

WA-F-LELE-04-011 Specification

1. Explanation of part number :

WA - E - LELE - 04 - 011
(1) (2) (3) (4) (5)

(1) Product Type : Wireless Antenna

(2) Material: FPC+Cable

(3) Frequency : 2400~2500MHz, 5150~5915~7125MHz

(4) Coaxial Cable Type : 04

(5) Suffix :011

2. Storage Condition:

Temperature -40 to +70°C
Humidity 65±20 % RH

3. Operating Condition:

Temperature -40 to +70°C
Humidity 65±20 % RH

4. Electrical Specification :

Those specifications were specially defined for SD09 model, and all characteristics were measured under the model's handset testing.

4-1. Frequency Band:

Frequency Band	MHz
WIFI	2400~2500MHz · 5150~5915~7125MHz

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SCALE : UNIT : mm

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DESIGNED BY:张冬冬 APPROVED BY : 张涛

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4-2. Impedance

50 ohm nominal

4-3. Matching circuit

None

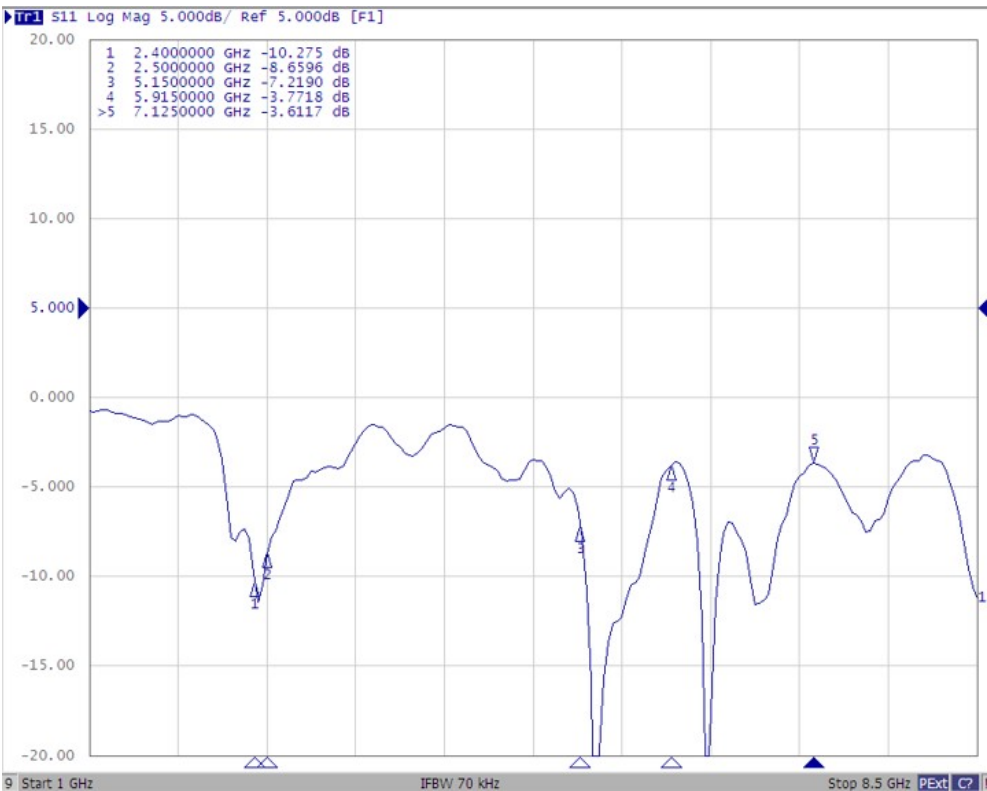
4-4. VSWR

4-4.1 Measuring Method

- 1.A 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR
- 2. Keeping this jig away from metal at least 20cm

4-4.2 Measurement frequency points and Log S11 value

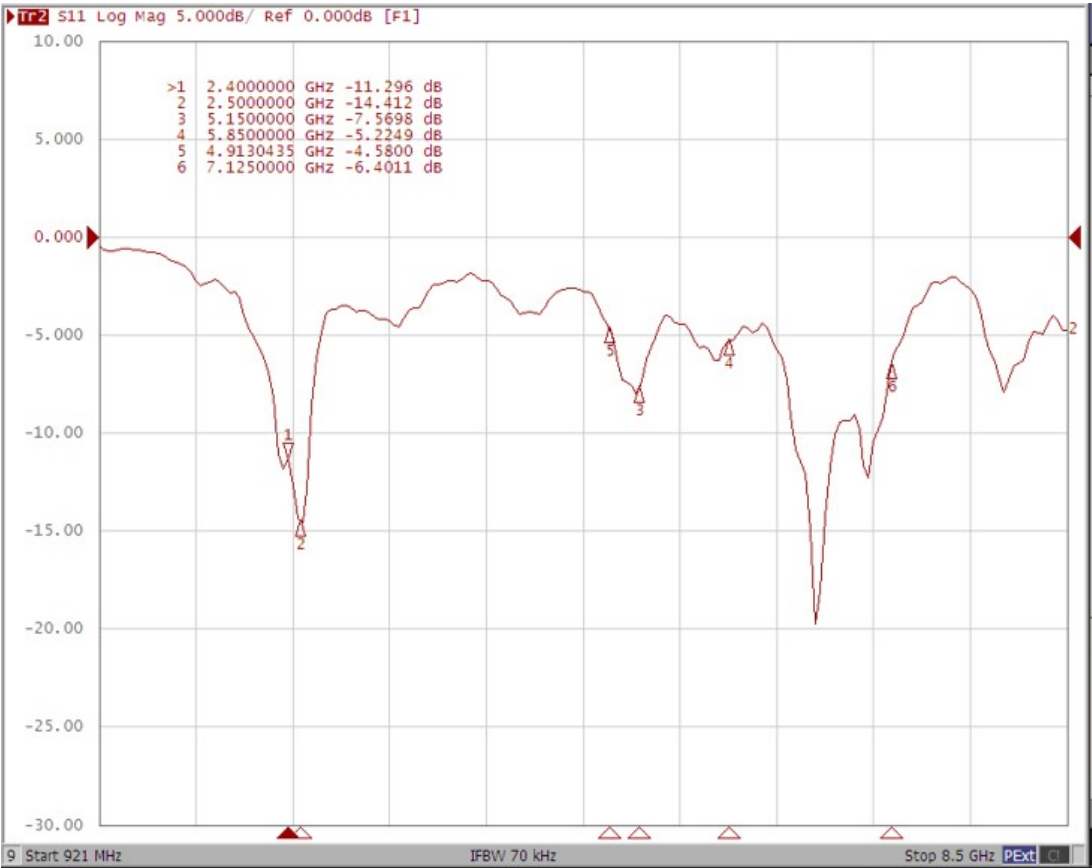
Frequency (Unit MHz)	2400	2500	5150	5915	7125
Log S11	-6	-6	-4	-2	-2



