

Antenna

YF0002AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-06-08	Kenny YIN	First official release
1.1	2020-12-16	Kenny YIN	Updated the antenna image (Chapter 2).
1.2	2021-02-20	Kenny YIN	Changed the antenna image (Chapter 2).
1.3	2021-03-12	Kenny YIN	1. Added the installation method (Chapter 3). 2. Updated the drawing (Chapter 5).
1.4	2021-07-25	Kenny YIN	Updated working temperature (Chapter 3).
1.5	2021-10-09	Vinnie LIU	Updated the drawing (Chapter 5).
1.6	2021-12-06	Vinnie LIU	Updated the product description in Chapter 1.

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1 Product Description

This Quectel embedded 5G FPC antenna covers 5G NR Sub-6 GHz frequency bands and is compatible with 4G/3G/2G/LPWA bands. Ground plane independent, it's designed to be mounted directly to the underside of either a plastic or non-metallic enclosure. Ease of integration with a cable and connector which can be customized to meet your product design and RF module. Used with other 5G antennas, it can achieve MIMO (multiple input, multiple output) antenna technology for wireless communications in which multiple antennas are used at both the source (transmitter) and the destination (receiver).

2 Product Features

- Cellular 5G MAIN
- High efficiency
- Excellent performance



3 Product Specifications

Electrical Specifications

Frequency Range	700–960 MHz, 1710–2700 MHz, 3300–5000 MHz
Input Impedence	50 Ω
VSWR	≤ 5.0
Gain	≤ 2 dBi
Polarization Type	Linear

Mechanical Specifications

Antenna Size	60.1 mm \times 12.25 mm \times 10.1 mm
Casing	PC
Operating Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Radome Color	Black
Mounting Type	M1.6 Screw

