

Antenna

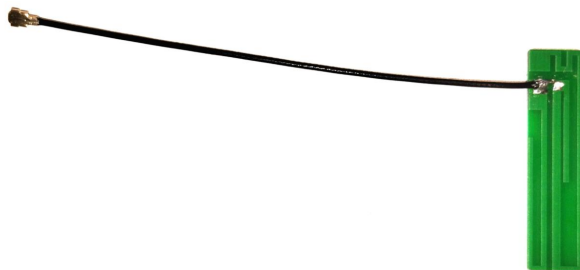
YPCA004AA Datasheet

Antenna Services

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About the Document

Revision History

| Version | Date | Author | Note |
|---------|------------|-------------------------|--|
| - | 2021-07-05 | Jason LONG/ Aria CHU | Creation of the document |
| 1.0 | 2021-07-05 | Jason LONG/ Aria CHU | First official release |
| 1.1 | 2021-11-27 | Jason LONG/ Aria CHU | Updated the product description in Chapter 1 |
| 2.0 | 2022-12-28 | Eleven RONG | Updated datasheet data in Chapter 4 |

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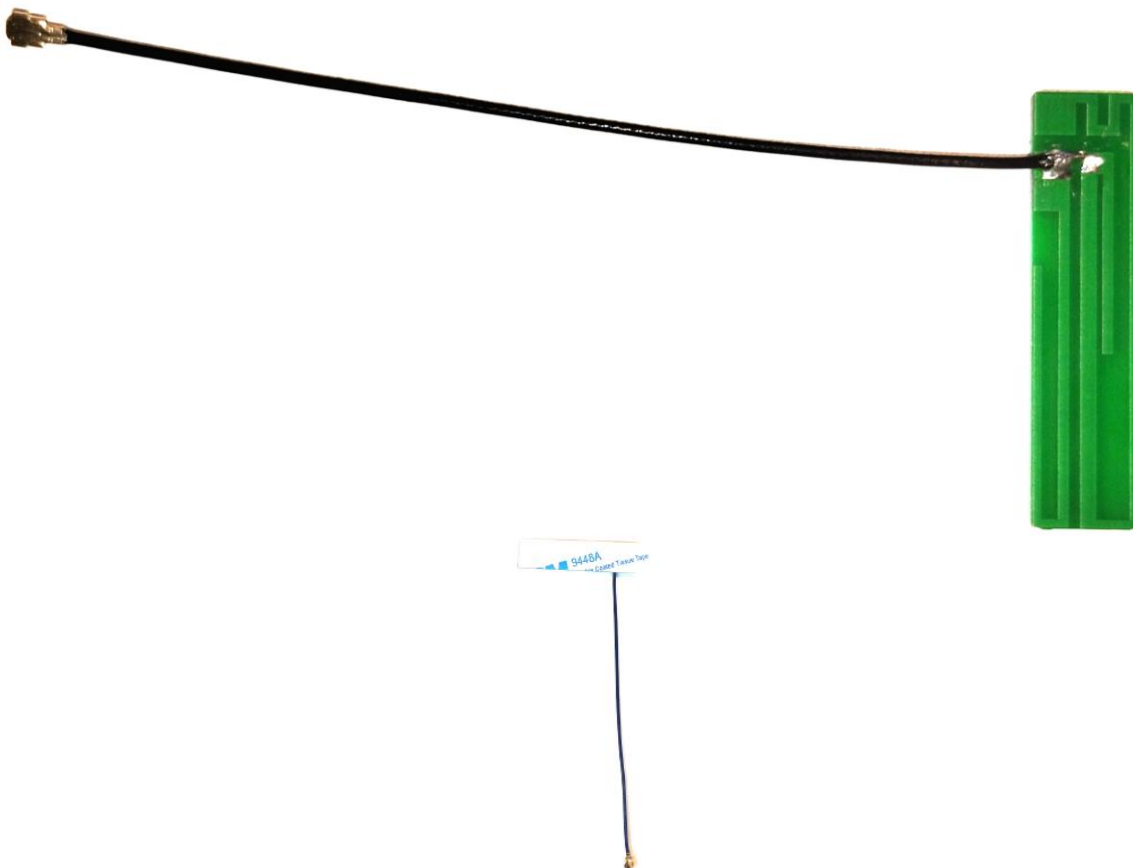
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1 Product Description

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

- LTE
- Small and exquisite
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

| | |
|-------------------|----------------------------|
| Frequency Range | 700–960 MHz, 1710–2690 MHz |
| Input Impedance | 50 Ω |
| VSWR | ≤ 8.0 |
| Gain | ≤ 2.3 dBi |
| Polarization Type | Linear |

Mechanical Specifications

| | |
|---------------------|------------------|
| Antenna Size (mm) | 40 × 10 × 1 |
| Material | PCB |
| Cable Type | Φ1.13 Black |
| Connector | IPEX I |
| Working Temperature | -40 °C to +85 °C |
| Color | Green |
| Mounting Type | Adhesive |

