



FCC RF EXPOSURE REPORT

EUT	Wireless Home Automation 8-Button Scene Controller
FCC ID:	ZZH-WFSC8
Frequency band (Operating)	<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
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<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
Max. output power	23.16dBm (207.0141349mW)
Antenna gain (Max)	3.0dBi(Numeric gain:2.0)
Evaluation applied	<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 / cm²



Maximum Permissible Exposure

Modulation Mode	Frequency band (MHz)	Conducted power(Max.) (dBm)	Turn-up power(dB)	Max. output power(dBm)	Max. output power (mW)	Antenna Gain (dBi)	Antenna gain (Numeric)	Distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
802.11b	2412-2462	19.27	19±1	20.00	100.000	3	2.00	20	0.03970572	1
802.11g	2412-2462	23.16	23±1	24.00	251.189	3	2.00	20	0.099736259	1
802.11n HT20	2412-2462	22.98	22±1	23.00	199.526	3	2.00	20	0.079223327	1