



Compliance Testing, LLC

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

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<http://www.ComplianceTesting.com>

info@ComplianceTesting.com

Date: August 27, 2010

Applicant: Spot, LLC
300 Holiday Square Blvd
Covington, LA 70433

Attention of: Christopher Robinson, Design Engineer
Ph: (985) 335-1530
Fax: (985) 335-1730
Email: chris.robinson@globalstar.com

Equipment: SMTPH
FCC ID: L2V-SMTPH
FCC Rules: Part 25

Enclosed please find your copy of the Engineering Test Report for which you are subject to the restrictions as listed on the attached summary. This report may not be reproduced, except in full, without written permission from Compliance Testing, LLC. Please retain a copy in your records for archival purposes.

Once a Telecommunication Certification Body (TCB) issues a Grant the Federal Communication Commission (FCC) has 30 days to review the application and request added information. It is your decision whether or not to market the equipment subject to a possible recall before the end of the 30 days.

If your equipment is still retained by us, it will be returned to you 30 days after approval is achieved. Our invoice for services has been directed to your Accounts Payable Department.

For any additional information please contact us.

Sincerely,

Compliance Testing



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Test Report

For

FCC ID: L2V-SMTPH

Model: SMTPH

Description:

2.4 GHz Bluetooth Transceiver, GPS Receiver,
and 1.6 GHz Simplex Transmitter

to

Federal Communications Commission

Rule Part(s) 25

Date of report: August 27, 2010

At the Request of:

Spot, LLC
300 Holiday Square Blvd
Covington, LA 70433

Attention of:

Christopher Robinson, Design Engineer
Ph: (985) 335-1530
Fax: (985) 335-1730
Email: chris.robinson@globalstar.com

by

Compliance Testing, LLC
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Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax



Test Report Revision History

Revision	Date	Revised By	Reason for revision
1.0	August 27, 2010	G. Corbin	Original Document



Testimonial and Statement of Verification

This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, the facts set forth in the application and accompanying technical data are true and correct to the best of my knowledge and belief.

A handwritten signature in black ink that reads "Greg Corbin".

Certifying Engineer:

Greg Corbin



Table of Contents

<u>Rule</u>	<u>Description</u>	<u>Page</u>
	Standard Test Conditions and Engineering Practices	5
	List of General Technical Information	7
	Test Results Summary	8
25.204	Power limits	9
25.202(f)	Emissions Limitations for Mobile Earth Stations	10
	Occupied Bandwidth	16
25.202(f)	Emission Masks	19
25.216(h)	Emissions Limits for Mobile Earth Stations	22
25.202(d)	Frequency Tolerance (Temperature Variation)	24
25.202(d)	Frequency Tolerance (Voltage Variation)	25
	Test Equipment Utilized	26



Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2009, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Environmental Conditions	
Temperature	Humidity
24.3 – 31.5 deg C	38 – 39.1%

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2 and the following individual Parts: FCC Part 25 Satellite Communications



A2LA

“A2LA has accredited Compliance Testing, LLC in Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 ‘General Requirements for the Competence of Testing and Calibration Laboratories’ and any additional program requirements in the identified field of testing.”

Please refer to www.a2la.org for current scope of accreditation.

Certificate number: 2152.01



TESTING CERT# 2152.01

FCC OATS Reg. Number 933597

Industry Canada OATS Number 2011A-1



List of General Technical Information

In Accordance with FCC Rules and Regulations Volume II, Part 2 and to Part 25

Name and Address of Applicant: Spot, LLC
300 Holiday Square Blvd
Covington, LA 70433

Manufacturer: Spot, LLC
300 Holiday Square Blvd
Covington, LA 70433

Model Number: SMTPH

(c)(3): **Instruction Manual(s):** Please see attached exhibits

(c)(4): **Type of Emission:** BPSK

(c)(5): **Frequency Range, MHz:** 1611.25 – 1618.75

(c)(6): **Power Rating, Watts:** .181
 _____ Switchable _____ Variable X N/A

EUT Description

The EUT is a transmitter module containing a 2.4 GHz Bluetooth Transmitter, a Class 1 GPS receiver, and a 1.6 GHz Simplex Transmitter.
 The EUT is powered by 2 "AA" Lithium batteries during normal operation.
 The EUT connects to a PC USB port for firmware updates only.
 The transmitters are disabled when the EUT is connected to a USB port.

Accessories used during testing:

Type	Quantity	Manufacturer	Model	Serial No.	FCC ID
None	None	None	None	None	None



Test Results Summary

Specification	Test Name	Pass, Fail, N/A	Comments
25.204	Power Limits	Pass	
25.202(f)	Emissions Limitations for Mobile Earth Stations	Pass	
N/A	Occupied Bandwidth	N/A	Provided for reference only
25.202 (f)	Emission Masks	Pass	
25.216(g)(i)	Emissions Limits for Mobile Earth Stations	Pass	
25.202(d)	Frequency Tolerance	Pass	



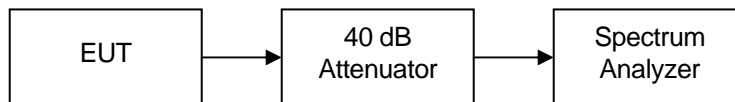
Name of Test: Power Limits
Specification: 25.204
Test Equipment Utilized i00331

Engineer: G. Corbin
Test Date: 8/12/2010

Test Procedure

The EUT was connected directly to a spectrum analyzer with the RBW set to 1MHz. The peak readings were taken and recorded in the following table. All cable and attenuator losses were summed and input into the analyzer as a reference level offset to ensure accurate readings.

Test Setup



Transmitter Peak Output Power

Tuned Frequency MHz	Conducted Output Power dBm	Antenna Gain dBi	EIRP Output Power dBm	EIRP Output Power watts	Specification Limit
1611.25	22.6	-0.5	22.1	.181	No limit for Earth Stations
1618.75	22.1	-0.5	21.6	.162	No limit for Earth Stations



Name of Test:
Specification:
Test Equipment Utilized

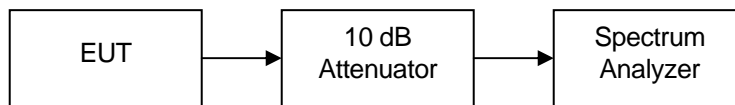
Emissions Limitations for Mobile Earth Stations
25.202(f)
i00331

Engineer: G. Corbin
Test Date: 8/12/2010

Test Procedure

The EUT was connected directly to a spectrum analyzer and the conducted spurious emissions were measured to ensure that the EUT met the requirements specified. Only the worst-case emission at each frequency was reported. Notch and/or high pass filters were utilized as necessary to ensure that the fundamental power did not force the input of the spectrum analyzer into compressions. These losses in addition to cable losses were input into the analyzer as a reference level offset to ensure accurate measurements were obtained.

