

# Antenna

# YF0023IA Datasheet

Antenna Services

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# About the Document

## Revision History

| Version | Date       | Author                 | Note                     |
|---------|------------|------------------------|--------------------------|
| -       | 2022-08-16 | Sly LIU/<br>Lucky FENG | Creation of the document |
| 1.0     | 2023-01-15 | Sly LIU/<br>Lucky FENG | First official release   |

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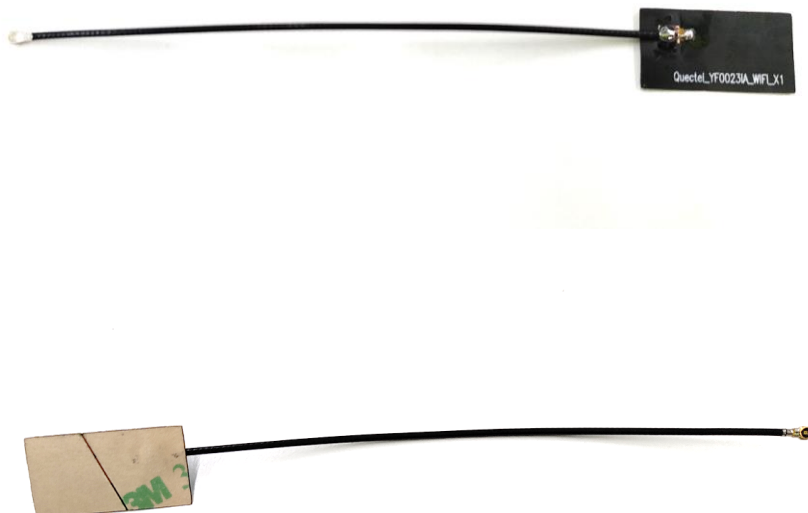
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## 1 Product Description

Quectel Wi-Fi antenna covers 2.4 GHz, 5 GHz, and up to 7 GHz bands, fully satisfying customers' requirements for Wi-Fi 5, Wi-Fi 6, and Wi-Fi 6E. There are various antenna types, including built-in FPC antenna, ceramic patch antenna, and other external antennas of different shapes or sizes. The antenna performance meets the customers' demands for efficiency, gain, and radiation and ensures the superior experience of the customers' products in use.

## 2 Product Features

- Wi-Fi
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

|                   |   |
|-------------------|---|
| Frequency Range   | 2400–2500 MHz; 4900–5850 MHz; 5925–7125 MHz |
| Input Impedance   | 50 $\Omega$                                 |
| Return Loss       | $\leq -8.8$ dB                              |
| Gain              | $\leq 5$ dBi                                |
| Polarization Type | Linear                                      |

#### Mechanical Specifications

|                     |                                |
|---------------------|--------------------------------|
| Antenna Size        | 22.90 × 11.70 mm               |
| Material            | FPC                            |
| Cable Type & Length | $\Phi$ 1.13 Black & L = 100 mm |
| Connector           | IPEX MHF IV                    |
| Color               | Black                          |
| Weight              | Typ. 0.44 g                    |
| Mounting Type       | Adhesive & Soldering           |
| Working Temperature | -20 °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



