



South
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SHENZHEN SOUTH STAR TECHNOLOGY CO., LTD

APPROVAL SHEET

Sample seal

Customer Name Roborock

Product Model VDS Shrapnel

Customer P/N 1. 16. 0026

Southstar P/N 3. N204. 0515

Production date 2025. 09. 05

Revision Rev. 1. 0

Southstar		
FICTION	DQE	R&D
Customer		
PUR	QC	R&D

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History

Version	Date	Change Description	Note
Rev. 1. 0	2025. 08. 28	First edition	
Rev. 2. 0	2025. 09. 05	Update the drawing, Increase dispensing	



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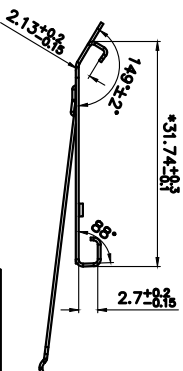
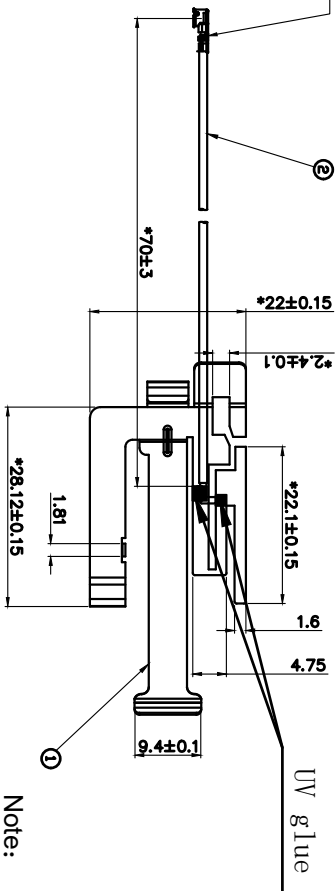
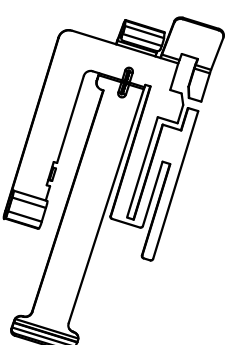
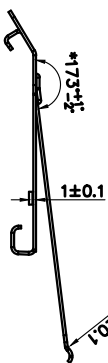
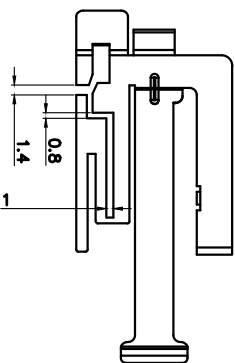
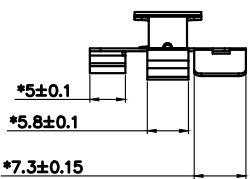
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Antenna Specification

A. Electrical Characteristics	
Frequency	2400MHz~ 2500MHz, 5150MHz~5850MHz
VSWR	<2
Efficiency	>42%
Impedance	50 Ohm
Polarization	Linear
Gain	2.4G:1.46dBi;5G:1.79dBi
Note	
B. Material & Mechanical Characteristics	
Material of Radiator	shrapnel
Cable Type	1.13 Black
Connector Type	First generation terminal
C. Environmental	
Operation Temperature	- 30°C ~ +65°C
Storage Temperature	- 40°C ~ +70°C

The terminal direction is as shown in the figure.



Note:

1. Marked "*" is the key size, and Marking "CpK" requires process capability analysis;
2. Unmarked tolerance refer to the Undeclared tolerance table;
3. The electrical property meets the requirements of the specification;
4. All parts shall meet the requirements of RoHS2.0 and REACH, HF, Red Phosphorus Free Flame.

