

SPECIFICATION



Shenzhen Daxian Technology Co., Ltd.

Merry 23251 BT antenna assembly

Product specification

Guest households	Merry	frequency band	2400MHz~2480MHz
Project name	23251	version	V1.0
Material No.	1N-T23251-051-E1	color	Black
R F design	Peng.Hu	structure design	RuiBin.Zhou
Quality Manager	ZiYin.Hu	R & D director	Lei Zhang
Date	2024-11-28		

client confirmation:

Whether the assembly meets your requirements: ☐OK ☐NG

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Confidential requirement

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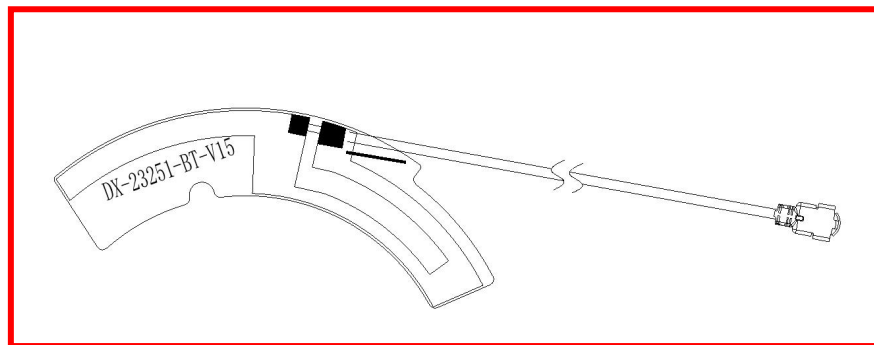
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— Project description

Customer name:	Merry
Whole machine type:	Headband Bluetooth Headset
Antenna band:	2400 ~ 2500MHz
Antenna form:	FPC+Coaxial line
Feed form:	weld
Testing laboratory:	Onewave Test OWT900

一、 BT antenna

This report provides a variety of measurements of the electrical performance of the 23251 antenna. Figure 1 shows the antenna designed by the display.



antenna appearing diagram
Figure 1

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1.1 Electrical specification standard

The frequency range of the antenna is 2400 ~ 2500MHz. The following table indicates the electrical performance specifications of the antenna. The antenna is designed and manufactured by a large display.

Frequency Range	Frequency (MHz)	VSWR
BT	2400 ~ 2500	≤ 2

1.2 Antenna composition

The antenna is mainly composed of FPC+Coaxial line.

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2、 The Equipment of Active Test

Satimo 3D Chamber $6 \times 4 \times 4$ (m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL



Figure 2

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3 test

3.1 The Test of standing Wave (VSWR)

3.1.1 The Test of standing Wave (VSWR): In turn, the connection of the VSWR testing device is as follows: RES ZVL Network Analyzer / testing Line / testing tool

Actual measurement (with diagram)

3.2 Measurement of Efficiency, Power (TRP) and Sensitivity (TIS)

3.2.1 Test site:

Large-scale microwave darkroom. The test frequency range is 400MHz / 6GHz, the static range is 50cm circumferential and the reflectivity is less than-50 dB..

3.2.2 Test instrument:

Rs ZVL Network Analyzer, Agilent8960 E5515C, Standard Horn Antenna, French SATIMO-SG24SYSTEM system, Printer, etc.

