



Antenna data sheet

APPLICANT : Ningbo Sunfree motor Technology Company Limited

PRODUCT NAME : Wire Antenna

MODEL NAME : AC1003-01

TRADE NAME : N/A

BRAND NAME : N/A

STANDARD(S) : IEEE Std 149-2021

RECEIPT DATE : 2025-04-15

TEST DATE : 2025-04-17

ISSUE DATE : 2025-05-07



Edited by:

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MORLAB

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Change History		
Version	Date	Reason for change
1.0	2025-05-07	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Ningbo Sunfree motor Technology Company Limited
Applicant Address:	202 No.418,Qihang North Road,Yinzhou District,Ningbo,China
Manufacturer:	N/A
Manufacturer Address:	N/A

1.2. Equipment Under Test (EUT) Description

Wireless Type	N/A
Test frequency band	N/A
Brand name	N/A
Hardware Version	N/A
Software Version	N/A
IMEI	N/A
Sample number	3#



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

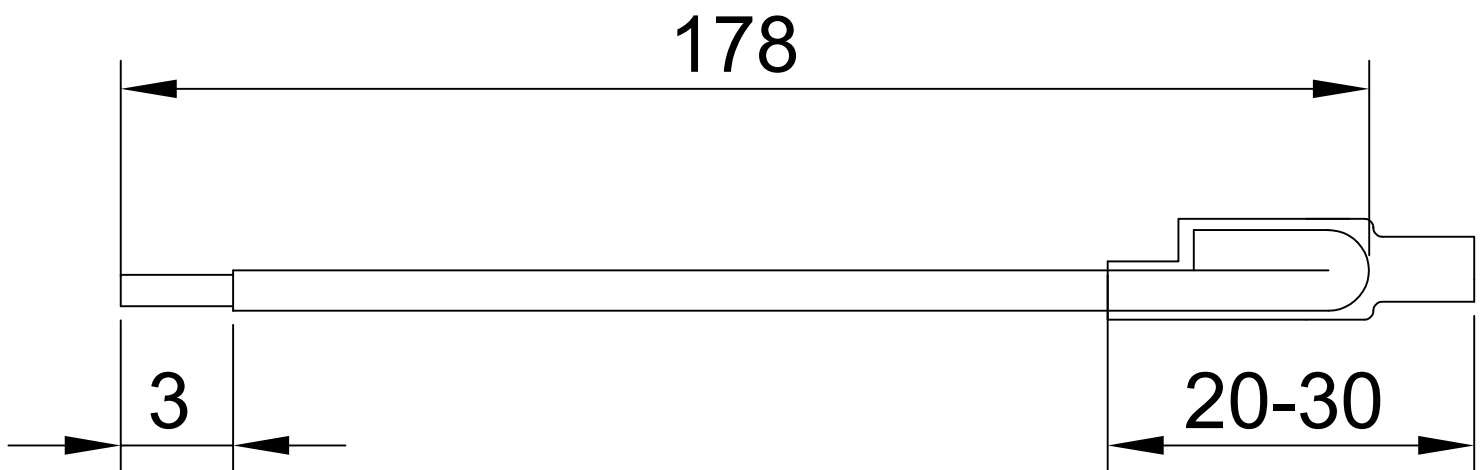
Test Environment Conditions:

Relative Humidity(%):	25 - 75
Temperature(°C):	10 - 30

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.

Antenna size



Wire material: AWM100720AWG, 80°C, 300V, white; total wire length 185mm. Strip 3mm from one end, twist and tin the wire. Bend the other end 6-7mm, then apply a 20-30mm long white heat-shrinkable tube for fixation.

