High Transfer Wave

Antenna Evaluation Report

Customer : IAC

PJT:MA5000

Antenna Tested By: kevin

2011/07/28

Revision History

Date	Revision	Description of changes
07/28	1	Passive Report

Contents

1. Technical Summary

This report is RF performance of the proposal about WIFI antenna to support IAC project. This antenna designed on below of the WIFI Function.

2. Experiments

2.1 Test fixture

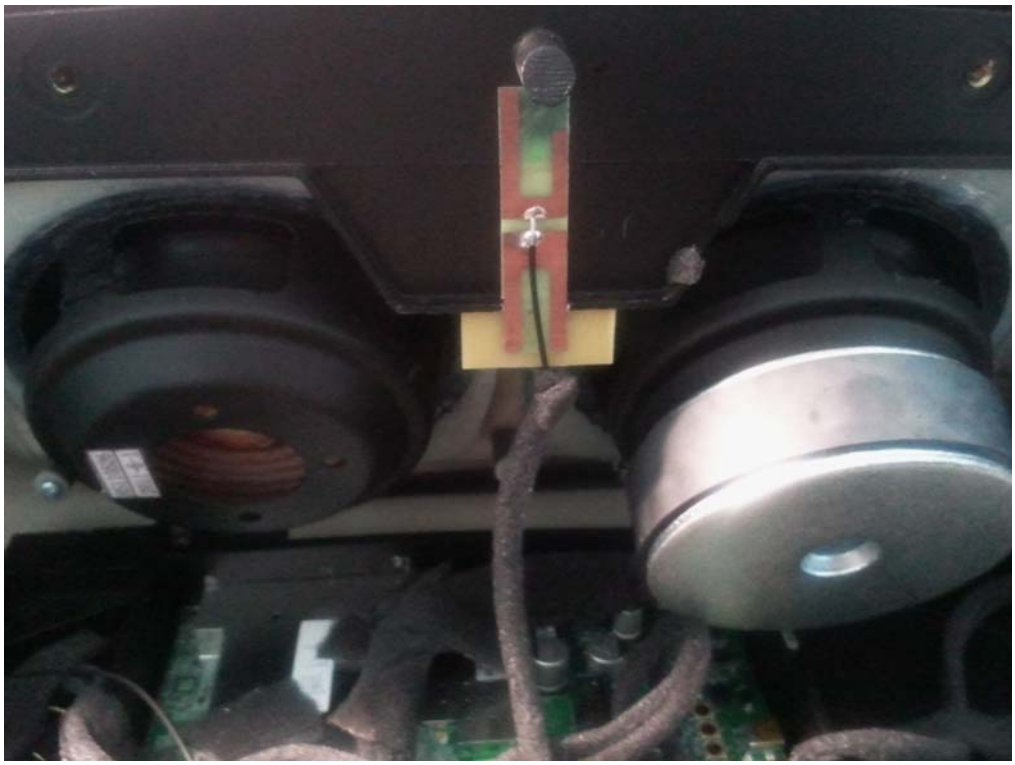


Figure 2-1 Measurement fixture figure

2.2 Matching Network

No matching network used.

2.3 Test Setup

2.3.1 VNA Test Setup

Return Loss measurements (S11) were performed using an Agilent E5071C Network Analyzer (Figure 2-2) and the test fixture shown in Figure 2-1. The testing was performed in free space.

Figure 2-2 Agilent E5071C Network Analyzer

2.3.2 Anechoic Chamber Test Setup

The antenna efficiency and gain were measured using a ETS AMS-8500 3D anechoic chamber at HTW. The configuration and the accuracy of the chamber are shown in Figure 2-3 and 2-4 the placement of the tested DUT is show in 2-5.

