

Antenna

YE0012AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2020-06-30	Kenny YIN	Creation of the document
1.0	2020-06-30	Kenny YIN	First official release
2.0	2020-07-03	Kenny YIN	Updated the specifications in Chapter 3.
2.1	2020-12-16	Kenny YIN	Updated the antenna image in Chapter 2.
2.2	2021-01-27	Kenny YIN	Added IP rating description and installation method in Chapter 3.
3.0	2021-03-29	Kenny YIN/ Aria CHU	Updated all test data in the datasheets and some other data.
3.1	2021-07-05	Kenny YIN	Updated product specifications in Chapter 3 and added test condition in Chapter 4.
3.2	2021-07-25	Kenny YIN/ Aria CHU	1. Updated working temperature. (Chapter 3) 2. Added detailed passive electrical specifications. (Chapter 3)
3.3	2021-12-01	Kenny YIN/ Aria CHU	Updated the product description in Chapter 1.

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1 Product Description

This Quectel external 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. Quectel also offers flexible installation with custom cable length and connector options.

2 Product Features

- Cellular LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	824–960 MHz; 1710–2690 MHz
Input Impedence	50 Ω
VSWR	≤ 3.0
Gain	≤ 5.35 dBi
Polarization Type	Linear

Detailed Passive Electrical Specifications

Frequency Range (MHz)	698–960	1176–1280	1400–1610	1710–2170	2170–2690	3300–4000	4000–5000	5000–6000
VSWR (Max.)	1.91	-	-	1.70	2.60	-	-	-
Average Efficiency (%)	40	-	-	50	52	-	-	-
Max. Peak Gain (dBi)	3.0	-	-	5.35	3.3	-	-	-

Mechanical Specifications

Antenna Size	116.5 mm × 21.7 mm × 5.6 mm RG174 Cable Length = 250 mm
Casing	ABS + PC
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black
Mounting Type	Adhesive
IP Rating	IP53

