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Electromagnetic Emissions Test Report
Application for Grant of Equipment Authorization
Class II Permissive Change
pursuant to
Industry Canada RSS-Gen Issue 2 / RSS 210 Issue 7
FCC Part 15 Subpart C
on the
Intel Corporation
Transmitter
Model: 533AN_MMW
(Canada model number 533ANMU)

UPN:	1000M-533ANMU
FCC ID:	PD9533ANMU
GRANTEE:	Intel Corporation 2111 N.E. 25th Ave. Hillsboro, OR 97124-5961
TEST SITE:	Elliott Laboratories 684 W. Maude Ave Sunnyvale, CA 94086
REPORT DATE:	September 8, 2008
REISSUE DATE:	September 19, 2008
FINAL TEST DATE:	August 18 - August 25, 2008
AUTHORIZED SIGNATORY:	Mark Briggs Staff Engineer

ACCREDITED

Testing Cert #2016-01

REVISION HISTORY

Rev #	Date	Comments	Modified By
1	9/11/08	First Release	-
2	9/19/08	Corrected the model name in the GENERAL subsection of PROPOSED MODIFICATION DETAILS on page 11. Modified the text describing the MIMO modes of operation with the specific antenna set being evaluated in the ANTENNA section of PROPOSED MODIFICATION DETAILS on page 11.	David Guidotti

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SCOPE

An electromagnetic emissions test has been performed on the Intel Corporation model 533AN_MMW pursuant to the following rules:

Industry Canada RSS-Gen Issue 2
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in Elliott Laboratories test procedures:

ANSI C63.4:2003
FCC DTS Measurement Procedure KDB558074, March 2005

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.

The test results recorded herein are based on a single type test of the Intel Corporation model 533AN_MMW and therefore apply only to the tested sample. The sample was selected and prepared by Robert Paxman of Intel Corporation

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 model 533AN_MMW complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 2
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any 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.).

TEST RESULTS SUMMARY

DIGITAL TRANSMISSION SYSTEMS (2400 – 2483.5MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM / DSSS techniques	-	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	No tests performed, the maximum power, power spectral density, conducted spurious emissions and minimum 6dB bandwidth remain unchanged from the values originally reported. The proposed addition of antenna does not affect the operation of the device as it relates to these requirements.		N/A
	RSP100	99% Bandwidth			
15.247 (b) (3)	RSS 210 A8.2 (4)	Output Power (multipoint systems)			
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density			
15.247(c) / 15.209	RSS 210 A8.5	Radiated Spurious Emissions 30MHz – 25 GHz	802.11n 40MHz 53.8dBµV/m @ 2484.8MHz	15.207 in restricted bands, all others <-30dBc Note 2	Complies (-0.2dB)

Note 1: Limit of -30dBc used because the power was measured using the UNII test procedure (maximum power averaged over a transmission burst) / RMS averaging over a time interval, as permitted under RSS 210 section A8.4(4).
Note 2: Spurious emissions below 1GHz were independent of operating channel and operating mode (transmit versus receive). Measurements were limited to above 1GHz are therefore reported for receive mode only.
Note 3: The original test report worst case emissions were 53.1 dBuV/m @ 2483.6 MHz (802.11n40 2x2 mode, Universe antenna) which was 0.9dB below the limit.

DIGITAL TRANSMISSION SYSTEMS (5725 –5850 MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM / DSSS techniques	-	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	No tests performed, the maximum power, power spectral density, conducted spurious emissions and minimum 6dB bandwidth remain unchanged from the values originally reported. The proposed addition of antenna does not affect the operation of the device as it relates to these requirements.		N/A
	RSP100	99% Bandwidth			
15.247 (b)	RSS 210 A8.2 (4)	Output Power (multipoint systems)			
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density			
15.247(c) / 15.209	RSS 210 A8.5 Table 2, 3	Radiated Spurious Emissions 30MHz – 40 GHz	53.1dBµV/m @ 17979.1MHz	15.207 in restricted bands, all others <-30dBc Note 2	Complies (-0.9dB)

Note 1: Limit of -30dBc used because the power was measured using the UNII test procedure (maximum power averaged over a transmission burst) / RMS averaging over a time interval, as permitted under RSS 210 section A8.4(4).
Note 2: Spurious emissions below 1GHz were independent of operating channel and operating mode (transmit versus receive). Measurements were limited to above 1GHz are therefore reported for receive mode only.
Note 3: The original test report worst case emissions were 52.7dBµV/m @ 11649.1MHz (802.11n20 3x3Ethertronics Antenna), 1.3dB below the limit.

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Connector remains unchanged from original filing	Unique connector	Complies
-	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	48.3dBµV/m @ 3000.41MHz	RSS GEN	Complies (- 5.7 dB)
15.207	RSS GEN Table 2	AC Conducted Emissions	The new antenna would not affect AC conducted emissions level.		N/A
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	The new antenna gain is lower than the previously evaluated antennas, therefore the rf exposure calculations and forms previously uploaded remain unchanged.		
	RSP 100 RSS GEN 7.1.5	User Manual	The addition of the new antenna does not affect the content required in the User Manual.		
	RSP 100 RSS GEN 7.1.5	User Manual			

Note 1: Spurious emissions below 1GHz were independent of operating mode and dominated by emissions from the test fixture. Test were not performed below 1GHz as the proposed changes are only to the antenna. The highest emission above 1GHz in receive mode from the original testing was 50.1dBµV/m @ 7713.3MHz (Ethertronics antenna), 3.9dB below the limit.

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	Frequency Range (MHz)	Calculated Uncertainty (dB)
Conducted Emissions	0.15 to 30	± 2.4
Radiated Emissions	0.015 to 30	± 3.0
Radiated Emissions	30 to 1000	± 3.6
Radiated Emissions	1000 to 40000	± 6.0

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Intel Corporation model 533AN_MMW is a 802.11abgn Radio that is designed to be installed in laptops for wireless transmission/reception. Since the EUT would be placed on a tabletop during operation, the EUT was treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 3.3 Volts DC, 0.5 Amps.

The sample was received on August 19, August 20, August 21, August 22, August 23 and August 25, 2008. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
Intel Corporation	533AN-MMW(MMC)	802.11abgn Radio		PD9533ANMU

ANTENNA SYSTEM

Refer to the PROPOSED MODIFICATION DETAILS section of this report.

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

The EUT did not require modifications during testing in order to comply with emissions specifications.

SUPPORT EQUIPMENT

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

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	Prototype	Laptop PC	Prototype	-

No remote support equipment was used during emissions testing.

EUT INTERFACE PORTS

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

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
PC	Board	PCI-Express extender	-	0.2
Antennas Port 1& 2 (A&B)	Antenna main and aux	Coax (2)	Shielded	0.3
DC Power	Board	3.3V dc	Unshielded	0.3

EUT OPERATION

During testing the EUT was transmitting at the stated power level at a data rate of 1Mb/s for 802.11b mode and 6Mb/s for 802.11g and n20 modes and 12Mb/s for 802.11n 40MHz mode. The following modes were selected as the worst case mode(s) for each of the transmitter-related measurements:

Band Edge, 2.4GHz Band: 802.11g, 802.11n 20MHz and 802.11n 40MHz modes
Band Edge, 5150MHz, 5350MHz, 5470MHz: 802.11n 20MHz and 40MHz modes, single- and dual-chains active
Spurious emissions, 2.4GHz Band: 802.11b, 802.11n 20MHz dual chain and n40MHz dual chain modes
Spurious emissions, 5150-5250MHz Band: 802.11n 20MHz mode - Dual chains active at the higher single chain power level
Spurious emissions, 5250-5350MHz Band: 802.11n 20MHz mode - Dual chains active at the higher single chain power level
Spurious emissions, 5470-5725MHz Band: 802.11n 20MHz mode - Dual chains active at the higher single chain power level
Spurious emissions, 5725-5850MHz Band: 802.11n20 MHz mode - Dual chains active at the higher single chain power level

Receiver-related measurements were made with the device operating on each chain alone and on both chains simultaneously.

During emissions testing the EUT was continuously transmitting.

PROPOSED MODIFICATION DETAILS

GENERAL

This section details the modifications to the Intel Corporation model 533AN_MMW (MMC) being proposed. All performance and construction deviations from the characteristics originally reported to the FCC are addressed

ANTENNA

The original certification included a Universe PIFA antenna and so covered all PIFA antennas of lower gain. The proposed change is to add a PIFA-based antenna designed for use with the module. Selection of operating modes for each series of tests (band-edge spurious emissions, radiated spurious emissions) is based on previous results with the universe PIFA antenna.

Antenna Name and model	Type	Antenna Gain				Comments
		2.4GHz	5.2GHz	5.5GHz	5.7GHz	
Universe	PIFA	3.24	3.73	4.77	4.97	Original Antenna tested
Amphenol WLAN Main: 14G152168231LV:	PIFA	-0.59	1.36	2.18	1.64	Proposed new antenna
WLAN Aux: 14G152168131LV:	Carrier	-1.00	0.01	2.19	2.76	

The Intel Model 533AN_MMW is a 3x3 transceiver with antenna connect detection. As the antenna set being evaluated has only 2 antenna elements the device operated as a 2x2 transceiver during the evaluation. The module still remains a 3x3 transceiver and the associated grant notes should indicate this to be the case.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on June 9, June 11, June 13, June 14, June 16, June 18, June 20, August 19, August 20, August 21, August 22, August 23 and August 25, 2008 at the Elliott Laboratories semi anechoic chambers located at 41039 Boyce Road, Fremont, California 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.

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 with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

CONDUCTED EMISSIONS CONSIDERATIONS

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

RADIATED EMISSIONS CONSIDERATIONS

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

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

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

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

INSTRUMENT CONTROL COMPUTER

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

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

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

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

FILTERS/ATTENUATORS

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

ANTENNAS

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

ANTENNA MAST AND EQUIPMENT TURNTABLE

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

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

INSTRUMENT CALIBRATION

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

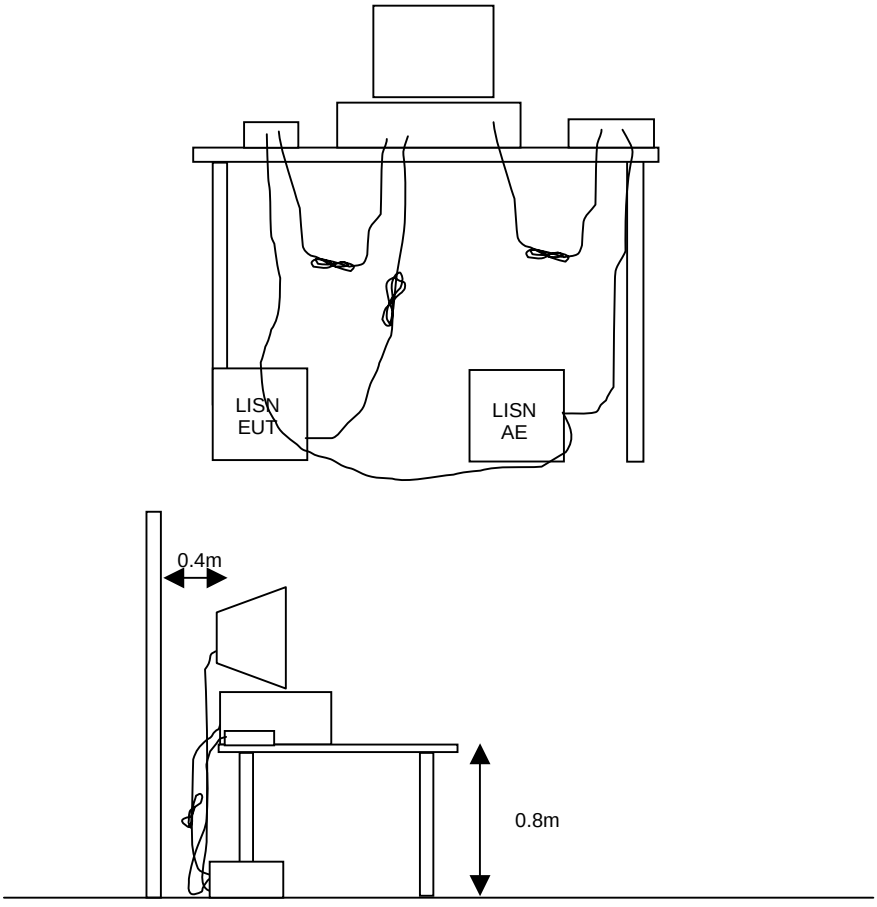
TEST PROCEDURES

EUT AND CABLE PLACEMENT

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

CONDUCTED EMISSIONS

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



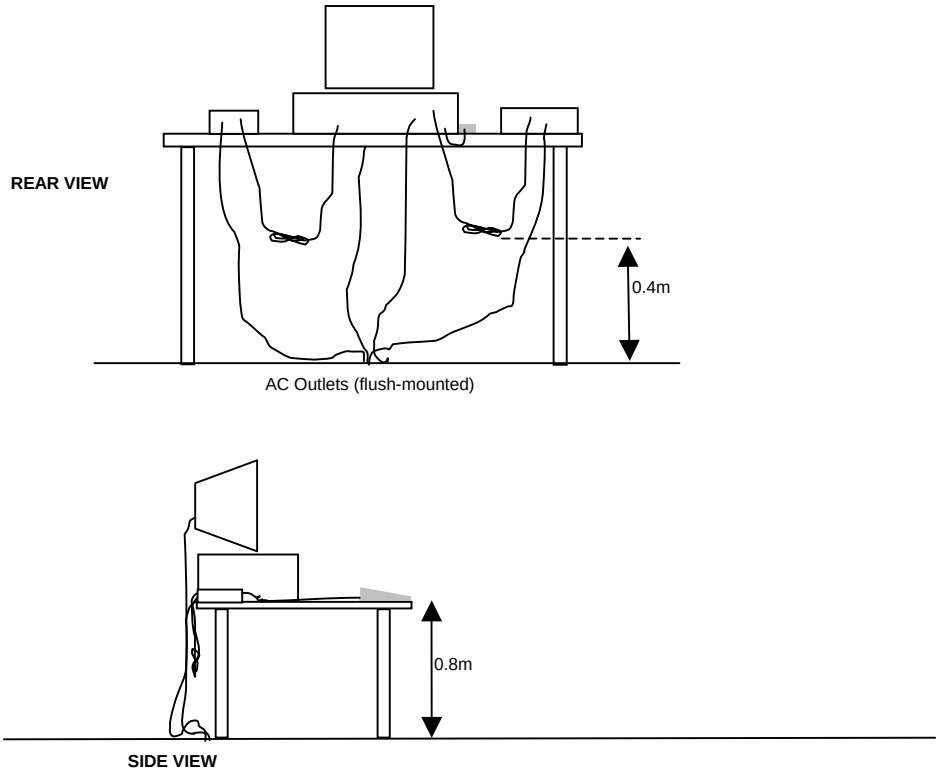
RADIATED EMISSIONS

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.

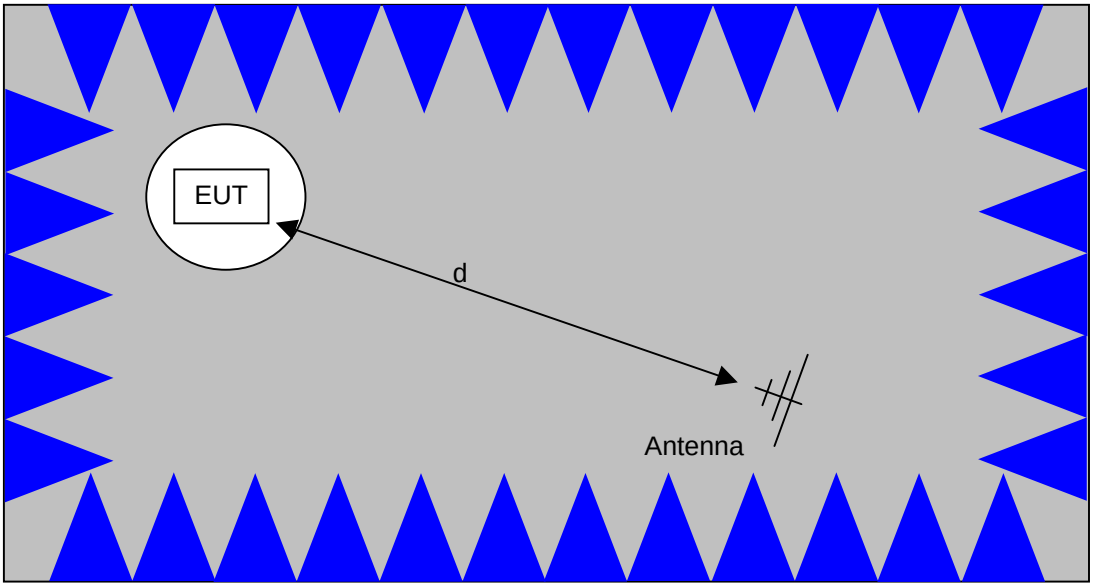
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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.

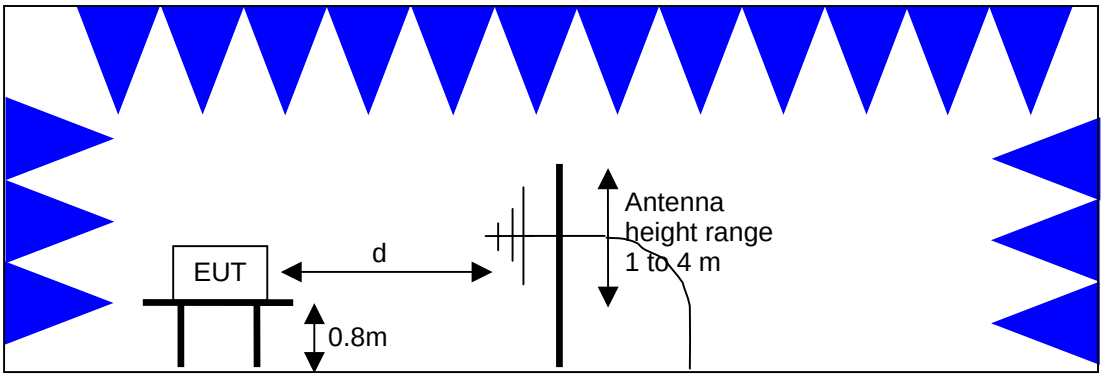


Typical Test Configuration for Radiated Field Strength Measurements



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

BANDWIDTH MEASUREMENTS

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

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

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

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

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

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

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

[1] 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

OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS

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

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

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

TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS

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

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

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

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

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

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

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

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

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

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

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_s = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of 3m from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{3} \text{ microvolts per meter}$$

where P is the eirp (Watts)

EXHIBIT 1: Test Equipment Calibration Data

2 Pages

Radiated Emissions, 30 - 6,500 MHz, 09-Jun-08
Engineer: jcaizzi

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	28-May-09
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	07-Jul-08
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	1771	17-Dec-08

DTS 802.11n-40 Band-edge test, 11-Jun-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Jun-08
EMCO	Antenna, Horn, 1-18 GHz	3115	1242	N/A

Radiated Emissions, 30 - 6,500 MHz, 13-Jun-08
Engineer: jcaizzi

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	07-Jul-08
Hewlett Packard	Spectrum Analyzer 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	15-Jan-09

Radiated Emissions, 802.11 b/g Band-edge test, 14-Jun-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	07-Jul-08
Hewlett Packard	Spectrum Analyzer 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	15-Jan-09
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1534	05-Mar-09

Radio Spurious Emissions, 16-Jun-08
Engineer: Suhaila Khushzad

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Test Sys (SA40, 9kHz - 40GHz) Purple	84125C	1770	06-Nov-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Jun-08

Radiated Emissions, 1000 - 26,500 MHz, 18-Jun-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1290	12-Jul-08
Rohde & Schwarz	Power Sensor 100 uW - 10 Watts	NRV-Z53	1555	15-Jan-09
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	1771	17-Dec-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

Radio Spurious Emissions, 18-Jun-08
Engineer: skhushzad

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	28-May-09
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Jun-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10

Radiated Emissions, 30 - 18,000 MHz, 20-Jun-08
Engineer: Joseph Cadigal

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	07-Jul-08
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	1771	17-Dec-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

Radiated Emissions, 2 GHz band-edge test, 19-Aug-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	17-Oct-08

EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1786	07-Jan-09

Radiated Emissions, 2.4 GHz band-edge test, 20-Aug-08
Engineer: bjing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1534	05-Mar-09
Rohde & Schwarz	Power Sensor 100 uW - 10 Watts	NRV-Z53	1555	15-Jan-09
Fischer Custom Comm.	150-50 ohm adapter, 1/2, 0.15 to 80 MHz	FCC-801-150-50	1573	06-Jun-09
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	22-Feb-09

Radiated Emissions, 2.4 GHz DTS Band-edge, 21-Aug-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	04-Dec-08
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1786	07-Jan-09

Radiated Emissions, 1000 - 18,000 MHz, 22-Aug-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
Hewlett Packard	SpectAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	15-Jan-09
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	25-Aug-08
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1786	07-Jan-09

Radiated Emissions, 30 - 26,500 MHz, 22-Aug-08
Engineer: jcaizzi

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
Hewlett Packard	SpectAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	15-Jan-09
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08

Radiated Emissions, 1000 - 18,000 MHz, 23-Aug-08
Engineer: Ben Jing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
Hewlett Packard	SpectAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	15-Jan-09
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1534	05-Mar-09
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1728	17-Oct-08
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08

Radiated Emissions, 1000 - 18,000 MHz, 25-Aug-08
Engineer: jcaizzi

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	24-Sep-08
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1728	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

EXHIBIT 2: Test Measurement Data

79 Pages

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		-
Emissions Standard(s):	FCC Part 15.247/RSS 210	Class:	DTS
Immunity Standard(s):	-	Environment:	-

EMC Test Data
DTS Radiated Emissions, SL-300 Antenna

For The

Intel Corporation

Model

533AN-MMW with SL-300 Antenna

Date of Last Test: 8/27/2008

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11g SL-300 Antenna

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. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 22 °C

Rel. Humidity: 48 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11g Chain A	1 2412MHz	21.0	12.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	50.2dBµV/m @ 2389.8MHz (-3.8dB)
1b	802.11g Chain A	1 2462MHz	22.5	14.7	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.4dBµV/m @ 2483.7MHz (-1.6dB)
2a	802.11g Chain B	1 2412MHz	23. 5	14.7	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.1 dBuV/m @ 2390 MHz (-0.9dB)
2b	802.11g Chain B	11 2462MHz	24. 5	14.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.2 dBuV/m @ 2483.6 MHz (-1.8dB)

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 Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain A

Date of Test: 8/18/2008
Test Engineer: Ben Jing
Test Location: FT Chamber #2
MAC Address: 0016EA02D4D0

Run #1a: Low Channel @ 2412 MHz

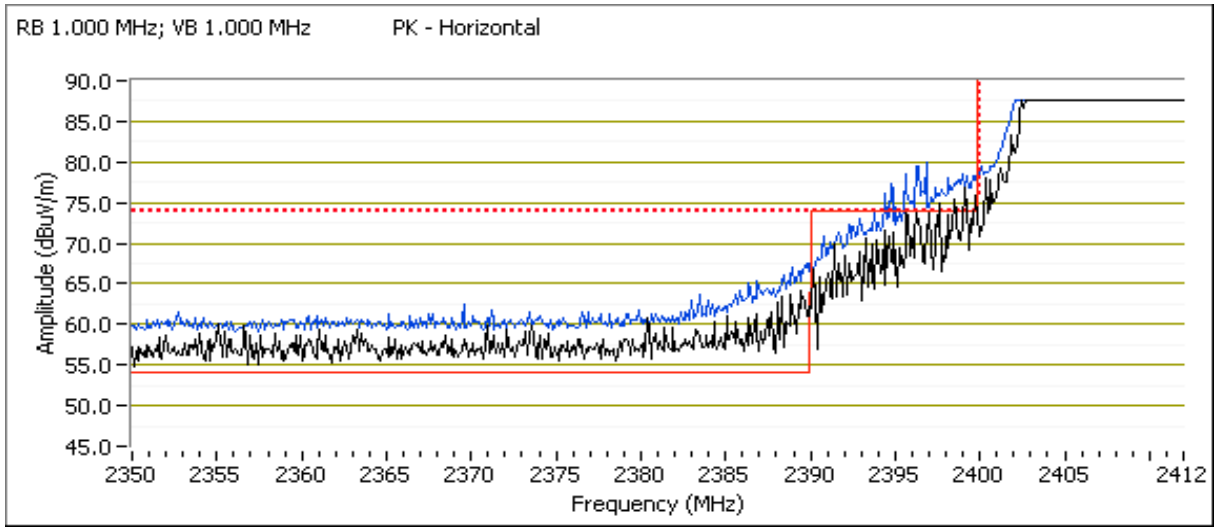
Power Setting: 21. 0 Average power: 12.9 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

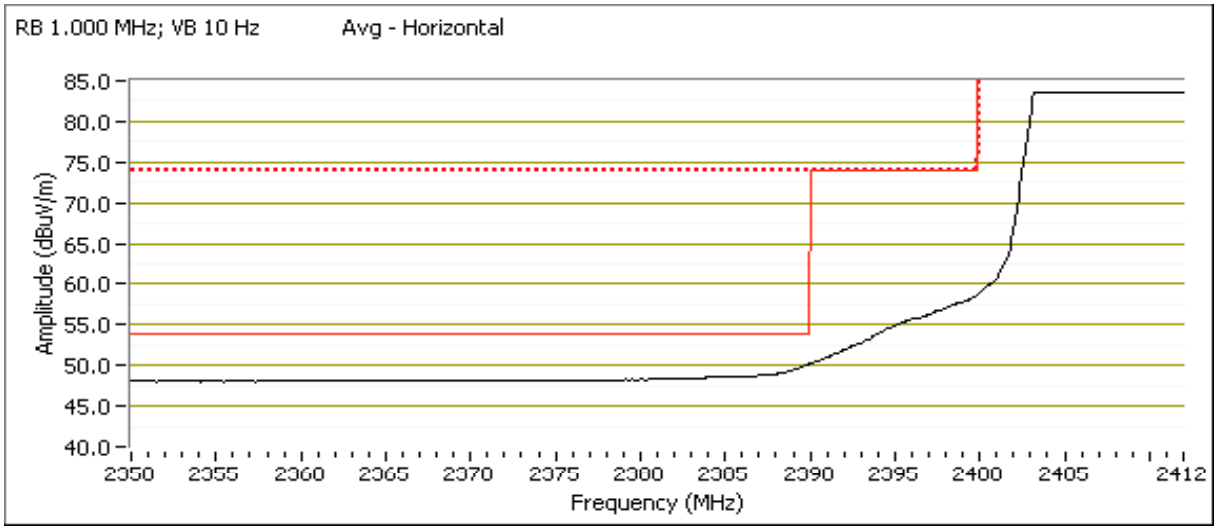
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2418.800	95.5	V	-	-	AVG	195	1.0	RB 1.000 MHz; VB: 10 Hz
2414.470	103.4	V	-	-	PK	195	1.0	RB 1.000 MHz; VB: 1.000 MHz
2408.720	98.5	H	-	-	AVG	66	1.0	RB 1.000 MHz; VB: 10 Hz
2409.550	106.4	H	-	-	PK	66	1.0	RB 1.000 MHz; VB: 1.000 MHz
2413.320	97.9	V	-	-	PK	194	1.0	RB 100 kHz; VB: 100 kHz
2410.750	98.7	H	-	-	PK	67	1.0	RB 100 kHz; VB: 100 kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.750	50.2	H	54.0	-3.8	AVG	68	1.0	
2389.750	69.1	H	74.0	-4.9	PK	68	1.0	
2389.770	48.6	V	54.0	-5.4	AVG	208	1.0	
2389.790	63.9	V	74.0	-10.1	PK	208	1.1	



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

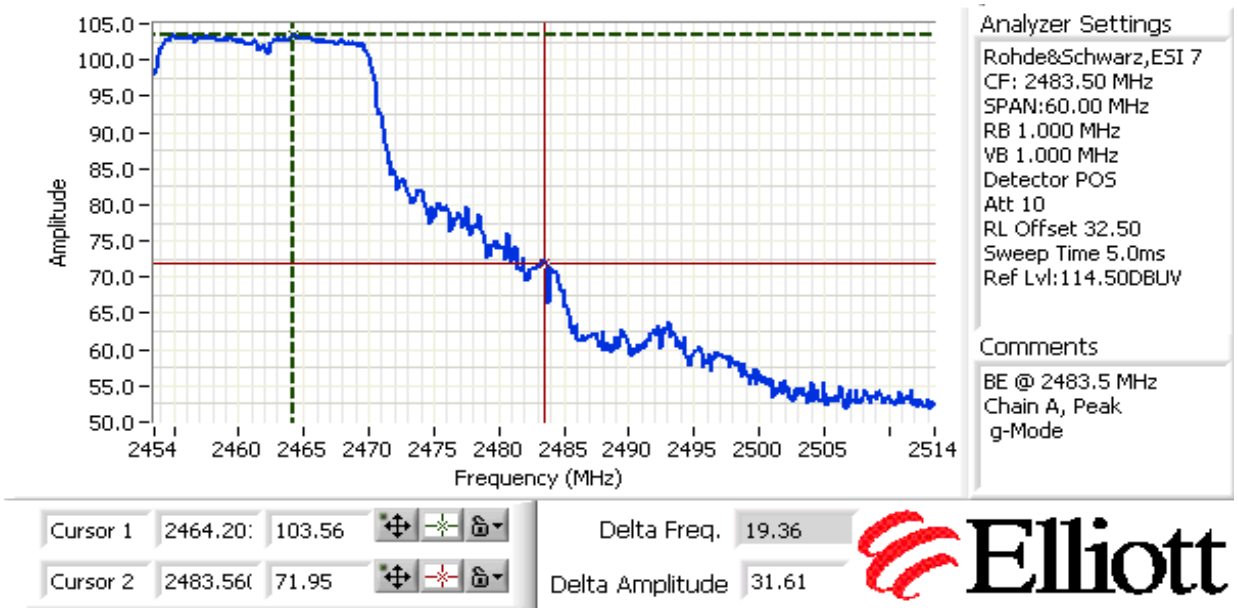
Run #1b: High Channel @ 2462 MHz

Date of Test: 8/19/2008
Test Engineer: Suhaila Khushzad
Test Location: FT Chamber #1
MAC Address: 0016EA02D4D0

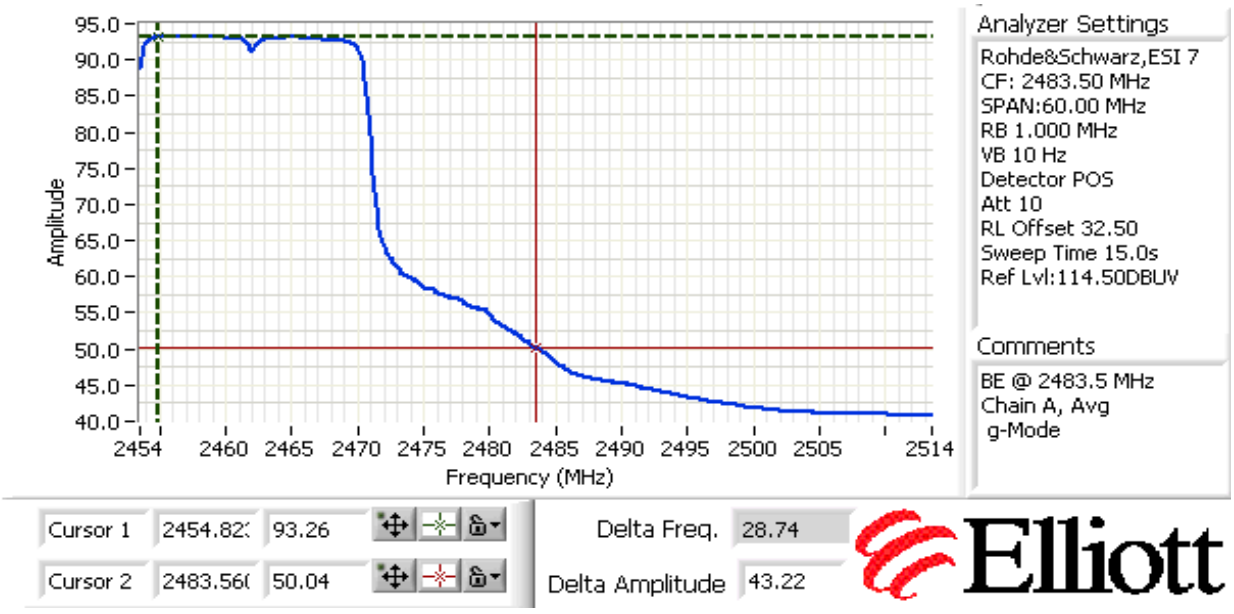
Power Setting: 22.5 Average power: 14.7 (for reference purposes)

