MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*
914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230-3432 • PHONE (410) 354-3300 • FAX (410) 354-3313
33439 WESTERN AVENUE • UNION CITY, CALIFORNIA 94587 • PHONE (510) 489-6300 • FAX (510) 489-6372
3162 BELICK STREET • SANTA CLARA, CA 95054 • PHONE (408) 748-3585 • FAX (510) 489-6372
13301 MCCALLEN PASS • AUSTIN, TX 78753 • PHONE (512) 287-2500 • FAX (512) 287-2513

May 28, 2013

S&C Electric Company
1135 Atlantic Avenue
Alameda, CA 94501

Dear Prakash Ramadass,

Enclosed is the EMC Wireless test report for compliance testing of the S&C Electric Company, IntelliCom DA Mesh Radio 1710 as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Part 15, Subpart B and ICES-003, Issue 5 August 2012 for a Class A Digital Device, and FCC Part 15 Subpart C and RSS-210, Issue 8, Dec. 2010 for Intentional Radiators.

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: (\S&C Electric Company\EMCS37379-FCC247 Rev. 2)

Electromagnetic Compatibility Criteria
Test Report

for the

S&C Electric Company
IntelliCom DA Mesh Radio 1710

Tested under
the FCC Certification Rules
contained in
Title 47 of the CFR, Parts 15 Subpart B & ICES-003
for Class A Digital Devices
&
15.247 Subpart C & RSS-210, Issue 8, Dec. 2010
for Intentional Radiators

MET Report: EMCS37379-FCC247 Rev. 2

May 28, 2013

Prepared For:

S&C Electric Company
1135 Atlantic Avenue
Alameda, CA 94501

Prepared By:
MET Laboratories, Inc.
3162 Belick St.
Santa Clara, CA 95054

Electromagnetic Compatibility Criteria
Test Report

for the

S&C Electric Company
IntelliCom DA Mesh Radio 1710

Tested under
the FCC Certification Rules
contained in
Title 47 of the CFR, Parts 15 Subpart B & ICES-003
for Class A Digital Devices
&
15.247 Subpart C & RSS-210, Issue 8, Dec. 2010
for Intentional Radiators

Jonathan Chao, 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 capable of operation in accordance with the requirements of the FCC Rules Parts 15B, 15.247 and Industry Canada standards ICES-003, Issue 5 August 2012, RSS-210, Issue 8, Dec. 2010 under normal use and maintenance.

Asad Bajwa,
Director, Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	March 22, 2013	Initial Issue.
1	May 9, 2013	Revised to reflect engineer corrections.
2	May 28, 2013	Revised to reflect corrected MPE.

Table of Contents

List of Tables

List of Plots

List of Figures

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

I. Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the S&C Electric Company IntelliCom DA Mesh Radio 1710, with the requirements of Part 15, §15.247. 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 IntelliCom DA Mesh Radio 1710. S&C Electric Company should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the IntelliCom DA Mesh Radio 1710, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.247, in accordance with S&C Electric Company, purchase order number 3455. All tests were conducted using measurement procedure ANSI C63.4-2003.

FCC Reference 47 CFR Part 15.247:2005	IC Reference RSS-210 Issue 8: 2010; RSS-GEN Issue 3: 2010	Description	Compliance
47 CFR Part 15.107 (a)	ICES-003 Issue 5 August 2012	Conducted Emission Limits for a Class A Digital Device	Compliant
47 CFR Part 15.109 (a)	ICES-003 Issue 5 August 2012	Radiated Emission Limits for a Class A Digital Device	Compliant
Title 47 of the CFR, Part 15 §15.203	N/A	Antenna Requirement	Compliant
Title 47 of the CFR, Part 15 §15.207(a)	RSS-GEN (7.2.4)	Conducted Emission Limits	Compliant
Title 47 of the CFR, Part 15 §15.247(a)(2)	RSS-Gen(4.6)	6dB Occupied Bandwidth	Compliant
		99% Occupied Bandwidth	Compliant
Title 47 of the CFR, Part 15 §15.247(b)	RSS-210(A8.4)	Peak Power Output	Compliant
Title 47 of the CFR, Part 15 §15.247(d); §15.209; §15.205	RSS-210(A8.5)	Radiated Spurious Emissions Requirements	Compliant
Title 47 of the CFR, Part 15 §15.247(d)	RSS-210(A8.5)	RF Conducted Spurious Emissions Requirements	Compliant
Title 47 of the CFR, Part 15 §15.247(d)	RSS-210(A8.5)	RF Conducted Band Edge	Compliant
Title 47 of the CFR, Part 15; §15.247(e)	RSS-210(A8.2)	Peak Power Spectral Density	Compliant
Title 47 of the CFR, Part 15 §15.247(i)	RSS-Gen(5.6)	Maximum Permissible Exposure (MPE)	Compliant
N/A	RSS-Gen(4.10)	Receiver Spurious Emissions	Compliant

Table 1. Executive Summary of EMC Part 15.247 ComplianceTesting

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by S&C Electric Company to perform testing on the IntelliCom DA Mesh Radio 1710, under S&C Electric Company's purchase order number 3455.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the S&C Electric Company, IntelliCom DA Mesh Radio 1710.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	IntelliCom DA Mesh Radio 1710	
Model(s) Covered:	IntelliCom DA Mesh Radio 1710	
EUT Specifications:	Primary Power: 120 VAC, 60 Hz	
	FCC ID: U3D-US1710DA IC: 5349C-CA1710DA	
	Type of Modulations:	OFDM/DSSS
	Equipment Code:	DTS
	Peak RF Output Power:	26.04 dBm
	EUT Frequency Ranges:	2412-2462MHz & 5745-5825MHz
	OATS:	2043C-1
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:	Jonathan Chao	
Report Date(s):	May 28, 2013	

Table 2. EUT Summary Table

B. References

CFR 47, Part 15, Subpart C	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Allocation, Assignment, and Use of Radio Frequencies
CFR 47, Part 15, Subpart B	Electromagnetic Compatibility: Criteria for Radio Frequency Devices
RSS-210, Issue 8, Dec. 2010	Low-power Licence-exempt Radiocommunications Devices (All Frequency Bands): Category I Equipment
RSS-GEN, Issue 3, Dec. 2010	General Requirements and Information for the Certification of Radio Apparatus
ICES-003, Issue 5 August 2012	Information Technology Equipment (ITE) — Limits and methods of measurement
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
ANSI C63.10-2009	American National Standard for Testing Unlicensed Wireless Devices

Table 3. References

C. Test Site

All testing was performed at MET Laboratories, Inc., 3162 Belick St., Santa Clara, CA 95054. 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 10 meter 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.

D. Description of Test Sample

The S&C Electric Company IntelliCom DA Mesh Radio 1710, Equipment Under Test (EUT), provides reliable Ethernet connectivity over a high performance, self-forming wireless mesh backbone. All nodes have an Ethernet port for connecting network devices or other networks to the wireless mesh. 1710 mesh features a single radio solution with capability of expansion to dual Radio operating in the 2.4 GHz, 4.9 GHz (U.S. public safety licensed band) or 5 GHz frequency ranges on the other. This is not a MIMO. Two identical radios with one port each and they do not simultaneously transmit.

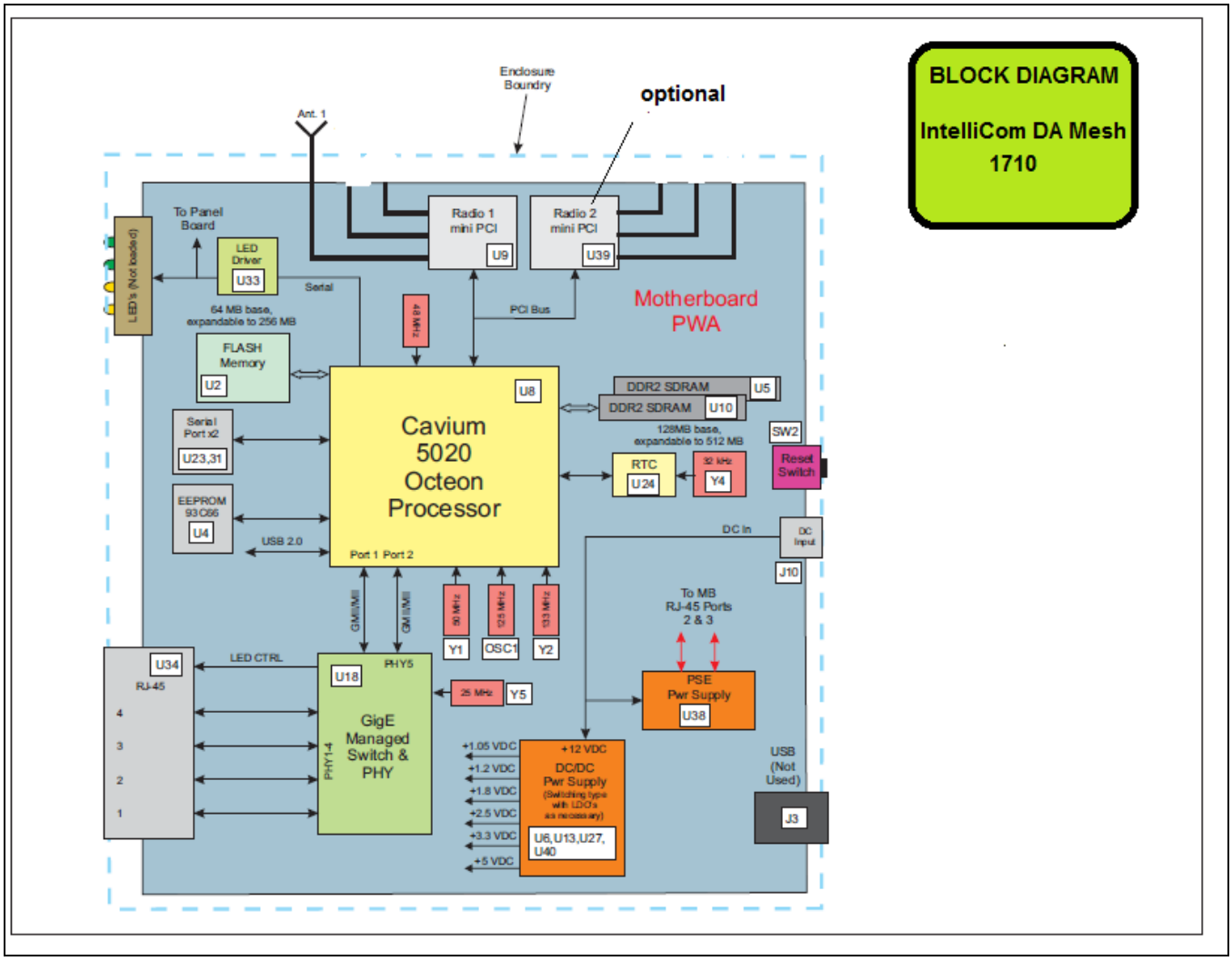


Figure 1. Block Diagram of Test Configuration

E. Equipment Configuration

The EUT was set up as outlined in Figure 1, Block Diagram of Test Setup. All cards, racks, etc., incorporated as part of the EUT is included in the following list.

Ref. ID	Name / Description	Model Number
1	Mesh Node	IntelliCom 1710

Table 4. Equipment Configuration

F. Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Name / Description	Manufacturer	Model Number
External DC Adapter	FSP Group	FSP040-1ADF03A
Omni	Master Wave	98144PRSX003

Table 5. Support Equipment

G. Ports and Cabling Information

Ref. ID	Port Name on EUT	Cable Description	Qty.	Length (m)	Shielded (Y/N)	Termination Point
1	Antenna Ports and Cables	--	1	--	Y	Antenna
2	RJ45 Port and Cable	--	1	--	NA	Laptop
3	DC Power Input Port	--	1	--	Y	DC Supply

Table 6. Ports and Cabling Information

H. Mode of Operation

Once the DC power is applied on board LED indicates to mention that the unit is powered on properly. . Proper IP address should be set in the PC prior to the Ethernet cable connection. The Ethernet connectivity needs to be made by connecting an Ethernet cable. Once the connection is established, you can verify this in the PC's LAN connectivity status. Proper IP address should be set in the PC prior to the Ethernet cable connection.

I. Method of Monitoring EUT Operation

IntelliCom 1710 will be used for wireless mesh node application and all the IntelliCom 1710 always be verified using the IntelliCom provided Software which will run on server PC or Laptop. If some connectivity is broken then we can verify this with IntelliCom software running on the server then we can take necessary action accordingly. Nodes connectivity will be monitored using a common server (PC or Laptop).

J. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

K. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to S&C Electric Company upon completion of testing.

III. Electromagnetic Compatibility Criteria for Unintentional Radiators

Electromagnetic Compatibility Criteria

§ 15.107 Conducted Emissions Limits

Test Requirement(s):

15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in Table 7. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

15.107 (b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in Table 7. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals. The lower limit applies at the band edges.

Frequency range (MHz)	Class A Conducted Limits (dBµV)		*Class B Conducted Limits (dBµV)	
	Quasi-Peak	Average	Quasi-Peak	Average
* 0.15- 0.45	79	66	66 - 56	56 - 46
0.45 - 0.5	79	66	56	46
0.5 - 30	73	60	60	50
Note 1 — The lower limit shall apply at the transition frequencies. Note 2 — The limit decreases linearly with the logarithm if the frequency in the range 0.15 MHz to 0.5 MHz.				

Table 7. Conducted Limits for Radio Frequency Devices calculated from FCC Part 15 Subsections 15.107(a) (b)

Test Procedures: The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. The method of testing, test conditions, and test procedures of ANSI C63.4 were used. The EUT was powered through a 50Ω/50µH LISN. An EMI receiver, connected to the measurement port of the LISN, scanned the frequency range from 150 kHz to 30 MHz in order to find the peak conducted emissions. All peak emissions within 6 dB of the limit were re-measured using a quasi-peak and/or average detector as appropriate.

Test Results: The EUT was compliant with the Class A requirement(s) of this section. Measured emissions were below applicable limits.

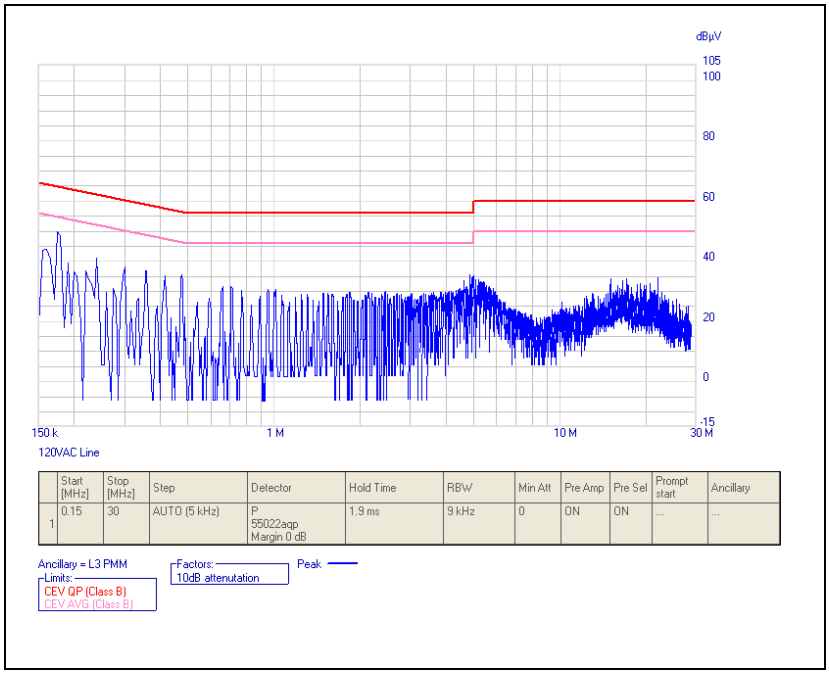
Test Engineer(s): Jonathan Chao

Test Date(s): 01/24/13

Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz)

Line	Freq. (MHz)	QP Amplitude	QP Limit	Delta	Pass	Average Amplitude	Average Limit	Delta	Pass
120VAC Line	.16	37.27	65.465	-28.195	Pass	9.88	55.465	-45.585	Pass
120VAC Line	.175	40.23	64.723	-24.493	Pass	28	54.723	-26.723	Pass
120VAC Line	.24	40.14	62.107	-21.967	Pass	30.83	52.107	-21.277	Pass

Table 8. Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz)

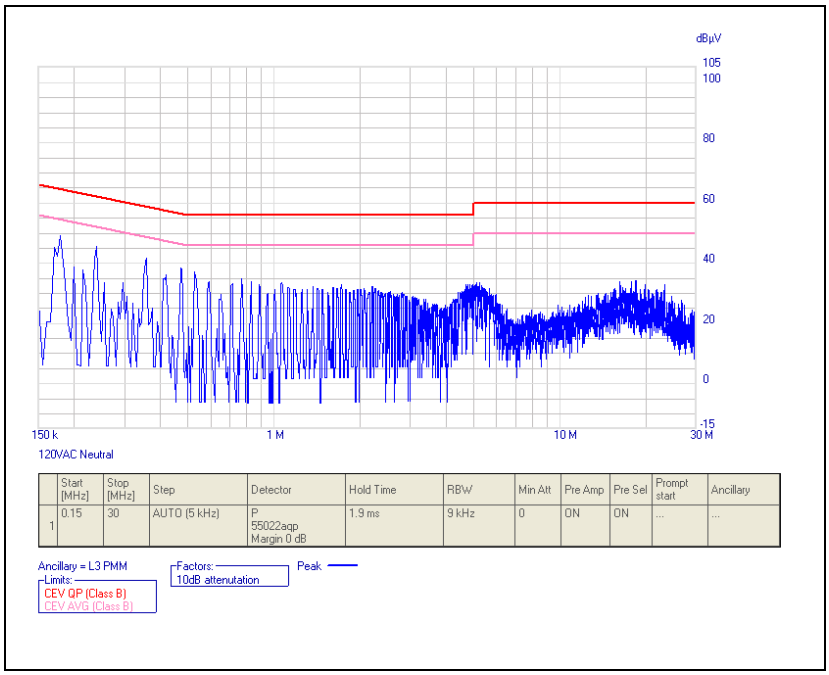


Plot 1. Conducted Emission, Phase Line Plot

Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz)

Line	Freq. (MHz)	QP Amplitude	QP Limit	Delta	Pass	Average Amplitude	Average Limit	Delta	Pass
120VAC Neutral	.17	40.1	64.963	-24.863	Pass	14.04	54.963	-40.923	Pass
120VAC Neutral	.18	53.01	64.49	-11.48	Pass	43.44	54.49	-11.05	Pass
120VAC Neutral	.24	46.6	62.107	-15.507	Pass	38.55	52.107	-13.557	Pass

Table 9. Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz)



Plot 2. Conducted Emission, Neutral Line Plot

Radiated Emission Limits

§ 15.109 Radiated Emissions Limits

Test Requirement(s): **15.109 (a)** Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the Class B limits expressed in Table 10.

15.109 (b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the Class A limits expressed in Table 10.

Frequency (MHz)	Field Strength (dBµV/m)	
	§15.109 (b), Class A Limit (dBµV) @ 10m	§15.109 (a),Class B Limit (dBµV) @ 3m
30 - 88	39.00	40.00
88 - 216	43.50	43.50
216 - 960	46.40	46.00
Above 960	49.50	54.00

Table 10. Radiated Emissions Limits calculated from FCC Part 15, §15.109 (a) (b)

Test Procedures: The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. The method of testing and test conditions of ANSI C63.4 were used. An antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. Unless otherwise specified, measurements were made using a quasi-peak detector with a 120 kHz bandwidth.

Test Results: The EUT was compliant with the Class A requirement(s) of this section. Measured emissions were below applicable limits.

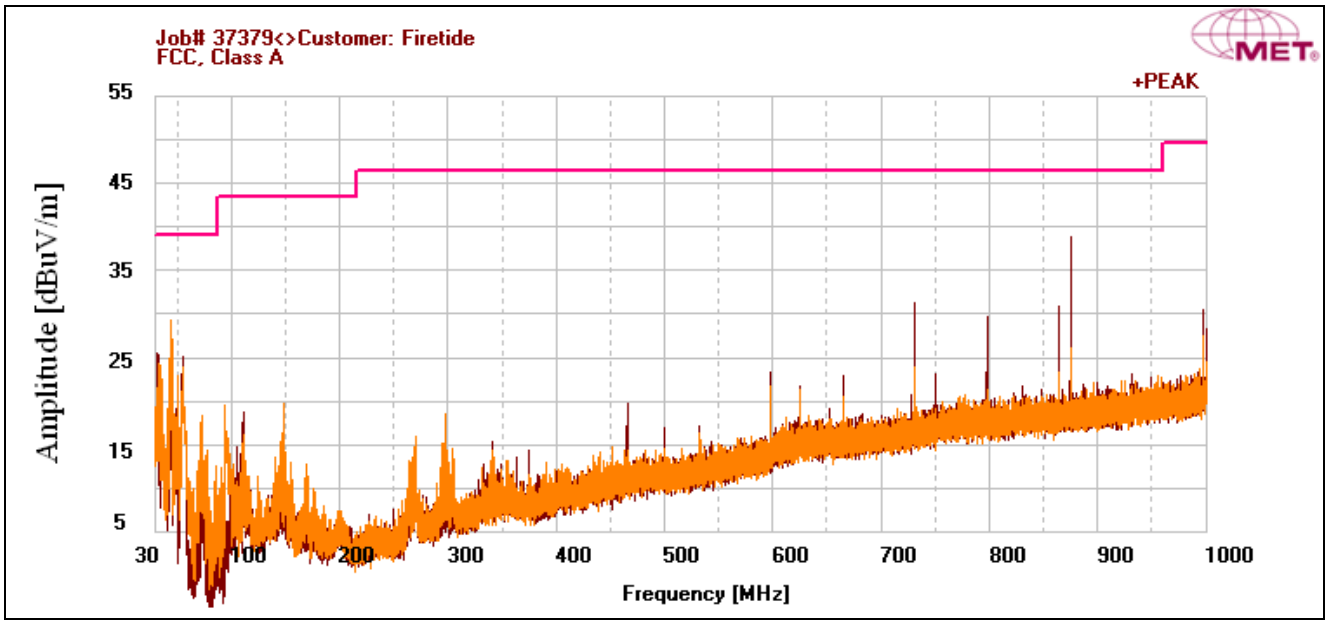
Test Engineer(s): Jonathan Chao

Test Date(s): 01/31/13

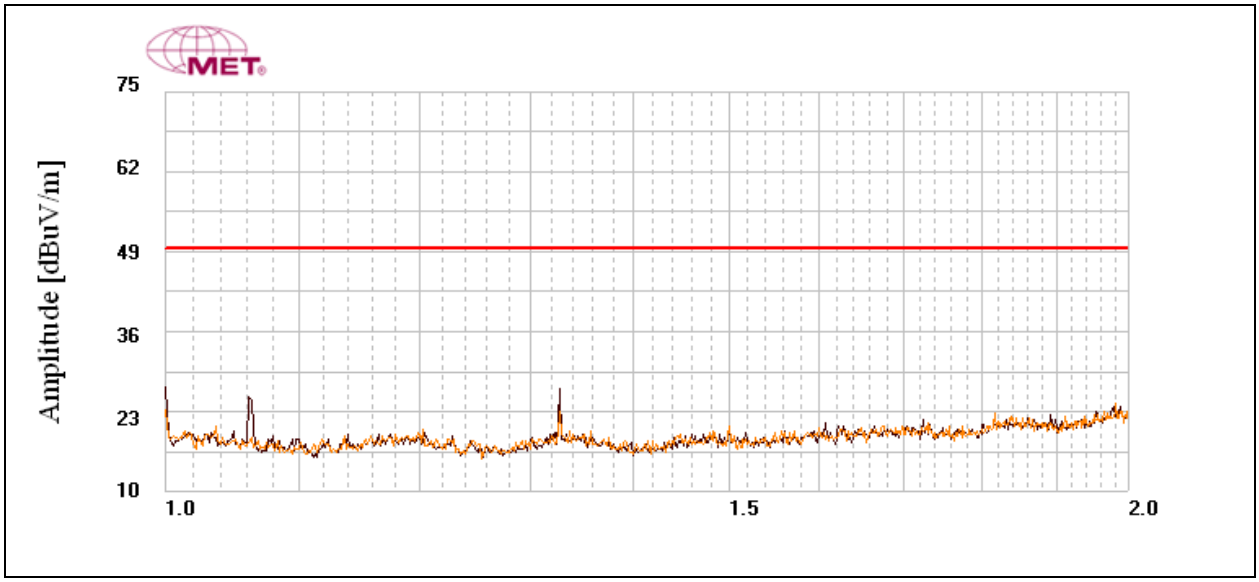
Radiated Emissions Limits Test Results, Class A

Frequency (MHz)	Antenna Polarity	EUT Azimuth (Degrees)	Antenna Height (cm)	Uncorrected Amplitude (dBuV)	ACF (dB/m)	Pre Amp Gain (dB)	CBL (dB)	DCF (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
875	H	263	100	22.33	22.5	0	4.668	-10.46	39.038	46.4	-7.362
864	H	273	100	14.62	22.38	0	4.618	-10.46	31.158	46.4	-15.242
797	H	111	100	12.5	21.86	0	4.384	-10.46	28.284	46.4	-18.116
731	H	100	100	17.5	21.1	0	4.149	-10.46	32.289	46.4	-14.111
465	H	290	100	9.68	17.6	0	3.342	-10.46	20.162	46.4	-26.238
43.8	V	0	100	24.89	11.82	0	0.918	-10.46	27.168	39	-11.832

Table 11. Radiated Emissions Limits, Test Results, 30 MHz – 1 GHz, FCC Limits



Plot 3. Radiated Emissions, 30 MHz - 1 GHz, FCC Limits

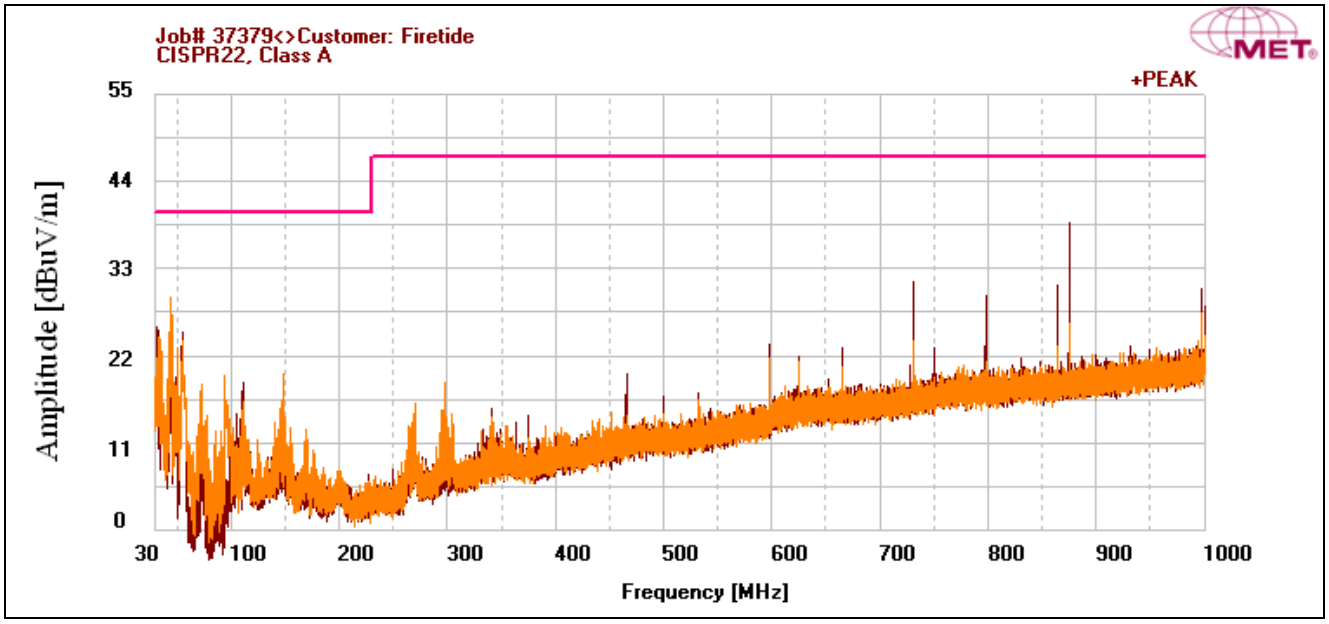


Plot 4. Radiated Emissions, Above 1 GHz, FCC Limits

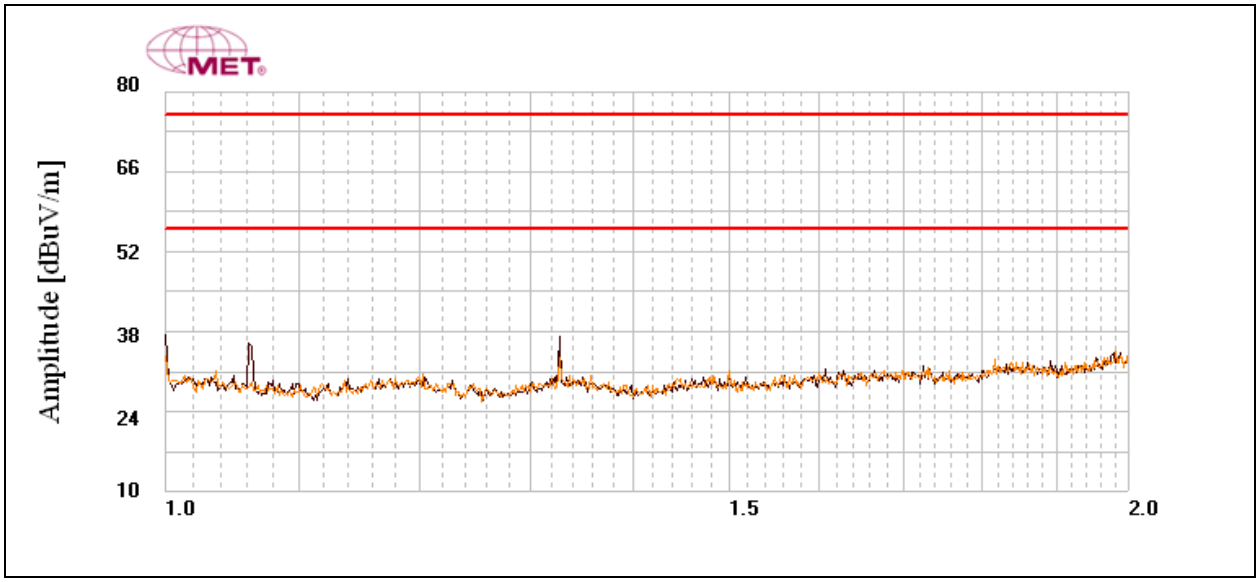
Radiated Emissions Limits Test Results, Class A

Frequency (MHz)	Antenna Polarity	EUT Azimuth (Degrees)	Antenna Height (cm)	Uncorrected Amplitude (dBuV)	ACF (dB/m)	Pre Amp Gain (dB)	CBL (dB)	DCF (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
875	H	263	100	22.33	22.5	0	4.668	-10.46	39.038	47	-7.962
864	H	273	100	14.62	22.38	0	4.618	-10.46	31.158	47	-15.842
797	H	111	100	12.5	21.86	0	4.384	-10.46	28.284	47	-18.716
731	H	100	100	17.5	21.1	0	4.149	-10.46	32.289	47	-14.711
465	H	290	100	9.68	17.6	0	3.342	-10.46	20.162	47	-26.838
43.8	V	0	100	24.89	11.82	0	0.918	-10.46	27.168	40	-12.832

Table 12. Radiated Emissions Limits, Test Results, ICES-003 Limits



Plot 5. Radiated Emissions, 30 MHz - 1 GHz, CISPR Limits



Plot 6. Radiated Emissions, Above 1GHz, CISPR Limits

IV. Electromagnetic Compatibility Criteria for Intentional Radiators

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

Test Requirement: **§ 15.203:** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

a.) Antenna must be permanently attached to the unit.

b.) Antenna must use a unique type of connector to attach to the EUT.

c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Results: The EUT as tested is compliant the criteria of §15.203. EUT uses a Reverse SMA which is a unique type of connector to attach to the EUT

Test Engineer(s): Jonathan Chao

Test Date(s): 02/06/13

Gain	Type	Model	Manufacturer
3dBi	Omni	98144PRSX003	Master Wave Technology Co.

Table 13. Antenna List

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.207(a) Conducted Emissions Limits

Test Requirement(s): **§ 15.207 (a):** For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Σ line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dBμV)	
	Quasi-Peak	Average
* 0.15- 0.45	66 - 56	56 - 46
0.45 - 0.5	56	46
0.5 - 30	60	50

Table 14. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Test Procedure: The EUT was placed on a 0.8 m-high wooden table inside a screen room. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω/50 μH Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with *ANSI C63.4-2003 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"*. The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50 Ω/50 μH LISN as the input transducer to an EMC/field intensity meter. For the purpose of this testing, the transmitter was turned on. Scans were performed with the transmitter on.

Test Results: The EUT was compliant with this requirement.

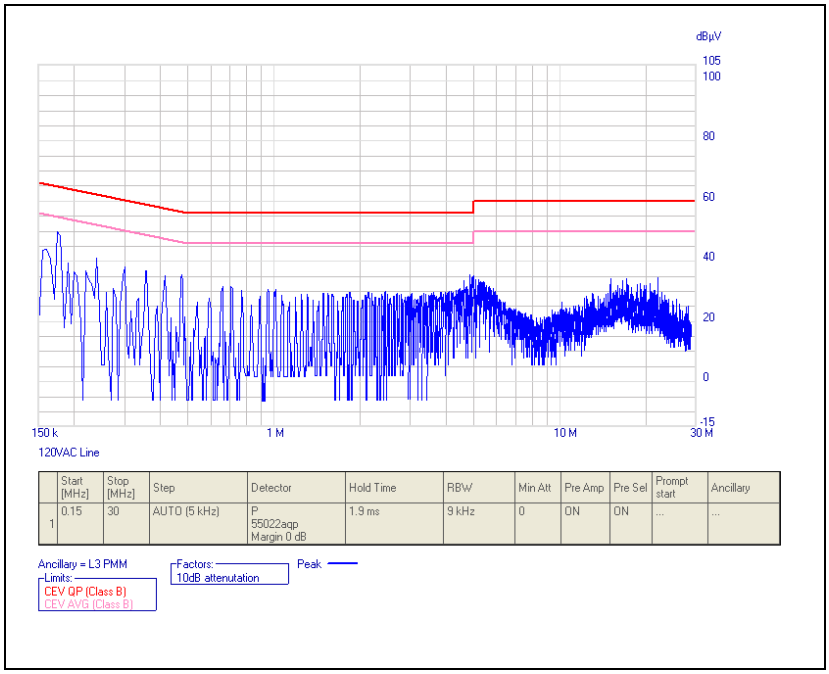
Test Engineer(s): Jonathan Chao

Test Date(s): 02/05/13

15.207(a) Conducted Emissions Test Results

Line	Freq. (MHz)	QP Amplitude	QP Limit	Delta	Pass	Average Amplitude	Average Limit	Delta	Pass
120VAC Line	.16	37.27	65.465	-28.195	Pass	9.88	55.465	-45.585	Pass
120VAC Line	.175	40.23	64.723	-24.493	Pass	28	54.723	-26.723	Pass
120VAC Line	.24	40.14	62.107	-21.967	Pass	30.83	52.107	-21.277	Pass

Table 15. Conducted Emissions, 15.207(a), Phase Line, Test Results

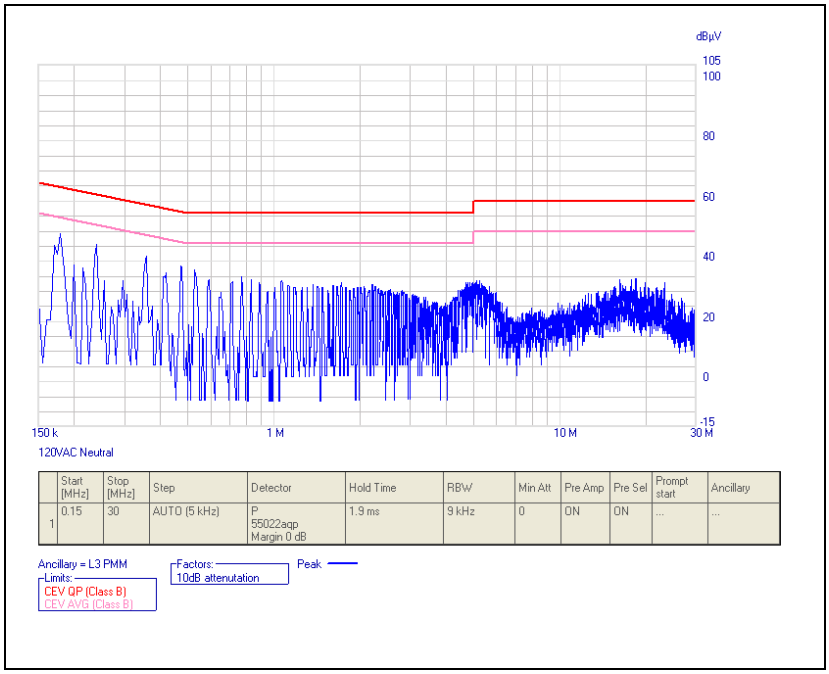


Plot 7. Conducted Emissions, 15.207(a), Phase Line

15.207(a) Conducted Emissions Test Results

Line	Freq. (MHz)	QP Amplitude	QP Limit	Delta	Pass	Average Amplitude	Average Limit	Delta	Pass
120VAC Neutral	.17	40.1	64.963	-24.863	Pass	14.04	54.963	-40.923	Pass
120VAC Neutral	.18	53.01	64.49	-11.48	Pass	43.44	54.49	-11.05	Pass
120VAC Neutral	.24	46.6	62.107	-15.507	Pass	38.55	52.107	-13.557	Pass

Table 16. Conducted Emissions, 15.207(a), Neutral Line, Test Results



Plot 8. Conducted Emissions, 15.207(a), Neutral Line

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(a)(2) 6 dB and 99% Bandwidth

Test Requirements: **§ 15.247(a)(2):** Operation under the provisions of this section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

For systems using digital modulation techniques, the EUT may operate in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Test Procedure: The transmitter was on and transmitting at the highest output power. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using a RBW approximately 1% of the total emission bandwidth, VBW > RBW. The 6 dB Bandwidth was measured and recorded. The measurements were performed on the low, mid and high channels.

Test Results The EUT was compliant with § 15.247 (a)(2).

The 6 dB and 99% Bandwidth was determined from the plots on the following pages.

