

Antenna Specification

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1.Purpose::

Use AT3216-B2R7HAA to debug and measure the field pattern.



2.Conclusion and Suggestions

2.1 Antenna gain is shown in the following table:

Gain Table

Unit in dBi	XY-plane		XZ-plane		YZ-plane		Efficiency
	Peak	Avg.	Peak	Avg.	Peak	Avg.	
@2400MHz	-1.0	-5.1	-0.8	-4.3	-1.1	-5.2	36.0%
@2450MHz	-1.7	-4.9	-2.1	-4.9	-0.5	-4.7	36.0%
@2500MHz	-2.4	-5.6	-2.5	-5.5	-0.7	-5.0	31.0%

2.2 Conclusion:

The measurement results of AT3216-B2R7HAA are shown in the table above. It is recommended that customers use the matching values in Appendix 2 for actual measurement.

3.Recommended Matching value: See Appendix 2 for details

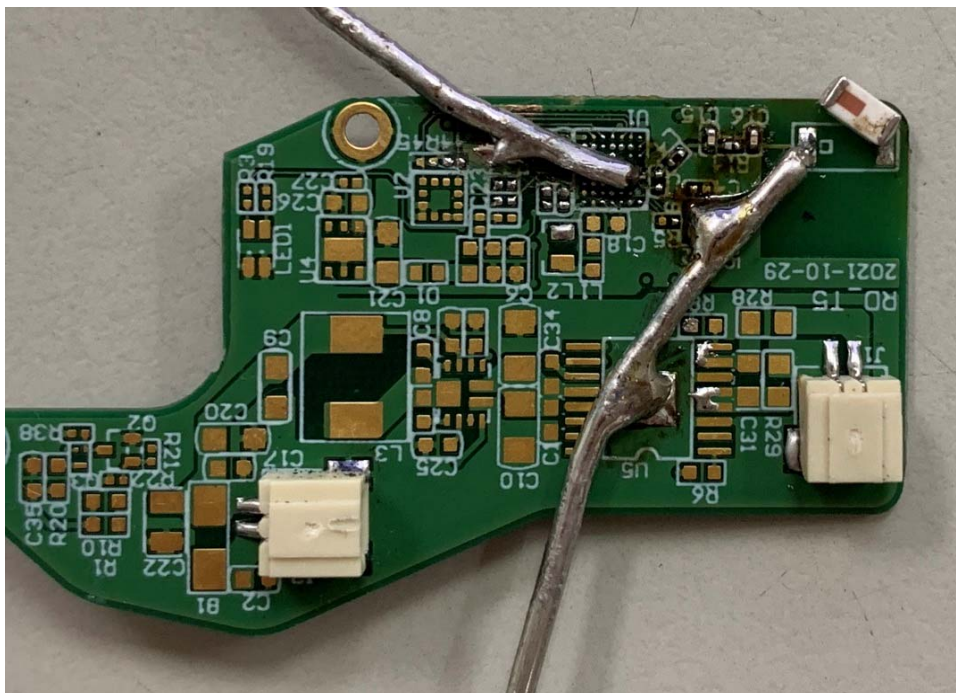
4.Field shape and various measurement methods and results:

see Appendix 3 for details

Appendix

1. PCB and housing structure diagram:

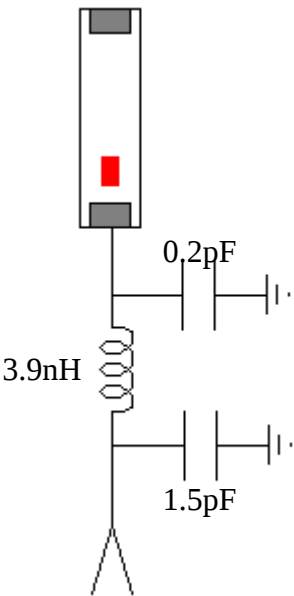
AT3216-B2R7HAA



2. Diagram of antenna matching circuit:



AT3216-B2R7HAA



Components used in matching circuits:

AT3216-B2R7HAA	0.2pF	3.9nH	1.5pF
	250R05L0R2AV4S	HI0603-1B3N9SHT	250R05L1R5BV4S

3. Patterns and Results

A. Instrument Settings

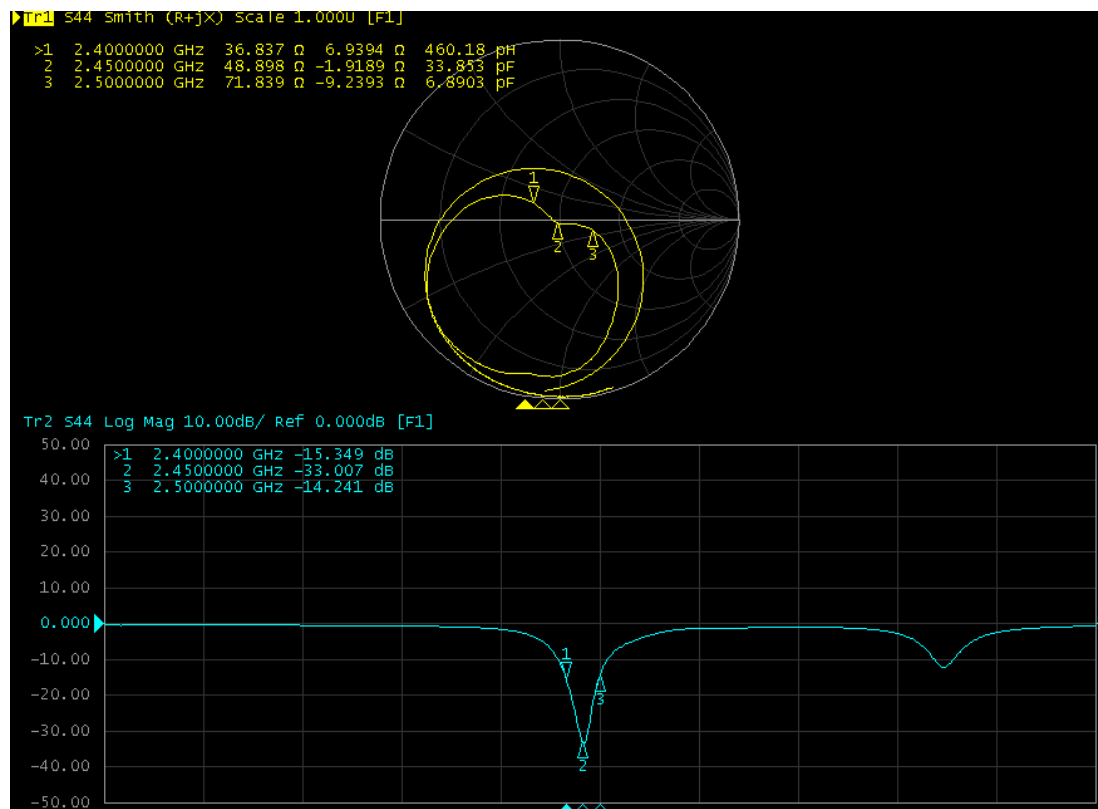
▲ Return Loss / VSWR:

- ◆ Measurement instrument : vector network analyzer - AG
- ◆ Calibration method : open/short/load –Cal. Kit 85052D

