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Electromagnetic Emissions Test Report and Application for Grant of Equipment Authorization pursuant to

Industry Canada RSS-Gen Issue 2 / RSS 210 Issue 7 FCC Part 15 Subpart C

on the Broadcom Corporation Transmitter Model: BCM94322HM8L

UPN:	4324A-BRCM1031
FCC ID:	QDS-BRCM1031
GRANTEE:	Broadcom Corporation 190 Mathilda Avenue Sunnyvale, CA 94086
TEST SITE:	Elliott Laboratories, Inc. 684 W. Maude Ave Sunnyvale, CA 94086
REPORT DATE:	January 14, 2008
FINAL TEST DATE:	December 31, 2007 thru January 15, 2008
AUTHORIZED SIGNATORY:	Mark E. Hill Staff Engineer

ACCREDITED

Testing Cert #2016-01

REVISION HISTORY

Rev #	Date	Comments	Modified By
1	2/11/08	Initial Release	DG

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SCOPE

An electromagnetic emissions test has been performed on the Broadcom Corporation model BCM94322HM8L 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

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 Broadcom Corporation model BCM94322HM8L and therefore apply only to the tested sample. The sample was selected and prepared by David Boldy of Broadcom 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 Broadcom Corporation model BCM94322HM8L 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	10.1 MHz (802.11b) 16.5 MHz (802.11g) 17.5 MHz (802.11n – 20 MHz CDD) 35.7 MHz (802.11n – 40 MHz CDD)	>500kHz	Complies
	RSP100	99% Bandwidth	14.0 MHz (802.11b) 17.6 MHz (802.11g) 18.8 MHz (802.11n – 20 MHz CDD) 37.0 MHz (802.11n – 40 MHz CDD)	Information only	Complies
15.247 (b) (3)	RSS 210 A8.2 (4)	Output Power (multipoint systems)	22.0 dBm (0.158 Watts) EIRP = 0.390 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	-0.1 dBm / MHz	8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions 30MHz – 25 GHz	All emissions <-30 dBc	< -30dBc Note 2	Complies
15.247(c) / 15.209	RSS 210 A8.5	Radiated Spurious Emissions 30MHz – 25 GHz	53.4dBµV/m (469.4µV/m) @ 2484.4MHz (-0.6dB)	15.207 in restricted bands, all others <-30dBc Note 2	Complies

Note 1: EIRP calculated using antenna gain of 3.9 dBi for the highest EIRP multi-point system.

Note 2: 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).

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 techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	16.33 MHz (802.11a) 17.6 MHz (802.11n – 20 MHz CDD) 35.7 MHz (802.11n – 40 MHz CDD)	>500kHz	Complies
	RSP100	99% Bandwidth	18.4 MHz (802.11a) 18.8 MHz (802.11n – 20 MHz CDD) 38.8 MHz (802.11n – 40 MHz CDD)	Information only	Complies
15.247 (b) (3) 15.247		Output Power (multipoint systems)	19.9 dBm (0.098 Watts) EIRP = 0.747 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	-4.8 dBm / MHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions – 30MHz – 40 GHz	All spurious emissions < -30dBc	< -30dBc Note 2	Complies
15.247(c) / 15.209	RSS 210 A8.5 Table 2, 3	Radiated Spurious Emissions 30MHz – 40 GHz	53.7dBµV/m (484.2µV/m) @ 17260.2MHz (-0.3dB)	15.207 in restricted bands, all others <-30dBc Note 2	Complies

Note 1: EIRP calculated using antenna gain of 5.8 dBi (effective 8.8 dBi gain) for the highest EIRP multi-point system.

Note 2: Limit of -30dBc used because the power was measured using the UNII test procedure (maximum power averaged over a transmission burst).

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Device uses a unique connector type		Complies
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	50.7dBµV/m (342.8µV/m) @ 17977.6MHz (-3.3dB)		Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	31.4dBµV (37.2µV) @ 2.174MHz (-14.6dB)	Refer to standard	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in Exhibit 11, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
	RSP 100 RSS GEN 7.1.5	User Manual		Statement required regarding non-interference	Complies
	RSP 100 RSS GEN 7.1.5	User Manual		Statement required regarding detachable antenna	

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 Broadcom Corporation model BCM94322HM8L is an 802.11ag/Draft 802.11n WLAN PCI-E Minicard that is designed to enable wireless data transmission in PCs. Since the EUT would be placed on a table top during operation, the EUT was treated as table-top equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 3.3Vdc from the host.

The sample was received on December 31, 2007 and tested on December 31, 2007 thru January 15, 2008. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
Broadcom	BCM94322HM8L	802.11ag/Draft 802.11n WLAN PCI-E Minicard		QDS-BRCM1031

ANTENNA SYSTEM

The EUT antenna is a stamped metal sheet antenna with peak gains of 3.9dBi/2.4GHz and 5.8dBi/5GHz.

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

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
HP	-	Laptop Computer	-	DoC
Dell*	Inspiron 0000	Laptop Computer	901014-70166-57K-01JT	DoC
HP*	C6490A	Printer	MY3883K42P	DoC

* - Dell laptop and printer used for conducted emissions testing only

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)
Main RF Port	Antenna	coax	shielded	0.15
Aux RF Port	Antenna	coax	shielded	0.15
PCMCIA Buss	Extender Card with EUT	Direct Connection	-	-
DC Power on Computer	AC/DC Adapter	multiconductor	shielded	1.5
AC/DC Adapter	AC Mains	3 wire	unshielded	1.5
USB on Computer	Printer	multiconductor	shielded	1.5

EUT OPERATION

During testing, the EUT was configured to either transmit continuously on the desired channel or set into a receive mode at the desired channel, as noted on the test data sheets.

All transmitter spurious emissions testing (radiated or conducted) was done at the highest power setting within the band. All band edge, power and other measurements were taken at the maximum power allowed by the EUT's power table for that particular channel.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on December 31, 2007 thru January 15, 2008 at the Elliott Laboratories semi anechoic chambers #3 & 5 located 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.

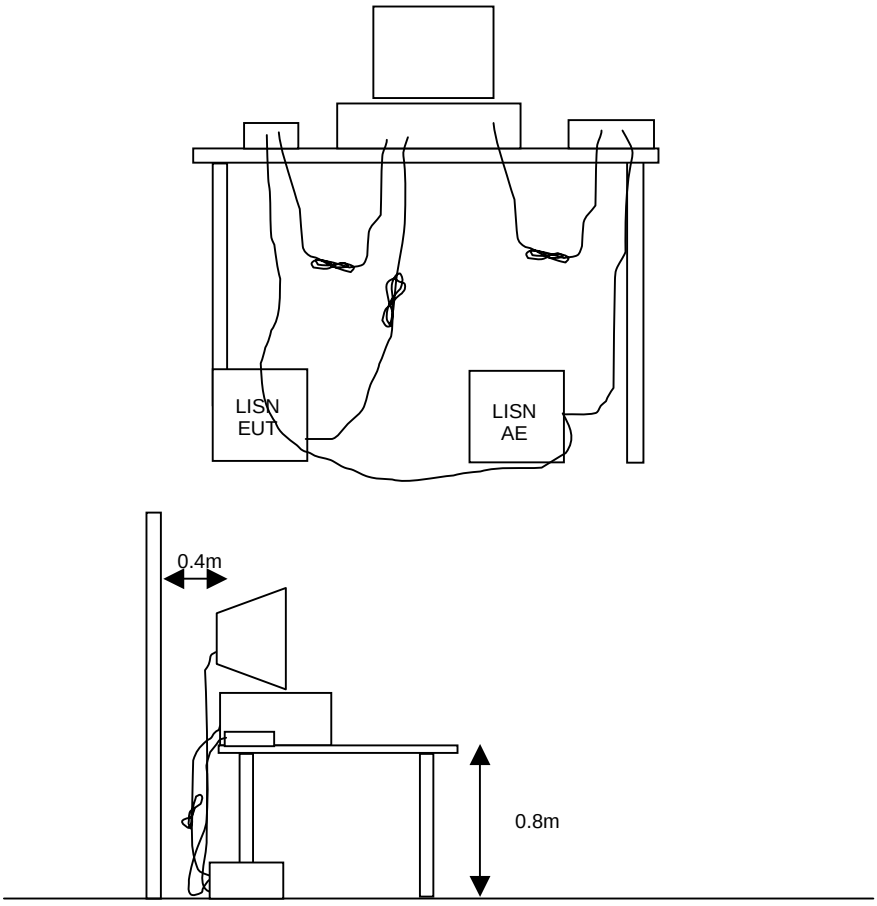
TEST PROCEDURES

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.

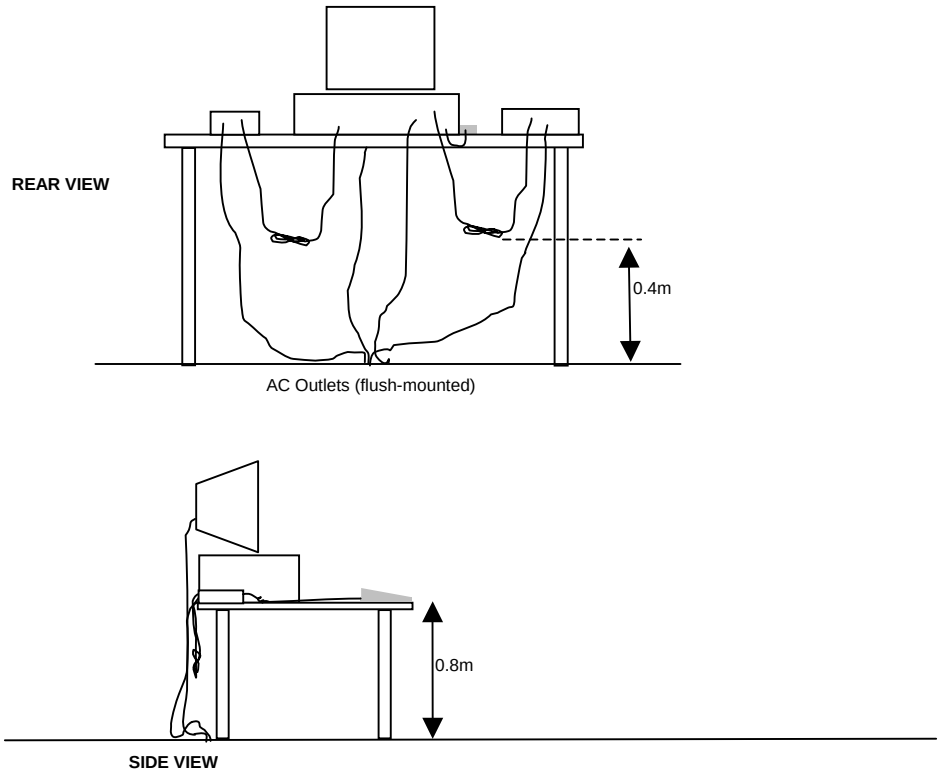


A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). 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.

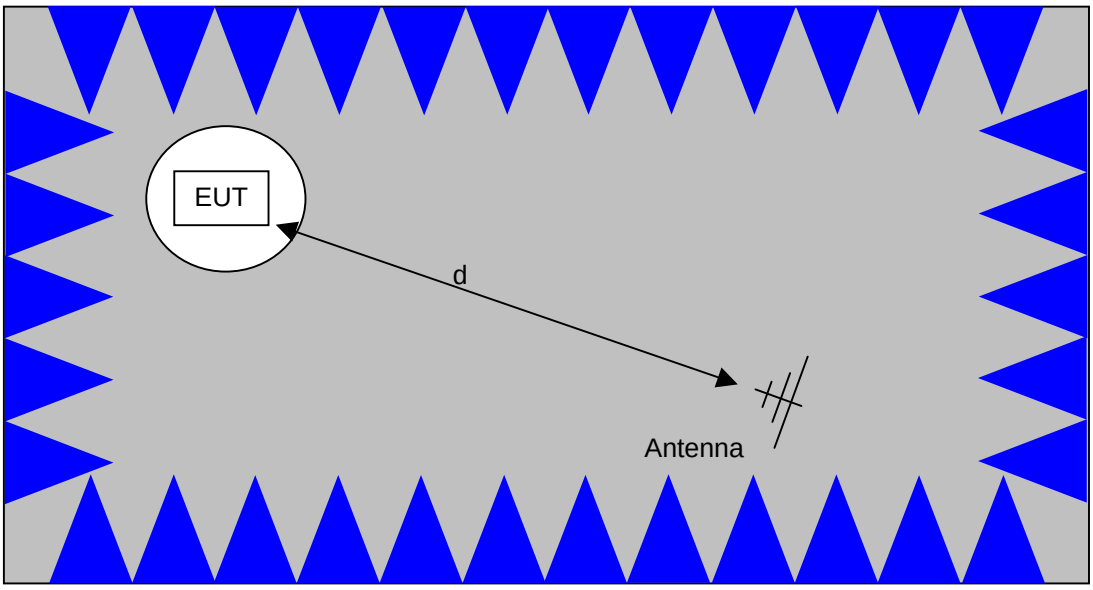
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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.

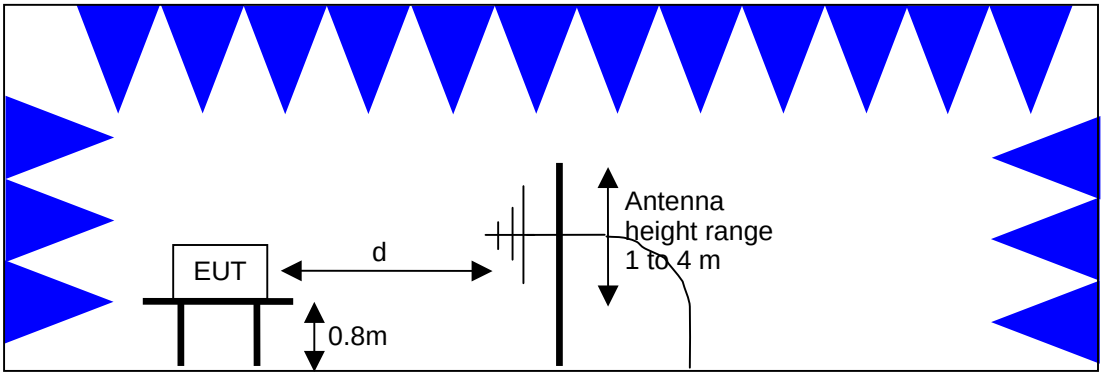


Typical Test Configuration for Radiated Field Strength Measurements



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

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

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

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

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

OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS

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

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

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

TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS

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

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

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

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

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

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

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

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

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

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

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_s = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

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

1 Page

Radio Spurious Emissions, 02-Jan-08
Engineer: Suhaila Khushzad

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	11-Jul-08
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FMT (SA40) Blue	8564E (84125C)	1393	17-Jan-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

Radio Spurious Emissions, 03-Jan-08
Engineer: Suhaila Khushzad

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 (SA40-Blu)	3115	1386	11-Jul-08
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	11-Jan-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

Radiated Emissions, 30 - 26,500 MHz, 08-Jan-08
Engineer: bjing

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	29-May-08
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	10-May-08
Hewlett Packard	High Pass filter, 3.5 GHz (Purple System)	P/N 84300-80038 (84125C)	1768	06-Nov-08
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	1771	17-Dec-08

Radio Antenna Port (Power and Spurious Emissions), 07, 08 and 09-Jan-08
Engineer: Mehran Birgani

Manufacturer	Description	Model #	Asset #	Cal Due
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	11-Jan-08
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40)	8564E	CH5273	20-Jul-08

Radiated Emissions, 30 - 26,500 MHz, 09-Jan-08
Engineer: bjing

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	11-Jul-08
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	11-Jan-08

Radio Antenna Port , 10-Jan-08
Engineer: Suhaila Khushzad

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Test Sys (SA40, 9kHz - 40GHz) FMT	84125C	Rental	20-Jul-08

EXHIBIT 2: Test Measurement Data

154 Pages

Elliott	EMC Test Data

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		-
Emissions Standard(s):	FCC 15.247/RSS-210	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Broadcom Corporation

Model

BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard

Date of Last Test: 1/17/2008

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manger:	Dean Eriksen
Contact:	David Boldy		
Emissions Standard(s):	FCC 15.247/RSS-210	Class:	-
Immunity Standard(s):	-	Environment:	-

EUT INFORMATION

General Description

The EUT is an 802.11ag/Draft 802.11n WLAN PCI-E Minicard that is designed to enable wireless data transmission in PCs. Since the EUT would be placed on a table top during operation, the EUT was treated as table-top equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 3.3Vdc from the host.

Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
Broadcom	BCM94322HM8L	802.11ag/Draft 802.11n WLAN PCI-E Minicard		QDS-BRCM1031

EUT Antenna (Intentional Radiators Only)

The EUT antenna is a stamped metal sheet antenna with peak gains of 3.9dBi/2.4GHz and 5.8dBi/5GHz.

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

EUT Enclosure

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

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manger:	Dean Eriksen
Contact:	David Boldy		
Emissions Standard(s):	FCC 15.247/RSS-210	Class:	-
Immunity Standard(s):	-	Environment:	-

Test Configuration #1

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
HP	-	Laptop Computer	-	DoC
Dell*	Inspiron 0000	Laptop Computer	901014-70166-57K-01JT	DoC
HP*	C6490A	Printer	MY3883K42P	DoC

* - Dell laptop and printer used for conducted emissions testing only

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
None	-	-	-	-

Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
Main RF Port	Antenna	coax	shielded	0.15
Aux RF Port	Antenna	coax	shielded	0.15
PCMCIA Buss	Extender Card with EUT	Direct Connection	-	-
DC Power on Computer	AC/DC Adapter	multiconductor	shielded	1.5
AC/DC Adapter	AC Mains	3 wire	unshielded	1.5
USB on Computer	Printer	multiconductor	shielded	1.5

EUT Operation During Emissions Tests

During testing, the EUT was configured to either transmit continuously on the desired channel or set into a receive mode at the desired channel, as noted on the test data sheets.

All transmitter spurious emissions testing (radiated or conducted) was done at the highest power setting within the band. All band edge, power and other measurements were taken at the maximum power allowed by the EUTs power table for that particular channel.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 Radiated Spurious Emissions Transmit Mode (FCC 15.247(d)/15.209)

Test Specific Details

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

Date of Test: 1/2/2008 & 1/7/2008
Test Engineer: Suhaila Khushzad & Ben Jing
Test Location: Chamber # 5 & # 3
Config. Used: 1
Config Change: None
EUT Voltage: Powered from Host System

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1 MHz and for average with RBW=1 MHz, VBW=10 Hz.

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

Ambient Conditions:

Temperature: 19 °C
Rel. Humidity: 35 %

Summary of Results

Run #1	TX Mode	Channel	Power Setting	Pass/Fail	Margin
1a	b legacy	1	-	Pass	51.9dBµV/m (391.3µV/m) @ 2386.3MHz (-2.2dB)
1b	b legacy	6	-	Pass	45.7dBµV/m (192.8µV/m) @ 4853.3MHz (-8.3dB)
1c	b legacy	11	-	Pass	49.4dBµV/m (294.4µV/m) @ 2499.2MHz (-4.6dB)

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:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25,000 MHz. Operating Mode: 802.11b

Run #1a: Tx Mode Low Channel @ 2412 MHz, Main Antenna

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2409.299	99.8	H	-	-	Avg	117	1.5	RBW=1MHz, VBW=10Hz
2409.539	103.9	H	-	-	PK	117	1.5	RBW=VBW=1MHz
2409.539	100.5	H	-	-	-	117	1.5	RBW=VBW=100kHz

Band Edge Signal Field Strength

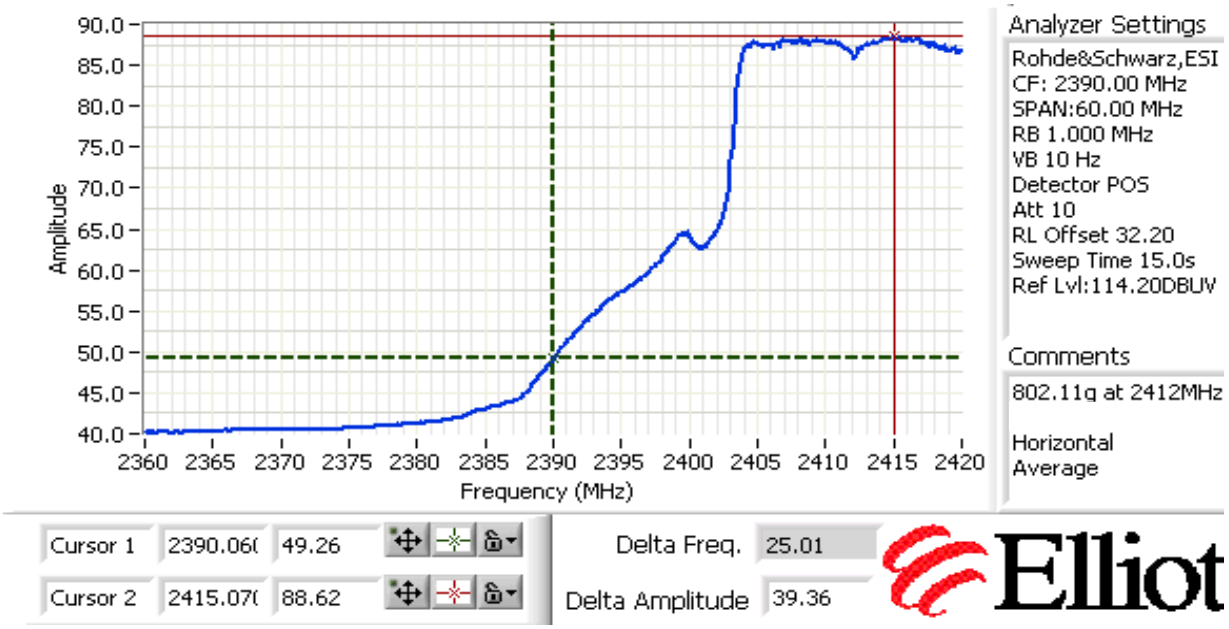
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.333	51.9	H	54.0	-2.2	Avg	117	1.5	
2386.333	51.0	V	54.0	-3.0	Avg	127	1.1	
2386.092	61.8	H	74.0	-12.2	Pk	117	1.5	
2386.092	59.8	V	74.0	-14.2	Pk	127	1.1	

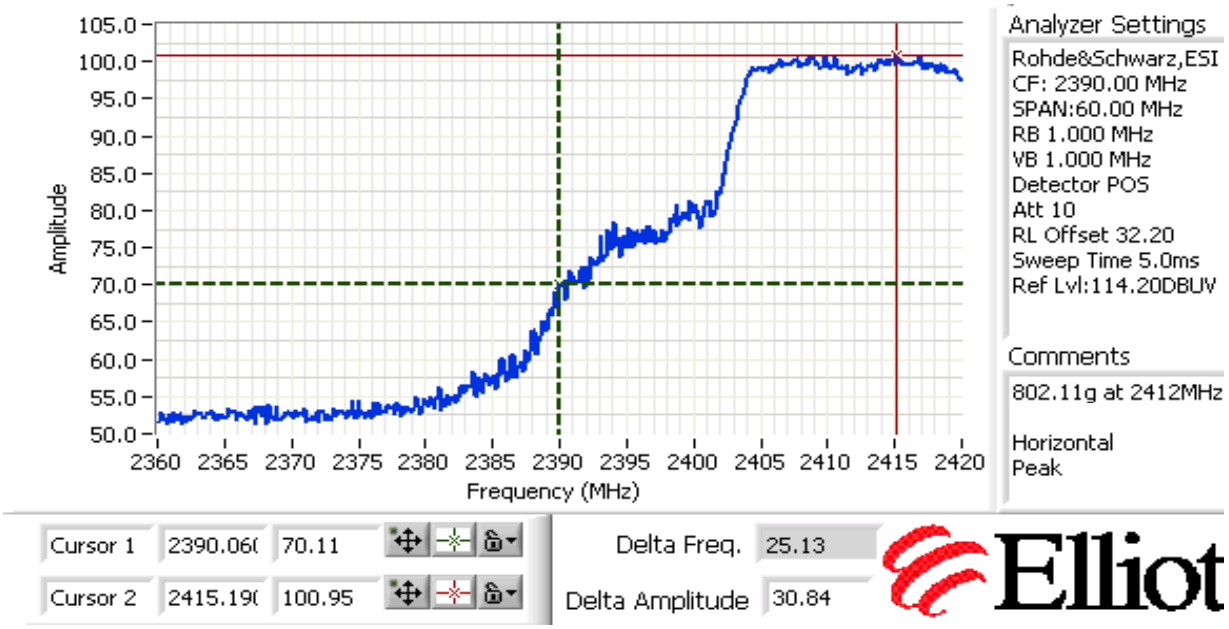
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4823.960	50.4	V	54.0	-3.6	Peak	5	1.0	
7235.010	47.9	V	54.0	-6.1	Peak	3	1.3	Note 1
7492.830	47.2	H	54.0	-6.8	Peak	136	1.3	
17986.36	46.7	V	54.0	-7.3	Peak	138	1.6	
9641.470	46.3	V	54.0	-7.7	Peak	0	1.0	Note 1
14480.53	44.6	H	54.0	-9.4	Peak	289	1.0	
4976.350	44.2	V	54.0	-9.8	Peak	46	1.3	
2999.980	41.0	V	54.0	-13.0	Peak	92	1.0	Note 1

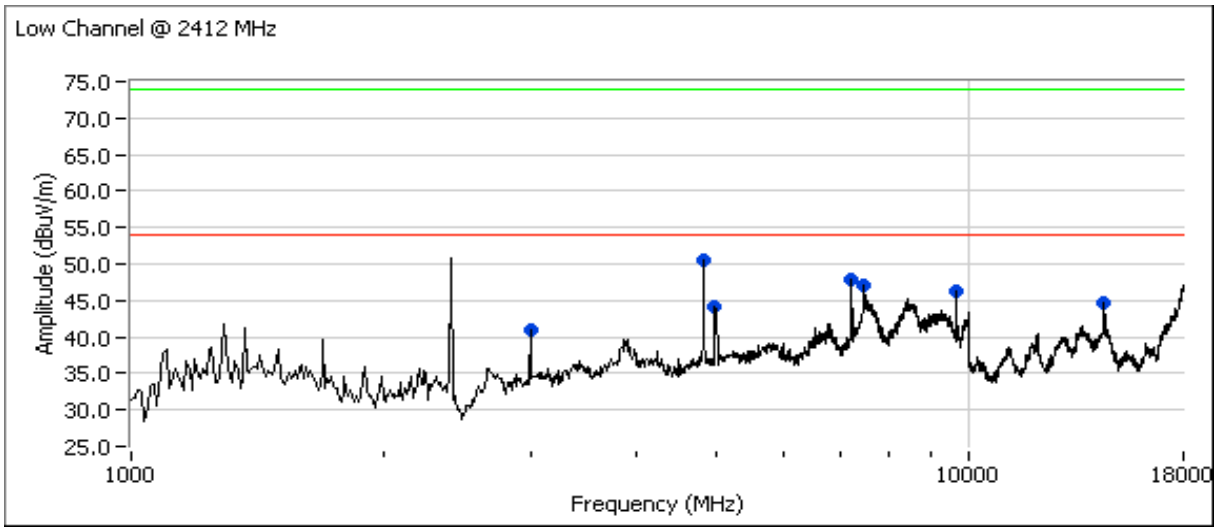
Note 1:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

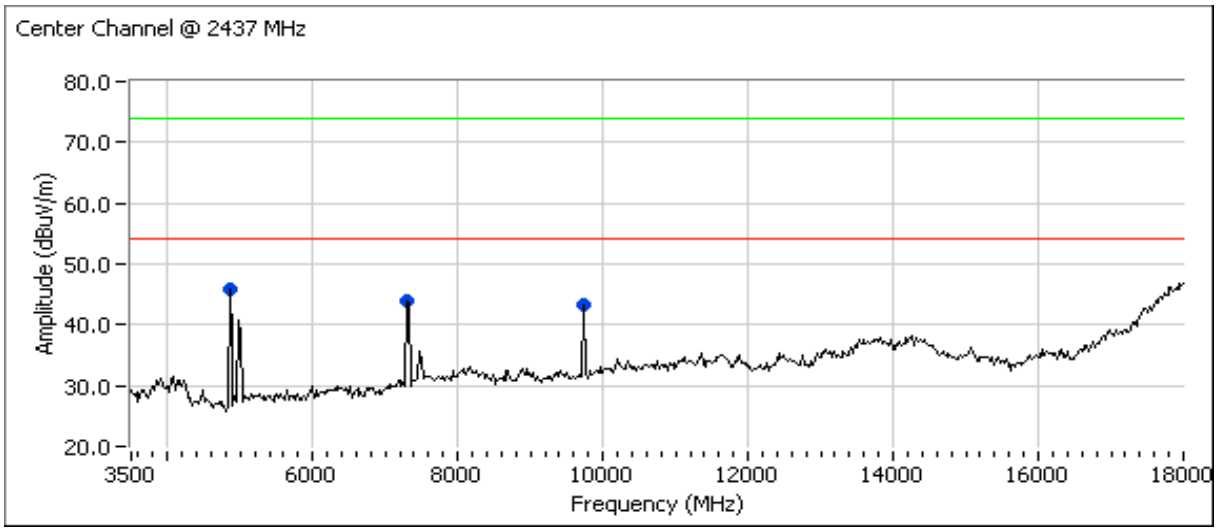


Run #1b: Tx Mode Center Channel @ 2437 MHz, Main Antenna

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4853.330	45.7	V	54.0	-8.3	Peak	158	1.0	
7294.170	44.0	V	54.0	-10.0	Peak	170	1.0	
9735.000	43.2	V	54.0	-10.8	Peak	158	1.0	Note 2

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



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1c: Tx Mode High Channel @ 2462 MHz, Main Antenna

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2458.793	101.7	V	-	-	Avg	130	1.0	RBW=1MHz, VBW=10Hz
2459.392	105.6	V	-	-	PK	130	1.0	RBW=VBW=1MHz
2459.392	102.3	V	-	-	-	130	1.0	RBW=VBW=100kHz

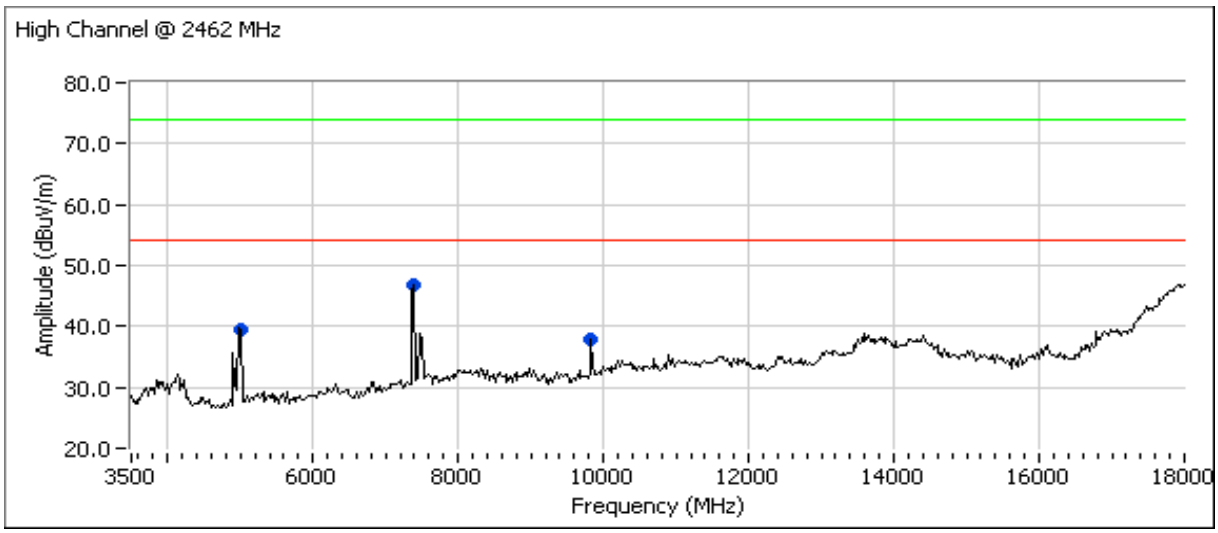
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2499.193	49.4	V	54.0	-4.6	Avg	130	1.0	
2483.800	45.7	H	54.0	-8.3	Avg	282	1.0	
2486.085	60.3	V	74.0	-13.8	Pk	130	1.0	
2485.960	57.2	H	74.0	-16.8	Pk	282	1.0	

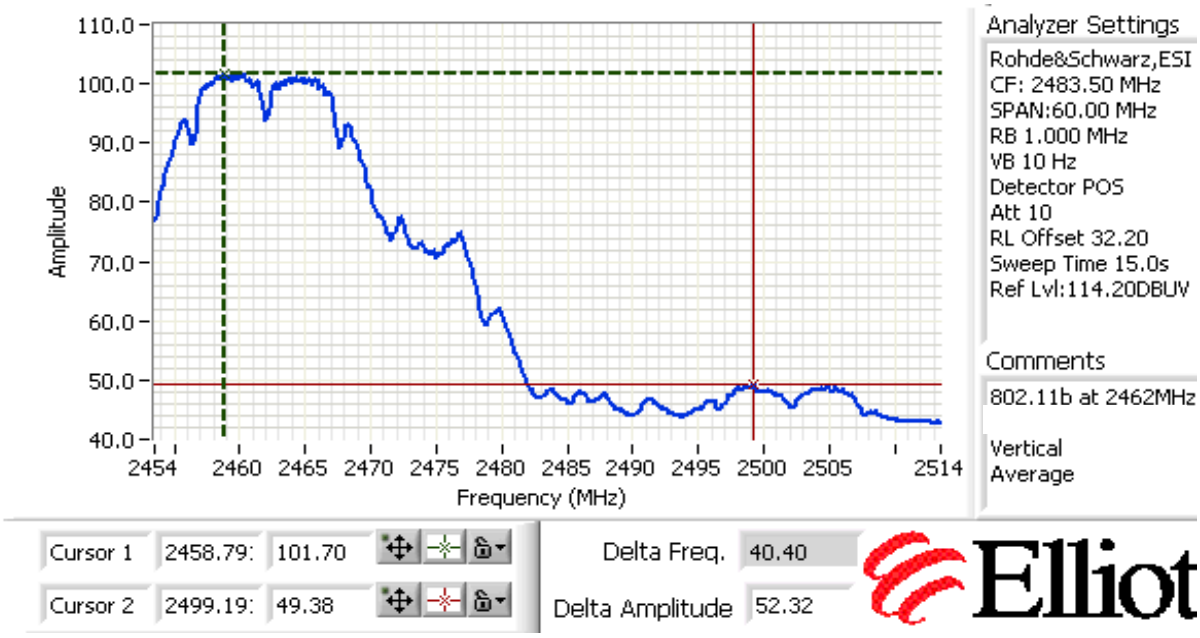
Other Spurious Emissions

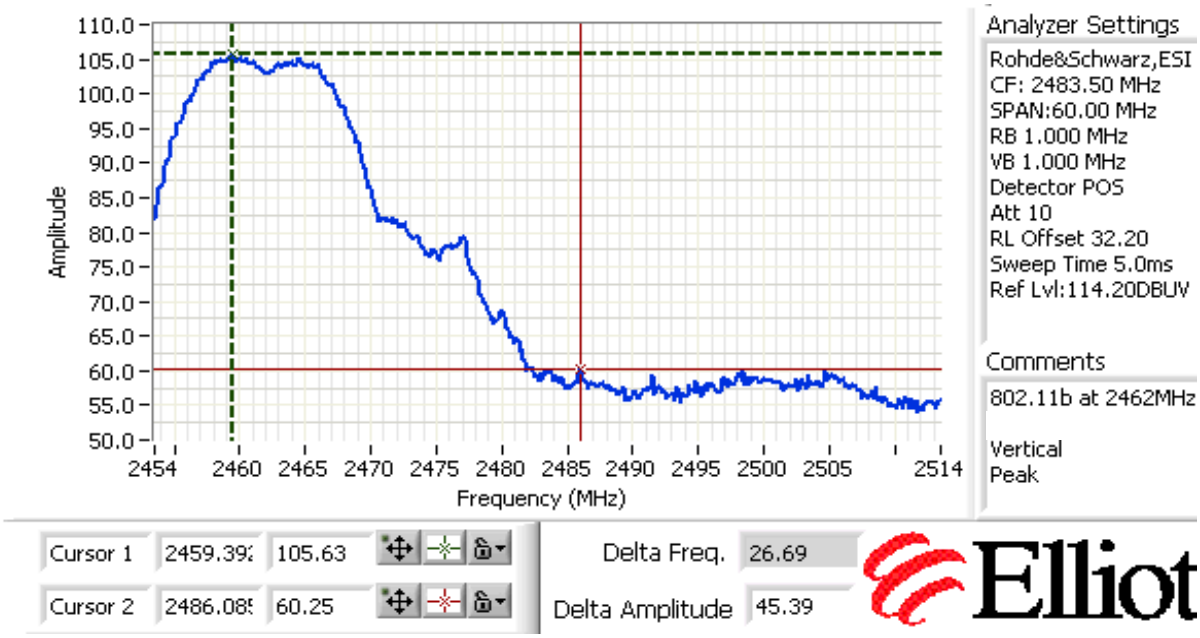
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7390.830	46.7	V	54.0	-7.3	Peak	160	1.3	
4998.330	39.5	V	54.0	-14.5	Peak	227	1.3	
9831.670	37.9	V	54.0	-16.1	Peak	118	1.0	Note 1

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



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 Radiated Spurious Emissions Transmit Mode (FCC 15.247(d)/15.209)

Test Specific Details

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

Date of Test: 1/3/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3
Config. Used: 1
Config Change: None
EUT Voltage: Powered from Host System

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1 MHz and for average with RBW=1 MHz, VBW=10 Hz.

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

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 36 %

Summary of Results

Run #1	TX Mode	Channel	Power Setting	Pass/Fail	Margin
1a	g legacy	1	-	Pass	72.8dBµV/m (4365.2µV/m) @ 2389.3MHz (-1.2dB)
1b	g legacy	6	-	Pass	41.6dBµV/m (120.2µV/m) @ 7309.5MHz (-12.4dB)
1c	g legacy	10	-	Pass	67.7dBµV/m (2415.5µV/m) @ 2484.4MHz (-6.3dB)
1d	g legacy	11	-	Pass	72.2dBµV/m (4092.6µV/m) @ 2483.9MHz (-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:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25,000 MHz. Operating Mode: 802.11g

Run #1a: Low Channel @ 2412 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2412.000	103.8	V	-	-	PK	265	1.0	RBW=VBW=1MHz
2412.000	89.7	V	-	-	Avg	265	1.0	RBW=1MHz, VBW=10Hz
2412.000	93.9	V	-	-	-	265	1.0	RBW=VBW=100kHz

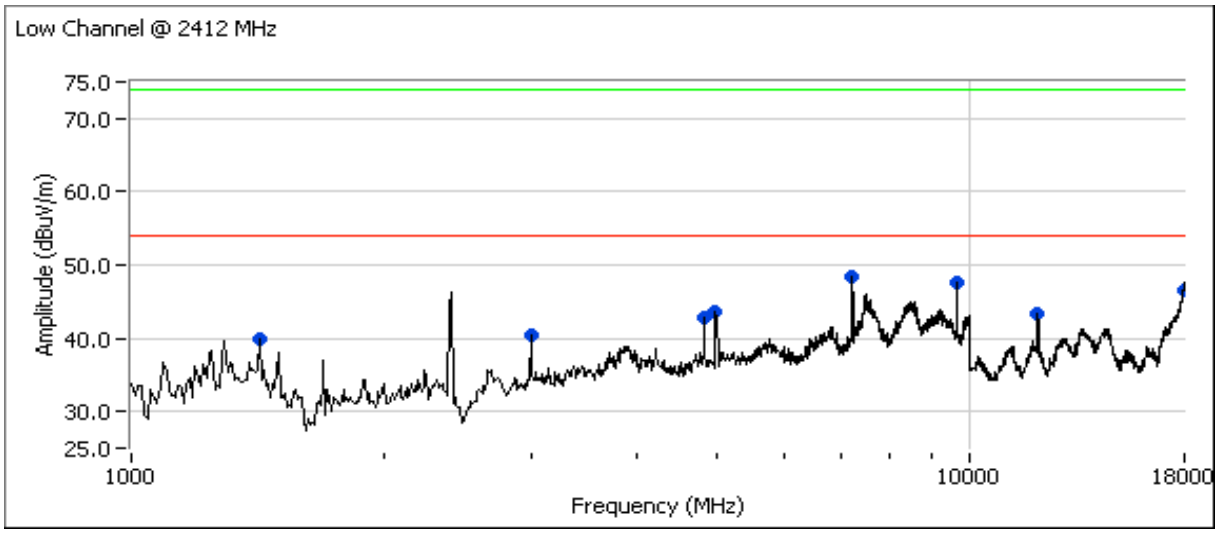
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.300	72.8	V	74.0	-1.2	Avg	265	1.0	
2390.000	51.1	V	54.0	-2.9	Avg	265	1.0	
2389.300	70.9	H	74.0	-3.1	Avg	271	1.7	
2390.000	49.3	H	54.0	-4.7	Avg	271	1.7	

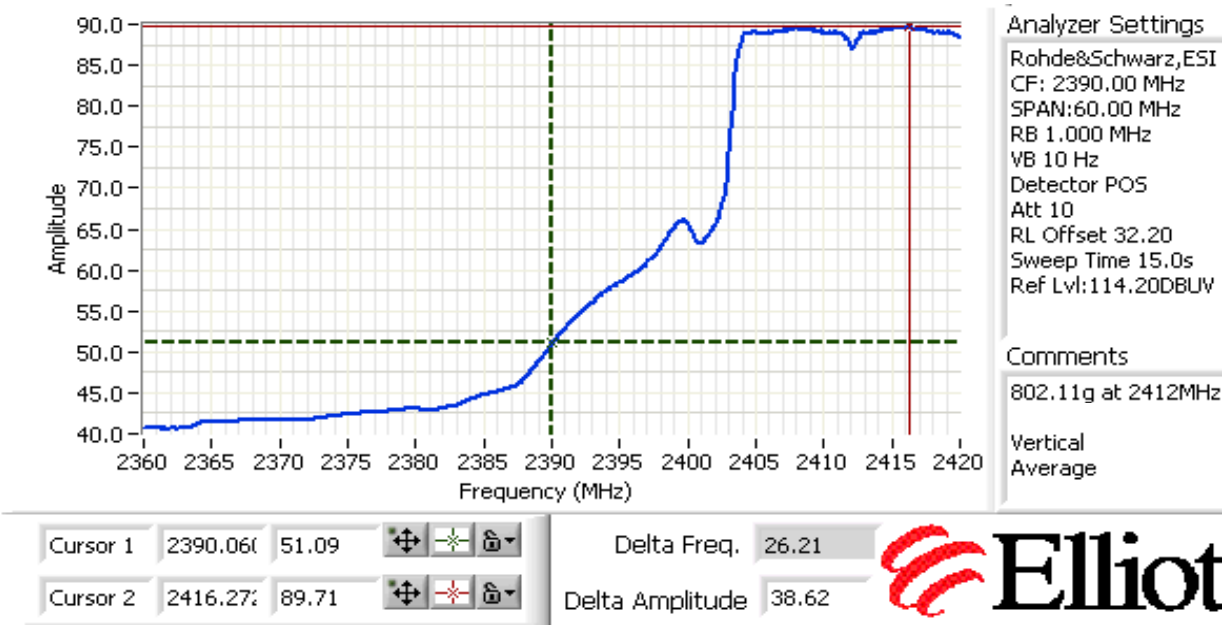
Other Spurious Emissions

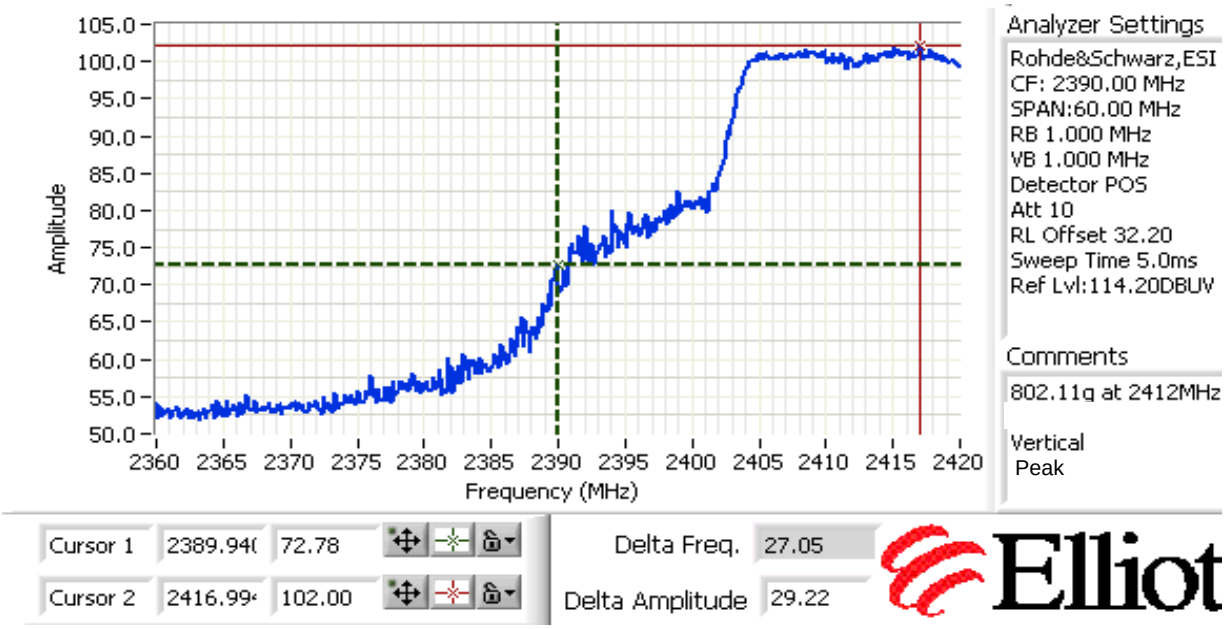
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7234.04	40.1	V	54.0	-13.9	AVG	173	1.2	Note 1
17955.84	39.1	V	54.0	-14.9	AVG	252	1.0	
9646.60	32.3	H	54.0	-21.7	AVG	48	1.0	Note 1
7234.04	51.9	V	74.0	-22.1	PK	173	1.2	Note 1
17955.84	51.0	V	74.0	-23.0	PK	252	1.0	
9646.60	44.7	H	74.0	-29.3	PK	48	1.0	Note 1

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



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

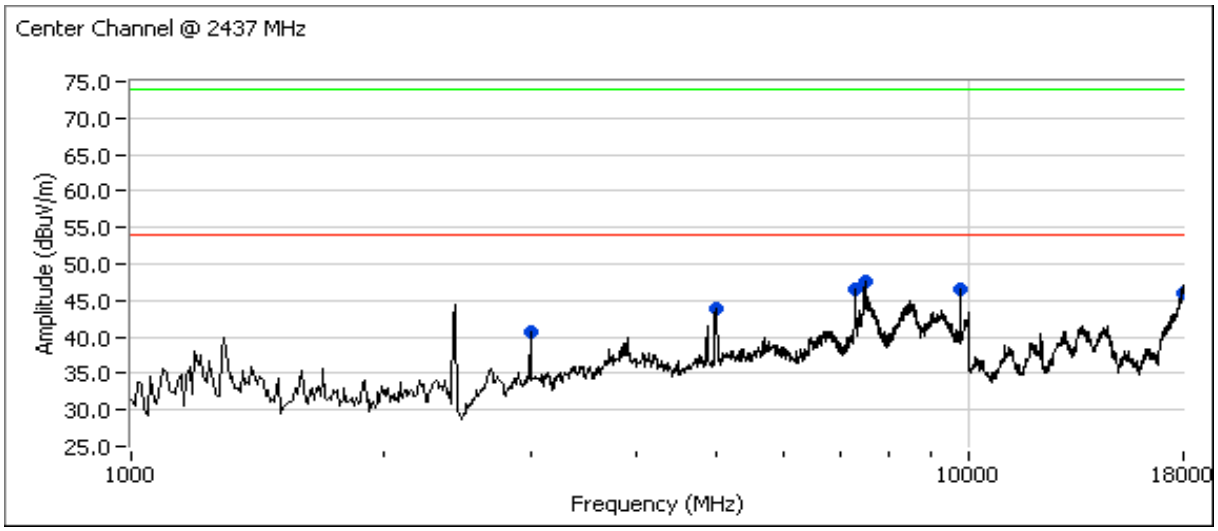




Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run # 1b: Center Channel 6 @ 2437 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2437.000	94.1	V	-	-	-	87	1.0	RBW=VBW=100kHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
7309.53	41.6	V	54.0	-12.4	AVG	158	1.3	
3000.01	40.2	V	54.0	-13.8	AVG	279	1.0	Note 1
17993.67	39.2	V	54.0	-14.8	AVG	54	1.0	
7498.17	37.5	V	54.0	-16.5	AVG	347	1.3	
9749.93	35.7	H	54.0	-18.3	AVG	1	1.0	Note 1
7309.53	53.2	V	74.0	-20.8	PK	158	1.3	
5000.12	32.7	V	54.0	-21.3	AVG	335	1.9	
5000.12	51.6	V	74.0	-22.4	PK	335	1.9	
17993.67	50.3	V	74.0	-23.7	PK	54	1.0	
7498.17	48.6	V	74.0	-25.4	PK	347	1.3	
9749.93	47.6	H	74.0	-26.4	PK	1	1.0	Note 1
3000.01	45.4	V	74.0	-28.6	PK	279	1.0	Note 1

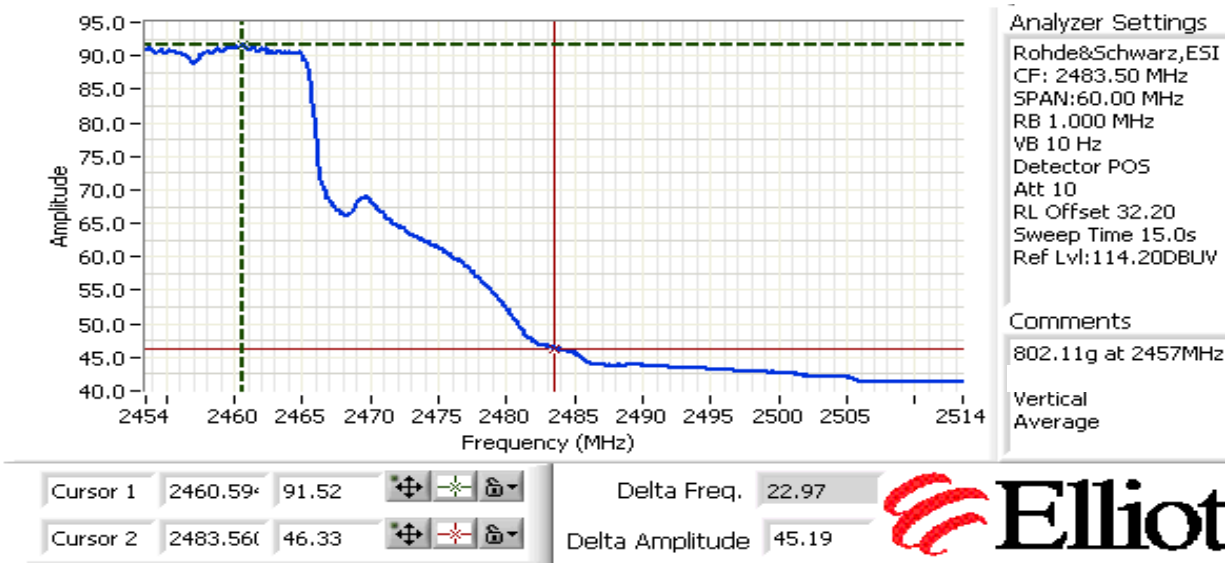
Note 1:	Signal is not in a restricted band but the more stringent restricted band limit was used.