Figure 2-3 Configuration of AMS-8500

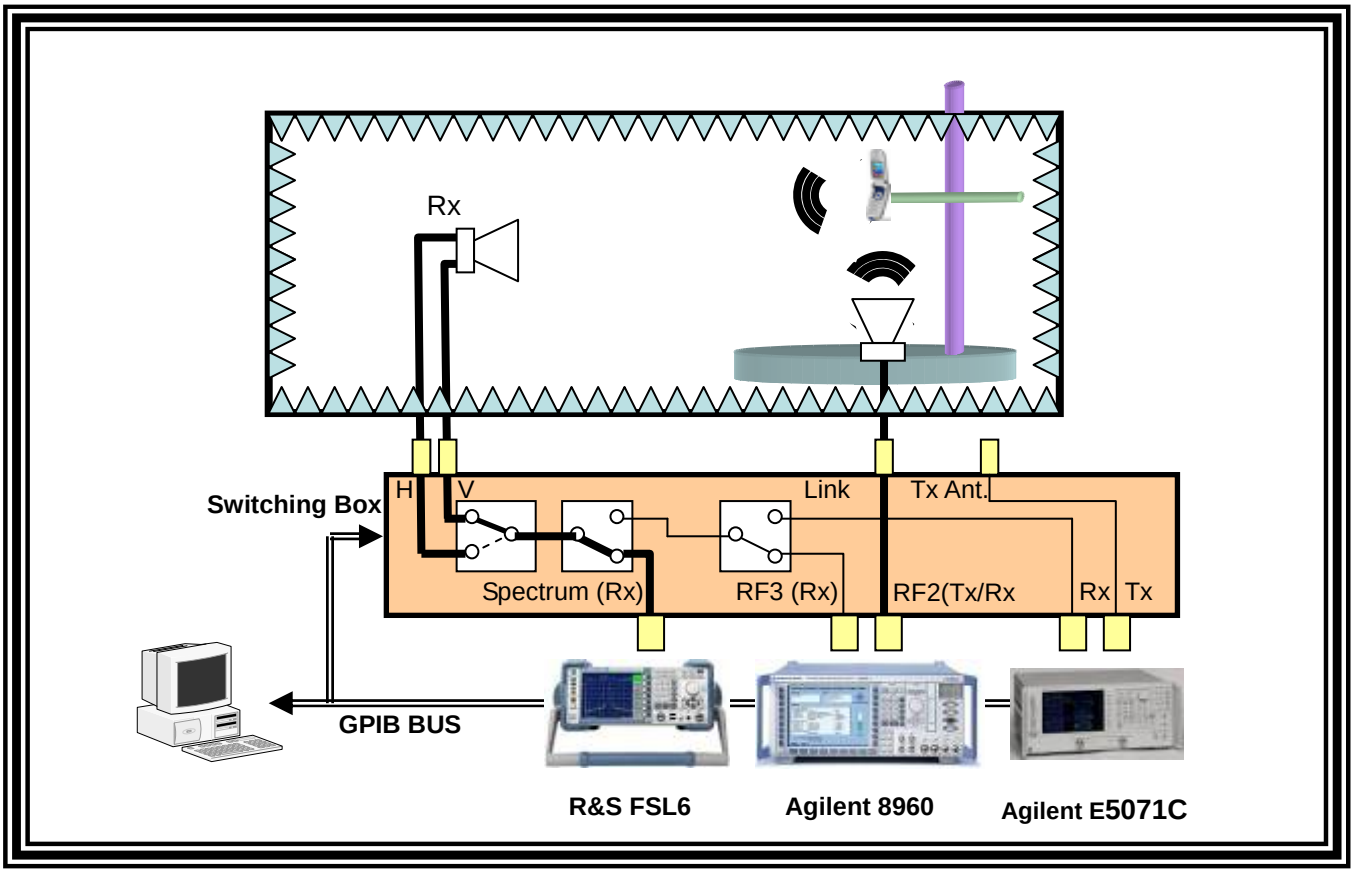


Figure 2-4 Configuration of AMS-8500

3 .Test results

This test mainly aims the antenna Return Loss、VSWR、TRP and Efficiency to make the measurements.

3.1 WIFI Antenna Passive test data:

Frequency	2.412GHz	2.437GHz	2.462GHz
Total Rad. Pow. (dBi)	-1.58	-1.74	-1.65
Peak Gain (dBi)	4.55	4.47	4.59

