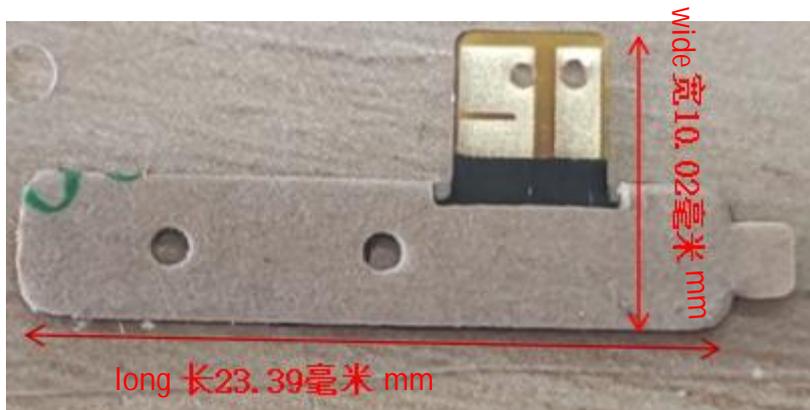


目录

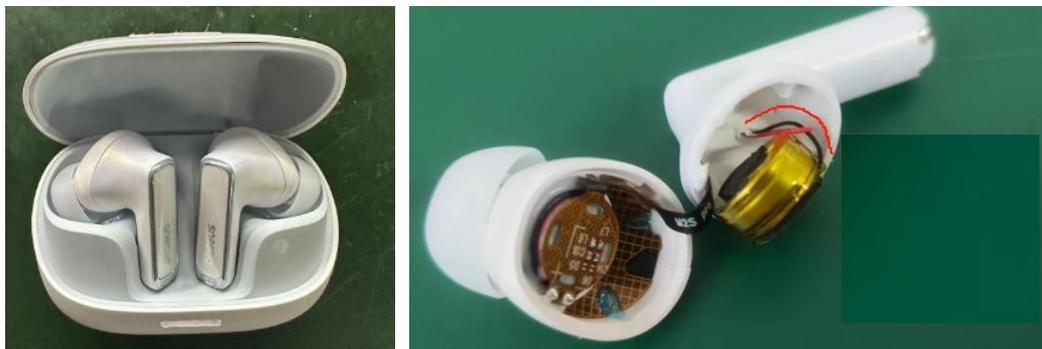
1、 Samples, instructions, and assembly methods four.....	4
2、 Testing equipment and projects.....	5-6
3、 Chamber Connection and Coordinates.....	6-7
4、 Antenna Matching Network	7
5. Antenna Electrical Performance Test	7-10
6、 Antenna Structure Drawing.....	11-12
7. Antenna Packaging Drawing	13

1. 样品图片. 电器参数说明及装配方式 (Sample picture and description) :



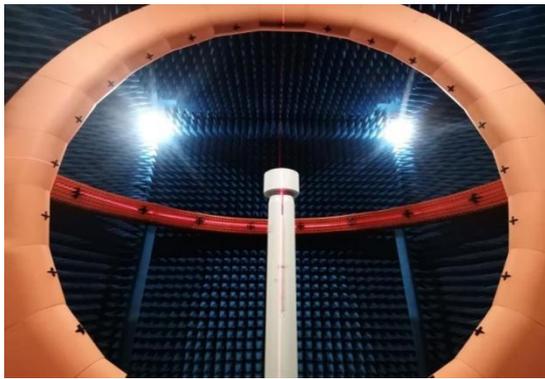
电气参数说明 (Electrical Specifications)	
频率范围 (Frequency range)	(2400-2500)MHz
特性阻抗 (impedance)	50 ohm
电压驻波比 (VSWR)	≤3
峰值增益 (Gain)	-0.56dBi
极化形式 (Polarization)	线性 linear
辐射方向 (Radiation direction)	全向 omnidirectional
连接方式说明 (Connection Mode Description)	
连接器 (connector)	/
线缆规格 (Cable specifications)	/
工作/储存温度 (Working/Storage temperature)	
工作温度 (Working temperature)	-30℃~65℃
储存温度 (Storage temperature)	-30℃~75℃

