

RF Exposure Evaluation Report

Product : WA02
Trade mark : N/A
Model/Type reference : WA02
Serial Number : N/A
Report Number : EED32Q81825702
FCC ID : 2BFQ6WA02R1
Date of Issue : Jan. 09, 2025
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091(mobile devices)
47 CFR Part 2.1093(portable devices)
KDB 447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

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1 Version

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3 General Information

3.1 Client Information

Applicant:	Iiwari Tracking Solutions Oy
Address of Applicant:	Kidekuja 2 Vuokatti 88610 Finland
Manufacturer:	KKM Technology Company Limited
Address of Manufacturer:	6A-3CDE, Baoneng Science and Technology Industrial Park, Long Hua district, Shenzhen 518109, Guang Dong, China.
Factory:	KKM Technology Company Limited
Address of Factory:	6A-3CDE, Baoneng Science and Technology Industrial Park, Long Hua district, Shenzhen 518109, Guang Dong, China.

3.2 General Description of EUT

Product Name:	WA02
Model No.:	WA02
Trade mark:	N/A
Power Supply:	Battery: DC 3.0V,850mAh
Test Voltage:	DC 3.0V
Sample Received Date:	Nov. 12, 2024
Sample tested Date:	Nov. 12, 2024 to Dec. 03, 2024

3.3 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

3.4 Deviation from Standards

None.

3.5 Abnormalities from Standard Conditions

None.

3.6 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula

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

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 ERP20cm is per Formula (B.1).

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

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure Evaluation

For Stand alone:

For Bluetooth LE:

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
2402	1.12	2.51	1..48	1.4060	2.788	0.5043	PASS

For UWB:

Channel	Frequency (MHz)	Max. Calculated Field Strength of fundamental (FSc) (dBuV/m)	EIRP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
2	4114.1	76.29	-18.94	0.0078	1.00	0.0078	PASS
5	6489.2	83.88	-11.35	0.0447	1.00	0.0447	PASS

Note:

①EIRP=conducted power+antenna gain;

②ERP=EIRP-2.15;

③EIRP(dBm) = Field strength of the fundamental signal(dBuV/m@3m) – 95.23;

④ERP(mW) = $10^{(ERP \text{ (dBm)}/10)}$;

⑤The estimation distance is 0.5cm;

⑥The test data please refer to the report of EED32Q80655101 and only the worst case data was recorded in the report.

For Simultaneous Transmission:

As MPE ratio (BLE+UWB Channel 2)=0.5043+0.0078=0.5121<1,

As MPE ratio (BLE+UWB Channel 5)=0.5043+0.0447=0.5490<1,

it' s deemed to fulfil the RF exposure requirement.

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*** 报告结束 ***

*** End of Report ***