



东莞市森岭智能科技有限公司

DONGGUAN SLEing INTEL-TECH CO.,LTD

承 认 书

SPECIFICATION APPROVAL SHEET

客 户 :

CUSTOMER

客 户 料 号 :

CUS PART NO

版次:

REV

X3

品 名 / 规格 :

2.4~2.5/5.15~7.15GHz

单重:

SPECIFICATION WIFI-1 AntennaL=360mm(Ø1.13+MHF)

weight

供 方 料 号 :

SLEingB246830360

SUP PART NO

日 期 :

DATE

2024.09.11

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
Jongrei	HZH	JDM	LSY	Xiang

客 户 核 准 :

CUS APPROVED

核准 APPROVED	审核 CHECKED	品保审核 QA CHECKED	承办 DESIGNED

东莞市森岭智能科技有限公司

DONGGUAN CITY SLEing INTEL-TECH CO.,LTD

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正本由承办单位保存

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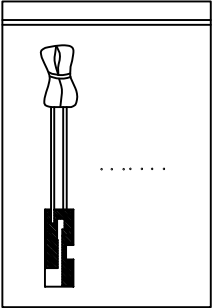
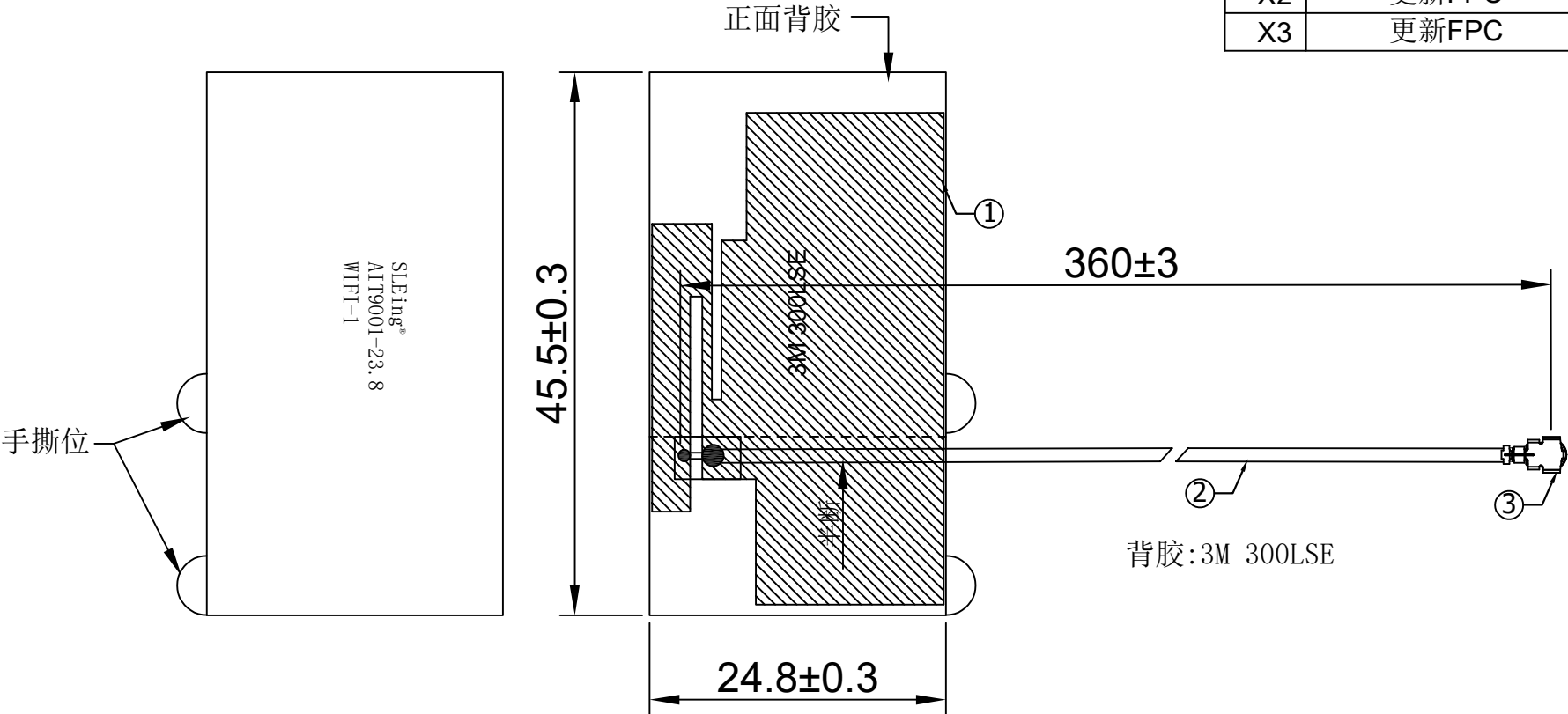
承认书项目表 (Spec Item)

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
10	OTA		11

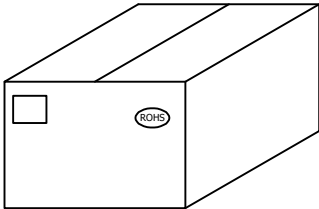
Give clear indication of:

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.

REV.	CONTENT	DATE
X1	First Sample	2024.06.24
X2	更新FPC	2024.07.06
X3	更新FPC	2024.09.11



50pcs/Bundle
Packing:100pcs/bag



外箱须贴ROHS标签与物料标签各1PCS

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

SLEing® 森岭 东莞市森岭智能科技有限公司 DONGGUAN SLEing INTEL-TECH CO.,LTD			CUSTOMER	
			PART NO	
			TITLE	
			S.L P/NO	
			SIZE	
			DRAWN	
			CHECKED	
			APPROVED	
			A4	

3	Connector	MHF Plug for Φ1.13 Cable	第一代端子	1
2	Cable	Φ1.13mm Coaxial Cable White,50Ω	低损耗线	1
1	FPCB	FPCB,L45.5*W24.8*T0.2mm,Color:Black	300LSE Adhesive	1
NO	PART NAME	DESCRIPTION	REMARK	Q'TY

8 7 6 5 4 3 2 1



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DONGGUAN SLEing INTEL-TECH CO.,LTD

电性测试报告

Test Reports

Electrical Properties	
Frequency	2.4~2.5/5.15~7.15GHz(带机测试)
Impedance	50 Ohm Nominal
V.S.W.R	≤ 1.92
Return Loss	-10 dB Max
Radiation	Omni-directional
Gain (Peak)	2 $\pm$ 0.5 dBi
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	MHF
Physical Properties	
Antenna Material	FPCB
Cable Type	Φ 1.13mm White
Operating Temp.	-40~+85 °C
Storage Temp.	-5~+30 °C

天线组装图

Antenna Profile

Device

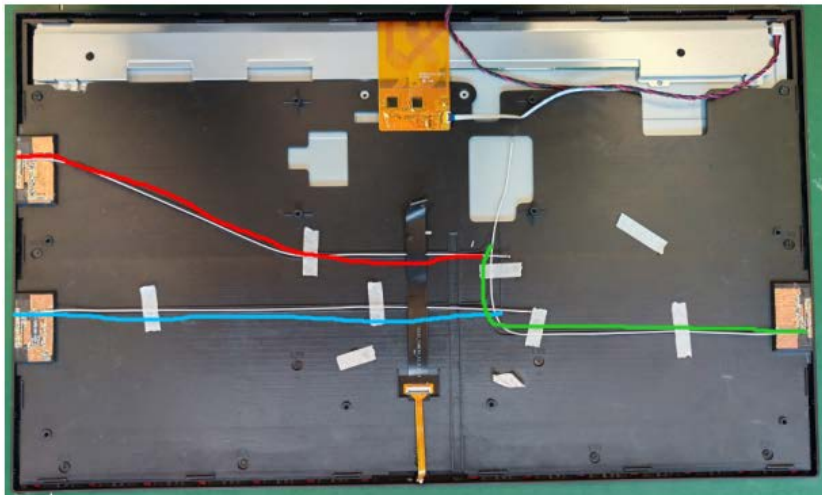
5、天线走线

天线走线具体如图所示。将天线固定好，装上主板，将天线端子扣在端口上

WiFi_0 天线如图中 **蓝线** 所示，天线线长 450mm，直径 1.13mm，1 代端子 (黑色同轴线)

WiFi_1 天线如图中 **绿线** 所示，天线线长 360mm，直径 1.13mm，1 代端子 (白色同轴线)。

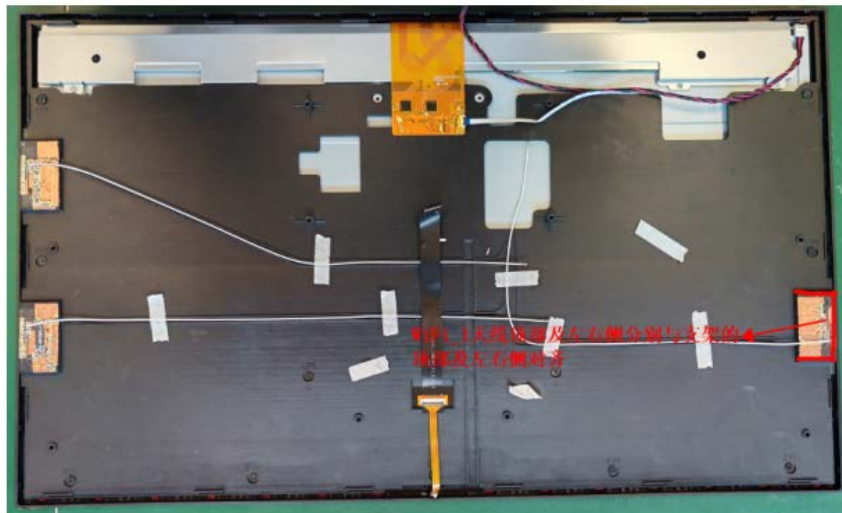
BT 天线如图中 **红线** 所示，天线线长 430mm，直径 1.13mm，1 代端子 (灰色同轴线)。



Antenna

3、粘贴 WiFi_1 天线

粘贴 WiFi_1 天线细节如下图所示。将 WiFi_1 天线顶部及左右侧分别与支架的顶部及左右侧对齐，最后将天线由上往下依次粘贴即可。注意：天线粘贴时，天线不能粘偏、歪斜、起翘。



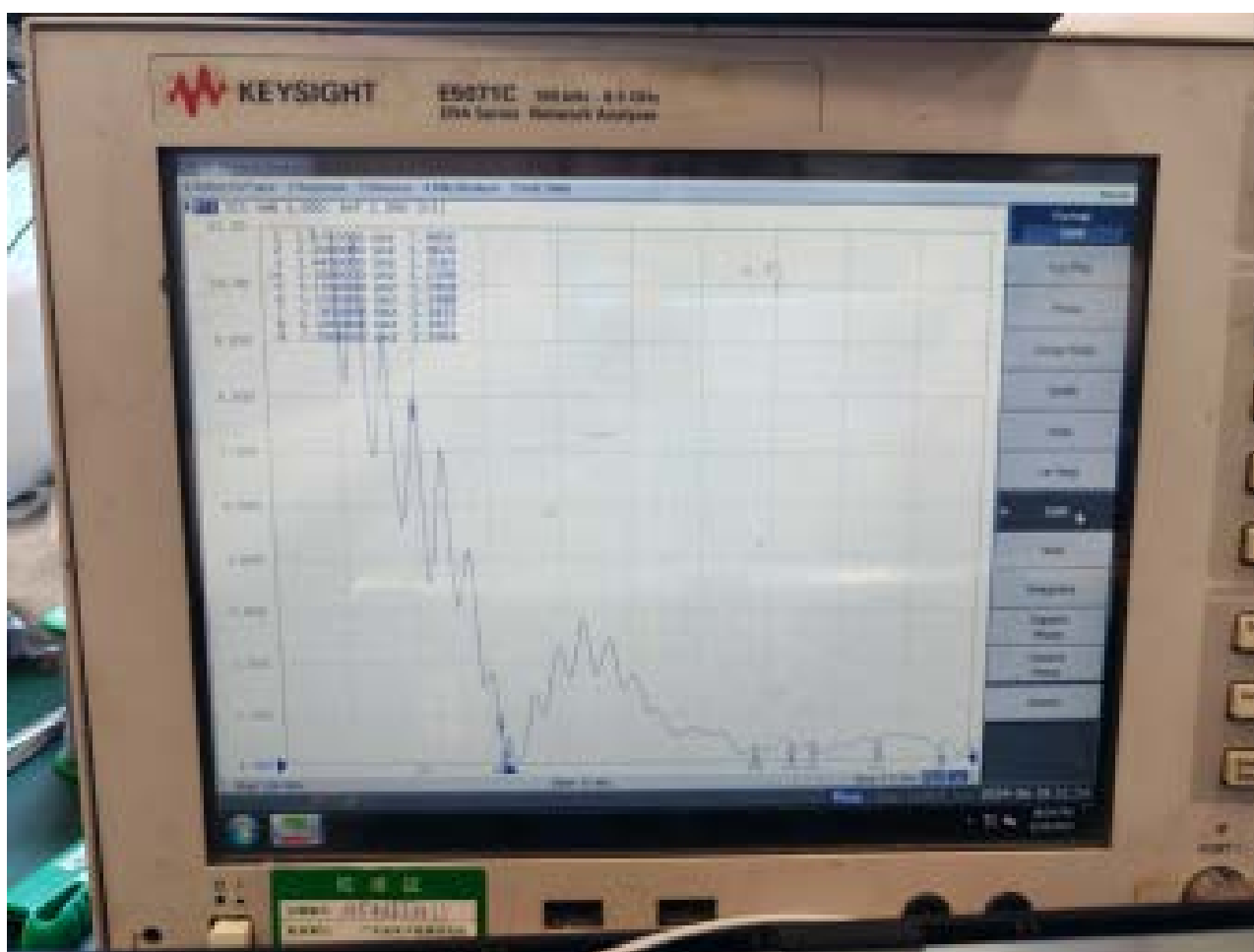
S 参数测试

S Parameter Test

Agilent E5071C Network Analyzer



WiFi 驻波 Antenna (NO.1)



S 参数测试

S Parameter Test

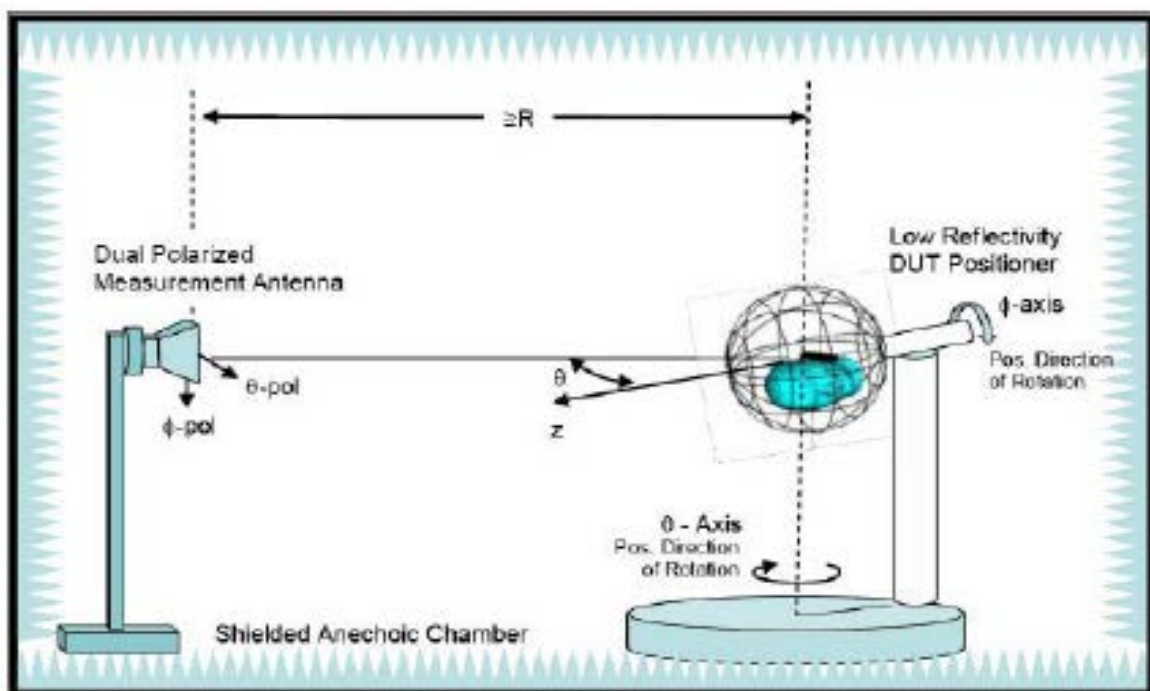
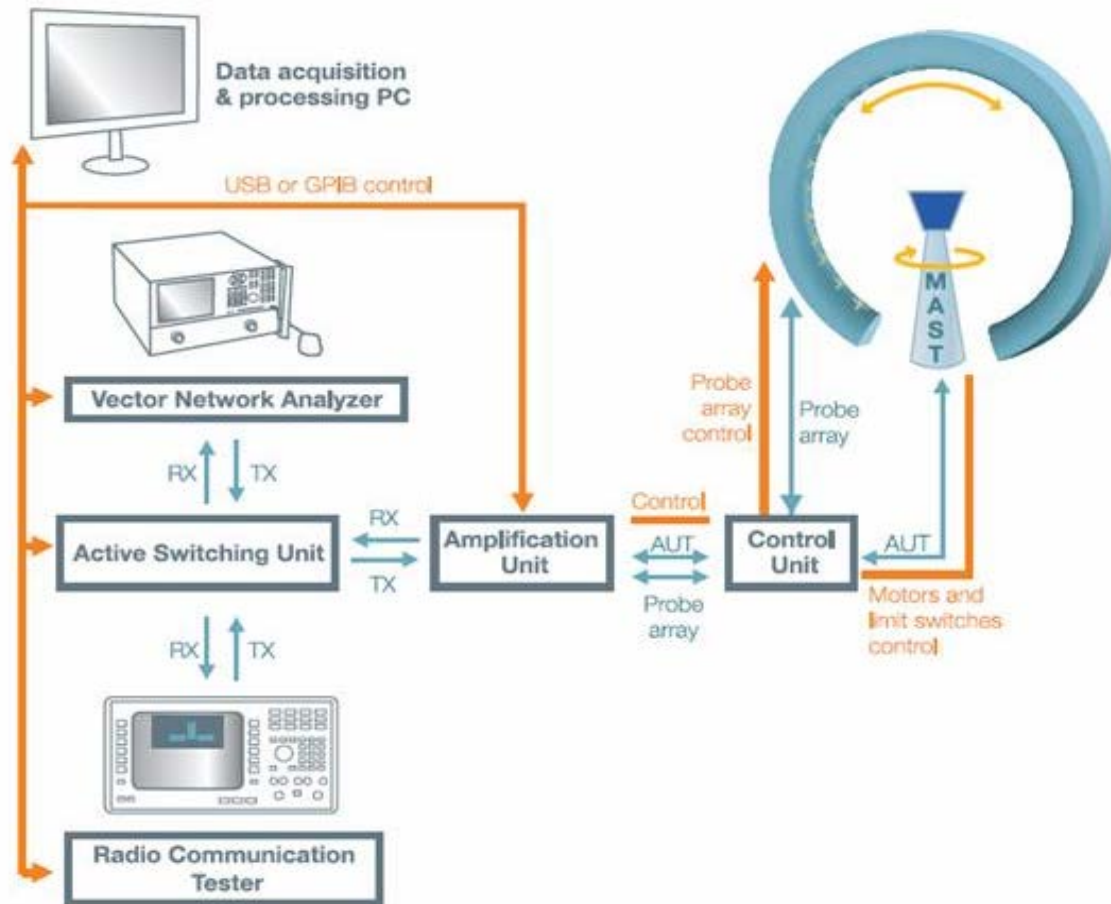
Agilent E5071C Network Analyzer



WiFi 回波损耗 Antenna (NO.1)



测试设备 Test Setup

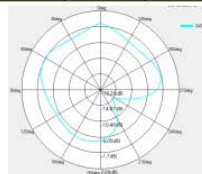
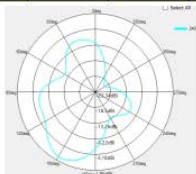
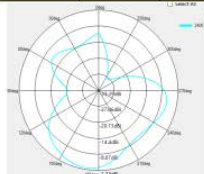
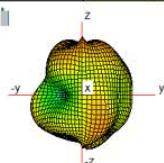


测试效率

Test Efficiency

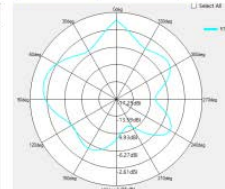
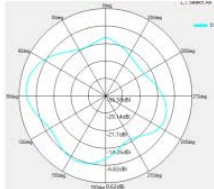
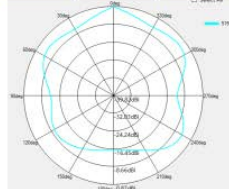
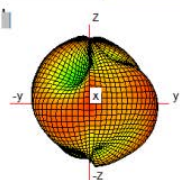
WIFI-1天线无源效率测试报告

2.4G WiFi	Frequency ID	1	2	3	4	5	6	7	8	9	10	11
	frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
	Gain (dBi)	1.71	1.94	1.11	1.11	1.17	1.13	2.08	1.25	1.36	1.34	1.40
	Efficiency (%)	42.65	44.43	45.80	46.76	44.81	43.37	42.90	42.71	41.98	41.55	41.25



5G WiFi	Frequency ID	1	2	3	4	5	6	7	8	9	10	11
	frequency (MHz)	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0
	Gain (dBi)	0.11	0.04	0.13	0.88	0.26	0.40	0.08	0.23	0.32	0.46	0.47
	Efficiency (%)	37.04	36.15	37.97	37.39	36.39	36.78	35.67	35.65	36.00	36.27	36.85

5G WiFi	Frequency ID	12	13	14	15	16	17	18	19	20	21	22
	frequency (MHz)	5700.0	5750.0	5800.0	5850.0							
	Gain (dBi)	1.01	0.79	0.25	0.14							
	Efficiency (%)	36.35	37.67	35.21	34.98							





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OTA

Operating Band	Bandwidth	Free Space Requirements		Channal	Testing Results		Gap	
		TRP	TIS		TRP	TIS (LCD ON)	TRP	TIS (LCD ON)
WIFI2-2.4G	11b 11Mbps	11	-80	1	13.3	-83.3	2.3	3.3
		11	-80	7	13.5	-83.2	2.5	3.2
		11	-80	13	13.7	-83.8	2.7	3.8
		11	-80	Avg	13.5	-83.4	2.5	3.4
WIFI2-5G	11a 6Mbps	10	-86	36	10.3	-88.4	0.3	2.4
		10	-86	100	10.9	-87.8	0.9	1.8
		10	-86	157	10.2	-87.4	0.2	1.4
		10.0	-86.0	Avg	10.5	-87.9	0.5	1.9