





## 2-3. VSWR ,Efficiency ,Matching and Active Data :

### 2-3.1 VSWR:

Frequency Band	1575	2400	2500	5150	5950
2-3-1. Typical Value:	$\leq 2$	$\leq 2.5$	$\leq 2$	$\leq 3.0$	$\leq 3.0$

2-3-2 Measuring Method	<ol style="list-style-type: none"> <li>1. A 50Ω coaxial cable is connected to the fpcb antenna. Then this cable is connected to a network analyzer to measure the VSWR.</li> <li>2. Keeping this jig away from metal at least 20 cm.</li> </ol>
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UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±2      X.X=±0.1      X.XX=±0.05

ANGLES=±

HOLEDIA=±

SCALE :

UNIT : mm

DRAWN BY : 黄土勇

CHECKED BY : 肖坤雄

DESIGNED BY : 苏汉鹏

APPROVED BY : 王伟

TITLE : GH6322-4IN1ANT-V2.0Specification



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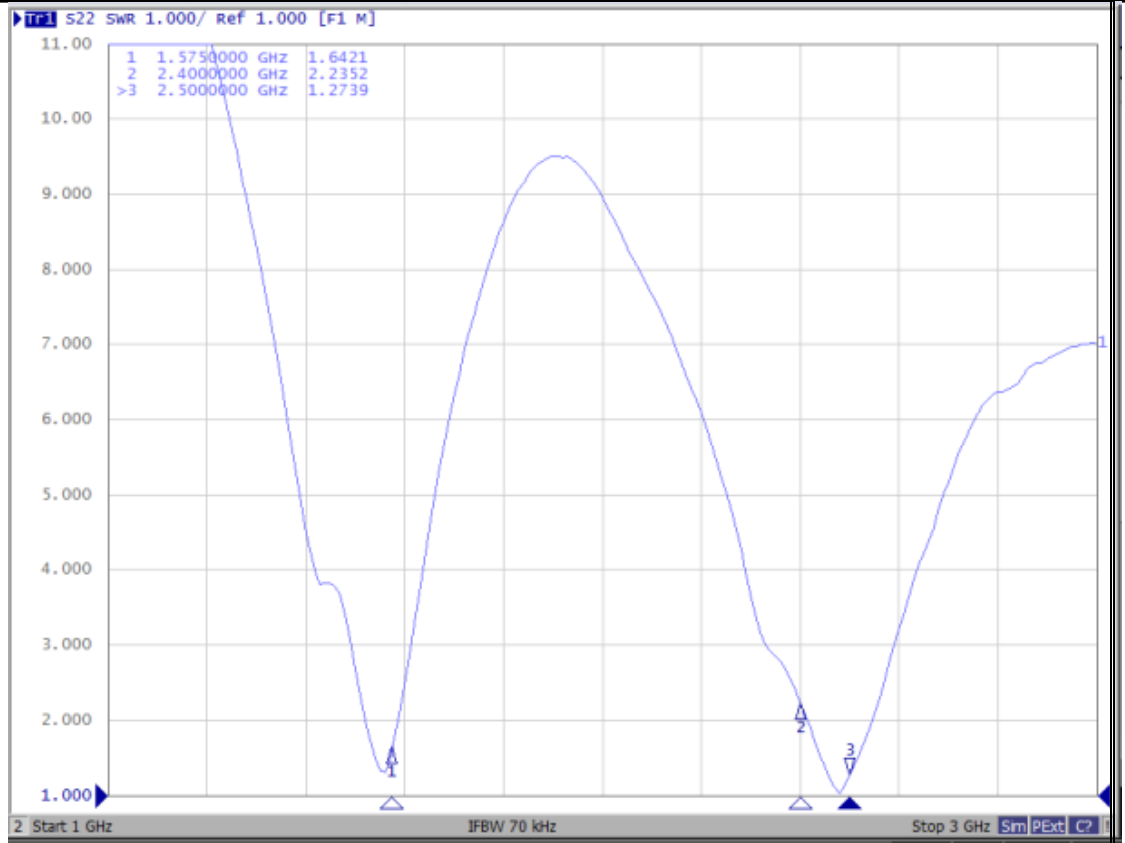
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## 2-4. Measure and Chamber

