



广东森领通信科技有限公司

GUANGDONG SLEING COMM-TECH CO., LTD

承认书

SPECIFICATION APPROVAL SHEET

客 户 :

CUSTOMER

客 户 料 号 :

CUS PART NO

版次:

REV

X1

品 名 / 规格 :

SPECIFICATION

2.4-2.5/5.15-7.15GHz

单重:

weight

WIFI MAIN Antenna L=245mm(Ø0.81+MHF)

供 方 料 号 :

SUP PART NO

SLEingB257090245

日 期 :

DATE

2026/3/6

厂 商 核 准 :

SUP APPROVED

核准 APPROVED	结构审核 Structure audit	RF审核 RF CHECKED	品保审核 QA CHECKED	承办 DESIGNED
1 李心波	胡世通	2026-03-06		邓索

客 户 核 准 :

CUS APPROVED

核准 APPROVED	审核 CHECKED	品保审核 QA CHECKED	承办 DESIGNED

广东森领通信科技有限公司

GUANGDONG SLEING COMM-TECH CO., LTD

广东省东莞市松山湖园区工业东路24号6栋402室

Room 402, Building 6, No. 24, Industrial East Road, Songshan Lake Park,
Dongguan City, Guangdong Province

Tel: +86-076989208968

Fax: +86-0769-89208969

www.sleing.com

正本由承办单位保存

[illegible]



广东森领通信科技有限公司

GUANGDONG SLEING COMM-TECH CO., LTD

承认书项目表 (Spec Item)

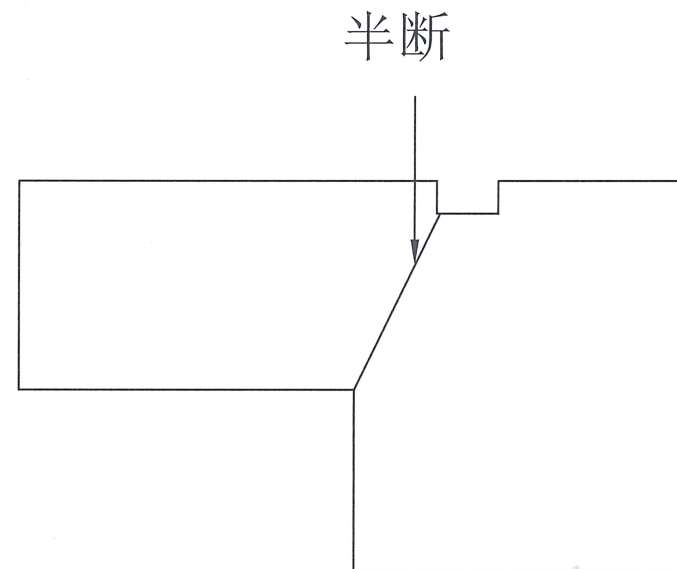
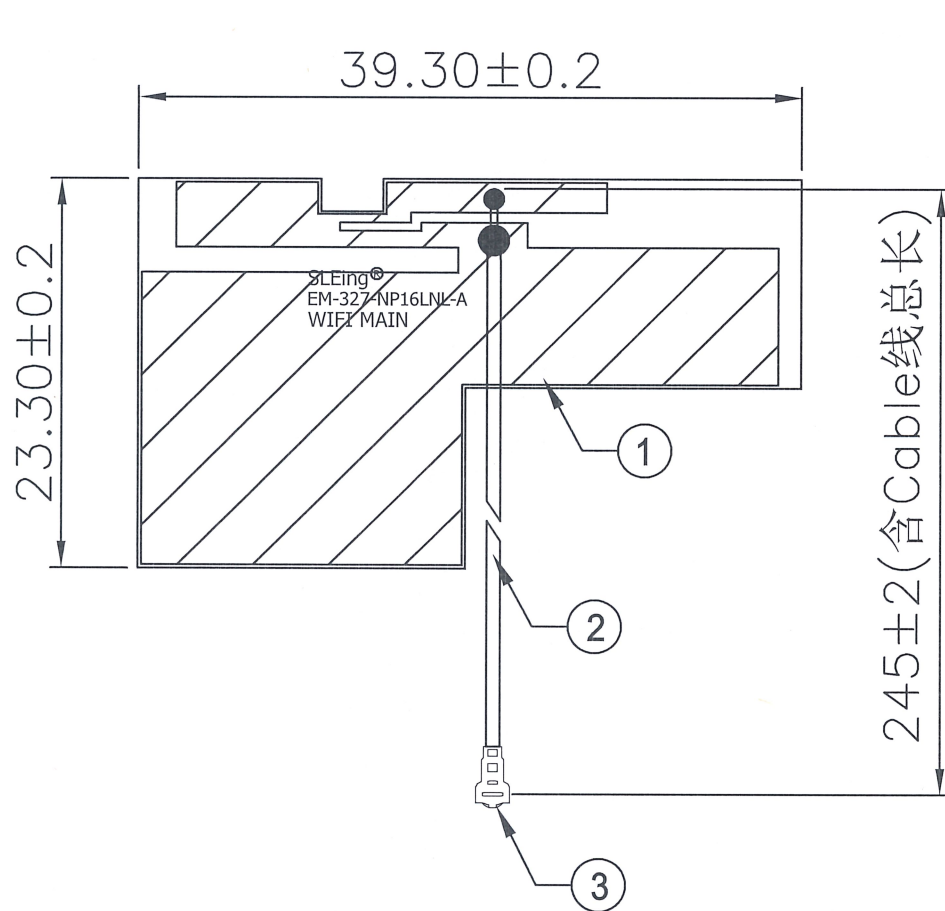
序号 (NO.)	项目 (Project)	备注 (Remark)	页码 (Page)
1	承认书封面 (Spec Cover)		1
2	变更记录 (MODIFICATION RECORD SHEET)		2
3	承认书项目表 (Spec Item)		3
4	工程成品图 (Drawing)		4
5	电性测试报告 (Test Reports)		5
6	天线组装图 (Antenna assembly diagram)		6
7	S参数测试 (S Parameter Test)		7-8
8	测试设备 (Test Setup)		9
9	测试效率 (Test Efficiency)		10

