



# Amphenol

## Datesheet

### Solstickan

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Project: Solstickan	Author: Henry. Zhang	File Name: <b>exf172-12-000-R</b>
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# 1 Antenna description

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

## 1.1 Part number

EXF172-12-000-R

### 1.1.1 Antenna pictures



Dipole Antenna

## 2 Electrical Performance

### 2.1 Measurement Set-up

#### 2.1.1 S11 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, Gain

The gain of the antenna was measured in Sporton's 3D anechoic chamber in KunShan, China. The full name is Sporton International (Kun Shan) INC. The chamber is a ETS-Lindgren 64 multiprobe system capable of doing tests from 380MHz to 8.5GHz. 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 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

#### 2.1.4 Calibration date and expiration date of the test equipment

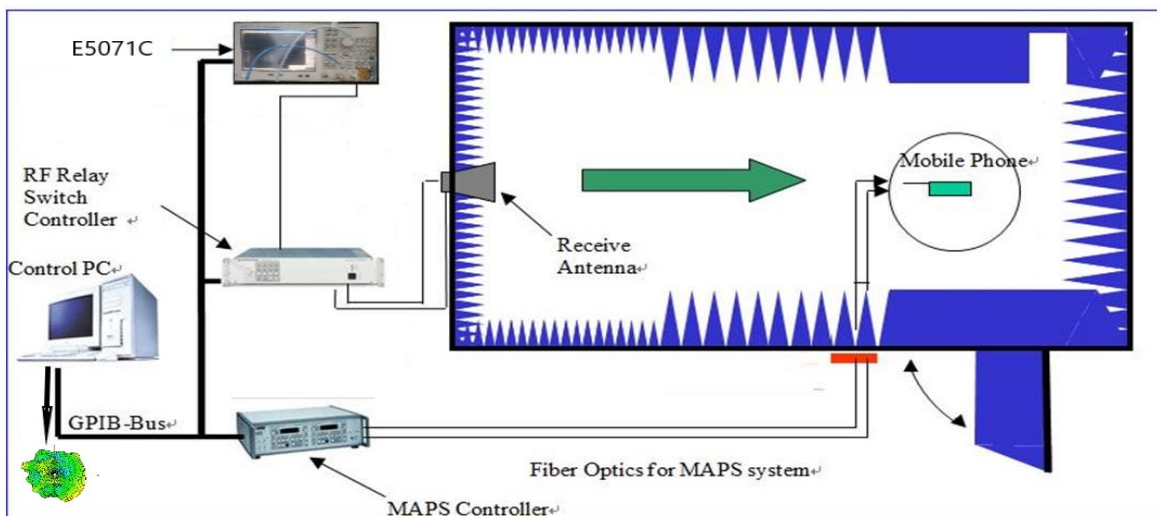
Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
Network Analyzer	Agilent	E5071C	MY46317418	2023/1/3	2024/1/2
Switch Control	ETS-Lindgren	EMC enter	160100	NCR	NCR
Diagonal Dual Polarized Horn	ETS-Lindgren	Aug-64	94091	NCR	NCR

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2.1.5 Test photo and test configuration diagram



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### 2.1.6 Matching Circuit Description

N/A

## 2.2 Reference measurement data

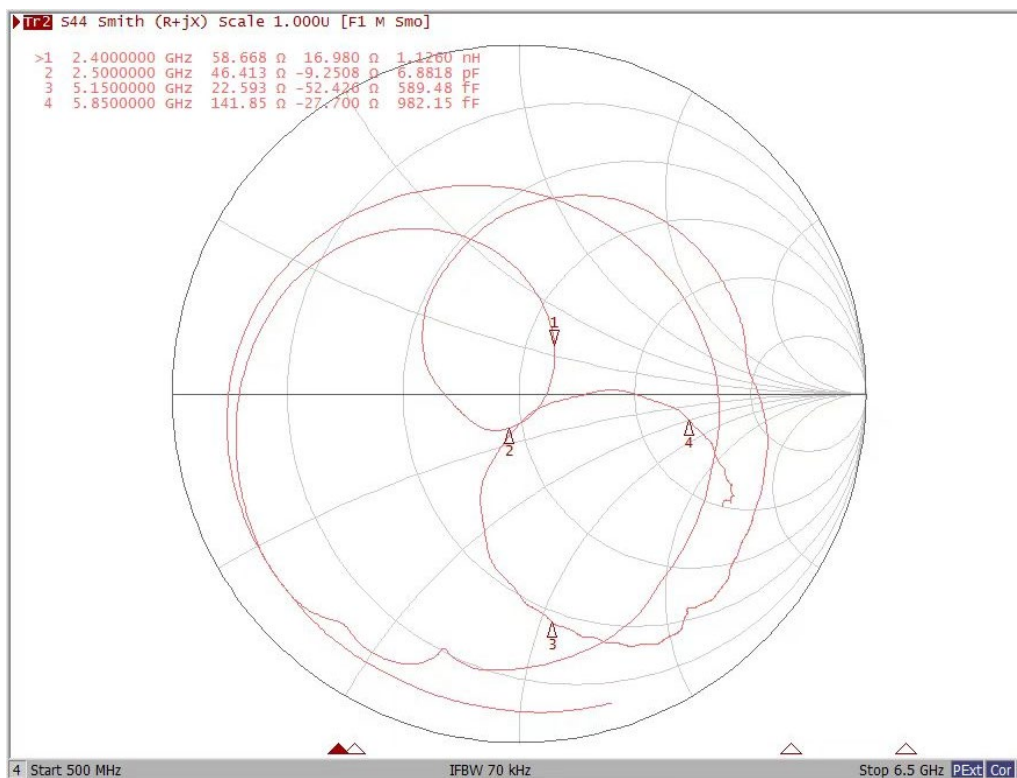
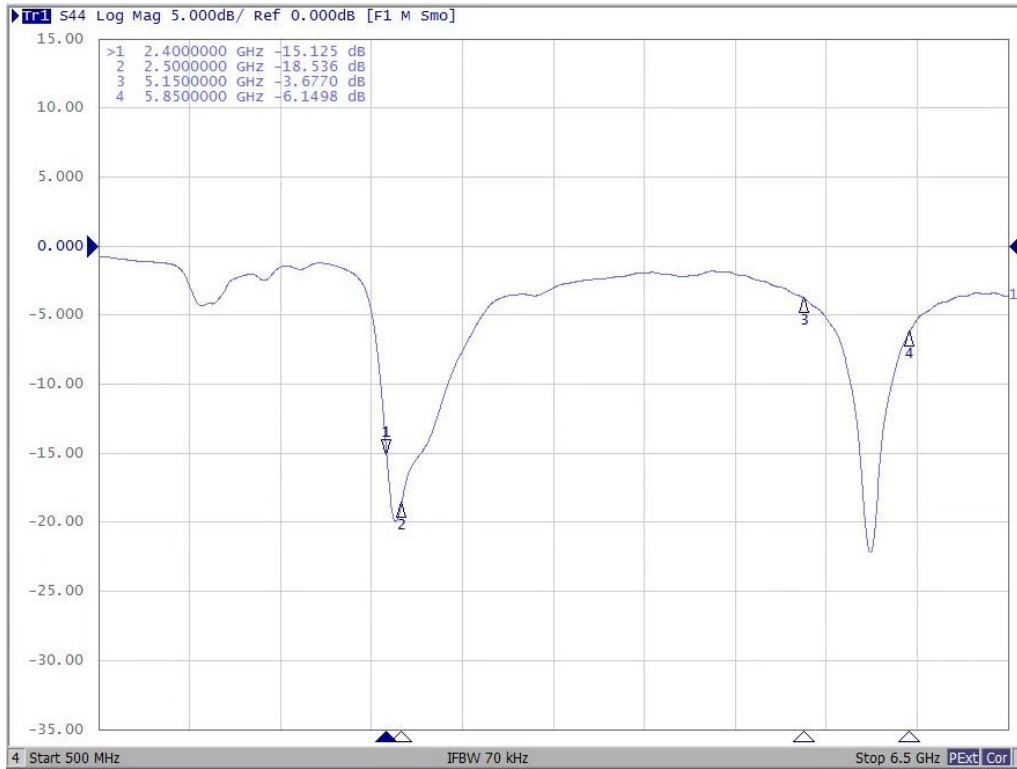
### Gain/Efficiency