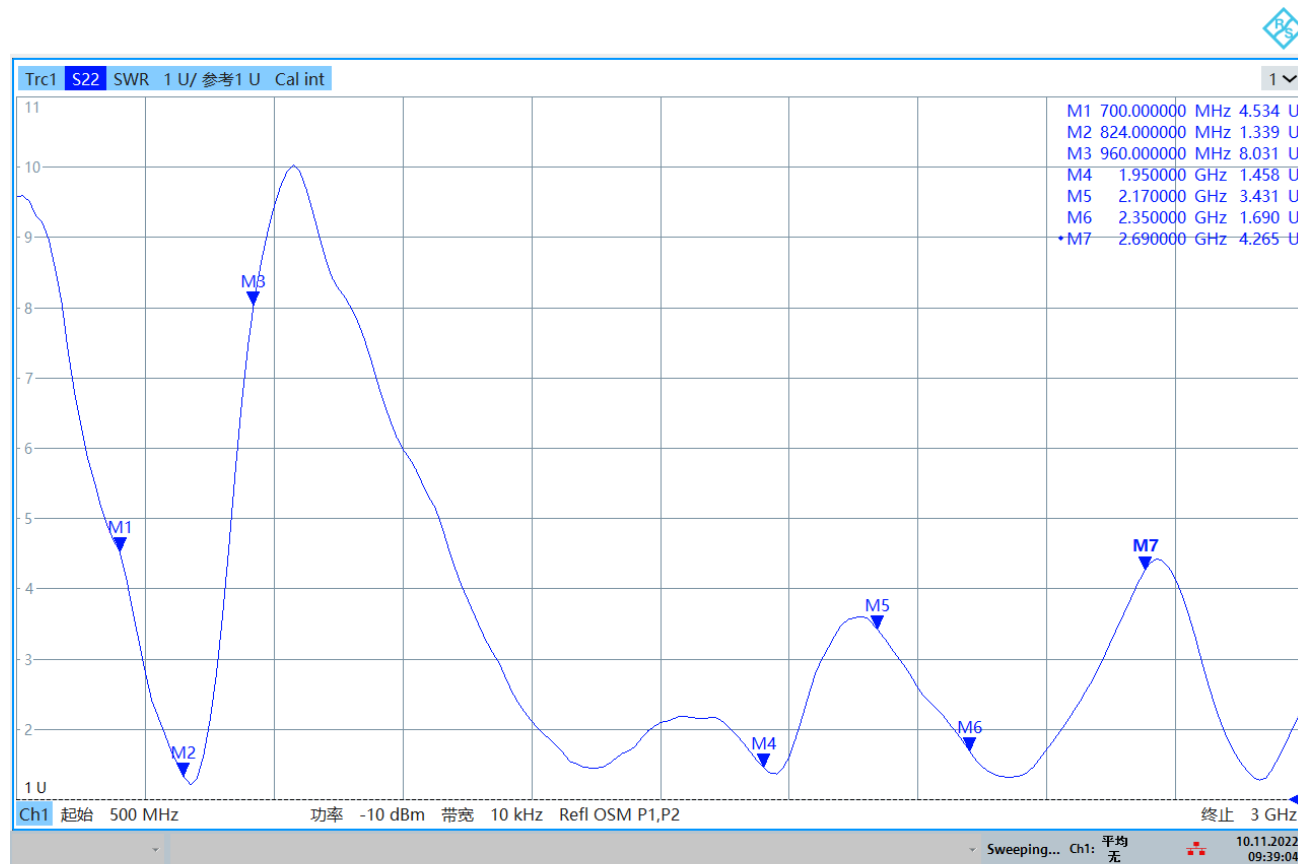
4 Overall Performance

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



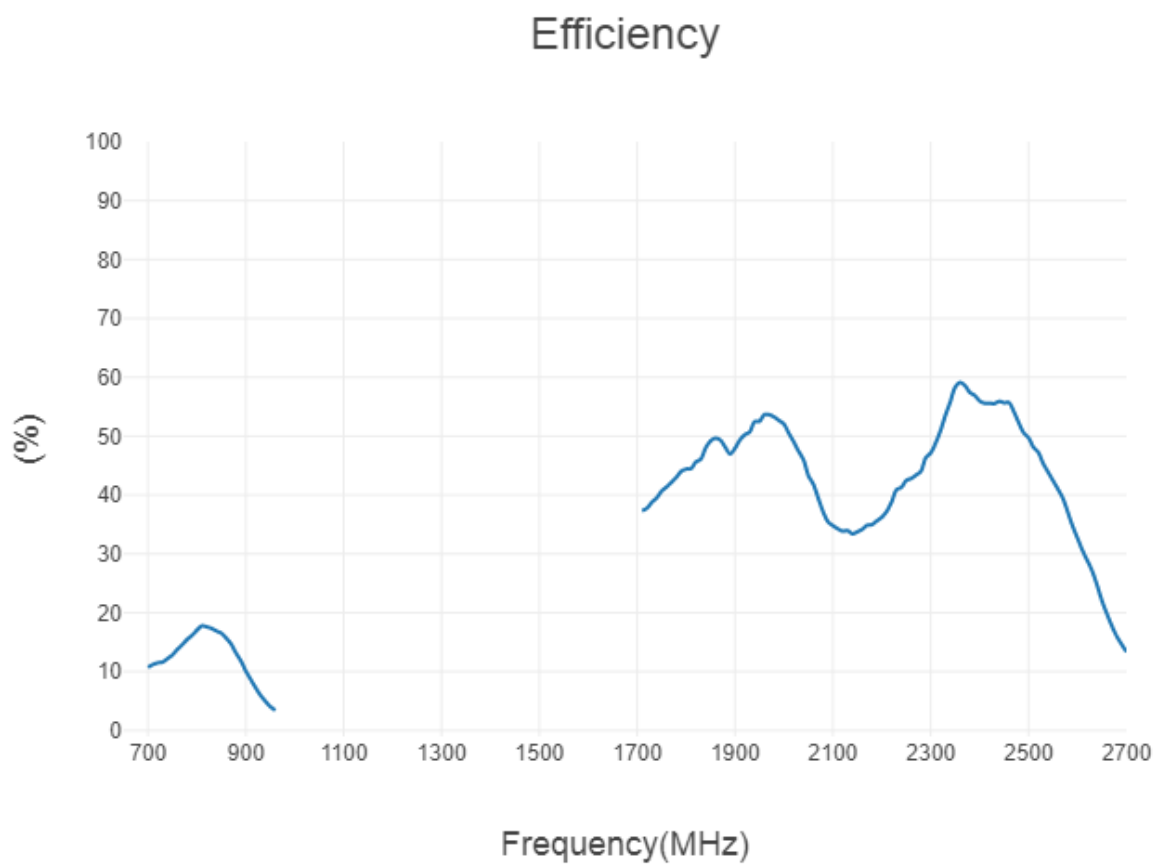
4.2. VSWR



09:39:05 10.11.2022

| Frequency (MHz) | 700 | 830 | 960 | 1710 | 1950 | 2170 | 2300 | 2690 |
|-----------------|------|-----|------|------|------|------|------|------|
| VSWR | 4.53 | 1.2 | 8.03 | 2.1 | 1.46 | 3.43 | 2.3 | 4.27 |

