

Parts Confirmation Letter

Part Name:

antenna

Part specifications:

Accessory, Antenna, DR1601, 2.4GHz WIFI antenna, external, coaxial line length 32mm, with 3rd generation terminal buckle, FPC, Hand tear position with release paper, 28.1 * 26.5mm, SF2543A-1L23B-032-A (silk screen SF2543A-1B2-A)

Start at the material number:

10883000168

Application model:

DR1601-6012B module with screen recorder

Supplier Name:

Shenzhen Suowode Communication Technology Co., Ltd

Supplier Type:

manufacturer, agent, Traders;

Manufacturer's part number:

SF2543A-1L23B-032-A

Admitting Number:

CRS0004552

Start at the issuance date:



Supplier approval column

develop: LTT	to examine: JYX	approval:
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*The following is the signature and approval column for monitoring and filming

Material sample submission signature column		Material recognition and approval column	
Procurement Engineer	Purchasing supervisor	R & D Engineer	R&D Supervisor

Stargazing (Shenzhen) Technology Co., Ltd

phone: 86-755-26401213

address: Guangdong, China. 28th floor, Building 8A, International Innovation Valley, Dashi 1st Road, Nanshan District, Shenzhen; / URL: www.ddpai.com / Stargazing (Dongguan) Visual Equipment Co., Ltd
Address: Guangda Manufacturing Tangxia Smart Valley, Building 5, No. 8 Fengbao Road, Tangxia Town, Dongguan City, Guangdong Province

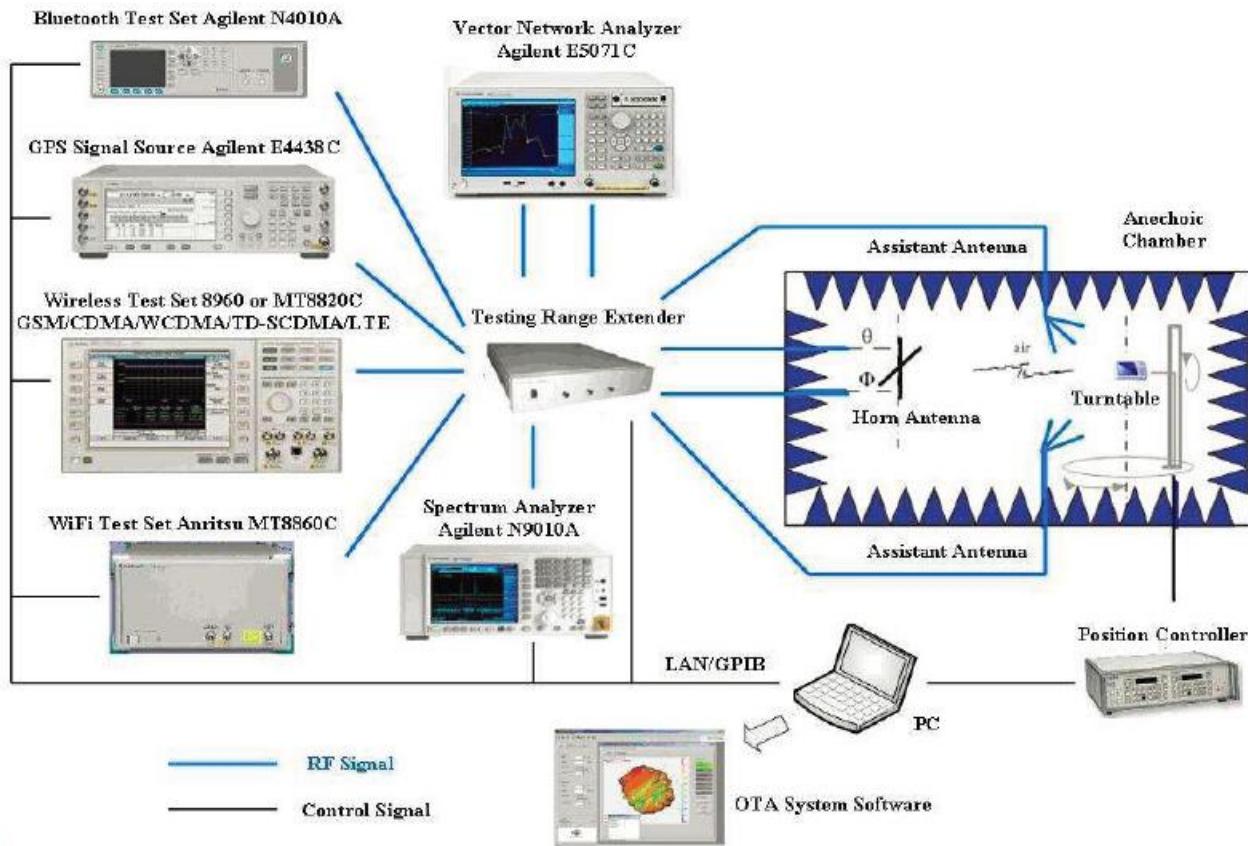
Supplier Address: 6th Floor, Building B, Hexi Hangcheng Industrial Zone, No. 135 Qianjin 2nd Road, Bao'an District, Shenzhen / Supplier contact information: [Luo Zhiwei/15989585437](tel:15989585437)

