



深圳市科奇通讯科技有限公司

承认书

APPROVAL SHEET

客户 Customer	宝捷時計电子（深圳）有限公司
项目名 Project	K950
料号 Part NO.	PCB 板载天线
规格 Specification	BLE Antenna

APPROVAL			
OnePlusOne:			
RF Check	ME Check	QC Check	Confirm By
李胜华	XIAO	CAO	刘臣
Customer:			
EE Check	PM Check	QC Check	Confirm By

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Project:	Author:	File Name: K950_APP_A.doc
Date: 2023-6-30	LIXC	
Revision:	B	
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Date:	Revision:	Updates and changes:	Issued by:
2023-6-30	A	Initial sheet	LIXC
2023-8-10	B	Revised Active Table	LIXC

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1 Antenna description

It summarize BLE antenna for project K950. BLE antenna's frequency band is 2400–2500MHz,

1.1 Part number

Part number of antenna: K950

1.2 Antenna pictures



2 Electrical Performance

2.1 Specification

BLE	
Frequency Range	2400–2500MHZ
Return Loss	<-5
Efficiency	>35%

2.2 Measurement Set-up

2.2.1 VSWR and Return Loss

VSWR measurements (S_{11}) were performed using an Agilent ENA series Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

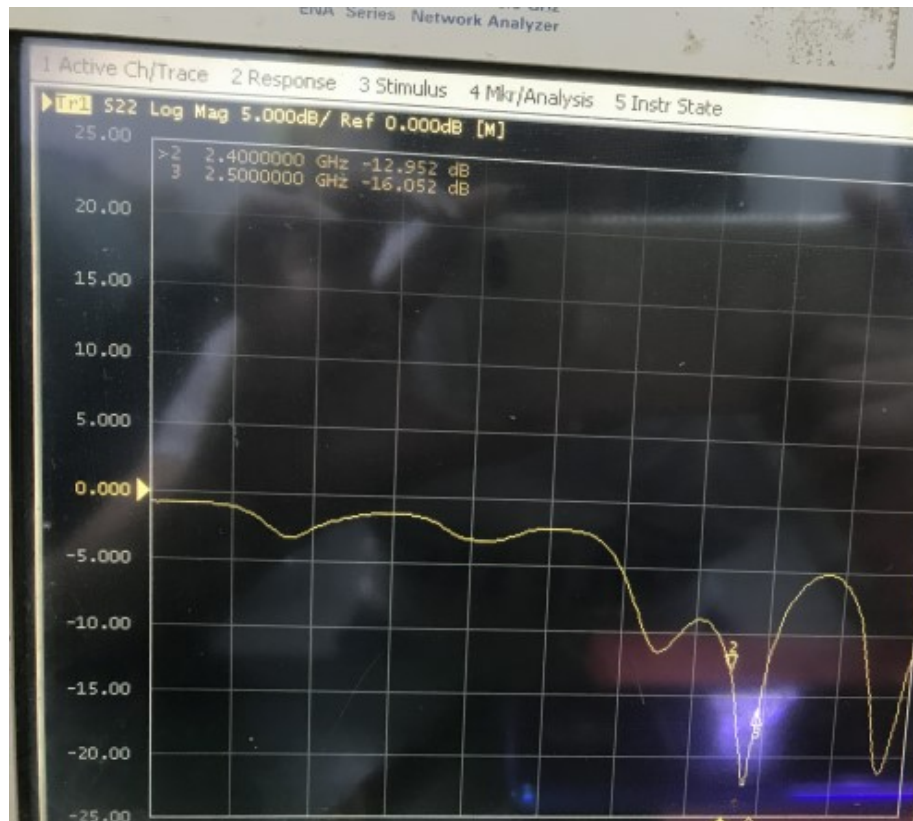
2.2.2 Efficiency and Gain

The gain of the antenna was measured in OPO's 3D anechoic chamber in Shenzhen, China. The chamber is a ETS system capable of doing tests from 380MHz to 6GHz. Coaxial chokes on the feed cable were used to mitigate surface currents during passive tests. The measurement results are calibrated using dipole standards. For TRP and TIS the chamber uses a 8960 / MT8820C to establish the connection with the mobile device and read the power.

