



### 13. Radio Frequency Exposure

#### 13.1.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

IEEE C95.1:2005

#### 13.2.EUT Specification

|                                   |   |
|-----------------------------------|---|
| <b>Frequency band (Operating)</b> | <input 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<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure   |
| <b>Antenna diversity</b>          | <input checked="" type="checkbox"/> Single antenna<br><input type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input 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 conducted output power is -0.14dBm (0.968mW) at 5210MHz (with 2.20 dBi 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.

#### 13.3.Test Results

No non-compliance noted.



### 13.4.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 / cm<sup>2</sup>



### 13.5. Maximum Permissible Exposure

| Channel Frequency (MHz) | Max. Conducted output power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|-------------------------|-----------------------------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 5180-5240               | -0.14                             | 2.2                | 20            | 0.0003                              | 1                           |
| 5745-5825               | -1.13                             | 2.2                | 20            | 0.0003                              | 1                           |