Table 3-1 WIFI Gain

Frequency	2.412GHz	2.437GHz	2.462GHz
Efficiency (%)	69.5	66.98	68.39

Table 3-1 WIFI Efficiency

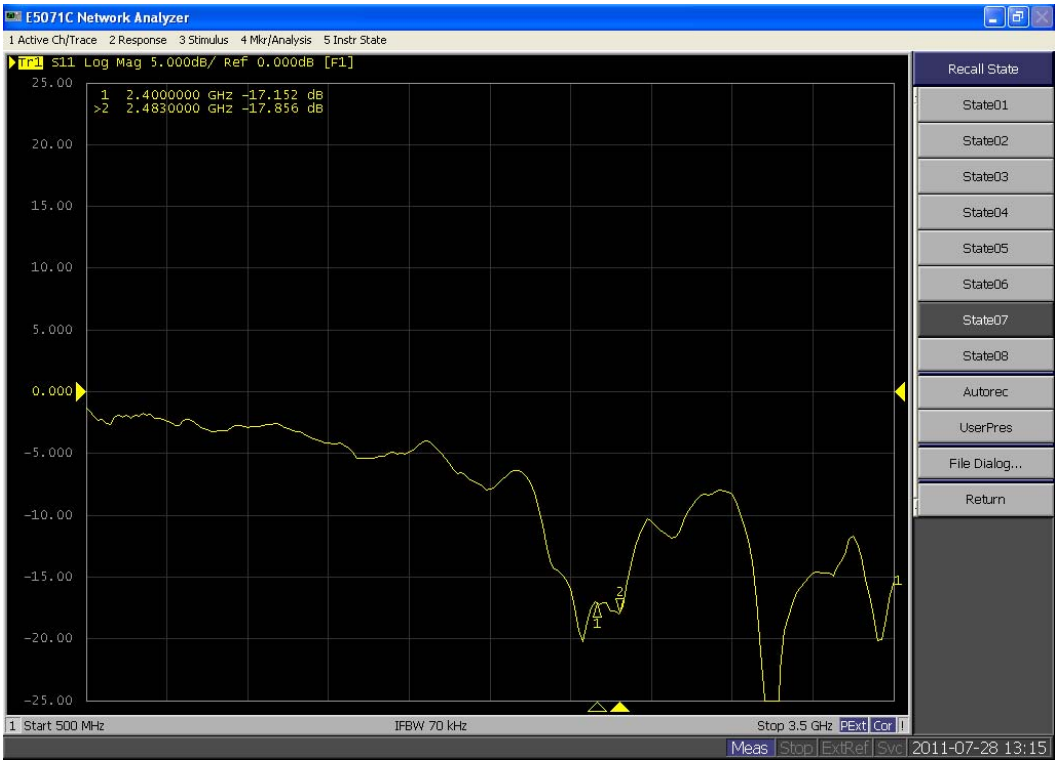


Figure 3-1 WIFI Antenna Return Loss

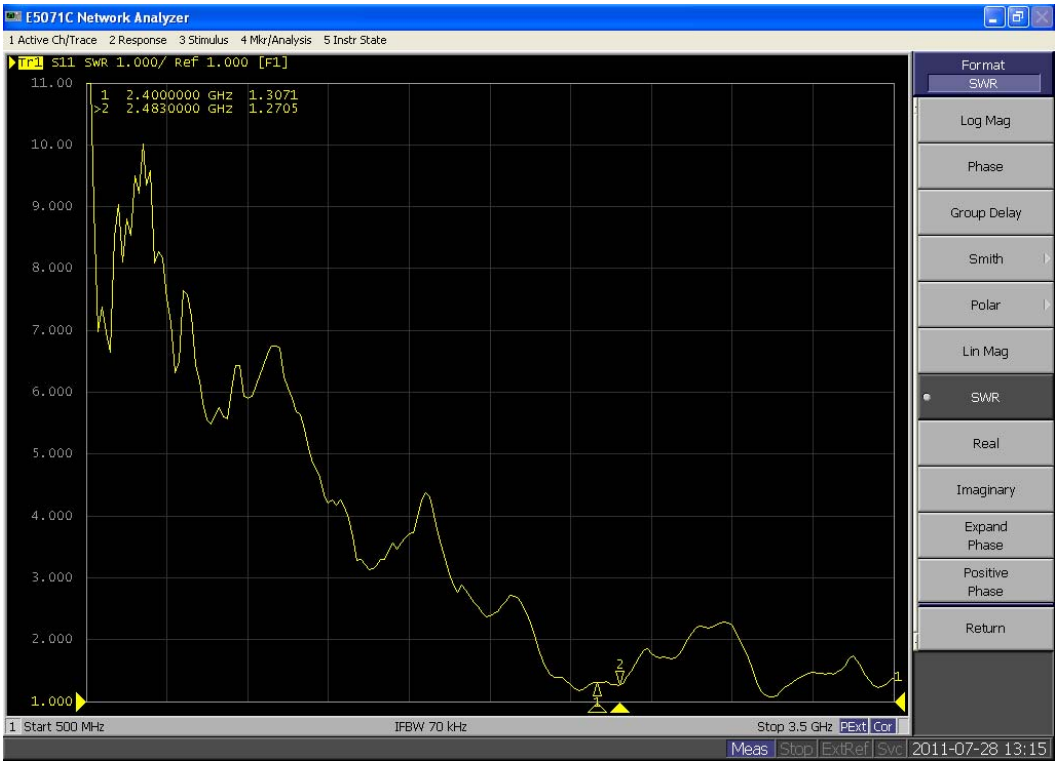
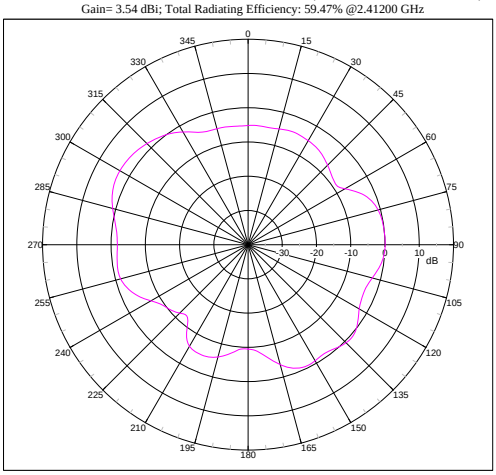
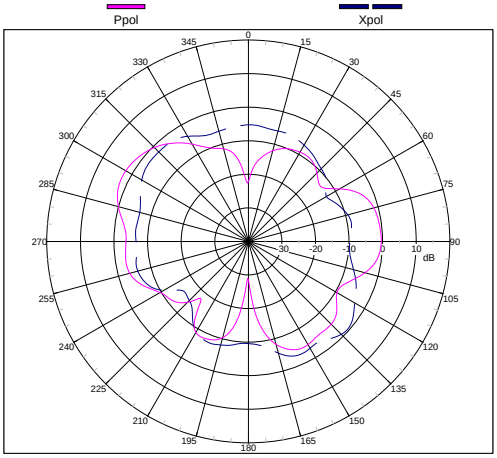


