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EMC Test Report

Application for Grant of Equipment Authorization

Industry Canada RSS-Gen Issue 3 / RSS 210 Issue 8
FCC Part 15 Subpart C

Model: 3160NGW

IC CERTIFICATION #:	1000M-3160NG
FCC ID:	PD93160NG and PD93160NGU
APPLICANT:	Intel Mobile Communications 100 Center Point Circle, Suite 200 Columbia, SC 29210, USA
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-4, 2845B-7
REPORT DATE:	June 17, 2013
FINAL TEST DATES:	May 21, 22, 23, 28, 29, 30, 31, June 1, 2, 3, 4, 5 and 6, 2013
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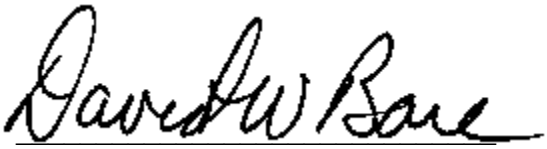

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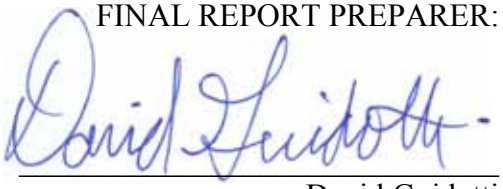

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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	06-17-2013	Initial release	-

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SCOPE

An electromagnetic emissions test has been performed on the Intel Mobile Communications models 3160NGW, pursuant to the following rules:

Industry Canada RSS-Gen Issue 3
RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems - Silicon Valley test procedures:

ANSI C63.4:2003
FCC DTS Measurement Procedure KDB 558074

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample(s) of Intel Mobile Communications models 3160NGW complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 3
RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Intel Mobile Communications models 3160NGW and therefore apply only to the tested sample(s). The sample(s) were selected and prepared by Stephen Hackett of Intel Mobile Communications.

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.

TEST RESULTS SUMMARY

DIGITAL TRANSMISSION SYSTEMS (2400 – 2483.5MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM/DSSS techniques	System must utilize digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	All modes > 500 kHz	>500kHz	Complies
15.247 (b) (3)	RSS 210 A8.2 (4)	Output Power (multipoint systems)	BT: 5.1 dBm b: 16.6 dBm g: 19.8 dBm n20: 19.8 dBm n40: 19.5 dBm EIRP = 0.200 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	BT: -10.9 dBm/3kHz b: -8.1 dBm/3kHz g: -9.0 dBm/3kHz n20: -8.5 dBm/3kHz n40: -12..2 dBm/3kHz	8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions 30MHz – 25 GHz	All spurious emissions < -20dBc or -30dBc	< -20dBc or < -30dBc Note 2	Complies
15.247(c) / 15.209	RSS 210 A8.5	Radiated Spurious Emissions 30MHz – 25 GHz	52.8 dBµV/m @ 4879.2 MHz (-1.2 dB)	15.209 in restricted bands, all others < -20dBc or <-30dBc Note 2	Complies

Note 1: EIRP calculated using antenna gain of 3.2 dBi for the highest EIRP system.
Note 2: A limit of -30dBc was used when the maximum conducted output power was measured and a limit of -20dBc was used when maximum peak conducted output power was measured.

DIGITAL TRANSMISSION SYSTEMS (5725 –5850 MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM/DSSS/GFSK techniques	System must utilize digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	All modes > 500 kHz	>500kHz	Complies
15.247 (b)	RSS 210 A8.2 (4)	Output Power (multipoint systems)	a: 16.4 dBm n20: 16.5 dBm n40: 20.1 dBm ac80: 20.8 dBm EIRP = 0.253 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	a: -9.3 dBm/3kHz n20: -8.4 dBm/3kHz n40: -11.3 dBm/3kHz ac80: -10.1 dBm/3kHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions – 30MHz – 40 GHz	All spurious emissions < -20dBc or -30dBc	< -20dBc or < -30dBc Note 2	Complies
15.247(c) / 15.209	RSS 210 A8.5 Table 2, 3	Radiated Spurious Emissions 30MHz – 40 GHz	36.5 dBµV/m @ 132.74 MHz (-7.0 dB)	15.209 in restricted bands, all others < -20dBc or <-30dBc Note 2	Complies

Note 1: EIRP calculated using antenna gain of 5.0 dBi for the highest EIRP system multi-point system.
Note 2: A limit of -30dBc was used when the maximum conducted output power was measured and a limit of -20dBc was used when maximum peak conducted output power was measured.

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Not applicable as antennas are integral in host systems.	Unique or integral antenna required	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	50.6 dBµV @ 0.208 MHz (-12.7 dB)	Refer to page 19	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to SAR report and RSS 102 declaration	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	Refer to User Manual for details	Statement required regarding non-interference	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	No detachable antenna	Statement for products with detachable antenna	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	2.4 GHz BT: 1.073 MHz b: 14.6 MHz g: 18.3 MHz n20: 19.3 MHz n40: 36.3 MHz 5.8 GHz a: 18.4 MHz n20: 19.6 MHz n40: 36.4 MHz ac80: 75.5 MHz	Information only	N/A

ADDITIONAL MEASUREMENTS

As both Bluetooth and 802.11 transmissions can occur simultaneously, radiated spurious measurements were made with both Bluetooth and 802.11 transmitting simultaneously.

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.209	RSS 210 A8.5	Radiated Spurious Emissions	52.9 dBµV/m @ 4823.9 MHz (-1.1 dB)	15.209 in restricted bands, all others < -20dBc or <-30dBc Note 2	Complies
Emission was second harmonic of the 802.11 signal and not an intermodulation product, but was the highest amplitude emissions observed with both Bluetooth and Wi-Fi operating simultaneously.					

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	± 0.52 dB
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	± 0.7 dB
Conducted emission of transmitter	dBm	25 to 26500 MHz	± 0.7 dB
Conducted emission of receiver	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dBµV/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Intel Mobile Communications model 3160NGW is M.2 (Next Generation Form Factor) IEEE 802.11a/b/g/n/ac wireless network adapter module that supports 1x1 (SISO) operation and Bluetooth operation in Basic Rate, Enhanced Data Rate and Low Energy modes.
The card is sold under two different FCC ID numbers (see table below). The ID ending in "U" is intended to allow user install conditions and host systems must be provided with a BIOS lock feature that prevents installation of unauthorized devices.
For radio testing purposes the card was installed in a test fixture that exposed all sides of the card. For digital device testing for certification under equipment code JBP the card was installed in a test fixture external to the PC.

The samples were received on May 20, 2013 and tested on May 21, 22, 23, 28, 29, 30, 31, June 1, 2, 3, 4, 5 and 6, 2013. The samples tested are as follows:

Company	Model	Description	Serial Number	FCC ID
Intel Mobile Communications	3160NGW	Bluetooth / IEEE 802.11a/b/g/n wireless network adapter module	BD5C22 or BD5C54	PD93160NG PD93160NGU 1000M-3160NG

ANTENNA SYSTEM

The EUT antenna is a two-antenna PIFA antenna system – Shanghai Universe Communication Electron Co., Ltd. One antenna is used for WiFi operation and one for Bluetooth operation.
The antenna connects to the EUT via a non-standard antenna connector, thereby meeting the requirements of FCC 15.203.

ENCLOSURE

The EUT has no enclosure. It is designed to be installed within the enclosure of a host computer.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at National Technical Systems - Silicon Valley.

SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Intel Mobile Communications	HMC-NGFF Extension REV.01	Extender board	-	N/A
Dell	Latitude D520	Laptop PC	HM9383J	N/A
		or		
Dell	Latitude E5400	Laptop PC	GFZW54J	N/A

EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
Laptop Mini PCIe slot	Extender Board PCIe	Ribbon	Unshielded	0.8

EUT OPERATION

The EUT was installed into a test fixture that exposed all sides of the card. The test fixture interfaced to a laptop computer for power and control. The laptop computer was used to configure the EUT to continuously transmit at a specified output power on the channel specified in the test data. For transmit mode measurements the system was configured to operate in each of the available operating modes – 802.11b, 802.11g, 802.11n (20 MHz and 40 MHz channel bandwidths), 802.11ac (20, 40 and 80 MHz channel bandwidths), Bluetooth 1Mb/s and Bluetooth 3Mb/s. In addition radiated spurious tests were repeated with the device operating in both Bluetooth and 802.11 modes to determine if any spurious emissions due to intermodulation products were created.

The data rates used for all tests were the lowest data rates for each 802.11 mode – 1Mb/s for 802.11b, 6Mb/s for 802.11a and 802.11g, 6.5MB/s for 802.11n20, and 13 Mb/s for 802.11n40 except 802.11ac80 mode was tested at 390Mb/s. The device operates at its maximum output power at the lowest data rate except for 802.11ac80 mode (this was confirmed through separate measurements – refer to test data for actual measurements). Bluetooth operation was evaluated at both 1Mb/s and 3Mb/s data rates. 2Mb/s data rate was found, through preliminary testing, to produce emissions similar to those for 3Mb/s.

The PC was using the Intel test utility DRTU Version 1.6.1-628 and the device driver was version 16.0.0.49.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Site	Registration Numbers		Location
	FCC	Canada	
Chamber 4	211948	2845B-4	41039 Boyce Road Fremont, CA 94538-2435
Chamber 7	A2LA accreditation	2845B-7	

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

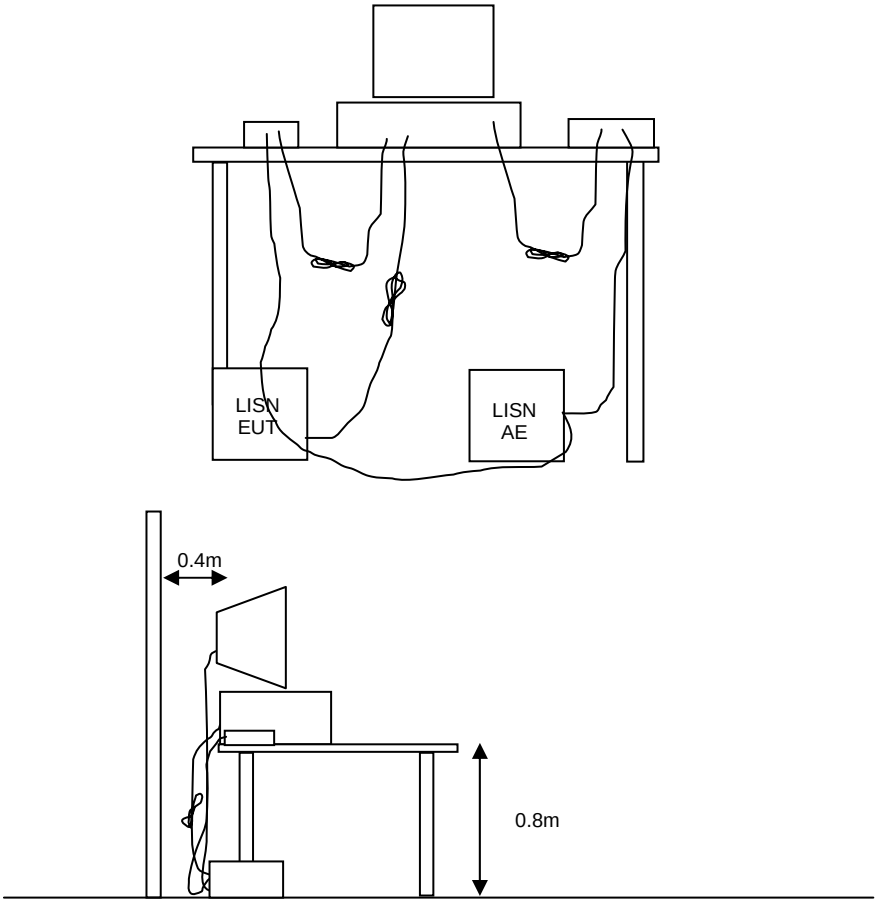


Figure 1 Typical Conducted Emissions Test Configuration

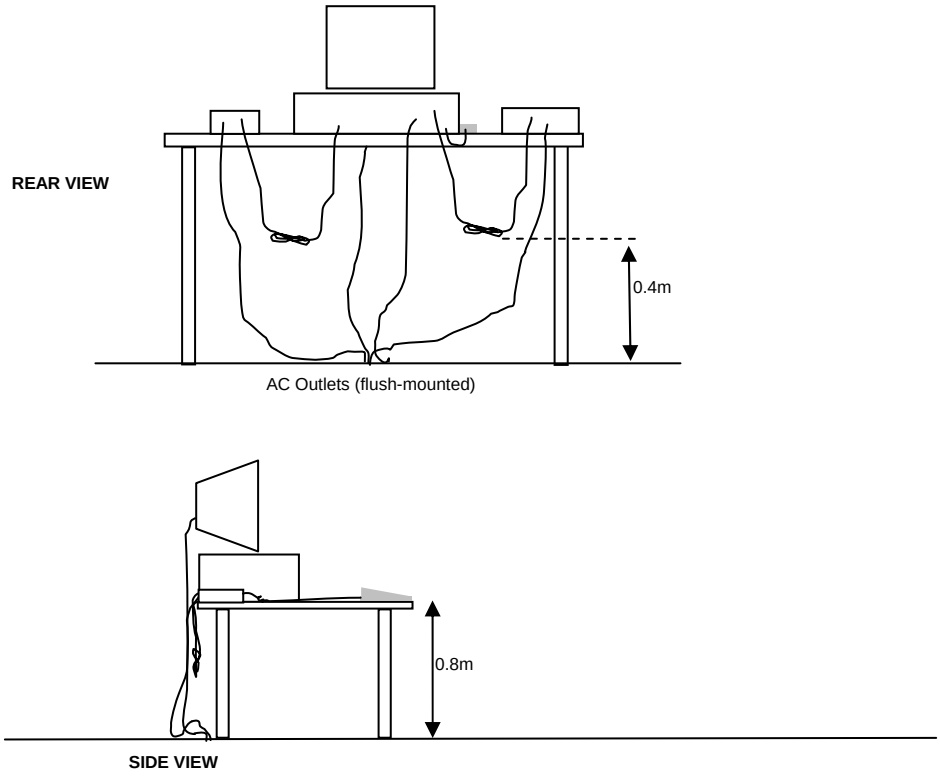
RADIATED EMISSIONS

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360˚, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

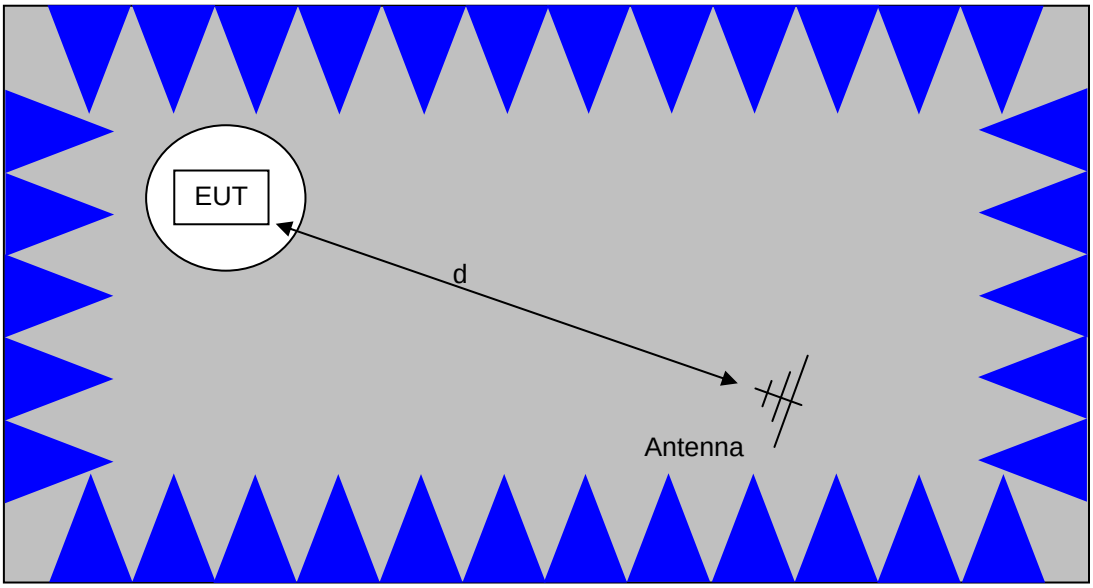
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.

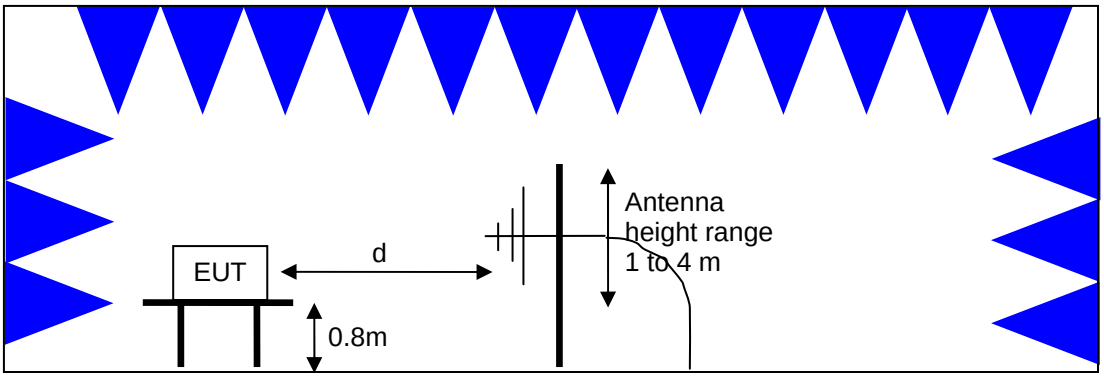


Typical Test Configuration for Radiated Field Strength Measurements



The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

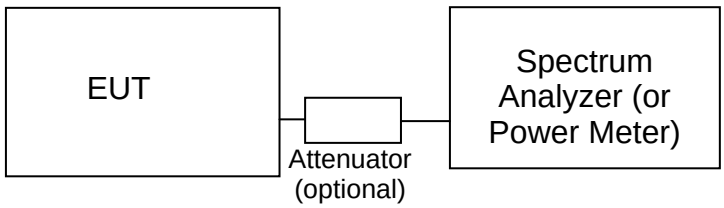
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



Test Configuration for Radiated Field Strength Measurements
Semi-Anechoic Chamber, Plan and Side Views

CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.



Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and National Technical Systems - Silicon Valley's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

BANDWIDTH MEASUREMENTS

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands[1] (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	$2400/F_{KHz}$ @ 300m	$67.6-20*\log_{10}(F_{KHz})$ @ 300m
0.490-1.705	$24000/F_{KHz}$ @ 30m	$87.6-20*\log_{10}(F_{KHz})$ @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from receivers as detailed in FCC Part 15.109, RSS 210 Table 2, RSS GEN Table 1 and RSS 310 Table 3. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109.

Frequency Range (MHz)	Limit (uV/m @ 3m)	Limit (dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

[1] The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
902 – 928	1 Watt (30 dBm)	8 dBm/3kHz
2400 – 2483.5	1 Watt (30 dBm)	8 dBm/3kHz
5725 – 5850	1 Watt (30 dBm)	8 dBm/3kHz

The maximum permitted output power is reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5850 MHz band are not subject to this restriction.

TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS

The limits for unwanted (spurious) emissions from the transmitter falling in the restricted bands are those specified in the general limits sections of FCC Part 15 and RSS 210. All other unwanted (spurious) emissions shall be at least 20dB below the level of the highest in-band signal level (30dB if the power is measured using the sample detector/power averaging method).

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_s = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{d} \quad \text{microvolts per meter}$$

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

Appendix A Test Equipment Calibration Data

Manufacturer	Description	Model	Asset #	Cal Due
Radio Antenna Port (Power and Spurious Emissions), 21-May-13				
Manufacturer	**Description**	**Model**	**Asset #**	**Cal Due**
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Schwarzbeck	LISN, 4x 100A, 50 uH , decoupling network	NNLK-8121	2242	N/A
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Radiated Emissions, 1000 - 6,500 MHz, 21-May-13				
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Radio Antenna Port (Power and Spurious Emissions), 22-May-13				
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Schwarzbeck	LISN, 4x 100A, 50 uH , decoupling network	NNLK-8121	2242	N/A
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Radiated Emissions, 1000 - 6,500 MHz, 22-May-13				
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Radiated Emissions, 1,000 - 18,000 MHz, 23-May-13				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013
Radiated Emissions, 1,000 - 18,000 MHz, 28-May-13				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	10/4/2013
Radio Antenna Port (Power and Spurious Emissions), 28-May-13				
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Radiated Emissions, 18,000 - 40,000 MHz, 28-May-13				
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/15/2014
Hewlett Packard	HF Amplifier, 45 MHz -50 GHz (with 1620)	83051A (84125C)	1742	5/13/2014
Hewlett Packard	HF Amplifier, 45 MHz -50 GHz (with 1620)	83051A (84125C)	1743	5/13/2014

Manufacturer	Description	Model	Asset #	Cal Due
A. H. Systems	Spare System Horn, 18-40GHz	SAS-574, p/n: 2581	2162	6/8/2013

Radiated Emissions, 1000 - 12,000 MHz, 29-May-13

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	10/4/2013
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	10/11/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2013

Radiated Emissions, 1000 - 40,000 MHz, 30-May-13

Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/15/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
A. H. Systems	Spare System Horn, 18-40GHz	SAS-574, p/n: 2581	2162	6/8/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Radiated Emissions, 1000 - 25,000 MHz, 31-May-13

Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/15/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
A. H. Systems	Spare System Horn, 18-40GHz	SAS-574, p/n: 2581	2162	6/8/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Radiated Emissions, 1,000 - 26,000 MHz, 01-Jun-13

Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013

Manufacturer	Description	Model	Asset #	Cal Due
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1681	8/31/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/13/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/4/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013
Radiated Emissions, 1,000 - 26,000 MHz, 01-Jun-13				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1681	8/31/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/13/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/4/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013
Radiated Emissions, 30 - 1,000 MHz, 02-Jun-13				
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1548	8/9/2014
Com-Power	Preamplifier, 30-1000 MHz	PA-103A	2359	2/20/2014
Radio Antenna Port (Power and Spurious Emissions), 03-Jun-13				
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Radiated Emissions, 1,000 - 26,000 MHz, 03-Jun-13				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/27/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1681	8/31/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/13/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/4/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Manufacturer	Description	Model	Asset #	Cal Due
Radio Antenna Port (Power and Spurious Emissions), 04-Jun-13				
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1422	1/3/2014
Rohde & Schwarz	Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	NRV-Z32	1536	12/12/2013
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	3/7/2014
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	1/28/2014
Radio Antenna Port (Power and Spurious Emissions), 05-Jun-13				
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1422	1/3/2014
Rohde & Schwarz	Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	NRV-Z32	1536	12/12/2013
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	3/7/2014
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	1/28/2014
Conducted Emissions - AC Power Ports, 05-Jun-13				
EMCO	LISN, 10 kHz-100 MHz	3825/2	1293	2/14/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/12/2013
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	1594	5/15/2014
Radio Antenna Port (Power and Spurious Emissions), 06-Jun-13				
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1422	1/3/2014
Rohde & Schwarz	Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	NRV-Z32	1536	12/12/2013
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	3/7/2014
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/17/2013
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	1/28/2014

Appendix B Test Data

T92301 Pages 29 - 156

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Emissions Standard(s):	FCC 15 B, 15.247, RSS 210	Class:	B
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Intel

Model

Intel Model 3160NGW Wireless Network Adapter

Date of Last Test: 6/10/2013

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

Power vs. Data Rate

In normal operating modes the card uses power settings stored on EEPROM to set the output power. For a given nominal output power the actual transmit power normally is redcued as the data rate increases, therefore testing was performed at the data rate in the mode wiht highest power to determine compliance with the requirements.
The following power measurements,were made using an average power meter and the with the device configured in a continuous transmit mode on Chain 1 at the various data rates in each mode to verify the highest power mode:

Date of Test: 5/21/2013
Test Engineer: Jack Liu
Test Location: FT CH4

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Chain A Channel 6 for 20 MHz b and g modes
Channel 36 / 38 / 42 for 20, 40 and 80 MHz n and ac modes

Mode	Data Rate	Power (dBm)	Power setting	Duty Cycle
802.11b	**1**	**17.1**	20.5	99%
	2	17.0		
	5.5	17.0		
	11	17.0		97%
802.11g	**6**	**15.8**	20.5	99%
	9	15.8		
	12	15.8		
	18	15.8		
	24	15.7		
	36	15.7		
	48	15.7		
	54	15.7		89%
802.11n/ac 20MHz	**6.5**	**11.1**	20.5	98%
	13	11.1		
	19.5	11.0		
	26	11.0		
	39	11.0		
	52	10.9		
	58.5	11.0		
	65	11.0		88%
	78	11.1		87%

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

Mode	Data Rate	Power (dBm)	Power setting	Duty Cycle
802.11n/ac 40MHz	**13.5**	**11.2**	20.5	97%
	27	11.0		
	40.5	11.0		
	54	11.0		
	81	11.0		
	108	11.0		
	121.5	11.1		
	135	11.2		81%
	162	11.2		
	180	11.2		79%
802.11ac 80MHz	29.3	10.8	20.5	93%
	58.5	10.9		
	87.8	11.0		
	117	11.0		
	175.5	11.2		
	234	11.2		
	266.3	11.2		
	292.5	11.1		
	351	11.2		
	390	**11.2**		70%

Note : Power setting - the software power setting used during testing, included for reference only.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements - WiFi

Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/4/13 & 6/5/13
Test Engineer: Jack Liu / R. Varelas
Test Location: FT Lab 4A

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60 Hz

General Test Configuration

The EUT was connected to the spectrum analyzer or power meter via a suitable attenuator. All measurements were made on a single chain.

All measurements have been corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 20.8 °C
Rel. Humidity: 35 %

Summary of Results

MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Pwr setting	Test Performed	Limit	Pass / Fail	Result / Margin
1	802.11b: 21 802.11g: 22.5 802.11n20: 22.5 802.11n40: 23	Output Power	15.247(b)	Pass	802.11b: 0.096W 802.11g: 0.2W 802.11n20: 0.2W 802.11n40: 0.19W
2	See above	Power spectral Density (PSD)	15.247(d)	Pass	-8.1 dBm/3kHz
3	See above	Minimum 6dB Bandwidth	15.247(a)	Pass	10.1 MHz
3	See above	99% Bandwidth	RSS GEN	-	802.11b: 14.6 MHz 802.11g: 18.3 MHz 802.11n20: 19.3 MHz 802.11n40: 36.3 MHz
4	See above	Spurious emissions	15.247(b)	Pass	All Emissions below -30dBc limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Duty Cycle:

Mode	Duty Cycle	cor fact	Data rate
b	98.7%	0.06	1
g	98.6%	0.06	6
n20	98.5%	0.07	HT0
n40	96.9%	0.14	HT0

Power Setting[2]	Frequency (MHz)	Output Power (dBm) [1]	Output Power mW	Antenna Gain (dBi)	Result	EIRP [Note 2] dBm	EIRP W	Output Power (dBm) [3]	Output Power mW
802.11b Mode									
20	2412	16.5	44.5	3.2	Pass	19.7	0.093	16.5	44.5
20.5	2437	16.4	44.1	3.2	Pass	19.6	0.092	16.4	44.1
21	2462	16.6	46.0	3.2	Pass	19.8	0.096	16.6	46.0
802.11g Mode									
19.0	2412	17.7	59.2	3.2	Pass	20.9	0.124	14.0	24.9
22.5	2437	19.8	95.5	3.2	Pass	23.0	0.200	16.5	44.2
19.5	2462	17.7	58.2	3.2	Pass	20.9	0.122	14.1	25.7
802.11n20 Mode									
19.0	2412	17.6	57.5	3.2	Pass	20.8	0.120	14.0	25.2
22.5	2437	19.8	95.9	3.2	Pass	23.0	0.200	16.5	44.5
19.5	2462	17.6	57.8	3.2	Pass	20.8	0.121	14.0	25.2
802.11n40 Mode									
17.5	2422	15.4	34.6	3.2	Pass	18.6	0.072	12.6	18.4
23	2437	19.5	89.5	3.2	Pass	22.7	0.187	16.6	46.1
19.5	2452	17.0	49.5	3.2	Pass	20.2	0.104	14.0	25.1

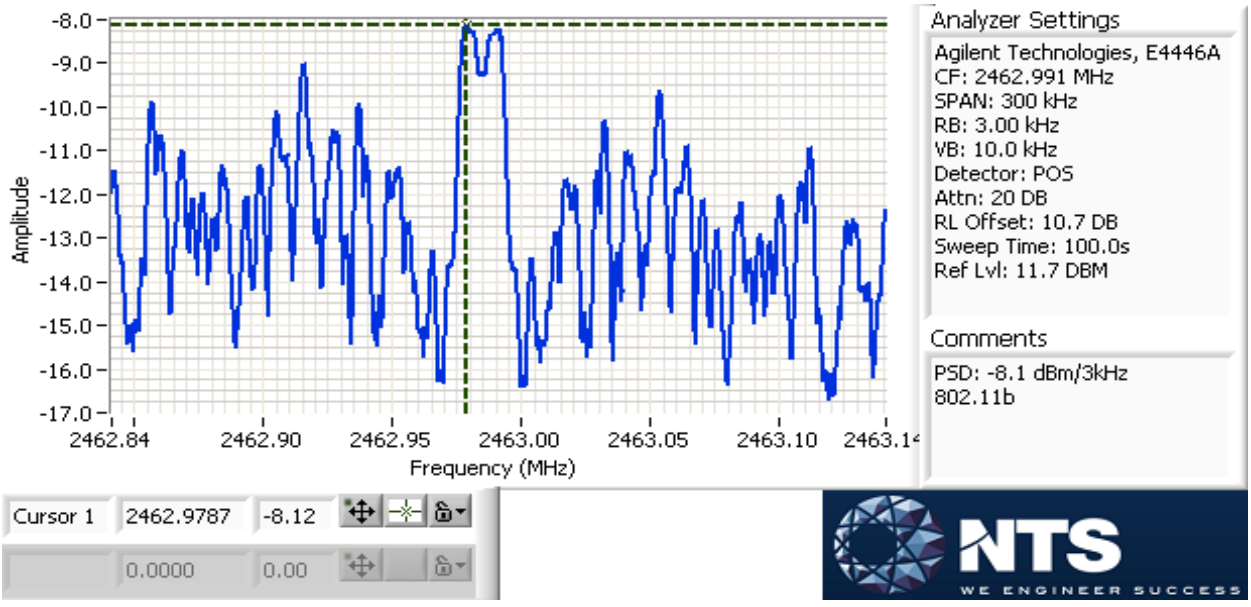
Note 1:	Output power for 802.11b measured using an average power meter. As the signal is not continuous, the average power meter measurements were adjusted by adding duty cycle factor. This is based on 10log(1/x), where x is the duty cycle. (method AVGPM of KDB 558074 D01). Spurious limit becomes -30dBc.
Note 1:	Output power for 802.11 g, n20, and n40 measured using a peak power meter, spurious limit is -20dBc.
Note 2:	Power setting - the software power setting used during testing, included for reference only.
Note 3:	Power measured using average power meter plus duty cycle correction factor and is included for reference only.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #2: Power spectral Density

Mode	Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1	Limit dBm/3kHz	Result
802.11b	20	2412	-8.5	8.0	Pass
	20.5	2437	-8.2	8.0	Pass
	21	2462	-8.1	8.0	Pass
802.11g	19.0	2412	-11.9	8.0	Pass
	22.5	2437	-9.0	8.0	Pass
	19.5	2462	-11.5	8.0	Pass
802.11n20	19.0	2412	-10.9	8.0	Pass
	22.5	2437	-8.5	8.0	Pass
	19.5	2462	-11.1	8.0	Pass
802.11n40	17.5	2422	-15.7	8.0	Pass
	23.0	2437	-12.2	8.0	Pass
	19.5	2452	-14.2	8.0	Pass

Note 1:	Power spectral density measured using RB=3 kHz, VB=10kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 1 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal.



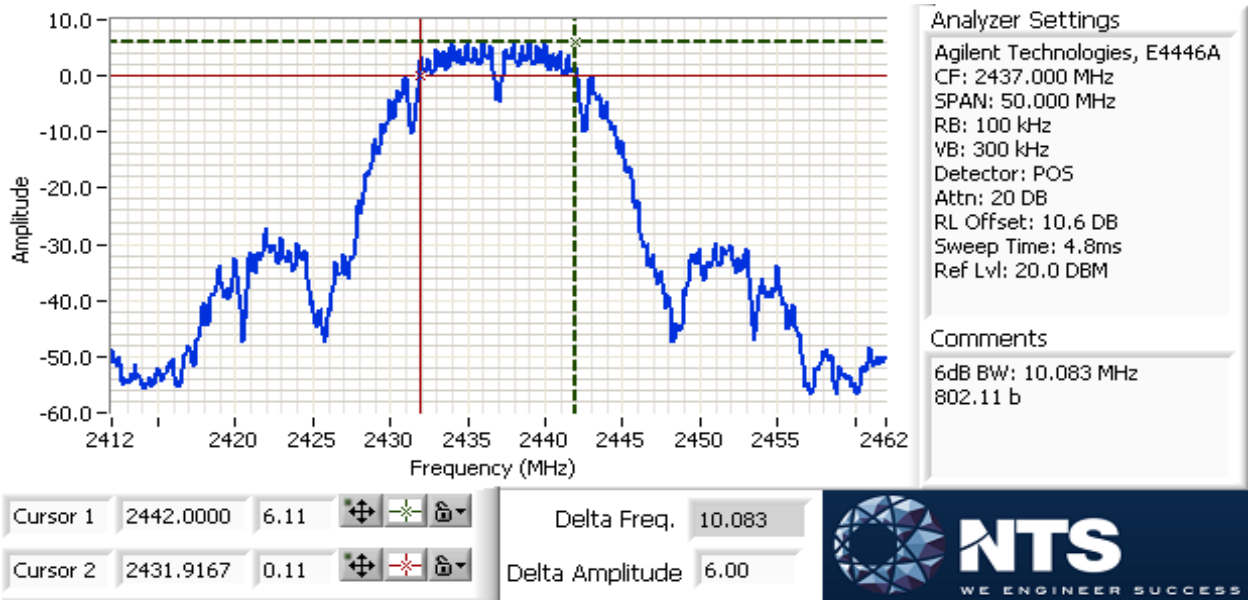
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

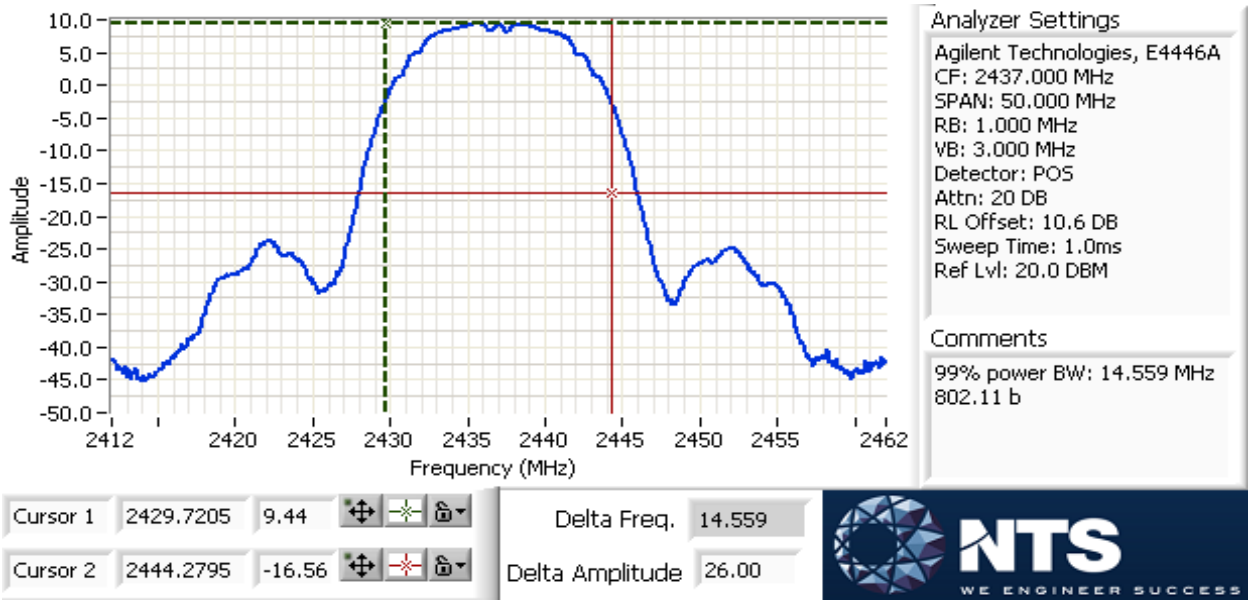
Run #3: Signal Bandwidth

Mode	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	Resolution Bandwidth	Bandwidth (MHz) 99%
802.11b	2412	100 kHz	11.08	1MHz	14.56
	2437	100 kHz	10.08	1MHz	14.56
	2462	100 kHz	10.08	1MHz	14.64
802.11g	2412	100 kHz	16.60	1MHz	18.00
	2437	100 kHz	16.30	1MHz	18.30
	2462	100 kHz	16.40	1MHz	18.00
802.11n20	2412	100 kHz	17.60	1MHz	19.00
	2437	100 kHz	17.60	1MHz	19.30
	2462	100 kHz	17.60	1MHz	17.90
802.11n40	2422	100 kHz	35.10	1MHz	36.10
	2437	100 kHz	35.10	1MHz	36.30
	2452	100 kHz	35.10	1MHz	36.10

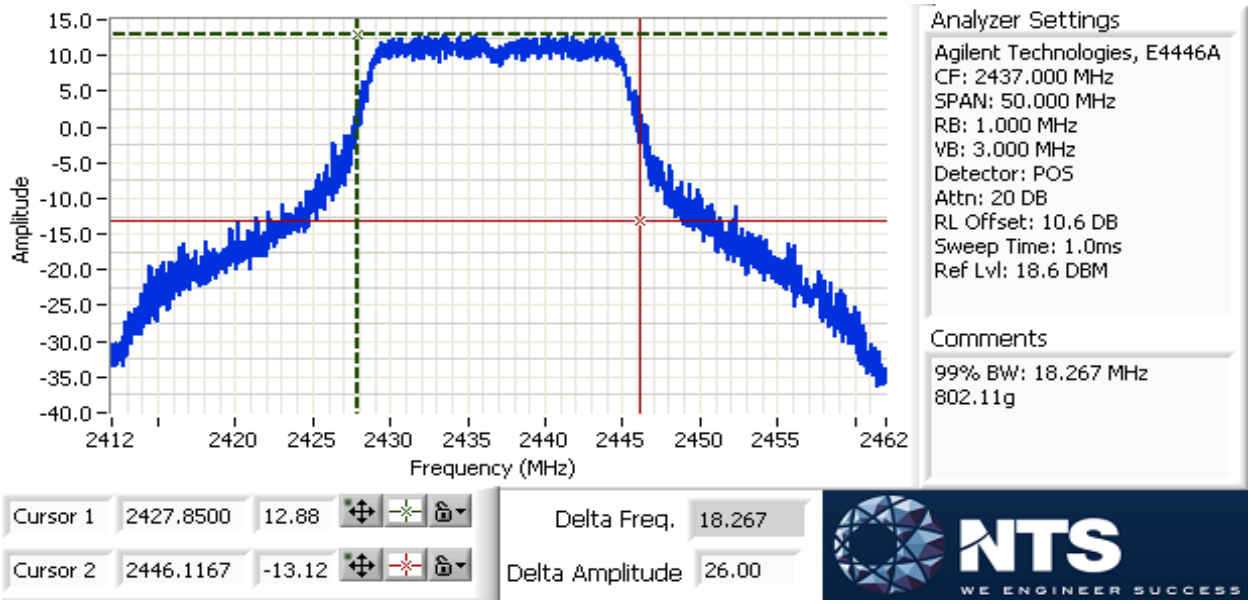
Note 1:	6dB bandwidth measured in accordance with KDB 558074, with RB = 100kHz and VB ≥ 3 x RB. See sample plot below.
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB ≥ 3 x RB. See sample plot below.

