

OTA TEST REPORT

Applicant Shenzhen MAYA Electronics Co. , Ltd.
Project name DK043美版
Date of report September 2023.02.21
Engineer Feng Guojun



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01

Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Shenzhen Maya Communication Equipment Co. , Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

CERTIFICATE OF COMPLIANCE N° CC.126.2.16.MVI.A

Shenzhen Maya Communication Equipment Co. , Ltd. has been included in the Italian Institute of Laboratory Accreditation Executive Measurement

1.3 Testing Location

Company: Shenzhen Maya Communication Equipment Co. , Ltd.

Address: 2/F, Unit 2, Building 1, Guanghui Science and Technology Park, Minqing Road, Longhua District, Shenzhen City, Guangdong Province

Post code: 518000

Contact: Yan Rong Fen

Telephone: 15815509272

E-mail: yyf@mayaant.com

Laboratory Environment

Temperature	22°C-25°C	
Relative humidity	≤80%	
Shield effect	0.7-6GHz	> 100dB
Ground resistance	<0.5Ω	



02

General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant Name	Shenzhen Guanqun Electronics Co. , Ltd.
Applicant address	Block A, Block 7B01, Tianyao Plaza, Anhongji, Tai Leng community, Minzhi Street, Longhua District, Shenzhen City
Manufacturer Name	Shenzhen Maya Communication Equipment Co. , Ltd.
Manufacturer address	2/F, Unit 2, Building 1, Guanghui Science and Technology Park, Minqing Road, Longhua District, Shenzhen City, Guangdong Province

2.2 General Information

EUT Description	
Project name	DK043美版
Antenna Type	FPC Antenna
Antenna Manufacturer	Shenzhen Maya Communication Equipment Co. , Ltd.
Test Frequency	1710MHz~2700MHz,2400MHz~2500MHz,5200MHz~5800MHz, 1570MHz~1580MHz,700MHz~960MHz,
Note:The EUT is sent from the applicant to MAYA and the information of the EUT is declared by the applicant. All indications of Pass/Fail in this report are opinions expressed by MAYA based on interpretations and/or observations of test results.Measurement Uncertainties were not taken into account and are published for informational purposes only.	

2.3

Test Date

The test is performed from August 8,2022 to August 18,2022

2.4

Receiving Date

The sample was received on August 8,2022

2.5

Applied Standards

According to the specifications of the manufacturer,it must comply with the requirements of the following standards.

Test Method:Have been manufactured and tested following the MV Italy procedure and according to ISO 9001 requirements.

Test lab.of the antenna gain and radiation pattern measurement :
Shenzhen Maya Communication Equipment Co. , Ltd.



03

Test Conditions

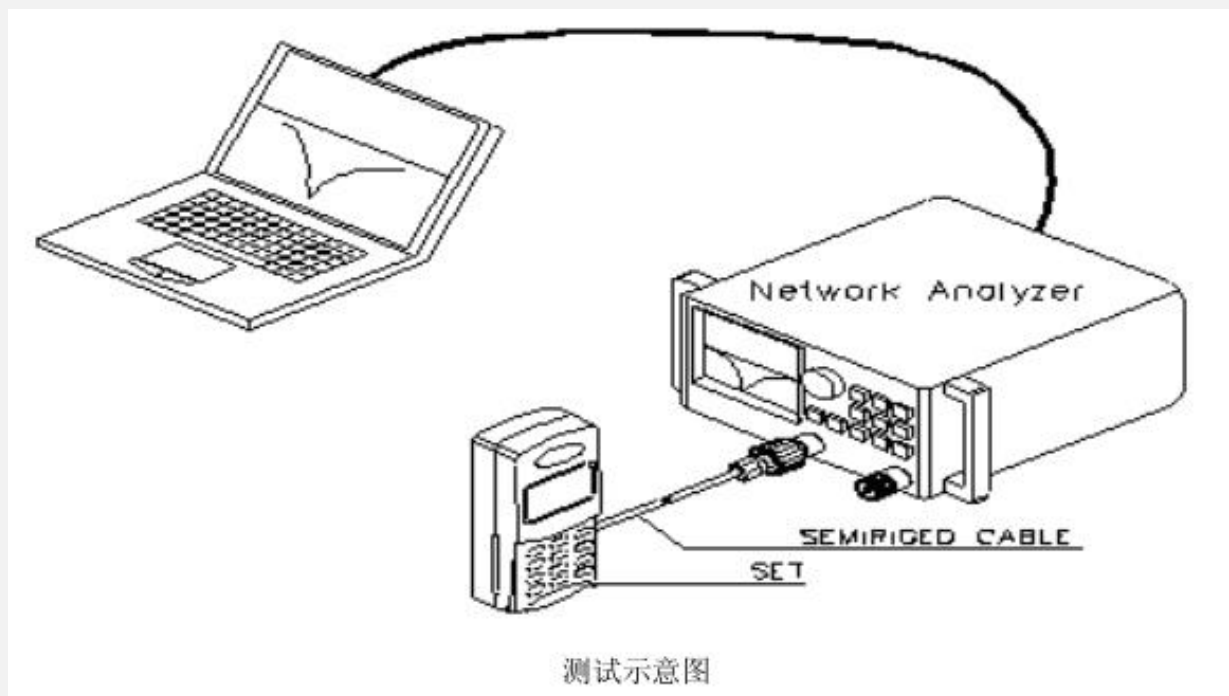
Test method description and data

Device name	Purpose
Vector Network Analyzer	S11/Impedance/ Passive Test
Agilent 8960 SP6010 R&S CMU200	Mobile Communication Device Test including GSM, GPRS, EDGE, CDMA2000,1XEV-DO, TD-SCDMA, WCDMA, HSDPA
R&S CMW500 MT8820C	Mobile phone test including TD-SCDMA, WCDMA, HSDPA, LTE, WIFI, GPS
SP9500E	Contains 5G, SA, NSA
Agilent E4438C	Test active GPS
MVG Chamber	Passive Test / OTA active Test / Efficiency/Gain

Passive Test Report

Test Equipment: Network analyzer

Test method: A 50 ohm CABLE is used to export from the instrument test port. After calibration, the SMA Joint of the handset is connected with the calibrated parts, and the data of the relevant frequency points such as echo loss or standing wave ratio is recorded.



