Sample Approved Sheet

Jinshang（T3）Acknowledgment

Customer Name Jinshang Technology (Shenzhen) Co., Ltd

Client Type T3

Brand BT0048-V4

Hetuo Judgment Audit Team

Formulate	Check	Ratify	Acknowledge the book completion time
Liyaona	Huxuewen	Daitingting	2024.3.25

（Client）Judgment Audit Team

Acknowledgement Number_____ Proving time

acknowledge	check	ratify	Acknowledge the book completion time
Project Review ☐Three acknowledgements ☐Specifications/drawings ☐examining report ☐Specimen PCS ☐Safety standard ☐HSF			
Appraisal report ☐Accept ☐Conditional acceptance ☐Refuse			

1. Antenna picture

The report mainly provides the test status of the electrical properties parameters T3.

The T3antenna is a **2.4-2.5GHz** Band . The antenna Picture and assembly are shown below.

Antenna picture & assembly picture

2.Antenna Test Equipment Introduction

Test of antenna input characteristics using Agilent E5071C and Agilent 5062A vector network analyzer; The radiation pattern of the antenna are tested using the Satimo starlab 3D near field Anechoic Chamber , and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

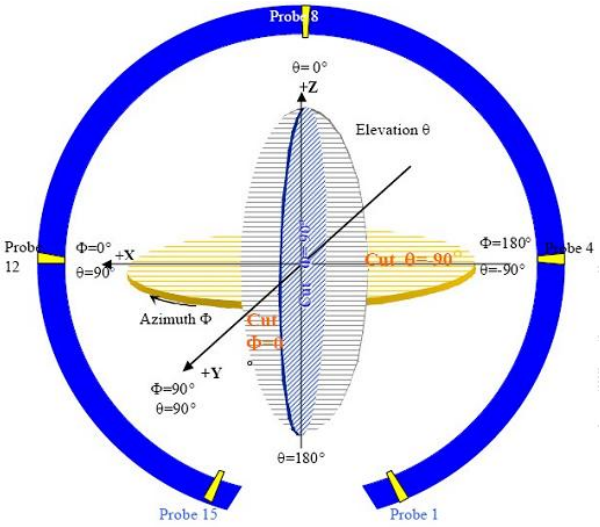


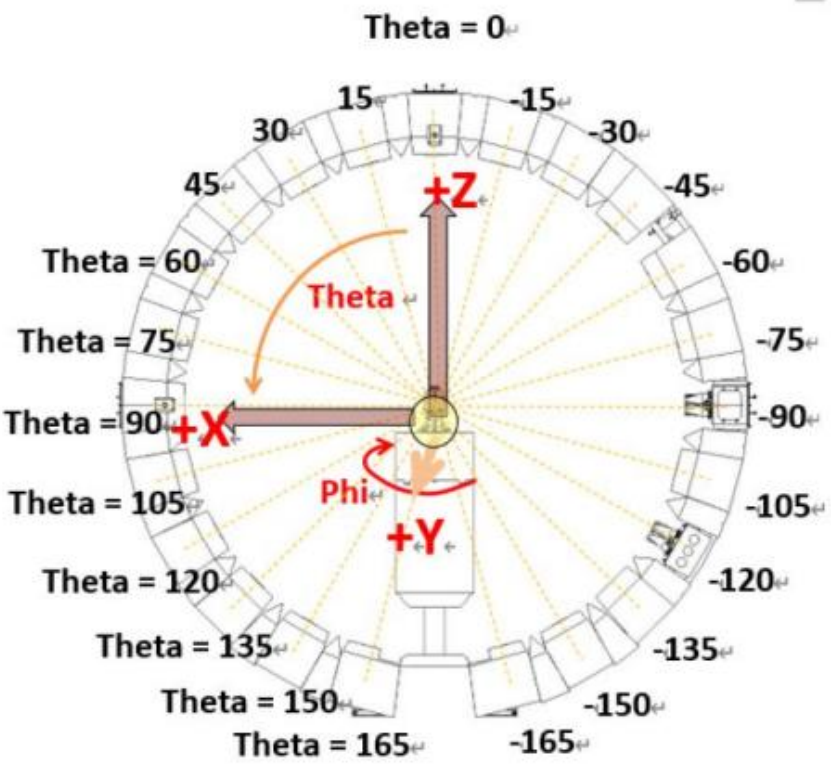
图 4 3D 微波暗室测试坐标系(back view)