Serial Number	Certification Number	Material type	Date of issue	notes
1	SHAEC24025471005	Tinned Copper	2024-11-25	a year
2	SHAEC24027284565	halogen	2024-12-06	a year
3	SHAEC24027480902	Adhesive backing	2024-12-06	a year
4	SHAEC24029171725	FEP sheath	2024-12-26	a year
5	SHAEC24027284563	FEP insulation	2024-12-05	a year
6	SZxEC24002306404	Tin wire	2024-07-24	a year
7	SZxEC24002306408	Solder bar	2024-07-24	a year
8	ETR24600712	printing ink	2024-06-14	a year
9	A2250132593101001E	base material	2025-03-10	a year
10	CANEC24028865417	EVA foam	2025-01-03	a year
11	A2240439752101001	conductive fabric	2024-07-29	a year
12	SZxEC24002471802	gold plate	2024-08-08	a year

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one:Device support&testable antenna types



Antenna function	frequency range	Testing instruments	Testing method	Testing standards
2G antenna (GSM)	824MHz-960MHz, 1710MHz-1990MHz	5071B, 8960, OTA darkroom	Active testing, passive testing	Soward standards, customer requirements
3G antenna (WCDMA/TDSCDMA/CDMA- EVDO/2000)	824MHz-960MHz, 1710MHz-2170MHz	5071B, 8960, OTA darkroom	Active testing, passive testing	Soward standards, customer requirements
4G天线 (LTE-FDD/LTE-TDD)		5071B、CMW500、 SP8011、 OTAdarkroom	Active testing, passive testing	Soward standards, customer requirements
WIFI antenna	2.4GHz-2.48GHz, 5.15GHz-5.35GHz, 5.725GHz-5.825GHz	5071B、CMW500、 OTAdarkroom、 Router、PC	Active testing, passive testing, APK testing, throughput testing	Soward standards, customer requirements
BT antenna	2.4GHz-2.48GHz	5071B、 OTAdarkroom、 Bluetooth Speaker	Active testing, passive testing, actual testing	Soward standards, customer requirements
Positioning antenna (GPS, GLONASS, Beidou, Galileo)	$1575.42\text{MHz} \pm 10\text{MHz}$ $1602\text{MHz} + 0.5625\text{MHz}$ $1561\text{MHz} + 2.046\text{MHz}$	5071B、 OTAdarkroom、APK	Active testing, passive testing, actual testing	Soward standards, customer requirements
NFC antenna	13.56MHz	5071B、 Specialized testing fixture、 OTAdarkroom、APK	Passive testing and actual measurement	Soward standards, customer requirements
Remote control antenna	433MHz	5071B、 OTAdarkroom	Passive testing and actual measurement	Soward standards, customer requirements
NB_IOT	with LTE-FDD	CMW500 (high-end version)	Active testing, passive testing	Under construction (power standard basically consistent with 4G)