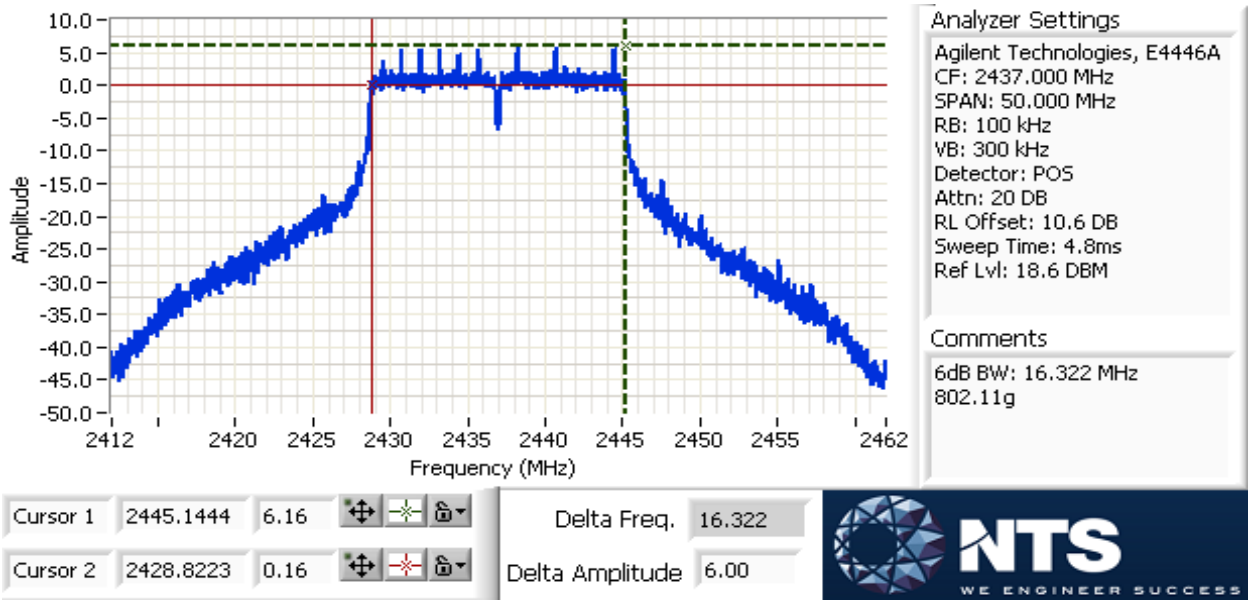
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



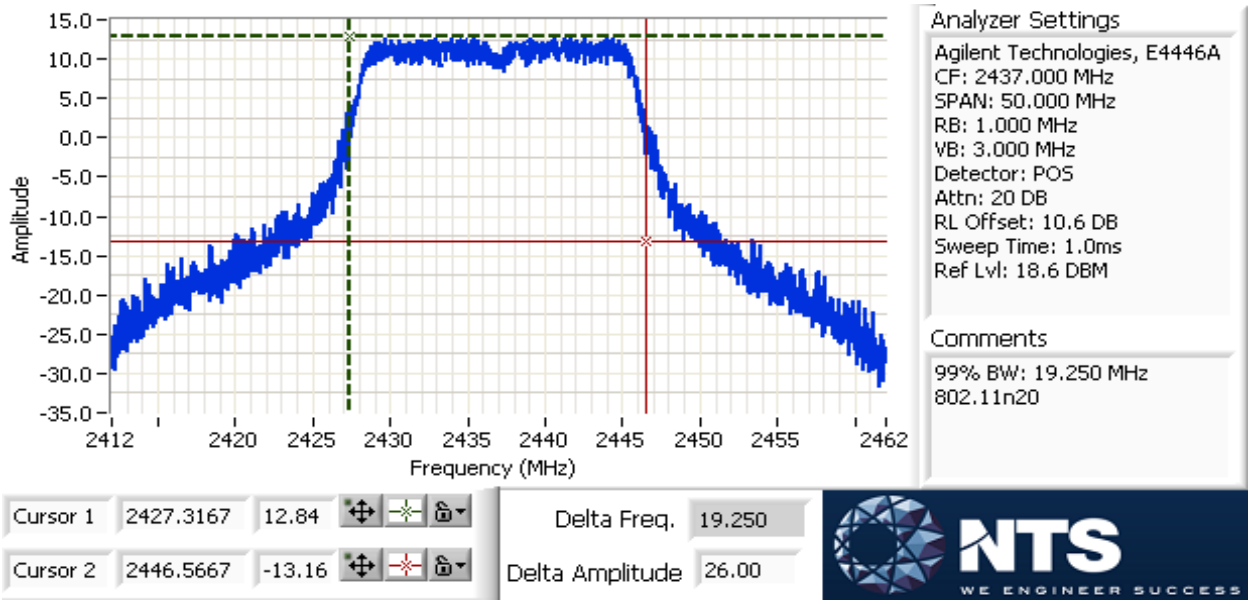


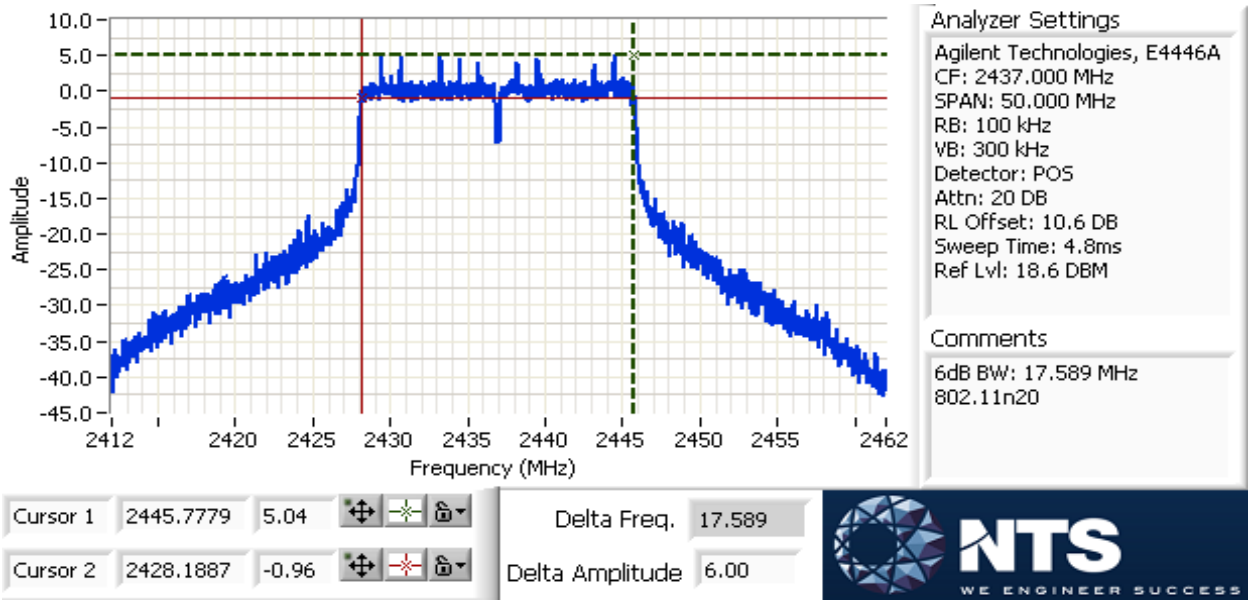
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



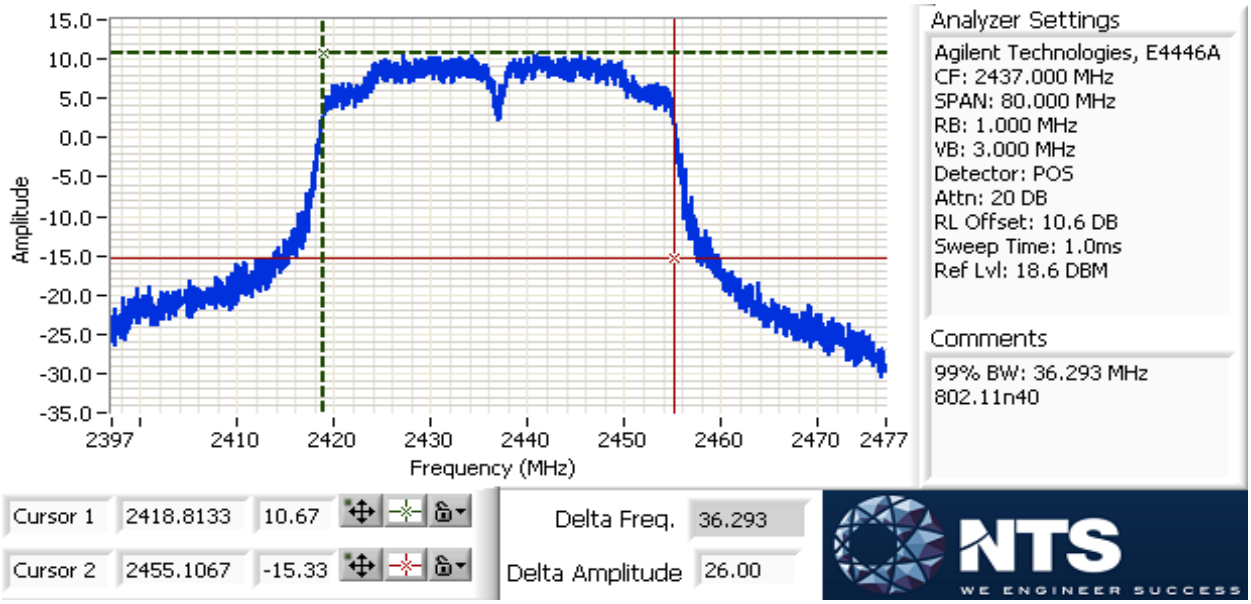


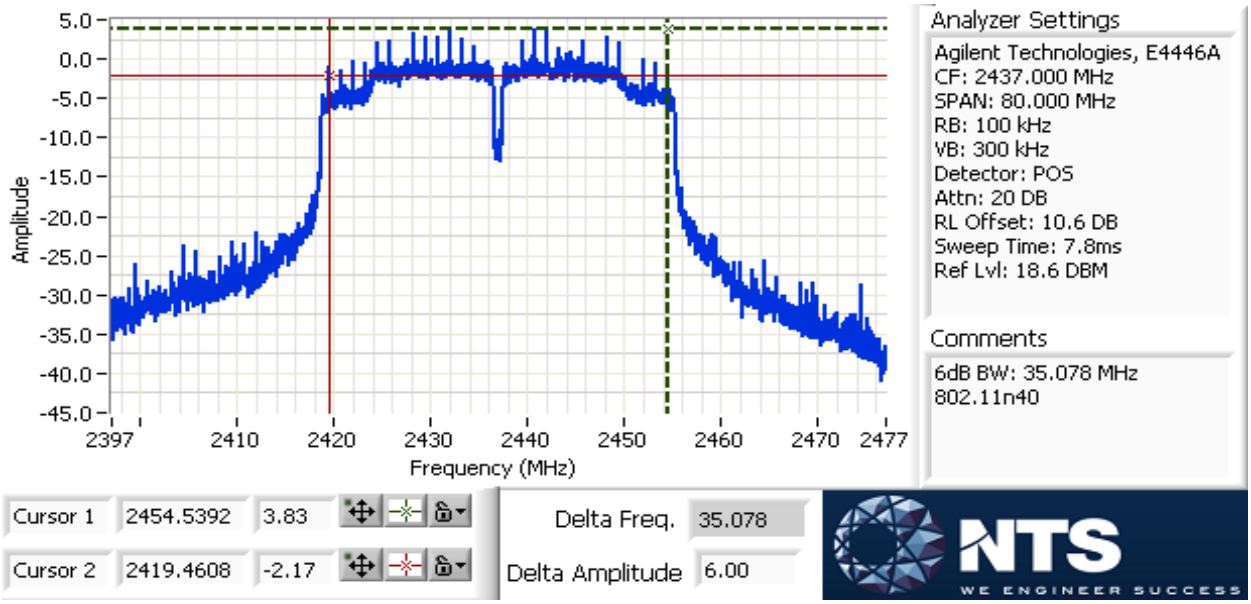
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A





Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



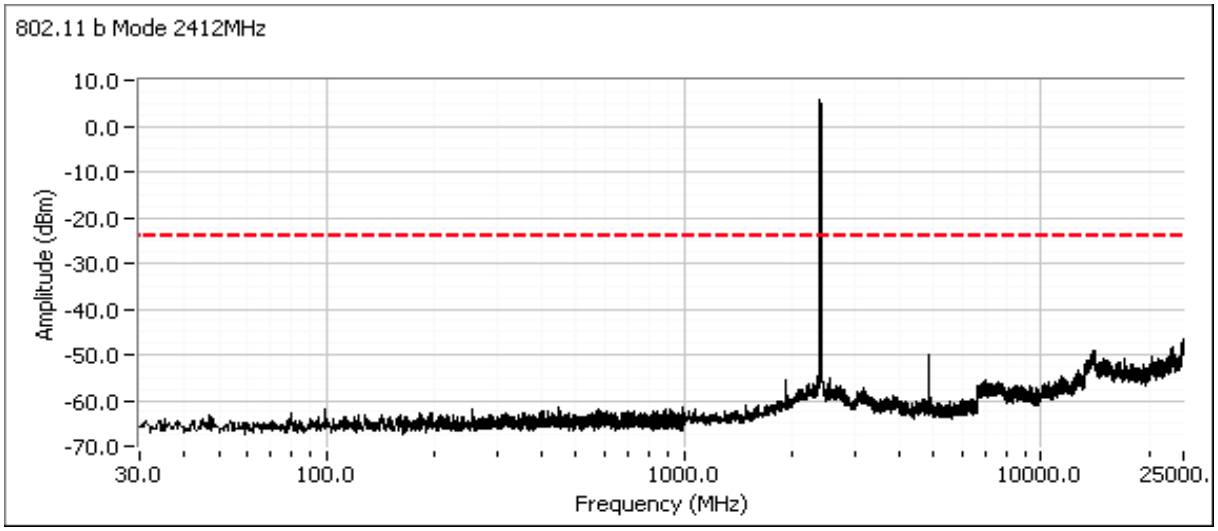


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #4: Out of Band Spurious Emissions

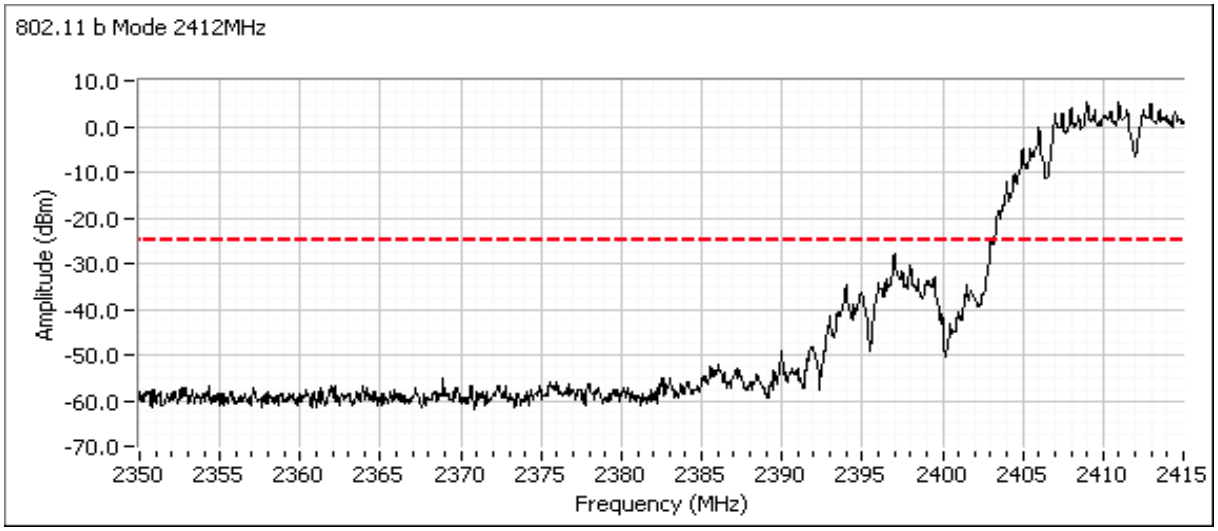
Mode	Frequency (MHz)	Limit	Result
802.11b	2412	-30dBc	Pass
	2437	-30dBc	Pass
	2462	-30dBc	Pass
802.11g	2412	-20dBc	Pass
	2437	-20dBc	Pass
	2462	-20dBc	Pass
802.11n20	2412	-20dBc	Pass
	2437	-20dBc	Pass
	2462	-20dBc	Pass
802.11n40	2422	-20dBc	Pass
	2437	-20dBc	Pass
	2452	-20dBc	Pass

Plots for low channel,802.11b

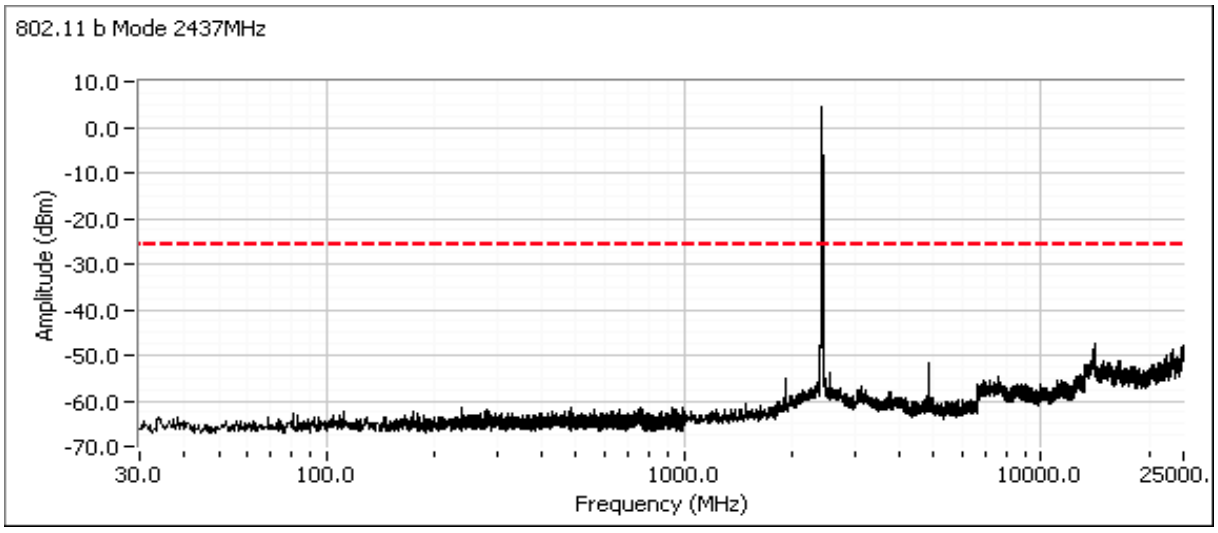


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Additional plot showing compliance with -30dBc limit from 2390 MHz to 2400 MHz. Radiated measurements used to show compliance with the limits in the restricted band below 2390 MHz.

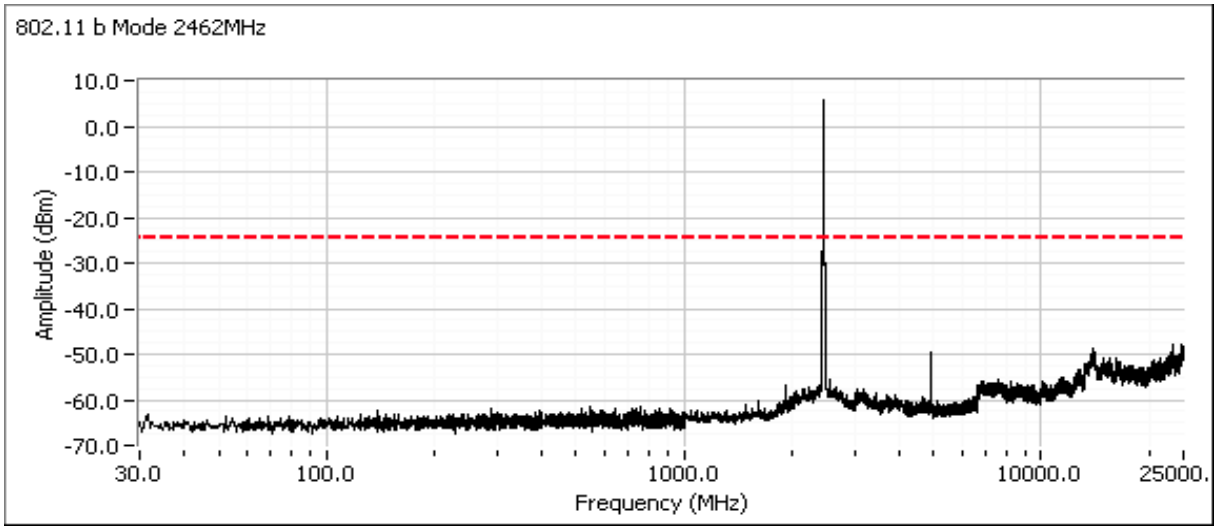


Plots for center channel, 802.11b

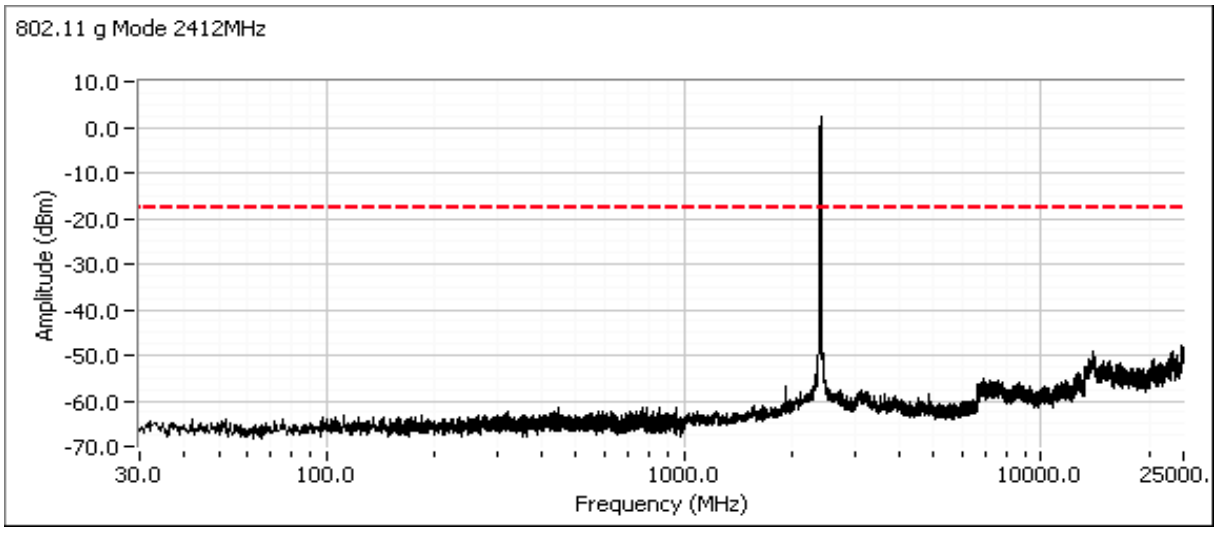


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for high channel, 802.11b

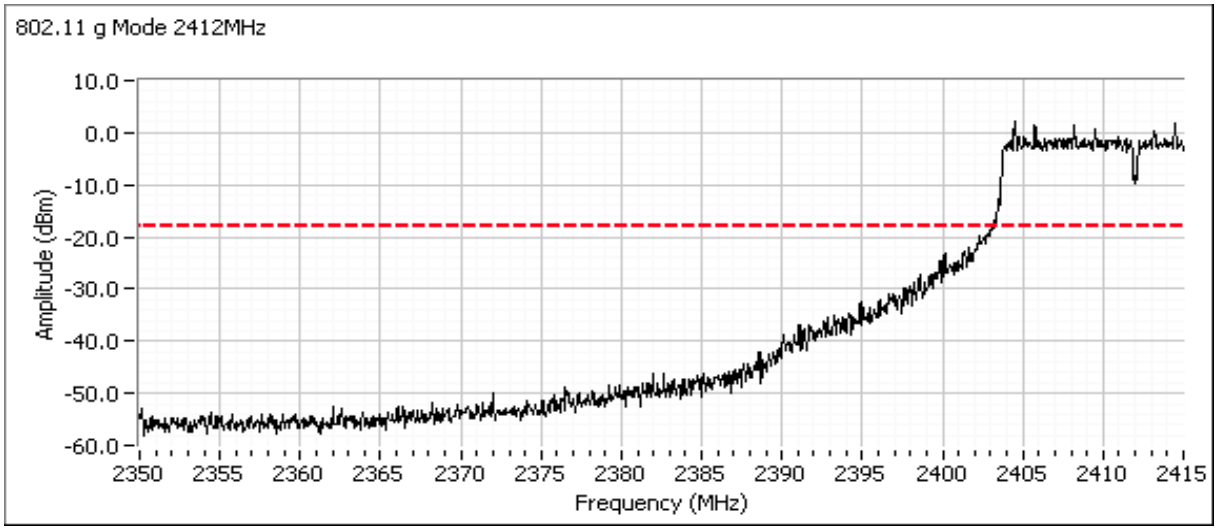


Plots for low channel,802.11g

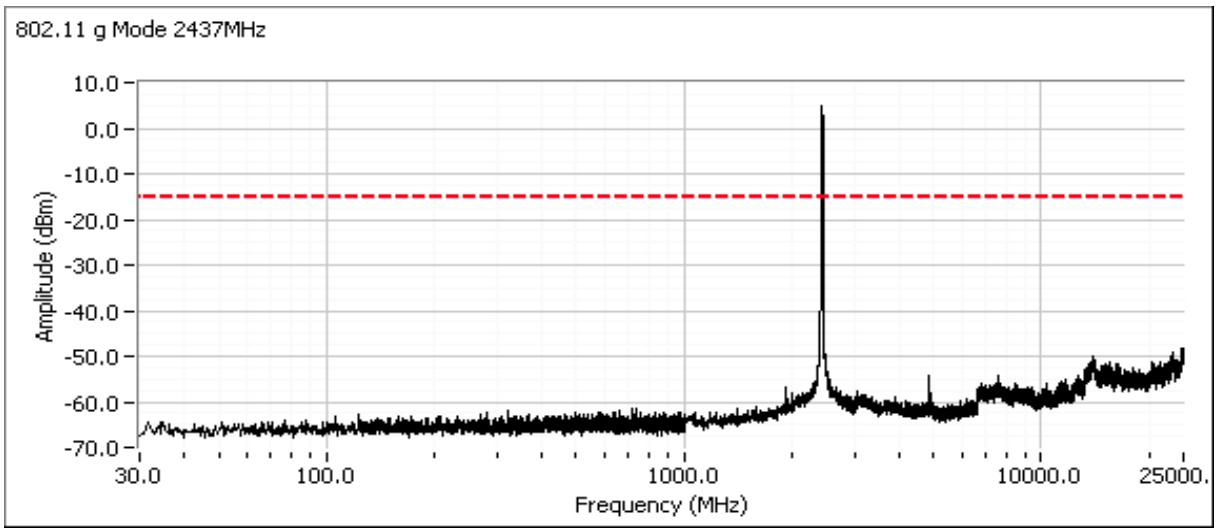


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Additional plot showing compliance with -20dBc limit from 2390 MHz to 2400 MHz. Radiated measurements used to show compliance with the limits in the restricted band below 2390 MHz.

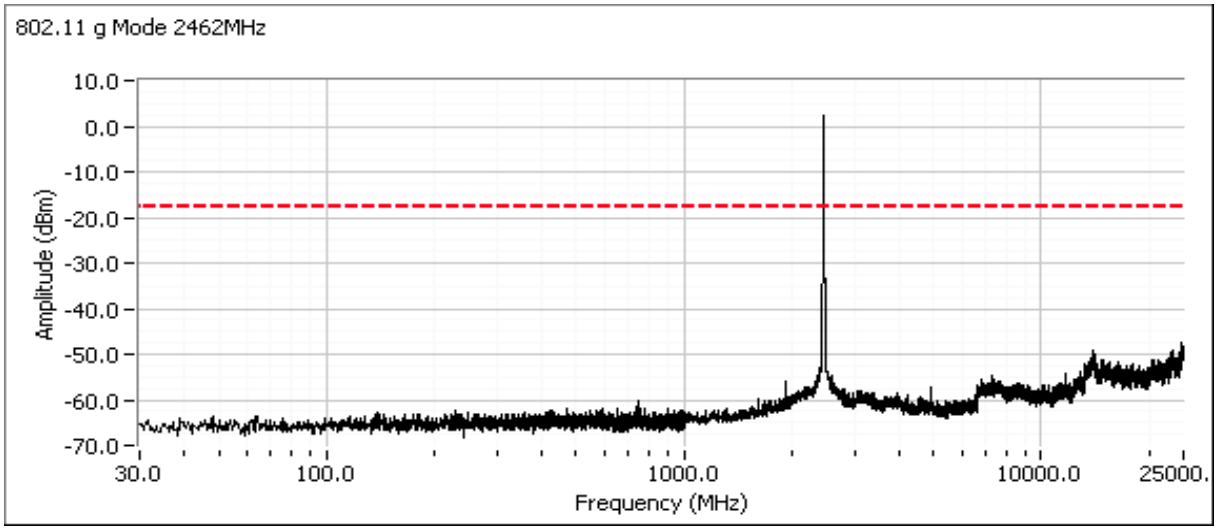


Plots for center channel, 802.11g

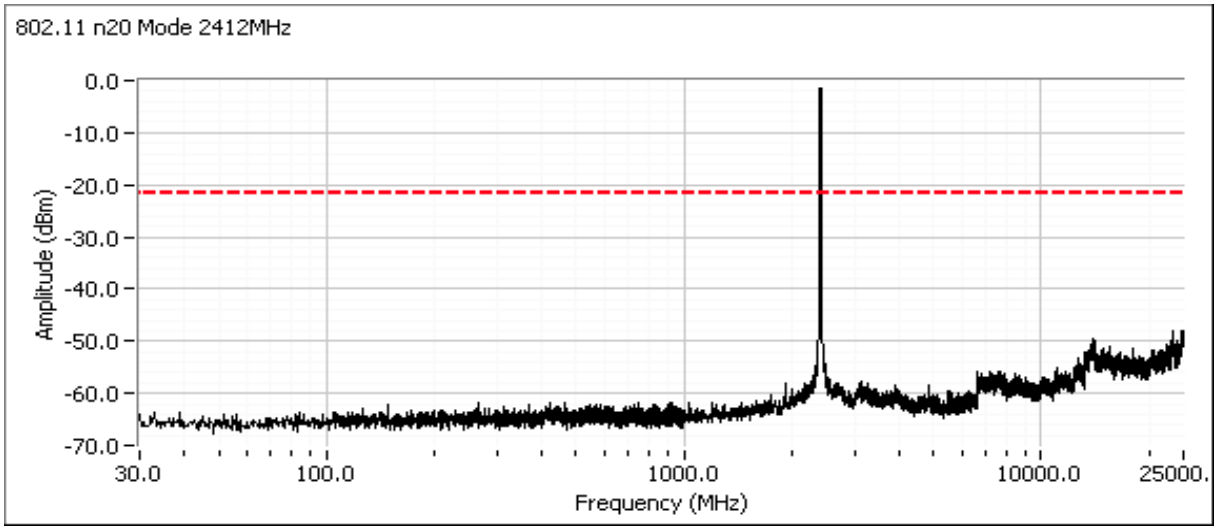


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for high channel, 802.11g

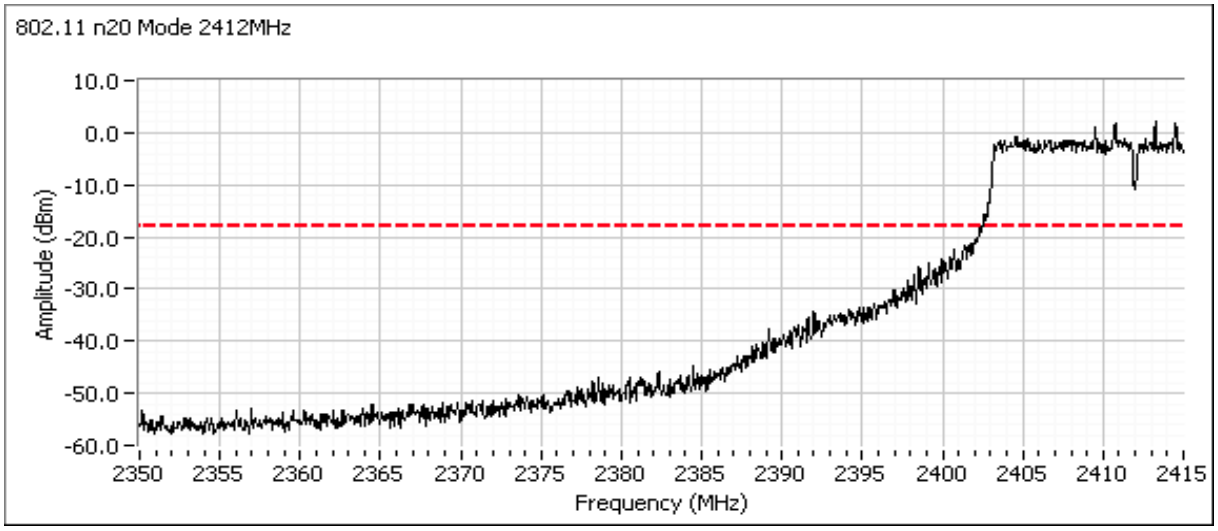


Plots for low channel,HT20

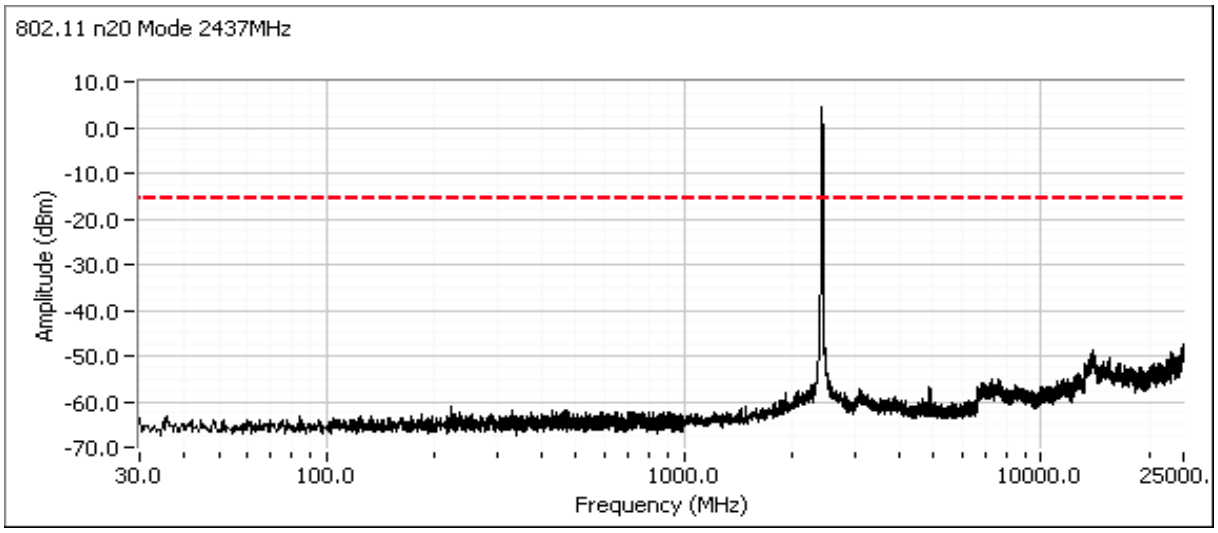


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Additional plot showing compliance with -20dBc limit from 2390 MHz to 2400 MHz. Radiated measurements used to show compliance with the limits in the restricted band below 2390 MHz.

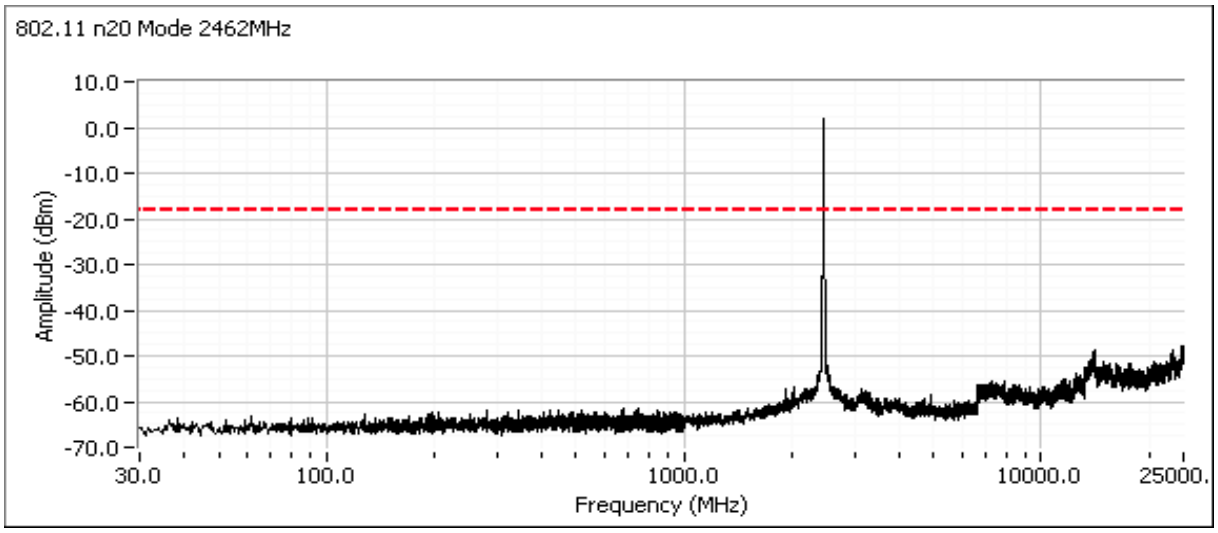


Plots for center channel, HT20

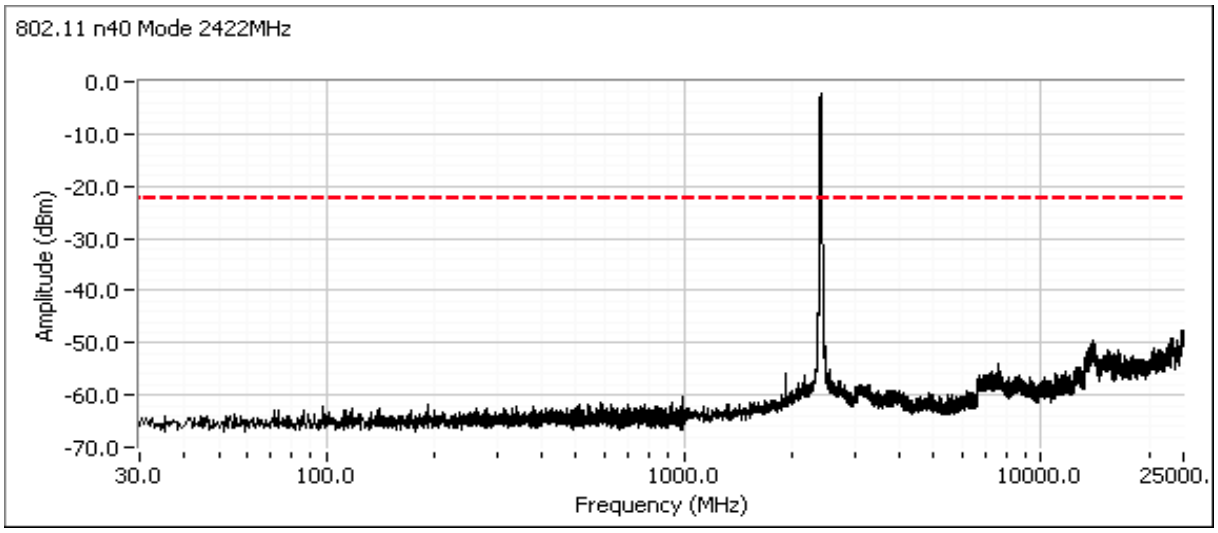


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for high channel, HT20

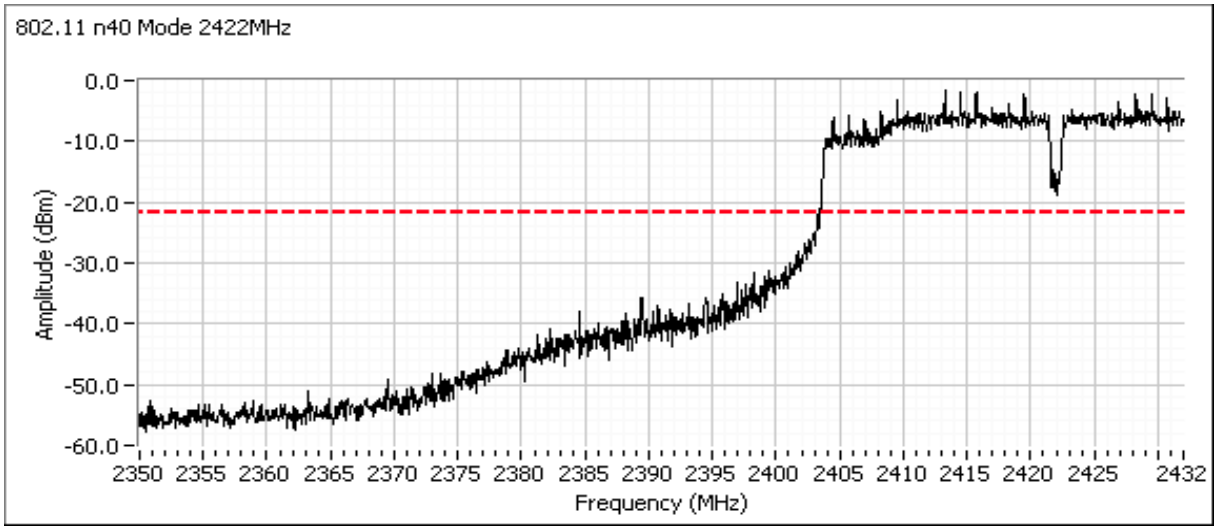


Plots for low channel, HT40

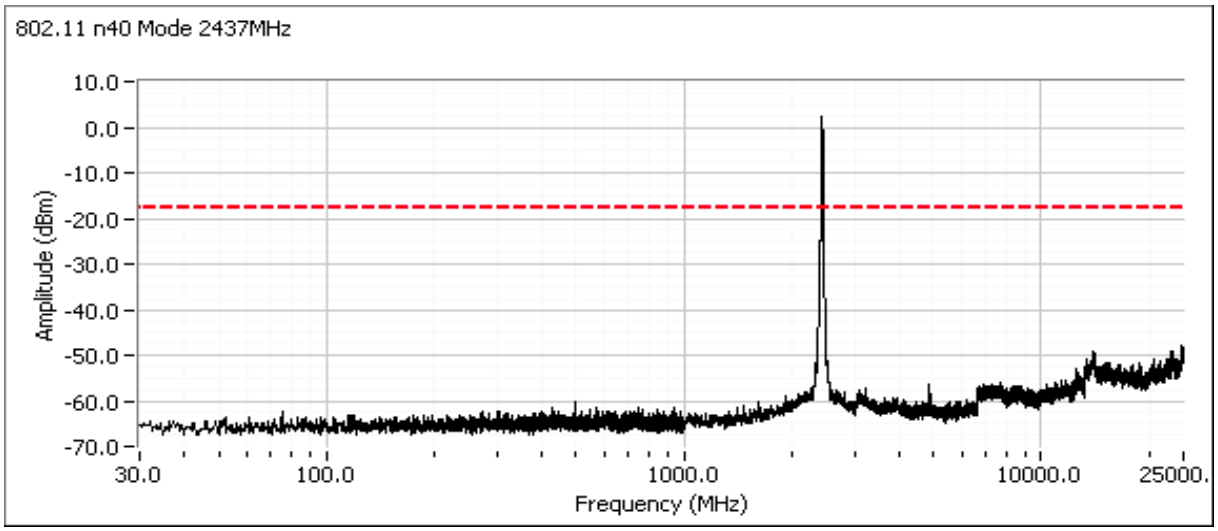


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Additional plot showing compliance with -20dBc limit from 2390 MHz to 2400 MHz. Radiated measurements used to show compliance with the limits in the restricted band below 2390 MHz.

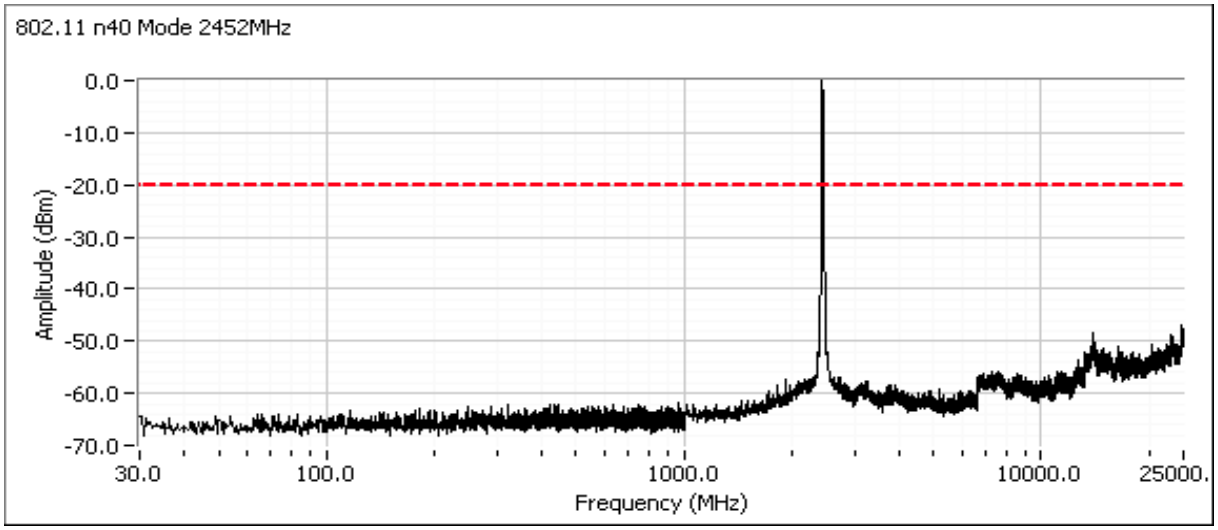


Plots for center channel, HT40



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for High channel, HT40



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Summary of Results

MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 1	802.11b Chain A	#1 2412 MHz	20.5	16.5	Restricted Band Edge at 2390 MHz	15.209	44.8 dBµV/m @ 2386.1 MHz (-9.2 dB)
		#11 2462 MHz	21.0	16.6	Restricted Band Edge at 2483.5 MHz	15.209	48.1 dBµV/m @ 2487.9 MHz (-5.9 dB)
Run # 2	802.11g Chain A	#1 2412 MHz	19.0	14.0	Restricted Band Edge at 2390 MHz	15.209	50.4 dBµV/m @ 2390.0 MHz (-3.6 dB)
		#11 2462 MHz	19.5	14.1	Restricted Band Edge at 2483.5 MHz	15.209	48.3 dBµV/m @ 2483.5 MHz (-5.7 dB)
Run #3	HT20 Chain A	#1 2412 MHz	19.0	14.0	Restricted Band Edge at 2390 MHz	15.209	52.8 dBµV/m @ 2390.0 MHz (-1.2 dB)
		#11 2462 MHz	19.5	14.1	Restricted Band Edge at 2483.5 MHz	15.209	51.4 dBµV/m @ 2483.5 MHz (-2.6 dB)
Run # 4	HT40 Chain A	#3 2422 MHz	17.5	12.6	Restricted Band Edge at 2390 MHz	15.209	52.8 dBµV/m @ 2389.6 MHz (-1.2 dB)
		#4 2427 MHz	18.5	13.6	Restricted Band Edge at 2390 MHz	15.209	52.4 dBµV/m @ 2389.8 MHz (-1.6 dB)
		#9 2452 MHz	19.5	14.0	Restricted Band Edge at 2483.5 MHz	15.209	50.7 dBµV/m @ 2483.5 MHz (-3.3 dB)

The channels adjacent to the low/high channels are also evaluated for band edge if the power at the low/high channels are 3dB or more below the highest channel power in the band.

Note - the target and measured power are average powers (measured with average power sensor) and are used for reference purposes only. Power is set using " GAIN CONTROL" mode in the DRTU tool.