Test Engineer(s): Jonathan Chao

Test Date(s): 02/05/13

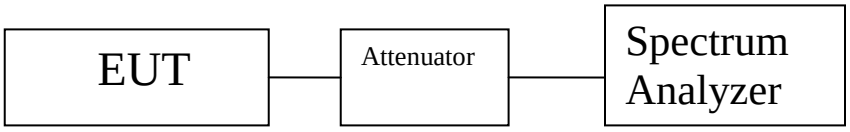


Figure 2. Block Diagram, Occupied Bandwidth Test Setup

Occupied Bandwidth Test Results

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	2412	10.169
Mid	2437	12.118
High	2462	11.138

Table 17. 6 dB Occupied Bandwidth, Test Results, 802.11b, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	2412	16.469
Mid	2437	16.472
High	2462	16.470

Table 18. 6 dB Occupied Bandwidth, Test Results, 802.11g, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	2412	17.743
Mid	2437	17.715
High	2462	17.723

Table 19. 6 dB Occupied Bandwidth, Test Results, 802.11n 20 MHz, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	2422	36.499
Mid	2437	36.462
High	2452	36.337

Table 20. 6 dB Occupied Bandwidth, Test Results, 802.11n 40 MHz, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	16.534
Mid	5785	16.461
High	5825	16.439

Table 21. 6 dB Occupied Bandwidth, Test Results, 802.11a, 5 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.728
Mid	5785	17.642
High	5825	17.610

Table 22. 6 dB Occupied Bandwidth, Test Results, 802.11n 20 MHz, 5 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.476
High	5795	36.299

Table 23. 6 dB Occupied Bandwidth, Test Results, 802.11n 40 MHz, 5 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	2412	15.079
Mid	2437	15.020
High	2462	15.136

Table 24. 99% Occupied Bandwidth, Test Results, 802.11b, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	2412	16.430
Mid	2437	16.393
High	2462	16.375

Table 25. 99% Occupied Bandwidth, Test Results, 802.11g, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	2412	17.595
Mid	2437	17.573
High	2462	17.524

Table 26. 99% Occupied Bandwidth, Test Results, 802.11n 20 MHz, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	2422	36.256
Mid	2437	36.480
High	2452	36.759

Table 27. 99% Occupied Bandwidth, Test Results, 802.11n 40 MHz, 2.4 GHz

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	17.098
Mid	5785	16.986
High	5825	18.409

Table 28. 99% Occupied Bandwidth, Test Results, 802.11a, 5 GHz

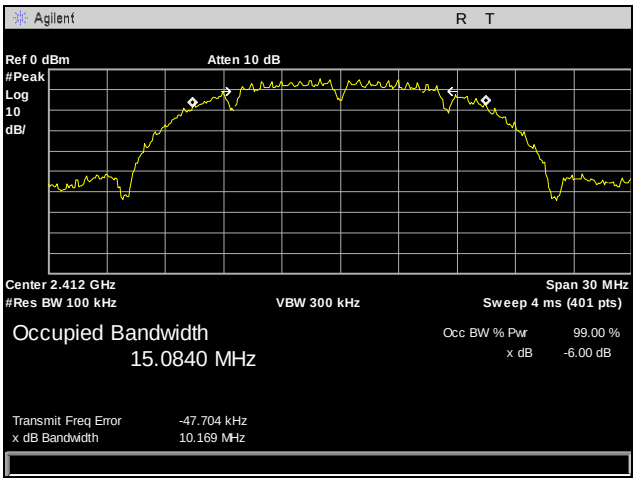
Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	18.226
Mid	5785	18.236
High	5825	17.524

Table 29. 99% Occupied Bandwidth, Test Results, 802.11n 20 MHz, 5 GHz

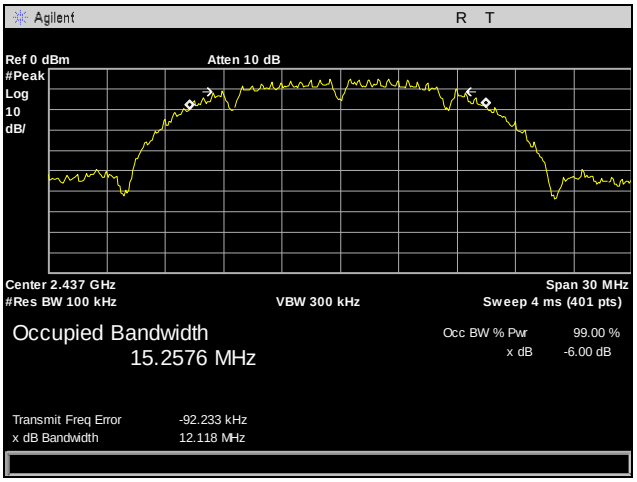
Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	37.123
High	5795	37.090

Table 30. 99% Occupied Bandwidth, Test Results, 802.11n 40 MHz, 5 GHz

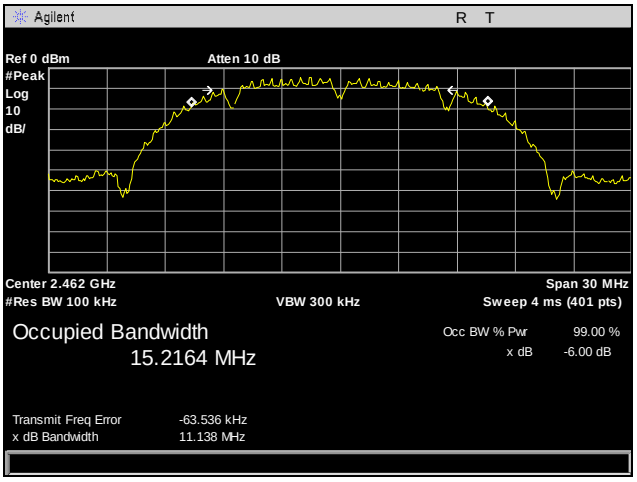
6 dB Occupied Bandwidth Test Results



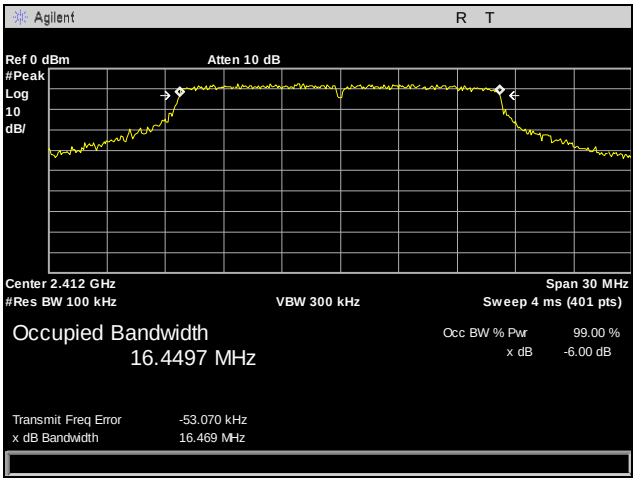
Plot 9. 6 dB Occupied Bandwidth, 802.11b 20 MHz, 2412 MHz, Low Channel



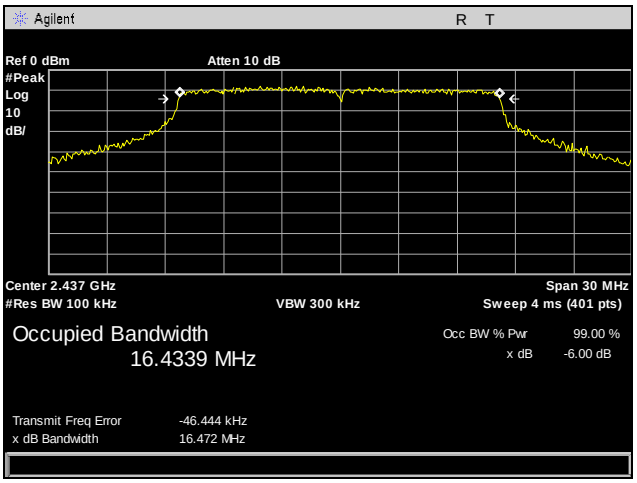
Plot 10. 6 dB Occupied Bandwidth, 802.11b 20 MHz, 2437 MHz, Mid Channel



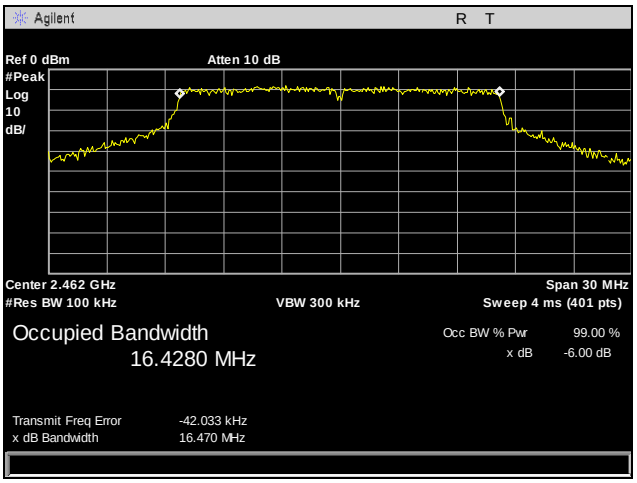
Plot 11. 6 dB Occupied Bandwidth, 802.11b 20 MHz, 2462 MHz, High Channel



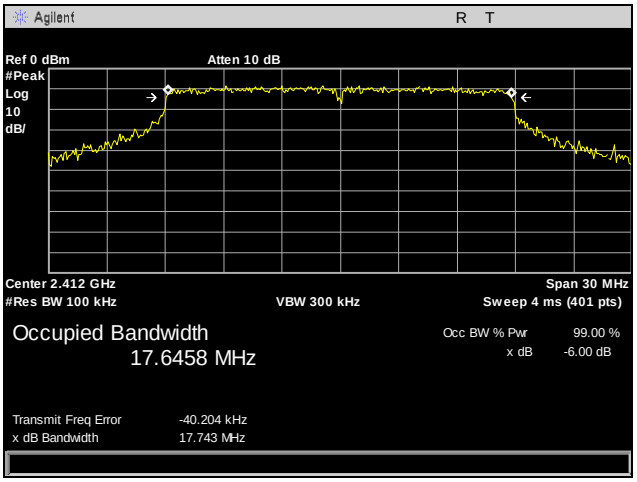
Plot 12. 6 dB Occupied Bandwidth, 802.11g 20 MHz, 2412 MHz, Low Channel



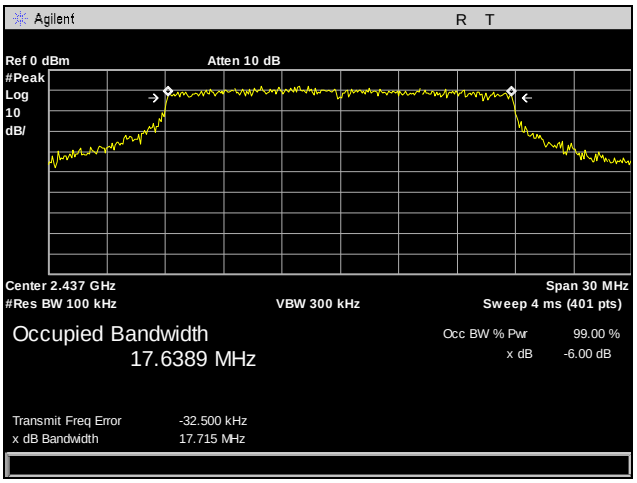
Plot 13. 6 dB Occupied Bandwidth, 802.11g 20 MHz, 2437 MHz, Mid Channel



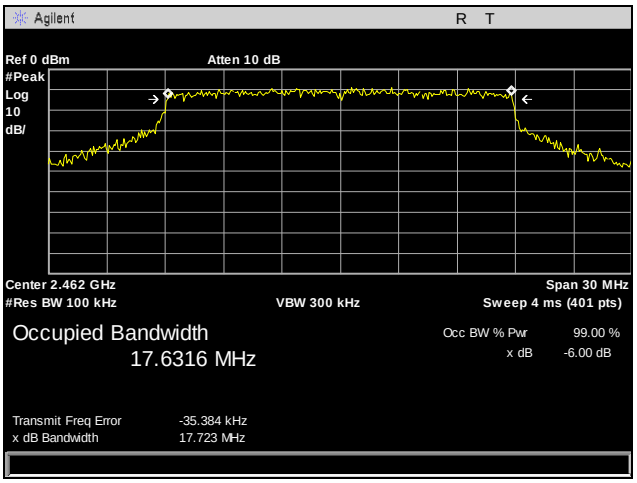
Plot 14. 6 dB Occupied Bandwidth, 802.11g 20 MHz, 2462 MHz, High Channel



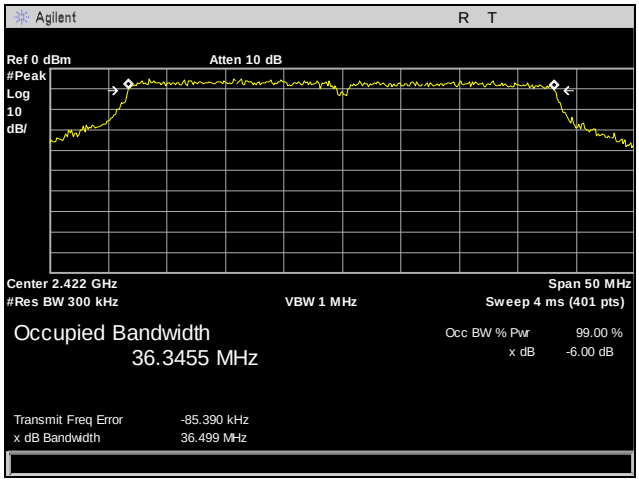
Plot 15. 6 dB Occupied Bandwidth, 802.11n 20 MHz, 2412 MHz, Low Channel



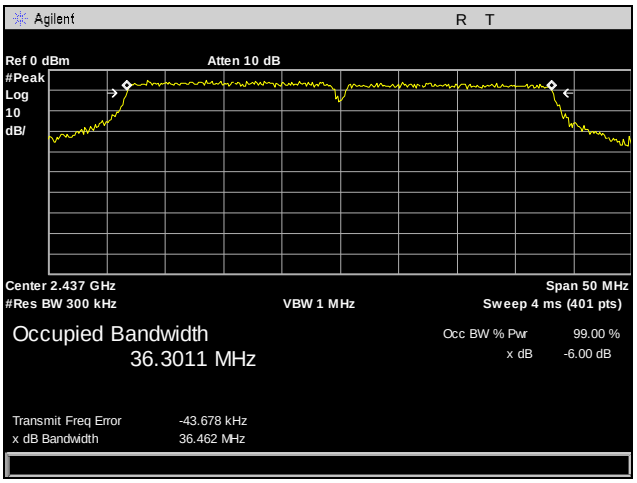
Plot 16. 6 dB Occupied Bandwidth, 802.11n 20 MHz, 2437 MHz, Mid Channel



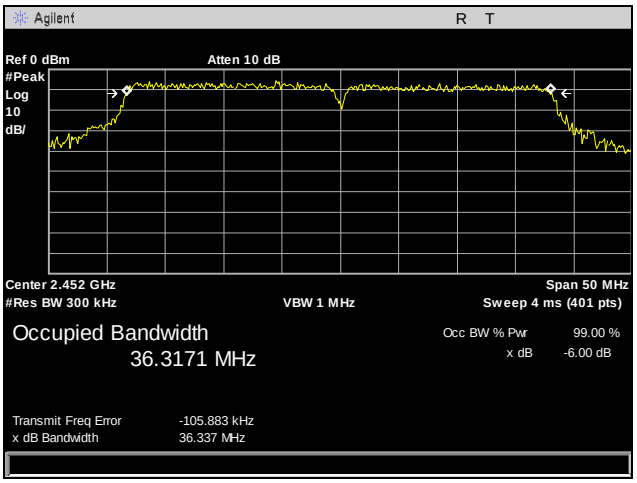
Plot 17. 6 dB Occupied Bandwidth, 802.11n 20 MHz, 2462 MHz, High Channel



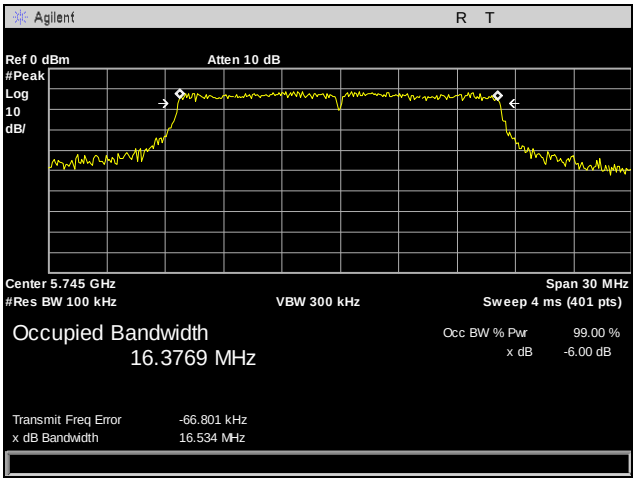
Plot 18. 6 dB Occupied Bandwidth, 802.11n 40 MHz, 2422 MHz, Low Channel



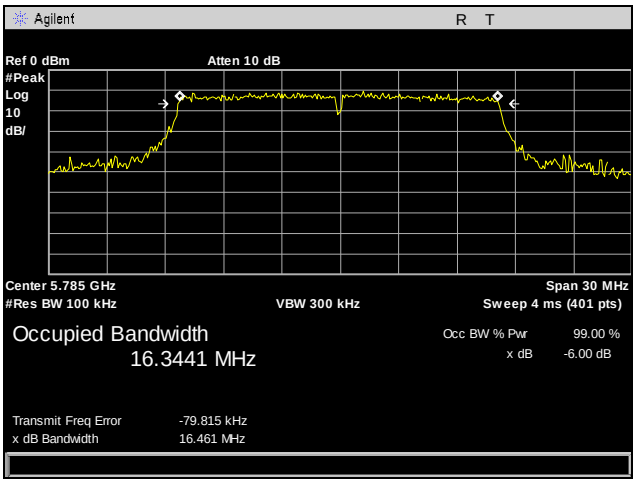
Plot 19. 6 dB Occupied Bandwidth, 802.11n 40 MHz, 2437 MHz, Mid Channel



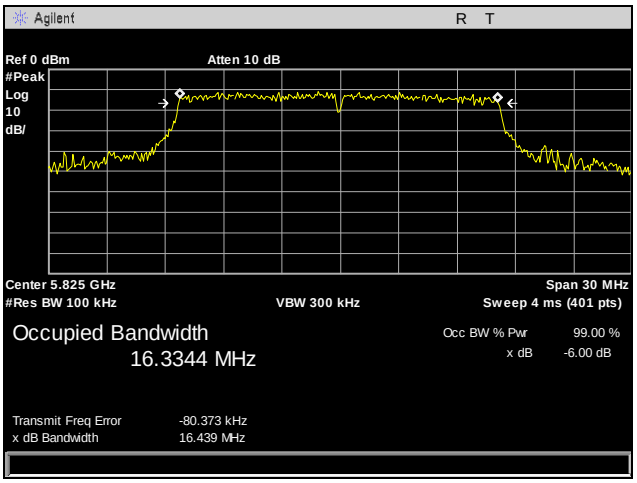
Plot 20. 6 dB Occupied Bandwidth, 802.11n 40 MHz, 2452 MHz, High Channel



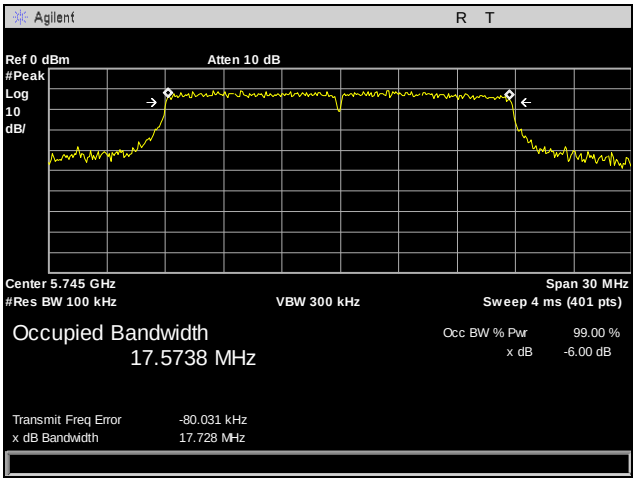
Plot 21. 6 dB Occupied Bandwidth, 802.11a 20 MHz, 5745 MHz, Low Channel



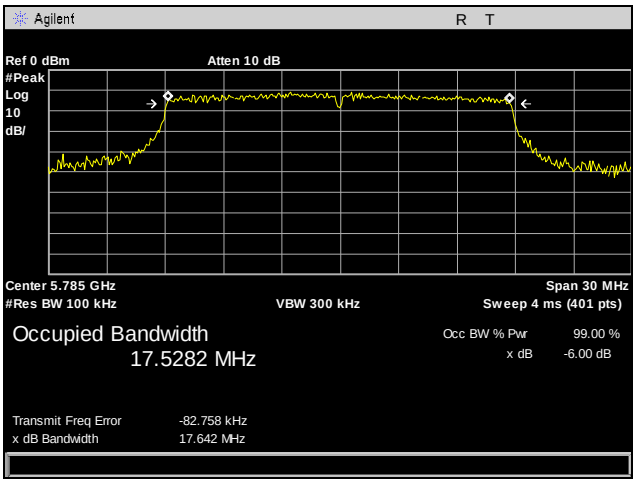
Plot 22. 6 dB Occupied Bandwidth, 802.11a 20 MHz, 5785 MHz, Mid Channel



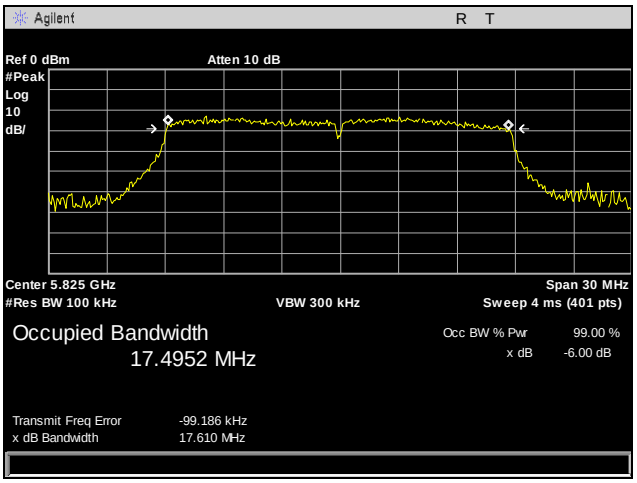
Plot 23. 6 dB Occupied Bandwidth, 802.11a 20MHz, 5825 MHz, High Channel



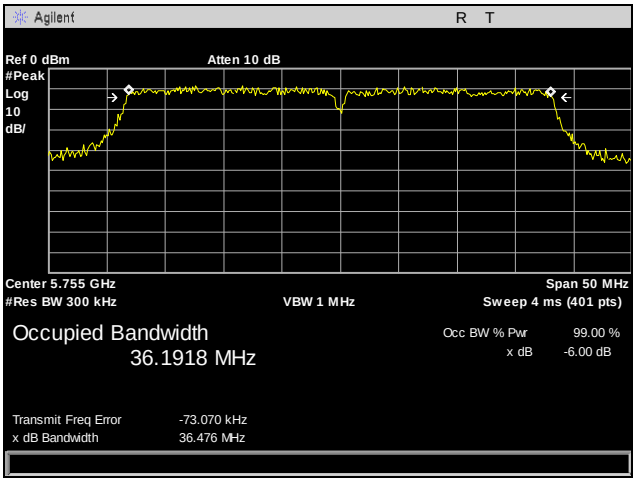
Plot 24. 6 dB Occupied Bandwidth, 802.11n 20 MHz, 5745 MHz, Low Channel



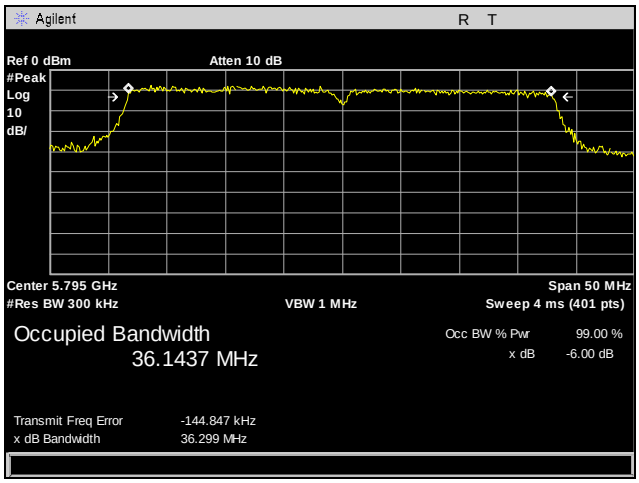
Plot 25. 6 dB Occupied Bandwidth, 802.11n 20 MHz, 5785 MHz, Mid Channel



Plot 26. 6 dB Occupied Bandwidth, 802.11n 20 MHz, 5825 MHz, High Channel

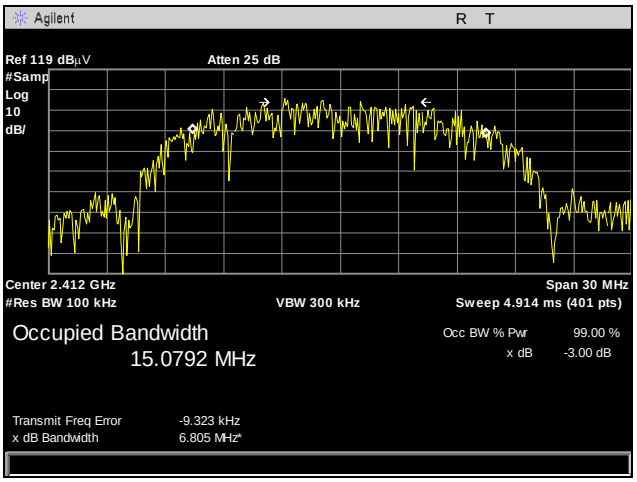


Plot 27. 6 dB Occupied Bandwidth, 802.11n 40 MHz, 5755 MHz, Low Channel

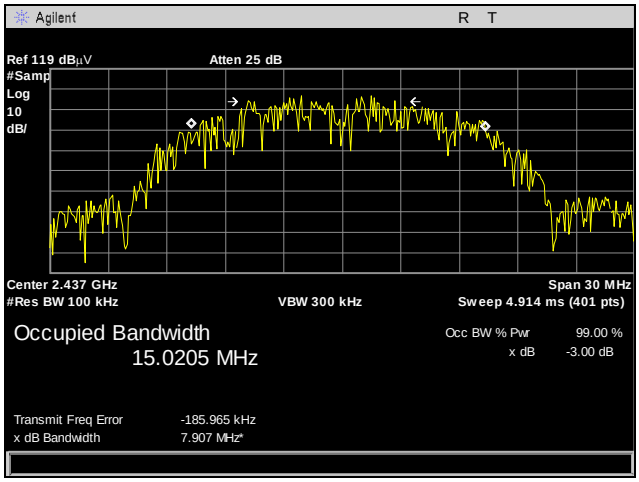


Plot 28. 6 dB Occupied Bandwidth, 802.11n 40 MHz, 5795 MHz, High Channel

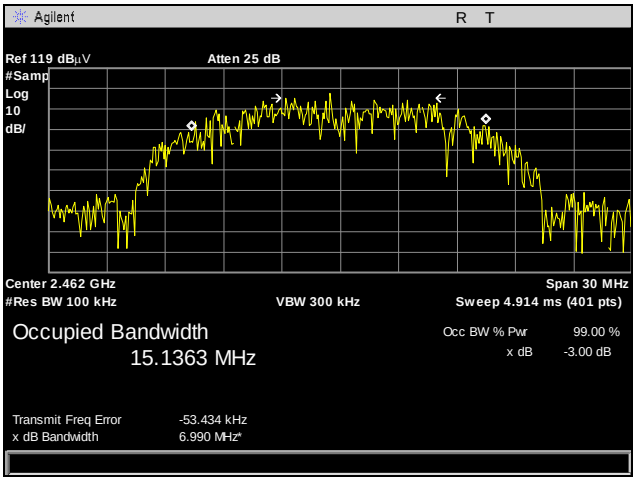
99% Occupied Bandwidth Test Results



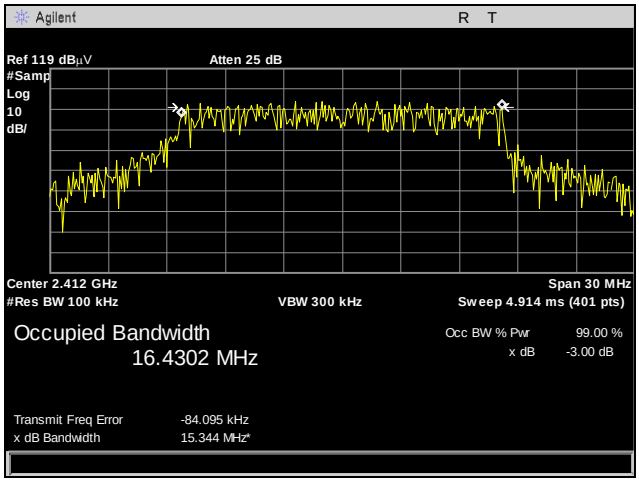
Plot 29. 99% Occupied Bandwidth, 802.11b 20 MHz, 2412 MHz, Low Channel



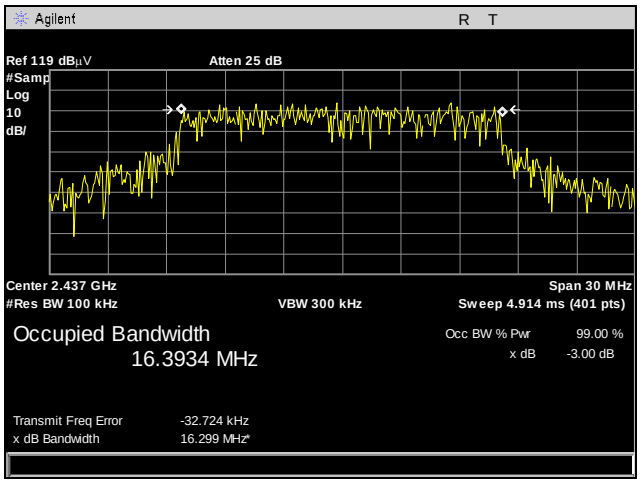
Plot 30. 99% Occupied Bandwidth, 802.11b 20 MHz, 2437 MHz, Mid Channel



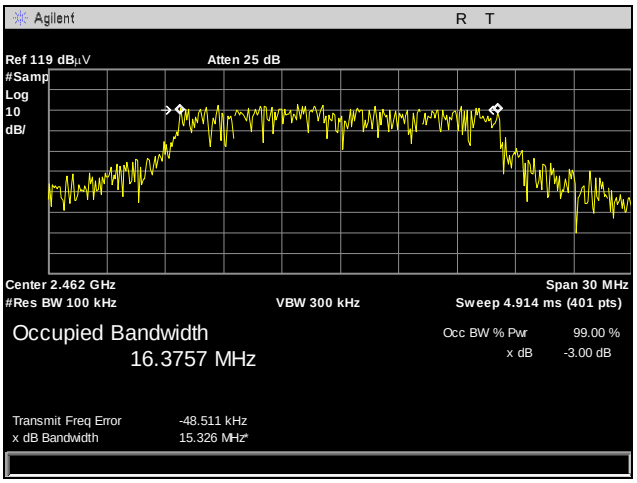
Plot 31. 99% Occupied Bandwidth, 802.11b 20 MHz, 2462 MHz, High Channel



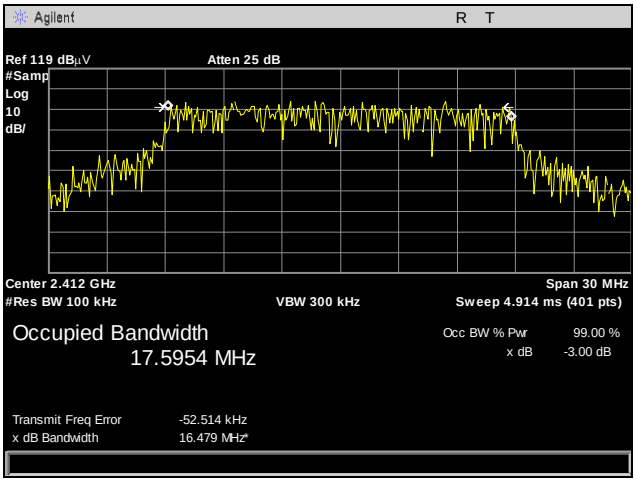
Plot 32. 99% Occupied Bandwidth, 802.11g 20 MHz, 2412 MHz, Low Channel



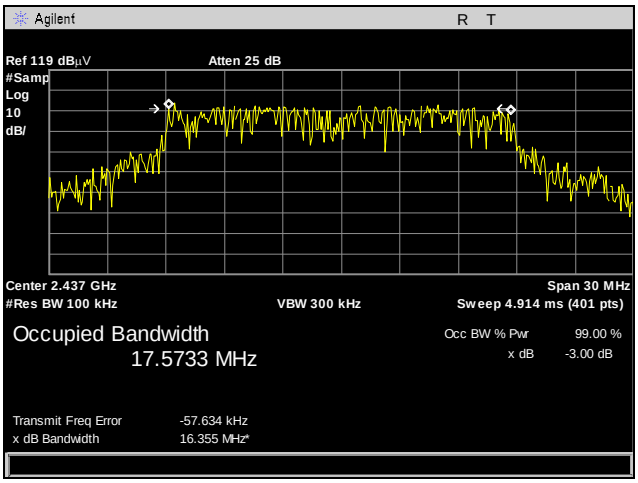
Plot 33. 99% Occupied Bandwidth, 802.11g 20 MHz, 2437 MHz, Mid Channel



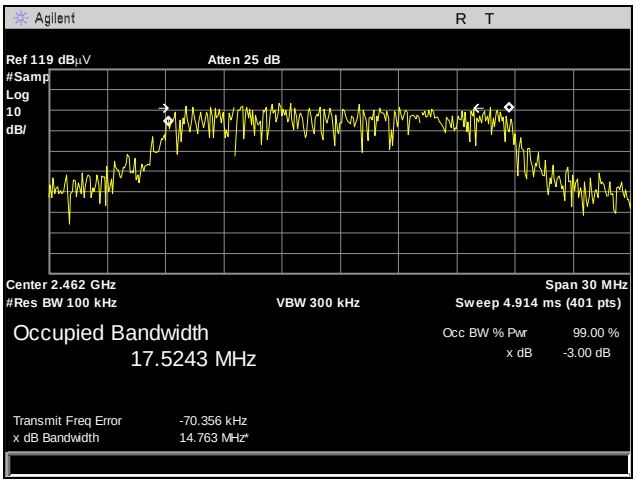
Plot 34. 99% Occupied Bandwidth, 802.11g 20 MHz, 2462 MHz, High Channel



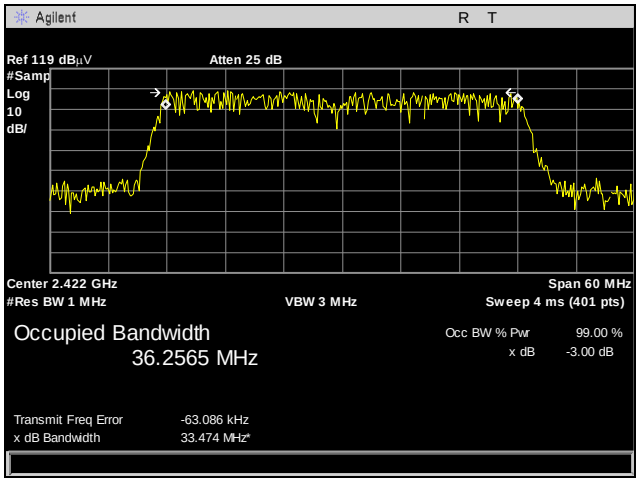
Plot 35. 99% Occupied Bandwidth, 802.11n 20 MHz, 2412 MHz, Low Channel



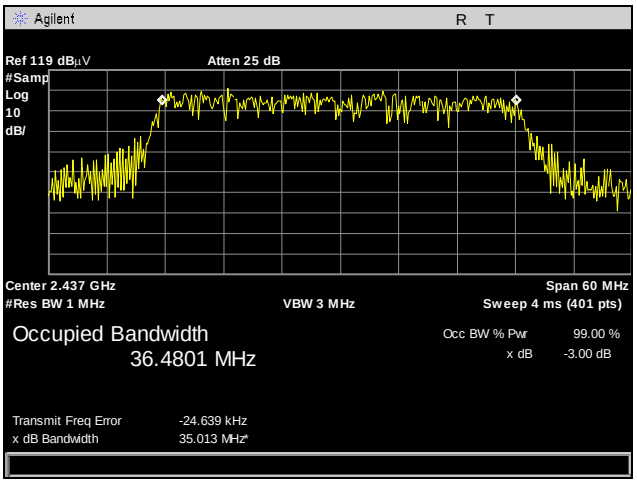
Plot 36. 99% Occupied Bandwidth, 802.11n 20 MHz, 2437 MHz, Mid Channel



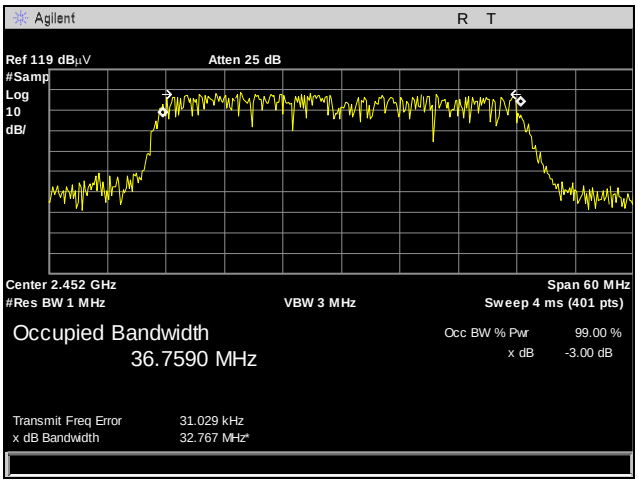
Plot 37. 99% Occupied Bandwidth, 802.11n 20 MHz, 2462 MHz, High Channel



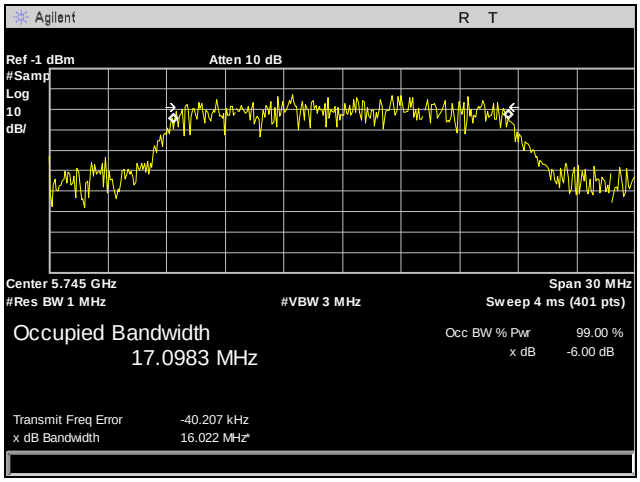
Plot 38. 99% Occupied Bandwidth, 802.11n 40 MHz, 2422 MHz, Low Channel



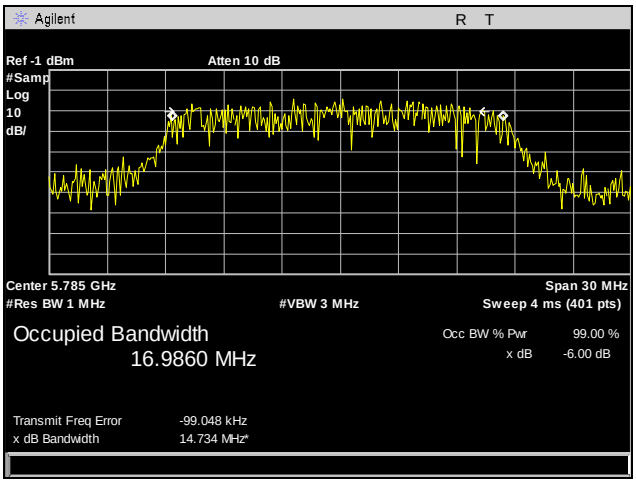
Plot 39. 99% Occupied Bandwidth, 802.11n 40 MHz, 2437 MHz, Mid Channel



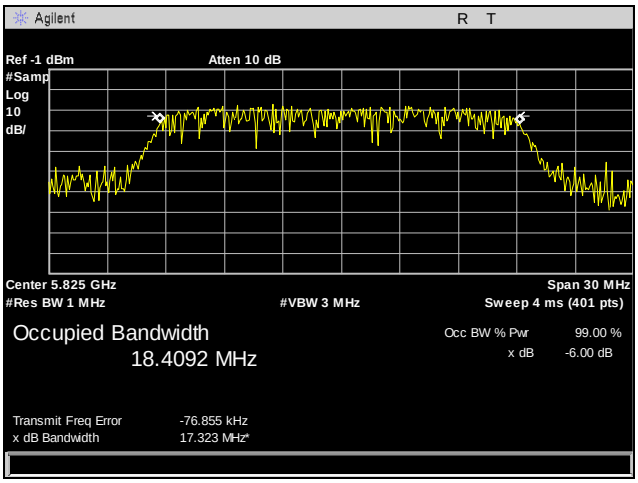
Plot 40. 99% Occupied Bandwidth, 802.11n 40 MHz, 2452 MHz, High Channel



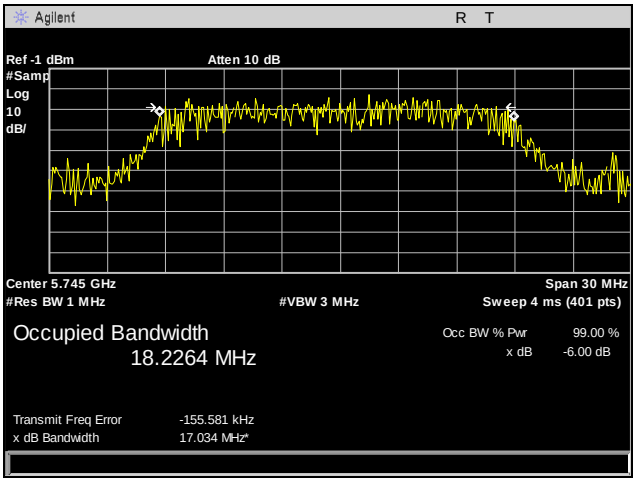
Plot 41. 99% Occupied Bandwidth, 802.11a 20 MHz, 5745 MHz, Low Channel



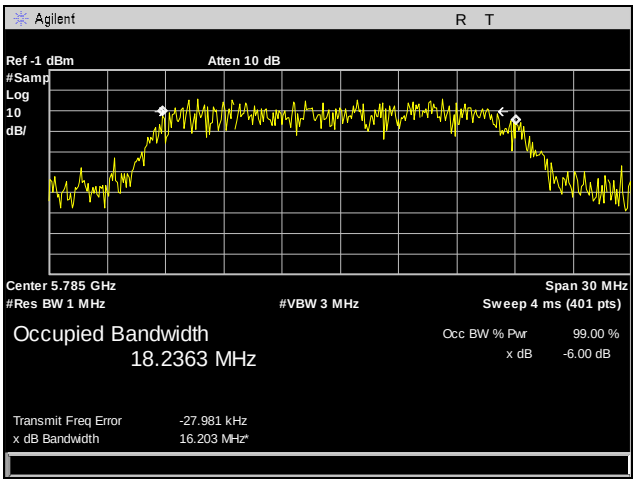
Plot 42. 99% Occupied Bandwidth, 802.11a 20 MHz, 5785 MHz, Mid Channel



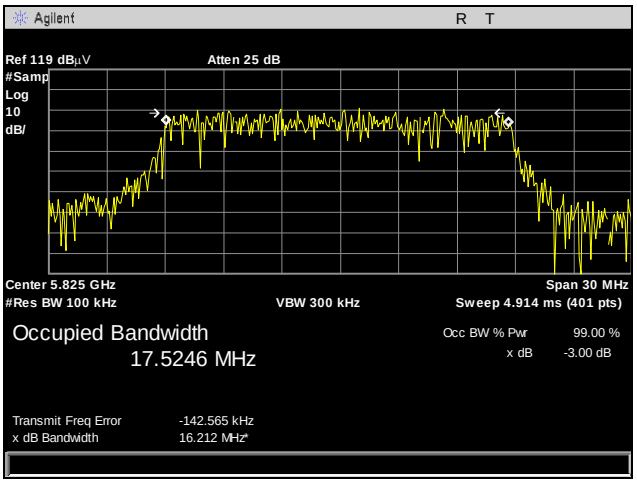
Plot 43. 99% Occupied Bandwidth, 802.11a 2 0MHz, 5825 MHz, High Channel



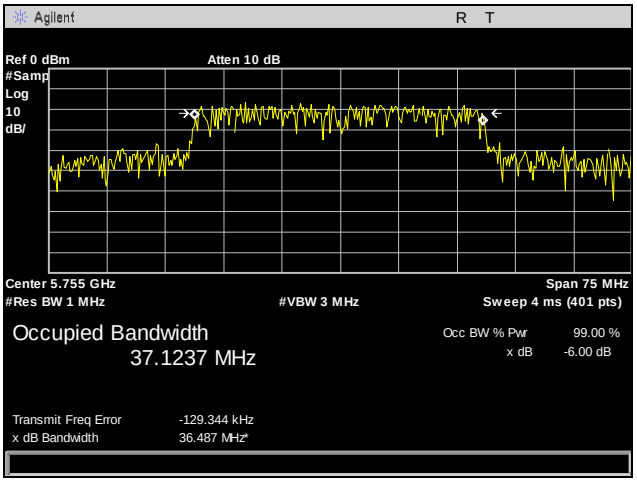
Plot 44. 99% Occupied Bandwidth, 802.11n 20 MHz, 5745 MHz, Low Channel



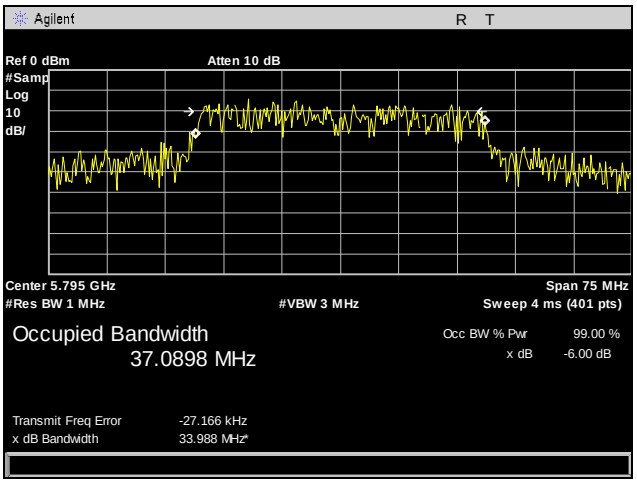
Plot 45. 99% Occupied Bandwidth, 802.11n 20 MHz, 5785 MHz, Mid Channel



Plot 46. 99% Occupied Bandwidth, 802.11n 20 MHz, 5825 MHz, High Channel



Plot 47. 99% Occupied Bandwidth, 802.11n 40 MHz, 5755 MHz, Low Channel



Plot 48. 99% Occupied Bandwidth, 802.11n 40 MHz, 5795 MHz, High Channel

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(b) Peak Power Output

Test Requirements: **§15.247(b):** The maximum peak output power of the intentional radiator shall not exceed the following:

Digital Transmission Systems (MHz)	Output Limit (Watts)
902-928	1.000
2400–2483.5	1.000
5725– 5850	1.000

Table 31. Output Power Requirements from §15.247(b)

§15.247(c): if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in the Table 31, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 2400 – 2483.5 MHz band and using a point to point application may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 5725 – 5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

Test Procedure: The transmitter was connected to a calibrated spectrum analyzer. The EUT was measured at the low, mid and high channels of each band at the maximum power level. A spectrum analyzer with a10dB attenuation was used in line. A Resolution bandwidth of 1MHz and Video Bandwidth of 3MHz were used. Plots were corrected for attenuator and cable loss. The device is not a MIMO. The device may have two identical radio modules. The power of each port was measured. In addition, it was verified that the total power from both radios will not exceed 1W.

