

## RF Exposure / MPE Calculation

**No. : 31HE0183-HO-01**

**Applicant** : Murata Manufacturing Co., Ltd.  
**Type of Equipmen** : Wireless LAN Module  
(11a(5180-5320, 5500-5700MHz), 11n-20(5180-5320, 5500-5700MHz), 11n-40(5190-5310, 5510-5670MHz))  
**Model No.** : LBWA1ZZUN1  
**FCC ID** : VPY-LBUN

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Murata Manufacturing Co., Ltd. declares that Model : LBWA1ZZUN1  
complies with FCC radiation exposure requirement specified in the FCC Rule 2.1091 (for mobile).

### RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided with the "LBWA1ZZUN1" as calculated from FCC OET Bulletin 65 Appendix A, Table (B) Limits for General Population / Uncontrolled Exposure. This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1.0mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

5180-5240MHz	Antenna 0	12.00dBm + 2.3 dBi = 14.30 dBm EIRP
	Antenna 1	11.66dBm + 2.8dBi = 14.46 dBm EIRP
5260-5320MHz	Antenna 0	11.25dBm + 2.3 dBi = 13.55 dBm EIRP
	Antenna 1	11.67dBm + 2.8dBi = 14.47 dBm EIRP
5500-5700MHz	Antenna 0	11.89dBm + 3.5dBi = 15.39 dBm EIRP
	Antenna 1	12.59dBm + 2.7dBi = 15.29 dBm EIRP

$$S = (P * G) / (4 * \pi * r^2)$$

Where

**P** = 15.45 mW (Maximum peak output power)  
**G** = 2.24 Numerical Antenna gain; equal to 3.50 dBi  
**r** = 20.0 cm

For: LBWA1ZZUN1

$$S = 0.00688 \text{ mW/cm}^2$$

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