

Redpine RSIA15 PCB Antenna

Performance Specifications

Version 1.3

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About this Document

This document lists the performance specifications of the Dual band PCB Antenna used for FCC, IC, ETSI/CE and other regulatory certifications of the RS9113 and RS9116 Single and Dual band Modules. This document will be discontinued in the future and the specifications listed here will be part of the main Datasheet of the modules.

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1 Overview

Following sections list down the performance specifications of the PCB antenna.

2 PCB Antenna Performance Specifications

2.1 Return Loss Characteristic of the Antenna

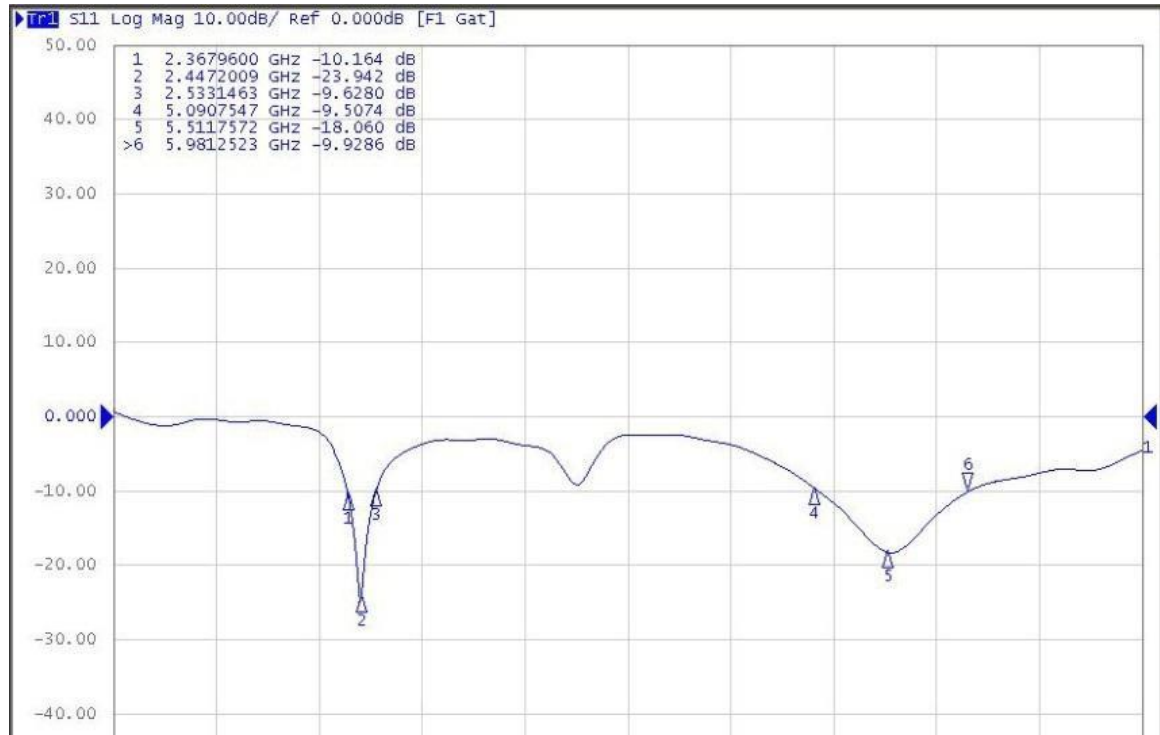


Figure 1: Return Loss Characteristic of the Antenna

2.2 Module Reference Orientation



Figure 2: Module Reference Orientation

2.3 2D Gain Plots

2.3.1 2D Gain Plots at 2.415 GHz

2.3.1.1 XY at 2.415 GHz

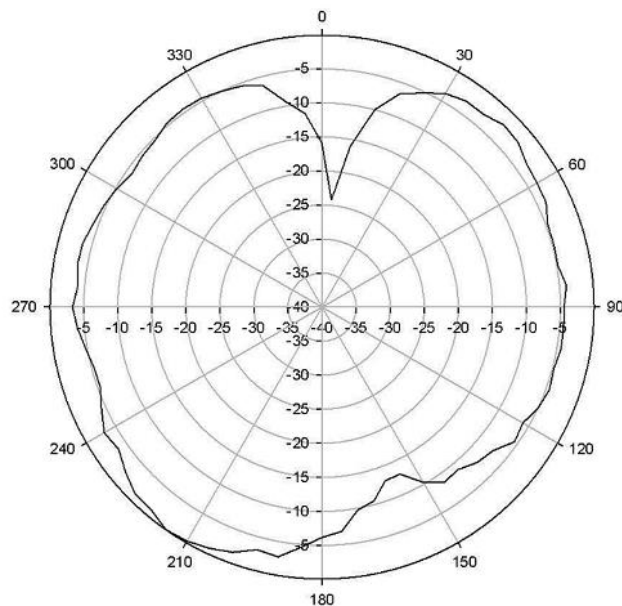