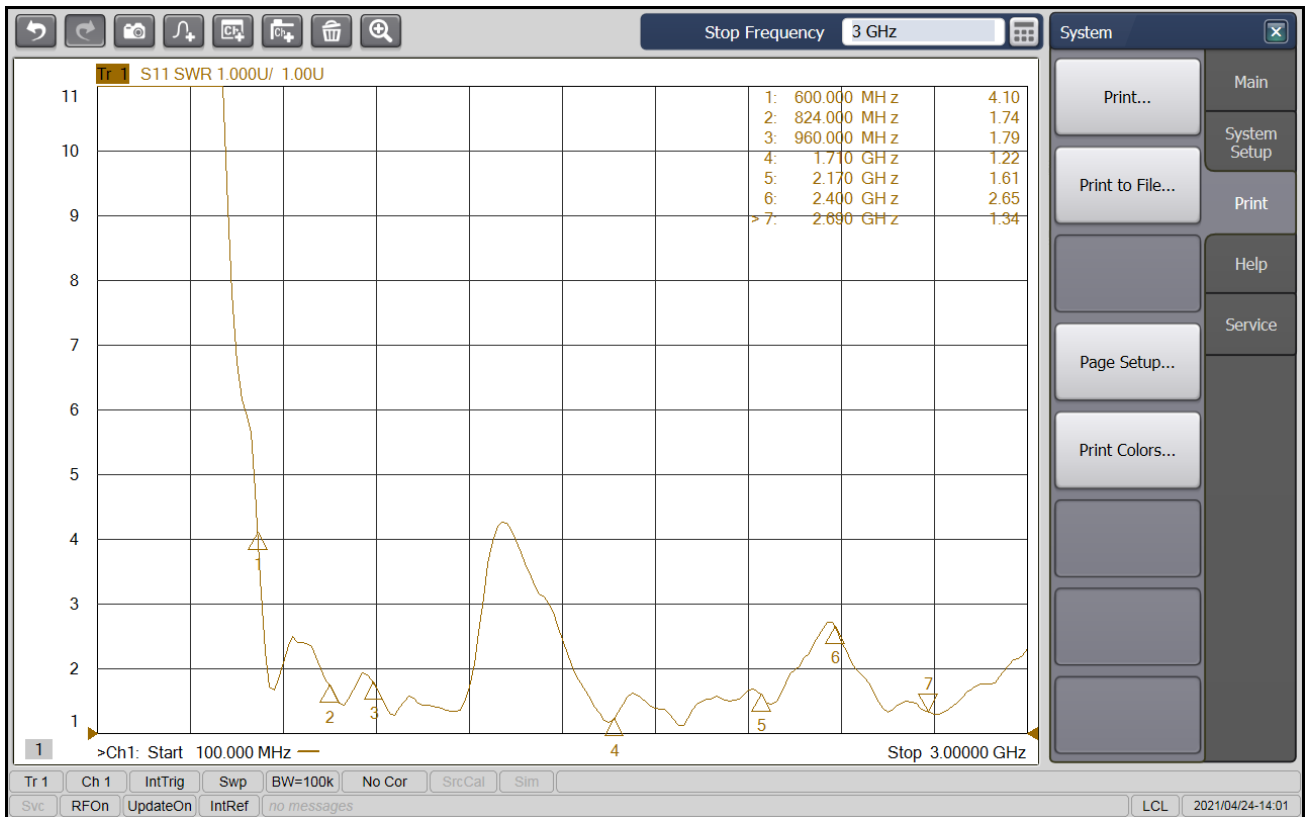
4 Overall Performance

4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz

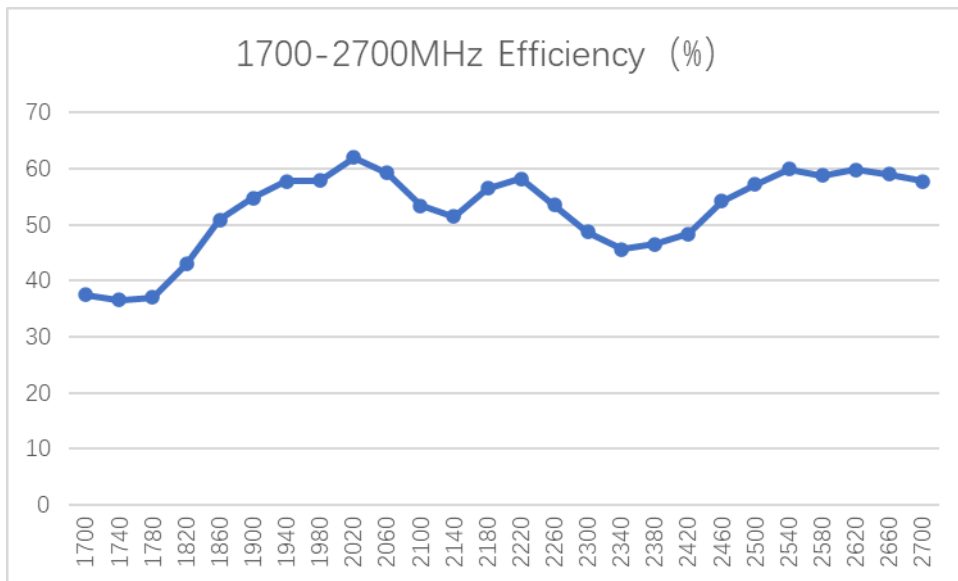
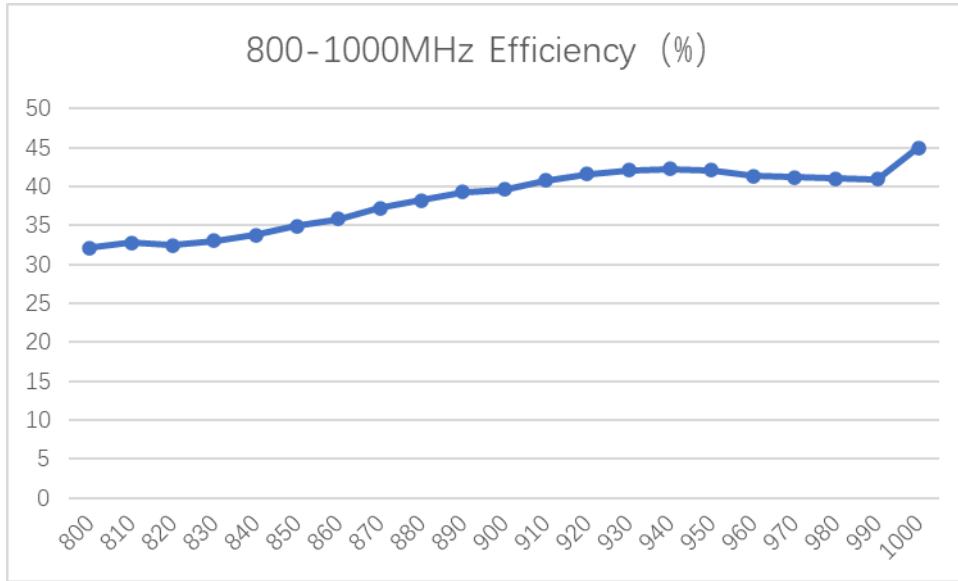


