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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 E

Model: 3160SDW

IC CERTIFICATION #:	1000M-3160SD
FCC ID:	PD93160SD
APPLICANT:	Intel Mobile Communications 100 Center Point Circle Suite 200 Columbia, SC 29210
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-3; 2845B-4, 2845B-5, 2845B-7
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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	01-23-2014	First release	

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SCOPE

An electromagnetic emissions test has been performed on the Intel Mobile Communications model 3160SDW, 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 E requirements for UNII Devices

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 C63.10-2009
FCC General UNII Test Procedures KDB789033

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 of Intel Mobile Communications model 3160SDW complied with the requirements of the following regulations:

RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15, Subpart E requirements for UNII Devices

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 model 3160SDW and therefore apply only to the tested sample. The sample was selected and prepared by Steve 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

UNII / LELAN DEVICES

Operation in the 5.15 – 5.25 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407(e)	-	Indoor operation only	Refer to user's manual	N/A	Complies
15.407(a) (2)	-	Min 26dB Bandwidth	11a: 37.1MHz n/ac20: 36.6MHz n/ac40: 42.3MHz ac80: 80.4MHz	N/A – limits output power if < 20MHz	N/A
-	A9.2(1)	Min 99% Bandwidth	11a: 17.0MHz n/ac20: 18.5MHz n/ac40: 36.1MHz ac80: 74.9MHz	N/A – limits output power if < 20MHz	N/A
15.407 (a) (1)	A9.2(1)	Output Power	11a: 16.3dBm (42.7mW) n/ac20: 16.4dBm (44.7mW) n/ac40: 16.6dBm (45.2mW) ac80: 12.0dBm (15.7mW) (Max eirp: 0.103W)	17dBm / 50mW (eirp < 23 dBm)	Complies
15.407 (a) (1)	-	Power Spectral Density	11a: 3.4dBm/MHz n/ac20: 3.3dBm/MHz n/ac40: 1.1dBm/MHz ac80: -6.2dBm/MHz	4 dBm/MHz	Complies
-	A9.5 (2)			6.4 dBm/MHz	Complies

Operation in the 5.25 – 5.35 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)	-	26dB Bandwidth	11a: 37.4MHz n/ac20: 38.3MHz n/ac40: 43.5MHz ac80:87.8MHz	N/A – limits output power if < 20MHz	N/A
-	A9.2(1)	Min 99% Bandwidth	11a:17.4MHz n/ac20:18.2MHz n/ac40: 36.1MHz ac80: 75.0MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	11a: 16.5dBm (44.6mW) n/ac20: 16.3dBm (42.5mW) n/ac40: 14.9dBm (30.6mW) ac80: 13.9dBm (24.4mW) (Max eirp: 0.105W)	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2)	-	Power Spectral Density	11a: 3.7dBm/MHz n/ac20: 3.2dBm/MHz n/ac40: -0.6dBm/MHz ac80: -4.2dBm/MHz	11.0 dBm/MHz	Complies
-	A9.2(2) / A9.5 (2)	Power Spectral Density		11.0 dBm / MHz[1]	Complies

[1] Reduced from 11dBm because highest value exceeded the average value by more than 3dB

Operation in the 5.47 – 5.725 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)	-	26dB Bandwidth	11a:27.3MHz n/ac20: 26.2MHz n/ac40: 41.6MHz ac80: 80.7MHz	N/A – limits output power if < 20MHz	N/A
-	A9.2(1)	Min 99% Bandwidth	11a:17.0MHz n/ac20:18.2MHz n/ac40: 36.1MHz ac80: 74.9MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	11a: 16.2dBm (41.4mW) n/ac20: 16.5dBm (44.5mW) n/ac40: 16.5dBm (44.7mW) ac80: 15.9dBm (38.7mW) (Max eirp: 0.135W)	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2))		Power Spectral Density	11a: 3.5dBm/MHz n/ac20: 3.5dBm/MHz n/ac40: 1.0dBm/MHz ac80: -2.2dBm/MHz	11.0 dBm/MHz	Complies
	A9.2(2) / A9.5 (2)	Power Spectral Density		11.0 dBm / MHz[2]	Complies
KDB 443999	A9	Non-operation in 5600 – 5650 MHz sub band	Device cannot operate in the 5600 – 5650 MHz band –refer to Operational Description		Complies

[2] Reduced from 11dBm because highest value exceeded the average value by more than 3dB

Requirements for all U-NII/LELAN bands

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	A9.5a	Modulation	Digital Modulation is used (OFDM)	Digital modulation is required	Complies
15.407(b) (5) / 15.209	A9.3	Spurious Emissions below 1GHz	32.9 dBµV/m @ 112.19 MHz (-10.6 dB)	Refer to page 24	Complies
15.407(b) (5) / 15.209	A9.3	Spurious Emissions above 1GHz	51.7 dBµV/m @ 5350.0 MHz (-2.3 dB)		Complies
15.407(a)(6)	-	Peak Excursion Ratio	8.4dB	< 13dB	Complies
	A9.5 (3)	Channel Selection	Spurious emissions tested at outermost channels in each band	Device was tested on the top, bottom and center channels in each band	N/A
15			Measurements on three channels in each band		N/A
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit	Operation is discontinued in the absence of information (Operational Description page 9)	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	A9.5 (5)	Frequency Stability	Frequency stability is better than 20ppm (Operational Description page 9)	Signal shall remain within the allocated band	Complies
15.407 (h1)	A9.4	Transmit Power Control	TPC is not required as the device operates at below 500mW eirp	The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW)	Complies
15.407 (h2)	A9.4	Dynamic frequency Selection (device without radar detection)	Refer to separate test report, reference R94329	Channel move time < 10s Channel closing transmission time < 260ms	Complies
	A9.9g	User Manual information	Refer to Users Manual exhibit for details	Warning regarding interference from Satellite Systems	Complies

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	EUT uses IPEX-4 RF ports	Unique or integral antenna required	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	45.7 dBµV @ 0.398 MHz (-2.2 dB)	Refer to page 22	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 7.1.3	User Manual	Refer to Users Manual exhibit for details	Statement required regarding non-interference	Complies
-	RSP 100 RSS GEN 7.1.2	User Manual	Refer to Users Manual exhibit for details	Statement for products with detachable antenna	Complies
-	RSP 100 RSS GEN 4.4.1	Max 99% Bandwidth	11a: 17.6MHz n/ac20: 18.8MHz n/ac40: 36.6MHz ac80: 75.0MHz	Information only	N/A

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 3160SDW is an IEEE 802.11a/b/g/n/ac wireless network adapter that supports 1x1 (SISO) operation and Bluetooth in Basic Rate, Enhanced Data Rate, and Low Energy modes. It is designed to be soldered down in host devices.

The sample was received on December 30, 2013 and tested on January 2, 3, and 6 - 12, 2014. The EUT consisted of the following component(s):

Company	Model	Description	MAC Address:	FCC ID
Intel Mobile Communications	3160SDW	Wireless Network Adapter	001500E60B22	PD93160SD 1000m-3160SD
			001500E6085C	

OTHER EUT DETAILS

802.11abgn + ac80, 1x1, module
Bluetooth 4.0
Supports simultaneous transmission
No transmit/receive diversity

ANTENNA SYSTEM

The EUT antenna is a two-antenna PIFA antenna system – SkyCross, Inc. One antenna is used for WiFi operation and one for Bluetooth operation. For Bluetooth: transmit is chain B, receive is chain B. For WiFi, only Chain A is used for transmit and receive.

The antenna connects to the EUT via a non-standard antenna connector, thereby meeting the requirements of FCC 15.203.

Band (MHz)	Antenna Gain
2400-2483.5	3.2 dBi
5150-5250	3.6 dBi
5250-5350	3.7 dBi
5470-5725	4.8 dBi
5725-5850	5.0 dBi

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 NTS Silicon Valley.

SUPPORT EQUIPMENT

The following equipment was used as local support equipment for testing:

Used for Tx Spurious >1GHz and UNII Antenna Port measurements

Company	Model	Description	Serial Number	FCC ID
Dell	DCCY	Desktop Computer	BJYN64J	N/A
-	ACK-260UAC	Keyboard	805229537(USA)	N/A
Logitech	M-BD69	Mouse	LNA20956449	N/A
HANNS	HX191	Monitor	017GR3XY00286	N/A
Agilent	-	Power Supply	-	-
Intel	NGFF Extender (ASS00390-101)	Test Fixture	N/A	-

Used for Simultaneous transmission, Tx spurious <1GHz, and AC conducted emissions

Company	Model	Description	Serial Number	FCC ID
Dell	Latitude E5400	Laptop	Unmarked	N/A
Dell	LA90PS3-00	AC/DC Adapter	CN-0FR613-71615-7CO-0058	N/A
Intel	-	Test Fixture	-	-

EUT INTERFACE PORTS

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

Used for Tx Spurious >1GHz and UNII Antenna Port measurements

Port		Cable(s)		
From	To	Description	Shielded/Unshielded	Length(m)
Computer – USB	Keyboard	Multiconductor	Shielded	1.5
Computer – USB	Mouse	Multiconductor	Shielded	1.5
Computer – VGA	Monitor	Multiconductor	Shielded	1.5
PCIe Port	Test Fixture	Ribbon Cable	Unshielded	0.8
EUT – RF ports (x2)	Antenna Fixture	coaxial (x2)	Shielded	0.2
Power Supply	Test Fixture	2wire	Unshielded	0.8

Used for Simultaneous transmission, Tx spurious <1GHz, and AC conducted emissions

Port		Cable(s)		
From	To	Description	Shielded/Unshielded	Length(m)
DC power (laptop)	External power supply	2 wire	Unshielded	2
AC input (power supply)	AC mains	2 wire	Unshielded	2
PCIe Internal Port	Test Fixture	Ribbon Cable	Unshielded (Shielded for radiated emissions)	0.8
EUT – RF ports (x2)	Antenna Fixture	coaxial (x2)	Shielded	0.2

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 1.7.4-855 and the device driver was version 16.8.0.3.

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 3	769238	2845B-3	41039 Boyce Road Fremont, CA 94538-2435
Chamber 4	211948	2845B-4	
Chamber 7	A2LA accreditation	2845B-7	

ANSI C63.4 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.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. 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 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4.

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 C63.10 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 as specified in ANSI C63.4. 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 C63.10, 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.

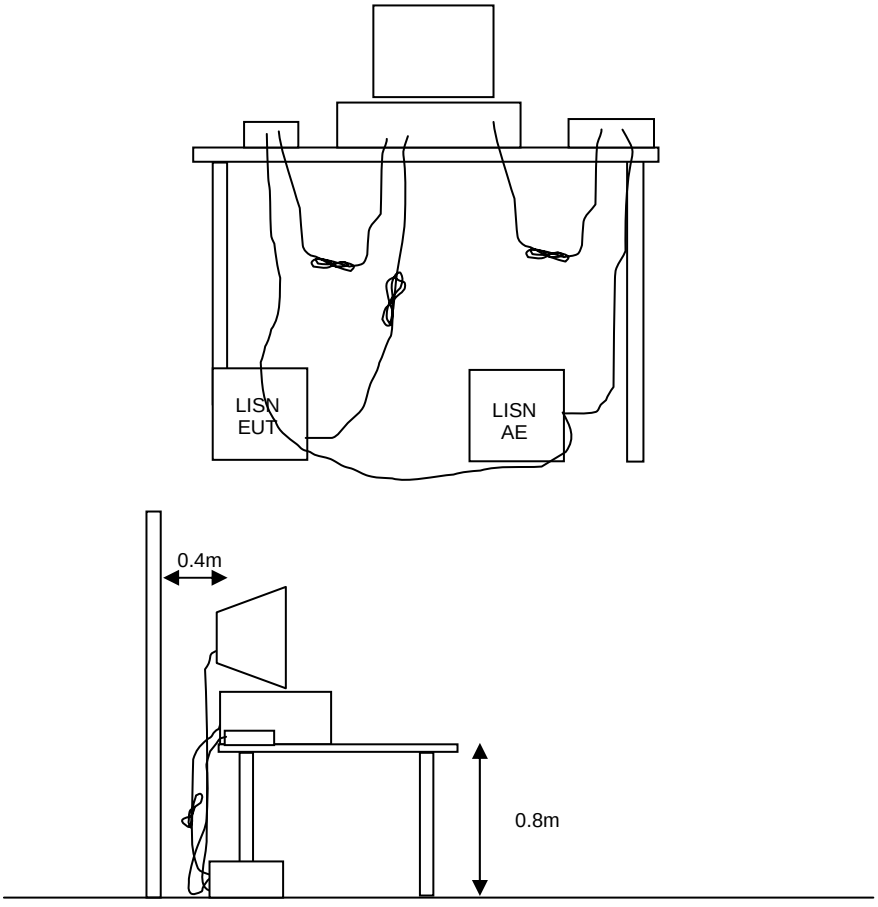


Figure 1 Typical Conducted Emissions Test Configuration

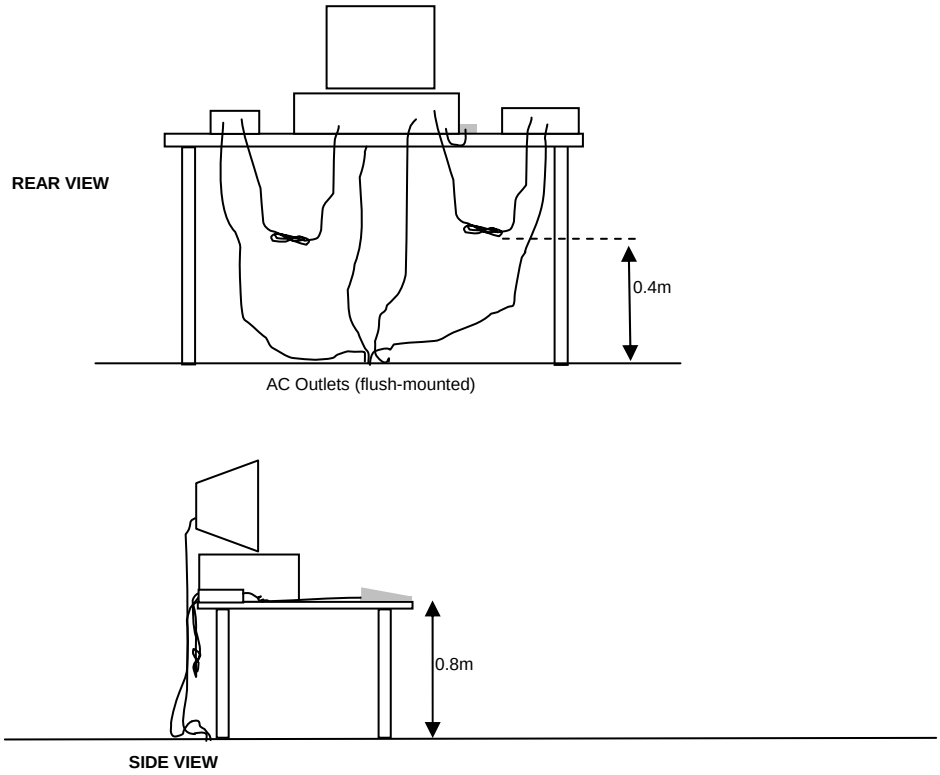
RADIATED EMISSIONS

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.

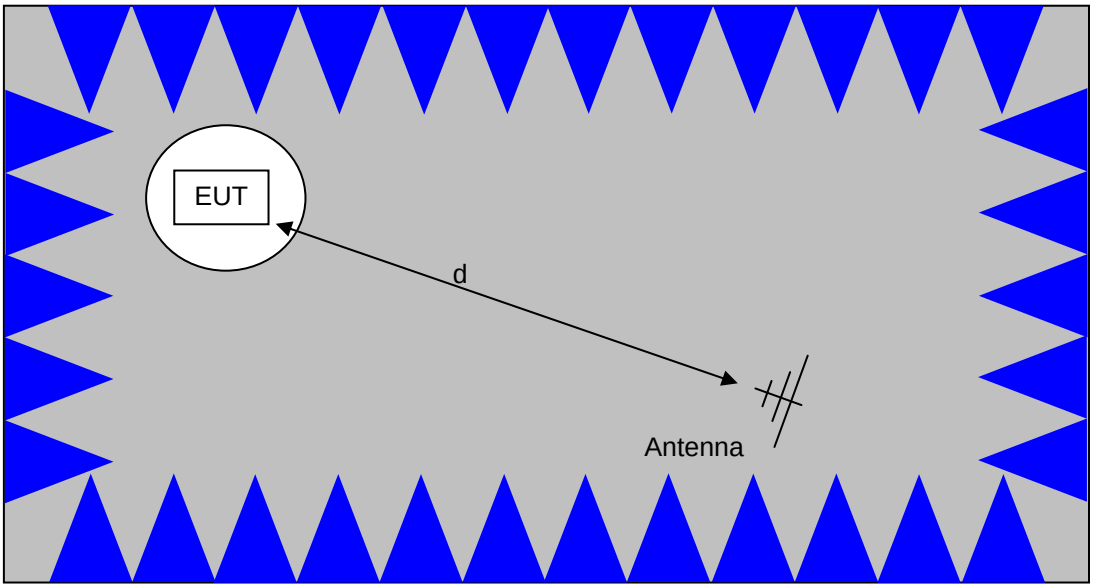
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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.

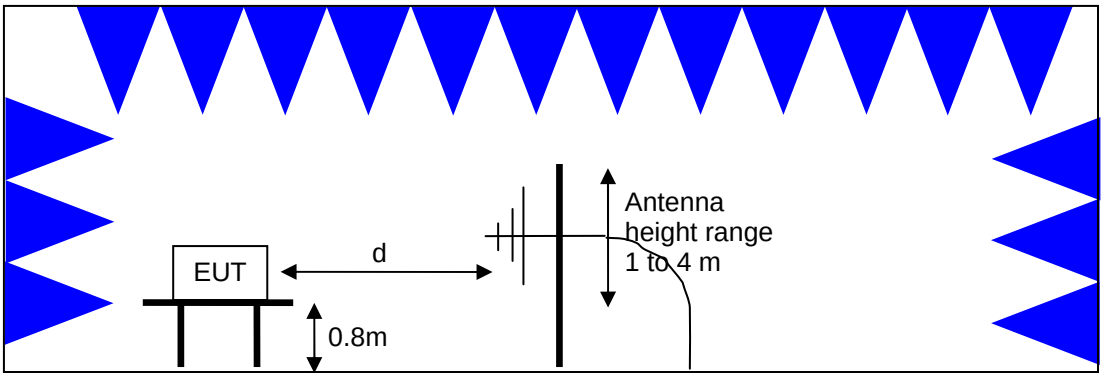


Typical Test Configuration for Radiated Field Strength Measurements



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.

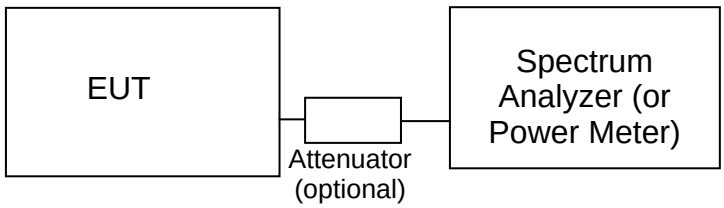
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



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 NTS 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, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and 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[3] (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

FCC 15.407 (a) OUTPUT POWER LIMITS

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
5150 – 5250	50mW (17 dBm)	4 dBm/MHz
5250 – 5350	250 mW (24 dBm)	11 dBm/MHz
5725 – 5825	1 Watts (30 dBm)	17 dBm/MHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5825 MHz band may use antennas with gains of up to 23dBi without this limitation. If the gain exceeds 23dBi then the output power limit of 1 Watt is reduced by 1dB for every dB the gain exceeds 23dBi.

The peak excursion envelope is limited to 13dB.

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

OUTPUT POWER LIMITS –LELAN DEVICES

The table below shows the limits for output power and output power density defined by RSS 210. 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
5150 – 5250	200mW (23 dBm) eirp	10 dBm/MHz eirp
5250 – 5350	250 mW (24 dBm)[4] 1W (30dBm) eirp	11 dBm/MHz
5470 – 5725	250 mW (24 dBm)[5] 1W (30dBm) eirp	11 dBm/MHz
5725 – 5825	1 Watts (30 dBm) 4W eirp	17 dBm/MHz

In addition, the power spectral density limit shall be reduced by 1dB for every dB the highest power spectral density exceeds the "average" power spectral density) by more than 3dB. The "average" power spectral density is determined by dividing the output power by 10log(EBW) where EBW is the 99% power bandwidth.

Fixed point-to-point applications using the 5725 – 5825 MHz band may use antennas with gains of up to 23dBi without this limitation. If the gain exceeds 23dBi then the output power limit of 1 Watt is reduced by 1dB for every dB the gain exceeds 23dBi.

SPURIOUS EMISSIONS LIMITS –UNII and LELAN DEVICES

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of –27dBm/MHz, which is a field strength of 68.3dBuV/m/MHz at a distance of 3m. For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10MHz of the allocated band is increased to –17dBm/MHz.

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

[4] If EIRP exceeds 500mW the device must employ TPC
[5] If EIRP exceeds 500mW the device must employ TPC

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, 30-Dec-13				
Rohde & Schwarz	Signal Analyzer 20 Hz - 26.5 GHz	FSQ26	2327	4/25/2014
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/19/2014
Radiated Emissions, 1,000 - 6,500 MHz, 30-Dec-13				
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	7/12/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Spurious Emissions, 1000 - 25,000 MHz, 31-Dec-13				
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/26/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/3/2014
Radiated Emissions, 1,000 - 40,000 MHz, 02-Jan-14				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	10/31/2014
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	9/14/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	10/3/2014
Radiated Emissions, 1,000 - 18,000 MHz, 03-Jan-14				
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/26/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	9/18/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	11/26/2014
Radiated Emissions, 1000 - 18,000 MHz, 04-Jan-14				
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	11/26/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/26/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	9/18/2014
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/18/2014
Radiated Emissions, 1,000 - 40,000 MHz, 06-Jan-14				
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014

Manufacturer	Description	Model	Asset #	Cal Due
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
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	11/26/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/26/2014
A. H. Systems	Purple System Horn, 18-40GHz	SAS-574, p/n: 2581	2160	6/28/2014
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/18/2014
Radiated Emissions BE, 1000 - 6,000 MHz, 07-Jan-14				
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/8/2014
Radio Antenna Port (Power and Spurious Emissions), 07-Jan-14 to 12-Jan-14				
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/19/2014
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	1/28/2014
Radiated Emissions, 1000 - 26,500 MHz, 07-Jan-14				
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	8/2/2014
Hewlett Packard	Head (Inc W1-W4, 1946 , 1947) Purple	84125C	1772	6/18/2014
A. H. Systems	Red System Horn, 18-40GHz	SAS-574, p/n: 2581	2161	6/10/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	2199	2/19/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Radiated Spurious Emissions, 1000 - 25,000 MHz, 07-Jan-14				
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/19/2014
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	7/12/2014
Hewlett Packard	Head (Inc W1-W4, 1946 , 1947) Purple	84125C	1772	6/18/2014
A. H. Systems	Red System Horn, 18-40GHz	SAS-574, p/n: 2581	2161	6/10/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2238	9/18/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Radiated Spurious Emissions, 1000 - 15,000 MHz, 08-Jan-14				
Narda West	High Pass Filter, 8 GHz	HPF 180	821	3/13/2014
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	Signal Analyzer 20 Hz - 26.5 GHz	FSQ26	2327	4/25/2014

Manufacturer	Description	Model	Asset #	Cal Due
Agilent Technologies	USB Average Power Sensor	U2001A	2442	12/19/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/26/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	9/18/2014
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/18/2014
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/18/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/3/2014
Radiated Emissions, 1000 - 15,000 MHz, 09-Jan-14				
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	7/12/2014
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/13/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	8/2/2014
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	8/2/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/3/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Radio Antenna Port (Power and Spurious Emissions), 09-Jan-14				
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	3/7/2014
Radiated Emissions, 30 - 1,000 MHz, 10-Jan-14				
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1548	8/9/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/8/2014
Com-Power	Preamplifier, 1-1000 MHz	PAM-103	2885	11/1/2014
Conducted Emissions - AC Power Ports, 10-Jan-14				
EMCO	LISN, 10 kHz-100 MHz	3825/2	1293	2/14/2014
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	1401	5/15/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/8/2014

Appendix B Test Data

T94177 Pages 31 – 183

Client:	Intel Mobile Communications	Job Number:	J94122
Product	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Emissions Standard(s):	FCC Part 15, RSS-210	Class:	B
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

For The

Intel Mobile Communications

Product

3160SDW

Date of Last Test: 1/16/2014

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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 a GATED average power meter and with the device configured in a continuous transmit mode on Chain 1(Port 2) at the various data rates in each mode to verify the highest power mode:

Sample Notes

MAC Address: 001500E60B22 DRTU Tool Version 1.7.4-845 Driver version 16.8.0.3

Date of Test: 12/30/2013
Test Engineer: Jack Liu
Test Location: FT Lab6

Mode	Data Rate	Power (dBm)	Power setting
802.11b	1	**16.6**	20.0
	2	16.5	
	5.5	16.4	
	11	16.4	
802.11g	6	**15.2**	20.0
	9	15.1	
	12	15.1	
	18	15.1	
	24	15.0	
	36	14.9	
	48	14.8	
	54	14.8	

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Mode	Data Rate	Power (dBm)	Power setting	
802.11n/ac 20MHz	6.5	**11.6**	20.0	
	13	11.2		
	19.5	11.0		
	26	10.8		
	39	10.6		
	52	10.4		
	58.5	10.4		
	65	10.4		
	78	10.1		<<-11ac mode only
802.11n/ac 40MHz	13.5	**10.5**	20.0	
	27	10.4		
	40.5	10.3		
	54	10.2		
	81	10.1		
	108	10.0		
	121.5	10.0		
	135	10.0		
	162	9.9		<<-11ac mode only
	180	9.9		<<-11ac mode only
802.11ac 80MHz	29.3	**10.1**	20.0	
	58.5	10.0		
	87.8	9.9		
	117	9.8		
	175.5	9.7		
	234	9.6		
	266.3	9.5		
	292.5	9.4		
	351	9.4		
	390	9.4		

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

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

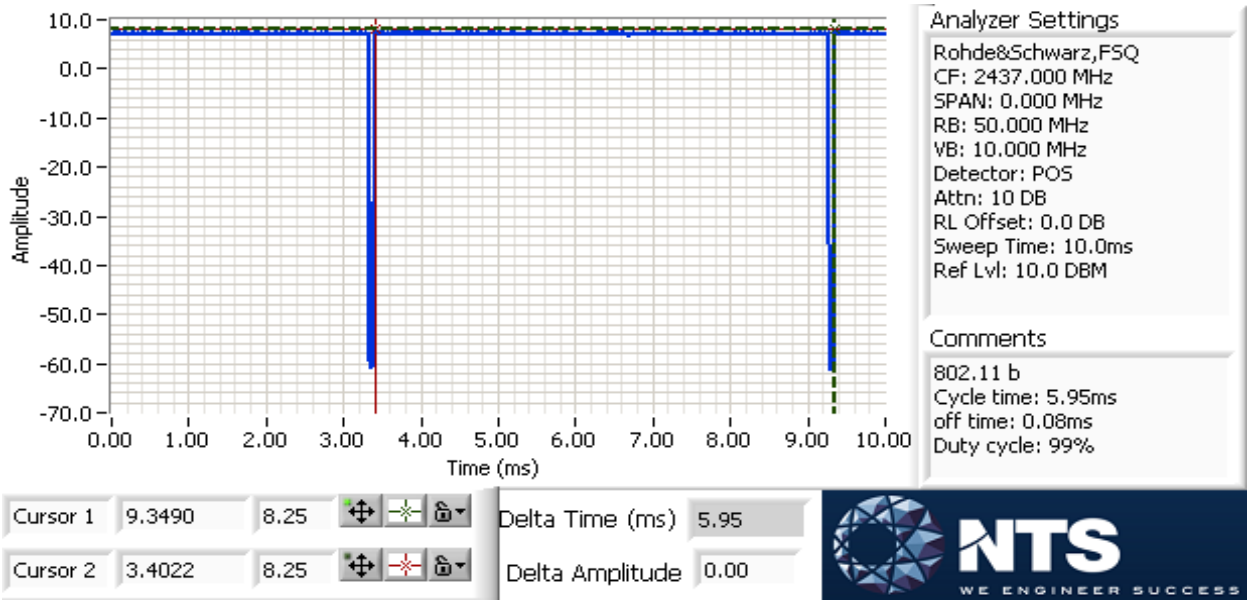
Duty Cycle

Date of Test: 12/30/2013
Test Engineer: Jack Liu
Test Location: FT Lab6

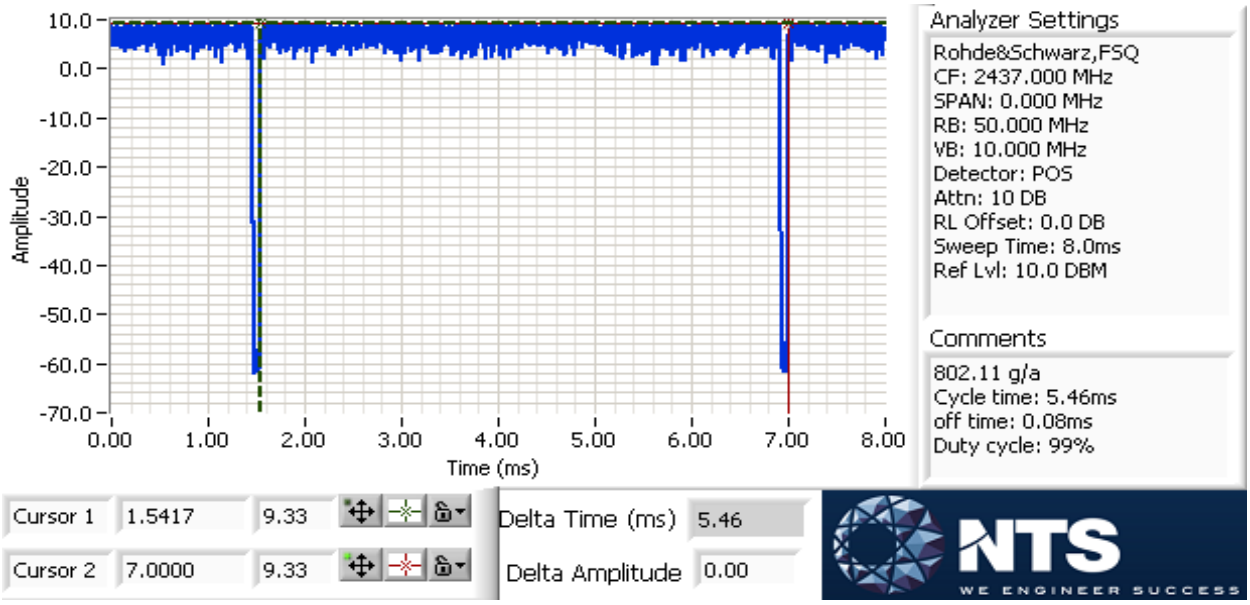
Duty cycle measurements performed on the worse case data rate for power.
Notes: Measurements taken with maximum RBW/VBW settings allowed.

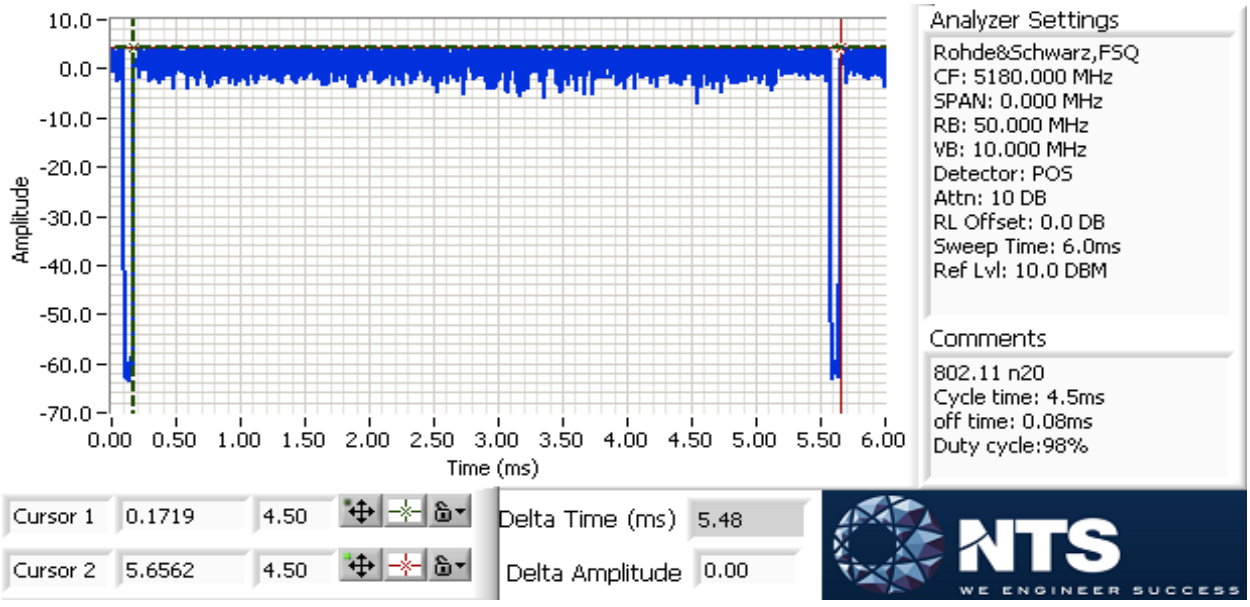
Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11b	1Mb/s	0.99	Yes	10	0	0	100
11g	6Mb/s	0.99	Yes	8	0	0	125
11a	6Mb/s	0.99	Yes	8	0	0	125
n20	HT0	0.98	Yes	6	0	0	166.67
n40	HT0	0.97	Yes	5	0.12	0.24	200
ac80	VHT0	0.94	Yes	2	0.26	0.51	500
BLE	-	0.63	Yes	0.4	1.97	3.95	2500

* Correction factor when using RMS/Power averaging - 10*log(1/x)
** Correction factor when using linear voltage average - 20*log(1/x)
T = Minimum transmission duration

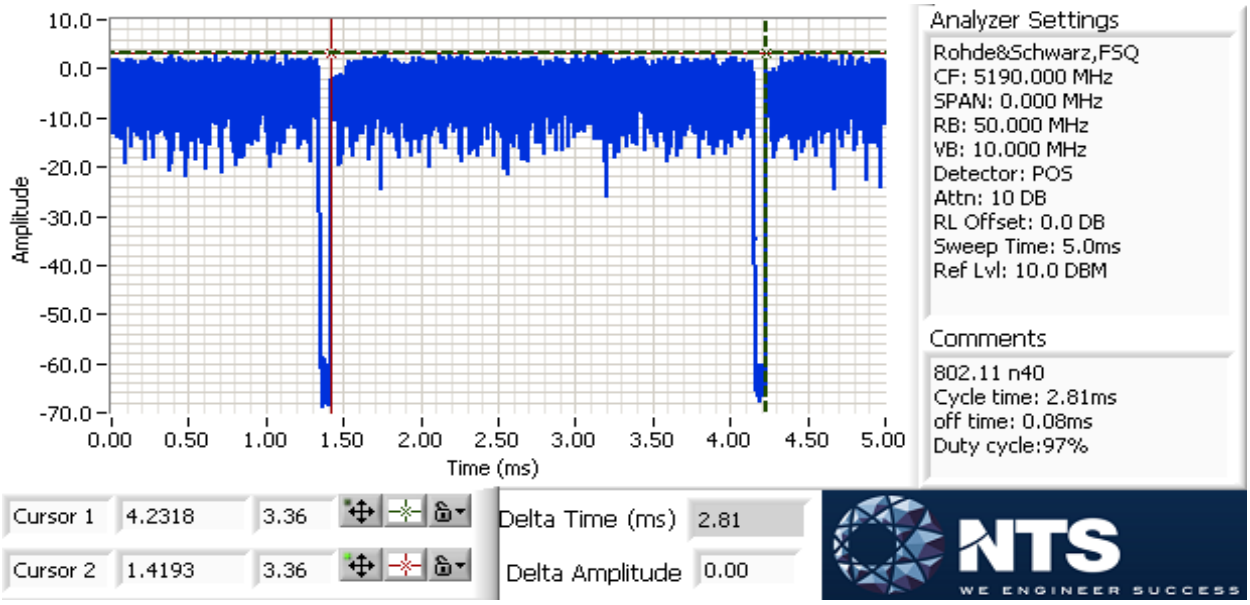


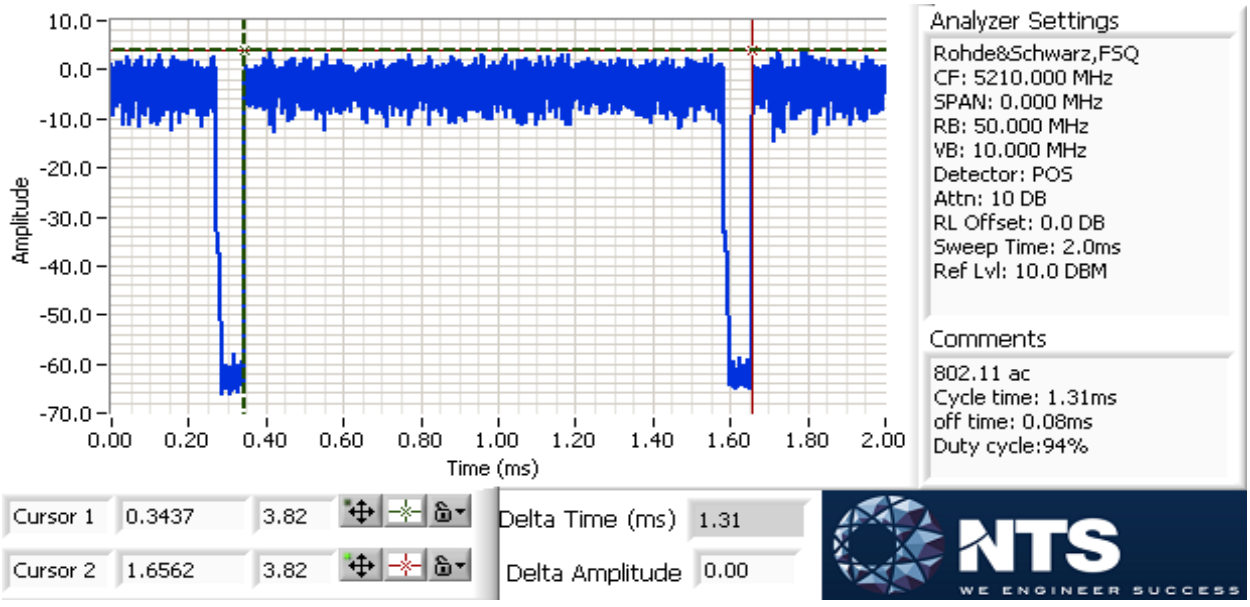
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



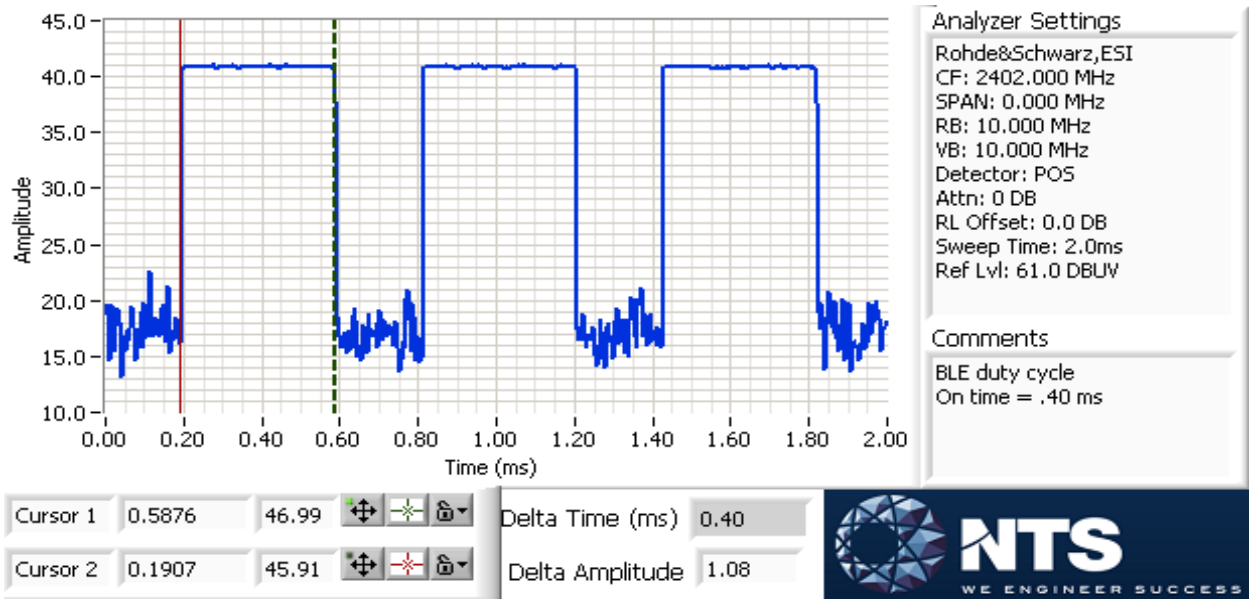


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

RSS 210 and FCC 15.407 (UNII) 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, unless otherwise noted.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 31 %

Summary of Results

For Wi-Fi, Chain A (2) is used for Tx and Rx. For Bluetooth, chain B (1) is used for Tx and Rx.
MAC Address: 001500E60B22 DRTU Tool Version 1.7.4-855 Driver version 16.8.0.3

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	BT Basic 11b	2402MHz 2412MHz	9 21.0	-	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	48.8 dBµV/m @ 4804.0 MHz (-5.2 dB)
2	BT Basic 11b	2480MHz 2462MHz	9 22.0	-			42.6 dBµV/m @ 4960.0 MHz (-11.4 dB)
3	BT Basic 11g	2402MHz 2412MHz	9 22.5	-			49.0 dBµV/m @ 4804.1 MHz (-5.0 dB)
4	BT Basic 11g	2480MHz 2462MHz	9 22.5	-			42.9 dBµV/m @ 4960.0 MHz (-11.1 dB)
Wi-Fi mode for the following runs based on the worst case mode from runs 1 through 4							
5	BT Basic 11g	2402MHz 2437MHz	9 22.5	-	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	44.9 dBµV/m @ 4804.0 MHz (-9.1 dB)
6		2441MHz 2412MHz	9 22.5	-			42.8 dBµV/m @ 4882.0 MHz (-11.2 dB)
7		2441MHz 2462MHz	9 22	-			41.7 dBµV/m @ 4882.0 MHz (-12.3 dB)
8		2480MHz 2437MHz	9 22.5	-			40.6 dBµV/m @ 4960.0 MHz (-13.4 dB)

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Wi-Fi mode and channel and Bluetooth channel for the following runs based on the worst case mode from runs 1 through 8

9	BT EDR 11g	2402MHz 2412MHz	1 22.5	-	Radiated Emissions, 1 - 10 GHz	FCC Part 15.209 / 15.247(c)	56.3 dBµV/m @ 1244.7 MHz (-17.7 dB)
10		2402MHz 2437MHz	1 22.5	-			56.2 dBµV/m @ 1245.9 MHz (-17.8 dB)

Bluetooth mode for the following runs based on worst case mode from runs 1 through 10 combined with n20 mode at center channel in each 5 GHz band

11	BT Basic n20	2402MHz 5200MHz	9 29	-	Radiated Emissions, 1 - 15 GHz	FCC Part 15.209 / 15.247(c) / 15.407	48.5 dBµV/m @ 4804.0 MHz (-5.5 dB)
12		2441MHz 5200MHz	9 29	-			46.3 dBµV/m @ 4882.0 MHz (-7.7 dB)
13		2480MHz 5200MHz	9 29	-			43.9 dBµV/m @ 4960.0 MHz (-10.1 dB)
14		2402MHz 5300MHz	9 28.5	-			49.3 dBµV/m @ 4804.0 MHz (-4.7 dB)
15		2402MHz 5580MHz	9 30.5	-			47.1 dBµV/m @ 4804.1 MHz (-6.9 dB)
16		2402MHz 5785MHz	9 31.5	-			49.7 dBµV/m @ 4804.0 MHz (-4.3 dB)
17		2480MHz 5300MHz	9 28.5	-			57.5 dBµV/m @ 1198.8 MHz (-16.5 dB)
18		2480MHz 5580MHz	9 30.5	-			No measurable emission.
19		2480MHz 5785MHz	9 31.5	-			No measurable emission.

