

Shenzhen Etheta Communication
Technology Co., Ltd.
(Shenzhen Etheta)
Customer: TCL Communication Ltd.

Project name: T951P

Product name: T951P - cellular & wifi antenna

Date: 2025.06.12

1. Antenna specification and test location

Antenna 0/1/2/3/4/5/6/7/8/9/

Material: MDA+LDS+FPC

Manufacturer: Shenzhen Etheta

Manufacturer Address: Block B, 3rd Floor, Building 1, Baisha Science and Technology

Industrial Park, No. 3011 Shahe West Road, Nanshan District, Shenzhen

Antenna gain and radiation pattern measured in SATIMO anechoic chamber.

Test engineer: jun.xu

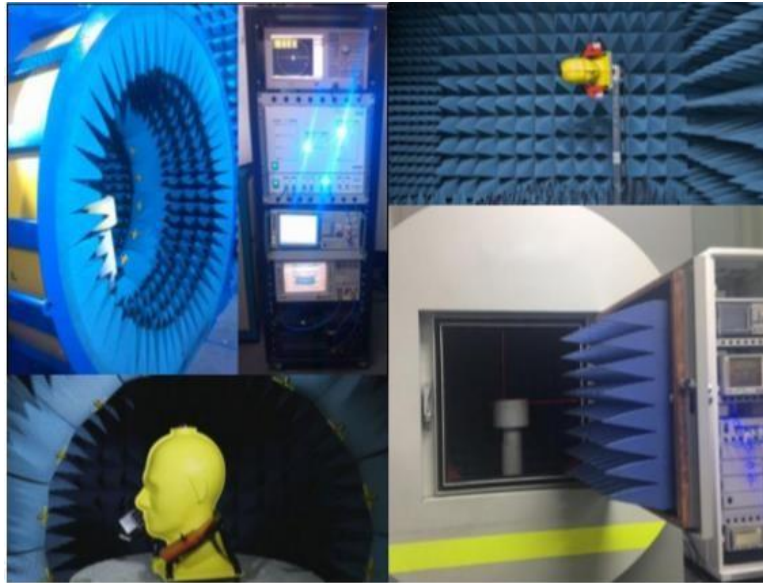
2. Test system introduction

2.1 Test Equipment list

Description	Manufacturer	Model	version	Cal Date
Vector Network Analyzer	Agilent Technologies	E5071C	13.30	2024.12.14
Anechoic Chamber	SATIMO	SG16	SPM 1.3.1	2024.12.14

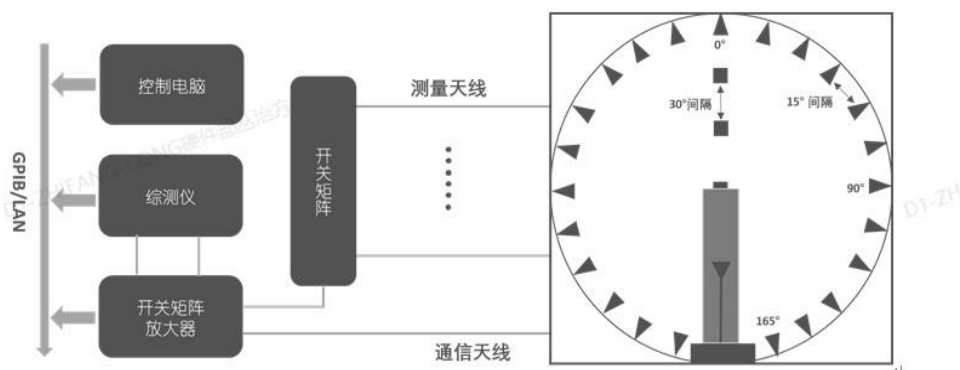
2.2 Anechoic chamber

Our company has a number of anechoic chamber for OTA test. It is ranging from 400 MHz to 8.5 GHz, which can provide passive test and active test, including OTA overall 2G, 3G, 4G, 5G FR test, WiFi multi-mode test, GPS active test, Bluetooth active test. The test system can provide antenna gain, efficiency, radiation pattern, upper and lower hemisphere efficiency values and mutual disturbance correlation coefficient analysis.



