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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: 23-Apr-21  
 Test Engineer: J. Brunett  
 EUT: GridConnect ESP32  
 EUT Mode: Worst Case  
 Meas. Distance: Conducted

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	
BLE/BT	2402	16.8	135.5	0.00952	5.5	0.0017394	1.00000	0.0095220	
BLE/BT	2440	16.8	135.5	0.00952	5.5	0.0017394	1.00000	0.0095220	
BLE/BT	2480	16.9	135.6	0.00974	5.5	0.0017799	1.00000	0.0097438	
WLAN - B/G/N	L	23.4	142.1	0.04332	5.5	0.0079142	1.00000	0.0433242	
WLAN - B/G/N	M	23.4	142.1	0.04362	5.5	0.0079691	1.00000	0.0436245	
WLAN - B/G/N	H	23.5	142.3	0.04495	5.5	0.0082112	1.00000	0.0449500	
					<b>MPE Max (&lt;1):</b>	<b>.008211</b>	<b>MPE Total (&lt;1):</b>		<b>.044950</b>
					Complies?	<b>Yes</b>	Complies?		<b>Yes</b>

\*As Measured / Computed from highest fundamental emission, see fundamental emission section of this report.  
 \*\*maximum of either EIRP or Pout as measured.  
 \*\*\* For FCC MPE, use of 300 kHz limit for signals below 300 kHz as previously requested by FCC.  
 \*\*\*\* 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.