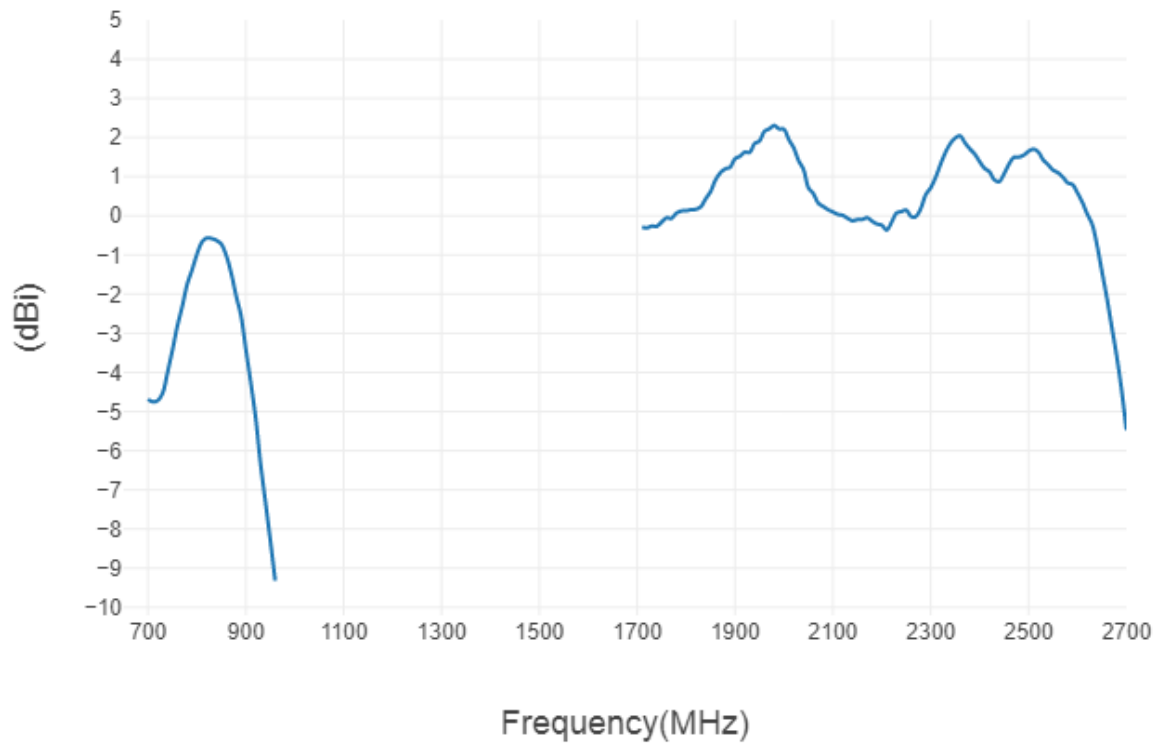
4.3. Efficiency



| Frequency (MHz) | 700 | 830 | 960 | 1710 | 1950 | 2170 | 2300 | 2690 |
|-----------------|------|------|-----|------|------|------|------|------|
| Efficiency (%) | 10.7 | 17.3 | 3.4 | 37.3 | 52.5 | 34.9 | 47.1 | 14.7 |

4.4. Gain

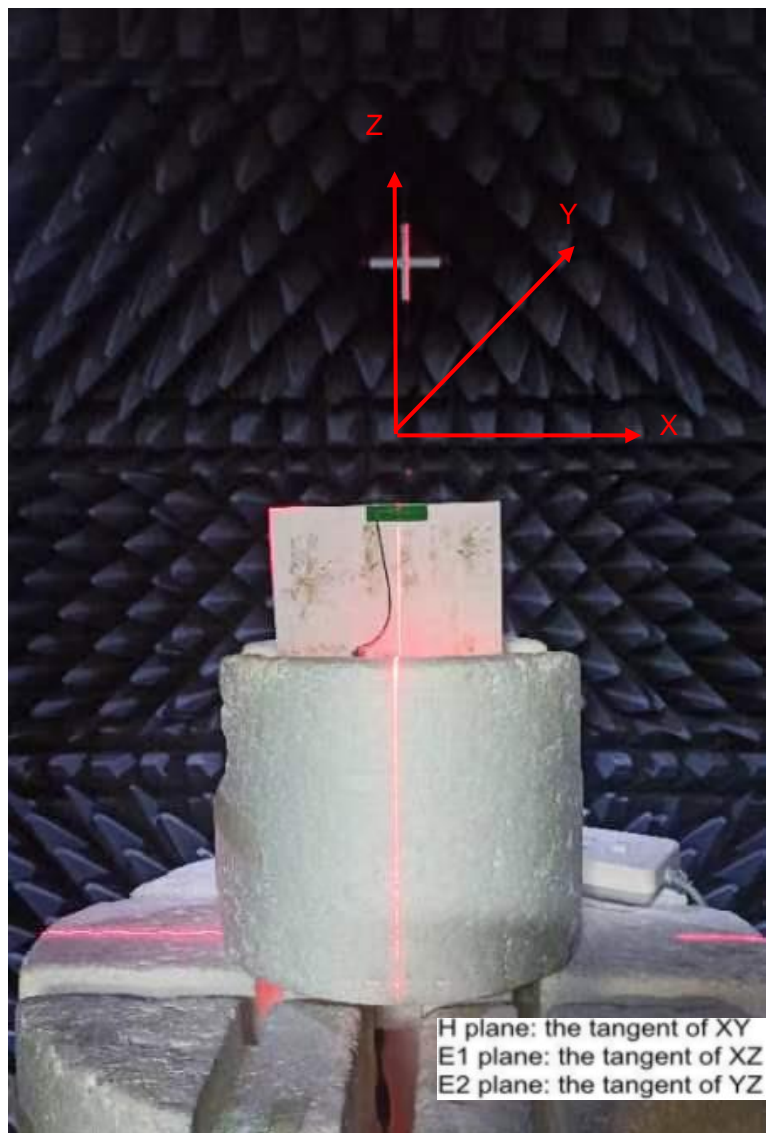
Peak Gain



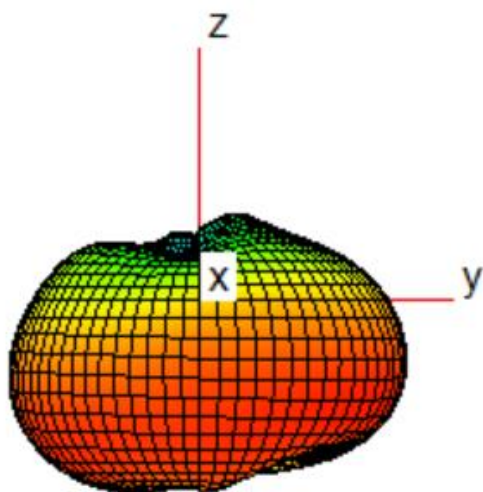
| Frequency (MHz) | 700 | 830 | 960 | 1710 | 1950 | 2170 | 2300 | 2690 |
|-----------------|-------|-------|-------|-------|------|-------|------|-------|
| Gain (dBi) | -4.75 | -0.58 | -9.31 | -0.29 | 1.91 | -0.05 | 0.71 | -4.43 |