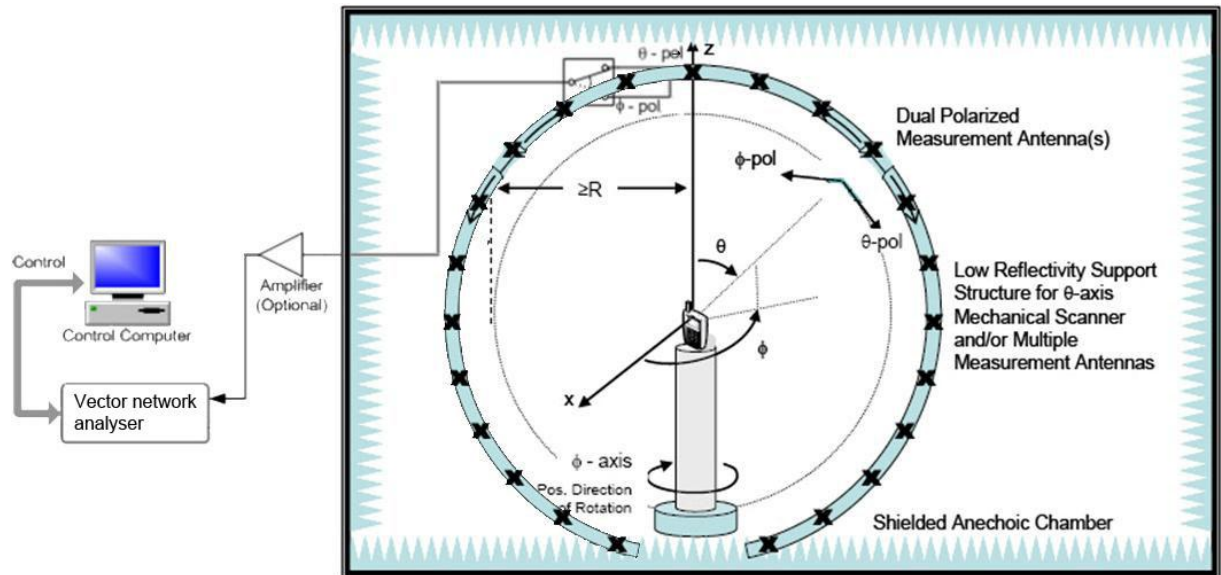


2.4. Test Results lists

2.4.1. Gain

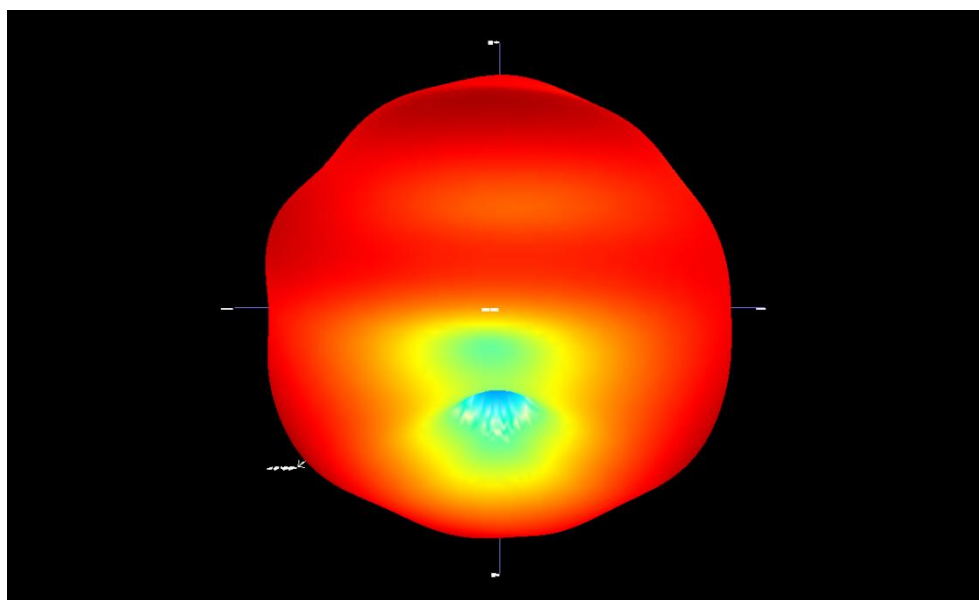
Frequency	Gain(dBi)
419MHz	-10.99
429MHz	-10.85
429.2MHz	-10.87
433.92MHz	-10.00
439MHz	-10.74
447.675MHz	-10.50
449MHz	-10.49

