

WA-F-LB-02-271 Specification

1. Explanation of part number :

WA - F - LB - 02 - 271
(1) (2) (3) (4) (5)

(1) Product Type : Wireless Antenna

(2) Material: FPC

(3) Frequency : 2400~2500/5150~5850 MHZ

(4) Coaxial Cable Type : 02

(5) Suffix : 271

2. Storage Condition:

Temperature -40 to +70℃
Humidity 20 to 65 %RH

3. Operating Condition:

Temperature -40 to +70℃
Humidity 10 to 85 %RH

4. Electrical Specification :

*Those specifications were specially defined for **LG DXD** WIFI model, and all characteristics were measured under the model's handset testing jig .*

4-1. Frequency Band:

Frequency Band	MHz
WIFI\BT	2400~2500 & 5100~5800 & 5925~7125

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SCALE : UNIT : mm

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DESIGNED BY : 胡志清 APPROVED BY : 徐克文

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4-2. Impedance

50 ohm nominal

4-3. Matching circuit

None

4-4. VSWR

4-4.1 Measuring Method

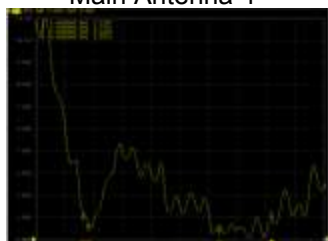
1.A 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR

2.Keeping this jig away from metal at least 20cm

4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (Unit MHz)	Spec	1	2	3	4	5
Main Antenna	2400	≤ 3.5	2.2	2.2	1.5	1.9	1.7
	2500	≤ 3.0	1.7	1.5	1.5	1.6	1.9
	5000	≤ 3.0	1.6	1.7	2	1.8	1.7
	6000	≤ 3.0	1.8	1.8	1.9	1.8	1.8
	Judgement		ok	ok	ok	ok	ok
Aux Antenna	2400	≤ 3.5	2.2	2	2.3	2.2	2.3
	2500	≤ 3.0	1.3	1.5	1.8	1.3	1.7
	5000	≤ 3.0	1.9	1.9	1.9	1.8	1.9
	6000	≤ 3.0	1.4	1.3	1.3	1.4	1.4
	Judgement		ok	ok	ok	ok	ok

