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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.

USA REF: 1.1310, 2.1091/1093, 447498 D01 General RF Exposure Guidance v06
 IC REF: RSS-102 Issue 6, Safety Code 6
 Min. Sep. Distance: 5 mm

Test Date: 14-Sep-26
 Test Engineer: J. Brunett
 EUT: Lippert 2x
 EUT Mode: Active
 Meas. Distance: 3m

R0	Mode	Frequency Band		Po (Pk)		Tune Up (Pk) dB	EIRP + Duty (Pk) mW		Canada ISED RSS-102 SAR		USA FCC 2.1093 SAR		
		Start MHz	Stop MHz	dBm	mW		dBm	mW	EIRP 5mm Exp. Limit Table 11 mW	SAR Ratio	SAR Threshold ERP (mW)	SAR Limit ERP (mW)	SAR Ratio
R1	Manual	433.92	433.92	-3.0	.50	.00	-3.0	0.50	83.5	0.006	0.306	23.17	0.013
R2	Periodic	433.92	433.92	-6.5	.22	.00	-6.5	0.22	83.5	0.003	0.137	23.17	0.006
R3									Total MPE	0.006		Total MPE	0.013
R4									MPE Ratio < 1	YES		MPE Ratio < 1	YES
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13

(ROW) (COLUMN) NOTE:

- R0 C5 Max of conducted or EIRP. Manufacturer declares max. RF output of -6.5 dBm in period mode, -3.0 dBm in manual activated mode. No duty applied to demonstrate compliance.
 R0 C6 TUNE UP – The manufacturer declares +/-0dB tune up.
 R0 C9 Using separation of 5mm according to according to table RSS-102, table 11 and multiplying by 2.5 for limb worn factor allowed in RSS-102, section 6.3.
 R0 C11 ERP (mW) = EIRP(mW)/1.64
 R0 C12 According to CFR 47, § 2.1093 (c)(1) - ERP (mW) Limit = $(2040 \times 0.43392) \times (0.5 \text{ cm} / 20 \text{ cm})^2 \times (-\text{Log}_{10}(60 / (2040 \times 0.43392 \times \text{SQRT}(0.43392 \text{ GHz}))) = 23 \text{ mW}$

Summary:

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