



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)	☒ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.150GHz ~ 5.250GHz ☐ WLAN: 5.725GHz ~ 5.850GHz ☒ Bluetooth: 2.402GHz ~ 2.480 GHz
Device category	☒ Portable (<20cm separation) ☐ Mobile (>20cm separation)
Exposure classification	☒ Occupational/Controlled exposure (S = 5mW/cm ²) ☐ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ 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	☒ MPE Evaluation* ☐ SAR Evaluation ☐ 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/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:

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

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, $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = \underline{0.543} < 3.0$ (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, $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = \underline{0.086} < 3.0$ (With Tune-up tolerance).

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