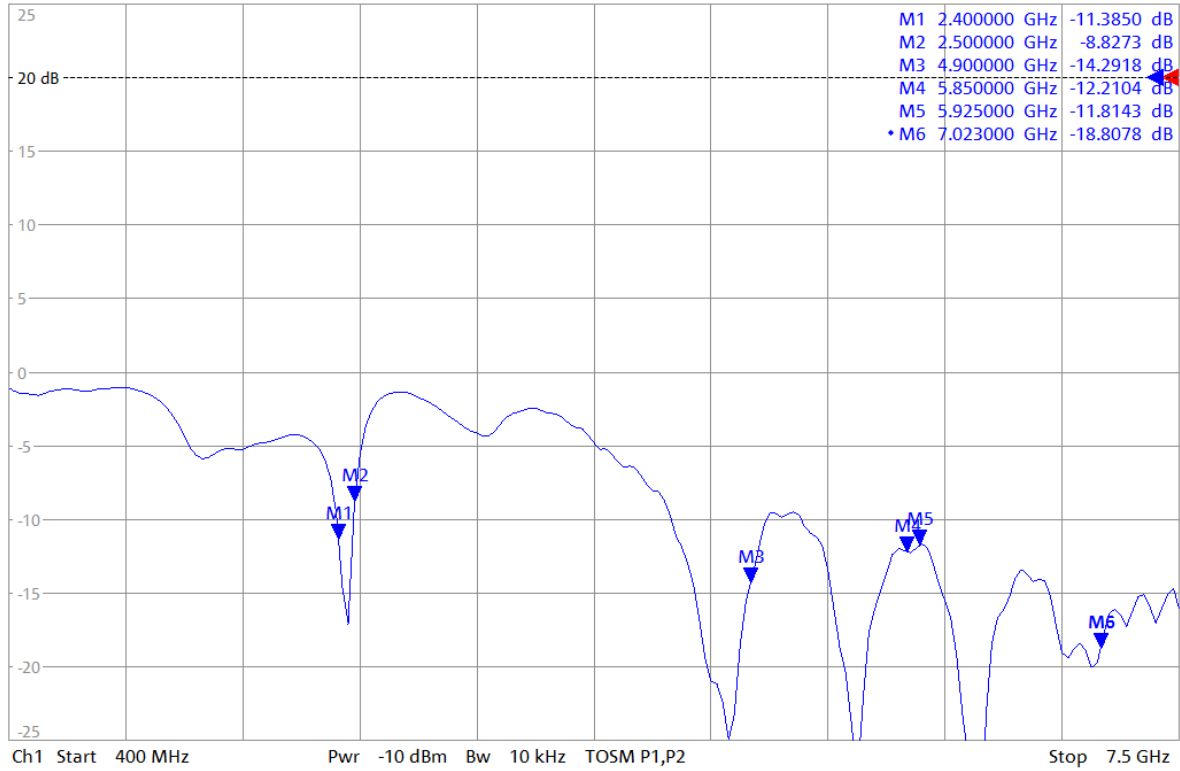


## 4.2. Return Loss

1/18/2021 1:22:01 AM  
1311.6010K44-103612-kz

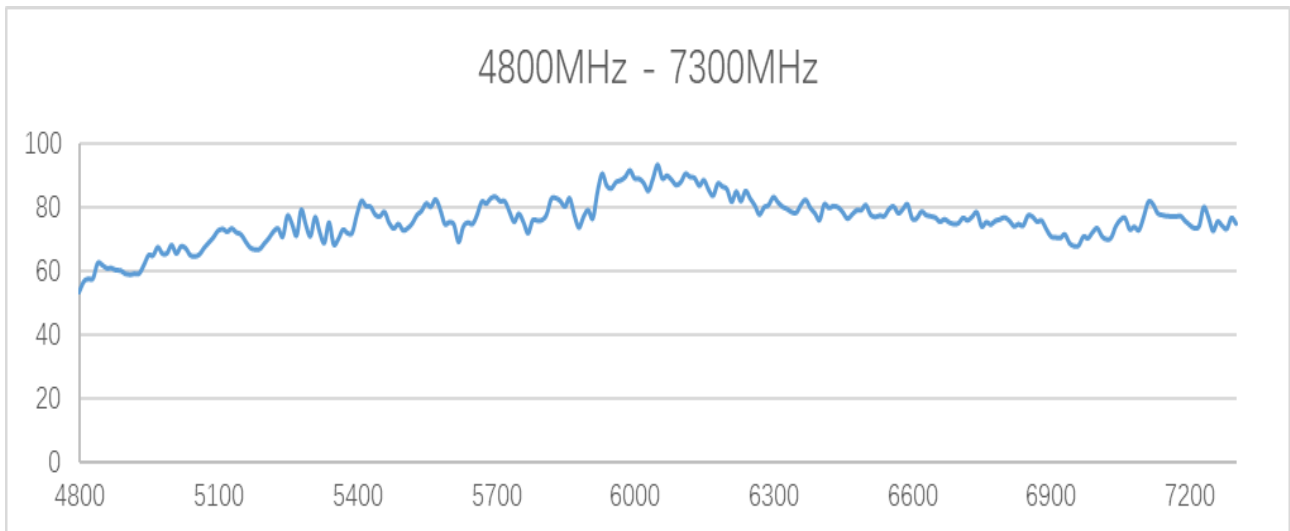
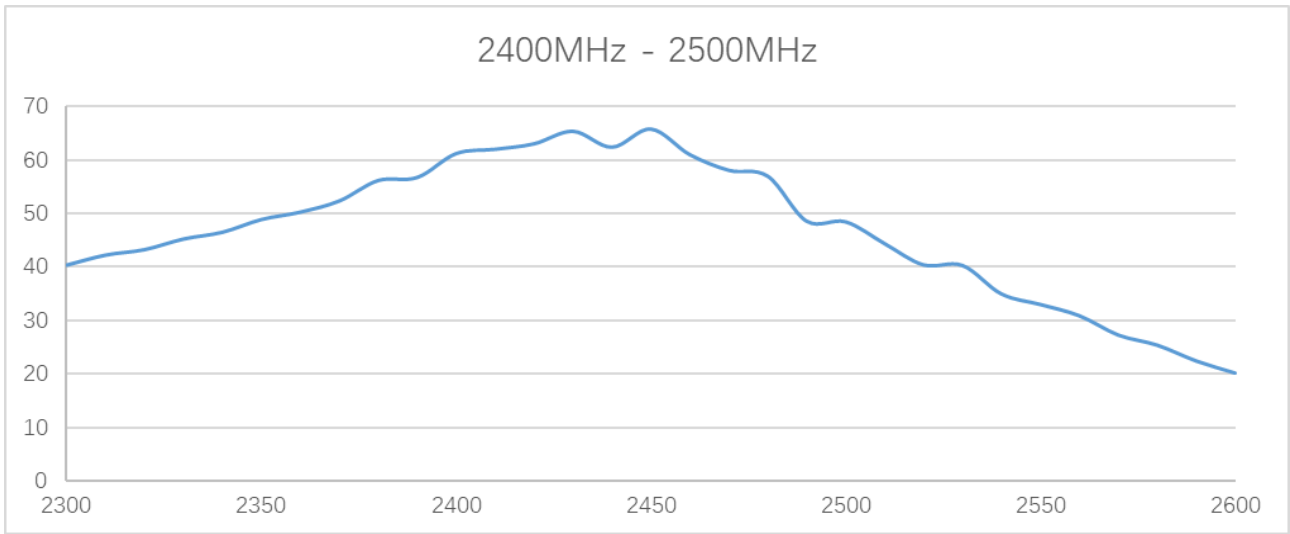
Trc1 — S11 dB Mag 5 dB/ Ref 20 dB Cal  
Mem2[Trc1] — S11 dB Mag 5 dB/ Ref 20 dB Invisible

