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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

Test Date: 12-Jun-25
 Test Engineer: J. Nantz
 EUT: PRECO PrecoLink Zigbee
 EUT Mode: Active
 Meas. Distance: 3m

R0	Mode	Frequency Band		EIRP+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	SAR Ratio	MPE Limit Table 1 (mW/cm2)	MPE Ratio	
R1	Zigbee	2405.00	2475.00	17.3	1.000	137.022	0.013	0.536	0.025	1.000	0.013	
R2												
R3												
R6												
R7								Total MPE	0.025		Total MPE	0.013
R8								MPE Ratio < 1	YES		MPE Ratio < 1	YES
#	C1	C2	C3	C4	C5	C6	C7	C9	C10	C11	C12	C13

(ROW) (COLUMN) NOTE:

R0 C4 No duty factor was applied to demonstrate compliance
 R0 C5 TUNE UP – The manufacturer declares +/-1dB tune up.
 R0 C6 $E20cm = EIRP + \text{Tune Up} + 95.2 + 20 \cdot \log(3/0.2)$
 R0 C7 $EIRP + \text{Tune up (mW)} = S \text{ (mW/cm}^2\text{)} / 4 \times \pi \times 20cm^2$
 R0 C9 mW/cm2 limit = $0.1 \cdot W/m^2$

Summary:

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