Antenna

YE0007AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
1.0	2020-06-01	Kenny YIN	Initial
2.0	2020-06-02	Kenny YIN	Updated the specifications.
3.0	2020-06-10	Kenny YIN	Updated the specifications.
3.1	2020-12-11	Kenny YIN	Updated the antenna image in Chapter 2.
3.2	2021-01-27	Kenny YIN	Added IP rating description.
3.3	2021-07-25	Kenny YIN	1. Updated working temperature. (Chapter 3) 2. Added detailed passive electrical specifications. (Chapter 3)
3.4	2021-11-30	Kenny YIN	Updated the product description in Chapter 1.
3.5	2022-10-17	Aria CHU	Deleted the IP rating.

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1 Product Description

This Quectel external 5G antenna covers 5G NR Sub-6 GHz frequency bands and is compatible with 4G/3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal omni-directional antenna solution to ensure high-speed data transmission, which can be widely used in a diversity of wireless communication devices such as AP, routers, outdoor equipment, real-time monitoring equipment, and many more. The antenna is designed to work with any ground plane size or in free space for ease of integration. Quectel also offers flexible installation with custom cable length and connector options.

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

- Cellular 5G & LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications	
Frequency Range	600–6000 MHz
Input Impendence	50 Ω
VSWR	≤ 3.5
Gain	≤ 6.0 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.)	3.5	-	-	2.9	2.8	3.0	2.9	2.7
Average Efficiency (%)	38	-	-	42	50	39	41	52
Max. Peak Gain (dBi)	3.0	-	-	4.1	3.2	3.9	5.2	5.5

Mechanical Specifications	
Antenna Size	152.4 mm × 21.79 mm × 14.49 mm
Casing	ABS
Connector Type	SMA Male (Center Pin)
Working Temperature	-40 °C to +85 °C
Radome Color	Black

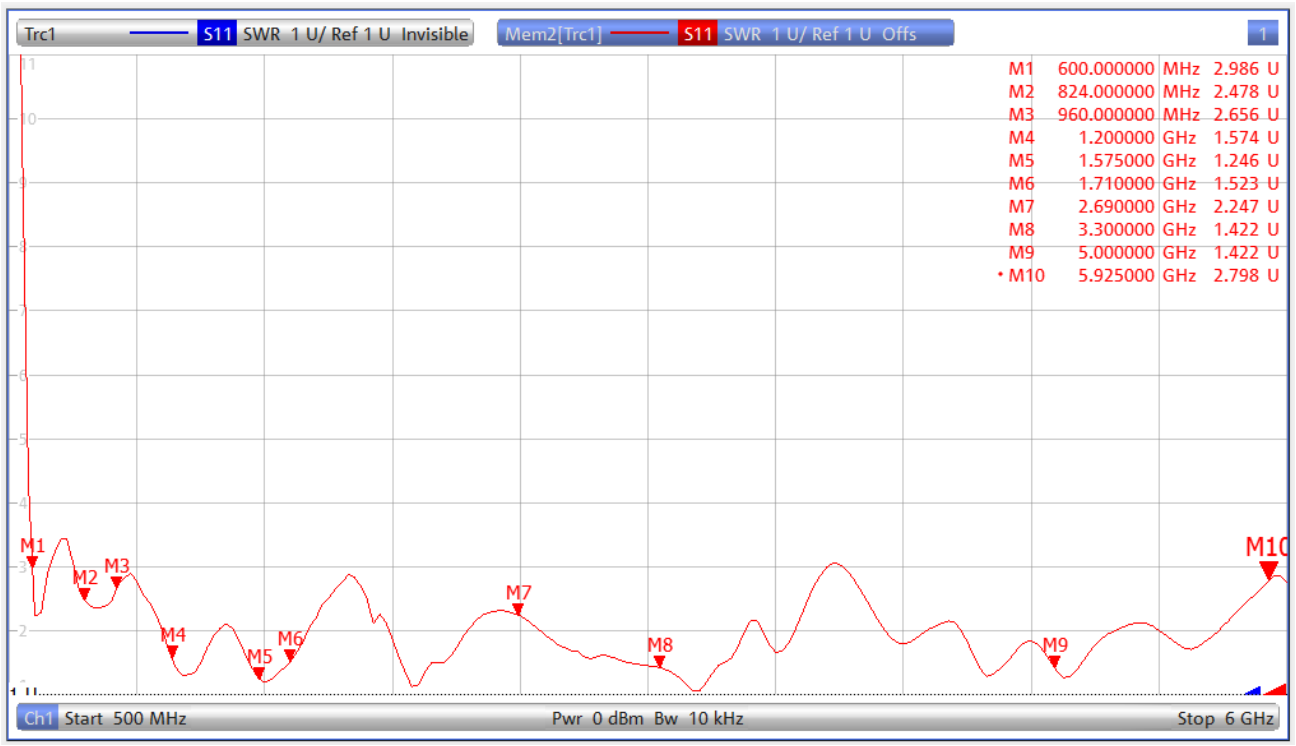
4 Overall Performance

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.