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4-4.3 Measurement frequency points and Log S11value

Frequency (Unit MHz)	2400	2500	5150	5915	7125
Log S11	-8	-8	-4	-2	-3



4-4.3 Measurement frequency points and S21value

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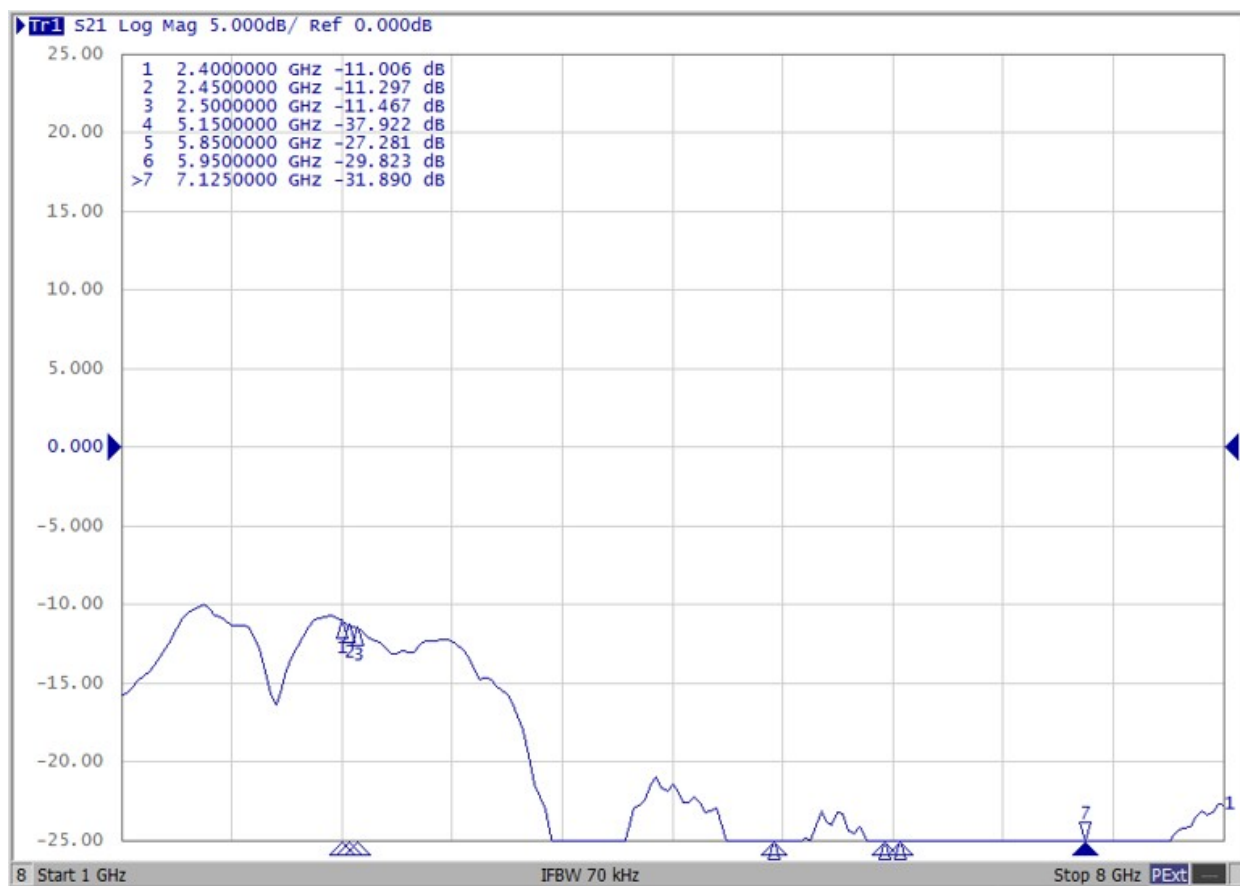
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4-5. Efficiency and Gain

