RF Exposure Evaluation

The EUT is a wireless device operating in Cell band (824 -849 MHz), PCS band (1860 – 1910 MHz) and LTE bands (700 – 1755 MHz) used in a mobile application, e.g. at least 20 cm from any body part of the user or nearby persons. The device doesn't transmit simultaneously in that bands. So, we calculate RF exposure (Power Density) in worst case standalone configuration which is LTE band.

The Power Density is calculated using formula:

$$S = \frac{EIRP}{4\pi D^2}$$

Where: S is Power Density in mW/cm^2
D is the distance from the antenna in cm.

The maximum conducted (average) Powerat 700 MHz is 235 mW, maximum antenna gain 2 dBi or 1.58 numeric. *EIRP* is calculated as 371 mW.

At *D* =20 cm, **S = 0.074 mW/cm^2**

The MPE Limit according to the Table 1 in sec 1.1310 of the FCC Rules is f/1500 mW/cm^2 for General Population/Uncontrolled Exposure, where f is frequency in MHz.
Taken the lowest frequency 700 MHz in the LTE band, we get the Limit as **0.47 mW**/cm^2**.**

As can be seen, the Power Density (S) is well below the MPE Limit.