Figure 3: 2D Gain Plot for XY at 2.415 GHz

2.3.1.2 YZ at 2.415 GHz

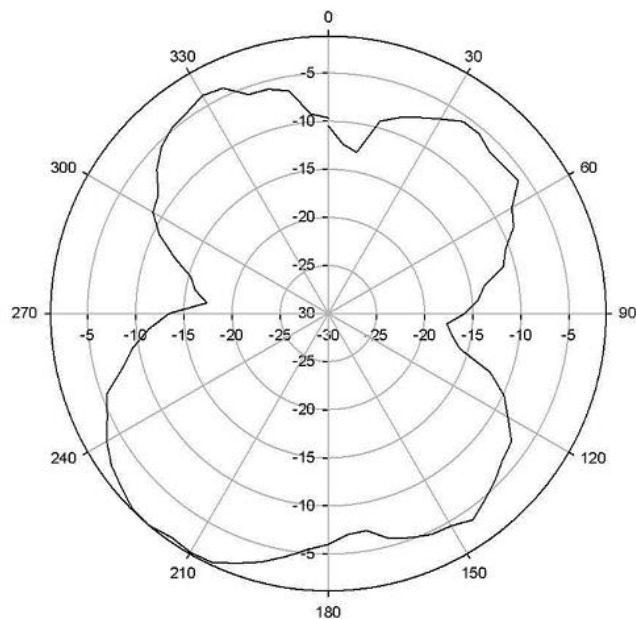


Figure 4: 2D Gain Plot for YZ at 2.415 GHz

2.3.1.3 ZX at 2415 GHz

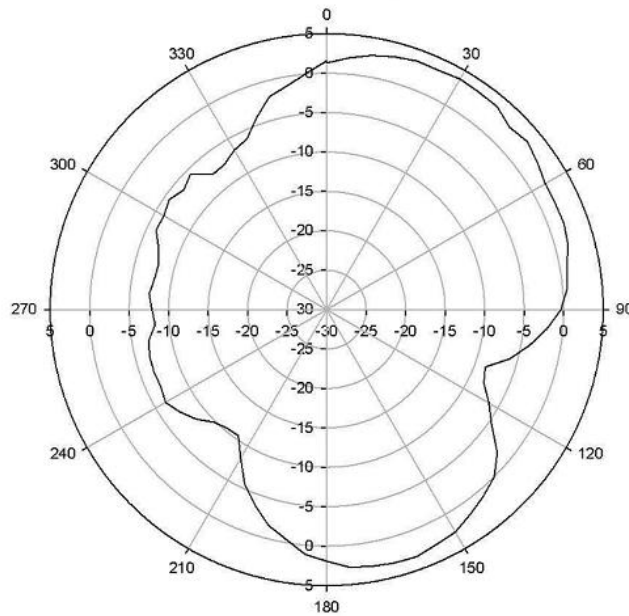


Figure 5: 2D Gain Plot for ZX at 2.415 GHz

2.3.2 2D Gain Plots at 2.430 GHz

2.3.2.1 XY at 2.43 GHz

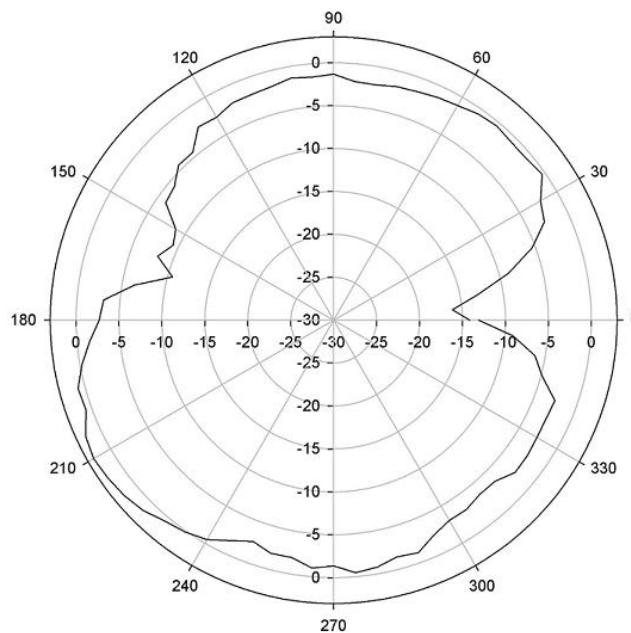


Figure 6: 2D Gain Plot for XY at 2.43 GHz

2.3.2.2 YZ at 2.43 GHz

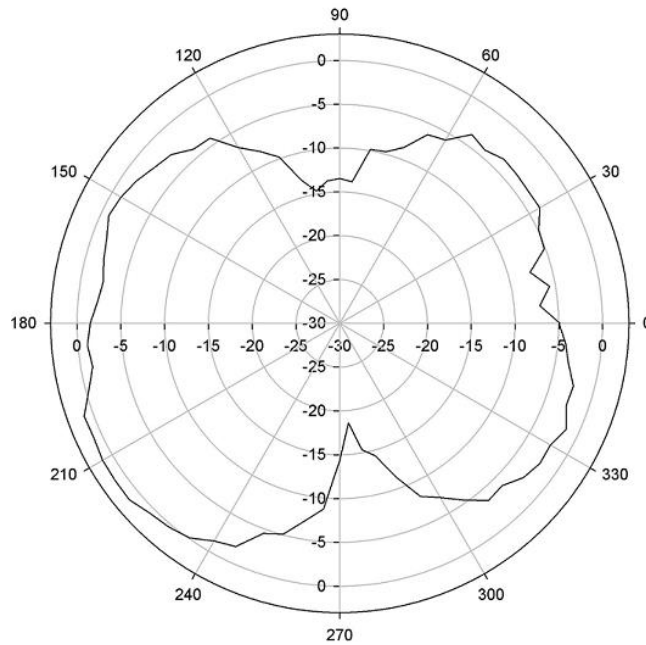


Figure 7: 2D Gain Plot for YZ at 2.43 GHz