Test Results: The EUT was compliant with the Peak Power Output limits of **§15.247(b)**.

Test Engineer(s): Jonathan Chao

Test Date(s): 02/05/13

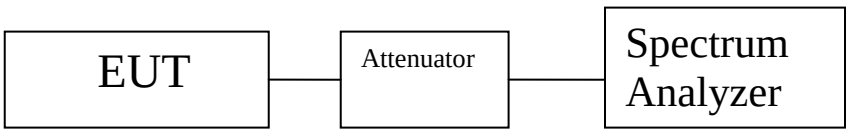


Figure 3. Peak Power Output Test Setup

Peak Power Output Test Results

Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	2412	18.91
Mid	2437	18.97
High	2462	19.51

Table 32. Peak Power Output, Test Results, 802.11b, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	2412	25.09
Mid	2437	25.75
High	2462	25.64

Table 33. Peak Power Output, Test Results, 802.11g, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	2412	26.04
Mid	2437	25.07
High	2462	25.42

Table 34. Peak Power Output, Test Results, 802.11n 20 MHz, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	2422	24.38
Mid	2437	25.95
High	2452	25.03

Table 35. Peak Power Output, Test Results, 802.11n 40 MHz, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	5745	23.72
Mid	5785	24.04
High	5825	22.64

Table 36. Peak Power Output, Test Results, 802.11a, 5 GHz

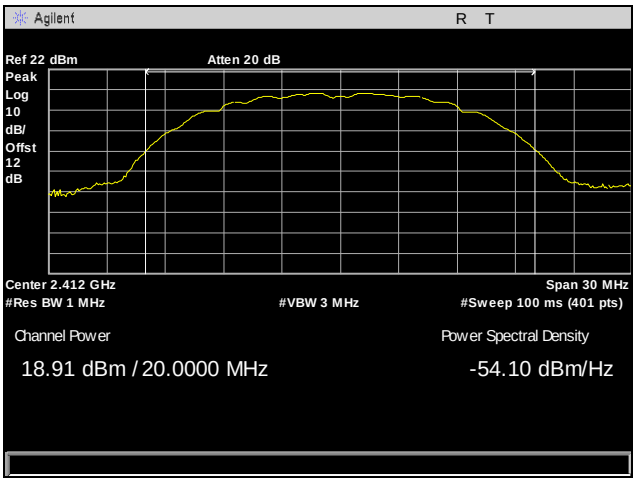
Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	5745	23.64
Mid	5785	23.53
High	5825	22.77

Table 37. Peak Power Output, Test Results, 802.11n 20 MHz, 5 GHz

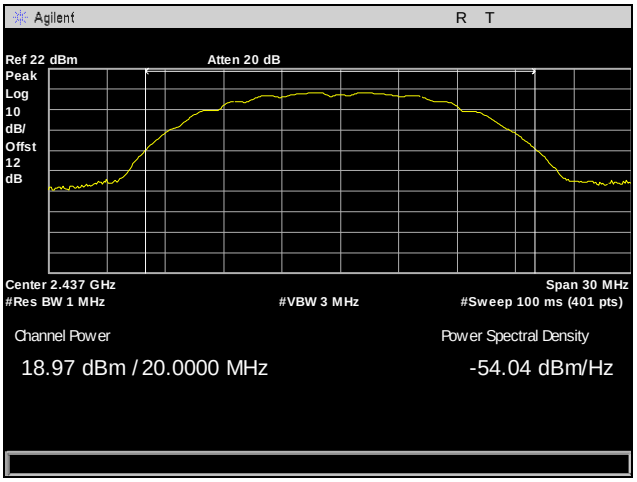
Carrier Channel	Frequency (MHz)	Measured Peak Output Power dBm
Low	5755	24.36
High	5795	21.47

Table 38. Peak Power Output, Test Results, 802.11n 40 MHz, 5 GHz

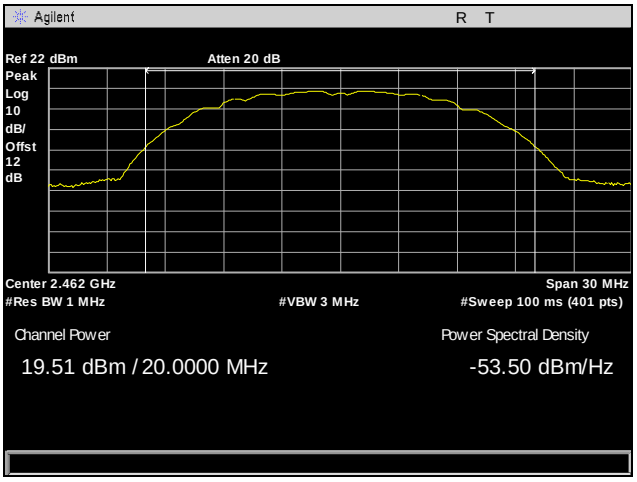
Peak Power Output Test Results



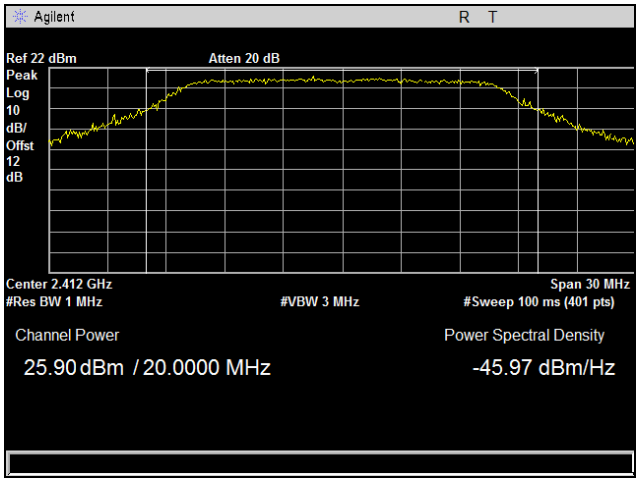
Plot 49. Output Power, 802.11b 20 MHz, 2412 MHz, Low Channel



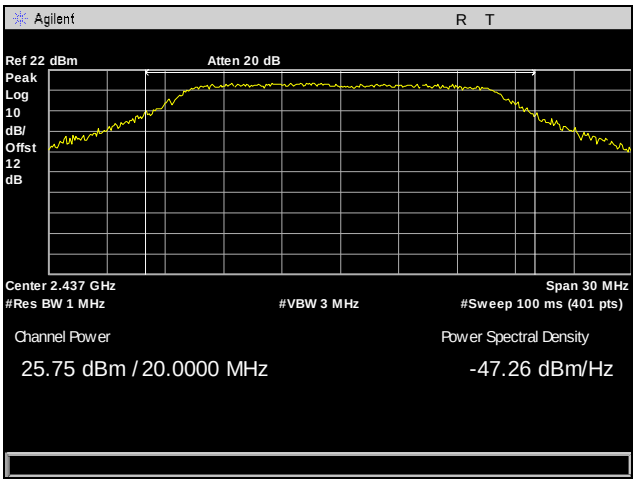
Plot 50. Output Power, 802.11b 20 MHz, 2437 MHz, Mid Channel



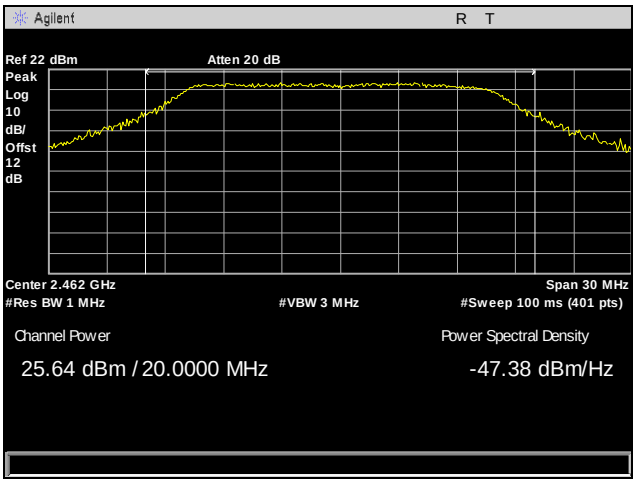
Plot 51. Output Power, 802.11b 20 MHz, 2462 MHz, High Channel



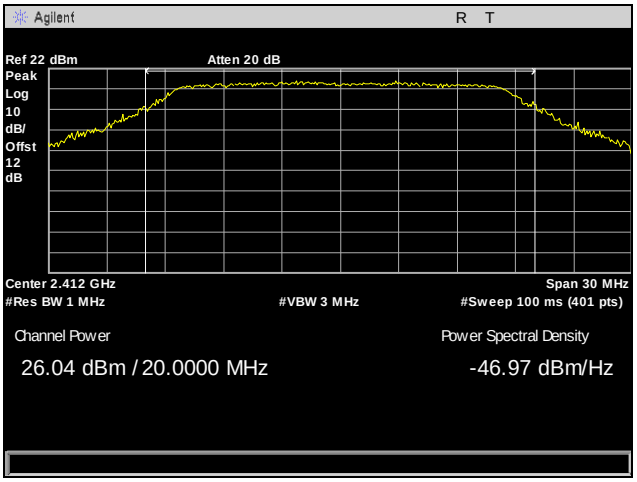
Plot 52. Output Power, 802.11g 20 MHz, 2412 MHz, Low Channel



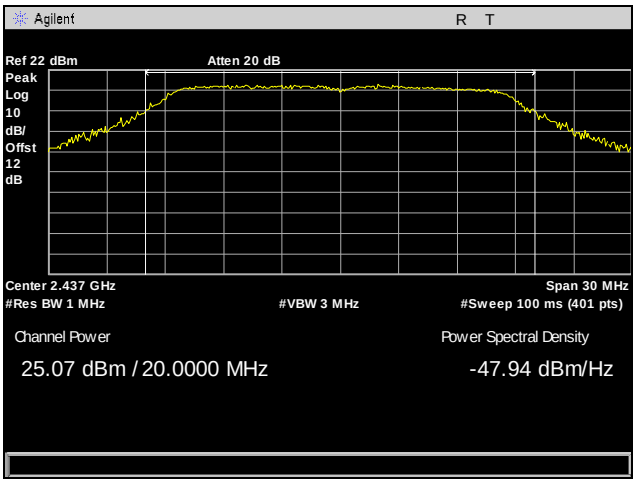
Plot 53. Output Power, 802.11g 20 MHz, 2437 MHz, Mid Channel



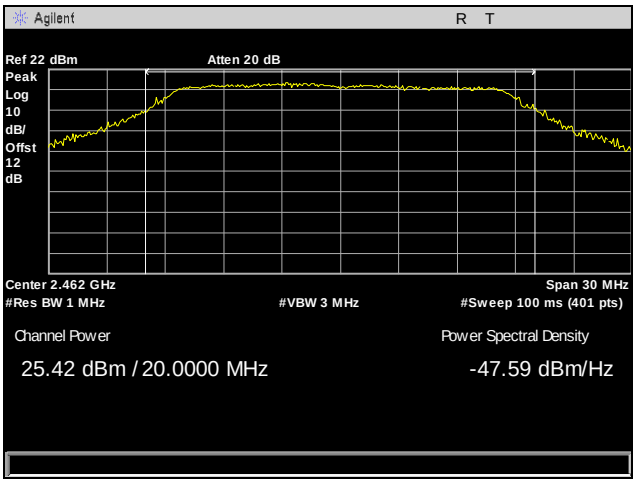
Plot 54. Output Power, 802.11g 20 MHz, 2462 MHz, High Channel



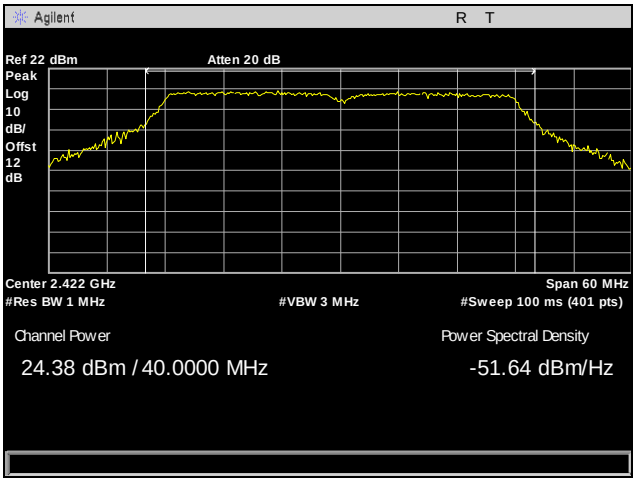
Plot 55. Output Power, 802.11n 20 MHz, 2412 MHz, Low Channel



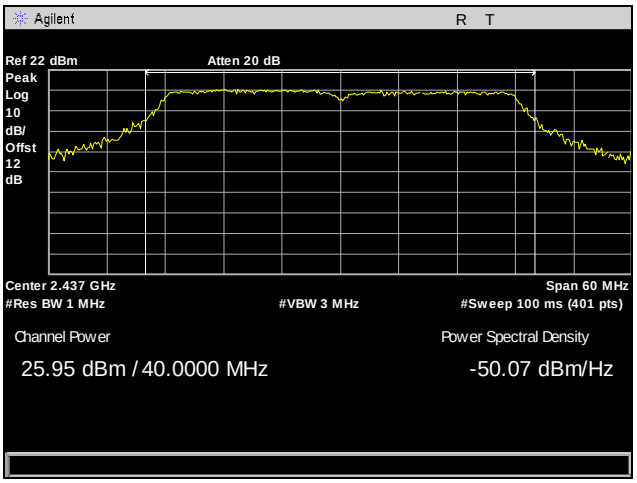
Plot 56. Output Power, 802.11n 20 MHz, 2437 MHz, Mid Channel



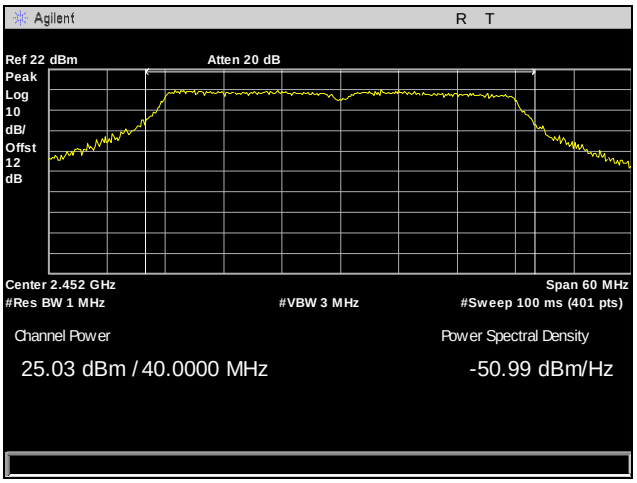
Plot 57. Output Power, 802.11n 20 MHz, 2462 MHz, High Channel



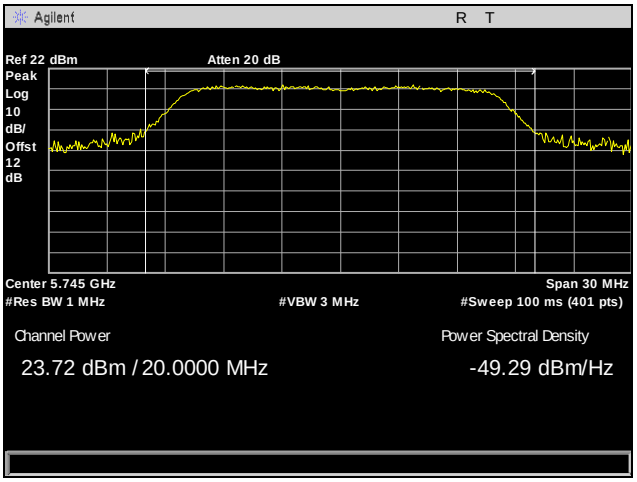
Plot 58. Output Power, 802.11n 40 MHz, 2422 MHz, Low Channel



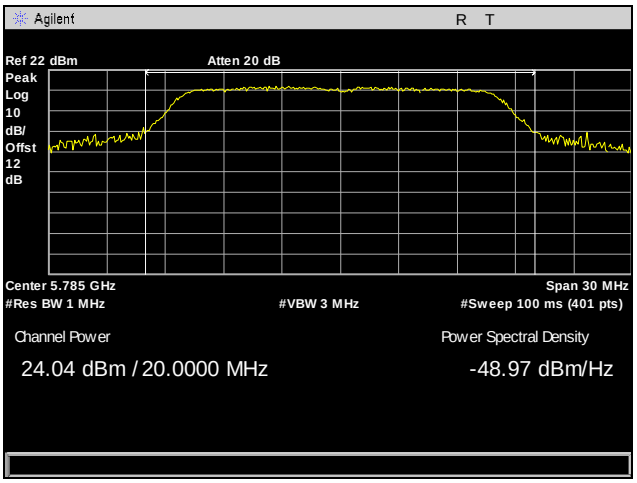
Plot 59. Output Power, 802.11n 40 MHz, 2437 MHz, Mid Channel



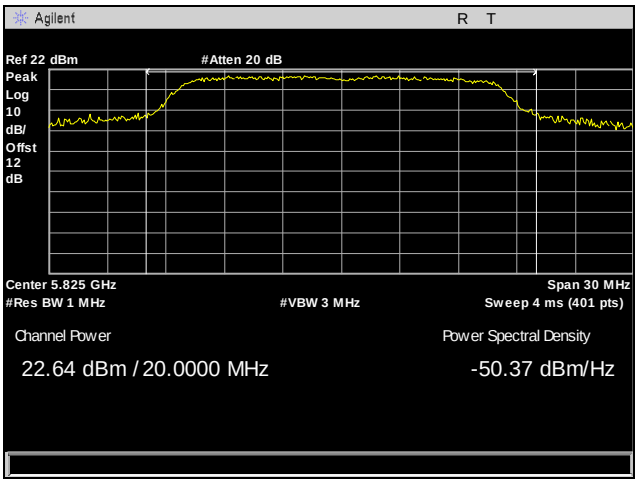
Plot 60. Output Power, 802.11n 40 MHz, 2452 MHz, High Channel



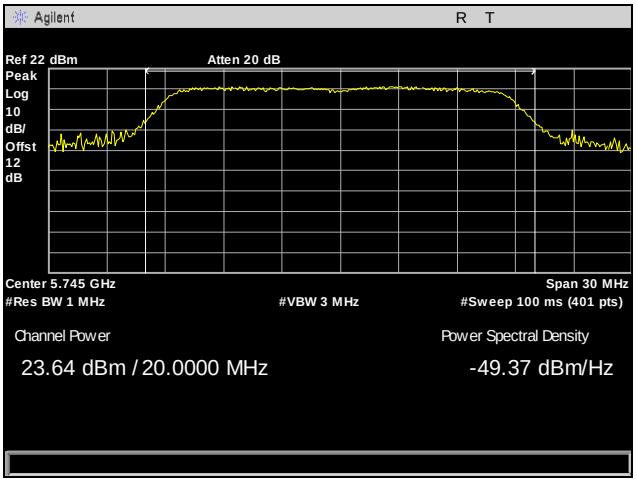
Plot 61. Output Power, 802.11a 20 MHz, 5745 MHz, Low Channel



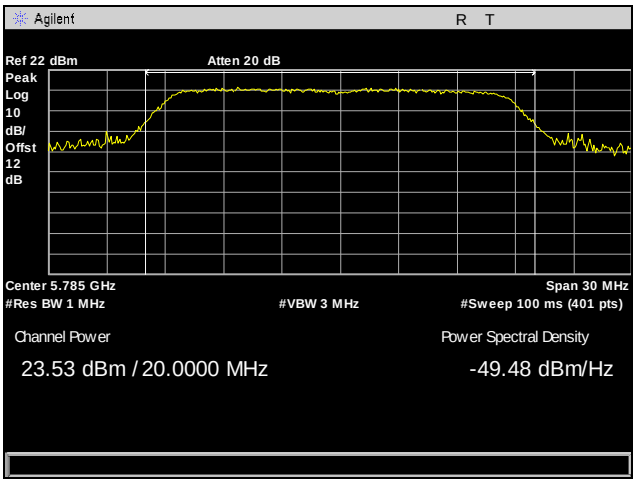
Plot 62. Output Power, 802.11a 20 MHz, 5785 MHz, Low Channel



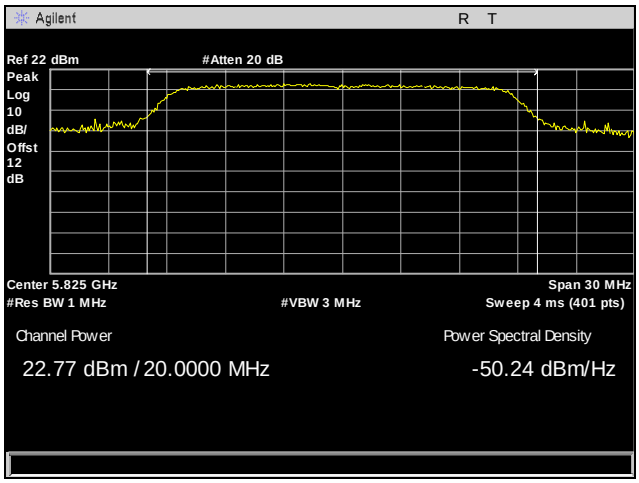
Plot 63. Output Power, 802.11a 20 MHz, 5825 MHz, High Channel



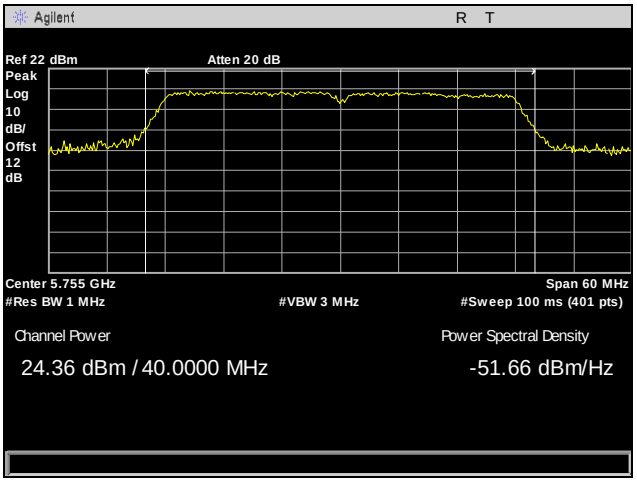
Plot 64. Output Power, 802.11n 20 MHz, 5745 MHz, Low Channel



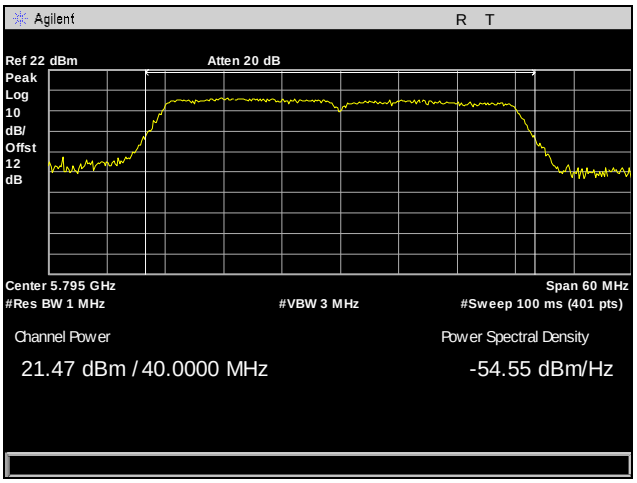
Plot 65. Output Power, 802.11n 20 MHz, 5785 MHz, Mid Channel



Plot 66. Output Power, 802.11n 20 MHz, 5825 MHz, High Channel



Plot 67. Output Power, 802.11n 40 MHz, 5755 MHz, Low Channel



Plot 68. Output Power, 802.11n 40 MHz, 5795 MHz, High Channel

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(d) Radiated Spurious Emissions Requirements and Band Edge

Test Requirements: **§15.247(d); §15.205:** Emissions outside the frequency band.

§15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a).

§15.205(a): Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090–0.110----------	16.42–16.423	399.9–410	4.5–5.15
[1] 0.495–0.505----------	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905----------	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128----------	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775----------	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775----------	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218----------	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825----------	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225----------	123–138	2200–2300	14.47–14.5
8.291–8.294----------	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366----------	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675----------	156.7–156.9	2655–2900	22.01–23.12
8.41425–8.41475----------	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293----------	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025----------	240–285	3345.8–3358 36.	43–36.5
12.57675–12.57725----------	322–335.4	3600–4400	([2])

Table 39. Restricted Bands of Operation

[1] Until February 1, 1999, this restricted band shall be 0.490 – 0.510 MHz.
[2] Above 38.6

Test Requirement(s): **§ 15.209 (a):** Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in Table 40.

Frequency (MHz)	§ 15.209(a),Radiated Emission Limits (dBµV) @ 3m
30 - 88	40.00
88 - 216	43.50
216 - 960	46.00
Above 960	54.00

Table 40. Radiated Emissions Limits Calculated from FCC Part 15, § 15.209 (a)

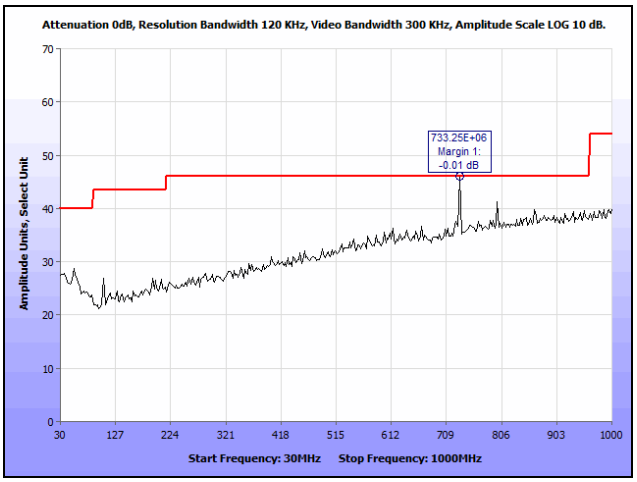
Test Procedures: The transmitter was turned on. Measurements were performed of the low, mid and high Channels. The EUT was rotated orthogonally through all three axes. Plots shown are corrected for both antenna correction factor and distance and compared to a 3 m limit line. Plots shown are corrected for both antenna correction factor, preamp, and distance compared to a 3 m limit line. A preamp was used in the range from 7GHz-18GHz. Only noise floor was measured above 18 GHz. At 733.25MHz the emission is determined to originate from a digital signal while scan was taken with transmission off. Emissions above 18 GHz were in the noise floor of the receiver.

Test Results: The EUT was compliant with the Radiated Spurious Emission limits of **§ 15.247(d)**.

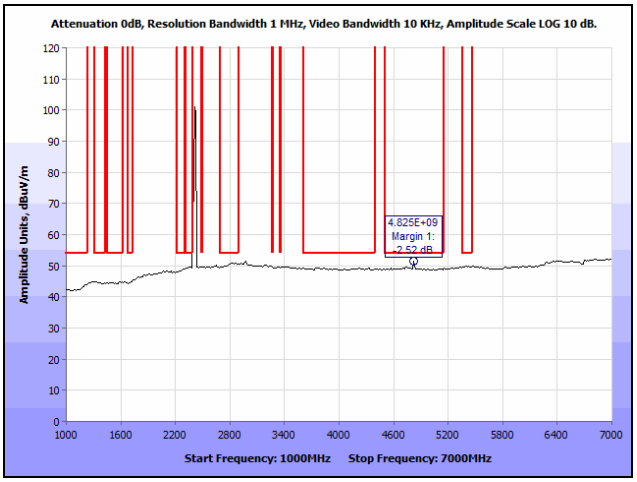
Test Engineer(s): Jonathan Chao

Test Date(s): 02/05/13

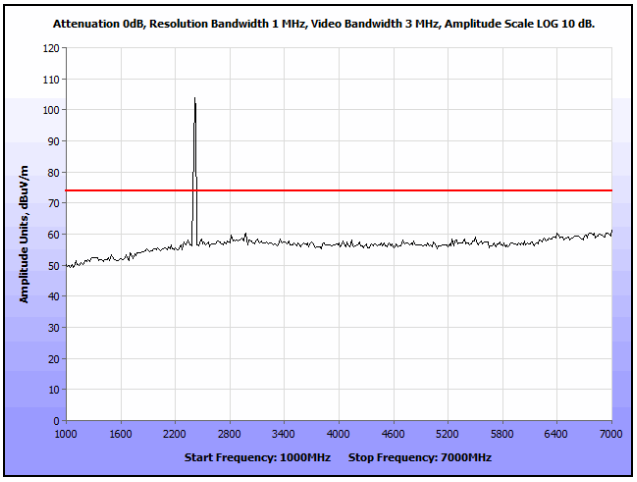
Radiated Spurious Emissions Test Results



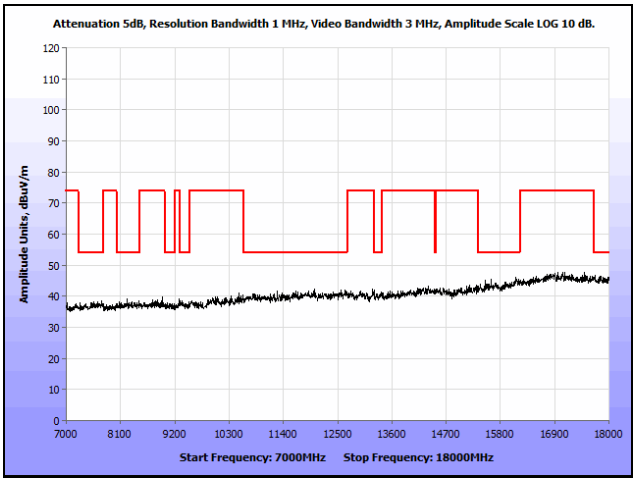
Plot 69. Radiated Spurious Emissions, 802.11b 20 MHz, 2412 MHz, Low Channel (30 MHz – 1 GHz)



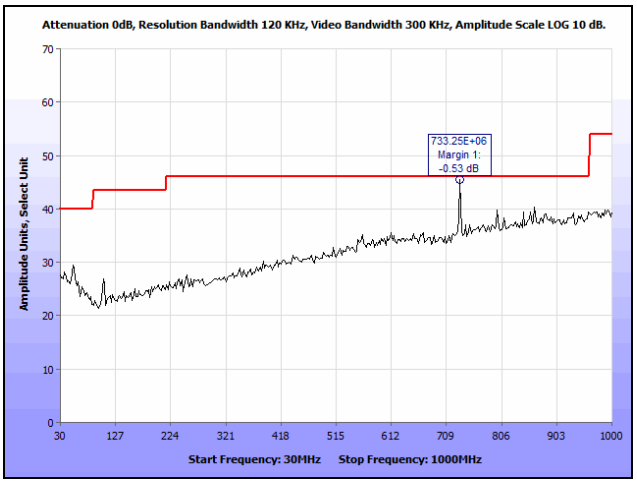
Plot 69. Radiated Spurious Emissions, 802.11b 20 MHz, 2412 MHz, Low Channel, Average (1 GHz – 7 GHz)



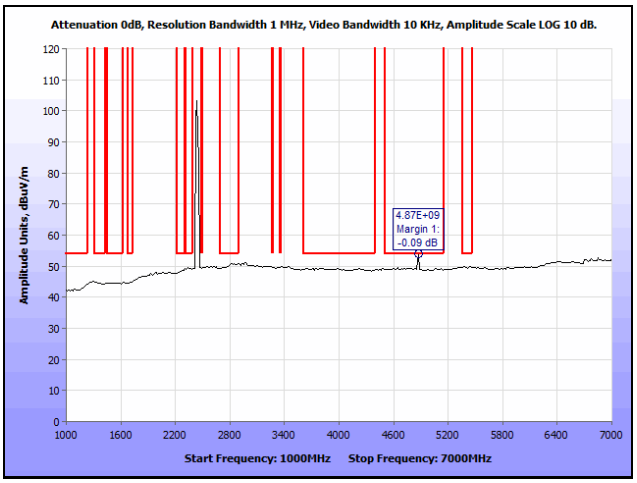
Plot 70. Radiated Spurious Emissions, 802.11b 20 MHz, 2412 MHz, Low Channel, Peak (1 GHz – 7 GHz)



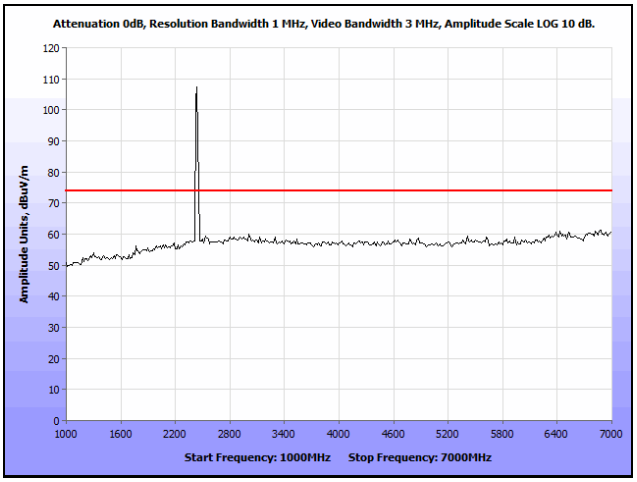
Plot 71. Radiated Spurious Emissions, 802.11b 20 MHz, 2412 MHz, Low Channel (7 GHz – 18 GHz)



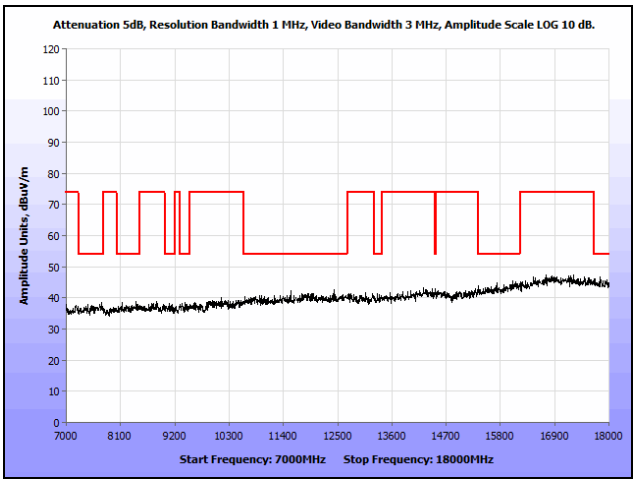
Plot 70. Radiated Spurious Emissions, 802.11b 20 MHz, 2437 MHz, Mid Channel (30 MHz – 1 GHz)



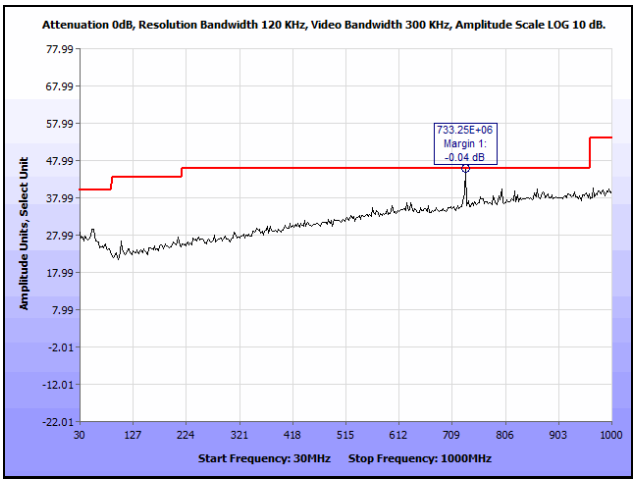
Plot 71. Radiated Spurious Emissions, 802.11b 20 MHz, 2437 MHz, Mid Channel, Average (1 GHz – 7 GHz)



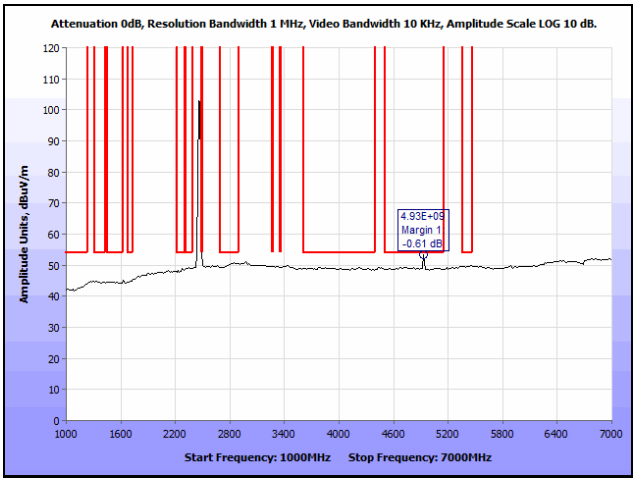
Plot 72. Radiated Spurious Emissions, 802.11b 20 MHz, 2437 MHz, Mid Channel, Peak (1 GHz – 7 GHz)



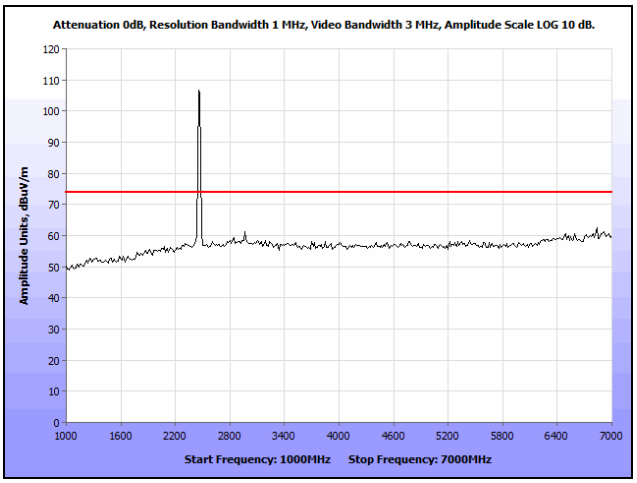
Plot 73. Radiated Spurious Emissions, 802.11b 20 MHz, 2437 MHz, Mid Channel (7 GHz – 18 GHz)



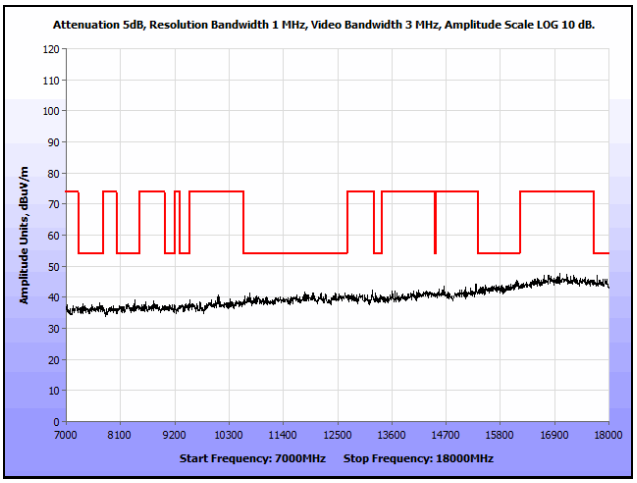
Plot 74. Radiated Spurious Emissions, 802.11b 20 MHz, 2462 MHz, High Channel (30 MHz – 1 GHz)



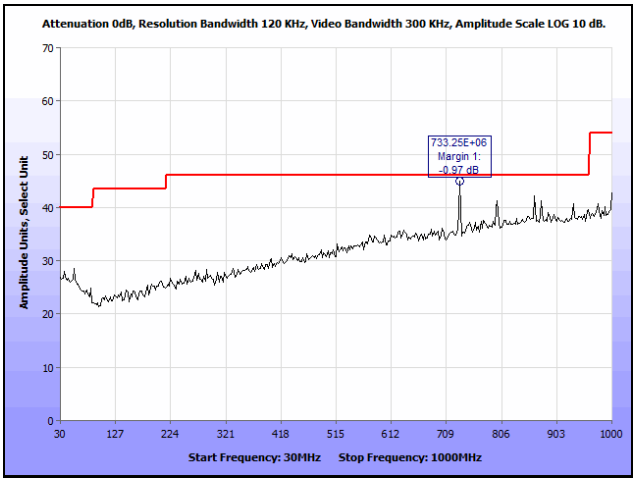
Plot 75. Radiated Spurious Emissions, 802.11b 20 MHz, 2462 MHz, High Channel, Average (1 GHz – 7 GHz)



