

IA.0227.L5.3PI**Antenna Specification****1. Application:**

This application shall apply for antenna unit which shall be used such as automotive, conventional communications, smart home, etc..

1. Electrical Specification:

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

2-1. Frequency Band:

Frequency Band	MHz
5G rod antenna	690-960/1710-2690/3300-5000

2-2. Impedance

50 ohm nominal

2-3. VSWR**2-3-1.Measurement frequency points and VSWR value**

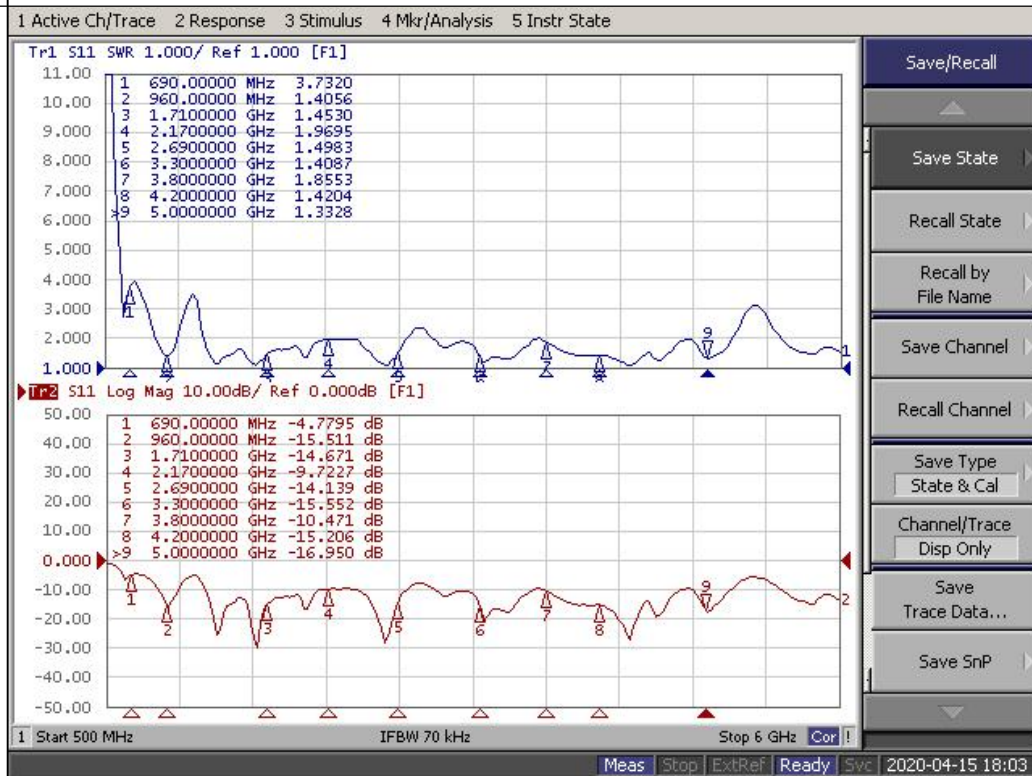
Frequency Band(MHz)	690	960	1710	2690	3300	5000
2-3-3. Typical Value:	3.7	1.4	1.4	1.5	1.4	1.3

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2-3-4 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 20 cm

2-3-5 Picture



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SCALE :