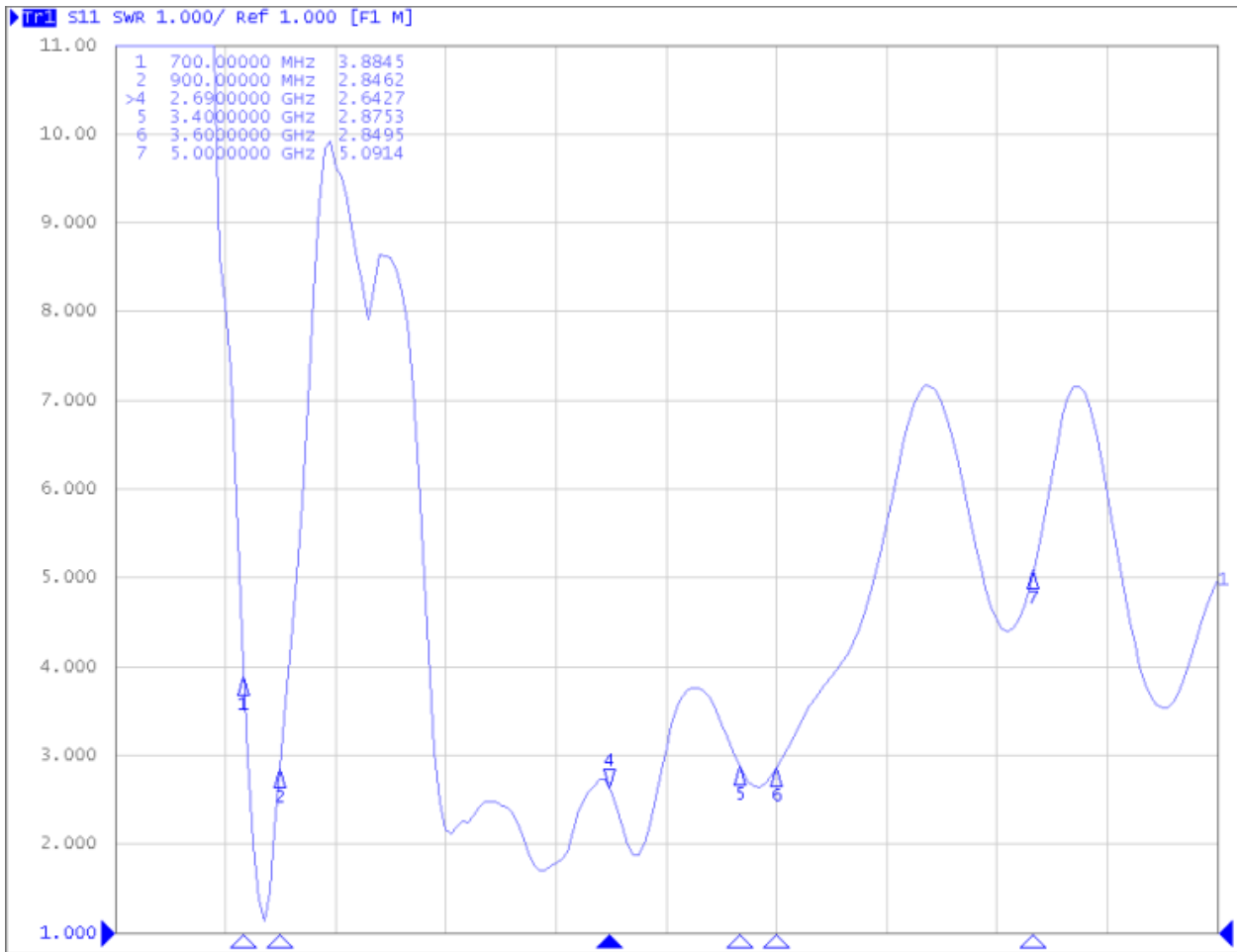
4 Overall Performance

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

