



Amphenol

Datasheet

W102

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Project: W102	Author: Liping.zhou	File Name: EXG186-12-000-R
Date: 2024-01-18		
Revision:		
	B	
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Revision History

Date	Revision	Description of Changes
2023-03-24	A	Initial release
2024-01-18	B	Release for MP Build

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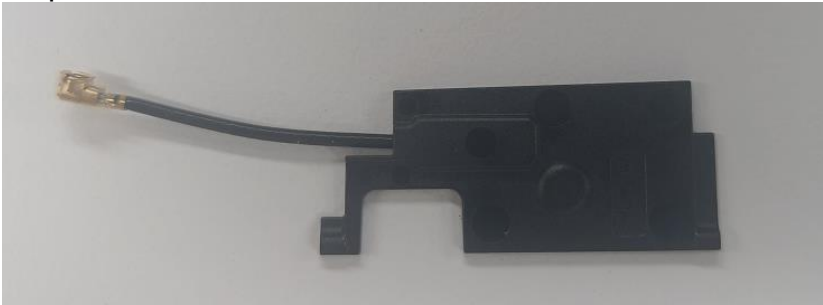
1 Antenna description

Dipole Antenna
Working band WIFI 2400~2500 5150~5850MHZ, FPC+ Cable+ carrier

1.1 Part number

EXG186-12-000-R

1.1.1 Antenna pictures



Dipole Antenna

2 Electrical Performance

2.1 Measurement Set-up

2.1.1 VSWR and return loss

VSWR measurements (S_{11}) were performed using an Agilent ENA series Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

2.1.2 Efficiency and Gain

The gain of the antenna was measured in the Sporton three-dimensional anechoic chamber in Kunshan, China. The full name is Sporton International(Kunshan)INC.
The chamber is a ETS-Lindgren single-probe system capable of doing tests from 600MHz to 980MHZ and 1.4GHZ to 8.2GHZ.
Coaxial chokes on the feed cable were used to mitigate surface currents during passive tests.
The measurement results are calibrated using dipole standards.

2.1.3 Test Informations

Test site details	Test dates	Test personnel	Test software being used	Software Version
Sporton International Inc.(Kunshan) No.1098,Pengxi North Road,Kunshan Econornic Development Zone,jiangsu Province,China	2024.01.17	Engineer Andy.Zhang	EMQuest	Version 1.16 Build 24234

2.1.4 Test methods and test standards

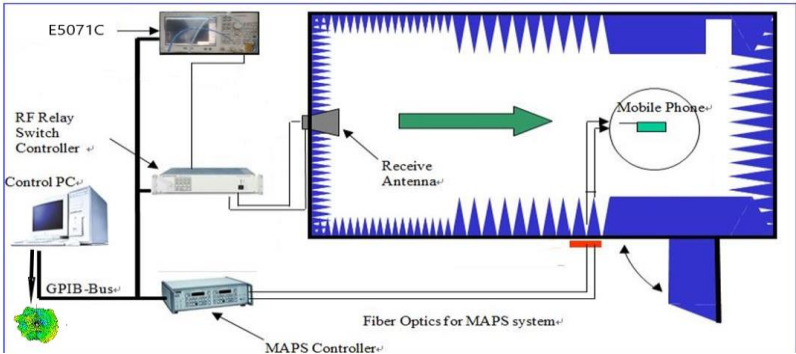
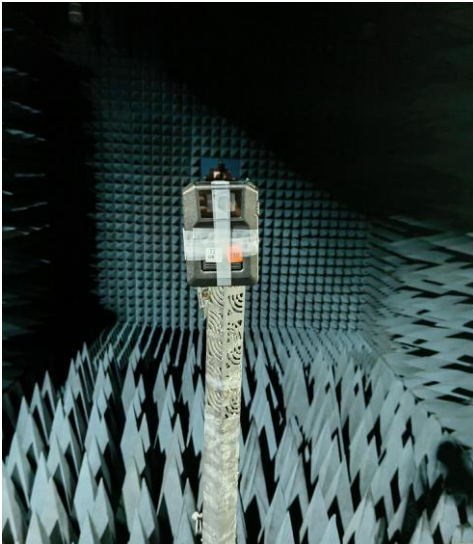
Name	Manufacturer	Type/Model	Serial Number
antenna performance	radiation efficiency	IEEE Standard Test Procedures for antennas	ANSI/IEEE Std 149- 2021

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2.1.5 Calibration date and expiration date of the test equipment

Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
Network Analyzer	Agilent	E5071C	MY46317418	2024/1/3	2025/1/2
Switch Control	ETS-Lindgren	EMC enter	160100	NCR	NCR
Diagonal Dual Polarized Horn	ETS-Lindgren	Aug-64	94091	NCR	NCR

2.1.6 Test photo and test configuration diagram



2.1.7 Matching Circuit Description

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2.2 Reference measurement data

