MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*
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13301 MCCALLEN PASS • AUSTIN, TEXAS 78753 • PHONE (512) 287-2500 • FAX (512) 287-2513

March 4, 2014

Digital Receiver Technology, Inc.
12409 Milestone Center Dr.
Germantown, MD 20876

Dear Steve Hudson,

Enclosed is the EMC Wireless test report for compliance testing of the Digital Receiver Technology, Inc., DRT9957B - Amplifier, tested to the requirements of Title 47 of the Code of Federal Regulations (CFR), Part 90 for Land Mobile Radio Services.

Thank you for using the services of MET Laboratories, Inc. If you have any questions regarding these results or if MET can be of further service to you, please feel free to contact me.

Sincerely yours,
MET LABORATORIES, INC.

Jennifer Warnell
Documentation Department

Reference: (\Digital Receiver Technology, Inc.\EMC39286-FCC90 Rev. 2)

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Electromagnetic Compatibility Criteria Test Report

For the

Digital Receiver Technology, Inc.
DRT9957B - Amplifier

Tested under

The FCC Verification Rules
Contained in Title 47 of the CFR, Part 90
for Private Land Mobile Radio Services

MET Report: EMC39286-FCC90 Rev. 2

March 4, 2014

Prepared For:
Digital Receiver Technology, Inc.
12409 Milestone Center Dr.
Germantown, MD 20876

Prepared By:
MET Laboratories, Inc.
914 W. Patapsco Ave.
Baltimore, MD 21230

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MET Report: EMC39286-FCC90 Rev. 2

Benjamin Taylor
Project Engineer, Electromagnetic Compatibility Lab

Jennifer Warnell
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is / is not capable of operation in accordance with the requirements of Part 90 of the FCC Rules under normal use and maintenance.

Asad Bajwa,
Director, Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	February 7, 2014	Initial Issue.
1	February 25, 2014	Revised to reflect customer corrections.
2	March 4, 2014	Editorial correction.

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List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBµA	**D**eci**b**els above one **micro**amp
dBµV	**D**eci**b**els above one **micro**volt
dBµA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBµV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent
E	**E**lectric Field
DSL	**D**igital **S**ubscriber **L**ine
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
FCC	**F**ederal **C**ommunications **C**ommission
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**ert**z**
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**h**ert**z**
kPa	**k**ilo**pa**scal
kV	**k**ilo**v**olt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**h**ertz
µH	**microh**enry
µ	**microf**arad
µs	**micros**econds
NEBS	**N**etwork **E**quipment-**B**uilding **S**ystem
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
TWT	**T**raveling **W**ave **T**ube
V/m	**V**olts **per m**eter
VCP	**V**ertical **C**oupling **P**lane

Executive Summary

1. Testing Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 90. All tests were conducted using measurement procedure ANSI TIA/EIA-603-A-2004.

Reference	Description	Compliance
§2.1046; §90.205	RF Power Output	Compliant
§2.202	Occupied Bandwidth	Compliant
§90.210	Emission Mask	Not Applicable – This EUT is strictly an amplifier.
§2.1051; §90.210	Spurious Emissions at Antenna Terminals	Compliant
§2.1053; §90.210	Field Strength of Spurious Emissions	Compliant
§90.213	Frequency Stability	Not Applicable – This EUT is strictly an amplifier, and is not responsible for initial signal generation.
NA	Filter Response	NA
N/A	Intermodulation	Compliant

Equipment Configuration

2. Equipment Configuration

2.1. Overview

MET Laboratories, Inc. was contracted by Digital Receiver Technology, Inc. to perform testing on the DRT9957B - Amplifier under quote number 053066.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Digital Receiver Technology, Inc., DRT9957B - Amplifier.

An EMC evaluation to determine compliance of the DRT9957B - Amplifier with the requirements of Part 90 was conducted. (All references are to the most current version of Title 47 of the Code of Federal Regulations in effect). In accordance with §2.1033, the following data is presented in support of the Certification of the DRT9957B - Amplifier. Digital Receiver Technology, Inc. should retain a copy of this document and it should be kept on file for at least five years after the manufacturing of the EUT has been **permanently** discontinued. The results obtained relate only to the item(s) tested.

Model(s) Tested:	DRT9957B Amplifier	
Model(s) Covered:	DRT9957B Amplifier	
EUT Specifications:	Primary Power Source: 120 VAC, 60 Hz	
	FCC ID: XLM9957B1	
	Type of Modulations:	TDMA
	Max Output Power: (Amplifier):	37.85 dBm
	Equipment Code:	AMP
	EUT Frequency Ranges:	851 – 869 MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature (15-35º C):	
	Relative Humidity (30-60%):	
	Barometric Pressure (860-1060 mbar):	
Evaluated by:	Benjamin Taylor	
Report Date(s):	March 4, 2014	

2.2. References

CFR 47, Part 90	Private Land Mobile Radio Services
ANSI C63.4:2003	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ISO/IEC 17025:2005	General Requirements for the Competence of Testing and Calibration Laboratories
EIA/TIA-603-A-2001	Land Mobile FM or PM Communication Equipment Measurement and Performance Standards

2.3. Test Site

All testing was performed at MET Laboratories, Inc., 914 W, Patapsco Ave., Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

2.4. Description of Test Sample

The DRT9957B - Amplifier, Equipment Under Test (EUT), is an RF power amplifier used with DRT base stations operating in the cellular, PCS, AWS, and TDMA 850MHz bands.

2.5. Equipment Configuration

Name / Description	Model Number	Part Number	Serial Number
TacTRAM	DRT9957B	--	--

Table 1. Equipment Configuration

2.6. Support Equipment

Digital Receiver Technology, Inc. supplied support equipment necessary for the operation and testing of the DRT9957B - Amplifier. All support equipment supplied is listed in the following Support Equipment List.

Ref. ID	Name / Description	Manufacturer	Model Number	Customer Supplied Calibration Data
--	Base Station	DRT	DRT1183C	--
--	Toughbook PC	Panasonic	CF-19	CF-19KDRAX6M

Table 2. Support Equipment

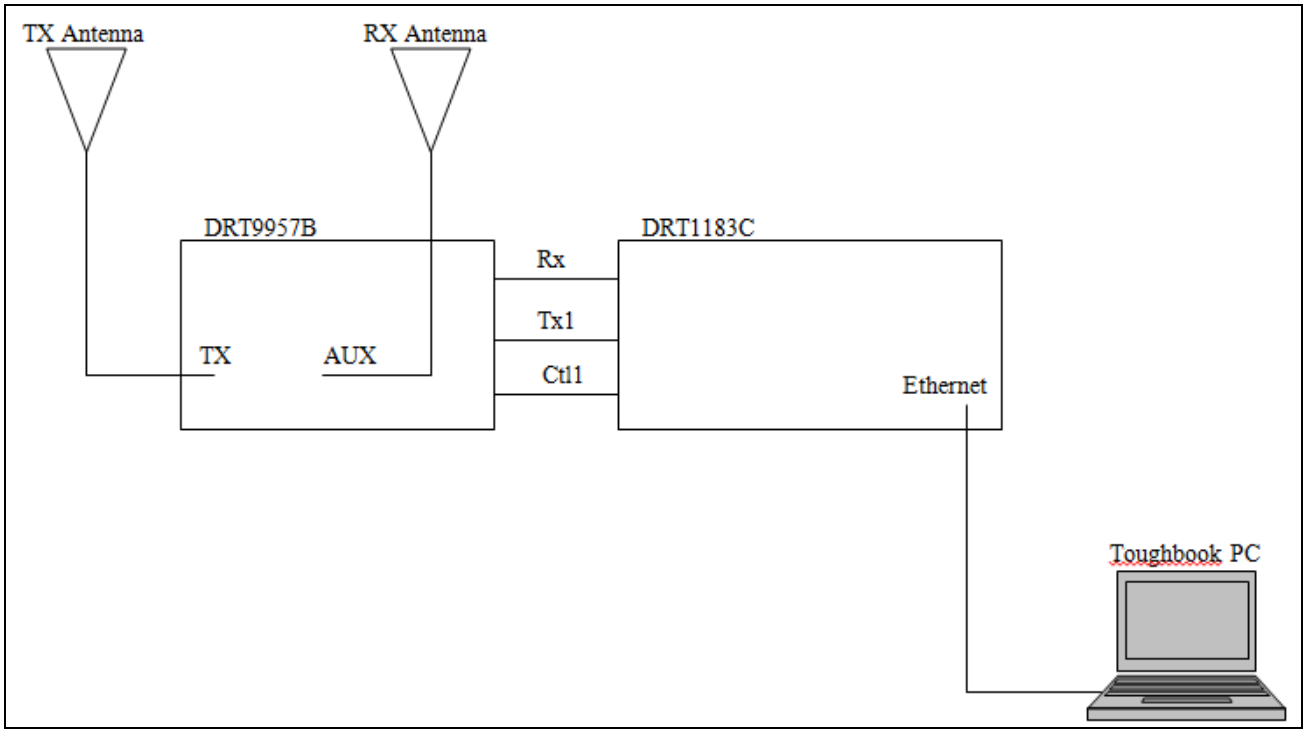


Figure 1. Block Diagram of Equipment Configuration

2.7. Mode of Operation

EUT operates as an RF power amplifier for DRT mobile base stations in GSM, CDMA, and WCDMA in the Cellular, PCS, and AWS bands, and TDMA in the 850 MHz band.

2.8. Method of Monitoring EUT Operation

Ran control software on a connected PC.

2.9. Modifications

2.9.1. Modifications to EUT

No modifications were made to the EUT.

2.9.2. Modifications to Test Standard

No modifications were made to the test standard.

2.10. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to Digital Receiver Technology, Inc. upon completion of testing.

III. Electromagnetic Compatibility Criteria for Intentional Radiators

3. Electromagnetic Compatibility RF Power Output Requirements

3.1. RF Power Output

Test Requirement(s): **§2.1046 and §90.635**

Test Procedures: As required by 47 CFR 2.1046, RF power output measurements were made at the RF output terminals using an attenuator and spectrum analyzer or power meter. The spectrum analyzer was set to its default settings – RBW, VBW, Sweep Time, etc. – except that the detector was set to an average detector. The "Channel Power" measurement feature of the spectrum analyzer was used. Power measurements were recorded in two different configurations: The amplifier operating in high power mode as permissible in single-channel mode, and lower power when using multiple channels simultaneously. This discrimination between power modes was necessary due to inter-modulations present when multiple channels within in the same band are in use in high power mode.

Test Results: Equipment complies with 47CFR 2.1046 and 90.635.