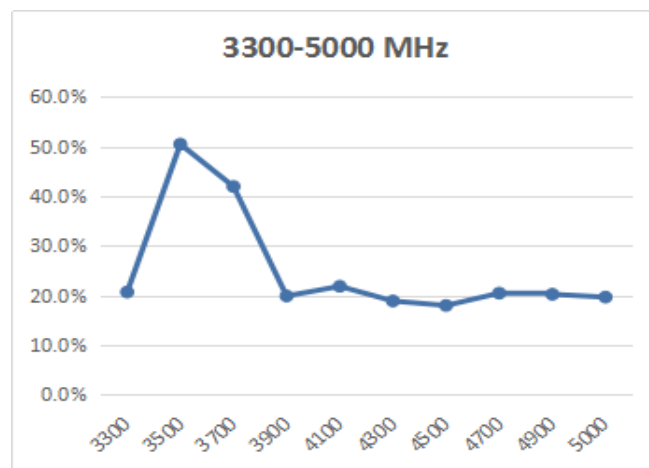
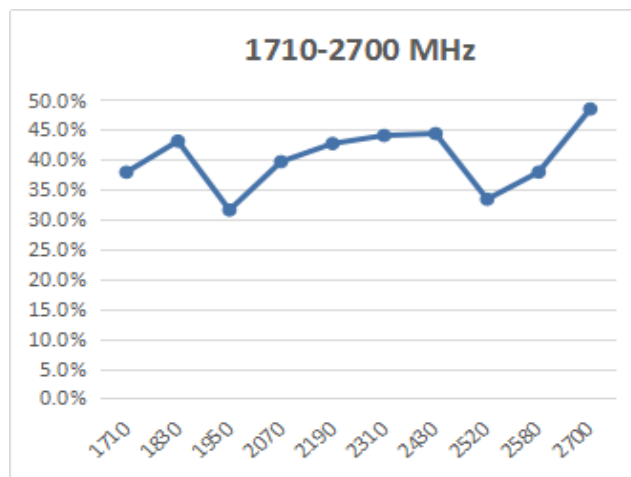
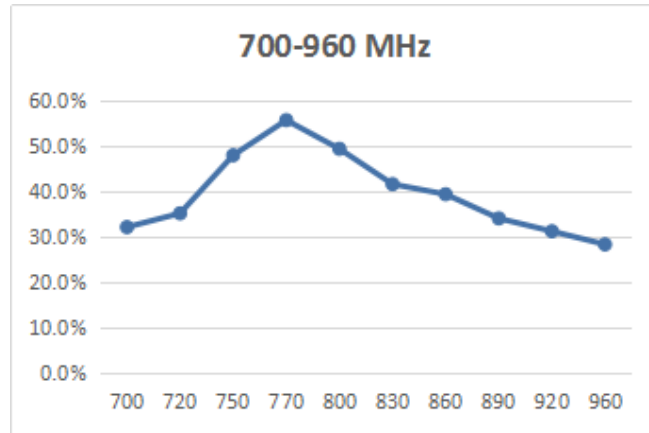


