



## FU3620 Two- element UWB Antenna Module

### RF Antenna Performance Data

| Doc. No.      | Version | Date       | Pages |
|---------------|---------|------------|-------|
| FU3620-DS-001 | V1.0    | 2026-08-24 | 7     |

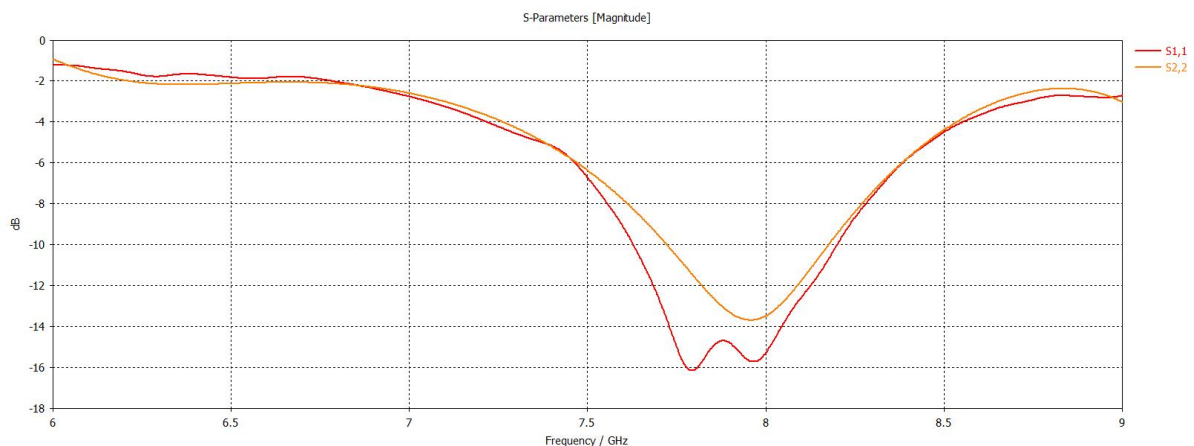
## 1. Product Overview

This document provides RF antenna performance data for the FineRange FU3620 two- element UWB antenna module within the 7.7- 8.3GHz frequency band, for FCC / IC certification application. The module consists of one shared TX/RX0 antenna and one independent RX1 antenna. All data are obtained from mass- production prototypes under standard test conditions.

## 2. Peak Gain and Antenna Efficiency

The tables below show return loss, peak gain and total efficiency at each frequency point from 7.7 GHz to 8.3 GHz. **Peak Gain** is defined as the maximum realized gain across all polarizations and directions. **Total Efficiency** includes mismatch loss, conductor loss and dielectric loss.

### 2.1 Return Loss



S11 — TX/RX0 Antenna, S22 — RX1 Antenna (*Insert S- Parameters Magnitude curve graph*)



## 2.2 TX/RX0 Shared Antenna (Antenna 0)

| Frequency<br>(GHz) | Peak Gain<br>(dBi) | Total Efficiency<br>(%) |
|--------------------|--------------------|-------------------------|
| 7.7                | 6.899              | -2.571                  |
| 7.8                | 6.828              | -2.431                  |
| 7.9                | 6.478              | -2.377                  |
| 8.0                | 6.659              | -2.583                  |
| 8.1                | 6.772              | -3.038                  |
| 8.2                | 6.804              | -3.330                  |
| 8.3                | 6.937              | -3.844                  |

