

Antenna matching



Customer: 绿联

Model Name: BT701

Frequency: BT(2402~2480MHz)

HEK ANT P/N: ANT5020R2400A1M1

Date: 2025.11.25

Number: 20251125004

Producer: FAE



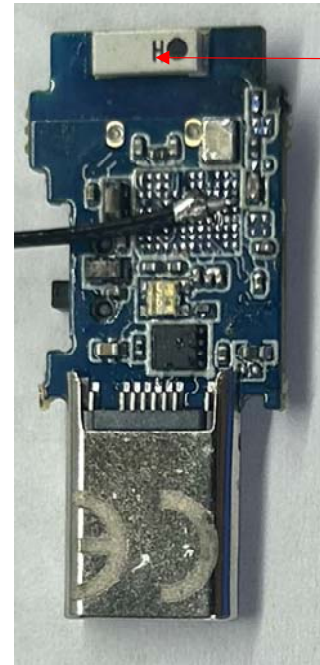
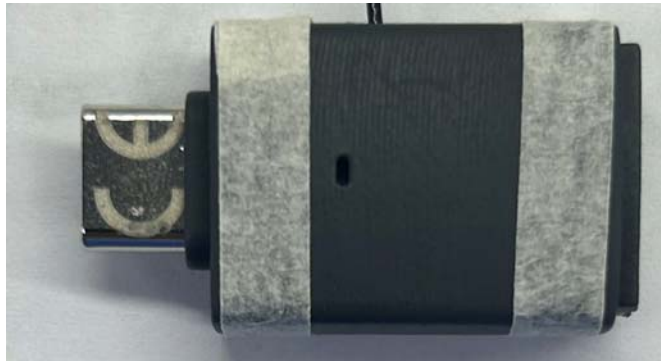
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Appearance of customer Sample

