



中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



RF EXPOSURE EVALUATION

Applicant: AKUVOX (XIAMEN) NETWORKS CO., LTD.

Address: 10/F, No.56 Guanri Road, Software Park II, Xiamen 361009, China

FCC ID: 2AHCR-S539V1

Product Name: Door Phone

Standard(s): 47 CFR §1.1310, 47 CFR §2.1091
447498 D01 General RF Exposure Guidance v06

The above equipment has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR230630917-00E

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230630917-00E	Original Report	2023/8/7

1.1 Applicable Standard

According to subpart 15.247(i) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

1.2 Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

1.3 EUT Information ▲ :

Operation Modes	Operation Frequency (MHz)	Max Conducted output power including Tune-up Tolerance (dBm)	Maximum Antenna Gain (dBi)
Bluetooth BDR/EDR	2402-2480	11	-0.8
Bluetooth LE	2402-2480	9	-0.8
5.8G	5866.5	-11.34	0
NFC(13.56MHz)	13.56	-31.36	/
125kHz	0.125	-23.22	/

Note:

1. The Above Parameters were provided by the manufacturer.
2. *NFC field strength is 63.84dBμV/m @ 3m = -31.36 dBm(0.0007mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.
3. *125kHz field strength is 71.98dBμV/m @ 3m = -23.22 dBm(0.005mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.
4. *5.8G field strength is 83.86dBμV/m @ 3m = -11.34 dBm(0.073mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.

1.4 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Bluetooth BDR/EDR	2402-2480	-0.8	0.83	11	12.59	20.00	0.002	1.0
Bluetooth LE	2402-2480	-0.8	0.83	9	7.94	20.00	0.001	1.0
5.8G	5866.5	0	1.00	-11.34	0.07	20.00	0.000015	1.0
NFC(13.56MHz)	13.56	0	1.00	-31.36	0.0007	20	<<0.0001	0.98
125kHz	0.125	0	1.00	-23.22	0.005	20	<<0.0001	/

The Bluetooth and 5.8G can transmit simultaneously:
(BDR/EDR can't transmission simultaneously with BLE)

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$$=S_{BT}/S_{limit-BT} + S_{5.8}/S_{limit-5.8}$$

$$=0.002/1+0.000015/1$$

$$=0.002$$

$$< 1.0$$

Note: the power Density of 13.56MHz and 125 kHz too low to calculate the MPE

Result: The device meet FCC MPE at 20 cm distance

===== END OF REPORT =====