

MPE Calculation

Report No: C15848TR1
Project No: C9235
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Product details:

Product name	JRD-1171 BLE Module
Company name	JR Dynamics Ltd (t/a Transmission Dynamics)
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MPE Calculation for JR Dynamics Ltd**FCC requirement:**

This report contains calculation of maximum Possible Exposure for the JRD-1171 BLE Module.

Required distance to the user is assumed to be 20 cm

Mobile devices are defined by the FCC as transmitters designed to be used in other than fixed locations and generally to be used in such a way that a separation distance of 20cm is normally maintained between radiating structures and the body of the user or nearby persons.

These devices are normally evaluated for exposure potential with relation to the MPE limit.

As the 20cm separation may not be achievable under normal operating conditions, an RF exposure calculation is used to demonstrate the minimum distance required to be less than the power density limit, as required under FCC rules.

FCC rule part:47CFR2.1091(3)

Power density (S) relates to Equivalent Isotropic Radiated power (EIRP) according to the following:

$$S = \frac{EIRP}{4\pi R^2}$$

Where,

R is the distance to the centre of radiation of the antenna (cm)

BLE Power Density

The worst case EIRP of the BLE module was = 2.4 mW

(Value obtained from test report C15847TR1)

value includes the worst-case antenna gain of 6dBi.

The Power density (S) is calculated as:

Frequency (MHz)	Maximum EIRP (mW)	Power density (S) (mW/cm ²)	Power density limit (S) (mW/cm ²) 47CFR1.1310 Table 1
2480.0	2.4	0.0005	1.0

Conclusion:

The product was shown to be compliant with the 20cm power density limit.

MPE Calculation for JR Dynamics Ltd**ISED Requirement**

RSS Standard:

RSS-102 Issue 6 Posted on Industry Canada website: December 15, 2023

Clause:6.6 Field reference level exposure exemption limits

At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less then, in Watts,

$$1.31 \times 10^{-2} f^{0.6834}$$

adjusted for tune-up tolerance, where f is in MHz

BLE Evaluation

Calculation of e.i.r.p.:

The worst case EIRP was determined, see Test Report C15847TR1.

(value includes the worst-case antenna gain of 6dBi.)

frequency (MHz)	Measured Power (W)	Limit (W)
2480	0.0024	2.74

Conclusion

The apparatus meets the exclusion requirements for RF exposure Evaluation.

Prepared by:



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