4-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

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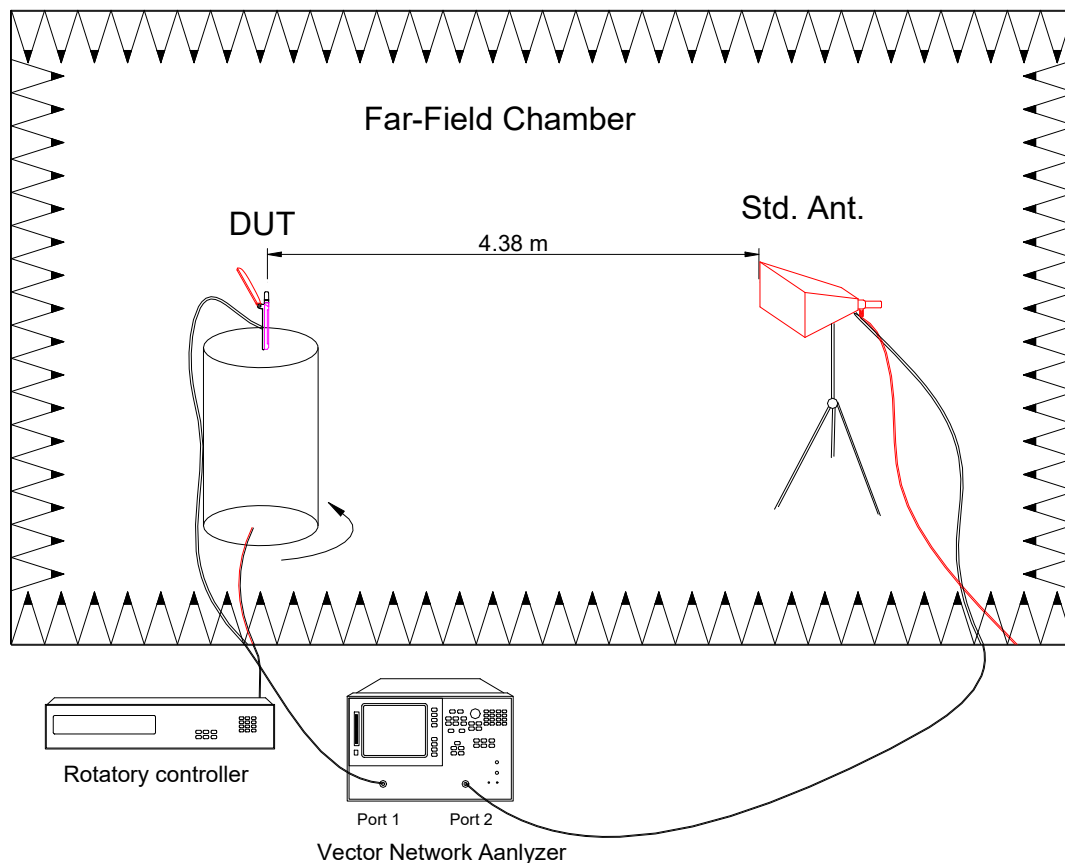
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4-5.2 Chamber definition

1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quiet room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

4-5.3 Efficiency and Gain

Antenna gain is marked (dBi) and is based on STANDARD HORN antenna. The data shows Peak Gain and Average Gain.

➤ WIFI 1

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Frequency/MHz	Efficiency/dB	PeakGain/dBi	Efficiency/%
2400	-6.37	2.23	23.09
2410	-6.19	2.41	24.05
2420	-5.9	2.73	25.73
2430	-5.79	2.8	26.36
2440	-5.88	2.69	25.81
2450	-5.9	2.63	25.73
2460	-6.19	2.28	24.02
2470	-6.15	2.22	24.25
2480	-6.15	2.15	24.29
2490	-6.21	1.97	23.96
2500	-6.33	1.77	23.27

5150	-6.43	1.15	22.76
5200	-6.38	1.25	23.03
5250	-6.38	1.32	23.02
5300	-6.07	1.57	24.72
5350	-5.8	1.86	26.29
5400	-5.62	2.02	27.45
5450	-5.52	1.99	28.04
5500	-5.55	1.87	27.87
5550	-5.37	2.09	29.06
5600	-5.36	2.19	29.12
5650	-5.42	2.39	28.73
5700	-5.41	2.71	28.78
5750	-5.41	2.99	28.75
5800	-5.51	3.2	28.13
5850	-5.47	3.44	28.41

5920	-5.04	2.78	31.33
5960	-4.93	2.77	32.11
6000	-4.88	2.76	32.54
6040	-4.91	2.56	32.26
6080	-5.03	2.37	31.4
6120	-5.15	2.07	30.55
6160	-5.27	1.98	29.74
6200	-5.38	1.8	28.98
6240	-5.29	2.01	29.55
6280	-5.36	1.94	29.14
6320	-5.44	2.02	28.57

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6360	-5.73	1.71	26.75
6400	-5.74	1.85	26.64
6440	-6.07	1.52	24.72
6480	-5.79	1.86	26.36
6520	-6.05	1.88	24.82
6560	-6.09	1.86	24.6
6600	-6.21	1.84	23.92
6640	-6.32	1.73	23.34
6680	-6.21	1.75	23.91
6720	-6.11	1.79	24.5
6760	-5.98	1.76	25.22
6800	-5.84	1.84	26.06
6840	-5.84	1.76	26.07
6880	-5.51	1.99	28.09
6920	-5.48	2	28.33
6960	-5.55	1.94	27.84
7000	-6.02	1.59	25
7050	-6	1.6	25.09
7100	-5.79	1.86	26.35
7150	-5.87	1.68	25.86

➤ WIFI 2

Frequency/MHz	Efficiency/dB	PeakGain/dBi	Efficiency/%
2400	-6.27	1.08	23.61
2410	-6.13	1.17	24.37
2420	-5.96	1.24	25.35
2430	-5.9	1.19	25.72
2440	-5.7	1.33	26.89
2450	-5.78	1.26	26.4
2460	-5.99	1.03	25.18
2470	-6.18	0.79	24.1
2480	-6.56	0.33	22.06
2490	-6.56	0.25	22.07
2500	-6.64	0.08	21.66

5150	-5.62	2.45	27.39
5200	-5.79	2.32	26.35
5250	-5.67	2.53	27.09
5300	-5.6	2.55	27.56
5350	-5.68	2.54	27.02
5400	-5.63	2.53	27.36