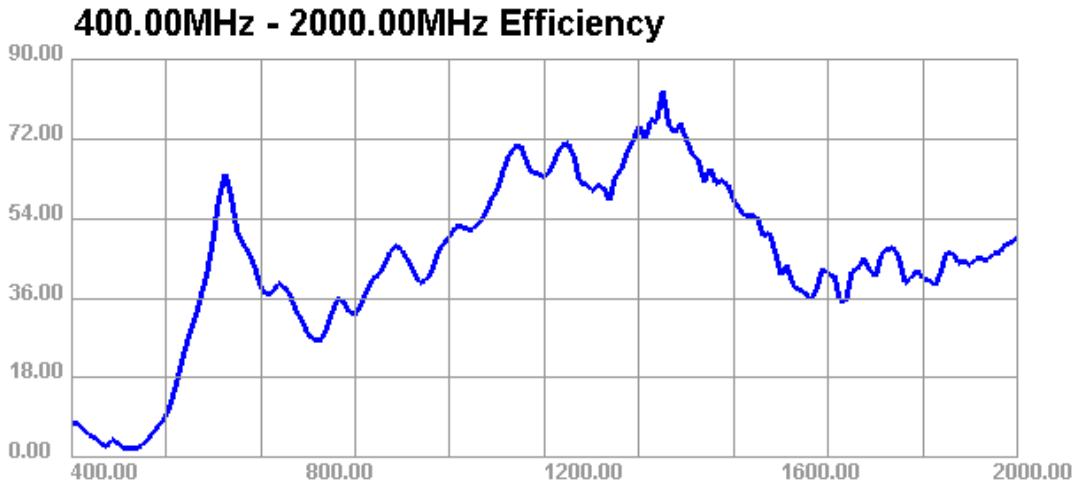


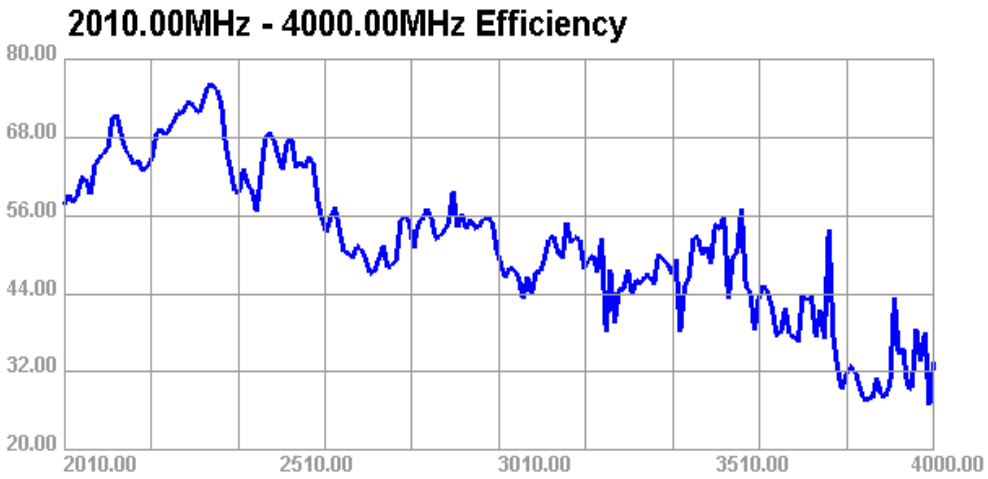
4.2. VSWR

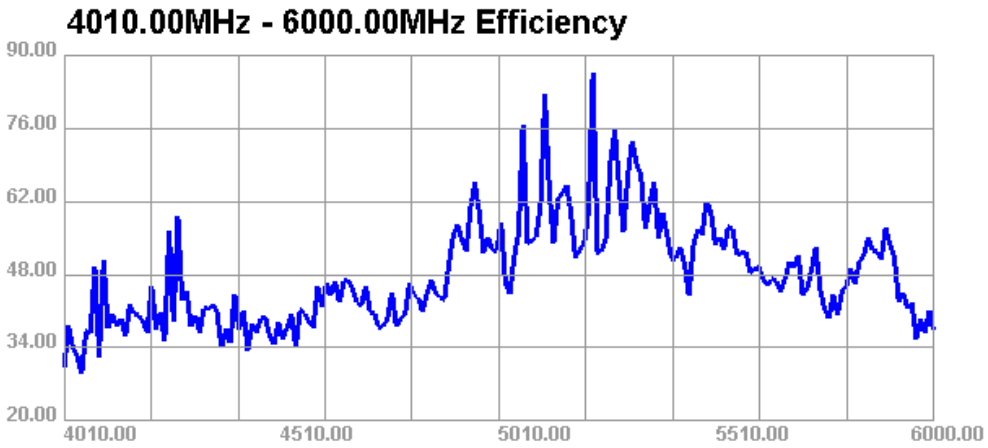


Frequency (MHz)	600	824	960	1200	1575	1710	2690	3300	5000	5925
VSWR	2.98	2.47	2.65	1.57	1.24	1.52	2.24	1.42	1.42	2.78

