COMPLIANCE WORLDWIDE INC.
TEST REPORT 159-23RFR1

In Accordance with the Requirements of

Federal Communications Commission CFR Title 47 Part 2.1091:2020
Radio Frequency Exposure Evaluation: Mobile Devices

Issued to

PICA Product Development, LLC
4 Ash Street Extension
Derry, NH 03038

for the

Vibration/Magnet Sensor
Internal Antenna

FCC ID: UOXSKYHAWKTRPSEN2

Report Issued on April 27, 2023
Revision R1 Issued on June 14, 2023

Tested by

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Sean P. Defelice

Reviewed by

Larry K. Stillings

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1. Scope

This test report certifies that the PICA Product Development Trap Sensor with Internal Antenna, as tested, meets the FCC Part 2.1091 requirements exempting the device from a SAR Evaluation.

The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required. Revision R1 updates the upper frequency in the table on page 7.

2. Product Details

2.1. Manufacturer: PICA Product Development

2.2. Model Number: SHTRPGFH

2.3 Serial Number: TRP22480002

2.4 Description of EUT: Vibration/Magnet Sensors offer Electronic Remote Monitoring (ERM) of rodent & wildlife traps using standard AA batteries for years of uninterrupted service.

2.5 Power Source: 3 VDC (2 – AA Batteries)

2.6 Hardware Revision: Rev I

2.7 Software/Firmware Revision: N/A

2.8. Modulation Type: Frequency Hopping Spread Spectrum

2.9. Operating Frequency: 906-923.5 MHz

2.10. EMC Modifications: None

3. Product Configuration

3.1. Operational Characteristics & Software

The EUT was configured for continuous transmit operation once the batteries are installed and the button is pushed.

3.2. EUT Hardware

Manufacturer	Model	Serial Number	Input Volts	Freq (Hz) Or DC	Description/Function
PICA Product Development	SHTRPGFH	TRP22480002	3	DC	Animal Trap Sensor

3.3. Support Equipment

Manufacturer	Model/Part # / Options	Serial Number	Input Voltage	Freq (Hz)	Description/Function
None					

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3. Product Configuration (continued)

3.4. Equipment Cables

Cable Type	Length	Shield	From	To
None				

3.5. Block Diagram

4. Measurements Parameters

4.1. Measurement Equipment and Software Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due	Interval
EMI Test Receiver, 9kHz - 7GHz [1]	Rohde & Schwarz	ESR7	101156	10/26/2023	2 Years
EMI Test Receiver, 10 Hz - 7GHz [1]	Rohde & Schwarz	ESR7	101770	7/23/2023	2 Years
Spectrum Analyzer, 2 Hz to 26.5 GHz[2]	Rohde & Schwarz	FSW26	102057	6/24/2023	2 Years
Spectrum Analyzer, 9 kHz to 40 GHz[3]	Rohde & Schwarz	FSV40	100899	8/12/2022	2 Years
Spectrum Analyzer 10 Hz – 40 GHz[4]	Rohde & Schwarz	FSVR40	100909	9/18/2022	2 Years
Biconilog Antenna, 30 MHz - 2 GHz	Sunol Sciences	JB1	A050913	7/1/2023	2 Years
Digital Barometer	Control Company	4195	ID236	1/27/2024	2 Years

[1] ESR7 Firmware revision: V3.48 SP3, Date installed: 09/30/2020 Previous V3.48 SP2, installed 07/23/2020.
[2] FSW26 Firmware revision: V4.71 SP1, Date installed: 11/16/2020 Previous V4.61, installed 08/11/2020.
[3] FSV40 Firmware revision: V2.30 SP4, Date installed: 05/04/2016 Previous V2.30 SP1, installed 10/22/2014.
[4] FSVR40 Firmware revision: V2.23 SP1, Date installed: 08/19/2016 Previous V2.23, installed 10/22/2014.

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4. Measurements Parameters (continued)

4.2. Software Used to Perform Test

Manufacturer	Software Description	Title or Model #	Rev.	Report Sections
Compliance Worldwide	Test Report Generation Software	Test Report Generator	1.0	Used to process conducted emissions data

4.3 Measurement & Equipment Setup

Test Dates:	3/30/2023, 4/27/2023
Test Engineer:	Sean Defelice
Site Temperature (°C):	21.2
Relative Humidity (%RH):	33
Frequency Range:	30 kHz to 9.4 GHz
Measurement Distance:	3 & 1 Meters
EMI Receiver IF Bandwidth:	200 Hz – 30 to 150 kHz 9 kHz – 150 kHz to 30 MHz 120 kHz – 30 MHz to 1 GHz 1 MHz – Above 1 GHz
EMI Receiver Avg Bandwidth:	≥ 3 * RBW or IF(BW)
Detector Functions:	Peak, Quasi-Peak & Average

4.4 Test Procedure

Test measurements were made in accordance FCC Part 15.247 Digital Transmission Systems using ANSI C63.10: 2013, American National Standard for Methods for Unlicensed Wireless Devices. In addition, FCC DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems, was also referenced.

In addition, FCC KDB 447498 D01 General RF Exposure Guidance v06, October 23, 2015 are referenced for the testing and requirements detailed in this report.

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5. Choice of Equipment for Test Suites

5.1 Choice of Model

This test report is based on the test samples supplied by the manufacturer and are reported by the manufacturer to be equivalent to the production units.

5.2 Presentation

This test sample was tested complete with all required ancillary equipment. Refer to Section 3 of this report for product equipment configuration.

5.3 Choice of Operating Frequencies

The product utilizes 50 channels in the 906 MHz to 923.5 MHz frequency range. In accordance with ANSI C63.10-2013, Section 5.6, three channels are detailed in this test report:

In accordance with ANSI C63.10-2013, Section 5.6, the choice of operating frequencies selected for the testing outlined in this report was based on the lowest, middle and highest operating frequencies. The frequencies selected were:

- Low Channel – 906.00 MHz
- Middle Channel – 912.75 MHz
- High Channel – 923.50 MHz

5.4. EUT Positions for Emissions Measurements

The device under test was tested in three orthogonal positions in accordance with ANSI C63.10-2013, Section 5.10.1.

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6. Measurement Data (continued)

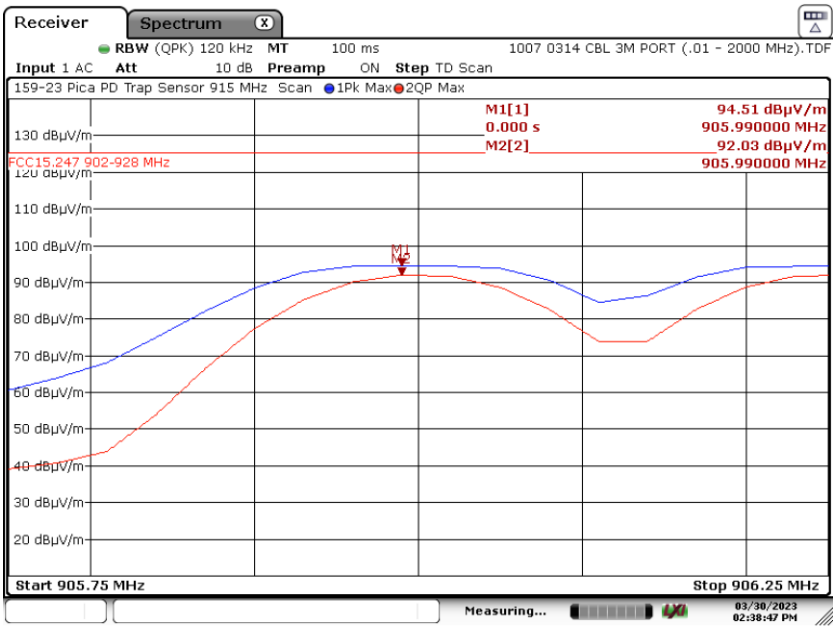
6.1. Maximum Peak Conducted Output Power (Section 15.247 (b))

Requirements: The maximum peak conducted output power of the intentional radiator shall not exceed the following: For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

Note: Field strengths at 3 meters were measured and converted to power by subtracting 95.2.

Channel	Frequency (MHz)	Max Radiated Output Power (dBµV/m)	Max Radiated Output Power (dBm)	Max Peak Radiated Output Power (Watts)	Limit (Watts)	Result
Low	906.00	94.51	-0.69	0.0009	1	Compliant
Middle	912.75	96.88	1.68	0.0015	1	Compliant
High	923.50	91.83	-3.37	0.0005	1	Compliant

