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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: 20 cm
 47723029: FCC ID: XPB-SENSEPRO1, IC: 8053B-SENSEPRO1
 47723023: FCC ID: XPB-SENSEPRO2, IC: 8053B-SENSEPRO2

Test Date: 25-Jan-25
 Test Engineer: J. Brunett
 EUT: Allegion Keypad + Interior
 EUT Mode: Active
 Meas. Distance: 3m

R0	Device / Radio	Frequency Band		EIRP (Pk) - Exposure Duty (RMS) dBm	Tune Up dB	E20cm (Avg) dBuV/m	S20cm (Avg) mW/cm2	Canada ISED Safety Code 6		USA FCC 1.1310 MPE		
		Start MHz	Stop MHz					Srl Table 5 mW/cm2	MPE Ratio	MPE Limit Table 1 (mW/cm2)	MPE Ratio	
R1	47723029: UWB	6150.00	6850.00	-16.8	1.000	102.9	0.000	1.0	0.000	1.000	0.000	
	47723029: UWB	6150.00	6850.00	-24.2	1.000	95.5	0.000	1.0	0.000	1.000	0.000	
R2	47723029: BLE	2402.00	2480.00	11.5	1.000	131.2	0.004	5.35	0.001	1.000	0.004	
R3	47723023: WLAN	2412.00	2462.00	18.9	1.000	138.6	0.019	5.37	0.004	1.000	0.019	
R4	47723023: BLE	2402.00	2480.00	20.2	1.000	139.9	0.026	5.35	0.005	1.000	0.026	
R5	47723023: Thread	2405.00	2480.00	20.3	1.000	140.0	0.027	5.36	0.005	1.000	0.027	
R6	Mode	Freq. MHz	E3m (Avg) dBuV/m	E20cm (Avg) dBuV/m	H20cm (Avg) dBuA/m	Canada ISED Safety Code 6			USA FCC 1.1310 MPE			
						E Field Limit (dBuV/m)	H Field Limit (dBuA/m)	MPE Ratio	E Field Limit (dBuV/m)	H Field Limit (dBuA/m)	MPE Ratio	
R7	47723029: NFC	13.56	65.30	88.8	37.295	148.774	97.2	0.384	155.673	104.164	0.358	
R8												
R9							Total MPE	0.398		Total MPE	0.434	
R10							MPE Ratio < 1	YES		MPE Ratio < 1	YES	
#	C1	C2	C3	C4	C5	C6	C7	C9	C10	C11	C12	C13
(ROW)	(COLUMN)	NOTE:										
R1/R2	C4	No duty factor was applied to demonstrate compliance										
R1/R2	C5	TUNE UP - The manufacturer declares +/-1dB tune up.										
R1/R2	C6	E20cm = EIRP+Tune Up+95.2+20*LOG(3/0.2)										
R1/R2	C7	EIRP+Tune up (mW) = S (mW/cm^2) x 4 x PI x 20cm^2										
R1/R2	C9	mW/cm2 limit = 0.1*W/m2										
R5	C4	E20cm = E3m+20*LOG(3/0.2)										
R5	C5	H20cm = E20cm-20*LOG(377)										
R5	C7/11	E Field Limit (dBuV/m) = 20*LOG(1000000*V/m Limit)										
R5	C8/C12	H Field Limit (dBuA/m) = 20*LOG(1000000*A/m Limit)										

Summary:

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