4.5. Radiation Pattern

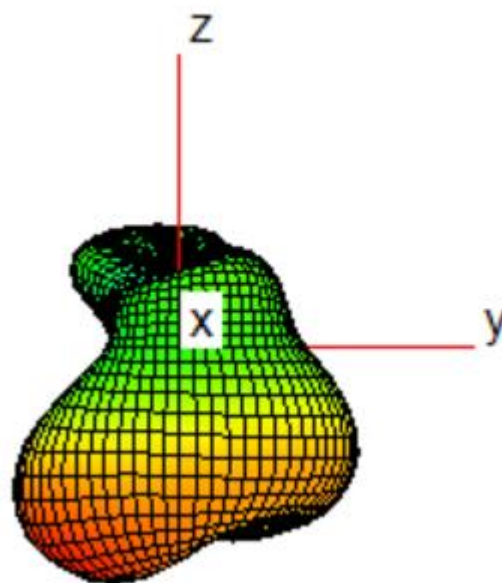
- Test condition: free space.



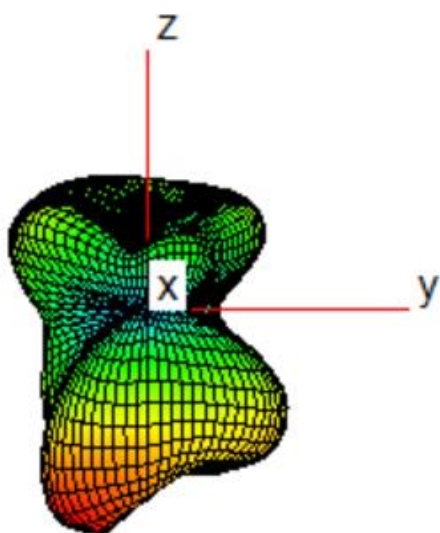
700 MHz



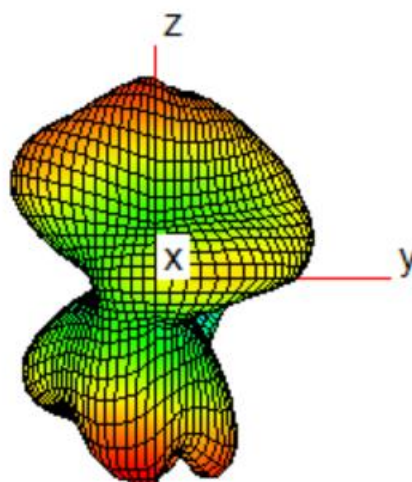
830 MHz



960 MHz

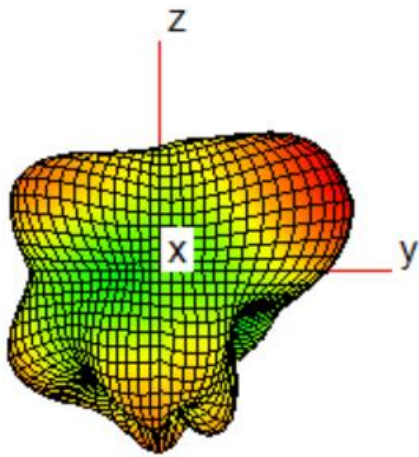


