



承认书

APPROVAL SHEET

客户名称 Customer Name	Roborock
产品型号 Product Model	Vivian
客户料号 Customer P/N	1. 16. 0007
南斗星料号 SouthstarP/N	3. N204. 0404
制作日期 Production date	2024-05-25
封样版本 Sample Version	2. 0

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FICTION	DQE	R&D
Customer		
PUR	QC	R&D

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History

Version	Date	Change Description	remark
1.0	2024.04.16	First edition	
2.0	2024.05.25	Drawing update	



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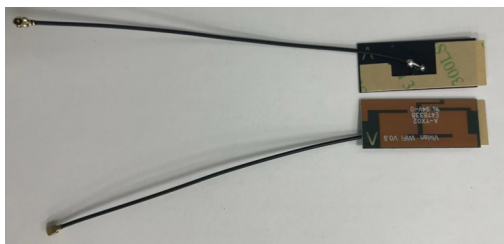
1. summarize

This report mainly describes the antenna performance of SOUTHSTAR for Stone Technology's Vivian project. The Vivian project prototype uses a frequency band ranging from 2400 MHZ to 2500 MHZ

. 电性能Electrical Characteristics	
Frequency 频率	2400MHz~2500 MHz
VSWR 电压驻波比	<2
Efficiency 效率	>50%
Impedance 阻抗	50 Ohm
Polarization 极化	Linear
Gain 增益	2.11dBi
Bandwidth 带宽	100MHz (Min)
Return loss 回波损耗	10dB (Min)
Maximum Power 最大功率	1W
Radiation 辐射	Omni directional
. 材料&物理性能Material & Mechanical Characteristics	
射频材料 Material of Radiator	PCB Black
射频线类型 Cable Type	1.13 Black
接头类型 Connector Type	Primary terminal
重量 weight	
. 环境 Environmental	
工作温度 Operation Temperature	- 30 °C ~ + 65 °C
存放温度 Storage Temperature	- 40 °C ~ + 70 °C



2. Vivian WIFI antenna photo





South
star SHENZHEN SOUTH STAR TECHNOLOGY CO., LTD

3 Test Equipment & Conditions

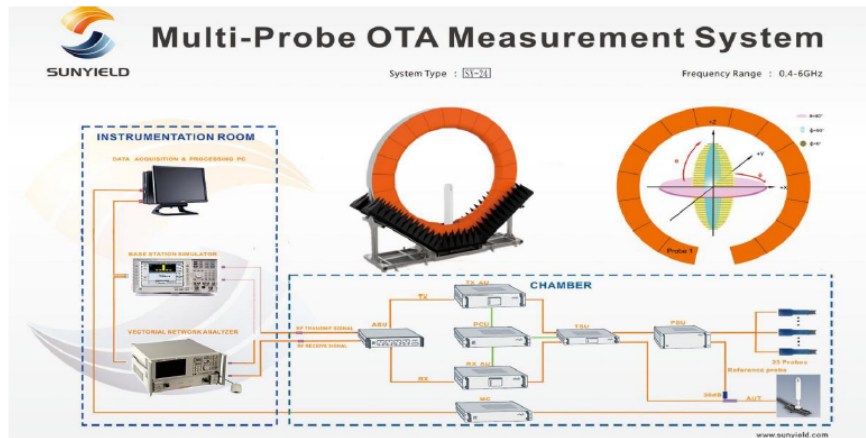
1. NetWork Analyzers:

Keysight E5071C

2. Comprehensive tester:

CMW500 、 MT8000A、 MT8862A

3. 3D Chamber Test System:



Name	Parameter	Method	Standard no		
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antenna	ANSI/IEEE Std 149. 2021		
Equipment	Manufacturer	Model No.	Serial NO.	Last Cal.	Due Date
Network Analyzer	Keysight	E5071C	MY47003143	2024. 04. 13	2025. 04. 12
Antenna	southstar	WIFI	N12-8165-ROA		
Chamber	SUNYIELD	MULTI-PROBE OTA MEASUREMENT SYSTEM			



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5. antenna assembly picture:

please refer to internal photo.



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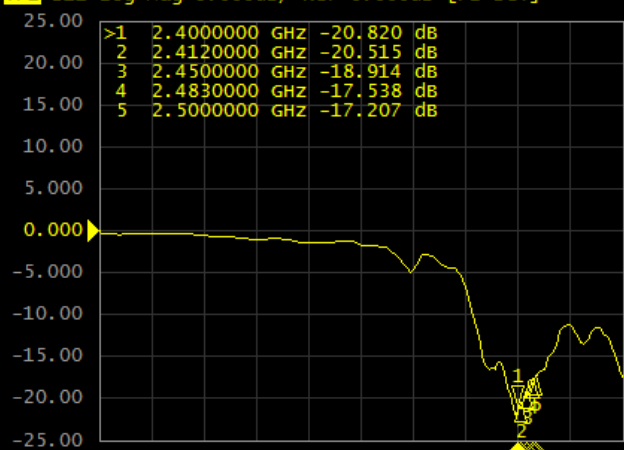
6. test date

1. Antenna pattern

E5071C Network Analyzer

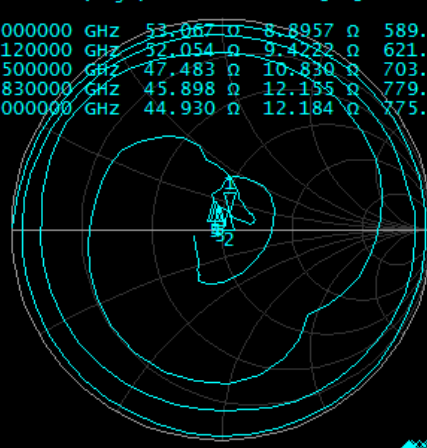
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F2 Del]



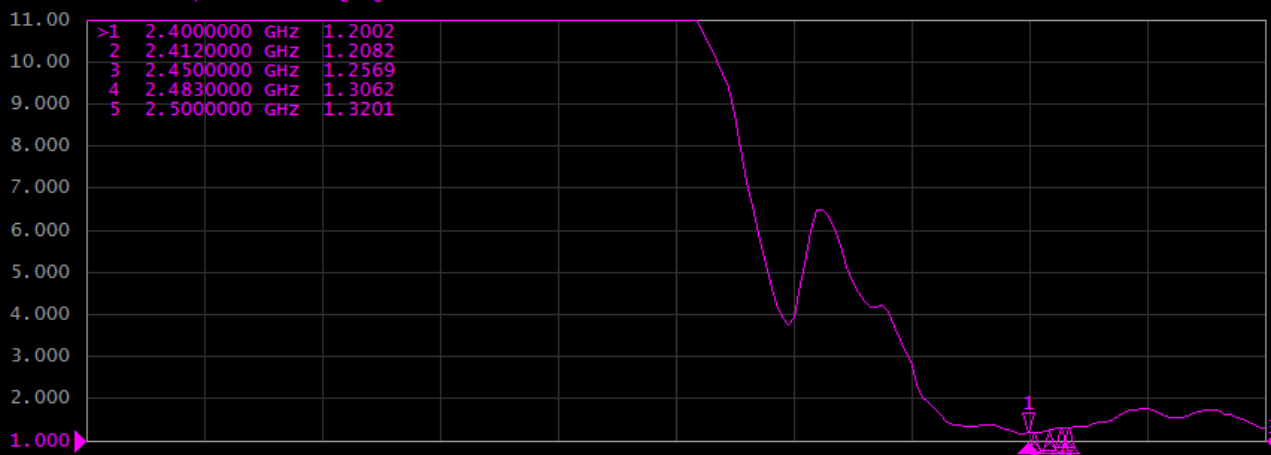
Tr2 S11 Smith (R+jX) Scale 1.000U [F2]

>1	2.400000	GHZ	53.067	Ω	8.8957	Ω	589.92	pH
2	2.412000	GHZ	52.054	Ω	9.4222	Ω	621.72	pH
3	2.450000	GHZ	47.483	Ω	10.830	Ω	703.55	pH
4	2.483000	GHZ	45.898	Ω	12.155	Ω	779.13	pH
5	2.500000	GHZ	44.930	Ω	12.184	Ω	875.67	pH



Tr3 S11 SWR 1.000/ Ref 1.000 [F2]

>1	2.400000	GHZ	1.2002
2	2.412000	GHZ	1.2082
3	2.450000	GHZ	1.2569
4	2.483000	GHZ	1.3062
5	2.500000	GHZ	1.3201



1 Start 1 MHz

IFBW 70 kHz

Stop 3 GHz C?

2. antenna gain

Frequency (MHz)	Efficiency (%)	Gain(dBi)
2400	60.82	1.87
2410	63.17	1.82
2420	64.92	1.89
2430	66.13	2.06
2440	65.43	2.11
2450	64.53	2.03
2460	63.89	1.93
2470	63.98	2.02
2480	64.92	1.90
2490	64.68	1.94
2500	63.54	1.93
均值:	64.18	1.95

3. Directional diagram