TRP/TIS

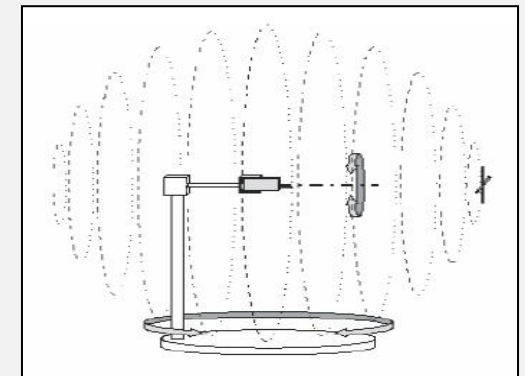
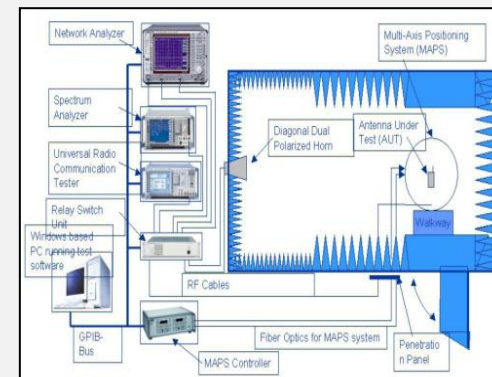
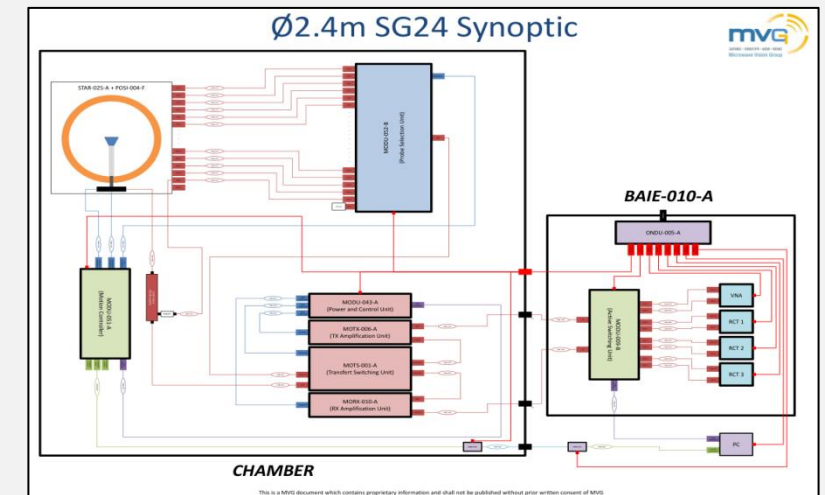
Testing Tools: General Surveyor, Network Analyzer, full-wave Far-field ETS, French MVG SG24LT (Satmio) near-field 3D anechoic chamber, High Precision positioning system and its controller and computer test environment with automatic test program: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $60\% \pm 15\%$: Using the Test Method and calculation of TRP in EST or Satimo 24LT system software, DUT (Device Under Test) is in the state of maximum transmitting power when TRP is tested, the position of the DUT is controlled by the positioning system. The 15-degree step is used to measure the 3D effective radiated power (EIRP) at each point. The mean value on the sphere is calculated by integrating, The formula is as follows:

$$TRP \cong \frac{\pi}{2NM} \sum_{i=1}^{N-1} \sum_{j=0}^{M-1} [EiRP_{\theta}(\theta_i, \phi_j) + EiRP(\theta_i, \phi_j)] \sin(\theta_i)$$

Active Test Report

In the TIS test, the DUT is in the state of maximum transmitting power. Three channels are selected to test. By controlling the position of the DUT, the receiving sensitivity of each point of the 3D is measured at a step length of 30 degrees, the mean value on the sphere is calculated by integration, The formula is as follows:

$$TIS \cong \frac{2NM}{\pi \sum_{i=1}^{N-1} \sum_{j=0}^{M-1} \left[\frac{1}{EIS_{\theta}(\theta_i, \phi_j)} + \frac{1}{EIS_{\phi}(\theta_i, \phi_j)} \right] \sin(\theta_i)}$$





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Test Results

Gain and Efficiency

天线类型/ Antenna Type:	GSM850	0.3dBi	LTE B26	0.3dBi
	GSM900	0.4dBi	LTE B28	0.2dBi
	DCS1800	0.7dBi	LTE B66	0.7dBi
	PCS1900	0.8dBi	LTE B41	0.7dBi
	WCDMA2	0.8dBi	WIF-B	1.0dBi
	WCDMA3	0.7dBi	WIF-B	1.0dBi
	WCDMA4	0.7dBi	WIF-B	1.0dBi
	WCDMA5	0.3dBi	WIF-A	0.8dBi
	LTE B2	0.8dBi	WIF-AC	0.8dBi
	LTE B3	0.7dBi	GPS	1.0dBi
	LTE B4	0.7dBi		
	LTE B5	0.3dBi		
	LTE B7	0.7dBi		
	LTE B8	0.4dBi		
	LTE B12	0.2dBi		
	LTE B13	0.3dBi		
	LTE B17	0.2dBi		
	LTE B25	0.6dBi		