Figure 3-2 WIFI Antenna VSWR

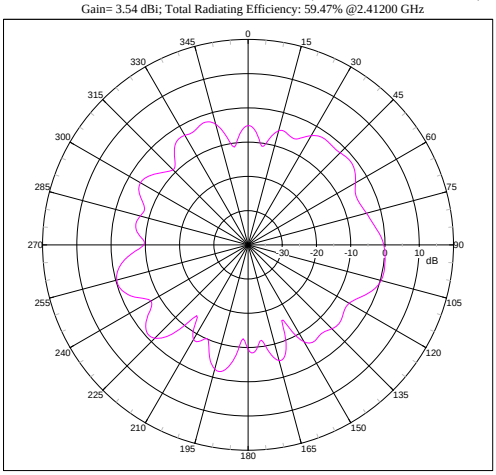
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain= 3.54 dBi; Total Radiating Efficiency: 59.47% @2.41200 GHz



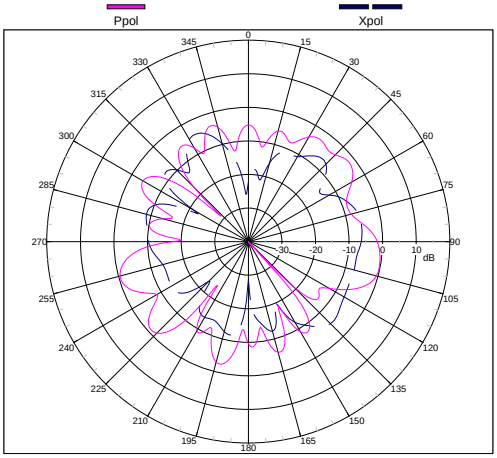
Far-field Pattern @ Phi=0 deg(E-Theta Plane-Cut)
Gain= 3.18 dBi; Co-Pol Efficiency: 54.93% @ Freq: 2.41200 GHz



