

INTERTEK TESTING SERVICES

RF Exposure

The Equipment under Test (EUT) is a Control unit for AUDI A3 model: HT99852 operating at 2.4GHz band. It is powered by DC 4.5V (3 x 1.5V AAA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.

Antenna Gain: 0dBi.

The normal radiated output power (e.i.r.p) is: 0dBm (tolerance: +/- 3dB).

The normal conducted output power is: 0dBm (tolerance: +/- 3dB).

Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 95.8dB μ V/m at 3m in the frequency 2410MHz and 2474MHz

The EIRP = $[(FS^*D)^2 / 30]$ mW = 0.57dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 95.6dB μ V/m at 3m in the frequency 2442MHz

The EIRP = $[(FS^*D)^2 / 30]$ mW = 0.37dBm
which is within the production variation.

The maximum conducted output power specified is 3.0dBm = 2.0mW

The source- based time-averaging conducted output power
= 2.0* Duty Cycle mW < 2.0mW (Duty Cycle<100%)

The SAR Exclusion Threshold Level:

$$\begin{aligned} &= 3.0 * (\text{min. test separation distance, mm}) / \text{sqrt(freq. in GHz)} \\ &= 3.0 * 5 / \text{sqrt}(2.474) \text{ mW} \\ &= 9.5 \text{ mW} \end{aligned}$$

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.

The duration of one cycle = 4.0870ms

Effective period of the cycle = 0.1739ms x 1=0.1739ms

DC = 0.1739ms / 4.0870ms = 0.0425 or 4.25%