

Antenna specification for approval

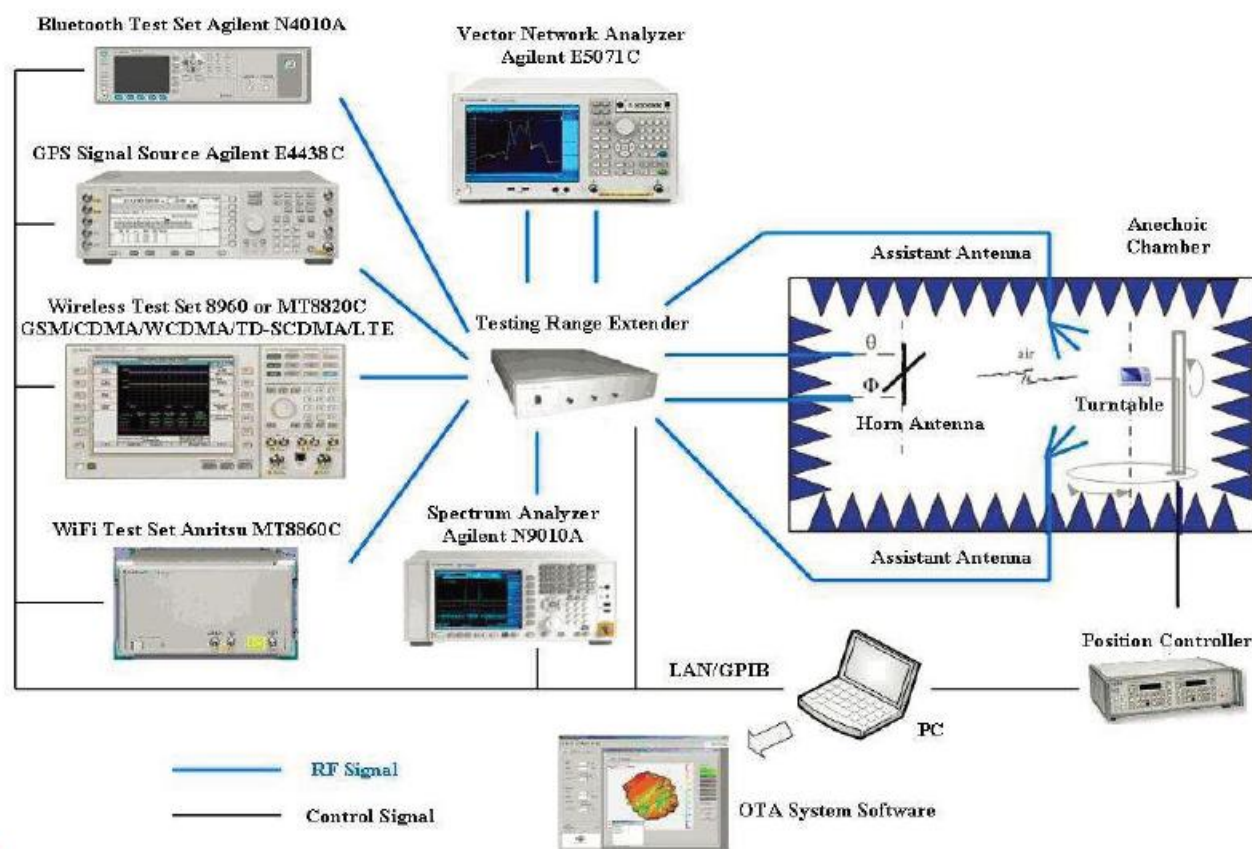
Customer name	Chengfeng		
Model	M01019AE-10.1 inch metal shell – Dajing 863T motherboard – A523 main control		
Antenna band	2.4GHZ&5GHz		
Antenna function	WIFI&BT&5Gwifiantenna		
Antenna material	FPC	color	black
model	M01019AE		
Material number	RTX-MQ1019AE-WIFI-V1.0		
Customer Part Number			
structure		Purchase	
Document control		structure	
radio frequency		engineering	
To examine		QC	
Responsible	LTT	To examine	
date 2025.07.28	Seal area	date 2025.07.28	Seal area
Customer name	Xiamen Weizhixing Technology Co., Ltd		

