Temperature	-30 to +65°C
Storage Temperature	-40 to +70°C
IP Rating	IP65
RoHs and REACH compliant	Yes

RF Characteristics

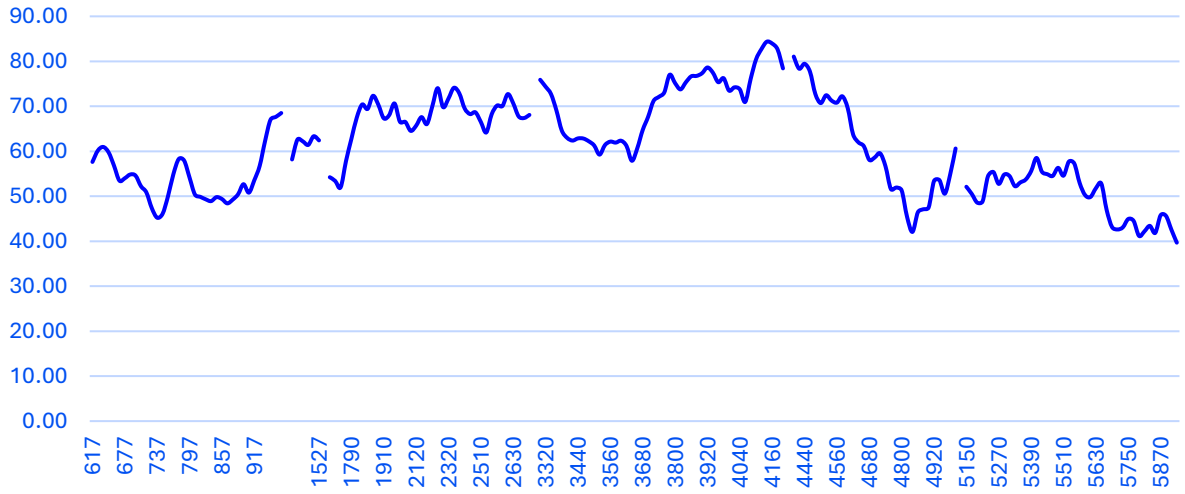
Return loss



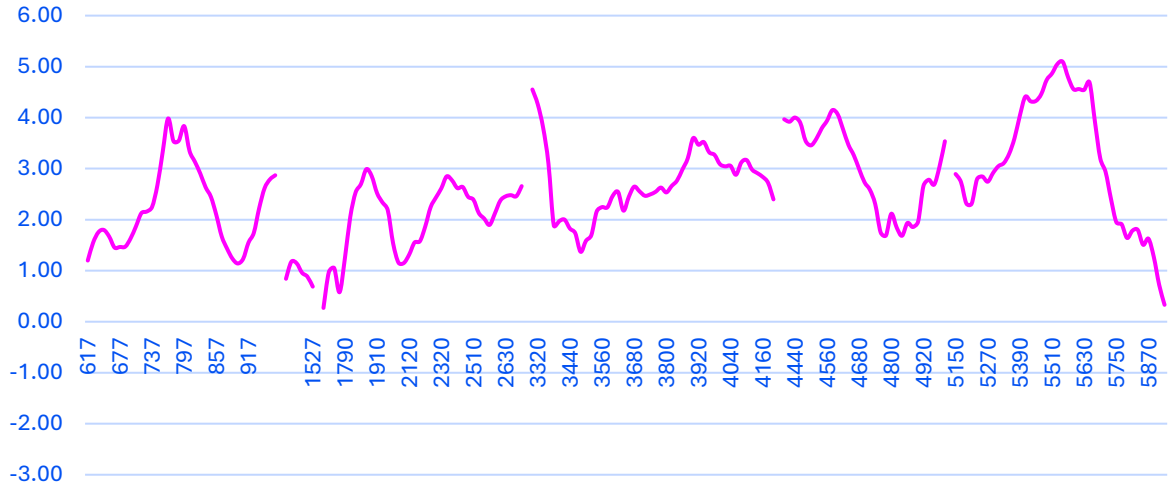
VSWR



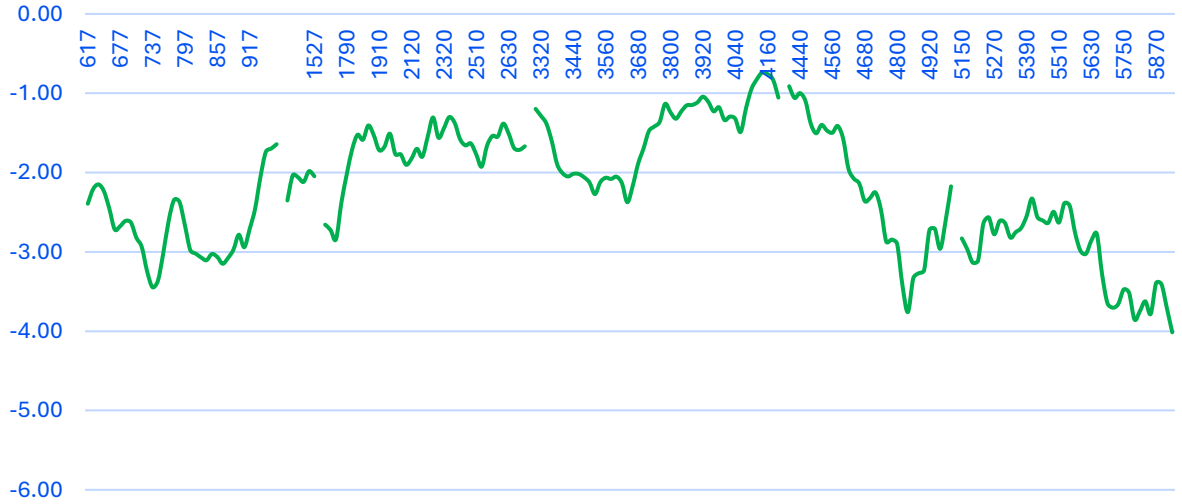
Efficiency



