



REPORT No.: SZ23030100E01

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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MORLAB

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

1. Technical Information

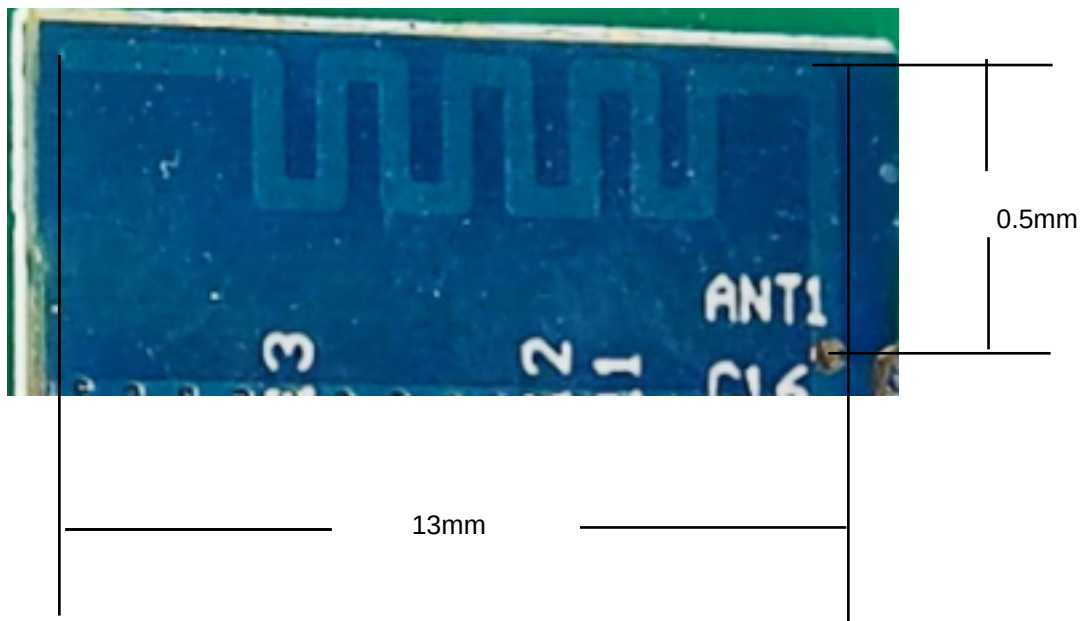
Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

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

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Frequency	2400MHz-2500MHz
IMEI	N/A
Sample No.	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	

