



SparkLAN Communications, Inc.

Antenna Test Report

Product Number	AD3216-A2461QA
Total Sample Quantity	2 sets
Date Finished	05/27/2025

View 1.0



Antenna Test Report

1. Purpose:

Use the AD3216-A2461QA*2 to debug and measure the field type.

2. Conclusion and recommendations:

2.1 The antenna gain is shown in the table below:

Gain Table

Unit in dBi	XY-plane		XZ-plane		YZ-plane		Efficiency
	Peak	Avg.	Peak	Avg.	Peak	Avg.	
ANT1@2400MHz	-4.2	-5.5	-1.8	-6.4	0.5	-3.7	32%
ANT1@2450MHz	-4.1	-5.8	-1.9	-6.2	0.3	-3.7	32%
ANT1@2500MHz	-3.7	-6.1	-2.7	-6.2	-0.3	-4.4	30%
ANT1@4900MHz	-0.6	-4.1	3.0	-4.5	2.6	-2.2	43%
ANT1@5375MHz	-0.5	-3.5	2.2	-2.9	3.1	-1.2	59%
ANT1@5850MHz	1.2	-2.4	3.7	-2.8	3.5	-0.6	73%
ANT1@6525MHz	0.7	-2.5	3.6	-3.1	3.2	-1.3	59%
ANT1@7200MHz	-0.4	-4.0	4.6	-2.9	4.7	-1.0	59%
ANT2@2400MHz	-5.2	-7.1	1.1	-5.5	-0.7	-5	32%
ANT2@2450MHz	-5.8	-7.5	1.4	-5.6	-0.6	-5.9	30%
ANT2@2500MHz	-4.7	-6.2	1.7	-5.2	0.2	-5.8	32%
ANT2@4900MHz	-2.0	-4.3	1.8	-4.2	0.3	-4.8	38%
ANT2@5375MHz	-2.8	-4.0	0.1	-3.7	0.5	-5.1	41%
ANT2@5850MHz	-2.7	-4.6	-1.1	-4.4	-2.1	-5.7	33%
ANT2@6525MHz	-2.2	-4.3	0.6	-3.5	-0.5	-3.6	44%
ANT2@7200MHz	-2.2	-4.3	0.6	-3.5	-0.5	-3.6	60%

2.2 Conclusion

The antenna gain of the AD3216-A2461QA after debugging is shown in the table above, and it is recommended that customers follow the matching values in Annex 2 for actual measurement.



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Antenna Test Report

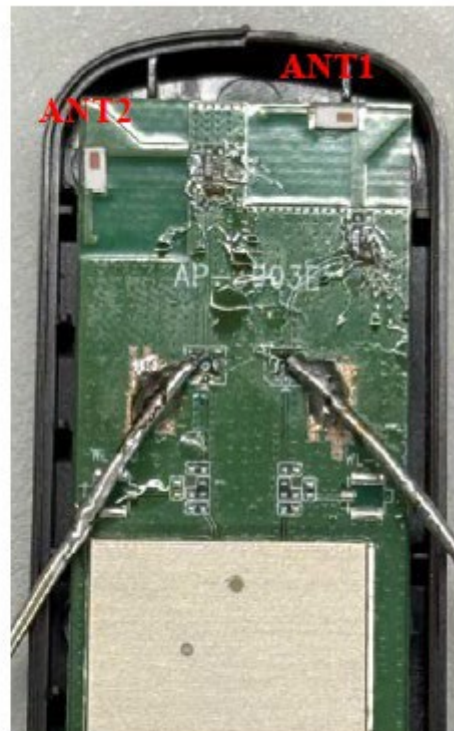
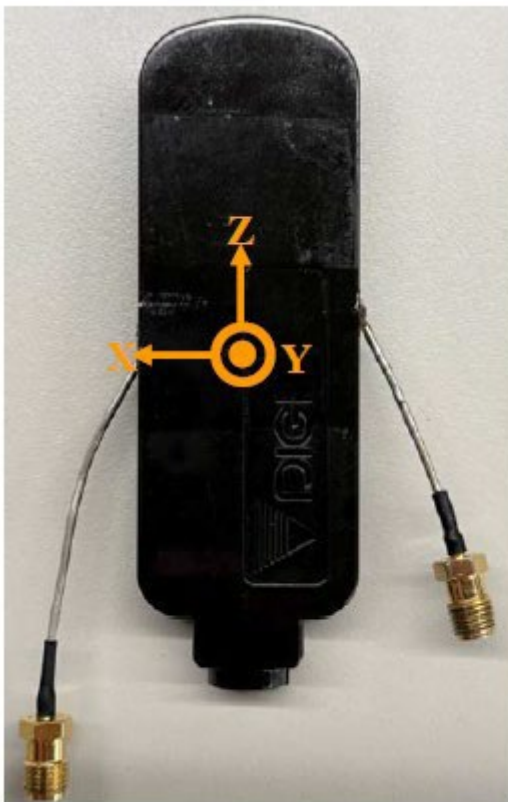
3. Suggestion Matching Values: See Annex 2.

4. Field shape and various measurement methods and results:
See Annex 3.

Annex

1. PCB and Enclosure Structure Diagram:

AD3216-A2461QA

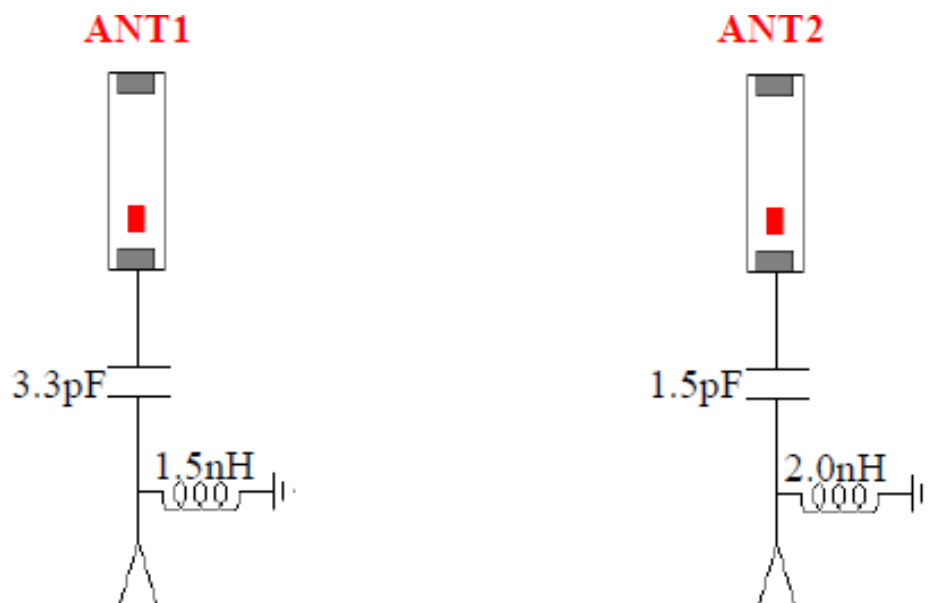


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2. Schematic diagram of antenna matching circuit:

Antenna Type : Chip Antenna

Antenna Size : 3.1mm * 1.6mm



Components used in matching circuits:

ANT1	3.3pF	1.5nH
	201R07S3R3BV4S	HI1005-1C1N5SMT
ANT2	1.5pF	2.0nH
	201R07S1R5BV4S	HI1005-1C2N0SMT



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Antenna Test Report

3. field type and various measurement methods and results:

A. Instrument setup

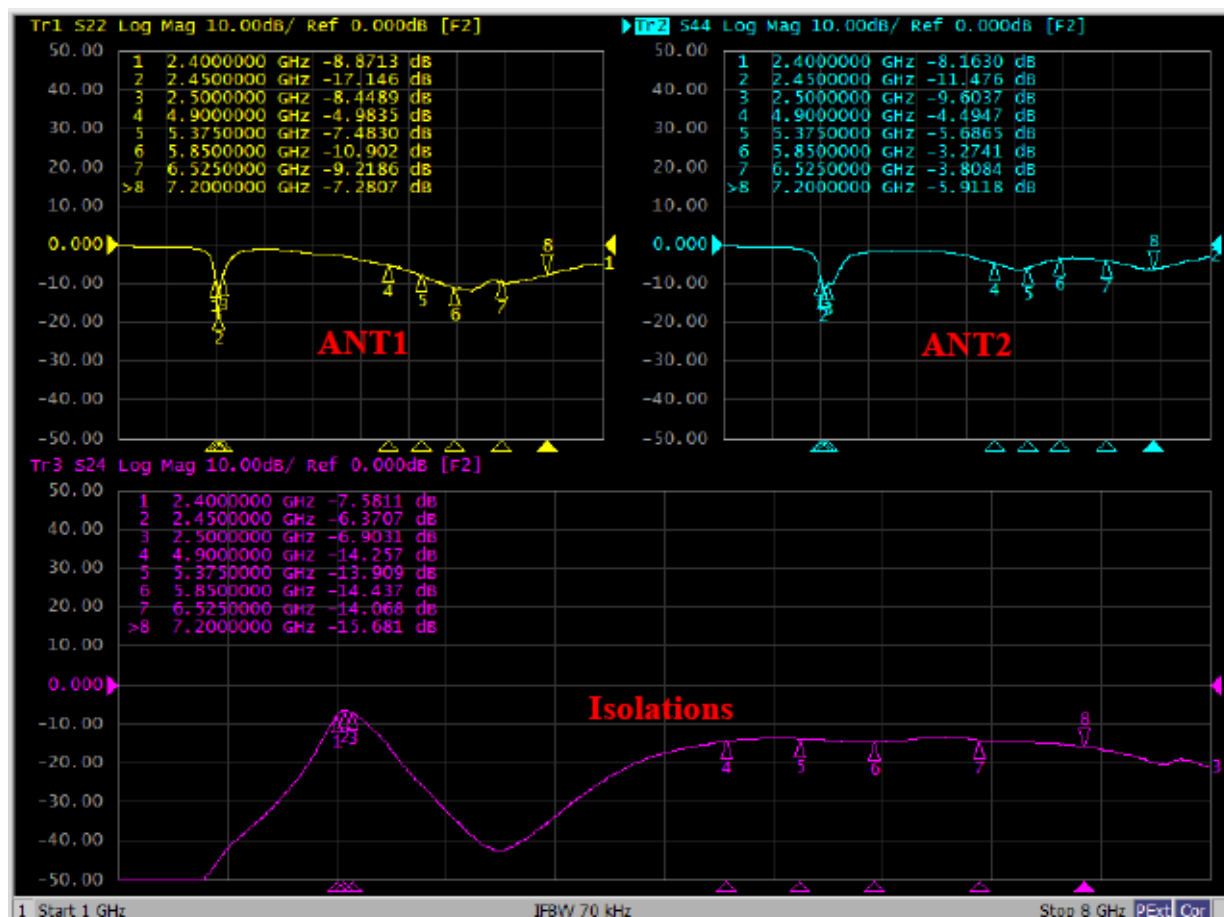
▲ Return Loss / VSWR:

- ◆ Instrument : Keysight ENA series network analyzer-E5071C
- ◆ Calibration method: Auto Port extension – Ecal

▲ 3D Radiation Pattern:

- ◆ BWant MS10 far field antenna measurement system

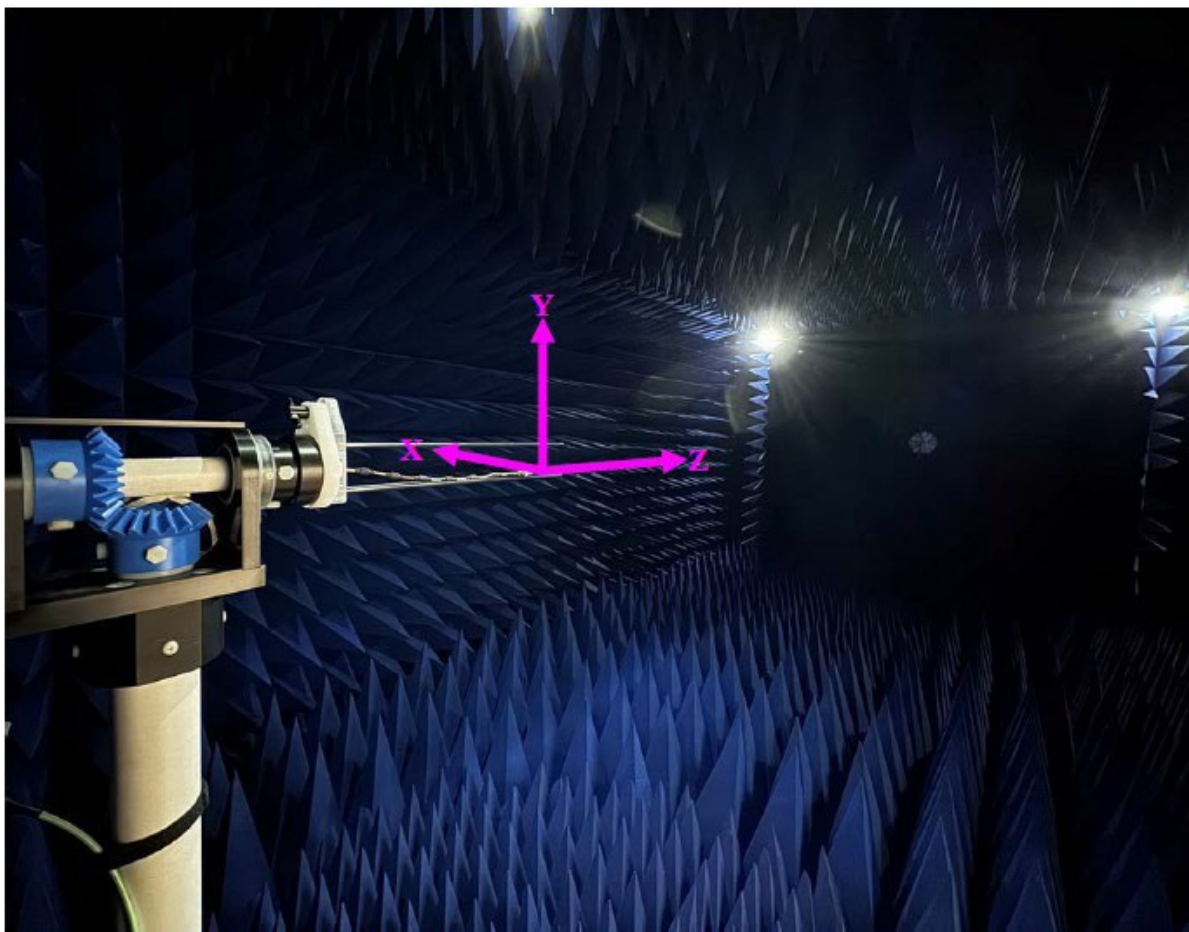
B. AD3216-A2461QA Return Loss Measured values



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Radiation field pattern diagram

