

Antenna

YE0038AA Datasheet

Antenna Services

Version: 3.1

Date: 2022-12-26

Status: Preliminary

Jason YZ



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Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local offices. For more information, please visit:

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About the Document

Revision History

Version	Date	Author	Note
-	2020-11-24	Kenny YIN	Creation of the document
1.0	2020-11-24	Kenny YIN	First official release
1.1	2021-01-27	Kenny YIN	Added IP rating description.
2.0	2021-04-28	Aria CHU	Updated all test data in the datasheets.
2.1	2021-07-25	Aria CHU	Updated working temperature (Chapter 3).
2.2	2021-11-16	Aria CHU	Updated the information of product features (Chapter 3).
2.3	2021-11-30	Aria CHU	Updated the product description in Chapter 1.
2.4	2022-01-18	Kenny YIN	Updated the drawing (Chapter 5).
3.0	2022-07-05	Aria CHU	Updated all data in this datasheet
3.1	2022-12-26	Aria CHU	Updated some data (4.1 and 4.2)

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1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

- Wi-Fi+Band48
- High efficiency
- Excellent performance

3 Product Specifications

● WIFI

Passive Electrical Specifications

Frequency Range	2.4–2.5 GHz, 5.15–5.85 GHz
Input Impedence	50 Ω
VSWR	2.4GHz: ≤ 2.0 , 5GHz: ≤ 2.8
Peak Gain	2.4GHz: $\leq 0.73\text{dBi}$, 5GHz: $\leq 1.14\text{dBi}$
Antenna Type	Dipole

● Band48

Passive Electrical Specifications

Frequency Range	3400-3800MHz
Input Impedence	50 Ω
VSWR	≤ 6.0
Peak Gain	$\leq -0.56 \text{ dBi}$
AntennaType	Dipole

Mechanical Specifications

Antenna Size	195 mm x Φ 13 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
IP Rating	IP55

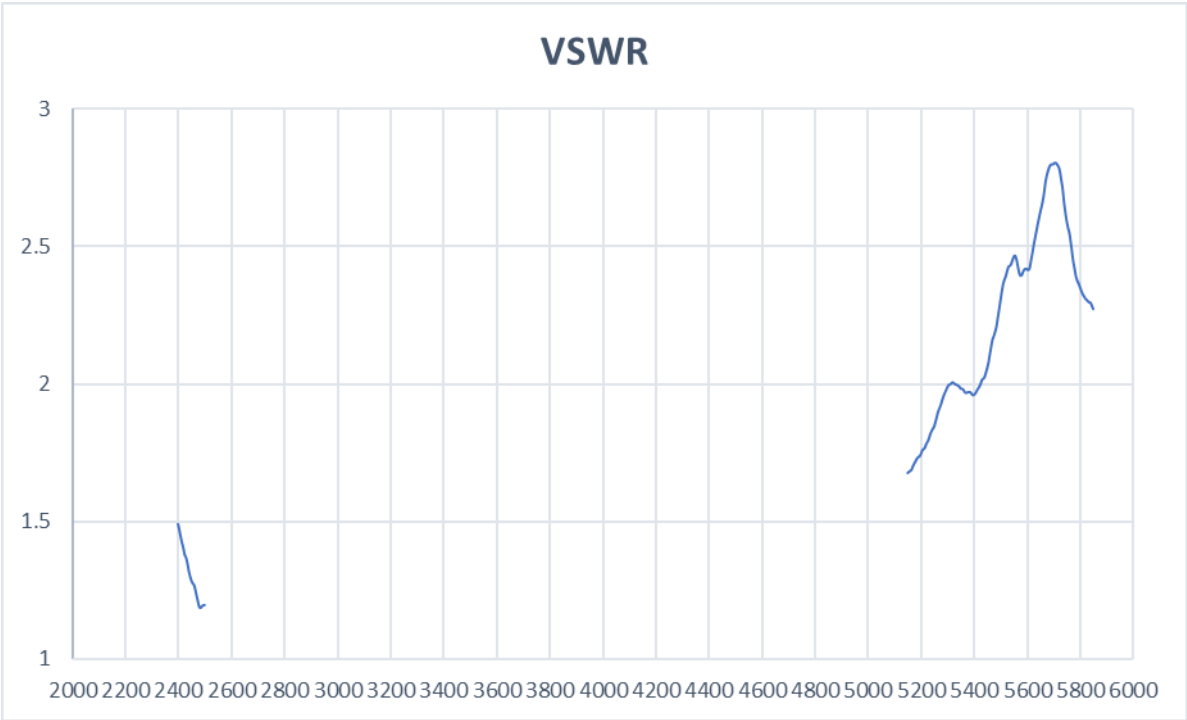
4 Overall Performance

4.1. Test Environment

- Network Analyzer: Keysight E5071C (Device number: QTB6331E; Calibration date: 2022-06-24)
- Chamber: OTA RayZone 2800 GTS (Device number: QTA0709; Calibration date: 2021-10-19)
- Testing Software: Libra

