

US Tech  
FCC ID:  
IC:  
Test Report Number:  
Issue Date:  
Customer:  
Model:

FCC Part 15/IC RSS Certification  
2ADCB-ACWIFI001  
6715A-ACWIFI001  
16-0139  
September 23, 2016  
Acuity Brands  
ACWIFI001

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## Maximum Public Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e) & RSS-102, 2.5.2

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density,  $S$ , of 1 mW/cm<sup>2</sup> at a distance,  $d$ , of 20 cm from the EUT.

Therefore, for:

### 2.4 GHz WiFi:

Peak Power (dBm) = 17.21 dBm  
Peak Power (Watts) = 0.053 W  
Gain of Transmit Antenna = 2.8 dBi = 1.9, numeric  
 $d$  = Distance = 20 cm = 0.2 m

$$\begin{aligned} S &= (PG / 4\pi d^2) = \text{EIRP} / 4A = 0.053(1.9) / 4 * \pi * 0.2 * 0.2 \\ &= 0.1007 / 0.5030 = 0.2002 \text{ w/m}^2 \\ &= (0.2002 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.02002 \text{ mW/cm}^2 \end{aligned}$$

which is << less than 1 mW/cm<sup>2</sup>

### RSS-102, 2.5.2 Compliance for 2.4 GHz WiFi:

At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834} \text{ W}$  (adjusted for tune-up tolerance), where  $f$  is in MHz;

$1.31 * 10^{-2} * 2440^{0.6834} = 2.7 \text{ W}$   
EUT max EIRP = 17.2 dBm + (2.8 dBi) = 20.0 dBm EIRP = 0.100 W  
Which is << than 2.7 W

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### Maximum Public Exposure to RF (MPE) CFR 1.1310 (e)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S**, of 1 mW/cm<sup>2</sup> at a distance, **d**, of 20 cm from the EUT.

Therefore, for:

#### 5 GHz WiFi:

Peak Power (dBm) = 17.25 dBm  
Peak Power (Watts) = 0.053 W  
Gain of Transmit Antenna = 3.38 dBi = 2.18, numeric  
**d** = Distance = 20 cm = 0.2 m

$$\begin{aligned} S &= (PG/4\pi d^2) = \text{EIRP}/4A = 0.053(2.18)/4*\pi*0.2*0.2 \\ &= 0.1155/0.5030 = 0.2297 \text{ w/m}^2 \\ &= (0.2297 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.02297 \text{ mW/cm}^2 \end{aligned}$$

which is << less than 1 mW/cm<sup>2</sup>

#### RSS-102, 2.5.2 Compliance for 5 GHz WiFi:

At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where *f* is in MHz;

$$1.31 * 10^{-2} * 5180^{0.6834} = 4.5 \text{ W}$$

EUT max EIRP = 17.5 dBm + (3.38 dBi) = 20.88 dBm EIRP = 0.122 W

Which is << than 4.5 W

All calculations performed by:

Date: 12/8/2016

Test Engineer: George Yang

Signature: 