索沃德天线调试报告

Antenna Test Report

客户名称：吉祥星

Customer Name: JI XIANGING

项目名称：V6H投影仪-RK3326 主控-6256模块

Project Name: V6H Projector-RK3326 Master-6256 module

日　　期：2020.10.17

Date:2020-10-17

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项目简介
Project Description

1. 项目简述 Project Brief

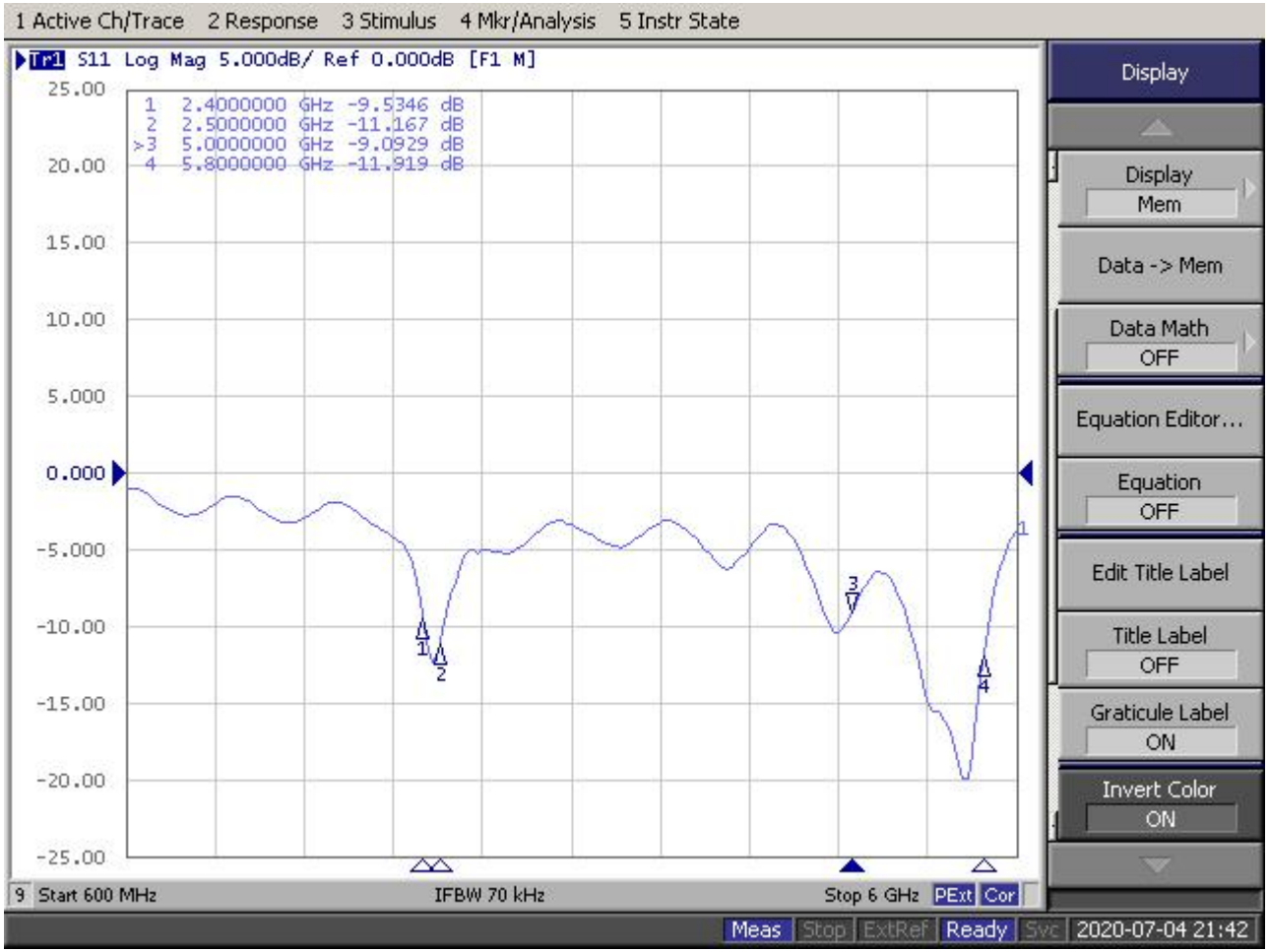
项目天线数目 The number of project antennas	机子类型 Machine subtype
1	投影仪 Projector
整机外壳材质：金属外壳+塑胶底壳 Shell material: metal shell + plastic bottom shell	