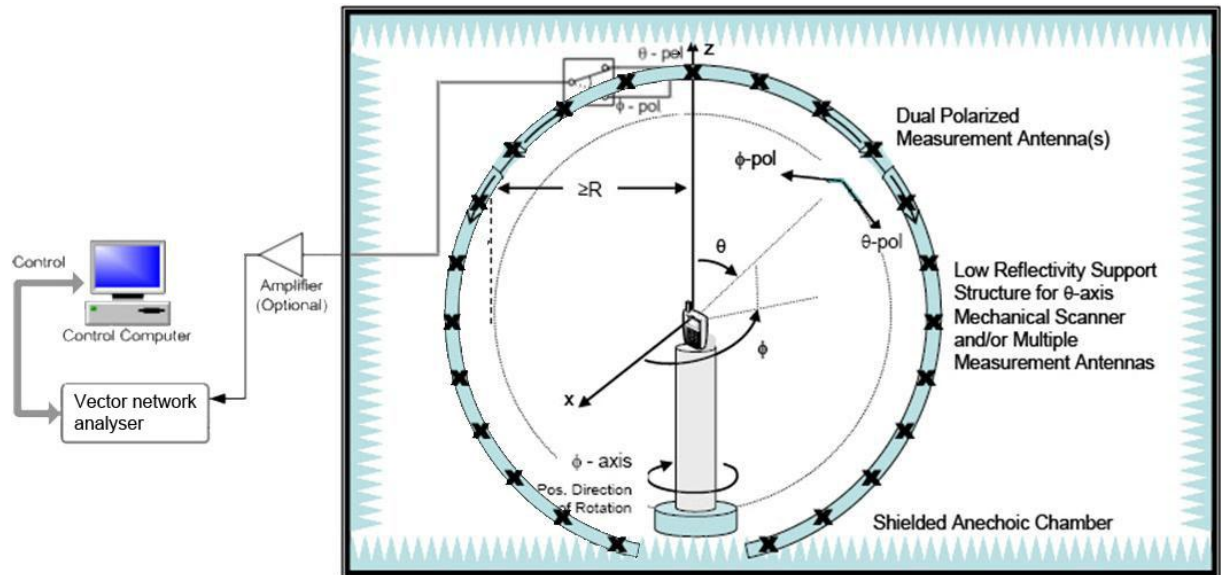


2.4. Test Results lists

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

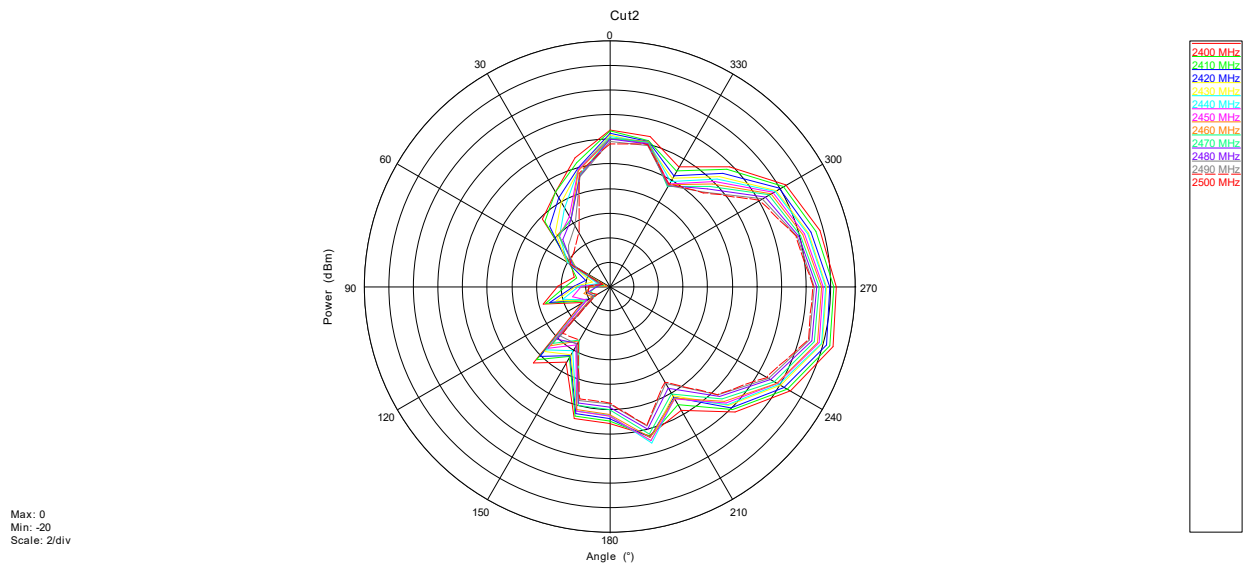
No.	Equipement Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Network Analyzer	MY46110140	E5071C	Agilent	2022.07.04	2023.07.03
2	OTA Chamber	TJ2235-Q1793	AMS-8923 -150	ETS	2022.11.30	2025.11.29
3	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS	N/A	N/A