Test Setup

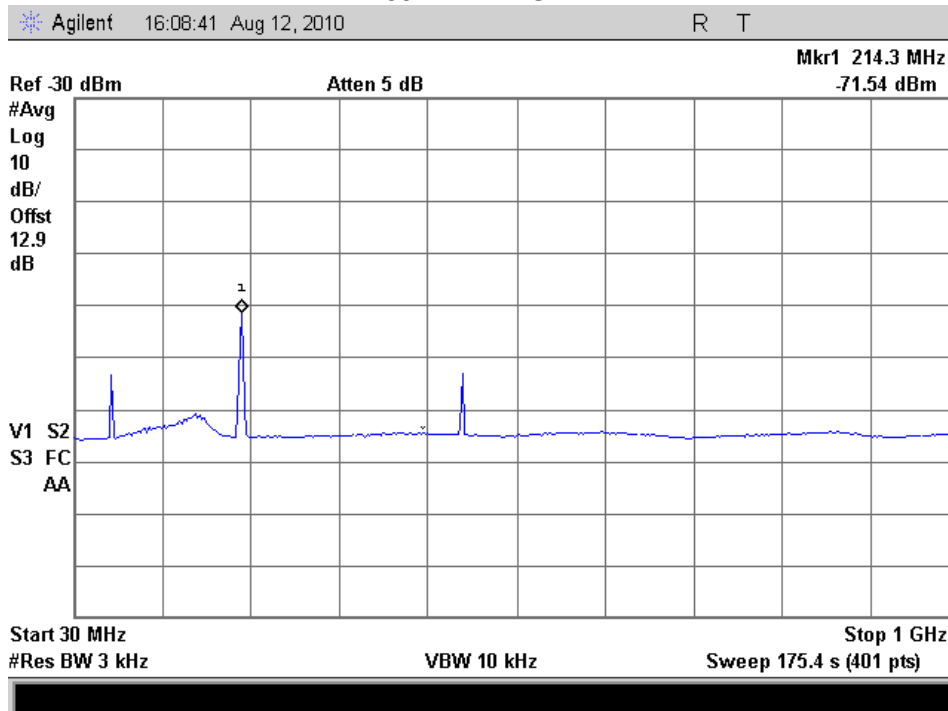


Emissions Limitations Summary Table

Tuned Freq (MHz)	Result	Comments
1611.25 MHz	Pass	See Plots
1618.75 MHz	Pass	See Plots

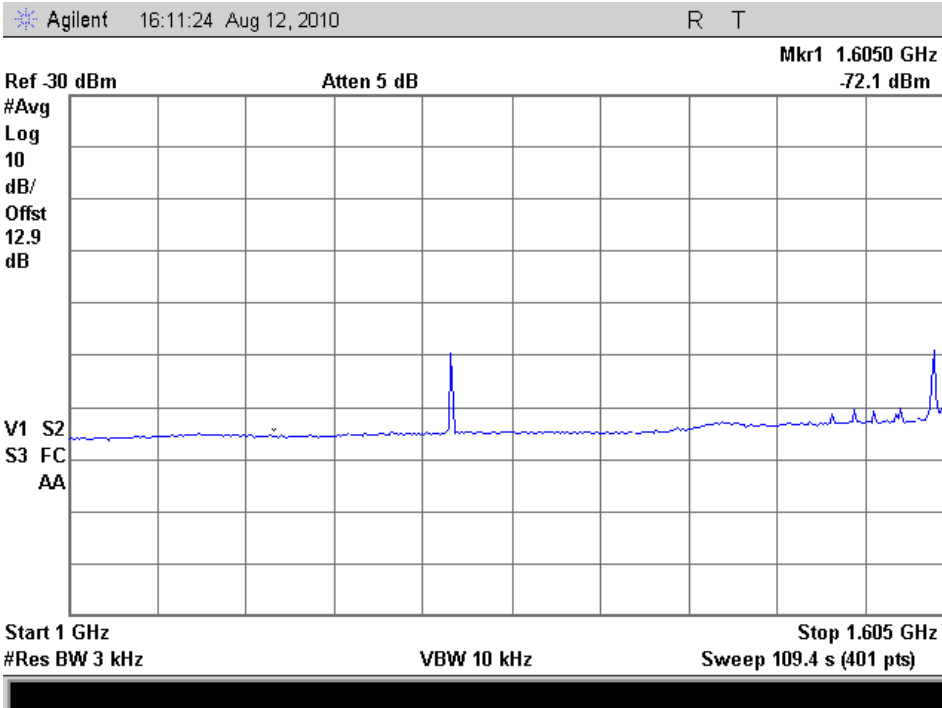
Conducted Spurious Emissions 1611.25 MHz

