
INTERTEK TESTING SERVICES

For RF exposure evaluation of the parent unit, the output power for portable transmitters is defined as the higher of the conducted or radiated (EIRP) source-based time averaging output power. And the low threshold is equal to $(60/f_{\text{GHz}})$ mW for $d < 2.5\text{cm}$, where f_{GHz} is mid-band frequency in GHz, and d is the distance from the portable transmitter to a person's body, excluding hands, wrists, feet, and ankles.

For the parent unit of the tested model of N9147, the measured peak conducted power was 36.06 mW. The maximum source-based time averaging duty factor is 10.0%.

$$\begin{aligned}\text{The conducted source-based time averaging output power} \\ &= (36.06 * 0.1000) \text{ mW} \\ &= 3.61 \text{ mW}\end{aligned}$$

The measured maximum field strength (FS) was 116.8 dB μ V/m. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters. From these data, the radiated (EIRP) source-based time-averaging output power can be calculated by:

$$\begin{aligned}\text{The radiated power} &= (FS * D)^2 / 30 \text{ mW} \\ &= 143.59 \text{ mW}\end{aligned}$$

$$\begin{aligned}\text{The radiated (EIRP) source-based time-averaging output power} \\ &= (143.59 * 0.1000) \text{ mW} \\ &= 14.36 \text{ mW}\end{aligned}$$

The low threshold in the 2400 – 2483.5MHz band is 24.57 mW.

From the above calculation, output power obtained in both method is less than low threshold, it is concluded that the parent unit can be exempted from SAR evaluation.