Annex A Test Setup Photos

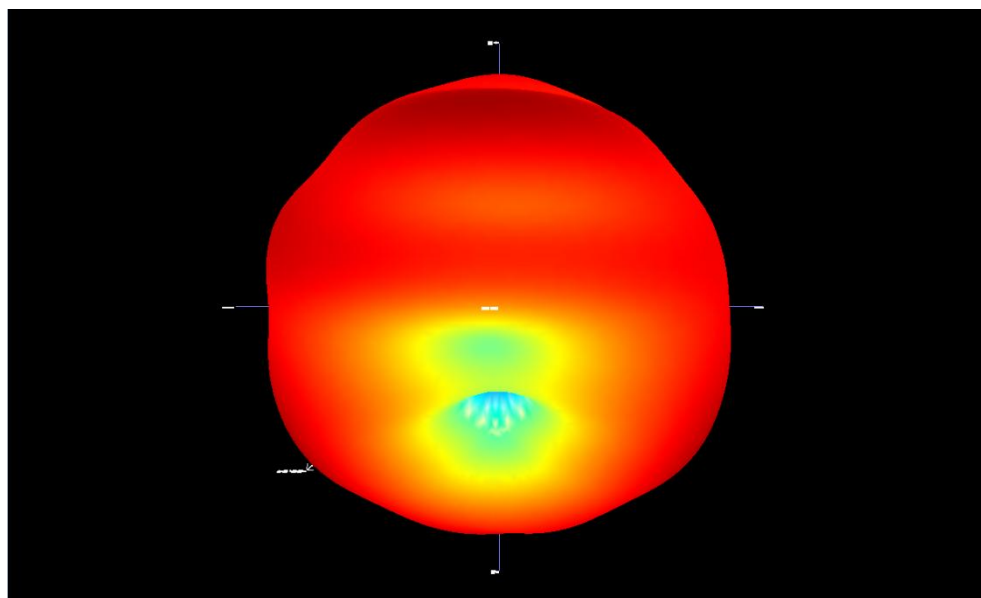




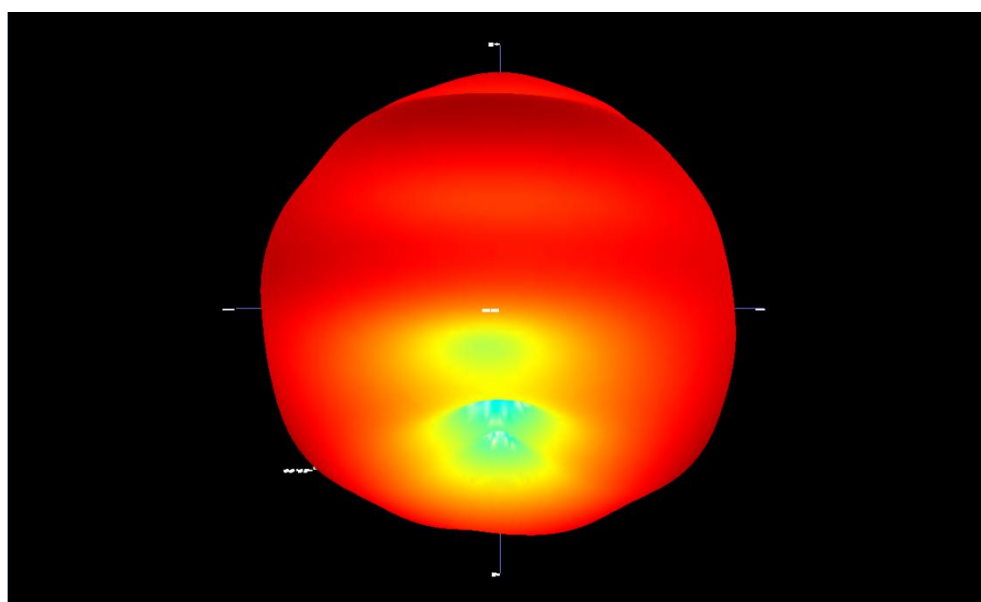