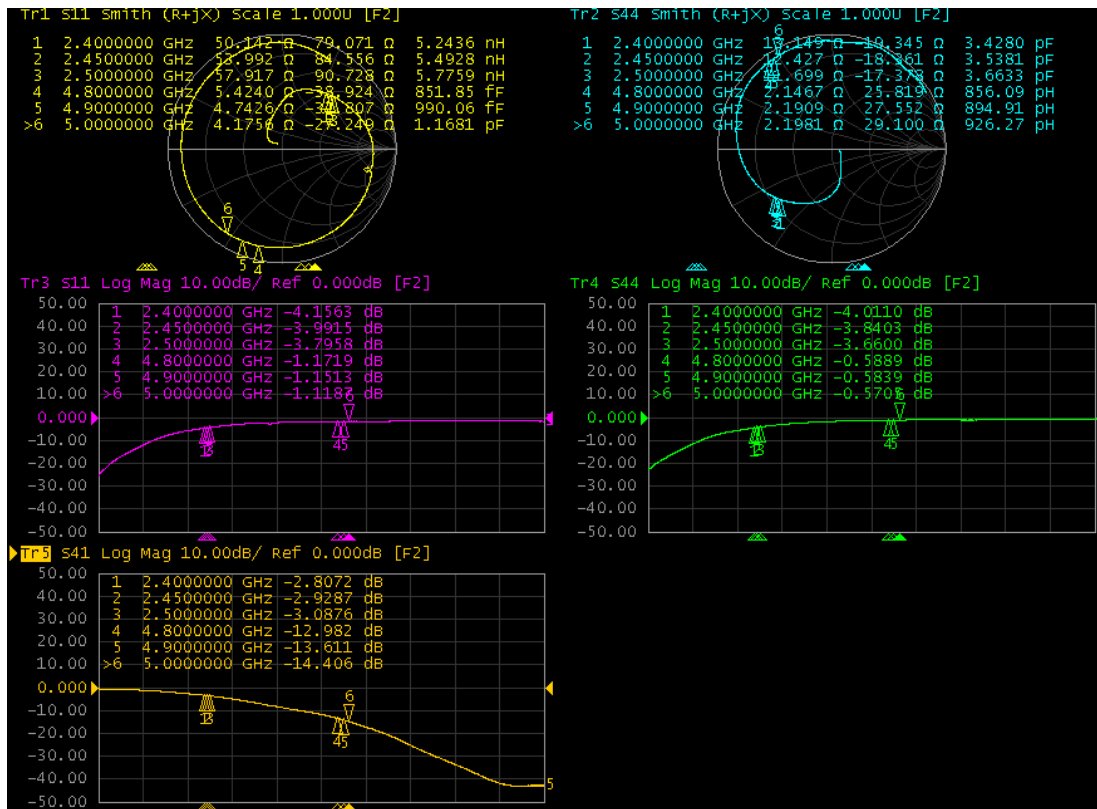
▲ 3D Radiation Pattern :