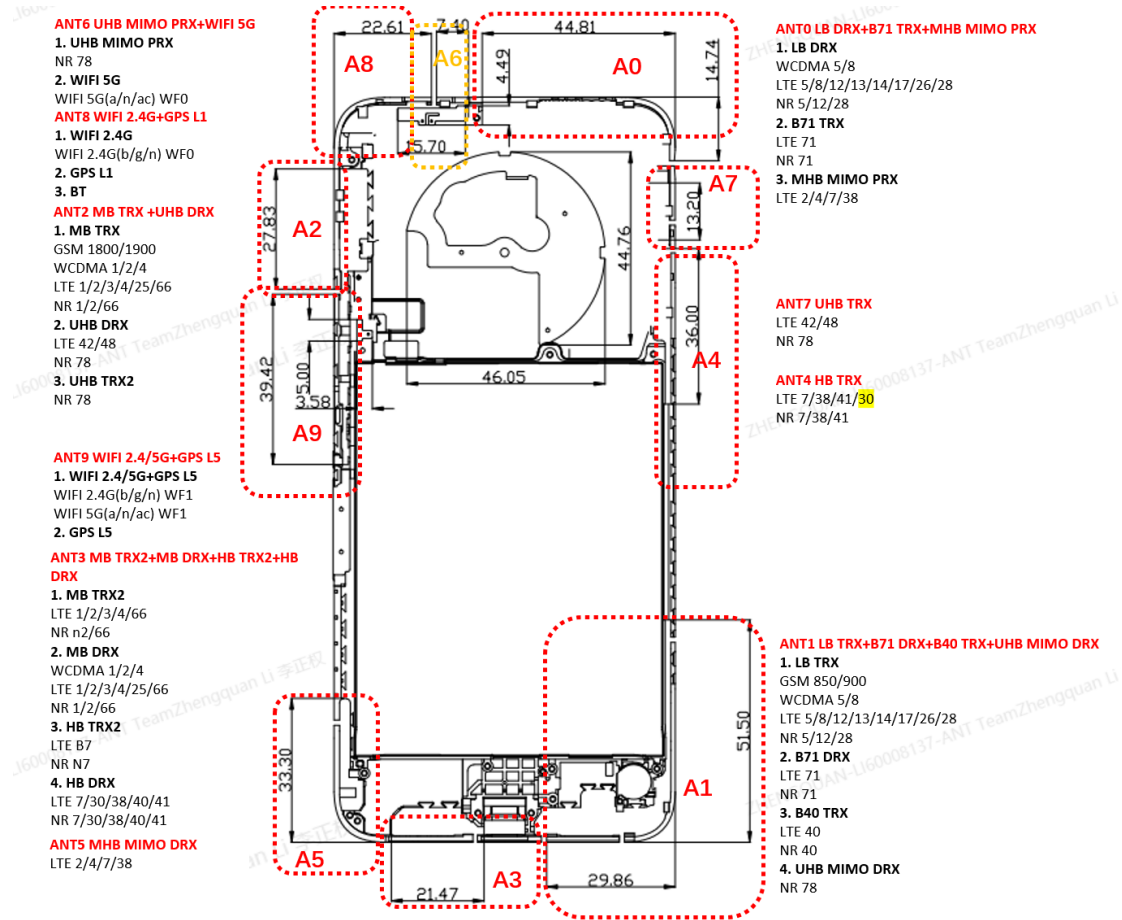
2.3 test system introduction:

The figure above shows the connection and control process between the anechoic chamber of our company and the testing system and computer. The testing system has the characteristics of accurate, fast and simple testing. The operation interface is simple and humanized.



3. Test result

3.1 Antenna information



Antenna information

Antenna number	Type	Model name	Description
0	Metal	Monalisa-ANT0	LB DRX+MHB MIMO PRX
1	Metal	Monalisa-ANT1	LB TRX+B40 TRX+UHB MIMO DRX
2	Metal+LDS	Monalisa-ANT2	MB TRX +UHB DRX
3	Metal	Monalisa-ANT3	MB TRX2+MB DRX+HB TRX2+HB DRX
4	Metal	Monalisa-ANT4	LB 3rd DRX+HB TRX
5	Metal	Monalisa-ANT5	MHB MIMO DRX

6	Metal+LDS	Monalisa-ANT6	UHB MIMO PRX+WIFI 5G
7	Metal	Monalisa-ANT7	UHB TRX
8	Metal+LDS	Monalisa-ANT8	WIFI 2.4+GPS L1
9	Metal+LDS	Monalisa-ANT9	WIFI 2.4/5G+GPS L5