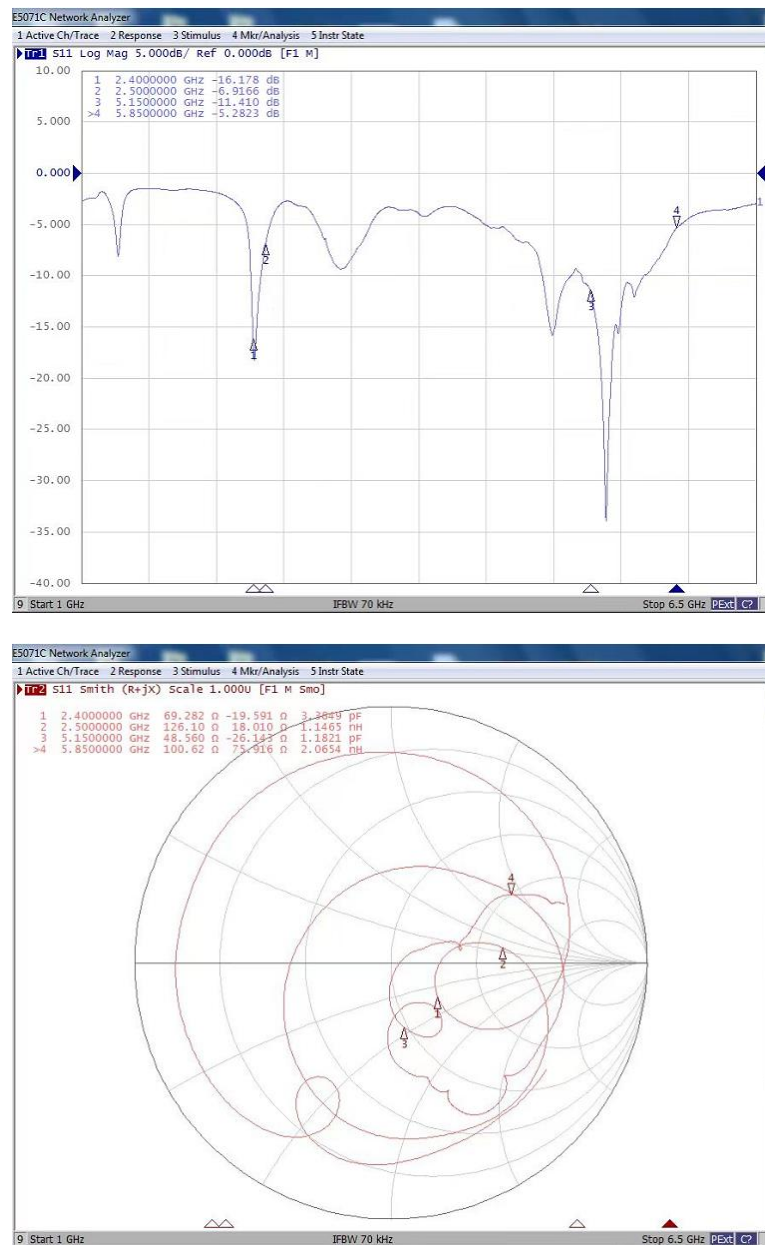
2.1.8 Gain/Efficiency

Freq(MHz)	Efficiency (%)	Avg Gain(dB)	Peak Gain(dB)
2400	42.9	-3.7	0.9
2410	44.5	-3.5	1.0
2420	44.0	-3.6	0.8
2430	43.3	-3.6	0.5
2440	42.3	-3.7	0.3
2450	40.5	-3.9	-0.1
2460	39.3	-4.1	-0.3
2470	37.4	-4.3	-0.3
2480	35.9	-4.5	-0.5
2490	33.9	-4.7	-0.6
2500	32.1	-4.9	-0.7
Average	39.6	-4.0	0.1
5150	45.0	-3.5	2.2
5200	45.2	-3.5	2.1
5250	47.3	-3.3	2.1
5300	46.6	-3.3	1.8
5350	48.1	-3.2	2.0
5400	49.2	-3.1	2.4
5450	45.8	-3.4	1.9
5500	46.7	-3.3	0.7
5550	47.5	-3.2	0.8
5600	45.8	-3.4	1.4
5650	46.5	-3.3	1.0
5700	45.9	-3.4	0.5
5750	42.9	-3.7	0.4
5800	40.6	-3.9	-0.2
5850	40.6	-3.9	-0.3
Average	45.6	-3.4	1.3