Peak Gain

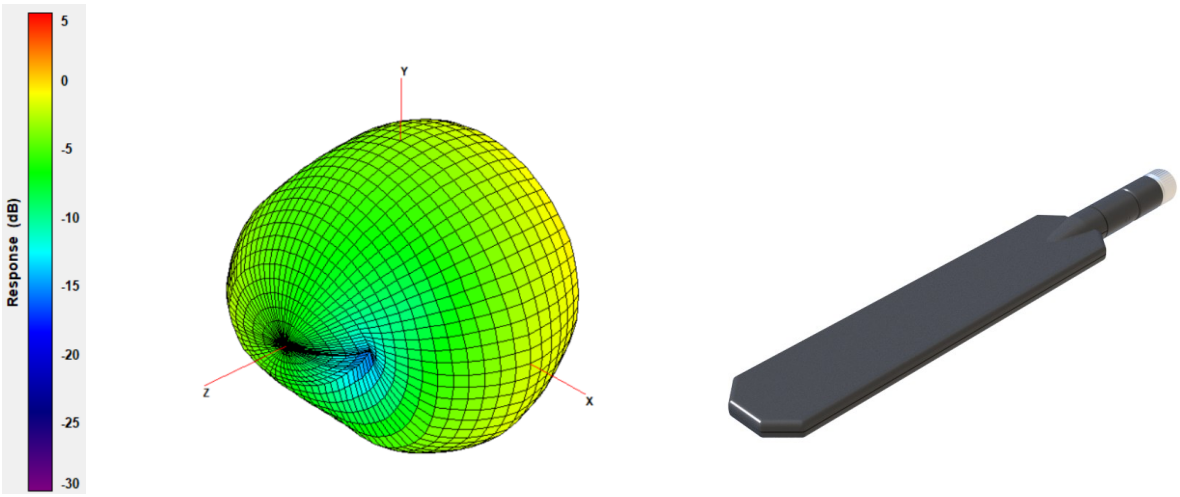


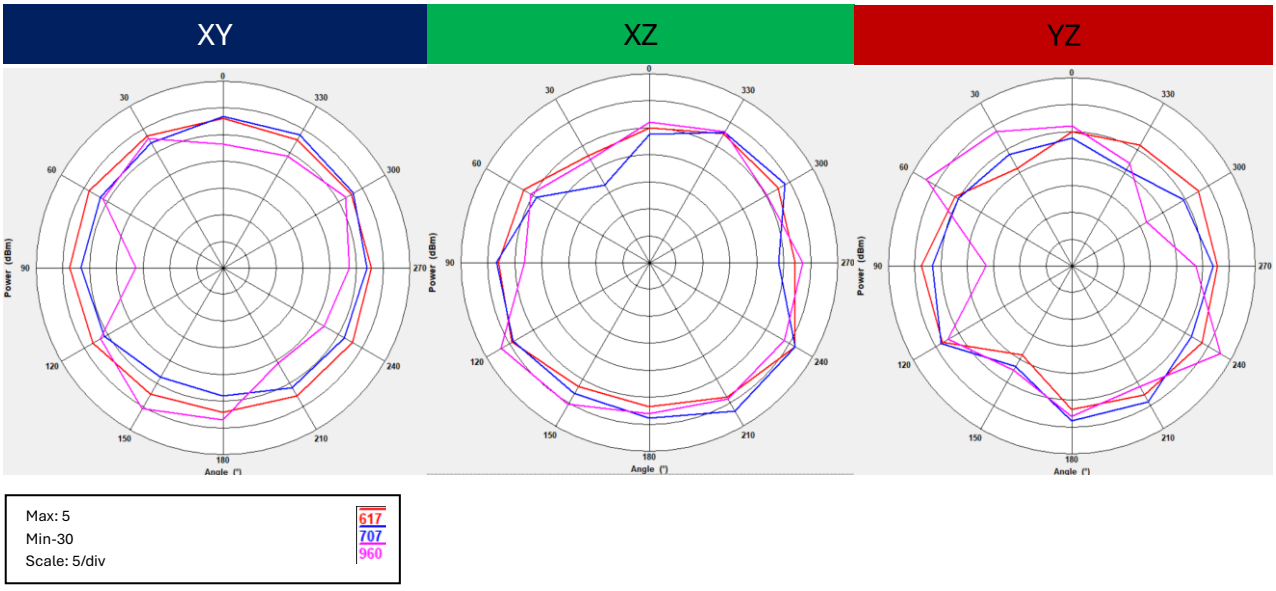
Average Gain



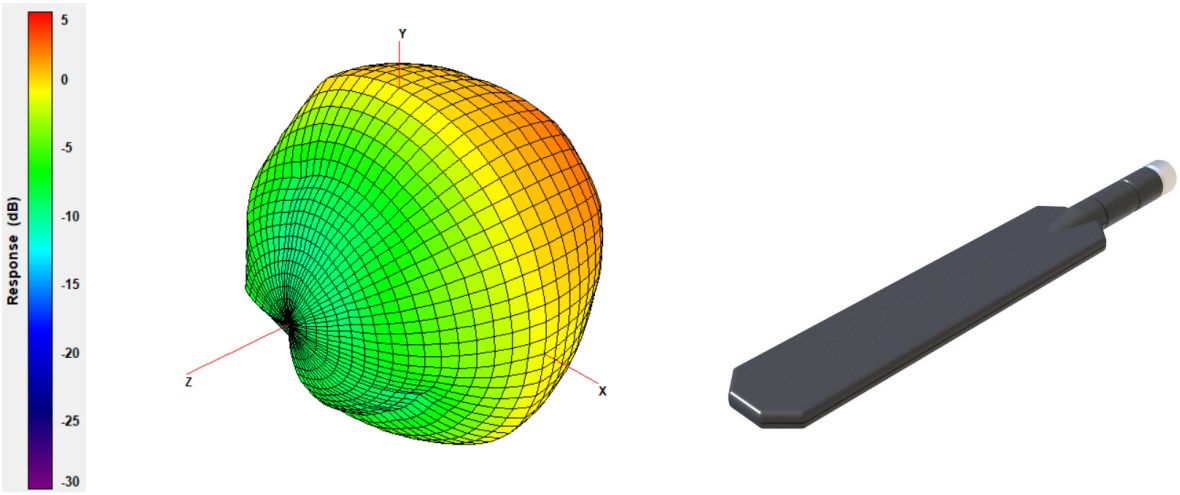
RF Radiation Patterns

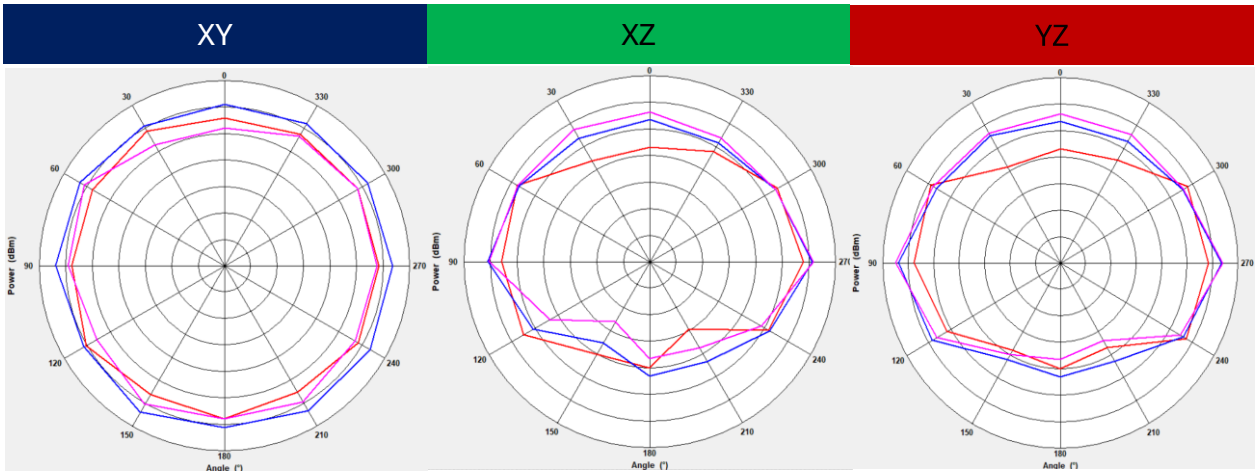
RF Radiation Patterns at 700MHz





RF Radiation Patterns at 1880MHz