装配方式 Assembly method

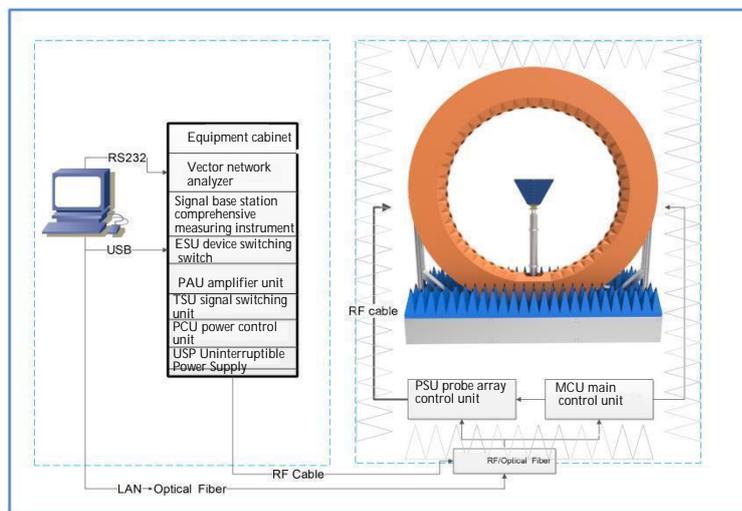


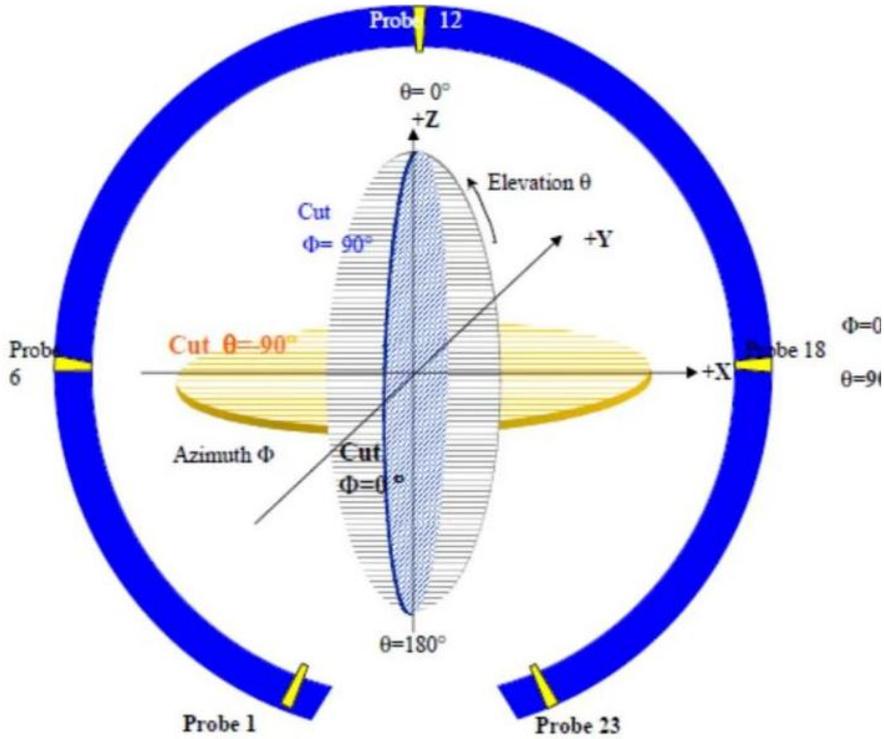
2. 测试设备及项目 (Test equipment and items) :

