Intertek Testing Services

For SAR evaluation of the handset, refer to TCB Exclusions List Revised on 17 July 2002. Transmitter with output power less than 60/fGHz (d < 2.5cm) can be certified by TCB without the SAR evaluation.

In fact, the Output power for transmitters is the higher of the conducted or radiated (EIRP) source-based time-averaged output. And the *f*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 WME (base unit),
the measured peak conducted power was 11.14mW and the source-based time averaged output power was 2.48mW as TX duty cycle of the handset is 22.3%.

The maximum field strength (FS) was 107.2dBμV/m at 5731.920MHz. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters.

From these data, the EIRP can be calculated by:

$$EIRP = (FS*D)^2 / 30$$

$$= 15.74mW$$

$$Source\text{-}based\ time\ averaged\ output\ power = (15.74*0.223)\ mW$$

$$= 3.51mW$$

For the tested model of WHE (handset unit),
the measured peak conducted power was 40.09mW and the source-based time averaged output power was 1.49mW as TX duty cycle of the handset is 3.714%.

The maximum field strength (FS) was 109.8dBμV/m at 5791.824MHz. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters.

From these data, the EIRP can be calculated by:

$$EIRP = (FS*D)^2 / 30$$

$$= 28.65mW$$

$$Source\text{-}based\ time\ averaged\ output\ power = (28.65*0.03714)\ mW$$

$$= 1.06mW$$

For the tested model of WDE (desktop unit),
the measured peak conducted power was 6.08mW and the source-based time averaged output power was 0.23mW as TX duty cycle of the handset is 3.714%.

The maximum field strength (FS) was 102.6dBμV/m at 5791.824MHz. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters.

From these data, the EIRP can be calculated by:

$$EIRP = (FS*D)^2 / 30$$

$$= 5.46mW$$

Source-based time averaged output power = (5.46*0.03714) mW

$$= 0.20mW$$

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