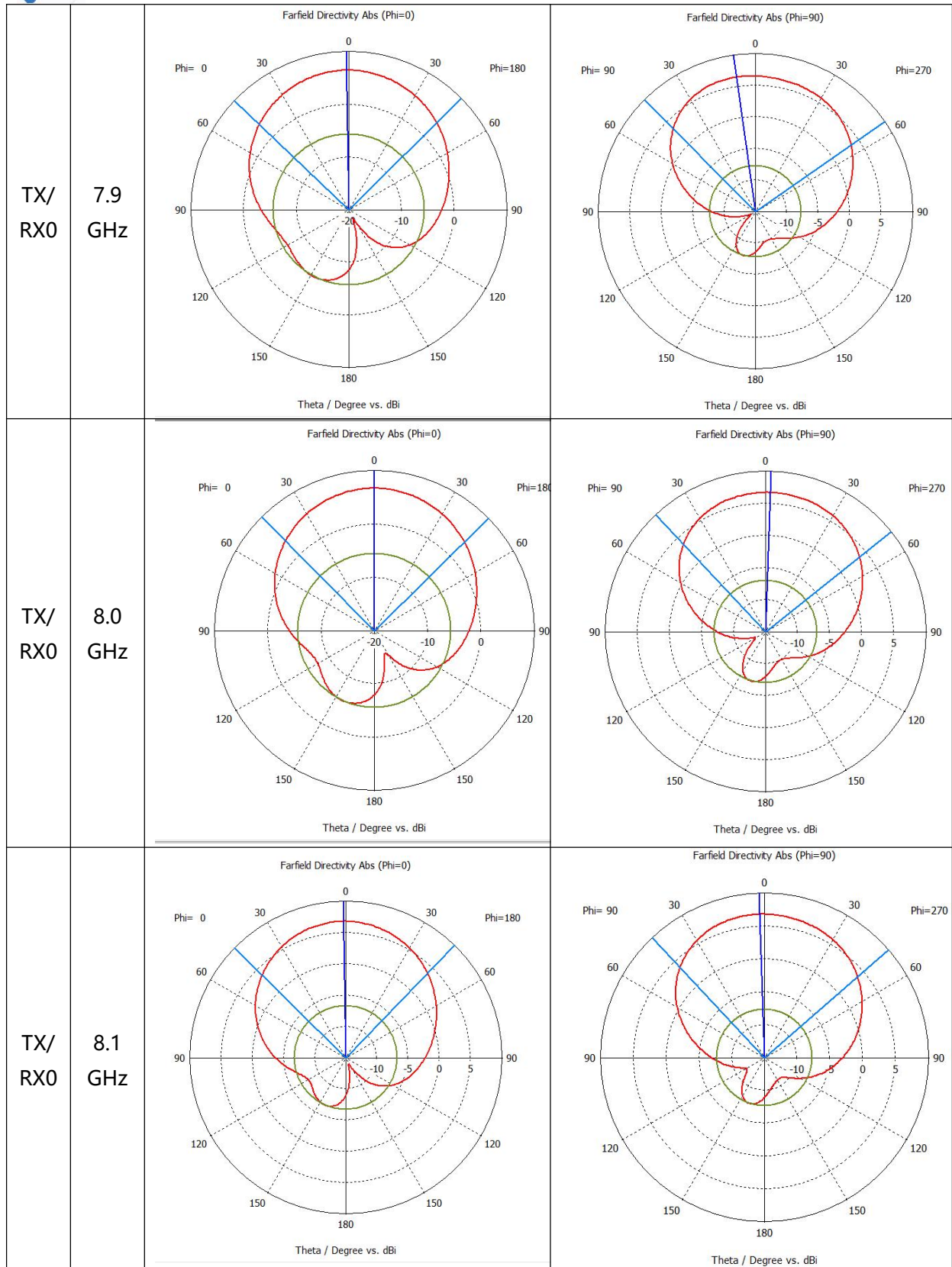
## 2.3 RX1 Independent Antenna (Antenna 1)

