



RF Exposure Evaluation

FCC ID: 2AOQW-FG-0053

The device is used portable RF exposure configuration – at a distance less than 20 cm from human's body. For this configuration SAR evaluation is required.

This device also receives wireless charging from companion wireless charger which is being tested and reported under FCC part 18 and KDB 680106 D01 RF Exposure Wireless Charging Apps v03. This device has receiving coil only. RF Exposure requirements of wireless charger are addressed separately under FCC part 18 DOC.

The RF Power is low; therefore, the SAR test exclusion threshold is calculated.

SAR test exclusion threshold formula according to FCC KDB 447898 D01 v06 is

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{(\text{min. test separation distance, mm})^2} \right] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10 -g extremity SAR, where } f(\text{GHz}) \text{ is the RF channel transmit frequency in GHz.}$$

Where: P is maximum RF conducted power of a channel or EIRP, including tune-up tolerance, mW; f is operating frequency in GHz; d is the minimum test separation distance, mm; the minimum distance is 5 mm.

Peak Conducted power: -2.16dBm or 0.608mWatts

No duty cycle was considered

Conducted Power for RF Exposure calculation is same as peak conducted power

The EIRP calculated is -2.16 (RF Conducted Power) + {-1.5 dBi (Antenna Gain)} = -3.66dBm or 0.23mW.

Higher of conducted power and EIPR is taken for calculation

As per KDB 447498 Section 4.3 SAR test exclusion threshold at 5mm distance is calculated as:

$$0.608 \times \sqrt{2.480} \div 5 = 0.191 < 3.$$

Therefore, SAR testing is not required as the SAR Test Exclusion Threshold condition is satisfied.