Main Antenna-1



Main Antenna-2



Main Antenna-3



Main Antenna-4



Main Antenna-5



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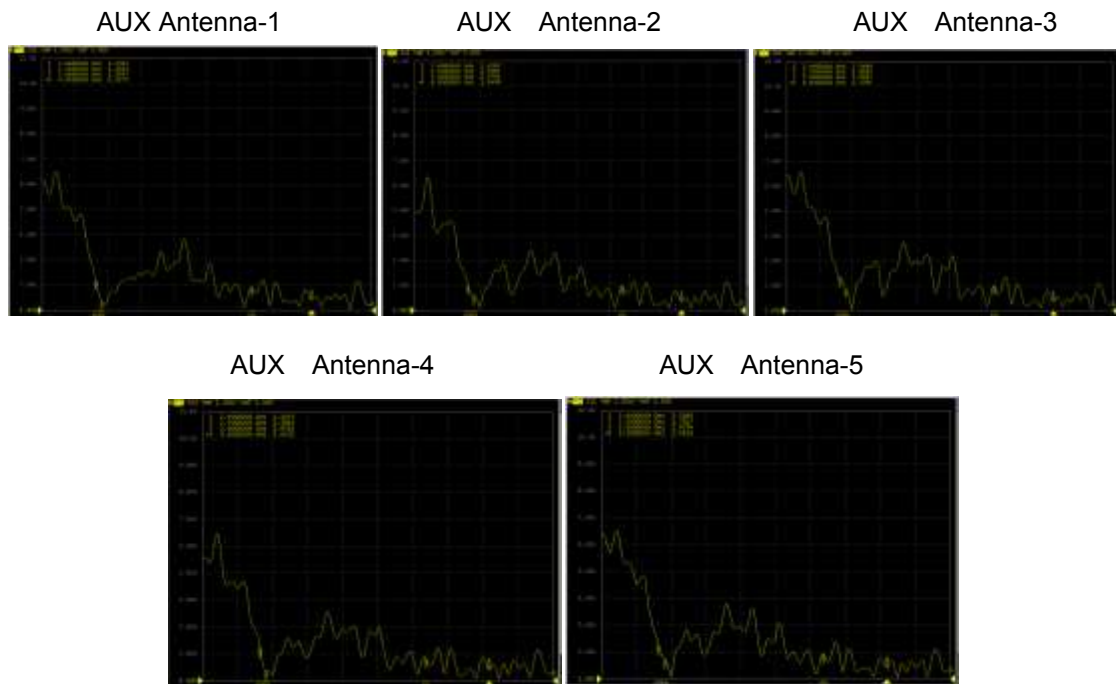
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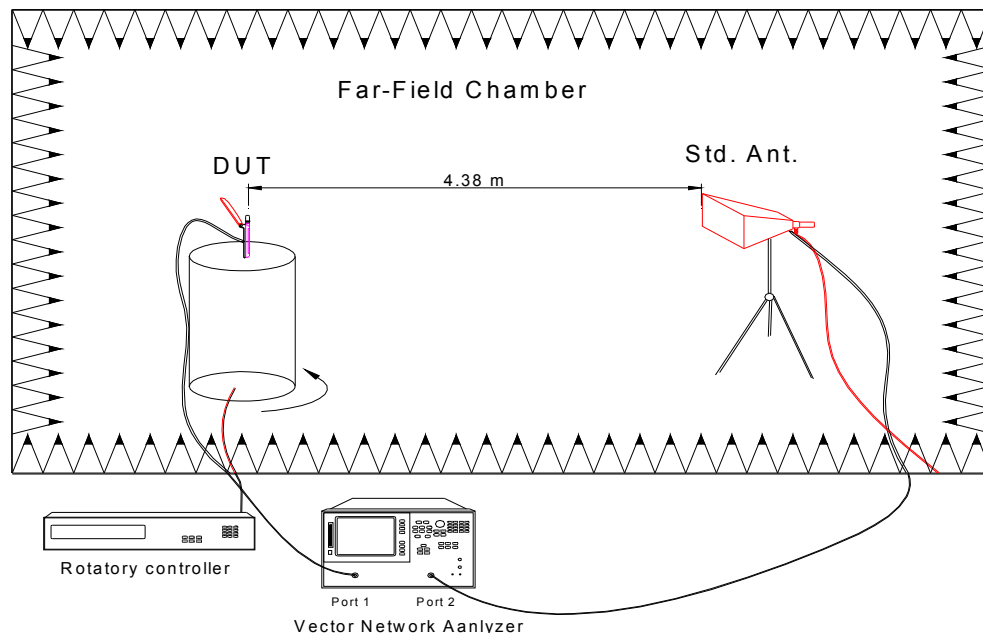
4-5. Efficiency and Gain

4-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
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

4-5.2 Chamber definition

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1. An anechoic chamber (8mx4mx3.5m) 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.

4-5-3-1 Electrical specification

Frequency (MHz)	Average Efficiency (%)	Average Gain(dBi)
2400~2500	>30	>-5
5100~5825	>30	>-5

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4-5.3-2 Efficiency and Gain Test Data