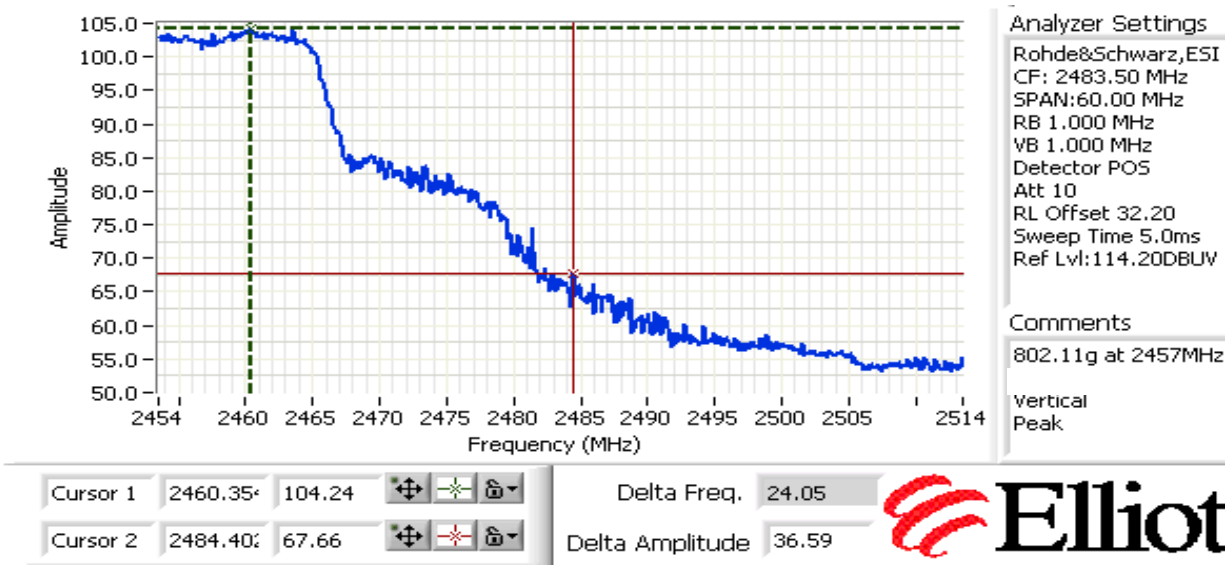
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run # 1c: Channel 10 @ 2457 MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.402	67.7	V	74.0	-6.3	Pk	114	1.0	
2483.560	46.3	V	54.0	-7.7	Avg	114	1.0	
2484.133	64.4	H	74.0	-9.6	PK	322	1.0	
2483.570	44.3	H	54.0	-9.7	Avg	322	1.0	





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run # 1d: High Channel 11 @ 2462 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2465.043	103.2	V	-	-	PK	142	1.0	RBW=VBW=1MHz
2466.727	90.5	V	-	-	Avg	142	1.0	RBW=1MHz, VBW=10Hz
2465.043	93.8	V	-	-	-	142	1.0	RBW=VBW=100kHz

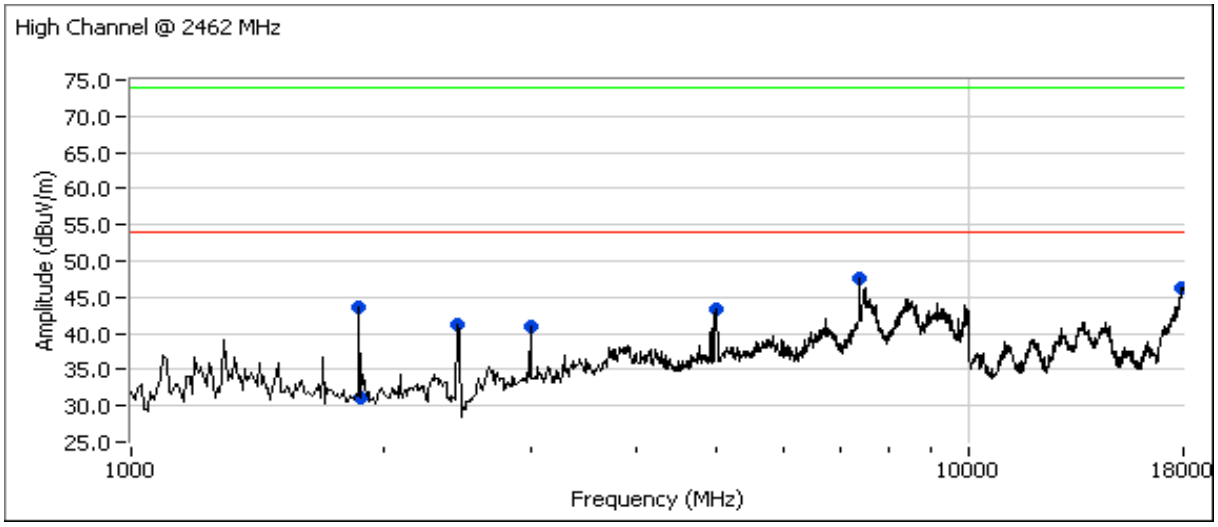
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.923	72.2	V	74.0	-1.8	PK	114	1.0	
2483.560	51.2	V	54.0	-2.8	Avg	114	1.0	
2483.803	68.5	H	74.0	-5.5	PK	322	1.0	
2483.560	48.1	H	54.0	-5.9	Avg	322	1.0	

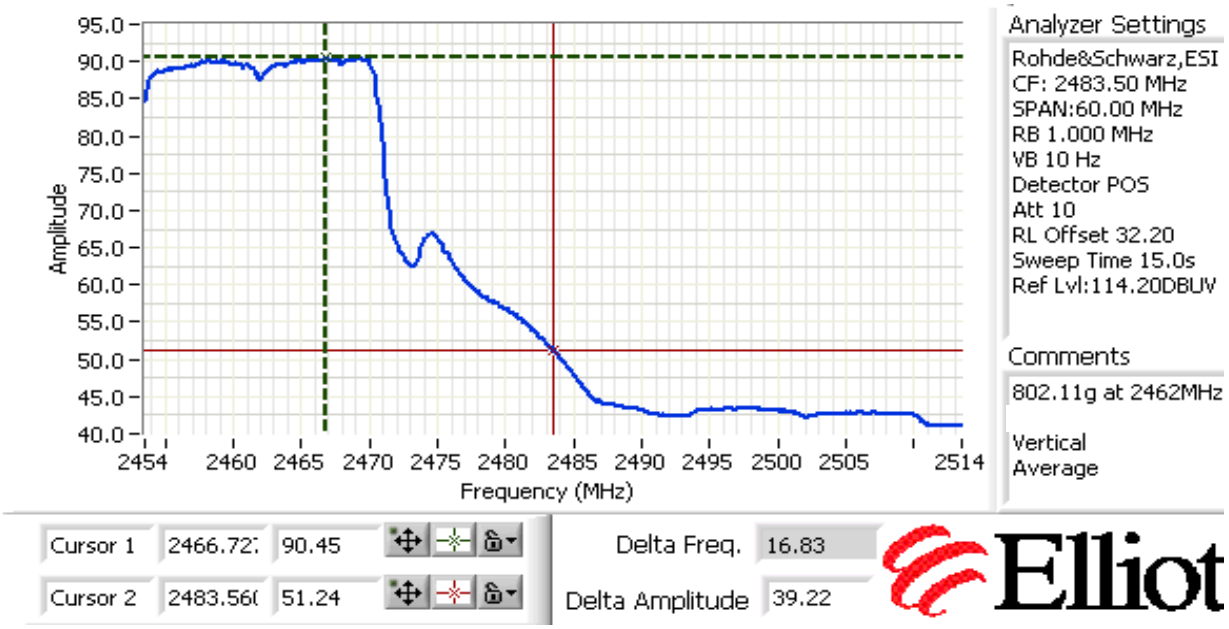
Other Spurious Emissions

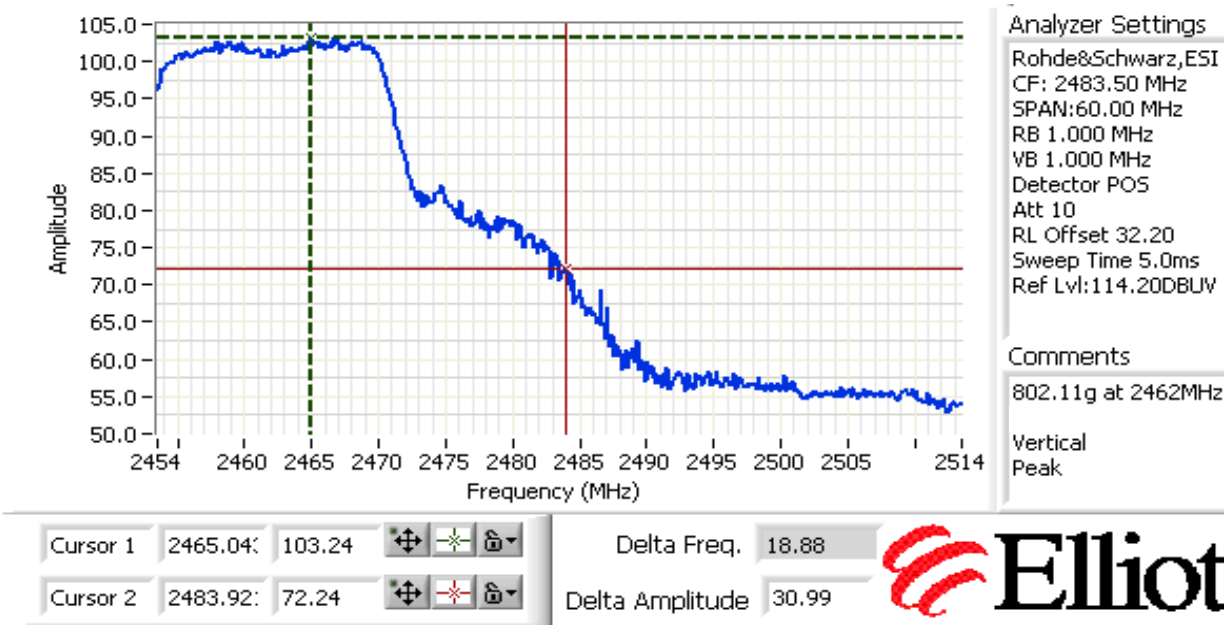
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17962.61	38.7	V	54.0	-15.3	AVG	53	2.2	
7391.04	37.7	V	54.0	-16.3	AVG	149	1.1	
3000.05	32.1	V	54.0	-21.9	AVG	266	1.0	Note 1
7391.04	50.7	V	74.0	-23.3	PK	149	1.1	
17962.61	50.1	V	74.0	-23.9	PK	53	2.2	
3000.05	39.2	V	74.0	-34.8	PK	266	1.0	Note 1

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



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 Radiated Spurious Emissions Transmit Mode (FCC 15.247(d)/15.209)

Test Specific Details

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

Date of Test: 1/3/2008
Test Engineer: Mehran Birgani
Test Location: Chamber # 3
Config. Used: 1
Config Change: None
EUT Host Voltage: Powered from Host System

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 36 %

Summary of Results

Run #1	TX Mode	Channel	Power Setting	Pass/Fail	Margin
1a	a legacy	149	-	Pass	40.4dBµV/m (104.7µV/m) @ 17235.6MHz (-13.6dB)
1b	a legacy	157	-	Pass	49.1dBµV/m (285.1µV/m) @ 17357.8MHz (-4.9dB)
1c	a legacy	165	-	Pass	48.5dBµV/m (266.1µV/m) @ 17475.2MHz (-5.5dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

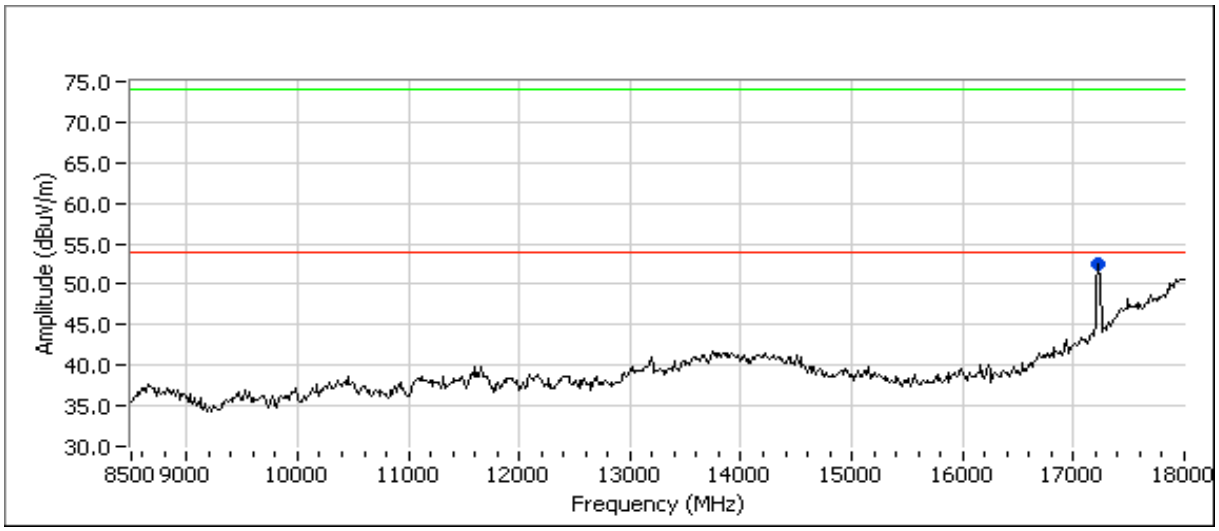
Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11a

Run #1a: Low Channel @ 5745 MHz



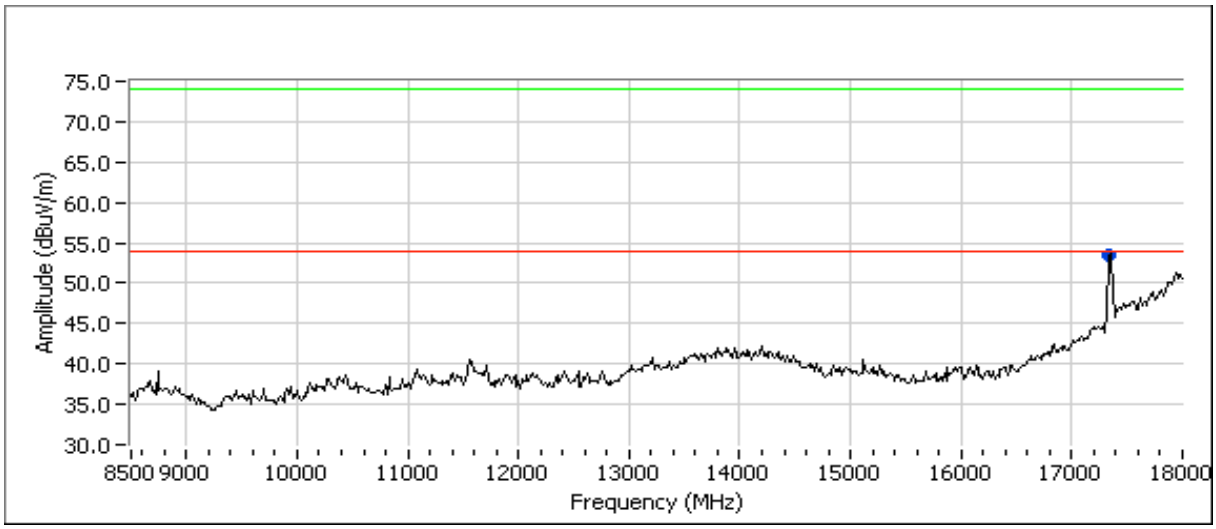
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17235.57	40.4	H	54.0	-13.6	AVG	155	1.1	Note 2
17235.57	51.9	H	74.0	-22.1	PK	155	1.1	Note 2

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1b: Center Channel @ 5785 MHz

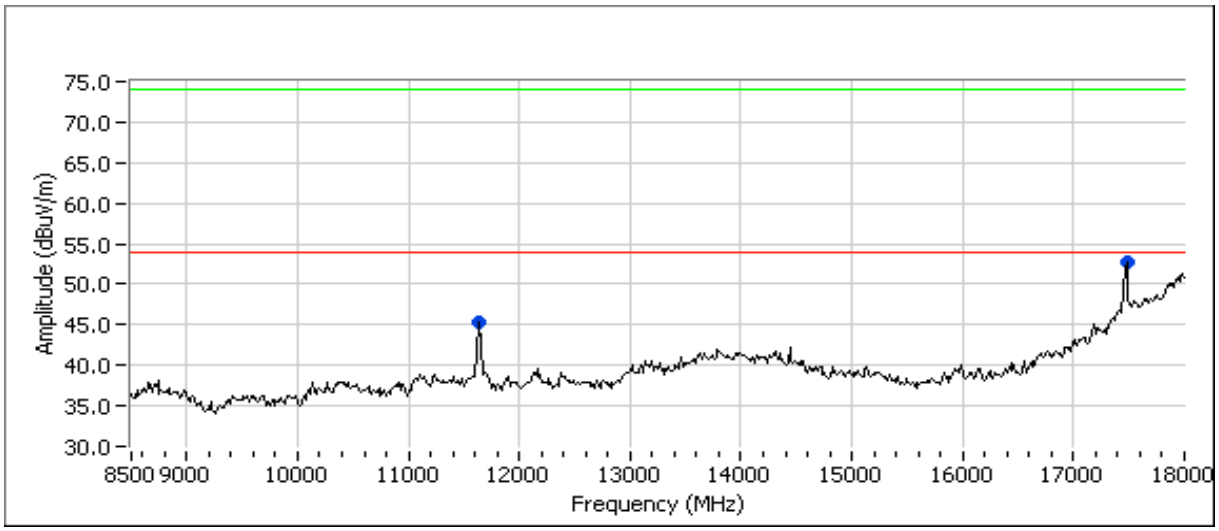


Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17357.75	49.1	H	54.0	-4.9	AVG	133	1.1	Note 2
17357.75	62.3	H	74.0	-11.7	PK	133	1.1	Note 2

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1c: High Channel @ 5825 MHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17475.18	48.5	H	54.0	-5.5	AVG	131	1.1	Note 2
17475.18	62.3	H	74.0	-11.7	PK	131	1.1	Note 2
11648.34	39.4	H	54.0	-14.6	AVG	122	1.1	
11648.34	52.0	H	74.0	-22.0	PK	122	1.1	

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 Radiated Spurious Emissions Transmit Mode (FCC 15.247(d)/15.209)

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. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Date of Test: 1/8/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5

Config. Used: 1
Config Change: None
EUT Host Voltage: Powered from Host System

Ambient Conditions:

Temperature: 19 °C
Rel. Humidity: 35 %

Summary of Results

Run #1	TX Mode	Channel	Power Setting	Pass/Fail	Margin
1a	20MHz CDD	1		Pass	44.9dBµV/m (175.4µV/m) @ 2389.9MHz (-9.1dB)
1b	20MHz CDD	2		Pass	45.7dBµV/m (192.5µV/m) @ 2389.8MHz (-8.3dB)
1c	20MHz CDD	3		Pass	46.4dBµV/m (207.7µV/m) @ 2389.8MHz (-7.7dB)
1d	20MHz CDD	6		Pass	40.0dBµV/m (100.0µV/m) @ 4974.2MHz (-14.0dB)
1e	20MHz CDD	9		Pass	45.9dBµV/m (196.8µV/m) @ 2485.0MHz (-8.1dB)
1f	20MHz CDD	10		Pass	44.9dBµV/m (176.4µV/m) @ 2483.6MHz (-9.1dB)
1g	20MHz CDD	11		Pass	69.6dBµV/m (3023.4µV/m) @ 2484.6MHz (-4.4dB)
2a	20MHz CDD	149		Pass	52.5dBµV/m (421.7µV/m) @ 17232.4MHz (-1.5dB)
2b	20MHz CDD	157		Pass	52.9dBµV/m (441.6µV/m) @ 17355.1MHz (-1.1dB)
2c	20MHz CDD	165		Pass	51.7dBµV/m (384.6µV/m) @ 17472.6MHz (-2.3dB)

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:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1a: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
Low Channel @ 2412 MHz

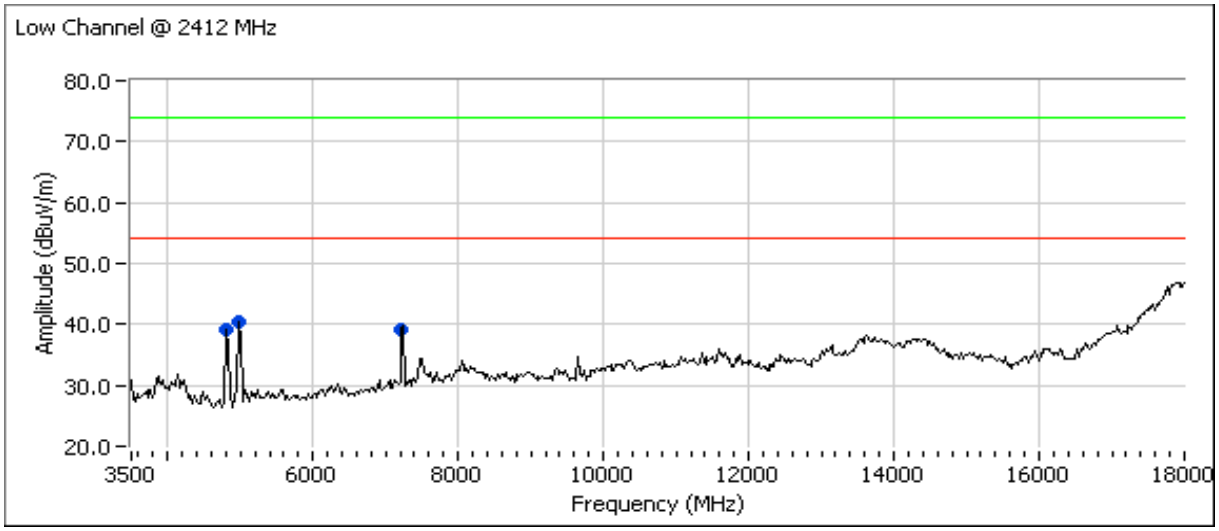
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.880	44.9	V	54.0	-9.1	Avg	129	1.0	
2389.820	64.5	V	74.0	-9.5	PK	129	1.0	
2389.750	43.8	H	54.0	-10.2	Avg	132	1.3	
2389.750	60.3	H	74.0	-13.7	PK	132	1.3	

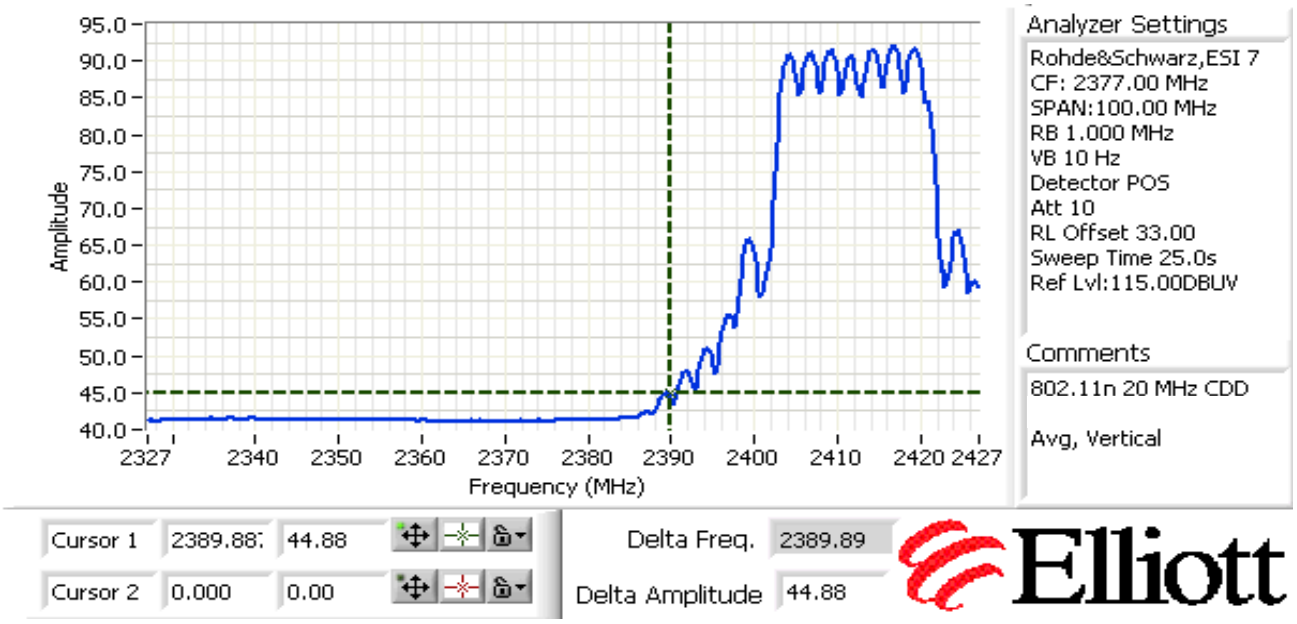
Other Spurious Emissions

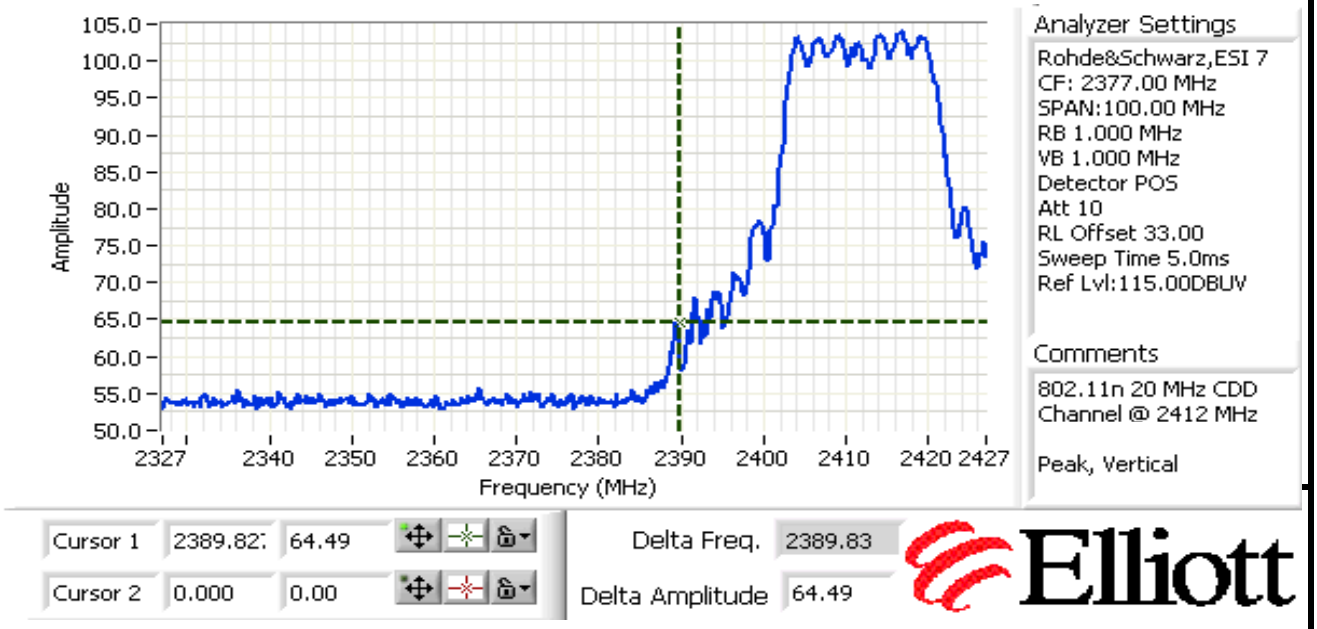
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4974.170	40.3	V	54.0	-13.7	Peak	226	1.3	
7221.670	39.3	V	54.0	-14.7	Peak	179	1.3	Note 2
4805.000	39.1	V	54.0	-14.9	Peak	168	1.6	

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

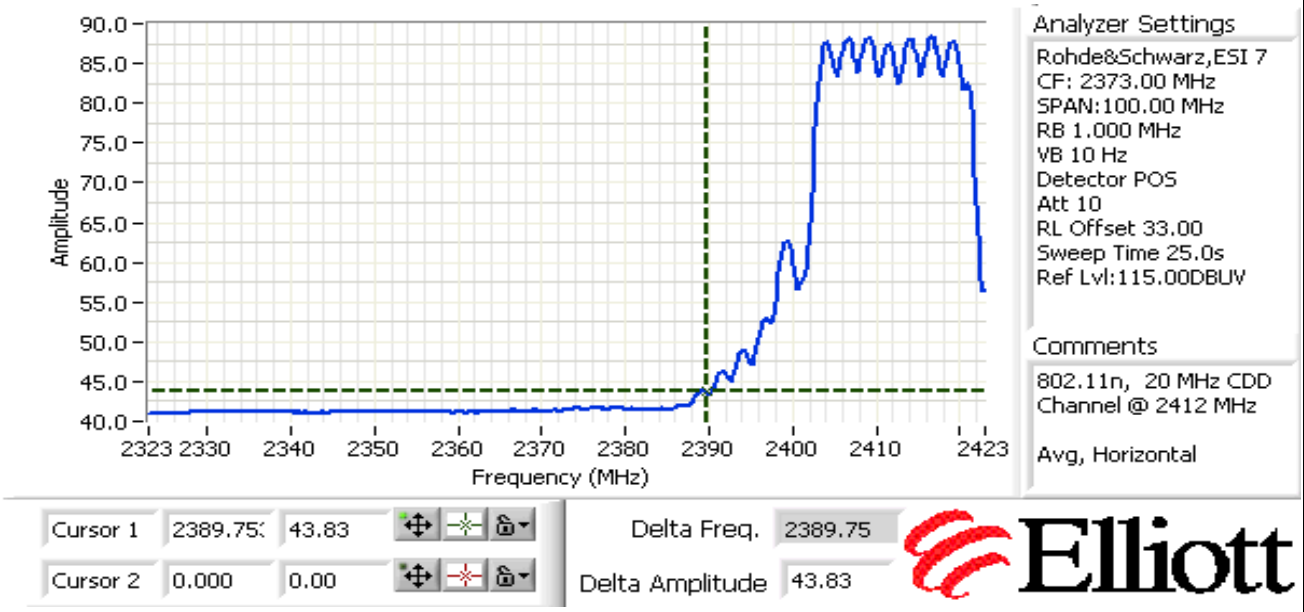


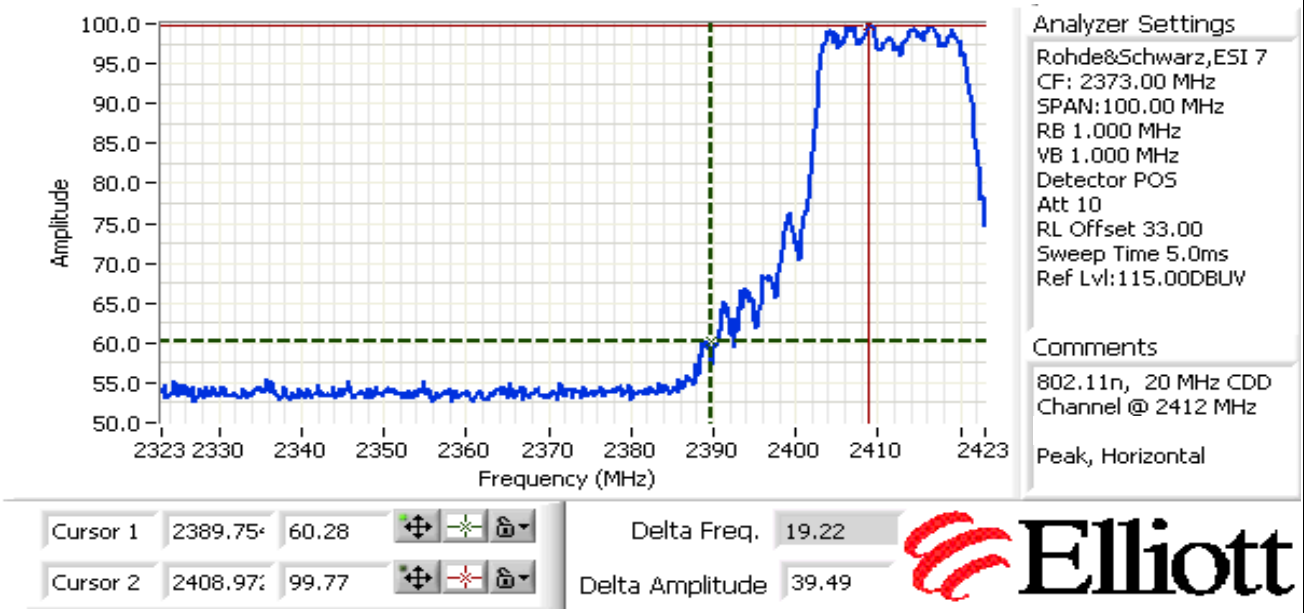
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



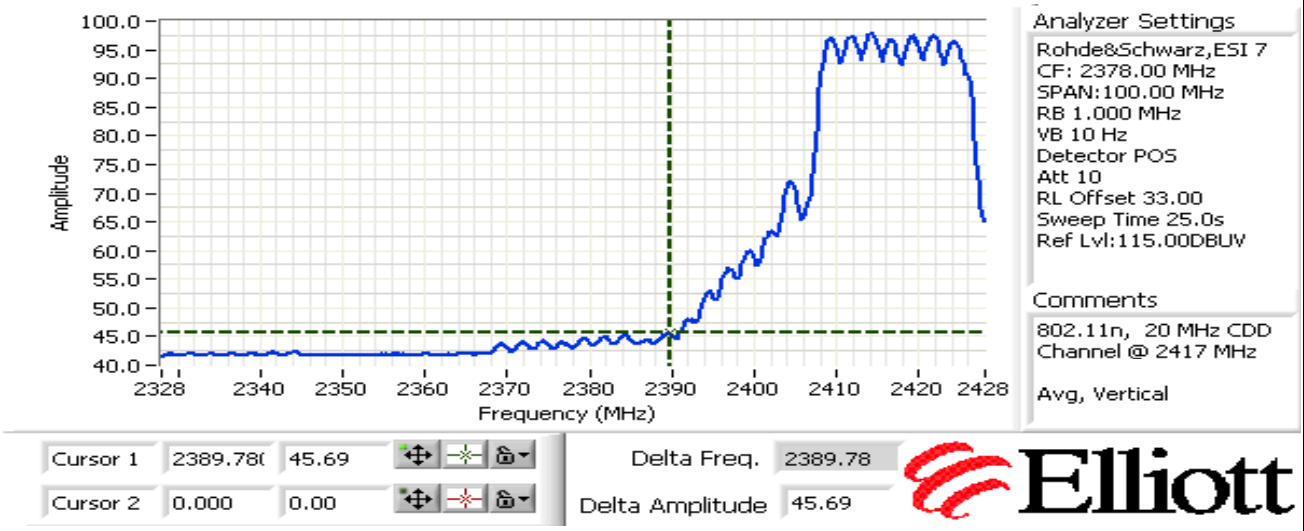


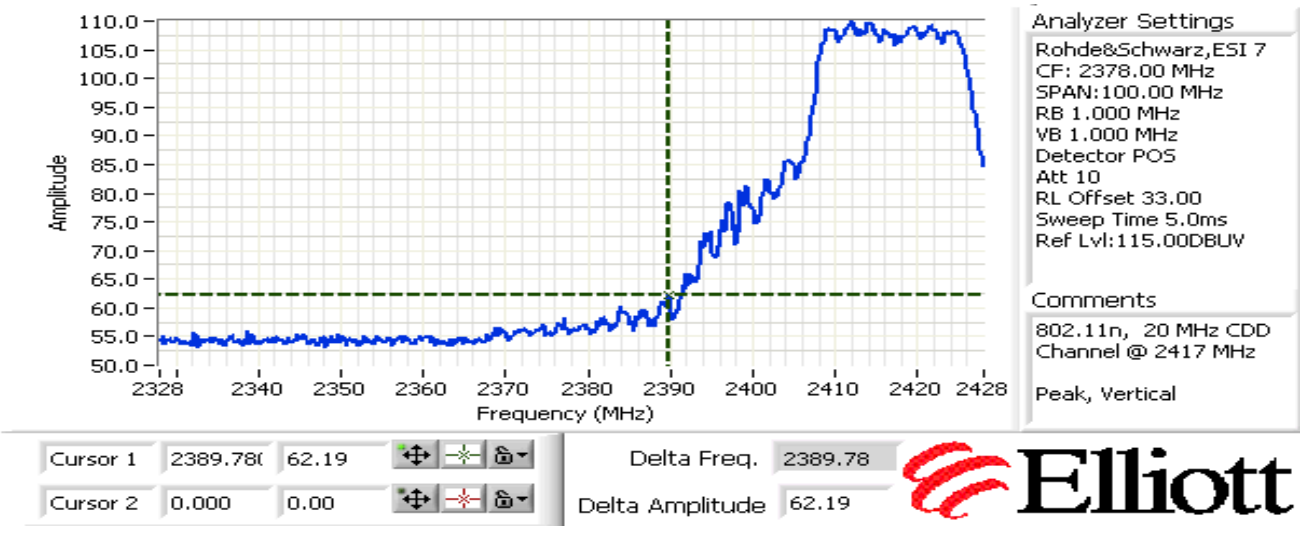
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1b: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
Low Channel @ 2417 MHz

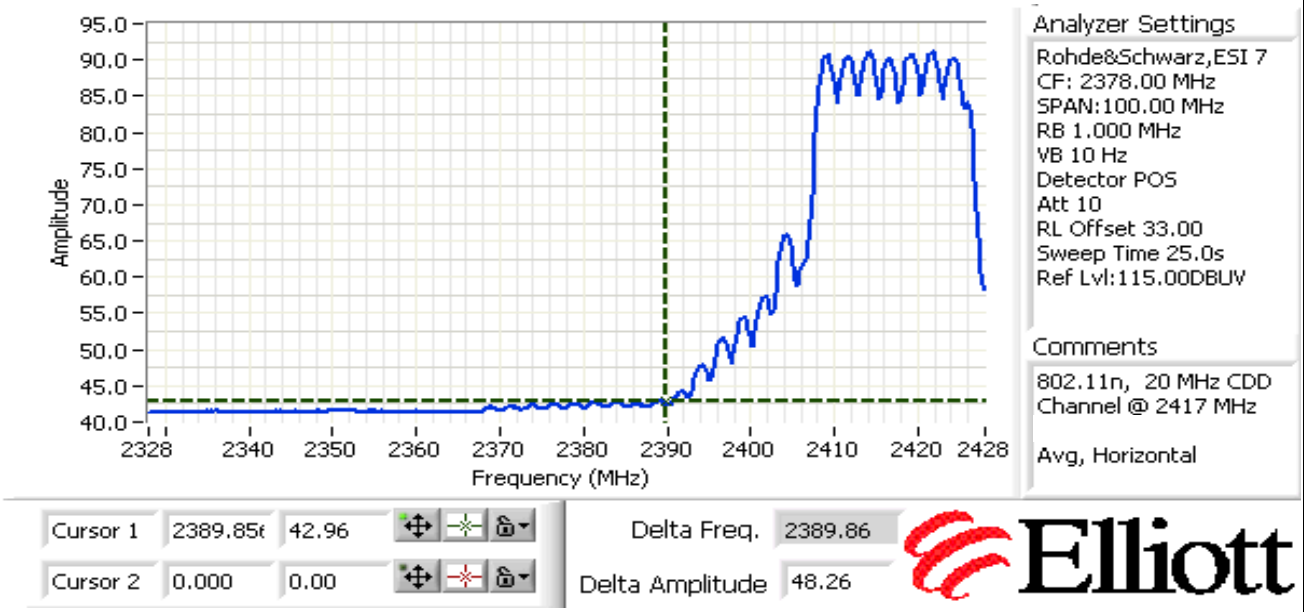
Band Edge Signal Field Strength

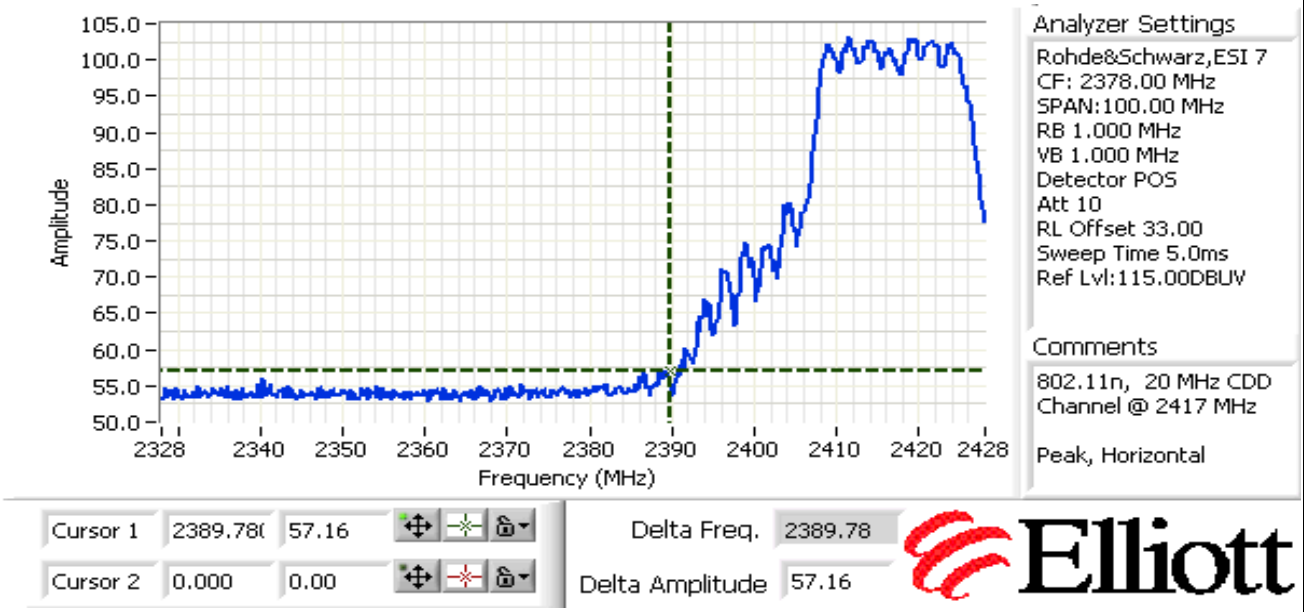
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.780	45.7	V	54.0	-8.3	Avg	327	1.3	
2389.850	43.0	H	54.0	-11.0	Avg	329	1.4	
2389.780	62.2	V	74.0	-11.8	PK	327	1.3	
2389.780	57.2	H	74.0	-16.8	PK	329	1.4	





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



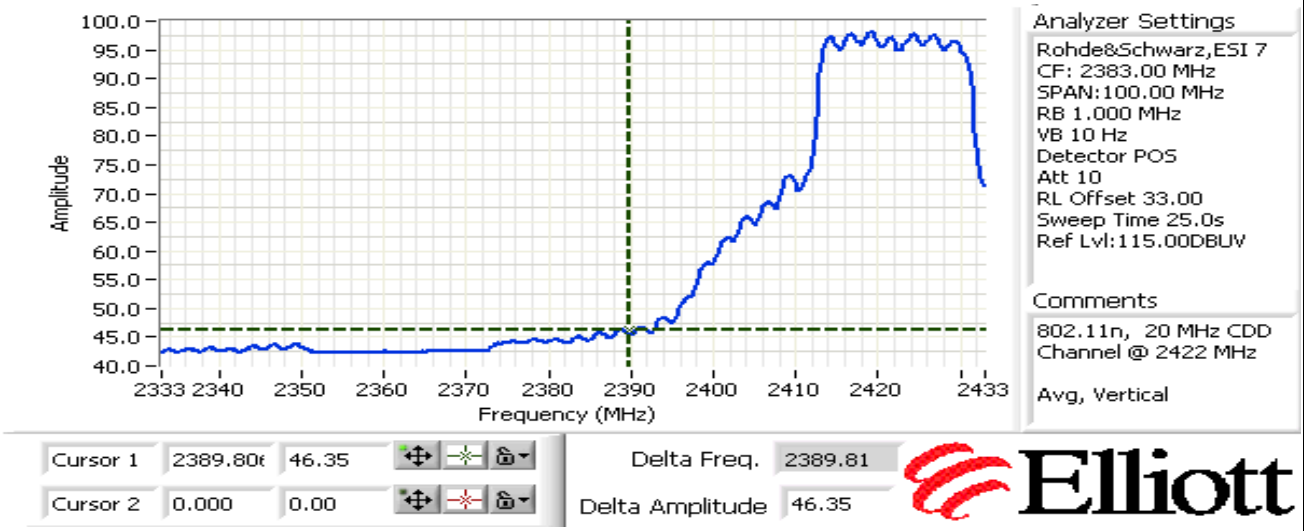


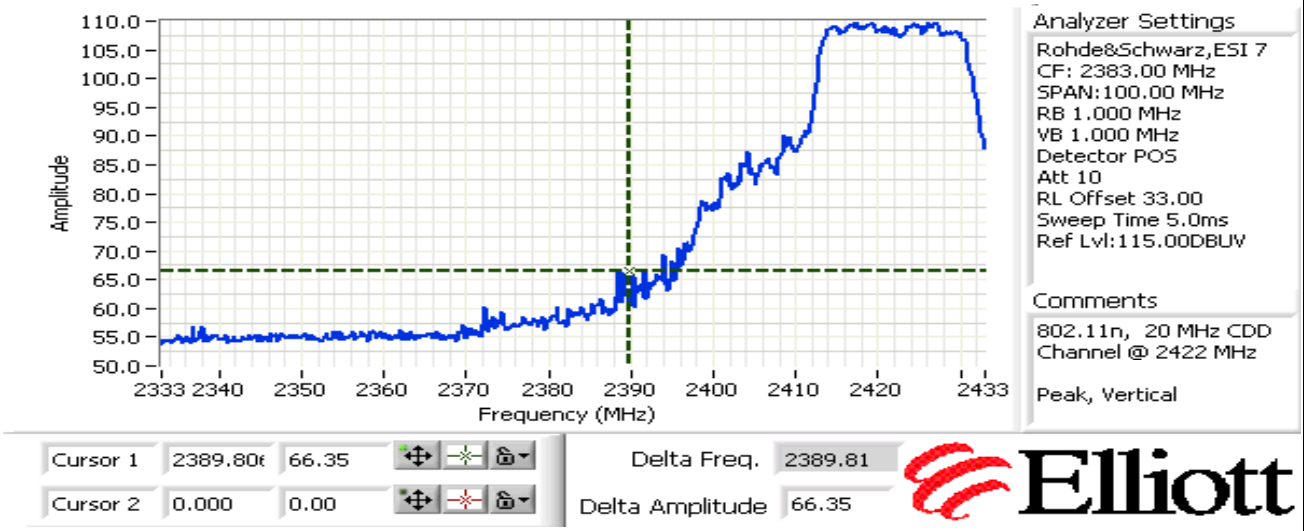
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1c: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
Low Channel @ 2422 MHz

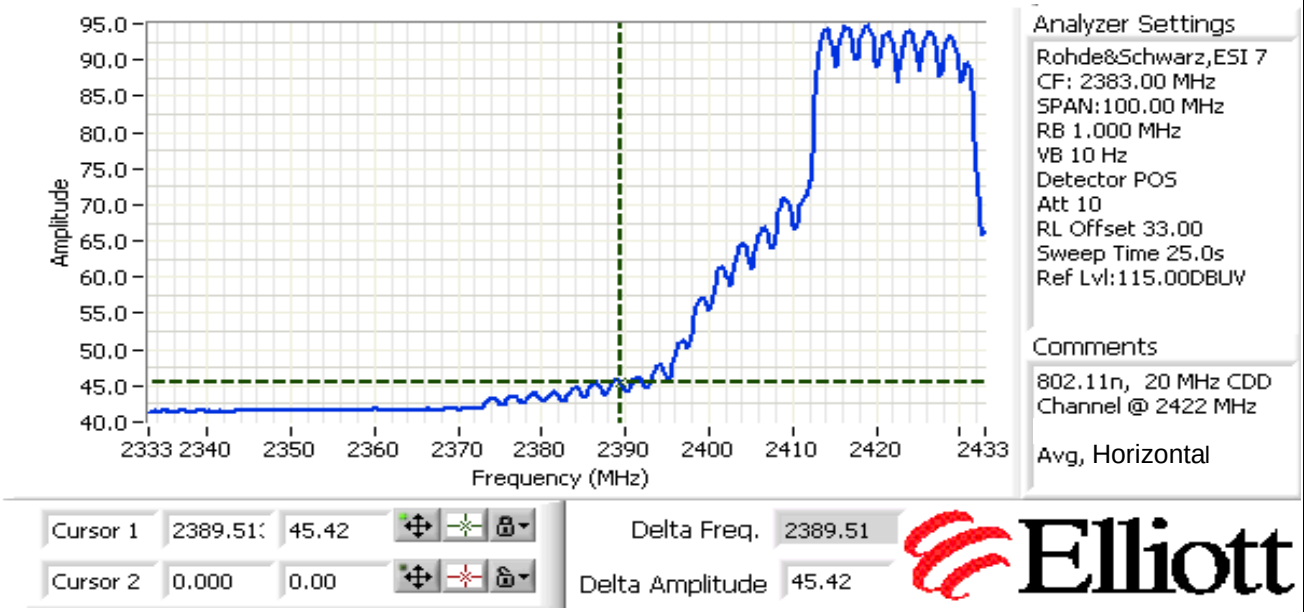
Band Edge Signal Field Strength

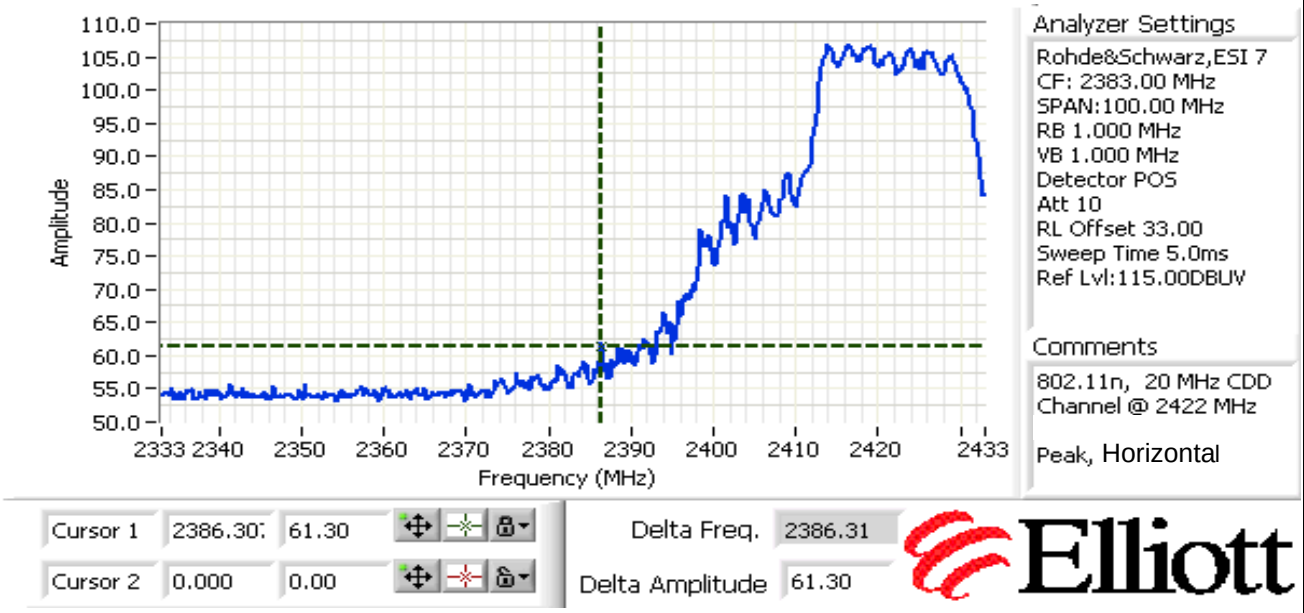
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.800	46.4	V	54.0	-7.7	Avg	303	1.3	
2389.800	66.4	V	74.0	-7.7	PK	303	1.3	
2389.510	45.4	H	54.0	-8.6	Avg	328	1.7	
2386.300	61.3	H	74.0	-12.7	PK	328	1.7	





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

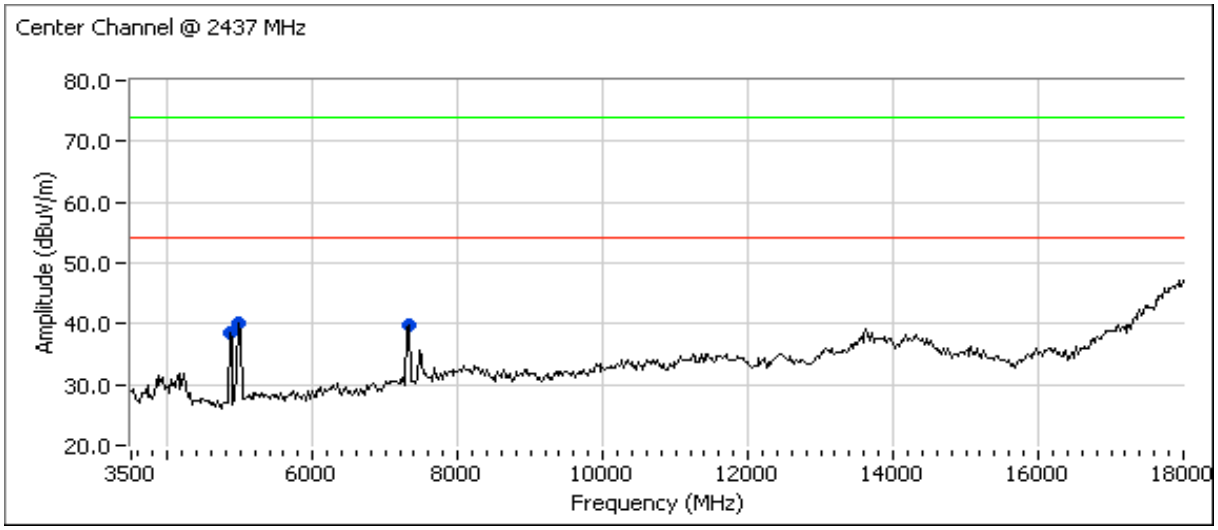
Run #1d: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
Center Channel @ 2437 MHz

Band Edge Signal Field Strength

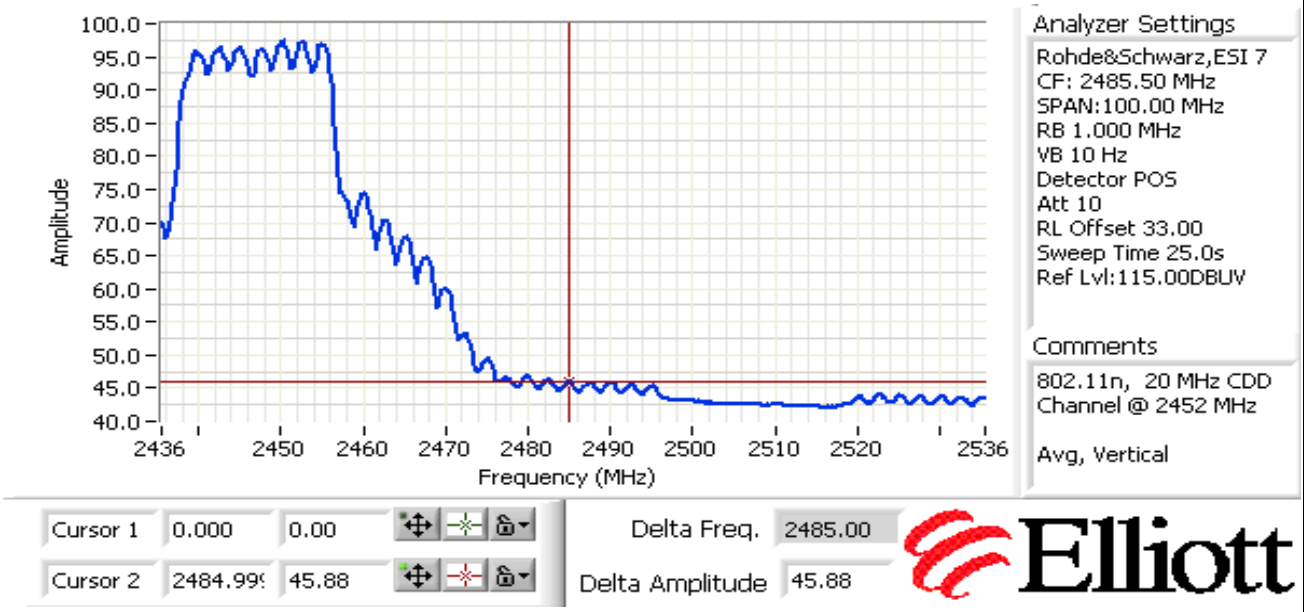
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.000	45.9	V	54.0	-8.1	Avg	106	1.5	
2483.200	44.7	H	54.0	-9.3	Avg	308	1.4	
2485.000	64.5	V	74.0	-9.5	PK	106	1.5	
2485.000	64.3	H	74.0	-9.7	PK	308	1.4	

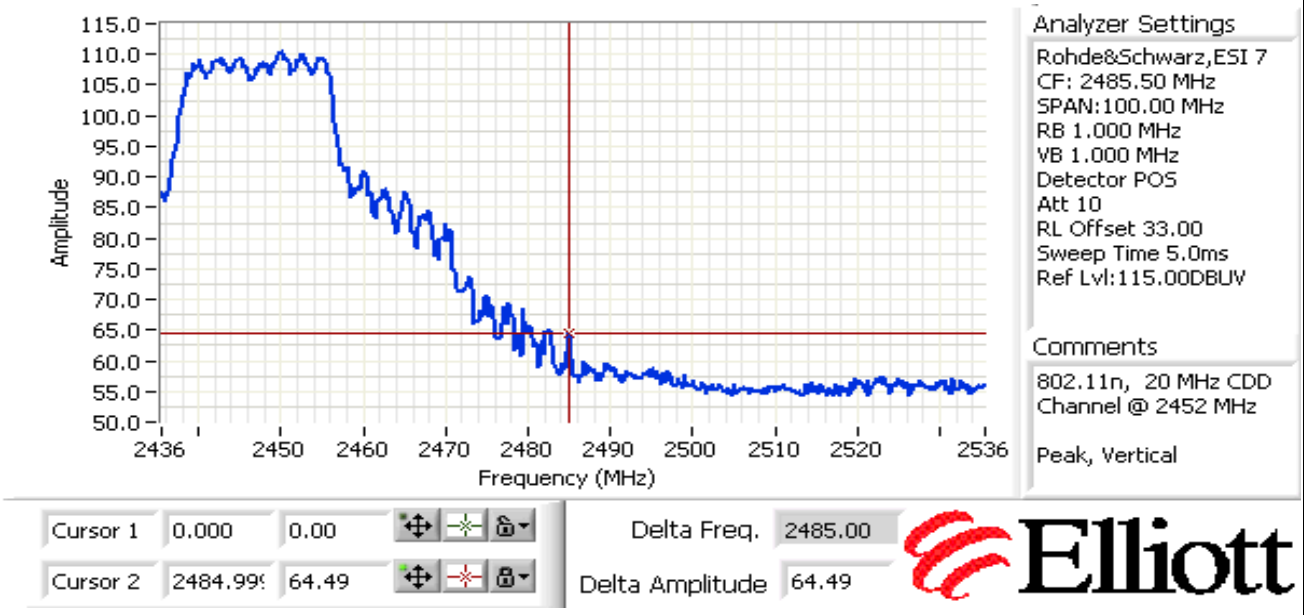
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4974.170	40.0	V	54.0	-14.0	Peak	227	1.3	
7318.330	39.7	V	54.0	-14.3	Peak	168	1.0	
4853.330	38.5	V	54.0	-15.5	Peak	168	1.0	

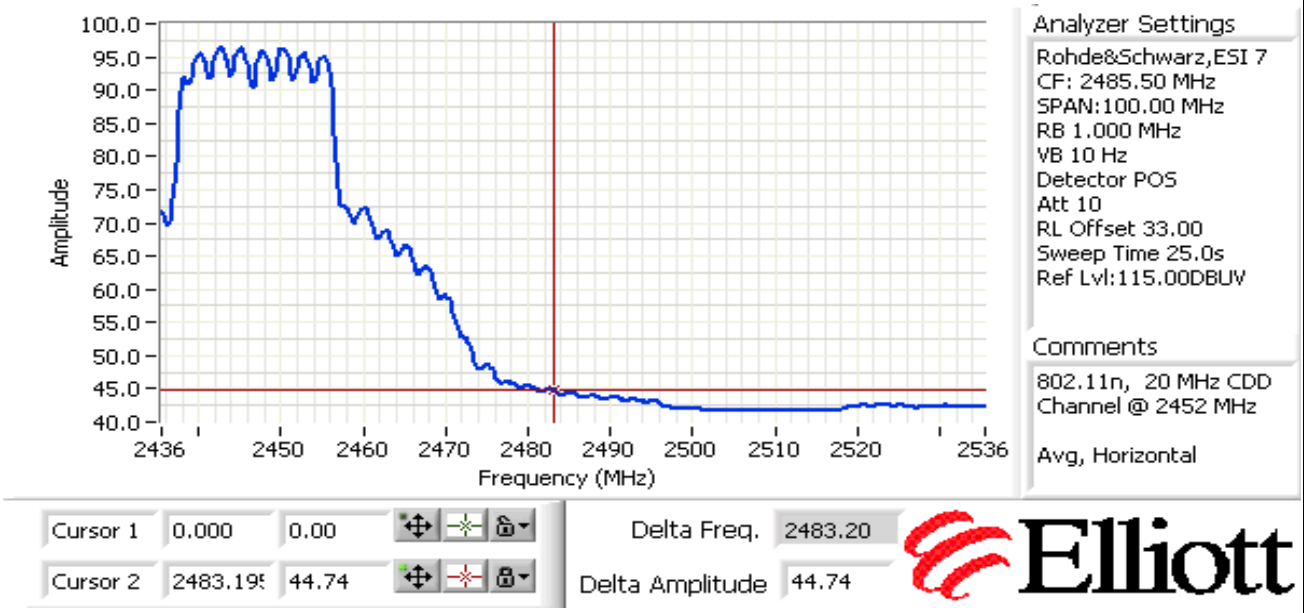


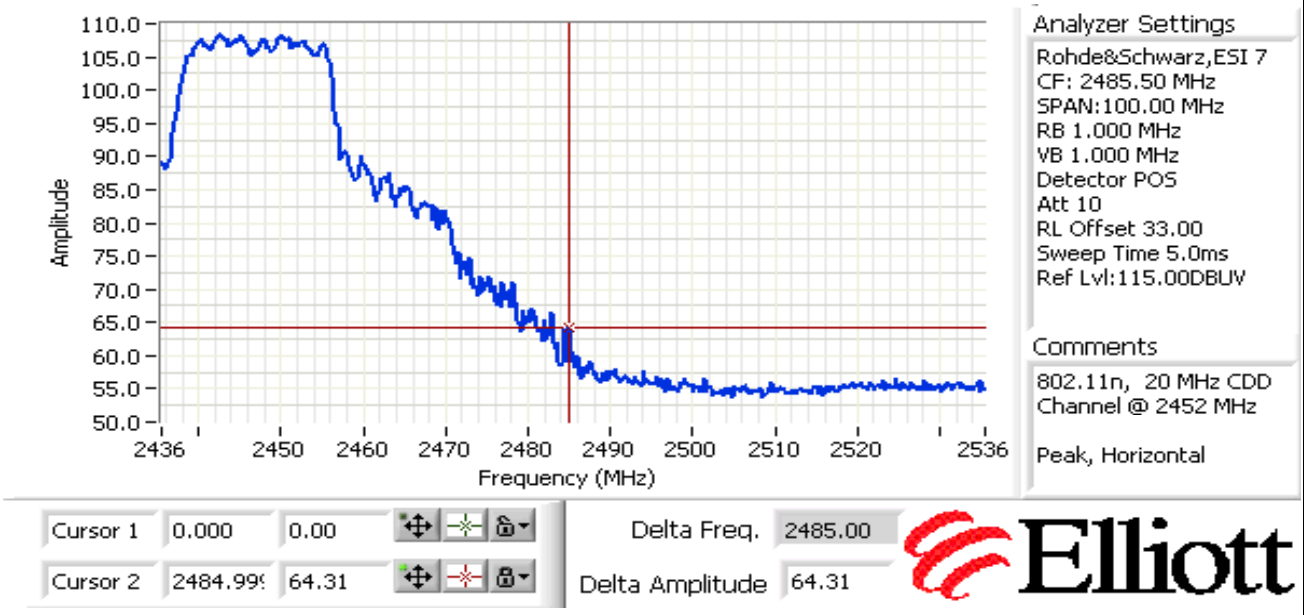
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