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5450	-5.4	2.76	28.84
5500	-5.23	2.87	29.98
5550	-5.22	2.69	30.08
5600	-5.12	2.72	30.73
5650	-4.8	2.96	33.13
5700	-4.65	3.07	34.27
5750	-4.67	3.1	34.15
5800	-4.46	3.24	35.83
5850	-4.39	3.36	36.38

5920	-4.47	2.36	35.69
5960	-4.43	2.31	36.03
6000	-4.49	1.98	35.56
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6480	-5.59	2.52	27.62
6520	-5.59	2.48	27.58
6560	-5.71	2.29	26.85
6600	-5.91	1.99	25.63
6640	-5.93	1.79	25.54
6680	-5.93	1.75	25.55
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6840	-6.22	1.46	23.9
6880	-6.29	1.35	23.5
6920	-6.41	1.1	22.87
6960	-6.91	0.48	20.38
7000	-6.88	0.22	20.51
7050	-6.69	0.23	21.45
7100	-6.78	-0.21	20.98
7150	-6.51	-0.13	22.32

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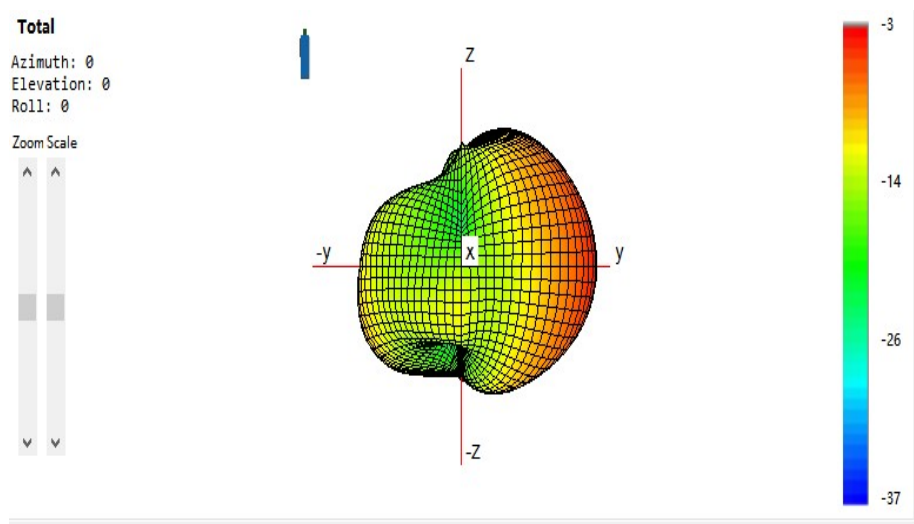
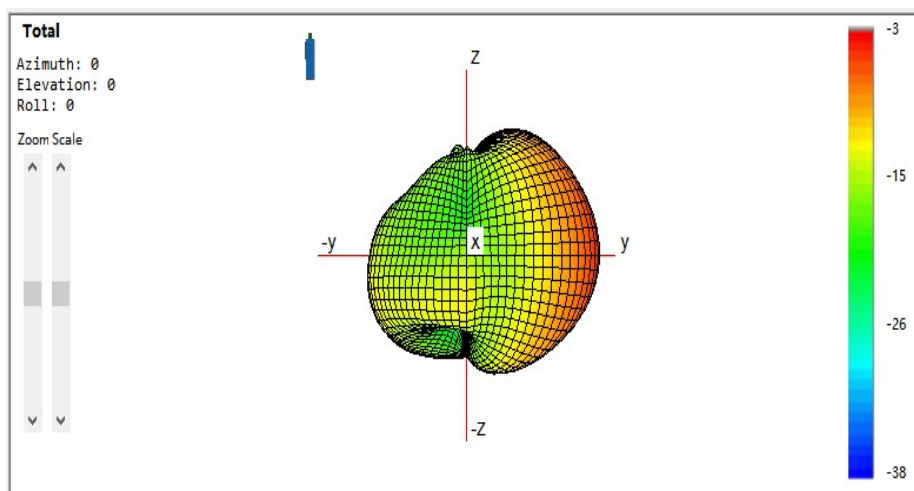
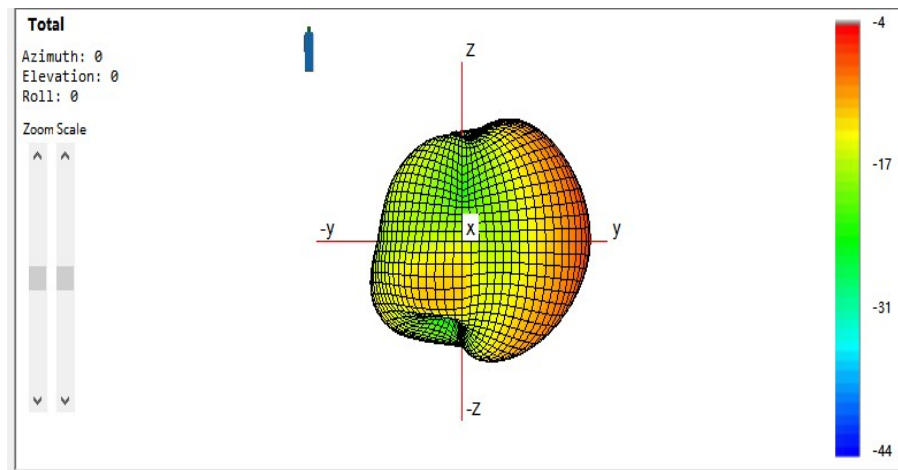
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➤ 3D Radiation Pattern Results