◆ Measurement coordinate map



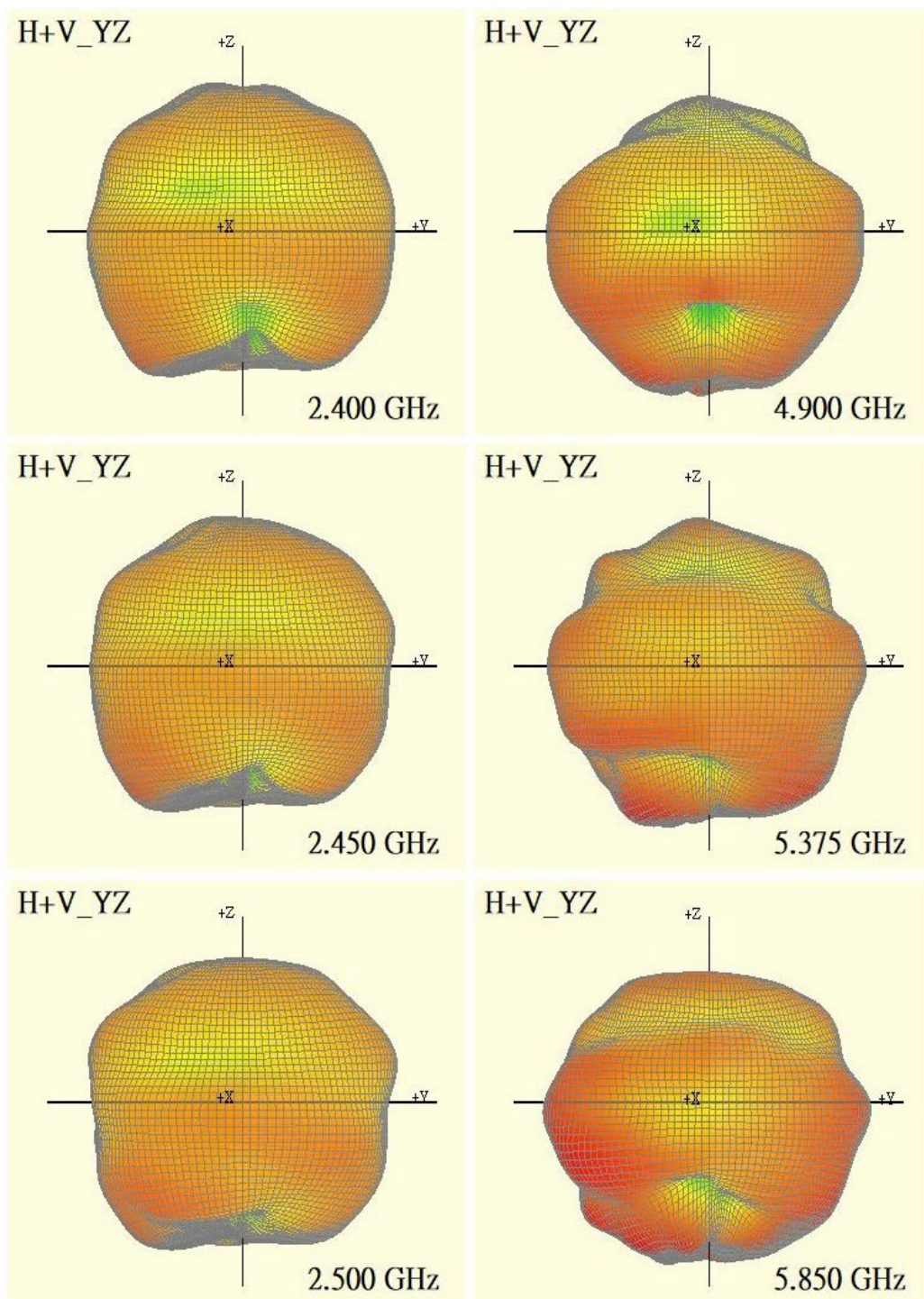
◆ Definitions of each plane

XY-plane	Theta=90°
XZ-plane	Phi=0°
YZ-plane	Phi=90°

Antenna Test Report

◆ 3D radiation field pattern

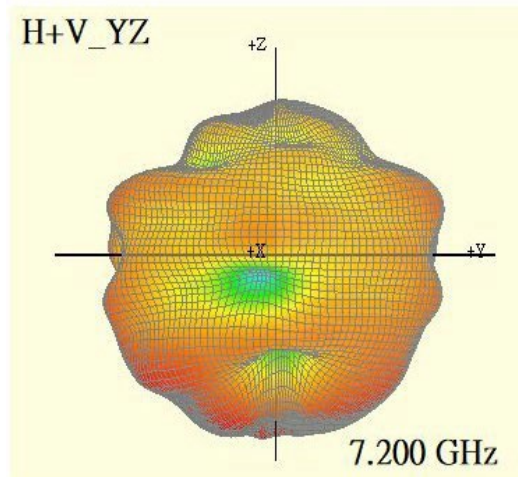
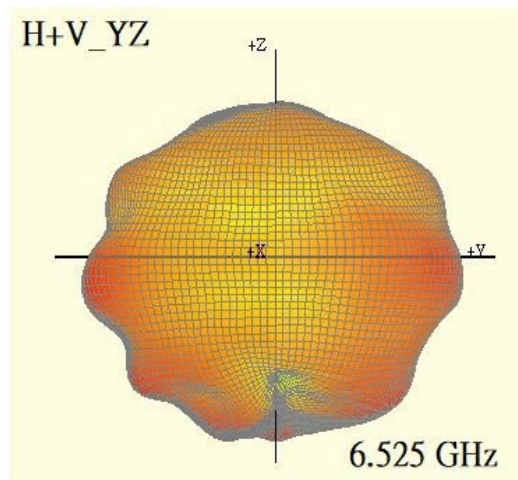
ANT1





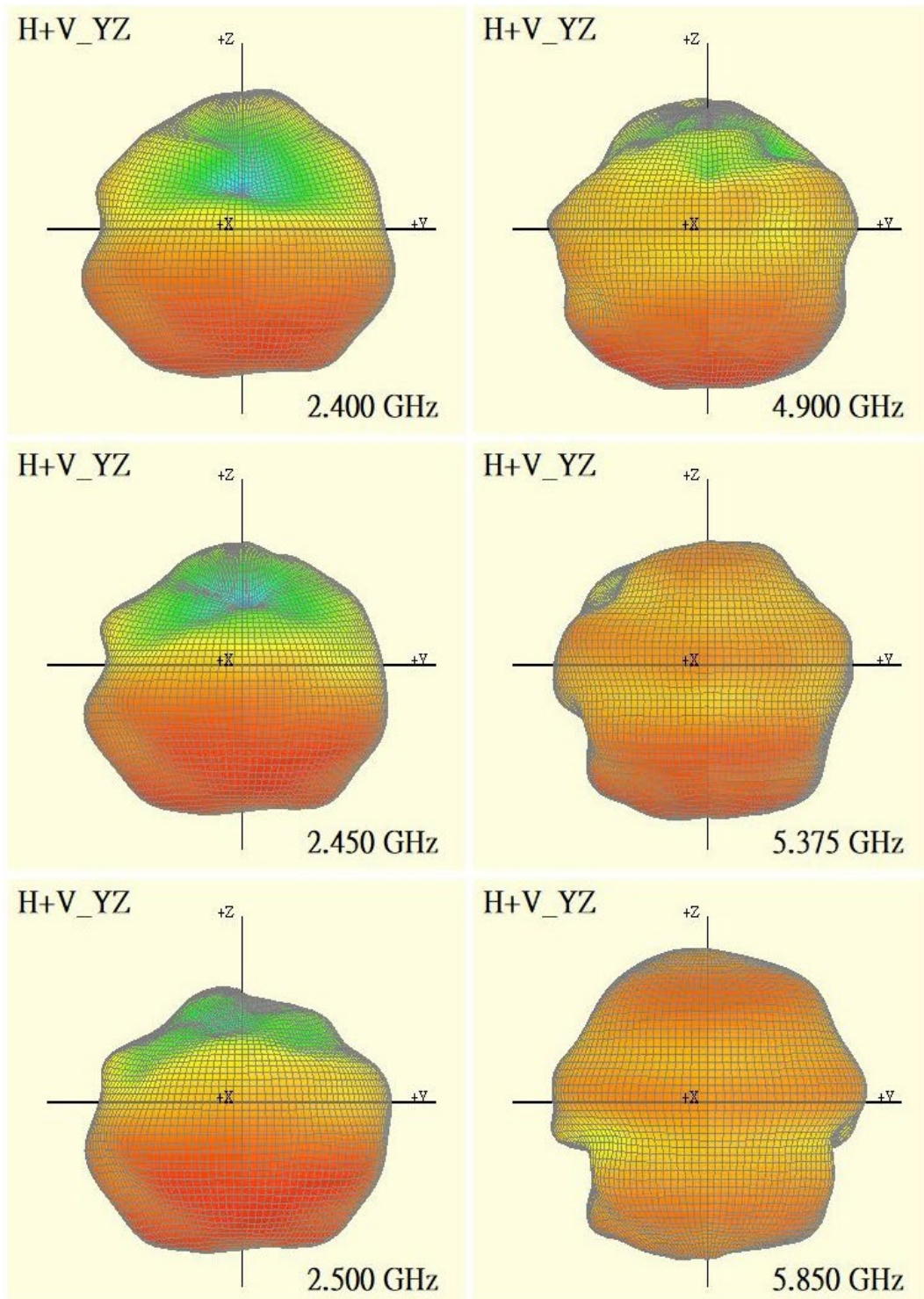
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Antenna Test Report