Freq(MHz)	Efficiency (%)	Avg Gain(dB)	Peak Gain
2400	40.6	-3.9	0.0
2450	43.6	-3.6	0.5
2500	48.7	-3.1	1.4
Average	44.3	-3.5	0.7
5150	23.2	-6.3	-1.0
5250	28.9	-5.4	0.0
5350	38	-4.2	0.8
5450	42.6	-3.7	0.2
5550	47.1	-3.3	1.0
5650	51.1	-2.9	1.8
5750	39	-4.1	-0.1
5850	29.1	-5.4	-1.4
Average	37.4	-4.4	0.2

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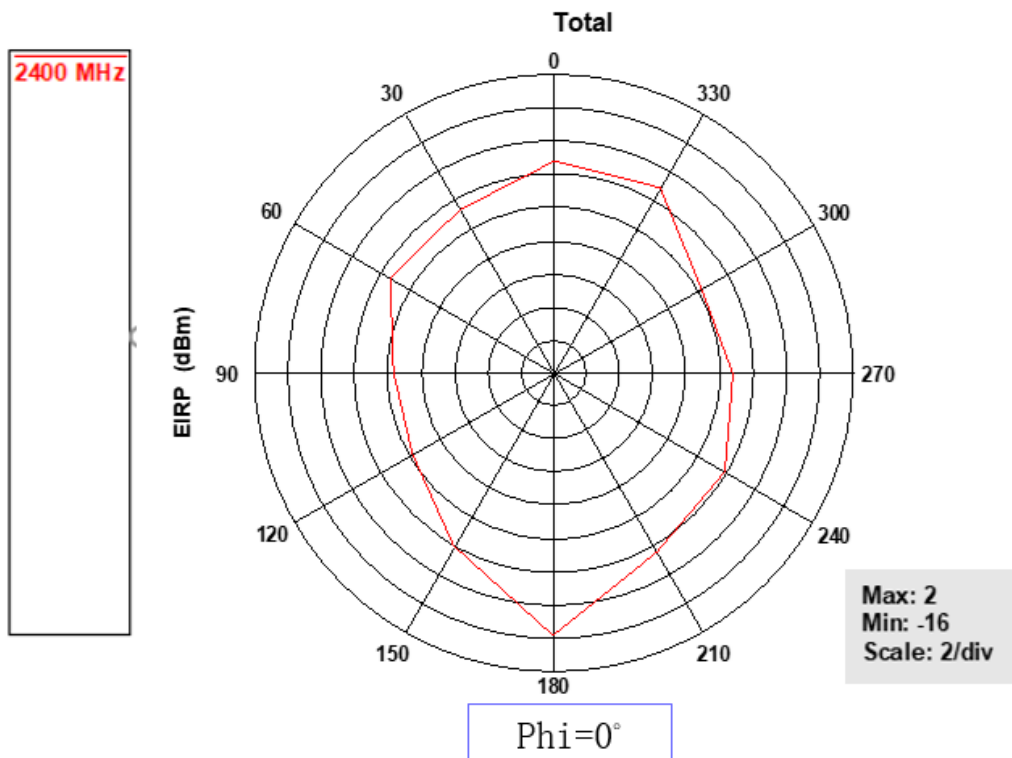
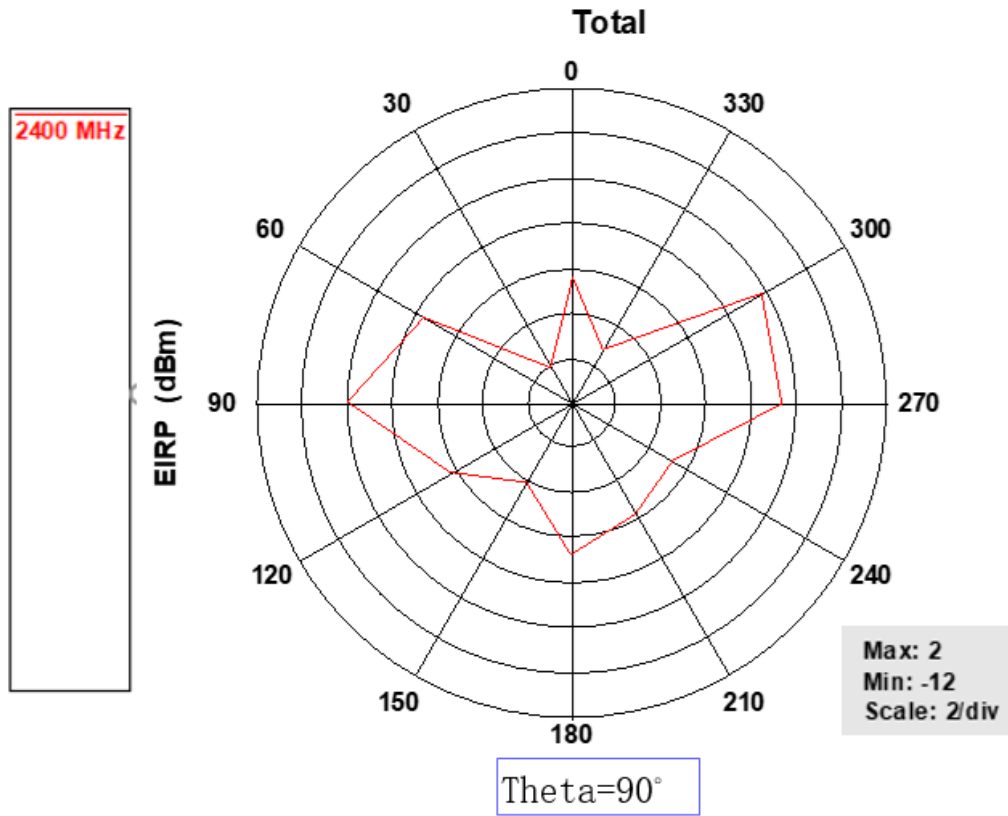
### 3 Plots