4.2. VSWR



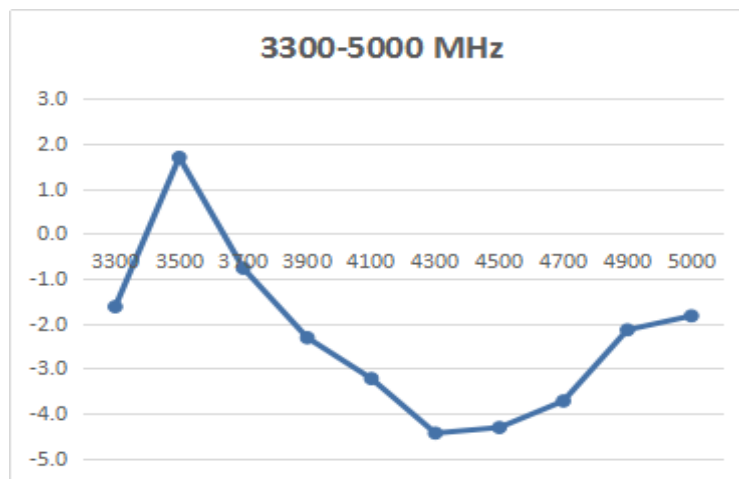
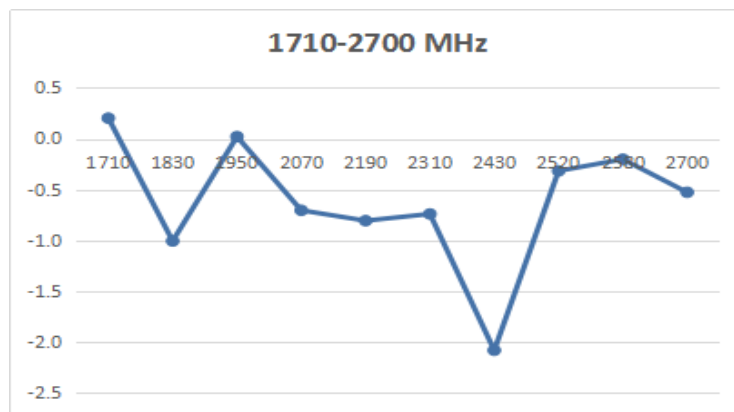
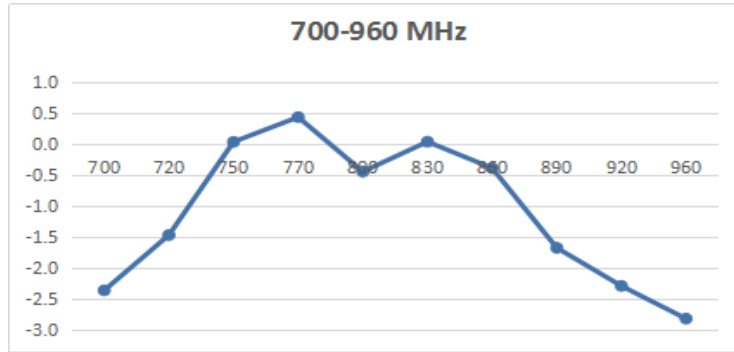
Frequency (MHz)	700	960	2690	3400	3600	5000
VSWR	3.88	2.84	2.64	2.87	2.94	5.09