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11b @ 2412, BT Basic @ 2402 MHz

Date of Test: 1/7/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		21.0
BT	7.0	-	9.0

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

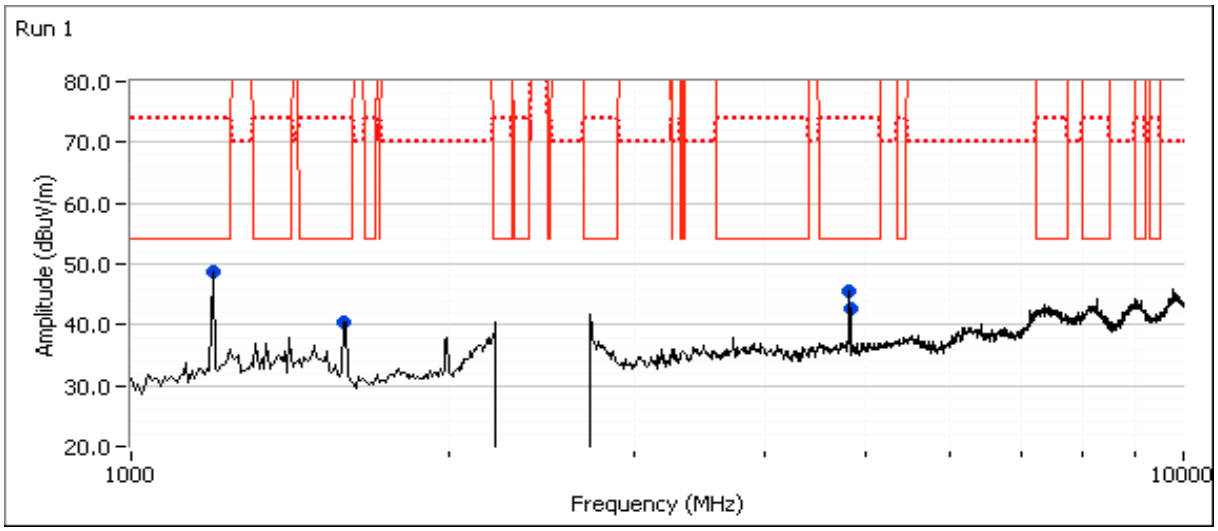
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1195.000	48.6	V	54.0	-5.4	Peak	178	1.5	Note 1
1592.500	40.4	V	54.0	-13.6	Peak	2	2.0	Note 1
4810.000	45.5	V	54.0	-8.5	Peak	213	1.0	
4825.000	42.8	V	54.0	-11.2	Peak	173	1.5	

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	
4804.030	48.8	V	54.0	-5.2	AVG	209	1.26	
4824.020	41.5	V	54.0	-12.5	AVG	233	1.54	
4804.080	50.9	V	74.0	-23.1	PK	209	1.26	
4824.000	46.5	V	74.0	-27.5	PK	233	1.54	

Note 1:	Emission from host laptop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

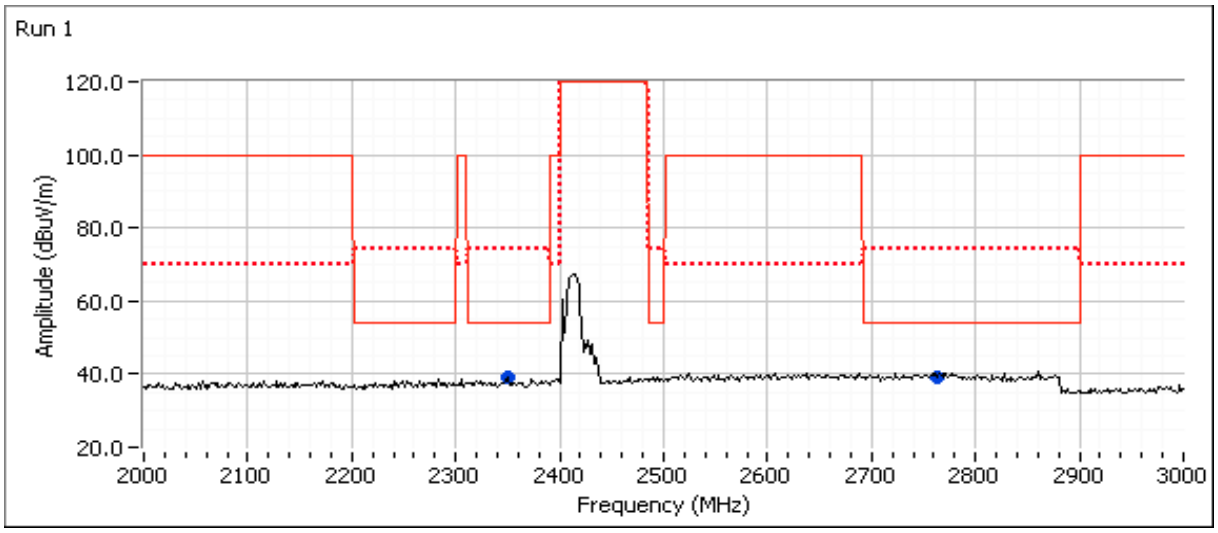
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
2351.300	39.1	V	54.0	-14.9	Peak	360	1.0	noise floor
2772.810	39.2	V	54.0	-14.8	Peak	360	1.0	noise floor

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	
2352.150	30.5	V	54.0	-23.5	AVG	360	1.0	noise floor
2351.030	41.6	V	74.0	-32.4	PK	360	1.0	noise floor
2774.140	32.1	V	54.0	-21.9	AVG	360	1.0	noise floor
2771.650	43.6	V	74.0	-30.4	PK	360	1.0	noise floor
2350.880	30.4	H	54.0	-23.6	AVG	0	1.0	noise floor
2350.810	41.2	H	74.0	-32.8	PK	0	1.0	noise floor
2773.410	32.3	H	54.0	-21.7	AVG	0	1.0	noise floor
2771.480	43.7	H	74.0	-30.3	PK	0	1.0	noise floor



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #2: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11b @ 2462, BT Basic @ 2480 MHz

Date of Test: 1/7/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		22.0
BT	7.0	-	9.0

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

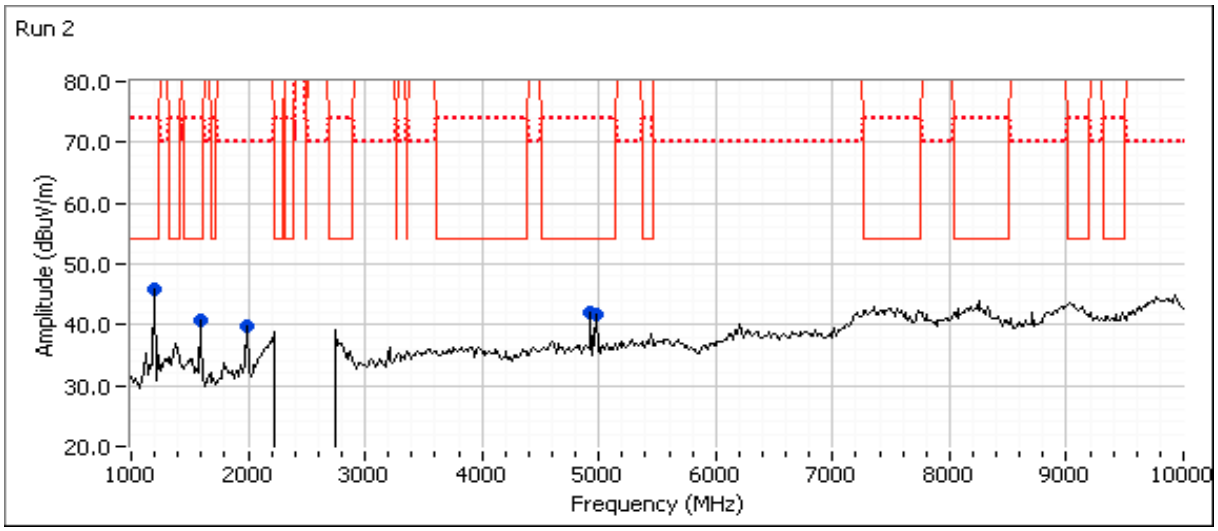
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1195.000	45.9	V	54.0	-8.1	Peak	30	1.0	Note 1
1585.000	40.8	V	54.0	-13.2	Peak	250	1.0	Note 1
1990.000	39.9	V	70.0	-30.1	Peak	360	1.0	Note 1
4930.000	42.1	V	54.0	-11.9	Peak	210	1.0	
4975.000	41.6	V	54.0	-12.4	Peak	210	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	
4960.000	42.6	V	54.0	-11.4	AVG	214	1.40	
4923.980	41.5	V	54.0	-12.5	AVG	214	1.00	
4960.370	46.4	V	74.0	-27.6	PK	214	1.40	
4924.100	46.3	V	74.0	-27.7	PK	214	1.00	

Note 1:	Emission from host laptop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

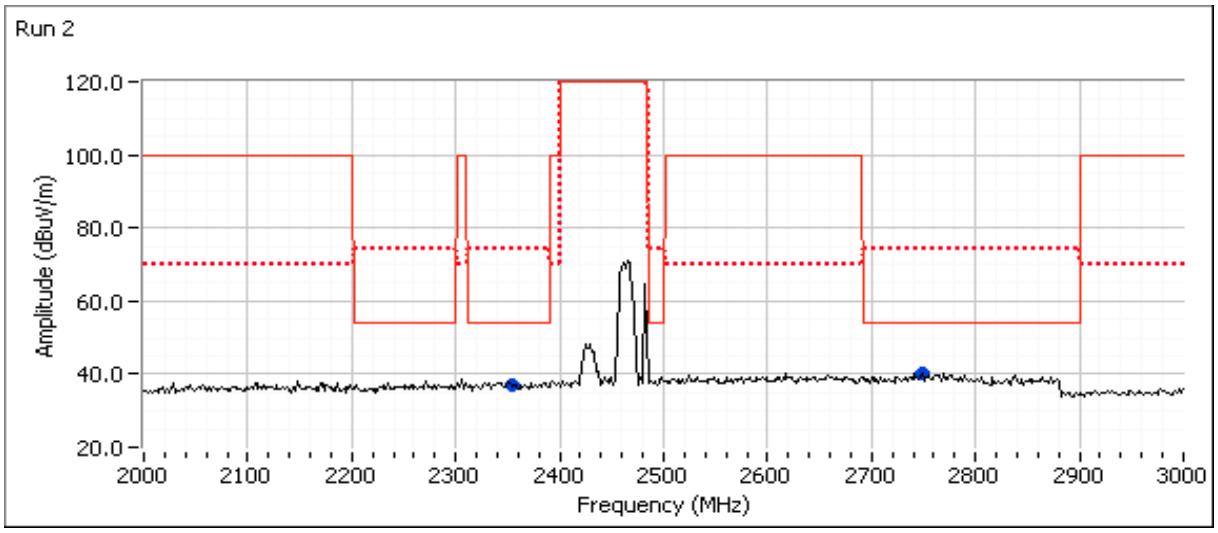
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
2740.990	40.0	V	54.0	-14.0	Peak	360	1.0	noise floor
2342.750	36.8	V	54.0	-17.2	Peak	360	1.0	noise floor

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	
2742.450	32.1	V	54.0	-21.9	AVG	360	1.0	noise floor
2740.170	43.2	V	74.0	-30.8	PK	360	1.0	noise floor
2341.560	30.4	V	54.0	-23.6	AVG	360	1.0	noise floor
2342.010	41.9	V	74.0	-32.1	PK	360	1.0	noise floor
2740.330	32.2	H	54.0	-21.8	AVG	0	1.0	noise floor
2739.780	43.2	H	74.0	-30.8	PK	0	1.0	noise floor
2342.530	30.4	H	54.0	-23.6	AVG	0	1.0	noise floor
2342.970	41.8	H	74.0	-32.2	PK	0	1.0	noise floor



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #3: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2412, BT Basic @ 2402 MHz

Date of Test: 1/7/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		22.5
BT	7.0	-	9.0

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

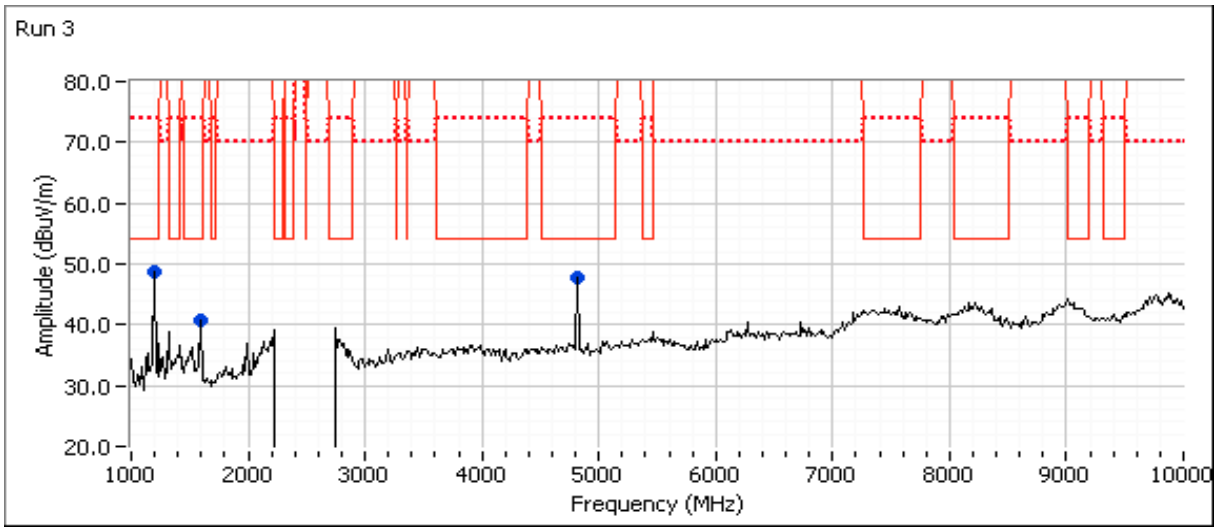
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1195.000	48.6	V	54.0	-5.4	Peak	201	1.5	Note 1
1585.000	40.8	V	54.0	-13.2	Peak	250	1.0	Note 1
4810.000	47.7	V	54.0	-6.3	Peak	206	1.0	

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	
4804.050	49.0	V	54.0	-5.0	AVG	210	1.30	
4823.930	33.2	V	54.0	-20.8	AVG	162	1.07	
4803.800	50.8	V	74.0	-23.2	PK	210	1.30	
4832.300	45.5	V	74.0	-28.5	PK	162	1.07	

Note 1:	Emission from host laptop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

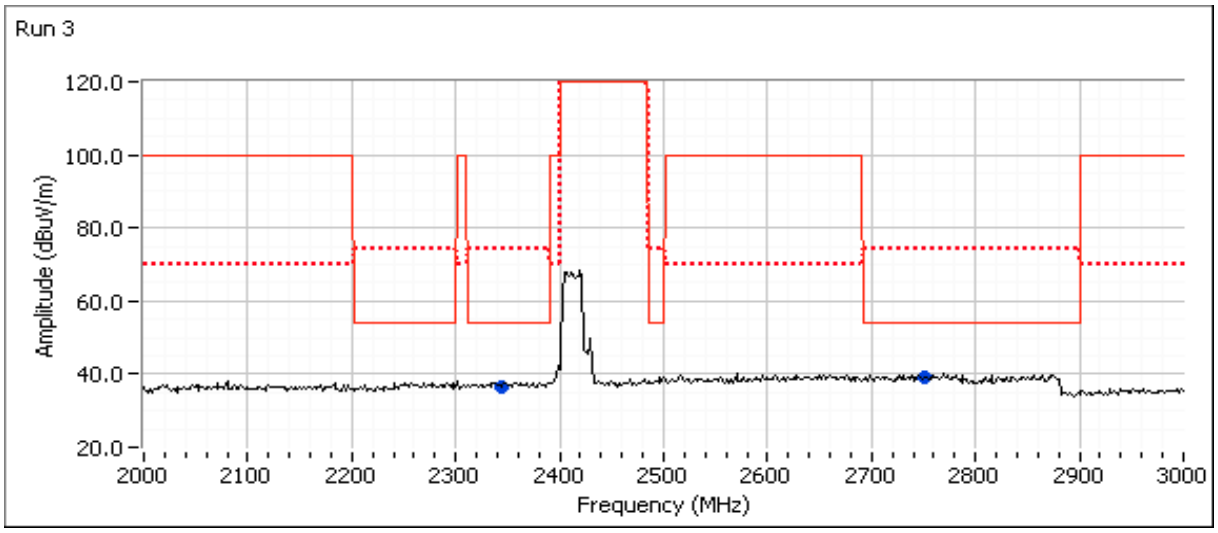
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
2760.460	39.4	V	54.0	-14.6	Peak	360	1.0	noise floor
2343.000	36.6	V	54.0	-17.4	Peak	360	1.0	noise floor

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	
2759.710	32.3	V	54.0	-21.7	AVG	360	1.0	noise floor
2761.660	42.9	V	74.0	-31.1	PK	360	1.0	noise floor
2760.000	32.3	V	54.0	-21.7	AVG	360	1.0	noise floor
2759.830	43.4	V	74.0	-30.6	PK	360	1.0	noise floor
2759.920	32.4	H	54.0	-21.6	AVG	0	1.0	noise floor
2760.130	43.6	H	74.0	-30.4	PK	0	1.0	noise floor
2759.450	32.4	H	54.0	-21.6	AVG	0	1.0	noise floor
2760.580	43.9	H	74.0	-30.1	PK	0	1.0	noise floor



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #4: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2462, BT Basic @ 2480 MHz

Date of Test: 1/7/2014
Test Engineer: Joseph Cadigal
Test Location: FT Chamber#7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		22.5
BT	8.0	-	9.0

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

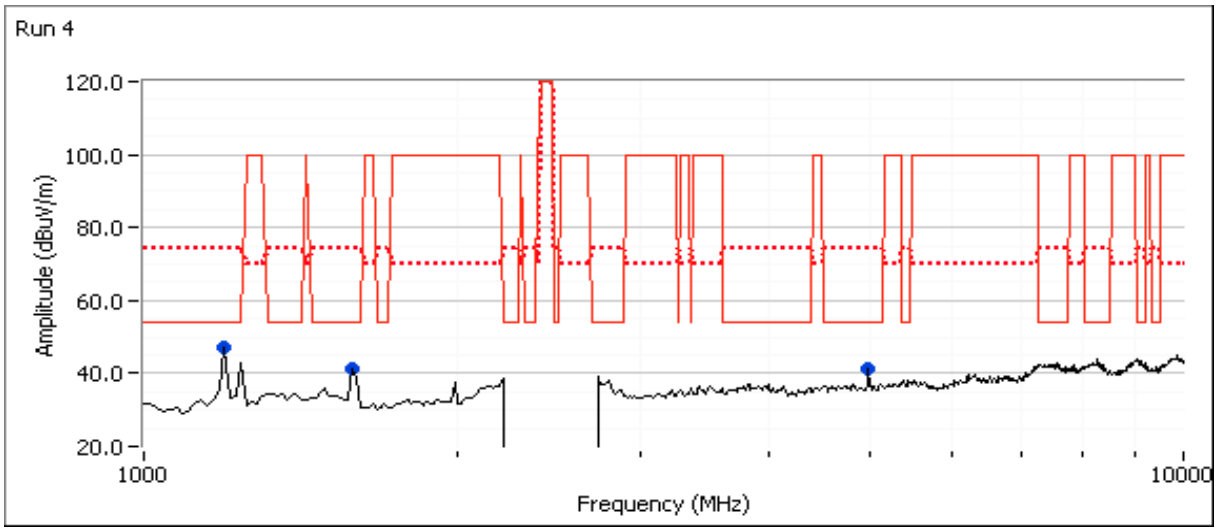
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1194.700	47.2	V	54.0	-6.8	Peak	44	1.0	
1598.030	41.3	V	54.0	-12.7	Peak	123	2.0	
4960.020	41.1	V	54.0	-12.9	Peak	214	1.0	

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	42.9	V	54.0	-11.1	AVG	214	1.0	RB 1 MHz;VB 10 Hz;Peak
4960.070	47.1	V	74.0	-26.9	PK	214	1.0	RB 1 MHz;VB 3 MHz;Peak
1196.200	33.7	V	54.0	-20.3	AVG	44	1.0	note 1
1195.270	55.9	V	74.0	-18.1	PK	44	1.0	note 1
1599.090	30.3	V	54.0	-23.7	AVG	123	2.0	note 1
1598.800	47.5	V	74.0	-26.5	PK	123	2.0	note 1

Note 1:	Emission from host laptop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

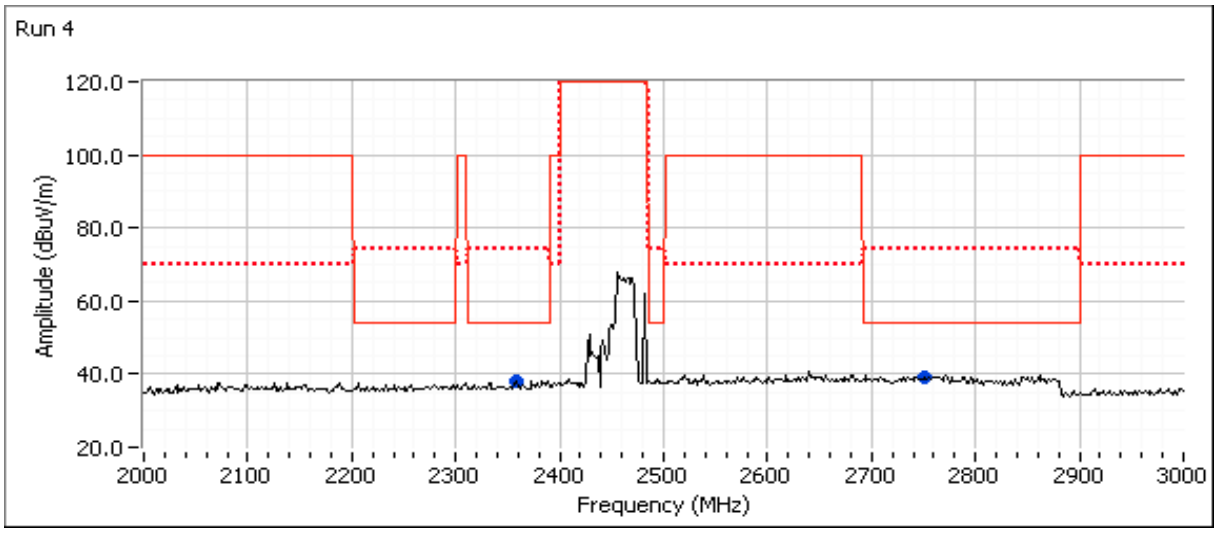
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
2348.350	38.0	V	54.0	-16.0	Peak	360	1.0	noise floor
2744.630	39.4	V	54.0	-14.6	Peak	360	1.0	noise floor

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	
2349.550	30.3	V	54.0	-23.7	AVG	360	1.0	noise floor
2346.930	41.2	V	74.0	-32.8	PK	360	1.0	noise floor
2744.350	32.2	V	54.0	-21.8	AVG	360	1.0	noise floor
2744.540	43.7	V	74.0	-30.3	PK	360	1.0	noise floor
2348.420	30.4	H	54.0	-23.6	AVG	0	1.0	noise floor
2348.640	41.7	H	74.0	-32.3	PK	0	1.0	noise floor
2743.320	32.3	H	54.0	-21.7	AVG	0	1.0	noise floor
2743.180	44.1	H	74.0	-29.9	PK	0	1.0	noise floor



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #5: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2437 MHz, BT Basic @ 2402 MHz

Date of Test: 1/8/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.4	22.5
BT	7.0	-	9.0

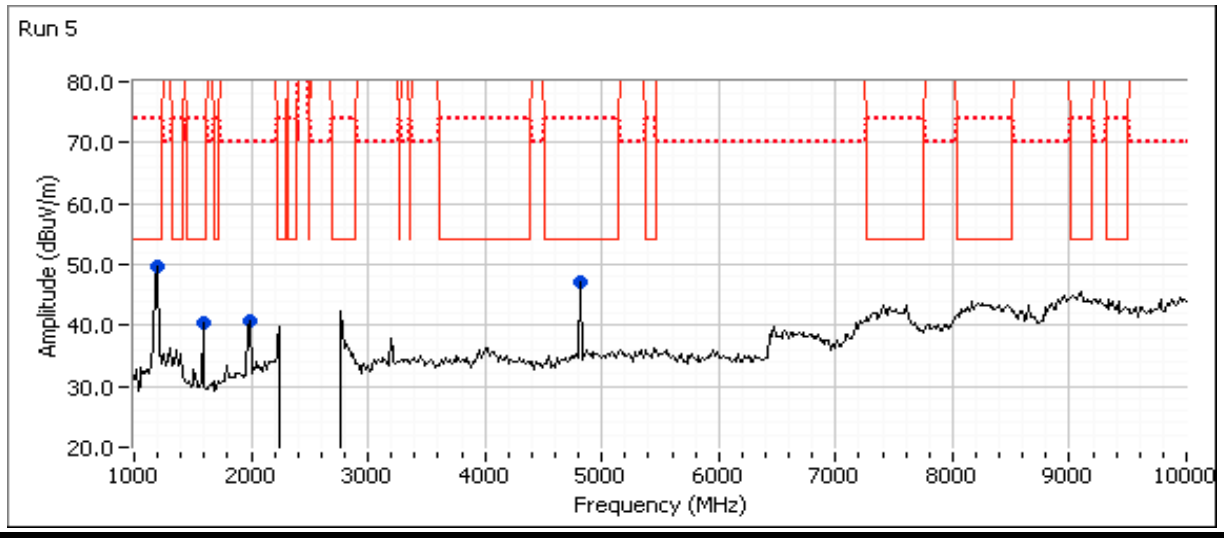
Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1195.000	*49.6*	*V*	*54.0*	*-4.4*	*Peak*	*198*	*1.5*	*Note 1*
1585.000	*40.4*	*H*	*54.0*	*-13.6*	*Peak*	*128*	*1.5*	*Note 1*
1990.000	*40.7*	*V*	*70.0*	*-29.3*	*Peak*	*178*	*1.0*	*Note 1*
4810.000	*47.0*	*V*	*54.0*	*-7.0*	*Peak*	*218*	*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	
4804.020	44.9	V	54.0	-9.1	AVG	210	1.00	
4804.200	47.9	V	74.0	-26.1	PK	210	1.00	

Note 1:	Emission from host laptop.



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

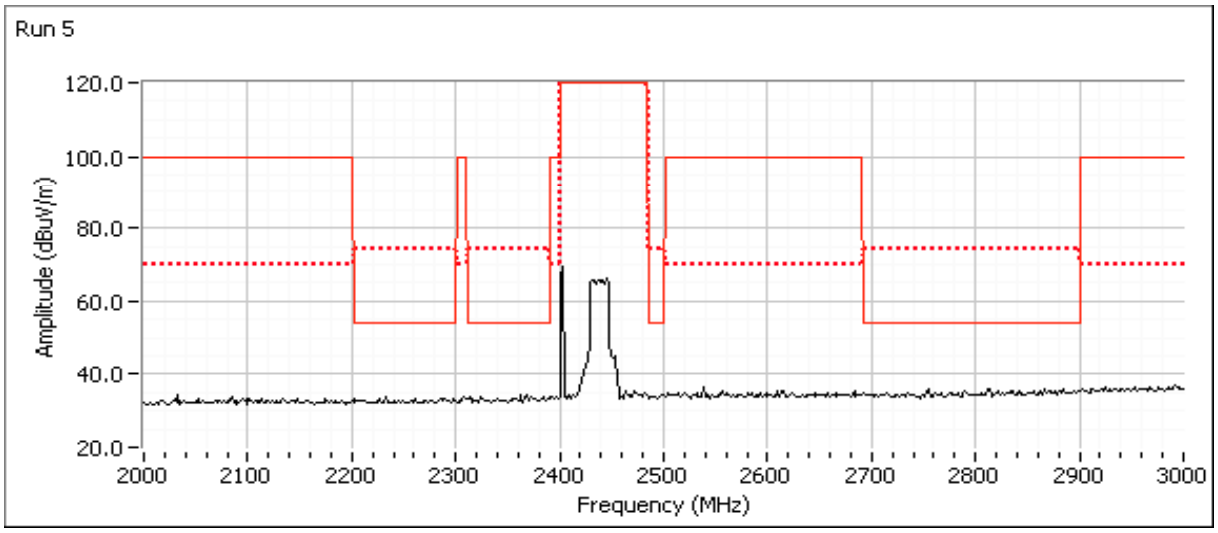
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #6: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2412 MHz, BT Basic @ 2441 MHz

Date of Test: 1/7/2014
Test Engineer: Joseph Cadigal
Test Location: FT Chamber#7

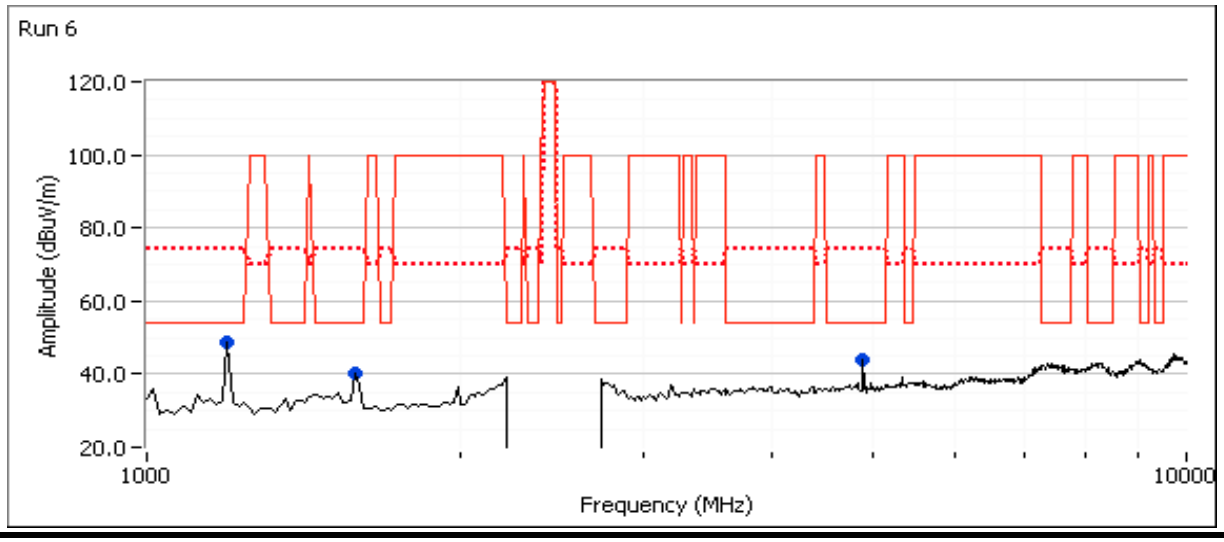
	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		22.5
BT	8.0	-	9.0

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	
1593.040	40.4	V	54.0	-13.6	Peak	137	2.5	
4881.810	44.0	V	54.0	-10.0	Peak	173	1.5	
1195.800	48.9	V	54.0	-5.1	Peak	199	1.5	

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	
4882.020	42.8	V	54.0	-11.2	AVG	173	1.5	RB 1 MHz;VB 10 Hz;Peak
4881.560	46.8	V	74.0	-27.2	PK	173	1.5	RB 1 MHz;VB 3 MHz;Peak
1593.310	30.0	V	54.0	-24.0	AVG	137	2.5	RB 1 MHz;VB 10 Hz;Peak
1594.030	45.6	V	74.0	-28.4	PK	137	2.5	RB 1 MHz;VB 3 MHz;Peak
1194.800	33.5	V	54.0	-20.5	AVG	199	1.5	RB 1 MHz;VB 10 Hz;Peak
1195.860	57.0	V	74.0	-17.0	PK	199	1.5	RB 1 MHz;VB 3 MHz;Peak



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

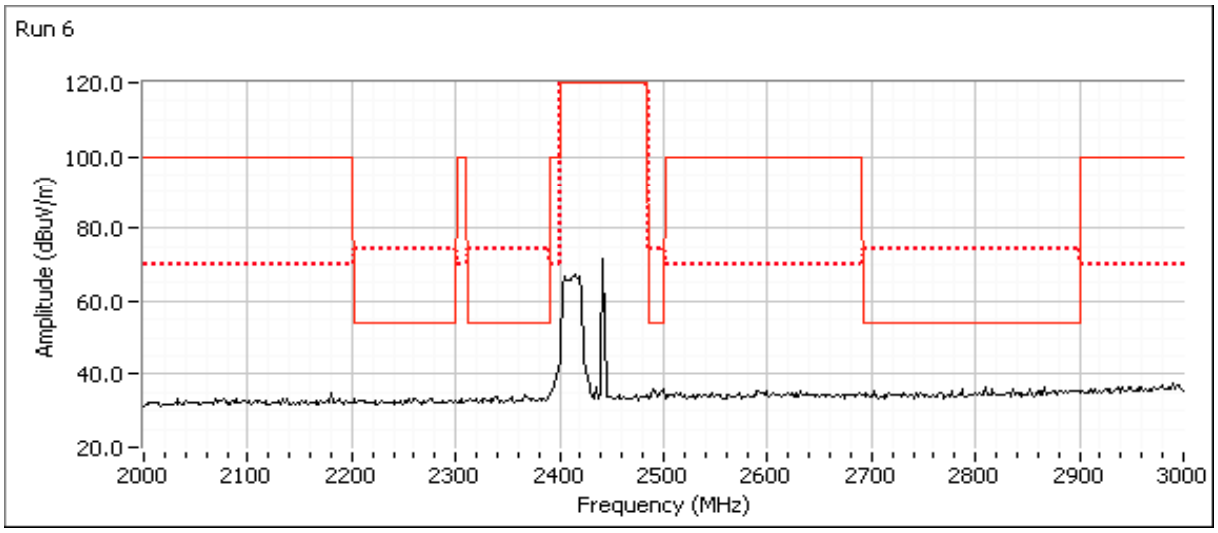
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
			0.0	0.0				

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	
			0.0	0.0				



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #7: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2462 MHz, BT Basic @ 2440 MHz

Date of Test: 1/7/2014
Test Engineer: Joseph Cadigal
Test Location: FT Chamber#7

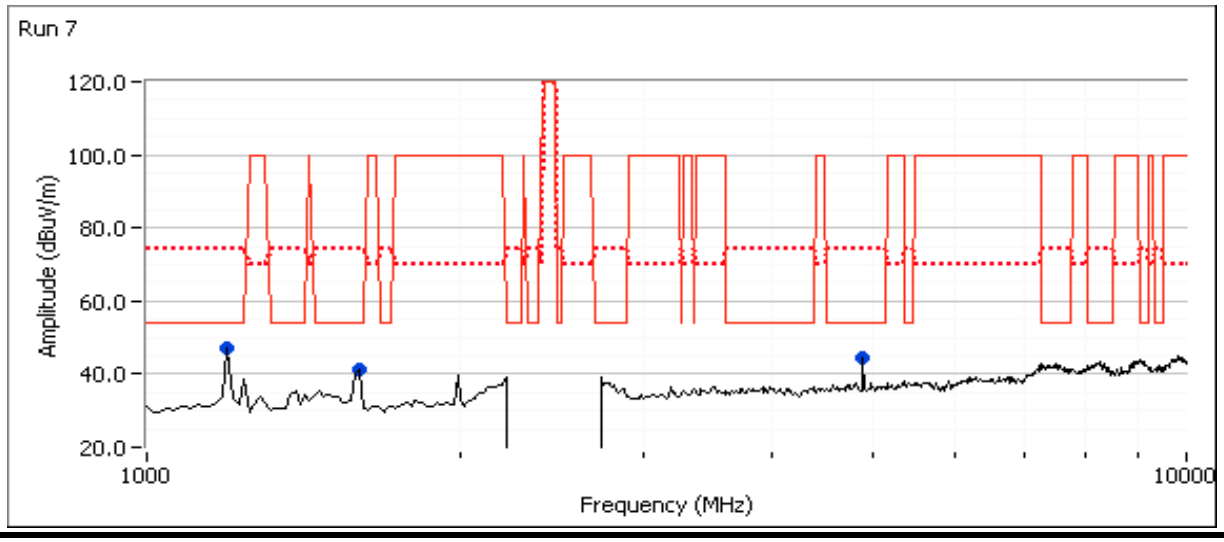
	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		22.0
BT	8.0	-	9.0

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	
4882.200	44.5	V	54.0	-9.5	Peak	156	1.0	
1198.590	47.2	V	54.0	-6.8	Peak	181	1.0	
1596.860	41.5	V	54.0	-12.5	Peak	360	2.0	

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	
4882.040	41.7	V	54.0	-12.3	AVG	156	1.0	RB 1 MHz;VB 10 Hz;Peak
4881.550	46.7	V	74.0	-27.3	PK	156	1.0	RB 1 MHz;VB 3 MHz;Peak
1197.350	31.4	V	54.0	-22.6	AVG	181	1.0	RB 1 MHz;VB 10 Hz;Peak
1199.760	55.3	V	74.0	-18.7	PK	181	1.0	RB 1 MHz;VB 3 MHz;Peak
1596.230	29.4	V	54.0	-24.6	AVG	360	2.0	RB 1 MHz;VB 10 Hz;Peak
1596.460	42.5	V	74.0	-31.5	PK	360	2.0	RB 1 MHz;VB 3 MHz;Peak



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

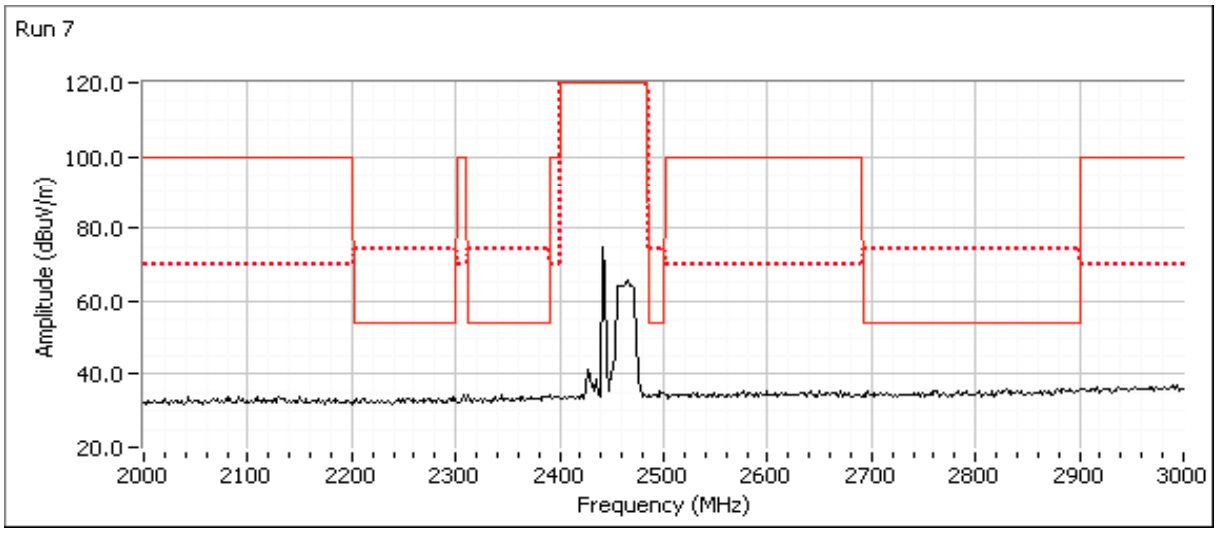
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
			0.0	0.0				

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	
			0.0	0.0				



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #8: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2437 MHz, BT Basic @ 2480 MHz

Date of Test: 1/8/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.4	22.5
BT	7.0	-	9.0

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

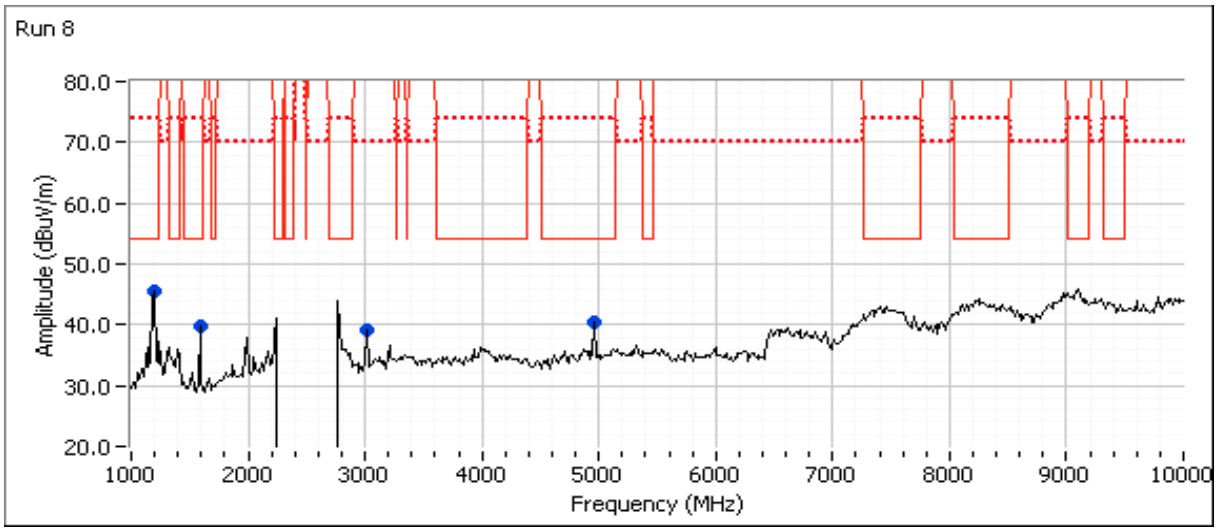
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1195.000	45.4	V	54.0	-8.6	Peak	360	1.0	Note 1
1585.000	39.8	V	54.0	-14.2	Peak	202	1.5	Note 1
4960.000	40.4	V	54.0	-13.6	Peak	299	1.5	
3010.000	39.2	V	70.0	-30.8	Peak	164	1.0	

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	
4960.000	40.6	V	54.0	-13.4	AVG	292	1.64	
4960.380	45.4	V	74.0	-28.6	PK	292	1.64	
2991.730	28.2	V	54.0	-25.8	AVG	172	1.00	Note 2
2987.270	39.6	V	74.0	-34.4	PK	172	1.00	Note 2

Note 1:	Emission from host laptop.
Note 2:	Emission in non-restricted band, but limit of 15.209 used.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 2 - 3GHz

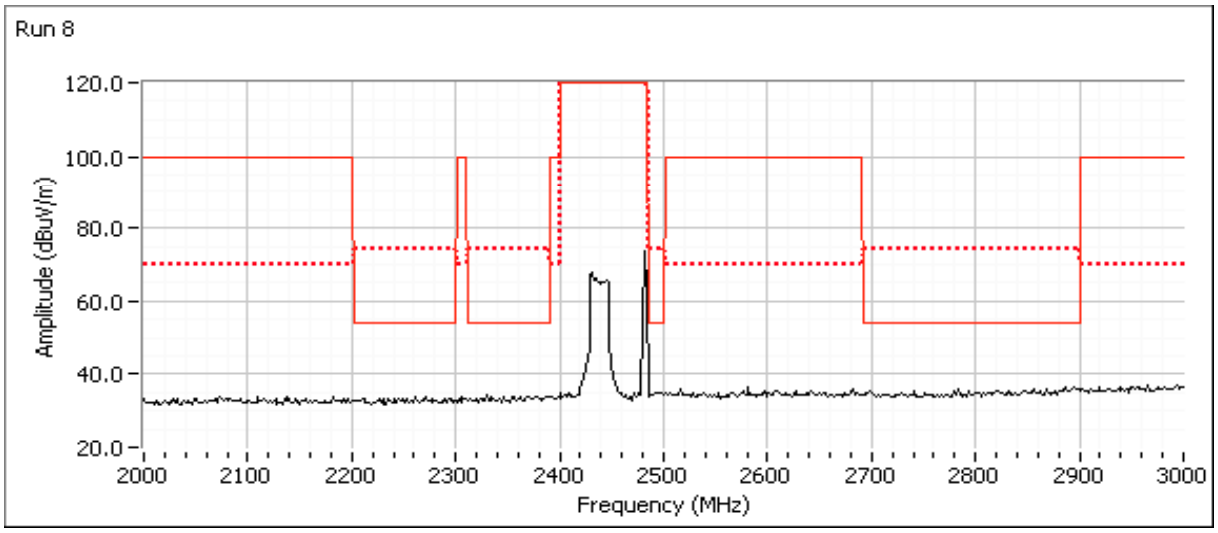
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
			0.0	0.0				

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	
			0.0	0.0				



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #9: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2412 MHz, BT EDR @ 2402 MHz

Date of Test: 1/8/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5		22.5
BT	1.0	-	1.0

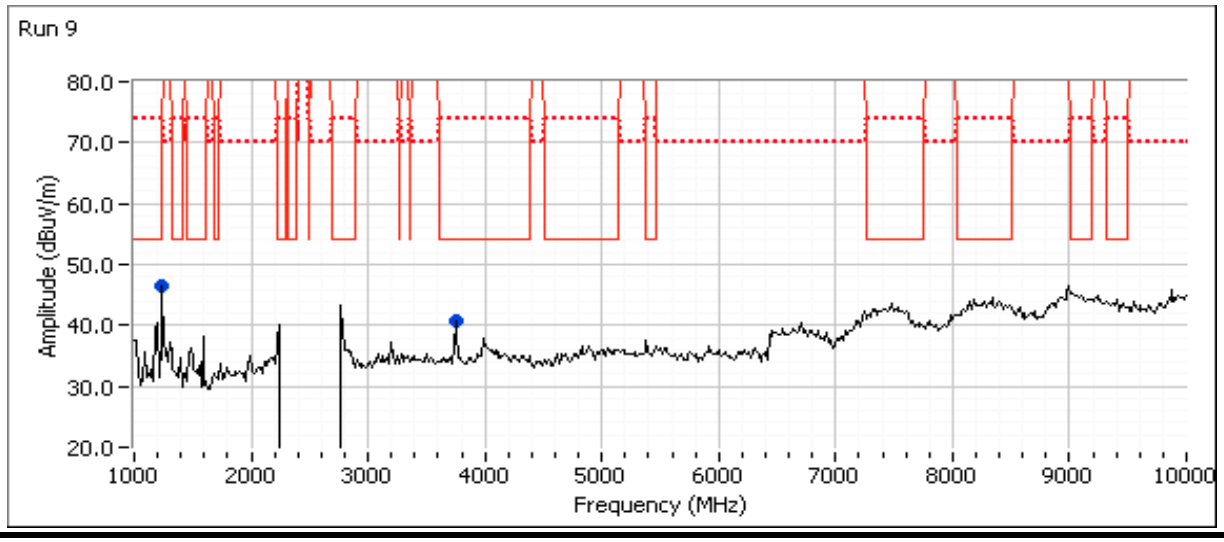
Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

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	46.6	H	54.0	-7.4	Peak	205	1.0	
3745.000	40.7	V	54.0	-13.3	Peak	194	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	
1247.870	33.7	H	54.0	-20.3	AVG	226	1.00	Note 2
1244.670	56.3	H	74.0	-17.7	PK	226	1.00	Note 2
3748.000	31.1	V	54.0	-22.9	AVG	194	1.00	
3740.400	53.3	V	74.0	-20.7	PK	194	1.00	

Note 2:	Emission in non-restricted band, but limit of 15.209 used.



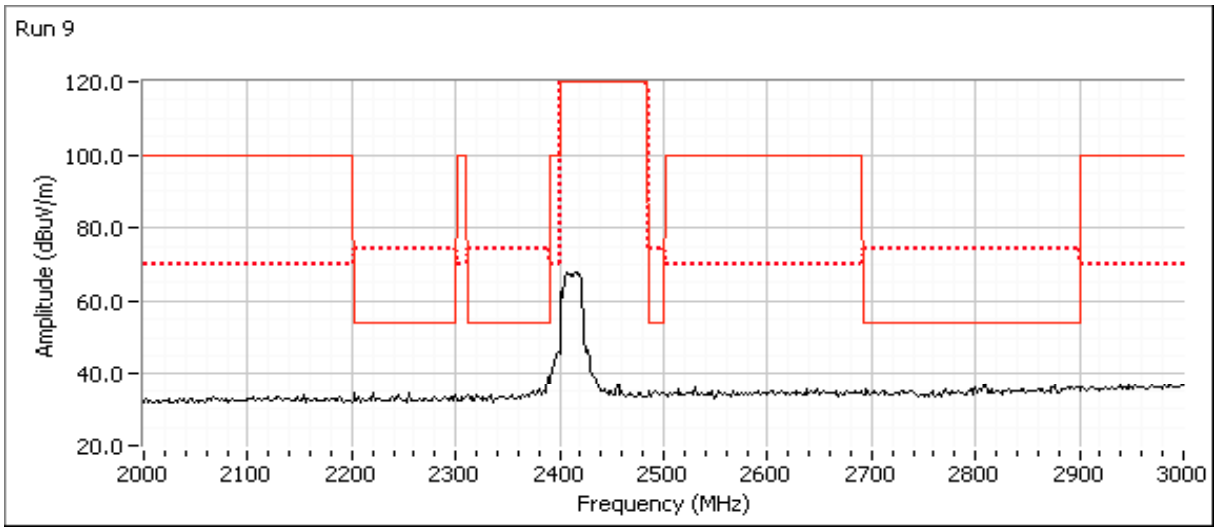
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #10: Radiated Spurious Emissions, 1-10GHz. Operating Mode: 11g @ 2372 MHz, BT EDR @ 2402 MHz

Date of Test: 1/8/2014
Test Engineer: John Caizzi
Test Location: Chamber 7

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.4	22.5
BT	1.0	-	1.0

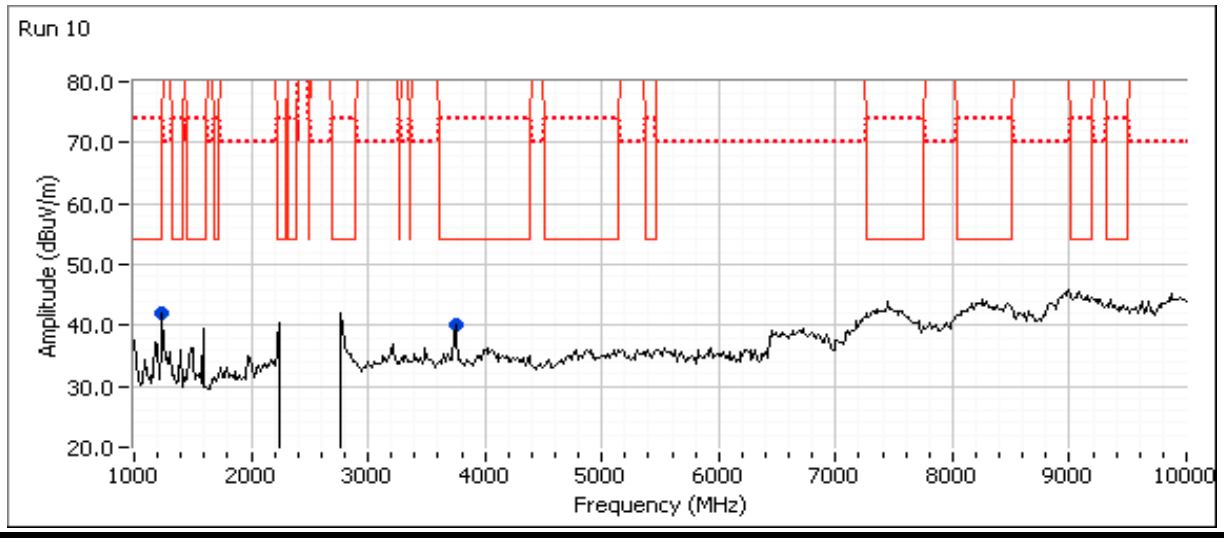
Preliminary Spurious Emissions excluding allocated band (Peak versus average limit)

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	42.1	H	54.0	-11.9	Peak	238	1.0	
3745.000	40.1	V	54.0	-13.9	Peak	160	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	
1248.200	33.9	H	54.0	-20.1	AVG	230	1.00	Note 2
1245.930	56.2	H	74.0	-17.8	PK	230	1.00	Note 2
3747.470	31.4	V	54.0	-22.6	AVG	198	1.00	
3747.070	53.6	V	74.0	-20.4	PK	198	1.00	

Note 2:	Emission in non-restricted band, but limit of 15.209 used.