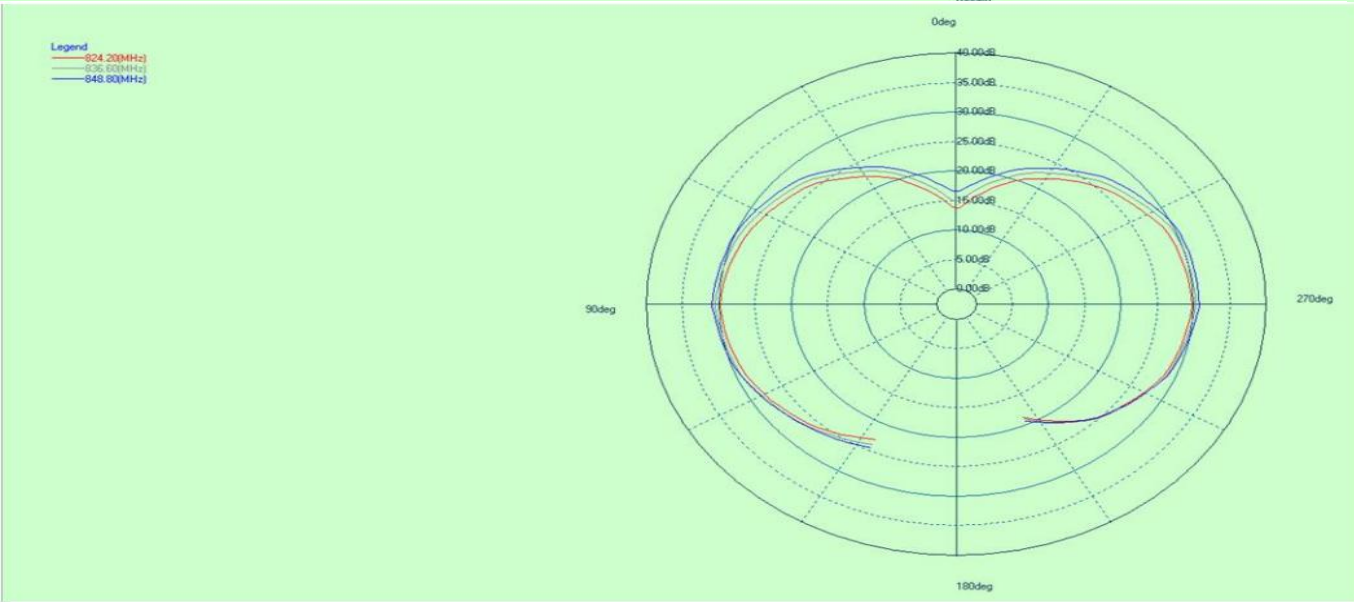
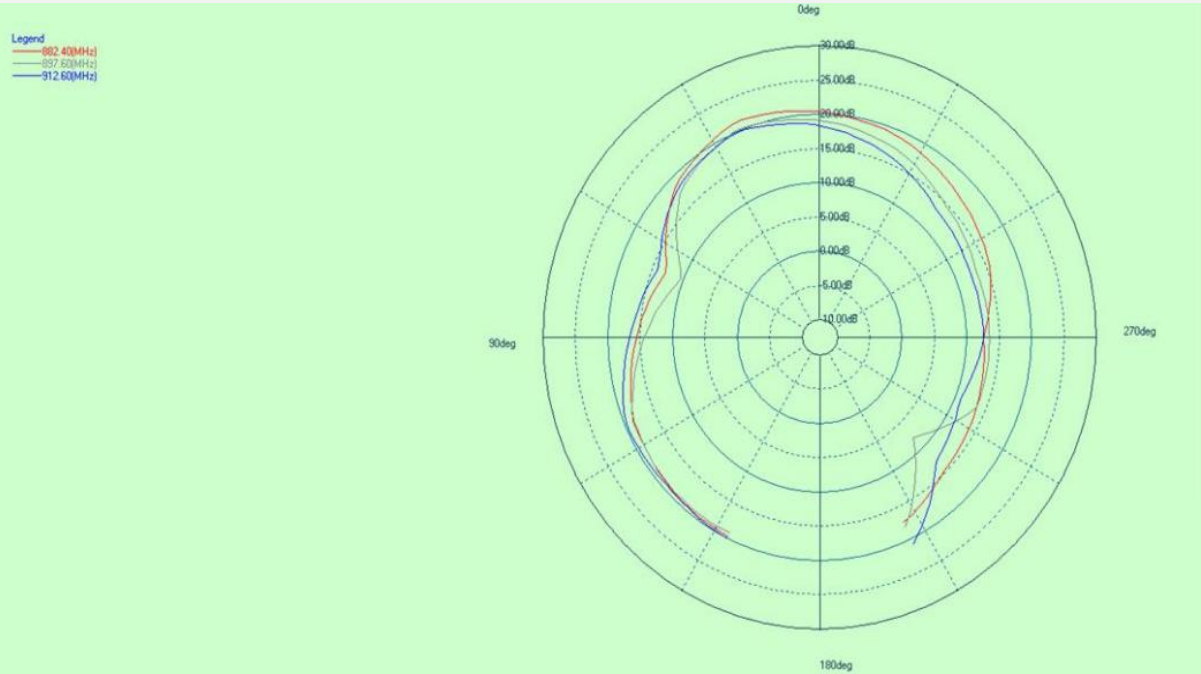
