

# INTERTEK TESTING SERVICES

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## Analysis Report

The equipment under test (EUT) is a portable transmitter for a Toy RC Underwater Explorer operating at 49.860MHz. The EUT is powered by one 9.0V 6F22 size batteries. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna with unique antenna connector

Antenna Gain: 0dBi

The nominal conducted output power specified: -15.0dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -17.15dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 79.4dB $\mu$ V/m at 3m in the frequency 49.86MHz

The EIRP = [(FS\*D) ^2 / 30] mW= -15.83dBm

The ERP = EIRP – 2.15 = -17.98 dBm

which is within the production variation.

The maximum conducted output power specified is -12dBm =0.06mW

The source- based time-averaging conducted output power

= 0.06\* Duty Cycle mW< 0.06mW (Duty Cycle<100%)

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

= 474 \* [1 + log(100/f(MHz))]/2

= 308.6 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.

Transmitter Duty Cycle Calculation

The duration of one cycle = 17.8261ms

Effective period of the cycle = 1.4783ms x 4 + 0.4783ms x 10=10.6962ms

DC = 10.6962ms / 17.8261ms = 0.6000 or 60.00%

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