



样品封订

承 认 书

APPROVAL SHEET

客户名称 Customer Name Wahoo

产品型号 Product Model KICKR MOVE

产品名称 Product Name Wifi Antenna

客户料号 Customer P/N

南斗星料号 SouthstarP/N 3. N101. 0546

制作日期 Production date 2022-4-14

封样版本 Sample Version A 版

南斗星 (Southstar)		
编制 (FICTION)	品质 (DQE)	研发 (R&D)
客户 (Customer)		
采 购 (PUR)	品质 (QC)	研发 (R&D)

Manufacturer : Shenzhen nandouxing Technology Co., Ltd

Shenzhen address : floor 8.10.16, building C6, Hezhou Hengfeng Industrial City,
Xixiang, Bao'an District, Shenzhen

Dongguan address : No. 3, Nanfang 1st Road, Chigang, Humen Town, Dongguan

Tel : 0755-27474071 Fax : 0755-29976316 Website: WWW.SZ-SOUTHSTAR.COM



深圳市南斗星科技有限公司

SHENZHEN SOUTH STAR TECHNOLOGY CO.,LTD

承认书变更履历

(Resume of change of letter of recognition)

版本 (edition)	日期 (date)	变更描述 (Change description)	备注 (remarks)
A 版 (Version a)	2022. 4. 14	初版 (First edition)	

目录 catalogue

1. 概述 Summary	4
2. 天线图片 Antenna picture..	4
3. 基本参数 Basic parameters	5
4. 调试设置 Debug settings	6
4.1 测试仪器 Test instrument.....	6
4.2 测试环境及方式 Test environment and method	6
5. 匹配电路 Matching circuit	7
6. 测试数据 Test data.....	8-10
7. 装配方式 Assembly mode.....	11
8. 结构图纸 Structural drawings.....	12
9. 包装方式 Packing method.....	13

1. 概述(General)

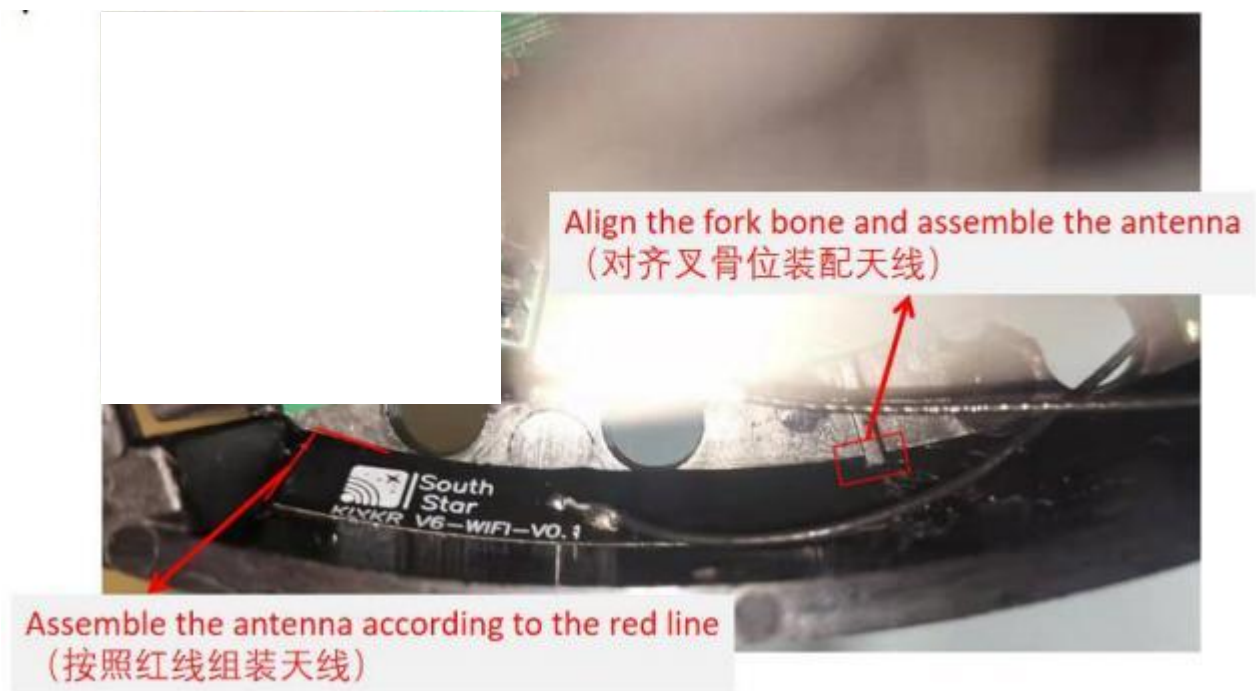
此报告主要描述 KICKR V6 项目的天线性能.