Test Engineer(s): Benjamin Taylor

Test Date(s): 11/24/13

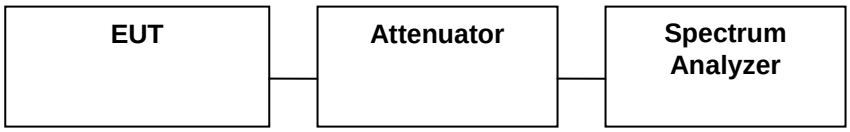
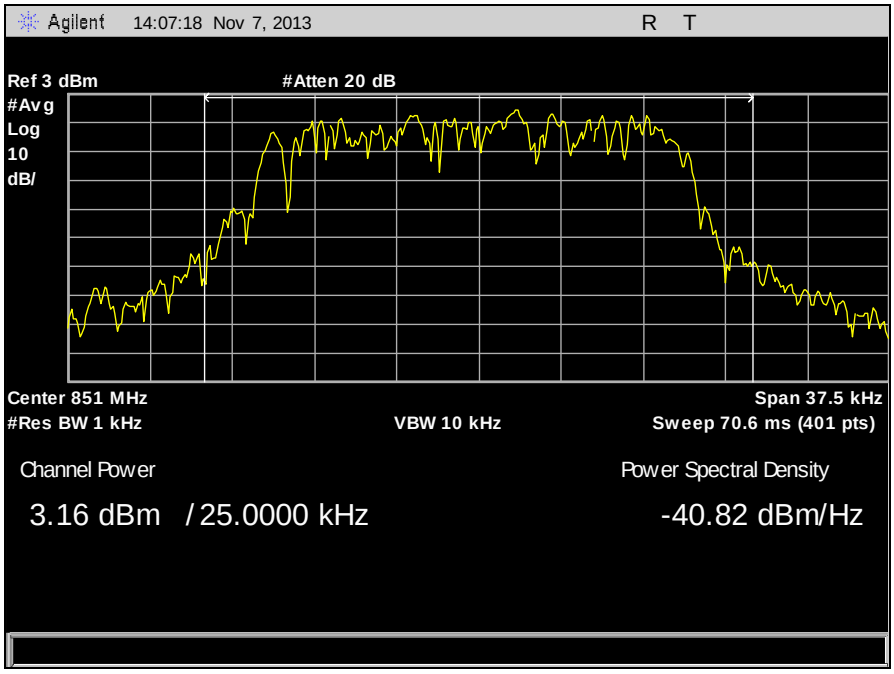
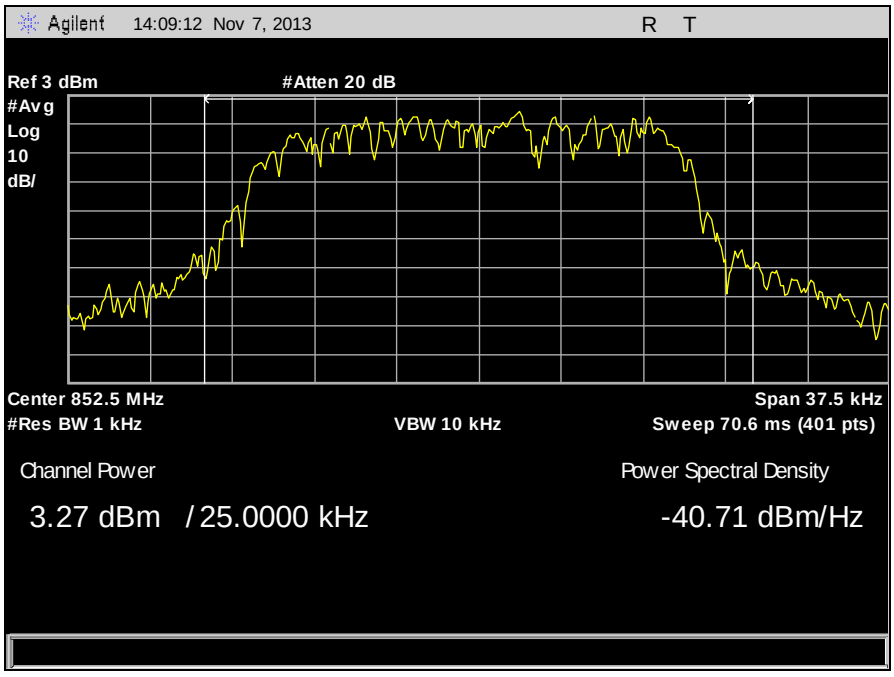


Figure 2. RF Power Output Test Setup

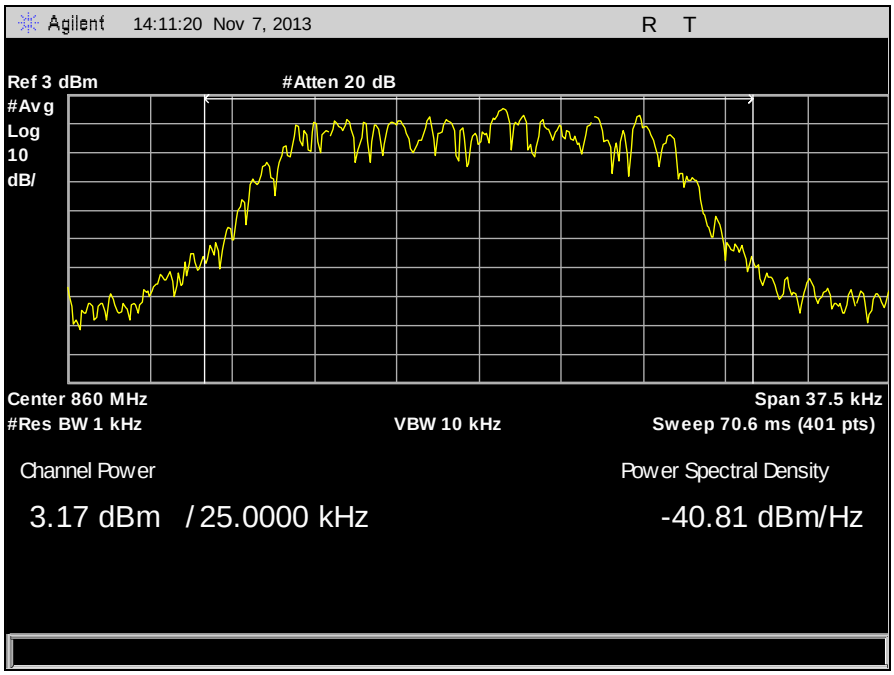
Single Channel Operation, High Power



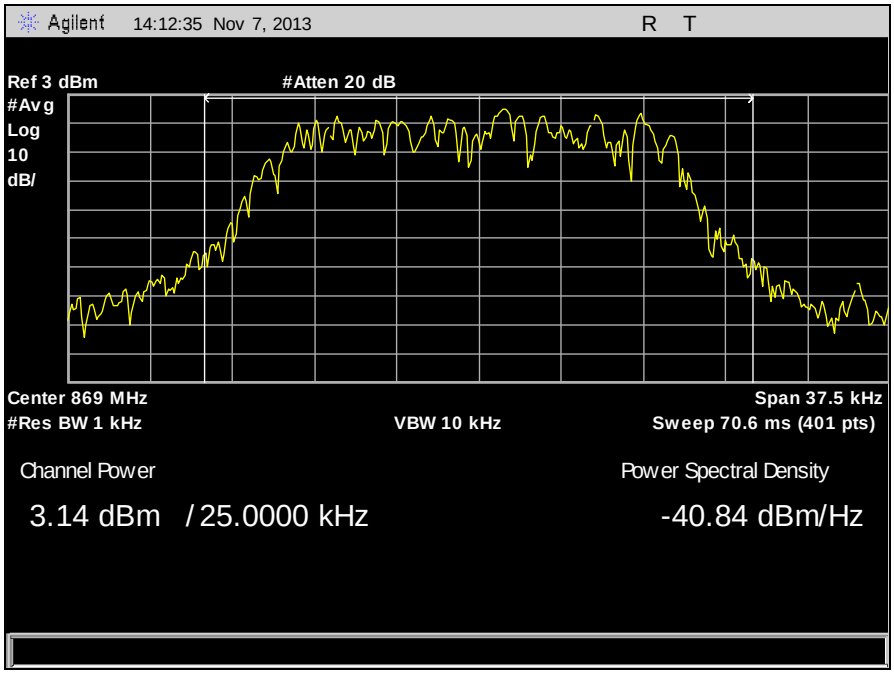
Plot 1. RF Power Output, Single Channel Operation, High Power, In TDMA, 851.0125 MHz



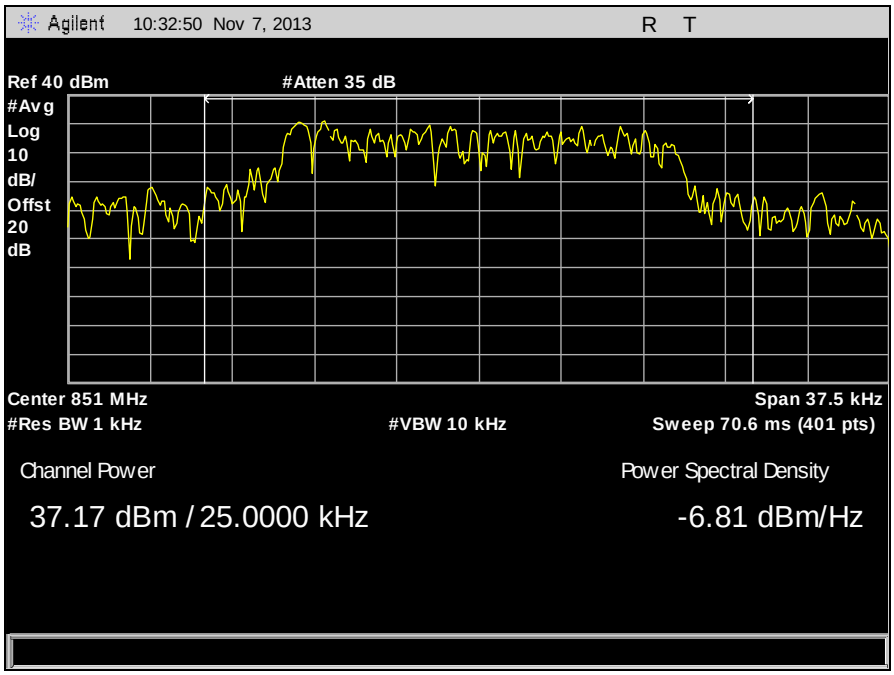
Plot 2. RF Power Output, Single Channel Operation, High Power, In TDMA, 852.5 MHz



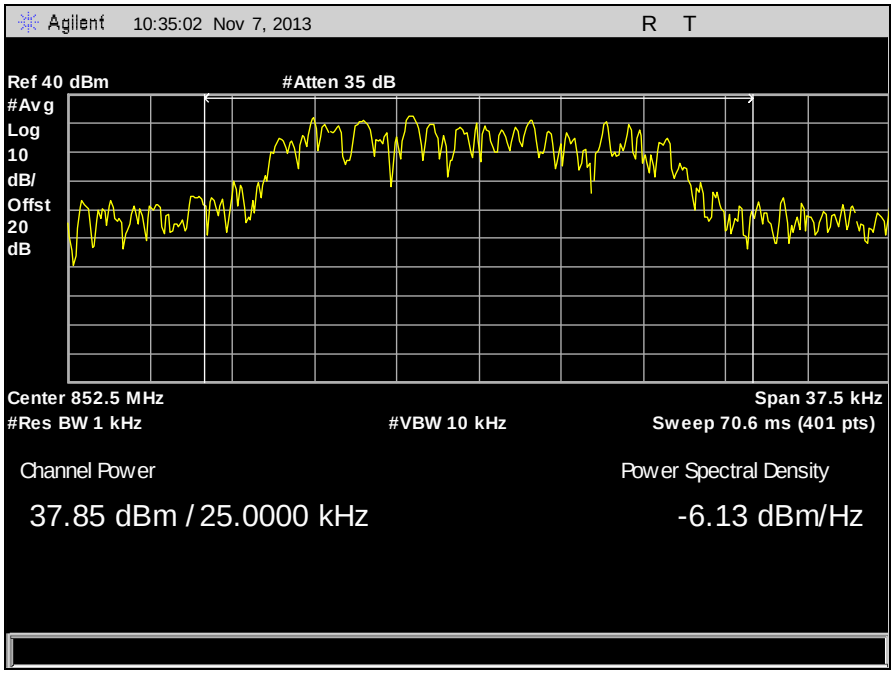
Plot 3. RF Power Output, Single Channel Operation, High Power, In TDMA, 860 MHz



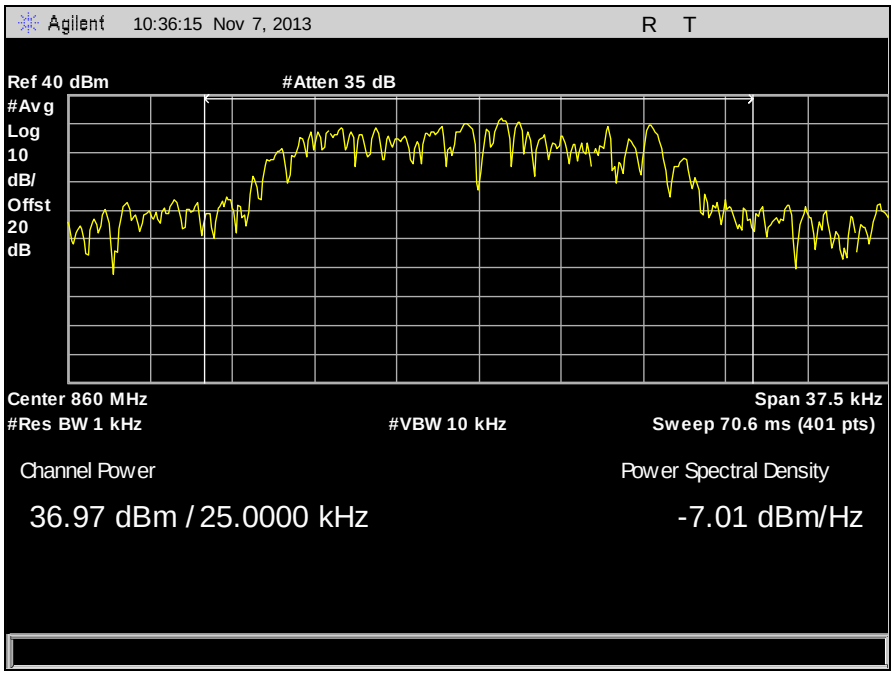
Plot 4. RF Power Output, Single Channel Operation, High Power, In TDMA, 868.9875 MHz