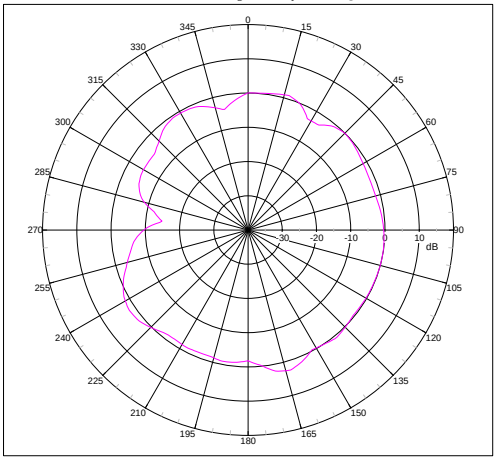
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain= 3.54 dBi; Total Radiating Efficiency: 59.47% @2.41200 GHz



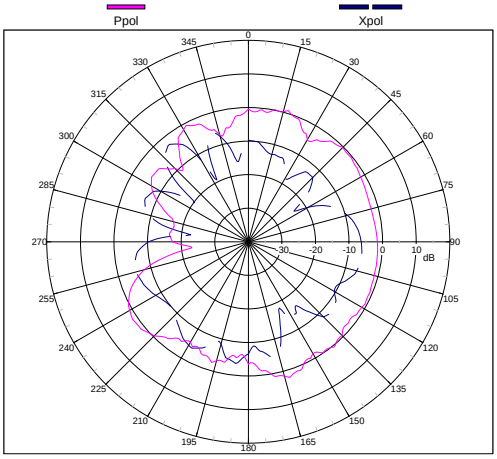
Far-field Pattern @ Phi=90 deg(E-Theta Plane-Cut)
Gain= 3.18 dBi; Co-Pol Efficiency: 54.93% @ Freq: 2.41200 GHz



Far-field Power Distribution on X-Y Plane
Gain= 3.54 dBi; Total Radiating Efficiency: 59.47% @2.41200 GHz

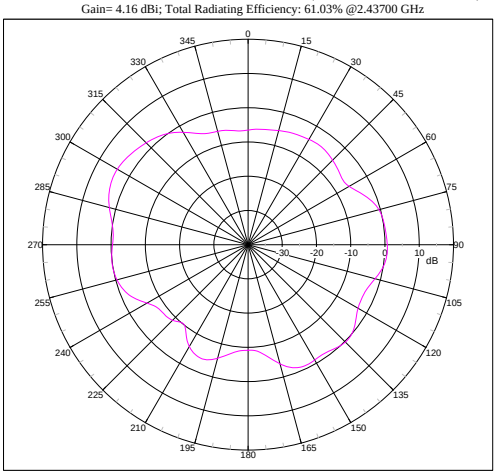


Far-field Pattern @ Theta=90 deg(E-Phi Plane-Cut)
Gain= 3.18 dBi; Co-Pol Efficiency: 54.93% @ Freq: 2.41200 GHz



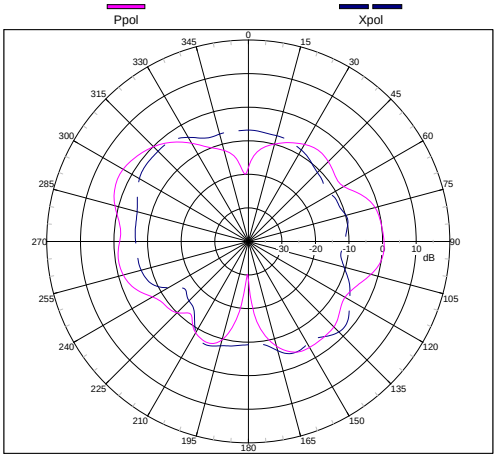
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)

