

INTERTEK TESTING SERVICES

According to the guidelines of FCC's OET KDB 447498 D01, "Mobile and Portable Device - RF Exposure Procedures and Equipment Authorization Policies", the body SAR evaluation for hand-held and hand-operated or wrist, feet and ankle worn devices that operate closer than 5 cm to the body is exempted if the output power is not greater than $300 \times [f(\text{GHz})]^{-0.5} \text{mW}$.

1. Shaker unit of tested model of VL4834PER1 is a wrist worn device, and the operation frequency range is 1.921536 to 1.928448 GHz.

Output power threshold

$$\begin{aligned} &= 300 \times [f(\text{GHz})]^{-0.5} \text{mW} \\ &= 300 \times (1.924992)^{-0.5} \text{mW} \\ &= 216.225 \text{mW} \end{aligned}$$

2. The maximum field strength measured (FS) of shaker unit was 111.0 $\text{dB}\mu\text{V}/\text{m}$. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters. And the maximum source-based time-averaging duty factor is 4.17%.

The radiated power

$$\begin{aligned} &= (FS \times D)^2 / 30 \\ &= 37.77 \text{mW} \end{aligned}$$

The radiated (EIRP) source-based time-averaging output power

$$\begin{aligned} &= (37.77 \times 0.042) \text{mW} \\ &= 1.57 \text{mW} \end{aligned}$$

3. The conducted peak transmit power measured of shaker unit was 18.34 dBm. And the maximum source-based time-averaging duty factor is 4.17%.

The conducted power

$$= 68.23 \text{mW}$$

The conducted source-based time-averaging output power

$$\begin{aligned} &= (68.23 \times 0.042) \text{mW} \\ &= 2.87 \text{mW} \end{aligned}$$

The maximum output power (higher value of conducted or radiated (EIRP) source-based time-averaging output power) is 2.87 mW and is not greater than the above output power threshold 216.225 mW, therefore the body SAR evaluation is exempted.