

*EMC Test Report*

*Industry Canada RSS-Gen Issue 3 / RSS 210 Issue 8  
FCC Part 15, Subpart E*

*Intel® Centrino® Advanced-N 6205 with WNC  
81XCAA15.G03 Dipole Antenna*

IC CERTIFICATION #: 1000M-62205ANHU  
FCC ID: PD962205ANHU

APPLICANT: Intel Corporation  
100 Center Point Circle Suite 200  
Columbia, SC 29210

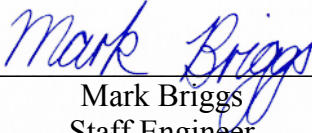
TEST SITE(S): Elliott Laboratories  
41039 Boyce Road.  
Fremont, CA. 94538-2435

IC SITE REGISTRATION #: 2845B-4, 2845B-5

REPORT DATE: June 24, 2011

FINAL TEST DATES: June 16, 17 and 20, 2011

AUTHORIZED SIGNATORY:



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Testing Cert #2016.01

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**REVISION HISTORY**

Rev#	Date	Comments	Modified By
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## SCOPE

An electromagnetic emissions test has been performed on the Intel Corporation Intel® Centrino® Advanced-N 6205 with WNC 81XCAA15.G03 Dipole Antenna, 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 (using FCC DA 02-2138, August 30, 2002)

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 Elliott Laboratories test procedures:

ANSI C63.4:2003

FCC UNII test procedure 2002-08 DA-02-2138, August 2002

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

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 Corporation Intel® Centrino® Advanced-N 6205 with WNC 81XCAA15.G03 Dipole Antenna 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 Corporation Intel® Centrino® Advanced-N 6205 with WNC 81XCAA15.G03 Dipole Antenna and therefore apply only to the tested sample. The sample was selected and prepared by Steve Hackett of Intel Corporation.

#### **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	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
15.407(a) (2)		26dB Bandwidth			
15.407 (a) (1)	A9.2(1)	Output Power			
15.407 (a) (1)	-	Power Spectral Density			
-	A9.5 (2)				

**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	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
15.407(a) (2)	A9.2(2)	Output Power			
15.407(a) (2)	-	Power Spectral Density			
-	A9.2(2) / A9.5 (2)	Power Spectral Density			

**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	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
15.407(a) (2)	A9.2(2)	Output Power			
15.407(a) (2)		Power Spectral Density			
	A9.2(2) / A9.5 (2)	Power Spectral Density			
KDB 443999	A9	Non-operation in 5600 – 5650 MHz sub band			

**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	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
15.407(b)(5) / 15.209	A9.3	Spurious Emissions below 1GHz			
15.407(b)(5) / 15.209	A9.3	Spurious Emissions above 1GHz	52.1dB $\mu$ V/m @ 5150.0MHz	Refer to page 19	Complies (-1.9dB)
15.407(a)(6)	-	Peak Excursion Ratio	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit			
15.407 (g)	A9.5 (5)	Frequency Stability			
15.407 (h1)	A9.4	Transmit Power Control	TPC is not required as the device operates at below 500mW eirp		Complies
15.407 (h2)	A9.4	Dynamic frequency Selection (client-only device without radar detection)	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
<p>Note 1: The previously reported worst case value for radiated spurious emissions was 52.9dB<math>\mu</math>V/m @ 5150MHz (1.1dB below the limit). Spurious emissions below 1Ghz were found to be independent of the transmitter/receiver during original device testing and related to the digital device emissions from the fixture and EUT.</p>					

**GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS**

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
15.207	RSS GEN Table 2	AC Conducted Emissions			
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	50.4dB $\mu$ V/m @ 10600.0MHz	Refer to page 19	Complies (- 3.6dB)
15.247 (b)(5) / 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	Not evaluated. The proposed changes (addition of a new antenna type of lower gain than the originally certified antenna) do not affect the values previously reported.		
<p>Note 1: The previously reported worst case value for radiated spurious emissions was 34.9dB<math>\mu</math>V/m @ 199.83MHz (8.6dB below the limit).</p>					

**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)	dB $\mu$ V/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dB $\mu$ V	0.15 to 30 MHz	± 2.4 dB



**EQUIPMENT UNDER TEST (EUT) DETAILS****GENERAL**

The Intel Corporation Intel® Centrino® Advanced-N 6205 with WNC 81XCAA15.G03 Dipole Antenna is a PCIe Half Mini Card form factor IEEE 802.11a/b/g/n wireless network adapter that operates in both the 2.4 GHz and 5.0 GHz spectra. The card supports 2x2 MIMO for 802.11n modes in both 20MHz and 40MHz channels. In legacy modes 1x2 operation is supported.

For radio testing purposes the card was installed in a test fixture that exposed all sides of the card.

The card has been certified with limited modular approval. The limited modular version is intended to allow the OEM to permit user installation when the host system is provided with a bios locking feature that prevents unauthorized installation (FCC ID: PD962205ANHU; IC:1000M-62205ANHU) The U.S./FCC approved version is approved under Intel model 62205ANHMW and for Canada/IC as model 62205ANHU.

The scope of testing is to evaluate a new antenna type for use with the module (dipole type). The gain of this new antenna compared to the originally approved PIFA-type antennas are detailed below.

The sample was received on June 13, 2011 and tested on June 16, 17 and 20, 2011. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID <i>IC UPN</i>
Intel Corporation	C/M 62205ANHU	PCIe Half Mini Card 802.11a/b/g/n wireless network adapter	MAC address 001500634F48	PD962205ANHU <i>1000M- 62205ANHU</i>

**ANTENNA SYSTEM**

The antenna originally approved with the system was a two-antenna PIFA antenna system – Shanghai Universe Communication Electron Co., Ltd. Testing under the scope of this report is to evaluate a new dipole antenna, part number WNC P/N 81XCAA15.G03. In all bands the new antenna has lower gain than the PIFA antenna.

Band	Antenna Gain	
	Original PIFA	New Dipole
200-2483.5 MHz	3.2 dBi	Tx/Rx1: -0.45 dBi Tx/Rx2: 1.26 dBi
5150-5350 MHz	3.7 dBi	Tx/Rx1: -0.36 dBi Tx/Rx2: 1.58 dBi
5470-5725 MHz	4.8 dBi	Tx/Rx1: -0.07 dBi Tx/Rx2: 1.01 dBi
5725-5850 MHz	5 dBi	Tx/Rx1: 0.83 dBi Tx/Rx2: 1.09 dBi

**ENCLOSURE**

The EUT does not have an enclosure as it is designed to be installed within the enclosure of a host computer or system.

**MODIFICATIONS**

No modifications were made to the EUT during the time the product was at Elliott.

**SUPPORT EQUIPMENT**

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Intel	Shiloh	MINI PCI test fixture	2009-1543	-
Dell	Prototype	Laptop PC	-	-
Ailent	-	DC bench supply	-	-

**EUT INTERFACE PORTS**

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

Port	Connected To	Description	Cable(s)	
			Shielded or Unshielded	Length(m)
test fixture DC In	DC Supply out	2-wire	Unshielded	2
test fixture PCIe	Laptop PCIe	Ribbon	Unshielded	1

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**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 and dc power supply. The laptop computer was used to configure the EUT to continuously transmitter or continuously receive on the channel specified in the test data.

For transmit mode measurements the system was configured to operate in one or more of the available operating modes – 802.11b, 802.11g, 802.11a, 802.11n (20 MHz channel bandwidth) and 802.11n (40MHz channel bandwidth). The output power for all measurements was set to be within 0.5dB of the output power measured during the original testing.

The data rates used for all tests were the lowest data rates for each mode – 1Mb/s for 802.11b, 6Mb/s for 802.11a and 802.11g, 6.5MB/s for 802.11n (20MHz), and 13 Mb/s for 802.11n (40MHz). The device operates at its maximum output power at the lowest data rate (this was confirmed through separate measurements during the original device certification tests).

As the scope of testing was to evaluate a new antenna, and because output power ratings for this new antenna were to be the same as those originally approved with the device, testing was limited to an evaluation of the radiated spurious emissions. The actual modes evaluated were based on the worst case mode or modes observed during the original tests.

Compliance with radiated spurious emissions requirements in the restricted bands adjacent to the allocated bands was evaluated in the worst case 20-MHz (which was 802.11n 20MHz for all bands) and also in the 802.11n 40-MHz mode.

Compliance with radiated spurious emissions requirements away from the allocated band edges was performed in the worst case OFDM mode. In the UNII bands the worst case OFDM modes were 802.11n (20MHz) MIMO mode in the 5150-5250 MHz and 5250-5350 MHz bands and 802.11a mode in the upper 5470-5725 MHz band. Legacy SISO modes were evaluated on each chain on the center channel and then on the worst-case chain on the top and bottom channels. MIMO modes were evaluated with both chains active and operating at the maximum power per chain.

The PC was using the Intel test utility DRTU Version 1.1.3 and the device driver was version 13.0.0.238.

**TEST SITE****GENERAL INFORMATION**

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

Site	Registration Numbers		Location
	FCC	Canada	
Chamber 4	211948	2845B-4	41039 Boyce Road Fremont, CA 94538-2435
Chamber 5	211948	2845B-5	

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

**RADIATED EMISSIONS CONSIDERATIONS**

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

**MEASUREMENT INSTRUMENTATION****RECEIVER SYSTEM**

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

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

### *INSTRUMENT CONTROL COMPUTER*

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

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

### *FILTERS/ATTENUATORS*

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

### *ANTENNAS*

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

### *ANTENNA MAST AND EQUIPMENT TURNTABLE*

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

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

### *INSTRUMENT CALIBRATION*

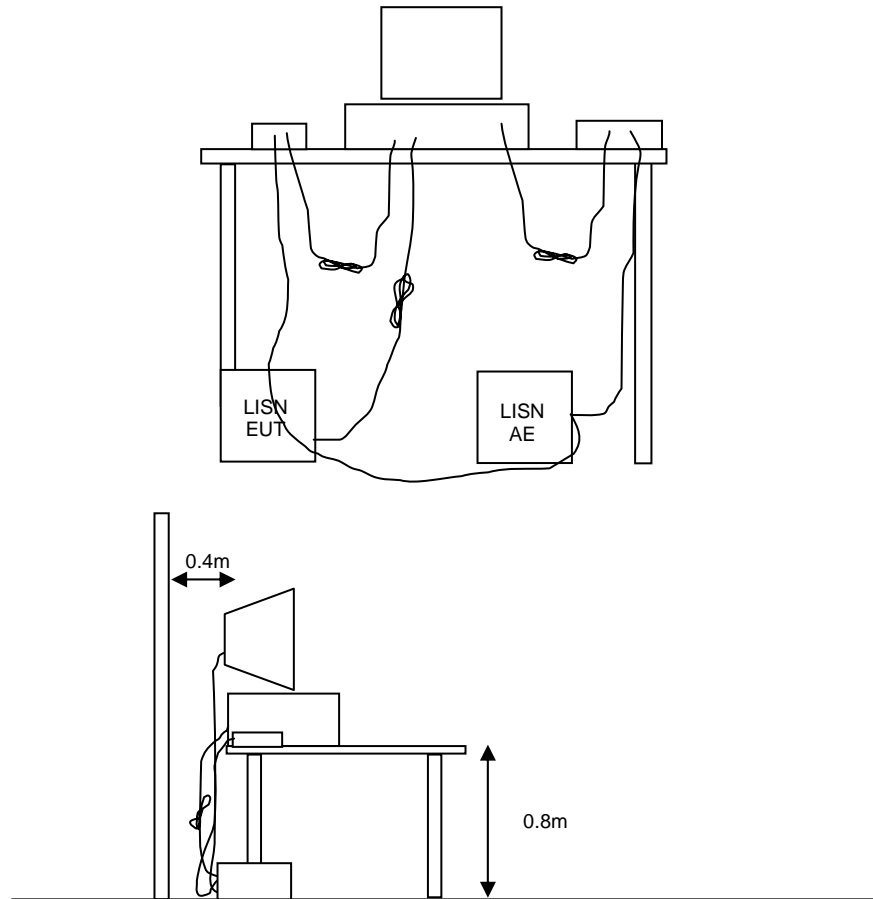
All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration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

## TEST PROCEDURES

### EUT AND CABLE PLACEMENT

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

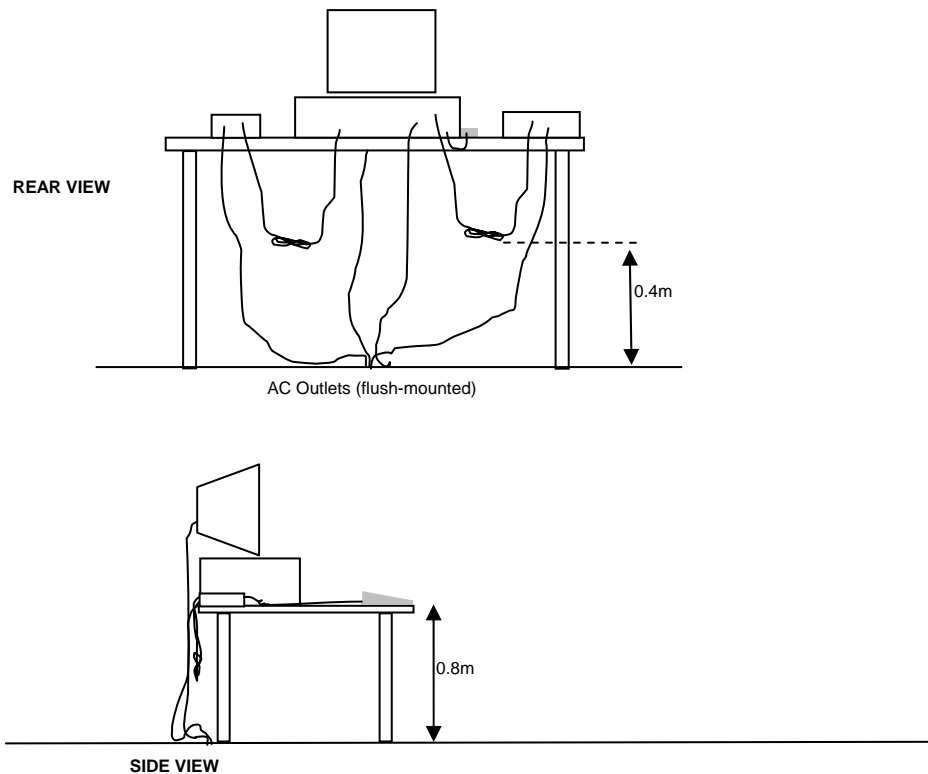
### RADIATED EMISSIONS



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.