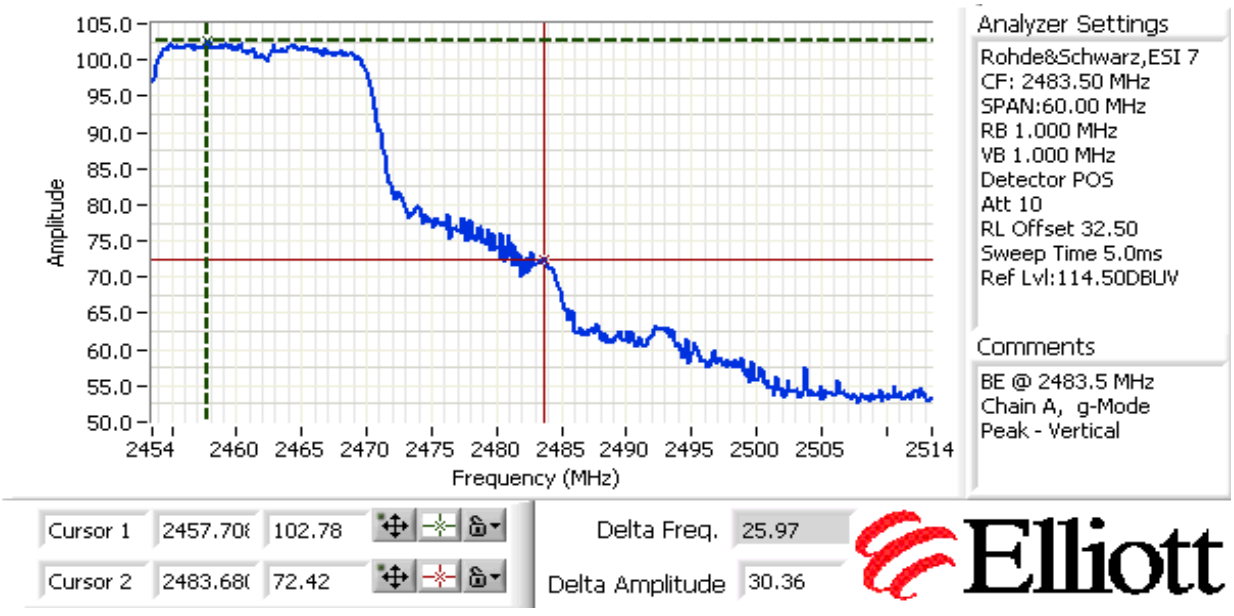
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.550	50.0	H	54.0	-4.0	AVG	63	1.0	GC=22.5
2483.560	72.0	H	74.0	-2.1	PK	63	1.0	GC=22.5
2483.680	72.4	V	74.0	-1.6	PK	274	1.0	GC=22.5
2483.560	49.8	V	54.0	-4.2	AVG	274	1.0	GC=22.5

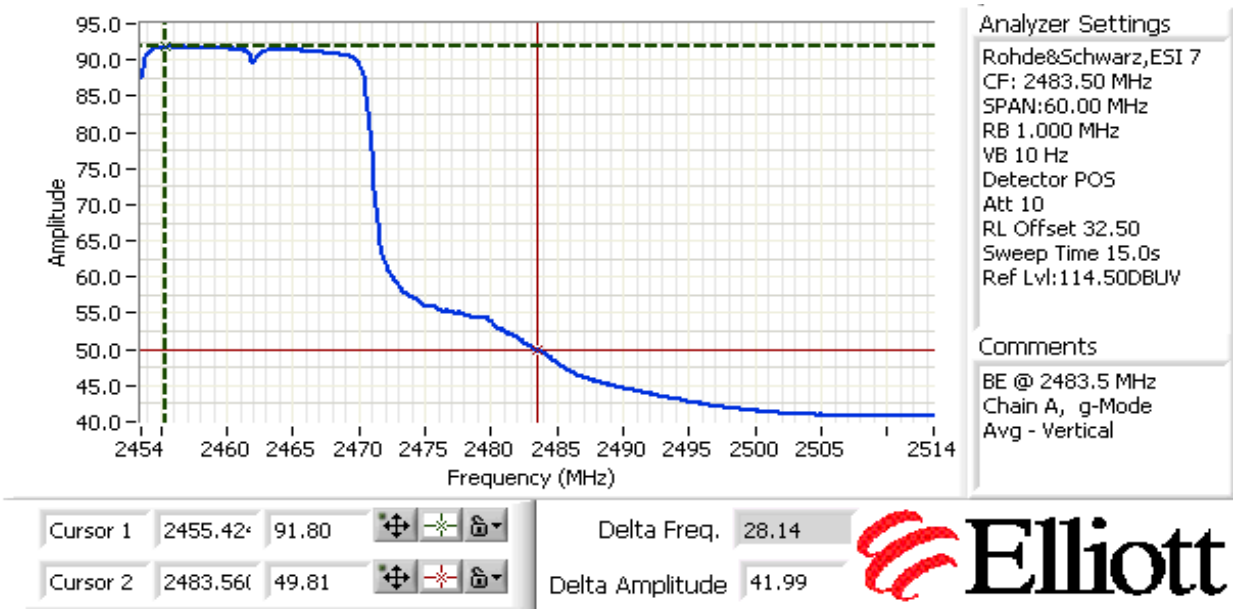


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

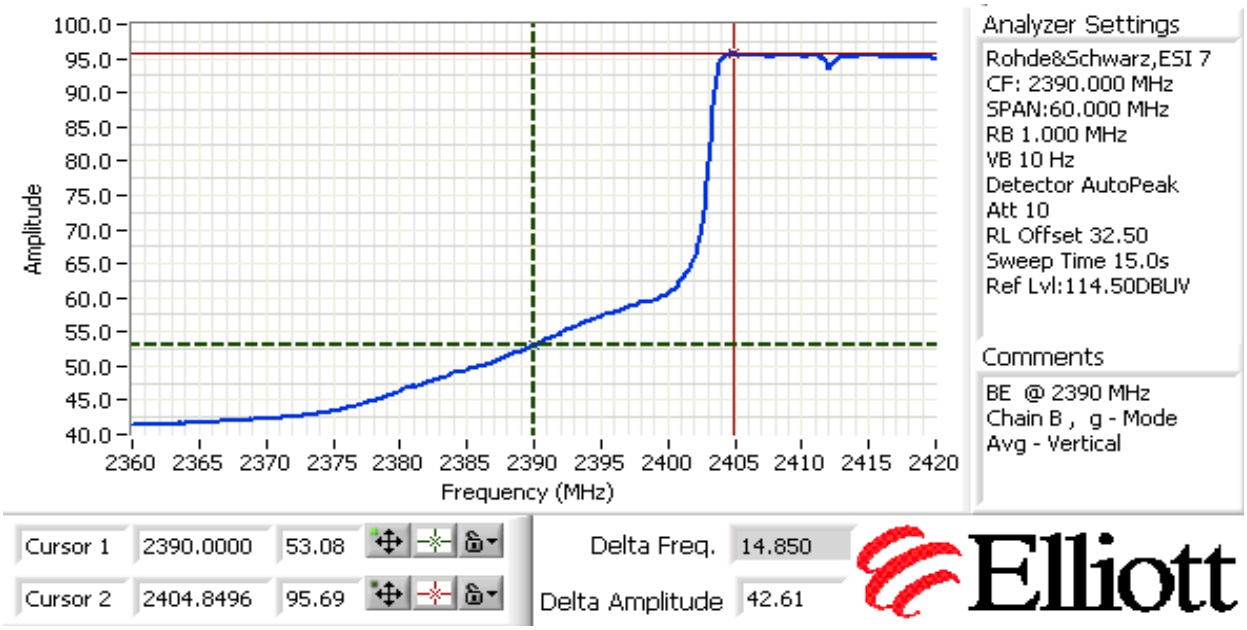
Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain B
Run #2a: Low Channel @ 2412 MHz Chain B

Date of Test: 8/19/2008
Test Engineer: Ben Jing
Test Location: FT Chamber #1
MAC Address: 0016EA02D4D0

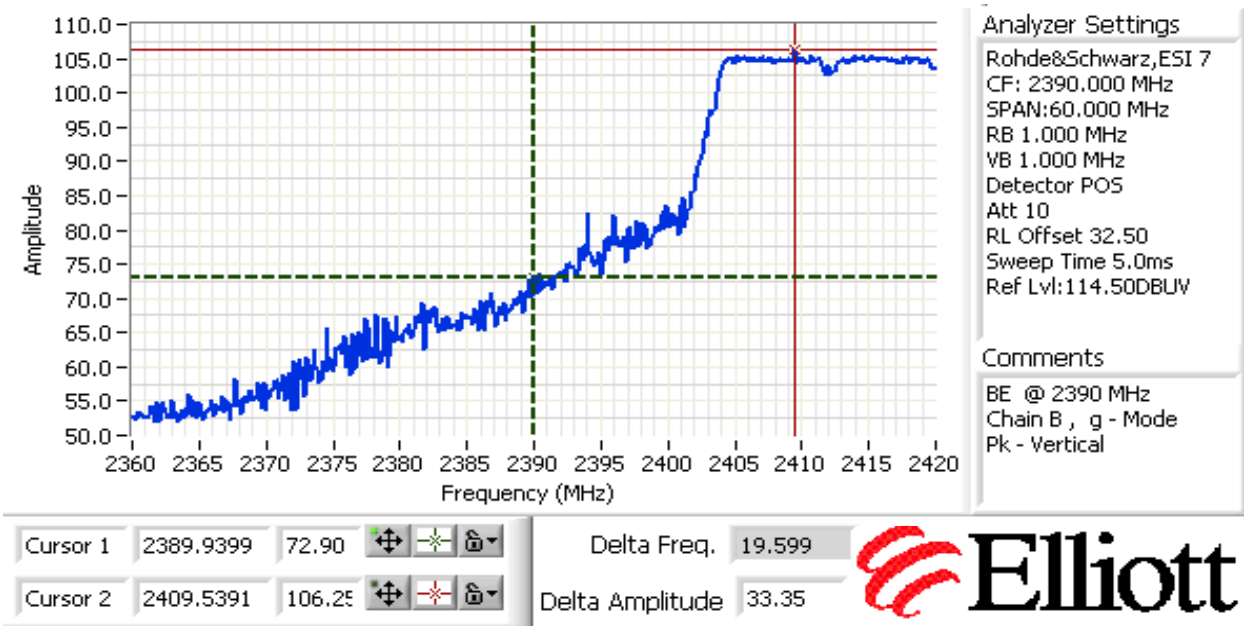
Power Setting: 23.5 Average power: 14. 7 (for reference purposes)

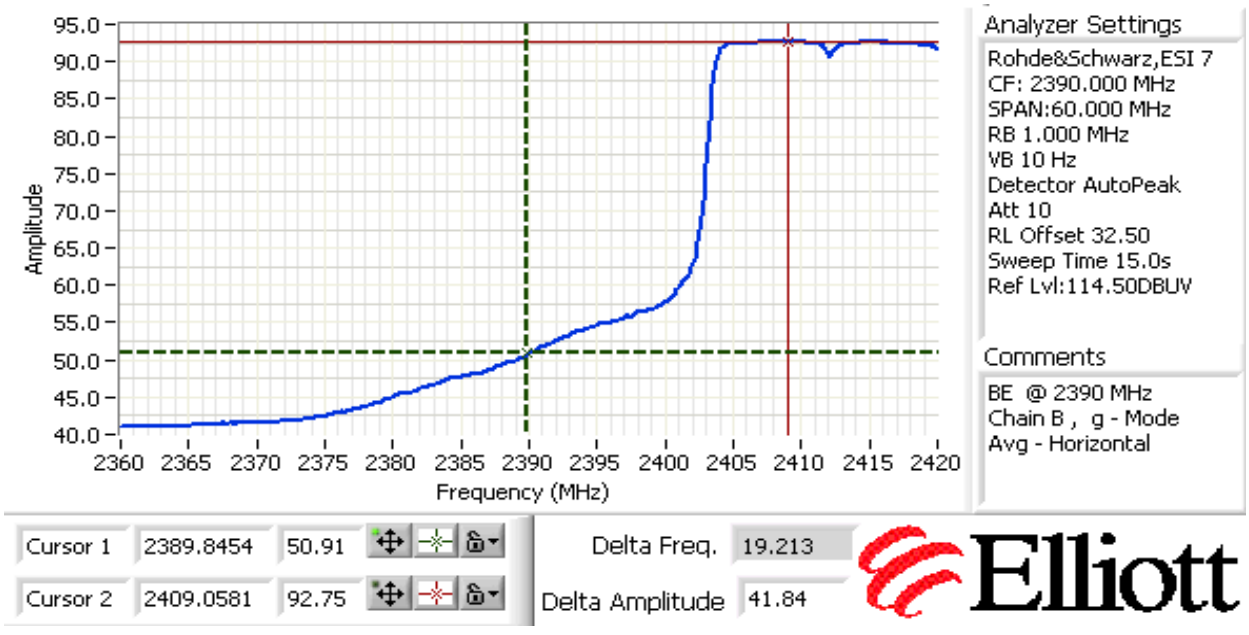
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	53.1	V	54.0	-0.9	AVG	230	1.0	GC = 23.5 , AP = 14.7 dBm
2389.939	72.9	V	74.0	-1.1	PK	230	1.0	GC = 23.5 , AP = 14.7 dBm
2390.000	50.9	H	54.0	-3.1	AVG	252	1.0	GC = 23.5 , AP = 14.7 dBm
2390.000	70.4	H	74.0	-3.6	PK	252	1.0	GC = 23.5 , AP = 14.7 dBm

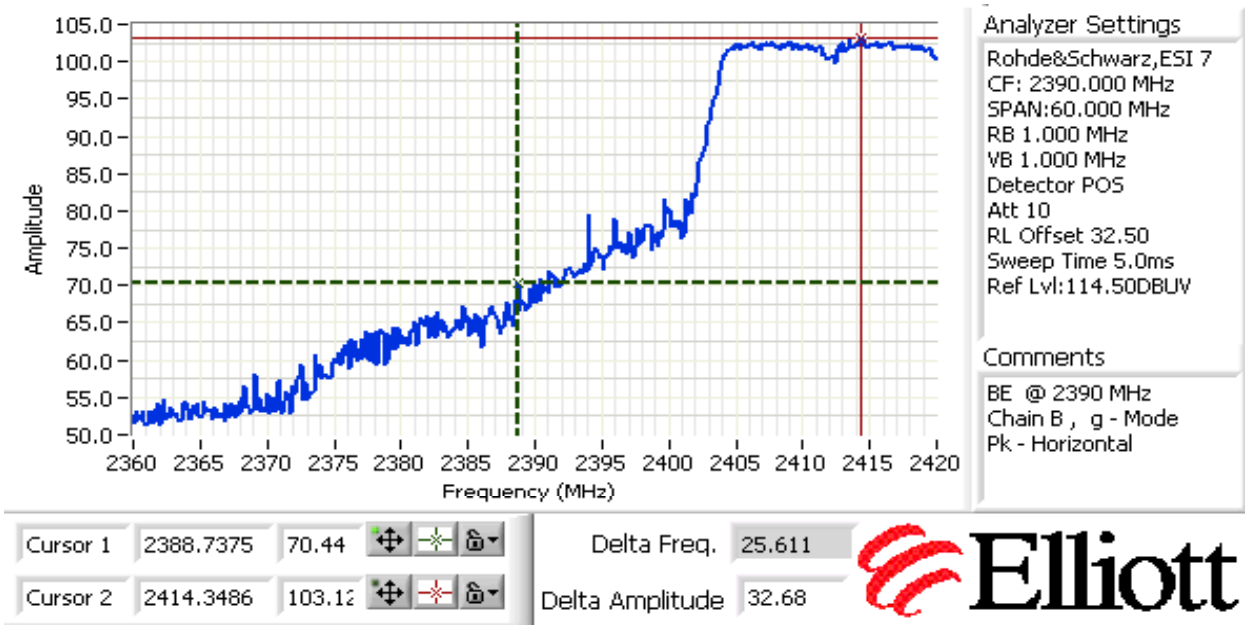


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

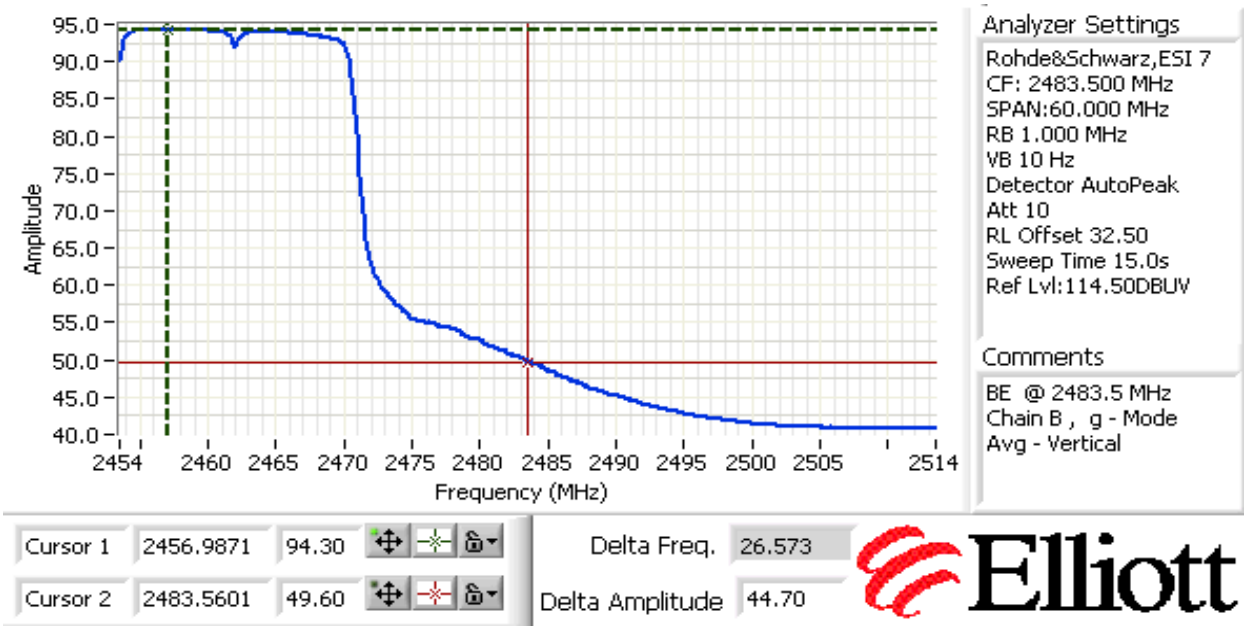
Run #2b: High Channel @ 2462 MHz Chain B

Date of Test: 8/19/2008
Test Engineer: Ben Jing
Test Location: FT Chamber #1
MAC Address: 0016EA02D4D0

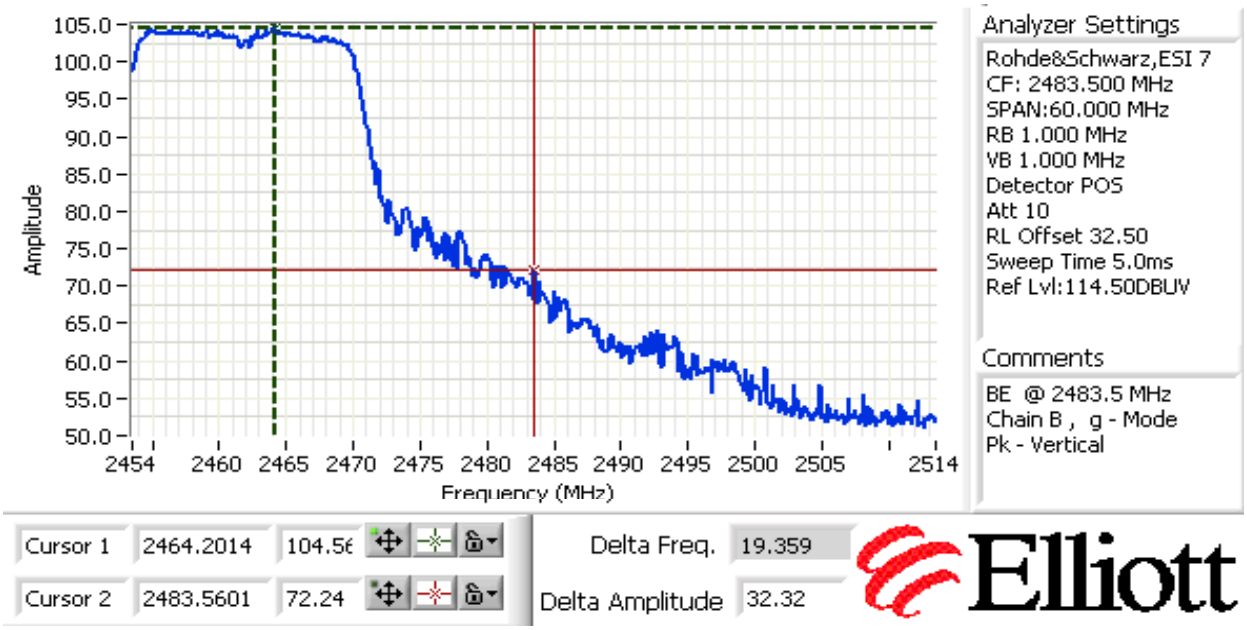
Power Setting: 24. 5 Average power: 14. 6 (for reference purposes)

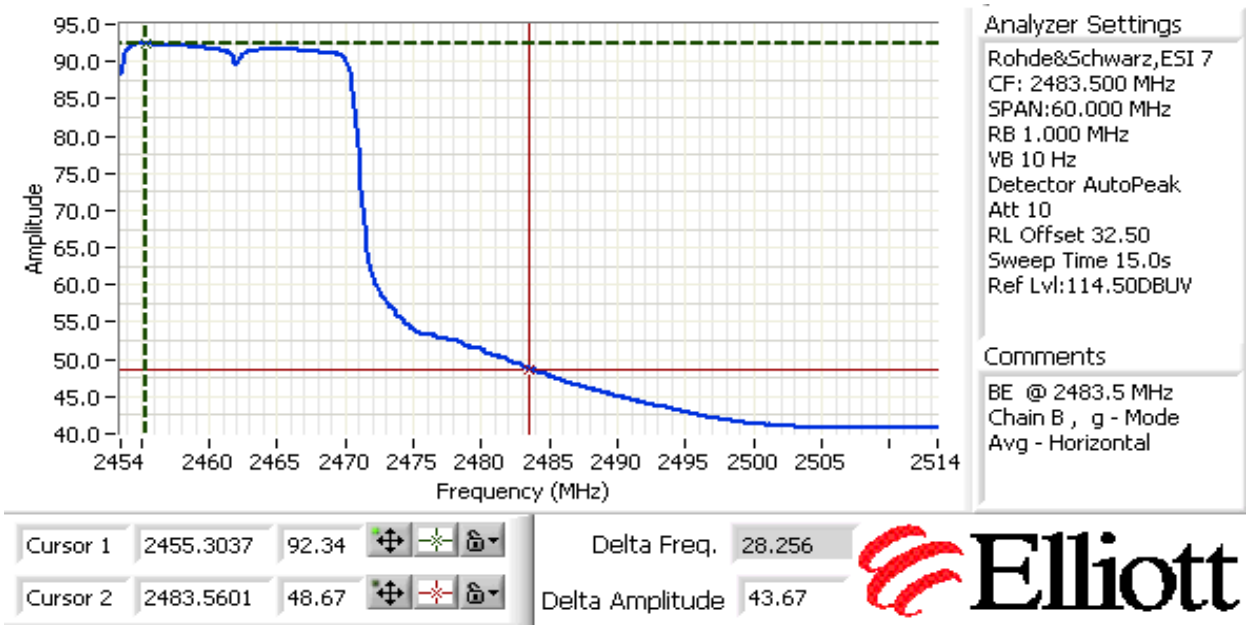
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.560	49.6	V	54.0	-4.4	AVG	230	1.0	GC = 24.5 , AP = 14.6 dBm
2483.560	72.2	V	74.0	-1.8	PK	230	1.0	GC = 24.5 , AP = 14.6 dBm
2483.560	48.7	H	54.0	-5.3	AVG	243	1.0	GC = 24.5 , AP = 14.6 dBm
2483.920	69.1	H	74.0	-4.9	PK	243	1.0	GC = 24.5 , AP = 14.6 dBm

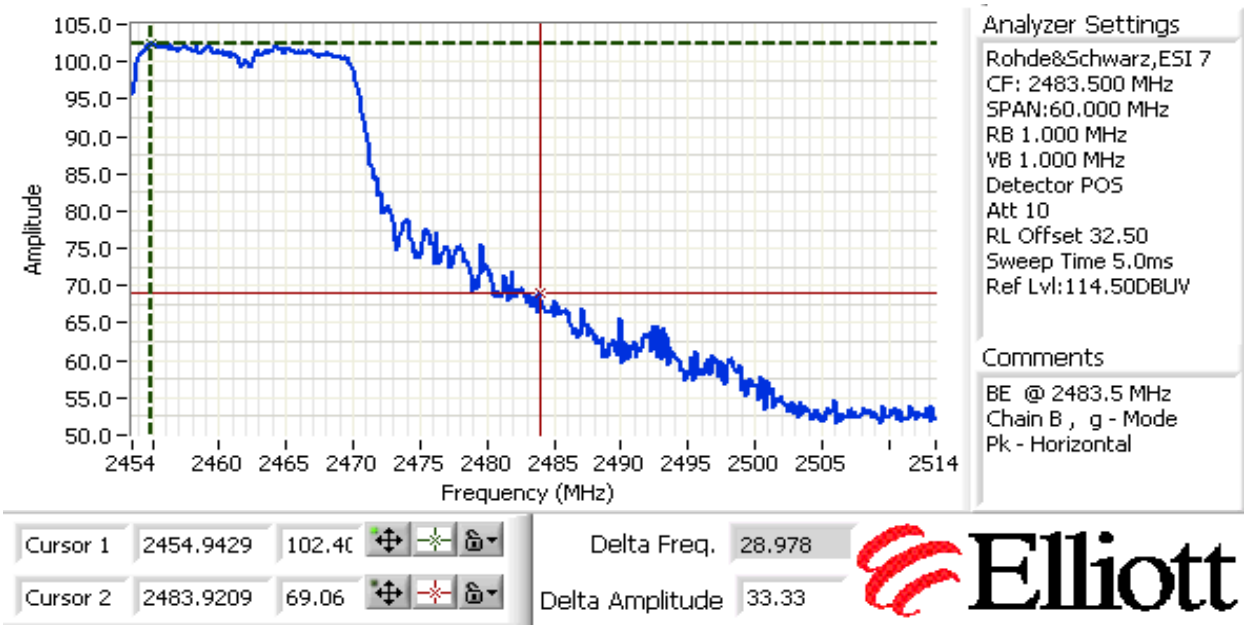


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11n20MHz SL-300 Antenna

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. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 22 °C

Rel. Humidity: 36 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n20 Chain A	1 2412MHz	18.5	11.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	45.0dBµV/m @ 2389.8MHz (-9.1dB)
1b	802.11n20 Chain A	11 2462MHz	22.0	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	73.1 dBuV/m @ 2484.4 MHz (-0.9dB)
2a	802.11n20 Chain B	1 2412MHz	21.5	12.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	70.7 dBuV/m @ 2386.3 MHz (-3.3dB)
2b	802.11n20 Chain B	11 2462MHz	23.5	14.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	70.6 dBuV/m @ 2483.8 MHz (-3.4dB)
3a	802.11n20 Chain A+B	1 2412MHz	22.0, 22.5	13.0, 12.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	66.4 dBuV/m @ 2388.6 MHz (-7.6dB)
3b	802.11n20 Chain A+B	11 2462MHz	22.0, 24.0	13.3, 13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.2dBµV/m @ 2483.6MHz (-6.8dB)

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 Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Date of Test: 8/19/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 3
MAC Address: 0016EA02D4D0

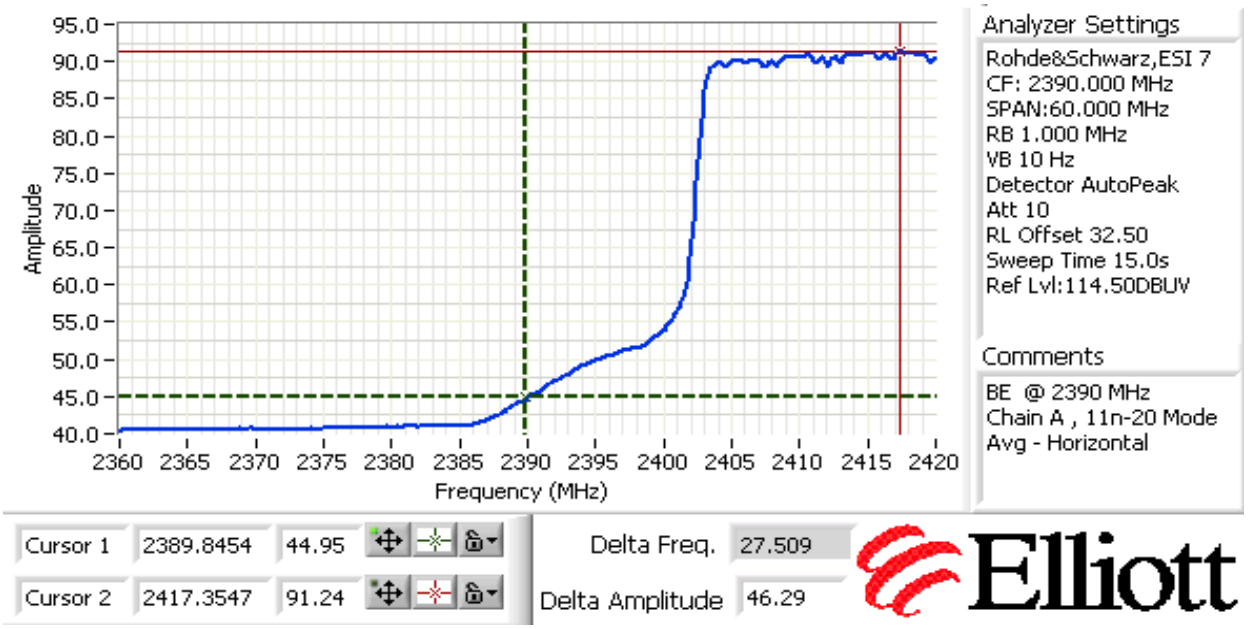
Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A

Run #1a: Low Channel @ 2412 MHz

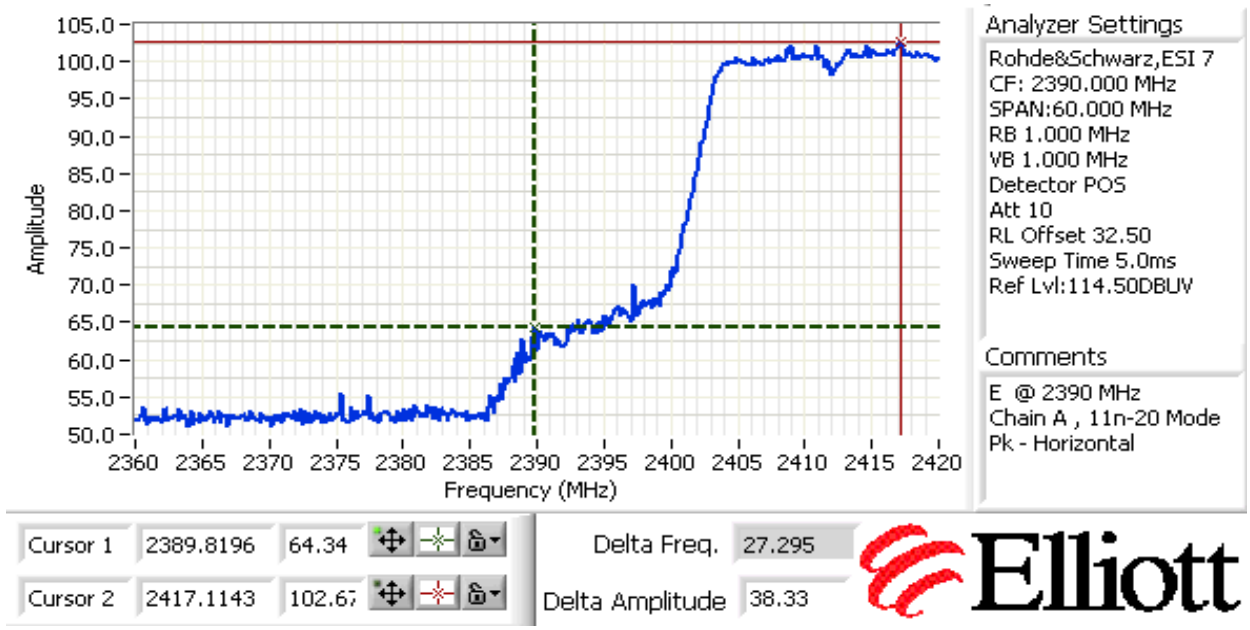
Power Setting: 18. 5 Average power: 11. 4 (for reference purposes)