3 Plots

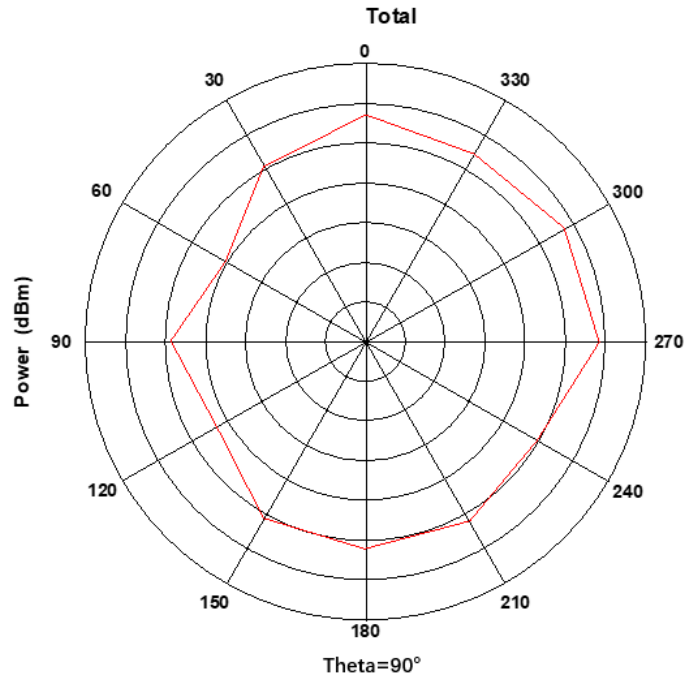
3.1 Return loss and Smith Chart

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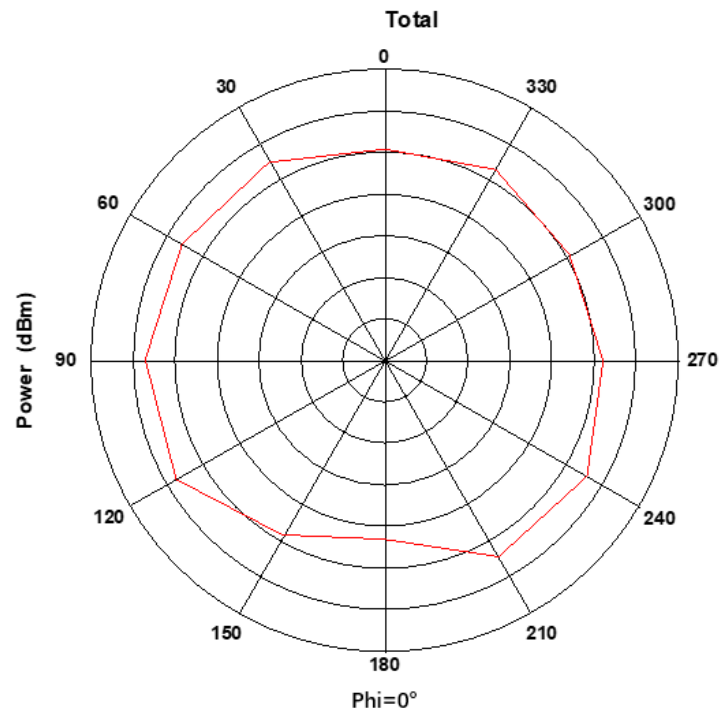


3.2 ANTENNA RADIATION PERFORMANCE

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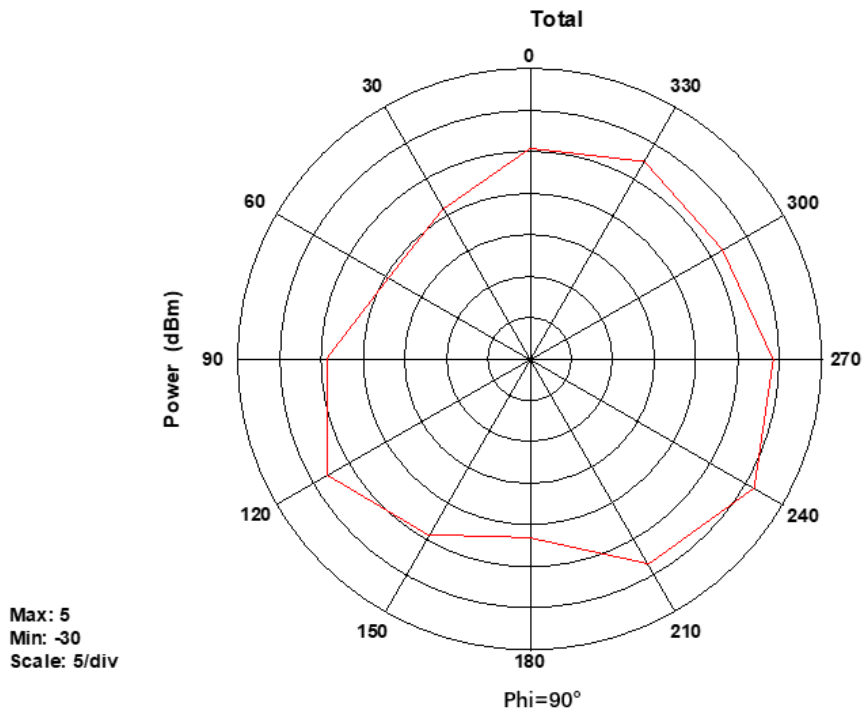