3. Electrical Specification

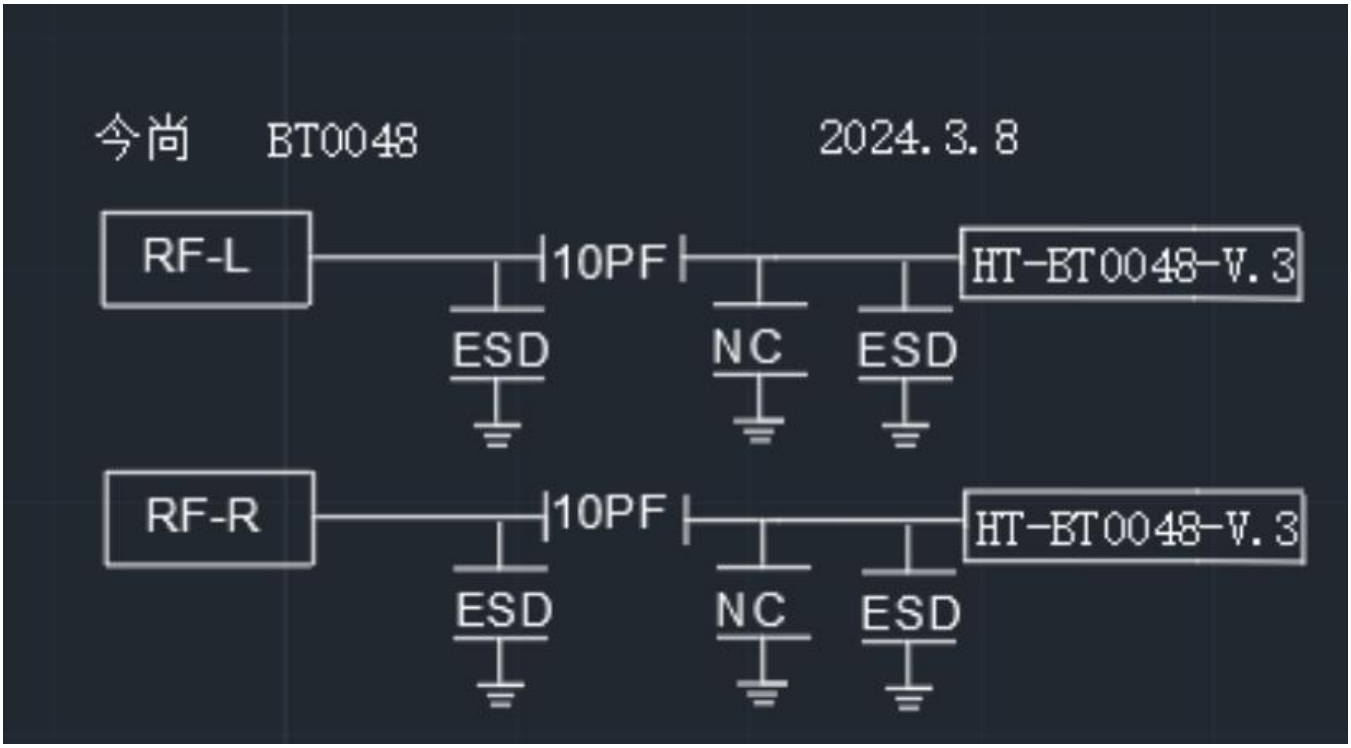
3-2 Passive S11 parameter

Measuring Method is a 50 Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 20cm.

