RF Exposure

The Equipment under Test (EUT) is a transmitter for the Cozmo Base Kit(Power Cube) model: 300-00031 operating at 2.4GHz band. It is powered by DC 1.5V (1 x 1.5V LR1 battery).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: -4.0dBm (tolerance: +/- 3dB).
The normal conducted output power is -4.0dBm (tolerance: +/- 3dB).
Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 91.2dBμV/m at 3m in the frequency 2402MHz
The EIRP = [(FS*D) ^2 / 30] mW = -4.03dB
which is within the production variation.

The Minimum peak radiated emission for the EUT is 90.6dBμV/m at 3m in the frequency 2481MHz
The EIRP = [(FS*D) ^2 / 30] mW = -4.63dBm
which is within the production variation.

The maximum conducted output power specified is -1dBm = 0.8mW
The source- based time-averaging conducted output power
= 0.8* Duty cycle mW <0.8 mW(Duty cycle <100%)

The SAR Exclusion Threshold Level:
= 3.0 * (min. test separation distance, mm) / sqrt(freq. in GHz)
= 3.0 * 5 / sqrt (2.481) mW
= 9.52 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 = 35.2174ms
Effective period of the cycle = 942.0μs = 0.942ms
DC = 0.942ms / 35.2174ms = 0.0267 or 2.67%