UNIT : mm

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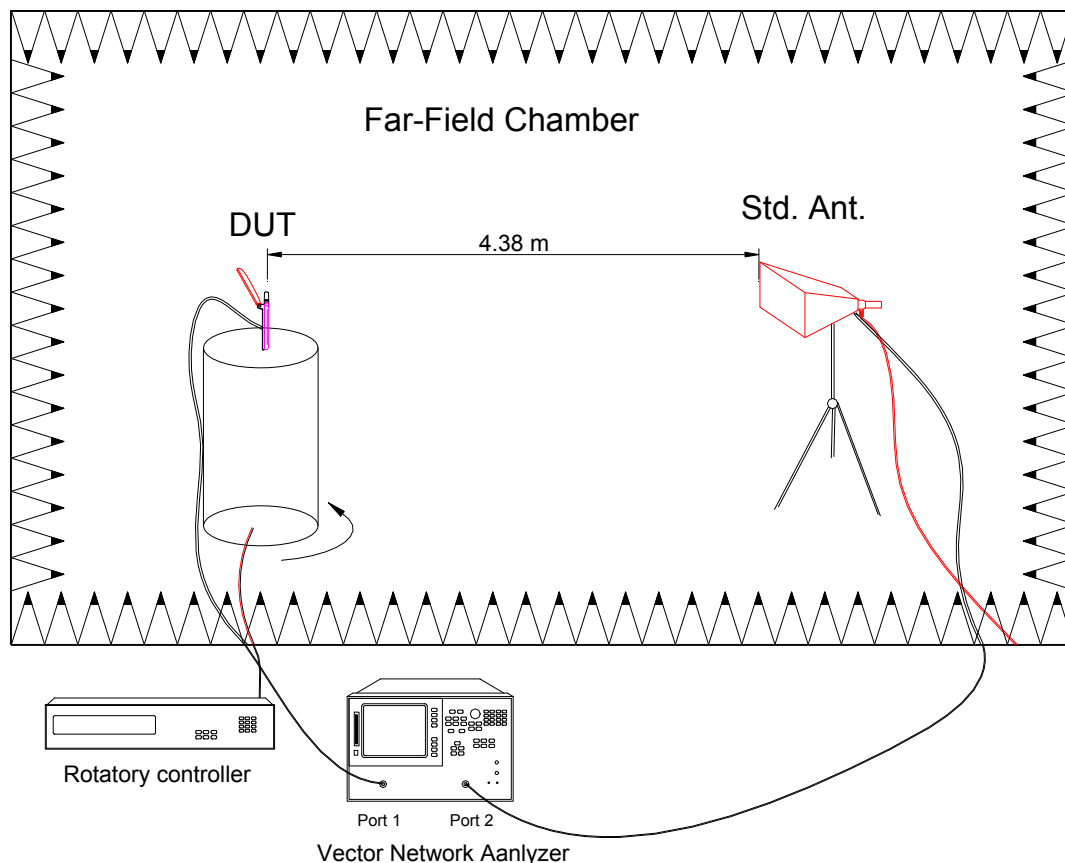
APPROVED BY: YS

2-4. Active test

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



1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m

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600MHz ~6GHz)

2-4-1 Efficiency and Gain

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
690	46.66	-3.31	2.54
700	43.76	-3.59	2
710	40.76	-3.9	1.01
720	39.81	-4	0.51
730	34.14	-4.67	0.45
740	33.6	-4.74	0.84
750	39.71	-5.27	0.6
760	38.19	-5.5	0.92
770	35.9	-5.87	0.73
780	33.63	-6.26	0.76
790	34.47	-6.11	0.34
800	32.43	-6.49	0.87
810	36.65	-5.74	0.57
820	34.85	-6.05	0.22
830	39.06	-5.37	0.26
840	40.49	-5.16	1.27
850	39.72	-4.01	2.23
860	41.75	-3.79	1.89
870	45.41	-3.43	1.57
880	44.79	-3.49	1.64
890	48.66	-3.13	2.34
900	49.4	-3.06	2.61
910	42.92	-3.67	2
920	45.8	-3.39	2.23
930	42.1	-3.76	1.7
940	49.86	-3.02	2.37
950	38.43	-4.15	0.99
960	46.22	-3.35	1.59

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1710	69.39	-1.59	3.86
1720	77.02	-1.13	4.47
1730	67.89	-1.68	3.88
1740	80.86	-0.92	4.7
1750	72.44	-1.4	3.95
1760	76.71	-1.15	4.03
1770	71	-1.49	3.36
1780	82.72	-0.33	4.56
1790	80.33	-0.95	3.69
1800	81.98	-0.51	4.13
1810	70.85	-1.5	2.97
1820	76.82	-1.15	3.36
1830	66.53	-1.77	2.64
1840	75.19	-1.24	3.14
1850	70.09	-1.54	2.7
1860	71.28	-1.47	2.6
1870	66.3	-1.78	2.19
1880	68.19	-1.66	2.16
1890	65.29	-1.85	2.1
1900	58.86	-2.3	1.53
1910	59.01	-2.29	1.6
1920	53.79	-2.69	1.37
1930	66.31	-1.78	3.05
1940	62.9	-2.01	3.13
1950	71.68	-1.45	4.22
1960	65.54	-1.83	3.89
1970	77.13	-1.13	4.78
1980	78.81	-1.03	4.55