2400 MHz

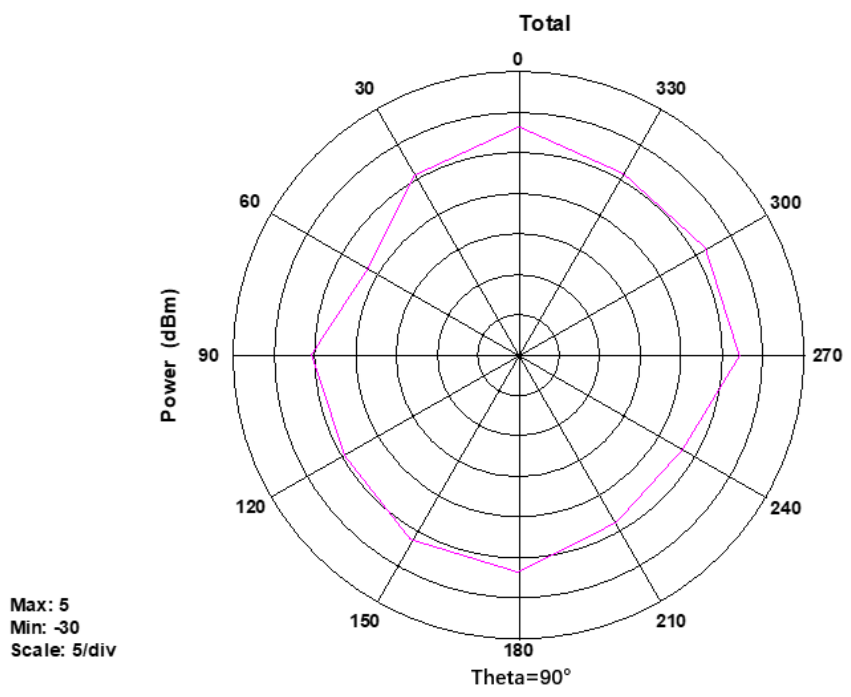


2400 MHz

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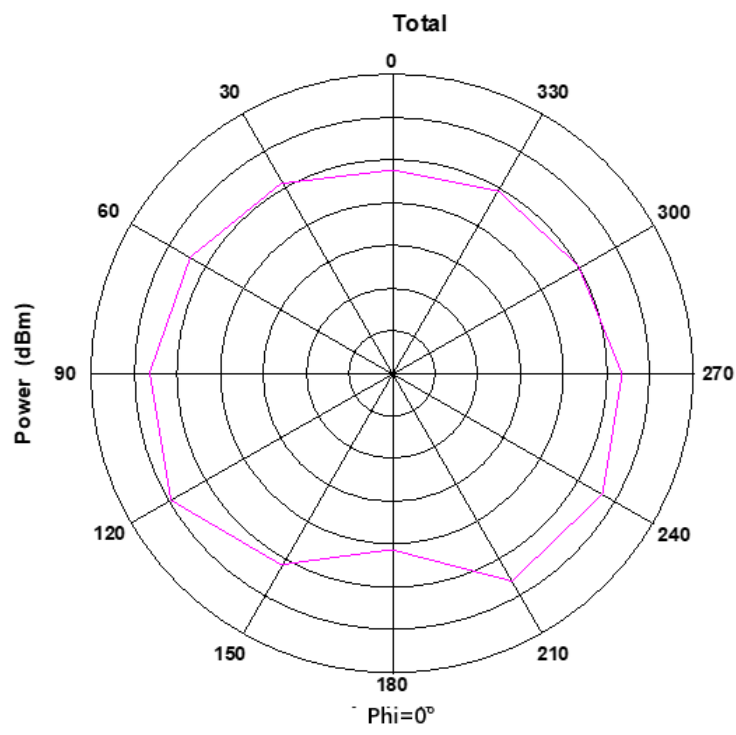
2400 MHz



2450 MHz

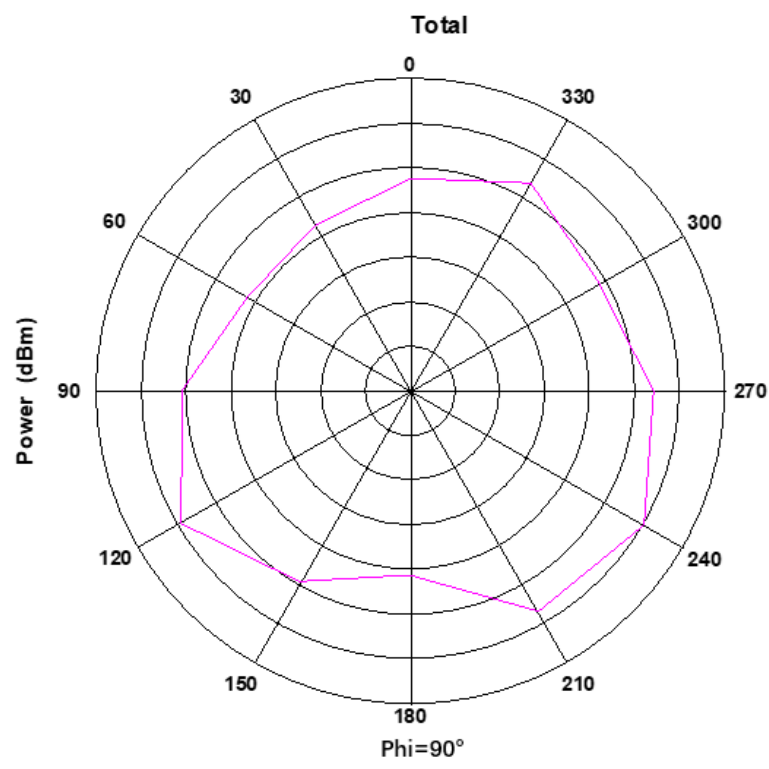
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Max: 5
Min: -30
Scale: 5/div