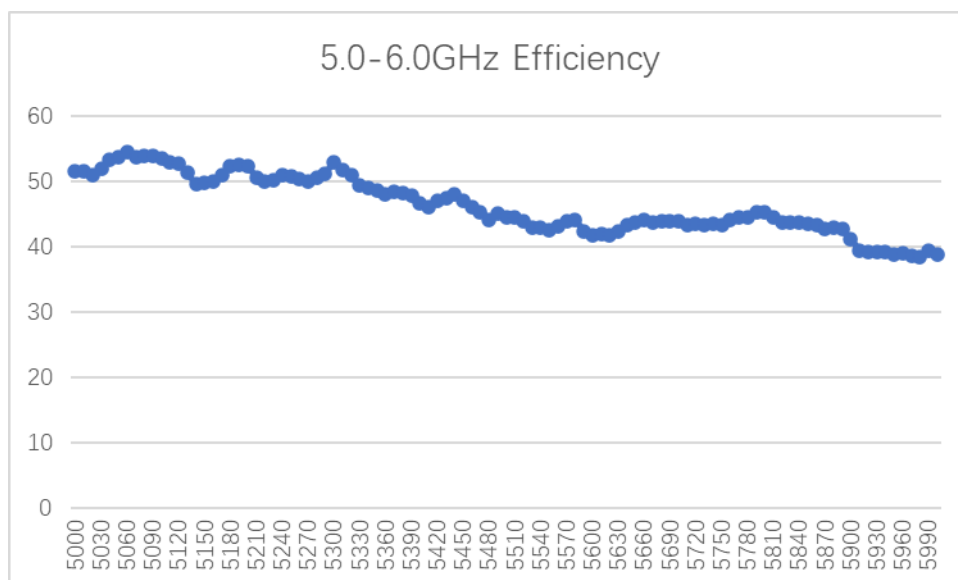
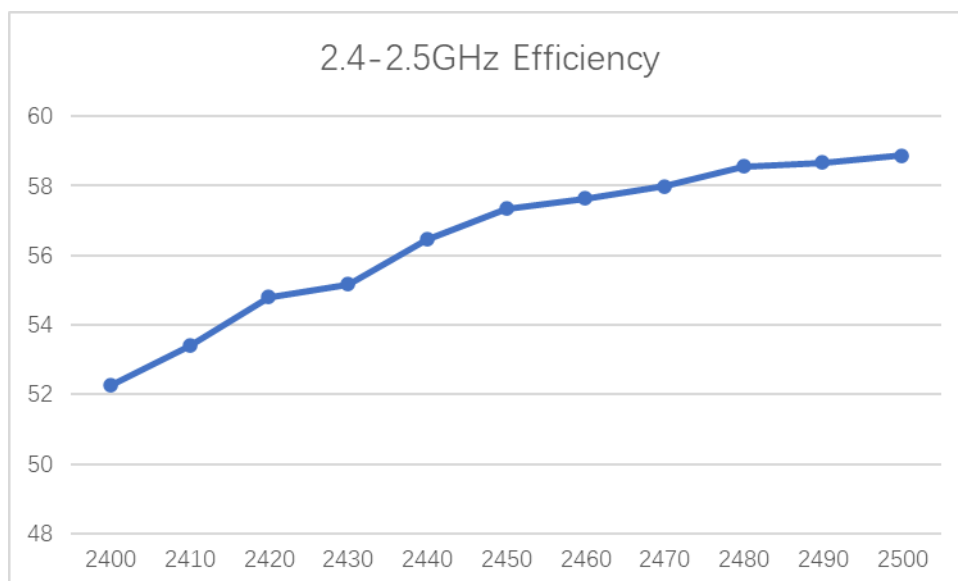
4.2. Data-WIFI

- VSWR



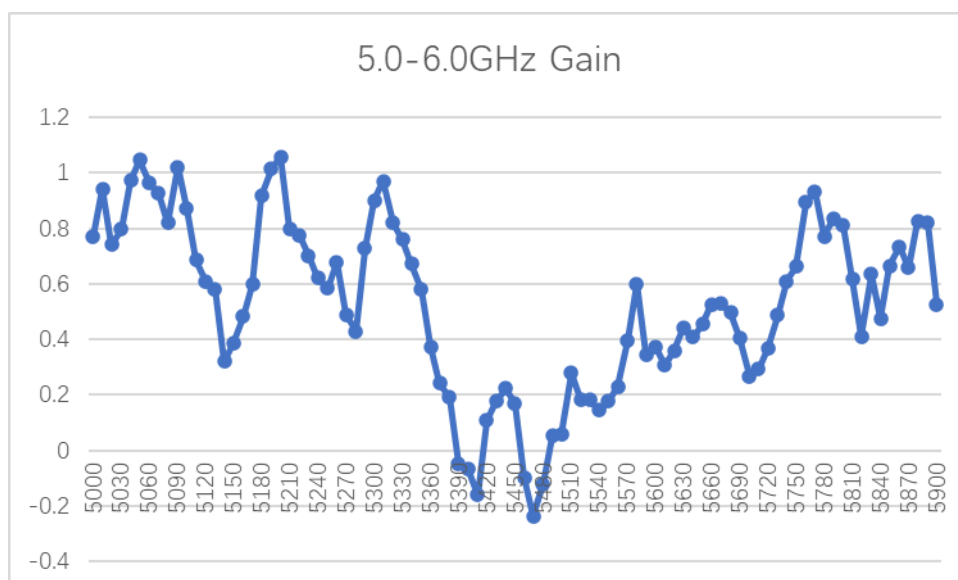
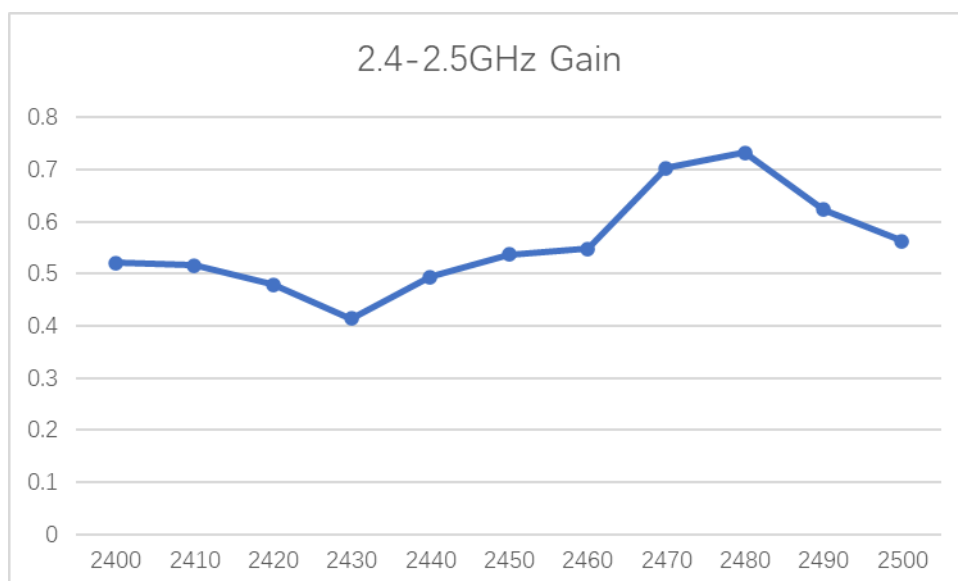
Frequency (MHz)	2400	2500	5150	5850
VSWR	1.49	1.19	1.67	2.27

