

SPECIFICATION



Daxian Communication Technology Limited

深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

得胜 Wireless Mic Dongle 天线

TAKSTAR Wireless Mic Dongle Antenna

产品规格书

Product Specification

客户 connection	得胜 TAKSTAR	频段 frequency range	2400 ~ 2500MHz
项目名称 entry name	Wireless Mic	版本 edition	V09
物料编号 Material No	2e-ssmic-027	颜色 Color	黑色 Black
客户料号 Customer Item Number	9.01.15020.00092		
R F 设计 R F Design	胡 鹏 Peng.Hu	结构设计 Structural Design	闭业智 Ye.Zhi.Bi
品质经理 Quality Manager	杨 进 Jin.Yang	技术总监 Technical Director	张 磊 Lei.Zhang
日期 Date	2023-08-18		

客户确认:

Customer confirmation:

装配是否符合贵司要求: OK NGWhether the assembly meets your company's requirements: OK NG

深圳市大显科技有限公司

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变更履历 Revision history

版本号 Version number	变更内容 Change content	变更理由 Reason for change	发起变更方 Originating Party	日期 Date	修改人 Modified by
V1.0	创建 found			2023-08-18	
V1.1					

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一 项目说明 Project Description

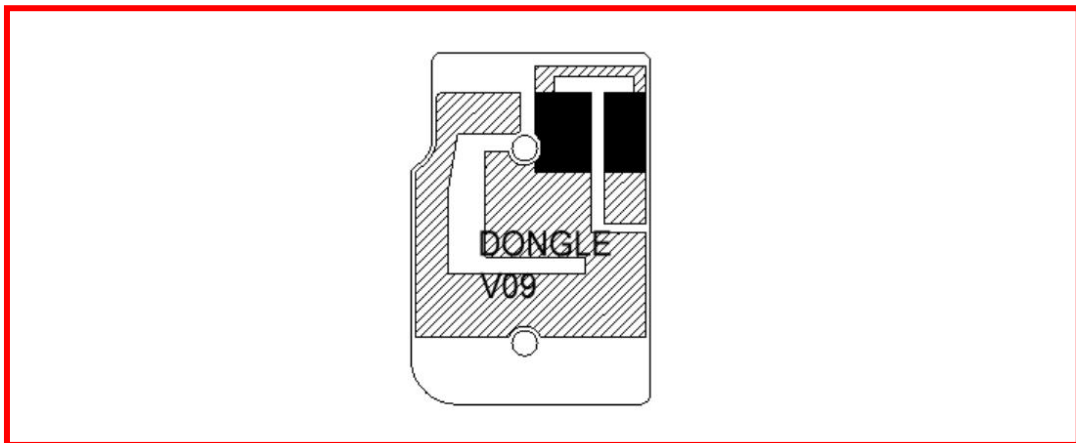
客户名: Customer Name:	得胜 TAKSTAR
整机类型: Type of complete machine:	Dongle
天线频段: Antenna band:	2400 ~ 2500MHz
天线形式: Antenna form:	FPC
馈电形式: Feed form:	顶针 POGOPIN
馈脚数量: Number of feed legs:	2 个 Two
硬件版本: Hardware version:	/

二 Dongle 天线 Dongle Antenna

1 规格 specifications

本报告主要提供 Wireless Mic 项目天线的各项电气和结构性能参数的测试状况。下图为大显设计的天线图片。

This report mainly provides the testing status of various electrical and structural performance parameters of the antenna for the Wireless Mic project. The following image shows an antenna with a large display design.



天线外观图

antenna appearing diagram

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1.1 电气规格标准 Electrical specifications and standards

1.1.1 电性能指标 Electrical performance index

天线工作频段在 **2400 ~ 2500 MHz**。下表是大显设计和量产天线的电性能指标。

The operating frequency band of the antenna is between **2400 and 2500 MHz**. The following table shows the electrical performance indicators of large display design and mass production antennas.

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

1.1.2 天线匹配 antenna matching

安卓 Android



苹果 Iphone



2 结构规格标准 Structural specifications and standards

2.1 天线组成 Antenna composition

天线主要是由 FPC 组成。

The antenna is mainly composed of FPC.