#### 3.1 Return loss and Smith Chart

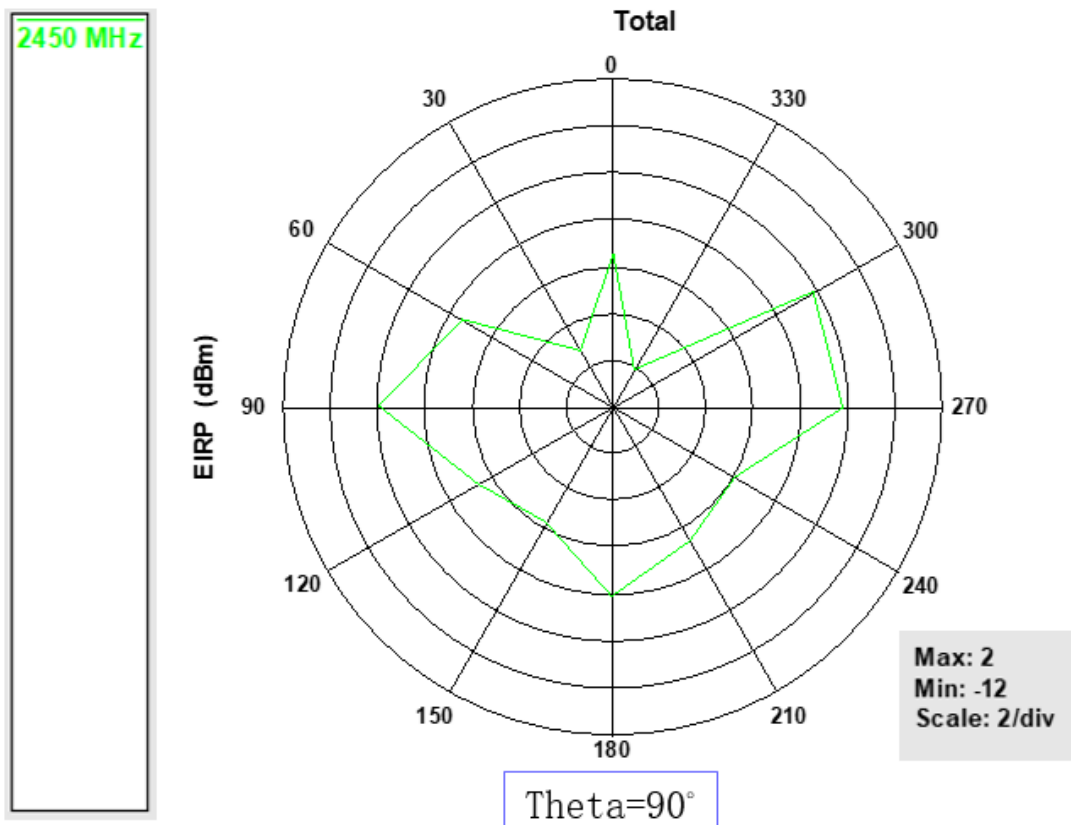
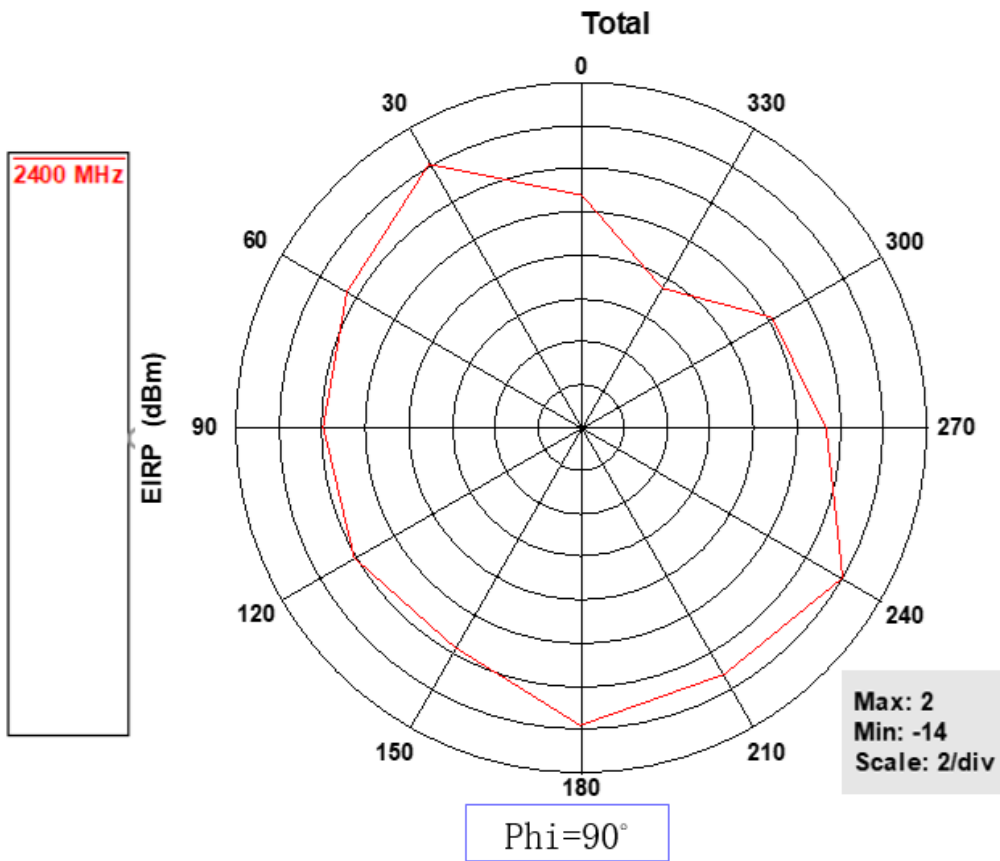


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### 3.2 ANTENNA RADIATION PERFORMANCE



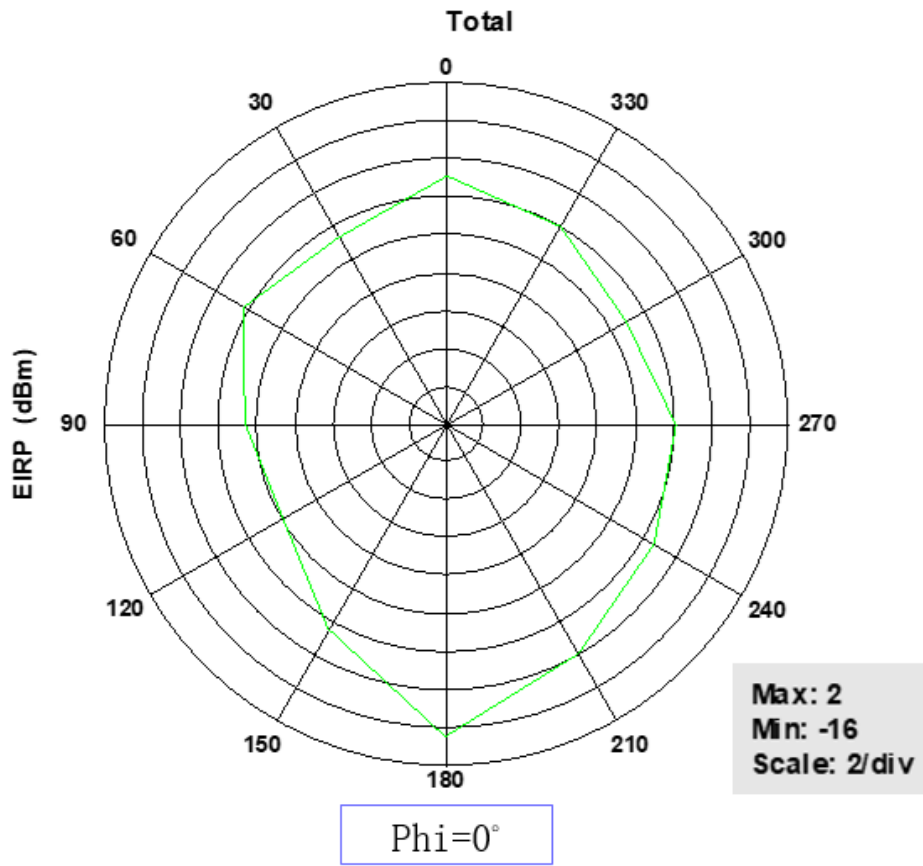
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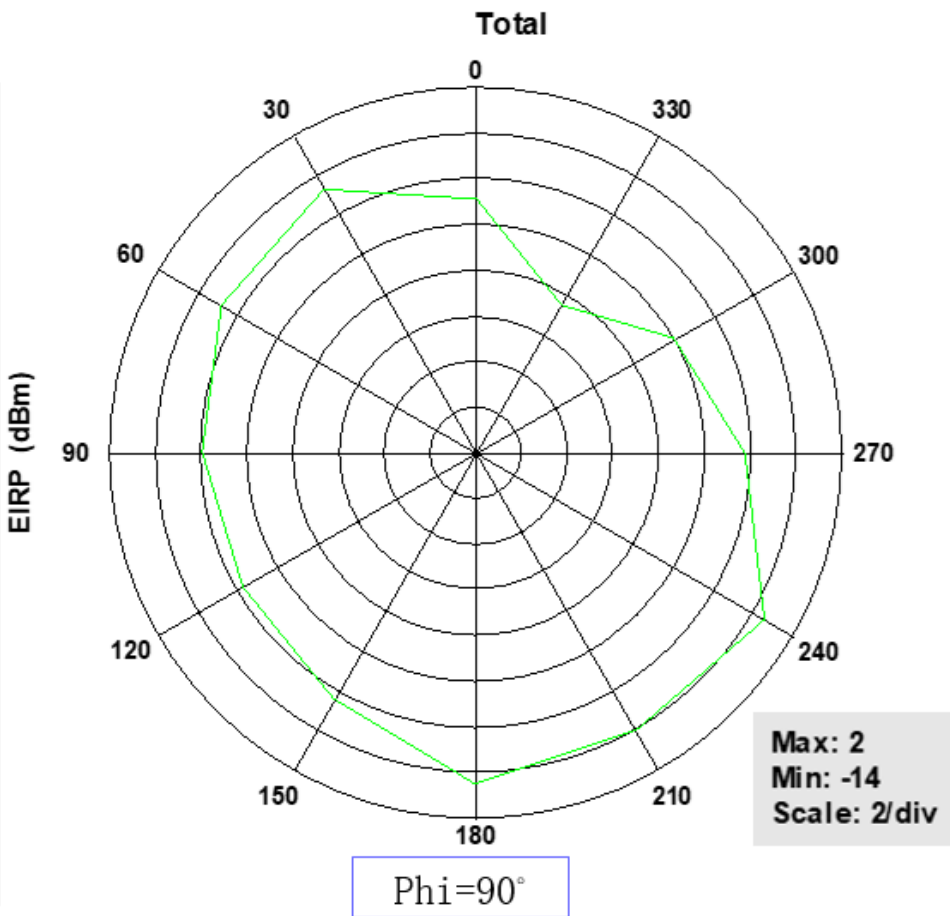
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2450 MHz