### 2-4-1 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

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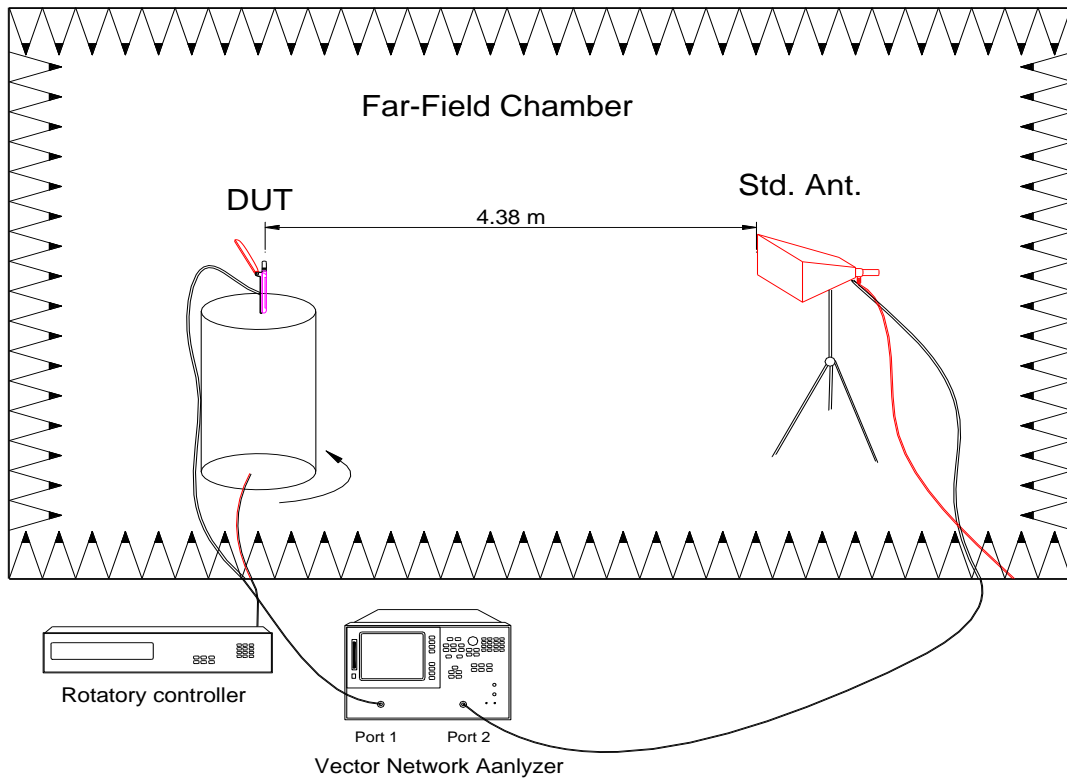
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## 2-4-2 Chamber definition



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)