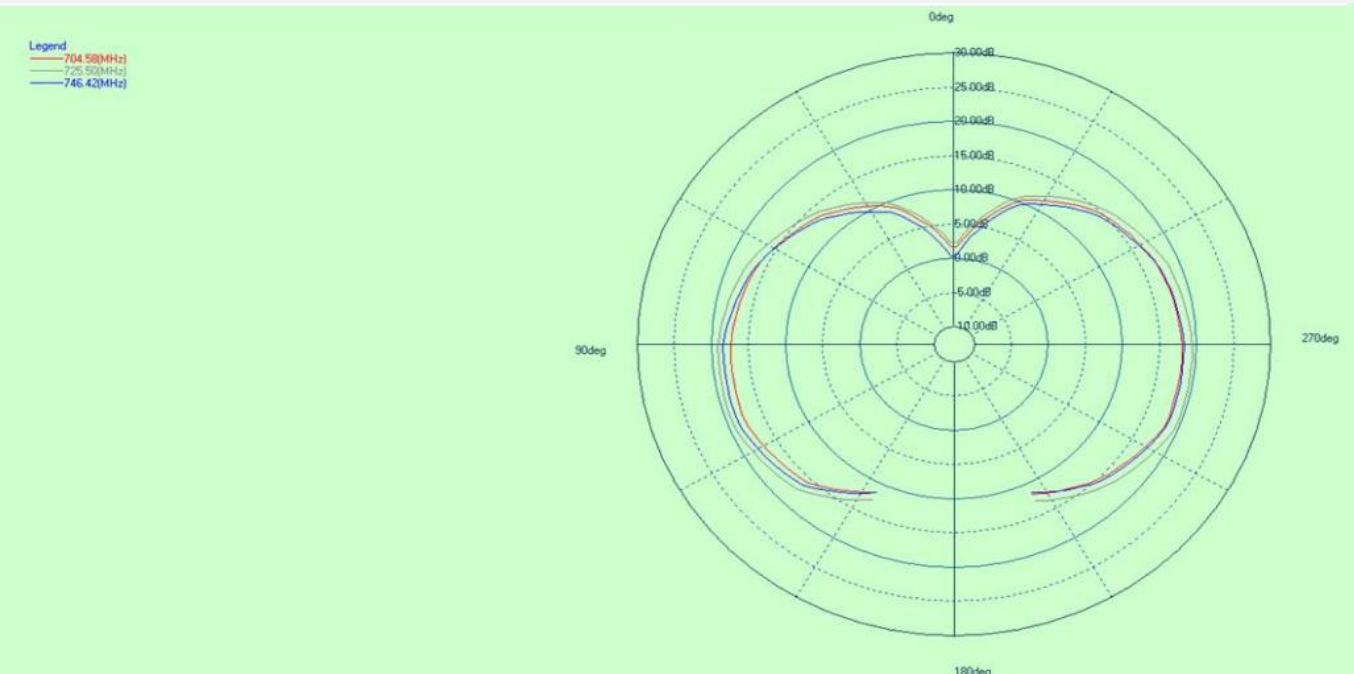


