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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:

USA REF: 1.1310, 2.1091/1093, 447498 D01 General RF Exposure Guidance v06
 IC REF: RSS-102 Issue 5, Safety Code 6
 Min. Sep. Distance: 20 cm (Mobile)

Test Date: 13-Dec-22
 Test Engineer: John Nantz
 EUT: INTR1 RAD w/BMS
 EUT Mode: Worst Case
 Meas. Distance: Conducted

MPE / Exposure Calculations											
R0	Mode	Freq. MHz	Worst Case EIRP(Pk/Avg) dBm	E20cm(Avg) dBuV/m	S20cm(Avg) mW/cm2	Canada ISED RSS-102 MPE		USA FCC 1.1310 MPE			
						SC6 Limit (S20cm) mW/cm2	MPE Ratio	S Limit mW/cm2	MPE Ratio		
R1	RADIO 1 - CM	2405	4.9	123.6	0.00061	5.5	.00011	1.00000	0.00061		
R2		2435	4.9	123.7	0.00062	5.5	.00011	1.00000	0.00062		
R3		2475	4.8	123.6	0.00061	5.5	.00011	1.00000	0.00061		
R4	RADIO 2 - CM	2412	4.2	123.0	0.00053	5.5	.00010	1.00000	0.00053		
R5		2437	4.4	123.1	0.00055	5.5	.00010	1.00000	0.00055		
R6		2462	4.4	123.1	0.00055	5.5	.00010	1.00000	0.00055		
R7							MPE Max (<1):	.00021	MPE Total (<1):		.001166
R8							Complies?	YES	Complies?		YES
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11

(ROW) R0 (COLUMN) C2 NOTE: As Measured / Computed from highest fundamental emission, see fundamental emission section of this report. Max value of all baud rates used for worst case calculation.
 R0 C2 Maximum of either EIRP or Pout as measured.
 R0 C5 EIRP (mW) = S (mW/cm²) x 4 x PI x 20cm²

Summary:

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