



# TEST REPORT

**APPLICANT** : Parts Express  
**PRODUCT NAME** : antenna  
**MODEL NAME** : PCB antenna  
**TRADE NAME** : talent  
**BRAND NAME** : N/A  
**STANDARD(S)** : IEEE Std 149-2021  
**RECEIPT DATE** : 2023-03-08  
**TEST DATE** : 2023-03-14  
**ISSUE DATE** : 2023-03-17

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Change History		
Version	Date	Reason for change
1.0	2023-03-17	First edition

# 1. Technical Information

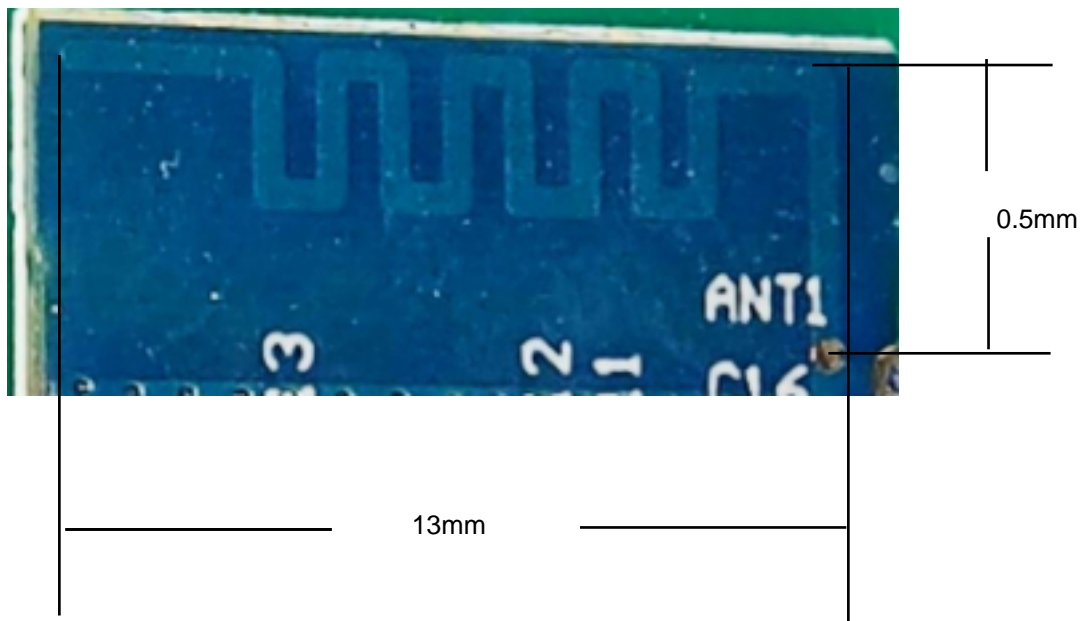
Note: Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	Parts Express
<b>Applicant Address:</b>	725 Pleasant Valley Drive, Springboro, Ohio 45066
<b>Manufacturer:</b>	N/A
<b>Manufacturer Address:</b>	N/A

## 1.2. Equipment Under Test (EUT) Description

<b>Wireless Type</b>	Bluetooth
<b>Frequency</b>	2400MHz-2500MHz
<b>IMEI</b>	N/A
<b>Sample No.</b>	1#



## 2. Test Results

### 2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	IEEE Std 149-2021	IEEE Recommended Practice for Antenna Measurements

### 2.2. Test Conditions

Test Environment Conditions:

Relative Humidity:	25 ... 75 %
Temperature:	+10 °C to +30 °C

### 2.3. Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO. When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.

Item	Measurement Uncertainty(dB)
Gain	±0.5
VSWR	±0.2
Measurement Uncertainty(95% Confidence Interval) K=2	