30 MHz – 1 GHz

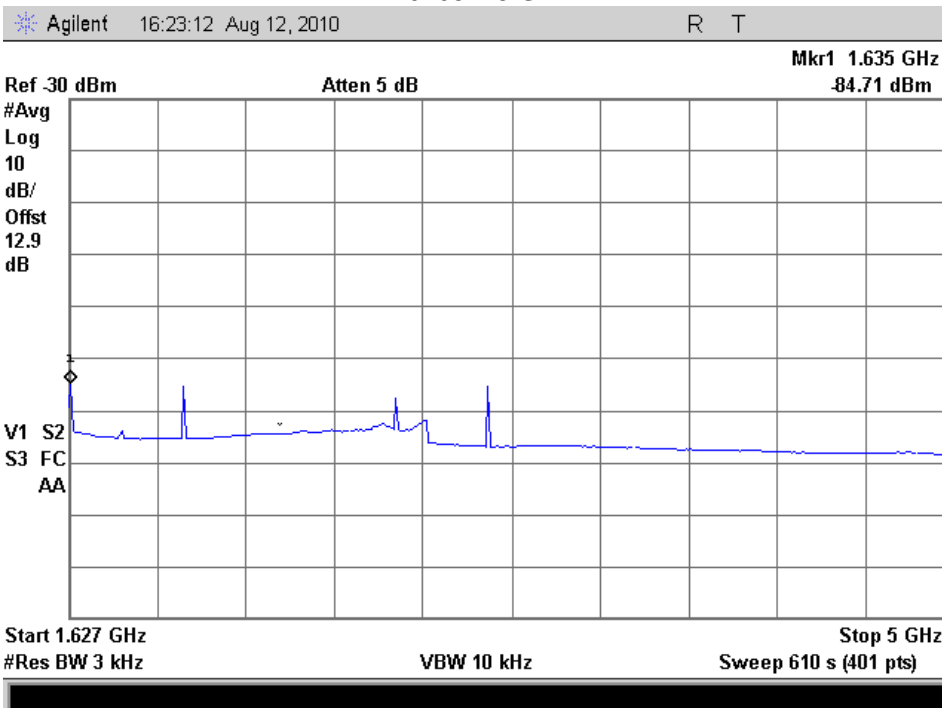




1 – 1.605 GHz

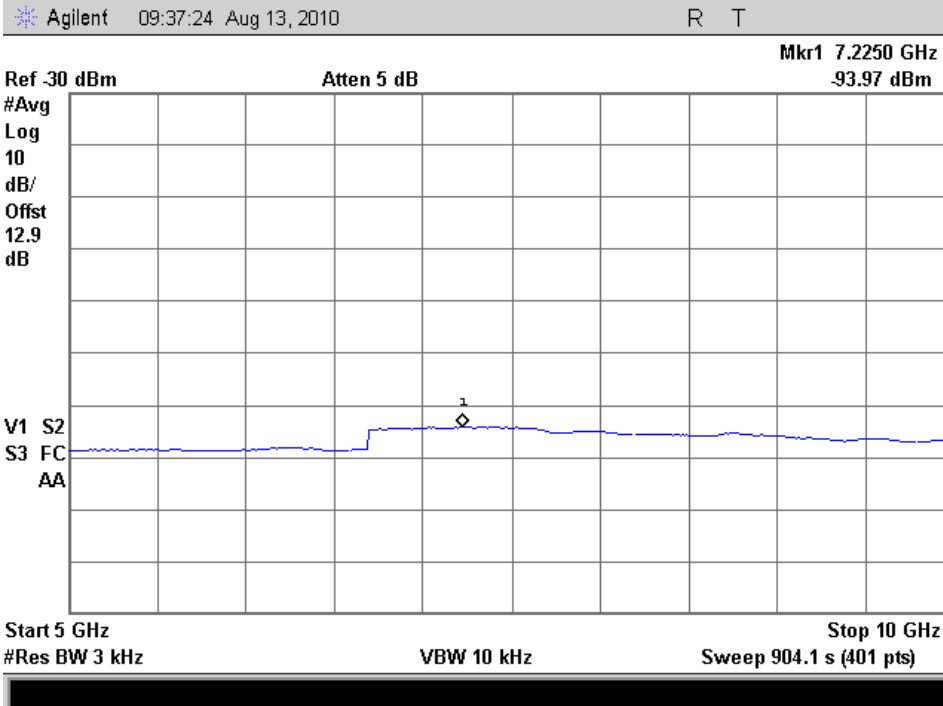


1.6265 – 5 GHz

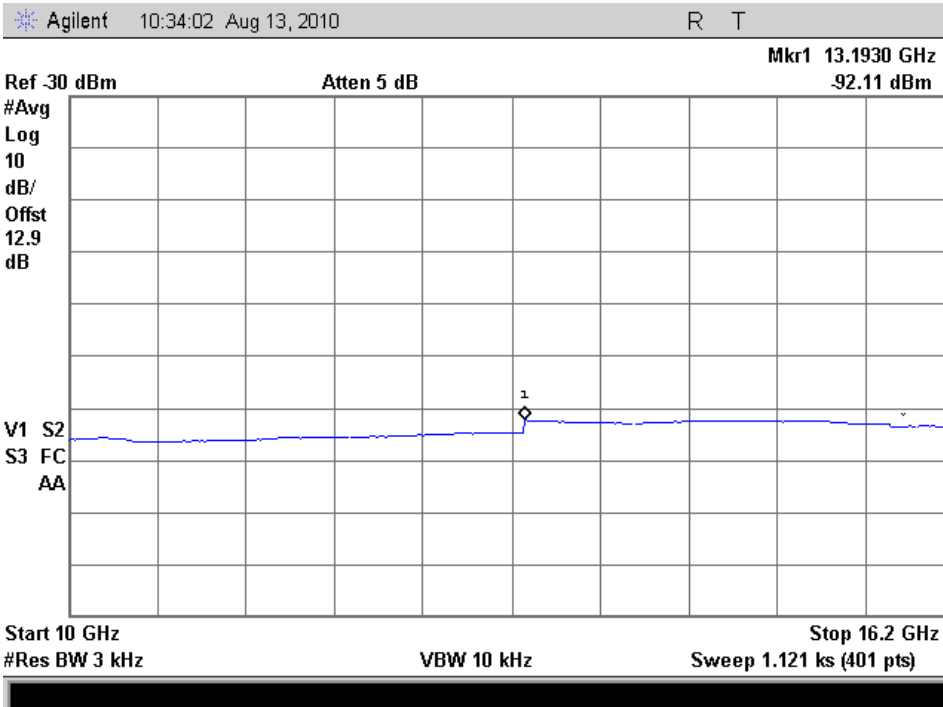




5 – 10 GHz



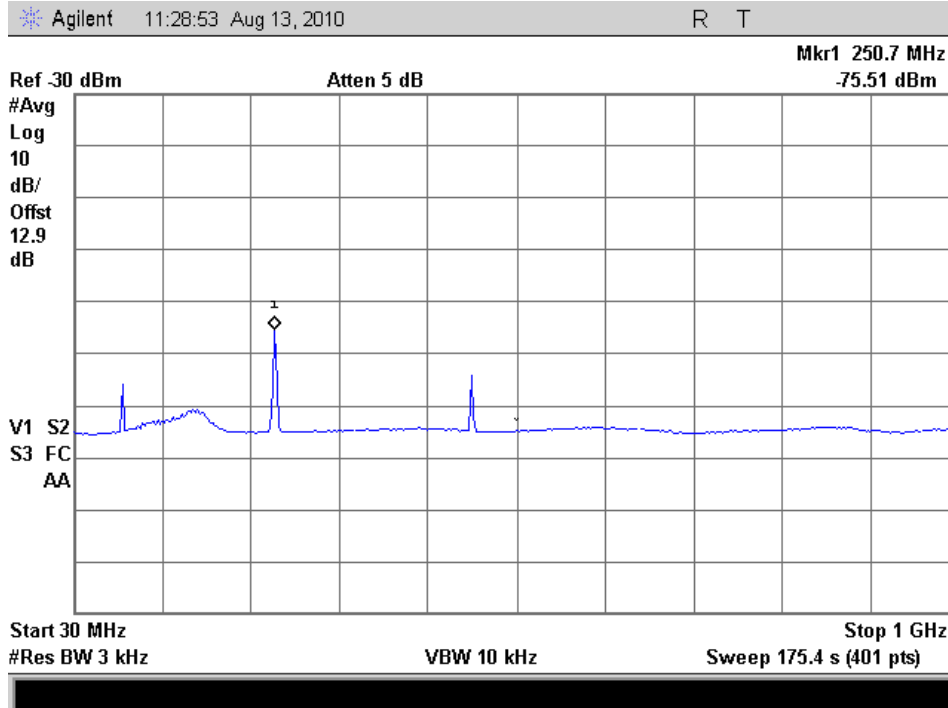
10 – 16.2 GHz



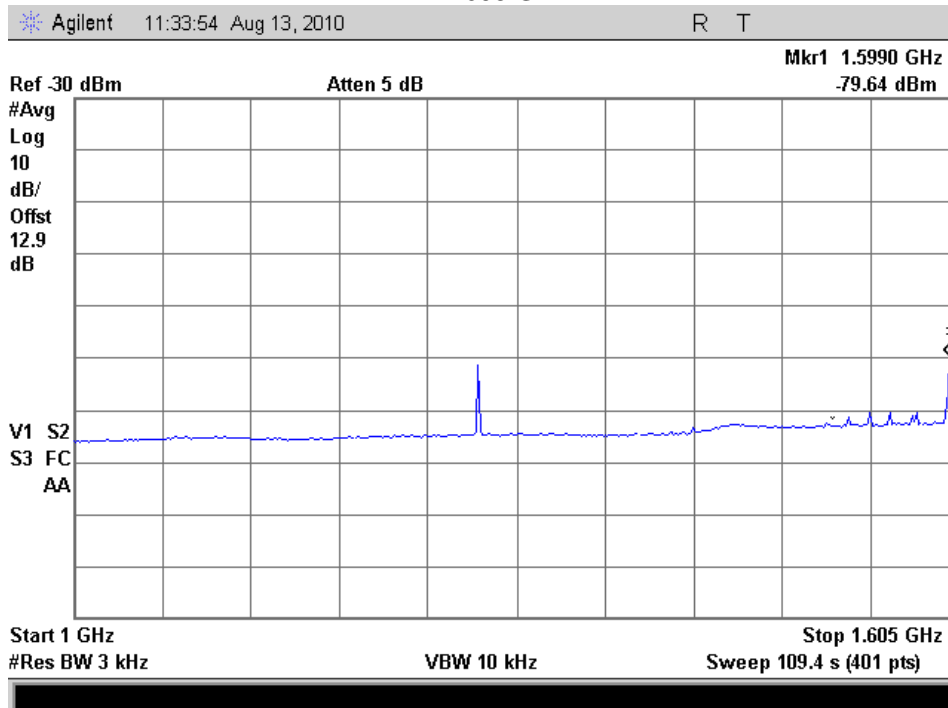


Conducted Spurious Emissions 1618.75 MHz

30 MHz – 1 GHz

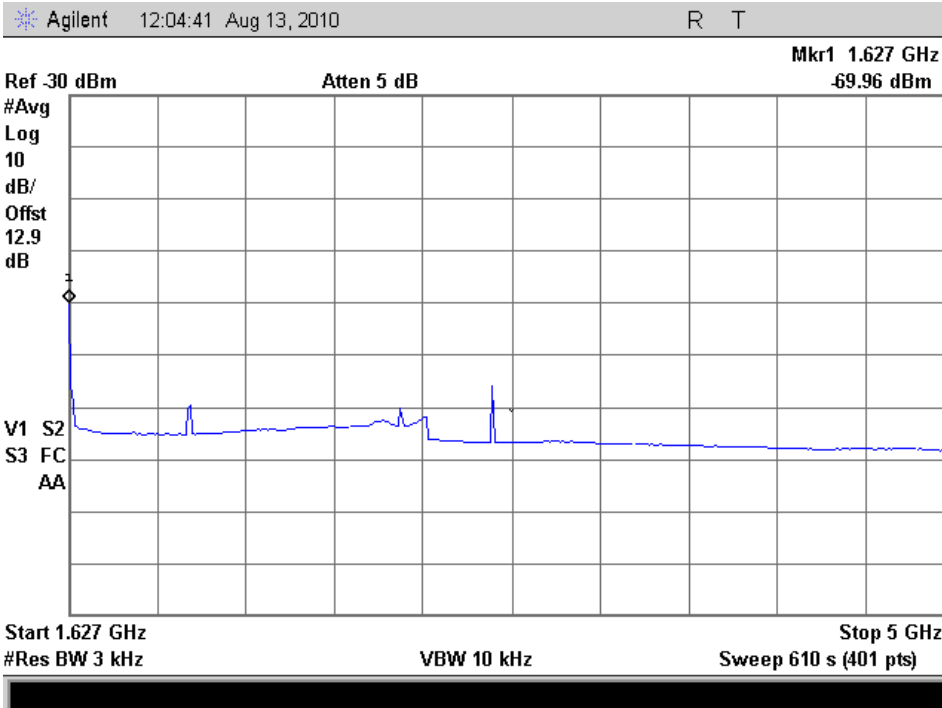


1 – 1.605 GHz

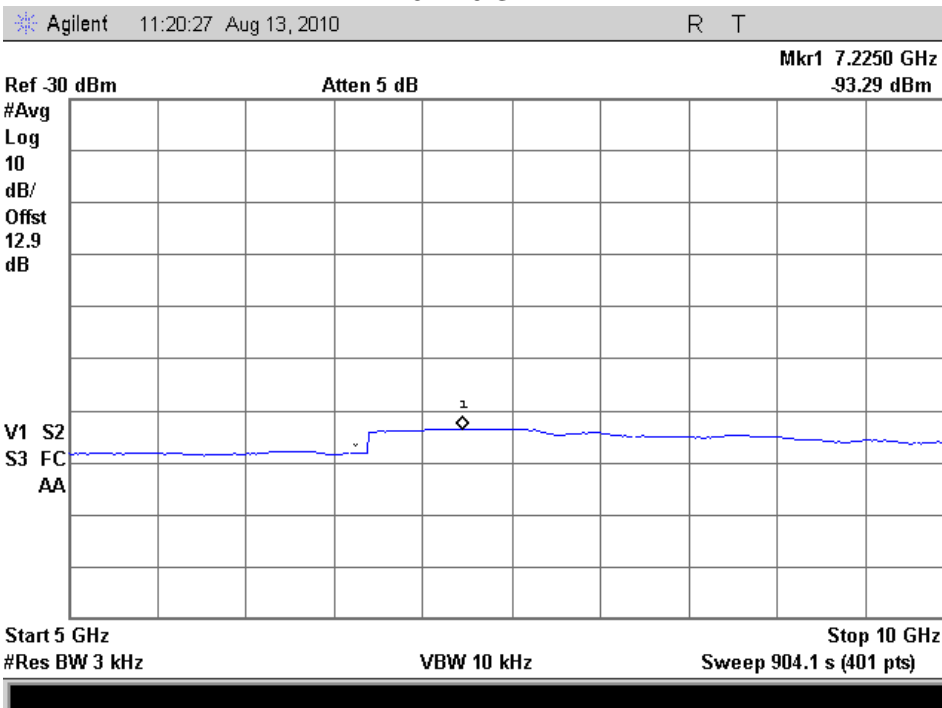




1.6265 – 5 GHz

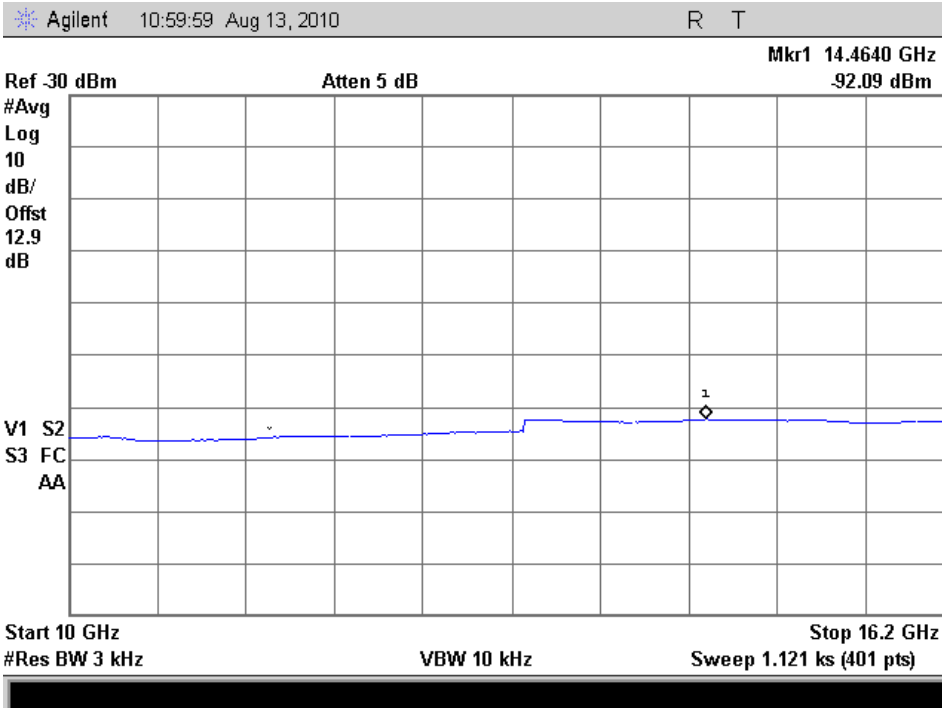


5 – 10 GHz





10 – 16.2 GHz