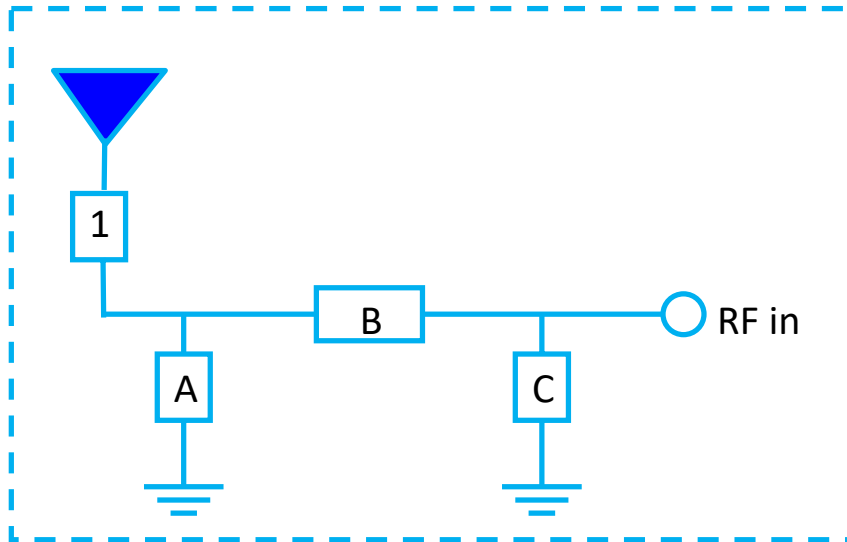


5020 Chip
Antenna



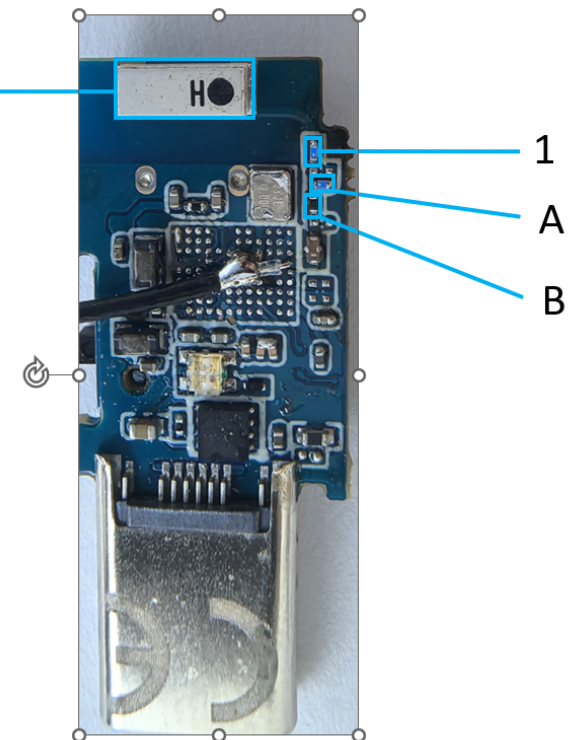


Matching parameters



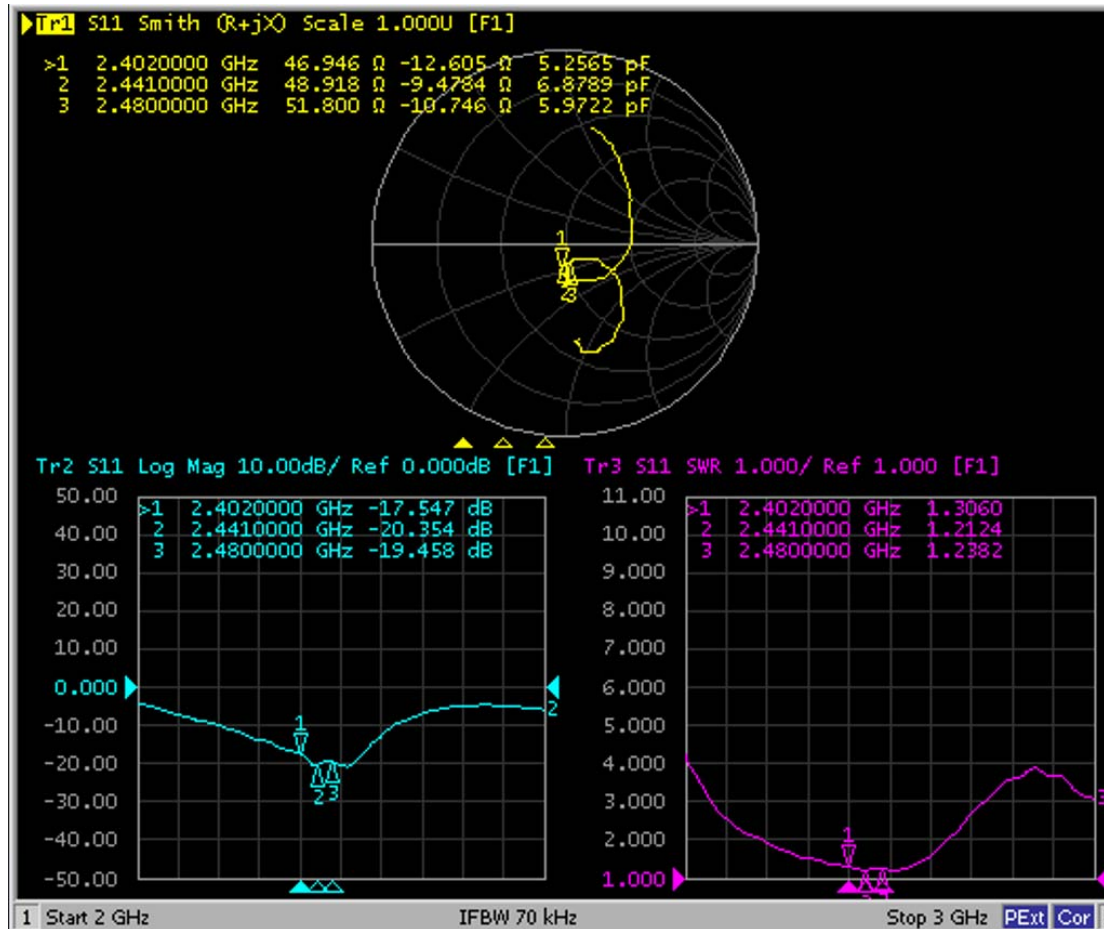
NO	Component	Brand	Description	P/N
ANT	Antenna	HEK	5020 Chip Antenna	ANT5020R2400A1M1
1	Inductor	muRata	0201 5.1nH	LQP03TN5N1H02
A	Inductor	muRata	0201 3.3nH	LQP03TN3N3B02
B	Resistor	Yageo	0201 0R	RC0201JR-070R
C	OPEN	N/A	N/A	N/A