4.3. Efficiency

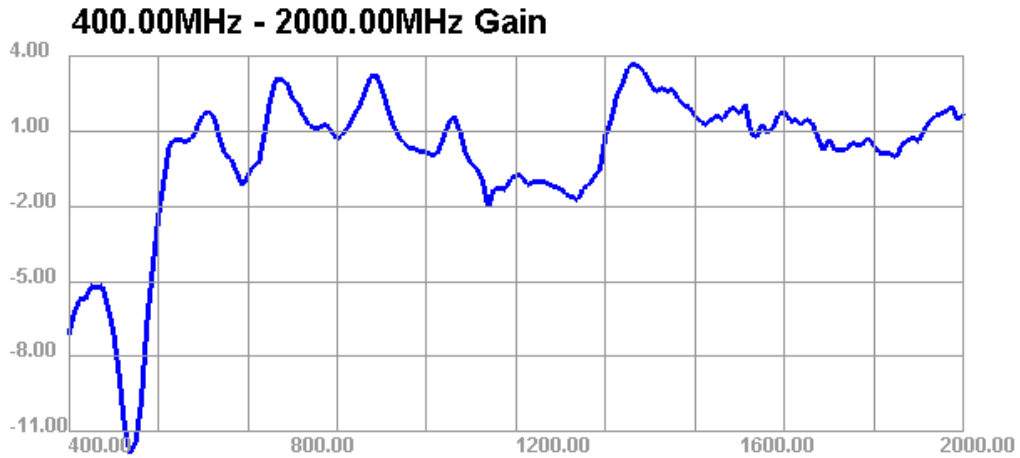


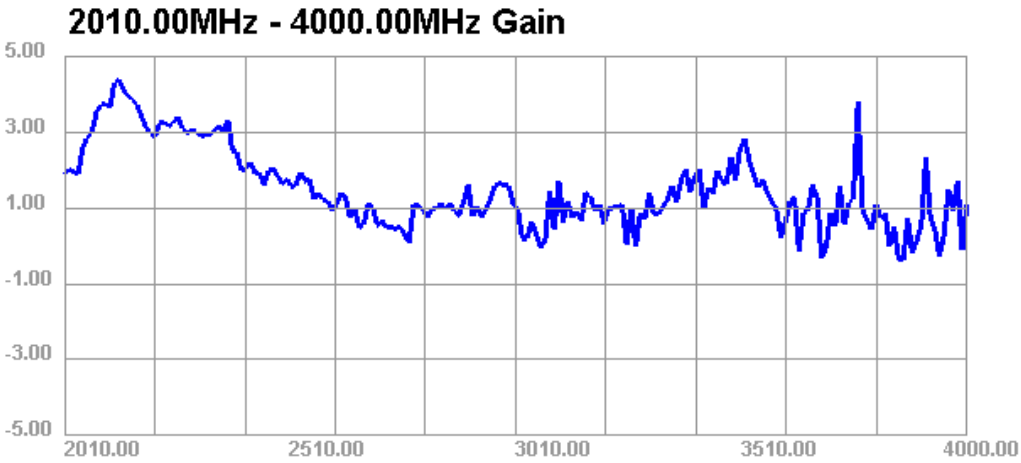




Frequency (MHz)	600	824	960	1200	1575	1710	2690	3300	5000	5925
Efficiency (%)	49.9	42.8	62.9	36.2	75.4	45	50.8	47.6	52.6	44.4