2.3.2.3 ZX at 2.43 GHz

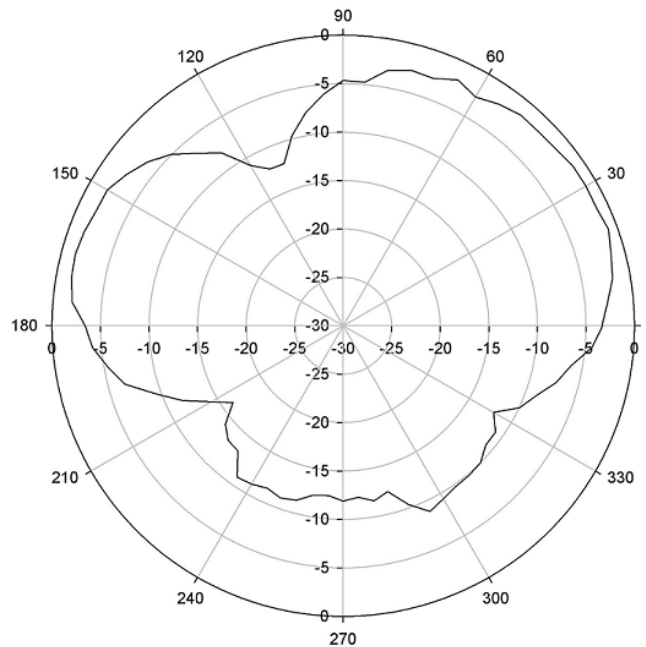


Figure 8: 2D Gain Plot for ZX at 2.43 GHz

2.3.3 2D Gain Plots at 2.480 GHz

2.3.3.1 XY at 2.480 GHz

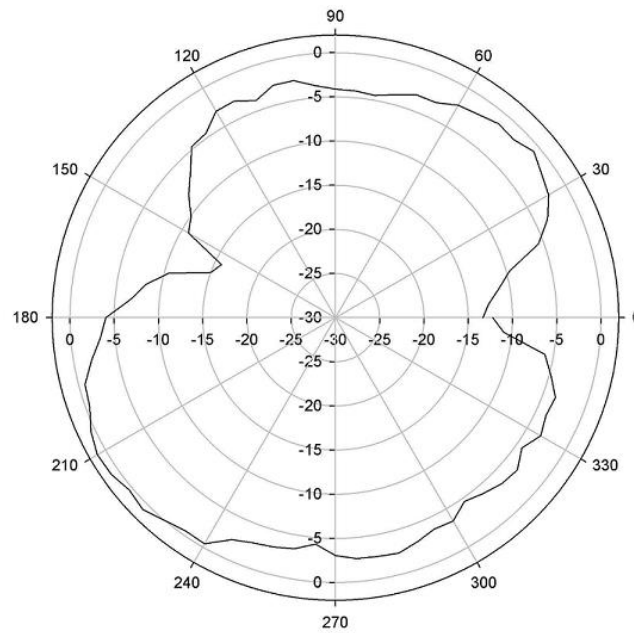


Figure 9: 2D Gain Plot for XY at 2.480 GHz

2.3.3.2 YZ at 2.480 GHz

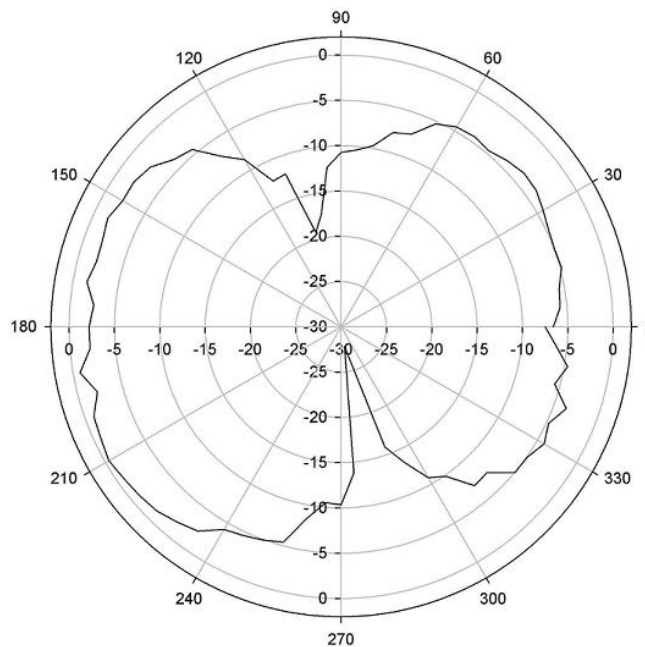


Figure 10: 2D Gain Plot for YZ at 2.480 GHz

2.3.3.3 ZX at 2480 GHz

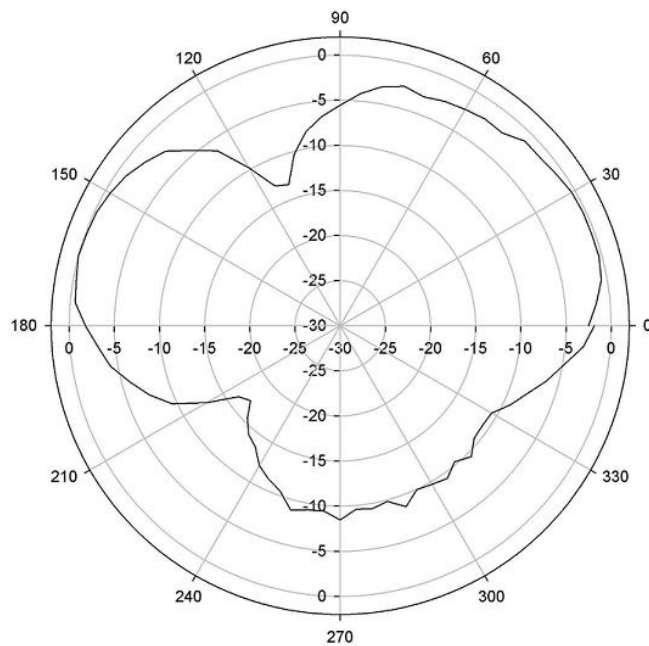


Figure 11: 2D Gain Plot for ZX at 2.480 GHz