● Efficiency



Frequency (MHz)	2400	2500	5150	5850
Efficiency (%)	52.26	59.64	49.76	43.45

● Gain



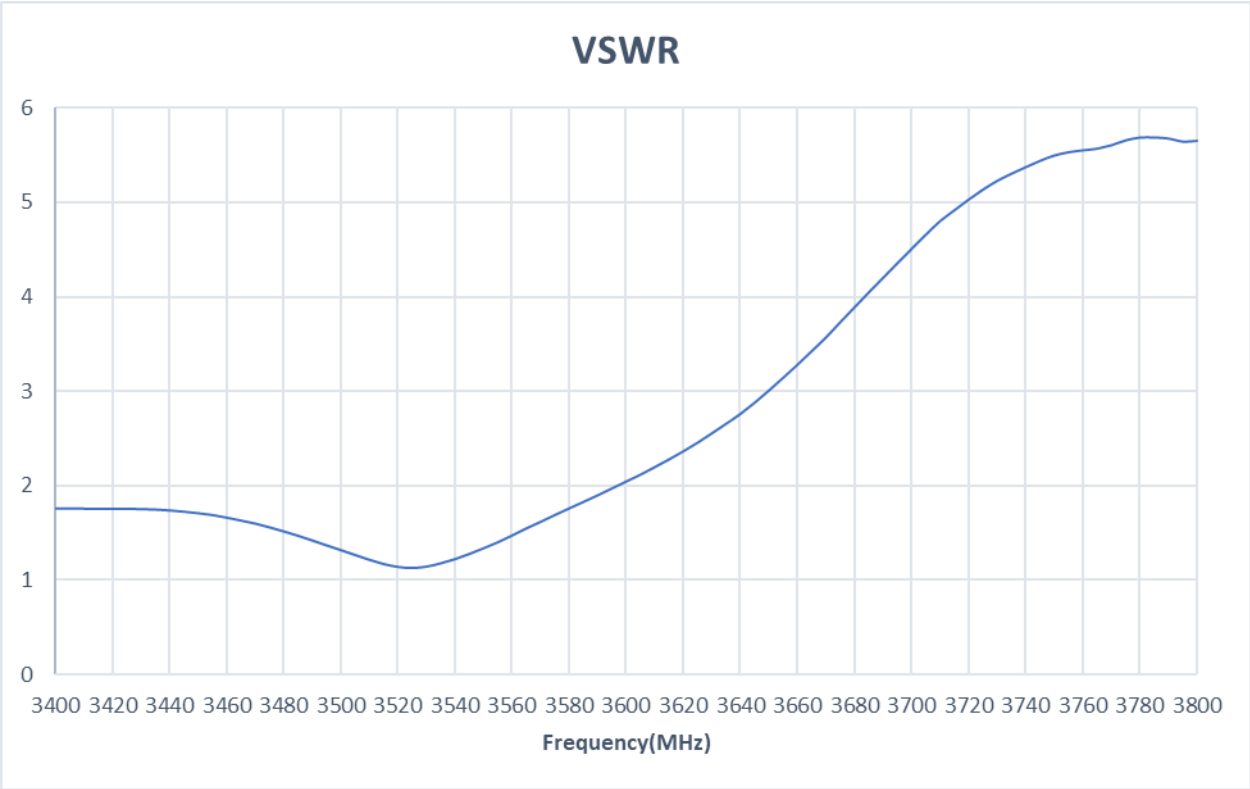
Frequency (MHz)	2400-2483.5	5150-5250MHz	5250-5350MHz	5470-5725MHz	5725-5850MHz
Peak Gain (dBi)	0.73	1.14	1.00	0.60	0.95

4.3. Data-Band48

- Detailed Band48 data

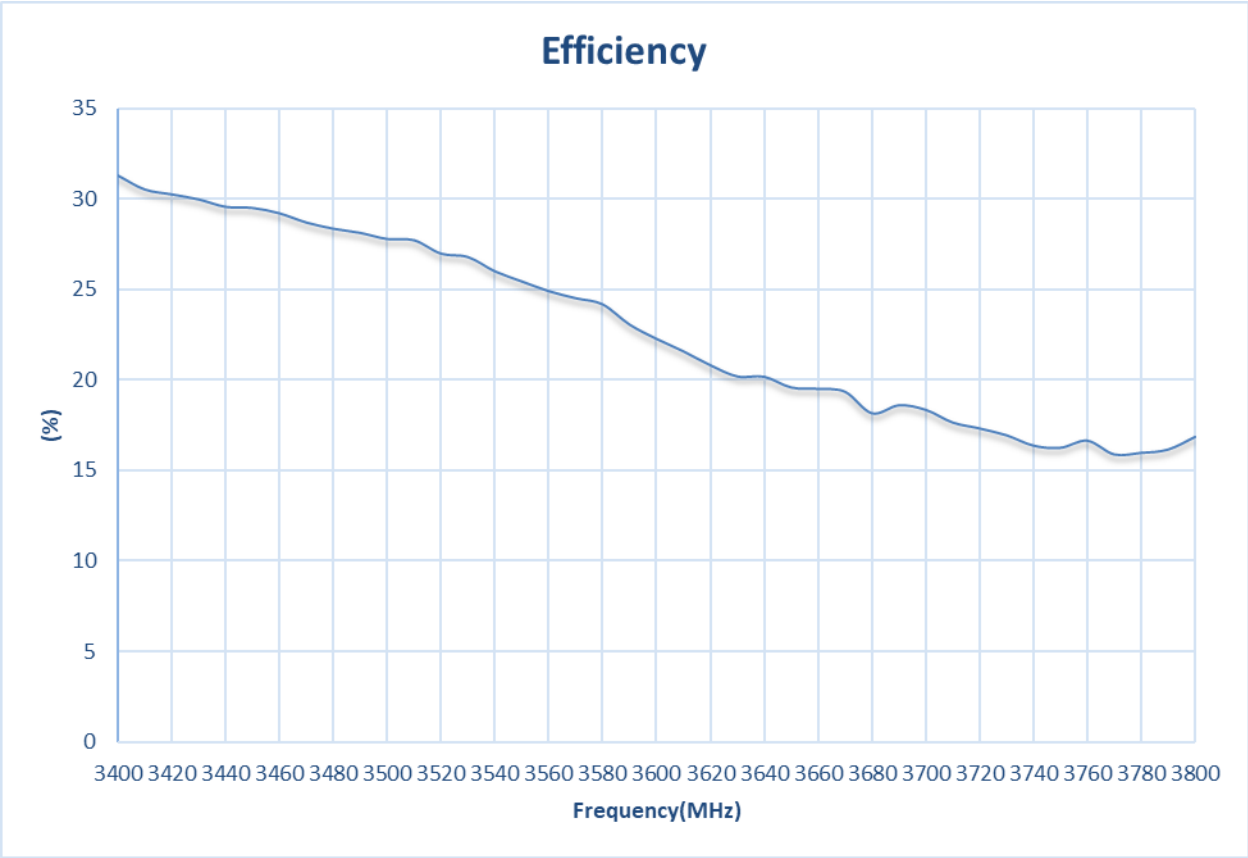
Frequency(MHz)	Efficiency(%)	Gain(dBi)	VSWR
3400	31.31	-0.62	1.7595953
3410	30.54	-0.6	1.7594879
3420	30.27	-0.56	1.7583804
3430	29.99	-0.6	1.7557133
3440	29.58	-0.67	1.7407261
3450	29.52	-0.72	1.7120283
3460	29.22	-0.7	1.6657989
3470	28.71	-0.85	1.6026738
3480	28.37	-0.89	1.5193631
3490	28.14	-1.02	1.4232132
3500	27.8	-1.1	1.3214646
3510	27.73	-1.21	1.2190003
3520	26.99	-1.24	1.1431093
3530	26.8	-1.16	1.1454306
3540	26.01	-1.3	1.2251233
3550	25.45	-1.36	1.3391756
3560	24.91	-1.42	1.4751243
3570	24.52	-1.48	1.6197301
3580	24.18	-1.5	1.7623735
3590	23.06	-1.73	1.9009234
3600	22.27	-2.09	2.046213
3610	21.58	-2.25	2.1994422
3610	21.58	-2.25	2.1994422
3620	20.81	-2.44	2.3669588
3630	20.19	-2.46	2.5564068
3640	20.17	-2.44	2.7623186
3650	19.58	-2.61	3.0100725
3660	19.5	-2.46	3.283869
3670	19.34	-2.51	3.5730605
3680	18.15	-2.77	3.8926434
3690	18.59	-2.63	4.2036292
3700	18.34	-2.72	4.5103584
3710	17.64	-3	4.8055132
3720	17.31	-3	5.0332462
3730	16.93	-3.14	5.2320687
3740	16.36	-3.21	5.3770512
3750	16.24	-3.23	5.5003468
3760	16.63	-3.26	5.5554026
3770	15.87	-3.42	5.608513
3780	15.96	-3.26	5.6901719
3790	16.14	-3.16	5.6804135
3800	16.84	-3.08	5.6561165