类别 (Class)	测试项目 (Test item)	设备 (Equipment)
1. S parameter	1. 回波损耗(RL) 2. 驻波比 (VSWR) 3. 史密斯原图(Smith chart)	网分 (VNA) : Agilent E5071B R&S ZVB8 Protek A333
2. 耦合测试 (Coupling testing)	1. 发射功率 (MAX Power) 2. 接收灵敏度 (MIN Sens)	1.2G/3G Tester: Agilent 8960 2.The coupling box: TESCO TC-5060A 3. 3D Chamber: ETS 3D Chamber (5x3x3)
3. 3D 无源测试 (Passive Test)	1. 效率 (Effeciency) 2. 增益 (Gain) 3. 辐射方向图 (Radiation pattern)	1. 3D Chamber: TEM24 3D Chamber(5x5x5) ETS 3D Chamber (5x3x3) 2. 网分 (VNA) : Agilent E5071B R&S ZVB8
4.3D 有源测试 (Active Test)	1. 3D 功率 (TRP) 2. 3D 灵敏度 (TIS) 3. 吞吐率 (Throughput rate)	1. 3D Chamber: TEM24 3D Chamber(5x5x5) ETS 3D Chamber (5x3x3) 2.2G/3G Tester: Agilent 8960 3.4G Tester: MT8820C/CMW500 4.WIFI/BT/NB-iot Tester: CMW500 5. 5G Tester: SP9500-CTS 6.Head: HEAD-P10 (FACE-P10)

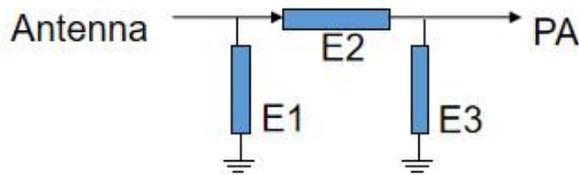


3. 暗室连接及坐标 (Chamber connection and coordinates) :





4. 天线匹配网络 (Antenna matching network) :



Tag number parameter

L	位号	参数
	E1	NC
	E2	10PF
	E3	NC

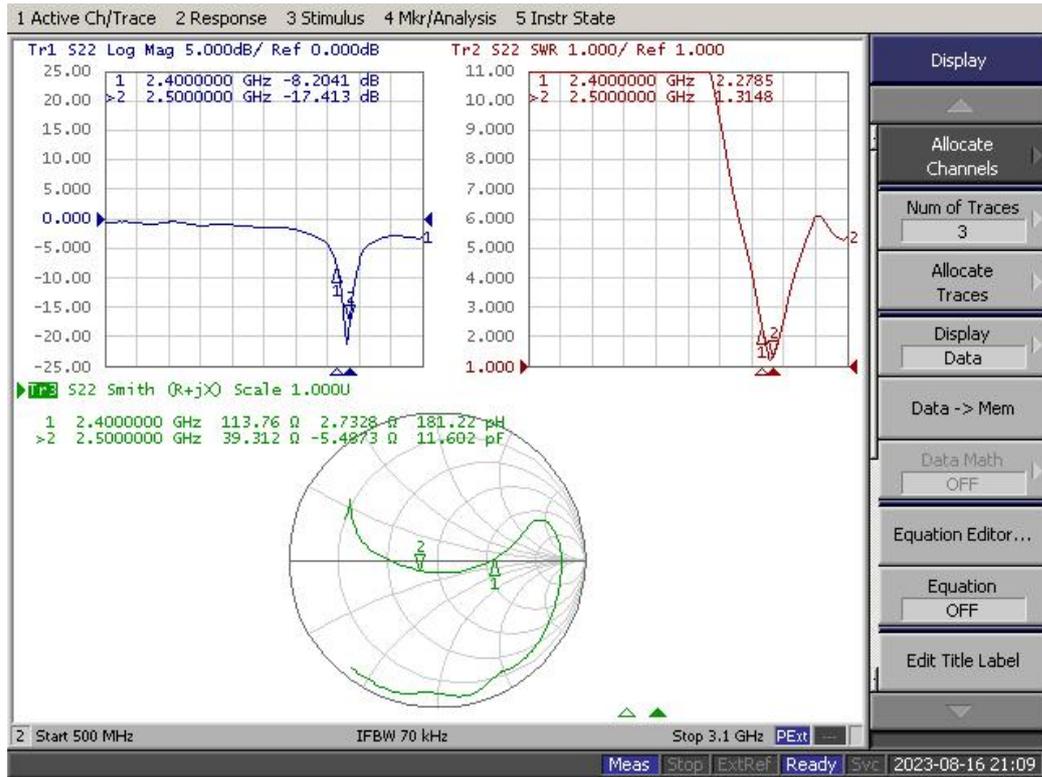
Tag number parameter

R	位号	参数
	E1	NC
	E2	10PF
	E3	NC

5. 天线电性能测试数据 (Antenna electrical performance test data) :

