REPORT No.: SZ20090129S01

RFEXPOSURE

EXEMPTREPORT

APPLICANT	:	Shanghai Xinxie Industrial Co., Ltd.
PRODUCT NAME	:	Wireless Audio Adapter
MODEL NAME	:	X2-PRO, X2-PRO-BK, X2-PRO-BU, X2-PRO-WH
BRAND NAME	:	HAGiBiS
FCC ID	:	2AS3L-X2-PRO
STANDARD(S)	:	47CFR 2.1093 KDB 447498
RECEIPT DATE	:	2020-09-10
TEST DATE	:	2020-09-17 to 2020-09-22
ISSUE DATE	:	2020-10-10

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Change History		
Version	**Date**	**Reason for change**
1.0	2020-10-10	First edition

1. Technical Information

Note: Provide by applicant.

1.1 Applicant and Manufacturer Information

Applicant:	Shanghai Xinxie Industrial Co., Ltd.
Applicant Address:	Room 1517, No. 69, Lane 1399, Husong Road, Jiuting Town, Songjiang District, Shanghai, China
Manufacturer:	Shenzhen c-smartlink Information Technology Co., Ltd.
Manufacturer Address:	3rd Floor, 2nd Floor, No. 43, Guangda Road, Henggang 189 Industrial Zone, Longgang District, Shenzhen, China

1.2 Equipment Under Test (EUT) Description

Product Name:	Wireless Audio Adapter
Serial No.:	(N/A, marked #1 by test site)
Hardware Version:	A
Software Version:	A
Bluetooth Version:	5.0
Operating Frequency Range:	2402MHz - 2480MHz
Modulation Mode:	GFSK(1Mbps), π/4-DQPSK(EDR 2Mbps), 8-DPSK(EDR 3Mbps)
Antenna Type:	PCB Antenna
Antenna Gain:	-2.33dBi

Note 1: According to the certificate holder, they declared that the models: X2-PRO, X2-PRO-BK, X2-PRO-BU, X2-PRO-WH are the same products. These four models only differ in model name and color. Their electrical circuit design, layout, components used and internal wiring are identical. The main measuring model is X2-PRO, only the results for X2-PRO was recorded in this report.

1.3 Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title	Method determination /Remark
1	47 CFR§2.1093	Radio Frequency Radiation Exposure Evaluation: portable devices	No deviation
2	KDB 447498 D01v06	General RF Exposure Guidance	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% risk level.

2. Device Category and RF Exposure Limit

Per user manual, this device is a Wireless Audio Adapter. Based on 47CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47CFR 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:

47CFR 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
Bluetooth LE	CH 00	2402	**-3.59**
	CH 19	2440	-3.97
	CH 39	2480	-4.46
Tune-up Limit			-2.0

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
Bluetooth classic	CH 00	2402	3.02	1.85	2.44
	CH 39	2441	**3.13**	2.09	2.05
	CH 78	2480	2.92	1.58	1.45
Tune-up Limit			4.0	3.0	3.0

Note 1: According to KDB 447498 Section 4.3, SAR test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring assessment, 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.: SZ20090129W01/W02).

4. RF Exposure Evaluation

➢ **Standalone Transmission SAR Evaluation:**

1. According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation Distances≤ 50 mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] ≤ 3.0.
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison

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

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (mW)	Test Distance (mm)	Result	Exclusion Thresholds for 1-g SAR
CH 39	2.441	4.0	2.51	5	0.78	3.0

Note: The conduction power was rounded in mW.

3. When standalone SAR is not required to be measured, per FCC KDB 447498 D01v06 4.3.2), the following equation must be used to estimate the standalone 1g SAR.

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5} \cdot \frac{\text{Max. power of channel, mW}}{\text{Min. Separation Distance, mm}}$$

Mode	Max. Tune-up Power (dBm)	Exposure Position	Hand/Body
		Test Distance (mm)	5
Bluetooth	4.0	Estimated SAR (W/kg)	0.105

➢ **Simultaneous SAR Evaluation:**

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

Annex A Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

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

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
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

The FCC designation number is CN1192, the test firm registration number is 226174.

END OF REPORT