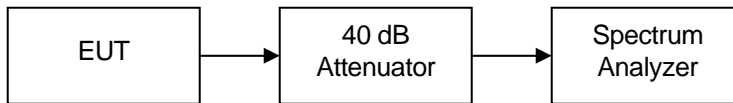
Name of Test: Occupied Bandwidth
Specification: N/A
Test Equipment: i00331

Engineer: G. Corbin
Test Date: 8/12/2010

There is no requirement for occupied bandwidth in part 25 for mobile earth stations however the emissions masks are based upon the occupied bandwidth. This information is reported for reference only.

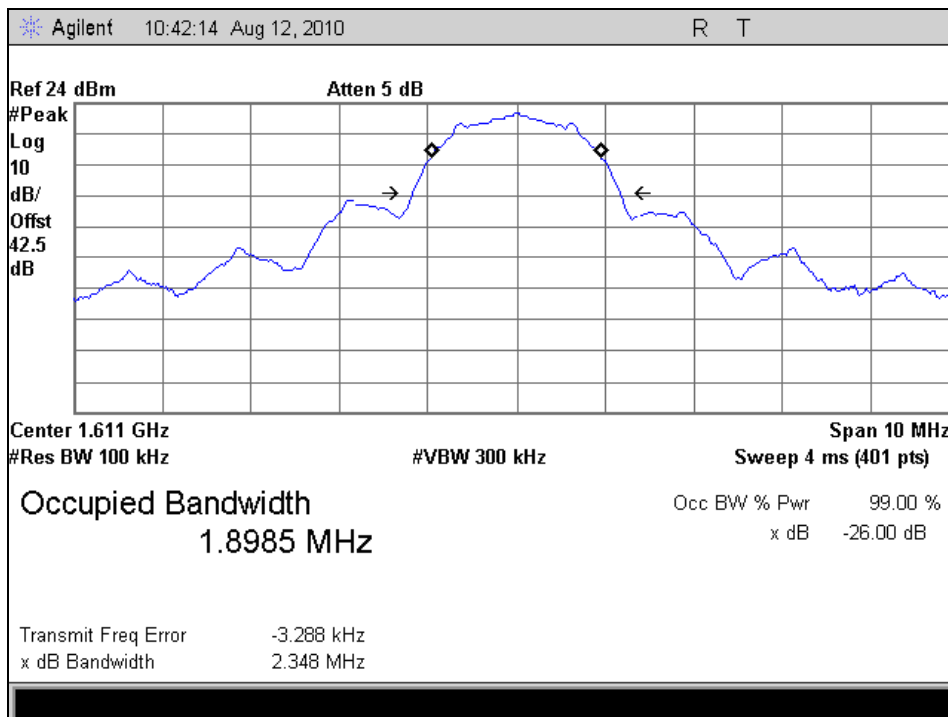
Test Procedure

The EUT was connected directly to a spectrum analyzer. The occupied bandwidth of the modulated output was measured and plotted.