05

Equipment List

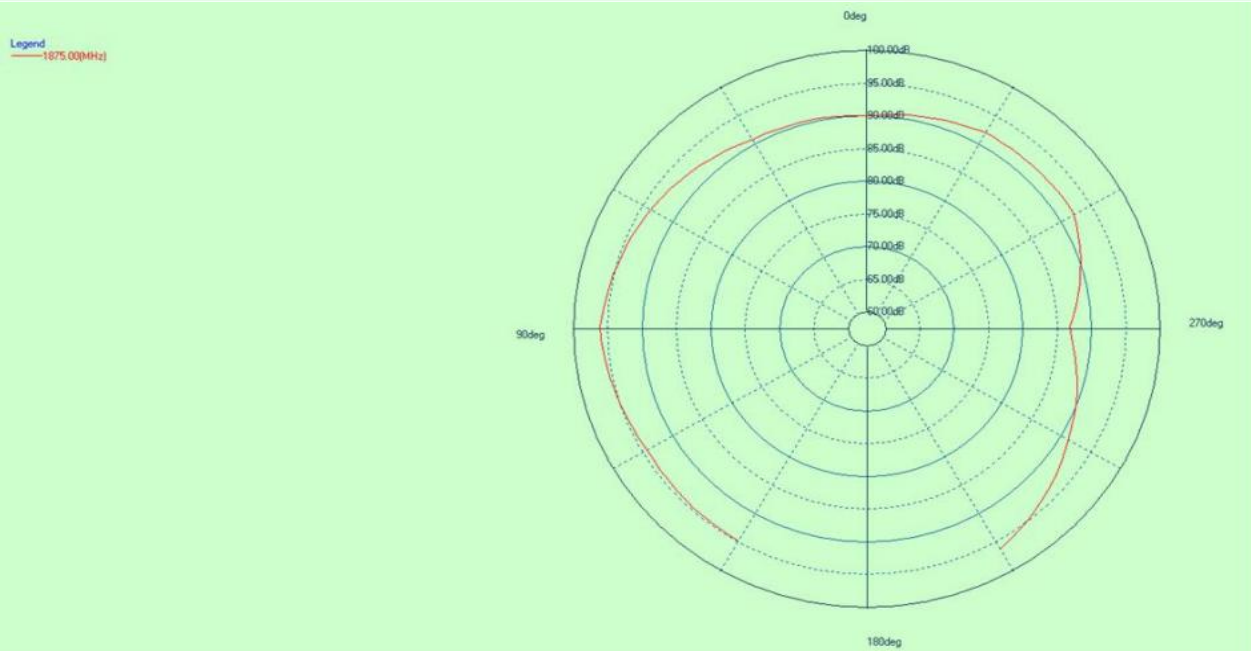
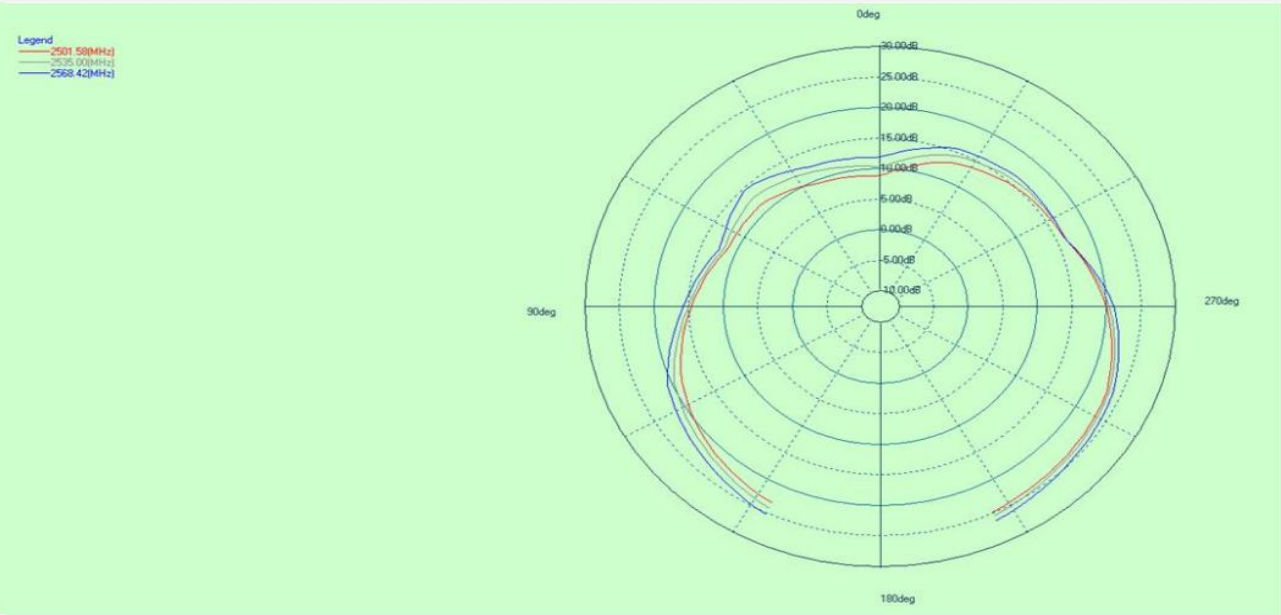
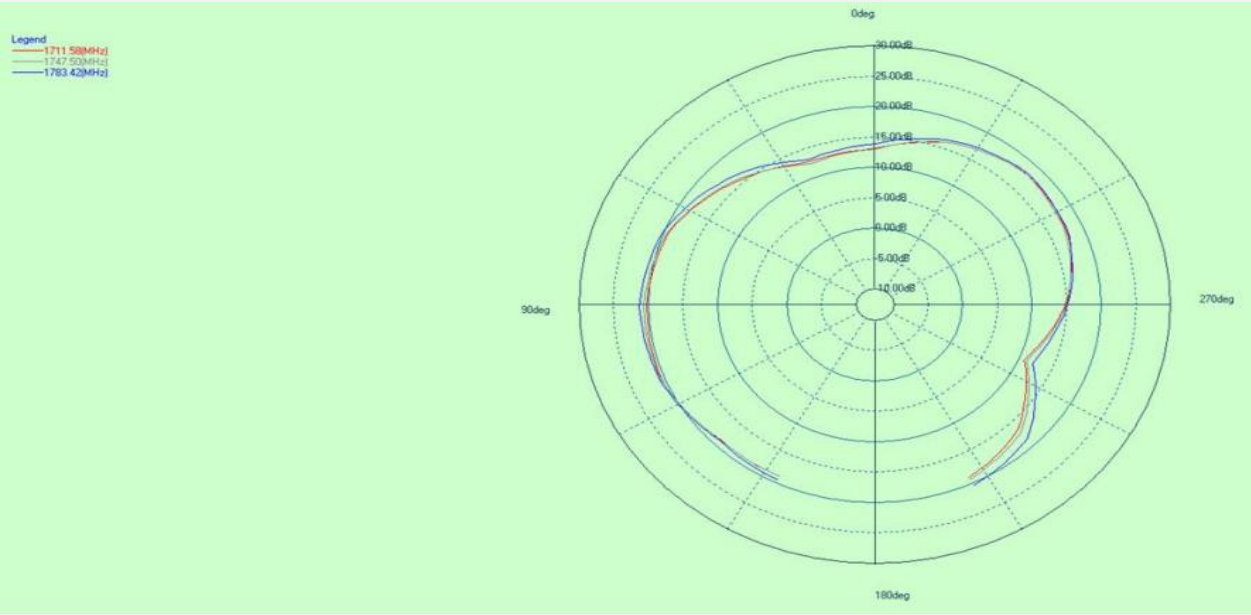
Type of Equipment	Manufacture	Model Number	S/N	Calibration Date
Network Analyzer	KEYSIGHT	E5071C	MY46528346	2021-12-11
Network Analyzer	Agilent Technologies	E5071B	MY42200809	2021-12-11

