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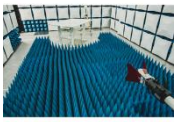

MEASUREMENT REPORT
Part 96

Applicant Name:
Inseego Corporation
9605 Scranton Road Suite 300
San Diego, CA 92121
United States

Date of Testing:
5/8/2019 – 5/8/2019
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M1903200042-01.PKR

FCC ID:	**PKRISGM1000**
APPLICANT:	**INSEEGO**

Application Type:	Certification
Model:	M1000
EUT Type:	Wireless Hotspot Modem
FCC Classification:	Citizens Band End User Devices (CBE)
FCC Rule Part(s):	96
Test Procedure(s):	KDB 940660 D01 v01, WINNF-TS-0122 V1.0.0

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Randy Ortanez
President

Authorized Test Lab

ACCREDITED
TESTING CERT#2041.01

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST is a CBRS Alliance (OnGo) Approved Test Lab
- PCTEST is a WInnForum Approved Test Lab
- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for CBRS Alliance Certification Test Plan and WInnForum Conformance and Performance Test Technical Standard.
- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Inseego Wireless Hotspot Modem FCC ID: PKRISGM1000**. The test data contained in this report pertains only to the EUT's LTE Band 48 operation in the CBRS band.

Test Device Serial Number: 990013090015335
Test Device SW Version Number: 1D

2.2 Test Configuration

The EUT was tested per the guidance of KDB 940660 D01 v01, WINNF-TS-0122 V1.0.0.

2.3 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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3.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Keysight	N9020A	MXA Spectrum Analyzer	4/29/2019	Annual	4/29/2020	MY54500644
Weinschel	4T-20	20dB Attenuator	2/20/2019	Annual	2/20/2020	N/A
Seekonk	NC-100	Torque Wrench	5/4/2018	2 Years	5/4/2020	N/A
Ruckus Wireless	Q710-US02	Smart Cell Q710 Access Point	N/A	N/A	N/A	511729000096
Dell	Latitude 5580	Test Harness Laptop	N/A	N/A	N/A	N/A

Table 3-1. Test Equipment

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4.0 TEST RESULTS

4.1 Summary

Company Name: Inseego

FCC ID: PKRISGM1000

FCC Classification: Citizens Band End User Devices (CBE)

Mode(s): LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
96.47	End User Device Additional Requirements (CBSD Protocol)	End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.	CONDUCTED	PASS	Section 7.2

Table 4-1. Summary of Conducted Test Results

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4.2 End User Device Additional Requirement (CBSD Protocol)

§96.47

Test Overview and Limit

End user device additional requirements (CBSD Protocol) are tested per the test procedures listed below. During testing, the EUT is connected to a certified CBSD (Ruckus FCC ID: S9GQ710US02) as a companion device to show compliance with Part 96.47.

End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

Test Procedure Used

KDB 940660 D01 v01, WINNF-TS-0122 V1.0.0.

Test Setup/Method

The EUT was connected to a certified CBSD and spectrum analyzer. The following procedure is performed by applying WINNF-TS-0122 CBRS CBSD Test Specification.

1. Run#1:
    a. Setup Rucksu AP with 3670MHz – 3690MHz.
    b. Enable AP service from Ruckus Cloud management.
    c. Check EUT Tx frequency and power.
    d. Disable AP service from Ruckus Cloud management and check EUT stop transmission within 10s.
2. Run#2:
    a. Setup Ruckus AP with 3550MHz – 3570MHz.
    b. Enable AP service from Ruckus Cloud management.
    c. Check EUT Tx frequency and power.
    d. Disable AP service from Ruckus Cloud management and check EUT stop transmission within 10s.

Test Notes

The EUT is an End User Device.