5. 1. 天线无源参数 (Antenna passive parameters)

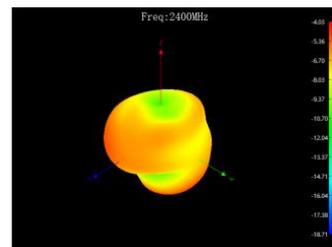
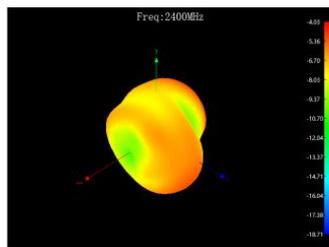
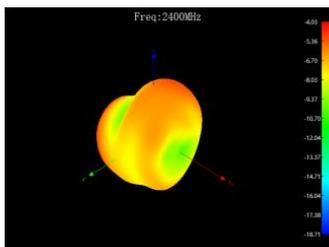
5.1.1. 天线回波损耗/驻波比/史密斯圆图 (RL/VSWR/Smith Chart)



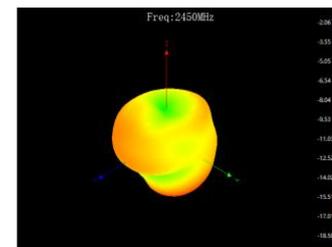
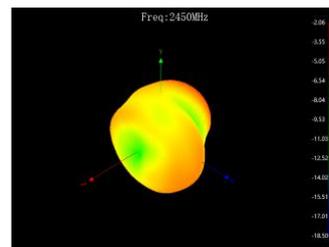
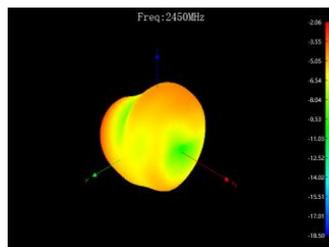
5. 1. 2. 天线效率/增益/方向图 (Effeciency/Gain/Radiation pattern)
自由空间 Free

Frequency	Efficiency	MAXGain
MHz	%	dBi
2400	11.83	-4.03
2410	12.19	-3.91
2420	13.84	-2.88
2430	14.79	-2.49
2440	16.18	-2.37
2450	17.18	-2.06
2460	19.28	-1.77
2470	20.7	-1.24
2480	21.28	-1.08
2490	23.17	-0.56
2500	23.66	-0.56

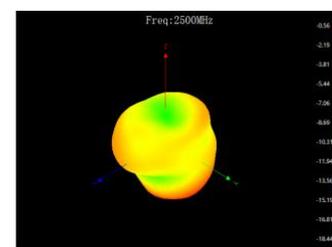
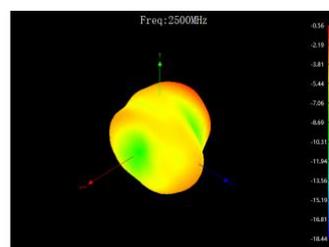
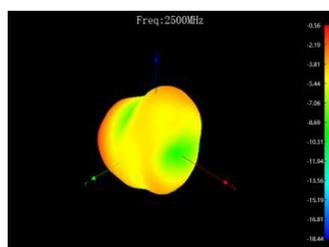
2400MHz (dBi)



2450MHz (dBi)



2500MHz (dBi)