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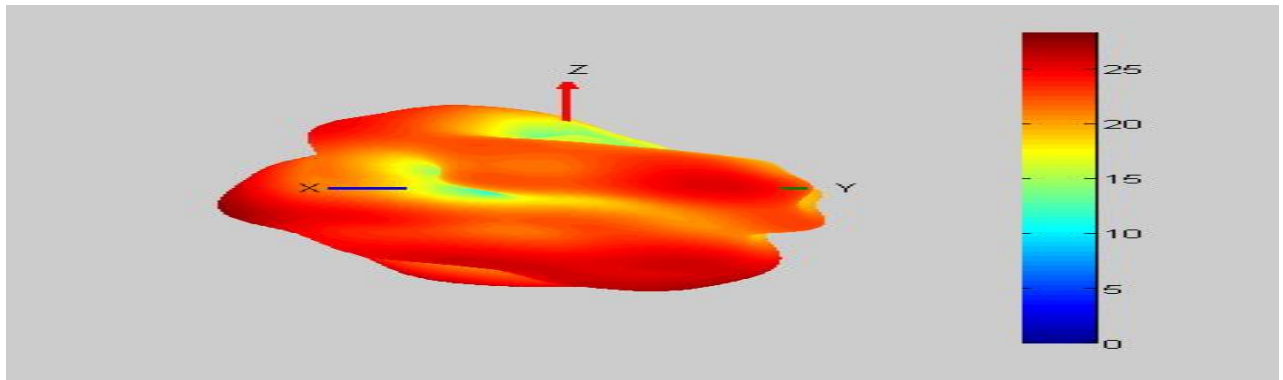
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## 2-4-3 Antenna Efficiency

GPS				2.4G WIFI				5G WIFI			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
1550	1.16	-4.66	34%	2400	-0.18	-5.03	31%	5150	0.08	-5.01	32%
1555	1.47	-4.46	36%	2410	0.38	-4.69	34%	5200	-0.2	-5.14	31%
1560	1.45	-4.57	35%	2420	0.92	-4.32	37%	5250	-1.13	-5.66	27%
1565	1.44	-4.53	35%	2430	0.53	-4.53	35%	5300	-0.19	-5.88	26%
1570	1.42	-4.49	36%	2440	0.68	-4.64	34%	5350	0.15	-6.01	25%
1575	1.26	-4.49	36%	2450	1.15	-4.5	35%	5400	-0.03	-6	25%
1580	1.07	-4.54	35%	2460	0.82	-4.75	34%	5450	0.61	-6.4	23%
1585	0.85	-4.59	35%	2470	0.68	-4.97	32%	5500	-0.35	-6.46	23%
1590	0.49	-4.72	34%	2480	1.01	-4.9	32%	5550	-0.26	-6.5	22%
1595	0.13	-5.03	31%	2490	0.78	-5.05	31%	5600	-0.12	-6.41	23%
1600	0.11	-5.1	31%	2500	0.38	-5.36	29%	5650	-2.38	-6.58	22%
								5700	-2.36	-7.32	19%
								5750	-1.18	-6.85	21%
								5800	-1.32	-5.58	28%
								5850	-1.66	-7.14	19%

## 3. 3D Radiation Pattern

GPS [1575MHz]



BT/WiFi 2.4GHz C0 [2400MHz]

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ANGLES=±

HOLEDIA=±

SCALE :