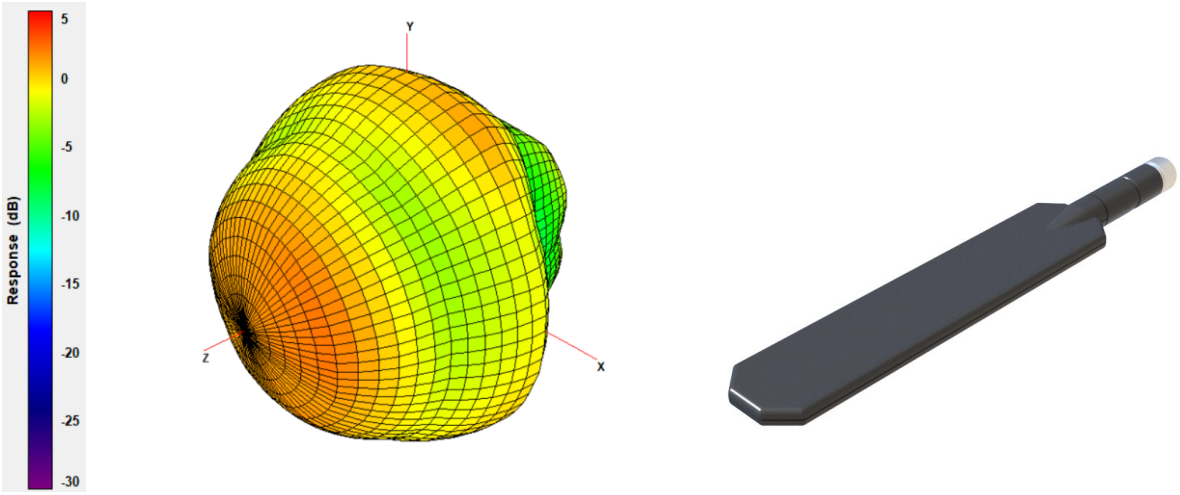


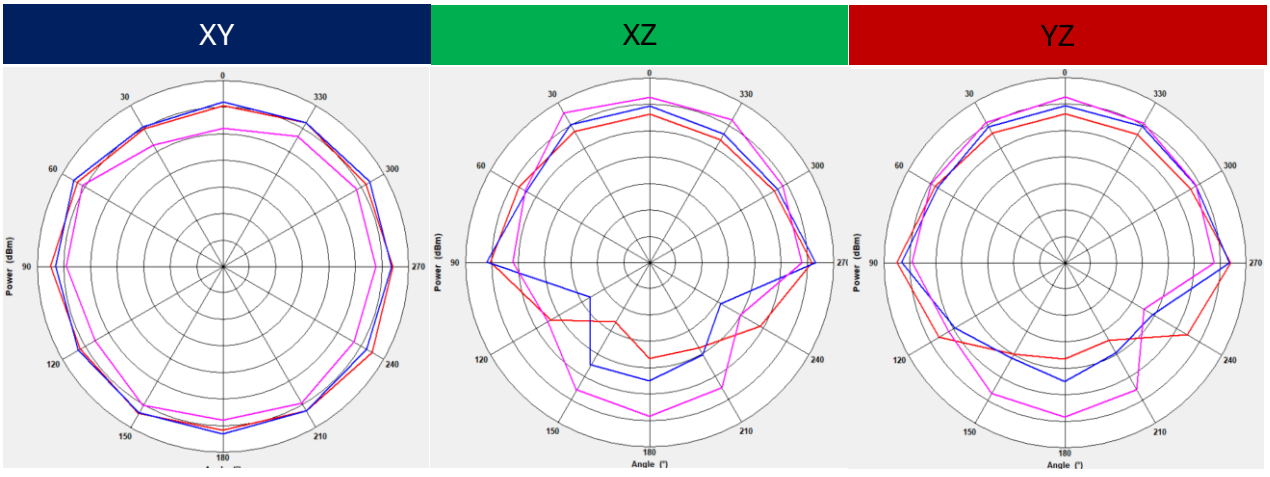


Max: 5
Min-30
Scale: 5/div

1710
2180
2300

RF Radiation Patterns at 2600MHz

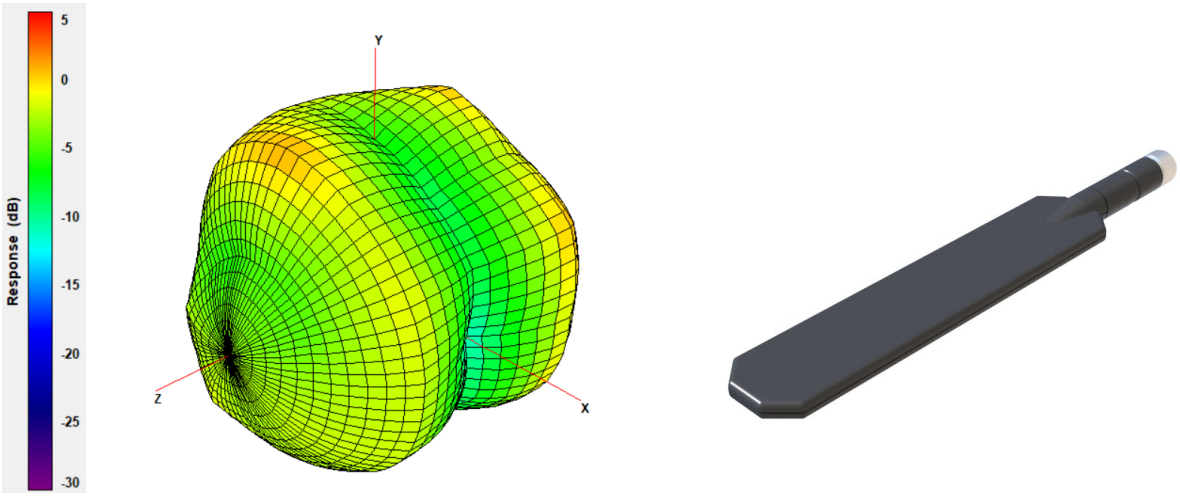


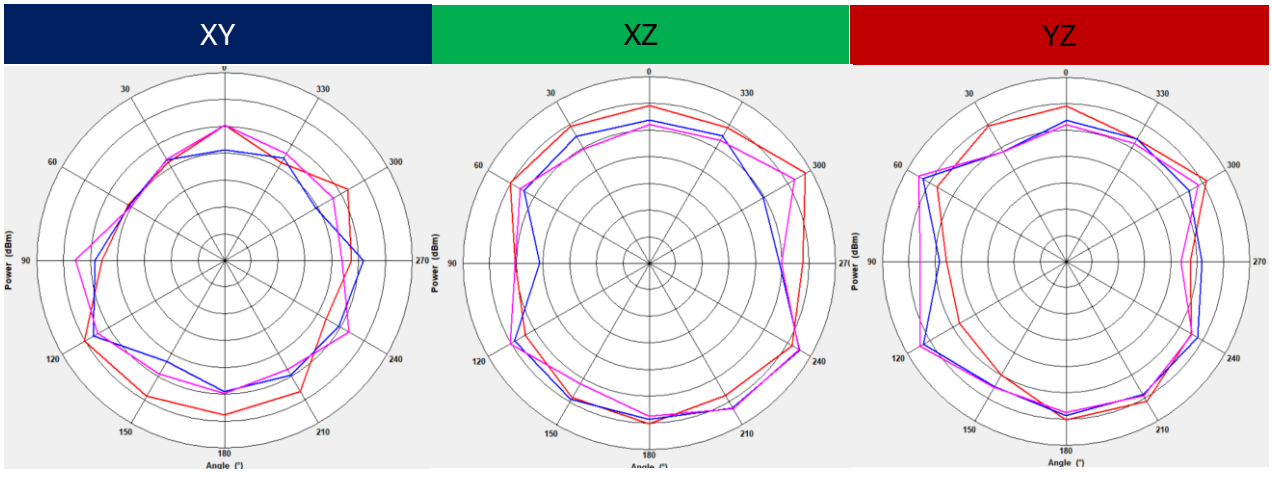


Max: 5
Min-30
Scale: 5/div

