RF Exposure Evaluation Report

Applicant:	8Devices
Address of Applicant:	Gedimino 47, Kaunas, LT-44242, Lithuania
Equipment Under Test (EUT)	
Product Name:	Komikan
Model No.:	Komikan
Canada IC:	11468A-KOM
Applicable standards:	RSS-102 Issue 5 March 2015
Date of sample receipt:	24 Mar., 2020
Date of Test:	24 Mar., to 06 May, 2020
Date of report issue:	07 May, 2020
Test Result:	PASS*

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*06 May, 2020*	*Original*

Tested by: Mike.ou ***Date:*** *06 May, 2020*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *06 May, 2020*

Project Engineer

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4 General Information

4.1 Client Information

Applicant:	8Devices
Address:	Gedimino 47, Kaunas, LT-44242, Lithuania
Manufacturer/Factory:	8Devices
Address:	Gedimino 47, Kaunas, LT-44242, Lithuania

4.2 General Description of E.U.T.

Product Name:	Komikan
Model No.:	Komikan
Operation Frequency:	2.4G Wi-Fi: 2412MHz~2472MHz 5.2G Wi-Fi Band 1: 5180MHz~5240MHz 5.8G Wi-Fi Band 4: 5725MHz~5875MHz Bluetooth/ BLE: 2402MHz~2480MHz
Modulation technology:	802.11b: DSSS, 802.11a/g/n/ac: OFDM Bluetooth BDR /BLE: GFSK, Bluetooth EDR: π/4-DQPSK, 8DPSK
Antenna Type:	Ceramic Antenna, Whip Antenna, Flex Antenna
Antenna gain:	BT/ BLE/2.4G WiFi: Ceramic Antenna: 2.09 dBi Flex Antenna: 3.20 dBi Whip Antenna: 4.00 dBi Wi-Fi: Ceramic Antenna: Band 1 and Band 4: 4.32dBi Flex Antenna: Band 1 and Band 4: 4.75dBi Whip Antenna: Band 1: 4.5dBi, Band 4: 5dBi
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

4.3 Operating Modes

Operating mode	Detail description
BLE mode	Keep the EUT in continuously transmitting in BLE mode
BT mode	Keep the EUT in continuously transmitting in BT mode
2.4G WIFI mode	Keep the EUT in continuously transmitting in 2.4G WIFI mode
5G WIFI mode	Keep the EUT in continuously transmitting in 5G WIFI mode

4.4 Additions to, deviations, or exclusions from the method

No

4.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

4.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.110~116, Building B, Jinyuan Business Building, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5 Technical Requirements Specification in RSS-102

5.1 Limits

According to RSS-102 Issue 5 March 2015, RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $22.48/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

Frequency Range (MHz)	Exemption Limits (W)
< 20	1
20 ~ 48	$22.48/f^{0.5}$
48 ~ 300	0.6
300 ~ 6000	$1.31*10^{-2}f^{0.6834}$
> 6000	5

5.2 Result

Frequency (MHz)	Output power (dBm)	Gain (dBi)	E.I.R.P (dBm)	Distance (cm)	Max. tune-up Power (dBm)	Max. Power (mW)	Output power level (mW)
BLE (GFSK- Middle mode)							
2442	5.89	2.09	7.98	25.00	10.00	10.00	2706.80
2442	5.89	3.20	9.09	25.00	10.00	10.00	2706.80
2442	5.89	4.00	9.89	25.00	10.00	10.00	2706.80
BT (8DPSK- Middle mode)							
2441	7.14	2.09	9.23	25.00	11.50	14.13	2706.05
2441	7.14	3.20	10.34	25.00	11.50	14.13	2706.05
2441	7.14	4.00	11.14	25.00	11.50	14.13	2706.05
2.4G Wi-Fi (802.11n(HT40)- Lowest mode)							
2437	22.70	2.09	13.13	25.00	15.00	31.62	2703.01
2437	22.70	3.20	14.30	25.00	15.00	31.62	2703.01
2437	22.70	4.00	14.53	25.00	15.00	31.62	2703.01
5.2G Wi-Fi (802.11a- Lowest mode)							
5180	15.78	4.32	20.10	25.00	21.00	125.89	4525.27
5180	15.78	4.75	20.53	25.00	21.00	125.89	4525.27
5180	15.78	4.50	20.28	25.00	21.00	125.89	4525.27
5.8G Wi-Fi (802.11a- Lowest mode)							
5745	18.34	4.32	22.66	25.00	23.50	223.87	4531.24
5745	18.34	5.00	23.34	25.00	23.50	223.87	4531.24
5745	18.34	4.75	23.09	25.00	23.50	223.87	4531.24

5.3 Conclusion

The BLE Cuz Max. Power=10.00mW < 2684.03 mW, so the extremity SAR test is exclusion.

The BT Cuz Max. Power=14.13mW < 2684.03 mW, so the extremity SAR test is exclusion.

The 2.4G Wi-Fi Cuz Max. Power=31.62mW < 2684.03 mW, so the extremity SAR test is exclusion.

The 5.2G Wi-Fi Cuz Max. Power=100.00mW < 2684.03 mW, so the extremity SAR test is exclusion.

The 5.8G Wi-Fi Cuz Max. Power=177.83mW < 2684.03 mW, so the extremity SAR test is exclusion.

------End of report------