



### FCC RF EXPOSURE REPORT

<b>EUT</b>	Dimmer Switch
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 2.422GHz ~ 2.452GHz <input type="checkbox"/> WLAN: 5.180GHz ~ 5.240GHz <input type="checkbox"/> WLAN: 5.260GHz ~ 5.320GHz <input type="checkbox"/> WLAN: 5.500GHz ~ 5.700GHz <input type="checkbox"/> BLE: 2.402GHz ~ 2.480GHz <input type="checkbox"/> Bluetooth: 2.402GHz ~ 2.480GHz
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
<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 diversity</b>	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Max. output power</b>	25.82dBm (381.944mW)
<b>Antenna gain (Max)</b>	2.0dBi(Numeric gain:1.58)
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

**TEST RESULTS**

No non-compliance noted.

**Calculation**

Given  $E = \frac{\sqrt{30 \times P \times G}}{d}$  &  $S = \frac{E^2}{3770}$

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:

$$S = \frac{30 \times P \times G}{3770d^2}$$

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

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where  $d$  = Distance in cm  
 $P$  = Power in mW  
 $G$  = Numeric antenna gain  
 $S$  = Power density in mW / cm<sup>2</sup>



**Maximum Permissible Exposure**

Modulation Mode	Frequency band (MHz)	Peak output power(dBm)	Peak output power(mW)	Antenna Gain (dBi)	Antenna gain (Numeric)	Distance (cm)	Power density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
802.11b	2412-2462	21.67	146.8926278	2	1.58	20	0.04632902	1
802.11g	2412-2462	25.82	381.9442708	2	1.58	20	0.12046283	1
802.11n HT20	2412-2462	25.78	378.4425847	2	1.58	20	0.11935842	1