4.2. VSWR



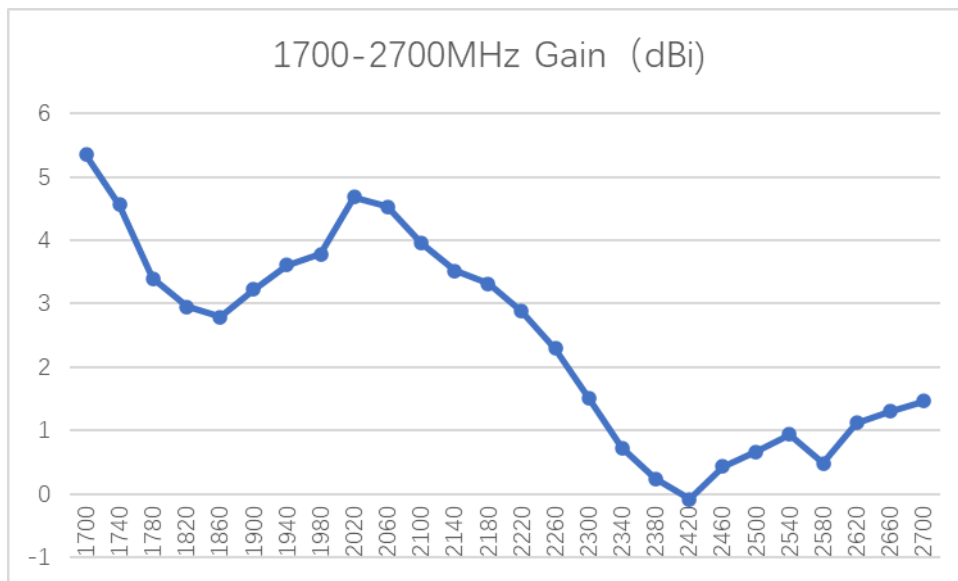
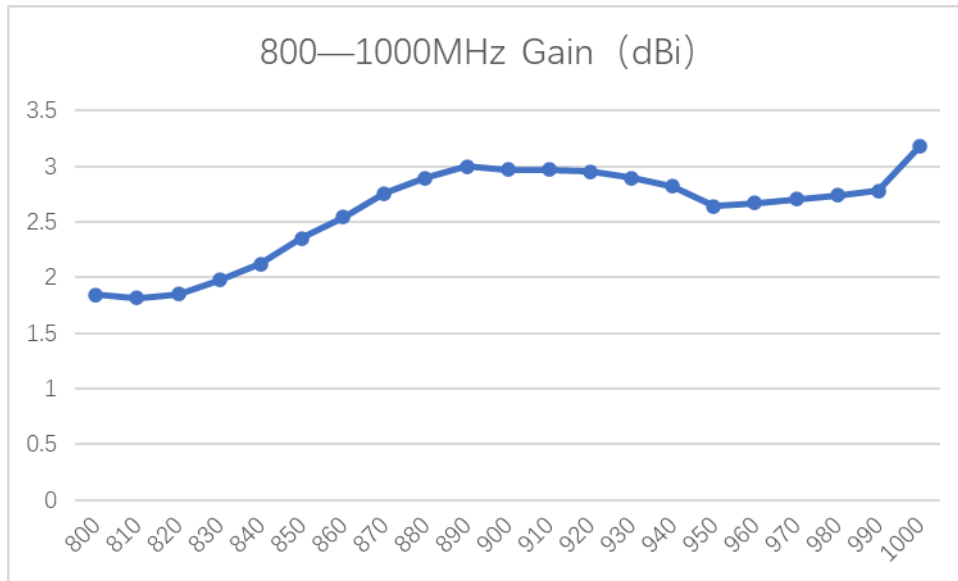
Frequency (MHz)	824	960	1710	2170	2400	2690
VSWR	1.74	1.79	1.22	1.61	2.65	1.34

4.3. Efficiency



Frequency (MHz)	820	960	1000	1700	1940	2220	2460	2700
Efficiency (%)	32.43	41.32	45.00	37.47	57.74	58.19	54.16	57.75