1



| Frequency (MHz) | 2400   | 2500  | 4900   | 5850   | 5925   | 7125   |
|-----------------|--------|-------|--------|--------|--------|--------|
| VSWR            | -11.38 | -8.83 | -14.29 | -12.21 | -11.81 | -18.81 |

### 4.3. Efficiency



|                        |       |       |       |       |       |       |
|------------------------|-------|-------|-------|-------|-------|-------|
| <b>Frequency (MHz)</b> | 2400  | 2500  | 4900  | 5850  | 5925  | 7125  |
| <b>Efficiency (%)</b>  | 61.26 | 48.51 | 59.43 | 80.27 | 86.34 | 80.33 |

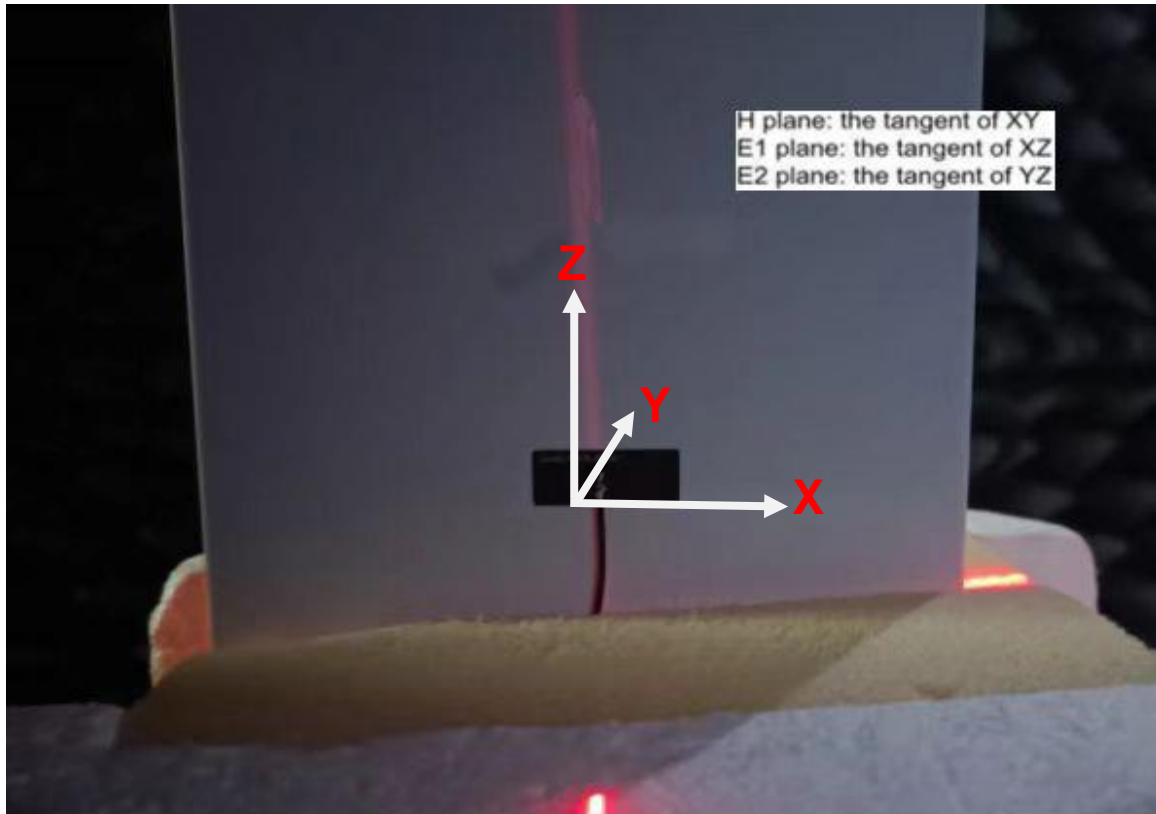
### 4.4. Gain



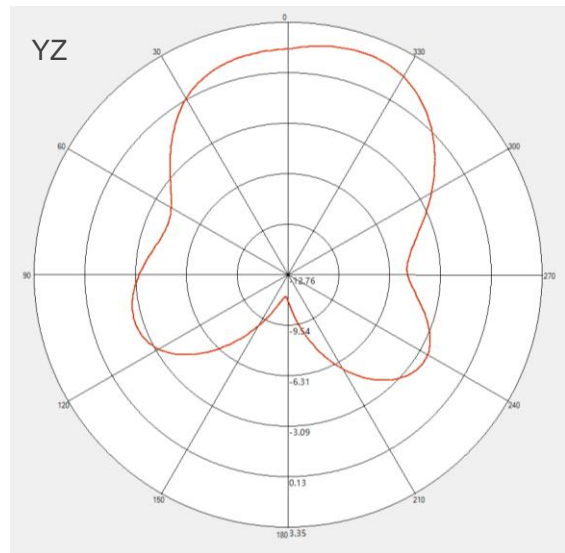
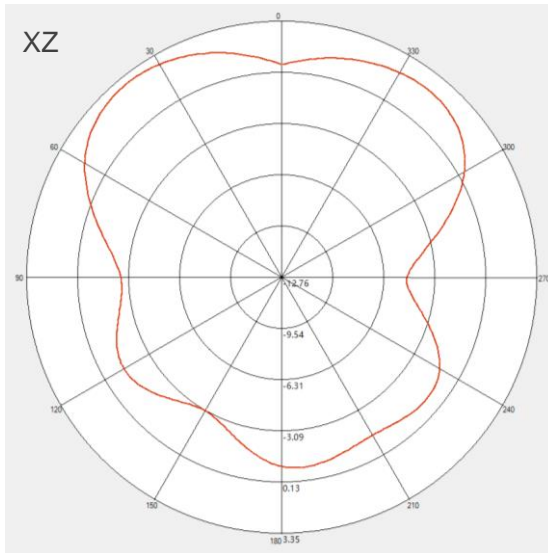
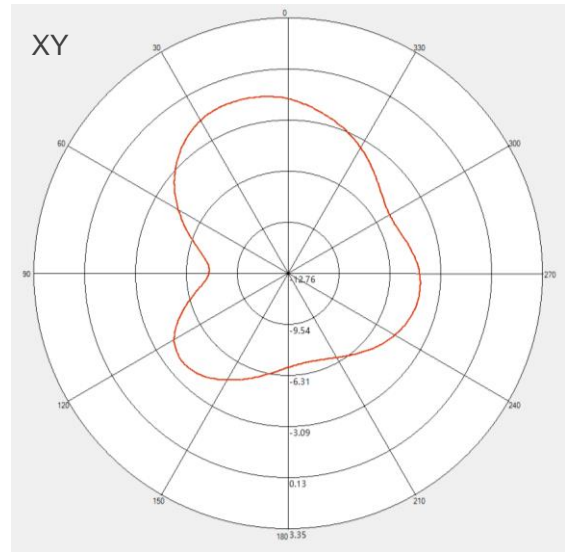
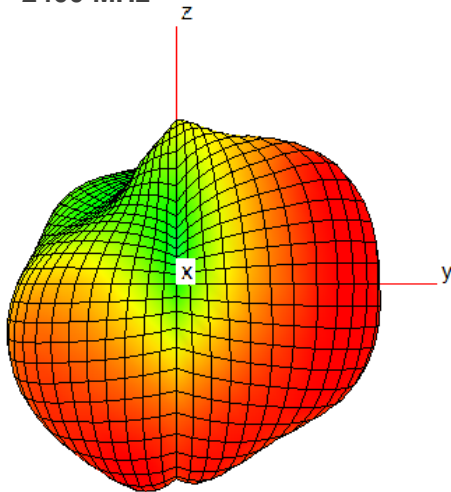
| Frequency (MHz) | 2400 | 2500 | 4900 | 5850 | 5925 | 7125 |
|-----------------|------|------|------|------|------|------|
| Gain (dBi)      | 2.73 | 1.56 | 2.35 | 3.54 | 4.31 | 4.49 |

## 4.5. Radiation Pattern

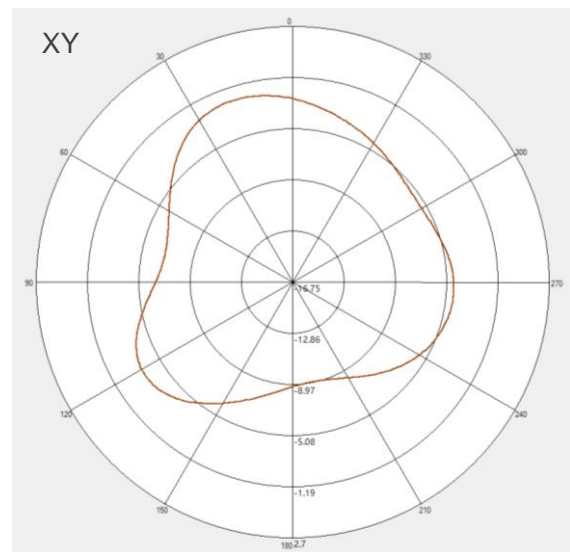
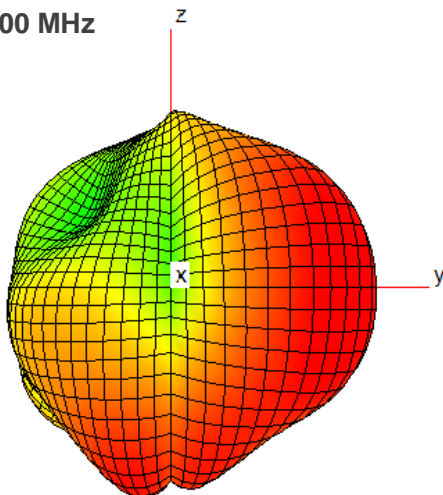
- Test condition: stick on a 3 mm thick ABS board.