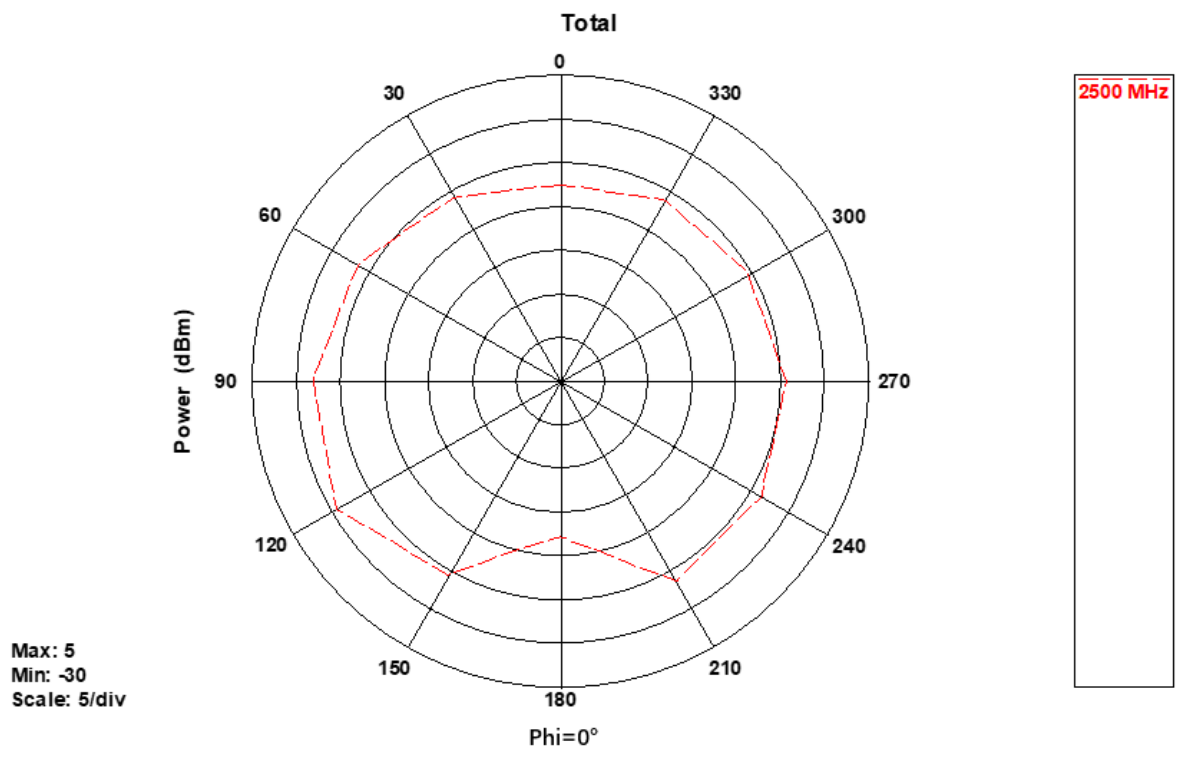
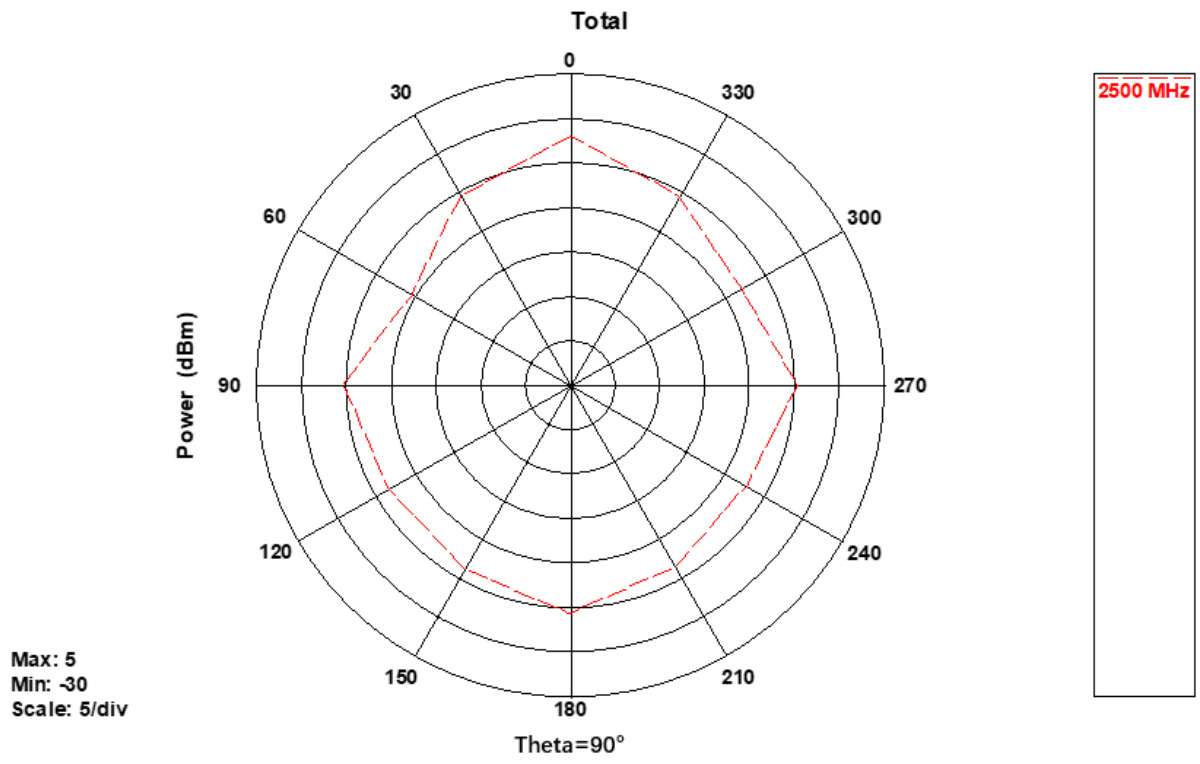
2450 MHz