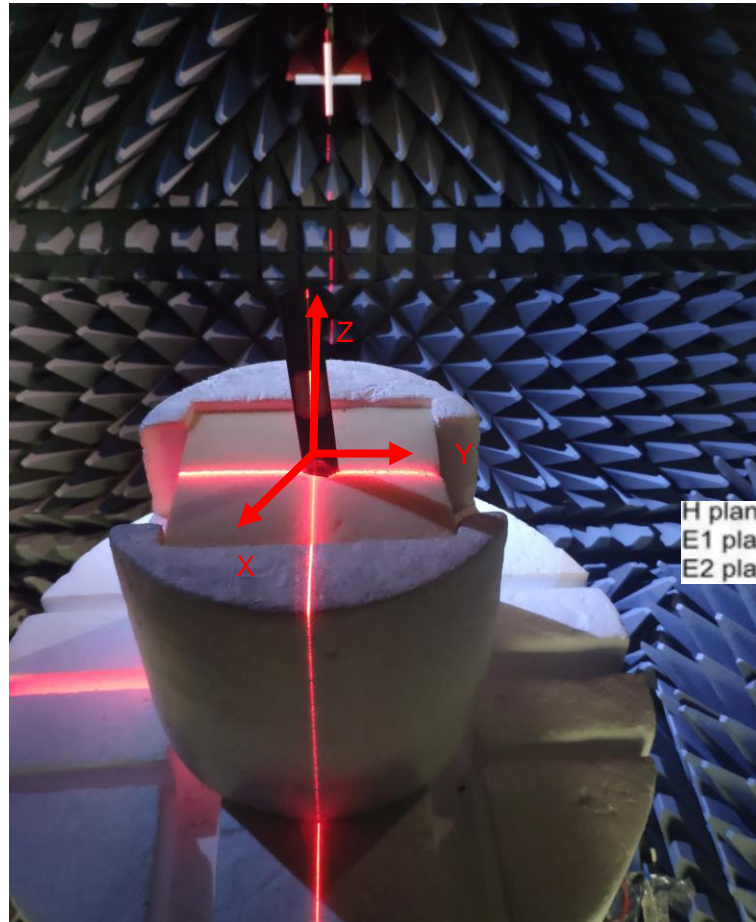
4.4. Gain



Frequency (MHz)	820	960	1000	1700	1940	2220	2460	2700
Gain (dBi)	1.85	2.67	3.18	5.35	3.61	2.88	0.43	1.47

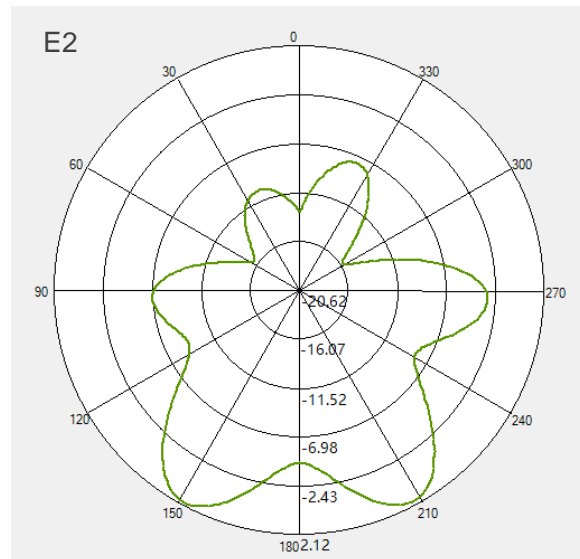
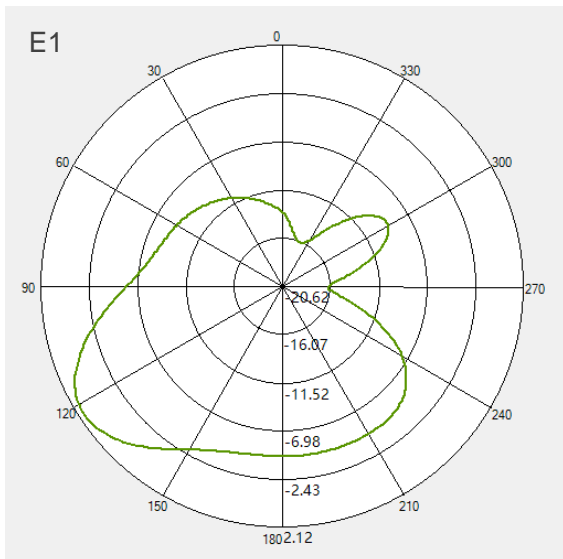
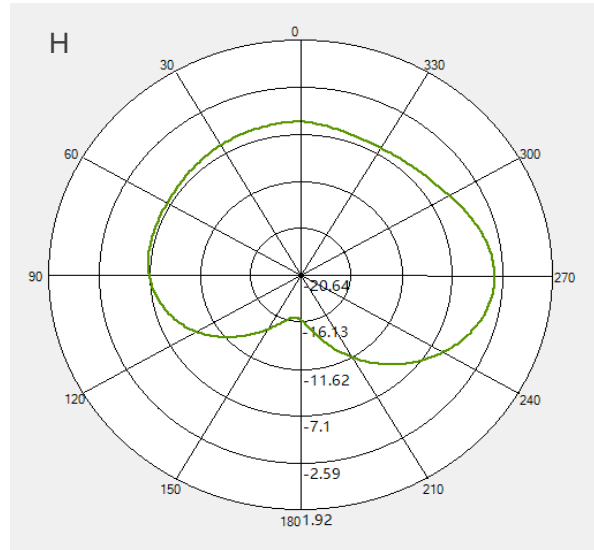
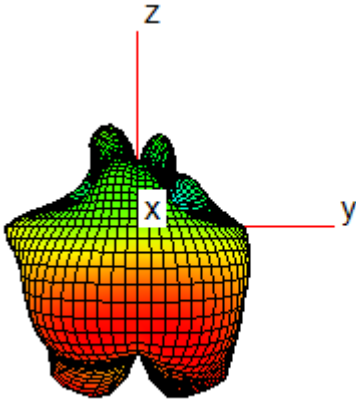
4.5. Radiation Pattern