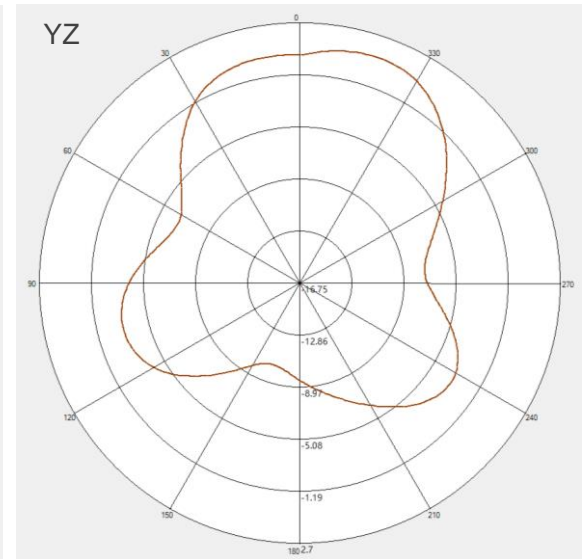
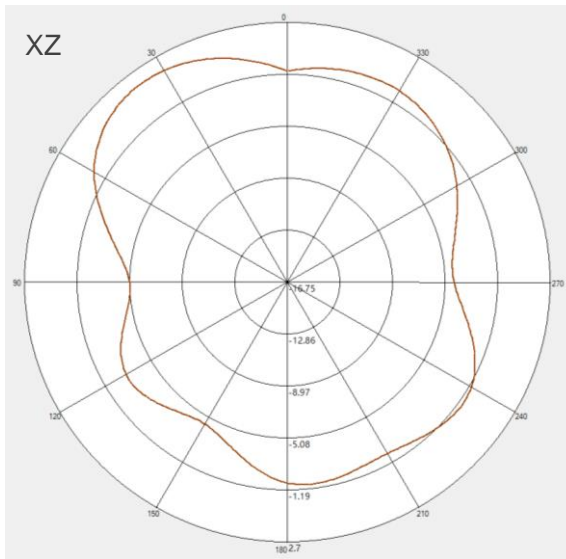


**2400 MHz**

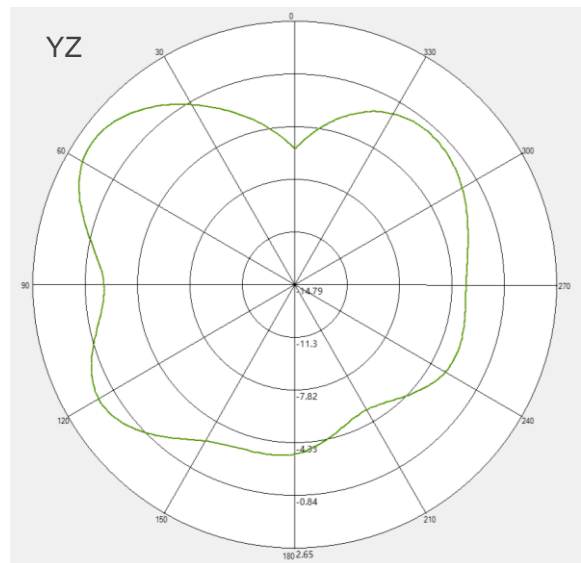
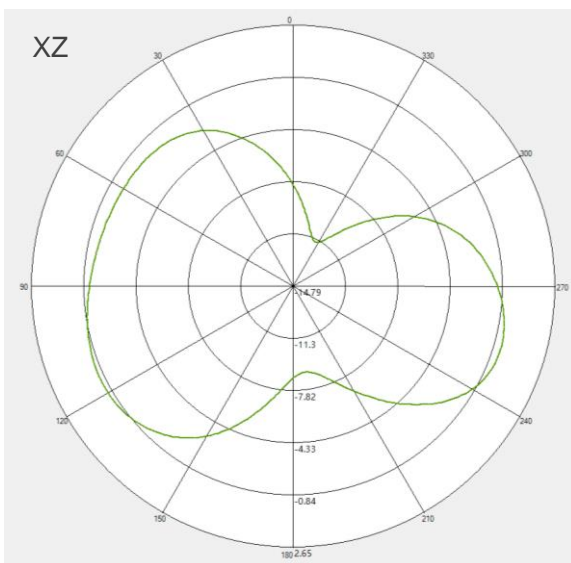
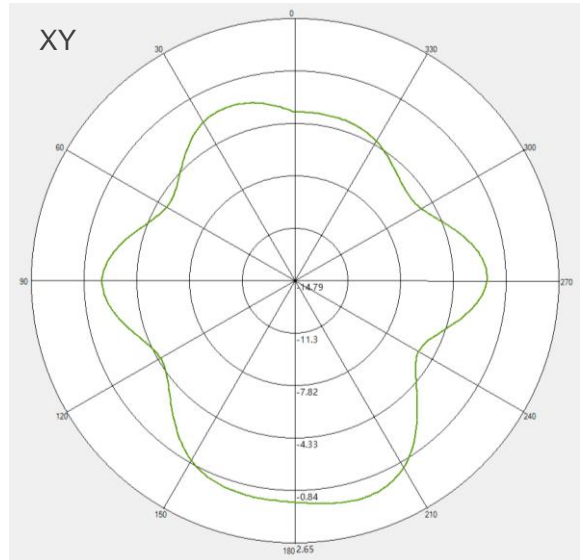
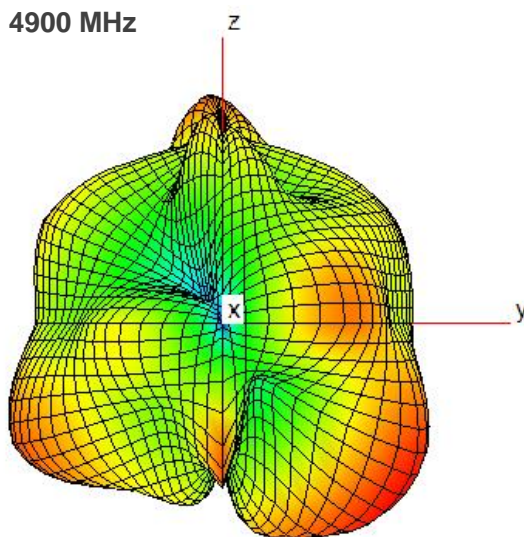


