RF Exposure Evaluation Report

Report No.:	JYTSZ-R12-2500166
Applicant:	Onity Inc.
Address of Applicant:	4001 Fairview Industrial Dr. SE, Salem, OR, 97302, United States
Equipment Under Test (EUT)	
Product Name:	IoT Ceiling Edge Computer Gateway
Model No.:	DSGW-230-15-US-ONITY
Trade mark:	Onity Inc.
FCC ID:	R32-10105776G1
Applicable standards:	FCC CFR Title 47 Part 2 (§2.1091)
Date of sample receipt:	18 Feb., 2025
Date of Test:	19 Feb., to 23 Apr., 2025
Date of report issue:	23 Apr., 2025
Test Result:	PASS

Project by:	Alan Chen ***Project Engineer***	***Date:***	*23 Apr., 2025*
Reviewed by:	Gelu Zhang ***Senior Engineer***	***Date:***	*23 Apr., 2025*
Approved by:	Janet Wei ***Manager***	***Date:***	*23 Apr., 2025*

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

1 Version

Version No.	Date	Description
00	*23 Apr., 2025*	*Original*

2 Contents

3 General Information

3.1 Client Information

Applicant:	Onity Inc.
Address:	4001 Fairview Industrial Dr. SE, Salem, OR, 97302, United States
Manufacturer:	Zhejiang dusun electron co., ltd
Address:	No.640 Feng Qing St, DeQing Zhejiang China
Factory:	Zhejiang dusun electron co., ltd
Address:	No.640 Feng Qing St, DeQing Zhejiang China

3.2 General Description of E.U.T.

Product Name:	IoT Ceiling Edge Computer Gateway
Model No.:	DSGW-230-15-US-ONITY
BLE Specification	
Operation Frequency:	2402MHz-2480MHz
Channel number:	40
Channel separation:	2MHz
Modulation	GFSK
Antenna Type:	Internal Antenna
Antenna gain:	2.45 dBi (declare by Applicant)
2.4GWi-Fi Specification	
Operation Frequency:	2412 MHz - 2462 MHz (802.11b, g, n-HT20)
	2422 MHz - 2452 MHz (802.11n-HT40)
Channel Numbers:	11 (802.11b, g, n-HT20)
	7 (802.11n-HT40)
Channel Separation:	5MHz
Modulation Technology: (IEEE 802.11b)	DSSS-DBPSK, DQPSK, CCK
Modulation Technology: (IEEE 802.11g/n	OFDM-BPSK, QPSK, 16QAM, 64QAM
Antenna Type:	Internal Antenna
Antenna Gain:	4.56 dBi (declare by Applicant)

5GWi-Fi Specification			
Operation Frequency:	Band 1: 5150 MHz - 5250 MHz		
	Band 4: 5725 MHz - 5850 MHz		
Channel Numbers:	Band 1: 4, Band 4: 5 (802.11a, n-HT20, ac-VHT20)		
	Band 1, 4: 2 (802.11n-HT40, ac-VHT40)		
	Band 1, 4: 1 (802.11ac-VHT80)		
Modulation Technology: (IEEE 802.11a/802.11n)	OFDM-BPSK, QPSK, 16QAM, 64QAM		
Modulation Technology: (IEEE 802.11ac)	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM		
Antenna Type:	Internal Antenna		
Antenna Gain:	5.2G Wi-Fi: 4.27 dBi (declare by applicant) 5.8G Wi-Fi: 4.51 dBi (declare by applicant)		
LTE Specification			
Operation Frequency Range:	LTE band 2:	Tx: 1850 MHz - 1910 MHz	Rx: 1930 MHz - 1990 MHz
	LTE band 4:	Tx: 1710 MHz - 1755 MHz	Rx: 2110 MHz - 2155 MHz
	LTE band 5:	Tx: 824 MHz - 849 MHz	Rx: 869 MHz - 894 MHz
	LTE band 12:	Tx: 699 MHz - 716 MHz	Rx: 729 MHz - 746 MHz
	LTE band 13:	Tx: 777 MHz - 787 MHz	Rx: 746 MHz - 756 MHz
	LTE band 25:	Tx: 1850 MHz - 1915 MHz	Rx: 1930 MHz - 1995 MHz
	LTE band 26:	Tx: 814 MHz - 849 MHz	Rx: 859 MHz - 894 MHz
Modulation Type:	☒QPSK ☒16QAM (only supports 25% RB)		
Antenna Type:	Internal Antenna		
Antenna Gain:	LTE band 2:	3.84 dBi (declare by Applicant)	
	LTE band 4:	3.41 dBi (declare by Applicant)	
	LTE band 5:	-1.76 dBi (declare by Applicant)	
	LTE band 12:	-0.94 dBi (declare by Applicant)	
	LTE band 13:	-2.59 dBi (declare by Applicant)	
	LTE band 25:	3.84 dBi (declare by Applicant)	
	LTE band 26:	-1.76 dBi (declare by Applicant)	
Test Sample Condition:	The test samples were provided in good working order with no visible defects.		

3.3 Operating Modes

Operating mode	Detail description
BLE mode	Keep the EUT in continuously transmitting in BLE 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
LTE mode	Keep the EUT in continuously transmitting in LTE Band 2/4/5/12/13/25/26 mode

3.4 Additions to, deviations, or exclusions from the method

No

3.5 Laboratory Facility

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

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

JianYan Testing Group Shenzhen 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 and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen 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 L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

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

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 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

3.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://jyt.lets.com

4 Technical Requirements Specification

4.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

4.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

4.3 Result

Mode	Maximum Tune-up power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm^2)	Limits for General Population/ Uncontrolled Exposure (mW/cm^2)	Ratio
BLE								
BLE 1 Mbps	4.5	2.82	2.45	1.76	20.00	0.001	1.0	0.001
2.4G Wi-Fi								
802.11b	17.5	56.23	4.56	2.86	20.00	0.032	1.0	0.032
5.2G Wi-Fi								
802.11ac	15.0	31.62	4.27	2.67	20.00	0.017	1.0	0.017
5.8G Wi-Fi								
802.11a	14.0	25.12	4.51	2.82	20.00	0.014	1.0	0.014
LTE								
Band 2	24.5	281.84	3.84	2.42	20.00	0.136	1.0	0.136
Band 4	24.5	281.84	3.41	2.19	20.00	0.123	1.0	0.123
Band 5	24.5	281.84	-1.76	0.67	20.00	0.037	0.56	0.066
Band 12	24.5	281.84	-0.94	0.81	20.00	0.045	0.47	0.096
Band 13	24.5	281.84	-2.59	0.55	20.00	0.031	0.52	0.060
Band 25	25.0	316.23	3.84	2.42	20.00	0.152	1.0	0.152
Band26 (Part 22)	25.0	316.23	-1.76	0.67	20.00	0.042	0.55	0.060
Band26 (Part 90)	25.0	316.23	-1.76	0.67	20.00	0.042	0.55	0.060

Simultaneous transmission(Worse mode):

ANT No.	Mode	Ratio	Total Ratio	Limit
Main ANT	LTE Band 25	0.152	0.185	1.00
Secondary ANT	2.4G WIFI	0.032		
Third ANT	BLE	0.001		

1. 2.4G WiFi and 5G WiFi share the same antenna, and can not transmit at the same time.

2. Just the worst case mode was shown in report.

4.4 Conclusion

The device is exempt from the SAR test and satisfies RF exposure evaluation.

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