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3 Reference measurement data

3.1 Passive



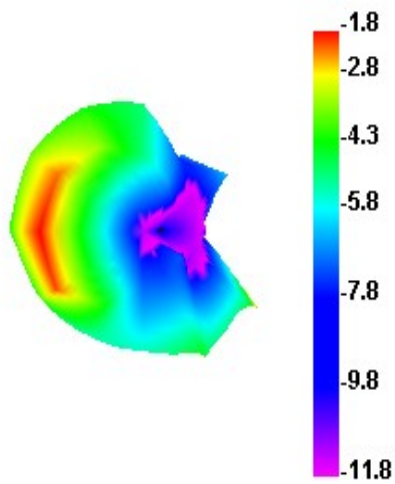
Return Loss

3.2 Active

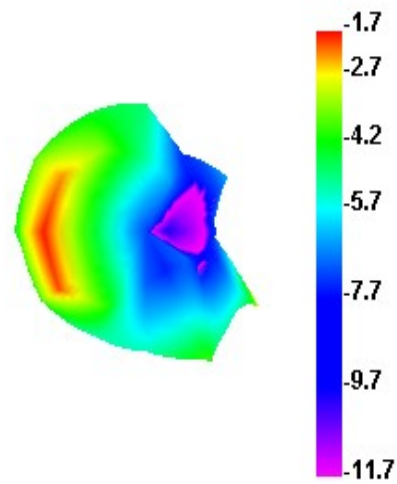
Passive Test For BLE												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Peek Gain (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	31.82	-4.97	-1.76	-3.91	16.873	14.951	-1.76	-9.2	3.22	60	49.16	49.2
2410	31.3	-5.05	-1.73	-3.88	16.677	14.618	-1.73	-9.44	3.31	60	49.24	49.52
2420	29	-5.38	-2.09	-4.24	15.328	13.671	-2.09	-9.84	3.29	60	48.82	48.96
2430	37.27	-4.29	-0.77	-2.92	19.612	17.656	-0.77	-8.96	3.51	60	50.61	50.76
2440	31.23	-5.05	-1.37	-3.52	16.306	14.926	-1.37	-10.09	3.68	0	49.15	49.41
2450	31.04	-5.08	-1.28	-3.43	16.115	14.925	-1.28	-10.21	3.8	0	49.58	49.67
2460	35.41	-4.51	-0.64	-2.79	18.196	17.209	-0.64	-9.69	3.87	0	49.91	49.91
2470	32.86	-4.83	-0.97	-3.12	16.906	15.956	-0.97	-9.82	3.86	0	51.14	51.27
2480	31.88	-4.96	-1.02	-3.17	16.265	15.619	-1.02	-10.92	3.95	0	49.68	49.55
2490	34.36	-4.64	-0.79	-2.94	17.546	16.811	-0.79	-11.25	3.85	0	50.9	50.82
2500	29.63	-5.28	-1.74	-3.89	15.16	14.469	-1.74	-11.75	3.54	0	49.4	49.45

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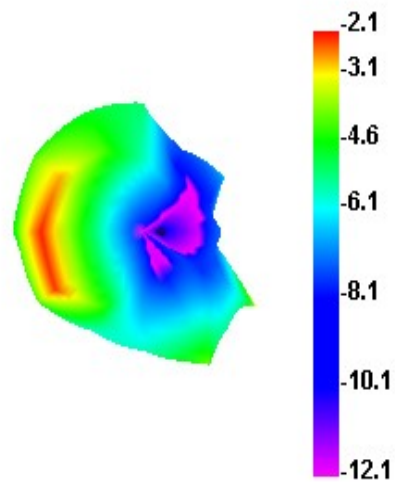
2400.000MHz