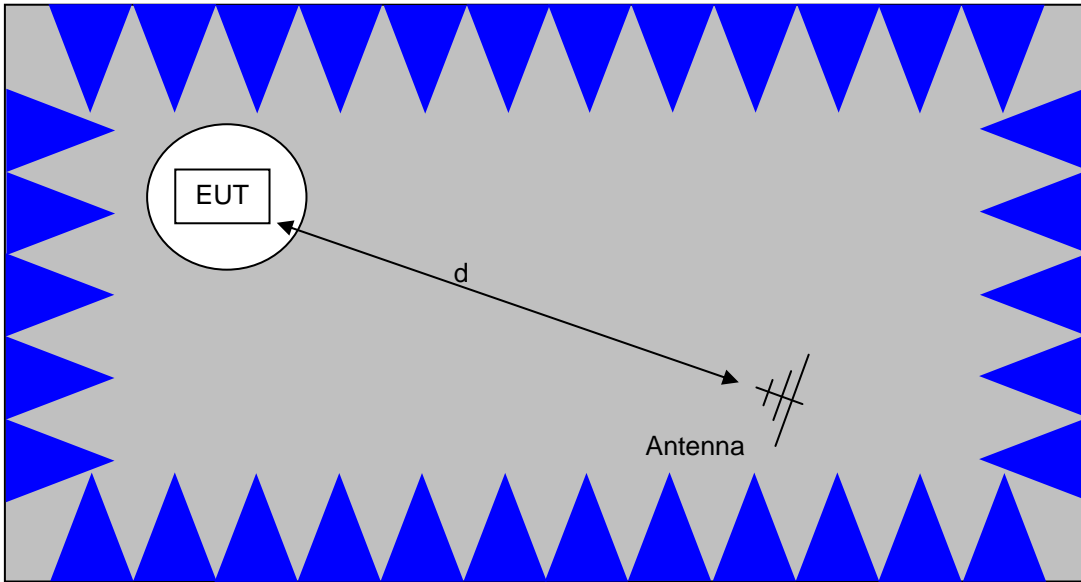
Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna 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 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



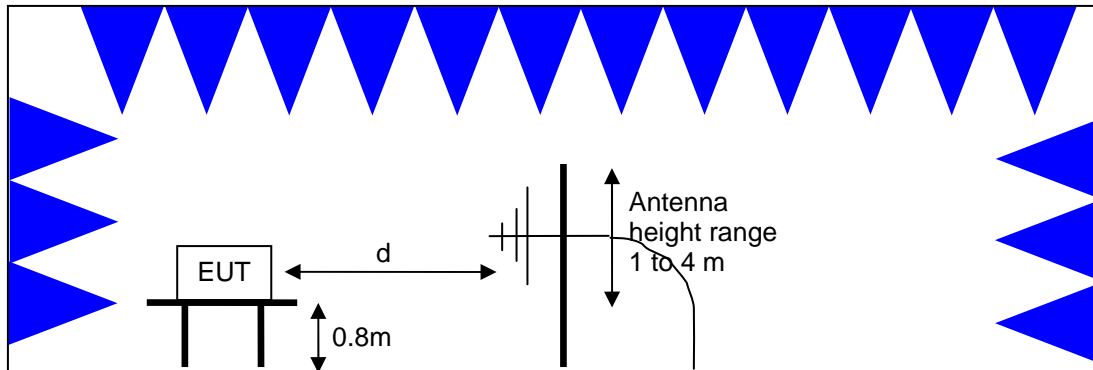
Typical Test Configuration for Radiated Field Strength Measurements





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

**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.

**GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS**

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>1</sup> (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	$2400/F_{\text{KHz}} @ 300\text{m}$	$67.6-20*\log_{10}(F_{\text{KHz}}) @ 300\text{m}$
0.490-1.705	$24000/F_{\text{KHz}} @ 30\text{m}$	$87.6-20*\log_{10}(F_{\text{KHz}}) @ 30\text{m}$
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

<sup>1</sup> The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

**RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS**

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

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

**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. This is an average limit so the peak value of the emission may not exceed –7dBm/MHz (88.3dBuV/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 - 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:

$$F_d = 20 * \text{LOG}_{10} (D_m/D_s)$$

where:

$$F_d = \text{Distance Factor in dB}$$

$$D_m = \text{Measurement Distance in meters}$$

$$D_s = \text{Specification Distance in meters}$$

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:

$$F_d = 40 * \text{LOG}_{10} (D_m/D_s)$$

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:

$$R_r = \text{Receiver Reading in dBuV/m}$$

$$F_d = \text{Distance Factor in dB}$$

$$R_c = \text{Corrected Reading in dBuV/m}$$

$$L_s = \text{Specification Limit in dBuV/m}$$

$$M = \text{Margin in dB Relative to Spec}$$

#### *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****Radiated Emissions, 1000 - 40,000 MHz, 16& 17-Jun-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	5/18/2012
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/11/2011
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	6/14/2011
Hewlett Packard	Head (Inc W1-W4, 1742 , 1743) Blue	84125C	1620	5/9/2012
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	8/10/2011
A.H. Systems	Blue System Horn, 18-40GHz	SAS-574, p/n: 2581	2159	3/23/2012

**Radiated Emissions, 1000 - 18,000 MHz, 17-Jun-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/6/2012
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	7/12/2011
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	9/3/2011
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	9/3/2011

**Radiated Emissions, 1000 - 6,500 MHz, 20-21-Jun-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/6/2012
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	7/12/2011

## *Appendix B Test Data*

T83587 33 Pages



## EMC Test Data

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
Contact:	Steven Hackett	Account Manager:	Christine Krebil
Emissions Standard(s):	FCC 15.247 / FCC 15 E / RSS 210	Class:	B
Immunity Standard(s):	-	Environment:	Radio

# EMC Test Data

For The

## Intel Corporation

Model

**62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole**

Date of Last Test: 6/20/2011

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

## RSS 210 and FCC 15 E (DTS) Radiated Spurious Emissions

### Test Specific Details

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

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Summary of Results

DRTU Version: 1.1.3

Driver Version: 13.0.0238

MAC Address: 001500634F48

Run #1 - 2 - Band edge measurements in restricted bands based on worst case operating configurations for 40-MHz channels from the original certification tests

Run #	Mode	Channel	Target Power	Measured Power	Test Performed	Limit	Result / Margin
Run #1	802.11n40 Chain A+B	#38 5190MHz	A: 10dBm B: 10dBm	A: 10.1dBm B: 10.2dBm	Restricted Band Edge at 5150 MHz	15.209	<b>52.1dBµV/m @ 5150.0MHz (-1.9dB)</b>
		#62 5310MHz	A: 10dBm B: 10dBm	A: 10.0dBm B: 10.1dBm	Restricted Band Edge at 5350 MHz	15.209	49.4dBµV/m @ 5350.0MHz (-4.6dB)
		#102 5510MHz	A: 10dBm B: 10dBm	A: 10.3dBm B: 10.2dBm	Restricted Band Edge at 5460 MHz	15.209	46.8dBµV/m @ 5459.7MHz (-7.2dB)
					Band Edge at 5470 MHz	15 E	66.3dBµV/m @ 5469.0MHz (-2.0dB)
Run # 2	802.11n40 Chain B	#38 5190MHz	11dBm	11.2dBm	Restricted Band Edge at 5150 MHz	15.209	49.5dBµV/m @ 5150.0MHz (-4.5dB)

### Ambient Conditions:

Temperature: 15-25 °C  
Rel. Humidity: 30-80 %

### 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.





# EMC Test Data

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

## Run #1, Band Edge Field Strength - 802.11n40, Chain A+B

### Run #1a, EUT on Channel #38 5190MHz - 802.11n40, Chain A+B

Date of Test: 6/20/2011

Test Location: FT Chamber #4

Test Engineer: Rafael Varelas

Config Change: None

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	10.0	10.0		13.0	10.1	10.2		13.2	18.5/19.0

### Fundamental Signal Field Strength

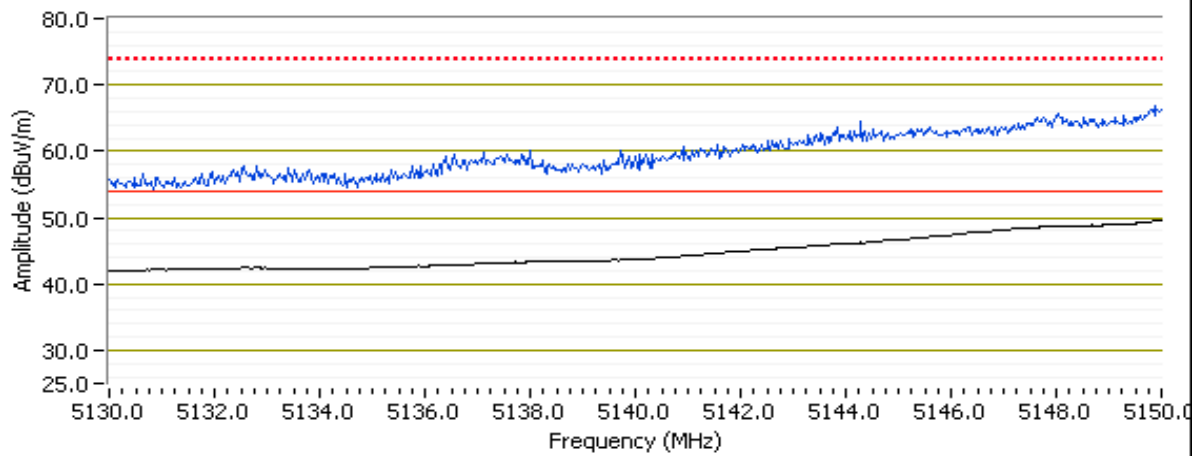
Frequency MHz	Level dBµV/m	Pol V/H	15.209 / 15 E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5187.130	92.5	V	-	-	AVG	258	1.0	RB 1 MHz;VB 10 Hz;Pk
5186.600	102.3	V	-	-	PK	258	1.0	RB 1 MHz;VB 3 MHz;Pk
5192.730	85.5	H	-	-	AVG	283	1.0	RB 1 MHz;VB 10 Hz;Pk
5185.530	95.8	H	-	-	PK	283	1.0	RB 1 MHz;VB 3 MHz;Pk

### Field Strength at 5150 MHz Band Edge

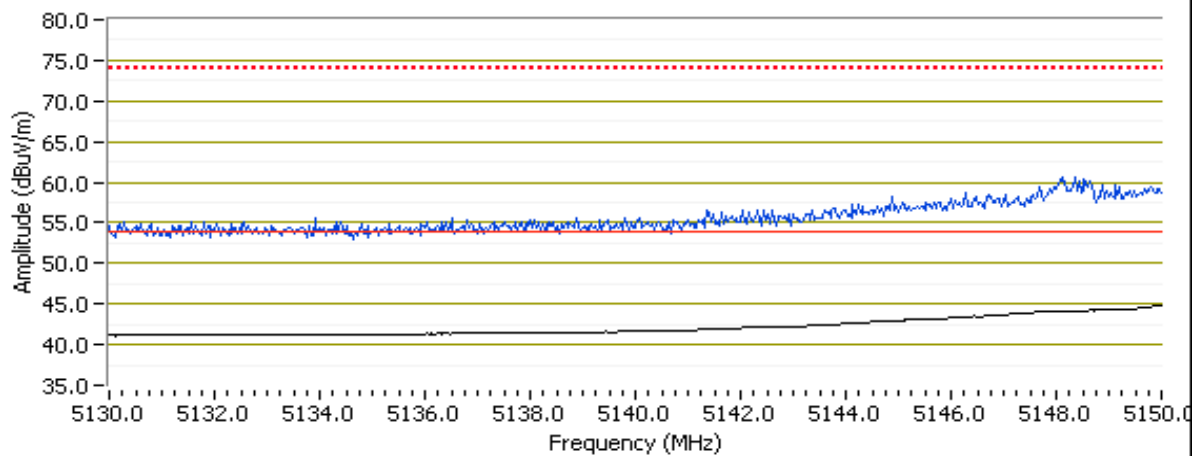
Frequency MHz	Level dBµV/m	Pol V/H	15.209 / 15 E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5149.980	52.1	V	54.0	-1.9	AVG	244	1.2	RB 1 MHz;VB 10 Hz;Pk
5149.700	66.1	V	74.0	-7.9	PK	244	1.2	RB 1 MHz;VB 3 MHz;Pk
5149.920	47.0	H	54.0	-7.0	AVG	330	1.0	RB 1 MHz;VB 10 Hz;Pk
5148.770	60.7	H	74.0	-13.3	PK	330	1.0	RB 1 MHz;VB 3 MHz;Pk

