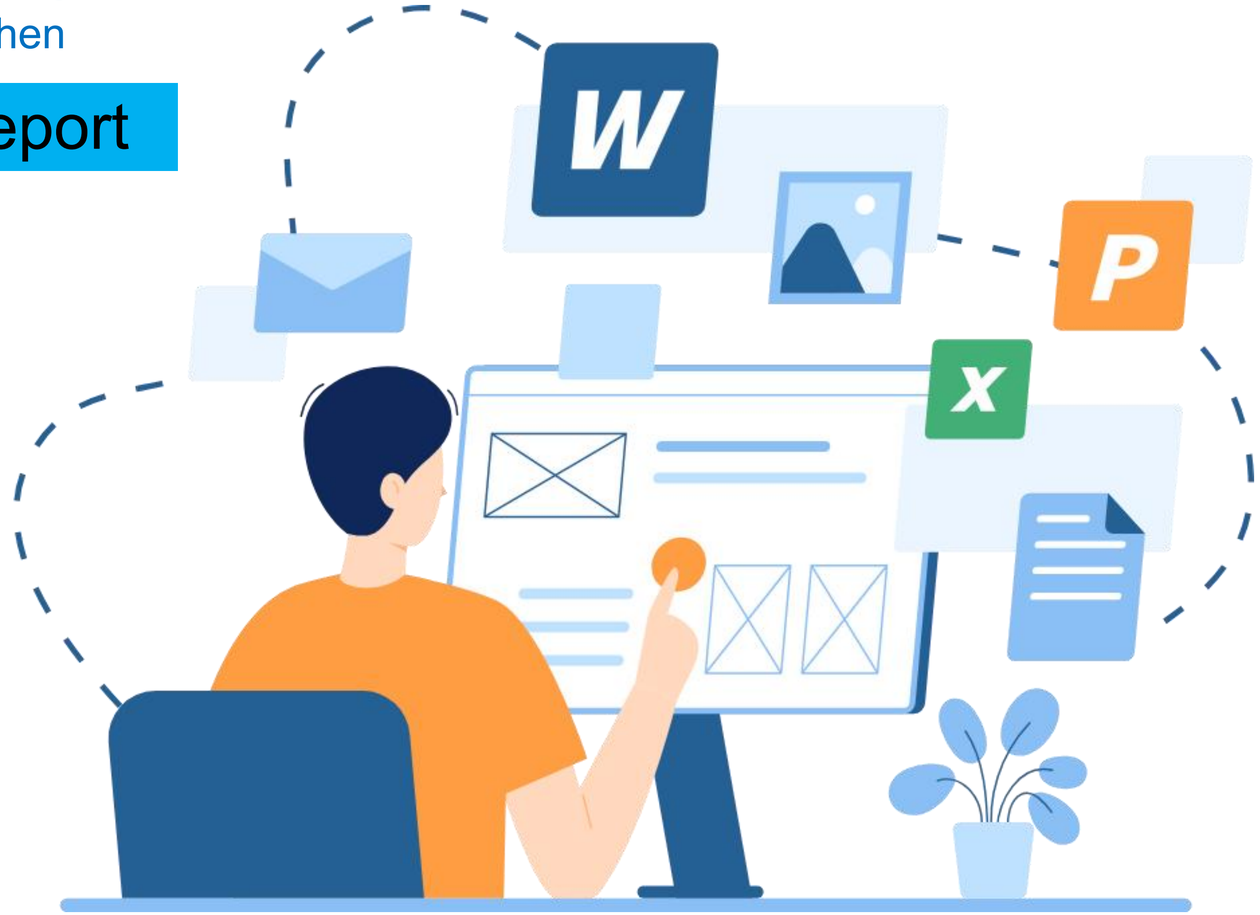
Shenzhen HamyWe Technology Co., Ltd.

Add:1st floor,Building B,Jinghang Industrial Park,Liu xian 2nd Road,District71,Bao'an,Shenzhen

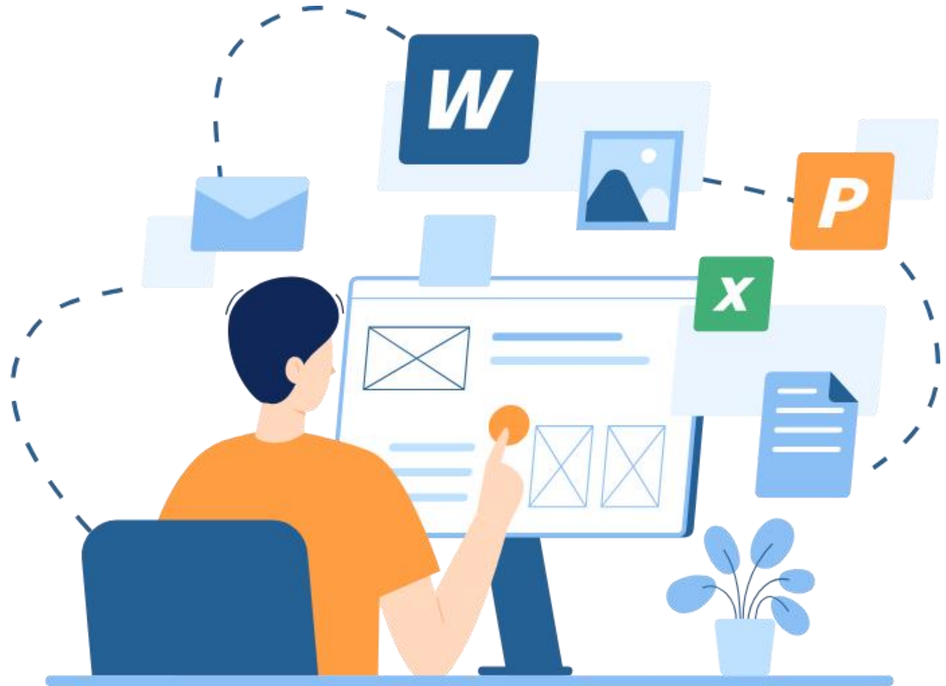
S66RFT Antenna Debugging Report



- Name：Wen Xuehua
- Tel：13609625813

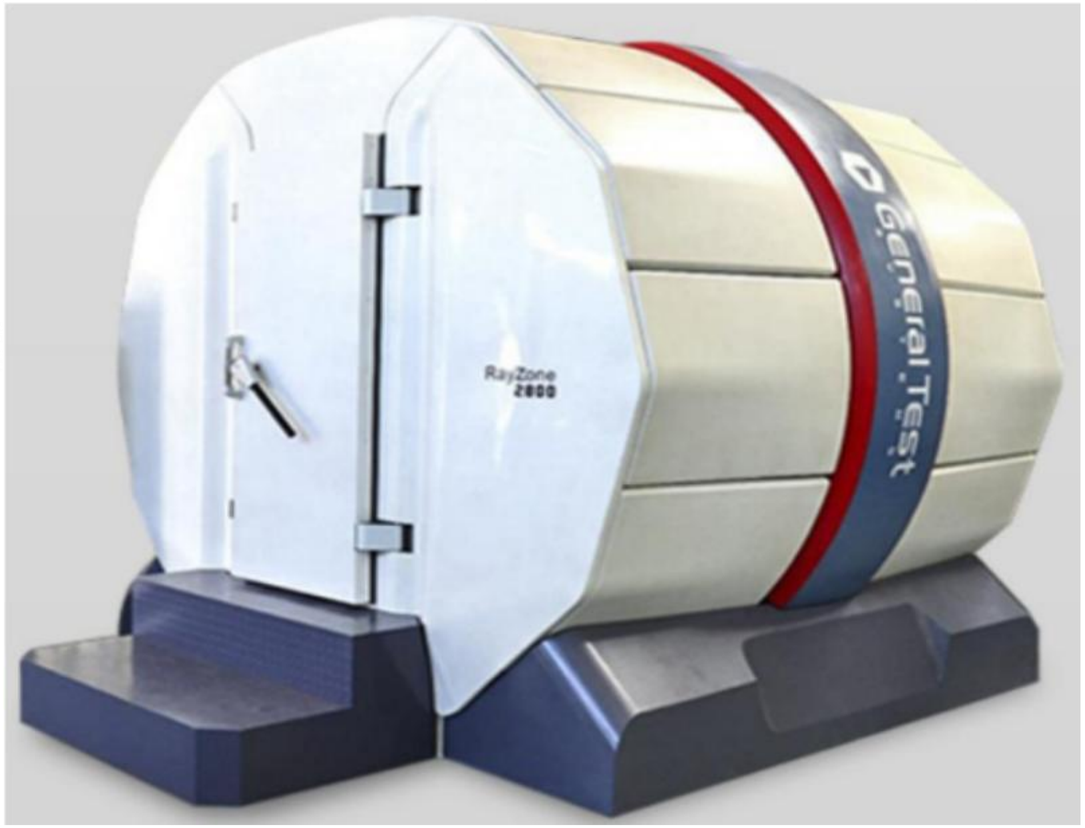
- Date：2024.3.15

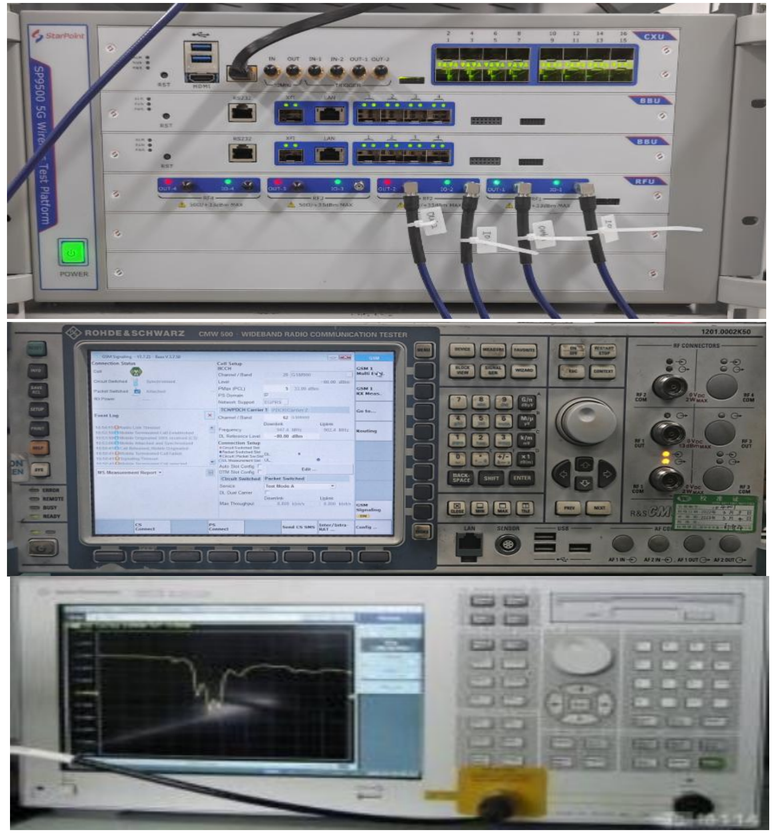
Catalogue



Active Testing&Passive Testing—
5G Microwave chamber

◆ Testing System	◆ Testing Environment	◆ Active Testing	◆ Passive Testing
GTS2800	temperature：22℃±3℃ humidity：50%±15%	support 5G/4G/3G/2G support BT/WIFI/GPS	600MHZ——6G





