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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) -<br>Exposure Duty<br>(RMS)<br>dBm | Tune Up<br>dB            | E20cm<br>(Avg)<br>dBuV/m     | S20cm<br>(Avg)<br>mW/cm2     | Canada ISED Safety Code 6 |                              | USA FCC 1.1310 MPE               |           |     |
|-------|------------------|------------------------------------------------------|------------------------|----------------------------------------------|--------------------------|------------------------------|------------------------------|---------------------------|------------------------------|----------------------------------|-----------|-----|
|       |                  | Start<br>MHz                                         | Stop<br>MHz            |                                              |                          |                              |                              | Srl<br>Table 5<br>mW/cm2  | MPE Ratio                    | MPE Limit<br>Table 1<br>(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.<br>MHz                                         | E3m<br>(Avg)<br>dBuV/m | E20cm<br>(Avg)<br>dBuV/m                     | H20cm<br>(Avg)<br>dBuA/m | Canada ISED Safety Code 6    |                              |                           | USA FCC 1.1310 MPE           |                                  |           |     |
|       |                  |                                                      |                        |                                              |                          | E Field<br>Limit<br>(dBuV/m) | H Field<br>Limit<br>(dBuA/m) | MPE Ratio                 | E Field<br>Limit<br>(dBuV/m) | H Field<br>Limit<br>(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 ISD Exposure Evaluation limits.