

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Shark Unit) for a RC Shark. The sample supplied operated on 21 channels, normally at 2420 - 2462MHz. The channel table is shown below.

2420	2422	2424	2426	2428
2430	2434	2436	2438	2440
2442	2444	2446	2450	2452
2454	2456	2457	2458	2460
2462				

The EUT is powered by 4 x 1.5V AAA batteries. After switching on the EUT, the shark will be moved forward or backward and turned left and right based on the switches pressed in the controller.

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 99.0dB μ V/m at 3m (Peak), 78.3dB μ V/m at 3m (Average)

Maximum allowed production tolerance: +/- 3dB

According to the KDB 447498:

Based on the maximum average field strength of production tolerance was 81.3dB μ V/m at 3m in frequency 2.420GHz.

Thus, it below calculated field strength according to minimum SAR exclusion threshold level as follows:

The worst case of SAR Exclusion Threshold Level:

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

$$= 3.0 * 5 / \text{sqrt}(2.483.5) \text{ mW}$$

$$= 9.52 \text{ mW}$$

According to the KDB 412172 D01:

$$\text{EIRP} = [(\text{FS} * \text{D})^2 * 1000 / 30]$$

Calculated Field Strength for 9.52mW is 105dBuV/m @3m

Since maximum average field strength plus production tolerance \leq 105dBuV/m @3m and antenna gain is \geq 0.0dBi, it is concluded that maximum Conducted Power and Field Strength are well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.