

Analysis Report

The Equipment Under Test (EUT) is a transceiver (Walkie-Talkie Unit) for a toy Push-to-Talk (PTT) type Walkie-Talkie Set operating at 49.860MHz governed by a crystal. The EUT is powered by a 9V battery. After switched ON the EUT, the user can transmit voice to other transceiver (Base Station Unit) by pressing the PTT button and speaking to the microphone, while release the PTT button to listen voice of other transceiver from the loudspeaker.

The loudspeaker also acts as a microphone. Also there is a Morse Code button on the (EUT), the user can transmit the Morse Code to other transceiver by pressing the PTT button and the Morse Code button at the same time.

Antenna Type: External antenna

Antenna Gain: 0dBi

Nominal rated field strength: 71.5 dB μ V/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 74.5dB μ V/m at 3m in frequency 49.860GHz, thus;

The EIRP = $[(FS * D)^2 * 1000 / 30] = 0.008mW$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.008mW.

The SAR Exclusion Threshold Level for 49.860MHz when the minimum test separation distance is < 50mm:

$$= [474 * (1 + \log_{10}(f(\text{MHz})))]/2$$

$$= 308.6mW$$

Since the above conducted output power is well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.