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Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1990	80.78	-0.93	4.74
2000	75.65	-1.21	4.36
2010	54.11	-2.67	2.99
2020	56.52	-2.48	3
2030	58.7	-2.31	3.07
2040	58.57	-2.32	2.85
2050	59.81	-2.23	2.72
2060	55.97	-2.52	2.48
2070	54.92	-2.6	2.33
2080	57.07	-2.44	2.9
2090	55.34	-2.57	2.74
2100	56.05	-2.51	2.98
2110	60.37	-2.19	3.21
2120	71.63	-1.45	4.15
2130	63.06	-2	3.44
2140	80.38	-0.95	4.69
2150	71.58	-1.45	4.07
2160	76.4	-0.63	5.1
2170	63.11	-2	3.72
2180	83.06	-0.81	5.13
2190	67.91	-1.68	4.22
2200	79.97	-0.46	5.45
2210	68.92	-1.62	4.27
2220	81.08	-0.91	4.91
2230	62.28	-2.06	3.85
2240	70.52	-1.52	4.31
2250	63.17	-2	3.95
2260	71.13	-1.48	4.38

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2320	63.54	-1.97	4.02
2330	63.99	-1.94	4.25
2340	73.87	-1.32	4.82
2350	72.46	-0.34	3.89
2360	70.45	-1.52	3.55
2370	74.26	-0.26	3.72
2380	72.26	-1.41	4.37
2390	89.97	-0.46	5.27
2400	79.17	-1.01	4.67
2410	75.71	0.24	4.89
2420	81.08	-0.91	4.72
2430	78.91	-0.51	5.06
2440	75.96	-1.19	4.44
2450	86.13	-0.65	4.91
2460	77.77	-1.09	4.54
2470	81.34	-0.9	4.58
2480	79.77	-0.98	4.6
2490	83.18	-0.8	4.71
2500	84.39	-0.74	4.99
2510	79.67	-0.99	4.56
2520	82.53	-0.83	4.83
2530	76.64	-1.16	4.42
2540	80.25	-0.96	4.65
2550	75.98	-1.19	4.4
2560	85.45	-0.68	5.01
2570	78.72	-1.04	4.5
2580	80.9	-0.92	4.69
2590	69.34	-1.59	4

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2270	58.64	-2.32	3.75
2280	61.63	-2.1	3.87
2290	57.01	-2.44	3.73
2300	61.85	-2.09	3.92
2310	59.65	-2.24	3.92

2600	75.58	-1.22	4.3
2610	64.81	-1.88	3.66
2620	68.86	-1.62	3.85
2630	61.74	-2.09	3.43
2640	64.66	-1.89	3.66

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2650	61.21	-2.13	3.47
2660	65.65	-1.83	3.79
2670	63.93	-1.94	3.62
2680	62.1	-2.07	3.65
2690	60.77	-2.16	3.31

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
4200	52.03	-2.84	1.59
4250	48.93	-3.1	1.12
4300	70.11	-1.54	2.97
4350	71.91	-1.43	3.02
4400	67.84	-1.69	2.79
4450	62.13	-0.86	3.17
4500	53.24	-3.64	1.08
4550	51.72	-4.99	1.96
4600	51.5	-5.02	1.66
4650	55.32	-4.52	1.45
4700	54.5	-4.62	1.65
4750	50.3	-3.95	1.01
4800	52.65	-4.86	1.85
4850	52.79	-4.84	1.07
4900	50.29	-2.99	0.46
4950	43.46	-3.62	0.54
5000	47.61	-3.22	1.51

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
3300	60.35	-2.19	2.68
3350	57.86	-2.38	1.6
3400	53.42	-2.72	1.55
3450	67.62	-1.7	1.31
3500	62.22	-2.06	1.31
3550	62.91	-2.01	1.37
3600	62.51	-2.04	1.38
3650	58.21	-2.35	1.46
3700	54.02	-2.67	1.1
3750	56.47	-2.48	1.88
3800	50.21	-2.99	1.42

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X=± **X.X=±** **X.XX=±**
ANGLES=± **HOLEDIA=±**



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SCALE :