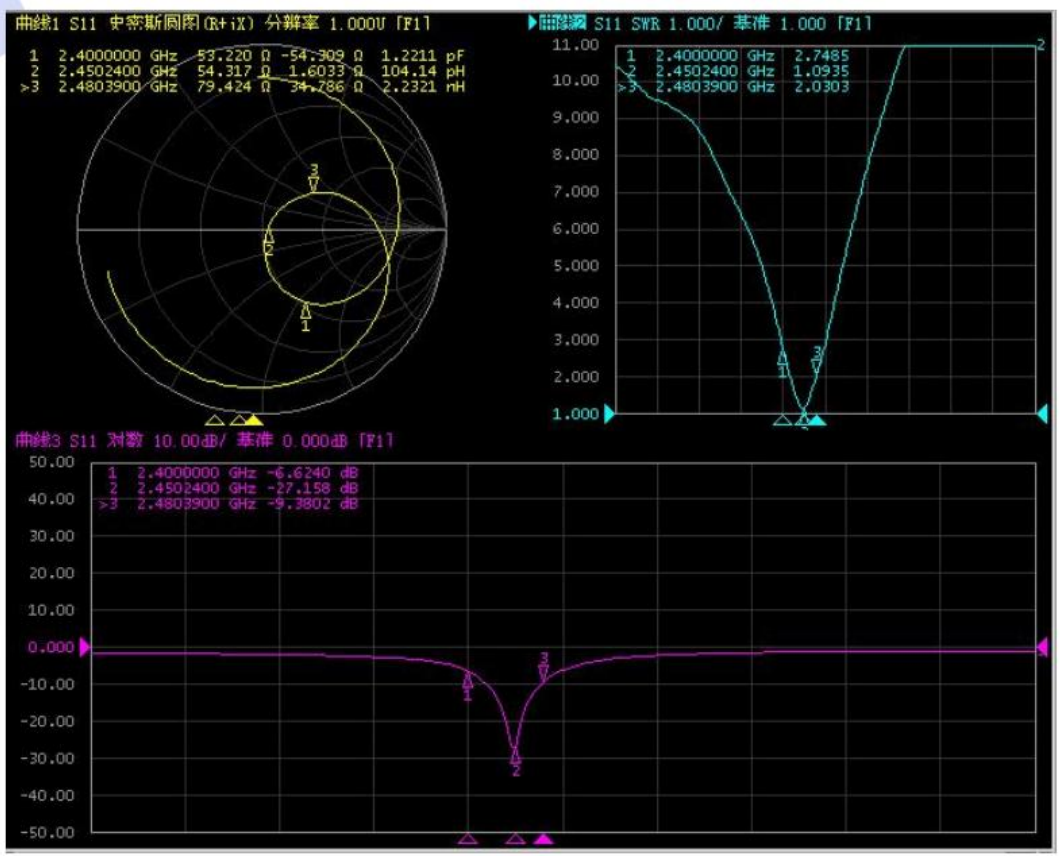
Sample status & coordinates



VSWR



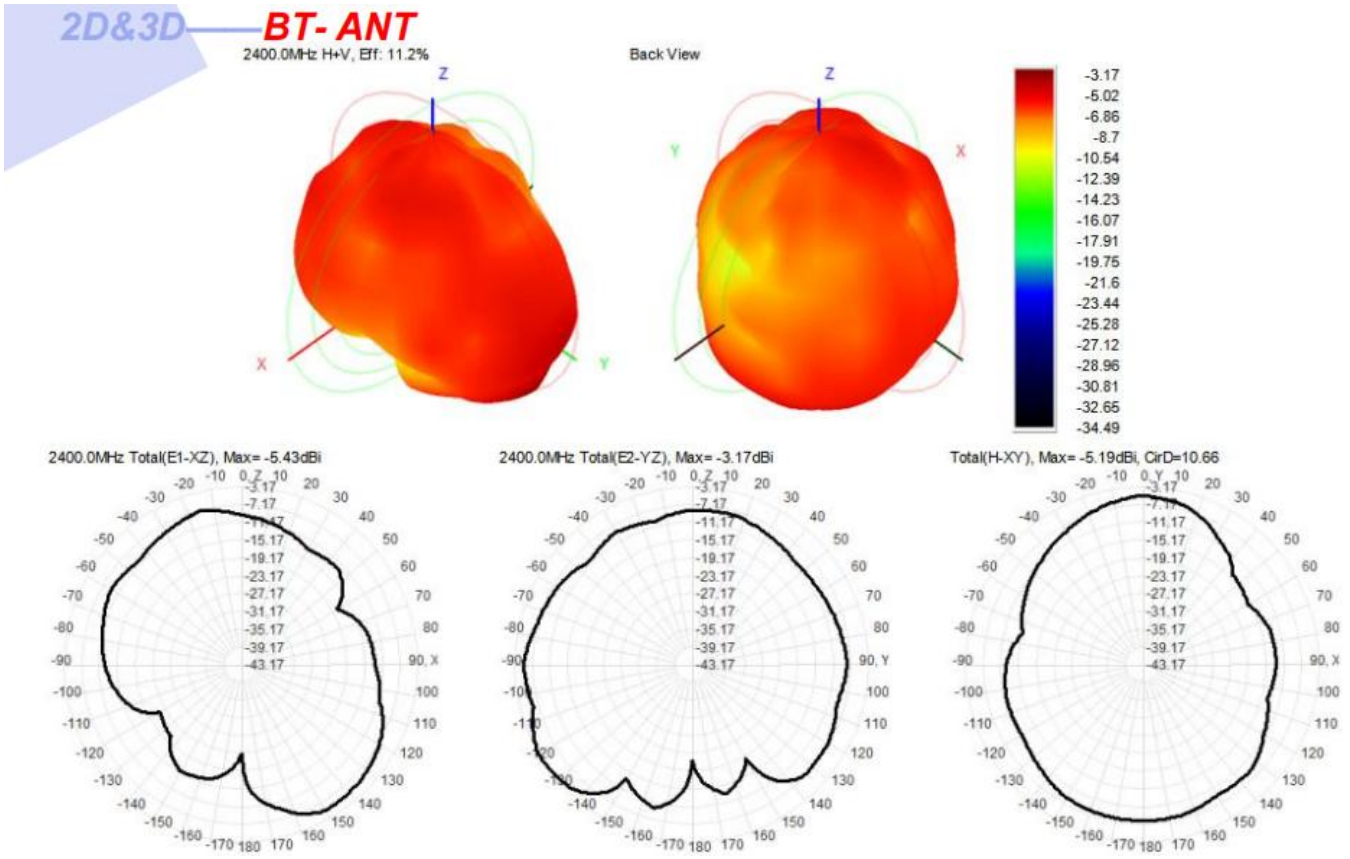
S11--(BT ANT)-(L/R)