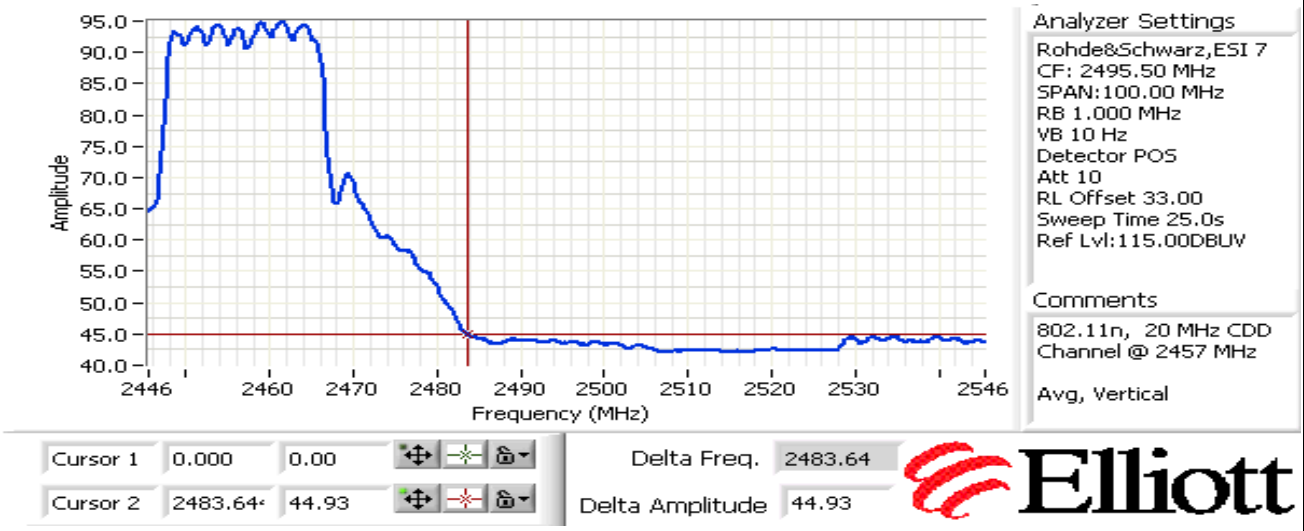


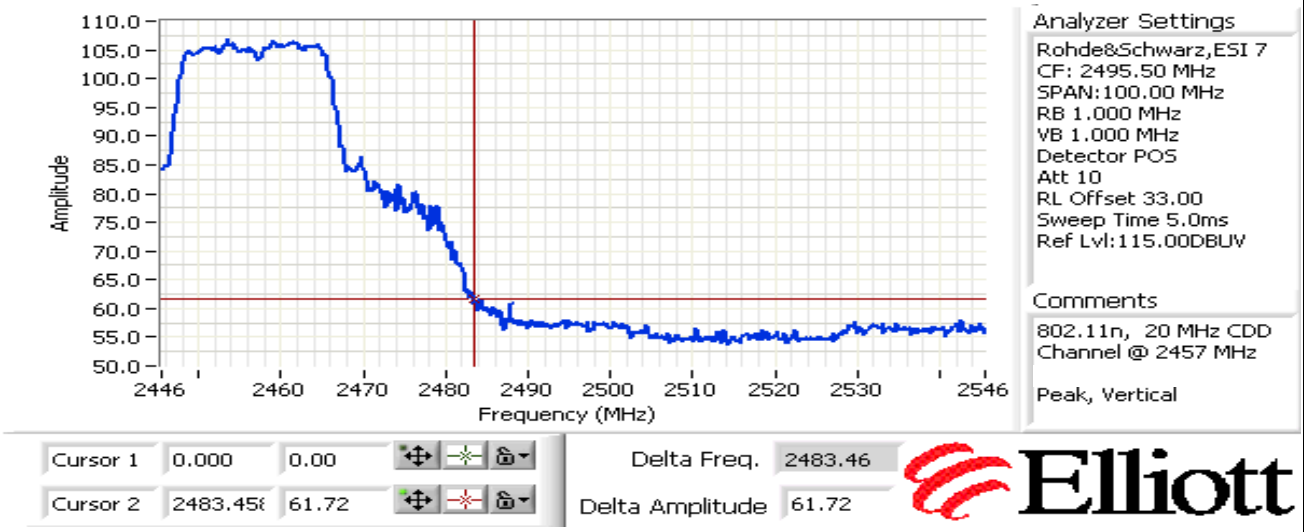
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1f: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
High Channel @ 2457 MHz

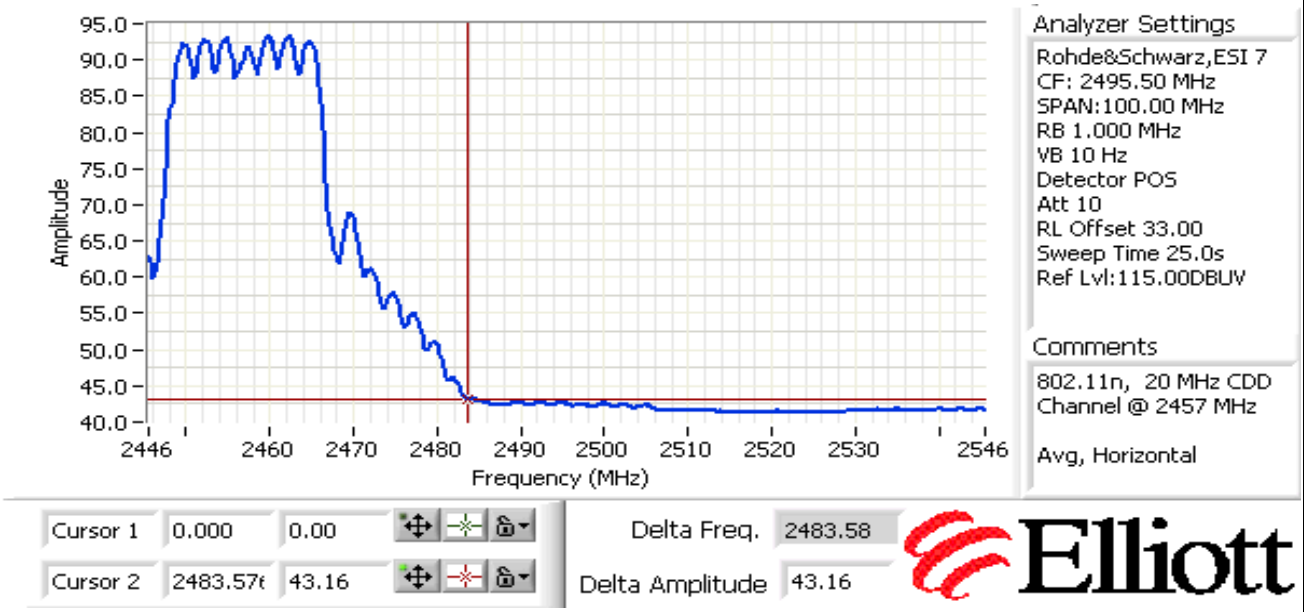
Band Edge Signal Field Strength

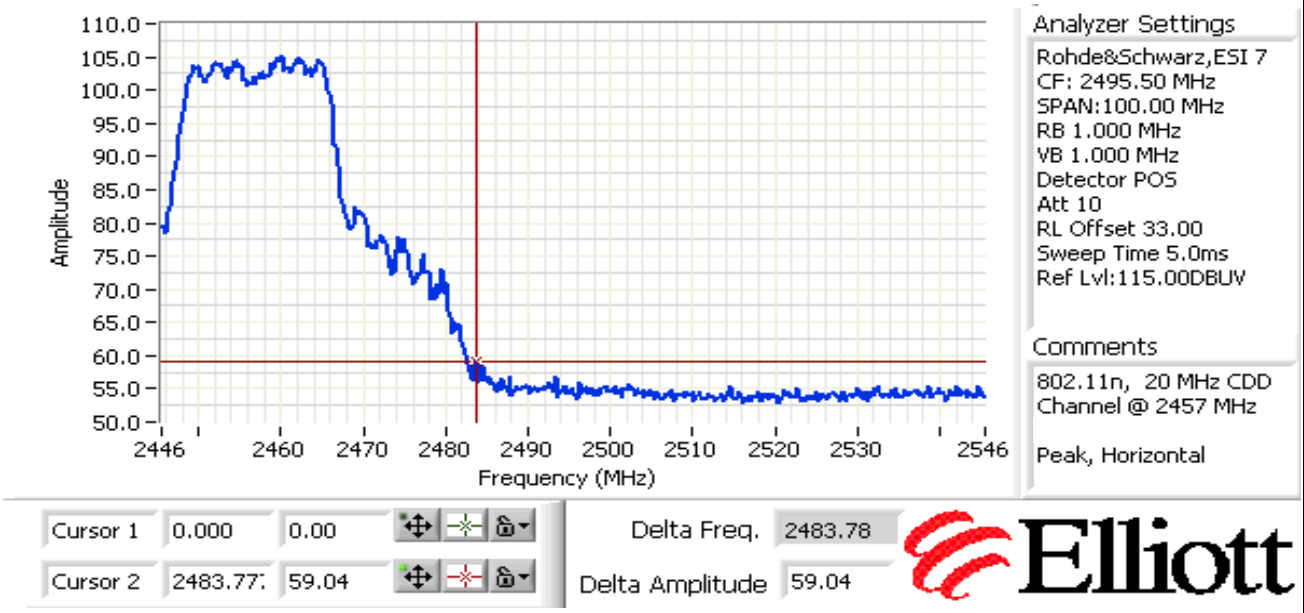
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.640	44.9	V	54.0	-9.1	Avg	309	1.2	
2483.580	43.2	H	54.0	-10.8	Avg	307	1.2	
2483.460	61.7	V	74.0	-12.3	PK	309	1.2	
2483.780	59.0	H	74.0	-15.0	PK	307	1.2	





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1g: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
High Channel @ 2462 MHz

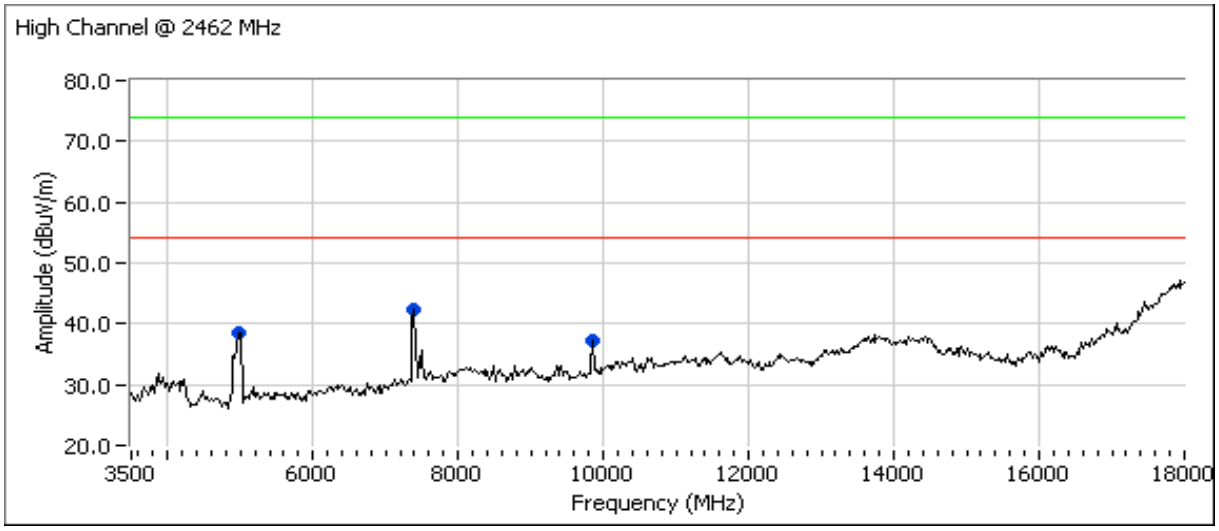
Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.570	69.6	V	74.0	-4.4	PK	165	1.3	
2484.970	49.4	V	54.0	-4.6	Avg	165	1.3	
2484.170	66.7	H	74.0	-7.3	PK	311	1.2	
2483.570	46.5	H	54.0	-7.5	Avg	311	1.2	

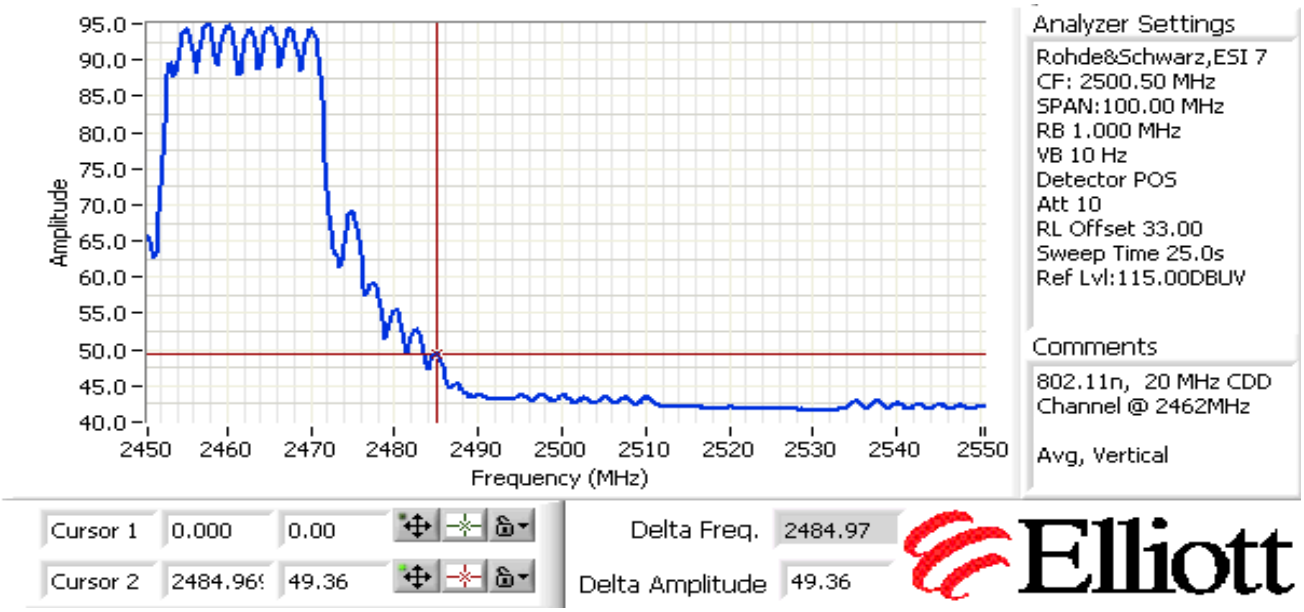
Other Spurious Emissions

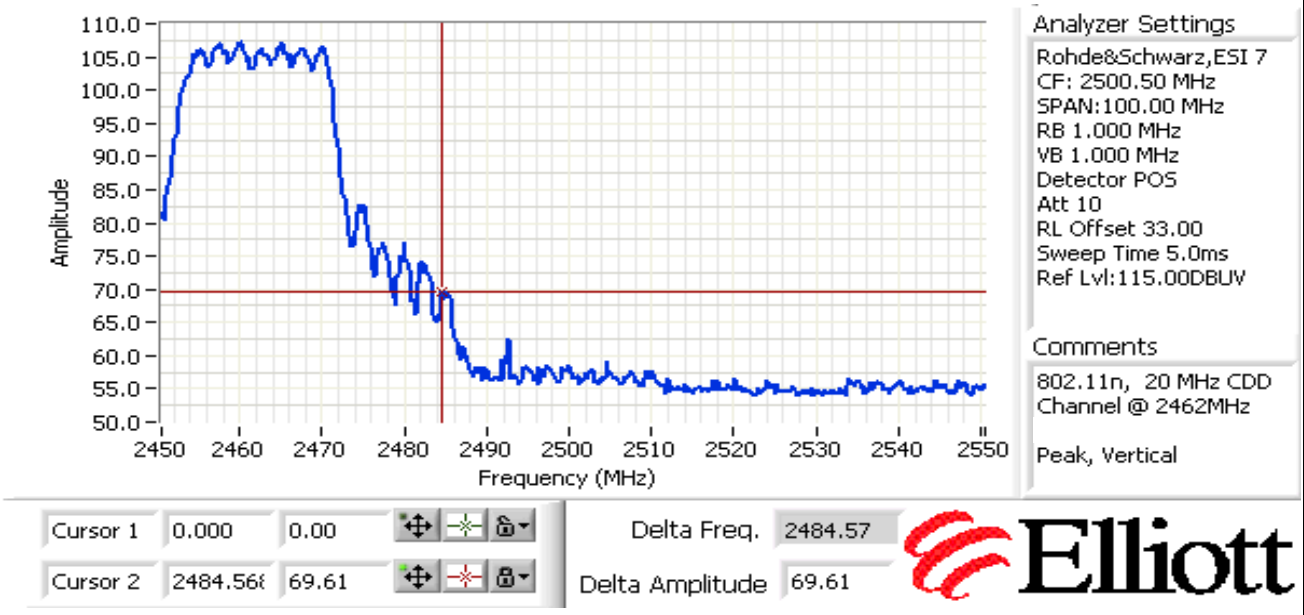
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7390.830	42.5	V	54.0	-11.5	Peak	166	1.3	
4974.170	38.6	V	54.0	-15.4	Peak	225	1.3	
9855.830	37.3	V	54.0	-16.7	Peak	166	1.0	Note 2

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

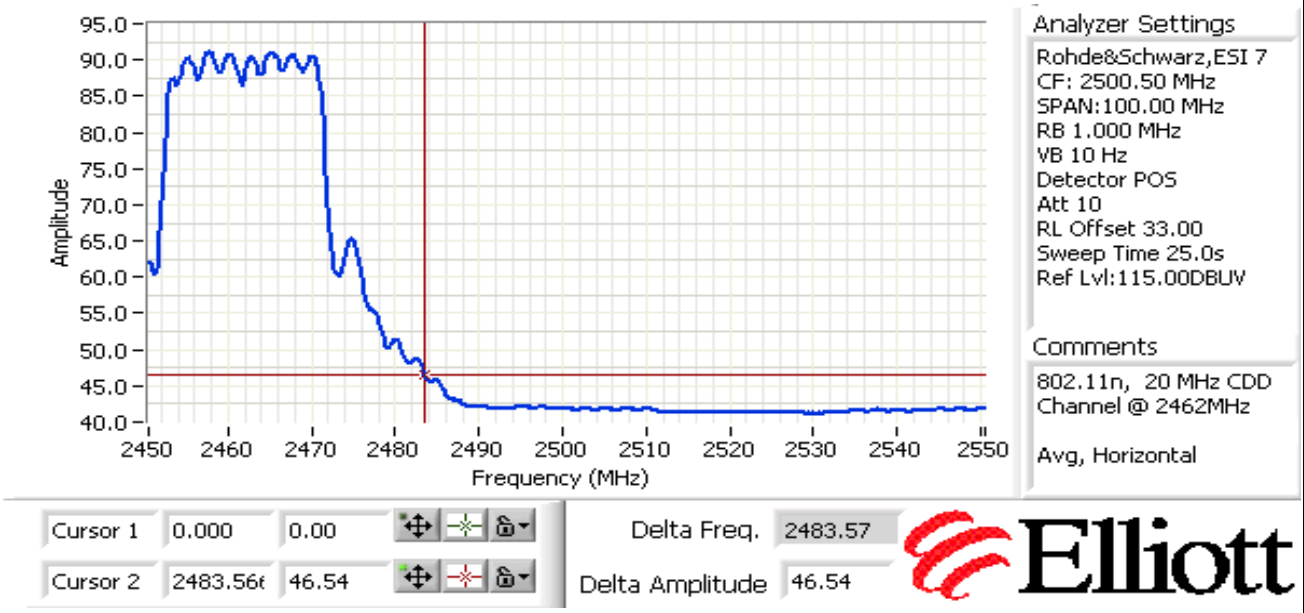


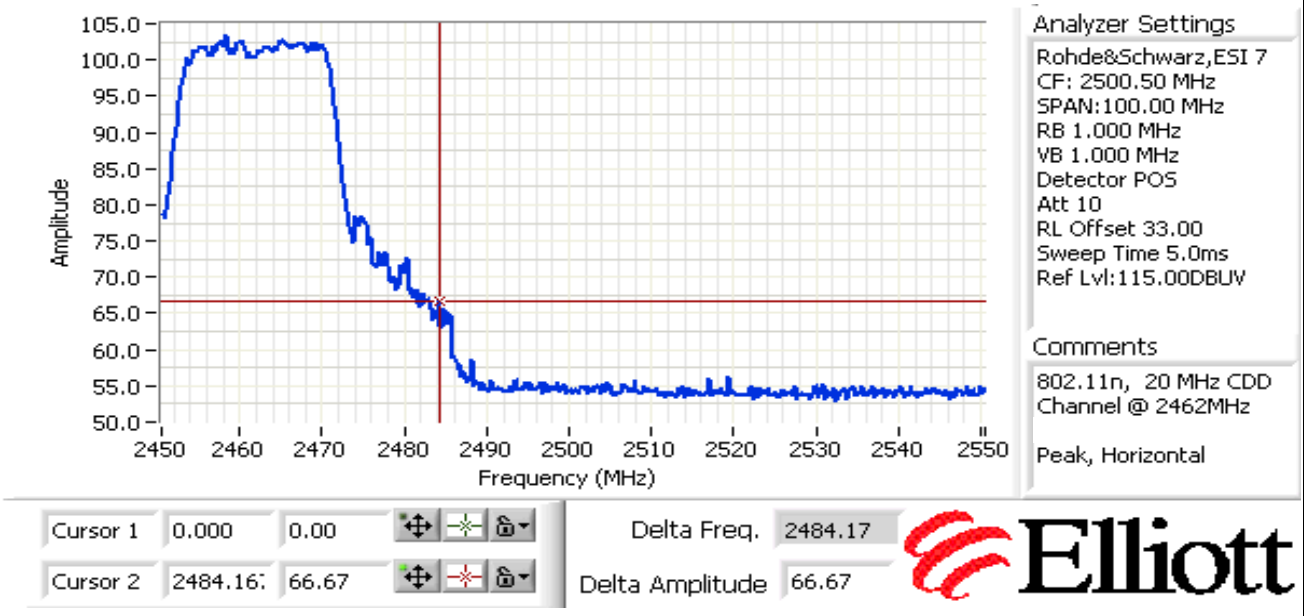
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

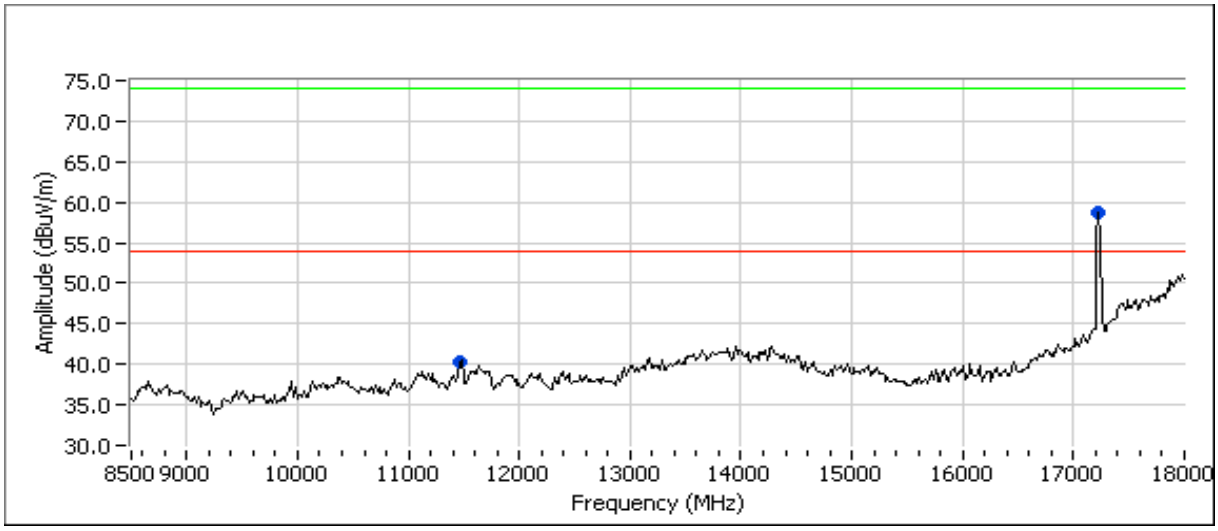


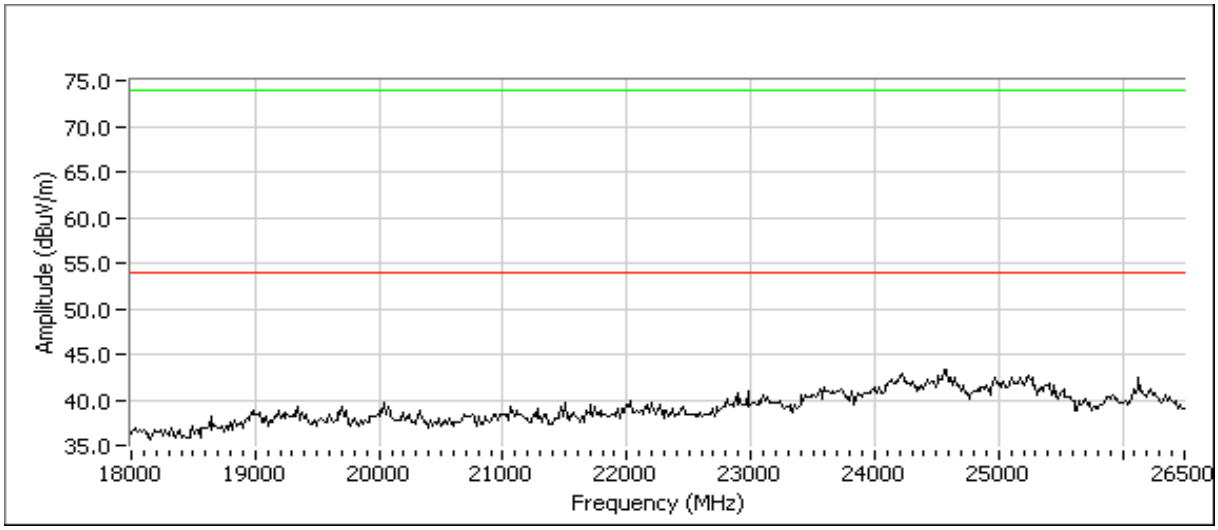


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

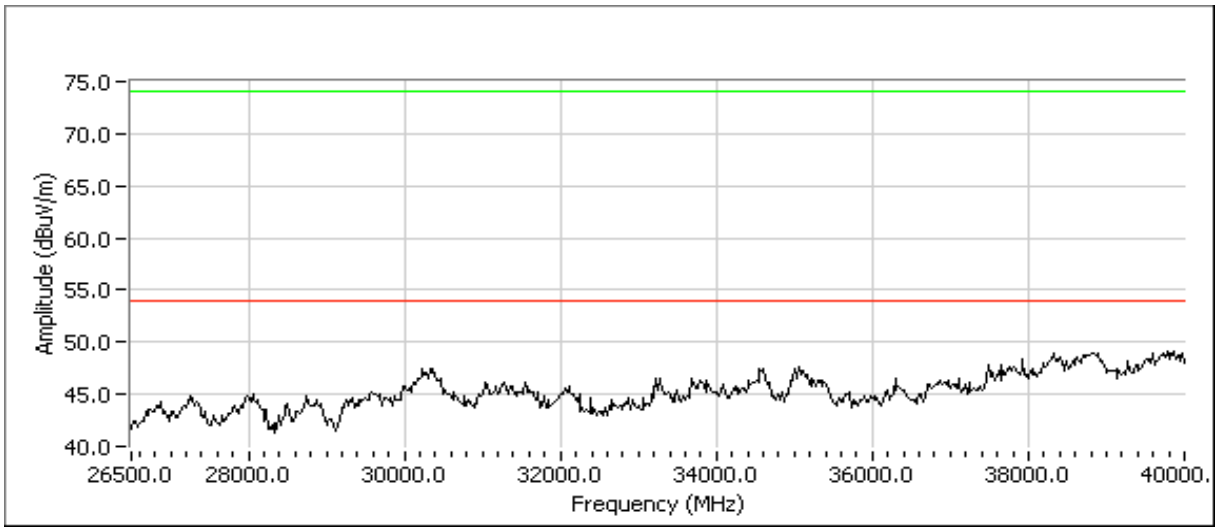
Run #2: Radiated Spurious Emissions, 30 - 40000 MHz. Operating Mode: 802.11n 20MHz CDD

Run #2a: Low Channel @ 5745 MHz





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



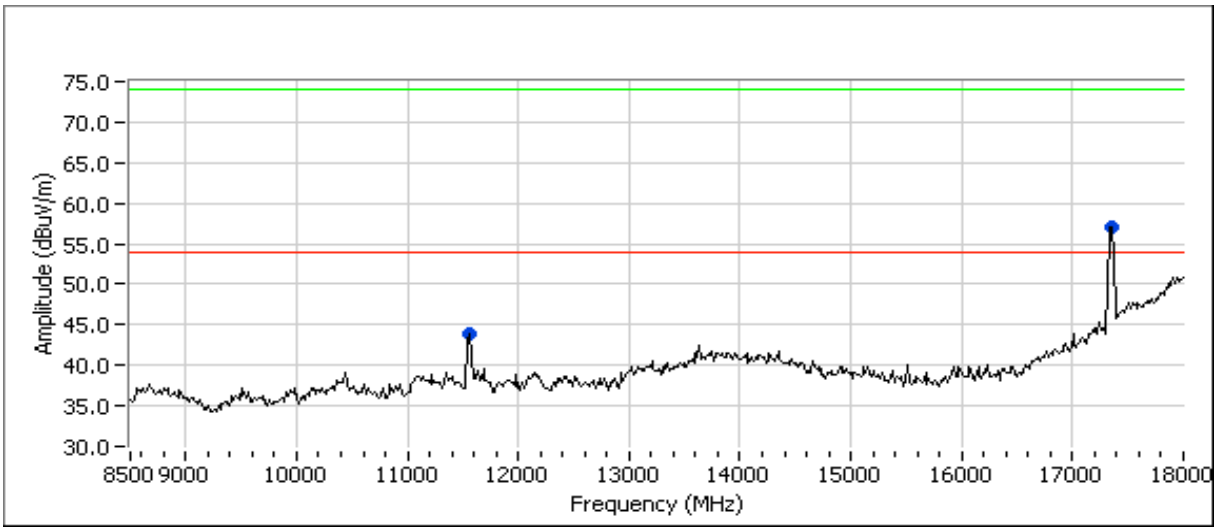
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17232.44	52.5	V	54.0	-1.5	AVG	85	1.0	Note 2
17232.44	66.2	V	74.0	-7.8	PK	85	1.0	Note 2
11489.07	40.4	H	54.0	-13.6	Peak	63	1.4	Peak reading with Avg limit

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #2b: Center Channel @ 5785 MHz

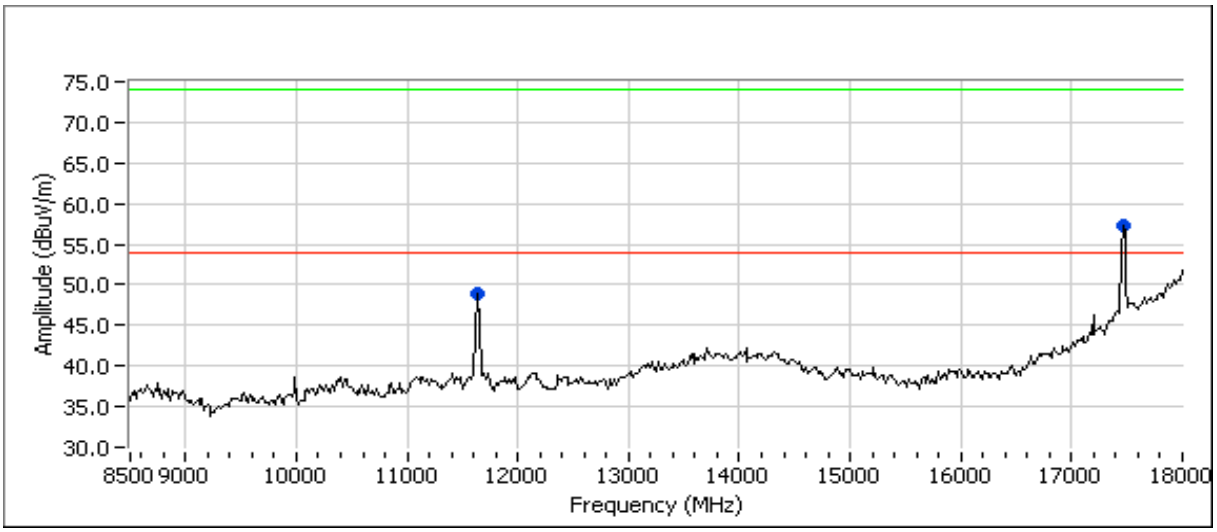


Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17355.13	52.9	V	54.0	-1.1	AVG	91	1.0	Note 2
17355.13	65.4	V	74.0	-8.6	PK	91	1.0	Note 2
11570.73	37.2	H	54.0	-16.8	AVG	215	1.4	
11570.73	48.0	H	74.0	-26.0	PK	215	1.4	

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #2c: High Channel @ 5825 MHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17472.56	51.7	H	54.0	-2.3	AVG	130	1.1	Note 2
17472.56	64.0	H	74.0	-10.0	PK	130	1.1	Note 2
11651.39	41.8	H	54.0	-12.2	AVG	66	1.4	
11651.39	53.6	H	74.0	-20.4	PK	66	1.4	

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 Radiated Spurious Emissions Transmit Mode (FCC 15.247(d)/15.209)

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. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Date of Test: 1/7/2008 ; 1/8/2008
Test Engineer: Ben Jing
Test Location: Chamber # 5 & #3
Config. Used: 1
Config Change: None
EUT Voltage: Powered from Host System

Ambient Conditions:

Temperature: 19 °C
Rel. Humidity: 35 %

Summary of Results

Run #1	TX Mode	Channel	Power Settin	Pass/Fail	Margin
1a	40MHz CDD	3		Pass	49.5dBµV/m (298.5µV/m) @ 2390.1MHz (-4.5dB)
1b	40MHz CDD	4		Pass	48.1dBµV/m (254.1µV/m) @ 2390.0MHz (-5.9dB)
1c	40MHz CDD	6		Pass	39.4dBµV/m (93.3µV/m) @ 4998.3MHz (-14.6dB)
1d	40MHz CDD	7		Pass	49.5dBµV/m (298.9µV/m) @ 2484.3MHz (-4.5dB)
1e	40MHz CDD	8		Pass	53.4dBµV/m (469.4µV/m) @ 2484.4MHz (-0.6dB)
1f	40MHz CDD	9		Pass	52.3dBµV/m (412.1µV/m) @ 2489.4MHz (-1.7dB)
2a	40MHz CDD	151		Pass	53.7dBµV/m (484.2µV/m) @ 17260.2MHz (-0.3dB)
2b	40MHz CDD	159		Pass	51.7dBµV/m (384.6µV/m) @ 17379.8MHz (-2.3dB)

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:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 40MHz CDD

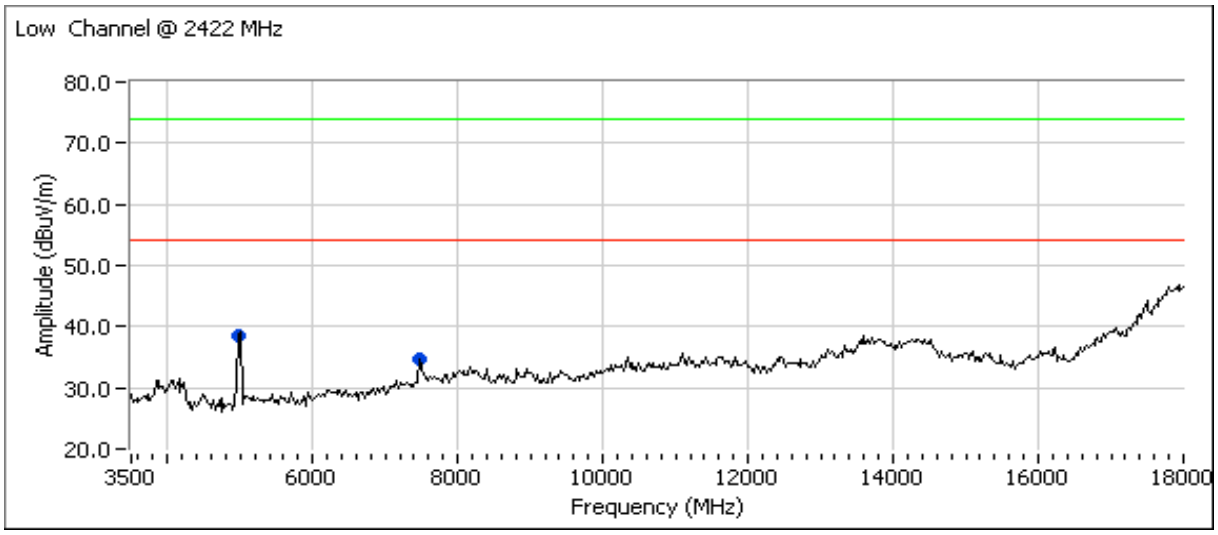
Run #1a: Low Channel @ 2422 MHz

Band Edge Signal Field Strength

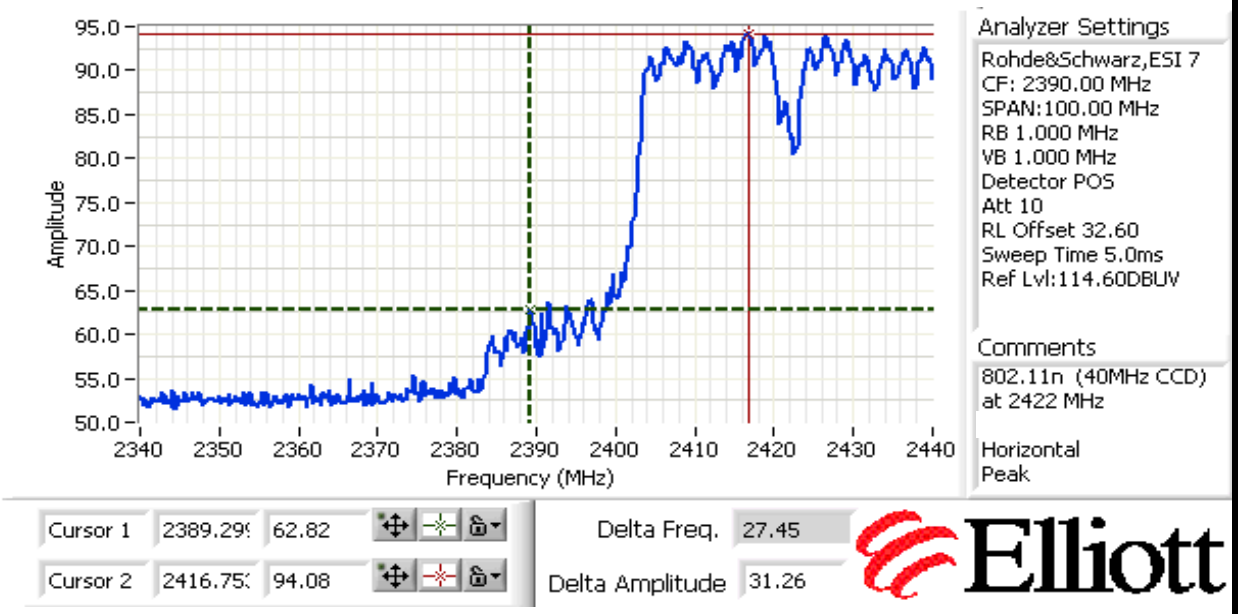
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.100	49.5	V	54.0	-4.5	Avg	165.0	1.0	
2389.690	64.8	V	74.0	-9.2	Pk	165.0	1.0	
2389.290	62.8	H	74.0	-11.2	Pk	9.0	1.0	
2389.290	41.7	H	54.0	-12.3	Avg	9.0	1.0	

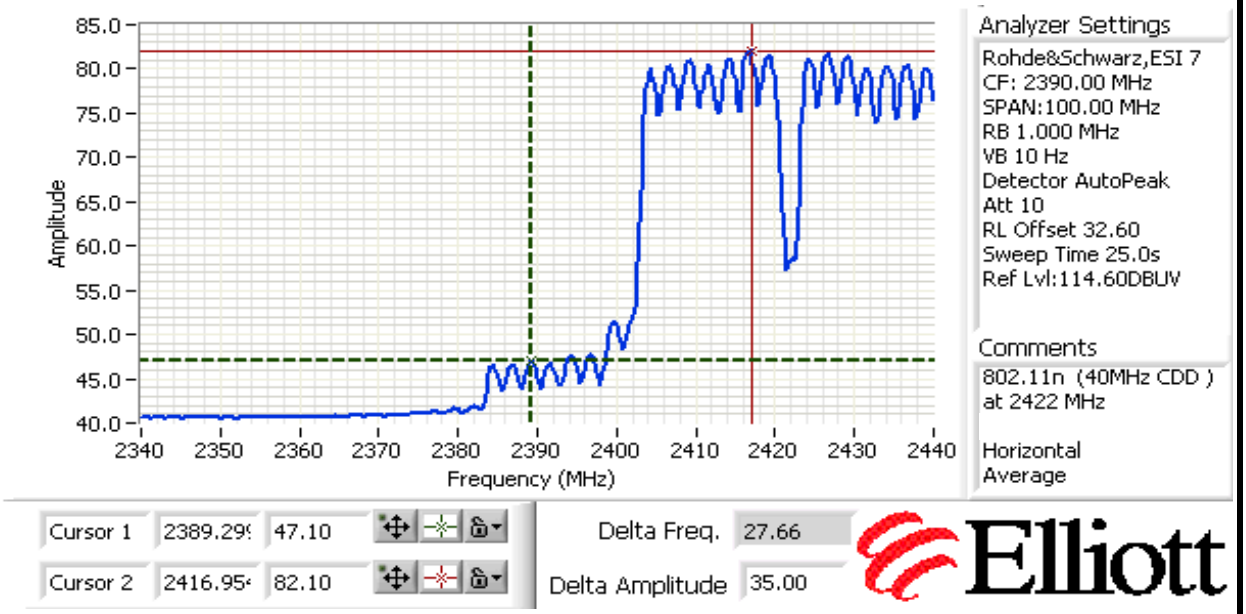
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4974.170	38.6	V	54.0	-15.4	Peak	16	1.0	
7463.330	34.8	V	54.0	-19.2	Peak	76	1.0	

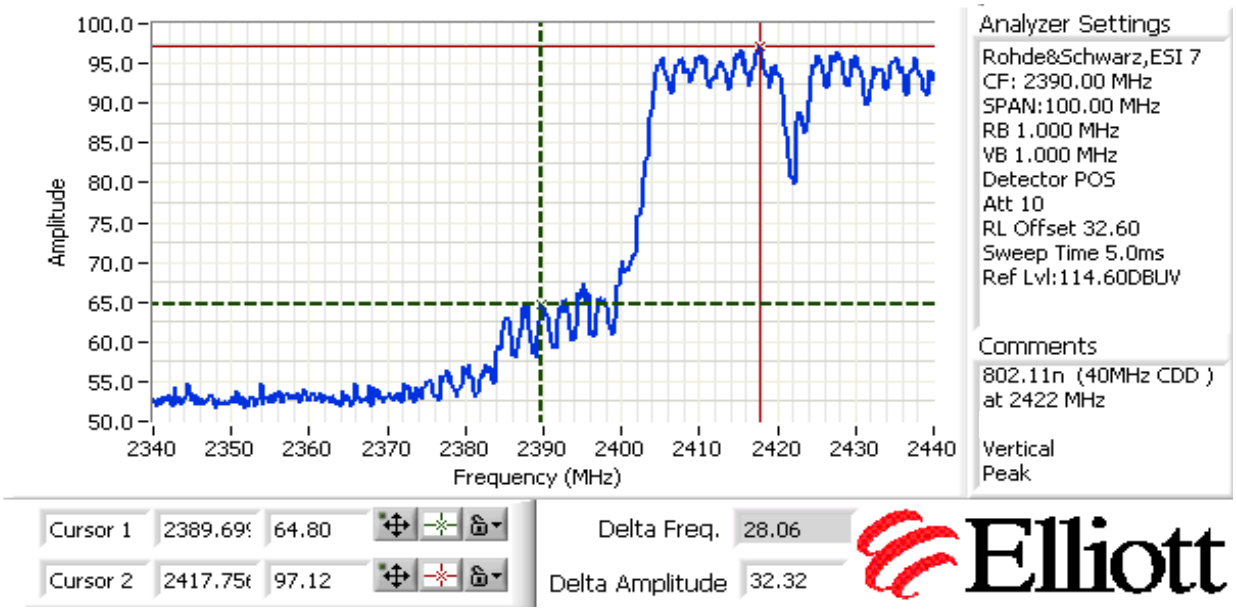


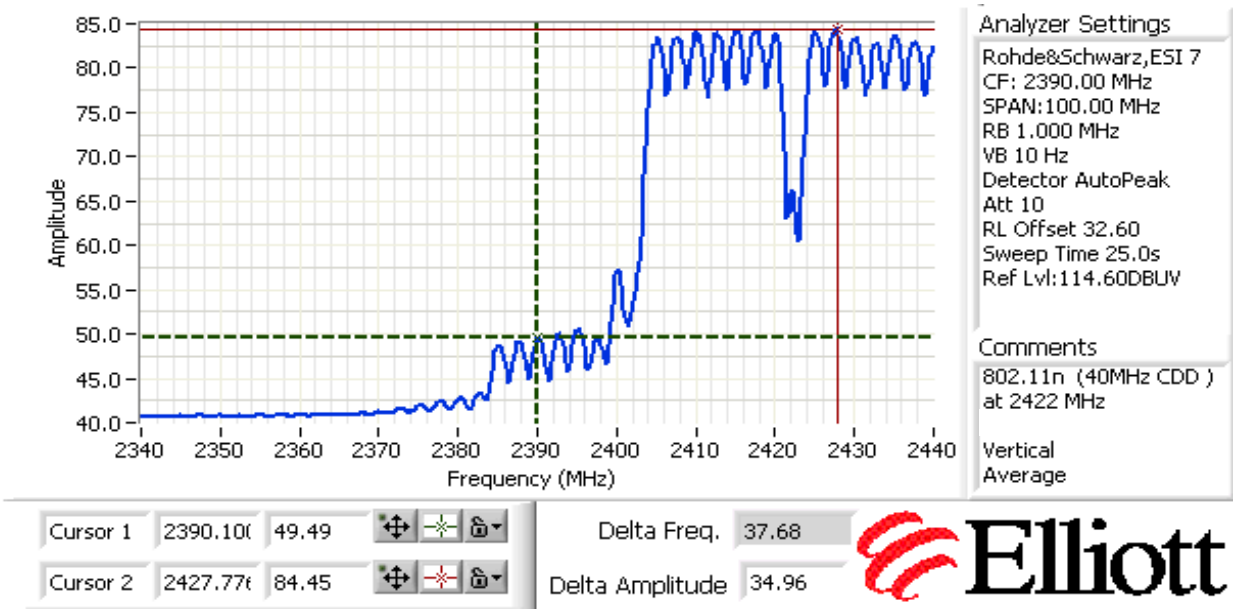
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

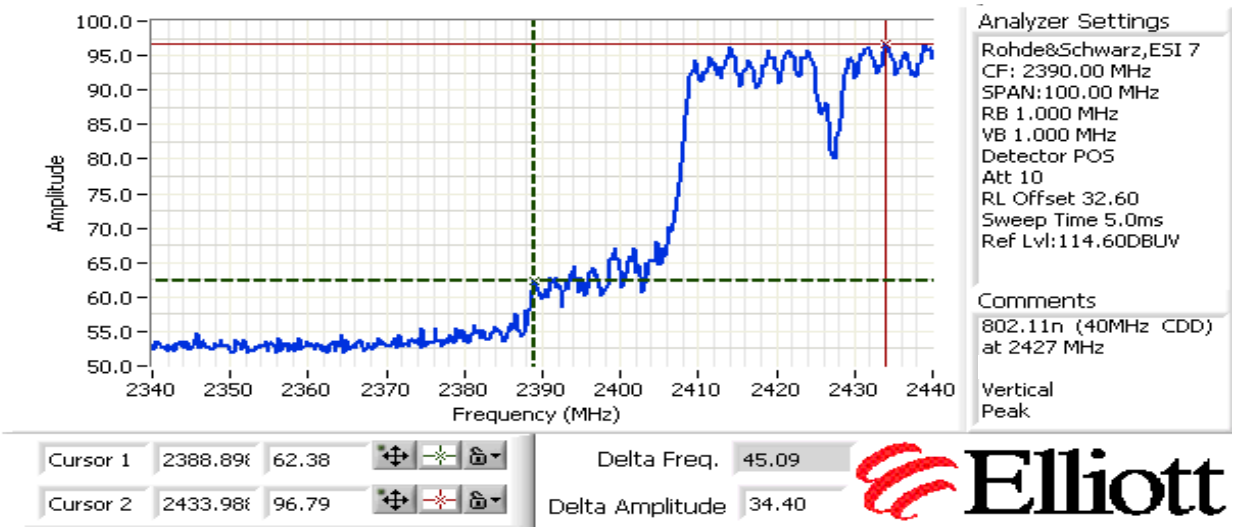


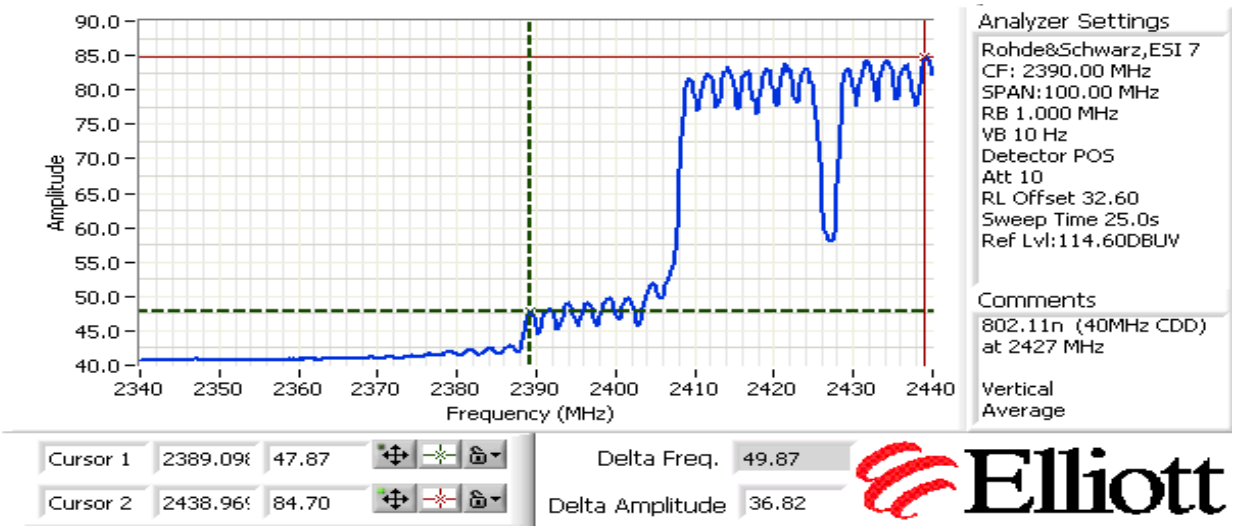


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

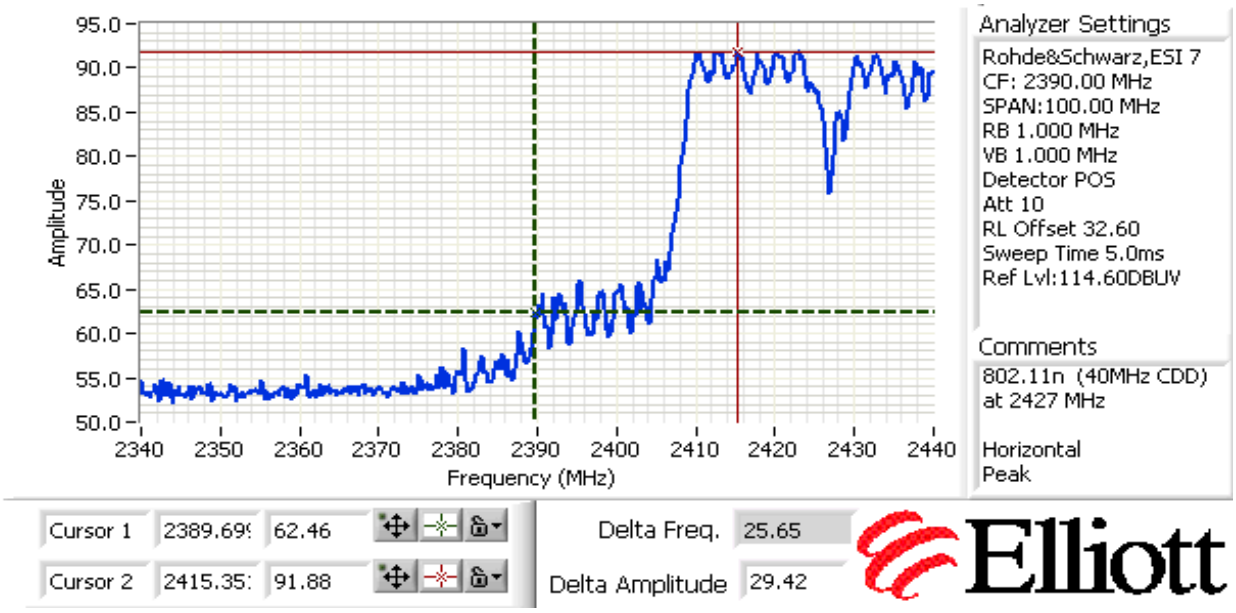
Run #1b: Low Channel @ 2427 MHz
Band Edge Signal Field Strength

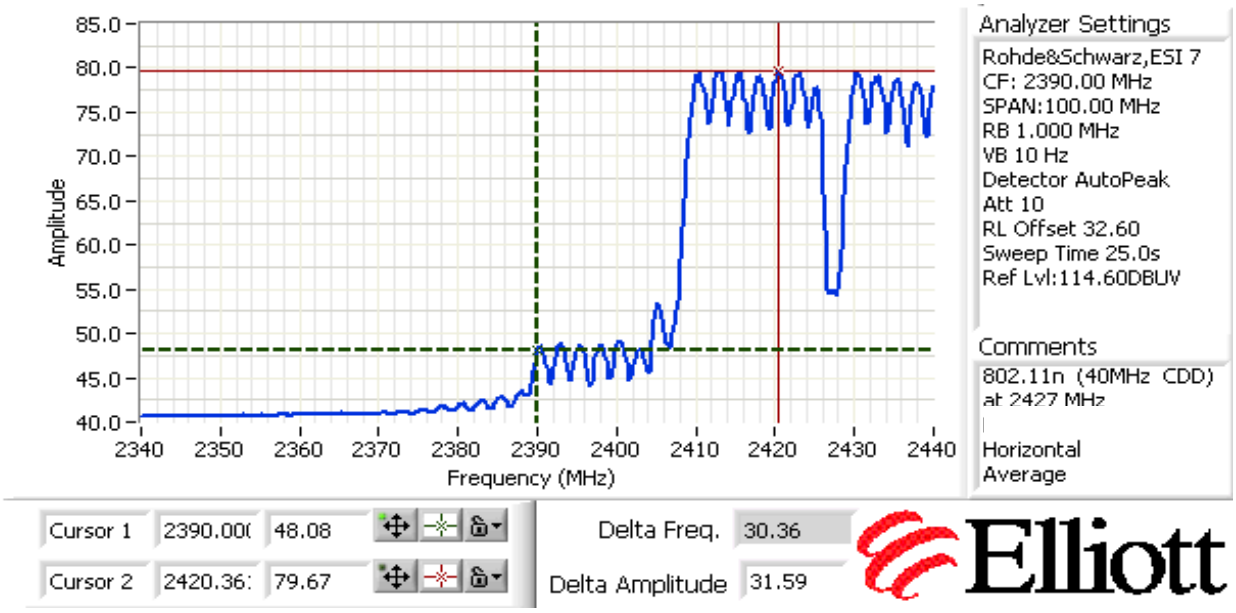
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	48.1	H	54.0	-5.9	Avg	253.0	1.0	
2389.090	47.9	V	54.0	-6.1	Avg	272.0	1.0	
2389.690	62.5	H	74.0	-11.5	Pk	253.0	1.0	
2388.890	62.4	V	74.0	-11.6	Pk	272.0	1.0	





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



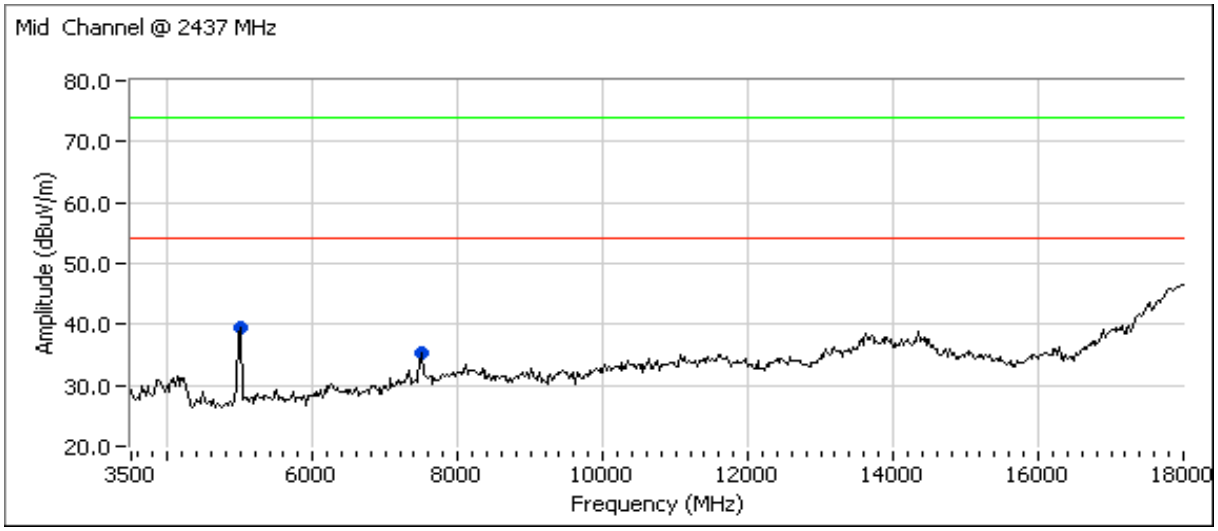


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1c: Mid Channel @ 2437 MHz

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4998.330	39.4	V	54.0	-14.6	Peak	226	1.3	
7511.670	35.4	V	54.0	-18.6	Peak	74	1.0	