2. 天线简述 Antenna Brief

天线编号 Antenna number	名称 Name	工作频段/MHZ Frequency Range	材质/结构 Material/Structure
1	WiFi&BT&5gWiFi	2400Mhz-2500Mhz/5000Mhz-5800Mhz	FPC

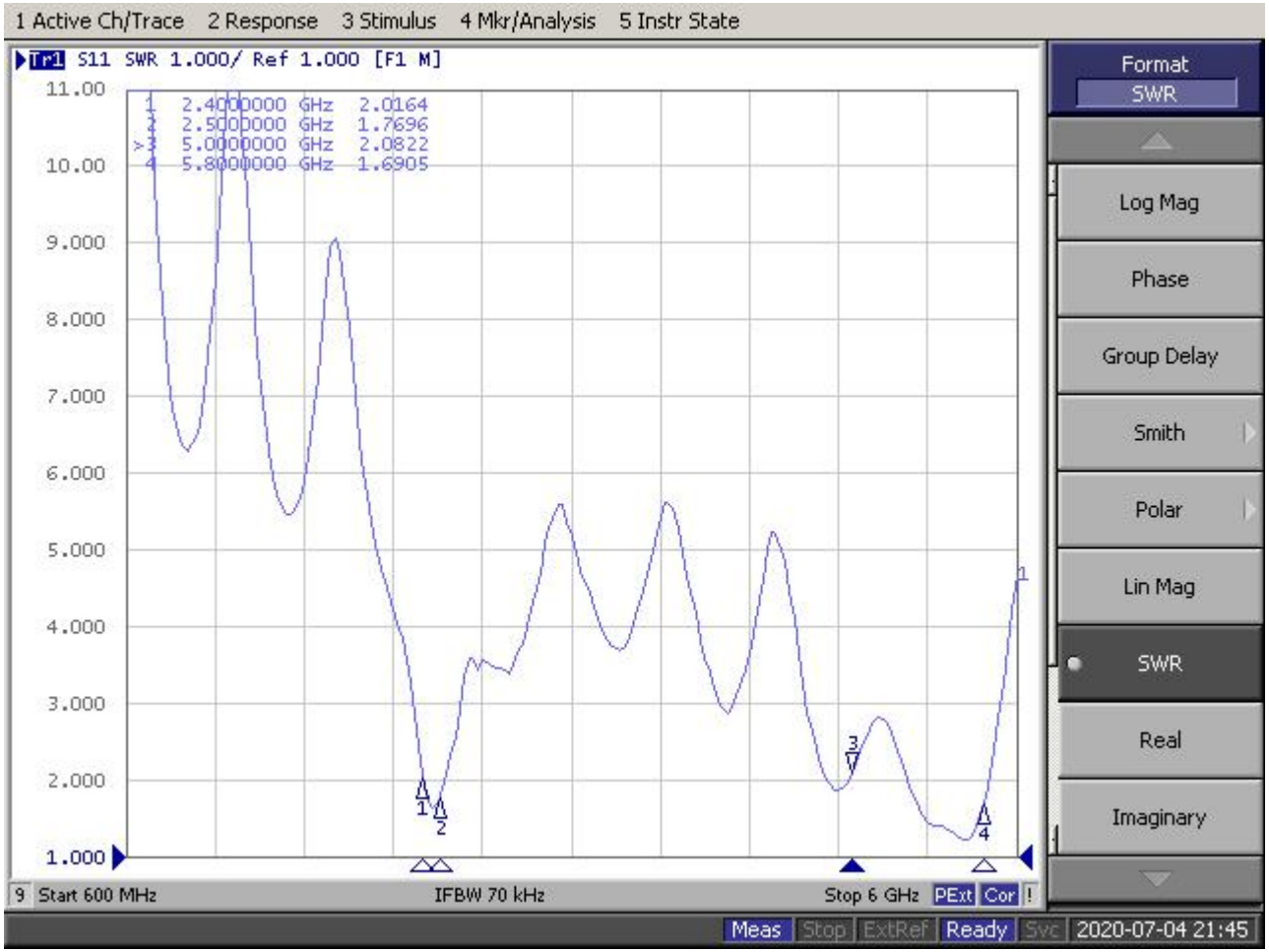
/ 天线布局

/ 天线回波损耗
Antenna return loss



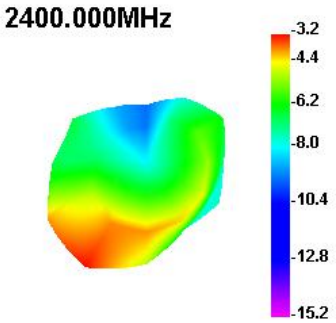
/ 天线驻波

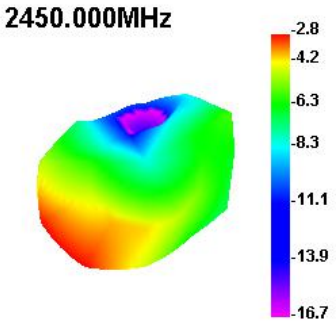
Antenna standing wave

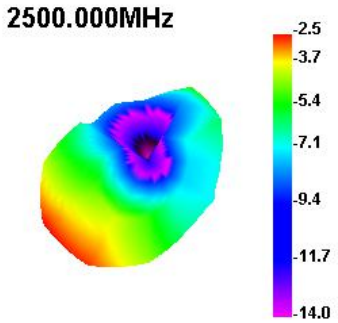


/ WiFi 天线效率（2.4G） Antenna efficiency

Passive Test For 2.4Gwifi										
Freq	Effi	Effi	Gain	Gain	UHIS	DHIS	Max	Min	Attenut	Attenut
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)	Hor	Ver
2400	18.59	-7.31	-3.21	-5.36	10.917	7.668	-3.21	-15.24	50.42	50.3
2410	17.8	-7.5	-3.35	-5.5	11.01	6.79	-3.35	-17.05	50.47	50.33
2420	17.38	-7.6	-3.31	-5.46	11.116	6.264	-3.31	-16.12	50.54	50.29
2430	17.32	-7.62	-3.13	-5.28	11.182	6.133	-3.13	-16.22	50.49	50.29
2440	18.3	-7.37	-2.77	-4.92	11.719	6.583	-2.77	-16.57	50.49	50.29
2450	18.4	-7.35	-2.8	-4.95	11.483	6.919	-2.8	-16.66	50.74	50.44
2460	18.92	-7.23	-2.73	-4.88	11.458	7.465	-2.73	-15.76	50.62	50.43
2470	20.39	-6.91	-2.52	-4.67	12.025	8.363	-2.52	-14.96	50.72	50.67
2480	21.35	-6.71	-2.31	-4.46	12.324	9.031	-2.31	-14.92	51.27	51.09
2490	20.6	-6.86	-2.47	-4.62	11.691	8.909	-2.47	-14.51	50.98	50.87
2500	19.91	-7.01	-2.54	-4.69	11.237	8.675	-2.54	-14.04	51.62	51.32

