Radio Frequency Exposure Compliance

RESULT: **Pass**

Test Specification

Test standard : CFR47 FCC Part 2: Section 2.1091
CFR47 FCC Part 1: Section 1.1310
FCC KDB Publication 447498 v06

FCC requirement: 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 level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

MPE Calculation Method according to KDB 447498 v06

Power Density: $S_{(mW/cm^2)} = PG/4\pi R^2$ or $EIRP/4\pi R^2$

Where:

S = power density (mW/cm^2)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

The nominal maximum conducted output power specified:

BLE: 2.20 dBm

Wi-Fi 802.11 b/g/n: 23.20 dBm

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (Max. 3.5 dBi for BLE, 3.5 dBi for Wi-Fi 802.11 b/g/n), the RF power density can be calculated as below:

For BLE: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.001$ mW/cm^2

For Wi-Fi 802.11 b/g/n: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.093$ mW/cm^2

Simultaneous Transmissions:
BLE and WLAN transmissions may not occur at the same time, because they share one antenna.

Limits for Maximum Permissible Exposure (MPE) according to FCC Part 1.1310:

1.0 mW/cm^2