● **VSWR**



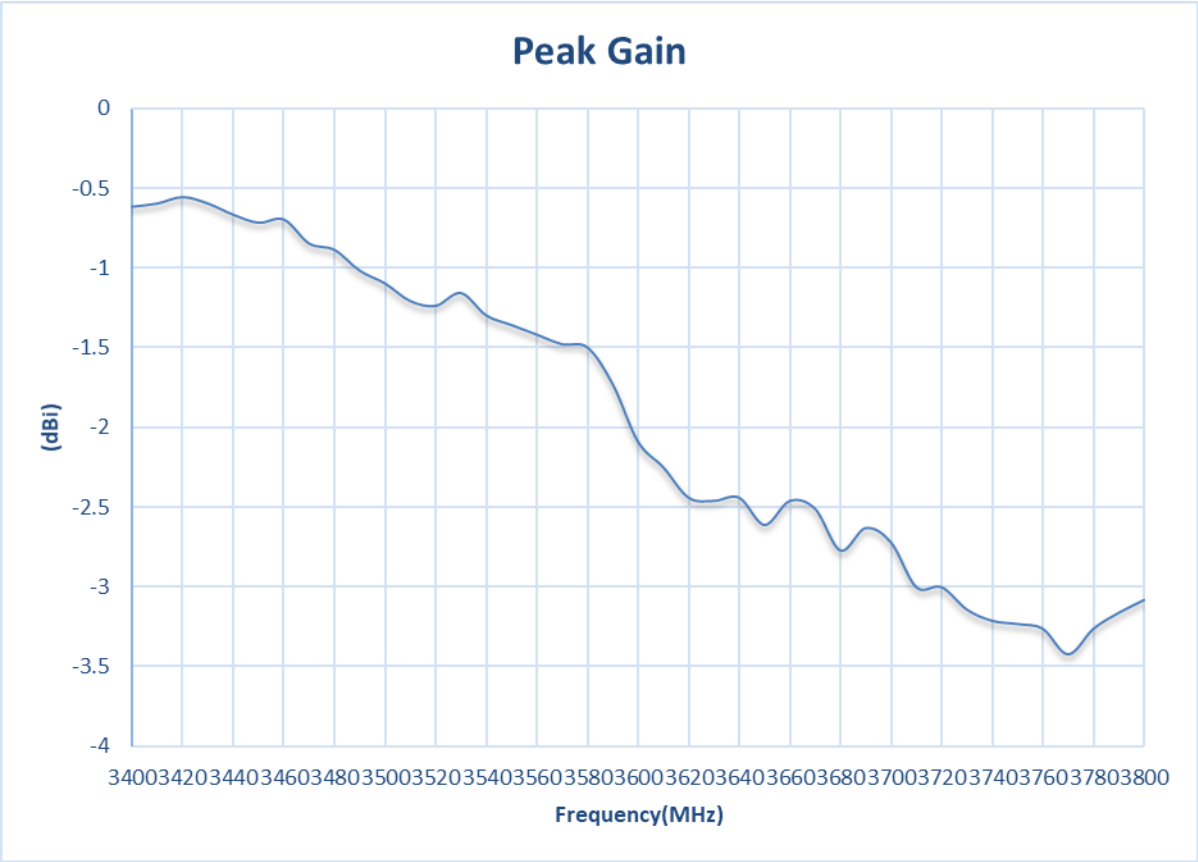
Frequency (MHz)	3400	3600	3800
VSWR	1.75	2.04	5.65

● Efficiency



Frequency (MHz)	3400	3600	3800
Efficiency (%)	31.31	22.27	16.84

● Gain

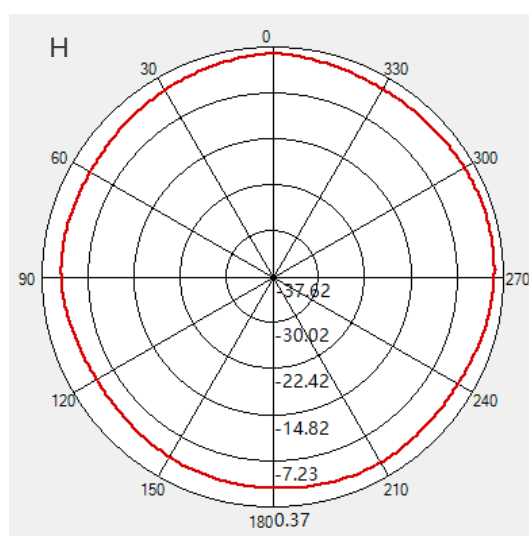
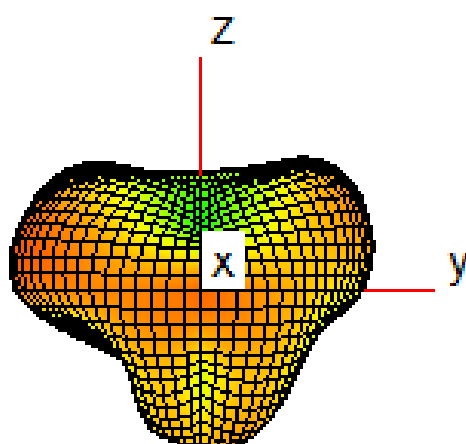