2.3.4 2D Gain Plots at 5.180 GHz

2.3.4.1 XY at 5.180 GHz

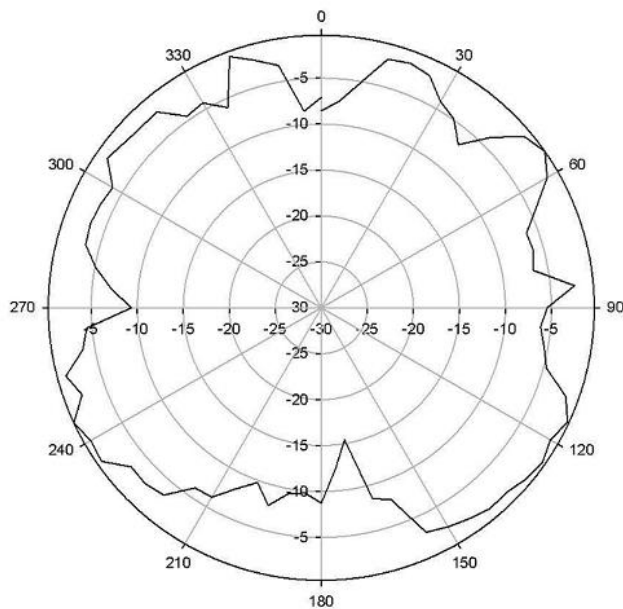


Figure 12: 2D Gain Plot for XY at 5.180 GHz

2.3.4.2 YZ at 5.180 GHz

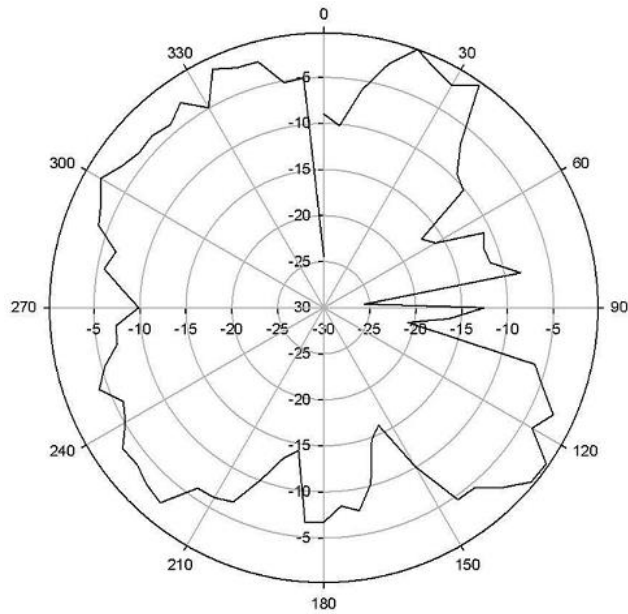


Figure 13: 2D Gain Plot for YZ at 5.180 GHz

2.3.4.3 ZX at 5.180 GHz

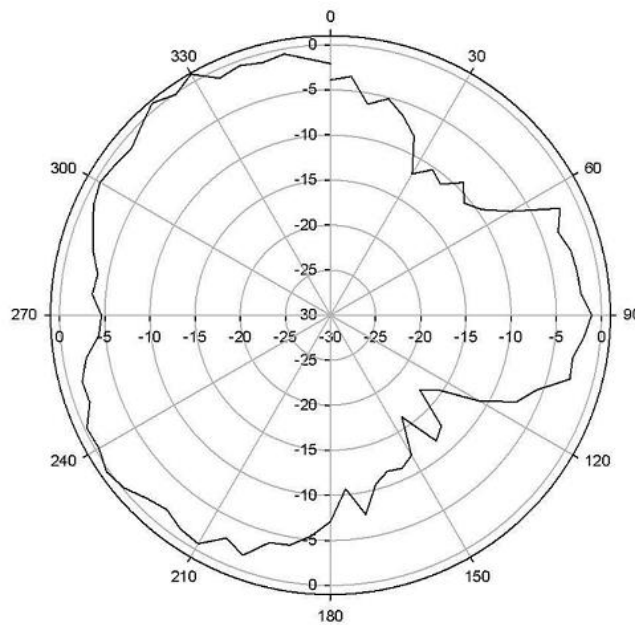


Figure 14: 2D Gain Plot for ZX at 5.180 GHz

2.3.5 2D Gain Plots at 5.49 GHz

2.3.5.1 XY at 5.49 GHz

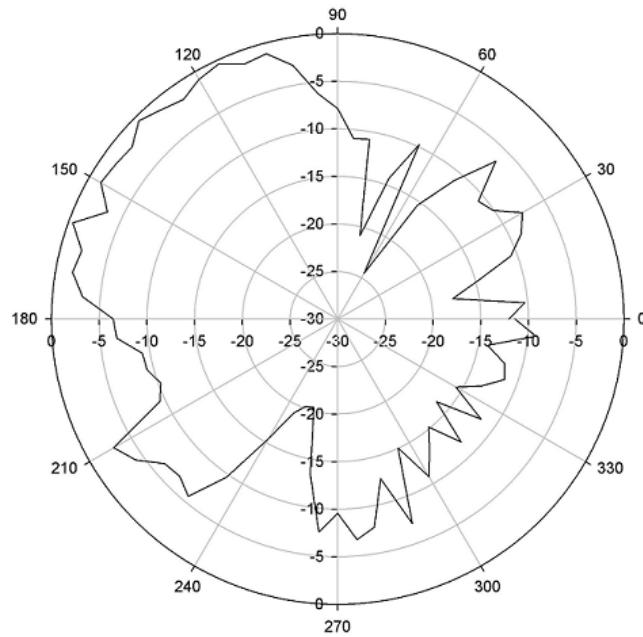


Figure 15: 2D Gain Plot for XY at 5.49 GHz

