RF Exposure

The equipment under test (EUT) is an DMX Box operating at 2.4G Band. The EUT can be powered by DC 12.0V by adaptor. For more detail information pls. refer to the user manual.

Antenna Type: dedicated antenna.
Antenna Gain: -0.57dBi.
The normal radiated output power (e.i.r.p) is: 6.43dBm (tolerance: +/- 3dB).
The normal conducted output power is 7.0dBm (tolerance: +/- 3dB).
Modulation Type: GFSK.

According to the KDB 447498 V06:

The Maximum peak radiated emission for the EUT is 104.4dBμV/m at 3m in the frequency 2445MHz
The EIRP = [(FS*D) ^2 / 30] mW = 9.17dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 103.7 dBμV/m at 3m in the frequency 2430MHz
The EIRP = [(FS*D) ^2 / 30] mW = 8.47dBm
which is within the production variation.

The maximum conducted output power specified is 10.0dBm= 10.000mW
The source- based time-averaging conducted output power
=10.000mW* Duty Cycle=10mW* 20%=2mW

The duty cycle is simply the on-time divided by the period:
The duration of one cycle = 4.0109ms
Effective period of the cycle = = 802.2μs x1 = 0.8022ms
DC =0.8022ms / 4.0109ms
=0.2000 or 20.00%

The SAR Exclusion Threshold Level:
= 3.0 * (min. test separation distance, mm) / sqrt(freq. in GHz)
= 3.0 * 5 / sqrt (2.455) mW
= 9.57 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.