Revision: 1

Issue Date: November 3, 2020 Final Test Date: November 2, 2020







Test Report - FCC PART 1.1310 / MPE Prepared For: VOS Systems LLC

Approved for Release By:

Signature: Bruno Charles

Name & Title: Bruno Clavier, General Manager

Date of Signature

(YYYY-MM-DD): 2020-11-03

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1. Customer Information

Applicant: VOS Systems LLC

Address: 304 W. University Avenue

Gainesville, FL 32601

Contact: Richard Allen Telephone: 352-317-2954

Email address: rallen@alerttrace.com

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: June 12 – September 18, 2020

Signature:

Name & Title: Franklin Rose, EMC Specialist

Date of Signature

(YYYY-MM-DD): 2020-11-3

Sr. EMC Engineer EMC-003838-NE

Signature:

Name & Title: Tim Royer, EMC Engineer

Date of Signature

(YYYY-MM-DD): 2020-11-3

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

The test sample was received: October 27, 2020

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:	2AXBEALERTTRACE			
Brief Description	AlertTrace Wearable Device Circuit			
Type of Modular	N/A			
Model(s) #	AlertTrace			
Trade name	N/A			
Firmware version	N/A			
Software version	N/A			
Serial Number	I6SY-EQ7Q-BFML			

Technical Characteristics				
Technology	Low Power Device			
Frequency Range	2400-2483.5			
RF O/P Power (Max.)	7.4 dBm			
Modulation	GFSK			
Bandwidth & Emission Class	2.29MHz			
Number of Channels	3			
Duty Cycle	N/A			
Antenna Type	1 dBi			
Antenna Gain (for each ant.)	Integrated Trace antenna			
Antenna Connector	Lithium Battery			
Voltage Rating (AC or Batt.)	Low Power Device			

Antenna Characteristics					
Frequency Range	Mode / BW	Antenna Gain			
915	n/a	0 dBi			

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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/cm²)	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/f²)	<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/f²)	<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 <u>mW/cm^2</u> to units of <u>W/m^2</u> 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. General Uncontrolled Exposure RF Exposure Results

Transmitter Type: AlertTrace Wearable Device Circuit

Separation Distance: 20 cm

Freq. band	Separation Distance (cm)	O/P (dBm)	Antenna Gain (dBi)	Duty Cycle (%)	EIRP (mW)	PD (mW/cm^ 2)	LIMIT mW/cm^2)
2402	20	7.4	1	100	5.5	0.00109	1

RESULT: Pass at DISTANCE 20cm

6. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_2967-20_FCC_MPE_1	1	Initial release	November 2, 2020

END OF TEST REPORT