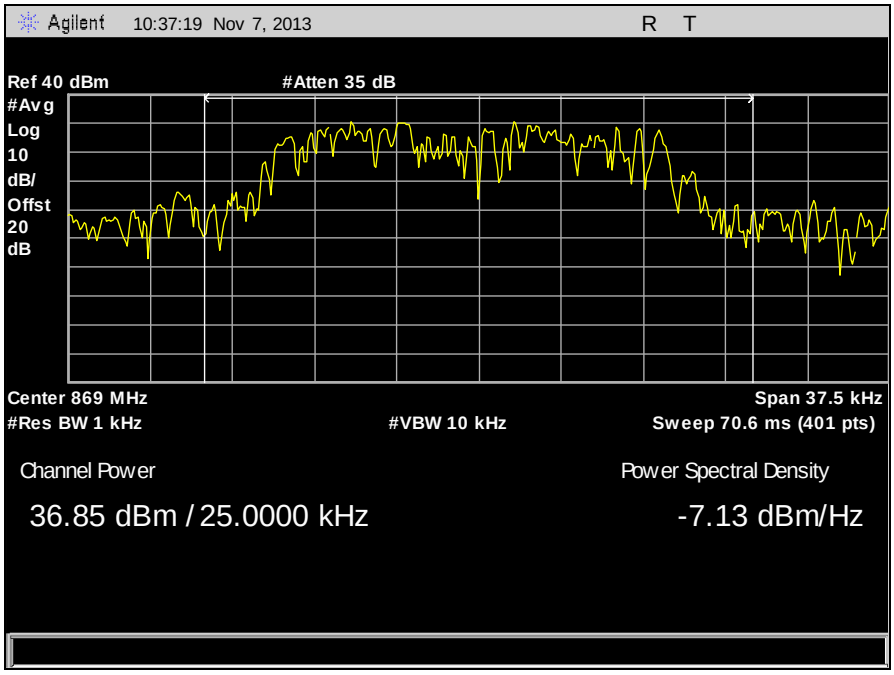
Plot 5. RF Power Output, Single Channel Operation, High Power, Out TDMA, 851.0125 MHz



Plot 6. RF Power Output, Single Channel Operation, High Power, Out TDMA, 852.5 MHz

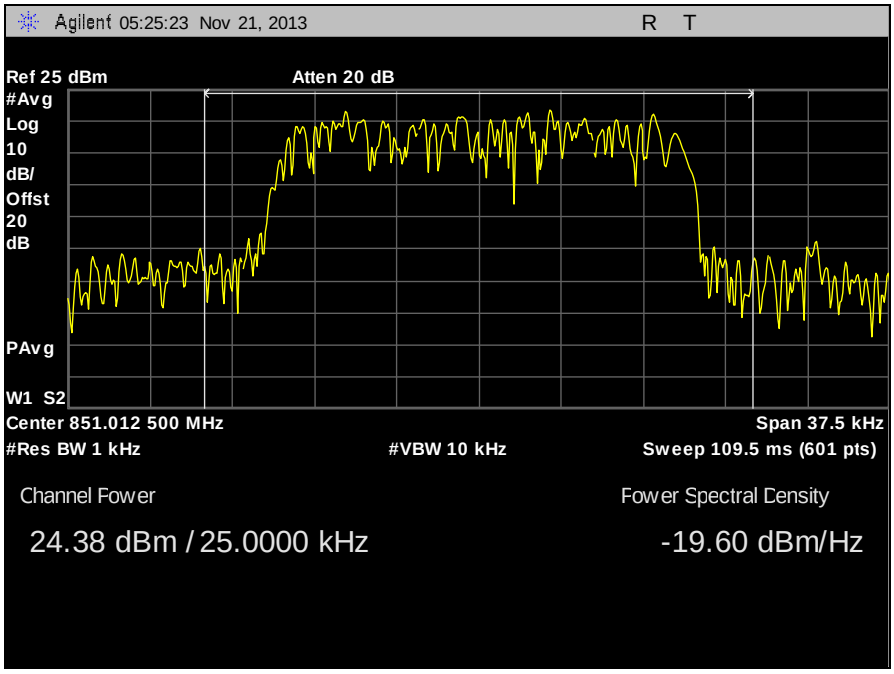


Plot 7. RF Power Output, Single Channel Operation, High Power, Out TDMA, 860 MHz

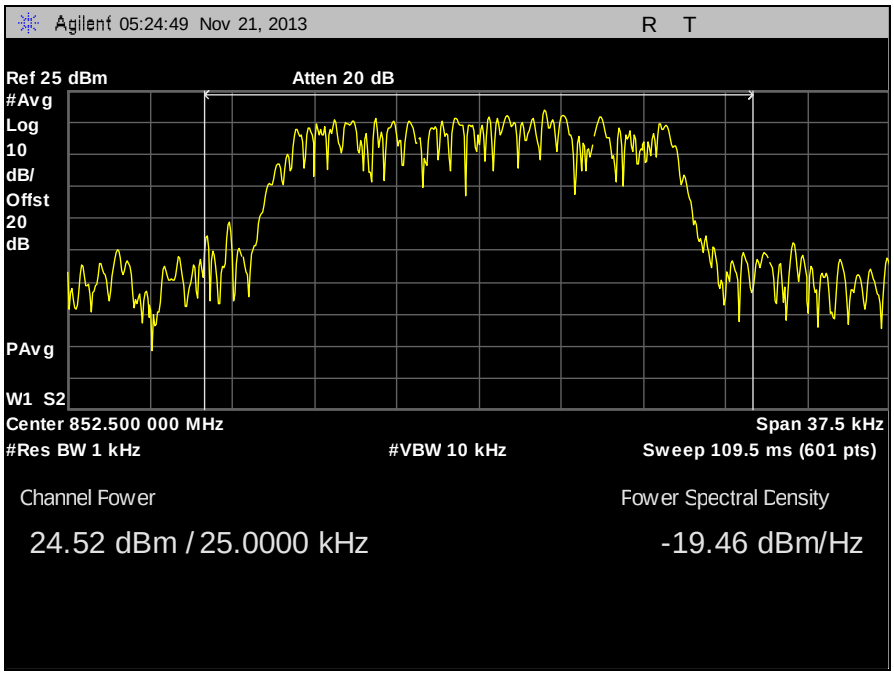


Plot 8. RF Power Output, Single Channel Operation, High Power, Out TDMA, 868.9875 MHz

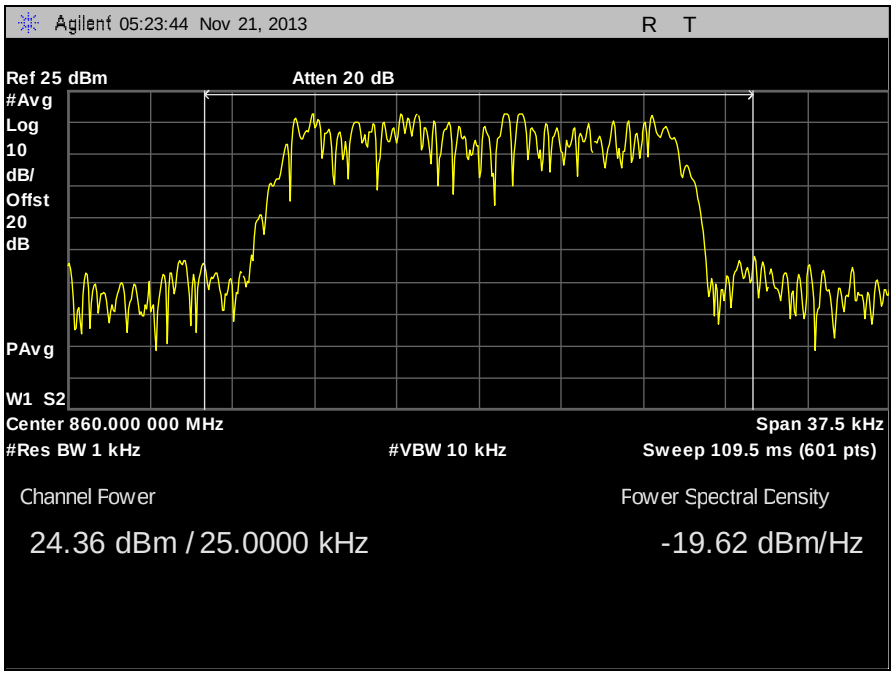
Multi-Channel Operation, Lower Power



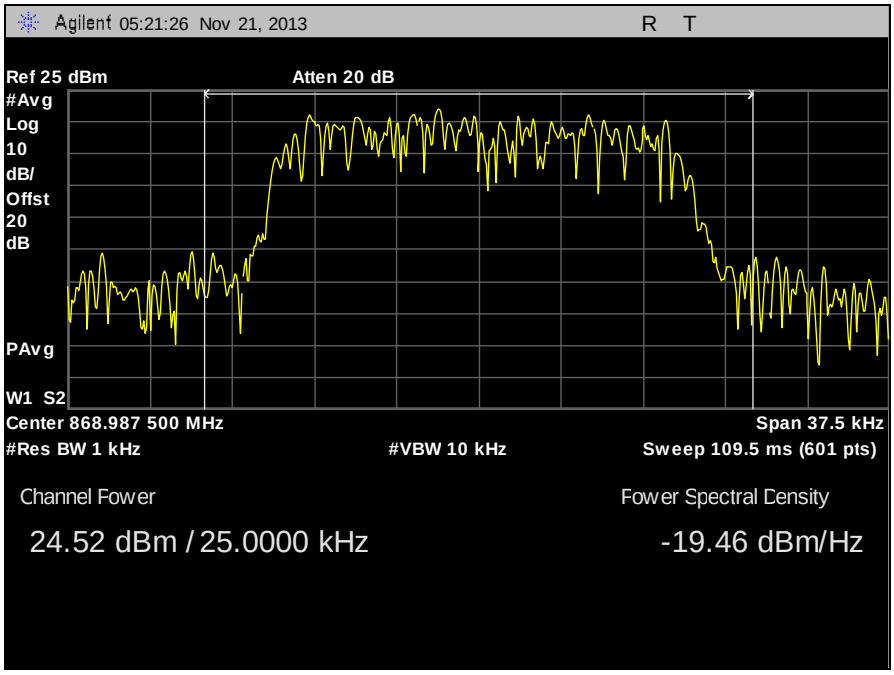
Plot 9. RF Power Output, Multi-Channel Operation, Lower Power, TDMA, 851.0125 MHz



Plot 10. RF Power Output, Multi-Channel Operation, Lower Power, TDMA, 852.5 MHz



Plot 11. RF Power Output, Multi-Channel Operation, Lower Power, TDMA, 860 MHz



Plot 12. RF Power Output, Multi-Channel Operation, Lower Power, TDMA, 868.9875 MHz