2.3.5.2 YZ at 5.49 GHz

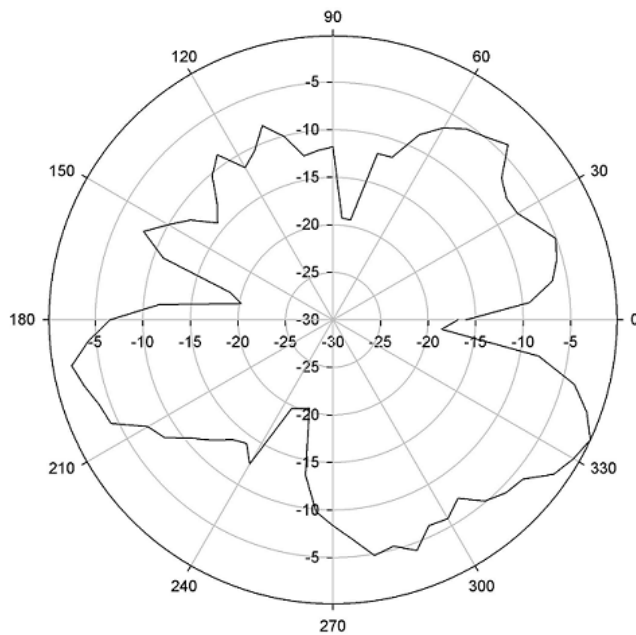


Figure 16: 2D Gain Plot for YZ at 5.49 GHz

2.3.5.3 ZX at 5.49 GHz

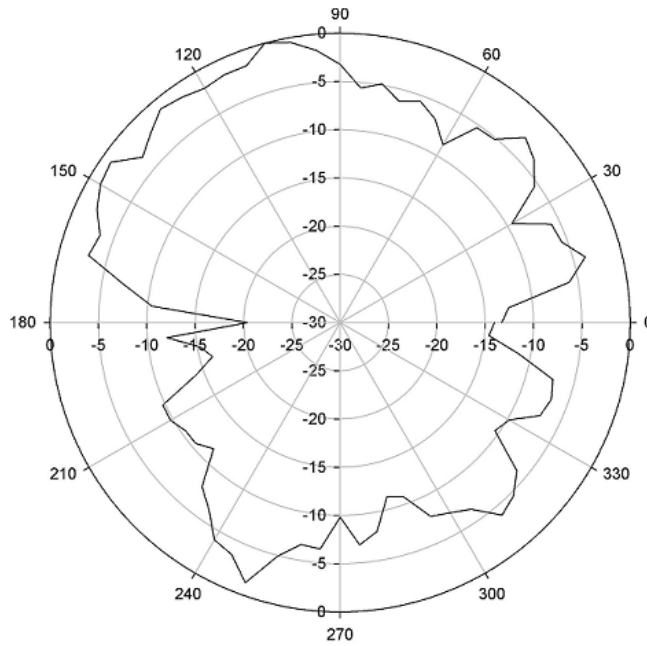


Figure 17: 2D Gain Plot for ZX at 5.49 GHz

2.3.6 2D Gain Plots at 5.750 GHz

2.3.6.1 XY at 5.750 GHz

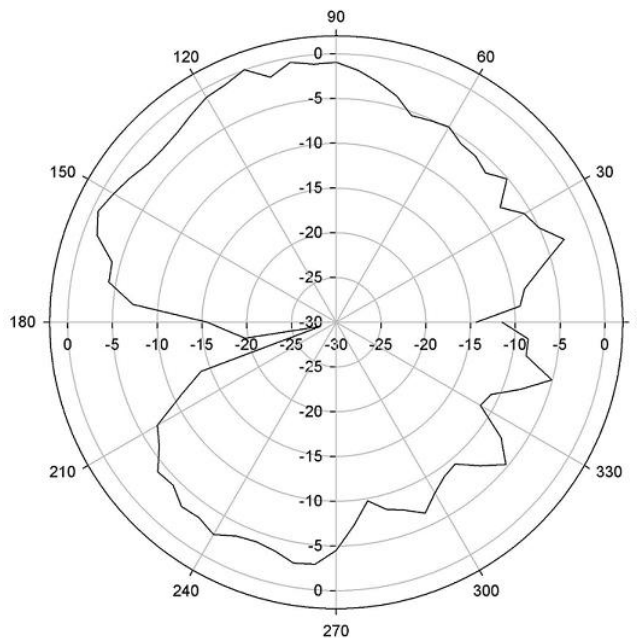


Figure 18: 2D Gain Plot for XY at 5.750 GHz

2.3.6.2 YZ at 5.750 GHz

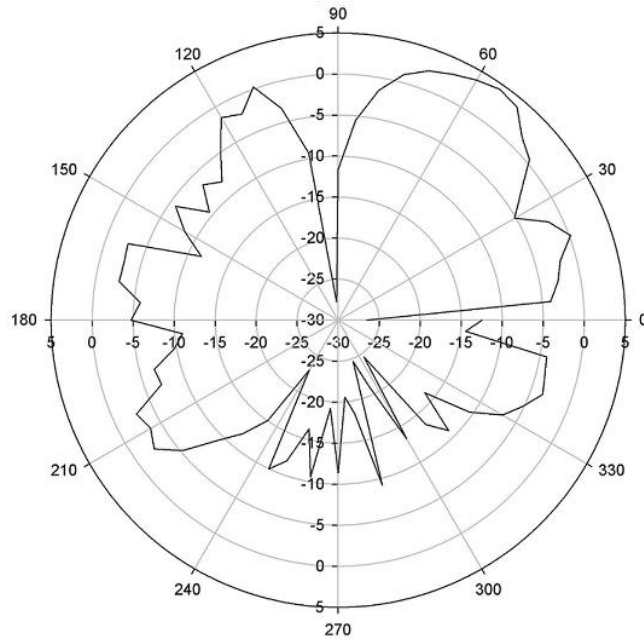


Figure 19: 2D Gain Plot for YZ at 5.750 GHz