4.3. Efficiency



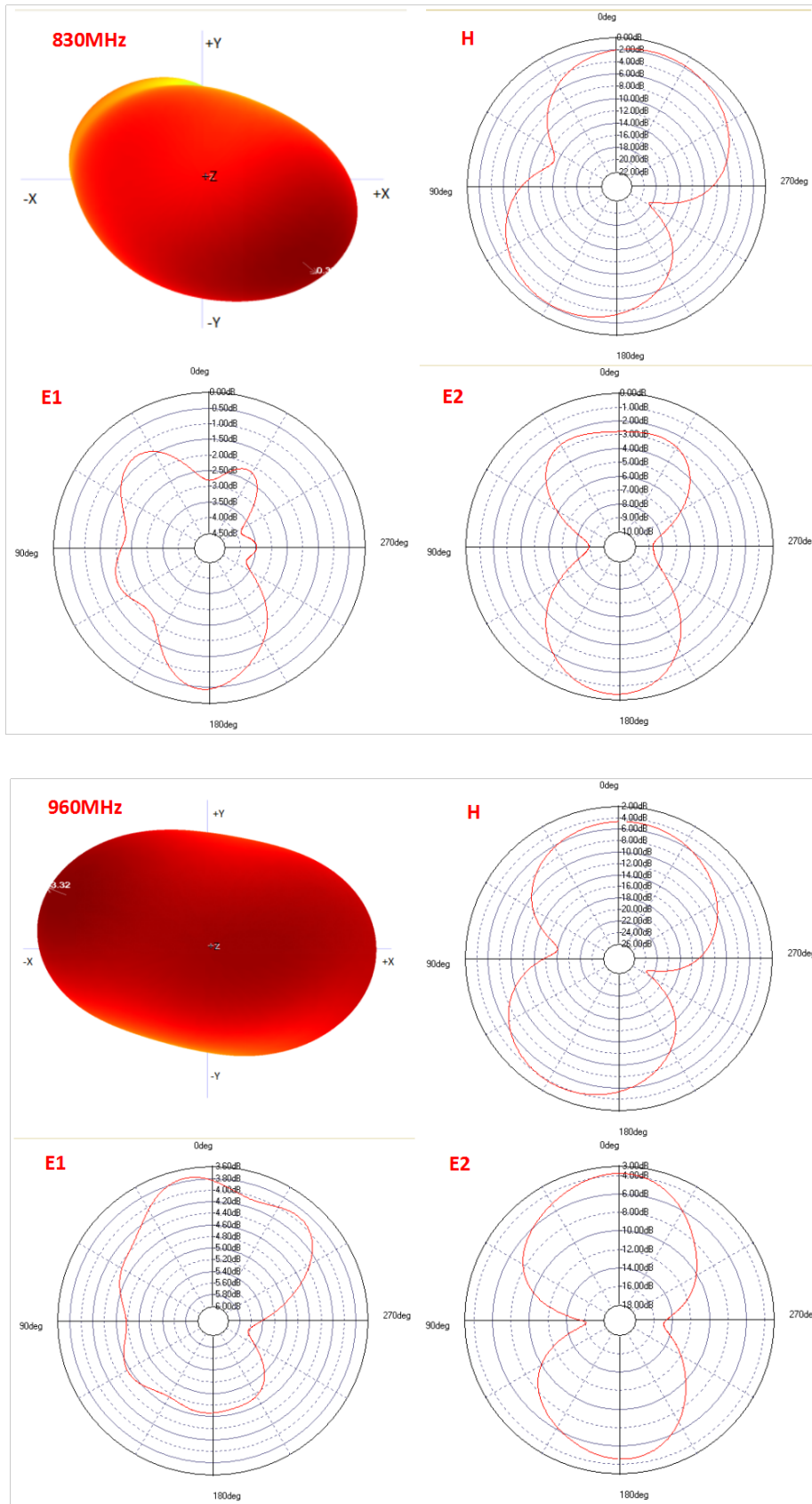
Frequency (MHz)	700	830	960	1710	2190	2700	3300	4100	5000
Efficiency (%)	32.3	41.7	28.4	37.9	42.7	48.5	20.7	21.9	19.7