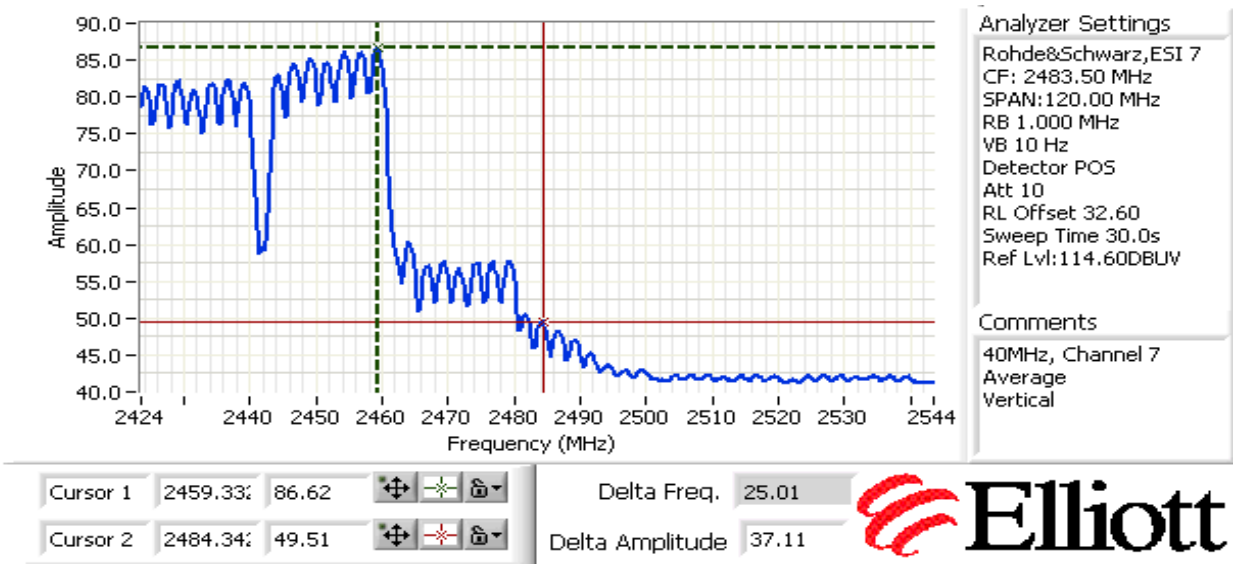


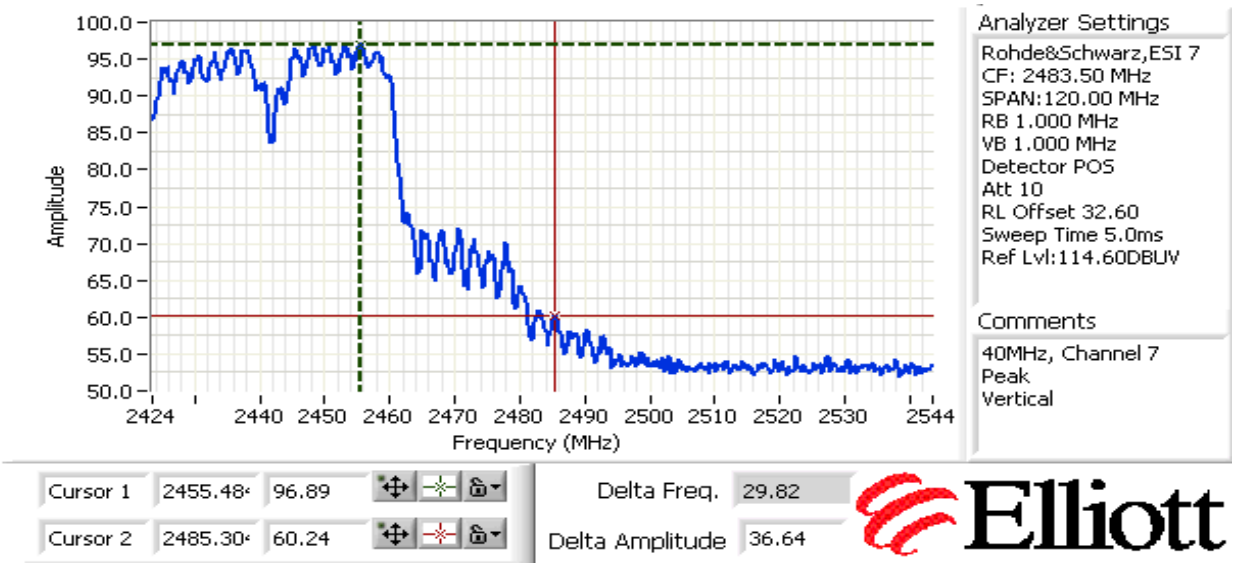
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1d: High Channel @ 2442 MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.342	49.5	V	54.0	-4.5	Avg	140	1.0	
2486.504	65.5	H	74.0	-8.5	Pk	267	1.2	
2483.620	45.3	H	54.0	-8.7	Avg	267	1.2	
2485.304	60.2	V	74.0	-13.8	Pk	140	1.0	



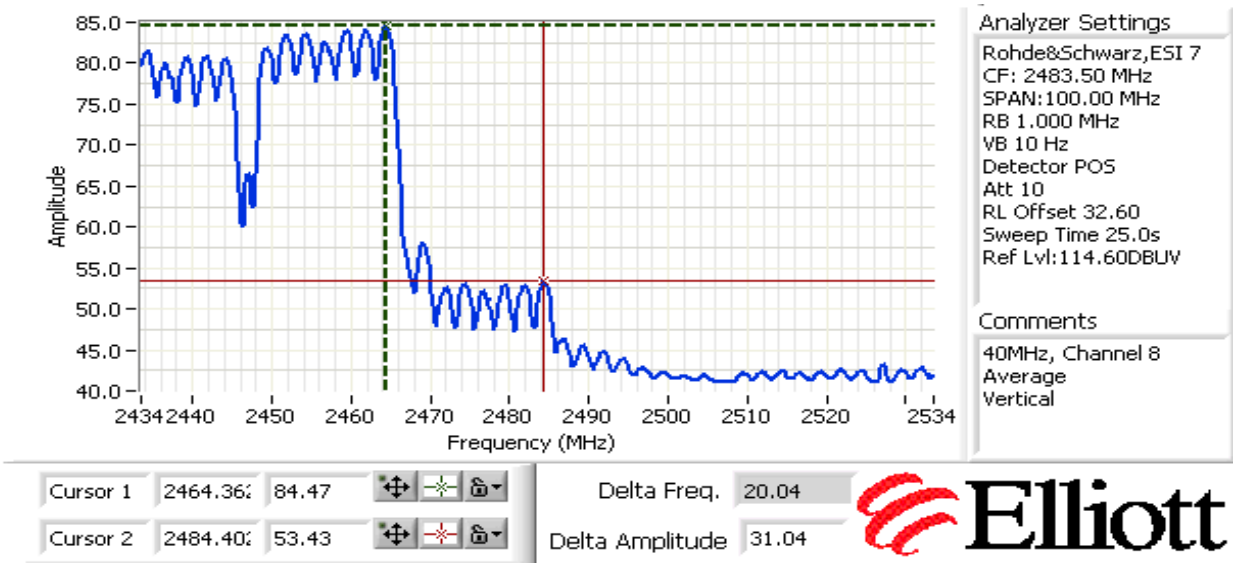


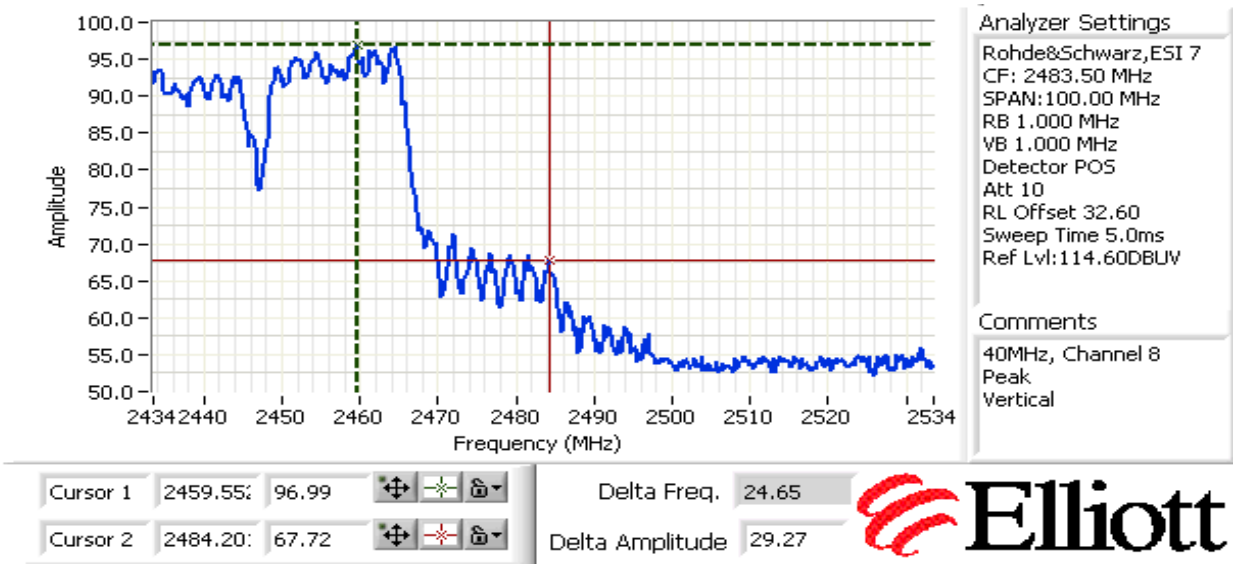
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1e: High Channel @ 2447 MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.402	53.4	V	54.0	-0.6	Avg	145	1.0	
2484.200	67.7	V	74.0	-6.3	Pk	145	1.0	
2484.000	50.6	H	54.0	-3.4	Avg	275	1.0	
2484.000	65.5	H	74.0	-8.5	Pk	275	1.0	





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

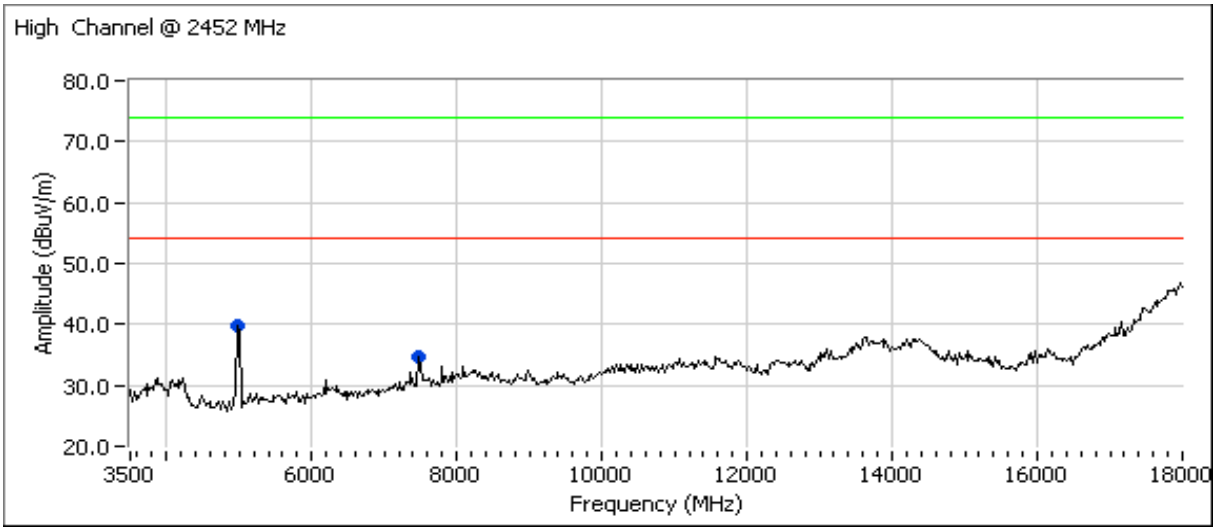
Run #1f: High Channel @ 2452 MHz

Band Edge Signal Field Strength

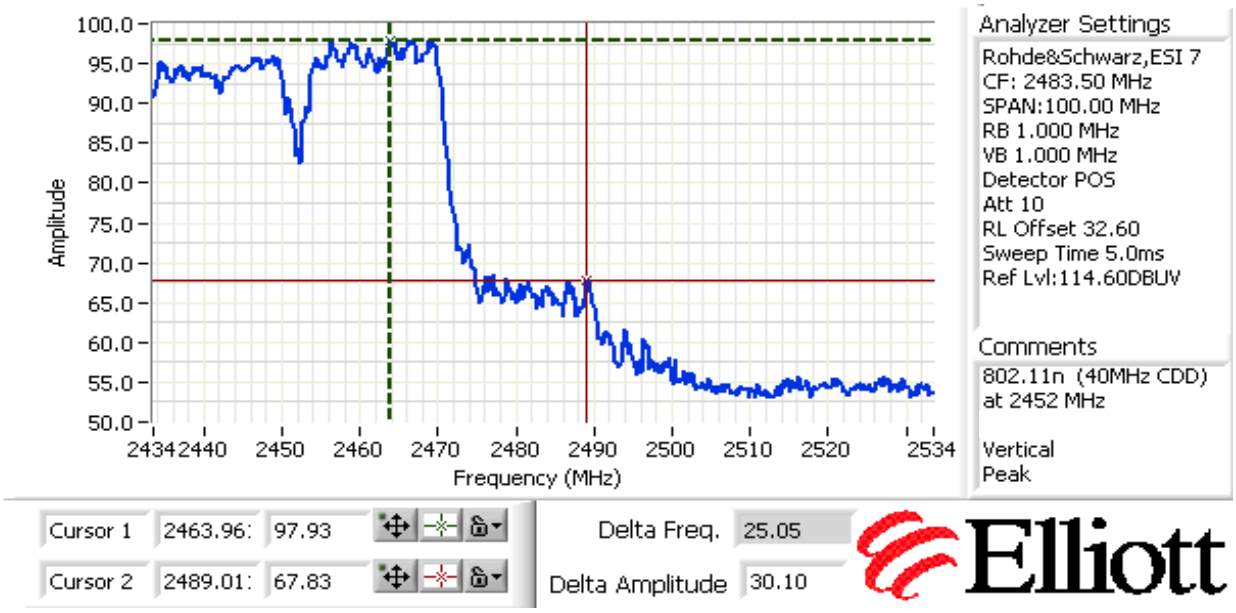
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2489.410	52.3	V	54.0	-1.7	Pk	128.0	1.0	
2489.010	67.8	V	74.0	-6.2	Pk	128.0	1.0	
2489.210	45.5	H	54.0	-8.5	Avg	275.0	1.0	
2483.800	60.6	H	74.0	-13.4	Pk	275.0	1.0	

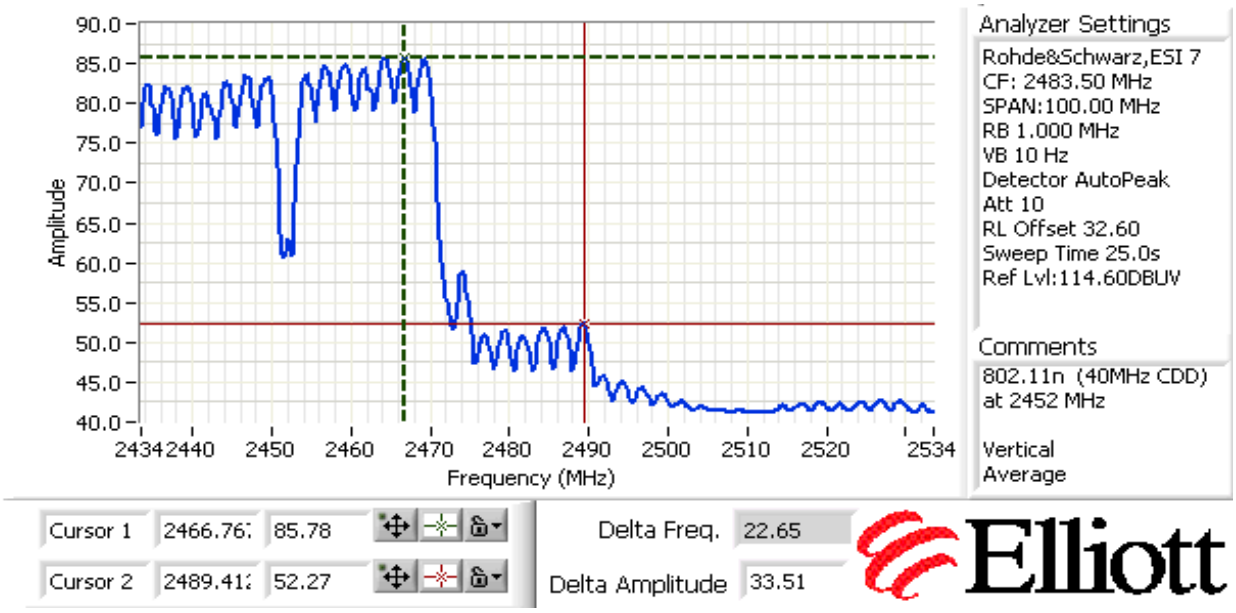
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4974.170	39.8	V	54.0	-14.2	Peak	16	1.0	
7463.330	34.6	V	54.0	-19.4	Peak	81	1.0	

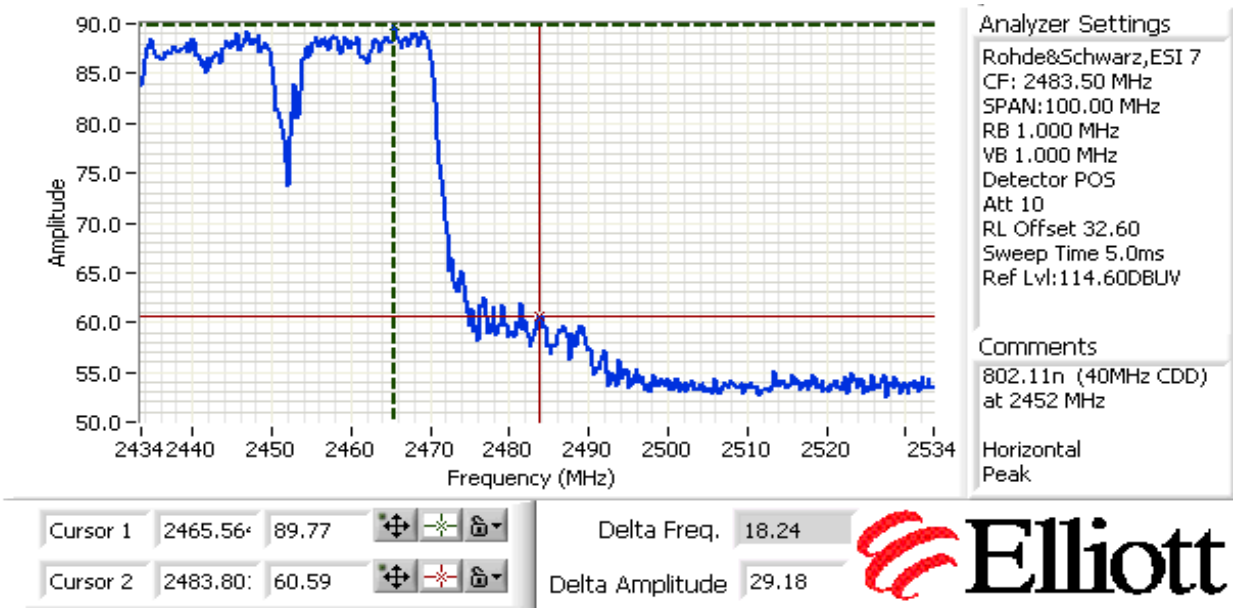


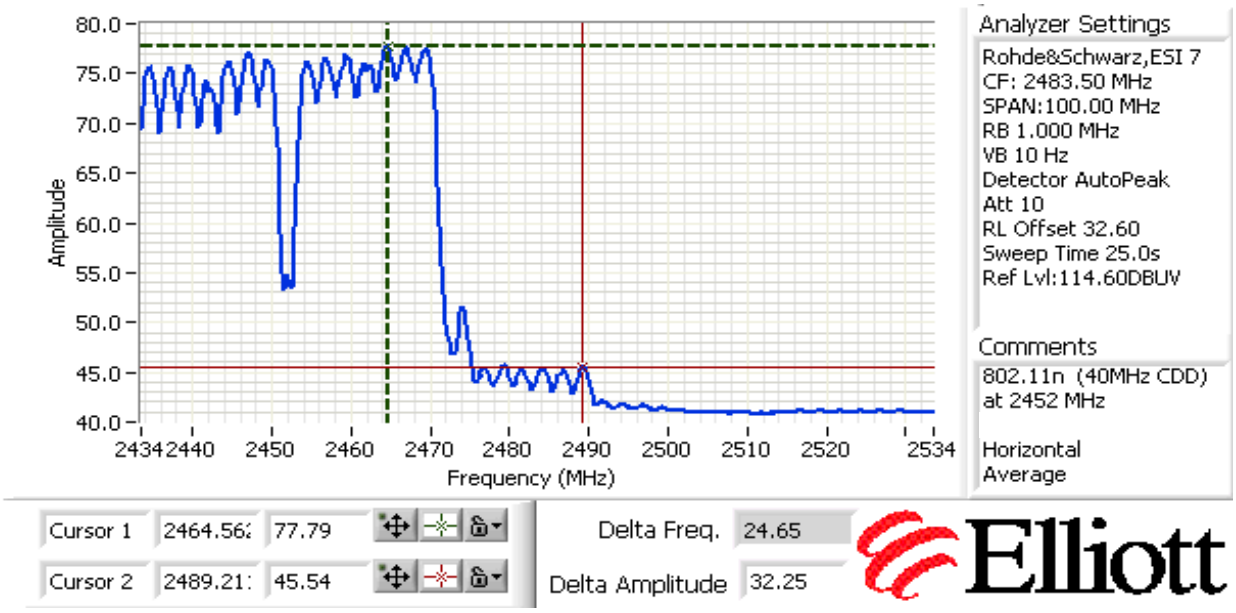
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

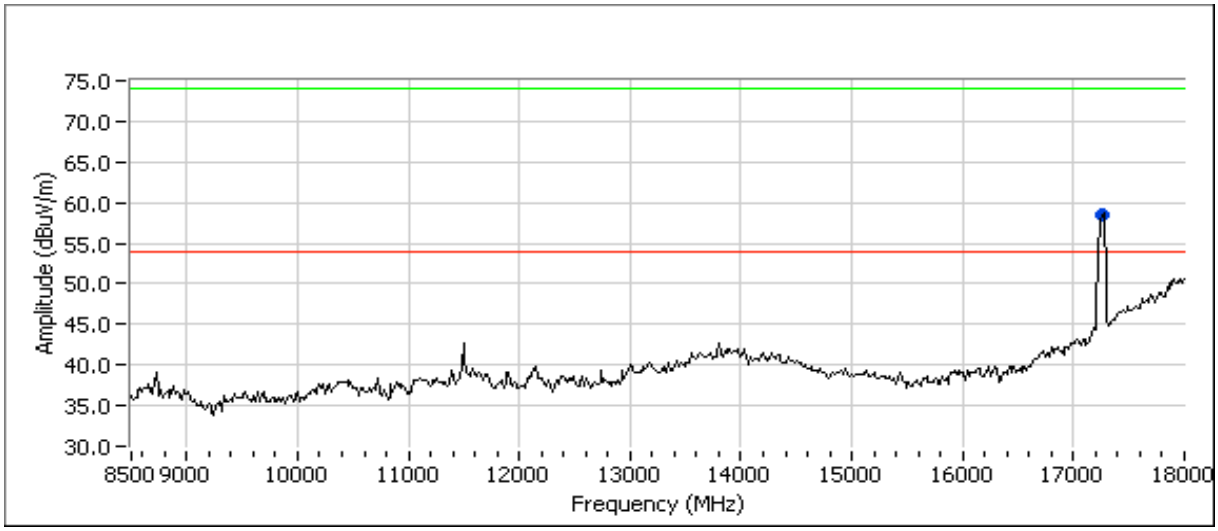


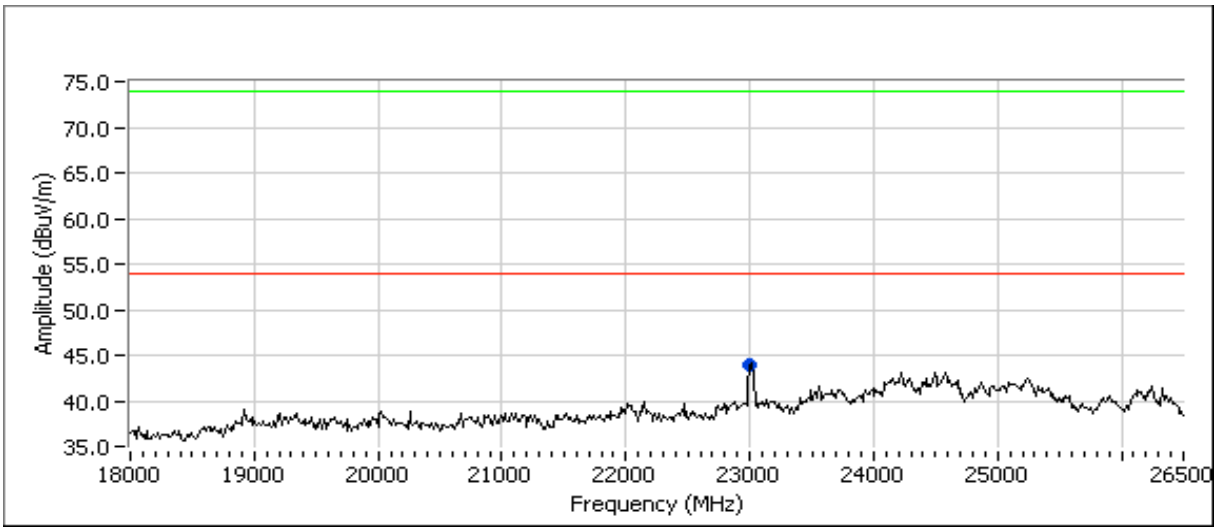


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

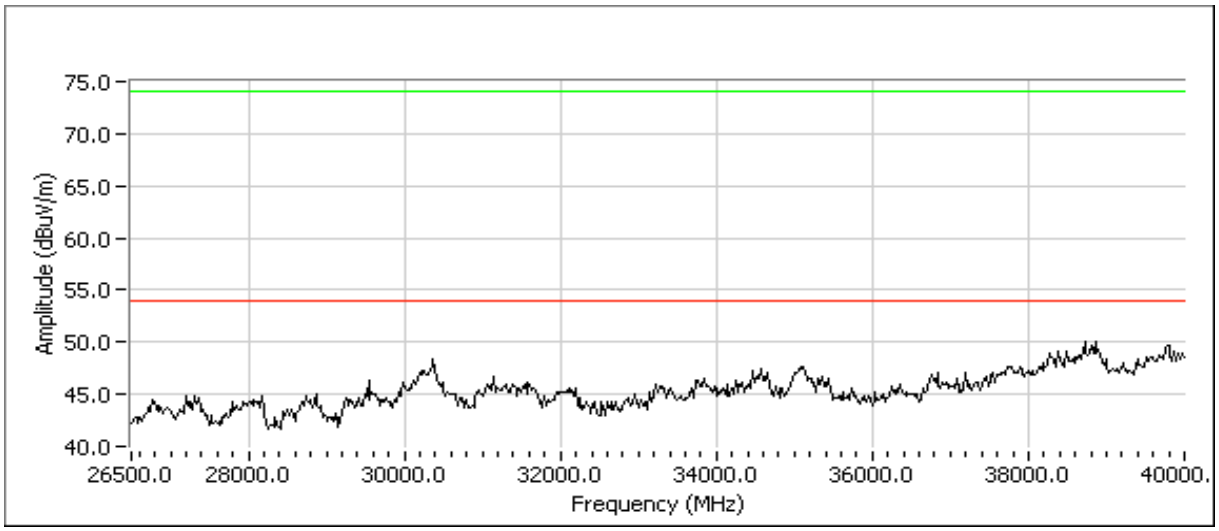
Run #2: Radiated Spurious Emissions, 30 - 40000 MHz. Operating Mode: 802.11n 40MHz CDD

Run #2a: Low Channel @ 5755 MHz





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



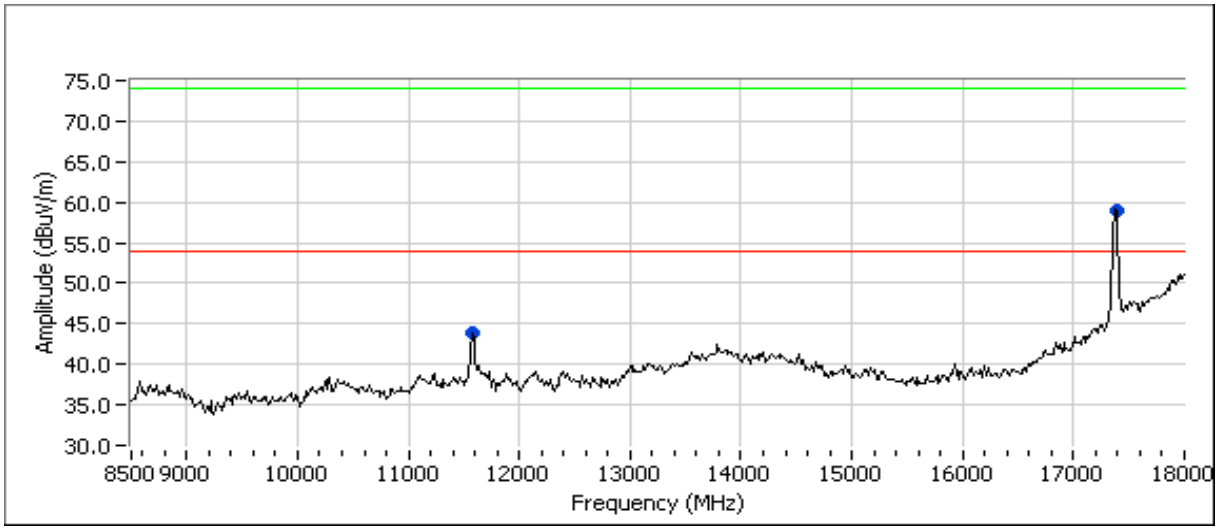
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17260.22	53.7	V	54.0	-0.3	AVG	87	1.0	Note 2
17260.22	64.1	V	74.0	-9.9	PK	87	1.0	Note 2
23000.83	44.0	V	74.0	-20.0	PK	96	1.0	

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #2b: High Channel @ 5795 MHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17379.78	51.7	V	54.0	-2.3	AVG	104	1.0	Note 2
17379.78	63.6	V	74.0	-10.4	PK	104	1.0	Note 2
11590.43	37.3	H	54.0	-16.7	AVG	199	1.1	
11590.43	48.4	H	74.0	-25.6	PK	199	1.1	

Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 Radiated Spurious Emissions
Receive Mode (FCC 15.209)

Test Specific Details

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

Date of Test: 1/4/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3
Config. Used: 1
Config Change: None
EUT Voltage: Powered From Host System

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 56 %

Summary of Results

Run #	RX Mode	Channel	Power Setting	Pass/Fail	Margin
1	a legacy	157	-	Pass	41.3dBµV/m (116.1µV/m) @ 17983.7MHz (-12.7dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

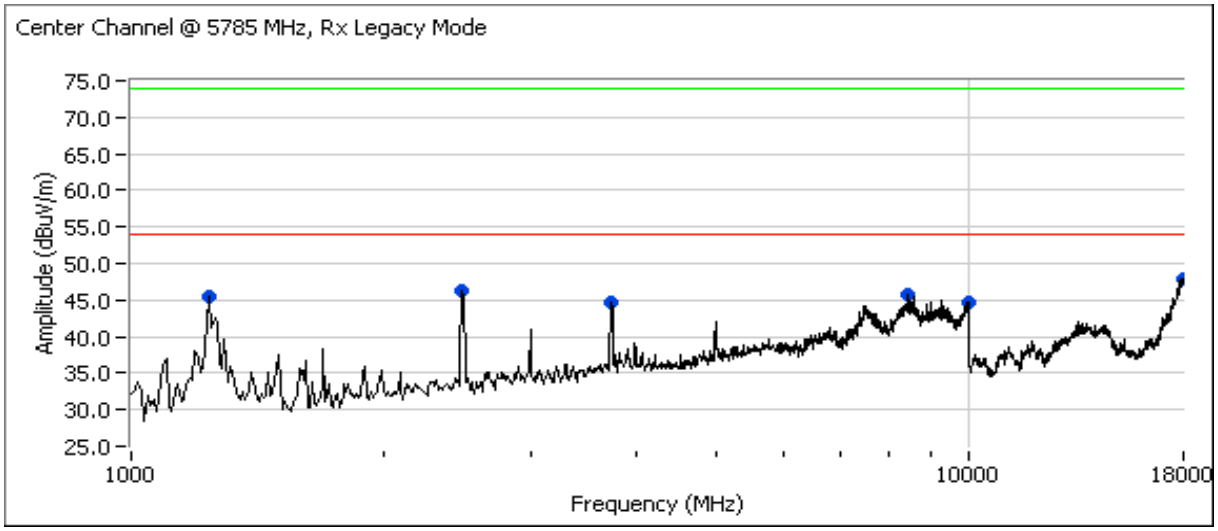
Deviations From The Standard

No deviations were made from the requirements of the standard.

Note: Preliminary testing showed that no receive mode radiated emissions below 1 GHz.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11a Legacy
Center Channel @ 5785 MHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17983.74	41.3	V	54.0	-12.7	AVG	0	1.3	
2496.68	54.7	V	74.0	-19.3	PK	57	1.3	
3750.39	53.4	H	74.0	-20.6	PK	31	1.0	
1248.79	52.9	V	74.0	-21.1	PK	205	1.0	
17983.74	52.7	V	74.0	-21.3	PK	0	1.3	
8443.64	29.9	H	54.0	-24.1	AVG	88	2.2	
9948.44	29.7	V	54.0	-24.3	AVG	188	1.6	
1248.79	23.6	V	54.0	-30.4	AVG	205	1.0	
2496.68	23.2	V	54.0	-30.8	AVG	57	1.3	
3750.39	22.6	H	54.0	-31.4	AVG	31	1.0	
8443.64	42.2	H	74.0	-31.8	PK	88	2.2	
9948.44	41.9	V	74.0	-32.1	PK	188	1.6	

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 Radiated Spurious Emissions Receive Mode (FCC 15.209)

Test Specific Details

Date of Test: 1/4/2008 0:00
Test Engineer: Ben Jing
Test Location: Fremont Chamber # 5
Config. Used: 1..
Config Change: None
EUT Voltage: Powered from host system

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 56 %

Summary of Results

Run #	RX Mode	Channel	Power Setting	Pass / Fail	Result / Margin
1	40MHz	151	-	Pass	56.0dBµV/m @ 1248.9MHz (-18.0dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

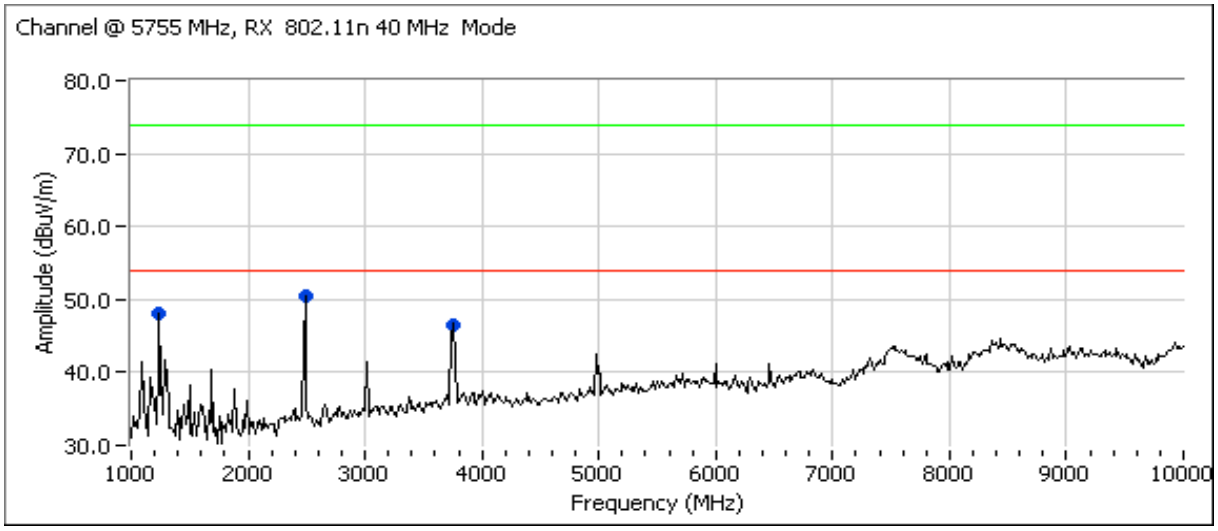
Deviations From The Standard

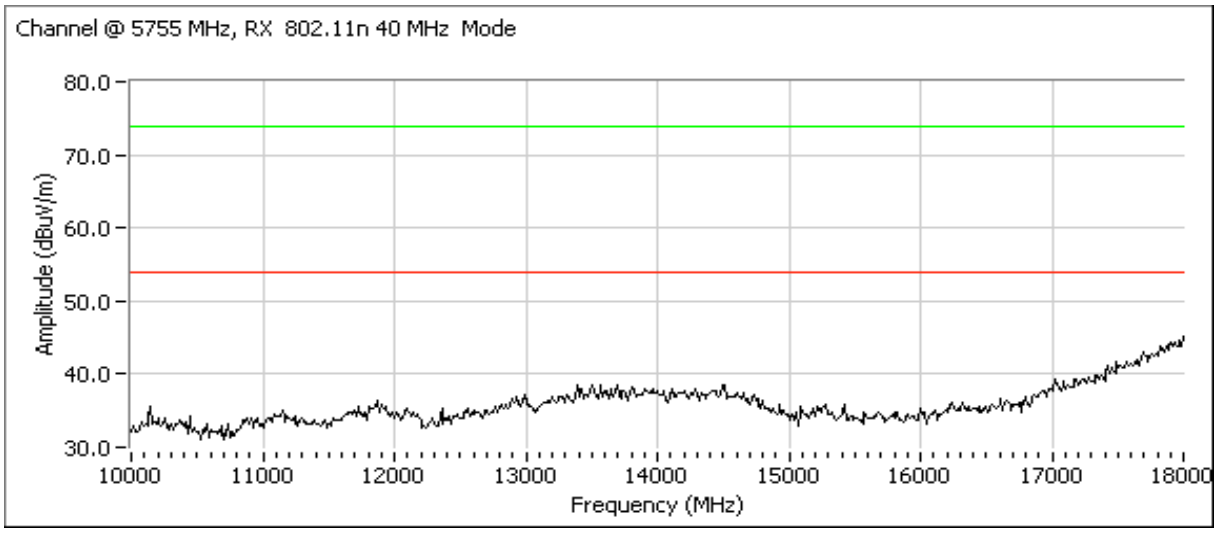
No deviations were made from the requirements of the standard.

Note: Preliminary testing showed that no receive mode radiated emissions below 1 GHz.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run # 1: Radiated Spurious Emissions, 30 - 25000 MHz. Operation Mode : 802.11n 40MHz CDD
Low Channel @ 5755 MHz





Other Spurious Radiated Emissions:

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1248.870	56.0	V	74.0	-18.0	PK	32	2.2	
3747.270	55.2	V	74.0	-18.8	PK	263	1.3	
3747.270	31.8	V	54.0	-22.2	AVG	263	1.3	
2477.610	28.7	V	54.0	-25.3	AVG	17	1.9	
1248.870	27.8	V	54.0	-26.2	AVG	32	2.2	
2477.610	45.7	V	74.0	-28.3	PK	17	1.9	

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 Radiated Spurious Emissions
Receive Mode (FCC 15.209)

Test Specific Details

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

Date of Test: 1/4/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3
Config. Used: 1
Config Change: None
EUT Voltage: Powered From Host System

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 56 %

Summary of Results

Run #	RX Mode	Channel	Power Setting	Pass/Fail	Margin
1	20MHz CDD	157	-	Pass	50.7dBµV/m (342.8µV/m) @ 17977.6MHz (-3.3dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

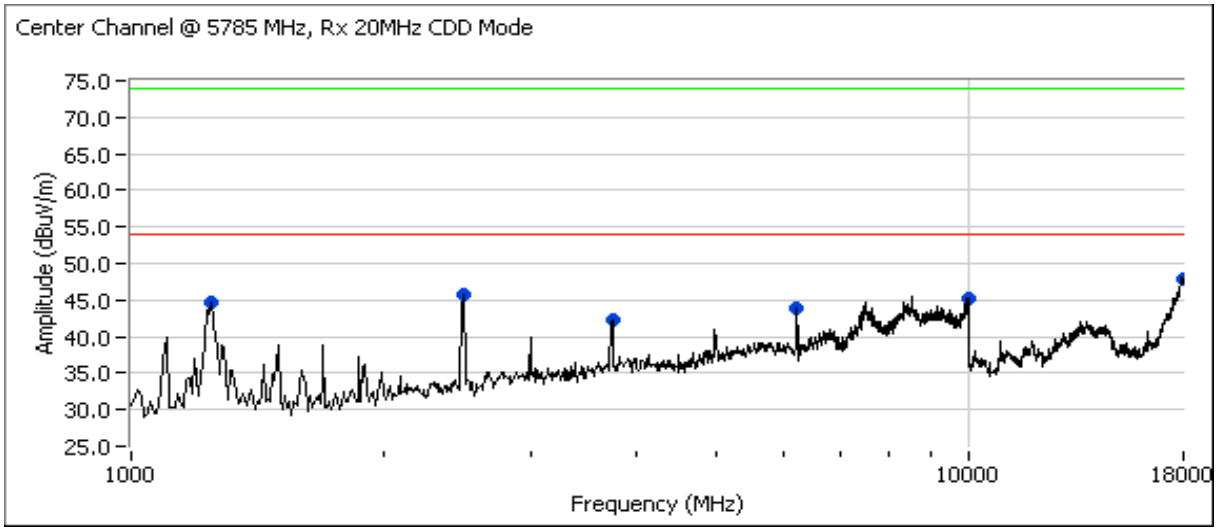
Deviations From The Standard

No deviations were made from the requirements of the standard.

Note: Preliminary testing showed that no receive mode radiated emissions below 1 GHz.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25000 MHz. Operating Mode: 802.11n 20MHz CDD
Center Channel @ 5785 MHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17977.64	50.7	V	54.0	-3.3	AVG	33	1.6	
17977.64	61.5	V	74.0	-12.5	PK	33	1.6	
9998.80	39.1	V	54.0	-14.9	AVG	199	1.6	
2495.14	58.6	H	74.0	-15.4	PK	99	1.0	
3743.19	57.7	V	74.0	-16.3	PK	321	2.0	
6222.66	34.6	V	54.0	-19.4	AVG	342	1.9	
1245.67	51.7	H	74.0	-22.3	PK	114	1.9	
3743.19	31.7	V	54.0	-22.3	AVG	321	2.0	
6222.66	51.7	V	74.0	-22.3	PK	342	1.9	
9998.80	50.3	V	74.0	-23.7	PK	199	1.6	
2495.14	28.7	H	54.0	-25.3	AVG	99	1.0	
1245.67	28.3	H	54.0	-25.7	AVG	114	1.9	

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 Radiated Spurious Emissions
Receive Mode (FCC 15.209)

Test Specific Details

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

Date of Test: 1/6/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 5
Config. Used: 1
Config Change: None
EUT Voltage: Powered From Host System

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. Unless otherwise stated, all peak measurements were taken with RBW=VBW=1MHz and for average with RBW=1MHz, VBW=10Hz.

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

Ambient Conditions:

Temperature: 18.9 °C
Rel. Humidity: 41 %

Summary of Results

Run #	RX Mode	Channel	Power Setting	Pass/Fail	Margin
1	802.11b	6	-	Pass	43.1dBµV/m (142.9µV/m) @ 3010.0MHz (-10.9dB)
2	802.11g	6	-	Pass	43.2dBµV/m (144.5µV/m) @ 3010.0MHz (-10.8dB)
3	802.11n (20 MHz)	6	-	Pass	42.6dBµV/m (134.9µV/m) @ 3010.0MHz (-11.4dB)
4	802.11n (40 MHz)	6	-	Pass	42.1dBµV/m (127.4µV/m) @ 3010.0MHz (-11.9dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

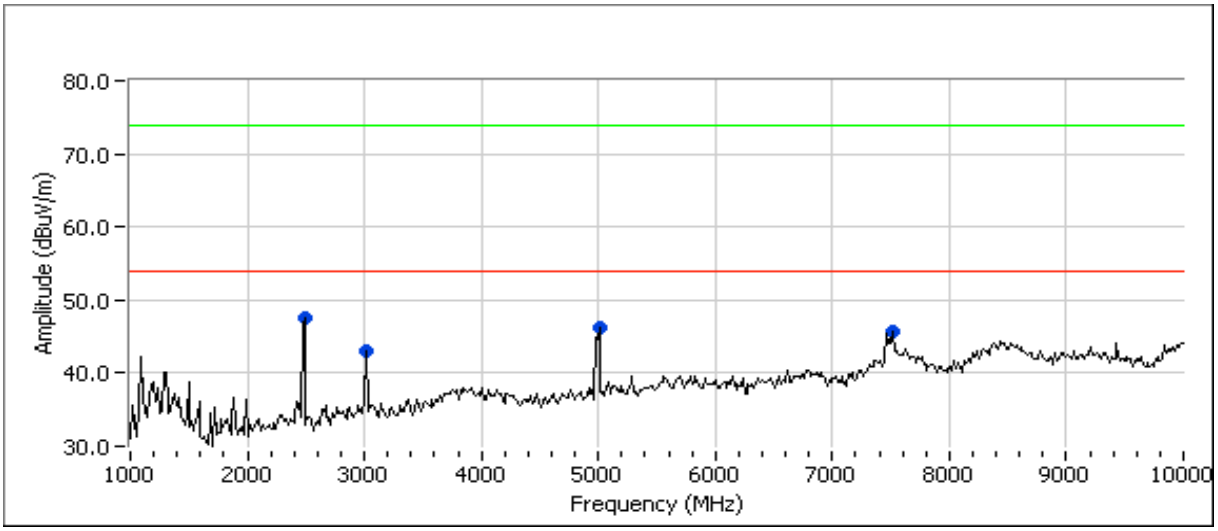
Deviations From The Standard

No deviations were made from the requirements of the standard.

Note: Preliminary testing showed that no receive mode radiated emissions below 1 GHz.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 10,000 MHz. Operating Mode: 802.11b
Center Channel @ 2437 MHz



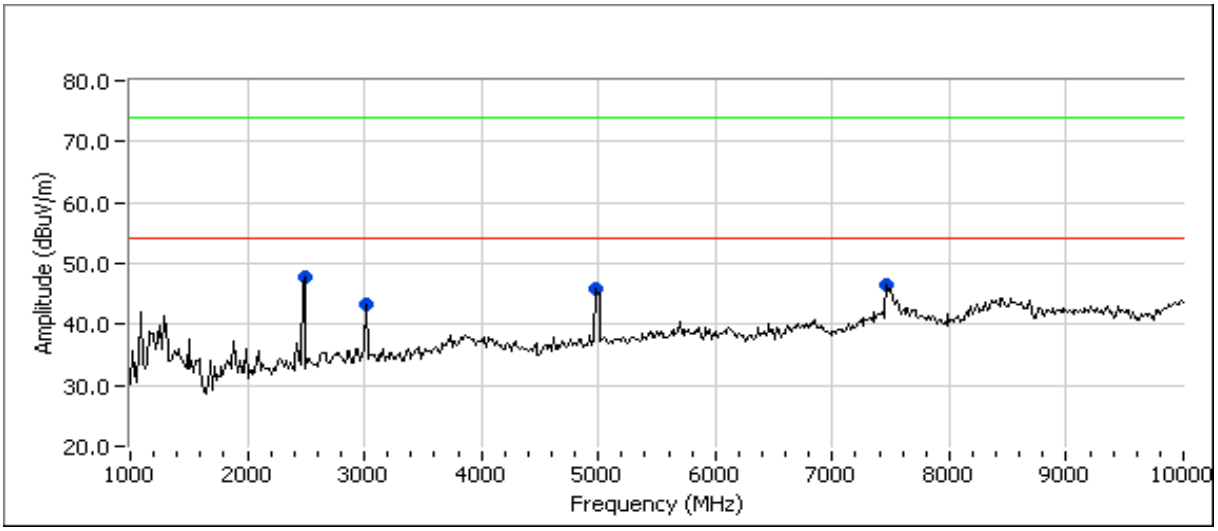
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3010.000	43.1	V	54.0	-10.9	Peak	288	1.0	
4996.960	35.2	V	54.0	-18.8	AVG	7	1.6	
4996.960	54.2	V	74.0	-19.8	PK	7	1.6	
2499.520	35.1	V	54.0	-18.9	AVG	282	1.9	
2499.520	55.7	V	74.0	-18.3	PK	282	1.9	
7511.500	39.0	H	54.0	-15.0	AVG	328	1.3	
7511.500	50.4	H	74.0	-23.6	PK	328	1.3	

Note 1:	No receive mode emissions were detected below 1 GHz

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #2: Radiated Spurious Emissions, 30 - 10,000 MHz. Operating Mode: 802.11g
Center Channel @ 2437 MHz



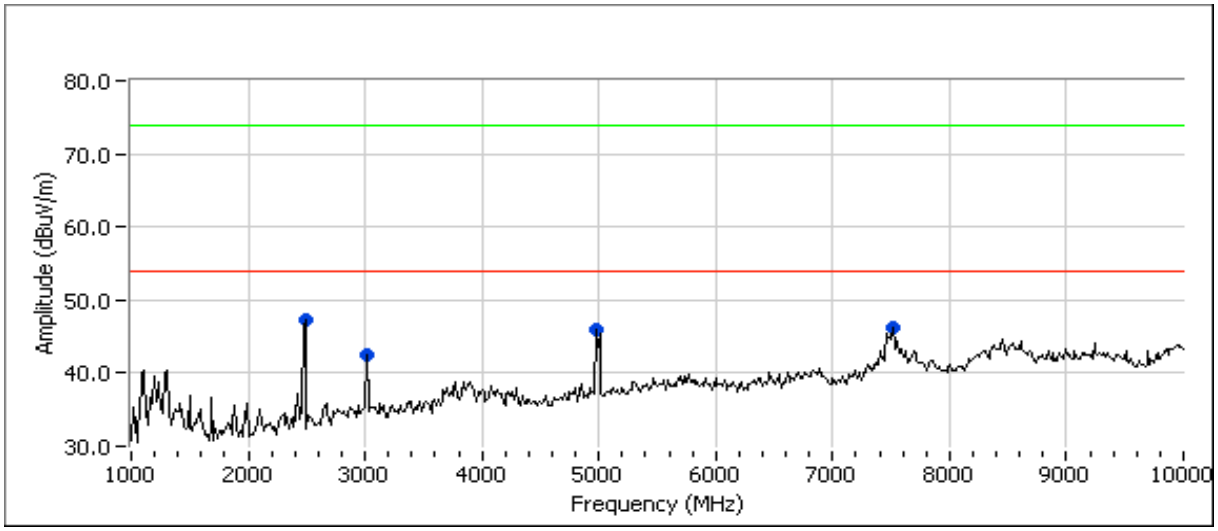
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3010.000	43.2	V	54.0	-10.8	Peak	266	1.0	
2499.120	36.0	V	54.0	-18.0	AVG	277	1.6	
2499.120	57.3	V	74.0	-16.7	PK	277	1.6	
4977.230	35.3	V	54.0	-18.7	AVG	230	1.6	
4977.230	55.8	V	74.0	-18.2	PK	230	1.6	
7477.550	39.5	H	54.0	-14.5	AVG	327	1.3	
7477.550	54.9	H	74.0	-19.1	PK	327	1.3	

Note 1:	No receive mode emissions were detected below 1 GHz

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #3: Radiated Spurious Emissions, 30 - 10,000 MHz. Operating Mode: 802.11n (20MHz)
Center Channel @ 2437 MHz



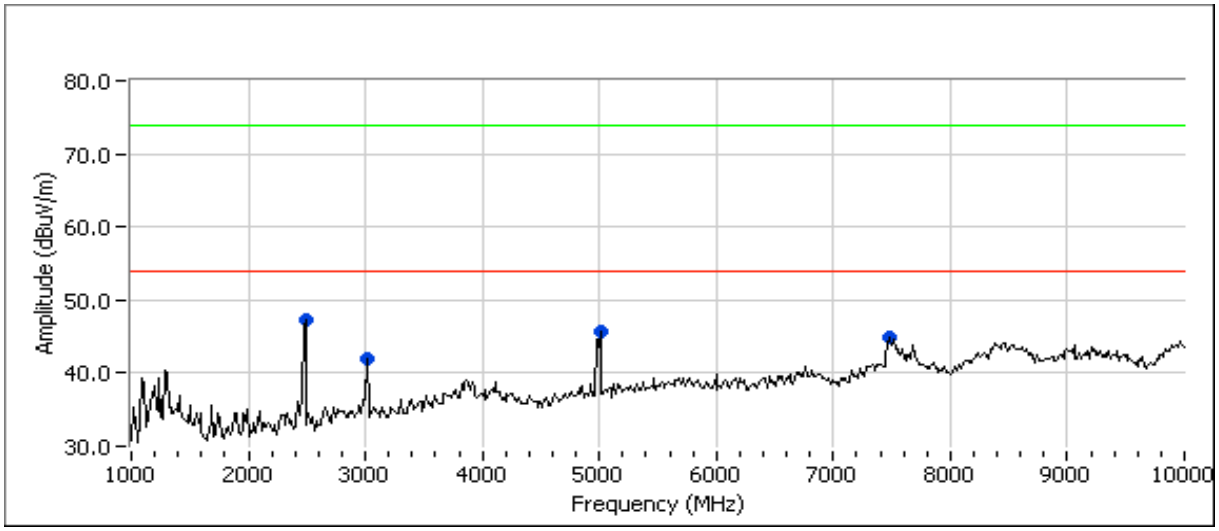
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3010.000	42.6	V	54.0	-11.4	Peak	278	1.0	
2499.540	34.5	V	54.0	-19.5	AVG	294	1.6	
2499.540	54.4	V	74.0	-19.6	PK	294	1.6	
4977.190	35.0	V	54.0	-19.0	AVG	346	1.3	
4977.190	53.2	V	74.0	-20.8	PK	346	1.3	
7509.460	38.7	H	54.0	-15.3	AVG	325	1.3	
7509.460	50.1	H	74.0	-23.9	PK	325	1.3	

Note 1:	No receive mode emissions were detected below 1 GHz

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Radiated Spurious Emissions, 30 - 10,000 MHz. Operating Mode: 802.11n (40MHz)
Center Channel @ 2437 MHz



Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3010.000	42.1	V	54.0	-11.9	Peak	279	1.0	
7480.400	39.3	H	54.0	-14.7	AVG	331	1.3	
7480.400	55.0	H	74.0	-19.0	PK	331	1.3	
2499.860	54.7	V	74.0	-19.3	PK	281	1.6	
4976.900	34.7	V	54.0	-19.3	AVG	346	1.0	
2499.860	34.6	V	54.0	-19.4	AVG	281	1.6	
4976.900	52.3	V	74.0	-21.7	PK	346	1.0	

Note 1:	No receive mode emissions were detected below 1 GHz

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
Power, Bandwidth and Spurious Emissions

Test Specific Details

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

Date of Test: 1/8/2008
Test Engineer: Mehran Birgani
Test Location: FT Chamber #3
Config. Used: 1
Config Change: None
EUT Host Voltage: Powered from Host System

General Test Configuration

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

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

Ambient Conditions:

Temperature: 12 °C
Rel. Humidity: 61 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Output Power	15.247(b)	Pass	22.0dBm (158.9 mW)
2	6dB Bandwidth	15.247(a)	Pass	10.2 MHz
2	99% Bandwidth	RSS GEN	-	14.0 MHz
3	Power spectral Density (PSD)	15.247(d)	Pass	-0.1 dBm/3kHz
4	Spurious emissions	15.247(b)	Pass	More than 30dB below limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Output Power

Power Setting[2]	Frequency (MHz)	Output Power (dBm)[1]	Output Power mW	Antenna Gain (dBi)	Result	EIRP[Note 2] dBm	EIRP W	Output Power (dBm)[3]	Output Power mW
-	2412	22.0	158.9	3.9	Pass	25.9	0.390		
-	2437	21.9	153.5	3.9	Pass	25.8	0.377		
-	2462	21.6	144.2	3.9	Pass	25.5	0.354		

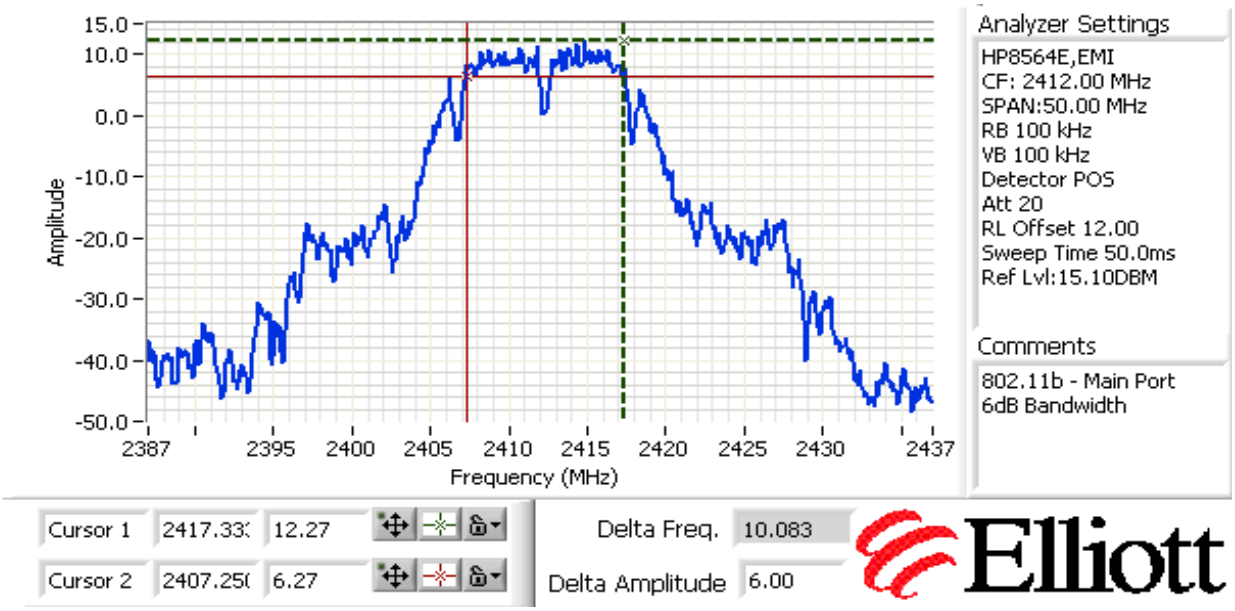
Note 1:	RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was not continuous but the ESI analyzer was configured with a gated sweep such that the analyzer was only sweeping when the device was transmitting) and power integration over 50MHz

