



Antenna matching report

Customer: Shenzhen Best Link Chip Technology Co.,Ltd.

Model Name: CH-5192B

Frequency: BT(2402~2480MHz)

Antenna type: Chip Antenna

HEK ANT P/N: ANT5020R2400A1M1

Antenna Size: 5.0x2.0mm

Date: 2026.07.03

Number: 20260703001

Producer: FAE

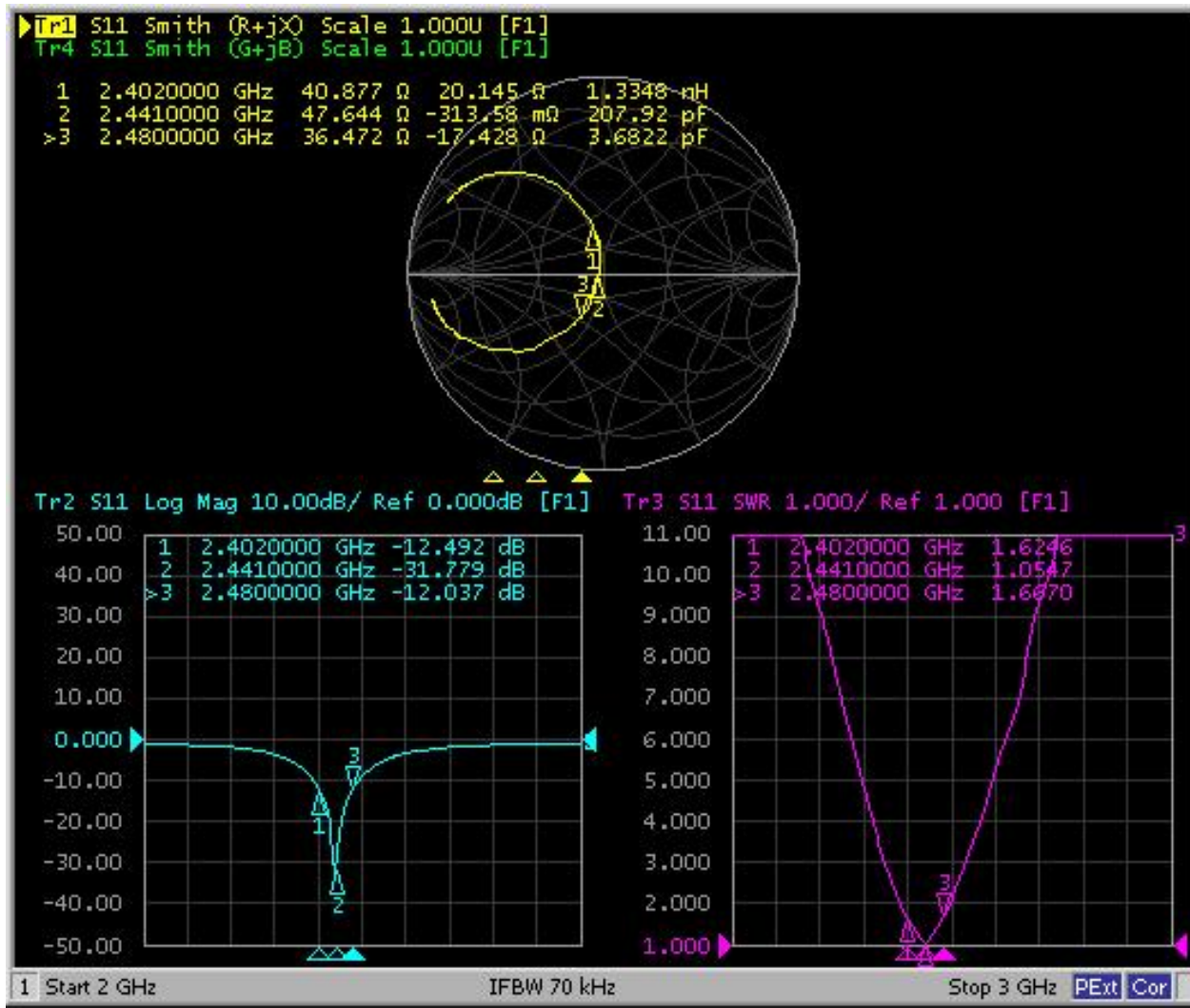


NO	PROJECT	Pagination
1	Appearance of customer Sample	Page 3
2	Matching parameters	Page 4
3	Antenna S parameters	Page 5
4	Antenna Passive parameter	Page 6
5	Antenna radiation pattern	Page 7
6	The main control IC transmits data	Page 8
7	OTA test data	Page 9
8	Conclusion	Page 10





Antenna S parameters



Item	Value		
	2402 (MHz)	2441(MHz)	2480(MHz)
Return loss(dB)	-12.49	-31.77	-12.03
Smith chart	40.83	-47.64	36.47
VSWR	1.62	1.05	1.66





