Antenna

YF0028JA Datasheet

Antenna Services

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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

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About the Document

Revision History

Version	Date	Author	Note
-	2023-01-09	Toby WANG/ Edison LIU/ Aria CHU	Creation of the document
1.0	2023-01-09	Toby WANG/ Edison LIU/ Aria CHU	First official release

Contents

1 Product Description

This Quectel embedded 4G FPC/PCB antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal antenna for a smooth and stable connection with high-efficiency data transmission even under the influence of the device's internal structure. 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.

2 Product Features

- Cellular LTE
- High efficiency
- Excellent performance

3 Product Specifications

- Stick on 3mm ABS board

Passive Electrical Specifications	
Frequency Range	700–960 MHz;1710-2690MHz
Input Impedance	50 Ω
VSWR	≤ 4.17
Gain	≤ 4.99 dBi
Polarization Type	Linear

Detailed Passive Electrical Specifications								
Frequency Range (MHz)	**700–960**	**1176–1280**	**1400–1610**	**1710–2170**	**2170–2690**	**3300–4000**	**4000–5000**	**5000–6000**
VSWR (Max.)	4.17	-	-	2.14	1.52	-	-	-
Average Efficiency (%)	24	-	-	72	81	-	-	-
Max. Peak Gain (dBi)	-0.82	-	-	3.58	4.99	-	-	-

Mechanical Specifications	
Antenna Size	94.00 × 21.00mm
Material	FPC
Cable Type	Φ1.37 Black
Connector Type	IPEX MHF I
Color	Black
Weight	Typical 0.99g
Installation Mode	Adhesive
Working Temperature	-40 °C to +85 °C