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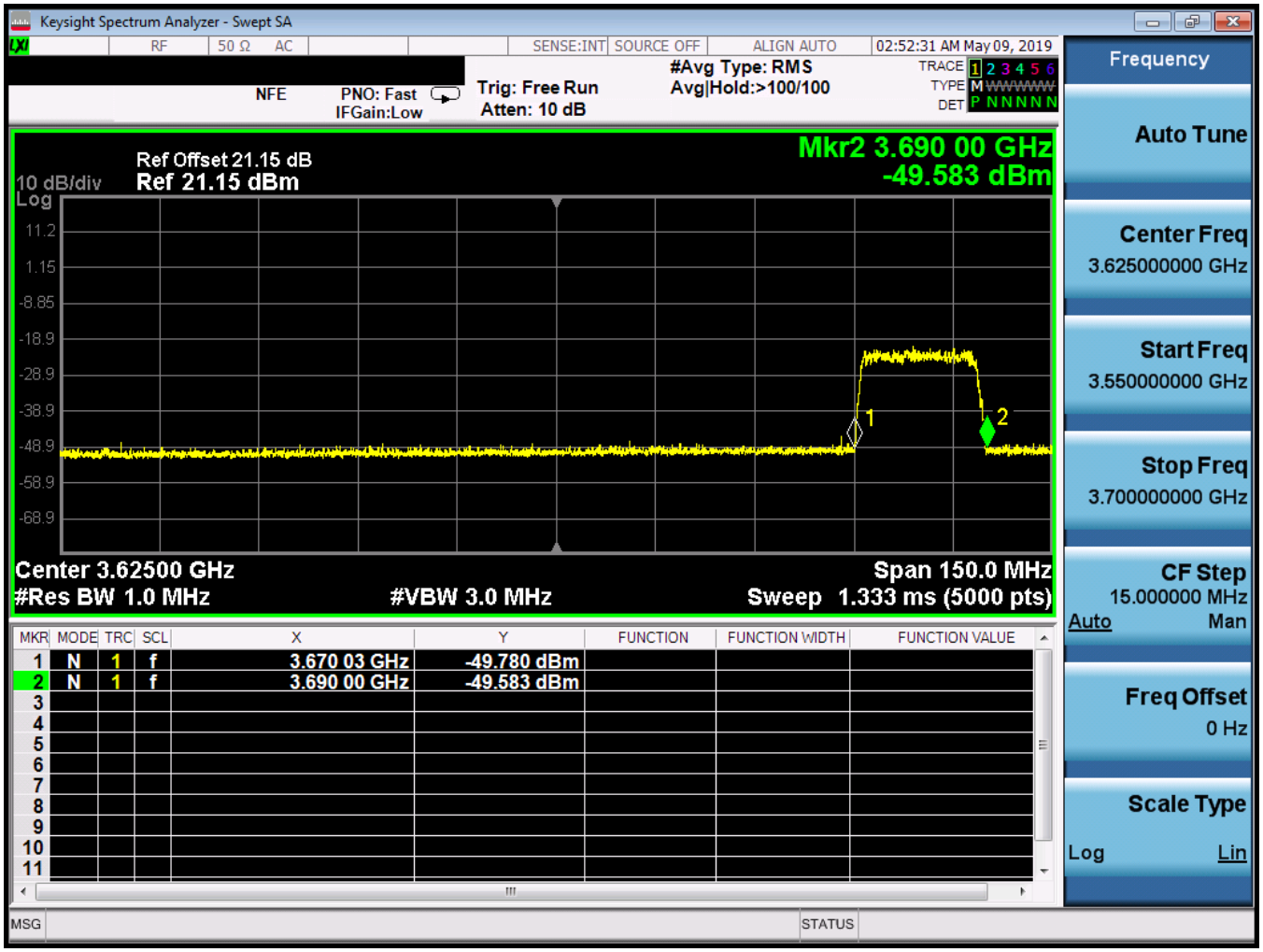
Run#1:

- Tx frequency set: 3670 – 3690MHz.



Plot 4-1. Run#1 End User Device Frequency of Operations

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Plot 4-2. Run#1 End User Device Discontinues Operations within 10s

Note:

Marker 1: CBSD sends instructions to discontinue LTE operations.
Marker 2: EUT discontinues operation.
Marker 3: 10 seconds elapsed time from CBSD sending instructions to EUT.