3.2.3 test data : In microwave anechoic chambers, the power and sensitivity values measured are shown in the following table:

OTA Active Test:

Free state			
BAND	CH	TRP	TIS
BT	0	10.87	-91.28
	39	11.12	-91.59
	78	10.58	-91.23

Head mold state			
BAND	CH	TRP	TIS
BT	0	9.51	-90.21
	39	9.87	-90.79
	78	9.56	-90.36

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OTA Passive Efficiency&Gain Test:**Free state**

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	39.74	-4.01	1.17
2410	41.34	-3.84	1.51
2420	42	-3.77	1.62
2430	42.68	-3.7	1.69
2440	41.74	-3.79	1.9
2450	40.02	-3.98	2.2
2460	43.37	-3.63	2.18
2470	41.62	-3.81	2.09
2480	40.93	-3.88	1.91
2490	40.15	-3.96	1.72
2500	39.26	-4.06	1.6

Head mold state

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	30.34	-5.18	1.47
2410	31.5	-5.02	1.67
2420	33.54	-4.74	1.74
2430	34.67	-4.6	1.8
2440	35.24	-4.53	2.01
2450	36	-4.44	2.29
2460	35.53	-4.49	2.26
2470	34.58	-4.61	2.15
2480	33.47	-4.75	1.92
2490	32.05	-4.94	1.71
2500	30.44	-5.17	1.62

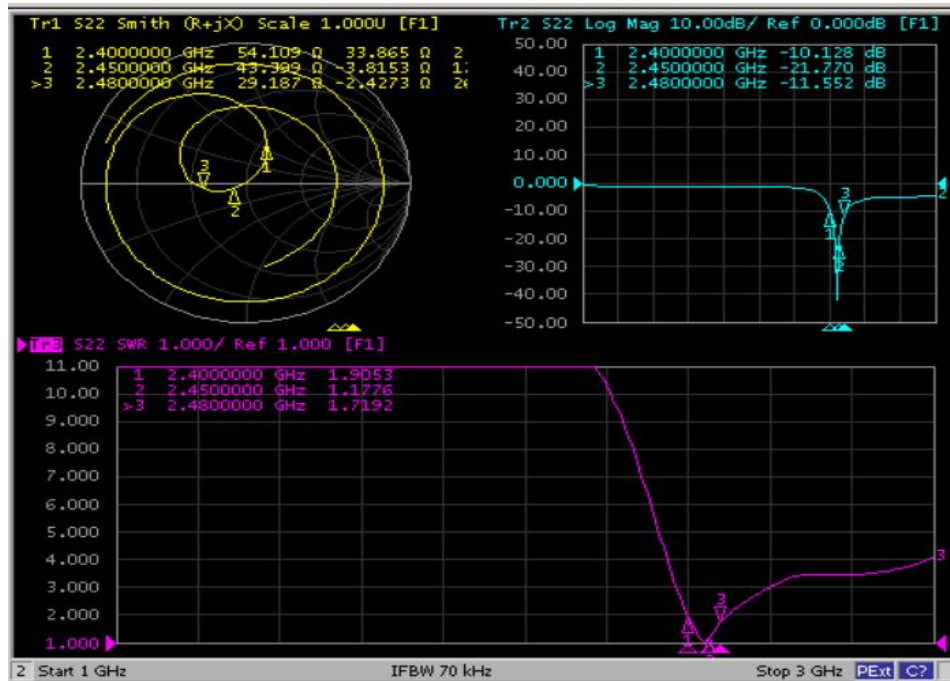
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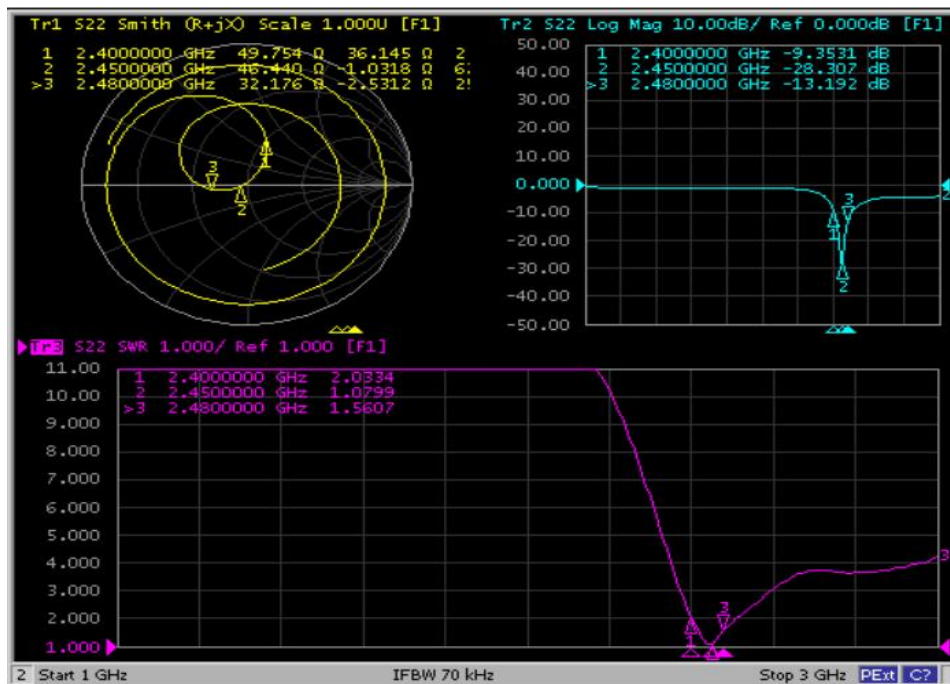
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4、 Attachment chart