(This report mainly describes the antenna performance of kickr V6 project)

KICKR V6 项目样机, WIFI 天线使用频段范围为 2400-2500MHz.

(For the prototype of kickr V6 project, the frequency band range of wifi antenna is 2400-2500mhz)

2. 天线图片 (Antenna picture)



3. 基本参数 Basic parameters

A. Electrical Characteristics	
Frequency	2400 MHz ~2500 MHz
VSWR	< 2.0
Efficiency	>43%
Impedance	50 Ohm $\pm$ 15%
Polarization	Linear
PeakGain Type	6.09dBi
B. Material & Mechanical Characteristics	
Material of Radiator	FPC black
Cable Type	Ø 0.81mm black
Connector Type	Three generation terminals
Dimension	
C. Environmental	
Operation Temperature	-20 °C ~ + 70 °C
Storage Temperature	- 25 °C ~ + 75°C

4. 调试设置 Debug settings

4.1 测试仪器 Test instrument

VSWR is tested by connecting Agilent E5071B to the test fixture, and the state is free space.

4.2 测试环境及方式 Test environment and method

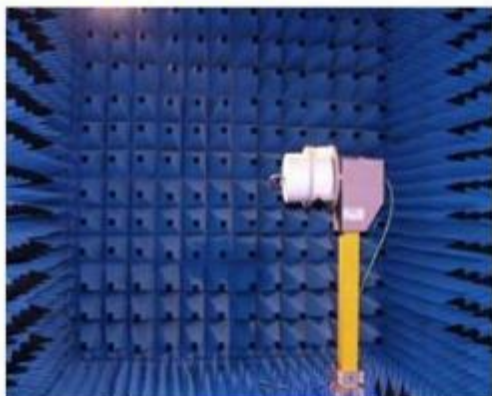
暗室规格: ETS-7 4 3

TD-SCDMA测试设备:StarPoint SP6010/Agilent 8960

LTE-TDD/FDD-SCDMA测试设备:StarPoint SP8011 /CMW500

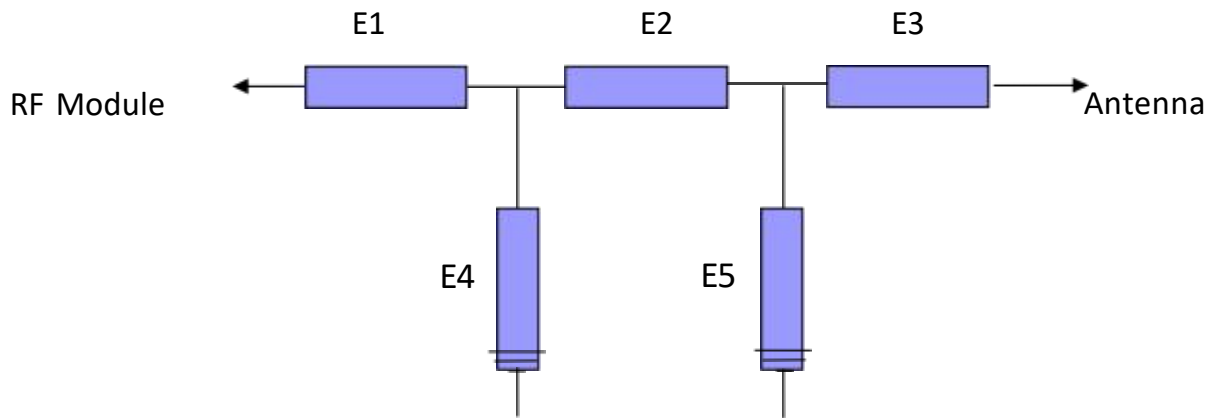
WCDMA/GSM/CDMA测试设备: Agilent 8960

无源效率测试设备: Agilent Technologies E5071B



5. 匹配电路 Matching circuit

5.1 WIFI 天线匹配不变更 (Wifi antenna matching unchanged)

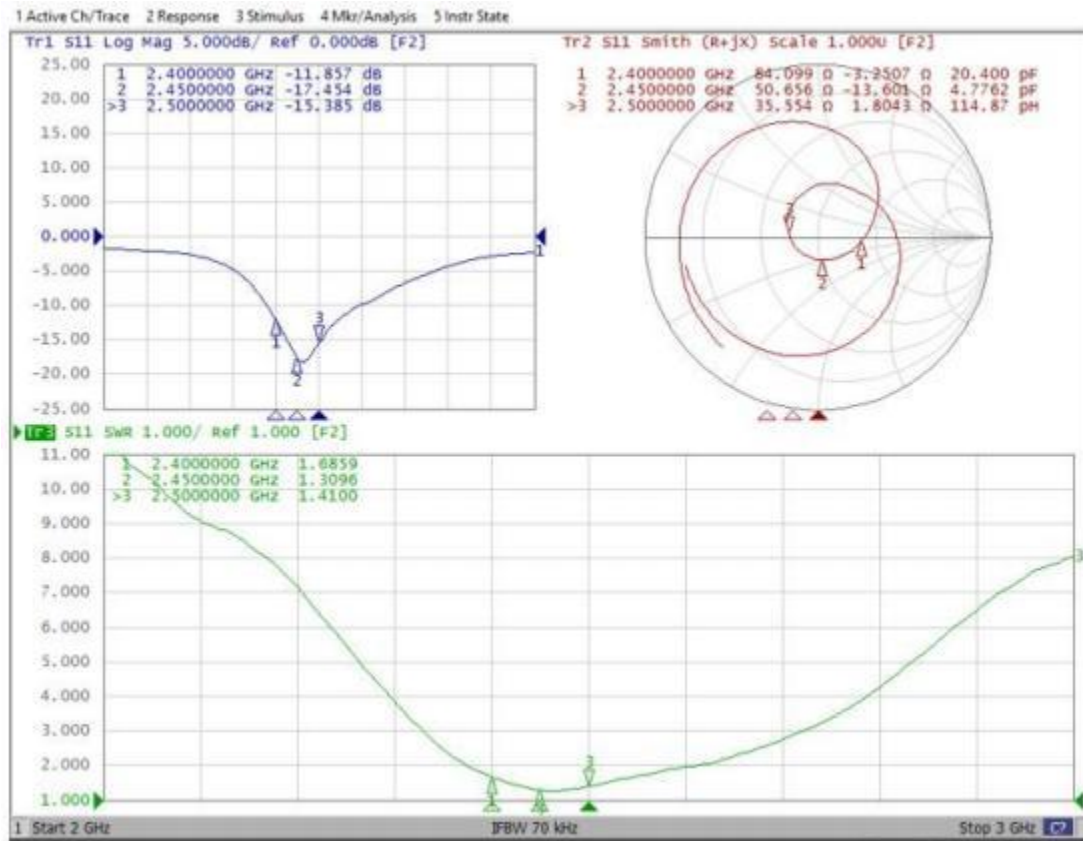


Element	Value
E1	N/A
E2	N/A
E3	N/A
E4	N/A
E5	N/A

6. 测试数据 Test data

(1) WIFI 天线测试无源数据 (Antenna test passive data)