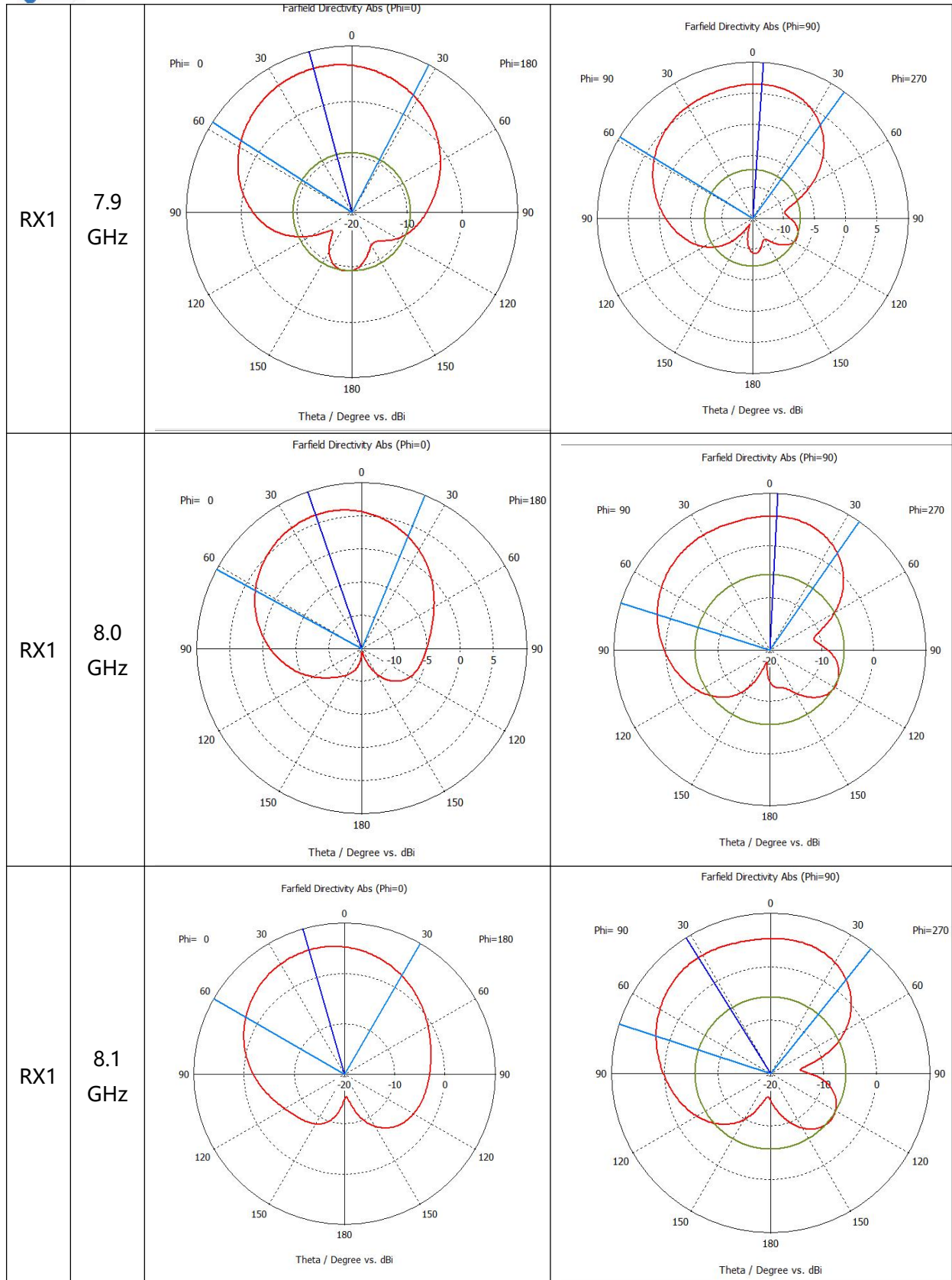
| Frequency<br>(GHz) | Peak Gain<br>(dBi) | Total Efficiency<br>(%) |
|--------------------|--------------------|-------------------------|
| 7.7                | 6.826              | -3.477                  |
| 7.8                | 6.727              | -4.149                  |
| 7.9                | 6.818              | -4.147                  |
| 8.0                | 6.283              | -3.898                  |
| 8.1                | 5.729              | -3.654                  |
| 8.2                | 6.028              | -3.572                  |
| 8.3                | 6.115              | -3.722                  |

## 3. 2D Radiation Patterns

2D radiation patterns are measured at typical frequency points (7.9 GHz / 8.0 GHz / 8.1 GHz). Co- Pol / Cross- Pol curves for E- plane ( $\phi=0^\circ$ ) and H- plane ( $\theta=90^\circ$ ) are provided respectively. The diagrams below are placeholders and shall be replaced with actual measured curves.

| Antenna | Frequency | E-Plane | H-Plane |
|---------|-----------|---------|---------|
|---------|-----------|---------|---------|

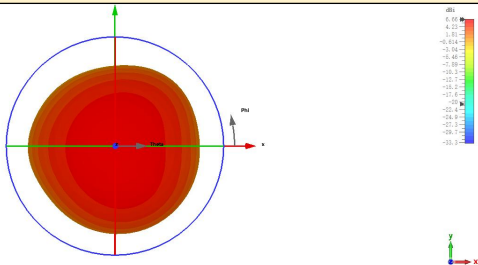
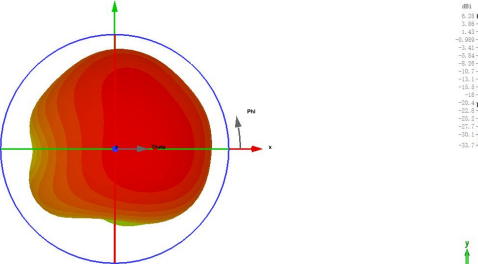




## 4. 3D Radiation Patterns



3D radiation patterns illustrate antenna radiation distribution under spherical coordinate system. The table below contains placeholders for the 3D gain patterns of TX/RX0 and RX1 at the center frequency of 8.0GHz.

