

# SWARDShenzhen Soward Communication Technology Co., Ltd.

Shenzhen Soward Communication Technology Co., Ltd.

## Antenna specifications Antenna specification for approval

client's name Customer name Model	Cool prestige		
Model	GKU-CD5 (3-inch screen recorder-8189FTV module)		
Antenna band Antenna band	2.4GHZ		
Antenna type Antenna type antenna	WIFI antenna		
material Antenna material	FPC		
FPC color FPC color material	black		
number Material number	SF687D-1L22B-080-A		
Thorward acknowledged the signature Ward accepted the signature structure		Customer acknowledgment signature Client acknowledges signature purchase	
structure	Purchase		
Quality QC	structure structure		
radio frequency auditTo	Engineering Quality		
examine organizer	QC		
Responsible	Li Tingting	Audit To examine date	
datedate 2021.06.16	Stamping area Seal area	2021.06.16	Stamping area Seal area

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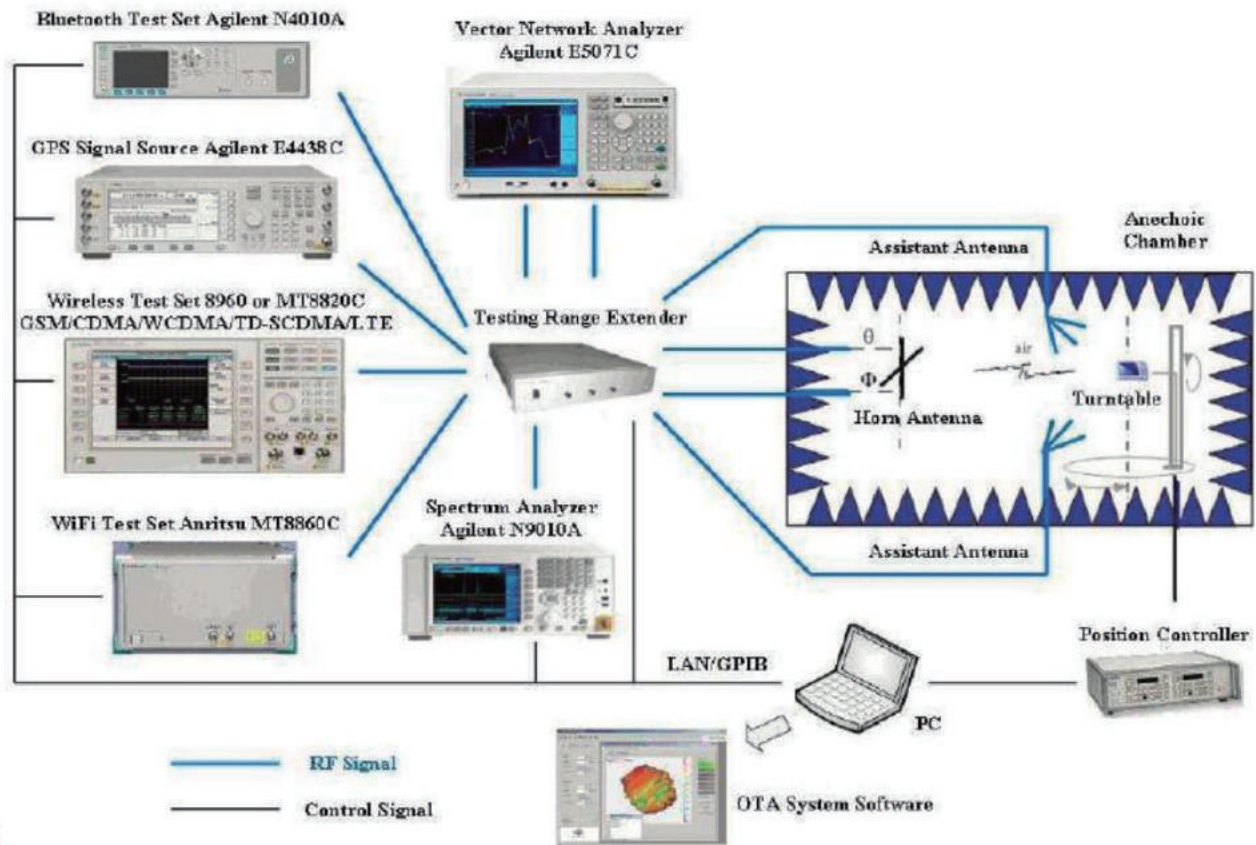
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## 1: Equipment support & testable antenna types