2300
2510
2690

RF Radiation Patterns at 3600MHz

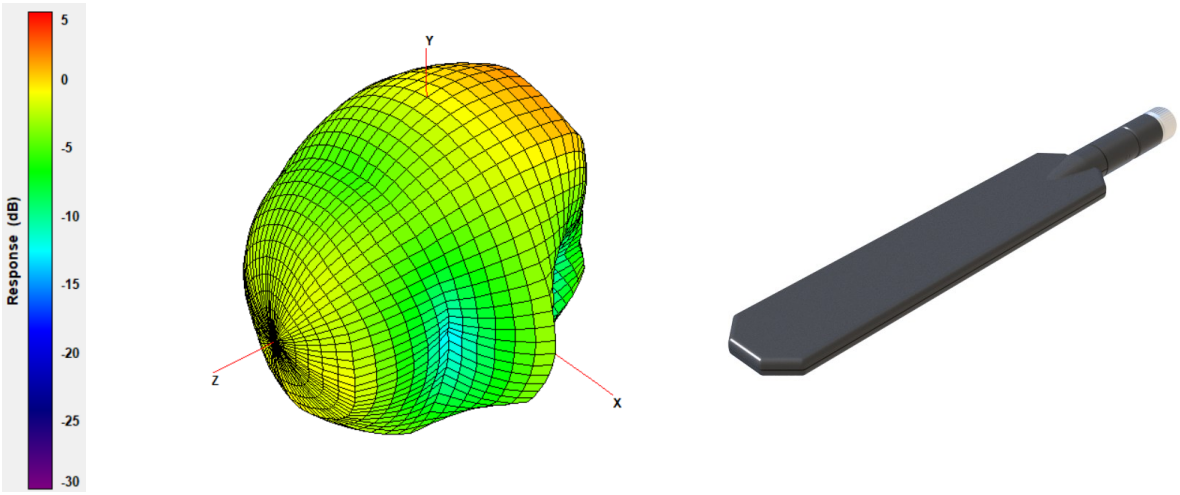


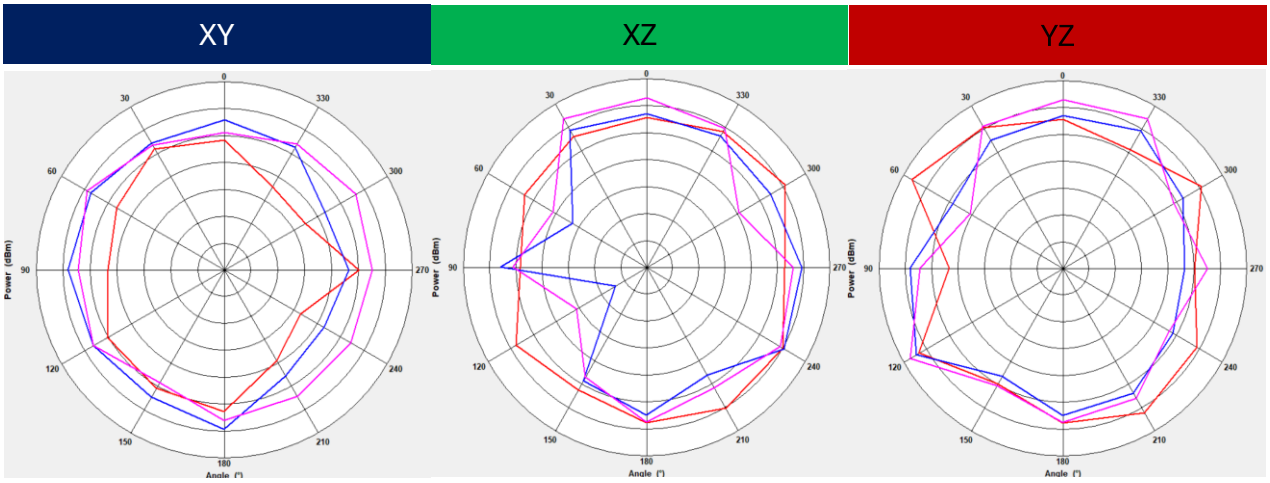


Max: 5
Min-30
Scale: 5/div

3300
3600
3760

RF Radiation Patterns at 4800MHz

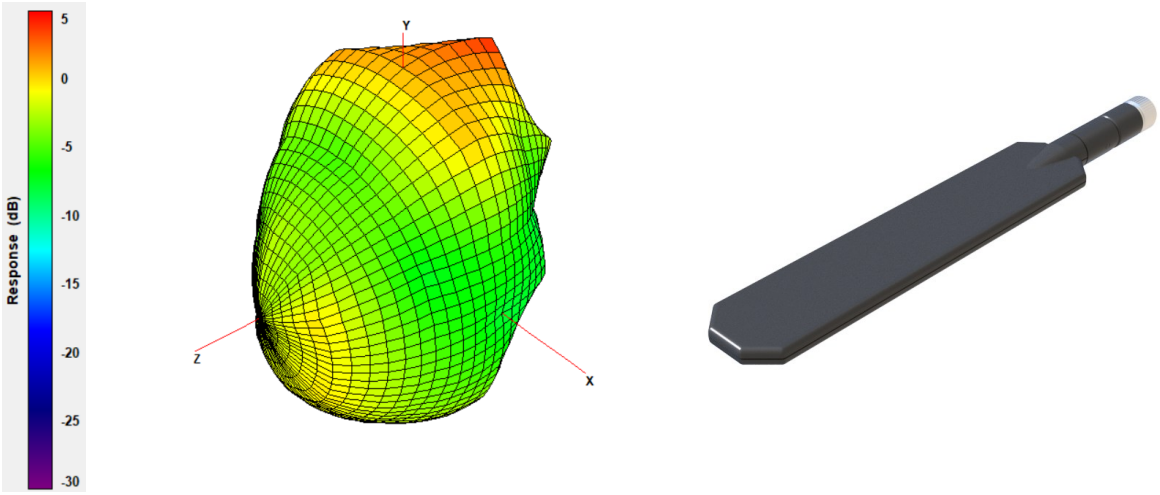


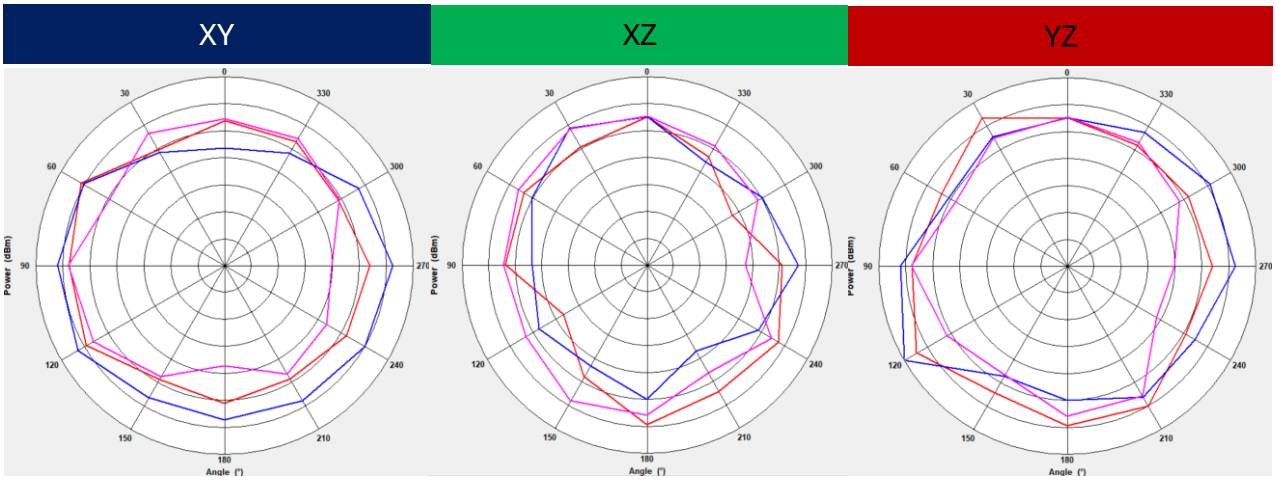