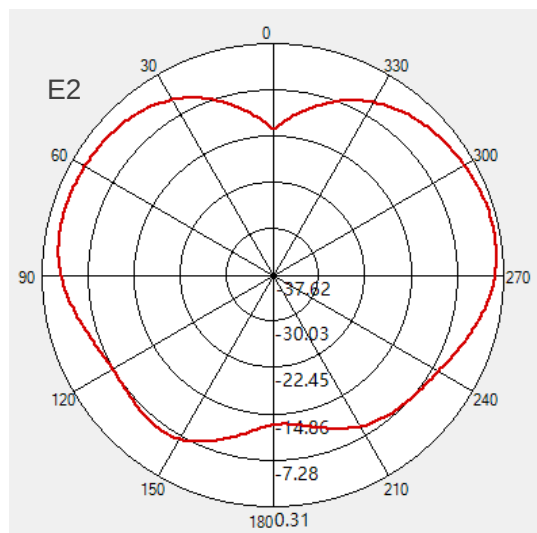
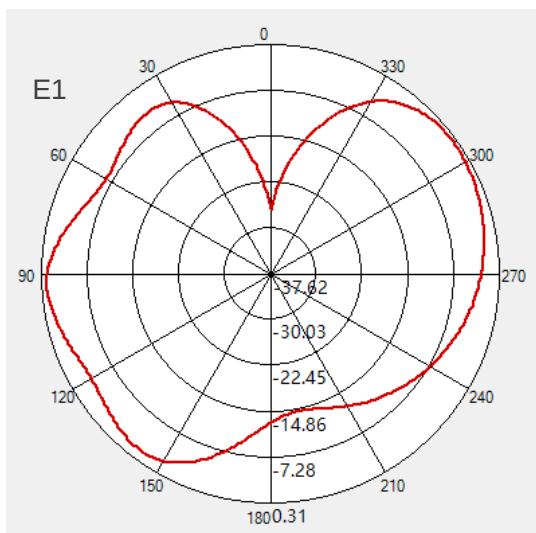
Frequency (MHz)	3400	3600	3800
Gain (dBi)	-0.62	-2.09	-3.08

4.4. Radiation Pattern-WIFI

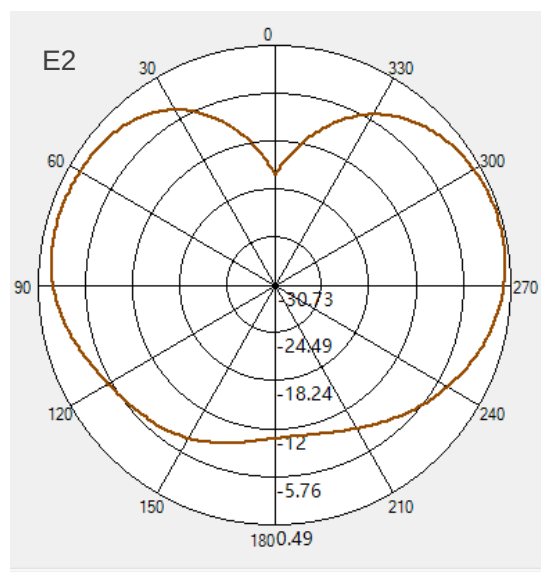
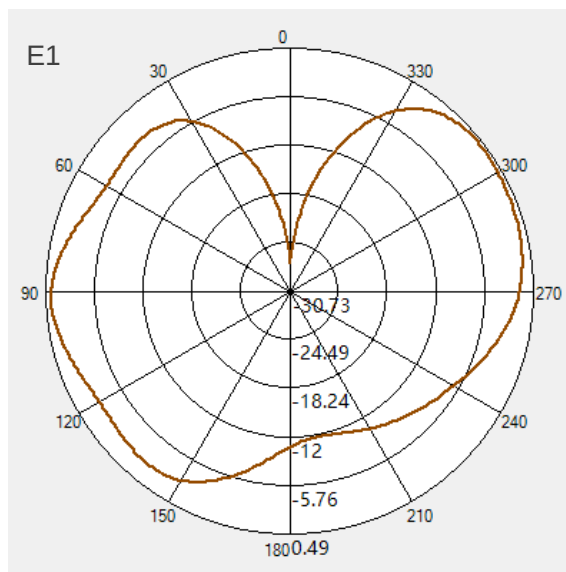
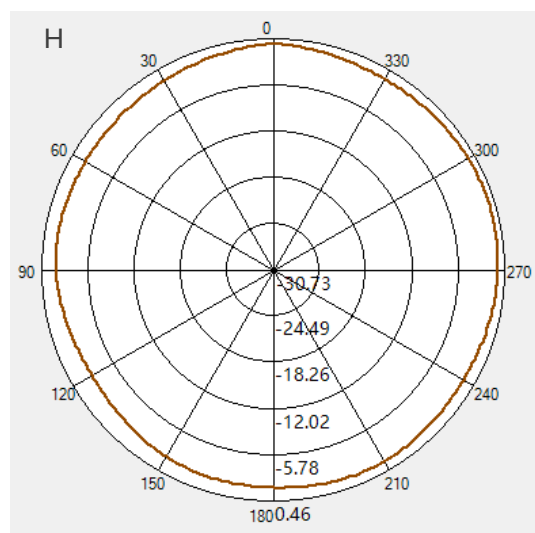
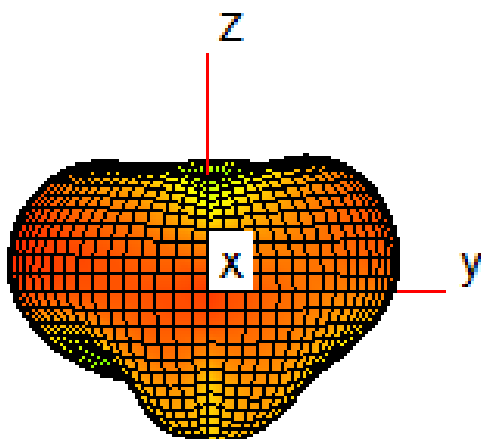
H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