**2500 MHz**



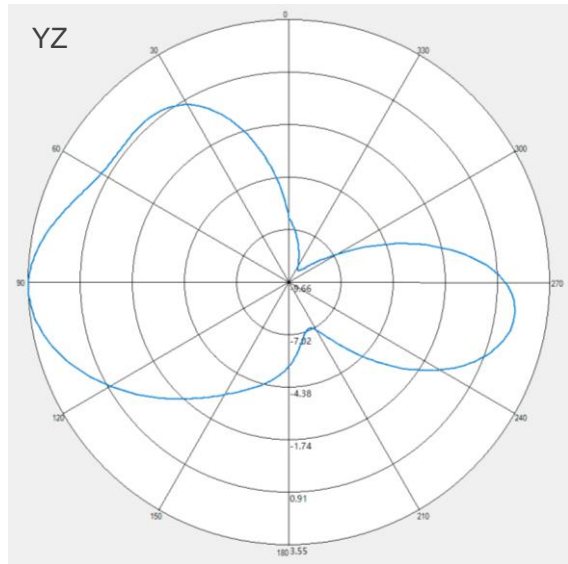
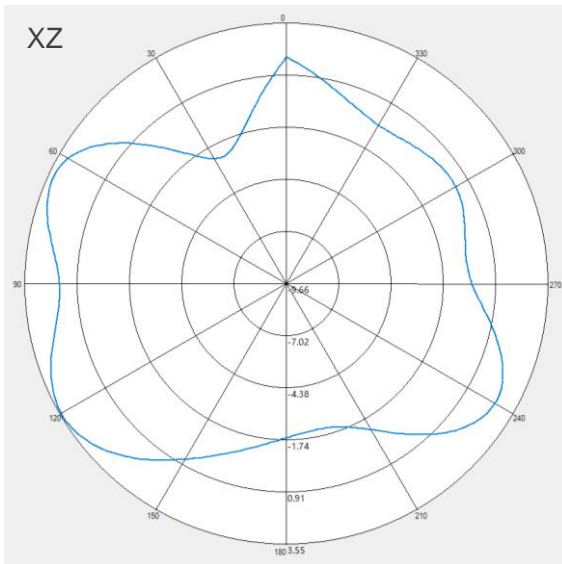
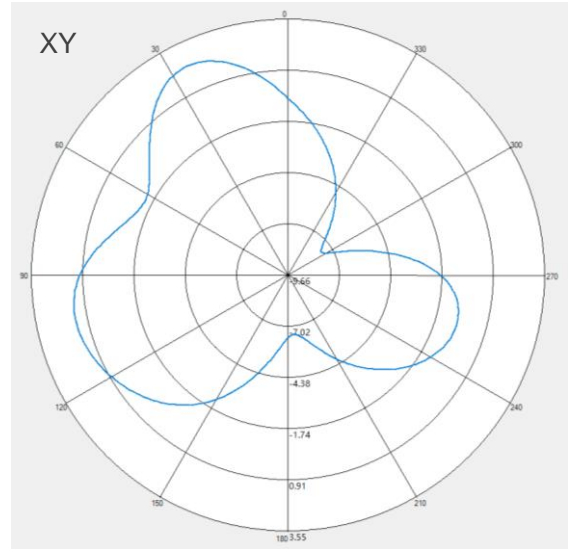
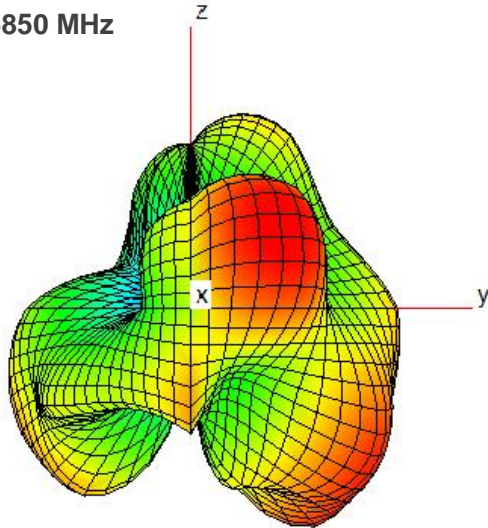