2450 MHz

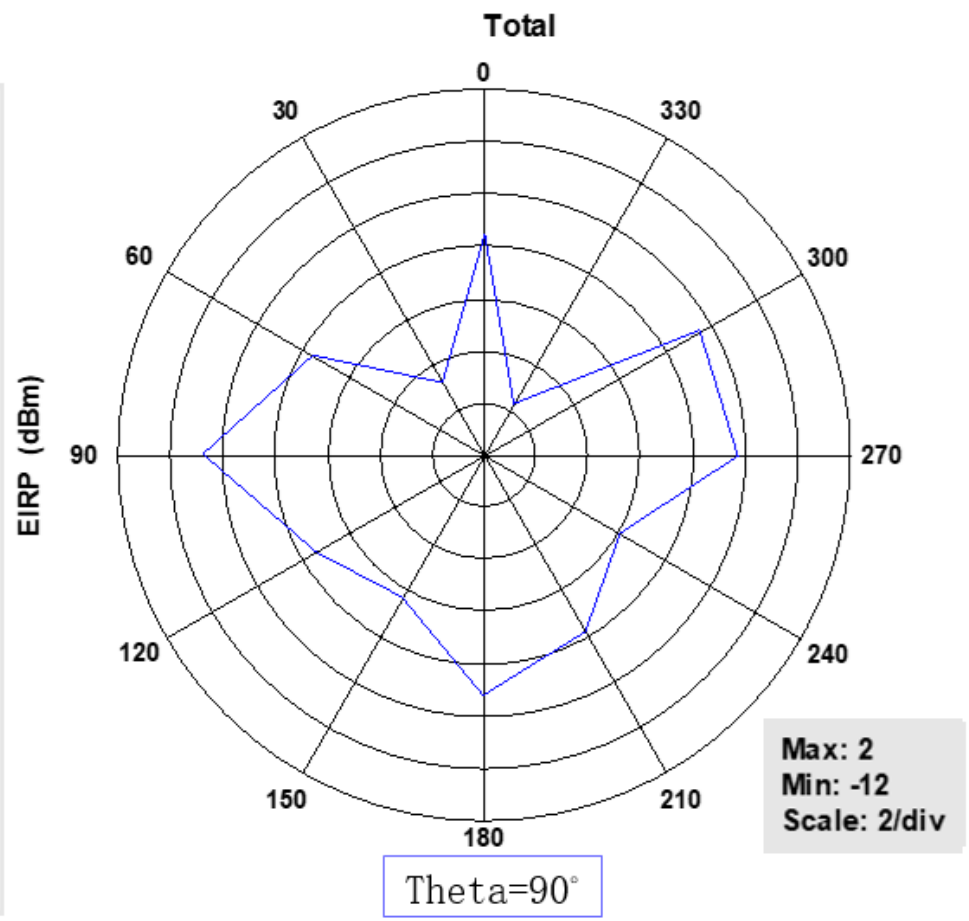


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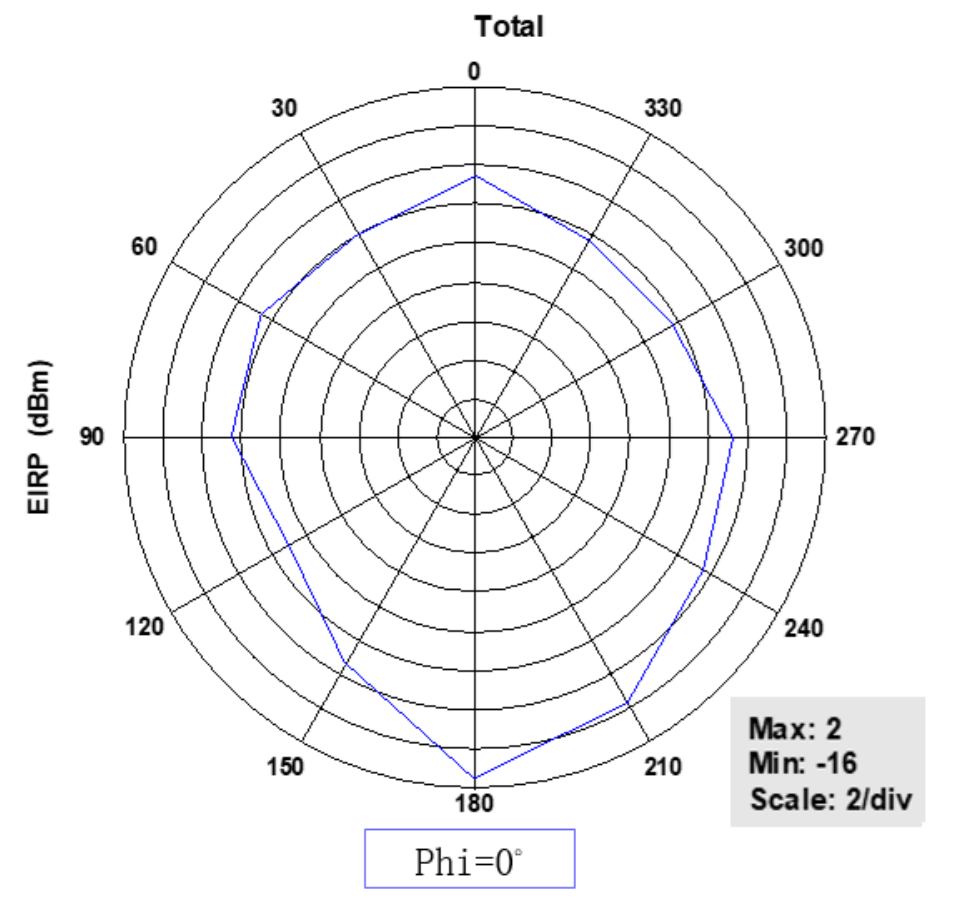
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2500 MHz