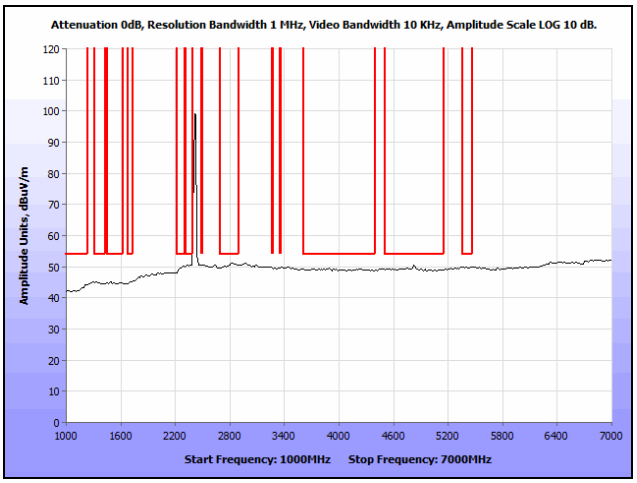
Plot 76. Radiated Spurious Emissions, 802.11b 20 MHz, 2462 MHz, High Channel, Peak (1 GHz – 7 GHz)



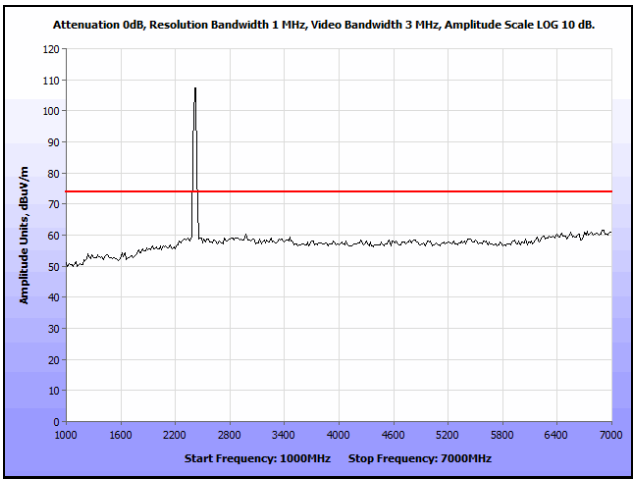
Plot 77. Radiated Spurious Emissions, 802.11b 20 MHz, 2462 MHz, High Channel (7 GHz – 18 GHz)



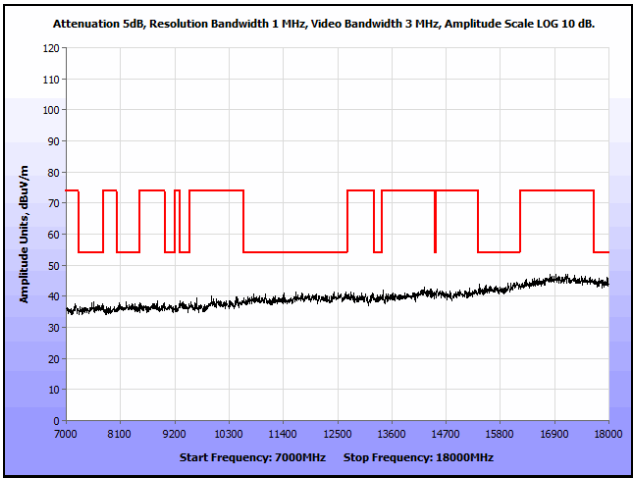
Plot 78. Radiated Spurious Emissions, 802.11g 20 MHz, 2412 MHz, Low Channel (30 MHz – 1 GHz)



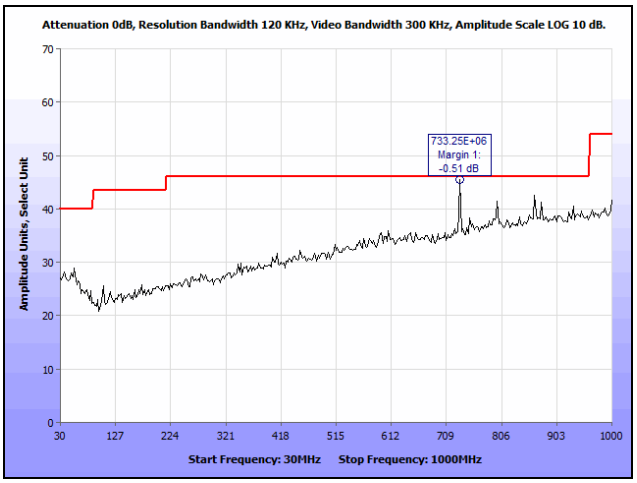
Plot 79. Radiated Spurious Emissions, 802.11g 20 MHz, 2412 MHz, Low Channel, Average (1 GHz – 7 GHz)



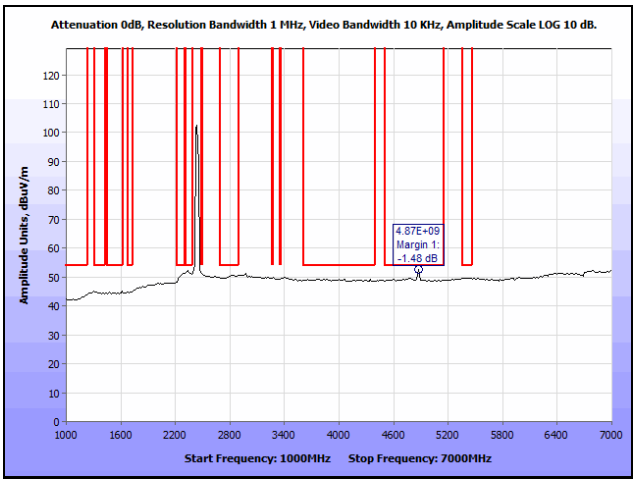
Plot 80. Radiated Spurious Emissions, 802.11g 20 MHz, 2412 MHz, Low Channel, Peak (1 GHz – 7 GHz)



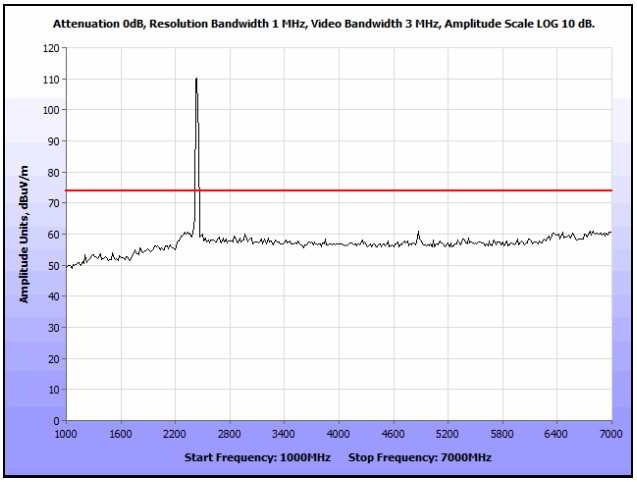
Plot 81. Radiated Spurious Emissions, 802.11g 20 MHz, 2412 MHz, Low Channel (7 GHz – 18 GHz)



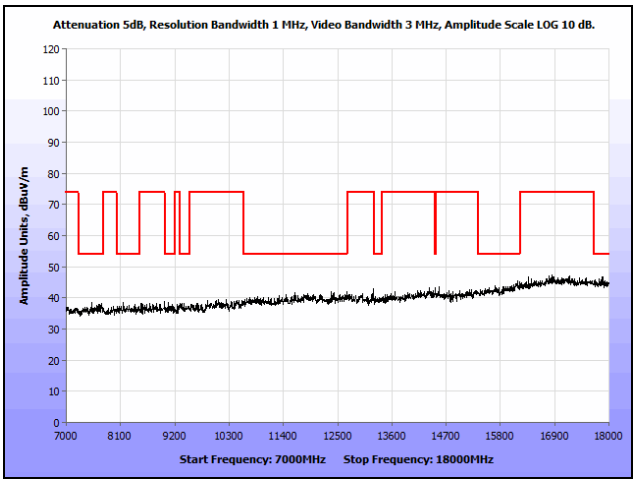
Plot 82. Radiated Spurious Emissions, 802.11g 20 MHz, 2437 MHz, Mid Channel (30 MHz – 1 GHz)



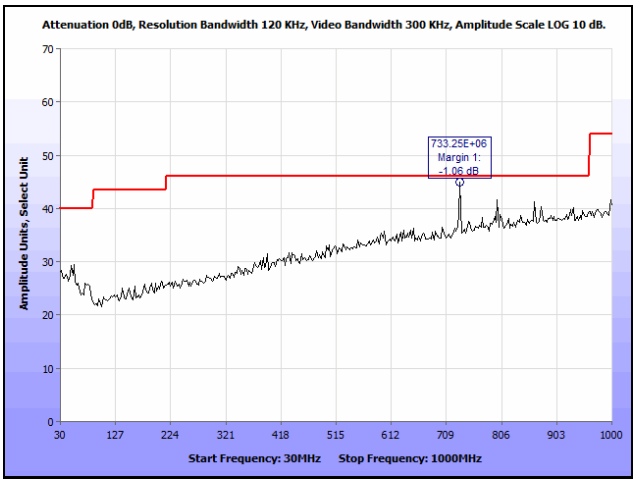
Plot 83. Radiated Spurious Emissions, 802.11g 20 MHz, 2437 MHz, Mid Channel, Average (1 GHz – 7 GHz)



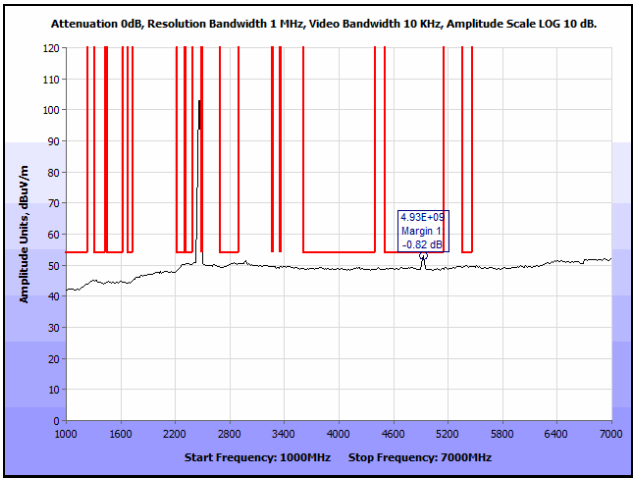
Plot 84. Radiated Spurious Emissions, 802.11g 20 MHz, 2437 MHz, Mid Channel, Peak (1 GHz – 7 GHz)



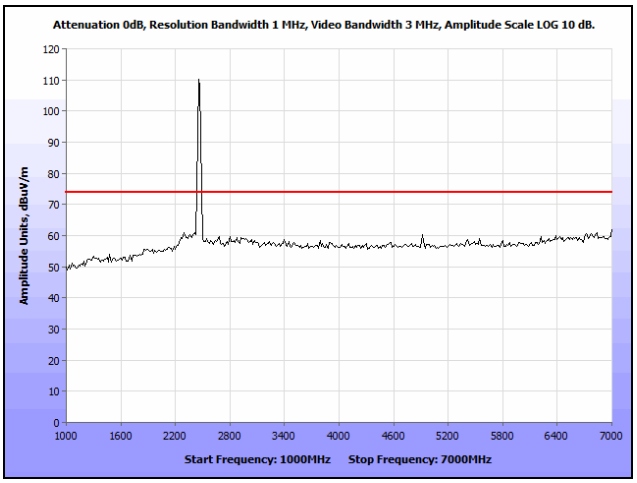
Plot 85. Radiated Spurious Emissions, 802.11g 20 MHz, 2437 MHz, Mid Channel (7 GHz – 18 GHz)



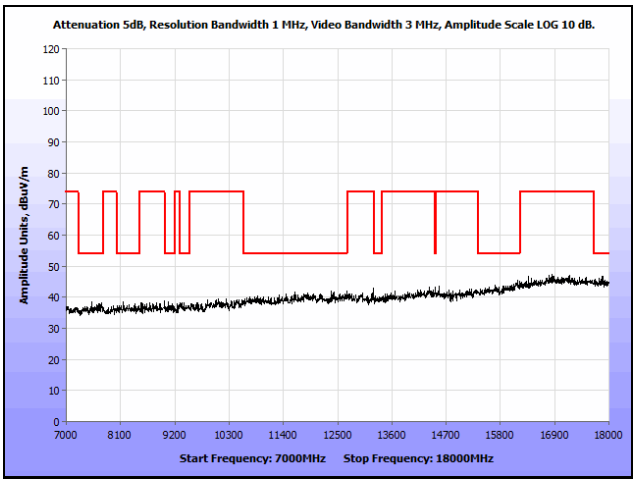
Plot 86. Radiated Spurious Emissions, 802.11g 20 MHz, 2462 MHz, High Channel (30 MHz – 1 GHz)



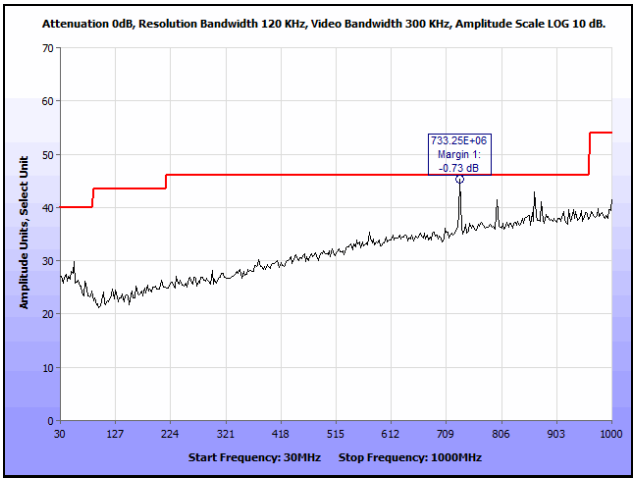
Plot 87. Radiated Spurious Emissions, 802.11g 20 MHz, 2462 MHz, High Channel, Average (1 GHz – 7 GHz)



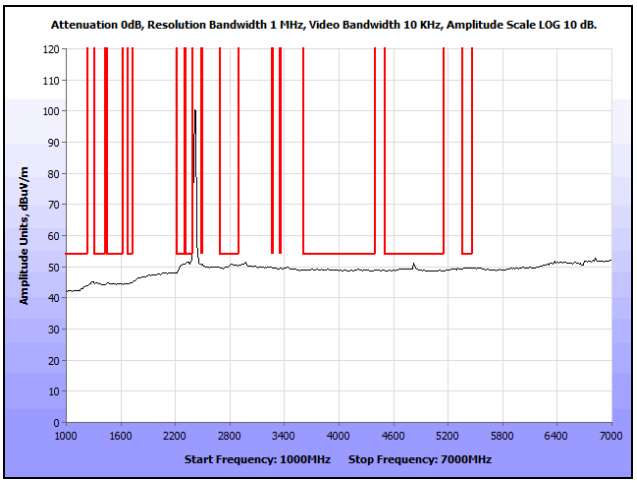
Plot 88. Radiated Spurious Emissions, 802.11g 20 MHz, 2462 MHz, High Channel, Peak (1 GHz – 7 GHz)



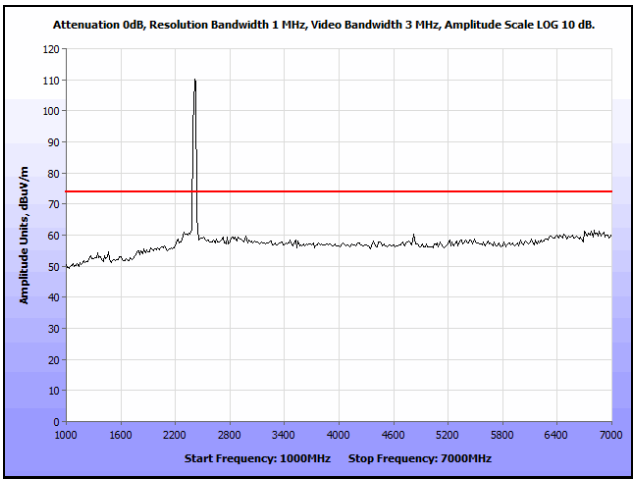
Plot 89. Radiated Spurious Emissions, 802.11g 20 MHz, 2462 MHz, High Channel (7 GHz – 18 GHz)



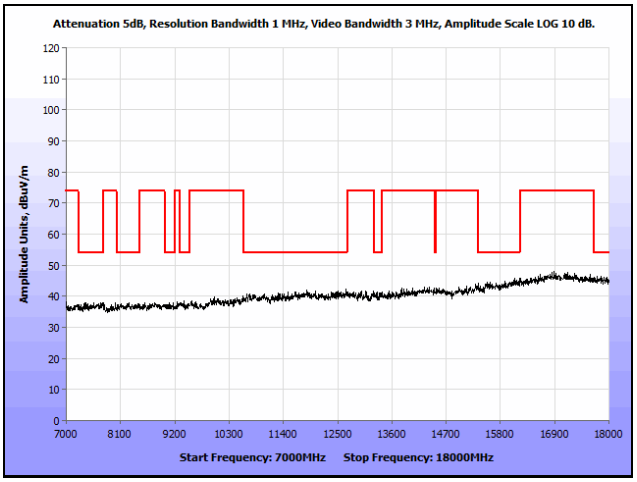
Plot 90. Radiated Spurious Emissions, 802.11n 20 MHz, 2412 MHz, Low Channel (30 MHz – 1 GHz)



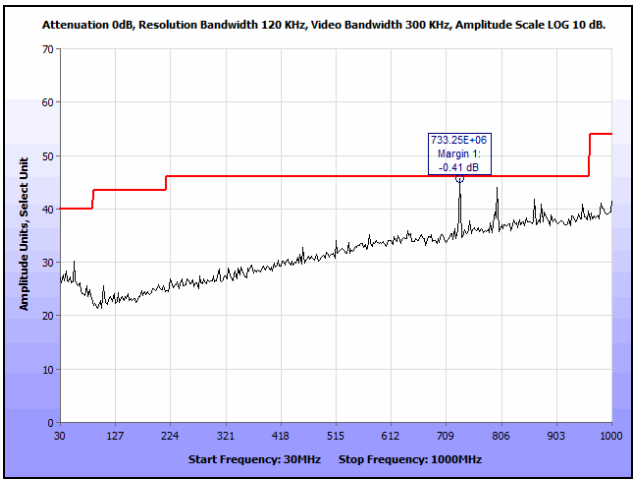
Plot 91. Radiated Spurious Emissions, 802.11n 20 MHz, 2412 MHz, Low Channel, Average (1 GHz – 7 GHz)



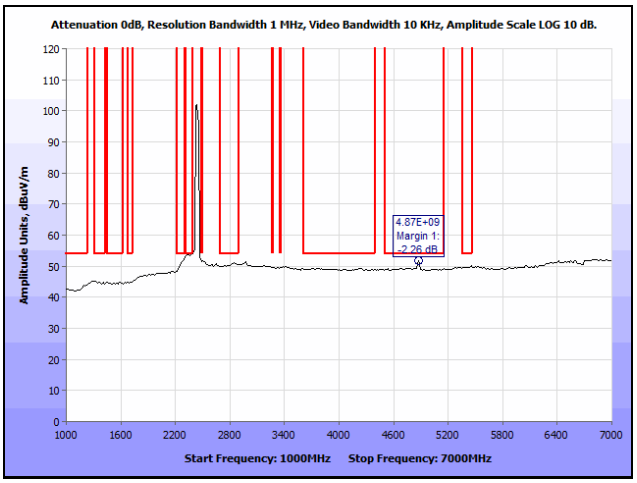
Plot 92. Radiated Spurious Emissions, 802.11n 20 MHz, 2412 MHz, Low Channel, Peak (1 GHz – 7 GHz)



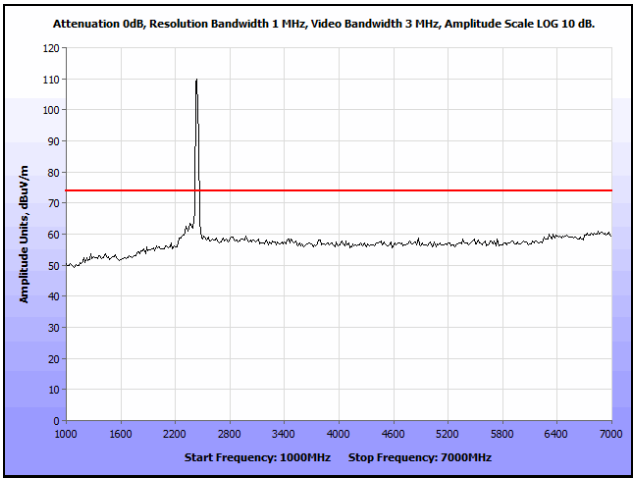
Plot 93. Radiated Spurious Emissions, 802.11n 20 MHz, 2412 MHz, Low Channel (7 GHz – 18 GHz)



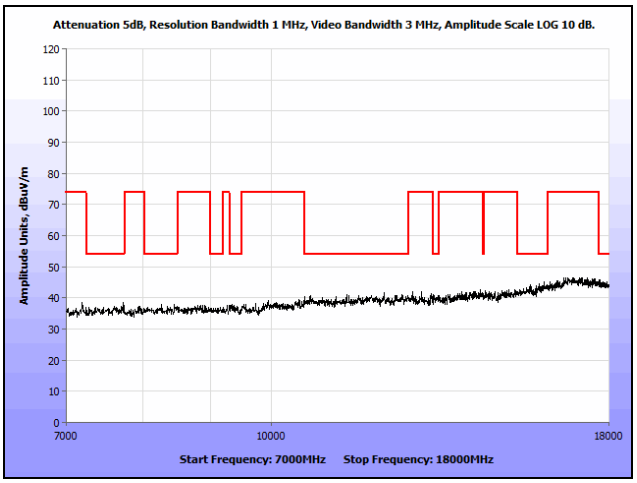
Plot 94. Radiated Spurious Emissions, 802.11n 20 MHz, 2437 MHz, Mid Channel (30 MHz – 1 GHz)



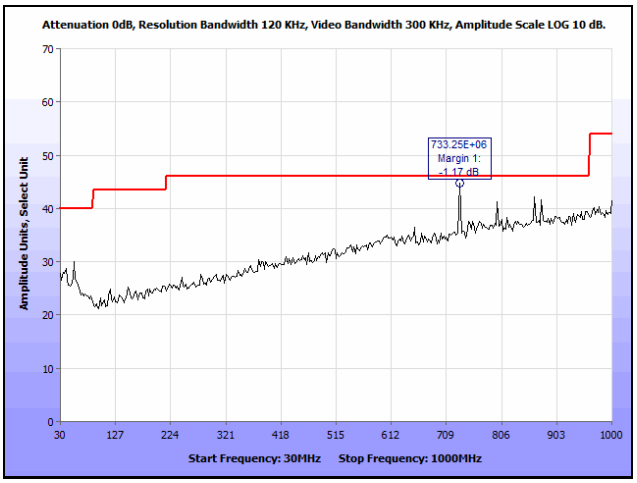
Plot 95. Radiated Spurious Emissions, 802.11n 20 MHz, 2437 MHz, Mid Channel, Average (1 GHz – 7 GHz)



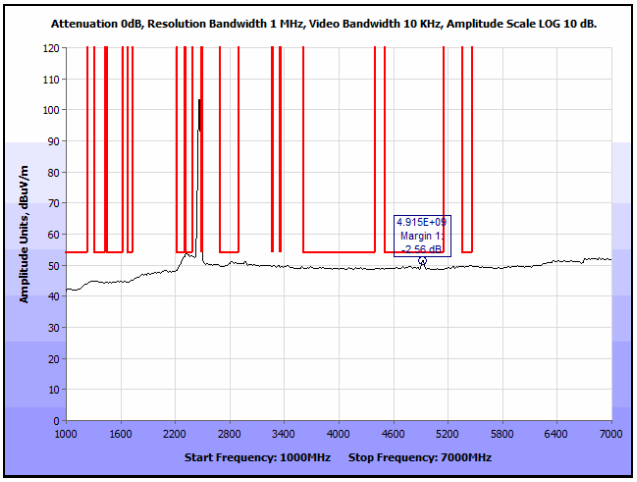
Plot 96. Radiated Spurious Emissions, 802.11n 20 MHz, 2437 MHz, Mid Channel, Peak (1 GHz – 7 GHz)



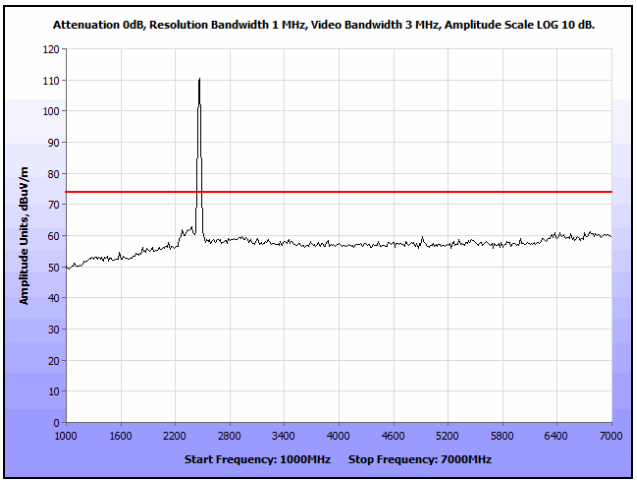
Plot 97. Radiated Spurious Emissions, 802.11n 20 MHz, 2437 MHz, Mid Channel (7 GHz – 18 GHz)



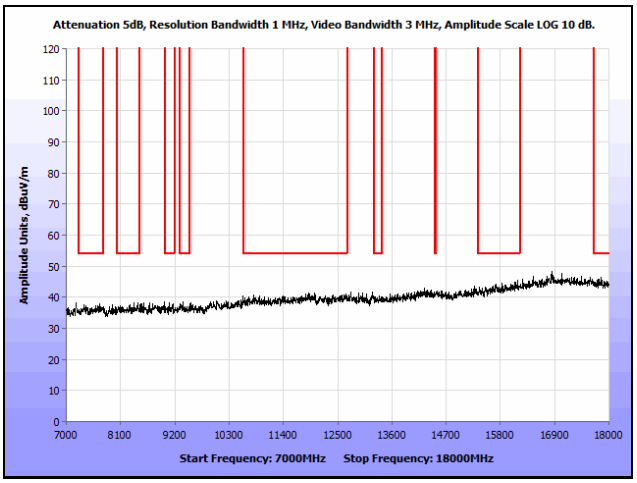
Plot 98. Radiated Spurious Emissions, 802.11n 20 MHz, 2462 MHz, High Channel (30 MHz – 1 GHz)



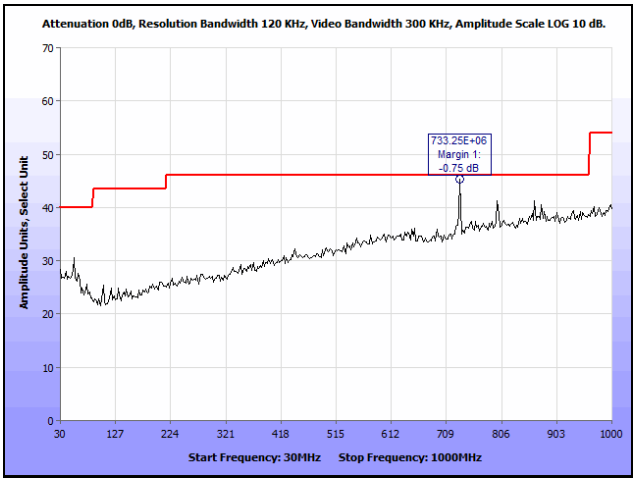
Plot 99. Radiated Spurious Emissions, 802.11n 20 MHz, 2462 MHz, High Channel, Average (1 GHz – 7 GHz)



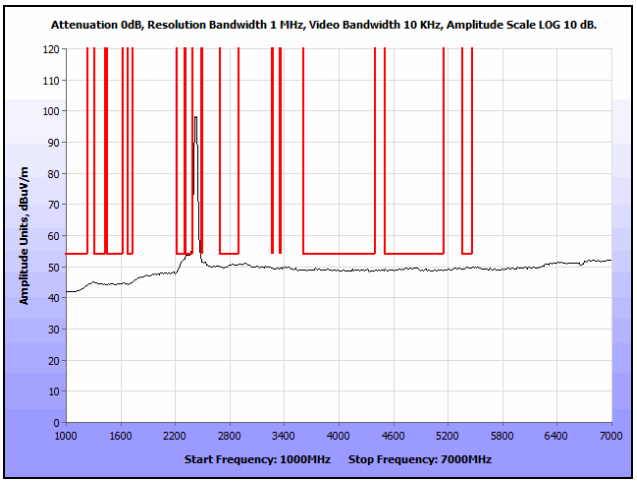
Plot 100. Radiated Spurious Emissions, 802.11n 20 MHz, 2462 MHz, High Channel, Peak (1 GHz – 7 GHz)



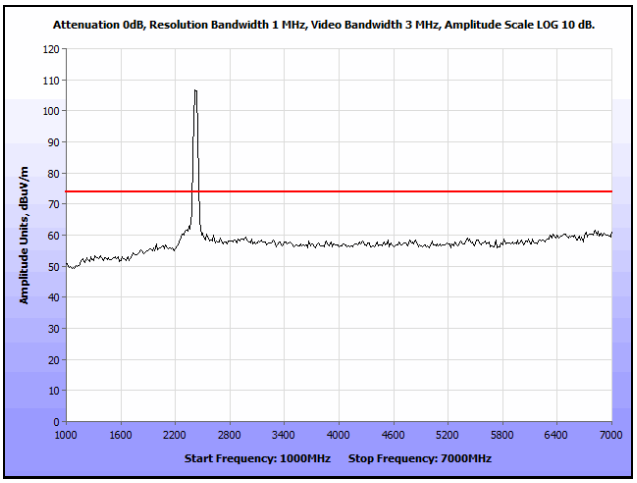
Plot 101. Radiated Spurious Emissions, 802.11n 20 MHz, 2462 MHz, High Channel (7 GHz – 18 GHz)



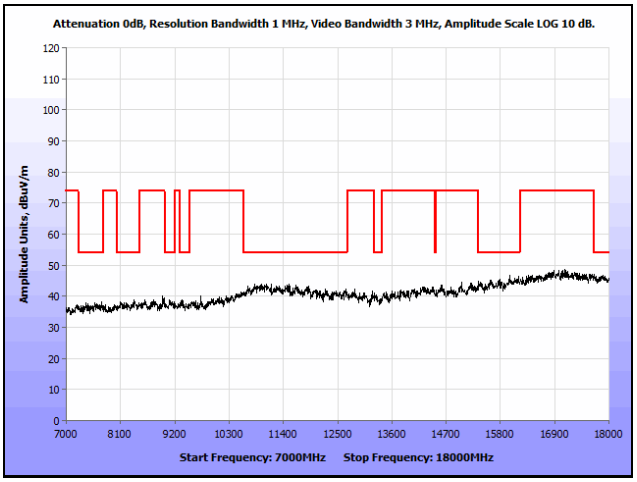
Plot 102. Radiated Spurious Emissions, 802.11n 40 MHz, 2422 MHz, Low Channel (30 MHz – 1 GHz)



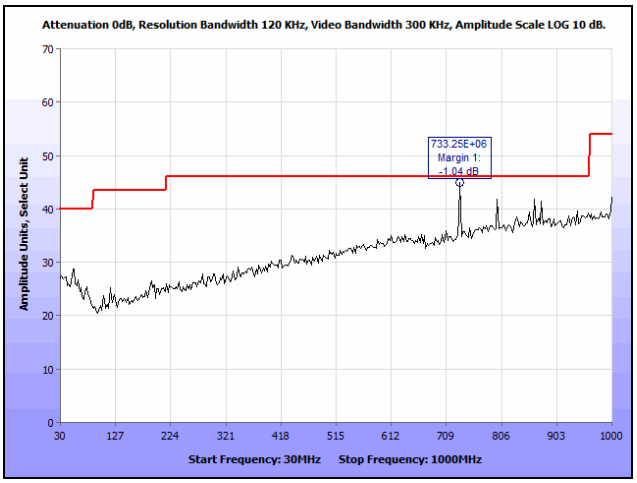
Plot 103. Radiated Spurious Emissions, 802.11n 40 MHz, 2422 MHz, Low Channel, Average (1 GHz – 7 GHz)



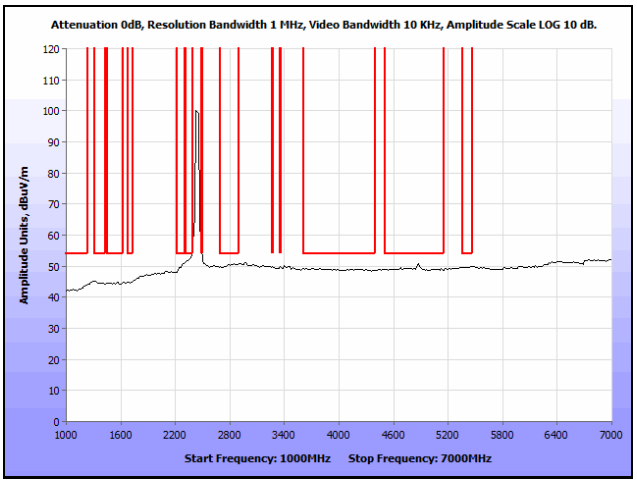
Plot 104. Radiated Spurious Emissions, 802.11n 40 MHz, 2422 MHz, Low Channel, Peak (1 GHz – 7 GHz)



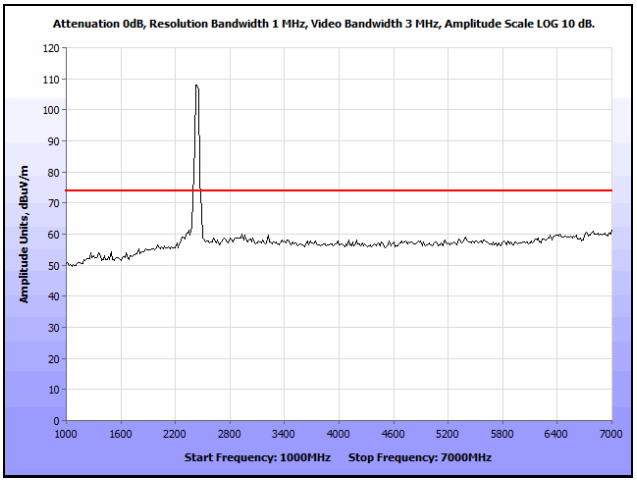
Plot 105. Radiated Spurious Emissions, 802.11n 40 MHz, 2422 MHz, Low Channel (7 GHz – 18 GHz)



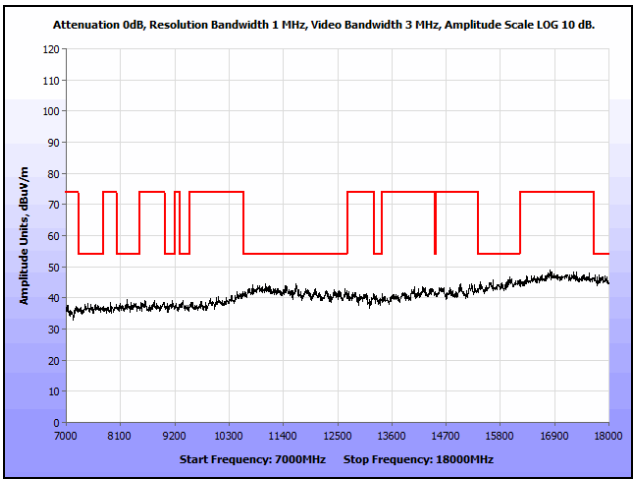
Plot 106. Radiated Spurious Emissions, 802.11n 40 MHz, 2437 MHz, Mid Channel (30 MHz – 1 GHz)



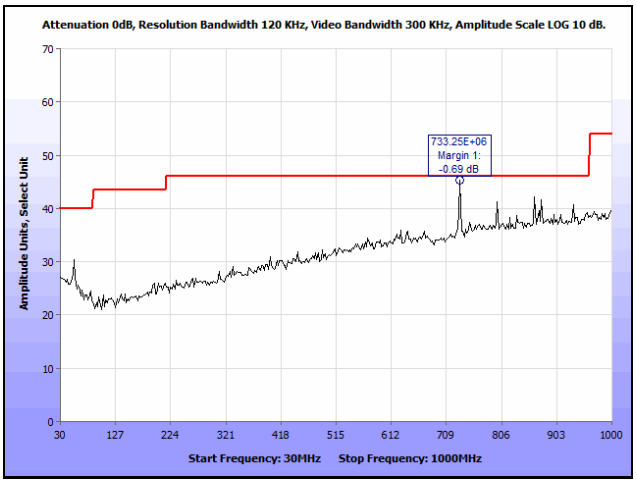
Plot 107. Radiated Spurious Emissions, 802.11n 40 MHz, 2437 MHz, Mid Channel, Average (1 GHz – 7 GHz)



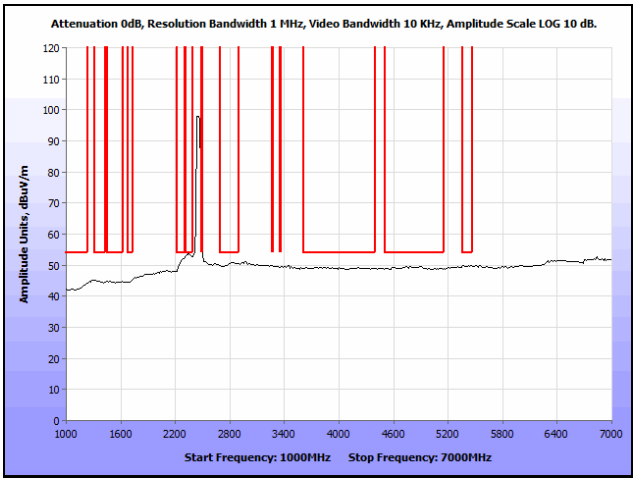
Plot 108. Radiated Spurious Emissions, 802.11n 40 MHz, 2437 MHz, Mid Channel, Peak (1 GHz – 7 GHz)



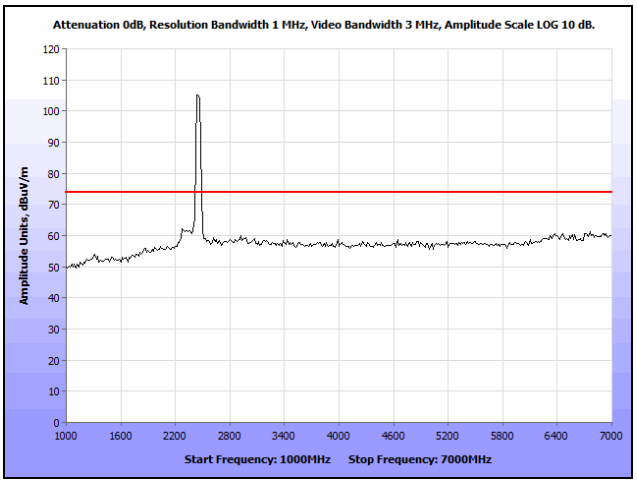
Plot 109. Radiated Spurious Emissions, 802.11n 40 MHz, 2437 MHz, Mid Channel (7 GHz – 18 GHz)



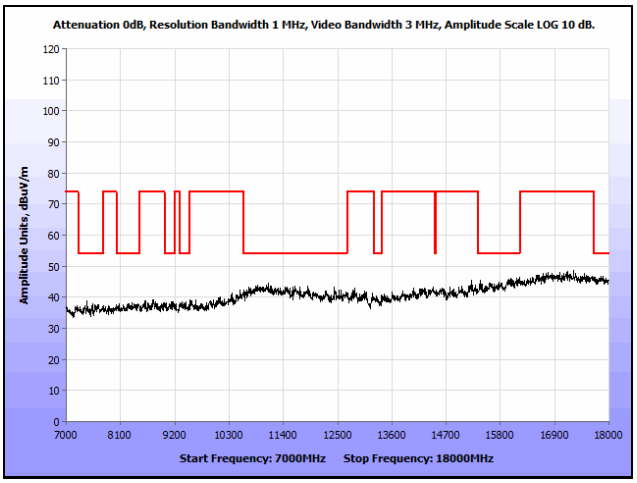
Plot 110. Radiated Spurious Emissions, 802.11n 40 MHz, 2452 MHz, High Channel (30 MHz – 1 GHz)



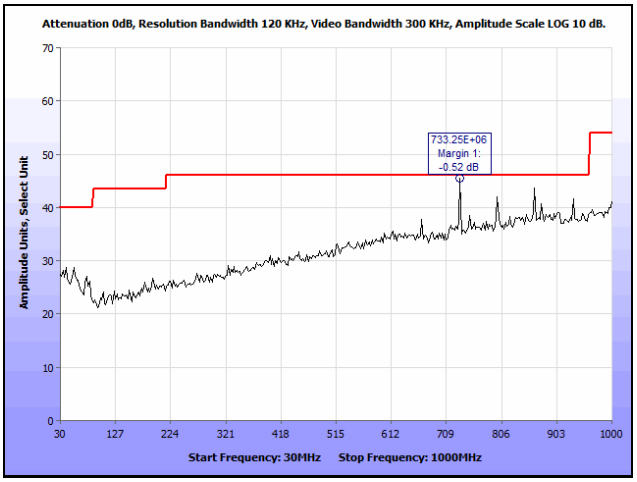
Plot 111. Radiated Spurious Emissions, 802.11n 40 MHz, 2452 MHz, High Channel, Average (1 GHz – 7 GHz)



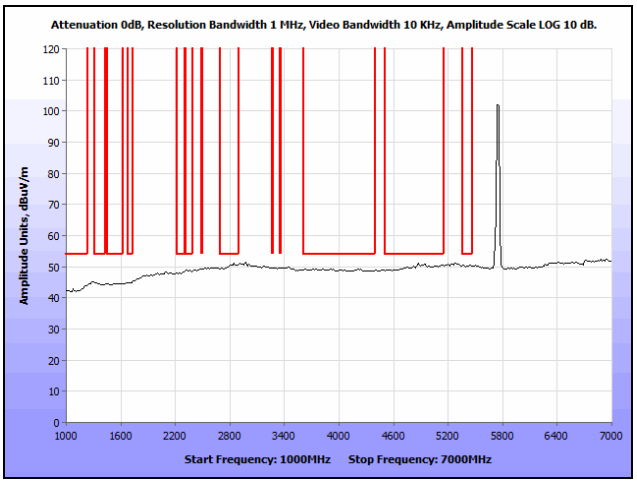
Plot 112. Radiated Spurious Emissions, 802.11n 40 MHz, 2452 MHz, High Channel, Peak (1 GHz – 7 GHz)