Serial number	Certification number	Material type	Date of issue	Remarks
1	SHAEC24025471005	Tinned copper wire	2024-11-25	One year
2	SHAEC24027284565	halogen	2024-12-06	One year
3	SHAEC24027480902	Adhesive	2024-12-06	One year
4	SHAEC24029171725	FEP sheath	2024-12-26	One year
5	SHAEC24027284563	FEP insulation	2024-12-05	One year
6	SZXEC24002306404	Tin wire	2024-07-24	One year
7	SZXEC24002306408	Tin	2024-07-24	One year
8	ETR25501383	Printing ink	2025-05-20	One year
9	A2250132593101001E	Substrate	2025-03-10	One year
10	CANEC24028865417	EVA foam	2025-01-03	One year
11	A2240439752101001	Conductive cloth	2024-07-29	One year
12	SZXEC24002471802	Gold plating	2024-08-08	One year

Catalogue

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one:Device support&testable antenna types



Antenna function	Frequency Range	test instrument	test method	standard test
2G antenna (GSM)	824MHz-960MHz, 1710MHz-1990MHz	5071B、8960 OTA darkroom	Active test, passive test	Soward standards, customer requirements
3G antenna (WCDMA/TDSCDMA/CDMA-EVDO/2000)	824MHz-960MHz, 1710MHz-2170MHz	5071B、8960 OTA darkroom	Active test, passive test	Soward standards, customer requirements
4G antenna (LTE-FDD/LTE-TDD)		5071B、CMW500、 SP8011、OTA darkroom	Active test, passive test	Soward standards, customer requirements
WIFI antenna	2.4GHz-2.48GHz, 5.15GHz-5.35GHz, 5.725GHz-5.825GHz	5071B、CMW500、OTA darkroom、router、 PC	Active test, passive test, APK actual test, throughput test	Soward standards, customer requirements
BT antenna	2.4GHz-2.48GHz,	5071B、OTA darkroom 、Bluetooth Speaker	Passive test, actual test	Soward standards, customer requirements
Positioning antenna (GPS, GLONASS, Beidou, Galileo)	1.575.42MHz±10MHz 1602MHz±0.5625MHz 1561MHz±2.046MHz	5071B、OTA darkroom 、APK	Passive test, actual test	Soward standards, customer requirements
NFC antenna	13.56MHz	5071B、Dedicated test fixture、OTA darkroom、APK	Passive test, actual test	Soward standards, customer requirements
Remote control antenna	433MHz	5071B、OTA darkroom	Passive test, actual test	Soward standards, customer requirements

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: 2. 4GHz~5GHz

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:

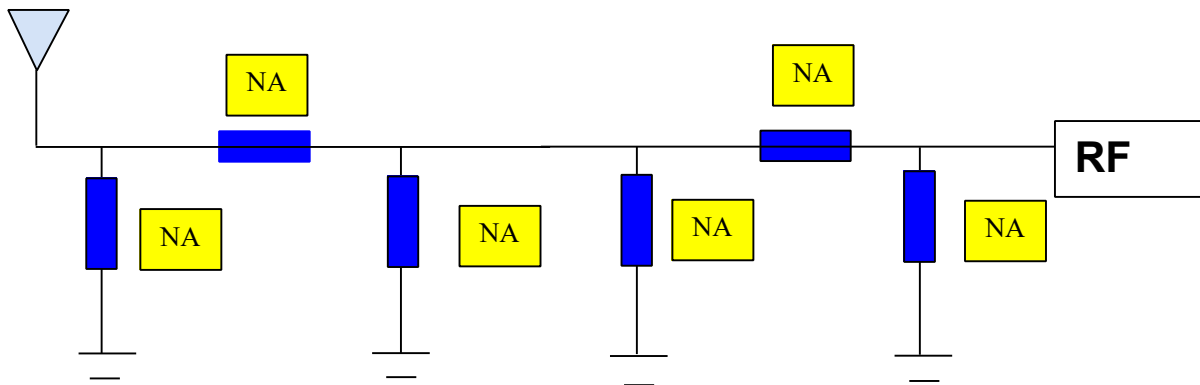
Description	2. 4GHz~5GHz	Units
VSWR	≤ 2.0	
Average Antenna Gain	≥ -4.5	dB
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