Antenna function	Frequency Range	Test Instrument	Testing Way	Test Standard
2G Antenna (GSM)	824MHz-960MHz, 1710MHz-1990MHz	5071B, 8960.OTA Darkroom	Active test, Passive test	Thorward Standard, Customer Standard
3G Antenna (WCDMA/TDSCDMA/CDMA- EVDO/2000)	824MHz-960MHz, 1710MHz-2170MHz	5071B, 8960.OTA Darkroom	Active test, Passive test	Thorward Standard, Customer Standard
4GAntenna (LTE-FDD/LTE-TDD)		5071B, CMW500, SP8011, OTA Darkroom	Active test, Passive test	Thorward Standard, Customer Standard
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 test, Throughput test	Thorward Standard, Customer Standard
BT Antenna	2.4GHz-2.48GHz	5071B, OTA Darkroom, BT speaker	Active test,Actural test	Thorward Standard, Customer Standard
Positioning Antenna (GPS, GLONASS, BEIDOU,Galileo)	1575.42MHz±10MHz 1602MHz+0.5625MHz 1561MHz+2.046MHz	5071B, OTA Darkroom, APK	Active test,Actural test	Thorward Standard, Customer Standard
NFC Antenna	13.56MHz	5071B,Special Fixture, OTA Darkroom, APK	Active test,Actural test	Thorward Standard, Customer Standard
Remote Antenna	433MHz	5071B, OTA Darkroom	Active test,Actural test	Thorward Standard, Customer Standard

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## 2: Overview

### Antenna performance

1.This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of WIFI 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
Antenna Efficiency	≥40	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

### Mechanical Information

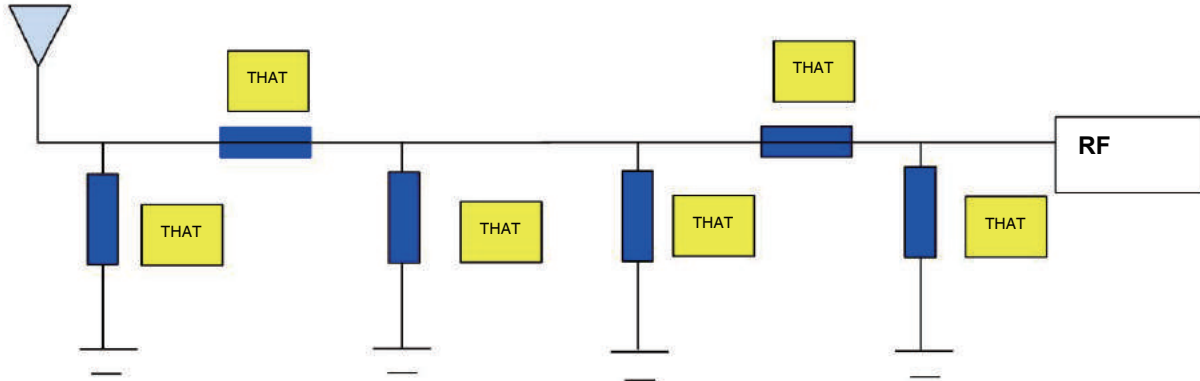
Mechanical Dimension	
Cable Length	080mm/BLACK
Description	WIFI antenna
Material	FPC
Coaxial Cable	50Ohm/O.D.0.81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