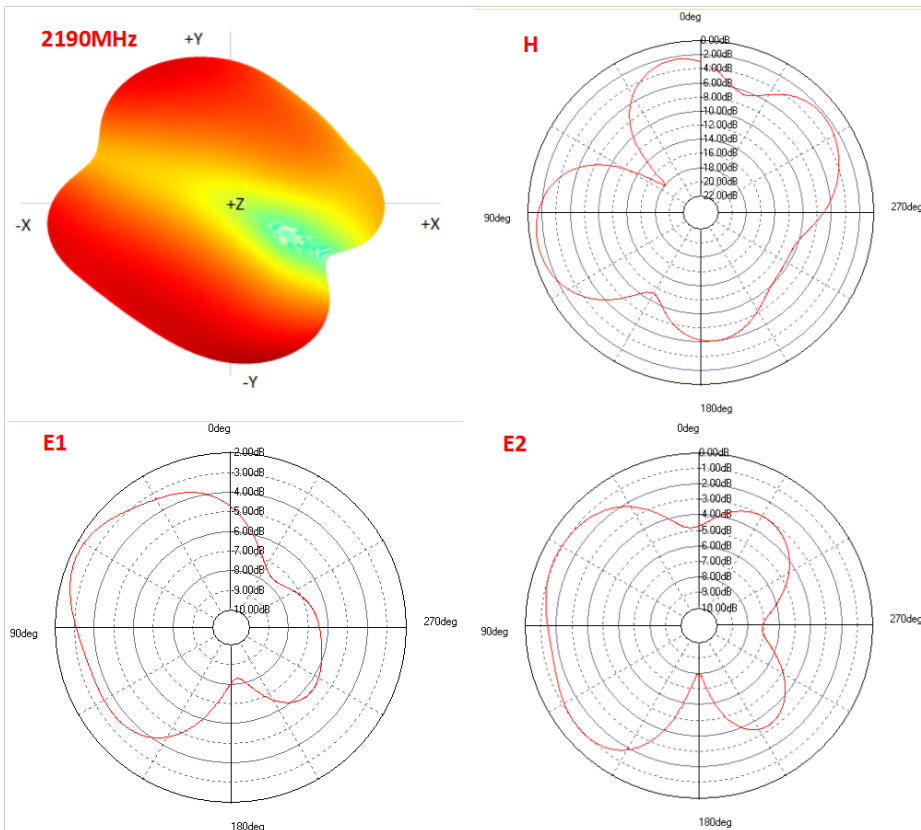
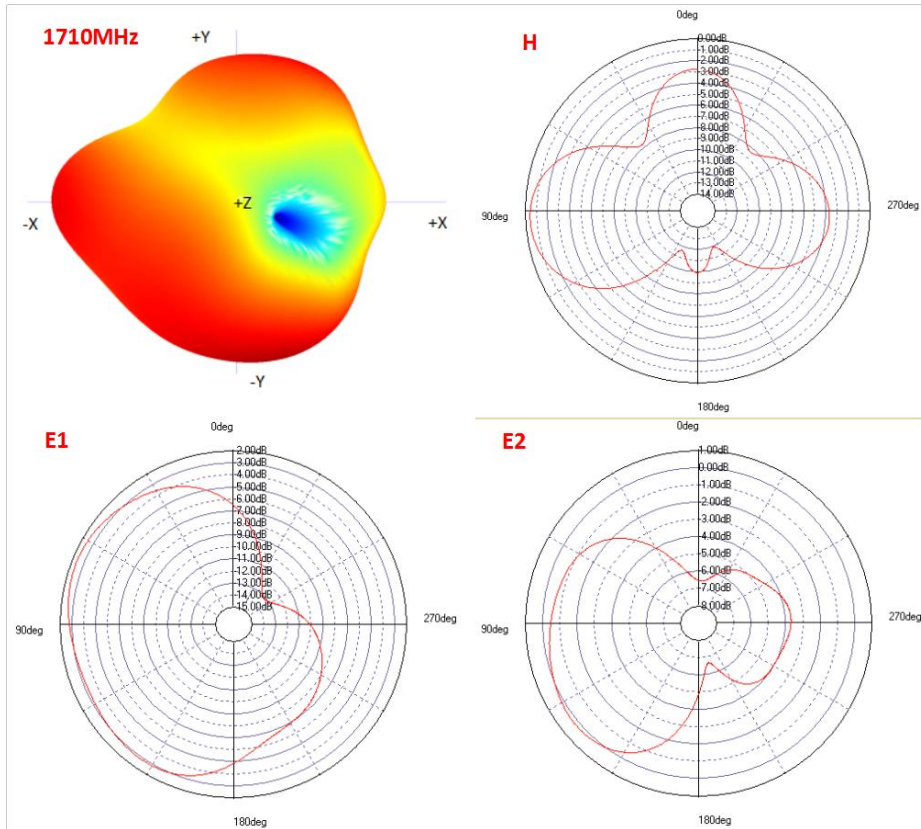
4.4. Gain