- ◆ NSI 800F-10 Far Field antenna measurement system

B. AT3216-B2R7HAA Return Loss

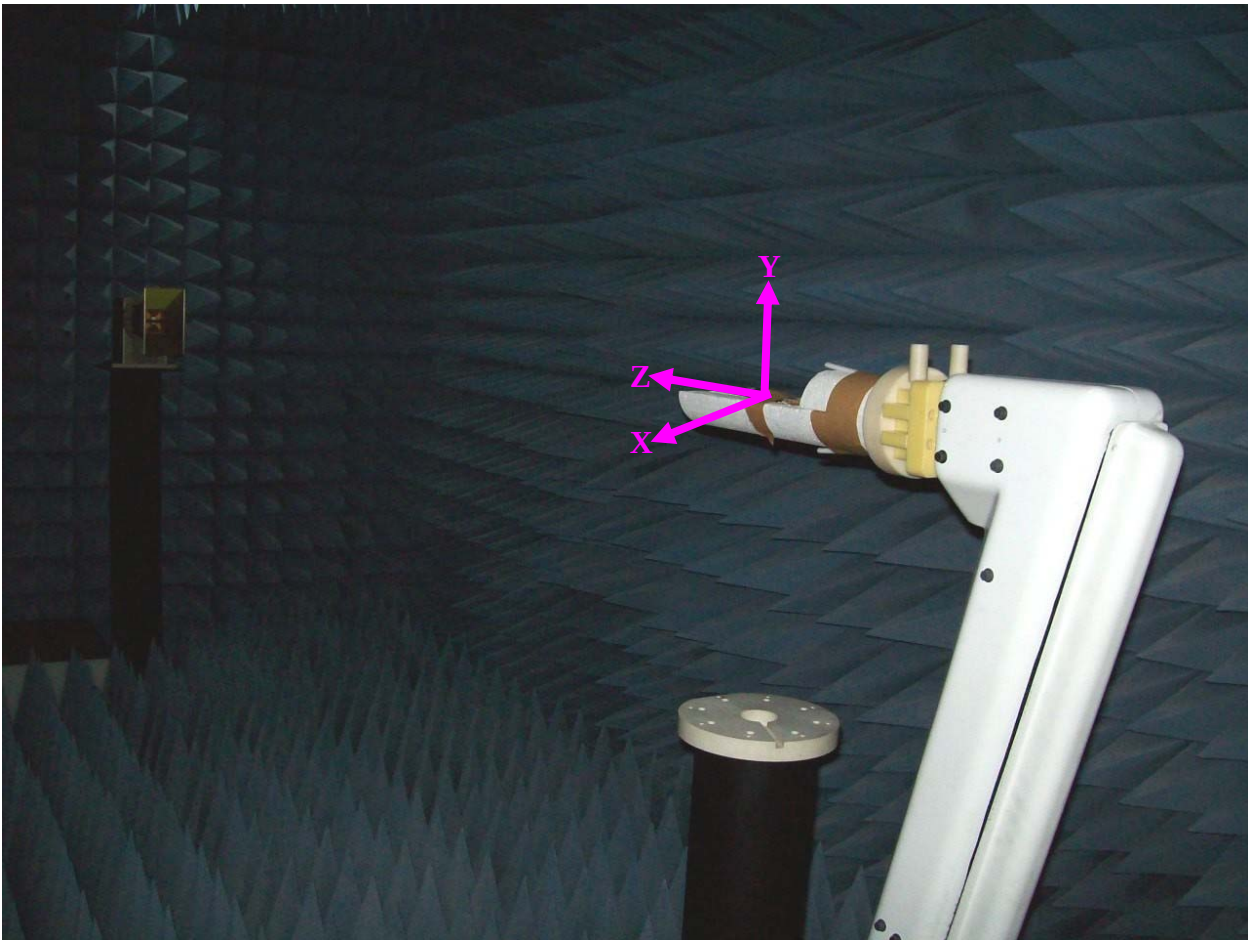


C. AT3216-B2R7HAA-1 Measured value



D. Radiation pattern

◆ Measurement coordinates



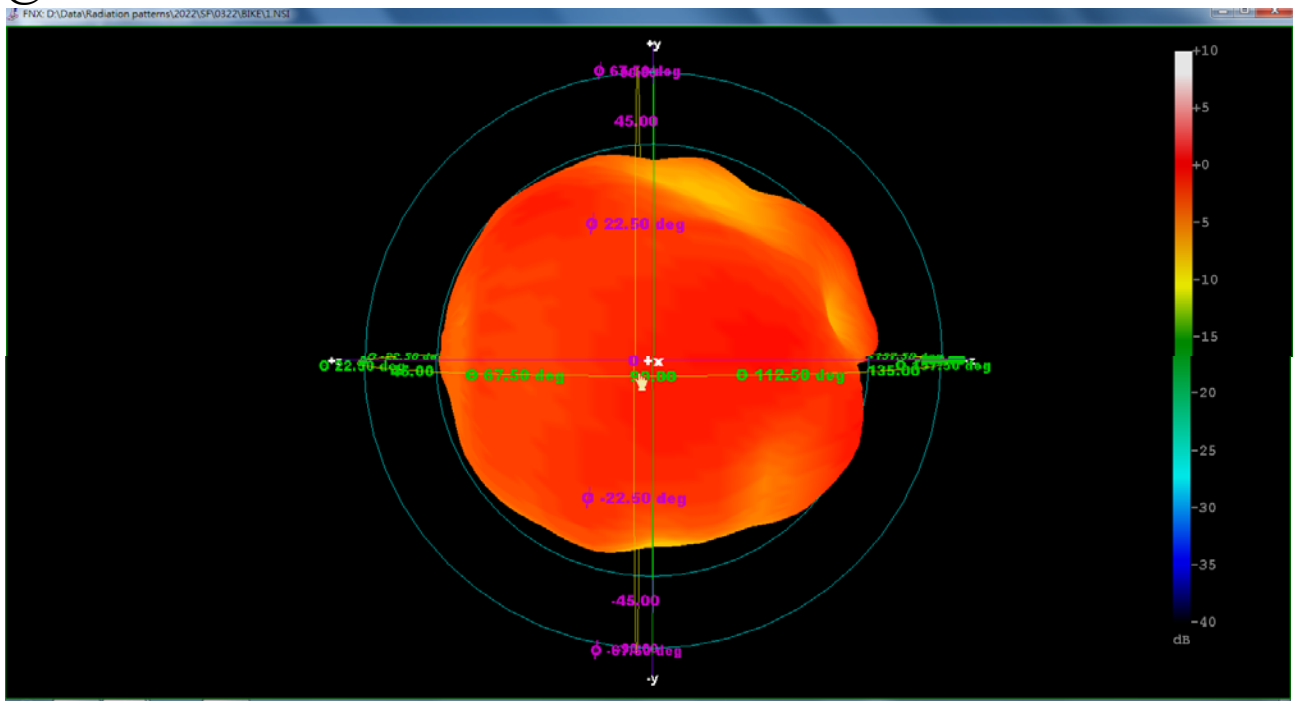
◆ Definition of each plane