Ambient Conditions:

Rel. Humidity: 21.4 %

Temperature: 36 °C

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Duty Cycle:

Mode	Duty Cycle	cor fact	Data rate
b	98.7%	0.12	1
g	98.6%	0.13	6
n20	98.5%	0.13	HT0
n40	96.9%	0.27	HT0

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1, Band Edge Field Strength - 802.11b, Chain A

Date of Test: 5/21/2013 Test Location: FT Chamber #4

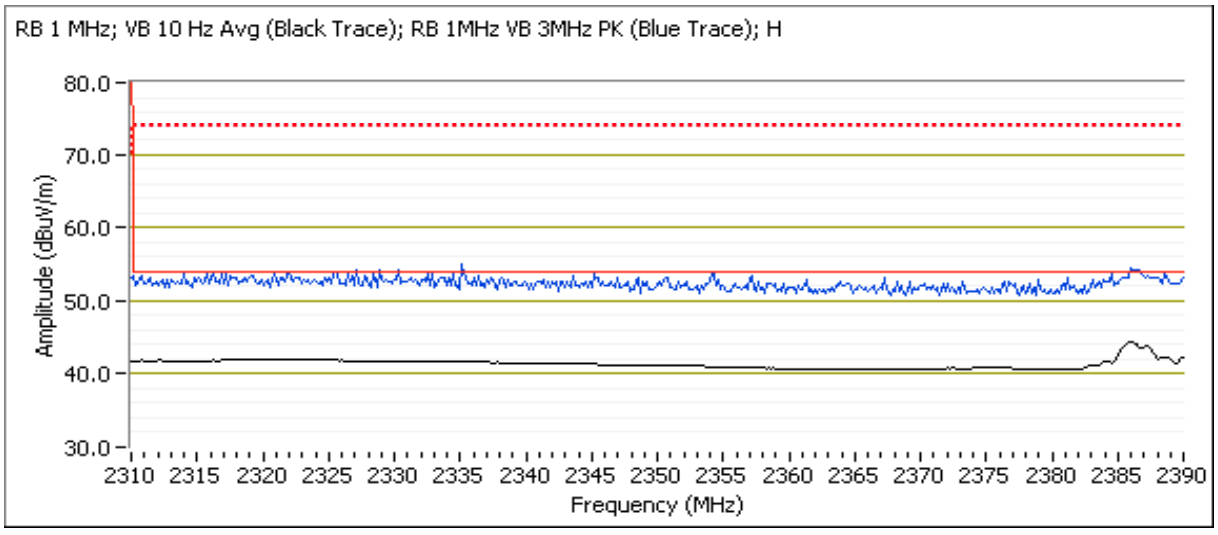
Test Engineer: Rafael Varelas Config Change: None

Run #1a, EUT on Channel #1 2412MHz - 802.11a, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	20.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.050	44.8	H	54.0	-9.2	AVG	130	1.0	POS; RB 1 MHz; VB: 10 Hz
2385.910	54.2	H	74.0	-19.8	PK	130	1.0	POS; RB 1 MHz; VB: 3 MHz
2385.990	43.5	V	54.0	-10.5	AVG	117	1.0	POS; RB 1 MHz; VB: 10 Hz
2319.780	54.2	V	74.0	-19.8	PK	117	1.0	POS; RB 1 MHz; VB: 3 MHz



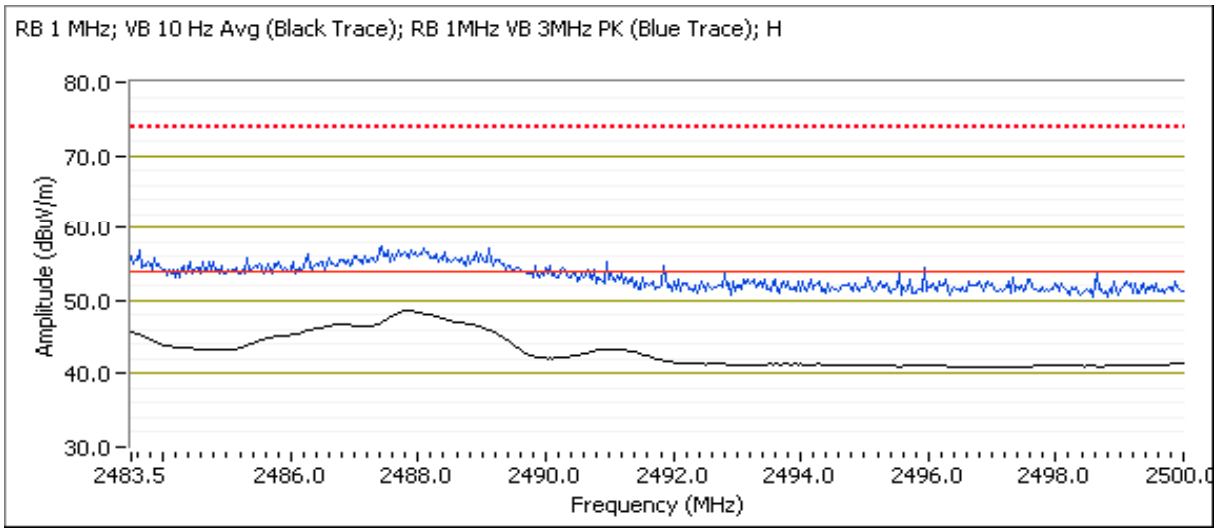
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1b, EUT on Channel #11 2462MHz - 802.11b, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	21.0

2483.5 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2487.860	48.1	H	54.0	-5.9	AVG	335	1.0	POS; RB 1 MHz; VB: 10 Hz
2487.570	55.9	H	74.0	-18.1	PK	335	1.0	POS; RB 1 MHz; VB: 3 MHz
2487.830	45.7	V	54.0	-8.3	AVG	96	1.1	POS; RB 1 MHz; VB: 10 Hz
2488.290	54.6	V	74.0	-19.4	PK	96	1.1	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #2, Band Edge Field Strength - 802.11g, Chain A

Date of Test: 5/21/2013 Test Location: FT Chamber #4

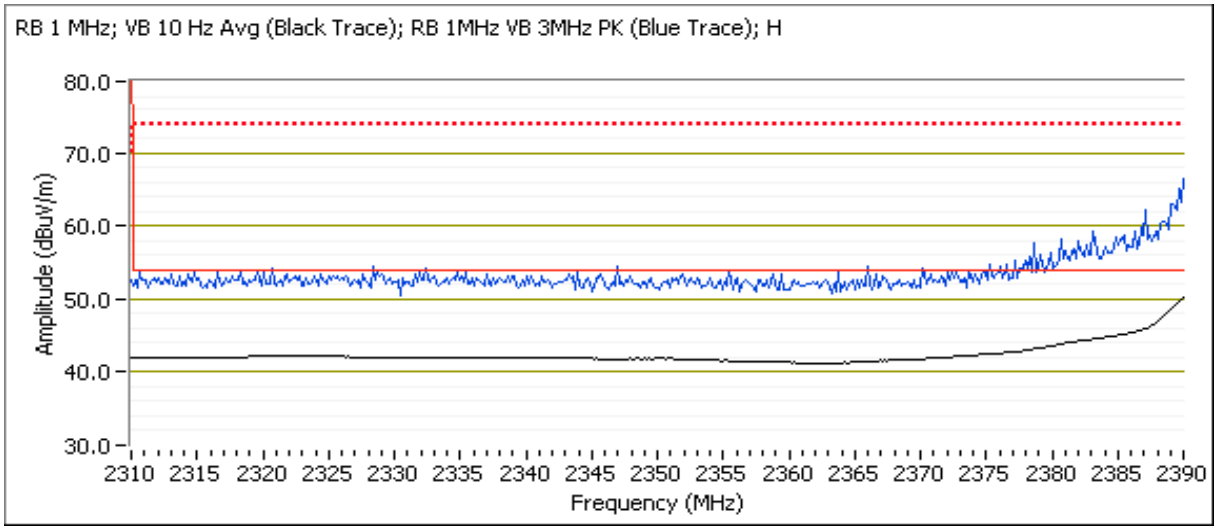
Test Engineer: Rafael Varelas Config Change: None

Run #2a, EUT on Channel #1 2412MHz - 802.11g, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	14.0	14.1	19.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	50.4	H	54.0	-3.6	AVG	131	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.940	64.9	H	74.0	-9.1	PK	131	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	49.7	V	54.0	-4.3	AVG	102	0.9	POS; RB 1 MHz; VB: 10 Hz
2389.920	65.1	V	74.0	-8.9	PK	102	0.9	POS; RB 1 MHz; VB: 3 MHz



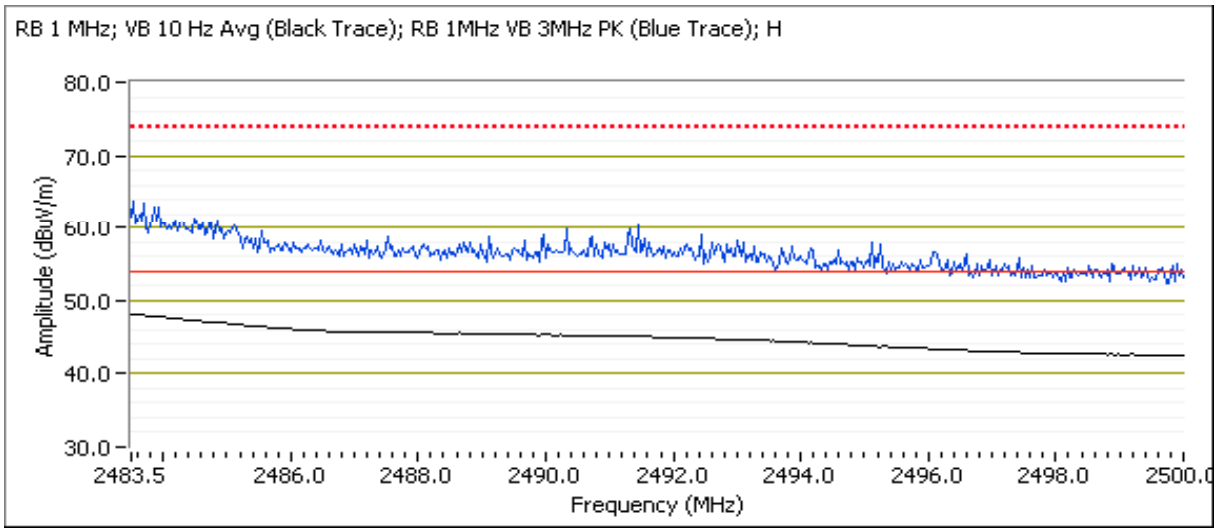
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #2b, EUT on Channel #11 2462MHz - 802.11g, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	14.0	14.1	19.5

2483.5 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.500	48.3	H	54.0	-5.7	AVG	332	1.1	POS; RB 1 MHz; VB: 10 Hz
2492.760	60.2	H	74.0	-13.8	PK	332	1.1	POS; RB 1 MHz; VB: 3 MHz
2483.500	47.0	V	54.0	-7.0	AVG	97	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.000	60.4	V	74.0	-13.6	PK	97	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #3, Band Edge Field Strength - HT20, Chain A

Date of Test: 5/22/2013 Test Location: FT CH4

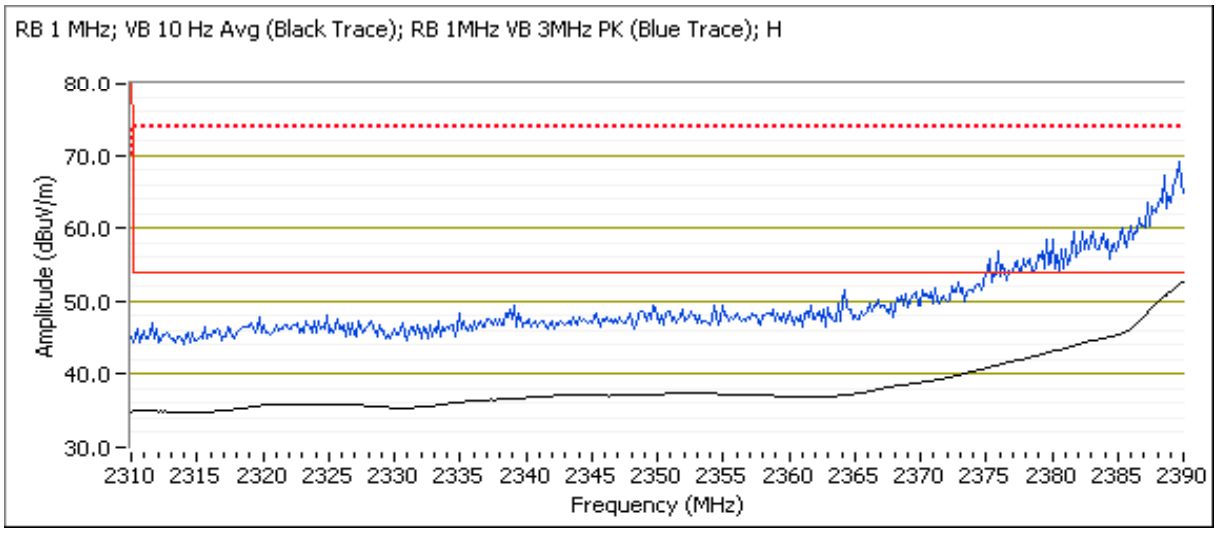
Test Engineer: Jack Liu Config Change: None

Run #3a, EUT on Channel #1 2412MHz - HT20, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	14.0	14.0	19.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.8	H	54.0	-1.2	AVG	128	1.0	POS; RB 1 MHz; VB: 10 Hz
2387.920	67.2	H	74.0	-6.8	PK	128	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	50.2	V	54.0	-3.8	AVG	103	0.9	POS; RB 1 MHz; VB: 10 Hz
2389.040	66.4	V	74.0	-7.6	PK	103	0.9	POS; RB 1 MHz; VB: 3 MHz



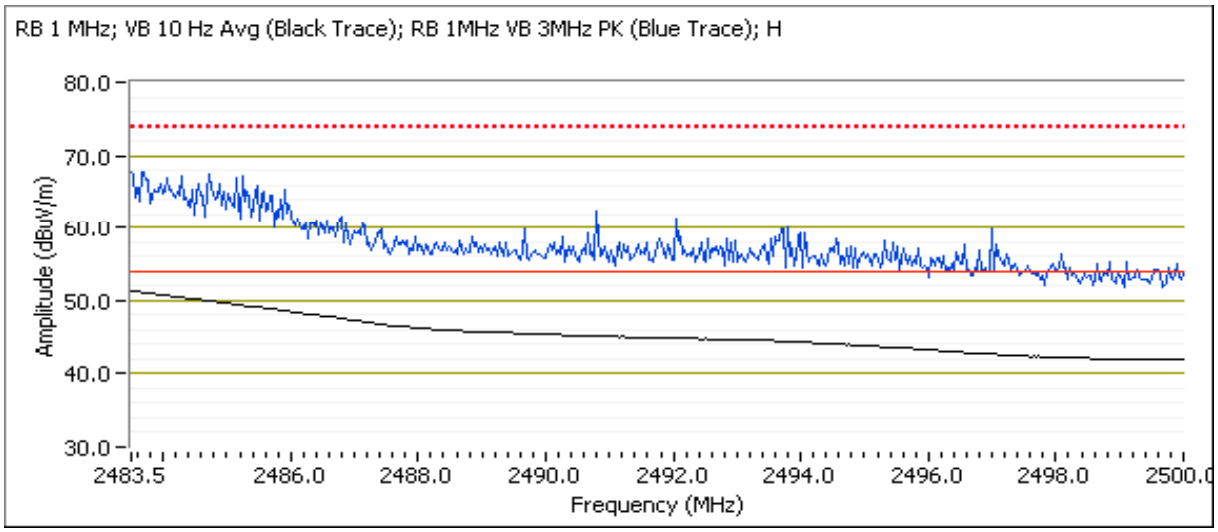
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #3b, EUT on Channel #11 2462MHz - HT20, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	14.0	14.1	19.5

2483.5 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.530	51.4	H	54.0	-2.6	AVG	327	1.1	POS; RB 1 MHz; VB: 10 Hz
2484.330	67.9	H	74.0	-6.1	PK	327	1.1	POS; RB 1 MHz; VB: 3 MHz
2483.530	47.1	V	54.0	-6.9	AVG	90	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.560	63.6	V	74.0	-10.4	PK	90	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #4, Band Edge Field Strength - HT40, Chain A

Date of Test: 5/22/2013 Test Location: FT CH4

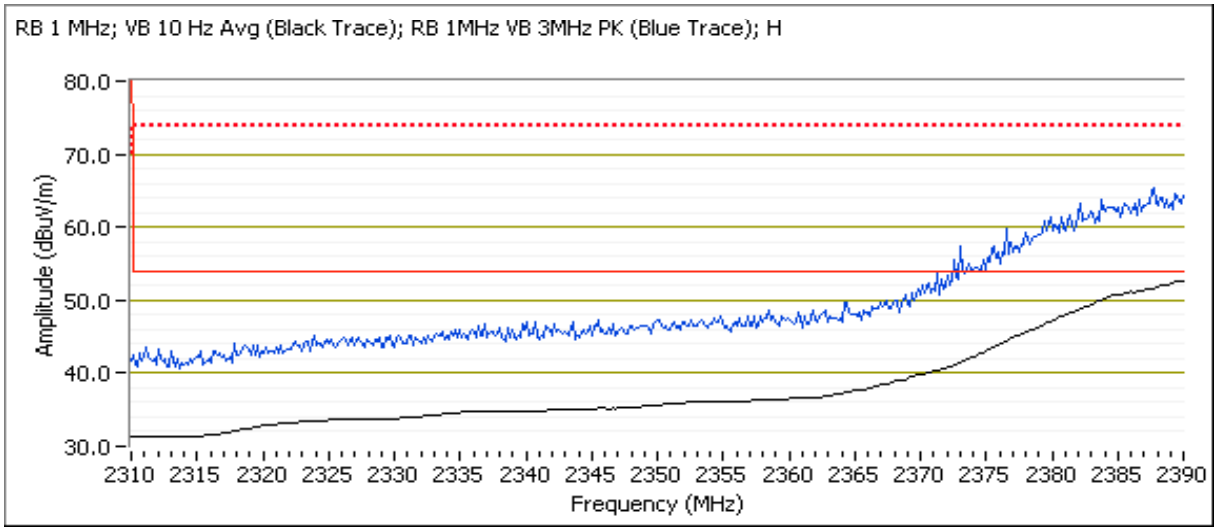
Test Engineer: Jack Liu Config Change: None

Run #4a, EUT on Channel #3 2422MHz - HT40, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	13.0	12.6	17.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.600	52.8	H	54.0	-1.2	AVG	125	1.2	Pwr setting 17.5
2387.840	65.2	H	74.0	-8.8	PK	125	1.2	Pwr setting 17.5
2389.760	53.9	H	54.0	-0.1	AVG	127	1.3	Pwr setting 18
2390.000	67.4	H	74.0	-6.6	PK	127	1.3	Pwr setting 18
2389.840	51.3	V	54.0	-2.7	AVG	110	1.0	Pwr setting 18
2389.200	62.7	V	74.0	-11.3	PK	110	1.0	Pwr setting 18



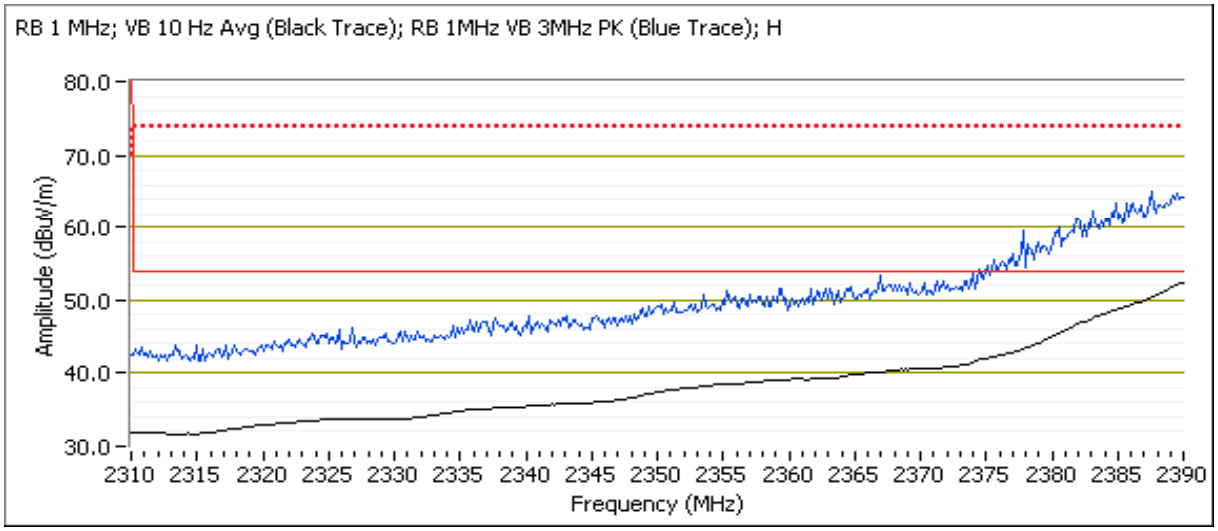
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #4b, EUT on Channel #4 2427MHz - HT40, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	13.5	13.6	18.5

2483.5 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.760	52.4	H	54.0	-1.6	AVG	65	1.7	POS; RB 1 MHz; VB: 10 Hz
2389.920	65.0	H	74.0	-9.0	PK	65	1.7	POS; RB 1 MHz; VB: 3 MHz
2389.680	49.7	V	54.0	-4.3	AVG	108	1.0	POS; RB 1 MHz; VB: 10 Hz
2390.000	62.9	V	74.0	-11.1	PK	108	1.0	POS; RB 1 MHz; VB: 3 MHz



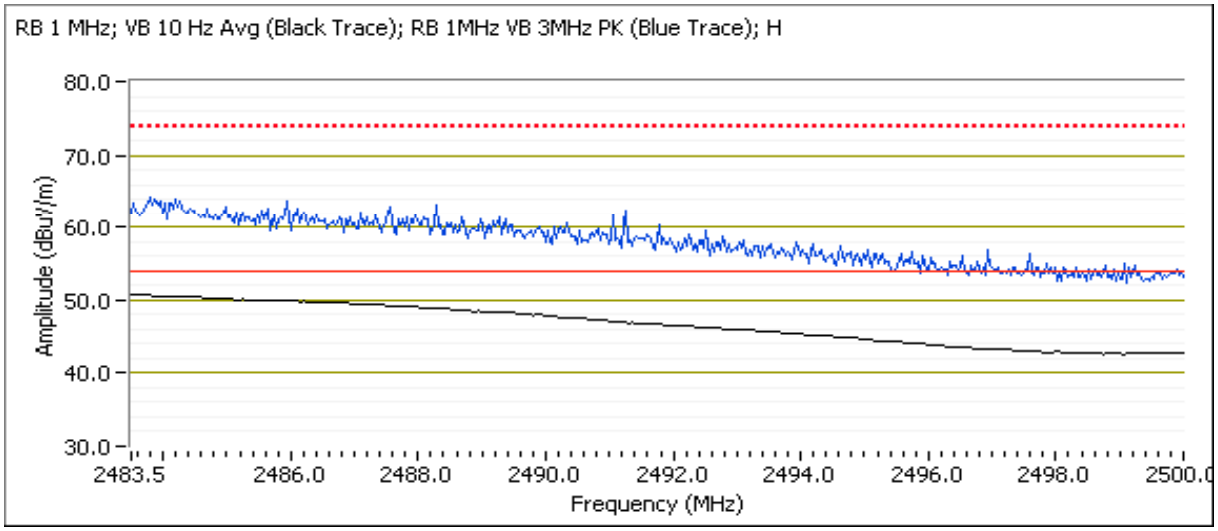
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #4c, EUT on Channel #9 2452MHz - HT40, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	14.0	14.0	19.5

2483.5 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.500	50.7	H	54.0	-3.3	AVG	329	1.1	POS; RB 1 MHz; VB: 10 Hz
2484.590	63.2	H	74.0	-10.8	PK	329	1.1	POS; RB 1 MHz; VB: 3 MHz
2483.570	46.8	V	54.0	-7.2	AVG	88	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.390	59.4	V	74.0	-14.6	PK	88	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Ambient Conditions:

Rel. Humidity: 20.9 %

Temperature: 35 °C

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results

MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 1	802.11b Chain A	#1 2412MHz	20.5	16.5	Radiated Emissions, 1 - 25 GHz	FCC 15.209 / 15.247	47.7 dBµV/m @ 4824.0 MHz (-6.3 dB)
		#6 2437MHz	20.5	16.4			47.8 dBµV/m @ 4874.0 MHz (-6.2 dB)
		#11 2462MHz	21.0	16.6			50.4 dBµV/m @ 4924.0 MHz (-3.6 dB)
Scans on center channel in all three OFDM modes to determine the worst case mode.							
Run # 2	802.11n20 Chain A	#6 2437MHz	22.5	16.5	Radiated Emissions, 1 - 25 GHz	FCC 15.209 / 15.247	35.3 dBµV/m @ 4874.9 MHz (-18.7 dB)
	802.11g Chain A	#6 2437MHz	22.5	16.5			38.8 dBµV/m @ 4865.2 MHz (-15.2 dB)
	802.11n40 Chain A	#6 2437MHz	23.0	16.6			34.8 dBµV/m @ 4877.4 MHz (-19.2 dB)
Measurements on low and high channels in worst-case OFDM mode.							
Run # 3	OFDM - 802.11 g Chain A	#1 2412MHz	22.5	16.6	Radiated Emissions, 1 - 25 GHz	FCC 15.209 / 15.247	36.7 dBµV/m @ 4824.3 MHz (-17.3 dB)
		#11 2462MHz	22.5	16.4			57.6 dBµV/m @ 1199.2 MHz (-16.4 dB)

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Note - the target and measured power are average powers (measured with average power sensor) and are used for reference purposes only. Power is set using " GAIN CONTROL" mode in the DRTU tool. Set power to within +/-0.2dB of target.

Duty Cycle:

Mode	Duty Cycle	cor fact	Data rate
b	98.7%	0.12	1
g	98.6%	0.13	6
n20	98.5%	0.13	HT0
n40	96.9%	0.27	HT0

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1, Radiated Spurious Emissions, 1-25 GHz, 802.11b, Chain A

Date of Test: 5/23/2013, 5/28/13 Test Location: FT chamber 4

Test Engineer: Jack Liu Config Change: none

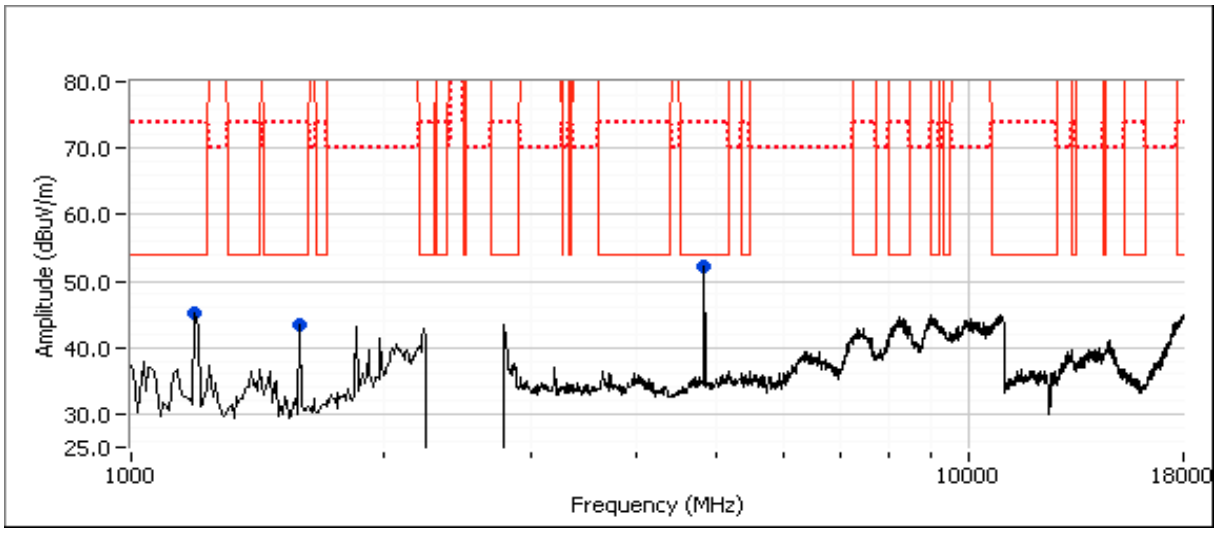
Run #1a, EUT on Channel #1 2412MHz - 802.11b, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	20.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4824.020	47.7	H	54.0	-6.3	AVG	360	1.0	RB 1 MHz;VB 10 Hz;Peak
4824.070	50.8	H	74.0	-23.2	PK	360	1.0	RB 1 MHz;VB 3 MHz;Peak
1196.200	32.6	H	54.0	-21.4	AVG	57	1.0	RB 1 MHz;VB 10 Hz;Peak
1198.940	55.3	H	74.0	-18.7	PK	57	1.0	RB 1 MHz;VB 3 MHz;Peak
1598.270	30.2	V	54.0	-23.8	AVG	138	1.3	RB 1 MHz;VB 10 Hz;Peak
1593.000	53.6	V	74.0	-20.4	PK	138	1.3	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

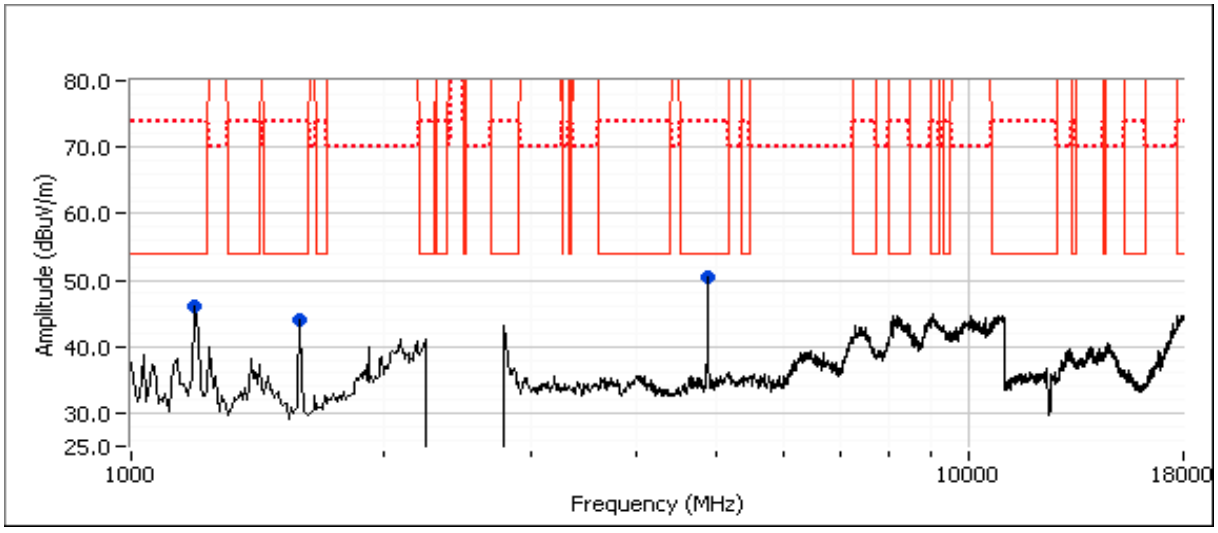
Run #1b: , EUT on Channel #6 2437MHz - 802.11b, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.4	20.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4873.980	47.8	H	54.0	-6.2	AVG	341	1.3	RB 1 MHz;VB 10 Hz;Peak
4874.020	50.6	H	74.0	-23.4	PK	341	1.3	RB 1 MHz;VB 3 MHz;Peak
1197.140	30.4	V	54.0	-23.6	AVG	3	1.5	RB 1 MHz;VB 10 Hz;Peak
1198.670	54.0	V	74.0	-20.0	PK	3	1.5	RB 1 MHz;VB 3 MHz;Peak
1595.470	30.7	V	54.0	-23.3	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Peak
1599.740	54.2	V	74.0	-19.8	PK	0	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 25 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

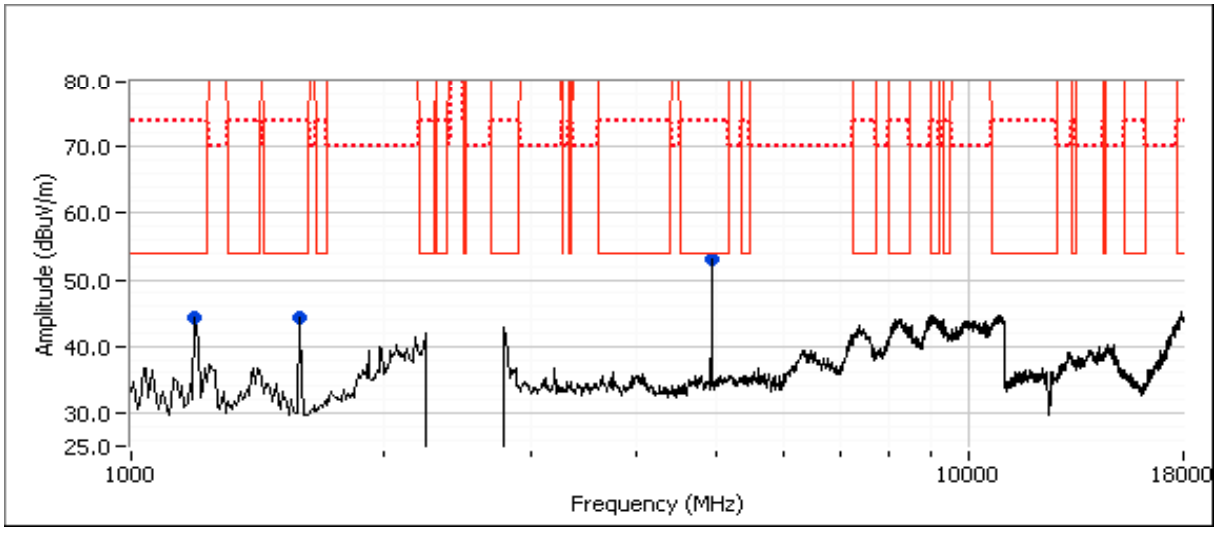
Run #1c: EUT on Channel #11 2462MHz - 802.11b, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4924.040	50.4	H	54.0	-3.6	AVG	334	1.0	RB 1 MHz;VB 10 Hz;Peak
4924.110	53.2	H	74.0	-20.8	PK	334	1.0	RB 1 MHz;VB 3 MHz;Peak
1594.070	29.7	V	54.0	-24.3	AVG	216	1.4	RB 1 MHz;VB 10 Hz;Peak
1593.600	54.5	V	74.0	-19.5	PK	216	1.4	RB 1 MHz;VB 3 MHz;Peak
1198.540	31.6	V	54.0	-22.4	AVG	22	1.3	RB 1 MHz;VB 10 Hz;Peak
1197.740	53.6	V	74.0	-20.4	PK	22	1.3	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #2, Radiated Spurious Emissions, 1-25 GHz, OFDM, Chain A

Date of Test: 5/23/2013, 5/28/13 Test Location: FT chamber 4

Test Engineer: Jack Liu Config Change: none

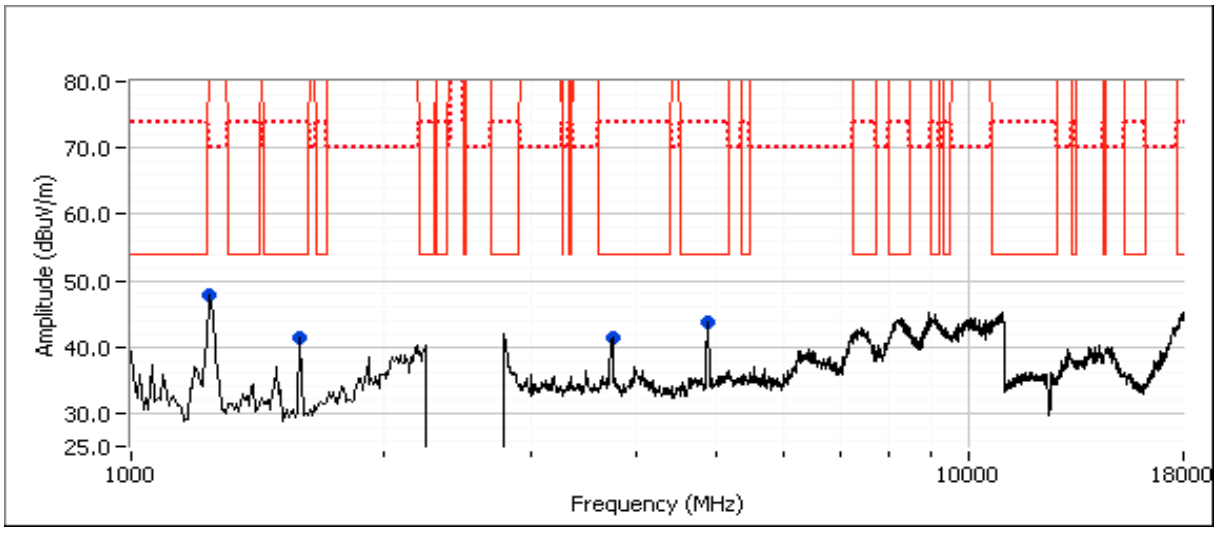
Run #2a, EUT on Channel #6 HT20 (OFDM), Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	22.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4874.930	35.3	H	54.0	-18.7	AVG	358	1.0	RB 1 MHz;VB 10 Hz;Peak
4872.930	48.7	H	74.0	-25.3	PK	358	1.0	RB 1 MHz;VB 3 MHz;Peak
3732.670	32.1	V	54.0	-21.9	AVG	84	1.0	RB 1 MHz;VB 10 Hz;Peak
3734.130	53.8	V	74.0	-20.2	PK	84	1.0	RB 1 MHz;VB 3 MHz;Peak
1598.800	28.4	V	54.0	-25.6	AVG	222	1.3	RB 1 MHz;VB 10 Hz;Peak
1598.040	49.7	V	74.0	-24.3	PK	222	1.3	RB 1 MHz;VB 3 MHz;Peak
1247.740	29.1	V	54.0	-24.9	AVG	147	1.0	Note 3
1246.400	53.8	V	74.0	-20.2	PK	147	1.0	Note 3

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 25 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

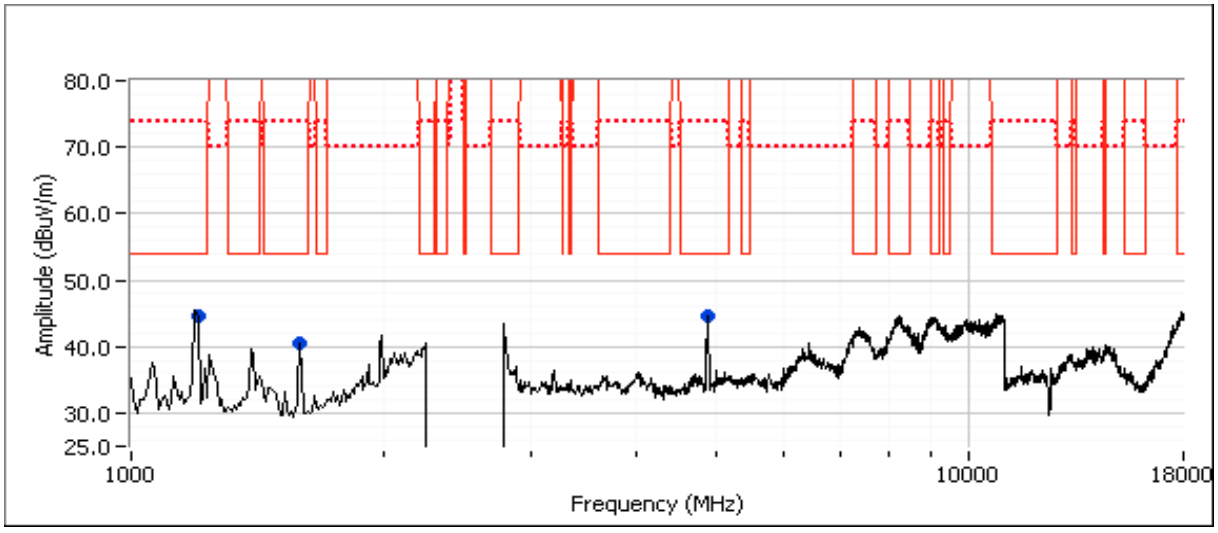
Run #2b: , EUT on Channel #6 802.11g (OFDM), Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	22.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4865.230	38.8	H	54.0	-15.2	AVG	335	1.0	RB 1 MHz;VB 10 Hz;Peak
4882.670	40.5	H	74.0	-33.5	PK	335	1.0	RB 1 MHz;VB 3 MHz;Peak
1200.130	30.1	V	54.0	-23.9	AVG	271	1.0	RB 1 MHz;VB 10 Hz;Peak
1197.000	50.7	V	74.0	-23.3	PK	271	1.0	RB 1 MHz;VB 3 MHz;Peak
1594.240	28.8	V	54.0	-25.2	AVG	151	1.3	RB 1 MHz;VB 10 Hz;Peak
1594.470	47.2	V	74.0	-26.8	PK	151	1.3	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 25 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

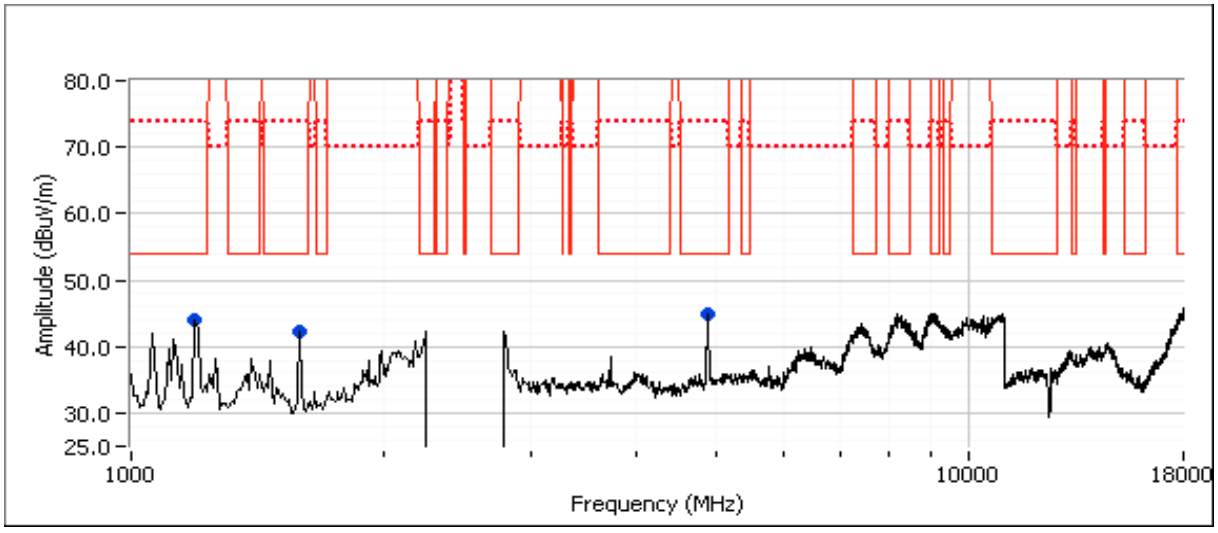
Run #2c: , EUT on Channel #6 HT40 (OFDM), Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	23.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4877.380	34.8	H	54.0	-19.2	AVG	330	1.3	RB 1 MHz;VB 10 Hz;Peak
4872.110	45.6	H	74.0	-28.4	PK	330	1.3	RB 1 MHz;VB 3 MHz;Peak
1195.630	32.2	V	54.0	-21.8	AVG	283	0.9	RB 1 MHz;VB 10 Hz;Peak
1197.800	52.1	V	74.0	-21.9	PK	283	0.9	RB 1 MHz;VB 3 MHz;Peak
1597.840	28.3	V	54.0	-25.7	AVG	152	1.2	RB 1 MHz;VB 10 Hz;Peak
1594.540	45.5	V	74.0	-28.5	PK	152	1.2	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 25 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #3, Radiated Spurious Emissions, 1-25 GHz, Worst Case OFDM Mode, Chain A

Date of Test: 5/29/2013 Test Location: FT Chamber 4

Test Engineer: Rafael Varelas Config Change: none

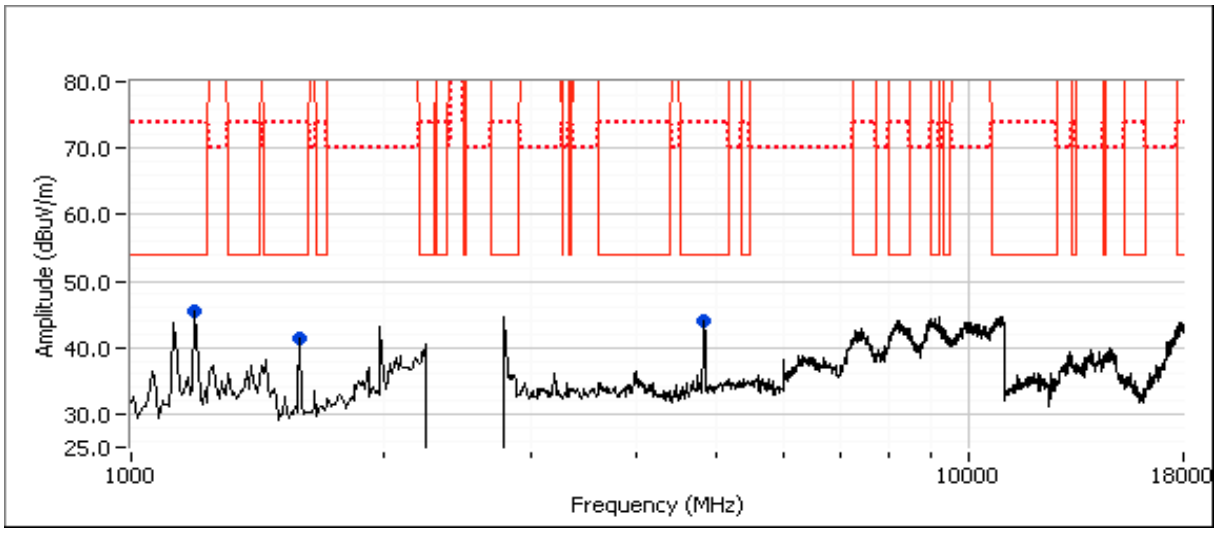
Run #3a, EUT on Channel #1 2412MHz - OFDM, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	22.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4824.340	36.7	V	54.0	-17.3	AVG	222	1.2	RB 1 MHz;VB 10 Hz;Peak
1195.650	55.6	V	74.0	-18.4	PK	215	1.2	RB 1 MHz;VB 3 MHz;Peak
1195.790	34.2	V	54.0	-19.8	AVG	215	1.2	RB 1 MHz;VB 10 Hz;Peak
4822.940	48.6	V	74.0	-25.4	PK	222	1.2	RB 1 MHz;VB 3 MHz;Peak
1595.520	27.7	V	54.0	-26.3	AVG	270	0.9	RB 1 MHz;VB 10 Hz;Peak
1594.930	46.1	V	74.0	-27.9	PK	270	0.9	RB 1 MHz;VB 3 MHz;Peak

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

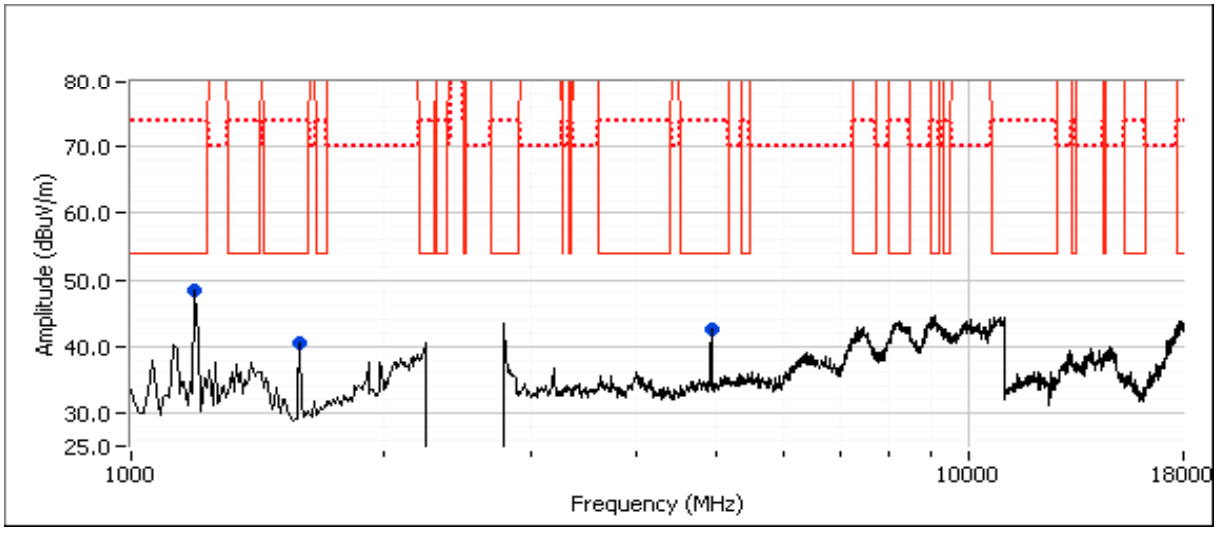
Run #3b: EUT on Channel #11 2462MHz - OFDM, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.4	22.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1199.210	57.6	V	74.0	-16.4	PK	195	1.4	RB 1 MHz;VB 3 MHz;Peak
4923.470	35.7	V	54.0	-18.3	AVG	247	1.0	RB 1 MHz;VB 10 Hz;Peak
1197.980	35.4	V	54.0	-18.6	AVG	195	1.4	RB 1 MHz;VB 10 Hz;Peak
1595.460	51.7	V	74.0	-22.3	PK	177	0.9	RB 1 MHz;VB 3 MHz;Peak
1594.440	29.2	V	54.0	-24.8	AVG	177	0.9	RB 1 MHz;VB 10 Hz;Peak
4928.240	48.1	V	74.0	-25.9	PK	247	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements - WiFi

Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/5 & 6/6/2013
Test Engineer: Rafael Varelas
Test Location: FT Lab 4A

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT was connected to the spectrum analyzer or power meter via a suitable attenuator. All measurements were made on a single chain.