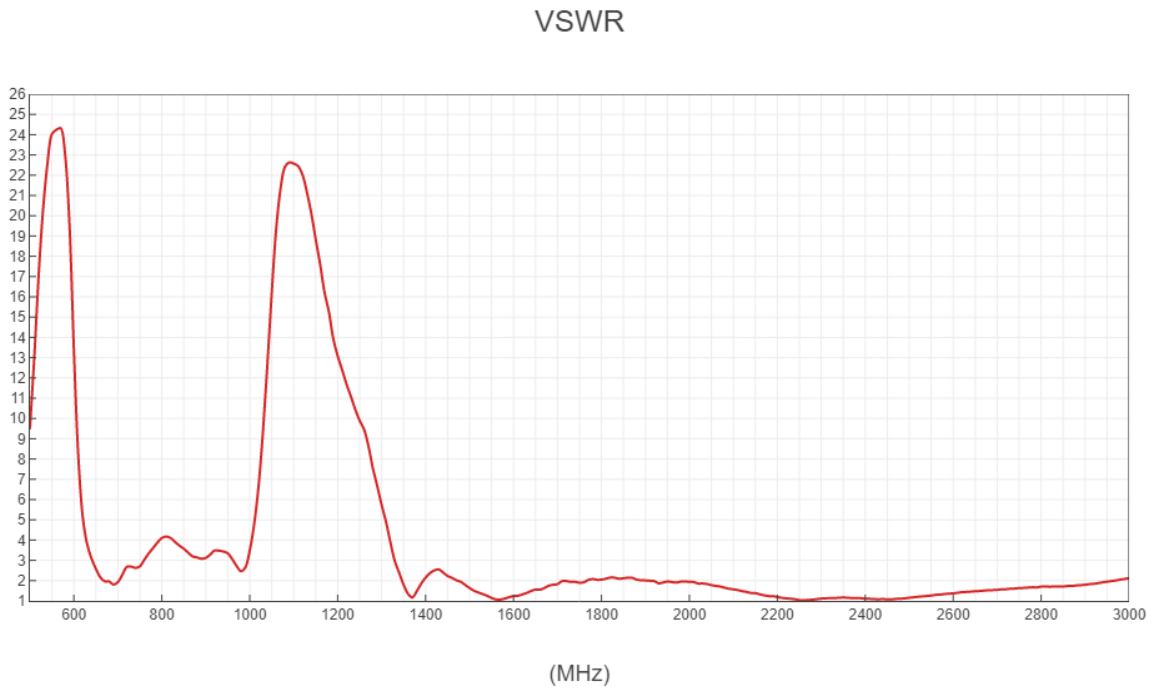
4 Overall Performance

4.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz

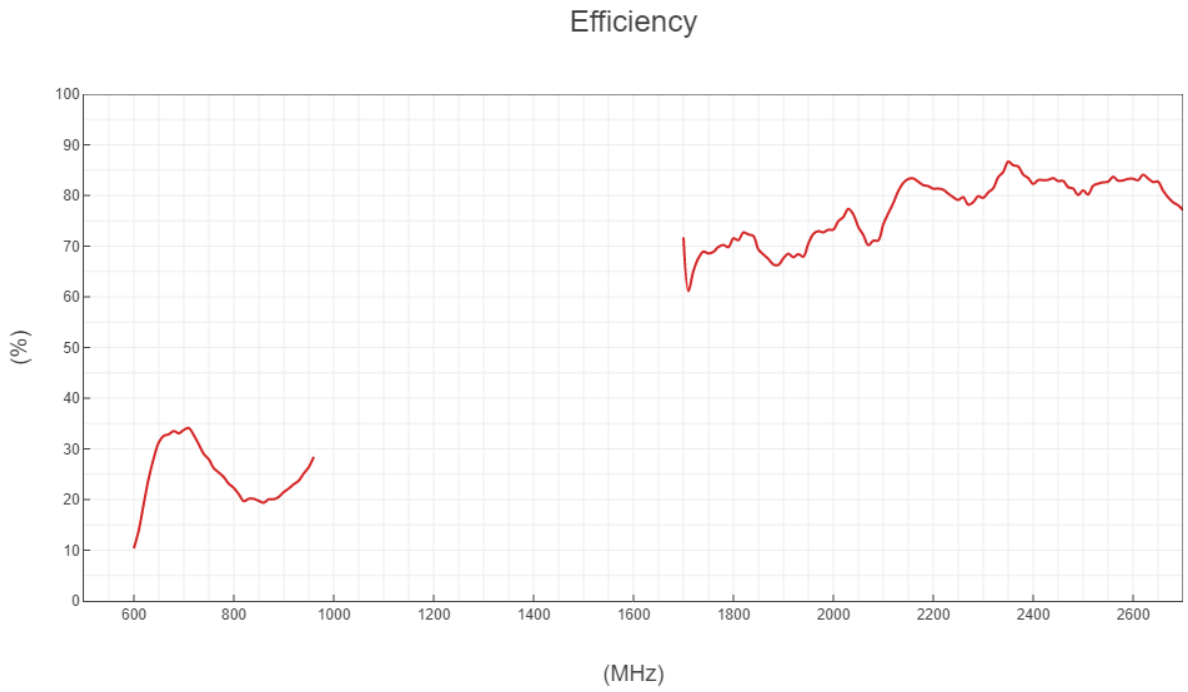
Other description:

4.2. VSWR



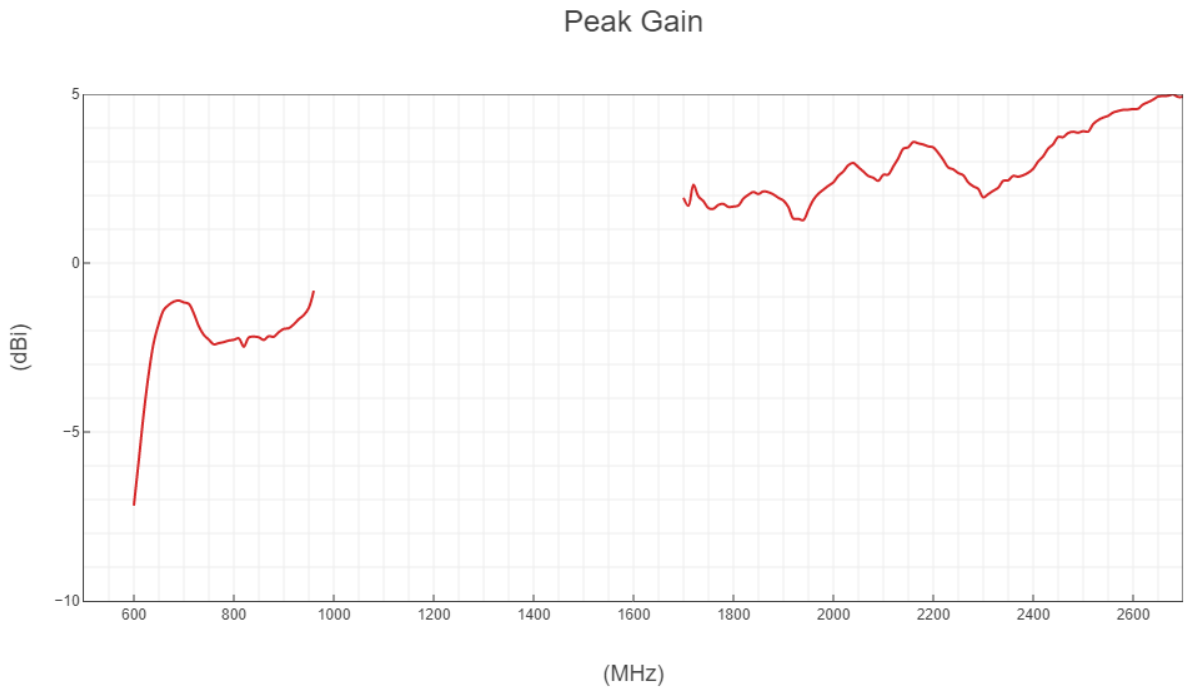
Frequency (MHz)	700	820	960	1710	2170	2690
VSWR	1.92	4.10	3.07	1.97	1.28	1.53

4.3. Efficiency



Frequency (MHz)	700	820	960	1710	2170	2690
Efficiency (%)	33.74	19.67	28.43	61.11	82.71	78.07

