

Analysis Report

The equipment under test (EUT) is a transmitter for Wireless electronic basketball with LED screen operating at 315MHz which is operated by a crystal. The EUT is powered by two 1.5V Size AAA batteries. For more detailed features description, please refer to the user's manual.

Type of the antenna: Integral Antenna

Modulation Type: ASK

Antenna Gain: 0dBi

The nominal conducted output power specified: -26.00dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -28.15dBm (+/- 3dB)

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 68.7dB μ V/m at 3m in the frequency 315MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -26.53dBm

The ERP = EIRP - 2.15 = -28.68 dBm

which is within the production variation.

The maximum conducted output power specified is -23.0dBm = 0.005mW

The source-based time-averaging conducted output power

= 0.005 * Duty Cycle Mw < 0.005 mW

The SAR Exclusion Threshold Level:

= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$

= $3.0 \cdot 5 / \sqrt{0.315}$ mW

= 26.72 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 = 100ms

Effective period of the cycle = $4.348 \times 3 + 5.507 + 6.232 + 2.174$

= 26.957ms

DC = 26.957ms / 100ms = 0.26957 or 26.957%