



**FCC Part 1 Subpart I
FCC Part 2 Subpart J
ISED CANADA RSS 102 ISSUE 5**

RF EXPOSURE REPORT

FOR

SMART SENSOR

MODEL NUMBER: V1

**FCC ID: 2AQVX-SS4MB01
IC: 24215-SS4MB01**

REPORT NUMBER: R12141961-E4

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**Prepared for
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Revision History

<u>Ver.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
1	2018-11-14	Initial Issue	Brian T. Kiewra
2	2018-11-21	Revised Section 6.1 to use 2480MHz.	Brian T. Kiewra
3	2018-12-04	Revised Section to remove both equations and to include only the equation used for clarity.	Brian T. Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: ABB Motors and Mechanical Inc. (Baldor Electric Company)
5711 RS Boreham Jr St.
Fort Smith, AR 72901-8301, USA

EUT DESCRIPTION: Smart Sensor

MODEL: V1

SERIAL NUMBER: 201710250000795, 201805160001207

DATE TESTED: 2018-06-11 to 2018-07-31

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 1 SUBPART I & PART 2 SUBPART J	Complies
ISED RSS 102 ISSUE 5	Complies

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

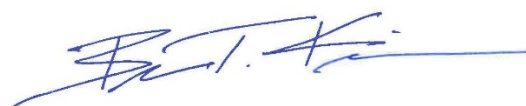
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. All samples tested were in good operating condition throughout the entire test program. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Approved & Released
For UL LLC By:



Jeffrey Moser
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Brian T. Kiewra
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2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 2.1091, 2.1093 and KDB 447498 D01 v06 and IC Safety Code 6, RSS 102 Issue 5.

3. REFERENCES

All measurements were made as documented in test report UL LLC Report R12141961-E1 for operation in the 2.4 GHz band.

Antenna gain data is excerpted from product documentation provided by the applicant.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA and 2800 Perimeter Park Dr., Suite B, Morrisville, NC 27560, USA.

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at <http://www.nist.gov/nvlap/>.

5. DEVICE UNDER TEST

The EUT is a battery operated smart sensor for mounted bearings containing a BLE transceiver.

6. STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

6.1. FCC

SAR test exclusion in accordance with KDB 447498.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [f(\text{GHz})] \leq 3.0$, for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

This test exclusion is applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

SAR Exclusion Calculation Table for Portable Devices (separation distance < 50 mm)

Tx	Frequency (MHz)	Avg Output power		Separation distances (mm)	Calculated Threshold
		dBm	mW		
BLE	2480	0.00	1.00	5	0.3

Conclusion

The computed values are < 3 ; therefore, the device qualifies for Standalone SAR test exclusion.

6.2. ISED CANADA

The SAR exclusion table from RSS-102 issue 5 is reproduced below:

Table 1: SAR evaluation - exemption limits for routine evaluation based on frequency and separation distance.

Frequency MHz	Exemption Limits (mW)				
	At separation distance of ≤5mm	At separation distance of 10mm	At separation distance of 15mm	At separation distance of 20mm	At separation distance of 25mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency MHz	Exemption Limits (mW)				
	At separation distance of 30mm	At separation distance of 35mm	At separation distance of 40mm	At separation distance of 45mm	At separation distance of ≥50mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

The minimum antenna to user distance that will be encountered in normal use is 25mm. This results in an exemption limit of 52mW at 2450 MHz.

Tx	Frequency (MHz)	Maximum Avg Power	Antenna Gain	-2.7 dBi
			(dBm)	(mW)
BLE	2402	Conducted	-0.31	0.93
		E.I.R.P	-3.01	0.50

As the maximum output power is 0.93 mW conducted and 0.50 mW EIRP, the DUT qualifies for SAR test exclusion.

END OF REPORT