



Test Report - FCC Part 1.1310/ MPE
Applicant: goTenna Inc.

Signature:

Sr. EMC Engineer
EMC-003838-NE



Name & Title: Tim Royer, EMC Engineer

Date of Signature 6/3/2024

Signature:

Name & Title: Kristoffer Costa, EMC Technician

Date of Signature 6/3/2024

This test report relates only to the items tested as identified and is not valid for any subsequent changes or modifications made to the equipment under test.

Table of Contents

1.	APPLICANT INFORMATION.....	3
2.	LOCATION OF TESTING.....	3
2.1	TEST LABORATORY.....	3
3.	TEST SAMPLE(S) (EUT/DUT).....	3
3.1	DESCRIPTION OF THE EUT.....	4
4.	TEST METHODS & APPLICABLE REGULATORY LIMITS.....	5
4.1	TEST METHODS/STANDARDS/GUIDANCE:.....	5
4.1.1	<i>FCC Limits for Maximum Permissible Exposure (MPE)</i>	5
4.2	EQUATIONS.....	6
5.	RF EXPOSURE RESULTS.....	7
6.	HISTORY OF TEST REPORT CHANGES.....	8

1. Applicant Information

Applicant: goTenna Inc.
Address: 101 Hudson Street
Suite 1701
Jersey City, New Jersey, 07302, 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 IIA's permanent laboratory located at 13146 NW 86th Drive, Suite 400, Alachua, Florida 32615.

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

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

The test sample was received: 3/12/2024

Dates of Testing: 3/14/2024 – 3/15/2024

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:	2ABVK373372
Brief Description	Mobile Mesh Networking Device
Model(s) #	N/A
Firmware version	N/A
Software version	N/A
Serial Number	N/A

Technical Characteristics	
Frequency Range	380 MHz- 450 MHz
RF O/P Power (Max.)	5W
Modulation	FM
Bandwidth & Emission Class	F1D
Antenna Connector	SMA
Voltage Rating (AC or Batt.)	Battery

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	n/a	n/a	0 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

$$E(V/m) = \text{SQRT} (30 * P * G) / d$$

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

$$S = \text{EIRP} / (4 * \text{Pi} * D^2v)$$

Where:

S = Power density, in mW/cm²

EIRP = Equivalent Isotropic Radiated Power, in mW

D = Separation distance in cm

Power density is converted from units of mW/cm² to units of W/m² by multiplying by 10.

DISTANCE

$$D = \text{SQRT} (\text{EIRP} / (4 * \text{Pi} * S))$$

Where:

D = Separation distance in cm

EIRP = Equivalent Isotropic Radiated Power, in mW

S = Power density in mW/cm²

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

$$\text{Source-based time-average EIRP} = (\text{DC} / 100) * \text{EIRP}$$

Where:

DC = Duty Cycle in % as applicable.

EIRP = Equivalent Isotropic radiated Power, in mW

5. RF Exposure Results

Test Results, Mode 1		
Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
420	36.53	4.497
445	36.70	4.677

FCC IDENTIFIER: 2ABVK373372

Name of Grantee: goTenna Inc.

Equipment Class: Licensed Non-Broadcast Station Transmitter

Notes: Mobile Mesh Networking Device

<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>	<u>Output Watts</u>	<u>Frequency Tolerance</u>	<u>Emission Designator</u>
EF ES	90	150.0 - 173.3	4.764	0.93 PM	7K41F1D
EF ES	90	450.0 - 479.0	4.853	0.79 PM	7K34F1D
EF ES	90	150.0 - 173.3	4.764	0.93 PM	11K9F1D
EF ES	90	450.0 - 479.0	4.853	0.79 PM	11K9F1D

Notes: The power level for TR_12608-24 is less than original Certification. Further MPE/SAR evaluation is not necessary.

6. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_12608-24_FCC 1.1310/ MPE_	1	Initial release	6/17/2024



13146 NW 86th Drive, Suite 400, Alachua, Florida 32615
(352) 472-5500 / testing@industrial-ia.com

END OF TEST REPORT