2500 MHz

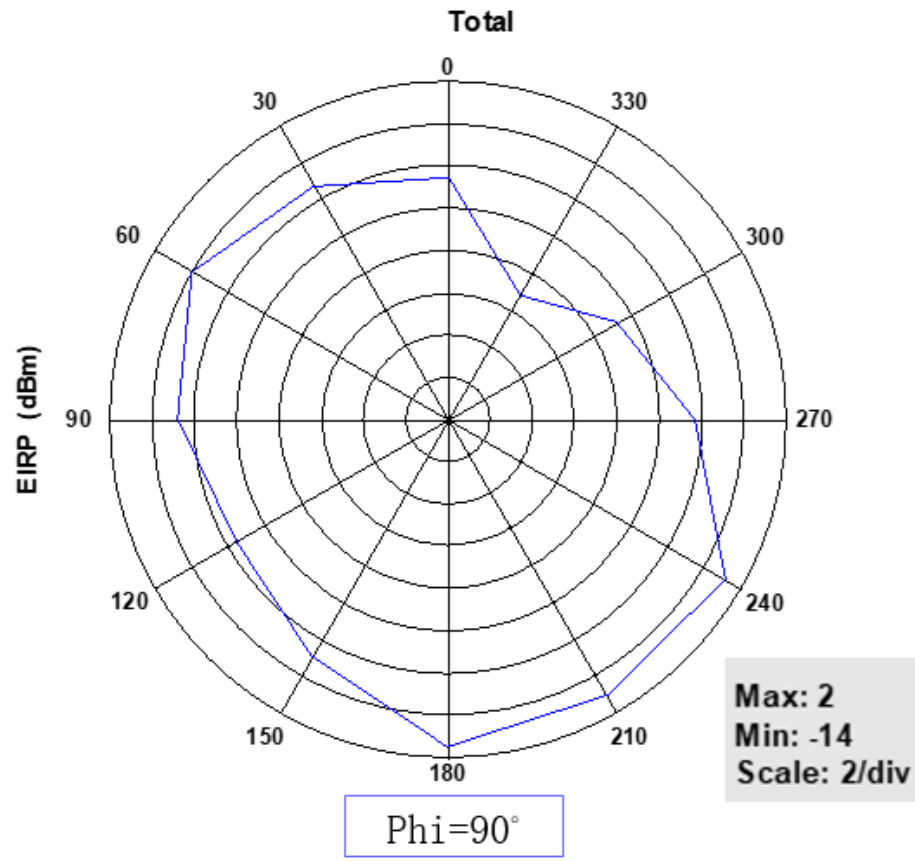


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2500 MHz

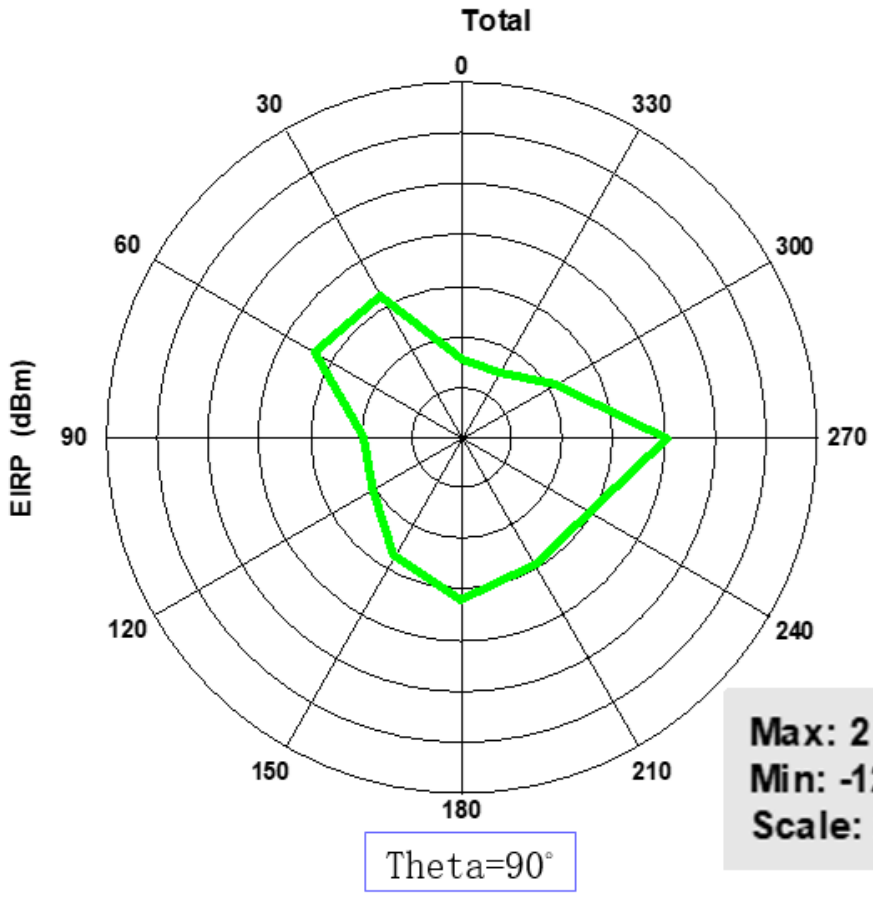


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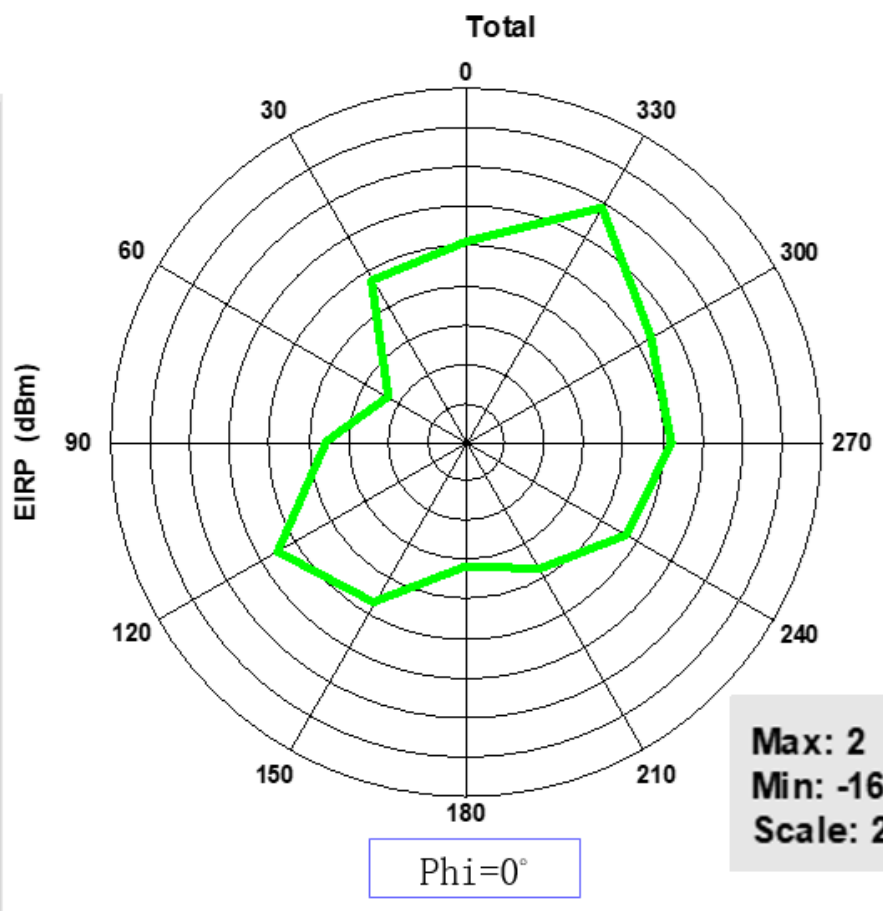
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5150 MHz