NFC antenna information

Type	Dimension
FPC	46.05*44.76

Antenna Gain

Gain of Antenna 0

Band	Gain average(dBi)	Gain Peak (dBi)
LTE B71	-9.8	-5.3
NR N71	-9.8	-5.3

Gain of Antenna 1

Band	Gain average(dBi)	Gain Peak (dBi)
GSM850	-8.3	-4.1
GSM900	-7.9	-4
WCDMA B5	-8.3	-4.1

WCDMA B8	-7.9	-4
LTE B5	-8.3	-4.1
LTE B8	-7.9	-4
LTE B12	-9	-3.8
LTE B13	-9.1	-4.5
LTE B17	-9.2	-4.8
LTE B18	-8.3	-4.1
LTE B19	-8.1	-4
LTE B20	-8.1	-4
LTE B26	-8.3	-4.1
LTE B28	-9.2	-4.8
LTE B30	-8	-3.9
LTE B40	-8	-3.9
N5	-8.3	-4.1
N8	-7.9	-4
N20	-8.1	-4
N26	-8.3	-4.1
N28	-9.2	-4.8

Gain of Antenna 2

Band	Gain average(dBi)	Gain Peak (dBi)
GSM1800	-5.6	-2.8
GSM1900	-6.5	-3.3
WCDMA B1	-5.6	-2.8
WCDMA B2	-5.8	-2.8
WCDMA B4	-6.3	-3.3
LTE B1	-5.6	-2.8
LTE B2	-5.8	-2.8
LTE B3	-6.5	-3.3

LTE B4	-6.3	-3.3
LTE B39	-5.8	-2.8
LTE B66	-6.1	-3.3
N1	-5.6	-2.8
N3	-6.5	-3.3
N66	-6.1	-3.3

Gain of Antenna 3

Band	Gain average(dBi)	Gain Peak (dBi)
(ENDC)LTE B1	-7.6	-3.2
(ENDC)LTE B3	-8.1	-3.6
(ENDC)LTE B66	-7.6	-3.2
(ENDC)LTE B7	-8	-3.6
(ENDC)LTE B38	-8	-3.6

Gain of Antenna 4

Band	Gain average(dBi)	Gain Peak (dBi)
LTE B7	-6.8	-3.9
LTE B38	-6.8	-3.9
LTE B41	-6.8	-3.9
NR N7	-6.8	-3.9
NR N38	-6.8	-3.9
NR N41	-6.8	-3.9

Gain of Antenna 6

Band	Gain average(dBi)	Gain Peak (dBi)
Wi-Fi 5G	-7.1	-5.8
Wi-Fi 6G	-8.2	-5.5

Gain of Antenna 7

Band	Gain average(dBi)	Gain Peak (dBi)
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LTE B42	-6.3	-3.6
LTE B48	-6.2	-3.6
NR N48	-6.2	-3.6
NR N77	-6.5	-3.6
NR N78	-6.2	-3.6

Gain of Antenna 8

Band	Gain average(dBi)	Gain Peak (dBi)
BT	-6.8	-5.3
Wi-Fi 2.4G	-6.8	-5.3
GPS L1	-6	-4.8

Gain of Antenna 9

Band	Gain average(dBi)	Gain Peak (dBi)
Wi-Fi 2.4G	-8	-6.2
Wi-Fi 5G	-7	-5.6
Wi-Fi 6G	-8.6	-6.1
GPS L5	-9	-6.6

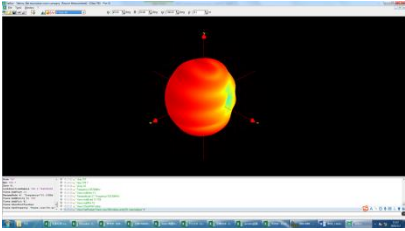
NFC antenna gain description:

The device does not support the test of NFC gain. In addition, all measurements were performed radiated and therefore additional antenna gain documentation is not required.