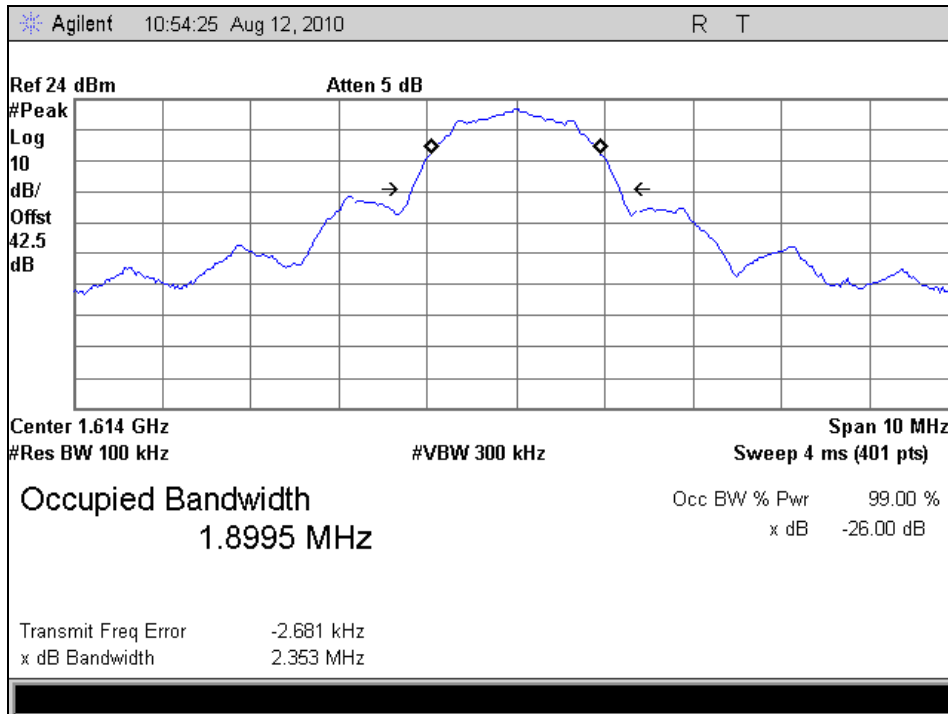
Occupied Bandwidth Plots

1611.25 MHz Emission Mask Plot

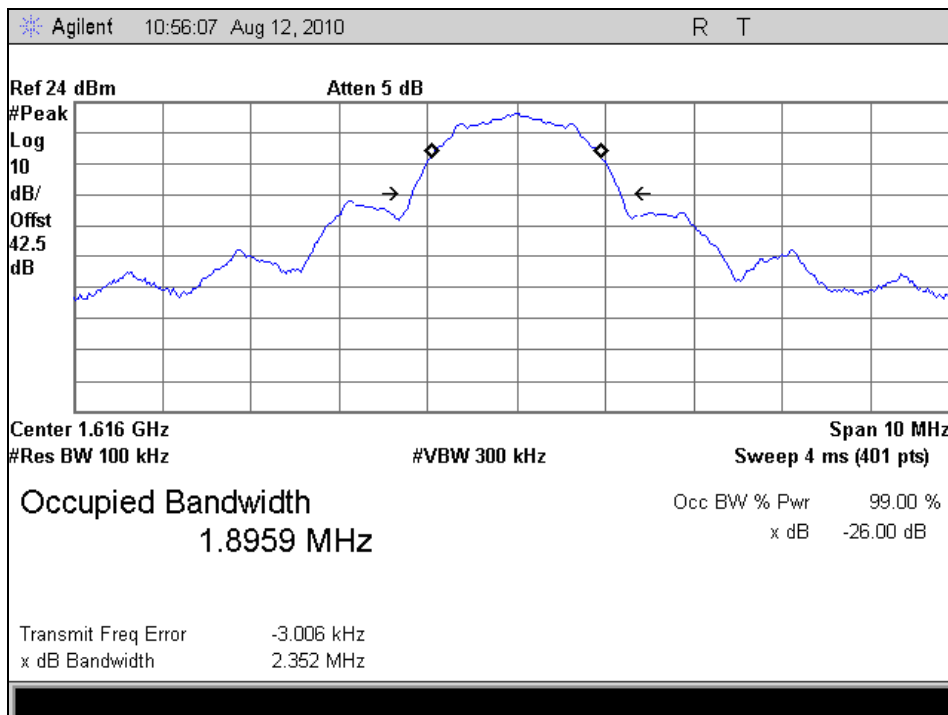




1613.75 MHz Emission Mask Plot

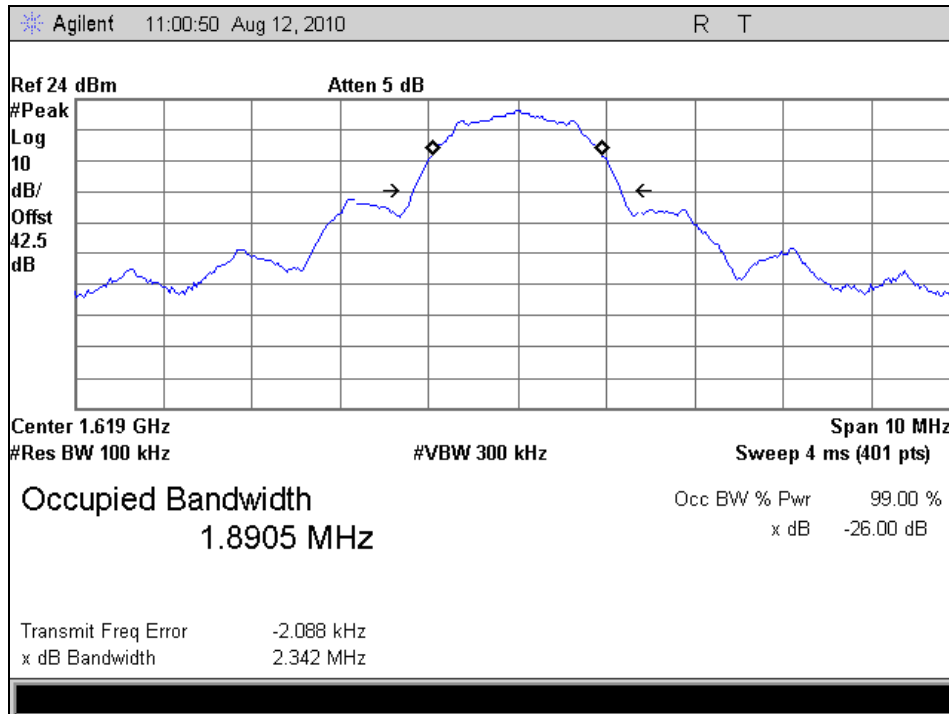


1616.25 MHz Emission Mask Plot





1618.75 MHz Emission Mask Plot





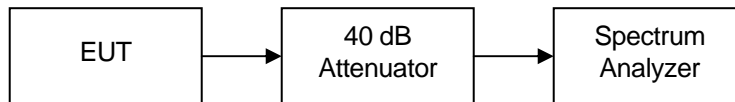
Name of Test: Emission Masks
Specification: 25.202(f)
Test Equipment Utilized i00331