头模 Head

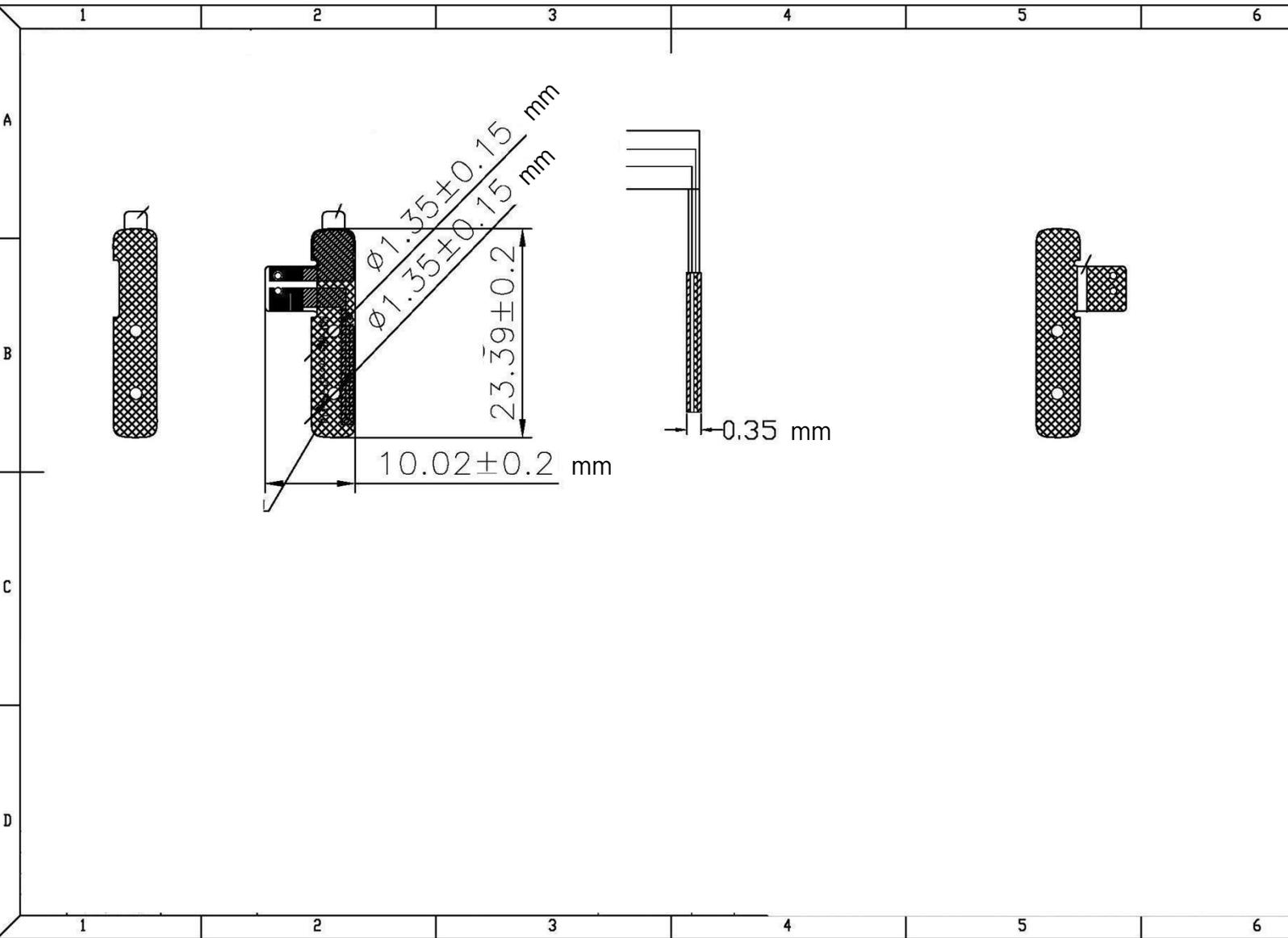
Frequency	Efficiency	MAXGain
MHz	%	dBi
2400	4.4	-7.11
2410	4.41	-7.12
2420	4.83	-6.93
2430	5.04	-6.97
2440	5.48	-6.54
2450	5.62	-6.18
2460	6.05	-5.44
2470	6.22	-5.41
2480	6.08	-5.48
2490	6.28	-5.73
2500	6.17	-5.91