ANNEX A 3-D Pattern Plots



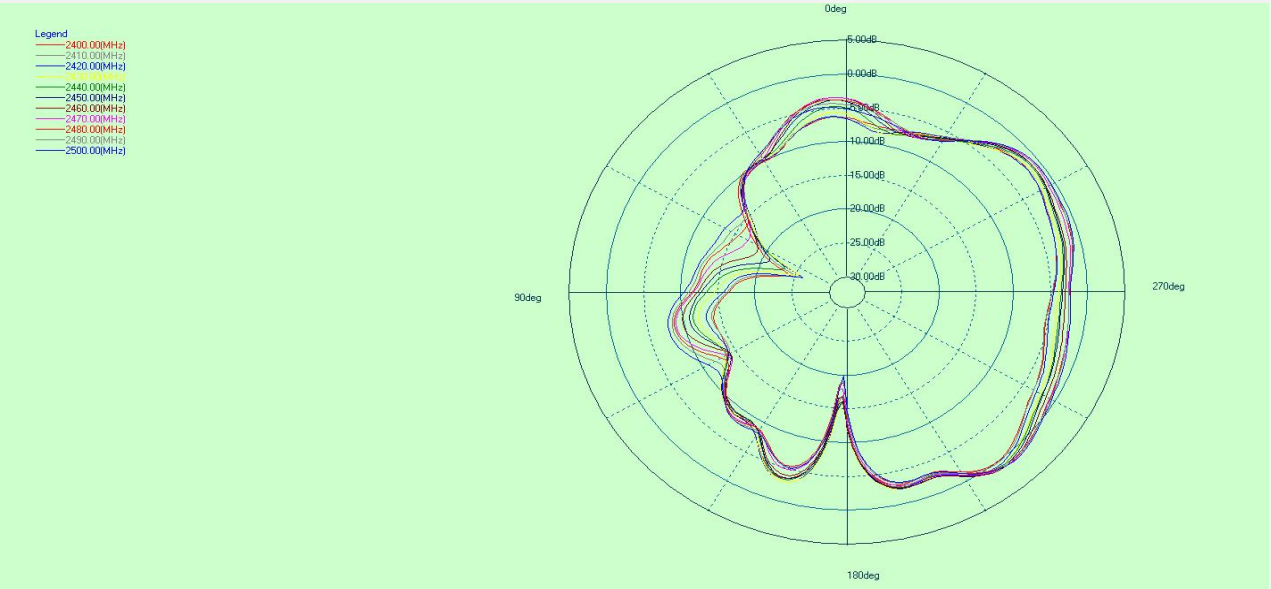
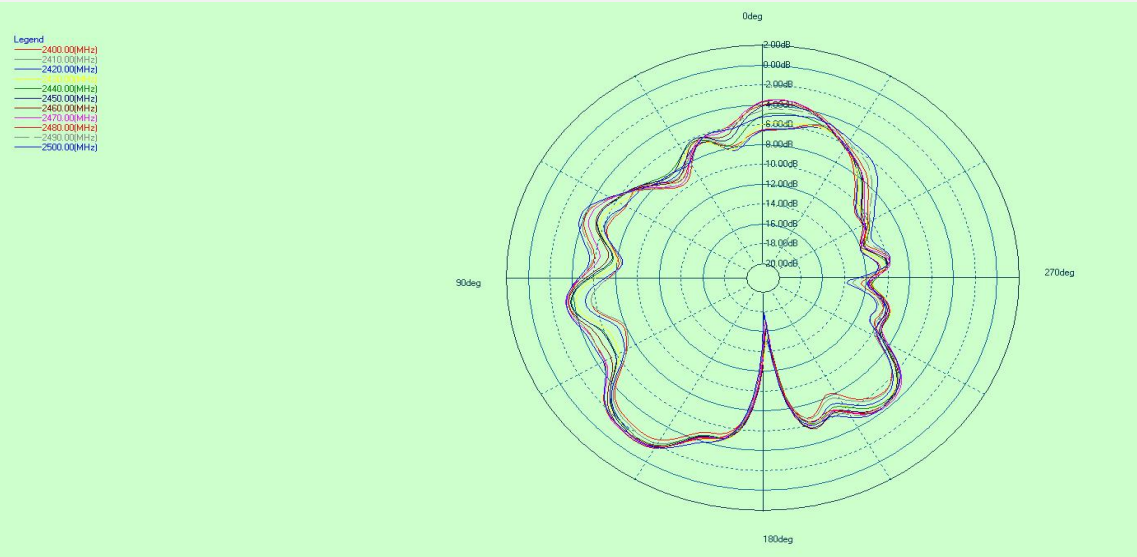
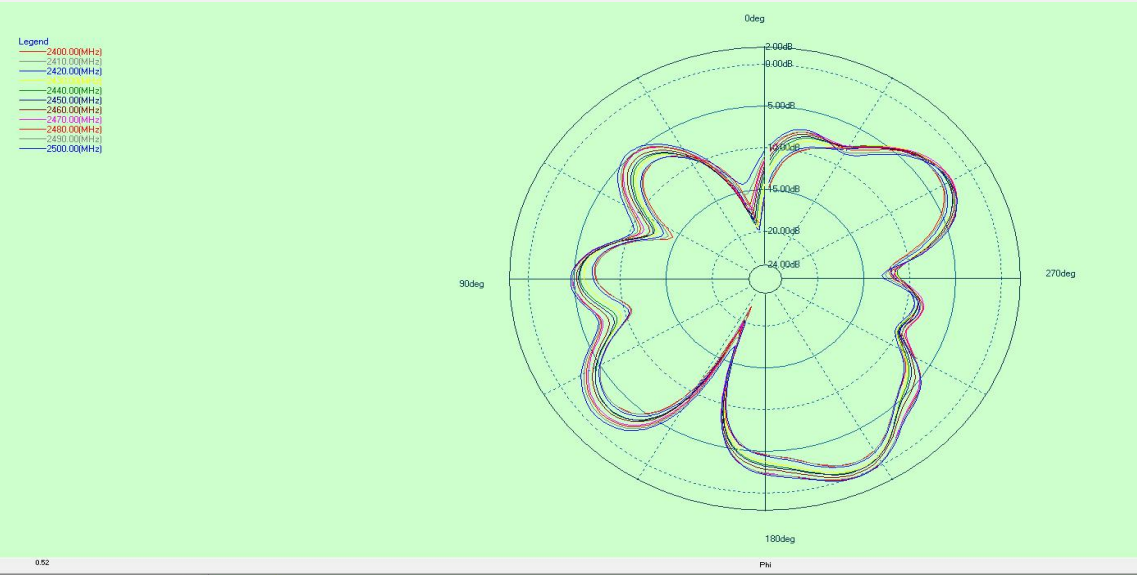
700-960MHz

