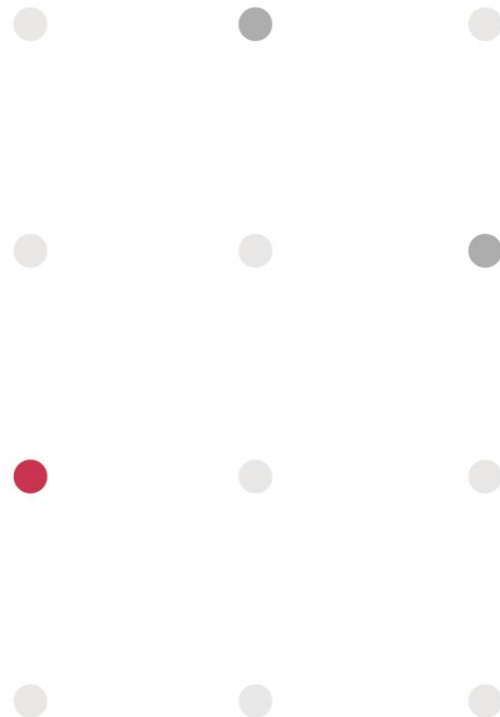


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INPAQ TECHNOLOGY CO., LTD.

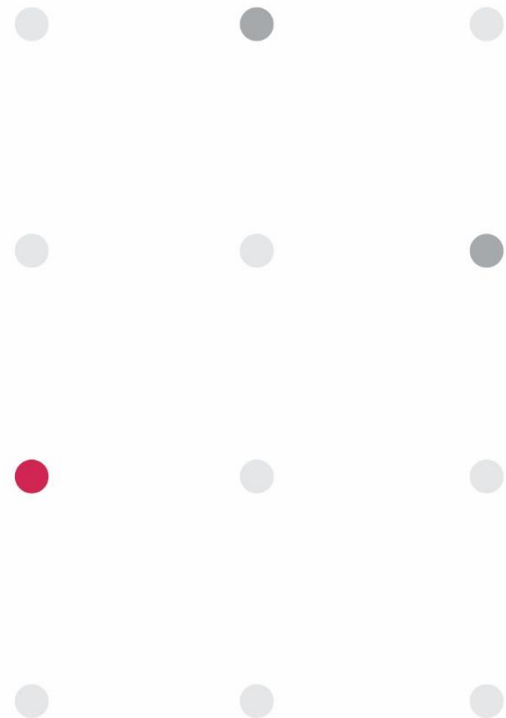
WE CONNECT & WE PROTECT WE ARE ONE



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PZ14 BT Keyboard

Presented by
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Last updated in 12.22, 2025

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Outline

- **Antenna Design History**
- **Requirements Antenna Design Measurement**
- **Antenna Placement & Solution**
- **VSWR**
- **Efficiency & Peak Gain**
- **Matching Circuit**
- **S21**
- **Conclusions**

Antenna Design History

Released Date	Version	Record
Aug. 20th, 2025	0.0	Initial report
Aug. 20th, 2025	0.1	Added shift of fake hand and PCB antenna
Sept. 5th, 2025	0.2	Increase the simulation of the antenna's surrounding environment
Sept. 24th, 2025	0.3	Modify the pattern and change the placement of the fake hand.
Nov. 26th, 2025	0.4	Replace the circuit board.
Dec. 19th, 2025	0.5	PCB Update
Dec. 22th, 2025	0.6	Add Matching Circuit

