



## FCC RF EXPOSURE REPORT

<b>EUT</b>	WIFI Smart Plug Outlet
<b>FCC ID</b>	ZZH-WF15PL
<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>	23.47dBm (222.331mW)
<b>Antenna gain (Max)</b>	3dBi(Numeric gain:2)
<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

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

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:

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

Changing to units of mW and cm, using:

$P$  (mW) =  $P$  (W) / 1000 and

$d$  (cm) =  $d$  (m) / 100

Yields

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

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/cm2)	Limit (mW/cm2)
802.11b	2412-2462	<b>19.62</b>	<b>91.62204901</b>	<b>3</b>	<b>2.00</b>	<b>20</b>	<b>0.03637919</b>	<b>1</b>
802.11g	2412-2462	<b>23.47</b>	<b>222.3309891</b>	<b>3</b>	<b>2.00</b>	<b>20</b>	<b>0.08827812</b>	<b>1</b>
802.11n HT20	2412-2462	<b>23.42</b>	<b>219.7859873</b>	<b>3</b>	<b>2.00</b>	<b>20</b>	<b>0.08726761</b>	<b>1</b>