2. 3D Radiation Pattern



429.2MHz



433.92MHz

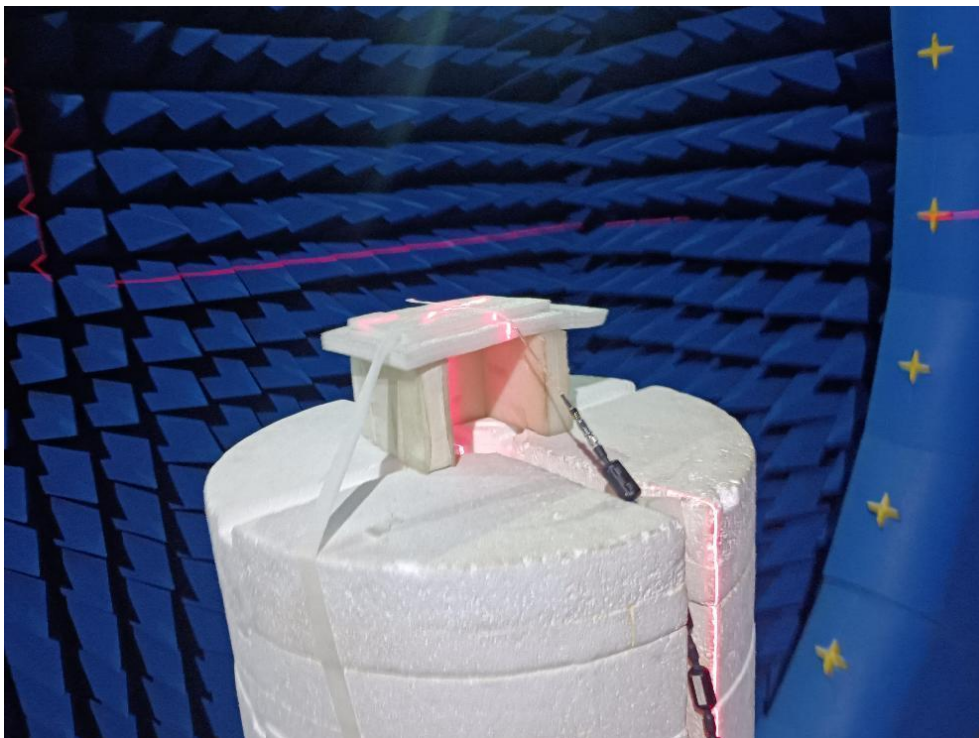
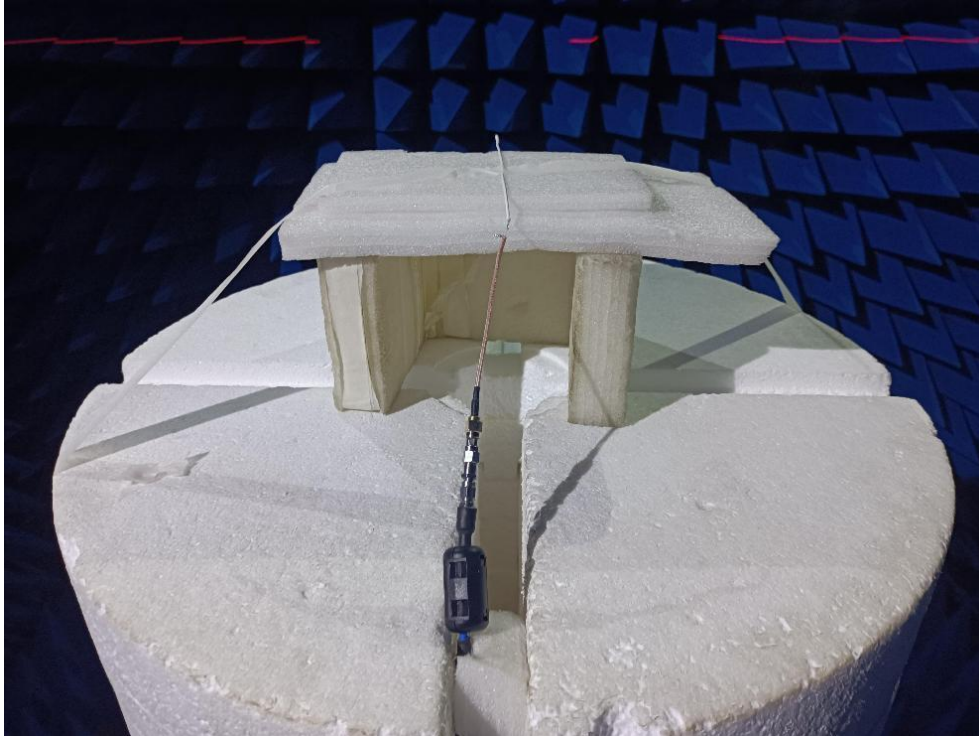