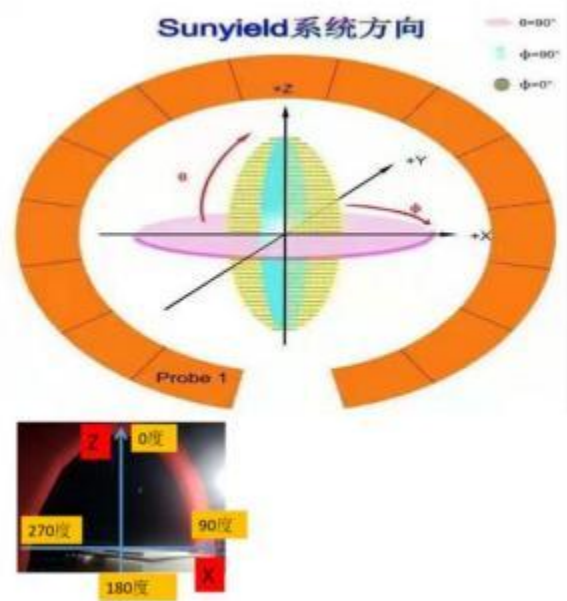
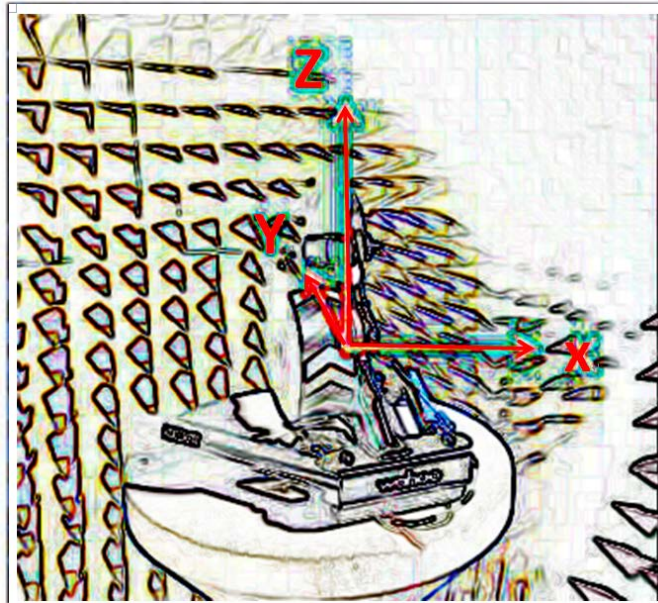
1.1 WIFI 工作频率无源图 (WiFi working frequency passive diagram)



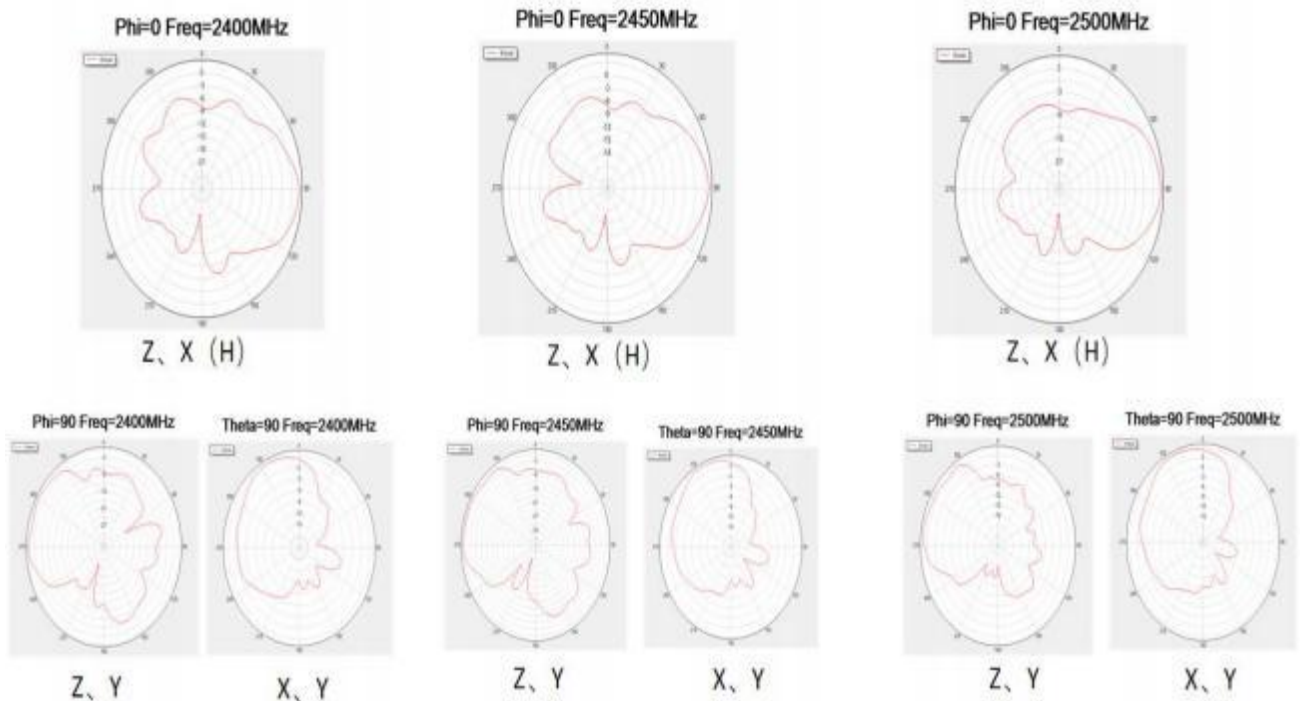
1.2 WIFI 天线效率与增益 (Wifi antenna efficiency and gain)

