

RF Exposure Analysis – SAR Test Exemption – DONGLE BTLE 5.0 AIR

FCC ID: 2AMLEDONGLEBTLE5

The DONGLE BTLE 5.0 AIR equipment operates in the 2400-2483.5MHz frequency band (LE Bluetooth)

The following FCC Rule Parts are applicable:

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

Part 1.1307(b)(3)(i)(C) - SAR test exemption (ii)

Part 1.1307(b)(3)(i)(B) - SAR test exemption (iii)

For model the DONGLE BTLE 5.0 AIR

Transmitter frequency range = 2400MHz to 2483.5MHz

Maximum Conducted Power = 5.0dBm

Peak Antenna gain: 0.5dBi

EIRP = 5.0dBm + 0.5dBi = 5.5dBm

ERP = EIRP-2.15dBm = +3.35dBm (**2.16mW**)

Minimum separation distance to be considered (d) = 20cm (0.2m)

Evaluation

From Part 2.1093(c)(1). RF exemption applies if the maximum transmitted power is less than the maximum of the following three criteria:

- i) Less than 1 mw Blanket exemption. $P_{TH} = 0.001 \text{ W}$ – (Dongle BTLE 5.0 Air is not compliant)
- ii) determination of exemption under the MPE-based §1.1307(b)(3)(i)(C), if i) not met
- iii) determination of exemption under the SAR-based §1.1307(b)(3)(i)(B) if both i) and ii) are not met;

Determination of threshold power (P_{TH}) under the MPE-based §1.1307(b)(3)(i)(C)

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This is only applicable at a separation distance greater than $\lambda/2\pi$

For the DONGLE BTLE 5.0 AIR

2.4GHz operation - $\lambda/2\pi = 0.02\text{m}$

The DONGLE BTLE 5.0 AIR separation distance equals 0.2m therefore this clause is applicable.

$$\text{Threshold ERP (watts)} P_{TH} = 19.2 * R^2$$

For

$$R = 0.2 \text{ m}$$

$$P_{TH} = 19.2 * 0.2^2$$

$$P_{TH} = 19.2 * 0.04$$

$$\mathbf{P_{TH} = 0.768 \text{ W (768 mW)}}$$

Conclusion:

The maximum ERP is below the applicable 0.768W threshold for operation at 2.4GHz, and therefore RF Exposure Evaluation is not required for the Dongle BTLE 5.0 Air with a user / antenna separation distance of 20cm and is exempt from evaluation in accordance with §1.1307(b)(3).

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