- Test condition: free space status.

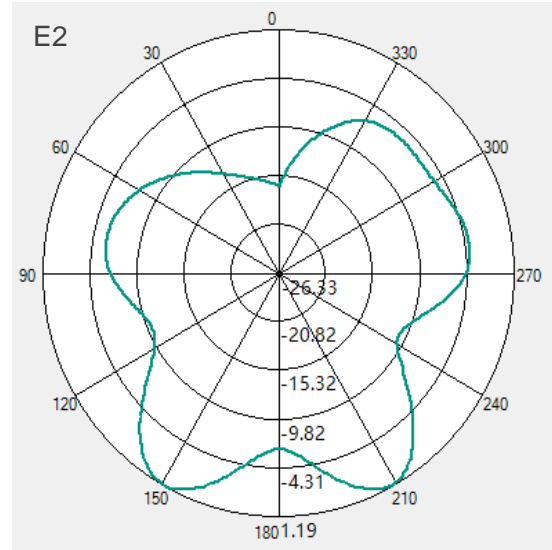
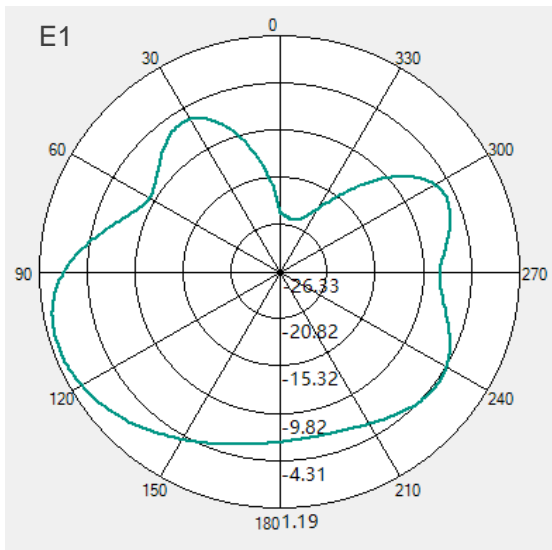
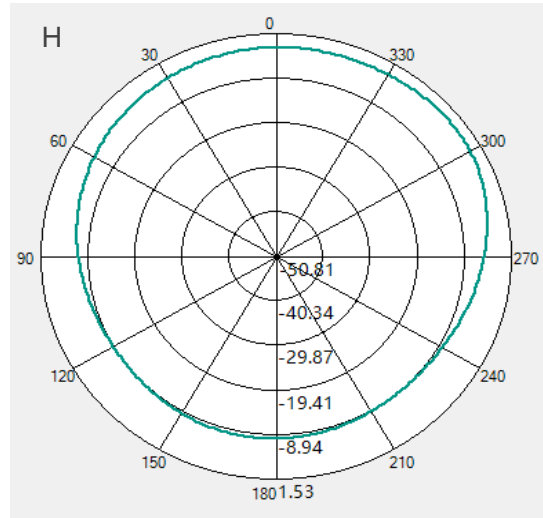
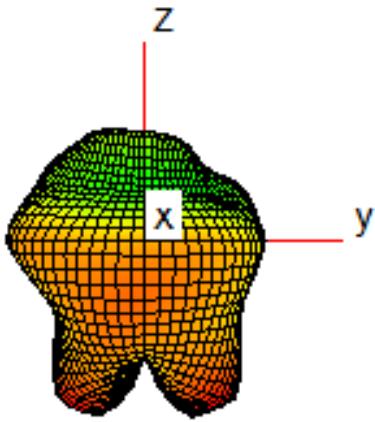