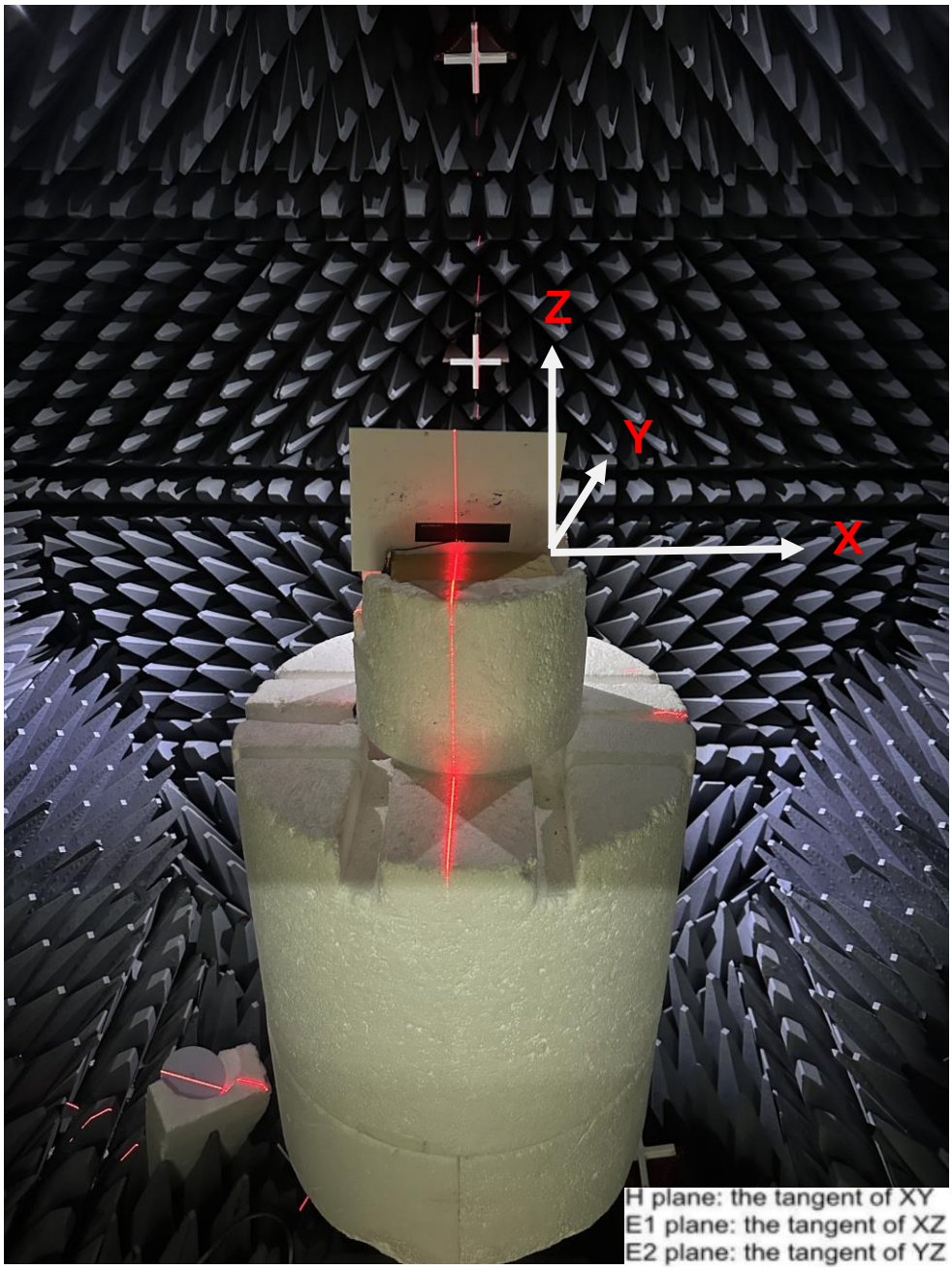
4.4. Gain

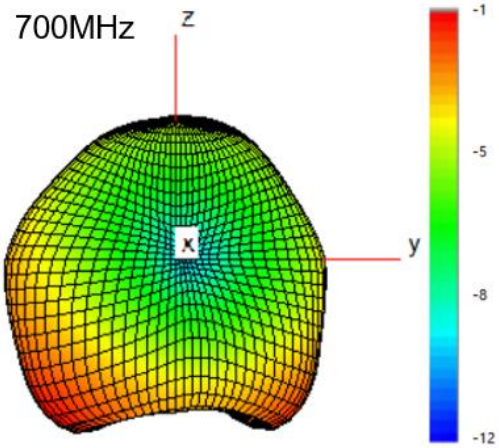


Frequency (MHz)	700	820	960	1710	2170	2690
Gain (dBi)	-1.17	-2.48	-0.82	1.69	3.54	4.92

4.5. Radiation Pattern

- Stick on a 3 mm ABS board.

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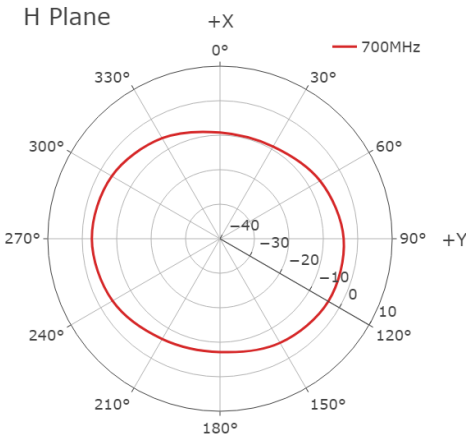
z
y
x
-1
-5
-8
-12