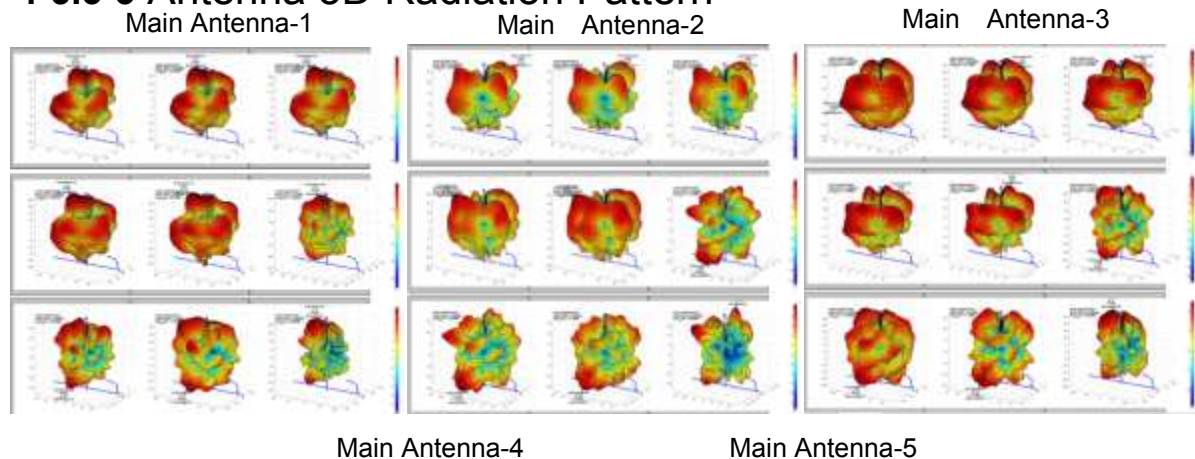
Frequency	Main Antenna-1			Main Antenna-2			Main Antenna-3		
	Efficiency	Average Gain	Peak Gain	Efficiency	Average Gain	Peak Gain	Efficiency	Average Gain	Peak Gain
2400MHz	44.4 %	-3.5 dBi	3.9 dBi	41.7 %	-3.8 dBi	1.5 dBi	45.4 %	-3.4 dBi	2.5 dBi
2425MHz	57.8 %	-2.4 dBi	5.3 dBi	43.3 %	-3.6 dBi	2.4 dBi	59.9 %	-2.2 dBi	3.2 dBi
2450MHz	52.4 %	-2.8 dBi	5.1 dBi	41.3 %	-3.8 dBi	2.3 dBi	53.6 %	-2.7 dBi	3.5 dBi
2475MHz	57.6 %	-2.4 dBi	6.0 dBi	44.4 %	-3.5 dBi	2.2 dBi	58.5 %	-2.3 dBi	4.7 dBi
2500MHz	61.3 %	-2.1 dBi	6.3 dBi	43.2 %	-3.6 dBi	1.4 dBi	62.3 %	-2.1 dBi	5.2 dBi
5150MHz	41.9 %	-3.8 dBi	2.9 dBi	31.3 %	-5.0 dBi	2.9 dBi	44.5 %	-3.5 dBi	2.7 dBi
5250MHz	42.5 %	-3.7 dBi	3.8 dBi	33.0 %	-4.8 dBi	2.5 dBi	43.8 %	-3.6 dBi	3.7 dBi
5350MHz	38.9 %	-4.1 dBi	0.5 dBi	32.3 %	-4.9 dBi	0.7 dBi	40.3 %	-3.9 dBi	3.1 dBi
5725MHz	44.4 %	-3.5 dBi	2.4 dBi	42.8 %	-3.7 dBi	1.9 dBi	44.3 %	-3.5 dBi	3.1 dBi
5825MHz	47.4 %	-3.2 dBi	2.7 dBi	44.6 %	-3.5 dBi	3.0 dBi	48.8 %	-3.1 dBi	3.0 dBi

Frequency	Main Antenna-4			Main Antenna-5					
	Efficiency	Average Gain	Peak Gain	Efficiency	Average Gain	Peak Gain			
2400MHz	46.1 %	-3.4 dBi	3.9 dBi	47.0 %	-3.3 dBi	2.7 dBi			
2425MHz	59.3 %	-2.3 dBi	4.2 dBi	61.6 %	-2.1 dBi	3.7 dBi			
2450MHz	51.0 %	-2.9 dBi	3.9 dBi	55.0 %	-2.6 dBi	3.7 dBi			
2475MHz	55.2 %	-2.6 dBi	4.4 dBi	59.8 %	-2.2 dBi	4.6 dBi			
2500MHz	58.0 %	-2.4 dBi	4.6 dBi	62.7 %	-2.0 dBi	5.0 dBi			
5150MHz	43.3 %	-3.6 dBi	3.7 dBi	44.1 %	-3.6 dBi	-0.6 dBi			
5250MHz	42.3 %	-3.7 dBi	3.8 dBi	43.1 %	-3.7 dBi	0.1 dBi			
5350MHz	38.2 %	-4.2 dBi	3.4 dBi	39.0 %	-4.1 dBi	-0.5 dBi			
5725MHz	43.3 %	-3.6 dBi	4.0 dBi	44.3 %	-3.5 dBi	1.2 dBi			
5825MHz	46.3 %	-3.3 dBi	4.7 dBi	48.3 %	-3.2 dBi	0.9 dBi			

