FCC RF EXPOSURE REPORT

EUT	WiFi Smart Socket
Frequency band (Operating)	☒ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 2.422GHz ~ 2.452GHz ☐ WLAN: 5.180GHz ~ 5.240GHz ☐ WLAN: 5.190GHz ~ 5.230GHz
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	17.14 dBm (51.761mW)
Antenna gain (Max)	0dBi(Numeric gain:1)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

Note:

1. *The maximum output power is 17.14 dBm (51.761mW) at 2437MHz (with numeric 1 antenna gain.)*
2. *DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.*
3. *For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.*

TEST RESULTS

No non-compliance noted.

Calculation

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

> 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

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

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

Maximum Permissible Exposure

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Antenna gain (dBi)	Antenna gain (Numeric)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
IEE 802.11b Mode	2412	11.07	0	1	20	0.0025	1
	2437	11.55	0	1	20	0.0028	1
	2462	14.53	0	1	20	0.0113	1
IEE 802.11g Mode	2412	16.40	0	1	20	0.0174	1
	2437	**17.14**	0	1	20	0.0206	1
	2462	14.53	0	1	20	0.0113	1
IEE 802.11n (HT-20) Mode	2412	16.36	0	1	20	0.0172	1
	2437	16.96	0	1	20	0.0198	1
	2462	10.75	0	1	20	0.0047	1