

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(1 Mbps)	2 480.00	5.0	-2.03	7.85	6.095 4	1.92	3.00
BT	EDR(2, 3 Mbps)	2 480.00	5.0	-2.03	6.35	4.315 2	1.36	3.00
BLE	GFSK(1 Mbps)	2 480.00	5.0	-2.03	3.00	1.995 3	0.63	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

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

Sample Calculation

$$= \left[\left(6.0954\text{mW} / 5\text{mm} \right) \right] \times \left[\sqrt{2.48\text{GHz}} \right] = 1.92$$

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