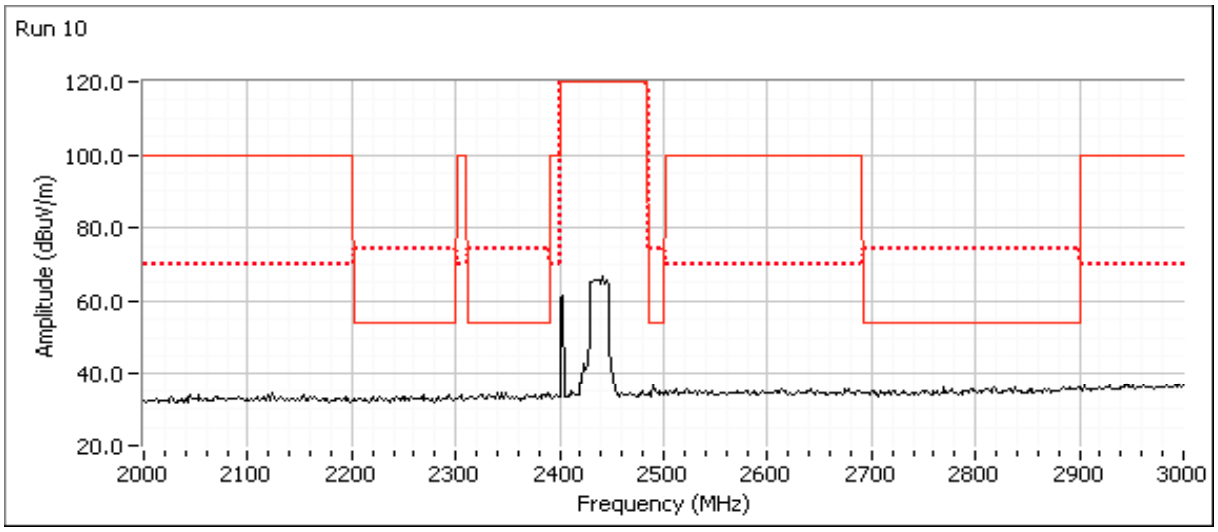
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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	
			0.0	0.0				



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	29.0
BT	7.0	-	9.0

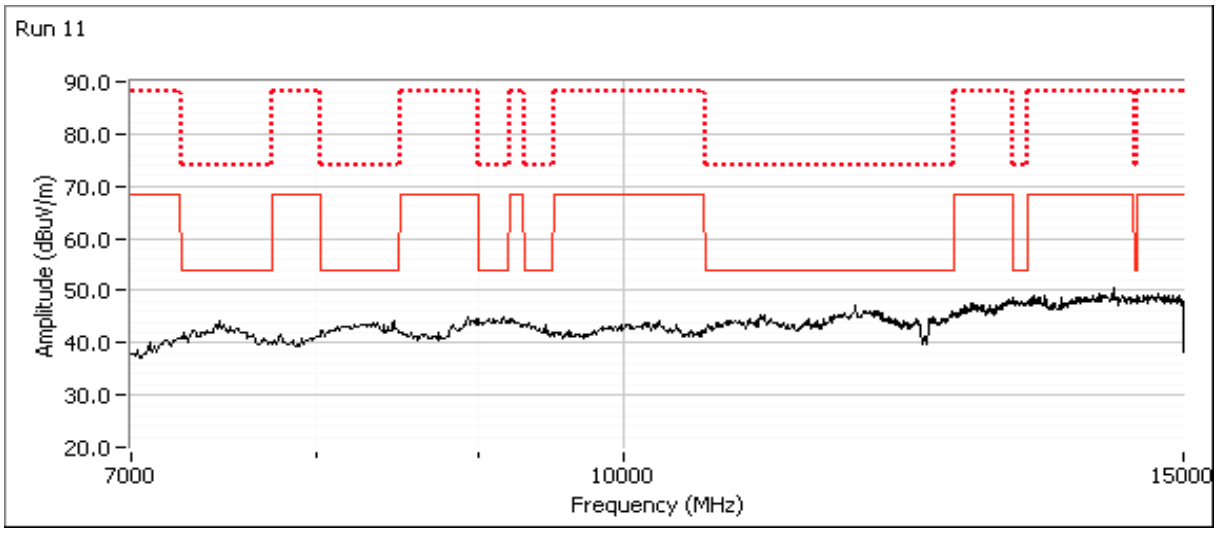
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

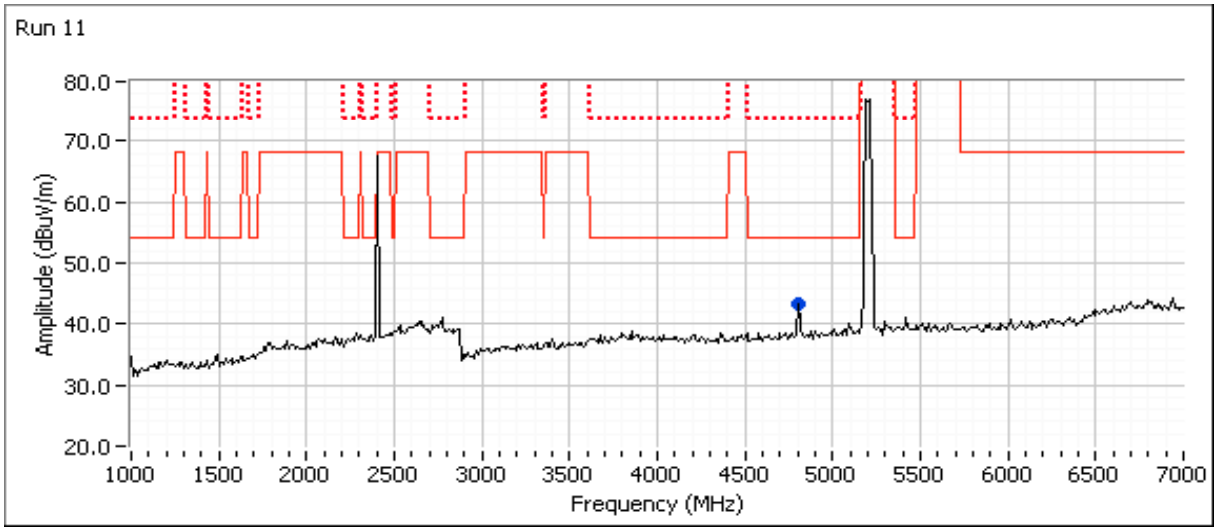
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
4800.000	43.4	V	54.0	-10.6	Peak	0	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	
4804.030	48.5	V	54.0	-5.5	AVG	203	1.75	
4804.180	50.8	V	74.0	-23.2	PK	203	1.75	
4803.970	46.8	H	54.0	-7.2	AVG	158	1.63	
4804.280	49.5	H	74.0	-24.5	PK	158	1.63	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	29.0
BT	7.0	-	9.0

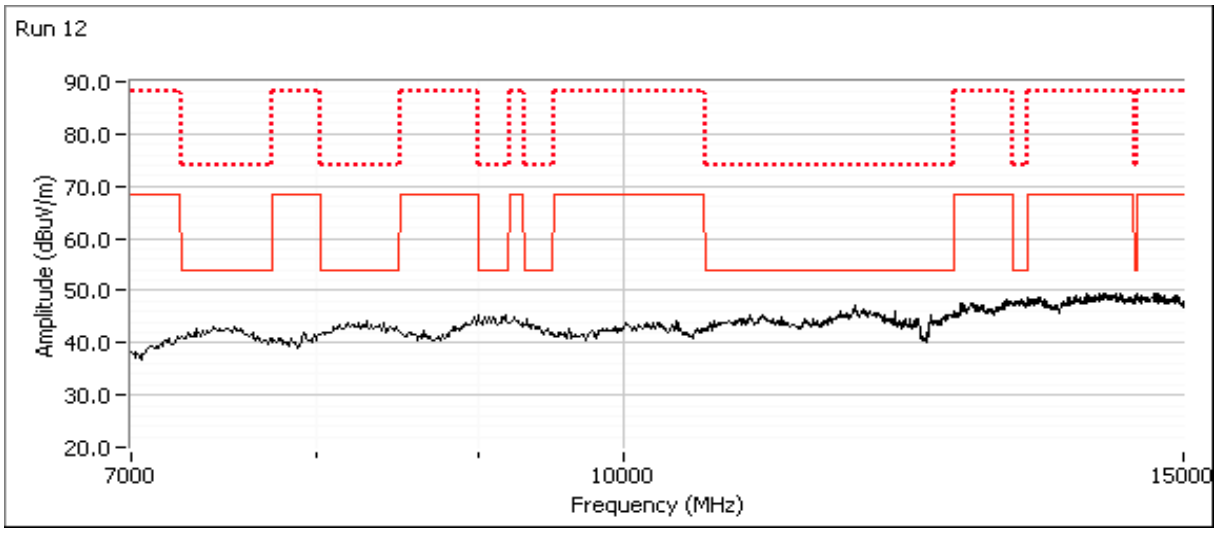
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

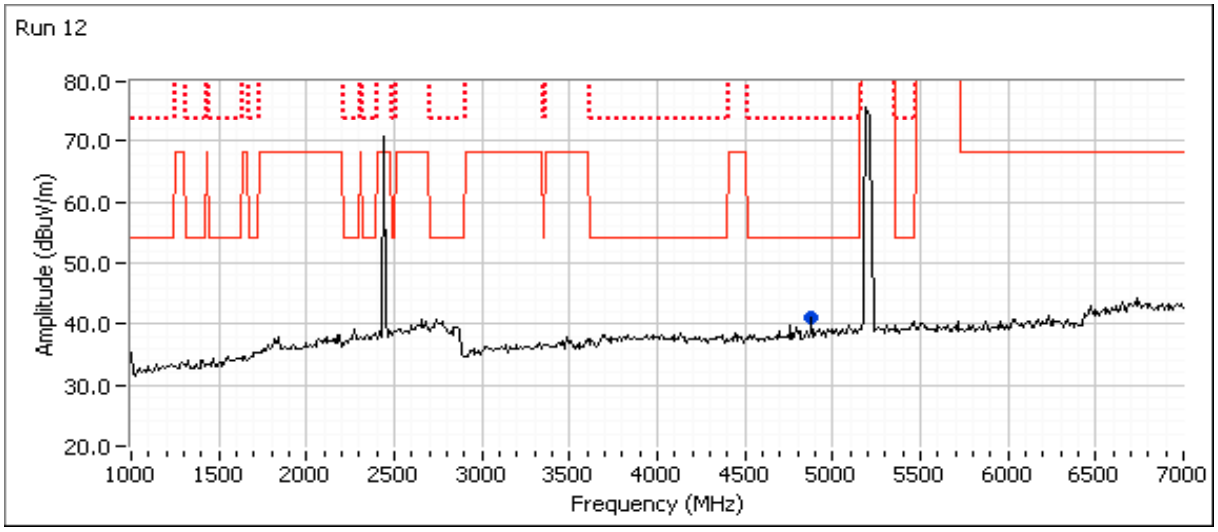
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
4880.000	41.2	V	54.0	-12.8	Peak	0	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	
4882.000	46.3	V	54.0	-7.7	AVG	212	1.07	
4882.400	50.1	V	74.0	-23.9	PK	212	1.07	
4882.000	46.0	H	54.0	-8.0	AVG	153	1.48	
4881.780	49.3	H	74.0	-24.7	PK	153	1.48	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	29.0
BT	7.0	-	9.0

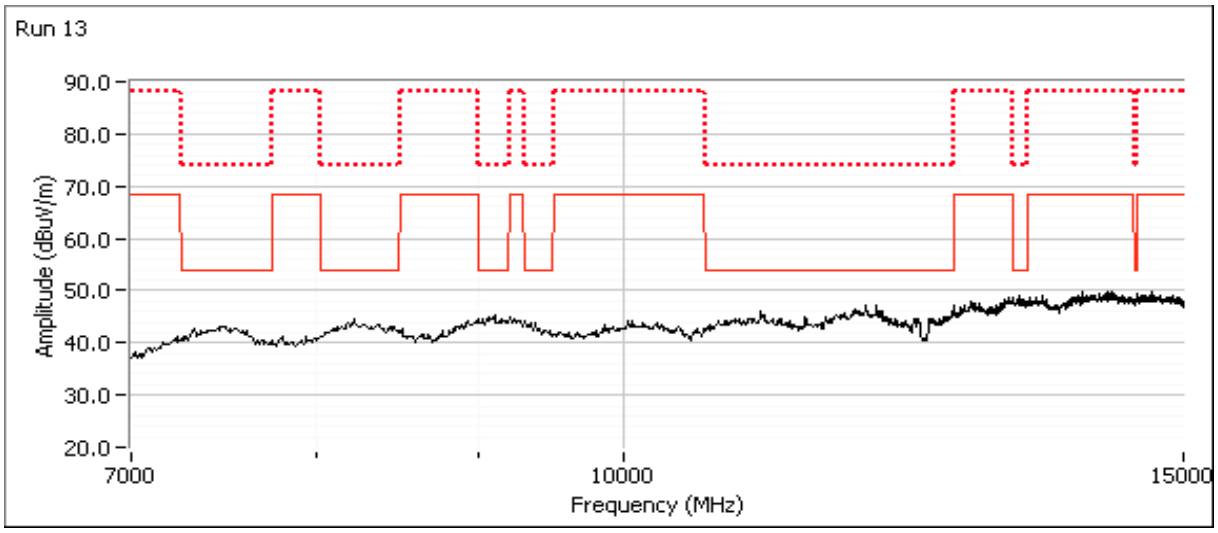
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

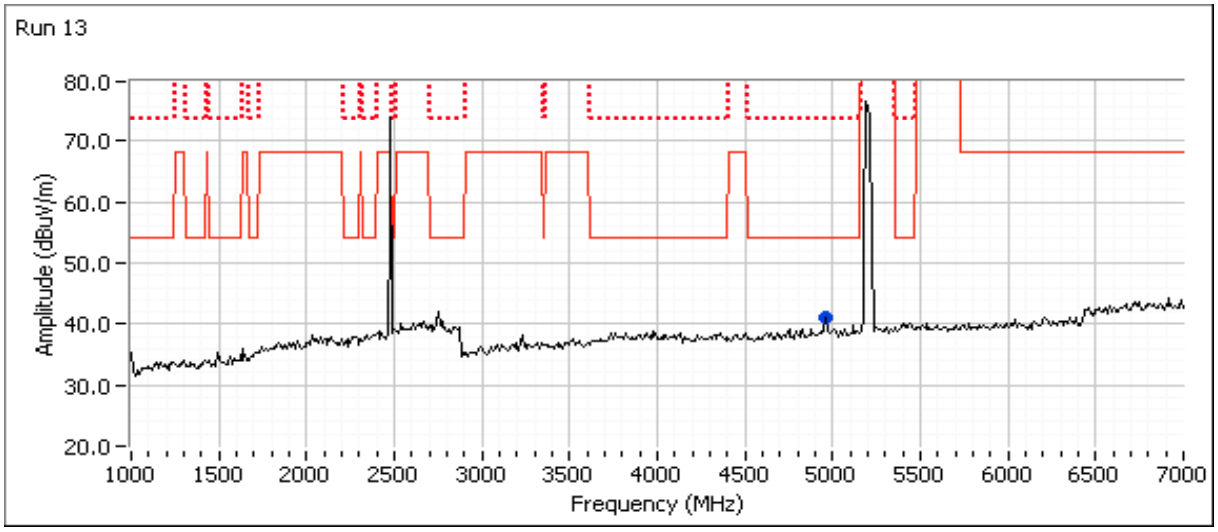
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
4960.000	41.1	V	54.0	-12.9	Peak	0	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	
4960.000	43.9	H	54.0	-10.1	AVG	151	1.75	
4960.700	48.2	H	74.0	-25.8	PK	151	1.75	
4959.970	42.8	V	54.0	-11.2	AVG	204	1.48	
4959.850	47.9	V	74.0	-26.1	PK	204	1.48	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #14: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: n20 @ 5300 MHz, BT Basic @ 2402 MHz

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.5	28.5
BT	7.0	-	9.0

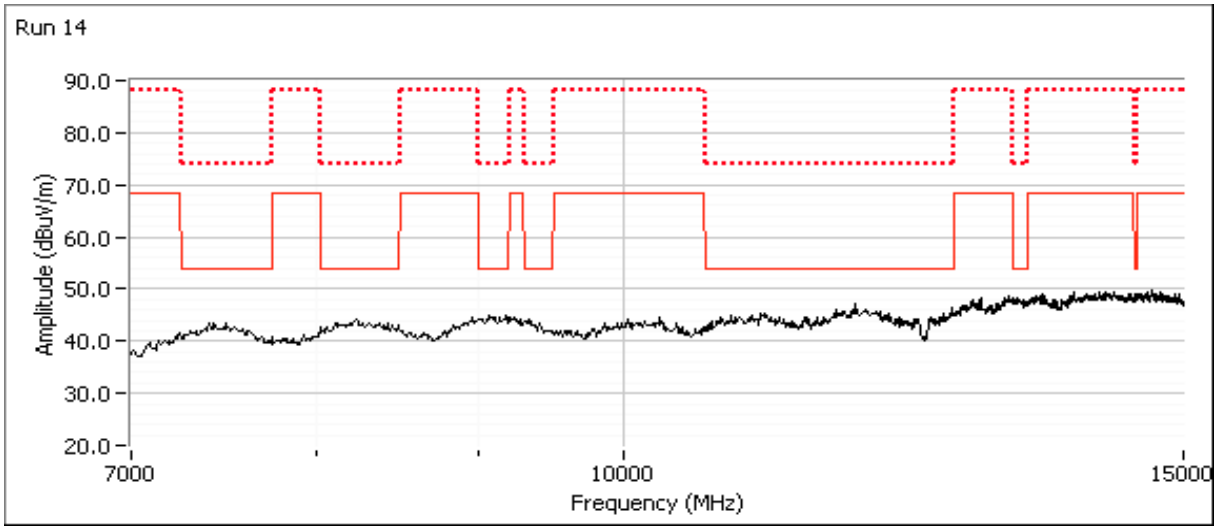
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, 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)

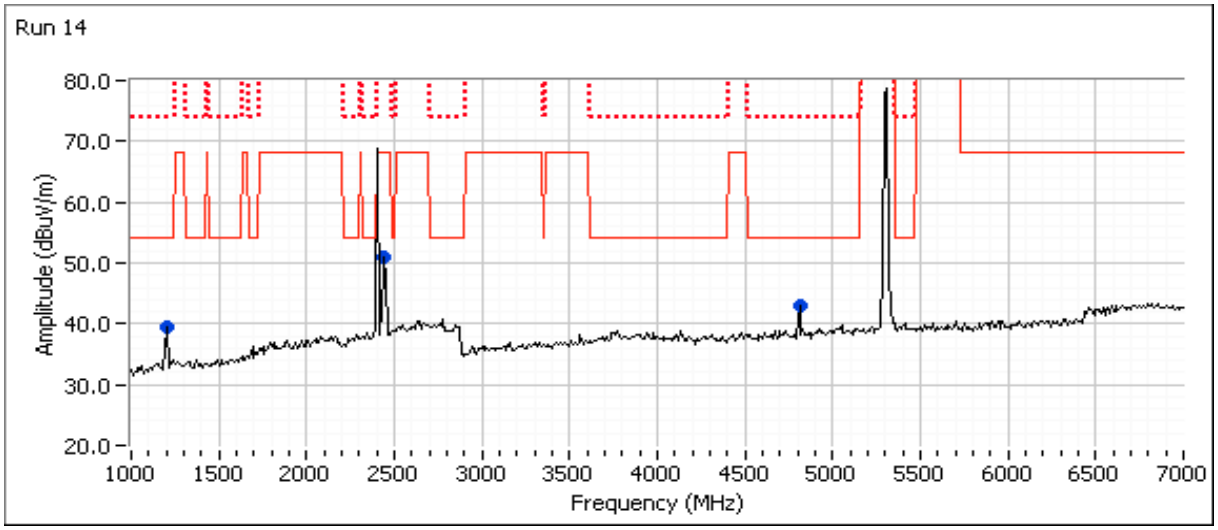
Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4810.000	43.1	V	54.0	-10.9	Peak	0	1.0	
1200.000	39.4	V	54.0	-14.6	Peak	0	1.0	
2440.000	51.0	V	68.3	-17.3	Peak	0	1.0	Note 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	
4803.980	49.3	V	54.0	-4.7	AVG	201	1.72	
4804.070	51.2	V	74.0	-22.8	PK	201	1.72	
4804.030	47.3	H	54.0	-6.7	AVG	158	1.77	
4804.200	49.9	H	74.0	-24.1	PK	158	1.77	
1197.930	31.9	V	54.0	-22.1	AVG	141	1.68	
1198.470	57.2	V	74.0	-16.8	PK	141	1.68	
1195.800	32.6	H	54.0	-21.4	AVG	136	1.89	
1198.800	57.5	H	74.0	-16.5	PK	136	1.89	

Note 3:	NTS WiFi leakage from opening chamber door.



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #15: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: n20 @ 5580 MHz, BT Basic @ 2402 MHz

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	30.5
BT	7.0	-	9.0

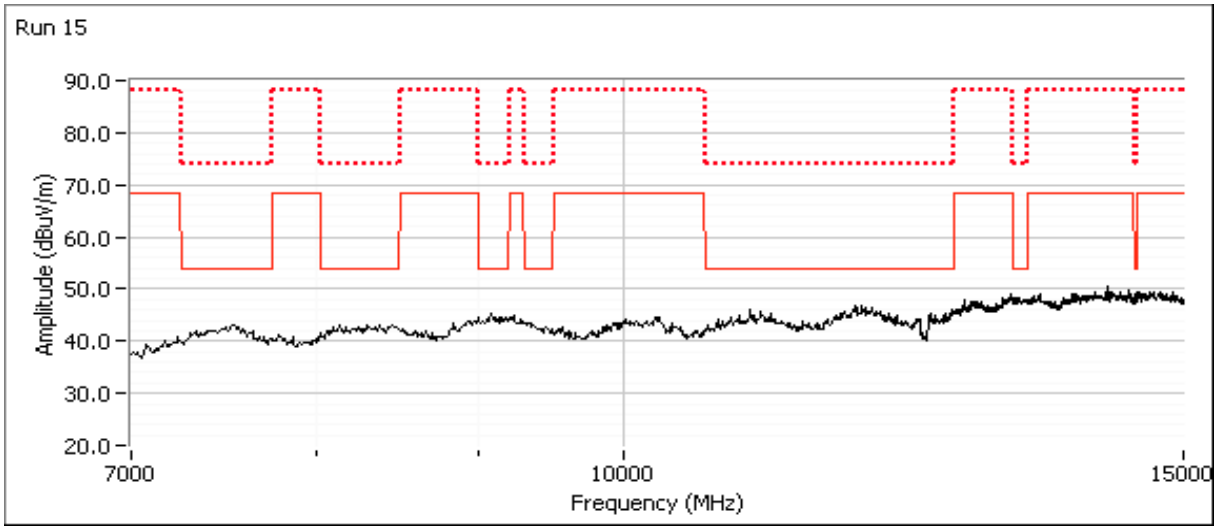
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

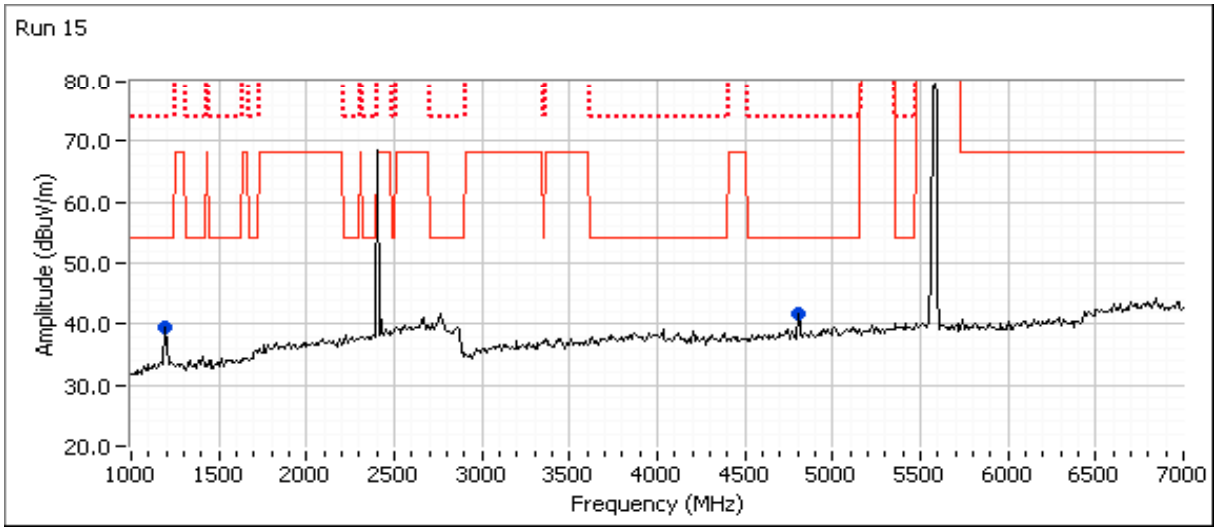
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
1190.000	39.5	V	54.0	-14.5	Peak	0	1.0	Measured in run 14.
4800.000	41.6	V	54.0	-12.4	Peak	0	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	
4804.050	47.1	H	54.0	-6.9	AVG	152	1.44	
4803.720	49.8	H	74.0	-24.2	PK	152	1.44	
4803.930	47.1	V	54.0	-6.9	AVG	204	1.71	
4803.820	49.8	V	74.0	-24.2	PK	204	1.71	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #16: Radiated Spurious Emissions, 1-15 GHz. Operating Mode: n20 @ 5785 MHz, BT Basic @ 2402 MHz

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	31.5
BT	7.0	-	9.0

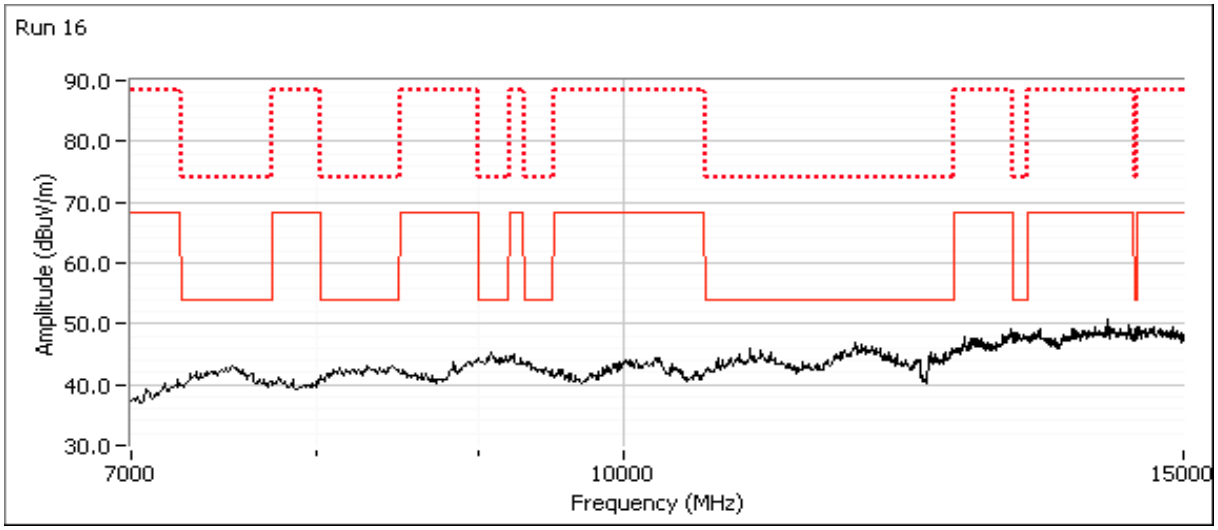
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

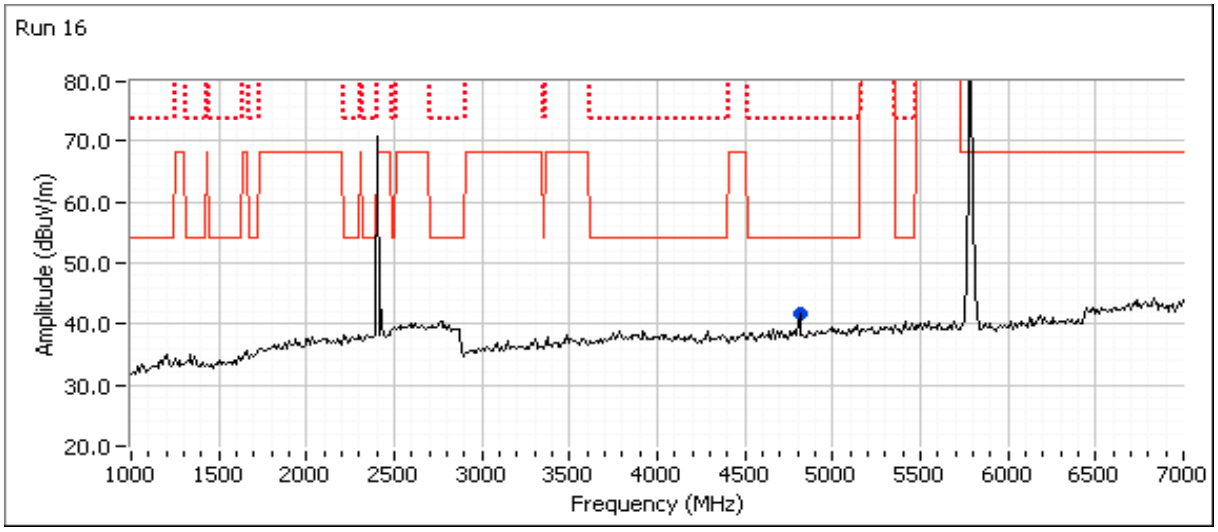
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
4810.000	41.8	V	54.0	-12.2	Peak	0	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	
4804.030	49.7	V	54.0	-4.3	AVG	201	1.71	
4803.930	51.7	V	74.0	-22.3	PK	201	1.71	
4803.980	47.3	H	54.0	-6.7	AVG	157	1.55	
4803.900	49.9	H	74.0	-24.1	PK	157	1.55	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.5	28.5
BT	7.0	-	9.0

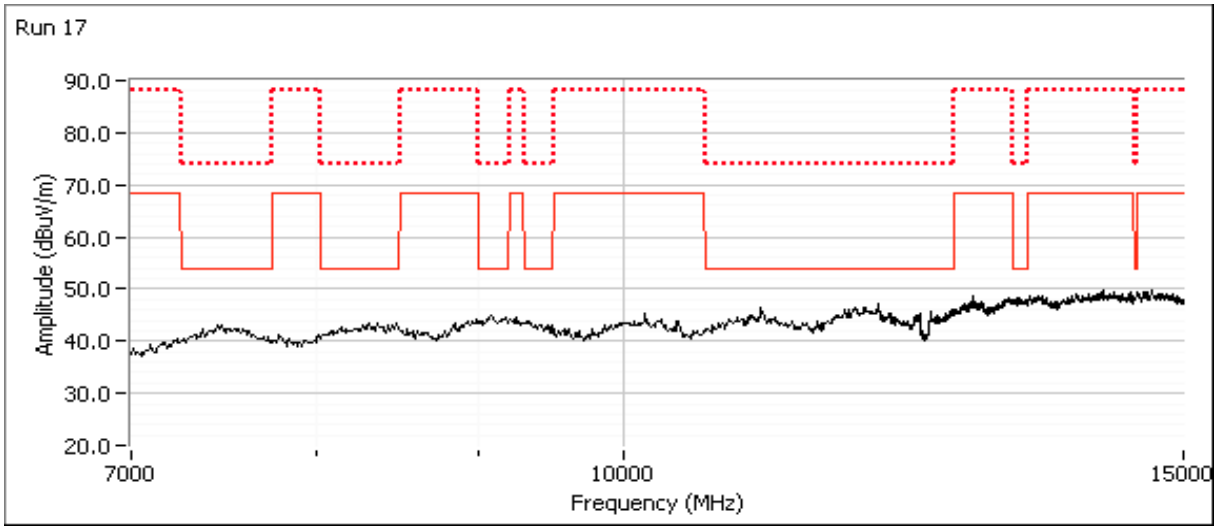
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, 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)

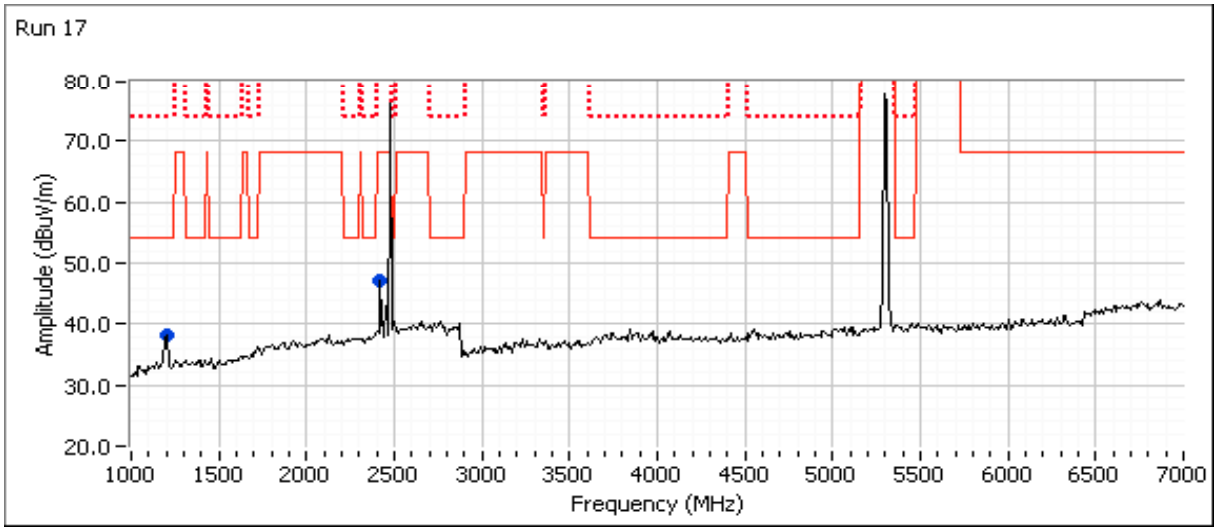
Preliminary Spurious Emissions at 30cm from 1-7 GHz (Peak versus average limit)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2420.000	47.1	V	68.3	-21.2	Peak	0	1.0	Note 3
1200.000	38.1	V	54.0	-15.9	Peak	0	1.0	Measured in run 14.

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	
1195.800	32.6	H	54.0	-21.4	AVG	136	1.89	From run 4.
1198.800	57.5	H	74.0	-16.5	PK	136	1.89	From run 4.

Note 3:	NTS WiFi leakage from opening chamber door.



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	30.5
BT	7.0	-	9.0

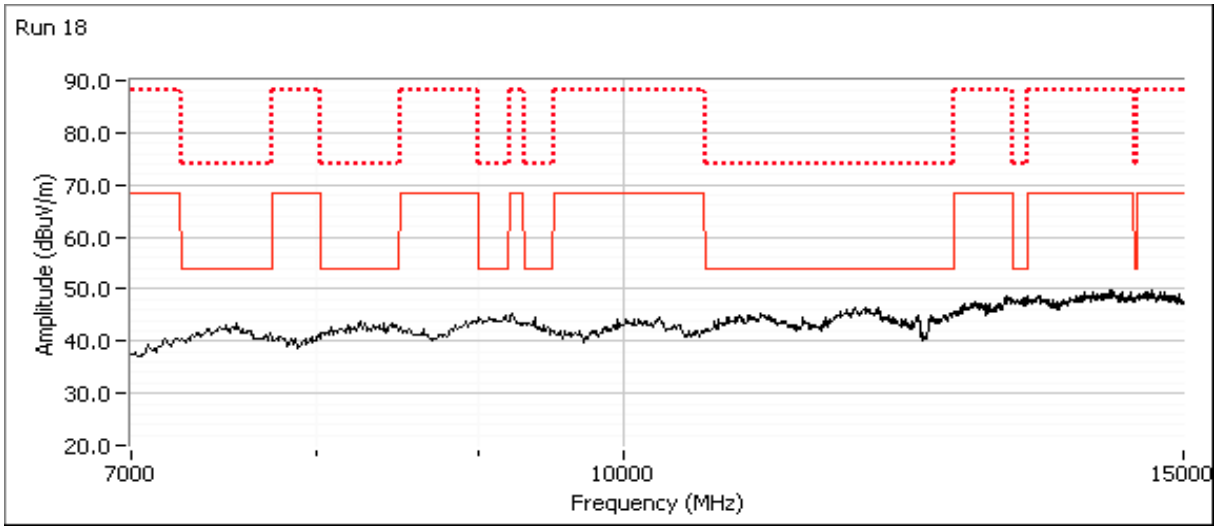
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

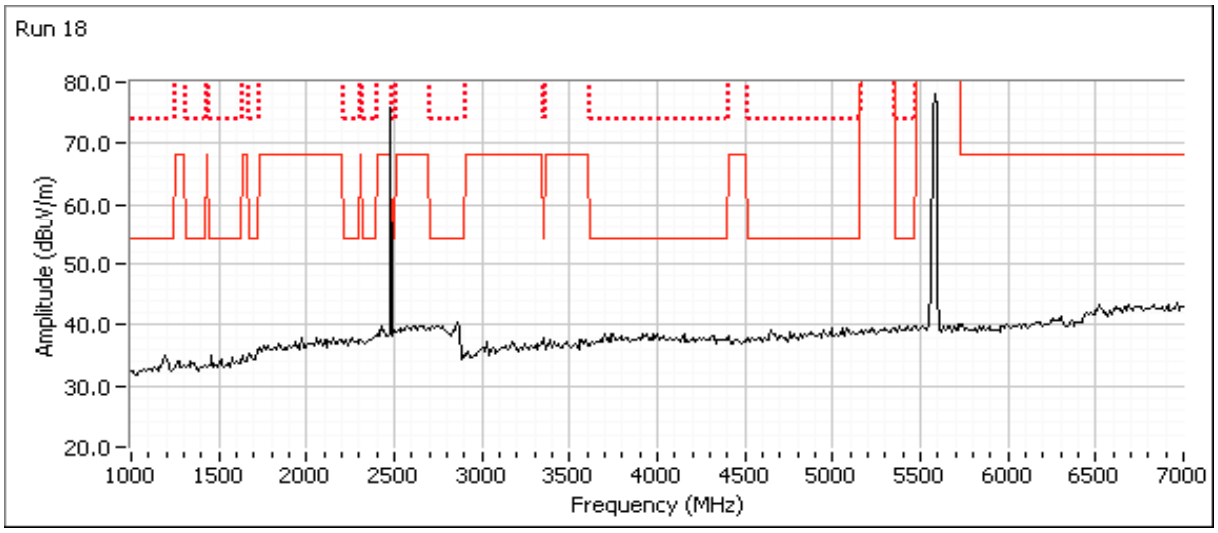
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
			0.0	0.0				

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	
			0.0	0.0				



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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

Date of Test: 1/8/2014 & 1/9/14
Test Engineer: J.Cadigal & J.Caizzi
Test Location: Chambers 7 & 4

	Power Settings		
	Target (dBm)	Measured (dBm)	Software Setting
WiFi	16.5	16.6	31.5
BT	7.0	-	9.0

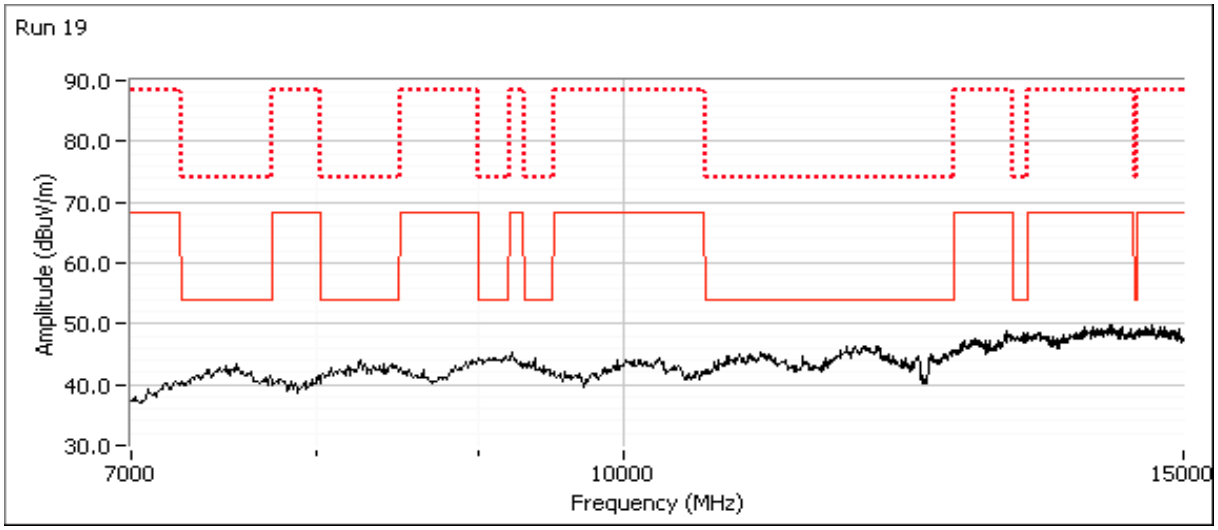
Spurious Radiated Emissions, 7 - 15GHz

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Spurious Radiated Emissions, 1 - 7GHz

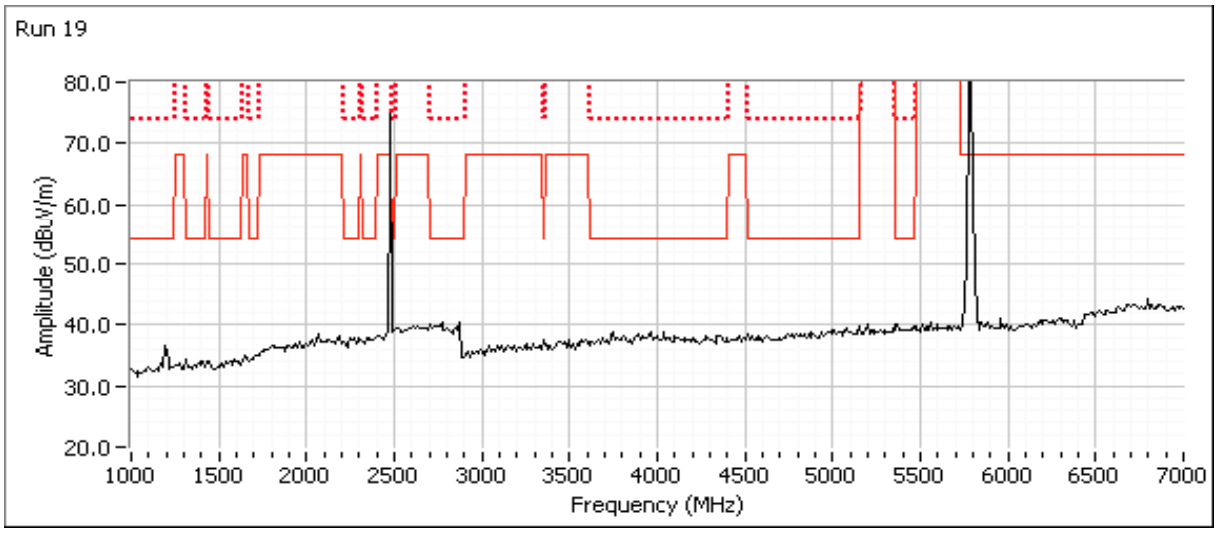
Preliminary Scan at ~ 30cm from the product to identify potential signals (Peak versus average limit)

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	
			0.0	0.0				

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	
			0.0	0.0				



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

Radiated Emissions 30-1000 MHz (Transmitter)

(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: 1/10/2014
Test Engineer: John Caizzi
Test Location: Chamber 4
Config. Used: 1
Config Change: none
Host Voltage: 120V / 60Hz

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: 21 °C
Rel. Humidity: 34 %

Summary of Results

MAC Address: 001500E60B22 DRTU Tool Version 1.7.4-855 Driver version 16.8.0.3

Run #	Test Performed	Limit	Result	Margin
1	Radiated Emissions 30 - 1000 MHz, Preliminary	FCC 15.209 / RSS 210	Eval	32.9 dBµV/m @ 112.19 MHz (-10.6 dB)
2	Radiated Emissions 30 - 1000 MHz, Maximized	FCC 15.209 / RSS 210	Pass	32.9 dBµV/m @ 112.19 MHz (-10.6 dB)
3	Radiated Emissions 30 - 1000 MHz, Preliminary	FCC 15.209 / RSS 210	Eval	28.6 dBµV/m @ 30.04 MHz (-11.4 dB)
4	Radiated Emissions 30 - 1000 MHz, Maximized	FCC 15.209 / RSS 210	Pass	28.6 dBµV/m @ 30.04 MHz (-11.4 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

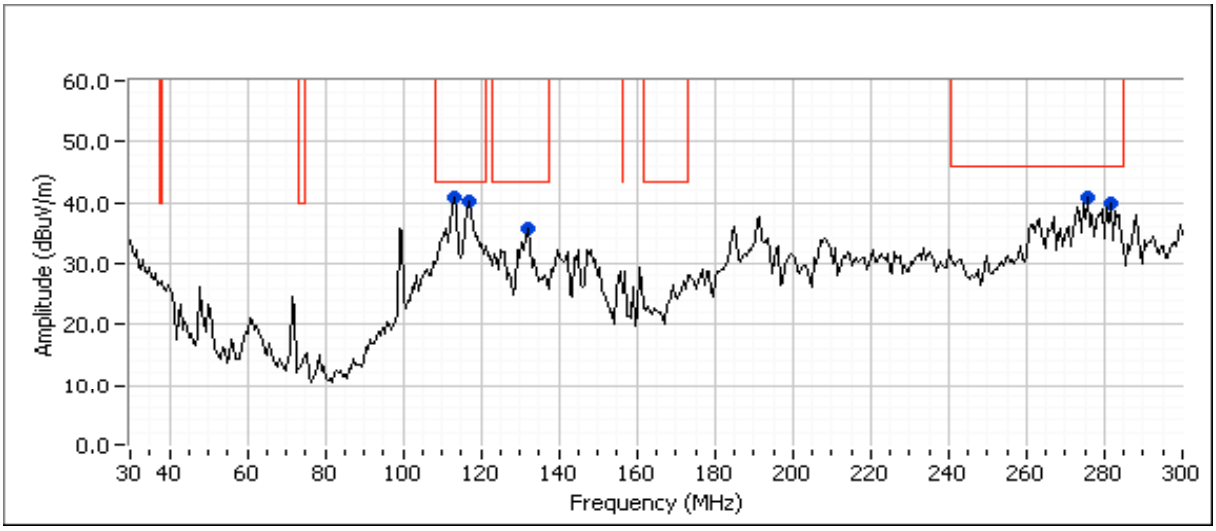
No deviations were made from the requirements of the standard.

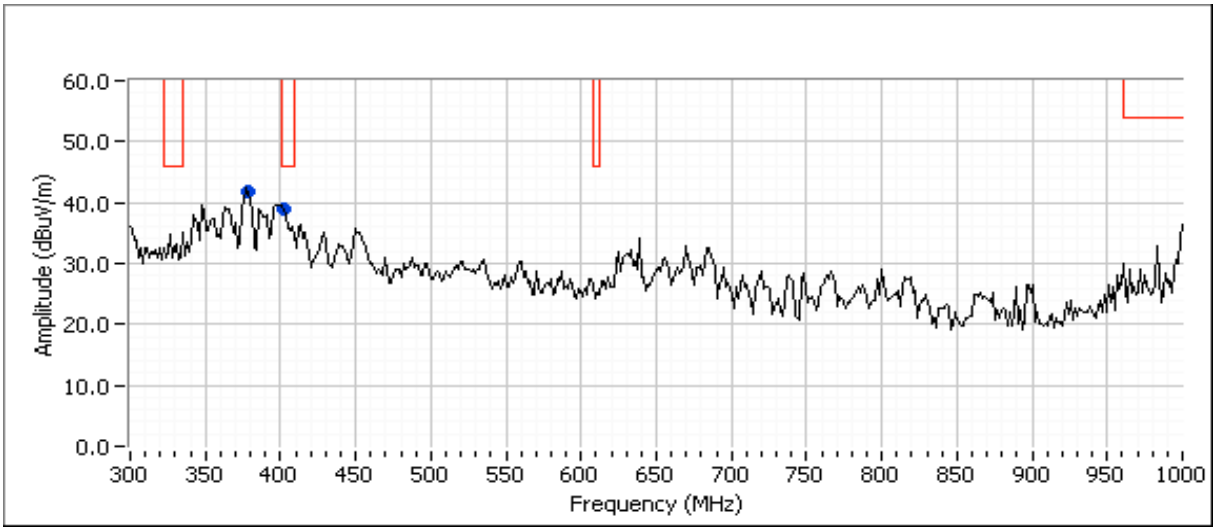
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

Run #1: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured to TX , 802.11b 16.5dBm on chain A (setting 22) on channel 6, BLE chain B (setting Max) on channel 2440MHz.