H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

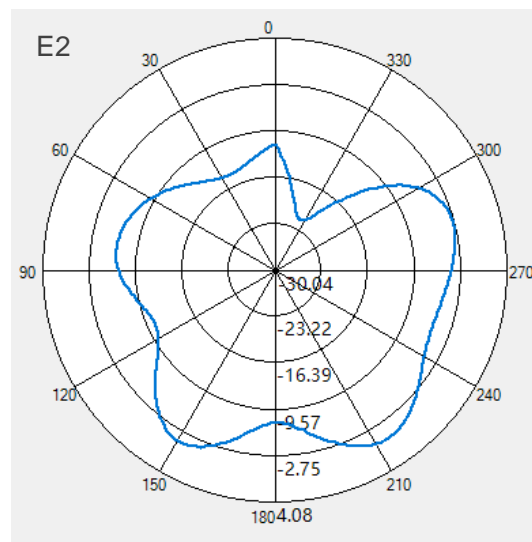
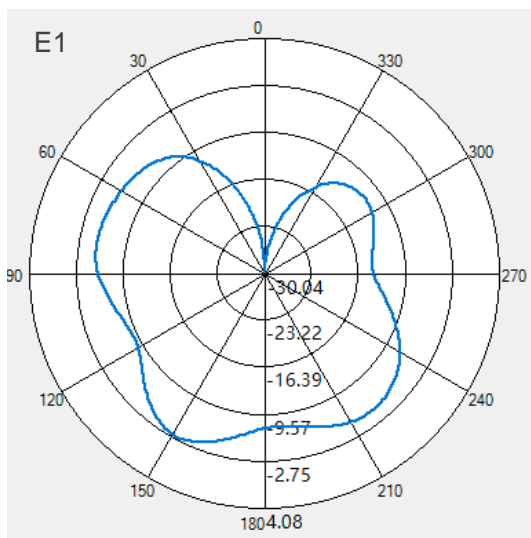
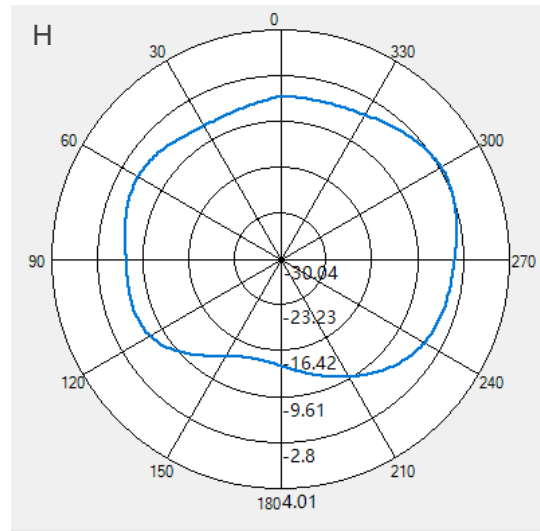
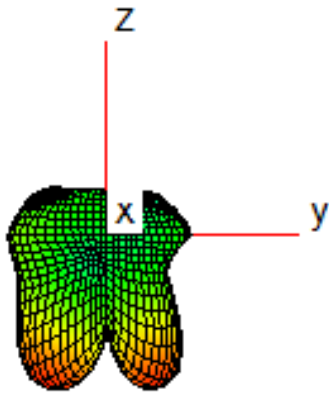
4.5.1. 820 MHz