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

RB 1 MHz; VB 10 Hz Avg (Black Trace); 1MHz=RB=VB (Blue Trace) Vertical



RB 1 MHz; VB 10 Hz Avg (Black Trace); 1MHz=RB=VB (Blue Trace) Horizontal



Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run #1b, EUT on Channel #62 5310MHz - 802.11n40, Chain A+B**

Date of Test: 6/20/2011

Test Location: FT Chamber #4

Test Engineer: Rafael Varelas

Config Change: none

Chain	Target (dBm)				Power Settings Measured (dBm)				Software Setting
	A	B	C	Total	A	B	C	Total	
	10.0	10.0		13.0	10.0	10.1		13.1	

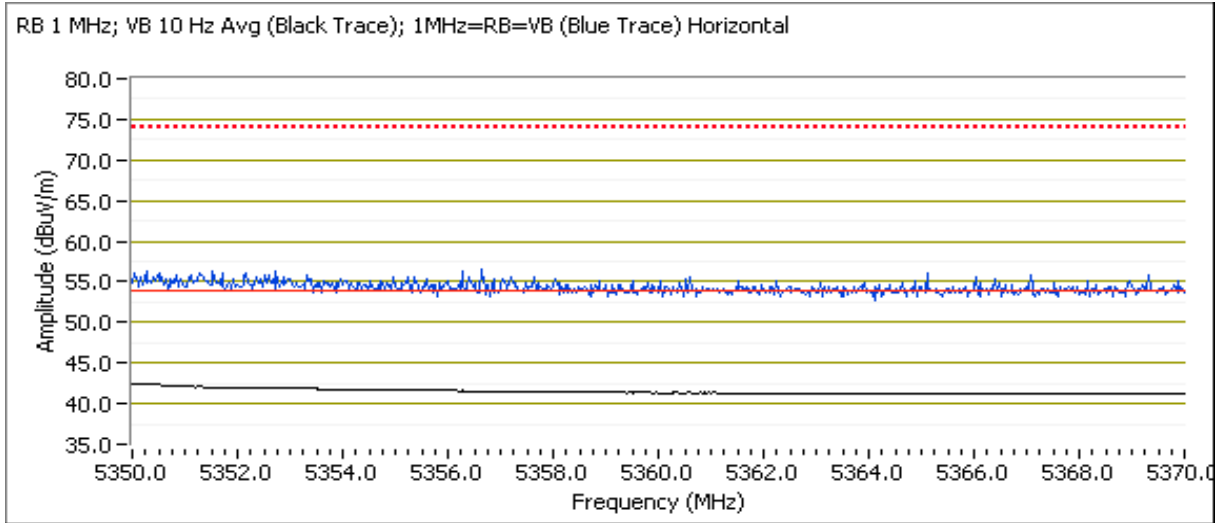
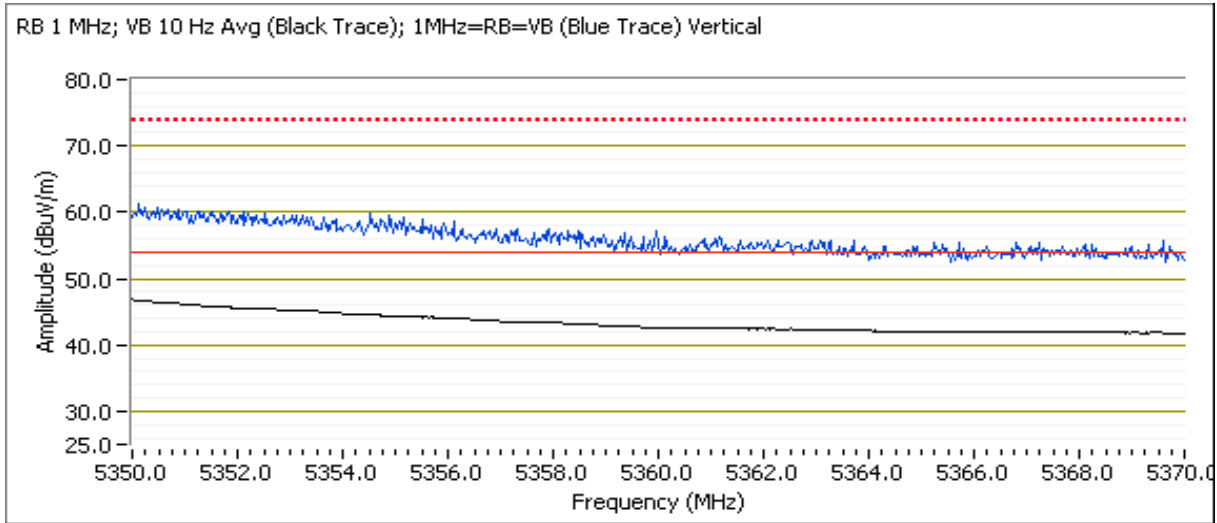
**Fundamental Signal Field Strength**

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5307.270	91.9	V	-	-	AVG	225	1.1	RB 1 MHz;VB 10 Hz;Pk
5302.400	101.7	V	-	-	PK	225	1.1	RB 1 MHz;VB 3 MHz;Pk
5307.270	83.9	H	-	-	AVG	330	1.0	RB 1 MHz;VB 10 Hz;Pk
5302.070	94.9	H	-	-	PK	330	1.0	RB 1 MHz;VB 3 MHz;Pk

**5350 MHz Band Edge Signal Radiated Field Strength**

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	49.4	V	54.0	-4.6	AVG	213	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.140	62.3	V	74.0	-11.7	PK	213	1.0	RB 1 MHz;VB 3 MHz;Pk
5350.130	44.3	H	54.0	-9.7	AVG	280	1.3	RB 1 MHz;VB 10 Hz;Pk
5350.680	55.8	H	74.0	-18.2	PK	280	1.3	RB 1 MHz;VB 3 MHz;Pk

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A





# EMC Test Data

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run #1c, EUT on Channel #102 5510MHz - 802.11n40, Chain A+B**  
 Date of Test: 6/20/2011      Test Location: FT Chamber #4  
 Test Engineer: Rafael Varelas      Config Change: none

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	10.0	10.0		13.0	10.3	10.2		13.3	21.5/22.0

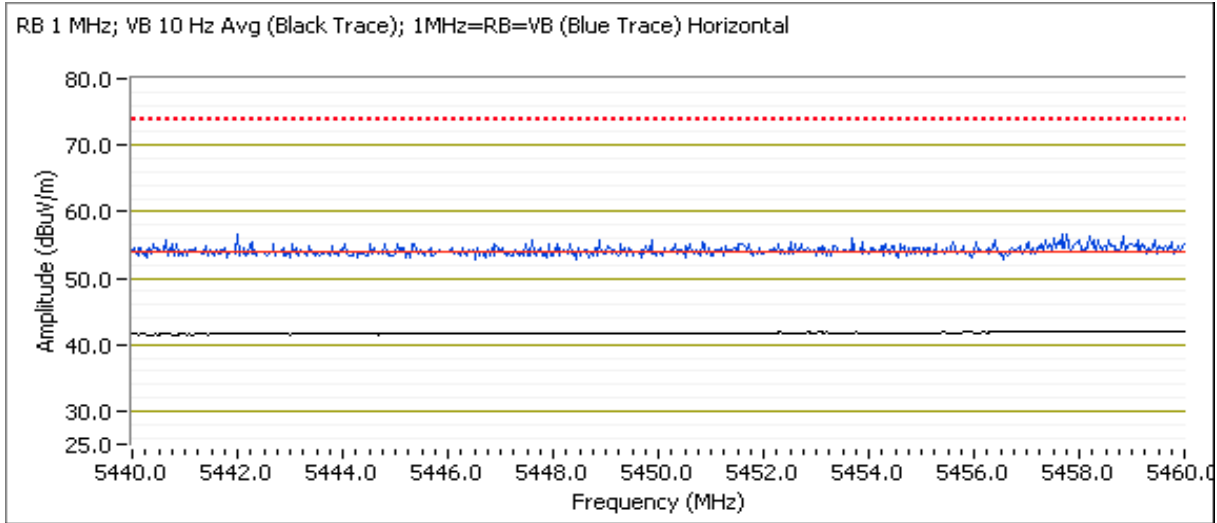
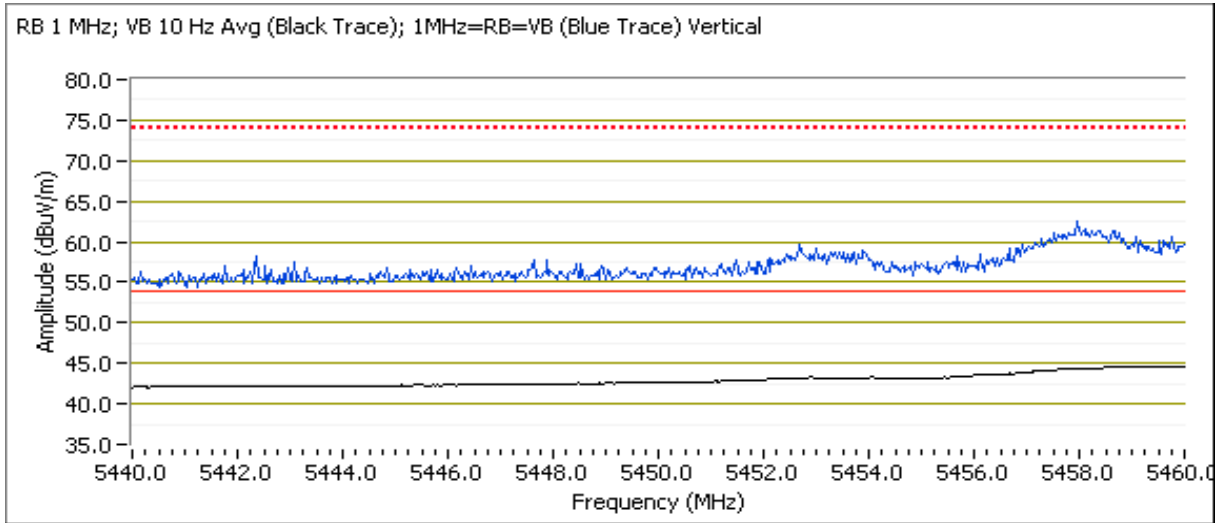
### Fundamental Signal Field Strength

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5512.800	94.4	V	-	-	AVG	218	1.1	RB 1 MHz;VB 10 Hz;Pk
5522.600	103.7	V	-	-	PK	218	1.1	RB 1 MHz;VB 3 MHz;Pk
5507.330	85.7	H	-	-	AVG	323	1.0	RB 1 MHz;VB 10 Hz;Pk
5505.070	96.9	H	-	-	PK	323	1.0	RB 1 MHz;VB 3 MHz;Pk

### 5460 MHz Restricted Band Edge Signal Radiated Field Strength - Direct measurement of field strength

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.730	46.8	V	54.0	-7.2	AVG	214	1.2	RB 1 MHz;VB 10 Hz;Pk
5458.140	61.6	V	74.0	-12.4	PK	214	1.2	RB 1 MHz;VB 3 MHz;Pk
5459.870	44.1	H	54.0	-9.9	AVG	331	1.0	RB 1 MHz;VB 10 Hz;Pk
5457.870	55.7	H	74.0	-18.3	PK	331	1.0	RB 1 MHz;VB 3 MHz;Pk