H Plane
+X
+Y
700MHz
0°
30°
60°
90°
120°
150°
180°
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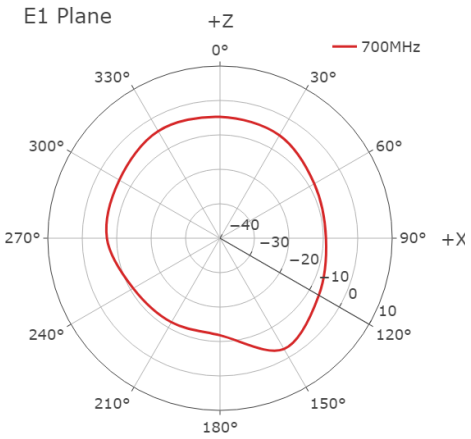
330°
-40
-30
-20
-10
0
10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+Z
+X
700MHz
0°
30°
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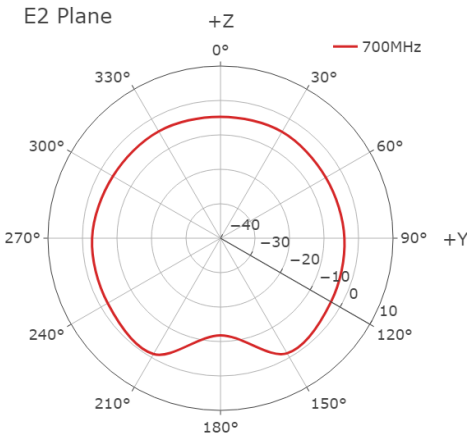
-20
-10
0
10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+Y
700MHz
0°
30°
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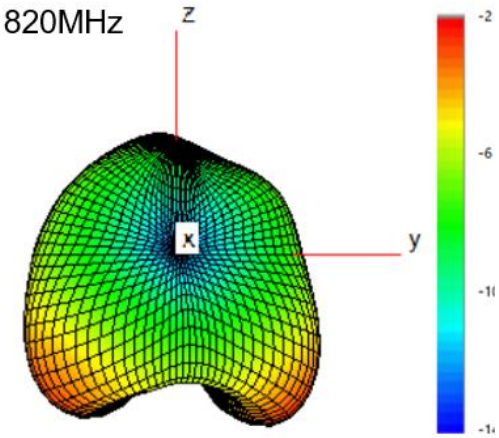
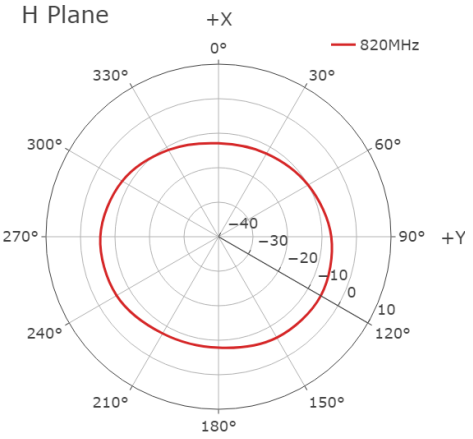
-40
-30
-20
-10
0
10


820MHz
z
y
x
-2
-6


H Plane
+X
+Y
820MHz
0°
30°
60°
90°
120°
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270°
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330°
-40
-30
-20
-10
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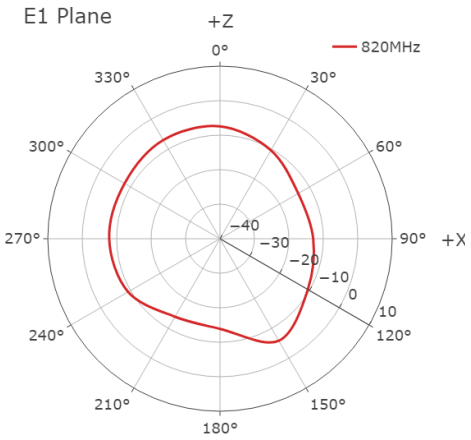
10