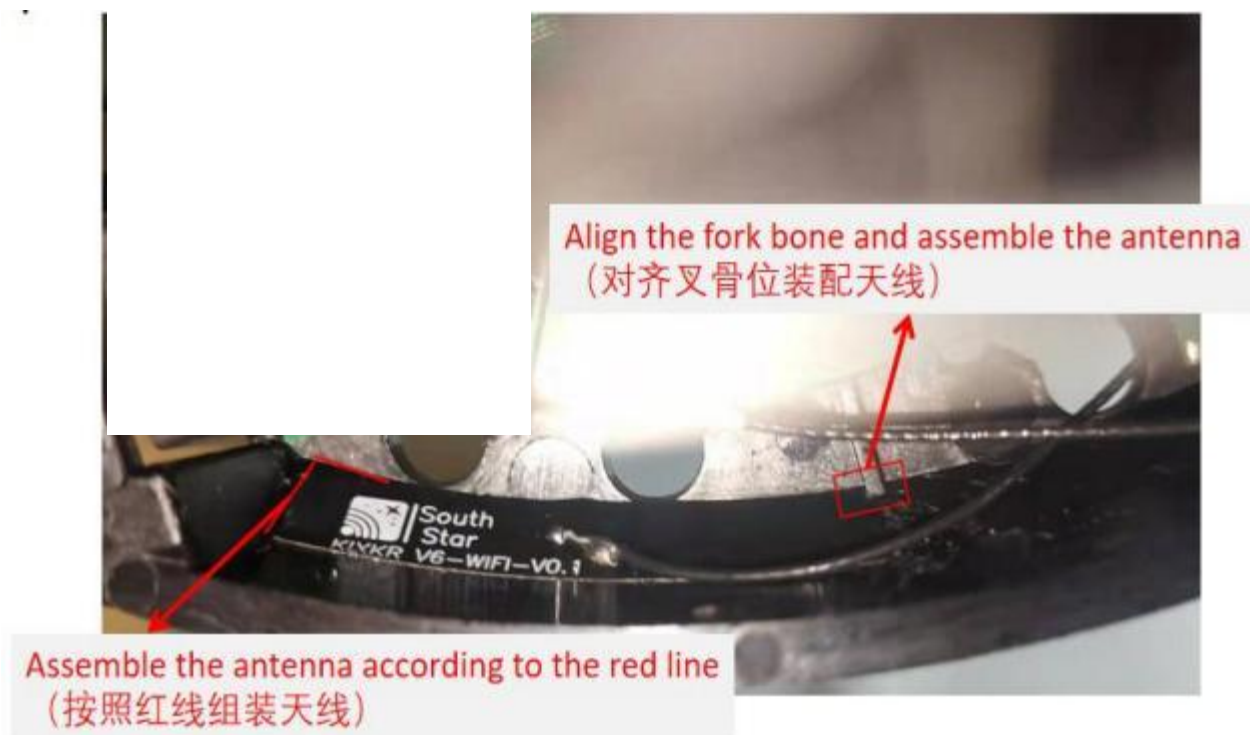
frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)
2400	4.12	-3.65	43.17
2410	4.09	-3.6	43.68
2420	3.75	-3.61	43.54
2430	3.82	-3.38	45.87
2440	4.62	-3.36	46.12
2450	4.81	-3.22	47.61
2460	4.39	-3.20	47.91
2470	4.75	-3.32	46.57
2480	5.12	-3.28	46.97
2490	5.35	-3.30	46.75
2500	6.09	-3.26	47.23
avg.	4.63	-3.38	45.95