Engineer: G. Corbin
Test Date: 8/12/2010

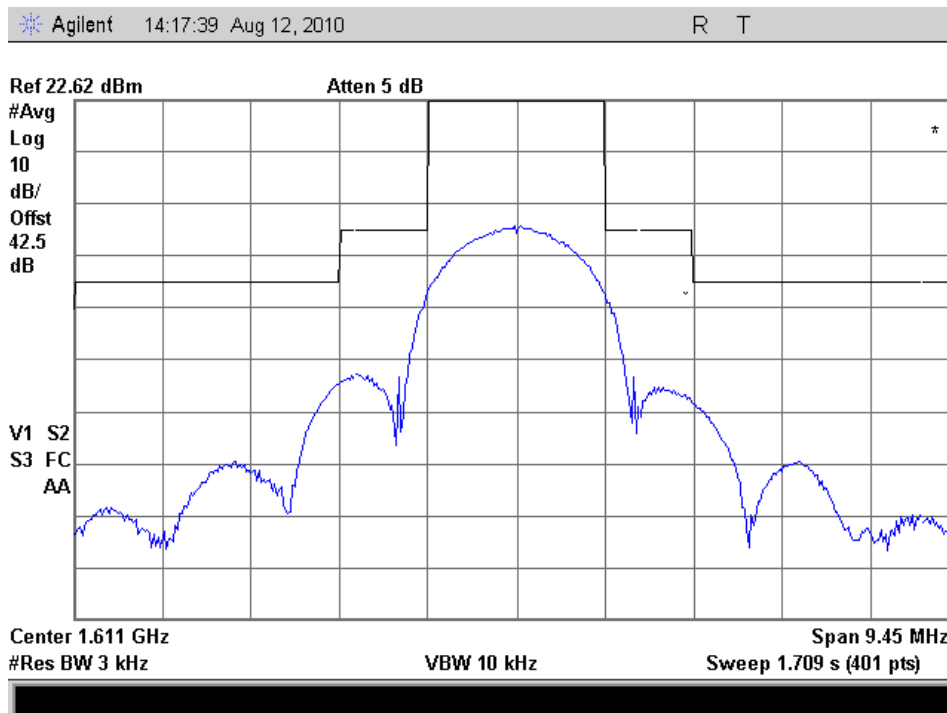
Test Procedure

The EUT was connected directly to a spectrum analyzer to verify that the EUT met the requirements for emission mask. The reference level was offset for the peak power output with the resolution bandwidth set for greater than 3 times the occupied bandwidth of a modulated signal. The emission masks for both modulation types and occupied bandwidths were measured and plotted.