All measurements have been corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 20.8 °C
Rel. Humidity: 35 %

Summary of Results

MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Max Pwr setting / mode	Test Performed	Limit	Pass / Fail	Result / Margin
1	802.11a: 802.11n20: 802.11n40: 802.11ac80:	Output Power	15.247(b)	Pass	802.11a: 0.09W 802.11n20: 0.09W 802.11n40: 0.21W 802.11ac80: 0.30W
2	See above	Power spectral Density (PSD)	15.247(d)	Pass	-8.4 dBm/3kHz
3	See above	Minimum 6dB Bandwidth	15.247(a)	Pass	16.3 MHz
3	See above	99% Bandwidth	RSS GEN	-	802.11a: 18.4 MHz 802.11n20: 19.6 MHz 802.11n40: 36.4 MHz 802.11ac80: 75.5 MHz
4	See above	Spurious emissions	15.247(b)	Pass	All Emissions below -30dBc limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Duty Cycle:

Mode	Duty Cycle	cor fact	Data rate
a	98.6%	0.06	6
n20	98.5%	0.07	HT0
n40	96.9%	0.14	HT0
ac 80	70.0%	1.55	VHT9

Run #1: Output Power

Power Setting[2]	Frequency (MHz)	Output Power (dBm)[1]	Output Power mW	Antenna Gain (dBi)	Result	EIRP[Note 2] dBm	EIRP W	Output Power (dBm)[3]	Output Power mW
802.11a Mode									
34	5745	16.3	42.9	3.2	Pass	19.5	0.090	16.5	44.5
34.5	5785	16.4	44.1	3.2	Pass	19.6	0.092	16.5	44.2
34.5	5825	16.3	42.8	3.2	Pass	19.5	0.089	16.5	44.5
802.11n20 Mode									
34.0	5745	16.3	42.7	3.2	Pass	19.5	0.089	16.6	45.4
34.5	5785	16.5	44.2	3.2	Pass	19.7	0.092	16.5	44.9
34.5	5825	16.3	42.7	3.2	Pass	19.5	0.089	16.5	44.2
802.11n40 Mode									
34.5	5755	20.1	101.9	3.2	Pass	23.3	0.213	16.6	45.7
35	5795	20.1	101.2	3.2	Pass	23.3	0.211	16.6	46.1
802.11ac80 Mode									
34.0	5775	20.8	121.1	3.2	Pass	24.0	0.253	16.6	45.2

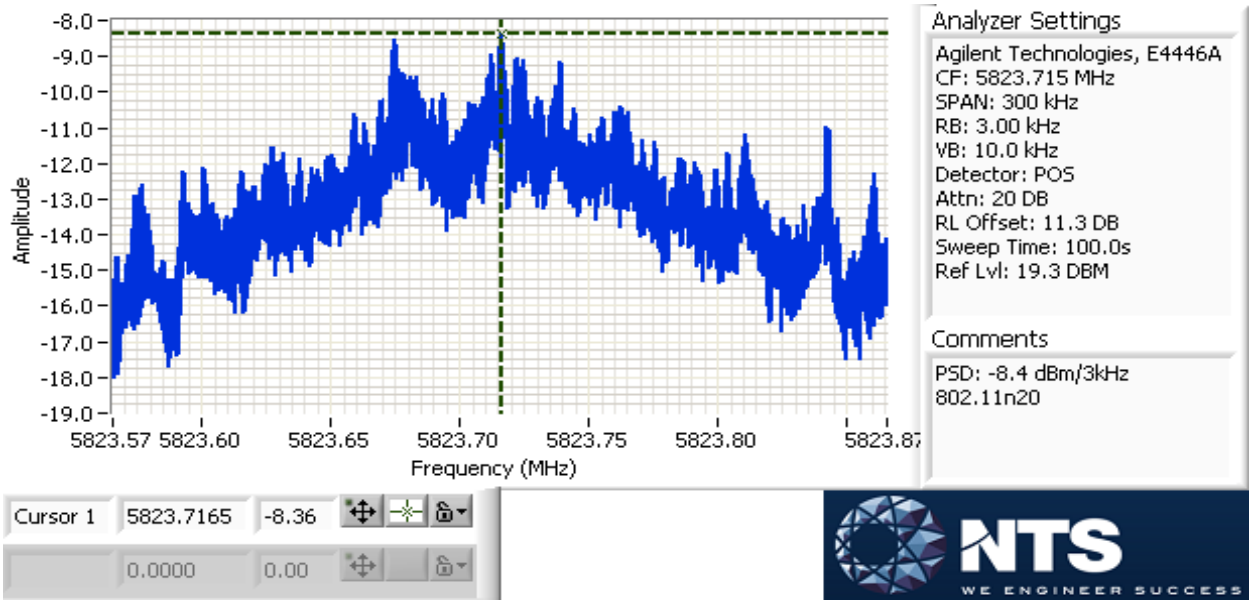
Note 1:	Output power for 802.11a and n20 measured using an average power meter. As the signal is not continuous, the average power meter measurements were adjusted by adding duty cycle factor. This is based on 10log(1/x), where x is the duty cycle. (method AVGPM of KDB 558074 D01). Spurious limit becomes -30dBc.
Note 1:	Output power for 802.11n40 and 802.11ac80 measured using a peak power meter, spurious limit is -20dBc.
Note 2:	Power setting - the software power setting used during testing, included for reference only.
Note 3:	Power measured using average power meter and is included for reference only.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #2: Power spectral Density

Mode	Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1	Limit dBm/3kHz	Result
802.11a	34	5745	-9.6	8.0	Pass
	34.5	5785	-9.3	8.0	Pass
	34.5	5825	-9.3	8.0	Pass
802.11n20	34.0	5745	-8.5	8.0	Pass
	34.5	5785	-9.6	8.0	Pass
	34.5	5825	-8.4	8.0	Pass
802.11n40	34.5	5755	-11.5	8.0	Pass
	35	5795	-11.3	8.0	Pass
802.11ac80	34.0	5775	-10.1	8.0	Pass

Note 1:	Power spectral density measured using RB=3 kHz, VB=10kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 1 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal.



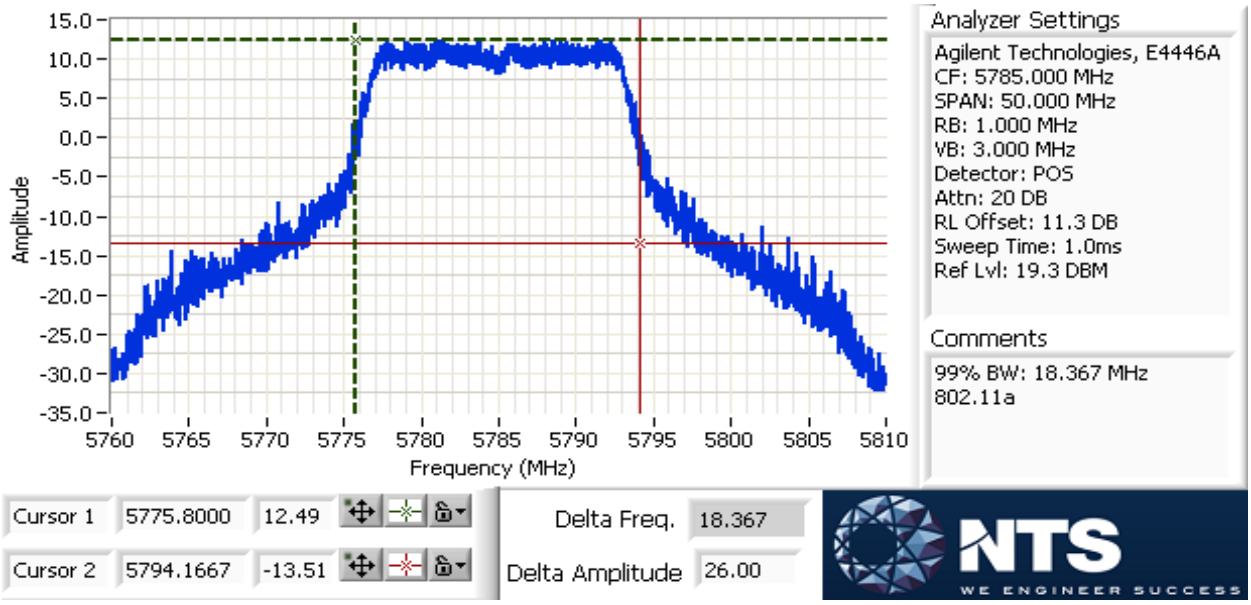
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

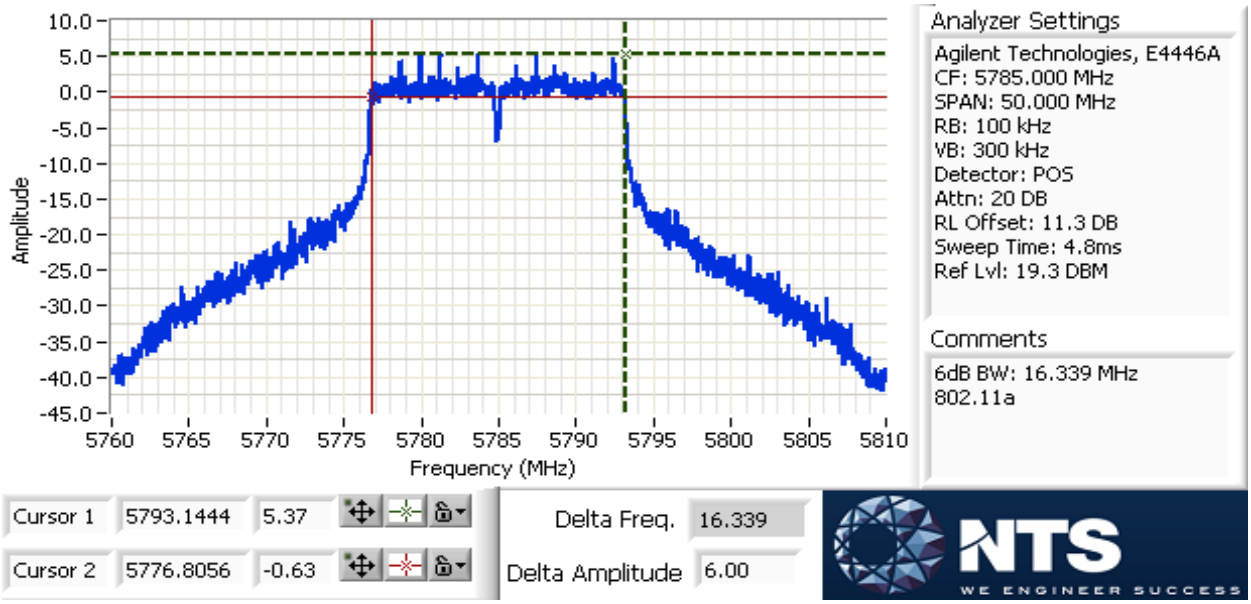
Run #3: Signal Bandwidth

Mode	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	Resolution Bandwidth	Bandwidth (MHz) 99%
802.11a	5745	100 kHz	16.4	1MHz	18.3
	5785	100 kHz	16.3	1MHz	18.4
	5825	100 kHz	16.3	1MHz	18.2
820.11n20	5745	100 kHz	17.6	1MHz	19.4
	5785	100 kHz	17.6	1MHz	19.2
	5825	100 kHz	17.6	1MHz	19.6
802.11n40	5755	100 kHz	35.1	1MHz	36.4
	5795	100 kHz	35.0	1MHz	36.4
802.11ac80	5775	100 kHz	75.1	1MHz	75.5

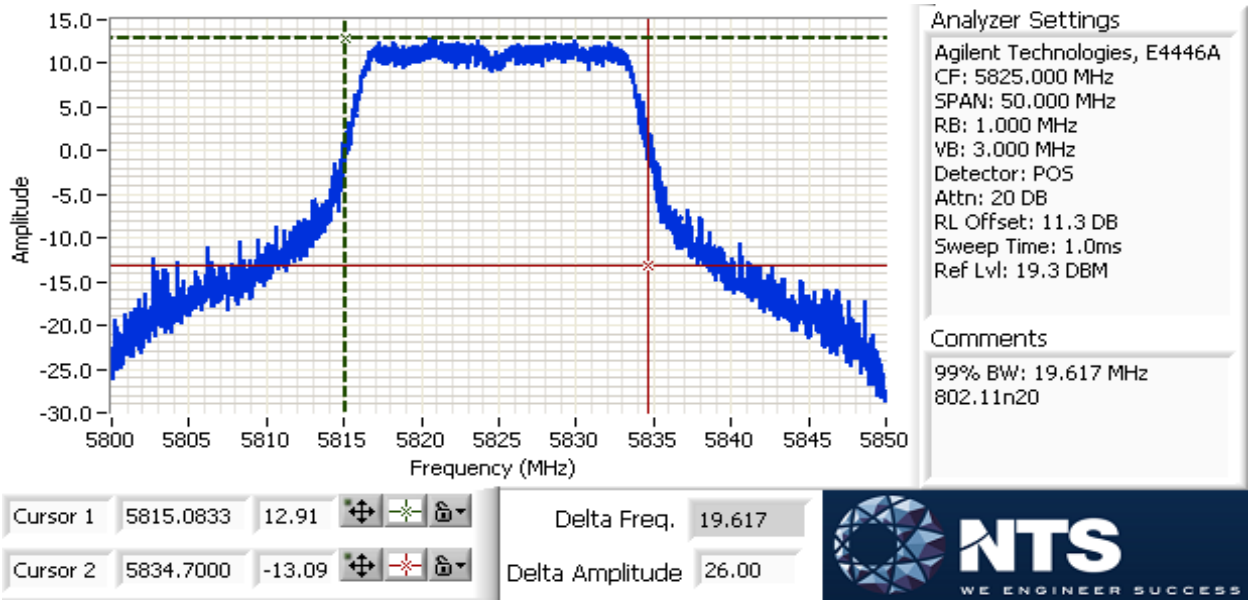
Note 1:	6dB bandwidth measured in accordance with KDB 558074, with RB = 100kHz and VB ≥ 3 x RB. See sample plot below.
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB ≥ 3 x RB. See sample plot below.

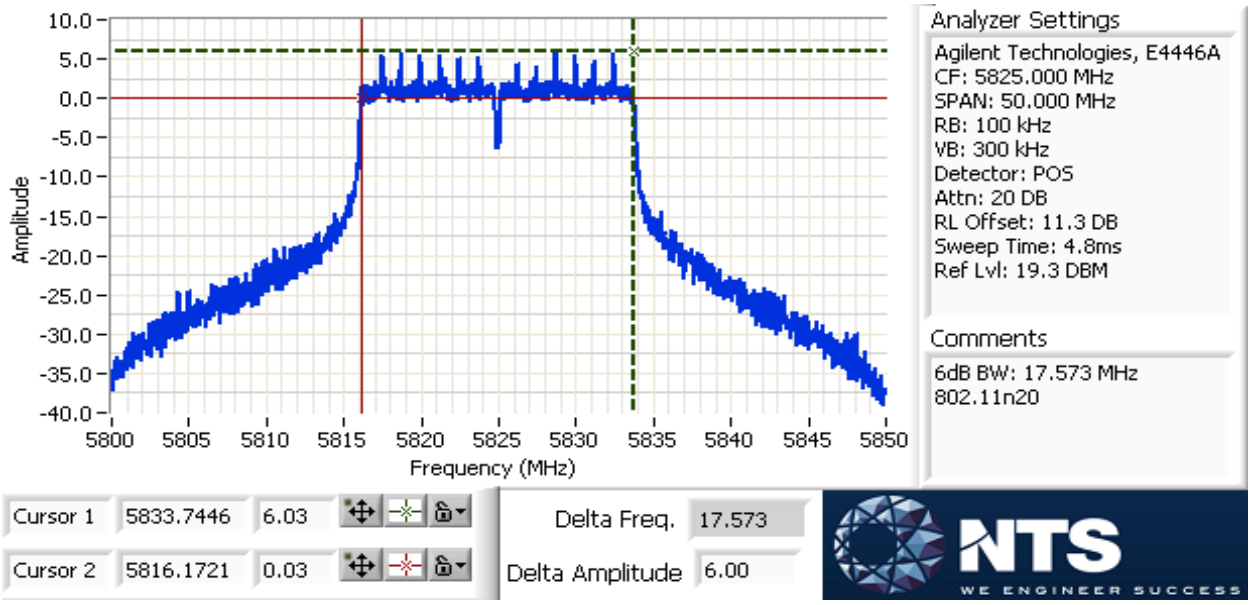
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



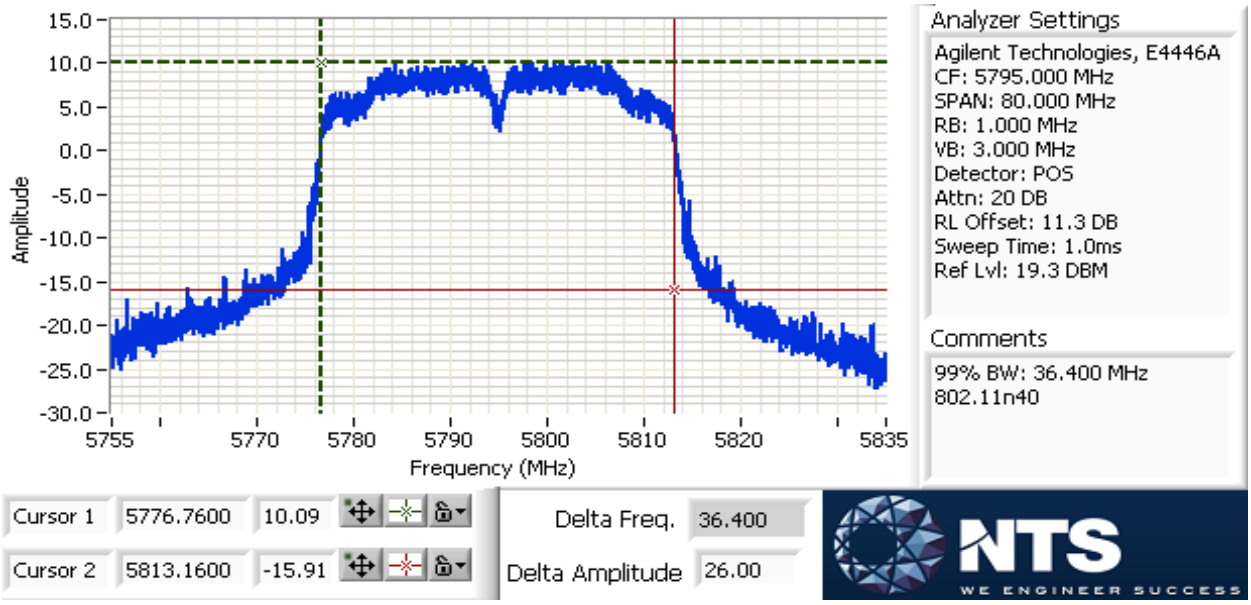


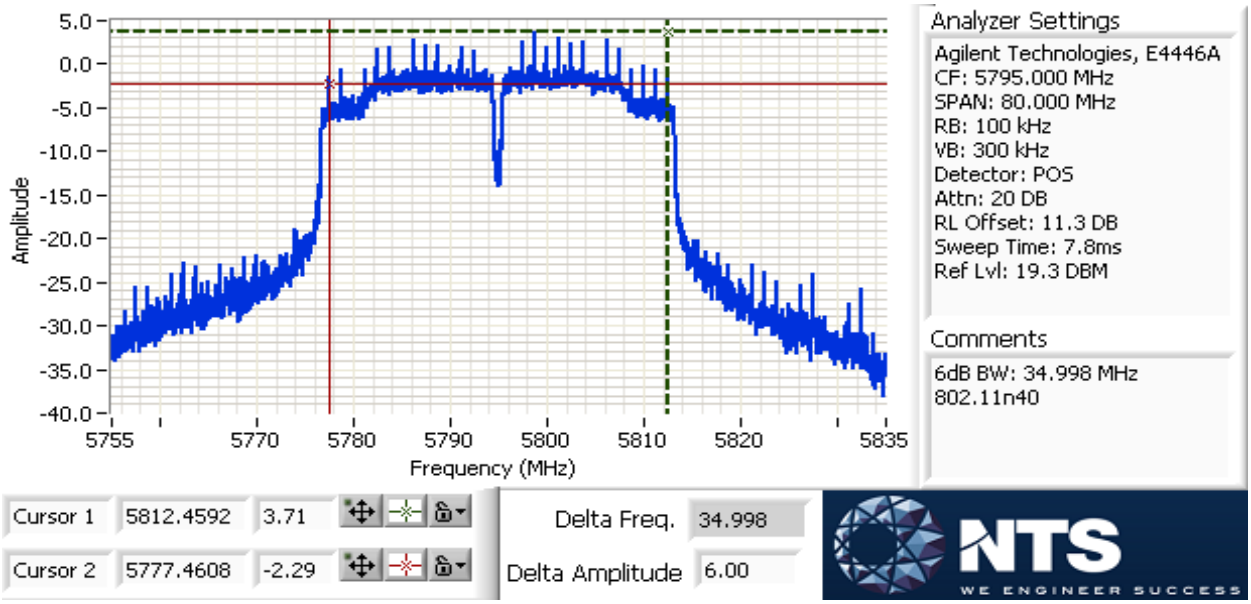
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



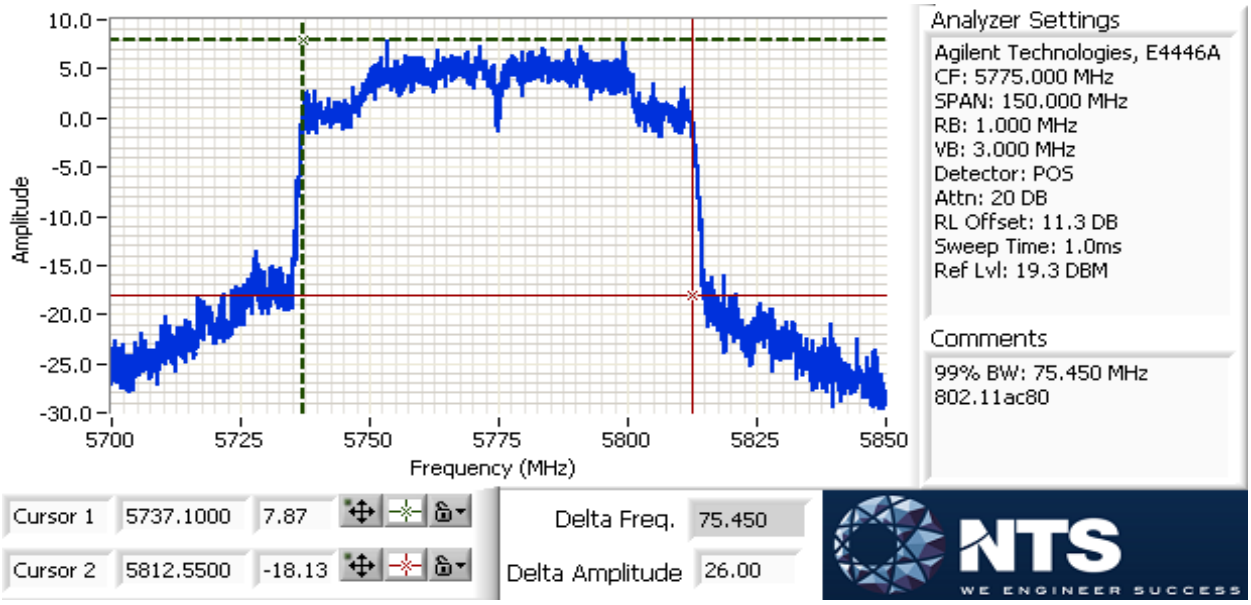


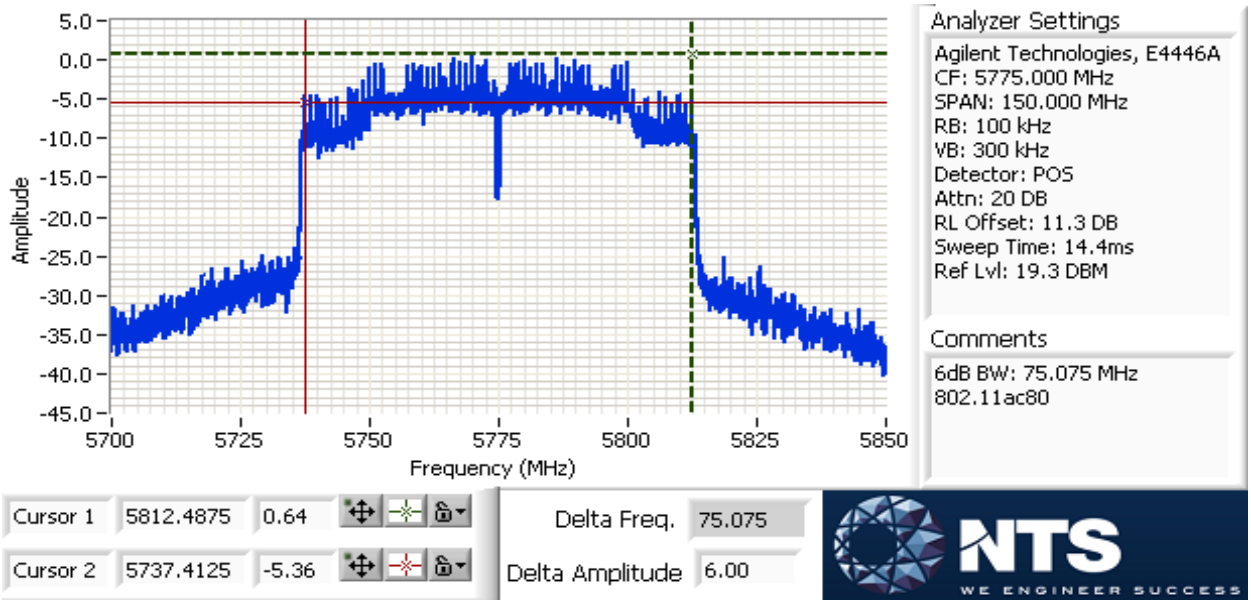
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A





Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A





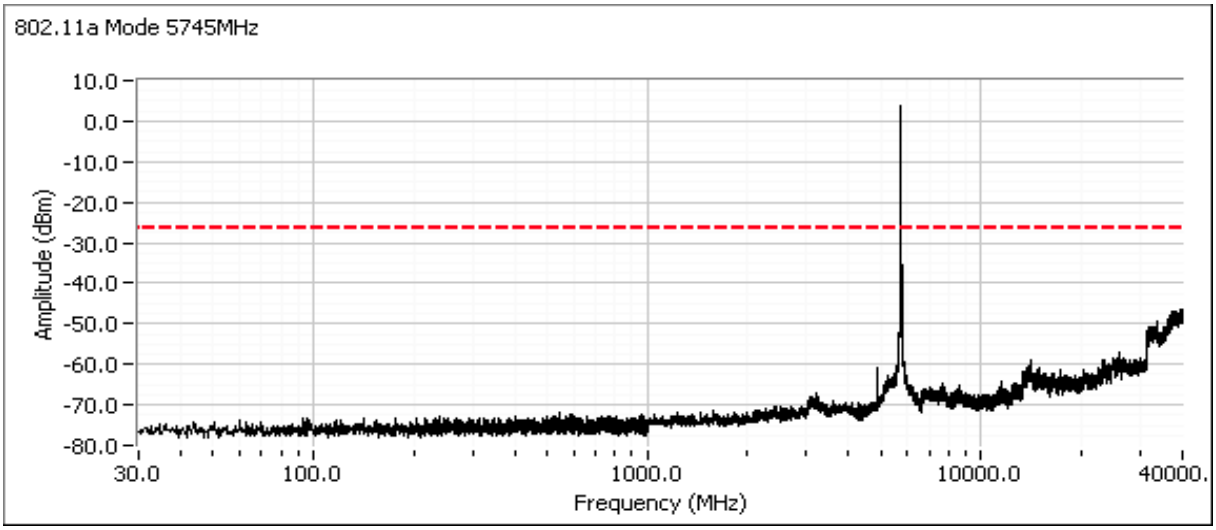
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #4: Out of Band Spurious Emissions

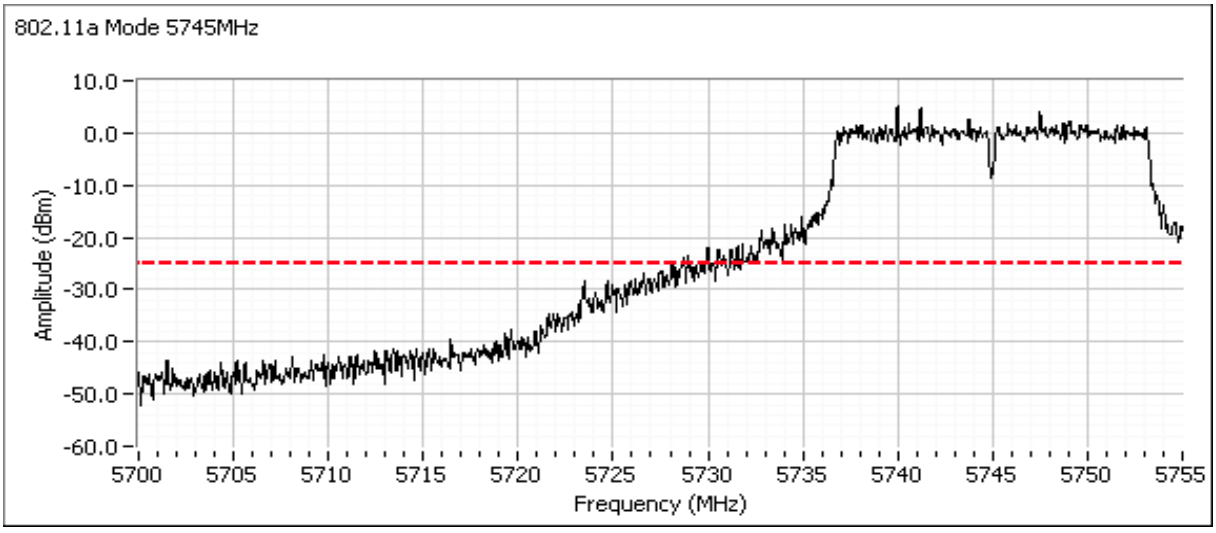
Mode	Frequency (MHz)	Limit	Result
802.11a	5745	-30dBc	Pass
	5785	-30dBc	Pass
	5825	-30dBc	Pass
802.11n20	5745	-30dBc	Pass
	5785	-30dBc	Pass
	5825	-30dBc	Pass
802.11n40	5755	-20dBc	Pass
	5795	-20dBc	Pass
802.11ac80	5775	-20dBc	Pass

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for low channel,802.11a

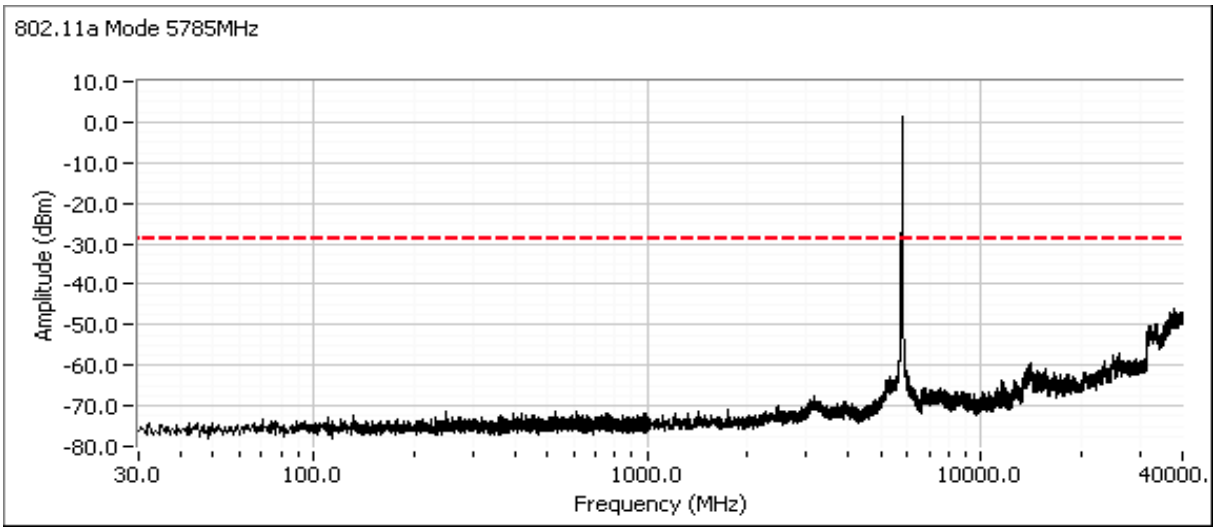


Additional plot from 5715 - 5755 MHz showing compliance with -30dBc at the band edge.

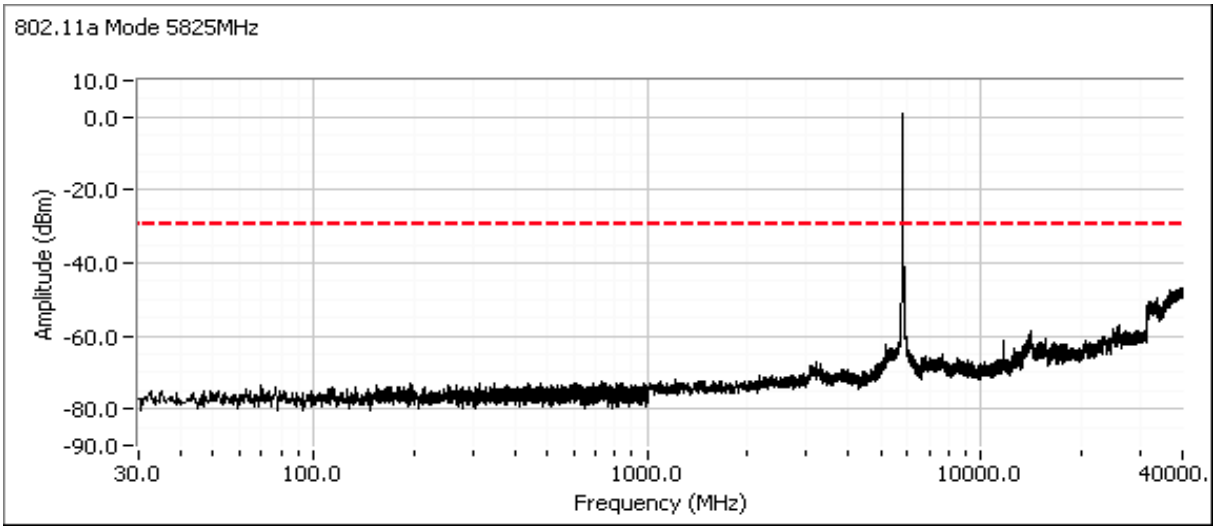


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for center channel, 802.11a

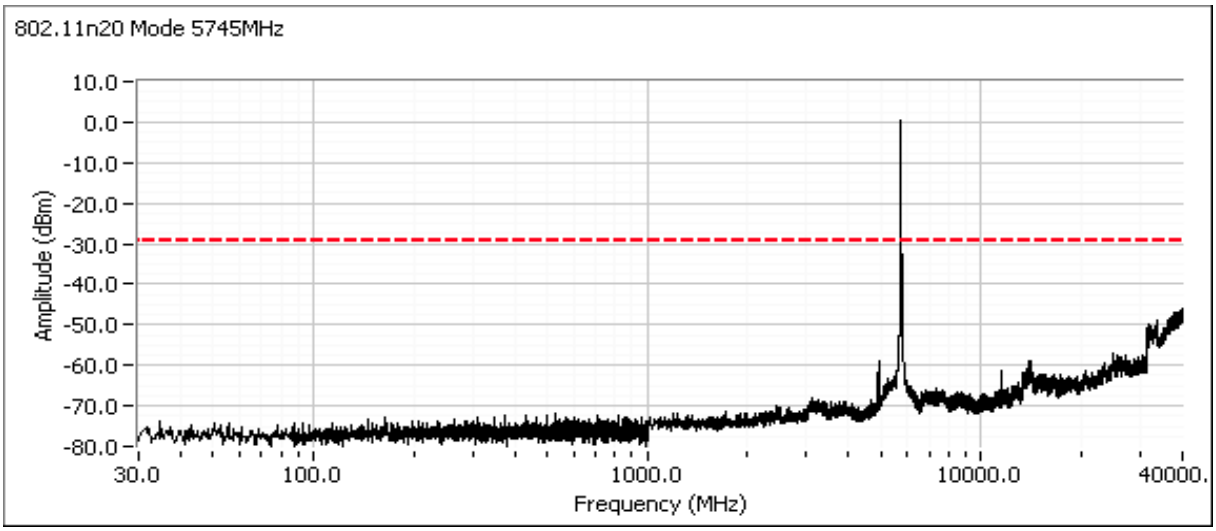


Plots for high channel, 802.11a

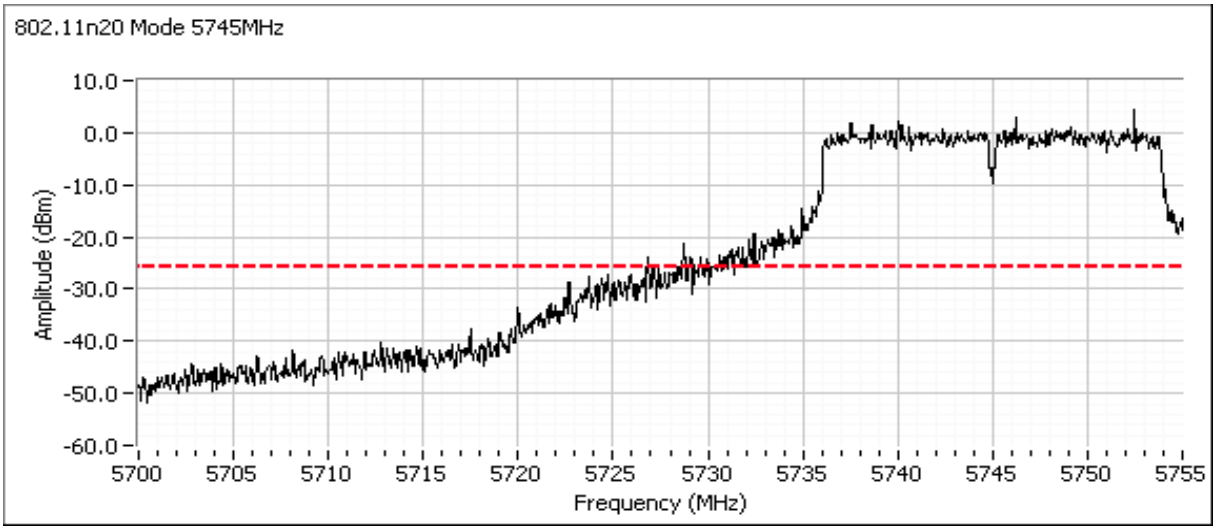


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for low channel,802.11n20

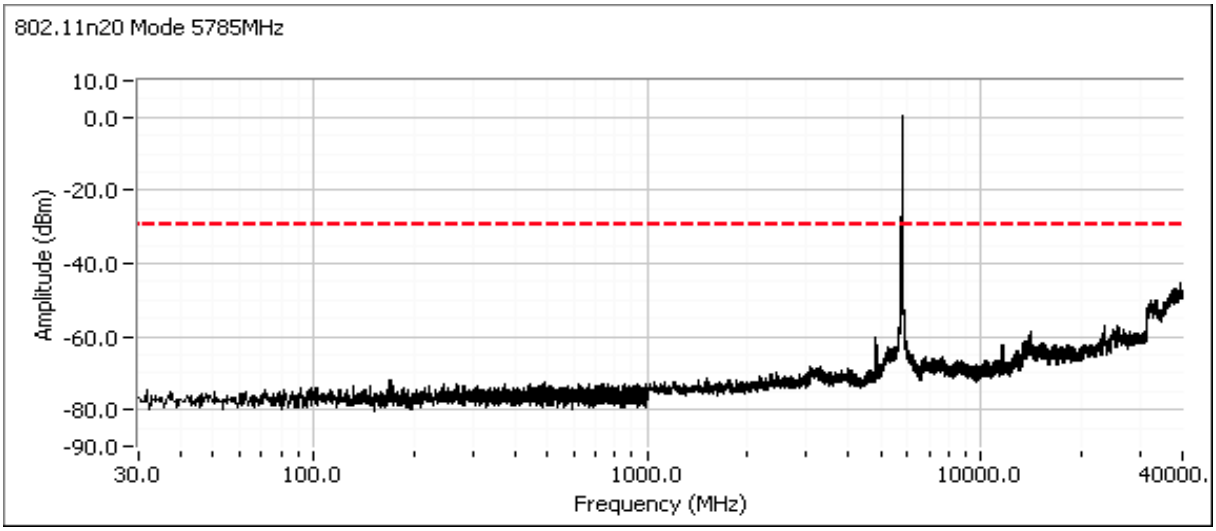


Additional plot from 5715 - 5755 MHz showing compliance with -30dBc at the band edge.

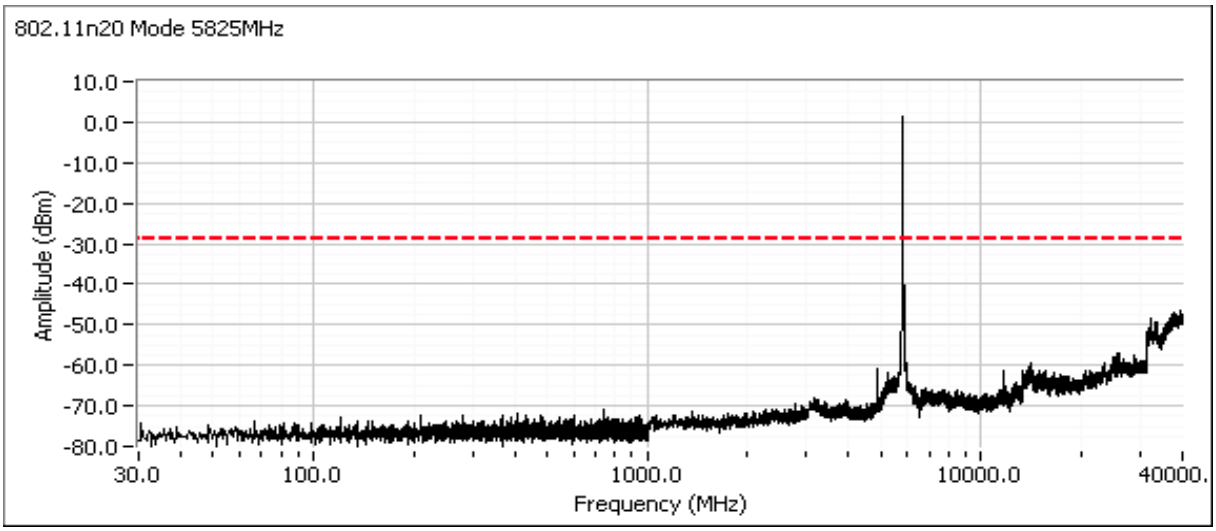


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for center channel, 802.11n20

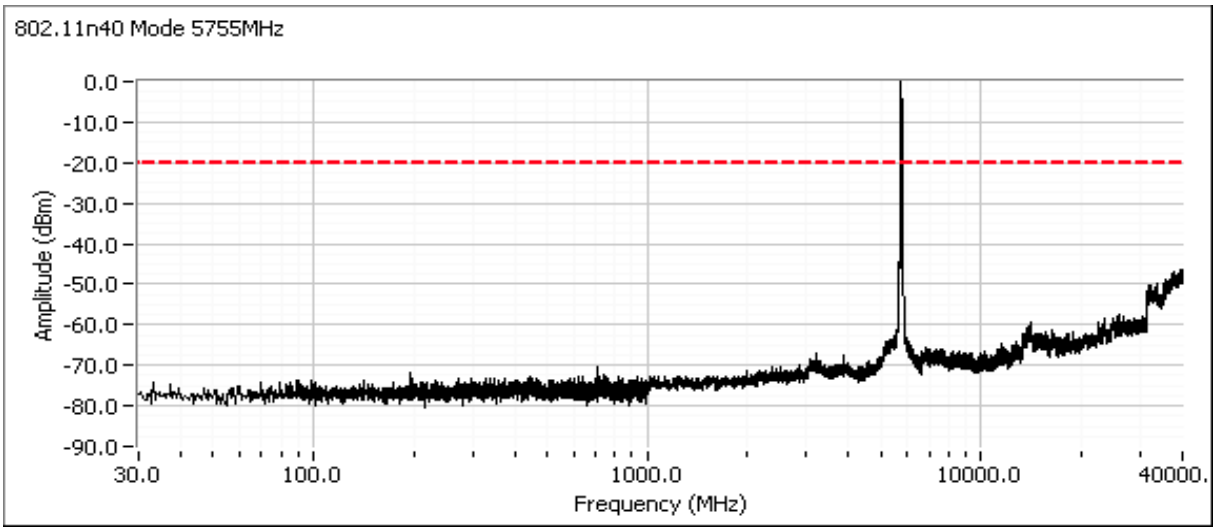


Plots for high channel, 802.11n20

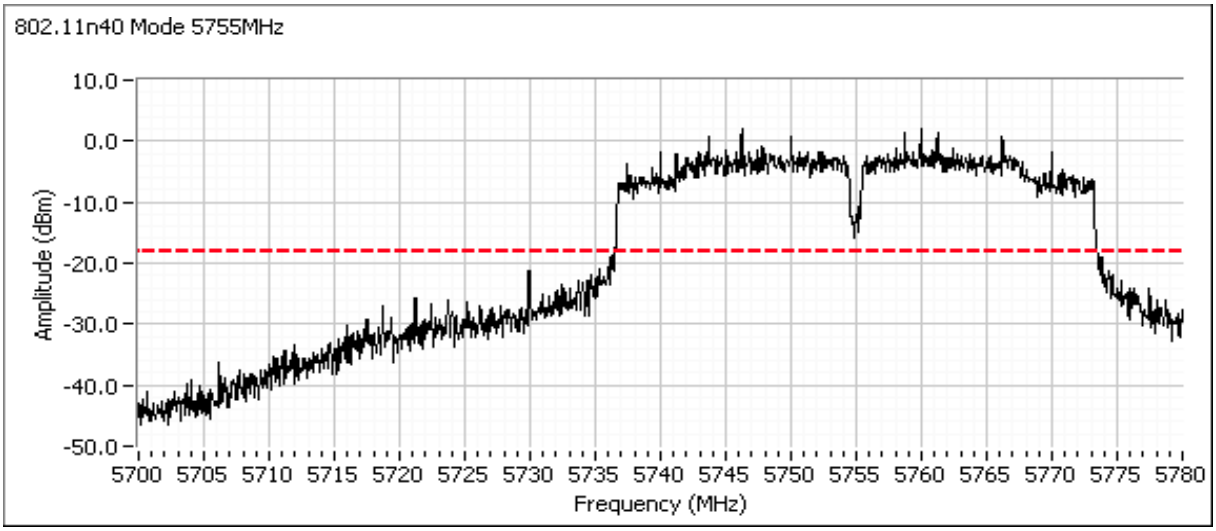


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for low channel,802.11n40

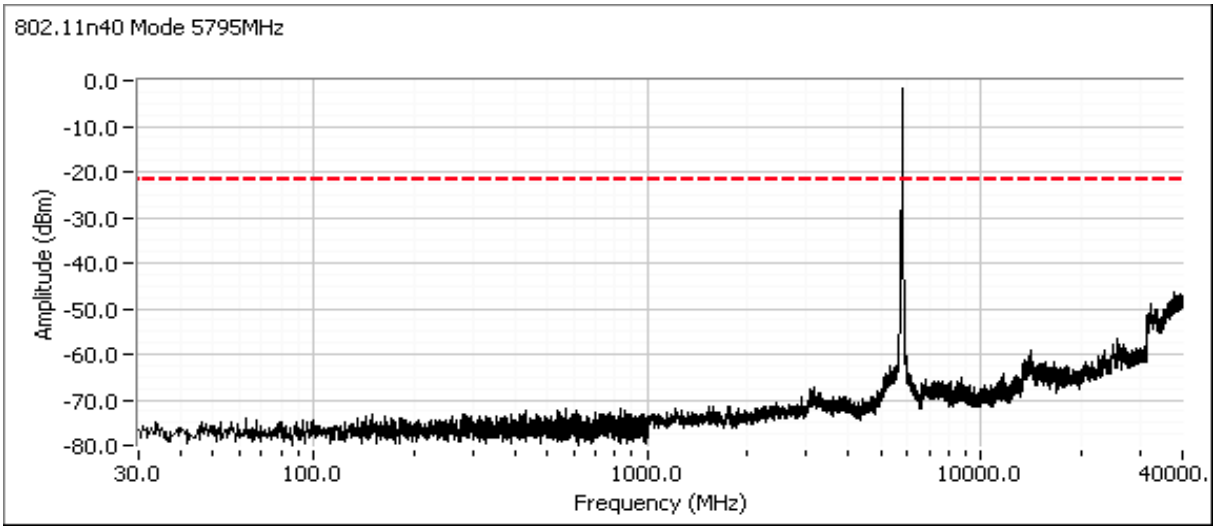


Additional plot from 5715 - 5755 MHz showing compliance with -20dBc at the band edge.