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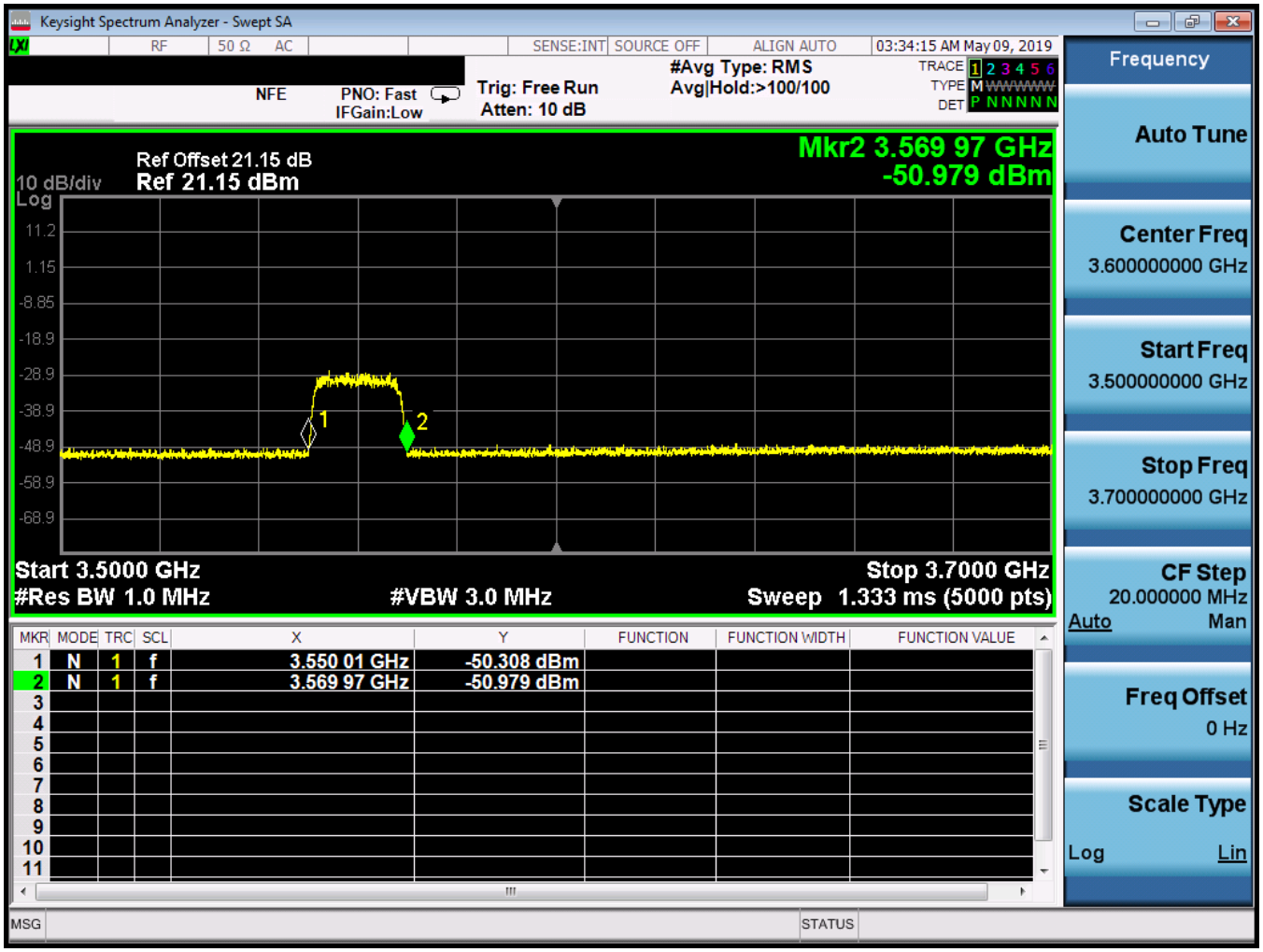
Run#2:

- Tx frequency set: 3550– 3570MHz.



Plot 4-3. Run#2 End User Device Frequency of Operations

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Plot 4-4. Run#2 End User Device Discontinues Operations within 10s

Note:

Marker 1: CBSD sends instructions to discontinue LTE operations.
Marker 2: EUT discontinues operation.
Marker 3: 10 seconds elapsed time from CBSD sending instructions to EUT.

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5.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the Inseego Wireless Hotspot Modem **FCC ID: PKRISGM1000** complies with all of the End User Device requirements of Part 96.47 of the FCC Rules.

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