



Willow Run (WR) Test Labs, Inc.
 7117 Fieldcrest Drive
 Brighton, MI 48116
 Phone: (734) 252-9785, Fax (734) 926-9785
 e-mail: info@wrtest.com

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: 30-Dec-99
 Test Engineer: Joseph Brunett
 EUT: 0
 EUT Mode: Worst Case
 Meas. Distance: 3 meters

Mode	Freq. MHz	Worst Case E3(Avg)* dBuV/m	E20cm(Avg) dBuV/m	H20cm(Avg) dBuA/m	Canada ISED RSS-102 MPE			USA FCC 1.1310 MPE		
					SC6 Limit (E20cm) dBuV/m	SC6 Limit (H20cm) dBuA/m	Worst Case MPE Ratio	E20cm Limit*** dBuV/m	H20cm Limit*** dBuA/m	Worst Case MPE Ratio
Mode	Freq. MHz	Worst Case EIRP(Avg)** dBm	E20cm(Avg) dBuV/m	S20cm(Avg)**** mW/cm2		SC6 Limit (S20cm) mW/cm2	MPE Ratio		S Limit mW/cm2	MPE Ratio
BLE Radio	2400-2483.5	6.50000	125.22183	0.00089		5.47422	0.00016		1.00000	0.00089
WiLAN (module)	2400-2483.5	16.54000	135.26183	0.00897		5.47422	0.00164		1.00000	0.00897
						MPE Total (<1):	.002		MPE Total (<1):	.010
						Complies?	Yes		Complies?	Yes

*As Measured / Computed from highest fundamental emission, see fundamental emission section of this report.

**EIRP, as computed from Modular Device RF Exposure Exhibits.

*** For FCC MPE, use of 300 kHz limit at frequencies below 300 kHz is applied (if applicable) as previously allowed 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.