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

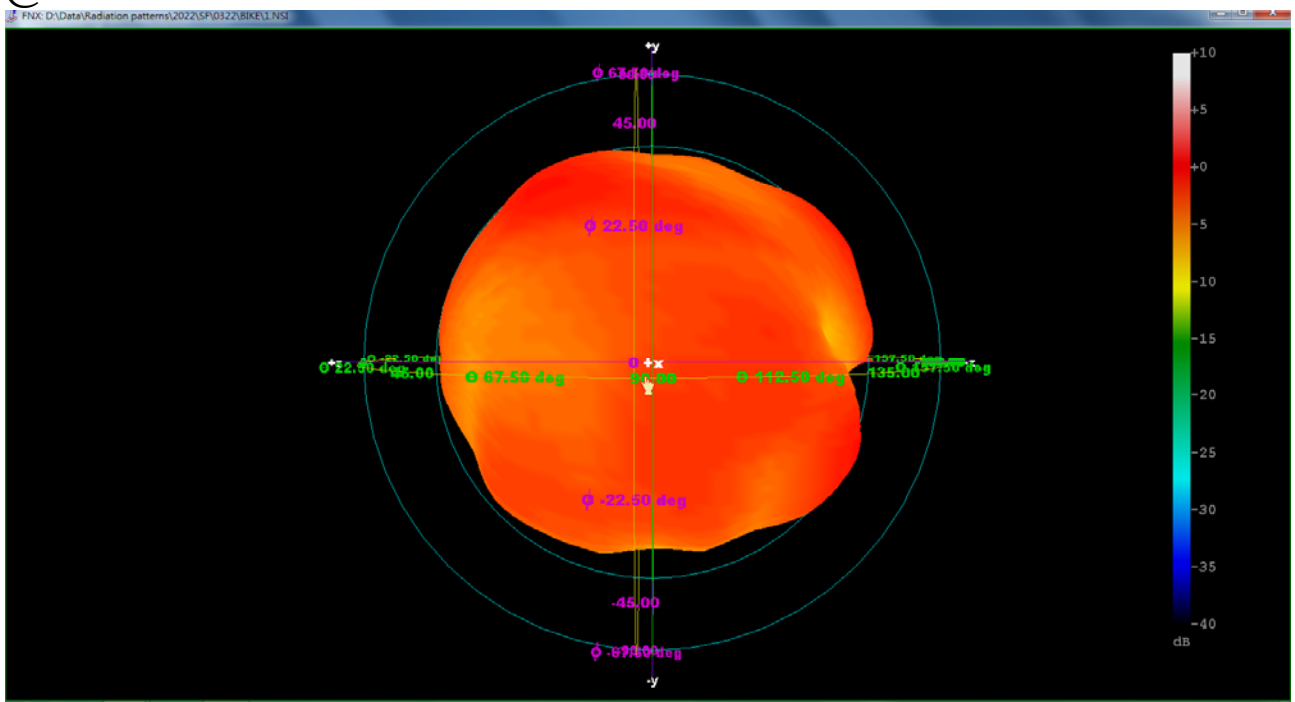
◆ 3D Patterns

ACX

@2400MHz

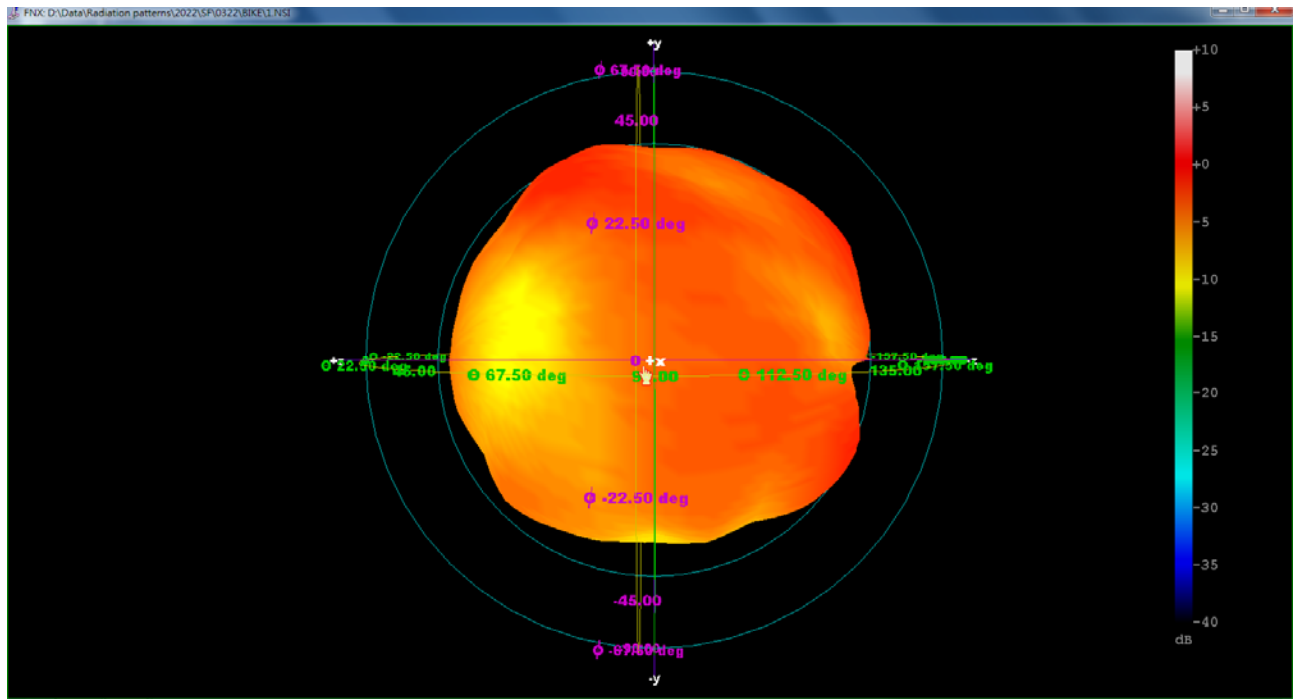


@2450MHz



@2500MHz

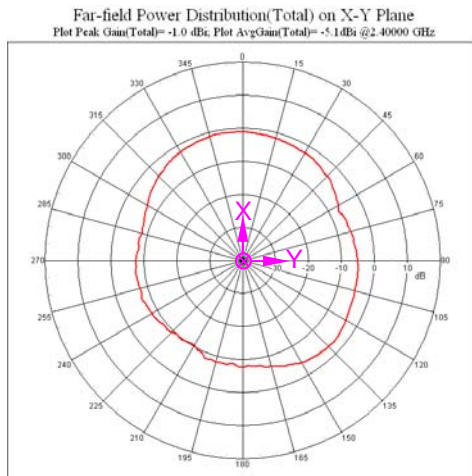
ACX



@2400MHz Radiation Patterns



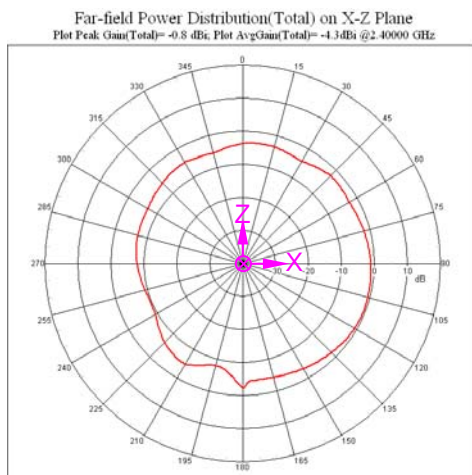