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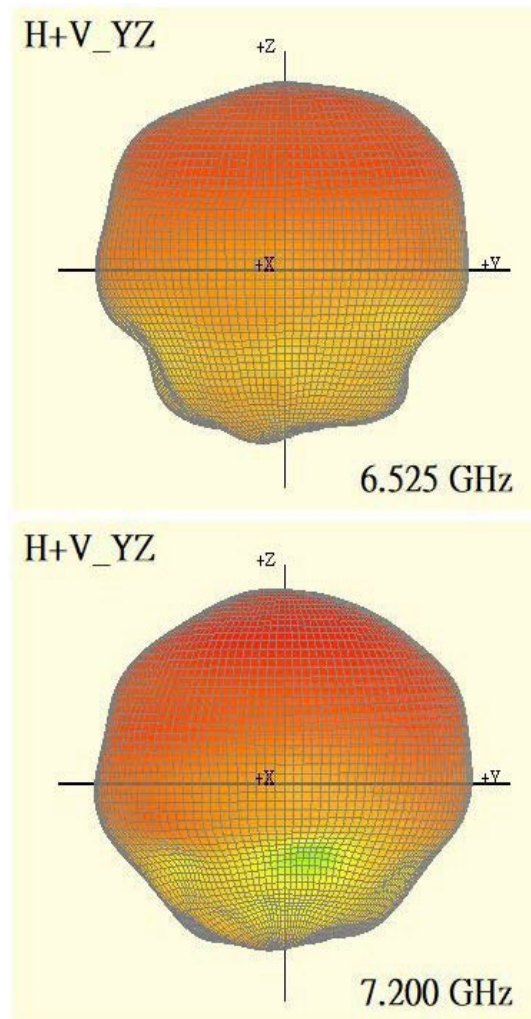
ANT2





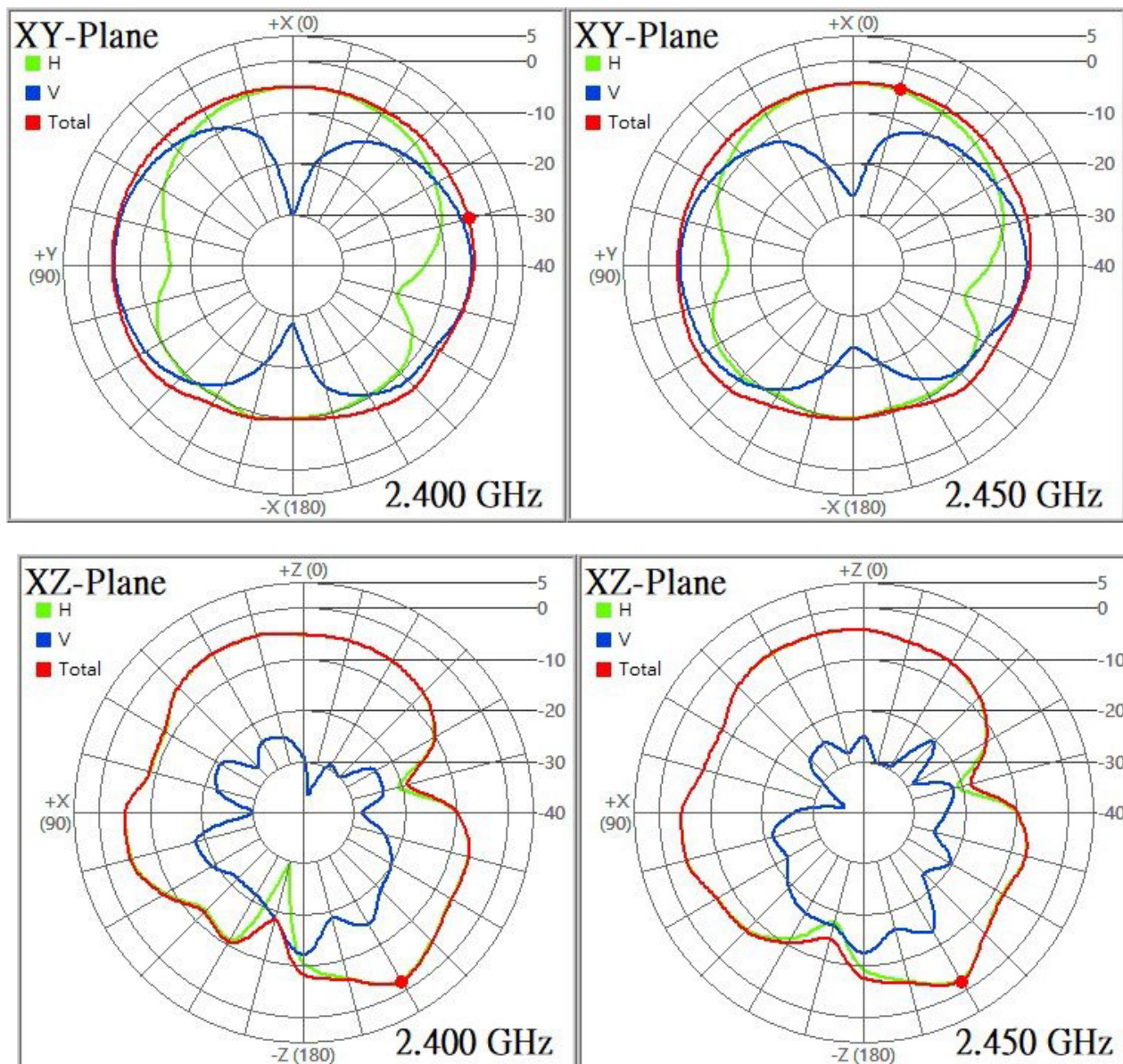
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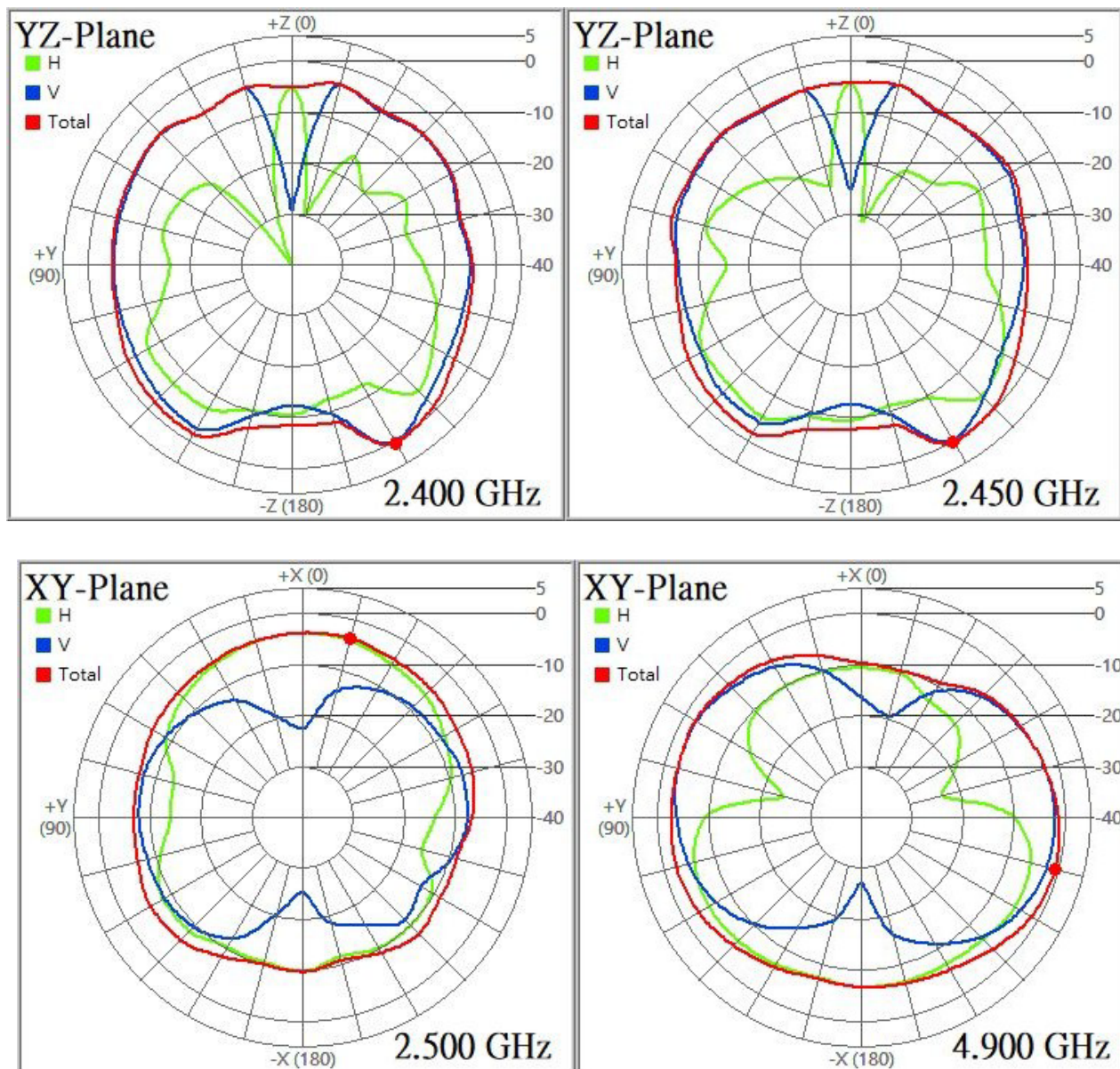