2400 MHz

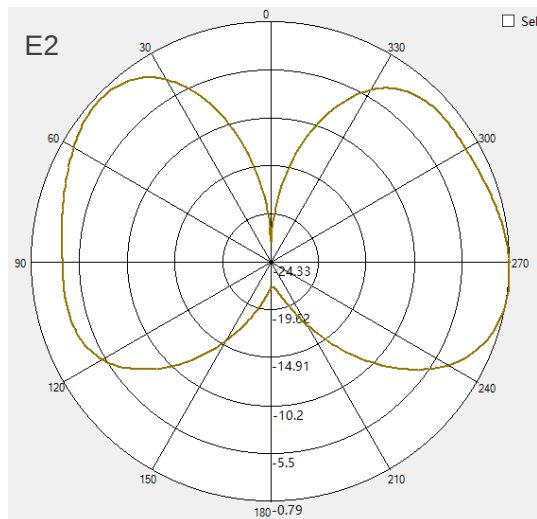
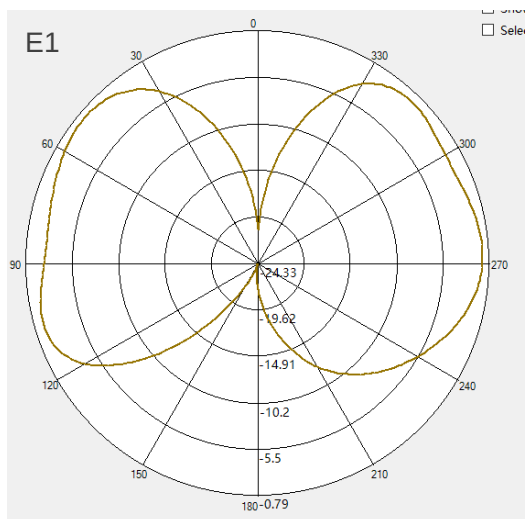
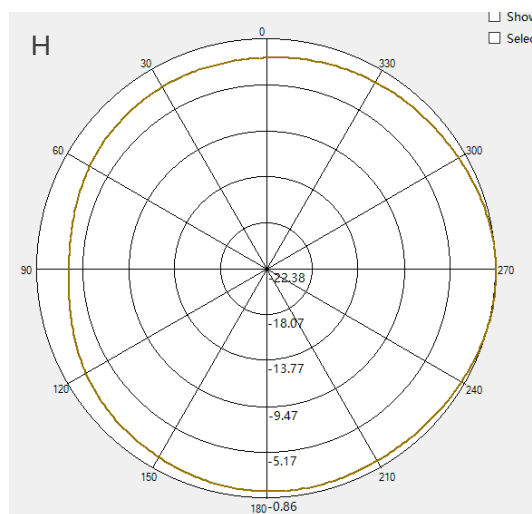
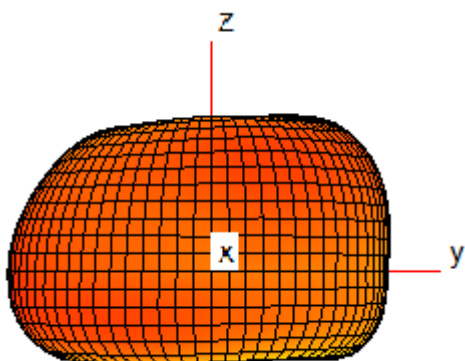




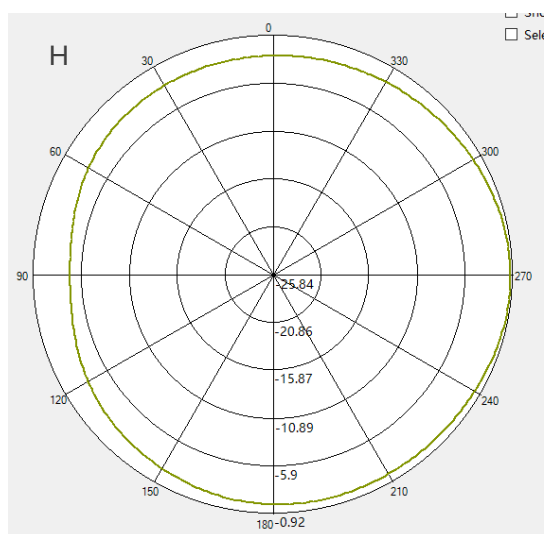
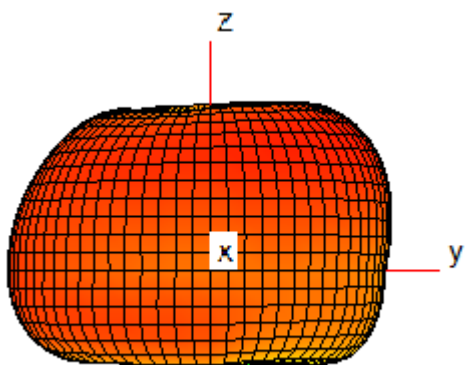
2500 MHz

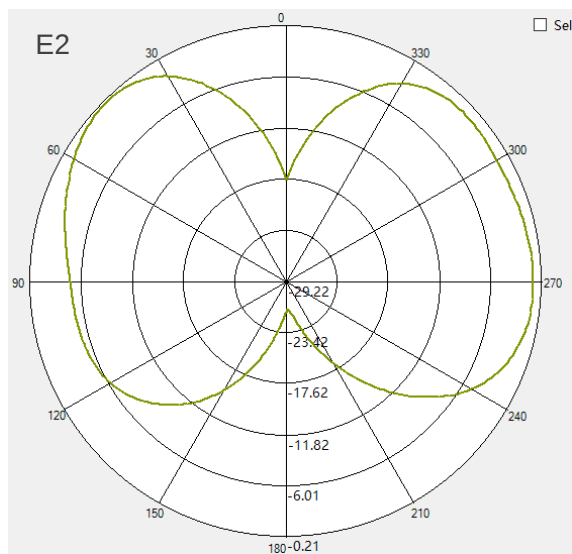
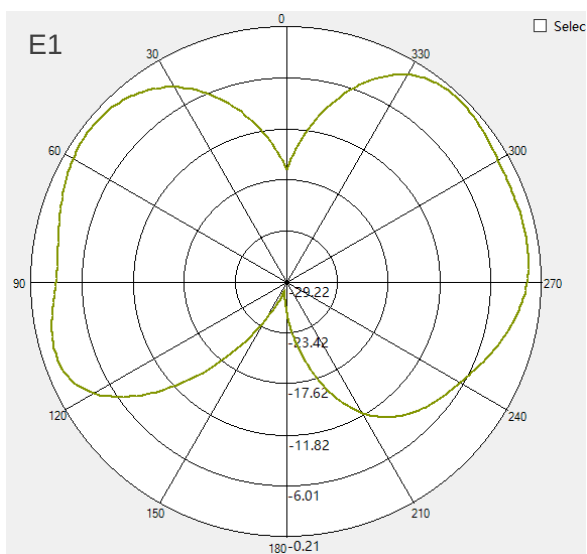