4.4. Gain

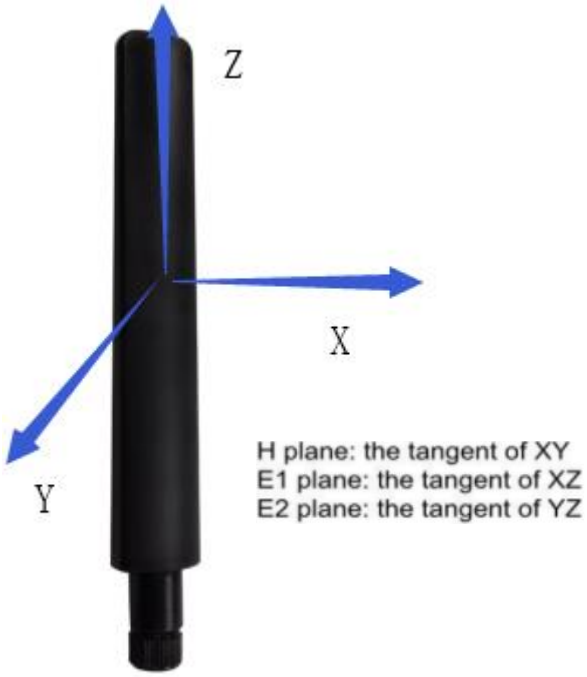


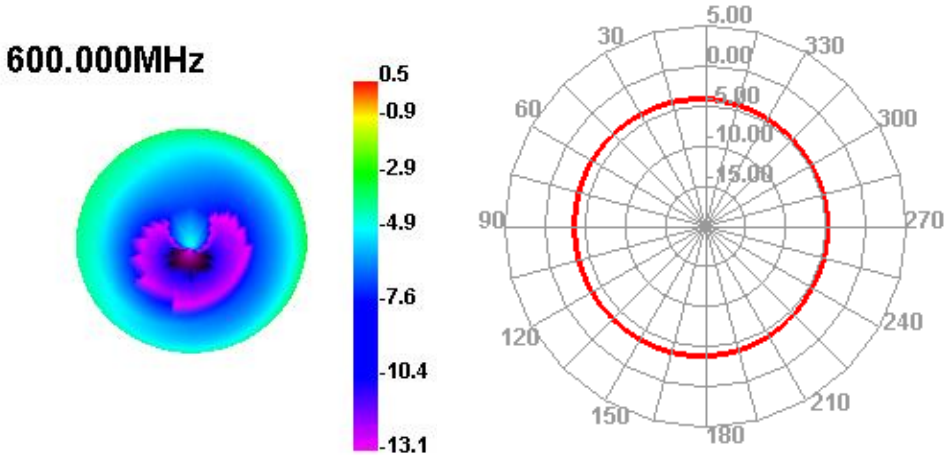




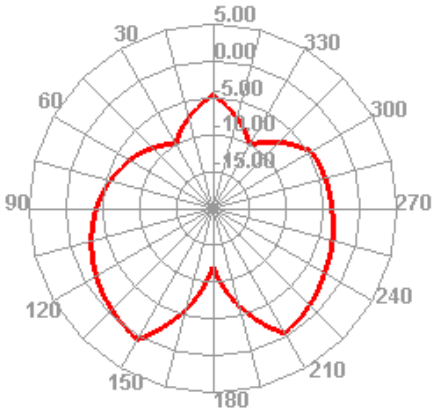
Frequency (MHz)	600	824	960	1200	1575	1710	2690	3300	5000	5925
Gain (dBi)	0.63	1.58	2.65	-0.75	1.87	1.25	0.99	1.44	1.88	3.02

4.5. Radiation Pattern

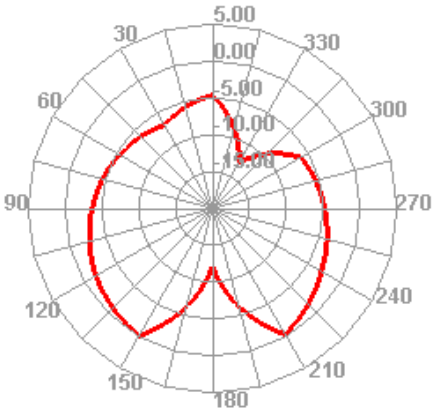




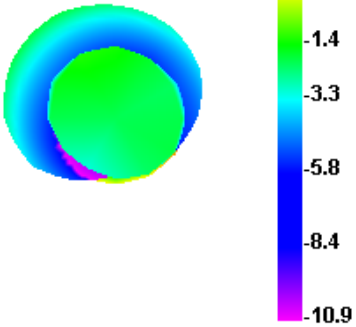
600.000MHz E1



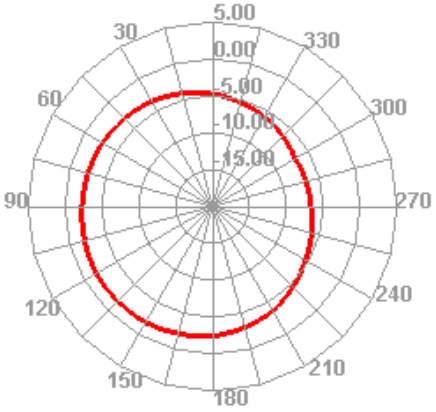
600.000MHz E2



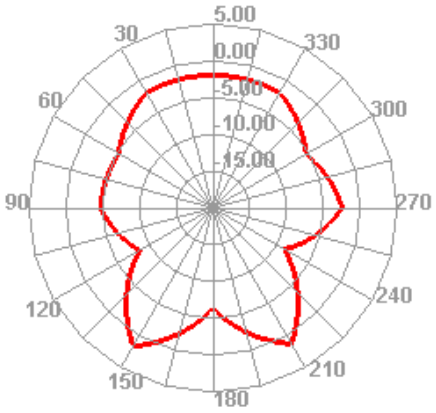
840.000MHz



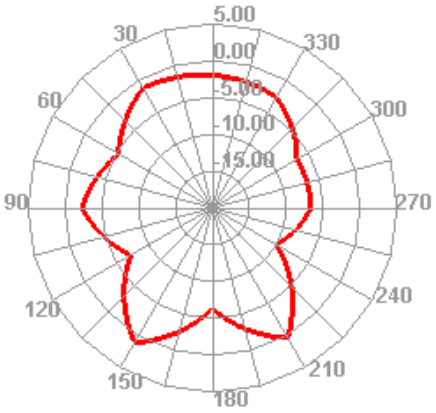
840.000MHz H



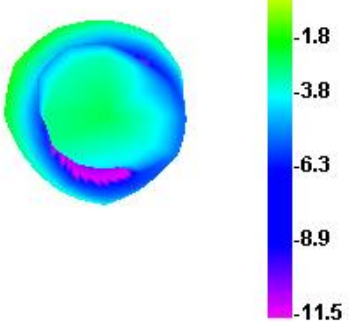
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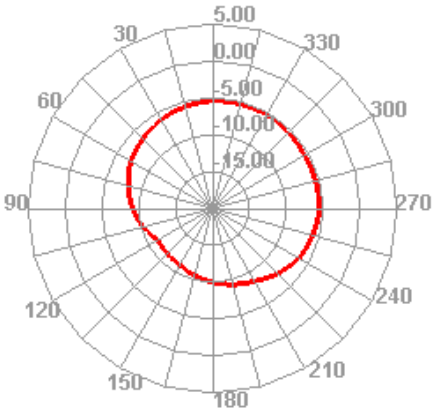
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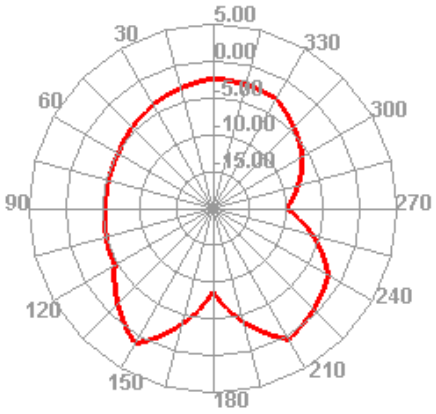
960.000MHz



