

RF EXPOSURE Test Report

Report No. : MTi251202028-0102E4
Date of Issue : 2026-02-27
Applicant : PAK FAI INDUSTRIES LIMITED
Product : 5-IN-1 SMART LOCK
Model(s) : RS303, RS-301, RS-304, 6301963, 6301961,
6301964
FCC ID : 2BTK9-RS303

Shenzhen Microtest Co., Ltd.



TEST REPORT

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Test Result Certification		
Applicant	PAK FAI INDUSTRIES LIMITED	
Applicant Address	Room 103, Hang Bong Commercial Centre, 28 Shanghai Street, Kowloon, Hong Kong, China	
Manufacturer	PAK FAI INDUSTRIES LIMITED	
Manufacturer Address	Room 103, Hang Bong Commercial Centre, 28 Shanghai Street, Kowloon, Hong Kong, China	
Product description		
Product name	5-IN-1 SMART LOCK	
Trademark	N/A	
Model name	RS303	
Series Model(s)	RS-301, RS-304, 6301963, 6301961, 6301964	
Standards	47 CFR Part 2.1091	
Test method	KDB 447498 D01 v06	
Testing Information		
Date of test	2026-01-05 to 2026-02-26	
Test Result	Pass	
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1 RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm(20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2 Measurement Result

BLE&2.4G WiFi:

BLE Operation Frequency: 2402-2480MHz,
 2.4G WiFi Operation Frequency: 2412-2462MHz
 Power density limited: 1mW/ cm²
 Antenna Type: PCB Antenna
 Antenna gain: 1.73 dBi
 R=20cm
 $mW=10^{(dBm/10)}$
 Antenna gain Numeric= $10^{(dBi/10)}=10^{(1.73/10)}=1.49$

BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna		Evaluation result	Power density Limits
		(dBm)	(dBm)	tune-up power (dBm)	(mW)	Gain (dBi)	Numeric	(mW/cm ²)	(mW/cm ²)
2402	GFSK-1M	-10.07	(-10)±1	-9	0.126	1.73	1.49	0.00004	1
2440		-10.31	(-10)±1	-9	0.126	1.73	1.49	0.00004	1
2480		-11.51	(-11)±1	-10	0.100	1.73	1.49	0.00003	1
2402	GFSK-2M	-10.22	(-10)±1	-9	0.126	1.73	1.49	0.00004	1
2440		-10.47	(-10)±1	-9	0.126	1.73	1.49	0.00004	1
2480		-11.46	(-11)±1	-10	0.100	1.73	1.49	0.00003	1

2.4G WIFI:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna		Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power (dBm)	(mW)	Gain (dBi)	Numeric	Power density (mW/cm ²)	(mW/cm ²)
2412	802.11b	13.34	14±1	15	31.623	1.73	1.49	0.00937	1
2437		14.01	14±1	15	31.623	1.73	1.49	0.00937	1
2462		13.12	14±1	15	31.623	1.73	1.49	0.00937	1
2412	802.11g	14.18	14±1	15	31.623	1.73	1.49	0.00937	1
2437		14.55	14±1	15	31.623	1.73	1.49	0.00937	1
2462		14.33	14±1	15	31.623	1.73	1.49	0.00937	1
2412	802.11n H20	14.48	14±1	15	31.623	1.73	1.49	0.00937	1
2437		15.22	15±1	16	39.811	1.73	1.49	0.01180	1
2462		14.56	14±1	15	31.623	1.73	1.49	0.00937	1

NFC:

Channel Freq. (MHz)	Mode	Field Strength @3m dBuV/m)	Measured Power (dBm)	Tune-up power (dBm)	Max tune-up	Max tune-up	Power density (mW/cm ²)	Power density Limits (mW/cm ²)
					power(dBm)	power(mW)		
13.56	ASK	41.70	-53.5	(-53)±1	-52	0.0000063	0.000000001	0.9789
Limits : *180/f ² = 180/(13.26) ² = 0.9789								

Conclusion:

When a number of sources at different frequencies, and/or broadband sources, contribute to the total exposure, it becomes necessary to weigh each contribution relative to the MPE. To comply with the MPE, the fraction of the MPE in terms of E2, H2 (or power density) incurred within each frequency interval should be determined and the sum of all such fractions should not exceed unity. In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

Simultaneous transmit:

Mode	Evaluation result(mW/cm ²)	Power density Limits(mW/cm ²)	Max rate(%)
BLE	0.00004	1	0.0012
2.4G WiFi	0.01180	1	0.0007
NFC	0.000000001	0.9789	0.00000000102

BLE, NFC and 2.4G WiFi work at the same time.

For the max result: 0.00190000102 ≤ 1.0 test exclusion threshold, No SAR is required.

Statement

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***** END OF REPORT *****