(2)Mechanical Information

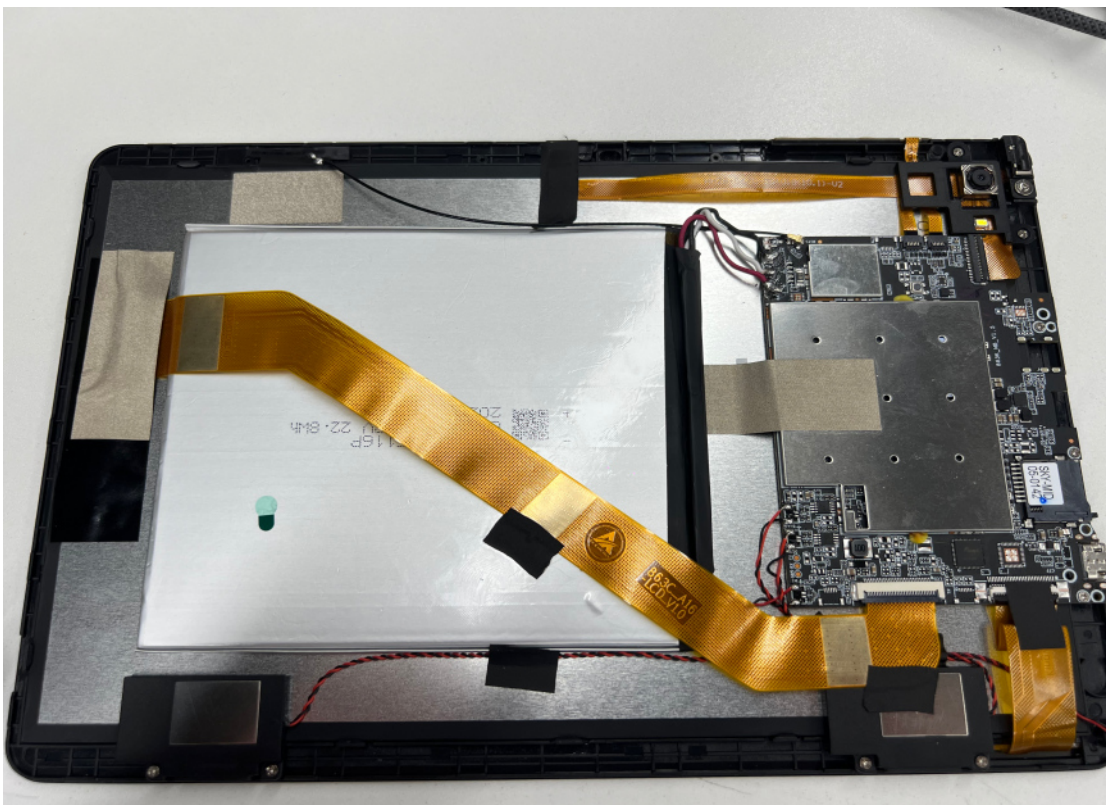
Mechanical Dimension	
Cable Length	115mm/BLACK
Description	WIFI&BT antenna
Material	FPC
Coaxial Cable	50 Ω /O. D. 0. 81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