UNIT : mm

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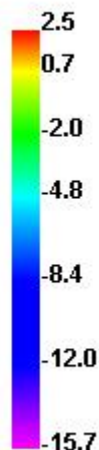
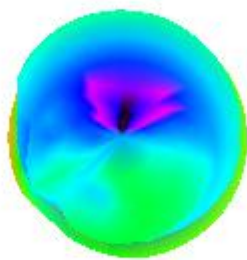
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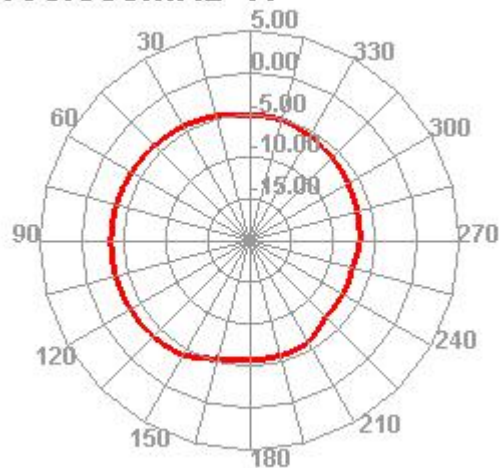
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2-4-2: Radiation direction

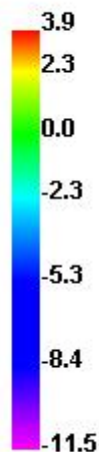
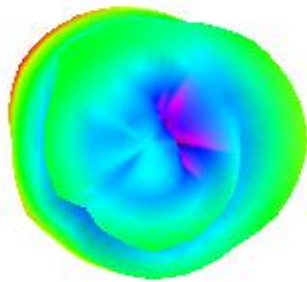
690.000MHz



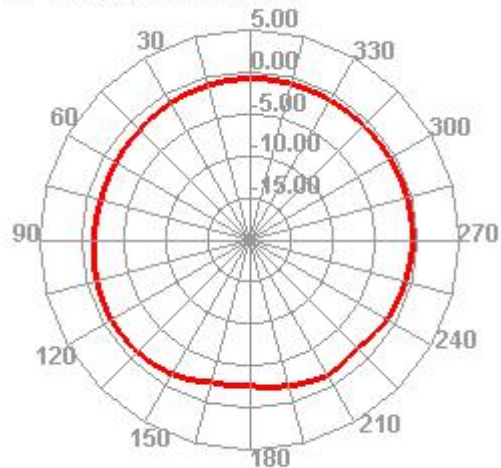
690.000MHz H



1710.000MHz



1710.000MHz H



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$X = \pm$ $X.X = \pm$ $X.XX = \pm$

ANGLES = $\pm$ HOLEDIA = $\pm$

SCALE :

UNIT : mm

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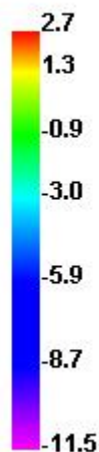
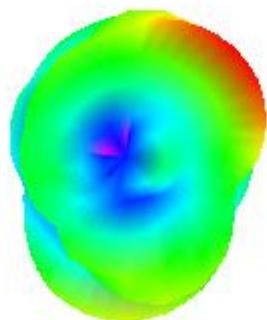
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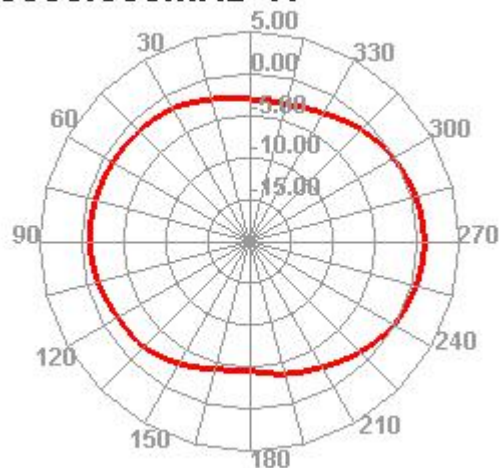
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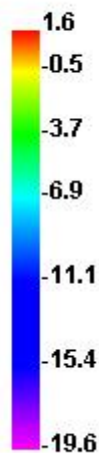
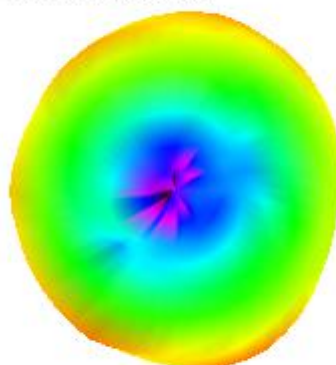
3300.000MHz