3.2. Occupied Bandwidth

Test Requirement(s): **§2.1049**

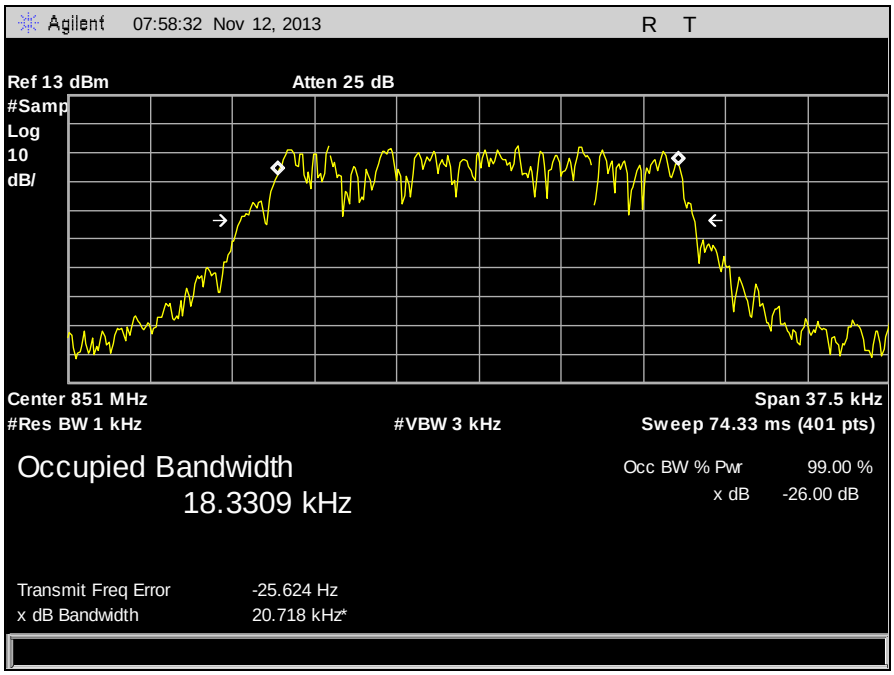
Test Procedures: As required by 47 CFR 2.1049, *occupied bandwidth measurements* were made at the RF output terminals using a Spectrum Analyzer.

A laptop was connected to EUT to control the RF frequency channel. The EUT was connected to a Spectrum Analyzer via attenuator. The RBW of the Spectrum Analyzer was set to at least 1% of the channel bandwidth. Measurements were carried out at the low, mid and high channels of the TX band. Measurements were recorded at both the input of the amplifier (the base station is capable of independent operation) and at the output of the optional power amplifier.

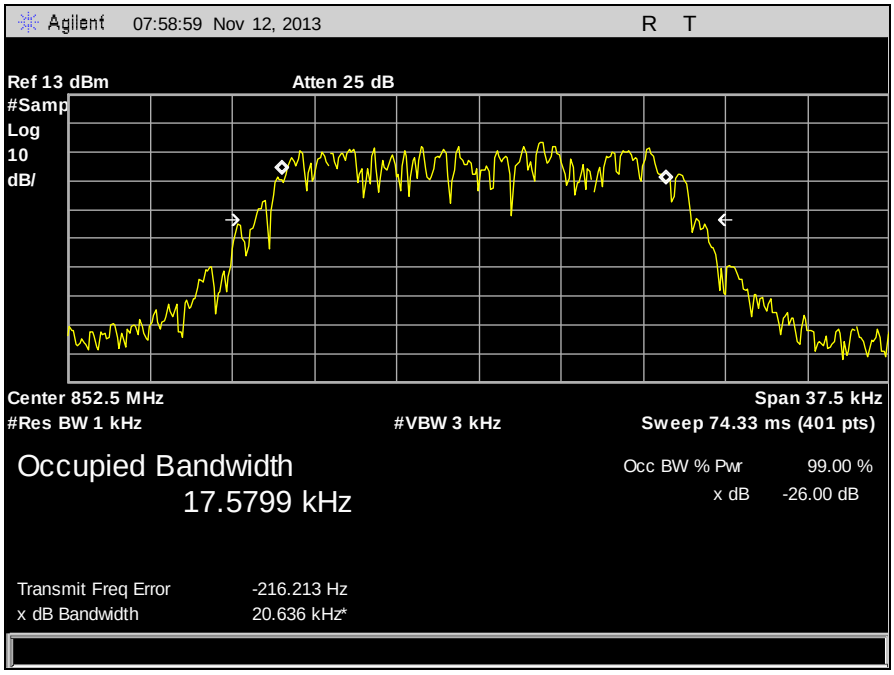
Test Results: Equipment complies with 47CFR 2.1049.

Test Engineer(s): Benjamin Taylor

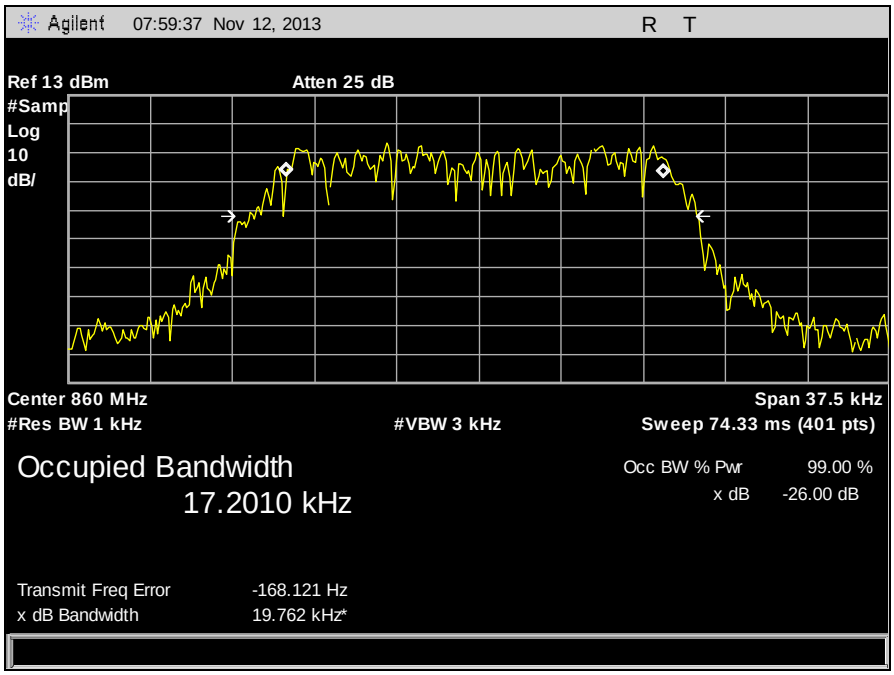
Test Date(s): 11/24/13



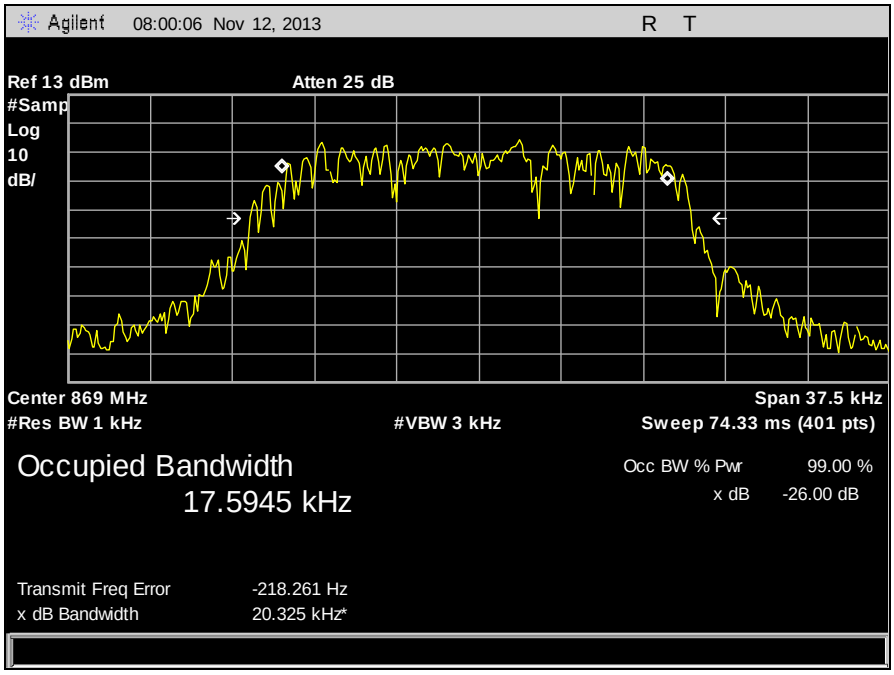
Plot 13. Occupied Bandwidth, TDMA, 851.0125 MHz, Input



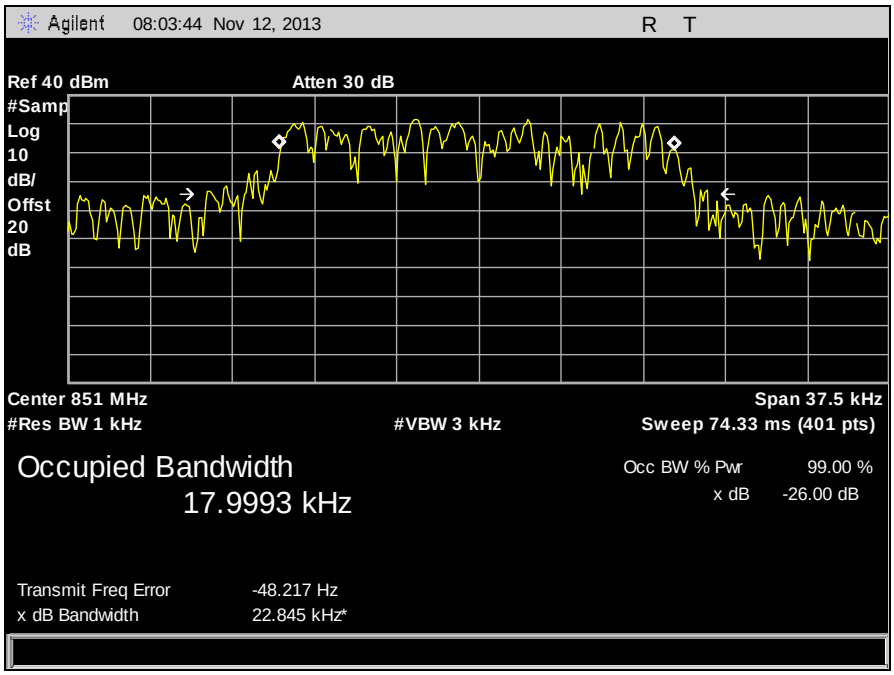
Plot 14. Occupied Bandwidth, TDMA, 852.5 MHz, Input



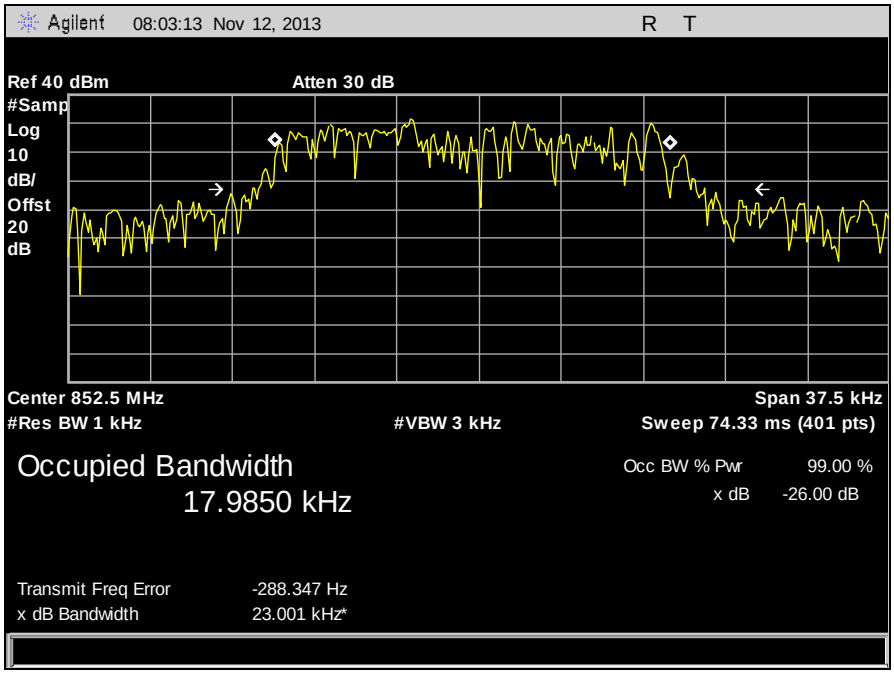
Plot 15. Occupied Bandwidth, TDMA, 860 MHz, Input