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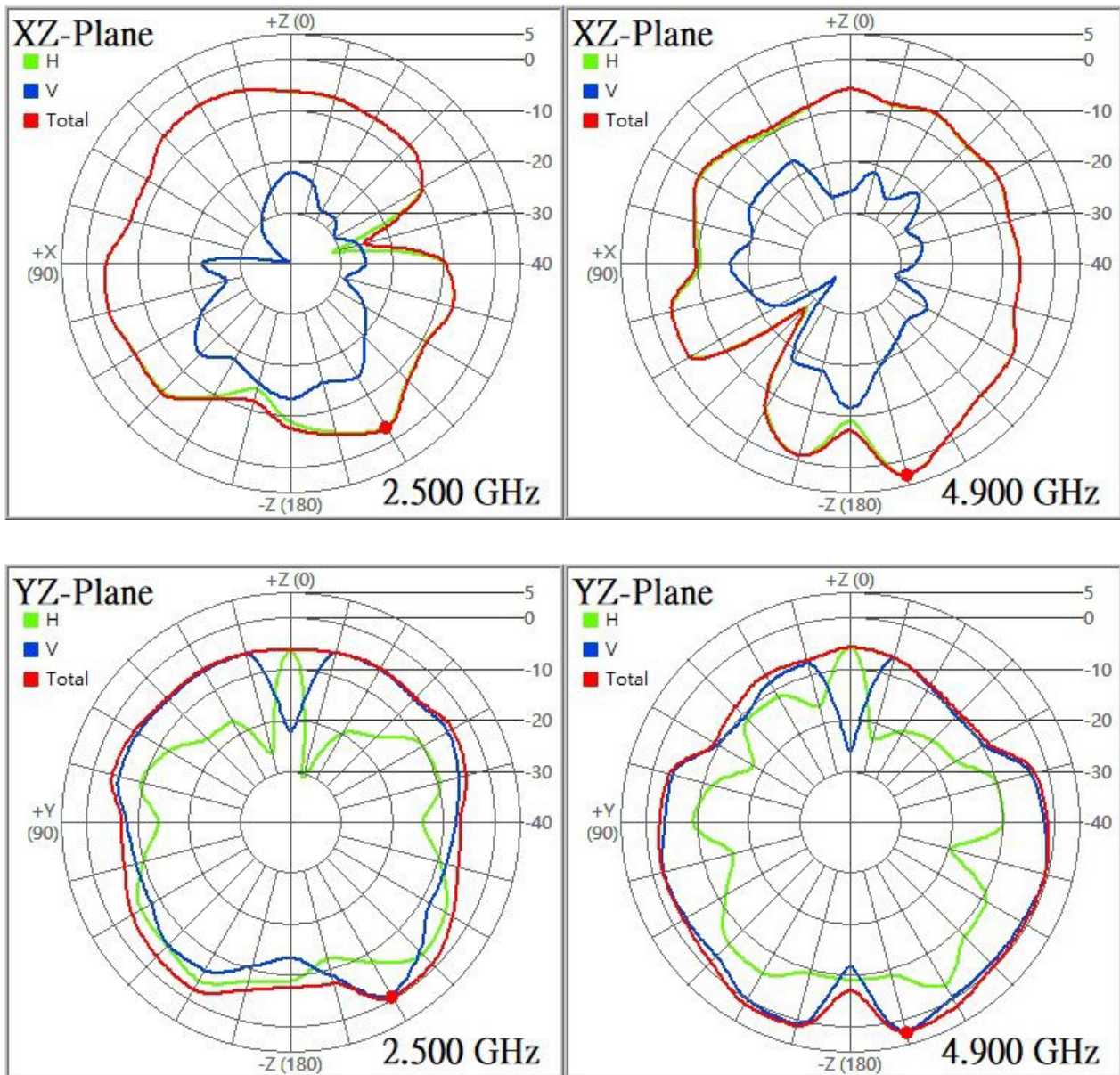
ANT1 radiation field type diagram