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

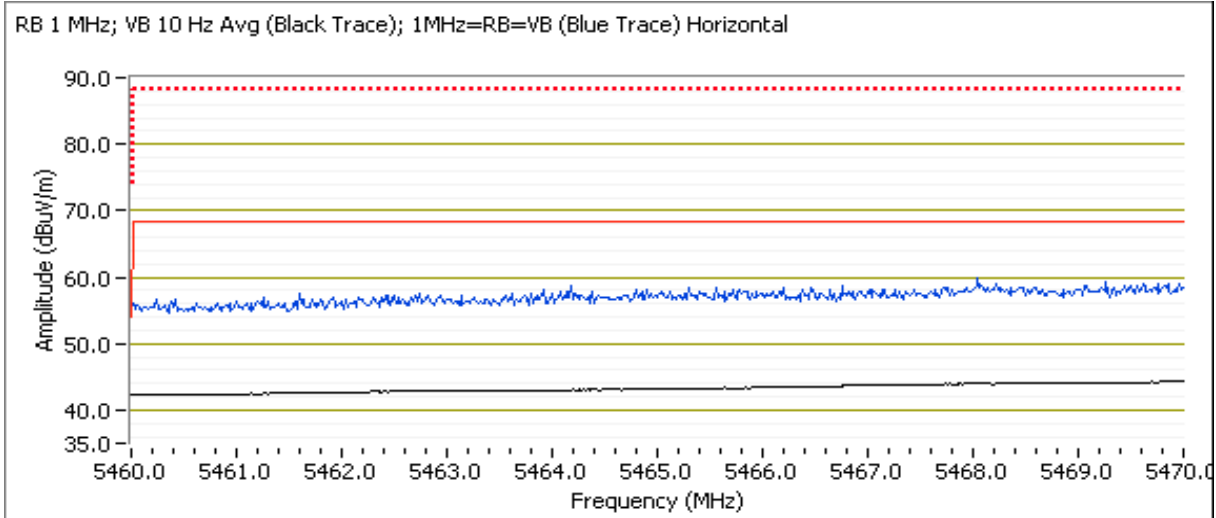
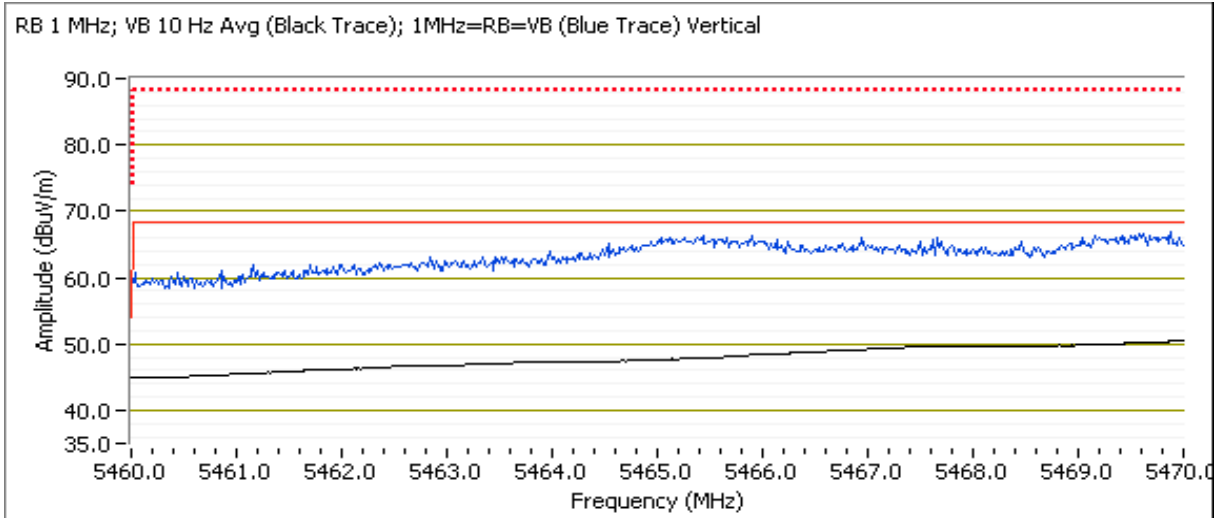


Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
Contact:	Steven Hackett	Account Manager:	Christine Krebil
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

### 5470 MHz Restricted Band Edge Signal Radiated Field Strength - Direct Measurement

Frequency	Level	Pol	15 E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5468.970	66.3	V	68.3	-2.0	PK	214	1.2	RB 1 MHz;VB 3 MHz;Pk
5469.050	59.0	H	68.3	-9.3	PK	331	1.0	RB 1 MHz;VB 3 MHz;Pk
5469.870	53.2	V	68.3	-15.1	AVG	214	1.2	RB 1 MHz;VB 10 Hz;Pk

Peak readings. Limit of -27dBm/MHz eirp is for the same measurement method used for in-band power density (power averaging).



Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 2, Band Edge Field Strength - 802.11n40, Chain B**

**Run # 2a, EUT on Channel #38 5190MHz - 802.11n40, Chain B**

Date of Test: 6/20/2011      Test Location: FT Chamber #4  
 Test Engineer: Rafael Varelas      Config Change: none

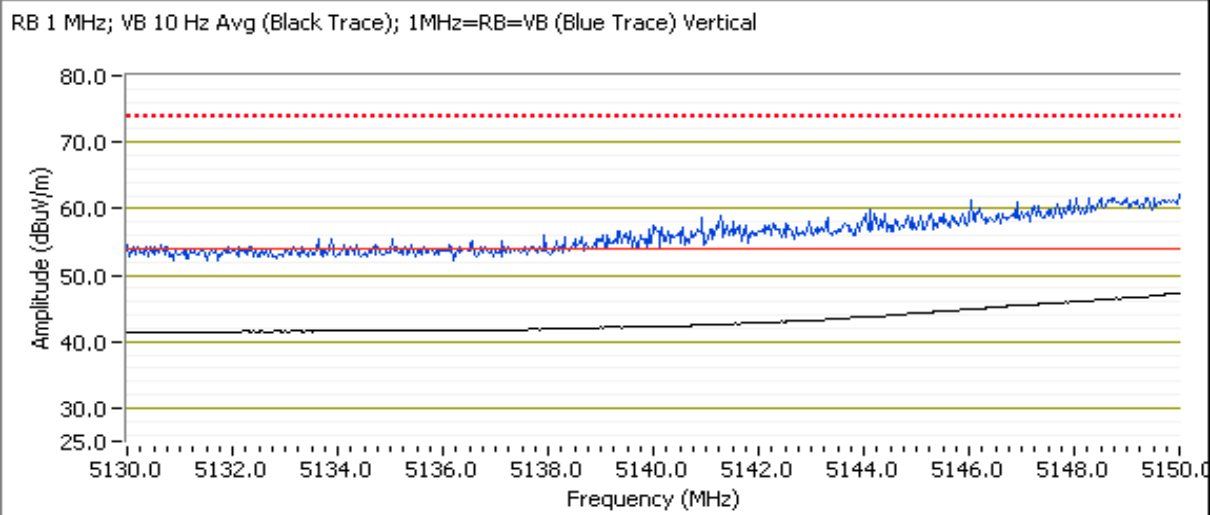
	Target (dBm)	Power Settings	
		Measured (dBm)	Software Setting
Chain B	11.0	11.2	16.0

**Fundamental Signal Field Strength**

Frequency MHz	Level dBµV/m	Pol V/H	15.209 / 15 E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5193.130	91.7	V	-	-	AVG	329	1.1	RB 1 MHz;VB 10 Hz;Pk
5192.670	100.8	V	-	-	PK	329	1.1	RB 1 MHz;VB 3 MHz;Pk
5187.270	83.5	H	-	-	AVG	334	1.0	RB 1 MHz;VB 10 Hz;Pk
5192.730	92.6	H	-	-	PK	334	1.0	RB 1 MHz;VB 3 MHz;Pk

**5150 MHz Restricted Band Edge Signal Radiated Field Strength - Direct measurement of field strength**

Frequency MHz	Level dBµV/m	Pol V/H	15.209 / 15 E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5149.970	49.5	V	54.0	-4.5	AVG	91	1.0	RB 1 MHz;VB 10 Hz;Pk
5147.830	62.5	V	74.0	-11.5	PK	91	1.0	RB 1 MHz;VB 3 MHz;Pk
5149.970	43.3	H	54.0	-10.7	AVG	318	1.0	RB 1 MHz;VB 10 Hz;Pk
5147.890	54.5	H	74.0	-19.5	PK	318	1.0	RB 1 MHz;VB 3 MHz;Pk





Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

## RSS 210 and FCC 15 E (DTS) Radiated Spurious Emissions

### Test Specific Details

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

### Summary of Results

MAC Address: 001500634F48 DRTU Tool Version 1.1.3 Driver version 13.0.0.238

Run #	Mode	Channel	Target Power	Measured Power	Test Performed	Limit	Result / Margin
<b>Run #3</b> - Band edge measurements in restricted bands based on worst case operating configurations for both 20- and 40-MHz channels from the original certification tests (n40 evaluated on separate data sheet, runs 1 and 2).							
Run # 3	802.11n20 Chain A+B	#36 5180MHz	A: 12.5 B: 12.5	A: 12.7 B: 12.6	Restricted Band Edge at 5150 MHz	15.209	45.8dBµV/m @ 5149.7MHz (-8.2dB)
		#64 5320MHz	A: 13.0 B: 13.0	A: 13.1 B: 13.2	Restricted Band Edge at 5350 MHz	15.209	44.5dBµV/m @ 5350.0MHz (-9.5dB)
		#100 5500MHz	A: 13.5 B: 13.5	A: 13.6 B: 13.8	Restricted Band Edge at 5460 MHz	15.209	45.0dBµV/m @ 5459.9MHz (-9.0dB)
					Band Edge at 5470 MHz	15 E	60.2dBµV/m @ 5469.9MHz (-8.1dB)
<b>Run #4, 5</b> - Spurious emissions away from the band edges based on worst case operating configurations from the original certification tests. The 802.11n (20MHz) mode with both chains active was the worst case mode in the 5150-5250 MHz and 5250-5350 MHz bands. 802.11a mode was worst case in the upper 5470-5725 MHz band. For 802.11a mode Chain A and Chain B were tested on the center channel and worst-case chain evaluated on low and high channels.							
Run # 4	802.11n20 Chain A+B	#36 5180MHz	A: 16.0 B: 16.0	A: 16.0 B: 16.1	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	43.4dBµV/m @ 5413.7MHz (-10.6dB)
		#40 5200MHz	A: 16.0 B: 16.0	A: 16.1 B: 16.1			43.5dBµV/m @ 5413.7MHz (-10.5dB)
		#48 5240MHz	A: 16.0 B: 16.0	A: 16.1 B: 16.2			42.4dBµV/m @ 5038.8MHz (-11.6dB)
		#52 5260MHz	A: 16.0 B: 16.0	A: 16.0 B: 16.1			42.3dBµV/m @ 5415.6MHz (-11.7dB)
		#60 5300MHz	A: 16.5 B: 16.5	A: 16.6 B: 16.8			<b>50.4dBµV/m @ 10600.0MHz (-3.6dB)</b>
		#64 5320MHz	A: 16.0 B: 16.0	A: 16.2 B: 16.3			49.4dBµV/m @ 10639.2MHz (-4.6dB)

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
Contact:	Steven Hackett	Account Manager:	Christine Krebil
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

Run #	Mode	Channel	Target Power	Measured Power	Test Performed	Limit	Result / Margin
Run # 5	802.11a Chain A	#100 5500MHz	16.5	16.7	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.0dBµV/m @ 1597.3MHz (-10.0dB)
	802.11a Chain B	#100 5500MHz	16.5	16.7			44.7dBµV/m @ 11000.1MHz (-9.3dB)
	802.11a Chain B	#120 5580MHz	16.5	16.6			44.5dBµV/m @ 11160.1MHz (-9.5dB)
		#140 5700MHz	16.5	16.6			43.9dBµV/m @ 1594.7MHz (-10.1dB)
<b>Run #6 - Spurious emissions for receive mode, cenetr channel in each band.</b>							
Run # 6	Receiver Chain A+B	#40 5200MHz	-	-	Radiated Emissions, 1 - 18 GHz	RSS GEN	44.8dBµV/m @ 6000.6MHz (-9.2dB)
		#60 5300MHz	-	-			44.7dBµV/m @ 9001.0MHz (-9.3dB)
		#116 5580MHz	-	-			<b>46.3dBµV/m @ 6000.7MHz (-7.7dB)</b>

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.  
For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**                      Temperature:      15-25 °C  
   Rel. Humidity:    30-80 %

### 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.



# EMC Test Data

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

### Run # 3, Band Edge Field Strength - 802.11n20, Chain A+B

### Run # 3a, EUT on Channel #36 5180MHz - 802.11n20, Chain A+B

Date of Test: 6/16/2011

Test Location: FT Chamber#5

Test Engineer: Rafael Varelas

Config Change: none

Chain	Target (dBm)				Power Settings Measured (dBm)				Software Setting
	A	B	C	Total	A	B	C	Total	
	12.5	12.5		15.5	12.7	12.6		15.7	

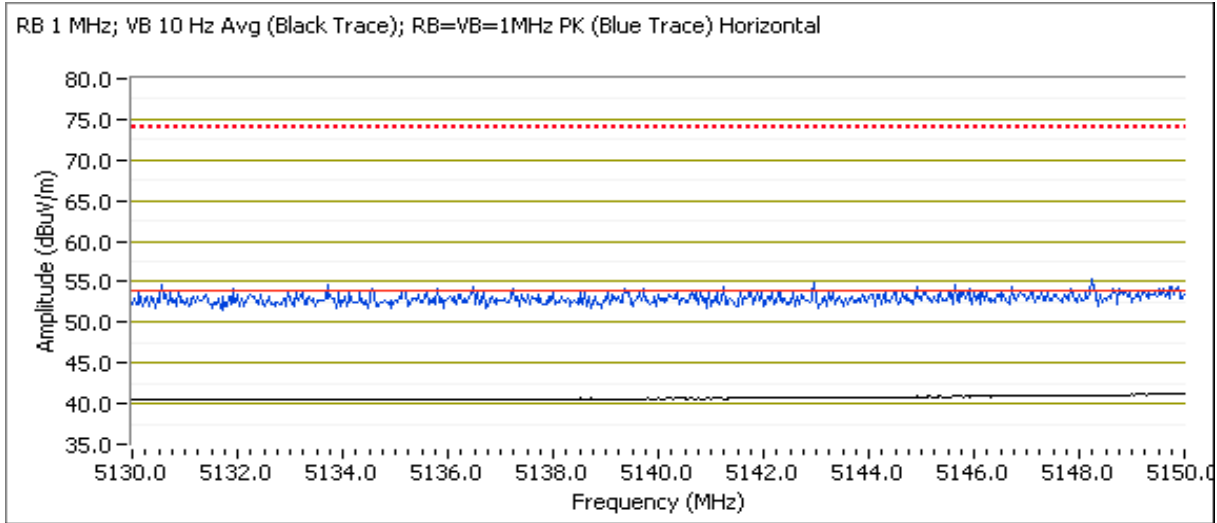
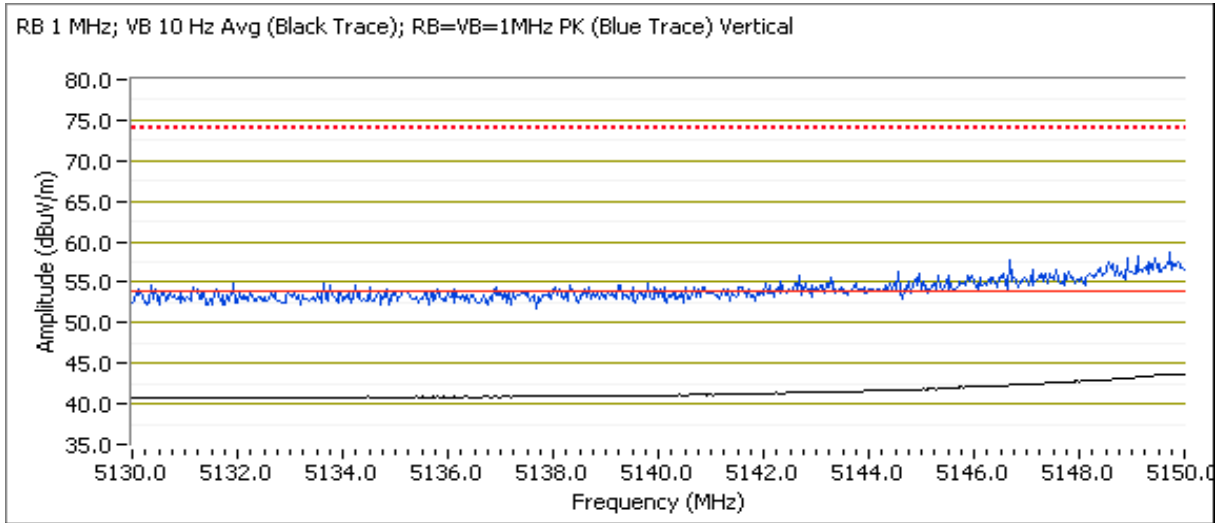
### Fundamental Signal Field Strength