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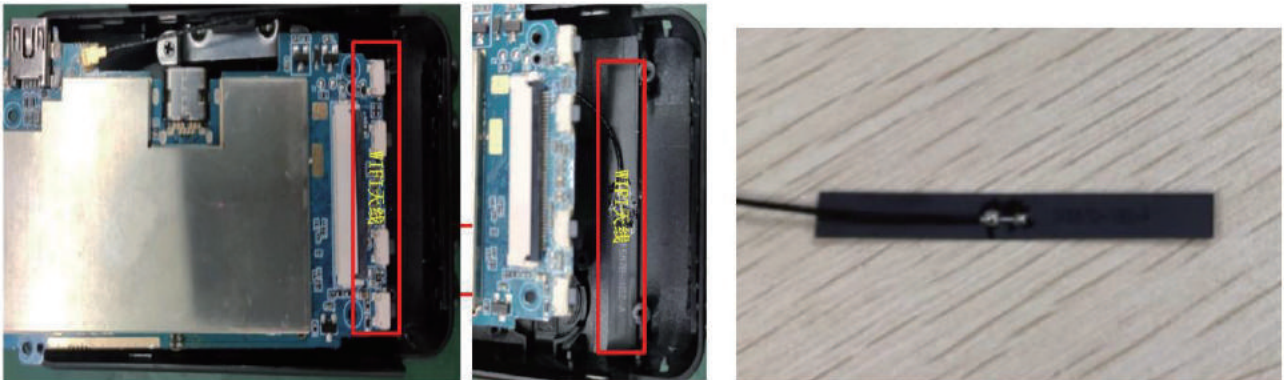
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Three: Matching circuit diagram & machine picture & antenna picture

Matching circuit



Machine pictures & antenna pictures



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## Four: Antenna standing wave ratio & antenna efficiency (VSWR)



Passive Test For 2.4Gwifi								
Freq	Effi	Effi	Gain	Gain	UHS	DHIS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
2400	41.55	-3.81	3.15	1	15.542	26.009	3.15	-16.99
2410	41.12	-3.86	3.02	0.87	15.376	25.744	3.02	-16.86
2420	38.39	-4.16	2.63	0.48	14.304	24.083	2.63	-15.76
2430	37.73	-4.23	2.47	0.32	14.047	23.686	2.47	-14.89
2440	36.69	-4.35	2.39	0.24	13.383	23.309	2.39	-16.72
2450	36.73	-4.35	2.53	0.38	13.043	23.685	2.53	-18.13
2460	35.67	-4.48	2.46	0.31	12.312	23.36	2.46	-16.53
2470	32.89	-4.83	2.07	-0.08	11.159	21.732	2.07	-17.16
2480	31.52	-5.01	1.77	-0.38	10.549	20.973	1.77	-18.78
2490	32.22	-4.92	1.64	-0.51	10.747	21.475	1.64	-20.78
2500	32.16	-4.93	1.45	-0.7	10.783	21.379	1.45	-22.15

Antenna average	dBi
gain WIFI-2.4	1.64

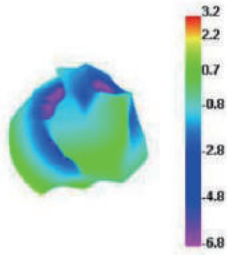
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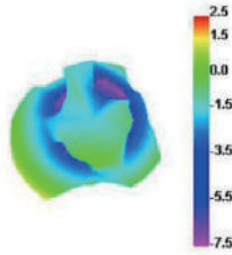
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## Five: 3D pattern

