

FCC RF Exposure

Applicant : Shenzhen DZH Industrial Co., LTD
3rd Floor, YiTuo Mike Industrial A building, Bu Yong

Address : Industrial D zone, Shajing street, Baoan district,
Shenzhen, China

Product Name : Three-mode Connection Touchpad

Brand Mark : N/A

Model : T8100C

Series model : T8100, T8100B

FCC ID : 2AFW2-T8100C

Report Number : BLA-EMC-202505-A0904

Date of Receipt : May 7, 2025

Date of Test : May 7, 2025 to May 21, 2025
47 CFR Part 15, Part1.1307

Test Standard : 47 CFR Part 15, Part2.1093
KDB447498D04 General RF Exposure Guidance v01

Test Result : Pass

Compiled by: *Hugh* Review by: *Xavier* Approved by: *Blue Zheng*
Issued Date: May 21, 2025

BlueAsia of Technical Services(Shenzhen) Co., Ltd.

Address: Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District,
Shenzhen, Guangdong Province, China



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Revise Record

Version No.	Date	Description
01	May 21, 2025	Original

BlueAsia

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	Three-mode Connection Touchpad
Model no.	T8100C
Series model	T8100, T8100B
Desc of series model	Their electrical circuit design layout, components used and internal wiring are identical, Only the model name and the casing are different.
Power supply	DC3.7V by battery
Hardware Version	V0.2
Software Version	V1.0

BLE:

Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK
Rate data:	1Mbps; 2Mbps
Channel Spacing:	2MHz
Number of Channels:	40
Antenna Type:	PCB antenna
Antenna Gain:	1.87dBi(Provided by customer)

2.4G:

Operation Frequency:	2402MHz-2480MHz
Channel numbers:	79
Modulation Type:	GFSK
Antenna Type:	PCB antenna
Antenna Gain:	1.87dBi(Provided by customer)

2 Laboratory and accreditations

The test facility is recognized, certified, or accredited by the following organizations:

Company name:	BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Address:	Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
CNAS accredited No.:	L9788
A2LA Cert. No.:	5071.01
FCC Designation No.:	CN1252
ISED CAB identifier No.:	CN0028
Telephone:	+86-755-28682673
FAX:	+86-755-28682673

3 RF Exposure Compliance Requirement

3.1 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.

3.2 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

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

3.3 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)

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

Separation distance = 0.5cm

Ant gain = 1.87dBi

For BLE(Worst):

Max Output power = 2.625dBm @ 2480MHz

$$\text{EIRP} = 2.625\text{dBm} + 1.87\text{dBi} = 4.495\text{dBm}$$

$$\text{ERP} = 4.495 - 2.15 = 2.345\text{dBm} = 1.716\text{mW} < 2.717\text{mW}$$

Comply with RF exposure exemption limit.

For 2.4G(Worst):

Ant gain = 1.87 dBi [-0.28dBd(0.938)]

Field strength = 86.22 dBμV/m @3m @2480MHz

$$\text{So Pt} = (((10^{(86.22/20)}/10^6 \times 3)^2)/30) \times 1000 \text{ mW} = 0.12564\text{mW} < 2.717\text{mW}$$

$$\text{So ERP} = 0.12564 \times 0.938 = 0.118 < 2.717\text{mW}$$

Comply with RF exposure exemption limit.

----END OF REPORT----

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