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5173.570	95.7	V	-	-	AVG	240	1.0	RB 1 MHz;VB 10 Hz;Pk
5174.430	107.0	V	-	-	PK	240	1.0	RB 1 MHz;VB 3 MHz;Pk
5185.930	85.7	H	-	-	AVG	328	1.0	RB 1 MHz;VB 10 Hz;Pk
5177.130	95.8	H	-	-	PK	328	1.0	RB 1 MHz;VB 3 MHz;Pk

### Field Strength at 5150 MHz Band Edge

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBμV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.690	45.8	V	54.0	-8.2	AVG	258	1.0	RB 1 MHz;VB 10 Hz;Pk
5149.120	58.3	V	74.0	-15.7	PK	258	1.0	RB 1 MHz;VB 3 MHz;Pk
5149.310	43.4	H	54.0	-10.6	AVG	300	1.0	RB 1 MHz;VB 10 Hz;Pk
5149.410	55.9	H	74.0	-18.1	PK	300	1.0	RB 1 MHz;VB 3 MHz;Pk

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A





# EMC Test Data

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 3b, EUT on Channel #64 5320MHz - 802.11n20, Chain A+B**

Date of Test: 6/16/2011

Test Location: FT Chamber#5

Test Engineer: Rafael Varelas

Config Change: none

Chain	Target (dBm)				Power Settings Measured (dBm)				Software Setting
	A	B	C	Total	A	B	C	Total	
	13.0	13.0		16.0	13.1	13.2		16.2	

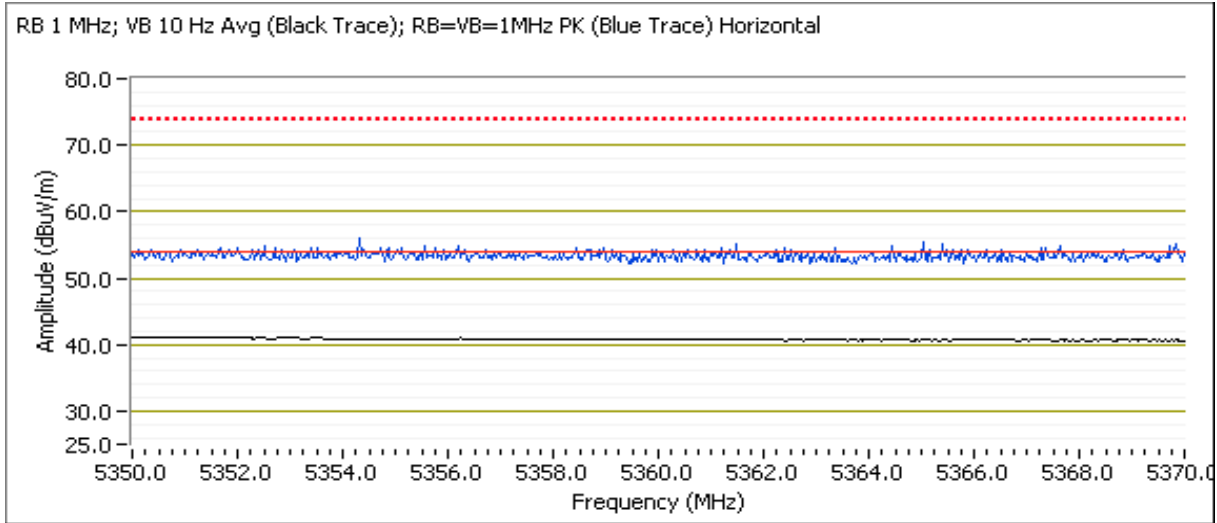
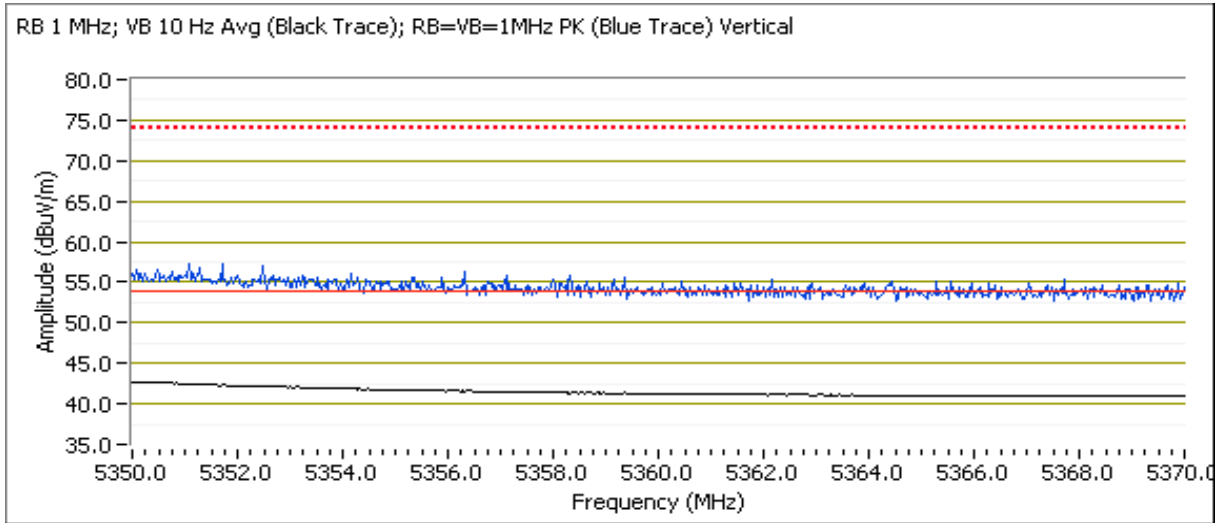
**Fundamental Signal Field Strength**

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5326.030	96.0	V	-	-	AVG	228	1.3	RB 1 MHz;VB 10 Hz;Pk
5325.800	106.1	V	-	-	PK	228	1.3	RB 1 MHz;VB 3 MHz;Pk
5326.230	87.0	H	-	-	AVG	32	1.0	RB 1 MHz;VB 10 Hz;Pk
5315.470	97.1	H	-	-	PK	32	1.0	RB 1 MHz;VB 3 MHz;Pk

**5350 MHz Band Edge Signal Radiated Field Strength**

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	44.5	V	54.0	-9.5	AVG	146	1.0	RB 1 MHz;VB 10 Hz;Pk
5352.270	55.9	V	74.0	-18.1	PK	146	1.0	RB 1 MHz;VB 3 MHz;Pk
5350.010	43.3	H	54.0	-10.7	AVG	96	1.0	RB 1 MHz;VB 10 Hz;Pk
5351.500	54.5	H	74.0	-19.5	PK	96	1.0	RB 1 MHz;VB 3 MHz;Pk

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A





# EMC Test Data

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

## Run # 3c, EUT on Channel #100 5500MHz - 802.11n20, Chain A+B

Chain	Target (dBm)				Power Settings Measured (dBm)				Software Setting
	A	B	C	Total	A	B	C	Total	
	13.5	13.5		16.5	13.6	13.8		16.7	25.5/26.5

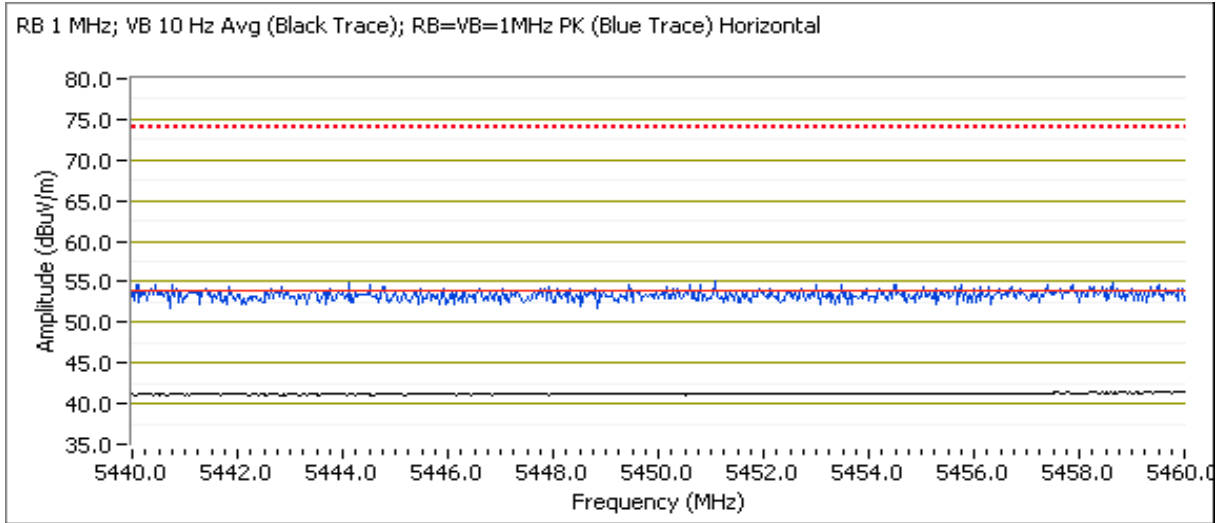
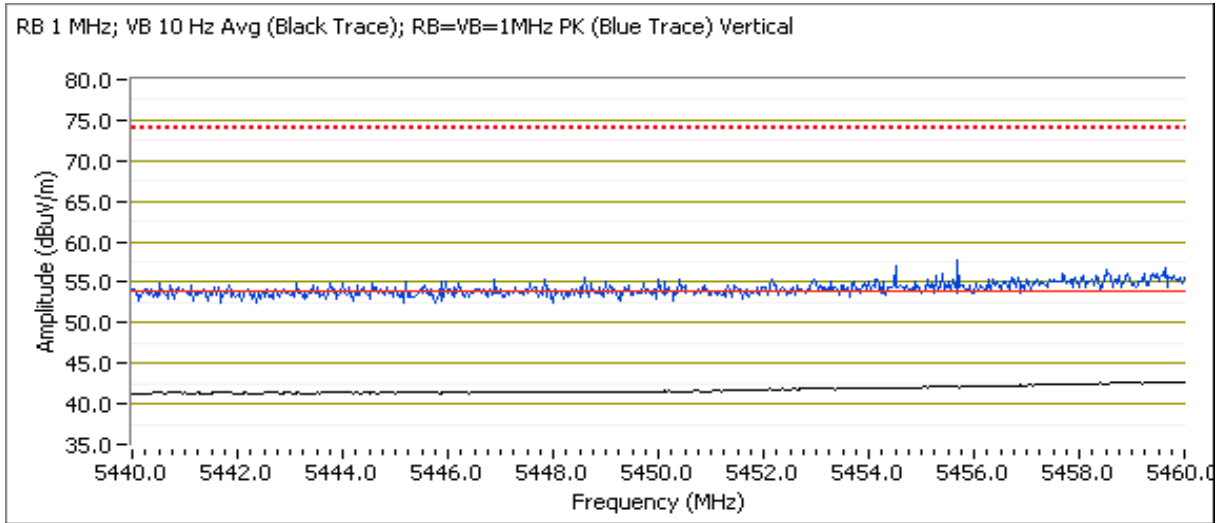
## Fundamental Signal Field Strength

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5498.870	96.7	V	-	-	AVG	210	1.1	RB 1 MHz;VB 10 Hz;Pk
5494.530	106.8	V	-	-	PK	210	1.1	RB 1 MHz;VB 3 MHz;Pk
5504.770	89.4	H	-	-	AVG	350	1.1	RB 1 MHz;VB 10 Hz;Pk
5505.900	99.7	H	-	-	PK	350	1.1	RB 1 MHz;VB 3 MHz;Pk

