RF Exposure evaluation

For FCC ID: TUVDS-2910E

According to 447498 D04 Interim General RF Exposure Guidance V01

$$P_{th}\,(\text{mW}) = \begin{cases} ERP_{20\,cm}(d/20\ \text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\,cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \quad \text{(B.1}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,cm}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

$$P_{th}\,(\text{mW}) = ERP_{20\,cm}\,(\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \quad \text{(B.1)}$$

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Eirp = pt x gt = $(EXd)^2/30$

Where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, --- $10^{((dBuV/m)/20)}/10^6$

d = measurement distance in meters (m) --- 3m

So pt = $(EXd)^2/30$ x gt

Ant gain = 0 dBi So Ant numeric gain = 1

Field strength = 86.23dBμV/m @3m@2480MHz

So Pt = { $[10^{(86.23/20)}/10^6$ x3$]^2/(30$ x 1)} x 1000mW = 0.18mW ＜ 2.79mW

Then SAR evaluation is not required.

2.4GHz and BT cannot be transmitted simultaneously.