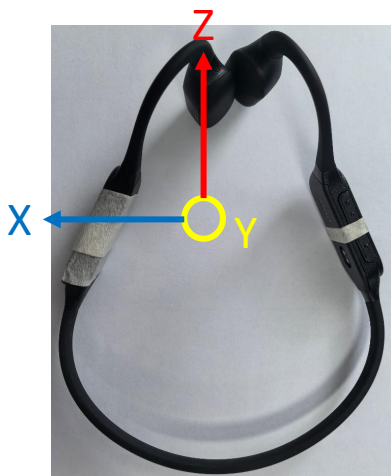
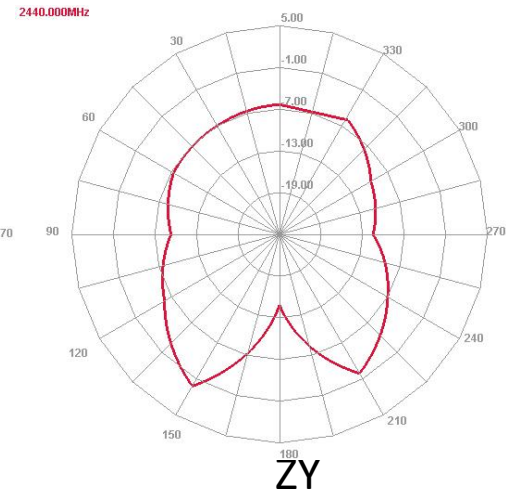
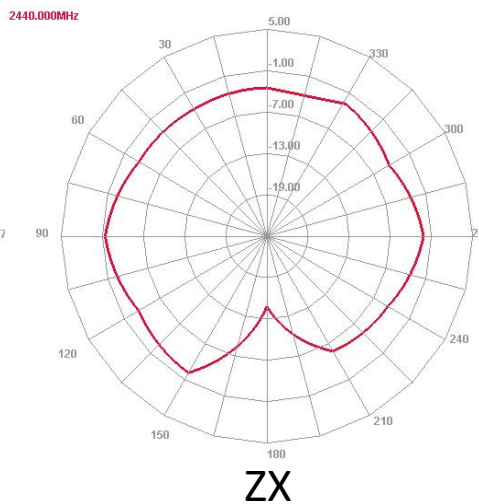
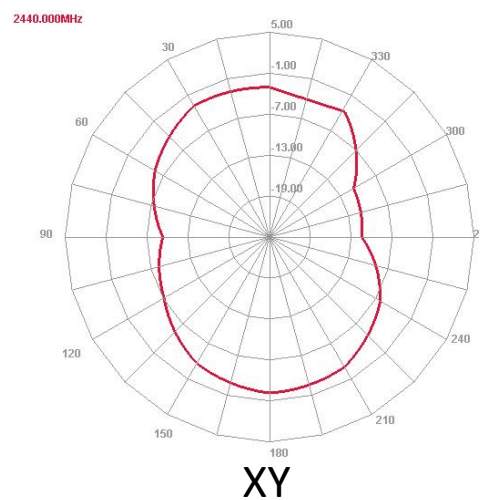
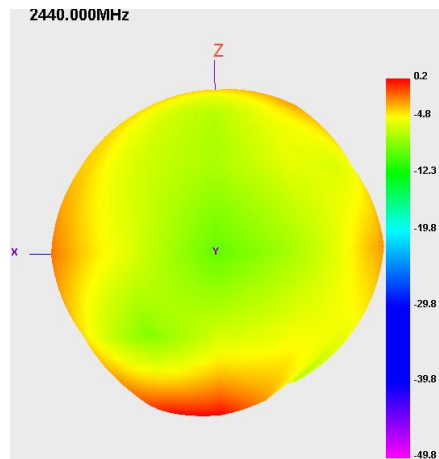
Antenna Passive parameter

Frequency (MHz)	Efficiency (%)	Mean gain (dBi)	Peak Gain (dBi)
2400	28.4	-5.47	0.43
2410	28.75	-5.41	0.56
2420	28.91	-5.39	0.62
2430	29.39	-5.32	0.73
2440	29.88	-5.25	0.82
2450	29.66	-5.28	1.06
2460	28.81	-5.41	0.91
2470	28.02	-5.52	0.75
2480	27.37	-5.63	0.64





Antenna Passive parameter





The main control IC transmits data

Conduction	CHANNEL	CH0	CH39	CH78
	RX(dBm)	-93.5	-93.6	-93.4
	TX(dBm)	8.5	8.2	8.6





OTA Test Data

1# Free field	CHANNEL	CH0	CH39	CH78
	TIS(dBm)	5.31	5.5	5.03
	TRP(dBm)	-92.26	-92.69	-91.28

1# Head-form	CHANNEL	CH0	CH39	CH78
	TIS(dBm)	0.25	0.14	-0.13
	TRP(dBm)	-86.47	-85.86	-85.68

2# Free field	CHANNEL	CH0	CH39	CH78
	TIS(dBm)	5.51	5.04	4.81
	TRP(dBm)	-91.64	-92.4	-91.73

2#Head-form	CHANNEL	CH0	CH39	CH78
	TIS(dBm)	0.32	0.46	0.44
	TRP(dBm)	-86.45	-86.22	-86.35





Conclusion

- With the matching circuit given, the return loss can reach at least -12.03dB(@2.48GHz).
- The antenna radiation measurement (in HEK anechoic chamber) shows at least 27.37% efficiency and 0.64dBi peak gain (@2.48GHz).
- Please make the final confirmation from the customer.
- If you have any questions, please feel free to contact our sales department



Thanks

