



REPORT No.: SZ24070093E01

TEST REPORT

APPLICANT : GP Electronics (SZ) Limited

PRODUCT NAME : On-board PCB PIFA Antenna of Bluetooth BK32881L Module

MODEL NAME : 8902-0750

TRADE NAME : N/A

BRAND NAME : N/A

STANDARD(S) : IEEE Std 149-2021

RECEIPT DATE : 2024-07-11

TEST DATE : 2024-07-12

ISSUE DATE : 2024-07-31



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MORLAB

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DIRECTORY

1. Technical Information	3
1.1. Applicant and Manufacturer Information	3
1.2. Equipment Under Test (EUT) Description	3
2. Test Results	4
2.1. Applied Reference Documents	4
2.2. Test Conditions	4
2.3. Measurement Uncertainty	4
2.4. Test Results lists	5
Annex A Test Setup Photos	6
Annex B Figures	7
1. 2D Radiation Pattern	7
2. 3D Radiation Pattern	8
3. Return Loss	10
Annex C EUT Photos	11
Annex D General Information	14
1.1 Identification of the Responsible Testing Laboratory	14
1.2 Identification of the Responsible Testing Location	14
1.3 Test Equipments Utilized	14
1.4 Test Software Utilized	14

Change History		
Version	Date	Reason for change
1.0	2024-07-31	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	GP Electronics (SZ) Limited
Applicant Address:	15/F, T1 Building, Shumyip Upperhills, No.5001 Huanggang RD, Futian District, Shenzhen, Guangdong, China (Postal Code: 518038)
Manufacturer:	GP Electronics (Huizhou) Co., Ltd.
Manufacturer Address:	(BOSSMING Technology Park) No.3, Xing Ping East Road, Dong Jiang Science & Technology Park, Zhong Kai Hi-Tech Ind. Dev. Zone, Huizhou, Guangdong, China (Postal Code: 516255)
Factory:	GP Electronics & Acoustics Co., Ltd.
Factory Address:	No. 19/6, 7 Moo 2, Bangkratuek Sub-District, Sampran District, Nakhon Pathom Province Thailand

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(°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.