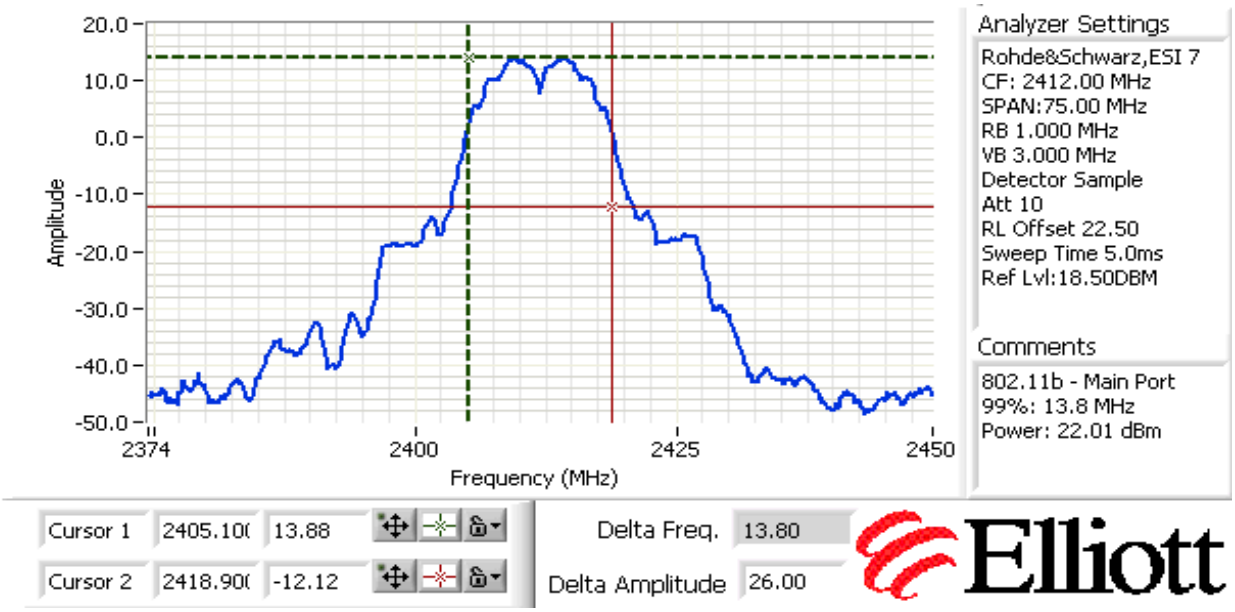
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	Bandwidth (MHz) 99%
-	2412	1MHz	10.1	13.8
-	2437	1MHz	10.2	14.0
-	2462	1MHz	10.2	14.0

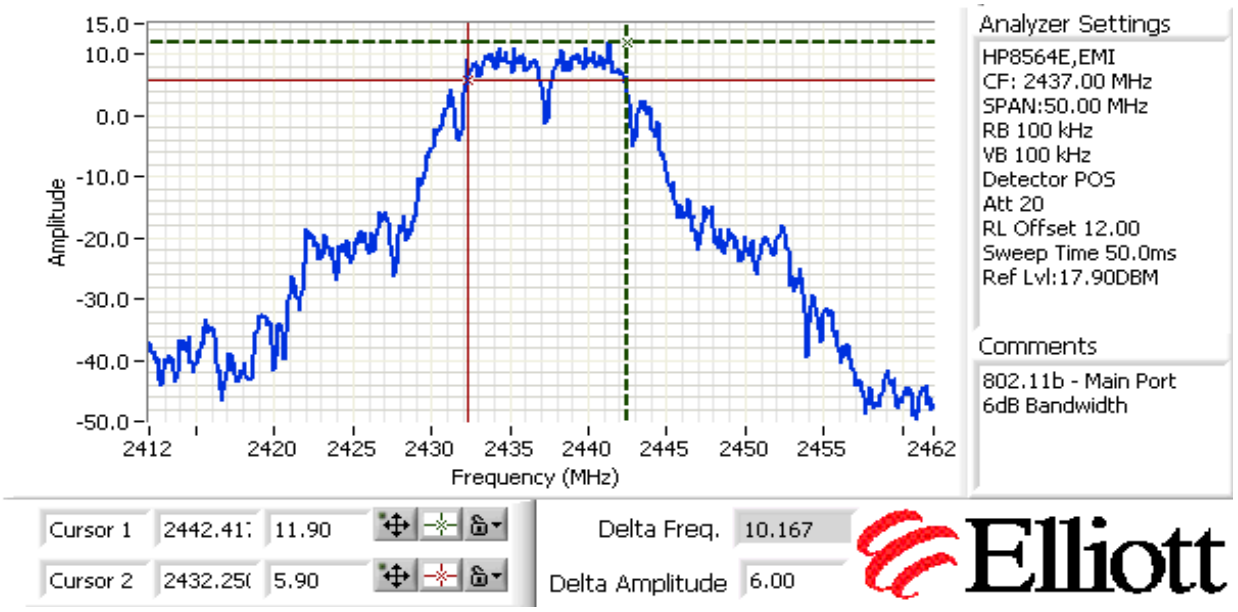
Note 1:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB

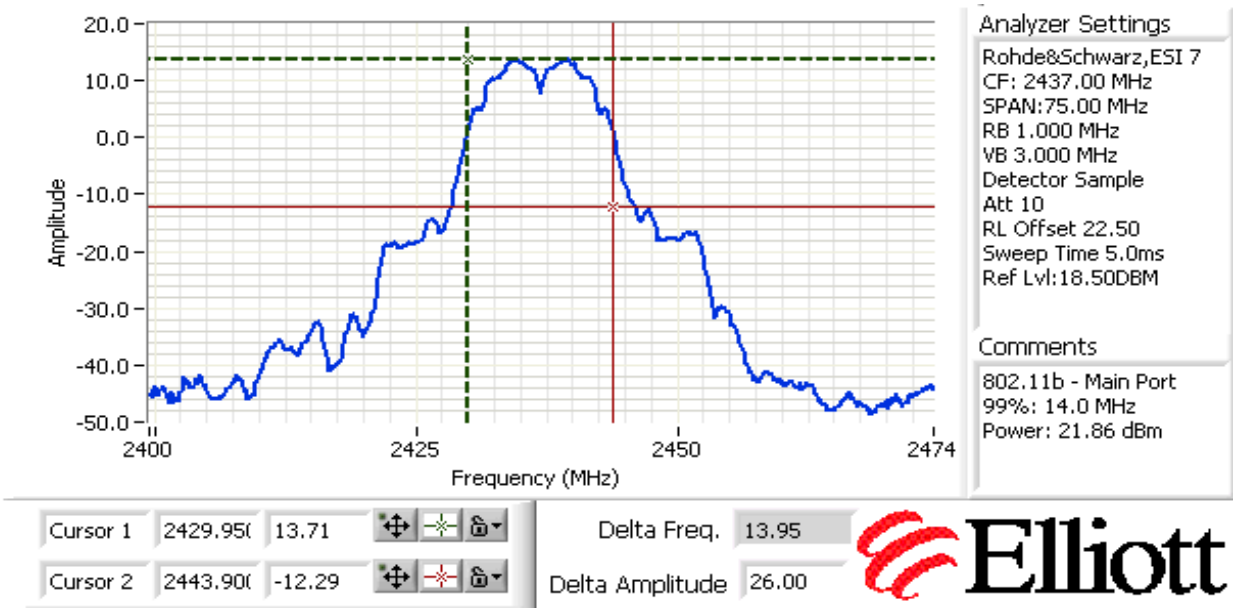
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



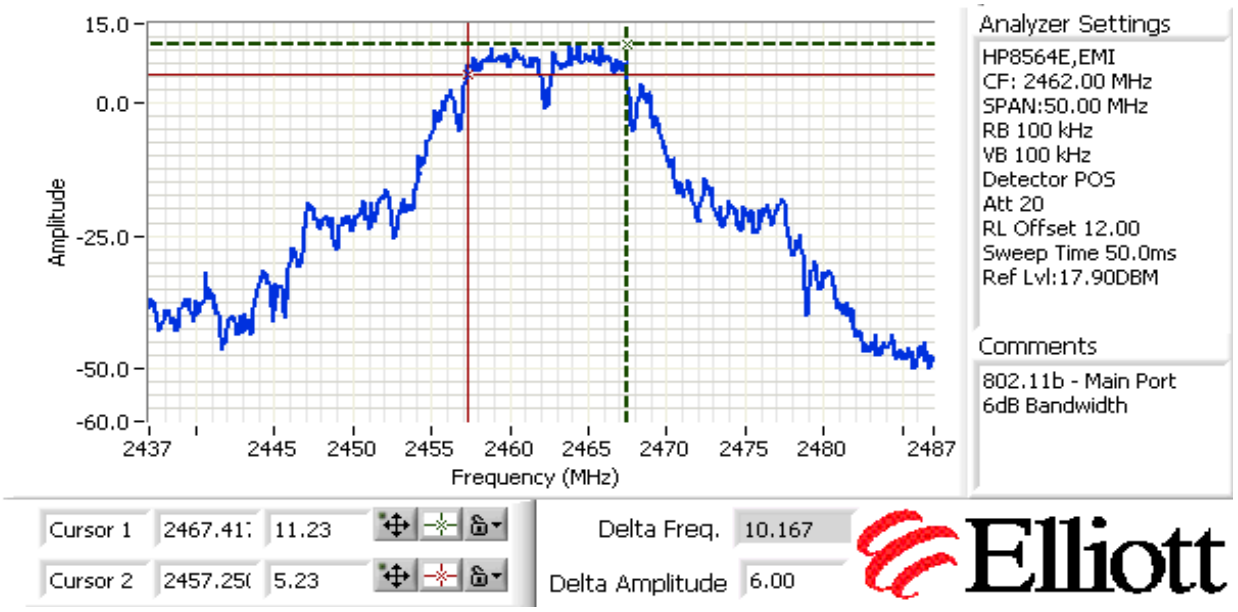


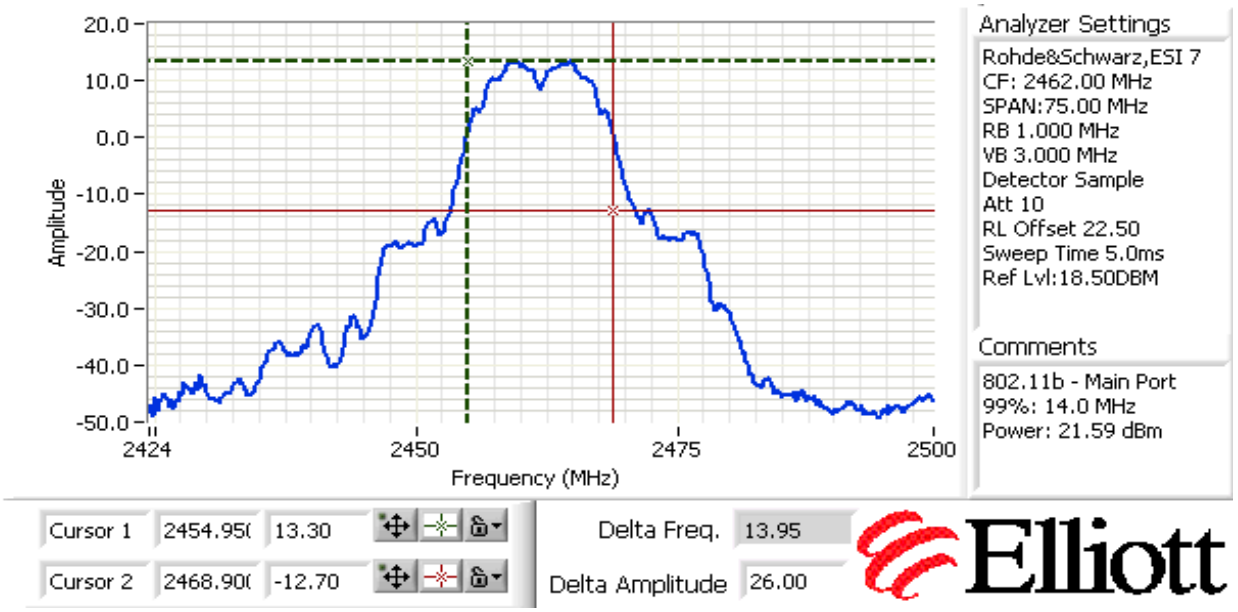
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



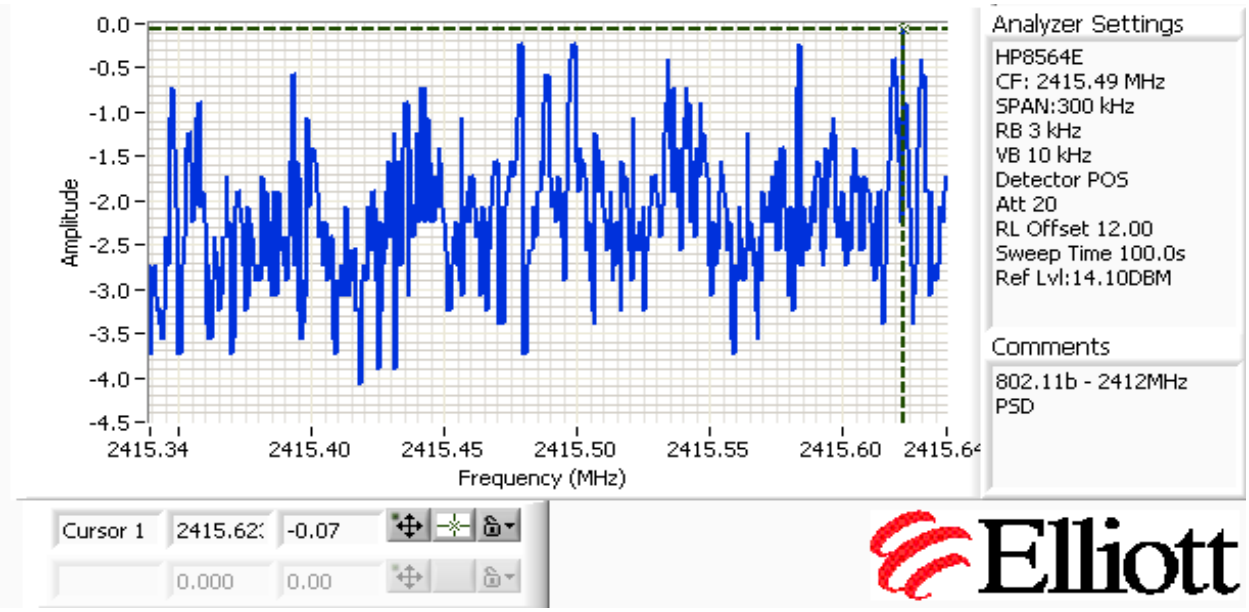


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

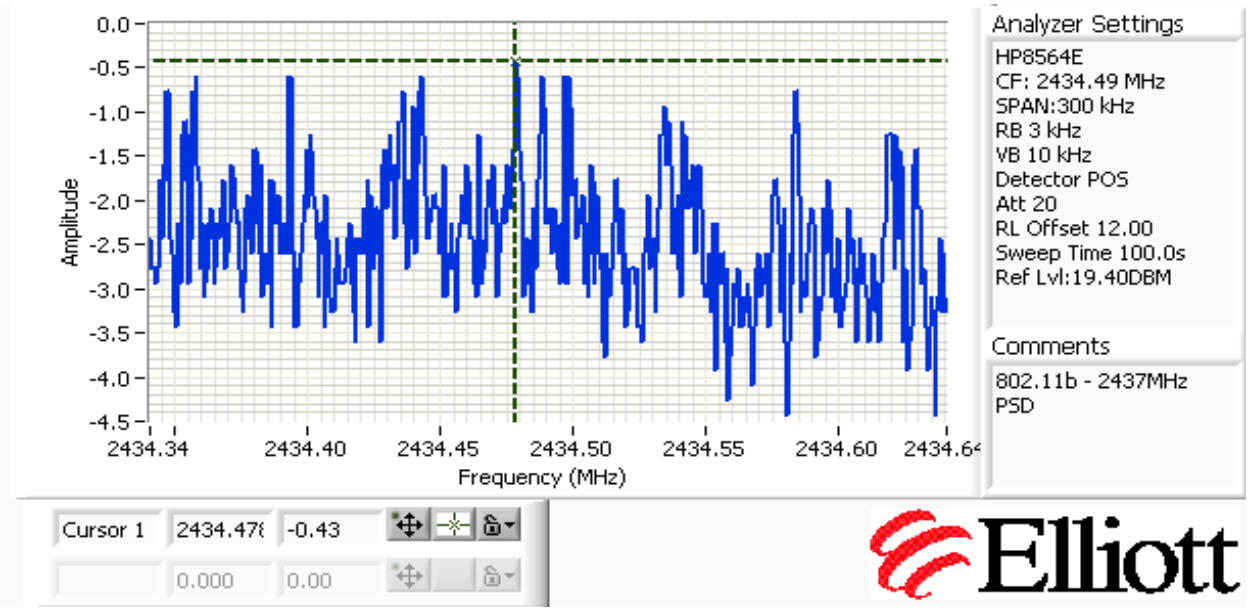
Run #3: Power spectral Density

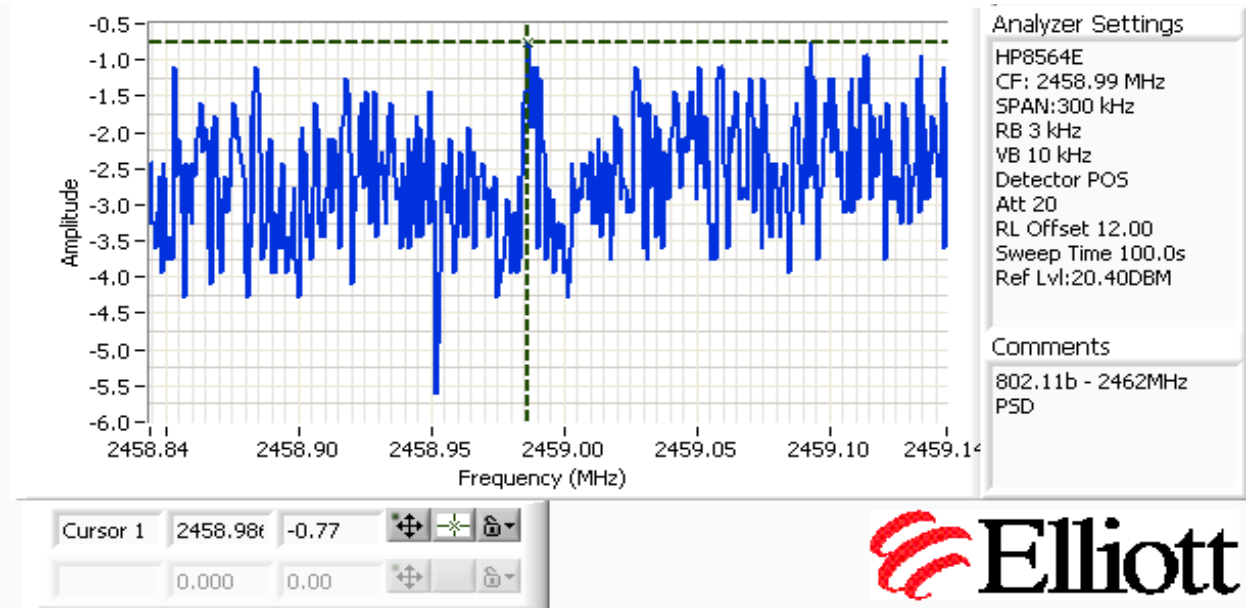
Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1	Limit dBm/3kHz	Result
19	2412	-0.1	8.0	Pass
19	2437	-0.4	8.0	Pass
19	2462	-0.8	8.0	Pass

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



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



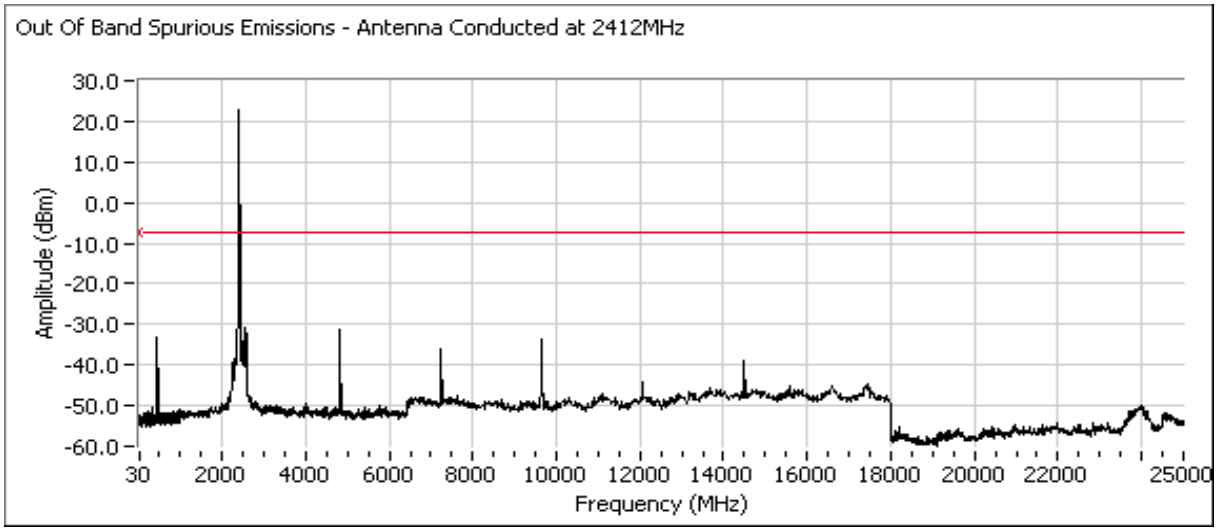


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

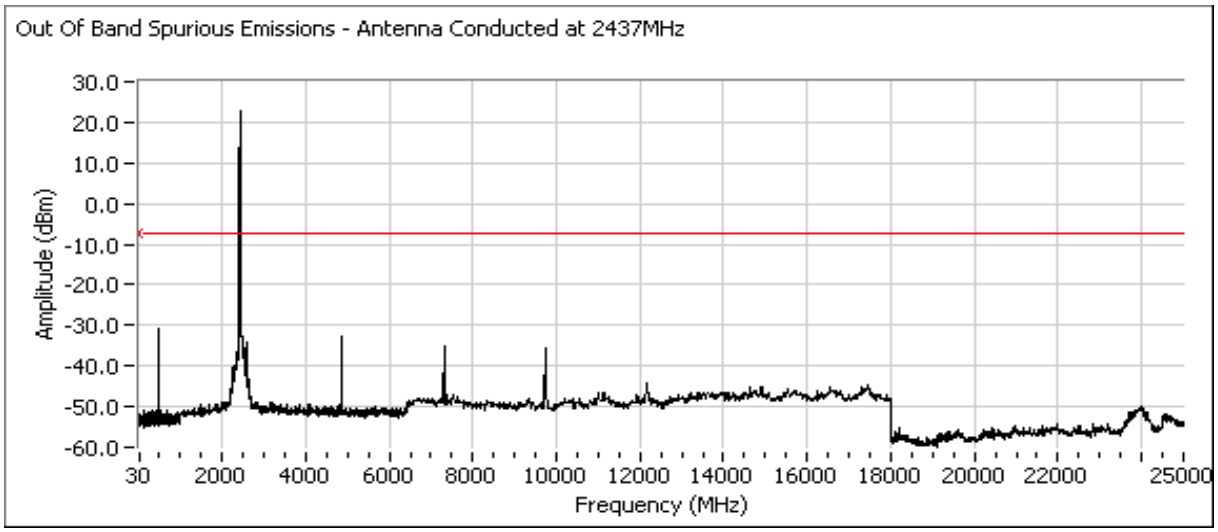
Frequency (MHz)	Limit	Result
2412	-30dBc	Pass
2437	-30dBc	Pass
2462	-30dBc	Pass

Plots for low channel

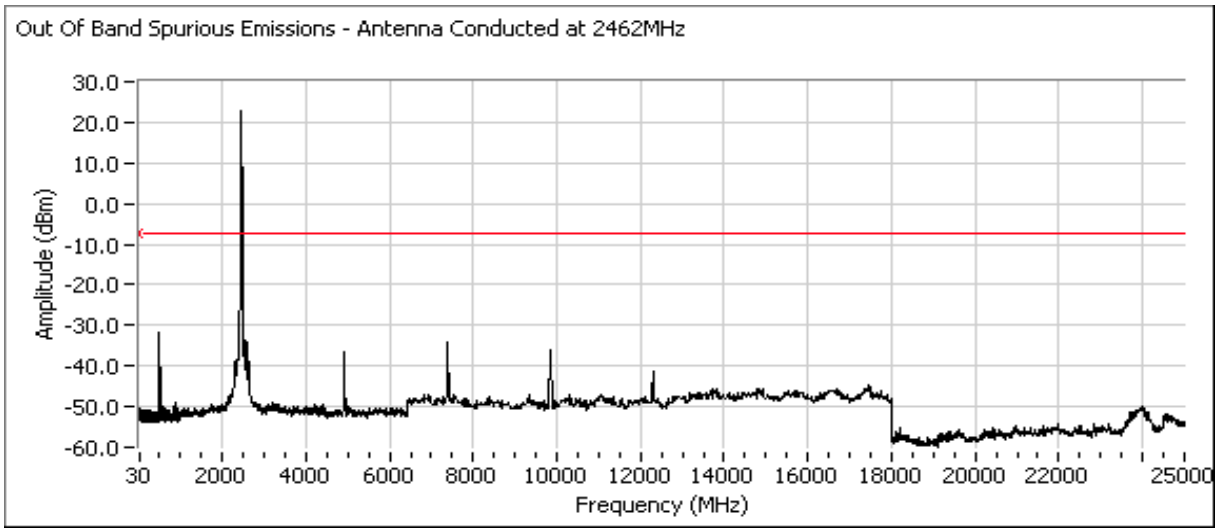


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for center channel



Plots for high channel



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
Power, Bandwidth and Spurious Emissions

Test Specific Details

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

Date of Test: 1/9/2008
Test Engineer: Mehran Birgani
Test Location: FT Chamber #3
Config. Used: 1
Config Change: None
EUT Host Voltage: Powered from Host System

General Test Configuration

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

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

Ambient Conditions:

Temperature: 13 °C
Rel. Humidity: 46 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Output Power	15.247(b)	Pass	18.9 dBm (77.6 mW)
2	6dB Bandwidth	15.247(a)	Pass	16.6 MHz
2	99% Bandwidth	RSS GEN	-	17.6 MHz
3	Power spectral Density (PSD)	15.247(d)	Pass	-3.7 dBm/3kHz
4	Spurious emissions	15.247(b)	Pass	More than 30dB below limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Output Power

Power Setting[2]	Frequency (MHz)	Output Power (dBm)[1]	Output Power mW	Antenna Gain (dBi)	Result	EIRP[Note 2] dBm	EIRP[Note 2] W	Output Power (dBm)[3]	Output Power mW
-	2412	18.9	77.6	3.9	Pass	22.8	0.191		
-	2437	18.8	76.2	3.9	Pass	22.7	0.187		
-	2462	16.8	47.8	3.9	Pass	20.7	0.117		

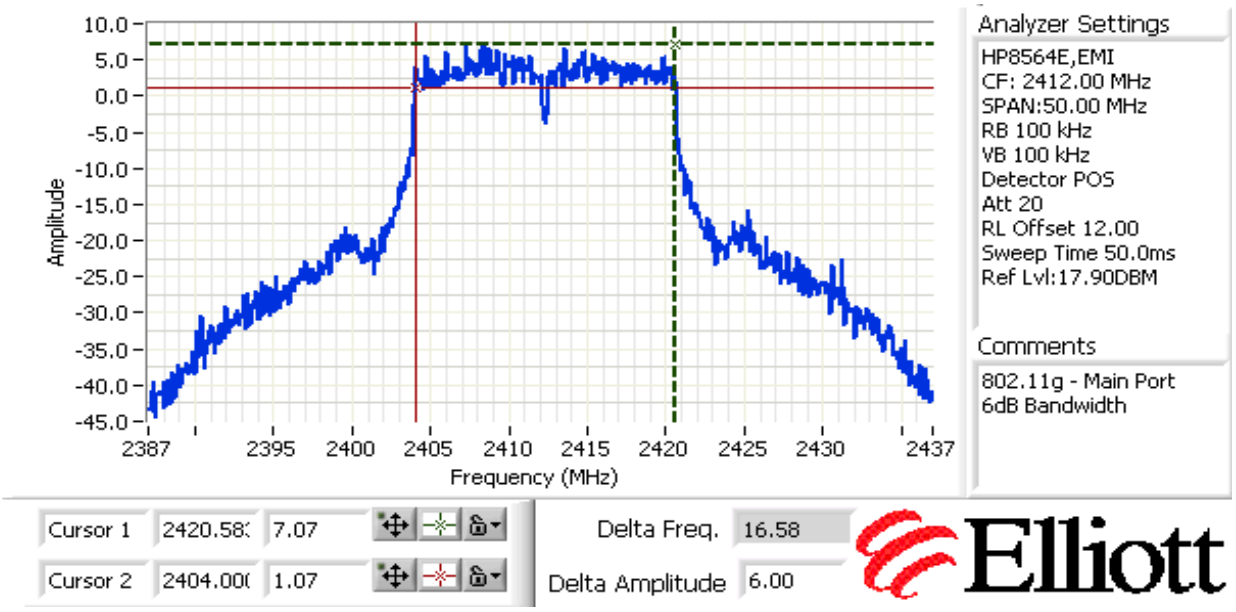
Note 1:	RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was not continuous but the ESI analyzer was configured with a gated sweep such that the analyzer was only sweeping when the device was transmitting) and power integration over 50MHz

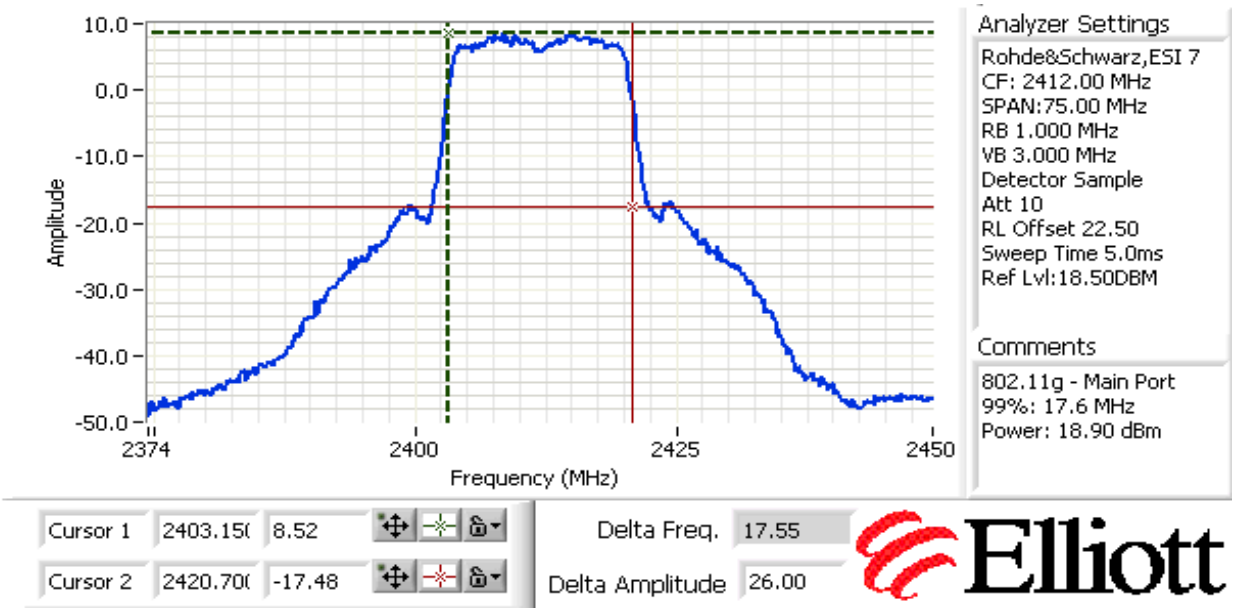
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	Bandwidth (MHz) 99%
-	2412	1MHz	16.6	17.6
-	2437	1MHz	16.5	17.6
-	2462	1MHz	16.5	17.6

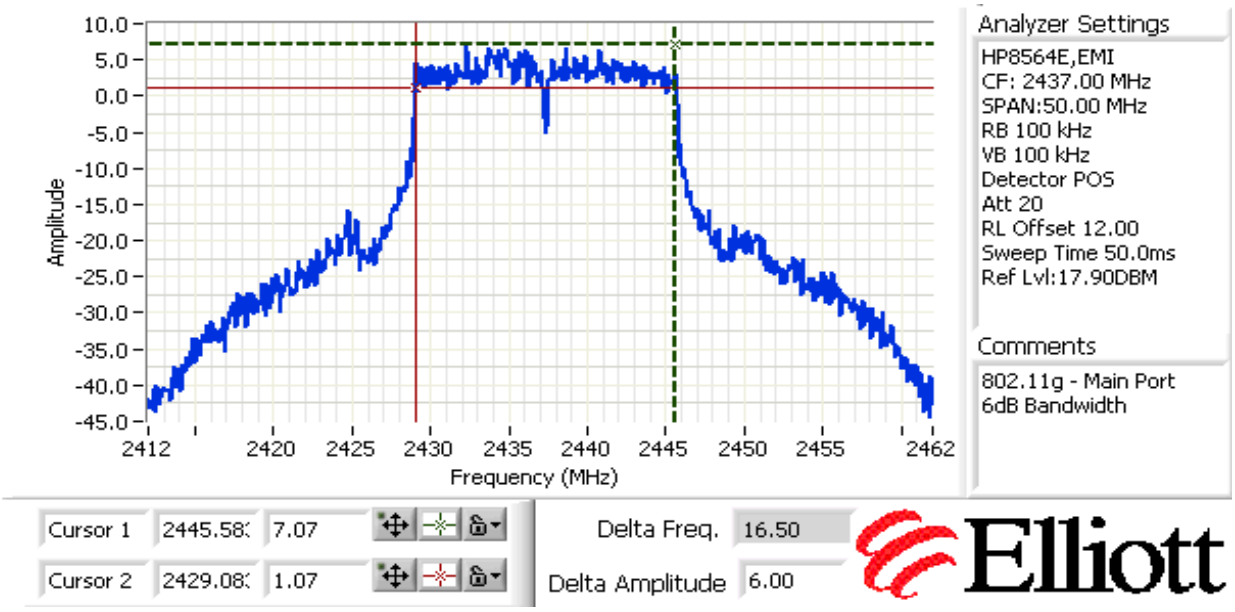
Note 1:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB

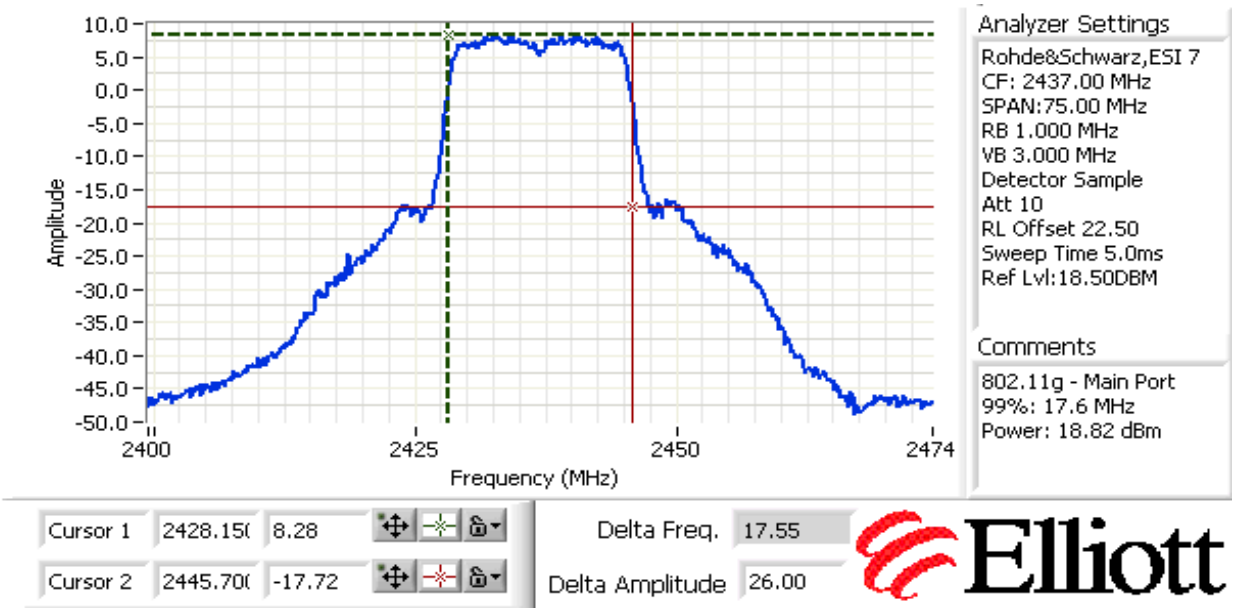
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



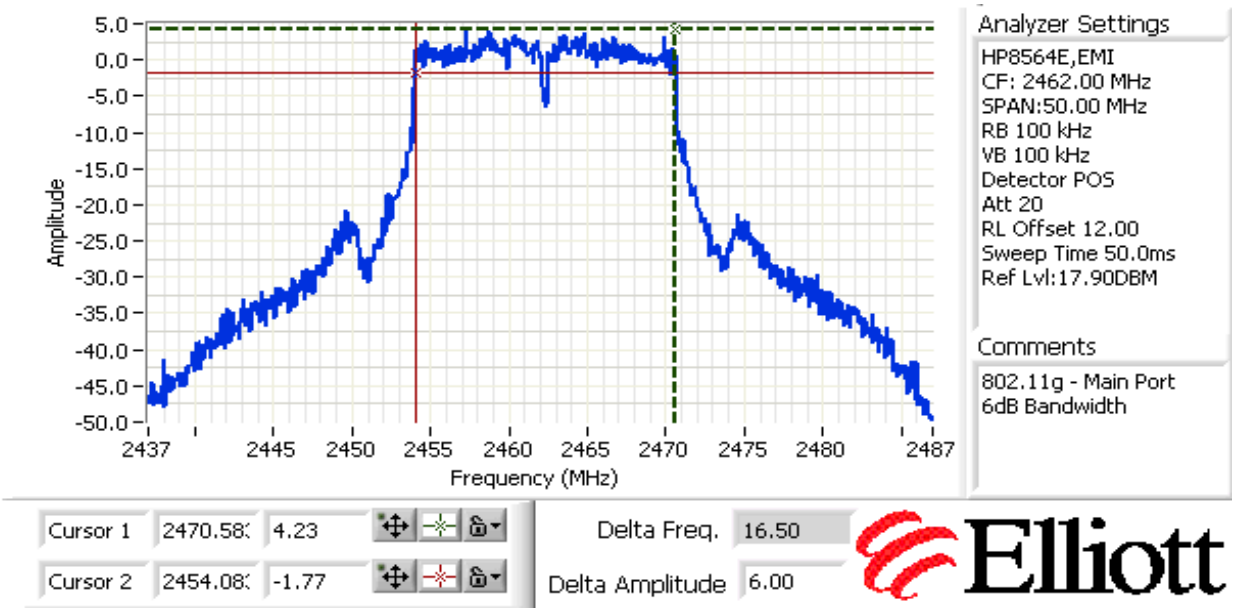


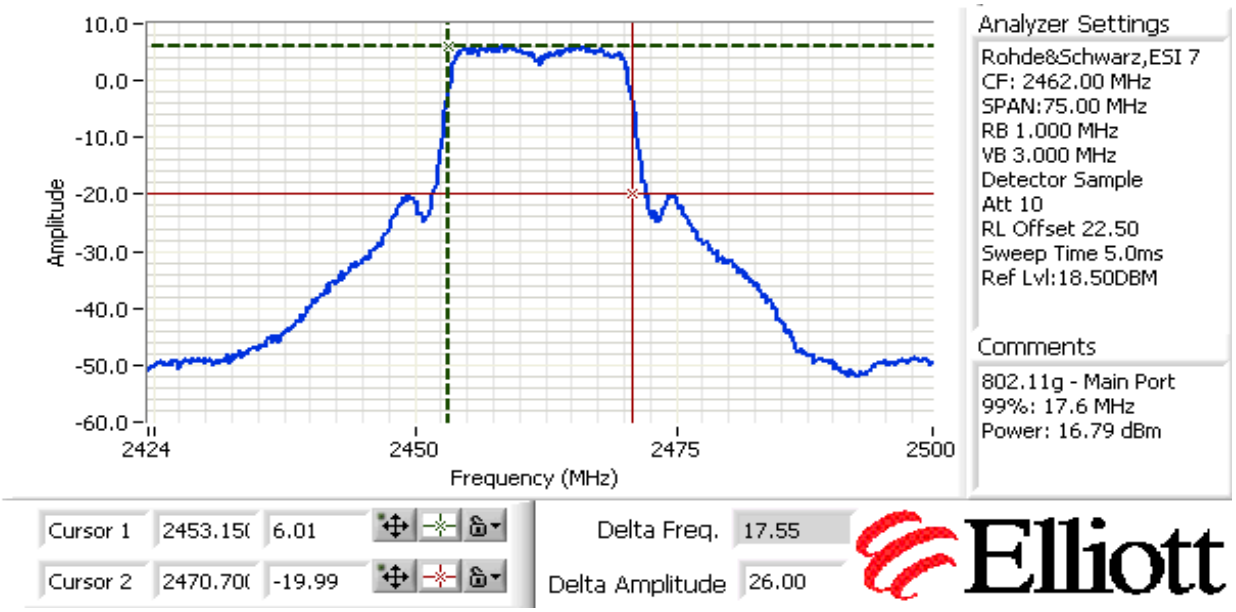
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



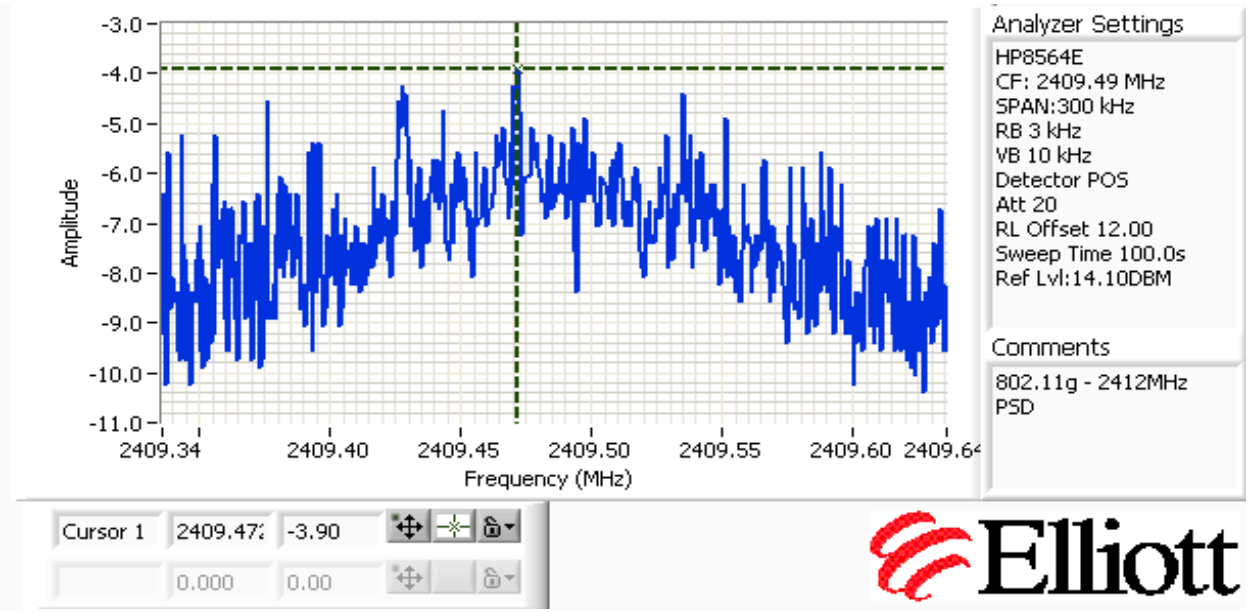


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

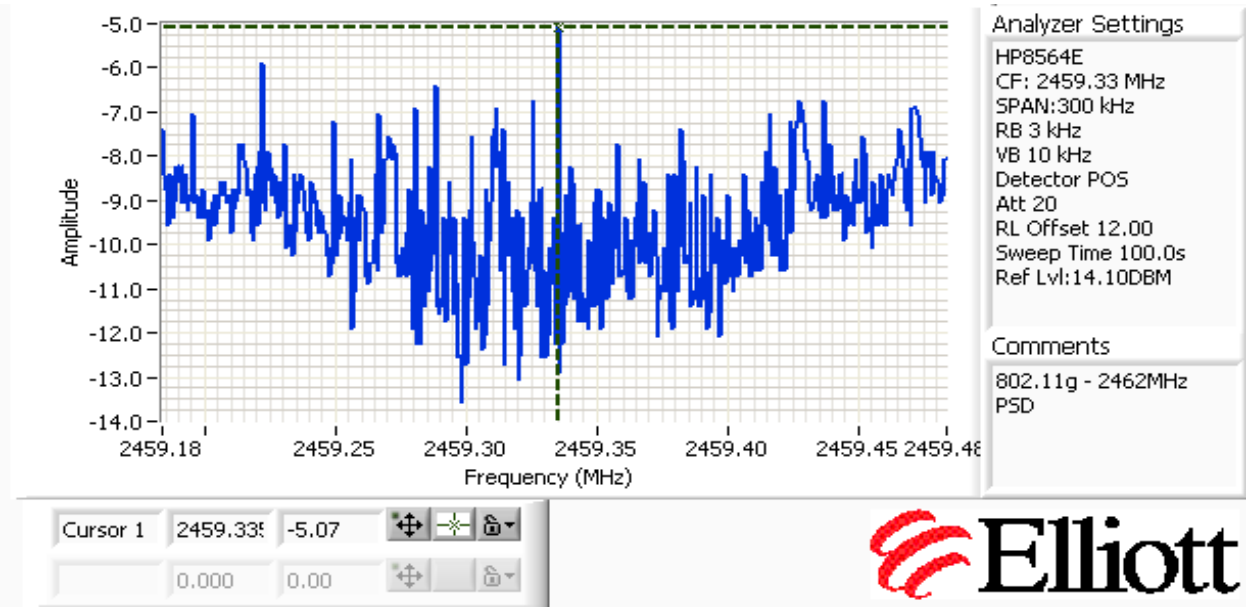
Run #3: Power spectral Density

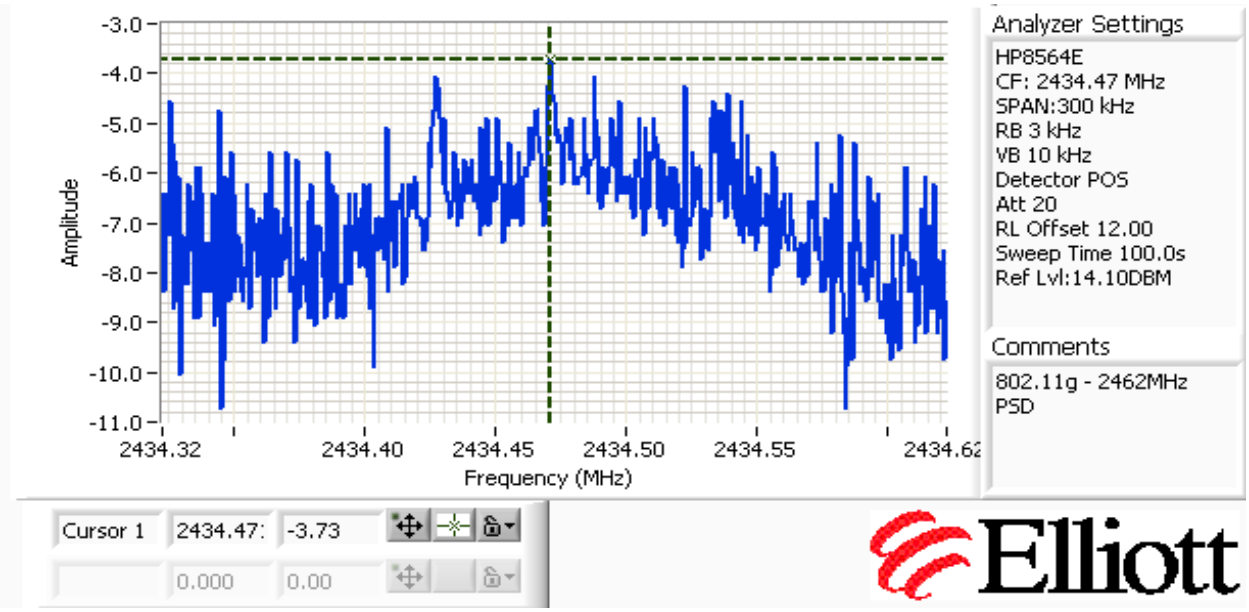
Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1	Limit dBm/3kHz	Result
-	2412	-3.9	8.0	Pass
-	2437	-3.7	8.0	Pass
-	2462	-5.1	8.0	Pass

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



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



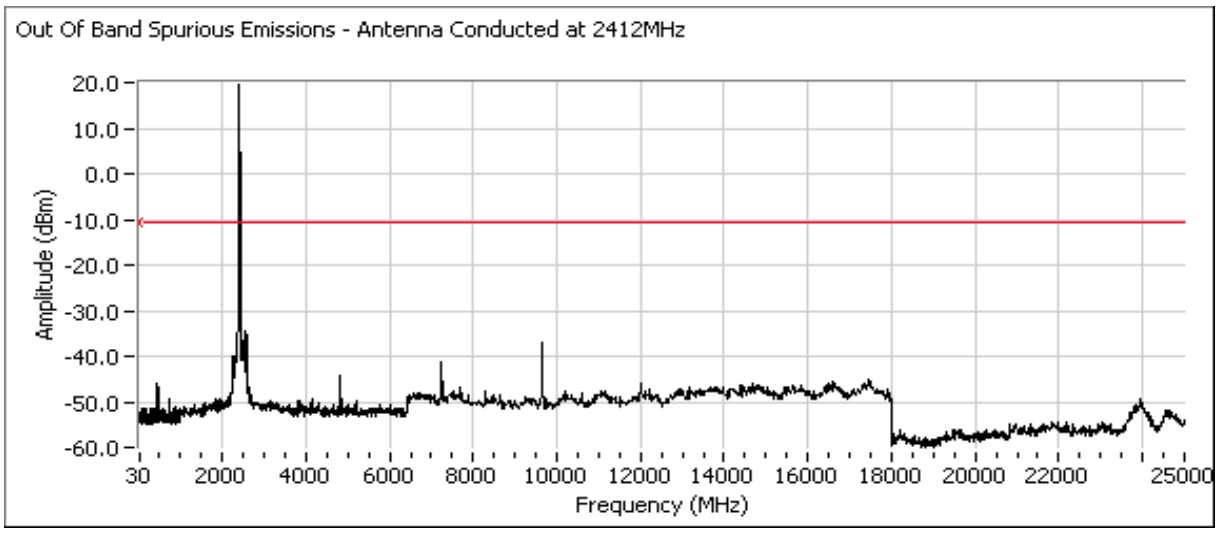


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

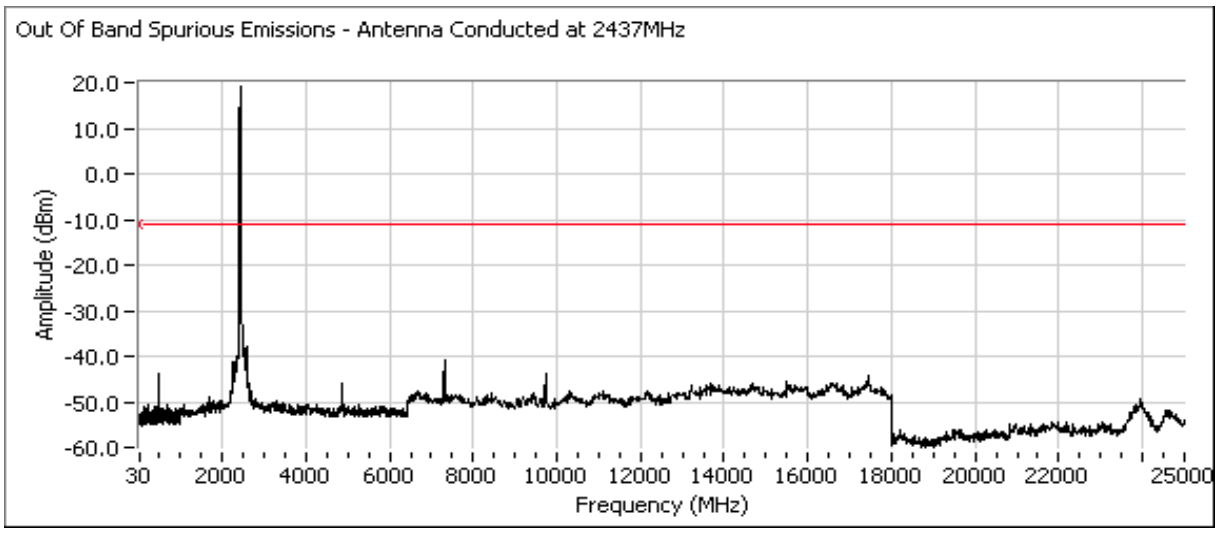
Run #4: Out of Band Spurious Emissions

Frequency (MHz)	Limit	Result
2412	-30dBc	Pass
2437	-30dBc	Pass
2462	-30dBc	Pass

Plots for low channel

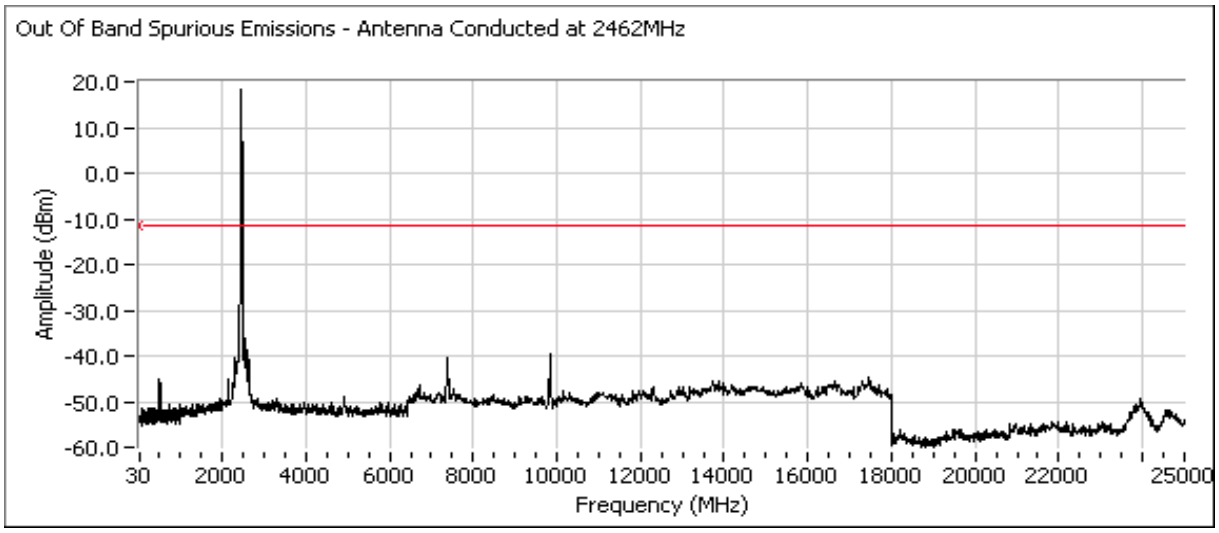


Plots for center channel



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for high channel



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
Power, Bandwidth and Spurious Emissions

Test Specific Details

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

Date of Test: 1/7/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5
Config. Used: 1
Config Change: None
EUT Voltage: Powered From Host System

General Test Configuration

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

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

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 50 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Output Power	15.247(b)	Pass	16.7dBm (46.8mW)
2	Power spectral Density (PSD)	15.247(d)	Pass	-5.5 dBm/3kHz
3	6dB Bandwidth	15.247(a)	Pass	16.43MHz
3	99% Bandwidth	RSS GEN	-	18.4MHz
4	Out of Band Spurious emissions	15.247(b)	Pass	More than 30dB below the limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

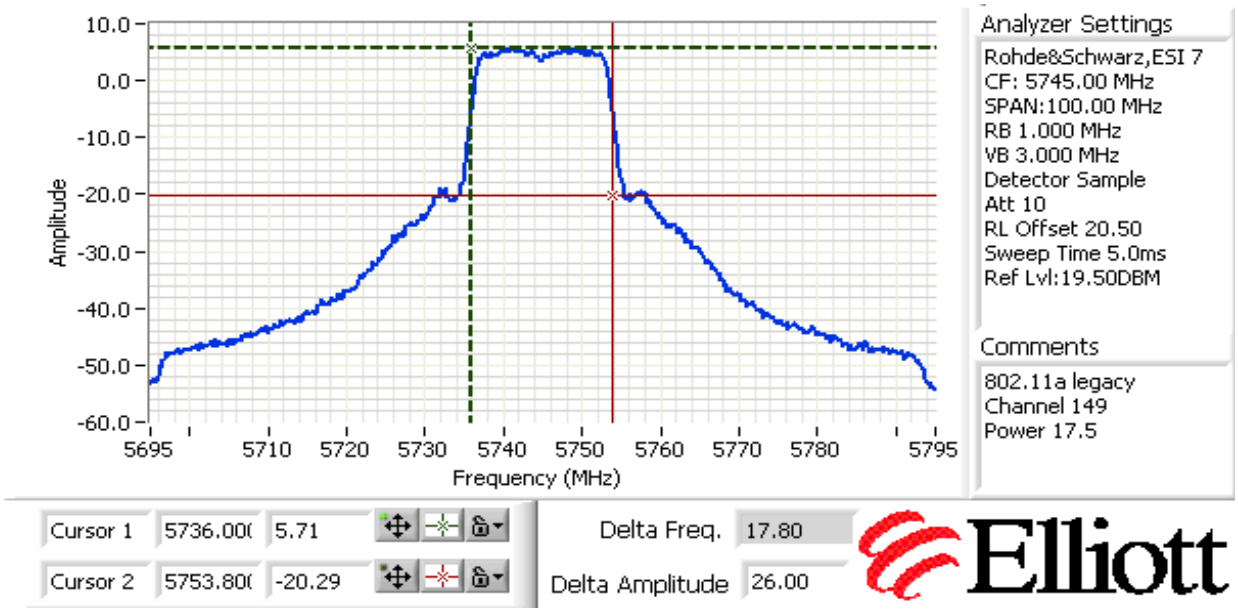
No deviations were made from the requirements of the standard.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