Test Setup

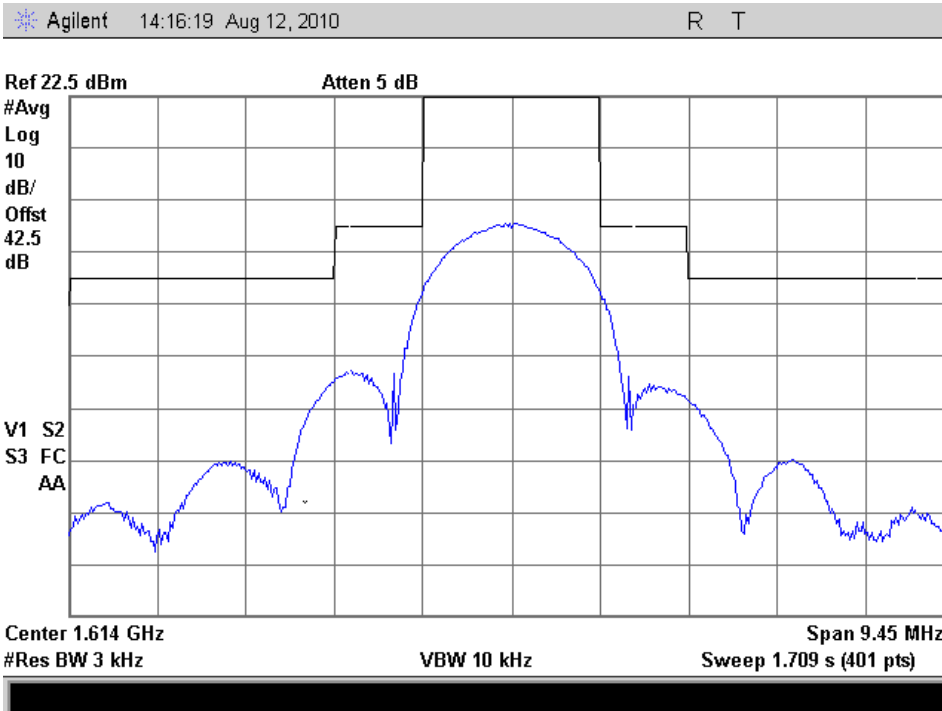


1611.25 MHz Emission Mask Plot

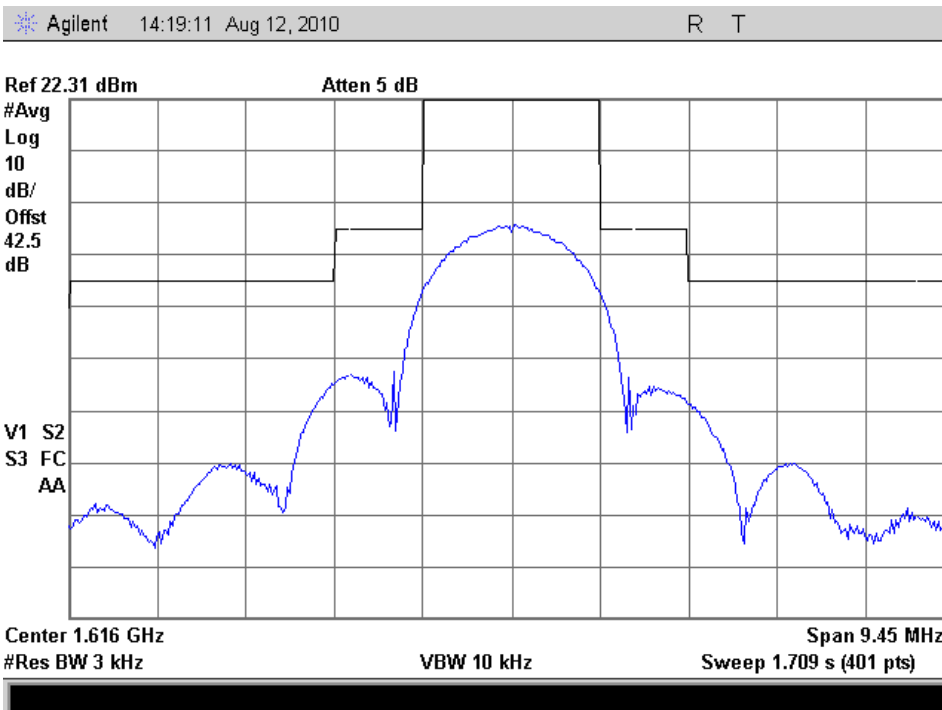




1613.75 MHz Emission Mask Plot

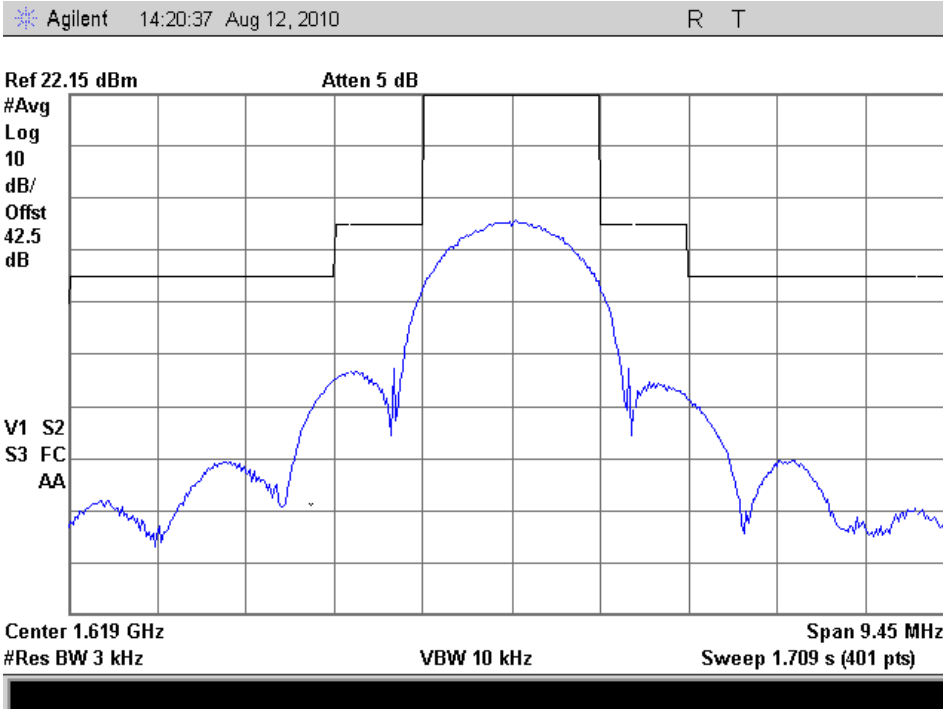


1616.25 MHz Emission Mask Plot





1618.75 MHz Emission Mask Plot





Name of Test:
Specification:
Test Equipment Utilized

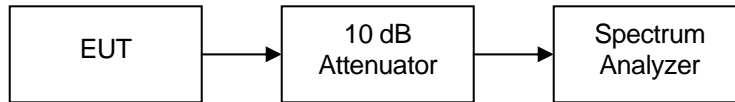
Emissions Limits for Mobile Earth Stations
25.216(g)(i)
i00331

Engineer: G. Corbin
Test Date: 8/13/2010

Test Procedure

The UUT was connected directly to a spectrum analyzer and the conducted spurious emissions were measured to ensure that the UUT met the requirements specified. Cable and attenuator losses were input into the analyzer as a reference level offset to ensure accurate measurements were obtained.

Test Setup



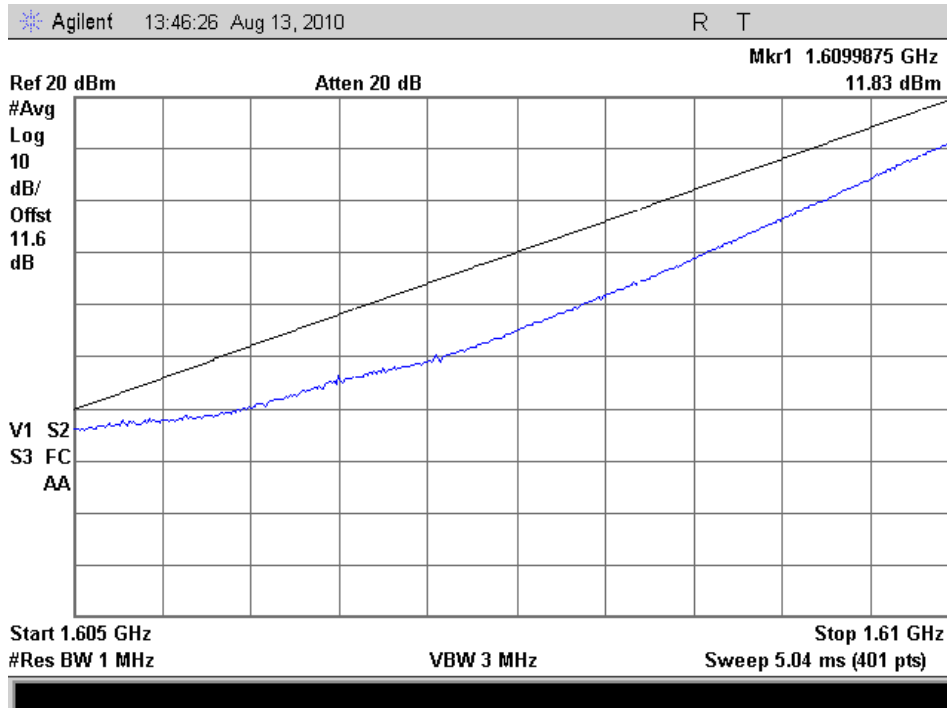
Transmitter Unwanted Emissions 25.216 (g)

Tuned Freq (MHz)	Result	Comments
1611.25	Pass	See Plots
1618.75	Pass	See Plots

Transmitter Unwanted Emissions 25.216 (g)

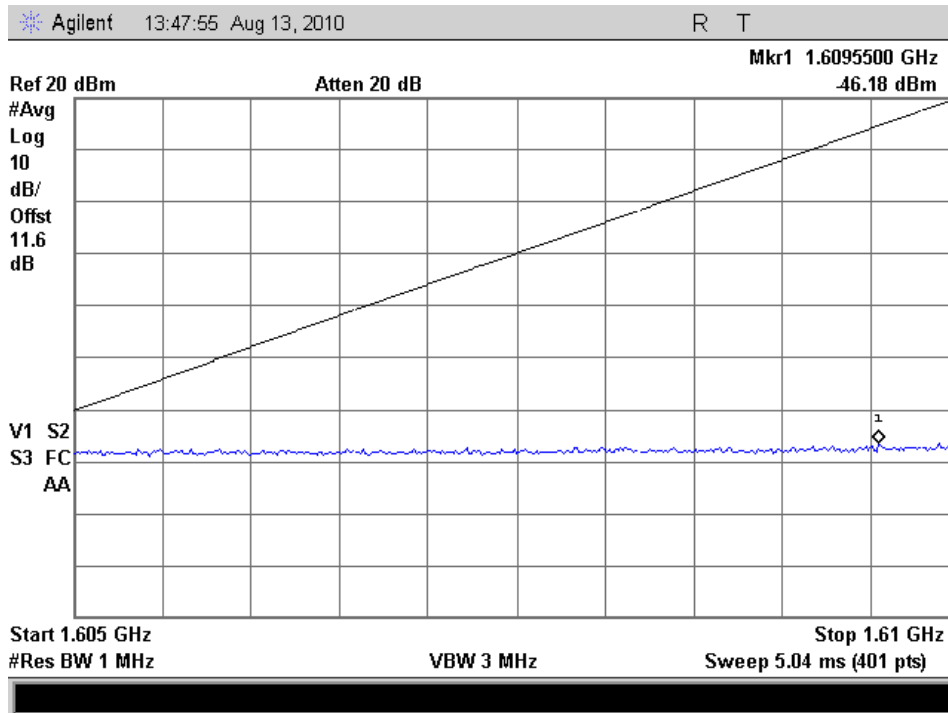
Tuned Freq (MHz)	Result	Comments
Off State	Pass	See Plots