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2. 测试设备 The Equipment of Active Test

Satimo 3D Chamber 6×4×4(m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL



图 2

Figure 2

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3 测试 test

3.1 驻波(VSWR)的测试 Test of standing wave (VSWR)

3.1.1 测试连接: VSWR 测试装置依次连接为: R&S ZVL 网络分析仪 → 测试线 → 测试治

Test connection: The VSWR test device is sequentially connected as follows: R&S ZVL network analyzer → test line → test fixture

实测(附图)Actual measurement (attached drawing)

3.2 增益及效率、功率 (TRP)、灵敏度 (TIS) 的测试

Gain and efficiency, power (TRP), sensitivity (TIS) testing

3.2.1 测试的场地 Test site:

大显微波暗室。测试频率范围为 400MHz—6GHz, 静区范围为 50cm 圆周, 反射率小于-50 dB。

Large display microwave anechoic chamber. The test frequency range is 400MHz - 6GHz, the static zone range is 50cm circumferential, and the reflectivity is less than - 50dB.

3.2.2 测试的仪表 Tested Instruments:

R&S ZVL 网络分析仪、Agilent8960 E5515C、标准喇叭天线、法国 SATIMO-SG24SYSTEM 系统、打印机等。

R&S ZVL network analyzer, Agilent 8960 E5515C, standard horn antenna, French SATIMO-SG24SYSTEM system, printer, etc.

3.2.3 测试数据 : 在微波暗室中, 测试的功率和灵敏度相关的数值如下表

Test data: In a microwave anechoic chamber, the values related to the power and sensitivity tested are shown in the table bel

OTA 有源测试 OTA active testing:

Android-dongle				Iphone-dongle			
BAND	CH	TRP	TIS	BAND	CH	TRP	TIS
BT	0	7.86	-88.23	BT	0	8.56	-87.21
	39	8.59	-89.12		39	8.27	-88.17
	78	9.12	-88.35		78	8.03	-87.33

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无源效率&增益 Passive efficiency&gain

安卓 Android

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	56.72	-2.46	1.05
2410	56.21	-2.43	1.23
2420	58.39	-2.38	1.12
2430	59.56	-2.25	0.97
2440	58.32	-2.34	1.09
2450	56.81	-2.46	1.22
2460	54.63	-2.65	1.15
2470	54.95	-2.6	0.93
2480	52.59	-2.82	1.2
2490	52.01	-2.83	1.13
2500	53.88	-2.67	1.07

苹果 Iphone

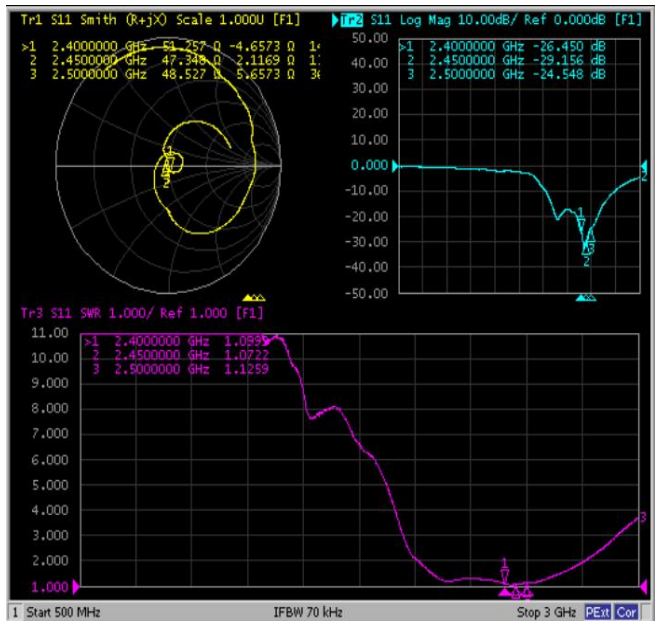
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	54.67	-2.61	1.11
2410	55.82	-2.53	1.01
2420	55.71	-2.6	0.95
2430	53.28	-2.81	1.17
2440	52.62	-2.86	0.99
2450	52.95	-2.85	1.27
2460	51.86	-2.9	1.15
2470	51.8	-2.9	1.13
2480	51.12	-2.88	1.19
2490	50.23	-2.95	0.96
2500	51.08	-2.91	1.08