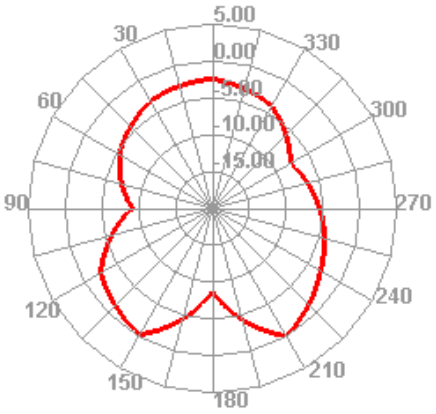
960.000MHz H



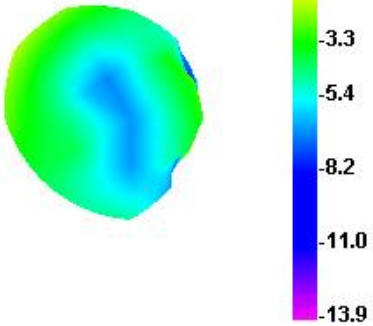
960.000MHz E1



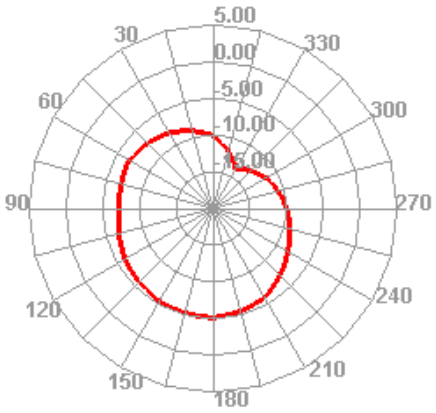
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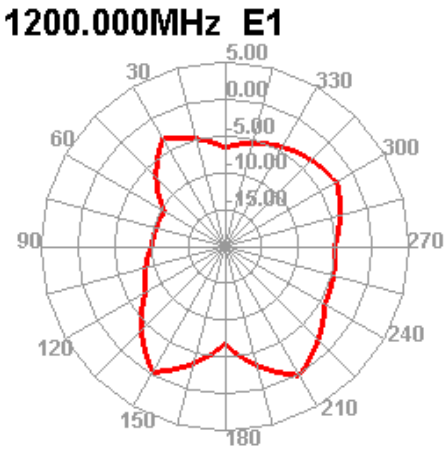