Give clear indication of:

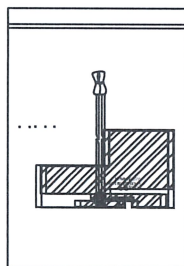
1. The contents of the acknowledgement shall be arranged in order according to the items in the check sheet.
2. The number of copies of the acceptance letter shall be printed according to the customer's requirements, and the SGS report shall be stamped with the engineering seal.
3. All materials shall be confirmed by the customer. Any material/process/changes that may affect product quality and environmental quality must be re-sent to the customer for confirmation before import.
4. SGS report is valid for one year.
5. According to the contents attached to the actual acknowledgement, check the check form: "Yes" is provided, "no" is provided according to customer requirements.

符合ROHS认证标准

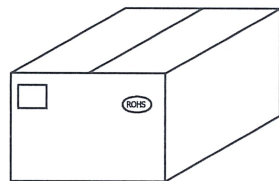
REV.	CONTENT	DATE
X1	First Sample	2026.03.06



Specification:
Frequency Rang:2.4~2.5/5.15~7.15GHz(带机测试)
Return Loss:-10 or less
VSWR:1.92 Max



50pcs/Bundle
Packing:100pcs/bag



外箱须贴ROHS标签与物料标签各1PCS

SLEing® 森领 广东森领通信科技有限公司 GUANGDONG SLEING COMM-TECH CO., LTD			CUSTOMER	
			PART NO	
			TITLE	
			WIFI MAIN Antenna	
			S/P NO	
			SLEingB257090245	
			SIZE	DRAWN
			2026.03.06	工程
			A4	工程
			SCALE: 1/1	工程
			XXX. ±2.0	工程