4、VSWR 参数图 VSWR parameter diagram

安卓 Android



苹果 Iphone

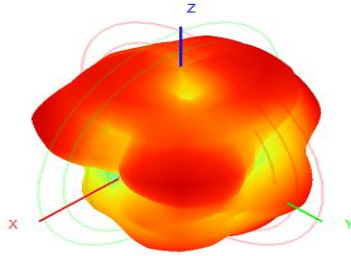


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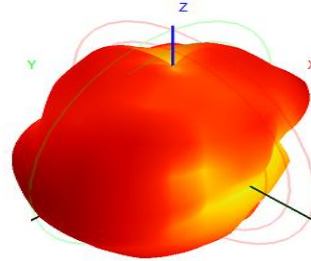
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5、无源场型图 Passive Field Pattern Diagram--安卓 Android

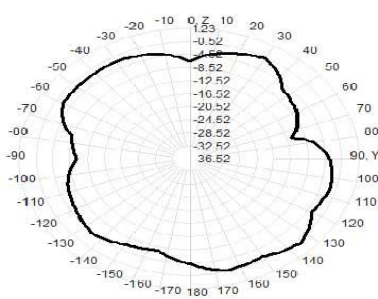
2410.0MHz H+V, Eff: 56.2%



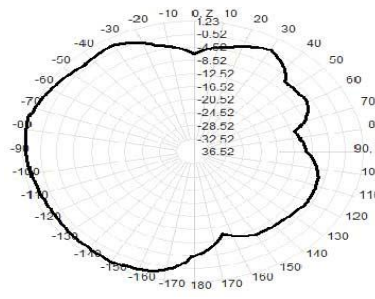
Back View



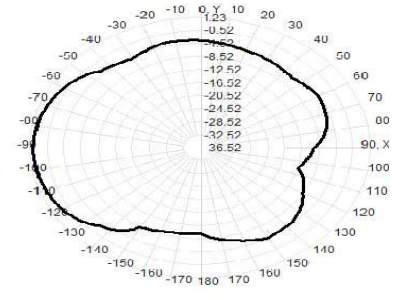
2410.0MHz Total(E1-XZ), Max= 1.23dBi



2410.0MHz Total(E2-YZ), Max= 0.92dBi



Total(H-XY), Max= -1.12dBi, CirD=12.87

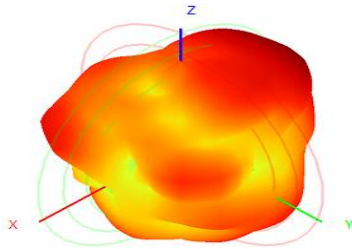


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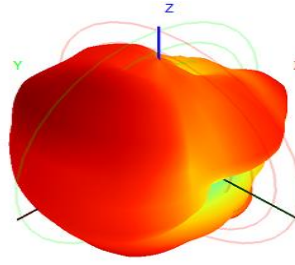
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5.1 无源场型图 Passive Field Pattern Diagram--苹果 iPhone

