

RF Exposure Evaluation

We, Lantronix, attest that the device in this filing is excluded from SAR testing per KDB447498 D01 v06 section 4.3.1 a). The maximum power in the tune procedure has been set to 15.32 dBm for 2.4 GHz band and 15.21 dBm for 5 GHz band. The antenna maintains a minimum of 15 mm from the user's extremity during operation. The simultaneous transmission is also evaluated with the BT transmitter. The BT transmits at a maximum of 14.82 dBm.

Using the calculation in KDB447498 D01 v06 section 4.3.1 a), the exclusion is shown below for the WiFi bands.

The equation is:

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

For 2.4 GHz (WiFi), the equation is:

$$[(34.0 \text{ mW}) / (15 \text{ mm})] * [\sqrt{2.462 \text{ GHz}}] = 3.6 \text{ which is less than } 7.5.$$

For 2.4 GHz (BT), the equation is:

$$[(30.3 \text{ mW}) / (15 \text{ mm})] * [\sqrt{2.48 \text{ GHz}}] = 3.2 \text{ which is less than } 7.5.$$

For 5 GHz, the equation is:

$$[(33.2 \text{ mW}) / (15 \text{ mm})] * [\sqrt{5.825 \text{ GHz}}] = 5.3 \text{ which is less than } 7.5.$$

For simultaneous evaluation between the WiFi transmitter and the BT transmitter, the SAR values were estimated using KDB447498 D01 v06 section 4.3.2 b).

The equation is:

$$[(\text{max power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f_{\text{(GHz)}}/x}] \text{ W/kg}$$

for test separation distances of ≤ 50 mm;

Where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

For the 2.4 GHz WiFi, the equation is:

$$[(34.0 \text{ mW}) / (15 \text{ mm})] * [\sqrt{2.462 \text{ GHz}/18.75}] = 0.19 \text{ W/kg.}$$

For the 5 GHz WiFi, the equation is:

$$[(33.2 \text{ mW}) / (15 \text{ mm})] * [\sqrt{5.825 \text{ GHz}/18.75}] = 0.28 \text{ W/kg.}$$

For the BT transmitter, the equation is:

$$[(30.3 \text{ mW}) / (15 \text{ mm})] * [\sqrt{2.48 \text{ GHz}/18.75}] = 0.17 \text{ W/kg.}$$

Therefore, the sum of the WiFi and BT is 0.45 W/kg which is below the limit. Therefore, the simultaneous transmission meets the requirements of the SAR limit.