447.675MHz



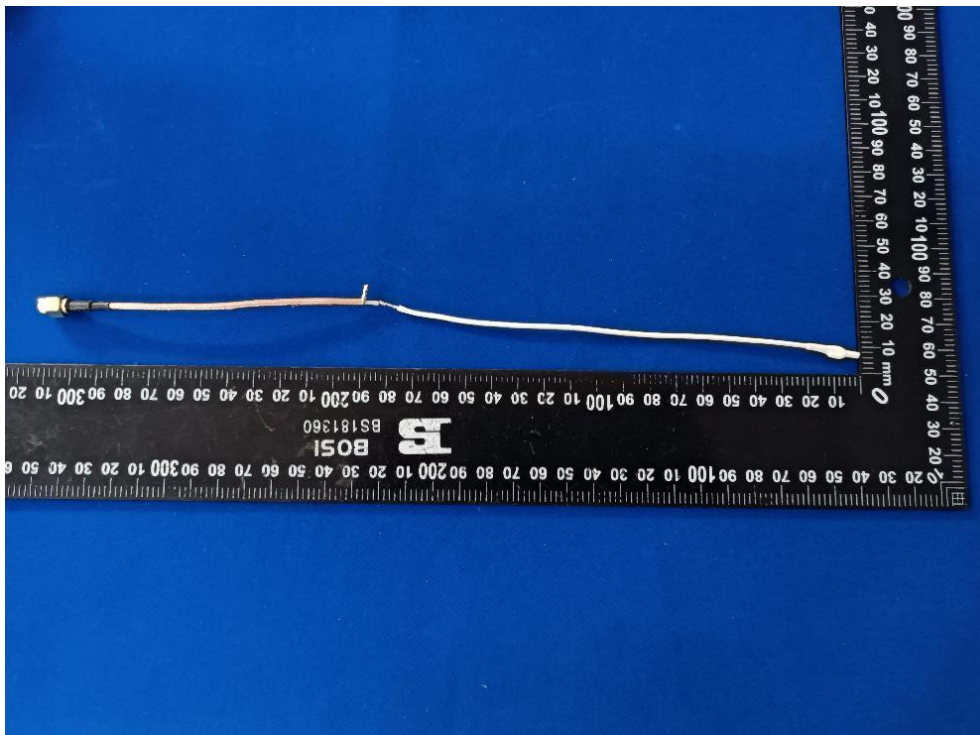
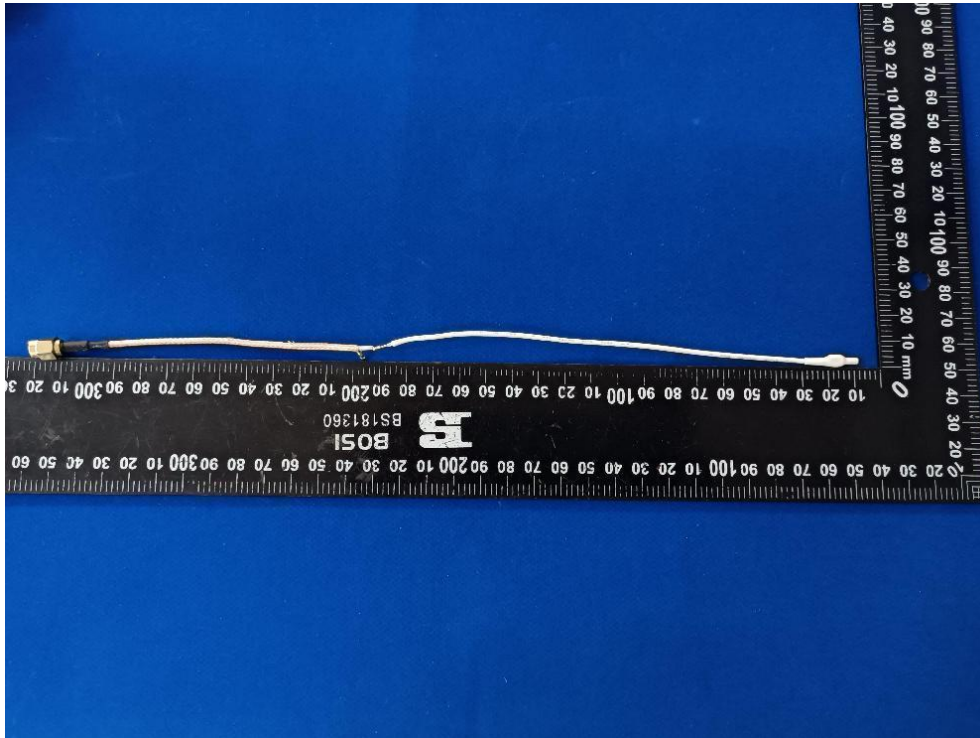
Annex C EUT Photos

1. Test environment





2. EUT





Annex D 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
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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.	Equipment Name	Serial NO.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Vector Network Analyzer	MY46214666	E5071C	Agilent	2025.01.09	2026.01.08
2	OTA Chamber	N/A	SG24	Satimo	2025.01.11	2028.01.10

1.4 Test Software Utilized

NO.	Software Name	Serial NO.	Version	Manufacturer
1	SatEnv	N/A	2.0.1.5 build 12	Satimo
2	SPM	N/A	1.11	Satimo