Free state



Head mold state

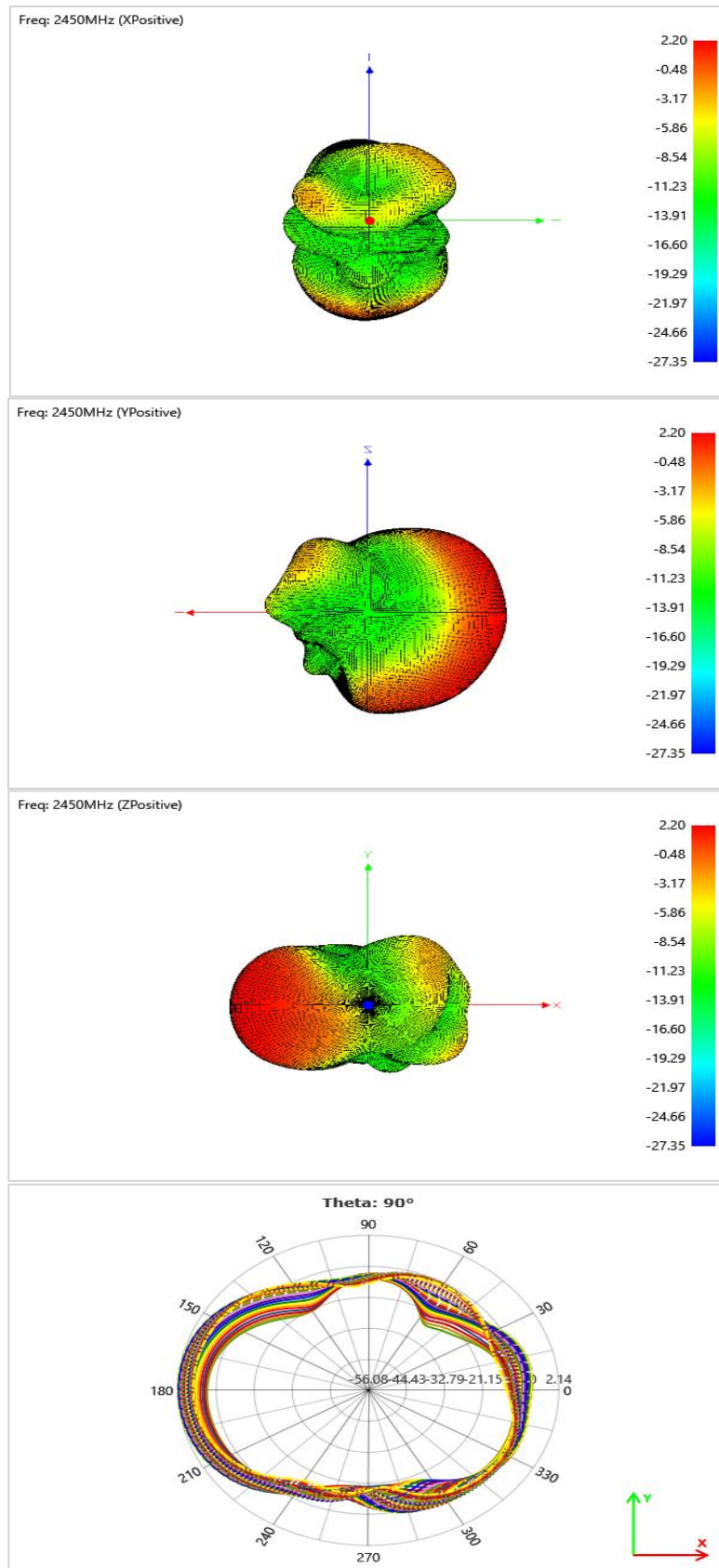


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