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RF EXPOSURE CALCULATIONS

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 guidelines. For Canada, RSS-102 sets 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.

Maximum Permissible Exposure Calculations:

	Level	Units	Test Date:	16-Jan-23
MPE Field Strength Limit	61	V/m	Test Engineer:	J. Brunett
MPE Power Density Limit	1.0	mW/cm ²	EUT Mode:	Active
			Meas. Distance:	3m

Freq. MHz	Temp °C	EIRP (Pk) dBm	Exposure Duty dB	EIRP (Avg) dBm	RS-102 2.5.2 EIRP dBm Limit	EUT Ant. Dim. cm	Far-field Distance m	S = 1mW/cm ² Dist.* cm	S @ 20 cm Distance mW/cm ²	MPE S Limit mW/cm ²	Comments
60019	18	14.4	-9.9	4.5	37.0	6.00	1.44	0.5	0.001	1.000	

$S @ 20\text{cm} = \text{EIRP} - 10 \cdot \log_{10}(4 \cdot \pi \cdot \text{PI} \cdot 20^2)$

$S = 1\text{mW/cm}^2 \text{ Distance} = \sqrt{\text{EIRPmW}/(4 \cdot \pi \cdot 1\text{mW/cm}^2)}$

S = 1mW/cm² Distance is an overestimated value when smaller than the EUT far field distance, and demonstrates compliance with FCC Part 1.1307, 1.1310, 2.1091, and 2.0193 requirements when the EUT is mounted.

Summary:

The EUT with all transmitters is compliant with both the FCC power density limit and the ISED Exposure Evaluation limits.