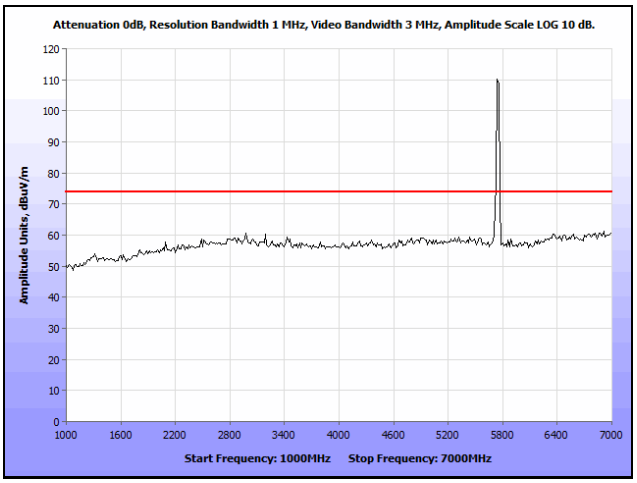
Plot 113. Radiated Spurious Emissions, 802.11n 40 MHz, 2452 MHz, High Channel (7 GHz – 18 GHz)



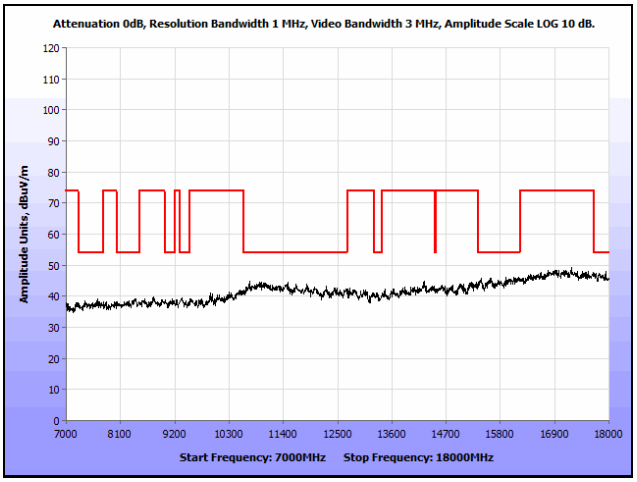
Plot 114. Radiated Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel (30 MHz – 1 GHz)



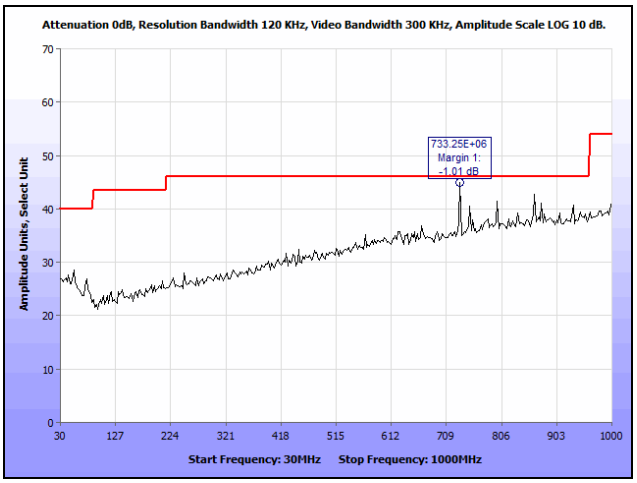
Plot 115. Radiated Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel, Average (1 GHz – 7 GHz)



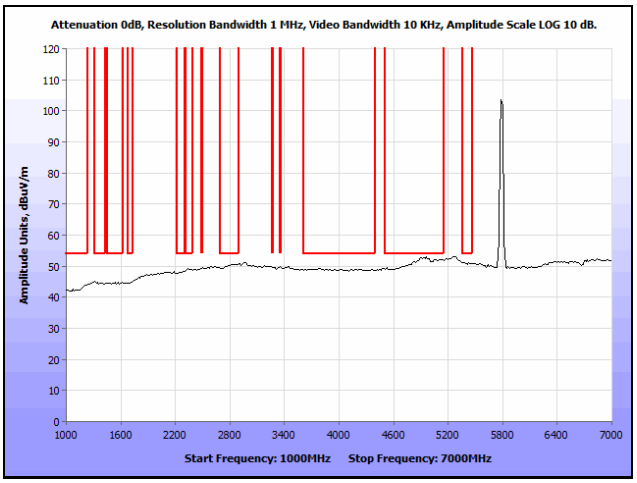
Plot 116. Radiated Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel, Peak (1 GHz – 7 GHz)



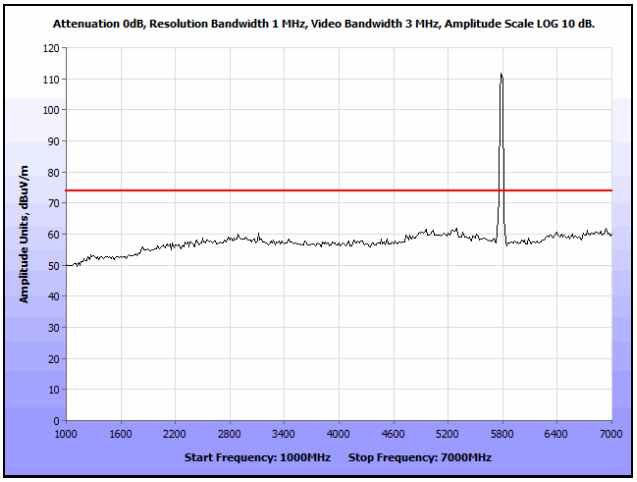
Plot 117. Radiated Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel (7 GHz – 18 GHz)



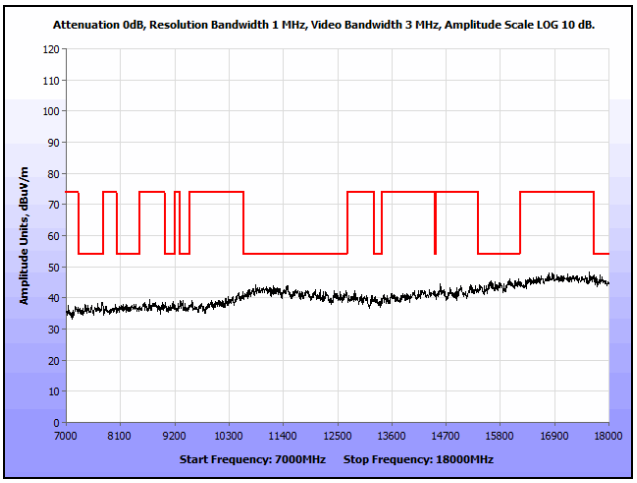
Plot 118. Radiated Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel (30 MHz – 1 GHz)



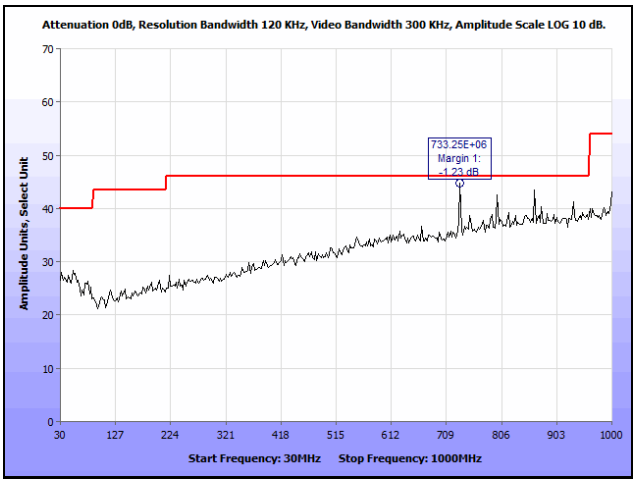
Plot 119. Radiated Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel, Average (1 GHz – 7 GHz)



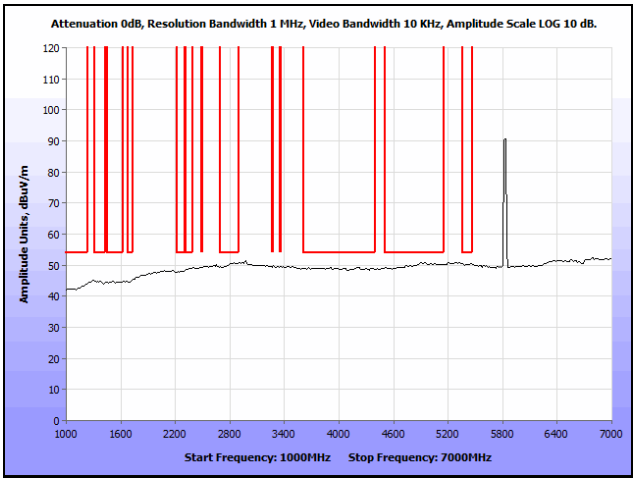
Plot 120. Radiated Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel, Peak (1 GHz – 7 GHz)



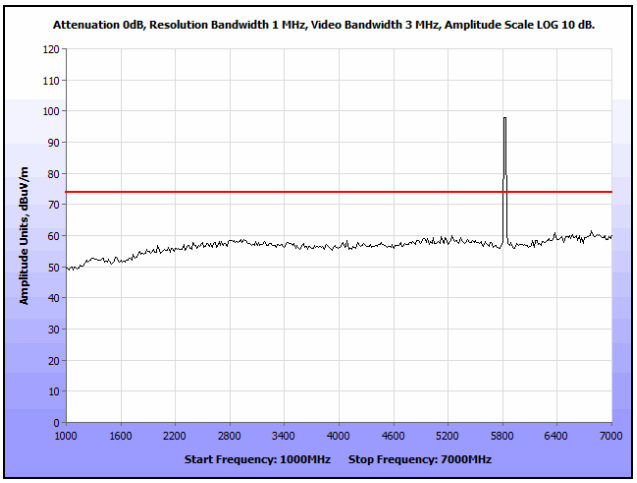
Plot 121. Radiated Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel (7 GHz – 18 GHz)



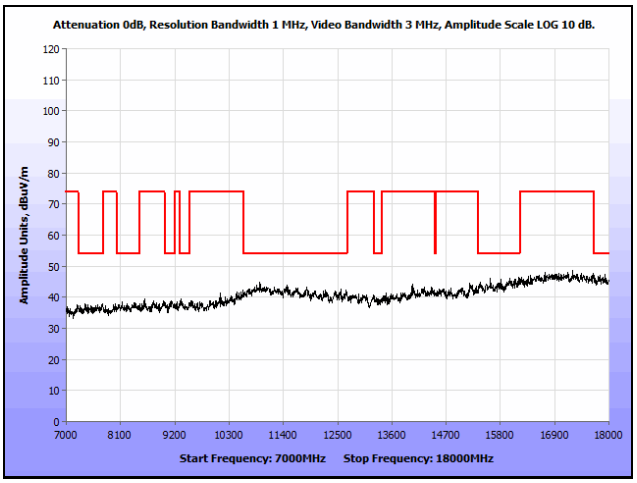
Plot 122. Radiated Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel (30 MHz – 1 GHz)



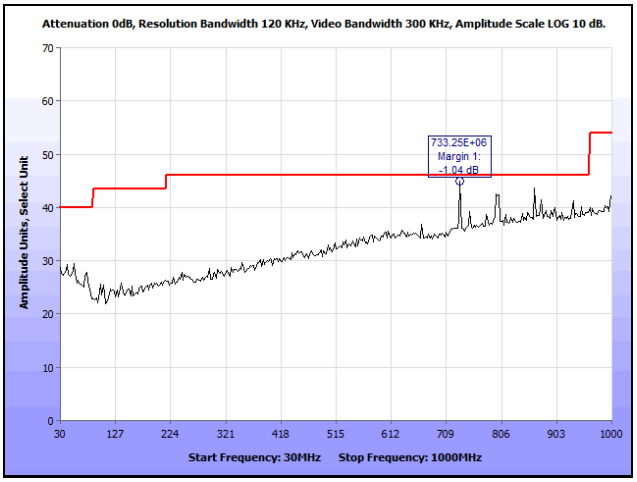
Plot 123. Radiated Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel, Average (1 GHz – 7 GHz)



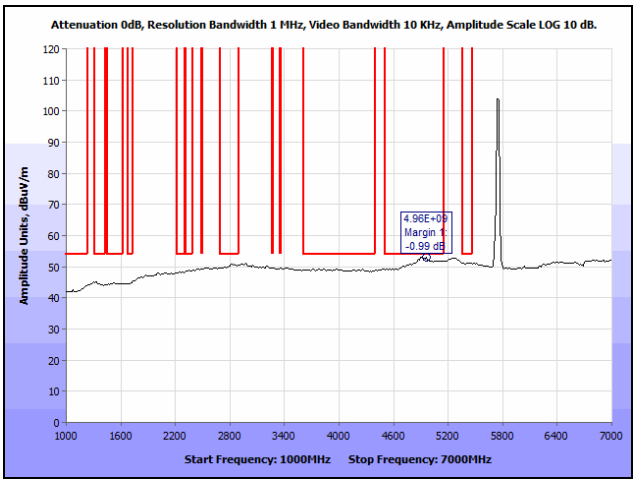
Plot 124. Radiated Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel, Peak (1 GHz – 7 GHz)



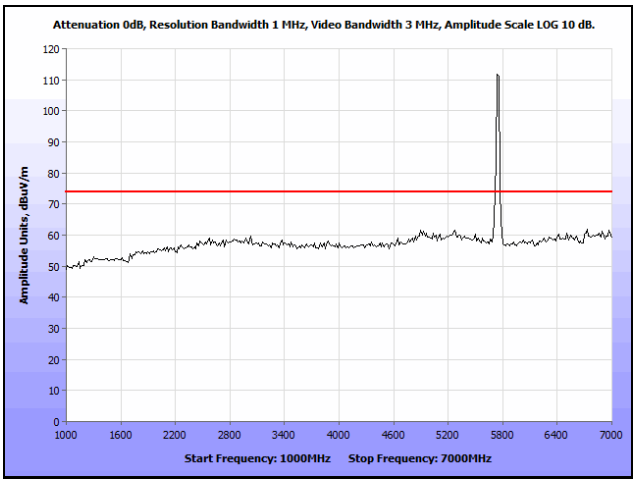
Plot 125. Radiated Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel (7 GHz – 18 GHz)



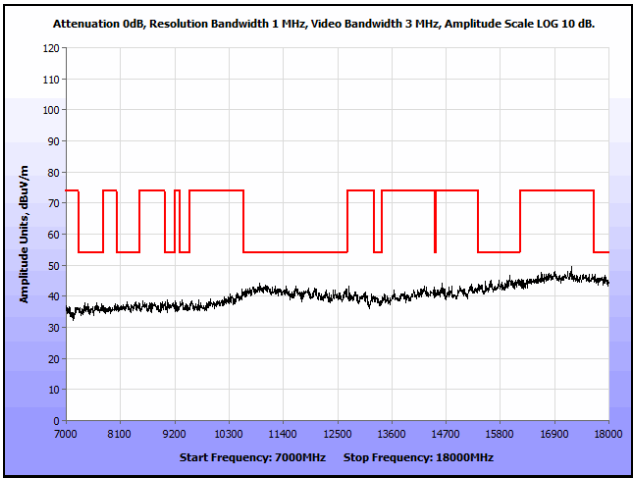
Plot 126. Radiated Spurious Emissions, 802.11n 20 MHz, 5745 MHz, Low Channel (30 MHz – 1 GHz)



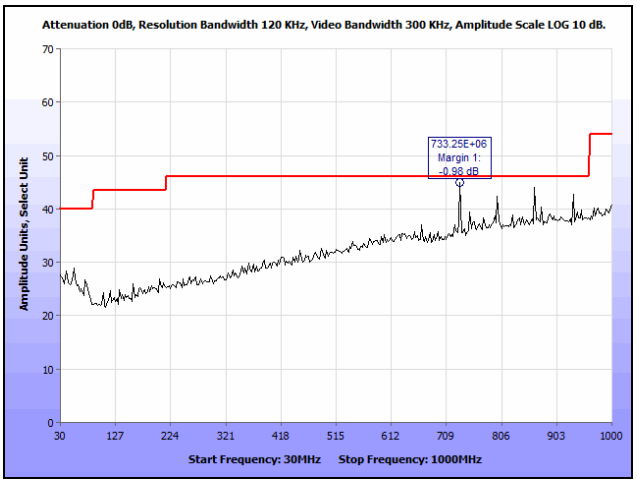
Plot 127. Radiated Spurious Emissions, 802.11n 20 MHz, 5745 MHz, Low Channel, Average (1 GHz – 7 GHz)



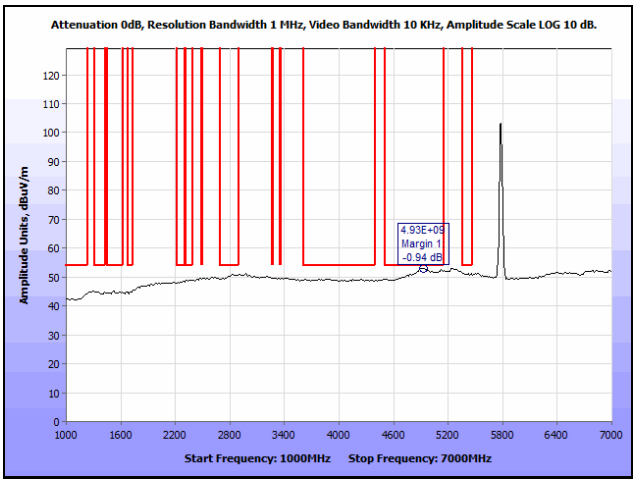
Plot 128. Radiated Spurious Emissions, 802.11n 20 MHz, 5745 MHz, Low Channel, Peak (1 GHz – 7 GHz)



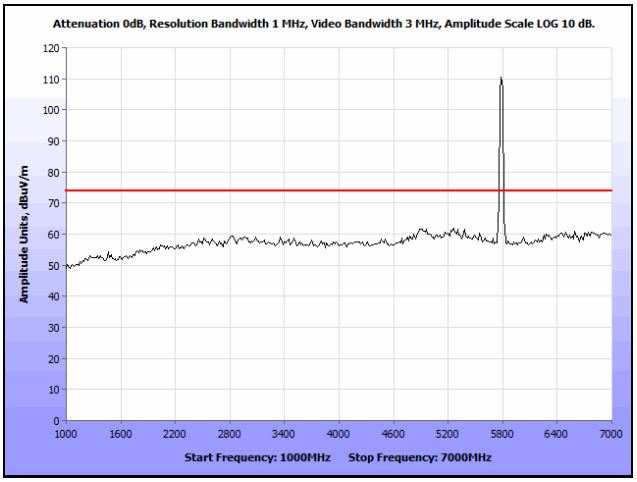
Plot 129. Radiated Spurious Emissions, 802.11n 20 MHz, 5745 MHz Low (7 GHz – 18 GHz)



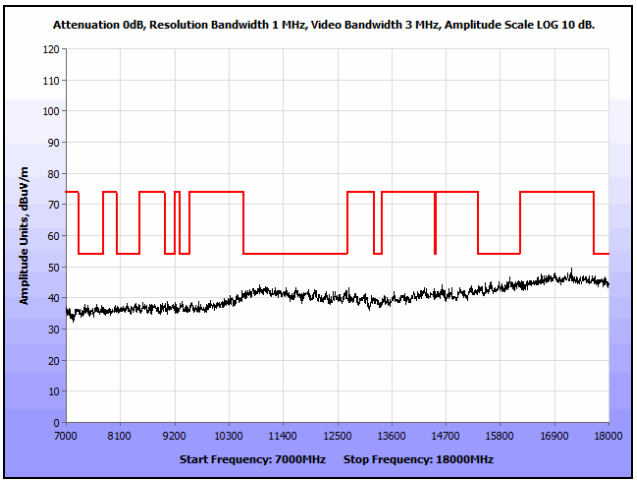
Plot 130. Radiated Spurious Emissions, 802.11n 20 MHz, 5785 MHz, Mid Channel (30 MHz – 1 GHz)



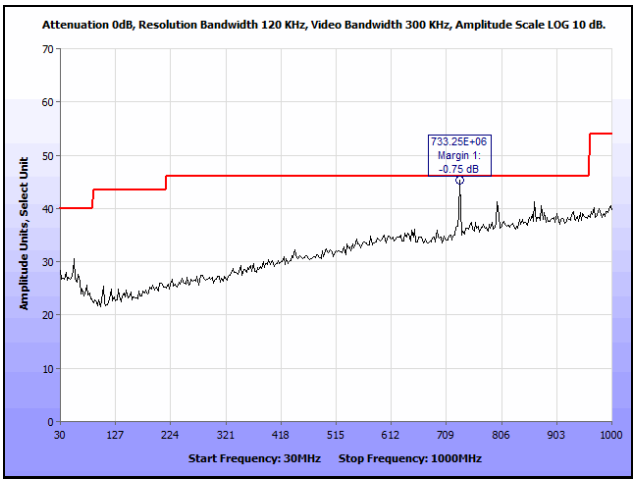
Plot 131. Radiated Spurious Emissions, 802.11n 20 MHz, 5785 MHz, Mid Channel, Average (1 GHz – 7 GHz)



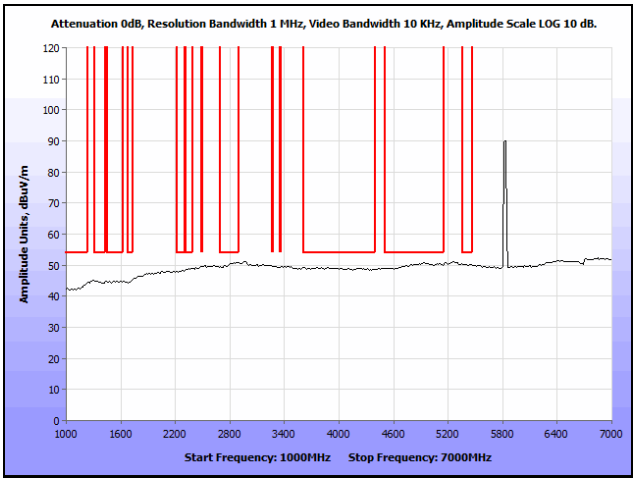
Plot 132. Radiated Spurious Emissions, 802.11n 20 MHz, 5785 MHz, Mid Channel, Peak (1 GHz – 7 GHz)



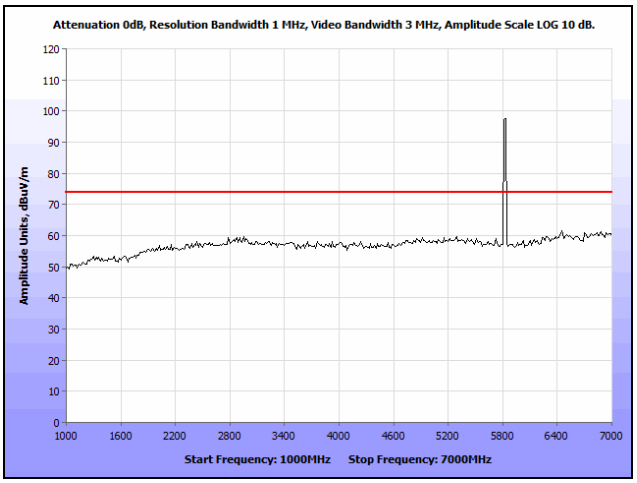
Plot 133. Radiated Spurious Emissions, 802.11n 20 MHz, 5745 MHz Low (7 GHz – 18 GHz)



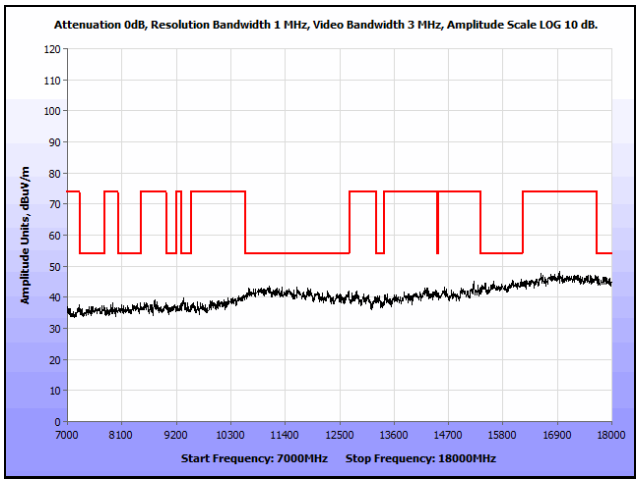
Plot 134. Radiated Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel (30 MHz – 1 GHz)



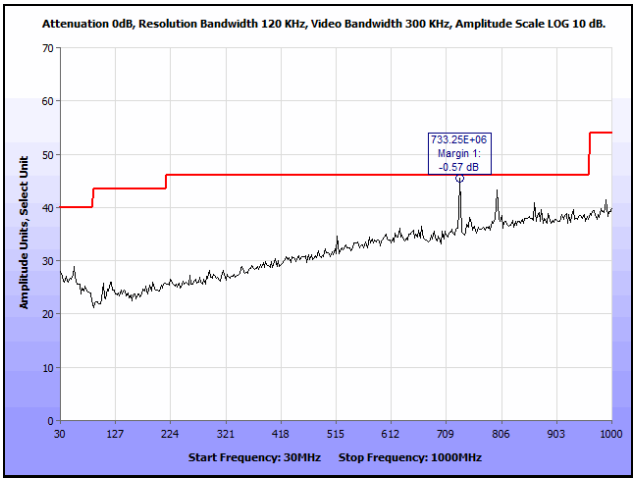
Plot 135. Radiated Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel, Average (1 GHz – 7 GHz)



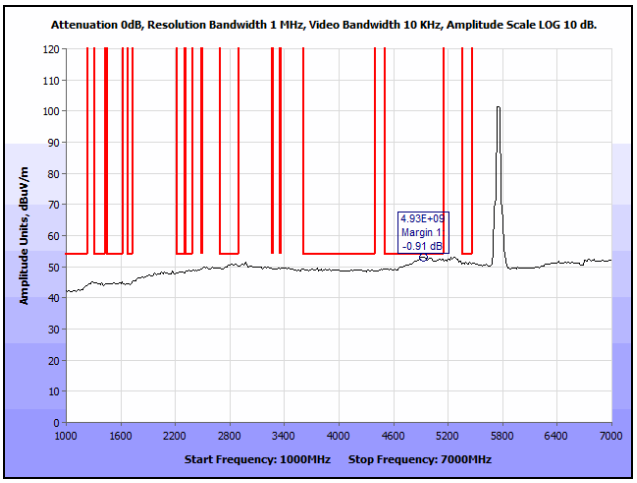
Plot 136. Radiated Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel, Peak (1 GHz – 7 GHz)



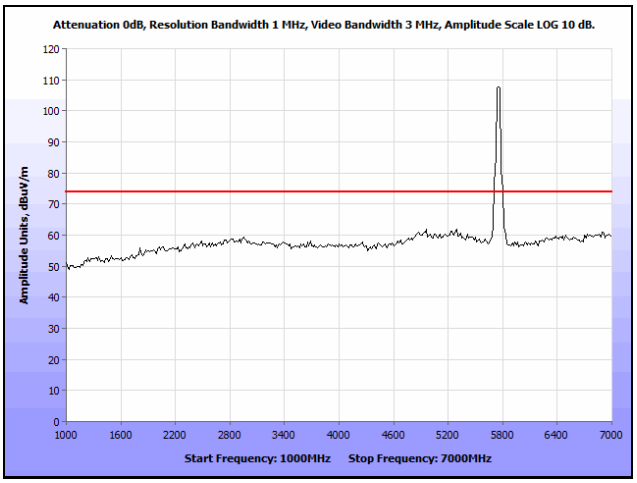
Plot 137. Radiated Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel (7 GHz – 18 GHz)



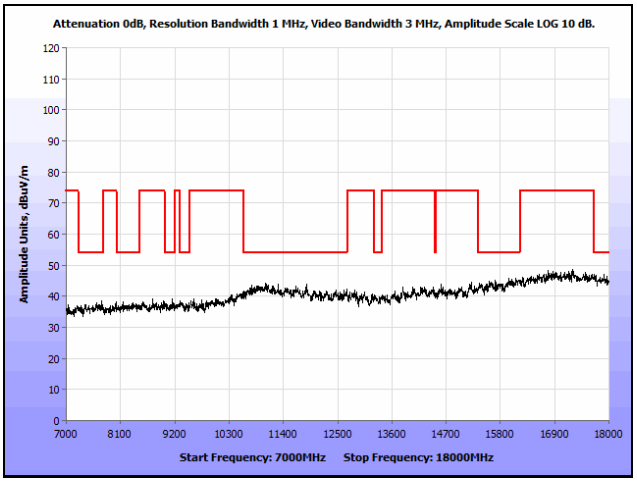
Plot 138. Radiated Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel (30 MHz – 1 GHz)



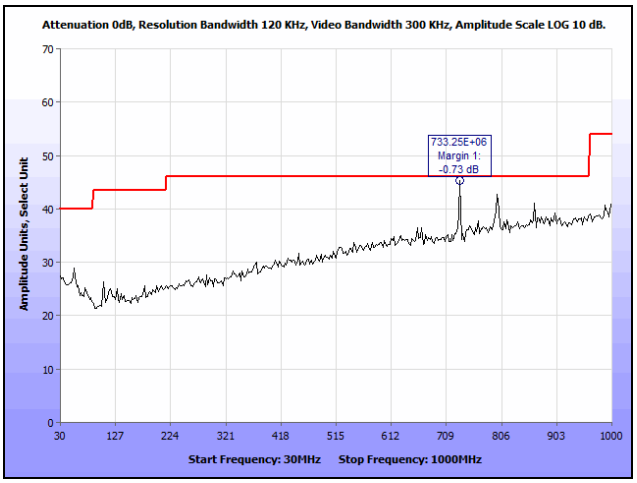
Plot 139. Radiated Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel, Average (1 GHz – 7 GHz)



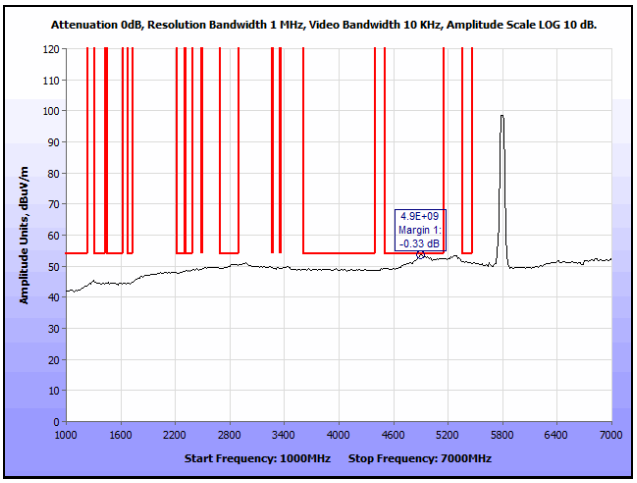
Plot 140. Radiated Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel, Peak (1 GHz – 7 GHz)



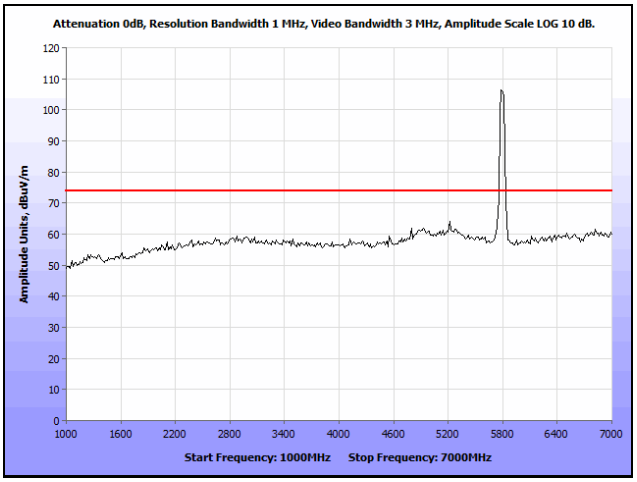
Plot 141. Radiated Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel (7 GHz – 18 GHz)



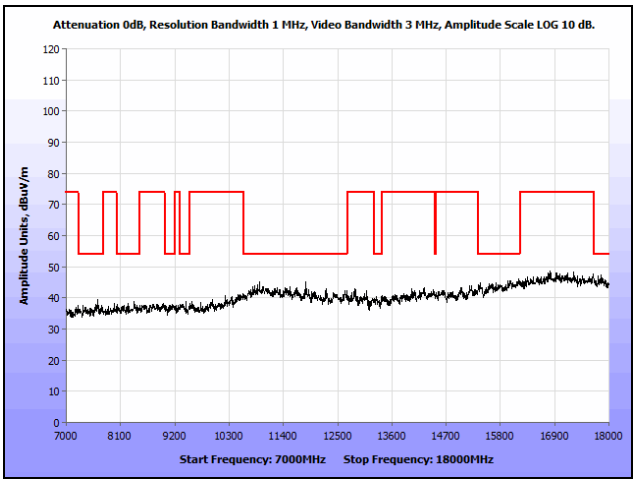
Plot 142. Radiated Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel (30 MHz – 1 GHz)



Plot 143. Radiated Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel, Average (1 GHz – 7 GHz)



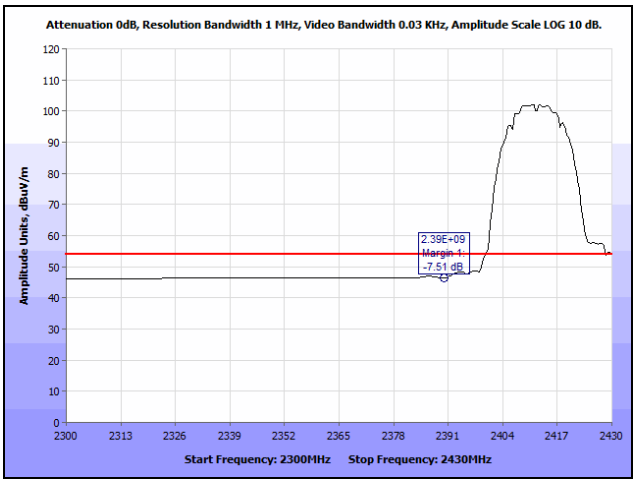
Plot 144. Radiated Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel, Peak (1 GHz – 7 GHz)



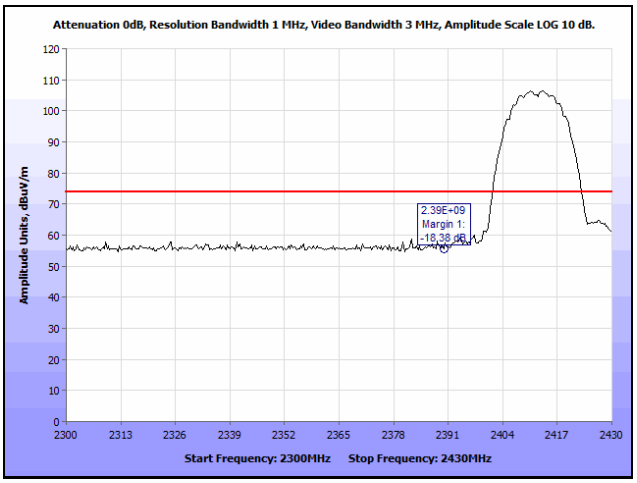
Plot 145. Radiated Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel (7 GHz – 18 GHz)

Radiated Band Edge Measurements

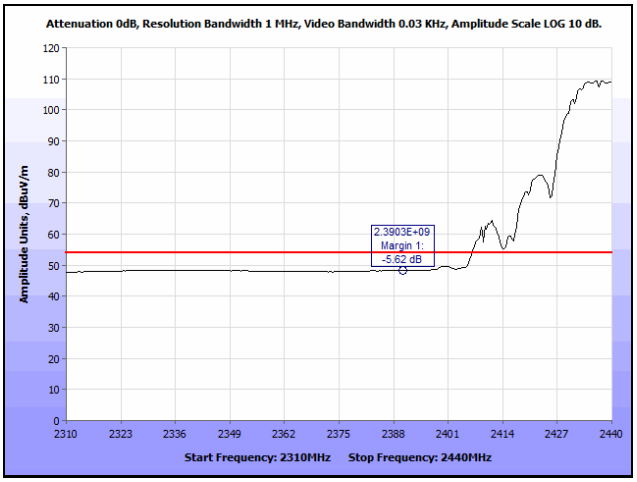
Test Procedures: The transmitter was turned on. Measurements were performed of the low, mid and high Channels. The EUT was rotated orthogonally through all three axes. Plots shown are corrected for both antenna correction factor and distance and compared to a 3 m limit line.



