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

RF EXPOSURE REPORT

For

ActiveHome

Model: AH11-11-11

Trade Name: Upstreem

Issued to

UPSTREEM S.A
Rue de Gosselies 13/9, Jumet, Belgium 6040

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
Issued Date: December 18, 2019

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	December 13, 2019	Initial Issue	ALL	May Lin
01	December 18, 2019	See the following Note Rev. (01)	P.5, P.7	May Lin

Rev (01):

1. *Revised the section 3 、 section 5.*

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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
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.

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

<table>
<tr><td>EUT</td><td>ActiveHome</td></tr>
<tr><td>Model</td><td>AH11-11-11</td></tr>
<tr><td>Model Discrepancy</td><td>N/A</td></tr>
<tr><td>Frequency band (Operating)</td><td>☒ GPRS: 850: 824.2 ~ 848.8 MHz
☒ GPRS: 1900: 1850.2 ~ 1909.8 MHz
☒ Bluetooth 4.0: 2402 ~ 2480 MHz
☐ Others</td></tr>
<tr><td>Device category</td><td>☐ Portable (<20cm separation)
☒ Mobile (>20cm separation)
☐ Others</td></tr>
<tr><td>Exposure classification</td><td>☐ Occupational/Controlled exposure (S = 5mW/cm^2)
☒ General Population/Uncontrolled exposure (S=1mW/cm^2)</td></tr>
<tr><td>Antenna Specification</td><td>GPRS 850: Antenna Gain : -3.83 dBi (Numeric gain 0.41)
GPRS 1900: Antenna Gain : 1.03 dBi (Numeric gain 1.27)
Bluetooth 4.0: Antenna Gain : 2.00 dBi (Numeric gain 1.58)</td></tr>
<tr><td>Maximum Measurement Average Power</td><td><table><tr><th>System</th><th>Power</th><th></th></tr><tr><td>GPRS 850</td><td>31.40 dBm</td><td>(1380.38 mW)</td></tr><tr><td>GPRS 1900</td><td>29.90 dBm</td><td>(977.24 mW)</td></tr><tr><td>Bluetooth 4.0</td><td>-3.31 dBm</td><td>(0.47 mW)</td></tr></table></td></tr>
<tr><td>Maximum tune up power</td><td><table><tr><td>GPRS 850:</td><td>32.00 dBm</td><td>(1584.893 mW)</td></tr><tr><td>GPRS 1900:</td><td>30.00 dBm</td><td>(1000.000 mW)</td></tr><tr><td>Bluetooth 4.0:</td><td>-3.30 dBm</td><td>(0.468 mW)</td></tr></table></td></tr>
<tr><td>Evaluation applied</td><td>☒ MPE Evaluation*
☐ SAR Evaluation
☐ N/A</td></tr>
</table>

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

GPRS 850 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
128	824.2	1584.893	0.41	20	0.1293	1.000

GPRS 1900 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
661	1880	1000.000	1.27	20	0.2527	1.000

Bluetooth 4.0:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
0	2402	0.468	1.58	20	0.0001	1.000

Simultaneously MPE

Simultaneously MPE = MPE1/Limit1 + MPE2/Limit2

2G + BLE

Simultaneously MPE = (0.2527 mW/cm^2 /1) + (0.0001 mW/cm^2 /1) = 0.2528

--End of report--