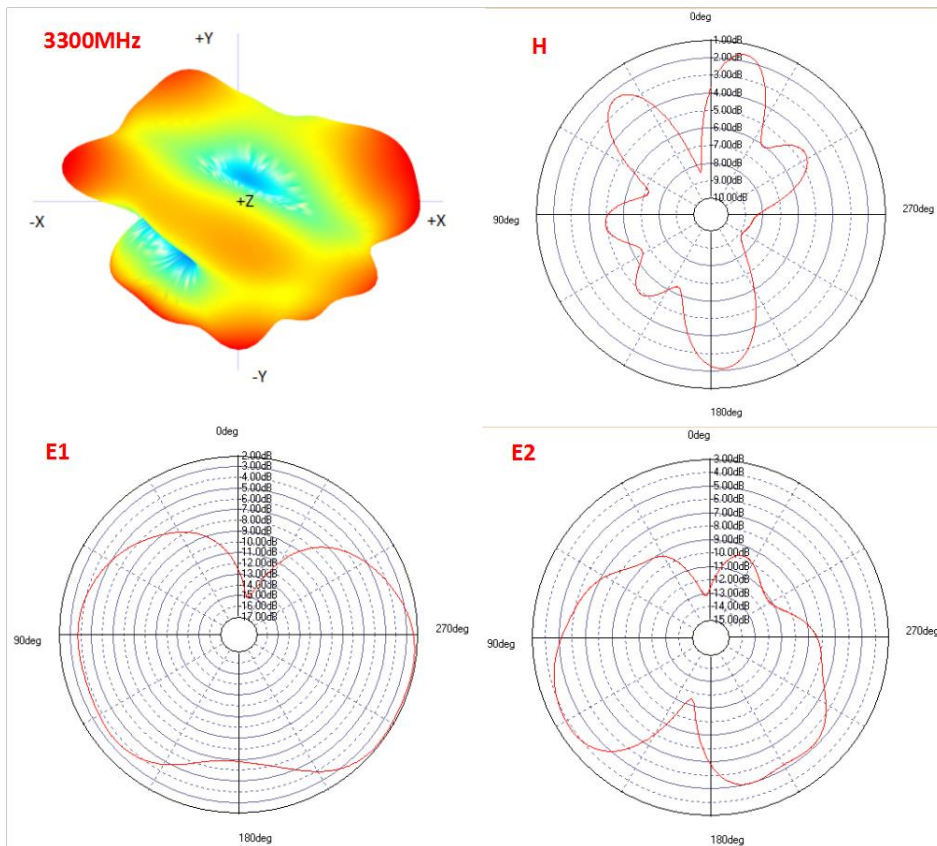
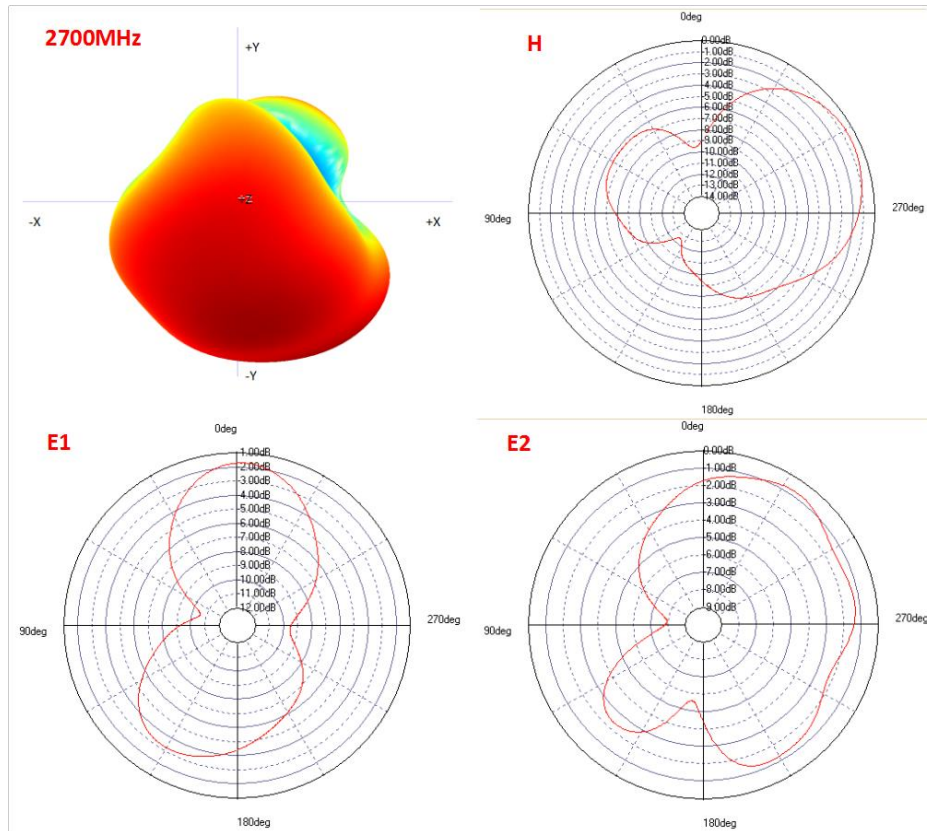