Rev	Description	Date	Remark
A	New drawing	2025-09-17	
B			

	东莞市南斗星科技集团有限公司 Dongguan South Star Technology Group co.,Ltd
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Undeclared tolerance table				Project		VDS Bumper	Designed by	ZJY	2025-09-17
0.5~6	±0.1	—	0.1	Part Name	Bumper Antenna-1	RF by	CBU	2025-09-17	
>6~30	±0.2	○	0.1	Part No.	3.N204.0515	Approved by	LSL	2025-09-17	
>30~120	±0.3	◎	0.1	Customer	/	Unit	mm		
>120~400	±0.5	⊥	0.1	P/N		Scale			
>400~1000	±0.8	∠	0.1	Page 1 of 1	Third Angle				
>1000	±1.2	Angle	±1.0°						

No.	Part NO.	Name	Specification	Amount	Remark	1	2	3	4	5	6	7	8
2	2.A01.2837	Cable	1.13 Black cable+Mini Con.-1	1									
1	1.W01.0215	Bumper	SUS304 T=0.4mm	1									
					Connector orientation Cable L≤ 100 standard Cable L≤ 200 ±90° Cable L> 200 Don't control								



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Test Equipment & Conditions

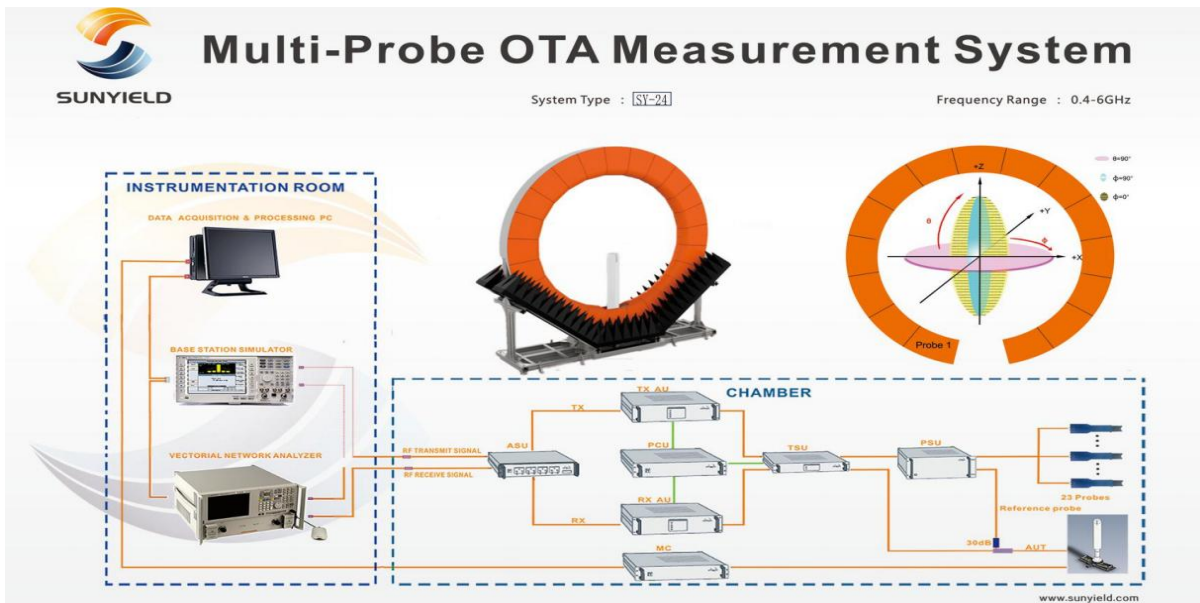
1. NetWork Analyzers:

Keysight E5071C

2. Comprehensive tester:

CMW500 、 MT8000A、 MT8862A

3. 3D Chamber Test System:





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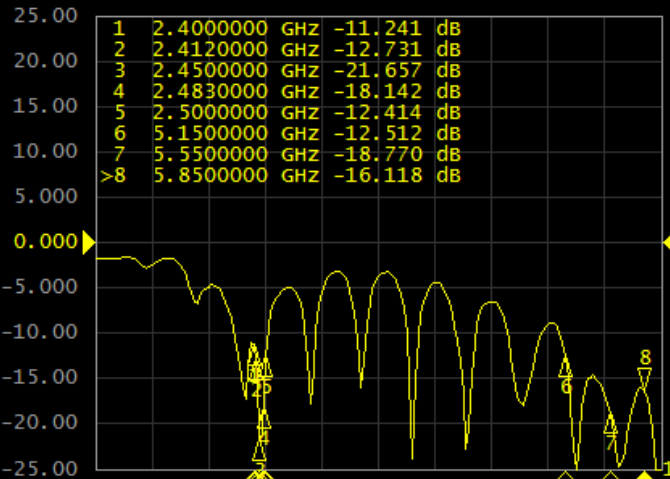
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Antenna Impedance: S11

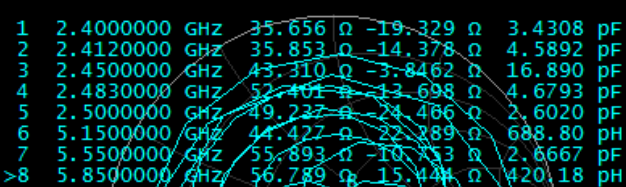
E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

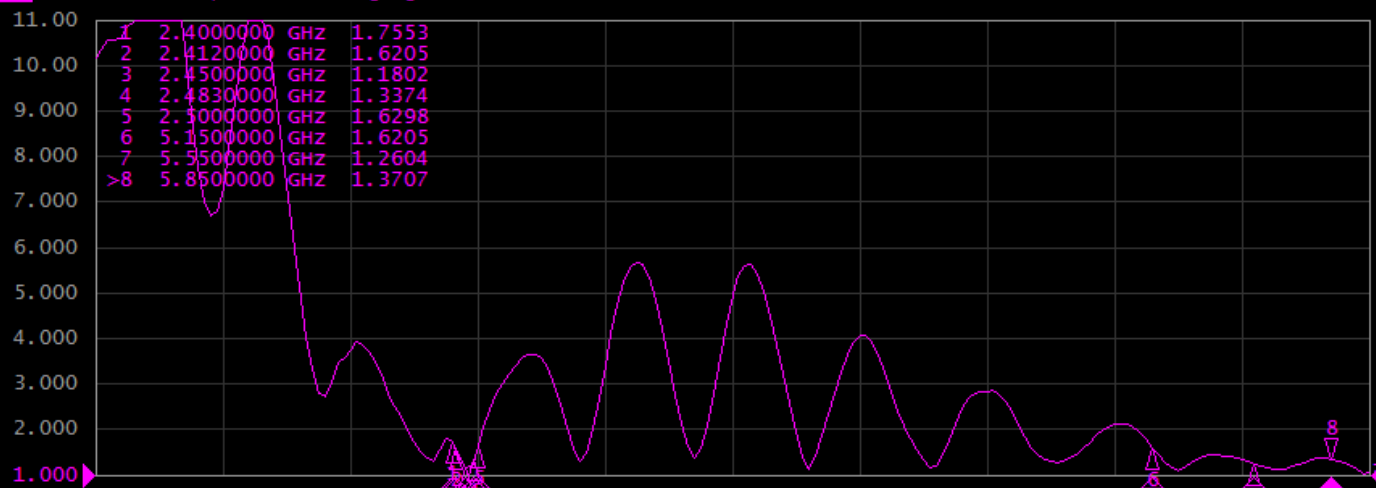
Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F1]



Tr2 S11 Smith (R+jX) Scale 1.000u [F1]



Tr3 S11 SWR 1.000/ Ref 1.000 [F1]



1 Start 1 GHz

IFBW 70 kHz

Stop 6 GHz



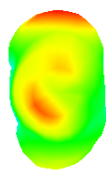
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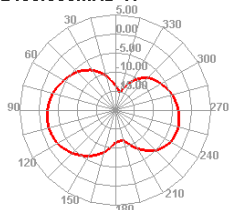
Efficiency & Gain:

Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
2400	42.83	1.1	5150	45.31	0.76
2410	42.84	1.1	5200	46.72	0.46
2420	43.13	1.39	5250	46.62	0.67
2430	45.56	1.17	5300	46.57	0.98
2440	45.94	0.69	5350	47.44	0.98
2450	46.45	0.7	5400	46.63	1.66
2460	44.75	1.09	5450	47.82	1.57
2470	44.53	1.35	5500	47.99	1.79
2480	45.3	1.16	5550	47.35	1.79
2490	44.58	1.04	5600	46.71	1.61
2500	44.47	1.46	5650	45.58	1.13
			5700	47.72	1.01
			5750	47.99	1.32
			5800	47.24	0.73
			5850	45.02	0.77

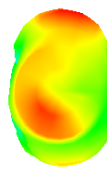
2400.000MHz



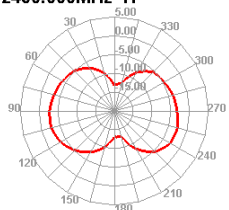
2400.000MHz H



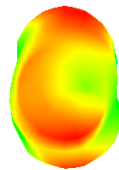
2450.000MHz



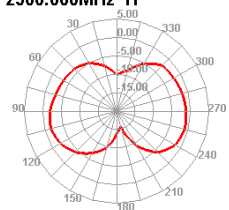
2450.000MHz H



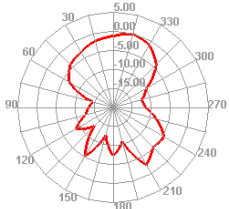
2500.000MHz



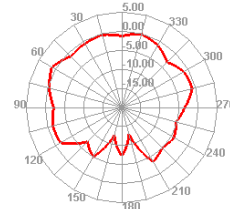
2500.000MHz H



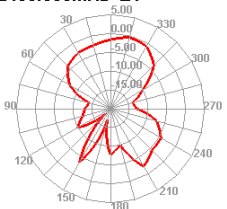
2400.000MHz E1



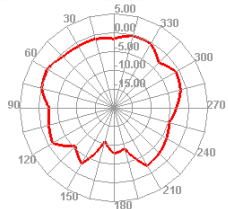
2400.000MHz E2



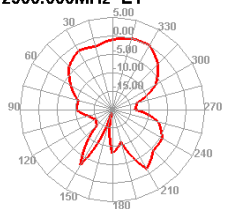
2450.000MHz E1



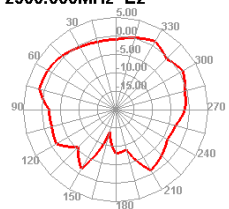
2450.000MHz E2



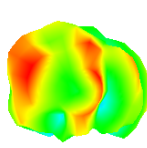
2500.000MHz E1



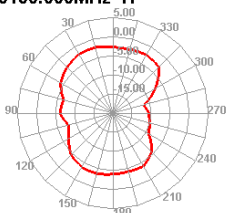
2500.000MHz E2