5180 MHz

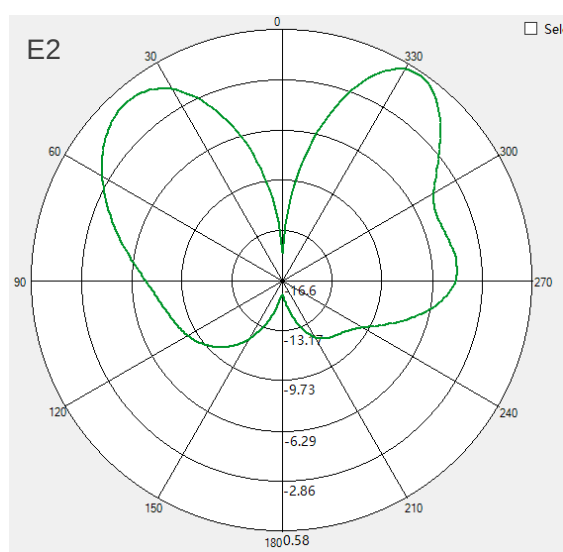
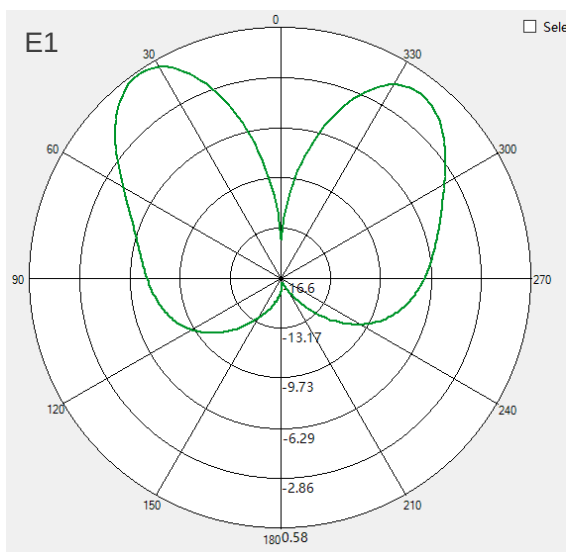
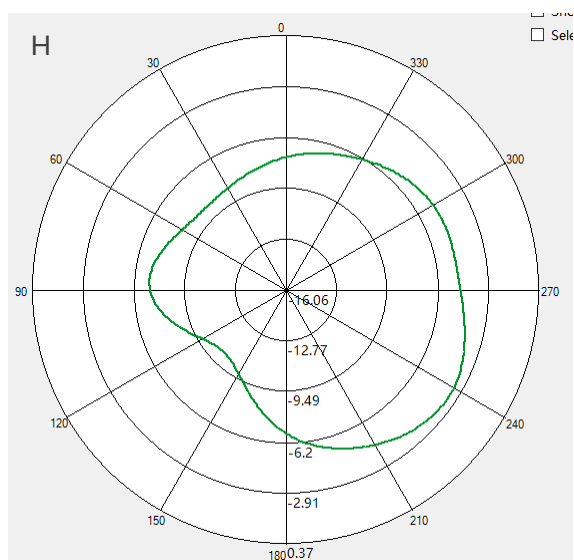
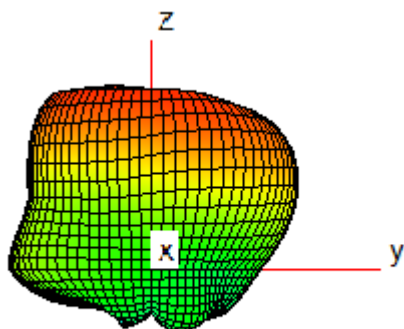


5300 MHz

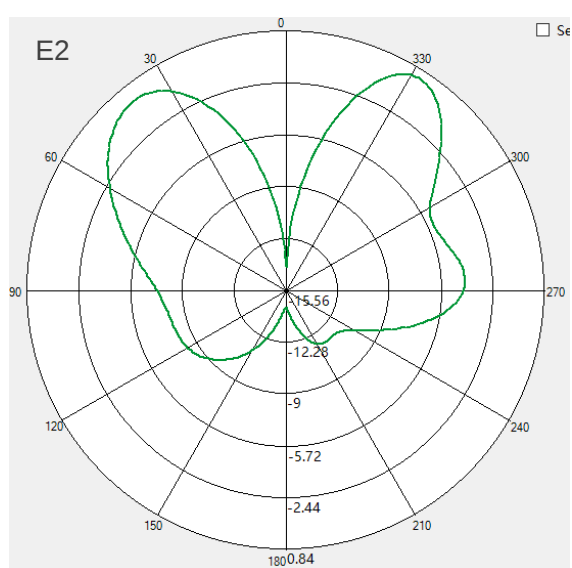
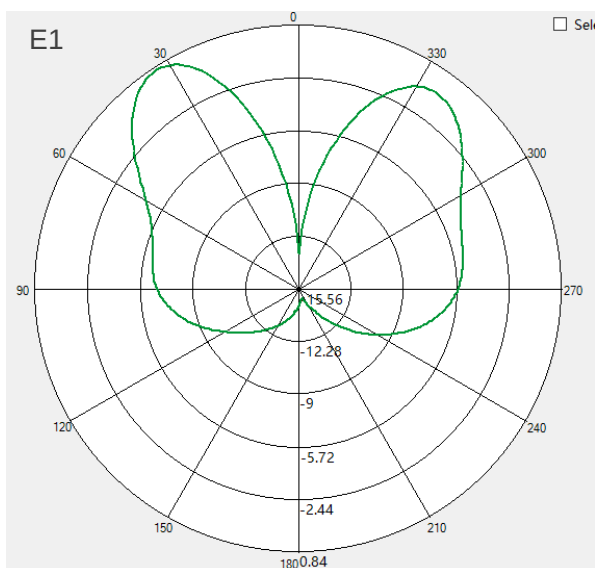
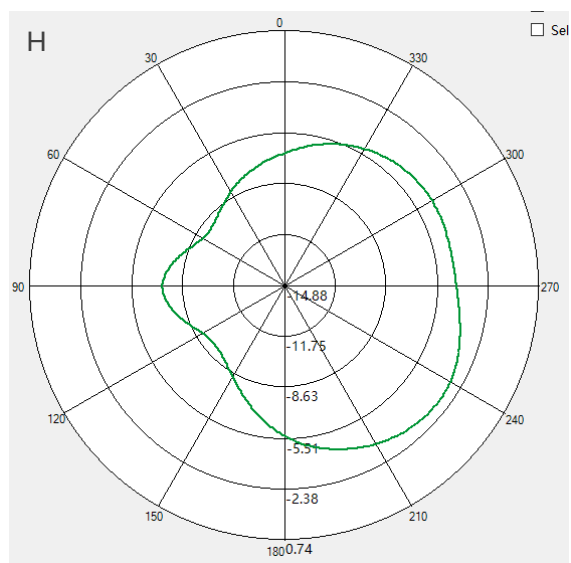
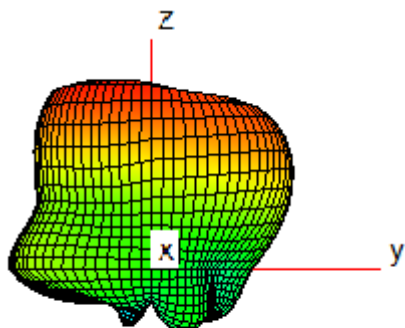