Project description

Machine type	Cell Phone	
Antenna & Supportting Band	Main Antenna	G4 W1/2/5/8 LTEB1/2/3/4/5/7/8/12/17/28/38/66
	B/G/W	Yes
	Diversity Antenna	Yes
Antenna Material/ Antenna Form	Metal frame plus FPC	

Recording of Dubugging version

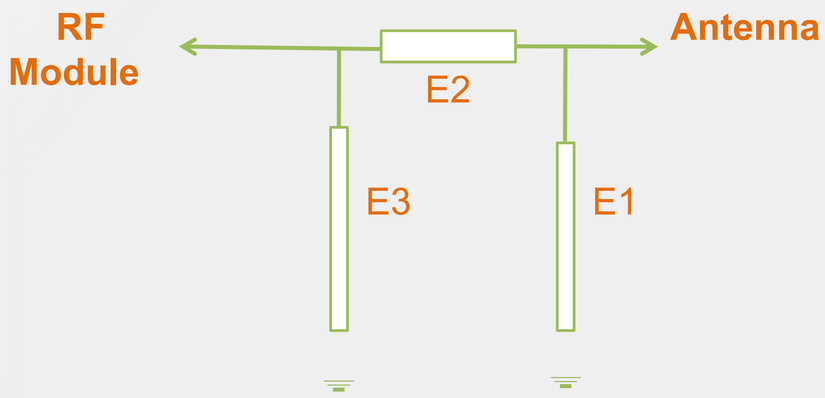
S66RFT

Version	Date	Content overview
V1	2024/1/10	Dubugging report
V2	2024/02/01	Debug data after the frame change
V3	2024/02/23	Side-top optimization and commissioning
V4	2024/03/15	Final data

Matching circuits

Match change?

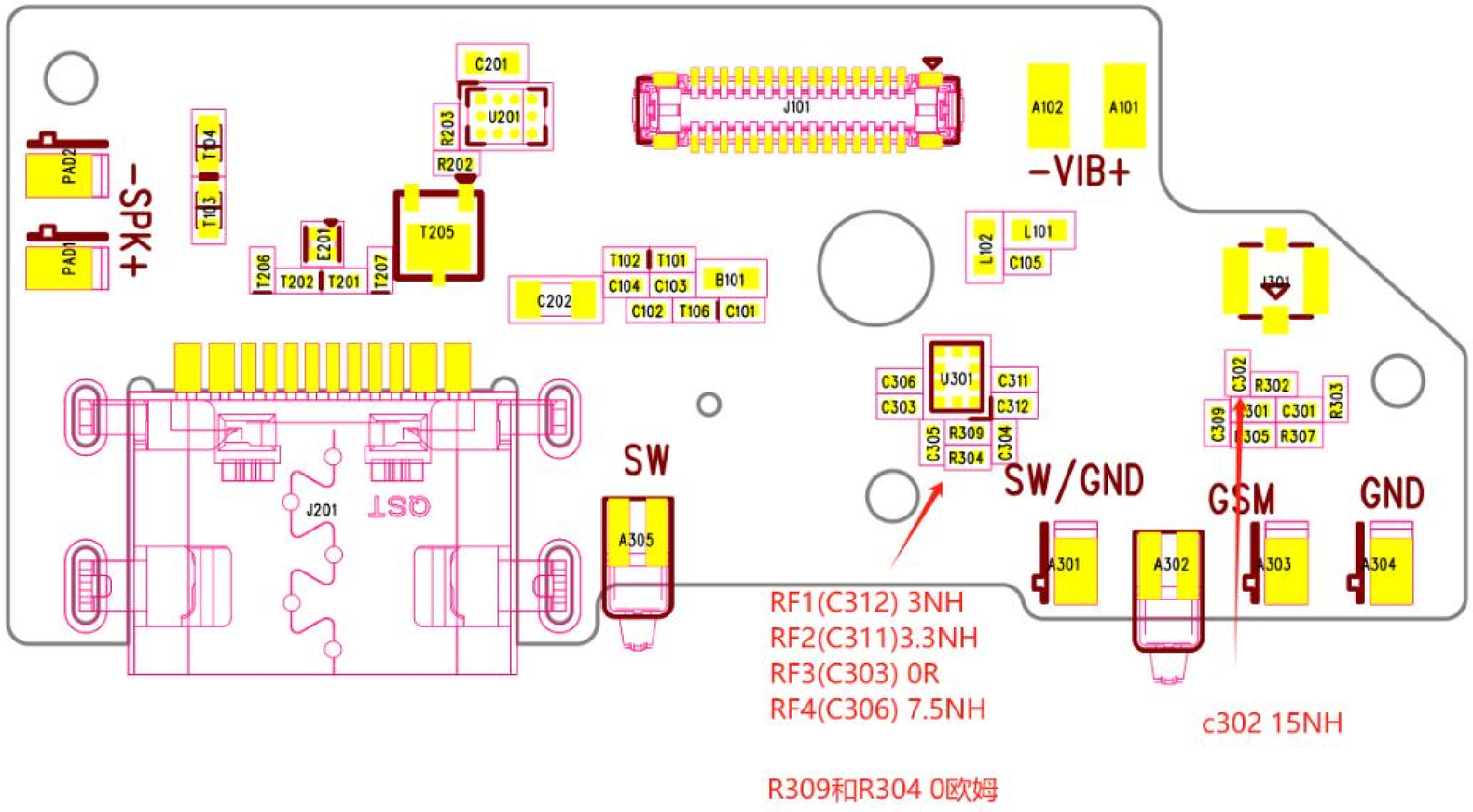
No



LTE Antenna

Element	Value
E1(0201)	NC
E2(0201)	0 Ω
E3(0201)	NC

Small plate spring-foot and matching details



Antenna logic in details

S66RFT Antenna logic

RF1=900/W8/B8
RF2=850/W5/B5
RF3=1800/1900 W1/W2/B1/2/3/4/7/66/38
RF=B12/17/28A/B

OTA report（Screen off）

Band	TRP	TIS		Band	TRP	TIS		Band	TRP	TIS	
GSM850	22.1			W1	19.2			LTE B1	19.5		
	22.3				18.7				19		
	22.4	-101.36			18.6	-105.2			18.8	-92.2	
GSM900	23.1			W2	19.2			LTE B2	18.5		
	23.6				18.5				18.6		
	23.7	-101.01			18.6	-105.2			18.7	-92.3	
DCS1800	24.1			W5	13.0			LTE 3	18.9		
	24.5				13.2				19.1		
	24.5	-103.72			13.4	-104.2			19	-93.1	
PCS1900	24.1			W8	13.2			LTE4	19		
	24.0				13.5				18.7		
	23.8	-103.05			13.5	-104.1			18.9	-93	

OTA report（Screen off）

Band	TRP	TIS		Band	TRP	TIS		Band	TRP	TIS	
LTE B5	12.8			LTE B17	12.3			LTE B66	19.4		
	13.5				12.4				19.3		
	13.6	-89.3			12.7	-87.3			19.1	-92.9	
LTE B7	16.8			LTE28A	12.2						
	16.9				12.4						
	16.6	-90.4			12.5	-87.4					
LTE B8	13.0			LTE28B	12.4						
	13.4				12.5						
	13.8	-90.1			12.7	-87					
LTE B12	12.6			LTE 38	16.4						
	12.7				16.2						
	12.9	-87.6			16.1	-89					

OTA report（Screen on）

Band	TRP	TIS		Band	TRP	TIS		Band	TRP	TIS	
GSM850				W1				LTE B1			
		-98.5				**-102.8**				**-92.7**	
GSM900				W2				LTE B2			
		-101.2				**-102.5**				**-91.6**	
DCS1800				W5				LTE 3			
		-102.3				**-100.6**				**-92.6**	
PCS1900				W8				LTE4			
		-102.1				**-102**				**-92.1**	

OTA report（Screen on）

Band	TRP	TIS		Band	TRP	TIS		Band	TRP	TIS	
LTE B5				LTE B17				LTE B66			
		-89.2				-85.3				-91.5	
LTE B7				LTE28A							
		-87.2				-85.5					
LTE B8				LTE28B							
		-87.3				-86					
LTE B12				LTE 38							
		-85.1				-87.2					

Conduction data

Band	TRP	TIS		Band	TRP	TIS		Band	TRP	TIS	
GSM850	31.2			W1	**22.4**			LTE B1	22		
	31.5				**22.6**				22.1		
	31.7	-107.5			**22.5**	**-108.5**			22.3	**-98**	
GSM900	31.4			W2	**22.3**			LTE B2	22.3		
	31.8				**22.4**				22		
	31.6	-107.8			**22.1**	**-108.5**			22.1	**-98**	
DCS1800	29.4			W5	**22.6**			LTE 3	22.1		
	29.5				**22.7**				22.3		
	29.8	-108			**22.4**	**-108**			22.4	**-98**	
PCS1900	29.6			W8	**22.6**			LTE4	22		
	29.6				**22.8**				22.1		
	29.5	-108.3			**22.4**	**-108.5**			22	**-98**	