ANNEX A 3-D Pattern Plots



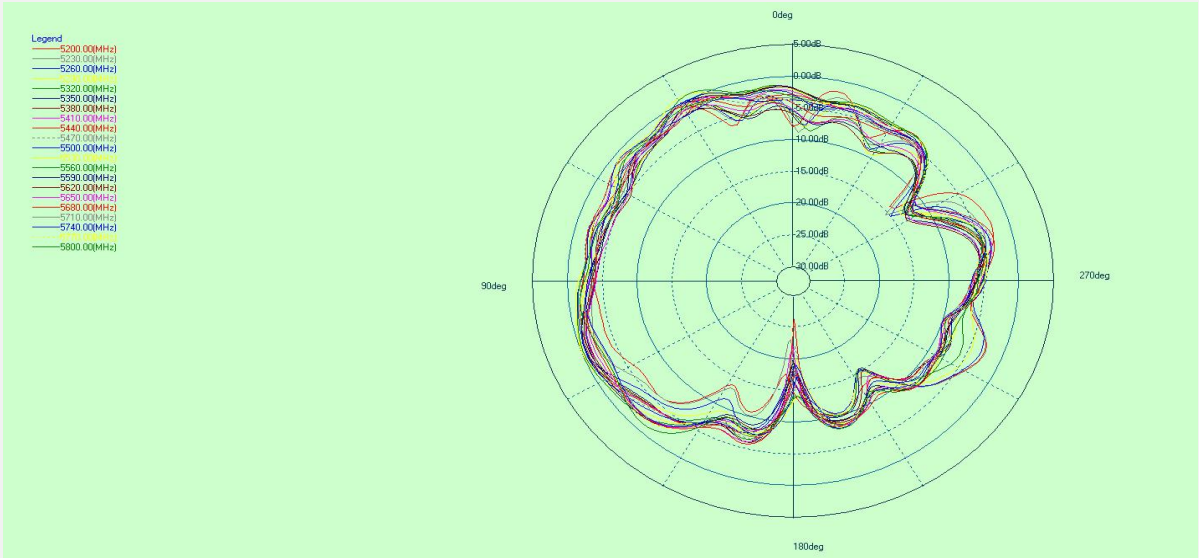
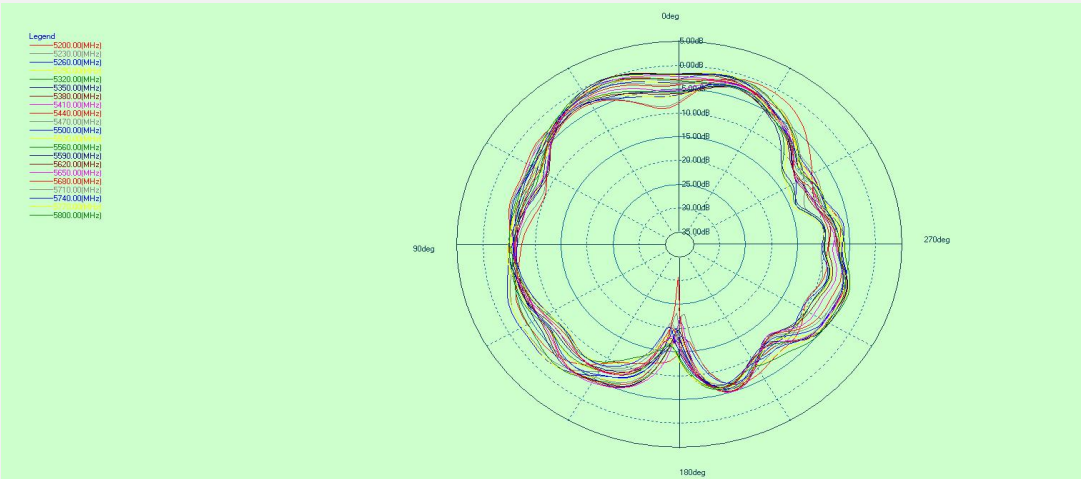
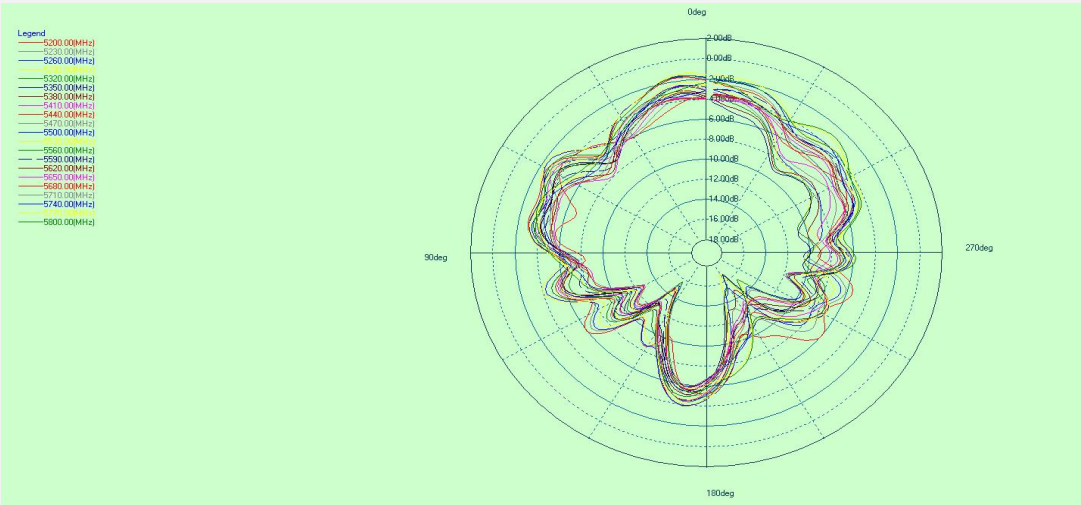
1710-2700MHz

