



15. Radio Frequency Exposure

15.1. Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in FCC Part 2 (Section 2.1091)
KDB 447498

15.2. EUT Specification

| | |
|-----------------------------------|---|
| Frequency band (Operating) | <input 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 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 output power is 14.80dBm (0.0229mW) at 5785MHz (with numeric 5.8 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.

15.3. Test Results

No non-compliance noted.



15.4.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 (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 / cm²

15.5.Maximum Permissible Exposure

| | |
|--------------------|--|
| Max. output power | Band: 5150MHz ~ 5250MHz |
| | 1TX: 802.11a: 12.57 dBm (0.0137 mW) 802.11an HT20: 12.75 dBm (0.0142 mW) 802.11an HT40: 12.37 dBm (0.0131 mW) 2TX: 802.11a: 14.80 dBm (0.0229 mW) 802.11an HT20: 13.06 dBm (0.0153 mW) 802.11an HT40: 12.47 dBm (0.0134 mW) |
| Antenna gain (Max) | 1TX: ANT A: 5.8dBi 2TX: ANT A: 5.8dBi, ANT B: 5.1dBi |

**Maximum Permissible Exposure**

Test Mode: 1TX

| Modulation Mode | Frequency band (MHz) | Max. Conducted output power (dBm) | Antenna gain (dBi) | Distance (cm) | Power density (mW/cm ²) | Limit (mW/cm ²) |
|-----------------|----------------------|-----------------------------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 802.11a | 5150-5250 | 12.57 | 5.8 | 20 | 0.0137 | 1 |
| | 5250-5350 | 12.36 | 5.8 | 20 | 0.0130 | 1 |
| | 5470-5725 | 14.39 | 5.8 | 20 | 0.0208 | 1 |
| | 5725-5850 | 14.40 | 5.8 | 20 | 0.0208 | 1 |
| 802.11an HT20 | 5150-5250 | 12.27 | 5.8 | 20 | 0.0128 | 1 |
| | 5250-5350 | 11.37 | 5.8 | 20 | 0.0104 | 1 |
| | 5470-5725 | 12.75 | 5.8 | 20 | 0.0142 | 1 |
| | 5725-5850 | 12.03 | 5.8 | 20 | 0.0121 | 1 |
| 802.11an HT40 | 5150-5250 | 11.69 | 5.8 | 20 | 0.0112 | 1 |
| | 5250-5350 | 12.37 | 5.8 | 20 | 0.0131 | 1 |
| | 5470-5725 | 12.22 | 5.8 | 20 | 0.0126 | 1 |
| | 5725-5850 | 12.02 | 5.8 | 20 | 0.0120 | 1 |

Test Mode: 2TX

| Modulation Mode | Frequency band (MHz) | Max. Conducted output power (dBm) | Antenna gain (dBi) | Distance (cm) | Power density (mW/cm ²) | Limit (mW/cm ²) |
|-----------------|----------------------|-----------------------------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 802.11a | 5150-5250 | 11.95 | 5.8 | 20 | 0.0118 | 1 |
| | 5250-5350 | 12.95 | 5.8 | 20 | 0.0149 | 1 |
| | 5470-5725 | 14.59 | 5.8 | 20 | 0.0217 | 1 |
| | 5725-5850 | 14.80 | 5.8 | 20 | 0.0229 | 1 |
| 802.11an HT20 | 5150-5250 | 11.95 | 5.8 | 20 | 0.0118 | 1 |
| | 5250-5350 | 11.29 | 5.8 | 20 | 0.0102 | 1 |
| | 5470-5725 | 13.06 | 5.8 | 20 | 0.0153 | 1 |
| | 5725-5850 | 12.62 | 5.8 | 20 | 0.0138 | 1 |
| 802.11an HT40 | 5150-5250 | 12.26 | 5.8 | 20 | 0.0127 | 1 |
| | 5250-5350 | 12.47 | 5.8 | 20 | 0.0134 | 1 |
| | 5470-5725 | 12.39 | 5.8 | 20 | 0.0131 | 1 |
| | 5725-5850 | 12.39 | 5.8 | 20 | 0.0131 | 1 |