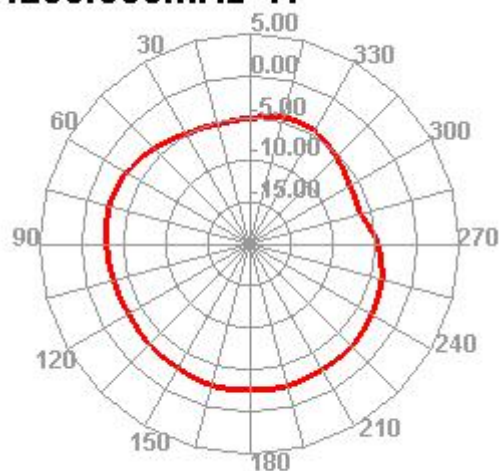
3300.000MHz H



4200.000MHz



4200.000MHz H



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ANGLES=± HOLEDIA=±

SCALE :

UNIT : mm

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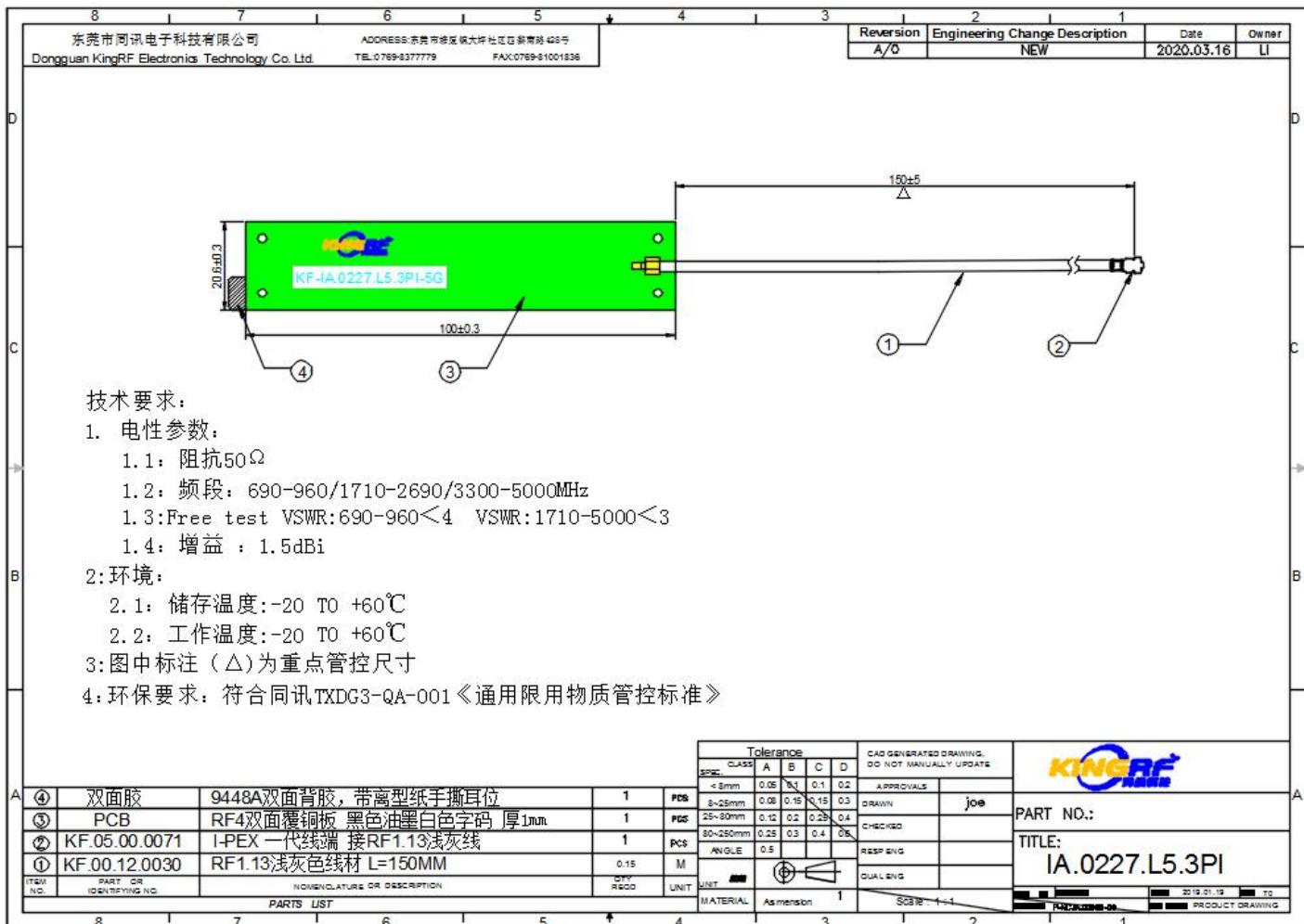
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APPROVED BY: YS