Frequency	AUX Antenna-1			AUX Antenna-2			AUX Antenna-3		
	Efficiency	Average Gain	Peak Gain	Efficiency	Average Gain	Peak Gain	Efficiency	Average Gain	Peak Gain
2400MHz	39.2 %	-4.1 dBi	3.0 dBi	34.2 %	-4.7 dBi	3.2 dBi	36.4 %	-4.4 dBi	3.1 dBi
2425MHz	40.6 %	-3.9 dBi	3.4 dBi	38.0 %	-4.2 dBi	3.5 dBi	40.2 %	-4.0 dBi	3.3 dBi
2450MHz	28.3 %	-5.5 dBi	2.0 dBi	34.8 %	-4.6 dBi	2.8 dBi	36.5 %	-4.4 dBi	2.9 dBi
2475MHz	28.8 %	-5.4 dBi	1.8 dBi	46.5 %	-3.3 dBi	3.6 dBi	47.2 %	-3.3 dBi	4.5 dBi
2500MHz	30.6 %	-5.1 dBi	1.8 dBi	51.3 %	-2.9 dBi	3.9 dBi	50.9 %	-2.9 dBi	5.0 dBi
5150MHz	32.7 %	-4.9 dBi	2.9 dBi	33.0 %	-4.8 dBi	2.9 dBi	32.8 %	-4.8 dBi	2.7 dBi
5250MHz	33.3 %	-4.8 dBi	3.8 dBi	33.3 %	-4.8 dBi	2.5 dBi	34.1 %	-4.7 dBi	3.7 dBi
5350MHz	32.3 %	-4.9 dBi	0.5 dBi	32.7 %	-4.9 dBi	0.7 dBi	33.7 %	-4.7 dBi	3.1 dBi
5725MHz	34.2 %	-4.7 dBi	2.4 dBi	39.4 %	-4.0 dBi	1.9 dBi	39.4 %	-4.1 dBi	3.1 dBi
5825MHz	36.8 %	-4.3 dBi	2.7 dBi	41.0 %	-3.9 dBi	3.0 dBi	41.0 %	-3.9 dBi	3.0 dBi

Frequency	AUX Antenna-4			AUX Antenna-5					
	Efficiency	Average Gain	Peak Gain	Efficiency	Average Gain	Peak Gain			
2400MHz	36.2 %	-4.4 dBi	2.8 dBi	36.9 %	-4.3 dBi	3.3 dBi			
2425MHz	39.9 %	-4.0 dBi	3.2 dBi	40.6 %	-3.9 dBi	3.9 dBi			
2450MHz	36.1 %	-4.4 dBi	2.8 dBi	36.5 %	-4.4 dBi	3.4 dBi			
2475MHz	47.1 %	-3.3 dBi	4.0 dBi	47.5 %	-3.2 dBi	4.4 dBi			
2500MHz	51.2 %	-2.9 dBi	4.4 dBi	51.7 %	-2.9 dBi	4.5 dBi			
5150MHz	32.9 %	-4.8 dBi	3.7 dBi	33.0 %	-4.8 dBi	-0.6 dBi			
5250MHz	33.3 %	-4.8 dBi	3.8 dBi	33.9 %	-4.7 dBi	0.1 dBi			
5350MHz	33.2 %	-4.8 dBi	3.4 dBi	32.4 %	-4.9 dBi	-0.5 dBi			
5725MHz	39.2 %	-4.1 dBi	4.0 dBi	38.9 %	-4.1 dBi	1.2 dBi			
5825MHz	40.7 %	-3.9 dBi	4.7 dBi	41.1 %	-3.9 dBi	0.9 dBi			