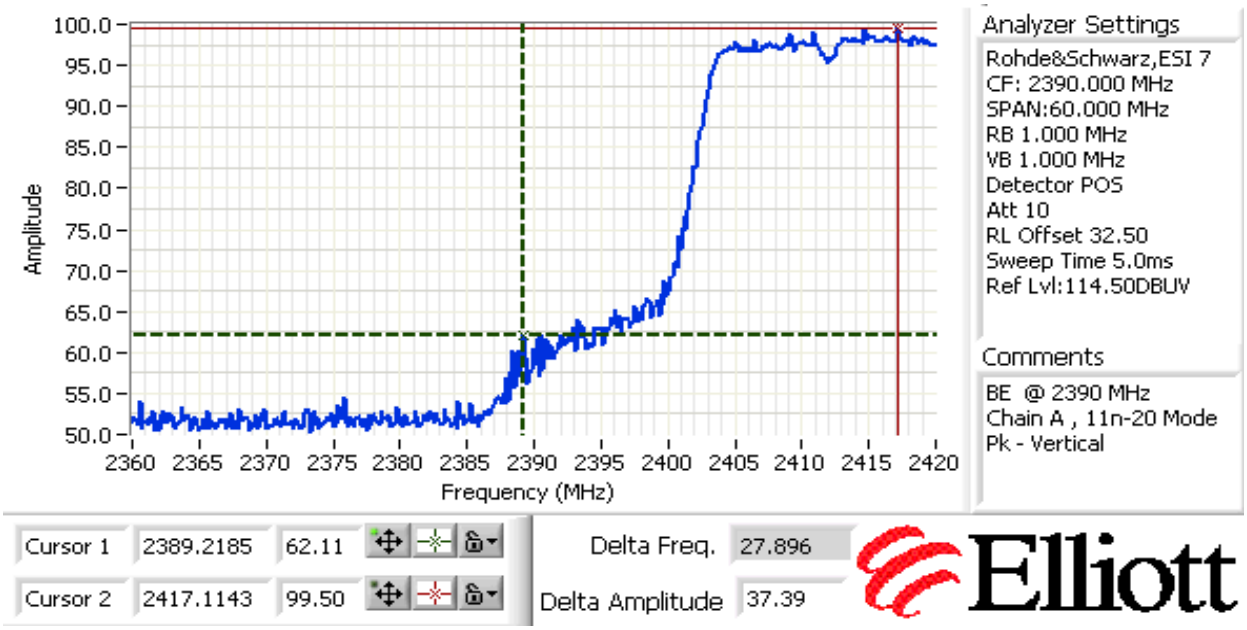
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.845	45.0	H	54.0	-9.1	AVG	63	1.0	
2389.819	63.4	H	74.0	-10.6	PK	63	1.0	
2389.845	44.1	V	54.0	-9.9	AVG	270	1.0	
2389.219	62.1	V	74.0	-11.9	PK	270	1.0	

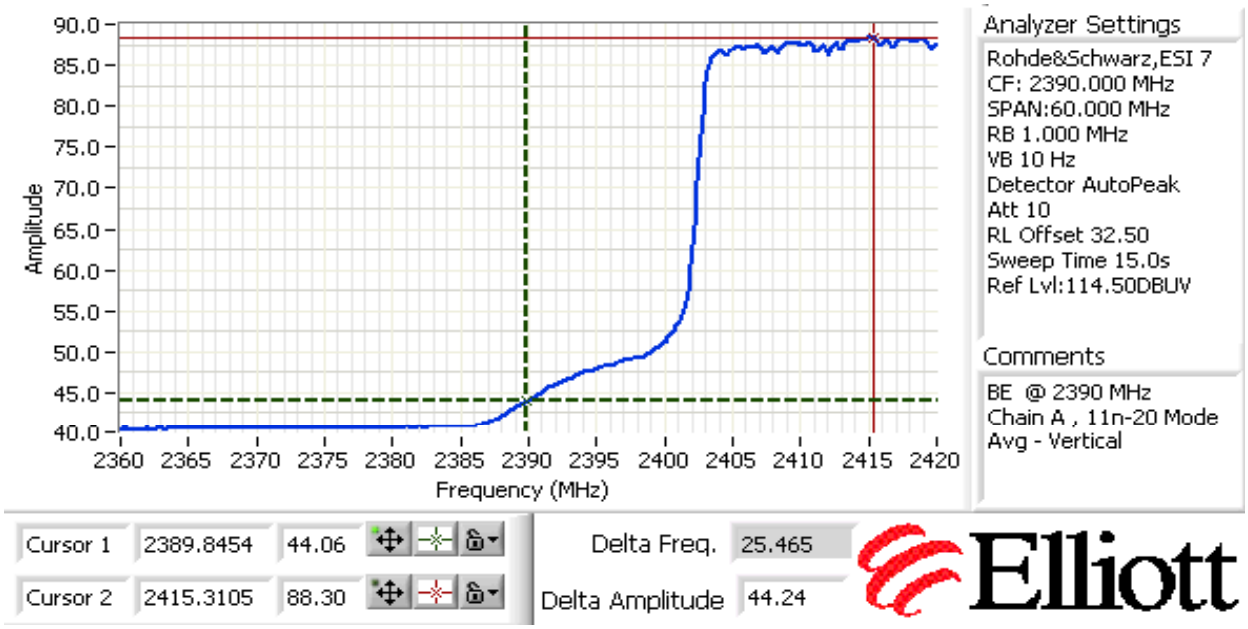


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



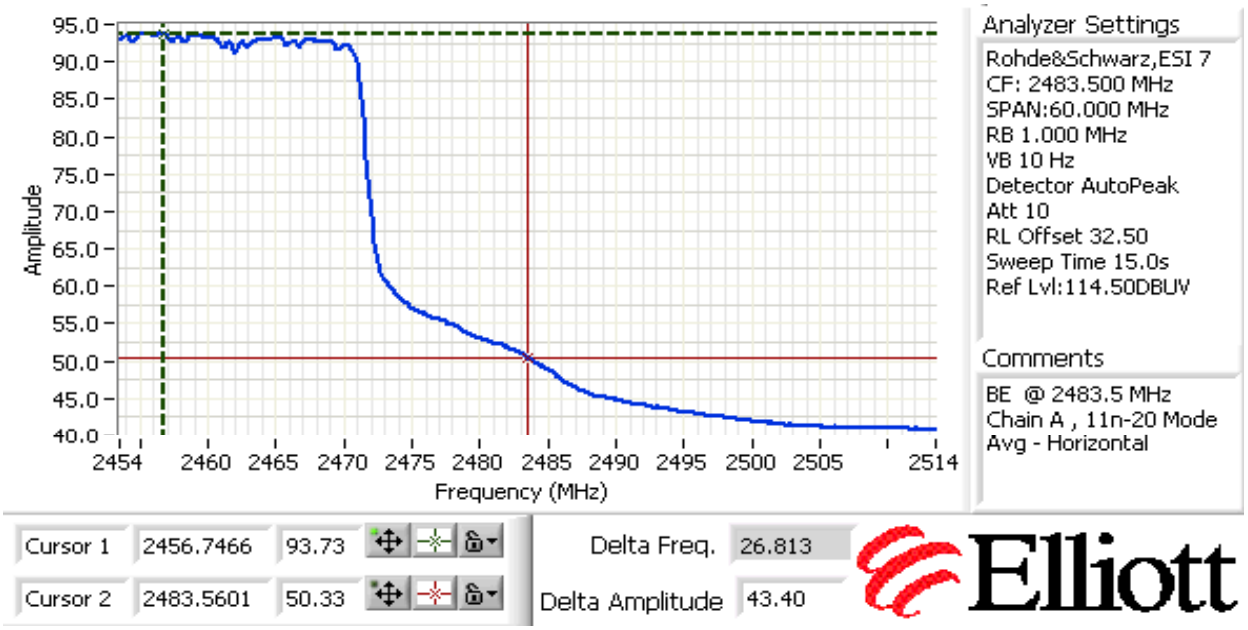
Run #1b: High Channel @ 2462 MHz

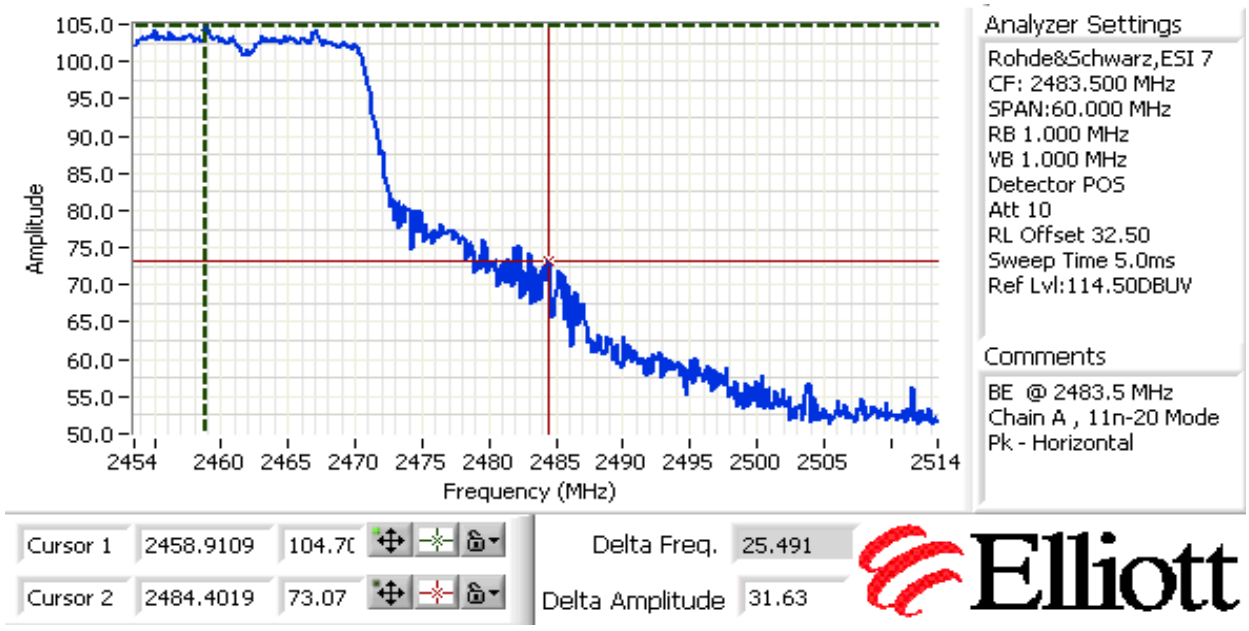
Power Setting: 22. 0 Average power: 13.9 (for reference purposes)

Band Edge Signal Field Strength

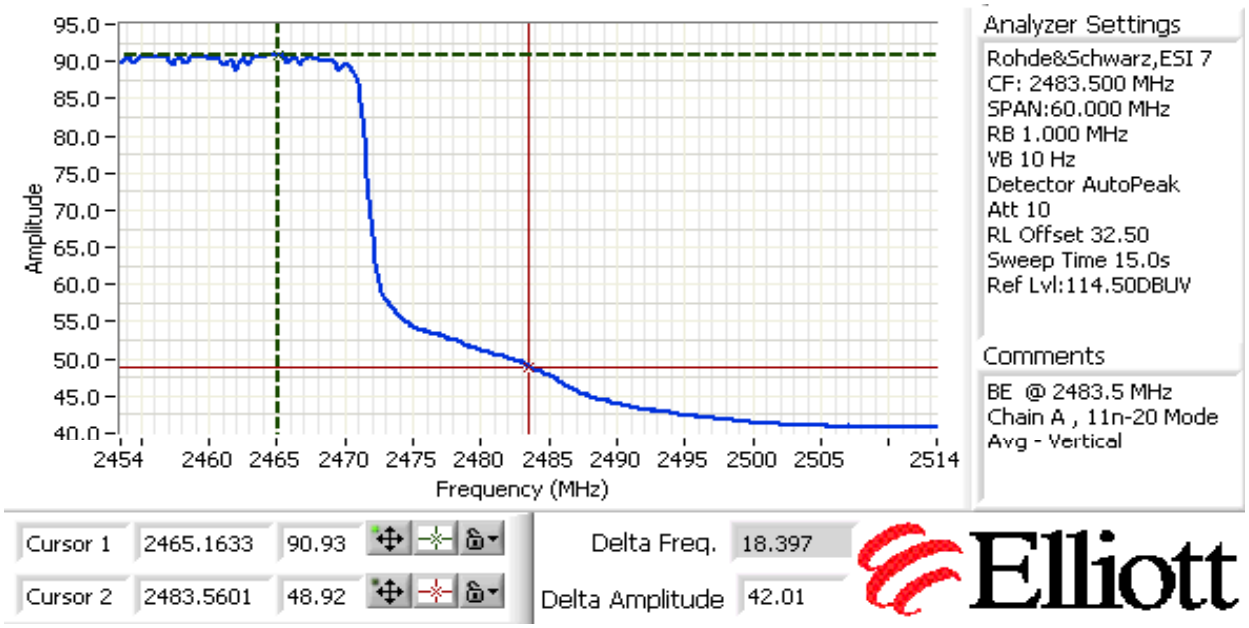
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.560	50.3	H	54.0	-3.7	AVG	63	1.0	
2484.402	73.1	H	74.0	-0.9	PK	63	1.0	
2483.560	48.9	V	54.0	-5.1	AVG	270	1.0	
2483.800	72.2	V	74.0	-1.8	PK	270	1.0	

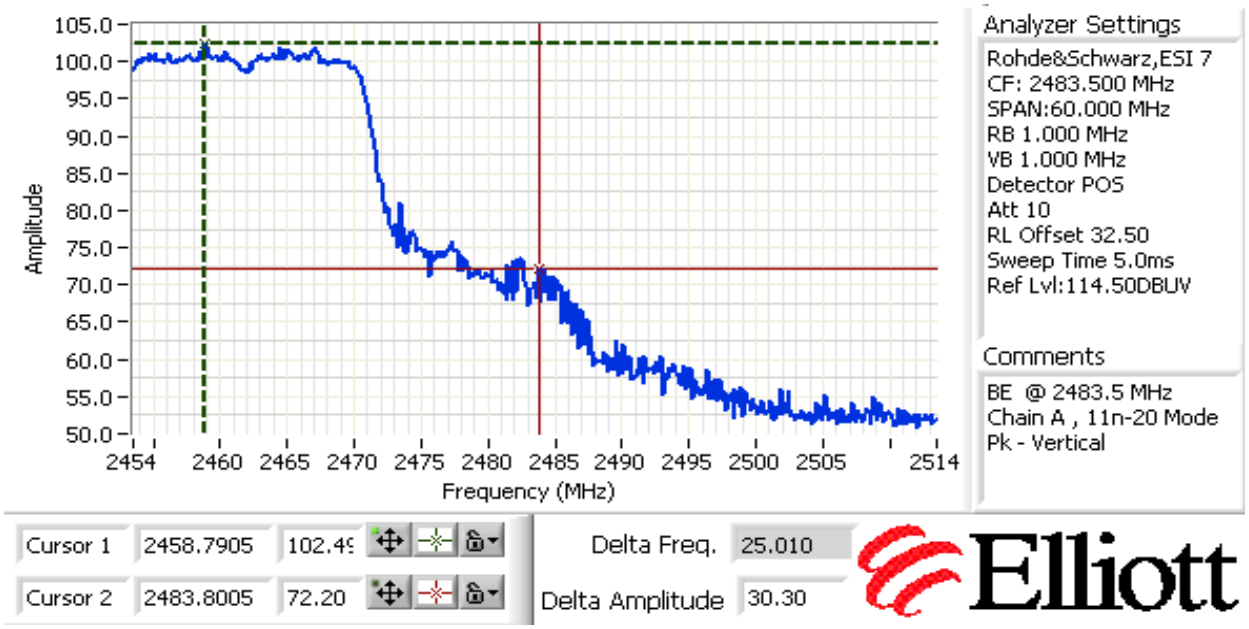
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

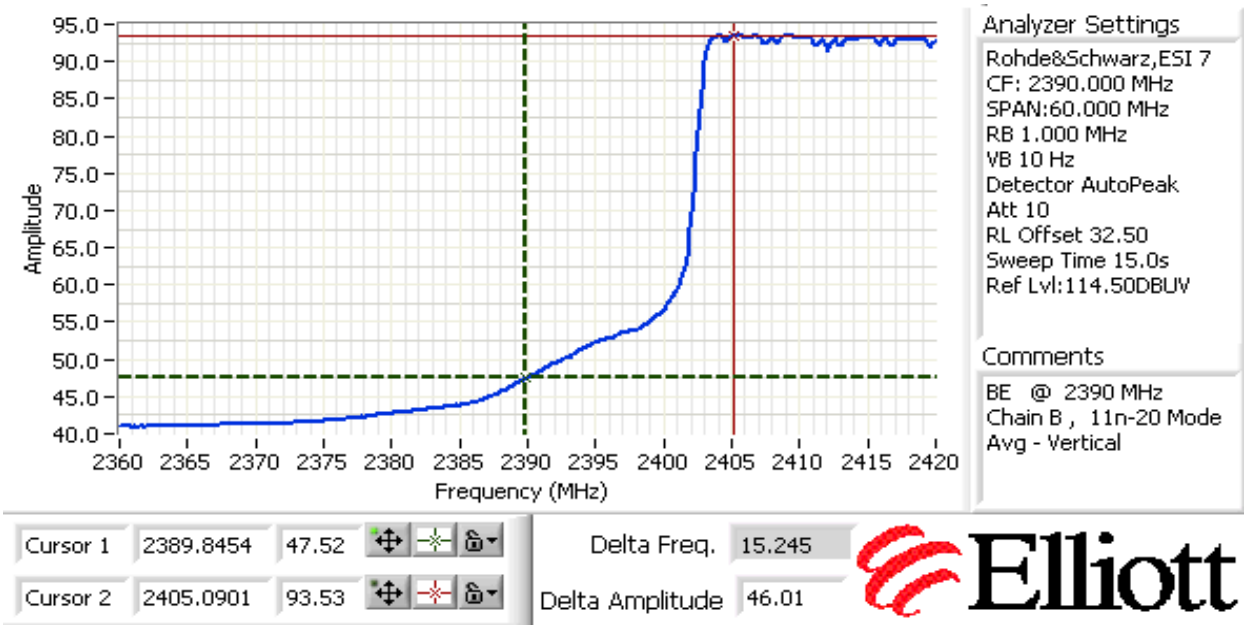
Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain B

Run #2a: Low Channel @ 2412 MHz

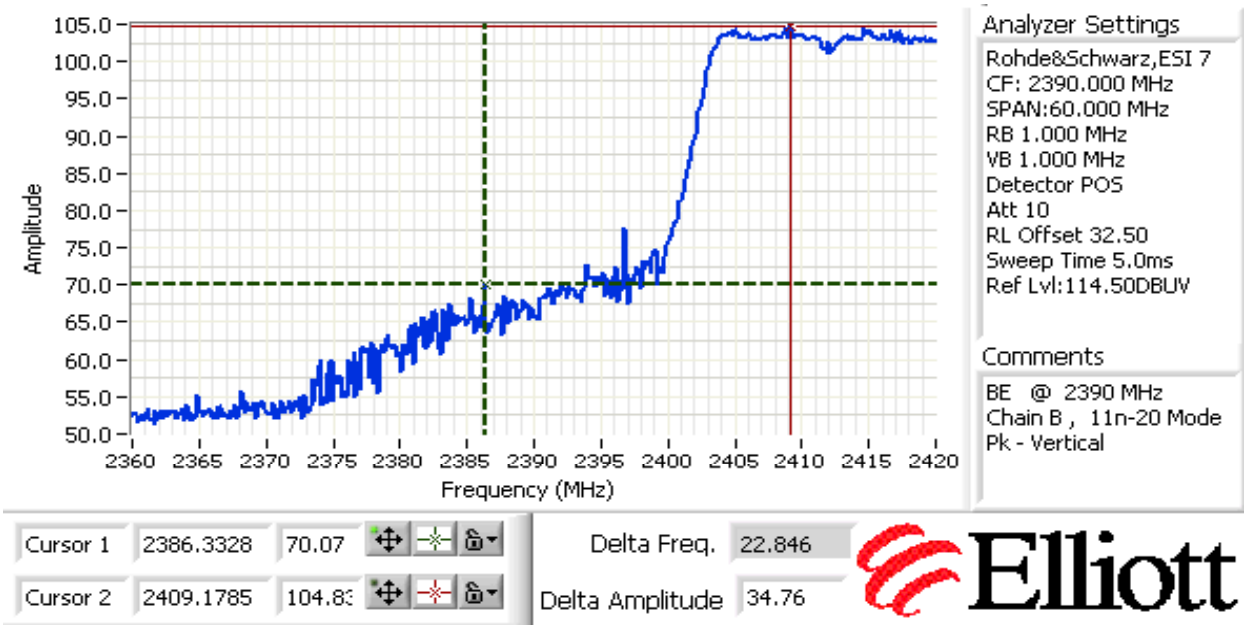
Power Setting: 21. 5 Average power: 12.3 (for reference purposes)

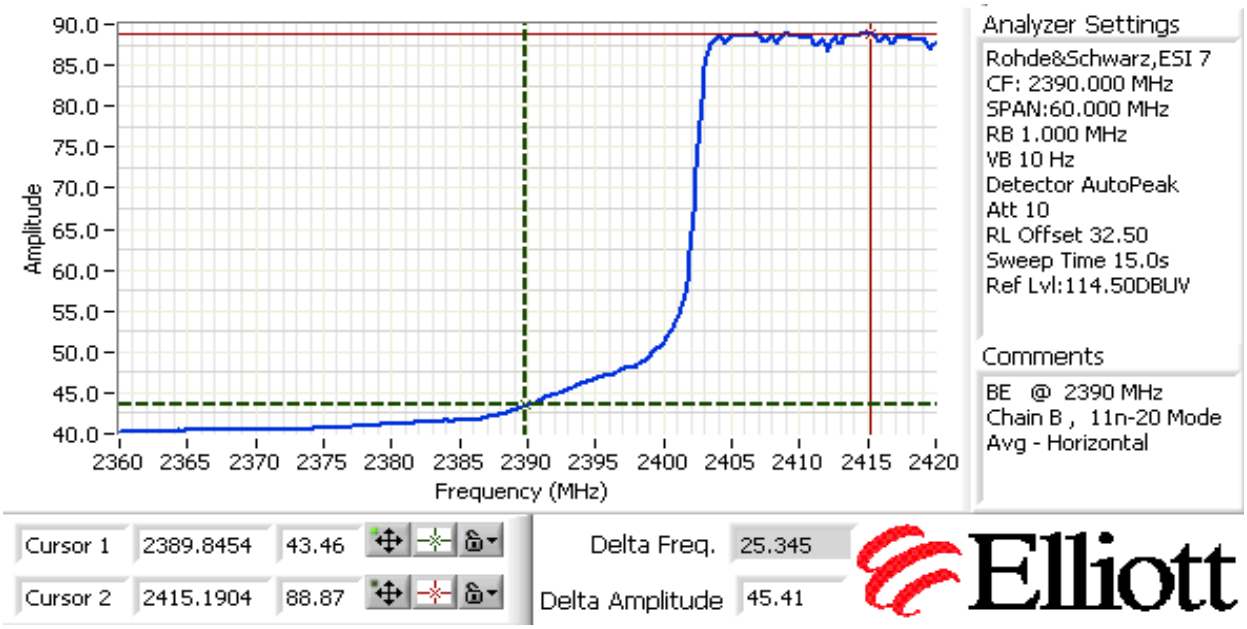
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.845	47.5	V	54.0	-6.5	AVG	230	1.0	
2386.333	70.7	V	74.0	-3.3	PK	230	1.0	
2389.845	43.5	H	54.0	-10.5	AVG	241	1.0	
2389.939	62.2	H	74.0	-11.8	PK	241	1.0	

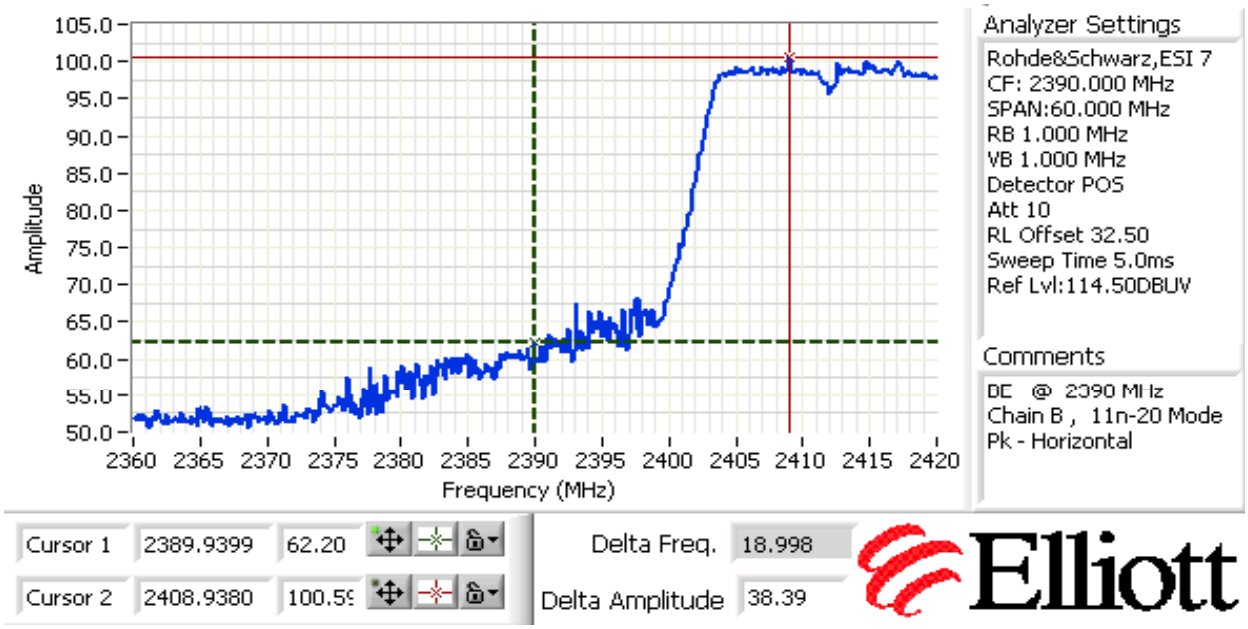


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



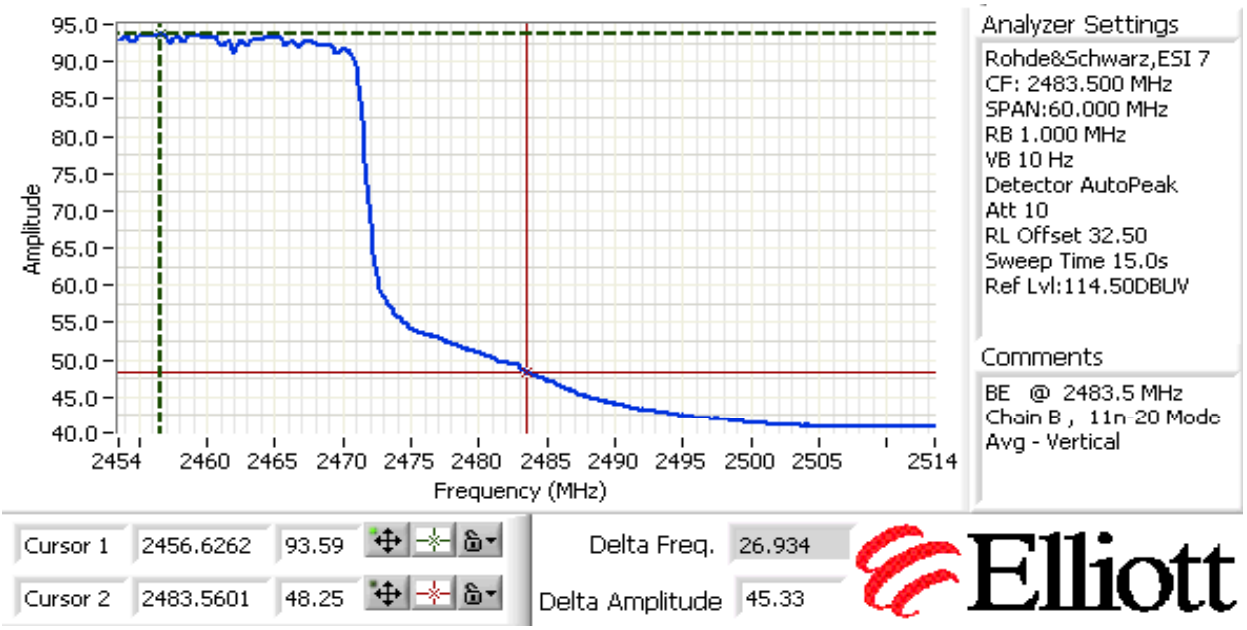
Run #2b: High Channel @ 2462 MHz

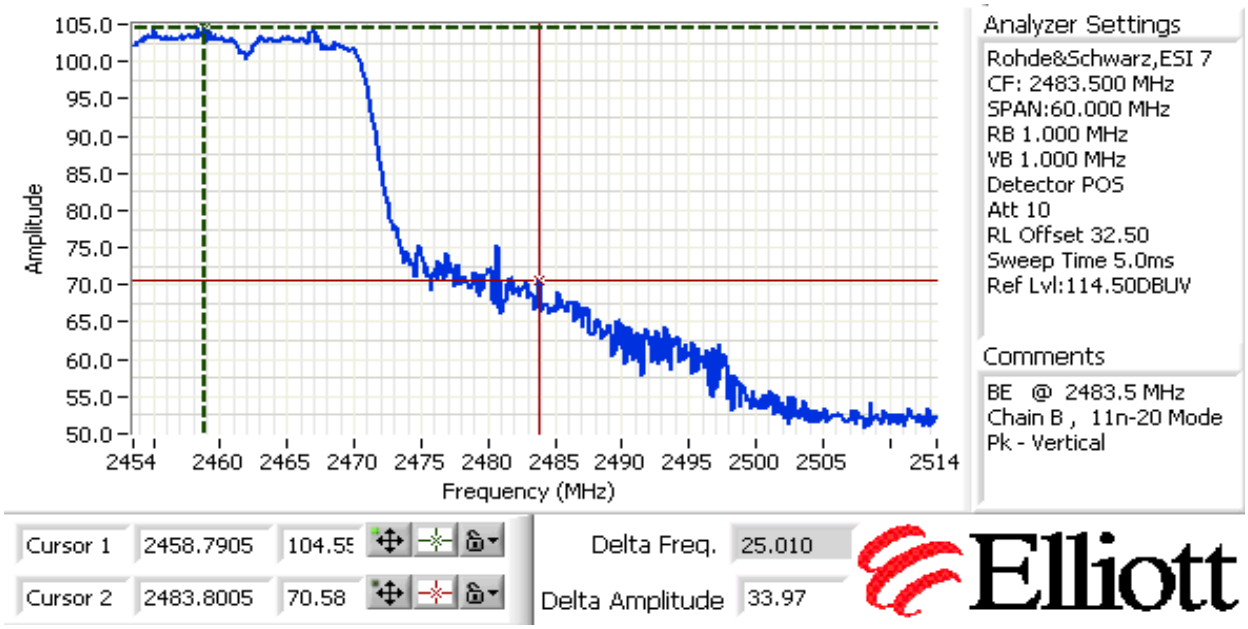
Power Setting: 23. 5 Average power: 14.0 (for reference purposes)

Band Edge Signal Field Strength

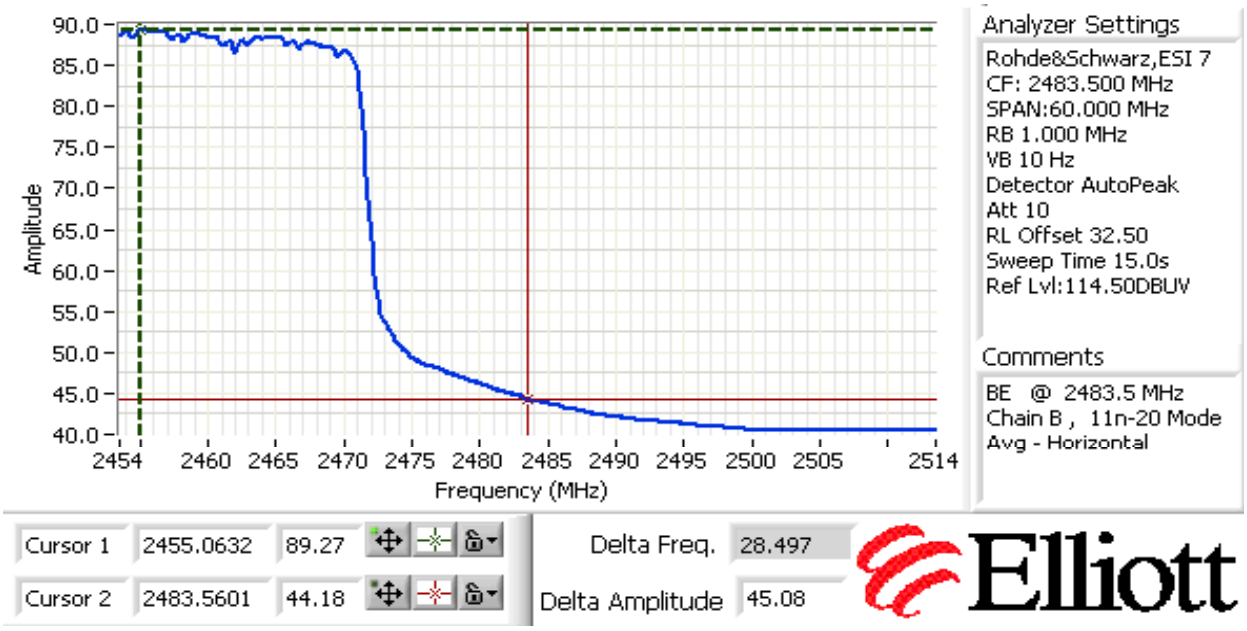
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.560	48.3	V	54.0	-5.7	AVG	230	1.0	
2483.800	70.6	V	74.0	-3.4	PK	230	1.0	
2483.560	44.2	H	54.0	-9.8	AVG	241	1.0	
2484.161	65.2	H	74.0	-8.8	PK	241	1.0	