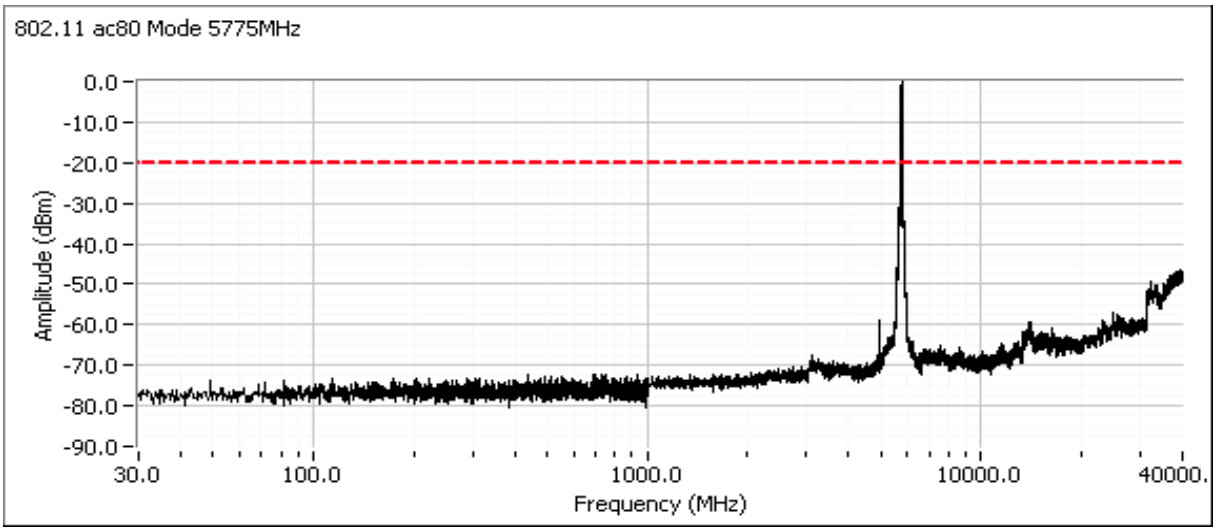
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for high channel, 802.11n40

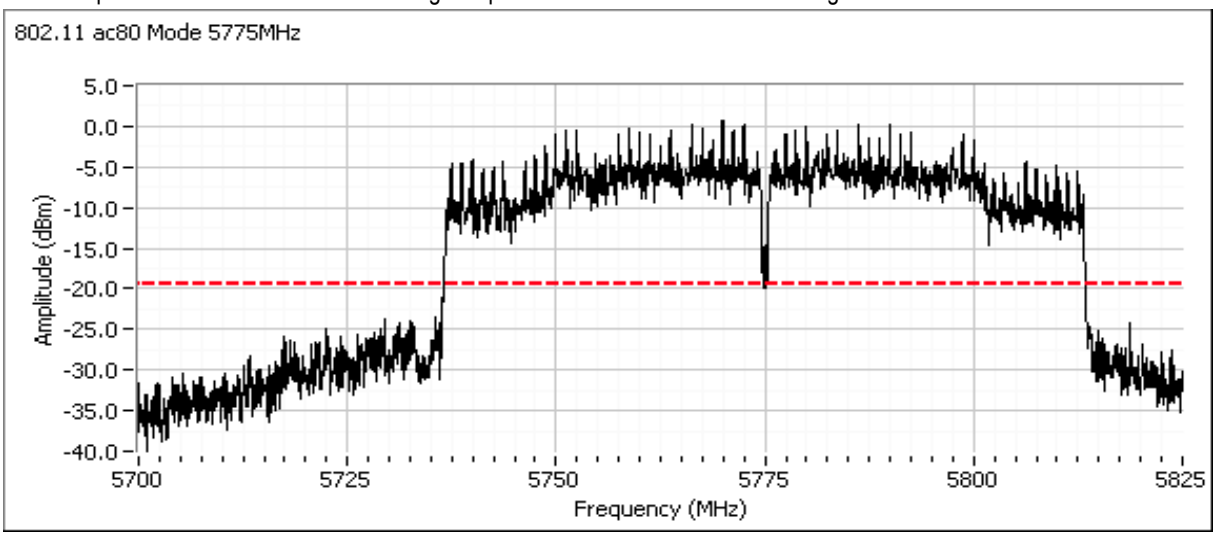


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plot for 802.11ac80



Additional plot from 5700 - 5825 MHz showing compliance with -20dBc at the band edge.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Ambient Conditions:

Rel. Humidity: 20.9 %

Temperature: 35 °C

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results

MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Scans on center channel in all four OFDM modes to determine the worst case.							
Run #1	802.11a Chain A	#157 5785 MHz	34.5	16.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	36.4 dBµV/m @ 2442.3 MHz (-17.6 dB)
	802.11n20 Chain A	#157 5785 MHz	34.5	16.5			43.0 dBµV/m @ 2446.2 MHz (-11.0 dB)
	802.11n40 Chain A	#159 5795 MHz	35.0	16.6			42.1 dBµV/m @ 2447.7 MHz (-11.9 dB)
	802.11ac80 Chain A	#155 5775 MHz	34.0	16.5			45.1 dBµV/m @ 2448.2 MHz (-8.9 dB)
Measurements on low and high channels in worst-case OFDM mode.							
Run #2	OFDM - 802.11 n20 Chain A	#149 5745 MHz	34.0	16.6	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	51.5 dBµV/m @ 1244.5 MHz (-22.5 dB)
		#165 5825 MHz	34.5	16.5			53.3 dBµV/m @ 1196.3 MHz (-20.7 dB)

Note - the target and measured power are average powers (measured with average power sensor) and are used for reference purposes only. Power is set using " GAIN CONTROL" mode in the DRTU tool. Set power to within +/-0.2dB of target.

Duty Cycle:

Mode	Duty Cycle	cor fact	Data rate
a	98.6%	0.13	6
n20	98.5%	0.13	HT0
n40	96.9%	0.27	HT0
ac 80	70.0%	3.10	VHT9

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1, Radiated Spurious Emissions, 1-40 GHz, OFDM, Chain A

Date of Test: 5/23/13, 5/28/13 Test Location: FT Chamber #4

Test Engineer: Rafael Varelas/ Jack Liu Config Change: None

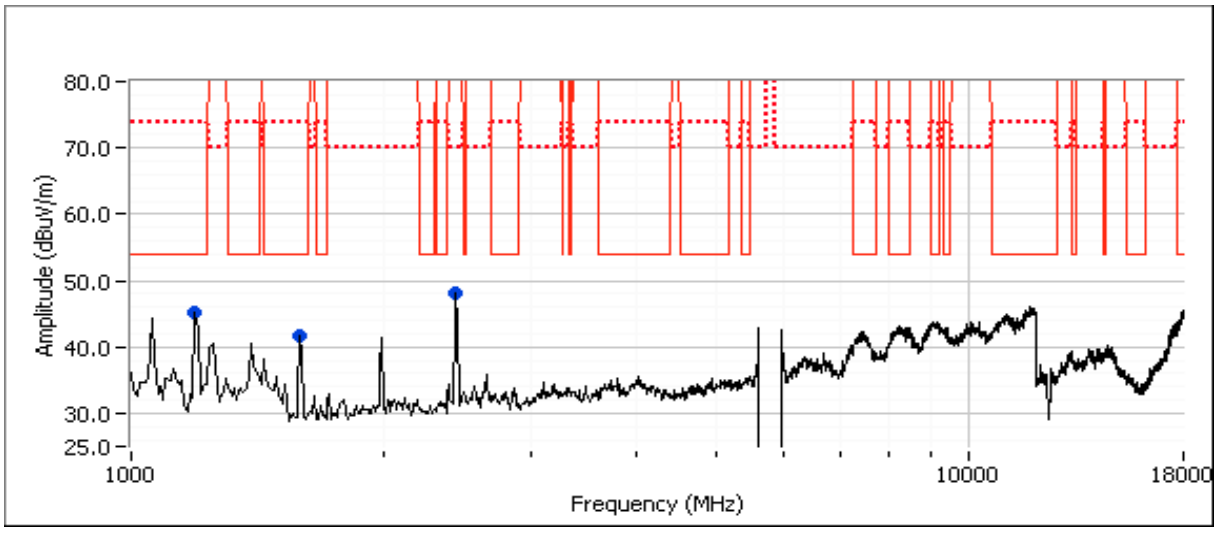
Run #1a, EUT on Channel #157 5785 MHz - 802.11a, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	34.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2442.260	36.4	H	54.0	-17.6	AVG	76	2.2	Note 3
2447.930	39.0	H	74.0	-35.0	PK	76	2.2	Note 3
1198.910	28.6	V	54.0	-25.4	AVG	286	1.0	RB 1 MHz;VB 10 Hz;Peak
1195.510	50.5	V	74.0	-23.5	PK	286	1.0	RB 1 MHz;VB 3 MHz;Peak
1597.760	27.1	V	54.0	-26.9	AVG	95	1.0	RB 1 MHz;VB 10 Hz;Peak
1599.060	46.2	V	74.0	-27.8	PK	95	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

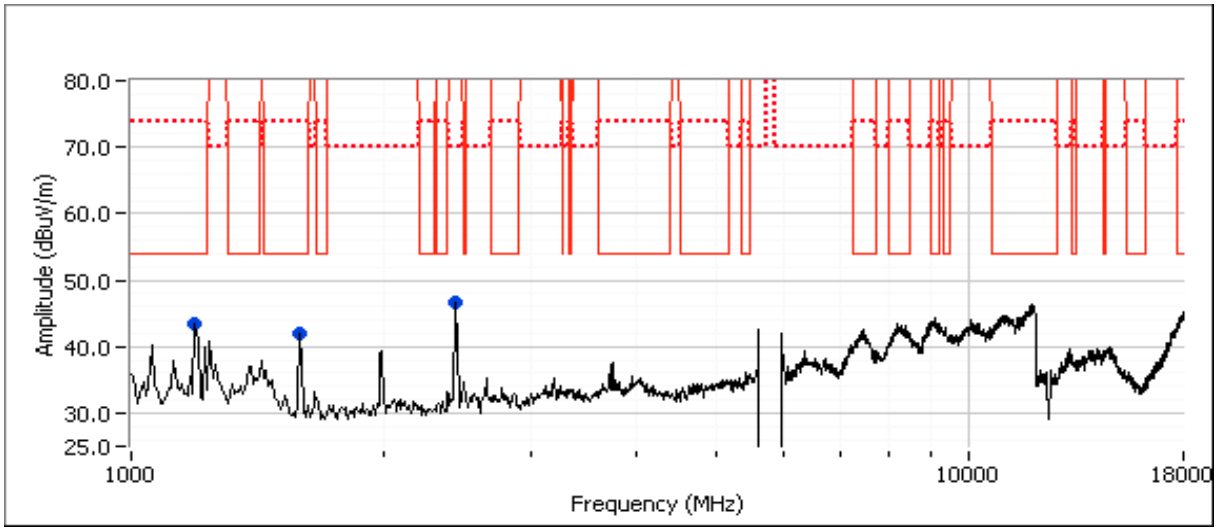
Run #1b: , EUT on Channel #157 5785 MHz - 802.11n20, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	34.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2446.200	43.0	V	54.0	-11.0	AVG	171	1.0	Note 3
2452.570	39.3	V	74.0	-34.7	PK	171	1.0	Note 3
1197.340	29.2	V	54.0	-24.8	AVG	293	1.6	RB 1 MHz;VB 10 Hz;Peak
1195.200	50.2	V	74.0	-23.8	PK	293	1.6	RB 1 MHz;VB 3 MHz;Peak
1593.720	27.8	V	54.0	-26.2	AVG	22	1.0	RB 1 MHz;VB 10 Hz;Peak
1593.050	51.0	V	74.0	-23.0	PK	22	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

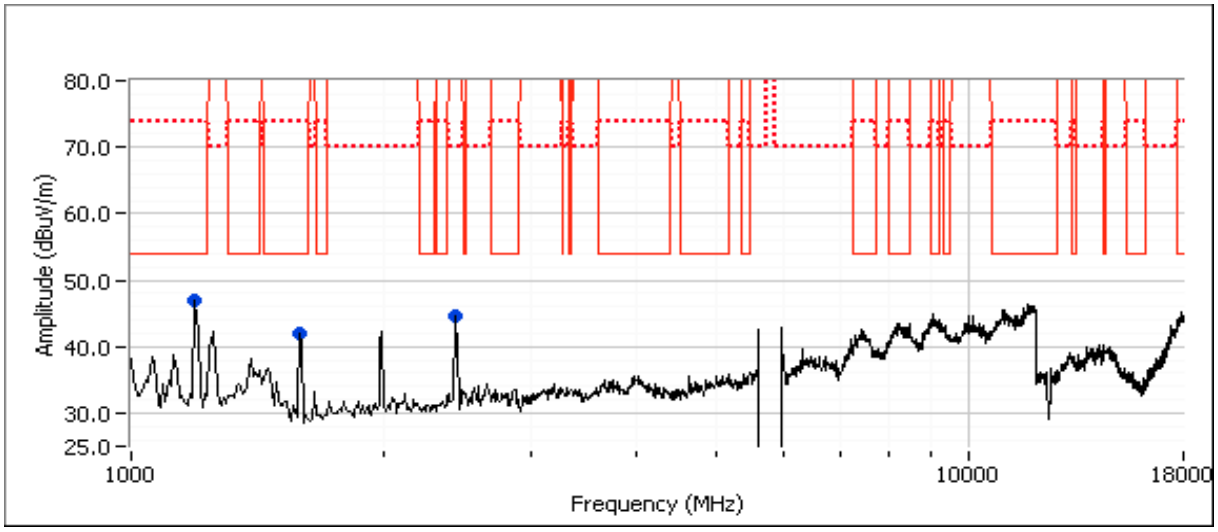
Run #1c: , EUT on Channel #159 802.11n40 Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	35.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2447.740	42.1	V	54.0	-11.9	AVG	21	1.0	Note 3
2449.040	43.9	V	74.0	-30.1	PK	21	1.0	Note 3
1593.570	27.6	V	54.0	-26.4	AVG	158	1.2	RB 1 MHz;VB 10 Hz;Peak
1593.170	44.9	V	74.0	-29.1	PK	158	1.2	RB 1 MHz;VB 3 MHz;Peak
1198.120	29.4	V	54.0	-24.6	AVG	354	1.1	RB 1 MHz;VB 10 Hz;Peak
1196.620	52.9	V	74.0	-21.1	PK	354	1.1	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

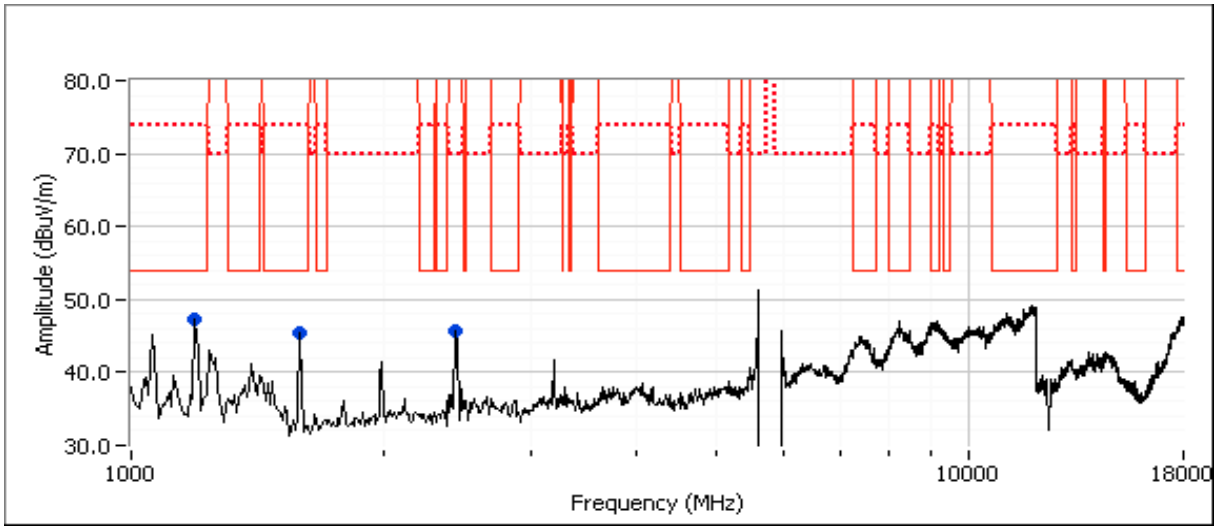
Run #1d: , EUT on Channel #155 802.11ac80 Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	34.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2448.240	45.1	H	54.0	-8.9	AVG	18	1.7	Note 3
2440.710	44.1	H	74.0	-29.9	PK	18	1.7	Note 3
1195.960	31.9	V	54.0	-22.1	AVG	44	1.4	RB 1 MHz;VB 10 Hz;Peak
1195.000	49.0	V	74.0	-25.0	PK	44	1.4	RB 1 MHz;VB 3 MHz;Peak
1595.270	32.3	V	54.0	-21.7	AVG	350	1.0	RB 1 MHz;VB 10 Hz;Peak
1599.430	56.0	V	74.0	-18.0	PK	350	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #2, Radiated Spurious Emissions, 1-25 GHz, Worst Case OFDM Mode, Chain A

Date of Test: 5/29/2013 Test Location: FT5

Test Engineer: Jack Liu Config Change: None

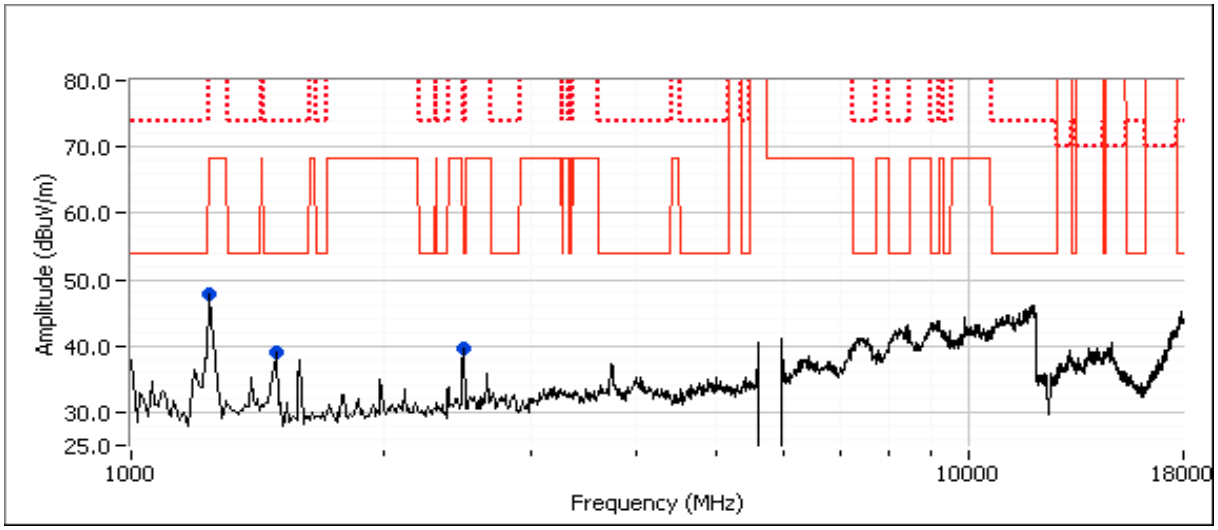
Run #2a, EUT on Channel #149 5745 MHz - OFDM, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	34.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1244.540	51.5	V	74.0	-22.5	PK	348	1.0	Note 3
1245.600	28.1	V	54.0	-25.9	AVG	348	1.0	Note 3
1472.270	28.4	V	54.0	-25.6	AVG	158	2.1	RB 1 MHz;VB 10 Hz;Peak
2496.270	28.3	H	54.0	-25.7	AVG	211	1.0	RB 1 MHz;VB 10 Hz;Peak
2496.670	46.4	H	74.0	-27.6	PK	211	1.0	RB 1 MHz;VB 3 MHz;Peak
1493.600	46.2	V	74.0	-27.8	PK	158	2.1	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

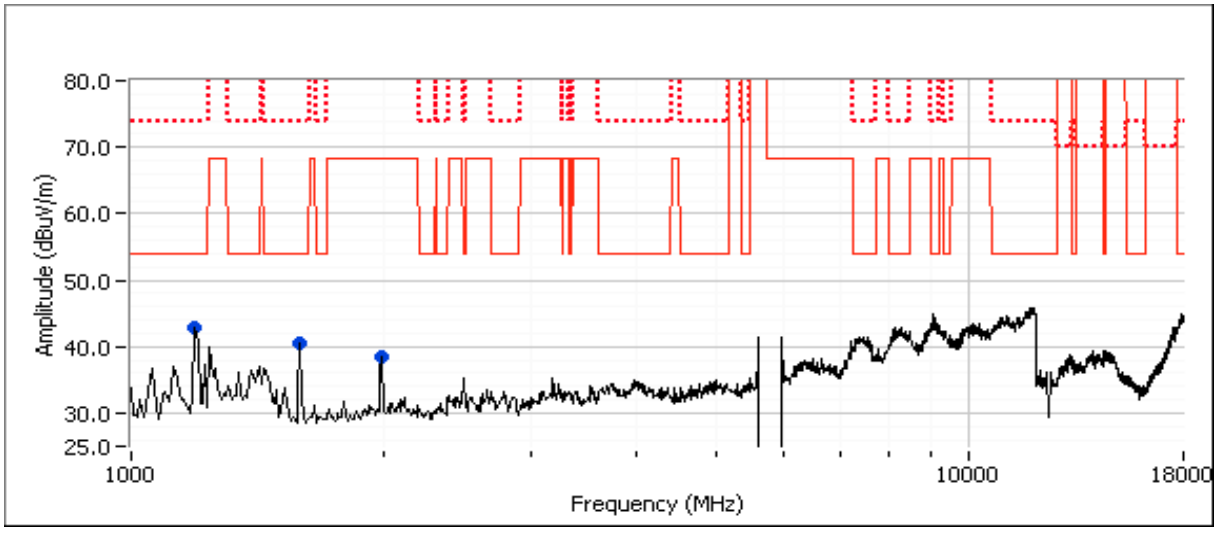
Run #2b: EUT on Channel #165 5825 MHz - OFDM, Chain A

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	34.5

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1196.340	53.3	V	74.0	-20.7	PK	199	1.5	RB 1 MHz;VB 3 MHz;Peak
1198.470	30.6	V	54.0	-23.4	AVG	199	1.5	RB 1 MHz;VB 10 Hz;Peak
1594.670	50.3	V	74.0	-23.7	PK	170	1.0	RB 1 MHz;VB 3 MHz;Peak
1593.540	27.7	V	54.0	-26.3	AVG	170	1.0	RB 1 MHz;VB 10 Hz;Peak
1999.270	51.0	V	74.0	-23.0	PK	48	1.0	Note 3
1998.140	28.0	V	54.0	-26.0	AVG	48	1.0	Note 3

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range
Note 3:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements - Bluetooth LE

Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/4/2013
Test Engineer: Rafael Varelas
Test Location: FT Lab 4B

Config. Used: 1
Config Change: None
Host Unit Voltage Host laptop

General Test Configuration

The EUT was connected to the spectrum analyzer or power meter via a suitable attenuator. All measurements were made on a single chain.

All measurements have been corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 20.5 °C
Rel. Humidity: 36 %

Summary of Results

BT MAC Address: 001500BD5C54 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
1	max	-	Output Power	15.247(b)	Pass	5.1 dBm
2	max	-	Power spectral Density (PSD)	15.247(d)	Pass	-10.9 dBm/ kHz
3	max	-	Minimum 6dB Bandwidth	15.247(a)	Pass	650 kHz
3	max	-	99% Bandwidth	RSS GEN	-	1.07 MHz
4	max	-	Spurious emissions	15.247(b)	Pass	All emissions below the limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1: Output Power

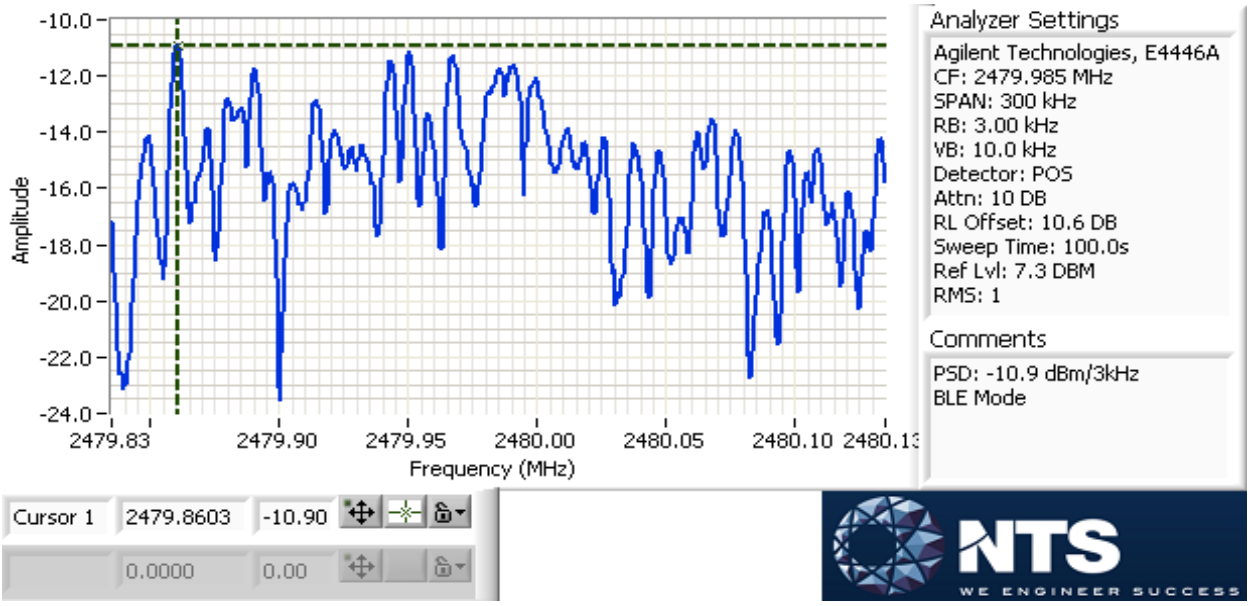
Power Setting[2]	Frequency (MHz)	Output Power (dBm) [1]	Output Power mW	Antenna Gain (dBi)	Result	EIRP Note 3 dBm	EIRP Note 3 W
8dBm	2402	3.6	2.3	3.2	Pass	6.8	0.005
8dBm	2440	4.5	2.8	3.2	Pass	7.7	0.006
8dBm	2480	5.1	3.2	3.2	Pass	8.3	0.007

Note 1:	Output power measured using a peak power meter, spurious limit is -20dBc.
Note 2:	Power setting - the software power setting used during testing, included for reference only.
Note 3:	Calculated from the sum of the power and antenna gain in dB. May not exceed the de-facto EIRP limit.

Run #2: Power spectral Density

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1	Limit dBm/3kHz	Result
8dBm	2401.968	-12.2	8.0	Pass
8dBm	2439.968	-11.6	8.0	Pass
8dBm	2479.861	-10.9	8.0	Pass

Note 1:	Power spectral density measured using RB=3 kHz, VB=10kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 1 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal.

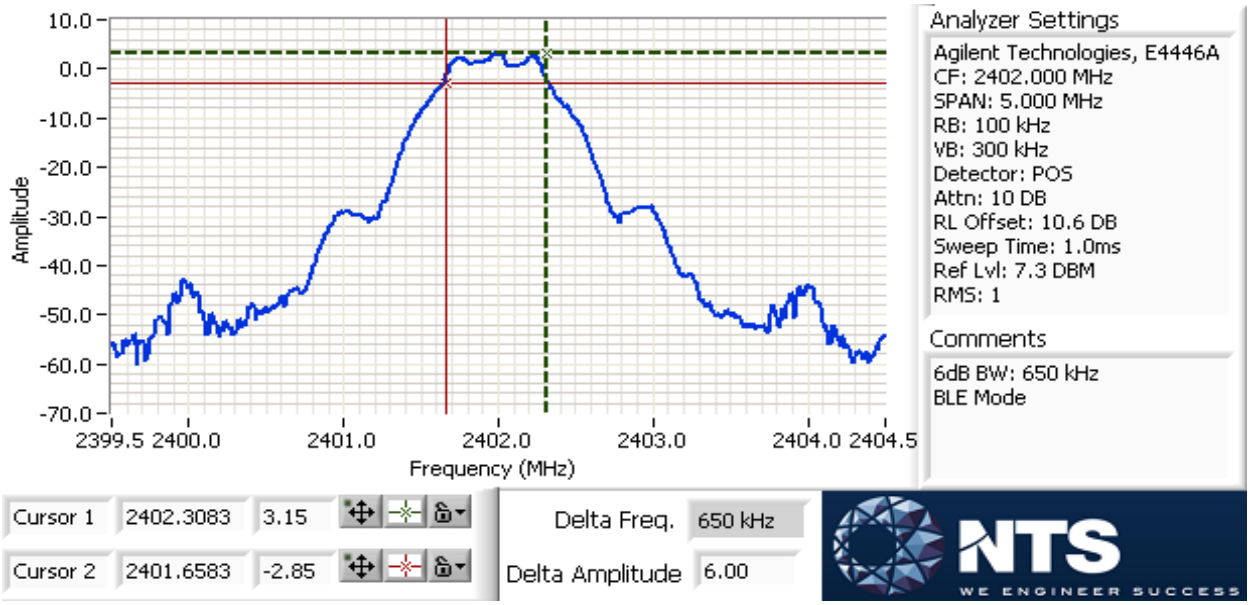


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

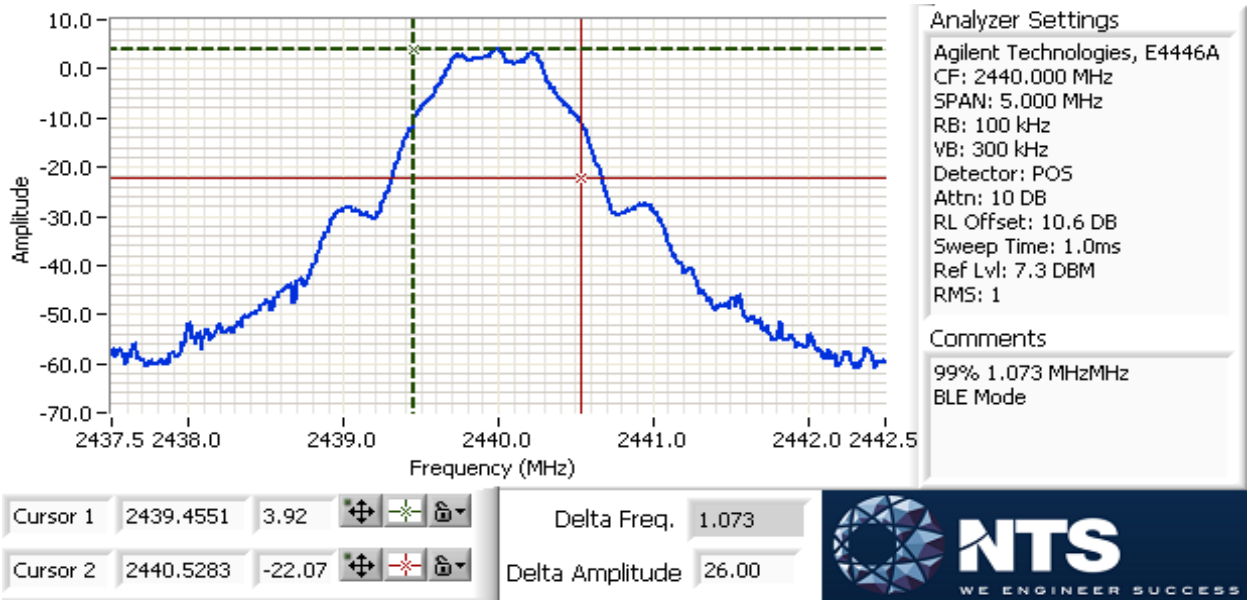
Run #3: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (kHz) 6dB	Resolution Bandwidth	Bandwidth (MHz) 99%
8dBm	2402	100 kHz	650	100 kHz	1.065
8dBm	2440	100 kHz	658	100 kHz	1.073
8dBm	2480	100 kHz	667	100 kHz	1.073

Note 1:	6dB bandwidth measured in accordance with KDB 558074, with RB = 100kHz and VB ≥ 3 x RB. See sample plot below.
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB ≥ 3 x RB. See sample plot below.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

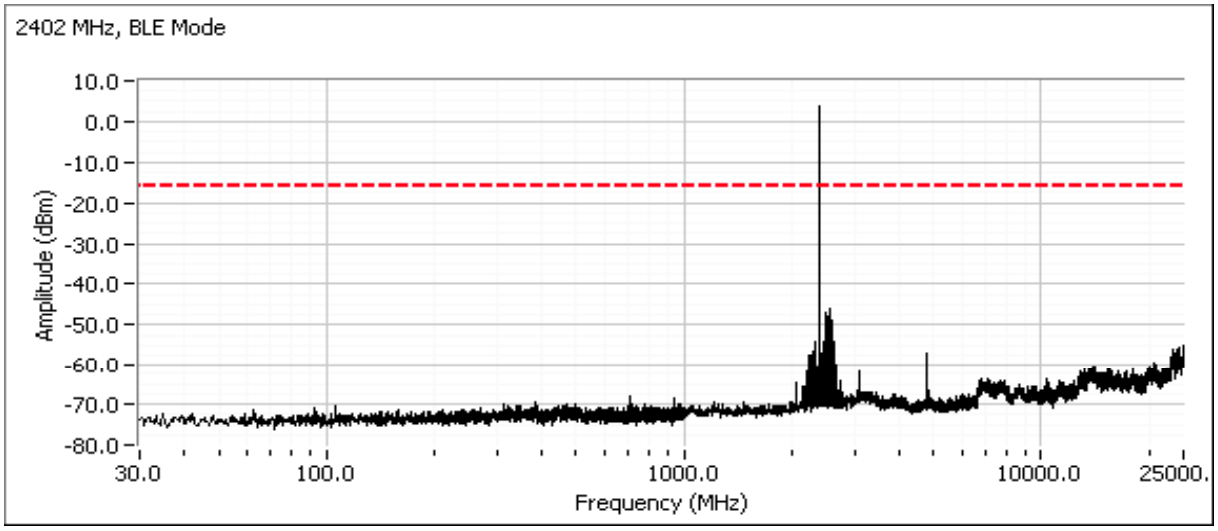


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

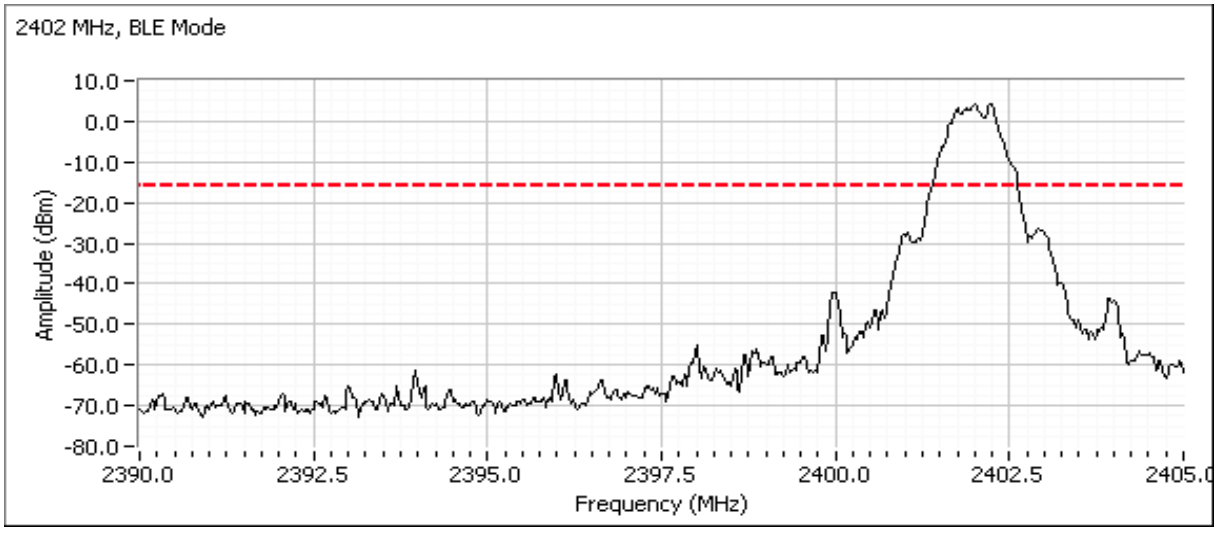
Run #4: Out of Band Spurious Emissions

Frequency (MHz)	Limit	Result
2402	-20dBc	Pass
2440	-20dBc	Pass
2480	-20dBc	Pass

Plots for low channel, power setting(s) = max

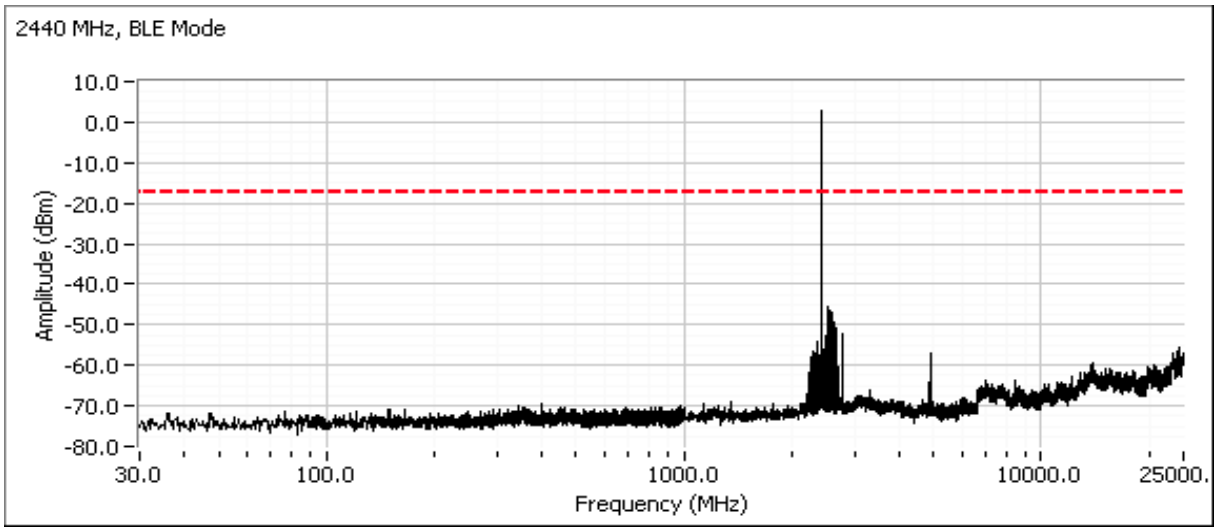


Additional plot showing compliance with -20dBc limit from 2390 MHz to 2400 MHz. Radiated measurements used to show compliance with the limits in the restricted band below 2390 MHz.

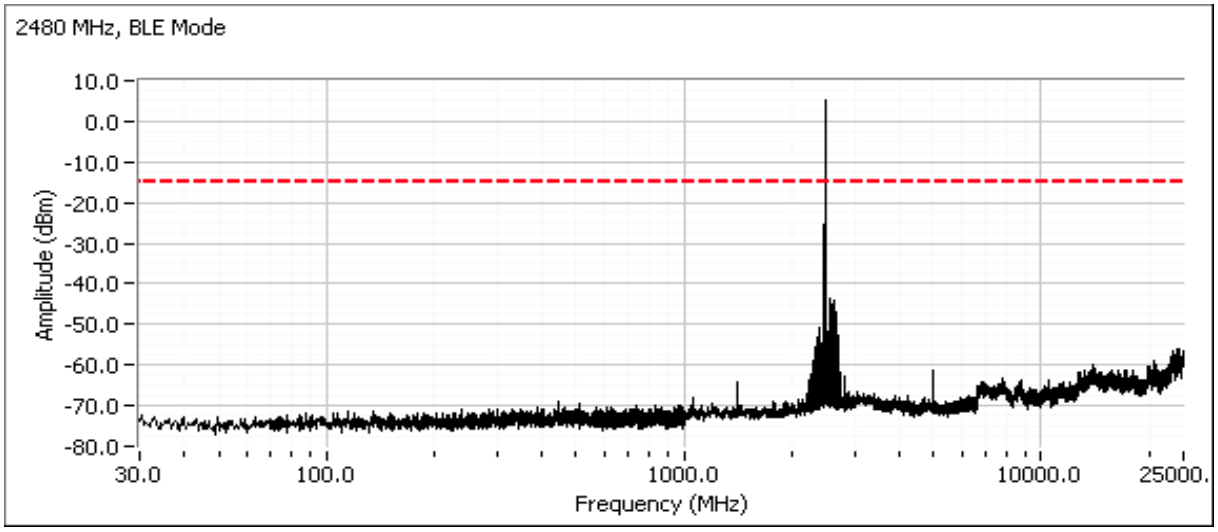


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Plots for center channel, power setting(s) = max



Plots for high channel, power setting(s) = max



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (FHSS) Radiated Spurious Emissions (BLE)

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Ambient Conditions:

Temperature: 21.4 °C

Rel. Humidity: 36 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Target power for Bluetooth is max power without exceeding 8 dBm

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49							
1a	BLE	2402	Max	-	Restricted Band Edge (2390 MHz)	FCC Part 15.209 / 15.247(c)	42.4 dBµV/m @ 2322.0 MHz (-11.6 dB)
			Max	-	Radiated Emissions, 1 -25 GHz	FCC Part 15.209 / 15.247(c)	42.8 dBµV/m @ 4803.9 MHz (-11.2 dB)
1b		2440	Max	-	Radiated Emissions, 1 - 25 GHz	FCC Part 15.209 / 15.247(c)	44.5 dBµV/m @ 4879.9 MHz (-9.5 dB)
1c		2480	Max	-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	36.6 dBµV/m @ 2485.0 MHz (-17.4 dB)
			Max	-	Radiated Emissions, 1 -25 GHz	FCC Part 15.209 / 15.247(c)	45.8 dBµV/m @ 4959.9 MHz (-8.2 dB)

Tx Duty Cycle	Period	Tx off	Duty Cycle Factor
65%	0.62	0.22	3.8 dB

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 25,000 MHz. Operating Mode:Basic rate, 1Mb/s

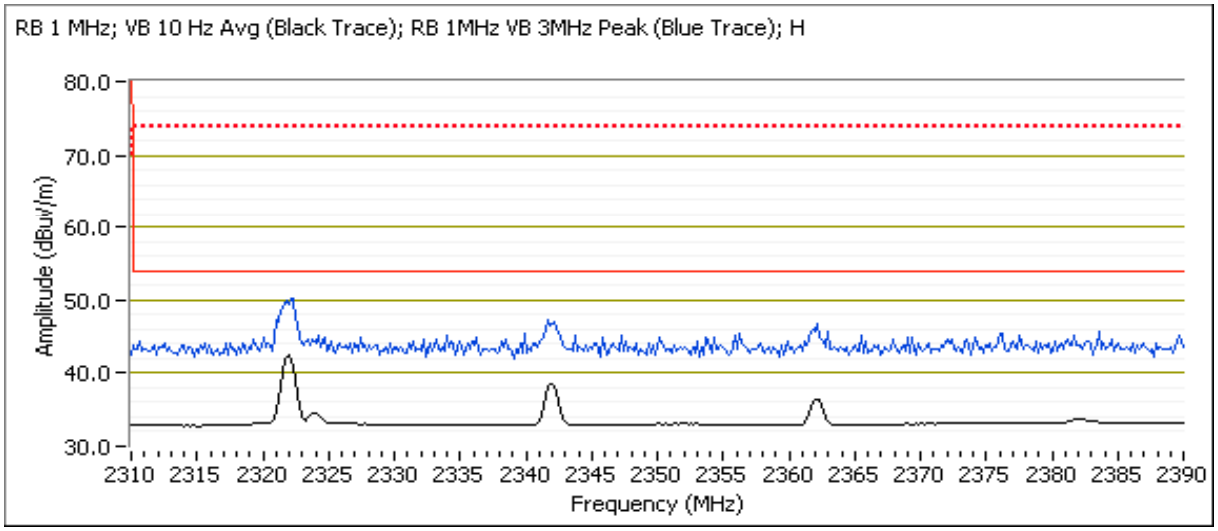
Date of Test: 5/30/2013 Test Location: FT chamber# 4

Test Engineer: Jack Liu / R. Varelas

Run #1a: Low Channel @ 2402 MHz

Band Edge Signal Field Strength - Direct measurement of field strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2322.020	42.4	H	54.0	-11.6	AVG	130	1.8	POS; RB 1 MHz; VB: 10 Hz
2322.180	49.7	H	74.0	-24.3	PK	130	1.8	POS; RB 1 MHz; VB: 3 MHz
2322.020	39.5	V	54.0	-14.5	AVG	169	1.0	POS; RB 1 MHz; VB: 10 Hz
2322.020	46.4	V	74.0	-27.6	PK	169	1.0	POS; RB 1 MHz; VB: 3 MHz

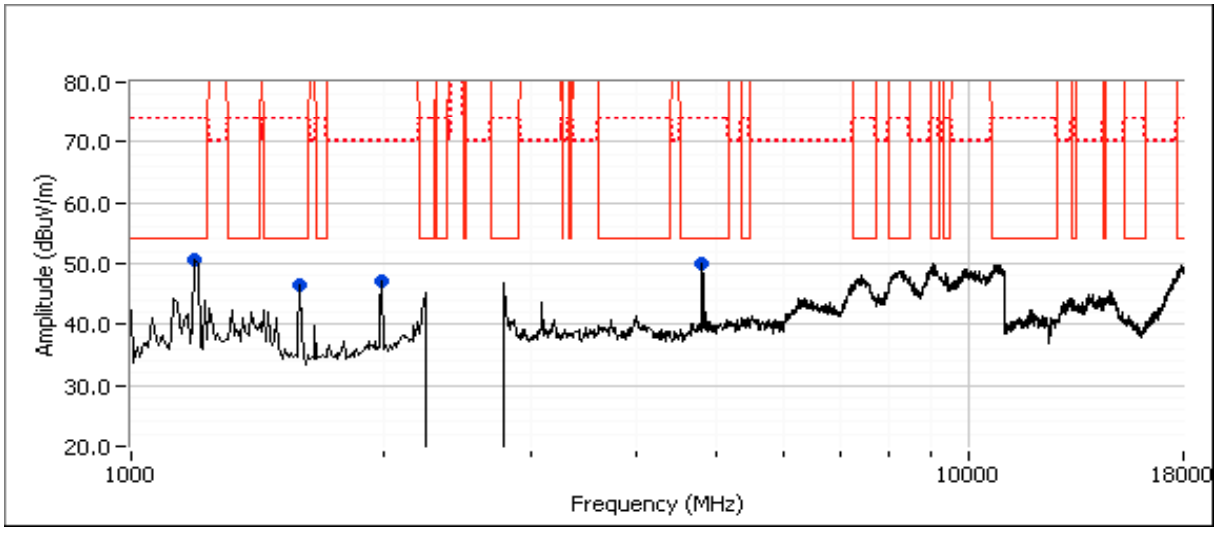


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4803.920	42.8	V	54.0	-11.2	AVG	116	1.6	RB 1 MHz;VB 10 Hz;Peak
4803.770	51.4	V	74.0	-22.6	PK	116	1.6	RB 1 MHz;VB 3 MHz;Peak
1195.400	36.5	V	54.0	-17.5	AVG	56	1.0	RB 1 MHz;VB 10 Hz;Peak
1195.470	59.4	V	74.0	-14.6	PK	56	1.0	RB 1 MHz;VB 3 MHz;Peak
1991.800	32.8	V	54.0	-21.2	AVG	57	1.0	Note 2
1995.470	56.1	V	74.0	-17.9	PK	57	1.0	Note 2
1595.740	34.9	V	54.0	-19.1	AVG	198	1.0	RB 1 MHz;VB 10 Hz;Peak
1598.400	56.4	V	74.0	-17.6	PK	198	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used.
Note 2:	Emissions not in restricted bands are measured as antenna conducted and compared to the out of band power limit.

