



FCC ID: 2ATZ6-AH11-11-11  
Report No.: T190219D08-MF

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Rev.: 01

**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: Upstream**

*Issued to*

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

*Issued by*

**Compliance Certification Services Inc.  
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Issued Date: December 18, 2019**

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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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**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<br>KDB 447498 D03<br>47 C.F.R. Part 1, Subpart I, Section 1.1310<br>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:

Reporter:



Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.



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

### GPRS 850 mode:

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

### Simultaneously MPE

Simultaneously MPE = MPE1/Limit1 + MPE2/Limit2

### 2G + BLE

$$\text{Simultaneously MPE} = (0.2527 \text{ mW/cm}^2 / 1) + (0.0001 \text{ mW/cm}^2 / 1) = 0.2528$$

--End of report--