## 5460 MHz Restricted Band Edge Signal Radiated Field Strength - Direct measurement of field strength

Frequency	Level	Pol	15.209 / 15 E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.870	45.0	V	54.0	-9.0	AVG	219	1.3	RB 1 MHz;VB 10 Hz;Pk
5458.070	56.7	V	74.0	-17.3	PK	219	1.3	RB 1 MHz;VB 3 MHz;Pk
5460.000	43.6	H	54.0	-10.4	AVG	334	1.0	RB 1 MHz;VB 10 Hz;Pk
5458.440	54.8	H	74.0	-19.2	PK	334	1.0	RB 1 MHz;VB 3 MHz;Pk

Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
Contact:	Steven Hackett	Account Manager:	Christine Krebil
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A





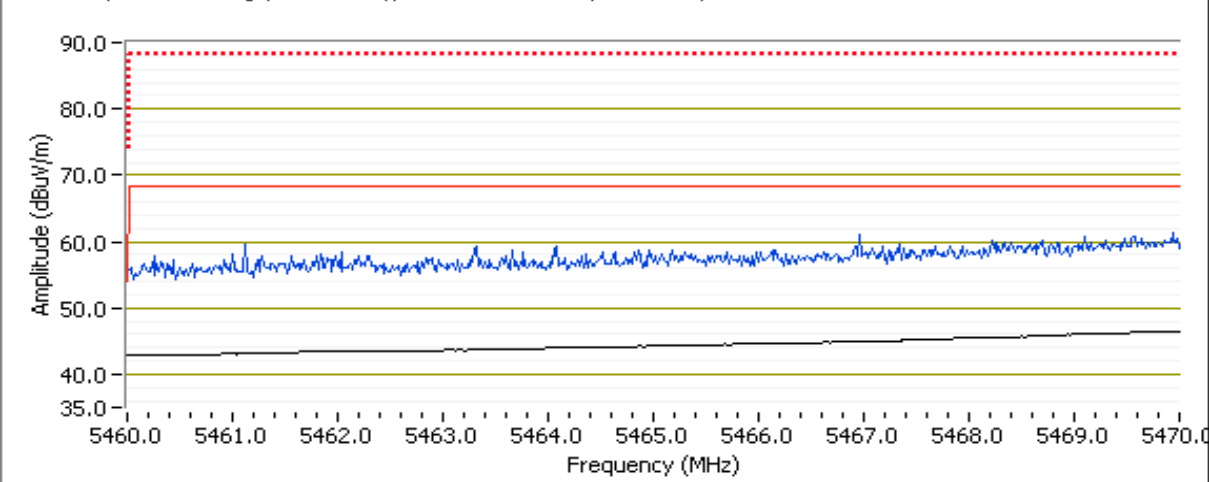
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
Contact:	Steven Hackett	Account Manager:	Christine Krebil
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

### 5470 MHz Restricted Band Edge Signal Radiated Field Strength - Direct Measurement

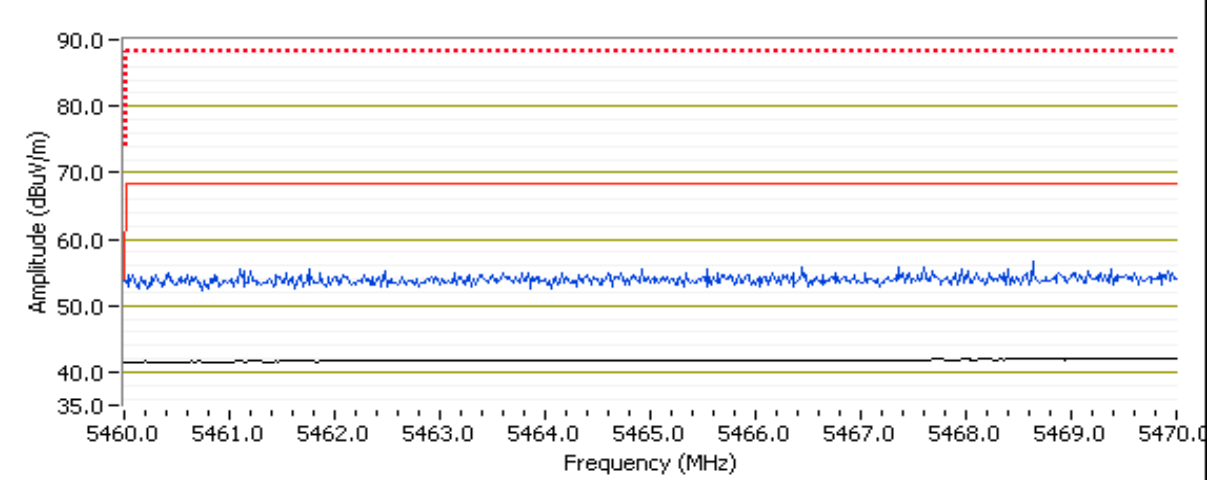
Frequency MHz	Level dB $\mu$ V/m	Pol V/H	15 E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5469.890	60.2	V	68.3	-8.1	PK	219	1.3	RB 1 MHz;VB 3 MHz;Pk
5468.830	55.3	H	68.3	-13.0	PK	334	1.0	RB 1 MHz;VB 3 MHz;Pk

Peak readings. Limit of -27dBm/MHz eirp is for the same measurement method used for in-band power density (power averaging).

RB 1 MHz; VB 10 Hz Avg (Black Trace); RB=VB=1MHz PK (Blue Trace) Vertical



RB 1 MHz; VB 10 Hz Avg (Black Trace); RB=VB=1MHz PK (Blue Trace) Horizontal





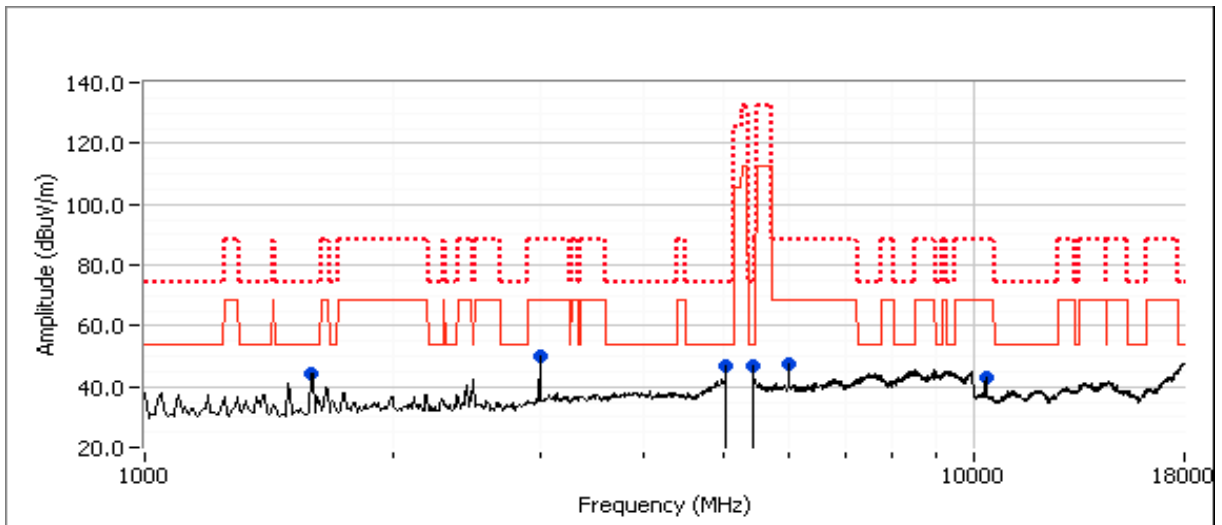
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 4a: EUT on Channel #36 5180MHz - 802.11n20, Chain A+B**

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	16.0	16.0		19.0	16.0	16.1		19.1	24,25

**Spurious Radiated Emissions:**

Frequency MHz	Level dBµV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
<b>5413.690</b>	<b>43.4</b>	H	54.0	<b>-10.6</b>	AVG	16	1.0	RB 1 MHz;VB 10 Hz;Pk
5039.360	42.4	V	54.0	-11.6	AVG	55	1.6	RB 1 MHz;VB 10 Hz;Pk
1594.070	38.9	V	54.0	-15.1	AVG	193	1.0	RB 1 MHz;VB 10 Hz;Pk
3000.220	53.0	H	68.3	-15.3	PK	184	1.0	RB 1 MHz;VB 3 MHz;Pk
6000.710	49.7	V	68.3	-18.6	PK	164	1.0	RB 1 MHz;VB 3 MHz;Pk
10359.890	49.6	V	68.3	-18.7	PK	39	1.6	RB 1 MHz;VB 3 MHz;Pk
5413.460	55.0	H	74.0	-19.0	PK	16	1.0	RB 1 MHz;VB 3 MHz;Pk
5037.840	54.3	V	74.0	-19.7	PK	55	1.6	RB 1 MHz;VB 3 MHz;Pk
1593.080	53.0	V	74.0	-21.0	PK	193	1.0	RB 1 MHz;VB 3 MHz;Pk



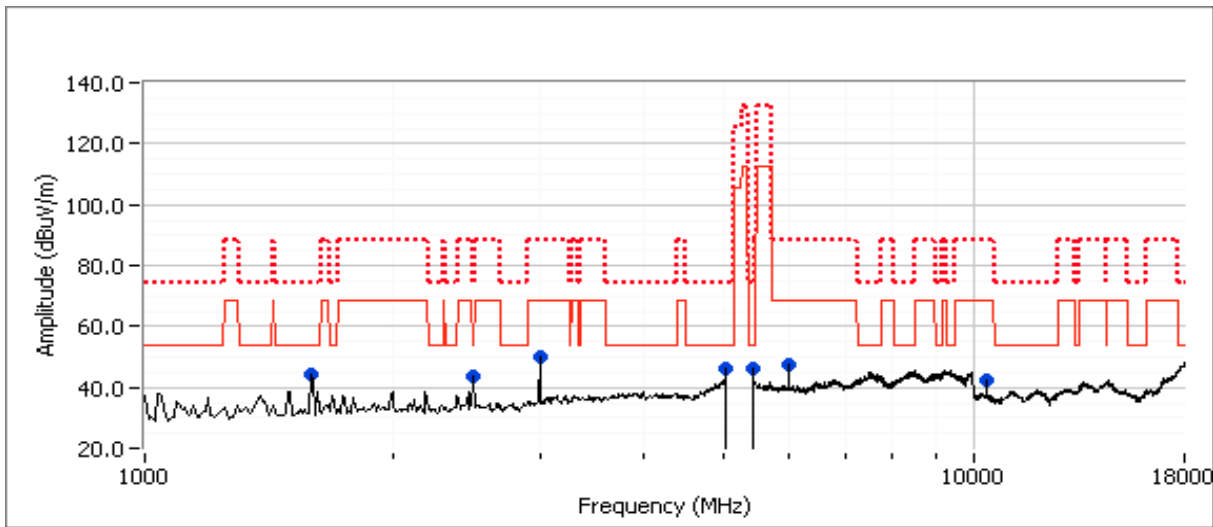
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 4b: EUT on Channel #40 5200MHz - 802.11n20, Chain A+B**

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	16.0	16.0		19.0	16.1	16.1		19.1	25.5,25.5

**Spurious Radiated Emissions:**

Frequency MHz	Level dBuV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
<b>5413.730</b>	<b>43.5</b>	V	54.0	<b>-10.5</b>	AVG	3	1.6	RB 1 MHz;VB 10 Hz;Pk
5035.110	41.5	V	54.0	-12.5	AVG	346	1.6	RB 1 MHz;VB 10 Hz;Pk
6000.590	51.4	V	68.3	-16.9	PK	154	1.0	RB 1 MHz;VB 3 MHz;Pk
5415.620	55.2	V	74.0	-18.8	PK	3	1.6	RB 1 MHz;VB 3 MHz;Pk
5035.740	53.3	V	74.0	-20.7	PK	346	1.6	RB 1 MHz;VB 3 MHz;Pk
1594.060	32.1	V	54.0	-21.9	AVG	211	1.0	RB 1 MHz;VB 10 Hz;Pk
2488.110	31.3	H	54.0	-22.7	AVG	145	1.0	RB 1 MHz;VB 10 Hz;Pk
2488.030	50.6	H	74.0	-23.4	PK	145	1.0	RB 1 MHz;VB 3 MHz;Pk
10380.210	41.8	V	68.3	-26.5	PK	360	1.3	RB 1 MHz;VB 3 MHz;Pk
3004.020	41.6	H	68.3	-26.7	PK	188	1.0	RB 1 MHz;VB 3 MHz;Pk
1592.810	45.2	V	74.0	-28.8	PK	211	1.0	RB 1 MHz;VB 3 MHz;Pk