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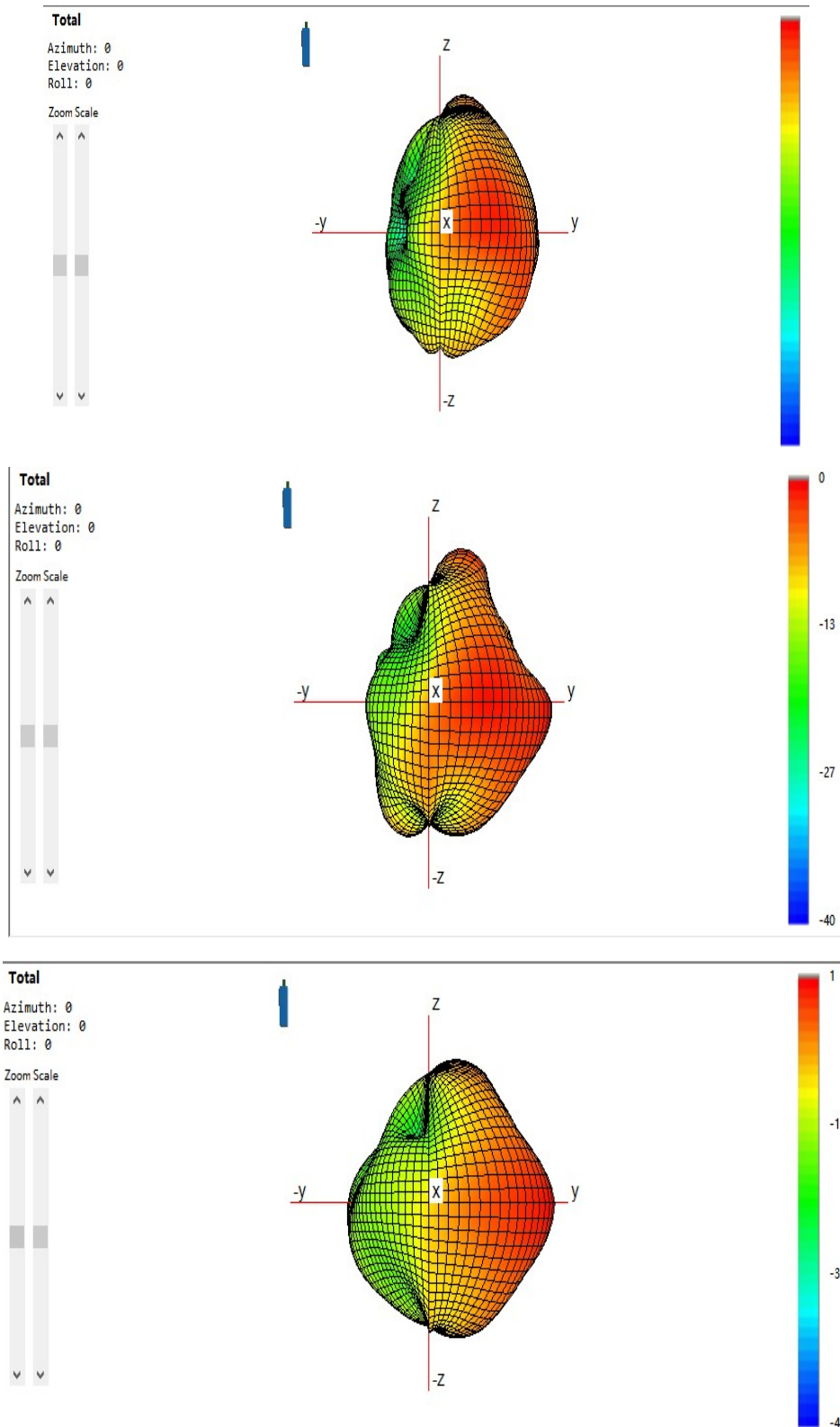
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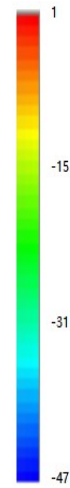
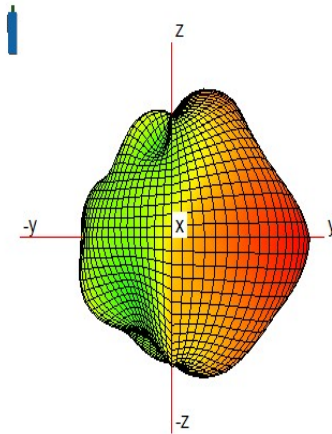
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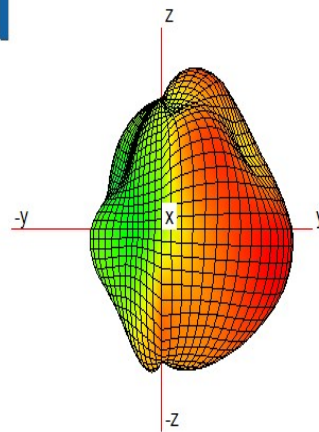