1.3 轴的定义 (Definition of axis)



1.4 WIFI 天线 方向图 (Wifi antenna pattern)



7. 装配方式 Assembly mode

1		2		3		4		5		6		7		8			
										Rev		Description		Date		Remark	
										A		New drawing					

Hand tearing position

40±0.2

8±0.2

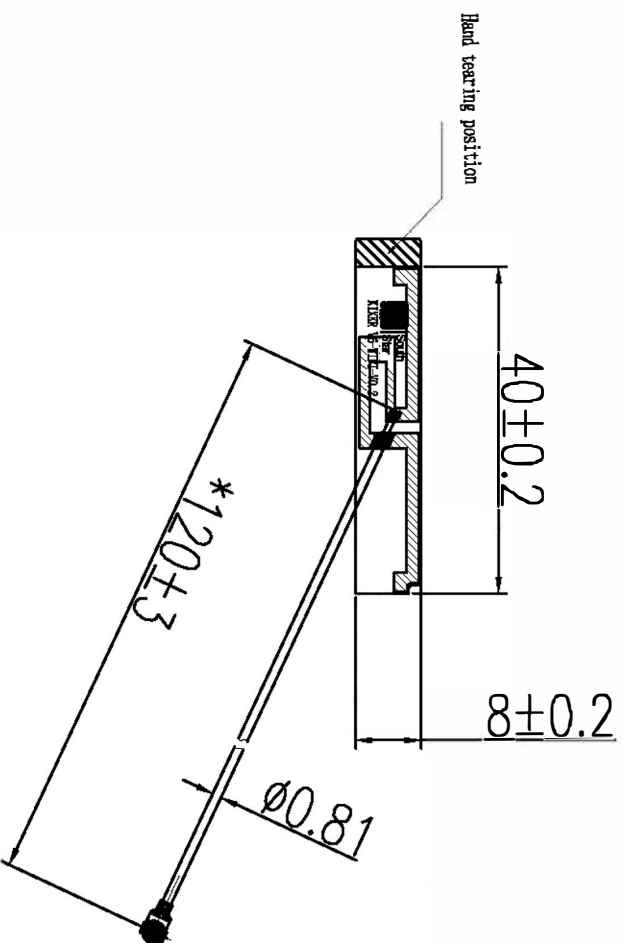
*120±3

∅0.81

C										Technical requirements:									
1										1. The dimension marked with "*" is the key controlled dimension;									
2										2. The dimension not marked shall be in accordance with the drawing;									
3										3. No welding defects such as false welding, tin connection, short circuit and open circuit;									
4										4. All parts shall meet RHHS requirements;									
5										5. The finished product should be fully inspected.									