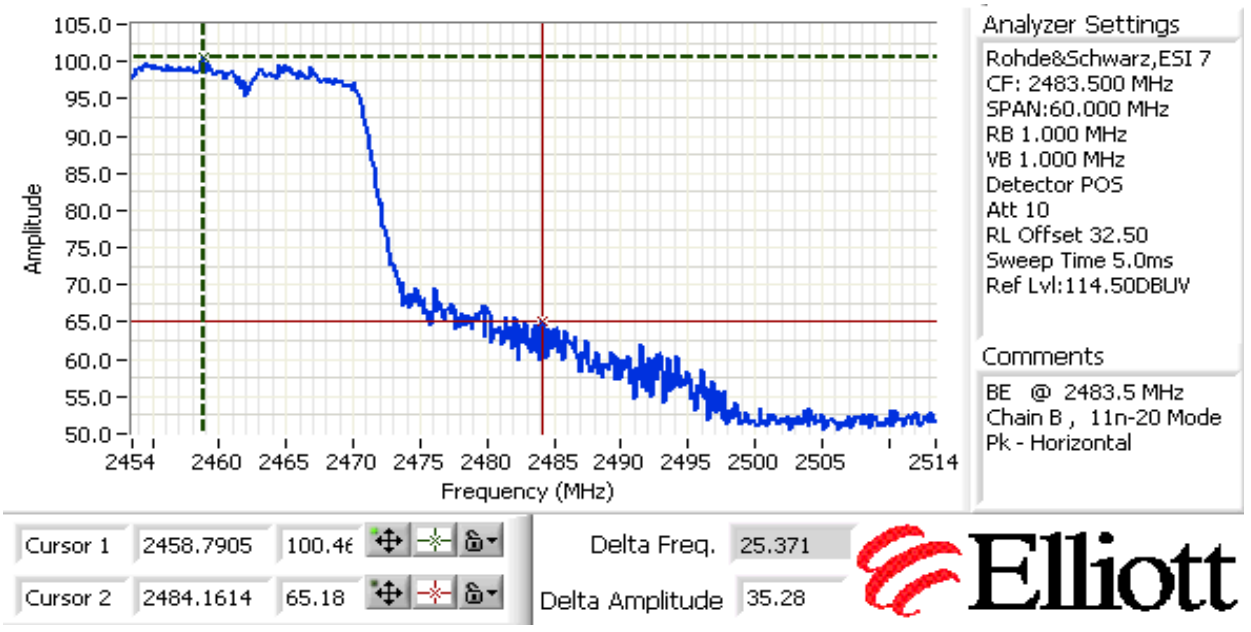
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Date of Test: 8/20/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 5
MAC Address: 0016EA02D4D0

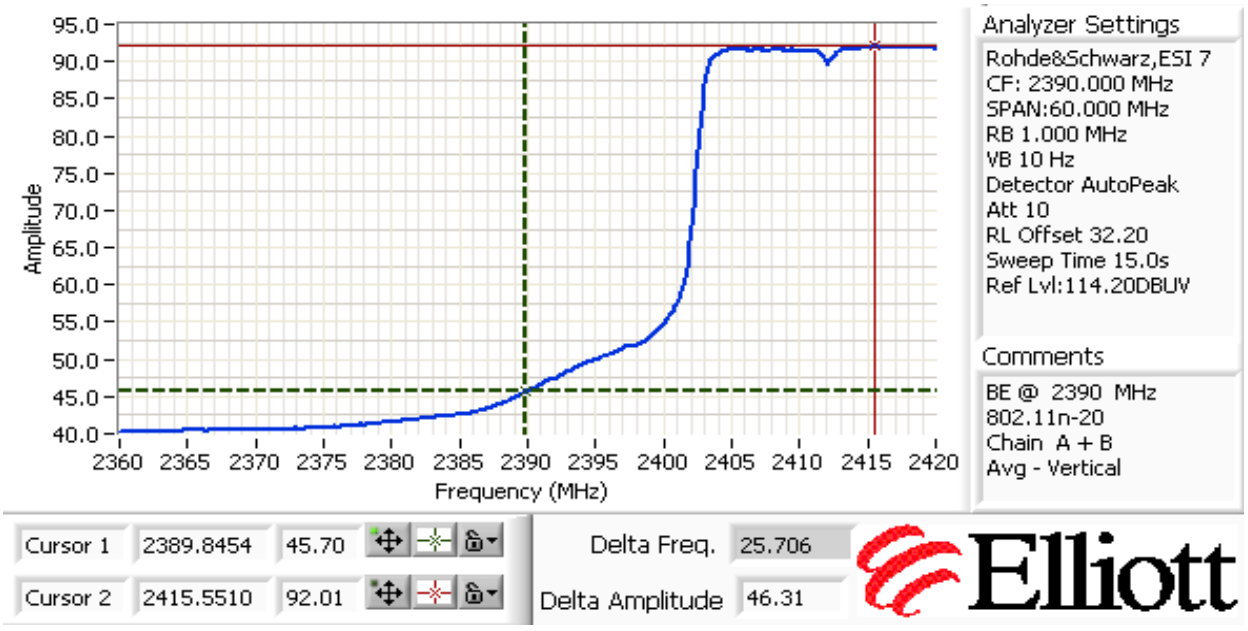
Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B

Run #3a: Low Channel @ 2412 MHz

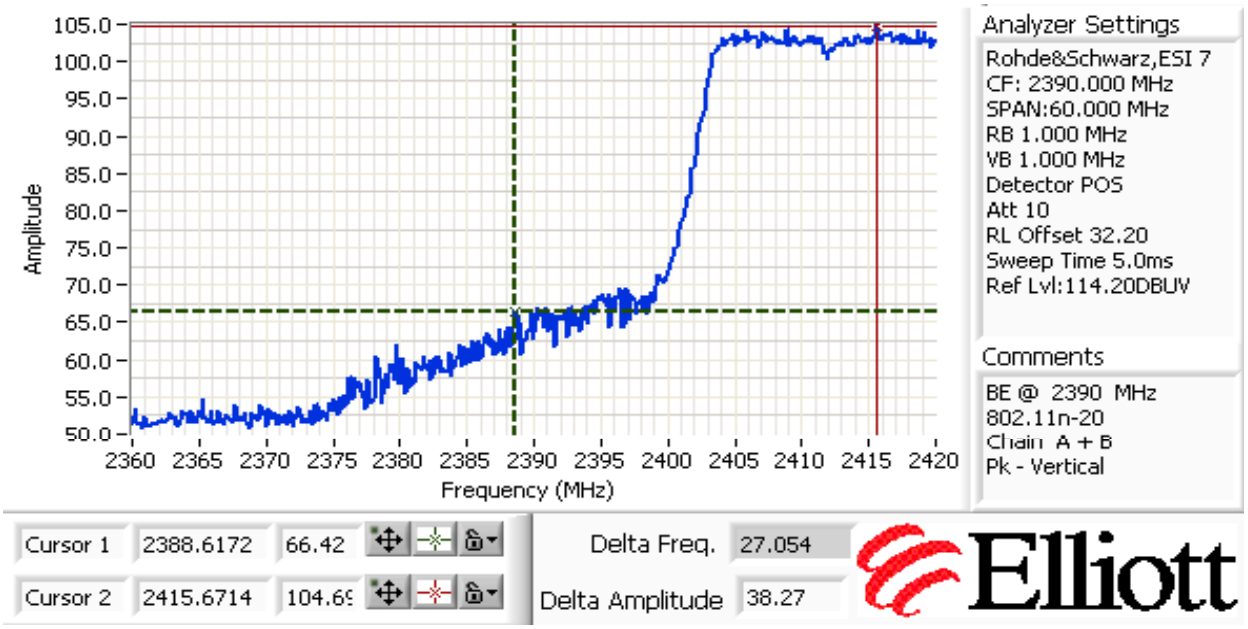
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
22.0	13	22.5	12.4		

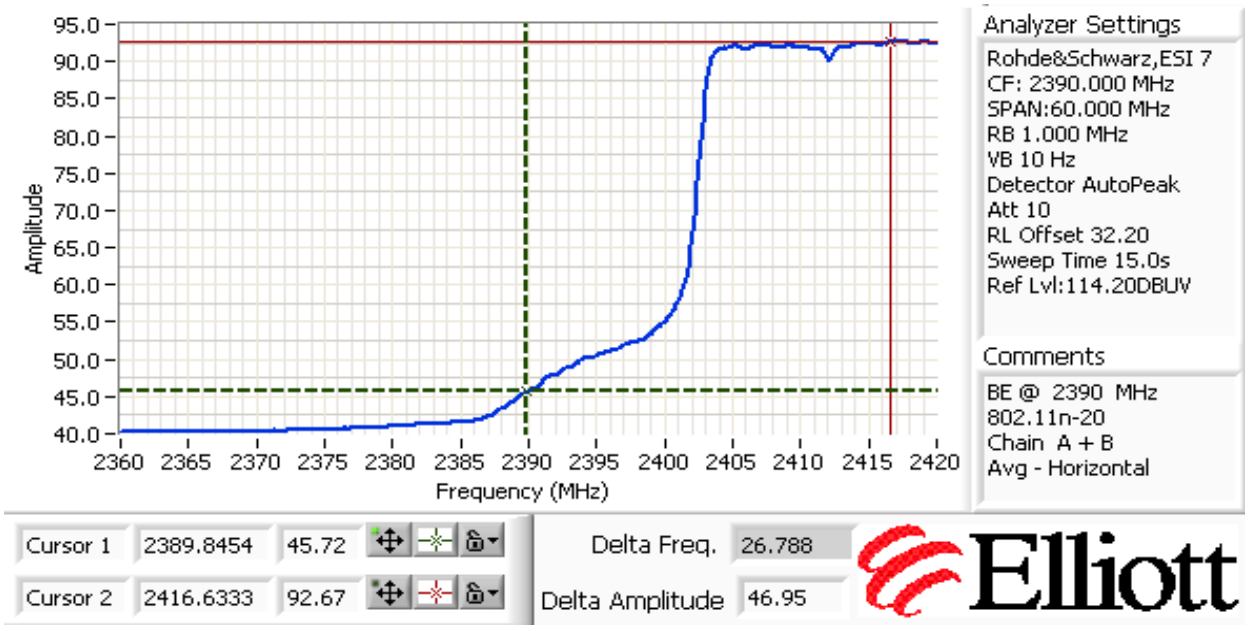
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.845	45.5	V	54.0	-8.5	AVG	223	1.0	
2388.617	66.4	V	74.0	-7.6	PK	223	1.0	
2389.845	45.7	H	54.0	-8.3	AVG	55	1.0	
2389.843	65.5	H	74.0	-8.5	PK	55	1.0	

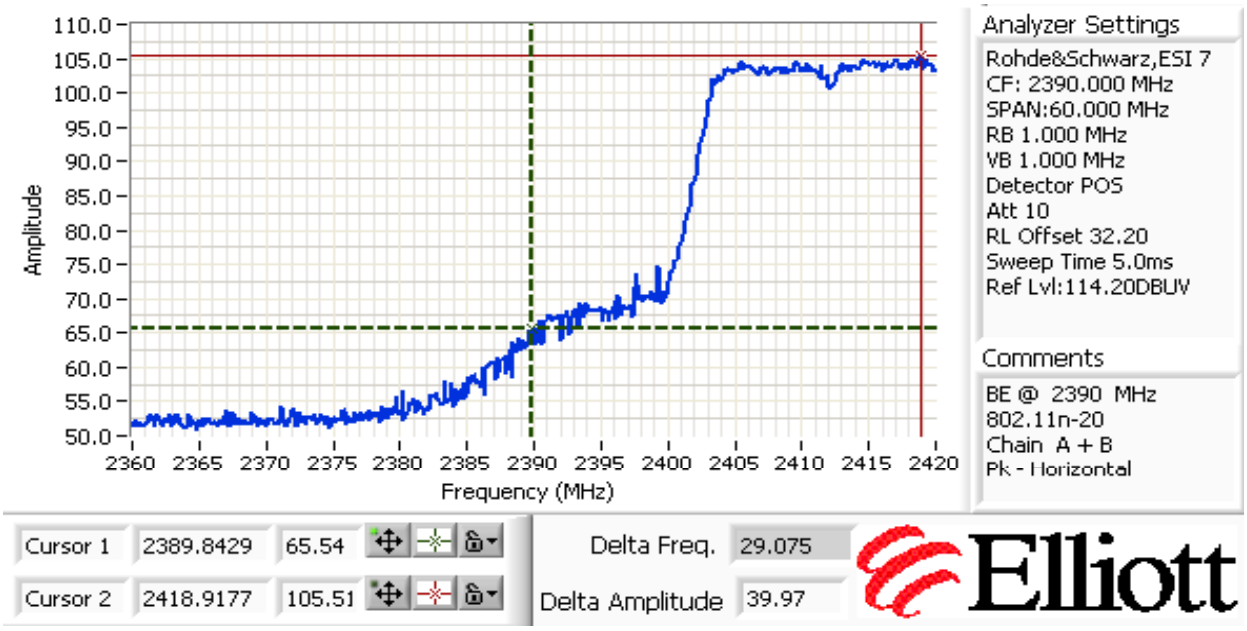


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



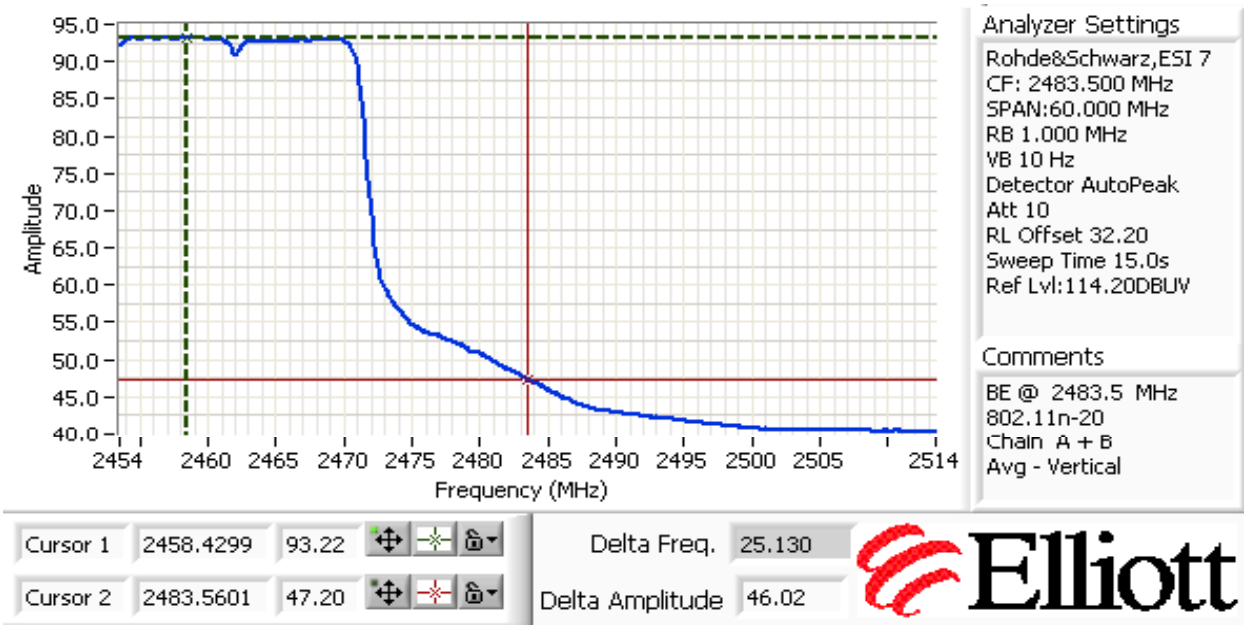
Run #3b: High Channel @ 2462 MHz

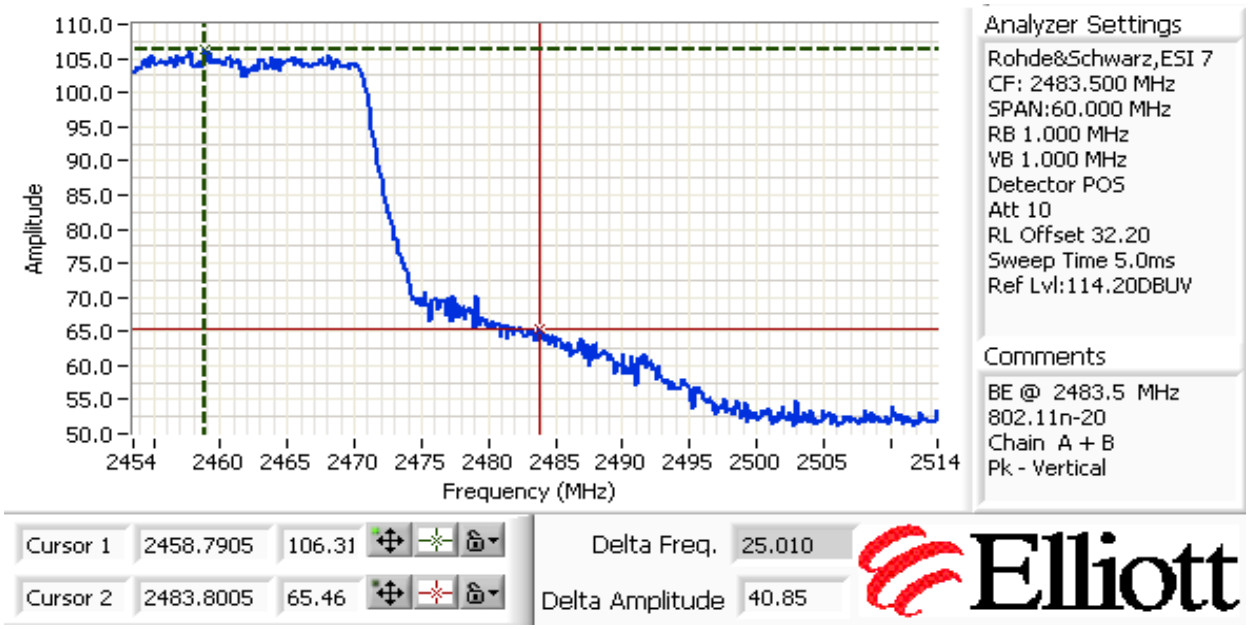
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
22.0	13.3	24.0	13.6		

Band Edge Signal Field Strength

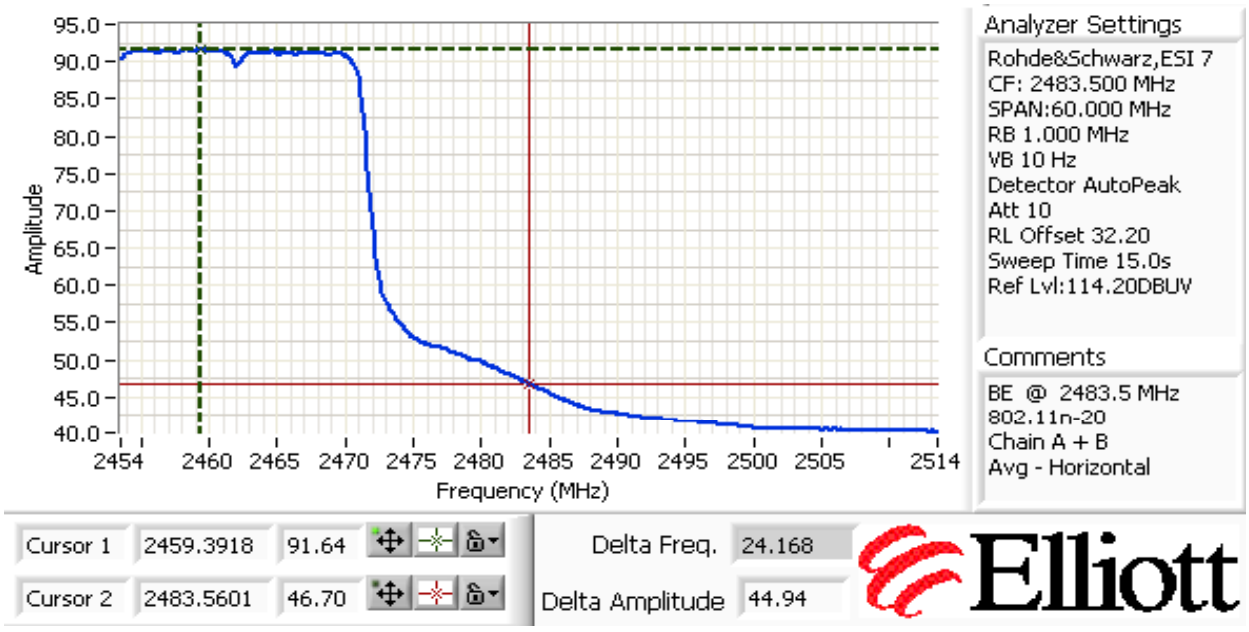
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.560	47.2	V	54.0	-6.8	AVG	223	1.0	
2483.801	65.5	V	74.0	-8.5	PK	223	1.0	
2483.560	46.7	H	54.0	-7.3	AVG	55	1.0	
2483.561	65.1	H	74.0	-8.9	PK	55	1.0	

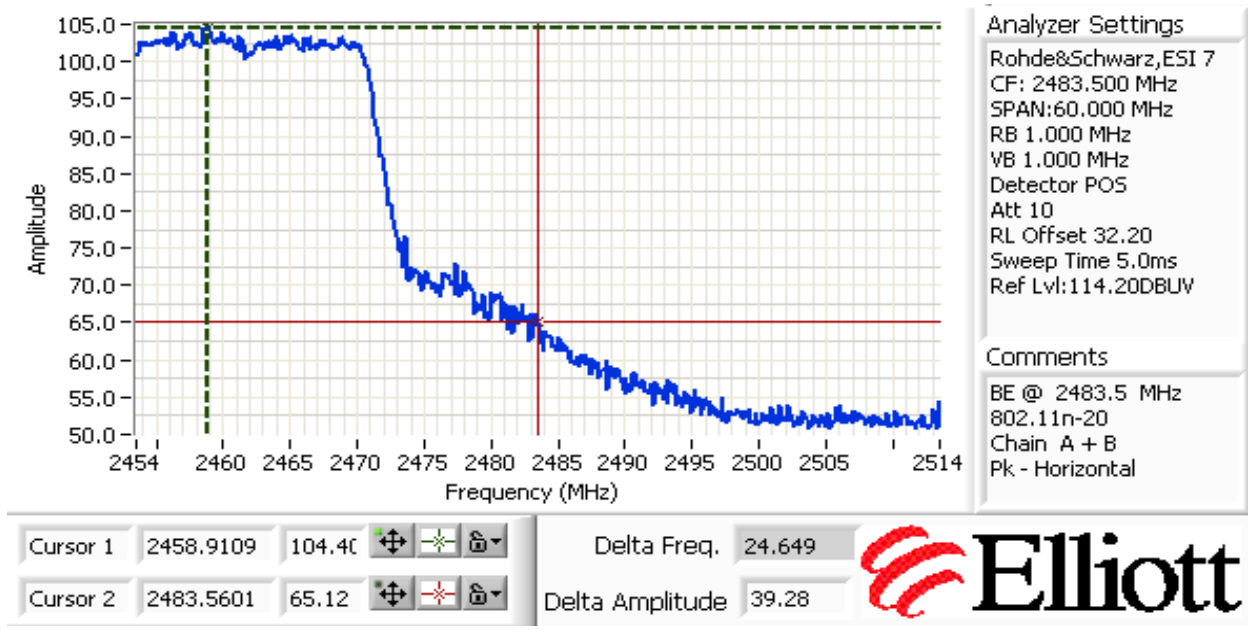
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11n40MHz SL-300 Antenna

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. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 14 - 25 °C

Rel. Humidity: 25 - 55 %

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

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n40 Chain A	1 2422MHz	19.0	12.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.6dBµV/m @ 2389.8MHz (-2.4dB)
1b	802.11n40 Chain A	11 2452MHz	21.0	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.5dBµV/m @ 2483.6MHz (-0.5dB)
2a	802.11n40 Chain B	1 2422MHz	21.5	12.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	73.1 dBuV/m @ 2387.7 MHz (-0.9dB)
2b	802.11n40 Chain B	11 2452MHz	23.0	14.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.8dBµV/m @ 2484.8MHz (-0.2dB)
3a	802.11n40 Chain A+B	3 2422MHz	A : 22.5 B : 23.5	A : 11.3 B : 11.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	49.6dBµV/m @ 2389.6MHz (-4.4dB)
3b	802.11n40 Chain A+B	9 2452MHz	A : 25.5 B : 26.5	A : 13.8 B : 14.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.9dBµV/m @ 2483.6MHz (-1.1dB)

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A

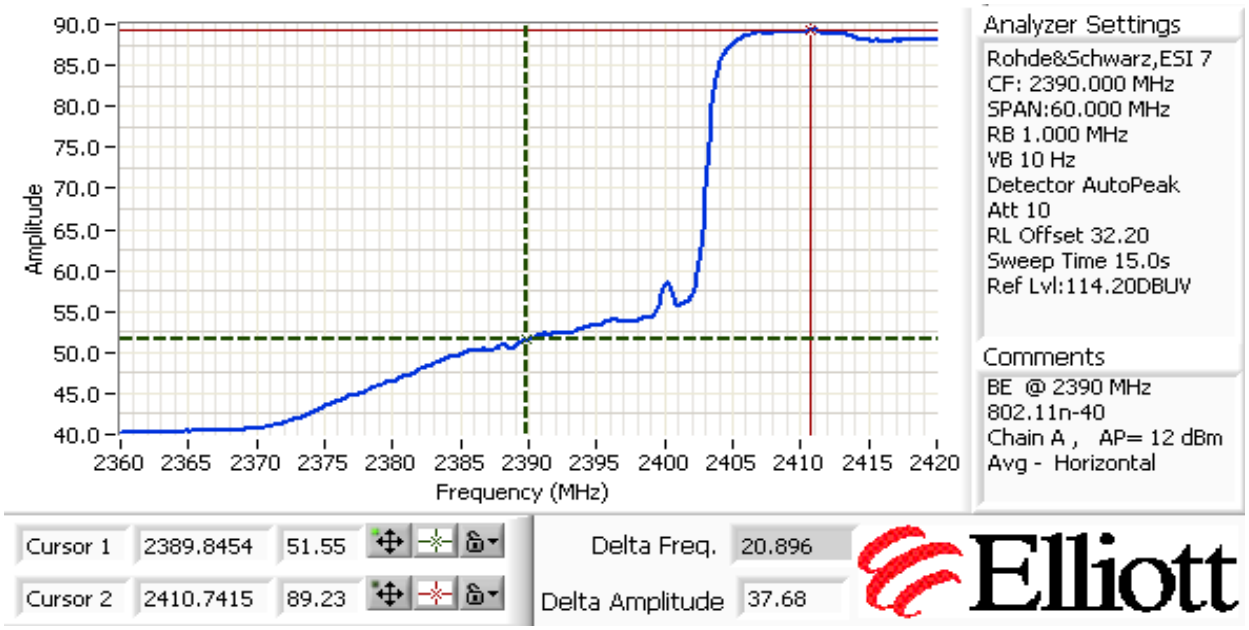
Date of Test: 8/20/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 5
MAC Address: 0016EA02D4D0

Run #1a: Low Channel @ 2422 MHz

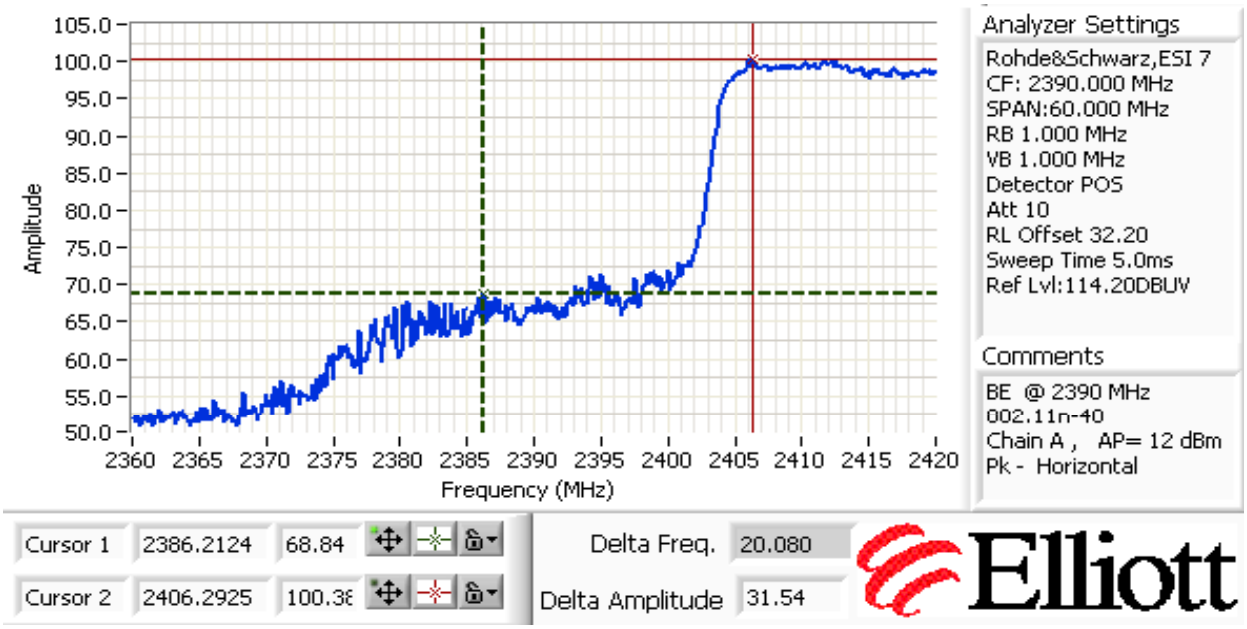
Power Setting: 19. 0 Average power: 12. 0 (for reference purposes)

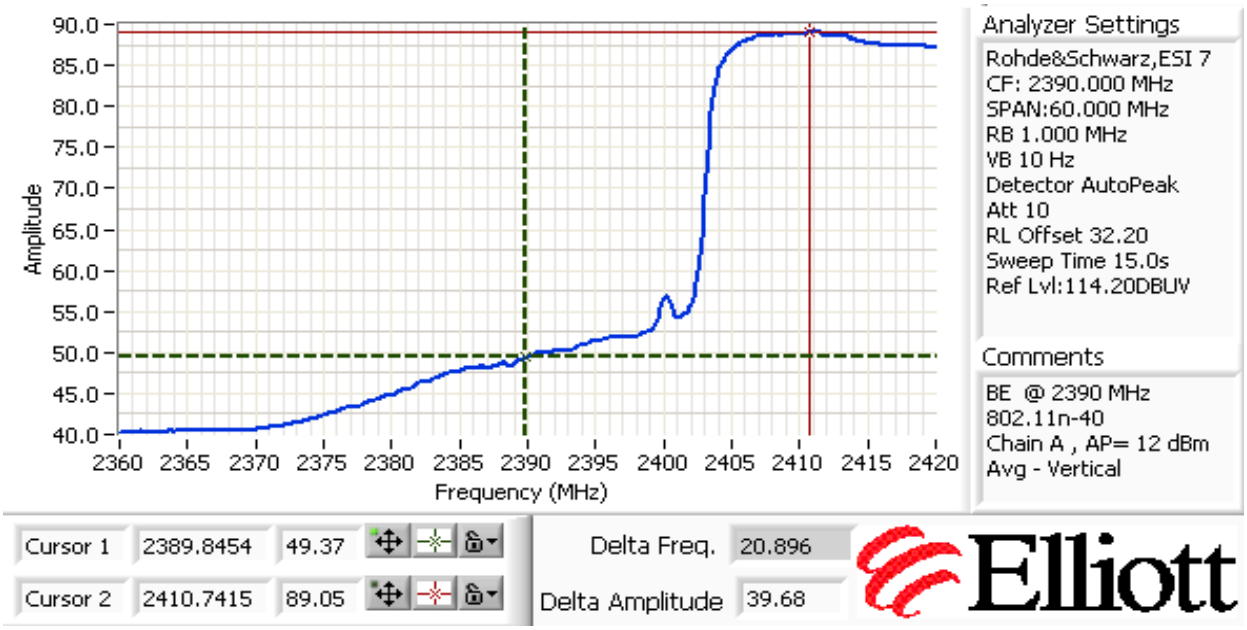
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/OP/Avg	degrees	meters	
2389.845	51.6	H	54.0	-2.4	AVG	59	1.0	
2386.212	68.8	H	74.0	-5.2	PK	59	1.0	
2389.845	49.4	V	54.0	-4.6	AVG	302	1.0	
2387.174	68.7	V	74.0	-5.3	PK	302	1.0	