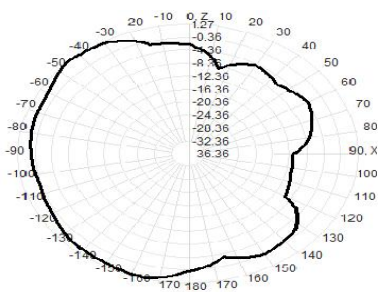
2450.0MHz H+V, Eff: 52.9%



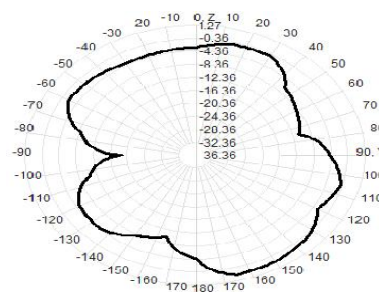
Back View



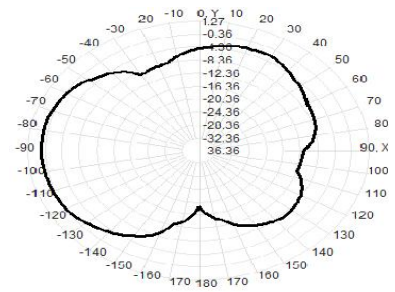
2450.0MHz Total(E1-XZ), Max= 1.27dBi



2450.0MHz Total(E2-YZ), Max= 0.87dBi