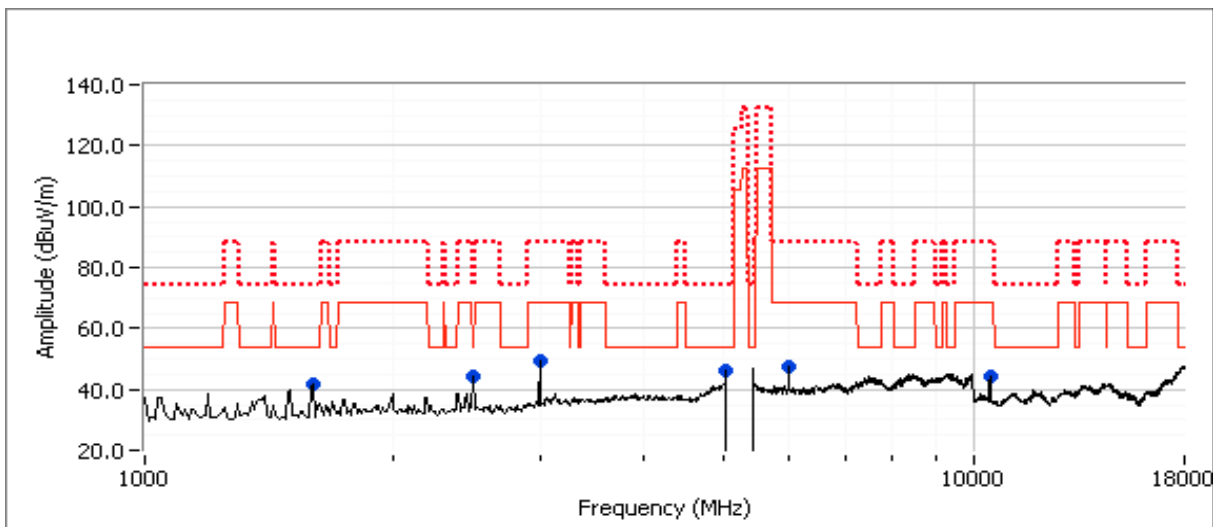
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 4c: EUT on Channel #48 5240MHz - 802.11n20, Chain A+B**

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	16.0	16.0		19.0	16.1	16.2		19.2	26,26

**Spurious Radiated Emissions:**

Frequency MHz	Level dBµV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
<b>5038.770</b>	<b>42.4</b>	V	54.0	<b>-11.6</b>	AVG	351	1.6	RB 1 MHz;VB 10 Hz;Pk
3000.290	54.0	H	68.3	-14.3	PK	184	1.0	RB 1 MHz;VB 3 MHz;Pk
6000.720	52.5	V	68.3	-15.8	PK	150	1.0	RB 1 MHz;VB 3 MHz;Pk
1599.150	35.3	V	54.0	-18.7	AVG	179	1.3	RB 1 MHz;VB 10 Hz;Pk
5038.460	53.6	V	74.0	-20.4	PK	351	1.6	RB 1 MHz;VB 3 MHz;Pk
2496.590	52.9	H	74.0	-21.1	PK	226	1.0	RB 1 MHz;VB 3 MHz;Pk
2497.240	32.8	H	54.0	-21.2	AVG	226	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.960	48.5	V	74.0	-25.5	PK	179	1.3	RB 1 MHz;VB 3 MHz;Pk
10467.480	42.7	V	68.3	-25.6	PK	11	1.0	RB 1 MHz;VB 3 MHz;Pk



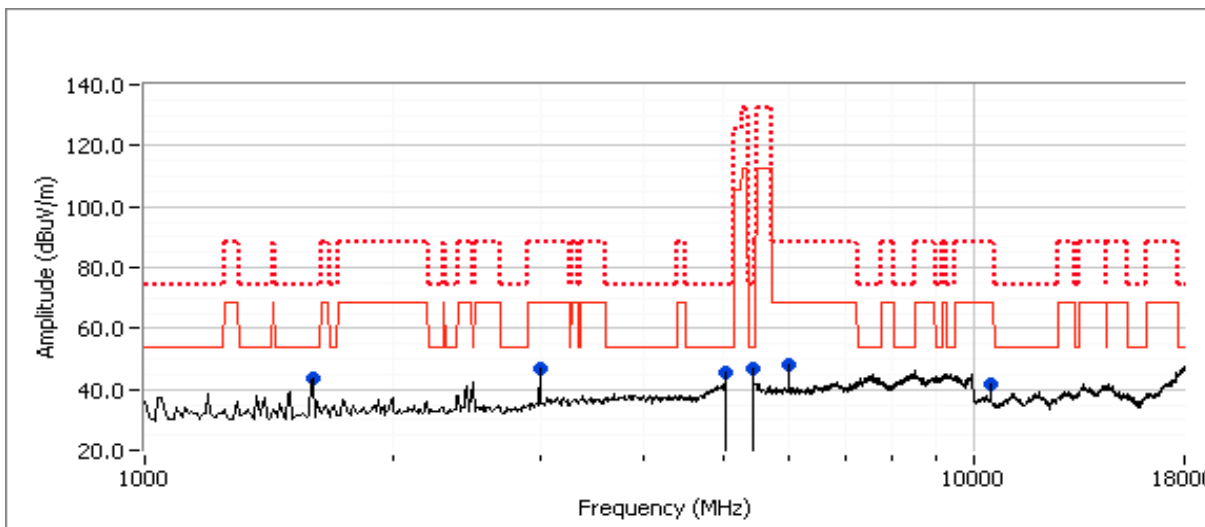
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 4d: EUT on Channel #52 5260MHz - 802.11n20, Chain A+B**  
 Date of Test: 6/16/2011      Test Location: FT Chamber#4  
 Test Engineer: Joseph Cadigal      Config Change: -

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	16.0	16.0		19.0	16.0	16.1		19.1	26,26

**Spurious Radiated Emissions:**

Frequency MHz	Level dBµV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5415.560	42.3	V	54.0	-11.7	AVG	321	1.0	RB 1 MHz;VB 10 Hz;Pk
5037.480	41.6	V	54.0	-12.4	AVG	70	1.6	RB 1 MHz;VB 10 Hz;Pk
1593.300	39.3	V	54.0	-14.7	AVG	193	1.0	RB 1 MHz;VB 10 Hz;Pk
10520.070	50.5	V	68.3	-17.8	PK	10	1.0	RB 1 MHz;VB 3 MHz;Pk
1593.360	53.5	V	74.0	-20.5	PK	193	1.0	RB 1 MHz;VB 3 MHz;Pk
5416.050	53.2	V	74.0	-20.8	PK	321	1.0	RB 1 MHz;VB 3 MHz;Pk
5036.020	52.9	V	74.0	-21.1	PK	70	1.6	RB 1 MHz;VB 3 MHz;Pk
5988.100	46.2	V	68.3	-22.1	PK	161	1.0	RB 1 MHz;VB 3 MHz;Pk
2993.230	42.8	H	68.3	-25.5	PK	187	1.6	RB 1 MHz;VB 3 MHz;Pk



Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

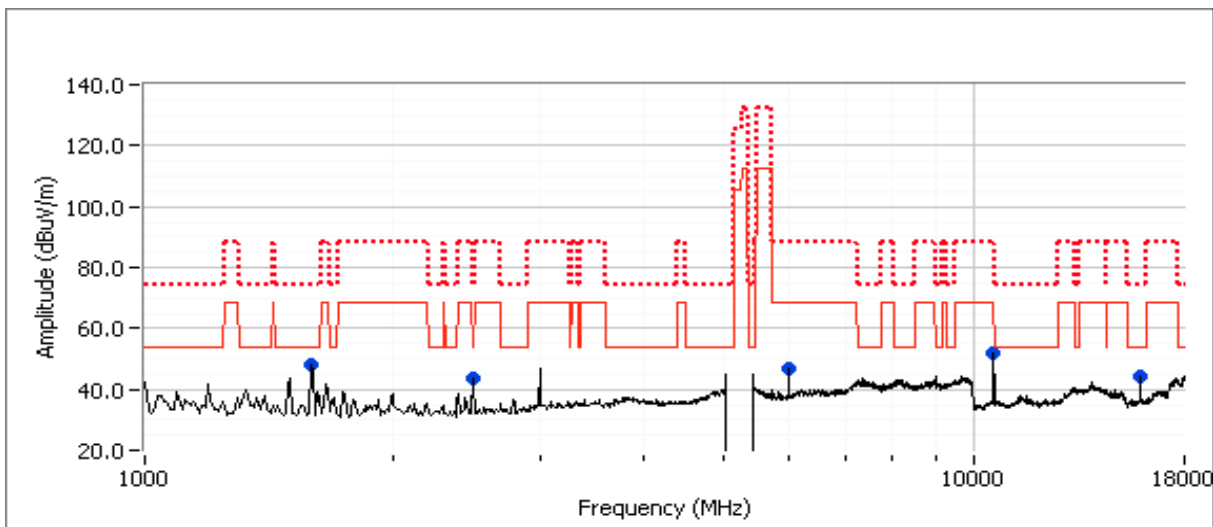
**Run # 4e: EUT on Channel #60 5300MHz - 802.11n20, Chain A+B**

Date of Test: 6/17/2011      Test Location: FT Chamber #4  
 Test Engineer: Rafael Varelas      Config Change: -

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	16.5	16.5		19.5	16.6	16.8		19.7	27.0/28.5

**Spurious Radiated Emissions:**

Frequency MHz	Level dBµV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
10600.040	50.4	V	54.0	-3.6	AVG	15	1.0	RB 1 MHz;VB 10 Hz;Pk
10600.110	64.4	V	74.0	-9.6	PK	15	1.0	RB 1 MHz;VB 3 MHz;Pk
15899.500	40.5	V	54.0	-13.5	AVG	208	1.0	RB 1 MHz;VB 10 Hz;Pk
15903.200	52.3	V	74.0	-21.7	PK	208	1.0	RB 1 MHz;VB 3 MHz;Pk
1594.160	43.2	V	54.0	-10.8	AVG	133	1.0	RB 1 MHz;VB 10 Hz;Pk
1593.960	56.3	V	74.0	-17.7	PK	133	1.0	RB 1 MHz;VB 3 MHz;Pk
2490.590	33.9	H	54.0	-20.1	AVG	217	1.0	RB 1 MHz;VB 10 Hz;Pk
2495.900	52.5	H	74.0	-21.5	PK	217	1.0	RB 1 MHz;VB 3 MHz;Pk
6000.210	46.8	V	68.3	-21.5	Peak	122	1.0	RB 1 MHz;VB 3 MHz;Pk



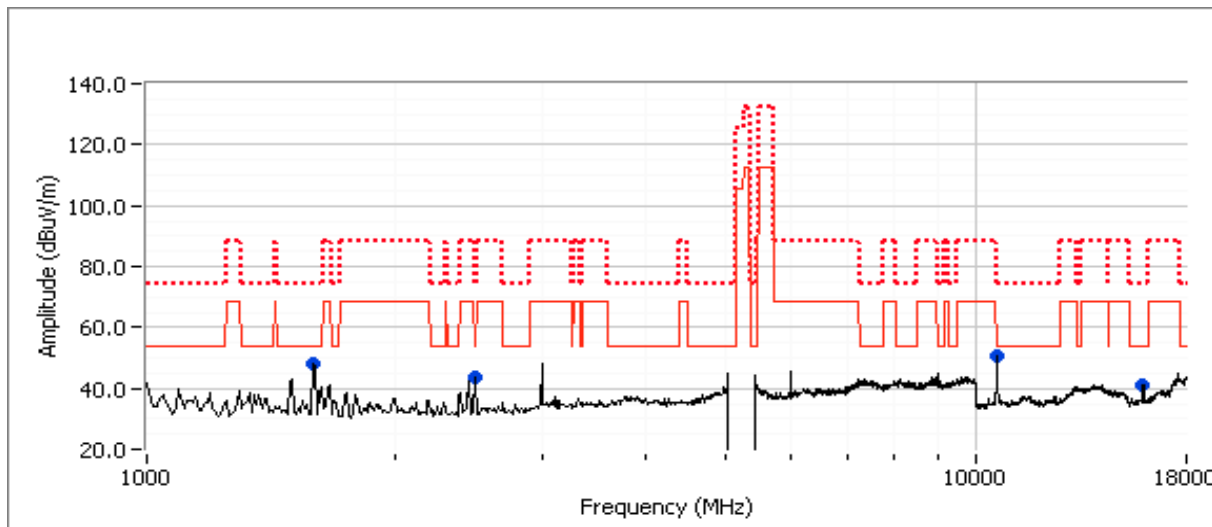
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 4f: EUT on Channel #64 5320MHz - 802.11n20, Chain A+B**

Chain	Power Settings								Software Setting
	Target (dBm)				Measured (dBm)				
	A	B	C	Total	A	B	C	Total	
	16.0	16.0		19.0	16.2	16.3		19.3	27.0/28.5

**Spurious Radiated Emissions:**

Frequency MHz	Level dBµV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
10639.230	49.4	V	54.0	-4.6	AVG	12	1.0	RB 1 MHz;VB 10 Hz;Pk
10640.230	62.7	V	74.0	-11.3	PK	12	1.0	RB 1 MHz;VB 3 MHz;Pk
15960.160	41.3	V	54.0	-12.7	Peak	215	1.0	
1596.600	42.1	V	54.0	-11.9	AVG	132	1.0	RB 1 MHz;VB 10 Hz;Pk
1595.200	56.0	V	74.0	-18.0	PK	132	1.0	RB 1 MHz;VB 3 MHz;Pk
2490.280	33.1	V	54.0	-20.9	AVG	137	1.0	RB 1 MHz;VB 10 Hz;Pk
2497.120	52.5	V	74.0	-21.5	PK	137	1.0	RB 1 MHz;VB 3 MHz;Pk







