RF Exposure Evaluation

FCC ID: QYU-ADAPTBB
IC: 4571A-ADAPTBB

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

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

SAR test exclusion threshold formula according to FCC KDB 447498 D01 v06 is [(max. power of channel, including tune-up tolerance, mW) / (min.test separation distance, mm] -[√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10 -g extremity SAR, where•f(GHz) 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: 2.64 dBm or 1.835 mWatts

Conducted Power for RF Exposure calculation = 2.64 dBm

The EIRP calculated is 2.64 (RF Conducted Power) + 0 dBi (Antenna Gain) = 2.64 dBm or 1.835 mW.

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

[(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [√f$_{(GHz)}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where :
- f$_{(GHz)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

(2 mW ÷ 5 cm) × √2.480 MHz = 0.6 < 3.

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

For IC: SAR Exemption limit according to IC RSS-102 Issue 5, at 5 mm separation distance = 4 mWatts.

The Conducted power = 2.64 dBm or 1.835 mWatts

The EIRP calculated is 2.64 (RF Conducted Power) + 0 dBi (Antenna Gain) = 2.64 dBm or 1.835 mW.

SAR evaluation is not required since the higher of the maximum conducted or equivalent isotopically radiated power (e.i.r.p.) source-based, time averaged output power is below the exemption limit.