1710 MHz

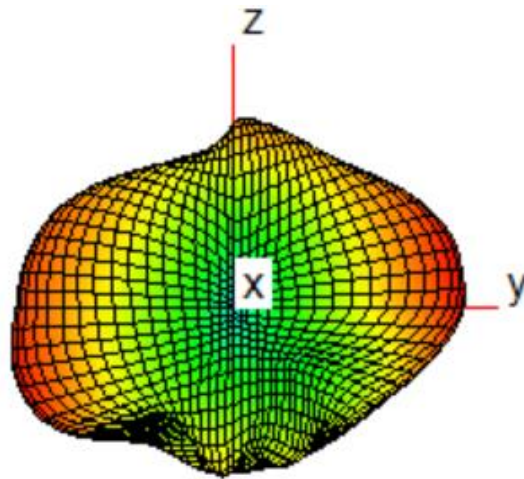


1950 MHz

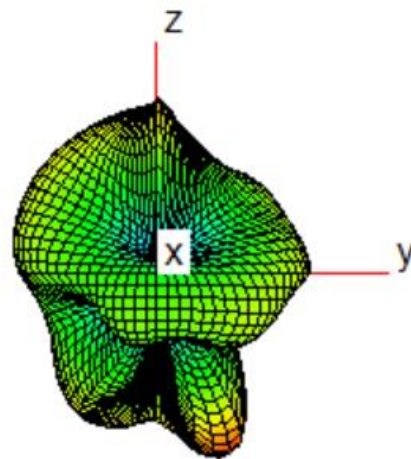
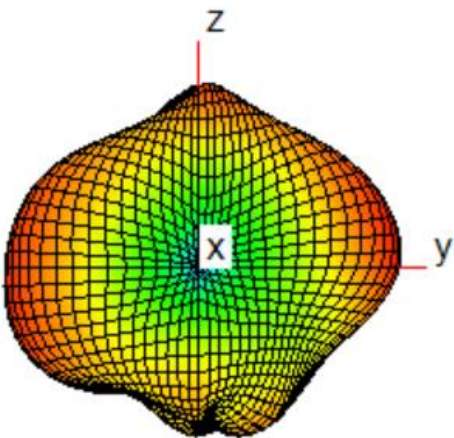
2170 MHz

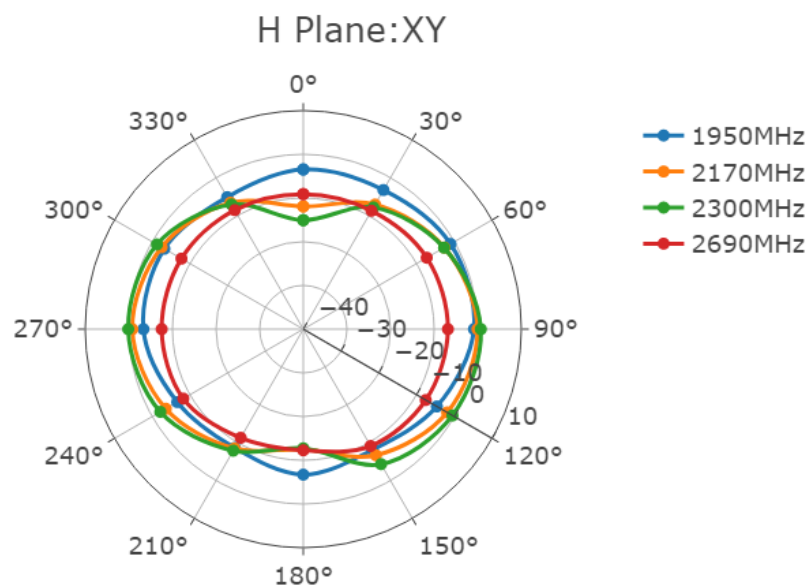
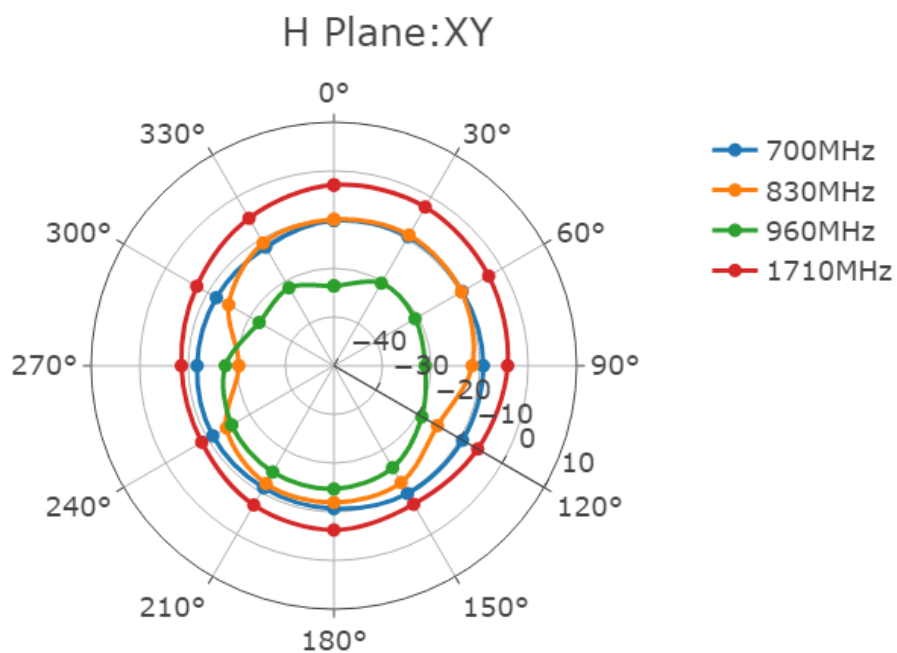