NO	PART NAME	DESCRIPTION	REMARK	Q'TY
3	Connector	MHF Plug for Φ0.81Cable	第四代端子	1
2	Cable	Φ0.81mm Coaxial Cable Black(低损耗),50Ω		1
1	FPC	L39.3*W23.3*T0.2mm,Color:Black		1



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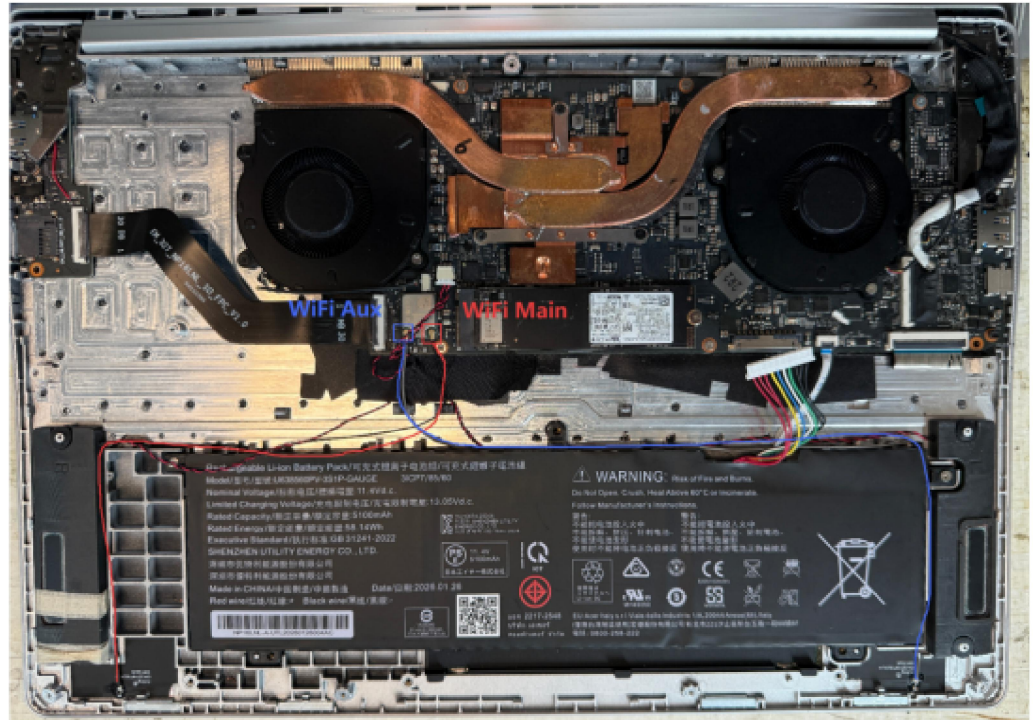
电性测试报告

Test Reports

Electrical Properties	
Frequency	2.4-2.5/5.15-7.15GHz
Impedance	50 Ohm Nominal
V.S.W.R	≤ 1.92
Return Loss	-10dB Max
Radiation	Omni-directional
Gain(Peak)	2.4G:1.2dBi/5.8G:1.19dBi/7.15G:1.99dBi
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	MHF
Physical Properties	
Antenna Material	FPC
Cable Type	$\Phi 0.81$ mm Black
Operating Temp	-40℃-85℃
Storage Temp.	-40℃-85℃