Test Parameters for Preliminary Scan(s)			
Frequency Range (MHz)	Prescan Distance (meters)	Limit Distance (meters)	Extrapolation Factor (dB, applied to data)
30 - 1000	3	3	0.0





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

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	
112.185	40.7	V	43.5	-2.8	Peak	285	1.0	
116.275	40.1	V	43.5	-3.4	Peak	231	1.0	
276.109	40.8	H	46.0	-5.2	Peak	178	1.0	
279.509	39.8	H	46.0	-6.2	Peak	347	1.5	
403.050	39.0	H	46.0	-7.0	Peak	209	1.5	
133.439	35.6	V	43.5	-7.9	Peak	102	1.5	
375.754	41.8	H	46.0	-4.2	Peak	211	1.5	Note 1

Preliminary quasi-peak readings (no 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	
279.509	28.7	H	46.0	-17.3	QP	345	1.01	
112.185	32.9	V	43.5	-10.6	QP	171	1.00	
116.275	28.3	V	43.5	-15.2	QP	149	1.00	
375.754	33.3	H	46.0	-12.7	QP	220	1.01	
403.050	32.2	H	46.0	-13.8	QP	205	1.00	
276.109	30.3	H	46.0	-15.7	QP	216	1.00	
133.439	25.5	V	43.5	-18.0	QP	113	1.01	

Note 1:	Emission in non-restricted band, but limit of 15.209 used.

Run #2: Maximized Readings From Run #1

Test Parameters for Maximized Reading(s)			
Frequency Range (MHz)	Test Distance (meters)	Limit Distance (meters)	Extrapolation Factor (dB, applied to data)
30 - 1000	3	3	0.0

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

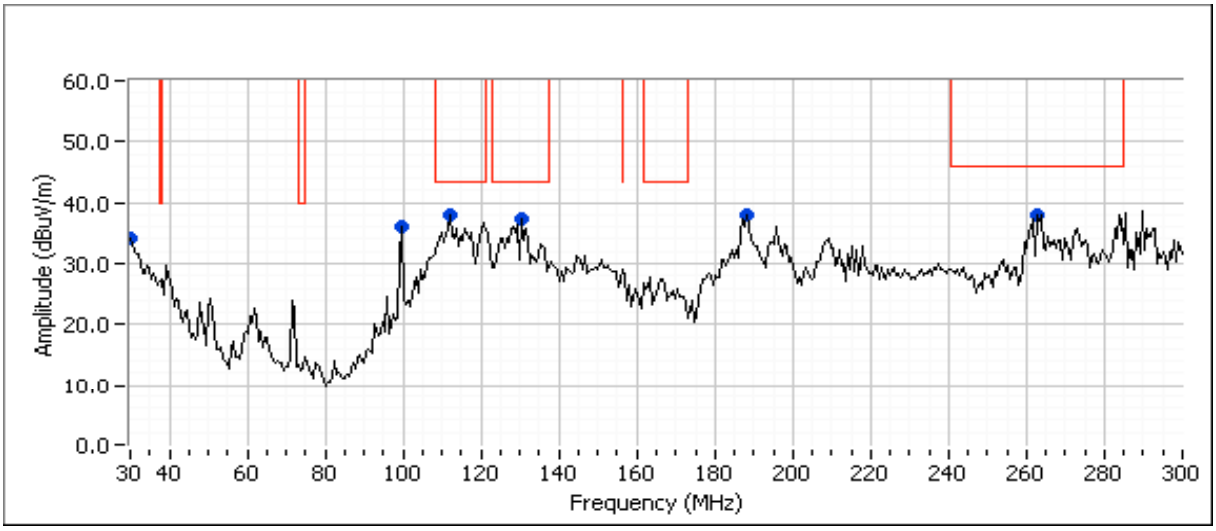
Frequency	Level	Pol	FCC 15.209 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
279.509	28.7	H	46.0	-17.3	QP	345	1.01	Moving cables lowered reading.
112.185	32.9	V	43.5	-10.6	QP	171	1.00	Moving cables lowered reading.
116.275	28.3	V	43.5	-15.2	QP	149	1.00	Moving cables lowered reading.
375.754	33.3	H	46.0	-12.7	QP	220	1.01	Moving cables lowered reading.
403.050	32.2	H	46.0	-13.8	QP	205	1.00	Moving cables lowered reading.
276.109	30.3	H	46.0	-15.7	QP	216	1.00	Moving cables lowered reading.
133.439	25.5	V	43.5	-18.0	QP	113	1.01	Moving cables lowered reading.

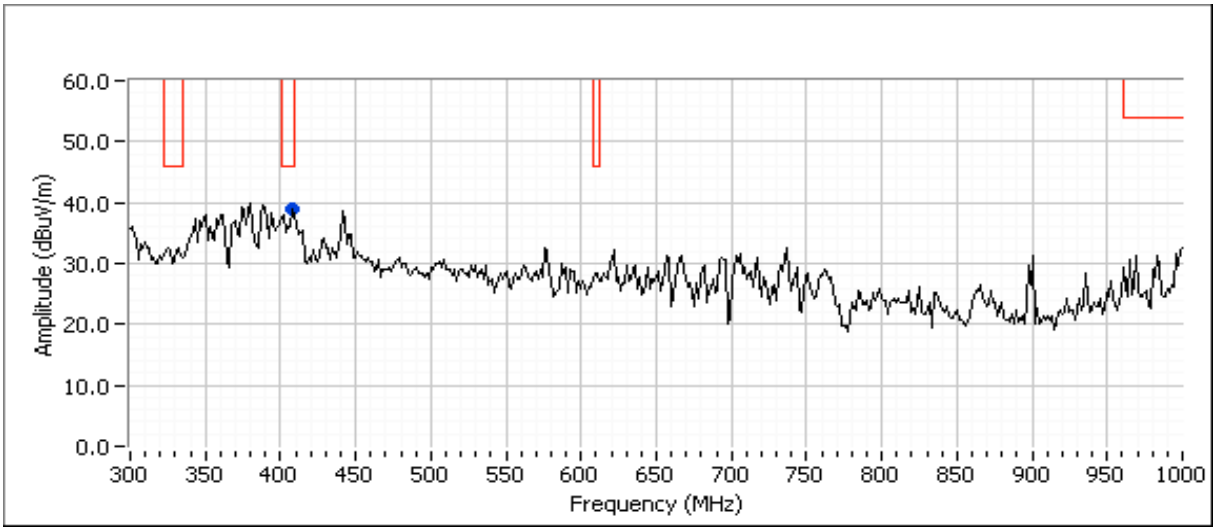
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

Run #3: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured to TX , 802.11a 16.5dBm on chain A (setting 30) on channel 100, BLE chain B (setting Max) on channel 2480MHz.

Test Parameters for Preliminary Scan(s)			
Frequency Range (MHz)	Prescan Distance (meters)	Limit Distance (meters)	Extrapolation Factor (dB, applied to data)
30 - 1000	3	3	0.0





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

Frequency	Level	Pol	FCC 15.209 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
114.078	38.1	V	43.5	-5.4	Peak	140	2.0	
188.629	38.0	H	43.5	-5.5	Peak	175	2.0	Note 1
30.038	34.0	V	40.0	-6.0	Peak	57	1.0	Note 1
130.441	37.4	V	43.5	-6.1	Peak	117	1.0	
403.794	39.0	H	46.0	-7.0	Peak	202	1.0	
99.812	36.1	V	43.5	-7.4	Peak	224	1.5	Note 1
262.665	*37.9*	*H*	*46.0*	*-8.1*	*Peak*	*81*	*2.5*	

Preliminary quasi-peak readings (no 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	
99.812	25.8	V	43.5	-17.7	QP	233	1.68	
403.794	31.5	H	46.0	-14.5	QP	208	1.00	
188.629	26.2	H	43.5	-17.3	QP	153	1.64	
114.078	30.2	V	43.5	-13.3	QP	122	1.01	
130.441	26.0	V	43.5	-17.5	QP	134	1.00	
30.038	28.6	V	40.0	-11.4	QP	31	1.01	

Run #4: Maximized Readings From Run #1

Test Parameters for Maximized Reading(s)			
Frequency Range (MHz)	Test Distance (meters)	Limit Distance (meters)	Extrapolation Factor (dB, applied to data)
30 - 1000	3	3	0.0

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	
99.812	25.8	V	43.5	-17.7	QP	233	1.68	Moving cables lowered reading.
403.794	31.5	H	46.0	-14.5	QP	208	1.00	Moving cables lowered reading.
188.629	26.2	H	43.5	-17.3	QP	153	1.64	Moving cables lowered reading.
114.078	30.2	V	43.5	-13.3	QP	122	1.01	Moving cables lowered reading.
130.441	26.0	V	43.5	-17.5	QP	134	1.00	Moving cables lowered reading.
30.038	28.6	V	40.0	-11.4	QP	31	1.01	Moving cables lowered reading.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

Conducted Emissions (Transmitter)

(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: 1/11/2014
Test Engineer: M. Birgani
Test Location: Chamber #4

Config. Used: 1
Config Change: -
EUT Voltage: 120 V, 60 Hz

General Test Configuration

For tabletop equipment, the EUT 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. A second LISN was used for all local support equipment. Remote support equipment was located outside of the semi-anechoic chamber. Any cables running to remote support equipment where routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

Ambient Conditions:

Temperature: 15-18 °C
Rel. Humidity: 30-40 %

Summary of Results

MAC Address: 001500E60B22 DRTU Tool Version 1.7.4-855 Driver version 16.8.0.3

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power,120V/60Hz	RSS 210 / 15.207	Pass	45.7 dBµV @ 0.398 MHz (-2.2 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

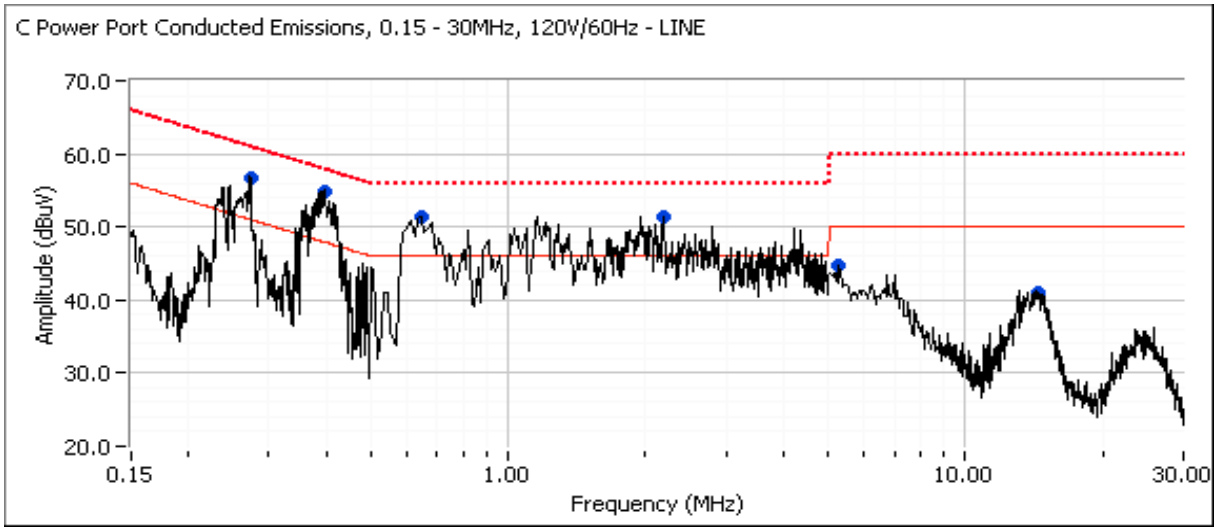
Deviations From The Standard

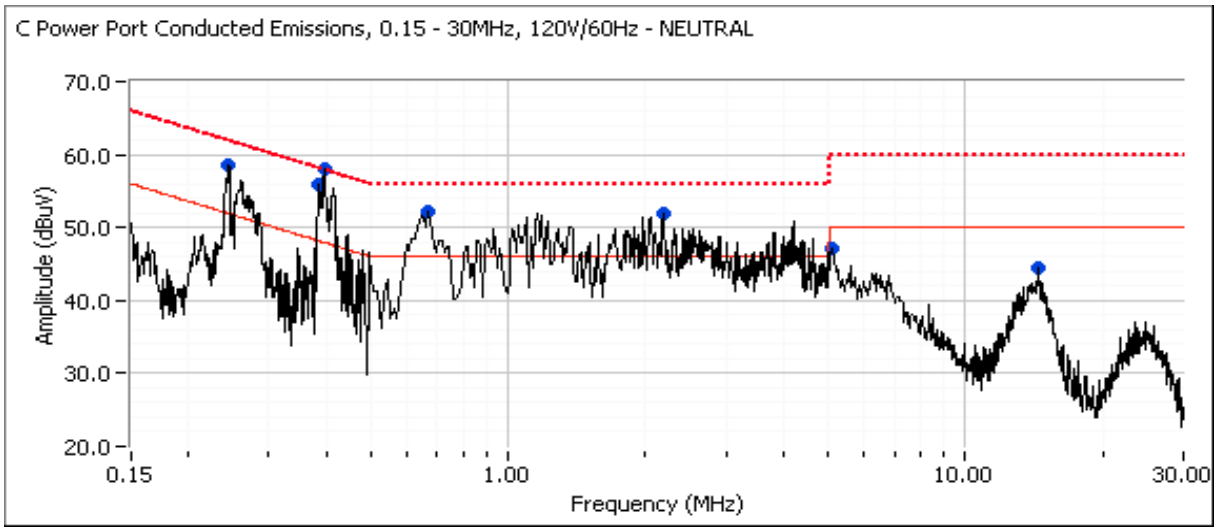
No deviations were made from the requirements of the standard.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

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

Configured to TX , 802.11b 16.5dBm on chain A (setting 22.0) on channel 6, BLE chain B (setting Max) on channel 2440MHz





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

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

Configured to TX , 802.11b 16.5dBm on chain A (setting 22.0) on channel 6, BLE chain B (setting Max) on channel 2440MHz

Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

Frequency	Level	AC	RSS 210 / 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.398	57.9	Neutral	47.9	10.0	Peak	
0.385	55.8	Neutral	48.1	7.7	Peak	
0.394	54.9	Line	47.9	7.0	Peak	
0.244	58.5	Neutral	51.9	6.6	Peak	
0.648	52.1	Neutral	46.0	6.1	Peak	
2.184	51.9	Neutral	46.0	5.9	Peak	
0.275	56.8	Line	51.0	5.8	Peak	
0.656	51.5	Line	46.0	5.5	Peak	
2.178	51.5	Line	46.0	5.5	Peak	
5.008	47.1	Neutral	50.0	-2.9	Peak	
5.129	44.7	Line	50.0	-5.3	Peak	
14.237	44.6	Neutral	50.0	-5.4	Peak	
14.394	41.1	Line	50.0	-8.9	Peak	

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	B

Final quasi-peak and average readings

Frequency	Level	AC	RSS 210 / 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.398	45.7	Neutral	47.9	-2.2	AVG	AVG (0.10s)
0.385	45.7	Neutral	48.2	-2.5	AVG	AVG (0.10s)
0.398	55.0	Neutral	57.9	-2.9	QP	QP (1.00s)
0.394	45.0	Line	48.0	-3.0	AVG	AVG (0.10s)
0.385	55.2	Neutral	58.2	-3.0	QP	QP (1.00s)
0.394	54.9	Line	58.0	-3.1	QP	QP (1.00s)
0.656	40.7	Line	46.0	-5.3	AVG	AVG (0.10s)
2.184	40.2	Neutral	46.0	-5.8	AVG	AVG (0.10s)
0.656	50.1	Line	56.0	-5.9	QP	QP (1.00s)
0.648	49.9	Neutral	56.0	-6.1	QP	QP (1.00s)
0.243	55.7	Neutral	62.0	-6.3	QP	QP (1.00s)
0.648	39.6	Neutral	46.0	-6.4	AVG	AVG (0.10s)
2.184	49.4	Neutral	56.0	-6.6	QP	QP (1.00s)
2.178	39.1	Line	46.0	-6.9	AVG	AVG (0.10s)
0.275	53.7	Line	61.0	-7.3	QP	QP (1.00s)
0.275	43.1	Line	51.0	-7.9	AVG	AVG (0.10s)
2.178	47.8	Line	56.0	-8.2	QP	QP (1.00s)
0.243	42.6	Neutral	52.0	-9.4	AVG	AVG (0.10s)
14.237	33.4	Neutral	50.0	-16.6	AVG	AVG (0.10s)
5.008	32.6	Neutral	50.0	-17.4	AVG	AVG (0.10s)
14.394	31.4	Line	50.0	-18.6	AVG	AVG (0.10s)
5.008	41.0	Neutral	60.0	-19.0	QP	QP (1.00s)
5.129	30.6	Line	50.0	-19.4	AVG	AVG (0.10s)
14.237	40.1	Neutral	60.0	-19.9	QP	QP (1.00s)
5.129	38.5	Line	60.0	-21.5	QP	QP (1.00s)
14.394	37.4	Line	60.0	-22.6	QP	QP (1.00s)

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

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 a GATED average power meter and with the device configured in a continuous transmit mode on Chain 1(Port 2) at the various data rates in each mode to verify the highest power mode:

Sample Notes

MAC Address: 001500E60B22 DRTU Tool Version 1.7.4-845 Driver version 16.8.0.3

Date of Test: 12/30/2013
Test Engineer: Jack Liu
Test Location: FT Lab6

Mode	Data Rate	Power (dBm)	Power setting
802.11b	1	**16.6**	20.0
	2	16.5	
	5.5	16.4	
	11	16.4	
802.11g	6	**15.2**	20.0
	9	15.1	
	12	15.1	
	18	15.1	
	24	15.0	
	36	14.9	
	48	14.8	
	54	14.8	

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Mode	Data Rate	Power (dBm)	Power setting	
802.11n/ac 20MHz	6.5	**11.6**	20.0	
	13	11.2		
	19.5	11.0		
	26	10.8		
	39	10.6		
	52	10.4		
	58.5	10.4		
	65	10.4		
	78	10.1		<<-11ac mode only
802.11n/ac 40MHz	13.5	**10.5**	20.0	
	27	10.4		
	40.5	10.3		
	54	10.2		
	81	10.1		
	108	10.0		
	121.5	10.0		
	135	10.0		
	162	9.9		<<-11ac mode only
	180	9.9		<<-11ac mode only
802.11ac 80MHz	29.3	**10.1**	20.0	
	58.5	10.0		
	87.8	9.9		
	117	9.8		
	175.5	9.7		
	234	9.6		
	266.3	9.5		
	292.5	9.4		
	351	9.4		
	390	9.4		

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

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

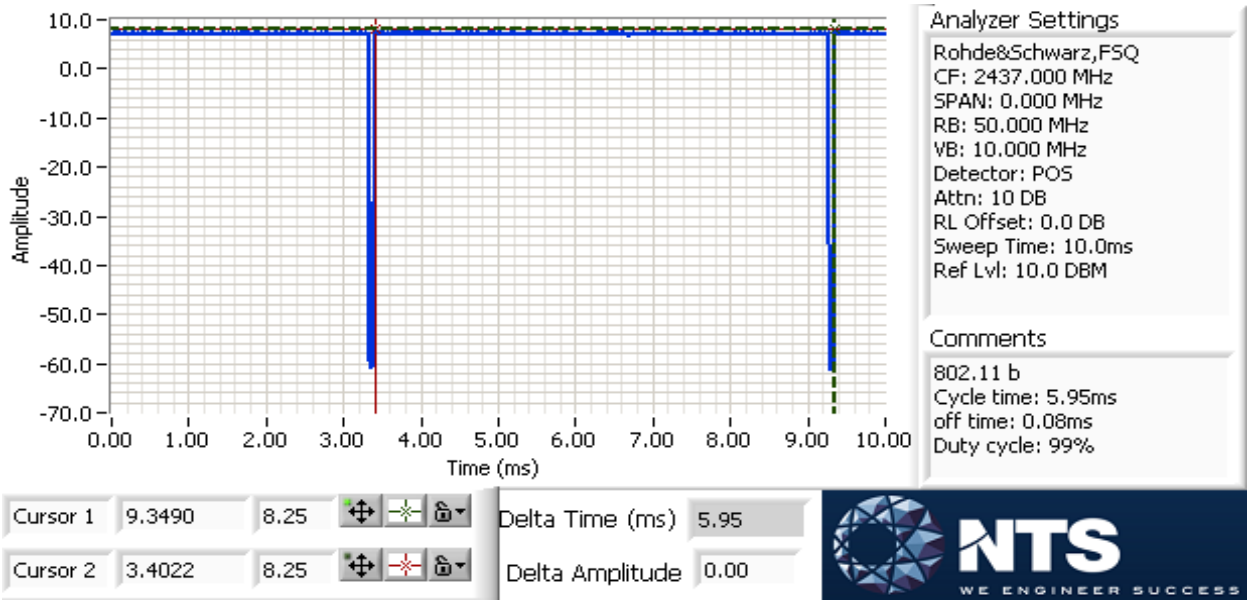
Duty Cycle

Date of Test: 12/30/2013
Test Engineer: Jack Liu
Test Location: FT Lab6

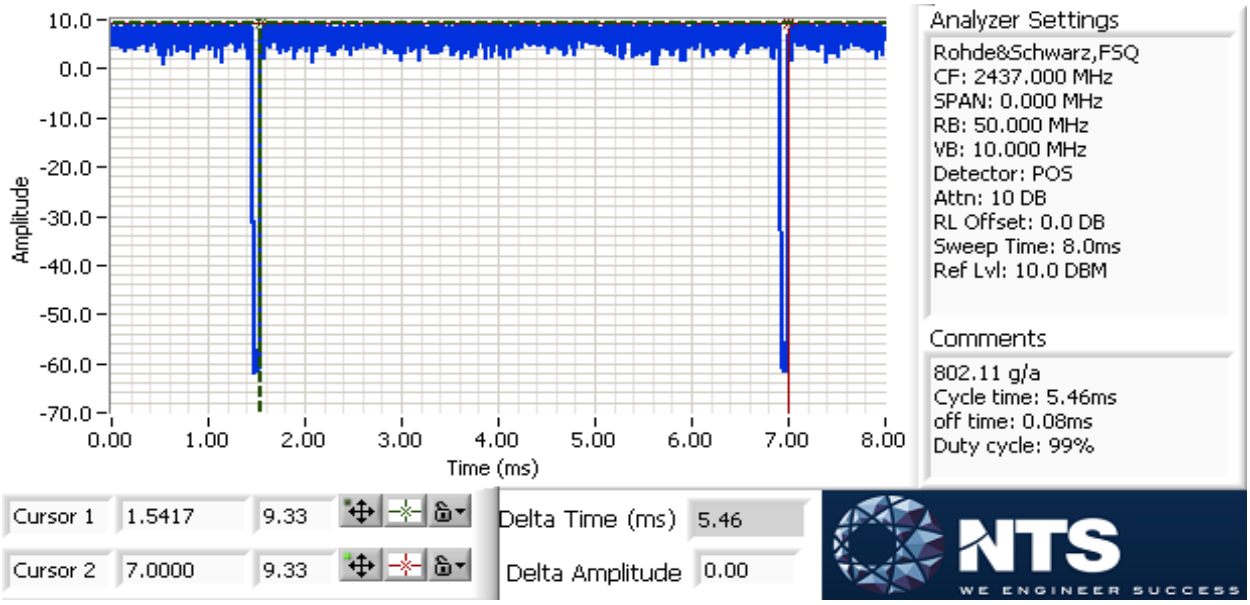
Duty cycle measurements performed on the worse case data rate for power.
Notes: Measurements taken with maximum RBW/VBW settings allowed.

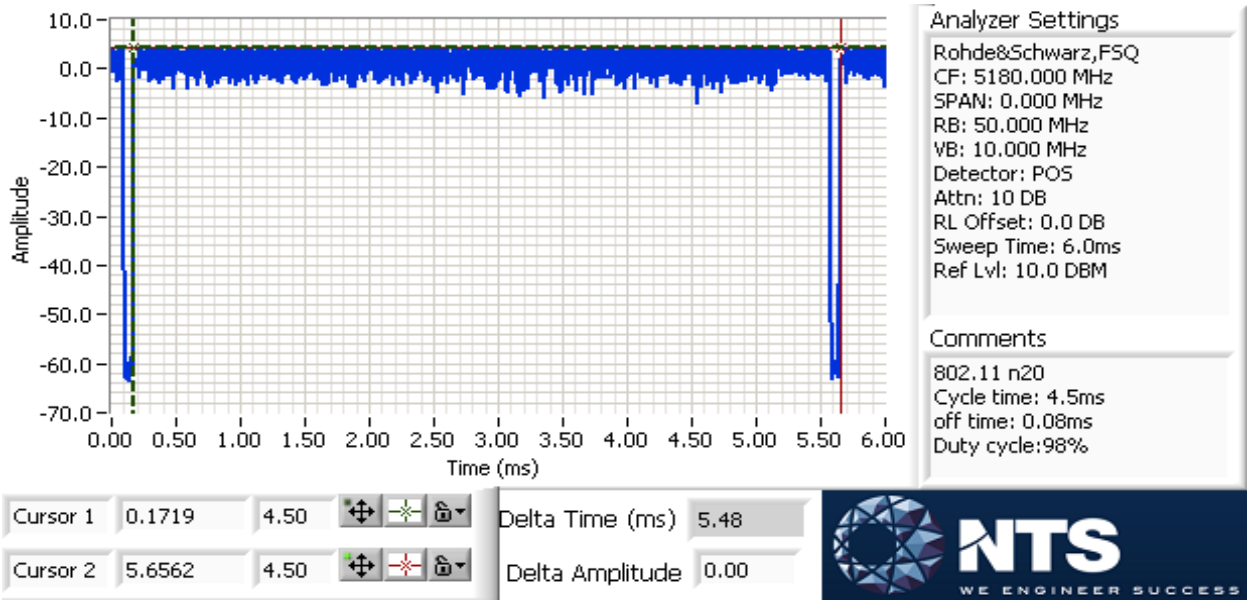
Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11b	1Mb/s	0.99	Yes	10	0	0	100
11g	6Mb/s	0.99	Yes	8	0	0	125
11a	6Mb/s	0.99	Yes	8	0	0	125
n20	HT0	0.98	Yes	6	0	0	166.7
n40	HT0	0.97	Yes	5	0.1	0.2	200
ac80	VHT0	0.94	Yes	2	0.3	0.5	500

* Correction factor when using RMS/Power averaging - 10*log(1/x)
** Correction factor when using linear voltage average - 20*log(1/x)
T = Minimum transmission duration

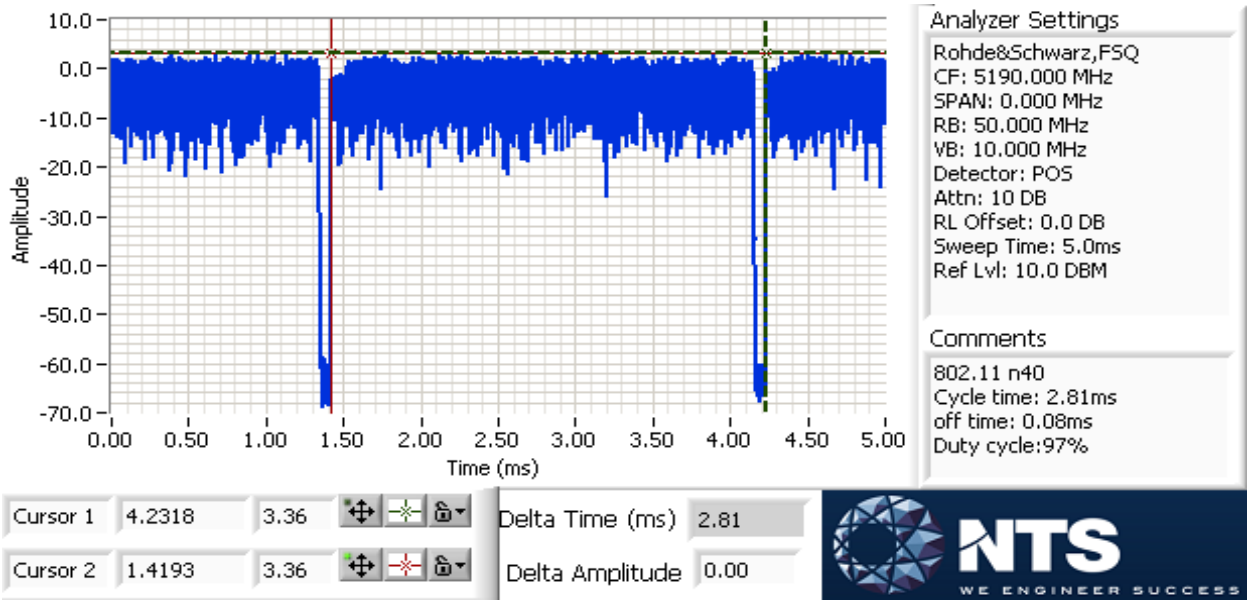


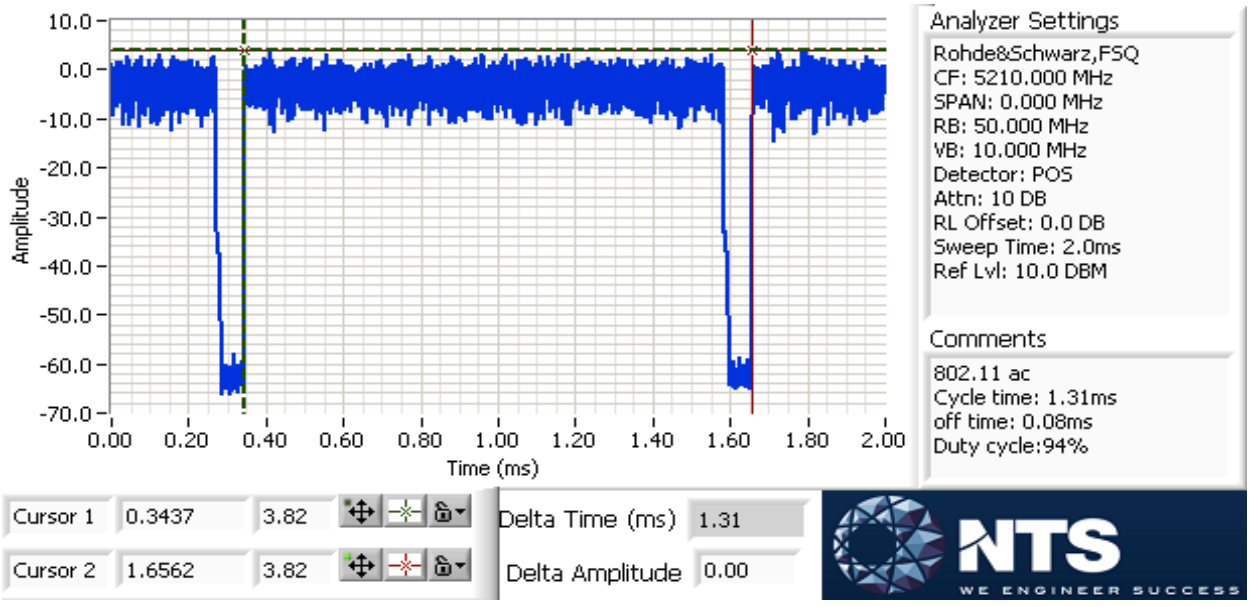
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

RSS-210 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, PSD, Peak Excursion, 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.

Summary of Results

MAC Address: 001500E6085C DRTU Tool Version 1.7.4-845 Driver version 16.8.0.3

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	11a: 16.3dBm (42.7mW) n/ac20: 16.4dBm (44.7mW) n/ac40: 16.6dBm (45.2mW) ac80: 12.0dBm (15.7mW)
1	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	11a: 3.4 dBm/MHz n/ac20: 3.3 dBm/MHz n/ac40: 1.1 dBm/MHz ac80: -6.2 dBm/MHz
1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	11a: 16.5dBm (44.6mW) n/ac20: 16.3dBm (42.5mW) n/ac40: 14.9dBm (30.6mW) ac80: 13.9dBm (24.4mW)
1	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	11a: 3.7dBm/MHz n/ac20: 3.2dBm/MHz n/ac40: -0.6dBm/MHz ac80: -4.2dBm/MHz
1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	-	EIRP = 20.2 dBm (104.5 mW)
1	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	11a: 16.2dBm (41.4mW) n/ac20: 16.5dBm (44.5mW) n/ac40: 16.5dBm (44.7mW) ac80: 15.9dBm (38.7mW)
1	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	11a: 3.5dBm/MHz n/ac20: 3.5dBm/MHz n/ac40: 1.0dBm/MHz ac80: -2.2dBm/MHz

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	-	EIRP = 21.3 dBm (134.9mW)
1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz for all modes
1	99% Bandwidth	RSS 210 (Information only)	N/A	a: 17 MHz n20: 18.2 MHz n40: 36.1 MHz ac80: 74.9 MHz
1	20dB Bandwidth	15.215 (c)	Pass	20 dB Bandwidth not within 5600-5650 MHz band for all modes
2	Peak Excursion Envelope	15.407(a) (6) 13dB	Pass	8.4dB
3	Antenna Conducted - Out of Band Spurious	15.407(b) -27dBm/MHz		Not performed conducted, Refer to Radiated Spurious Emissions data

General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

Ambient Conditions:

Temperature:	20.8 °C
Rel. Humidity:	37 %

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 Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01 v01r03, dated April 8, 2013

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mb/s	0.99	Yes	8	0	0	125
n20	HT0	0.98	Yes	6	0	0	166.66667
n40	HT0	0.97	Yes	5	0.1	0.2	200
ac80	VHT0	0.94	Yes	2	0.3	0.5	500

Note: Correction for duty cycle applied in the measurement system.

Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems

Date of Test: 1/7/14 to 1/12/14 — Config. Used: 1

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

Test Location: FT Lab 4A — EUT Voltage: 120V/60Hz

Note 1:	Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep ≥ 2*span/RBW, RMS detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz for (a) and (n20) modes 80 MHz for (n40) mode and 100 MHz for (ac80) mode. (method SA-1 of KDB 789033).
Note 2:	Measured using the same analyzer settings used for output power.
Note 3:	For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
Note 4:	99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
Note 5:	For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

SISO Device - 5150-5250 MHz Band - FCC

Antenna Gain (dBi): 3.6 Max EIRP: 103.5 mW 20.2 dBm

Frequency (MHz)	Software Setting	26dB BW (MHz)	Duty Cycle %	Output Power[1] dBm			PSD[2] dBm/MHz			Result
				Measured	Calculated	Limit	Measured	Calculated	Limit	
802.11a										
5180	27.5	37.1	100.0	15.6	15.6	17.0	2.8	2.8	4.0	Pass
5200	28.5	38.1	100.0	16.3	16.3	17.0	3.4	3.4	4.0	Pass
5240	28.0	38.6	100.0	16.2	16.2	17.0	3.4	3.4	4.0	Pass
802.11n 20MHz										
5180	28.0	36.6	100.0	15.6	15.6	17.0	2.3	2.3	4.0	Pass
5200	29.0	37.9	100.0	16.4	16.4	17.0	3.1	3.1	4.0	Pass
5240	28.5	39.2	100.0	16.3	16.3	17.0	3.3	3.3	4.0	Pass
802.11n 40MHz										
5190	25.5	42.3	100.0	14.2	14.2	17.0	-1.2	-1.2	4.0	Pass
5230	29.0	72.8	100.0	16.6	16.6	17.0	1.1	1.1	4.0	Pass
802.11ac 80MHz										
5210	23.0	80.4	100.0	12.0	12.0	17.0	-6.2	-6.2	4.0	Pass

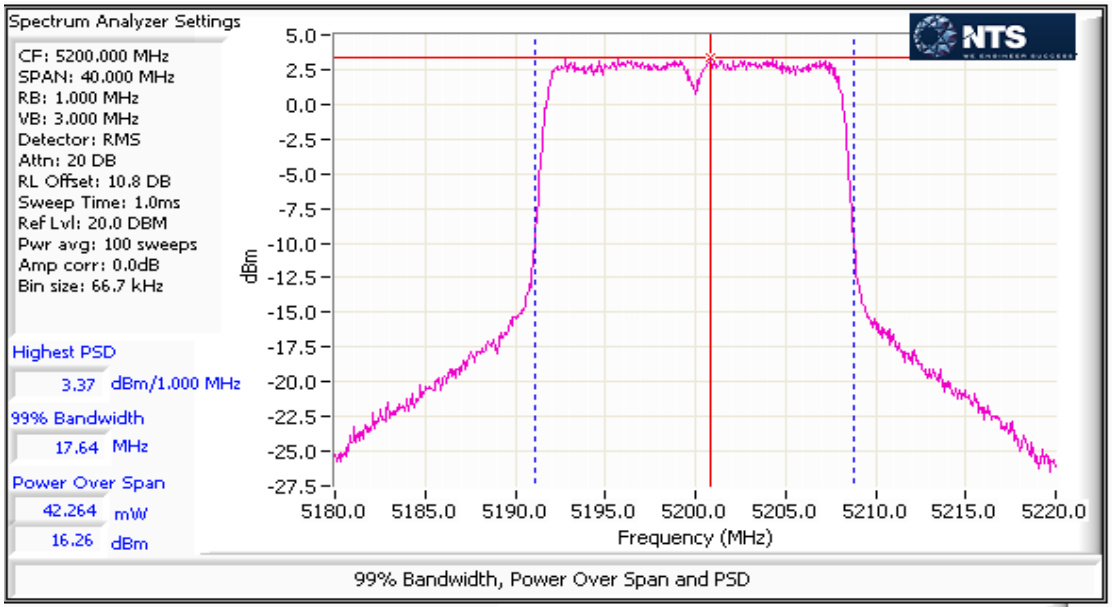
SISO Device - 5150-5250 MHz Band - Industry Canada

Antenna Gain (dBi): 3.6 Max EIRP: 103.5 mW 20.2 dBm

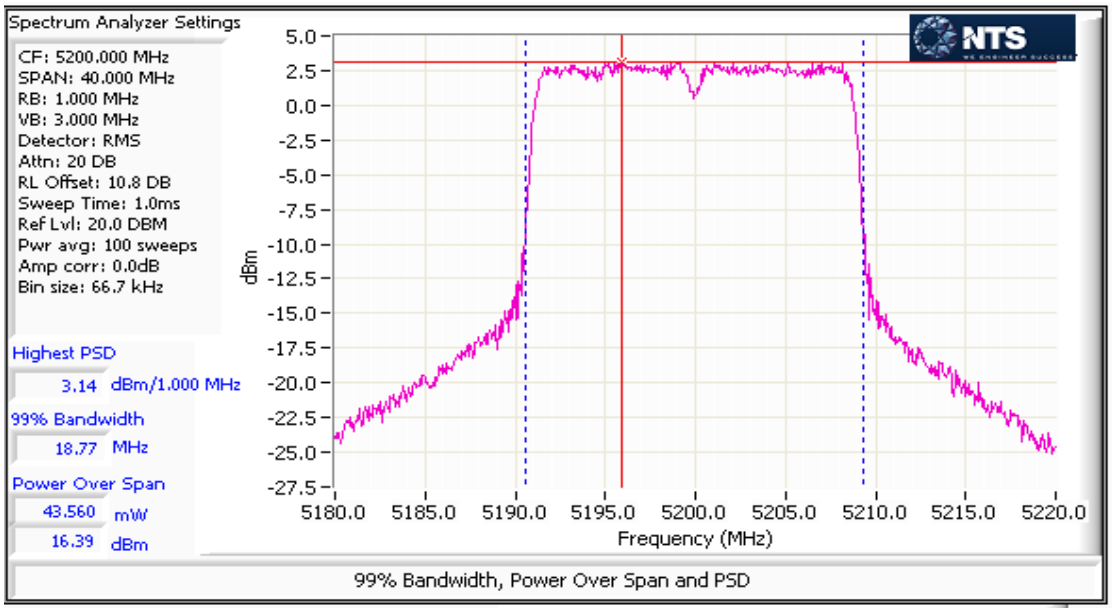
Frequency (MHz)	Software Setting	99% BW (MHz)	Duty Cycle %	Output Power[1] dBm			PSD[2] dBm/MHz			Result
				Measured	Calculated	Limit	Measured	Calculated	Limit[3]	
802.11a										
5180	27.5	17.0	100.0	15.6	15.6	16.3	2.8	2.8	6.4	Pass
5200	28.5	17.6	100.0	16.3	16.3	16.5	3.4	3.4	6.4	Pass
5240	28.0	17.4	100.0	16.2	16.2	16.4	3.4	3.4	6.4	Pass
802.11n 20MHz										
5180	28.0	18.5	100.0	15.6	15.6	16.7	2.3	2.3	6.4	Pass
5200	29.0	18.8	100.0	16.4	16.4	16.7	3.1	3.1	6.4	Pass
5240	28.5	18.6	100.0	16.3	16.3	16.7	3.3	3.3	6.4	Pass
802.11n 40MHz										
5190	25.5	36.1	100.0	14.2	14.2	17.0	-1.2	-1.2	6.4	Pass
5230	29.0	36.6	100.0	16.6	16.6	17.0	1.1	1.1	6.4	Pass
802.11ac 80MHz										
5210	23.0	74.9	100.0	12.0	12.0	17.0	-6.2	-6.2	6.4	Pass

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

11a - 5200MHz

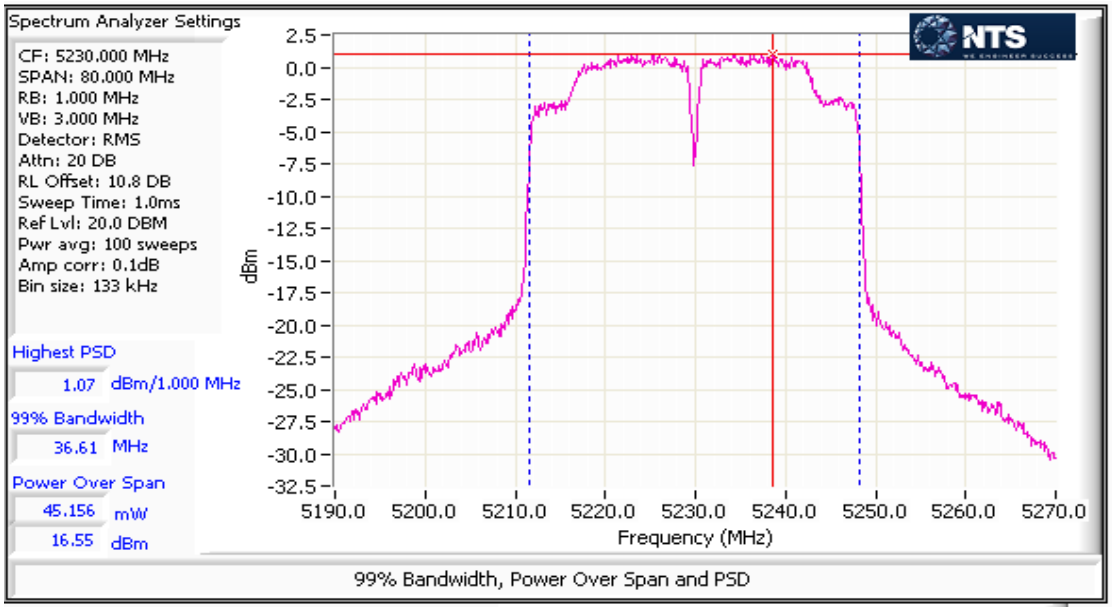


n20 - 5200MHz

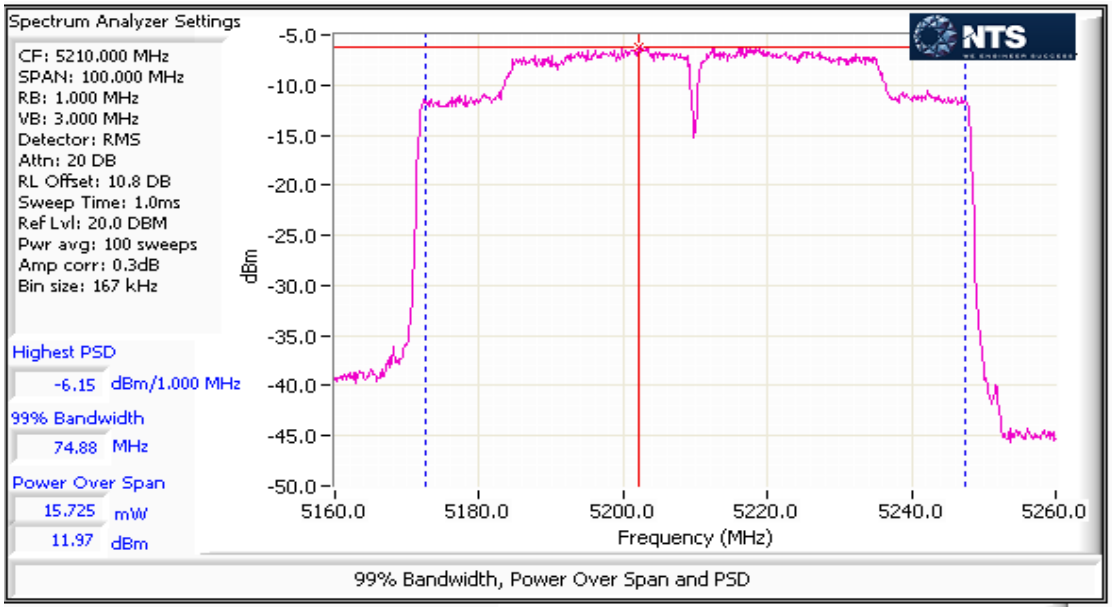


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

n40 - 5230MHz



ac80 - 5210MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

SISO Device - 5250-5350 MHz Band - FCC

Antenna Gain (dBi): 3.7 Max EIRP: 104.5 mW 20.2 dBm

Frequency (MHz)	Software Setting	26dB BW (MHz)	Duty Cycle %	Output Power[1] dBm			PSD[2] dBm/MHz			Result
				Measured	Calculated	Limit	Measured	Calculated	Limit	
802.11a										
5260	28.5	37.4	100.0	16.5	16.5	24.0	3.7	3.7	11.0	Pass
5300	28.5	38.5	100.0	16.3	16.3	24.0	3.4	3.4	11.0	Pass
5320	28.0	38.1	100.0	16.0	16.0	24.0	3.1	3.1	11.0	Pass
802.11n 20MHz										
5260	28.5	38.4	100.0	16.3	16.3	24.0	3.2	3.2	11.0	Pass
5300	28.5	38.5	100.0	16.2	16.2	24.0	3.1	3.1	11.0	Pass
5320	28.0	38.3	100.0	15.9	15.9	24.0	2.7	2.7	11.0	Pass
802.11n 40MHz										
5270	25.5	73.2	100.0	14.1	14.1	24.0	-1.4	-1.4	11.0	Pass
5310	26.5	43.5	100.0	14.9	14.9	24.0	-0.6	-0.6	11.0	Pass
802.11ac 80MHz										
5290	25.5	87.8	100.0	13.9	13.9	24.0	-4.2	-4.2	11.0	Pass

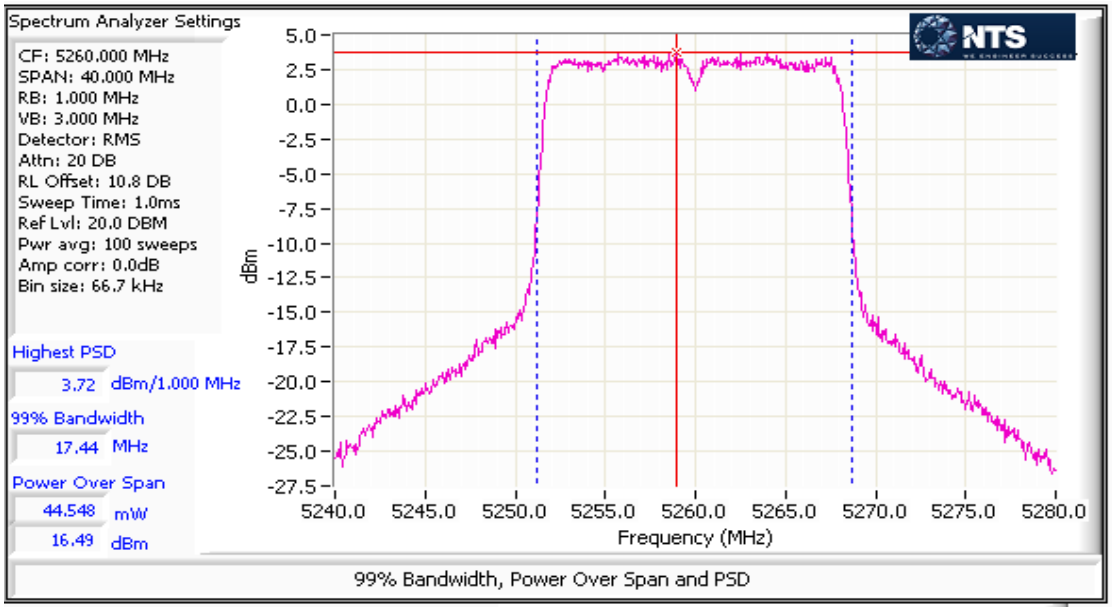
SISO Device - 5250-5350 MHz Band - Industry Canada