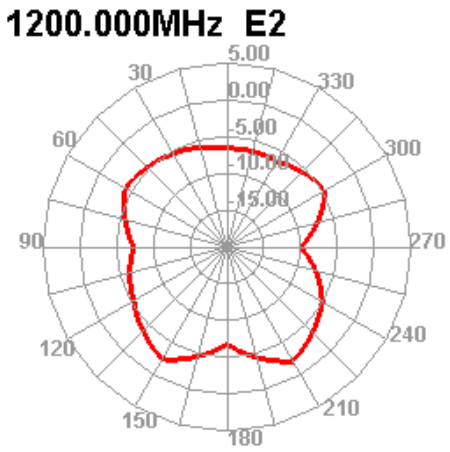
1200.000MHz

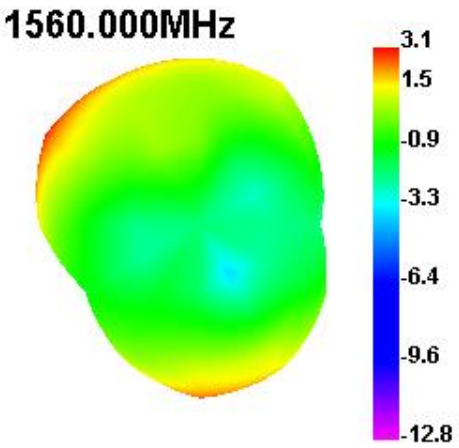


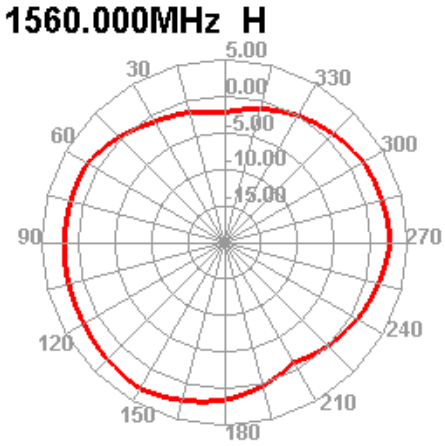
1200.000MHz H

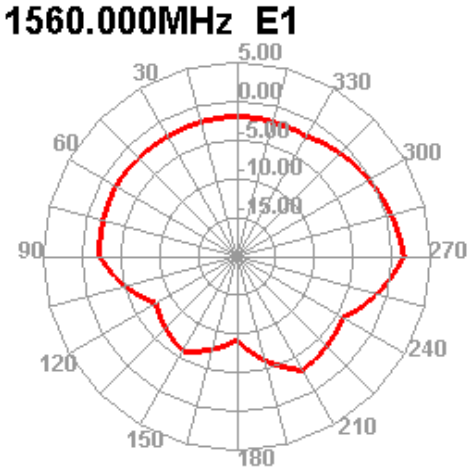


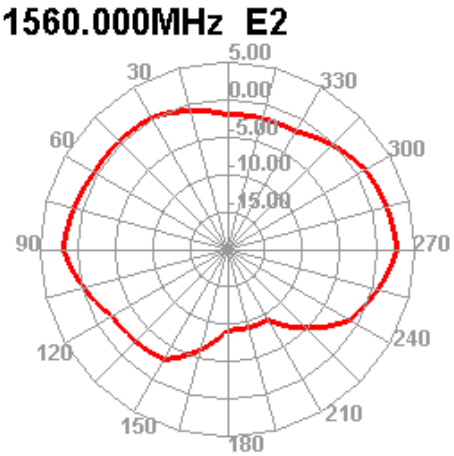

1200.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

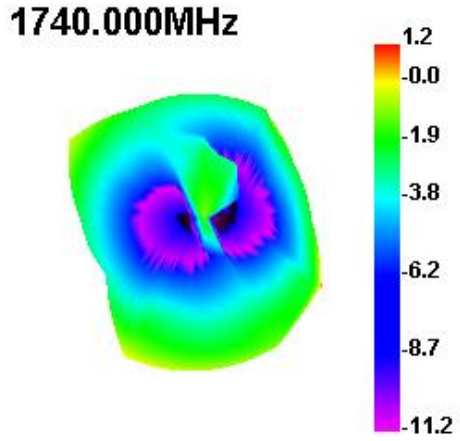

1200.000MHz E2
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-10.00
-15.00
30
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60
300
90
270
120
240
150
210
180

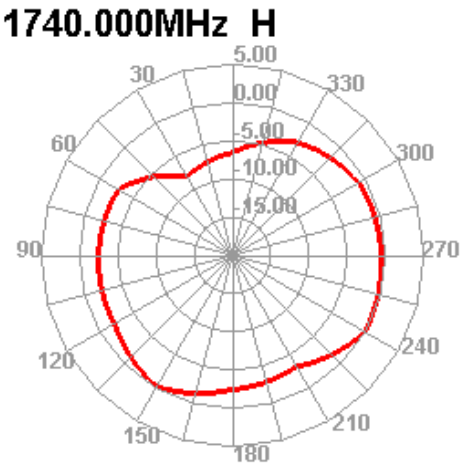

1560.000MHz
3.1
1.5
-0.9
-3.3
-6.4
-9.6
-12.8

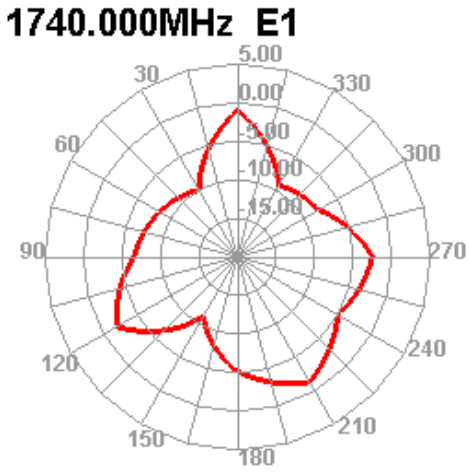

1560.000MHz H
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

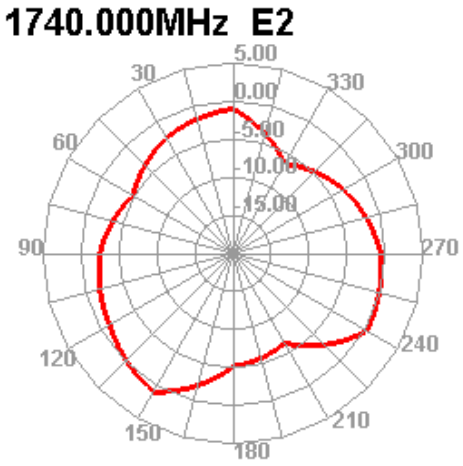

1560.000MHz E1
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0.00
-5.00
-10.00
-15.00
30
330
60
300
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240
150
210
180

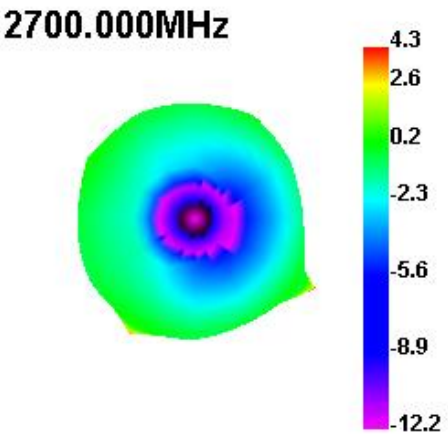

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-15.00
30
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60
300
90
270
120
240
150
210
180

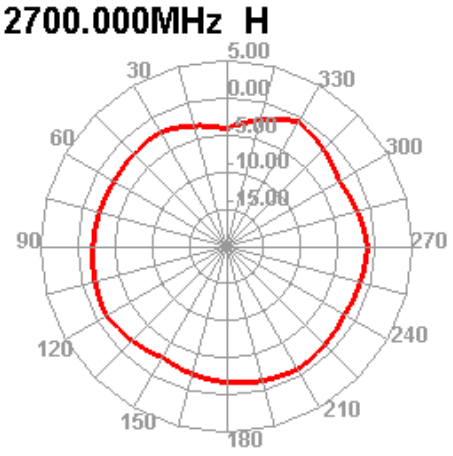

1740.000MHz
1.2
-0.0
-1.9
-3.8
-6.2
-8.7
-11.2


1740.000MHz H
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-15.00
30
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90
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120
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210
180