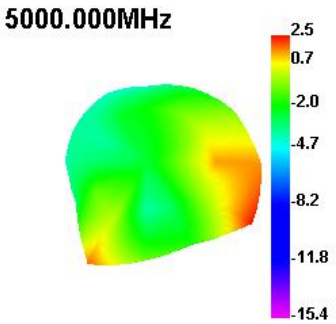


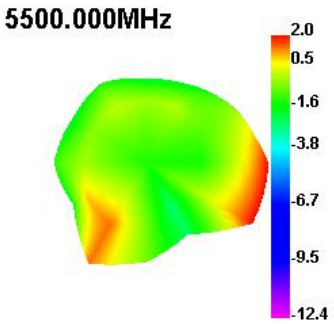


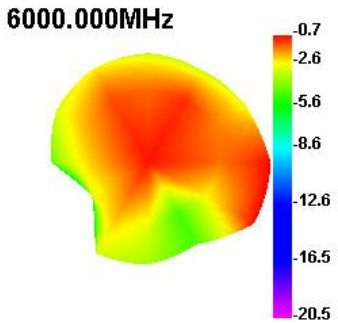


/ WiFi 天线效率（5G） Antenna efficiency

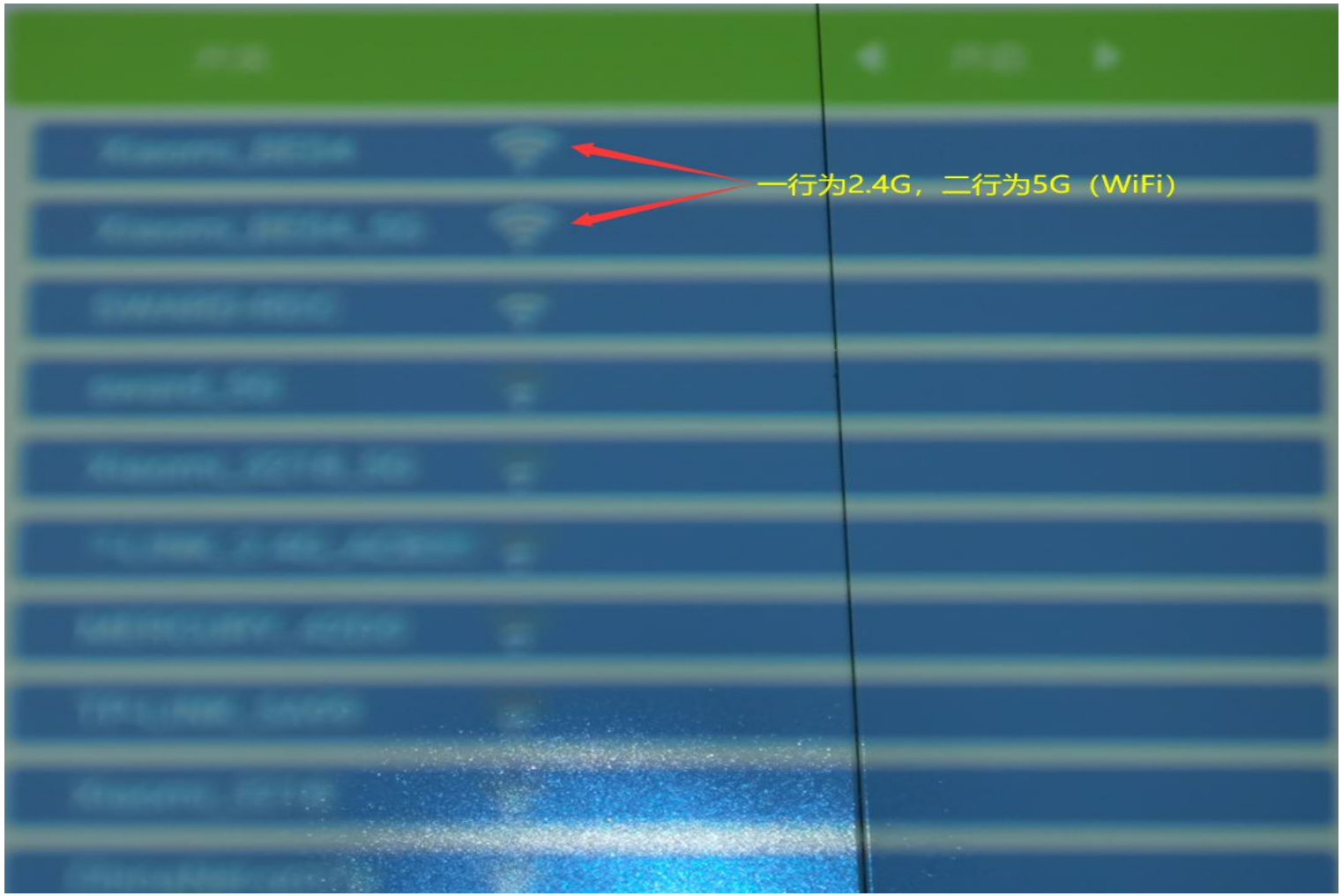
Passive Test For 5Gwifi										
Freq	Effi	Effi	Gain	Gain	UHIS	DHIS	Max	Min	Attenut	Attenut
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)	Hor	Ver
5000	47.51	-3.23	2.51	0.36	34.062	13.447	2.51	-15.4	62.54	57.46
5100	38.98	-4.09	1.52	-0.63	27.263	11.721	1.52	-11.74	61.59	57.17
5200	40.91	-3.88	1.81	-0.34	29.28	11.634	1.81	-11.95	60.21	57.57
5300	39.4	-4.05	1.35	-0.8	28.203	11.196	1.35	-12.08	60.86	59.02
5400	49.45	-3.06	1.77	-0.38	35.82	13.633	1.77	-11.37	61.13	59.11
5500	54.26	-2.66	1.99	-0.16	39.545	14.716	1.99	-12.43	60.4	59.92
5600	48.1	-3.18	2.02	-0.13	35.878	12.22	2.02	-14.69	60.01	59.51
5700	45.98	-3.37	1.8	-0.35	34.816	11.161	1.8	-17.47	60.31	59.92
5800	35.79	-4.46	0.6	-1.55	27.144	8.641	0.6	-21.14	60.05	59.68
5900	32.82	-4.84	-0.31	-2.46	25.143	7.682	-0.31	-18.68	60.15	59.67
6000	29.33	-5.33	-0.66	-2.81	22.533	6.794	-0.66	-20.49	60.01	59.58