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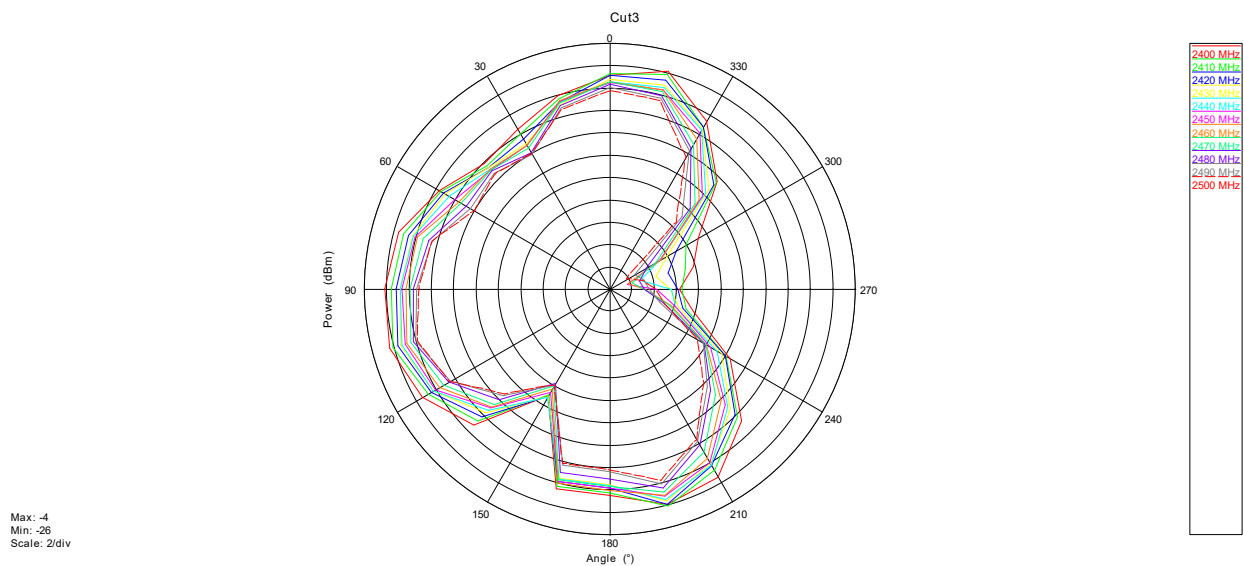
Annex B Figures