Conduction data

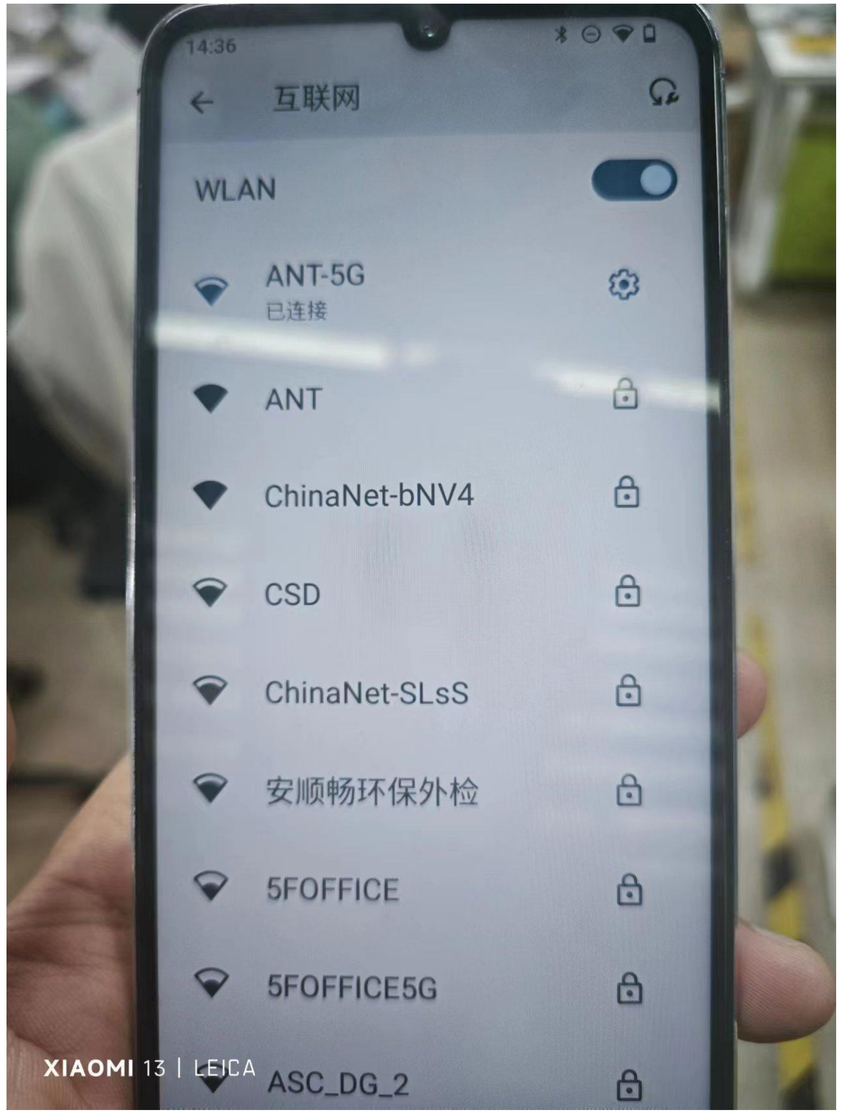
Band	TRP	TIS		Band	TRP	TIS		Band	TRP	TIS	
LTE B5	22.4			LTE B17	22.6			LTE B66	22.1		
	22.6				22.7				22		
	22.5	-98			22.4	-97			22.1	-97.5	
LTE B7	22.1			LTE28A	23						
	22				22.8						
	22.2	-97			22.9	-97					
LTE B8	22.4			LTE28B	22.6						
	22.5				22.9						
	22.3	-96			22.8	-97					
LTE B12	22.3			LTE 38	22.1						
	22.4				22.2						
	22.5	-97			22	-94					

Antenna Gain

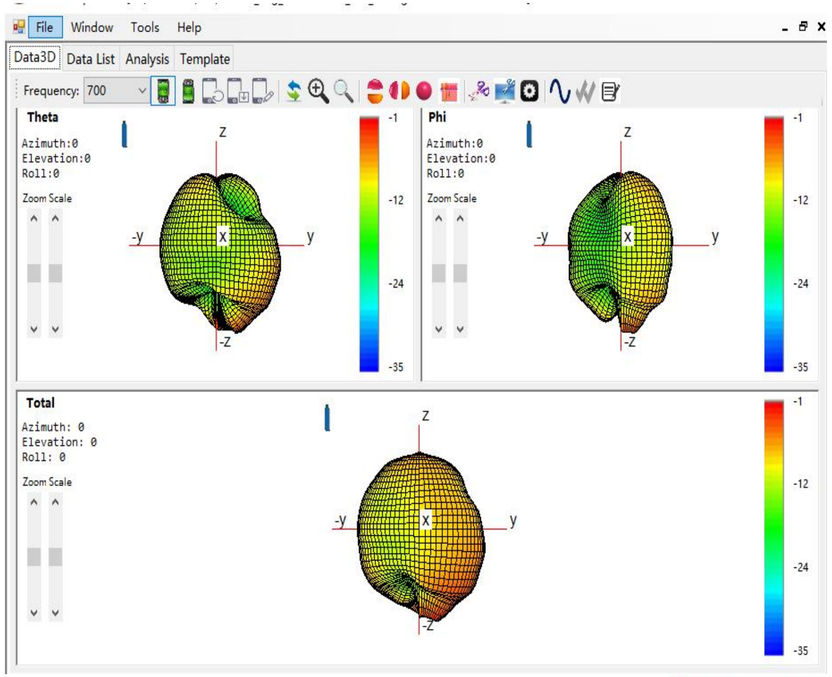
S66RFT-L65A 2024 Antenna Gain			
Band	Gain (dBi)	Band	Gain (dBi)
GSM B2	0.1	W B1	0.1
B3	0.4	W B2	0.33
B5	-0.7	W B5	-0.7
B8	-0.8	W B8	-0.8
LTE B2	0.33	GPS	0.6
B3	0.4	2.4GWIFI	0.9
B4	0.25	BT	0.9
B5	-0.7		
B7	0.67		
B8	-0.8		
B12	-1.12		
B17	-1.16		
B28AB	-1.21		
B38	0.67		
B66	0.25		

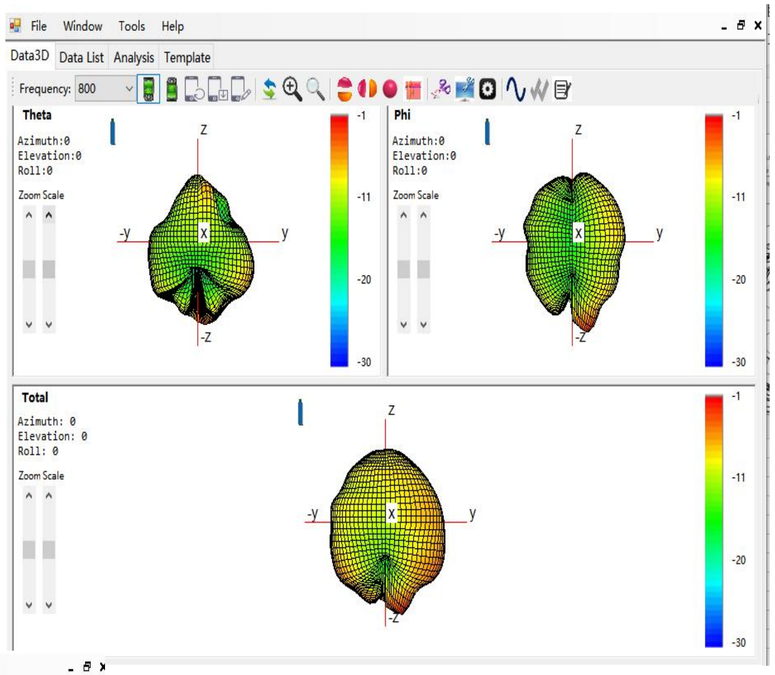
GPS measurement is measured on the first floor of our company, with 29 stars and more than 3 stable 40

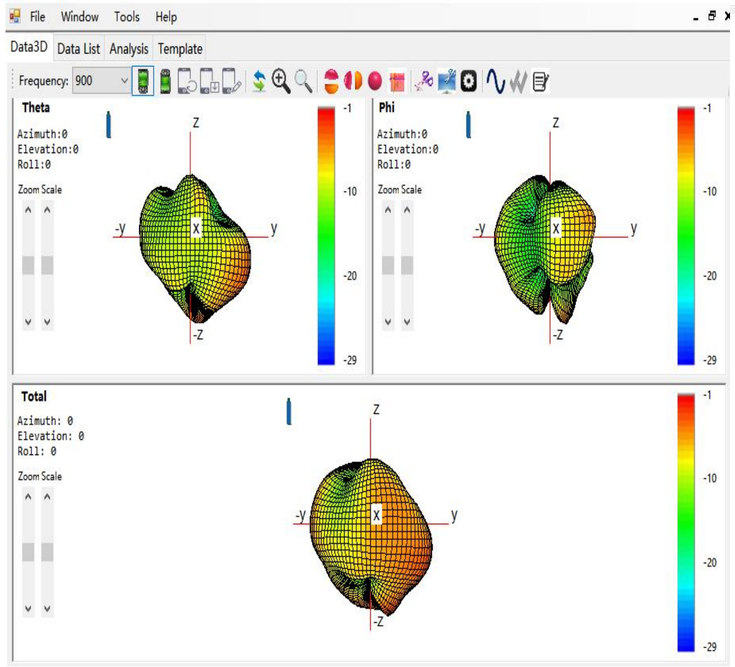
The signal value 10 meters away from our router