4-5.3-3 Antenna 3D Radiation Pattern



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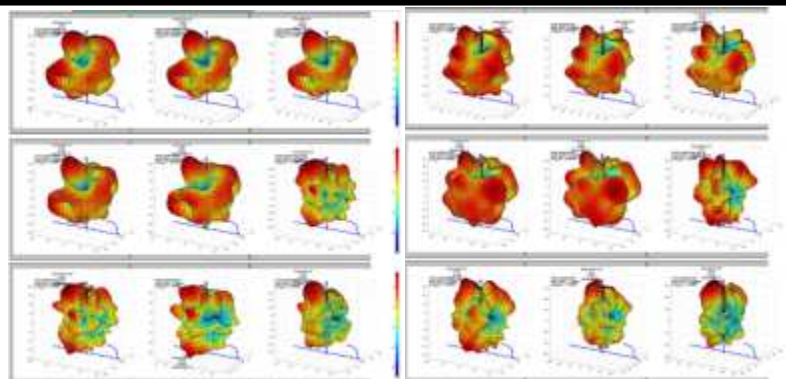
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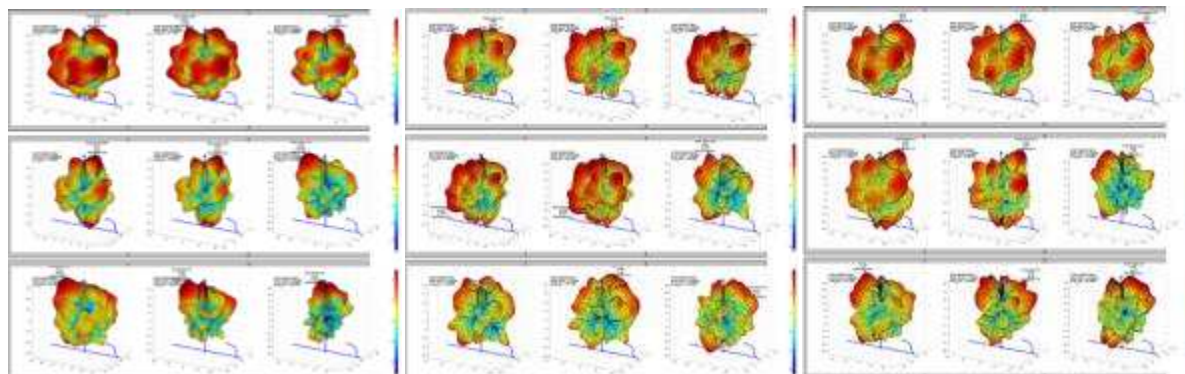
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AUX Antenna-1

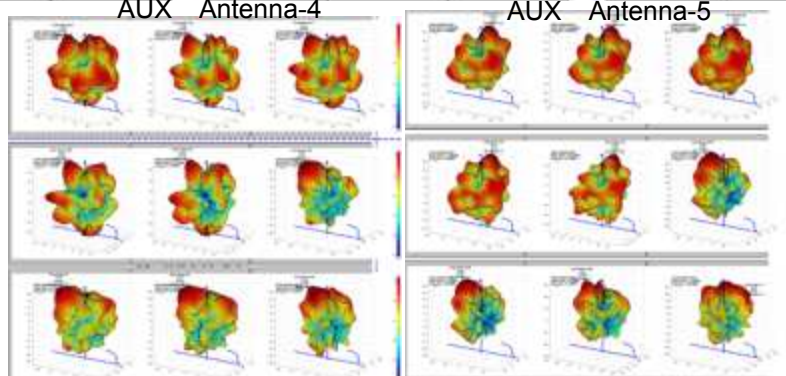
AUX Antenna-2

AUX Antenna-3



AUX Antenna-4

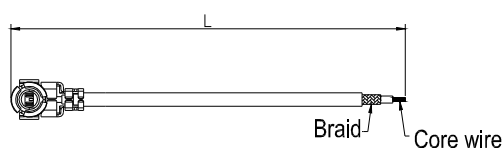
AUX Antenna-5



5. Mechanical Specification:

Connector: I-PEX: 20278; Cable: RF Cable 1.13 (Black)

Cable length: $150 \pm 2\text{mm}$ (Include connector)