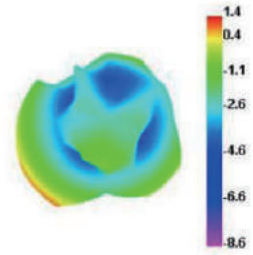
2400.000MHz



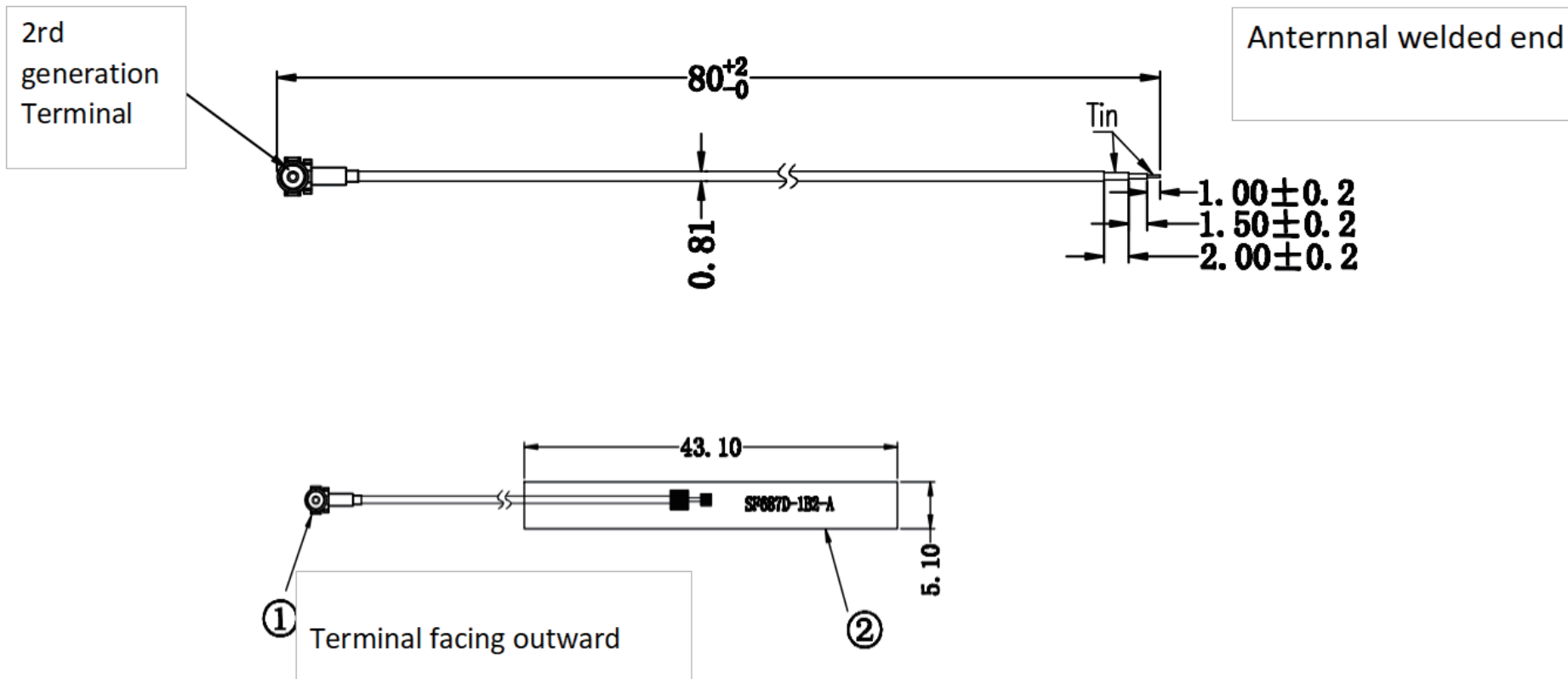
2450.000MHz



2500.000MHz



## Six: Structural drawings



**Skills Requirement**

Marked \* is the key size

There are no false welds or false welds in the solder joints.

The network score test passed (the specified waveform appears)

Linear dimensions are not marked with tolerances. According to SJ/T 10628 1995 Level 6, the tolerance value is divided equally by the upper and lower deviations.

5								
4								
3							Signature	Year/Date/Day
2	FOC		Black	1	F687D-1B2-ARD		YWD	2021-6-15
1	coaxial line	2rd generation Terminal	Black	1	φ=0.81mm	RF		
No.	Name	Material	Color	QTY	Description	Verify		

**SWARD**

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SF687D-1L22B-080-A