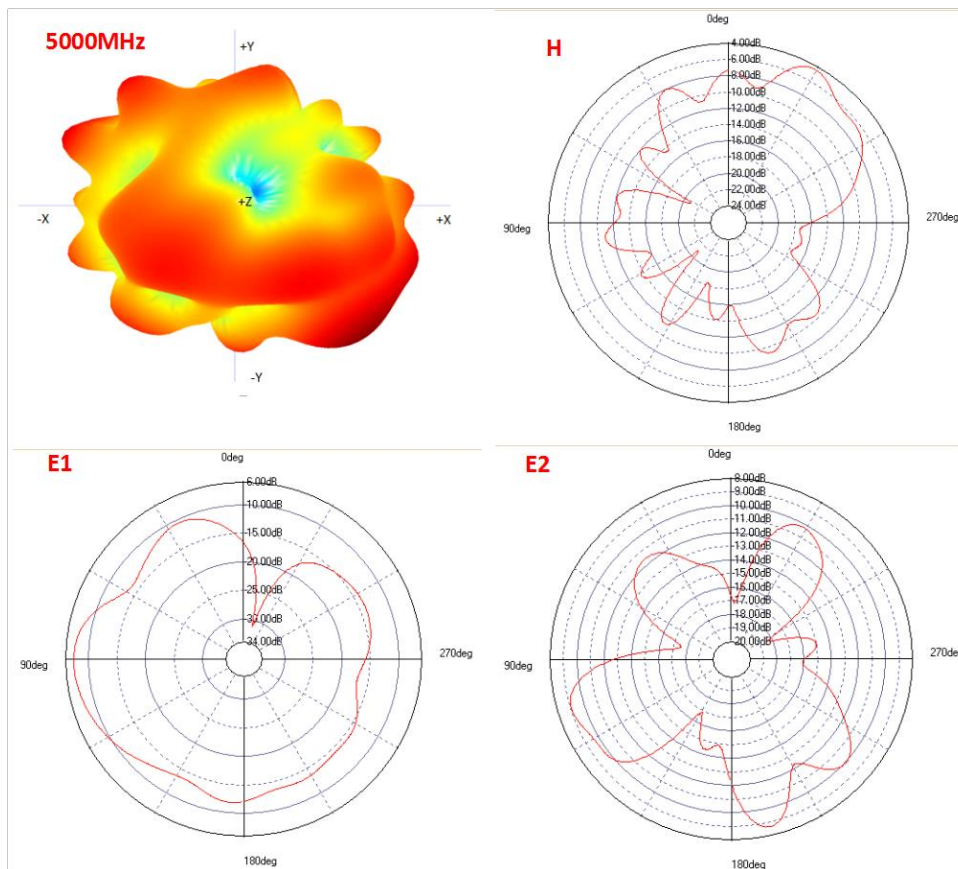
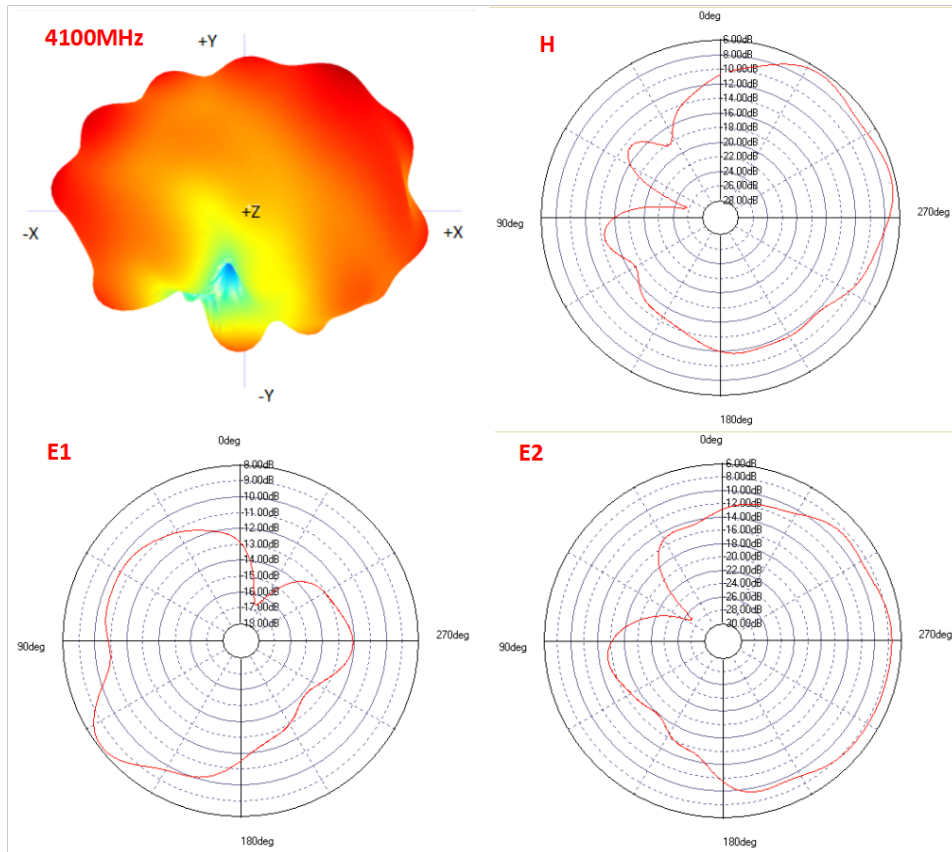
Frequency (MHz)	700	830	960	1710	2190	2700	3300	4100	5000
Gain (dB)	-2.4	0.0	-2.8	0.2	-0.8	-0.5	-1.6	-3.2	-1.8

4.5. Radiation Pattern









4.6. OTA

Band	Channel	TRP (dBm)	TIS (dBm)	Band	Fre	TRP (dBm)	TIS (dBm)
	18050	20.1			23780	17.46	
LTE 1	18300	20.71		LTE 17	23790	18.12	
	18550	20.27	-98.58		23800	17.33	-87.37
	19250	19.66			24200	20.74	
LTE 3	19575	20.18		LTE 20	24300	20.62	
	19900	19.39	-97.48		24400	19.82	-88.41
	20450	20.76			37850	20.16	
LTE 5	20525	19.65		LTE 38	37800	19.75	
	20600	18.49	-88.26		38150	19.24	-93.12
	20800	21			38350	19.56	
LTE 7	21100	20.74		LTE 39	38450	19.26	
	21400	20.02	-96.03		38550	19.38	-95
		17.91			38750	20.05	
LTE 8	21500	17.44		LTE 40	39150	20.23	
	21625	17.24	-88.99		38550	18.59	-94.15
	21750						
					40240	20.07	
				LTE 41	40640	20.64	
					41140	19.97	-92.83

5 Product Size

RoHS