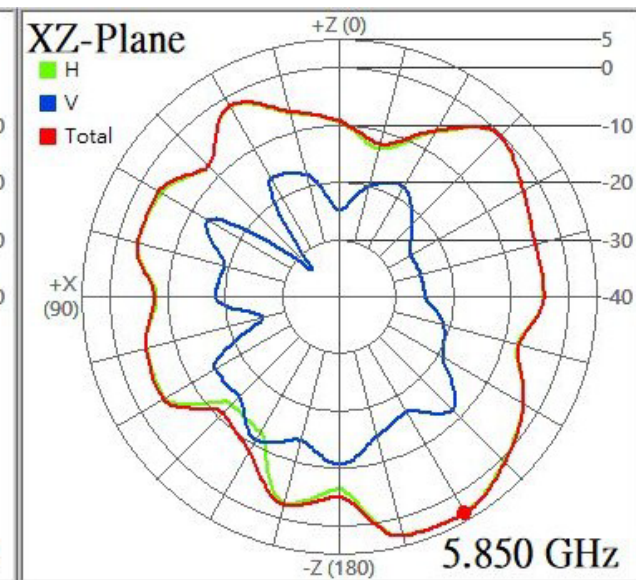
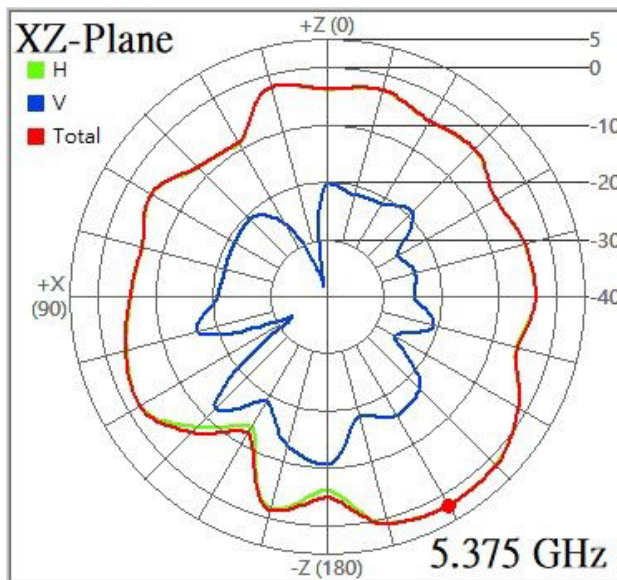
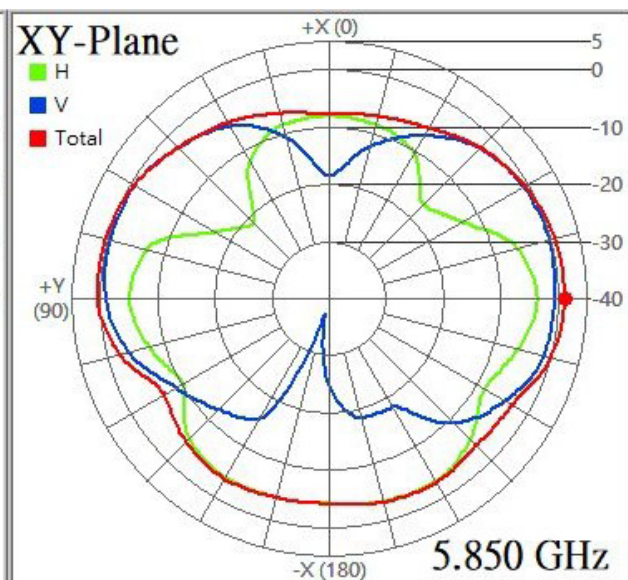
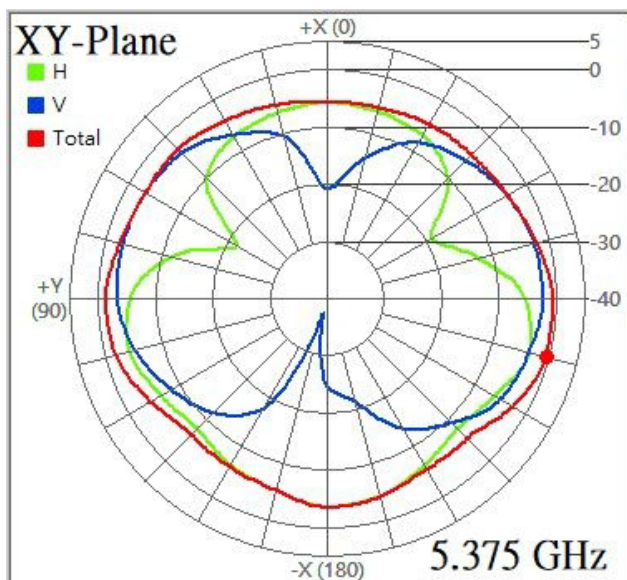
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