RF Exposure

The Equipment under Test (EUT) is a Control unit for 1:10 RC ROCK CRAWLER XXXL operating at 2.4GHz band. It is powered by DC 3.0V (2 x 1.5V AA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.
Antenna Gain: 0dBi.
The normal radiated output power (e.i.r.p) is: -3.5dBm (tolerance: +/- 3dB).
The normal conducted output power is -3.5dBm (tolerance: +/- 3dB).
Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 92.2 dBμV/m at 3m in the frequency 2450MHz
The EIRP = [(FS*D) ^2 / 30] mW = -3.03dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 90.4dBμV/m at 3m in the frequency 2410MHz and 2471MHz
The EIRP = [(FS*D) ^2 / 30] mW = -4.83dBm
which is within the production variation.

The maximum conducted output power specified is -0.5dBm = 0.89mW
The source- based time-averaging conducted output power
= 0.89* Duty Cycle mW < 0.89 mW (Duty Cycle<100%)

The SAR Exclusion Threshold Level:
= 3.0 * (min. test separation distance, mm) / sqrt(freq. in GHz)
= 3.0 * 5 / sqrt (2.471) mW
= 9.54 mW

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

The duty cycle is simply the on-time divided by the period:
The duration of one cycle= 2.7536ms
Effective period of the cycle= 289.9μs x 1 = 289.9μs
DC = 289.9μs / 2.7536ms = 0.1053 or 10.53%