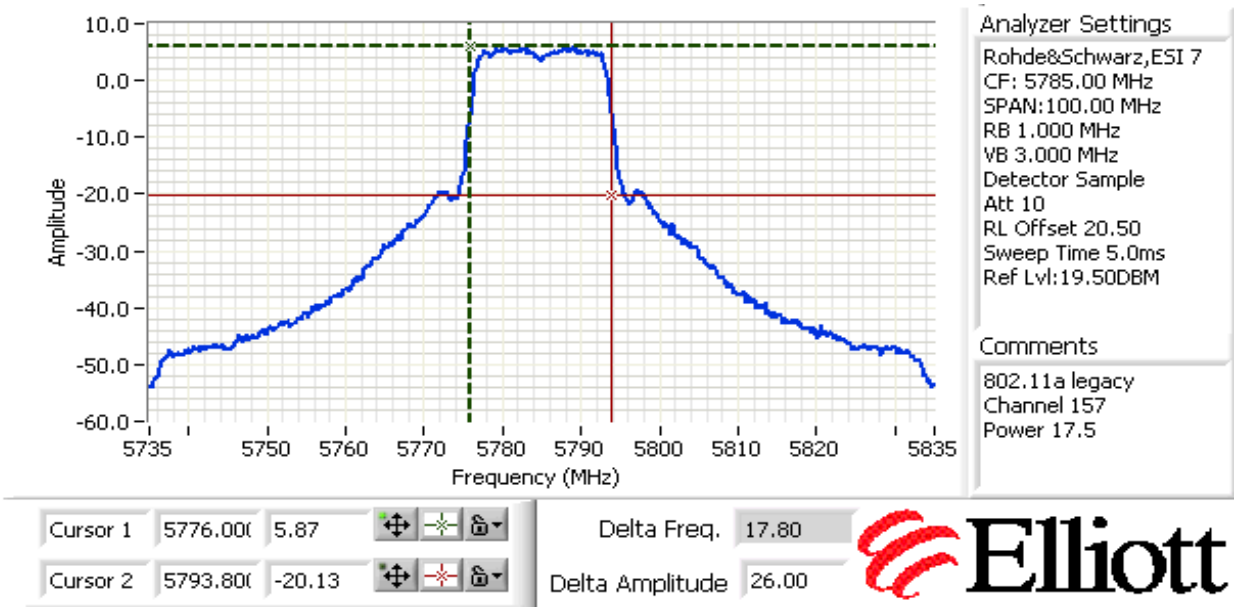
Run #1: Output Power

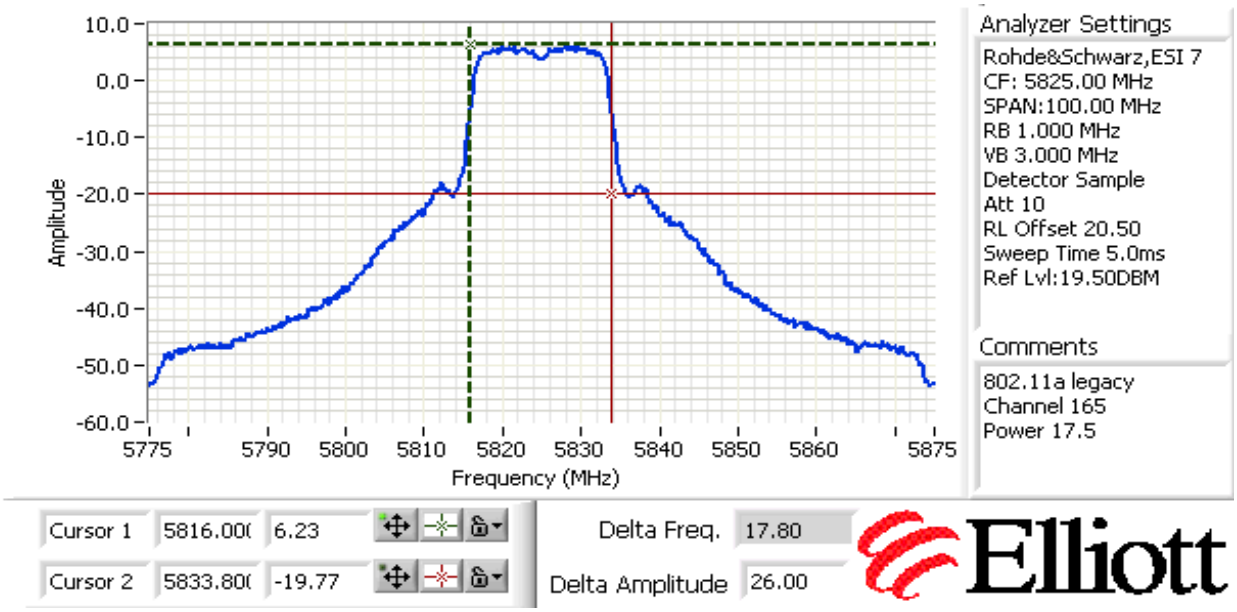
Power Setting	Frequency (MHz)	Output Power (dBm) [1]	Output Power mW	Antenna Gain (dBi)	Result	EIRP dBm	EIRP W	Output Power (dBm) [3]	Output Power mW
-	5745	16.6	45.7	5.8	Pass	22.4	0.174		
-	5785	16.6	45.7	5.8	Pass	22.4	0.174		
-	5825	16.7	46.8	5.8	Pass	22.5	0.178		

Note 1:	RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was not continuous but the ESI analyzer was configured with a gated sweep such that the analyzer was only sweeping when the device was transmitting) and power integration over 3 MHz



Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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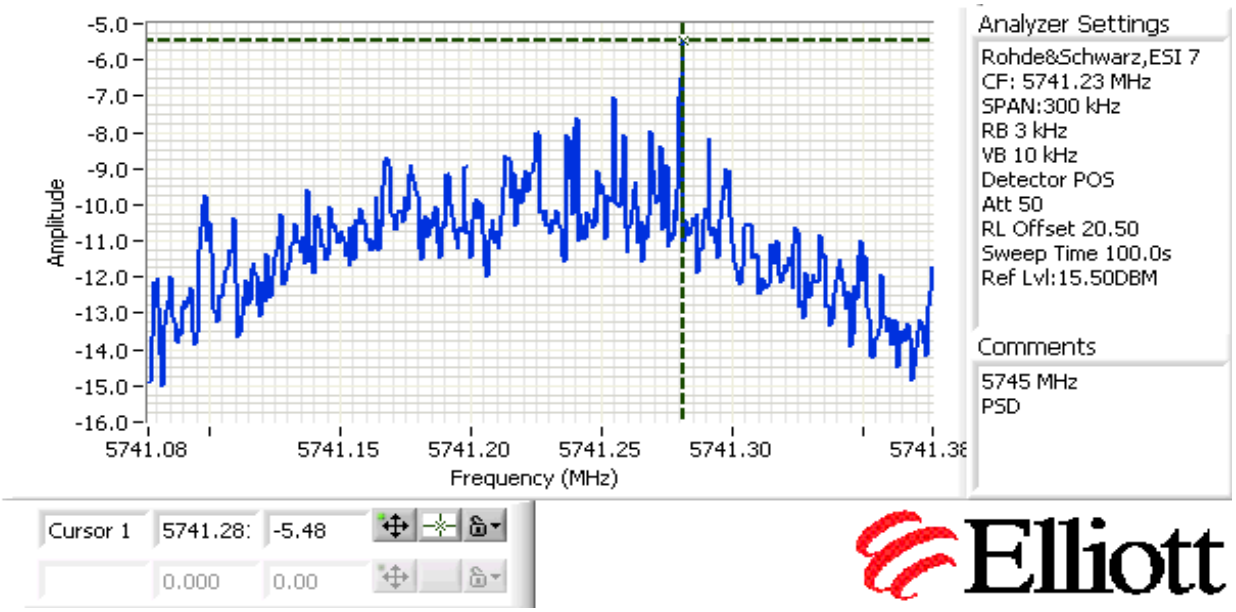
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #2: Power spectral Density

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1	Limit dBm/3kHz	Result
-	5745	-5.5	8.0	Pass
-	5785	-7.2	8.0	Pass
-	5825	-8.5	8.0	Pass

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



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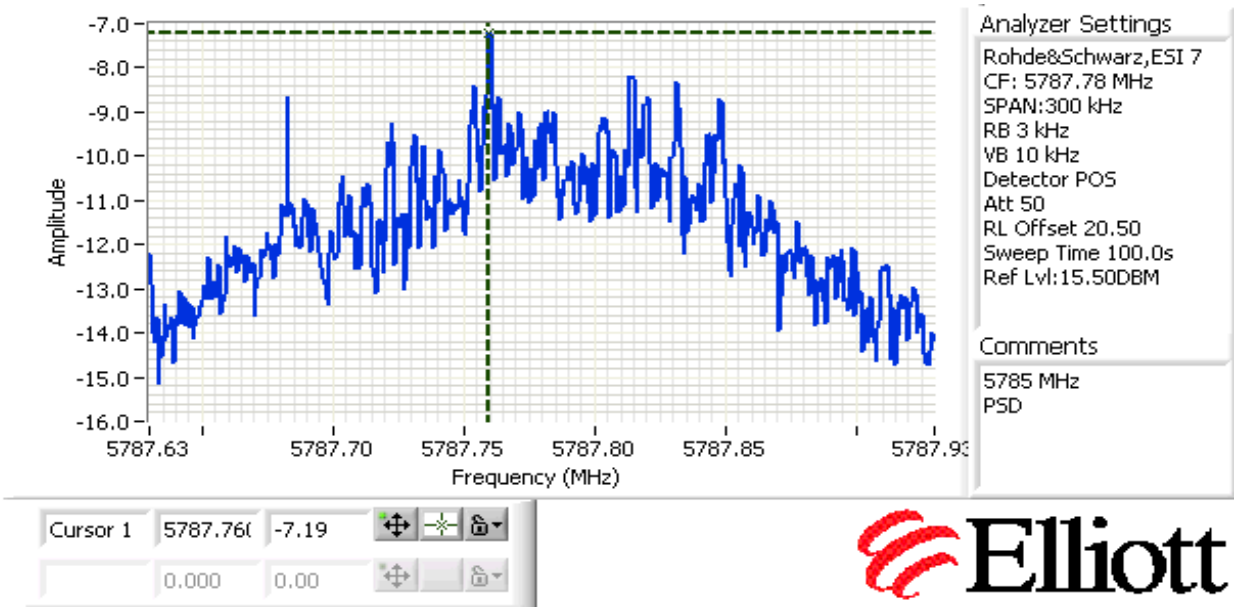
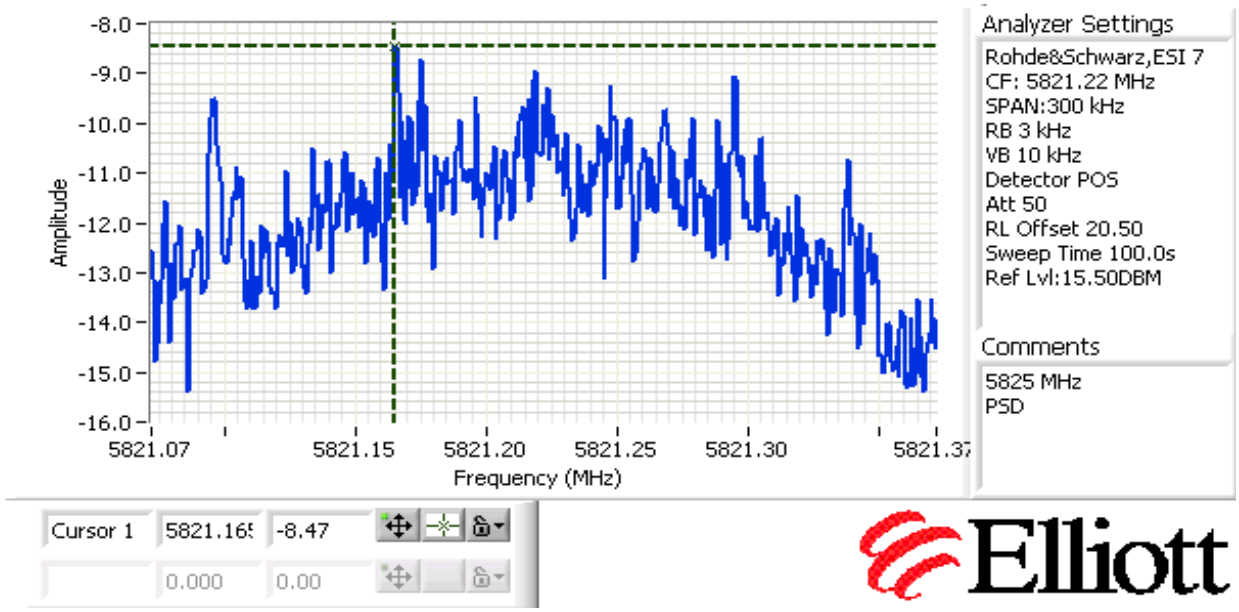
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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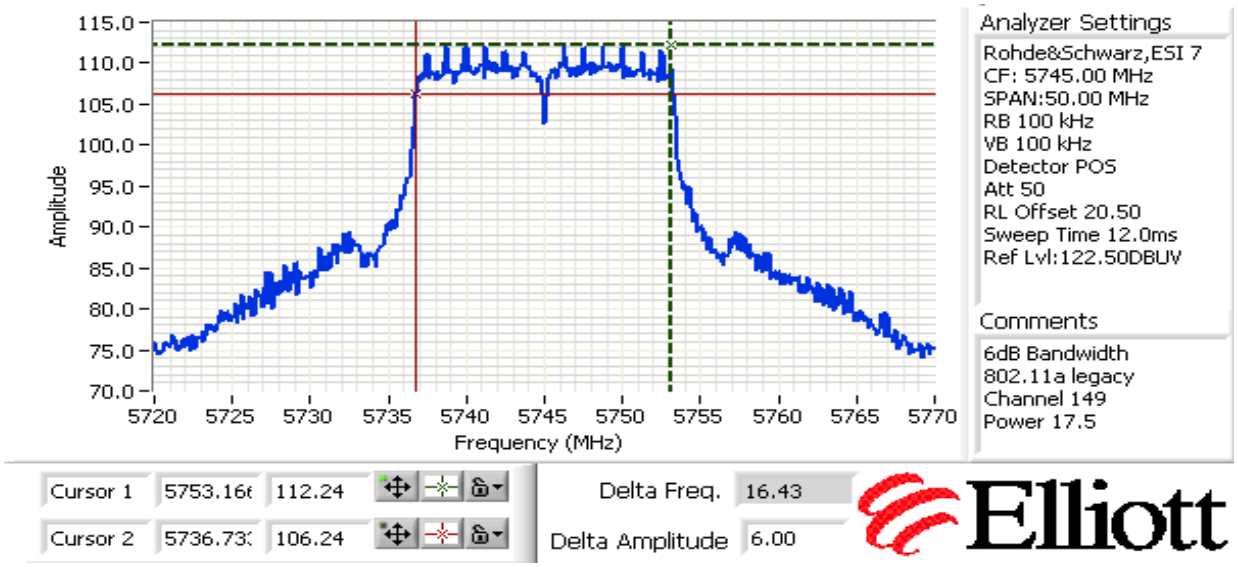
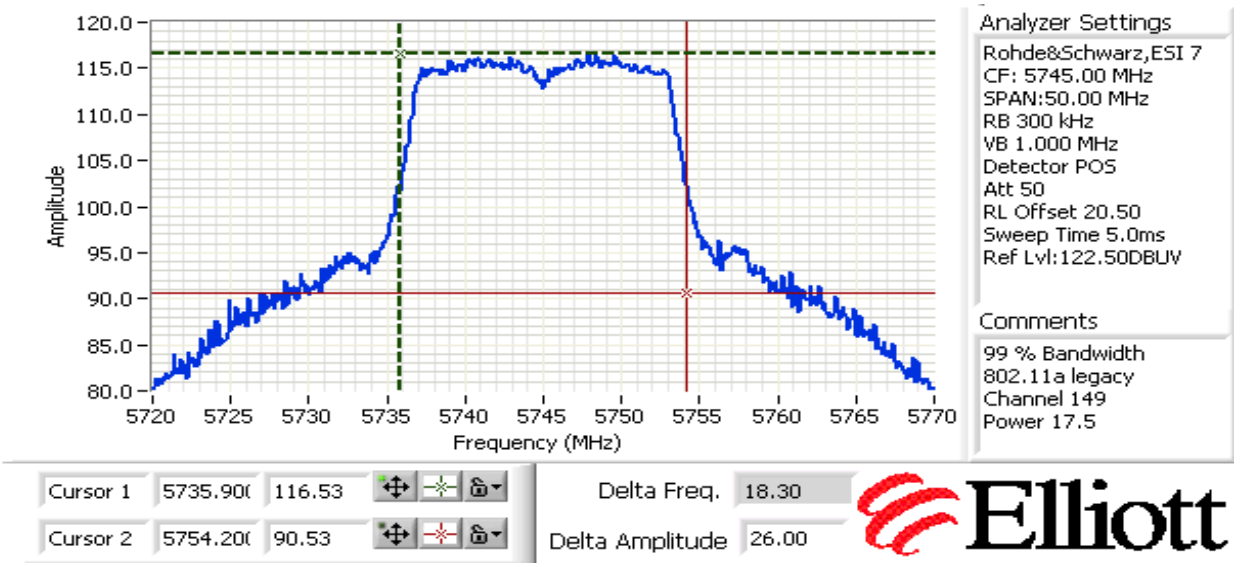
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #3: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	99%
-	5745	100kHz	16.43	18.3
-	5785	100kHz	16.33	18.4
-	5825	100kHz	16.33	18.2

Note 1:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB





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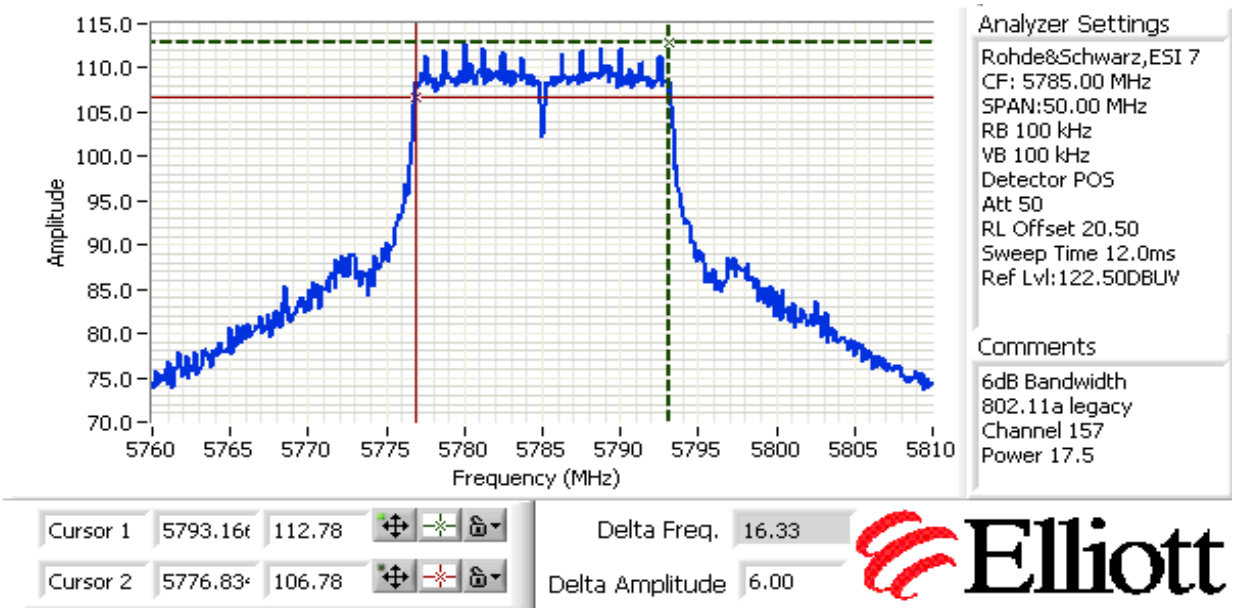
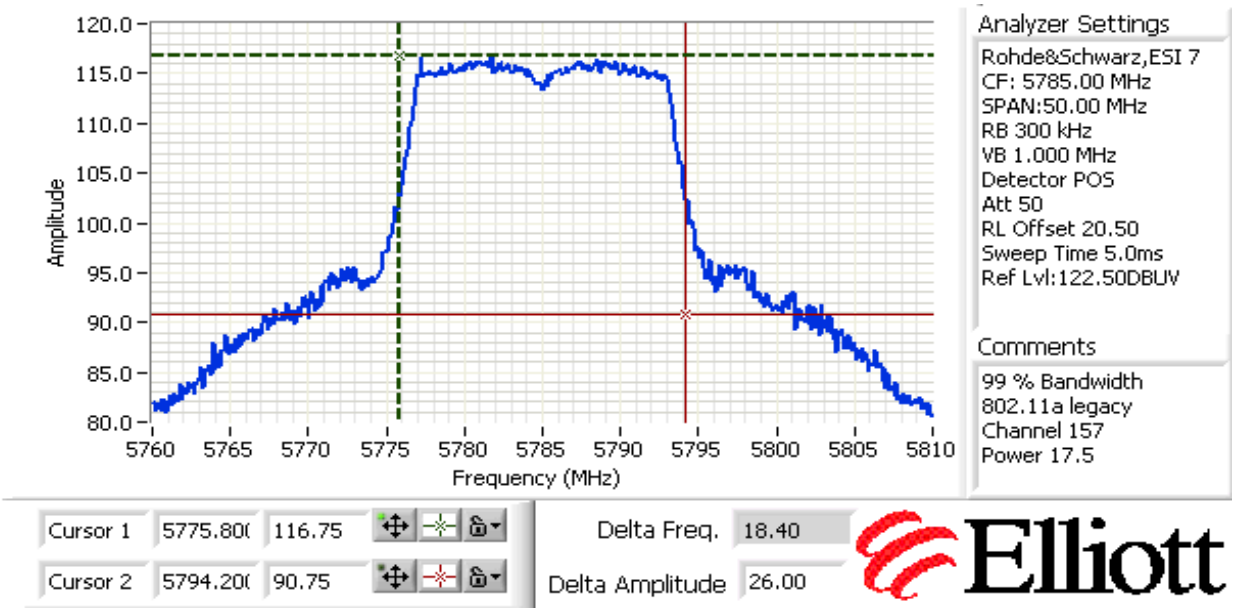
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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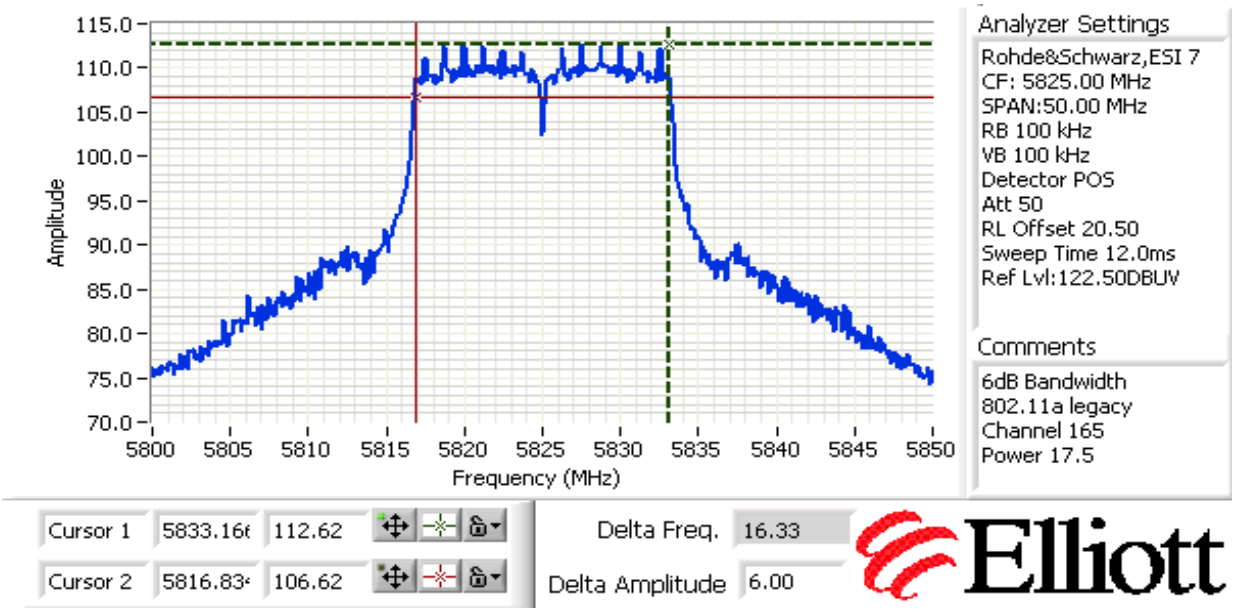

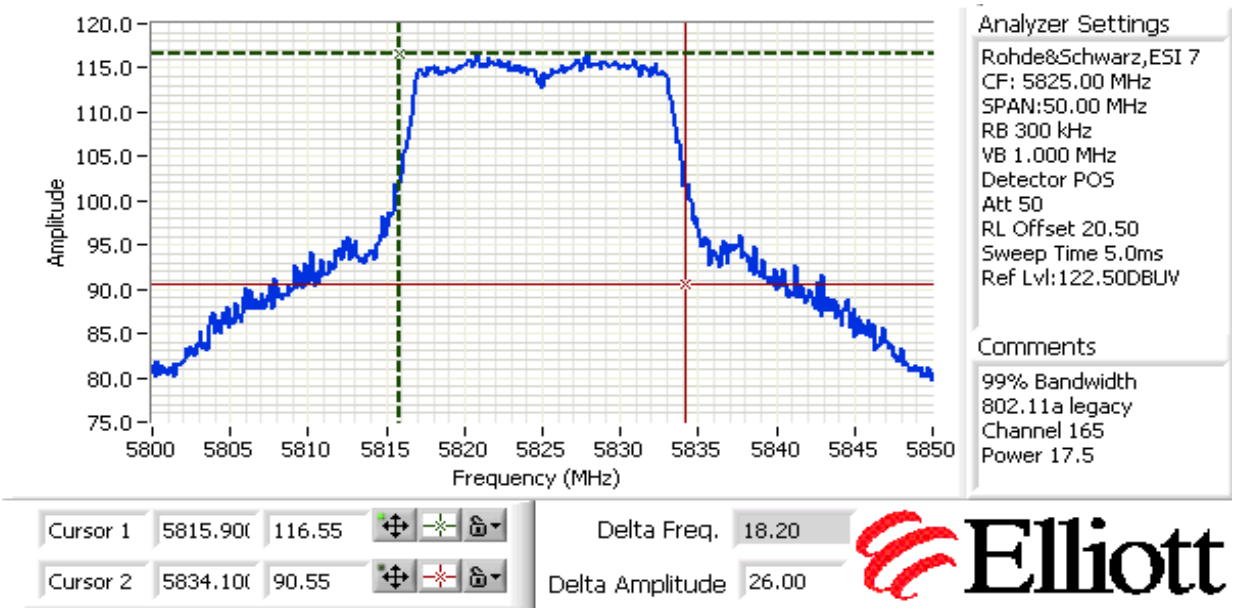

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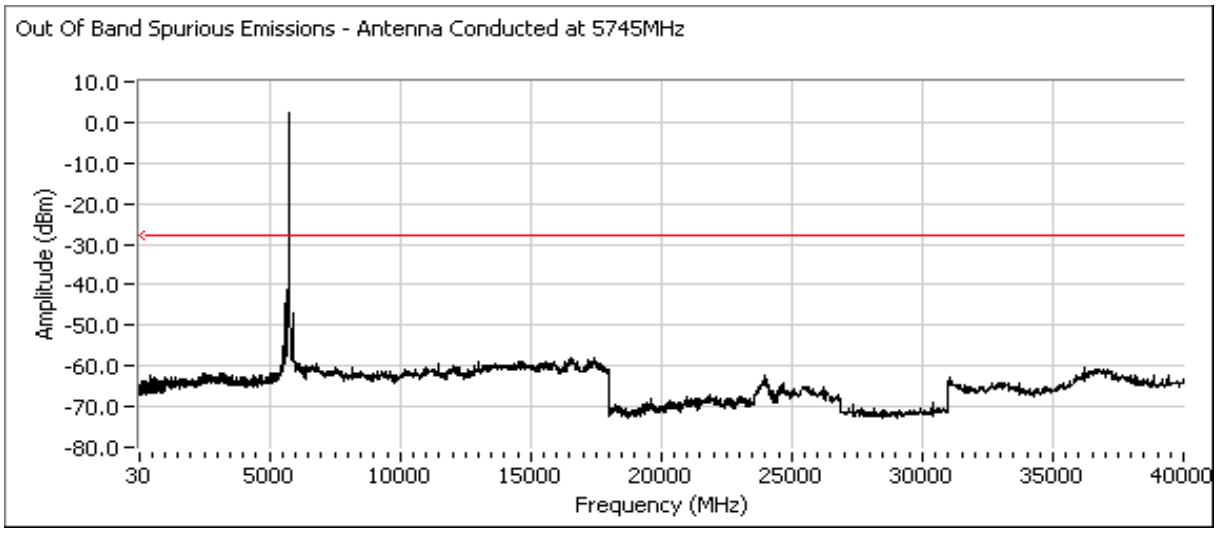
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Frequency (MHz)	Limit	Result
5745	-30dBc	Pass
5785	-30dBc	Pass
5825	-30dBc	Pass

Plots for low channel



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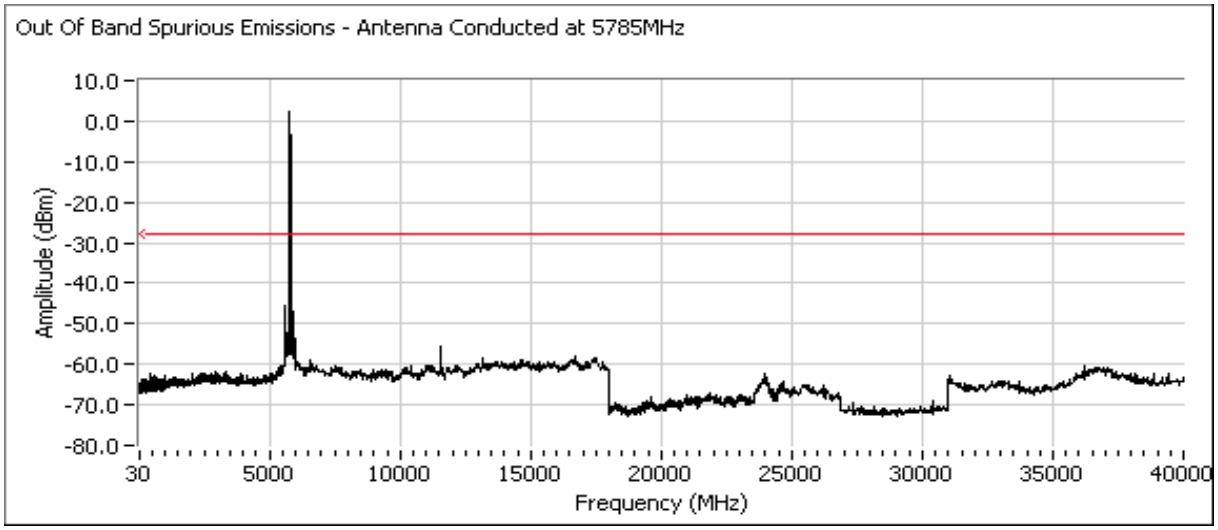
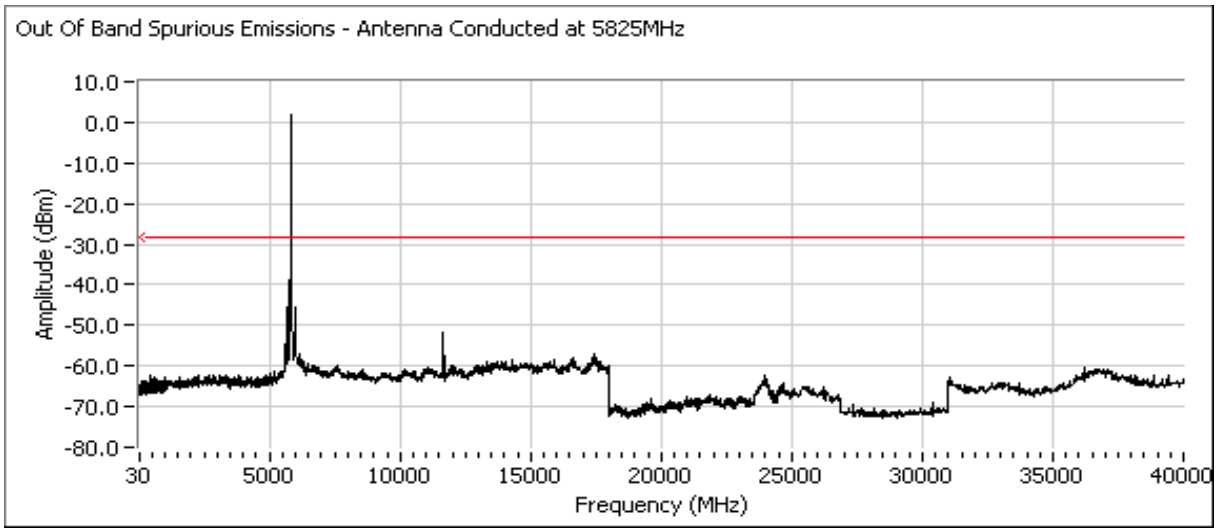
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for mid channel



Plots for high channel



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		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power, Bandwidth and Spurious Emissions

Test Specific Details

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

Date of Test: 1/8/2008
Test Engineer: Mehran Birgani
Test Location: FT Chamber #3
Config. Used: 1
Config Change: None
EUT Host Voltage: Powered from Host System

General Test Configuration

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

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

Ambient Conditions:

Temperature: 12 °C
Rel. Humidity: 63 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Output Power (2412-2462 MHz)	15.247(b)	Pass	21.8 dBm (151.4 mW)
1	Output Power (5745-5825 MHz)	15.247(b)	Pass	19.8 dBm (95.5 mW)
2	6dB Bandwidth (2412-2462 MHz)	15.247(a)	Pass	17.8 MHz
2	6dB Bandwidth (5745-5825 MHz)	15.247(a)	Pass	17.8 MHz
2	99% Bandwidth (2412-2462 MHz)	RSS GEN	-	18.8 MHz
2	99% Bandwidth (5745-5825 MHz)	RSS GEN	-	18.8 MHz
3	Power spectral Density (PSD) (2412-2462 MHz)	15.247(d)	Pass	-2.7 dBm/3kHz
3	Power spectral Density (PSD) (5475-5825 MHz)	15.247(d)	Pass	-7.4 dBm/3kHz
4	Spurious emissions	15.247(b)	Pass	More than 20dB below limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

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Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

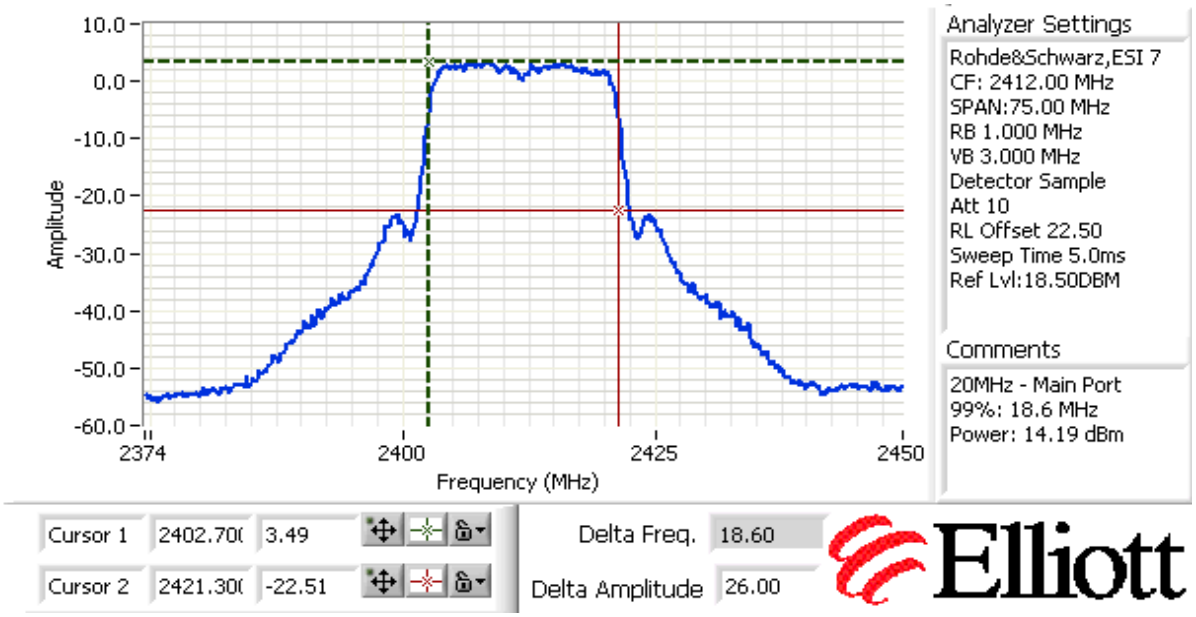
Run #1: Output Power

Transmitted signal on chain is coherent ? Yes

Regulatory Power Measurements:

Power Setting[4]	Frequency (MHz)	Output Power (dBm) Note 1			Antenna Gain (dBi) Note 3			EIRP Note 2	
		Chain 1	Chain 2	Total	Chain 1	Chain 2	Total	dBm	W
-	2412	14.2	13.8	17.0	3.9	3.9	6.9	23.9	0.247
-	2437	18.9	18.6	21.8	3.9	3.9	6.9	28.7	0.739
-	2462	13.9	13.3	16.7	3.9	3.9	6.9	23.6	0.228
-	5745	16.8	16.8	19.8	5.8	5.8	8.8	28.6	0.725
-	5785	16.1	16.8	19.4	5.8	5.8	8.8	28.3	0.669
-	5825	16.4	16.7	19.6	5.8	5.8	8.8	28.4	0.686

Note 1:	RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was not continuous but the ESI analyzer was configured with a gated sweep such that the analyzer was only sweeping when the device was transmitting) and power integration over 50 MHz
Note 2:	EIRP - if transmit chains are coherent then the EIRP is calculated from the sum of the antenna gains plus the total power (i.e. beam-forming is assumed because of coherency on the chains). If the individual chains are incoherent then the EIRP is calculated from the sum of the individual EIRPs for each chain.
Note 3:	If the transmit chains are coherent then the total system antenna gain is the sum of the numeric gains for each antenna. If the transmit chains are incoherent then the system antenna gain is not applicable as each transmit chain can be treated independently.



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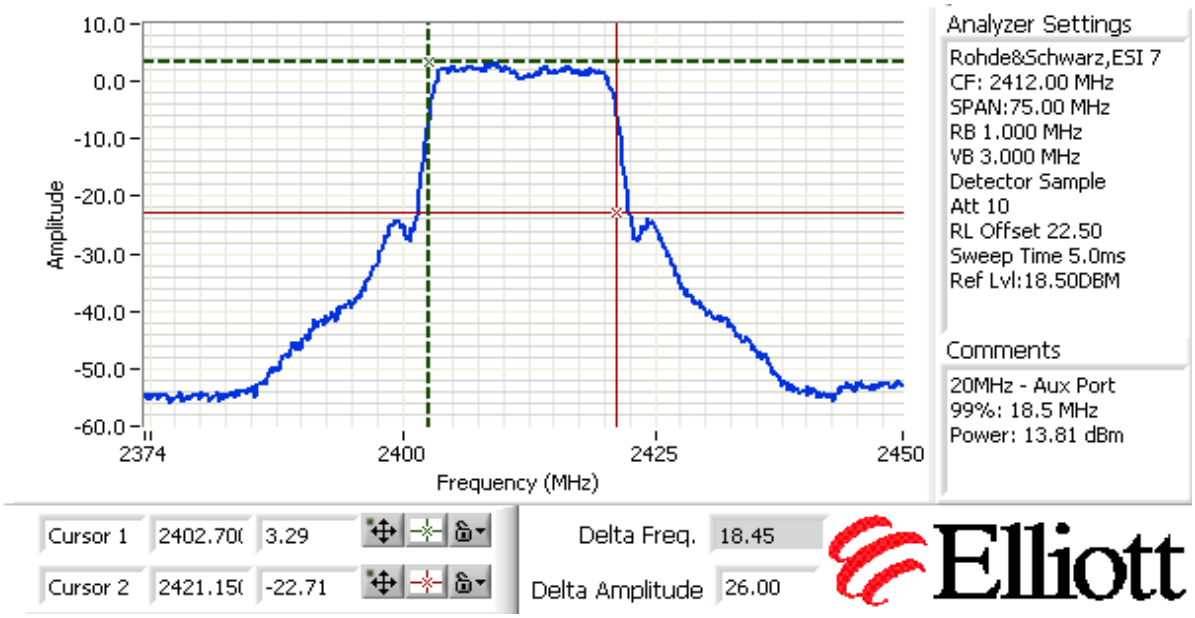

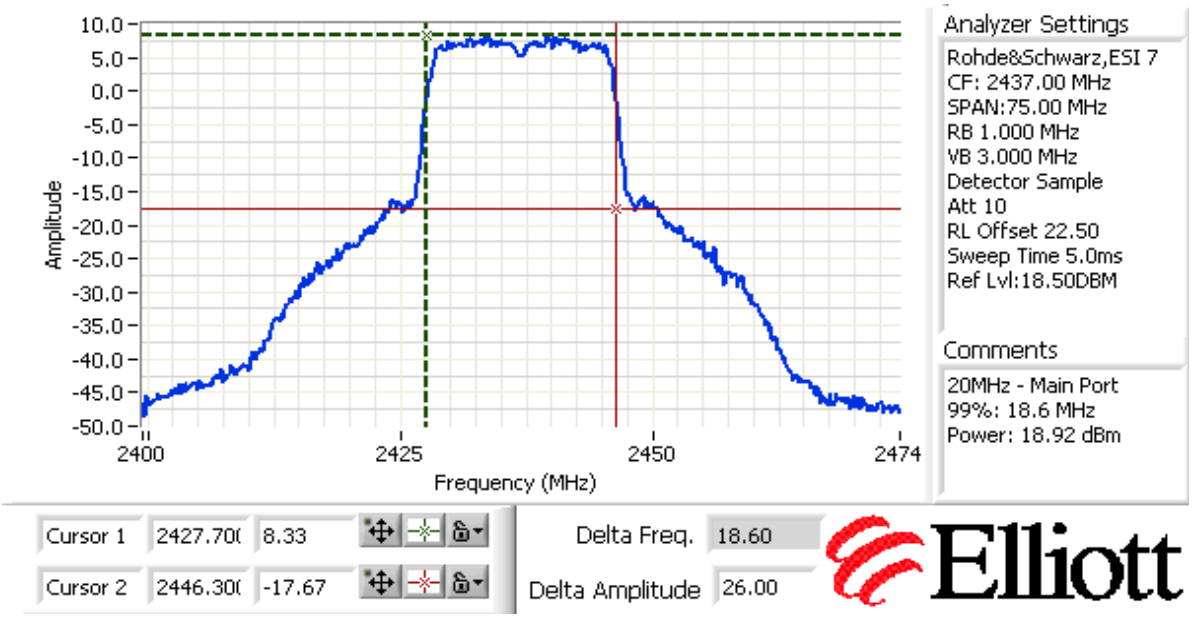

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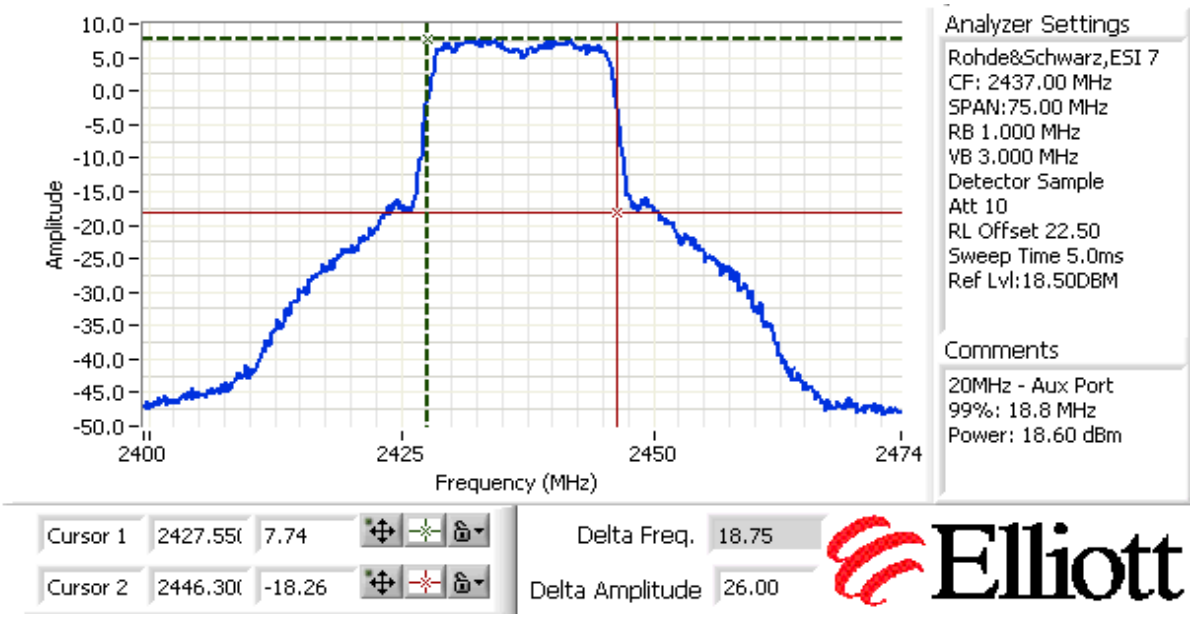

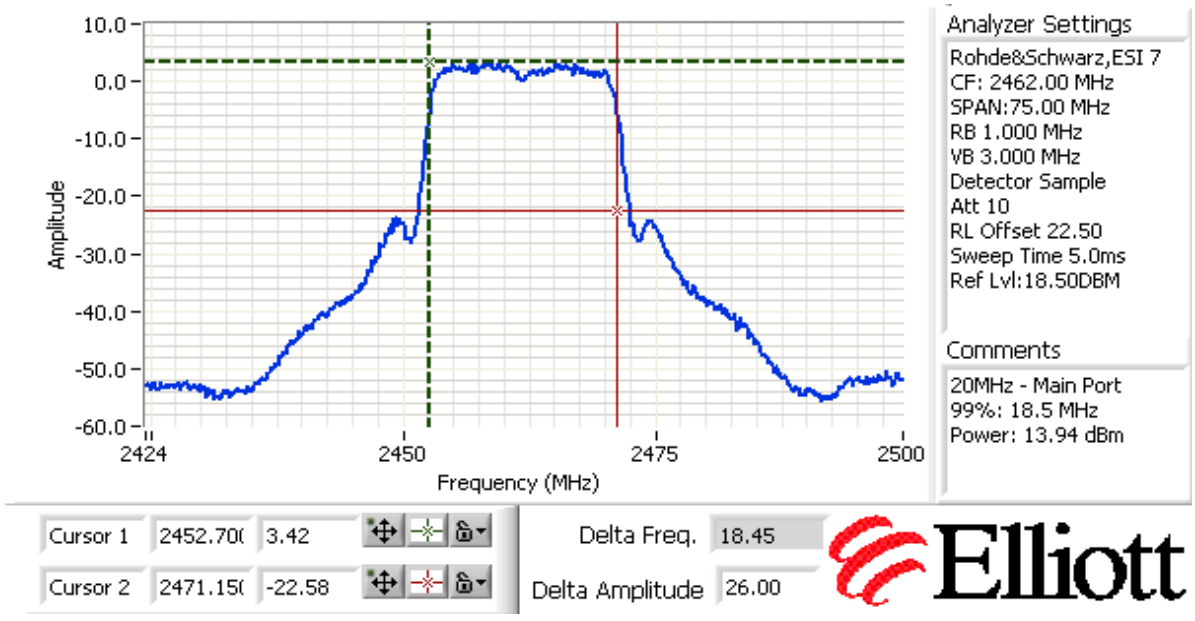

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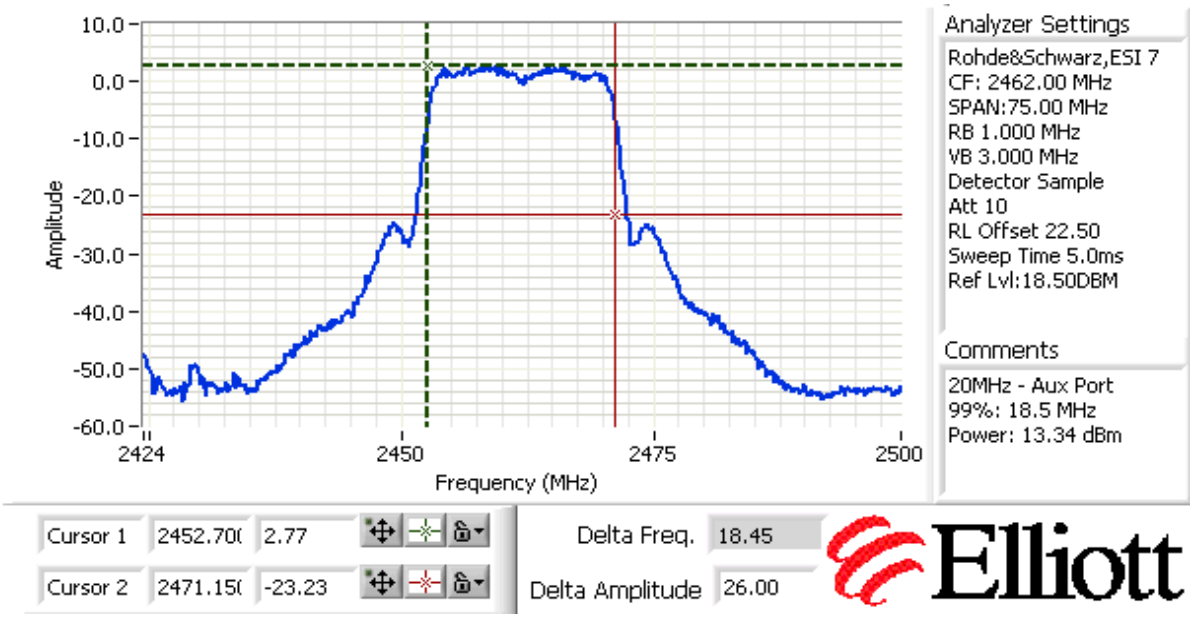

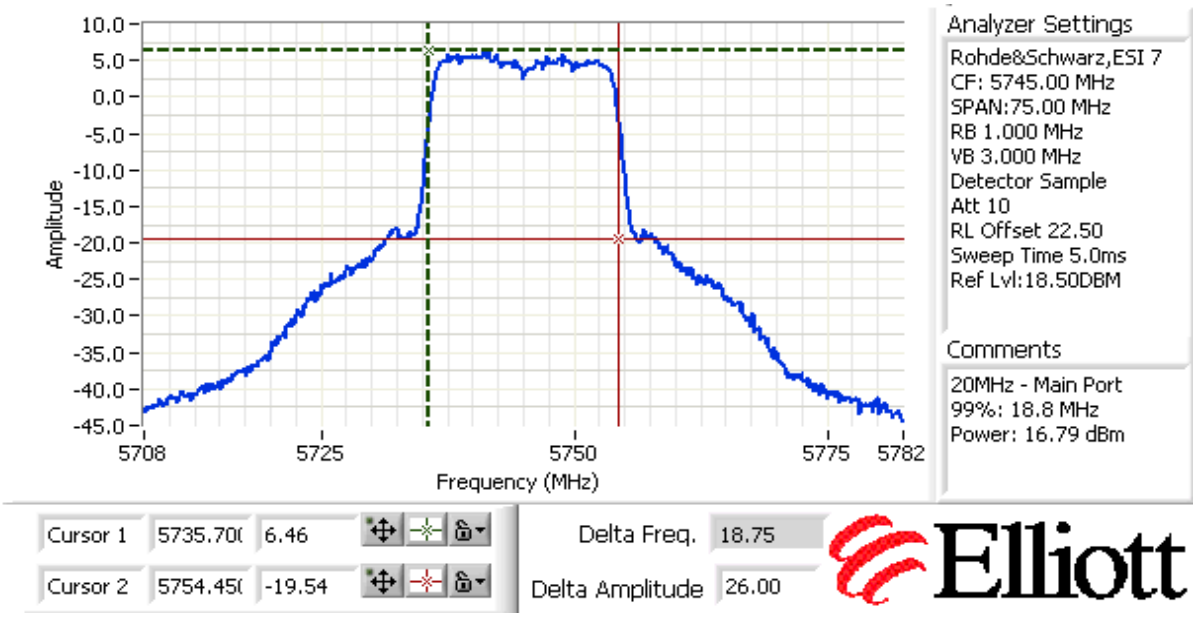

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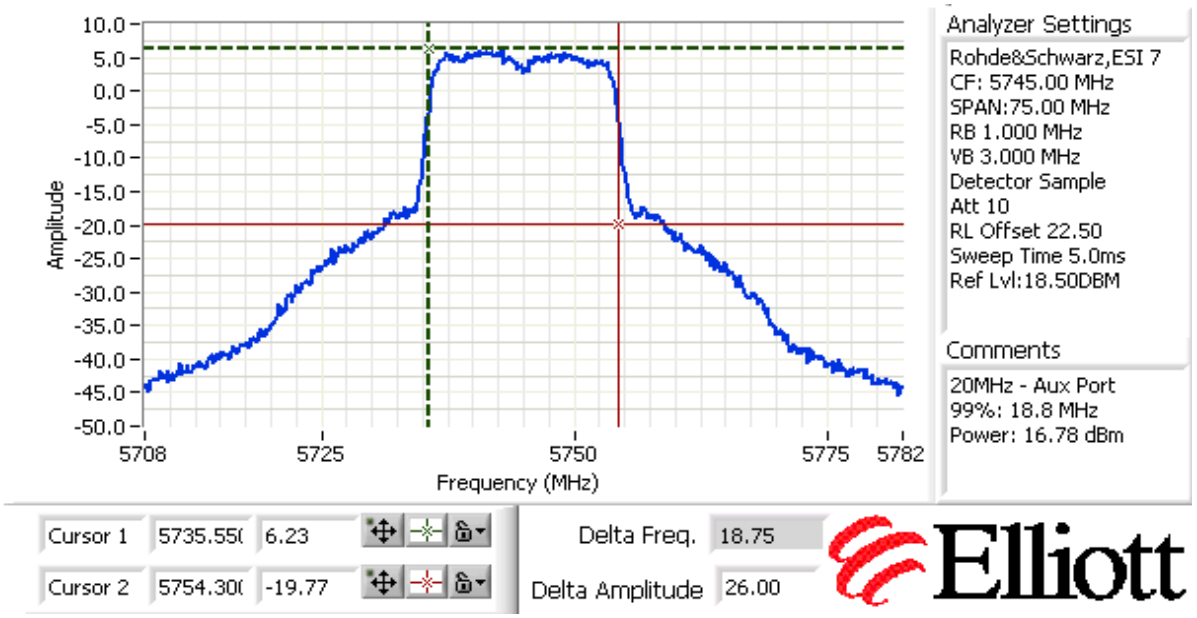

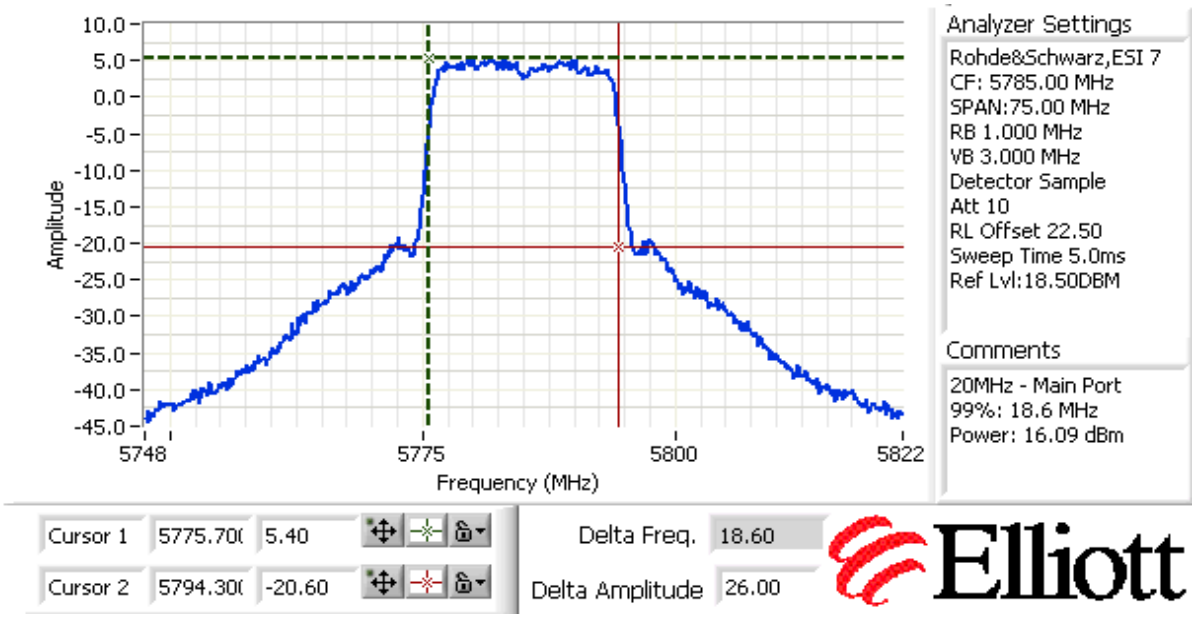

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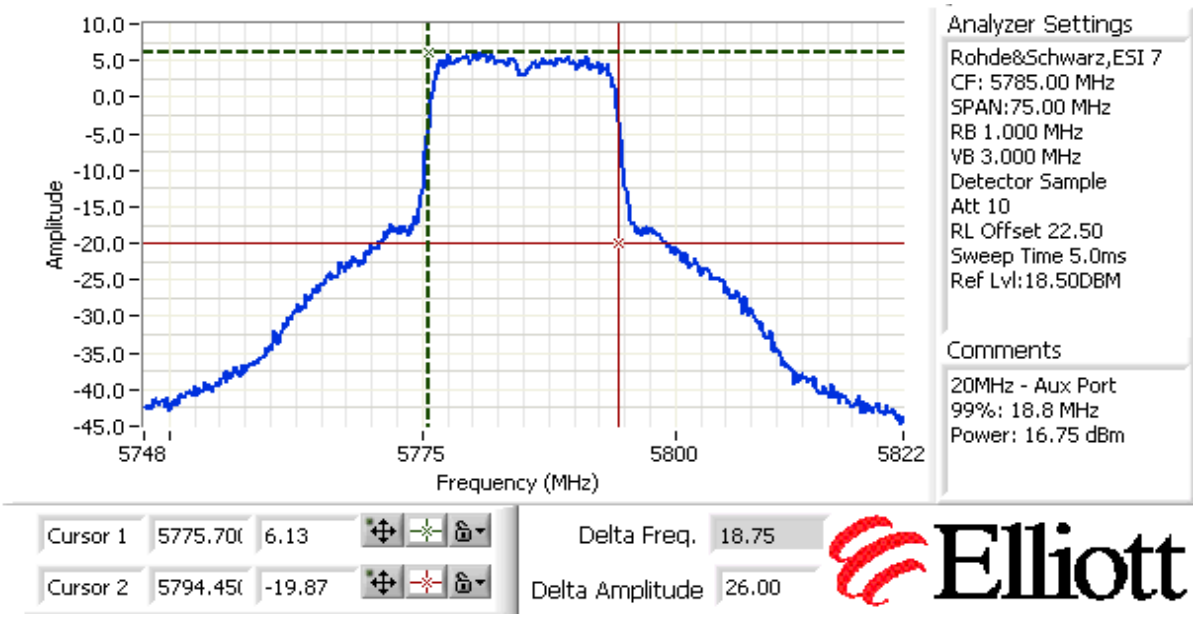

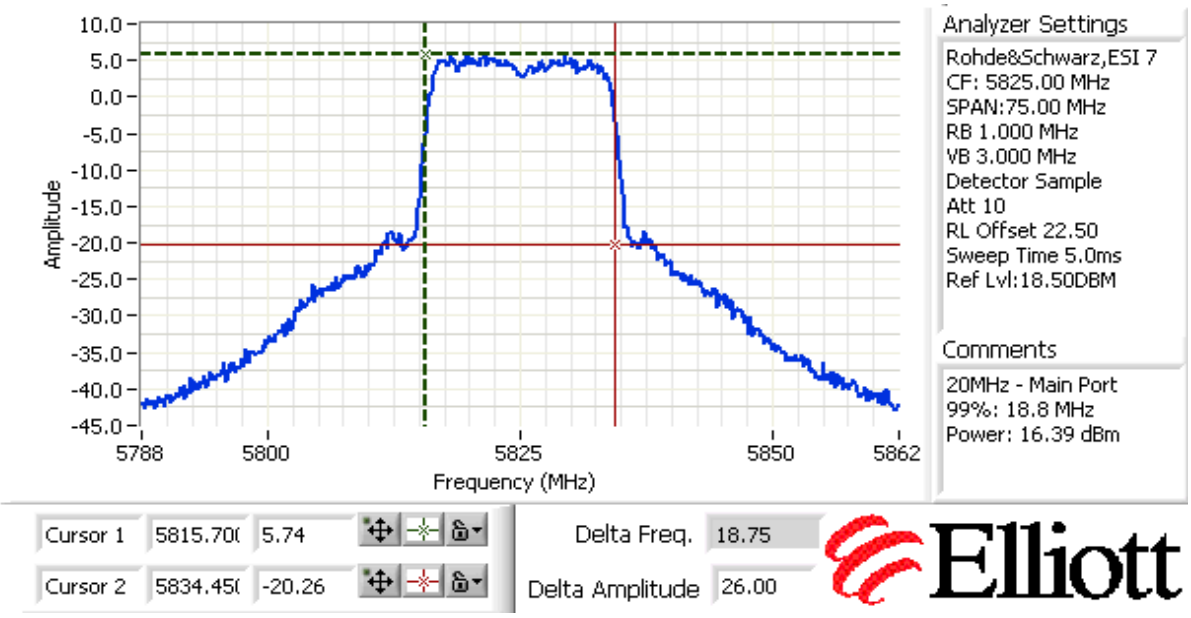

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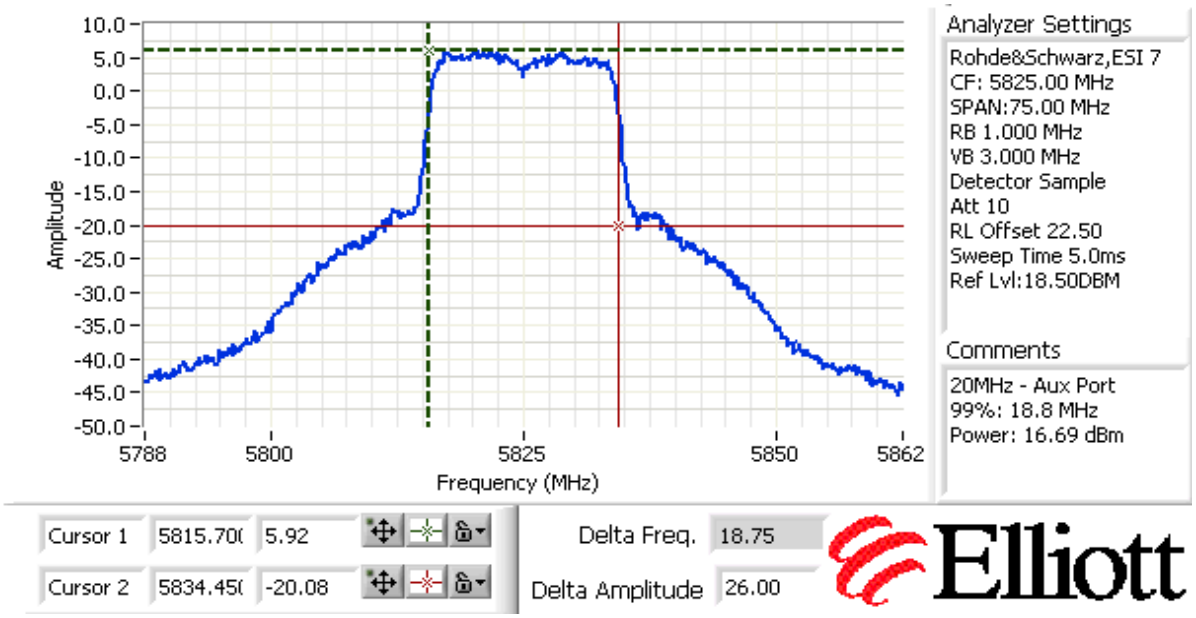

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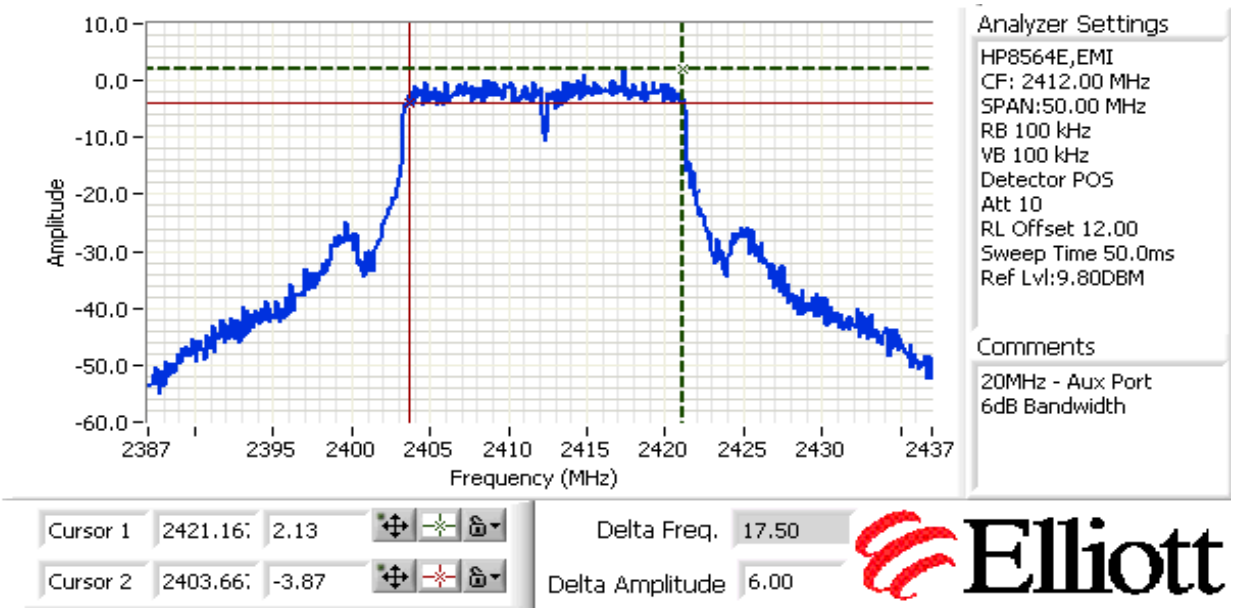
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	6dB Bandwidth (MHz) chain #1	6dB Bandwidth (MHz) chain #2	Resolution Bandwidth	99% Bandwidth (MHz) chain #1	99% Bandwidth (MHz) chain #2
14.0	2412	100kHz	17.8	17.5	1MHz	18.6	18.5
19.0	2437	100kHz	17.8	17.7	1MHz	18.6	18.8
14.0	2462	100kHz	17.7	17.8	1MHz	18.5	18.5
17.0	5745	100kHz	17.8	17.8	1MHz	18.8	18.8
17.5	5785	100kHz	17.8	17.8	1MHz	18.6	18.8
17.5	5825	100kHz	17.6	17.7	1MHz	18.8	18.8

Note 1:	Measured on a single chain and both chain were set to same power setting.
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB. See plots above for 99% data.