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Scale: 5/div

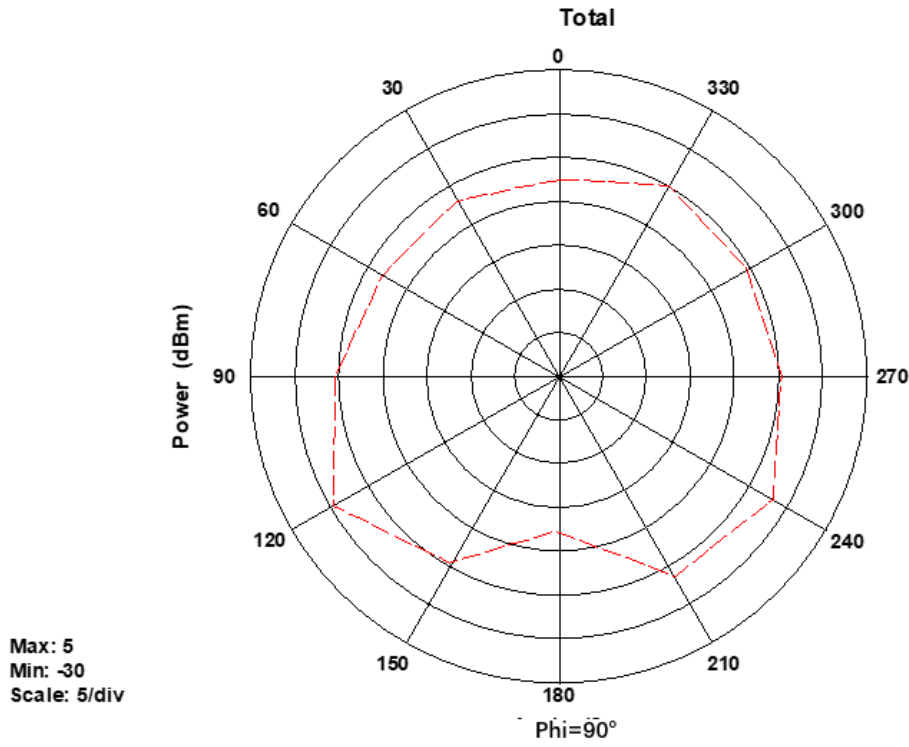


2450 MHz

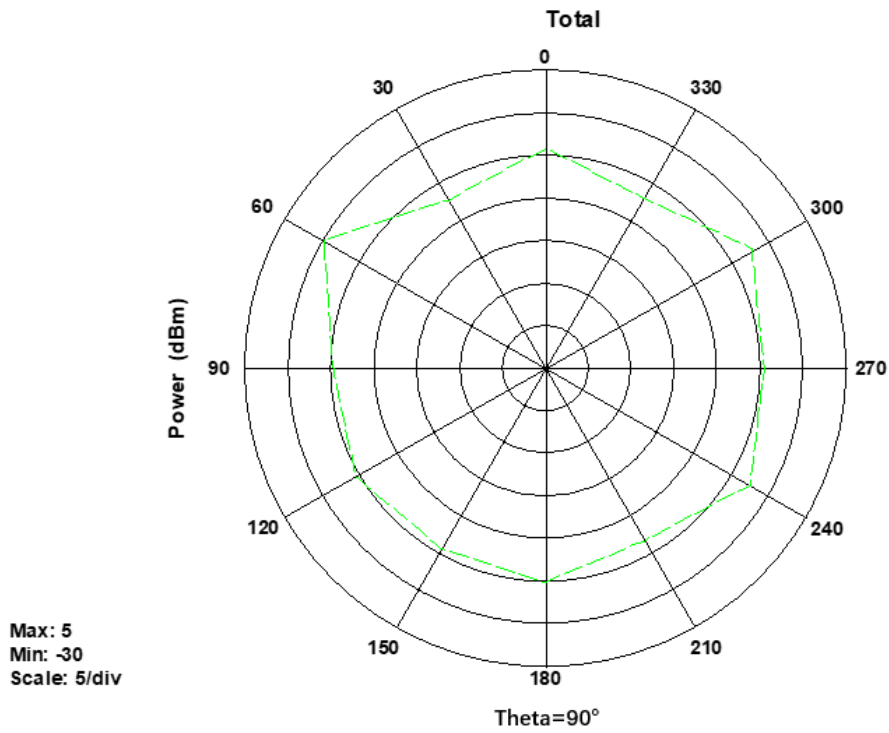
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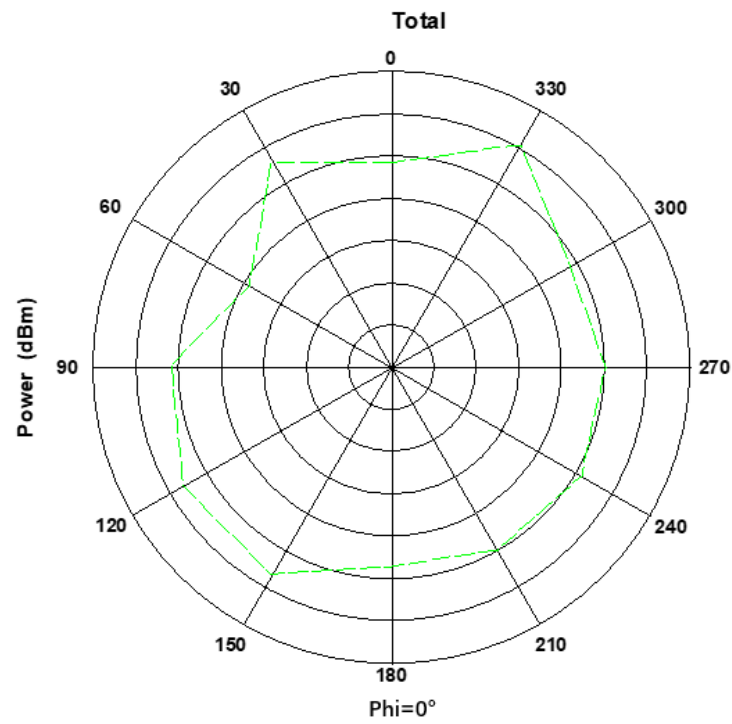
2500 MHz



