



## 12. Radio Frequency Exposure

### 12.1 Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in FCC Part 2 (Section 2.1091)

### 12.2 EUT Specification

<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2412MHz ~ 2462MHz <input type="checkbox"/> WLAN: 5150MHz ~ 5250MHz <input type="checkbox"/> WLAN: 5250MHz ~ 5350MHz <input type="checkbox"/> WLAN: 5470MHz ~ 5725MHz <input type="checkbox"/> WLAN: 5725MHz ~ 5850MHz <input type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz
<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 ( $S = 5\text{mW/cm}^2$ ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure ( $S=1\text{mW/cm}^2$ )
<b>Antenna diversity</b>	<input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input checked="" type="checkbox"/> Tx/Rx diversity
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

**Remark:**

1. The maximum conducted output power is 29.97dBm (992.048mW) at 2437MHz (with 5.30dBi 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<sup>2</sup> even if the calculation indicates that the power density would be larger.



## 12.3 Test Results

No non-compliance noted.

## 12.4 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:

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

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>

**12.5 Maximum Permissible Exposure**

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	29.97	31.97	5.3	24	0.737	1

**Maximum Permissible Exposure(Co-location)**

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	MPE Ratio
11n HT20	2412-2462	29.97	31.97	5.3	24	0.737	1.000	0.737
11ac VHT20	5150-5250	25.74	27.74	4.7	24	0.242	1.000	0.242
Co-location Total								0.979
Σ MPE ratios Limit								1