1611.25 MHz Transmitter Unwanted Emissions

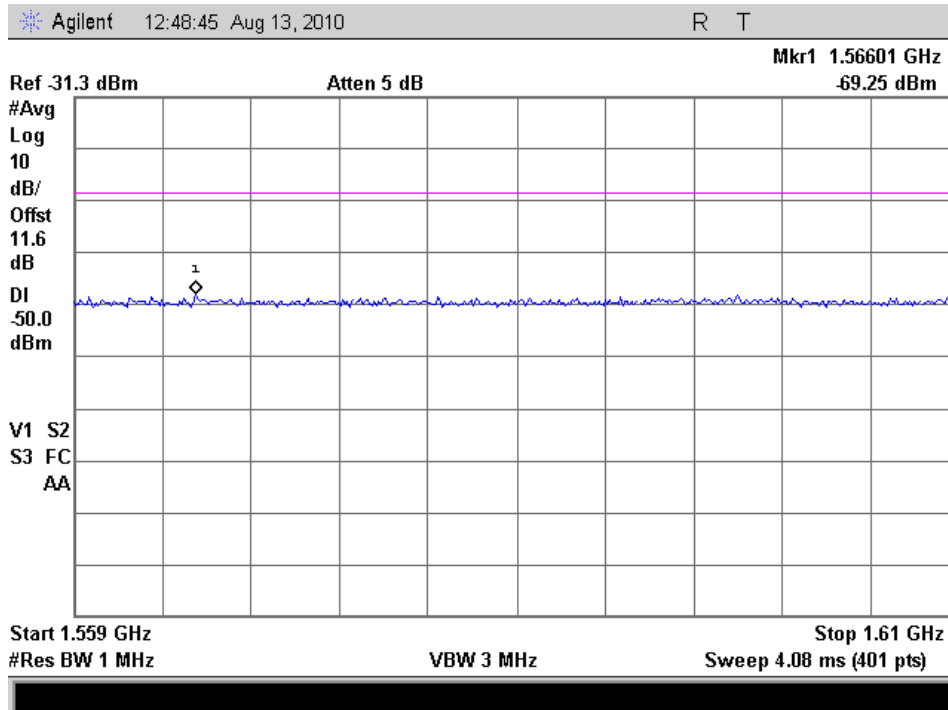




1618.75 MHz Transmitter Unwanted Emissions



Off State Unwanted Emissions



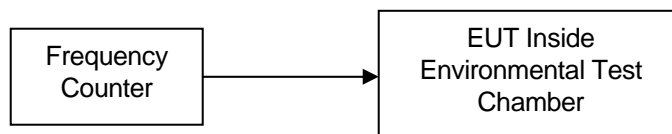


Name of Test: Frequency Tolerance
Specification: 25.202(d)
Test Equipment Utilized: i00027, i00320, i00331, i00350

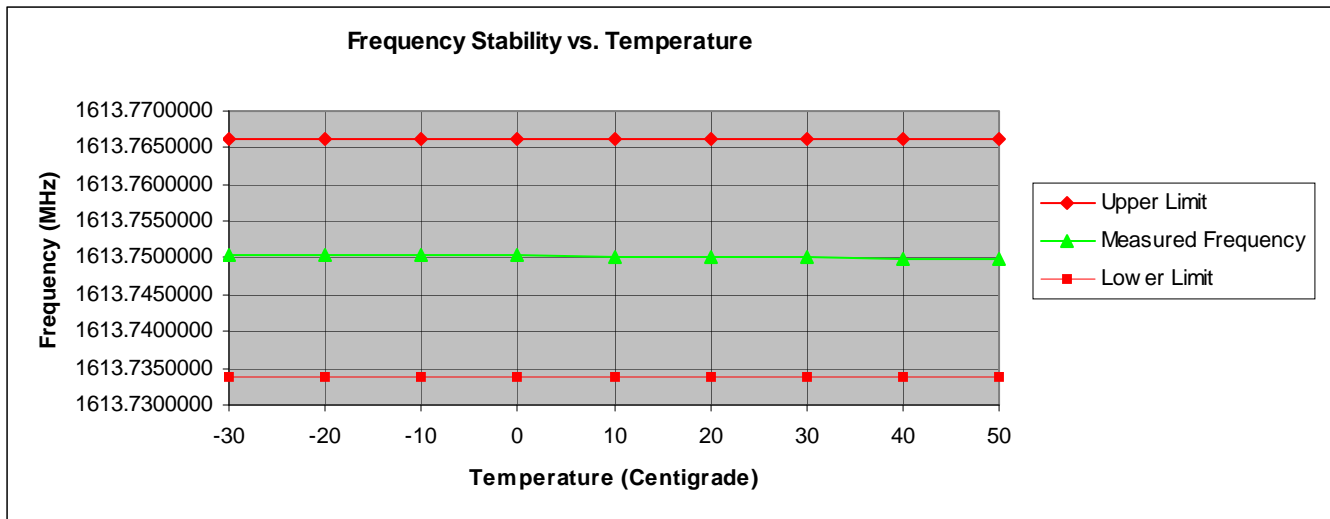
Engineer: G. Corbin
Test Date: 8/11/2010

Test Procedure

The EUT was placed in an environmental test chamber and the temperature was raised from -30°C to 50°C in 10°C increments. The EUT RF output was connected directly to a frequency counter. At each 10°C increment the frequency was measured.



Test Plot

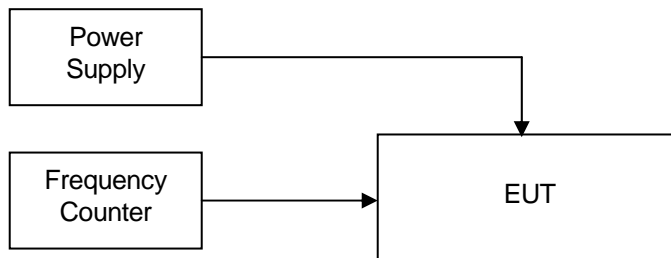




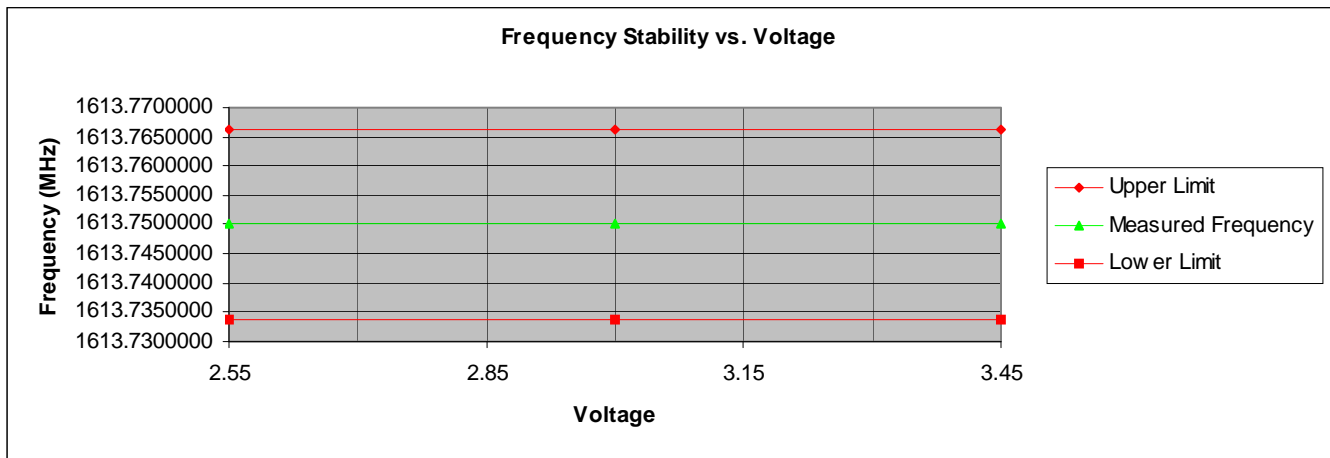
Name of Test: Frequency Tolerance (Voltage Variation)
Specification: 25.202(d) **Engineer:** G. Corbin
Test Equipment Utilized: i00027, i00320, i00331, i00350 **Test Date:** 8/11/2010

Test Procedure

The EUT was powered by a test power supply. The EUT RF output was connected directly to a frequency counter. The EUT output frequency was measured at the nominal voltage and the +/- 15% voltage levels for the UUT.



Test Plot





Test Equipment Utilized

Description	MFG	Model Number	CT Asset Number	Last Cal Date	Cal Due Date
DC Power Supply	Kenwood	PR18-3A	i00008	NCR	NCR
Temperature Chamber	Tenny	Tenny Jr	i00027	12/8/2009	12/8/2010
DMM	Fluke	75III	i00320	2/16/2010	2/16/2011
Spectrum Analyzer	Agilent	E4407B	i00331	11/3/2009	11/3/2010
Power Supply	HP	6654A	i00350	NCR	NCR

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

End of Test Report