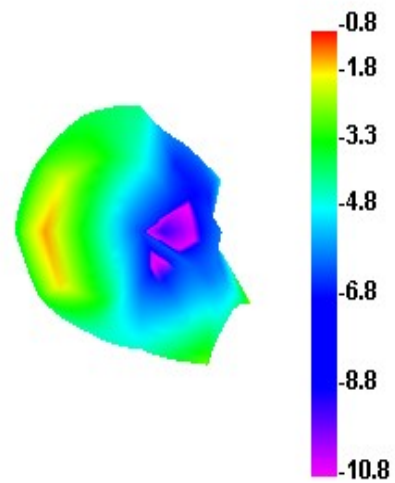
2410.000MHz



2420.000MHz

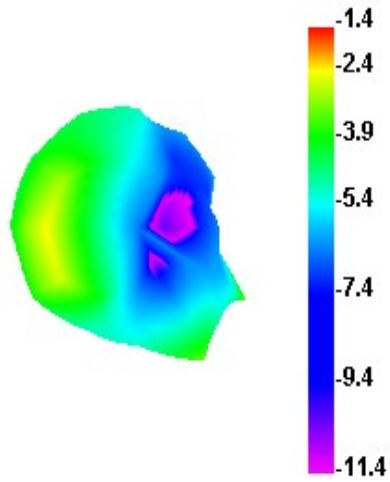


2430.000MHz

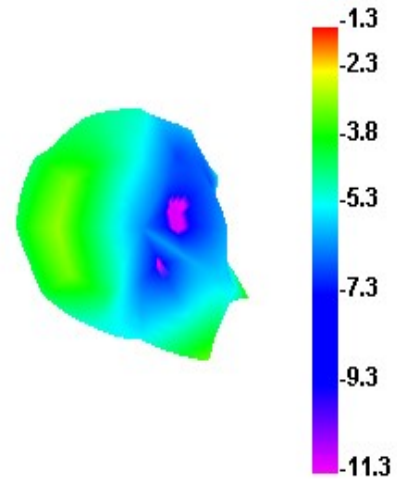


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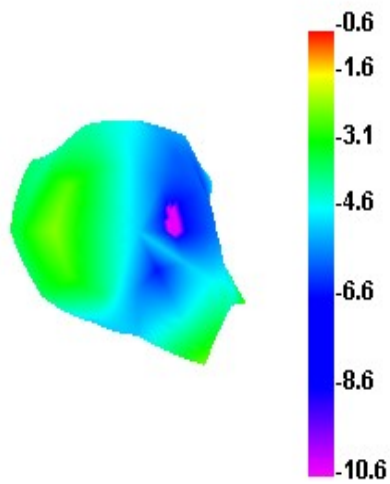
2440.000MHz



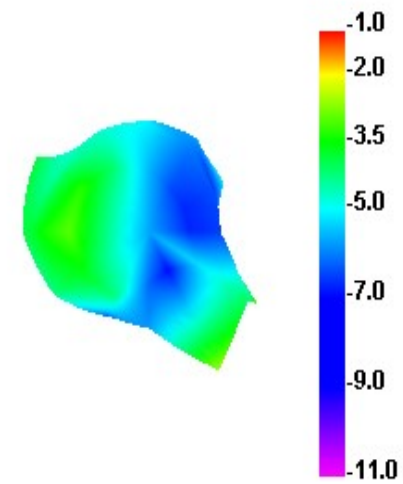
2450.000MHz



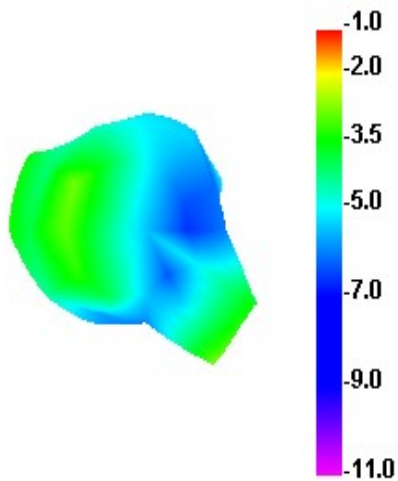
2460.000MHz



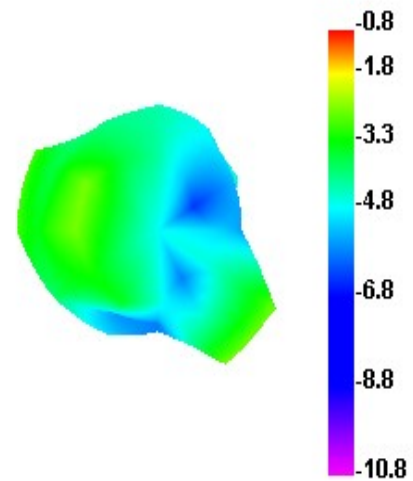
2470.000MHz



2480.000MHz

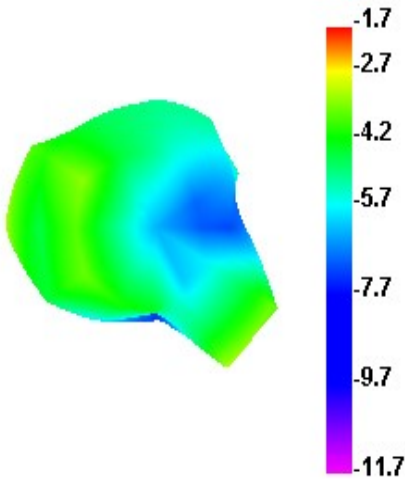


2490.000MHz



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2500.000MHz



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