



Radio Frequency Exposure

LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

EUT Specification

EUT	Bluetooth Low Energy TPMS
Frequency band (Operating)	<input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.150GHz ~ 5.250GHz <input type="checkbox"/> WLAN: 5.725GHz ~ 5.850GHz <input checked="" type="checkbox"/> Bluetooth: 2.402GHz ~ 2.480 GHz <input type="checkbox"/> Zigbee: 2.405GHz ~ 2.480 GHz
Device category	<input checked="" type="checkbox"/> Portable (<20cm separation) <input 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
Max. output power	GFSK: 2.23dBm(1.67mW)
Antenna gain (Max)	-0.42 dBi
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

Remark:

1. The maximum average output power is 2.23dBm (1.67mW) at 2402MHz (with numeric -0.42dBi 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.

*Note: Simultaneous transmission is not applicable for this EUT.



TEST RESULTS

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation distance ≤ 50 mm are determined by:

$$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot [\sqrt{f \text{ (GHz)}}] \leq 3.0$$

The max. average power of channel, including tune-up tolerance(mW) is 1.67mW @ 2402MHz (With Tune-up tolerance),

The min. test separation distance (mm) is 5 mm,

So, $\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot [\sqrt{f \text{ (GHz)}}] = 0.5 < 3.0$ (With Tune-up tolerance).

Therefore, standalone SAR measurements are not required for both head and body.