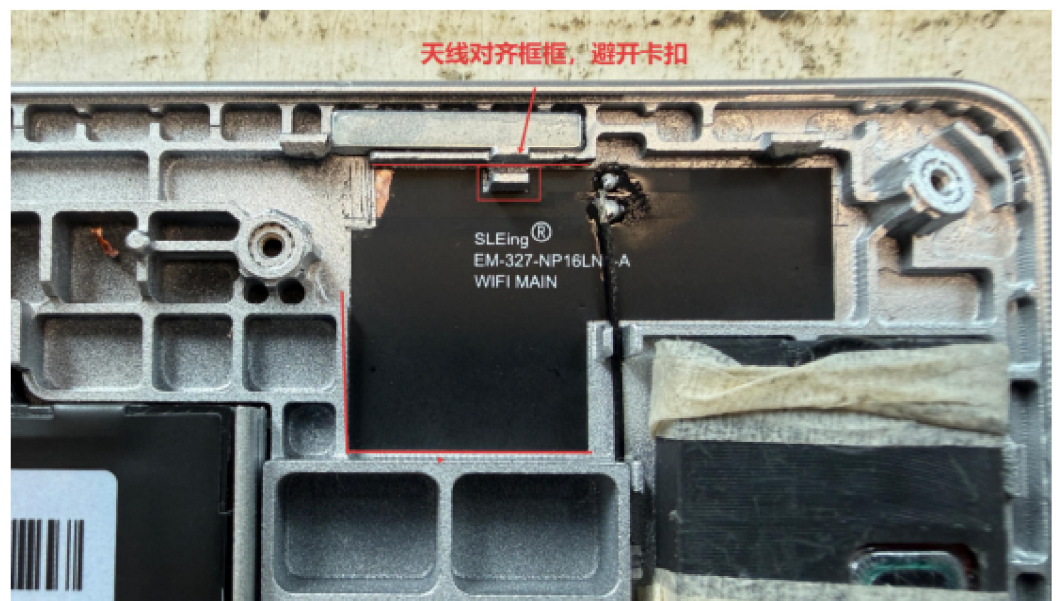
Device

WiFi Main 天线走线, 天线总线长 245mm, 直径 0.81mm, 4 代端子 (黑色低损同轴线);
WiFi Aux 天线走线, 天线总线长 310mm, 直径 0.81mm, 4 代端子 (灰色低损同轴线);



Antenna

WiFi MAIN 天线粘贴细节如图所示, 注意: 天线不能粘偏, 歪斜, 起翘;



S参数测试 S Parameter Test

Agilent E5071C Network Analyzer



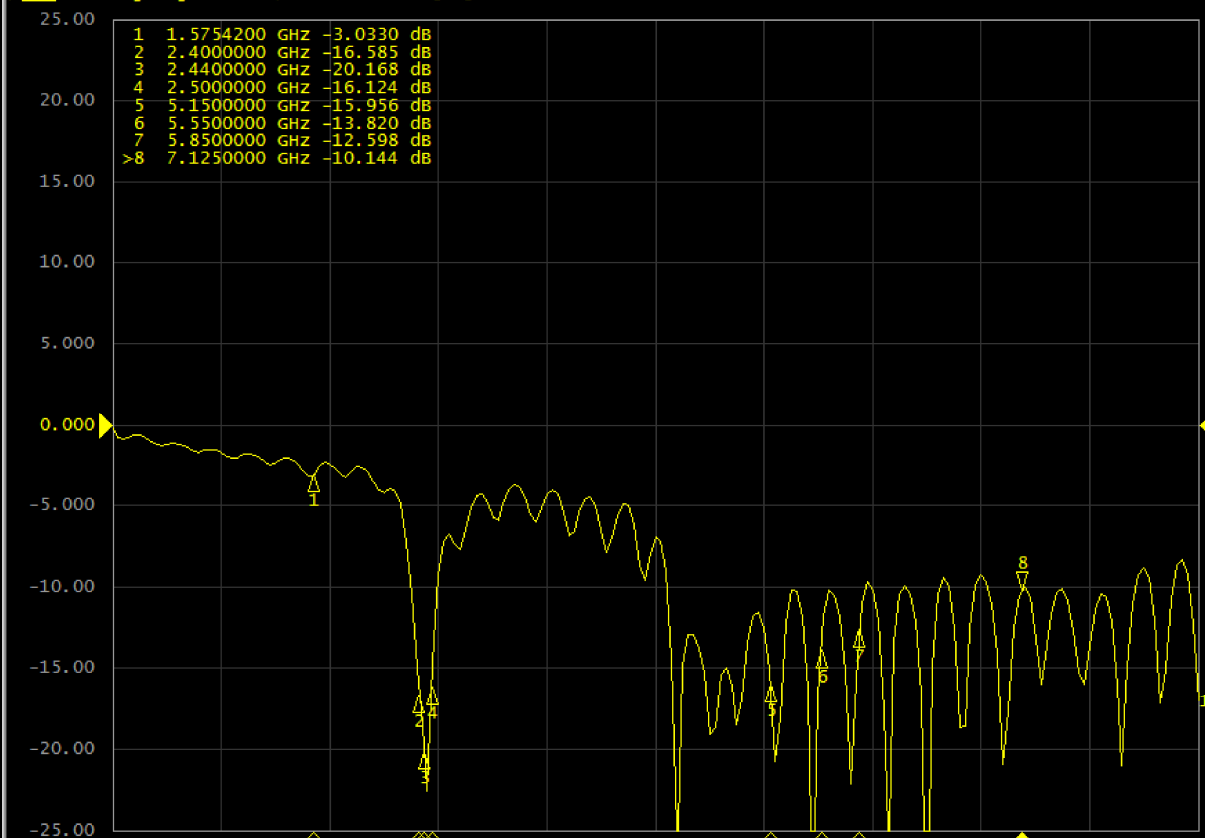
RF Antenna (Return Loss)