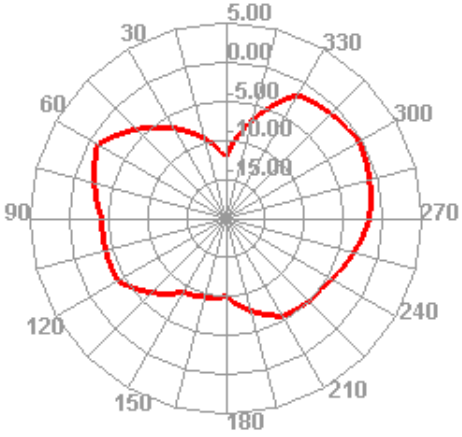

1740.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


1740.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
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150
210
180

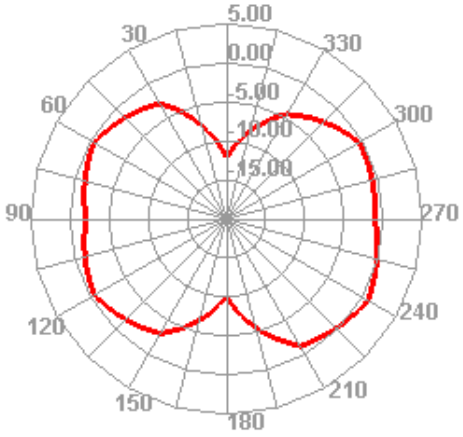

2700.000MHz
4.3
2.6
0.2
-2.3
-5.6
-8.9
-12.2


2700.000MHz H
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30
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210
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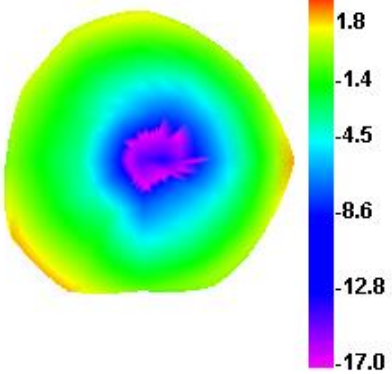
2700.000MHz E1



