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Test report no.:

250335-AU01+W02

for:

HBC-radiomatic GmbH
IMU transmitter unit
CSIT0100

according to:

47 CFR Part 2
RSS-102



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Deutsche
Akkreditierungsstelle
D-PL-12155-01-00

Accreditation:

FCC test firm accreditation expiration date: 2027-09-09
MRA US-EU, FCC designation number: DE0010
Test firm registration number: 997268
FCC Registration Number (FRN): 0032245045
BNetzA-CAB-02/21-02/7 Valid until 2028-11-26

Recognized until 2027-03-18 by the
Department of Innovation, Science and Economic Development Canada (ISED)
as a recognized testing laboratory
CAB identifier: DE0011
Company number: 3472A

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1 Summary of test results

1.1 FCC standard

<i>FCC standard</i>	<i>Requirement</i>	<i>Result</i>	<i>Page</i>
47 CFR Part 2, § 2.1091	Maximum permissible exposure, except WPT, calculation	Passed	8

1.2 IC standard

<i>IC standard</i>	<i>Requirement</i>	<i>Result</i>	<i>Page</i>
RSS-102 Issue 6, section 6.6	Evaluation for separation distance > 20 cm, except 3 kHz – 10 MHz	Passed	11

Straubing, June 25, 2026



Tested by
Konrad Graßl
Department Manager Radio



Approved by
Christian Kiermeier
Reviewer

2 Test regulations

2.1 FCC standards

Standard	Title
Part 1, Subpart I, Section 1.1307 October 2025	Actions that may have a significant environmental effect, for which Environmental Assessment (EAs) must be prepared.
Part 1, Subpart I, Section 1.1310 October 2025	Radiofrequency radiation exposure limits
Part 2, Subpart J, Section 2.1091 October 2025	Radiofrequency radiation exposure evaluation: mobile devices.
KDB 447498 D04 v01 November 29, 2021	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
ANSI C63.10 September, 2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
ANSI/USEMCSC C63.10-2020/Cor 1-2023 (Corrigendum to ANSI C63.10-2020)	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Corrigendum 1

Note: Where ANSI C63.10 is referred to in combination with FCC Rules (47 CFR), this is equivalent to

- ANSI C63.10-2020
- + ANSI/USEMCSC C63.10-2020/Cor 1-2023 (Corrigendum to ANSI C63.10-2020)

2.2 IC standards

Standard	Title
RSS-102 Issue 6 (December 15, 2023)	Spectrum Management and Telecommunications Radio Standards Specification Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)
ANSI C63.10 September, 2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
ANSI/USEMCSC C63.10-2020/Cor 1-2023 (Corrigendum to ANSI C63.10-2020)	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Corrigendum 1
ANSI/USEMCSC C63.10a-2024 (Amendment to ANSI C63.10-2020)	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1
ANSI/USEMCSC C63.10a-2024 (Amendment to ANSI C63.10-2020)	Errata to American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1

Note: Where ANSI C63.10 is referred to in combination with Canadian standards (RSS), this is equivalent to

- ANSI C63.10-2020
- + ANSI/USEMCSC C63.10-2020/Cor 1-2023 (Corrigendum to ANSI C63.10-2020)
- + ANSI/USEMCSC C63.10a-2024 (Amendment to ANSI C63.10-2020), Amendment
- + ANSI/USEMCSC C63.10a-2024 (Amendment to ANSI C63.10-2020), Errata

3 Equipment under Test

All Information in this clause is declared by customer.

3.1 General information

Product type:	IMU transmitter unit		
Model name:	CSIT0100		
Serial number(s):	250807014		
Manufacturer:	HBC-radiomatic GmbH		
Hardware version:	MS0010		
Software version:	SG0502		
Short description:	EUT is a radio remote transmitter for Inertial Measurement Unit system.		
Additional modifications:	None		
FCC ID:	NO9IMU		
IC registration number:	2977A-IMU		
Designation of emissions:	897KF7D--		
Power supply:	Battery supply		
	Nominal voltage:	3.6 V	
Device type:	☐ Portable	☒ Mobile	☐ Fixed

3.2 Radio specifications

System type:	Frequency hopping spread spectrum system (FHSS)		
Radio technology:	2.4 GHz FHSS proprietary		
Application frequency band:	2400.0 MHz - 2483.5 MHz		
Number of RF channels:	79		
Nominal bandwidth:	1 MHz		
Modulation(s):	GFSK		
Antenna:	Type:	PCB antenna	
	Gain:	4.7 dBi (maximum)	
	Model:	N/A	
	Manufacturer:	HBC radiomatic	
	Connector:	☐ external	☒ internal
		☐ temporary	☐ none (integral antenna)

3.3 Human exposure specifications

Exposure tier:	Body
Separation distance:	> 20 cm
Evaluated against exposure limits:	General public use
Simultaneous transmissions:	no

3.4 Photographs of EUT

See Annex B of test report 250335-AU01+W01 of test laboratory Element Materials Technology Straubing GmbH.