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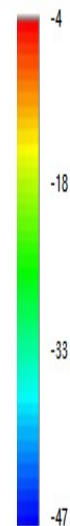
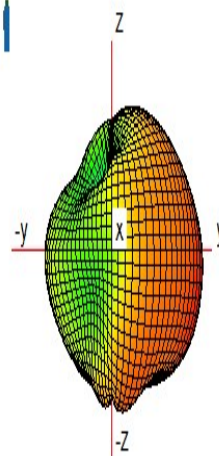
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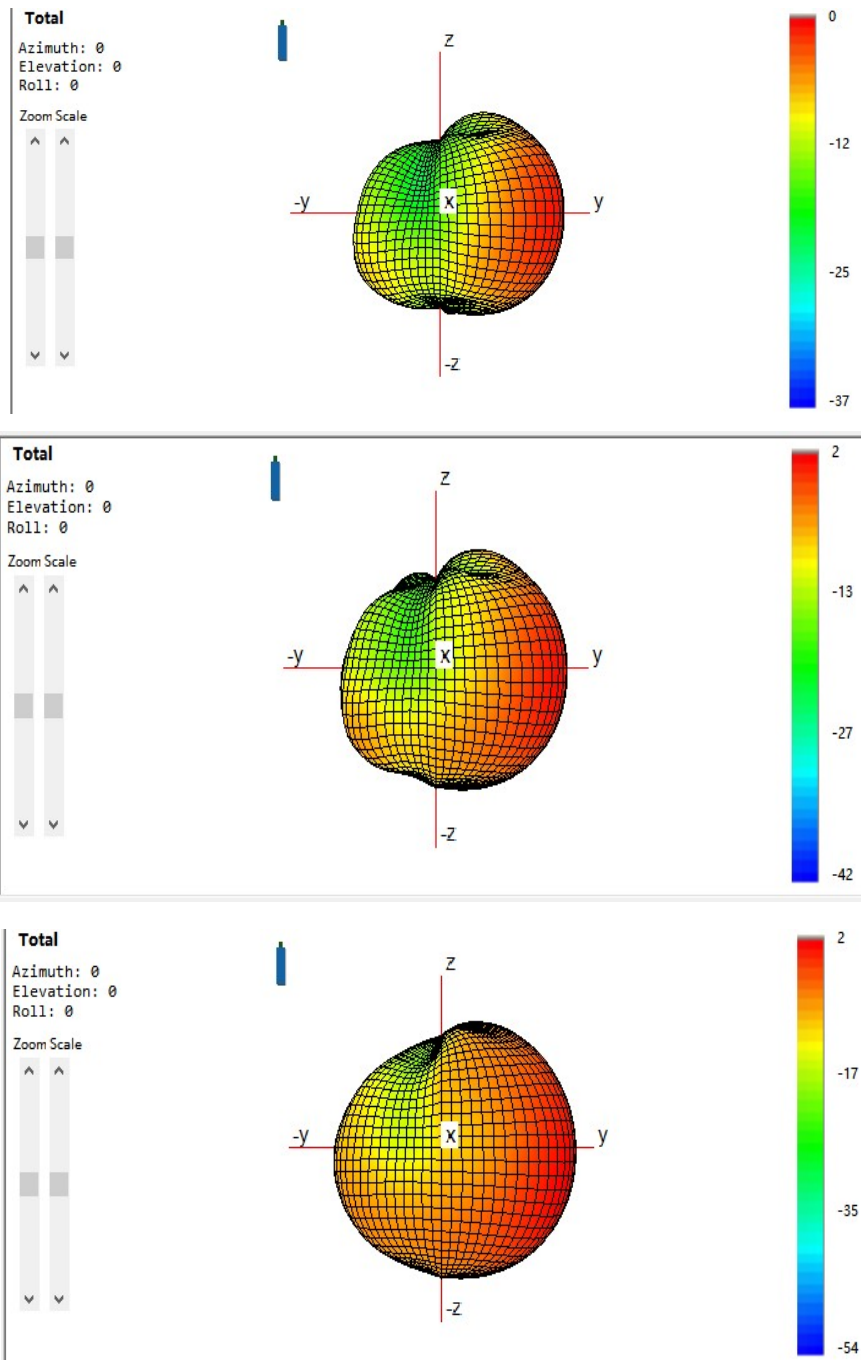
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➤ 3D Radiation Pattern Results

