

## Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transmitter (Orange Controller Unit) for a RC car. The sample supplied operated on 1 channel, normally at 2450MHz.

The Equipment Under Test (EUT), is a portable 2.4GHz Transmitter (Blue Controller Unit) for a RC car. The sample supplied operated on 1 channel, normally at 2460MHz.

Both Controller units are powered by 2 x 1.5V AAA batteries. After switching on the EUT, the car will be moved forward or backward based on the switches pressed in the controller.

### For Orange Controller

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 97.2dB $\mu$ V/m at 3m (Peak), 66.6dB $\mu$ 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 69.6dB $\mu$ V/m at 3m in frequency 2.450GHz.

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 105dB $\mu$ V/m @3m

Since maximum average field strength plus production tolerance  $\leq$  105dB $\mu$ V/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.

### For Blue Controller

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 95.5dB $\mu$ V/m at 3m (Peak), 64.3dB $\mu$ 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 67.3dB $\mu$ V/m at 3m in frequency 2.460GHz.

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.