2300 MHz

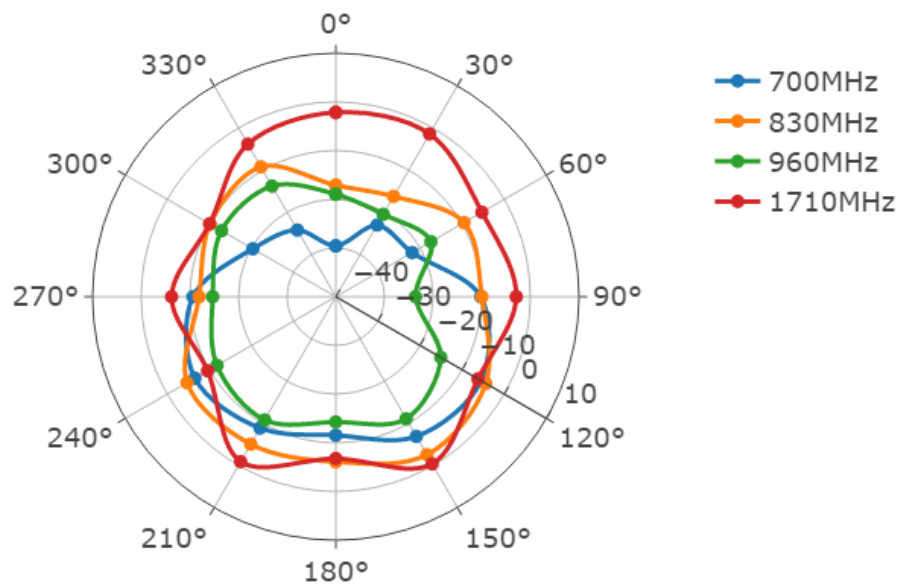


2690 MHz

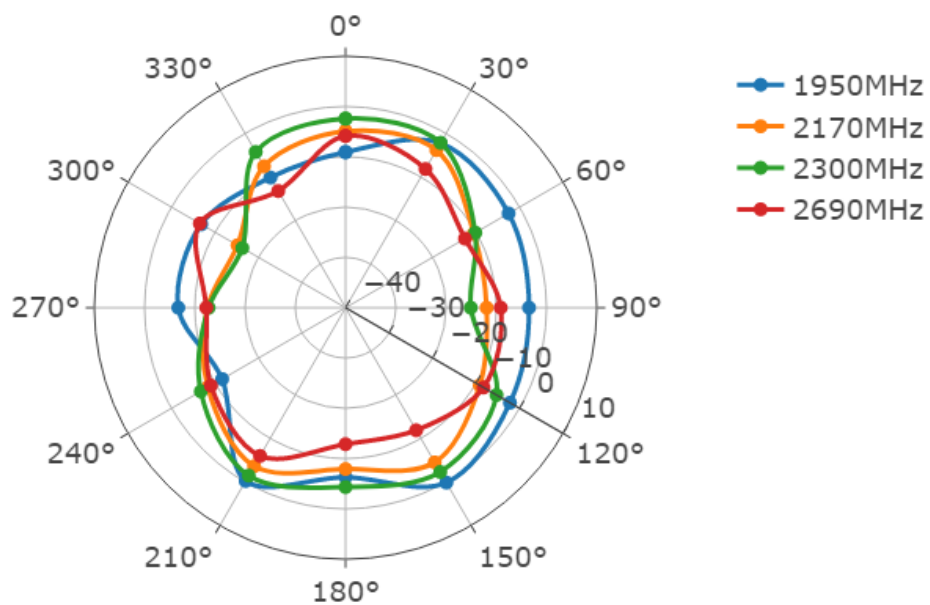




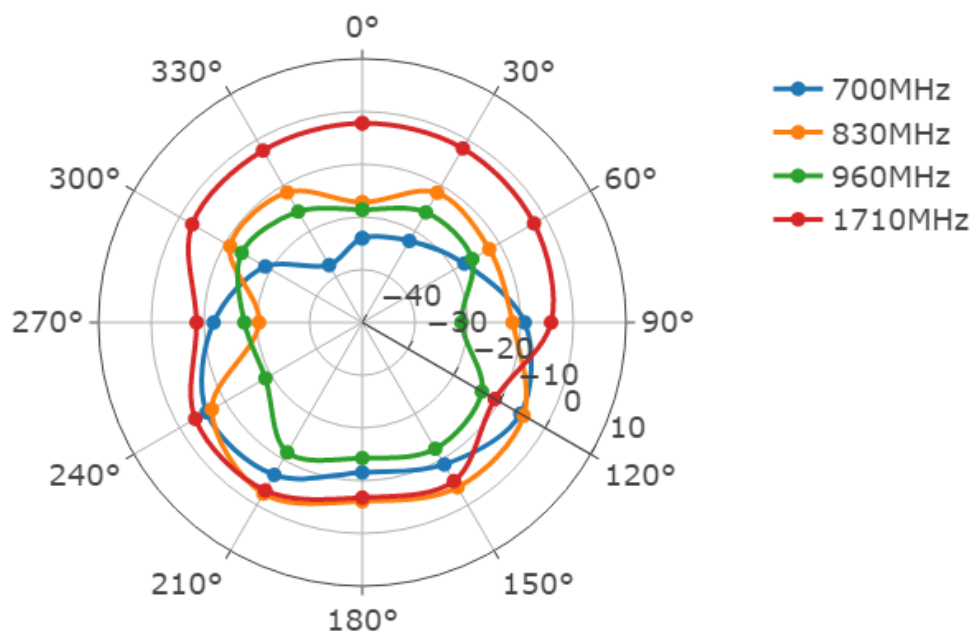
E1 Plane:XZ