Antenna Gain (dBi): 3.7 Max EIRP: 104.5 mW 20.2 dBm

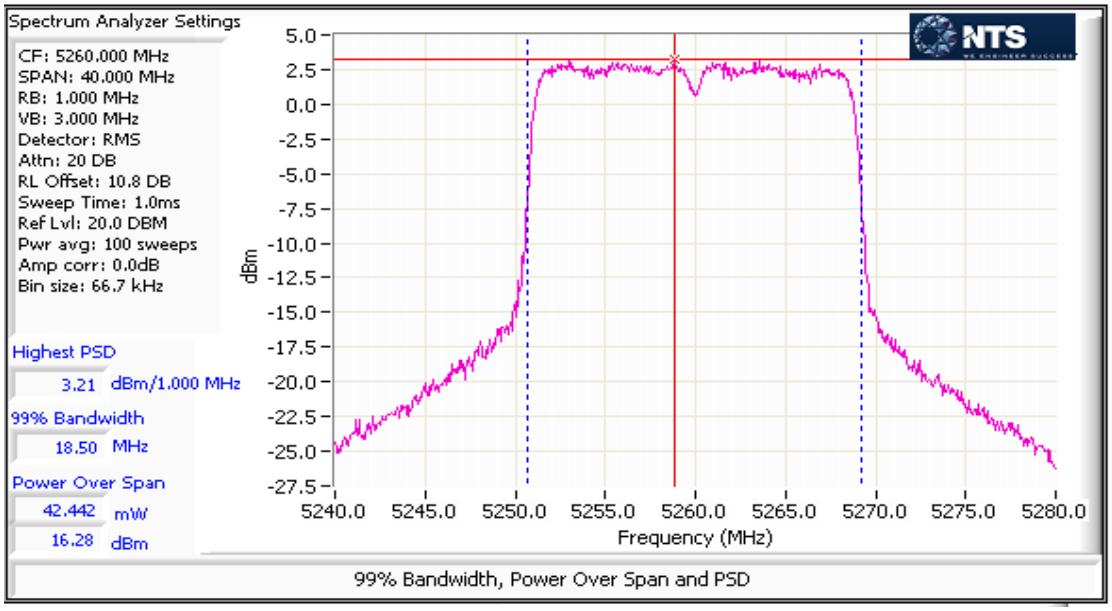
Frequency (MHz)	Software Setting	99% BW (MHz)	Duty Cycle %	Output Power[1] dBm			PSD[2] dBm/MHz			Result
				Measured	Calculated	Limit	Measured	Calculated	Limit[3]	
802.11a										
5260	28.5	17.4	100.0	16.5	16.5	23.4	3.7	3.7	11.0	Pass
5300	28.5	17.5	100.0	16.3	16.3	23.4	3.4	3.4	11.0	Pass
5320	28.0	17.4	100.0	16.0	16.0	23.4	3.1	3.1	11.0	Pass
802.11n 20MHz										
5260	28.5	18.5	100.0	16.3	16.3	23.7	3.2	3.2	11.0	Pass
5300	28.5	18.6	100.0	16.2	16.2	23.7	3.1	3.1	11.0	Pass
5320	28.0	18.2	100.0	15.9	15.9	23.6	2.7	2.7	11.0	Pass
802.11n 40MHz										
5270	25.5	36.1	100.0	14.1	14.1	24.0	-1.4	-1.4	11.0	Pass
5310	26.5	36.1	100.0	14.9	14.9	24.0	-0.6	-0.6	11.0	Pass
802.11ac 80MHz										
5290	25.5	75.0	100.0	13.9	13.9	24.0	-4.2	-4.2	11.0	Pass

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

11a - 5260MHz

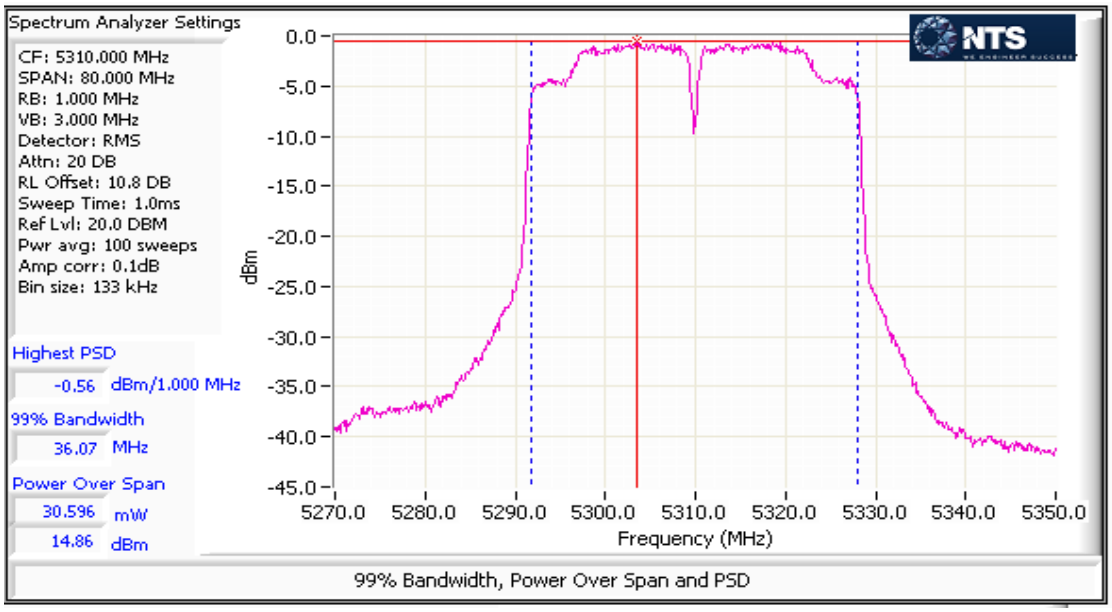


n20 - 5260MHz

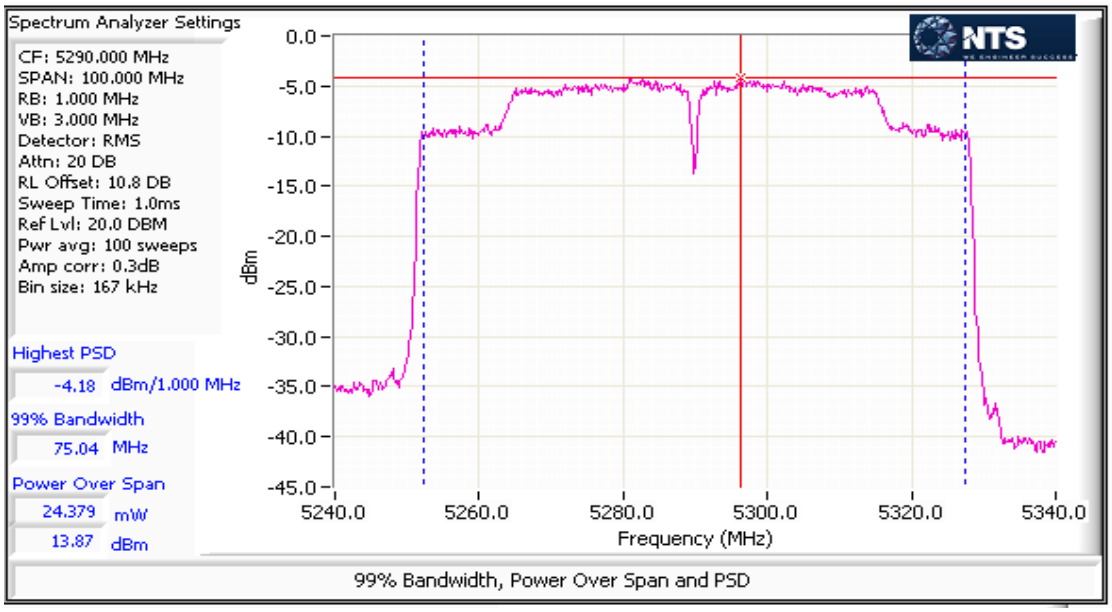


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

n40 - 5310MHz



ac80 - 5290MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

SISO Device - 5470-5725 MHz Band - FCC

Antenna Gain (dBi): 4.8 Max EIRP: 134.9 mW 21.3 dBm

Frequency (MHz)	Software Setting	26dB BW (MHz)	Duty Cycle %	Output Power[1] dBm			PSD[2] dBm/MHz			Result
				Measured	Calculated	Limit	Measured	Calculated	Limit	
802.11a										
5500	29.5	28.4	100.0	16.0	16.0	24.0	3.1	3.1	11.0	Pass
5580	30.5	29.8	100.0	16.2	16.2	24.0	3.5	3.5	11.0	Pass
5700	29.5	27.3	100.0	14.9	14.9	24.0	2.0	2.0	11.0	Pass
802.11n 20MHz										
5500	29.5	30.0	100.0	15.9	15.9	24.0	2.7	2.7	11.0	Pass
5580	30.5	30.7	100.0	16.5	16.5	24.0	3.5	3.5	11.0	Pass
5700	29.5	26.2	100.0	15.0	15.0	24.0	1.9	1.9	11.0	Pass
802.11ac 20MHz										
UNII-2ext										
5720	32.0	26.6	100.0	15.1	15.1	24.0	3.0	3.0	11.0	Pass
UNII-3										
5720	32.0	14.4	100.0	9.7	9.7	22.6	3.0	3.0	11.0	Pass
802.11n 40MHz										
5510	26.5	41.6	100.0	14.1	14.1	24.0	-1.4	-1.4	11.0	Pass
5550	30.5	63.0	100.0	16.5	16.5	24.0	1.0	1.0	11.0	Pass
5670	30.5	51.7	100.0	16.2	16.2	24.0	0.7	0.7	11.0	Pass
802.11ac 40MHz										
UNII-2ext										
5710	32.0	54.0	100.0	16.0	16.0	24.0	0.8	0.8	11.0	Pass
UNII-3										
5710	32.0	22.5	100.0	3.0	3.0	24.0	-3.0	-3.0	11.0	Pass
802.11ac 80MHz										
5530	24.5	80.7	100.0	11.8	11.8	24.0	-6.3	-6.3	11.0	Pass
UNII-2ext										
5690	32.0	104.0	100.0	15.9	15.9	24.0	-2.2	-2.2	11.0	Pass
UNII-3										
5690	32.0	17.0	100.0	-1.3	-1.3	23.3	-7.5	-7.5	11.0	Pass

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

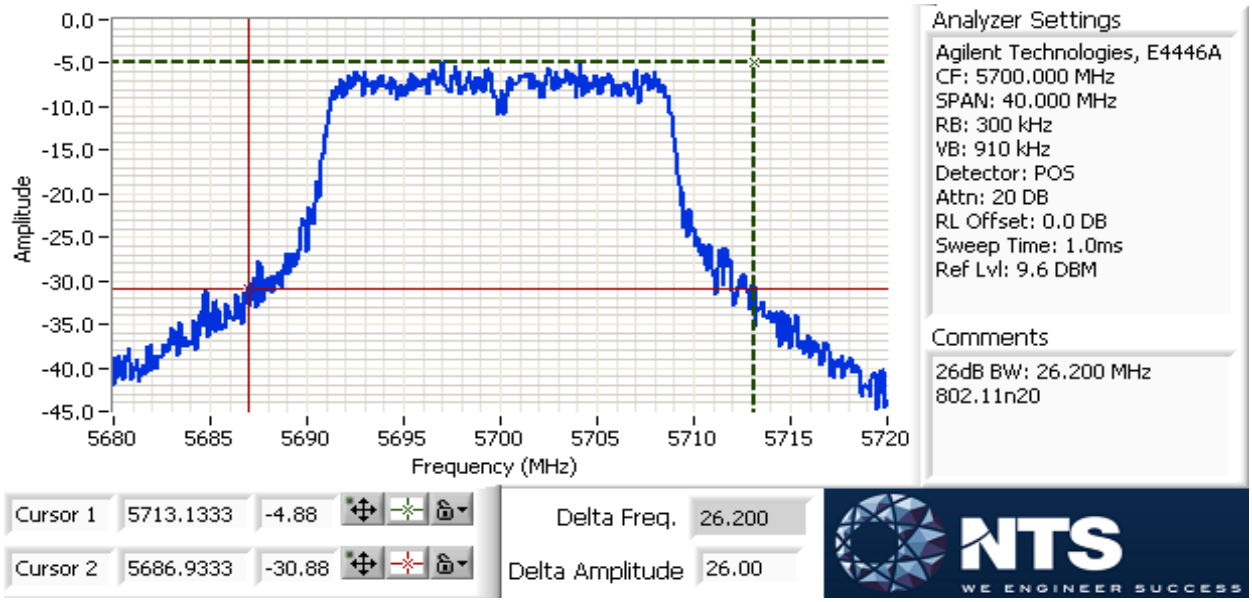
SISO Device - 5470-5725 MHz Band - Industry Canada

Antenna Gain (dBi): 4.8 Max EIRP: 134.9 mW 21.3 dBm

Frequency (MHz)	Software Setting	99% BW (MHz)	Duty Cycle %	Output Power[1] dBm			PSD[2] dBm/MHz			Result
				Measured	Calculated	Limit	Measured	Calculated	Limit[3]	
802.11a										
5500	29.5	17.0	100.0	16.0	16.0	23.3	3.1	3.1	11.0	Pass
5580	30.5	17.1	100.0	16.2	16.2	23.3	3.5	3.5	11.0	Pass
5700	29.5	17.0	100.0	14.9	14.9	23.3	2.0	2.0	11.0	Pass
802.11n 20MHz										
5500	29.5	18.2	100.0	15.9	15.9	23.6	2.7	2.7	11.0	Pass
5580	30.5	18.2	100.0	16.5	16.5	23.6	3.5	3.5	11.0	Pass
5700	29.5	18.2	100.0	15.0	15.0	23.6	1.9	1.9	11.0	Pass
802.11ac 20MHz										
UNII-2ext										
5720	32.0	14.3	100.0	15.1	15.1	22.6	3.0	3.0	11.0	Pass
UNII-3										
5720	32.0	7.1	100.0	9.7	9.7	19.5	3.0	3.0	11.0	Pass
802.11n 40MHz										
5510	26.5	36.1	100.0	14.1	14.1	24.0	-1.4	-1.4	11.0	Pass
5550	30.5	36.3	100.0	16.5	16.5	24.0	1.0	1.0	11.0	Pass
5670	30.5	36.6	100.0	16.2	16.2	24.0	0.7	0.7	11.0	Pass
802.11ac 40MHz										
UNII-2ext										
5710	32.0	33.0	100.0	16.0	16.0	24.0	0.8	0.8	11.0	Pass
UNII-3										
5710	32.0	9.6	100.0	3.0	3.0	20.8	-3.0	-3.0	10.2	Pass
802.11ac 80MHz										
5530	24.5	74.9	100.0	11.8	11.8	24.0	-6.3	-6.3	11.0	Pass
UNII-2ext										
5690	32.0	72.0	100.0	15.9	15.9	24.0	-2.2	-2.2	11.0	Pass
UNII-3										
5690	32.0	12.8	100.0	-1.3	-1.3	22.1	-7.5	-7.5	9.2	Pass

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

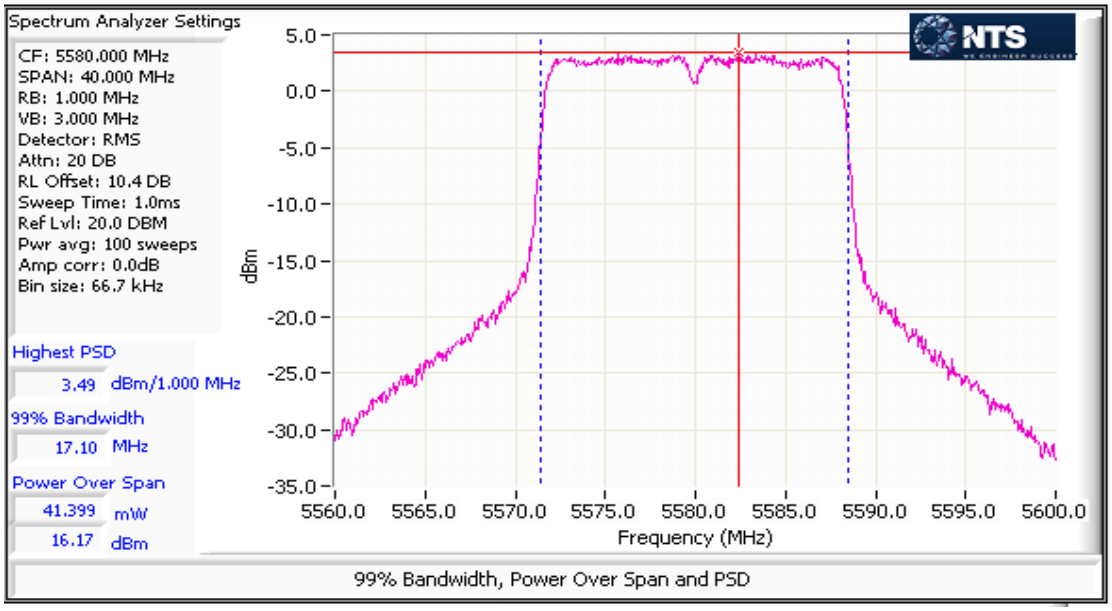
Worse Case 26dB BW across all bands, channels and modes - n20 5700MHz



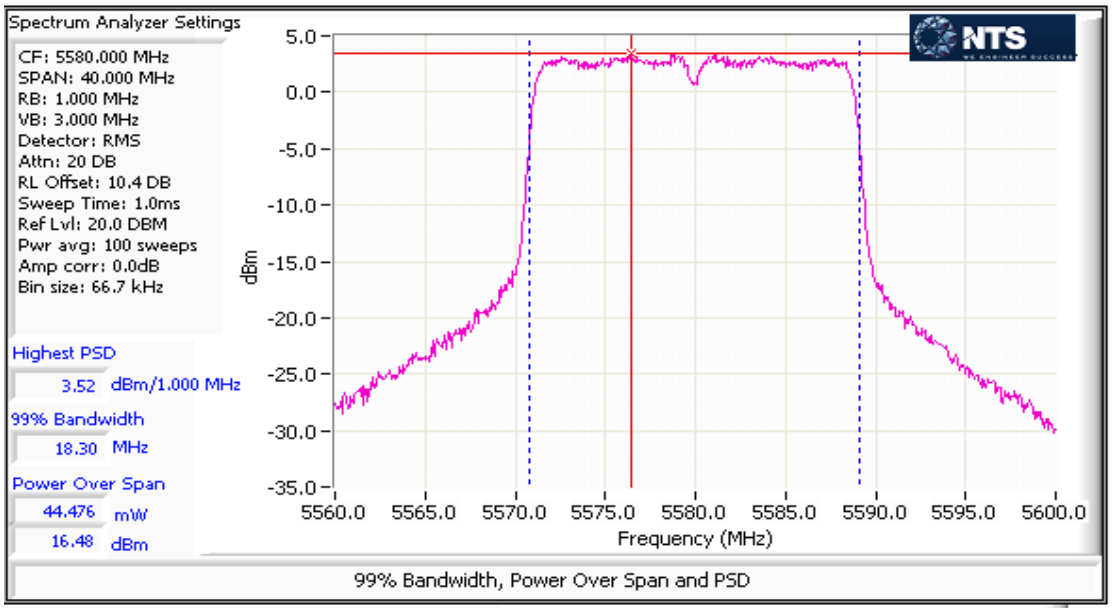
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Plots Showing Highest Power for each mode and Bandwidths

11a - 5580MHz

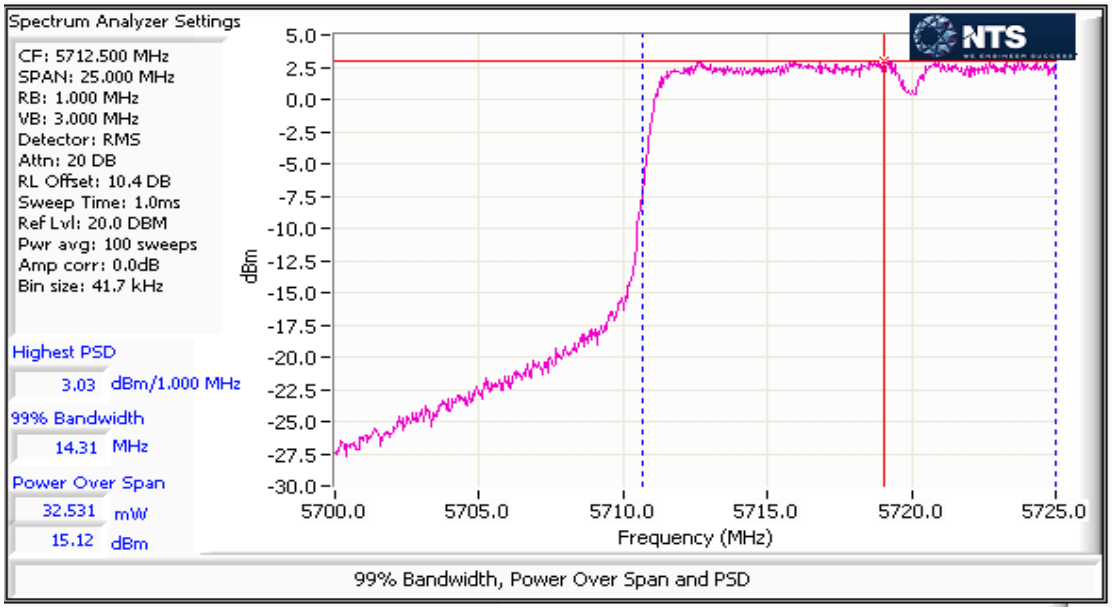


n20 - 5580MHz

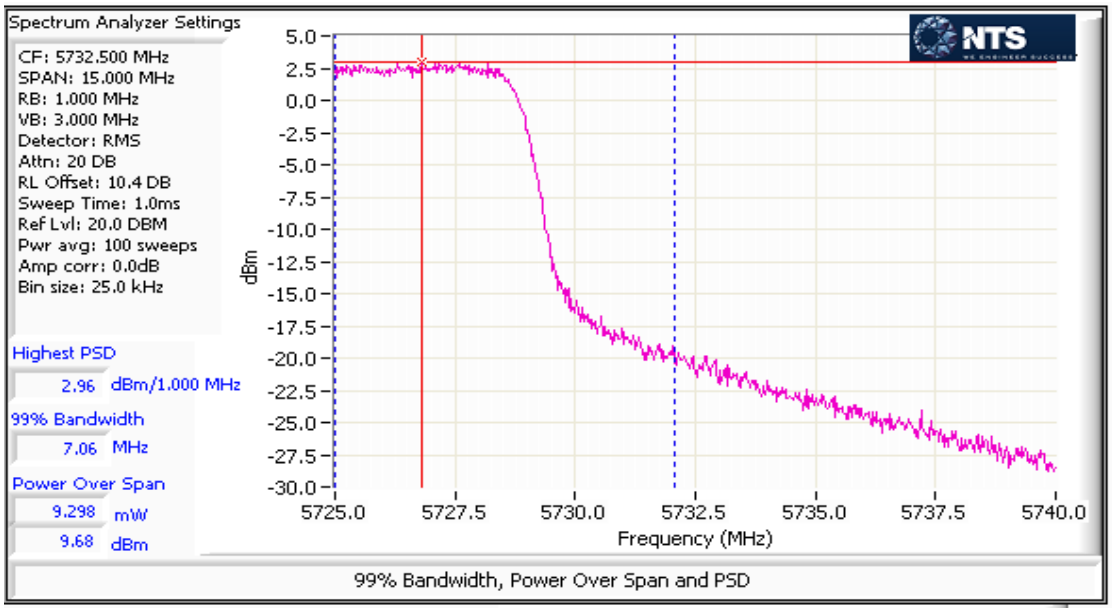


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

ac20 - 5720MHz - UNII-2ext

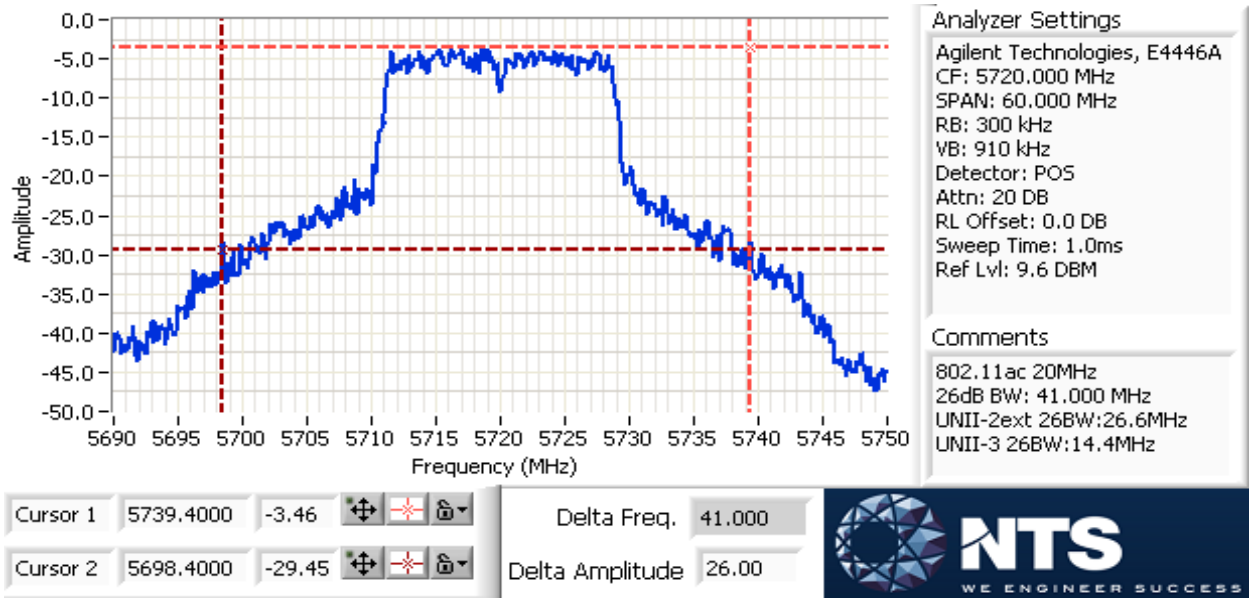


ac20 - 5720MHz - UNII-3



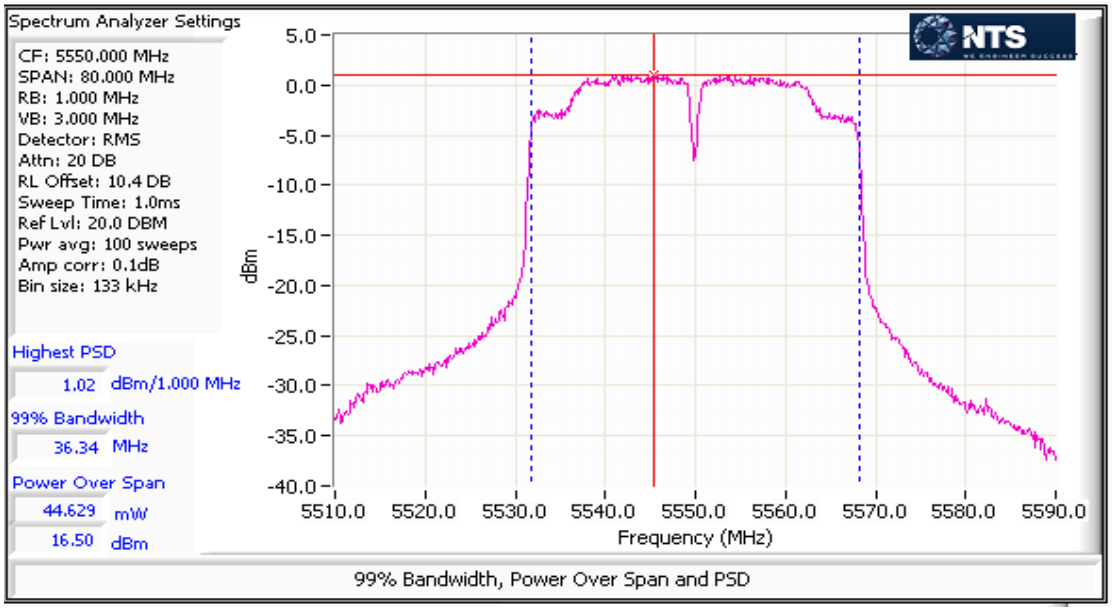
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

ac20 - 5720MHz - 26dB Bandwidth

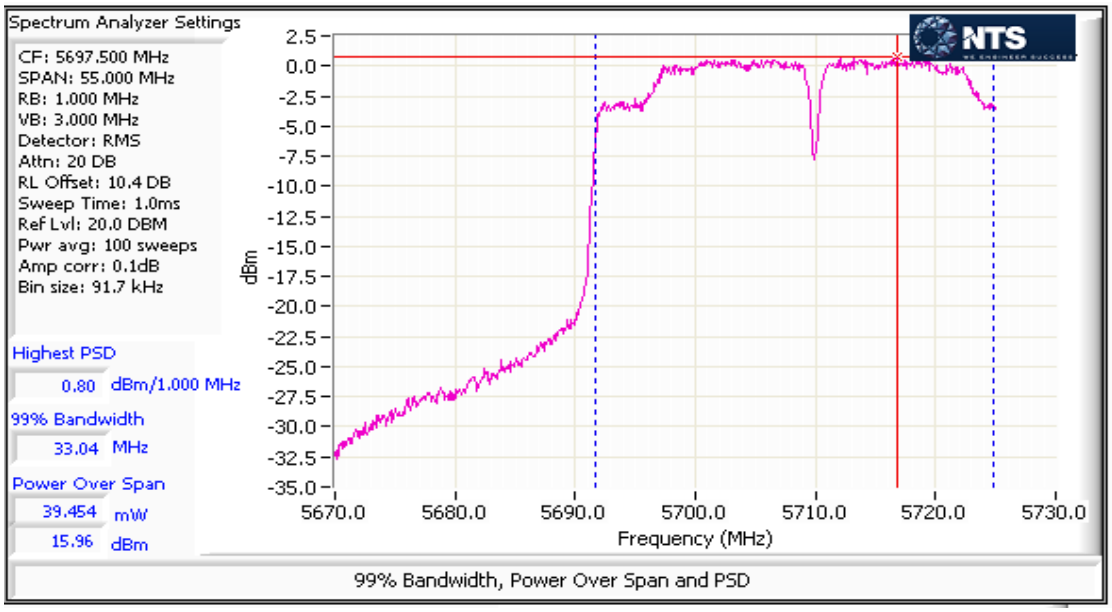


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

n40 - 5550MHz

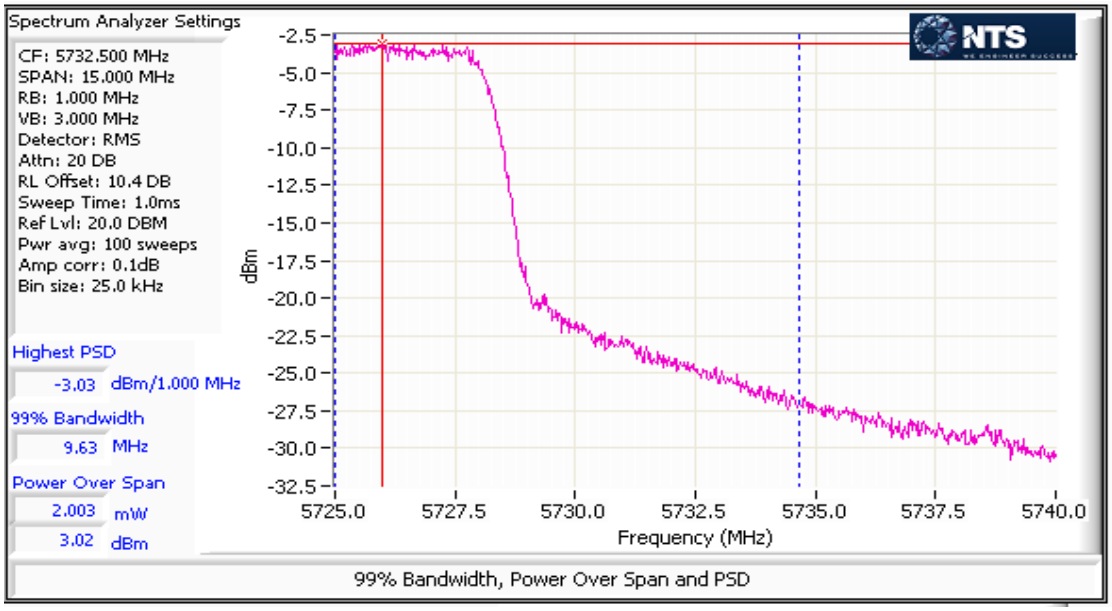


ac40 - 5710MHz - UNII-2ext

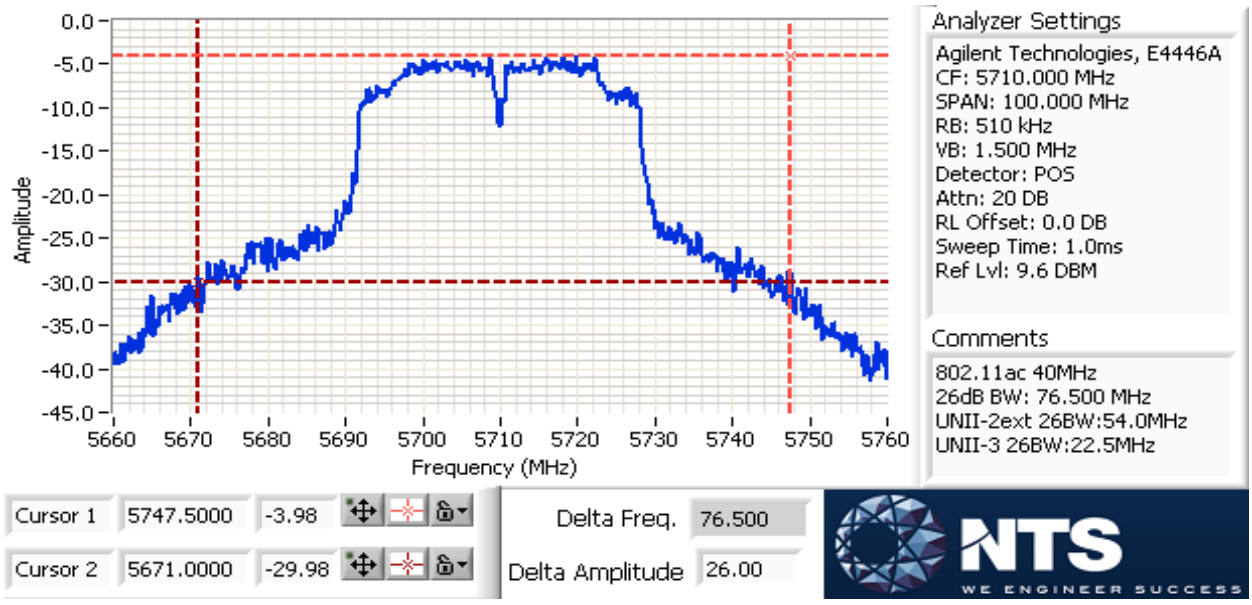


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

ac40 - 5710MHz - UNII-3

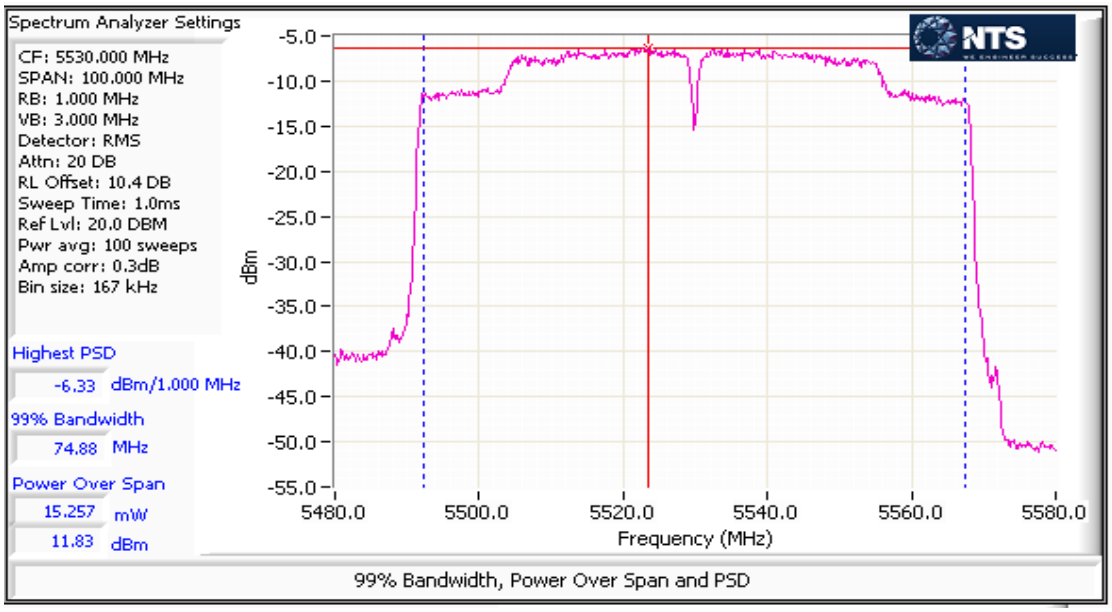


ac40 - 5710MHz - 26dB BW

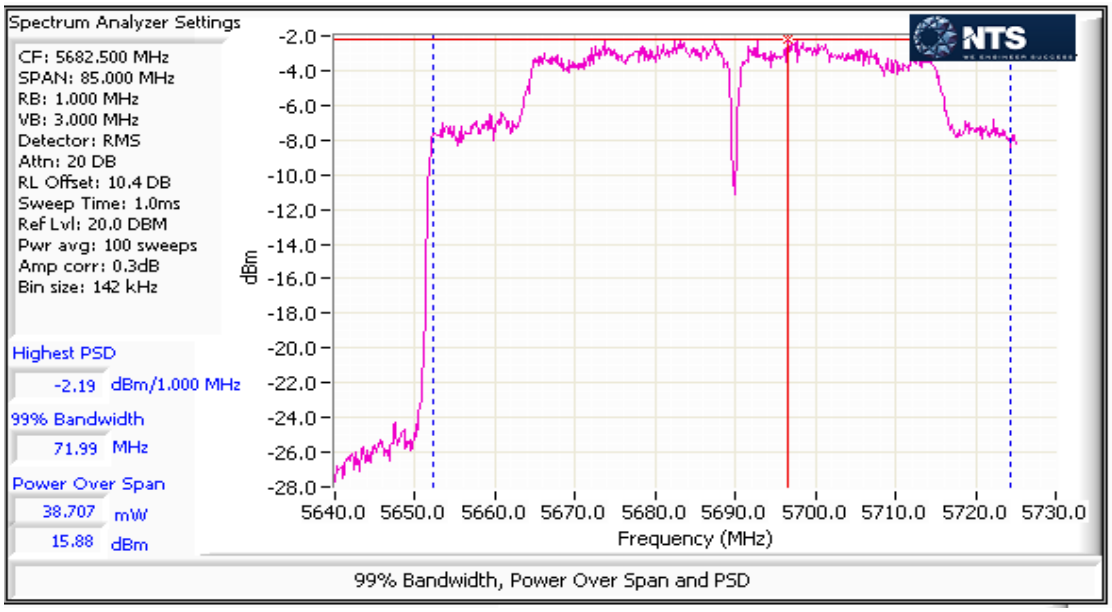


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

ac80 - 5530MHz

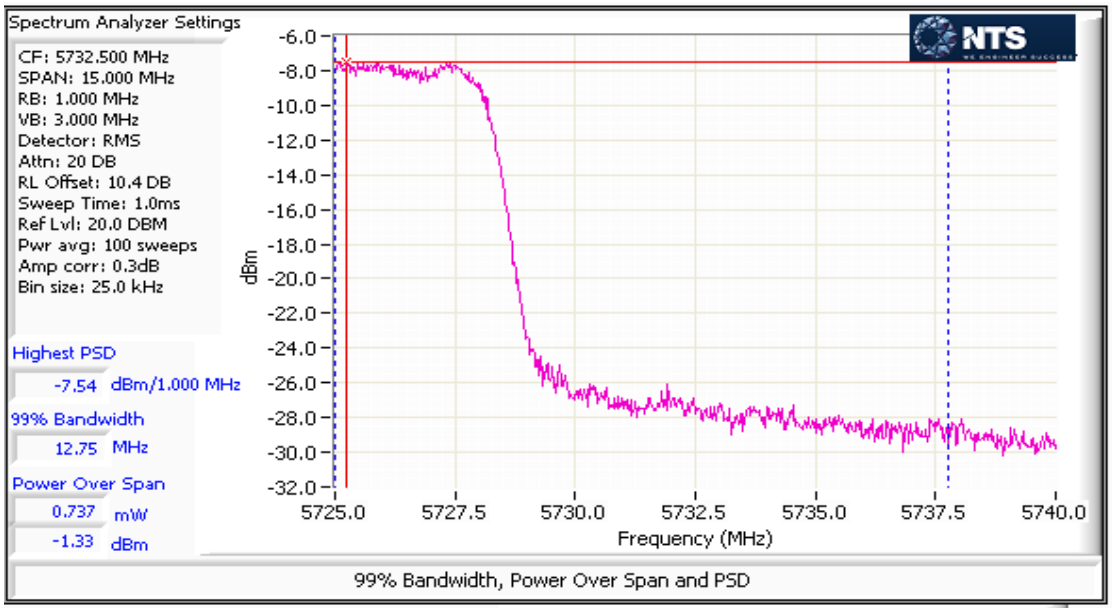


ac80 - 5690MHz - UNII-2ext

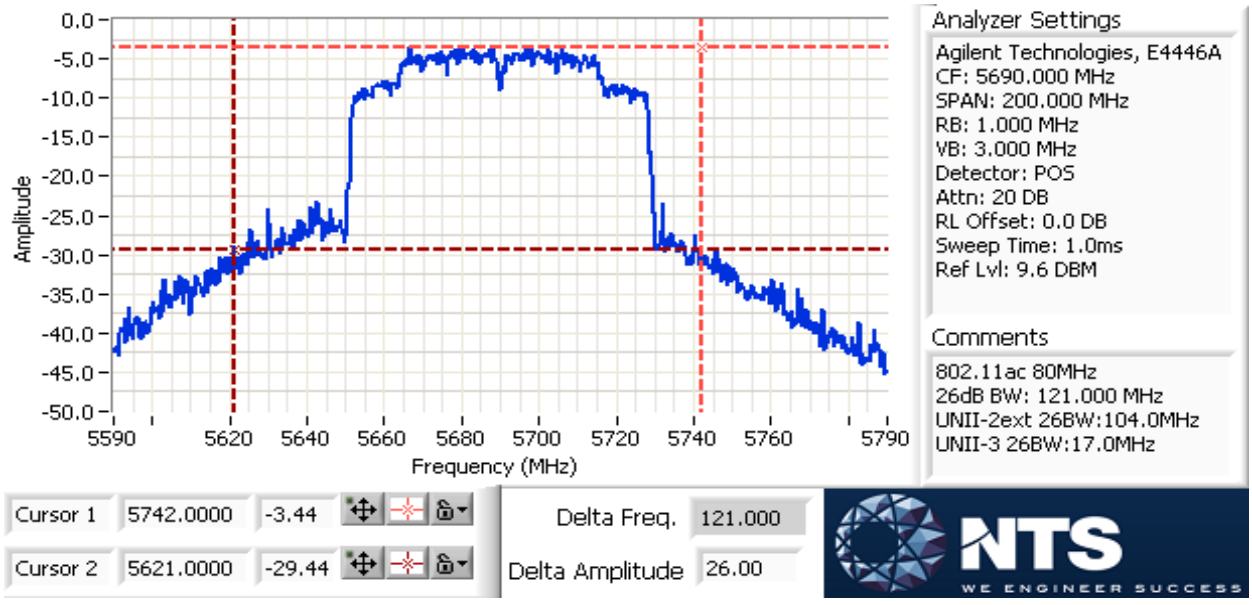


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

ac80 - 5690MHz - UNII-3



ac80 - 5690MHz - 26dB BW

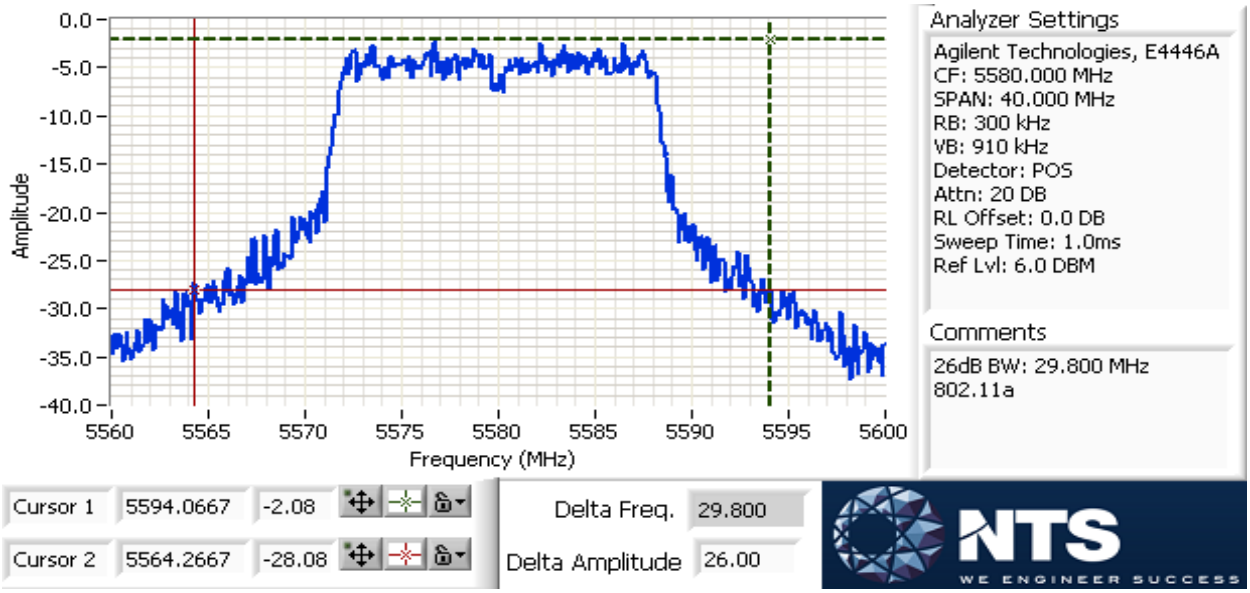


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

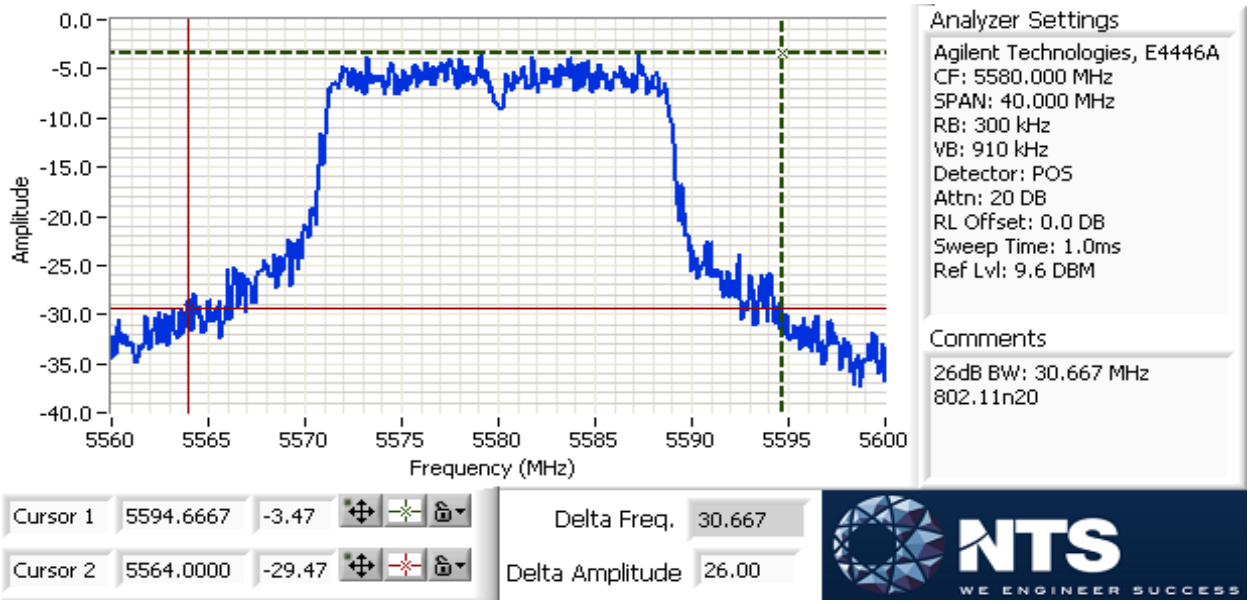
20 dB BW plots for closest channel to 5600 MHz

