RF Exposure

The Equipment under Test (EUT) is a Car unit for The Polar Express Remote Set model: 6-30218 operating at 2.4GHz band. It is powered by a AC/DC adapter (Model: YF1802000K3-UL, Input: 100~240V, 50/60Hz, 0.85A, Output: DC 18V, 2000mA). 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: 1.0dBm (tolerance: +/- 3dB).
The normal conducted output power is 1.0dBm (tolerance: +/- 3dB).
Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 95.5dBμV/m at 3m in the frequency 2438MHz
The EIRP = [(FS*D) ^2 / 30] mW = 0.27dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 93.9dBμV/m at 3m in the frequency 2401MHz
The EIRP = [(FS*D) ^2 / 30] mW = -1.33dBm
which is within the production variation.

The maximum conducted output power specified is 4.0dBm = 2.5mW
The source- based time-averaging conducted output power
= 2.5 * Duty Cycle mW = 0.35 mW

The SAR Exclusion Threshold Level:
= 3.0 * (min. test separation distance, mm) / sqrt(freq. in GHz)
= 3.0 * 5 / sqrt (2.480) mW
= 9.5 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 = 17.220ms
Effective period of the cycle = 480us x 5 = 2.4ms
DC = 5 x 480us / 17.220ms = 0.1394 or 13.94%