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RF EXPOSURE EVALUATION Maximum Permissible Exposure (MPE)

Applicant Name:

Garmin International Inc
1200 E. 151st. Street
Olathe, Kansas
United States 66062

Date of Evaluation:

08/17/2026

Test Report Issue Date:

08/18/2026

Test Site/Location:

Element lab., Columbia, MD, USA

Test Report Serial No.:

1M2605220038-05.IPH

FCC ID:

IPH-04812

IC:

1792A-04812

APPLICANT:

Garmin International Inc

Application Type:

Certification

Model/HVIN:

A04812

EUT Type:

Mobile Digital Transceiver

FCC/ISED Classification:

Digital Transmission System (DTS)

FCC Rule Part:

FCC Part 1 (§1.1310) and Part 2 (§2.1091)

ISED Specification(s):

RSS-102 Issue 6

Test Procedure(s):

KDB 447498 D01 v06

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in FCC KDB 447498 D01. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RJ Ortanez
Executive Vice President



FCC ID: IPH-04812		Evaluation Dates: 08/17/2026	EUT Type: Mobile Digital Transceiver	Approved by: Technical Manager
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TEST REPORT REVISION HISTORY

Rev. No.	Report S/N	Description	Issue Date
-	1M2605220038-05.IPH	Initial Release	08/18/2026

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Test Location

These measurement tests were conducted at the Element laboratory located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4:2014.

1.3 Test Facility / Accreditations

Measurements were performed at Element lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered test laboratory with the site description on file with ISED (Wireless Test Lab number 2451B) and FCC (Designation Number US1113, Test Lab Registration Number 445776).
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs).

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2.0 RF EXPOSURE EVALUATION – MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 Scope

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC Rules and Regulations and RSS-102 of Industry Canada.

The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is listed in Table 2-1. According to FCC §1.1310 and RSS-102: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b).

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits For Occupational / Control Exposures (f = frequency)				
30-300	61.4	0.163	1.0	6
300-1500	...	...	f/300	6
1500-100,000	...	...	5.0	6
(B) Limits For General Population / Uncontrolled Exposure (f = frequency)				
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

Table 2-1. Limits for Maximum Permissible Exposure (MPE)

2.2 EUT Description

The **Garmin Mobile Digital Transceiver FCC ID: IPH-04812 / IC: 1792A-04812** is a device supporting ANT, Bluetooth, and 2.4GHz WLAN capabilities. Each radio can only transmit individually so there are no considerations for simultaneous transmission RF exposure for this application.

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2.3 Procedure

The procedure used to determine the RF power density was based upon a calculation for determining compliance with the MPE requirements.

The power generated by each transmitter used in this product was initially measured by a power meter or spectrum analyzer and the powers were recorded. Through use of the Friis transmission formula and knowledge of the maximum antenna gain to be used, the power density level is calculated at a distance of 20cm.

Friis Transmission Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4\pi r^2)$

Where,

P_d = Power Density (mW/cm²)

π = 3.1416

P_{out} = output power to antenna (mW)

r = distance between observation point and center of the radiator (cm)

G = gain of antenna in linear scale

Calculated MPE

The power density limit for General Population/Uncontrolled Exposure at each frequency is determined based on the information in Table 2-1.

There is no co-location between the electric fields of any two transmitters therefore following power densities are calculated for each individual transmitter by frequency at 20cm spacing:

Frequency	2402 MHz		
FCC Limit	1.000 mW/cm ²		
ISED Limit	5.351 W/m ²		
Distance (cm), R =	20 cm		
Power (dBm), P =	-1 dBm	0.79 mW	
TX Ant Gain (dBi), G =	3 dBi		
Calculated EIRP =	2 dBm		
Power Density (S) =	0.000 mW/cm ²	(at 20cm)	
ISED Power Density (S) =	0.003 W/m ²	(at 20cm)	

Table 2-2. Calculated MPE Data for ANT

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Frequency	2402 MHz		
Limit	1.000 mW/cm ²		
ISED Limit	5.351 W/m ²		
Distance (cm), R =	20 cm		
Power (dBm), P =	8 dBm	6.31 mW	
TX Ant Gain (dBi), G =	3 dBi		
Calculated EIRP =	11 dBm		
Power Density (S) =	0.003 mW/cm ²	(at 20cm)	
ISED Power Density (S) =	0.025 W/m ²	(at 20cm)	

Table 2-3. Calculated MPE Data for Bluetooth LE

Frequency	2412 MHz		
Limit	1.000 mW/cm ²		
ISED Limit	5.366 W/m ²		
Distance (cm), R =	20 cm		
Power (dBm), P =	15.5 dBm	35.48 mW	
TX Ant Gain (dBi), G =	3 dBi		
Calculated EIRP =	18.5 dBm		
Power Density (S) =	0.014 mW/cm ²	(at 20cm)	
ISED Power Density (S) =	0.141 W/m ²	(at 20cm)	

Table 2-4. Calculated MPE Data for 2.4GHz WLAN

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3.0 CONCLUSION

The device meets the mobile RF exposure limit at a 20cm separation distance as specified in §2.1091 of the FCC Rules and Regulations and Health Canada Safety Code 6. An appropriate RF exposure compliance statement will be placed in the user's manual.

- END OF TEST REPORT -

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