

RF Exposure / SAR / Health Hazard Statement

Requirement:

According to USA CFR 15 §1.1307 (b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to radio frequency energy level in excess of the Commission’s guideline. For Canada, RSS-102 Tests out the requirements and measurement techniques used to evaluate radio frequency (RF) exposure compliance of radiocommunication apparatus designed to be used within the vicinity of the human body.

SAR Testing Exclusion:

Per FCC 447498 General RF Exposure Guidance v05, Section 4.3.1, the 1-g (body) and 10-g (extremity) SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances 50 mm are determined by the following formula

$$SAR = \frac{P_c}{d} \sqrt{f_{GHz}}$$

where d = minimum test distance and Pc is the source-based time-averaged maximum conducted output power, or EIRP for a device without a removable antenna. For IC RSS-102, the SAR threshold is based on conducted output power of the radio device. The SAR threshold at a minimum test distance of 5 mm is thus computed to be:

SAR Threshold

Freq. (GHz)	EIRP/Po Avg (dBm)	EIRP/Po Avg (mW)	IC Po Threshold (mW)	dmin (mm)	Computed FCC SAR Threshold (Avg)	1-g SAR Body Threshold (Avg)	10-g SAR Extremity Threshold (Avg)
2.412	9.5	8.9	20	5	2.8	3	7.5
2.432	9.3	8.5	20	5	2.7	3	7.5
2.472	8.6	7.2	20	5	2.3	3	7.5

Thus the EUT meets the test exclusion thresholds for Industry Canada and the FCC 1-g and 10-g Extremity SAR evaluation threshold.