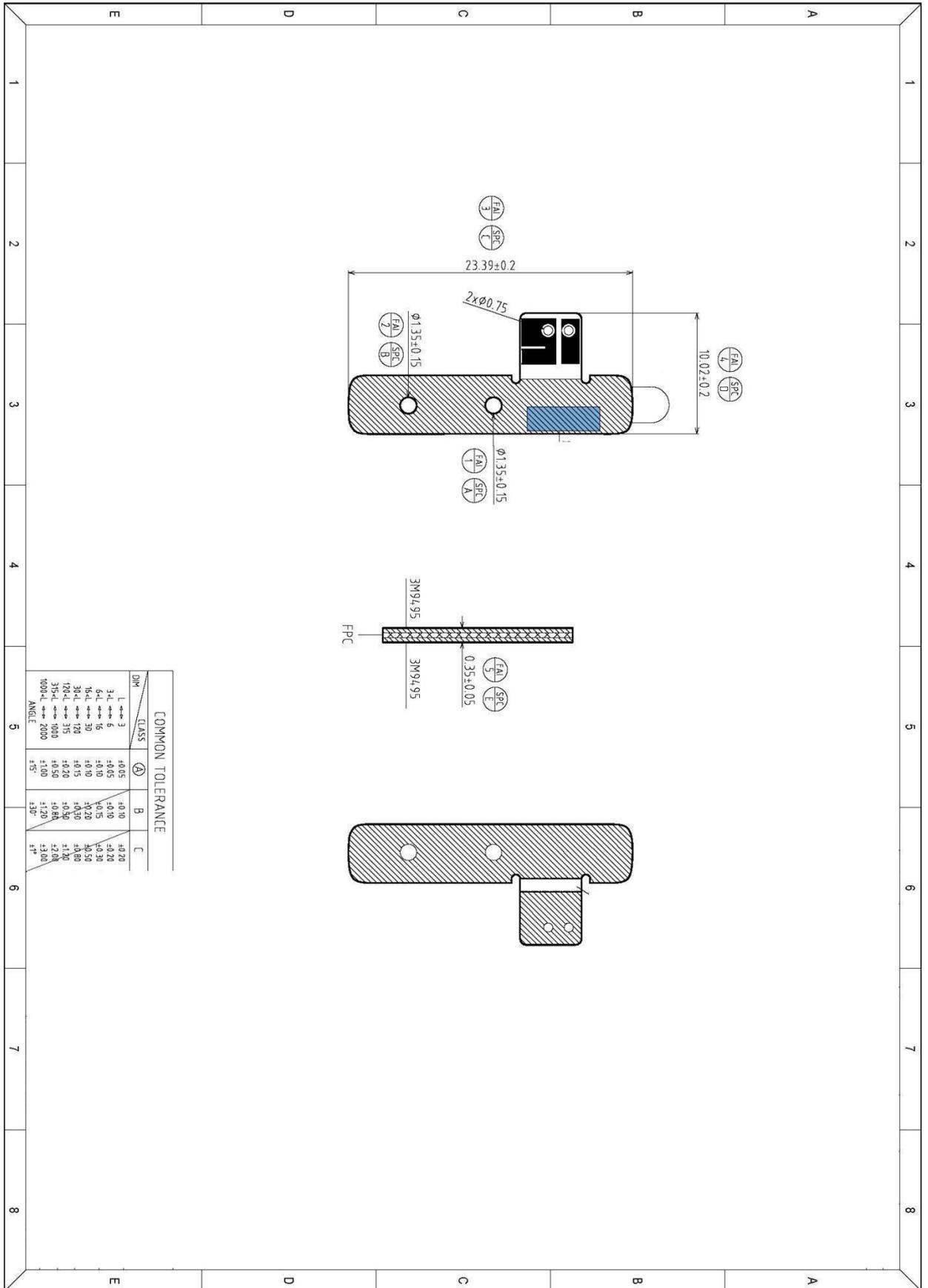
5.2 天线有源参数 (Antenna Active parameter)

5.2.1 TRP/TIS

NQI ANT TRP&TIS parameter Summary of M2SPRO				
自由空间 free space	Test	Bluetooth TRP&TIS		
	Result	0	39	78
	TRP (dBm)	-8.89	-7.17	-3.82
	TIS (dBm)	-81.56	-81.87	-82.69
二代头耳模 Second generation head and ear molds	Test	Bluetooth TRP&TIS		
	Result	0	39	78
	TRP (dBm)	-6.81	-4.81	-1.73
	TIS (dBm)	-81.83	-82.47	-82.89

6. 天线结构图纸 (Antenna structure drawing) :





7. 天线包装图纸 (Antenna package drawing) :