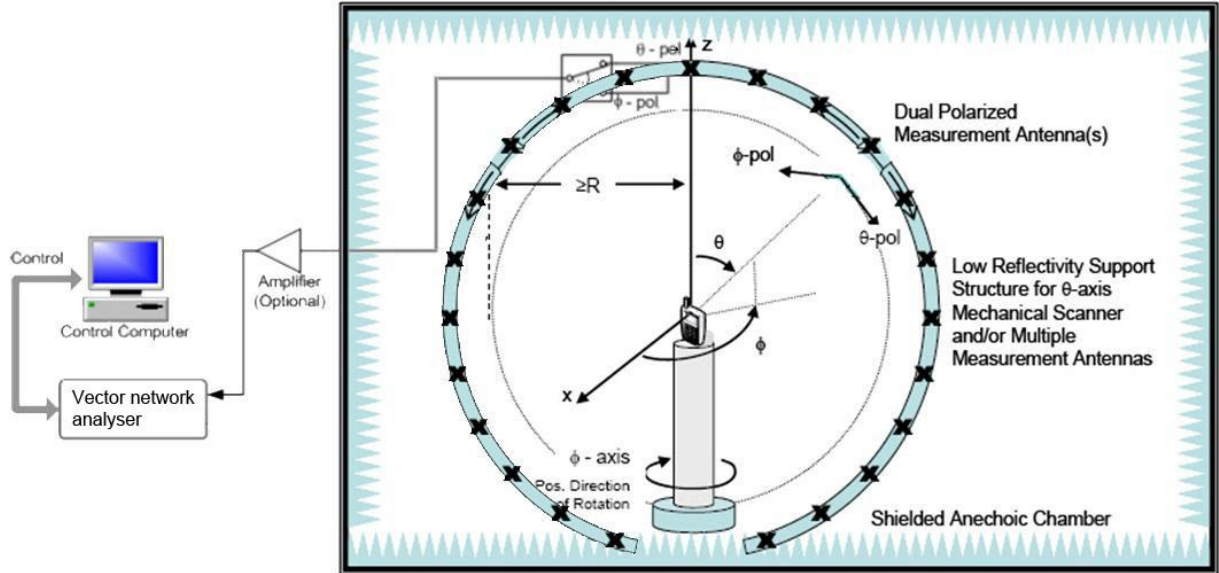


## 2.4. Test Results lists

### 2.4.1. Gain

Frequency (MHz)	Gain(dBi)
2400	1.90
2410	1.53
2420	1.21
2430	0.81
2440	0.70
2450	0.63
2460	0.54
2470	0.35
2480	0.18
2490	0.05
2500	0.00

## Annex A Test Setup Photos





## Annex C General Information

### 1.1 Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

### 1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

### 1.3 Test Equipments Utilized

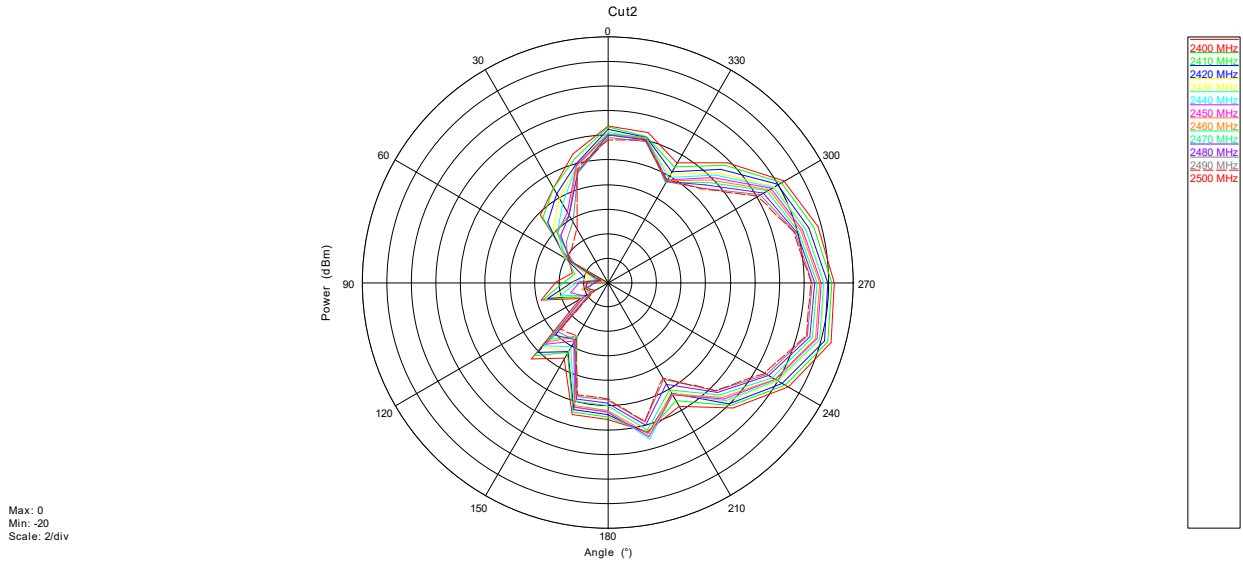
No.	Equipement Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Network Analyzer	MY46110140	E5071C	Agilent	2022.07.04	2023.07.03
2	OTA Chamber	TJ2235-Q1793	AMS-8923 -150	ETS	2022.11.30	2025.11.29
3	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS	N/A	N/A