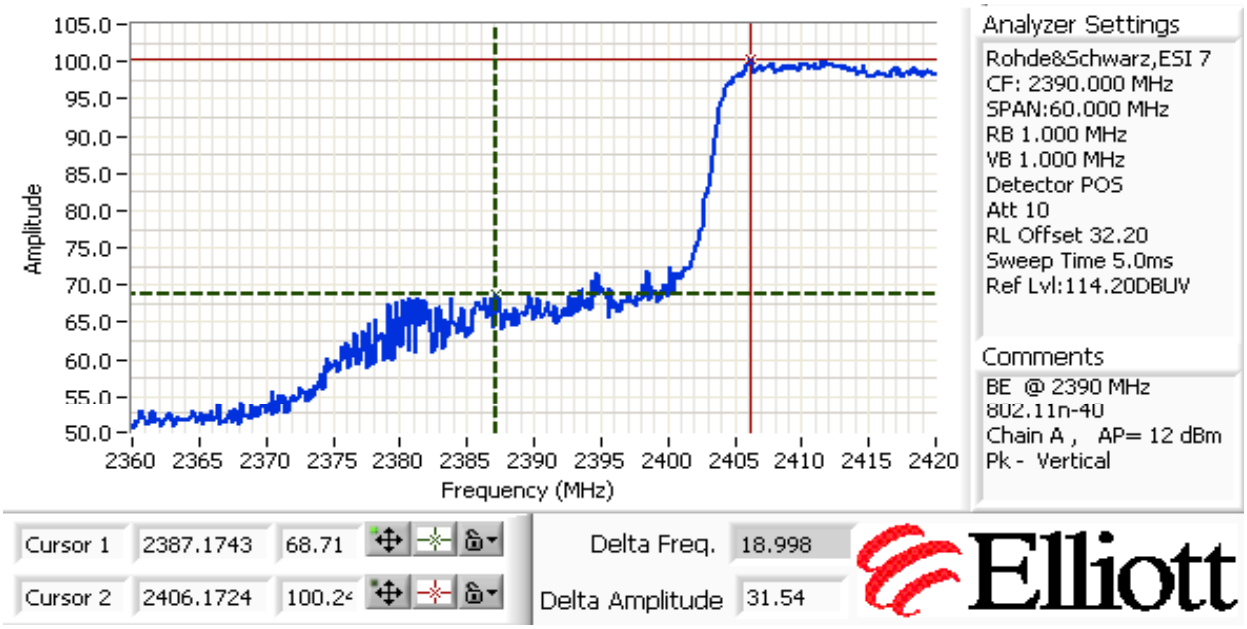


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



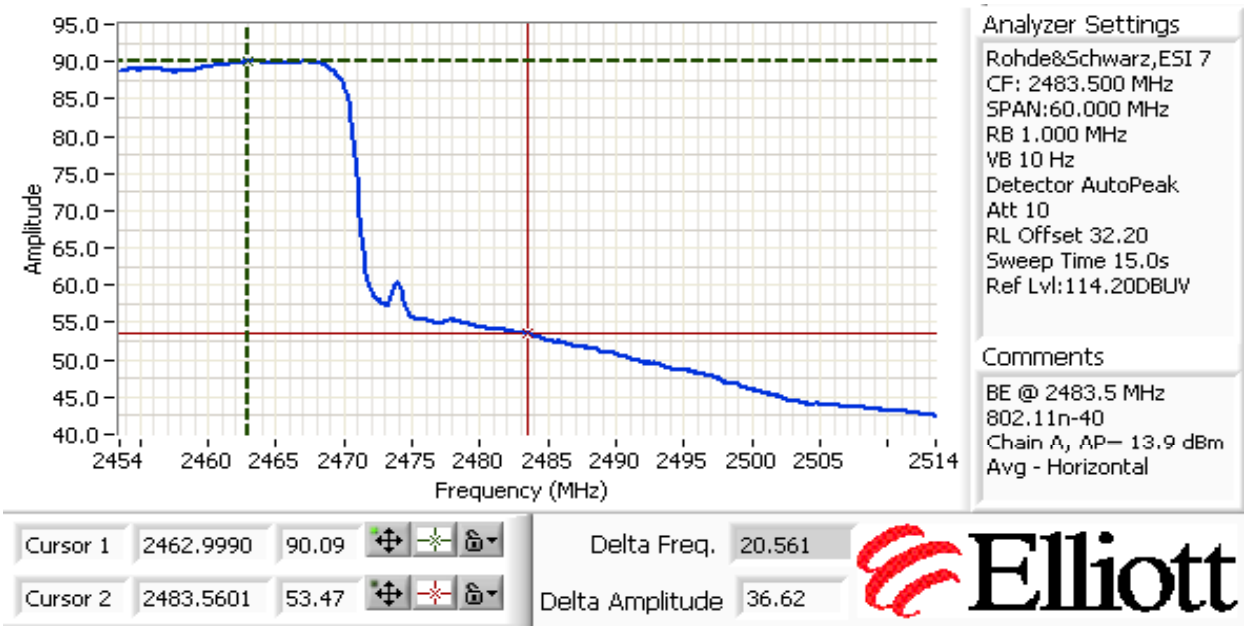
Run #1b: High Channel @ 2452 MHz

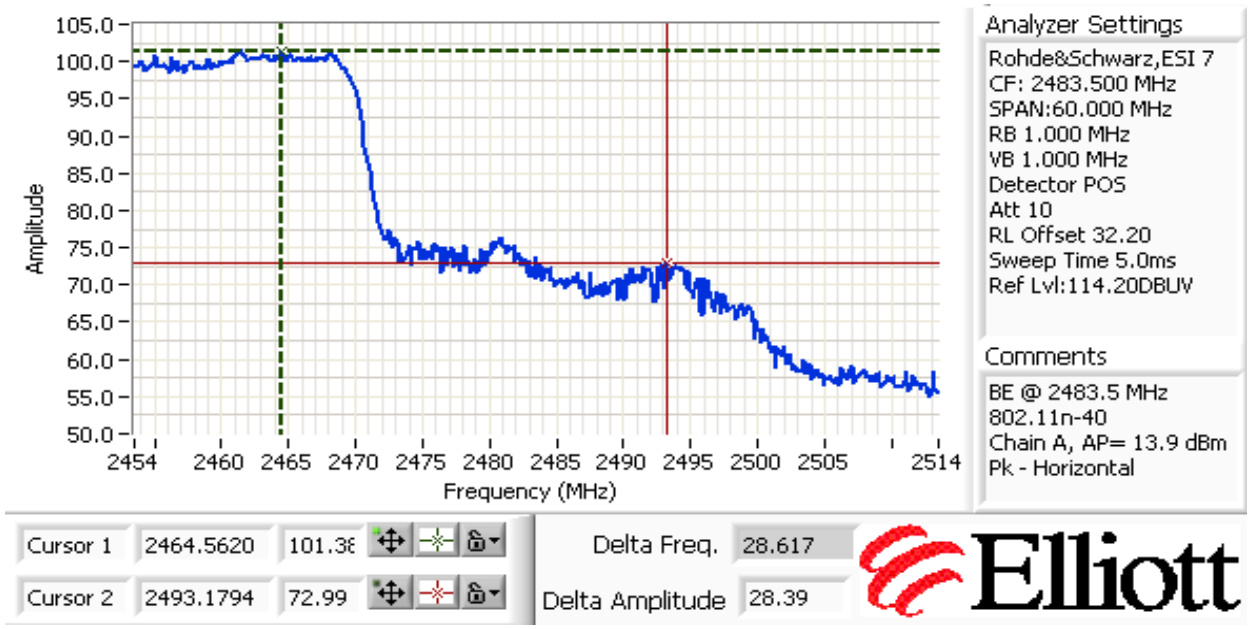
Power Setting: 21. 0 Average power: 13. 9 (for reference purposes)

Band Edge Signal Field Strength

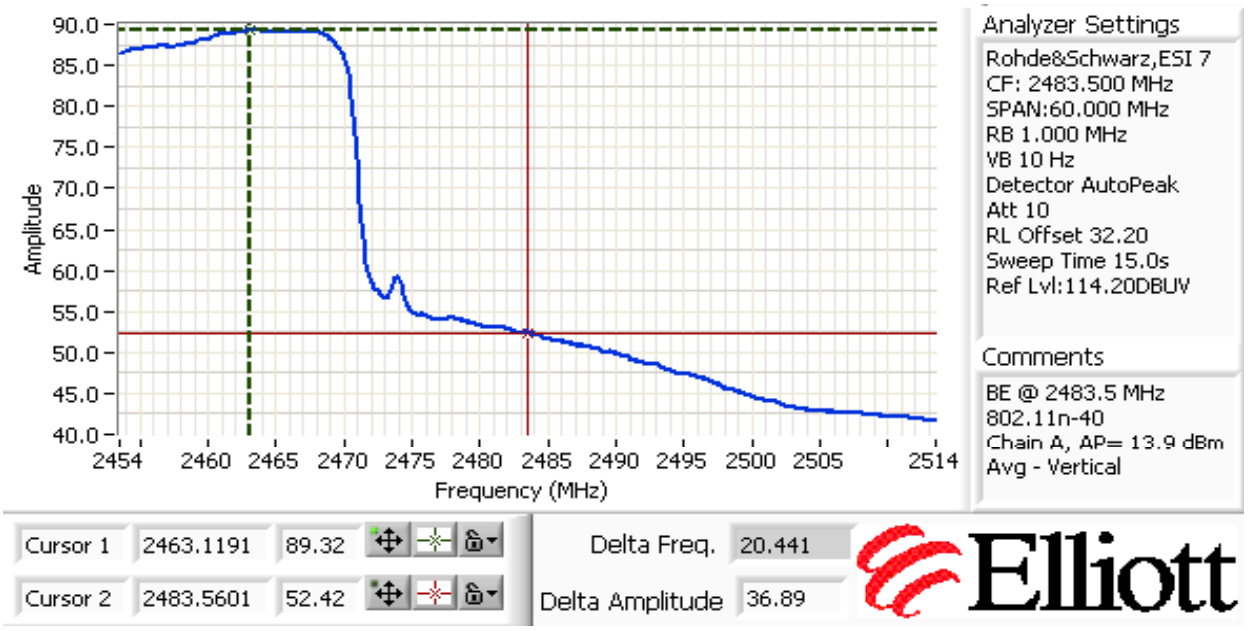
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.560	53.5	H	54.0	-0.5	AVG	61	1.0	
2493.179	73.0	H	74.0	-1.0	PK	61	1.0	
2483.560	52.4	V	54.0	-1.6	AVG	303	1.0	
2486.085	71.6	V	74.0	-2.4	PK	303	1.0	

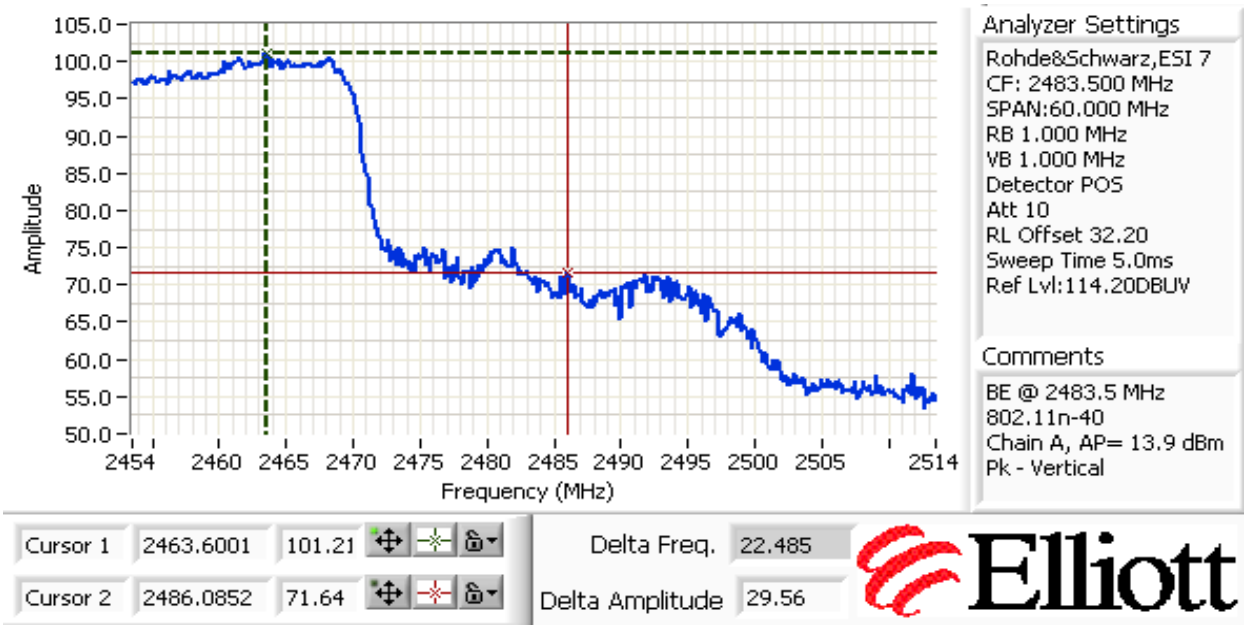
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain B

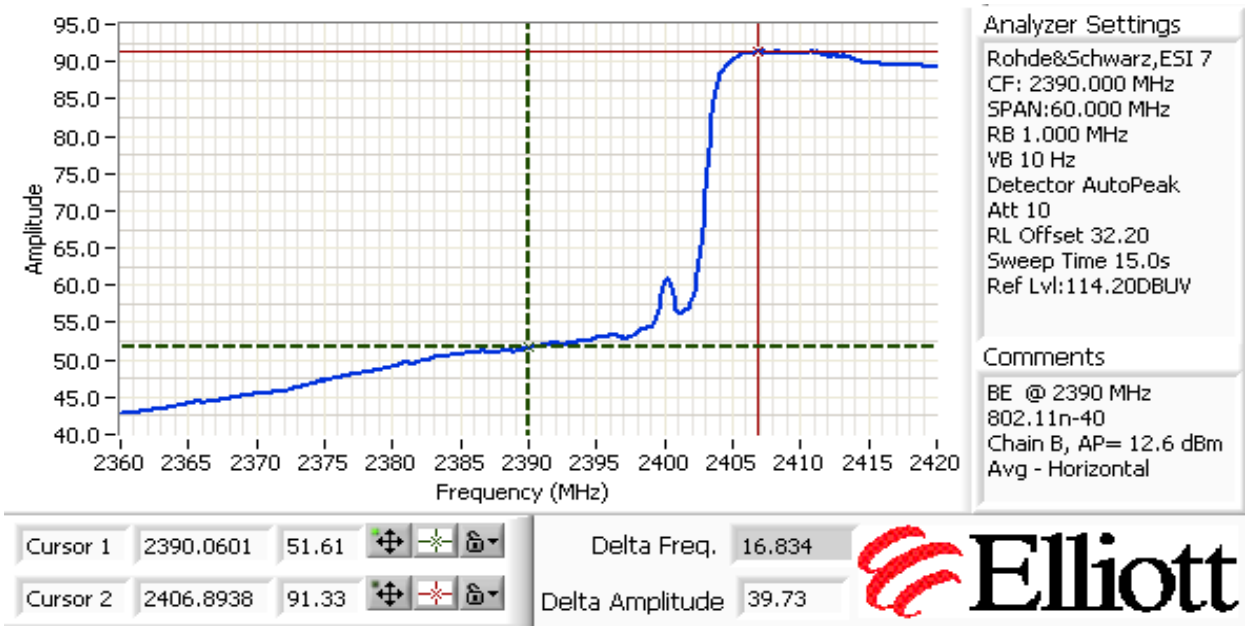
Date of Test: 8/20/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 5
MAC Address: 0016EA02D4D0

Run #2a: Low Channel @ 2422 MHz

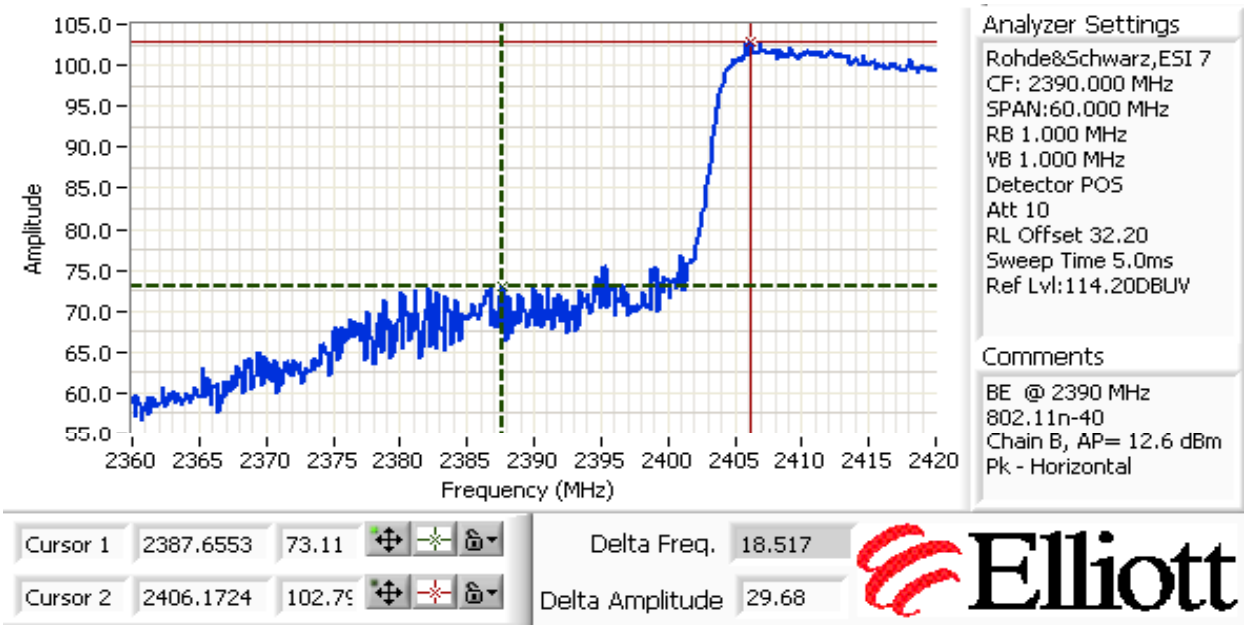
Power Setting: 21. 5 Average power: 12. 6 (for reference purposes)

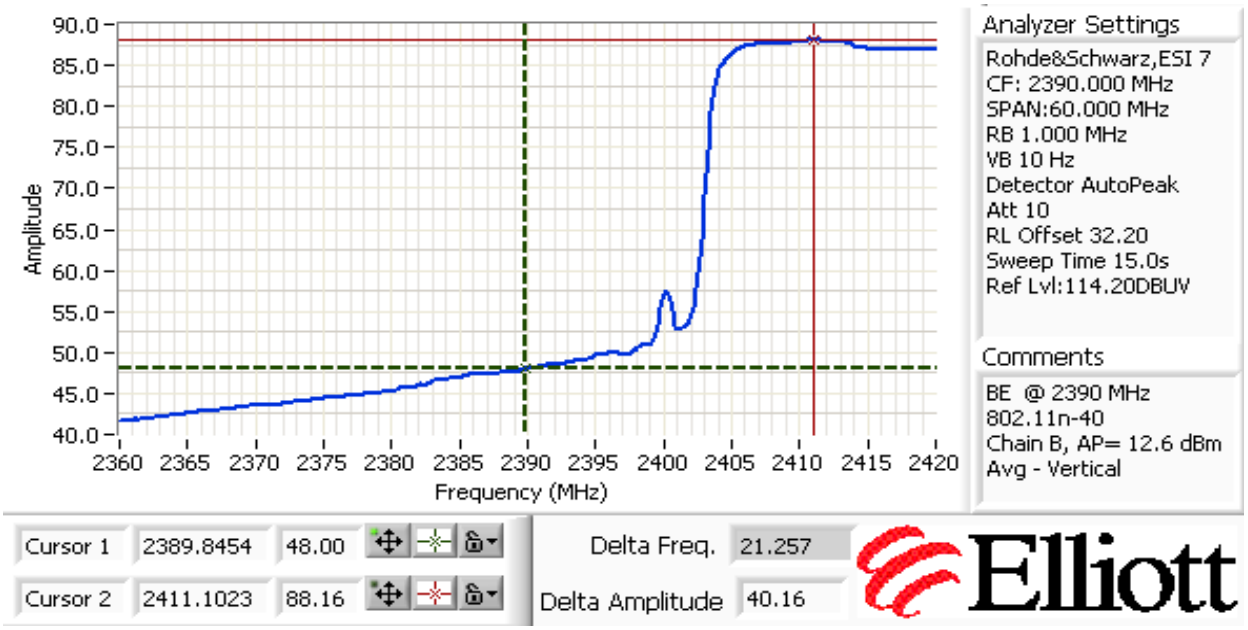
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/OP/Avg	degrees	meters	
2389.845	51.6	H	54.0	-2.4	AVG	59	1.0	
2387.655	73.1	H	74.0	-0.9	PK	59	1.0	
2389.845	48.0	V	54.0	-6.0	AVG	224	1.0	
2388.016	68.4	V	74.0	-5.6	PK	224	1.0	

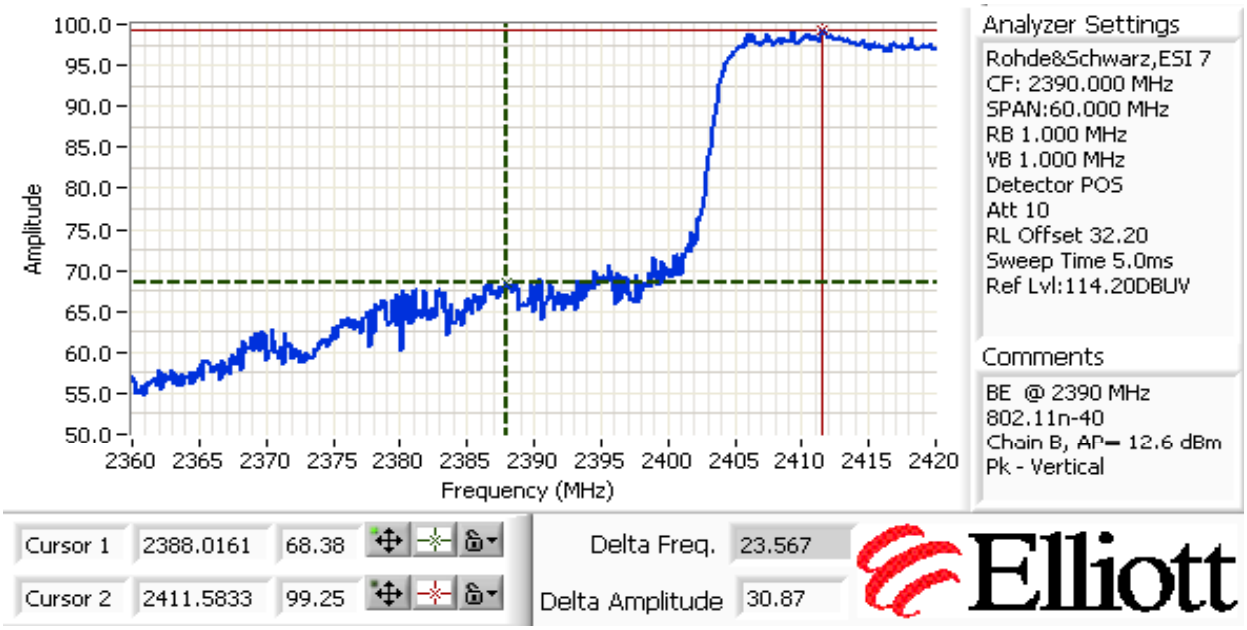


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



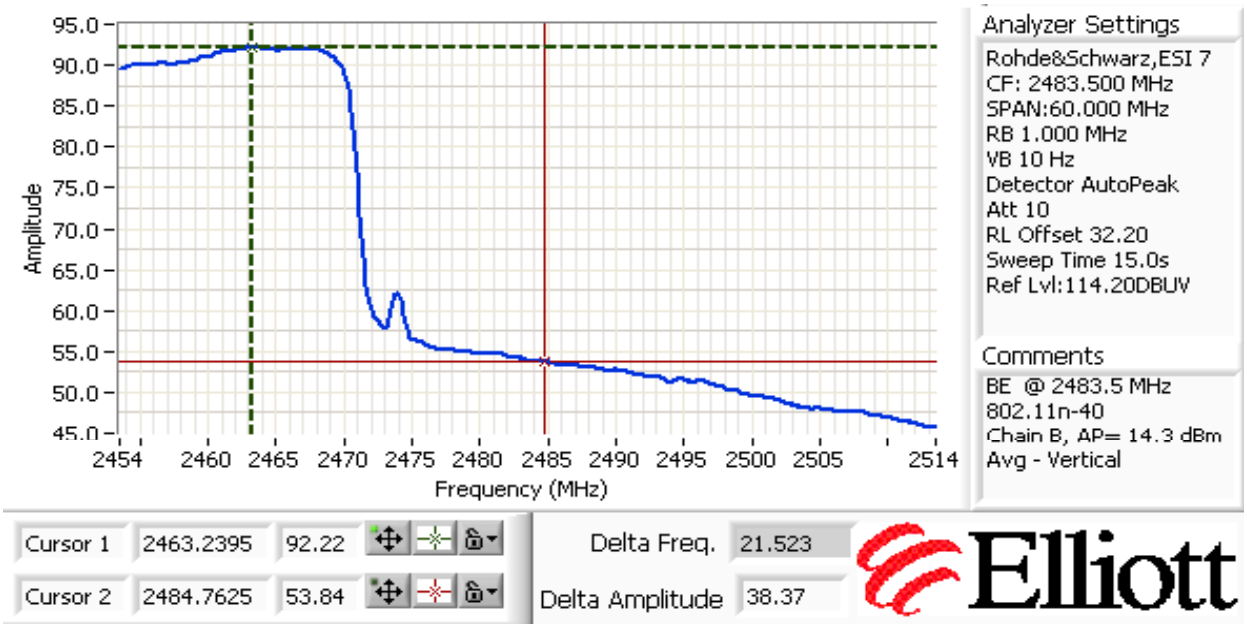
Run #2b: High Channel @ 2452 MHz

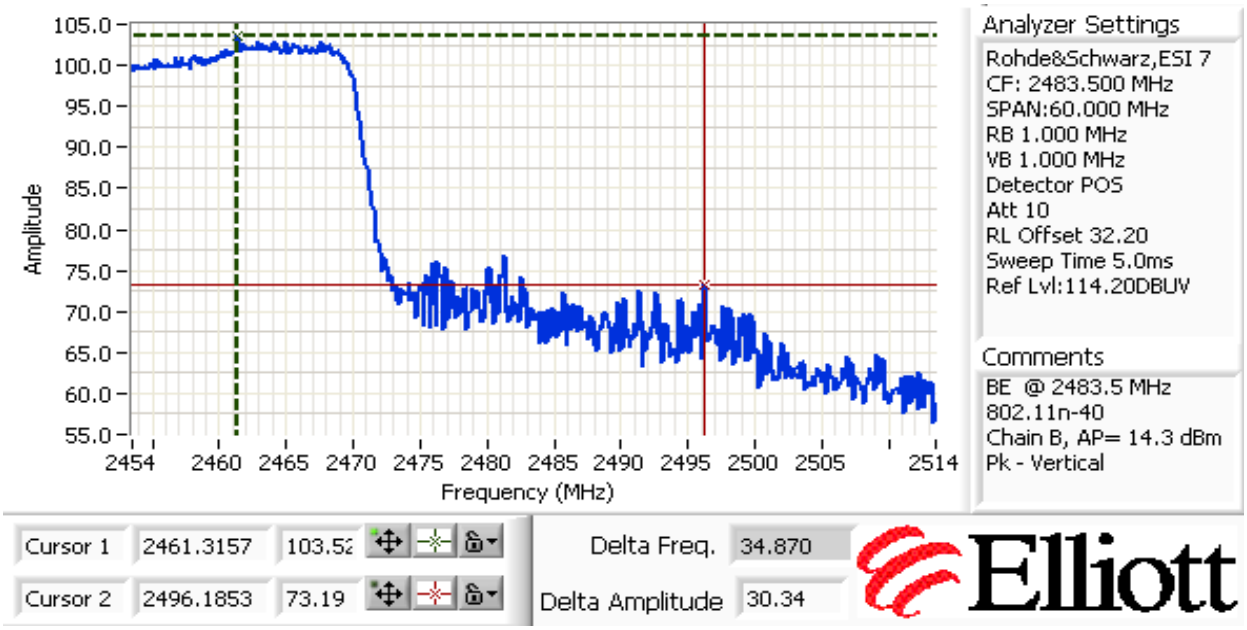
Power Setting: 23. 0 Average power: 14. 3 (for reference purposes)

Band Edge Signal Field Strength

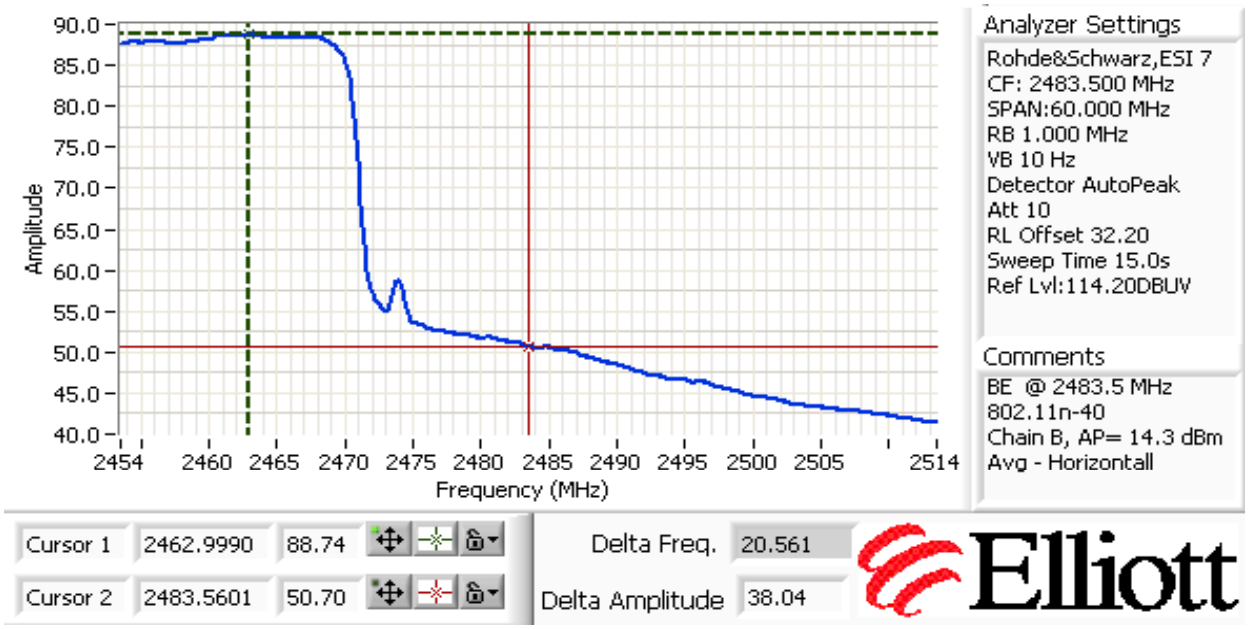
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.763	53.8	V	54.0	-0.2	AVG	217	1.0	
2496.185	73.2	V	74.0	-0.8	PK	217	1.0	
2483.560	50.7	H	54.0	-3.3	AVG	116	1.0	
2485.604	70.0	H	74.0	-4.0	PK	116	1.0	

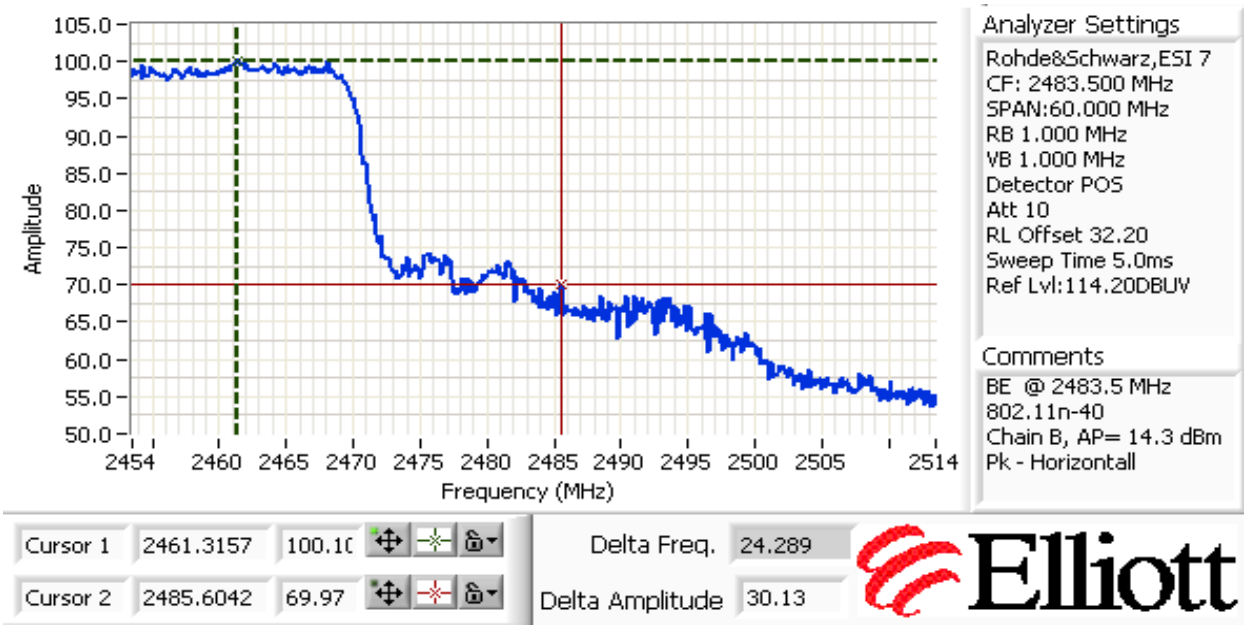
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+B