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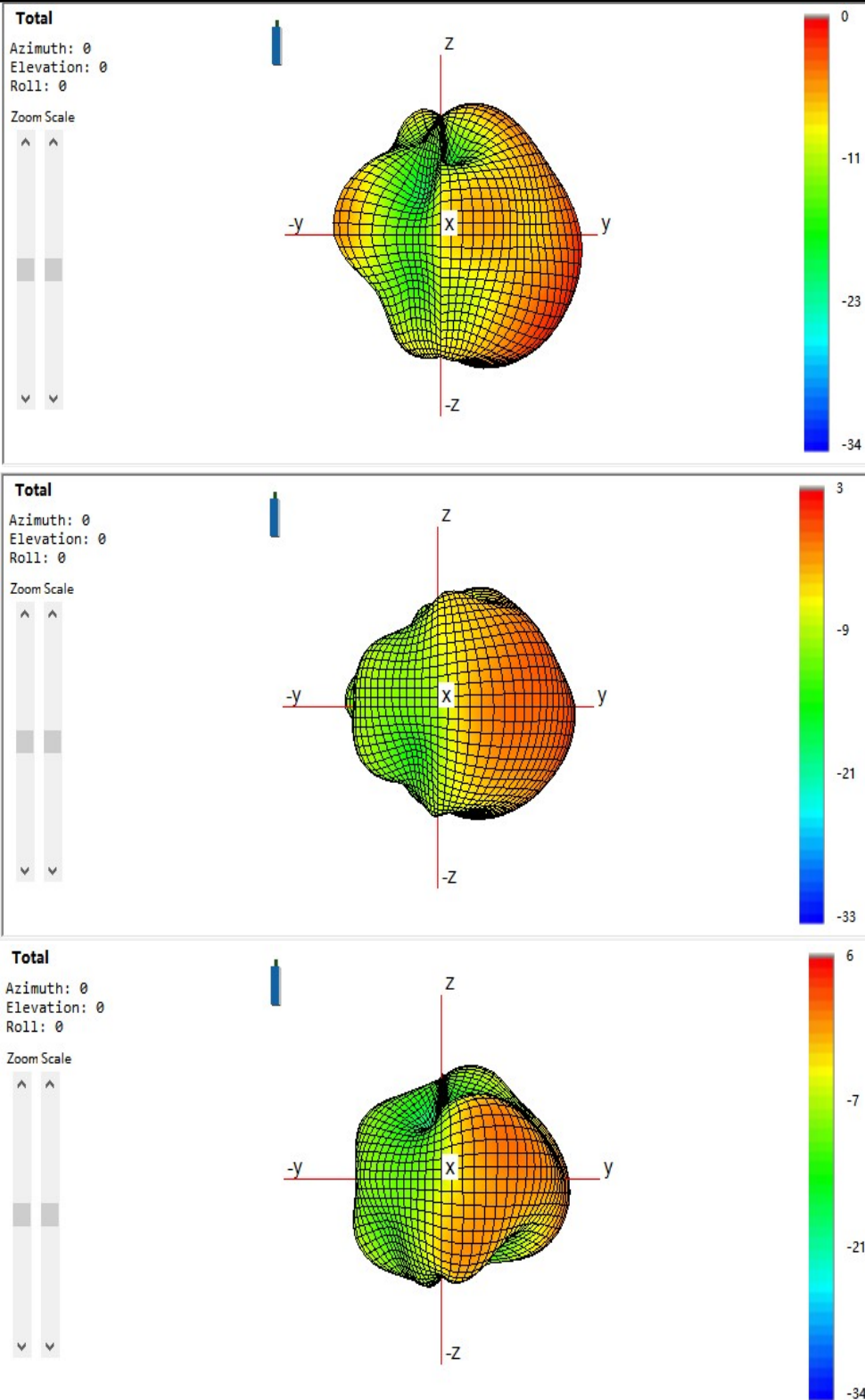
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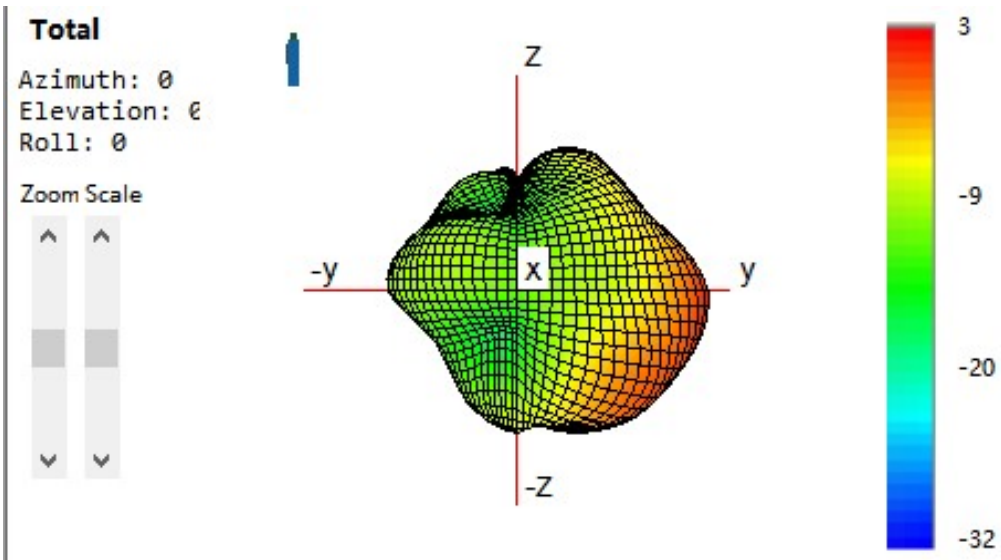
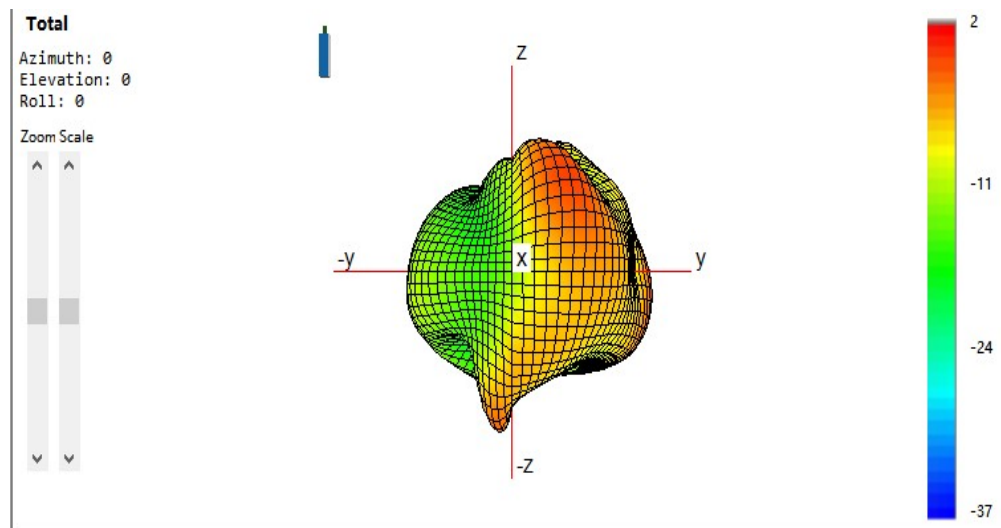
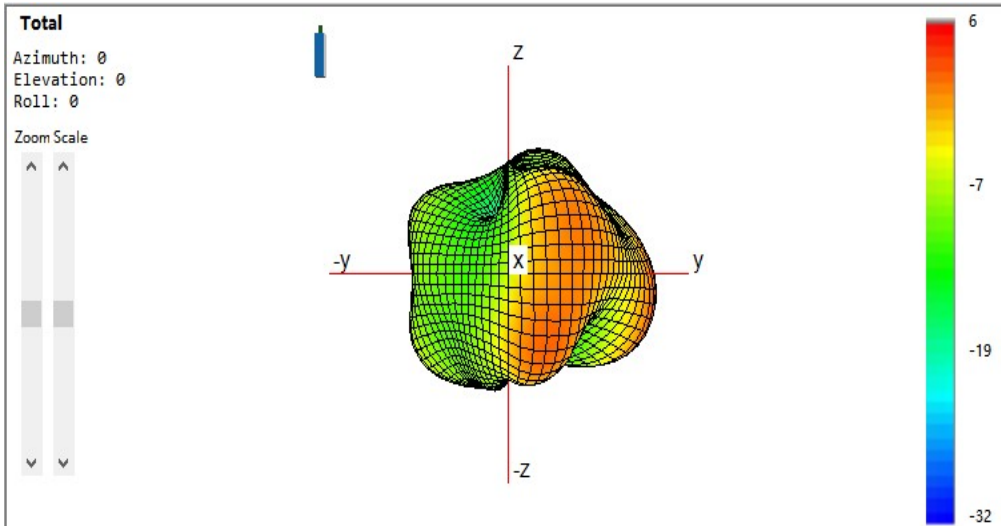
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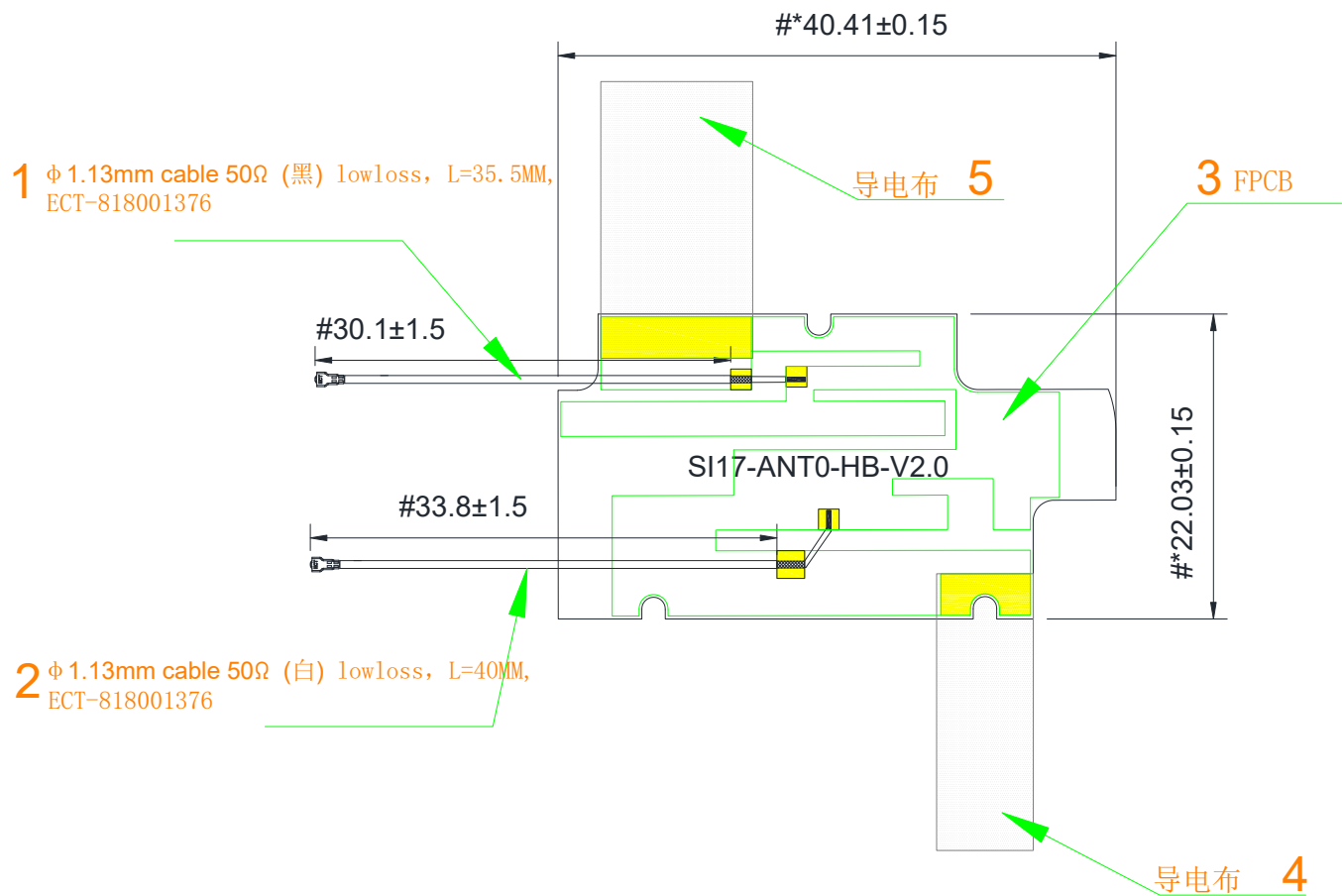
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5. Mechanical Specification:

5-1. Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing Figure 5-1-1



5	灰色导电布20X7MM	1
4	灰色导电布20X11MM	1
3	FPC 背胶3M467;ED铜0.5oz 基材PI 0.5mil有胶基材, 黑色覆盖膜PAD点镀NI2~7um, OSP, 盐雾24H	1
2	ϕ 1.13mm cable 50 Ω (白) lowloss L=40MM	1
1	ϕ 1.13mm cable 50 Ω (黑) lowloss L=35.5MM	1
PART No.	DESCRIPTION	MATERIAL

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