



FCC ID: W3TR8812BU1
Report No.: T200416C04-MF

Page 1 / 9
Rev.: 01

KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

BL-R8812BU1

Model: BL-R8812BU1

Trade Name: Safe Fleet

Issued to

Fleetmind Seon Solutions Inc
Unit 111 – 3B Burbidge Street, Coquitlam, BC, V3K 7B2 Canada

Issued by

Compliance Certification Services Inc.
Wugu Laboratory
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City, Taiwan. (R.O.C.)
Issue Date: July 10, 2020

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Report No.: T200416C04-MF

Page 2 / 9

Rev.: 01

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 24, 2020	Initial Issue	ALL	Allison Chen
01	July 10, 2020	See the following note Rev.(01)	P.7, P.9	Allison Chen

Rev.(01)

1. Revised max. AV power for 802.11b and max tune up power and test result for 802.11a.



Report No.: T200416C04-MF

Page 3 / 9
Rev.: 01

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION	4
2. LIMIT	5
3. EUT SPECIFICATION	6
4. TEST RESULTS	8
5. MAXIMUM PERMISSIBLE EXPOSURE.....	9



Report No.: T200416C04-MF

Page 4 / 9

Rev.: 01

1. TEST RESULT CERTIFICATION

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted
Statements of Conformity	
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

Approved by:

Kevin Tsai
Deputy Manager
Compliance Certification Services Inc.



Report No.: T200416C04-MF

Page 5 / 9

Rev.: 01

2. LIMIT

According to §15.247(i), 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 levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.



Report No.: T200416C04-MF

Page 6 / 9

Rev.: 01

3. EUT SPECIFICATION

EUT	BL-R8812BU1																
Model	BL-R8812BU1																
Model Discrepancy	N/A																
Frequency band (Operating)	☒ 802.11b/g/n HT20: 2412MHz ~ 2462 MHz ☒ 802.11n HT40: 2422MHz ~ 2452MHz ☒ 802.11a/n HT20: 5180MHz ~ 5240MHz / 5260 ~ 5320MHz 5500 ~ 5700MHz / 5745MHz ~ 5825MHz 802.11n HT40: 5190MHz ~ 5230MHz / 5270 ~ 5310MHz 5510 ~ 5670MHz / 5755MHz ~ 5795MHz 802.11ac VHT80: 5210MHz / 5290MHz / 5530MHz / 5775MHz ☐ Others																
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others																
Exposure classification	☐ Occupational/Controlled exposure ($S = 5\text{mW/cm}^2$) ☒ General Population/Uncontrolled exposure ($S=1\text{mW/cm}^2$)																
Antenna Specification	Dual Band Omni Antenna <table><tr><td>2.4GHz:</td><td>Directional Gain :</td><td>4.00 dBi</td><td>(Numeric gain:</td><td>2.51)</td><td>Worst</td></tr><tr><td>5GHz:</td><td>Directional Gain :</td><td>4.00 dBi</td><td>(Numeric gain:</td><td>2.51)</td><td>Worst</td></tr></table>					2.4GHz:	Directional Gain :	4.00 dBi	(Numeric gain:	2.51)	Worst	5GHz:	Directional Gain :	4.00 dBi	(Numeric gain:	2.51)	Worst
2.4GHz:	Directional Gain :	4.00 dBi	(Numeric gain:	2.51)	Worst												
5GHz:	Directional Gain :	4.00 dBi	(Numeric gain:	2.51)	Worst												

Maximum Measurement Average Power	2.4GHz		
	IEEE 802.11b Mode:	22.60 dBm	(181.970 mW)
	IEEE 802.11g Mode:	21.17 dBm	(130.918 mW)
	IEEE 802.11n HT 20 Mode:	21.08 dBm	(128.233 mW)
	IEEE 802.11n HT 40 Mode:	20.69 dBm	(117.220 mW)
	5GHz		
	IEEE 802.11a Mode:	19.55 dBm	(90.157 mW)
	IEEE 802.11n HT 20 Mode:	20.07 dBm	(101.625 mW)
	IEEE 802.11n HT 40 Mode:	20.05 dBm	(101.158 mW)
	IEEE 802.11ac VHT 80 Mode:	17.47 dBm	(55.847 mW)
Maximum tune up power	2.4GHz		
	IEEE 802.11b Mode:	23.00 dBm	(199.526 mW)
	IEEE 802.11g Mode:	21.50 dBm	(141.254 mW)
	IEEE 802.11n HT 20 Mode:	21.50 dBm	(141.254 mW)
	IEEE 802.11n HT 40 Mode:	21.00 dBm	(125.893 mW)
	5GHz		
	IEEE 802.11a Mode:	20.50 dBm	(112.202 mW)
	IEEE 802.11n HT 20 Mode:	21.00 dBm	(125.893 mW)
	IEEE 802.11n HT 40 Mode:	21.00 dBm	(125.893 mW)
	IEEE 802.11ac VHT 80 Mode:	18.00 dBm	(63.096 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A		

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \text{ Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	199.526	2.51	20	0.0997	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
1	2412	141.254	2.51	20	0.0706	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	141.254	2.51	20	0.0706	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	125.893	2.51	20	0.0629	1

IEEE 802.11a mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
100	5500	112.202	2.51	20	0.0560	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
100	5500	125.893	2.51	20	0.0629	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
54	5270	125.893	2.51	20	0.0629	1

IEEE 802.11ac VHT80 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
122	5610	55.847	2.51	20	0.0279	1

--End of Report--