Max: 5
Min-30
Scale: 5/div

4000
4800
5000

RF Radiation Patterns at 5500MHz

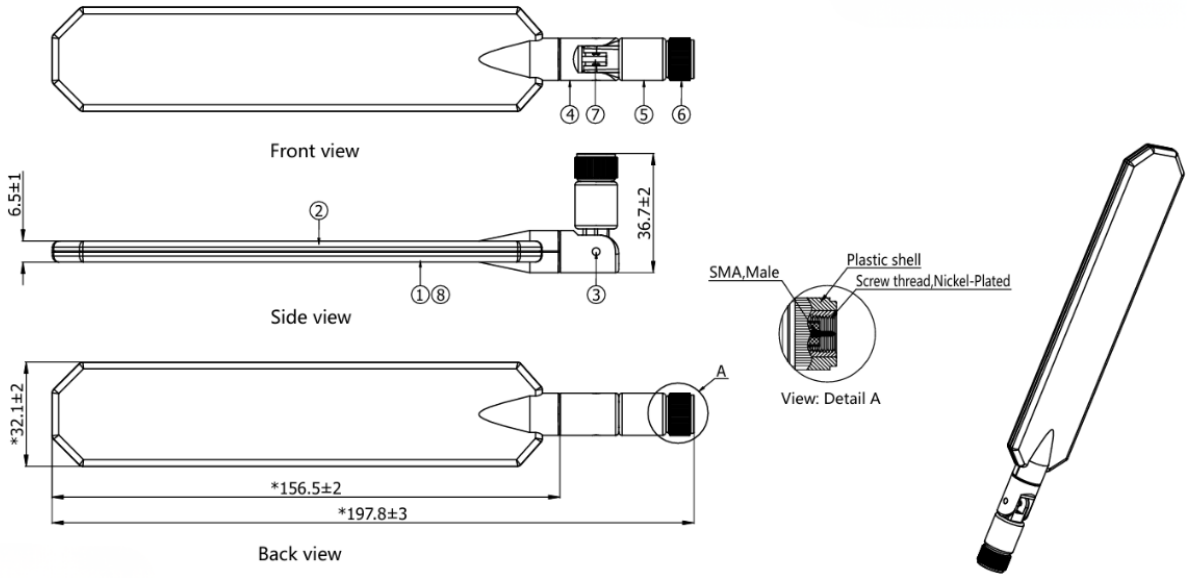




Max: 5
Min-30
Scale: 5/div

5140
5500
6000

Mechanical Drawing



Specification:

1.Electrical properties:
- Frequency Range:617~7125MHz