E1 Plane
+Z
820MHz
0°
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90°
+X
120°
150°
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240°
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300°
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−10
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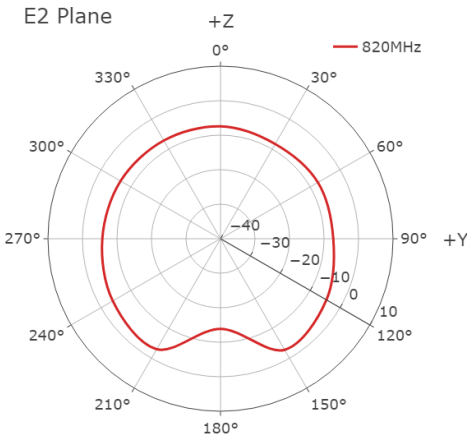
E2 Plane
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820MHz
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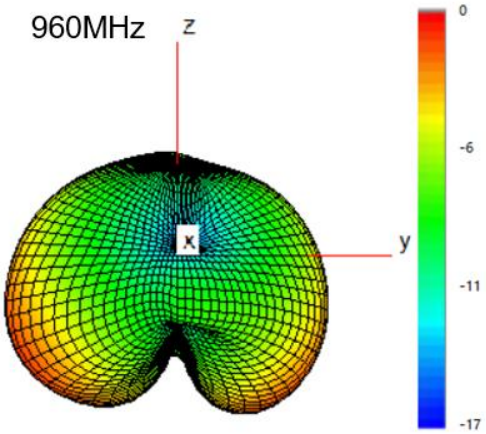
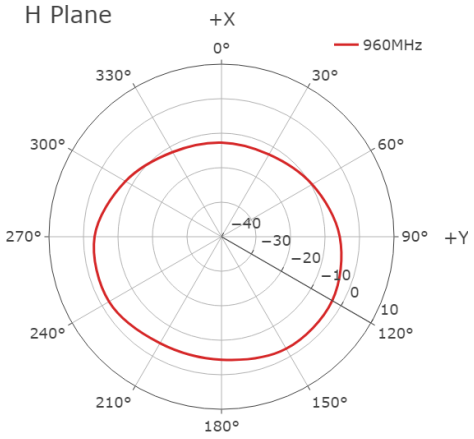

960MHz
z
y
x
0
-6
-11
-17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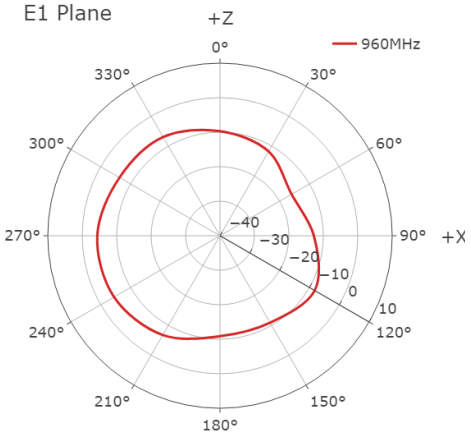
E1 Plane
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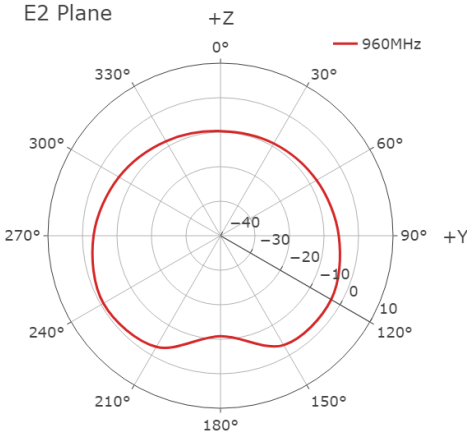
E2 Plane
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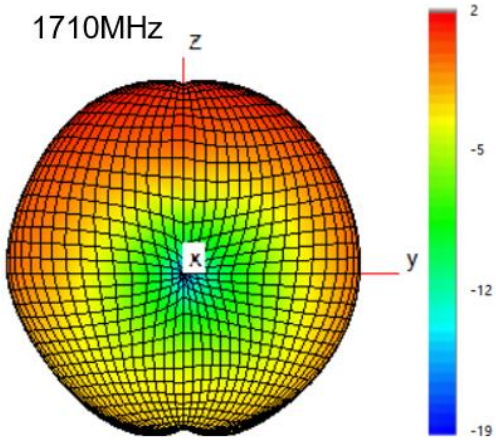
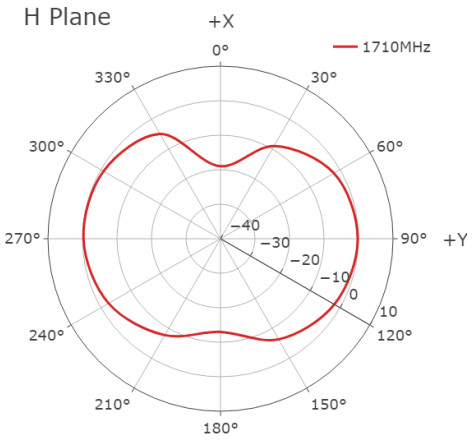