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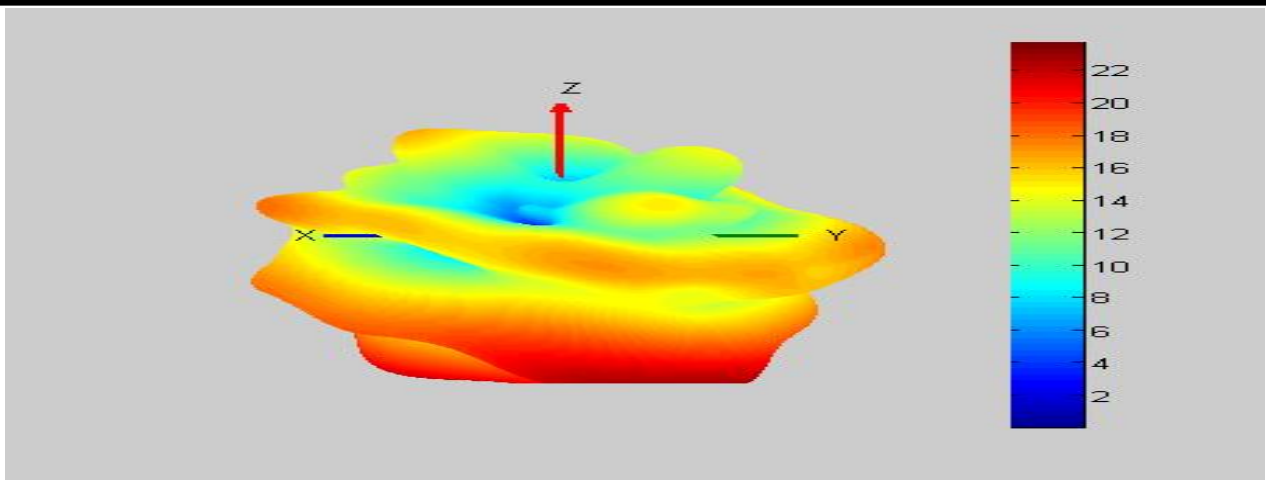
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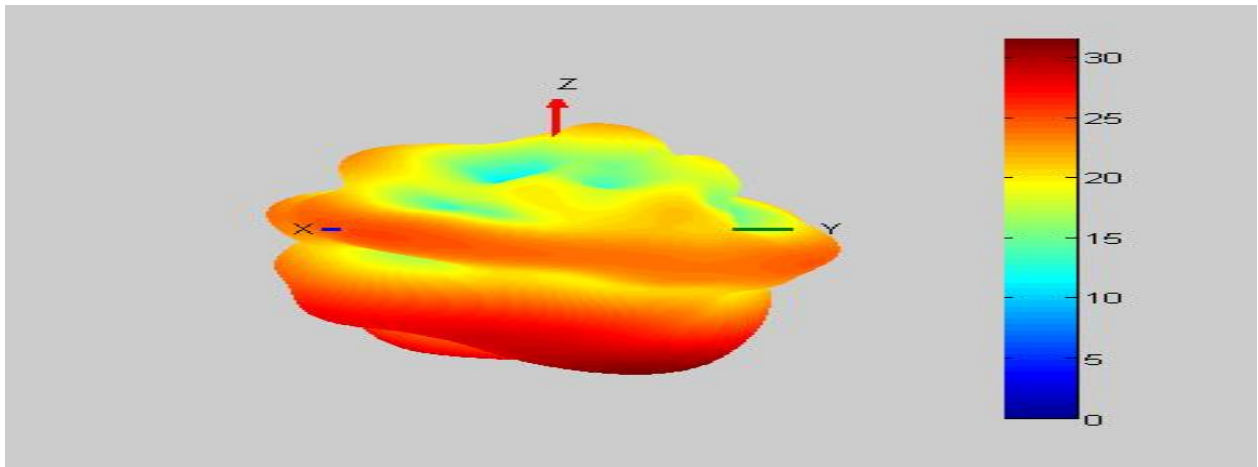
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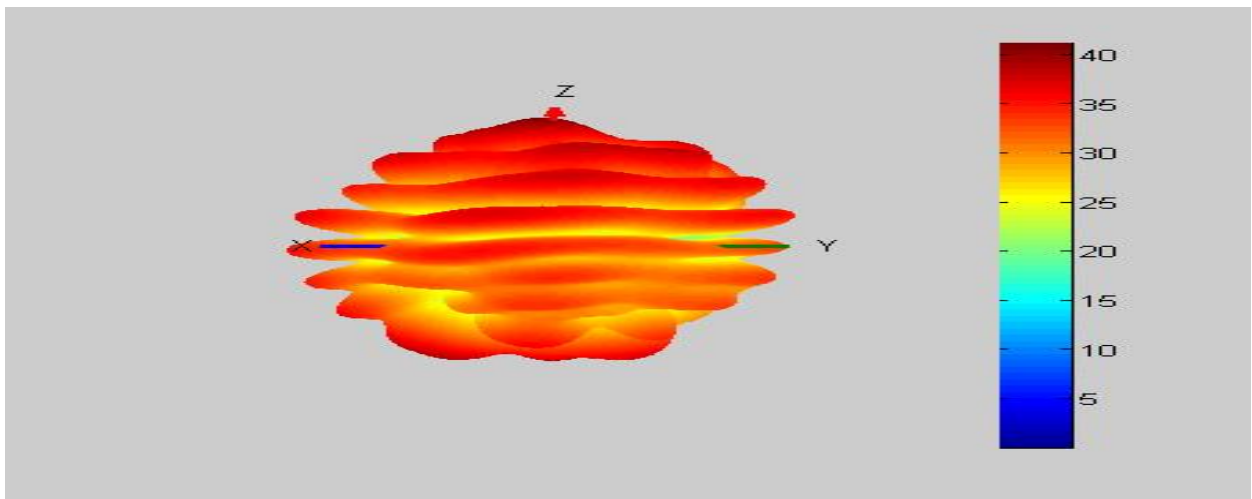
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**BT/WiFi 2.4GHz C0 [2500MHz]**



