



13. Radio Frequency Exposure

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

13.1 EUT Specification

Frequency band (Operating)	<input 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 checked="" type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure <input checked="" type="checkbox"/> General Population/Uncontrolled exposure
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
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A
Remark: 1. The maximum conducted output power is <u>10.83 dBm (12.106 mW)</u> at <u>2402MHz</u> (with <u>2.91dBi antenna gain</u> .) 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.	

13.2 Test Results

No non-compliance noted.



13.3 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:

$P \text{ (mW)} = P \text{ (W)} / 1000$ and

$d \text{ (cm)} = d \text{ (m)} / 100$

Yields

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

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

**13.4 Maximum Permissible Exposure**

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
GFSK	2402-2480	10.83	11.33	2.91	20	0.005	1
$\pi/4$ -DQPSK	2402-2480	10.70	11.20	2.91	20	0.005	1
8DPSK	2402-2480	10.41	10.91	2.91	20	0.005	1

Maximum Permissible Exposure (Co-location)**BT+2.4G**

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	MPE Ratio
GFSK	2402-2480	10.83	11.33	2.91	20	0.005	1.000	0.005
11n HT40	2412-2462	22.10	22.60	3.91	20	0.089	1.000	0.089
Co-location Total								0.094
Σ MPE ratios Limit								1

BT+5G

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	MPE Ratio
GFSK	2402-2480	10.83	11.33	2.91	20	0.005	1.000	0.005
11ac VHT80	5500-5720	15.86	16.36	2.68	20	0.016	1.000	0.016
Co-location Total								0.021
Σ MPE ratios Limit								1

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