2.4. Test Results lists

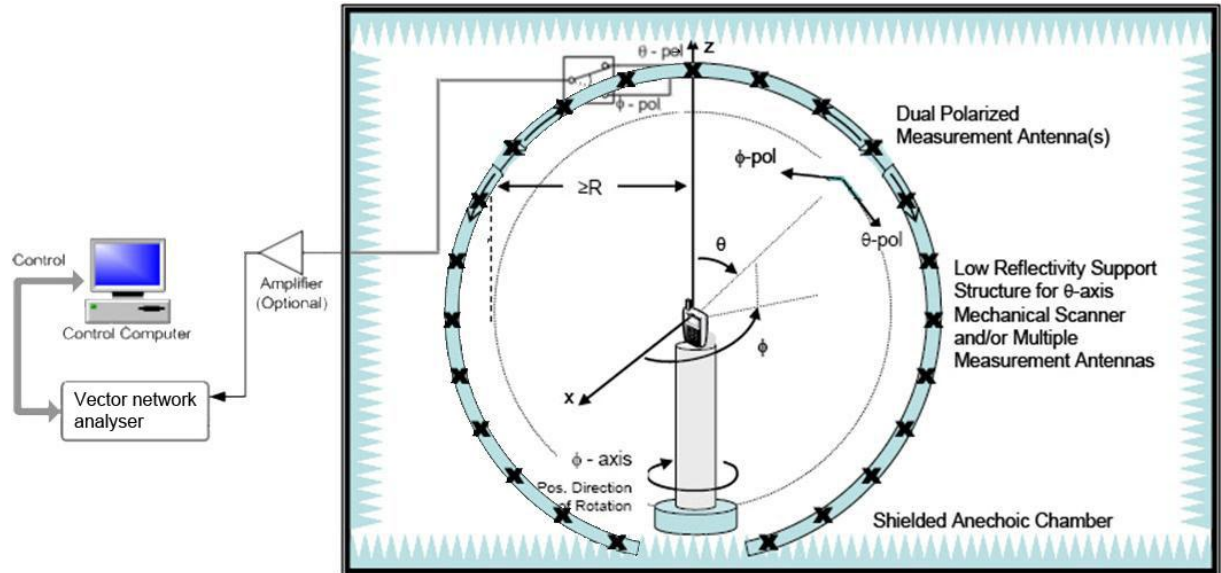
2.4.1. Gain

Frequency (MHz)	Gain(dBi)
2400	-8.11
2410	-8.64
2420	-8.94
2430	-9.15
2440	-9.22
2450	-9.23
2460	-9.64
2470	-10.07
2480	-10.05
2490	-10.02
2500	-9.99

