

US Tech Test Report:
FCC ID:
IC:
Test Report Number:
Issue Date:
Model:

FCC Part 15 Certification/ RSS 247
2AGBW9290019683X
20812-9683X
7088818001181-00
October 26, 2018
9290019683

Maximum Public Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e) & RSS-102, 2.5.2

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, S , of 1 mW/cm² at a distance, d , of 20 cm from the EUT.

Therefore, for:

Maximum Peak Power (dBm) = 9.33 dBm at Zigbee 2450MHz
Peak Power (Watts) = 0.0086 W
Maximum Gain of Transmit Antenna = 3.48 dBi = 2.23, numeric
 d = Distance = 20 cm = 0.2 m

$$\begin{aligned} S &= (PG / 4 \pi d^2) = EIRP/4A = 0.0086 * (2.23) / 4 * \pi * 0.2 * 0.2 \\ &= 0.0191 / 0.5030 = 0.03685 \text{ W/m}^2 \\ &= (0.03797 \text{ W/m}^2) (1\text{m}^2/\text{W}) / (0.1 \text{ mW/cm}^2) \\ &= 0.3797 \text{ mW/cm}^2 \end{aligned}$$

which is << less than 1.0 mW/cm²

RSS-102, 2.5.2 Compliance for 2405 MHz ~ 2480 MHz band:

At or above 300 MHz and below 6 GHz and the source based time averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ in Watts (adjusted for tune-up tolerance where applicable), where f = frequency in MHz.

$$1.31 \times 10^{-2} \times 2450^{0.6834} = 2.71 \text{ W}$$

EUT max EIRP = 9.33 dBm + 3.48 dBi = 12.81 dBm EIRP = 0.0191 W
Which is << than 2.71 W

The MPE limits are below the threshold as stated in KDB447498 D01 V06 in Section 4.3. The calculations above are presented to show that the EUT meets the exclusion requirements.