

Intertek Testing Services

For SAR evaluation of the hand-held unit (so called controller unit), refer to TCB Exclusions List Revised on 17 July 2002. Potable transmitter with output power less than 60/fGHz ($d < 2.5\text{cm}$) can be certified by TCB without the SAR evaluation.

In fact, the Output power for portable transmitters is the higher of the conducted or radiated (EIRP) source-based time-averaged output. And the $f\text{GHz}$ is mid-band frequency in GHz, and d is the distance to a person's body, excluding hands, wrists, feet, and ankles.

For the tested model of JS109HT1, the measured peak conducted power was 3.5mW and the source-based time averaged output power was 0.32mW as TX duty cycle is 9%.

The maximum field strength (FS) was 89.7dB $\mu\text{V}/\text{m}$ at 2440.430MHz. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters.

From these data, the EIRP can be calculated by:

$$\text{EIRP} = (\text{FS} * \text{D})^2 / 30$$

$$= 0.28\text{mW}$$

$$\text{Source-based time averaged output power} = (0.28 * 0.09) \text{ mW}$$

$$= 0.025\text{mW}$$

Based on the above calculation, it is concluded that the handset can be certified by TCB without the SAR evaluation.