1710MHz
z
y
x
2
-5
-12
-19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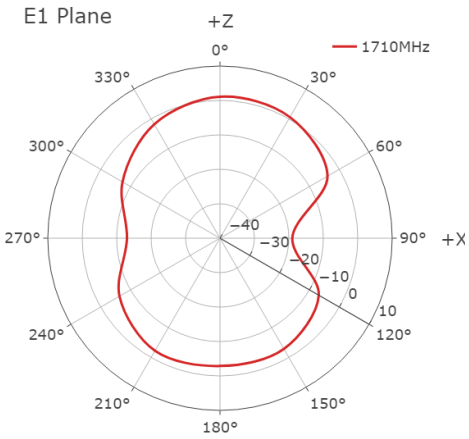
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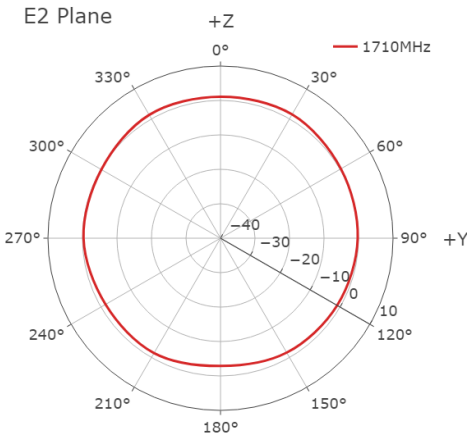
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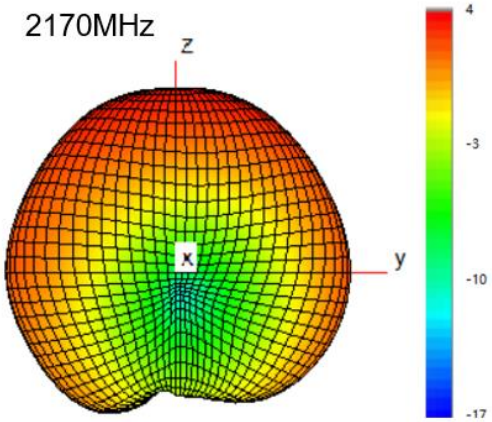
2170MHz
z
y
x
4
-3
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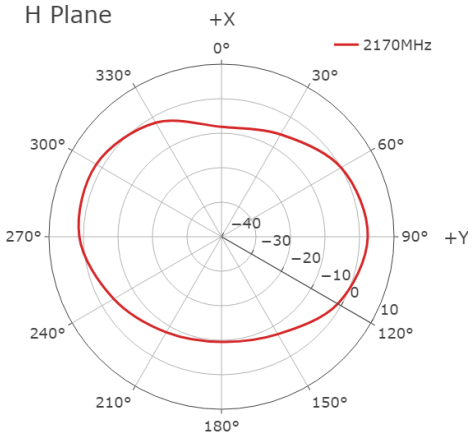
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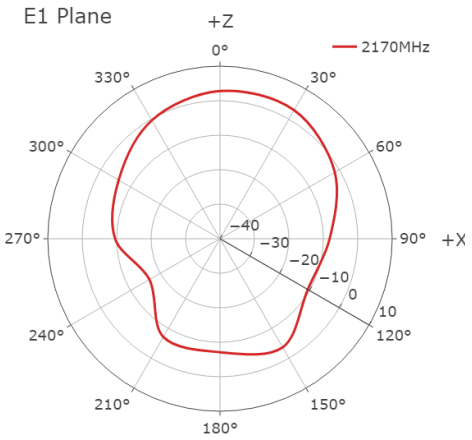
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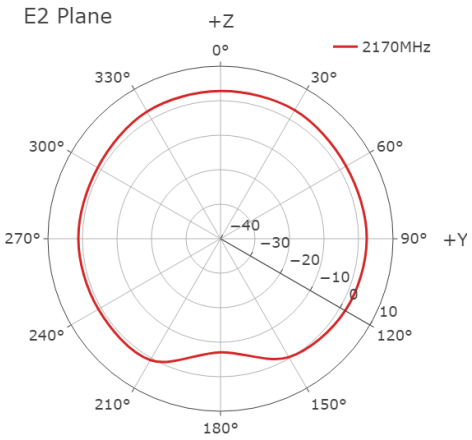