————— END OF REPORT —————

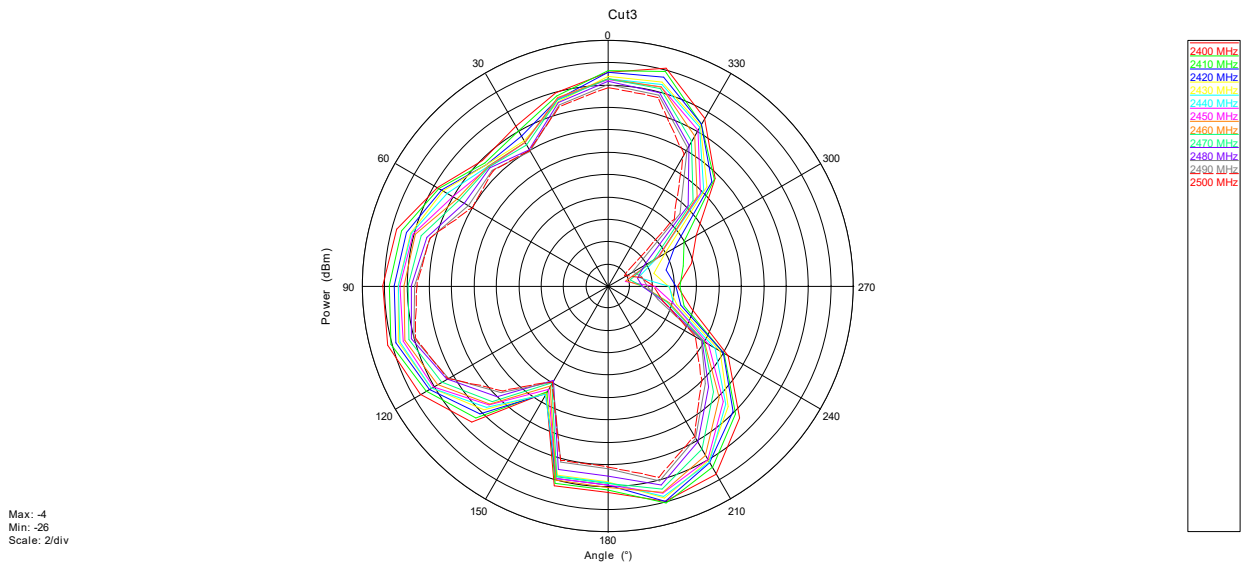
## Annex B Figures

### 1. 2D Radiation Pattern

Phi=0°