2.4.2. Return Loss

Frequency (MHz)	Return Loss(dB)
2400	-2.25
2440	-1.97
2480	-1.87

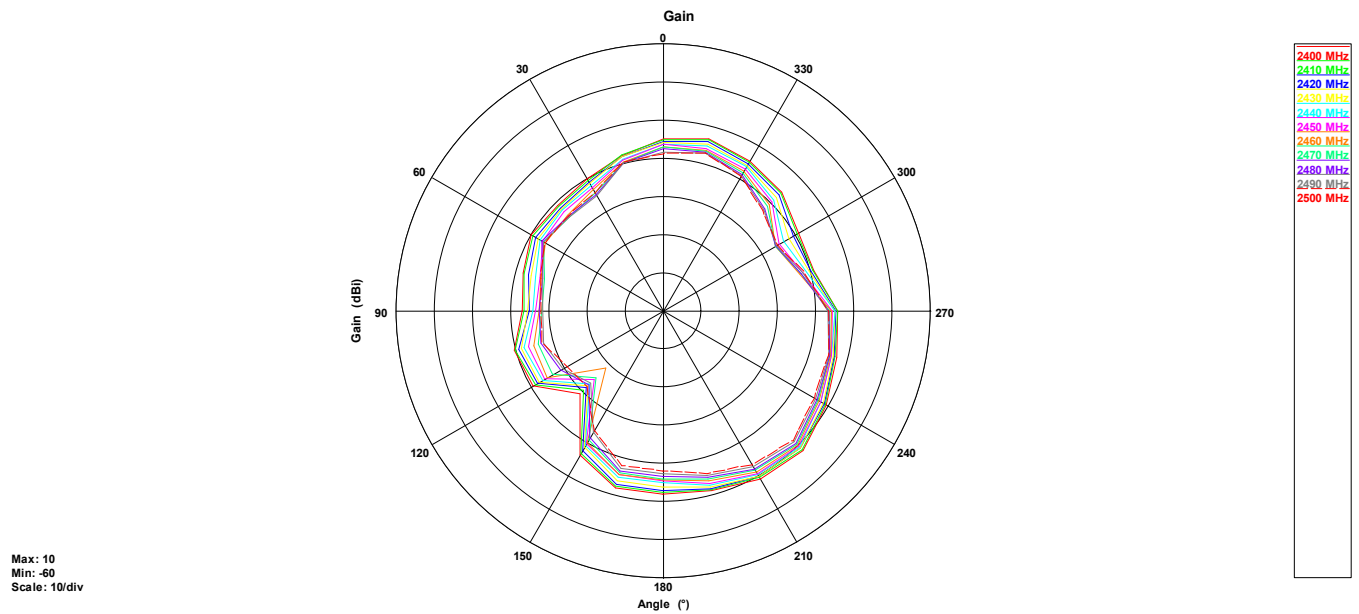