1. 2D Radiation Pattern

Phi=0°



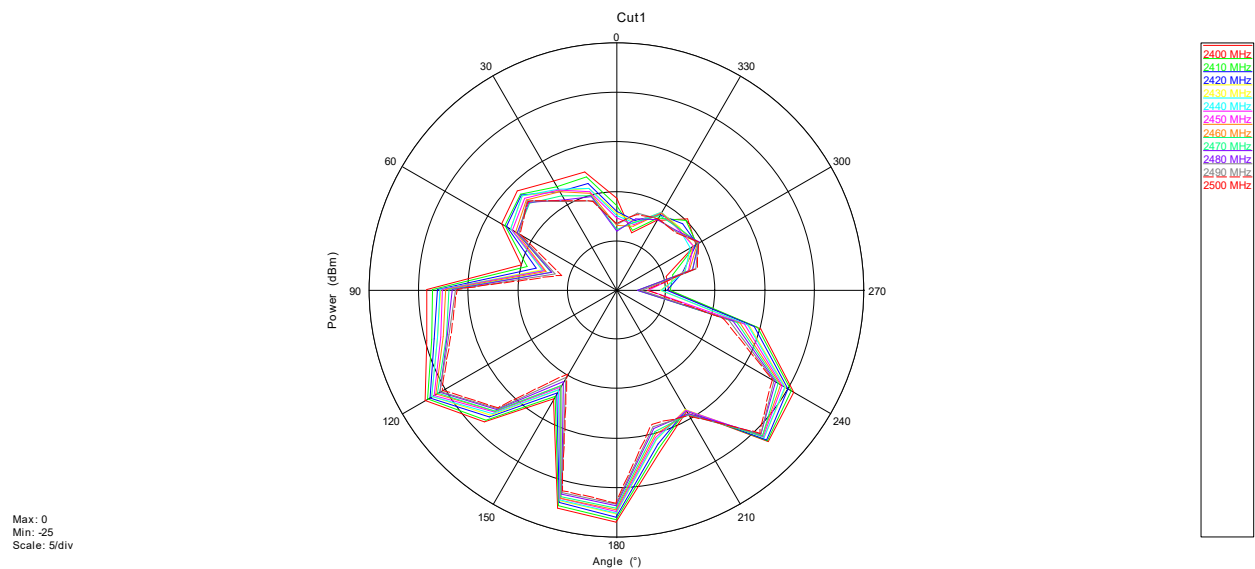
Phi=90°



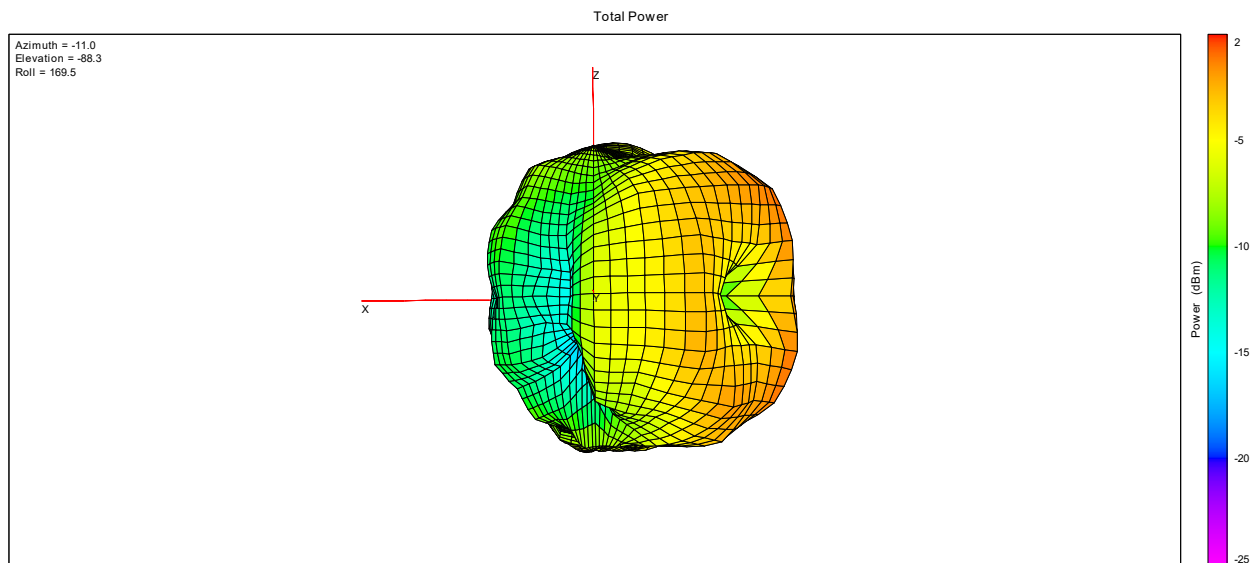


Theta=90°

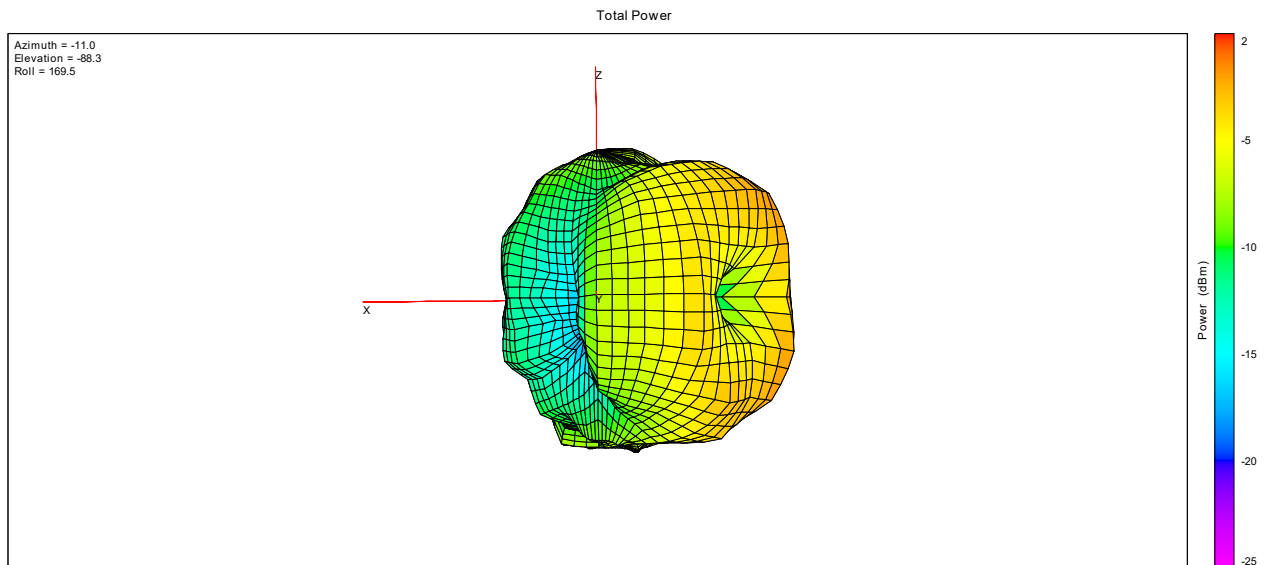