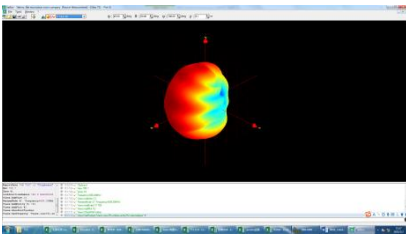
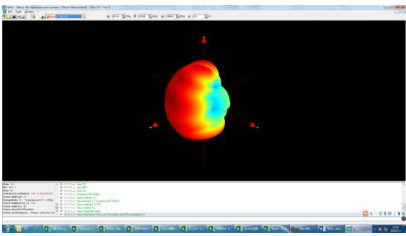
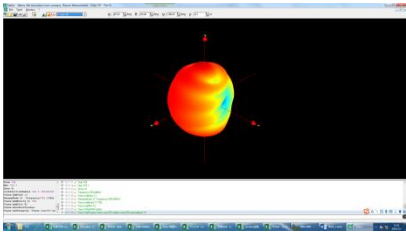
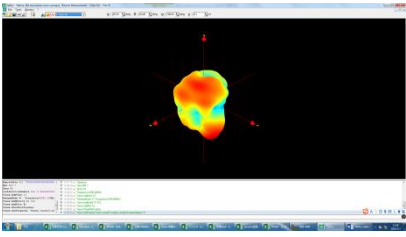
3.3 Radiation Pattern

Antenna 0

(FrequencyBand)	LTE 71 NR N71
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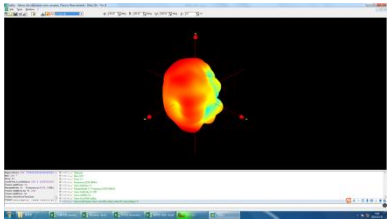
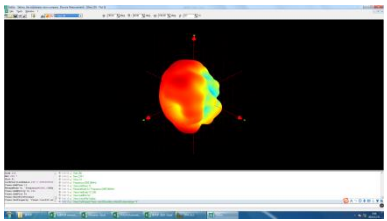
3D Radiation Pattern	
Efficiency[%]	10%
Avg Gain [dBi]	-9.8
Peak Gain [dBi]	-5.3

Antenna 1

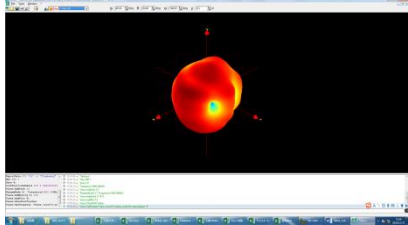
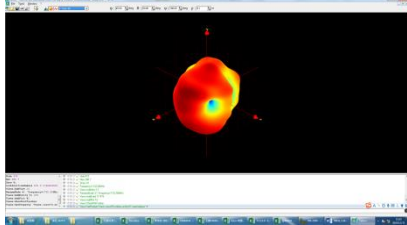
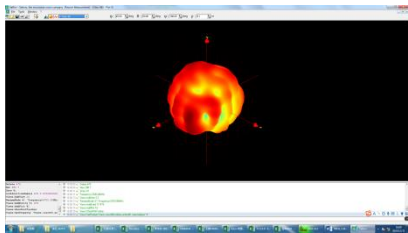
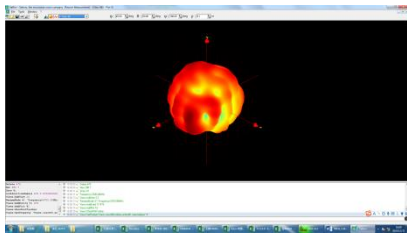
(FrequencyBand)	GSM 850 LTE B5/26 N5	LTEB12/13/14/17
3D Radiation Pattern		
Efficiency[%]	15%	12%
Avg Gain [dBi]	-8.3	-9.1
Peak Gain [dBi]	-4.1	-4.5
(FrequencyBand)	B28 N28	B40 N40
3D Radiation Pattern		
Efficiency[%]	12%	16%
Avg Gain [dBi]	-9.2	-8
Peak Gain [dBi]	-4.8	-3.9

Antenna 2

(FrequencyBand)	W2 LTE B2/25 N2	W4 LTE B4/66 N66
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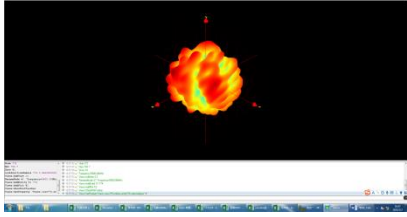
3D Radiation Pattern		
Efficiency[%]	26%	25%
Avg Gain [dBi]	-5.8	-6.1
Peak Gain [dBi]	-2.8	-3.3