Annex A Test Setup Photos



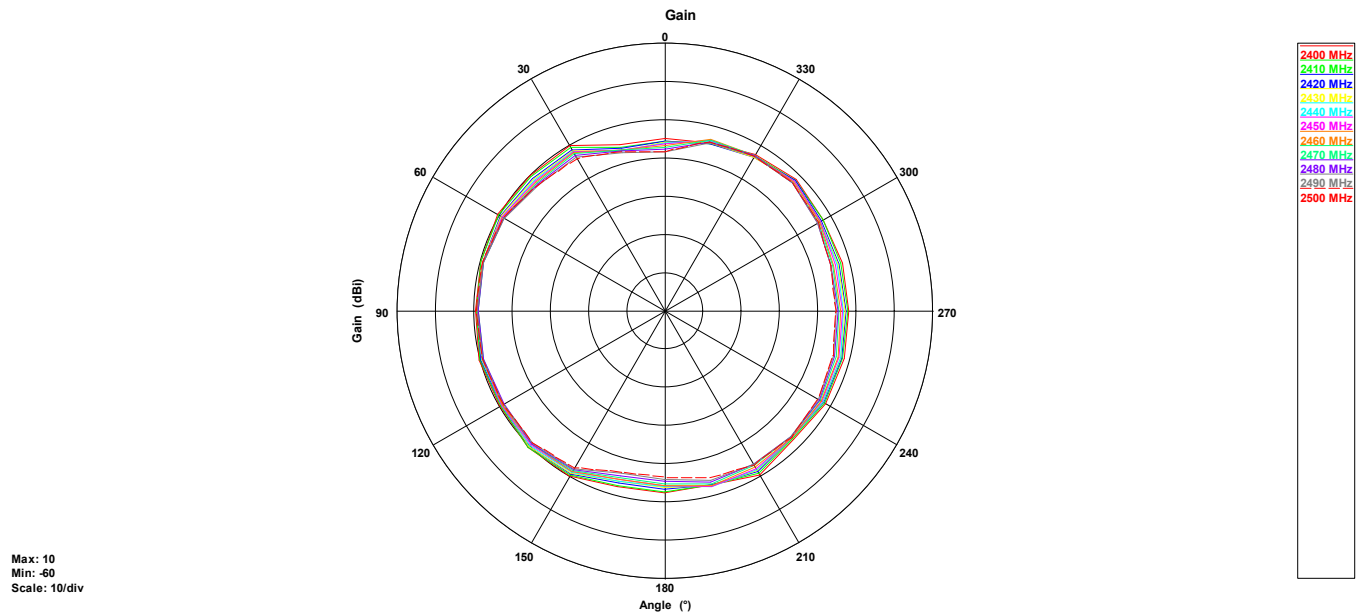


Annex B Figures

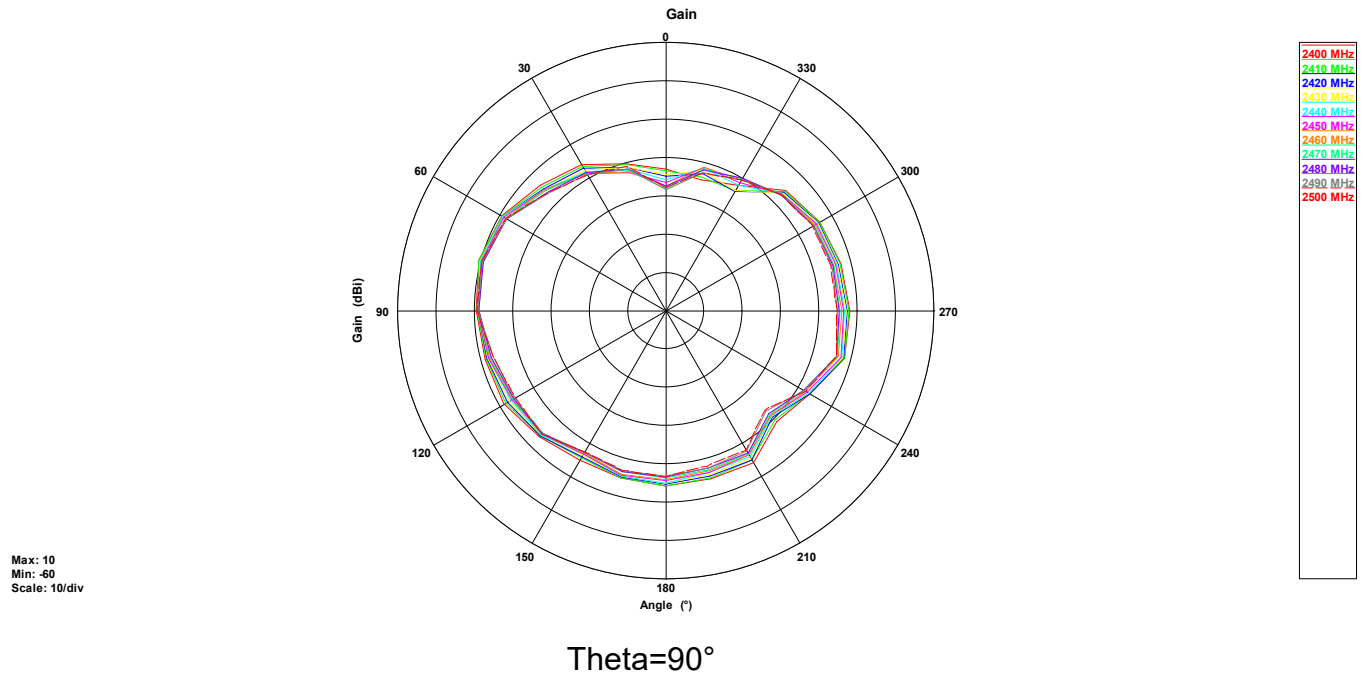
1. 2D Radiation Pattern



