

FCC RF Exposure

Applicant : Shenzhen DZH Industrial Co., LTD
Address : 3rd Floor, YiTuo Mike Industrial A building, Bu Yong Industrial
D zone, Shajing street, Baoan district, Shenzhen, China
Product Name : Magnetic floating keyboard
Brand Mark : N/A
Model : M19
Series model : M20
FCC ID : 2AFW2-M19
Report Number : BLA-EMC-202508-A11402
Date of Receipt : Aug. 26, 2025
Date of Test : Aug. 26, 2025 to Sep. 02, 2025
47 CFR Part 15, Part1.1307
Test Standard : 47 CFR Part 15, Part2.1093
KDB447498D04 General RF Exposure Guidance v01
Test Result : Pass

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Review by: Xavier

Approved by:

Blue Zheng

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Revise Record

Version No.	Date	Description
01	Sep. 04, 2025	Original

1 General information

1.1 General information

Applicant	Shenzhen DZH Industrial Co., LTD
Address	3rd Floor, YiTuo Mike Industrial A building,Bu Yong Industrial D zone, Shajing street, Baoan district,Shenzhen,China
Manufacturer	Shenzhen DZH Industrial Co., LTD
Address	3rd Floor, YiTuo Mike Industrial A building,Bu Yong Industrial D zone, Shajing street, Baoan district,Shenzhen,China
Factory	Shenzhen DZH Industrial Co., LTD
Address	3rd Floor, YiTuo Mike Industrial A building,Bu Yong Industrial D zone, Shajing street, Baoan district,Shenzhen,China

1.2 General description of EUT

Product Name	Magnetic floating keyboard
Model No.	M19
Series Model No.	M20
Differences of Series model	Their electrical circuit design layout, components used and internal wiring are identical, only the model name are different
Operation Frequency	2402MHz-2480MHz
Modulation Type	GFSK
Rate data	1Mbps
Channel Spacing	2MHz
Number of Channels	40
Antenna Type	PCB antenna
Antenna Gain	2.78dBi (Provided by customer)
Power supply	Battery DC 3.7V
Test Voltage	DC 3.7V
Hardware Version	N/A
Software Version	N/A

Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2 RF Exposure Compliance Requirement

2.1 Standard Requirement

According to 447498 D04 Interim General RF Exposure Guidance v01

Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.2 Limits

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50	
	300	39	65	88	110	129	148	166	184	201	217
	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
	1900	3	12	26	44	66	92	122	157	195	236
	2450	3	10	22	38	59	83	111	143	179	219
	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

2.3 Result

$$\text{EIRP} = \text{pt} \times \text{gt} = (\text{E} \times \text{d})^{2/30}$$

Where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m,

d = measurement distance in meters (m)

$$\text{Spot} = (\text{E} \times \text{d})^{2/30} \times \text{gt}$$

$$\text{Ant gain} = 2.78 \text{dBi}$$

For BLE 1M(Worst case):

$$\text{Max Output power} = -1.924 \text{dBm} @ 2402 \text{MHz}$$

$$\text{ERP} = -1.924 \text{dBm} + 2.78 \text{dBi} - 2.15 = -1.294 \text{dBm} = 0.742 \text{mW} < 2.788 \text{mW}$$

Comply with RF exposure exemption limit.

----END OF REPORT----

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