

RF EVALUATION TEST REPORT

Applicant..... :Zhongshan Senjia Electrical Appliances Co., Ltd.
Address..... :No. 35, Wenming Road Nanqu, Zhongshan, Guangdong, China
Manufacturer..... :Zhongshan Senjia Electrical Appliances Co., Ltd.
Address..... :No. 35, Wenming Road Nanqu, Zhongshan, Guangdong, China
Factory..... :Zhongshan Senjia Electrical Appliances Co., Ltd.
Address..... :No. 35, Wenming Road Nanqu, Zhongshan, Guangdong, China
Product Name..... :Wireless Under Cabinet, Bluetooth, MP3 Radio Music System
FCC ID..... :R4Z-IKB3
Brand Name..... :iLive
Model No. :IKB323SMP3U, IKB318S(For model difference refer to section 2.)
Measurement Standard..... :47 CFR PART 2, Section 2.1091
Receipt Date of Samples.... :March 31, 2023
Date of Tested..... :March 31, 2023 to April 12, 2023
Date of Report..... :April 19, 2023

This report shows that above equipment is technically compliant with the requirements of the standards above. All test results in this report apply only to the tested sample(s). Without prior written approval of Dongguan Nore Testing Center Co., Ltd, this report shall not be reproduced except in full.



Prepared by

Rose Hu / Project Engineer



Approved by

Iori Fan / Authorized Signatory

Table of Contents

1. General Description of EUT	4
2. Test Facility and Location	6
3. Applicable Standards and References.....	7
4. Maximum Permissible Exposure Limit	8
5. RF Exposure Evaluation Results	11

Revision History

Report Number	Description	Issued Date
NTC2303486F01	Initial Issue	2023-04-19

1. General Description of EUT

Product Information	
Product name:	Wireless Under Cabinet, Bluetooth, MP3 Radio Music System
Main Model Name:	IKB323SMP3U
Additional Model Name:	IKB318S
Model Difference:	Both of models have the same circuit schematic, construction, PCB Layout and critical components. The differences are model number and model IKB318S deleted USB and AUX function, IKB318S used different power adapter due to trading purpose.
S/N:	2304-1738 for IKB323SMP3U, 2303-1664 for IKB318S
Brand Name:	iLive
Hardware version:	rev02
Software version:	V1.1.3
Rating:	DC 5V come from DC port
Classification:	Class B
Typical arrangement:	Table-top
I/O Port:	Refer to the user manual
Accessories Information	
Adapter for IKB323SMP3U:	Manufacturer: Shenzhen Grosun Technology Co., Ltd. M/N: GS-P050200E664 Input: AC100-240V 50/60Hz 0.5A Output: DC 5.0V 2.0A
Adapter for IKB318S:	Manufacturer: Shenzhen Grosun Technology Co., Ltd. M/N: GS-P050150E664 Input: AC100-240V 50/60Hz 0.5A Output: DC 5.0V 1.5A
Cable:	DC Line of Adapter: 1.50m unshielded, undetachable
Other:	N/A

Additional information	
Note:	According to the model differences, all the test items were performed on model IKB323SMP3U.
Remark:	All the information above are provided by the manufacturer. More detailed feature of the EUT please refers to the user manual.

Technical Specification	
Bluetooth Version:	V5.3
Frequency Range:	2402-2480MHz
Modulation Type:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Number of Channel:	79 (refer to following channel list for details)
Channel Space:	1MHz
Antenna Type:	PCB Antenna
Antenna Gain:	-0.58dBi
The EUT does not support Bluetooth Low Energy feature in accordance with the manufacturer declaration.	

2. Test Facility and Location

Test Site	:	Dongguan Nore Testing Center Co., Ltd. (Dongguan NTC Co., Ltd.)
Accreditations and Authorizations	:	<p>The Laboratory has been assessed and proved to be in compliance with CNAS/CL01 Listed by CNAS, August 13, 2018 The Certificate Registration Number is L5795. The Certificate is valid until August 13, 2024</p> <p>The Laboratory has been assessed and proved to be in compliance with ISO17025 Listed by A2LA, November 01, 2017 The Certificate Registration Number is 4429.01</p> <p>Listed by FCC, November 06, 2017 Test Firm Registration Number: 907417</p> <p>Listed by Industry Canada, June 08, 2017 The Certificate Registration Number. Is 46405-9743A</p>
Test Site Location	:	Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, China

3. Applicable Standards and References

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Test Standards:

47 CFR Part 1, 1.1307

47 CFR Part 2, 2.1091

KDB 447498 D04 v01

4. Maximum Permissible Exposure Limit

According to 47 CFR Part 1, 1.1307, for single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if: 47 CFR Part 1, 1.1307

(A) The available maximum time- averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time- averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

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

Where,

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

And,

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

d = the minimum separation distance (cm) in any direction from any part of the device antenna(s) or radiating structure(s) to the body of the device user.

For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time- averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(i)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

Where,

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for P_{th} , including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i .

ERP_j = the ERP of fixed, mobile, or portable RF source j .

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source j , at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

Evaluated_k= the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limit_k= either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from §1.1310 of this chapter.

5. RF Exposure Evaluation Results

Single RF Source								
Mode	Frequency (MHz)	Max. Conducted Power (dBm)	Antenna Gain (dBi)	Max. EIRP (dBm)	Max. ERP (dBm)	Max. ERP (mW)	Separation Distance (cm)	Part 1.1307 Option (B) P _{th} (mW)
GFSK	2402	-1.230	-0.58	-1.810	-3.96	0.40	20	3060
	2441	-3.922	-0.58	-4.502	-6.652	0.22	20	3060
	2480	-4.699	-0.58	-5.279	-7.429	0.18	20	3060
Π4/-DQPSK	2402	1.598	-0.58	1.018	-1.132	0.77	20	3060
	2441	-1.362	-0.58	-1.942	-4.092	0.39	20	3060
	2480	-2.204	-0.58	-2.784	-4.934	0.32	20	3060
GFSK (BLE)	2402	2.227	-0.58	1.647	-0.503	0.89	20	3060
	2440	-0.670	-0.58	-1.250	-3.400	0.46	20	3060
	2480	-1.589	-0.58	-2.169	-4.319	0.37	20	3060

Conclusion:

According to 47 CFR §1.1307 (b)(3)(i)(B), the RF exposure analysis concludes that the product is compliant with the FCC RF exposure requirements in portable exposure condition.

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