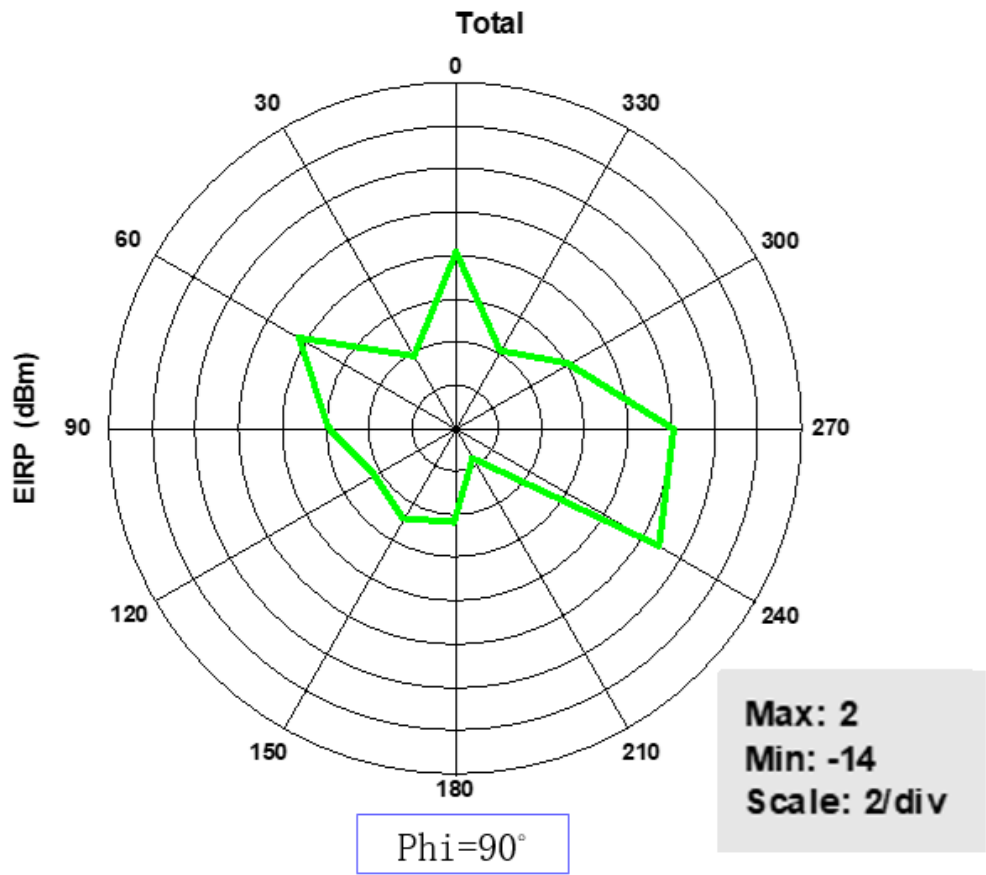


5150 MHz

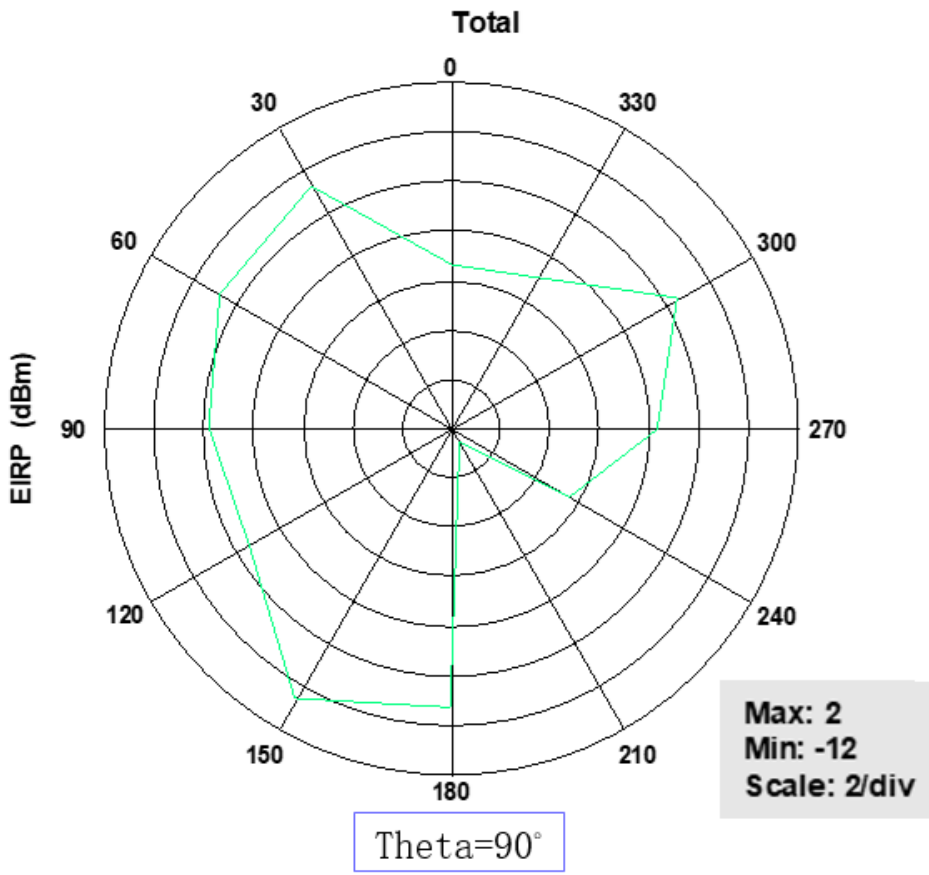


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5150 MHz

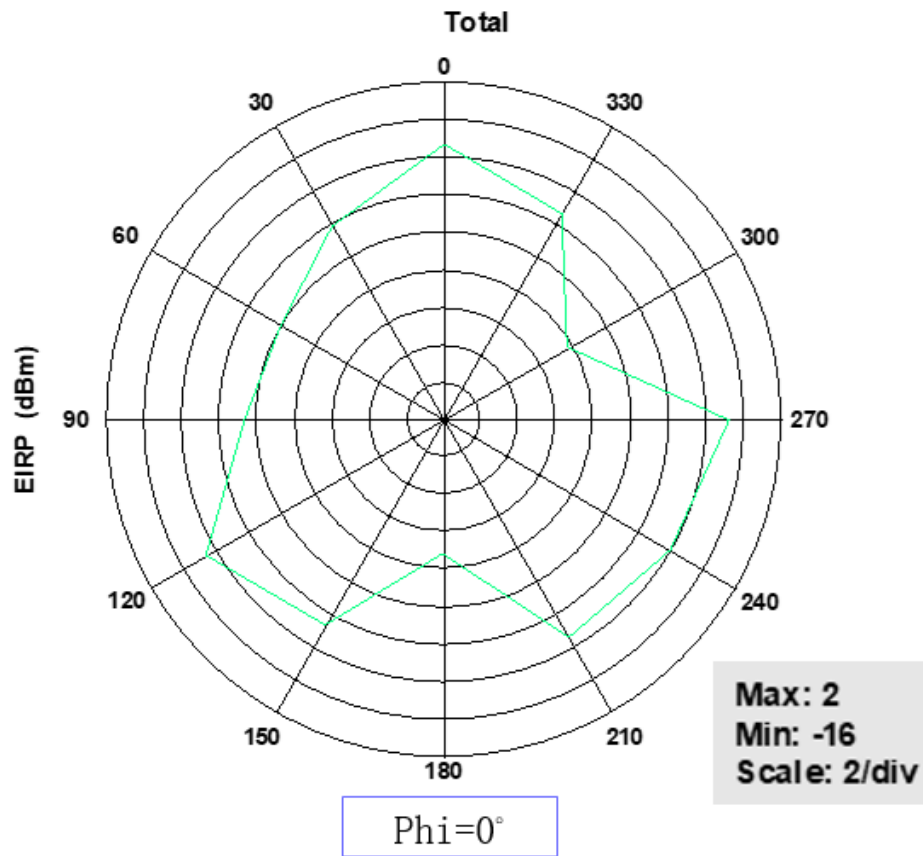


5550 MHz

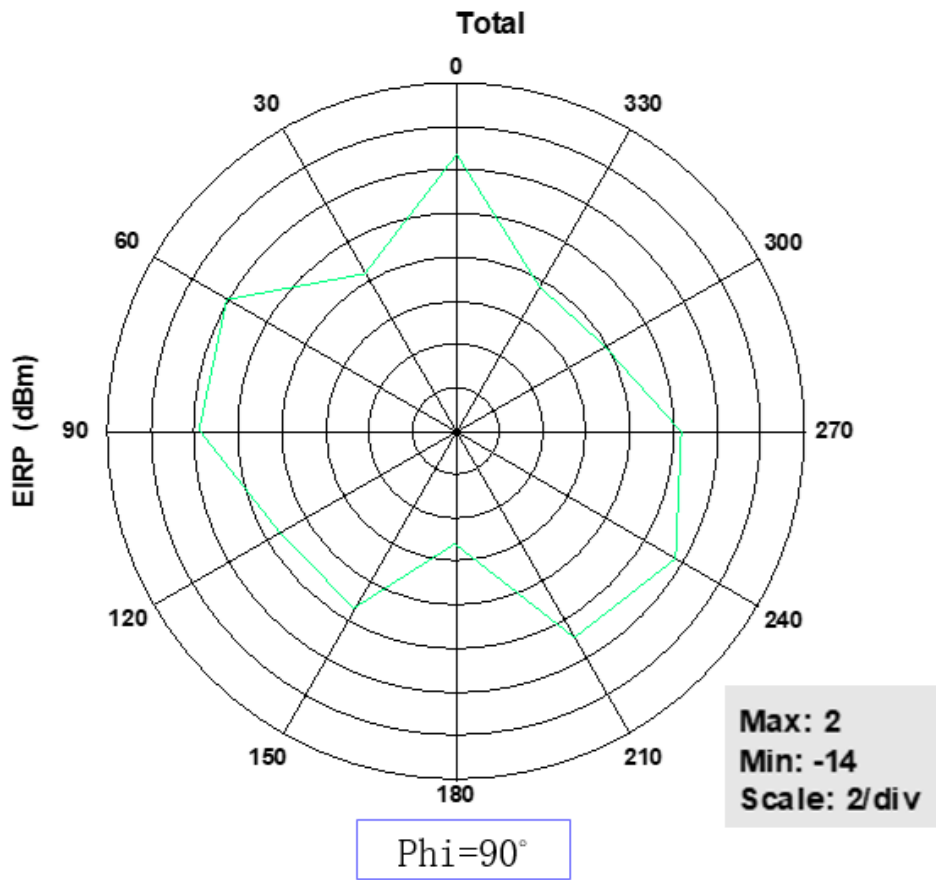


