

SPECIFICATION

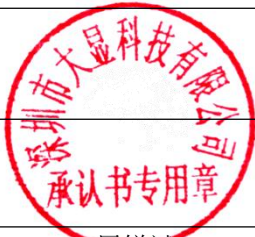
深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

通力 Q95 WIFI 0 天线组件Tonly Q95 WIFI 0 Antenna assembly

产 品 规 格 书

Product Specification

客 户 connection	通力 Tonly	频 段 frequency range	2400 ~ 2500MHz、5150 ~ 5850MHz
项目名称 entry name	Q95	版 本 edition	V05
物料编号 Material No	3Q-95XXX-141	颜 色 Color	黑色 Black
客户料号 Customer Item Number			
环保要求 environmental requirement			
	☒ RoHS ☒ REACH		
R F 设计 R F Design	刘柱东 ZhuDong.Liu	结构设计 Structural Design	周锐斌 Rui Bin.Zhou
品质经理 Quality Manager	李高亮 GaoLiang.Li	技术总监 Technical Director	张 磊 Lei.Zhang
日 期 Date	2026-04-08		

客户确认:

Customer confirmation:

装配是否符合贵司要求: ☐OK ☐NGWhether the assembly meets your company's requirements: ☐OK ☐NG

深圳市大显科技有限公司

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变更履历

Revision history

版本号 Version number	变更内容 Change content	变更理由 Reason for change	发起变更方 Originating Party	日期 Date	修改人 Modified by
V1.0	创建 found			2026-01-22	
V2.0	更新 modify	天线性能设计变更 Antenna performance design changes	DX	2026-01-29	
V3.0	更新 modify	包棉长度改为 723mm 长 The cotton-wrapped length has been changed to 723mm.	DX	2026-02-04	
V4.0	更新 modify	天线丝印 V03 版, 包棉长度改为 711mm 长, 管控焊点高度低于 2mm, 取消 UV 点胶, 增加醋酸胶布和 EVA 泡棉 Antenna Silk Screen V03 Edition: Insulation tape length adjusted to 711mm. Solder joint height controlled below 2mm. UV dispensing removed. Acetate tape added and EVA foam.	DX	2026-02-25	
V5.0	更新 modify	天线丝印 V05 版, 同轴线剪短为 740mm 长, 泡棉剪短为 702mm 长, 取消醋酸胶布, EVA 泡棉加宽, 及电性能数据更新 Antenna screen printing, Version V05, The coaxial cable was cut to a length of 740 mm, and the foam cable was cut to a length of 702 mm. Remove the acetate tape; widen the EVA foam; Updated electrical performance data	DX	2026-04-08	

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一 项目说明 Project Description

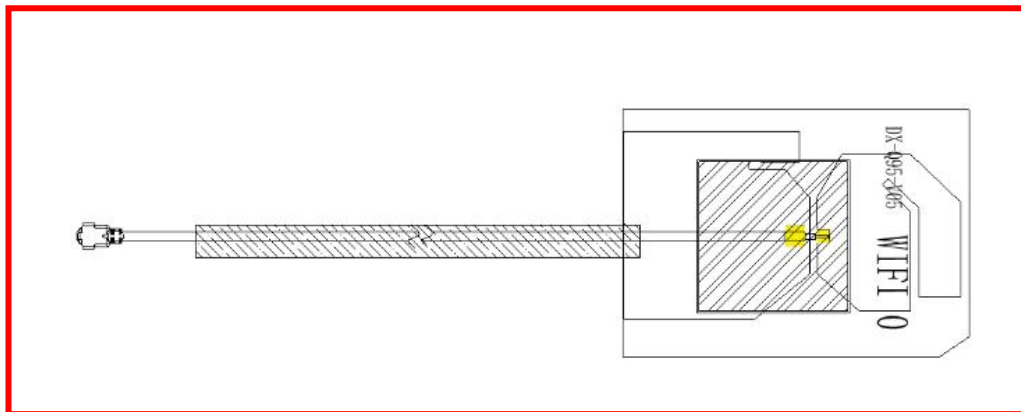
客户名: Customer Name:	通力 Tonly
整机类型: Type of complete machine:	音箱 loudspeaker box
天线频段: Antenna band:	2400~2500MHz、5150~5850MHz
天线形式: Antenna form:	FPC+同轴线+线材海绵+EVA 泡棉 FPC+coaxial line+wire sponge+EVA foam
馈电形式: Feed form:	焊接 weld
硬件版本: Hardware version:	/

二 WIFI 0 天线组件 Antenna assembly

1 规格 specifications

本报告主要提供 **Q95** 项目天线的各项电气和结构性能参数的测试状况。下图为大显设计的天线图片。

This report mainly provides the testing status of various electrical and structural performance parameters of the antenna for the **Q95** project. The following image shows an antenna with a large display design.



