RF Exposure Evaluation

The device is used in a portable RF exposure configuration – at a distance less than 20 cm from human'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 447898 D01 v05r02 is

$$\frac{P \times \sqrt{f}}{d} < 3$$

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

The maximum calculated EIRP is -4.6 dBm or 0.35 mW.
(conducted Power is -5.1 dBm; antenna Gain is 0.5 dBi)

The SAR test exclusion threshold at 5mm distance is calculated as:

$$\frac{0.35 \times \sqrt{2.48}}{5} = 0.11$$

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

For IC: SAR Exemption limit according to RSS-102 Issue 5, at 5 mm separation distance is 4 mW. Routine evaluation is not required since the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time averaged output power is below the exemption limit.