

Analysis Report

Report No.: 13090344HKG-001

The Equipment Under Test (EUT) is a portable transceiver for a electronic toy operating at 0.125MHz. The EUT is powered by 2 X 1.5V AAA batteries. The EUT is equipped with four buttons. After power on the EUT and press suitable buttons to the “Bump” function, the EUT will transmit or receive RF signal from the corresponding transceiver and thus causing it beeping and exchanging data.

Antenna Type: Internal integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 50.0dBμV/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 50.0dBμV/m at 3m in frequency 0.125MHz, thus;

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 0.00006mW$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.00006mW.

In the frequency range below 100MHz and test separation distance $\leq 50mm$, the SAR Exclusion Threshold will be determined as follow,

The SAR exclusion threshold

$$\begin{aligned} &= \left\{ \left[(3.0 \times 50) / \sqrt{0.1} \right] + (50 - 50) * [100 / 150] \right\} * \left\{ 1 + \log[100 / F(MHz)] \right\} * \left\{ 1 / 2 \right\} \text{ Mw} \\ &= 474.34 * \left\{ 1 + \log[100 / F(MHz)] \right\} * \left\{ 1 / 2 \right\} \text{ mW} \\ &= 925.7 \text{ mW} \end{aligned}$$

where TD = 5 mm and F(MHz) = 0.125 MHz

Conclusion

Since the source-based time-averaging output power is 0.00006 mW, which is less than the SAR Exclusion Threshold at 5mm test separation distance 925.7 mW for general population and uncontrolled exposure, standalone SAR evaluation for general population exposure conditions, by measurement or numerical simulation is not required.