和乐H3天线射频研发报告V1

Hele H3 antenna RF research and development report V1

本次报告主要目的：优化板载天线匹配参数，提升天线性能

The main purpose of this report: Optimize the onboard antenna matching parameters to improve antenna

本次报告主要结论：优化匹配后，整机天线无源性能与OTA数据都很好

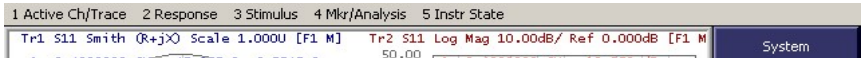
The main conclusion of this report: After optimization and matching, the passive performance and OTA whole antenna are good

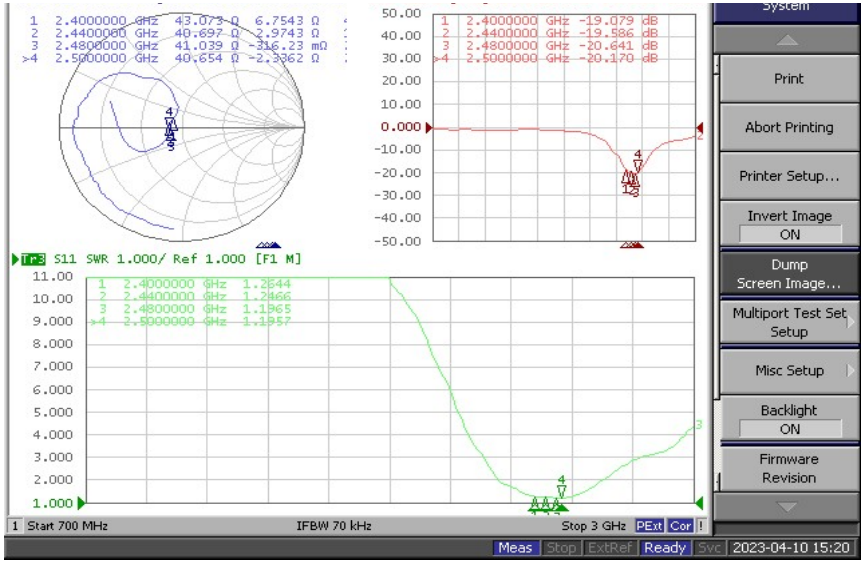
本次报告重点注意事项：功率电感已更换，电感料号：HDC0603Y100DMT

Key points to note in this report: The power inductor has been replaced. The inductor part number is

天线阻抗参数测试情况

Antenna impedance parameters test condition



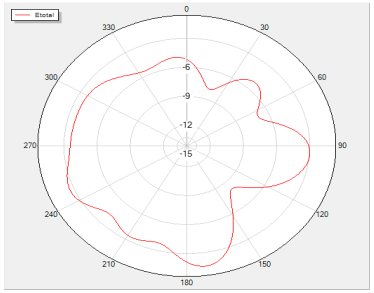


天线无源效率测试情况（附3D&2D方向图）

Antenna passive efficiency test (with 3D&2D direction chart)

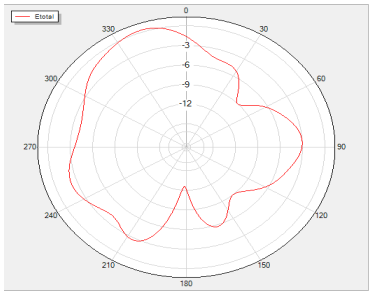
频点MHz	增益(dBi)	效率(dB)	效率 （%）
	Gain (dBi)	Efficiency (db)	Efficiency (%)
2400	0.93	-3.44	45.28
2410	1.11	-3.34	46.3
2420	1.3	-3.22	47.64
2430	1.42	-3.11	48.89
2440	1.5	-2.98	50.31
2450	2.5	-3.86	56.75

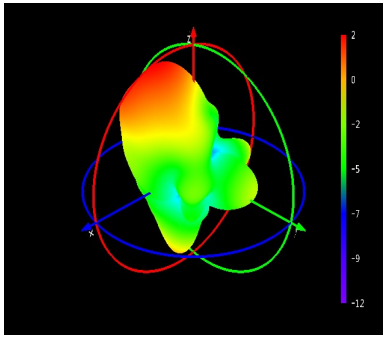
Theta=90 Freq=2440MHz

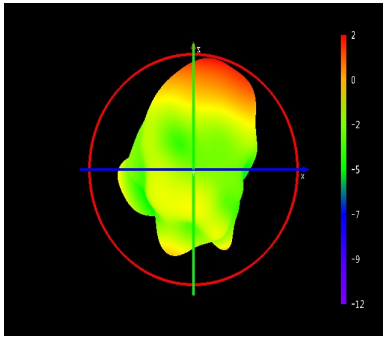


Phi=90 Freq=2440MHz

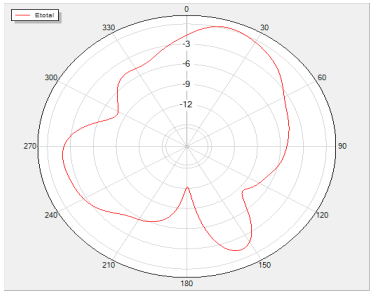
2460	1.58	-2.79	52.61
2470	1.5	-2.79	52.62
2480	1.4	-2.82	52.18
2490	1.3	-2.9	51.34
2500	1.17	-3	50.16
平均值	1.47	-3.15	50.29

