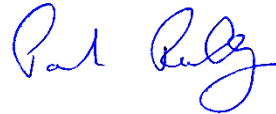


<b>Project No.</b>	<b>22E9851-3a</b>
<b>Quotation</b>	<b>Q22-1001-1</b>
<b>Prepared For</b>	<b>Sensotek Ltd</b>
<b>Company Address</b>	<b>Unit 23, Ormeau Business Park, Cromac Ave, BT7 2JA Belfast</b>
<b>Contact</b>	<b>Martin McNeill</b>
<b>Contact Email</b>	<b>amccall@sensotek.co.uk</b>
<b>Contact Phone</b>	<b>+44 2896 208 453</b>
<b>Prepared By</b>	<b>Compliance Engineering Ireland</b>
<b>Test Lab Address</b>	<b>Clonross Lane, Derrockstown, Dunshaughlin, Co. Meath, Ireland</b>
<b>Tested By</b>	<b>Joy Dalayap</b>
<b>Test Report By</b>	<b>Michael Kirby</b>
<b>FCC Test Firm Registration</b>	<b>409640</b>
<b>ISED CAB identifier:</b>	<b>IE0001</b>
<b>Date</b>	<b>24<sup>th</sup> Nov 2022</b>
<b>EUT Description</b>	<b>Wireless Sensor</b>
<b>FCC ID</b>	<b>2ANL3SPR433CA</b>
<b>IC ID</b>	<b>23633-SPR433CA</b>
<b>Authorised by</b>	<b>Paul Reilly</b>
<b>Authorised Signature:</b>	

## **RF Exposure Exhibit– Technical Report**

### **1.0 Overview**

The sensor is designed for fixed / mobile applications application environments.

### **1.1 Fixed / Mobile Application**

MPE for bystanders which are considered to be  $\geq 20$ cm away from the front of the transmit antenna

## 1.0 Overview FCC MPE

47 CFR Sections 1.1307, 1.1310, 2.1091,

447498 D01 General RF Exposure Guidance v06

## 2.1 Maximum Permissible Exposure 433.4MHz

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

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

Prediction frequency:	433.4	MHz
Radiated Field Strength at 3m	87.9	dBuV/m
Power Conversion factor for antenna distance 3m	-95.2	dB
EIRP Peak	-7.3	dBm
Time Averaging Factor	0	dB
EIRP Peak	-7	dBm
EIRP Peak	0.18620	mW
Prediction distance:	20	cm
MPE limit for Uncontrolled/General Population exposure at prediction frequency:	0.29	mW/cm <sup>2</sup>
Power density at prediction frequency:	0.00003704	mW/cm <sup>2</sup>
Power density at prediction frequency:	0.000370	W/m <sup>2</sup>
<b>Test Result: Exempt from RF exposure test</b>	Pass	

### Notes

The table above shows that for a prediction distance of 20cm, RF exposure evaluation is not required.

## 2.2 Maximum Permissible Exposure BLE

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

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

Prediction frequency:	2402	MHz
Radiated Field Strength at 3m	88.99	dBuV/m
Power Conversion factor for antenna distance 3m	-95.2	dB
EIRP Peak	-6.21	dBm
Time Averaging Factor	0	dB
EIRP Peak	-6	dBm
EIRP Peak	0.23930	mW
Prediction distance:	20	cm
MPE limit for Uncontrolled/General Population exposure at prediction frequency:	1	mW/cm <sup>2</sup>
Power density at prediction frequency:	0.00004761	mW/cm <sup>2</sup>
Power density at prediction frequency:	0.000476	W/m <sup>2</sup>
<b>Test Result: Exempt from RF exposure test</b>	Pass	

## 2.3 Maximum Permissible Exposure BLE and 433.4MHz co-locating

Combining the results above

$$0.0/0.3\% + 0/1\% = 0\%$$

Result less than limit of 100%

Result => Transmitters co-locating are Exempt from RF Exposure Evaluation

Note the tables and co-locating results above show that for a prediction distance of 20cm, RF exposure evaluation is not required.

### 3.0 Maximum Permissible Exposure IC

#### 3.1 Maximum Permissible Exposure 433.4MHz

Limits for Routine Evaluation — RF Exposure Evaluation

Limits as per RSS 102 Issue 5 (Mar 2015) Section 2.5.2

Prediction frequency:	433.4	MHz
EIRP Peak	-7.3	dBm
Time Averaging Factor	0.00	dB
Tune up factor	0	dB
EIRP Peak	-7.3	dBm
EIRP Peak	0.19	mW
2.5.2 Exemption limit for Routine Evaluation :	830.5	mW
<b><u>Exempt from Routine RF Exposure Evaluation</u></b>		

### 3.2 Maximum Permissible Exposure BLE

Limits for Routine Evaluation — RF Exposure Evaluation

Limits as per RSS 102 Issue 5 (Mar 2015) Section 2.5.2

Prediction frequency:	2402
EIRP Peak	-6.21
Time Averaging Factor	0.00
Tune up factor	0
EIRP Peak	-6.2
EIRP Peak	0.24
2.5.2 Exemption limit for Routine Evaluation :	2676.4
<b>Exempt from Routine RF Exposure Evaluation</b>	

### 3.3 Maximum Permissible Exposure BLE and 433MHz co-locating

Combining the results above

$$0.19/830 + 0.24/2676 < 0.1\%$$

Result less than limit of 100%

Result => Transmitter co-locating are Exempt from Routine RF Exposure Evaluation

**End of Report**