three: Match circuit diagrams, machine images, and antenna images

(1) matching circuit



(2) Machine images&antenna images





four:Antenna standing wave ratio&antenna efficiency

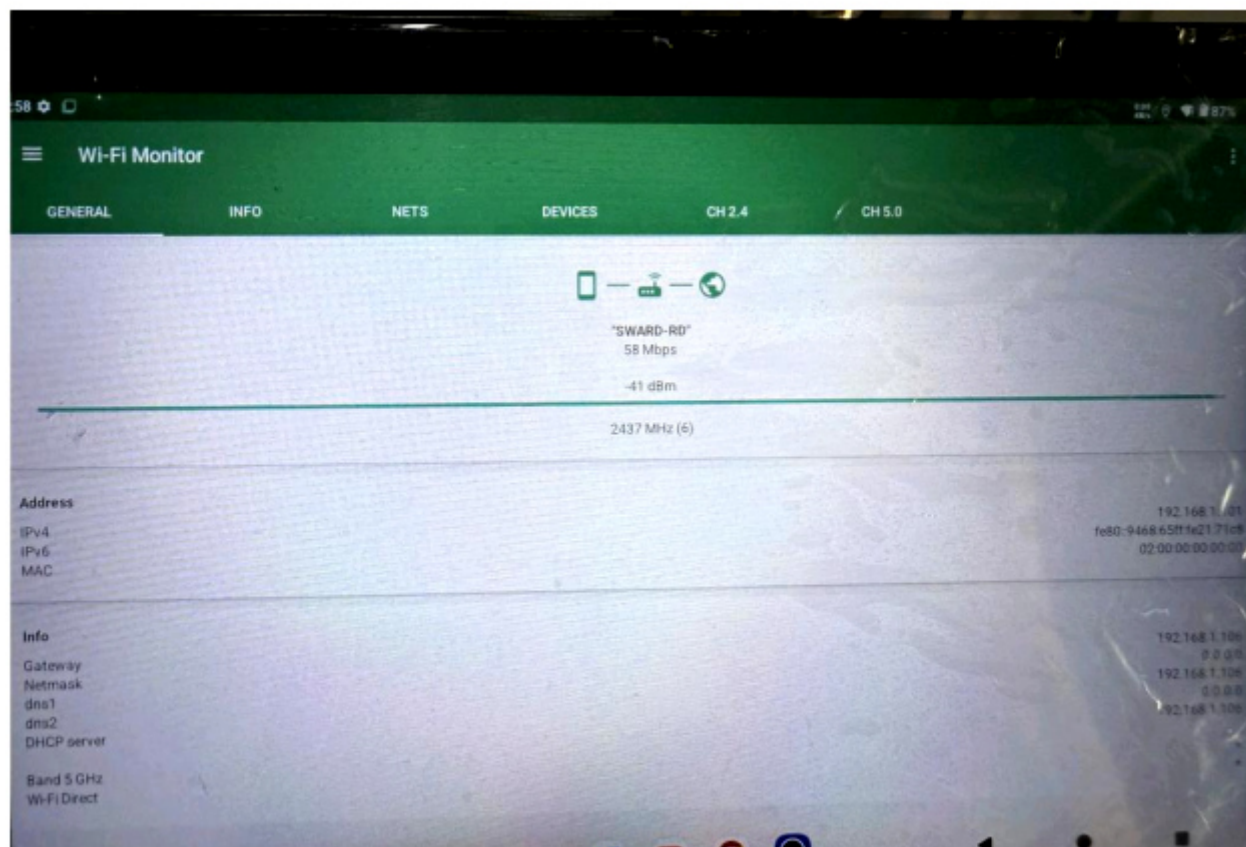


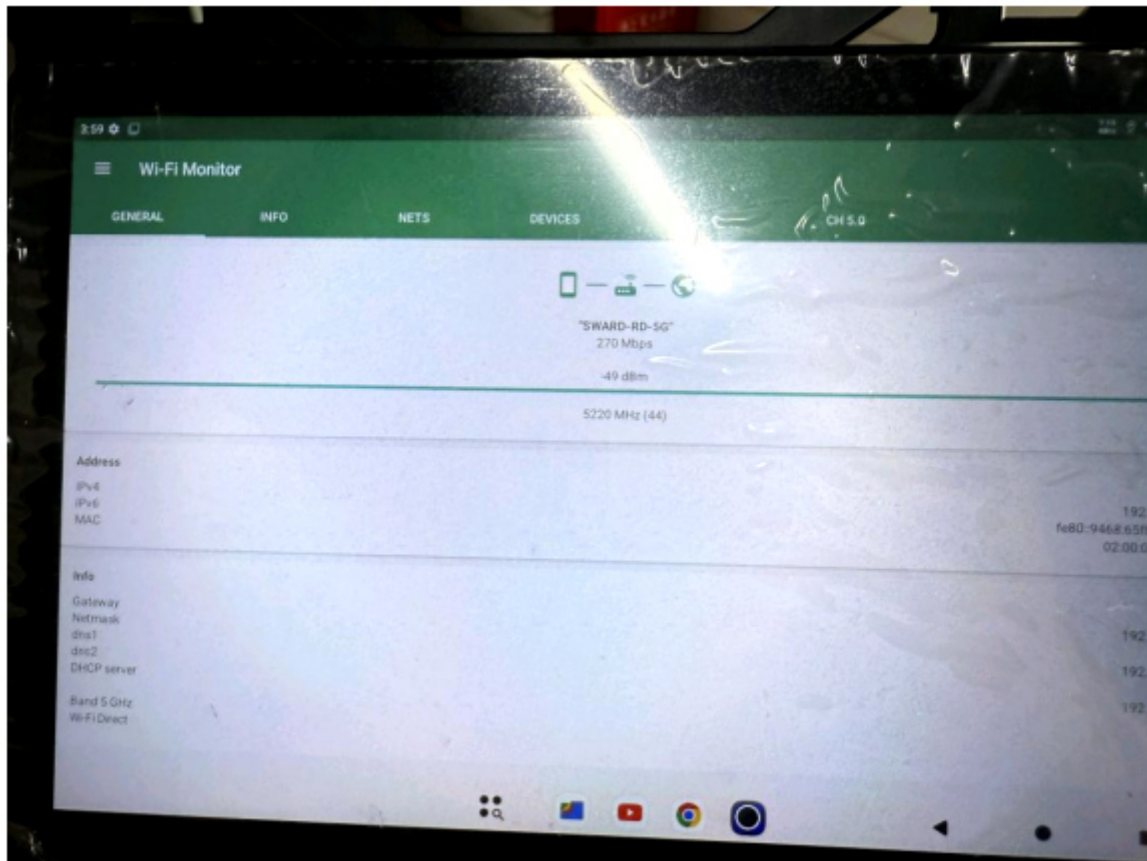
Passive Test For 2.21-2.8G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
2400	30.26	-5.19	-0.56	-2.71	18.089	12.176	-0.56	-15.1
2410	28.86	-5.4	-0.95	-3.1	17.202	11.656	-0.95	-15.81
2420	34.1	-4.67	-0.51	-2.66	20.104	13.994	-0.51	-14.74
2430	37.31	-4.28	-0.45	-2.6	21.639	15.668	-0.45	-13.12
2440	41.75	-3.79	0.09	-2.06	23.812	17.936	0.09	-12.33
2450	35.39	-4.51	-0.54	-2.69	19.852	15.534	-0.54	-14.63
2460	35.2	-4.54	-0.36	-2.51	19.525	15.671	-0.36	-16.71
2470	28.6	-5.44	-1.07	-3.22	15.807	12.795	-1.07	-19.23
2480	29.11	-5.36	-0.85	-3	16.176	12.929	-0.85	-19.76
2490	30.62	-5.14	-0.56	-2.71	17.216	13.404	-0.56	-19.79
2500	38.16	-4.18	0.46	-1.69	21.677	16.479	0.46	-18.49

