RF Exposure report

The Equipment Under Test (EUT) is a Drone with Wi-Fi function operating at 2412-2462MHz for 802.11b/g, 11 channels with 5MHz channel spacing. The EUT is powered by rechargeable battery (DC 7.4V, 2500mAh) which can be charged by USB port (DC 5V). The EUT can't transmit when it is charging. For more detailed features description, please refer to the user's manual.

Modulation Type: CCK, BPSK, QPSK, 16QAM, 64QAM
Antenna Type: Integral Antenna
Antenna Gain: 3dBi
The nominal conducted output power specified: 16dBm (Tolerance: +/-3dB)

The maximum conducted output power for the EUT is 17.60 dBm in the frequency 2.462GHz 802.11b mode which is within the production variation.

The minimum conducted output power for the EUT is 12.58 dBm in the frequency 2.412GHz 802.11g mode which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting devices is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use,
According to the KDB 447498 and OET 65, the simple calculation as below:

For Maximum Permissible Exposure (MPE) evaluation of the product, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65.

The maximum E.I.R.P= 16+3+3=22dBm=158.49mW
The source-based time averaged maximum radiated power = 158.49 x Duty Cycle = 158.49mW

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:
= 158.49 / 4πR^2
= 0.0315 mW/cm^2

The MPE limit is 1.0 mWcm^2 for general population and uncontrolled exposure in the Wi-Fi frequency range according to FCC Part 1.1310. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.

Transmitter Duty Cycle Calculation
The EUT transmit continuously during the test, the duty cycle is 1.

The following RF exposure statement or similar sentence is proposed to be included in the user manual:
“FCC RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”