FCC Part 1 Subpart I
FCC Part 2 Subpart J
ISED RSS-102

RF EXPOSURE REPORT

FOR

PORTABLE SENSOR

MODEL NUMBER: A04537

FCC ID: IPH-04537

IC: 1792A-04537

REPORT NUMBER: R15511401-E4

ISSUE DATE: 2025-01-22

Prepared for
GARMIN INTERNATIONAL INC.
1200 EAST 151ST STREET
OLATHE, KS 66062-3426, USA

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CERT #0751.06

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-01-22	Initial Issue	Chandler Stanley

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151St Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Portable Sensor

MODEL: A04537

SERIAL NUMBER: 0652188 / 0651913 / 17598655

SAMPLE RECEIPT DATE: 2024-11-12, 2024-11-13, 2024-11-18, and 2024-11-25

DATE TESTED: 2024-11-15 to 2024-12-09

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 1 SUBPART I & PART 2 SUBPART J	Complies

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:

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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, ISED RSS-102.

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. Data provided by the customer includes:

1.) Maximum Declared Output Power (See section 7)
2.) Separation Distance (See section 7)
3.) Antenna Gain (See section 7.2)

3. REFERENCES

Output power, duty cycle and antenna gain 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 utilized 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} <= 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 portable sensor with BLE and ANT/ANT+.

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

The maximum measured average conducted output power was 7.789dBm for BLE, but the client has declared a maximum average output power of 9dBm and an operational duty cycle of 70%. This corresponds to a DCCF of -3.1dB resulting in a maximum average output power of 5.9dBm.
Corrected Max Avg Output Power = 9dBm – 3.1dB = 5.9dBm

The maximum peak measurement for ANT was found to be 100.49dBuV/m (at a 3-meter distance) which is 5.29dBm. This value will be used as the average EIRP to represent the worst-case.
EIRP (dBm) = E(dBuV/m) – 95.2 = 100.49 – 95.2 = 5.29dBm
Avg Conducted Power (dBm) = EIRP (dBm) - antenna gain (dB) = 5.29dBm - 0.35dB = 4.94dBm

7. FCC PORTABLE DEVICE TEST EXCLUSION CONSIDERATIONS

7.1. FCC Stand-alone test exclusion KDB 447498 D01 v6.

a) 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:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)]·[√f(GHz)] ≤ 3.0, for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f_{(GHz)}$ 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

The test exclusions are 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 Calculations Table for Portable Devices (separation distance ≤ 50 mm)

Tx	Frequency (MHz)	Avg Output power		Separation Distances (mm)	Calculated Threshold
		dBm	mW		
BLE 2.4 GHz	2402	5.90	4	5	1.2
ANT 2.4 GHz	2440	4.94	3	5	0.9

Conclusion:
The computed value is ≤ 3 (1-g SAR) and ≤7.5 (10-g extremity SAR) exclusion thresholds; therefore, EUT qualifies for Standalone SAR test exclusion using declared minimum separation distance of 5mm.

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7.2. ISED CANADA

The SAR exclusion table from RSS-102 issue 6 is reproduced below:

When 10 gram value applies, the exemption limits for routine evaluation in Table 1 of RSS 102 Issue 6 §6.2, are multiplied by a factor of 2.5. The resulting values are illustrated in the table below.

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	112.5	290	347.5	407.5	472.5	540	615	700	797.5	905
450	80	177.5	217.5	260	310	367.5	437.5	520	620	740
750*	58.5	101.5	128	162.5	208.8	268.3	348	449.8	581	744
835	52.5	80	102.5	135	180	240	322.5	430	570	745
1750*	20.3	32.8	53	90	147.8	231.5	341.8	477.3	632.3	798.8
1900	15	25	45	82.5	142.5	230	345	485	642.5	807.5
2300*	9.5	19.5	41.3	80.8	140.8	224.5	326.8	441.3	555.3	665.8
2450	7.5	17.5	40	80	140	222.5	320	425	522.5	612.5
2500*	7.5	17.5	40	79.8	139.3	220.5	316	418.3	513.5	602.3
2600*	7.3	17.3	39.8	79	137.8	216.5	307.8	405	495.8	581.5
3500	5	15	37.5	72.5	125	180	235	285	335	395
5200*	3.3	13.3	33.8	61.5	91.8	122.8	161	211	275.8	339.5
5300*	3	13	33.5	60.8	89.8	119.3	156.8	206.8	272.5	336.3
5600*	2.8	12.8	33	58.8	84	109.3	143.8	193.8	262	326.5
5800	2.5	12.5	32.5	57.5	80	102.5	135	185	255	320

The minimum antenna to user distance that will be encountered in normal use is 5mm. This results in an exemption limit of 7.5mW while in use at 2450 MHz.

Tx	Frequency (MHz)	Maximum Declared Average Power	Antenna Gain	0.35 dBi
			(dBm)	(mW)
BLE	2402	Conducted	5.90	3.89
		E.I.R.P	6.25	4.22
ANT	2440	Conducted	4.94	3.12
		E.I.R.P	5.29	3.38

As the maximum average output power for BLE is 3.89 mW conducted and 4.22 mW EIRP, and the maximum average output power for ANT is 3.12mW conducted and 3.38mW EIRP, the EUT qualifies for SAR test exclusion.

END OF TEST REPORT