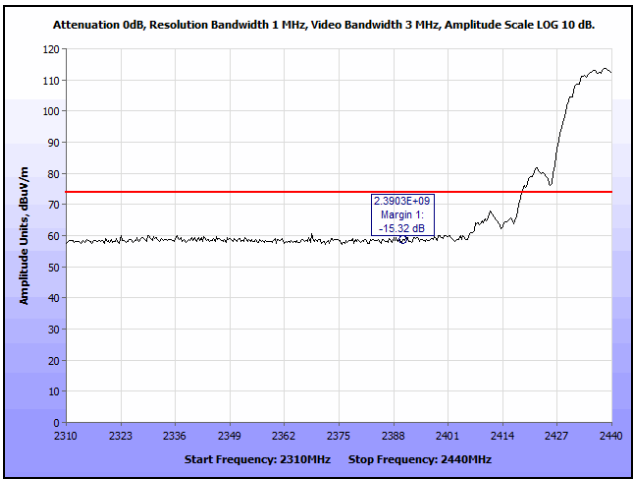
Plot 146. Radiated Restricted Band Edge, 802.11b 20 MHz, 2412 MHz, Low Channel (Average) @ 2390 MHz



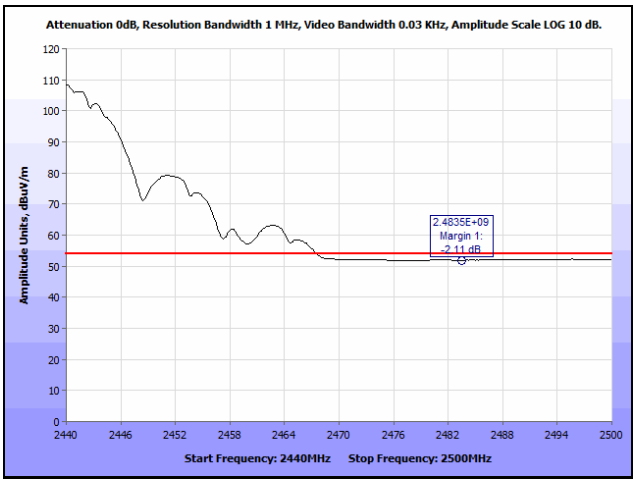
Plot 147. Radiated Restricted Band Edge, 802.11b 20 MHz, 2412 MHz, Low Channel (Peak) @ 2390 MHz



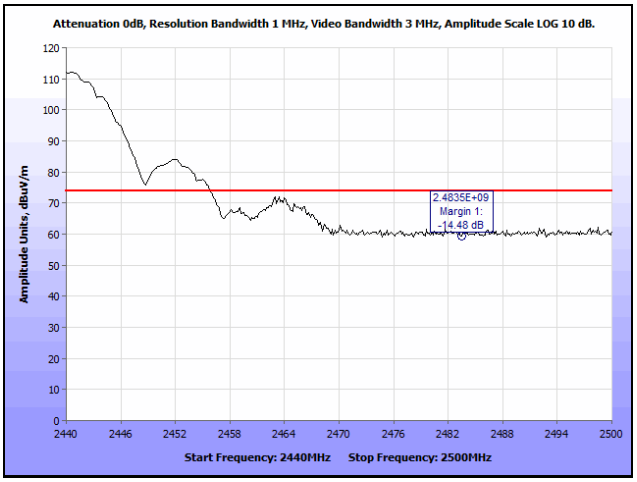
Plot 148. Radiated Restricted Band Edge, 802.11b 20 MHz, 2437 MHz, Mid Channel (Average) @ 2390 MHz



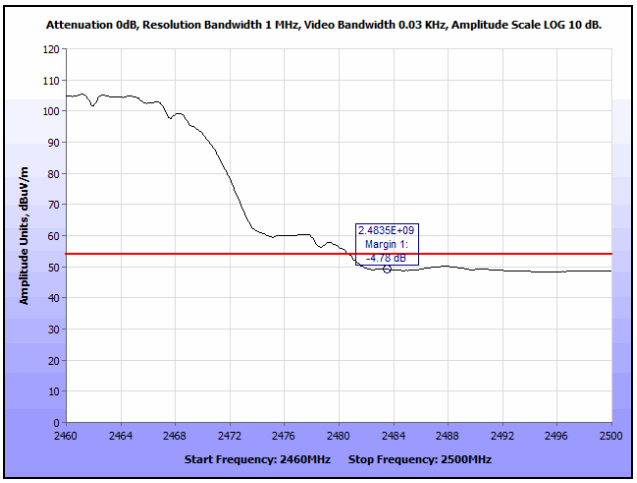
Plot 149. Radiated Restricted Band Edge, 802.11b 20 MHz, 2437 MHz, Mid Channel (Peak) @ 2390 MHz



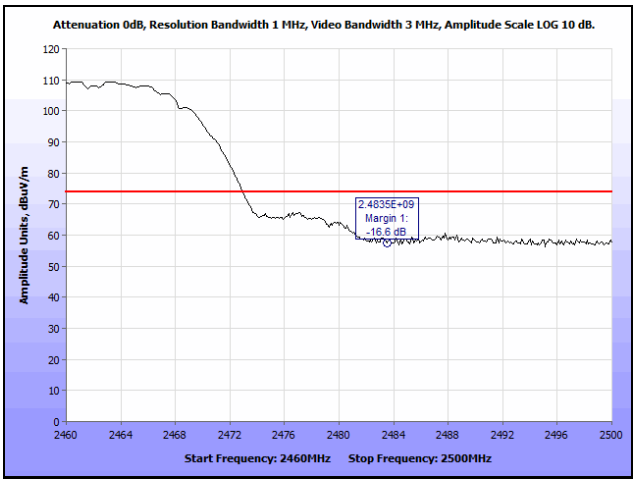
Plot 150. Radiated Restricted Band Edge, 802.11b 20 MHz, 2437 MHz, Mid Channel (Average) @ 2483.5 MHz



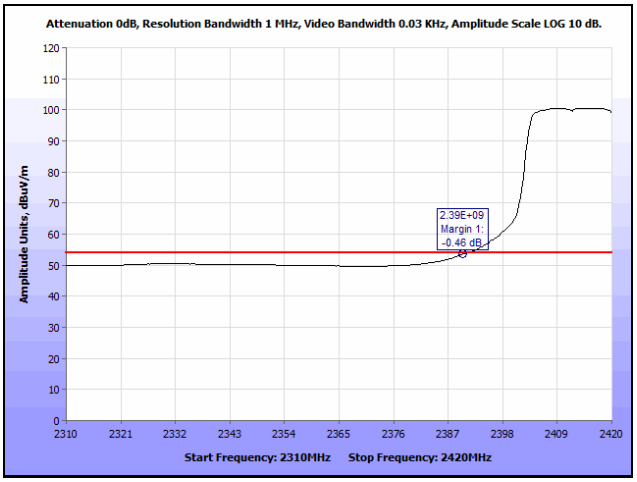
Plot 151. Radiated Restricted Band Edge, 802.11b 20 MHz, 2437 MHz, Mid Channel (Peak) @ 2483.5 MHz



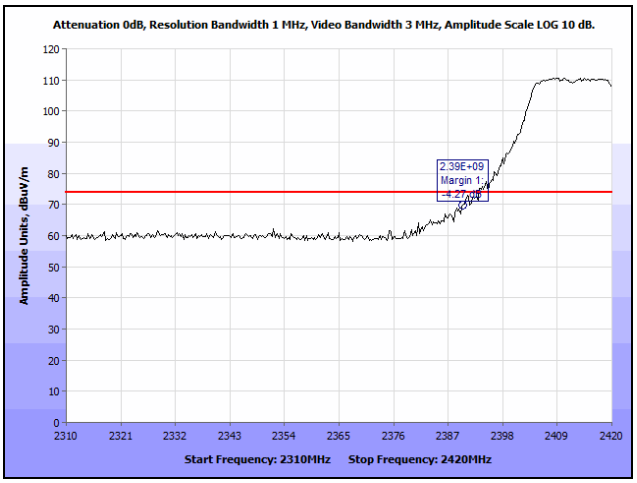
Plot 152. Radiated Restricted Band Edge, 802.11b 20 MHz, 2462 MHz, High Channel (Average) @ 2483.5 MHz



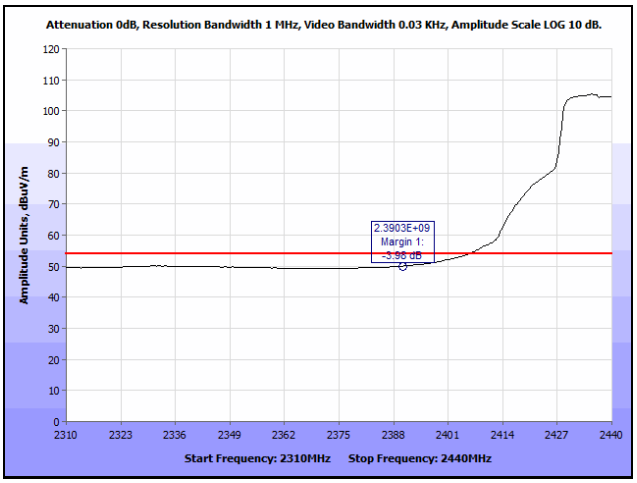
Plot 153. Radiated Restricted Band Edge, 802.11b 20 MHz, 2462 MHz, High Channel (Peak) @ 2390 MHz



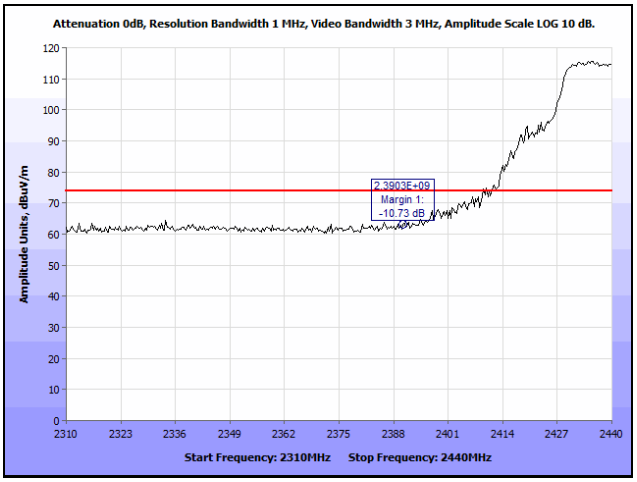
Plot 154. Radiated Restricted Band Edge, 802.11g 20 MHz, 2412 MHz, Low Channel (Average) @ 2390 MHz



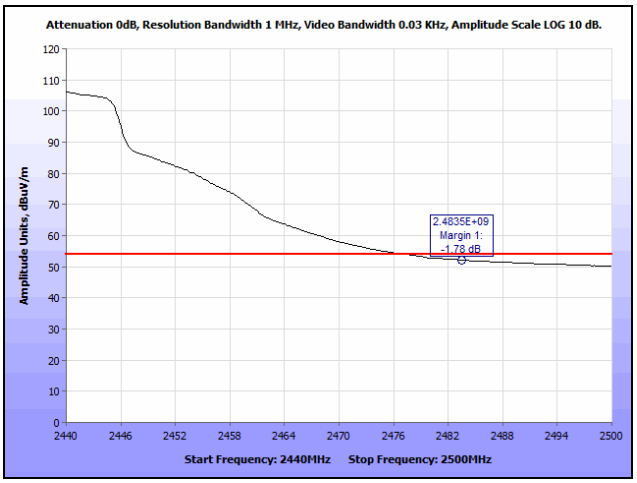
Plot 155. Radiated Restricted Band Edge, 802.11g 20 MHz, 2412 MHz, Low Channel (Peak) @ 2390 MHz



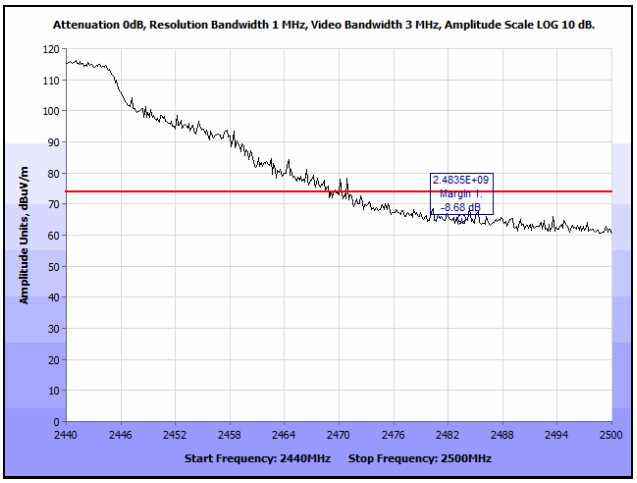
Plot 156. Radiated Restricted Band Edge, 802.11g 20 MHz, 2437 MHz, Mid Channel (Average) @ 2390 MHz



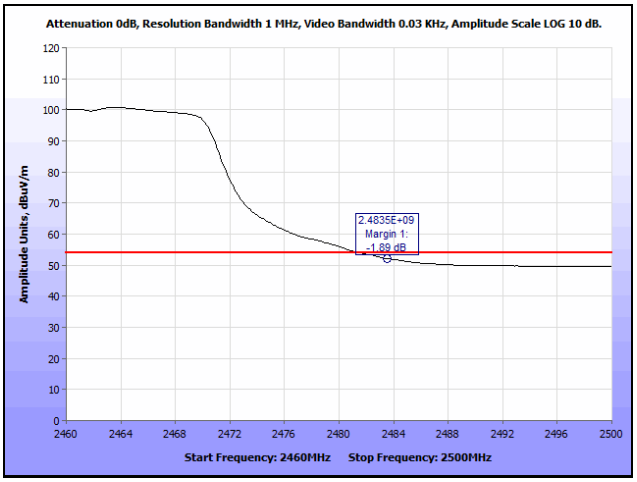
Plot 157. Radiated Restricted Band Edge, 802.11g 20 MHz, 2437 MHz, Mid Channel (Peak) @ 2390 MHz



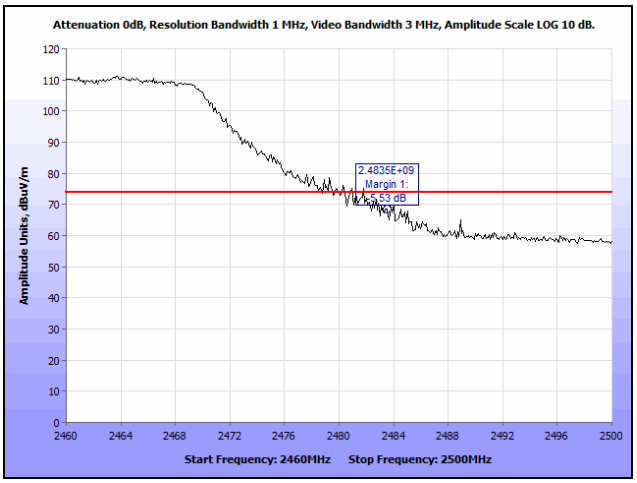
Plot 158. Radiated Restricted Band Edge, 802.11g 20 MHz, 2437 MHz, Mid Channel (Average) @ 2483.5 MHz



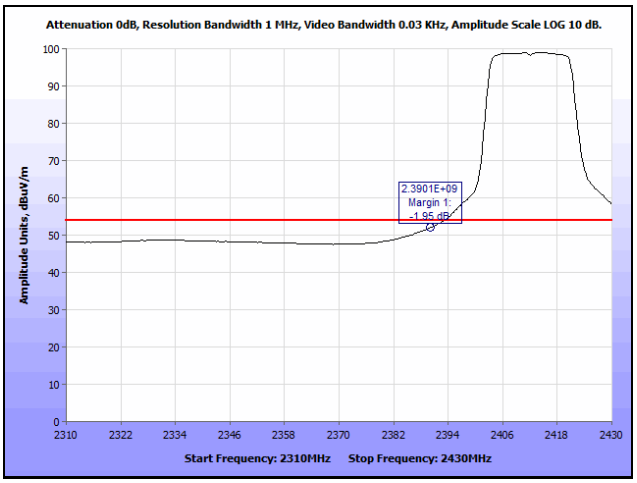
Plot 159. Radiated Restricted Band Edge, 802.11g 20 MHz, 2437 MHz, Mid Channel (Peak) @ 2483.5 MHz



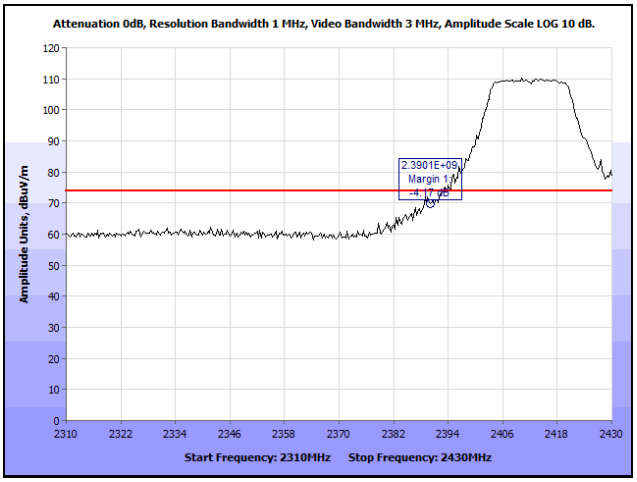
Plot 160. Radiated Restricted Band Edge, 802.11g 20 MHz, 2462 MHz, High Channel (Average) @ 2483.5 MHz



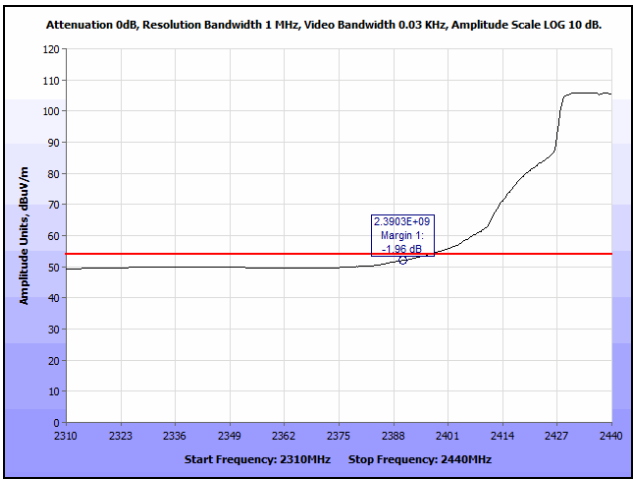
Plot 161. Radiated Restricted Band Edge, 802.11g 20 MHz, 2462 MHz, High Channel (Peak) @ 2390 MHz



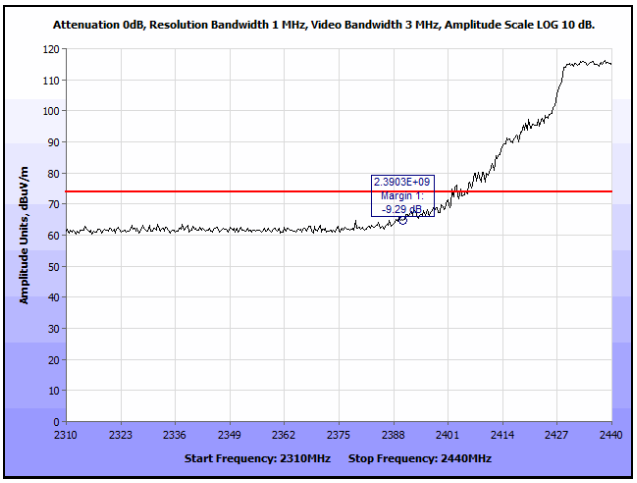
Plot 162. Radiated Restricted Band Edge, 802.11n 20 MHz, 2412 MHz, Low Channel (Average) @ 2390 MHz



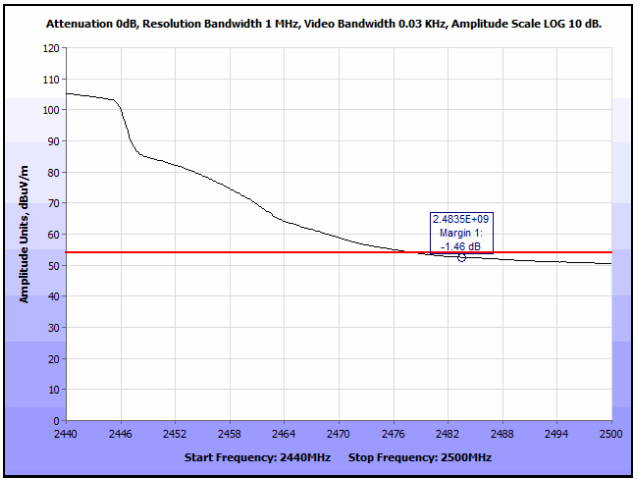
Plot 163. Radiated Restricted Band Edge, 802.11n 20 MHz, 2412 MHz, Low Channel (Peak) @ 2390 MHz



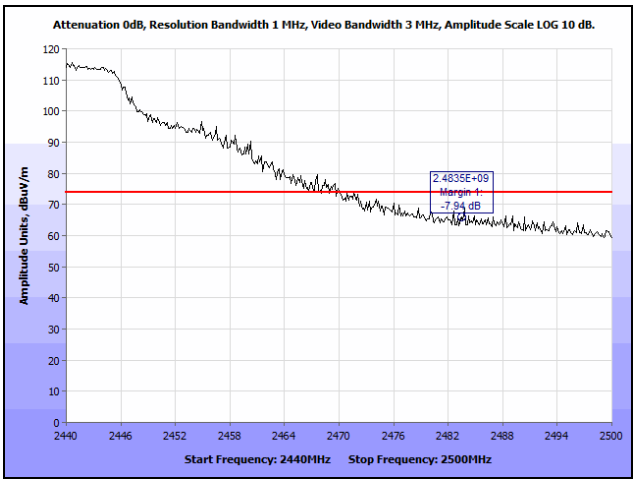
Plot 164. Radiated Restricted Band Edge, 802.11n 20 MHz, 2437 MHz, Mid Channel (Average) @ 2390 MHz



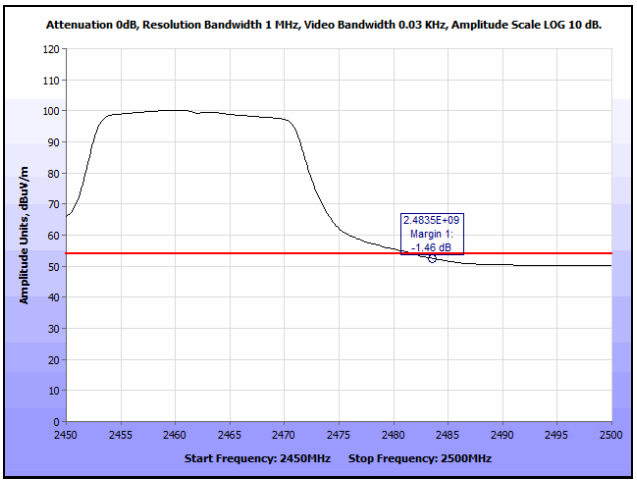
Plot 165. Radiated Restricted Band Edge, 802.11n 20 MHz, 2437 MHz, Mid Channel (Peak) @ 2390 MHz



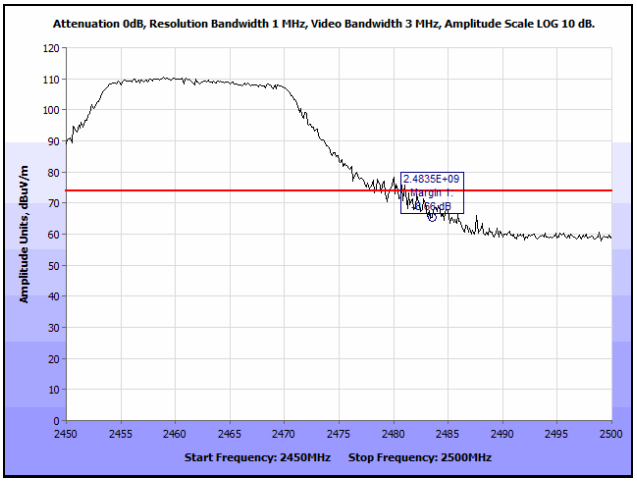
Plot 166. Radiated Restricted Band Edge, 802.11n 20 MHz, 2437 MHz, Mid Channel (Average) @ 2483.5 MHz



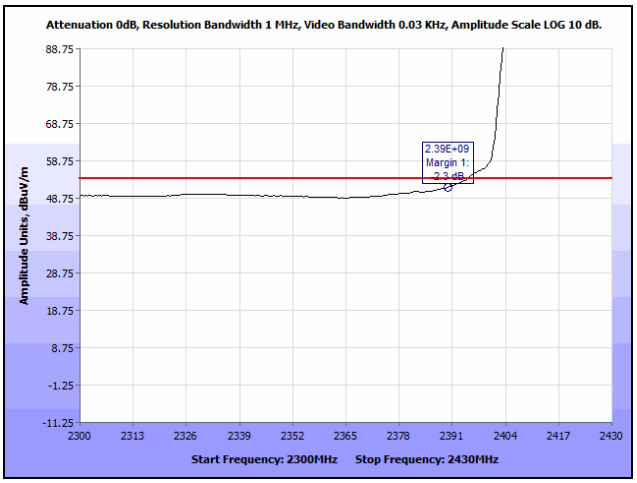
Plot 167. Radiated Restricted Band Edge, 802.11n 20 MHz, 2437 MHz, Mid Channel (Peak) @ 2483.5 MHz



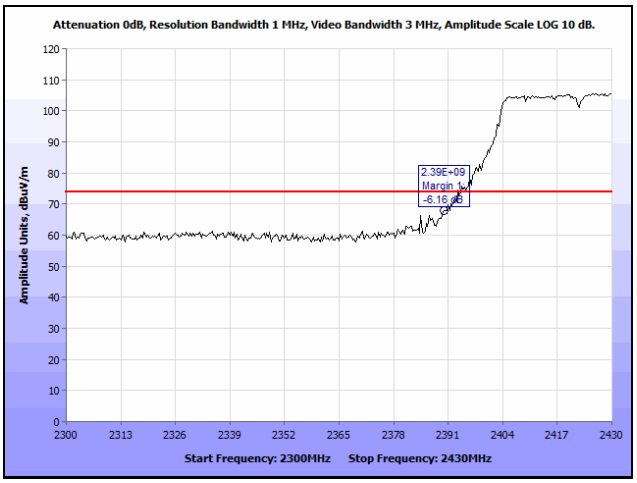
Plot 168. Radiated Restricted Band Edge, 802.11n 20 MHz, 2462 MHz, High Channel (Average) @ 2483.5 MHz



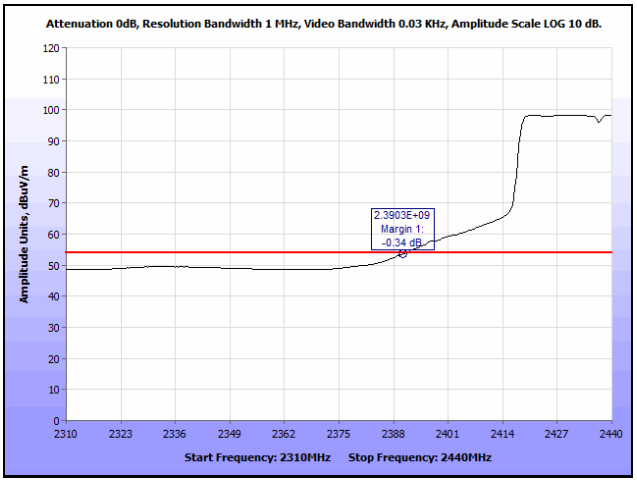
Plot 169. Radiated Restricted Band Edge, 802.11n 20 MHz, 2462 MHz, High Channel (Peak) @ 2390 MHz



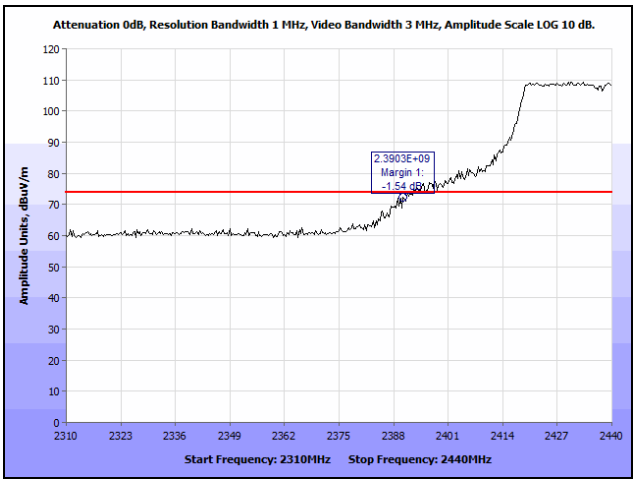
Plot 170. Radiated Restricted Band Edge, 802.11n 40 MHz, 2422 MHz, Low Channel (Average) @ 2390 MHz



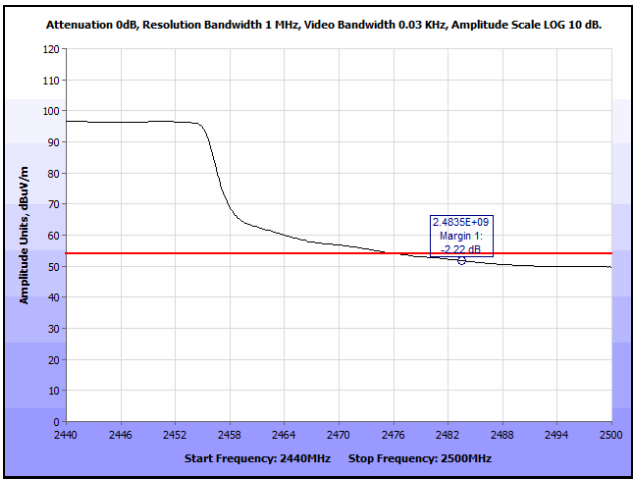
Plot 171. Radiated Restricted Band Edge, 802.11n 40 MHz, 2422 MHz, Low Channel (Peak) @ 2390 MHz



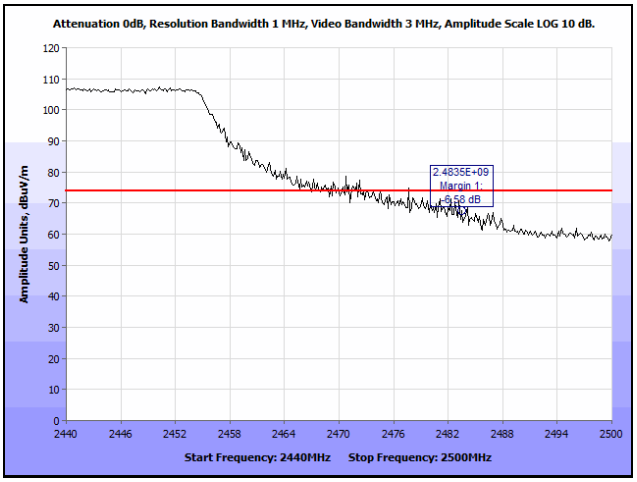
Plot 172. Radiated Restricted Band Edge, 802.11n 40 MHz, 2437 MHz, Mid Channel (Average) @ 2390 MHz



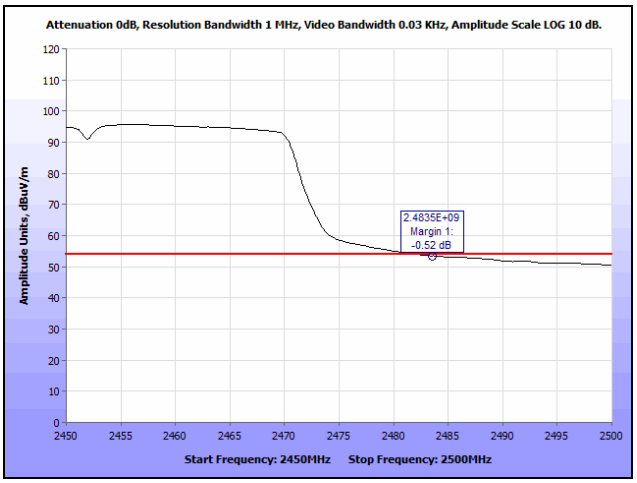
Plot 173. Radiated Restricted Band Edge, 802.11n 40 MHz, 2437 MHz, Mid Channel (Peak) @ 2390 MHz



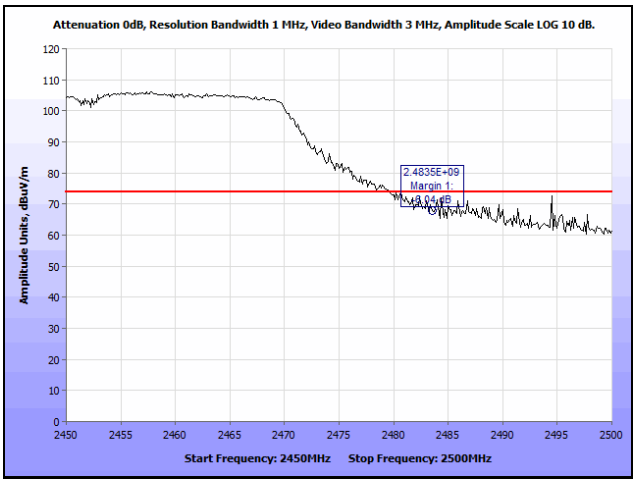
Plot 174. Radiated Restricted Band Edge, 802.11n 40 MHz, 2437 MHz, Mid Channel (Average) @ 2483.5 MHz



Plot 175. Radiated Restricted Band Edge, 802.11n 40 MHz, 2437 MHz, Mid Channel (Peak) @ 2483.5 MHz



Plot 176. Radiated Restricted Band Edge, 802.11n 40 MHz, 2452 MHz, High Channel (Average) @ 2483.5 MHz



Plot 177. Radiated Restricted Band Edge, 802.11n 40 MHz, 2452 MHz, High Channel (Peak) @ 2390 MHz

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(d) RF Conducted Spurious Emissions Requirements and Band Edge

Test Requirement: **15.247(d)** In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Procedure: For intentional radiators with a digital device portion which operates below 10 GHz, the spectrum was investigated as per §15.33(a)(1) and §15.33(a)(4); i.e., the lowest RF signal generated or used in the device up to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

The EUT was investigated from 30MHz to the 10th harmonic of the fundamental carrier. A spectrum analyzer with a 10dB attenuator in line was utilized. A 100kHz resolution bandwidth and 300kHz video bandwidth were used. Plots are corrected for cable loss and attenuator.

See following pages for detailed test results with RF Conducted Spurious Emissions.

Test Results: The EUT was compliant with the Conducted Spurious Emission limits of **§15.247(d)**.

Test Engineer(s): Jonathan Chao

Test Date(s): 02/05/13

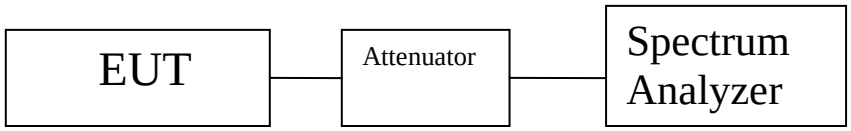
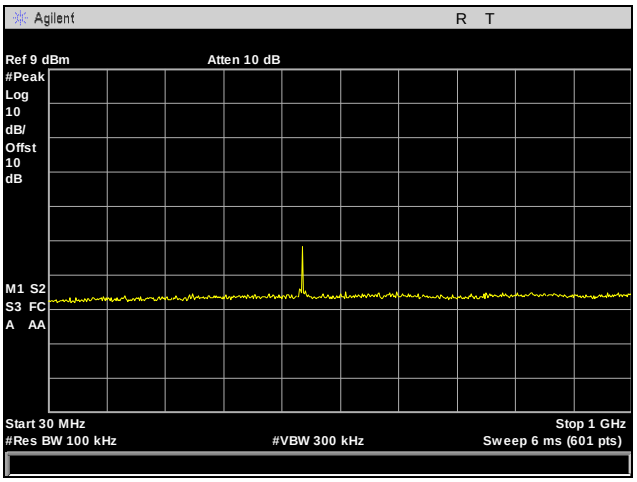
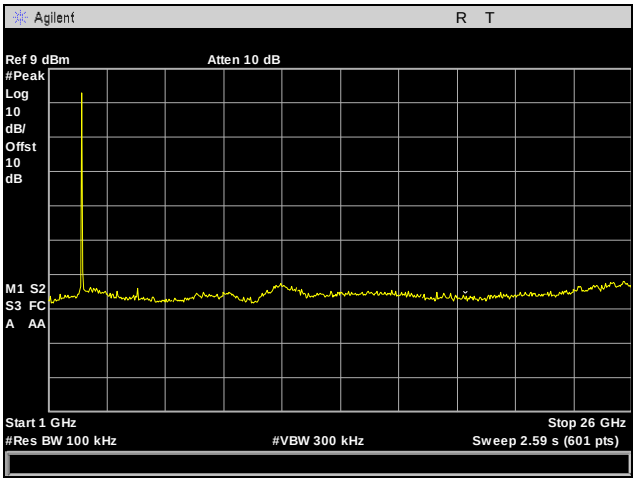


Figure 4. Block Diagram, Conducted Spurious Emissions Test Setup

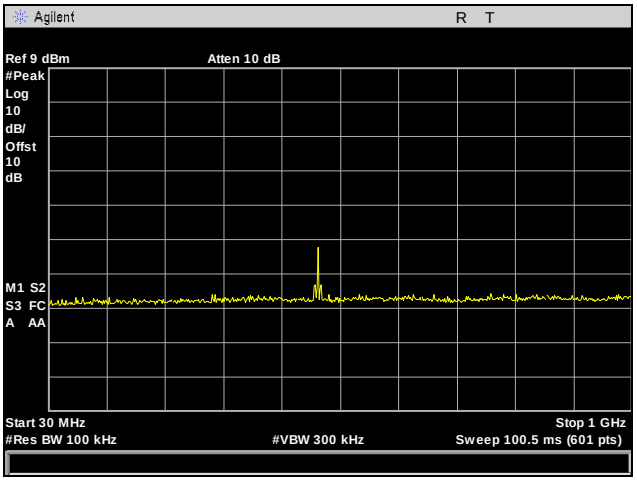
Conducted Spurious Emissions Test Results



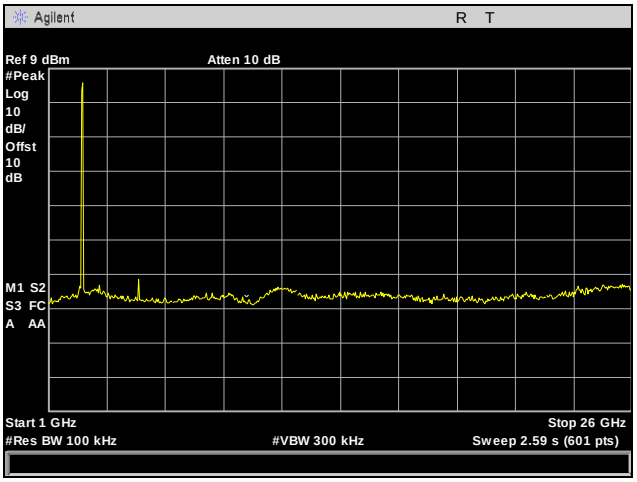
Plot 178. Conducted Spurious Emissions, 802.11b 20 MHz, 2412 MHz, Low Channel (30 MHz - 1 GHz)



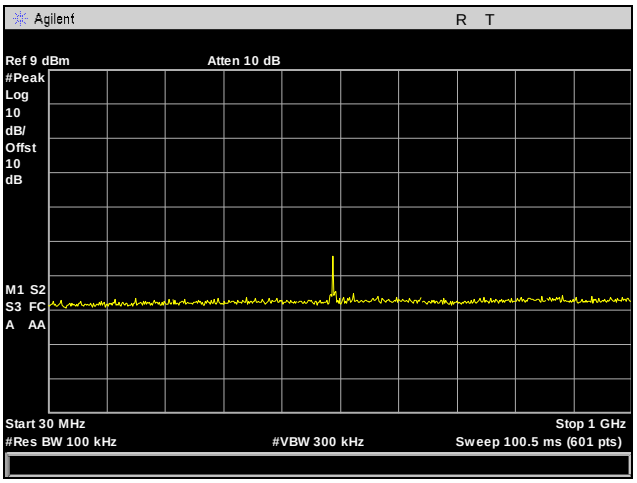
Plot 179. Conducted Spurious Emissions, 802.11b 20 MHz, 2412 MHz, Low Channel (1 GHz - 26 GHz)



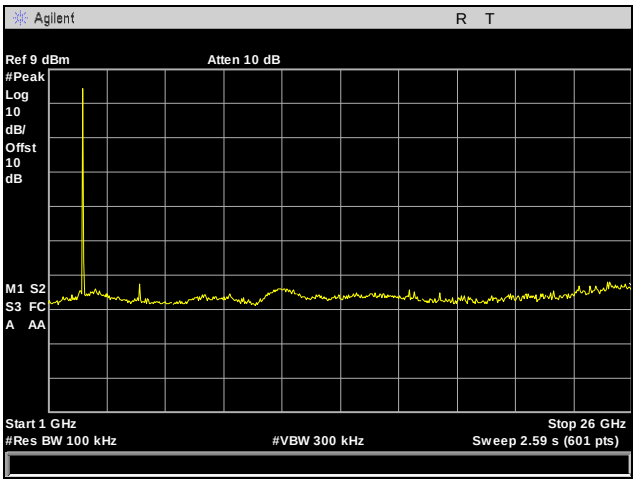
Plot 180. Conducted Spurious Emissions, 802.11b 20 MHz, 2437 MHz, Mid Channel (30 MHz - 1 GHz)



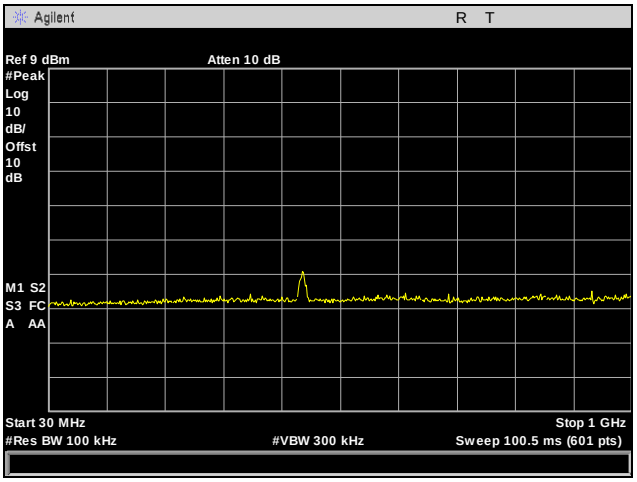
Plot 181. Conducted Spurious Emissions, 802.11b 20 MHz, 2437 MHz, Mid Channel (1 GHz - 26 GHz)



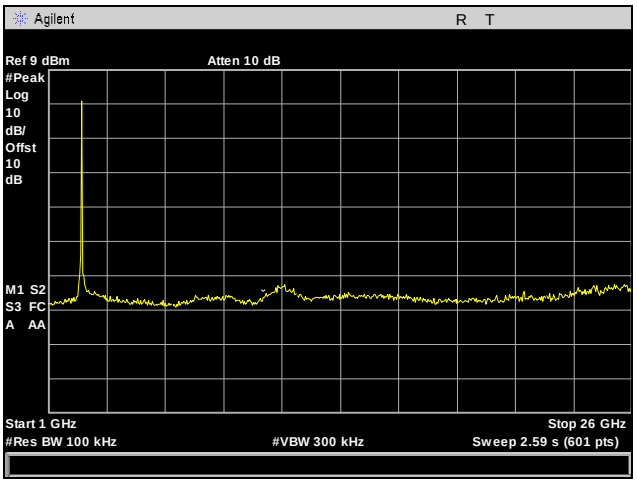
Plot 182. Conducted Spurious Emissions, 802.11b 20 MHz, 2462 MHz, High Channel (30 MHz - 1 GHz)



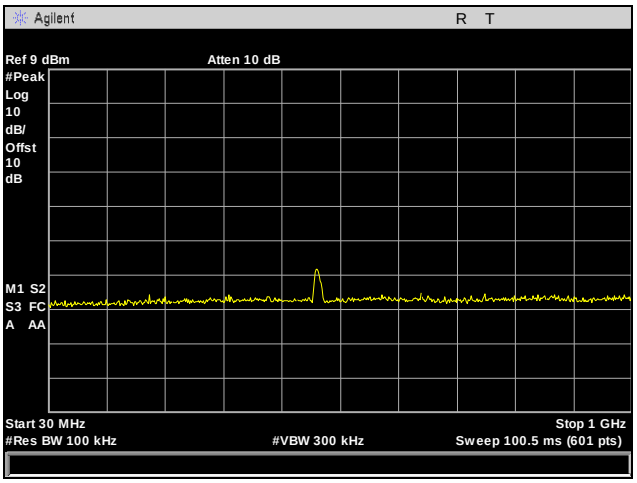
Plot 183. Conducted Spurious Emissions, 802.11b 20 MHz, 2462 MHz, High Channel (1 GHz - 26 GHz)



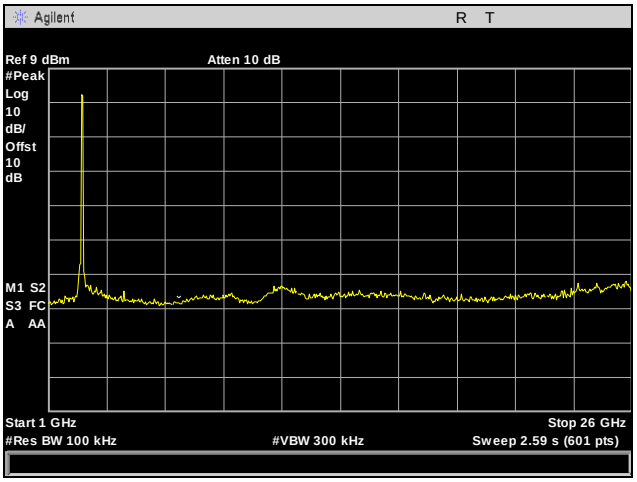
Plot 184. Conducted Spurious Emissions, 802.11g 20 MHz, 2412 MHz, Low Channel (30 MHz - 1 GHz)



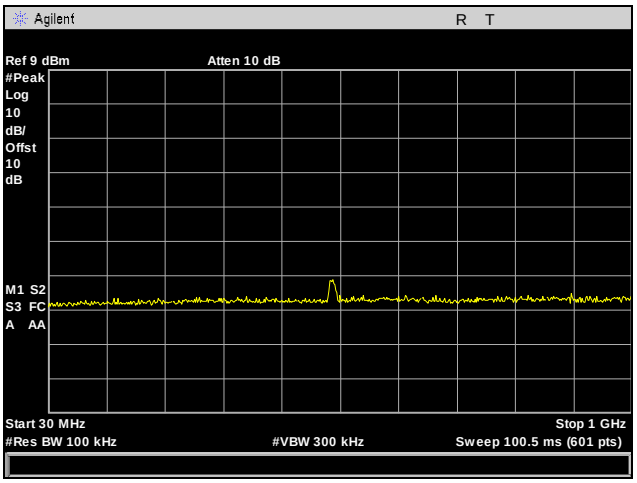
Plot 185. Conducted Spurious Emissions, 802.11g 20 MHz, 2412 MHz, Low Channel (1 GHz - 26 GHz)



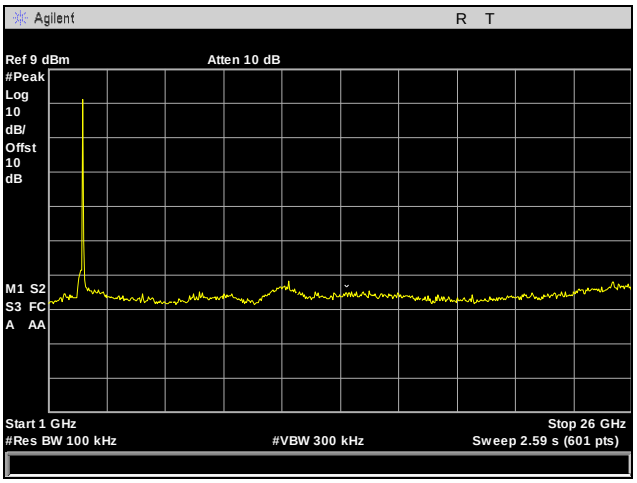
Plot 186. Conducted Spurious Emissions, 802.11g 20 MHz, 2437 MHz, Mid Channel (30 MHz - 1 GHz)