Requirements Antenna Design Measurement

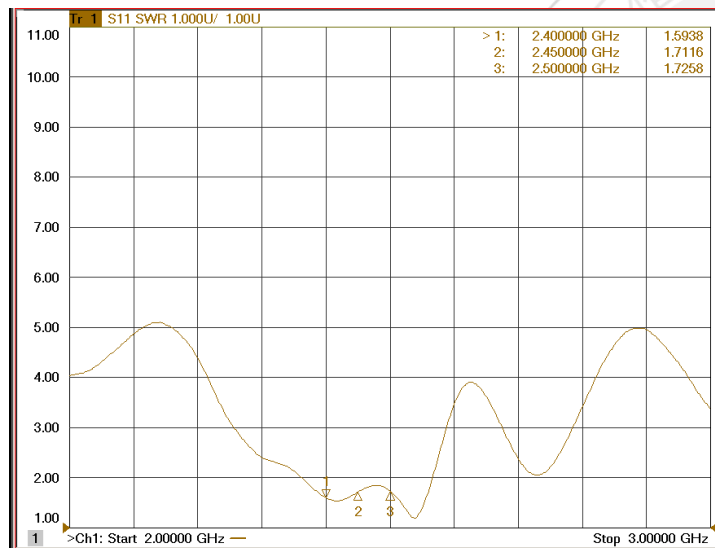
Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
BT	PCB Ant	2400~2500 MHz	PCB



VSWR

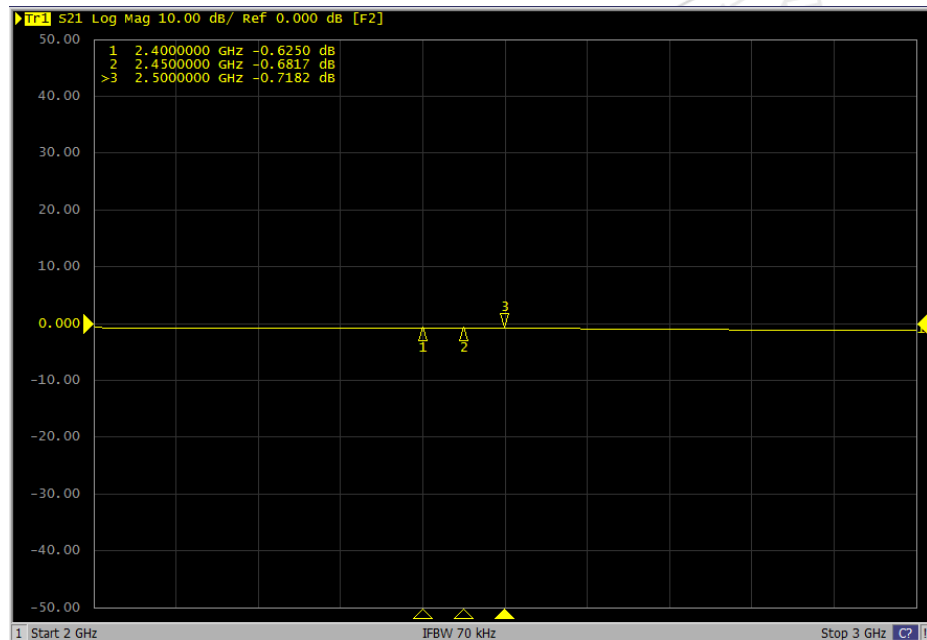
PCB Ant(with hand)



Efficiency & Peak Gain

Frequency (MHz)	PCB Ant(with hand)	
	Efficiency (%)	Peak Gain (dBi)
2400	41.98%	1.24
2410	41.15%	1.11
2420	40.22%	1.18
2430	40.06%	1.23
2440	41.9%	1.13
2450	41.28%	1.10
2460	42.36%	1.18
2470	42.72%	1.04
2480	42.09%	0.83
2490	41.27%	0.70
2500	40.64%	0.73

S21



Conclusions

- The VSWR of ANT1 are < 2 .
- The efficiency of ANT1 are between 40%-42% on 2G.
- The peak gain of ANT1 are between 1.34-0.7 dBi.
- The current matching uses a series 0-ohm resistor. At 2.45 GHz, the S21 shows a loss of approximately -0.68 dB. After subtracting the additional losses from the extra cable length at both ends, the remaining loss of the transmission line itself is -0.38 dB, which is approximately close to 50 ohms.

Thank you

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