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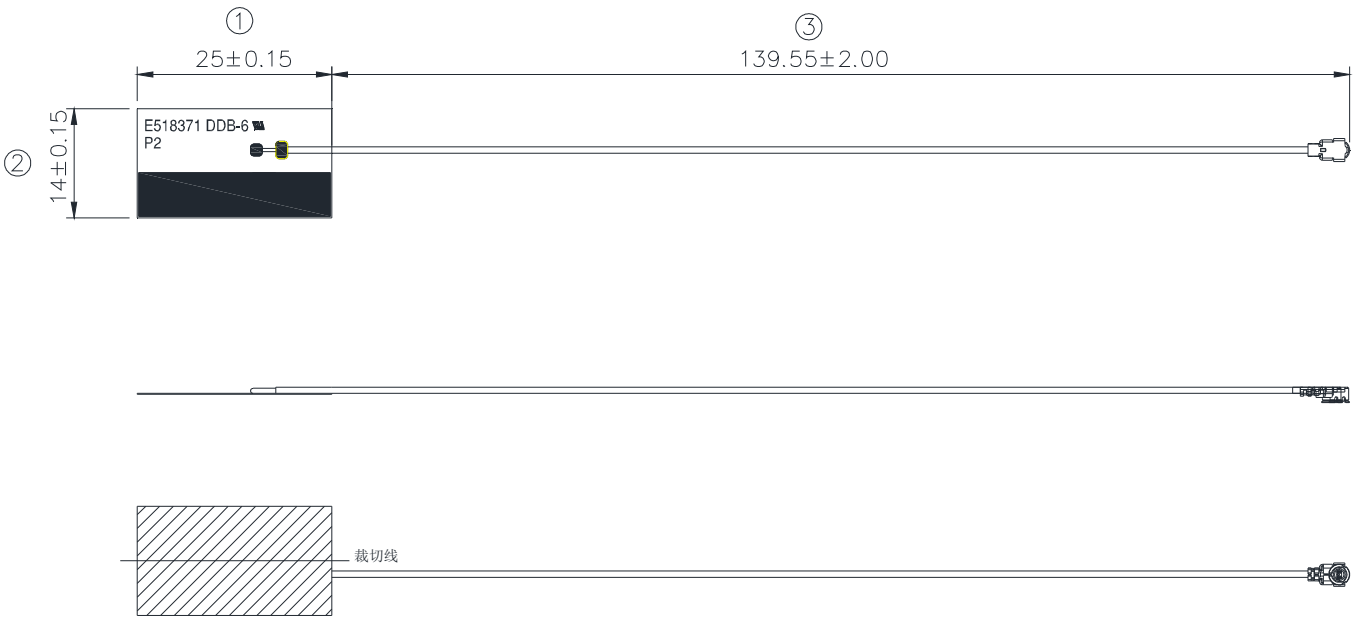
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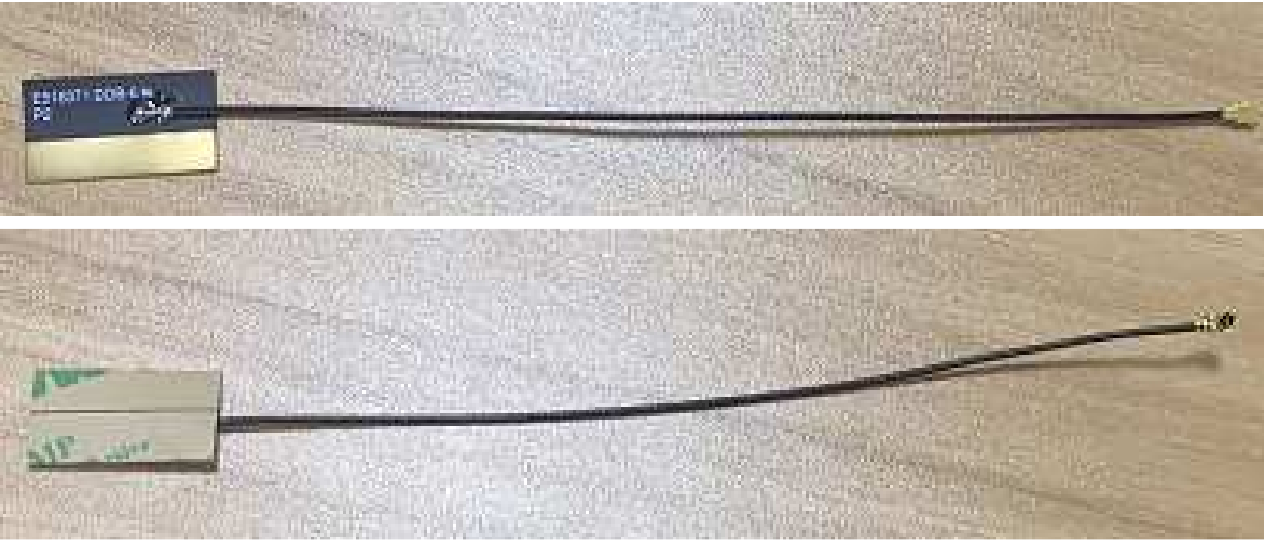
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Mechanical Configuration: (* dimension is important dimension)



实物照片:



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