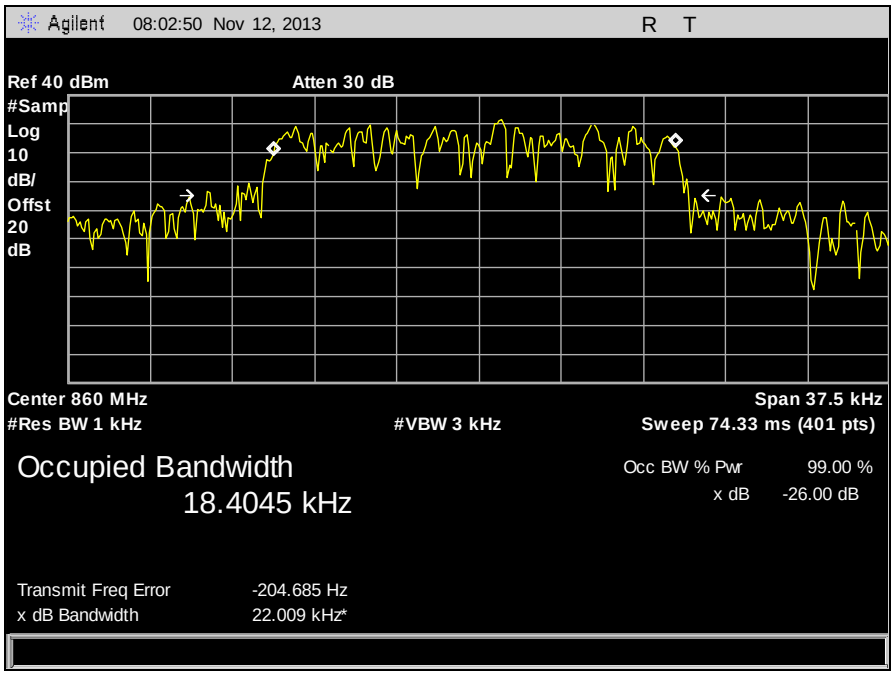
Plot 16. Occupied Bandwidth, TDMA, 868.9875 MHz, Input



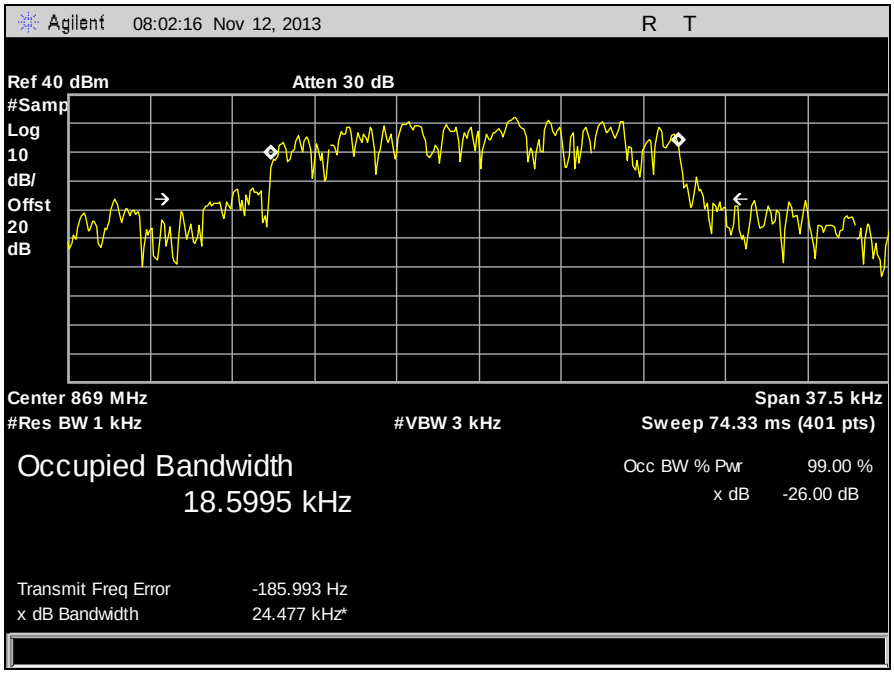
Plot 17. Occupied Bandwidth, TDMA, 851.0125 MHz, Output



Plot 18. Occupied Bandwidth, TDMA, 852.5 MHz, Output



Plot 19. Occupied Bandwidth, TDMA, 860 MHz, Output



Plot 20. Occupied Bandwidth, TDMA, 868.9875 MHz, Output

3.3. Emissions Mask

Test Requirement(s): **§90.210**

Frequency Band (MHz)	Mask for Equipment with Audio Low Pass Filter	Mask for Equipment without Audio Low Pass Filter
851 – 854	B	H
854 – 869	B	G

Test Results: The requirements of §90.210 were not applicable as this EUT is strictly an amplifier.

3.4. Spurious Emissions at Antenna Terminals

Test Requirement(s): **§2.1051 and §90.210**

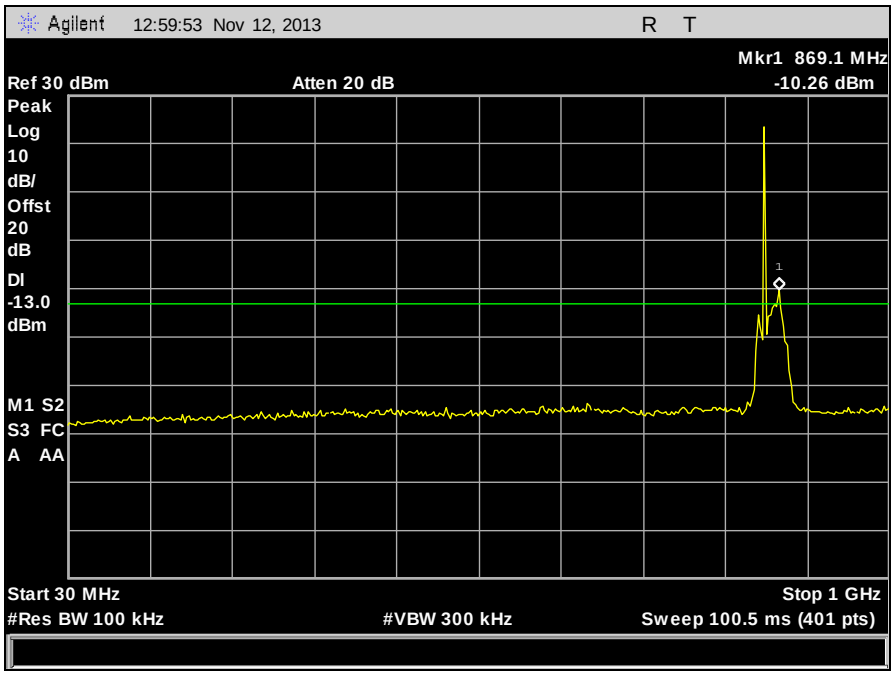
Test Procedures: As required by 47 CFR 2.1051, *spurious emissions at antenna terminal measurements* were made at the RF output terminals using a Spectrum Analyzer.

A laptop was connected to EUT to control the RF power output and frequency channel. The EUT was connected to a Spectrum Analyzer. The Spectrum Analyzer was set to sweep 30 MHz and up to 10th harmonic of the fundamental or 40GHz whichever is the lesser. Measurements were made at the low, mid and high channels.

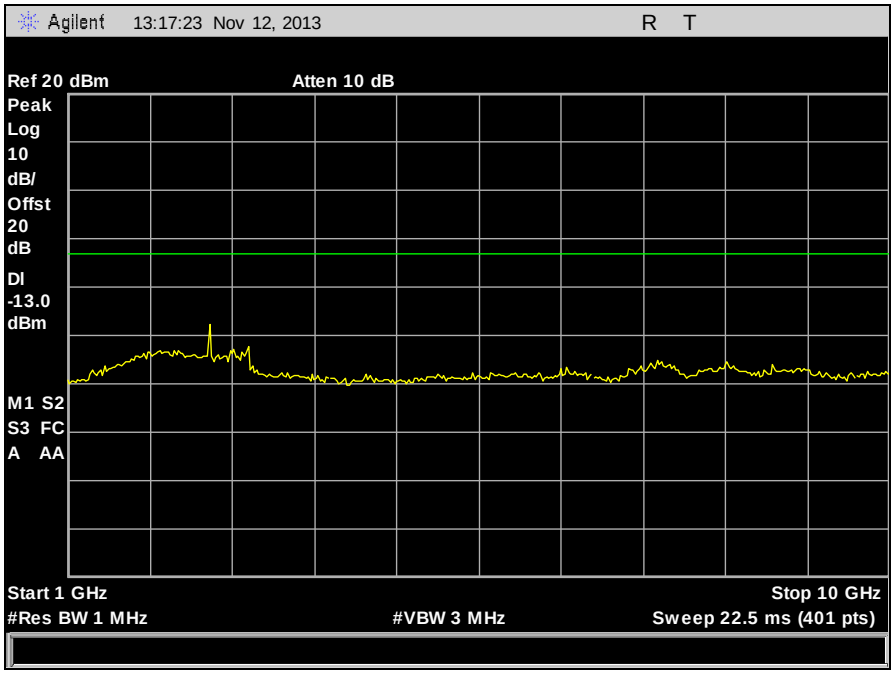
Test Results: Equipment complies with 47CFR 2.1051 and 90.210.

Test Engineer(s): Benjamin Taylor

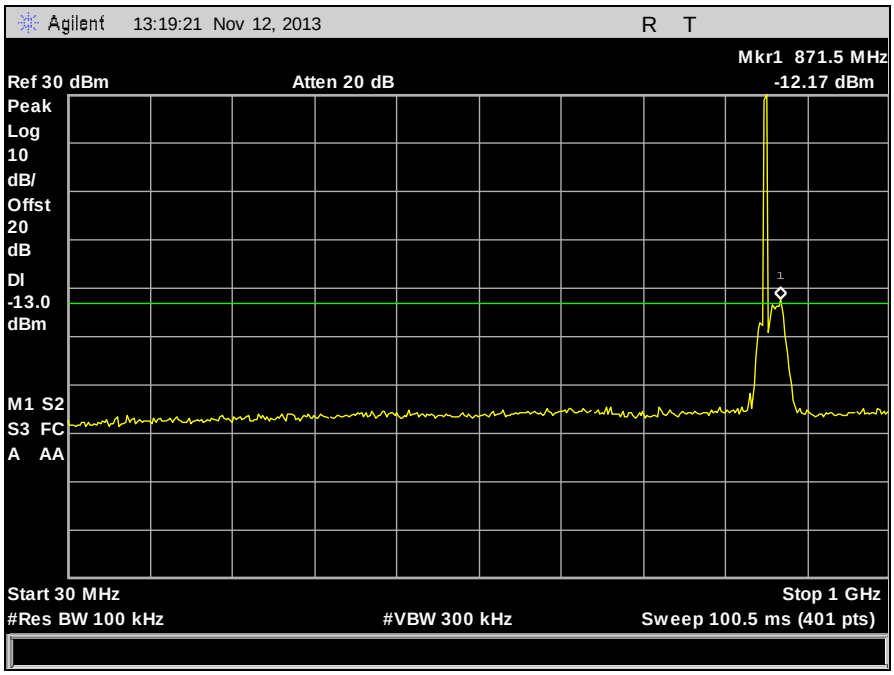
Test Date(s): 11/24/13



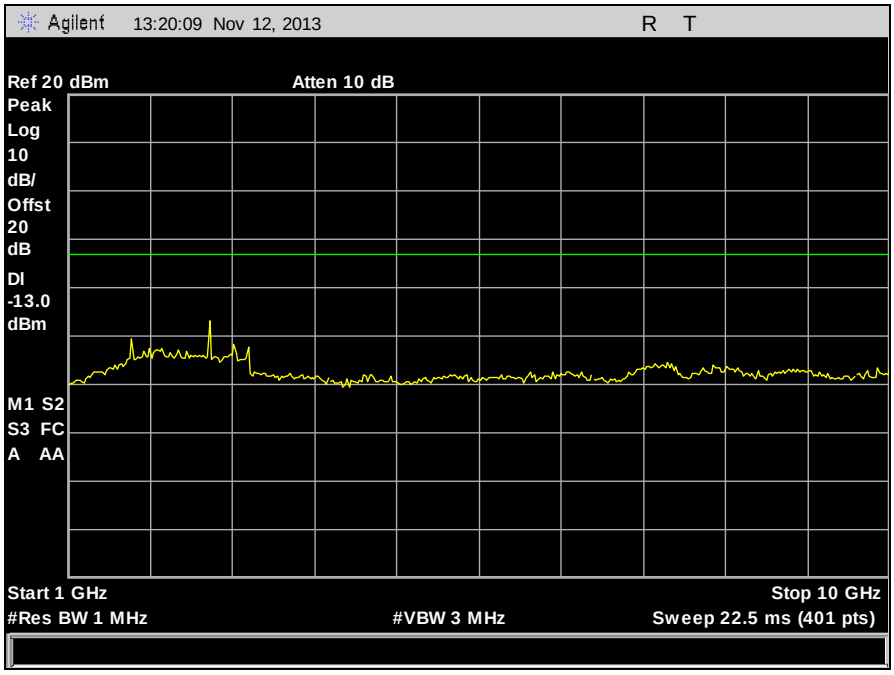
Plot 21. Conducted Spurious Emissions, TDMA, 851.0125 MHz, 30 MHz – 1 GHz