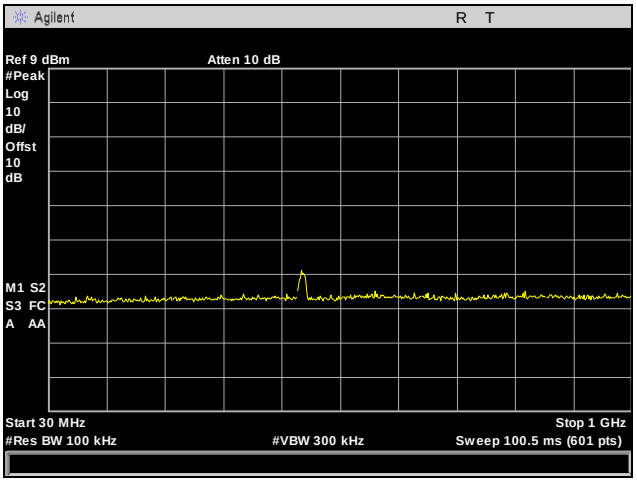
Plot 187. Conducted Spurious Emissions, 802.11g 20 MHz, 2437 MHz, Mid Channel (1 GHz - 26 GHz)



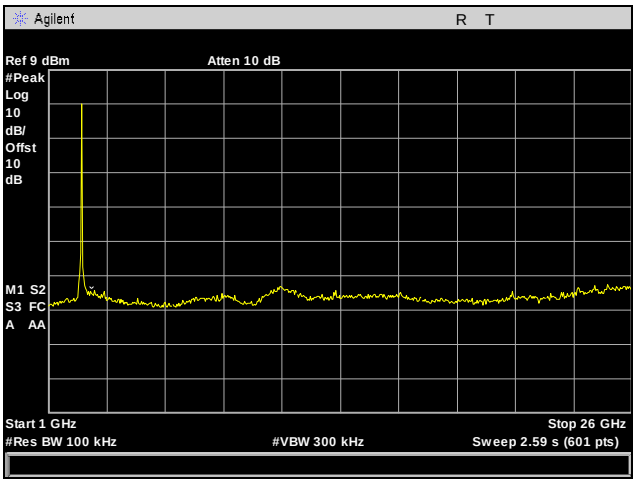
Plot 188. Conducted Spurious Emissions, 802.11g 20 MHz, 2462 MHz, High Channel (30 MHz - 1 GHz)



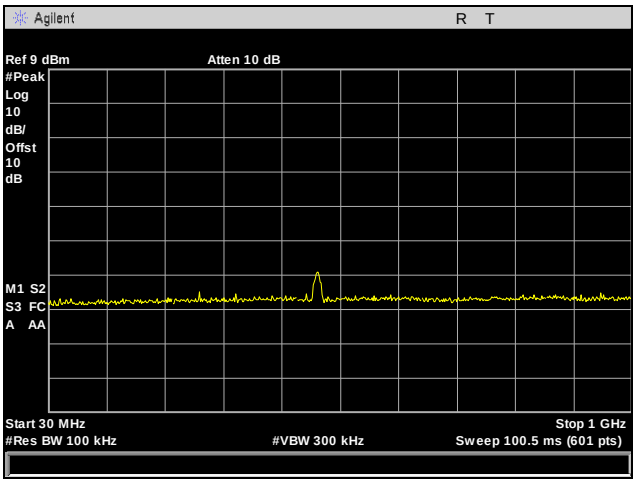
Plot 189. Conducted Spurious Emissions, 802.11g 20 MHz, 2462 MHz, High Channel (1 GHz - 26 GHz)



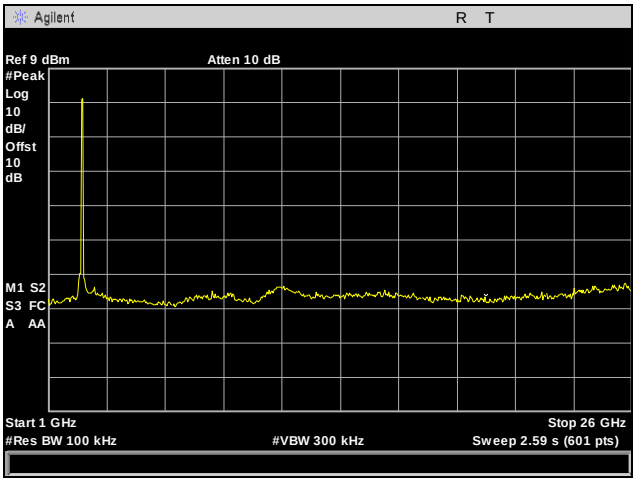
Plot 190. Conducted Spurious Emissions, 802.11n 20 MHz, 2412 MHz, Low Channel (30 MHz - 1 GHz)



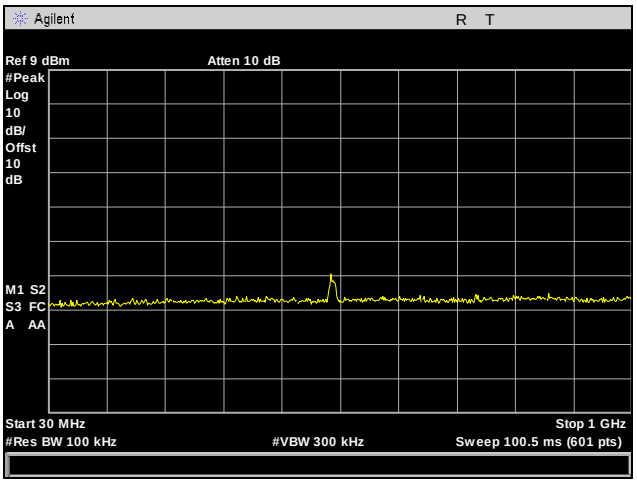
Plot 191. Conducted Spurious Emissions, 802.11n 20 MHz, 2412 MHz, Low Channel (1 GHz - 26 GHz)



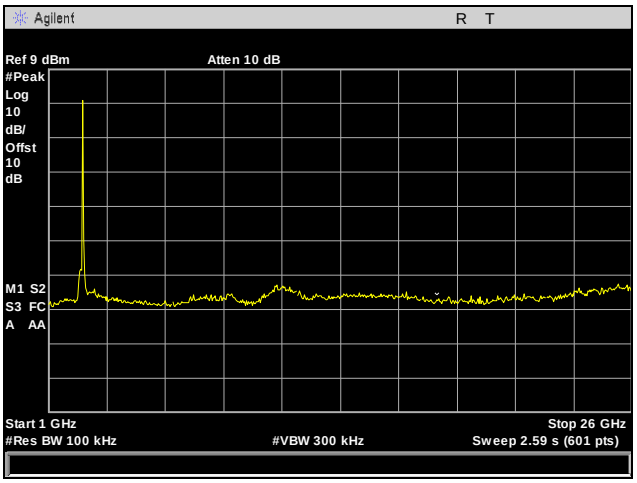
Plot 192. Conducted Spurious Emissions, 802.11n 20 MHz, 2437 MHz, Mid Channel (30 MHz - 1 GHz)



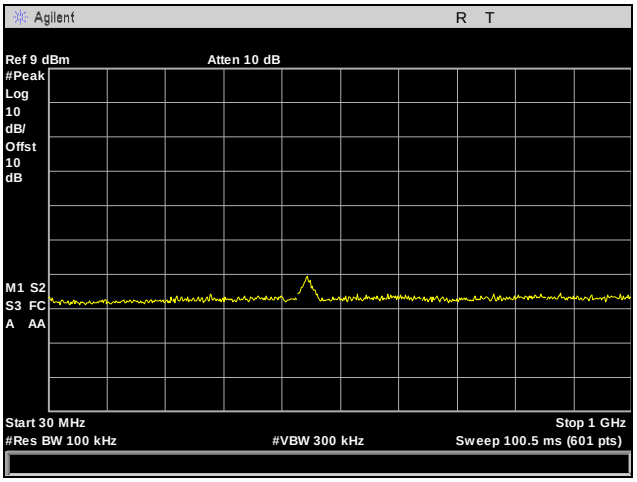
Plot 193. Conducted Spurious Emissions, 802.11n 20 MHz, 2437 MHz, Mid Channel (1 GHz - 26 GHz)



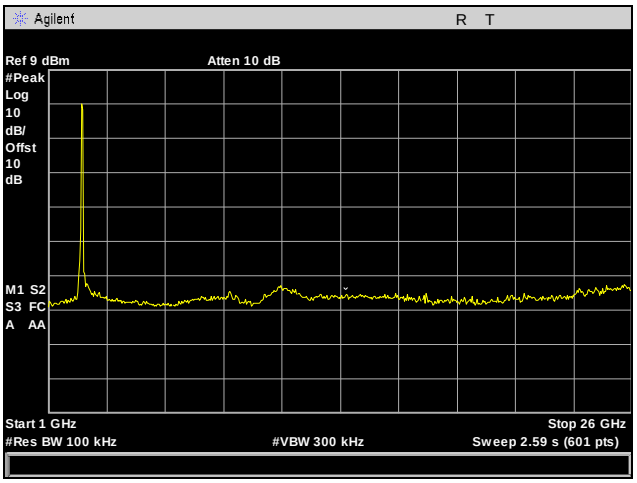
Plot 194. Conducted Spurious Emissions, 802.11n 20 MHz, 2462 MHz, High Channel (30 MHz - 1 GHz)



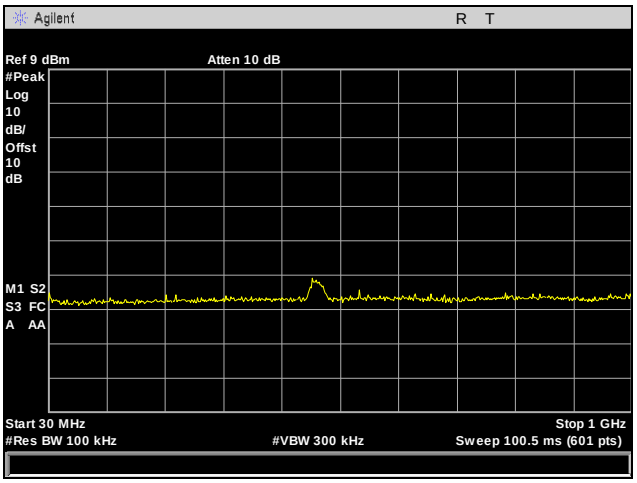
Plot 195. Conducted Spurious Emissions, 802.11n 20 MHz, 2462 MHz, High Channel (1 GHz - 26 GHz)



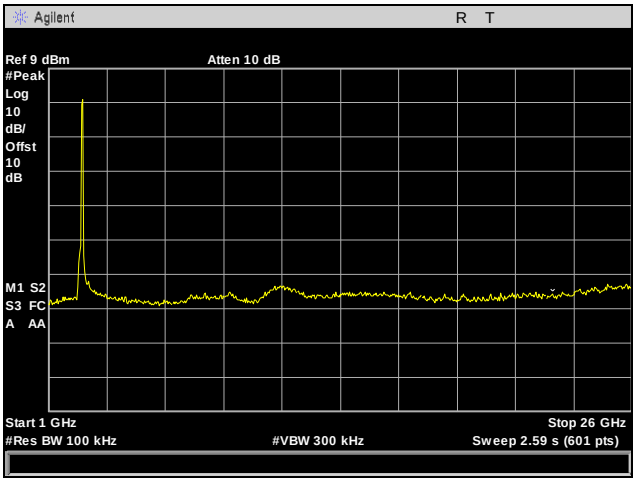
Plot 196. Conducted Spurious Emissions, 802.11n 40 MHz, 2422 MHz, Low Channel (30 MHz - 1 GHz)



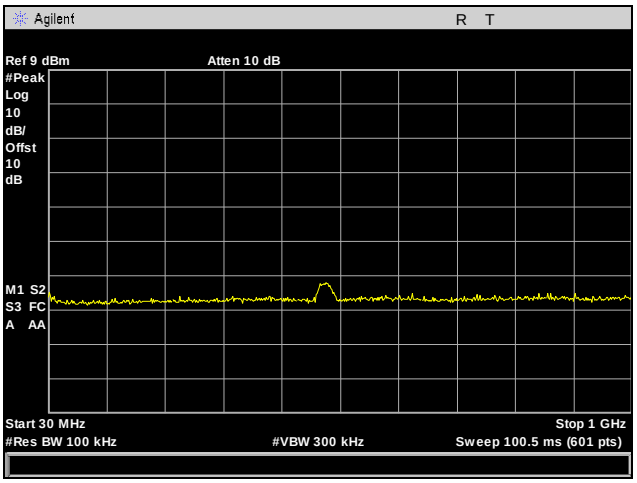
Plot 197. Conducted Spurious Emissions, 802.11n 40 MHz, 2422 MHz, Low Channel (1 GHz - 26 GHz)



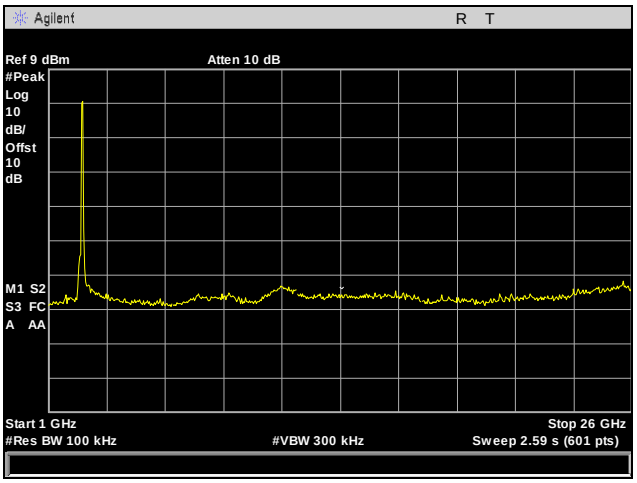
Plot 198. Conducted Spurious Emissions, 802.11n 40 MHz, 2437 MHz, Mid Channel (30 MHz - 1 GHz)



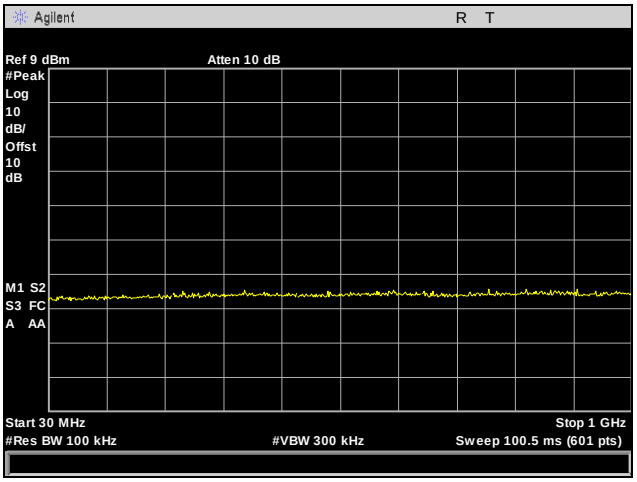
Plot 199. Conducted Spurious Emissions, 802.11n 40 MHz, 2437 MHz, Mid Channel (1 GHz - 26 GHz)



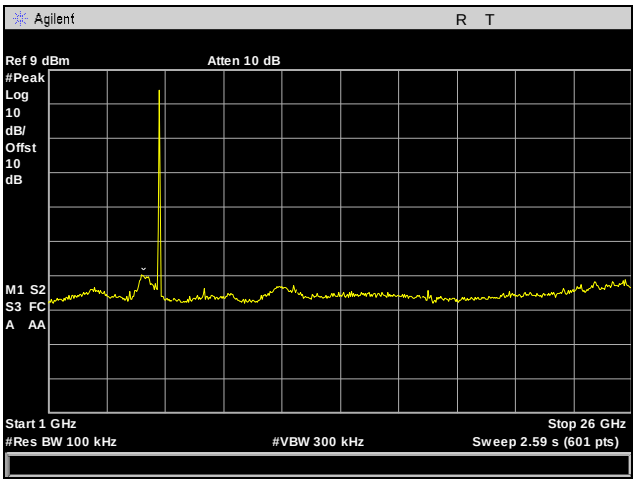
Plot 200. Conducted Spurious Emissions, 802.11n 40 MHz, 2452 MHz, High Channel (30 MHz - 1 GHz)



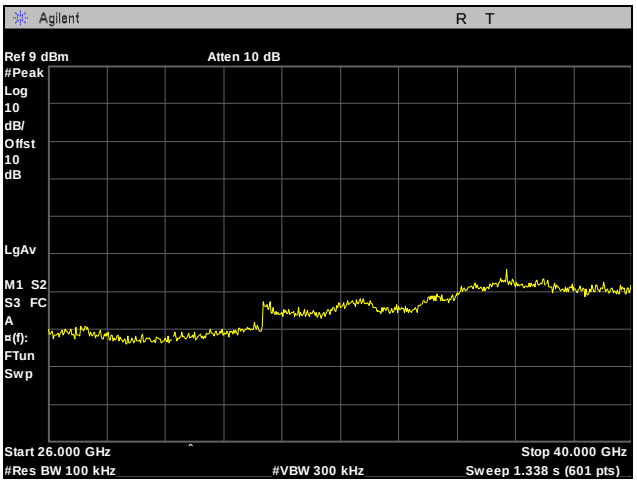
Plot 201. Conducted Spurious Emissions, 802.11n 40 MHz, 2452 MHz, High Channel (1 GHz - 26 GHz)



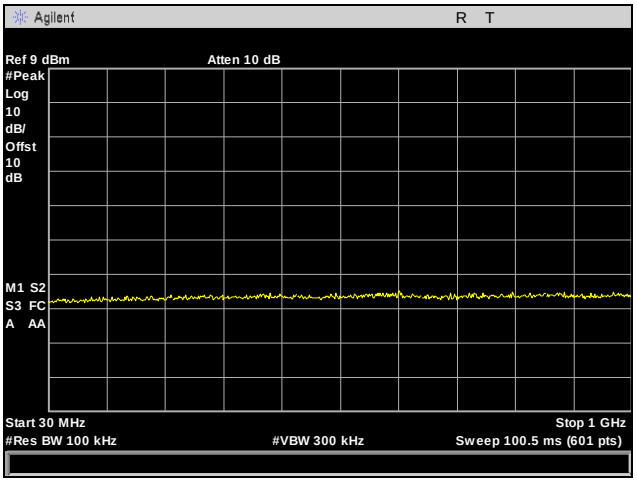
Plot 202. Conducted Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel (30 MHz - 1 GHz)



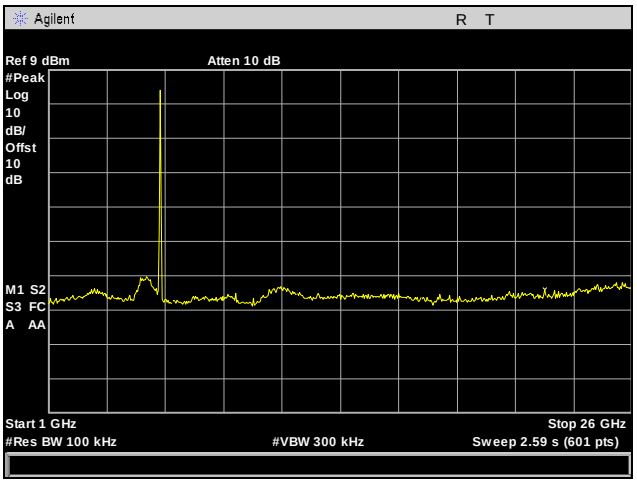
Plot 203. Conducted Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel (1 GHz - 26 GHz)



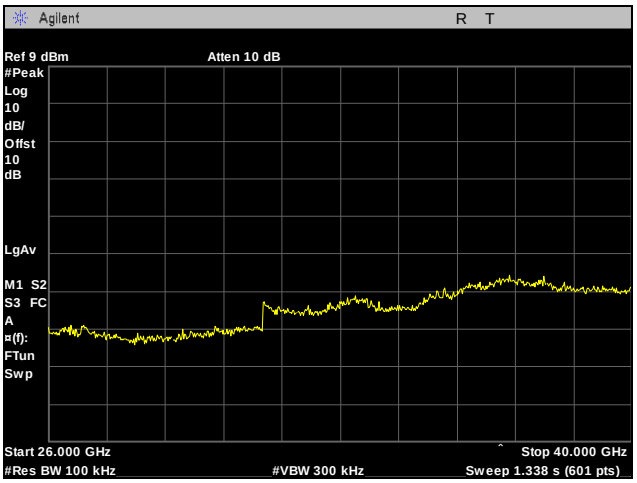
Plot 204. Conducted Spurious Emissions, 802.11a 20 MHz, 5745 MHz, Low Channel (26 GHz - 40 GHz)



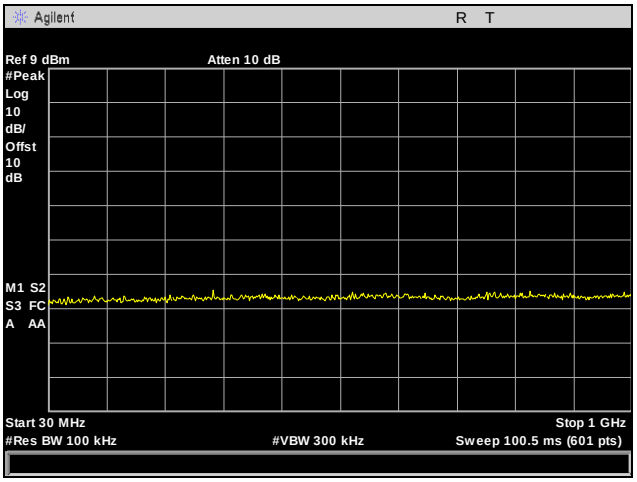
Plot 205. Conducted Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel (30 MHz - 1 GHz)



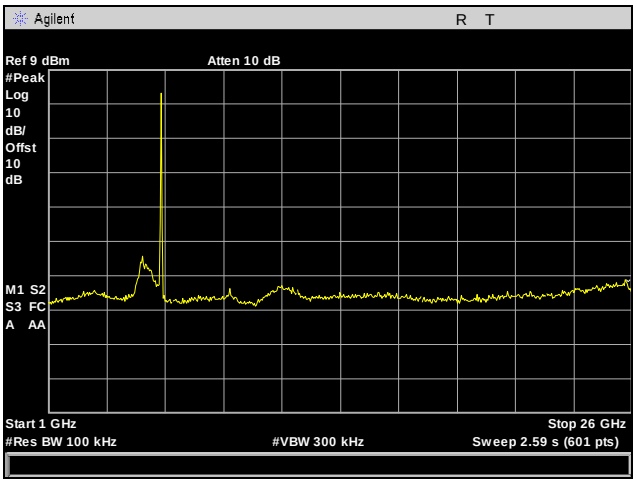
Plot 206. Conducted Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel (1 GHz - 26 GHz)



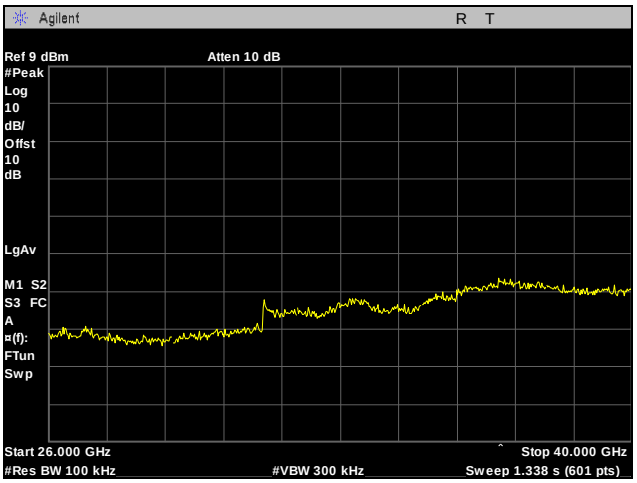
Plot 207. Conducted Spurious Emissions, 802.11a 20 MHz, 5785 MHz, Mid Channel (26 GHz - 40 GHz)



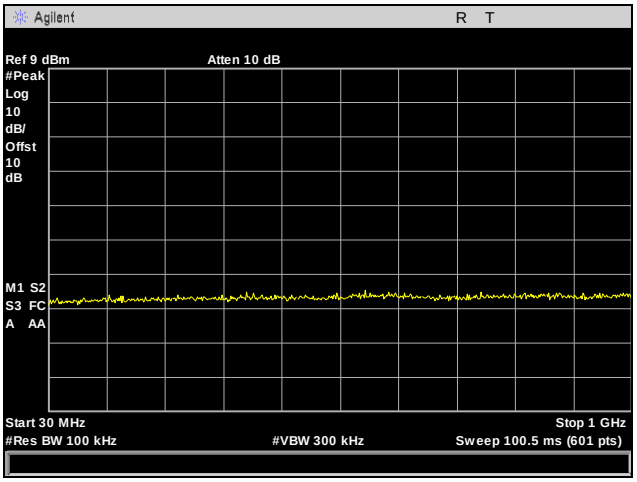
Plot 208. Conducted Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel (30 MHz - 1 GHz)



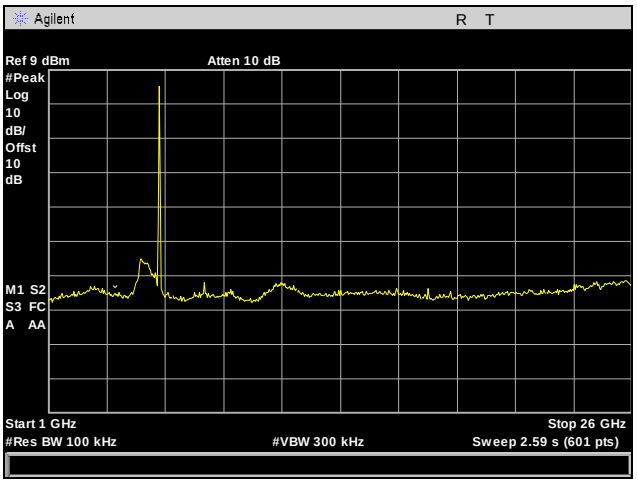
Plot 209. Conducted Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel (1 GHz - 26 GHz)



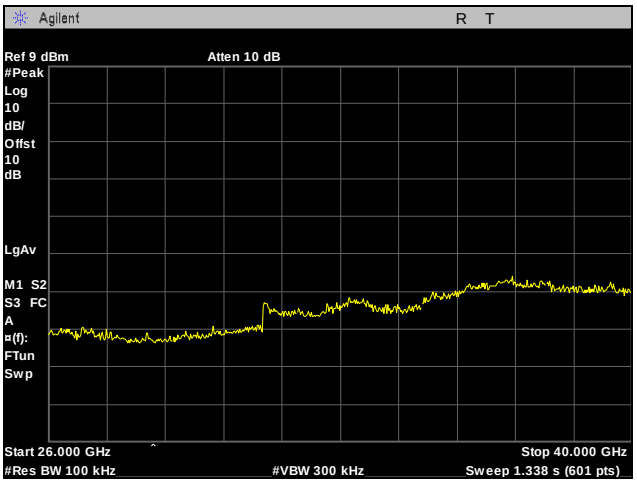
Plot 210. Conducted Spurious Emissions, 802.11a 20 MHz, 5825 MHz, High Channel (26 GHz - 40 GHz)



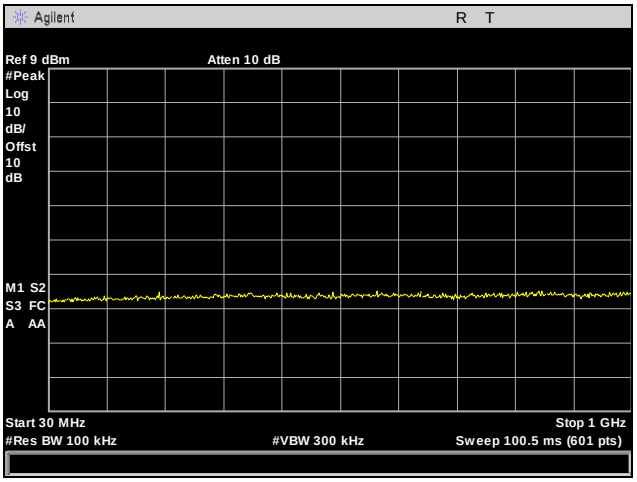
Plot 211. Conducted Spurious Emissions, 802.11n 20 MHz, 5745 MHz, Low Channel (30 MHz - 1 GHz)



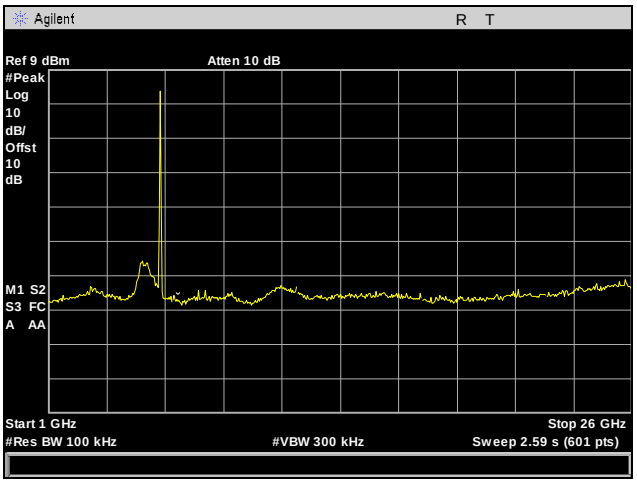
Plot 212. Conducted Spurious Emissions, 802.11n 20 MHz, 5745 MHz, Low Channel (1 GHz - 26 GHz)



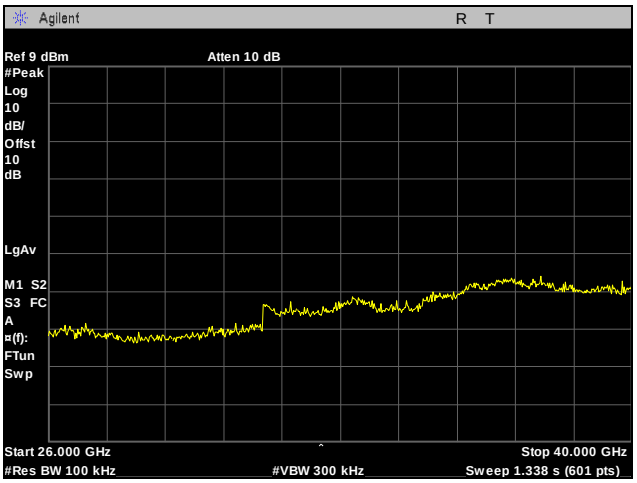
Plot 213. Conducted Spurious Emissions, 802.11n 20 MHz, 5745 MHz, Low Channel (26 GHz - 40 GHz)



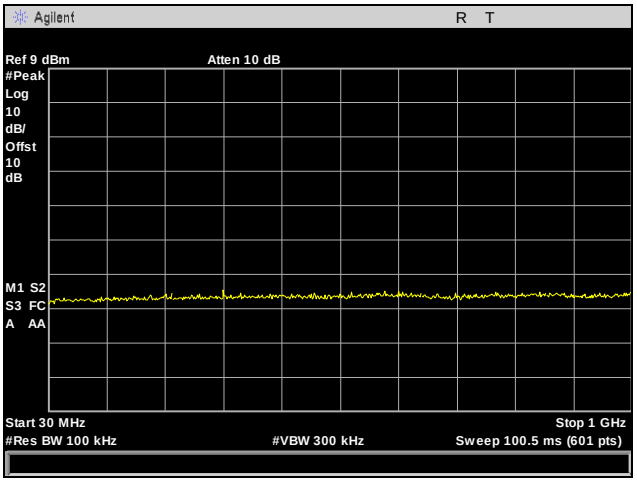
Plot 214. Conducted Spurious Emissions, 802.11n 20 MHz, 5785 MHz, Mid Channel (30 MHz - 1 GHz)



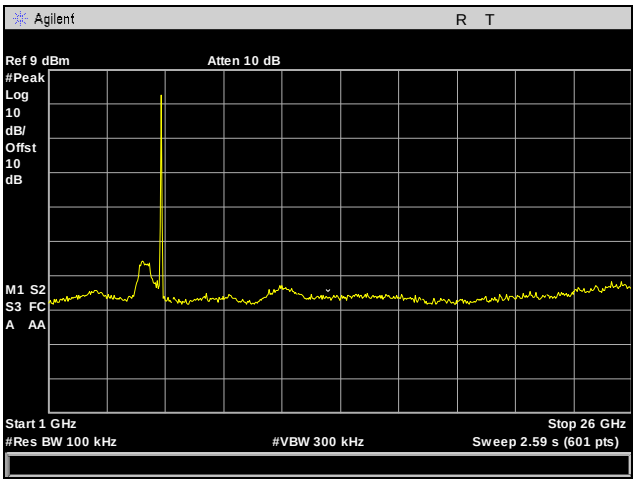
Plot 215. Conducted Spurious Emissions, 802.11n 20 MHz, 5785 MHz, Mid Channel (1 GHz - 26 GHz)



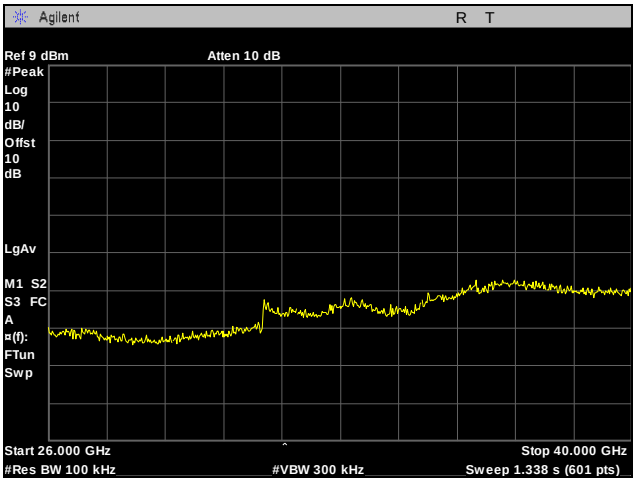
Plot 216. Conducted Spurious Emissions, 802.11n 20 MHz, 5785 MHz, Mid Channel (26 GHz – 40 GHz)



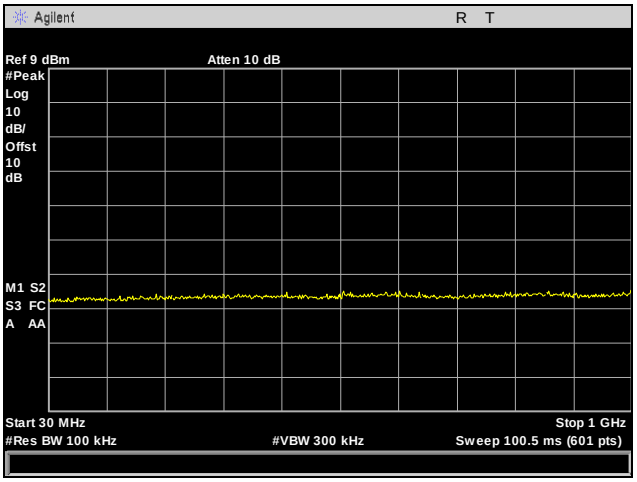
Plot 217. Conducted Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel (30 MHz - 1 GHz)



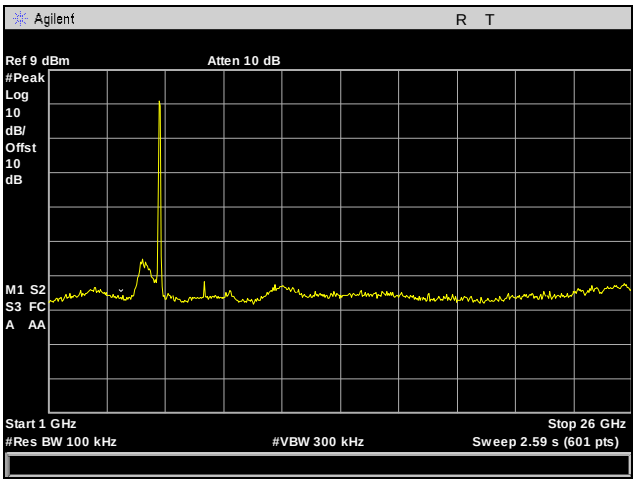
Plot 218. Conducted Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel (1 GHz - 26 GHz)



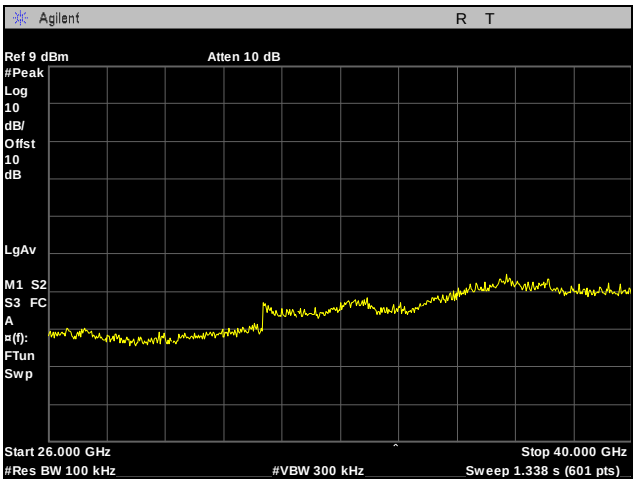
Plot 219. Conducted Spurious Emissions, 802.11n 20 MHz, 5825 MHz, High Channel (26 GHz - 40 GHz)



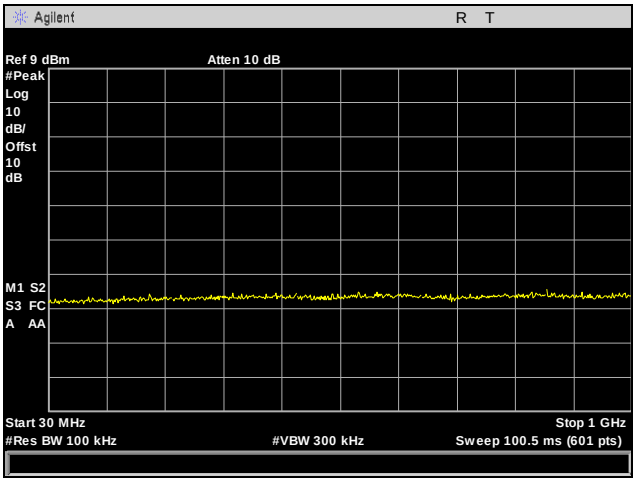
Plot 220. Conducted Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel (30 MHz - 1 GHz)



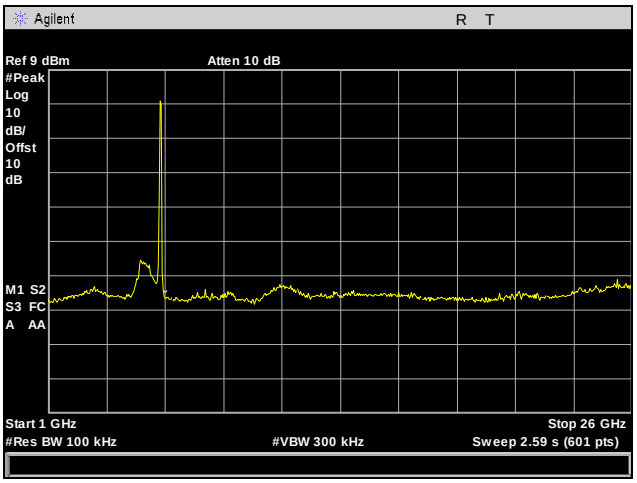
Plot 221. Conducted Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel (1 GHz - 26 GHz)



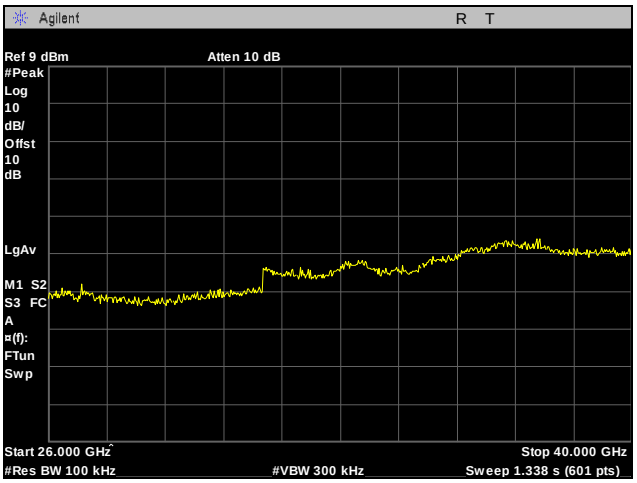
Plot 222. Conducted Spurious Emissions, 802.11n 40 MHz, 5755 MHz, Low Channel (26 GHz - 40 GHz)



Plot 223. Conducted Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel (30 MHz - 1 GHz)

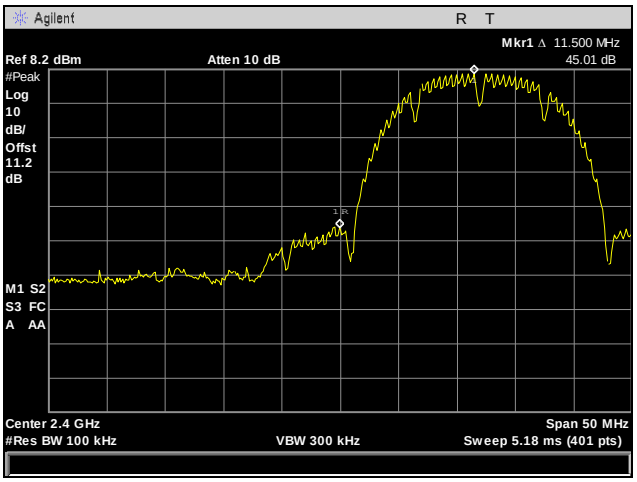


Plot 224. Conducted Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel (1 GHz - 26 GHz)

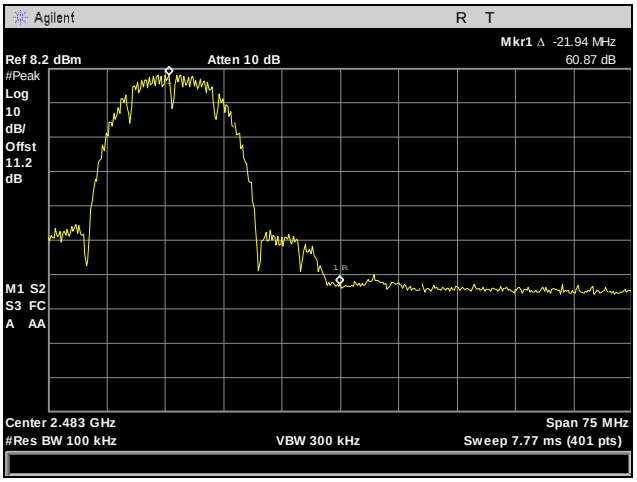


Plot 225. Conducted Spurious Emissions, 802.11n 40 MHz, 5795 MHz, High Channel (26 GHz - 40 GHz)