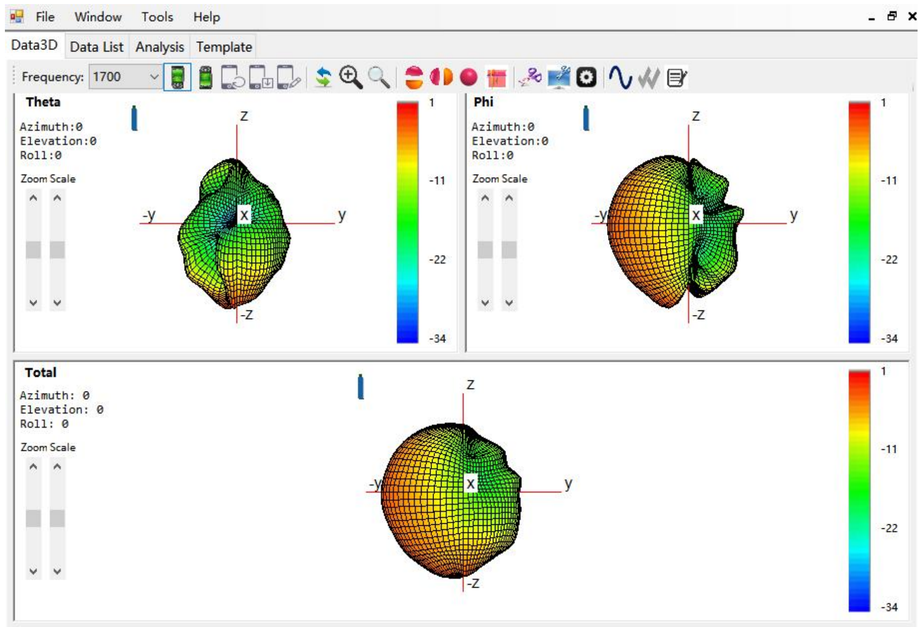


Main Antenna 3D Drawing





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Elevation:0
Roll:0
Zoom Scale
Phi
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Elevation:0
Roll:0
Zoom Scale
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Azimuth: 0
Elevation: 0
Roll: 0
Zoom Scale
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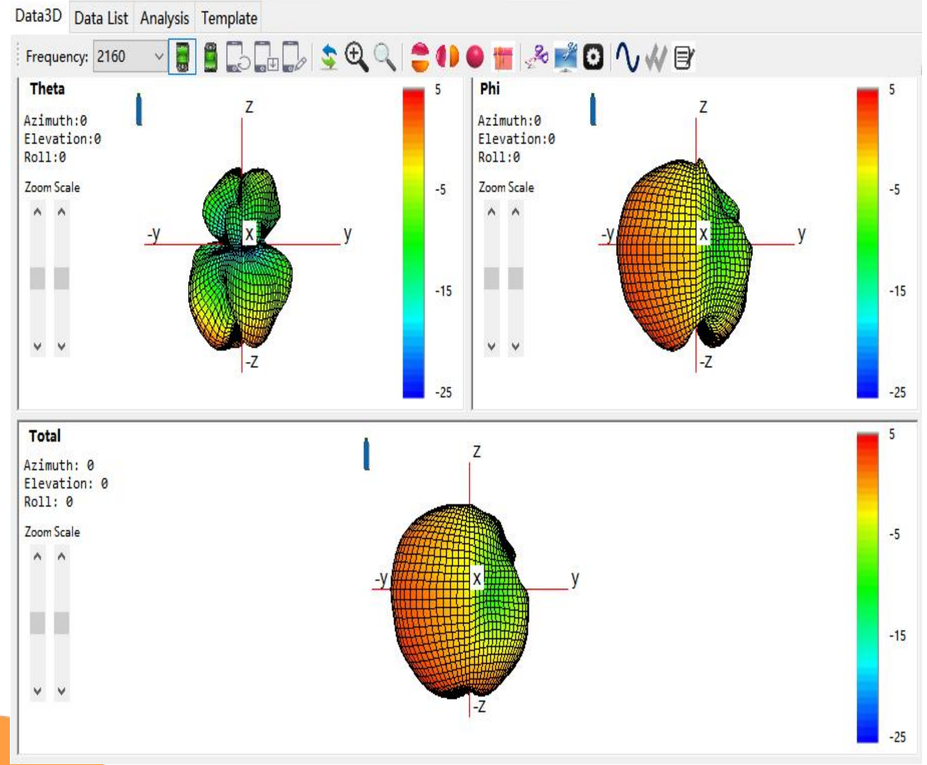
-11
-22
-34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Zoom Scale
Phi
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Zoom Scale
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Elevation: 0
Roll: 0
Zoom Scale
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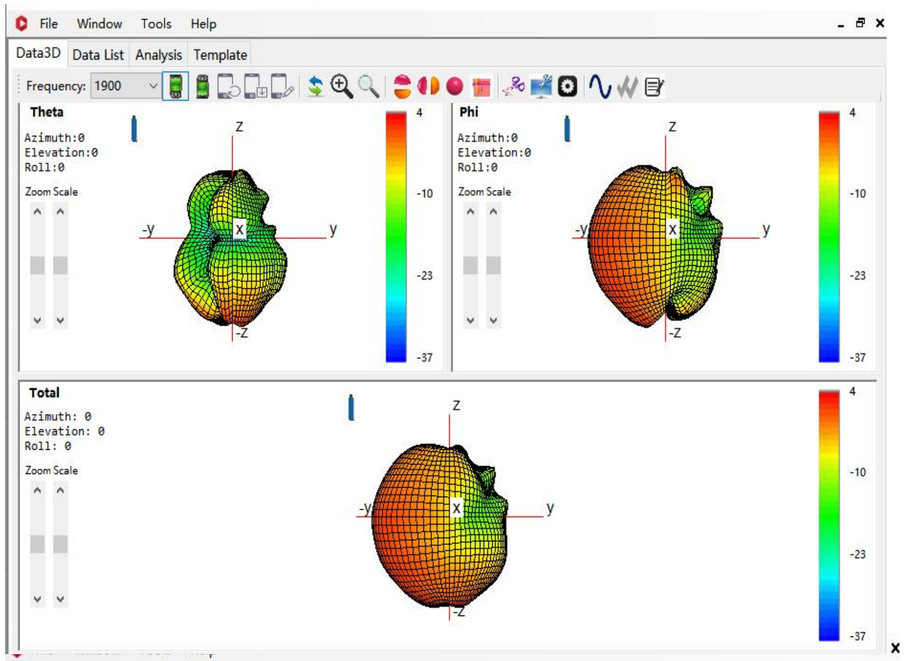
-5
-15
-25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Zoom Scale
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Zoom Scale
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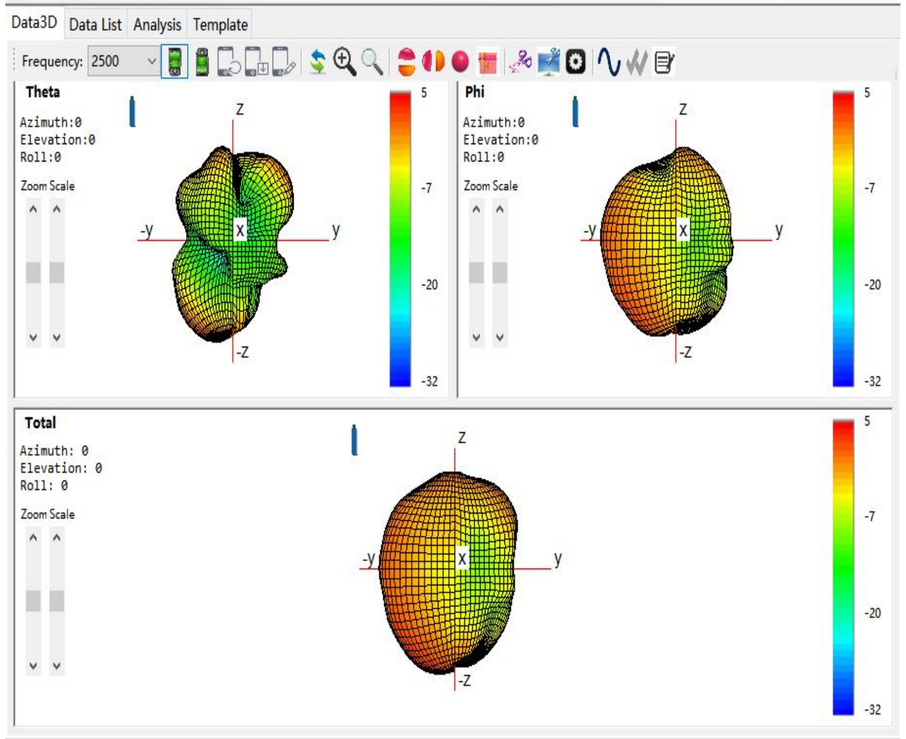
-37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Elevation:0
Roll:0
Zoom Scale
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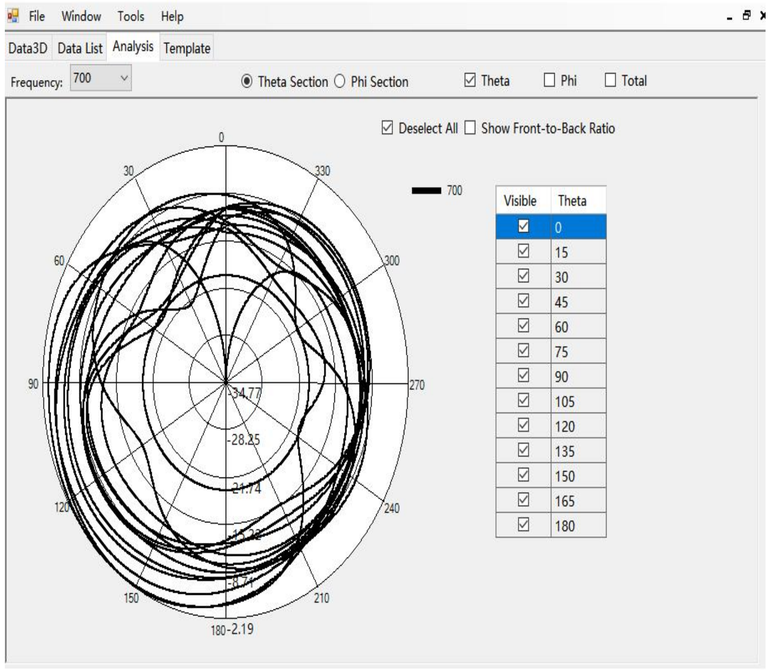
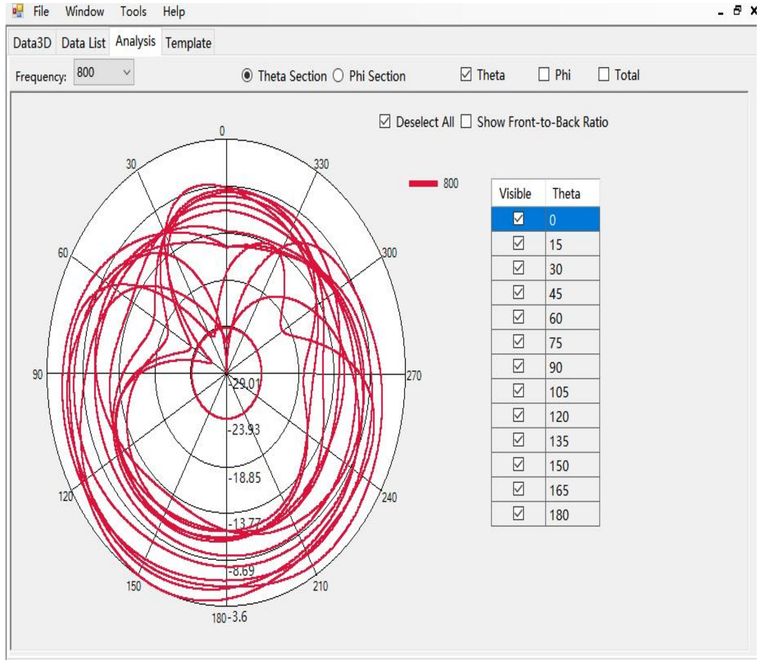
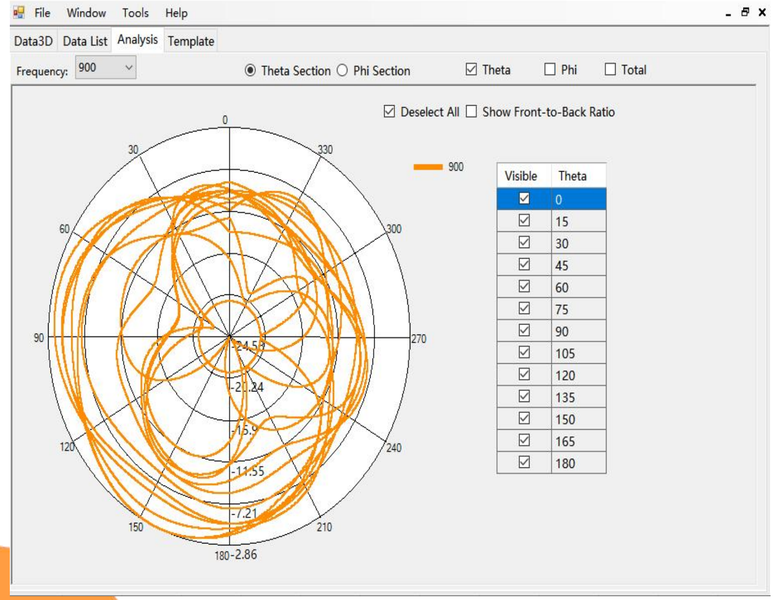
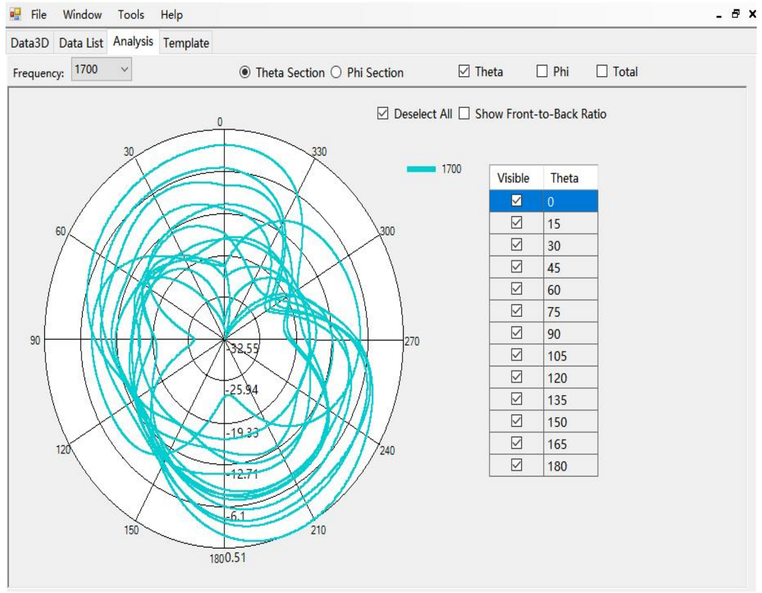
Elevation: 0
Roll: 0
Zoom Scale
5
-7
-20
-32

