



# 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	Withings Thermo™
Frequency band (Operating)	<input checked="" 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
Device category	<input checked="" type="checkbox"/> Portable (<20cm separation) <input type="checkbox"/> Mobile (>20cm separation)
Exposure classification	<input checked="" type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
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	802.11b: 2.44 dBm (1.75 mW) GFSK: -8.22 dBm (0.26 mW)
Antenna gain (Max)	2.8 dBi
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 2.44 dBm (1.75mW) at 2412MHz (with numeric 2.8 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/cm<sup>2</sup> 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  $\leq 50$  mm are determined by:

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

WLAN:

The max. average power of channel, including tune-up tolerance(mW) is 1.75 mW @ 2412MHz (With Tune-up tolerance),

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

So,  $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = 0.543 < 3.0$  (With Tune-up tolerance).

BT-LE:

The max. average power of channel, including tune-up tolerance(mW) is 0.26 mW @ 2402MHz (With Tune-up tolerance),

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

So,  $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = 0.086 < 3.0$  (With Tune-up tolerance).

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