◆ XY-plane



Unit : dBi

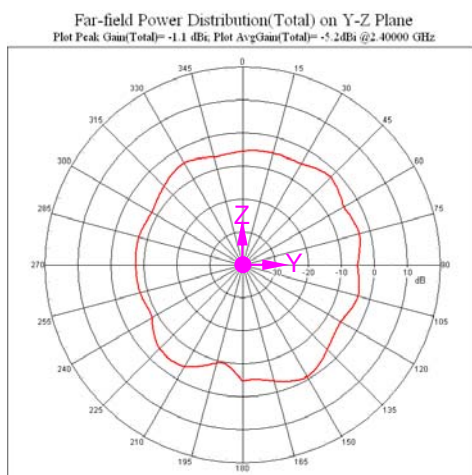
	Peak gain	Avg. gain
XY-plane	-1.0	-5.1

◆ XZ-plane



	Peak gain	Avg. gain
XZ-plane	-0.8	-4.3

◆ YZ-plane

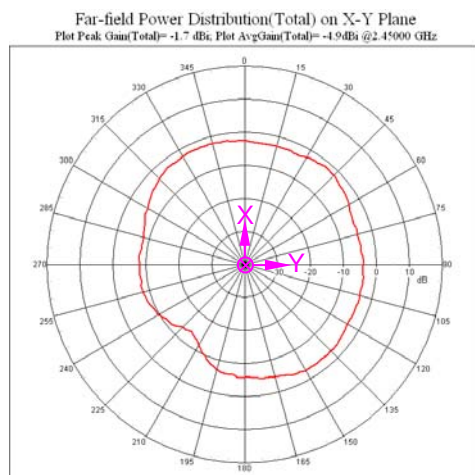


	Peak gain	Avg. gain
YZ-plane	-1.1	-5.2

@2450MHz Radiation Patterns