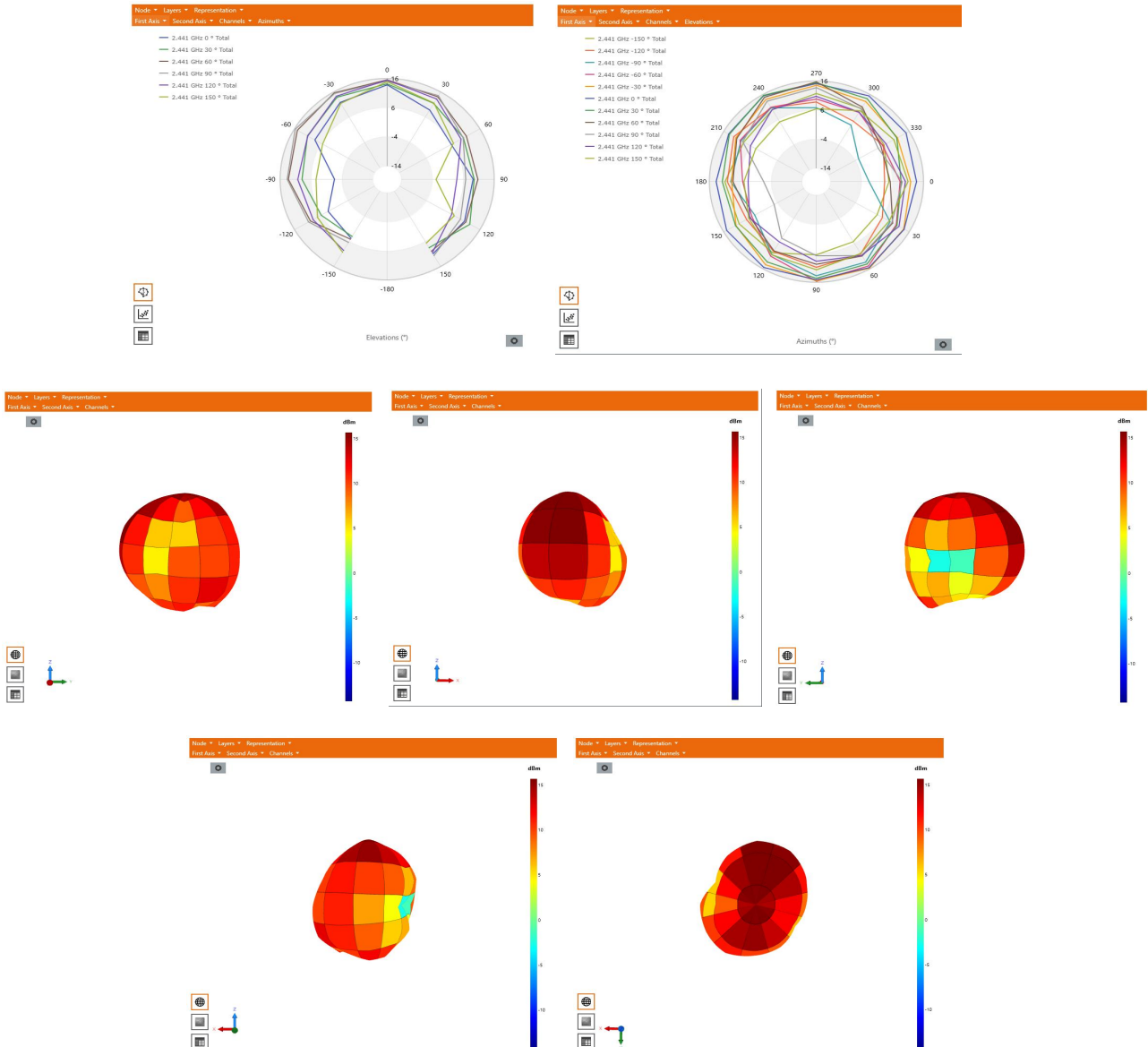
Total(H-XY), Max= -1.03dBi, CirD=13



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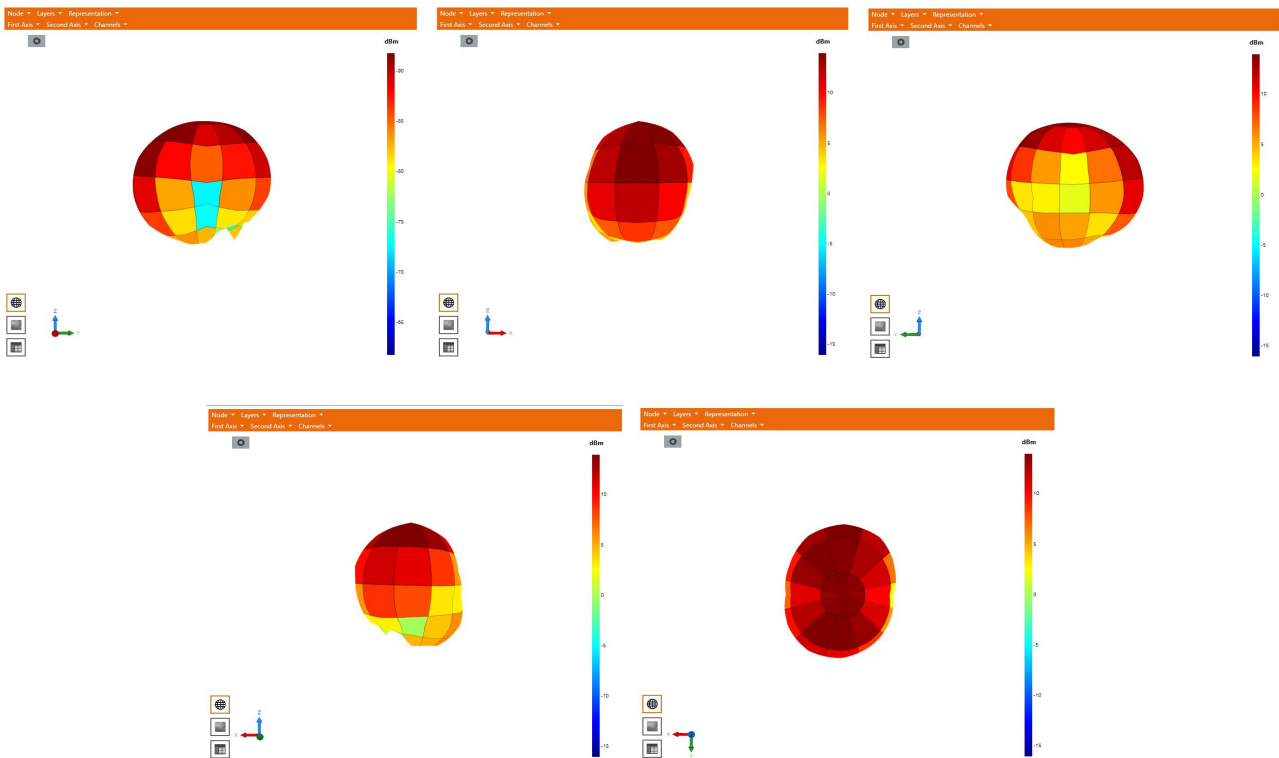
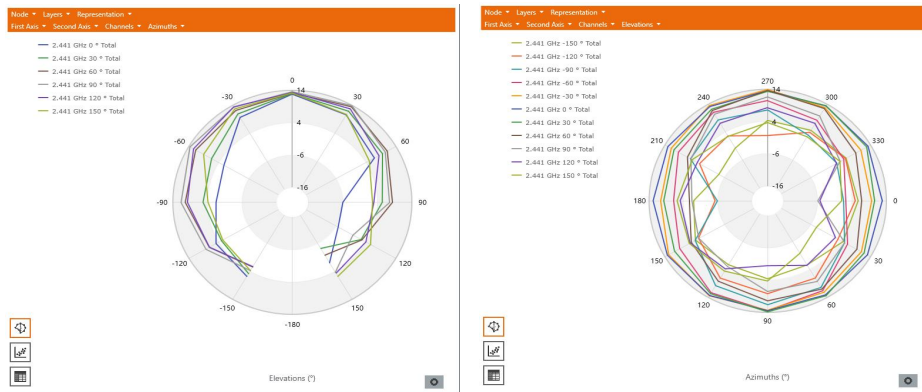
6、OTA 有源场型图- OTA field pattern diagram--安卓 Android