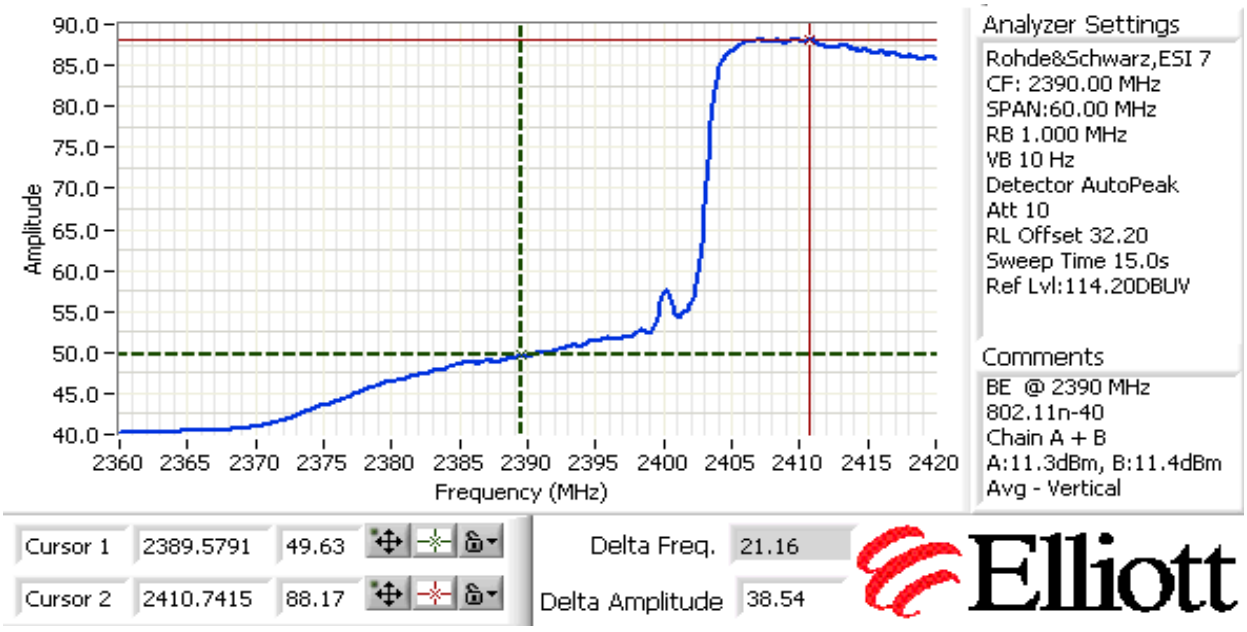
Date of Test: 8/21/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 4
MAC Address: 0016EA02D4D0

Run #3a: Low Channel @ 2422 MHz

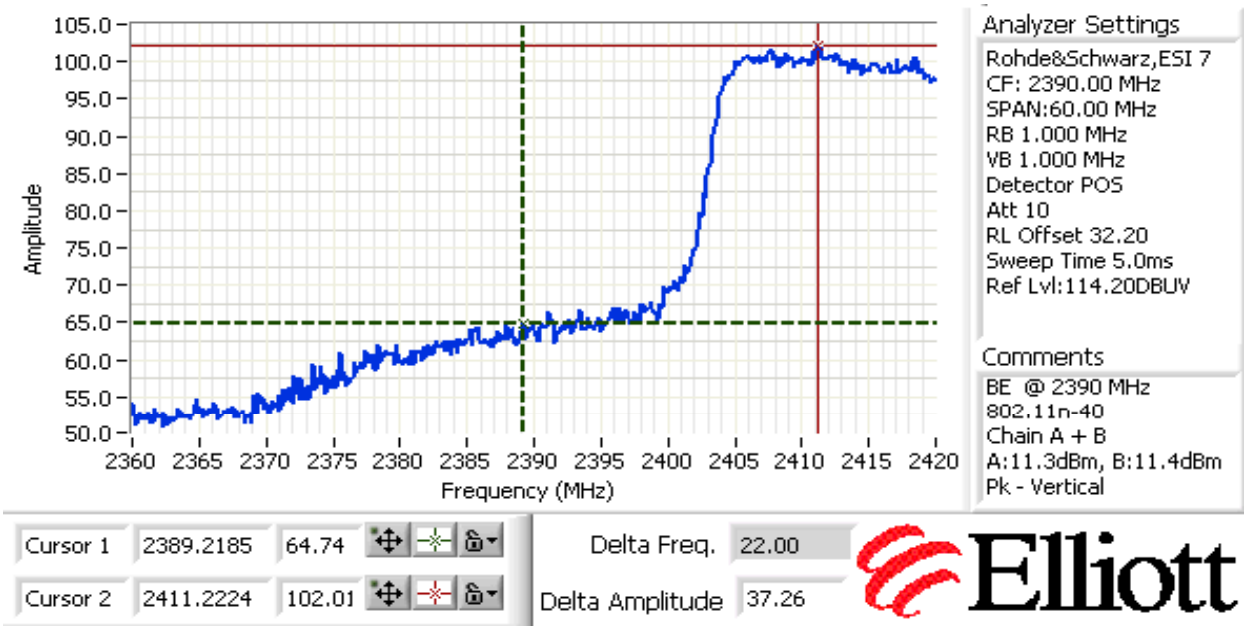
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
19.0	11.3	21.0	11.4		

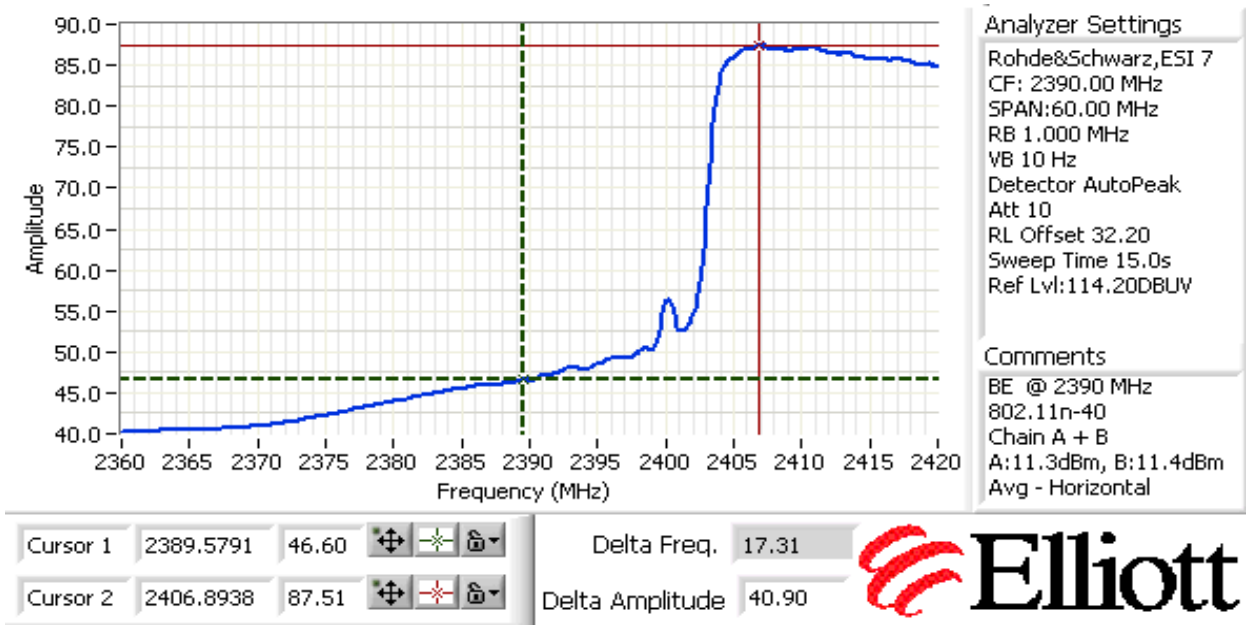
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.579	49.6	V	54.0	-4.4	AVG	177	1.1	
2389.219	64.7	V	74.0	-9.3	PK	177	1.1	
2389.579	46.6	H	54.0	-7.4	AVG	254	1.1	
2389.338	63.1	H	74.0	-10.9	PK	254	1.1	

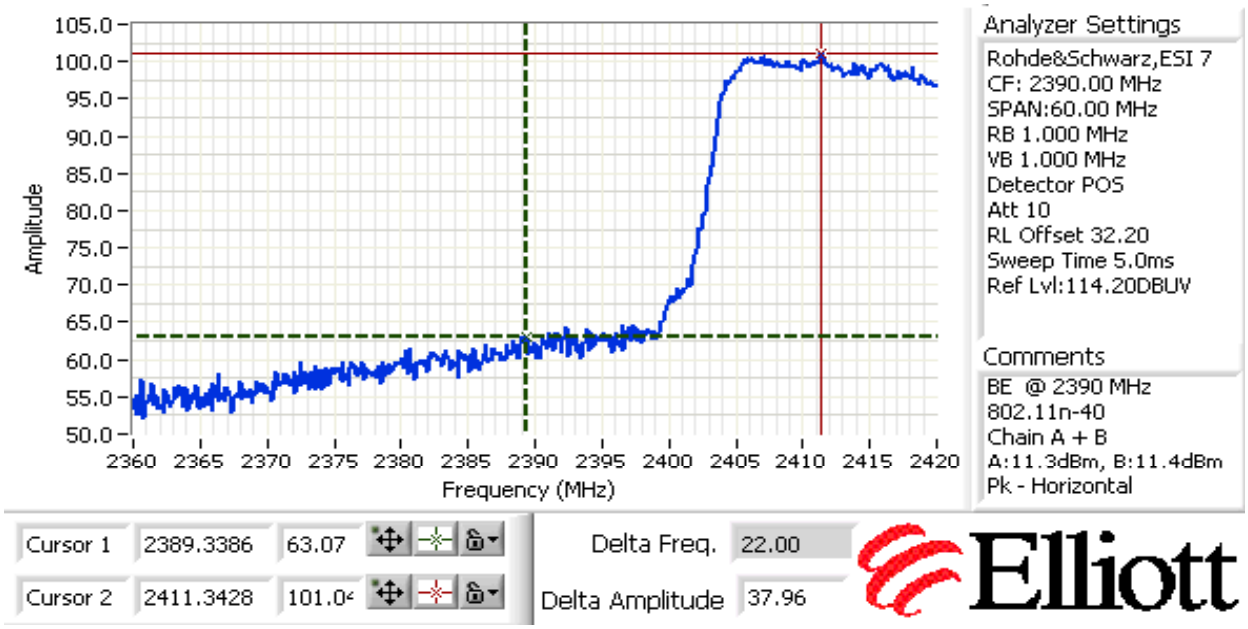


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



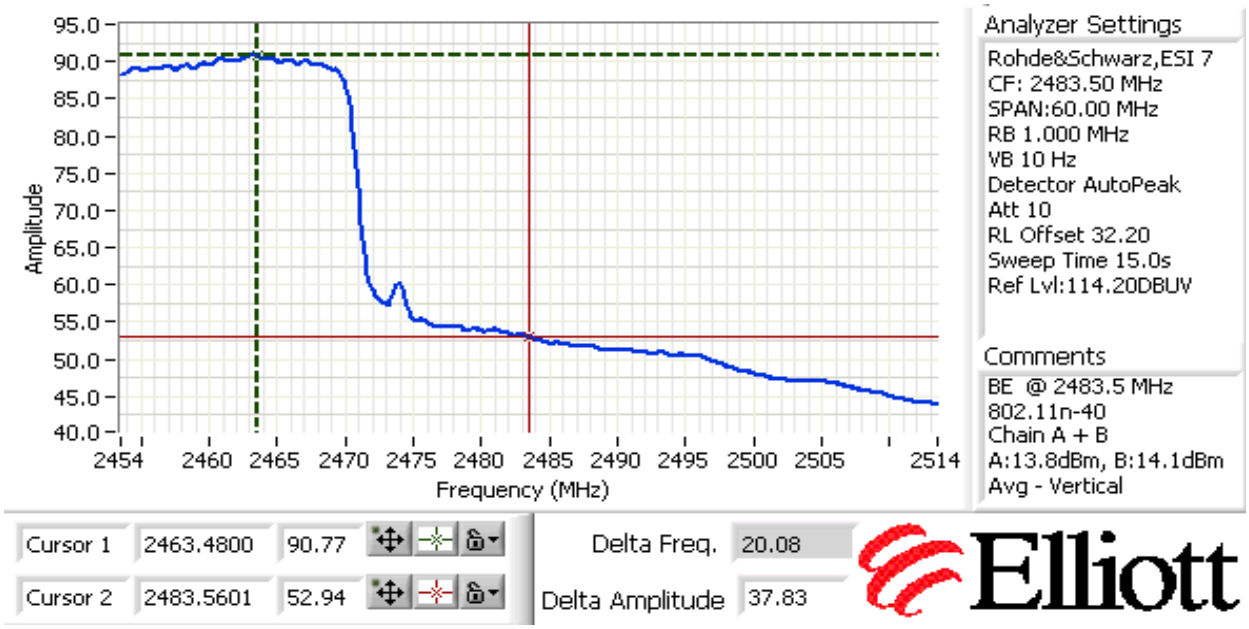
Run #3b: High Channel @ 2452 MHz

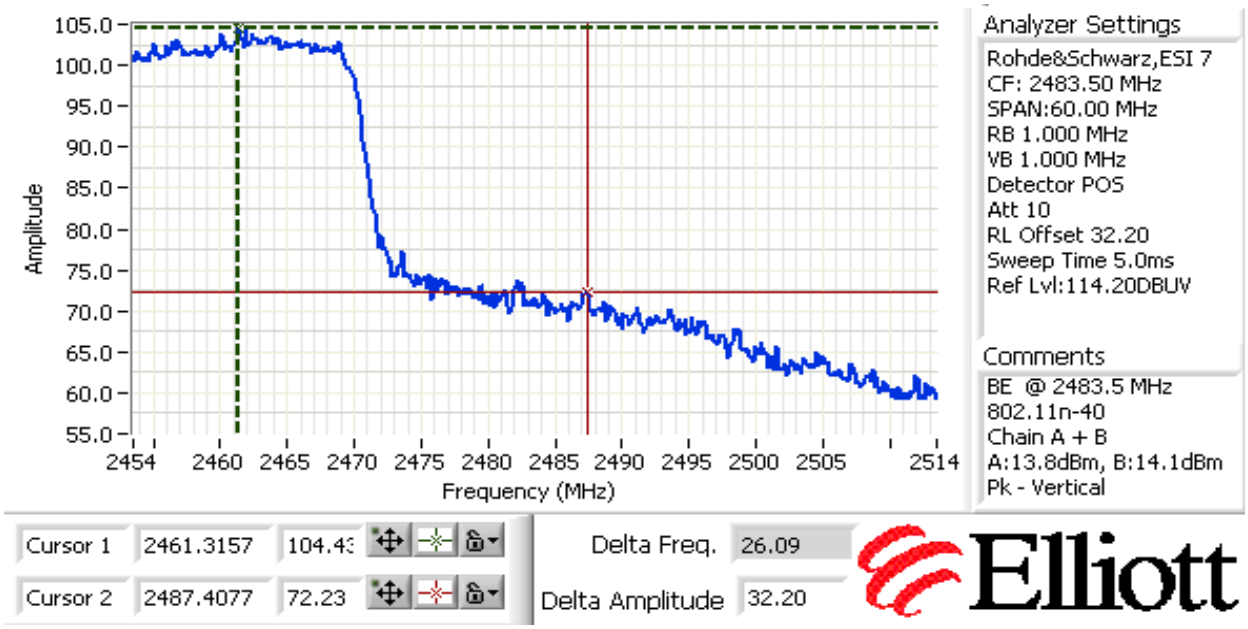
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
22.5	13.8	24.5	14.1		

Band Edge Signal Field Strength

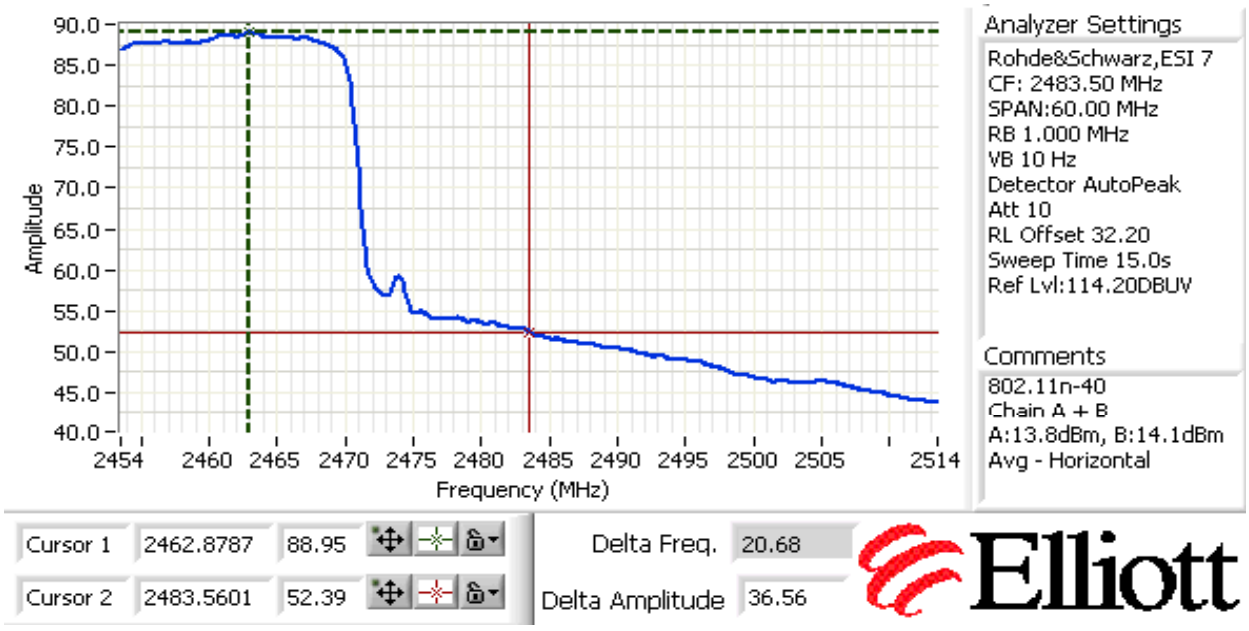
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.560	52.9	V	54.0	-1.1	AVG	236	1.1	
2487.408	72.2	V	74.0	-1.8	PK	236	1.1	
2483.560	52.4	H	54.0	-1.6	AVG	251	1.1	
2484.402	72.2	H	74.0	-1.8	PK	251	1.1	

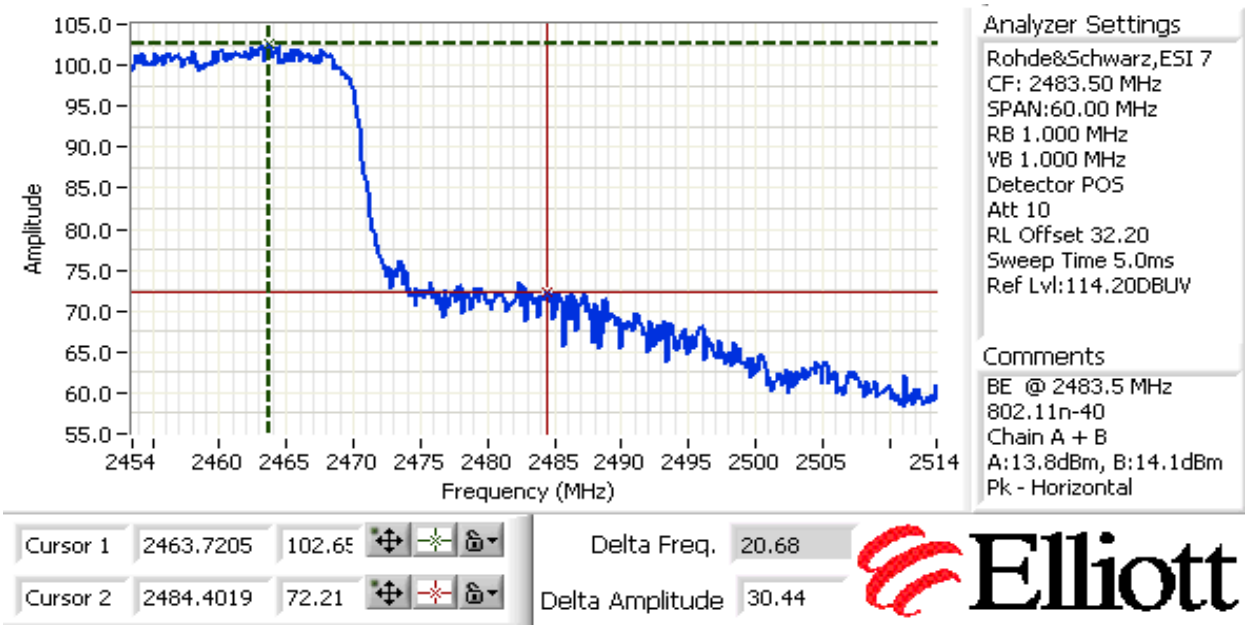
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A





Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11b SL-300 Antenna

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. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 20 °C

Rel. Humidity: 34 %

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

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11b Chain A	1 (2412)	20.5	16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	43.3 dBuV/m @ 7500.1 MHz (-10.7dB)
1b	802.11b Chain A	6 (2437)	20.5	16.6	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.1 dBuV/m @ 4874.0 MHz (-7.9dB)
1c	802.11b Chain A	11 (2462)	20.5	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	47.6 dBuV/m @ 4924.0 MHz (-6.4dB)
2a	802.11b Chain B	1 (2412)	22.0	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.6 dBuV/m @ 7500.0 MHz (-11.4dB)
2b	802.11b Chain B	6 (2437)	21.5	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	39.6dBµV/m @ 7500.1MHz (-14.4dB)
2c	802.11b Chain B	11 (2462)	22.0	16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	47.3dBµV/m @ 1495.0MHz (-6.7dB)

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11b Chain A

Date of Test: 8/21/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 4
MAC Address: 0016EA02D4D0

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz (EUT 3.3V DC)

Run # 1a : Low Channel @ 2412 MHz

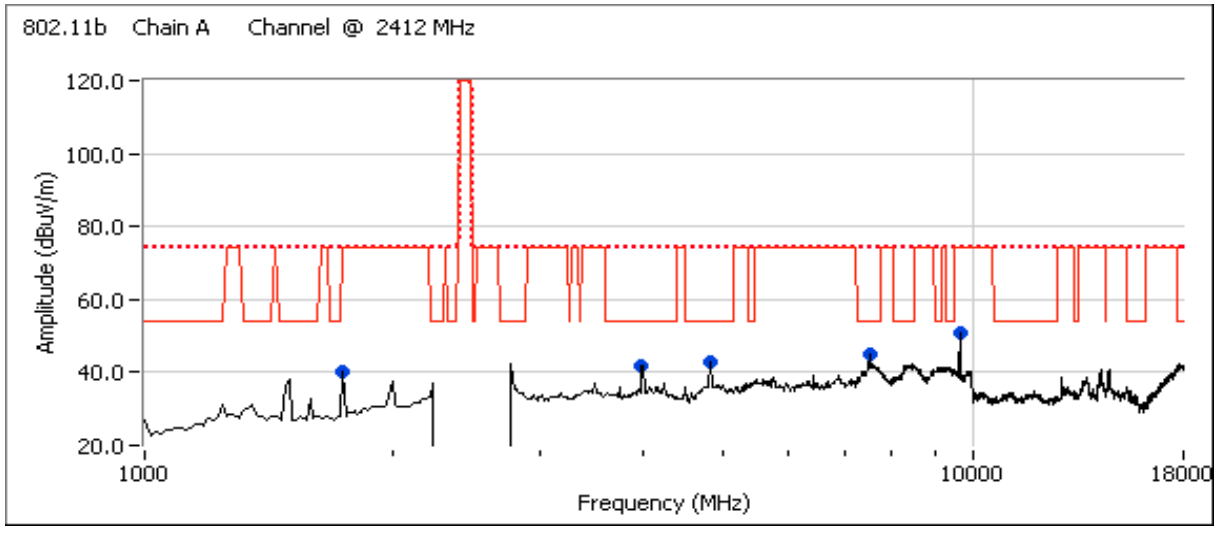
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2411.020	100.4	H	74.0	26.4	PK	69	1.0	RB 100 kHz; VB: 100 kHz
2411.000	100.0	V	74.0	26.0	PK	169	1.1	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1742.490	40.2	V	54.0	-13.8	Peak	184	1.9	Pk Value vs Avg limit.
3990.390	41.9	V	54.0	-12.1	Peak	108	1.3	Pk Value vs Avg limit.
4824.000	41.0	V	54.0	-13.0	AVG	210	1.0	
4823.930	46.6	V	74.0	-27.4	PK	210	1.0	
7500.110	43.3	V	54.0	-10.7	AVG	243	1.3	
7499.960	49.0	V	74.0	-25.0	PK	243	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run # 1b : Center Channel @ 2437 MHz

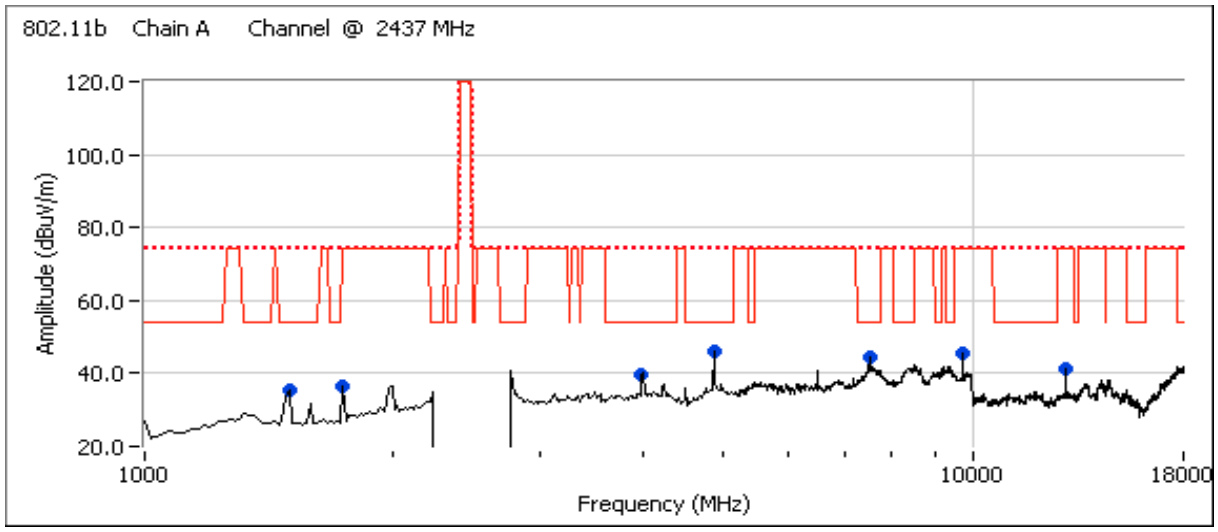
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2435.510	99.7	V	74.0	25.7	PK	189	1.0	RB 100 kHz; VB: 100 kHz
2436.500	101.7	H	74.0	27.7	PK	72	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1495.000	35.3	V	54.0	-18.7	Peak	88	1.3	Pk Value vs Avg limit.
1735.000	36.4	V	54.0	-17.6	Peak	95	1.6	Pk Value vs Avg limit.
9745.000	45.6	V	54.0	-8.4	Peak	215	1.3	Pk Value vs Avg limit.
3988.950	32.3	V	54.0	-21.7	AVG	219	1.0	
3997.820	49.9	V	74.0	-24.1	PK	219	1.0	
4874.010	46.1	V	54.0	-7.9	AVG	186	1.0	
4874.110	49.3	V	74.0	-24.7	PK	186	1.0	
7500.040	43.8	V	54.0	-10.2	AVG	86	1.0	
7500.080	50.2	V	74.0	-23.8	PK	86	1.0	
12997.320	41.3	V	74.0	-32.7	AVG	237	1.2	
12997.310	45.9	V	74.0	-28.1	PK	237	1.2	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run # 1c : High Channel @ 2462 MHz

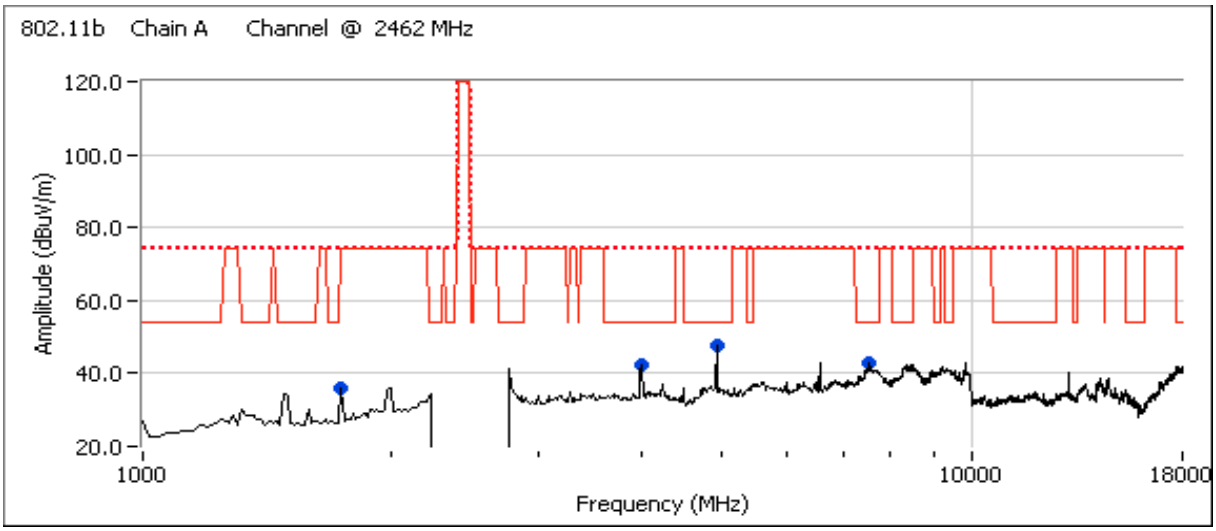
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.510	99.7	V	74.0	25.7	PK	180	1.0	RB 100 kHz; VB: 100 kHz
2460.500	101.2	H	74.0	27.2	PK	72	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1735.000	36.2	V	54.0	-17.8	Peak	85	1.6	Pk Value vs Avg limit.
3995.060	30.9	V	54.0	-23.1	AVG	135	1.4	
3996.050	47.7	V	74.0	-26.3	PK	135	1.4	
4924.000	47.6	V	54.0	-6.4	AVG	184	1.0	
4924.040	50.6	V	74.0	-23.4	PK	184	1.0	
7500.040	42.1	V	54.0	-11.9	AVG	158	1.0	
7499.850	49.2	V	74.0	-24.8	PK	158	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain B

Run # 2a : Low Channel @ 2412 MHz

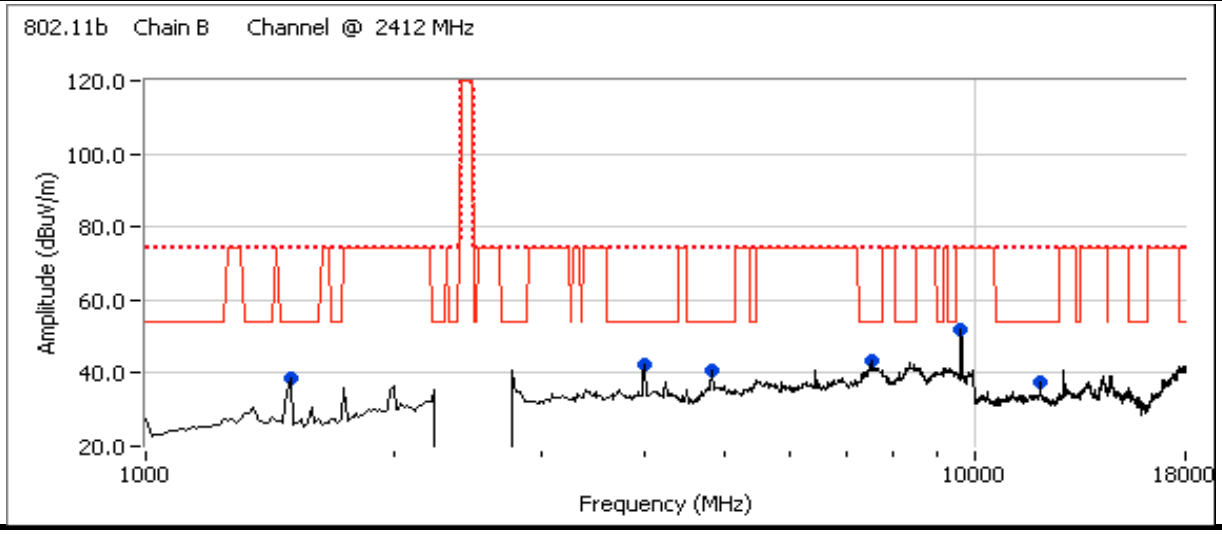
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.500	100.4	V	74.0	26.4	PK	234	1.1	RB 100 kHz; VB: 100 kHz
2413.020	98.8	H	74.0	24.8	PK	278	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.470	28.5	H	54.0	-25.5	AVG	172	1.0	
1497.610	43.2	H	74.0	-30.8	PK	172	1.0	
3987.750	30.5	V	54.0	-23.5	AVG	229	1.3	
3989.410	46.9	V	74.0	-27.1	PK	229	1.3	
4824.000	39.7	H	54.0	-14.3	AVG	254	1.0	
4824.090	45.7	H	74.0	-28.3	PK	254	1.0	
7500.020	42.6	V	54.0	-11.4	AVG	243	1.3	
7500.040	49.0	V	74.0	-25.0	PK	243	1.3	
9647.990	54.3	V	74.0	-19.7	AVG	213	1.6	
9648.030	56.5	V	74.0	-17.5	PK	213	1.6	
12055.250	41.9	V	74.0	-32.1	PK	150	1.2	
12055.340	33.0	V	54.0	-21.0	AVG	150	1.2	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Date of Test: 8/22/2008
Test Engineer: John Caizzi
Test Location: FT Chamber #4