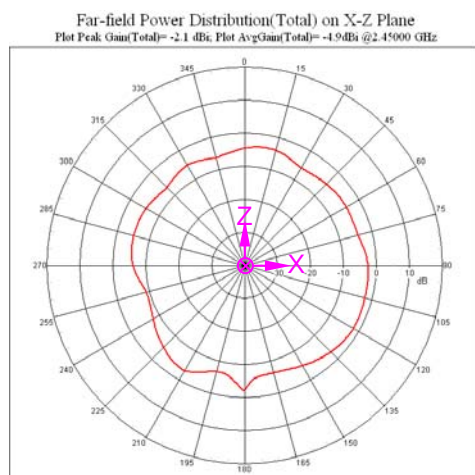
◆ XY-plane



Unit : dBi

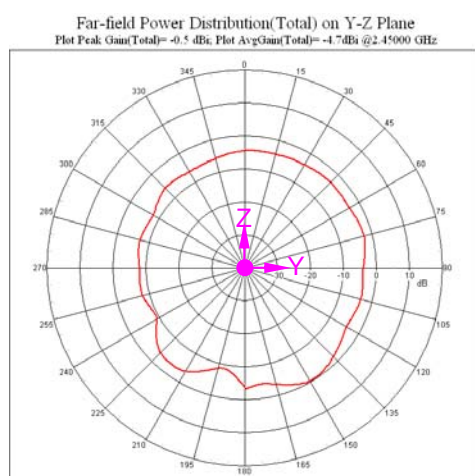
	Peak gain	Avg. gain
XY-plane	-1.7	-4.9

◆ XZ-plane



	Peak gain	Avg. gain
XZ-plane	-2.1	-4.9

◆ YZ-plane

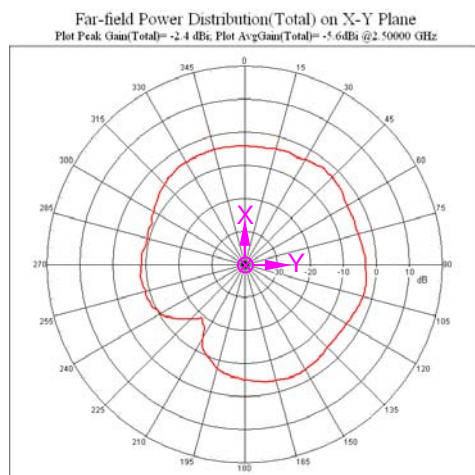


	Peak gain	Avg. gain
YZ-plane	-0.5	-4.7