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6.1、OTA 有源场型图- OTA field pattern diagram--苹果 iPhone



7、结论 conclusion

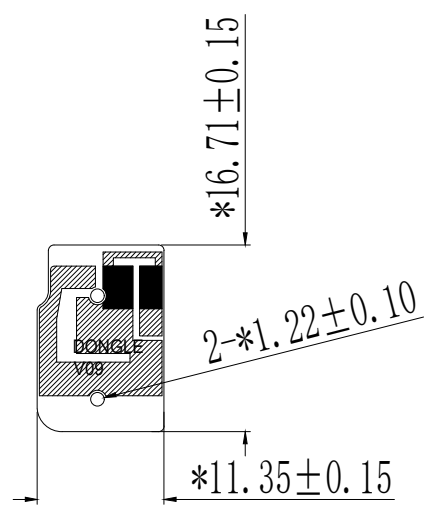
此天线是在客户提供样机基础上设计，电参数和结构性能已达到技术要求，请确认！

This antenna is designed based on the prototype provided by the customer. The electrical parameters and structural performance have met the technical requirements, please confirm!

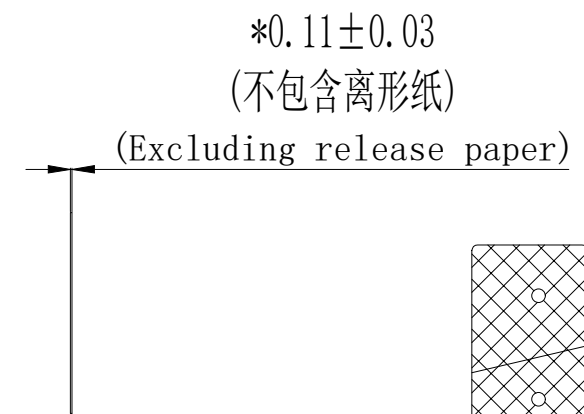
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1	2	3	4	5	6
			0~10	10~30	30~50
			50~	角度(Angle)	○
			0.05	0.10	0.15
			0.20	1°	0.02
				◎	⊥
					∕
					0.03
					0.05



正面(TOP)



反面(BOT)

离型纸刀口
(Release paper opening)

注:
(Note:)

1. "*"为重点尺寸 ;
(1. "*" for the key size;)
2. FPC材料:电解铜,半对半 ;
(2.FPC Material Science:Electrolytic copper)
3. 反面背胶3M9471;
(3. 3m300 series double-sided adhesive tape is pasted on the back of the product)
4. 未标公差尺寸,模具冲出尺寸公差为±0.1;
(4.No tolerance dimension is marked, and the tolerance of die stamping dimension is ± 0.1)
5. 画 为镀金区,画 为铜箔区,画 的为背胶区。
(5. Gold plated area, Copper foil area, Gum;)



深圳大显科技有限公司
Shenzhen Daxian Technology Co., Ltd.

机型(Machine model)	Wireless Mic	产品颜色(Product Color)	黑色 (black)	日期(date)	2023/08/09
项目编码(Project Code)	2e-ssmic-027	模面处理(Mold surface treatment)	NA	结构(MD)	闭业智
零件名称(Part Name)	dongle天线(dongle antenna)	单位 (unit)	mm	比例 (scale)	1:1
零件编码(Part Number)	2e-ssmic-027-1	第三视角 (Third perspective)		射频(RF)	胡鹏
材质(material)	PI电解铜 (PI Electrolytic copper)			审核(check)	周康
保存路径(Save Path)				批准(ratify)	张磊
				当前版本(current version)	A

A	首次发行(Initial Issue)	2023.08.09	
版本(edition)	描述(describe)	日期(date)	备注(Note)