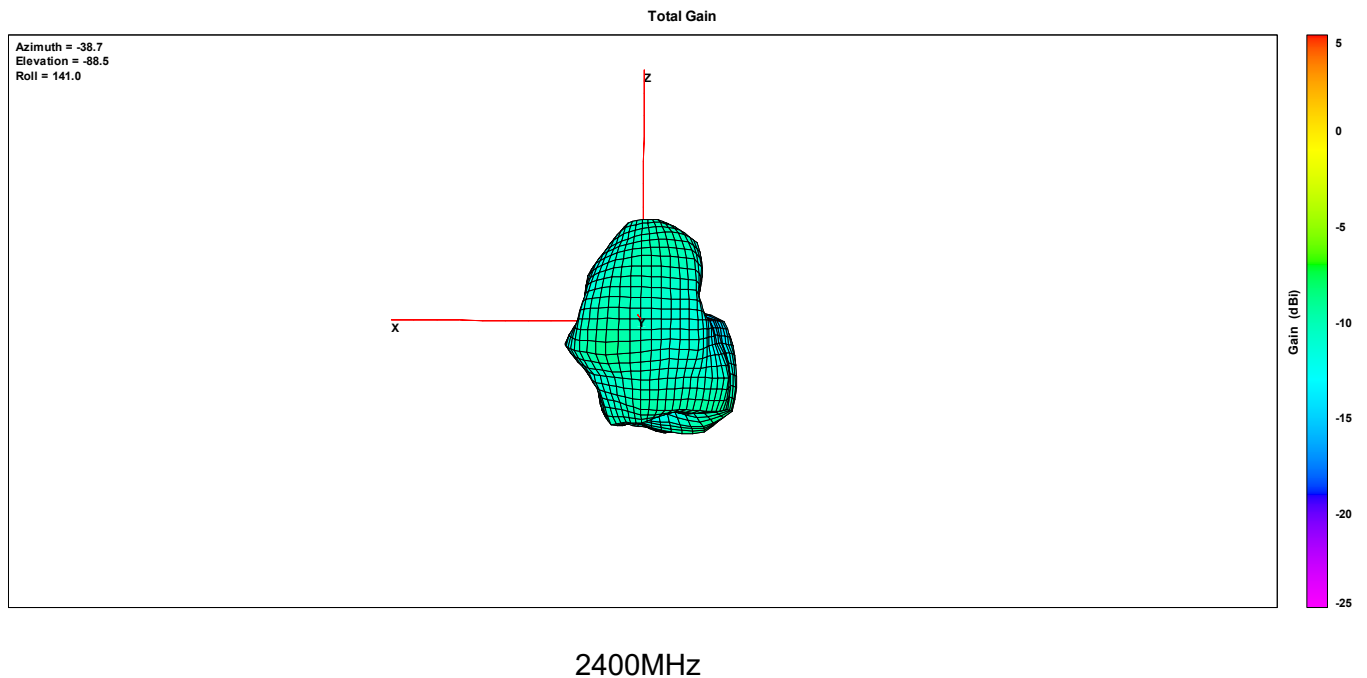
Phi=0°

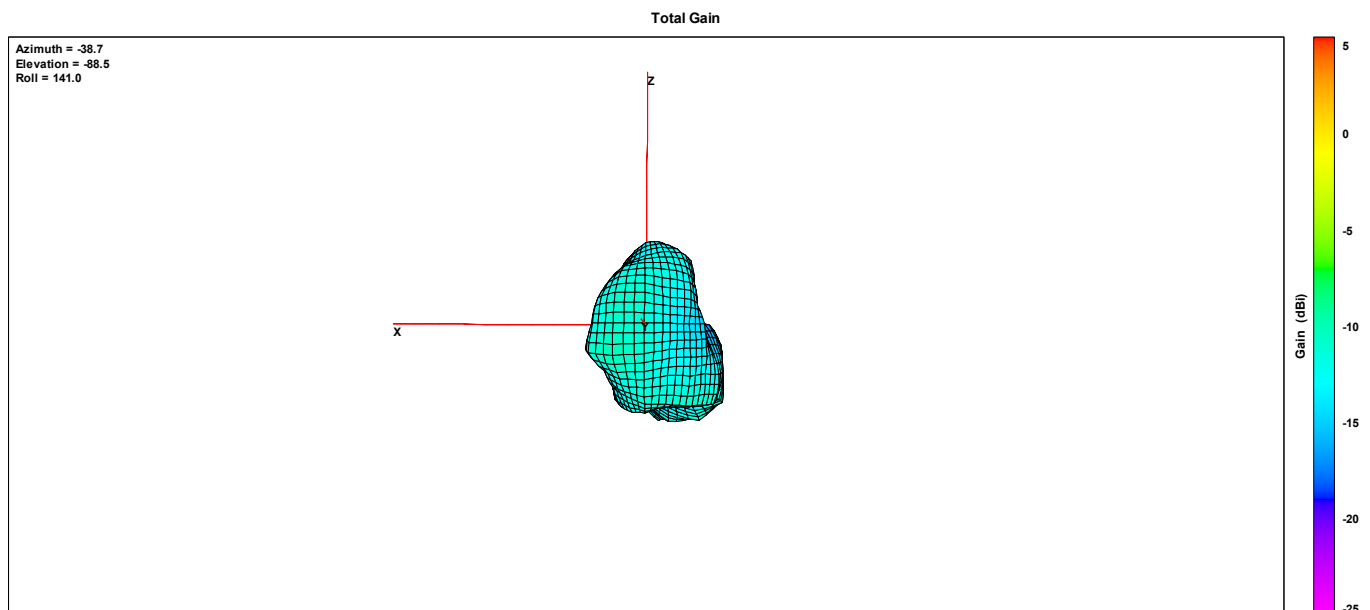
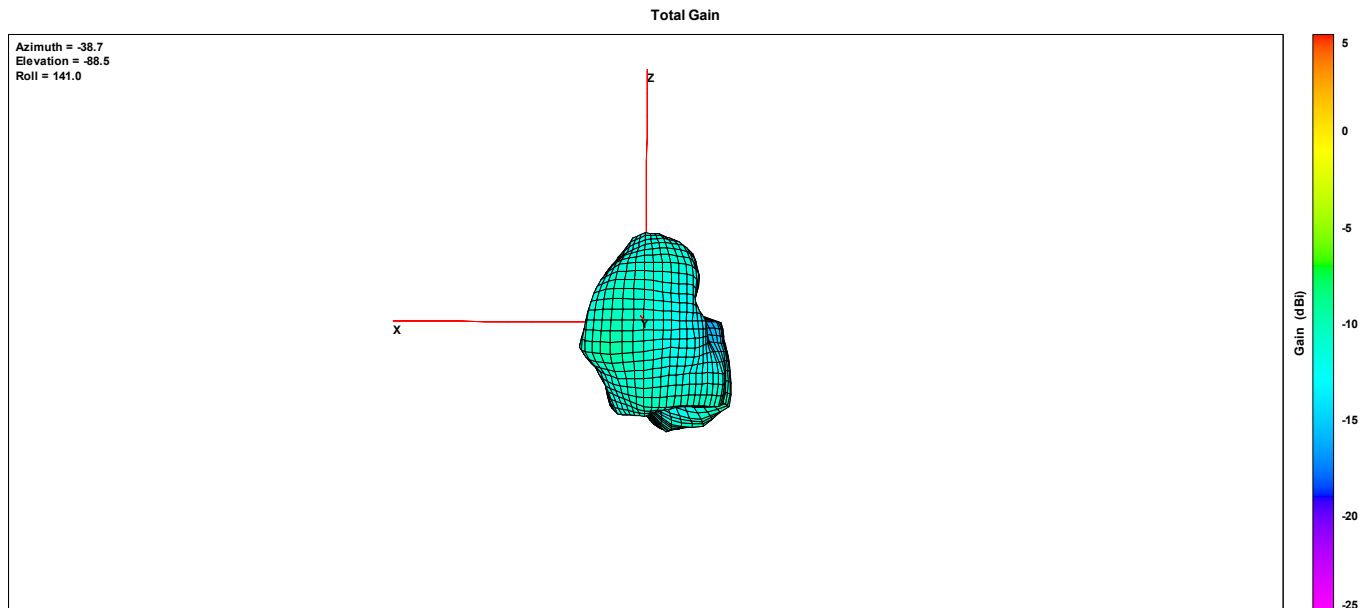