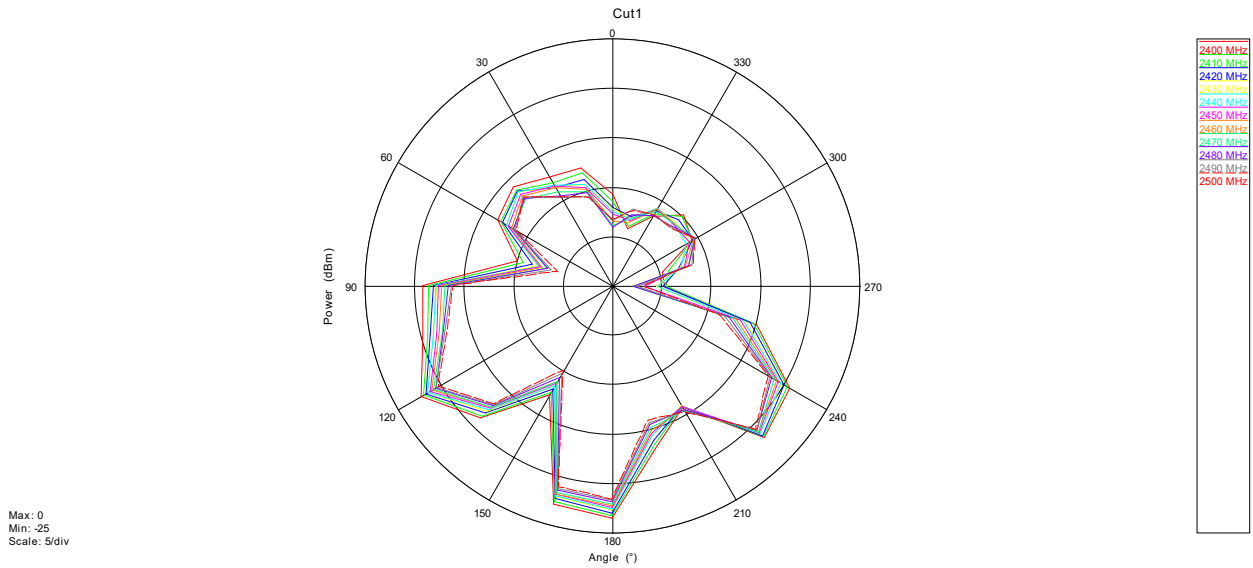
Phi=90°



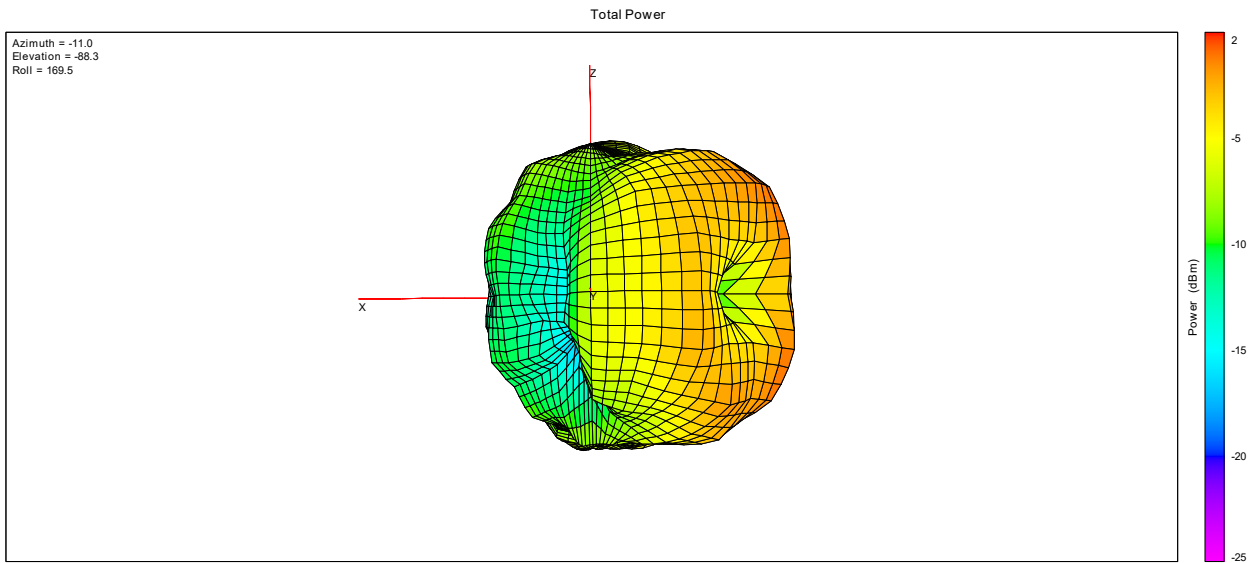




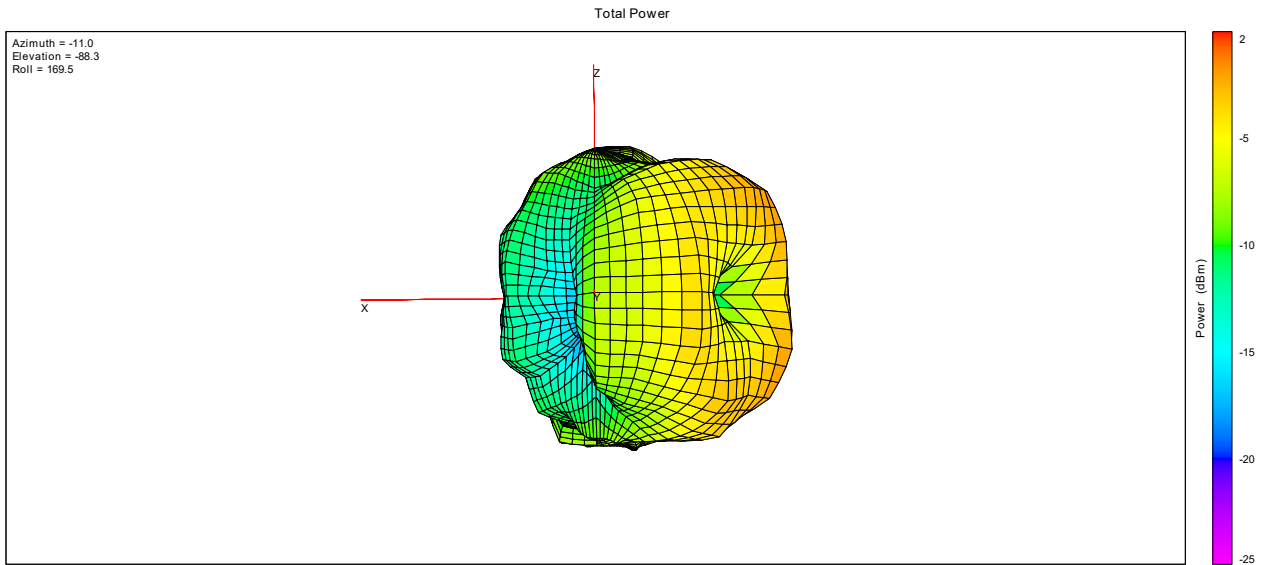