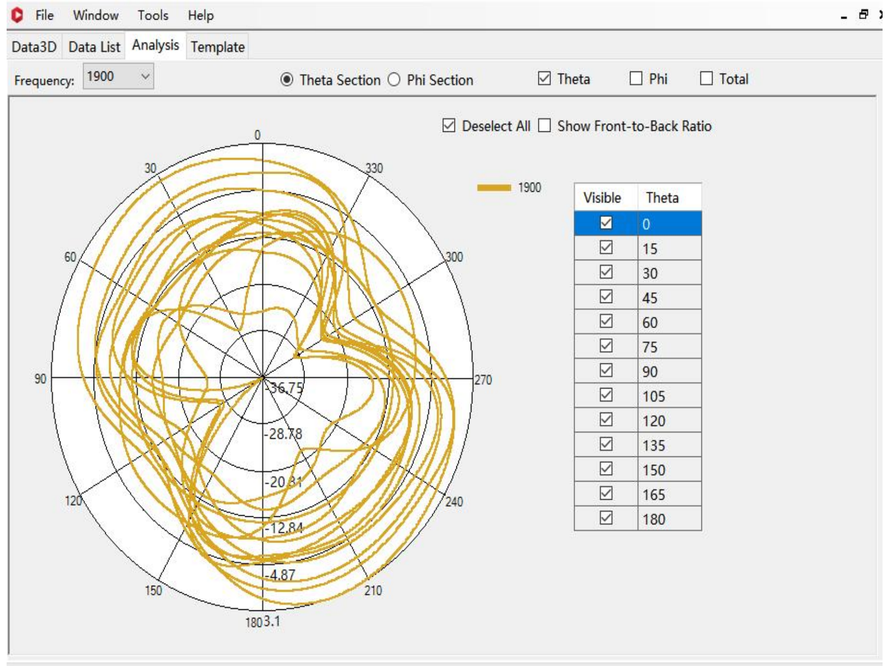
Main Antenna 2D Drawing







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Visible Theta
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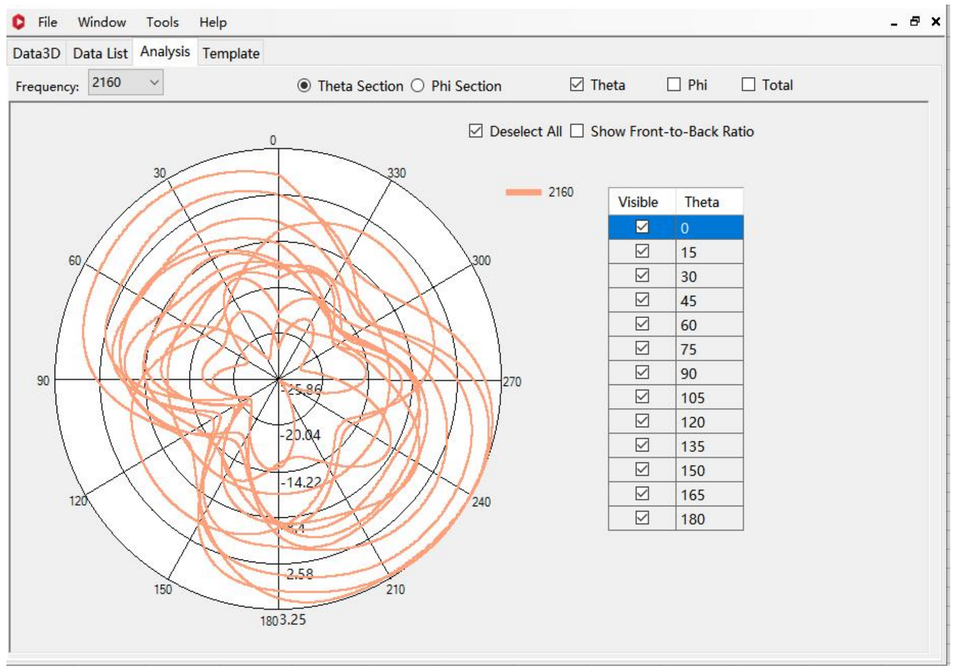
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Theta Phi Total
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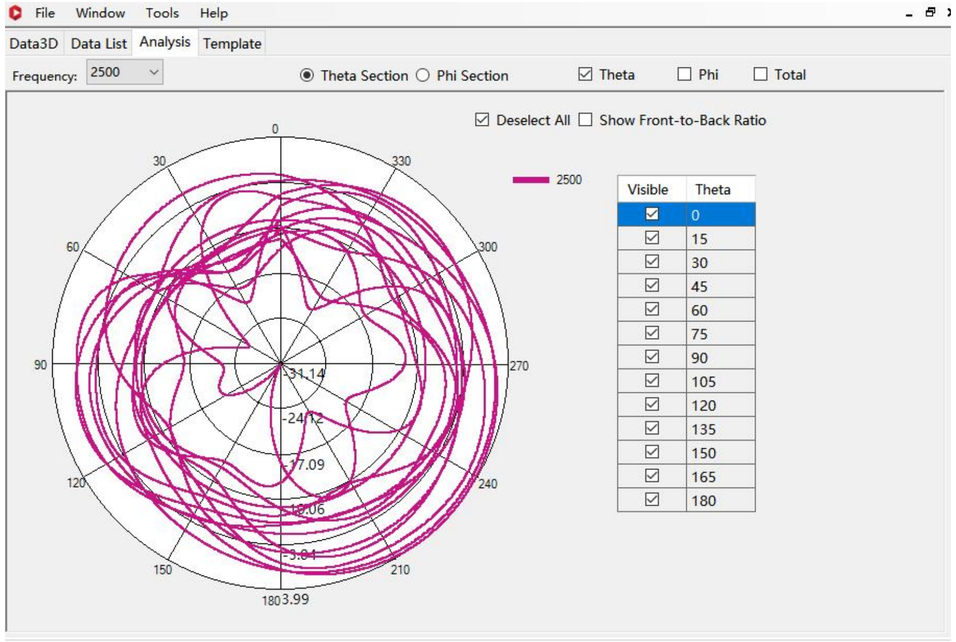
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Theta Section Phi Section
Theta Phi Total
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Visible Theta
0 15 30 45 60 75 90 105 120 135 150 165 180
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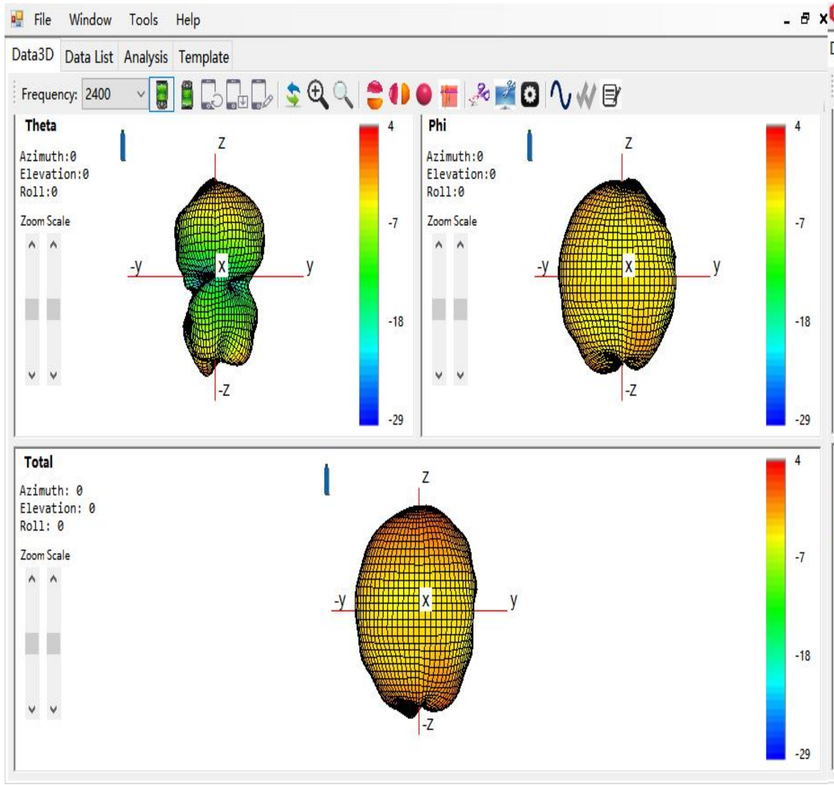
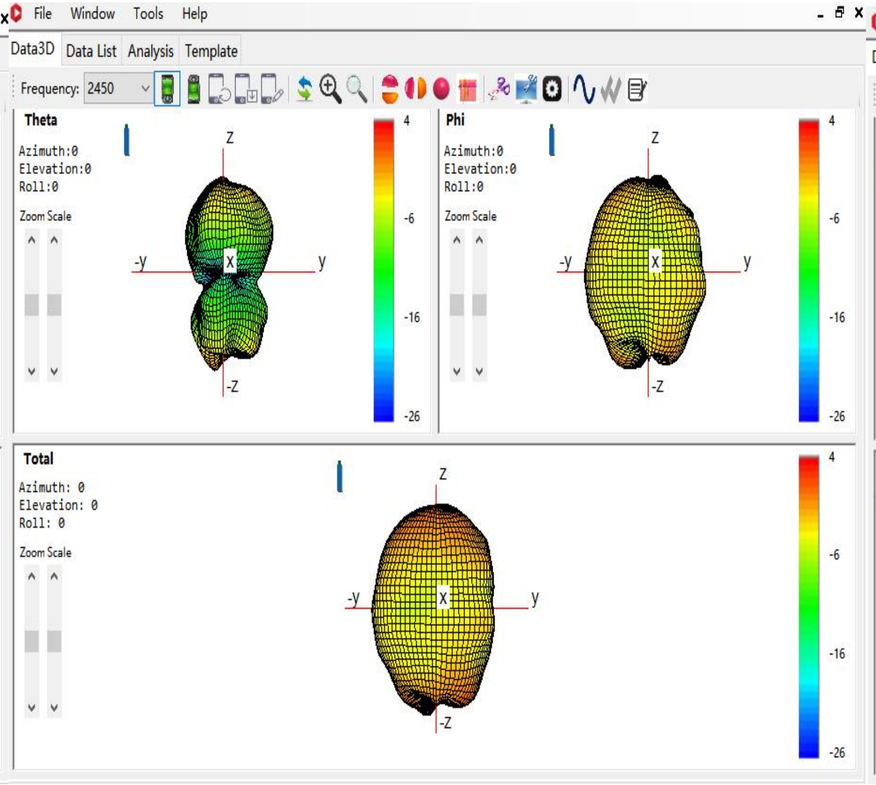
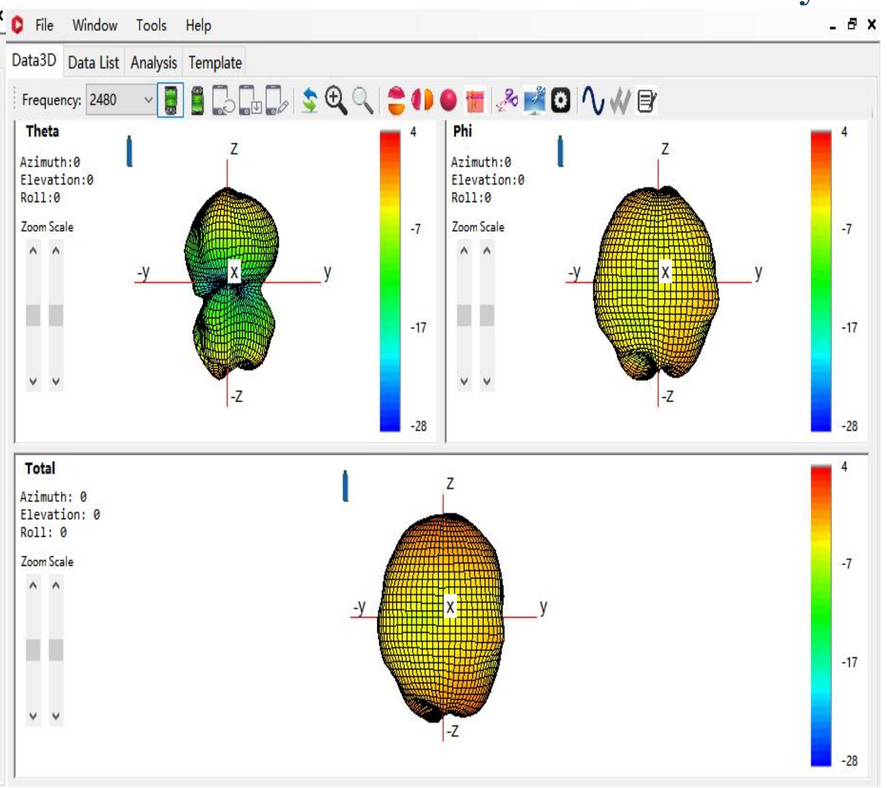
2.4WIFI 3D Drawing