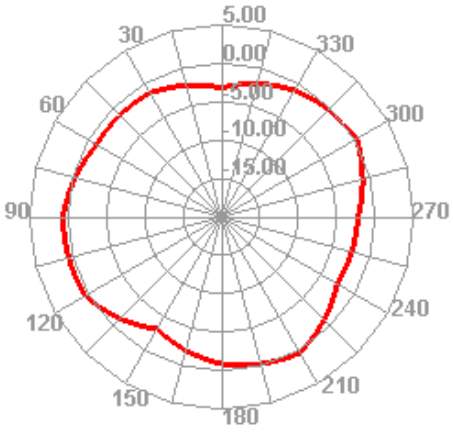
2700.000MHz E2



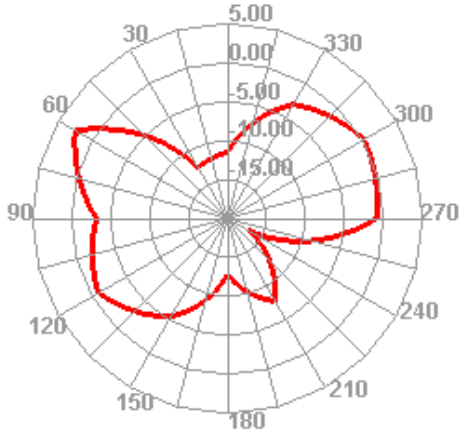
3300.000MHz



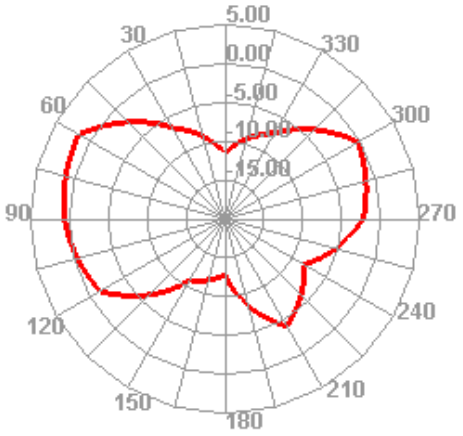
3300.000MHz H

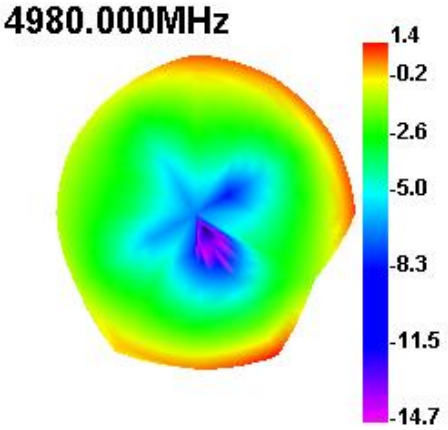


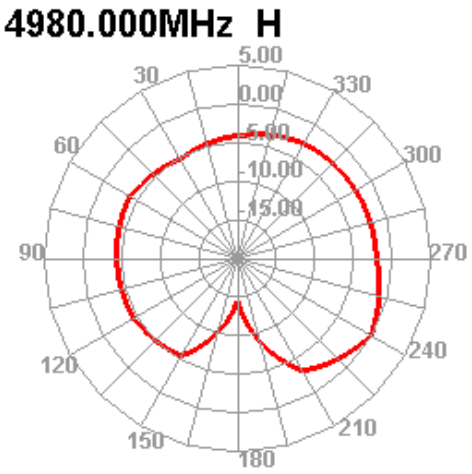
3300.000MHz E1

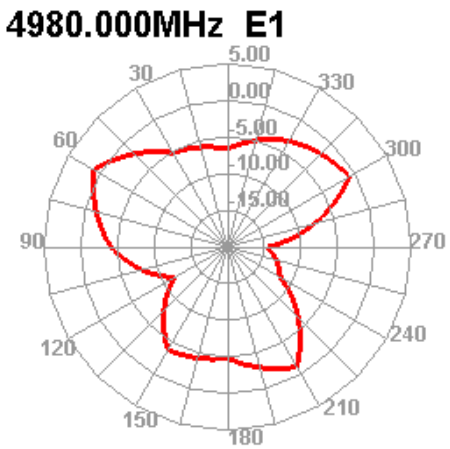


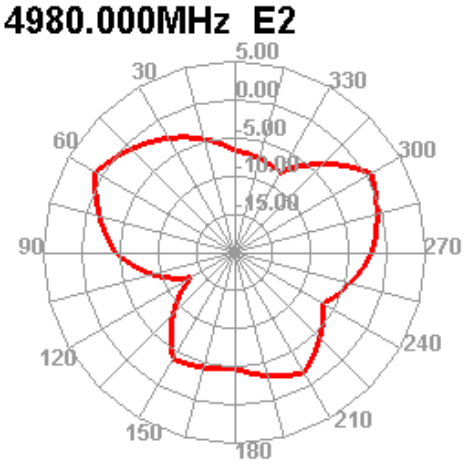
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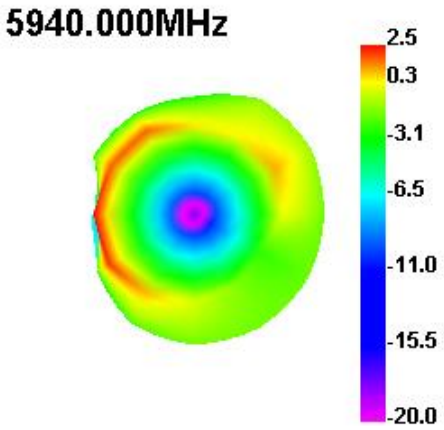


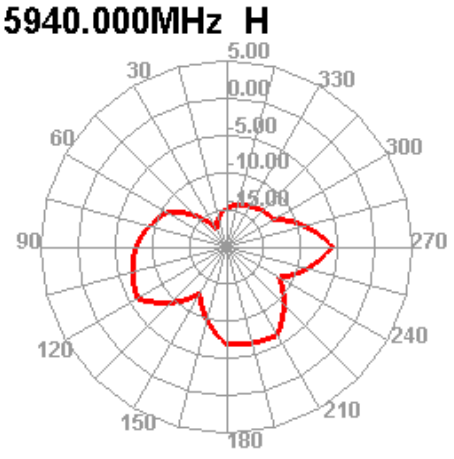

4980.000MHz
1.4
-0.2
-2.6
-5.0
-8.3
-11.5
-14.7

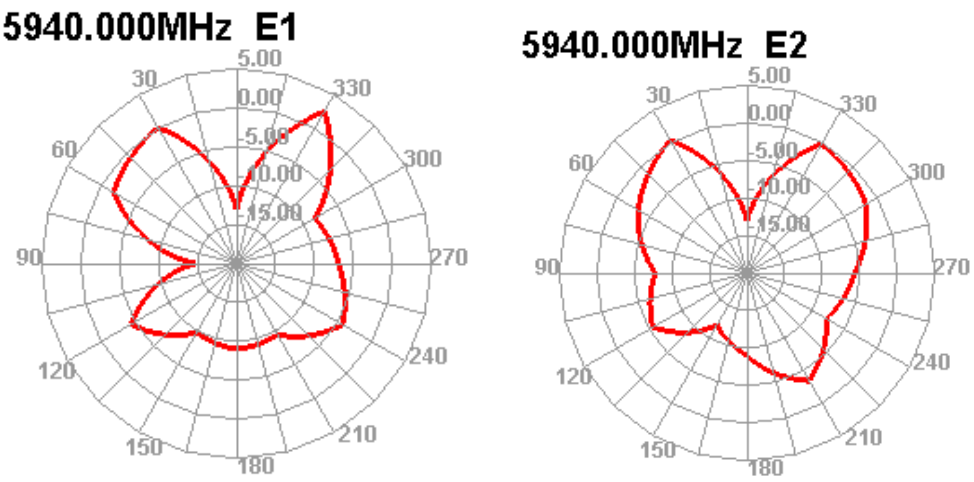

4980.000MHz H
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


4980.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


4980.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


5940.000MHz
2.5
0.3
-3.1
-6.5
-11.0
-15.5
-20.0


5940.000MHz H
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


5940.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180
5940.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

5 Product Size

ROHS