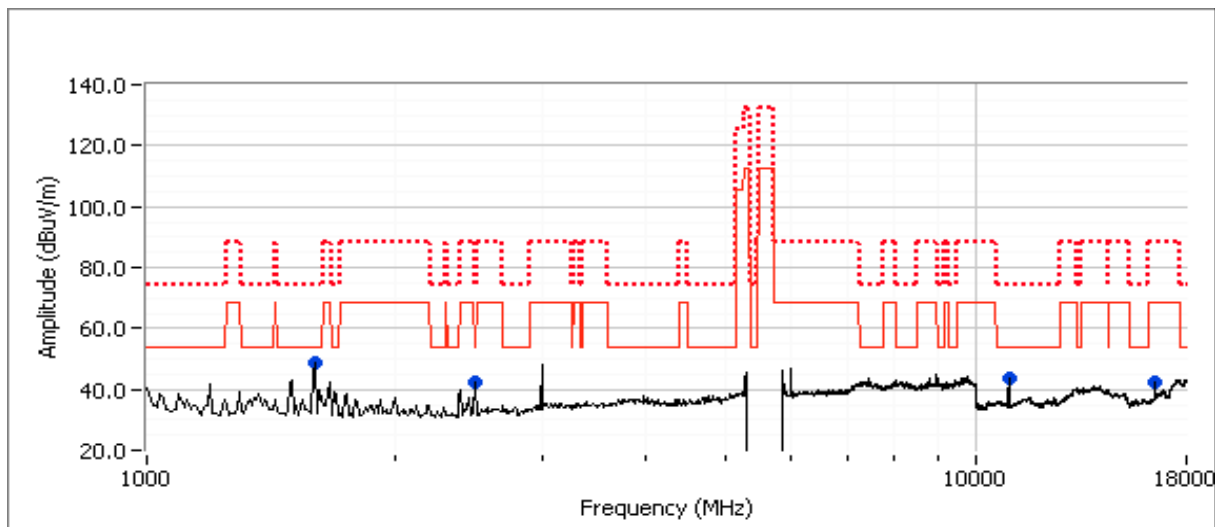
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 5b: EUT on Channel #100 5500MHz - 802.11a, Chain B**

	Target (dBm)	Power Settings Measured (dBm)	Software Setting
Chain B	16.5	16.7	26.5

**Spurious Radiated Emissions:**

Frequency MHz	Level dBuV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
11000.080	44.7	V	54.0	-9.3	AVG	67	1.0	RB 1 MHz;VB 10 Hz;Pk
11000.710	55.9	V	74.0	-18.1	PK	67	1.0	RB 1 MHz;VB 3 MHz;Pk
16511.480	42.1	V	68.3	-26.2	Peak	304	1.0	RB 1 MHz;VB 3 MHz;Pk
1594.740	43.3	V	54.0	-10.7	AVG	127	1.0	RB 1 MHz;VB 10 Hz;Pk
1594.540	56.1	V	74.0	-17.9	PK	127	1.0	RB 1 MHz;VB 3 MHz;Pk
2490.640	32.9	V	54.0	-21.1	AVG	206	1.0	RB 1 MHz;VB 10 Hz;Pk
2489.380	51.5	V	74.0	-22.5	PK	206	1.0	RB 1 MHz;VB 3 MHz;Pk



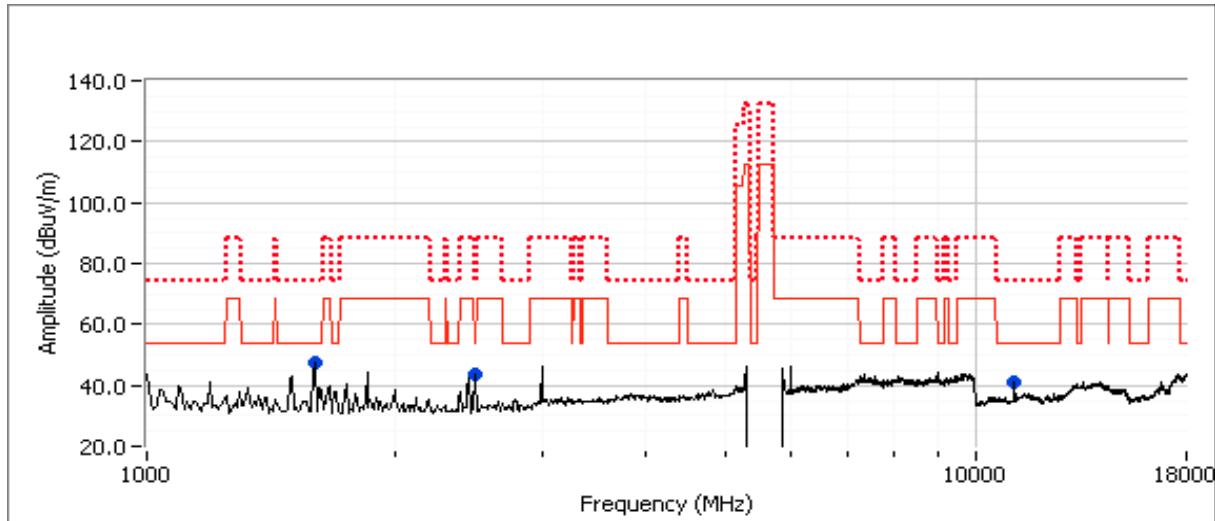
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 5c: EUT on Channel #120 5580MHz - 802.11a, Worst case chain from 5a and 5b (Chain B)**

	Target (dBm)	Power Settings Measured (dBm)	Software Setting
Chain A	16.5	16.6	26.5

**Spurious Radiated Emissions:**

Frequency MHz	Level dBuV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
11160.070	44.5	V	54.0	-9.5	AVG	44	1.5	RB 1 MHz;VB 10 Hz;Pk
11158.470	56.5	V	74.0	-17.5	PK	44	1.5	RB 1 MHz;VB 3 MHz;Pk
2490.300	34.4	H	54.0	-19.6	AVG	125	1.0	RB 1 MHz;VB 10 Hz;Pk
2490.930	54.1	H	74.0	-19.9	PK	125	1.0	RB 1 MHz;VB 3 MHz;Pk
1598.310	43.4	V	54.0	-10.6	AVG	135	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.540	56.6	V	74.0	-17.4	PK	135	1.0	RB 1 MHz;VB 3 MHz;Pk



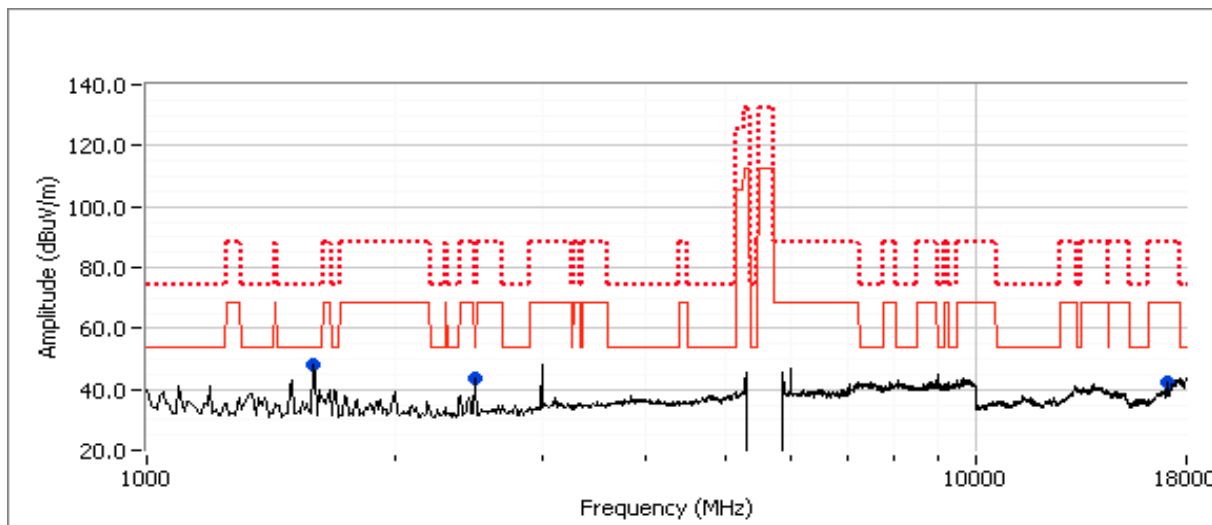
Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 5d: EUT on Channel #140 5700MHz - 802.11a, Worst case chain from 5a and 5b (Chain B)**

	Target (dBm)	Power Settings Measured (dBm)	Software Setting
Chain A	16.5	16.6	27.0

**Spurious Radiated Emissions:**

Frequency MHz	Level dBμV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1594.690	43.9	V	54.0	-10.1	AVG	132	1.0	RB 1 MHz;VB 10 Hz;Pk
1593.120	56.4	V	74.0	-17.6	PK	132	1.0	RB 1 MHz;VB 3 MHz;Pk
11390.230	39.8	H	54.0	-14.2	AVG	332	1.0	RB 1 MHz;VB 10 Hz;Pk
11394.230	51.1	H	74.0	-22.9	PK	332	1.0	RB 1 MHz;VB 3 MHz;Pk
17093.330	42.3	H	68.3	-26.0	Peak	205	1.0	RB 1 MHz;VB 3 MHz;Pk
2489.860	32.5	V	54.0	-21.5	AVG	132	1.0	RB 1 MHz;VB 10 Hz;Pk
2487.620	51.4	V	74.0	-22.6	PK	132	1.0	RB 1 MHz;VB 3 MHz;Pk

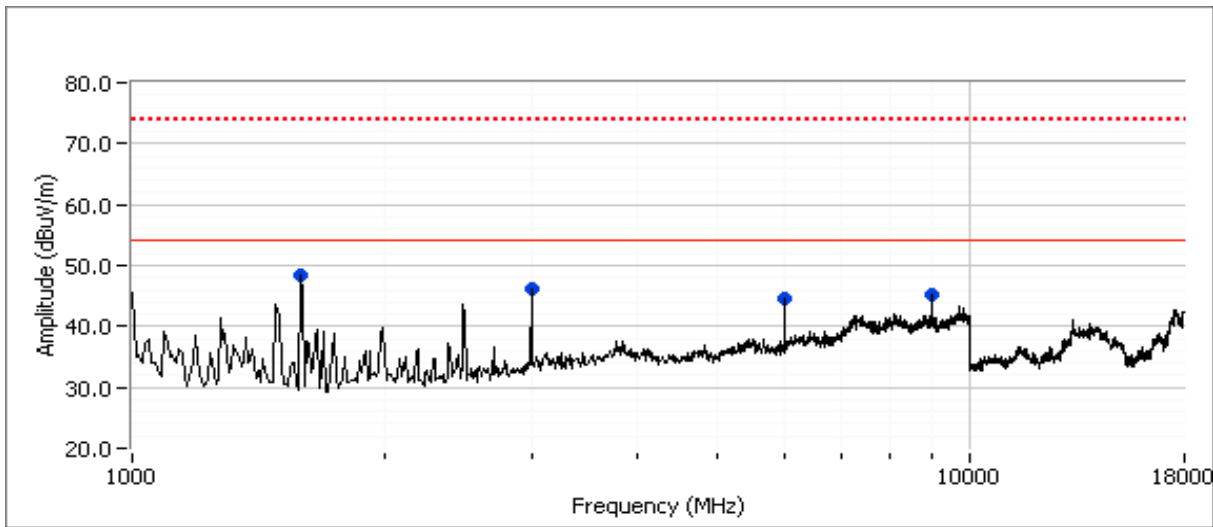




Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
		Account Manager:	Christine Krebil
Contact:	Steven Hackett		
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 6b: EUT on Channel #60 5300MHz - Receiver, Chain A+B**

Frequency MHz	Level dBμV/m	Pol v/h	RSS GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
9001.040	44.7	V	54.0	-9.3	AVG	143	1.0	MHz;VB 10 Hz;Pk
9001.010	52.2	V	74.0	-21.8	PK	143	1.0	MHz;VB 3 MHz;Pk
3000.300	42.7	H	54.0	-11.3	AVG	198	1.0	MHz;VB 10 Hz;Pk
3000.180	48.6	H	74.0	-25.4	PK	198	1.0	MHz;VB 3 MHz;Pk
1595.830	43.5	V	54.0	-10.5	AVG	131	1.0	MHz;VB 10 Hz;Pk
1594.860	55.7	V	74.0	-18.3	PK	131	1.0	MHz;VB 3 MHz;Pk
6000.650	43.7	V	54.0	-10.3	AVG	116	1.1	MHz;VB 10 Hz;Pk
6000.590	49.9	V	74.0	-24.1	PK	116	1.1	MHz;VB 3 MHz;Pk



Client:	Intel Corporation	Job Number:	J83582
Model:	62205ANHMW (Intel® Centrino® Advanced-N 6205) with WNC 81XCAA15.G03 Dipole	T-Log Number:	T83587
Contact:	Steven Hackett	Account Manager:	Christine Krebil
Standard:	FCC 15.247 / FCC 15 E / RSS 210	Class:	N/A

**Run # 6c: EUT on Channel #116 5580MHz - Receiver, Chain A+B`**

Frequency MHz	Level dBµV/m	Pol v/h	RSS GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
6000.720	46.3	V	54.0	-7.7	AVG	272	1.0	RB 1 MHz;VB 10 Hz;Pk
6000.780	50.7	V	74.0	-23.3	PK	272	1.0	RB 1 MHz;VB 3 MHz;Pk
1594.890	40.0	V	54.0	-14.0	AVG	191	1.0	RB 1 MHz;VB 10 Hz;Pk
1599.060	52.1	V	74.0	-21.9	PK	191	1.0	RB 1 MHz;VB 3 MHz;Pk
3000.370	46.1	V	54.0	-7.9	AVG	223	1.0	RB 1 MHz;VB 10 Hz;Pk
3000.270	51.2	V	74.0	-22.8	PK	223	1.0	RB 1 MHz;VB 3 MHz;Pk
9000.970	44.4	V	54.0	-9.6	AVG	142	1.0	RB 1 MHz;VB 10 Hz;Pk
9001.070	52.2	V	74.0	-21.8	PK	142	1.0	RB 1 MHz;VB 3 MHz;Pk