3. Mechanical Specification:

3-1. Mechanical Configuration (Unit: mm)

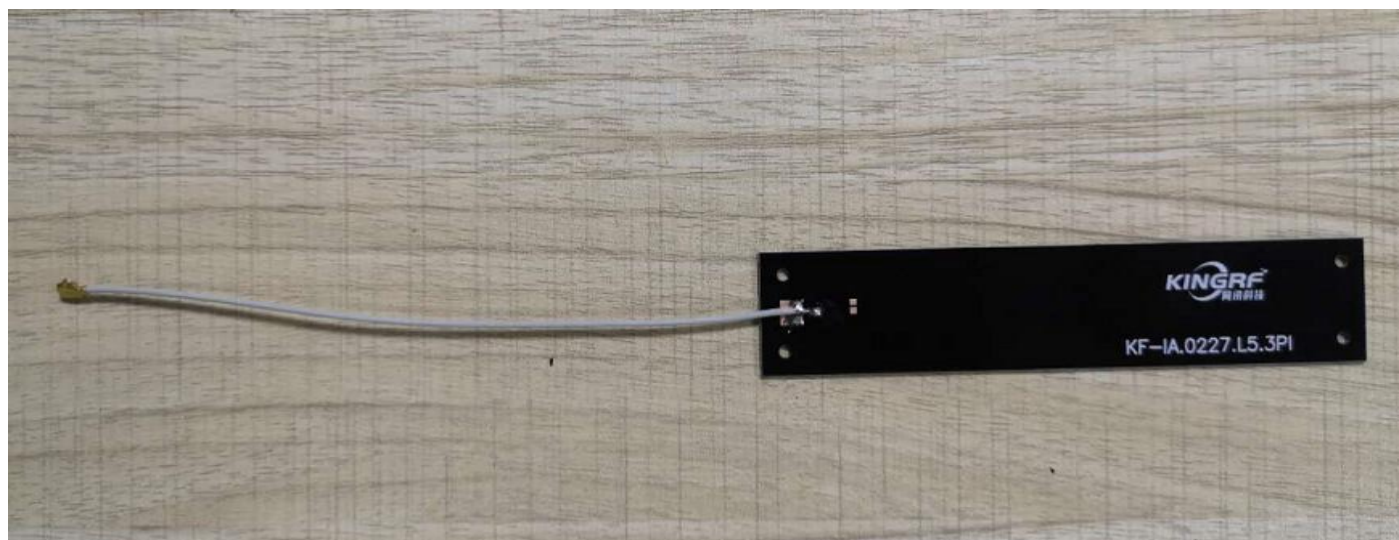
The appearance of the antenna is according to drawing



3-2. Connector appearance:

IPEX-I

3-3.Product Image:



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5 .Packaging specification:

Product number: xxx

Product model: xxx

一、Label requirements:

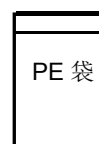
Customer	xxx		
supplier	xxxxxx		
Material coding	xx		
Product model	xx		
Number	XXX PCS	Factory date	X X X
Remarks			

二、Boxing:

Job description:

1. Inner packaging:

XXpcs A bag



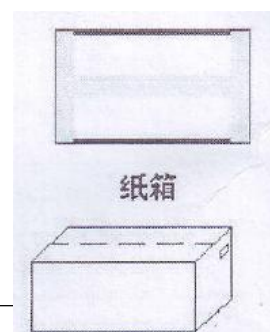
2. External packaging:

Xx PCS ;

3. Matters needing attention:

a. Whether to add partition and pearl cotton;

b. Label attachments, such as ROHS, etc.;



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$ANGLES=\pm$	$X.XX=\pm$			
	$HOLEDIA=\pm$			
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