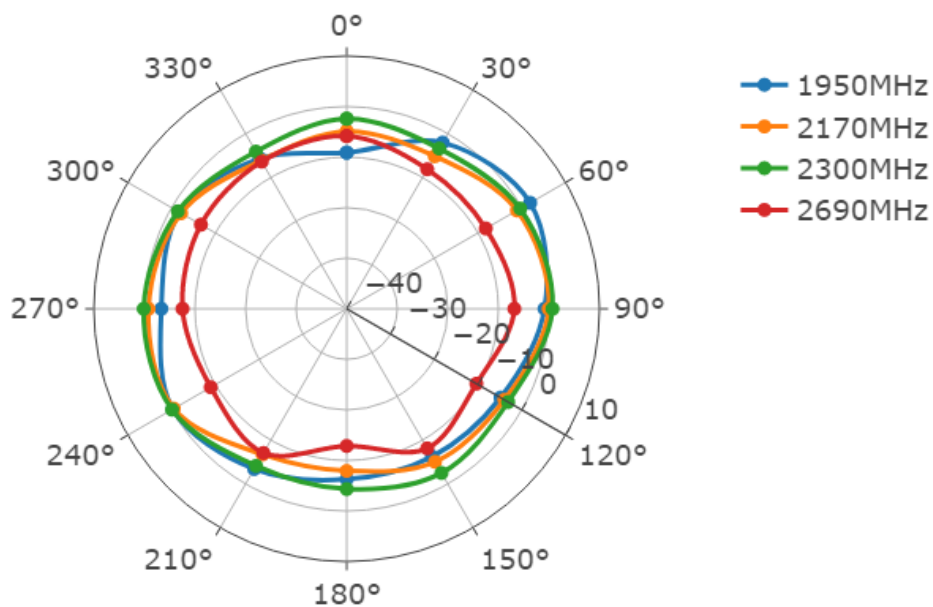
E1 Plane:XZ



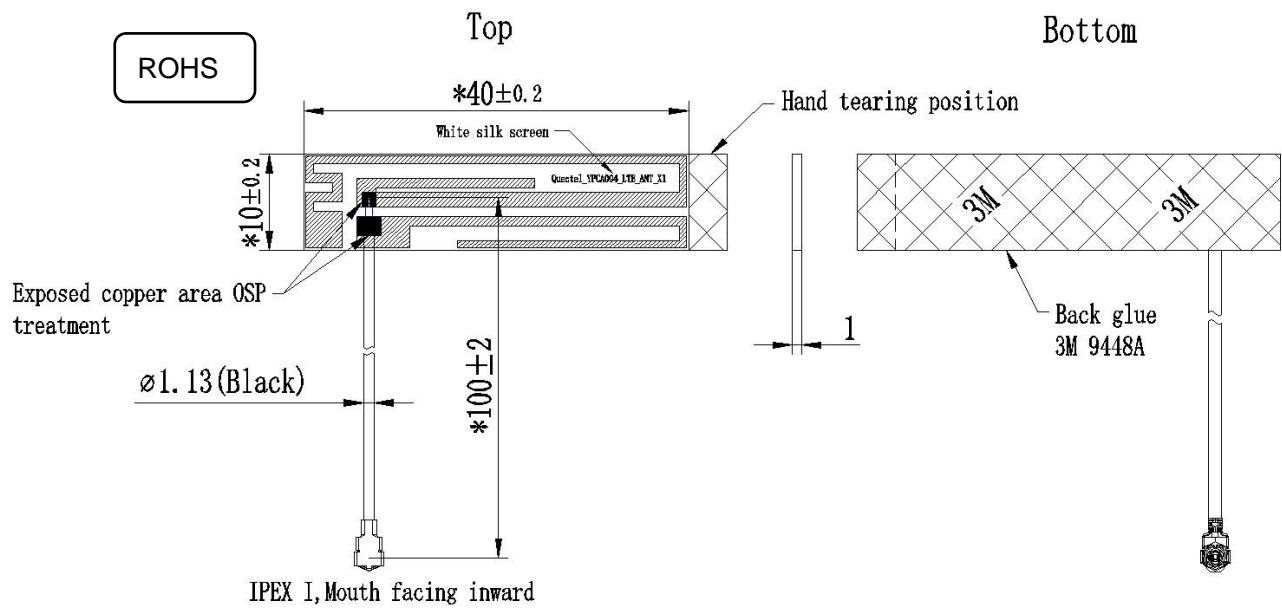
E2 Plane:YZ



E2 Plane:YZ



5 Product Size



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