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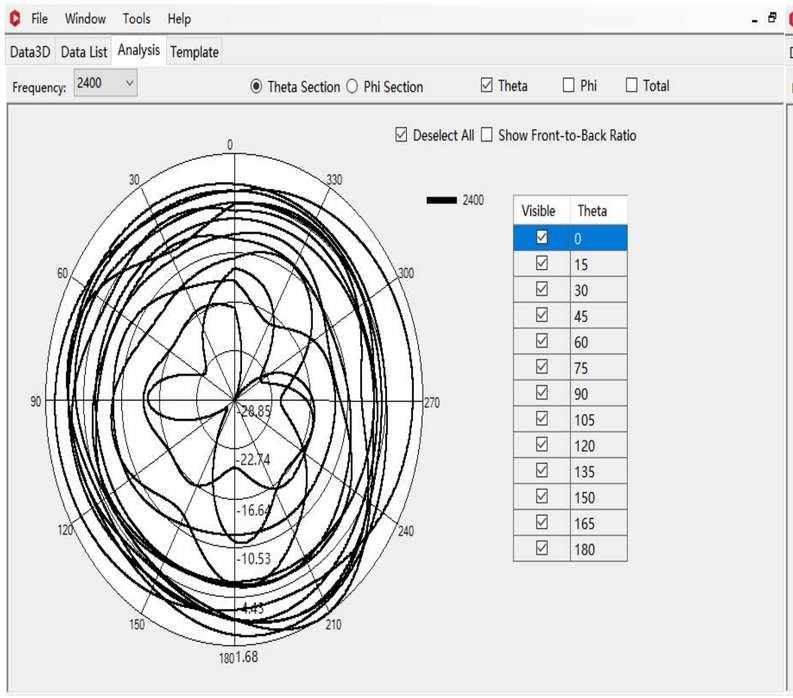
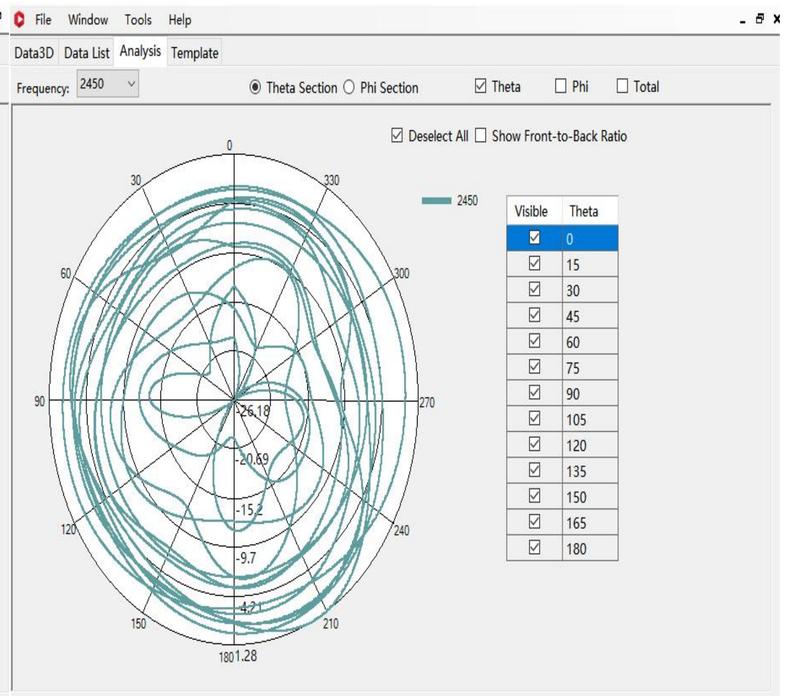
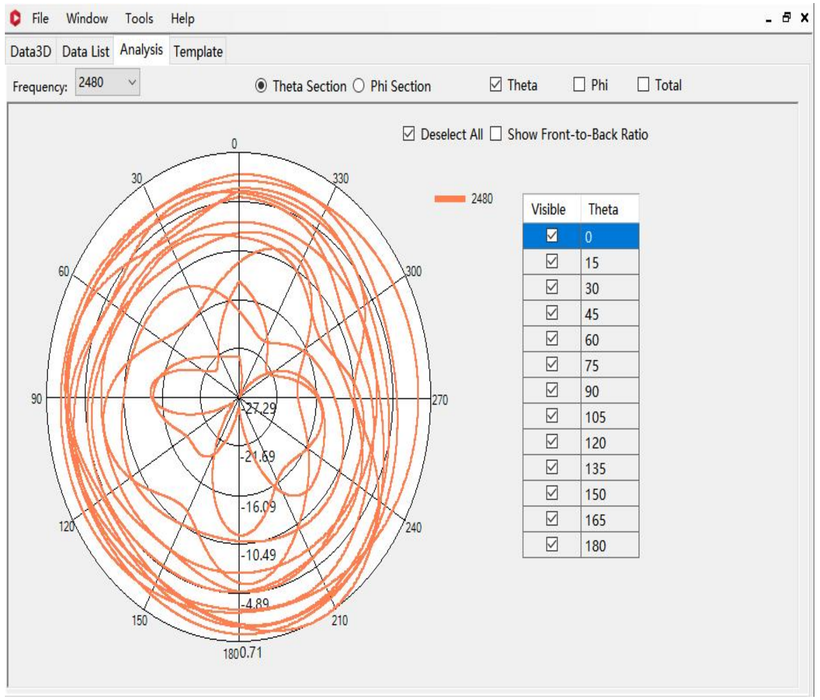
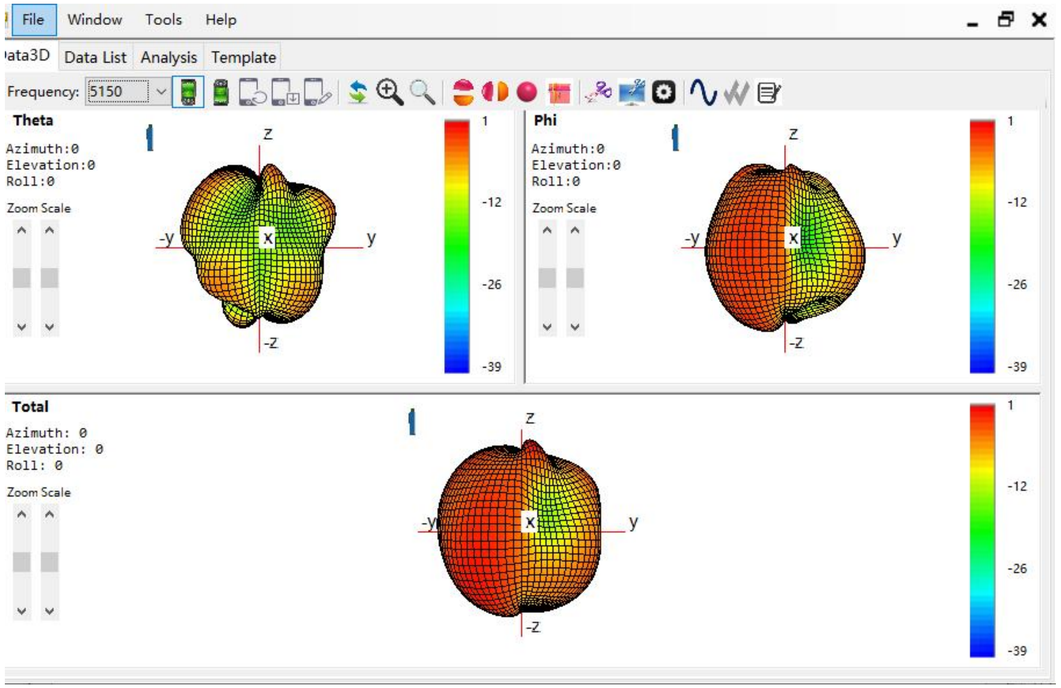
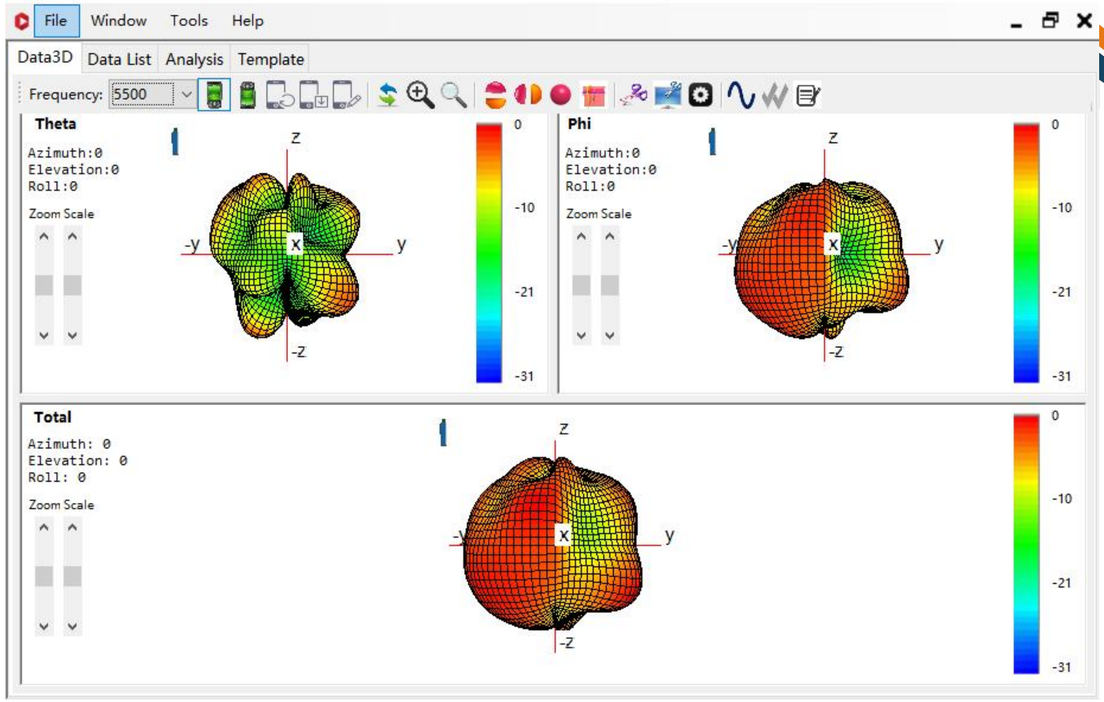