E5071C Network Analyzer

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

Resize

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



1 Start 100 kHz

IFBW 70 kHz

Stop 8.5 GHz PExt Cor I

Meas Stop ExtRef Svc 2026-03-03 14:34

Recall State

State01

State02

State03

State04

State05

State06

State07

State08

Autorec

UserPres

File Dialog...

Return

S参数测试 S Parameter Test

Agilent E5071C Network Analyzer

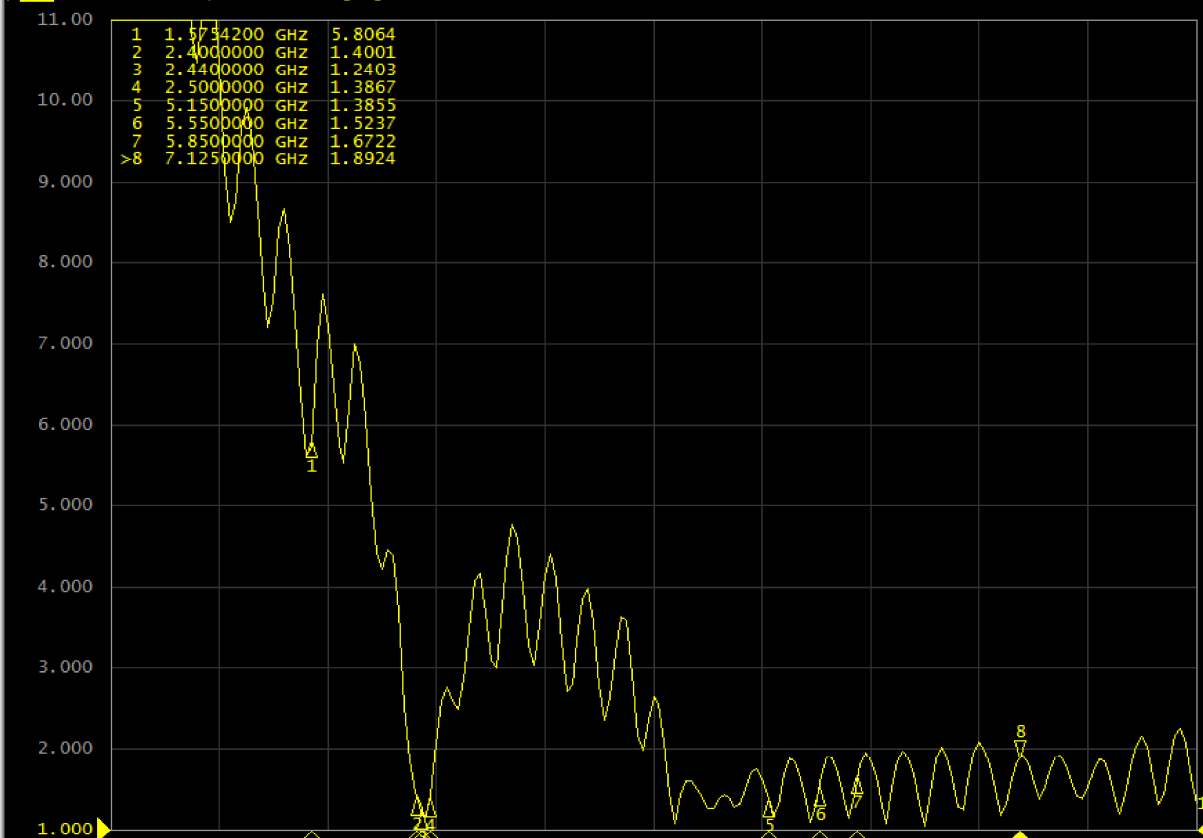


RF Antenna (VSWR)

E5071C Network Analyzer

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

► Tr1 S11 SWR 1.000/ Ref 1.000 [F1]