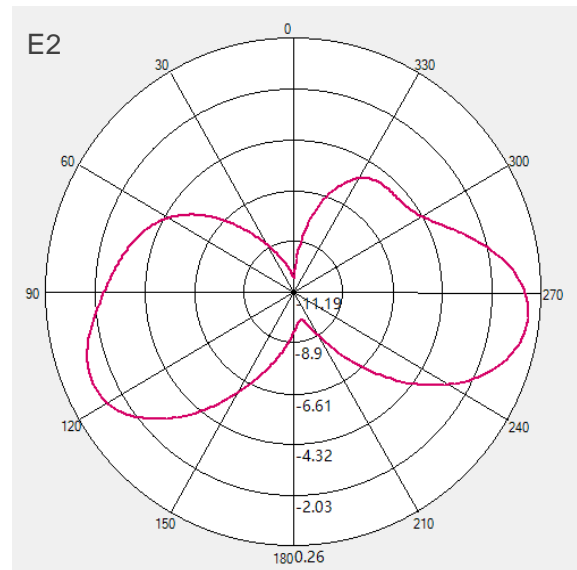
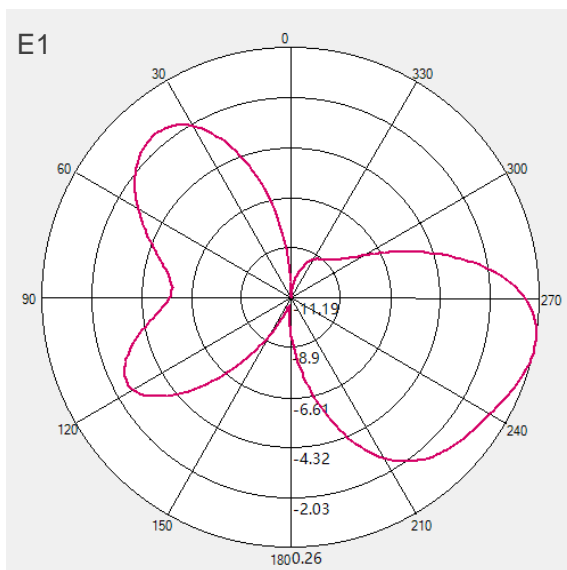
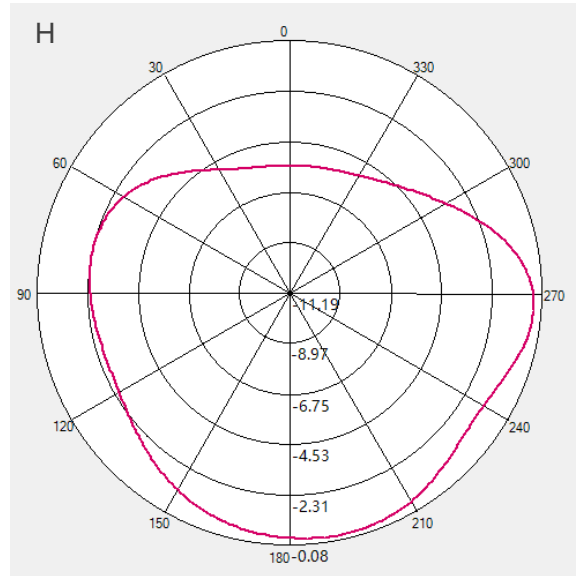
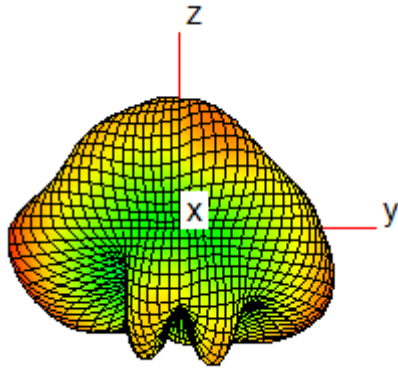
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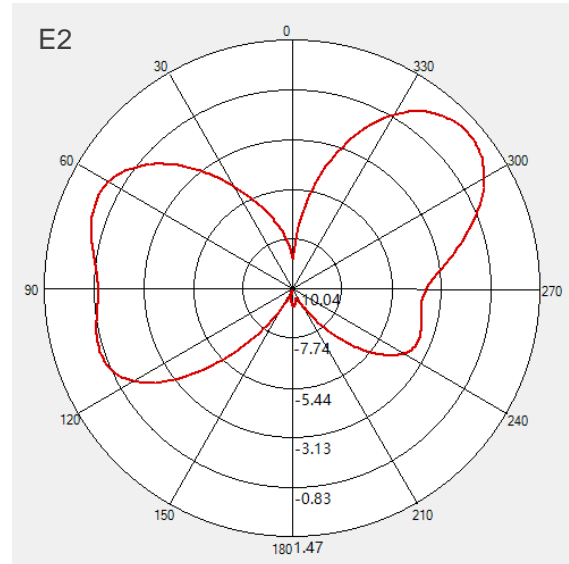
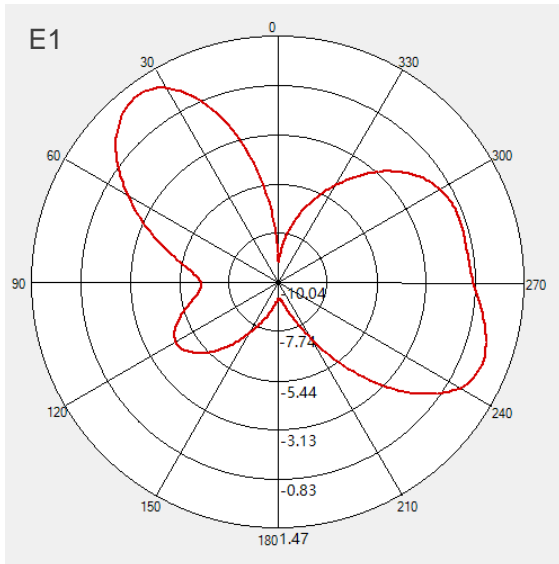
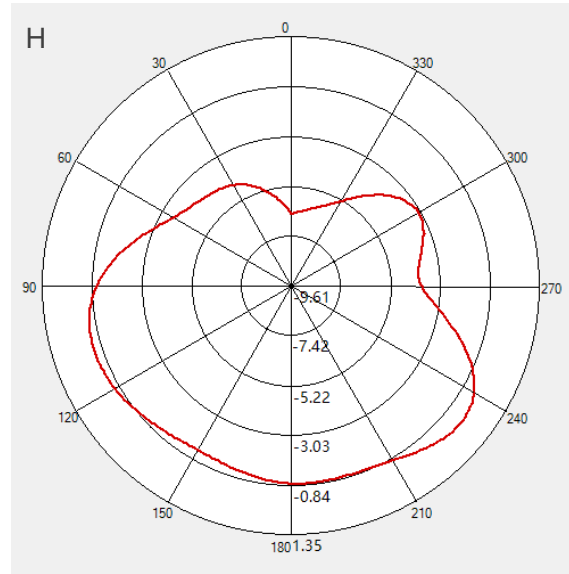
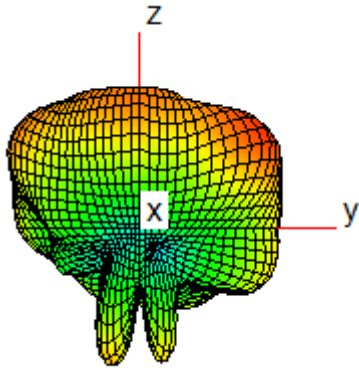
4.5.3. 1710 MHz