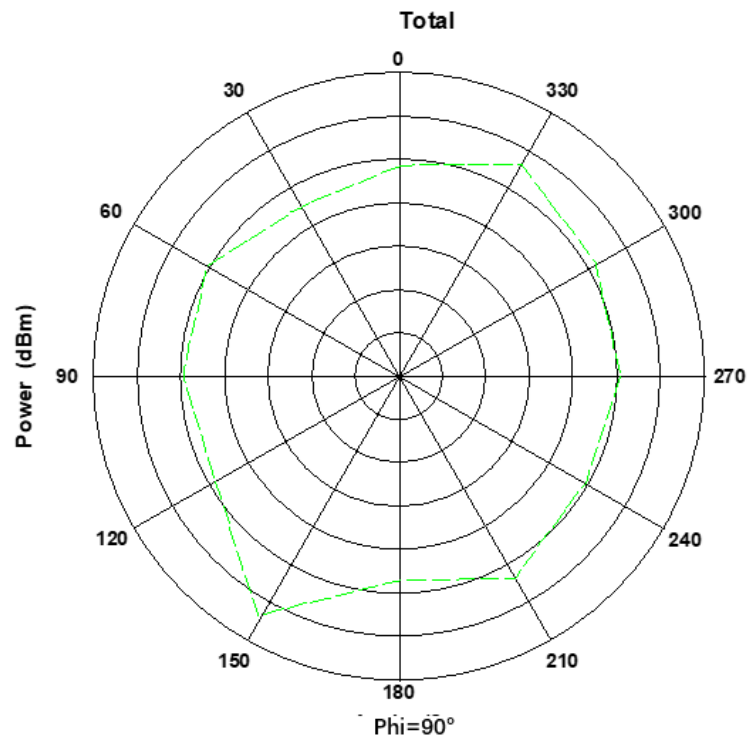
5150 MHz

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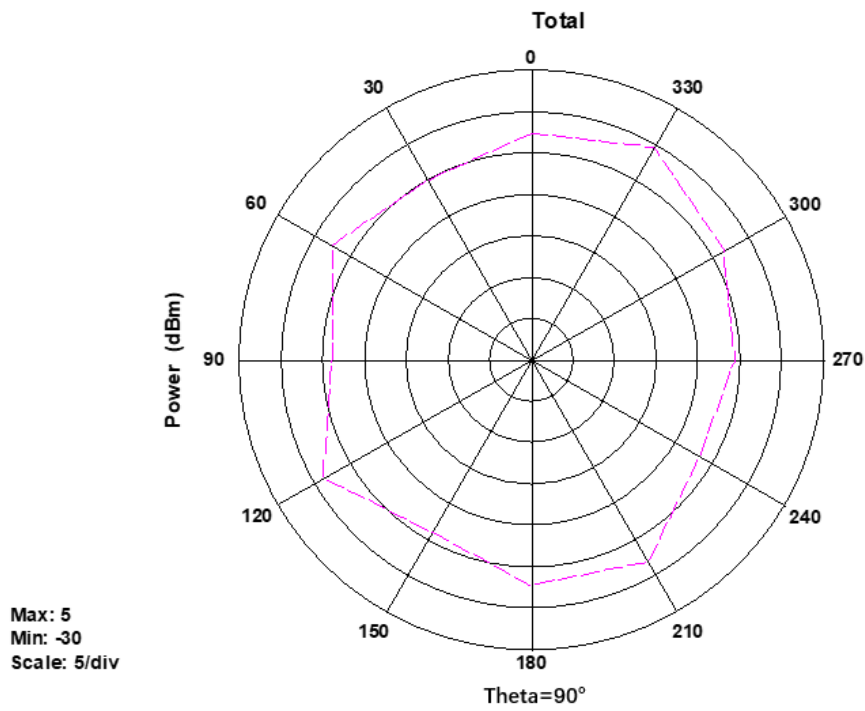
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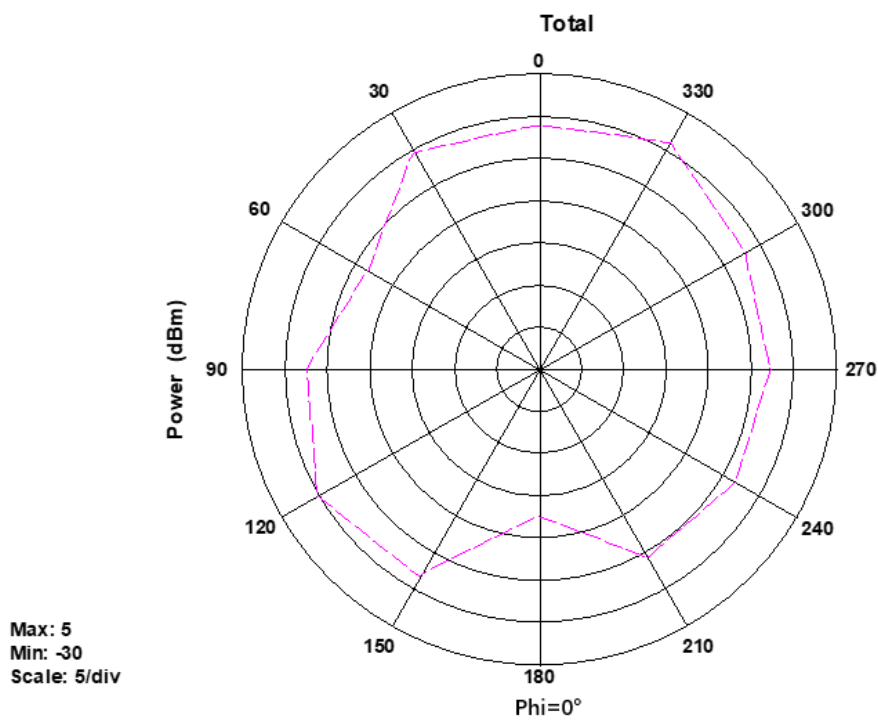
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Scale: 5/div



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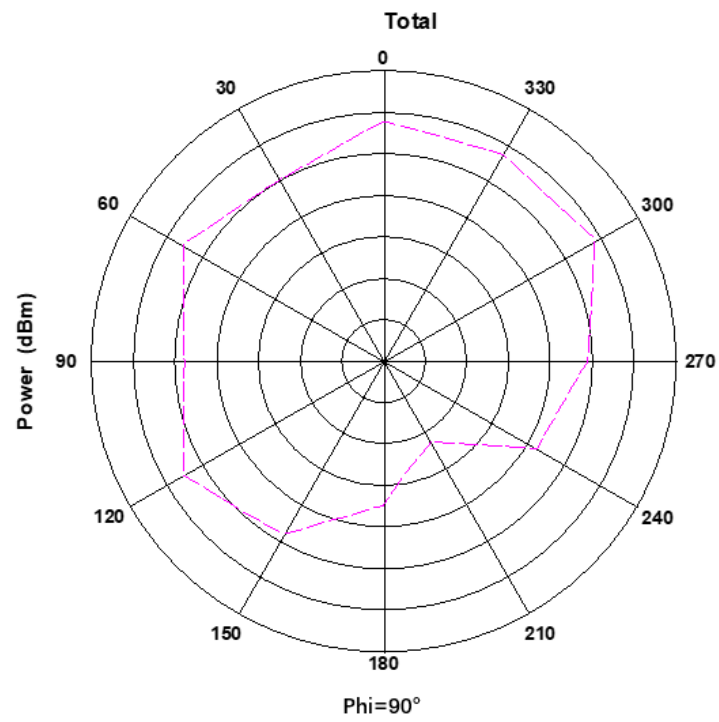
5550 MHz