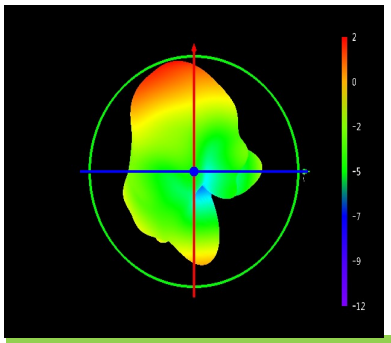


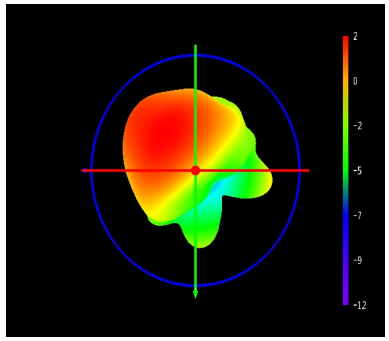




Phi=0 Freq=2440MHz







整机有源测试数据3D场型图/苹果图

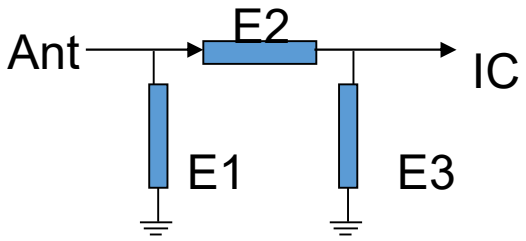
Complete machine active test data 3D field pattern/apple chart

自由数据/Free data			
	Channel	TRP（dBm）	TIS（dBm）
FS	CH 0	4.73	-91.04
	CH 39	5.07	-92.48
	CH 78	5.54	-92.67

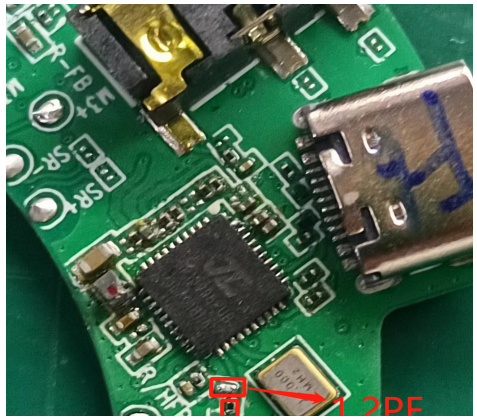
头模数据/Head module data			
	Channel	TRP（dBm）	TIS（dBm）
BH	CH 0	4.04	-90.45
	CH 39	4.37	-91.23
	CH 78	4.79	-91.76

天线匹配电路

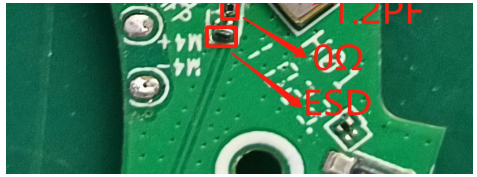
Antenna matching circuit



Element	Value
E1	N/A

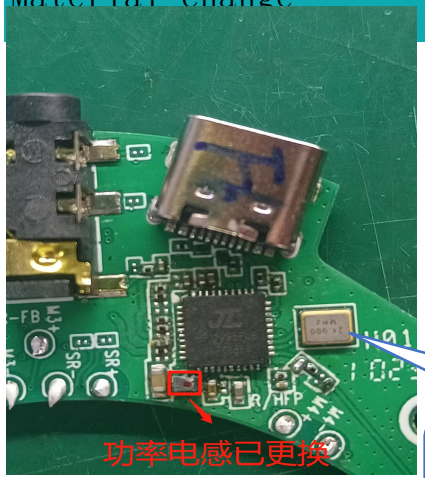


E2	0Ω
E3	1.2PF



物料更改

Material change



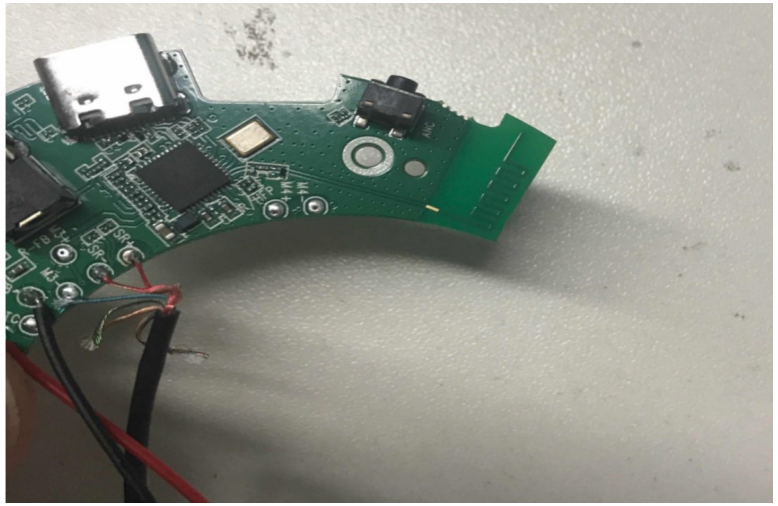
功率电感料号/Power inductor

总结

conclusion

优化匹配后，整机天线无源性能与OTA数据都很好。

After optimization and matching, the passive performance and OTA data of the whc are good.



performance

data of the

HDC0603Y100DMT

ole antenna