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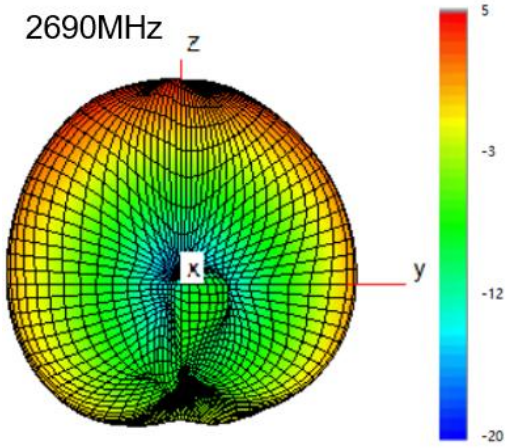
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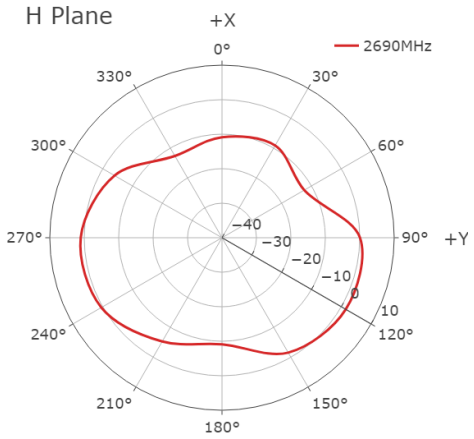
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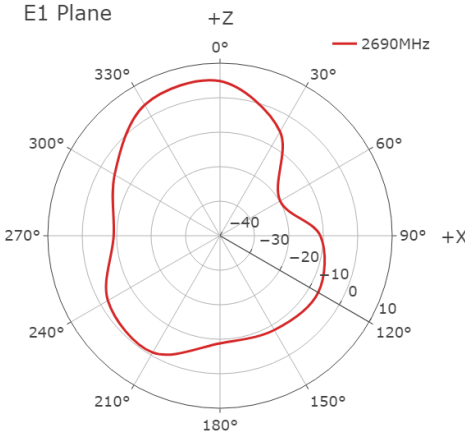
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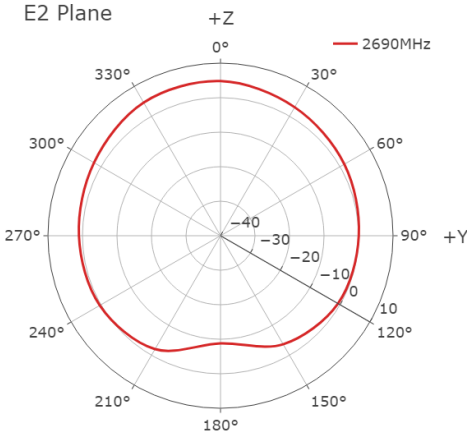
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2690MHz
0°
30°
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90°
+Y
120°
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180°
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240°
270°
300°
330°
−40
−30
−20
−10
0
10

5 Product Size