

**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 board**

**Model:**

**xUPC-CHT01x (x-where x may be any combination of  
alphanumeric characters or “-“ or blank)**

**Trade Name: AAEON**

*Issued to*

**AAEON Technology Inc.  
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*Issued by*

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**Issued Date: January 25, 2018**



## Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	January 25, 2018	Initial Issue	ALL	May Lin

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## 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:



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Sam Chuang  
Manager  
Compliance Certification Services Inc.

Tested by:



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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

<b>EUT</b>	UP-Core board															
<b>Model</b>	xUPC-CHT01x (x-where x may be any combination of alphanumeric characters or "-" or blank)															
<b>Trade Name</b>	AAEON															
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> Bluetooth 2.1 + EDR / 4.0: 2408 ~ 2480MHz 802.11b/g/n HT20: 2412MHz ~ 2462MHz <input type="checkbox"/> Others															
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others															
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )															
<b>Antenna Specification</b>	Bluetooth 2.00 dBi (Numeric gain: 1.58) WIFI 2.4G 2.00 dBi (Numeric gain: 1.58) Type: Dipole Antenna															
<b>Max tune up Power Power</b>	<table border="1"> <tr> <td>Bluetooth</td><td>1.00dBm</td><td>(1.259mW)</td></tr> <tr> <td>WIFI</td><td></td><td></td></tr> <tr> <td>IEEE 802.11b mode</td><td>14.00dBm</td><td>(25.119mW)</td></tr> <tr> <td>IEEE 802.11g mode</td><td>14.00dBm</td><td>(25.119mW)</td></tr> <tr> <td>802.11n HT20 mode</td><td>13.00dBm</td><td>(19.953mW)</td></tr> </table>	Bluetooth	1.00dBm	(1.259mW)	WIFI			IEEE 802.11b mode	14.00dBm	(25.119mW)	IEEE 802.11g mode	14.00dBm	(25.119mW)	802.11n HT20 mode	13.00dBm	(19.953mW)
Bluetooth	1.00dBm	(1.259mW)														
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IEEE 802.11g mode	14.00dBm	(25.119mW)														
802.11n HT20 mode	13.00dBm	(19.953mW)														
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> 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

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

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

## 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 / cm<sup>2</sup>

### Bluetooth:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
79	2480	1.259	1.58	20	0.0004	1.000

### IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
11	2462	25.119	1.58	20	0.0079	1.000

### IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
11	2462	25.119	1.58	20	0.0079	1.000

### IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
11	2462	19.953	1.58	20	0.0063	1.000