

Standalone SAR test exclusion considerations

RF feature	Mode	Transmitting Frequency(MHz)	Test separation distance (mm)	ANT Gain (dBi)	Max. power with tune-up tolerance (dBm) ^{Note1,2}	Max. power with tune-up tolerance (mW)	Power thresholds	SAR test exclusion thresholds
BT	BDR(1Mbps)	2 480.00	5.0	-0.10	5.35	3.427 7	1.08	3.00
BT	EDR(2,3Mbps)	2 480.00	5.0	-0.10	4.35	2.722 7	0.86	3.00
BLE	GFSK(1Mbps)	2 480.00	5.0	-0.10	0.00	1.000 0	0.31	3.00

Note1. For bluetooth(BDR, EDR), the max tune-up power was based on time-averaged power.

$$\text{Max Time Avg. Power} = \text{Max Burst Avg. Power} + \text{Duty factor}$$

$$\text{Duty factor} = 10 \times \log \left(\frac{\text{TX}_{\text{on time}}}{\text{TX}_{\text{on+off time}}} \right) = 10 \times \log \left(\frac{2.88\text{ms}}{3.75\text{ms}} \right) = -1.15 \text{ dB}$$

Note2. Please refer to the operation description for Max tune-up power.

KDB 447498 D01 clause 4.3.1 Step 1) SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50 mm

$\left[\left(\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right) \cdot \sqrt{f(\text{GHz})} \right] \leq 3.0$ for 1g SAR and ≤ 7.5 for 10g extremity SAR

Sample Calculation

$$= \left[\left(\frac{3.4277\text{mW}}{5\text{mm}} \right) \right] \times \sqrt{2.48\text{GHz}} = 1.08$$

Note. The calculation result was rounded to two decimal place for comparison.

Conclusion : SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required