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5550 MHz

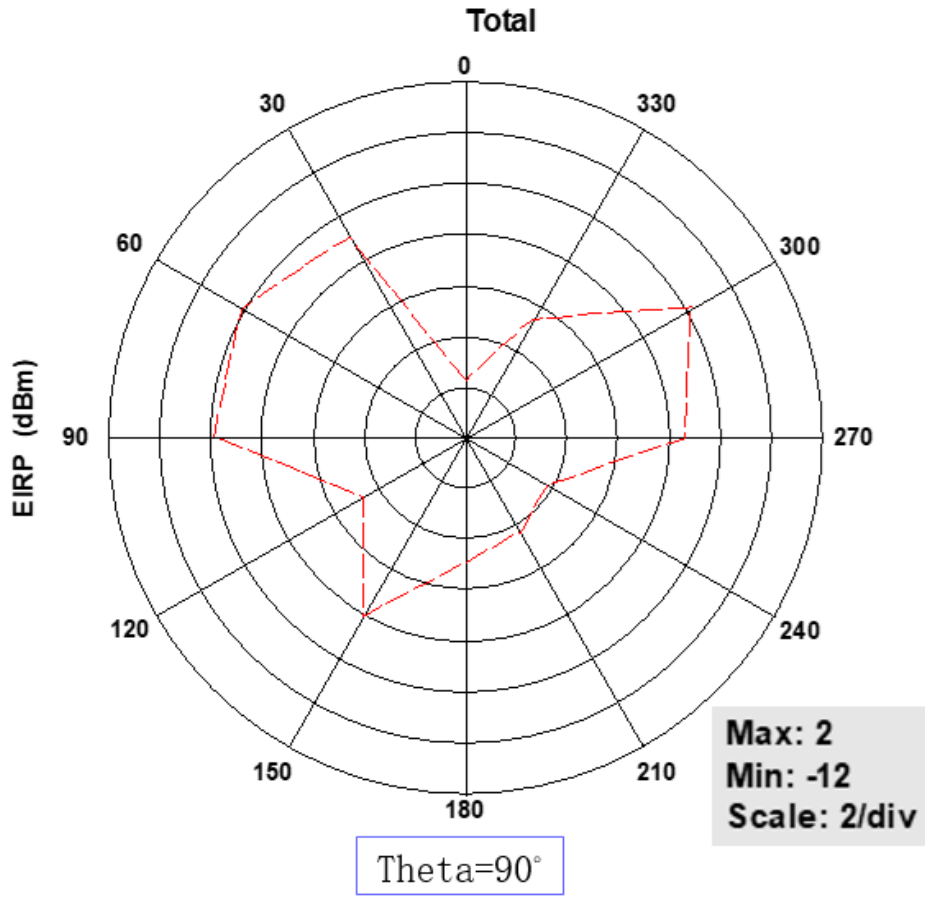


5550 MHz

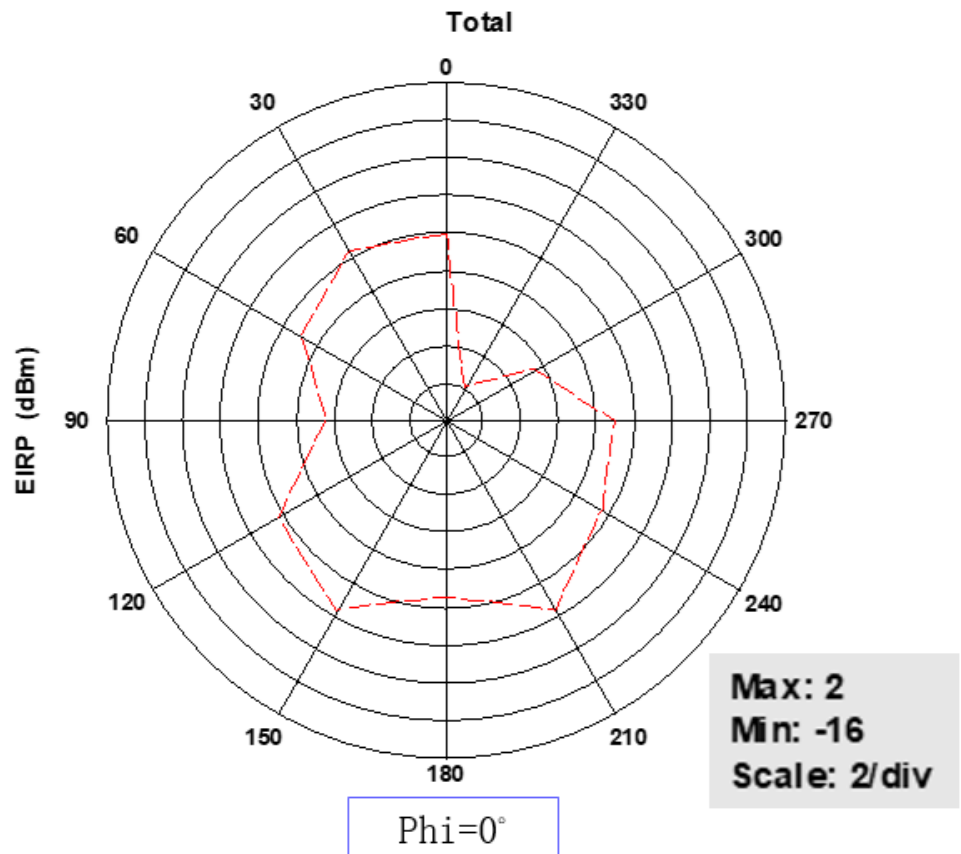


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5850 MHz



5850 MHz

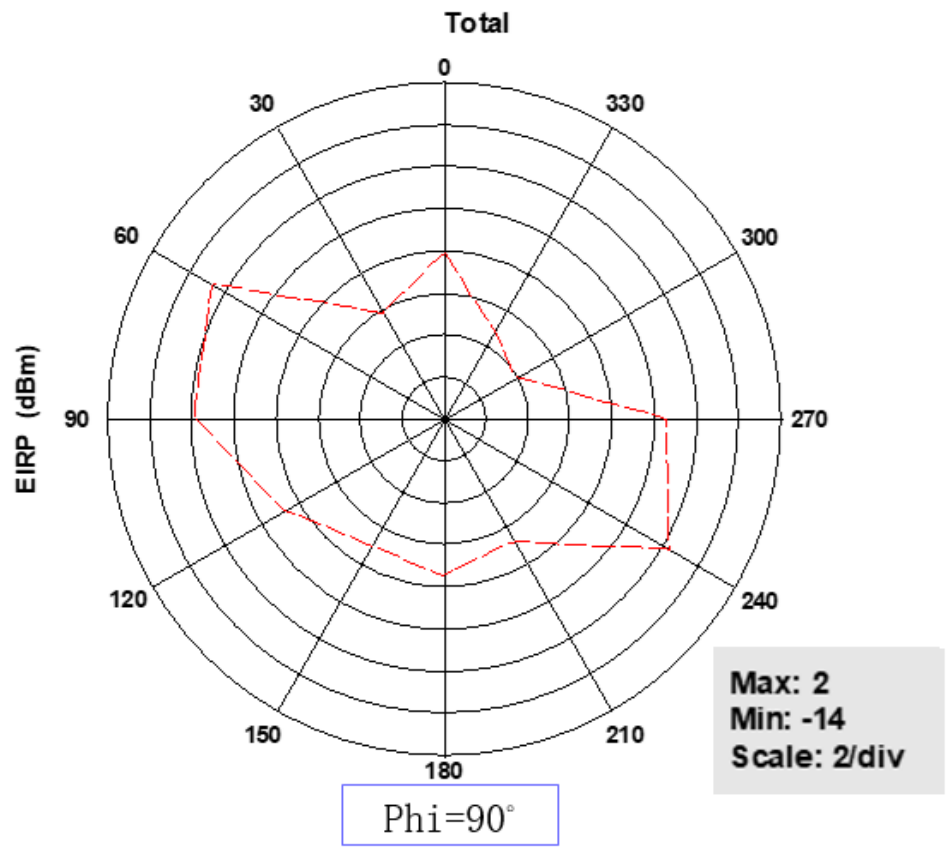