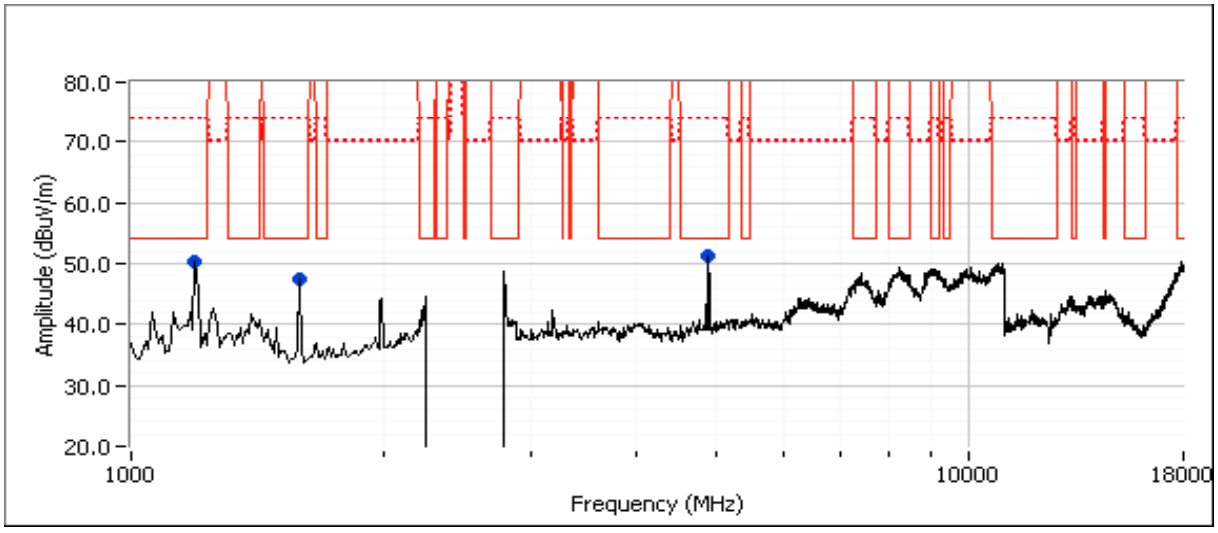


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1b: Center Channel @ 2440 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4879.930	44.5	V	54.0	-9.5	AVG	107	1.9	RB 1 MHz;VB 10 Hz;Peak
4879.630	53.1	V	74.0	-20.9	PK	107	1.9	RB 1 MHz;VB 3 MHz;Peak
1594.070	33.6	V	54.0	-20.4	AVG	185	1.0	RB 1 MHz;VB 10 Hz;Peak
1596.600	55.6	V	74.0	-18.4	PK	185	1.0	RB 1 MHz;VB 3 MHz;Peak
1195.000	37.0	V	54.0	-17.0	AVG	52	1.2	RB 1 MHz;VB 10 Hz;Peak
1198.670	59.5	V	74.0	-14.5	PK	52	1.2	RB 1 MHz;VB 3 MHz;Peak

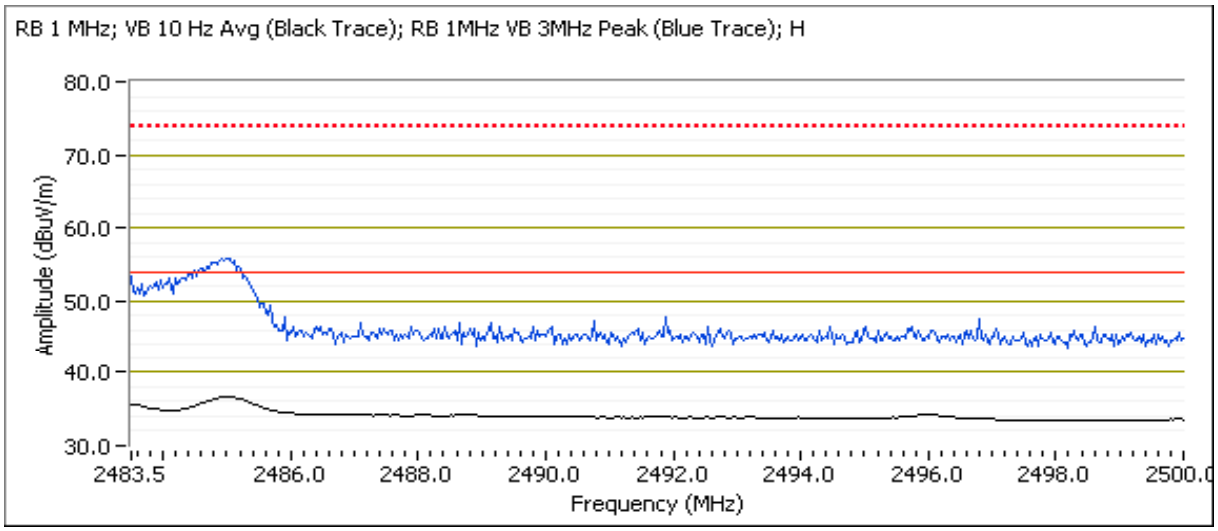
Note 1:	For emissions in restricted bands, the limit of 15.209 was used.
Note 2:	Emissions not in restricted bands are measured as antenna conducted and compared to the out of band power limit.
Note 3:	Scans made between 18 - 25 GHz with the measurement antenna moved around the card and its antennas 20-50 cm from the device indicated there were no signifcant emissions in this frequency range.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #1c: High Channel @ 2480 MHz
Band Edge Signal Field Strength - Direct measurement of field strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.020	36.6	H	54.0	-17.4	AVG	62	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.790	54.7	H	74.0	-19.3	PK	62	1.0	POS; RB 1 MHz; VB: 3 MHz
2485.050	36.6	V	54.0	-17.4	AVG	79	1.0	POS; RB 1 MHz; VB: 10 Hz
2485.190	54.2	V	74.0	-19.8	PK	79	1.0	POS; RB 1 MHz; VB: 3 MHz

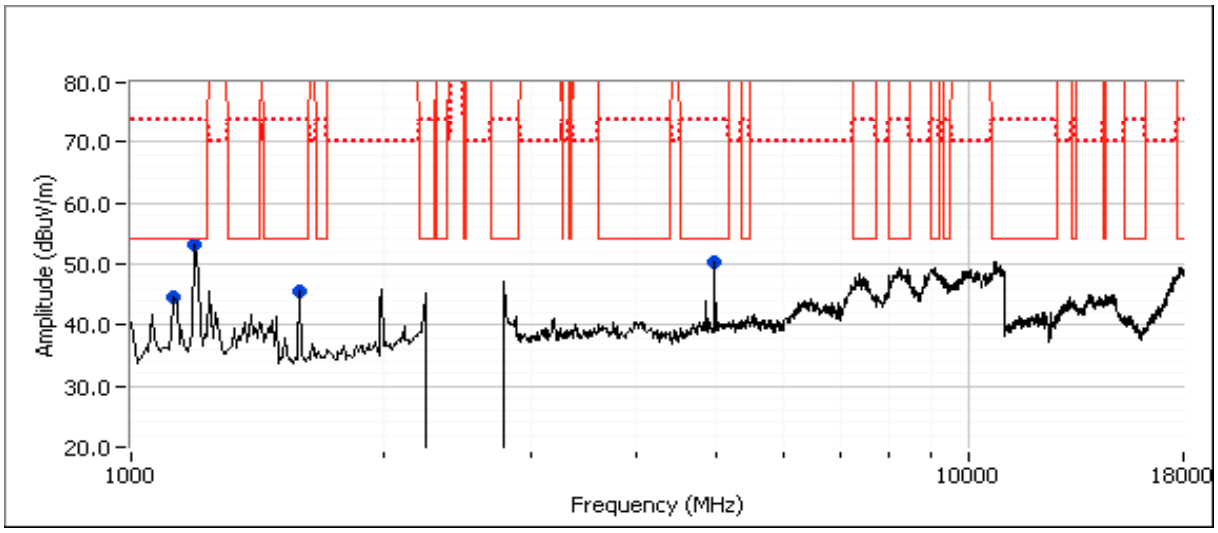


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4959.900	45.8	V	54.0	-8.2	AVG	150	1.6	RB 1 MHz;VB 10 Hz;Peak
4960.250	53.9	V	74.0	-20.1	PK	150	1.6	RB 1 MHz;VB 3 MHz;Peak
1593.400	33.0	V	54.0	-21.0	AVG	67	1.5	RB 1 MHz;VB 10 Hz;Peak
1596.940	56.4	V	74.0	-17.6	PK	67	1.5	RB 1 MHz;VB 3 MHz;Peak
1198.740	37.5	V	54.0	-16.5	AVG	203	1.3	RB 1 MHz;VB 10 Hz;Peak
1195.070	61.7	V	74.0	-12.3	PK	203	1.3	RB 1 MHz;VB 3 MHz;Peak
1129.730	38.6	H	54.0	-15.4	AVG	307	1.2	RB 1 MHz;VB 10 Hz;Peak
1129.130	51.9	H	74.0	-22.1	PK	307	1.2	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used.
Note 2:	Emissions not in restricted bands are measured as antenna conducted and compared to the out of band power limit.



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 21.4 °C

Rel. Humidity: 36 %

Summary of Results

For Wi-Fi, Chain A is used for Tx and Rx. For Bluetooth, chain B is used for Tx and Rx.

BT MAC Address: 001500BD5C22 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	BT Basic 802.11b	2402MHz 2412MHz	8 dBm 20.5	- 16.5	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	52.9 dBµV/m @ 4823.9 MHz (-1.1 dB)
2	BT Basic 802.11b	2480MHz 2462MHz	8 dBm 21	- 16.5		FCC Part 15.209 / 15.247(c)	50.3 dBµV/m @ 2499.9 MHz (-3.7 dB)
3	BT Basic 802.11g	2402MHz 2412MHz	8 dBm 22.5	- 16.6		FCC Part 15.209 / 15.247(c)	49.1 dBµV/m @ 4804.0 MHz (-4.9 dB)
4	BT Basic 802.11g	2480MHz 2462MHz	8 dBm 22.5	- 16.4		FCC Part 15.209 / 15.247(c)	44.7 dBµV/m @ 4960.0 MHz (-9.3 dB)
Wi-Fi mode for the following runs based on the worst case mode from runs 1 through 4							
5	BT Basic 802.11b	2402MHz 2437MHz	8 dBm 20.5	- 16.4	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	47.8 dBµV/m @ 4874.0 MHz (-6.2 dB)
6	BT Basic 802.11b	2441MHz 2412MHz	8 dBm 20.0	- 16.3		FCC Part 15.209 / 15.247(c)	52.6 dBµV/m @ 2383.0 MHz (-1.4 dB)
7	BT Basic 802.11b	2441MHz 2462MHz	8 dBm 21	- 16.5		FCC Part 15.209 / 15.247(c)	46.5 dBµV/m @ 4924.0 MHz (-7.5 dB)
8	BT Basic 802.11b	2480MHz 2437MHz	8 dBm 20.5	- 16.4		FCC Part 15.209 / 15.247(c)	51.0 dBµV/m @ 4959.9 MHz (-3.0 dB)

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Wi-Fi mode and channel and Bluetooth channel for the following run based on the worst case mode from runs 1 through 8							
9	BT EDR 802.11b	2402MHz 2437MHz	8 dBm 20.5	- 16.4	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	44.6 dBµV/m @ 4874.0 MHz (-9.4 dB)
10	BT EDR 802.11b	2441MHz 2412MHz	8dBm 20.5	- 16.5	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	48.7 dBµV/m @ 4824.0 MHz (-5.3 dB)
Bluetooth mode based on worst case mode from runs 1 through 10 combined with 802.11n20 mode at center channel in each 5 GHz band							
11	BT Basic 802.11n20	2402MHz 5200MHz	8 dBm 29.5	- 16.6	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	50.5 dBµV/m @ 2790.9 MHz (-3.5 dB)
12	BT Basic 802.11n20	2441MHz 5200MHz	8dBm 29.5	- 16.6	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	49.7 dBµV/m @ 2751.8 MHz (-4.3 dB)
13	BT Basic 802.11n20	2480MHz 5200MHz	8dBm 29.5	- 16.6	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	50.7 dBµV/m @ 4960.1 MHz (-3.3 dB)
Bluetooth mode based on worst case mode from runs 11 and 13 combined with 802.11n20 mode at center channel in each 5 GHz band							
14	BT Basic 802.11n20	2402MHz 5300MHz	8 dBm 28.5	- 16.5	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	53.8 dBµV/m @ 2512.9 MHz (-14.5 dB)
15	BT Basic 802.11n20	2402MHz 5580MHz	8 dBm 33	- 16.5	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	54.9 dBµV/m @ 2522.0 MHz (-13.4 dB)
16	BT Basic 802.11n20	2402MHz 5785MHz	8 dBm 34.5	- 16.5	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	45.2 dBµV/m @ 2522.0 MHz (-8.8 dB)
17	BT Basic 802.11n20	2480MHz 5300MHz	8 dBm 28.5	- 16.5	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	50.8 dBµV/m @ 4960.0 MHz (-3.2 dB)
18	BT Basic 802.11n20	2480MHz 5580MHz	8 dBm 33.0	- 16.5	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	50.5 dBµV/m @ 4960.0 MHz (-3.5 dB)
19	BT Basic 802.11n20	2480MHz 5785MHz	8 dBm 34.5	- 16.5	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	50.5 dBµV/m @ 4960.1 MHz (-3.5 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Test Notes

Scans in the near field performed without the external preamplifier and band reject filter

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

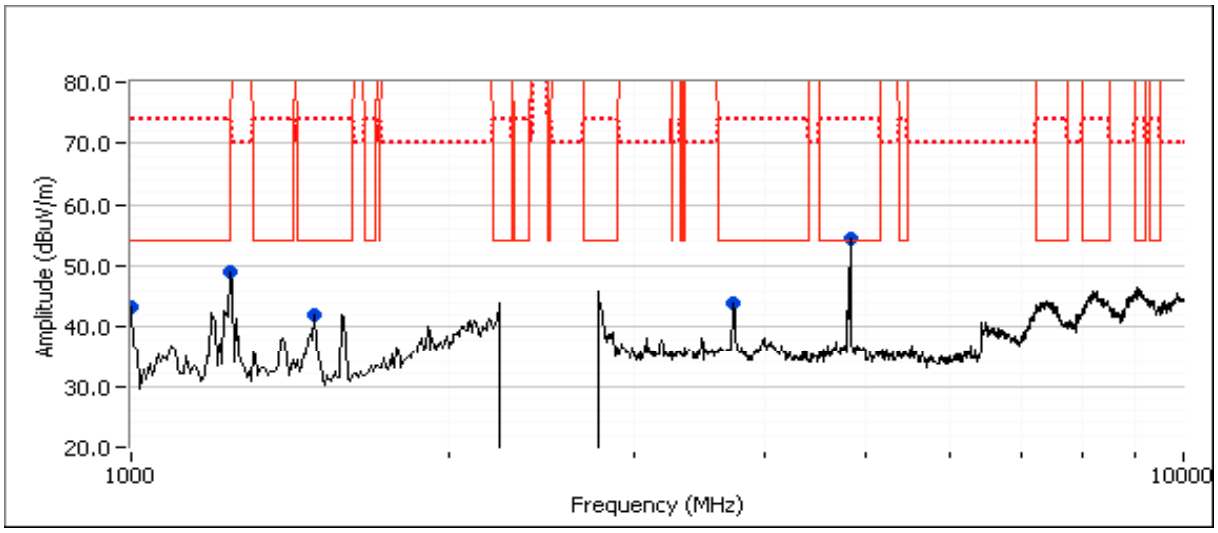
Run #1: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2412, BT Basic @ 2402 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	20.5
Chain B	8.0	-	8dBm



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1240.000	49.1	V	54.0	-4.9	Peak	112	1.0	
1493.330	42.0	V	54.0	-12.0	Peak	205	1.6	
3740.000	43.8	V	54.0	-10.2	Peak	185	1.3	
4820.000	54.6	H	54.0	0.6	Peak	155	1.3	
1000.000	43.3	V	54.0	-10.7	Peak	205	1.0	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4823.930	52.9	H	54.0	-1.1	AVG	155	1.3	RB 1 MHz;VB 10 Hz;Peak
4824.000	55.8	H	74.0	-18.2	PK	155	1.3	RB 1 MHz;VB 3 MHz;Peak
1245.670	31.7	V	100.0	-68.3	AVG	112	1.0	RB 1 MHz;VB 10 Hz;Peak
1249.400	56.9	V	70.0	-13.1	PK	112	1.0	RB 1 MHz;VB 3 MHz;Peak
1487.660	29.1	V	54.0	-24.9	AVG	206	1.5	RB 1 MHz;VB 10 Hz;Peak
1483.460	54.2	V	74.0	-19.8	PK	206	1.5	RB 1 MHz;VB 3 MHz;Peak
3747.870	32.5	V	54.0	-21.5	AVG	188	1.3	RB 1 MHz;VB 10 Hz;Peak
3747.600	58.1	V	74.0	-15.9	PK	188	1.3	RB 1 MHz;VB 3 MHz;Peak
1011.550	25.0	V	54.0	-29.0	AVG	295	1.5	RB 1 MHz;VB 10 Hz;Peak
1010.950	40.5	V	74.0	-33.5	PK	295	1.5	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

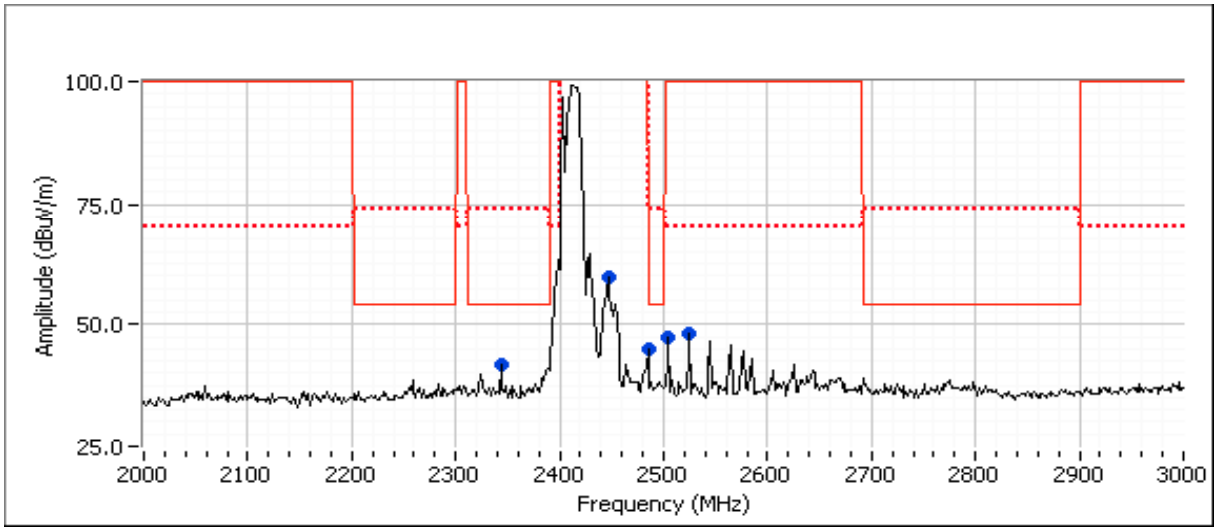
Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2343.330	41.6	H	54.0	-12.4	Peak	180	1.0	
2446.670	59.7	H	120.0	-60.3	Peak	180	1.0	
2485.000	44.9	H	54.0	-9.1	Peak	180	1.0	
2505.000	47.2	H	70.0	-22.8	Peak	180	1.0	
2525.000	48.2	H	70.0	-21.8	Peak	180	1.0	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2342.050	42.5	H	54.0	-11.5	AVG	292	1.0	POS; RB 1 MHz; VB: 10 Hz
2344.490	53.7	H	74.0	-20.3	PK	292	1.0	POS; RB 1 MHz; VB: 3 MHz
2484.220	41.9	H	54.0	-12.1	AVG	75	1.0	POS; RB 1 MHz; VB: 10 Hz
2486.260	53.5	H	74.0	-20.5	PK	75	1.0	POS; RB 1 MHz; VB: 3 MHz
2484.150	41.9	V	54.0	-12.1	AVG	83	1.0	POS; RB 1 MHz; VB: 10 Hz
2487.940	54.4	V	74.0	-19.6	PK	83	1.0	POS; RB 1 MHz; VB: 3 MHz
2338.410	42.6	V	54.0	-11.4	AVG	359	1.0	POS; RB 1 MHz; VB: 10 Hz
2343.080	54.3	V	74.0	-19.7	PK	359	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

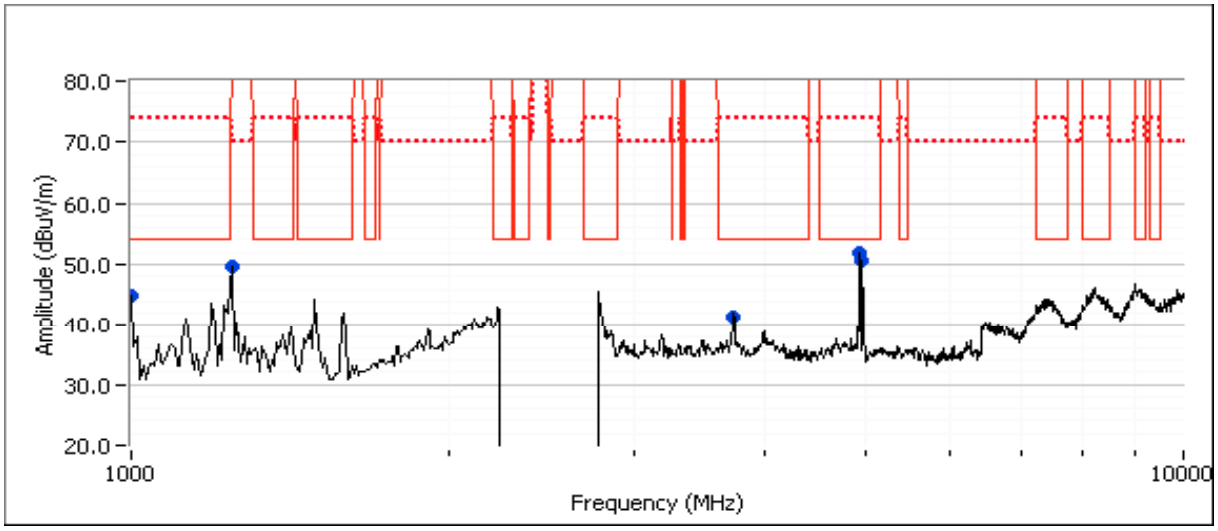
Run #2: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2462, BT Basic @ 2480 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	21.0
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4920.000	51.9	H	54.0	-2.1	Peak	157	1.6	
4953.330	50.6	V	54.0	-3.4	Peak	166	1.3	
1246.670	49.8	V	70.0	-20.2	Peak	105	1.0	
1000.000	44.8	V	54.0	-9.2	Peak	118	1.0	
3733.330	41.3	V	54.0	-12.7	Peak	187	1.3	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4924.030	49.6	H	54.0	-4.4	AVG	157	1.7	RB 1 MHz;VB 10 Hz;Peak
4924.030	53.3	H	74.0	-20.7	PK	157	1.7	RB 1 MHz;VB 3 MHz;Peak
4960.030	47.4	V	54.0	-6.6	AVG	166	1.2	RB 1 MHz;VB 10 Hz;Peak
4960.010	52.7	V	74.0	-21.3	PK	166	1.2	RB 1 MHz;VB 3 MHz;Peak
1247.270	31.6	V	54.0	-22.4	AVG	103	0.9	Note 1
1249.400	55.5	V	74.0	-18.5	PK	103	0.9	Note 1
1001.600	31.0	V	54.0	-23.0	AVG	202	0.9	RB 1 MHz;VB 10 Hz;Peak
1031.470	50.4	V	74.0	-23.6	PK	202	0.9	RB 1 MHz;VB 3 MHz;Peak
3727.200	31.2	V	54.0	-22.8	AVG	321	0.9	RB 1 MHz;VB 10 Hz;Peak
3729.200	43.3	V	74.0	-30.7	PK	321	0.9	RB 1 MHz;VB 3 MHz;Peak

Note 1:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

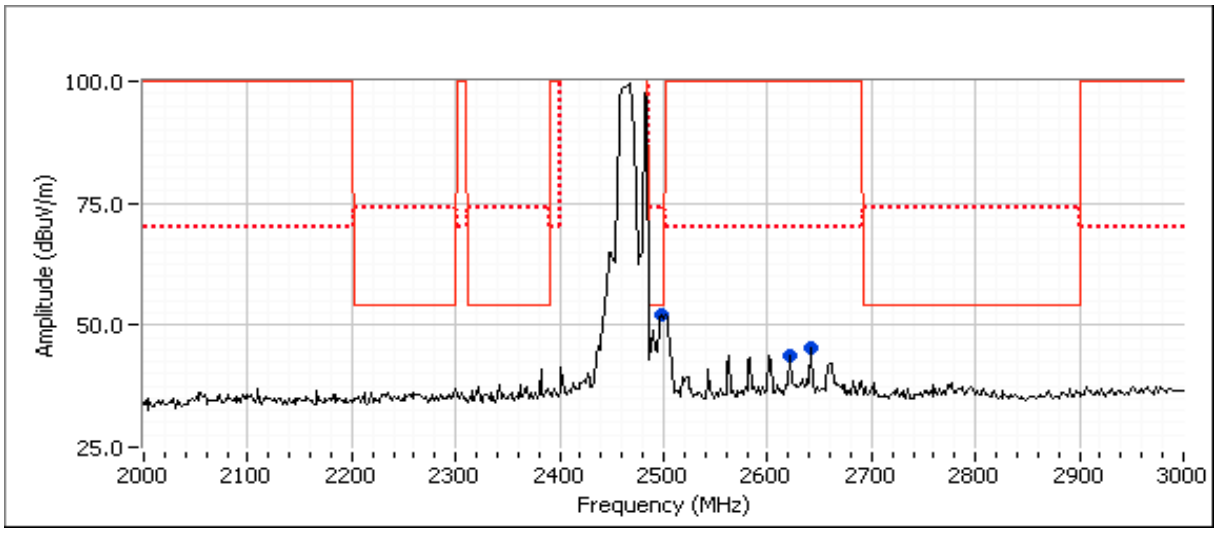
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2498.330	*52.1*	*H*	*54.0*	*-1.9*	*Peak*	*180*	*1.0*	
2641.670	*45.4*	*H*	*70.0*	*-24.6*	*Peak*	*180*	*1.0*	
2621.670	*43.8*	*H*	*70.0*	*-26.2*	*Peak*	*180*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2499.870	50.3	V	54.0	-3.7	AVG	88	0.9	POS; RB 1 MHz; VB: 10 Hz
2496.530	58.8	V	74.0	-15.2	PK	88	0.9	POS; RB 1 MHz; VB: 3 MHz
2496.400	50.2	H	54.0	-3.8	AVG	180	1.0	POS; RB 1 MHz; VB: 10 Hz
2497.880	59.0	H	74.0	-15.0	PK	180	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

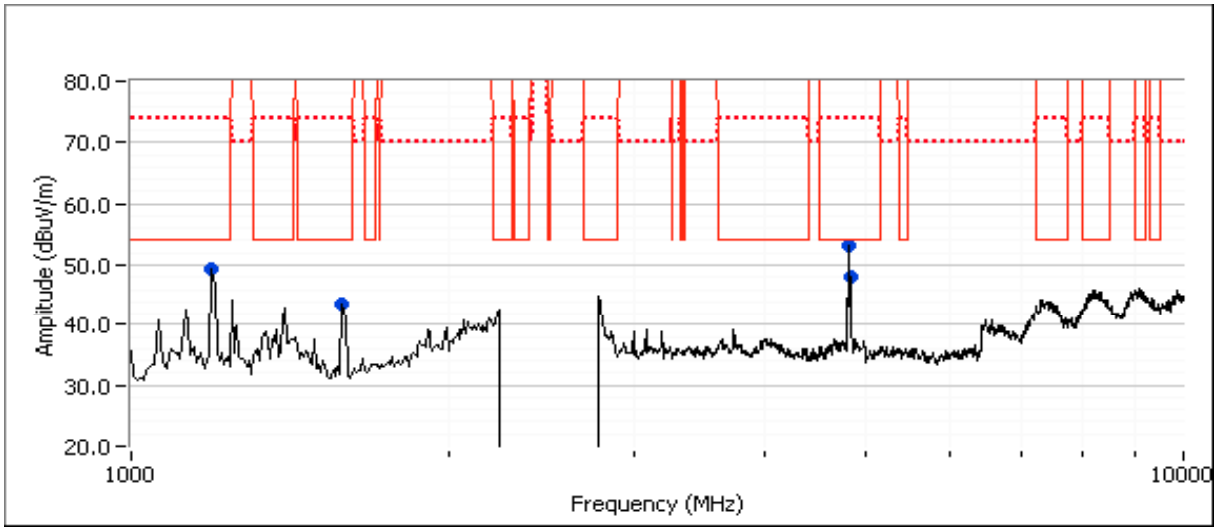
Run #3: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11g @ 2412, BT Basic @ 2402 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	22.5
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1199.190	49.3	V	54.0	-4.7	Peak	209	1.3	
1592.860	43.6	V	54.0	-10.4	Peak	73	1.3	
4803.750	53.1	H	54.0	-0.9	Peak	157	1.0	
4824.040	48.1	H	54.0	-5.9	Peak	163	1.3	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

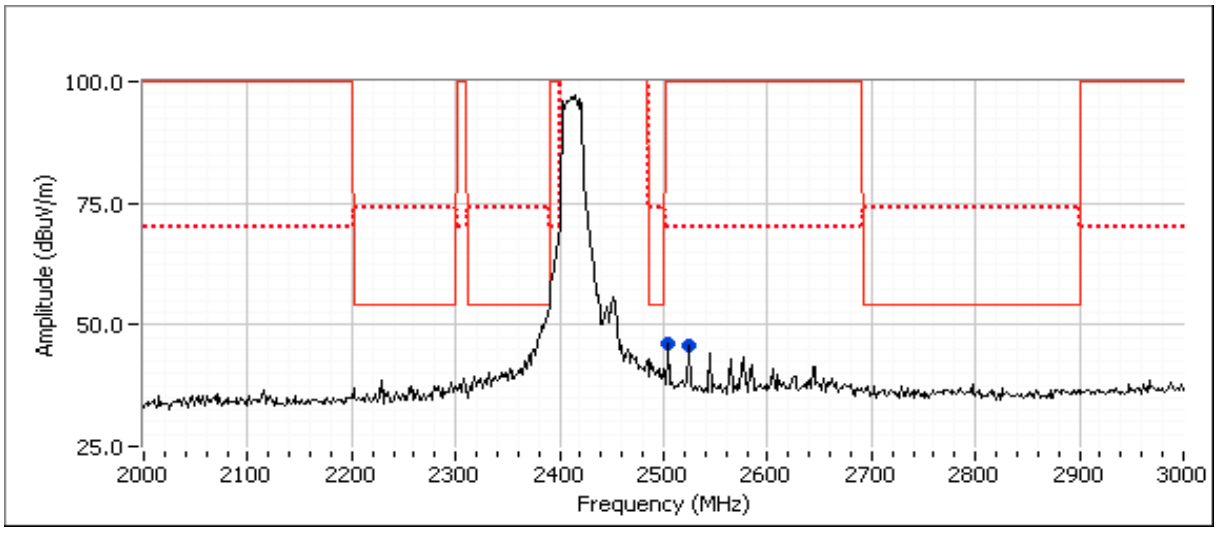
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4803.990	49.1	H	54.0	-4.9	AVG	159	0.9	RB 1 MHz;VB 10 Hz;Peak
4803.650	53.7	H	74.0	-20.3	PK	159	0.9	RB 1 MHz;VB 3 MHz;Peak
1198.570	36.7	V	54.0	-17.3	AVG	207	1.3	RB 1 MHz;VB 10 Hz;Peak
1198.110	59.4	V	74.0	-14.6	PK	207	1.3	RB 1 MHz;VB 3 MHz;Peak
4824.420	40.6	H	54.0	-13.4	AVG	152	1.2	RB 1 MHz;VB 10 Hz;Peak
4823.710	53.7	H	74.0	-20.3	PK	152	1.2	RB 1 MHz;VB 3 MHz;Peak
1594.040	30.6	V	54.0	-23.4	AVG	71	0.9	RB 1 MHz;VB 10 Hz;Peak
1594.140	50.9	V	74.0	-23.1	PK	71	0.9	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2505.000	46.0	H	70.0	-24.0	Peak	180	1.0	
2525.000	45.9	H	70.0	-24.1	Peak	180	1.0	



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

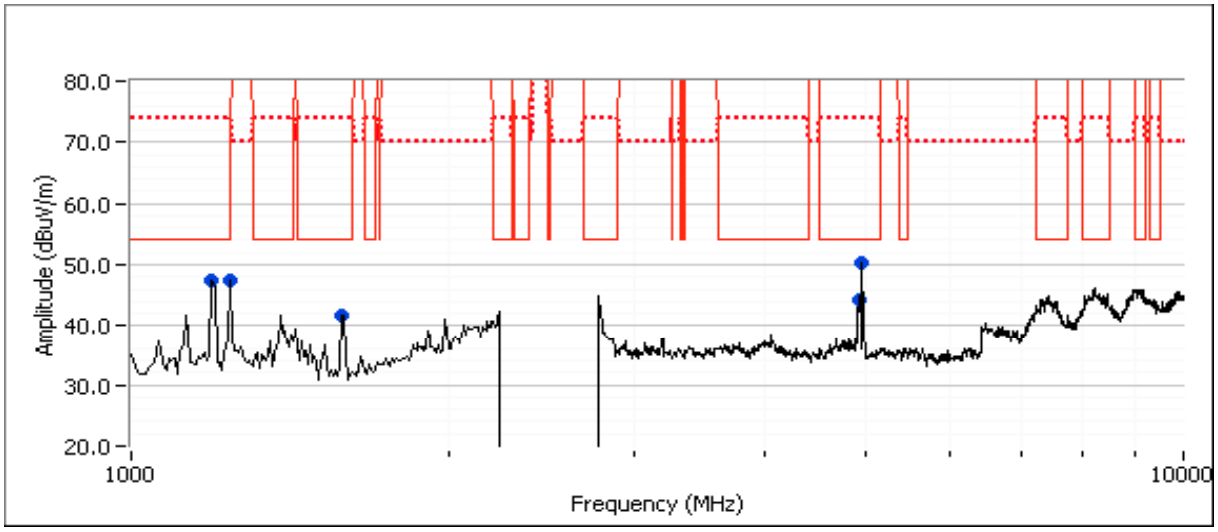
Run #4: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11g @ 2462, BT Basic @ 2480 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.4	22.5
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1193.330	47.5	V	54.0	-6.5	Peak	67	1.0	
1240.000	47.6	V	54.0	-6.4	Peak	108	1.0	
1586.670	41.8	V	54.0	-12.2	Peak	174	1.0	
4953.330	50.4	V	54.0	-3.6	Peak	118	2.2	
4913.330	44.3	V	54.0	-9.7	Peak	261	1.9	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

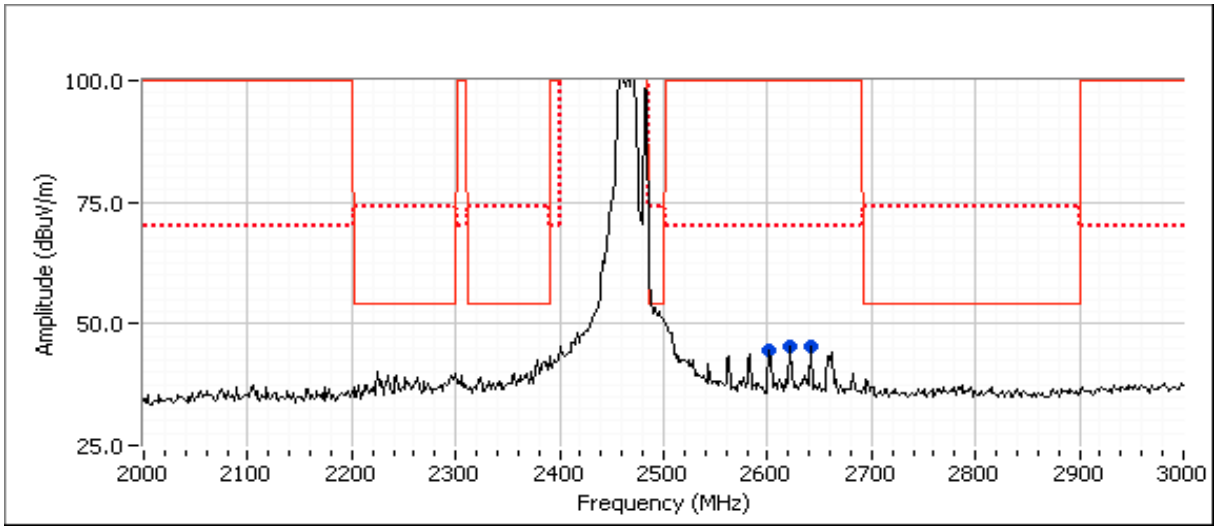
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4960.000	44.7	V	54.0	-9.3	AVG	116	2.4	RB 1 MHz;VB 10 Hz;Peak
4960.400	50.6	V	74.0	-23.4	PK	116	2.4	RB 1 MHz;VB 3 MHz;Peak
1197.460	33.9	V	54.0	-20.1	AVG	57	1.0	RB 1 MHz;VB 10 Hz;Peak
1198.730	56.8	V	74.0	-17.2	PK	57	1.0	RB 1 MHz;VB 3 MHz;Peak
1230.270	31.2	V	54.0	-22.8	AVG	73	0.9	RB 1 MHz;VB 10 Hz;Peak
1222.270	51.0	V	74.0	-23.0	PK	73	0.9	RB 1 MHz;VB 3 MHz;Peak
1597.270	32.4	V	54.0	-21.6	AVG	172	0.9	RB 1 MHz;VB 10 Hz;Peak
1598.070	54.4	V	74.0	-19.6	PK	172	0.9	RB 1 MHz;VB 3 MHz;Peak
4923.600	37.7	V	54.0	-16.3	AVG	261	1.3	RB 1 MHz;VB 10 Hz;Peak
4921.000	51.3	V	74.0	-22.7	PK	261	1.3	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2601.670	44.4	H	70.0	-25.6	Peak	180	1.0	
2621.670	45.3	H	70.0	-24.7	Peak	180	1.0	
2641.670	45.2	H	70.0	-24.8	Peak	180	1.0	



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

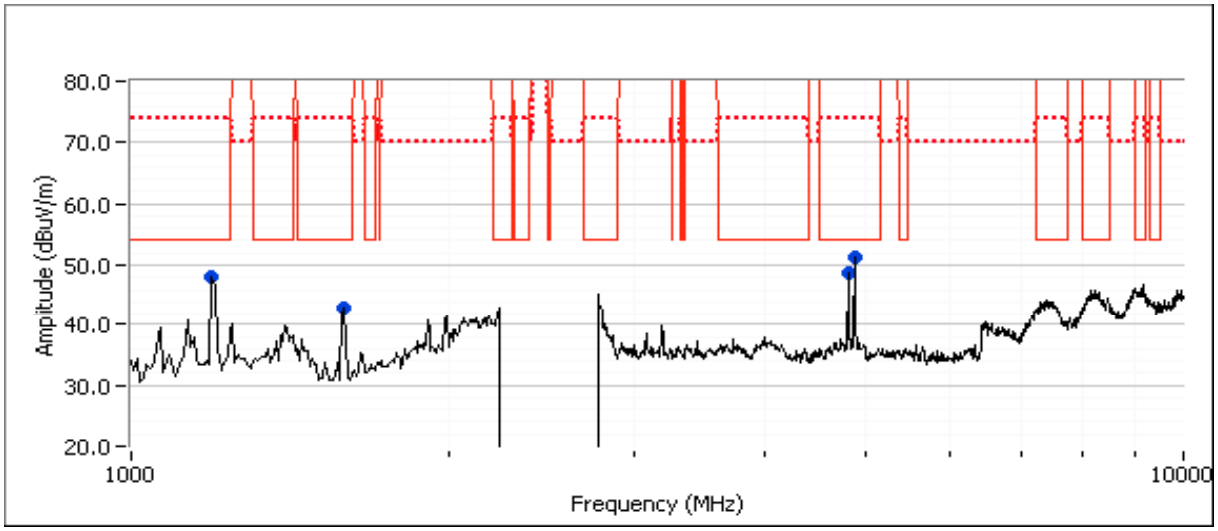
Run #5: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2437 MHz, BT Basic @ 2402 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.4	20.5
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1193.330	48.2	V	54.0	-5.8	Peak	202	1.3	
1593.330	43.1	V	54.0	-10.9	Peak	176	1.0	
4800.000	48.6	V	54.0	-5.4	Peak	197	1.9	
4873.330	51.4	V	54.0	-2.6	Peak	121	1.3	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4873.980	47.8	V	54.0	-6.2	AVG	115	1.1	RB 1 MHz;VB 10 Hz;Peak
4874.150	51.5	V	74.0	-22.5	PK	115	1.1	RB 1 MHz;VB 3 MHz;Peak
1598.670	31.2	V	54.0	-22.8	AVG	178	0.9	RB 1 MHz;VB 10 Hz;Peak
1596.470	53.8	V	74.0	-20.2	PK	178	0.9	RB 1 MHz;VB 3 MHz;Peak
4803.970	44.2	V	54.0	-9.8	AVG	209	1.3	RB 1 MHz;VB 10 Hz;Peak
4803.650	48.9	V	74.0	-25.1	PK	209	1.3	RB 1 MHz;VB 3 MHz;Peak
1197.320	34.5	V	54.0	-19.5	AVG	200	1.4	RB 1 MHz;VB 10 Hz;Peak
1196.900	58.3	V	74.0	-15.7	PK	200	1.4	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

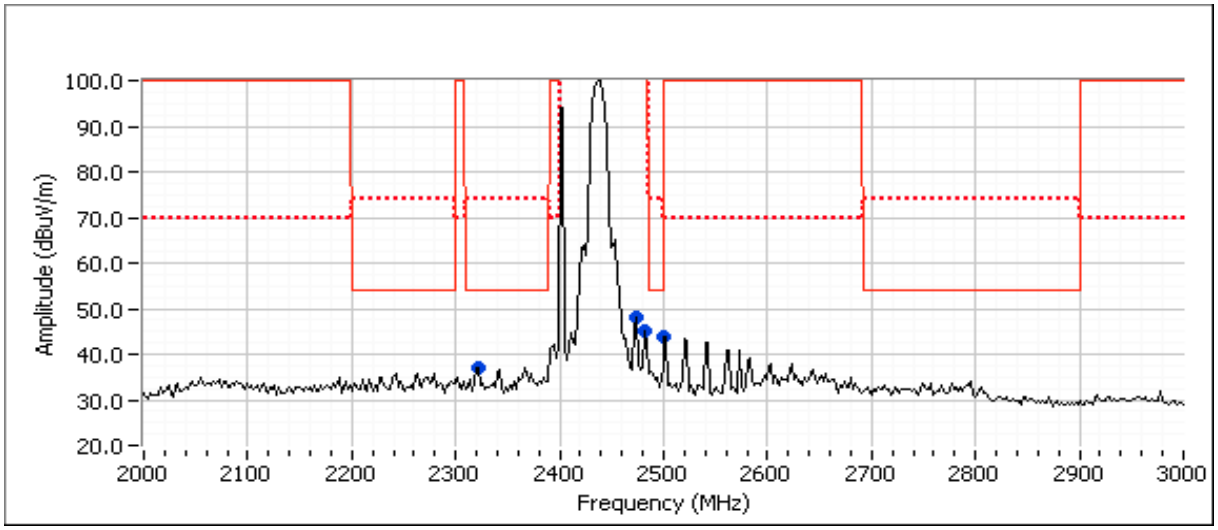
Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2322.650	*37.2*	*H*	*54.0*	*-16.8*	*Peak*	*179*	*1.0*	
2472.950	*48.2*	*H*	*120.0*	*-71.8*	*Peak*	*179*	*1.0*	
2480.960	*45.1*	*H*	*120.0*	*-74.9*	*Peak*	*179*	*1.0*	
2502.000	*43.7*	*H*	*70.0*	*-26.3*	*Peak*	*179*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2321.960	43.2	H	54.0	-10.8	AVG	360	1.0	POS; RB 1 MHz; VB: 10 Hz
2324.080	55.4	H	74.0	-18.6	PK	360	1.0	POS; RB 1 MHz; VB: 3 MHz
2322.000	43.3	V	54.0	-10.7	AVG	170	1.0	POS; RB 1 MHz; VB: 10 Hz
2320.600	54.4	V	74.0	-19.6	PK	170	1.0	POS; RB 1 MHz; VB: 3 MHz