2		FPC		PI/DSP/40#8mm		1		black	
1		Coaxial line		∅0.81Black line+three generation terminals		1			
No.		Part name		Specification		Amount		Remark	
1									
2									

SOUTH STAR TECHNOLOGY HONG KONG COMPANY LIMITED											
South Star		Third Angle		Project		KIXKR V6		Date		2022-04-14	
0~10 ±0.05		○ 0.02		Part Name		VFI antenna		Designed by		huang tuyong	
10~18 ±0.10		◎ Ø0.03		Part No.				Checked by		RF He Jian	
18~30 ±0.12		⊥ 0.02		Material		/		Approved by		PE	
30~40 ±0.15		∇ 0.04		DWG No.		3.NI01.0546		Unit		mm	
40~ ±0.20		Angle ±0.5°						Scale		1:1	
Location										Rev	
										A	



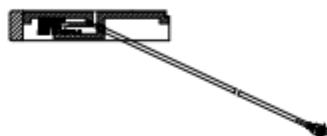
Technical requirements:

1. The dimension marked with "*" is the key controlled dimension;
2. The dimension not marked shall be in accordance with the drawing;
3. No welding defects such as false welding, tin connection, short circuit and open circuit;
4. All parts shall meet RHHS requirements;
5. The finished product should be fully inspected.

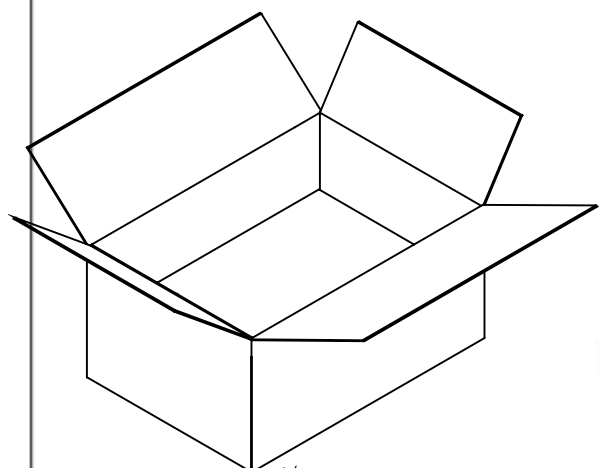
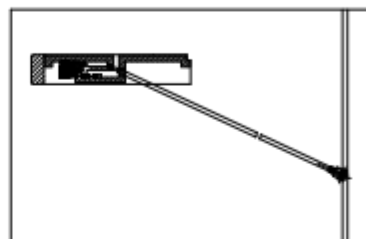
SOUTH STAR TECHNOLOGY HONG KONG COMPANY LIMITED									
									
		Third Angle		Project		KIXKR V6		Date	
0~10		±0.05	○	0.02	Part Name	WiFi antenna		2022-04-14	
10~18		±0.10	◎	0.03	Part No.			huang tuyong	
18~30		±0.12	⊥	0.02	Material	/		He Jian	
30~40		±0.15	▱	0.04				Checked by	
40~		±0.20	Angle	±0.5°	DWG No.	3.N01.0546		Approved by	
Location								Unit	mm
5		6		7		8		Scale	1:1
								Rev	A

Product name : KIXKR V6 WIFI Antenna	版本: A
	Customer : Wahoo

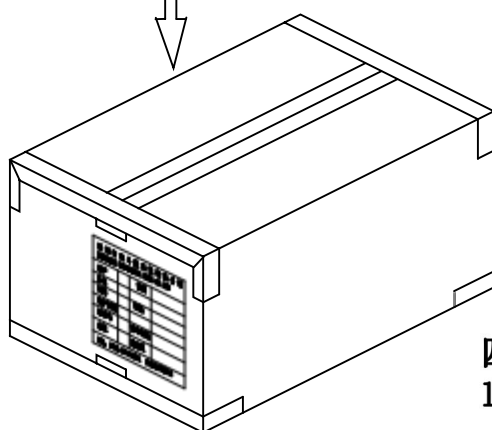
一: Finished antenna



二: Bag, each PE bag contains 50pcs products, and the terminal is wrapped with pearl cotton



四: Case, according to the actual package.



四: Sealing, SouthStar produces and ROHS labels .

Approval: _____ Confirm: _____ Preparation: huang tuyong