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5850 MHz

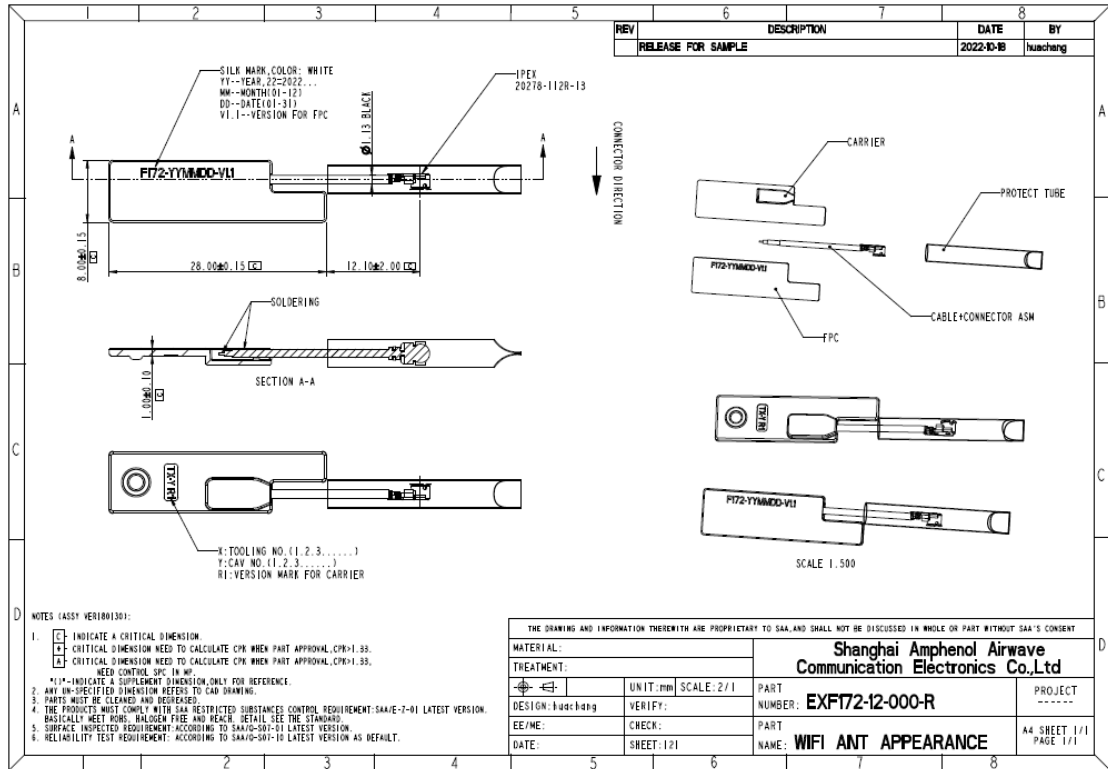


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# 4 Mechanical description

## 4.1 Drawings



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