**WiFi 5GHz [5150MHz]**



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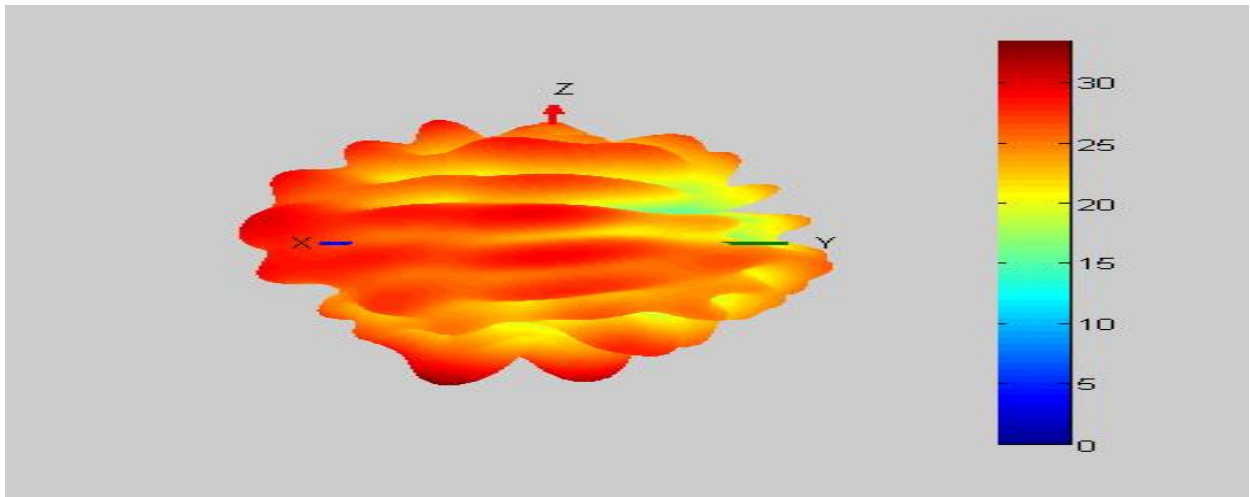