Phi=90°



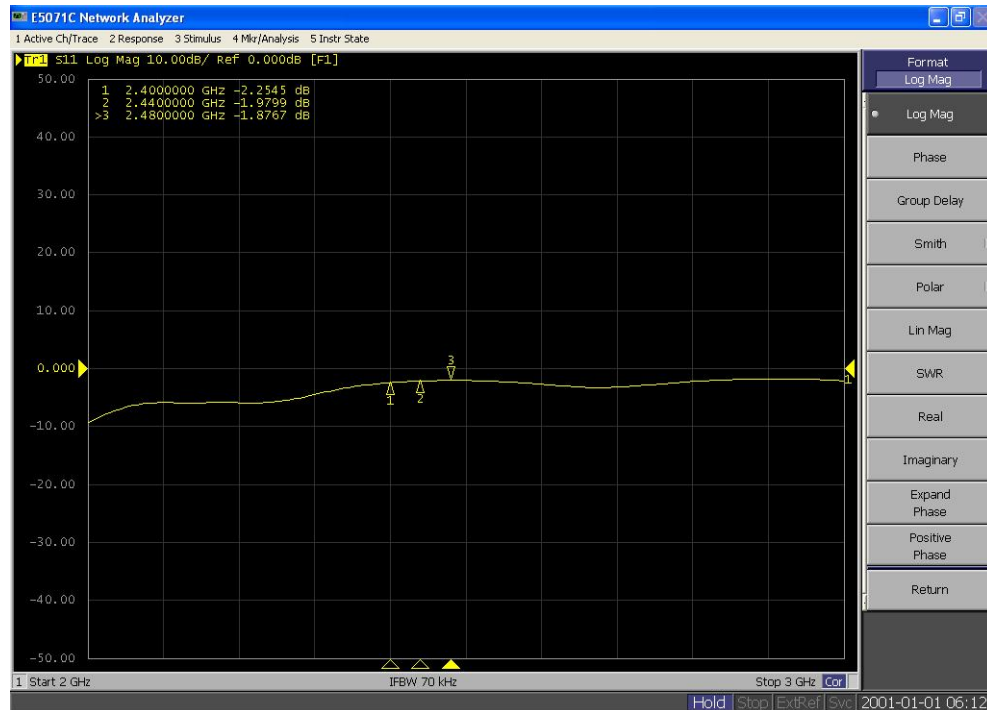
2. 3D Radiation Pattern







3. Return Loss





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
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	2024.05.30	2025.05.29
2	OTA Chamber	TJ2235-Q1793	AMS-8923 -150	ETS	2022.11.30	2025.11.29

1.4 Test Software Utilized

No.	Software Name	Serial No.	Version	Manufacturer
1	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS

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