4 Test results

This clause gives details about the test results as collected in the summary of test results on page 4.

4.1 FCC

4.1.1 Maximum permissible exposure, except WPT, calculation

Requirement: Part 2, §2.1091
Reference: KDB 447498 D04 v01

Performed by:	Konrad Graßl	Date of test:	April 17, 2026
Result:	☒ Limits kept	☐ Limits not kept	

4.1.1.1 Requirements and limits maximum permissible exposure

According to §2.1091(b):

A mobile device is defined as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons.”

According to §2.1091(c)(1):

Evaluation of compliance with the exposure limits in §1.1310 of this chapter, and preparation of an EA if the limits are exceeded, is necessary for mobile devices with single RF sources having either more than an available maximum time-averaged power of 1 mW or more than the ERP listed in Table 1 to §1.1307(b)(3)(i)(C), whichever is greater. For mobile devices not exempt by §1.1307(b)(3)(i)(C) at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in §1.1310 of this chapter is necessary if the ERP of the device is greater than ERP_{20cm} in the formula below. If the ERP of a single RF source at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP) in comparison with the following formula only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

$$P_{th}(\text{mW}) = ERP_{20\text{ cm}}(\text{mW}) = \begin{cases} 2040f & 0.3\text{ GHz} \leq f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \leq f \leq 6\text{ GHz} \end{cases}$$

According to §1.1307(b)(3)(i)(C):

Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

Table 1: Table 1 to §1.1307(b)(3)(i)(C)—Single RF Sources Subject to Routine Environmental Evaluation

4.1.1.2 Process to Determine RF Exposure Compliance

According to Appendix A of KDB 447498 D04 Interim General RF Exposure Guidance V01:

Generally, the sequence to apply for single portable RF sources includes the following steps:

- 1) Determination of 1 mW blanket exemption under § 1.1307(b)(3)(i)(A)
- 2) Determination of exemption under the MPE-based § 1.1307(b)(3)(i)(C) if 1) is not met
- 3) Determination of exemption under the SAR-based § 1.1307(b)(3)(i)(B) if both 1) and 2) are not met

4.1.1.3 Results

Note(s): The determination according to point 2 in clause 4.1.1.2 was used for evaluation.

The following data are based on applicants document: Test report 250335-AU01+W01 of the test laboratory Element Materials Technology Straubing GmbH

Antenna gain: 4.7 dBi
Maximum conducted output power: 18.2 dBm at 2402 MHz
19.1 dBm at 2440 MHz
19.1 dBm at 2480 MHz

Information related to Exposure:

Tune-up tolerance (according to the manufacturer): 0 dB
Separation distance: 20 cm
Exposure: general public
Power averaging over time: not applied

<i>Channel Frequency (MHz)</i>	<i>ERP + tune-up tolerance (dBm)</i>	<i>ERP (W)</i>	<i>Limit threshold ERP (W)</i>	<i>Ratio of limit</i>	<i>Result</i>
2402	20.8	0.12	0.77	0.16	Passed
2440	21.7	0.15	0.77	0.19	Passed
2480	21.7	0.15	0.77	0.19	Passed

Table 2: Result of evaluation of compliance

According to annex G.4 of ANSI C63.10: $ERP = EIRP - 2.15 \text{ dB}$

4.2 Canada

4.2.1 Evaluation for separation distance > 20 cm, except 3 kHz – 10 MHz

Requirement: RSS-102 Issue 6, section 6.6

Reference: n/a

Performed by:	Konrad Graßl	Date of test:	April 17, 2026
Result:	☒ Limits kept	☐ Limits not kept	

4.2.1.1 Field reference level exposure exemption limits

According to RSS 102, section 6.6:

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

4.2.1.2 Results

The following data are based on applicants document: Test report 250335-AU01+W01 of the test laboratory Element Materials Technology Straubing GmbH

Antenna gain: 4.7 dBi
Maximum conducted output power: 18.2 dBm at 2402 MHz
19.1 dBm at 2440 MHz
19.1 dBm at 2480 MHz

Information related to Exposure:

Tune-up tolerance (according to the manufacturer): 0 dB
Separation distance: 20 cm
Exposure: general public
Power averaging over time: not applied

<i>Channel Frequency (MHz)</i>	<i>EIRP + tuneup tolerance (dBm)</i>	<i>EIRP (W)</i>	<i>EIRP limit (W)</i>	<i>Ratio of limit</i>	<i>Result</i>
2402	22.9	0.19	2.68	0.07	Passed
2440	23.8	0.24	2.71	0.09	Passed
2480	23.8	0.24	2.74	0.09	Passed

Table 3: Result of exemption for routine evaluation of RF exposure

According to annex G.4 of ANSI C63.10: ERP = EIRP – 2.15 dB

5 Revision history

<i>Revision</i>	<i>Date</i>	<i>Issued by</i>	<i>Description of modifications</i>
0	2026-06-25	Konrad Graßl	First edition

Template: RF_FCC_IC_Human Exposure_V1.12