- VSWR:≤4.0@617~960MHz;
  ≤3.5@1710~2700MHz;
  ≤3.5@3300~7125MHz;
- Gain: 2dBi@617~960MHz;
  4dBi@1710~2700MHz;
  6dBi@3300~7125MHz;
- Impendance:50Ω

2.Waterproof Rating:IP65;

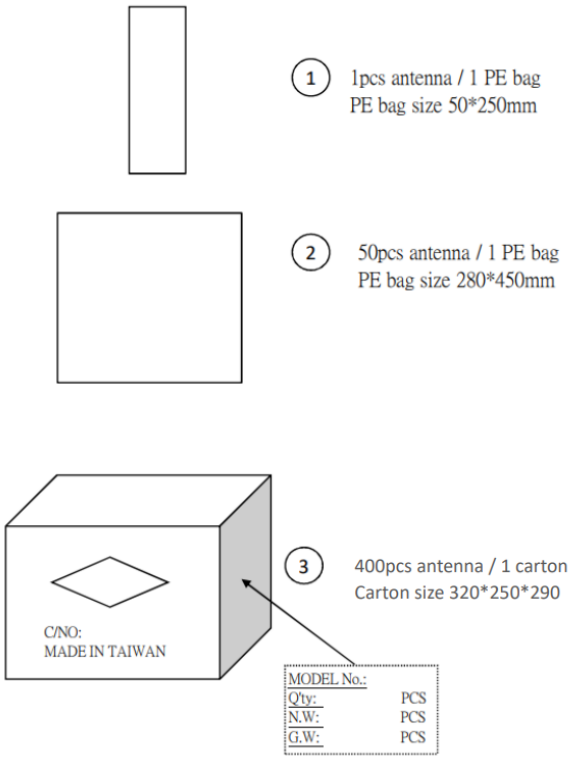
3.The antenna complied with ROHS 2.0 ;

4.Connector complied with the 48-hour salt spray test

5.Important dimensions marked with "*",and () for reference.

NO	DESCRIPTION	Q'TY
8	Antenna	PCB Board: FR4; Color: Black solder resist ink	1
7	Cable	RG-178 cable; Color: Brown&transparent	1
6	Connector	SMA,Male; Shell Color: Black	1
5	Down-Base	PC+PBT; Color: Black	1
4	Up-Base	PC; Color: Black	1
3	Rivet	POM; Color: Black	2
2	Right-Cover	ABS; Color: Black	1
1	Left-Cover	ABS; Color: Black	1

Packaging



Material Regulation

The antenna has been assessed to conform to RoHS requirements. A certificate of conformance is available upon request.