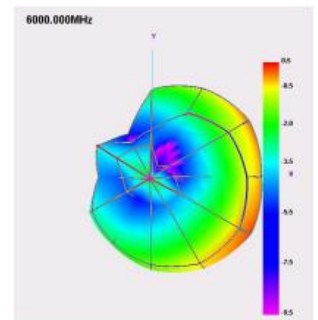
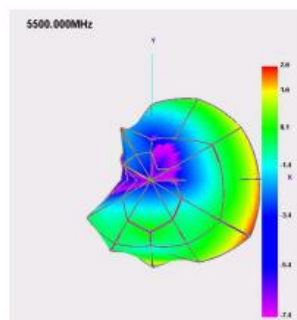
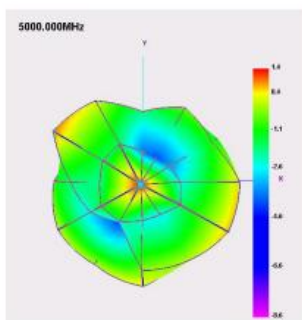
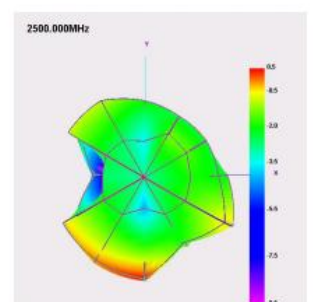
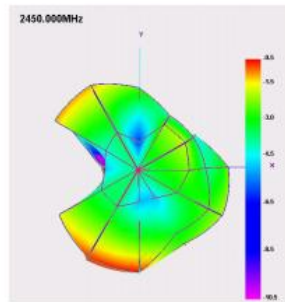
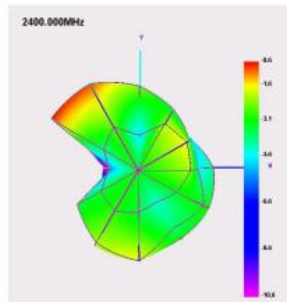
Passive Test For 5G-WIFI								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
5000	45.69	-3.4	1.43	-0.72	25.132	20.555	1.43	-16.89
5100	41.82	-3.79	1.3	-0.85	21.07	20.745	1.3	-15.79
5200	41.61	-3.81	1.65	-0.5	18.589	23.024	1.65	-20.62
5300	51.06	-2.92	1.97	-0.18	21.709	29.349	1.97	-18.57
5400	51.75	-2.86	3.12	0.97	22.825	28.927	3.12	-14.54
5500	43.26	-3.64	2.57	0.42	19.276	23.983	2.57	-16.59
5600	40.54	-3.92	2.15	0	18.592	21.947	2.15	-14.69
5700	38.73	-4.12	1.67	-0.48	18.151	20.576	1.67	-14.23
5800	41.35	-3.83	2.37	0.22	19.852	21.502	2.37	-20.09
5900	38.44	-4.15	1.28	-0.87	18.781	19.663	1.28	-18.81
6000	34.69	-4.6	0.51	-1.64	17.027	17.663	0.51	-18.64

five:Antenna measurement

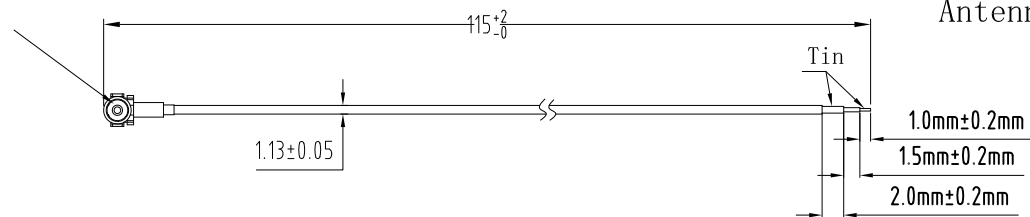
Actual test effect	
Model number	1
testing environment	Soward R&D Center
Test equipment	Huawei AM08
test distance	10 meters $\geq$



