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# **MPE Calculation**

E&E

Report No: C15806TR3 Project No: C8930 Date: 4<sup>th</sup> March 2025

#### Product details:

Product name	WIQ Sensor Hub
Company name	WattIQ Inc
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	South San Francisco
	California
	94080
	United States of America
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EEUK v1.4

# MPE Calculation for WattlQ Inc

## FCC requirement:

This report contains calculation of maximum Possible Exposure for the IH-303 Sensor Hub.

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)

### Zigbee Power Density

The worst case output power of the Zigbee device was obtained from test report C15805TR3.

The Power density (S) is calculated as:

Frequency (MHz)	Maximum EIRP (mW)	Power density (S) (mW/cm²)	Power density limit (S) (mW/cm <sup>2</sup> ) 47CFR1.1310 Table 1
2405.0	55.5	0.0110	1.0
2440.0	51.1	0.0102	1.0
2480.0	3.5	0.0007	1.0

### Conclusion:

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

## **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,

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1.31 \times 10^{-2} f^{0.6834}
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adjusted for tune-up tolerance, where f is in MHz

## **BLE Evaluation**

Calculation of e.i.r.p.:

Peak conducted power was measured, see Test Report C15805TR3.

frequency (MHz)	Measured Power (W)	Limit (W)
2405	0.055	2.68
2440	0.051	2.71
2480	0.004	2.74

### Conclusion

The apparatus meets the exclusion requirements for RF exposure Evaluation.

Prepared by:

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