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz (EUT 3.3V DC)

Run # 2b : Center Channel @ 2437 MHz

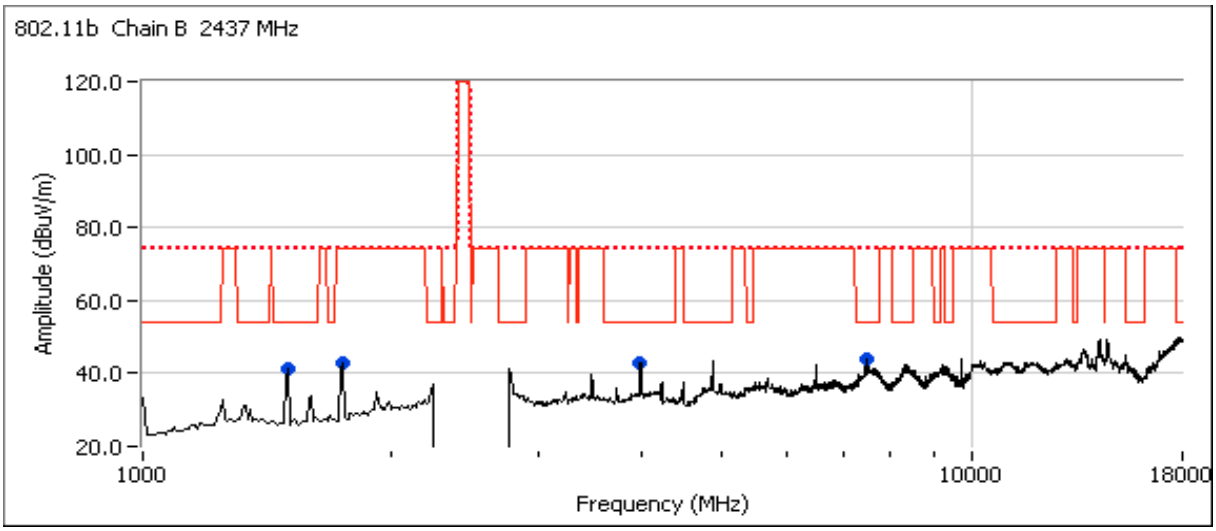
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2434.130	93.3	V	120.0	-26.7	Pk	21	1.3	RB 100 kHz; VB: 100 kHz
2434.130	93.3	H	120.0	-26.7	Pk	320	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/OP/Avg	degrees	meters	
7500.110	39.6	V	54.0	-14.4	AVG	24	1.3	
1497.700	36.6	V	54.0	-17.4	AVG	136	1.6	
1748.240	44.4	V	63.3	-18.9	PK	151	1.0	RB 100 kHz; VB: 100 kHz
3990.440	34.9	H	54.0	-19.1	AVG	224	1.3	
3993.100	54.8	H	74.0	-19.2	PK	224	1.3	
1497.570	47.5	V	74.0	-26.5	PK	136	1.6	
7500.030	46.6	V	74.0	-27.4	PK	24	1.3	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run # 2c : High Channel @ 2462 MHz

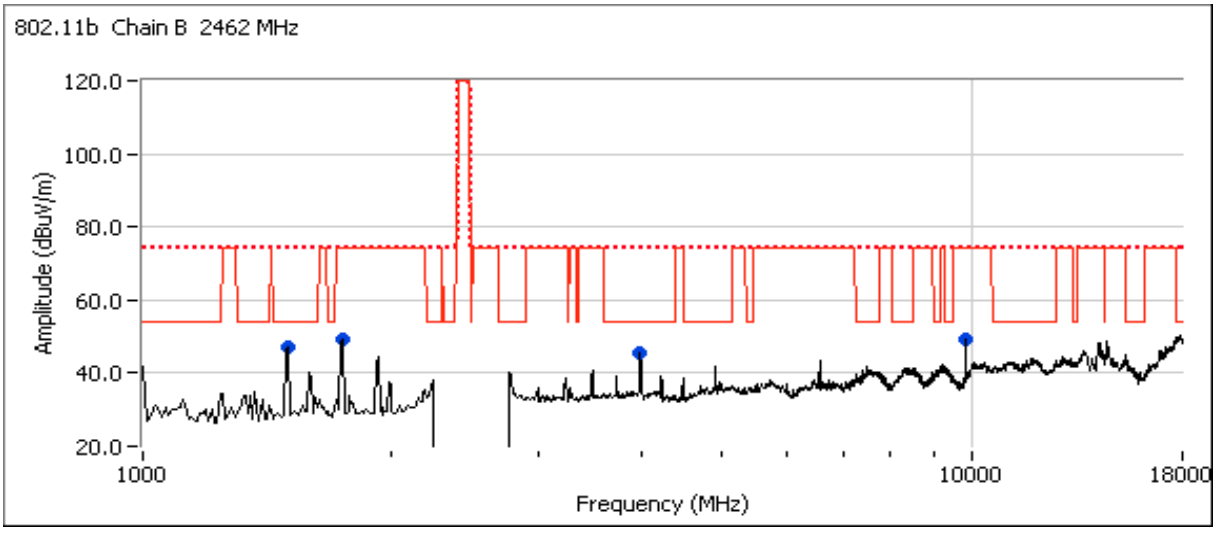
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2462.800	96.6	H	120.0	-23.4	Pk	60	1.3	RB 100 kHz; VB: 100 kHz
2459.670	94.7	V	120.0	-25.3	Pk	18	1.3	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1495.000	47.3	V	54.0	-6.7	Peak	241	1.3	Need to be maximized.
1742.500	49.1	H	74.0	-24.9	Peak	215	1.0	Need to be maximized.
3979.170	45.3	V	54.0	-8.7	Peak	306	1.9	Need to be maximized.
9848.330	49.3	V	74.0	-24.7	Peak	57	1.6	Need to be maximized.

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11n 20MHz SL-300 Antenna

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: 8/22/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 5
MAC Address: 0016EA02D4D0

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 22 °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

Note - no emissions observed from 18-26GHz

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	Chain A Chain B Chain C	6 (2437)	28.0 27.5 26.5	16.5 dBm	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Covered by 802.11b mode as worst case in single chain mode
2a,b,c	802.11n20 Chains A+B	2412 MHz	A: 26.0 B: 26.5	A: 16.5 B: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.8 dBuV/m @ 7500.1 MHz (-11.2dB)
		2437 MHz	A: 26.0 B: 27.0	A: 16.5 B: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	45.8 dBuV/m @ 7305.7 MHz (-8.2dB)
		2462 MHz	A: 26.5 B: 27.0	A: 16.5 B: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	43.1 dBuV/m @ 7390.3 MHz (-10.9dB)

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11n 20MHz, Single Chain
Covered by measurements on 802.11b mode which represents the worst-case mode
Also covered by tests on duak-chain with both chains operating at the higher single-chain power setting.

Run #2: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11n 20MHz Chains A+B
These tests run at a power setting equal to the highest single-chain settings to cover all possible dual- and triple-chain operating modes.

Run #2a: Low Channel @ 2412 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26. 0	16.5	26. 5	16.5		

Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

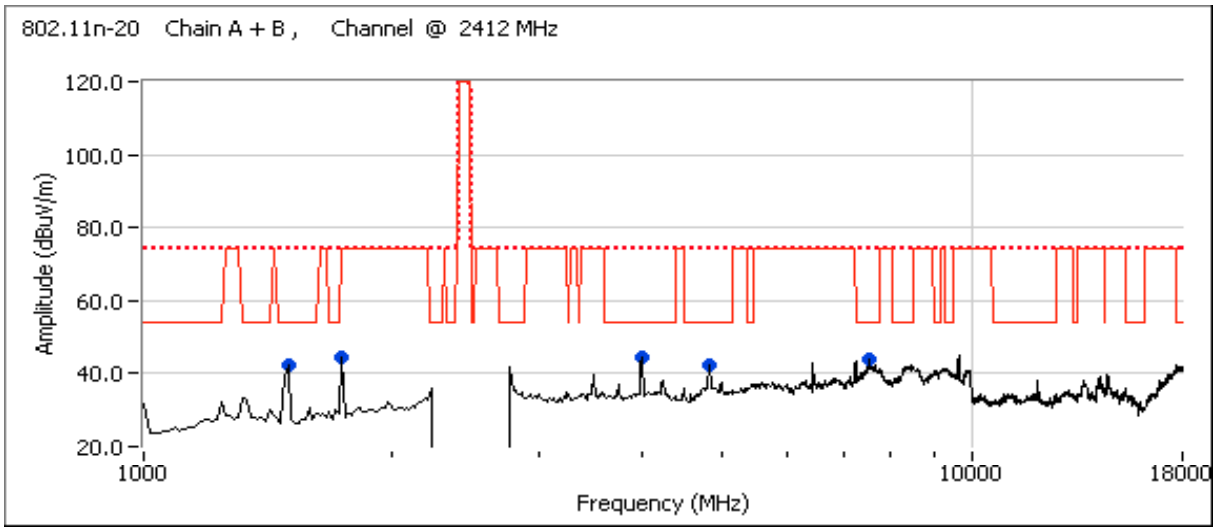
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2411.380	96.5	V	120.0	-23.5	PK	274	1.1	RB 100 kHz; VB: 100 kHz
2413.290	98.5	H	120.0	-21.5	PK	66	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.270	47.1	V	74.0	-26.9	PK	175	1.3	
1497.570	33.4	V	54.0	-20.6	AVG	175	1.3	
1745.140	52.0	V	74.0	-22.0	PK	146	1.0	
1745.380	34.1	V	74.0	-39.9	AVG	146	1.0	
3989.970	49.6	V	74.0	-24.4	PK	180	1.3	
3990.510	32.5	V	54.0	-21.5	AVG	180	1.3	
4823.770	33.8	V	54.0	-20.2	AVG	190	1.0	
4824.070	49.0	V	74.0	-25.0	PK	190	1.0	
7500.080	42.8	V	54.0	-11.2	AVG	78	1.1	
7500.130	49.4	V	74.0	-24.6	PK	78	1.1	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



Run #2b: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	16.5	27. 0	16.5		

Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

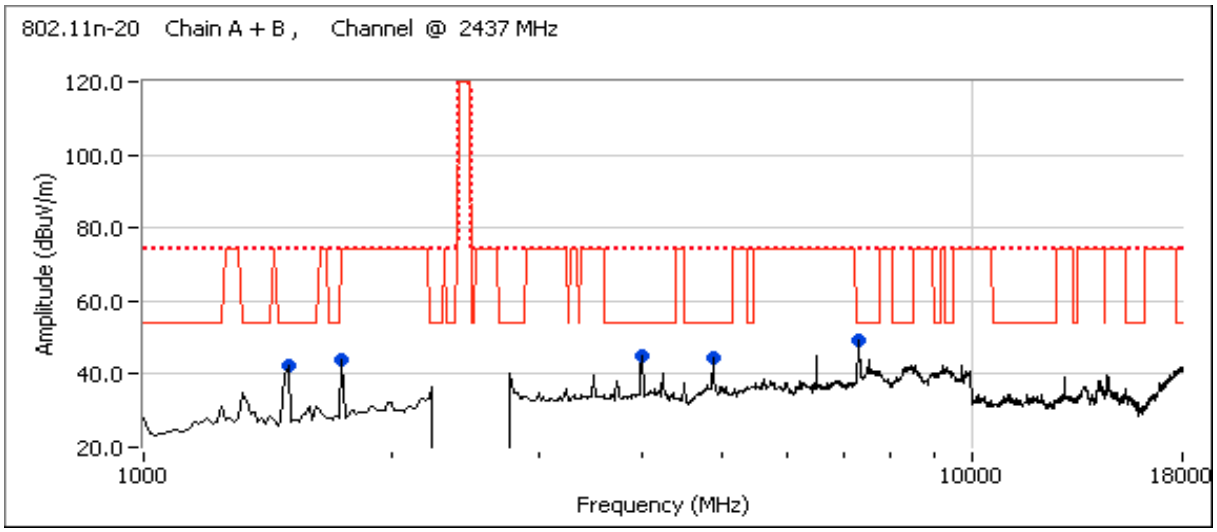
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2438.280	95.7	V	120.0	-24.3	PK	272	1.1	RB 100 kHz; VB: 100 kHz
2438.280	91.2	H	120.0	-28.8	PK	28	1.0	RB 100 kHz; VB: 100 kHz

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.700	42.4	V	54.0	-11.6	Peak	144	1.3	Pk Value vs Avg limit.
1749.080	43.9	V	74.0	-30.1	Peak	154	1.0	
3993.030	32.8	V	54.0	-21.2	AVG	192	1.7	
3993.120	50.1	V	74.0	-23.9	PK	192	1.7	
4874.000	47.7	V	74.0	-26.3	PK	192	1.5	
4874.020	34.1	V	54.0	-19.9	AVG	192	1.5	
7303.520	59.6	V	74.0	-14.4	PK	193	1.2	
7305.650	45.8	V	54.0	-8.2	AVG	193	1.2	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2c: High Channel @ 2462 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26. 5	16.5	27. 0	16.5		

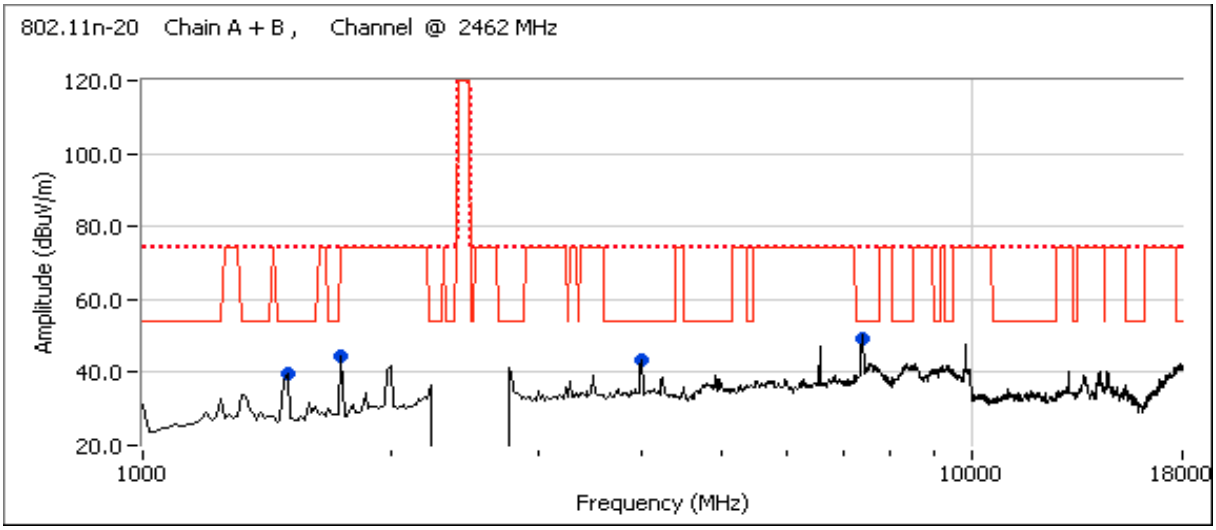
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.310	96.4	V	120.0	-23.6	PK	272	1.0	RB 100 kHz; VB: 100 kHz
2463.290	101.6	H	120.0	-18.4	PK	251	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1495.000	39.8	V	54.0	-14.2	Peak	144	1.3	Pk Value vs Avg limit.
1735.000	44.4	V	74.0	-29.6	Peak	151	1.0	
3989.860	32.6	H	54.0	-21.4	AVG	134	1.7	
3988.160	50.4	H	74.0	-23.6	PK	134	1.7	
7390.250	43.1	V	54.0	-10.9	AVG	221	1.6	
7390.280	56.1	V	74.0	-17.9	PK	221	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11n 40MHz Universe Antenna

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.

Sample tested: 0016EA02D660
Date of Test: 8/22/2008
Test Engineer: Ben Jing
Test Location: Chamber # 4

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 22 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11n40 Chains A+B	2437 MHz	A: 26.0 B: 26.5	A: 16.5 B: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	43.7 dBuV/m @ 7305.9 MHz (-10.3dB)

Measurements made to demonstrate that 802.11n 40-MHz mode emissions are not signifcantly different from 802.11n 20MHz mode.

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 Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26,000 MHz. Operating Mode: 802.11n 40MHz Chain A+B+C at Max power
Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26. 0	16. 5	26. 5	16. 6		

<--- highest power setting for single channel

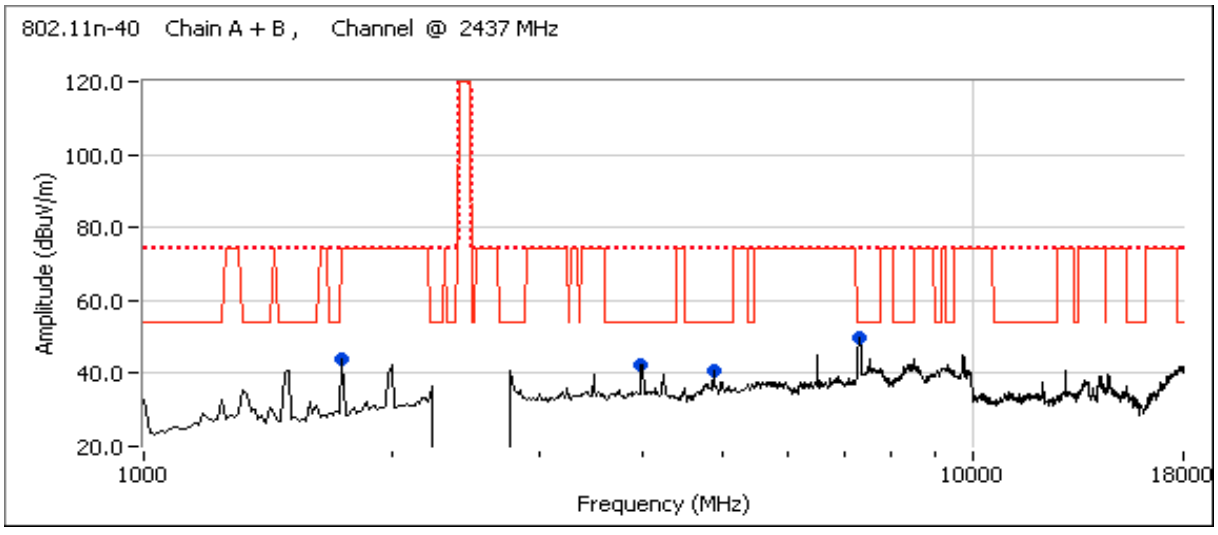
Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2436.390	93.2	H	120.0	-26.8	PK	255	1.0	RB 100 kHz; VB: 100 kHz
2438.300	92.1	V	120.0	-27.9	PK	272	1.1	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1735.000	43.7	V	74.0	-30.3	Peak	175	1.0	
3990.300	33.3	V	54.0	-20.7	AVG	190	1.6	
3990.220	51.8	V	74.0	-22.2	PK	190	1.6	
4873.920	32.6	V	54.0	-21.4	AVG	268	1.7	
4873.950	45.2	V	74.0	-28.8	PK	268	1.7	
7305.850	43.7	V	54.0	-10.3	AVG	195	1.2	
7303.800	56.6	V	74.0	-17.4	PK	195	1.2	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11a Universe Antenna

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. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 20 °C

Rel. Humidity: 33 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11a Chain A	5745 MHz 5785 MHz 5825 MHz	23 23 23.5	16.8 16.9 16.9	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.9dBµV/m @ 11570.1MHz (-11.1dB)
2	802.11a Chain B	5745 MHz 5785 MHz 5825 MHz	25.0 25.5 26.0	16.6 16.6 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.4 dBuV/m @ 7660.0 MHz (-7.6dB)

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 Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

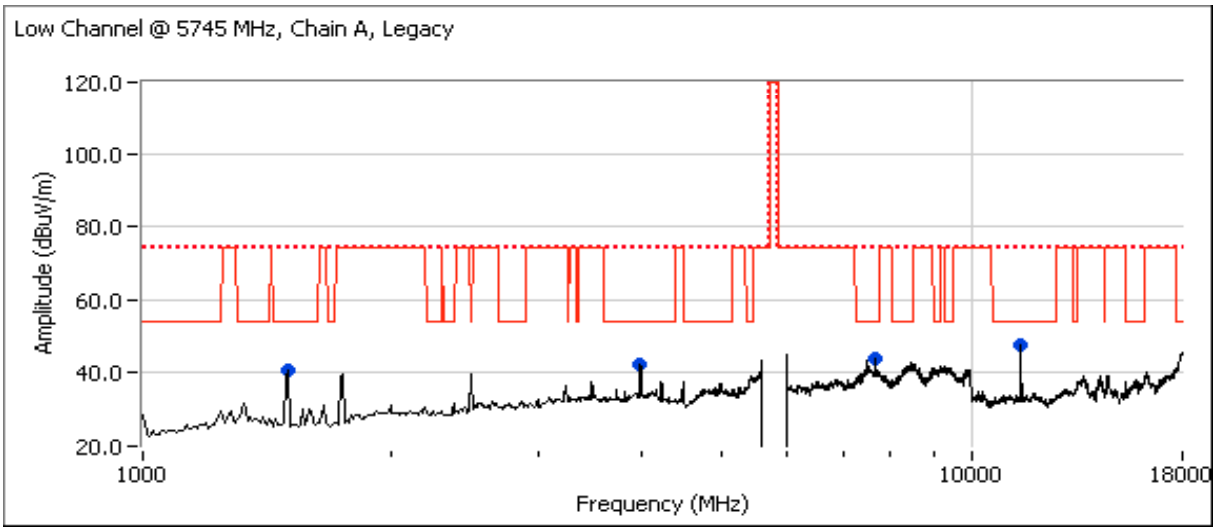
Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain A

Date of Test: 8/21/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 4

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

Run #1a: Low Channel @ 5745 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
23.0	16.8					<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11490.150	41.0	H	54.0	-13.0	AVG	270	1.0	RB 1.000 MHz; VB: 10 Hz
11492.110	51.8	H	74.0	-22.2	PK	270	1.0	RB 1.000 MHz; VB: 1.000 MHz
1497.590	30.7	V	54.0	-23.3	AVG	85	1.0	RB 1.000 MHz; VB: 10 Hz
1498.470	46.6	V	74.0	-27.4	PK	85	1.0	RB 1.000 MHz; VB: 1.000 MHz
3992.720	33.1	V	54.0	-20.9	AVG	86	2.1	RB 1.000 MHz; VB: 10 Hz
3997.340	52.2	V	74.0	-21.8	PK	86	2.1	RB 1.000 MHz; VB: 1.000 MHz
7660.050	39.7	V	54.0	-14.3	AVG	140	1.6	RB 1.000 MHz; VB: 10 Hz
7659.970	46.1	V	74.0	-27.9	PK	140	1.6	RB 1.000 MHz; VB: 1.000 MHz

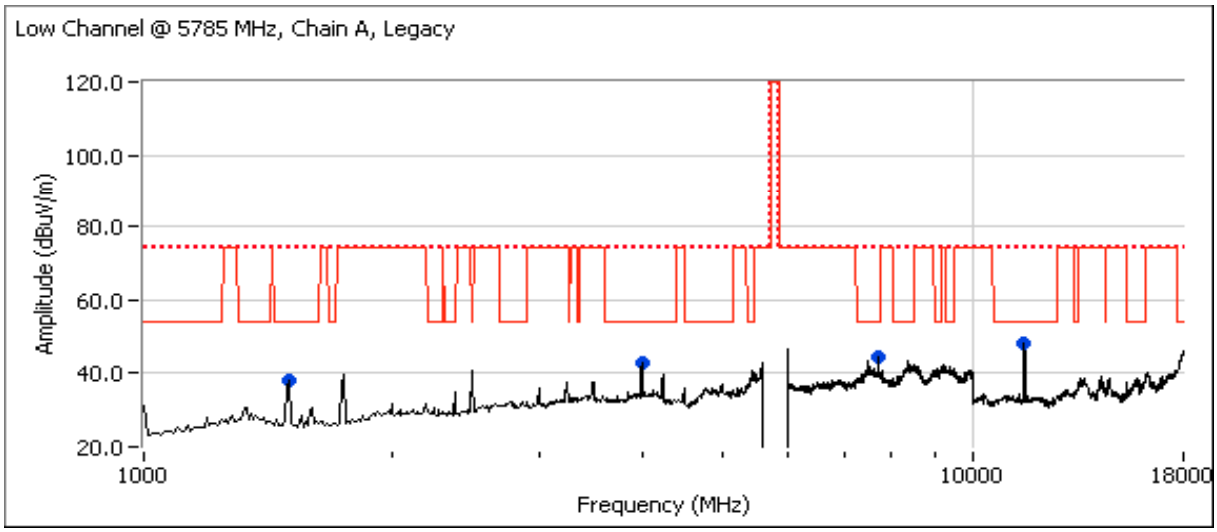
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain A

Run #1b: Center Channel @ 5785 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
23.0	16.9				

<--- highest power setting for single channel



Spurious Emissions

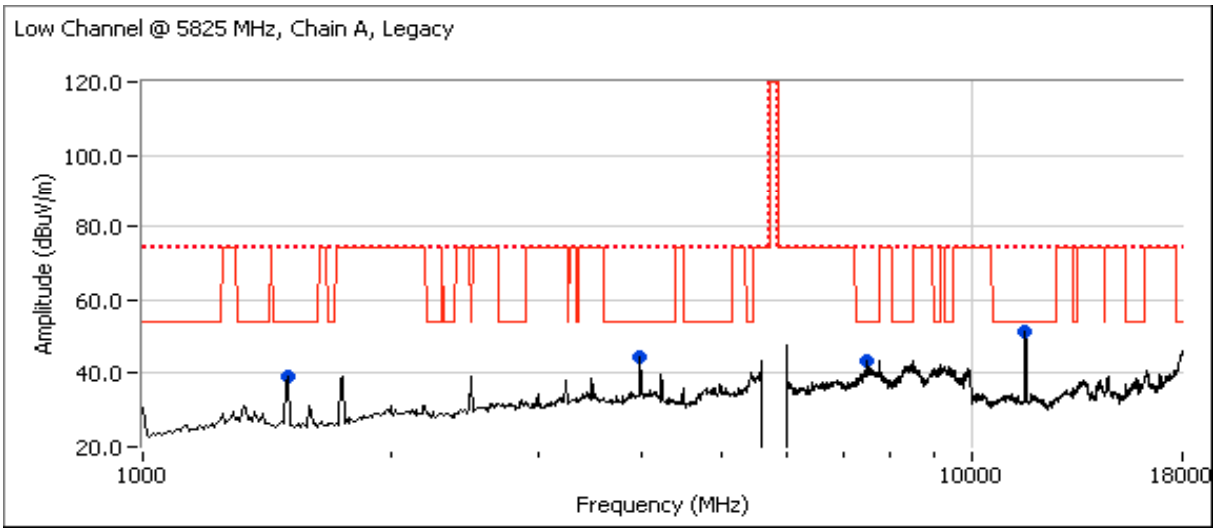
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11570.050	42.9	V	54.0	-11.1	AVG	207	1.0	RB 1.000 MHz; VB: 10 Hz
11571.980	54.2	V	74.0	-19.8	PK	207	1.0	RB 1.000 MHz; VB: 1.000 MHz
7713.320	42.2	V	54.0	-11.8	AVG	221	1.4	RB 1.000 MHz; VB: 10 Hz
7713.320	48.1	V	74.0	-25.9	PK	221	1.4	RB 1.000 MHz; VB: 1.000 MHz
1497.620	30.1	V	54.0	-23.9	AVG	88	1.0	RB 1.000 MHz; VB: 10 Hz
1497.440	47.0	V	74.0	-27.0	PK	88	1.0	RB 1.000 MHz; VB: 1.000 MHz
3995.600	32.6	V	54.0	-21.4	AVG	86	1.3	RB 1.000 MHz; VB: 10 Hz
3997.760	51.1	V	74.0	-22.9	PK	86	1.3	RB 1.000 MHz; VB: 1.000 MHz

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain A

Run #1c: High Channel @ 5825 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
23.5	16.9					<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11650.130	42.5	V	54.0	-11.5	AVG	188	1.0	RB 1.000 MHz; VB: 10 Hz
11647.650	53.7	V	74.0	-20.3	PK	188	1.0	RB 1.000 MHz; VB: 1.000 MHz
1497.590	30.7	V	54.0	-23.3	AVG	87	1.0	RB 1.000 MHz; VB: 10 Hz
1497.360	46.7	V	74.0	-27.3	PK	87	1.0	RB 1.000 MHz; VB: 1.000 MHz
3990.250	30.4	V	54.0	-23.6	AVG	254	1.2	RB 1.000 MHz; VB: 10 Hz
3996.290	47.7	V	74.0	-26.3	PK	254	1.2	RB 1.000 MHz; VB: 1.000 MHz
7500.190	40.6	V	54.0	-13.4	AVG	214	1.0	RB 1.000 MHz; VB: 10 Hz
7499.870	47.5	V	74.0	-26.5	PK	214	1.0	RB 1.000 MHz; VB: 1.000 MHz

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain B

Date of Test: 8/22/2008 Config. Used: 1

Test Engineer: Ben Jing Config Change: None

Test Location: Chamber # 4 Host Unit Voltage 120V/60Hz

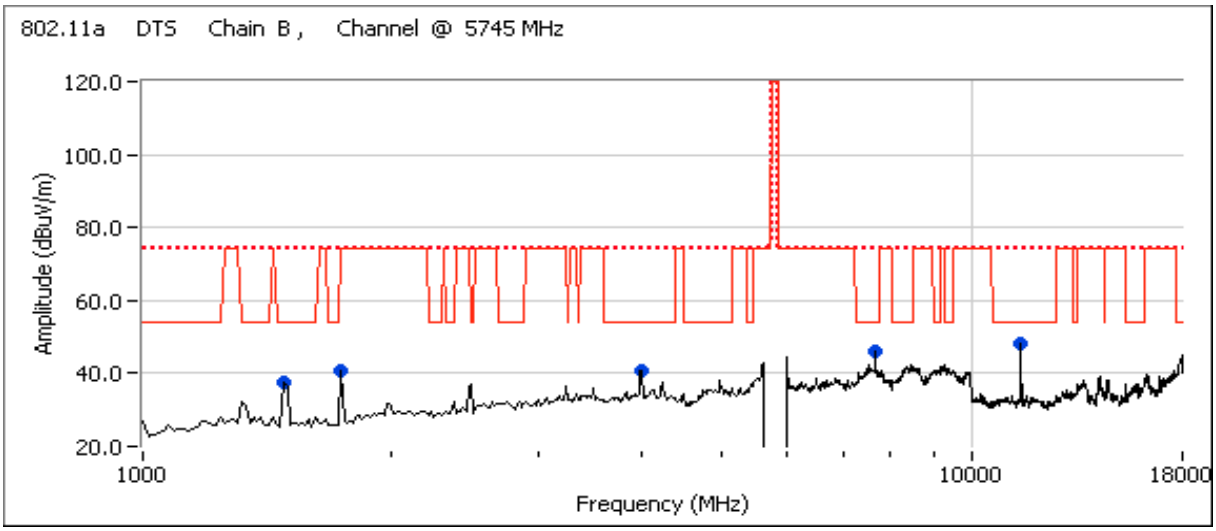
Run #2a: Low Channel @ 5745 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		25.0	16.7		

<--- highest power setting for single channel

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/OP/Avg	degrees	meters	
1472.250	25.6	V	54.0	-28.4	AVG	158	1.3	
1472.230	34.1	V	74.0	-39.9	PK	158	1.3	
1746.160	29.5	V	74.0	-44.5	AVG	147	1.0	
1747.090	47.0	V	74.0	-27.0	PK	147	1.0	
3984.040	29.8	V	54.0	-24.2	AVG	205	1.3	
3993.420	45.8	V	74.0	-28.2	PK	205	1.3	
7659.980	46.4	V	54.0	-7.6	AVG	177	1.7	
7659.980	51.1	V	74.0	-22.9	PK	177	1.7	
11490.090	42.5	V	54.0	-11.5	AVG	221	1.1	
11488.980	53.8	V	74.0	-20.2	PK	221	1.1	