Note: If 26dB BW passes 20dB BW will pass.

a Mode 5580MHz

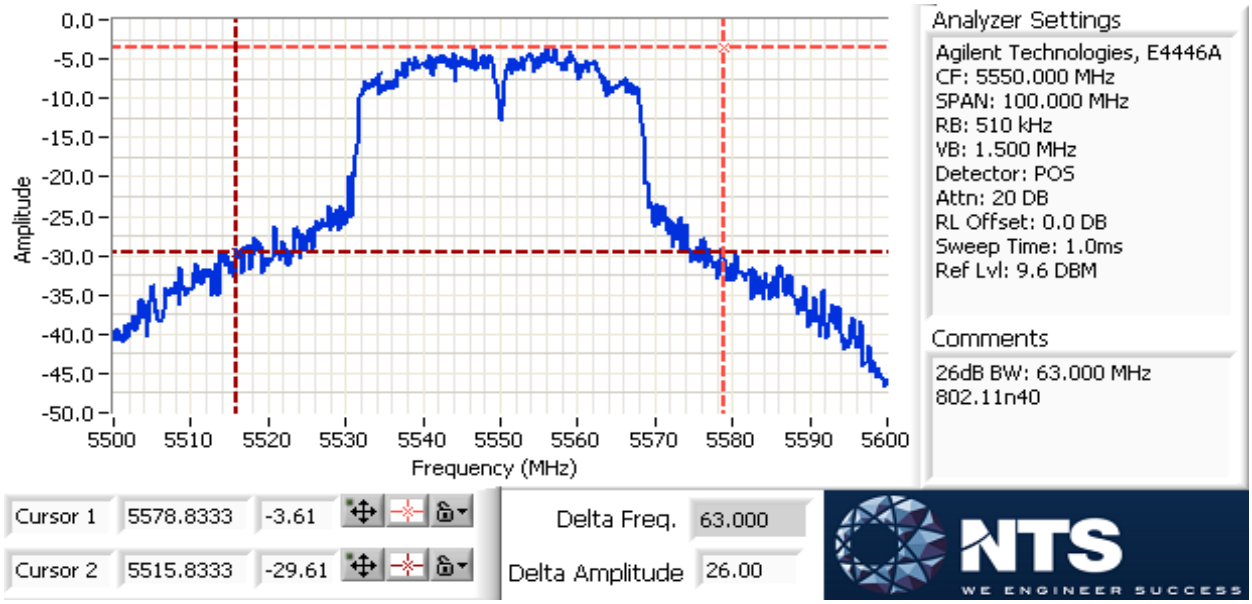


n20 Mode 5580MHz

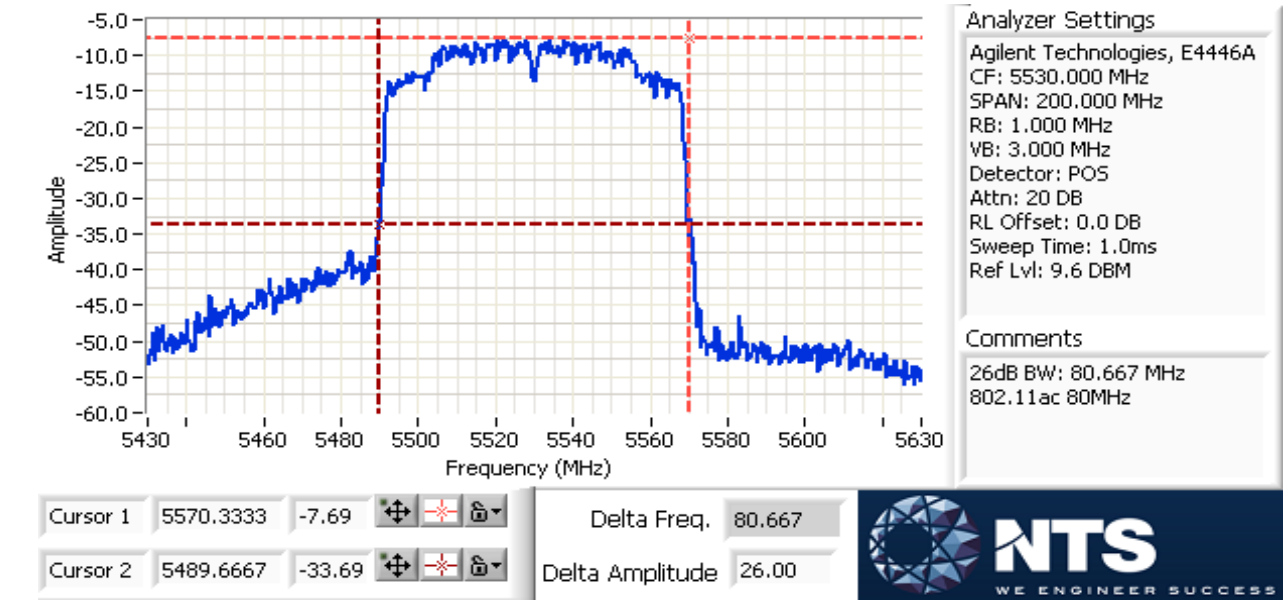


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

n40 Mode 5550MHz



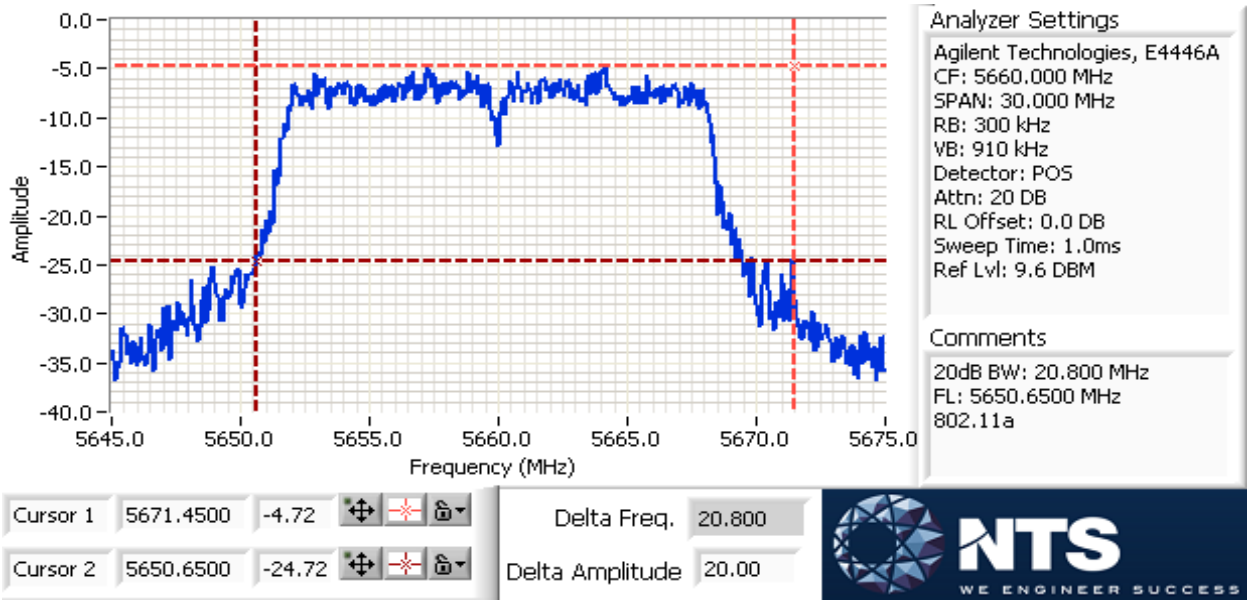
ac80 Mode 5530MHz



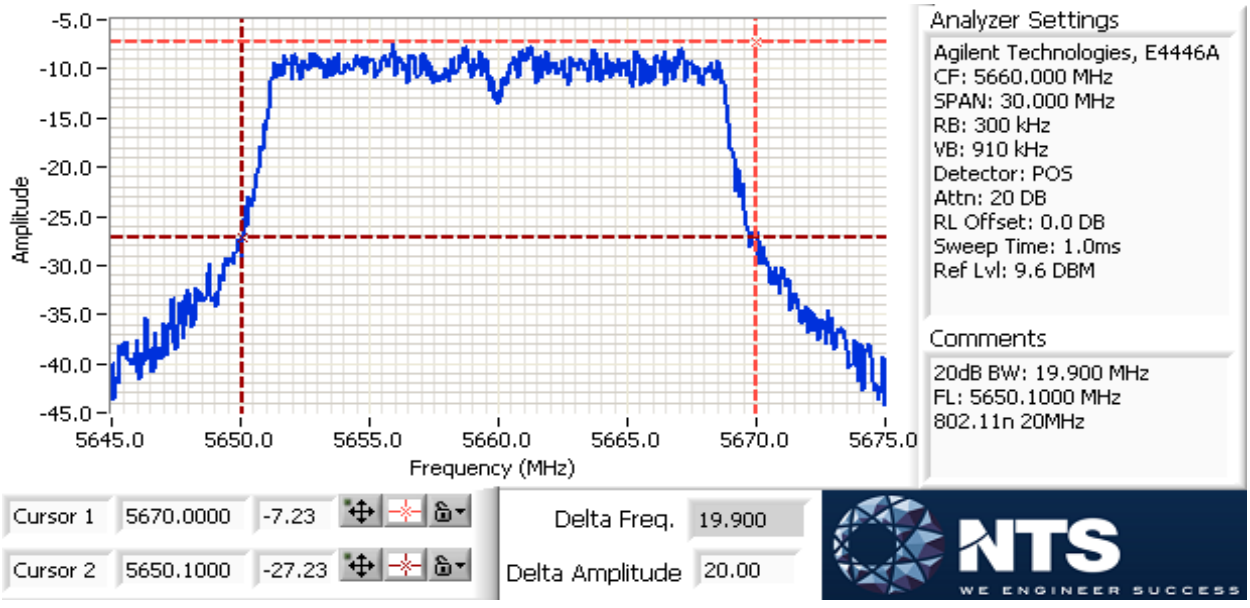
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

20 dB BW plots for closest channel to 5650 MHz

a Mode 5660MHz (Average Power: 16.0dBm)

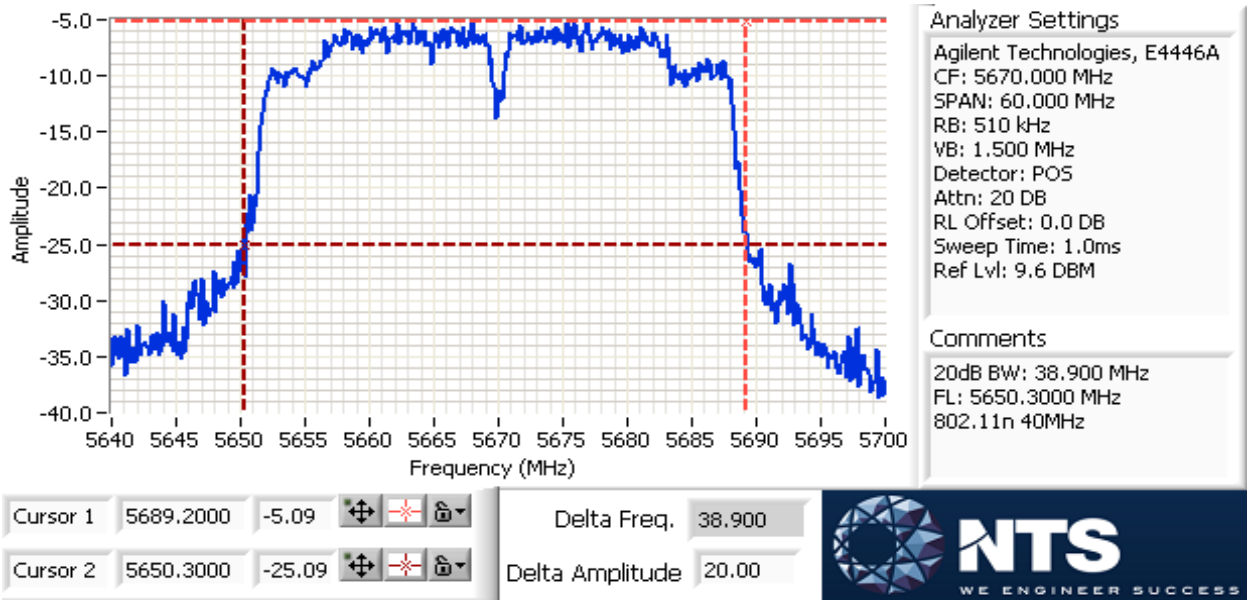


n20 Mode 5660MHz (Average Power: 13.7dBm)

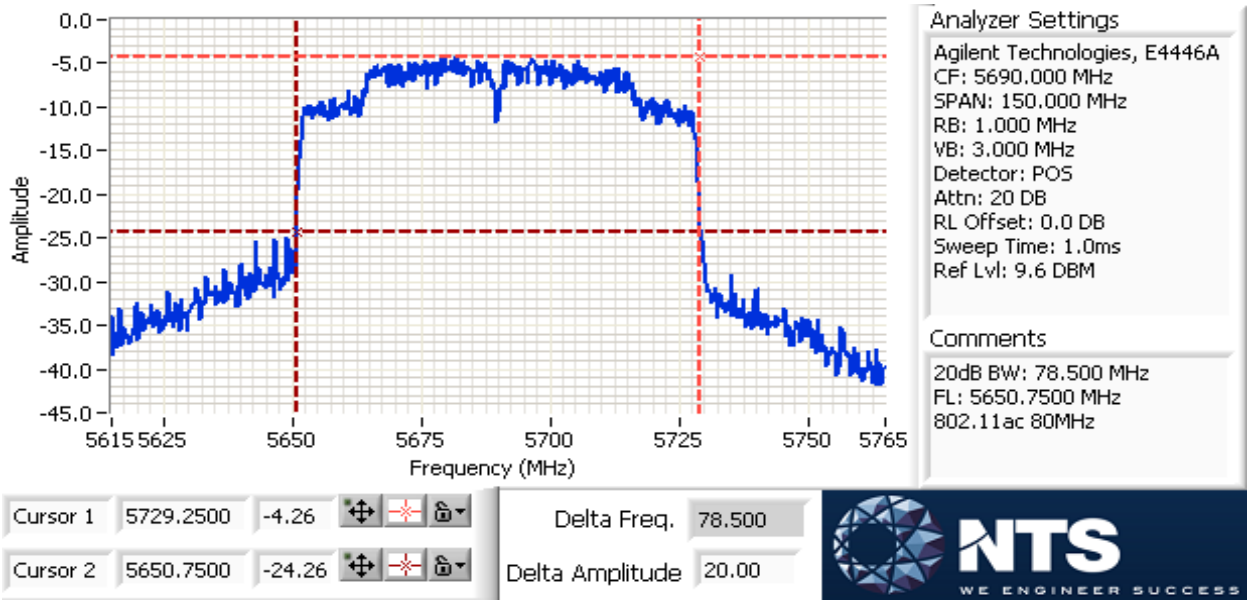


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

n40 Mode 5670MHz (Average Power: 16.4dBm)



ac80 Mode 5690MHz (Average Power: 16.1dBm)



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #2: Peak Excursion Measurement

Date of Test: 1/7/14 to 1/12/14 — Config. Used: 1

Test Engineer: Jack Liu — Config Change: None

Test Location: FT Lab 4A — EUT Voltage: 120V/60Hz

a: Device meets the requirement for the peak excursion

Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)	
(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit
5180	8.4	13.0	5260	6.9	13.0	5500	7.3	13.0
5200	7.7	13.0	5300	7.2	13.0	5580	7.1	13.0
5240	7.5	13.0	5320	7.7	13.0	5700	7.2	13.0

n/ac20: Device meets the requirement for the peak excursion

Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)	
(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit
5180	7.0	13.0	5260	7.2	13.0	5500	7.2	13.0
5200	7.3	13.0	5300	7.1	13.0	5580	7.0	13.0
5240	7.6	13.0	5320	7.1	13.0	5700	7.3	13.0
						5720	7.8	13.0

n/ac40: Device meets the requirement for the peak excursion

Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)	
(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit
5190	7.1	13.0	5270	7.2	13.0	5510	7.5	13.0
5230	7.9	13.0	5310	8.1	13.0	5550	7.1	13.0
						5670	7.2	13.0
						5710	7.3	13.0

ac80: Device meets the requirement for the peak excursion

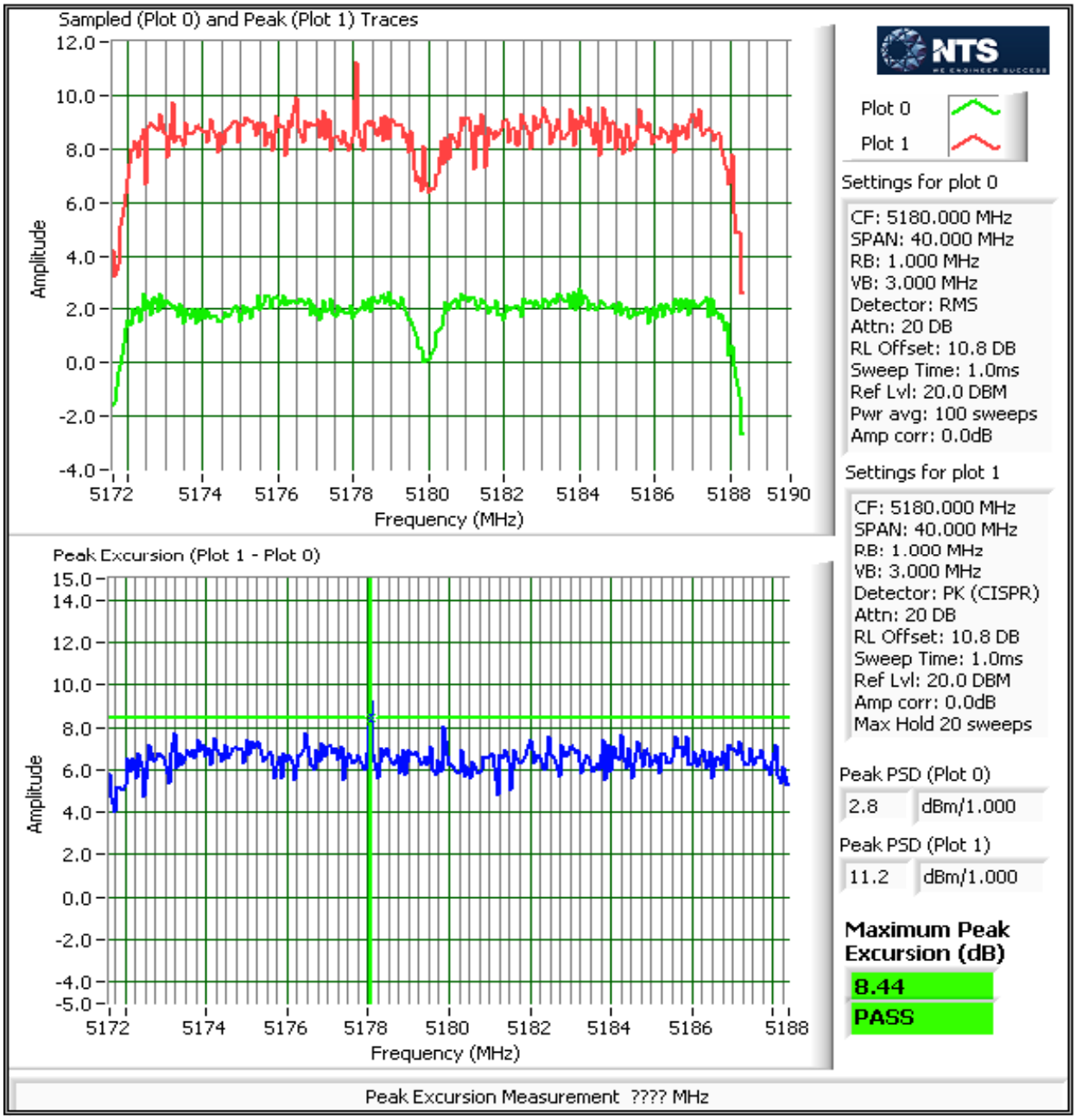
Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)	
(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit
5210	7.5	13.0	5290	7.2	13.0	5530	7.5	13.0
						5690	7.7	13.0

Plots Showing Peak Excursion

Trace A: RBW = 1MHz, VBW = 3MHz, Peak hold

Trace B: Same settings as used for power/PSD measurements (RBW = 1 MHz, VBW = 3MHz, Integrated average power)

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #3: Out Of Band Spurious Emissions - Antenna Conducted

Refer to UNII Radiated Emisisons test data

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

RSS 210 and FCC 15.407 (UNII) 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, unless otherwise noted.

Ambient Conditions:

Temperature: 20.7 °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

MAC Address: 001500E6085C DRTU Tool Version 1.7.4-845 Driver version 16.8.0.3

Run #	Mode	Channel	Target/ Measured	Power Setting	Test Performed	Limit	Result / Margin
20MHz Bandwith Modes							
1	a	36 - 5180MHz	16 / 15.7	27.5	Restricted Band Edge at 5150 MHz	15.209	47.6 dBµV/m @ 5150.0 MHz (-6.4 dB)
2	a	64 - 5320MHz	16 / 16.0	28.0	Restricted Band Edge at 5350 MHz	15.209	50.9 dBµV/m @ 5350.0 MHz (-3.1 dB)
3	a	100 - 5500MHz	16 / 16.2	29.5	Restricted Band Edge at 5460 MHz	15.209	45.8 dBµV/m @ 5398.6 MHz (-8.2 dB)
		100 - 5500MHz	16 / 16.2	29.5	Band Edge 5460 - 5470 MHz	15E	63.1 dBµV/m @ 5469.9 MHz (-5.2 dB)
		140 - 5700MHz	15.0 / 15.2	29.5	Band Edge 5725MHz	15E	61.1 dBµV/m @ 5725.4 MHz (-7.2 dB)

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #	Mode	Channel	Target/ Measured	Power Setting	Test Performed	Limit	Result / Margin
20MHz Bandwith Modes							
4	n20	36 - 5180MHz	16 / 15.9	28.0	Restricted Band Edge at 5150 MHz	15.209	47.8 dBµV/m @ 5150.0 MHz (-6.2 dB)
5	n20	64 - 5320MHz	16 / 15.9	28.0	Restricted Band Edge at 5350 MHz	15.209	51.7 dBµV/m @ 5350.0 MHz (-2.3 dB)
6	n20	100 - 5500MHz	16 / 16.1	29.5	Restricted Band Edge at 5460 MHz	15.209	46.1 dBµV/m @ 5459.9 MHz (-7.9 dB)
		100 - 5500MHz	16 / 16.1	29.5	Band Edge 5460 - 5470 MHz	15E	63.6 dBµV/m @ 5469.6 MHz (-4.7 dB)
		140 - 5700MHz	15.0 / 15.2	29.5	Band Edge 5725MHz	15E	65.3 dBµV/m @ 5725.2 MHz (-3.0 dB)
40MHz Bandwith Modes							
7	n40	38 - 5190MHz	14 / 14.0	25.5	Restricted Band Edge at 5150 MHz	15.209	49.1 dBµV/m @ 5150.0 MHz (-4.9 dB)
8	n40	62 - 5310MHz	15 / 15.0	26.5	Restricted Band Edge at 5350 MHz	15.209	50.1 dBµV/m @ 5352.6 MHz (-3.9 dB)
9	n40	102 - 5510MHz	14 / 14.0	26.5	Restricted Band Edge at 5460 MHz	15.209	44.1 dBµV/m @ 5410.2 MHz (-9.9 dB)
		102 - 5510MHz	14 / 14.0	26.5	Band Edge 5460 - 5470 MHz	15E	65.2 dBµV/m @ 5469.3 MHz (-3.1 dB)
		134 - 5670MHz	16.5 / 16.4	30.5	Band Edge 5725MHz	15E	60.6 dBµV/m @ 5727.7 MHz (-7.7 dB)
80MHz Bandwith Modes							
10	ac80	42 - 5210MHz	12.0 / 12.0	23.0	Restricted Band Edge at 5150 MHz	15.209	51.3 dBµV/m @ 5144.0 MHz (-2.7 dB)
11	ac80	58 - 5290MHz	14.0 / 14.1	25.5	Restricted Band Edge at 5350 MHz	15.209	50.9 dBµV/m @ 5366.4 MHz (-3.1 dB)
12	ac80	106 - 5530MHz	12.0 / 12.2	24.5	Restricted Band Edge at 5460 MHz	15.209	49.9 dBµV/m @ 5458.8 MHz (-4.1 dB)
	ac80	106 - 5530MHz	12.0 / 12.2	24.5	Band Edge 5460 - 5470 MHz	15E	66.0 dBµV/m @ 5465.4 MHz (-2.3 dB)

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mb/s	0.99	Yes	8	0	0	125
n20	HT0	0.98	Yes	6	0	0	166.7
n40	HT0	0.97	Yes	5	0.12	0.24	200
ac80	VHT0	0.94	Yes	2	0.26	0.51	500

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2:	Emission has duty cycle ≥ 98%, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 traces
Note 3:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor
Note 4:	Emission has duty cycle < 98% and is NOT constant, average measurement performed: RBW=1MHz, VBW> 1/T, peak detector, linear average mode, sweep time auto, max hold. Max hold for 50*(1/DC) traces
Note 5:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Pwr correction factor
Note 6:	Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabluar results for final measurements.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #1: Radiated Bandedge Measurements, 5150-5250MHz

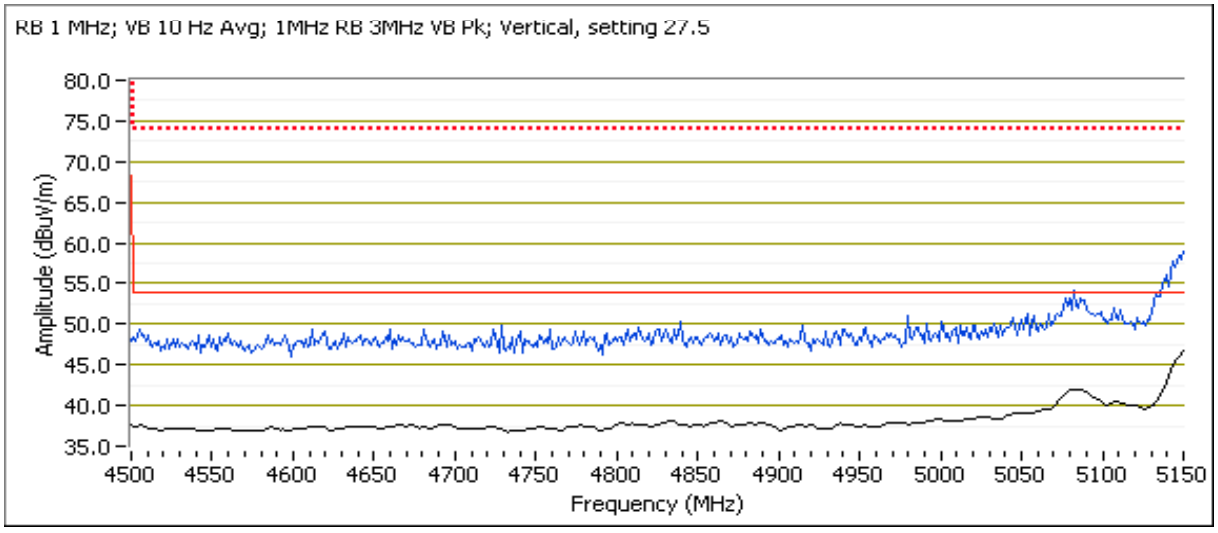
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

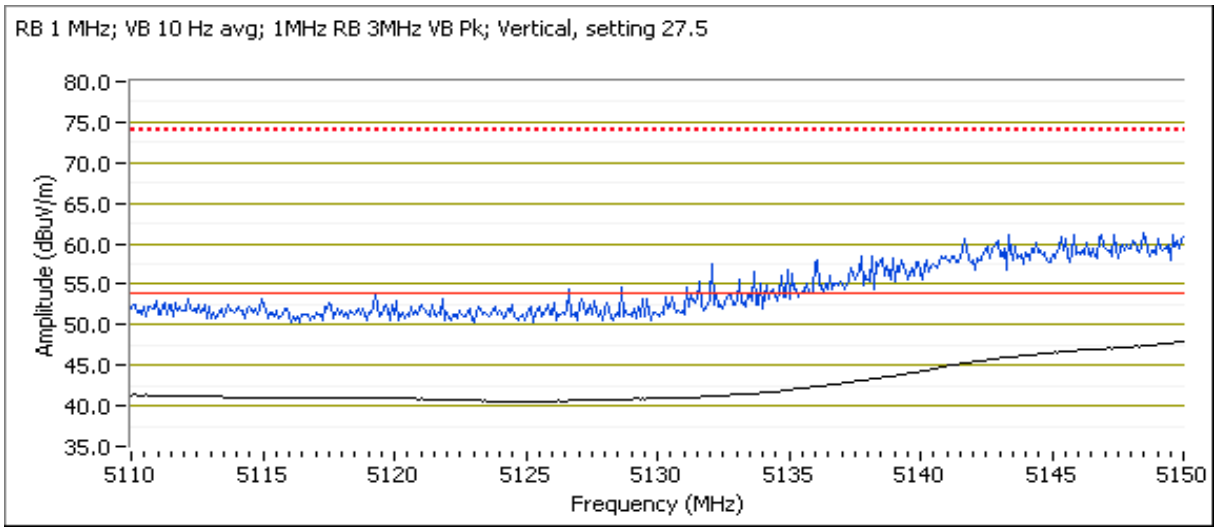
Channel: 36 - 5180 MHz
Tx Chain: Port 2
Mode: a
Data Rate: 6Mb/s

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5150.000	47.6	V	54.0	-6.4	AVG	160	1.1	
5144.870	59.6	V	74.0	-14.4	PK	160	1.1	
5150.000	46.1	H	54.0	-7.9	AVG	61	1.0	
5148.080	57.9	H	74.0	-16.1	PK	61	1.0	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #2: Radiated Bandedge Measurements, 5250-5350MHz

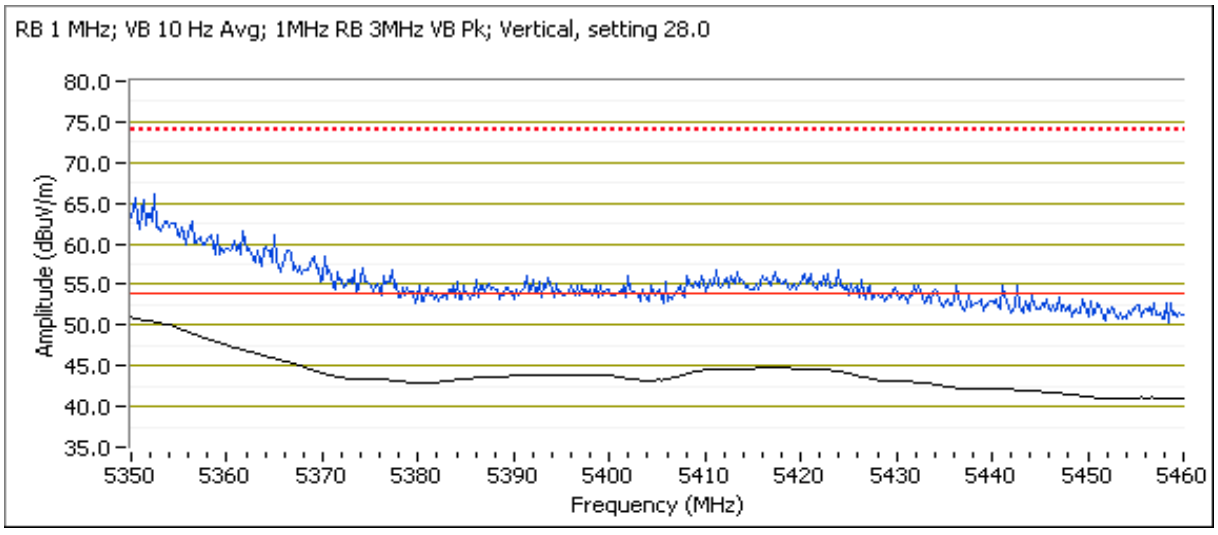
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

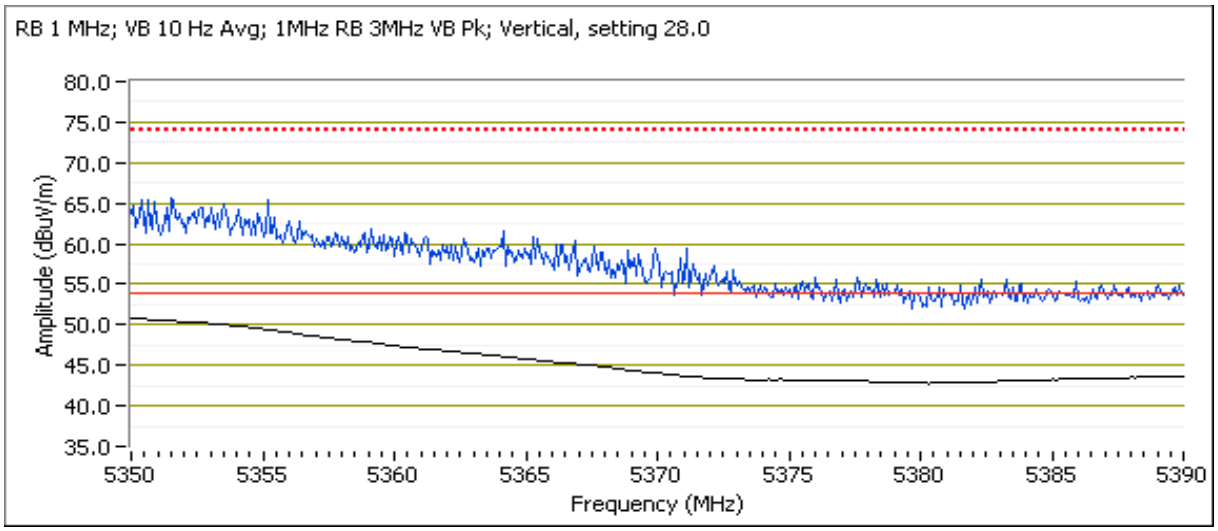
Channel: 64 - 5320MHz
Tx Chain: Port 2
Mode: a
Data Rate: 6Mb/s

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	50.9	V	54.0	-3.1	AVG	100	1.0	
5350.000	63.2	V	74.0	-10.8	PK	100	1.0	
5350.080	48.8	H	54.0	-5.2	AVG	224	1.0	
5350.000	62.7	H	74.0	-11.3	PK	224	1.0	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #3: Radiated Bandedge Measurements, 5470-5725MHz

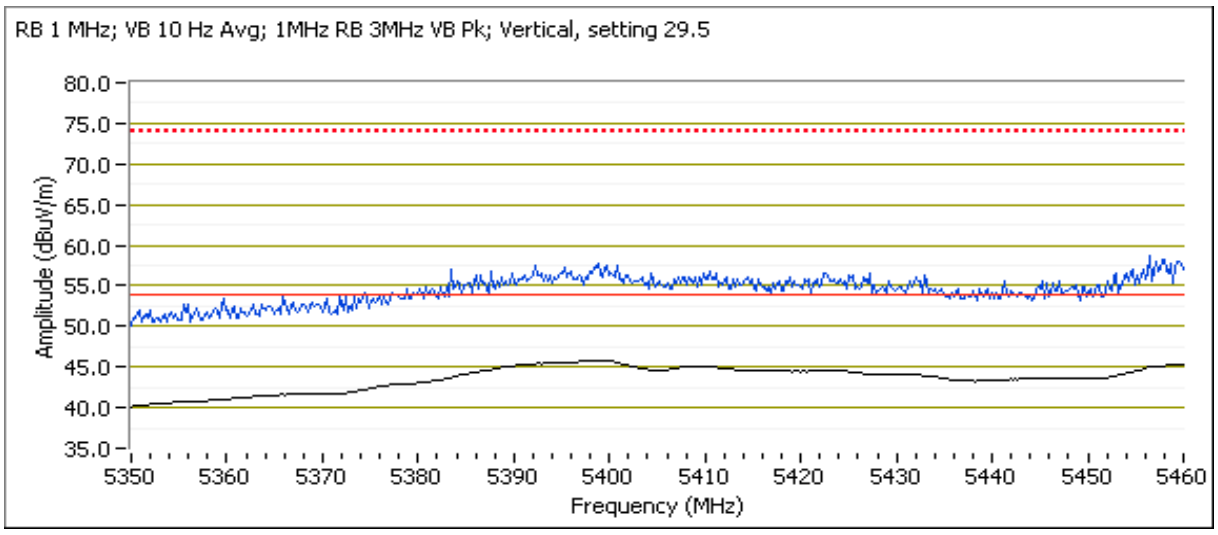
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 100 - 5500MHz
Tx Chain: Port 2
Mode: a
Data Rate: 6Mb/s

5460 MHz Band Edge Signal Radiated Field Strength

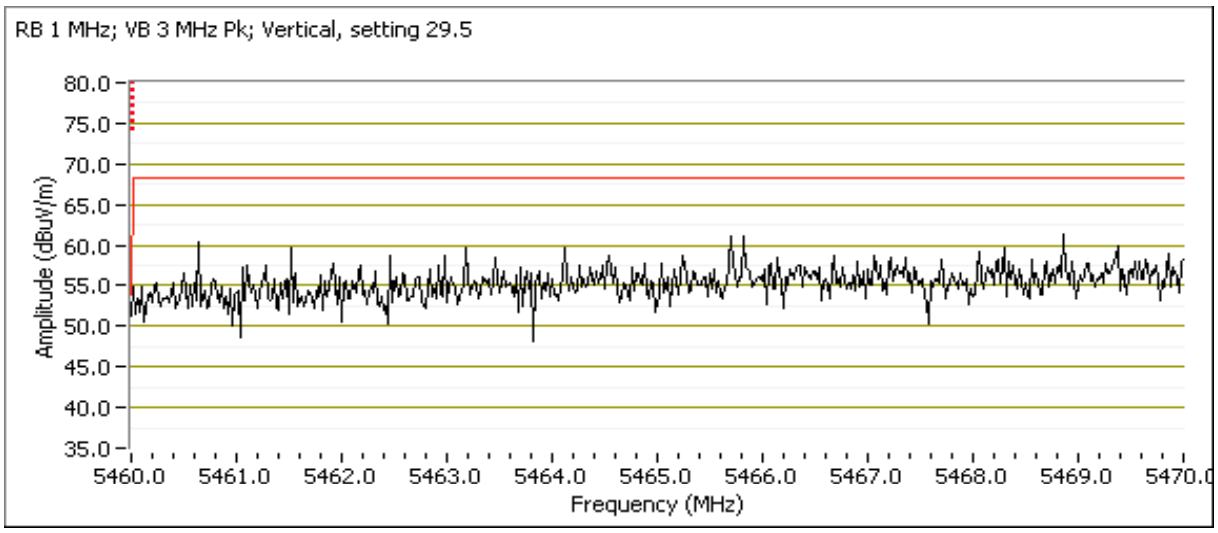
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5398.580	45.8	V	54.0	-8.2	AVG	119	1.0	POS; RB 1 MHz; VB: 10 Hz
5398.740	58.2	V	74.0	-15.8	PK	119	1.0	POS; RB 1 MHz; VB: 3 MHz
5460.000	45.4	V	54.0	-8.6	AVG	119	1.0	POS; RB 1 MHz; VB: 10 Hz
5457.760	57.1	V	74.0	-16.9	PK	119	1.0	POS; RB 1 MHz; VB: 3 MHz
5460.000	43.8	H	54.0	-10.2	AVG	320	1.0	POS; RB 1 MHz; VB: 10 Hz
5460.000	55.9	H	74.0	-18.1	PK	320	1.0	POS; RB 1 MHz; VB: 3 MHz
5399.940	43.1	H	54.0	-10.9	AVG	320	1.0	POS; RB 1 MHz; VB: 10 Hz
5410.000	55.7	H	74.0	-18.3	PK	320	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.860	63.1	V	68.3	-5.2	PK	119	1.0	POS; RB 1 MHz; VB: 3 MHz
5469.680	60.3	H	68.3	-8.0	PK	320	1.0	POS; RB 1 MHz; VB: 3 MHz

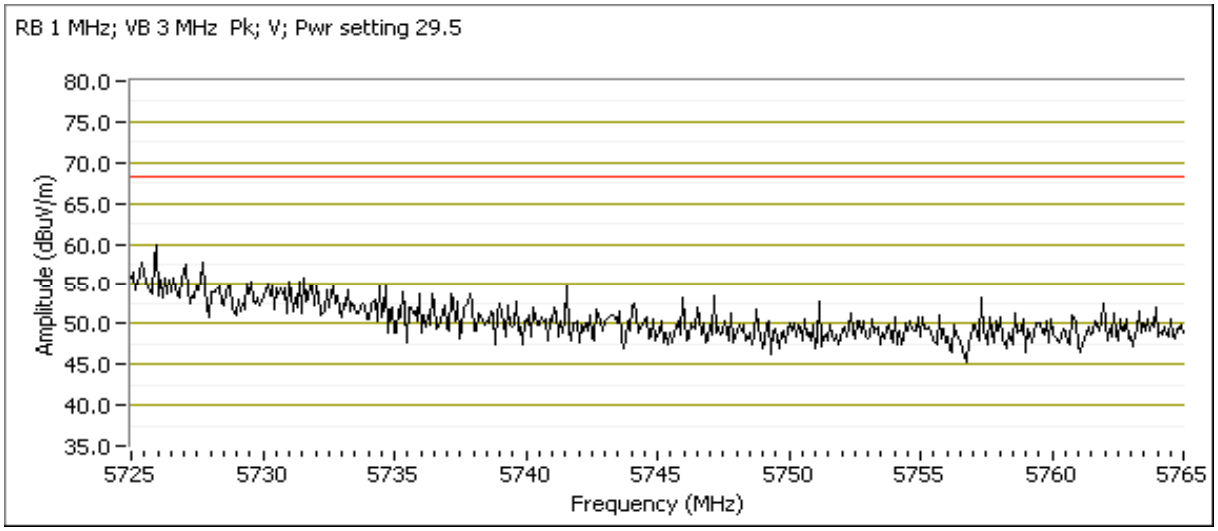


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Channel: 140 - 5700MHz
Tx Chain: Port2
Mode: a
Data Rate: 6Mb/s

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5725.400	61.1	V	68.3	-7.2	PK	218	1.0	Note 1
5725.560	59.1	H	68.3	-9.2	PK	228	1.0	Note 1



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #4: Radiated Bandedge Measurements, 5150-5250MHz

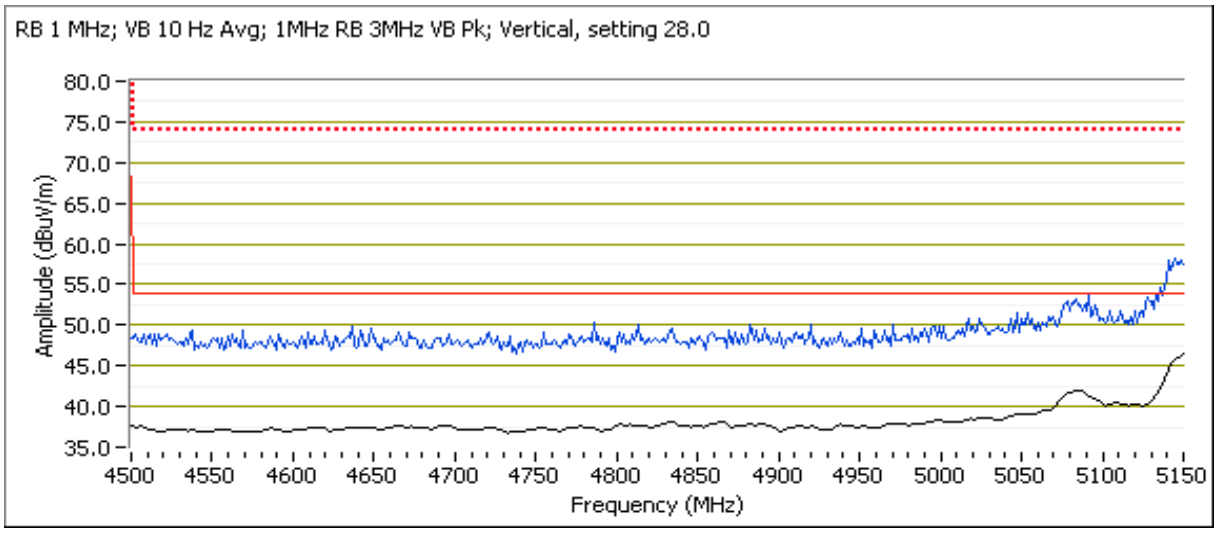
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

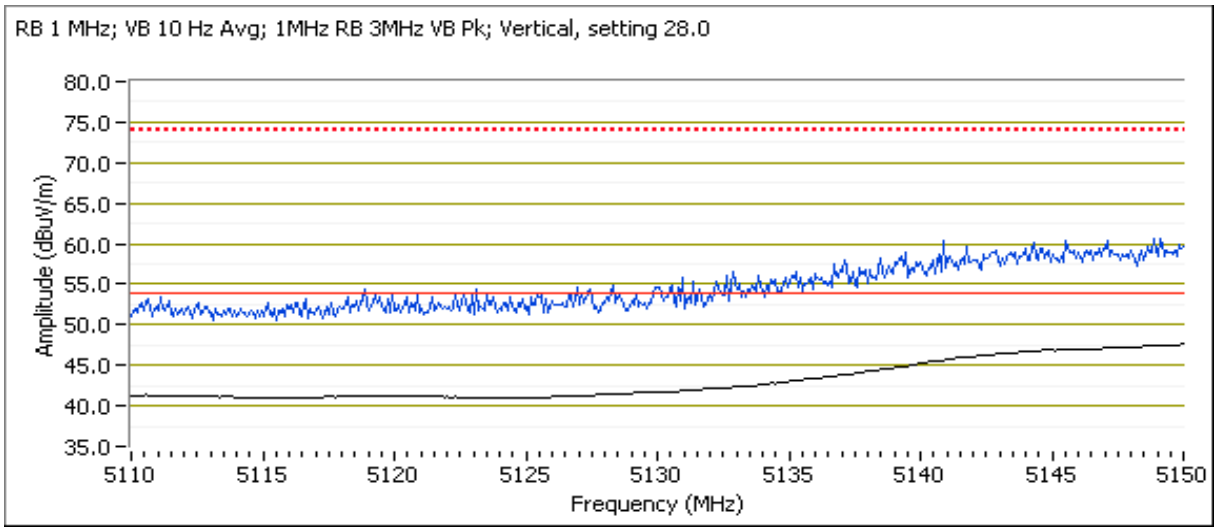
Channel: 36 - 5180 MHz
Tx Chain: Port 2
Mode: n20
Data Rate: HT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5150.000	47.8	V	54.0	-6.2	AVG	160	1.1	
5142.630	60.1	V	74.0	-13.9	PK	160	1.1	
5150.000	47.0	H	54.0	-7.0	AVG	61	1.0	
5142.790	58.3	H	74.0	-15.7	PK	61	1.0	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #5: Radiated Bandedge Measurements, 5250-5350MHz