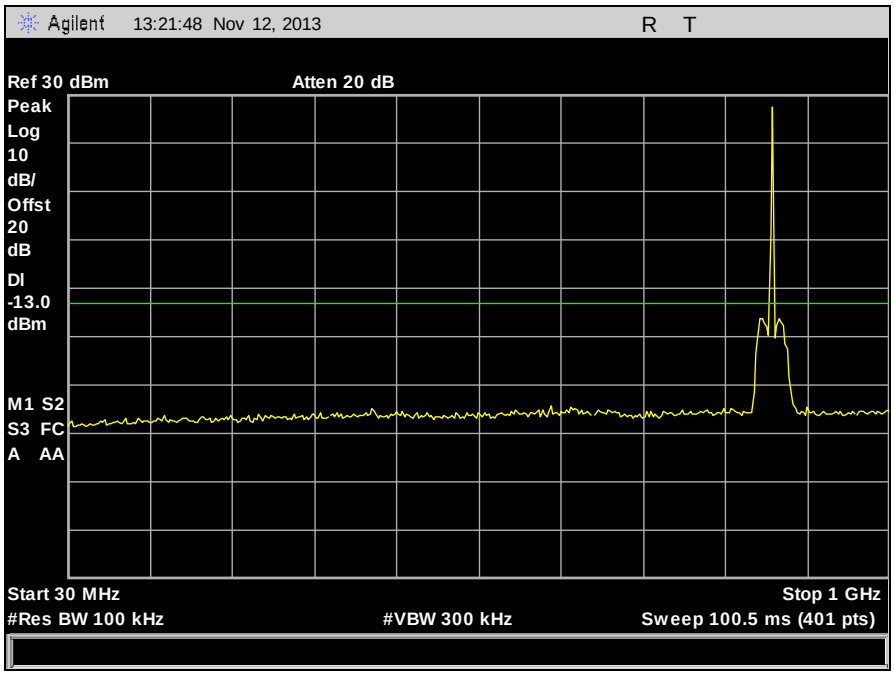
Plot 22. Conducted Spurious Emissions, TDMA, 851.0125 MHz, 1 GHz – 10 GHz



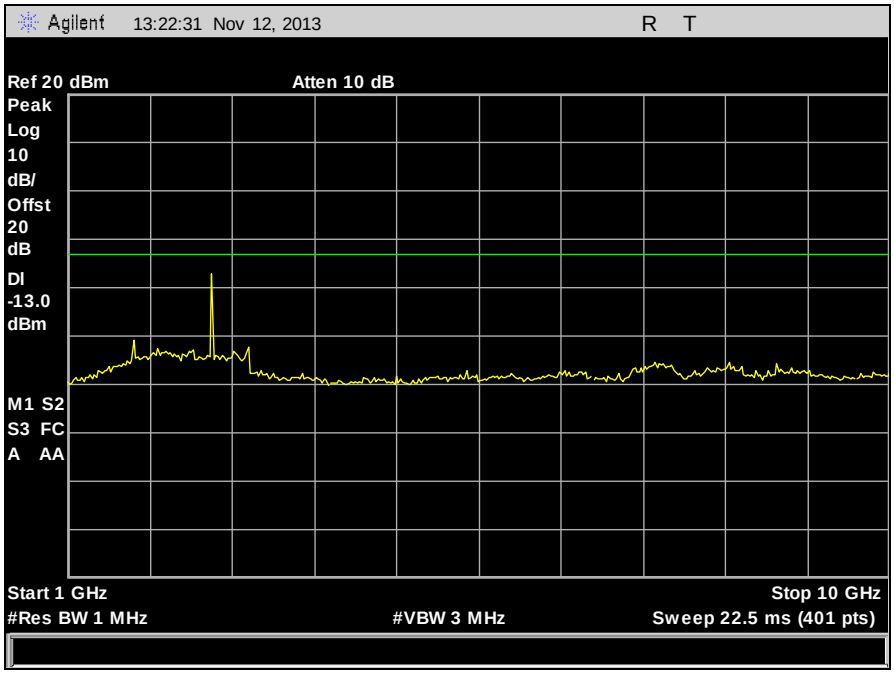
Plot 23. Conducted Spurious Emissions, TDMA, 852.5 MHz, 30 MHz – 1 GHz



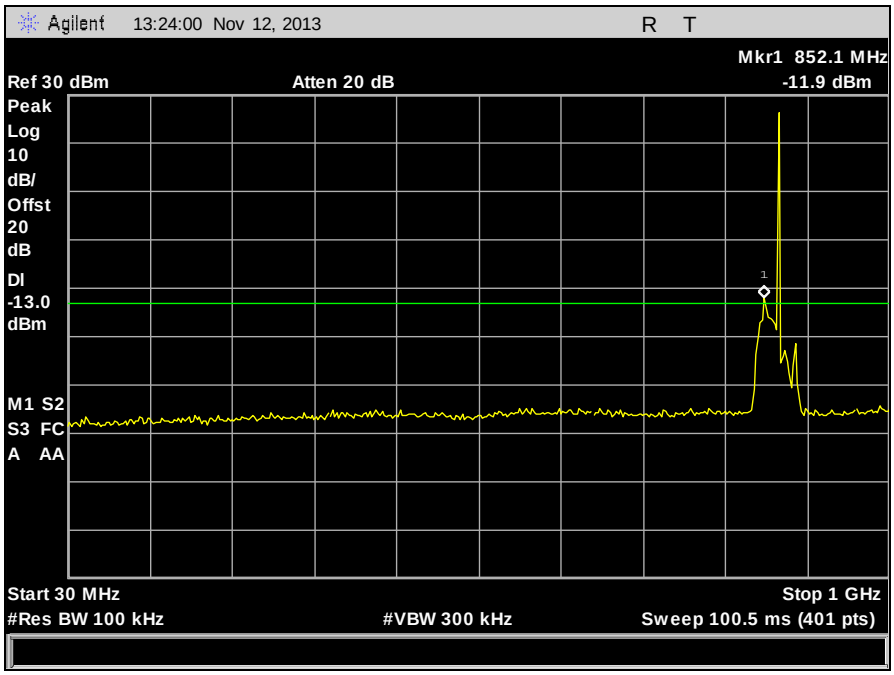
Plot 24. Conducted Spurious Emissions, TDMA, 852.5 MHz, 1 GHz – 10 GHz



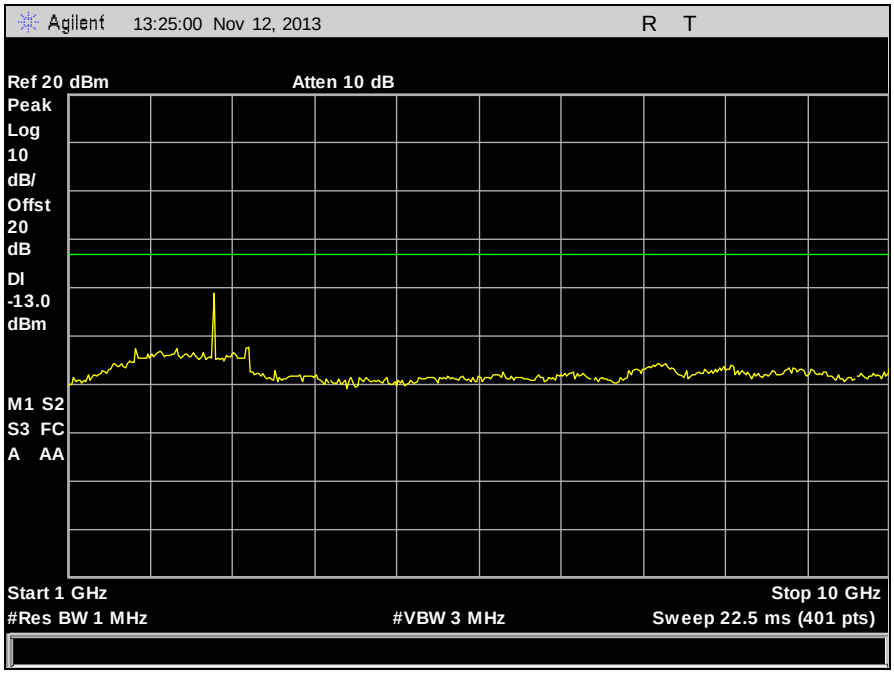
Plot 25. Conducted Spurious Emissions, TDMA, 860 MHz, 30 MHz – 1 GHz



Plot 26. Conducted Spurious Emissions, TDMA, 860 MHz, 1 GHz – 10 GHz



Plot 27. Conducted Spurious Emissions, TDMA, 868.9875 MHz, 30 MHz – 1 GHz



Plot 28. Conducted Spurious Emissions, TDMA, 868.9875 MHz, 1 GHz – 10 GHz

3.5. Field Strength of Spurious Emissions

Test Requirement(s): **§2.1053 and §90.210**

Test Procedures: As required by 47 CFR 2.1053, *field strength of radiated spurious measurements* were made in accordance with the procedures of TIA/EIA-603-A-2001 "Land Mobile FM or PM Communications Equipment Measurement and Performance Standards".

Radiated emission measurements were performed inside a 3 meter semi-anechoic chamber. The EUT was set at a distance of 3m from the receiving antenna. The EUT's RF ports were terminated to 50ohm load. The EUT was set to transmit at the low, mid and high channels of the transmitter frequency range at its maximum power level. The EUT was rotated about 360^0 and the receiving antenna scanned from 1-4m in order to capture the maximum emission. Harmonic emissions up to the 10^{th} or 40GHz, which ever was the lesser, were investigated.