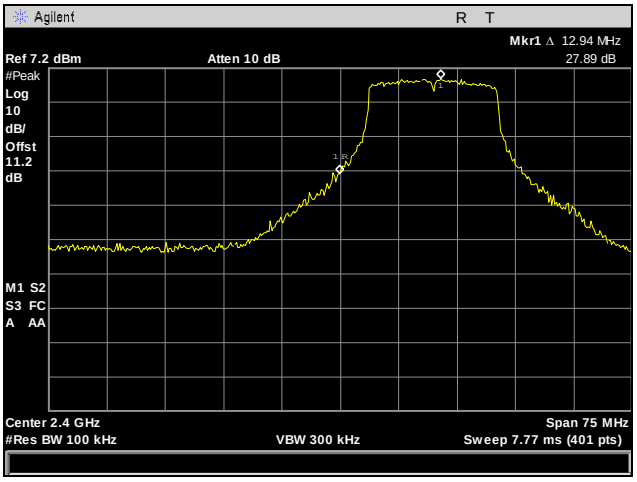
Conducted Band Edge Test Results



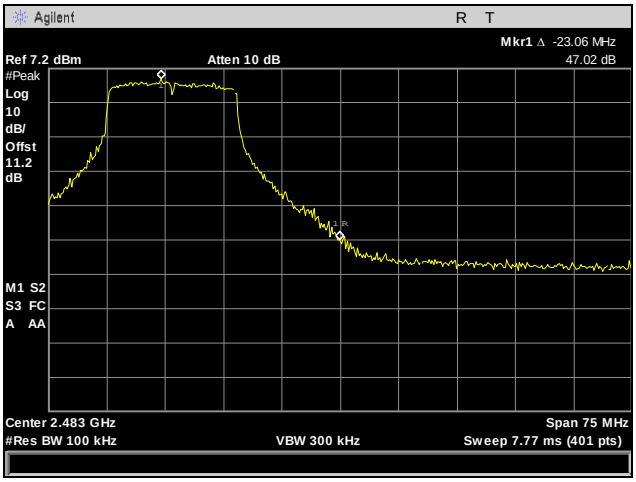
Plot 226. Conducted Band Edge, 802.11b 20 MHz, 2412 MHz, Low Channel



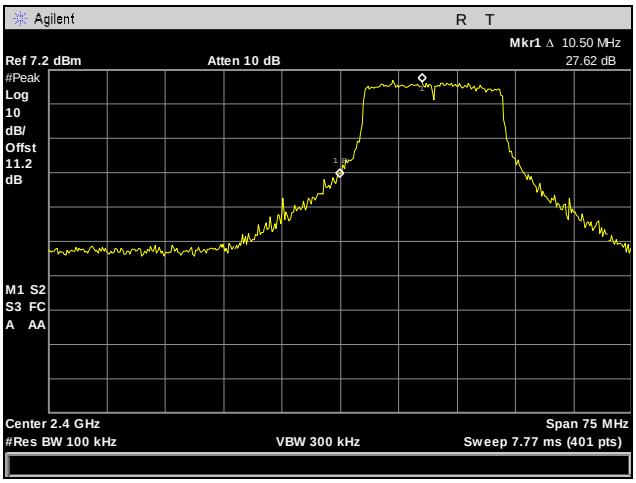
Plot 227. Conducted Band Edge, 802.11b 20 MHz, 2462 MHz, High Channel



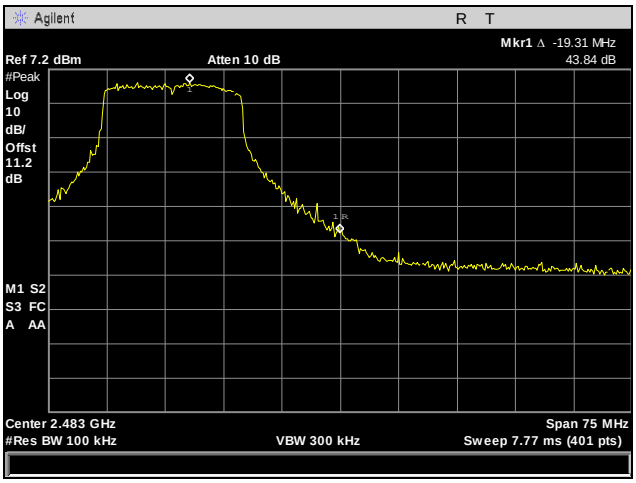
Plot 228. Conducted Band Edge, 802.11g 20 MHz, 2412 MHz, Low Channel



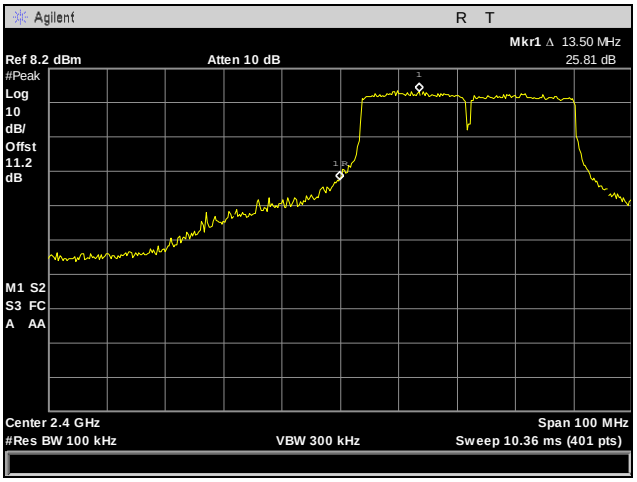
Plot 229. Conducted Band Edge, 802.11g 20 MHz, 2462 MHz, High Channel



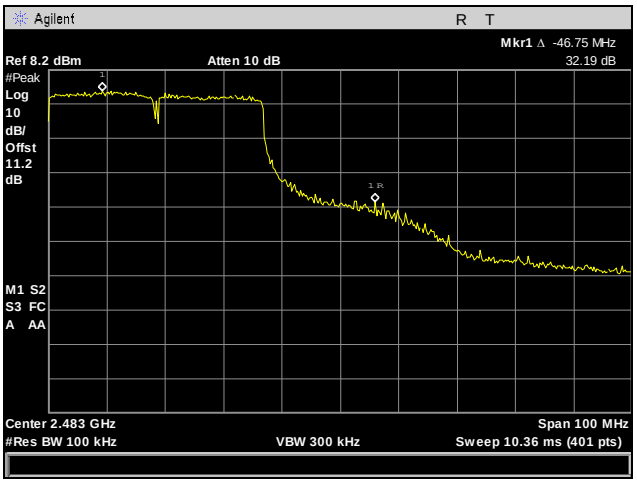
Plot 230. Conducted Band Edge, 802.11n 20 MHz, 2412 MHz, Low Channel



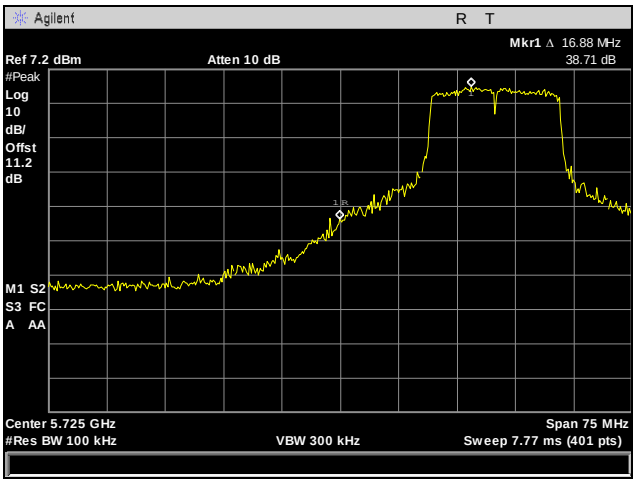
Plot 231. Conducted Band Edge, 802.11n 20 MHz, 2462 MHz, High Channel



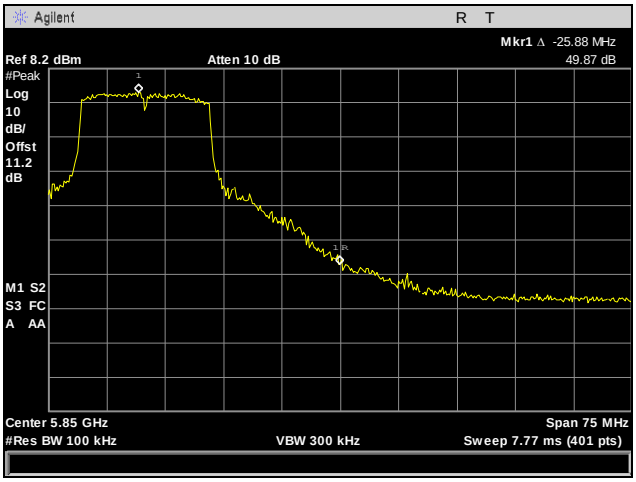
Plot 232. Conducted Band Edge, 802.11n 40 MHz, 2422 MHz, Low Channel



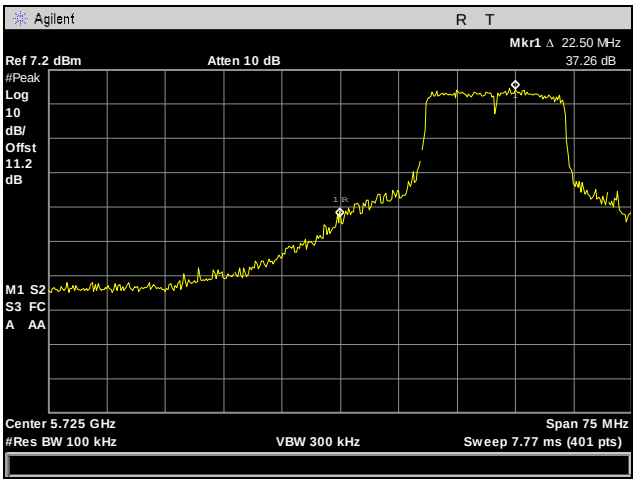
Plot 233. Conducted Band Edge, 802.11n 40 MHz, 2452 MHz, High Channel



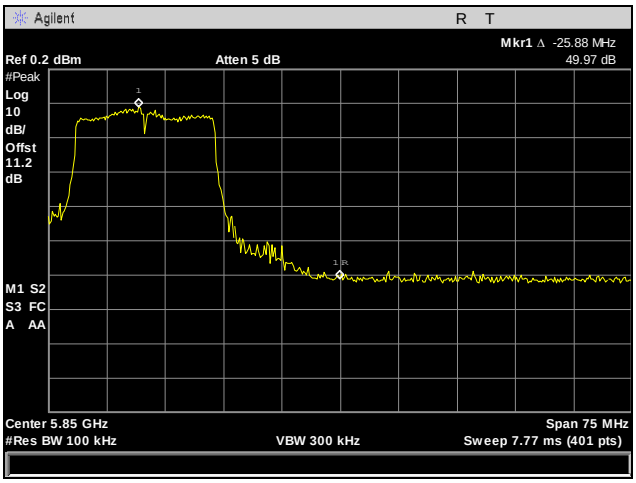
Plot 234. Conducted Band Edge, 802.11a 20 MHz, 5745 MHz, Low Channel



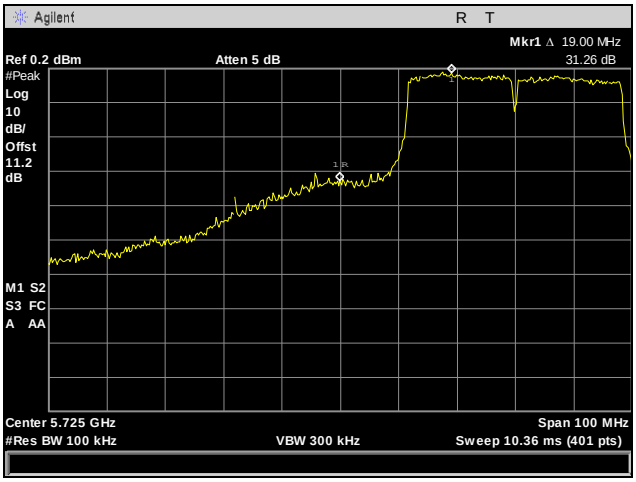
Plot 235. Conducted Band Edge, 802.11a 20 MHz, 5825 MHz, High Channel



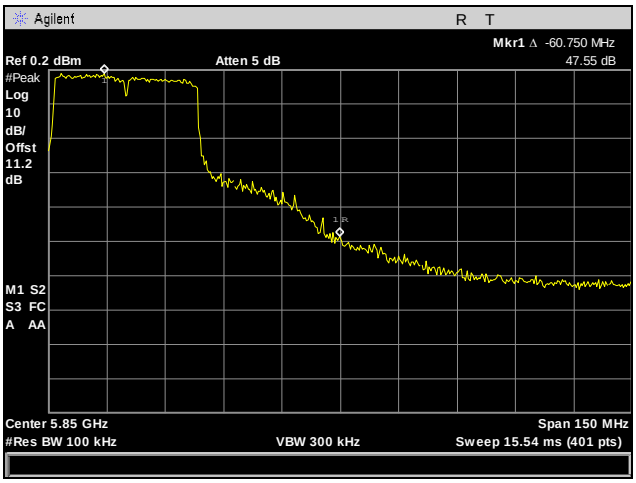
Plot 236. Conducted Band Edge, 802.11n 20 MHz, 5745 MHz, Low Channel



Plot 237. Conducted Band Edge, 802.11n 20 MHz, 5825 MHz, High Channel



Plot 238. Conducted Band Edge, 802.11n 40 MHz, 5725MHz, Low Channel



Plot 239. Conducted Band Edge, 802.11n 40 MHz, 5795 MHz, High Channel

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(e) Peak Power Spectral Density

Test Procedure: The transmitter was connected directly to a Spectrum Analyzer through an attenuator. The power level was set to the maximum level. A RBW of 1 MHz and VBW of 3 MHz were used to determine the peak emissions within the band. The Spectrum analyzer was then set to a RBW of 3 kHz and VBW was set to 10 kHz. The SPAN of the analyzer was set to 1 MHz with a 333.3 second sweep. Measurements were carried out at the low, mid and high channels.

Test Results: The EUT was compliant with the peak power spectral density limits of **§ 15.247 (e)**.

The peak power spectral density was determined from plots on the following page(s).

Test Engineer: Jonathan Chao

Test Date: 02/05/13

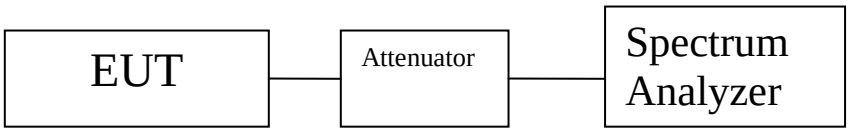


Figure 5. Block Diagram, Peak Power Spectral Density Test Setup

Peak Power Spectral Density Test Results

Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	2412	-6.581	8
Mid	2437	-6.579	8
High	2462	-4.309	8

Table 41. Peak Power Spectral Density, Test Results, 802.11b, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	2412	-2.112	8
Mid	2437	-4.736	8
High	2462	-5.588	8

Table 42. Peak Power Spectral Density, Test Results, 802.11g, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	2412	-3.686	8
Mid	2437	-2.927	8
High	2462	-4.083	8

Table 43. Peak Power Spectral Density, Test Results, 802.11n 20 MHz, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	2422	-6.481	8
Mid	2437	-8.207	8
High	2452	-4.705	8

Table 44. Peak Power Spectral Density, Test Results, 802.11n 40 MHz, 2.4 GHz

Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	5745	-7.979	8
Mid	5785	-7.008	8
High	5825	-6.77	8

Table 45. Peak Power Spectral Density, Test Results, 802.11a, 5 GHz

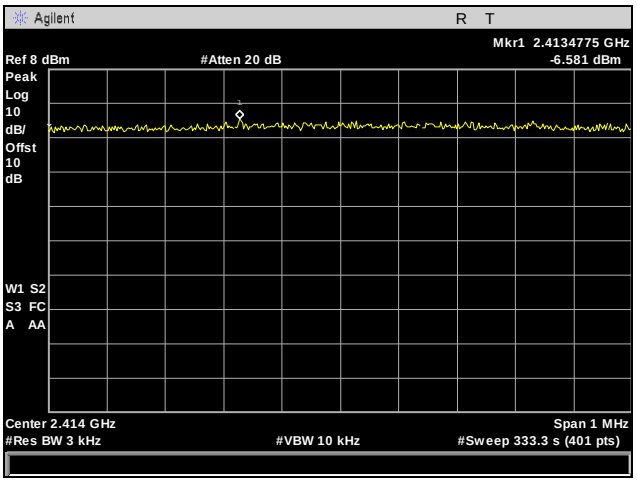
Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	5745	-7.386	8
Mid	5785	-6.963	8
High	5825	-7.32	8

Table 46. Peak Power Spectral Density, Test Results, 802.11n 20 MHz, 5 GHz

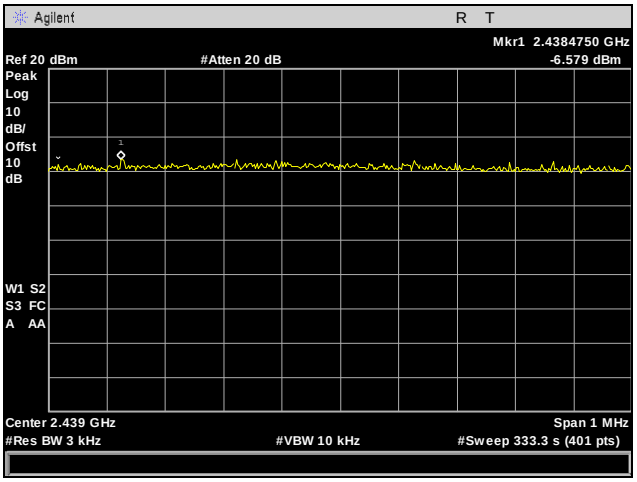
Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)
Low	5755	-11.24	8
High	5795	-10.11	8

Table 47. Peak Power Spectral Density, Test Results, 802.11n 40 MHz, 5 GHz

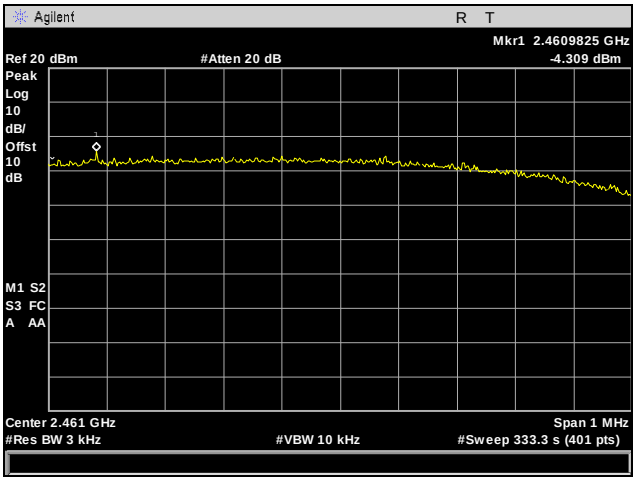
Peak Power Spectral Density



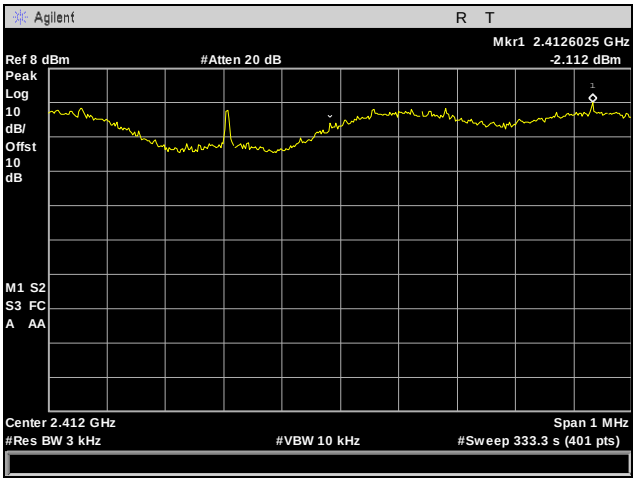
Plot 240. Peak Spectral Density, 802.11b 20 MHz, 2412 MHz, Low Channel



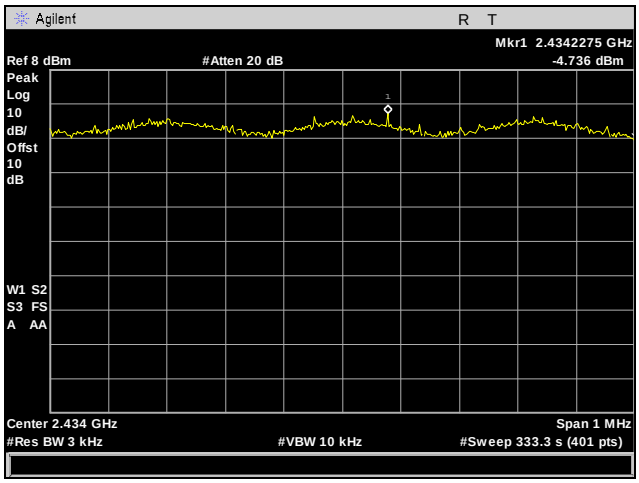
Plot 241. Peak Spectral Density, 802.11b 20 MHz, 2437 MHz, Mid Channel



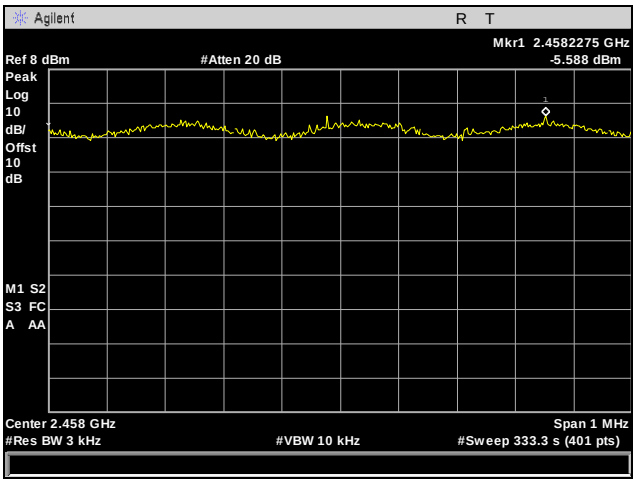
Plot 242. Peak Spectral Density, 802.11b 20 MHz, 2462 MHz, High Channel



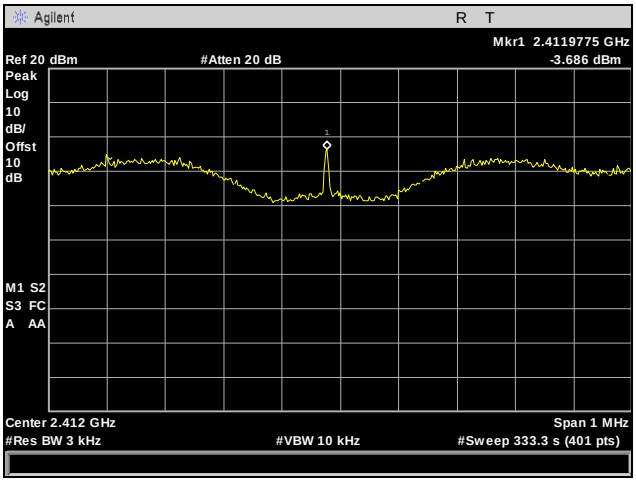
Plot 243. Peak Spectral Density, 802.11g 20 MHz, 2412 MHz, Low Channel



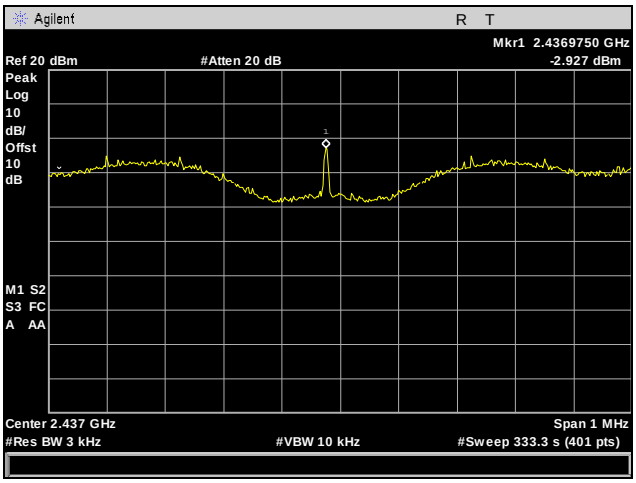
Plot 244. Peak Spectral Density, 802.11g 20 MHz, 2437 MHz, Mid Channel



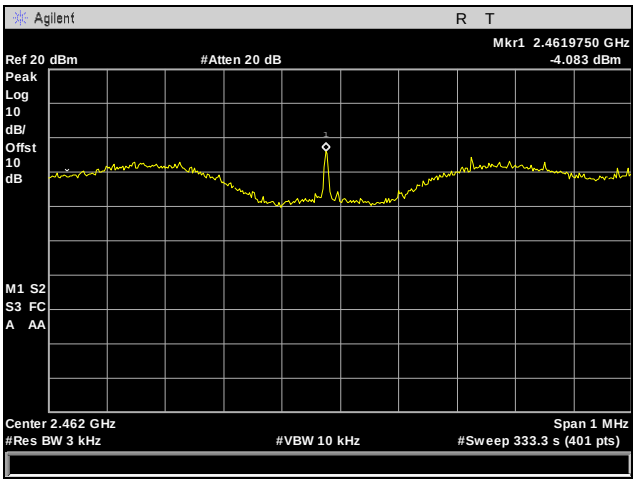
Plot 245. Peak Spectral Density, 802.11g 20 MHz, 2462 MHz, High Channel



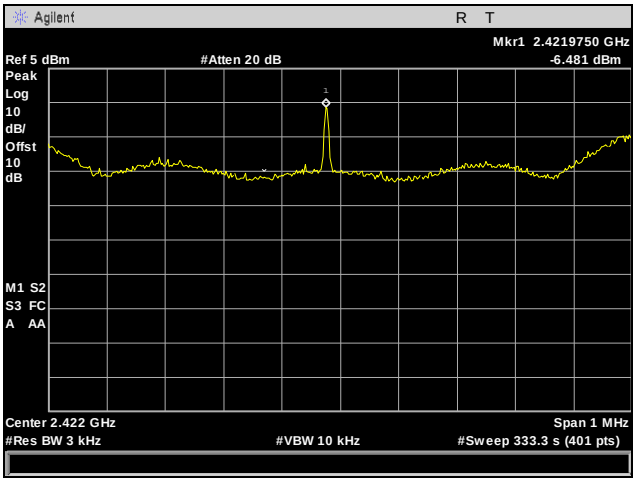
Plot 246. Peak Spectral Density, 802.11n 20 MHz, 2412 MHz, Low Channel



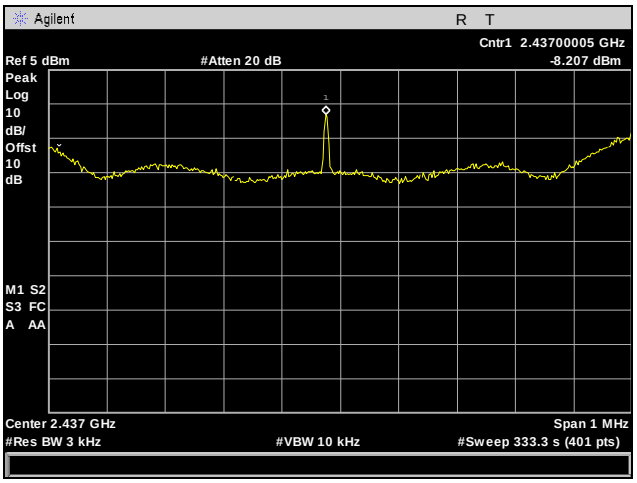
Plot 247. Peak Spectral Density, 802.11n 20 MHz, 2437 MHz, Mid Channel



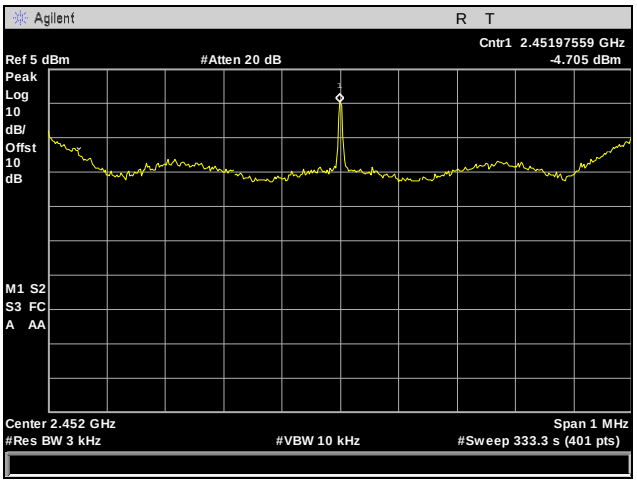
Plot 248. Peak Spectral Density, 802.11n 20 MHz, 2462 MHz, High Channel



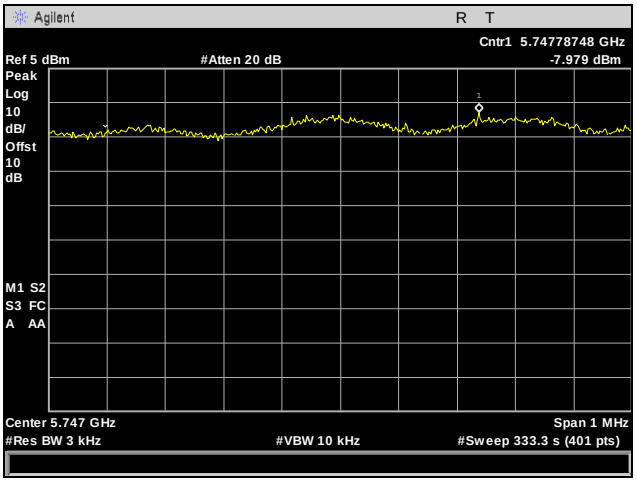
Plot 249. Peak Spectral Density, 802.11n 40 MHz, 2422 MHz, Low Channel



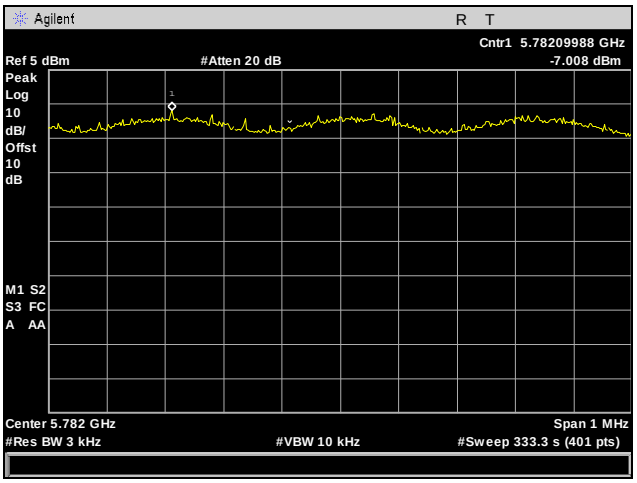
Plot 250. Peak Spectral Density, 802.11n 40 MHz, 2437 MHz, Mid Channel



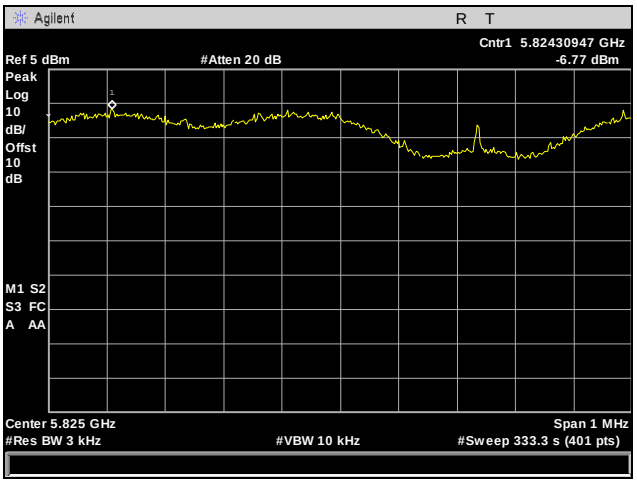
Plot 251. Peak Spectral Density, 802.11n 40 MHz, 2452 MHz, High Channel



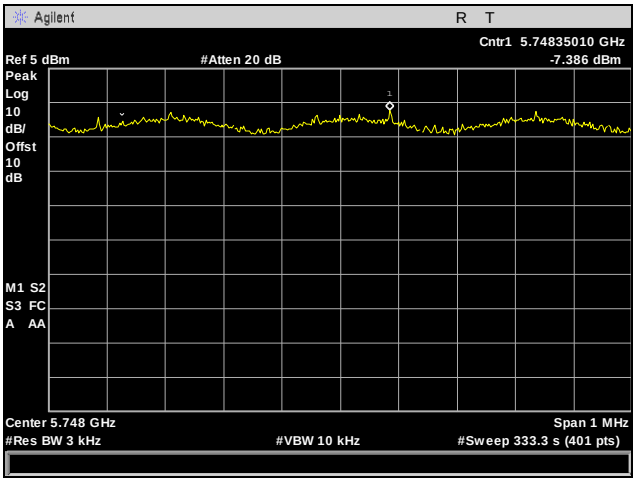
Plot 252. Peak Spectral Density, 802.11a 20 MHz, 5745 MHz, Low Channel



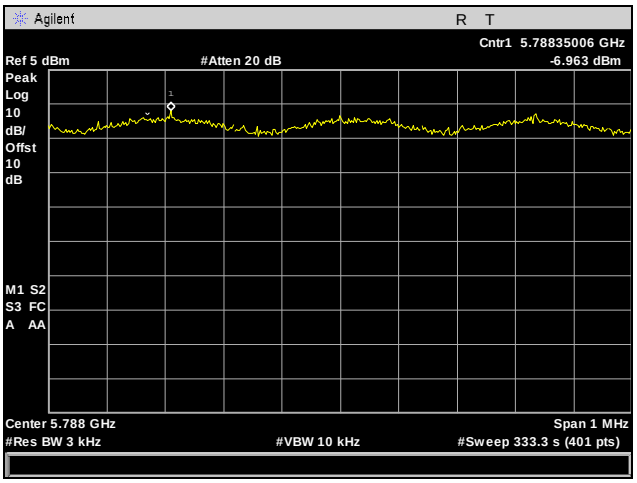
Plot 253. Peak Spectral Density, 802.11a 20 MHz, 5785 MHz, Mid Channel



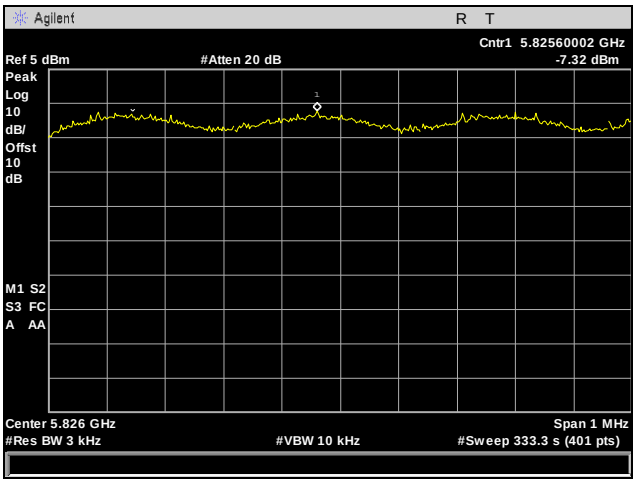
Plot 254. Peak Spectral Density, 802.11a 20 MHz, 5825 MHz, High Channel



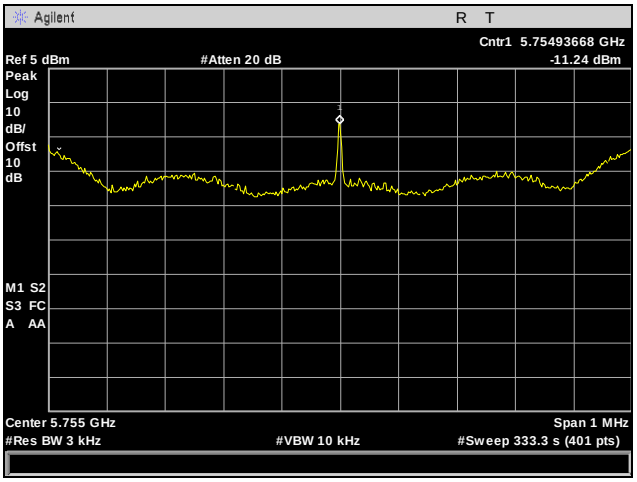
Plot 255. Peak Spectral Density, 802.11n 20 MHz, 5745 MHz, Low Channel



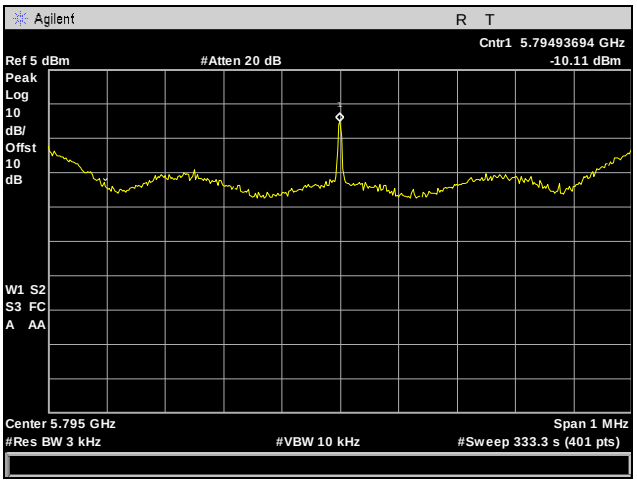
Plot 256. Peak Spectral Density, 802.11n 20 MHz, 5785 MHz, Mid Channel



Plot 257. Peak Spectral Density, 802.11n 20 MHz, 5825 MHz, High Channel



Plot 258. Peak Spectral Density, 802.11n 40 MHz, 5755 MHz, Low Channel



Plot 259. Peak Spectral Density, 802.11n 40 MHz, 5795 MHz, High Channel

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(i) Maximum Permissible Exposure

RF Exposure Requirements: **§1.1307(b)(1) and §1.1307(b)(2):** Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

RF Radiation Exposure Limit: **§1.1310:** As specified in this section, the Maximum Permissible Exposure (MPE) Limit shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in Sec. 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of Sec. 2.1093 of this chapter.

MPE Limit Calculation: EUT's operating frequencies @ 2412-2462 MHz and 5745-5850 MHz; highest conducted power = *26.04dBm* (peak) therefore, **Limit for Uncontrolled exposure: 1 mW/cm^2 or 10 W/m^2**

EUT maximum antenna gain = 3 *dBi.*

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 \quad \text{or} \quad R = \sqrt{PG / 4\pi S}$$

where, S = Power Density (1 mW/cm^2)
P = Power Input to antenna (601.1737mW)
G = Antenna Gain (1.99 numeric)

$S = (402*1.99/ 4*3.14*20^2) = 0.16$ mW/cm^2

IV. Test Equipment

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
1S2600	BILOG ANTENNA	TESEQ	CBL6112D	4/14/2010	4/14/2013
1S2482	5 METER CHAMBER (NSA)	PANASHIELD	5 METER SEMI-ANECHOIC CHAMBER	11/22/2011	5/22/2013
1S2583	SPECTRUM ANALYZER	AGILENT/HP	E4447A	3/27/2012	9/27/2013
1S2460	1-26GHZ SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4407B	7/27/2012	1/27/2014
1S2202	HORN ANTENNA (1 METER)	EMCO	3116	4/23/2010	4/23/2013
1S2523	PREAMPLIFIER	AGILENT TECHNOLOGIES	8449B	SEE NOTE	
1S2603	DOUBLE RIDGED WAVEGUIDE HORN	ETS-LINDGREN	3117	4/15/2011	4/15/2013
1S2729	SONOMA AMPLIFIER	SONOMA INSTRUMENT	310N	4/18/2012	10/18/2013
1S2229	TEMPERATURE CHAMBER	TENNY ENGINEERING	T63C	2/18/2012	8/18/2013
1S2710	DRG HORN ANTENNA	AH SYSTEMS, INC	SAS-574	12/13/2012	6/13/2014
NA	HIGH PASS FILTER	MICRO-TRONICS	HPM13147	SEE NOTE	

Table 48. Test Equipment List

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

V. Certification & User's Manual Information

Certification & User's Manual Information

A. 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 proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

Certification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J — 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.

§ 2.907 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.

Certification & User's Manual Information

§ 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.

Certification & User's Manual Information

1. 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 user's 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.

Verification & User's Manual Information

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 A 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 A 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 commercial 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

(b) 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.

ICES-003 Procedural & Labeling Requirements

From the Industry Canada Electromagnetic Compatibility Advisory Bulletin entitled, "Implementation and Interpretation of the Interference-Causing Equipment Standard for Digital Apparatus, ICES-003" (EMCAB-3, Issue 2, July 1995):

> "At present, CISPR 22: 2002 and ICES technical requirements are essentially equivalent. Therefore, if you have CISPR 22: 2002 approval by meeting CISPR Publication 22, the only additional requirements are: to attach a note to the report of the test results for compliance, indicating that these results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations; to maintain these records on file for the requisite five year period; and to provide the device with a notice of compliance in accordance with ICES-003."

Procedural Requirements:

According to Industry Canada's Interference Causing Equipment Standard for Digital Apparatus ICES-003 Issue 5 August 2012:

Section 6.1: A record of the measurements and results, showing the date that the measurements were completed, shall be retained by the manufacturer or importer for a period of at least five years from the date shown in the record and made available for examination on the request of the Minister.

Section 6.2: A written notice indicating compliance must accompany each unit of digital apparatus to the end user. The notice shall be in the form of a label that is affixed to the apparatus. Where because of insufficient space or other constraints it is not feasible to affix a label to the apparatus, the notice may be in the form of a statement in the users' manual.

Labeling Requirements:

The suggested text for the notice, in English and in French, is provided below, from the Annex of ICES-003:

> This Class [2] digital apparatus complies with Canadian ICES-003.
>
> Cet appareil numérique de la classe [1] est conforme à la norme NMB-003 du Canada.

[2] Insert either A or B but not both as appropriate for the equipment requirements.

End of Report