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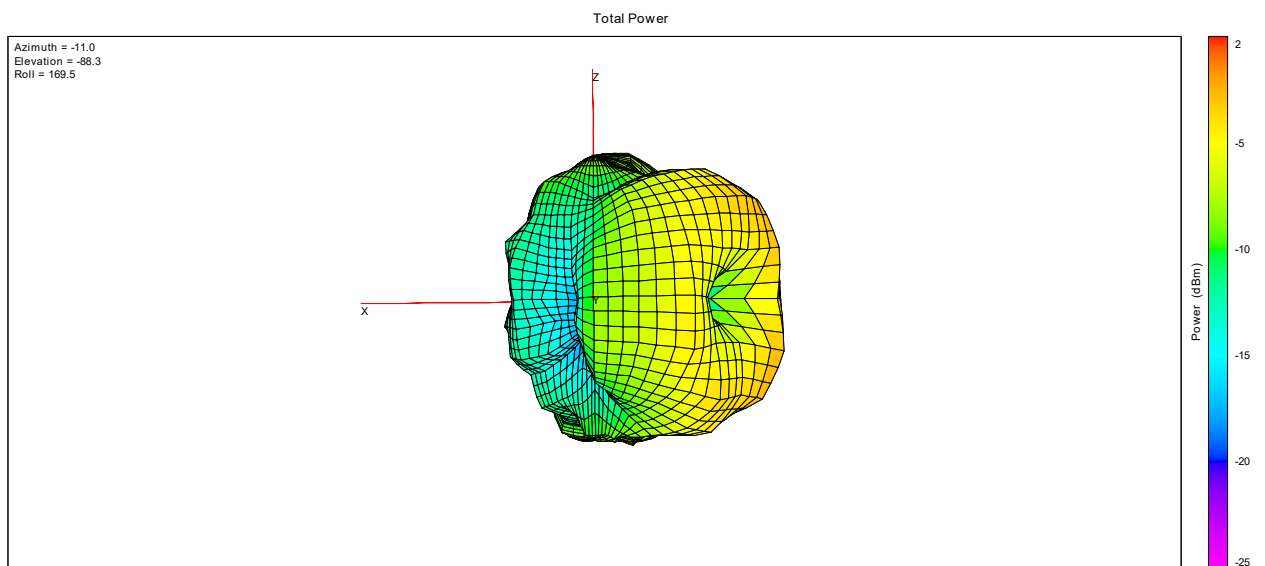
2. 3D Radiation Pattern



2400MHz



2440MHz



2480MHz