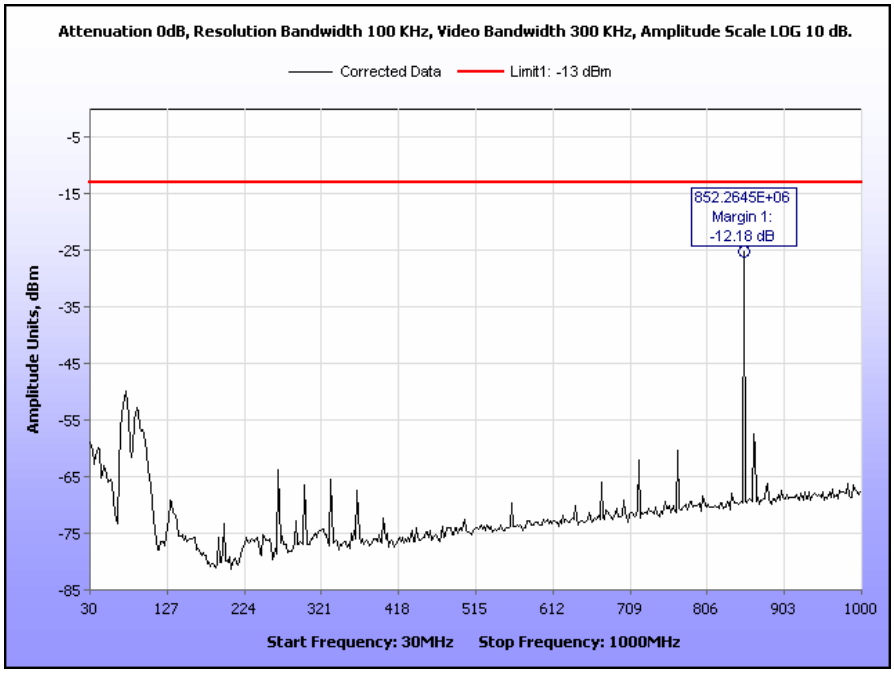
The plots were corrected to show EIRP.

Test Results: Equipment complies with Section 2.1053 and 90.210.

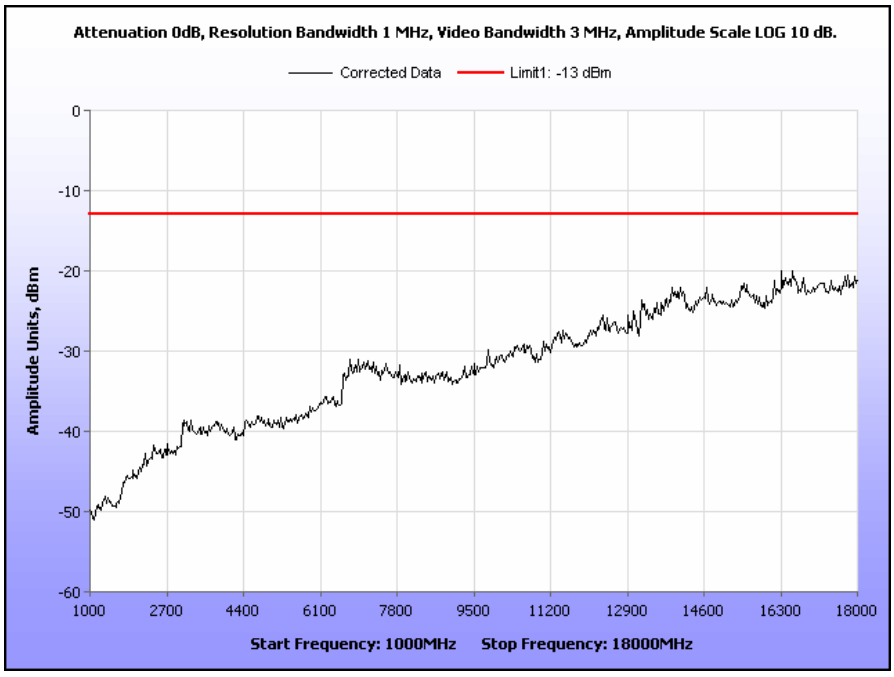
Test Engineer(s): Benjamin Taylor

Test Date(s): 11/24/13

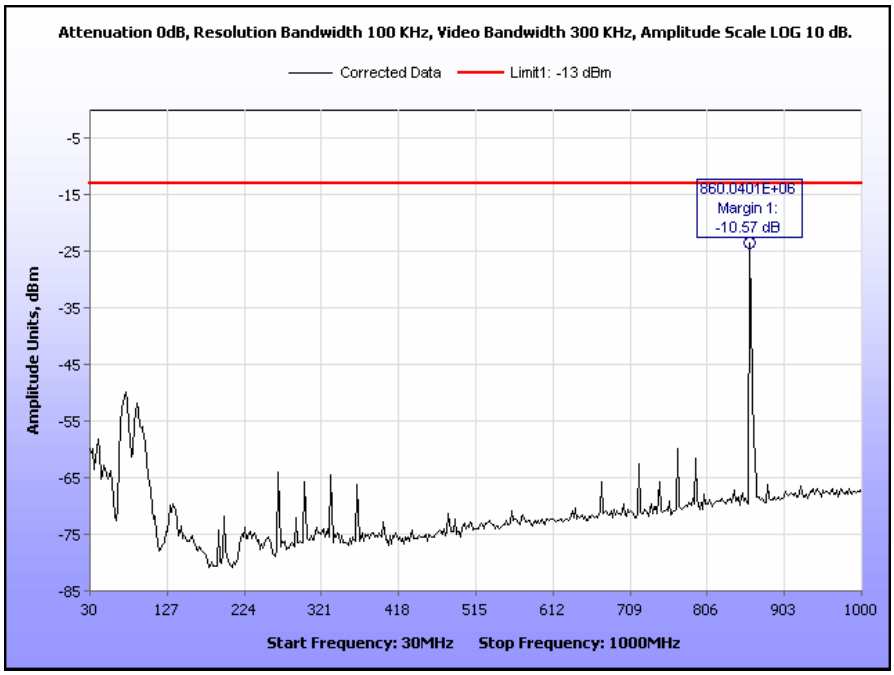
Radiated Emissions Test Results



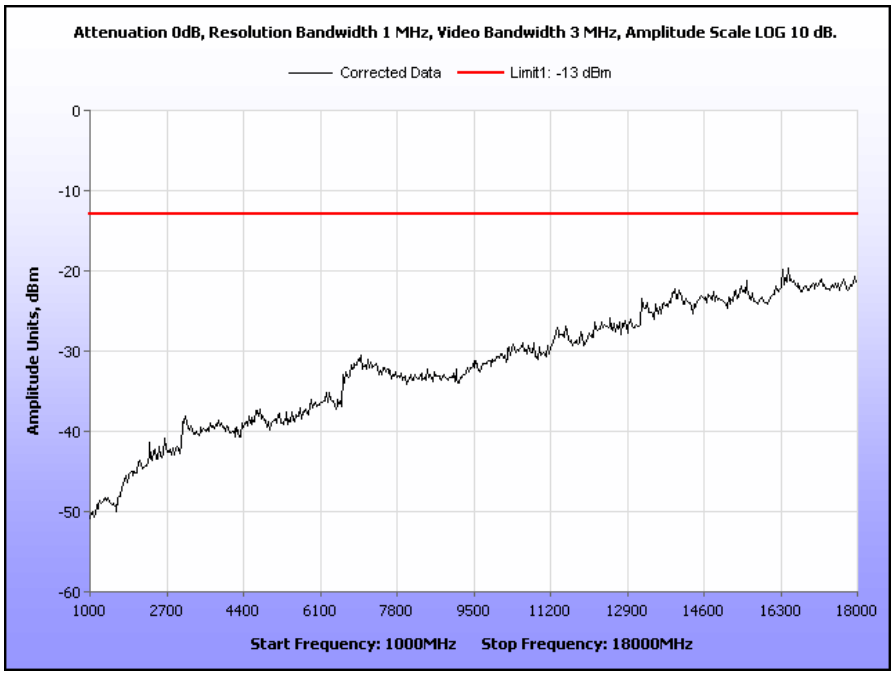
Plot 29. Radiated Spurious Emissions, TDMA, AMP, Low Cannel, 30 MHz – 1 GHz



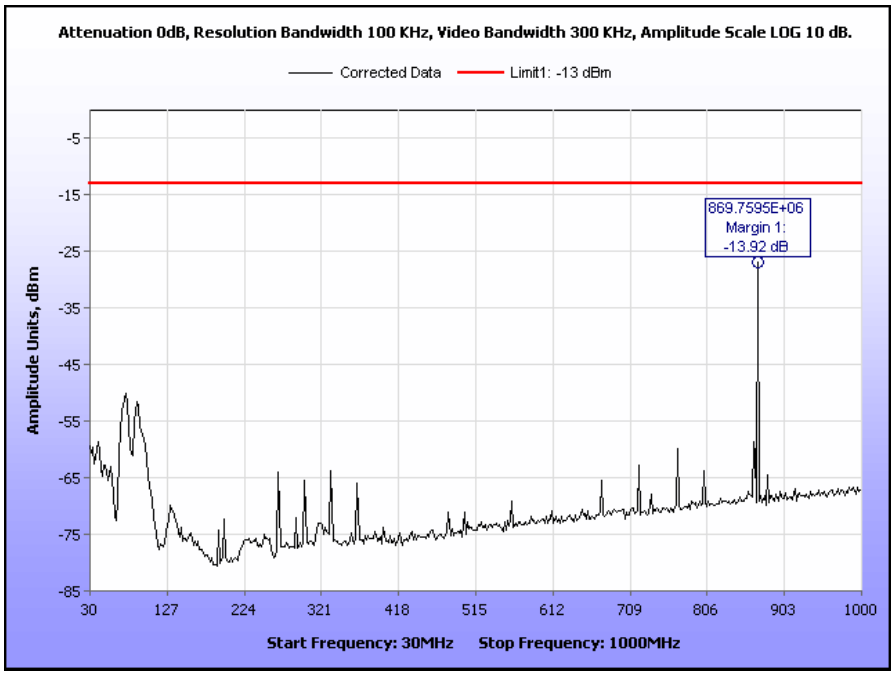
Plot 30. Radiated Spurious Emissions, TDMA, AMP, Low Cannel, 1 GHz – 18 GHz



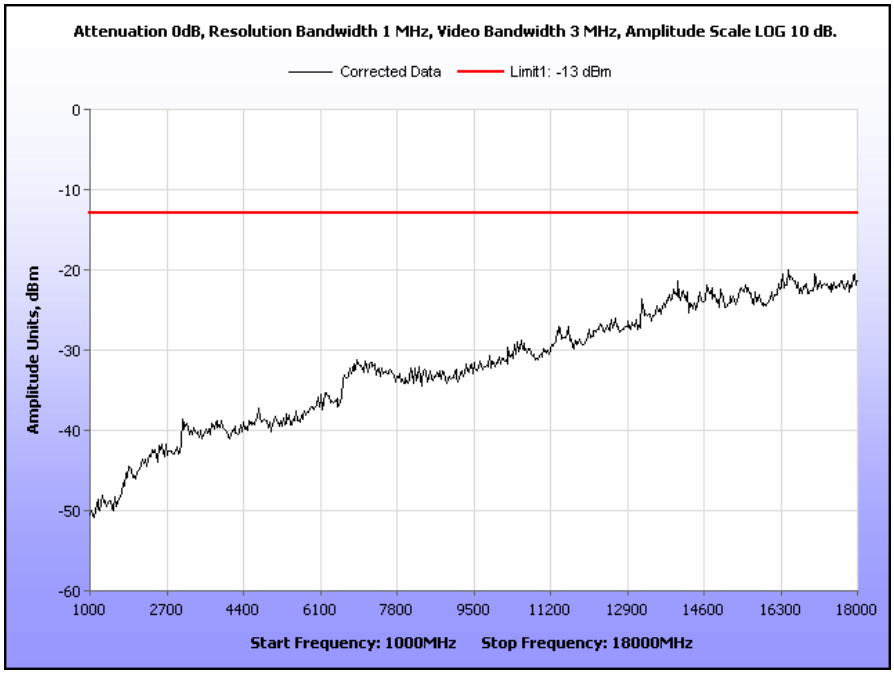
Plot 31. Radiated Spurious Emissions, TDMA, AMP, Mid Cannel, 30 MHz – 1 GHz



Plot 32. Radiated Spurious Emissions, TDMA, AMP, Mid Cannel, 1 GHz – 18 GHz



Plot 33. Radiated Spurious Emissions, TDMA, AMP, High Cannel, 30 MHz – 1 GHz



Plot 34. Radiated Spurious Emissions, TDMA, AMP, High Cannel, 1 GHz – 18 GHz

3.6. Frequency Stability

Test Requirement(s): **§2.1055 and §90.213**

Test Results: The requirements §2.1055 and §90.213 are not applicable. This EUT is strictly an amplifier, and is not responsible for initial signal generation.