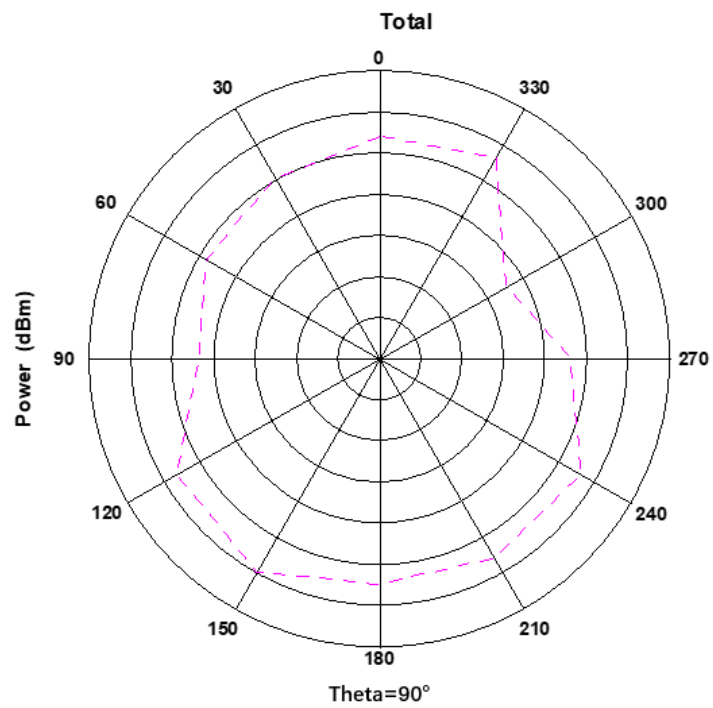
5550 MHz

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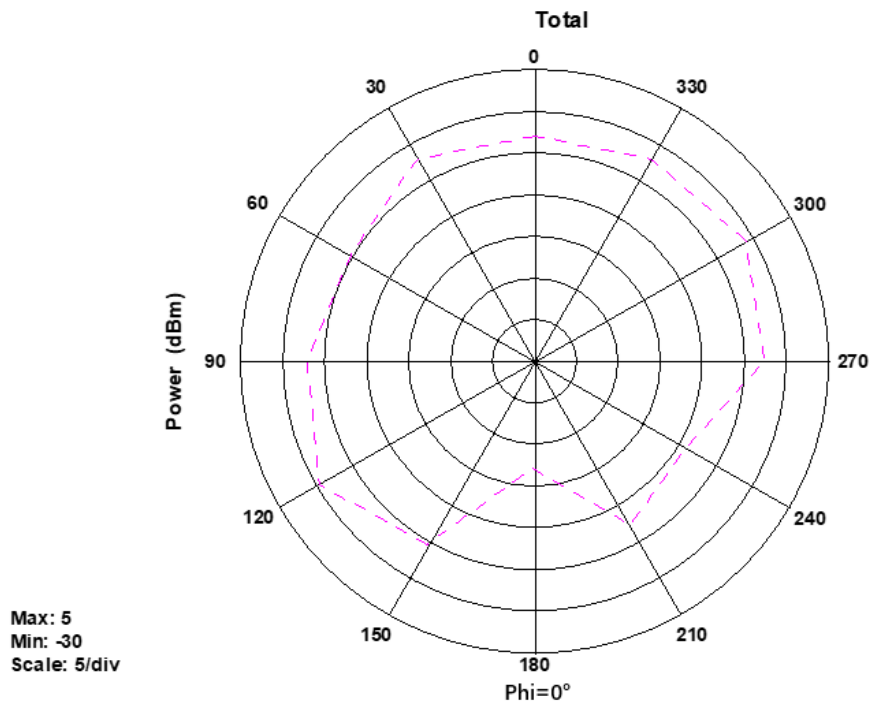
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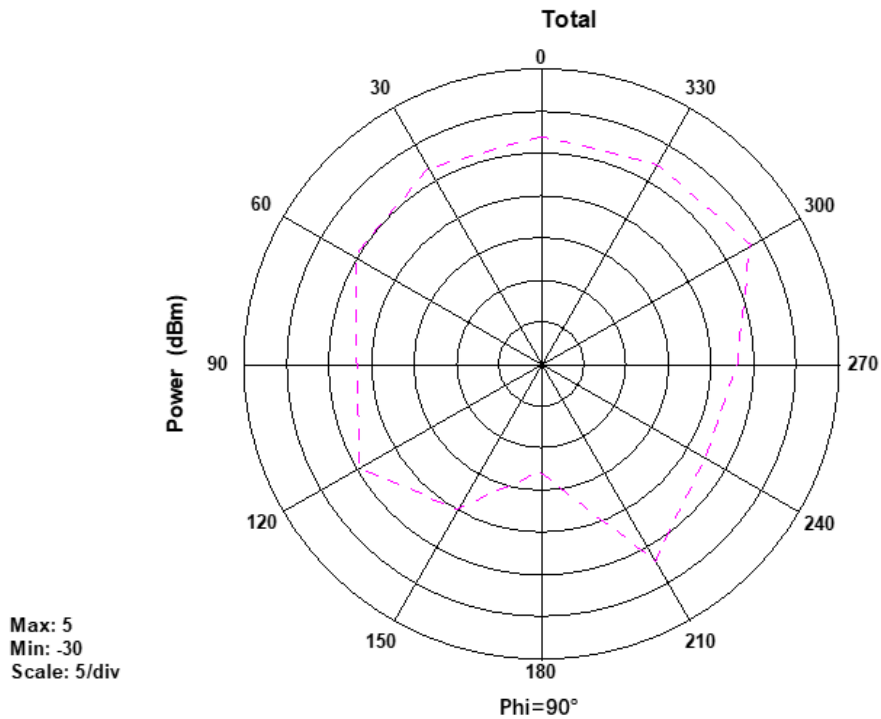
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5850 MHz



5850 MHz

4 Mechanical description

4.1 Drawings

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