



## 14. Radio Frequency Exposure

### 14.1.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

### 14.2.EUT Specification

|                                   |                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency band (Operating)</b> | <input checked="" type="checkbox"/> WLAN: 2412MHz ~ 2462MHz<br><input checked="" type="checkbox"/> WLAN: 5150MHz ~ 5250MHz<br><input type="checkbox"/> WLAN: 5250MHz ~ 5350MHz<br><input type="checkbox"/> WLAN: 5470MHz ~ 5725MHz<br><input checked="" type="checkbox"/> WLAN: 5725MHz ~ 5850MHz<br><input type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz |
| <b>Device category</b>            | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)                                                                                                                                                                                                                                      |
| <b>Exposure classification</b>    | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )                                                                                                                                                              |
| <b>Antenna diversity</b>          | <input type="checkbox"/> Single antenna<br><input checked="" type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input checked="" type="checkbox"/> Tx/Rx diversity                                                                                                                  |
| <b>Evaluation applied</b>         | <input checked="" type="checkbox"/> MPE Evaluation*<br><input type="checkbox"/> SAR Evaluation<br><input type="checkbox"/> N/A                                                                                                                                                                                                                             |

**Remark:**

1. The maximum output power is 28.28dBm (673.052197.26mW) at 5745MHz (with numeric 5 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.

### 14.3.Test Results

No non-compliance noted.



#### 14.4.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:

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

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

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

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

**14.5.Maximum Permissible Exposure**

|                    |                                                                                                                                                                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max. output power  | Band: 5150MHz ~ 5250MHz<br>802.11a: 20.30 dBm (107.512mW)<br>802.11an HT20: 20.36 dBm (108.724mW)<br>802.11an HT40: 22.00 dBm (158.476mW)<br><br>Band: 5725MHz ~ 5850MHz<br>802.11a: 25.13 dBm (325.837mW)<br>802.11an HT20: 28.28 dBm (673.052mW)<br>802.11an HT40: 27.75 dBm (596.211mW) |
| Antenna gain (Max) | 2.4GHz:<br>802.11b/g: ANT B: 4 dBi<br>802.11n: ANT A: 4 dBi; ANT B: 4 dBi<br>5GHz:<br>802.11a: ANT A: 5 dBi;<br>802.11 n: ANT A: 5 dBi; ANT B: 5 dBi                                                                                                                                       |

**Maximum Permissible Exposure**

| Modulation Mode | Frequency band (MHz) | Max. Conducted output power (dBm) | Antenna gain (dBi) | Distance (cm) | Power density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|-----------------|----------------------|-----------------------------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 802.11a         | 5150-5250            | 20.30                             | 5                  | 20            | 0.0674                              | 1                           |
| 802.11a         | 5725-5850            | 25.13                             | 5                  | 20            | 0.2050                              | 1                           |
| 802.11an HT20   | 5150-5250            | 20.36                             | 5                  | 20            | 0.0684                              | 1                           |
| 802.11an HT20   | 5725-5850            | 28.28                             | 5                  | 20            | 0.4234                              | 1                           |
| 802.11an HT40   | 5150-5250            | 22.00                             | 5                  | 20            | 0.0997                              | 1                           |
| 802.11an HT40   | 5725-5850            | 27.75                             | 5                  | 20            | 0.3751                              | 1                           |