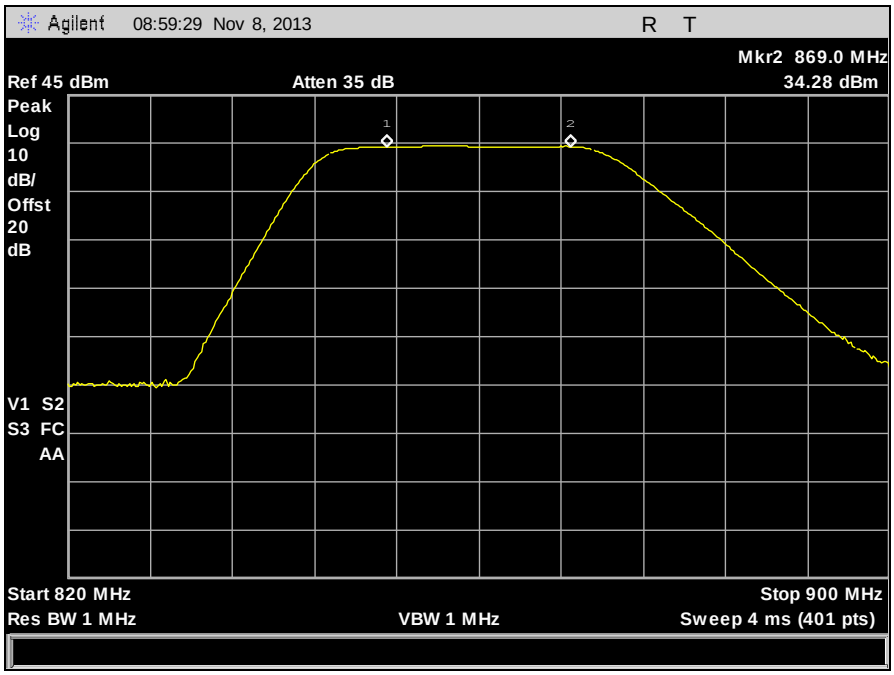
3.7. Filter Response

Test Procedures: The output of an RF signal generator was connected to the input of the amplifier, and the entire frequency range of the band including an adequate span of the band's edges was swept. A spectrum analyzer was connected to the output of the amplifier to record the response of the amplifier's (repeater's) filter.

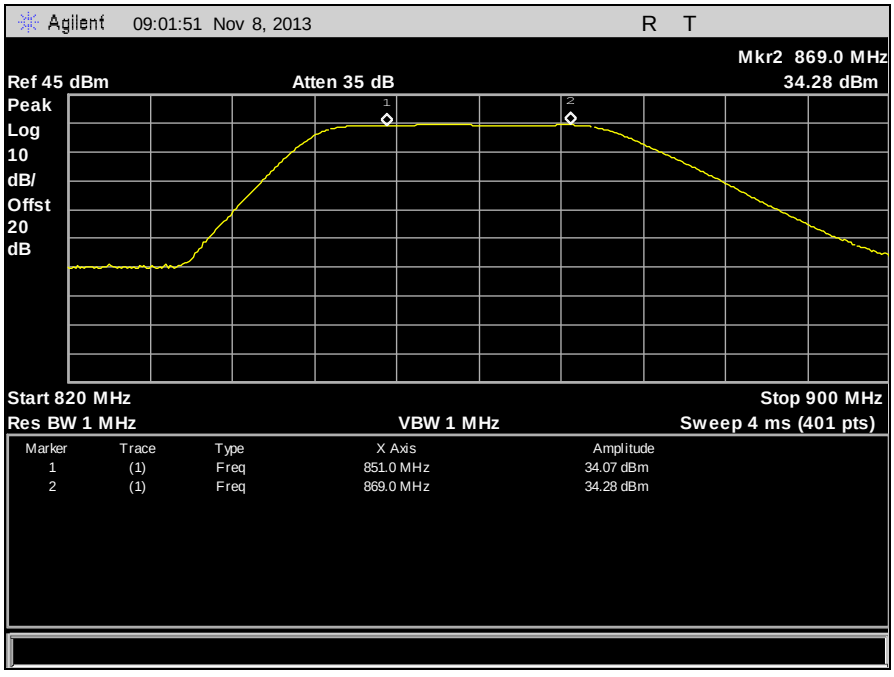
Test Results: Equipment complies with this requirement.

Test Engineer(s): Benjamin Taylor

Test Date(s): 11/08/13



Plot 35. Filter Response



Plot 36. Filter Response with Marker Table

3.8. Intermodulation

Test Requirement(s): Intermodulation – Test all modulation types [TDMA, CDMA, and FM (covers GSM and F1D)]

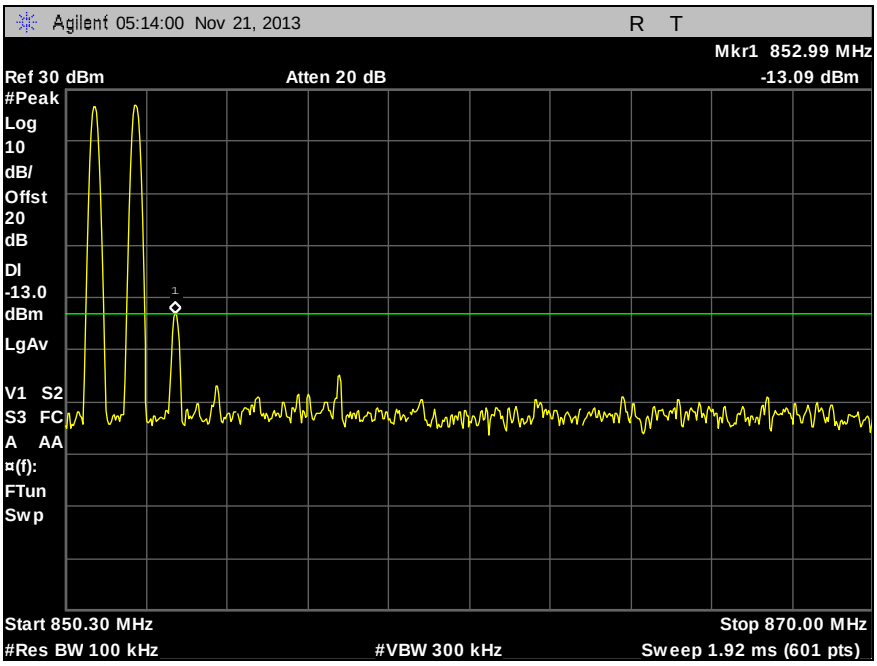
- CW signal rather than typical signal is acceptable (for FM).
- At maximum drive level, for each modulation: one test with three tones, or two tests (High-, low-band edge) with two tones)
- Limit usually is -13 dBm conducted.
- Not needed for Single Channel systems
- Combination of modulation types not needed.

Test Procedures: The two tone test method was used. A signal generator was used to drive the input of the EUT. The EUT was evaluated at the high and low band edge.

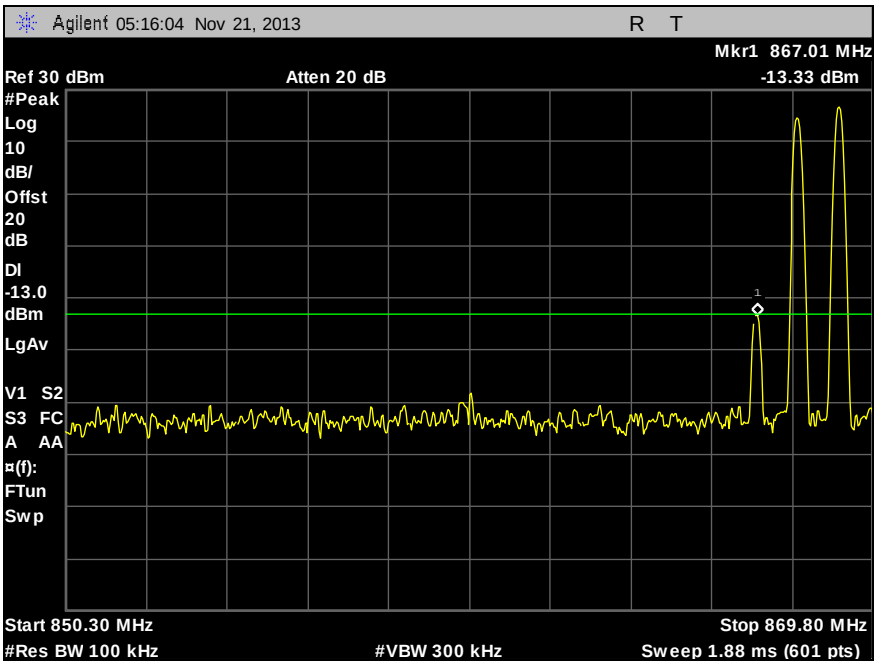
Test Results: The EUT complies with the requirements of this section. Inter modulation will only pass for low power setting. Therefore, high power setting cannot be used when there are multiple channels per band.

Test Engineer(s): Len Knight

Test Date(s): 11/24/13



Plot 37. Intermodulation, TDMA, Lowe Band



Plot 38. Intermodulation, TDMA, High Band

4. Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2005.

MET Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1T4612	SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4407B	07/30/2013	01/30/2015
1T4300	SEMI-ANECHOIC CHAMBER # 1 (NSA)	EMC TEST SYSTEMS	NONE	07/24/2012	07/24/2015
1T4409	EMI RECEIVER	ROHDE & SCHWARZ	ESIB7	07/16/2012	07/16/2014
1T4299	SIGNAL GENERATOR	HP	E4432B	11/13/2013	05/13/2015
1T4483	ANTENNA; HORN	ETS-LINDGREN	3117	08/06/2012	02/06/2014
1T4751	ANTENNA - BILOG	SUNOL SCIENCES	JB6	01/08/2013	07/08/2014
1T4354	SIGNAL GENERATOR	HEWLETT PACKARD	83752A	10/28/2013	04/28/2015
1T4592	RF FILTER KIT	VARIOUS	N/A	NOT REQUIRED	
1T4442	PRE-AMPLIFIER, MICROWAVE	MITEQ	AFS42-01001800-30-10P	SEE NOTE	
1T4149	HIGH-FREQUENCY ANECHOIC CHAMBER	RAY-PROOF	81	NOT REQUIRED	
1T4548	AC POWER SOURCE	CALIFORNIA INSTRUMENTS	1251P	SEE NOTE	
2T1083	TEMPHUMIDITY CHAMBER/ CONTROLLER/ RECORDER/ TRANSMITTER	THERMOTRON/ THERMOTRON/ HONEYWELL/ VAISALA	SE-1000-3-3/ 7800/ DR4500/ HMM30C	05/25/2013	05/25/2014
1T4377	TRUE RMS MULTIMETER	FLUKE	189	07/25/2013	01/25/2015

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

Certification & User's Manual Information

5. Certification Label & User's Manual Information

5.1. Certification Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I — Marketing of Radio frequency devices:

§ 2.801 Radio-frequency device defined.

As used in this part, a radio-frequency device is any device which in its operation is capable of Emitting radio-frequency energy by radiation, conduction, or other means. Radio- frequency devices include, but are not limited to:

(a) The various types of radio communication transmitting devices described throughout this chapter.

(b) The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.

(c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.

(d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

§ 2.803 Marketing of radio frequency devices prior to equipment authorization.

(a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:

(1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or

(2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.

(d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

(e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:

(i) Compliance testing;

(ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or

(v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.

(e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.

(f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a provision that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart Y — Equipment Authorization Procedures:

§ 2.901 Basis and Purpose

(a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated.[1] *In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer*, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.

(b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant, whichever is applicable.

§ 2.902 Certification.

(a) Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.

(b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

[1] In this case, the equipment is subject to the rules of Part 15. More specifically, the equipment falls under Subpart B (of Part 15), which deals with unintentional radiators.

§ 2.948 Description of measurement facilities.

(a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

(1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.

(i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.

(ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.

(2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

5.2. Label and User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A — General:

§ 15.19 Labeling requirements.

(a) In addition to the requirements in Part 2 of this chapter, a device subject to certification or verification shall be labeled as follows:

(1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

(2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

(3) All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

(5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

§ 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B — Unintentional Radiators:

§ 15.105 Information to the user.

(a) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

End of Report