2.3.6.3 ZX at 5.750 GHz

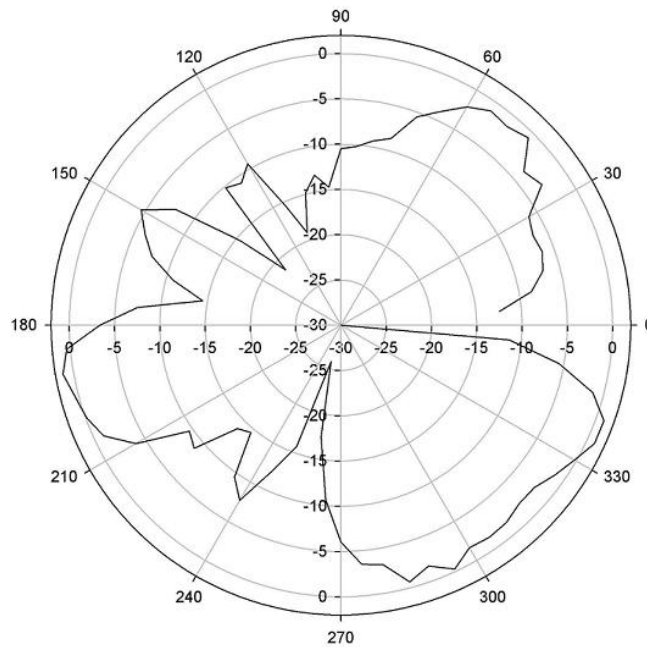


Figure 20: 2D Gain Plot for ZX at 5.750 GHz

2.4 Peak Gain

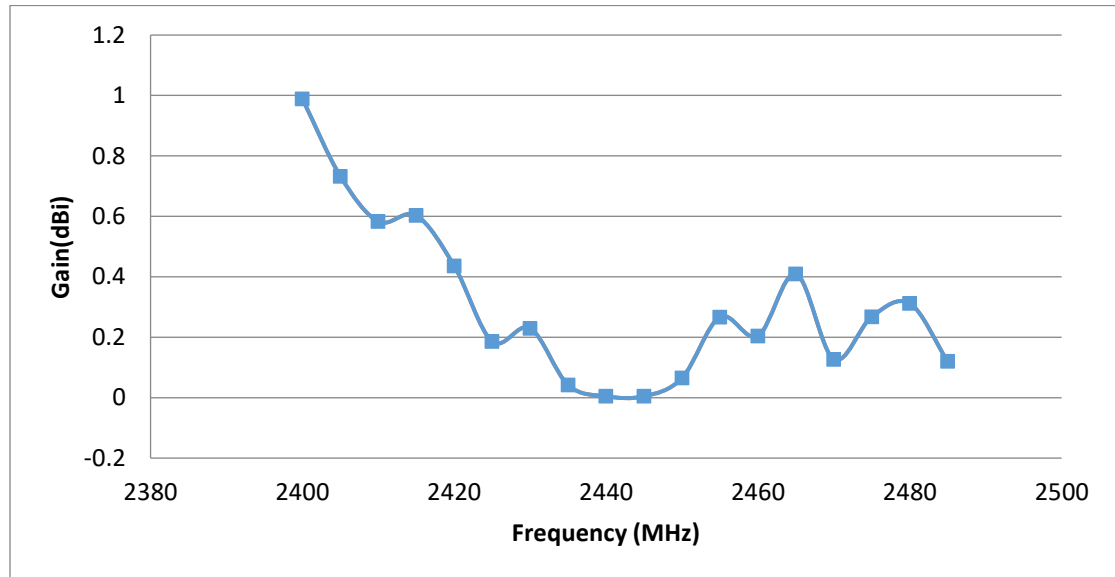


Figure 21: Peak Gain at frequencies 2.4 to 2.5GHz

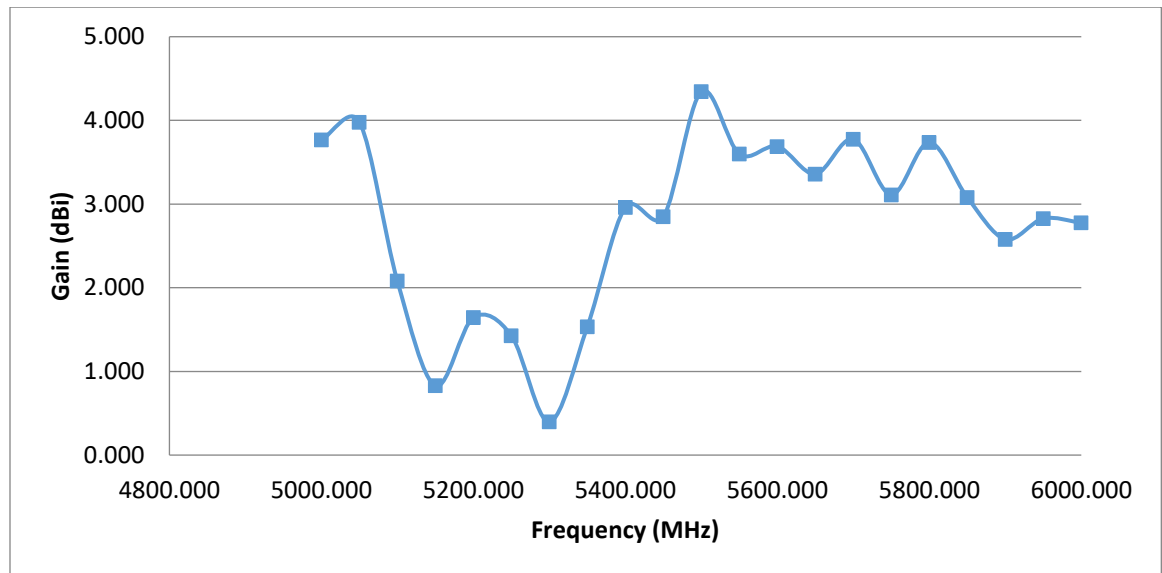


Figure 22: Peak Gain at frequencies 5 to 6GHz

2.5 Antenna Parameters

Parameter	2400 - 2500MHz	5000 - 6000MHz
Peak Gain	0.99 dBi	4.42 dBi
Efficiency	87 %	85 %

Table 1: Antenna Parameters

3 Mechanical Characteristics

Parameter	Value (L X W)	Units
Antenna Dimensions	16 x 6.5	mm
Tolerance	±0.1	mm

Table 2: Mechanical Characteristics

Revision History

S.No.	Ver. No.	Date	Changes
1.	1.0	September 2014	Initial Version
2.	1.1	July 2015	1) Added antenna dimensions information. 2) Added the frequency range for the peak gain parameters. 3) Updated peak gain for the antenna.
3.	1.2	August 2015	Changed the units for Antenna Peak Gain from dB to dBi.
4.	1.3	February 2016	Added 2D Gain Plots for Low and High Channels in 2.4 GHz and 5 GHz bands.