| Antenna | Frequency | 3D Gain Pattern                                                                                                                                                                                                                                                                         |
|---------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TX/RX0  | 8.0 GHz   |  <pre> Farfield (9+4) (1) Type: Farfield Approximation: analytical (M &gt;&gt; 1) Component: Abs Output: Directivity Frequency: 8 GHz Real Effic: -2.266 dB Tot. Effic: -2.581 dB Dn: 6.639 dB </pre> |
| RX1     | 8.0 GHz   |  <pre> Farfield (9+4) (1) Type: Farfield Approximation: analytical (M &gt;&gt; 1) Component: Abs Output: Directivity Frequency: 8 GHz Real Effic: -3.705 dB Tot. Effic: -3.898 dB Dn: 6.203 dB </pre> |

## 5. Antenna AOA Test Result: - 60° ~ +60°

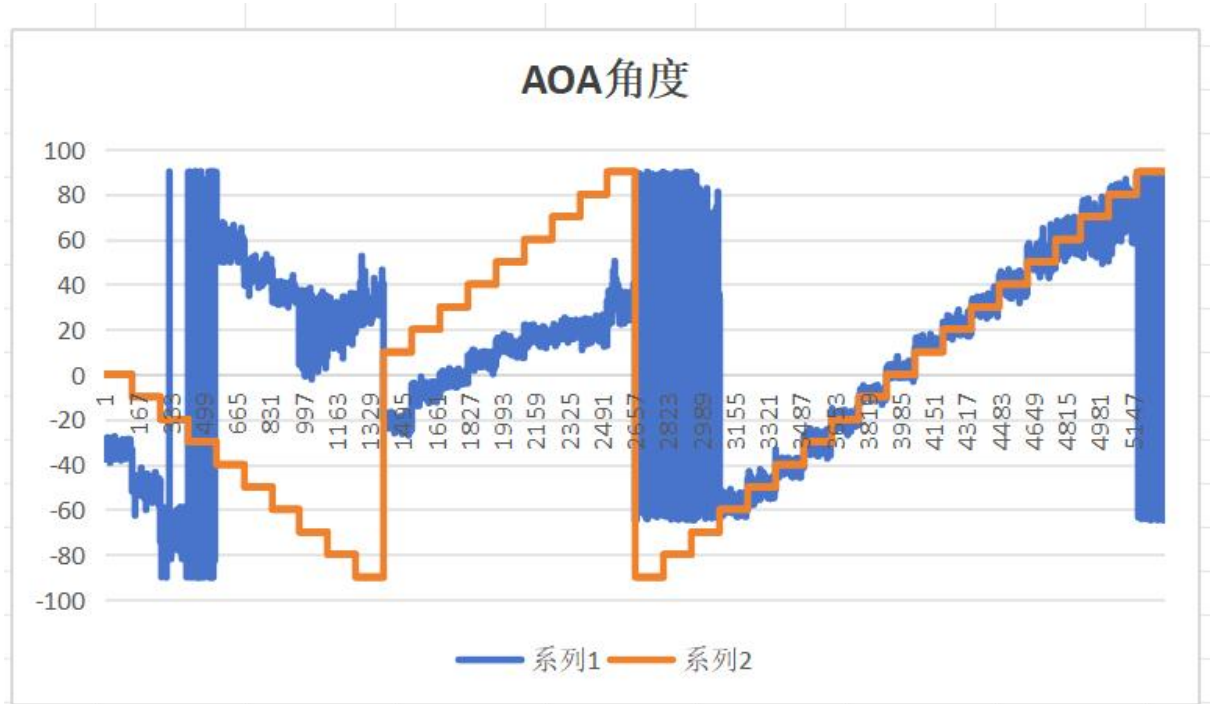
**TX/RX0 Shared Antenna:** Antenna0 is the shared port for transmission and reception. It shall meet both transmitted EIRP limit requirements and receiving sensitivity requirements. During testing, confirm that its peak gain does not exceed the power spectral density limits for UWB transmission specified by FCC/IC. The maximum- gain direction shall be provided for certification envelope

**RX1 Independent Antenna:** Antenna 1 is an independent receiving channel for PDoA/AOA angle- of- arrival measurement. For certification documents, focus shall be placed on its gain and efficiency consistency, to ensure the dual- antenna receiving chain meets system phase consistency requirements.

*(Insert AOA angle test chart)*



calculation.



## 7. Declaration

All data contained in this report are only for FCC / IC certification reference for customers purchasing FineRange FU3620 antenna module. Final certification data shall be subject to the official test report issued by an accredited laboratory. Excerpting, copying this document or using it for other product promotion purposes without authorization is prohibited.

### Antenna Dimension Diagram