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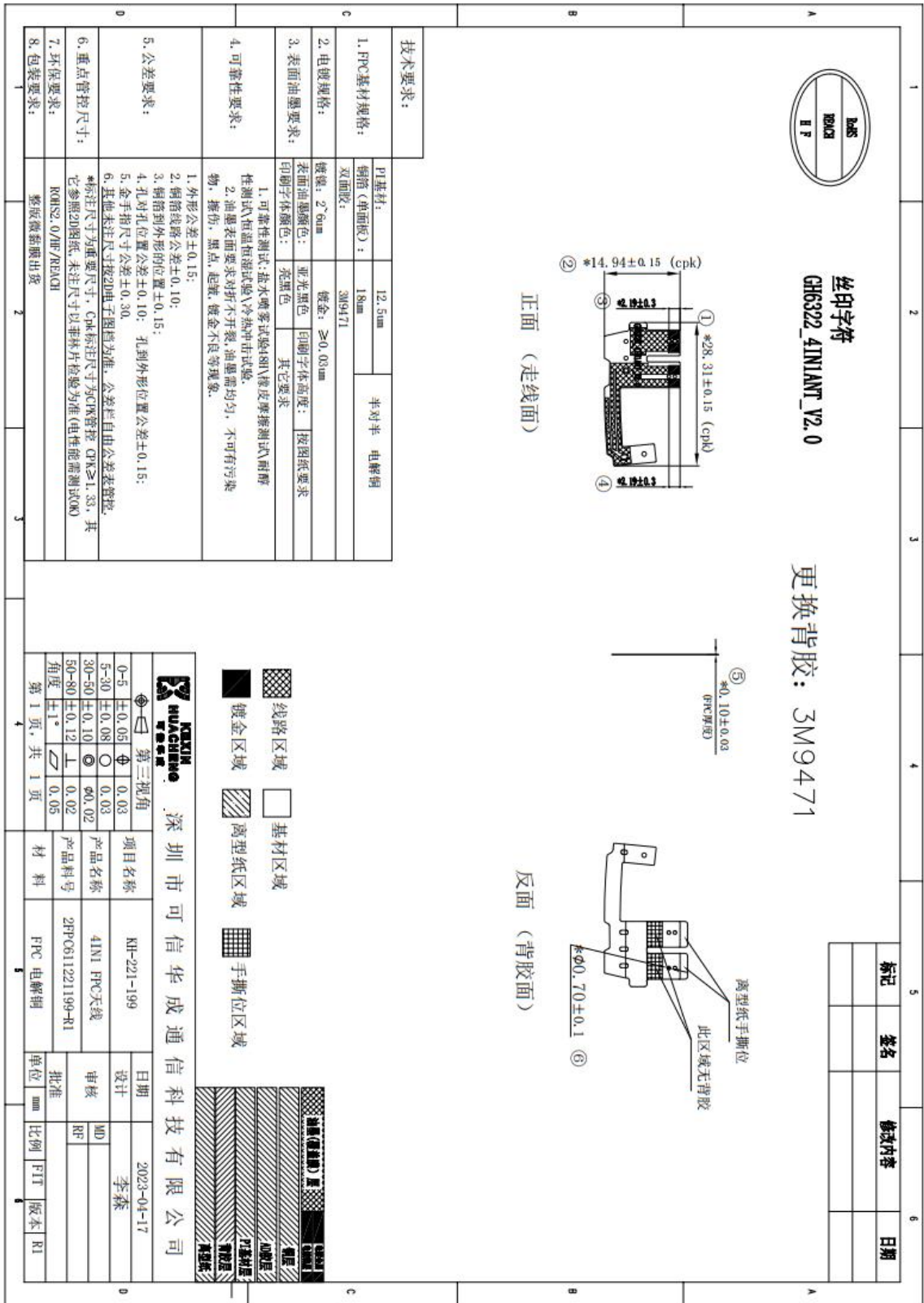
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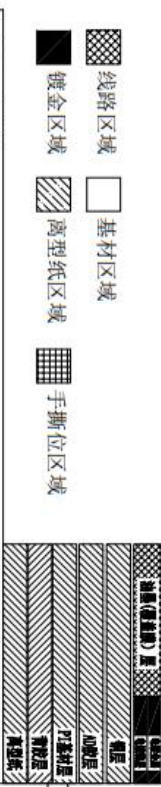
#### 4. Antenna Dimensions:

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第三视角	项目名称	日期	设计	2023-04-17	李森
0-5 ±0.05	产品名称	审核	MD		
5-30 ±0.08	产品料号	批准	RF		
30-50 ±0.10	2FPC611221199-R1				
50-80 ±0.12					
角度 ±1°					
第 1 页, 共 1 页	材料	FPC 电解铜	单位	mm	比例
					1:1
					版本
					R1



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ANGLES=±      HOLEDIA=±

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