Gain= 4.16 dBi; Total Radiating Efficiency: 61.03% @2.43700 GHz



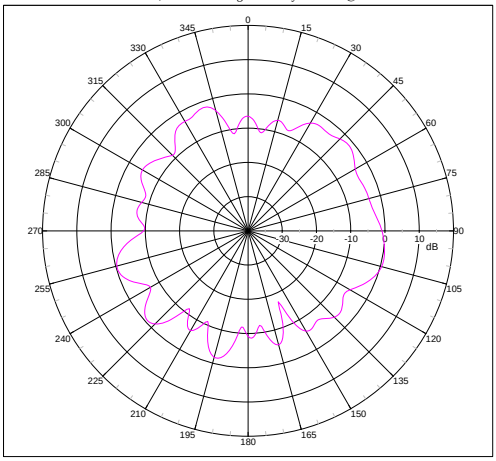
Far-field Pattern @ Phi=0 deg(E-Theta Plane-Cut)

Gain= 3.69 dBi; Co-Pol Efficiency: 59.47% @ Freq: 2.43700 GHz



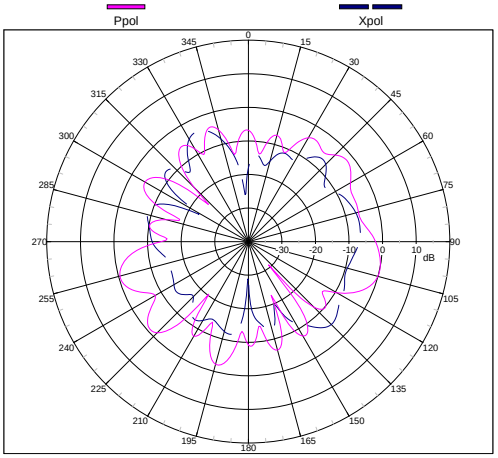
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)

Gain= 4.16 dBi; Total Radiating Efficiency: 61.03% @2.43700 GHz



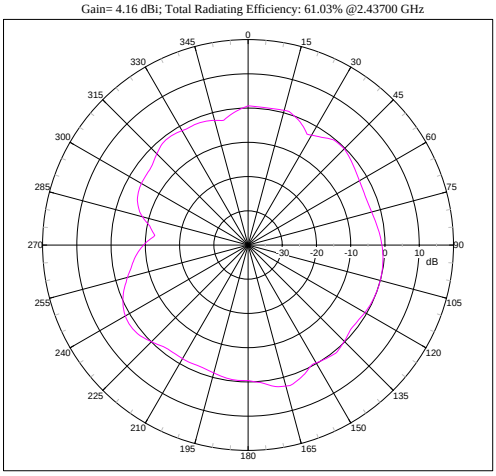
Far-field Pattern @ Phi=90 deg(E-Theta Plane-Cut)

Gain= 3.69 dBi; Co-Pol Efficiency: 59.47% @ Freq: 2.43700 GHz



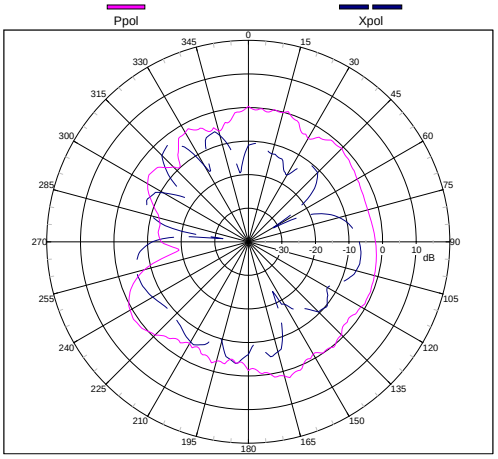
Far-field Power Distribution on X-Y Plane

Gain= 4.16 dBi; Total Radiating Efficiency: 61.03% @2.43700 GHz



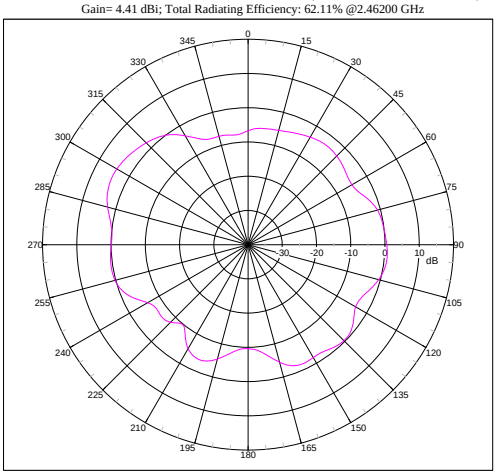
Far-field Pattern @ Theta=90 deg(E-Phi Plane-Cut)