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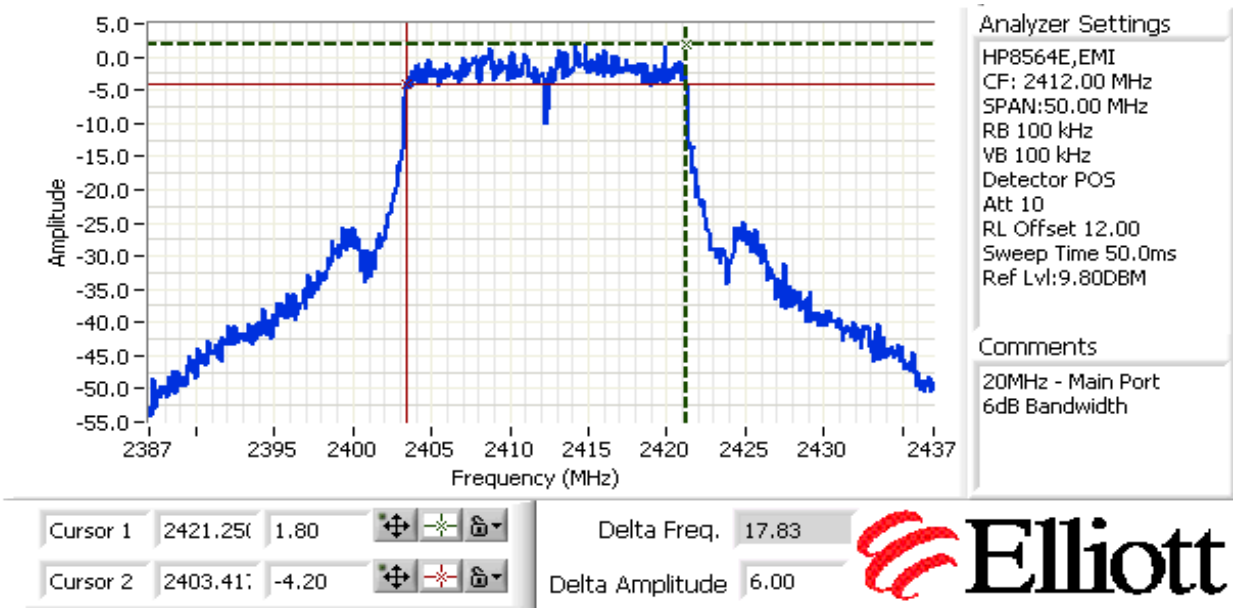

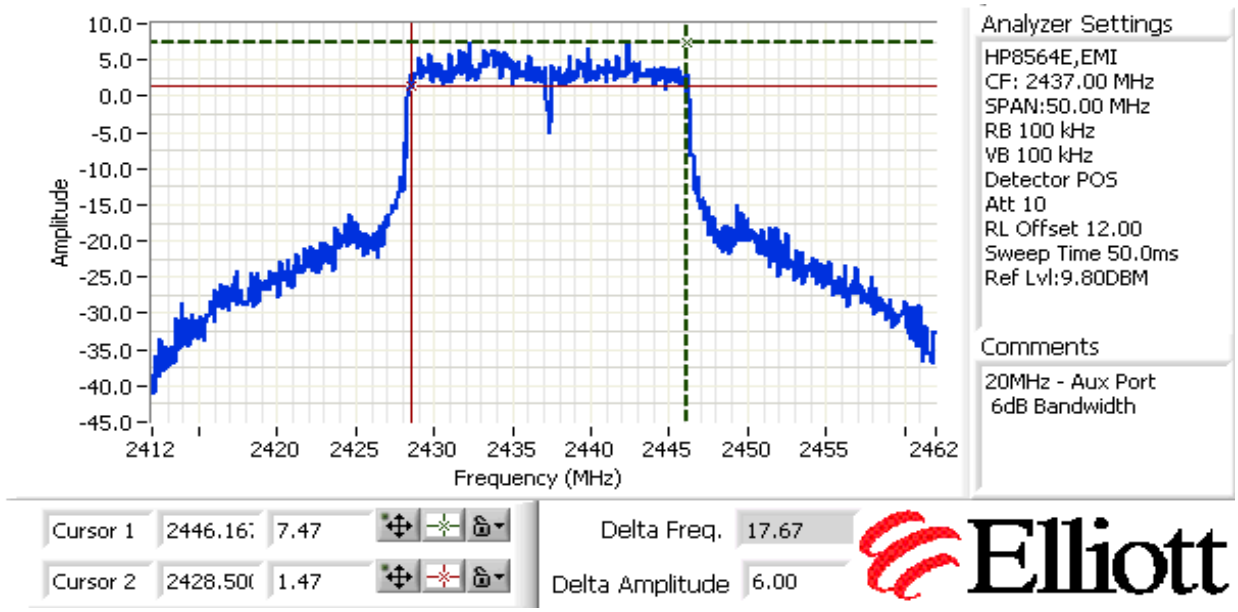

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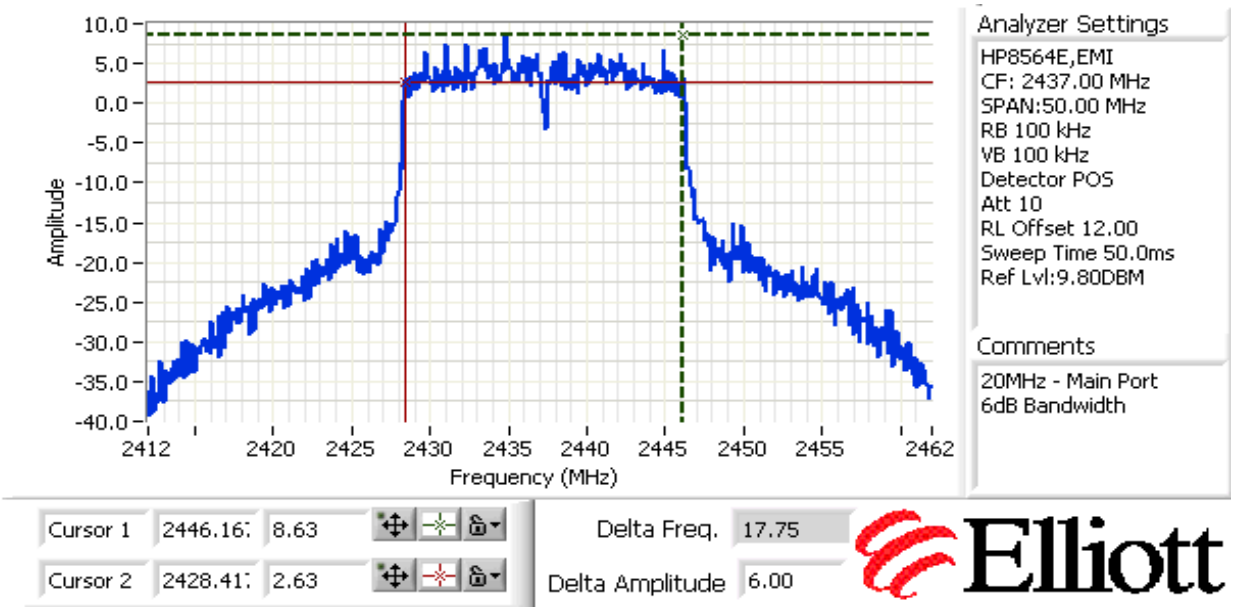

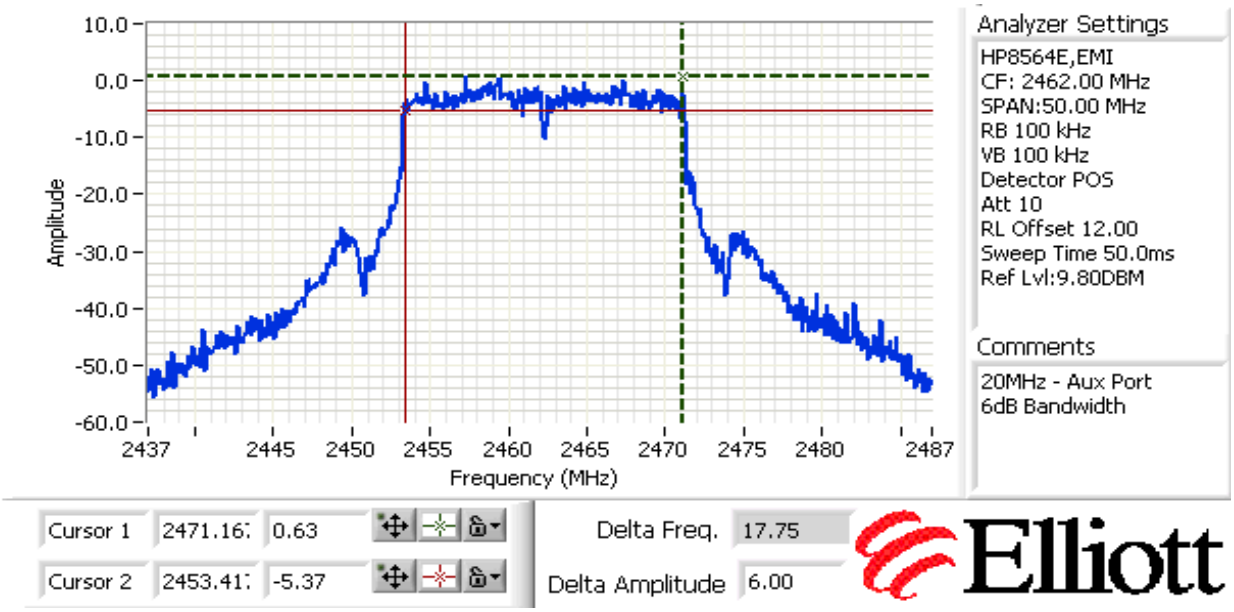

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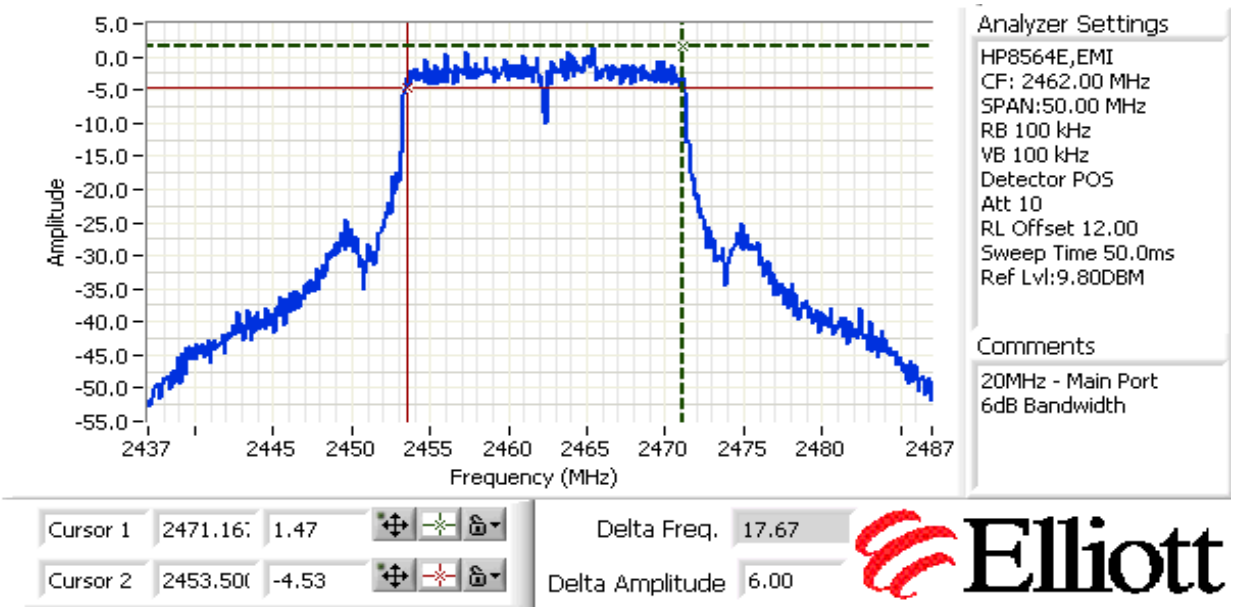
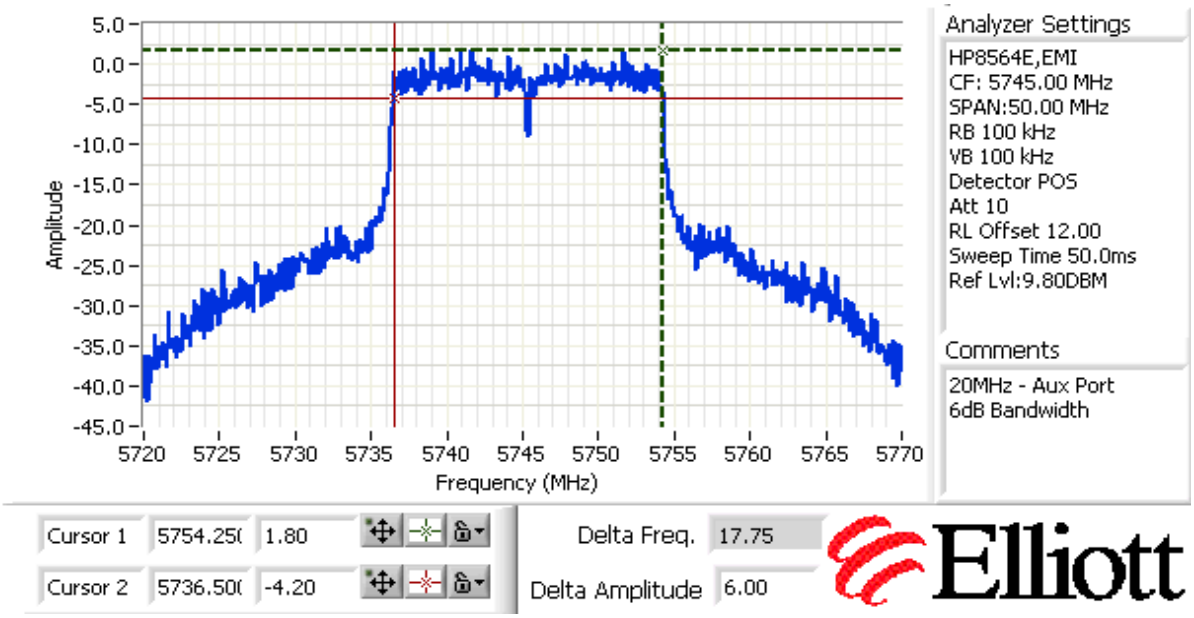
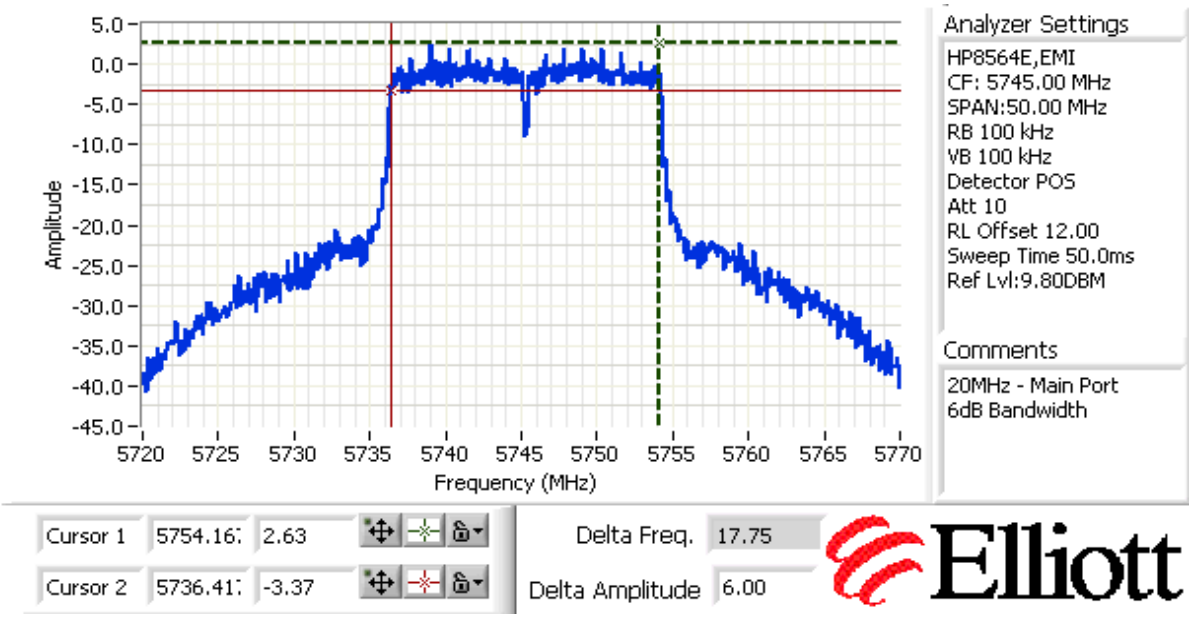
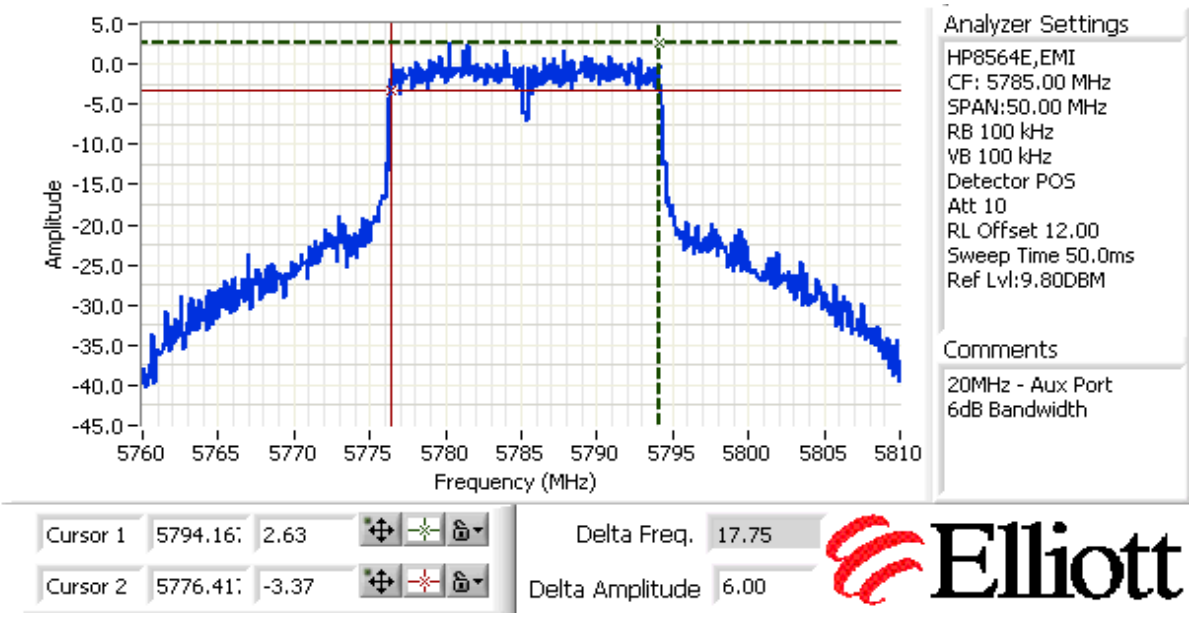
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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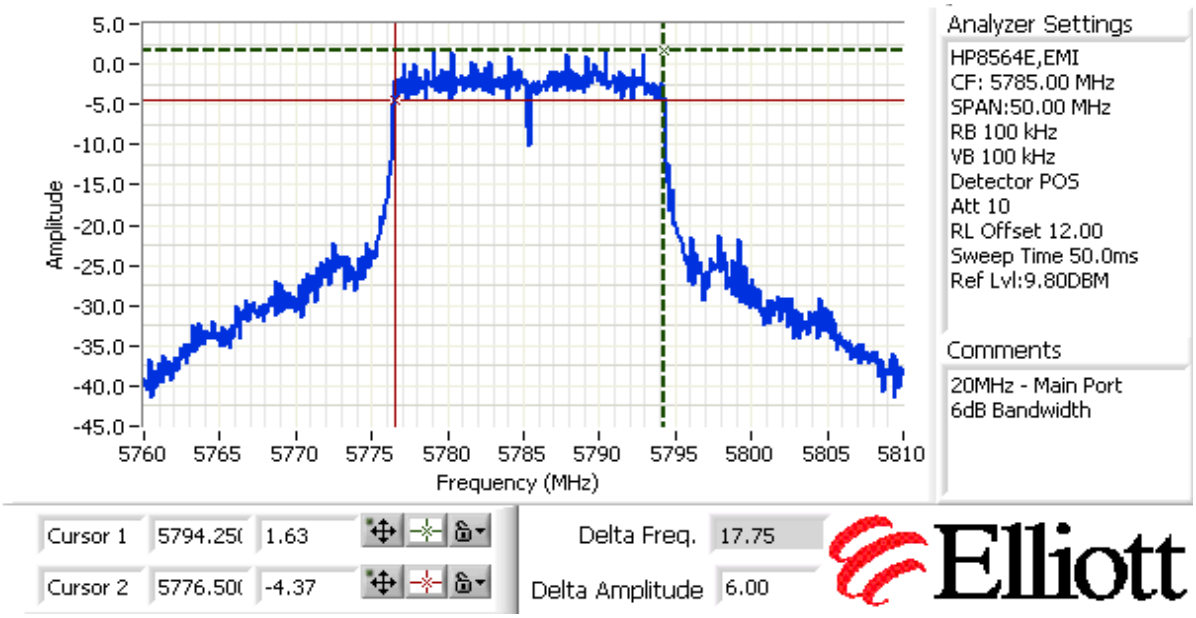
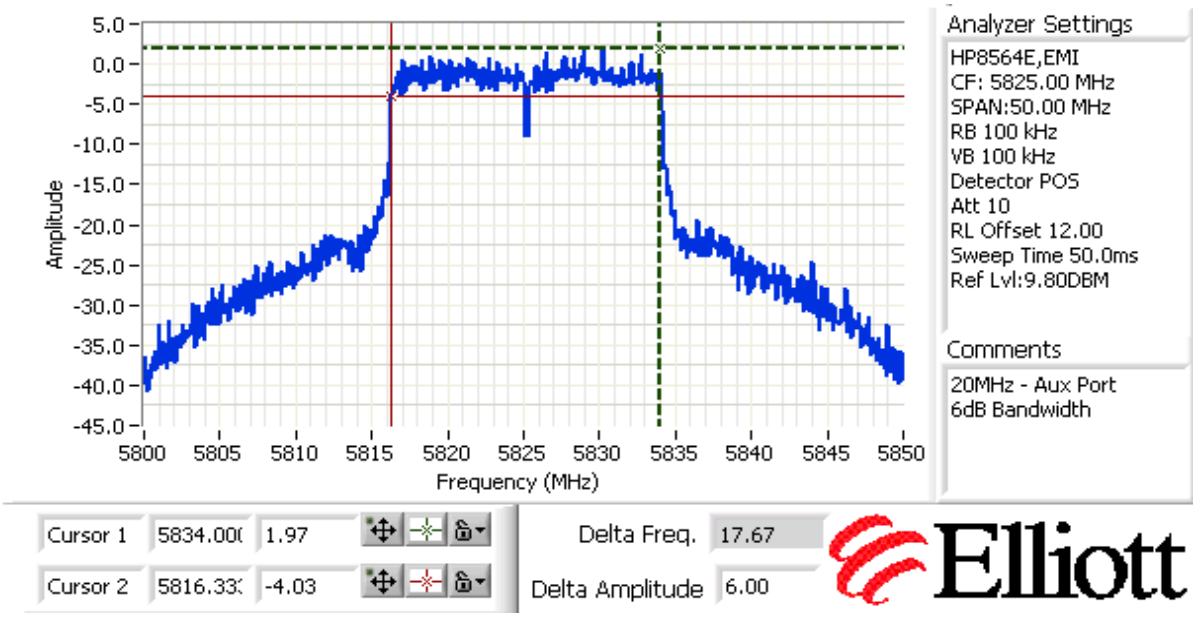
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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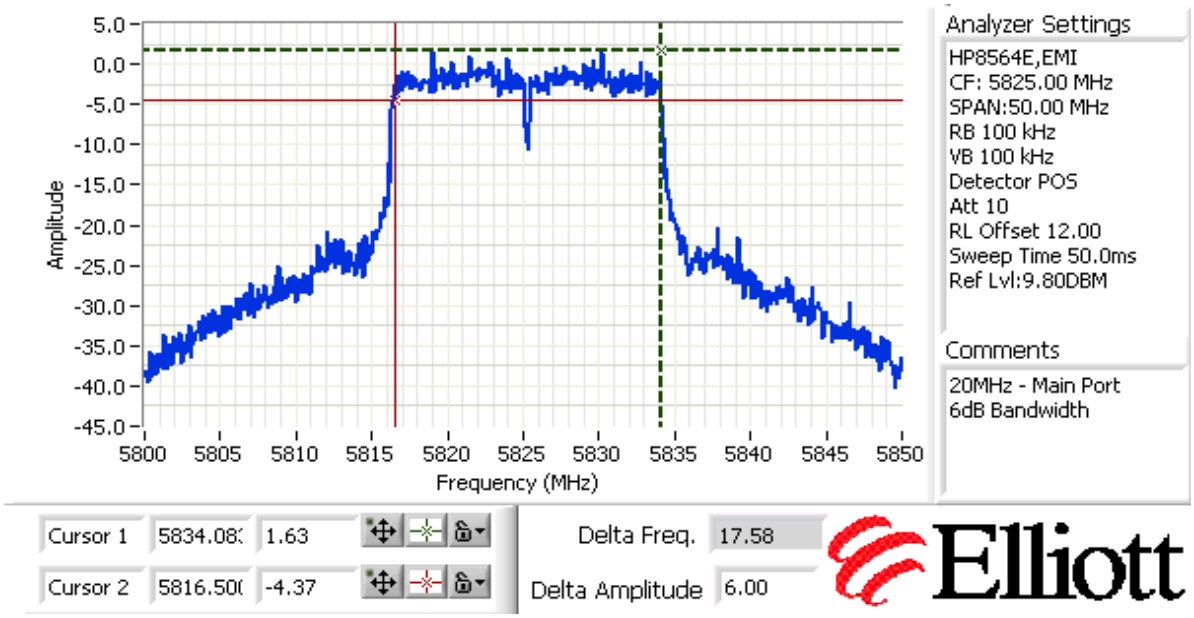
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A



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Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #3: Power spectral Density

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1			Limit dBm/3kHz	Result
		Chain 1	Chain 2	Total		
-	2412	-9.2	-22.0	-9.0	8.0	Pass
-	2437	-2.7	-15.3	-2.5	8.0	Pass
-	2462	-8.1	-21.2	-7.9	8.0	Pass
-	5745	-7.7	-17.0	-7.2	8.0	Pass
-	5785	-7.7	-17.2	-7.2	8.0	Pass
-	5825	-7.4	-16.3	-6.9	8.0	Pass

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

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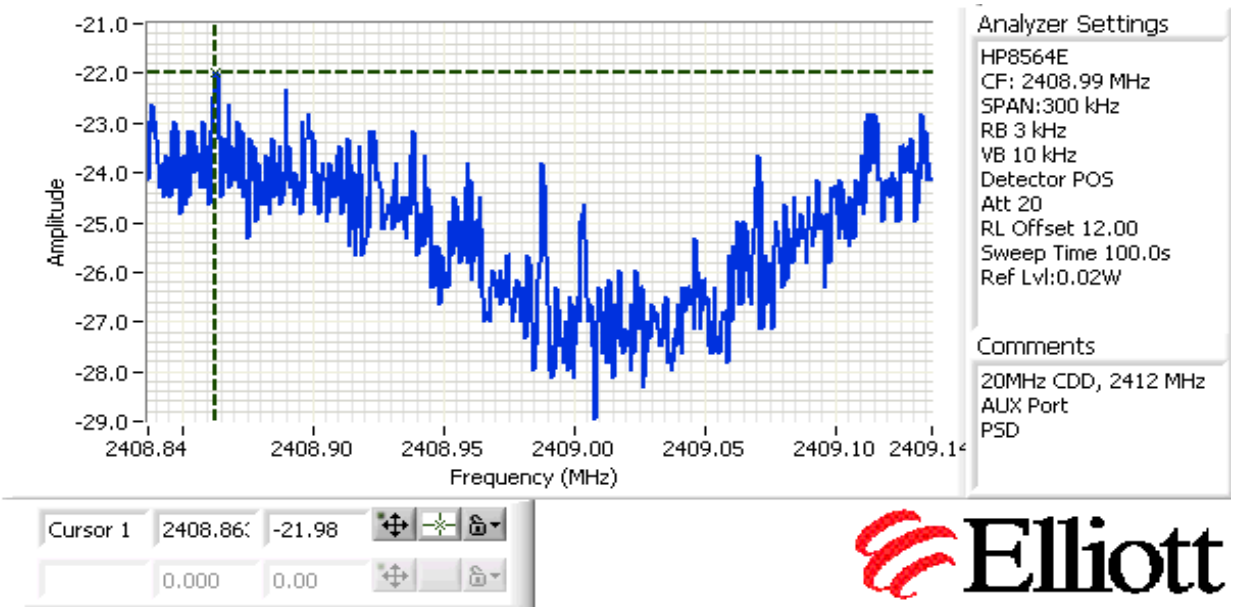
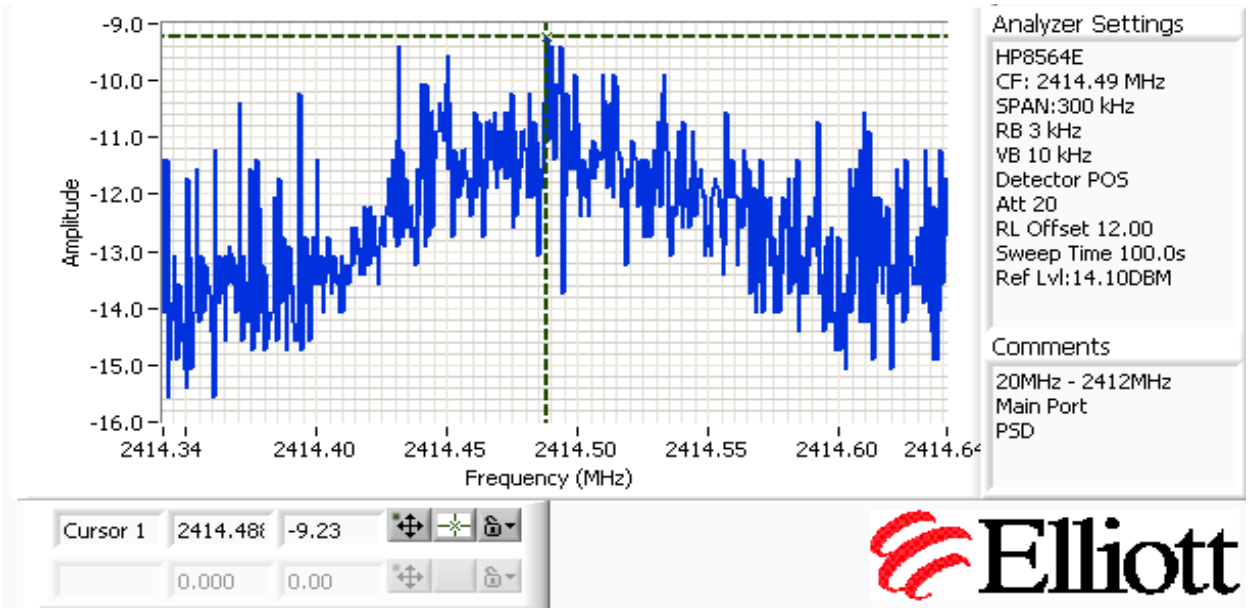
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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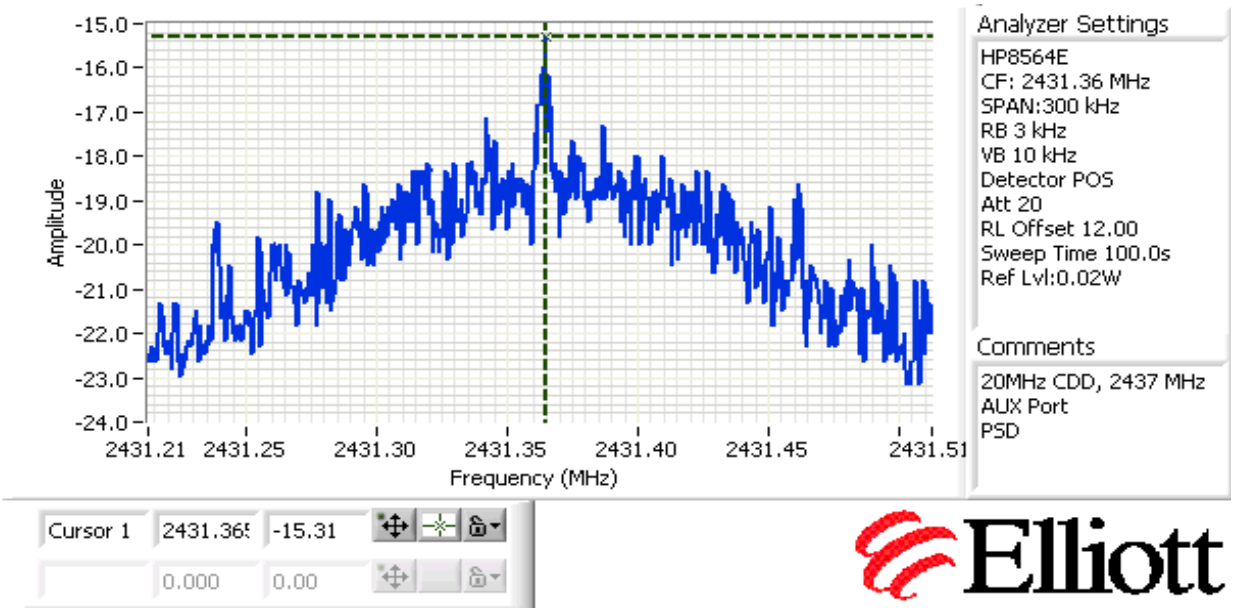
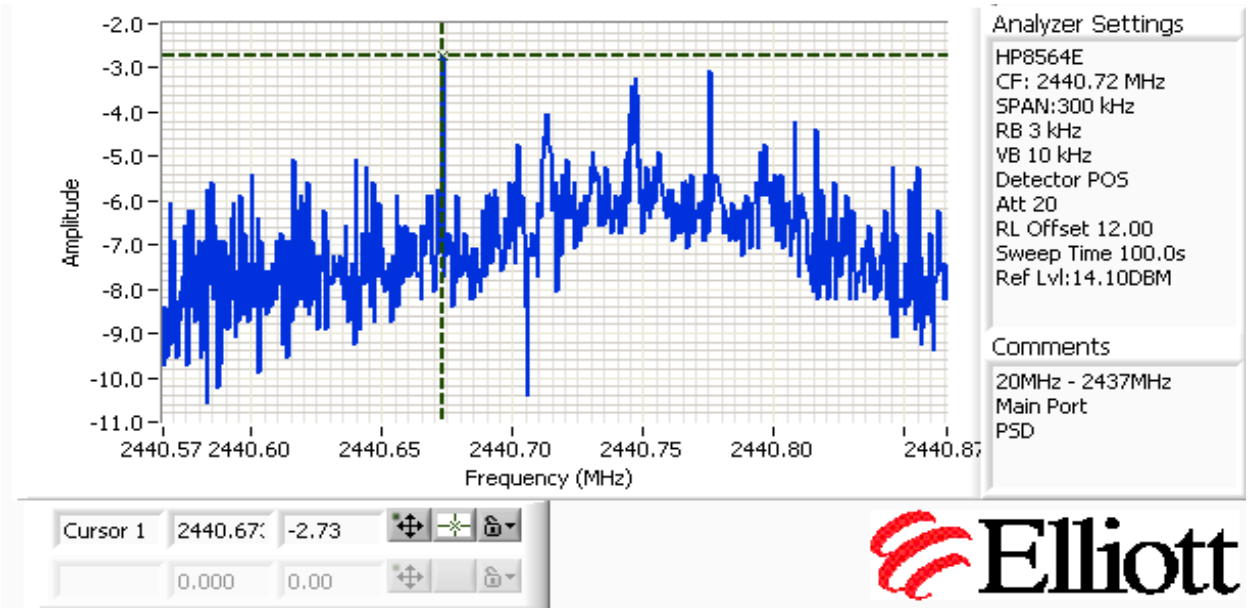
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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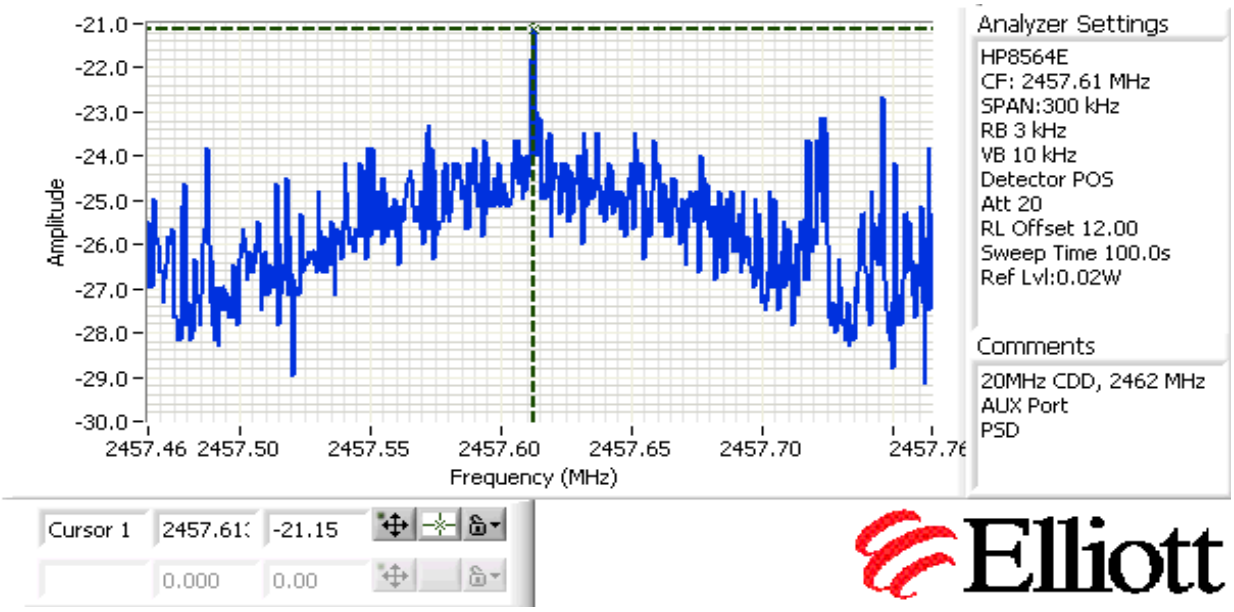
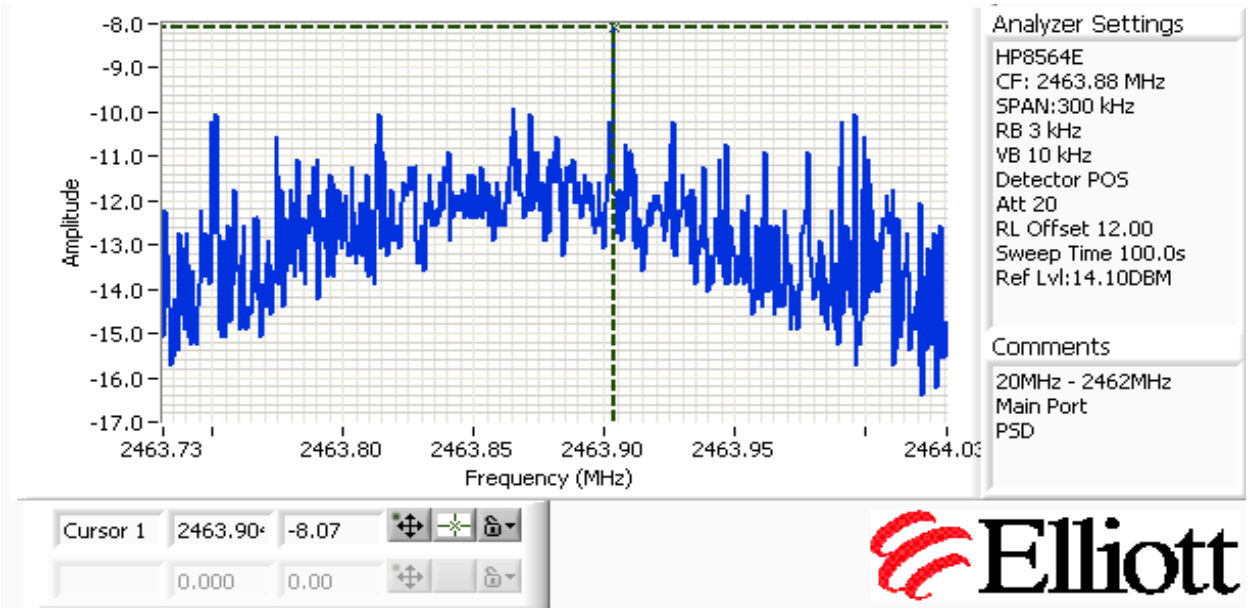
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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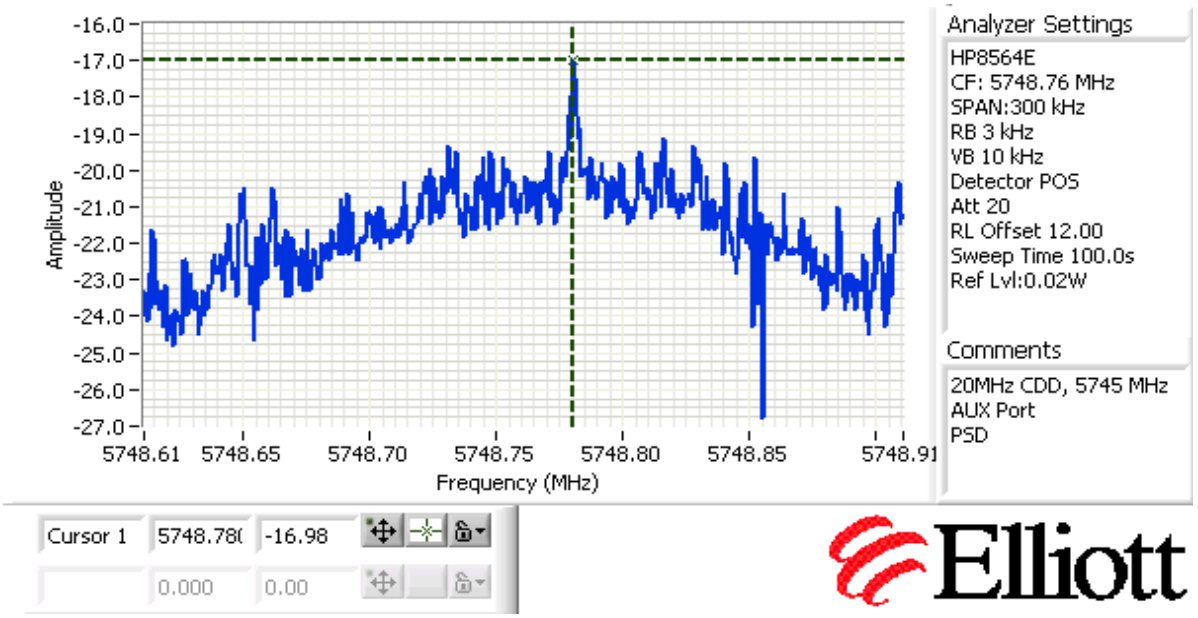
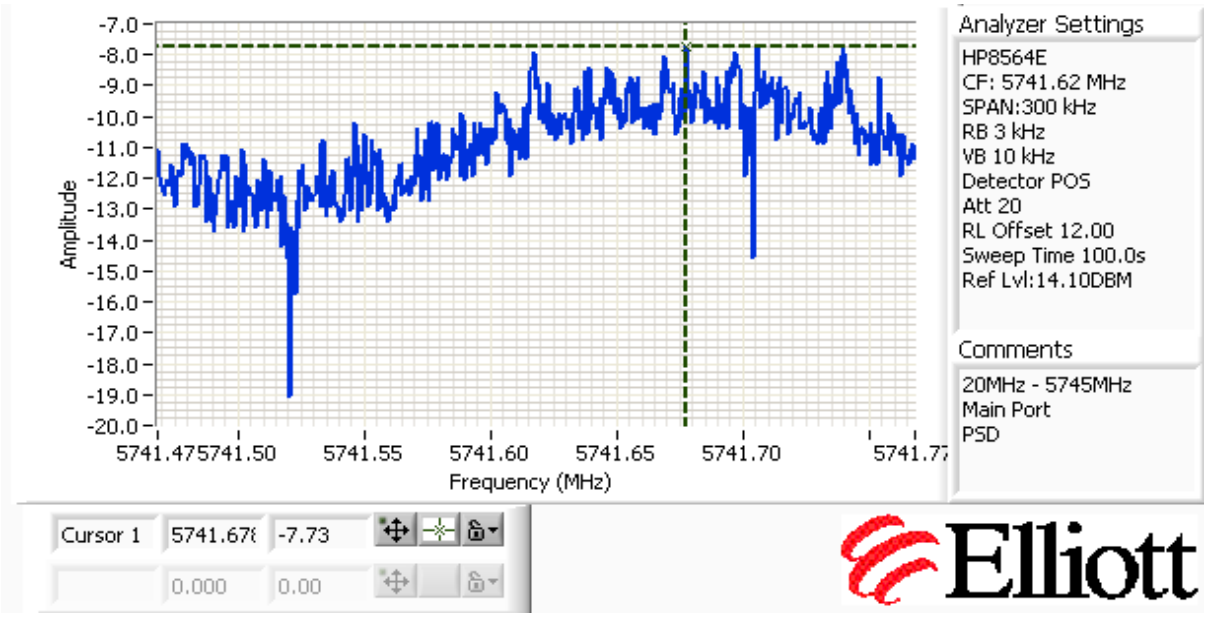
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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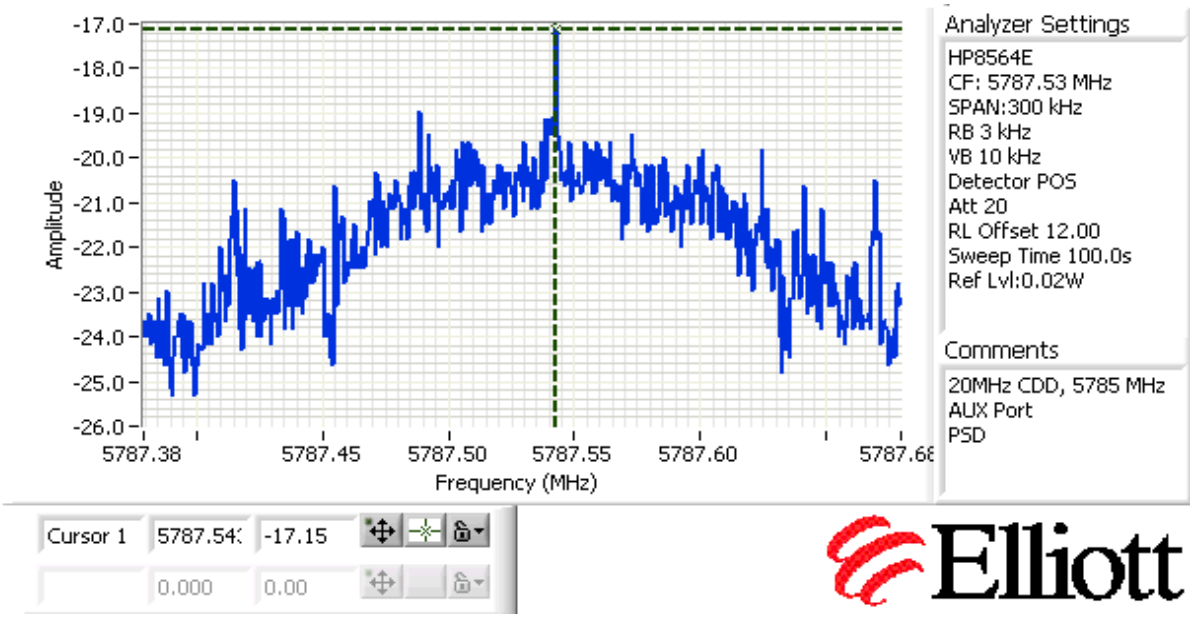
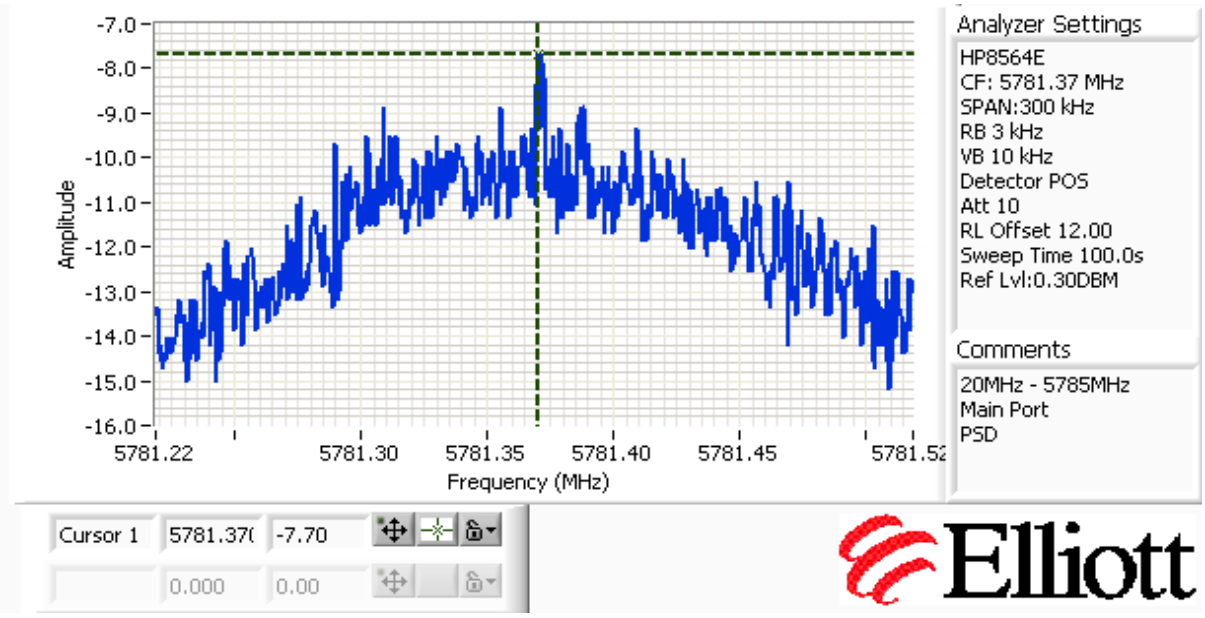
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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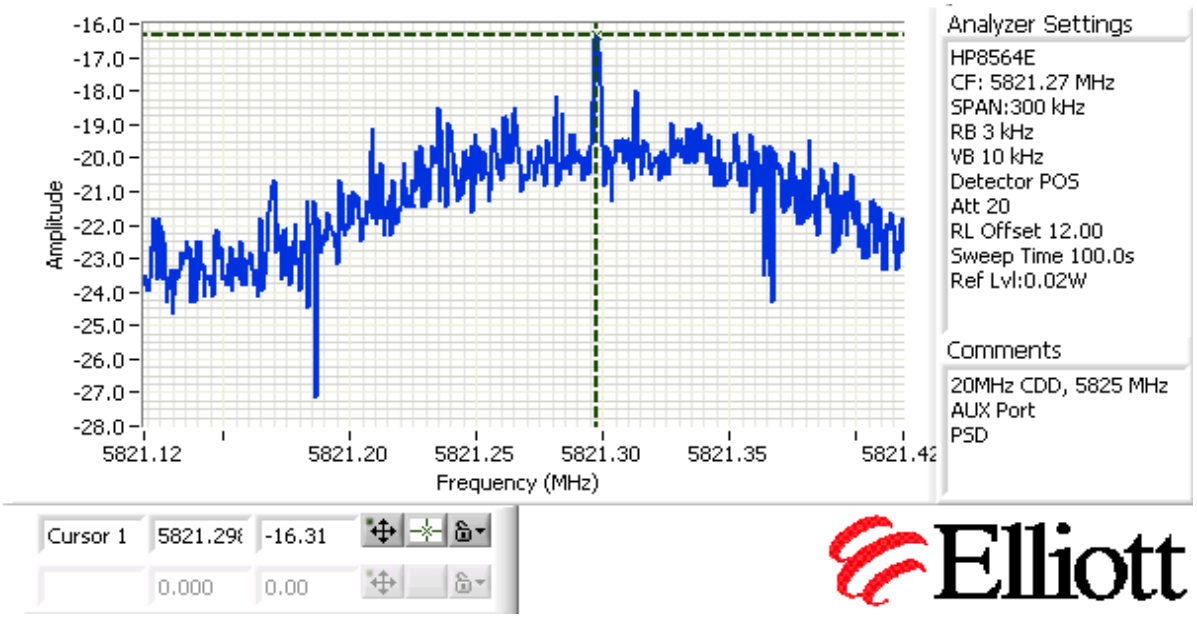
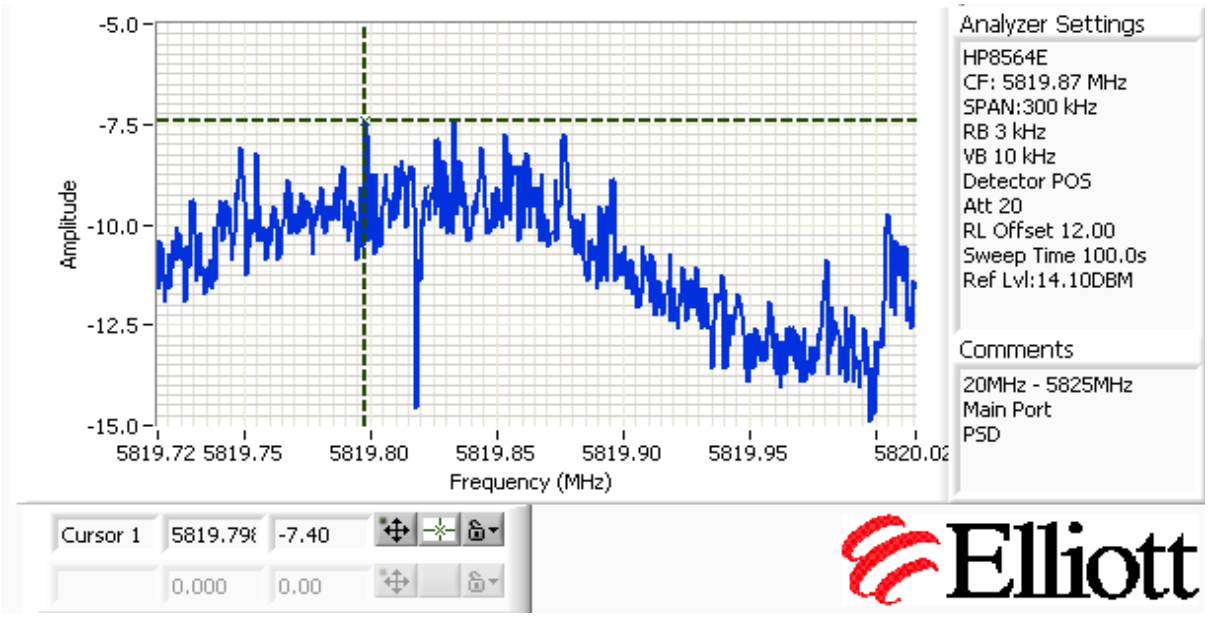
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
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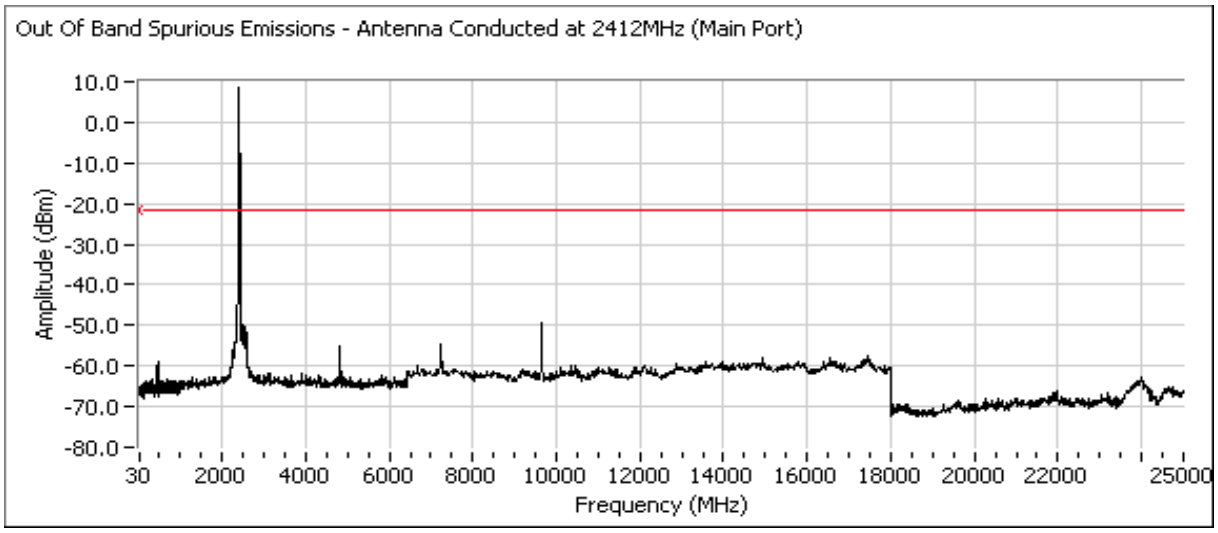
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Power Setting Per Chain #1	#2	#3	Frequency (MHz)	Limit	Result
-	-		2412	-30dBc	Pass
-	-		2437	-30dBc	Pass
-	-		2462	-30dBc	Pass
-	-		5745	-30dBc	Pass
-	-		5785	-30dBc	Pass
-	-		5825	-30dBc	Pass

