REPORT No.: SZ23020085S01

RF EXPOSURE

EXEMPT REPORT

APPLICANT	:	Shenzhen Hohem Technology Co., Ltd.
PRODUCT NAME	:	iSteady XE(3-Axis Smartphone Stabilizer)
MODEL NAME	:	iSXEK, iSXE, iSteady XE Kit, iSteady XE
BRAND NAME	:	hohem
FCC ID	:	2AIB7XE
STANDARD(S)	:	47 CFR Part 2(2.1093)
RECEIPT DATE	:	2023-02-07
TEST DATE	:	2023-02-16 to 2023-02-28
ISSUE DATE	:	2023-03-07

Edited by: Zeng Xiaoying (Rapporteur)

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MORLAB

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DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0	2023-03-07	First edition

1. Technical Information

Note: Provide by applicant.

1.1 Applicant and Manufacturer Information

Applicant:	Shenzhen Hohem Technology Co., Ltd.
Applicant Address:	B106,University Creative Park, Xili, Nanshan, Shenzhen, China
Manufacturer:	Shenzhen Hohem Technology Co., Ltd.
Manufacturer Address:	B106,University Creative Park, Xili, Nanshan, Shenzhen, China

1.2 Equipment Under Test (EUT) Description

Product Name:	iSteady XE(3-Axis Smartphone Stabilizer)
Sample No.:	1#
Hardware Version:	V1.00
Software Version:	V1.001
Equipment Type:	Bluetooth LE
Bluetooth Version:	5.3
Operating Frequency Range:	2402MHz-2480MHz
Modulation Type:	GFSK(1Mbps, 2Mbps)
Antenna Type:	PCB Antenna
Antenna Gain:	-2.16dBi

Note 1: According to the certificate holder, they declared that the models iSXEK, iSXE, iSteady XE Kit, iSteady XE have the same hardware and software, only different in model name and iSXEK, iSteady XE Kit have Maginetic Fill Light, iSXE, iSteady XE doesn't have the Maginetic Fill Light, all RF parameters remain the same. The main measuring model is iSXEK, only the results for iSXEK were recorded in this report.

1.3 Applied Reference Documents

Leading reference documents for testing:

Identity	Document Title	Method Determination /Remark
47 CFR Part 2(2.1093)	Radio Frequency Radiation Exposure Assessment: Portable devices	No deviation
KDB 447498 D04v01	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices	No deviation
Note 1: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table. **Note 2:** When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.		

2. Device Category and RF Exposure Limit

Per user manual, based on 47 CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47 CFR 2.1093(b)

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

General Population/Uncontrolled Exposure:

47 CFR 2.1093(d) (2)

Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

3. RF Output Power

<Bluetooth Output Power>

Mode	Channel	Frequency (MHz)	Average Power (dBm)	
			GFSK	
			1Mbps	2Mbps
Bluetooth LE	CH 00	2402	-1.82	-1.88
	CH 19	2440	-1.45	-1.47
	CH 39	2480	-1.33	-1.40
Tune-up Limit			-1.00	-1.00

Note 1: According to KDB 447498, SAR test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Note 2: The output power refers to report (Report No.: SZ223020085W01).

4. RF Exposure Assessment

➢ **Standalone Transmission SAR Assessment**

1. According to KDB 447498 D04v01 Appendix B, the 1-g SAR test exclusion thresholds at test separation Distances ≤ 20 mm are determined by:

a. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator. For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP20cm in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

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

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

b. 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 P_{th} (mW).

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

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).
The example values shown in Table B.2 are for illustration only.

2. When the device is used, 5mm as the most conservative minimum test separation distance was used for evaluating.

Channel	Frequency (MHz)	Separation Distance (cm)	ERP_{20cm}	P_{th} (mW)
CH 39	2480	0.5	3060	3

Note: The maximum source-based time-averaged power including tune-up limit is less than the SAR-based exemption, therefore SAR measurement is not required for this device.

<Estimated SAR Evaluation>

Frequency (MHz)	Separation Distance (cm)	P_{max} (dBm)	P_{max} (mW)	Estimated SAR (W/kg)
2480	0.5	-1.00	0.79	0.12

Note: According to the TCBC WS publications in Apr. 2022, the estimated SAR calculating should be followed: $SAR_{est} = 0.4 \times P_{ant} / P_{th}$

➢ **Simultaneous SAR Assessment**

This device only incorporates one Bluetooth transmitter, therefore simultaneous SAR evaluation is not required.

➢ **Conclusion**

According to FCC 47 CFR Part 2(2.1093), this device complies with the EMF basic restrictions.

Annex A Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.

END OF REPORT