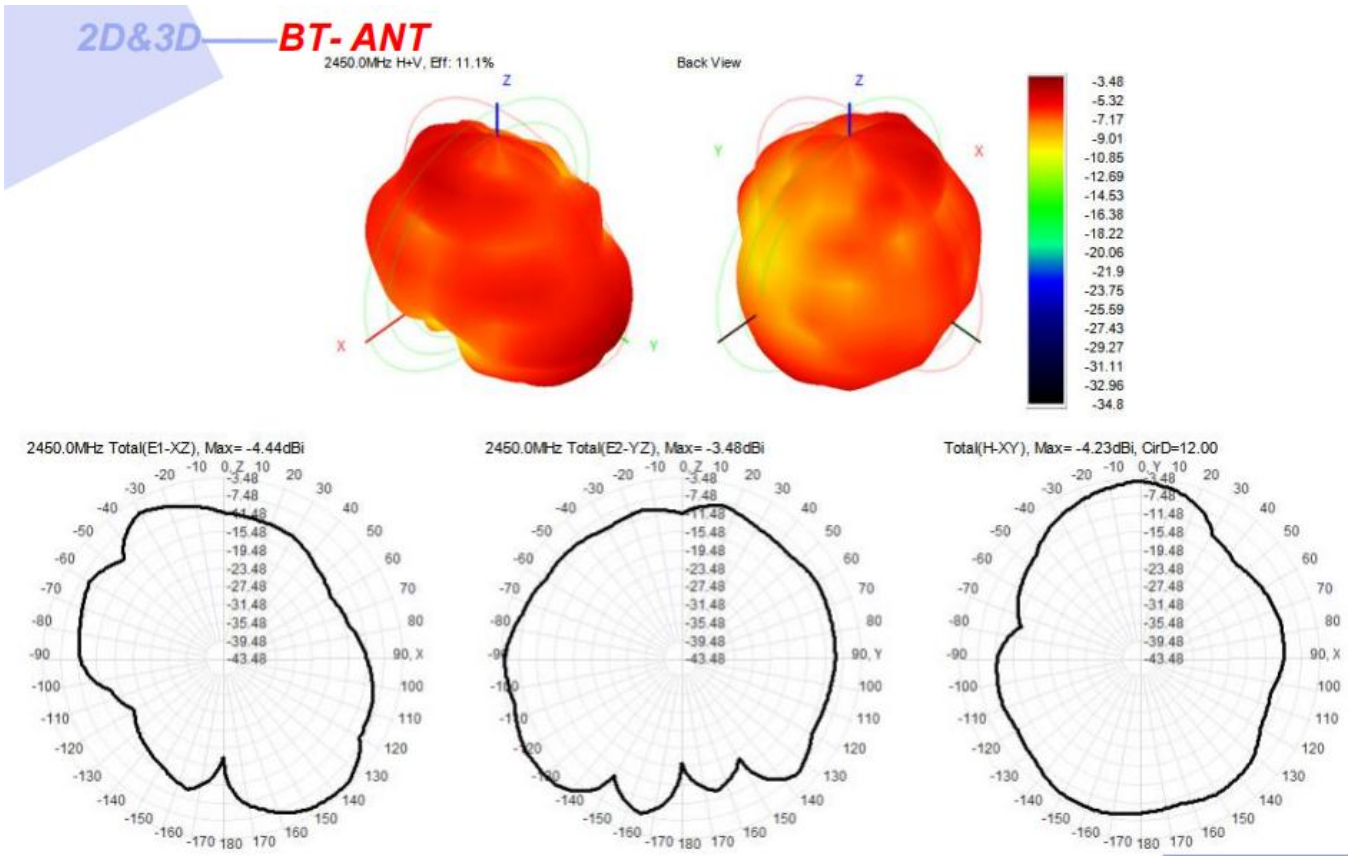


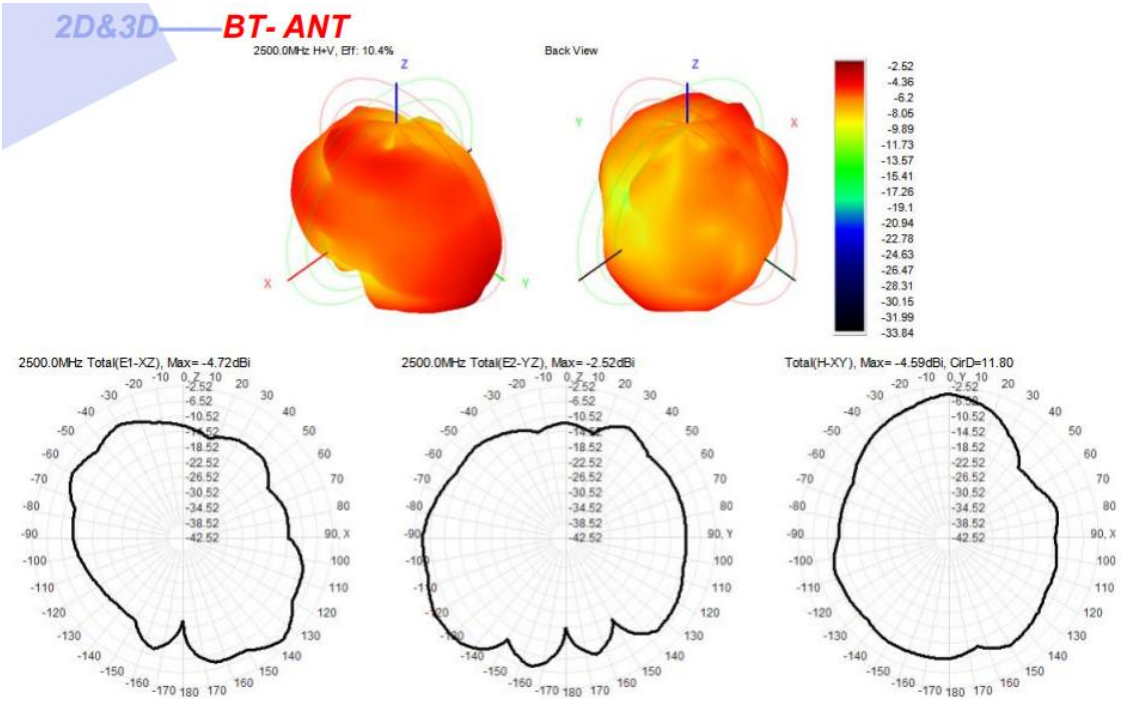
3-3 Antenna Matching Network

Gain & Efficiency-BT-ANT(L/R)

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-9.51	-9.55	-9.54	-9.53	-9.40	-9.54	-9.61	-9.82	-9.89	-9.81	-9.84
Gain (dBi)	-3.17	-2.72	-3.06	-3.08	-3.14	-3.48	-3.62	-3.24	-3.32	-2.68	-2.52
Efficiency (%)	11.19	11.09	11.11	11.14	11.48	11.10	10.95	10.41	10.25	10.44	10.38
Directivity (dB)	6.34	6.83	6.48	6.45	6.26	6.06	5.99	6.58	6.57	7.13	7.32
Peak Gain Position (Theta)	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00
Peak Gain Position (Phi)	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
Efficiency ThetaPol (%)	4.82	4.77	4.78	4.86	5.00	4.92	4.79	4.63	4.56	4.74	4.91
Efficiency PhiPol (%)	6.37	6.33	6.33	6.28	6.48	6.19	6.15	5.78	5.69	5.70	5.47
Upper Hem. Efficiency (%)	4.89	4.74	4.86	4.86	4.96	4.74	4.71	4.29	4.21	4.19	4.15
Lower Hem. Efficiency (%)	6.30	6.35	6.25	6.28	6.52	6.36	6.23	6.12	6.04	6.24	6.23


