RF Exposure Evaluation

According to *KDB 447498 D01 General RF Exposure Guidance v06* and part 2.1093，
Unless specifically required by the *published RF exposure KDB procedures*, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding *SAR Test Exclusion Threshold* condition(s), listed below, is (are) satisfied.

For 100 MHz to 6 GHz and test separation distances ≤ 5 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [$\sqrt{f_{(GHz)}}$] ≤ 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

Here,

	Mode	Frequency (MHz)	Max Power (dBm)	Target power W/ tolerance (dBm)	Max tune up power tolerance (dBm)	Max Power (mW)	Min. Distance (mm)	Calc. thresholds	limit
BLE	GFSK	2402	0.2	0±1.0	1	1.259	5.00	0.390	3.0
		2440	0.28	0±1.0	1	1.259	5.00	0.393	3.0
		2480	0.12	0±1.0	1	1.259	5.00	0.397	3.0
Lora	GFSK	915	-4.65	-5±1.0	-4	0.398	5.00	0.123	3.0

Remark：

1.EIRP=E_{meas}+20Log(d_{meas})-104.7

EIRP is the equivalent isotropically radiated power, in dBm

E_{meas} is the field strength of the emission at the measurement distance, in dBuV/m

d_{meas} is the measurement distance. in m

So EIRP=90.51+20Log(3)-104.7

= -4.65dBm

2. BTAntenna gain is -0.58 dBi, Lora(915MHz) Antenna gain is 3 dBi

3. BT and Lora can transmit at the same time

4. In the case of simultaneous launches for Lora and BT:

The Max Calc. Thresholds : BT: 0.397, Lora: 0.123

BT and Lora: 0.397/3+0.123/3 =0.173 ≤ 1

So a SAR test is not required