5020 Chip Antenna





Antenna S parameters



Item	Value		
	2402(MHz)	2441(MHz)	2480(MHz)
Smith(Ω)	46.94	48.91	51.80
Return loss(dB)	-17.54	-20.35	-19.45
VSWR	1.30	1.21	1.23





Antenna Passive parameter

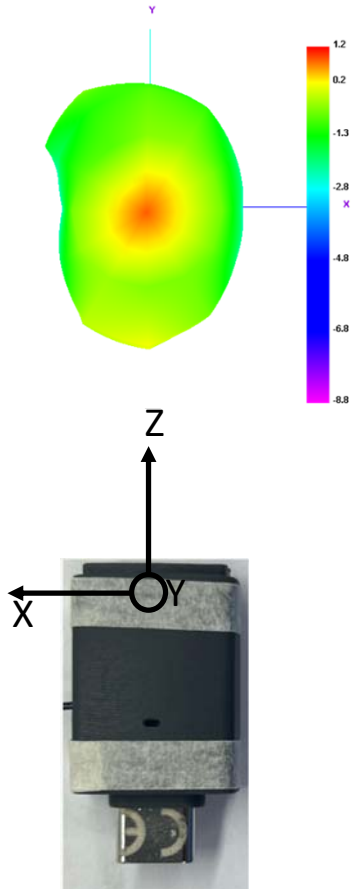
Frequency (MHz)	Efficiency (%)	Mean gain (dbi)	Peak Gain (dBi)
2410	58.66	-2.32	1.66
2420	53.78	-2.69	1.25
2430	52.17	-2.83	1.15
2440	53.74	-2.7	1.33
2450	51.31	-2.9	1.17
2460	53.18	-2.74	1.41
2470	54.42	-2.64	1.55
2480	53.99	-2.68	1.57



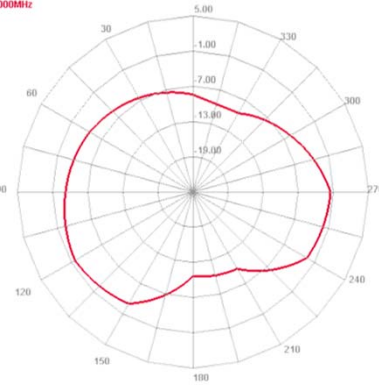


Antenna Passive parameter

2440.000MHz

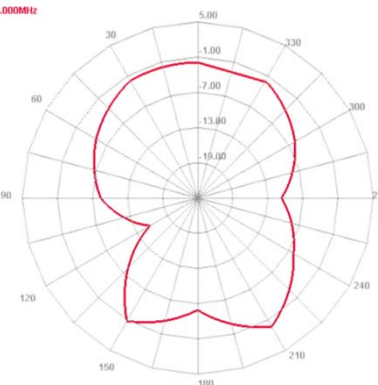


2440.000MHz



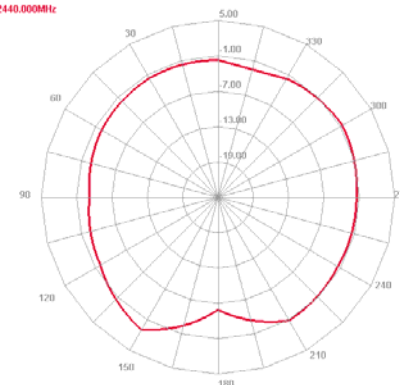
XY

2440.000MHz



ZX

2440.000MHz



ZY





Conclusion

- This work redesigned the antenna.
- With the matching circuit given, the return loss can reach at least 12.03dB(@2.48GHz), a good impedance matching result.
- The antenna radiation measurement (in HEK anechoic chamber) shows at least 44.4% efficiency and 1.77 dBi peak gain (@2.40GHz.)
- Please make the final confirmation from the customer.
- If you have any questions, please feel free to contact our sales department



Thanks