@2500MHz Radiation Patterns



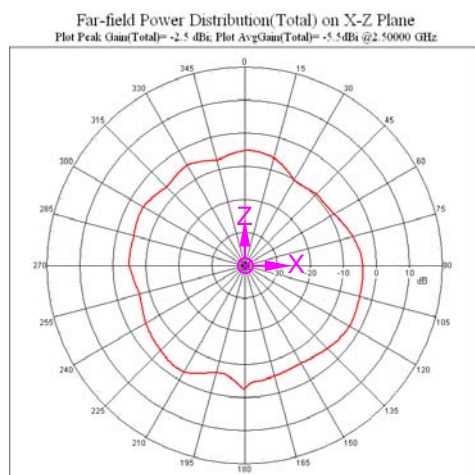
◆XY-plane



Unit : dBi

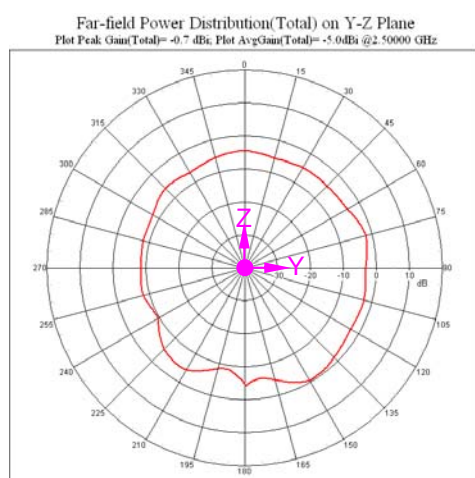
	Peak gain	Avg. gain
XY-plane	-2.4	-5.6

◆XZ-plane



	Peak gain	Avg. gain
XZ-plane	-2.5	-5.5

◆YZ-plane



	Peak gain	Avg. gain
YZ-plane	-0.7	-5.0