**4900 MHz**

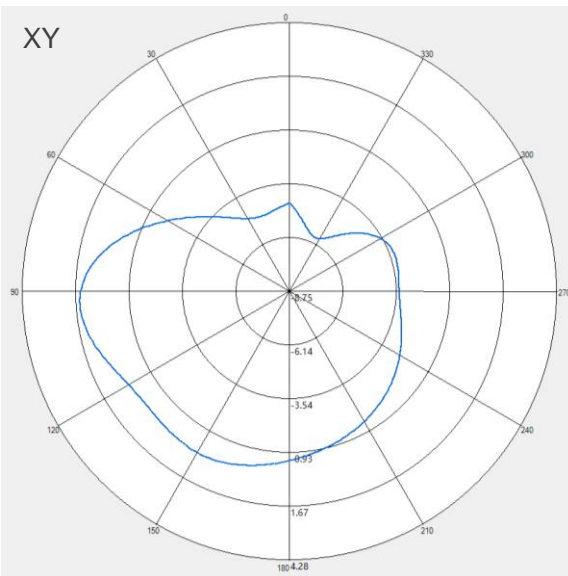
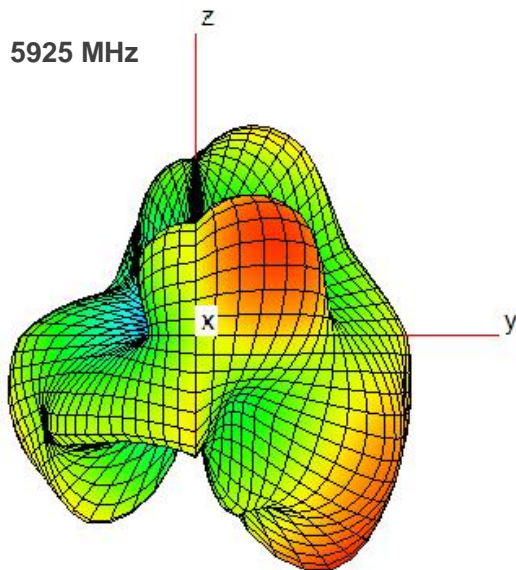


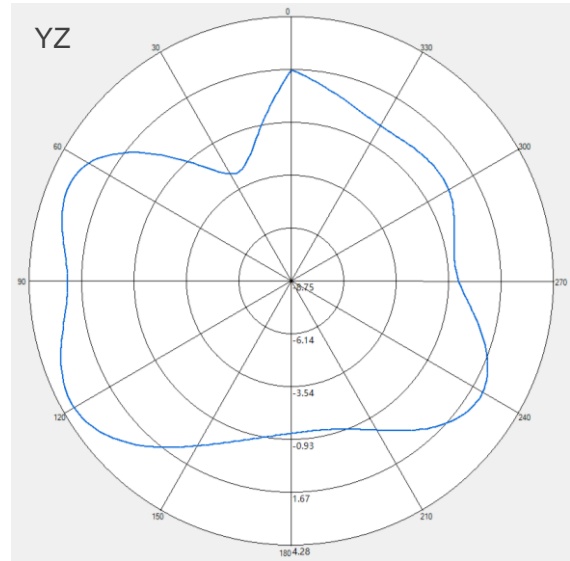
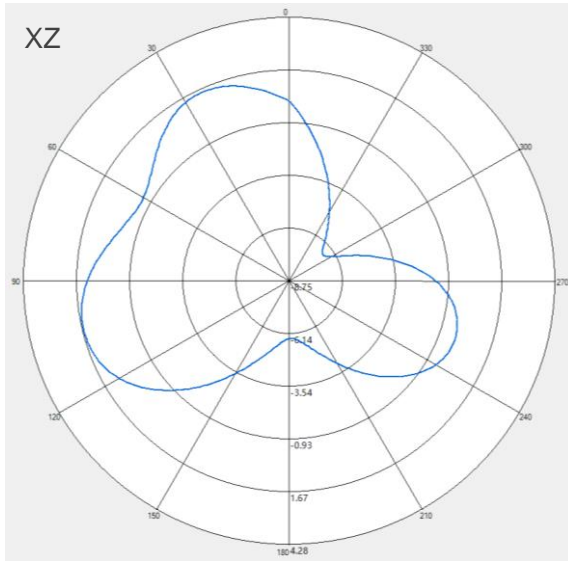