ANNEX A 3-D Pattern Plots



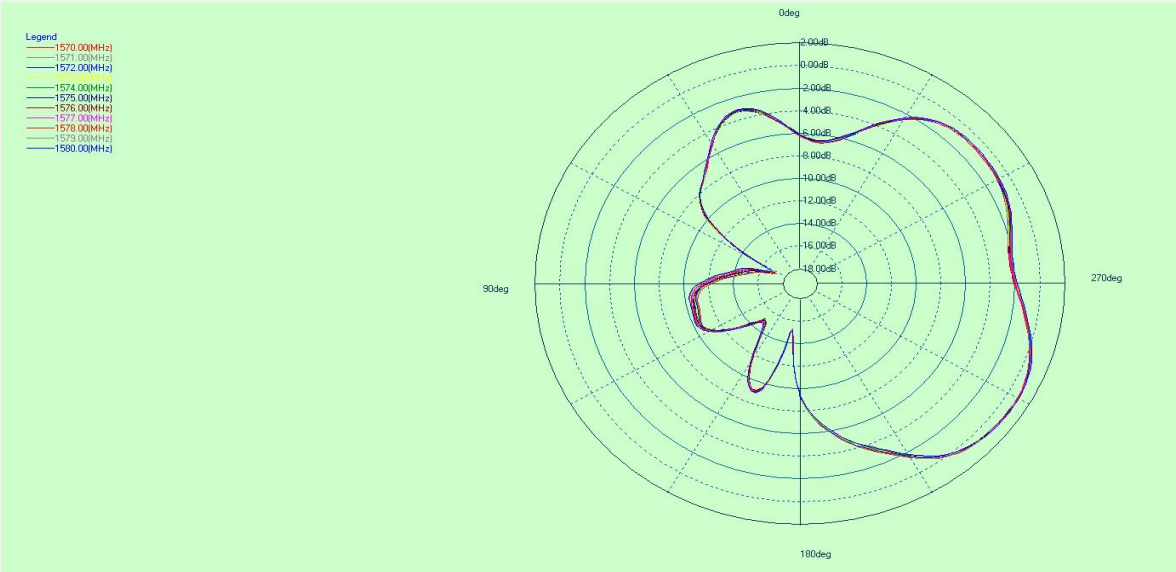
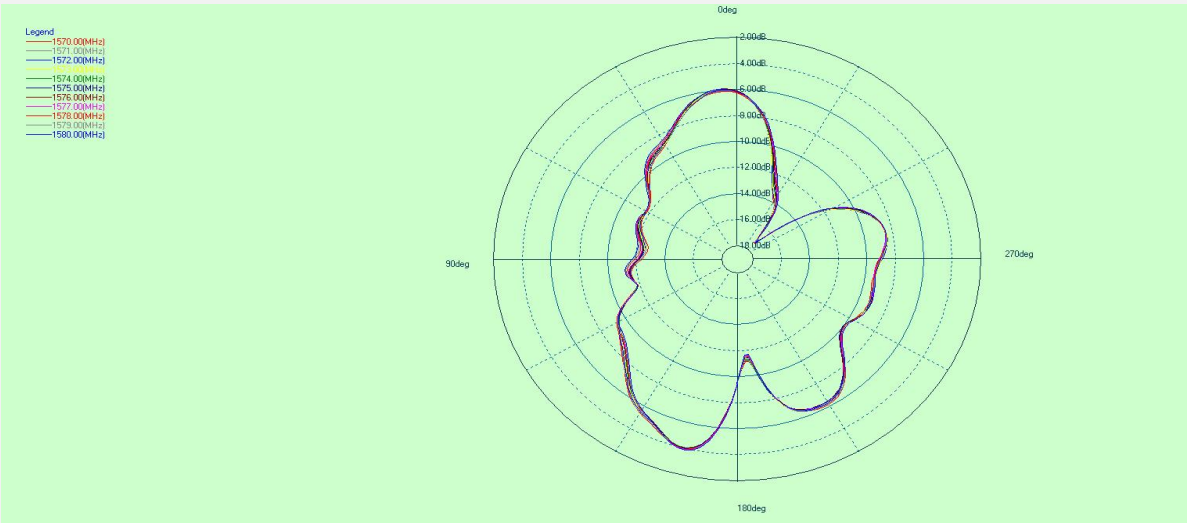
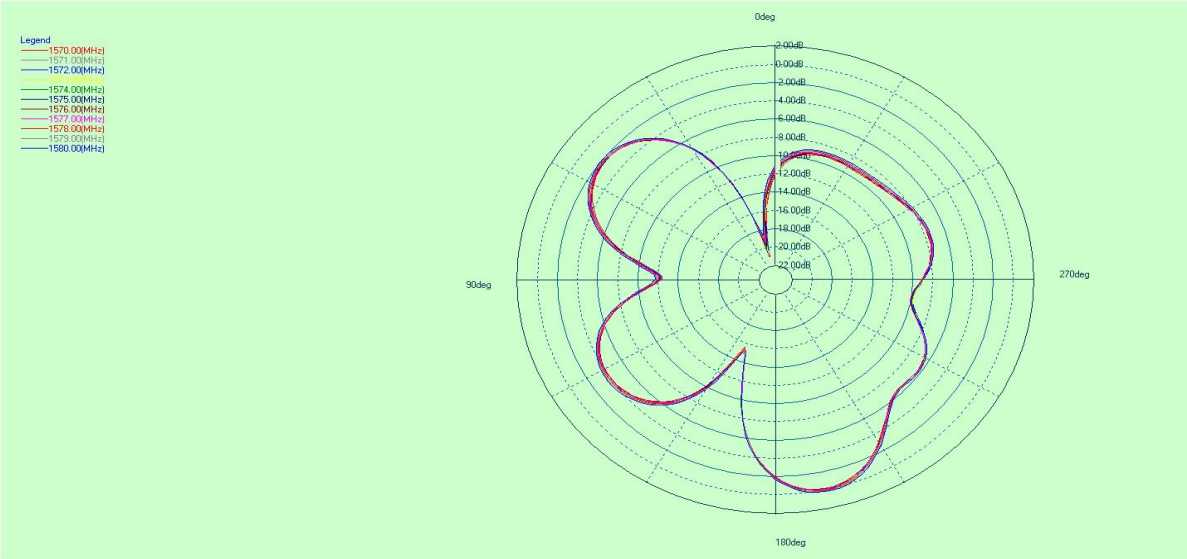
2400-2500MHz

ANNEX A 3-D Pattern Plots



5200-5800MHz

ANNEX A 3-D Pattern Plots



1570-1580MHz

Antenna:

