An IIA Company

Test Report - FCC Part 1.1310_BLE_MPE
Applicant: OBVIUS Robotics, Inc.

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 12/13/2023

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1. Applicant Information

Applicant: OBVIUS Robotics, Inc.
Address: 7 Patton Avenue, #1403
Asheville, North Carolina, 28801, United States

2. Location of Testing

2.1 Test Laboratory

Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at Timco's permanent laboratory located at 849 NW State Road 45, Newberry, Florida 32669

FCC test firm # 578780
FCC Designation # US1070
FCC site registration is under A2LA certificate # 0955.01
ISED Canada test site registration # 2056A
EU Notified Body # 1177
For all designations see A2LA scope # 0955.01

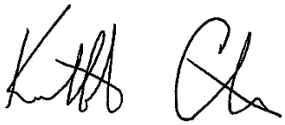
2.2 Testing was performed, reviewed by

Dates of Testing: 7/18/2022 – 7/22/2022

Signature:  Sr. EMC Engineer EMC-003838-NE

Name & Title: Tim Royer, EMC Engineer

Date of Signature 12/13/2023

Signature: 

Name & Title: Kristoffer Costa, EMC Technician

Date of Signature 12/13/2023

3. Test Sample(s) (EUT/DUT)

The test sample was received: 7/18/2022

3.1 Description of the EUT

A description as well as unambiguous identification of the EUT(s) tested. Where more than one sample is required for technical reasons (such as the use of connected units for the purpose of conducted output power testing where the product units will have integral antennas), each specific test shall identify which unit was tested.

Identification	
FCC ID:	2A72J-23782
FCC ID of Certified Module:	XPYEMMYW161
Brief Description	Ultrasound-Guided Needle Positioning System
Model(s) #	CAD-1001
Firmware version	v0.3.0fcc-timco
Software version	v1.0.9-fcc
Serial Number	000008

Technical Characteristics	
Technology	Digital Spread Spectrum
Frequency Range	2400-2483.5 MHz
Antenna Connector	N/A
Voltage Rating (AC or Batt.)	12VDC, Battery

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	n/a	n/a	3 dBi

- Note: Information such as antenna gain, firmware/software numbers are provided by manufacturer and cannot be validated by the test lab.

4. Test methods & Applicable Regulatory Limits

4.1 Test methods/Standards/Guidance:

The following guidance FCC KDB 447498 D01 General RF Exposure Guidance v06 was used for RF exposure evaluation as per FCC Part 1.1310 and FCC Part 2.1091 and part 2.1093. Full test results are available in this report.

4.1.1 FCC Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging Time (minutes)
A Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
B Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*($180/f^2$)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

4.2 Equations

POWER DENSITY

E(V/m) = SQRT (30 * P * G) / d

Pd(W/m^2) = E^2 / 377

S = EIRP / (4 * Pi * D^2v)

Where:

S = Power density, in mW/cm^2
EIRP = Equivalent Isotropic Radiated Power, in mW
D = Separation distance in cm

Power density is converted from units of mW/cm^2 to units of W/m^2 by multiplying by 10.

DISTANCE

D = SQRT (EIRP / (4 * Pi * S))

Where:

D = Separation distance in cm
EIRP = Equivalent Isotropic Radiated Power, in mW
S = Power density in mW/cm^2

SOURCE-BASED DUTY CYCLE (When applicable (for example, multi-slot mobile phone applications) A duty cycle factor may be applied.)

Source-based time-average EIRP = (DC / 100) * EIRP

Where:

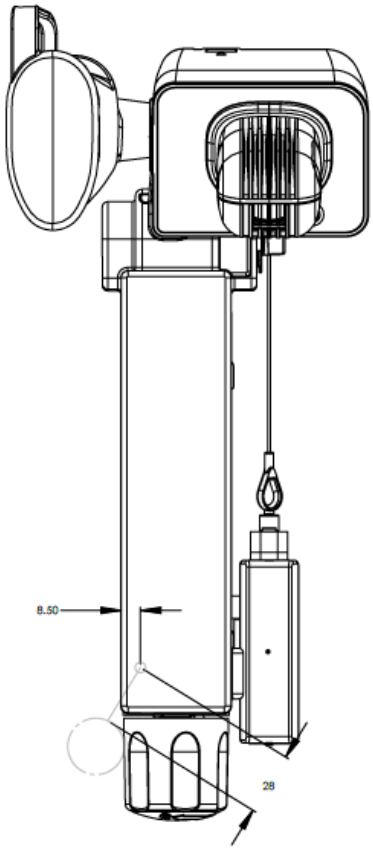
DC = Duty Cycle in % as applicable.
EIRP = Equivalent Isotropic radiated Power, in mW

5. RF Exposure Results

MPE

Frequency Band	Separation Distance (mm)	Max Power + Tolerance (dBm)	Max Power + Tolerance (mW)	SAR Exclusion Value	Limit for 1-g SAR	Limit for 10-g SAR (Extremeties)	SAR Exclusion
2400-2483.5 MHz	28	4.71	2.96	0.17	3.0	7.5	SAR EXEMPT

RESULT: Pass



MINIMUM DISTANCE TO USER EXTREMITY

6. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_3377-22_FCC 1.1310_BLE_MPE_	1	Initial release	06/21/2023
	2	Updated Page 8	6/25/2023
	3	Updated Page 8	12/13/2023

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END OF TEST REPORT