6.1.1. Maximum Peak Conducted Output Power – Low Channel



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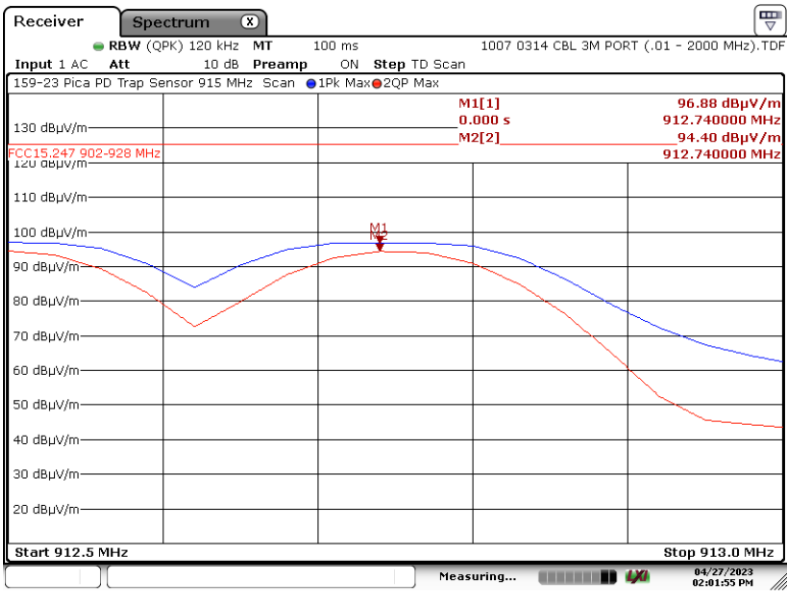
6. Measurement Data (continued)

6.1. Maximum Peak Conducted Output Power (Section 15.247 (b)) (continued)

6.3.2. Maximum Peak Conducted Output Power – Middle Channel



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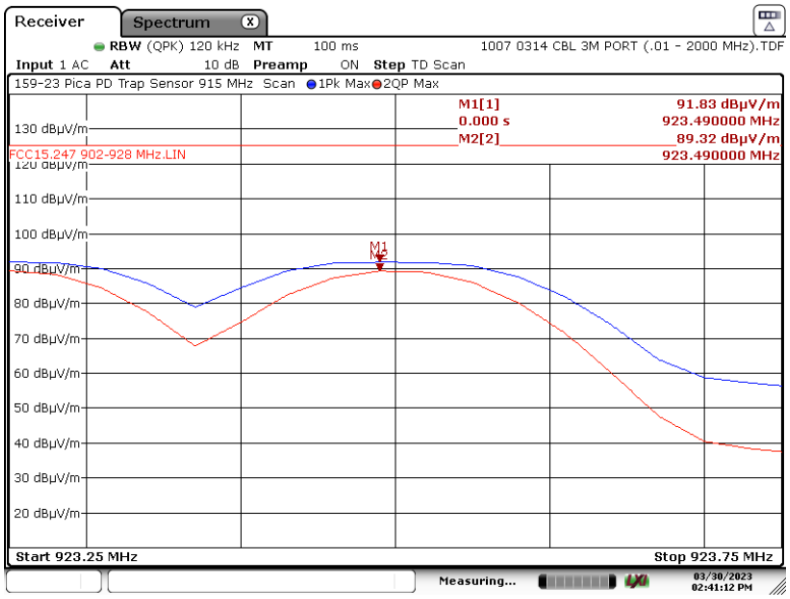
6.1.3. Maximum Peak Conducted Output Power – High Channel



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6. Measurement Data (continued)

6.2. Public Exposure to Radio Frequency Energy Levels (FCC Part 2.1091:2020)

6.2.1. 2.1091 Requirements

Requirement: Reference CFR 2.1091: For purposes of this section, 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.

RF Exposure of simultaneously operated radios within the host which is considered a Mobile Device.
Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0, according to calculated/estimated, numerically modeled, or measured field strengths or power density. The MPE ratio of each antenna is determined at the minimum *test separation distance* required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to the MPE limit at the test frequency

FCC Part 1.1310:2020 Table 1 Limits for General Population / Uncontrolled Exposure
Power Density Limit from 300 to 1500 MHz is f/1500, where f is in MHz
Power Density Limit from 1500 to 100,000 MHz is 1.0

The highest powers from each of these radios including tune up tolerances were used in the table below.

Power Density (S) = (P*G) / $4\pi R^2$, where S = mW/cm^2, P is power to antenna (mW), G = Gain of the Antenna (numeric), π = 3.1416 and R is the distance in cm to the antenna

Frequency (MHz)	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Numeric Gain (dB)	Power Density (mW/cm^2)	Limit (mW/cm2)	Result
	(1)	(2)	(3)	(4)	(5)	
912.75	20	1.68	0	0.0002929	0.61	Compliant

Note: The DUT power was measured as a field strength therefore the numeric gain of the antenna is included.

Result: Compliant - The device under test meets the exclusion requirement detailed in FCC OET 447498, dated October 23, 2015.

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