/ WiFi 15m 实测图（2.4G/5G） Measured map

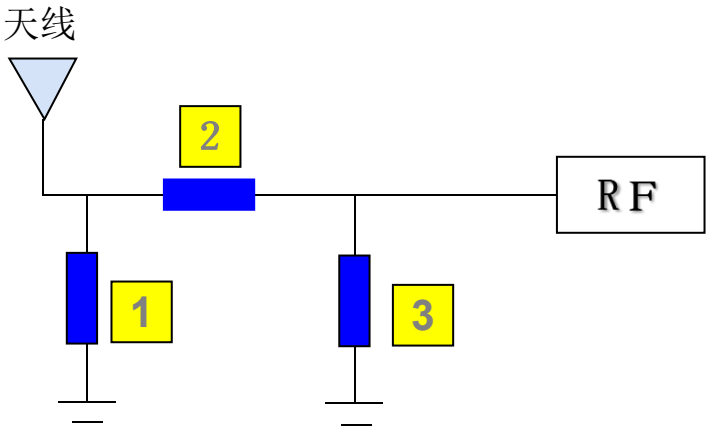


/ WiFi 耦合测试数据

Coupling test data

机型编号	信道	b模式（11MHz）		g模式（54MHz）		n模式（MCS7）		a模式（54MHz）	
		TRP	TIS	TRP	TIS	TRP	TIS	TRP	TIS
1	1	9.17	/	/	/	/	/	/	/
	7	9.96	/	/	/	/	/	/	/
	13	11.43	-71.65	/	/	/	/	/	/
	36	/	/	/	/	/	/	13.57	/
	149	/	/	/	/	/	/	/	/
	157	/	/	/	/	/	/	/	/
	161	/	/	/	/	/	/	/	/
	165	/	/	/	/	/	/	15.41	-74.68

/ WiFi 天线匹配修改
Antenna matching modifications



主天线	1	2	3	备注
原始匹配	NA	参数未知（电容）	NA	
变更匹配	NA	0Ω	NA	

/ 环境处理及装配说明

Environmental treatment and assembly instructions

未更改/增加环境处理，按常规装机即可。

No change to add environmental treatment, according to the conventional installation can be

注：1.此份报告依据调试样机实际调试及测试情况所得，其中环境处理、天线位置以及各器件装配位置不可随意更改；
2.样机所使用物料若有变动，需及时反馈我司做再次验证；
3.敏感器件清单：
TP（材质，涂层，走线等）
屏（放大电路，LED，排线设计等）
壳料（天线装配方式，结构干涉，壳料材质，天线位置高度及面积等）
主板（主板传导，射频电路匹配、PA、双功器、滤波、LNA，电源电路等）
摄像头、电池、马达、MIC、指纹识别模块等
4.因调试样机数量少或仅有一台，部分概率性问题不能完全找出，建议量产前先小批试产排查问题点（如闪屏花屏，喇叭杂音，TP跳点，黑屏死机，信号跳水等）

Note: 1. This report is based on the actual debugging and testing of the debugging prototype, in which the environmental treatment, antenna position and assembly position of each device
cannot be changed at will;
2. If the materials used in the prototype change, it is necessary to feedback to our company for re-verification;
3. List of sensitive devices:
TP (material, coating, wiring, etc.)
Screen (amplification circuit, LED, cable design, etc.)
shell material (antenna assembly method, structural interference, shell material, antenna position height and area, etc.)
Main board (motherboard conduction, RF circuit matching, PA, biplexer, filter, LNA, power circuit, etc.)
Camera, battery, motor, MIC, Fingerprint recognition module, etc.
4. Due to the small number of debugging prototypes or only one, some probabilistic problems cannot be completely found, it is recommended to check the problem points in small batches of trial production before mass production