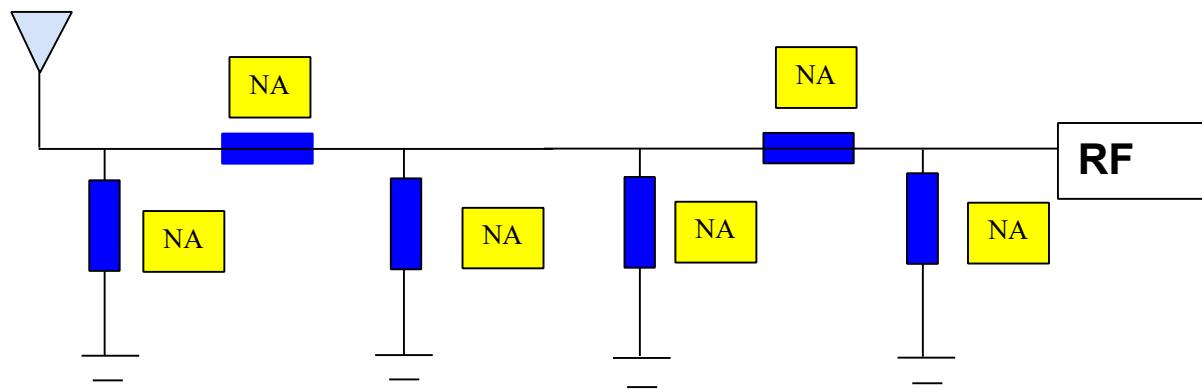
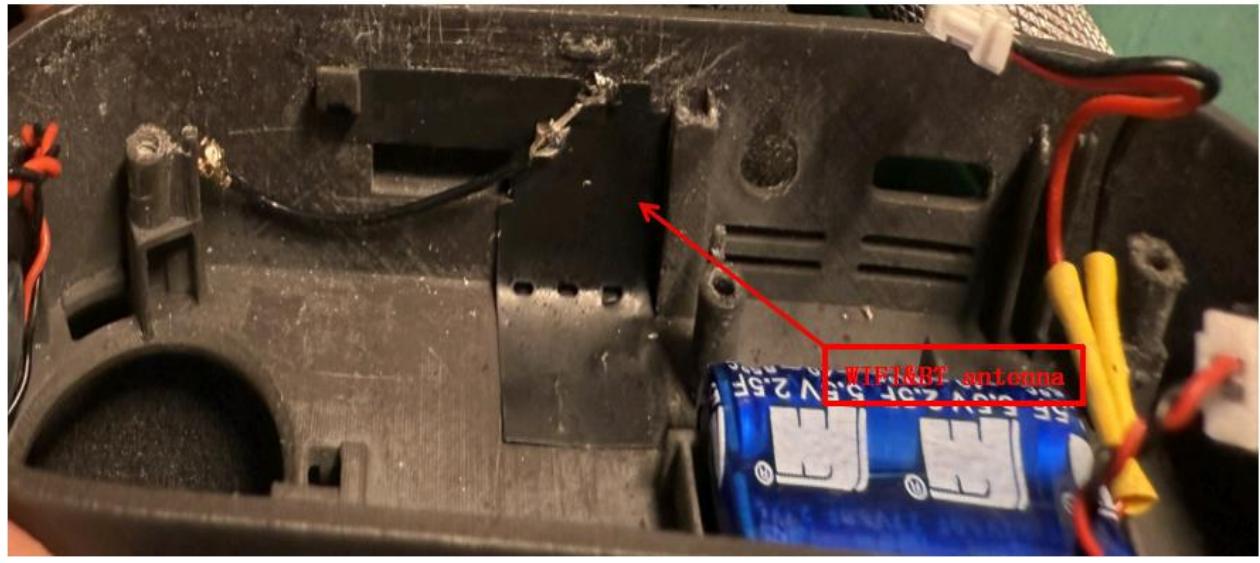
two: overview**(1) Antenna performance**

1. This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of WIFI&BT antenna.
2. Antenna shape size: Meet the requirement of MID
3. Antenna band: 2400MHz~2500MHz
4. Antenna material: Antenna material meet the requirement of MID
5. Adhesive performance: Adhesive performance meet the requirement of MID
6. Antenna performance meet the spec below:

Description	2.4GHz~2.5GHz	Units
VSWR	≤2.0	
Average Antenna Gain	≥-4.5	dB
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

(2) Mechanical Information

Mechanical Dimension	
Cable Length	32mm/Black
Description	WIFI&BT antenna
Material	FPC
Coaxial Cable	50Ω/0. D. 0.81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

three: Matching Circuit Diagram & Machine Picture & Antenna Picture**(1) Matching circuit****(2) Machine picture & antenna picture**

**four:Antenna Standing Wave Ratio & Antenna Efficiency (VSWR)**

Passive Test For 2.4-2.5G				
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)
2400	54.84	-2.61	0.82	-1.33
2410	53.14	-2.75	0.68	-1.47
2420	62.15	-2.07	1.32	-0.83
2430	65.26	-1.85	1.6	-0.55
2440	71.57	-1.45	2.0	-0.11
2450	61.35	-2.12	1.4	-0.75
2460	60.79	-2.16	1.4	-0.75
2470	50.81	-2.94	0.66	-1.49
2480	51.58	-2.88	0.62	-1.53
2490	53.78	-2.69	0.7	-1.45
2500	64.53	-1.9	1.36	-0.79

five:Active testing

Model number	channel	B Mode (11MHz)		G Mode (54MHz)		N mode (MCS7)	
		TRP	TIS	TRP	TIS	TRP	TIS
1	1	14.10	-71.89	12.33	-60.27	12.97	-55.43
	7	14.47	-72.48	12.24	-59.00	12.90	-53.86
	13	15.05	-70.92	12.82	-57.8	12.83	-53.1

