

Standalone SAR Test Exclusion Calculation

1.1 Test Procedure

Per KDB447498 D01 Section 4.3.1 Standalone SAR test exclusion, the following formula was used to determine if the device was excluded from a SAR evaluation:

$$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, 25 where}$$

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation²⁶
- The result is rounded to one decimal place for comparison

For Industry Canada, an exemption from routine SAR evaluation is achieved by meeting the exemption limits shown in the table below:

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance^{4,5}

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW



1.2 Results:

The following were used in the calculation:

- Maximum Conducted Output Power = -3.110dbm (0.488mW)
- Min Separation Distance = 0mm (5mm used in calculation)
- Frequency (GHz) = 2.480

$$[.488\text{mW} / 5\text{mm}] \times \text{SQRT}[2.48\text{GHz}] = 1.536$$

Since 1.536 is less than 3 then the device is excluded from standalone SAR evaluation for the FCC.

Since the conducted output power is less than 4mW, the device is also excluded from standalone SAR evaluation for Industry Canada.