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

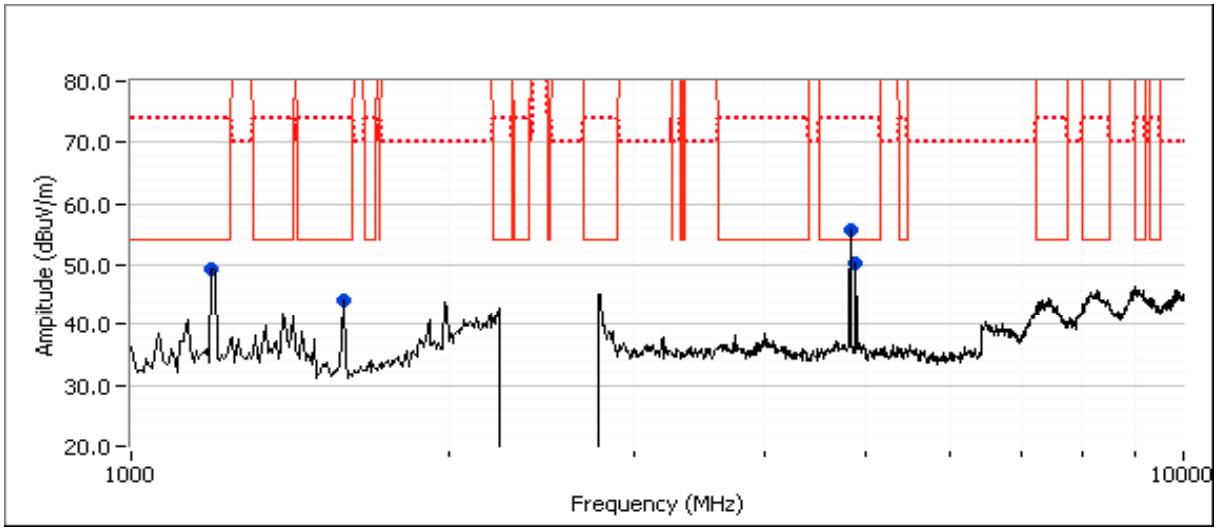
Run #6: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2412 MHz, BT Basic @ 2441 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.3	20.0
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1196.770	49.3	V	54.0	-4.7	Peak	209	1.3	
1599.430	44.4	V	54.0	-9.6	Peak	27	1.3	
4824.040	55.6	H	54.0	1.6	Peak	159	1.3	
4882.060	50.4	V	54.0	-3.6	Peak	165	1.9	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4823.980	52.5	H	54.0	-1.5	AVG	151	0.9	RB 1 MHz;VB 10 Hz;Peak
4824.040	54.1	H	74.0	-19.9	PK	151	0.9	RB 1 MHz;VB 3 MHz;Peak
1598.780	29.4	V	54.0	-24.6	AVG	28	1.2	RB 1 MHz;VB 10 Hz;Peak
1598.930	51.2	V	74.0	-22.8	PK	28	1.2	RB 1 MHz;VB 3 MHz;Peak
4881.970	45.2	V	54.0	-8.8	AVG	172	1.0	RB 1 MHz;VB 10 Hz;Peak
4881.770	49.6	V	74.0	-24.4	PK	172	1.0	RB 1 MHz;VB 3 MHz;Peak
1195.810	37.6	V	54.0	-16.4	AVG	211	1.2	RB 1 MHz;VB 10 Hz;Peak
1197.680	58.5	V	74.0	-15.5	PK	211	1.2	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

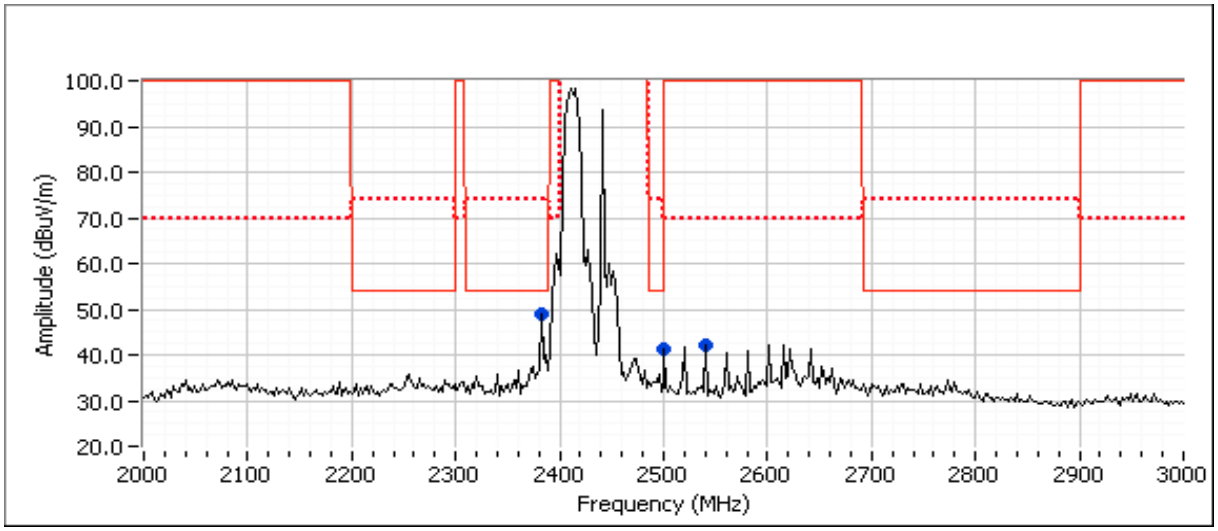
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2382.770	*49.1*	*H*	*54.0*	*-4.9*	*Peak*	*179*	*1.0*	
2501.000	*41.3*	*H*	*70.0*	*-28.7*	*Peak*	*179*	*1.0*	
2541.080	*42.2*	*H*	*70.0*	*-27.8*	*Peak*	*179*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2383.030	52.6	H	54.0	-1.4	AVG	249	1.0	
2383.030	59.7	H	74.0	-14.3	PK	249	1.0	
2383.030	50.3	V	54.0	-3.7	AVG	292	1.1	
2383.210	58.7	V	74.0	-15.3	PK	292	1.1	



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

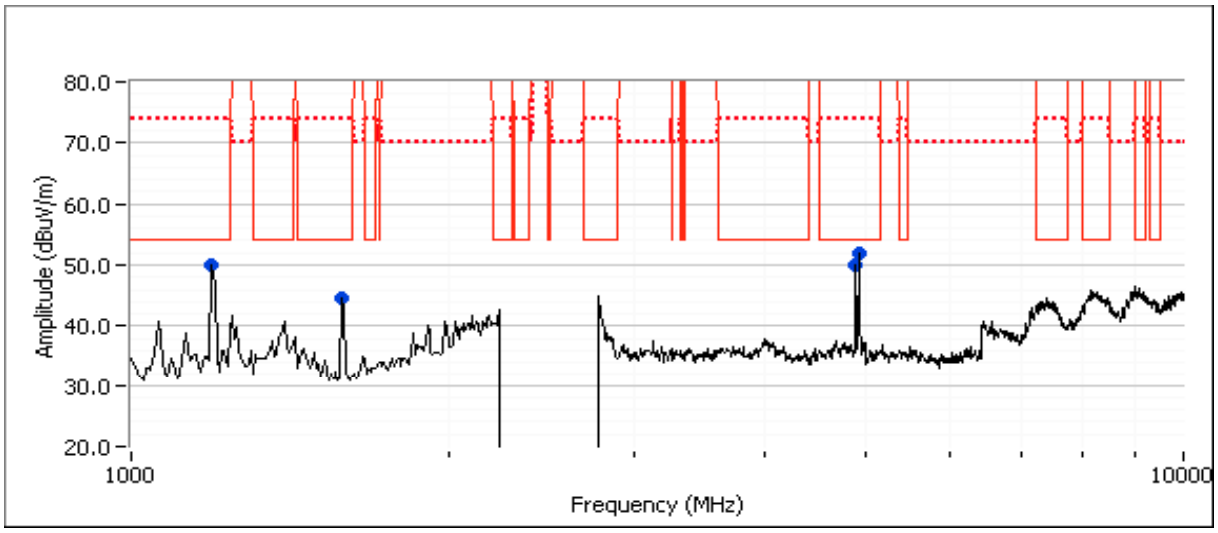
Run #7: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2462 MHz, BT Basic @ 2440 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	21.0
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1198.320	50.0	V	54.0	-4.0	Peak	194	1.3	
1593.100	44.5	V	54.0	-9.5	Peak	218	1.0	
4882.330	49.9	H	54.0	-4.1	Peak	164	1.3	
4924.060	51.9	V	54.0	-2.1	Peak	290	1.6	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4924.020	46.5	V	54.0	-7.5	AVG	298	1.3	RB 1 MHz;VB 10 Hz;Peak
4923.960	50.2	V	74.0	-23.8	PK	298	1.3	RB 1 MHz;VB 3 MHz;Peak
4881.950	45.6	H	54.0	-8.4	AVG	166	1.0	RB 1 MHz;VB 10 Hz;Peak
4882.080	49.8	H	74.0	-24.2	PK	166	1.0	RB 1 MHz;VB 3 MHz;Peak
1197.280	37.3	V	54.0	-16.7	AVG	196	1.4	RB 1 MHz;VB 10 Hz;Peak
1198.060	59.7	V	74.0	-14.3	PK	196	1.4	RB 1 MHz;VB 3 MHz;Peak
1593.100	31.2	V	54.0	-22.8	AVG	219	1.0	RB 1 MHz;VB 10 Hz;Peak
1593.250	54.7	V	74.0	-19.3	PK	219	1.0	RB 1 MHz;VB 3 MHz;Peak

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

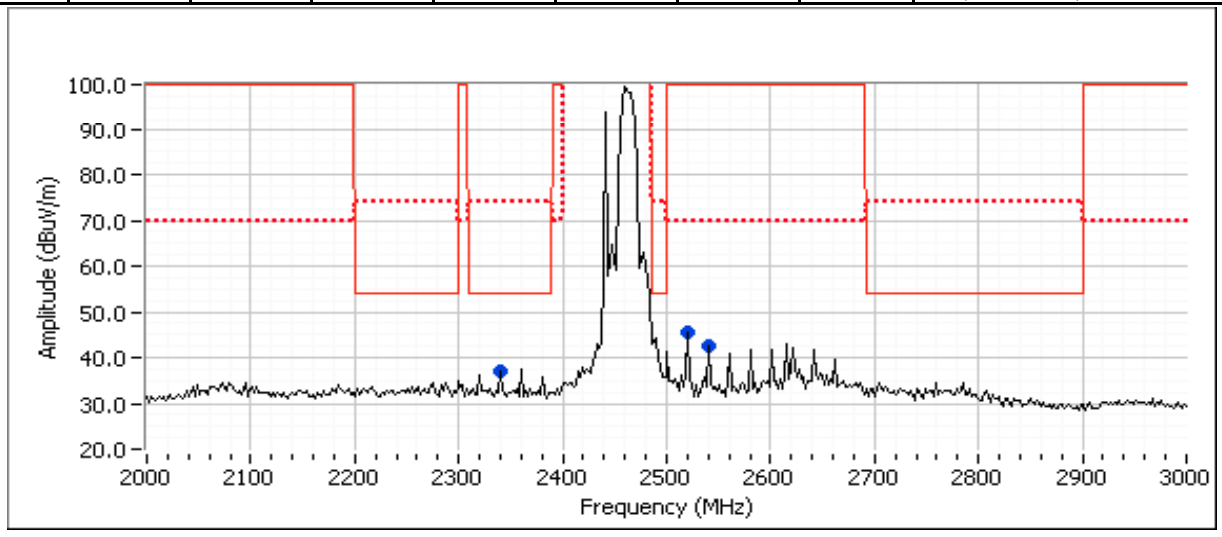
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2340.680	*37.1*	*H*	*54.0*	*-16.9*	*Peak*	*179*	*1.0*	
2521.040	*45.7*	*H*	*70.0*	*-24.3*	*Peak*	*179*	*1.0*	
2541.080	*42.5*	*H*	*70.0*	*-27.5*	*Peak*	*179*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2340.990	44.3	H	54.0	-9.7	AVG	355	0.9	POS; RB 1 MHz; VB: 10 Hz
2341.130	54.6	H	74.0	-19.4	PK	355	0.9	POS; RB 1 MHz; VB: 3 MHz
2341.110	43.0	V	54.0	-11.0	AVG	310	1.0	POS; RB 1 MHz; VB: 10 Hz
2343.260	54.9	V	74.0	-19.1	PK	310	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

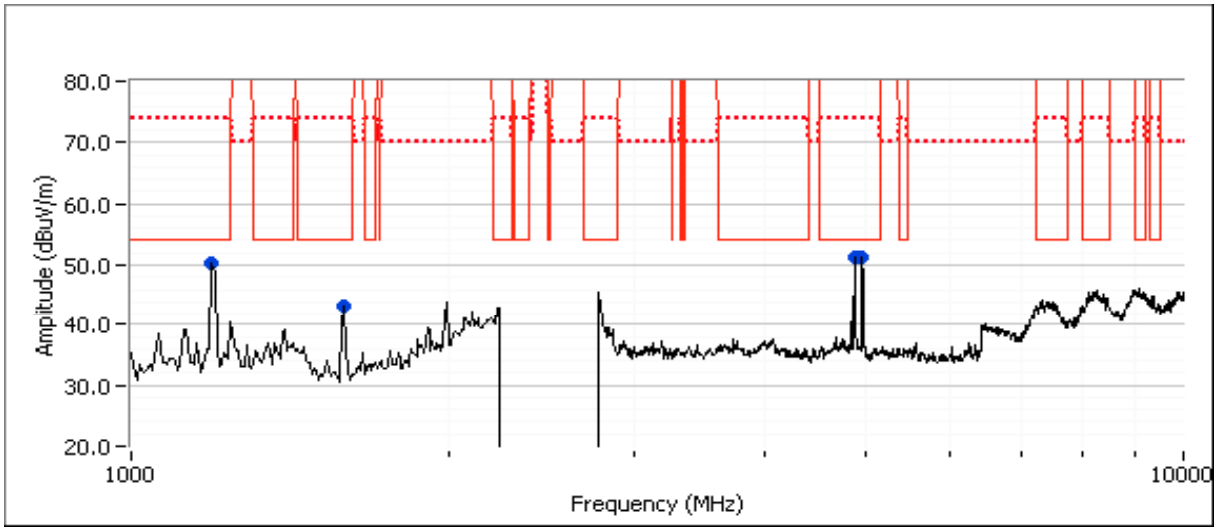
Run #8: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2437 MHz, BT Basic @ 2480 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.4	20.5
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1196.750	50.3	V	54.0	-3.7	Peak	187	1.3	
1592.660	43.3	V	54.0	-10.7	Peak	222	1.0	
4874.020	51.2	H	54.0	-2.8	Peak	153	1.0	
4959.760	51.4	V	54.0	-2.6	Peak	154	1.6	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4959.940	51.0	V	54.0	-3.0	AVG	141	1.0	RB 1 MHz;VB 10 Hz;Peak
4960.300	55.6	V	74.0	-18.4	PK	141	1.0	RB 1 MHz;VB 3 MHz;Peak
4874.000	48.3	H	54.0	-5.7	AVG	147	1.1	RB 1 MHz;VB 10 Hz;Peak
4874.020	51.8	H	74.0	-22.2	PK	147	1.1	RB 1 MHz;VB 3 MHz;Peak
1196.260	34.7	V	54.0	-19.3	AVG	188	1.2	RB 1 MHz;VB 10 Hz;Peak
1195.650	58.8	V	74.0	-15.2	PK	188	1.2	RB 1 MHz;VB 3 MHz;Peak
1593.090	32.1	V	54.0	-21.9	AVG	223	0.9	RB 1 MHz;VB 10 Hz;Peak
1593.150	52.7	V	74.0	-21.3	PK	223	0.9	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

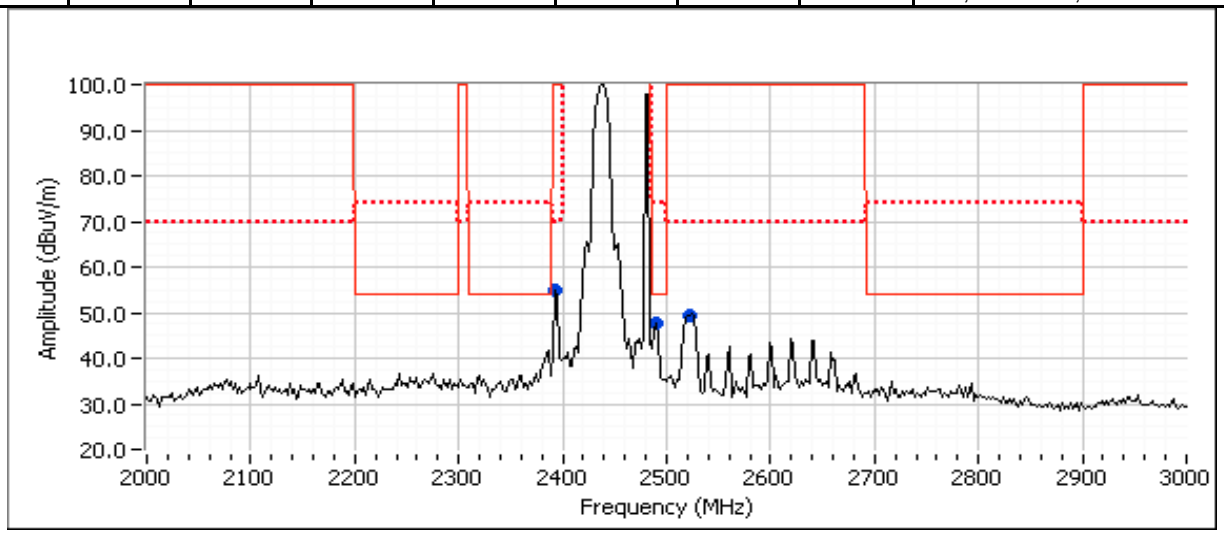
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2392.790	*54.8*	*H*	*70.0*	*-15.2*	*Peak*	*179*	*1.0*	
2488.980	*47.7*	*H*	*54.0*	*-6.3*	*Peak*	*179*	*1.0*	
2523.050	*49.5*	*H*	*70.0*	*-20.5*	*Peak*	*179*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2488.030	46.9	H	54.0	-7.1	AVG	155	1.0	POS; RB 1 MHz; VB: 10 Hz
2486.710	56.5	H	74.0	-17.5	PK	155	1.0	POS; RB 1 MHz; VB: 3 MHz
2488.030	46.8	V	54.0	-7.2	AVG	218	1.5	POS; RB 1 MHz; VB: 10 Hz
2488.350	56.5	V	74.0	-17.5	PK	218	1.5	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

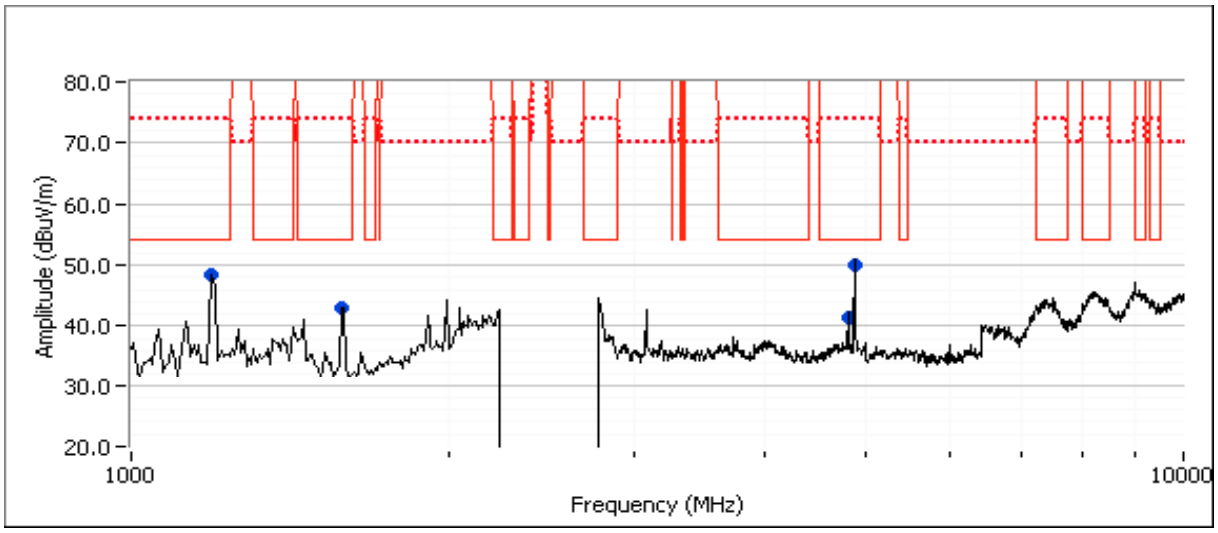
Run #9: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2437 MHz, BT EDR @ 2402 MHz

Date of Test: 5/31/2013

Test Engineer: Jack Liu / R. Varelas

Test Location: FT Chamber# 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.4	20.5
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1194.860	48.5	V	54.0	-5.5	Peak	186	1.3	
1593.170	43.0	V	54.0	-11.0	Peak	215	1.0	
4804.190	41.4	H	54.0	-12.6	Peak	170	2.5	
4874.020	49.9	V	54.0	-4.1	Peak	125	1.6	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4874.030	44.6	V	54.0	-9.4	AVG	103	0.9	RB 1 MHz;VB 10 Hz;Peak
4873.900	49.4	V	74.0	-24.6	PK	103	0.9	RB 1 MHz;VB 3 MHz;Peak
1593.140	30.6	V	54.0	-23.4	AVG	213	0.9	RB 1 MHz;VB 10 Hz;Peak
1593.180	54.0	V	74.0	-20.0	PK	213	0.9	RB 1 MHz;VB 3 MHz;Peak
1194.690	33.9	V	54.0	-20.1	AVG	184	1.3	RB 1 MHz;VB 10 Hz;Peak
1195.520	60.3	V	74.0	-13.7	PK	184	1.3	RB 1 MHz;VB 3 MHz;Peak
4803.960	40.6	H	54.0	-13.4	AVG	153	1.1	RB 1 MHz;VB 10 Hz;Peak
4804.030	48.5	H	74.0	-25.5	PK	153	1.1	RB 1 MHz;VB 3 MHz;Peak

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

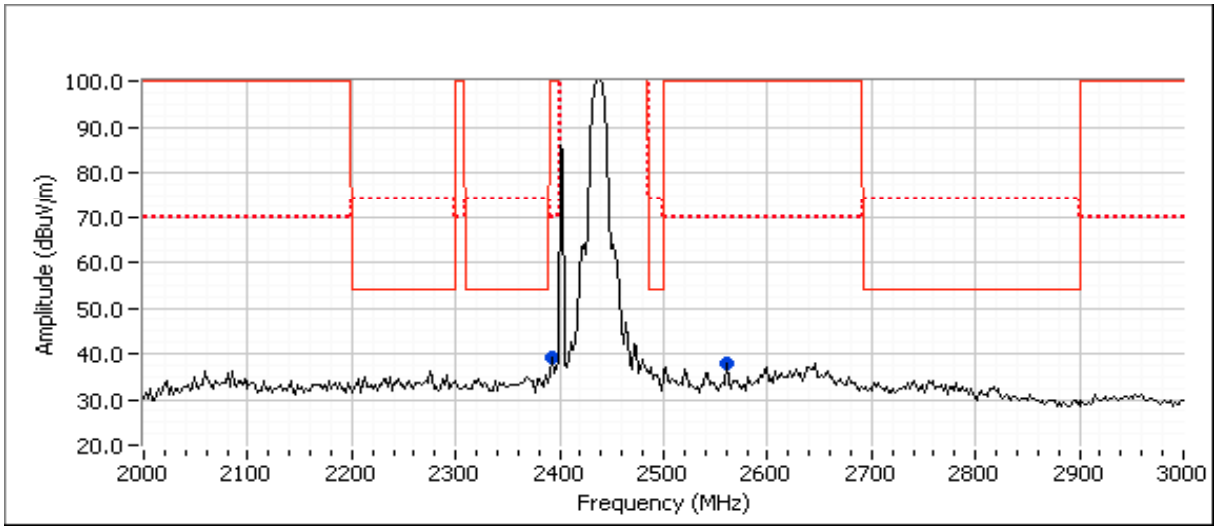
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2392.790	*39.1*	*H*	*70.0*	*-30.9*	*Peak*	*179*	*1.0*	
2561.120	*37.9*	*H*	*70.0*	*-32.1*	*Peak*	*179*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
-	-	-	-	-	-	-	-	-	-	-

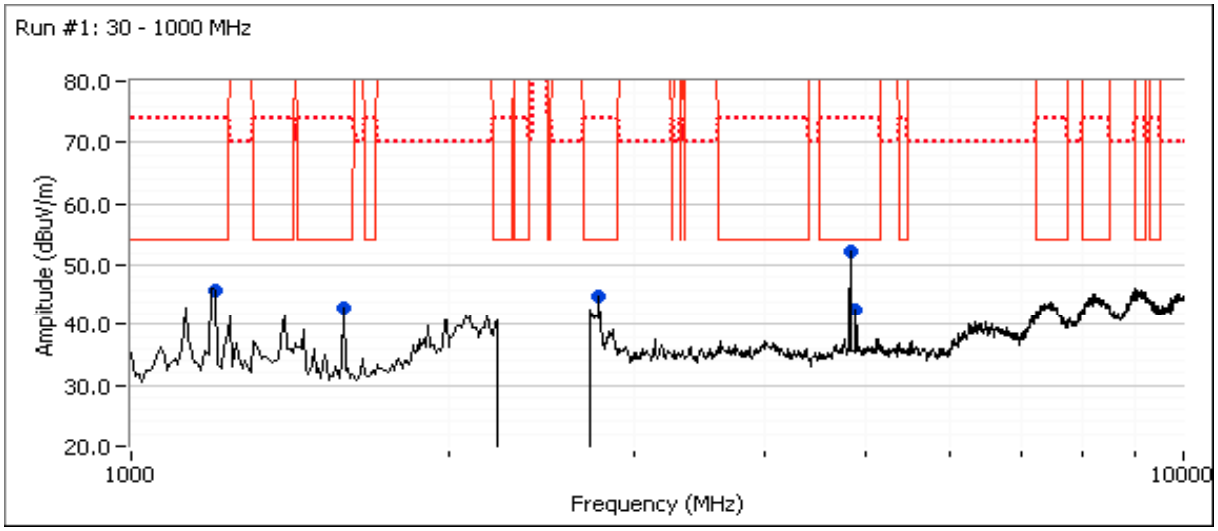


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #10: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 802.11b @ 2412 MHz, BT EDR @ 2441 MHz

Date of Test: 6/3/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	20.5
Chain B	8.0	-	8dBm



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1199.580	45.7	V	54.0	-8.3	Peak	174	1.6	
1596.270	42.9	V	54.0	-11.1	Peak	78	1.3	
2779.340	45.0	H	54.0	-9.0	Peak	158	1.0	
4824.030	52.1	V	54.0	-1.9	Peak	247	1.3	
4882.360	42.6	H	54.0	-11.4	Peak	165	1.6	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4823.980	48.7	V	54.0	-5.3	AVG	247	1.3	RB 1 MHz;VB 10 Hz;Peak
4823.950	51.3	V	74.0	-22.7	PK	247	1.3	RB 1 MHz;VB 3 MHz;Peak
1200.060	34.4	V	54.0	-19.6	AVG	174	1.3	RB 1 MHz;VB 10 Hz;Peak
1199.230	56.7	V	74.0	-17.3	PK	174	1.3	RB 1 MHz;VB 3 MHz;Peak
4882.000	40.0	H	54.0	-14.0	AVG	155	1.2	RB 1 MHz;VB 10 Hz;Peak
4881.790	47.7	H	74.0	-26.3	PK	155	1.2	RB 1 MHz;VB 3 MHz;Peak
2776.460	36.1	H	54.0	-17.9	AVG	152	1.0	RB 1 MHz;VB 10 Hz;Peak
2783.270	48.2	H	74.0	-25.8	PK	152	1.0	RB 1 MHz;VB 3 MHz;Peak

Spurious Radiated Emissions, 2 - 3GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

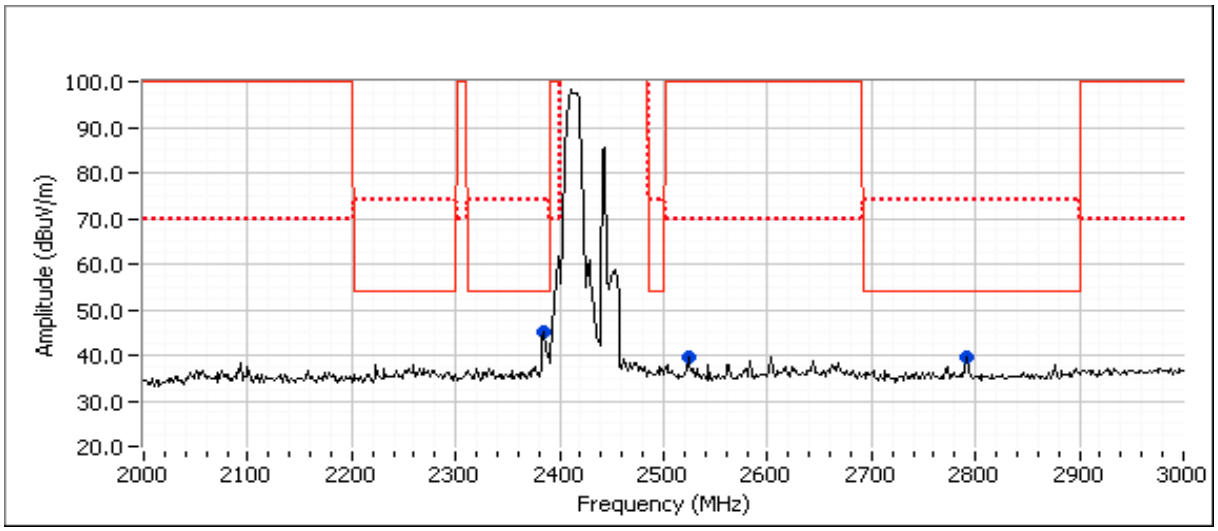
Preliminary Spurious Emissions at 30cm from 2-3 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2385.000	*45.2*	*V*	*54.0*	*-8.8*	*Peak*	*180*	*1.0*	
2523.330	*39.7*	*V*	*70.0*	*-30.3*	*Peak*	*180*	*1.0*	
2791.670	*39.5*	*V*	*54.0*	*-14.5*	*Peak*	*180*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2382.990	47.0	H	54.0	-7.0	AVG	250	1.0	POS; RB 1 MHz; VB: 10 Hz
2382.400	57.8	H	74.0	-16.2	PK	250	1.0	POS; RB 1 MHz; VB: 3 MHz
2789.760	42.5	H	54.0	-11.5	AVG	154	1.0	POS; RB 1 MHz; VB: 10 Hz
2795.230	53.6	H	74.0	-20.4	PK	154	1.0	POS; RB 1 MHz; VB: 3 MHz
2789.720	41.9	V	54.0	-12.1	AVG	186	1.0	POS; RB 1 MHz; VB: 10 Hz
2790.440	53.3	V	74.0	-20.7	PK	186	1.0	POS; RB 1 MHz; VB: 3 MHz
2383.050	46.7	V	54.0	-7.3	AVG	288	1.1	POS; RB 1 MHz; VB: 10 Hz
2385.090	56.9	V	74.0	-17.1	PK	288	1.1	POS; RB 1 MHz; VB: 3 MHz

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #11: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5200 MHz, BT Basic @ 2402 MHz

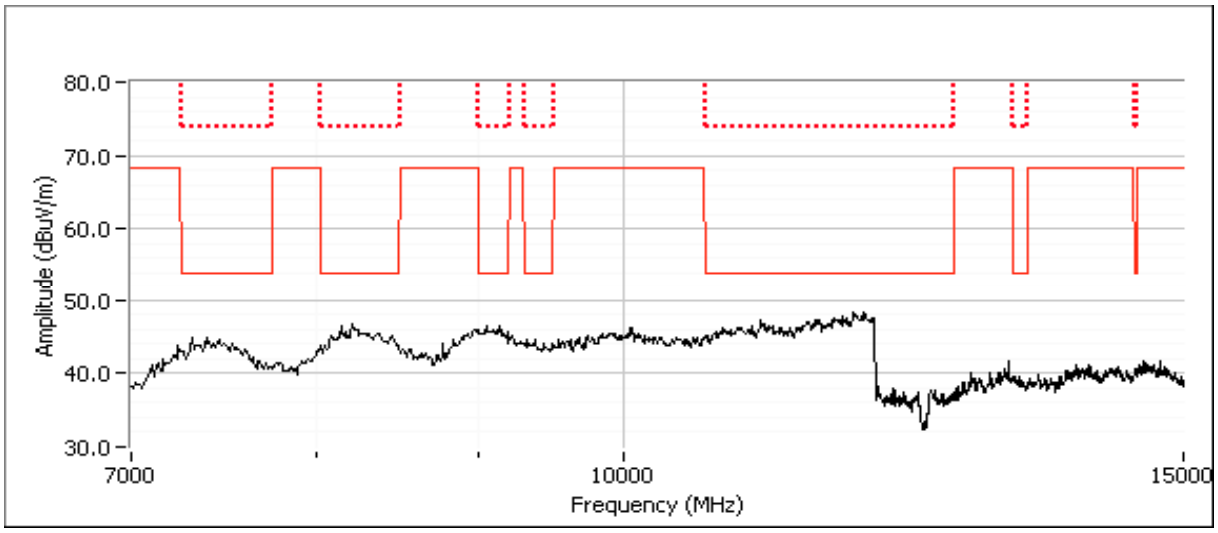
Date of Test: 6/1/2013

Test Engineer: Jack Liu

Test Location: FT Chamber #4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	29.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

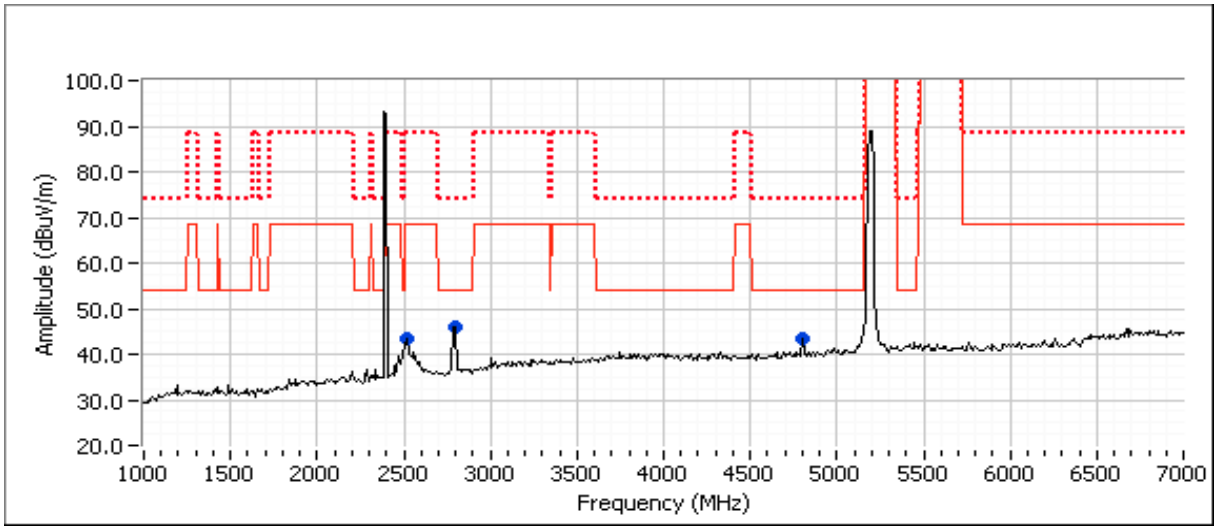
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2520.000	*43.2*	*V*	*68.3*	*-25.1*	*Peak*	*228*	*1.0*	
2800.000	*45.8*	*V*	*54.0*	*-8.2*	*Peak*	*240*	*1.0*	
4800.000	*43.4*	*V*	*54.0*	*-10.6*	*Peak*	*260*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2790.870	50.5	H	54.0	-3.5	AVG	158	1.0	POS; RB 1 MHz; VB: 10 Hz
2793.700	62.3	H	74.0	-11.7	PK	158	1.0	POS; RB 1 MHz; VB: 3 MHz
2790.990	46.6	V	54.0	-7.4	AVG	183	1.0	POS; RB 1 MHz; VB: 10 Hz
2792.290	57.6	V	74.0	-16.4	PK	183	1.0	POS; RB 1 MHz; VB: 3 MHz

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #12: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5200 MHz, BT Basic @ 2441 MHz

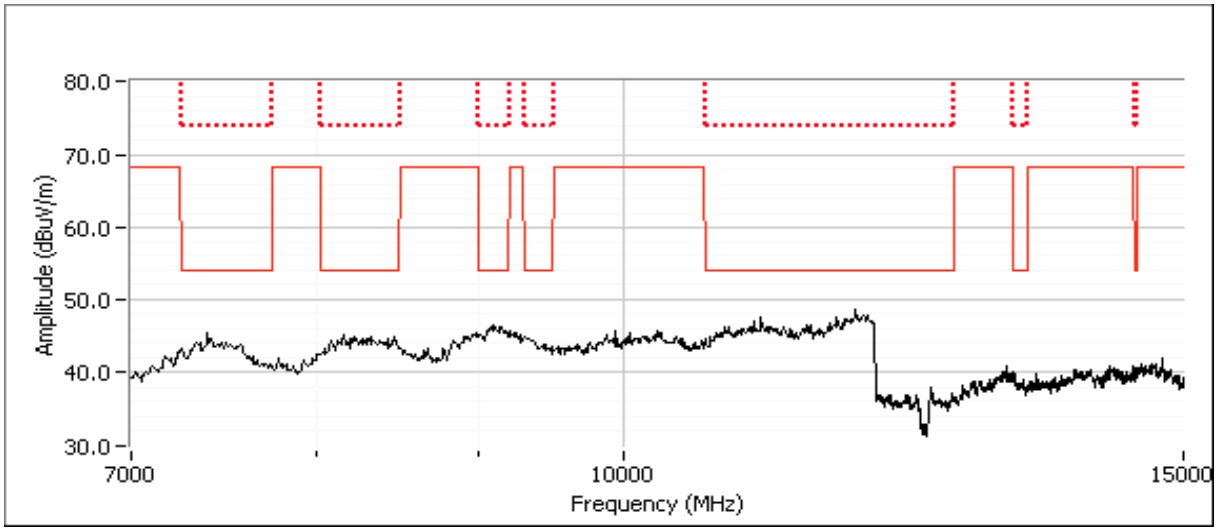
Date of Test: 6/3/2013

Test Engineer: Rafael Varelas

Test Location: FT Chamber #7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	29.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
-	-	-	-	-	-	-	-	-	-	-

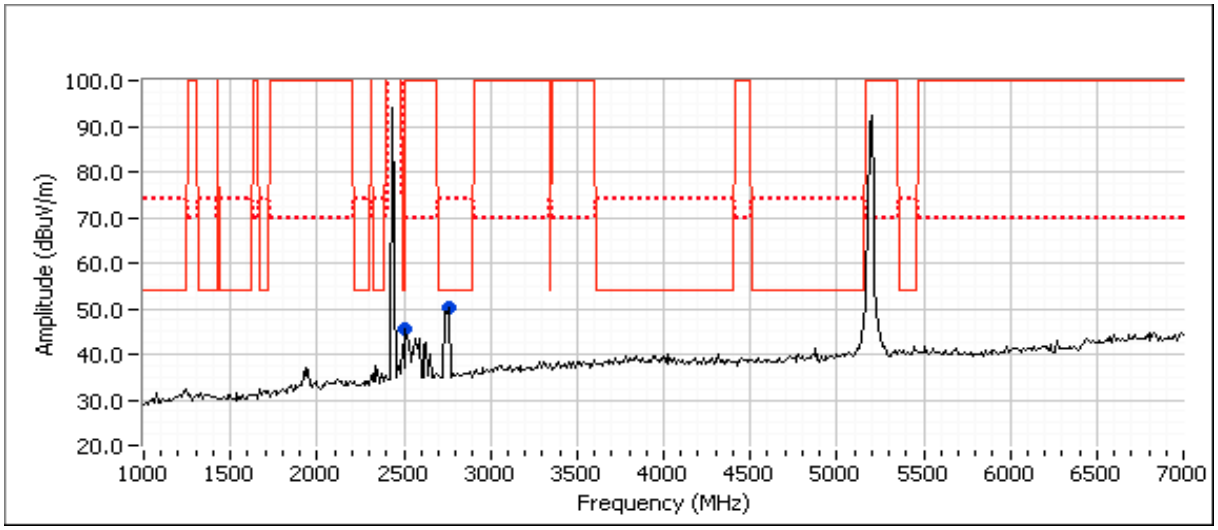
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
-	-	-	-	-	-	-	-	-	-	-

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2510.000	*45.7*	*V*	*70.0*	*-24.3*	*Peak*	*180*	*1.0*	
2760.000	*50.1*	*V*	*54.0*	*-3.9*	*Peak*	*180*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2751.790	49.7	H	54.0	-4.3	AVG	157	1.0	POS; RB 1 MHz; VB: 10 Hz
2752.440	60.5	H	74.0	-13.5	PK	157	1.0	POS; RB 1 MHz; VB: 3 MHz
2760.260	46.9	V	54.0	-7.1	AVG	184	1.0	POS; RB 1 MHz; VB: 10 Hz
2761.660	57.7	V	74.0	-16.3	PK	184	1.0	POS; RB 1 MHz; VB: 3 MHz

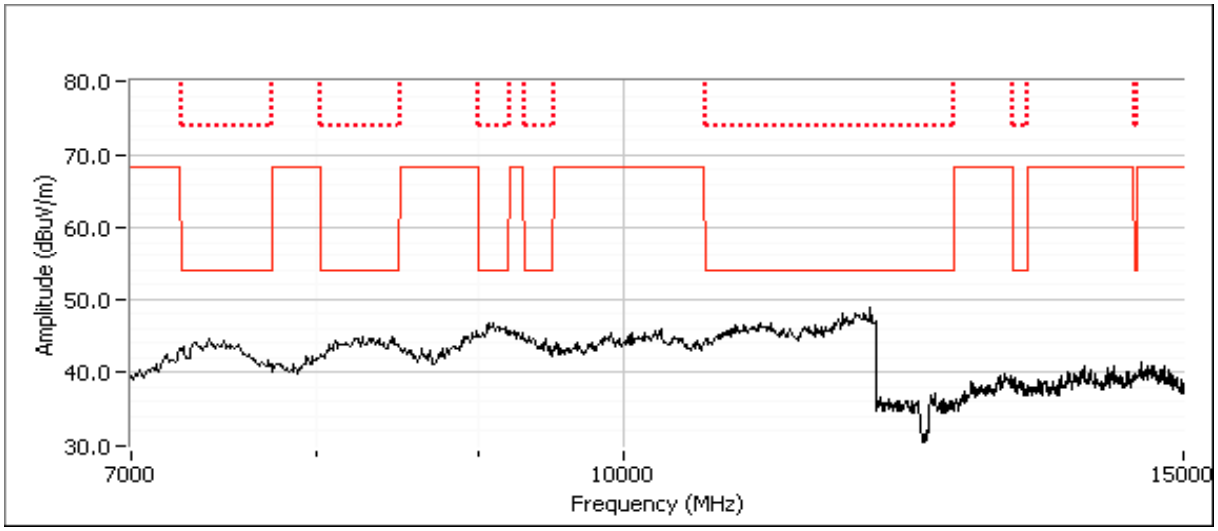
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #13: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5200 MHz, BT Basic @ 2480 MHz

Date of Test: 6/3/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.6	29.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
-	-	-	-	-	-	-	-	-	-	-

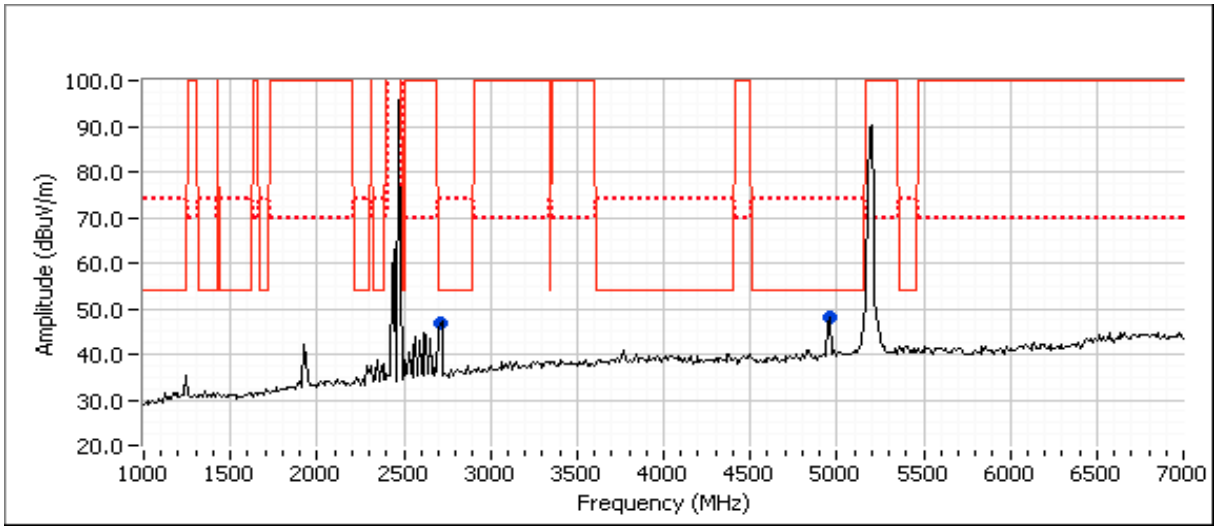
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
-	-	-	-	-	-	-	-	-	-	-

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2710.000	*46.9*	*V*	*54.0*	*-7.1*	*Peak*	*180*	*1.0*	*13*
4960.000	*48.1*	*V*	*54.0*	*-5.9*	*Peak*	*180*	*1.0*	*13*

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4960.050	50.7	V	54.0	-3.3	AVG	161	1.5	POS; RB 1 MHz; VB: 10 Hz
4959.830	59.6	V	74.0	-14.4	PK	161	1.5	POS; RB 1 MHz; VB: 3 MHz
4960.030	50.4	H	54.0	-3.6	AVG	117	1.1	POS; RB 1 MHz; VB: 10 Hz
4959.530	59.7	H	74.0	-14.3	PK	117	1.1	POS; RB 1 MHz; VB: 3 MHz
2712.980	48.2	H	54.0	-5.8	AVG	156	1.0	POS; RB 1 MHz; VB: 10 Hz
2715.300	58.6	H	74.0	-15.4	PK	156	1.0	POS; RB 1 MHz; VB: 3 MHz
2715.990	44.9	V	54.0	-9.1	AVG	186	1.0	POS; RB 1 MHz; VB: 10 Hz
2720.280	56.9	V	74.0	-17.1	PK	186	1.0	POS; RB 1 MHz; VB: 3 MHz

