IEEE C95.1 2005
KDB 447498 D01 V06
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

NEC-SIGN

Model: xNEC-SIGNxxxxxxxxxxxx (x can be 0-9, A-Z, a-z, "-", or blank)

Trade Name: AAEON

Issued to

AAEON Technology Inc.
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New Taipei City, Taiwan, R.O.C

Issued by

Compliance Certification Services Inc.
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http://www.ccsrf.com
Issued Date: October 1, 2018

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	October 1, 2018	Initial Issue	ALL	Allison Chen

TABLE OF CONTENTS

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**
IEEE C95.1 2005 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

Approved by:

Sam Chuang
Manager
Compliance Certification Services Inc.

Reporter:

Allison Chen
Report coordinator
Compliance Certification Services Inc.

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.

3. EUT SPECIFICATION

EUT	NEC-SIGN
Model	xNEC-SIGNxxxxxxxxxxx (x can be 0-9, A-Z, a-z, "-", or blank)
Trade Name	AAEON
Model Discrepancy	N/A
Frequency band (Operating)	☒ Bluetooth: 2402 ~ 2480 MHz IEEE 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz IEEE 802.11a/n HT20: 5180MHz ~ 5240MHz / 5745MHz ~ 5825MHz IEEE 802.11n HT40: 5190MHz ~ 5230MHz / 5755MHz ~ 5795MHz IEEE 802.11ac VHT80: 5210MHz / 5775MHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	Bluetooth : Antenna Gain : 2.00 dBi (Numeric gain 1.58) 2.4GHz: Antenna Gain : 2.00 dBi (Numeric gain 1.58) 5GHz: Antenna Gain : 2.00 dBi (Numeric gain 1.58)
Max tune up Power	Bluetooth: 2.50 dBm (1.778 mW) IEEE 802.11b Mode: 18.00 dBm (63.096 mW) IEEE 802.11g Mode: 16.50 dBm (44.668 mW) IEEE 802.11n HT 20 Mode: 19.00 dBm (79.433 mW) IEEE 802.11a Mode: 17.50 dBm (56.234 mW) IEEE 802.11n HT 20 Mode: 17.50 dBm (56.234 mW) IEEE 802.11n HT 40 Mode: 17.00 dBm (50.119 mW) IEEE 802.11ac VHT 80 Mode: 20.50 dBm (112.202 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

Notes: For Bluetooth and WIFI could be use as transmit/receive at the same time.

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 (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

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

Bluetooth mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
0	2402	1.778	1.58	20	0.0006	1.000

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
11	2462	63.096	1.58	20	0.0198	1.000

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
11	2462	44.668	1.58	20	0.0140	1.000

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
6	2437	79.433	1.58	20	0.0250	1.000

IEEE 802.11 a mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
165	5825	56.234	1.58	20	0.0177	1.000

IEEE 802.11 n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
149	5745	56.234	1.58	20	0.0177	1.000

IEEE 802.11 n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
151	5755	50.119	1.58	20	0.0158	1.000

IEEE 802.11 ac VHT80:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
155	5775	112.202	1.58	20	0.0353	1.000

6. SIMULTANEOUS TRANSMISSION SAR ANALYSIS

Both of the WIFI and BT can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WIFI+BT

Therefore, the worst-case situation is 0.0006/ 1 + 0.0353 / 1 = 0.0359, which is less than “1”.

--End of Report--