2D&3D
BT- ANT
2400.0MHz H+V, Eff: 11.2%
Back View
-3.17
-5.02
-6.86
-8.7
-10.54
-12.39
-14.23
-16.07
-17.91
-19.75
-21.6
-23.44
-25.28
-27.12
-28.96
-30.81
-32.65
-34.49
2400.0MHz Total(E1-XZ), Max= -5.43dBi
2400.0MHz Total(E2-YZ), Max= -3.17dBi
Total(H-XY), Max= -5.19dBi, CirD=10.66


2D&3D
BT- ANT
2450.0MHz H+V, Eff: 11.1%
Back View
-3.48
-5.32
-7.17
-9.01
-10.85
-12.69
-14.53
-16.38
-18.22
-20.06
-21.9
-23.75
-25.59
-27.43
-29.27
-31.11
-32.96
-34.8
2450.0MHz Total(E1-XZ), Max= -4.44dBi
2450.0MHz Total(E2-YZ), Max= -3.48dBi
Total(H-XY), Max= -4.23dBi, CirD=12.00



OTA DATA(L)--free space

Test Equipment:	R&S CMW500			
Test Condition:				
Band	Wireless Protocol	Channel	TRP(dBm)	TIS(dBm)
BT		0	-0.75	-82.09
		39	-0.99	-82.36
		78	-2.84	-80.41

OTA DATA(R)--free space

Test Equipment:	R&S CMW500			
Test Condition:				
Band	Wireless Protocol	Channel	TRP(dBm)	TIS(dBm)
BT		0	-0.83	-82.34
		39	-.14	-82.56
		78	-2.67	-81.17

OTA DATA(L)--headform

Test Equipment:	R&S CMW500			
Test Condition:				
Band	Wireless Protocol	Channel	TRP(dBm)	TIS(dBm)
BT		0	-2.84	-80.02
		39	-2.43	-80.33
		78	-4.47	-79.28

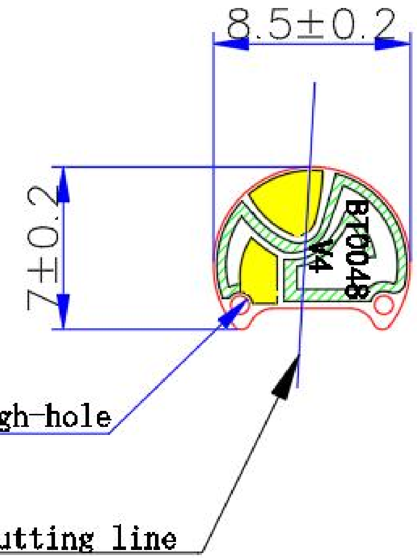
OTA DATA(R)--headform

Test Equipment:	R&S CMW500			
Test Condition:				
Band	Wireless Protocol	Channel	TRP(dBm)	TIS(dBm)
BT		0	-2.67	-73.25
		39	-3.15	-80.47
		78	-4.84	-78.73

4. Mechanical Specification:

Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing Figure 8



Technical requirements:

1. It must comply with EU RoHs and REACH, as detailed in the appendix;
2. Single machine usage: 2PCS
3. FPC copper wiring section on side A, while side B represents the use of 3M 9471 adhesive backing
4. The total thickness of FPC is 0.11-1.15mm (excluding adhesive release paper), and the contact point needs to be processed with a 3-mil gold deposition process
5. Please use PI1 to 1 substrate, electrolytic copper; Surface black ink line printed in white
6. The ink does not contain carbon or metal particles, and the surface is UV resistant and UV resistant;

Shenzhen Hetuo Technology Co., Ltd

PART NAME:	049.0003
Customer Rev:	BT0048-FPC
SCALE	1:1
UNITS	MM
SIZE	A4
DRAWING NAME	0812M-ANT-FPC-INSTANT
DWG NO.	0812M-ANT-FPC-INSTANT
DATE	2023.02.27