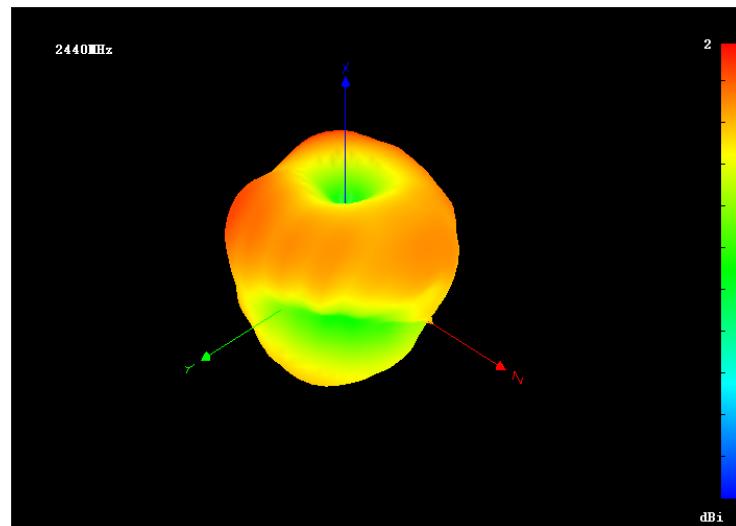
Model number	channel	B Mode (11MHz)		G Mode (54MHz)		N mode (MCS7)	
		TRP	TIS	TRP	TIS	TRP	TIS
2	1	14. 47	-72. 86	12. 44	-60. 43	13. 44	-56. 86
	7	15. 01	-72. 45	12. 71	-59. 28	13. 43	-54. 99
	13	15. 68	-71. 61	13. 09	-58. 02	13. 28	-53. 05

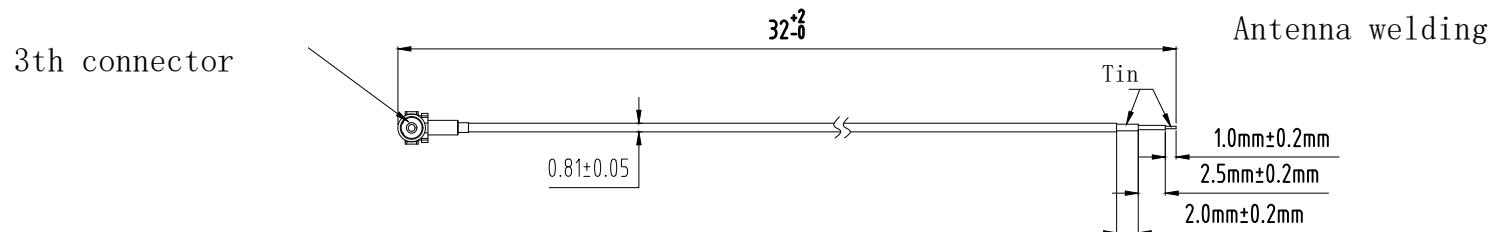
six:environmental treatment

Environment processing has not been changed.

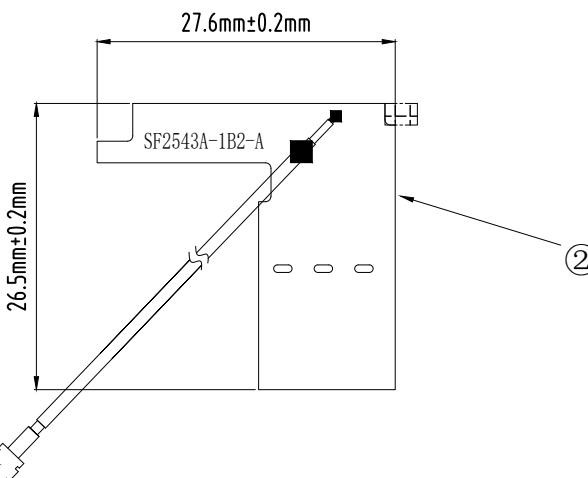


Note: Please optimize the specific environmental treatment methods according to the test report

seven:3D pattern**eight:structural drawings**



① The connector is facing inward.



Technical Requirements:

1. Mark * for critical dimensions;
2. Dimensions must comply with the drawing requirements;
3. No incomplete or false soldering at the joints. The joints should be smooth and full.
4. The network test is passed (with the specified waveform).
5. The dimensional tolerances not specified are at level 6 of SJ/T 10628 1995, and the tolerance values are calculated by averaging the upper and lower deviations.

5									
4									
3							Signature	Date	
2	FPC		Black	1	SF2543A-1B2-A	RD	Joseph	2025. 6. 25	QC
1	coaxial cable	3th connector	Black	1	Φ=0.81mm	RF			
Serial	NAME	Materials	Colour	Count	Description	Process		Approval	

SWARD

ShenZhen SWARD
Communication Technology Co. Ltd

SF2543A-1L23B-032-A

ROHS