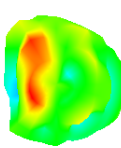
5150.000MHz



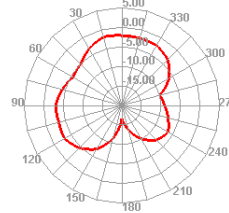
5150.000MHz H



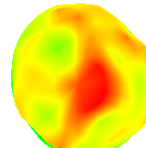
5500.000MHz



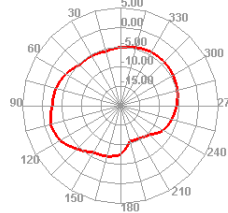
5500.000MHz H



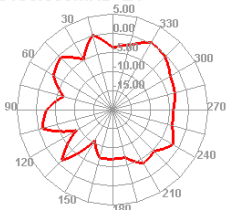
5850.000MHz



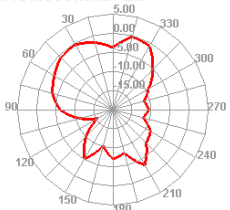
5850.000MHz H



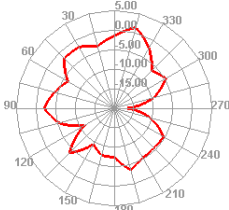
5150.000MHz E1



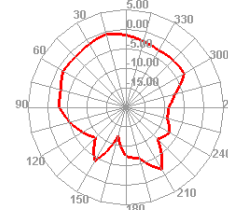
5150.000MHz E2



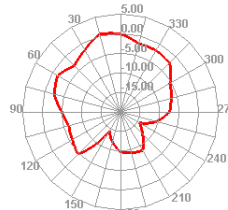
5500.000MHz E1



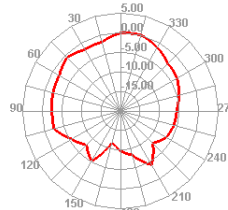
5500.000MHz E2



5850.000MHz E1



5850.000MHz E2





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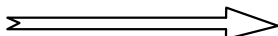
Antenna assembly picture:



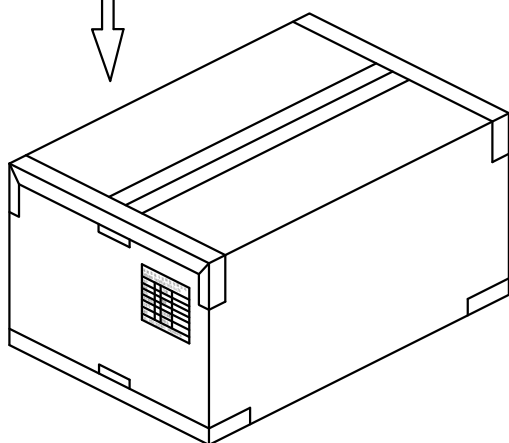
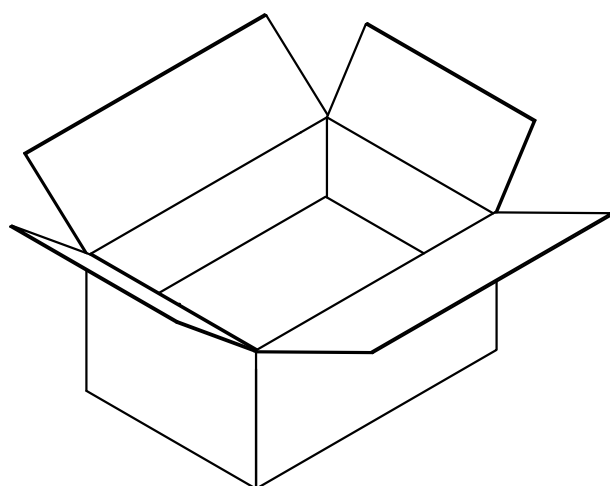
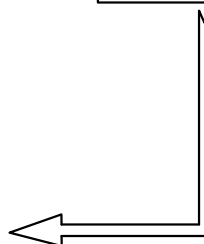
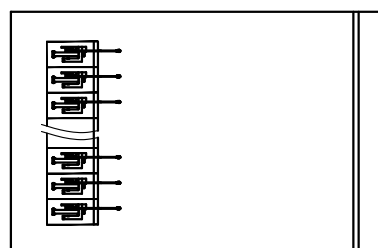


Name : VDS Bumper	Version: A
	Customer: Roborock

1. The Product



2. Place in PE bags. Pack 10 pieces per bag. Use foam peanuts to wrap the terminals for every 20 pieces. Then, pack 5 small bags in each large PE bag, totaling 100 pieces. Attach internal labels.



3. Packing (subject to actual packing) .