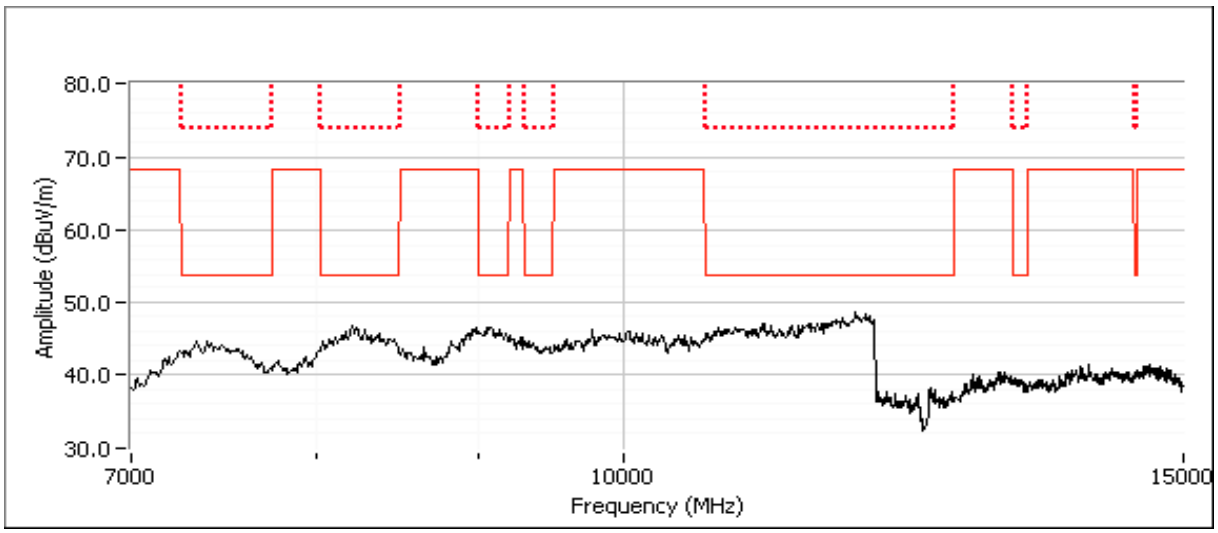
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #14: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5300 MHz, BT Basic @ 2440 MHz

Date of Test: 6/1/2013
Test Engineer: Jack Liu
Test Location: FT Chamber #4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	28.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

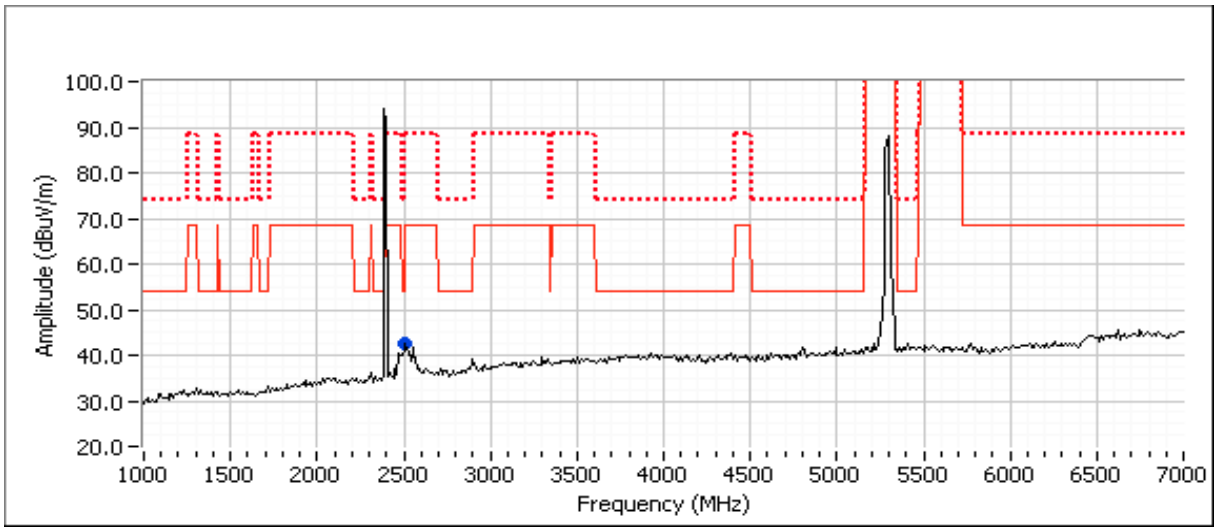
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2510.000	42.7	V	68.3	-25.6	Peak	227	1.0	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2512.860	53.8	V	68.3	-14.5	PK	278	1.0	POS; RB 1 MHz; VB: 3 MHz

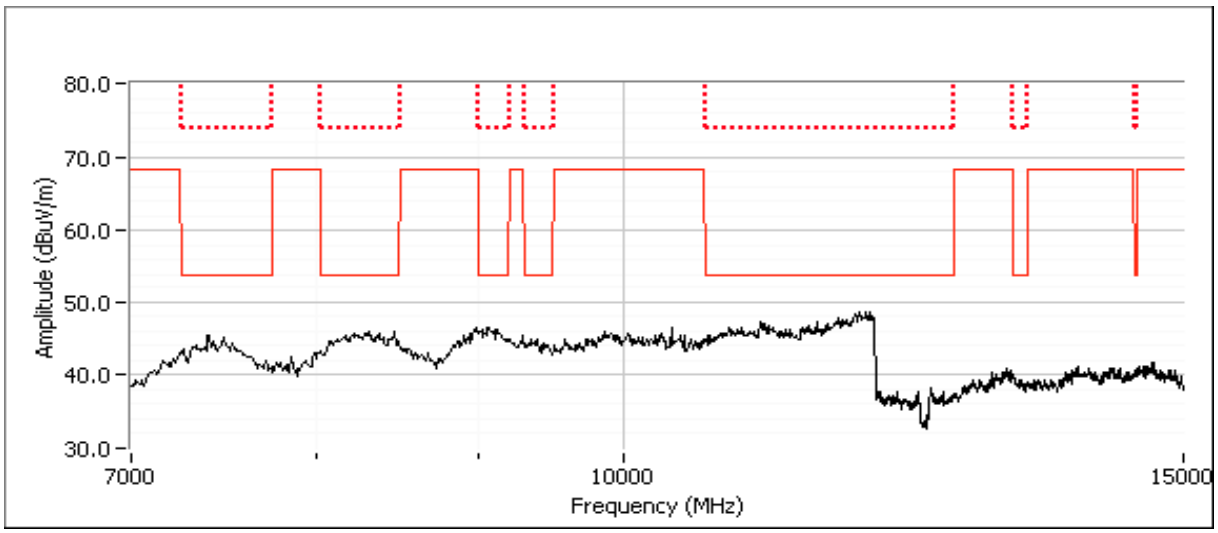
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #15: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5580 MHz, BT Basic @ 2440 MHz

Date of Test: 6/1/2013
Test Engineer: Jack Liu
Test Location: FT Chamber #4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	33.0
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

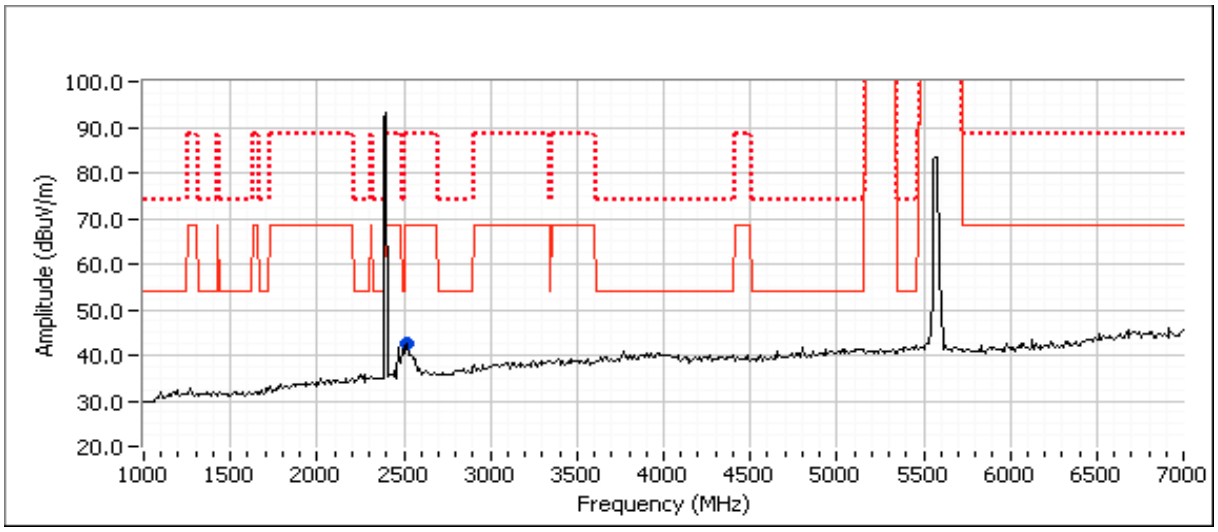
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2520.000	42.5	V	68.3	-25.8	Peak	230	1.3	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2522.010	54.9	V	68.3	-13.4	PK	91	1.0	POS; RB 1 MHz; VB: 3 MHz

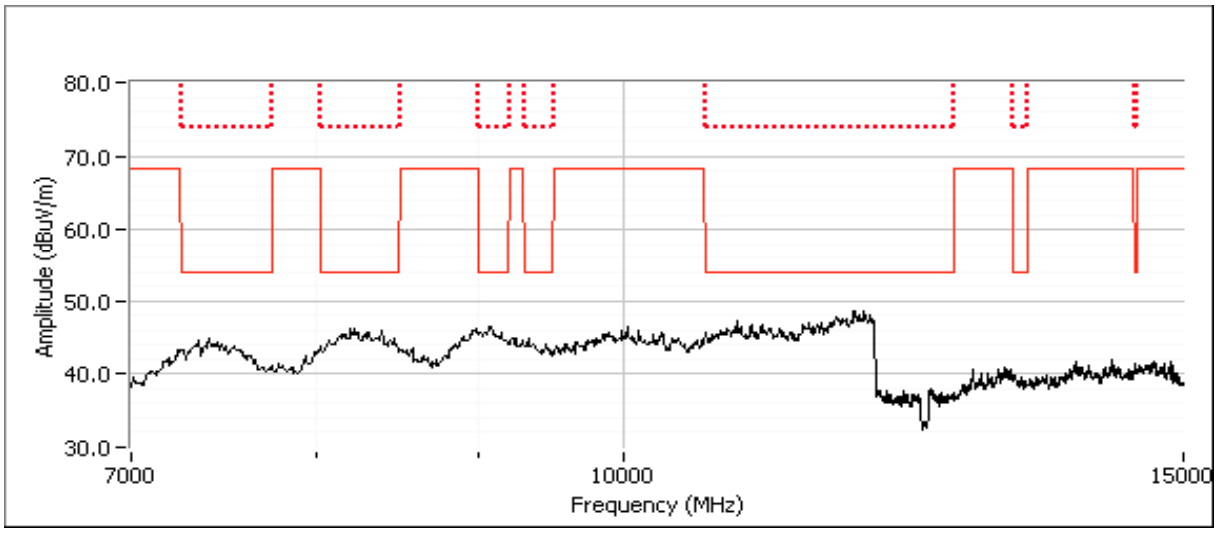
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #16: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5785 MHz, BT Basic @ 2441 MHz

Date of Test: 6/1/2013
Test Engineer: Jack Liu
Test Location: FT Chamber #4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	34.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

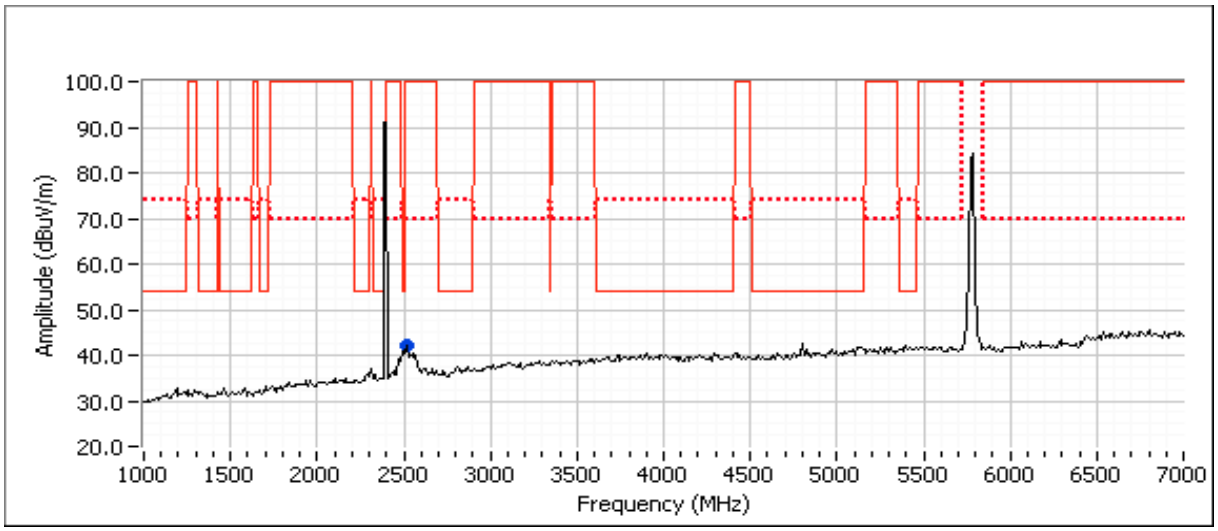
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2520.000	42.0	V	70.0	-28.0	Peak	224	1.0	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2522.030	45.2	V	54.0	-8.8	AVG	93	1.0	Note 1
2521.830	55.4	V	74.0	-18.6	PK	93	1.0	Note 1

Note 1: Emission is not in the restricted band, restricted band limit was used

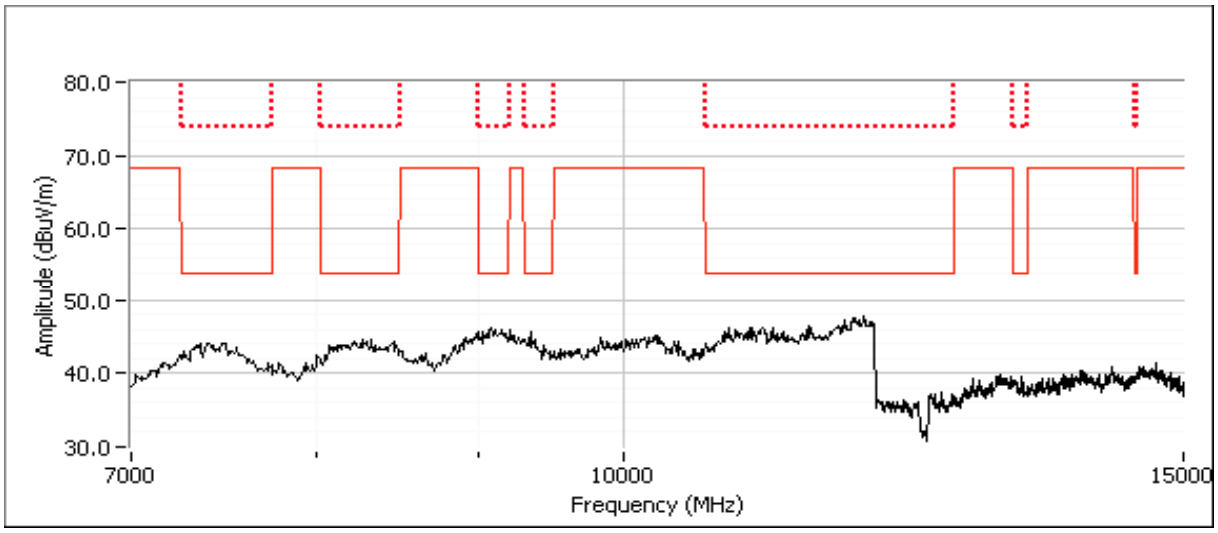
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #17: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5300 MHz, BT Basic @ 2480 MHz

Date of Test: 6/3/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	28.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

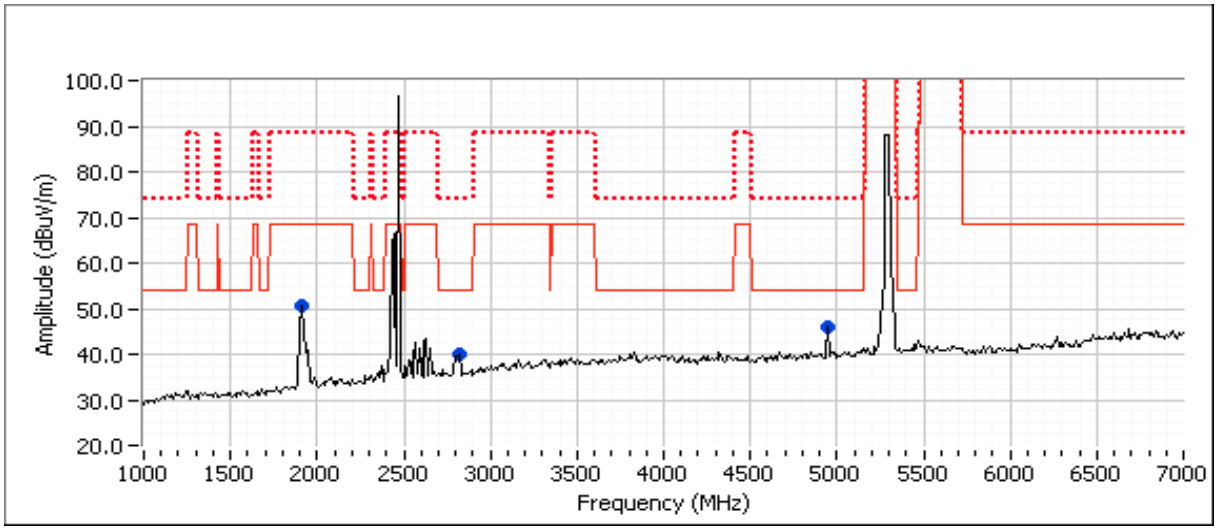
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1910.000	*50.5*	*V*	*68.3*	*-17.8*	*Peak*	*180*	*1.0*	
2820.000	*40.1*	*V*	*54.0*	*-13.9*	*Peak*	*180*	*1.0*	
4950.000	*46.1*	*V*	*54.0*	*-7.9*	*Peak*	*180*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4960.030	50.8	H	54.0	-3.2	AVG	119	1.0	POS; RB 1 MHz; VB: 10 Hz
4960.350	58.9	H	74.0	-15.1	PK	119	1.0	POS; RB 1 MHz; VB: 3 MHz
4960.030	50.6	V	54.0	-3.4	AVG	162	1.2	POS; RB 1 MHz; VB: 10 Hz
4959.870	60.4	V	74.0	-13.6	PK	162	1.2	POS; RB 1 MHz; VB: 3 MHz
1909.070	50.2	V	68.3	-18.1	PK	360	1.0	POS; RB 1 MHz; VB: 3 MHz
1911.370	49.5	H	68.3	-18.8	PK	174	1.0	POS; RB 1 MHz; VB: 3 MHz

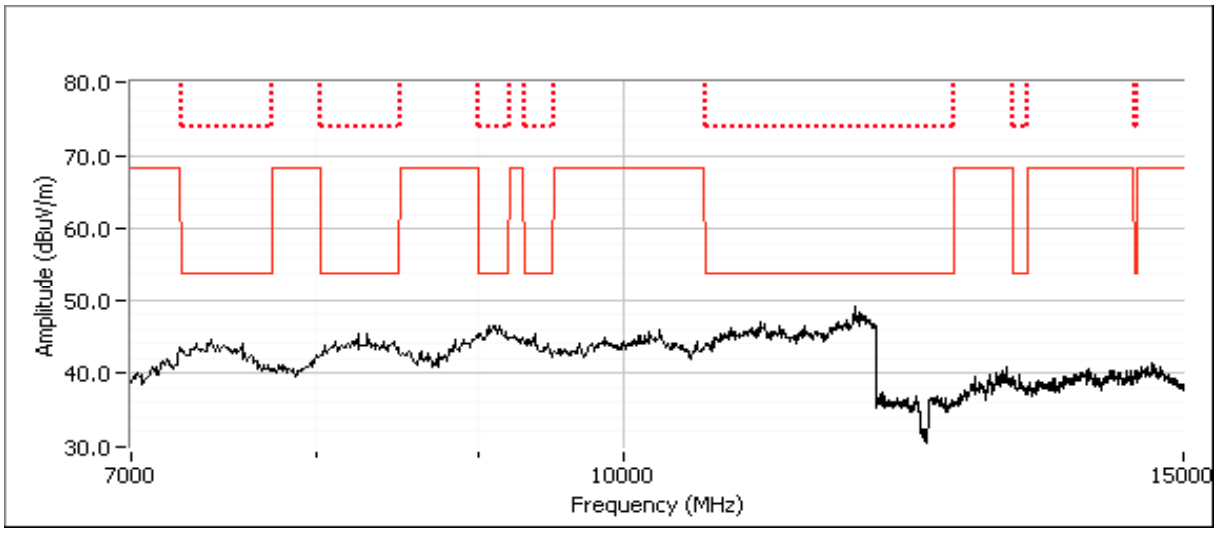
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #18: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5580 MHz, BT Basic @ 2480 MHz

Date of Test: 6/3/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	33.0
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

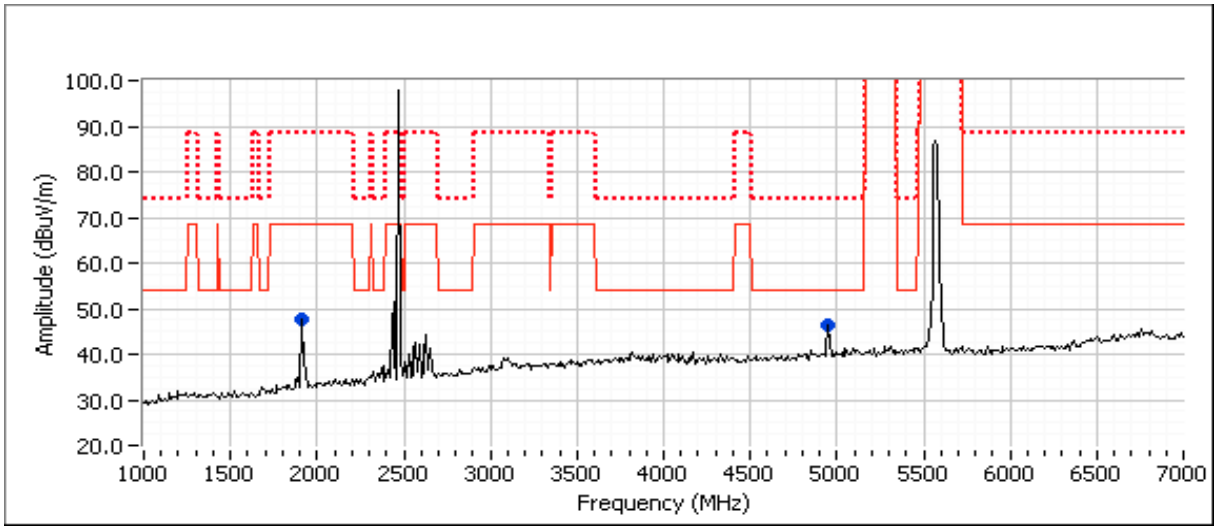
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1910.000	*47.6*	*V*	*68.3*	*-20.7*	*Peak*	*180*	*1.0*	
4950.000	*46.2*	*V*	*54.0*	*-7.8*	*Peak*	*180*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4960.040	50.5	H	54.0	-3.5	AVG	118	1.0	POS; RB 1 MHz; VB: 10 Hz
4960.490	59.8	H	74.0	-14.2	PK	118	1.0	POS; RB 1 MHz; VB: 3 MHz
4960.070	50.1	V	54.0	-3.9	AVG	162	1.2	POS; RB 1 MHz; VB: 10 Hz
4960.290	59.5	V	74.0	-14.5	PK	162	1.2	POS; RB 1 MHz; VB: 3 MHz
1919.800	50.0	V	68.3	-18.3	PK	22	1.0	POS; RB 1 MHz; VB: 3 MHz
1918.680	49.5	H	68.3	-18.8	PK	96	1.0	POS; RB 1 MHz; VB: 3 MHz

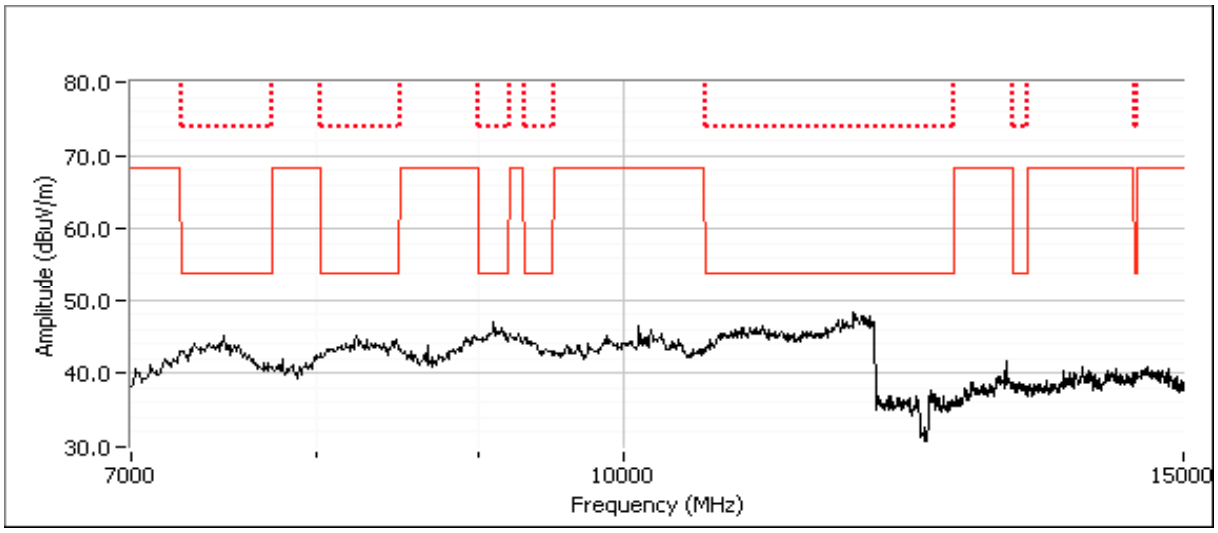
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Run #19: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: 802.11n20 @ 5785 MHz, BT Basic @ 2480 MHz

Date of Test: 6/3/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
Chain A	16.5	16.5	34.5
Chain B	8.0	-	8dBm

Spurious Radiated Emissions, 7 - 15GHz



Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

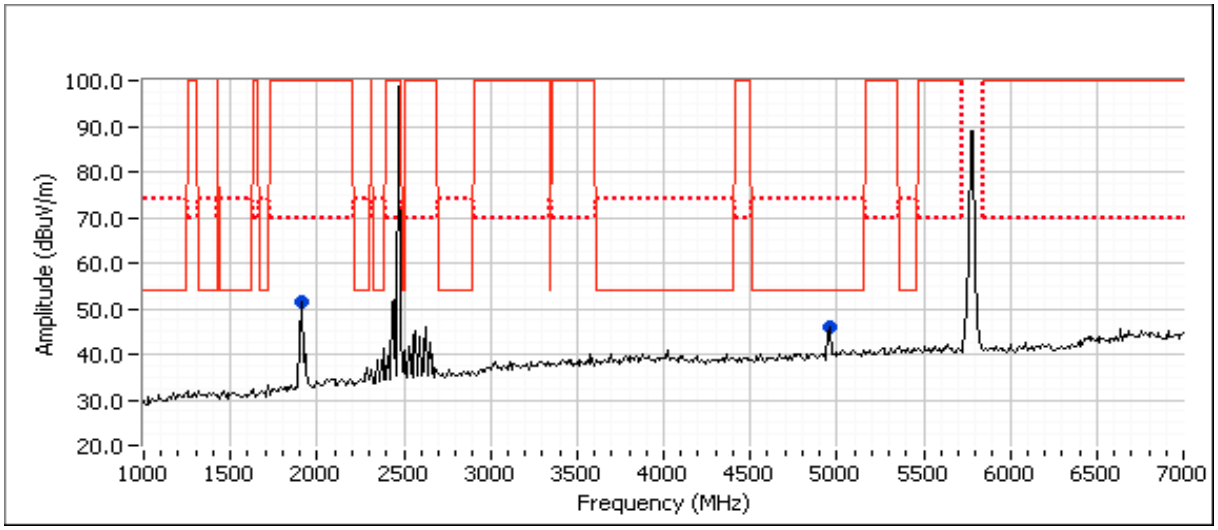
Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
-	-	-	-	-	-	-	-	

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)



Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1910.000	*51.3*	*V*	*70.0*	*-18.7*	*Peak*	*180*	*1.0*	
4960.000	*45.9*	*V*	*54.0*	*-8.1*	*Peak*	*180*	*1.0*	

Final measurements at 3m

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4960.050	50.5	V	54.0	-3.5	AVG	163	1.2	POS; RB 1 MHz; VB: 10 Hz
4960.450	59.3	V	74.0	-14.7	PK	163	1.2	POS; RB 1 MHz; VB: 3 MHz
4960.030	50.2	H	54.0	-3.8	AVG	118	1.0	POS; RB 1 MHz; VB: 10 Hz
4959.850	59.4	H	74.0	-14.6	PK	118	1.0	POS; RB 1 MHz; VB: 3 MHz
1914.740	37.8	H	54.0	-16.2	AVG	146	1.0	Note 1
1907.610	48.7	H	74.0	-25.3	PK	146	1.0	Note 1
1920.000	38.4	V	54.0	-15.6	AVG	360	1.0	Note 1
1907.370	49.1	V	74.0	-24.9	PK	360	1.0	Note 1

Note 1: Emission is not in the restricted band, restricted band limit was used

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

Radiated Emissions - Module

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/2/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4
Config. Used: 2
Config Change: None
Host Unit Voltage Host Laptop

General Test Configuration

The EUT and any local support equipment were located on the turntable for radiated emissions testing.

The test distance and extrapolation factor (if applicable) are detailed under each run description.

Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, and manipulation of the EUT's interface cables.

Ambient Conditions:

Temperature: 20.8 °C
Rel. Humidity: 35 %

Summary of Results

WiFi MAC Address: 001500BD5C54 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Test Performed	Limit	Result	Margin
1a - 802.11b / Bluetooth	Radiated Emissions 30 - 1000 MHz, Preliminary	15.209 / 15.247 / RSS 210	Pass	36.5 dBµV/m @ 132.74 MHz (-7.0 dB)
1b - 802.11a / Bluetooth	Radiated Emissions 30 - 1000 MHz, Preliminary	15.209 / 15.247 / 15.407 / RSS 211	Pass	35.0 dBµV/m @ 134.33 MHz (-8.5 dB)
2 - Worst Case	Radiated Emissions 30 - 1000 MHz, Maximized	15.209 / 15.247 / 15.407 / RSS 210	Pass	34.1 dBµV/m @ 225.80 MHz (-11.9 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

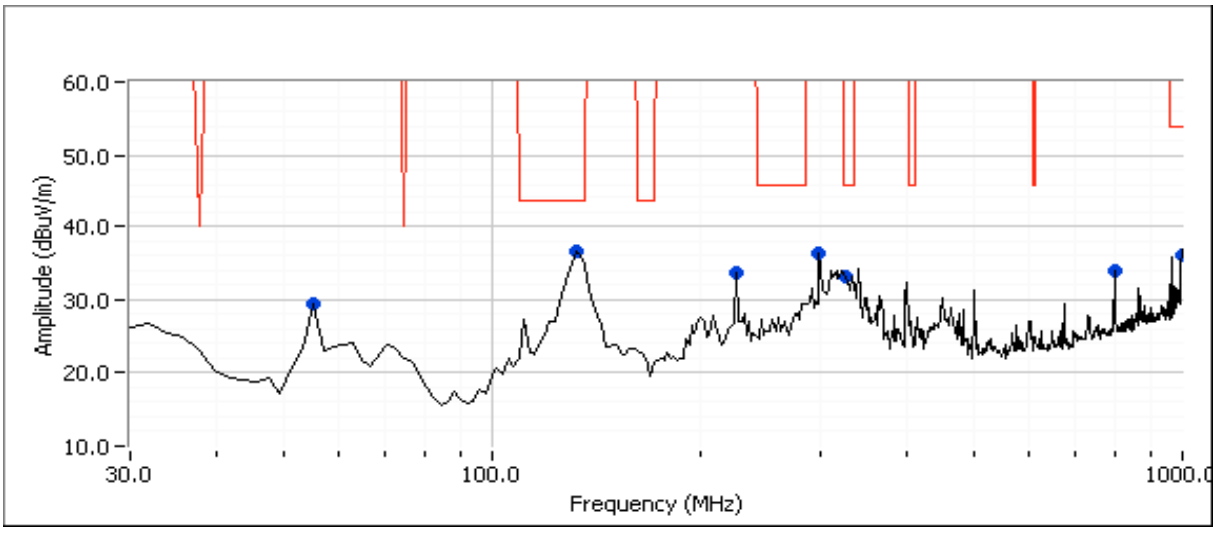
Frequency Range	Test Distance	Limit Distance	Extrapolation Factor
30 - 1000 MHz	3	3	0.0

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

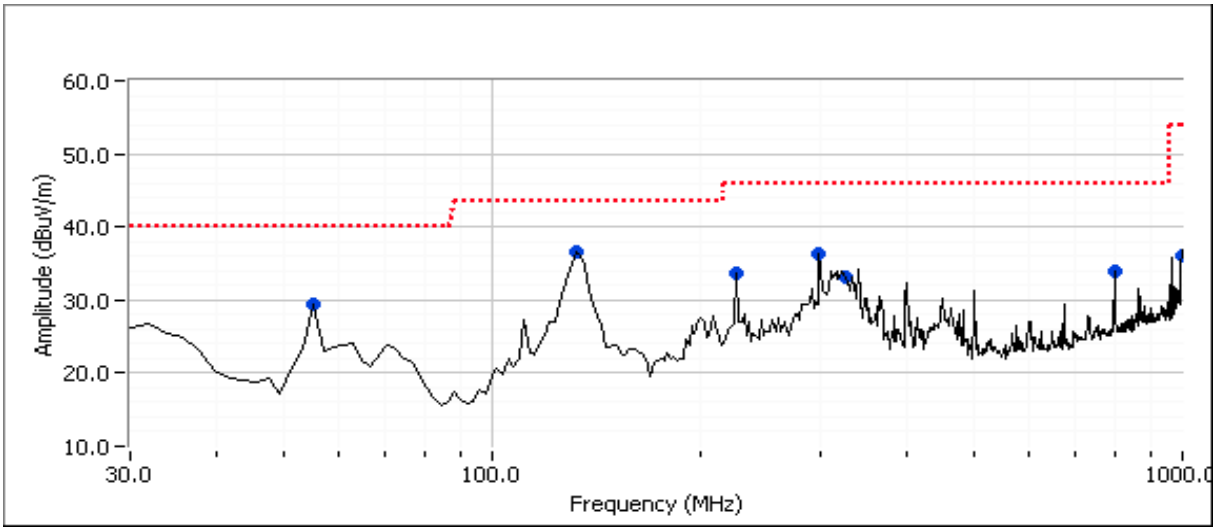
Run #1a: Preliminary Radiated Emissions, 30 - 1000 MHz
EUT at 2437 MHz (Wi-Fi) at 16.5 dBm and 2440 MHz (Bluetooth) at maximum level

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.209 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
132.742	36.5	H	43.5	-7.0	Peak	229	2.0	
56.453	29.3	V	40.0	-10.7	Peak	215	2.5	
225.795	33.7	H	46.0	-12.3	Peak	233	1.5	
297.351	36.2	V	46.0	-9.8	Peak	185	1.5	
324.003	33.1	H	46.0	-12.9	Peak	192	1.0	
800.042	33.9	V	46.0	-12.1	Peak	209	1.0	
995.918	36.0	H	54.0	-18.0	Peak	230	1.0	



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

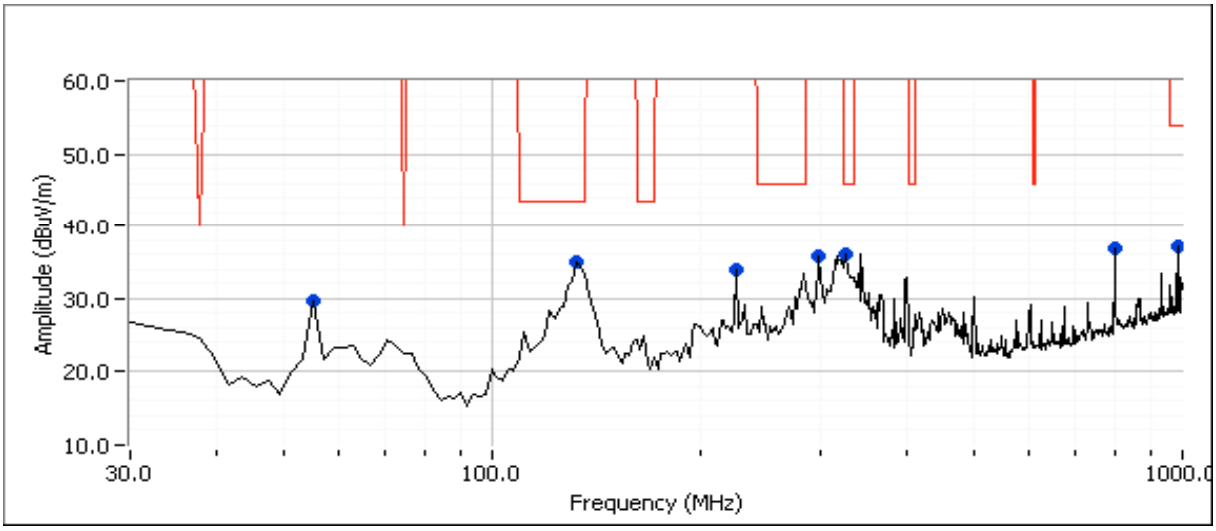


Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

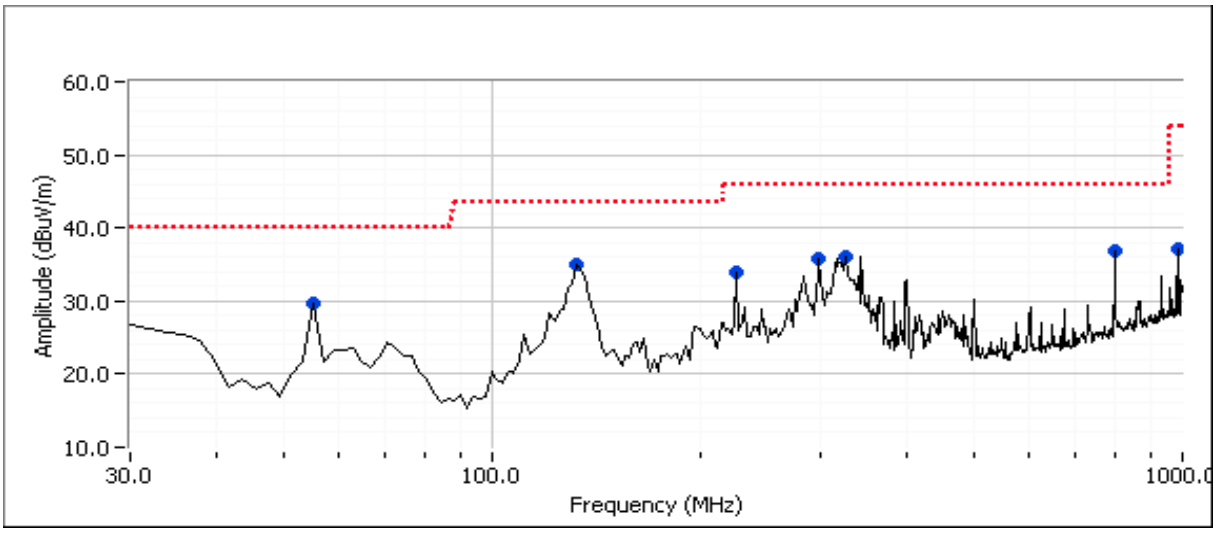
Run #1b: Preliminary Radiated Emissions, 30 - 1000 MHz
EUT at 5540 MHz (Wi-Fi) at 16.5 dBm and 2440 MHz (Bluetooth) at maximum level

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.209 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
134.327	35.0	H	43.5	-8.5	Peak	233	2.0	
56.453	29.6	V	40.0	-10.4	Peak	204	2.5	
225.795	34.0	H	46.0	-12.0	Peak	233	1.5	
299.028	35.7	V	46.0	-10.3	Peak	165	1.5	
328.280	36.0	H	46.0	-10.0	Peak	200	1.0	
799.945	36.8	V	46.0	-9.2	Peak	204	1.0	
985.120	37.2	H	54.0	-16.8	Peak	151	1.0	



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B



Run #2: Maximized Readings From Run #1

Maximized quasi-peak readings (includes manipulation of EUT interface cables)

Frequency	Level	Pol	FCC 15.209 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
225.795	34.1	H	46.0	-11.9	QP	225	1.5	QP (1.00s)
799.945	31.7	V	46.0	-14.3	QP	205	0.9	QP (1.00s)
134.327	31.3	H	43.5	-12.2	QP	223	1.9	QP (1.00s)
56.453	27.6	V	40.0	-12.4	QP	202	1.9	QP (1.00s)
328.280	29.4	H	46.0	-16.6	QP	214	0.9	QP (1.00s)
299.028	27.7	V	46.0	-18.3	QP	180	1.0	QP (1.00s)
985.120	32.8	H	54.0	-21.2	QP	142	0.9	QP (1.00s)

Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

Conducted Emissions

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/5/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: 2
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The host system was located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN.

Ambient Conditions:

Temperature: 21.5 °C
Rel. Humidity: 34 %

Summary of Results

WiFi MAC Address: 001500BD5C54 DRTU Tool Version 1.6.1-628 Driver version 16.0.0.49

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power,120V/60Hz	Class B	Pass	50.6 dBµV @ 0.208 MHz(-12.7 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

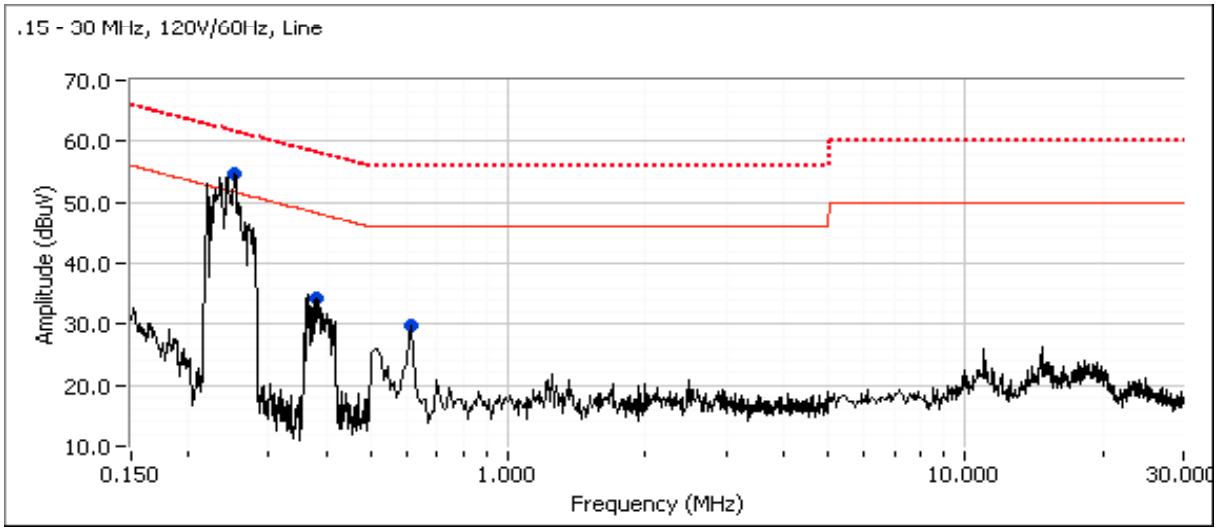
Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B

Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz

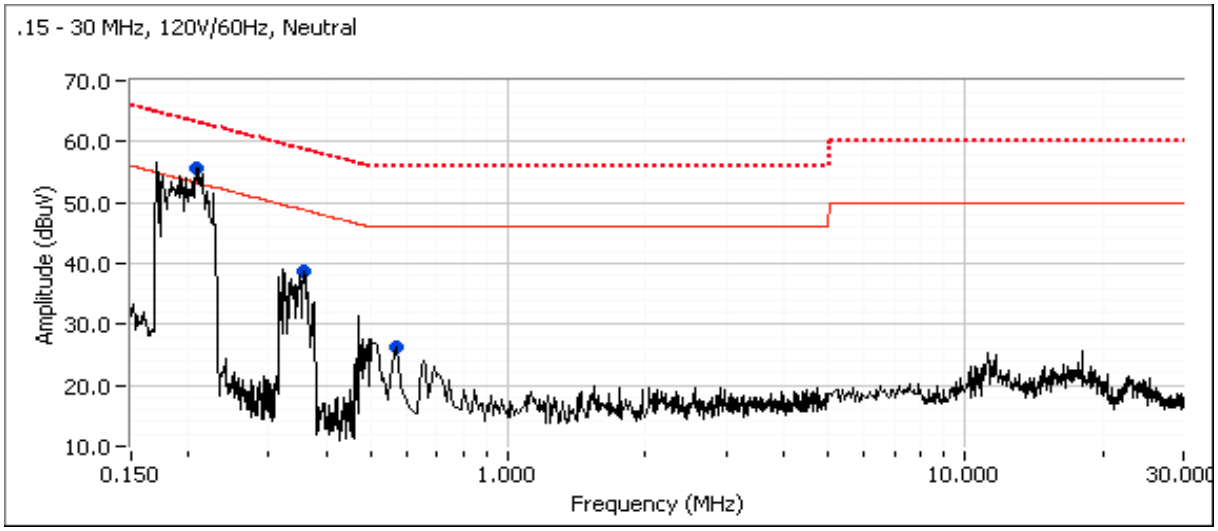
Note: The module was transmitting at 2412 MHz (Wi-Fi) at 16.5 dBm and 2441 MHz (Bluetooth) at maximum level.

Final quasi-peak and average readings

Frequency MHz	Level dBµV	AC Line	Class B Limit	Class B Margin	Detector QP/Ave	Comments
0.208	50.6	Neutral	63.3	-12.7	QP	QP (1.00s)
0.254	46.0	Line 1	61.6	-15.6	QP	QP (1.00s)
0.208	33.8	Neutral	53.3	-19.5	AVG	AVG (0.10s)
0.254	29.5	Line 1	51.6	-22.1	AVG	AVG (0.10s)
0.360	34.4	Neutral	58.7	-24.3	QP	QP (1.00s)
0.379	31.2	Line 1	58.3	-27.1	QP	QP (1.00s)
0.619	25.5	Line 1	56.0	-30.5	QP	QP (1.00s)
0.360	17.7	Neutral	48.7	-31.0	AVG	AVG (0.10s)
0.619	14.4	Line 1	46.0	-31.6	AVG	AVG (0.10s)
0.379	16.4	Line 1	48.3	-31.9	AVG	AVG (0.10s)
0.572	22.9	Neutral	56.0	-33.1	QP	QP (1.00s)
0.572	11.9	Neutral	46.0	-34.1	AVG	AVG (0.10s)



Client:	Intel	Job Number:	J91968
Model:	Intel Model 3160NGW Wireless Network Adapter	T-Log Number:	J92301
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15 B, 15.247, RSS 210	Class:	B



End of Report

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