Gain= 3.69 dBi; Co-Pol Efficiency: 59.47% @ Freq: 2.43700 GHz

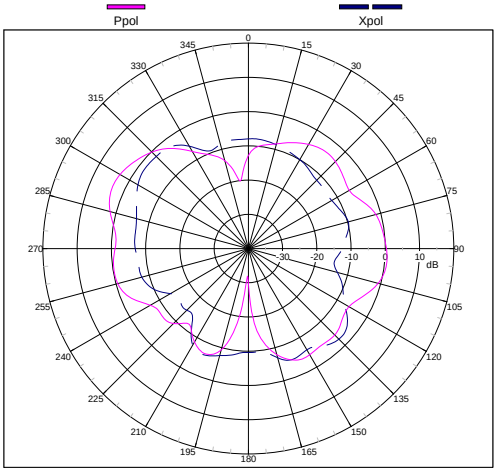


Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)

Gain= 4.41 dBi; Total Radiating Efficiency: 62.11% @2.46200 GHz

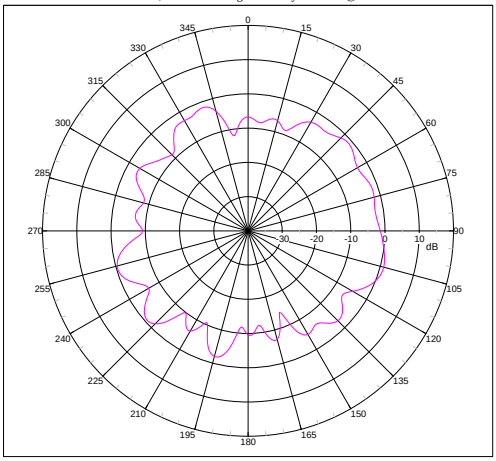


Far-field Pattern @ Phi=0 deg(E-Theta Plane-Cut)



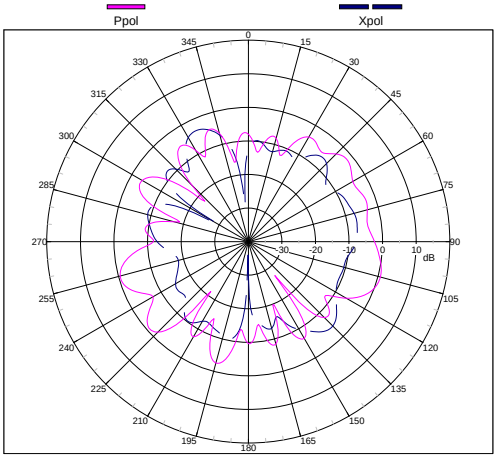
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)

Gain= 4.41 dBi; Total Radiating Efficiency: 62.11% @2.46200 GHz



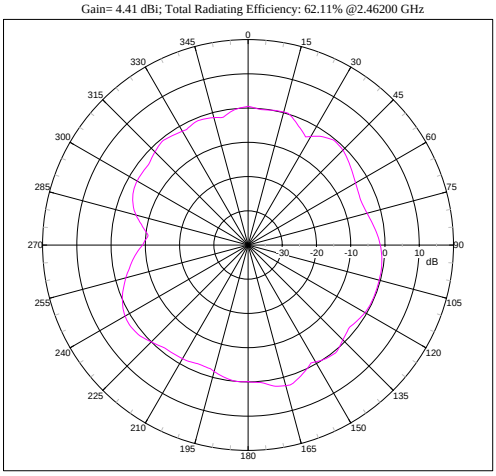
Far-field Pattern @ Phi=90 deg(E-Theta Plane-Cut)

Gain= 3.88 dBi; Co-Pol Efficiency: 56.33% @ Freq: 2.46200 GHz



Far-field Power Distribution on X-Y Plane

Gain= 4.41 dBi; Total Radiating Efficiency: 62.11% @2.46200 GHz



Far-field Pattern @ Theta=90 deg(E-Phi Plane-Cut)

Gain= 3.88 dBi; Co-Pol Efficiency: 56.33% @ Freq: 2.46200 GHz