**5850 MHz**

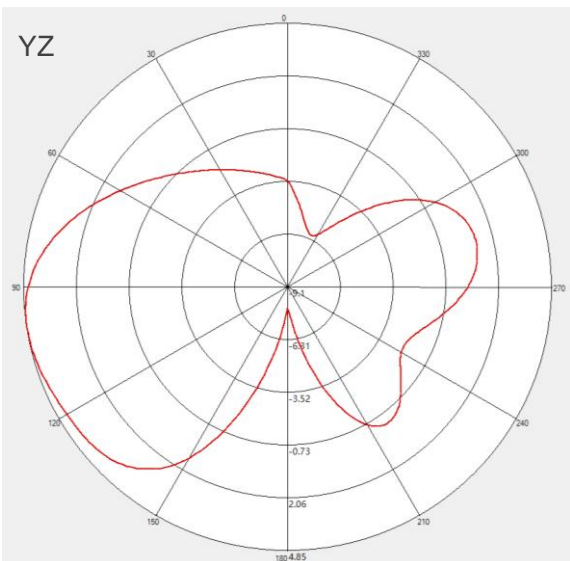
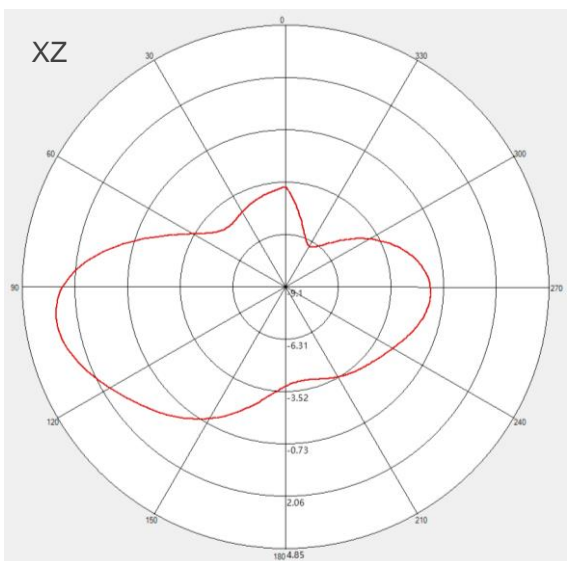
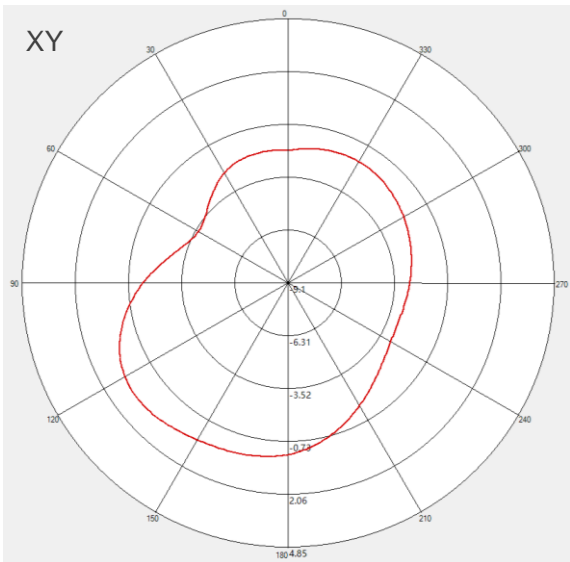
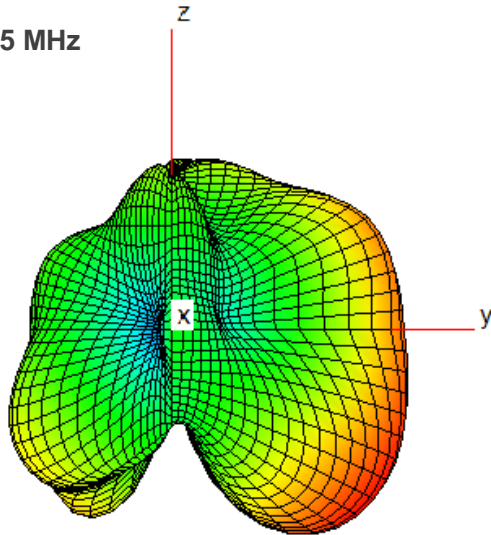


**5925 MHz**



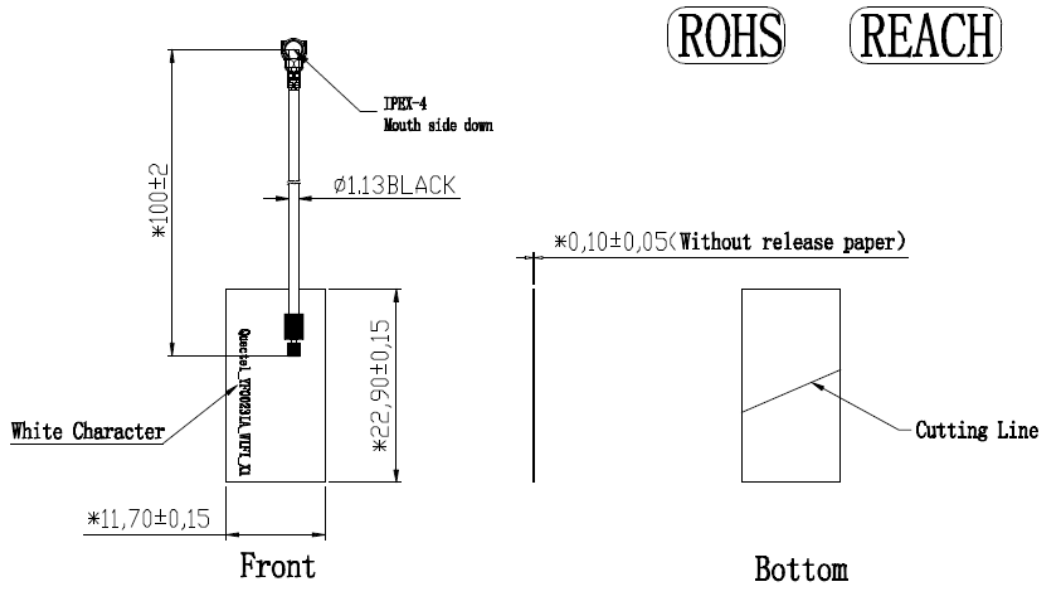


**7125 MHz**





## 5 Product Size



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