
INTERTEK TESTING SERVICES

For Standalone SAR test exclusion consideration, when the corresponding SAR Exclusion Threshold requirement in KDB 447498 is satisfied, standalone SAR evaluation for general population exposure conditions, by measurement or numerical simulation is not required.

Description the tested model: 2190

EUT Description	: 2.4GHz Remote Controller
Model	: 2190
Operating Configuration(s)	: Handheld
Operating mode (s)	: Data Transmission
Device Category	: Portable Device
Tx Frequency	: 2412 – 2475 MHz
Production tolerance	: -6 dBm (Minimum) to 3 dBm (Maximum)
Antenna gain	: 0 dBi = 1.00 (num gain)
Maximum source-based time-averaging duty factor	: 16.3% = (16.32/100 x100%)
Minimum separation distance	: 5 mm
Applicable FCC KDB	: FCC KDB 447498 D01 FCC KDB 865664 D02

From above data, the source-based time-averaging output power is as follow:

$$\begin{aligned}\text{The Maximum Conducted Power} &= 3 \text{ dBm} \\ &= 2.0 \text{ mW}\end{aligned}$$

The Maximum conducted Power source-based time-averaging output power

$$\begin{aligned}&= (2.0 * 0.163) \text{ mW} \\ &= \mathbf{0.33 \text{ mW}}\end{aligned}$$

In the frequency range of 100MHz to 6GHz and test separation distance $\leq 50\text{mm}$, the SAR Exclusion Threshold will be determined as follow,

$$\begin{aligned}\text{The SAR exclusion threshold} &= (3.0 \times TD) / \sqrt{F(\text{GHz})} \\ &= \mathbf{9.53 \text{ mW}}\end{aligned}$$

where $TD = 5 \text{ mm}$ and $F(\text{GHz}) = 2.475 \text{ GHz}$

Conclusion

Since the calculated conducted source-based time-averaged output power is **0.33 mW**, which is less than the SAR Exclusion Threshold at 5mm test separation distance **9.53 mW** for general population and uncontrolled exposure, standalone SAR evaluation for general population exposure conditions, by measurement or numerical simulation is not required.