



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

Frequency band (Operating)	<input checked="" type="checkbox"/> WLAN: 2412MHz ~ 2462MHz <input checked="" type="checkbox"/> WLAN: 5150MHz ~ 5250MHz <input checked="" type="checkbox"/> WLAN: 5250MHz ~ 5350MHz <input checked="" type="checkbox"/> WLAN: 5470MHz ~ 5725MHz <input checked="" 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 (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<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
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 28.60dBm (725.262mW) at 5745MHz (with 4.99dBi 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/cm² 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:

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

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

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



12.5. Maximum Permissible Exposure

Maximum Permissible Exposure

(Non-Beamforming)

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	28.17	4.67	20	0.382	1
5260-5320	23.53	4.4	20	0.124	1
5500-5700	22.10	5	20	0.102	1
5745-5825	28.60	4.99	20	0.455	1

(Beamforming)

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	26.67	6.66	20	0.428	1
5260-5320	22.75	7.2	20	0.197	1
5500-5700	22.14	7.78	20	0.195	1
5745-5825	28.31	7.61	20	0.777	1



Maximum Permissible Exposure(Co-location)

(Non Beamforming)

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	MPE Ratio	
GFSK	2402-2480	9.81	2.69	20	0.004	1.000	0.004	
11b	2412-2462	29.01	3.55	20	0.359	1.000	0.359	
11a	5725-5850	28.6	4.99	20	0.455	1.000	0.455	
Co-location Total								0.817
ΣMPE ratios Limit								1

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	MPE Ratio	
GFSK	2402-2480	9.81	2.69	20	0.004	1.000	0.004	
11b	2412-2462	29.01	3.55	20	0.359	1.000	0.359	
11ac VT40	5260-5320	23.53	4.4	20	0.124	1.000	0.124	
Co-location Total								0.486
ΣMPE ratios Limit								1

(Beamforming)

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	MPE Ratio	
GFSK	2402-2480	9.81	2.69	20	0.004	1.000	0.004	
VHT20	2412-2462	25.38	6.47	20	0.305	1.000	0.305	
11ac VHT40	5725-5850	25.62	7.61	20	0.419	1.000	0.419	
Co-location Total								0.727
ΣMPE ratios Limit								1

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	MPE Ratio	
GFSK	2402-2480	9.81	2.69	20	0.004	1.000	0.004	
VHT20	2412-2462	25.38	6.47	20	0.305	1.000	0.305	
11ac VHT40	5260-5320	19.83	7.2	20	0.100	1.000	0.100	
Co-location Total								0.409
ΣMPE ratios Limit								1