

FCC Part 1 Subpart I
FCC Part 2 Subpart J

RF EXPOSURE REPORT

FOR

CONDITION MONITORING IOT SENSOR

MODEL NAME: WEGscan 100 / WEGscan 101

FCC ID: 2BDMZ-WEGSCAN100

FCC ID: 2BDMZ-WEGSCAN101

REPORT NUMBER: R14866507-E4

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Prepared for
WEG DRIVES AND CONTROLES
AV. PREFEITO WALDEMAR GRUBBA
3000, VILA LALAU
JARAGUA DO SUL, SC 89256-900, BRAZIL

Prepared by
UL LLC
12 LABORATORY DR.
RESEARCH TRIANGLE PARK, NC 27709 USA
TEL: (919) 549-1400



REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024-01-17	Initial Issue	Charles Moody

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: WEG Drives and Controls
Av. Prefeito Waldemar Grubba
3000, Vila Lalau
Jaragua Do Sul, SC 89256-900, Brazil

EUT DESCRIPTION: Condition monitoring IoT Sensor

MODEL: WEGscan 100 / WEGscan 101

SAMPLE RECEIPT DATE: 2023-01-18 TO 2023-11-02

DATE TESTED: 2023-11-01

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 1 SUBPART I & PART 2 SUBPART J	Engineering Data

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

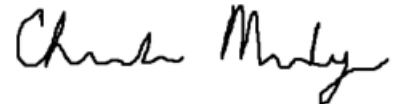
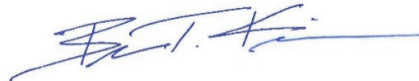
The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

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.

Approved & Released
For UL LLC By:

Reviewed By:

Prepared By:



Michael Antola
Staff Engineer
Consumer, Medical and IT Segment
UL LLC

Brian Kiewra
Project Engineer
Consumer, Medical and IT Segment
UL LLC

Charles Moody
Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 1.1310, 2.1091, 2.1093, KDB 447498 D01 v06, KDB 447498 D03 V01, IEEE Std C95.1-2005, and IEEE Std C95.3-2002.

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer.

3. REFERENCES

Output power, Duty cycle and Antenna gain data is excerpted from the applicable test reports or client declarations.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

5.2. DECISION RULES

For all tests where the applicable $U_{LAB} \leq U_{MAX}$ the Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2, where $U_{MAX} = 30\%$ (0.3) for RF Exposure evaluations. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

For all tests where the applicable $U_{LAB} > U_{MAX}$ the Decision Rule is based on Guarded Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.3.2, with a guard band equal to $(U_{LAB} - U_{MAX})$, where $U_{MAX} = 30\%$ (0.3) for RF Exposure evaluations. (Test results are adjusted by the value of the guard band to determine conformity with a specified requirement.)

6. DEVICE UNDER TEST

The EUT is a Condition monitoring IoT sensor that contains a BLE radio.

Separation distances, output power, and antenna gain have been declared by the manufacturer and can be found in documentation provided.

7. STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

7.1. 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.

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:

- $\{[\text{Power allowed at numeric threshold for 50 mm}]\} + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]$ mW, for 100 MHz to 1500 MHz
 - $f(\text{MHz})$ is the RF channel transmit frequency in MHz.
- $\{[\text{Power allowed at numeric threshold for 50 mm}]\} + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]$ mW, for > 1500 MHz and ≤ 6 GHz.

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

Tx	Frequency (MHz)	Average Output power		Separation distances (mm)	Calculated Threshold
		dBm	mW		
BLE 2.4 GHz	2480	5.5	3.5	5	1.1

Conclusion:

The calculated threshold value is < 3 ; therefore, the device qualifies for Standalone SAR test exclusion.

Note: minimum distance used in above table is lowest value declared distance.

END OF TEST REPORT