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

UP core Plus

Model: xUPC-PLUSx (x – where x may be any combination of alphanumeric characters or "-" or blank)

Trade Name: AAEON

Issued to

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan, R.O.C

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
Issued Date: November 08, 2018

Note: *This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NIST or any government agencies. The test results in the report only apply to the tested sample.*

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	November 08, 2018	Initial Issue	ALL	May Lin

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION 4
2. LIMIT 5
3. EUT SPECIFICATION 5
4. TEST RESULTS 6
5. MAXIMUM PERMISSIBLE EXPOSURE 7
6. SIMULTANEOUS TRANSMISSION SAR ANALYSIS 8

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:

May Lin
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	UP core Plus
Model	xUPC-PLUSx (x – where x may be any combination of alphanumeric characters or "-" or blank)
Trade Name	AAEON
Model Discrepancy	All the above models are identical except for the designation of model numbers. The suffix of (x – where x may be any combination of alphanumeric characters or "-" or blank) on model number is just for marketing purpose only.
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: 4.00 dBm (2.512 mW) IEEE 802.11b Mode: 17.00 dBm (50.119 mW) IEEE 802.11g Mode: 15.50 dBm (35.481 mW) IEEE 802.11n HT 20 Mode: 17.50 dBm (56.234 mW) IEEE 802.11a Mode: 16.00 dBm (39.811 mW) IEEE 802.11n HT 20 Mode: 16.00 dBm (39.811 mW) IEEE 802.11n HT 40 Mode: 15.50 dBm (35.481 mW) IEEE 802.11ac VHT 80 Mode: 14.50 dBm (28.184 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	2.512	1.58	20	0.0008	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	50.119	1.58	20	0.0158	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	35.481	1.58	20	0.0112	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)
11	2462	56.234	1.58	20	0.0177	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	39.811	1.58	20	0.0125	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	39.811	1.58	20	0.0125	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	35.481	1.58	20	0.0112	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	28.184	1.58	20	0.0089	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 0.0177/ 1 + 0.0008 / 1 = 0.0185, which is less than “1”.

--End of Report--