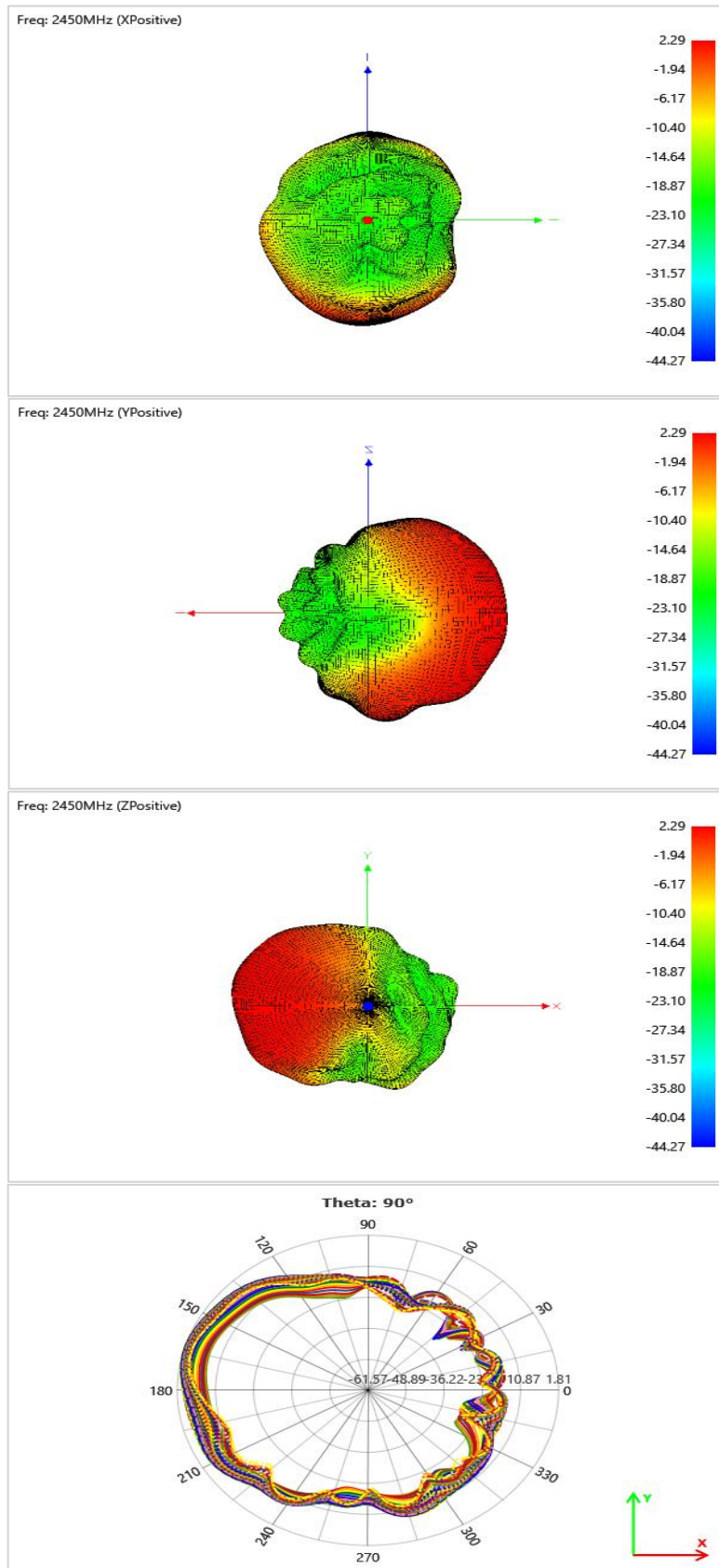
5、 Antenna passive field pattern diagram - Free state:



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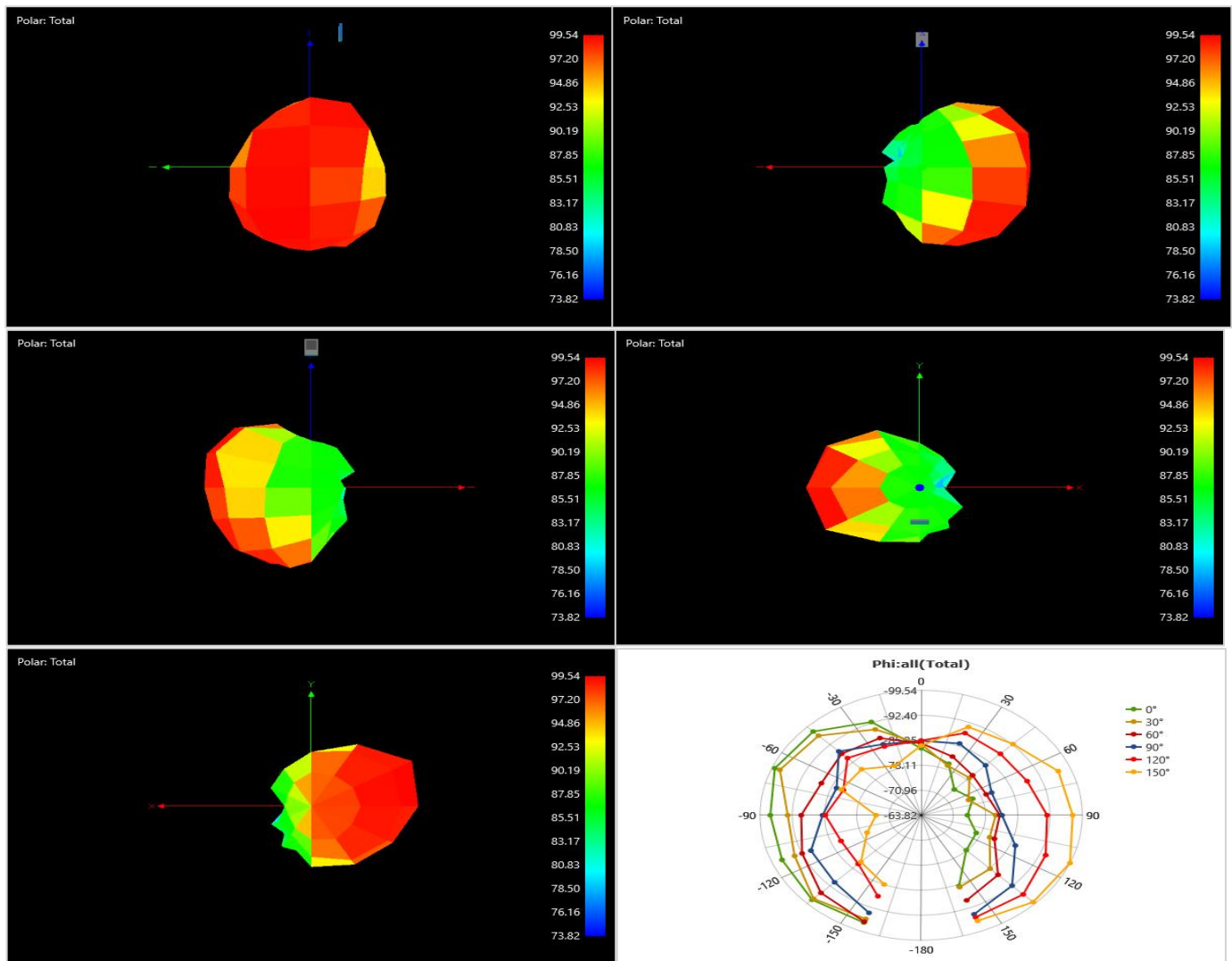
Antenna passive field pattern diagram - Head mold state:



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6、 Antenna OTA Field Pattern Diagram - Head Mode state:



7、 conclusion:

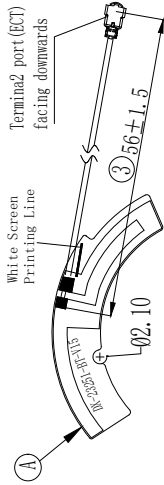
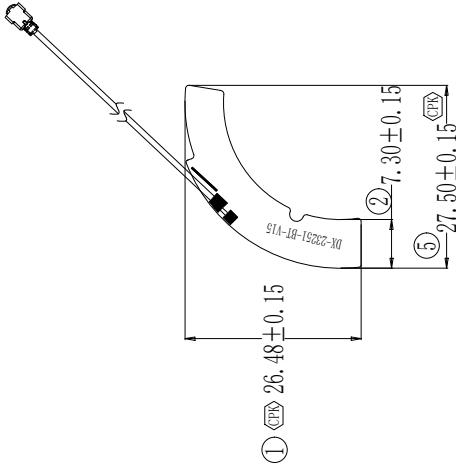
This antenna is designed on the basis of the prototype provided by the customer, electrical parameters and structural performance have reached the technical requirements, please confirm!

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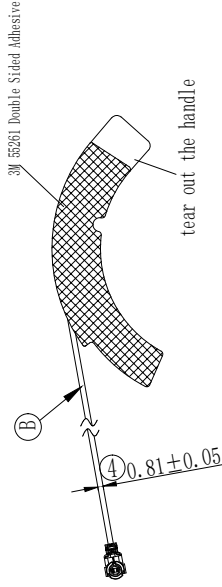
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1		2		3		4		5		6	
						0~10		10~30		30~50	
						0.05		0.10		0.15	
								1°		0.20	
										0.02	
										0.02	
										⊥	
										0.03	
										0.05	



0.30±0.05 (FPC+Double Sided Adhesive+Removal Paper)

0.20±0.05 (FPC+Double Sided Adhesive)



Technical requirement:

1. "*" is the key dimension;
2. Please refer to the drawing for unspecified dimensions;
3. There should be no poor operation such as faulty soldering, missing soldering, short wires, broken wires, etc;
4. Meet RoHS requirements.

B	RF connector	Cable	black	
A	FPC	Electrolytic copper PI	black	
Serial number		Part Name	Material	Colour
				Note



Shenzhen Daxian Technology Co., Ltd.

Machine model	23251	Product Color	Black	Date	2024/11/29
Project Code	CN-T23251-051	Mold surface treatment	NA	MD	RuibinZhou
Part Name	BT antenna	Unit	mm	RF	Penglu
Part Number	1N-T23251-051-E1	Third perspective	比例 (scale) 1:1	Check	KangZhou
material	FPC+RF connector			Ratify	LeiZhang
Save Path				Current version	A

1	2	3	4	5	6
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