

**FCC RF EXPOSURE REPORT**

EUT	Dimmer Switch
Frequency band (Operating)	☒ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 2.422GHz ~ 2.452GHz ☐ WLAN: 5.180GHz ~ 5.240GHz ☐ WLAN: 5.260GHz ~ 5.320GHz ☐ WLAN: 5.500GHz ~ 5.700GHz ☐ BLE: 2.402GHz ~ 2.480GHz ☐ Bluetooth: 2.402GHz ~ 2.480GHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	20.91dBm (123.310mW)
Antenna gain (Max)	2.0dBi(Numeric gain:1.58)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ 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:

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

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

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

Where d = Distance in cm
 P = Power in mW
 G = Numeric antenna gain
 S = Power density in mW / cm²

**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 ²)	Limit (mW/cm ²)
802.11b	2412-2462	17.12	51.52286446	2	1.58	20	0.01624999	1
802.11g	2412-2462	20.74	118.5768748	2	1.58	20	0.0373984	1
802.11n HT20	2412-2462	20.91	123.3104833	2	1.58	20	0.03889136	1