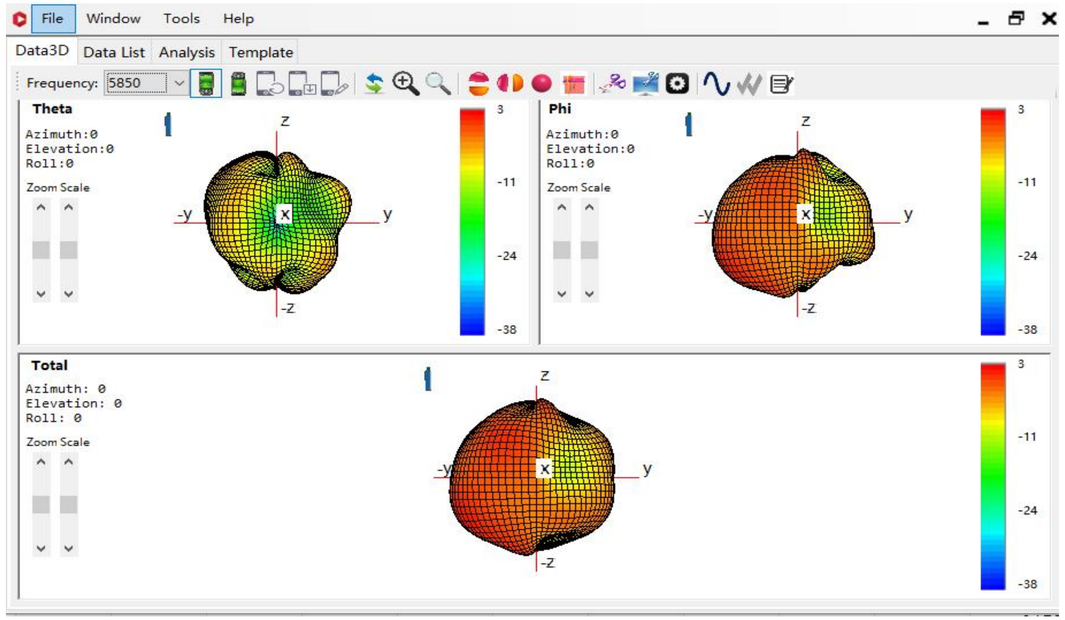




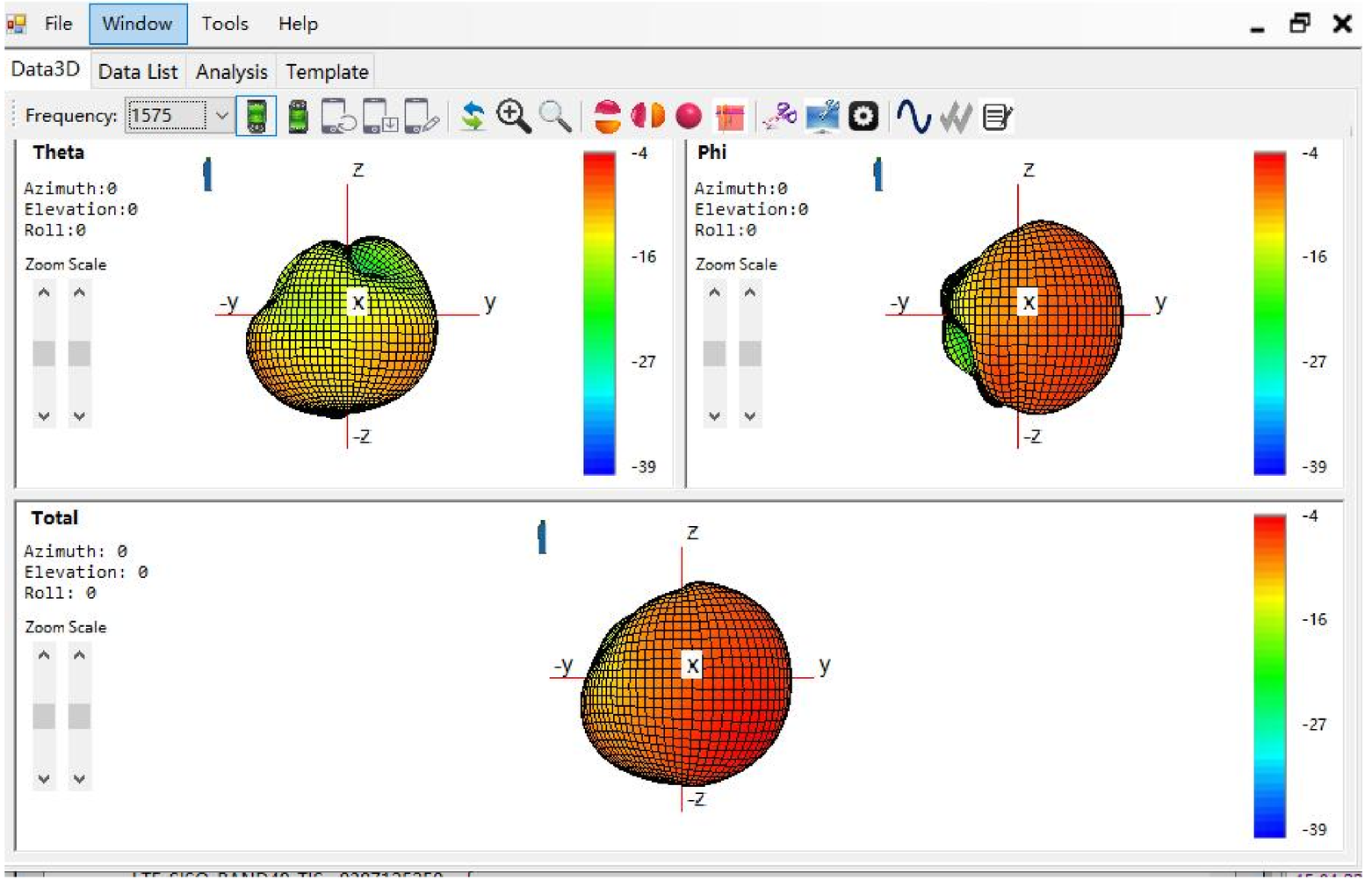
5.8G WIFI 3D Drawing



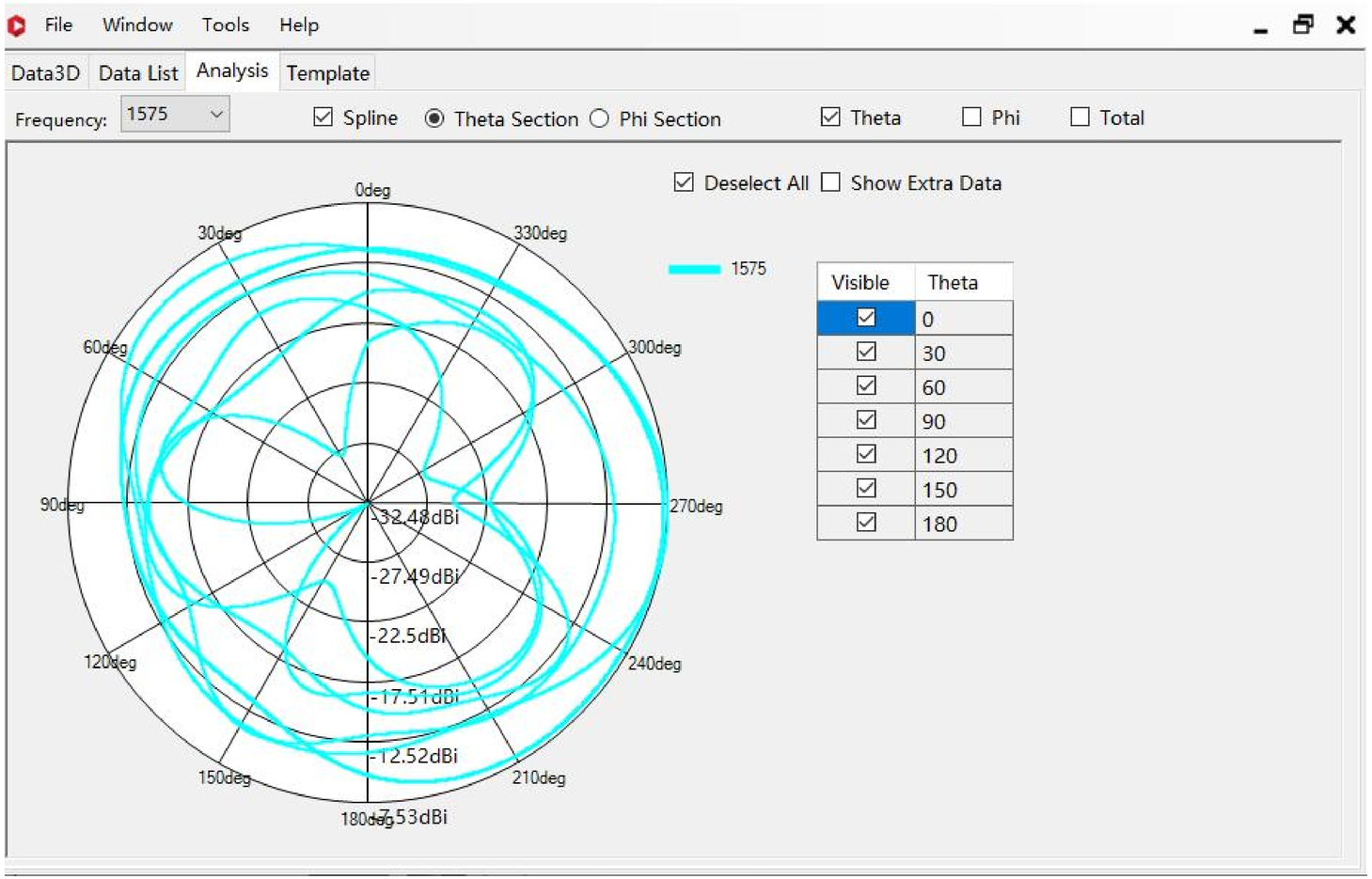




GPS 3D Drawing

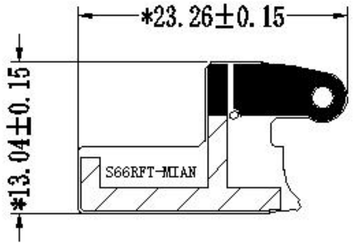


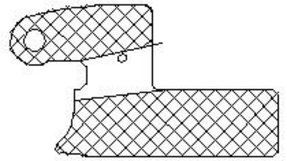
GPS 2D Drawing



Antenna Engineer drawing

Environmental requirements : ROSH ■REACH □No





NOTES:

1. The knife mold should not damage the circuit, and the gold-plated area should be connected to the circuit
2. TThe surface should not have any dirt, scratches, black spots, breakage or detachment after plating:
3. Material: FPC single panel [PI (electrolytic copper) 0.0175/0.0127mm base material + adhesive (3M94710.05mm)+ surface sub-white ink (Kaiyao/Youli/Rio Tinto/Ligu) (>0.01mm)];
4. Reverse adhesive 3M9471300LSE (viscosity needs high and low temperature experiment), test conditions: -30℃(60min)~ (conversion time 30min)~+70℃(60min)~ (conversion time 30min)~-30℃(60min).After a total of five cycles, place at room temperature for 8 hours without peeling, warping, ink dropping, or bulging;.
5. Nickel plating on the surface of gold finger (thickness: 0.05UM), no oxidation phenomenon (salt spray test is required) : After 48~49 hours of salt spray test, there are no corrosion points on the surface and no coating detachment
6. Mark * as the key dimensions

Copper platinum circuit

Golden Finger

3M adhesive backing

mark	change date	Changed by	Content-Change	remarks
⚠				
⚠				
⚠				

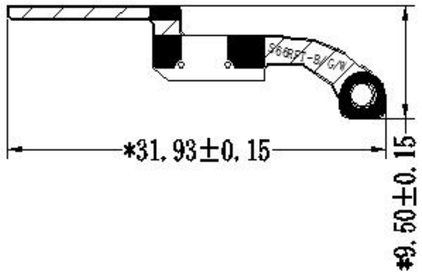
Shenzhen HamyWe Technology Co., Ltd

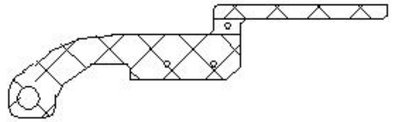
unmarked tolerances standard			
XXX	±2	○	0.1
XX	±1	◎	Ø 0.05
X	±0.5	⊥	0.05
X	±0.2	▱	0.05
.XX	±0.10	Angle	±3°

Type of machine	X2566-S66RFT	Product name	LTE-FPC	Date	2024.03.27
Material number	X2566-S66RFT-LTE-A03			M D	
material	PI	Special Process		R F	
pages in total page 1				Auditor	
First perspective		unit	mm	scale	Fit edition V01

Antenna Engineer drawing

Environmental requirements : ROSH ■REACH □ No





NOTES:

1. The knife mold should not damage the circuit, and the gold-plated area should be connected to the circuit
2. TThe surface should not have any dirt, scratches, black spots, breakage or detachment after plating:
3. Material: FPC single panel [PI (electrolytic copper) 0.0175/0.0127mm base material + adhesive (3M94710.05mm)+ surface sub-white ink (Kaiyao/Youli/Rio Tinto/Ligu) (>0.01mm)];
4. Reverse adhesive 3M9471300LSE (viscosity needs high and low temperature experiment), test conditions: -30℃(60min)~ (conversion time 30min)~+70℃(60min)~ (conversion time 30min)~-30℃(60min).After a total of five cycles, place at room temperature for 8 hours without peeling, warping, ink dropping, or bulging;.
5. Nickel plating on the surface of gold finger (thickness: 0.05UM), no oxidation phenomenon (salt spray test is required) : After 48~49 hours of salt spray test, there are no corrosion points on the surface and no coating detachment
6. Mark * as the key dimensions

Copper platinum circuit

Golden Finger

3M adhesive backing

mark	change date	Changed by	Content-Change	remarks
⚠				
⚠				
⚠				

Shenzhen HamyWe Technology Co., Ltd

unmarked tolerances standard			
XXX	±2	○	0.1
XX	±1	◎	Ø 0.05
X	±0.5	⊥	0.05
.X	±0.2	▱	0.05
.XX	±0.10	Angle	±3°

Type of machine	X2566-S66RFT	Product name	WIFI&GPS-FPC	Date	2024.03.27				
Material number	X2566-S66RFT-LTE-A03			M D					
material	PI	Special Process		R F					
pages in total page 1				Auditor					
First perspective		unit	mm	scale	Fit	edition	V01		

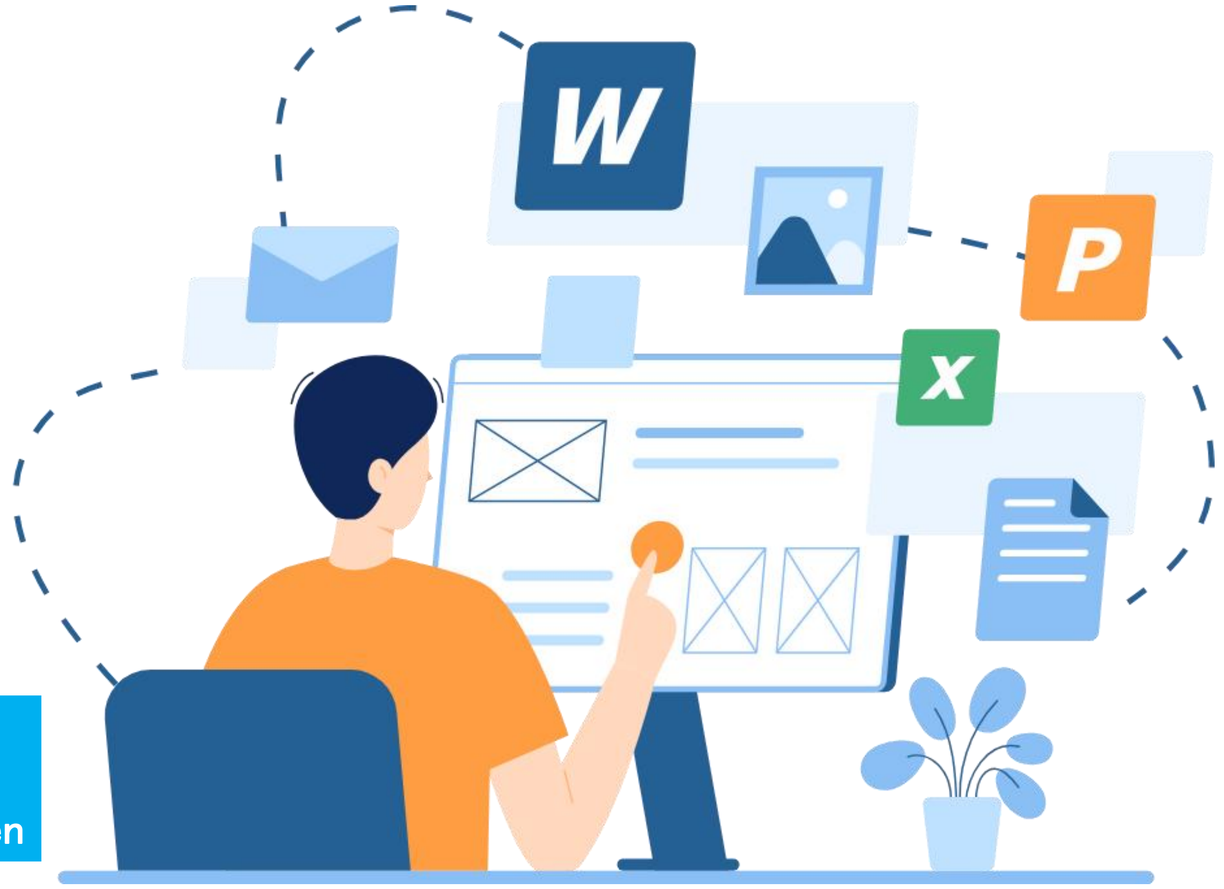
Important Instruction

1. Please pay attention to whether the matching in the report has changed and whether the environmental treatment is feasible; This will directly affect the antenna performance, if you have any objections, please contact us in time;

2. If your machine has replacement materials, updated software, environmental processing changes, etc., you must provide the latest status of the machine to our company for verification in time;

3. If your machine needs to be sent to a third party for verification or inspection, it is best to provide the test machine to our company to test and verify OK before sending it for testing (because the consistency of the motherboard, environmental treatment, antenna assembly and so on will affect the antenna deviation).

THANKS FOR WATCHING



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