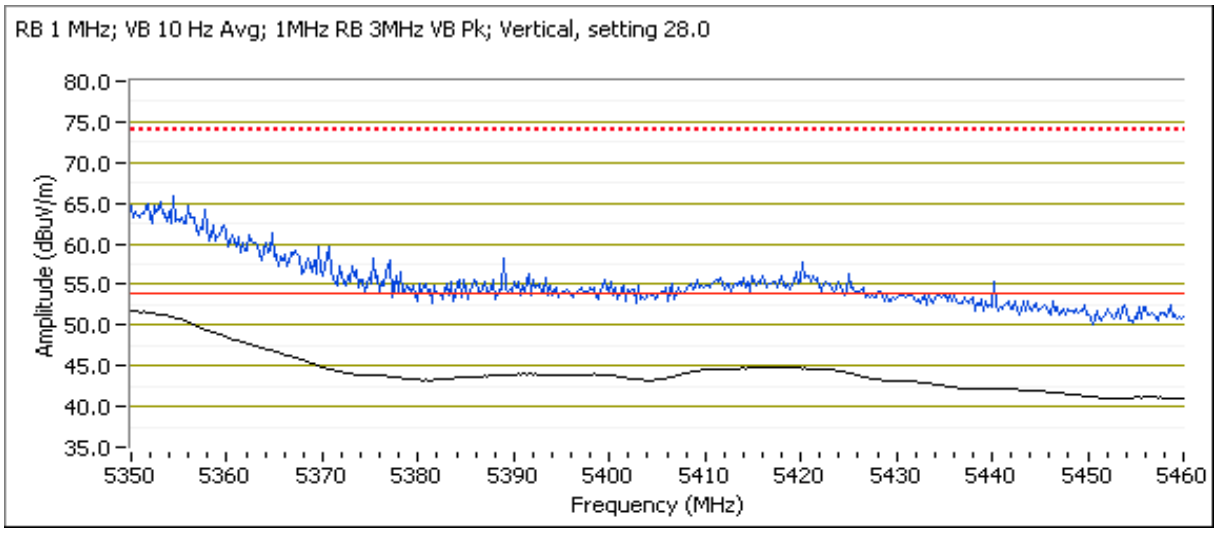
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

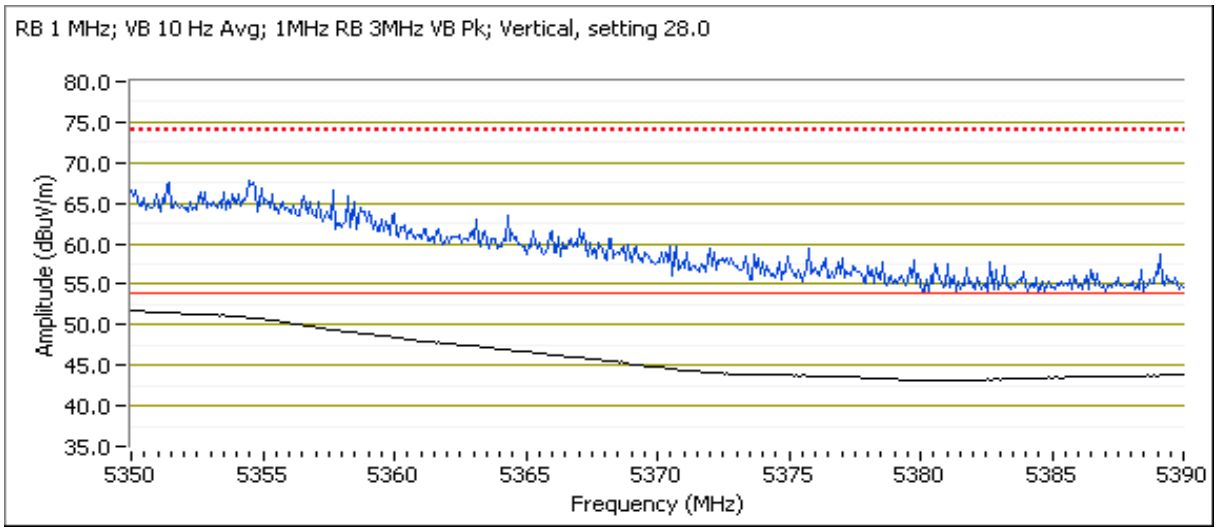
Channel: 64 - 5320MHz
Tx Chain: Port 2
Mode: n20
Data Rate: HT0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	51.7	V	54.0	-2.3	AVG	100	1.0	
5355.290	66.4	V	74.0	-7.6	PK	100	1.0	
5350.080	49.0	H	54.0	-5.0	AVG	224	1.0	
5353.770	64.0	H	74.0	-10.0	PK	224	1.0	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #6: Radiated Bandedge Measurements, 5470-5725MHz

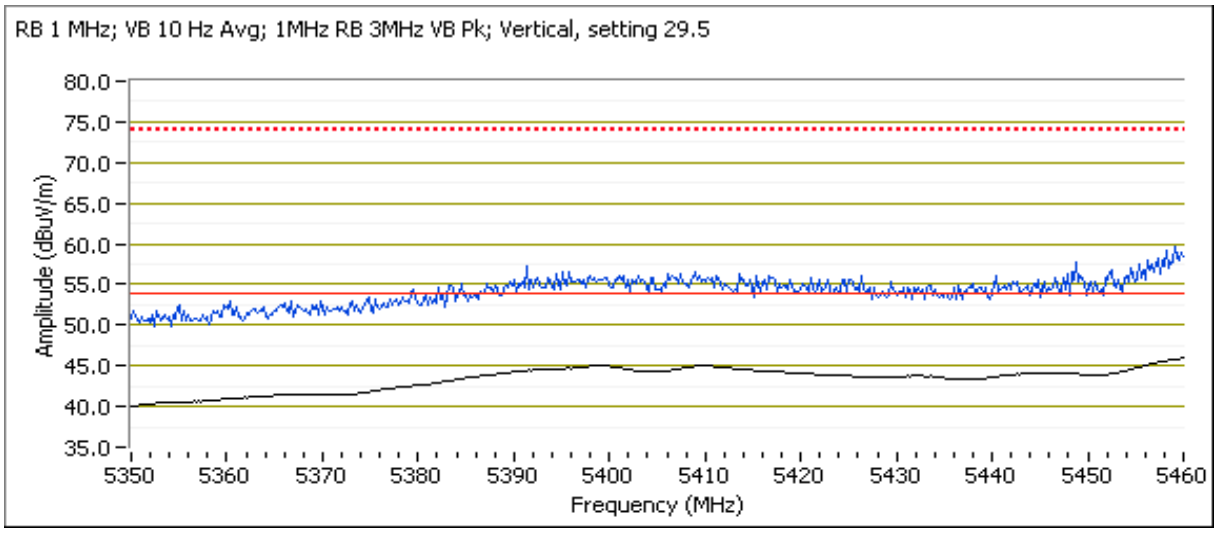
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 100 - 5500MHz
Tx Chain: Port 2
Mode: n20
Data Rate: HT0

5460 MHz Band Edge Signal Radiated Field Strength

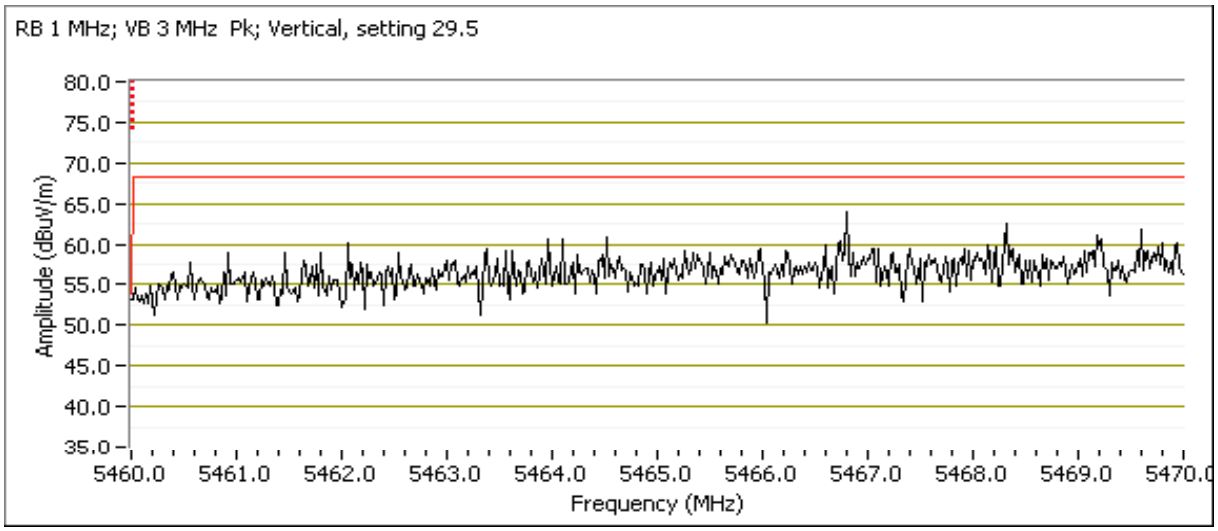
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.920	46.1	V	54.0	-7.9	AVG	125	1.1	POS; RB 1 MHz; VB: 10 Hz
5457.520	57.7	V	74.0	-16.3	PK	125	1.1	POS; RB 1 MHz; VB: 3 MHz
5460.000	44.2	H	54.0	-9.8	AVG	320	1.0	POS; RB 1 MHz; VB: 10 Hz
5459.520	56.8	H	74.0	-17.2	PK	320	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.580	63.6	V	68.3	-4.7	PK	125	1.1	POS; RB 1 MHz; VB: 3 MHz
5462.950	60.5	H	68.3	-7.8	PK	320	1.0	POS; RB 1 MHz; VB: 3 MHz

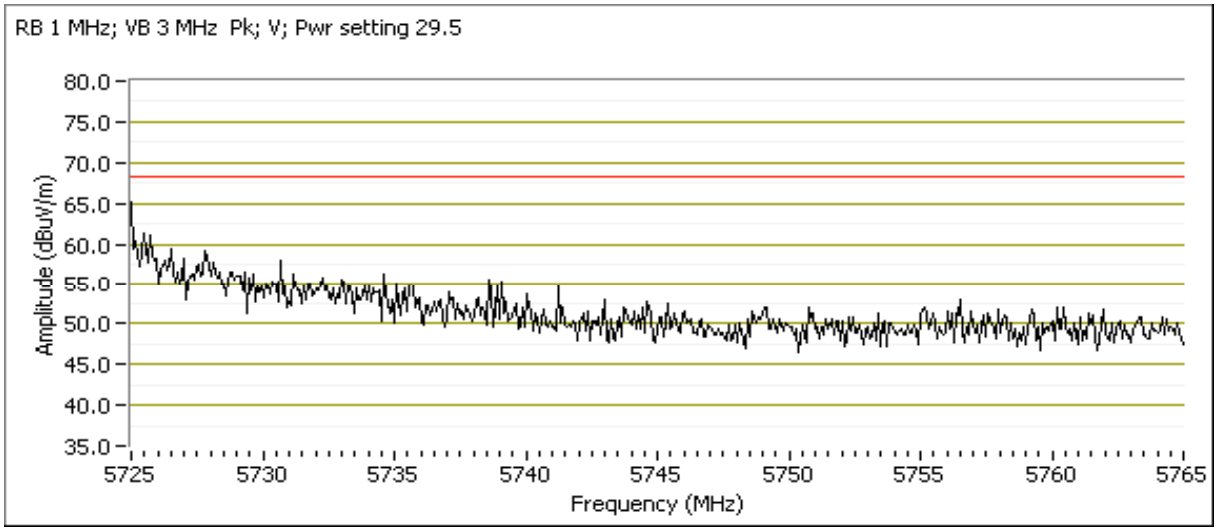


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Channel: 140 - 5700MHz
Tx Chain: Port2
Mode: n20
Data Rate: HT0

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5725.240	65.3	V	68.3	-3.0	PK	160	1.9	POS; RB 1 MHz; VB: 3 MHz
5725.560	63.9	H	68.3	-4.4	PK	228	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #7: Radiated Bandedge Measurements, 5150-5250MHz

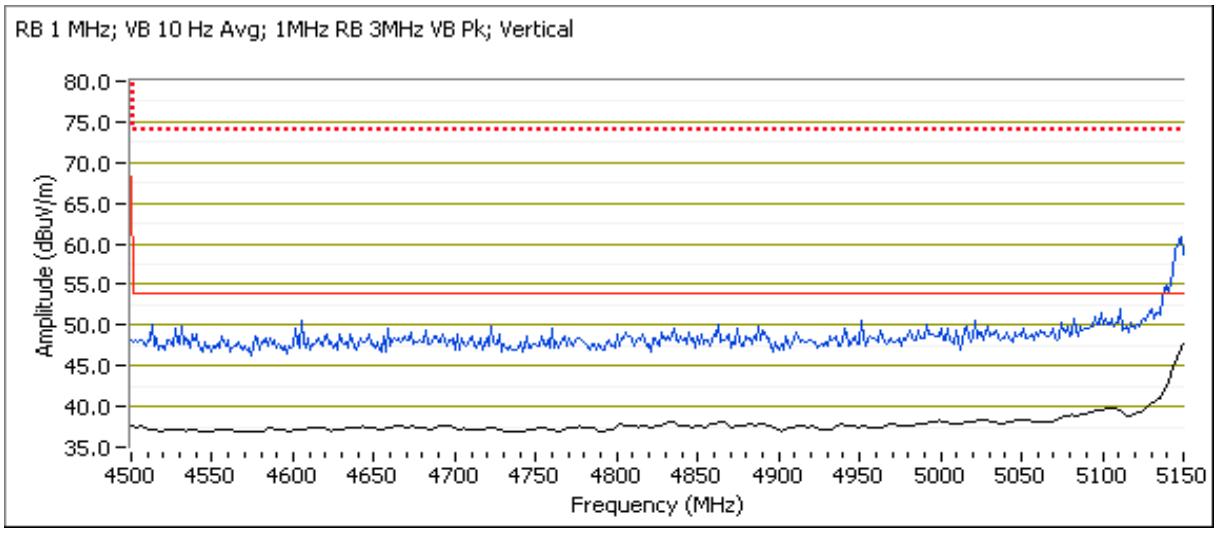
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 38 - 5190 MHz
Tx Chain: Port 2
Mode: n40
Data Rate: HT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5150.000	49.1	V	54.0	-4.9	AVG	27	1.0	Note 3
5150.000	60.2	V	74.0	-13.8	PK	27	1.0	POS; RB 1 MHz; VB: 3 MHz
5150.000	49.0	H	54.0	-5.0	AVG	160	1.9	Note 3
5149.600	61.4	H	74.0	-12.6	PK	160	1.9	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #8: Radiated Bandedge Measurements, 5250-5350MHz

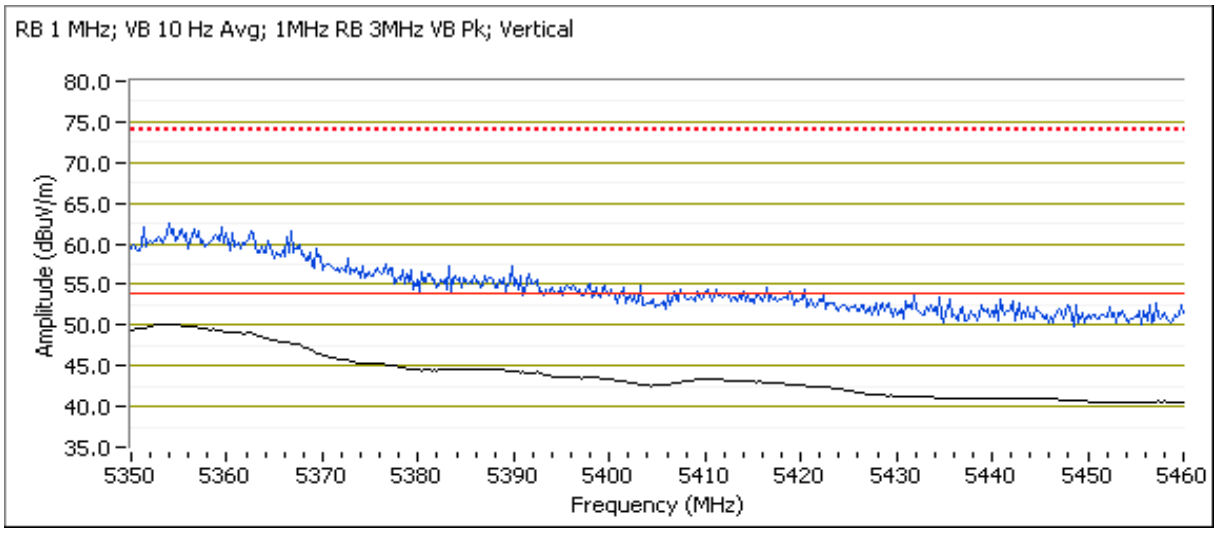
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 62 - 5310MHz
Tx Chain: Port 2
Mode: n40
Data Rate: HT0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5352.560	50.1	V	54.0	-3.9	AVG	92	1.0	Note 3
5356.090	61.2	V	74.0	-12.8	PK	92	1.0	POS; RB 1 MHz; VB: 3 MHz
5352.730	47.1	H	54.0	-6.9	AVG	344	1.0	Note 3
5364.270	59.0	H	74.0	-15.0	PK	344	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #9: Radiated Bandedge Measurements, 5470-5725MHz

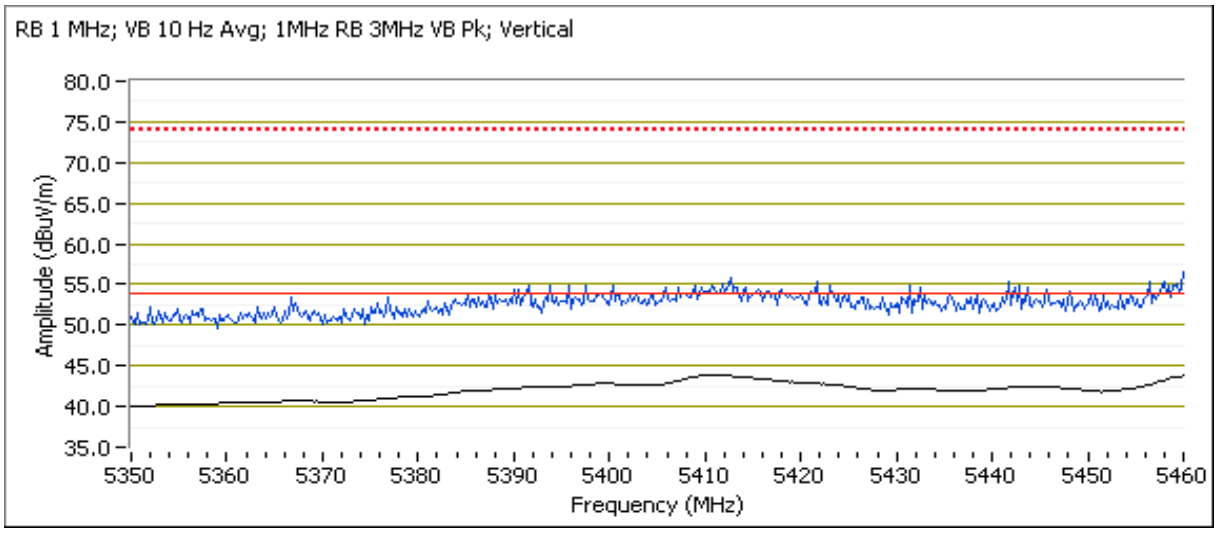
Date of Test: 1/6/2013 0:00
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 102 - 5510MHz
Tx Chain: Port 2
Mode: n40
Data Rate: HT0

5460 MHz Band Edge Signal Radiated Field Strength

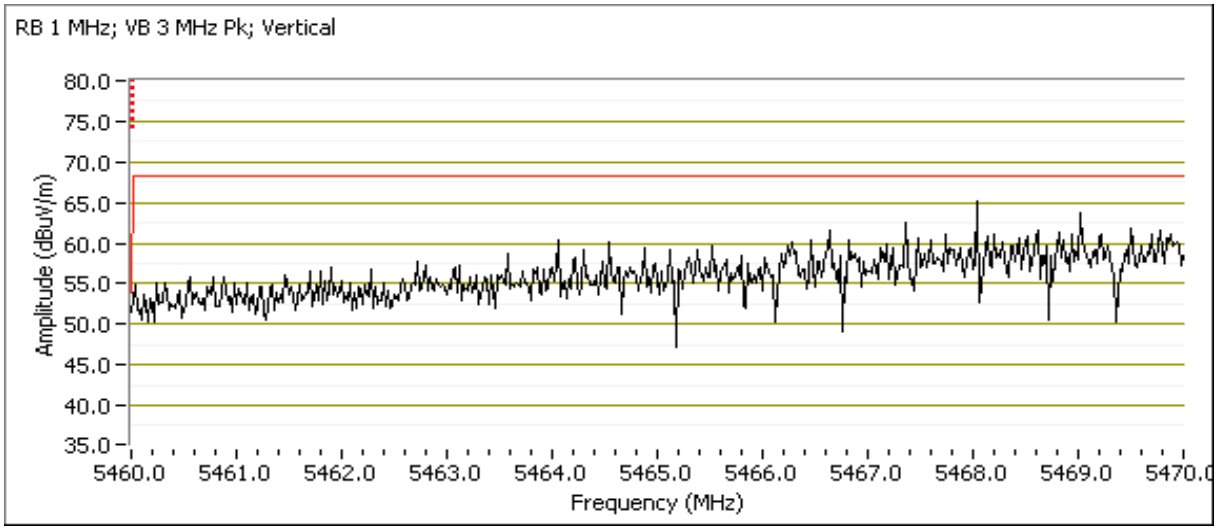
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5410.220	44.1	V	54.0	-9.9	AVG	125	1.2	Note 3
5420.920	55.5	V	74.0	-18.5	PK	125	1.2	POS; RB 1 MHz; VB: 3 MHz
5460.000	43.5	H	54.0	-10.5	AVG	359	1.0	Note 3
5459.280	53.8	H	74.0	-20.2	PK	359	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.320	65.2	V	68.3	-3.1	PK	126	1.1	POS; RB 1 MHz; VB: 3 MHz
5466.010	61.4	H	68.3	-6.9	PK	342	1.0	POS; RB 1 MHz; VB: 3 MHz

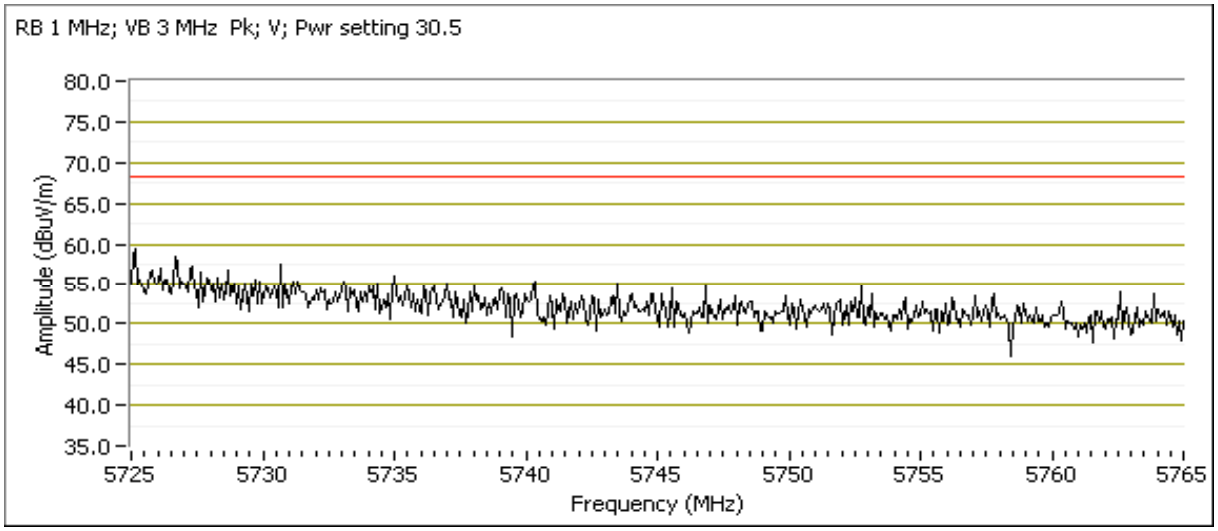


Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Channel: 134 - 5670MHz
Tx Chain: Port2
Mode: n40
Data Rate: HT0

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5727.650	60.6	V	68.3	-7.7	PK	156	1.7	Note 1
5733.660	58.6	H	68.3	-9.7	PK	230	1.0	Note 1



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #10: Radiated Bandedge Measurements, 5150-5250MHz

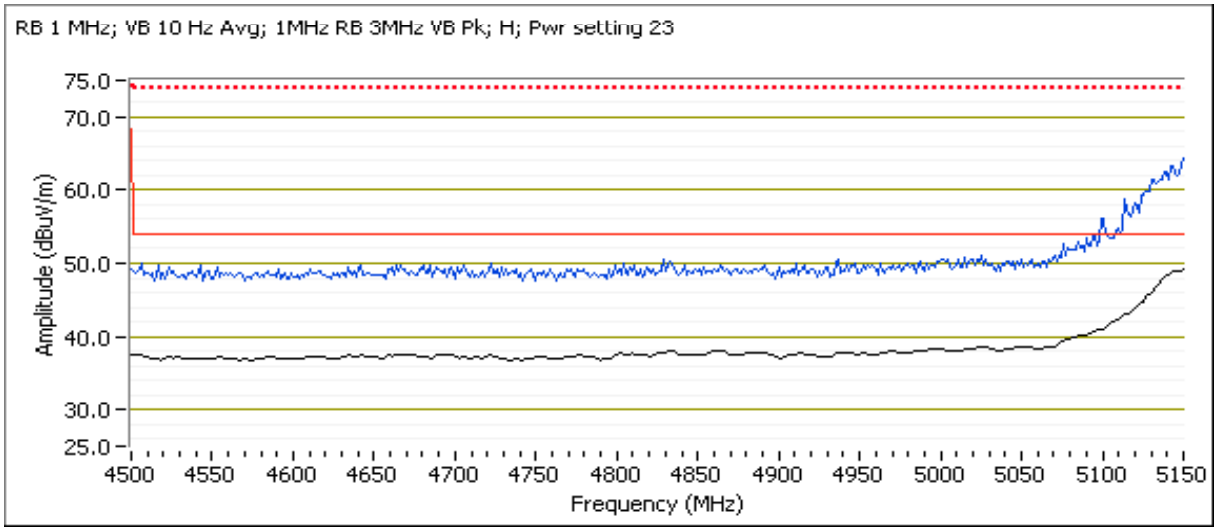
Date of Test: 1/7/2014 0:00
Test Engineer: Jack Liu
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 42 - 5210MHz
Tx Chain: Port 2
Mode: ac80
Data Rate: VHT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5143.990	51.3	H	54.0	-2.7	AVG	289	1.0	Note3
5141.820	65.8	H	74.0	-8.2	PK	289	1.0	
5143.910	50.5	V	54.0	-3.5	AVG	161	1.0	Note3
5141.020	65.0	V	74.0	-9.0	PK	161	1.0	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #11: Radiated Bandedge Measurements, 5250-5350MHz

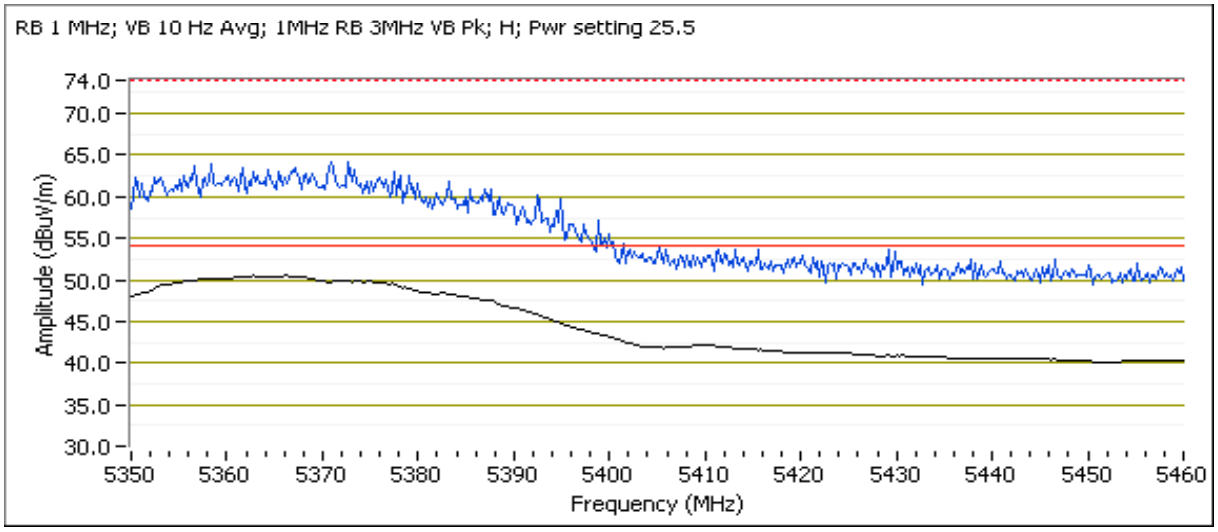
Date of Test: 1/7/2014 0:00
Test Engineer: Jack Liu
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 58 - 5290MHz
Tx Chain: Port 2
Mode: ac80
Data Rate: VHT0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5366.430	50.9	H	54.0	-3.1	AVG	346	1.0	Note3
5372.690	64.6	H	74.0	-9.4	PK	346	1.0	
5366.270	50.6	V	54.0	-3.4	AVG	216	1.1	Note3
5372.770	65.2	V	74.0	-8.8	PK	216	1.1	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #12: Radiated Bandedge Measurements, 5470-5725MHz

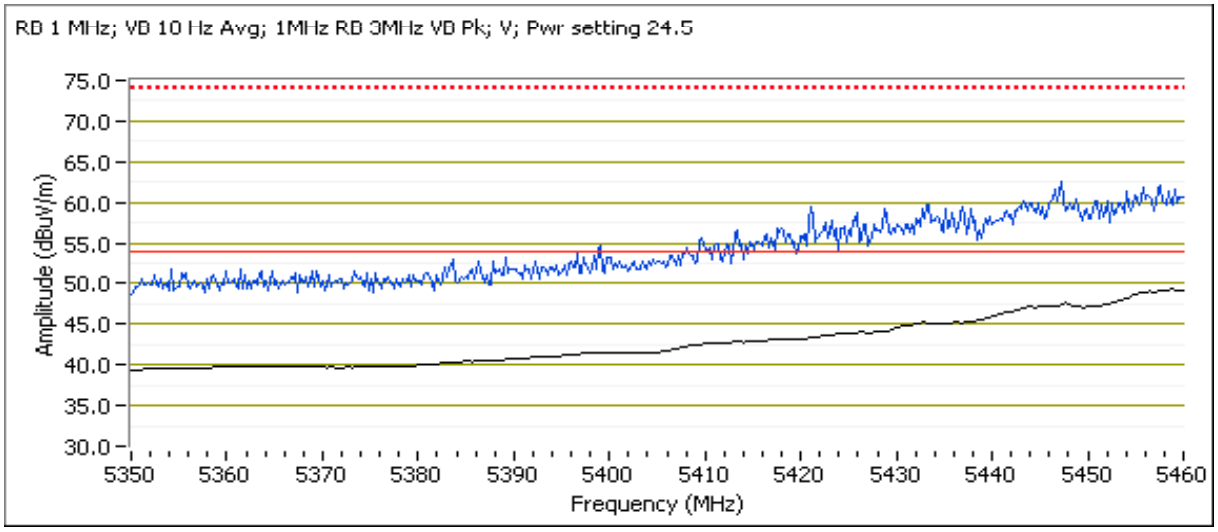
Date of Test: 1/7/2014 0:00
Test Engineer: Jack Liu
Test Location: FT Chamber #4

Config. Used: -
Config Change: -
EUT Voltage: Powered by host ; Host use 120V/60Hz

Channel: 106 - 5530MHz
Tx Chain: Port 2
Mode: ac80
Data Rate: VHT0

5460 MHz Band Edge Signal Radiated Field Strength

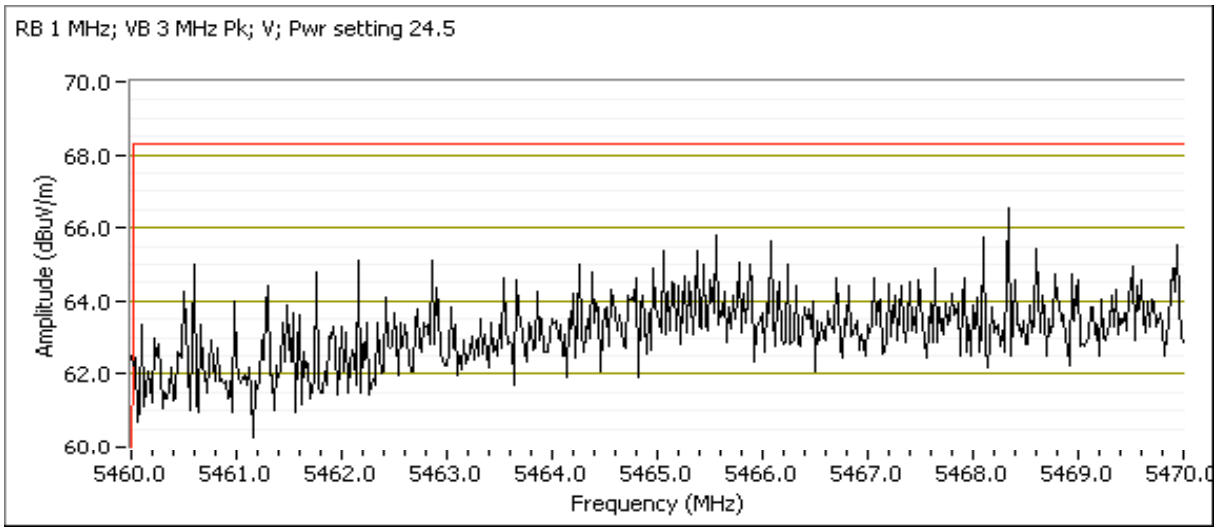
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5458.800	49.9	V	54.0	-4.1	AVG	79	1.0	Note3
5459.200	63.6	V	74.0	-10.4	PK	79	1.0	
5458.880	47.8	H	54.0	-6.2	AVG	332	1.0	Note3
5457.350	60.6	H	74.0	-13.4	PK	332	1.0	



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5465.390	66.0	V	68.3	-2.3	PK	84	1.1	POS; RB 1 MHz; VB: 3 MHz
5468.940	63.5	H	68.3	-4.8	PK	332	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

RSS 210 and FCC 15.407 (UNII) 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, unless otherwise noted.

Ambient Conditions:

Temperature: 23-25 °C
Rel. Humidity: 30-40 %

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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mb/s	0.99	Yes	8	0	0	125.00
n20	HT0	0.98	Yes	6	0	0	166.7
n40	HT0	0.97	Yes	5	0.12	0.24	200.00
ac80	VHT0	0.94	Yes	2	0.26	0.51	500.00

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Summary of Results

MAC Address: 001500E6085C DRTU Tool Version 1.7.4-845 Driver version 16.8.0.3

Run #	Mode	Channel	Target/ Measured	Power Setting	Test Performed	Limit	Result / Margin
Scans on "center" channel in all four OFDM modes to determine the worst case mode.							
1	a	40 - 5200MHz	16.5/16.4	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	63.1 dBµV/m @ 1596.0 MHz (-10.9 dB)
	n20	40 - 5200MHz	16.5/16.6	29.0	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	63.1 dBµV/m @ 1596.0 MHz (-10.9 dB)
	n40	38 - 5190MHz	16.5/16.4	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	63.1 dBµV/m @ 1596.0 MHz (-10.9 dB)
	ac80	42 - 5210MHz	12.0/12.0	23.0	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.3 dBµV/m @ 1499.0 MHz (-8.7 dB)
Measurements on low and high channels in worst-case OFDM mode. n20 selected as there was no difference between modes							
2	n20	36 - 5180MHz	16.5 / 16.6	29.0	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.9 dBµV/m @ 1499.1 MHz (-9.1 dB)
	n20	48 - 5240MHz	16.5 / 16.5	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.9 dBµV/m @ 1499.1 MHz (-9.1 dB)
Scans on "center" channel in all four OFDM modes to determine the worst case mode.							
3	a	60 - 5300MHz	16.5 / 16.4	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.9 dBµV/m @ 1499.1 MHz (-9.1 dB)
	n20	60 - 5300MHz	16.5 / 16.5	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.9 dBµV/m @ 1499.1 MHz (-9.1 dB)
	n40	54 - 5270MHz	15.0 / 15.1	26.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.9 dBµV/m @ 1499.1 MHz (-9.1 dB)
	ac80	58 - 5290MHz	14.0 / 14.1	25.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.9 dBµV/m @ 1499.1 MHz (-9.1 dB)
Measurements on low and high channels in worst-case OFDM mode. n20 selected as there was no difference between modes							
4	n20	52 - 5260MHz	16.5 / 16.5	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.1 dBµV/m @ 1499.1 MHz (-8.9 dB)
	n20	64 - 5320MHz	16.5 / 16.4	28.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.1 dBµV/m @ 1499.1 MHz (-8.9 dB)

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Summary of Results (Continues)

MAC Address: 001500E6085C DRTU Tool Version 1.7.4-845 Driver version 16.8.0.3

Run #	Mode	Channel	Target Power	Power Setting	Test Performed	Limit	Result / Margin
Scans on "center" channel in all four OFDM modes to determine the worst case mode.							
5	a	116 - 5580MHz	16.5 / 16.7	30.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.8 dBµV/m @ 1499.1 MHz (-8.2 dB)
	n20	116 - 5580MHz	16.5 / 16.6	30.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.7 dBµV/m @ 1498.9 MHz (-8.3 dB)
	n40	110 - 5550MHz	16.5 / 16.7	30.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.7 dBµV/m @ 1499.1 MHz (-8.3 dB)
	ac80	106 - 5530MHz	16.0 / 16.2	30.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.6 dBµV/m @ 1499.1 MHz (-8.4 dB)
Measurements on low and high channels in worst-case OFDM mode. a selected as there was no difference between modes							
6	a	100 - 5500MHz	16.5 / 16.7	30.0	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.6 dBµV/m @ 9000.6 MHz (-8.4 dB)
	a	144- 5720MHz	16.5 / 16.6	31.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	46.1 dBµV/m @ 9000.6 MHz (-7.9 dB)

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2:	Emission has duty cycle ≥ 98%, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 traces
Note 3:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor
Note 4:	Emission has duty cycle < 98% and is NOT constant, average measurement performed: RBW=1MHz, VBW> 1/T, peak detector, linear average mode, sweep time auto, max hold. Max hold for 50*(1/DC) traces
Note 5:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Pwr correction factor
Note 6:	Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabluar results for final measurements.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #1, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5150-5250 MHz Band

Date of Test: 1/2/2014 Config. Used: -

Test Engineer: M. Birgani Config Change: -

Test Location: Chamber #3 EUT Voltage: 120V, 60Hz

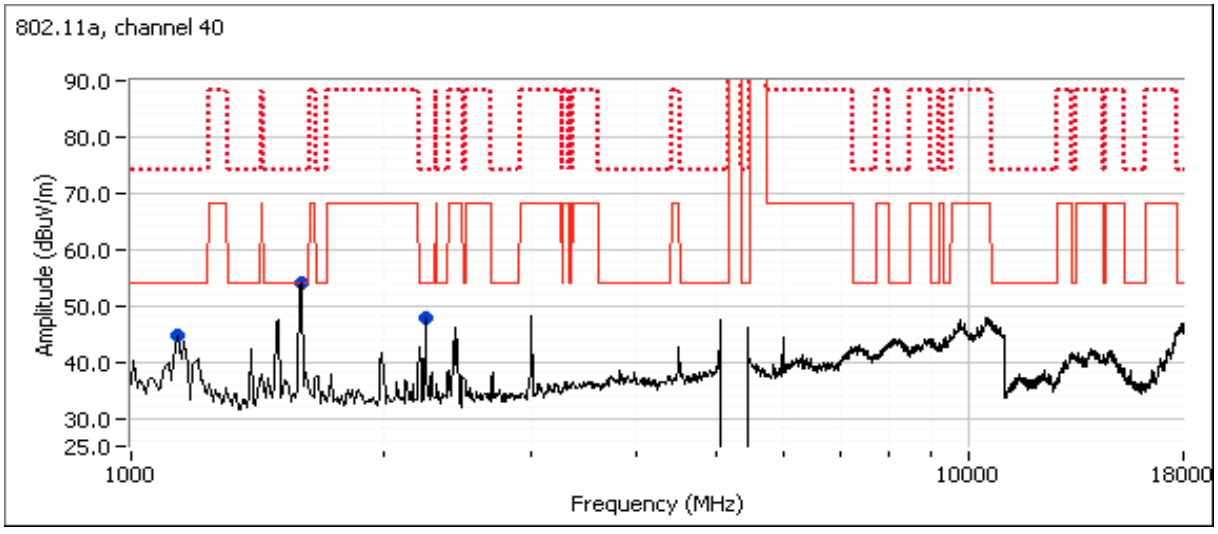
Run #1a: Center Channel

Channel: 40 Mode: 11a Target Power: 16.5dBm Power Setting: 28.5

Tx Chain: Main Data Rate: 6Mb/s Measured Power: 16.4dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1596.010	63.1	V	74.0	-10.9	PK	9	1.5	RB 1 MHz;VB 3 MHz;Peak, note 3
1593.410	42.7	V	54.0	-11.3	AVG	9	1.5	RB 1 MHz;VB 10 Hz;Peak, note 3
2211.220	35.1	V	54.0	-18.9	AVG	24	1.0	RB 1 MHz;VB 10 Hz;Peak, note 3
1151.770	32.3	H	54.0	-21.7	AVG	159	2.3	RB 1 MHz;VB 10 Hz;Peak
1152.910	49.7	H	74.0	-24.3	PK	159	2.3	RB 1 MHz;VB 3 MHz;Peak
2209.770	45.2	V	74.0	-28.8	PK	24	1.0	RB 1 MHz;VB 3 MHz;Peak, note 3

Note:	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 significant emissions in this frequency range
Note 1:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 2:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 3:	Stopped the transmission, but the signal level did not drop.



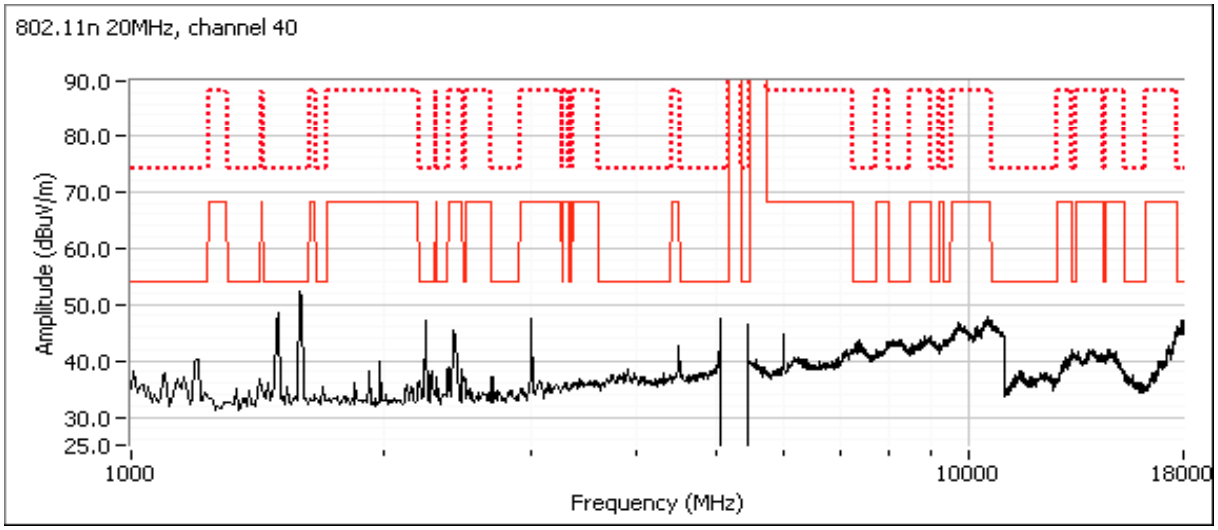
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #1b: Center Channel

Channel: 40 Mode: 11n20 Target Power: 16.5dBm Power Setting: 29.0
Tx Chain: Main Data Rate: HT0 Measured Power: 16.5dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1596.010	63.1	V	74.0	-10.9	PK	9	1.5	RB 1 MHz;VB 3 MHz;Peak, note 3
1593.410	42.7	V	54.0	-11.3	AVG	9	1.5	RB 1 MHz;VB 10 Hz;Peak, note 3

Note:	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 significant emissions in this frequency range
Note 1:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 2:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 3:	Stopped the transmission, but the signal level did not drop.



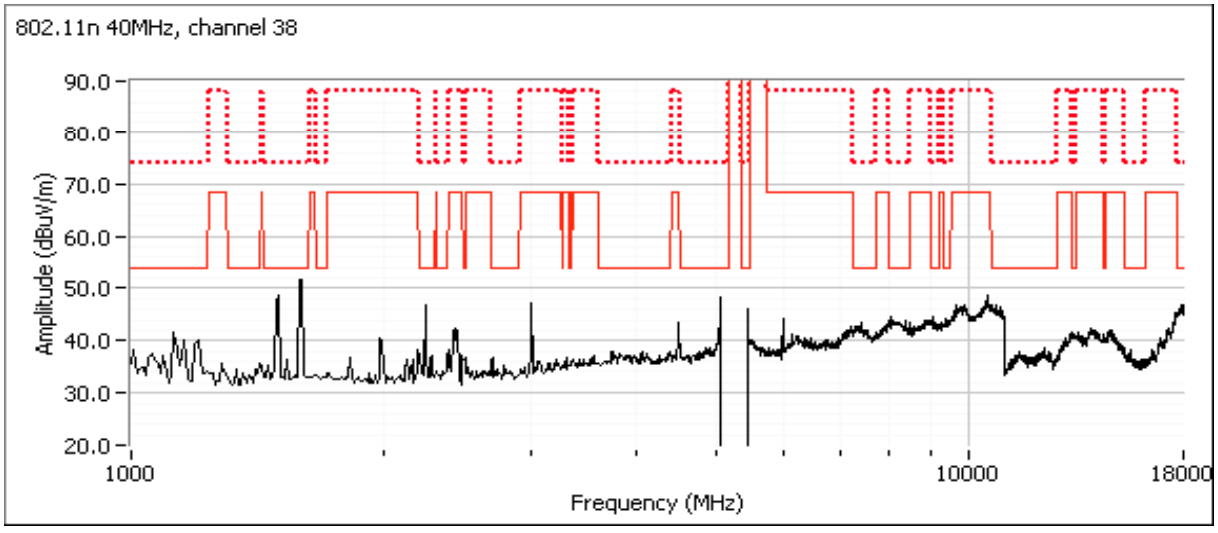
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #1c: Center Channel

Channel: 38 Mode: 11n40 Target Power: 16.5dBm Power Setting: 28.5
Tx Chain: Main Data Rate: HT0 Measured Power: 16.4dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1596.010	63.1	V	74.0	-10.9	PK	9	1.5	RB 1 MHz;VB 3 MHz;Peak, note 3
1593.410	42.7	V	54.0	-11.3	AVG	9	1.5	RB 1 MHz;VB 10 Hz;Peak, note 3

Note:	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 significant emissions in this frequency range
Note 1:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 2:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 3:	Stopped the transmission, but the signal level did not drop.