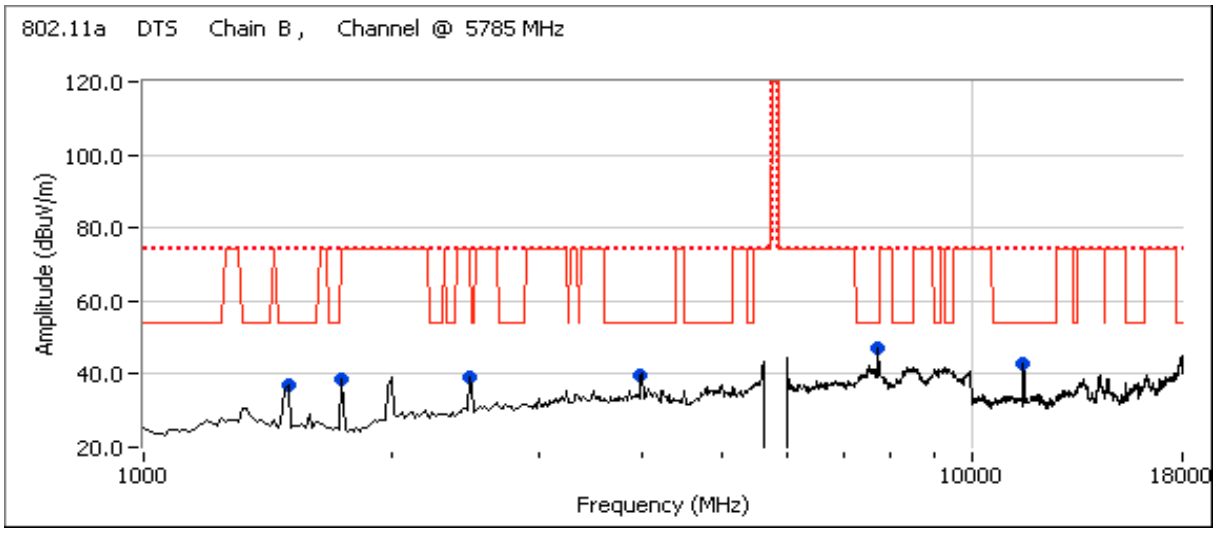
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2b: Center Channel @ 5785 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
		25.5	16.7			<--- highest power setting for single channel

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1735.000	38.4	V	74.0	-35.6	Peak	174	1.3	
2470.000	39.3	V	74.0	-34.7	Peak	158	1.3	
7713.330	45.7	V	54.0	-8.3	AVG	177	1.7	
7713.340	50.8	V	74.0	-23.2	PK	177	1.7	
1497.680	31.2	V	54.0	-22.8	AVG	174	1.2	
1497.650	44.0	V	74.0	-30.0	PK	174	1.2	
3984.740	30.5	V	54.0	-23.5	AVG	183	1.9	
3984.640	46.8	V	74.0	-27.2	PK	183	1.9	
11569.960	38.9	V	54.0	-15.1	AVG	256	1.2	
11569.920	48.2	V	74.0	-25.8	PK	256	1.2	



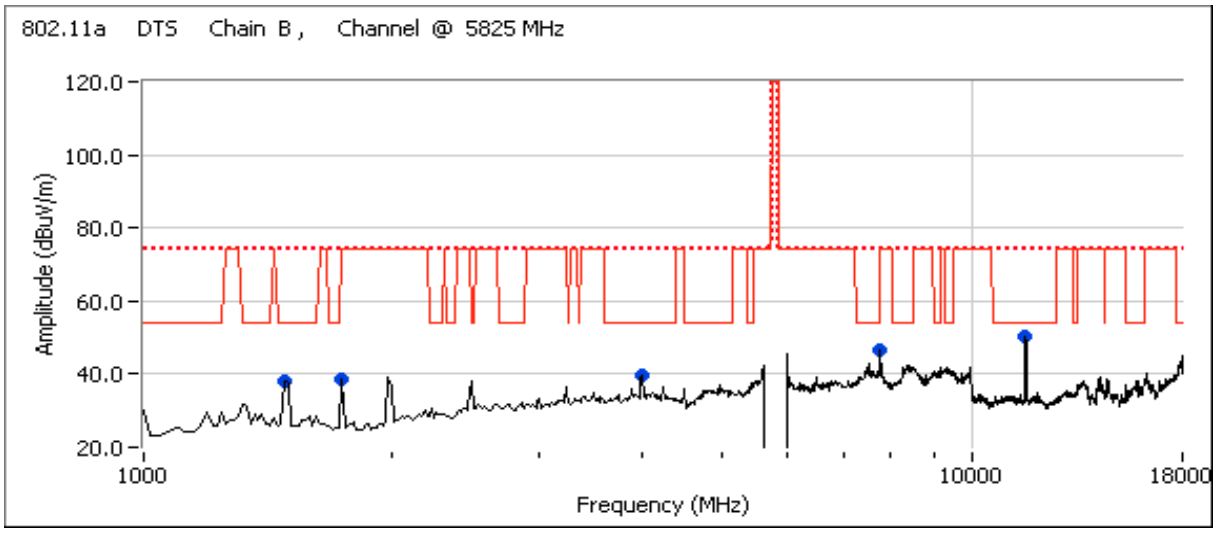
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2c: High Channel @ 5825 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
		26.0	16.7			<--- highest power setting for single channel

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1735.000	38.4	V	74.0	-35.6	Peak	154	1.0	
7765.000	46.5	V	74.0	-27.5	Peak	217	1.6	
1472.240	26.6	V	54.0	-27.4	AVG	162	1.4	
1472.150	35.0	V	74.0	-39.0	PK	162	1.4	
11650.120	45.7	V	54.0	-8.3	AVG	231	1.0	
11652.020	57.9	V	74.0	-16.1	PK	231	1.0	



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11n20MHz SL-300 Antenna

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. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

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

Ambient Conditions:

Temperature: 24 °C

Rel. Humidity: 50 %

Summary of Results

Measurements with the Universe PIFA antenna demonstarted that the spurious emissions in n20 mode were higher than those in n40 mode, therefore n20 mode tests covers both of the n-modes. These tests run at a power setting equal to the highest single-chain settings to cover single- and dual-chain operating modes.

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n20 Chain A+B	5745 MHz	A: 24.0 B: 26.0	A: 16.5 B: 16.5	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	53.1dBµV/m @ 17979.1MHz (-0.9dB)
1b	802.11n20 Chain A+B	5785 MHz	A: 24.5 B: 26	A: 16.9 B: 16.9	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	42.1dBµV/m @ 11569.9MHz (-11.9dB)
1c	802.11n20 Chain A+B	5825 MHz	A: 25 B: 26.5	A: 16.8 B: 16.9	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	47.3dBµV/m @ 11649.7MHz (-6.7dB)

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 Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 20MHz Chains A+B
Run #1a: Low Channel @ 5745 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
24.0	16.5	26.0	16.5		

Sample tested: MAC 0016EA02D4D0
Date of Test: 8/25/2008
Test Engineer: John Caizzi
Test Location: Fremont Chamber #4

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

Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

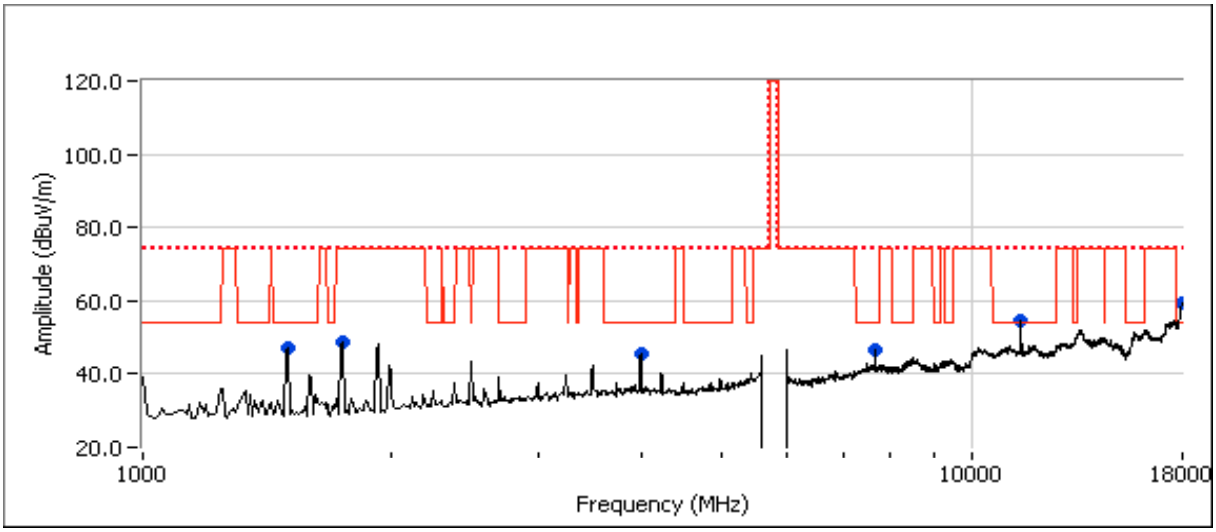
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5743.930	99.2	V	120.0	-20.8	Pk	339	1.0	RB 100 kHz; VB: 100 kHz
5743.930	99.0	H	120.0	-21.0	Pk	303	1.0	RB 100 kHz; VB: 100 kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17979.060	53.1	V	54.0	-0.9	AVG	297	1.0	
11488.740	48.8	V	54.0	-5.2	AVG	355	1.3	
7660.070	45.7	V	54.0	-8.3	AVG	299	1.6	
17972.600	64.5	V	74.0	-9.5	PK	297	1.0	
1497.730	40.6	H	54.0	-13.4	AVG	244	1.0	
11490.070	59.6	V	74.0	-14.4	PK	355	1.3	
3988.500	36.8	V	54.0	-17.2	AVG	166	1.2	
1499.200	54.9	H	74.0	-19.1	PK	244	1.0	
3992.830	54.0	V	74.0	-20.0	PK	166	1.2	
7660.290	51.7	V	74.0	-22.3	PK	299	1.6	
1742.500	48.8	H	69.2	-20.4	Peak	231	1.9	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 20MHz Chains A+B

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
24.5	16.9	26.0	16.9		

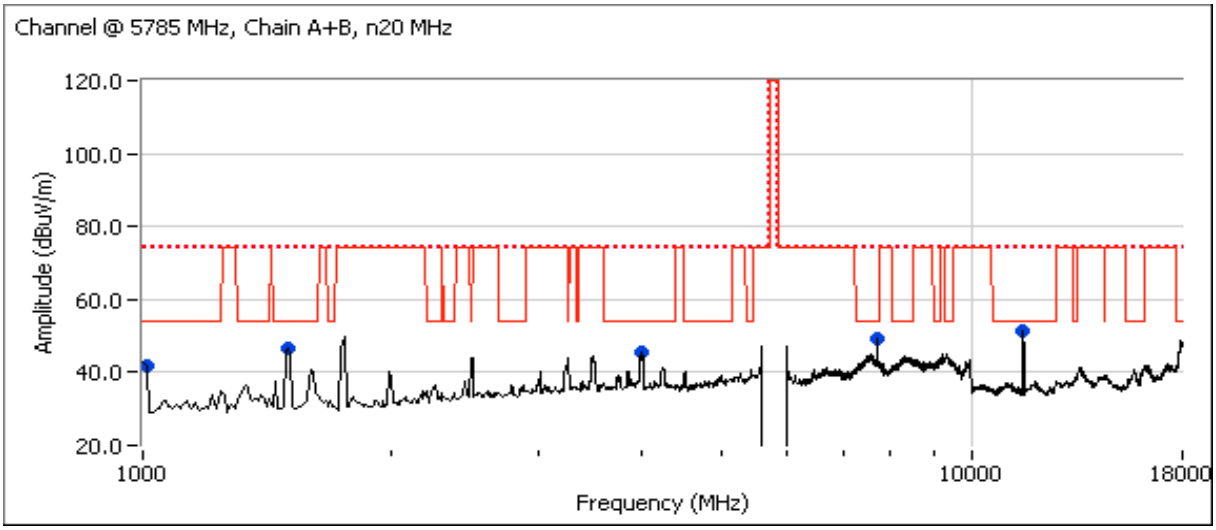
Sample tested: MAC 0016EA02D4D0
Date of Test: 8/27/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

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

Run #1b: Center Channel @ 5785 MHz

Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5790.500	98.2	H	-	-	PK	108	1.0	RB 100 kHz; VB: 100 kHz
5787.670	100.8	V	-	-	PK	172	1.0	RB 100 kHz; VB: 100 kHz



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 20MHz Chains A+B
Run #1b: Center Channel @ 5785 MHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11569.940	42.1	V	54.0	-11.9	AVG	182	1.0	RB 1.000 MHz; VB: 10 Hz
11570.080	56.0	V	74.0	-18.0	PK	182	1.0	RB 1.000 MHz; VB: 1.000 MHz
1497.630	34.2	V	54.0	-19.8	AVG	225	1.5	RB 1.000 MHz; VB: 10 Hz
1497.660	45.7	V	74.0	-28.3	PK	225	1.5	RB 1.000 MHz; VB: 1.000 MHz
3993.450	33.0	V	54.0	-21.0	AVG	181	1.0	RB 1.000 MHz; VB: 10 Hz
3998.250	49.3	V	74.0	-24.7	PK	181	1.0	RB 1.000 MHz; VB: 1.000 MHz
998.581	22.1	V	54.0	-31.9	AVG	45	1.3	RB 100 kHz; VB: 10 Hz
999.321	35.3	V	74.0	-38.7	PK	45	1.3	RB 100 kHz; VB: 100 kHz

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

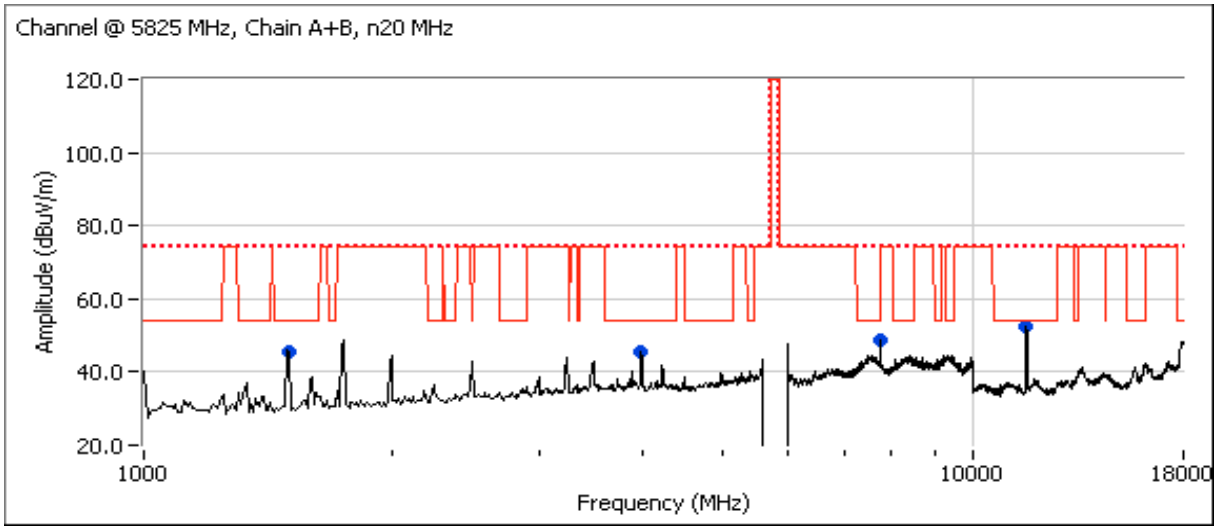
Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 20MHz Chains A+B
Run #1c: High Channel @ 5825 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25.0	16.8	26.5	16.9		

Fundamental Field Strength, Peak measured in 100kHz (used to determine spurious limit outside of restricted bands)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5818.780	98.7	V	-	-	PK	172	1.5	RB 100 kHz; VB: 100 kHz
5832.590	95.9	H	-	-	PK	109	1.0	RB 100 kHz; VB: 100 kHz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11649.680	47.3	V	54.0	-6.7	AVG	199	1.0	RB 1.000 MHz; VB: 10 Hz
11652.120	59.3	V	74.0	-14.7	PK	199	1.0	RB 1.000 MHz; VB: 1.000 MHz
7766.560	48.1	V	74.0	-25.9	AVG	212	1.3	RB 1.000 MHz; VB: 10 Hz
7766.560	52.3	V	74.0	-21.7	PK	212	1.3	RB 1.000 MHz; VB: 1.000 MHz
1497.680	34.0	V	54.0	-20.0	AVG	237	1.5	RB 1.000 MHz; VB: 10 Hz
1499.320	49.4	V	74.0	-24.6	PK	237	1.5	RB 1.000 MHz; VB: 1.000 MHz
3996.300	34.6	H	54.0	-19.4	AVG	78	1.7	RB 1.000 MHz; VB: 10 Hz
3996.520	53.2	H	74.0	-20.8	PK	78	1.7	RB 1.000 MHz; VB: 1.000 MHz

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

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

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

Ambient Conditions:

Temperature: 15-25 °C

Rel. Humidity: 35-55 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	Chain A RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	47.2dBµV/m @ 3000.41MHz (-6.8dB)
1b	Chain A RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	47.8dBµV/m @ 3000.42MHz (-6.2dB)
2a	Chain B RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	47.8dBµV/m @ 3000.41MHz (-6.2dB)
2b	Chain B RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	48.1dBµV/m @ 3000.31MHz (-5.9dB)
3a	Chain A+B RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	48.3dBµV/m @ 3000.41MHz (-5.7dB)
3a	Chain A+B RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	48dBµV/m @ 3000.41MHz (-6.0dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

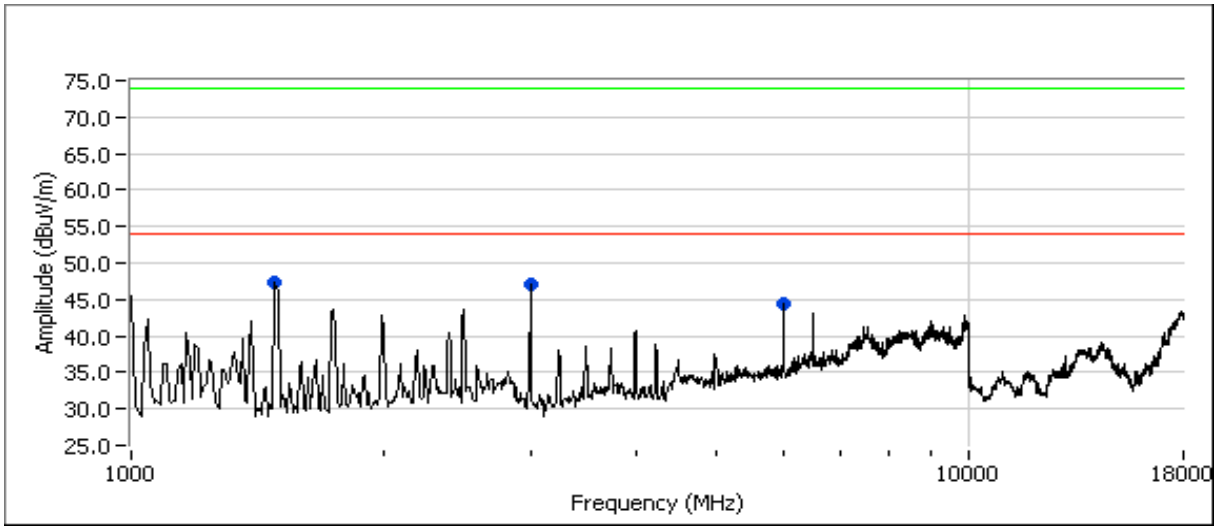
No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run # 1: Chain A Rx Radiated Spurious Emissions, 1000 - 18000 MHz
Run # 1a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain A

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.750	32.6	V	54.0	-21.4	AVG	183	1.0	
3000.400	47.2	H	54.0	-6.8	AVG	169	1.0	
5995.830	44.3	V	54.0	-9.7	Peak	273	2.0	Pk measurement, avg limit
1494.750	53.0	V	74.0	-21.0	PK	183	1.0	
3000.400	51.4	H	74.0	-22.6	PK	169	1.0	

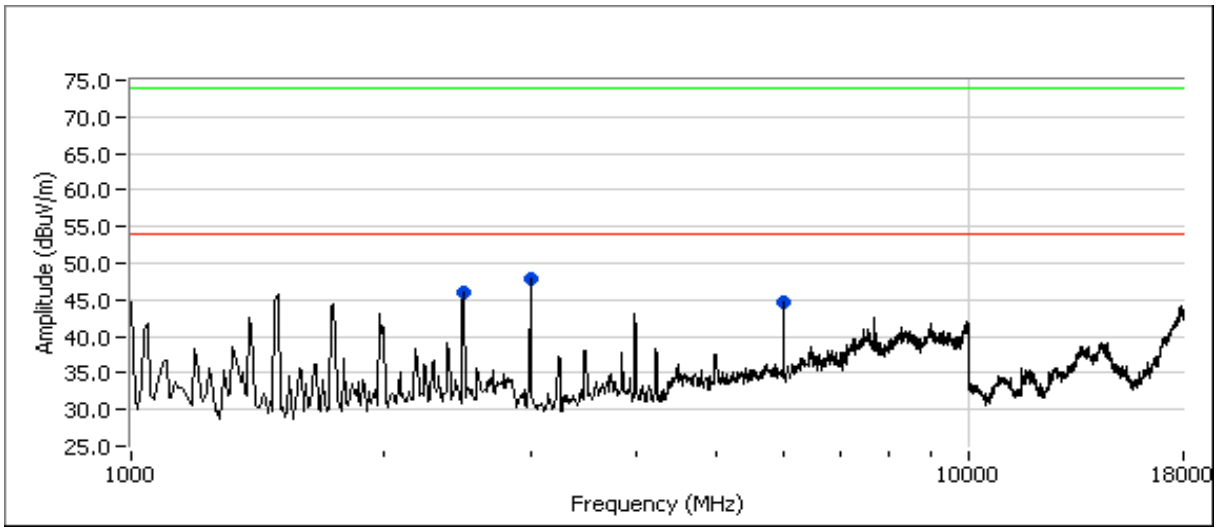


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run # 1b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain A

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2490.610	30.3	H	54.0	-23.7	AVG	144	1.0	
3000.410	47.8	V	54.0	-6.2	AVG	259	1.3	
5995.830	44.6	V	54.0	-9.4	Peak	96	1.0	Pk measurement, avg limit
2490.610	50.9	H	74.0	-23.1	PK	144	1.0	
3000.410	51.2	V	74.0	-22.8	PK	259	1.3	

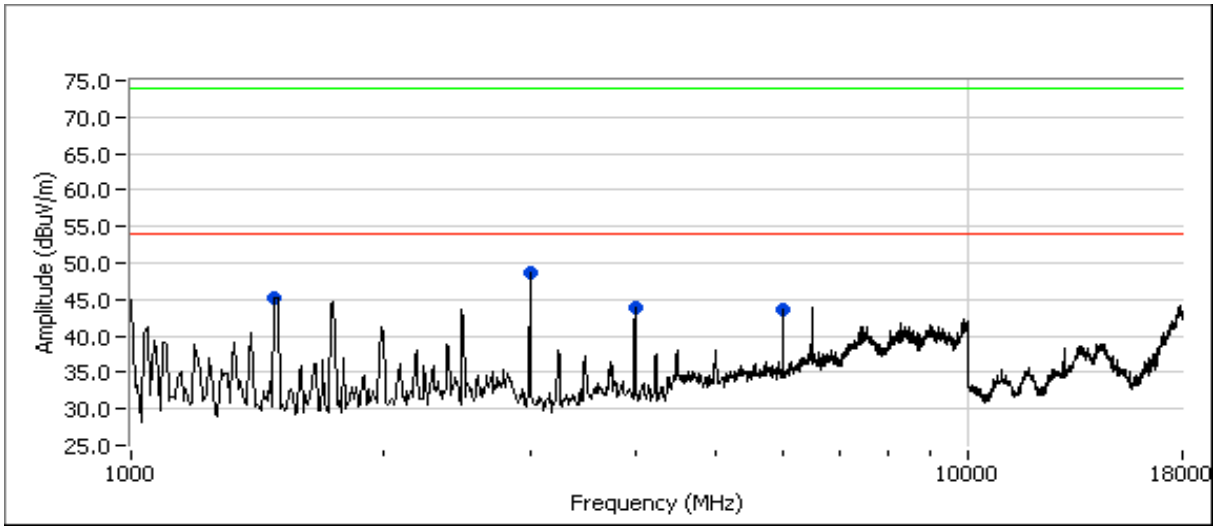


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2: Chain B Rx Radiated Spurious Emissions, 1000 - 18000 MHz
Run #2a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain B

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.790	32.8	V	54.0	-21.2	AVG	252	1.3	
3000.400	47.8	V	54.0	-6.2	AVG	259	1.3	
3997.500	43.8	V	54.0	-10.2	Peak	128	1.0	Pk measurement, avg limit
5995.830	43.6	V	54.0	-10.4	Peak	98	1.0	Pk measurement, avg limit
1497.790	49.6	V	74.0	-24.4	PK	252	1.3	
3000.400	51.1	V	74.0	-22.9	PK	259	1.3	

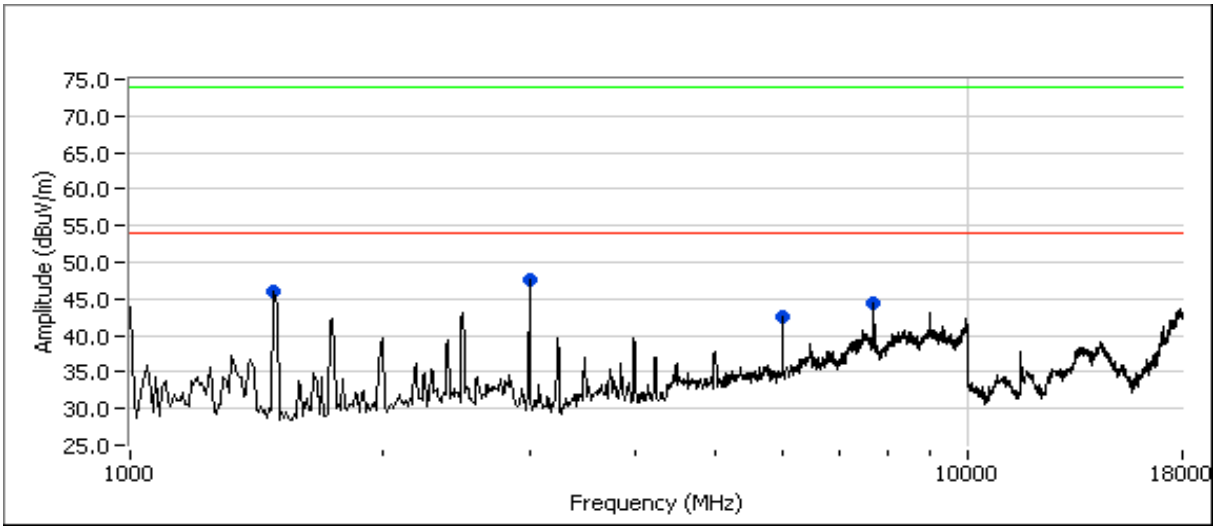


Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #2b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain B

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.410	33.6	H	54.0	-20.4	AVG	163	1.0	
3000.340	48.1	V	54.0	-5.9	AVG	262	1.3	
5995.830	42.5	V	54.0	-11.5	Peak	263	1.3	Pk measurement, avg limit
7713.330	44.4	V	54.0	-9.6	Peak	255	1.6	Pk measurement, avg limit
1494.410	53.6	H	74.0	-20.4	PK	163	1.0	
3000.340	51.6	V	74.0	-22.4	PK	262	1.3	



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #3: Chain A+B Rx Radiated Spurious Emissions, 1000 - 18000 MHz

Run #3a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain A+B

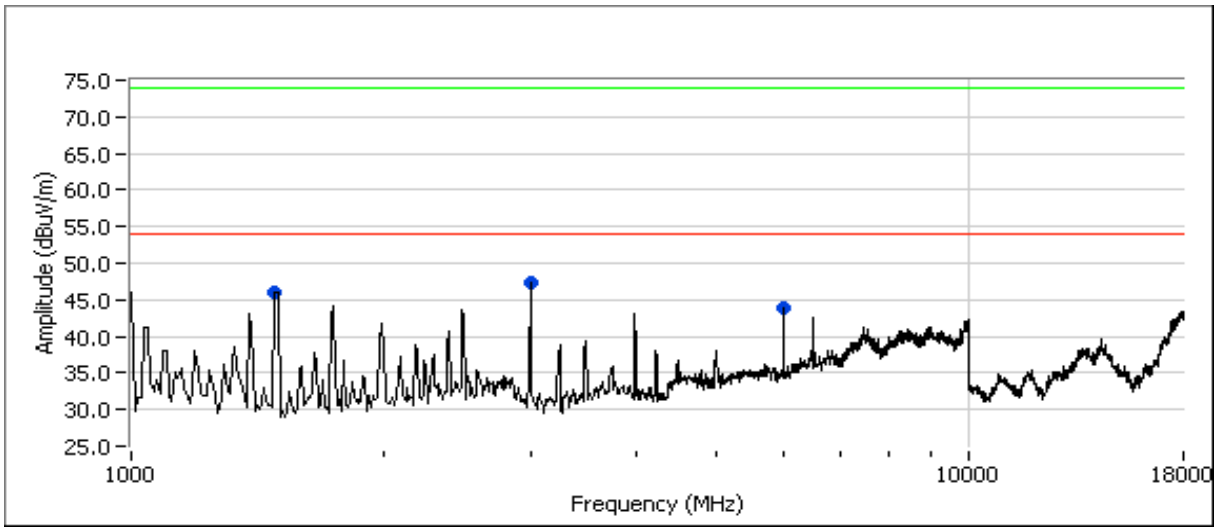
Sample tested: 0016EA02D660

Date of Test: 6/19/2008

Test Engineer: Rafael Varelas

Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.670	33.9	H	54.0	-20.1	AVG	168	1.0	
3000.350	48.3	V	54.0	-5.7	AVG	258	1.3	
5995.830	43.8	V	54.0	-10.2	Peak	105	1.3	Pk measurement, avg limit
1494.670	53.5	H	74.0	-20.5	PK	168	1.0	
3000.350	51.8	V	74.0	-22.2	PK	258	1.3	



Client:	Intel Corporation	Job Number:	J72725
Model:	533AN-MMW with SL-300 Antenna	T-Log Number:	T72735
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC Part 15.247/RSS 210	Class:	N/A

Run #3b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain A+B

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.200	33.1	H	54.0	-20.9	AVG	162	1.0	
3000.370	48.0	V	54.0	-6.0	AVG	257	1.3	
5995.830	44.8	V	54.0	-9.2	Peak	95	1.0	Pk measurement, avg limit
7713.330	43.9	V	54.0	-10.1	Peak	252	1.6	Pk measurement, avg limit
1498.200	52.9	H	74.0	-21.1	PK	162	1.0	
3000.370	51.4	V	74.0	-22.6	PK	257	1.3	

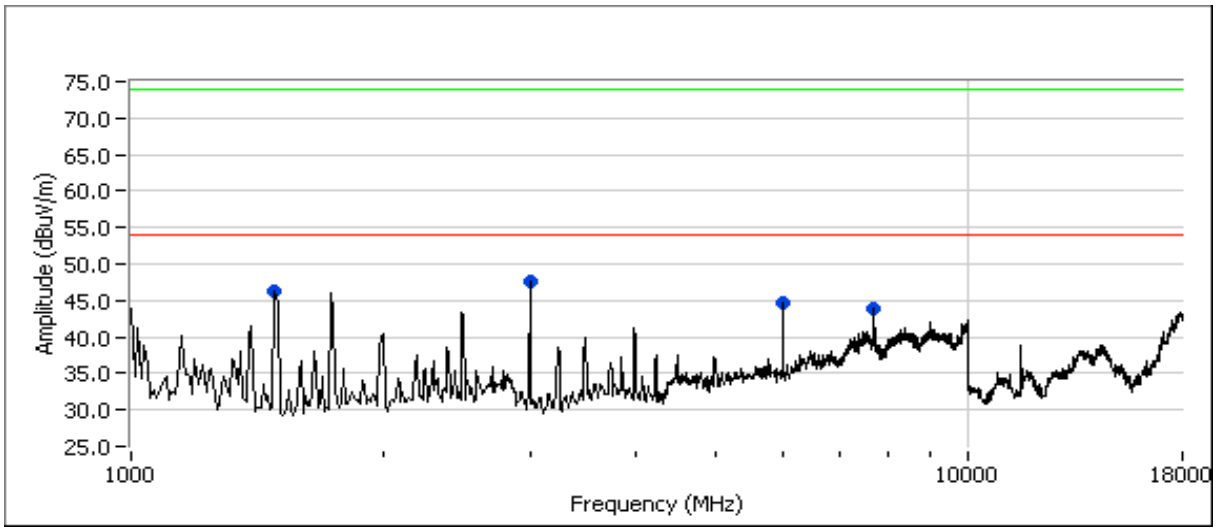


EXHIBIT 3: Photographs of Test Configurations