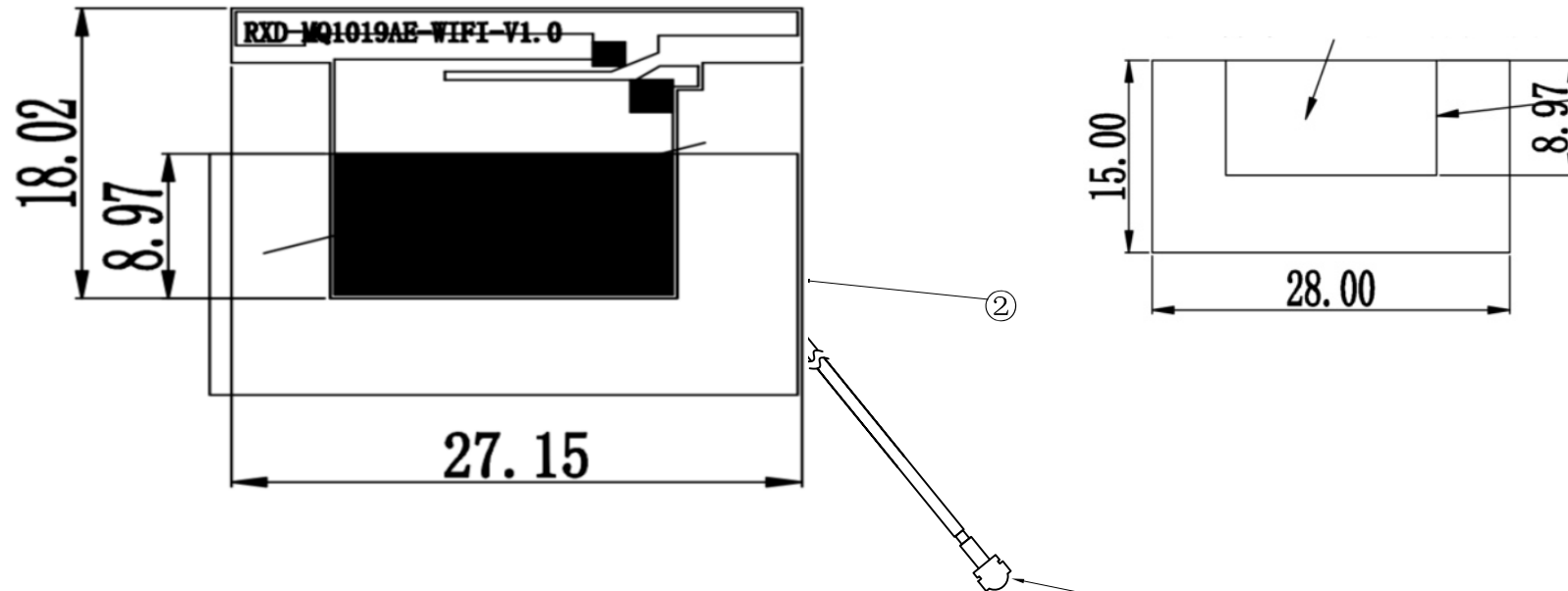


six:3D pattern**seven:structural drawings**

4th connector



Antenna welding



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.

- Packaging requirements:
1. PE sealed bag packaging
 2. 100 pieces per bag.

①Terminal facing inward

5											
4											
3							Signature	Date		Signature	Date
2	FPC		Black	1	SF2564A-1B2-A	RD	Joseph	2025. 7. 28	QC		
1	coaxial cable	4th connector	Black	1	∅0.81mm	RF					
Serial	NAME	Materials	Colour	Count	Description	Process			Approval		

SWARD

ShenZhen SWARD
Communication Technology Co.Ltd

Stage marker

Organization

Ratio

A

mm

N/A

Total: 1Number pages:1 Page

ROHS