1 Start 100 kHz

IFBW 70 kHz

Stop 8.5 GHz PExt Cor I

Meas Stop ExtRef Svc 2026-03-03 14:34

Format

SWR

Log Mag

Phase

Group Delay

Smith

Polar

Lin Mag

SWR

Real

Imaginary

Expand

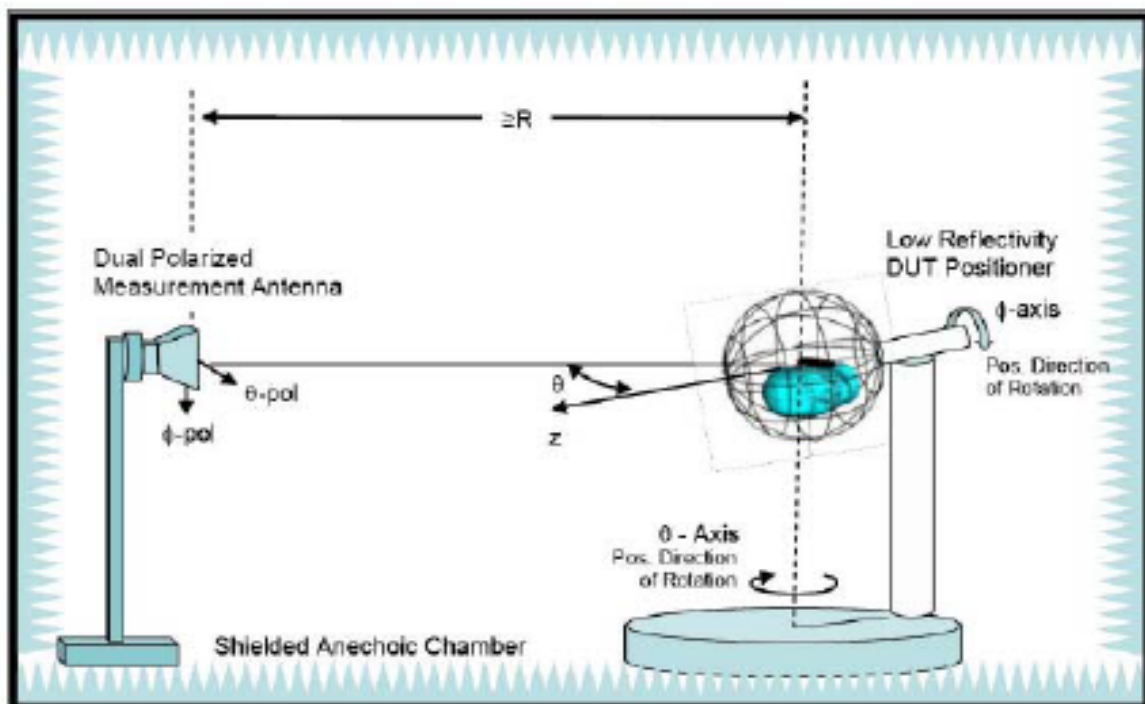
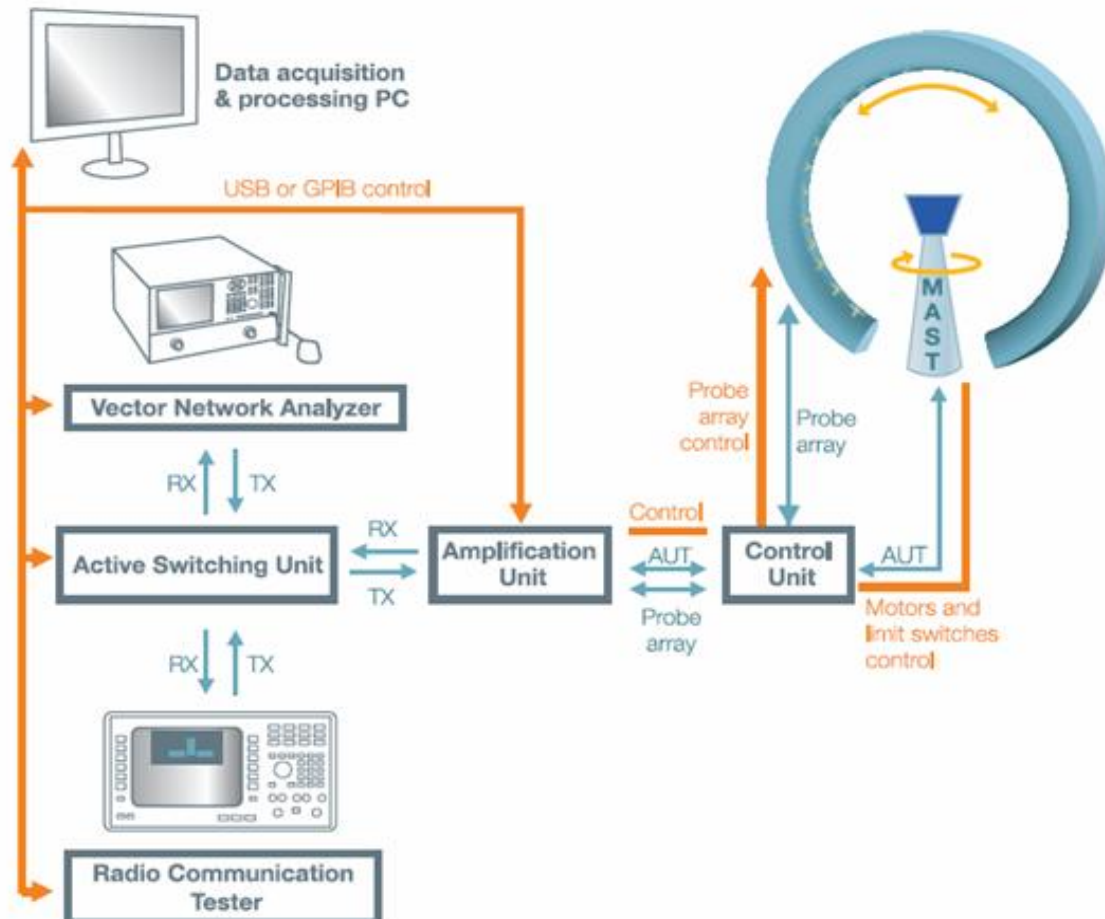
Phase

Positive

Phase

Return

测试设备 Test Setup





测试效率
Test Efficiency

WiFi 2.4G 天线效率	Frequency ID	Frequency (MHz)	Gain (dBi)	Efficiency (%)	WiFi 5G 天线效率	Frequency ID	Frequency (MHz)	Gain (dBi)	Efficiency (%)
	1	2400	1.2	46.28		37	5870	0.4	34.55
	2	2410	1.07	48.18		38	5890	0.27	33.11
	3	2420	0.85	49.93		39	5910	-0.03	31.14
	4	2430	0.74	50.96		40	5930	-0.18	30.7
	5	2440	0.77	52.14		41	5950	-0.3	30.77
	6	2450	0.76	52.56		42	5970	-0.28	31.55
	7	2460	0.73	52.86		43	5990	-0.17	32.73
	8	2470	0.72	53.59		44	6010	-0.01	34.39
	9	2480	0.83	53.45		45	6030	0.14	35.92
	10	2490	0.92	53.29		46	6050	0.3	37.61
WiFi 5G 天线效率	11	2500	1.02	53.6		47	6070	0.49	38.75
	Frequency ID	Frequency (MHz)	Gain (dBi)	Efficiency (%)		48	6090	0.7	39.36
	1	5150	0.24	44.63		49	6110	0.75	38.46
	2	5170	0.42	45.66		50	6130	0.65	37.55
	3	5190	0.34	44.73		51	6150	0.43	36.91
	4	5210	0.31	45.27		52	6170	0.22	37
	5	5230	0.03	45.34		53	6190	0.35	36.87
	6	5250	0.14	45.72		54	6210	0.56	36.6
	7	5270	-0.04	44.1		55	6230	0.64	35.98
	8	5290	0	41.15		56	6250	0.71	35.79
	9	5310	0.19	40.52		57	6270	0.94	36.61
	10	5330	0.46	40.9		58	6290	1.16	37.63
	11	5350	0.61	40.3		59	6310	1.22	37.59
	12	5370	0.67	40.56		60	6330	1.24	37.38
	13	5390	0.49	40.15		61	6350	1.1	36.73
	14	5410	0.33	39.89		62	6370	0.95	37.09
	15	5430	0.61	42.2		63	6390	0.66	37.28
	16	5450	0.98	44.45		64	6410	0.23	36.63
	17	5470	1.05	44.72		65	6430	0.16	35.58
	18	5490	0.85	43.6		66	6450	0.26	33.73
	19	5510	0.75	41.15		67	6470	0.4	31.49
	20	5530	0.75	38.85		68	6490	0.5	30.57
	21	5550	0.92	38.75		69	6510	0.63	30.27
	22	5570	1.09	40.1		70	6530	0.66	30.06
	23	5590	1.19	41.16		71	6550	0.9	30.58
	24	5610	0.95	40.52		72	6570	1.24	31.73
	25	5630	0.61	38.64		73	6590	1.54	32.8
	26	5650	0.27	37.71		74	6610	1.74	34.28
	27	5670	0.01	38.19		75	6630	1.87	35.65
	28	5690	-0.25	39.5		76	6650	1.93	36.47
	29	5710	-0.21	39.24		77	6670	1.99	37.42
	30	5730	-0.28	39.04		78	6690	1.91	36.89
	31	5750	-0.23	37.9		79	6710	1.69	35.3
	32	5770	0.11	38.25		80	6730	1.37	33.86
	33	5790	0.47	38.78		81	6750	1.15	33.14
	34	5810	0.64	39.01		82	6770	0.88	32.45
	35	5830	0.67	38.28		83	6790	0.61	31.5
	36	5850	0.55	36.58		84	6810	0.46	31.05
						85	6830	0.21	29.74
						86	6850	-0.1	28.24
						87	6870	-0.29	28.17
						88	6890	-0.29	28.77
						89	6910	-0.29	29.32
						90	6930	-0.49	30.01
						91	6950	-0.68	30.62
						92	6970	-0.73	31.25
						93	6990	-0.76	31.14
						94	7010	-0.8	30.65
						95	7030	-1.01	29.09
						96	7050	-1.34	27.16
						97	7070	-1.6	26.54
						98	7090	-1.8	25.67
						99	7110	-1.95	24.4
						100	7130	-1.82	25.42
						101	7150	-1.72	26.76