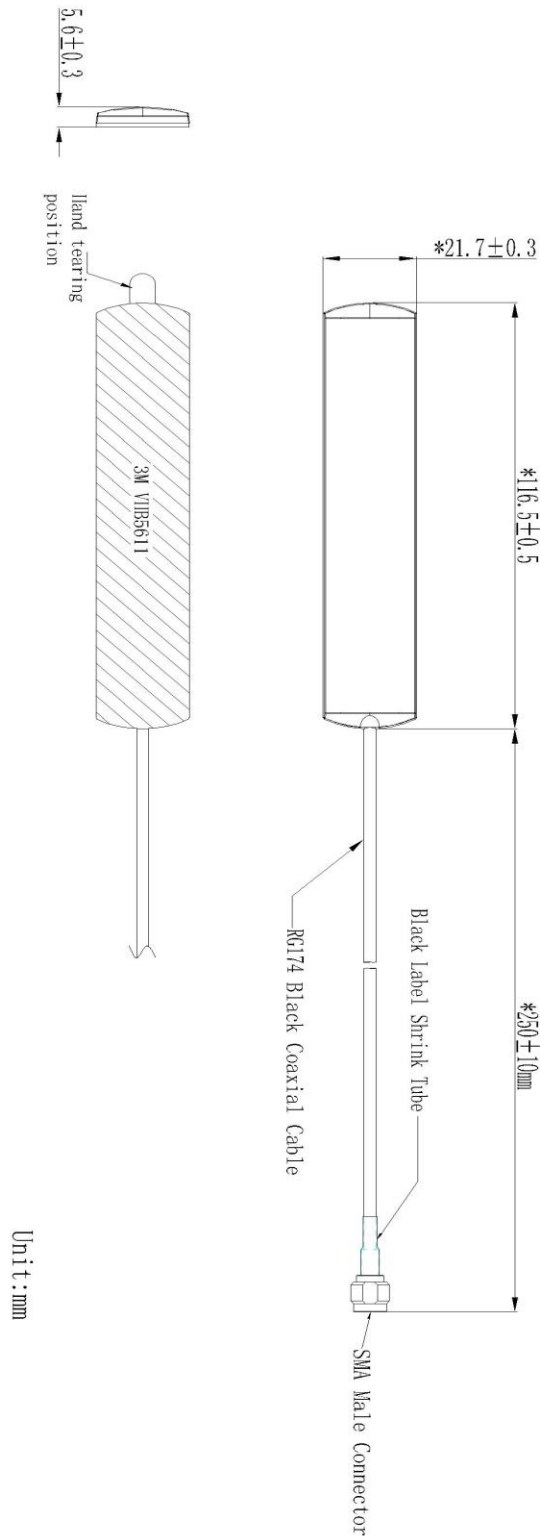
4.5.4. 2400 MHz



4.5.5. 2660 MHz



5 Product Size



RoHS