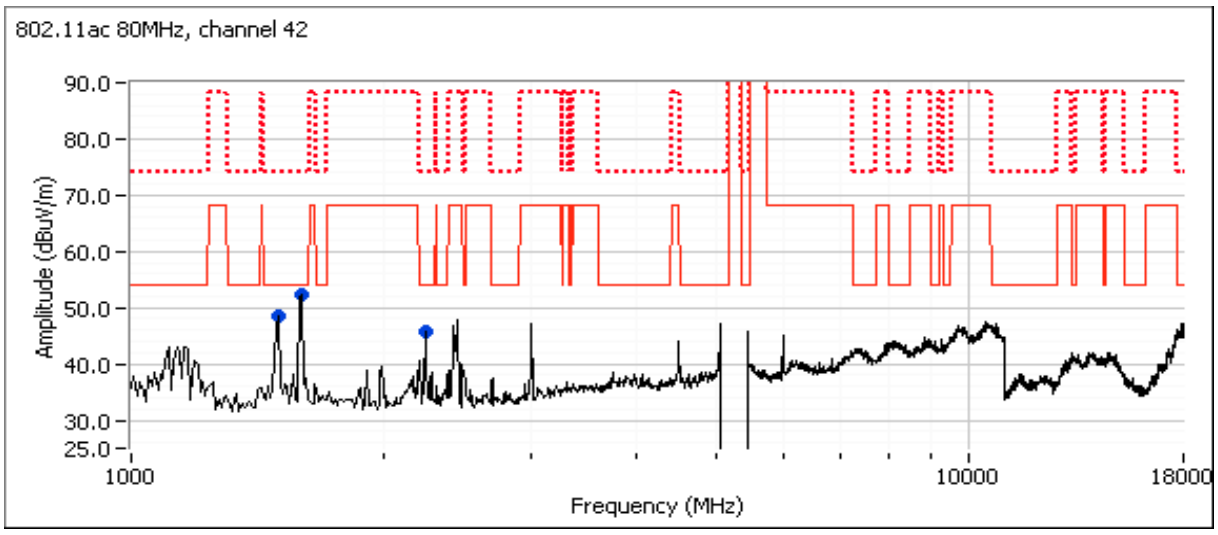
Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #1d: Center Channel

Channel: 42 Mode: ac80 Target Power: 12.0dBm Power Setting: 23.0
Tx Chain: Main Data Rate: VHT0 Measured Power: 12.0dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.950	45.3	V	54.0	-8.7	AVG	338	1.5	RB 1 MHz;VB 10 Hz;Peak, note 3
2248.530	45.1	V	54.0	-8.9	AVG	22	1.0	RB 1 MHz;VB 10 Hz;Peak, note 3
1598.400	41.2	V	54.0	-12.8	AVG	0	1.5	RB 1 MHz;VB 10 Hz;Peak, note 3
1599.850	58.2	V	74.0	-15.8	PK	0	1.5	RB 1 MHz;VB 3 MHz;Peak, note 3
2249.280	53.0	V	74.0	-21.0	PK	22	1.0	RB 1 MHz;VB 3 MHz;Peak, note 3
1496.680	52.5	V	74.0	-21.5	PK	338	1.5	RB 1 MHz;VB 3 MHz;Peak, note 3

Note:	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 significant emissions in this frequency range
Note 1:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 2:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 3:	Stopped the transmission, but the signal level did not drop.



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #2: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #1

Date of Test: 1/3/2014 & 1/6/14 Config. Used: -

Test Engineer: Jack Liu Config Change: -

Test Location: Chamber #4 EUT Voltage: Powered by host ; Host use 120V/60Hz

Run #2a: Low Channel

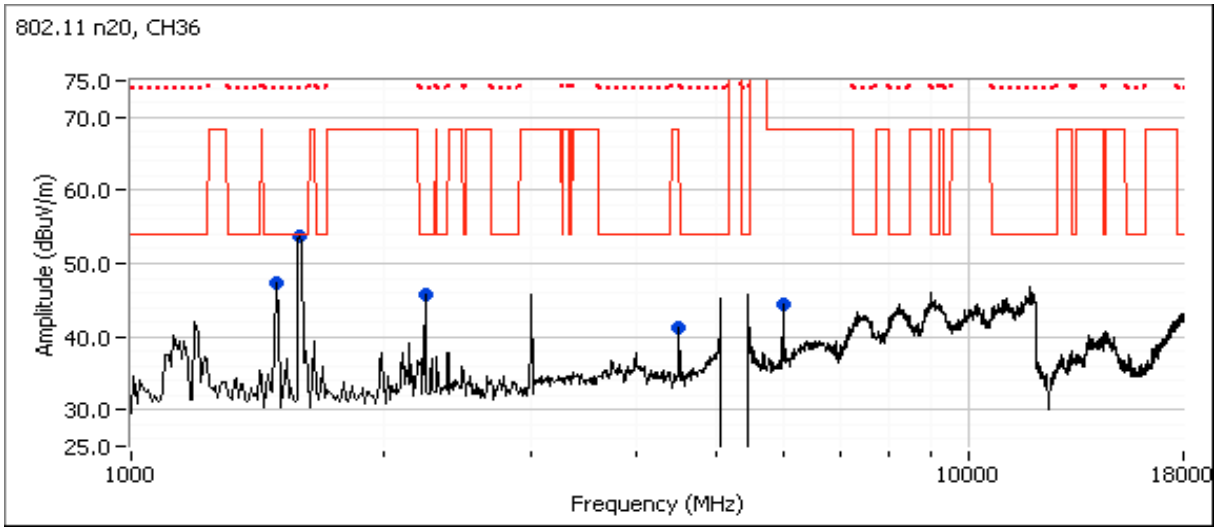
Channel: 36 Mode: n20 Target Power: 16.5dBm Power Setting: 29.0

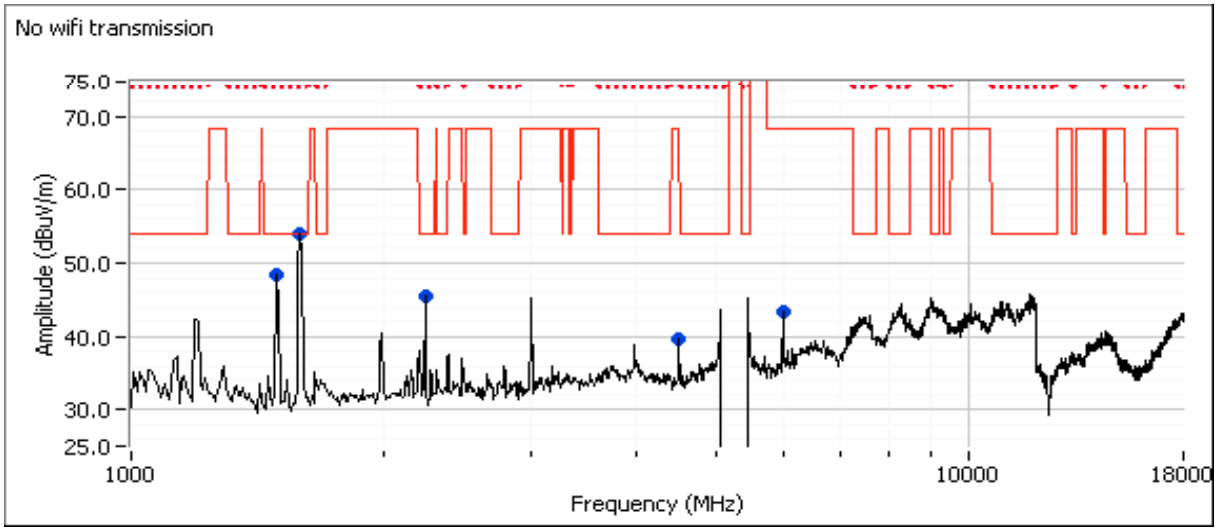
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.6dBm

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	44.9	V	54.0	-9.1	AVG	91	1.0	Note 8
1499.300	53.7	V	74.0	-20.3	PK	91	1.0	Note 8
4497.000	34.9	V	54.0	-19.1	AVG	112	1.3	Note 7a, 8
4497.200	46.2	V	74.0	-27.8	PK	112	1.3	Note 7a, 8
1598.670	37.9	V	54.0	-16.1	AVG	91	1.0	Note 8
1599.070	60.5	V	74.0	-13.5	PK	91	1.0	Note 8
2248.670	41.8	V	54.0	-12.2	AVG	122	1.0	Note 8
2246.600	51.7	V	74.0	-22.3	PK	122	1.0	Note 8
6000.470	38.0	V	54.0	-16.0	AVG	260	1.0	Note 7a, 8
6000.370	44.9	V	74.0	-29.1	PK	260	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A





Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

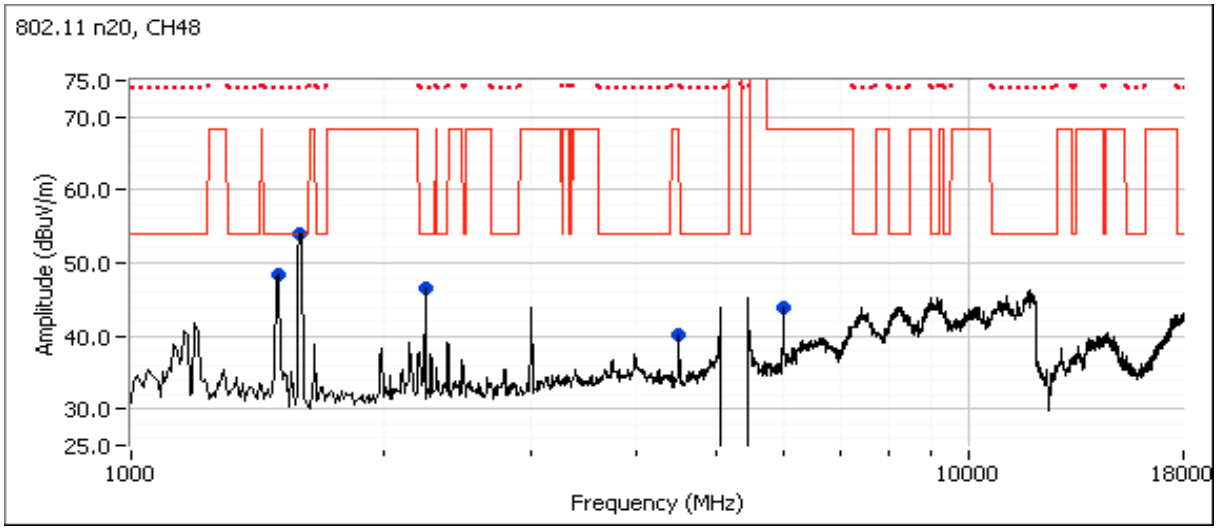
Run #2b: High Channel

Channel: 48 Mode: n20 Target Power: 16.5dBm Power Setting: 28.5
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.5dBm

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	44.9	V	54.0	-9.1	AVG	91	1.0	Note 8
1499.300	53.7	V	74.0	-20.3	PK	91	1.0	Note 8
4497.000	34.9	V	54.0	-19.1	AVG	112	1.3	Note 7a, 8
4497.200	46.2	V	74.0	-27.8	PK	112	1.3	Note 7a, 8
1598.670	37.9	V	54.0	-16.1	AVG	91	1.0	Note 8
1599.070	60.5	V	74.0	-13.5	PK	91	1.0	Note 8
2248.670	41.8	V	54.0	-12.2	AVG	122	1.0	Note 8
2246.600	51.7	V	74.0	-22.3	PK	122	1.0	Note 8
6000.470	38.0	V	54.0	-16.0	AVG	260	1.0	Note 7a, 8
6000.370	44.9	V	74.0	-29.1	PK	260	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #3, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250-5350 MHz Band

Date of Test: 1/3/2014 & 1/6/14 Config. Used: -

Test Engineer: Jack Liu Config Change: -

Test Location: Chamber #4 EUT Voltage: Powered by host ; Host use 120V/60Hz

Run #3a: Center Channel

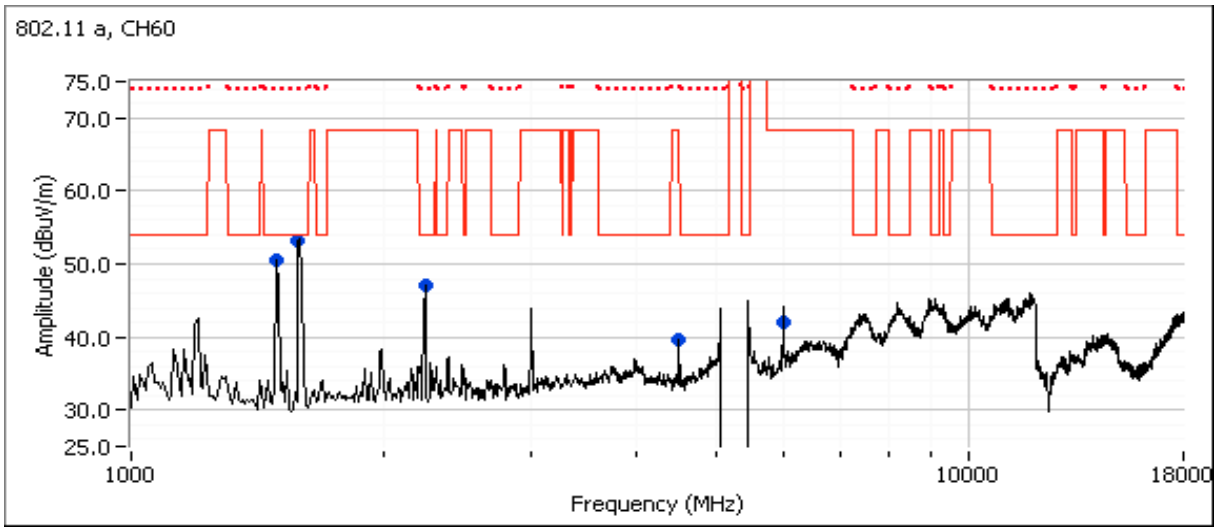
Channel: 60 Mode: 11a Target Power: 16.5dBm Power Setting: 28.5

Tx Chain: Port 2 Data Rate: 6Mb/s Measured Power: 16.4dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	44.9	V	54.0	-9.1	AVG	91	1.0	Note 8
1499.300	53.7	V	74.0	-20.3	PK	91	1.0	Note 8
4497.000	34.9	V	54.0	-19.1	AVG	112	1.3	Note 7a, 8
4497.200	46.2	V	74.0	-27.8	PK	112	1.3	Note 7a, 8
1598.670	37.9	V	54.0	-16.1	AVG	91	1.0	Note 8
1599.070	60.5	V	74.0	-13.5	PK	91	1.0	Note 8
2248.670	41.8	V	54.0	-12.2	AVG	122	1.0	Note 8
2246.600	51.7	V	74.0	-22.3	PK	122	1.0	Note 8
6000.470	38.0	V	54.0	-16.0	AVG	260	1.0	Note 7a, 8
6000.370	44.9	V	74.0	-29.1	PK	260	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

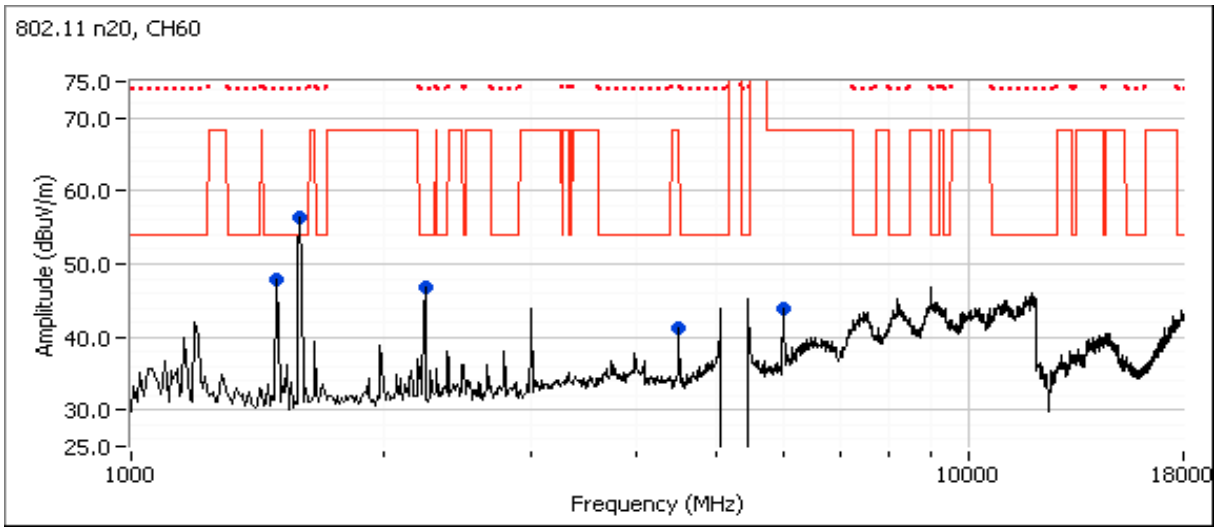
Run #3b: Center Channel

Channel: 60 Mode: 11n20 Target Power: 16.5dBm Power Setting: 28.5
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.5dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	44.9	V	54.0	-9.1	AVG	91	1.0	Note 8
1499.300	53.7	V	74.0	-20.3	PK	91	1.0	Note 8
4497.000	34.9	V	54.0	-19.1	AVG	112	1.3	Note 7a, 8
4497.200	46.2	V	74.0	-27.8	PK	112	1.3	Note 7a, 8
1598.670	37.9	V	54.0	-16.1	AVG	91	1.0	Note 8
1599.070	60.5	V	74.0	-13.5	PK	91	1.0	Note 8
2248.670	41.8	V	54.0	-12.2	AVG	122	1.0	Note 8
2246.600	51.7	V	74.0	-22.3	PK	122	1.0	Note 8
6000.470	38.0	V	54.0	-16.0	AVG	260	1.0	Note 7a, 8
6000.370	44.9	V	74.0	-29.1	PK	260	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

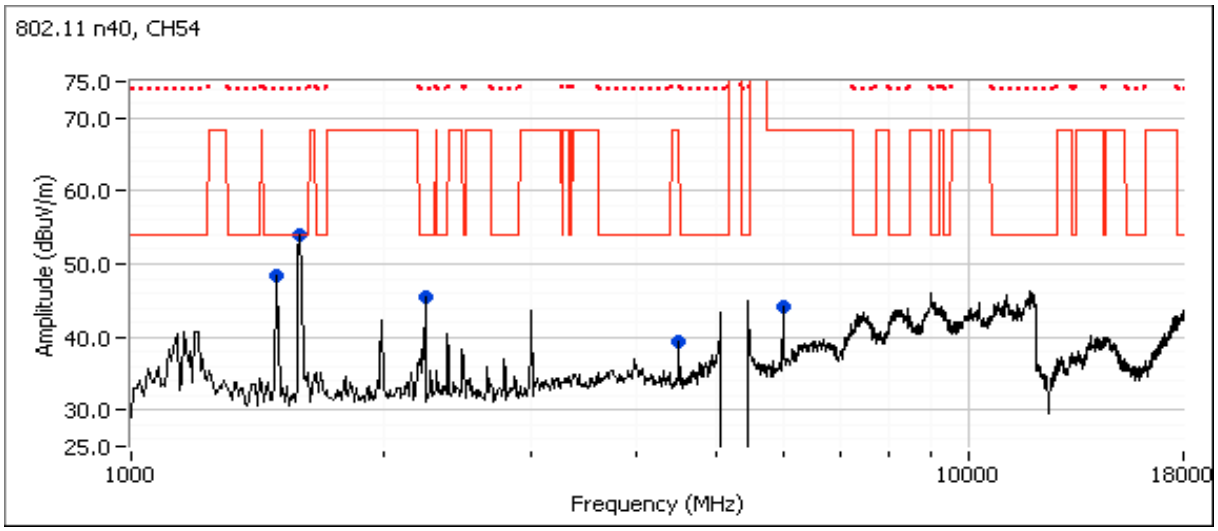
Run #3c: Center Channel

Channel: 54 Mode: 11n40 Target Power: 15.0dBm Power Setting: 26.5
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 15.1dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	44.9	V	54.0	-9.1	AVG	91	1.0	Note 8
1499.300	53.7	V	74.0	-20.3	PK	91	1.0	Note 8
4497.000	34.9	V	54.0	-19.1	AVG	112	1.3	Note 7a, 8
4497.200	46.2	V	74.0	-27.8	PK	112	1.3	Note 7a, 8
1598.670	37.9	V	54.0	-16.1	AVG	91	1.0	Note 8
1599.070	60.5	V	74.0	-13.5	PK	91	1.0	Note 8
2248.670	41.8	V	54.0	-12.2	AVG	122	1.0	Note 8
2246.600	51.7	V	74.0	-22.3	PK	122	1.0	Note 8
6000.470	38.0	V	54.0	-16.0	AVG	260	1.0	Note 7a, 8
6000.370	44.9	V	74.0	-29.1	PK	260	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

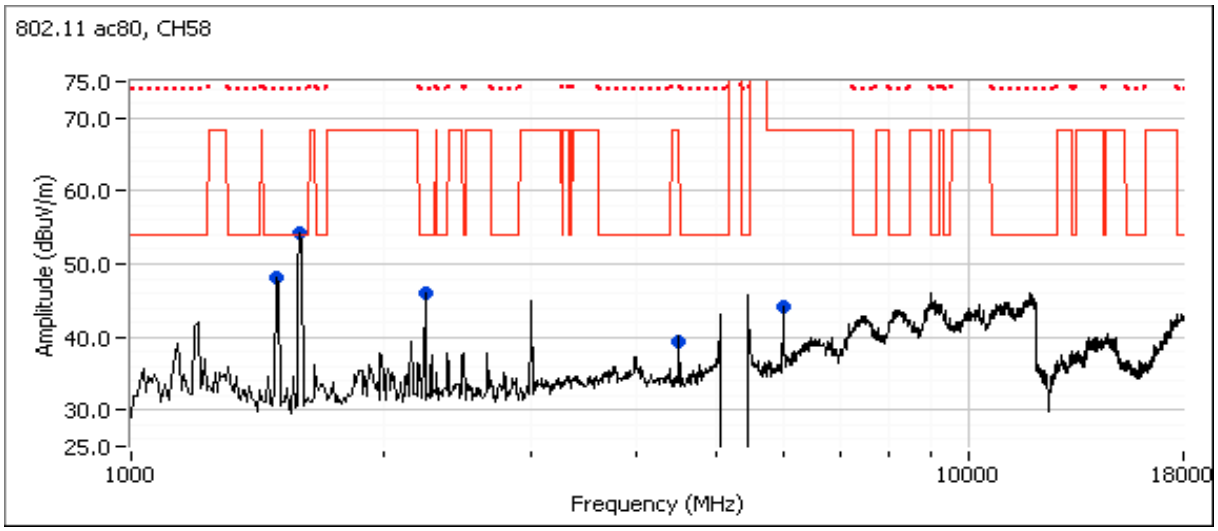
Run #3d: Center Channel

Channel: 58 Mode: ac80 Target Power: 14.0dBm Power Setting: 25.5
Tx Chain: Port 2 Data Rate: VHT0 Measured Power: 14.1dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	44.9	V	54.0	-9.1	AVG	91	1.0	Note 8
1499.300	53.7	V	74.0	-20.3	PK	91	1.0	Note 8
4497.000	34.9	V	54.0	-19.1	AVG	112	1.3	Note 7a, 8
4497.200	46.2	V	74.0	-27.8	PK	112	1.3	Note 7a, 8
1598.670	37.9	V	54.0	-16.1	AVG	91	1.0	Note 8
1599.070	60.5	V	74.0	-13.5	PK	91	1.0	Note 8
2248.670	41.8	V	54.0	-12.2	AVG	122	1.0	Note 8
2246.600	51.7	V	74.0	-22.3	PK	122	1.0	Note 8
6000.470	38.0	V	54.0	-16.0	AVG	260	1.0	Note 7a, 8
6000.370	44.9	V	74.0	-29.1	PK	260	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #4: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #3

Date of Test: 1/3/2014 &1/6/14 Config. Used: -

Test Engineer: Rafael Varelas / Jack Liu Config Change: -

Test Location: Chamber #4 EUT Voltage: Powered by host ; Host use 120V/60Hz

Run #4a: Low Channel

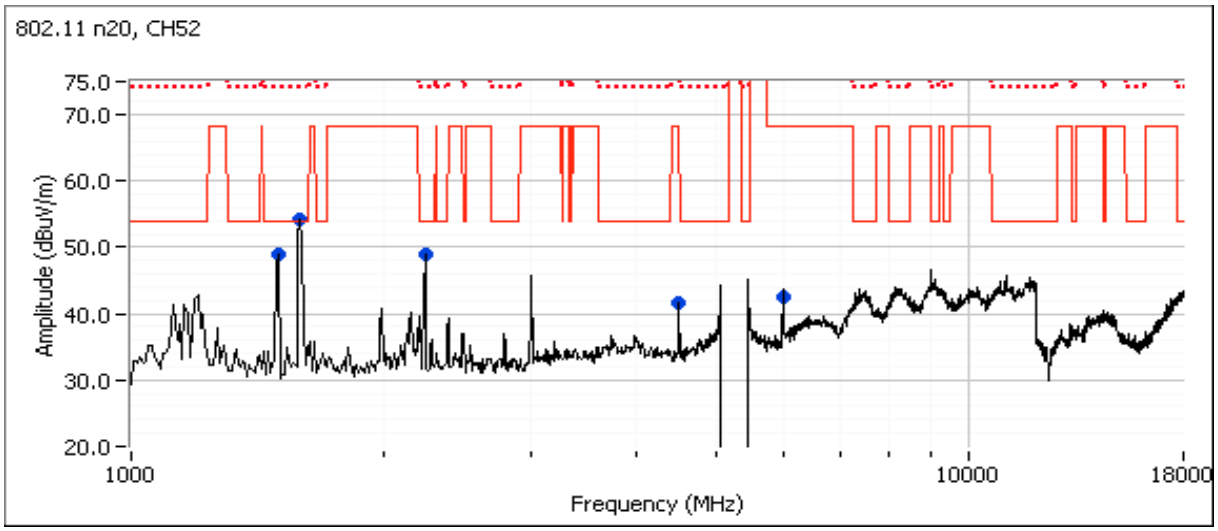
Channel: 52 Mode: 11n20 Target Power: 16.5dBm Power Setting: 28.5

Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.5dBm

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	45.1	V	54.0	-8.9	AVG	85	1.0	Note 8
1499.440	53.0	V	74.0	-21.0	PK	85	1.0	Note 8
2248.690	44.7	V	54.0	-9.3	AVG	125	1.0	Note 8
2248.640	52.6	V	74.0	-21.4	PK	125	1.0	Note 8
4497.090	35.6	V	54.0	-18.4	AVG	107	1.0	Note 7a, 8
4496.020	47.1	V	74.0	-26.9	PK	107	1.0	Note 7a, 8
1592.900	44.6	V	54.0	-9.4	AVG	101	1.0	Note 8
1593.230	59.2	V	74.0	-14.8	PK	101	1.0	Note 8
6000.420	38.4	H	54.0	-15.6	AVG	98	1.1	Note 7a, 8
6000.370	46.4	H	74.0	-27.6	PK	98	1.1	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

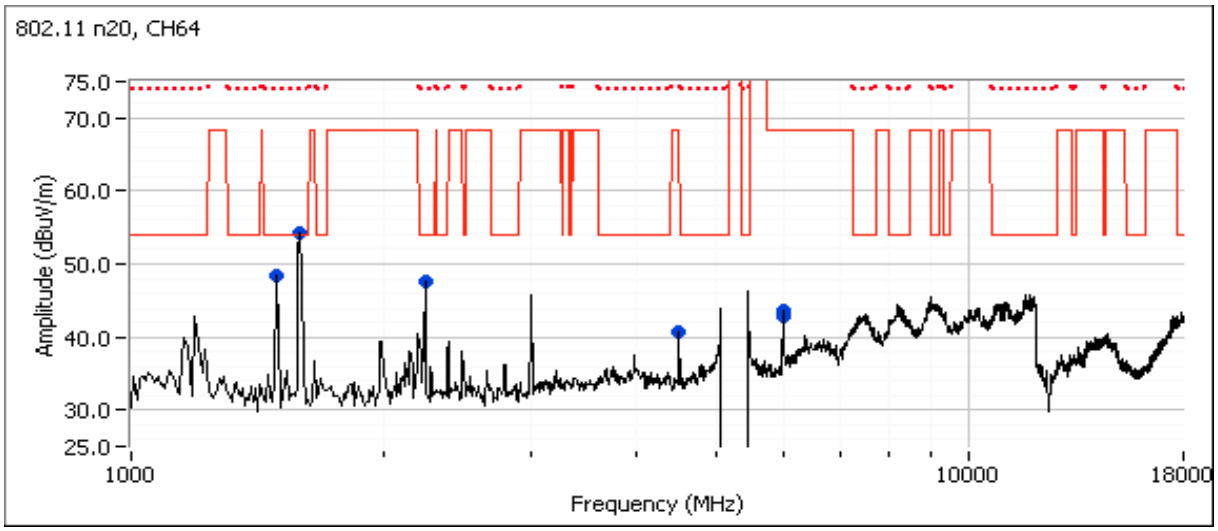
Run #4b: High Channel

Channel: 64 Mode: 11n20 Target Power: 16.5dBm Power Setting: 28.5
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.4dBm

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.090	45.1	V	54.0	-8.9	AVG	85	1.0	Note 8
1499.440	53.0	V	74.0	-21.0	PK	85	1.0	Note 8
2248.690	44.7	V	54.0	-9.3	AVG	125	1.0	Note 8
2248.640	52.6	V	74.0	-21.4	PK	125	1.0	Note 8
4497.090	35.6	V	54.0	-18.4	AVG	107	1.0	Note 7a, 8
4496.020	47.1	V	74.0	-26.9	PK	107	1.0	Note 7a, 8
1592.900	44.6	V	54.0	-9.4	AVG	101	1.0	Note 8
1593.230	59.2	V	74.0	-14.8	PK	101	1.0	Note 8
6000.420	38.4	H	54.0	-15.6	AVG	98	1.1	Note 7a, 8
6000.370	46.4	H	74.0	-27.6	PK	98	1.1	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #5, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5725 MHz Band

Date of Test: 1/3/2014 & 1/6/13 Config. Used: -

Test Engineer: Rafael Varelas / Jack Liu Config Change: -

Test Location: Chamber #4 EUT Voltage: Powered by host ; Host use 120V/60Hz

Run #5a: Center Channel

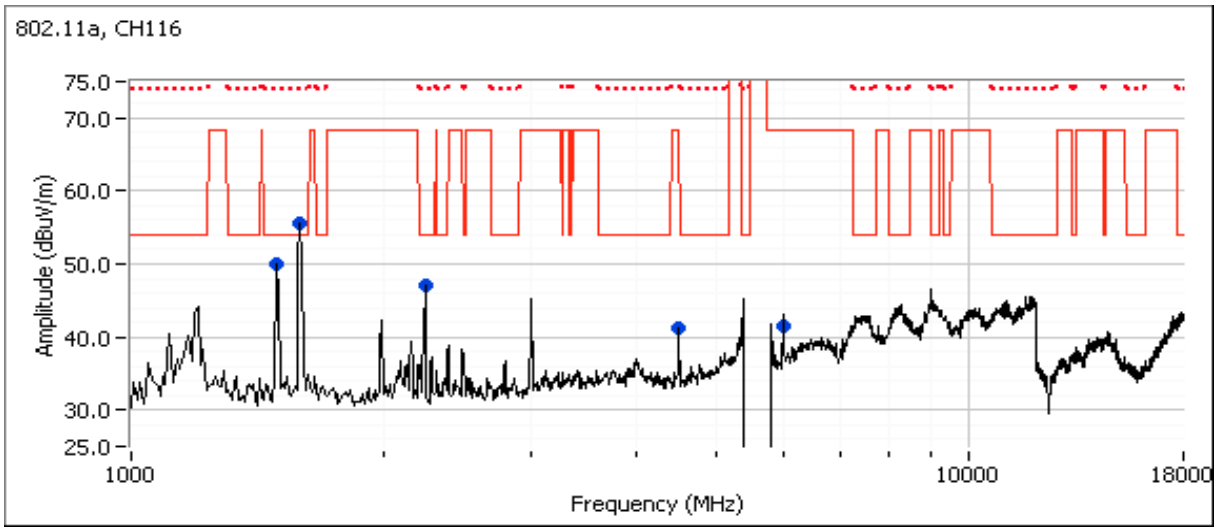
Channel: 116 Mode: a Target Power: 16.5dBm Power Setting: 30.5

Tx Chain: Port 2 Data Rate: 6Mb/s Measured Power: 16.7dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.110	45.8	V	54.0	-8.2	AVG	82	1.0	Note 8
1498.770	53.6	V	74.0	-20.4	PK	82	1.0	Note 8
4496.900	36.0	V	54.0	-18.0	AVG	107	1.0	Note 7a, 8
4497.400	46.6	V	74.0	-27.4	PK	107	1.0	Note 7a, 8
1592.990	41.9	V	54.0	-12.1	AVG	119	1.0	Note 8
1593.330	62.1	V	74.0	-11.9	PK	119	1.0	Note 8
2248.480	44.5	V	54.0	-9.5	AVG	121	1.0	Note 8
2248.660	54.1	V	74.0	-19.9	PK	121	1.0	Note 8
6000.440	36.4	V	54.0	-17.6	AVG	315	1.0	Note 7a, 8
6000.550	44.0	V	74.0	-30.0	PK	315	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

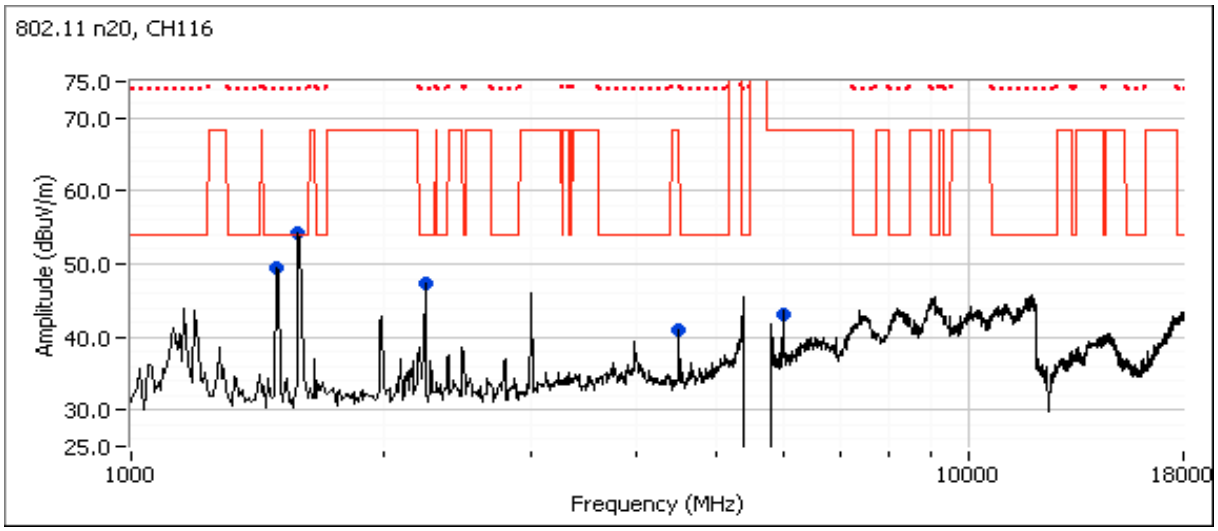
Run #5b: Center Channel

Channel: 116 Mode: 11n20 Target Power: 16.5dBm Power Setting: 30.5
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.6dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.940	45.7	V	54.0	-8.3	AVG	84	1.0	Note 8
1498.000	53.4	V	74.0	-20.6	PK	84	1.0	Note 8
2248.890	44.8	V	54.0	-9.2	AVG	125	1.0	Note 8
2248.250	52.7	V	74.0	-21.3	PK	125	1.0	Note 8
4496.690	36.8	V	54.0	-17.2	AVG	113	1.0	Note 7a, 8
4493.260	47.4	V	74.0	-26.6	PK	113	1.0	Note 7a, 8
1598.960	42.8	V	54.0	-11.2	AVG	105	1.0	Note 8
1599.420	63.1	V	74.0	-10.9	PK	105	1.0	Note 8
6000.400	38.9	H	54.0	-15.1	AVG	109	1.1	Note 7a, 8
6000.440	46.5	H	74.0	-27.5	PK	109	1.1	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

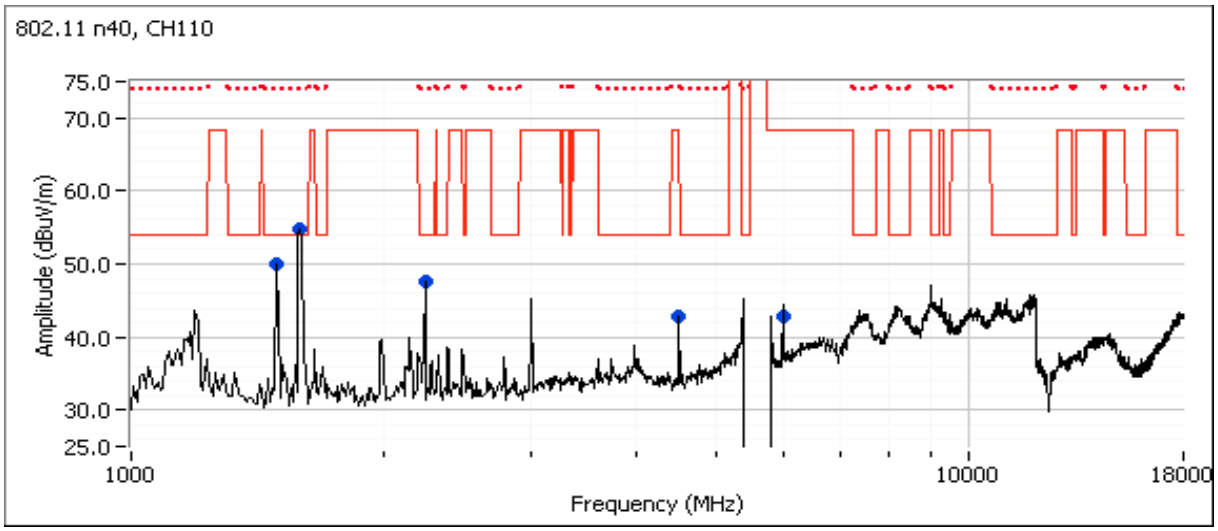
Run #5c: Center Channel

Channel: 110 Mode: 11n40 Target Power: 16.5dBm Power Setting: 30.5
Tx Chain: Port 2 Data Rate: HT0 Measured Power: 16.7dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.140	45.7	V	54.0	-8.3	AVG	88	1.0	Note 8
1499.370	53.0	V	74.0	-21.0	PK	88	1.0	Note 8
6000.380	38.7	H	54.0	-15.3	AVG	97	1.1	Note 7a, 8
6000.480	45.5	H	74.0	-28.5	PK	97	1.1	Note 7a, 8
1592.910	40.4	V	54.0	-13.6	AVG	94	1.0	Note 8
1593.700	60.5	V	74.0	-13.5	PK	94	1.0	Note 8
4496.890	36.7	V	54.0	-17.3	AVG	110	1.0	Note 7a, 8
4498.190	48.1	V	74.0	-25.9	PK	110	1.0	Note 7a, 8
2248.690	44.4	V	54.0	-9.6	AVG	124	1.0	Note 8
2247.530	52.4	V	74.0	-21.6	PK	124	1.0	Note 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

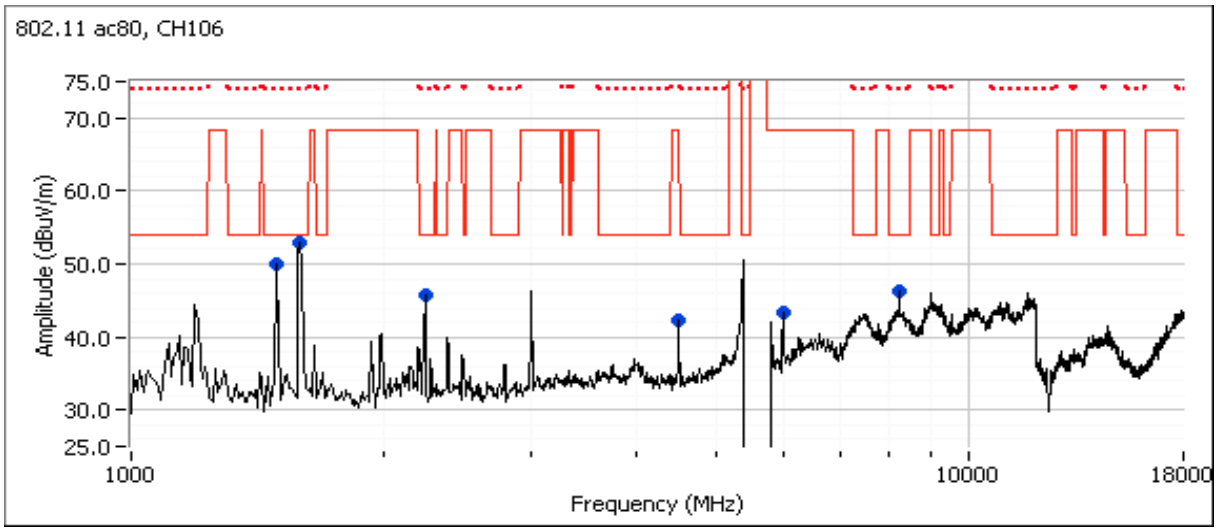
Run #5d: Center Channel

Channel: 106 Mode: ac80 Target Power: 16.0dBm Power Setting: 30.5
Tx Chain: Port 2 Data Rate: VHT0 Measured Power: 16.2dBm

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1499.070	45.6	V	54.0	-8.4	AVG	83	1.0	Note 8
1499.060	53.5	V	74.0	-20.5	PK	83	1.0	Note 8
1592.810	40.6	V	54.0	-13.4	AVG	113	1.0	Note 8
1593.110	58.5	V	74.0	-15.5	PK	113	1.0	Note 8
6000.420	38.5	H	54.0	-15.5	AVG	101	1.1	Note 7a, 8
6000.180	45.0	H	74.0	-29.0	PK	101	1.1	Note 7a, 8
4496.970	37.0	V	54.0	-17.0	AVG	111	1.0	Note 7a, 8
4496.770	48.5	V	74.0	-25.5	PK	111	1.0	Note 7a, 8
2248.610	44.5	V	54.0	-9.5	AVG	123	1.0	Note 8
2248.610	53.4	V	74.0	-20.6	PK	123	1.0	Note 8
8257.910	40.3	V	54.0	-13.7	AVG	231	1.6	Note 8
8262.380	52.3	V	74.0	-21.7	PK	231	1.6	Note 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5

Date of Test: 1/6/2014 Config. Used: -
Test Engineer: Jack Liu Config Change: -
Test Location: Chamber #4 EUT Voltage: Powered by host ; Host use 120V/60Hz

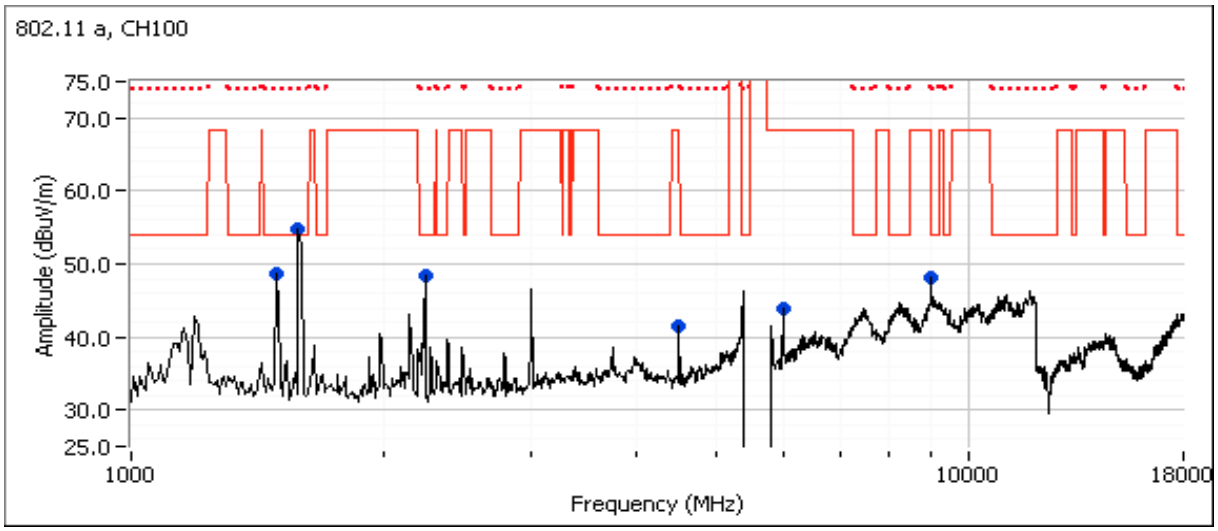
Run #6a: Low Channel

Channel: 100 Mode: a Target Power: 16.5dBm Power Setting: 30.0
Tx Chain: Port2 Data Rate: 6MB/s Measured Power: 16.7dBm

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
9000.630	45.6	V	54.0	-8.4	AVG	122	1.0	
9000.430	54.7	V	74.0	-19.3	PK	122	1.0	
1499.090	44.3	V	54.0	-9.7	AVG	90	1.0	Note 8
1498.200	53.8	V	74.0	-20.2	PK	90	1.0	Note 8
1598.760	37.5	V	54.0	-16.5	AVG	105	1.0	Note 8
1594.460	59.8	V	74.0	-14.2	PK	105	1.0	Note 8
4496.530	36.3	V	54.0	-17.7	AVG	110	1.0	Note 7a, 8
4498.230	49.1	V	74.0	-24.9	PK	110	1.0	Note 7a, 8
2248.670	43.8	V	54.0	-10.2	AVG	125	1.0	Note 8
2249.170	53.0	V	74.0	-21.0	PK	125	1.0	Note 8
6000.430	37.8	V	54.0	-16.2	AVG	253	1.0	Note 7a, 8
6000.080	46.6	V	74.0	-27.4	PK	253	1.0	Note 7a, 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A

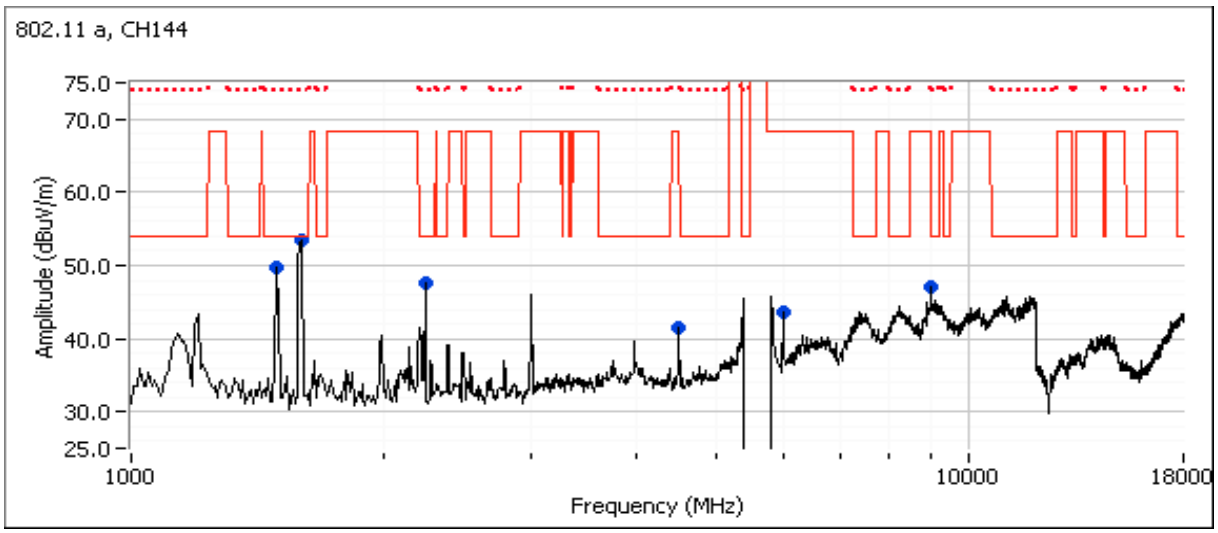
Run #6b: High Channel

Channel: 144 Mode: a Target Power: 16.5dBm Power Setting: 31.5
Tx Chain: Port2 Data Rate: 6MB/s Measured Power: 16.6dBm

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
9000.620	46.1	V	54.0	-7.9	AVG	120	1.1	
9000.630	54.9	V	74.0	-19.1	PK	120	1.1	
1499.120	44.8	V	54.0	-9.2	AVG	85	1.0	Note 8
1499.200	52.6	V	74.0	-21.4	PK	85	1.0	Note 8
1598.930	38.8	V	54.0	-15.2	AVG	86	1.0	Note 8
1599.630	57.9	V	74.0	-16.1	PK	86	1.0	Note 8
6000.400	39.0	H	54.0	-15.0	AVG	98	1.1	Note 7a, 8
6000.500	46.9	H	74.0	-27.1	PK	98	1.1	Note 7a, 8
4496.840	36.6	V	54.0	-17.4	AVG	111	1.0	Note 7a, 8
4497.200	49.2	V	74.0	-24.8	PK	111	1.0	Note 7a, 8
2248.640	42.7	V	54.0	-11.3	AVG	127	1.4	Note 8
2246.600	51.9	V	74.0	-22.1	PK	127	1.4	Note 8

Note:	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 significant emissions in this frequency range
Note 7a:	Refer to Measurement Specific Notes 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 7b:	Refer to Measurement Specific Notes 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 8:	Stopped the transmission, but the signal level did not drop.

Client:	Intel Mobile Communications	Job Number:	J94122
Model:	3160SDW	T-Log Number:	T94177
		Project Manager:	Christine Krebill
Contact:	Steve Hackett	Project Coordinator:	-
Standard:	FCC Part 15, RSS-210	Class:	N/A



End of Report

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