Theta=90°



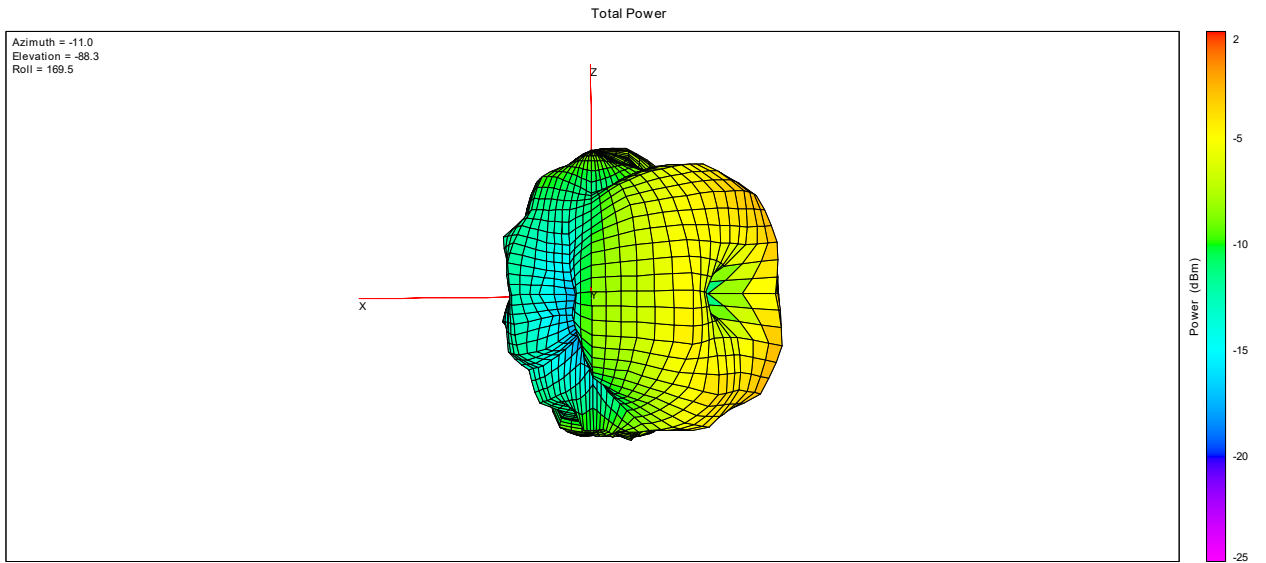
## 2. 3D Radiation Pattern



2400MHz



2440MHz



2480MHz