

Analysis Report

The equipment under test (EUT) is a transmitter for Electric Scooter operating at 315 MHz. The EUT is powered by one 3.0V Button Cell. For more detailed features description, please refer to the user's manual.

Type of the antenna: Integral Antenna

Modulation Type: ASK

Antenna Gain: -4dBi

The nominal radiated output power (e.r.p) specified: -27.00dBm (+/- 3dB)

The nominal conducted output power specified: -23.00dBm (+/- 3dB)

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 71.7dBμV/m at 3m in the frequency 315MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -23.53dBm

The ERP = EIRP – 2.15 = -25.68dBm

which is within the production variation.

The maximum conducted output power specified is -20.0dBm = 0.01mW

The source-based time-averaging conducted output power
= 0.01 * Duty Cycle mW < 0.01 mW

The SAR Exclusion Threshold Level:

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

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

= 26.73 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 = 51.014 ms

Effective period of the cycle = 1.014 ms x 11 + 0.290 ms x 14 = 15.214 ms

DC = 15.214 ms / 51.014 ms = 0.298 or 29.8%