5725 MHz



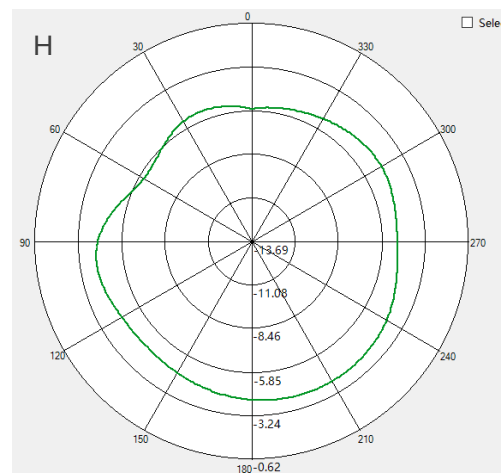
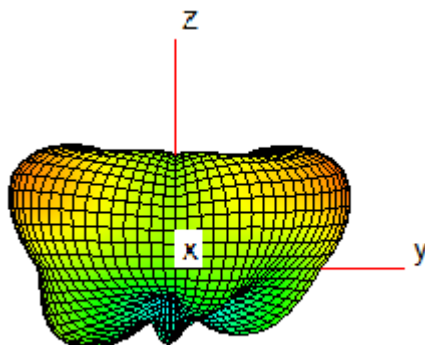
5750 MHz

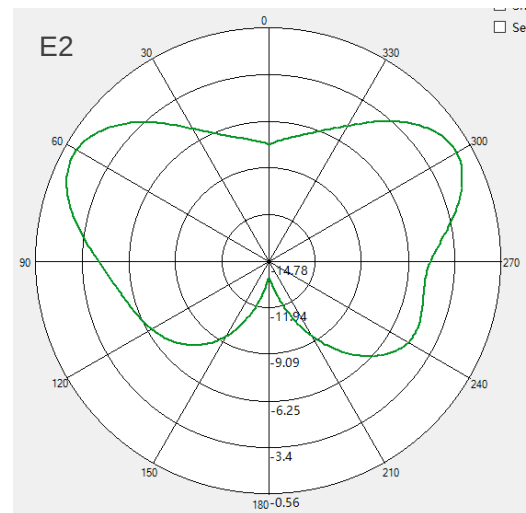
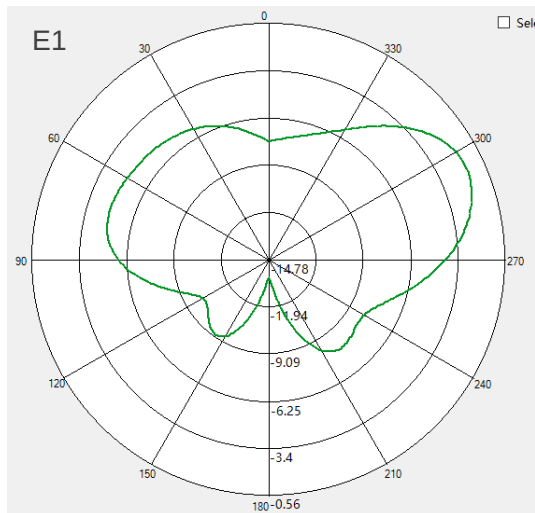


4.5. Radiation Pattern-Band48

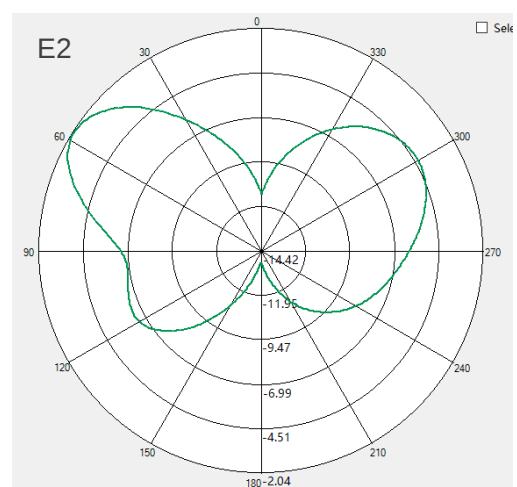
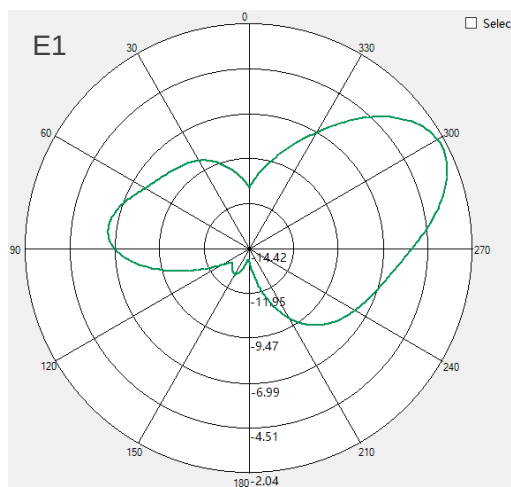
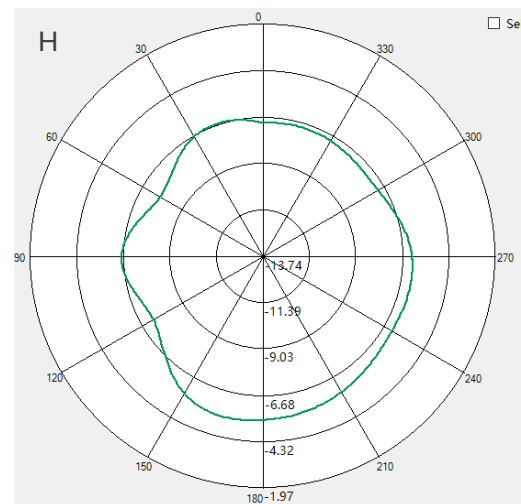
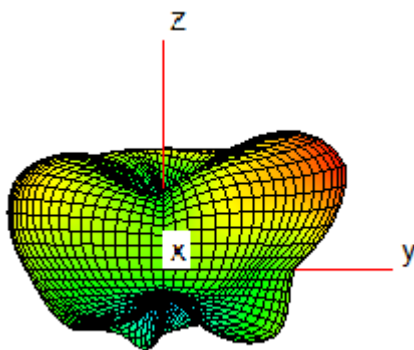
H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

3400MHz





3600MHz



3800MHz