Antenna 3

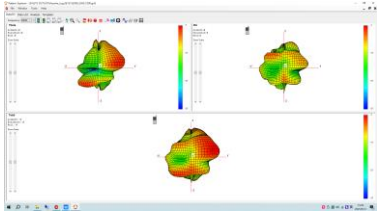
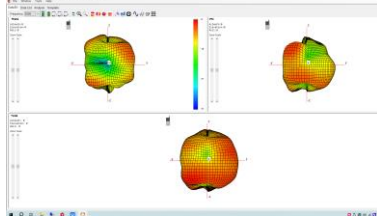
(FrequencyBand)	ENDC LTE B1	ENDC LTE B3/66
3D Radiation Pattern		
Efficiency[%]	17%	15%
Avg Gain [dBi]	-7.6	-8.1
Peak Gain [dBi]	-3.2	-3.6
(FrequencyBand)	ENDC LTE B7	ENDC LTE B38
3D Radiation Pattern		
Efficiency[%]	16%	16%
Avg Gain [dBi]	-8	-8
Peak Gain [dBi]	-3.6	-3.6

Antenna 4

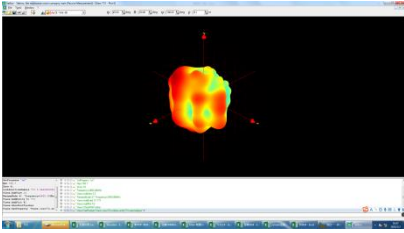
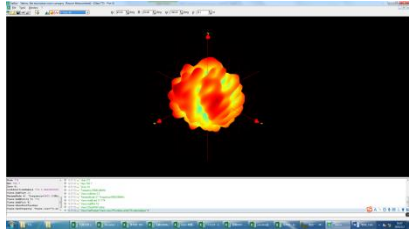
(Frequency Band)	LTE B7/38/41/NR n7/38/41
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3D Radiation Pattern	
Efficiency[%]	21%
Avg Gain [dBi]	-6.8
Peak Gain [dBi]	-3.9

Antenna 6

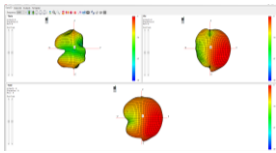
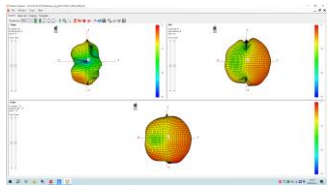
(Frequency Band)	WIFI 5G	WIFI6G
3D Radiation Pattern		
Efficiency[%]	19%	15%
Avg Gain [dBi]	-7.1	-8.2
Peak Gain [dBi]	-5.8	-5.5

Antenna 7

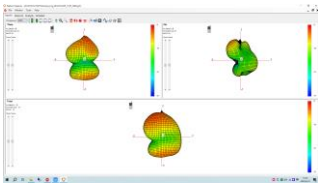
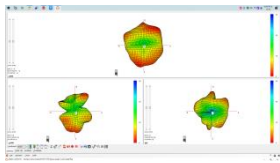
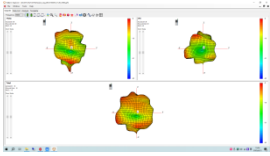
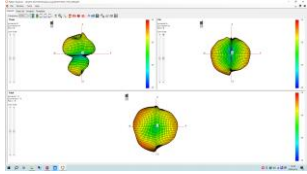
(Frequency Band)	N77	B42/48 N48/78
3D Radiation Pattern		
Efficiency[%]	22%	24%
Avg Gain [dBi]	-6.5	-6.2
Peak Gain [dBi]	-3.6	-3.6

Antenna 8

(Frequency Band)	WiFi 2.4G/BT	GPS L1
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3D Radiation Pattern		
Efficiency[%]	21%	25%
Avg Gain [dBi]	-6.8	-6
Peak Gain [dBi]	-5.3	-4.8

Antenna 9

(Frequency Band)	WiFi 2.4G	WiFi 5G
3D Radiation Pattern		
Efficiency[%]	16%	20%
Avg Gain [dBi]	-8	-7
Peak Gain [dBi]	-6.2	-5.6
(Frequency Band)	WiFi 6G	GPS L5
3D Radiation Pattern		
Efficiency[%]	14%	0.13
Avg Gain [dBi]	-8.6	-9
Peak Gain [dBi]	-6.1	-6.6