天线外观图

antenna appearing diagram

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1.1 电气规格标准 Electrical specifications and standards

1.1.1 电性能指标 Electrical performance index

天线工作频段在 2400 ~ 2500MHz、5150 ~ 5850 MHz。 下表是大显设计和量产天线的电性能指标。

The operating frequency band of the antenna is between 2400 and 2500MHz、5150 and 5850 MHz. The following table shows the electrical performance indicators of large display design and mass production antennas.

Frequency Range	Frequency (MHz)	VSWR
WIFI 0	2400 ~ 2500、5150 ~5850	≤ 2

1.1.2 天线位置图片 Antenna position picture



2 结构规格标准 Structural specifications and standards

1.2.1 天线组成 Antenna composition

天线主要是由 FPC+同轴线+线材海绵+ EVA 泡棉组成。

The antenna is mainly composed of FPC+coaxial line+wire sponge+EVA foam.

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2、测试设备 The Equipment of Active Test

Satimo 3D Chamber $4 \times 4 \times 4$ (m)

CMW500 E5071C

Network analyzer-R&S ZVL

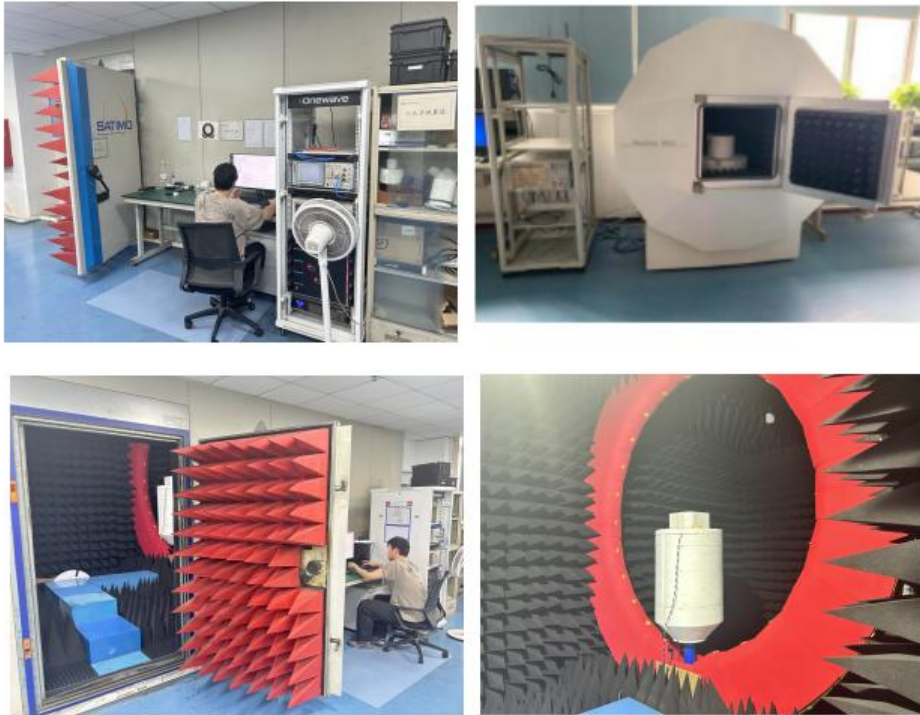


图 2

Figure 2

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3 测试 test

3.1 驻波(VSWR)的测试 Test of standing wave (VSWR)

3.1.1 测试连接: VSWR 测试装置依次连接为: R&S ZVL 网络分析仪 → 测试线 → 测试治

Test connection: The VSWR test device is sequentially connected as follows: R&S ZVL network analyzer → test line → test fixture

实测(附图)Actual measurement (attached drawing)

3.2 增益及效率、功率 (TRP)、灵敏度 (TIS) 的测试

Gain and efficiency, power (TRP), sensitivity (TIS) testing

3.2.1 测试的场地 Test site:

大显微波暗室。测试频率范围为 400MHz—6GHz, 静区范围为 50cm 圆周, 反射率小于 -50 dB。

Large display microwave anechoic chamber. The test frequency range is 400MHz - 6GHz, the static zone range is 50cm circumferential, and the reflectivity is less than - 50dB.

3.2.2 测试的仪表 Tested Instruments:

R&S ZVL 网络分析仪、CMW500 E5071C、标准喇叭天线、法国 SATIMO-SG24SYSTEM 系统、打印机等。

R&S ZVL network analyzer, Agilent 8960 E5515C, standard horn antenna, French SATIMO-SG24SYSTEM system, printer, etc.

3.2.3 测试数据 : 在微波暗室中, 测试的功率和灵敏度相关的数值如下表

Test data: In a microwave anechoic chamber, the values related to the power and sensitivity tested are shown in the table below

OTA 有源测试数据 OTA Active Test Data:

	CH	TPR (dBm)	TIS (dBm)
802.11b 11M	1	10.59	-40.32
	6	10.52	-51.56
	11	10.61	-81.32
802.11g 54M	1	11.34	-69.22
	6	12.21	-69.65
	11	12.52	-69.45
802.11n MCS7	1	11.78	-67.49
	6	12.34	-68.41
	11	12.66	-68.23
802.11a 54M	36	8.42	-71.43
	149	8.87	-71.66
	161	8.28	-71.39

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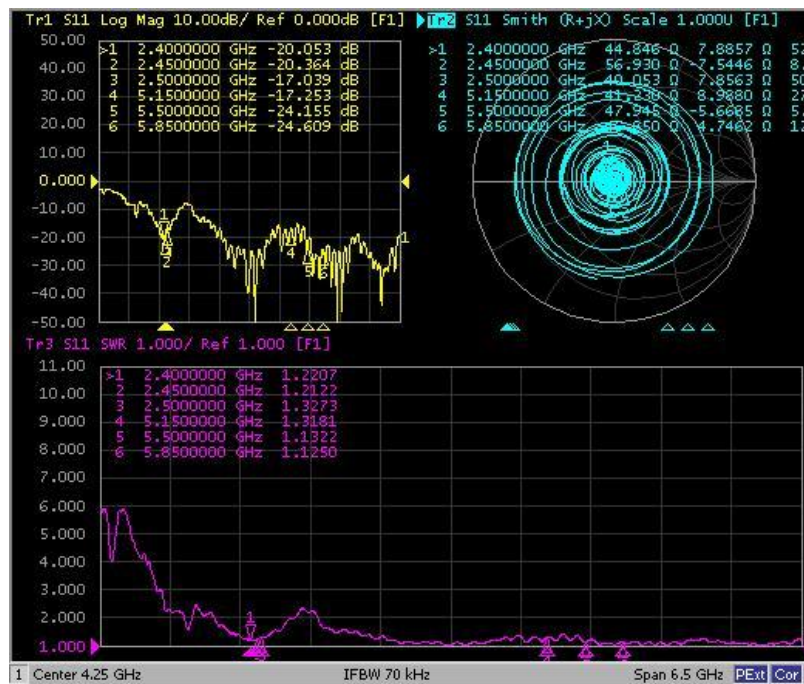
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无源效率&增益 Passive efficiency&gain:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	35.21	-4.53	3.29
2450	37.72	-4.23	3.5
2500	35.3	-4.52	3.43
5150	22.47	-6.48	2.74
5250	22.06	-6.56	3.02
5350	21.97	-6.58	2.86
5450	21.26	-6.72	2.52
5550	21.09	-6.76	2.56
5650	20.71	-6.84	2.31
5750	20.99	-6.78	2.32
5850	20.68	-6.84	2.12

4、VSWR 参数图 VSWR parameter diagram



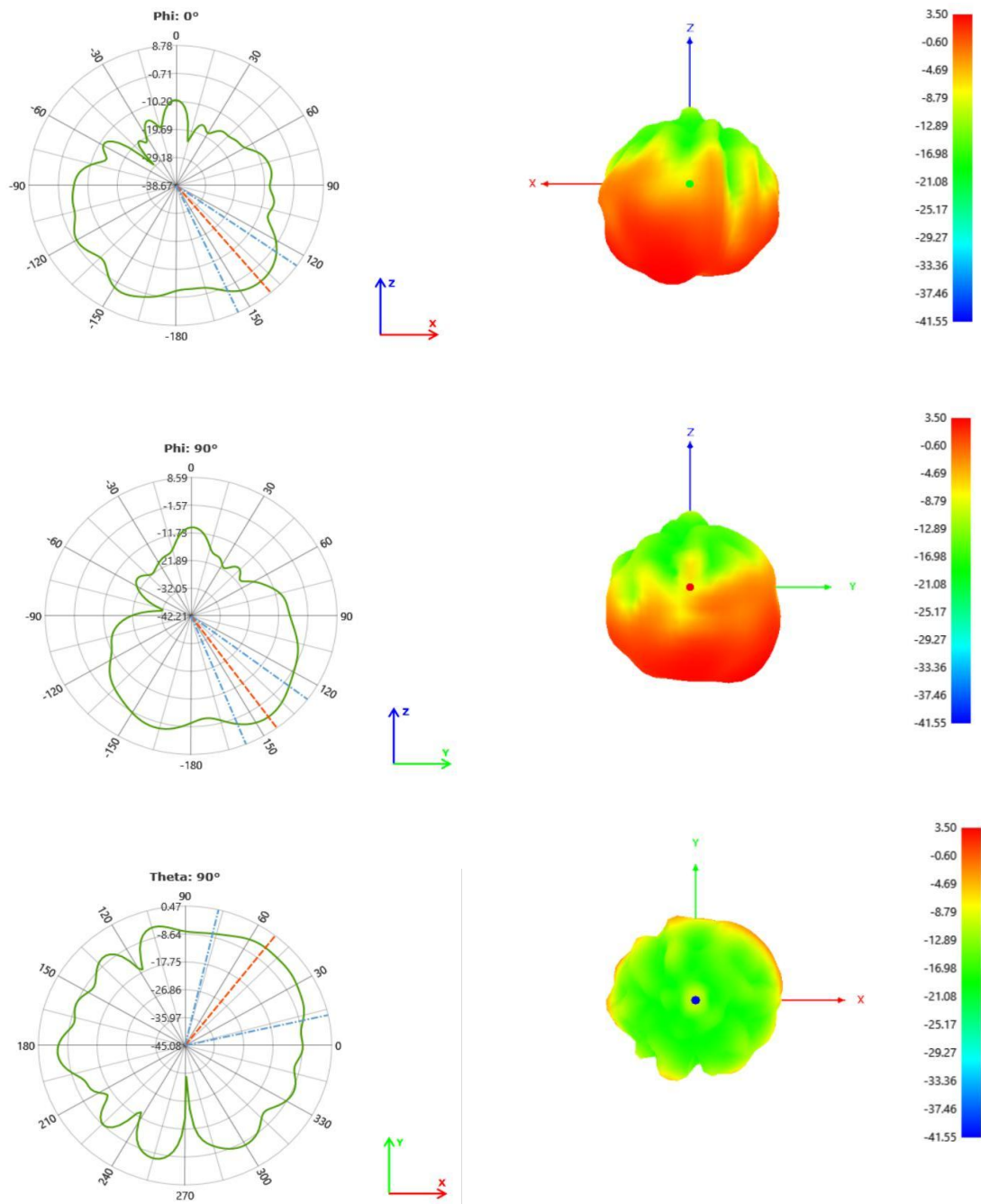
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5、无源场型图 Passive Field Pattern Diagram

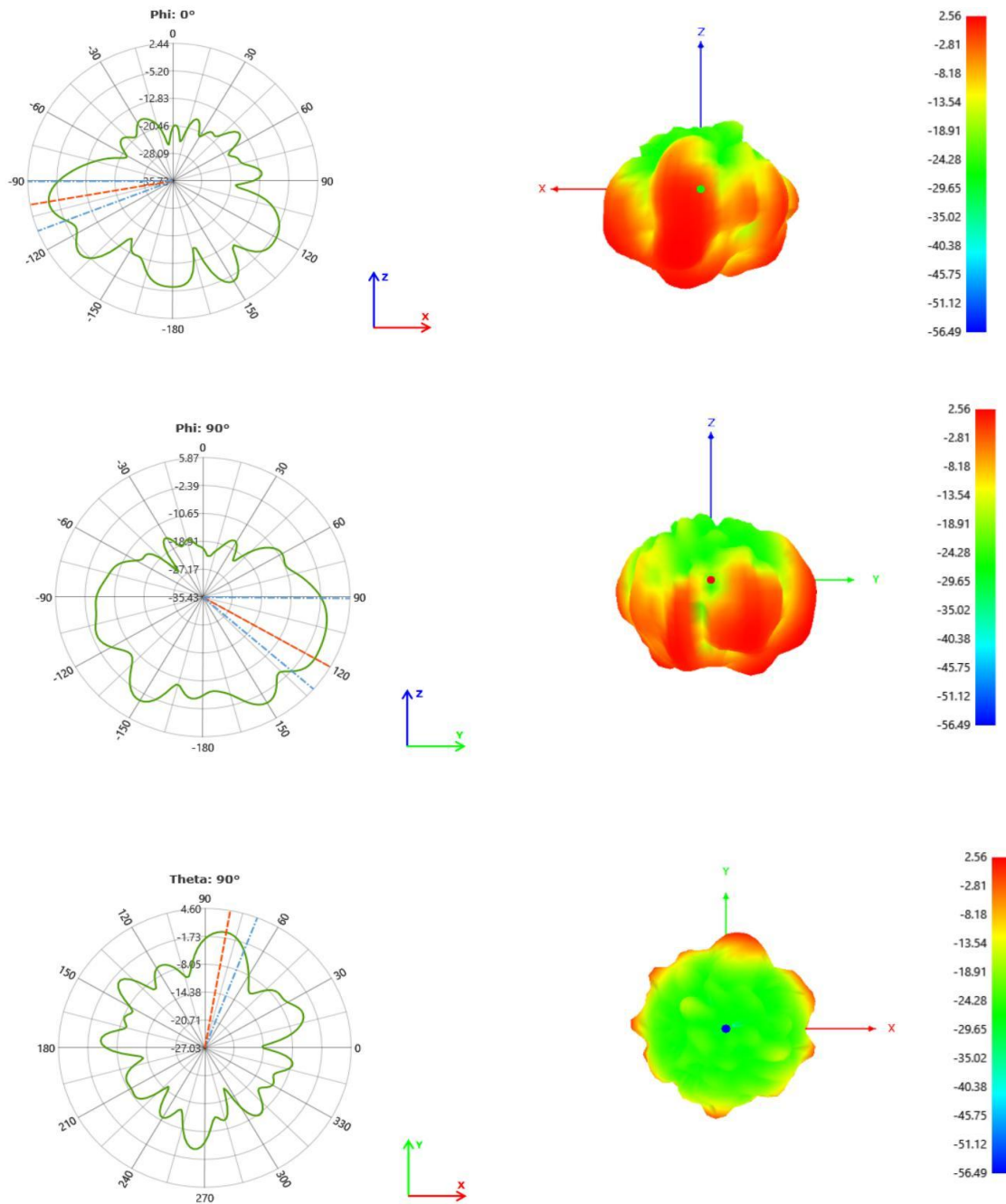
2450MHz



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5550MHz

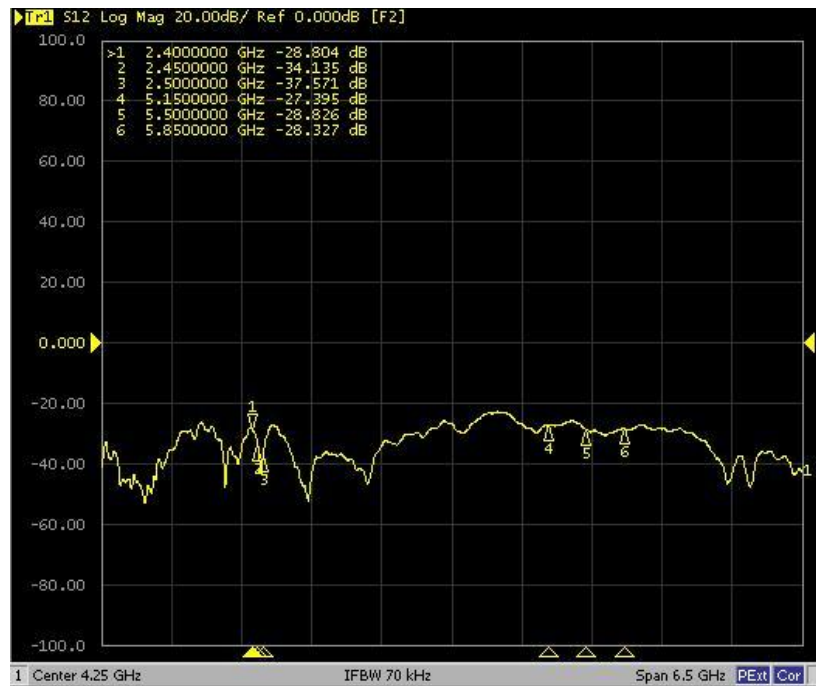


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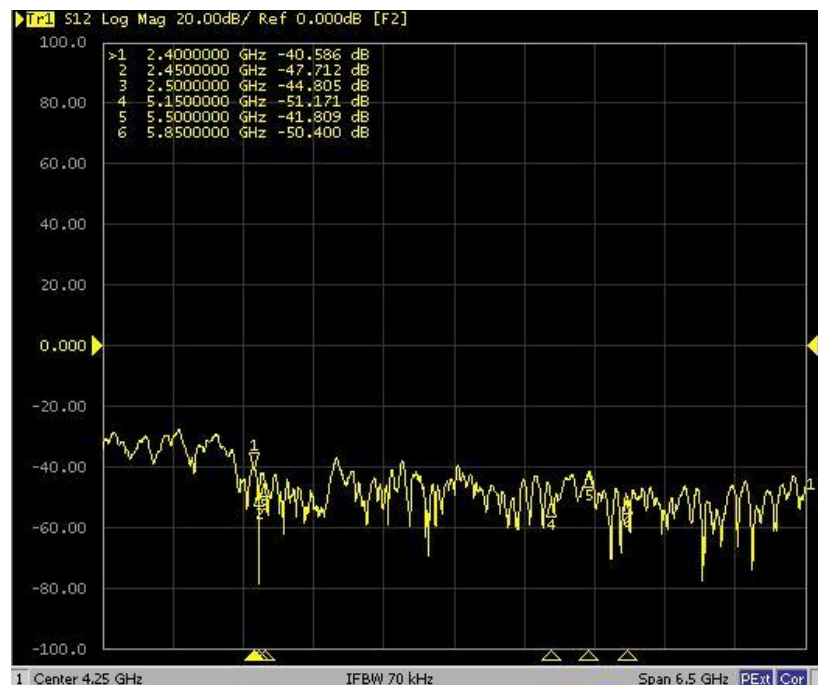
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6、天线隔离度 Antenna isolation degree

WIFI 0&WIFI1



WIFI 0&BT

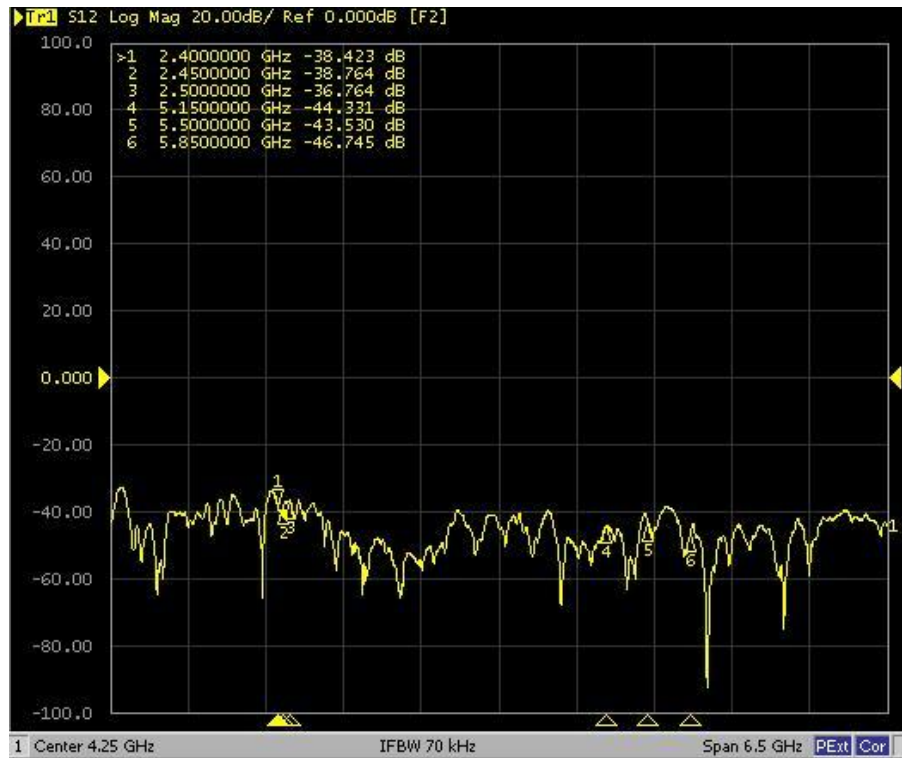


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WIFI0&Wieleess



7、结论 conclusion

此天线是在客户提供样机基础上设计，电参数和结构性能已达到技术要求，请确认！

This antenna is designed based on the prototype provided by the customer. The electrical parameters and structural performance have met the technical requirements, please confirm!

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