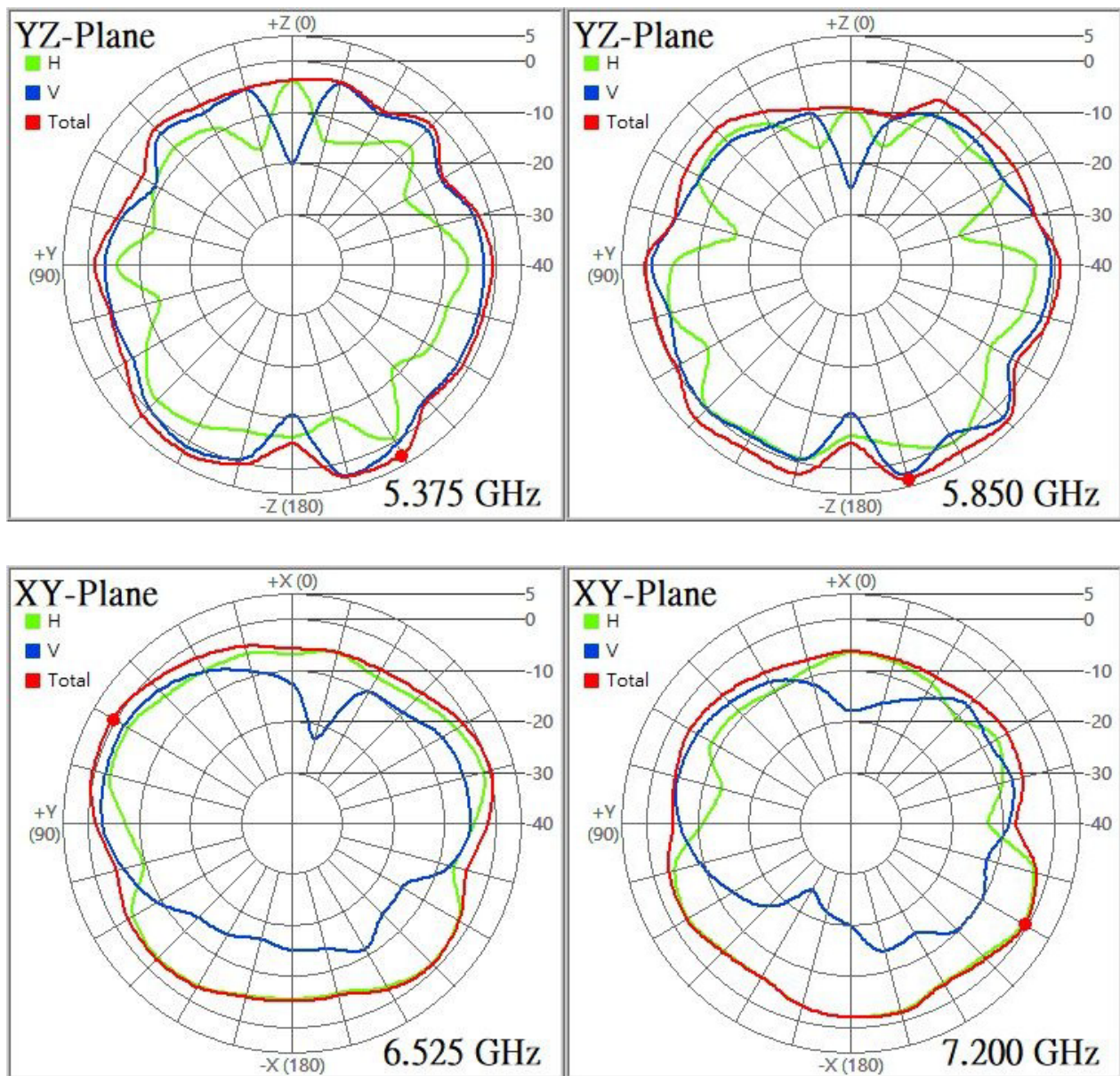
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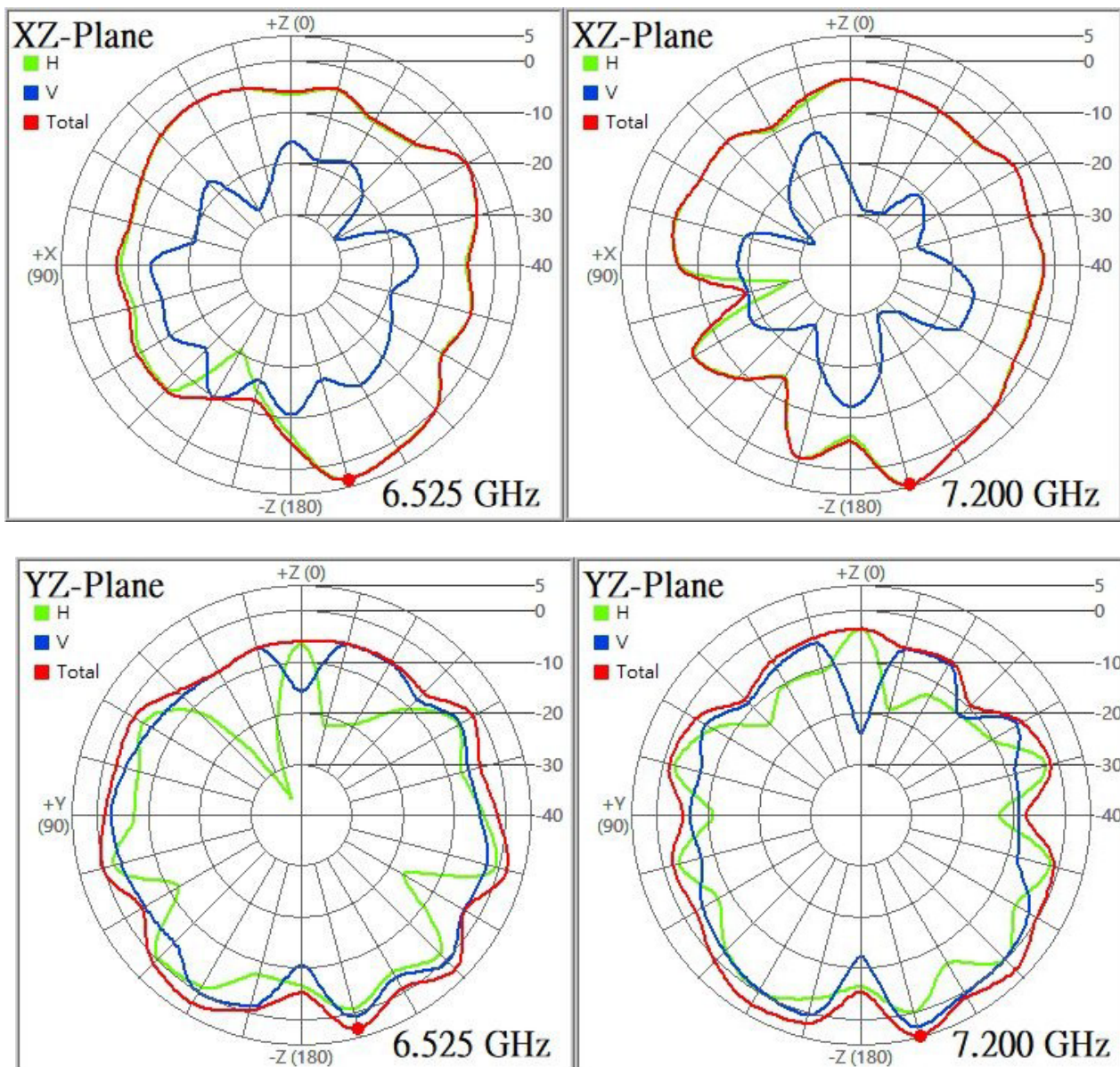
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ANT2 radiation field pattern