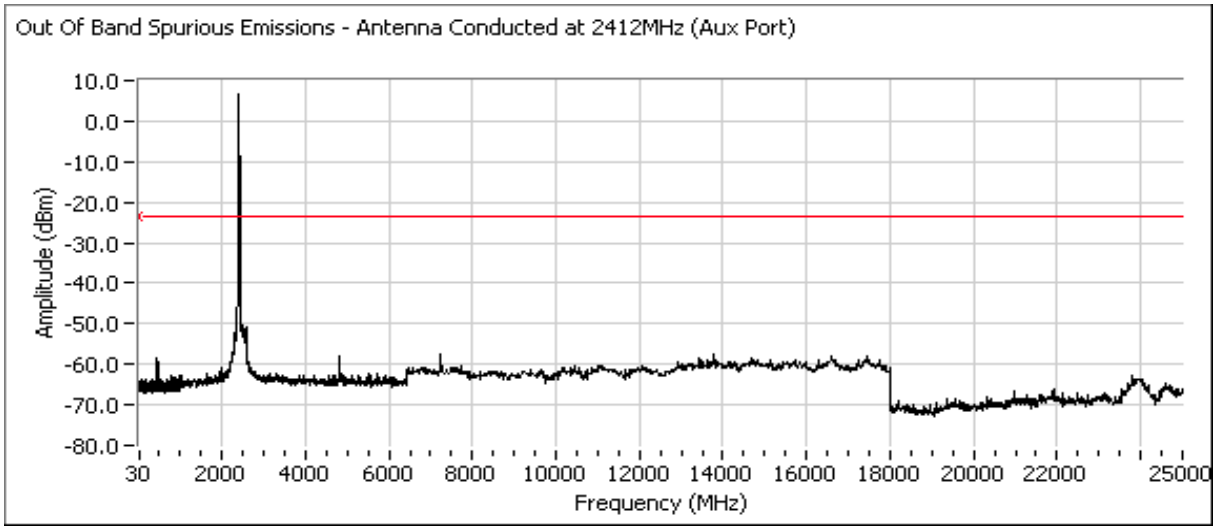
Note 1:	Measured on each chain individually

Plots for low channel, Main Port

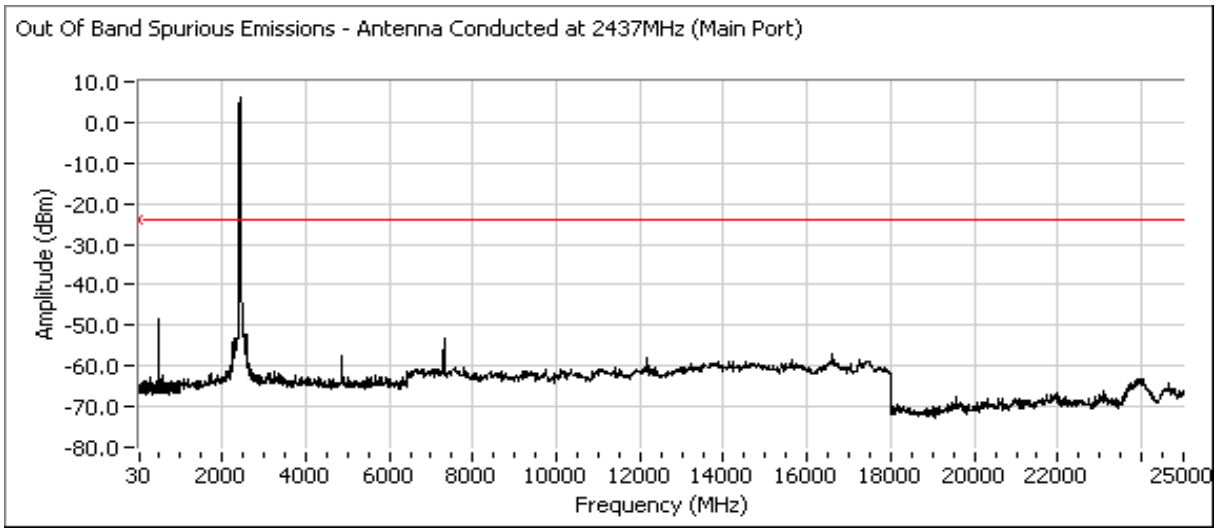


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for low channel, Aux Port

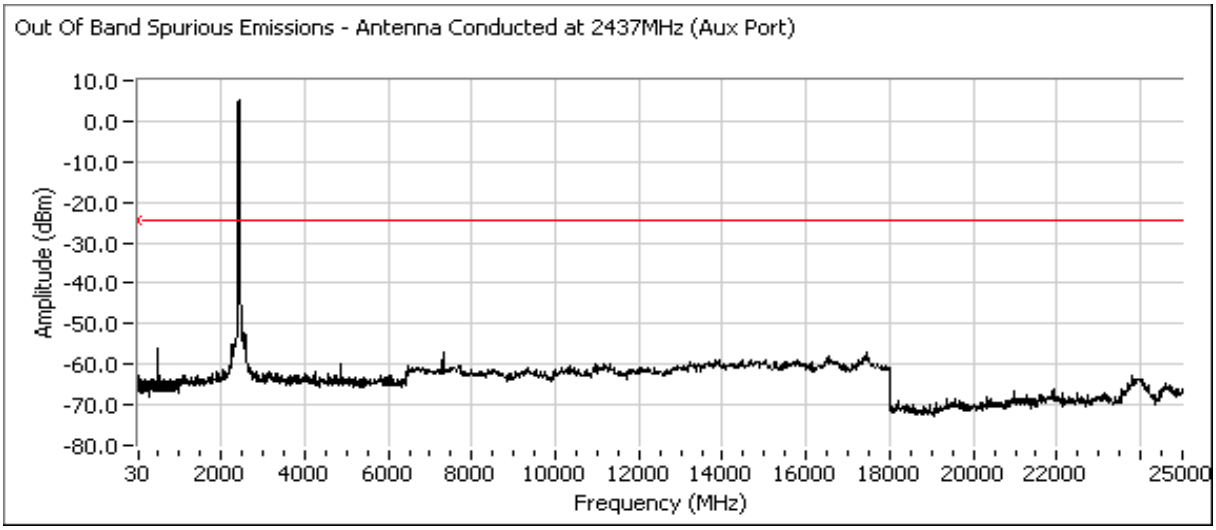


Plots for Mid channel, Main Port

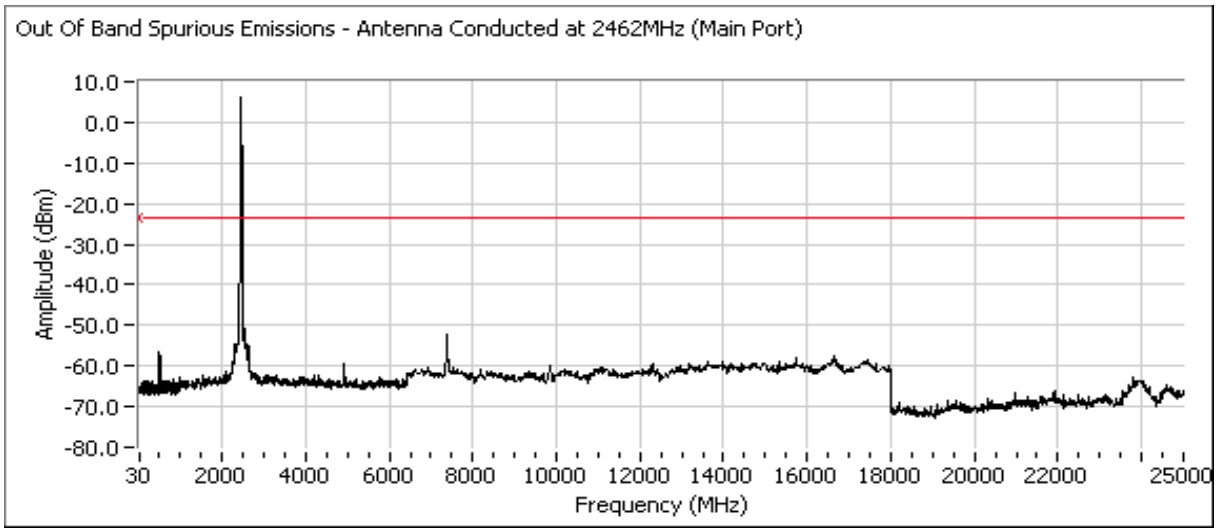


Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for mid channel, Aux Port



Plots for high channel, Main Port



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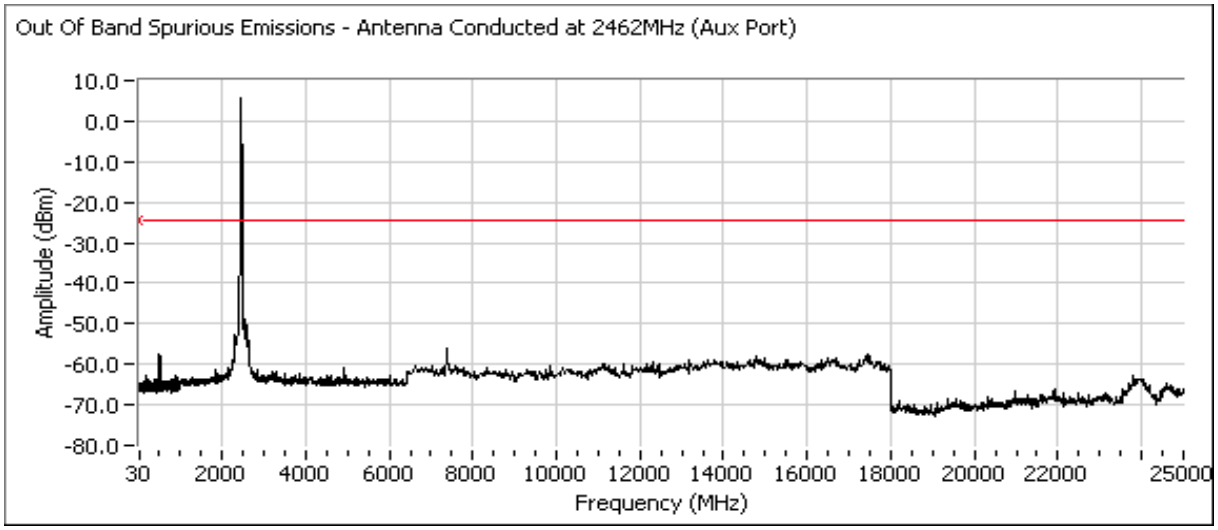
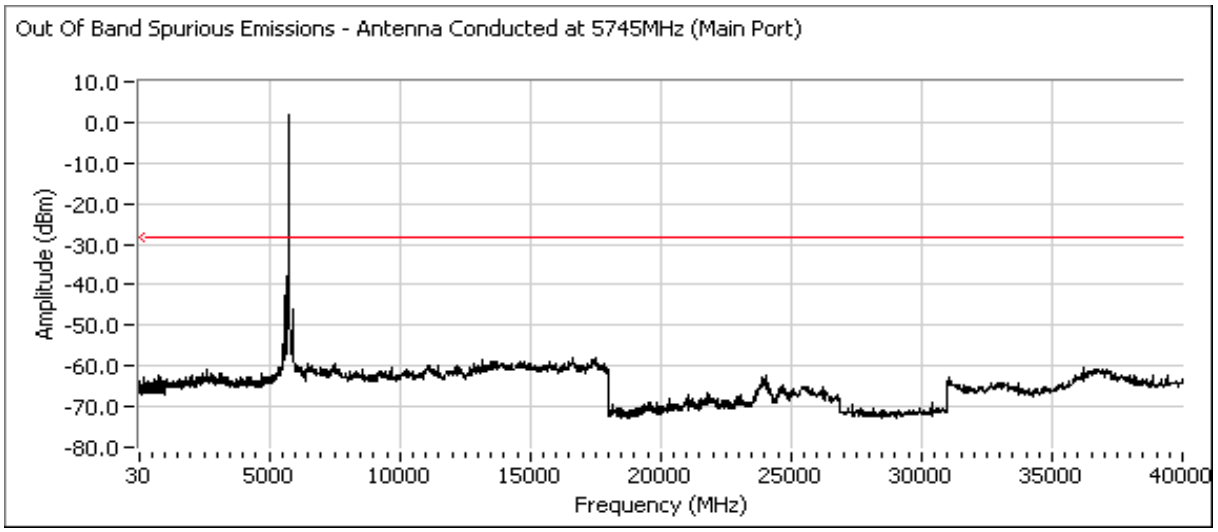
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for high channel, Aux Port



Plots for low channel (5G band), Main Port



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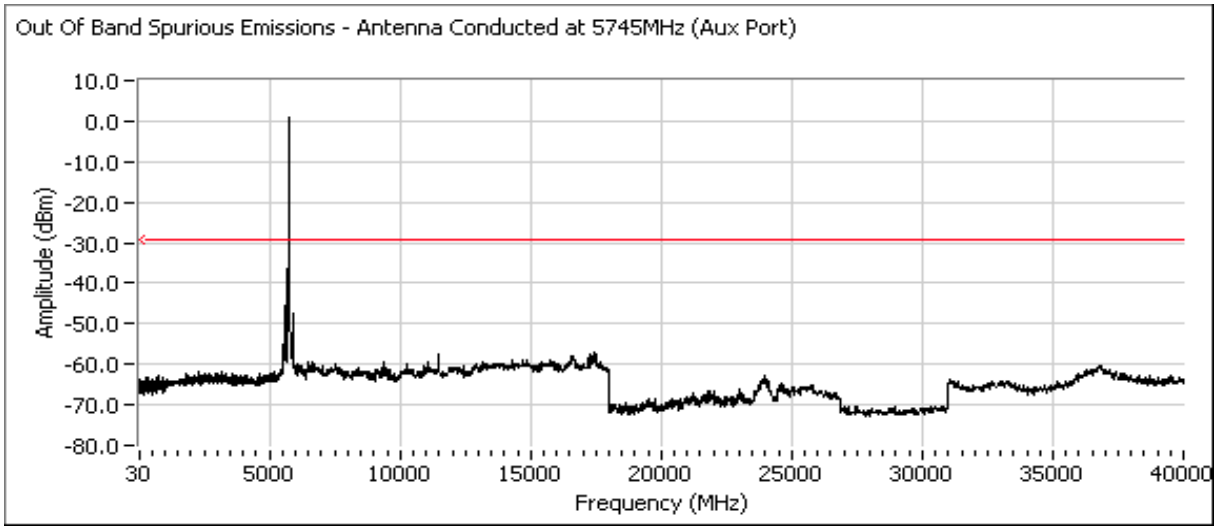
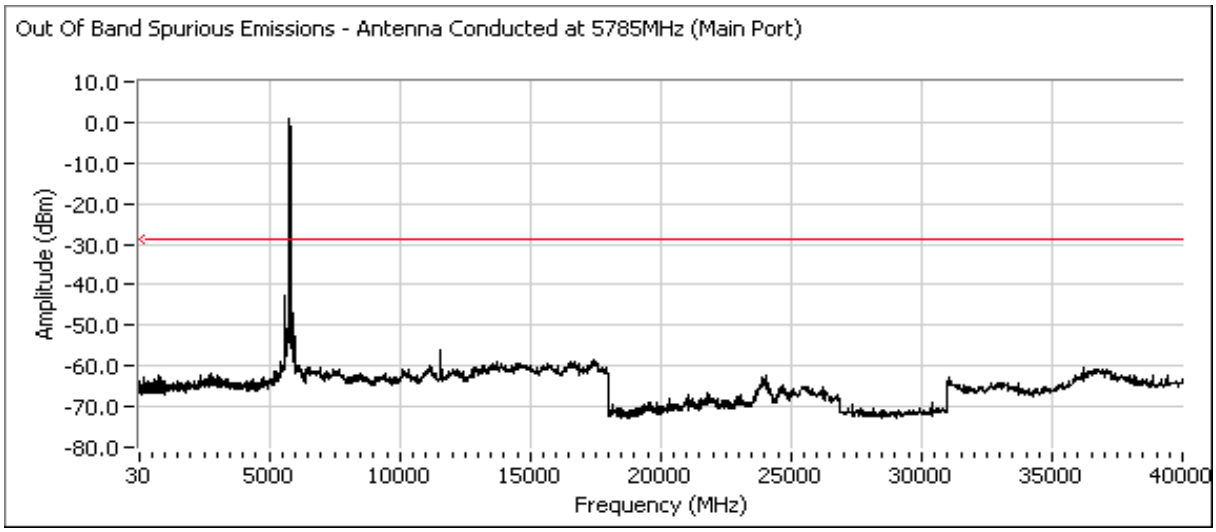
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for low channel (5G band), Aux Port



Plots for mid channel (5G band), Main Port



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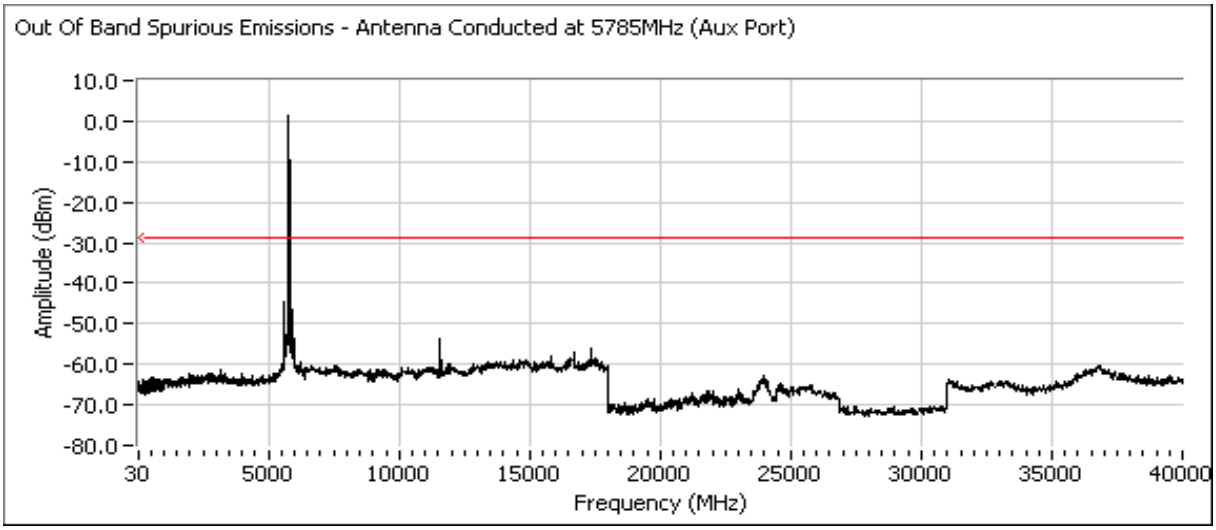
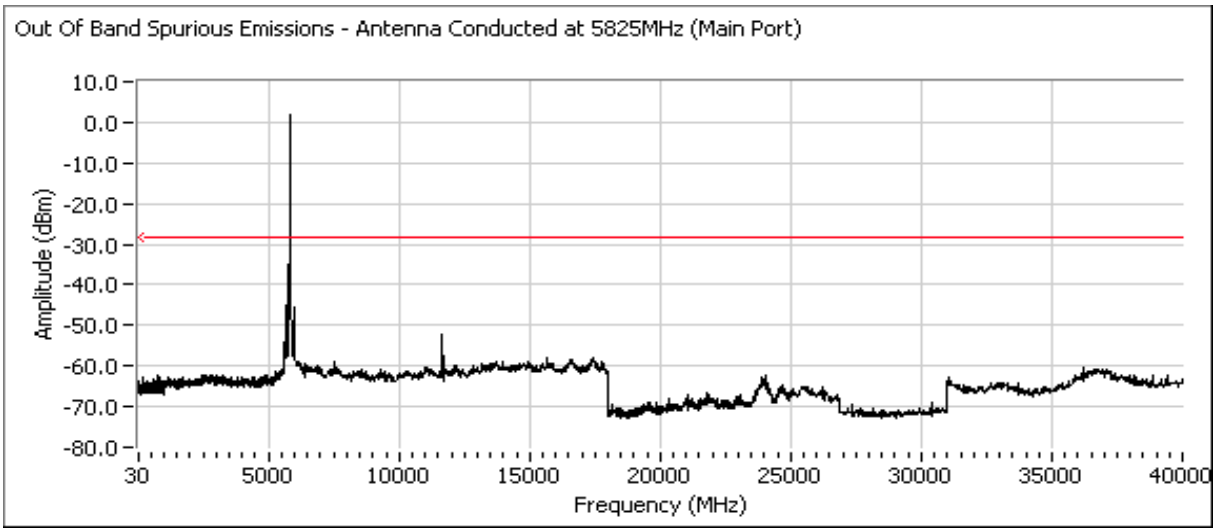
Standard:	FCC 15.247/RSS-210	Class:	N/A

Plots for mid channel (5G Band) Aux Port



Plots for high channel (5G band), Main Port



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Contact:	David Boldy		
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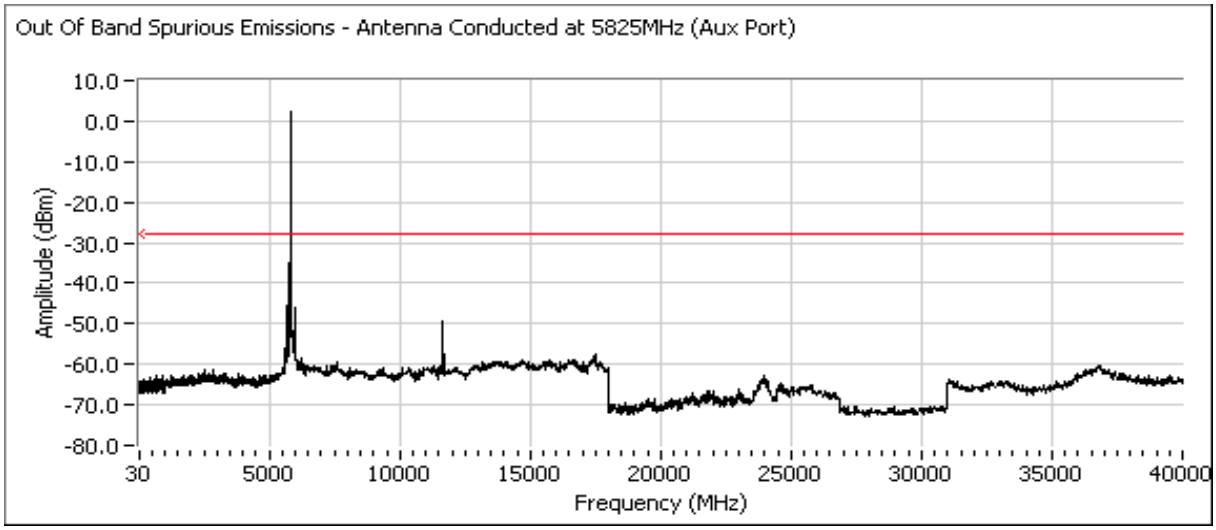
Plots for high channel (5G Band), Aux Port



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Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power, Bandwidth and Spurious Emissions

Test Specific Details

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

Date of Test: 1/7/2008
Test Engineer: Mehran Birgani
Test Location: FT Chamber #5
Config. Used: 1
Config Change: None
EUT Host Voltage: Powered from Host System

General Test Configuration

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

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

Ambient Conditions:

Temperature: 15 °C
Rel. Humidity: 48 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Output Power (2422-2452 MHz)	15.247(b)	Pass	16.8 dBm (47.9 mW)
1	Output Power (5755-5795 MHz)	15.247(b)	Pass	19.9 dBm (97.7 mW)
2	6dB Bandwidth (2422-2452 MHz)	15.247(a)	Pass	36.7 MHz
2	6dB Bandwidth (5755-5795 MHz)	15.247(a)	Pass	36.5 MHz
2	99% Bandwidth (2422-2452 MHz)	RSS GEN	-	37.0 MHz
2	99% Bandwidth (5755-5795 MHz)	RSS GEN	-	37.8 MHz
3	Power spectral Density (PSD) (2422-2452 MHz)	15.247(d)	Pass	-1.6 dBm/3kHz
3	Power spectral Density (PSD) (5755-5795 MHz)	15.247(d)	Pass	-4.8 dBm/3kHz
4	Spurious emissions	15.247(b)	Pass	More than 30dB below the limit

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
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Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: Output Power

Transmitted signal on chain is coherent ? Yes

Regulatory Power Measurements:

Power Setting[4]	Frequency (MHz)	Output Power (dBm) Note 1			Antenna Gain (dBi) Note 3			EIRP Note 2	
		Chain 1	Chain 2	Total	Chain 1	Chain 2	Total	dBm	W
-	2422	12.8	13.4	16.1	3.9	3.9	6.9	23.0	0.200
-	2437	13.6	13.9	16.8	3.9	3.9	6.9	23.7	0.234
-	2452	11.6	12.0	14.8	3.9	3.9	6.9	21.7	0.148
-	5755	16.6	17.2	19.9	5.8	5.8	8.8	28.7	0.747
-	5795	16.4	16.9	19.7	5.8	5.8	8.8	28.5	0.704

Note 1:	RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was not continuous but the ESI analyzer was configured with a gated sweep such that the analyzer was only sweeping when the device was transmitting) and power integration over 80 MHz. See plots under Run #2 for data.
Note 2:	EIRP - if transmit chains are coherent then the EIRP is calculated from the sum of the antenna gains plus the total power (i.e. beam-forming is assumed because of coherency on the chains). If the individual chains are incoherent then the EIRP is calculated from the sum of the individual EIRPs for each chain.
Note 3:	If the transmit chains are coherent then the total system antenna gain is the sum of the numeric gains for each antenna. If the transmit chains are incoherent then the system antenna gain is not applicable as each transmit chain can be treated independently.

Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	6dB Bandwidth (MHz)		Resolution Bandwidth	99% Bandwidth (MHz)	
			chain #1	chain #2		chain #1	chanin #2
-	2422	100kHz	36.7	36.7	1MHz	36.8	37.0
-	2437	100kHz	36.5	36.7	1MHz	36.8	37.0
-	2452	100kHz	35.7	36.5	1MHz	36.8	36.8
-	5755	100kHz	36.5	36.5	1MHz	37.6	38.8
-	5795	100kHz	36.5	36.5	1MHz	37.2	37.8

Note 1:	Measured on a single chain and both chain were set to same power setting.
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB

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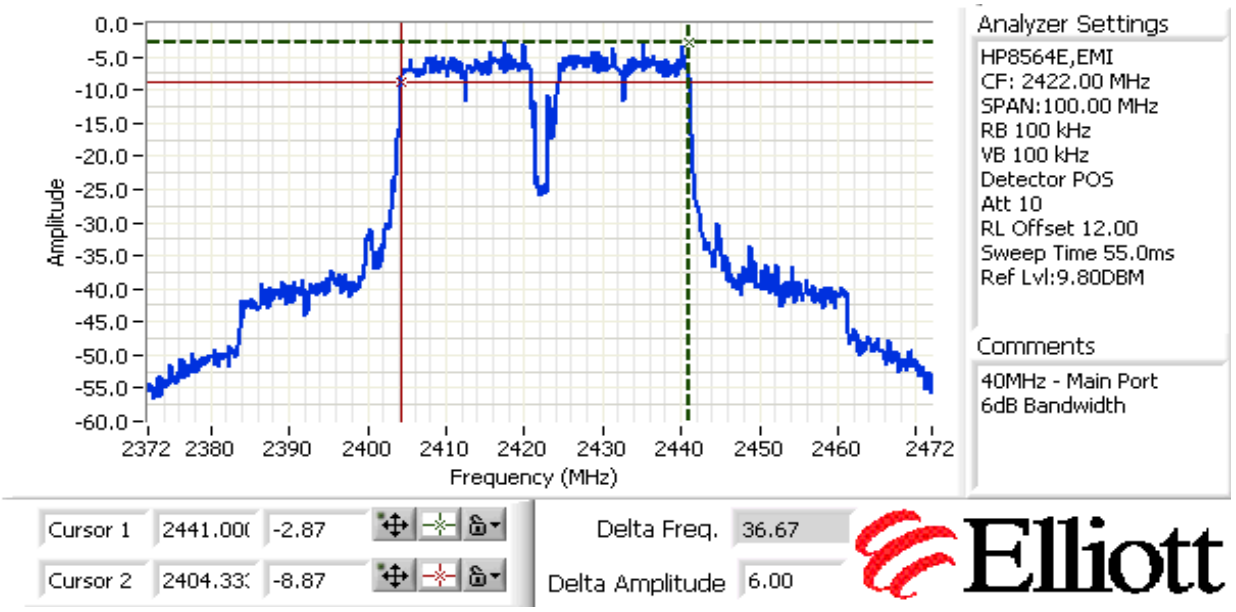
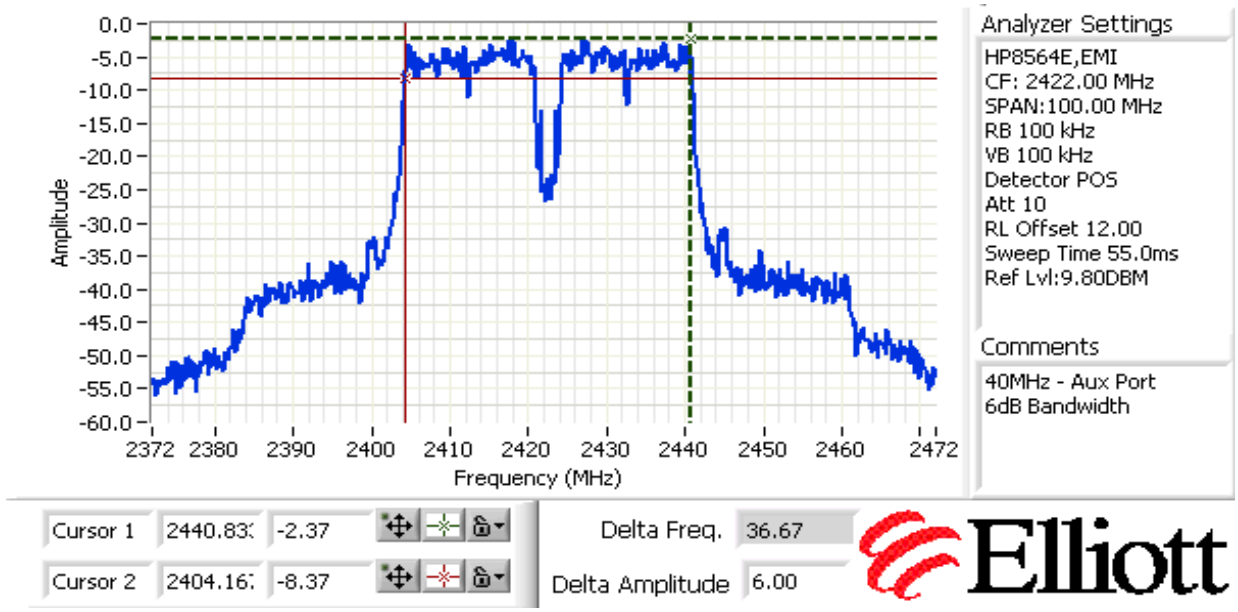
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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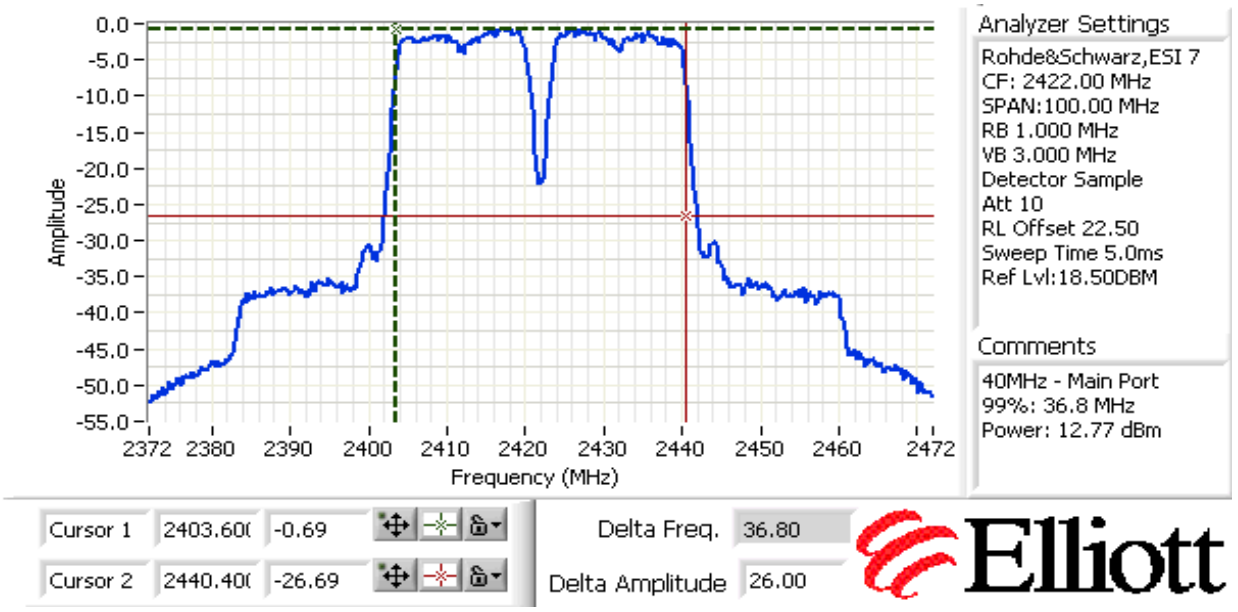
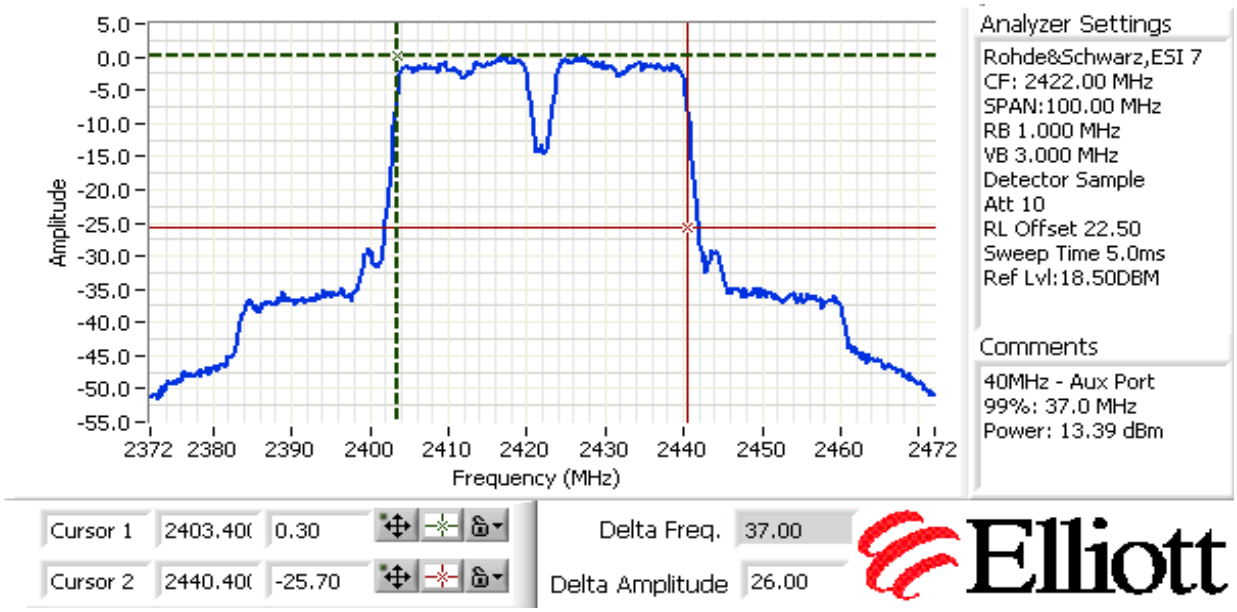
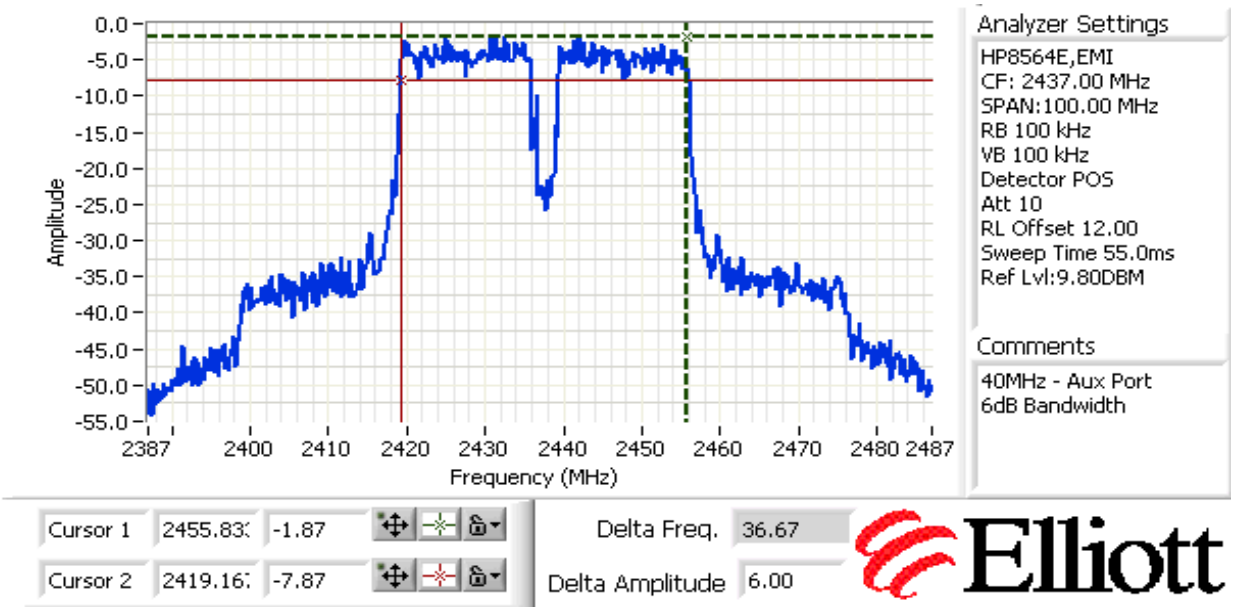
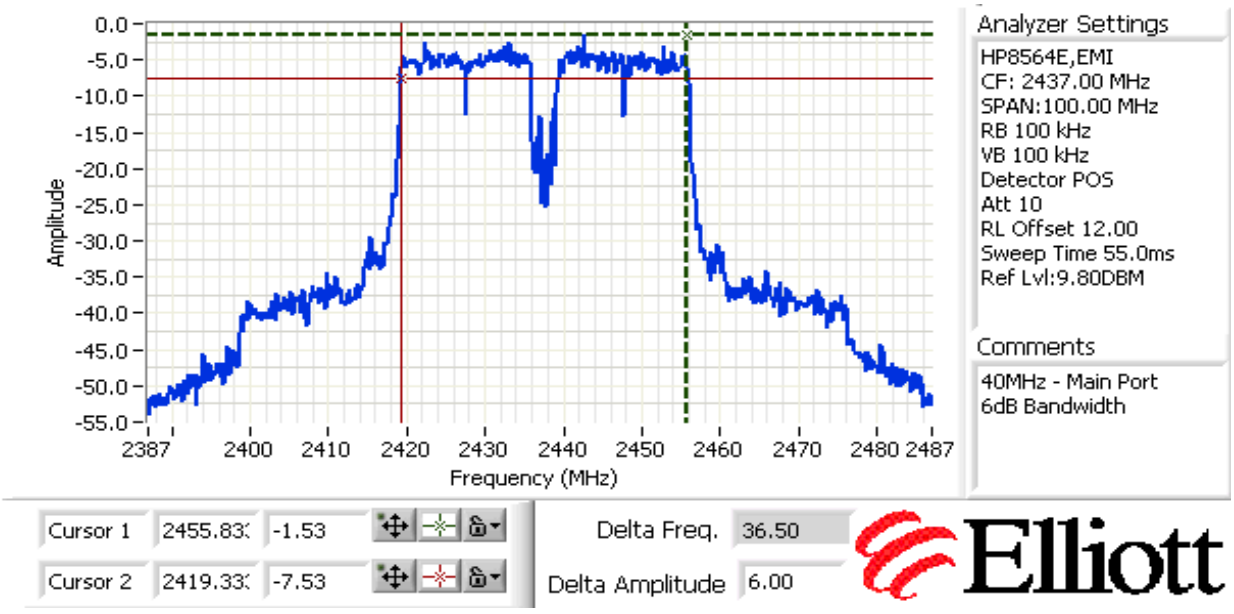
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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		Account Manager:	Dean Eriksen
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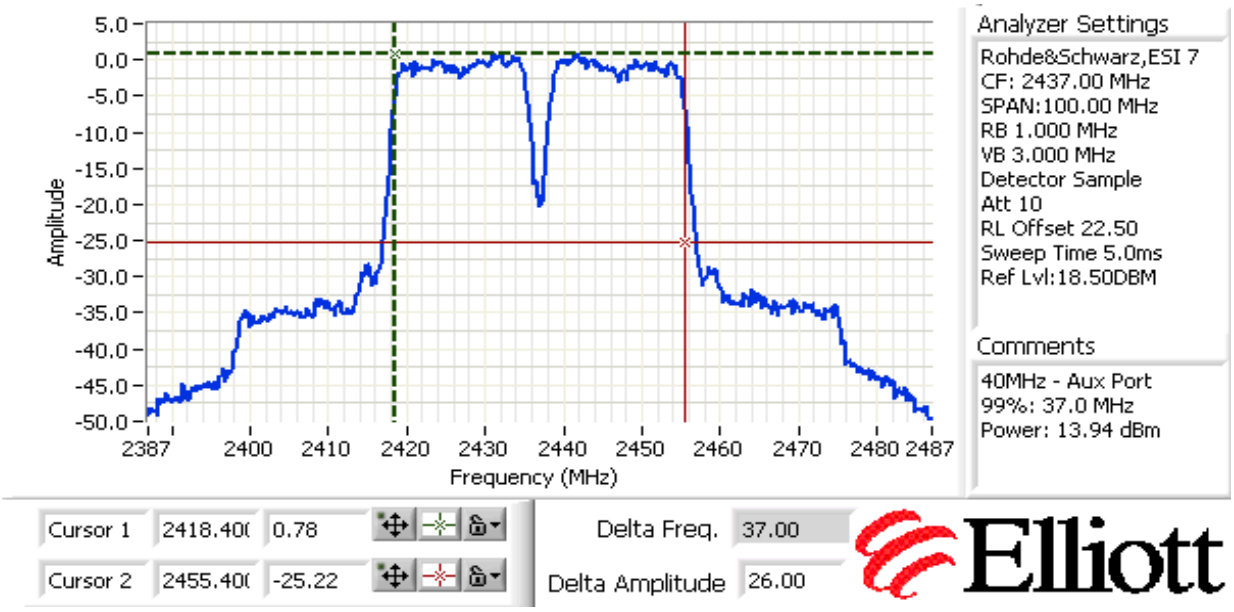
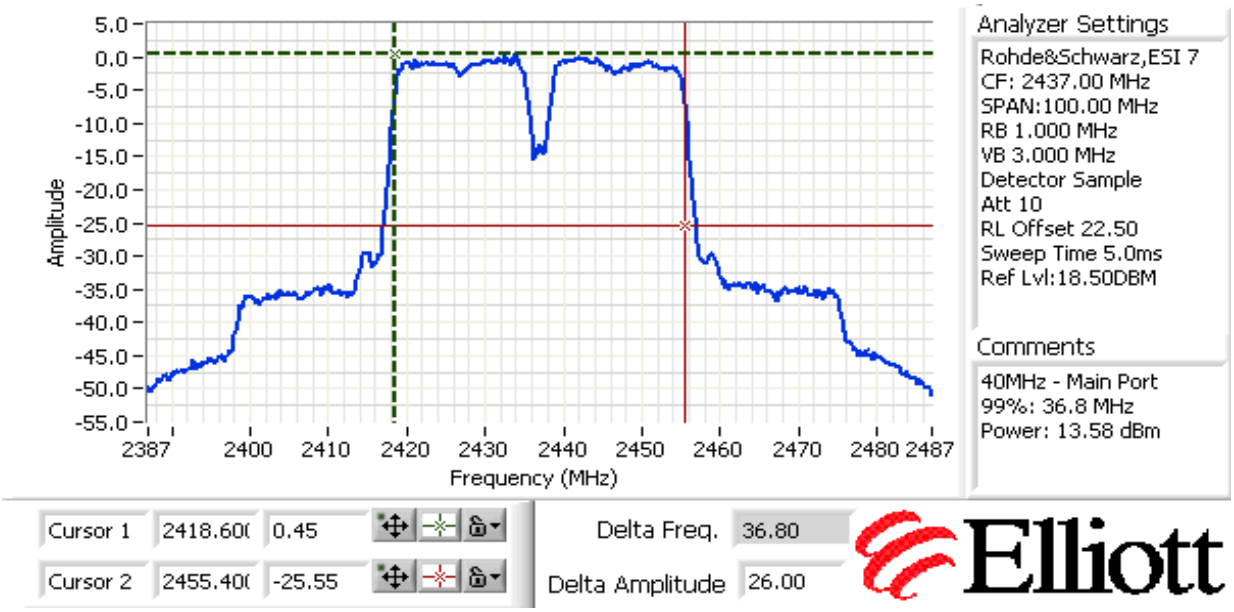
Standard:	FCC 15.247/RSS-210	Class:	N/A





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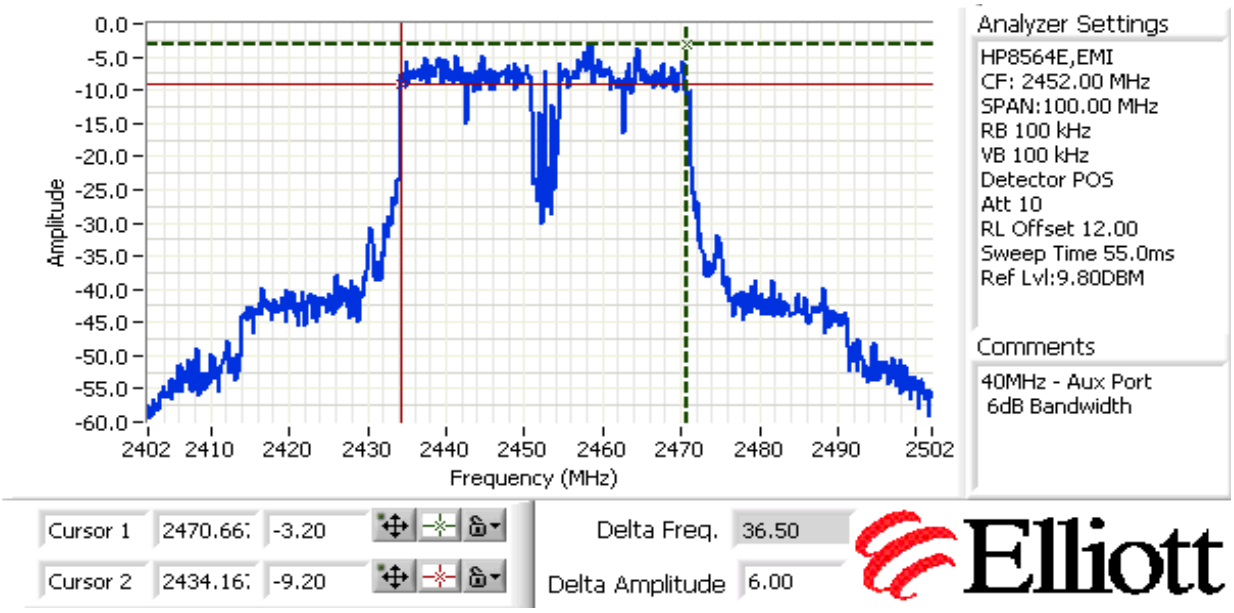
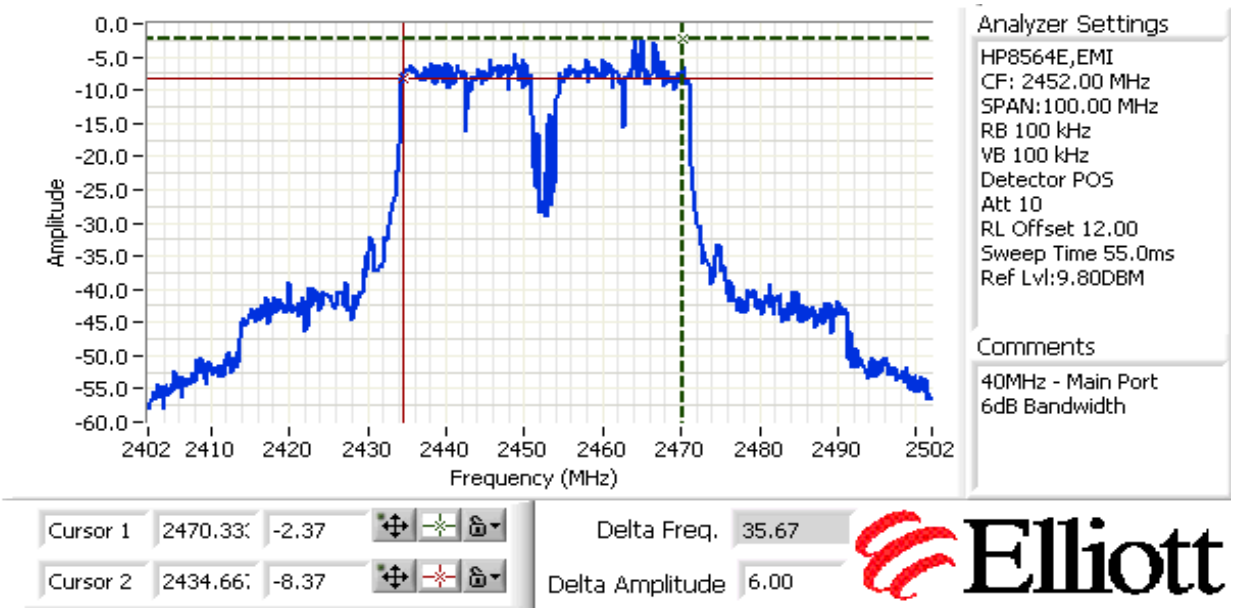
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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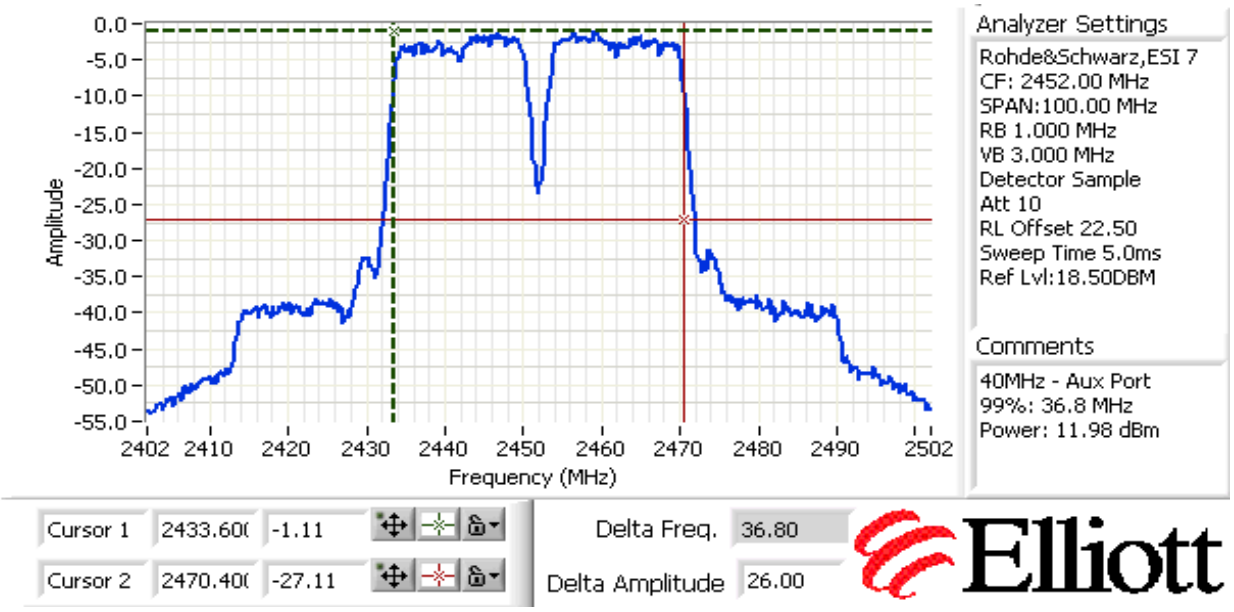
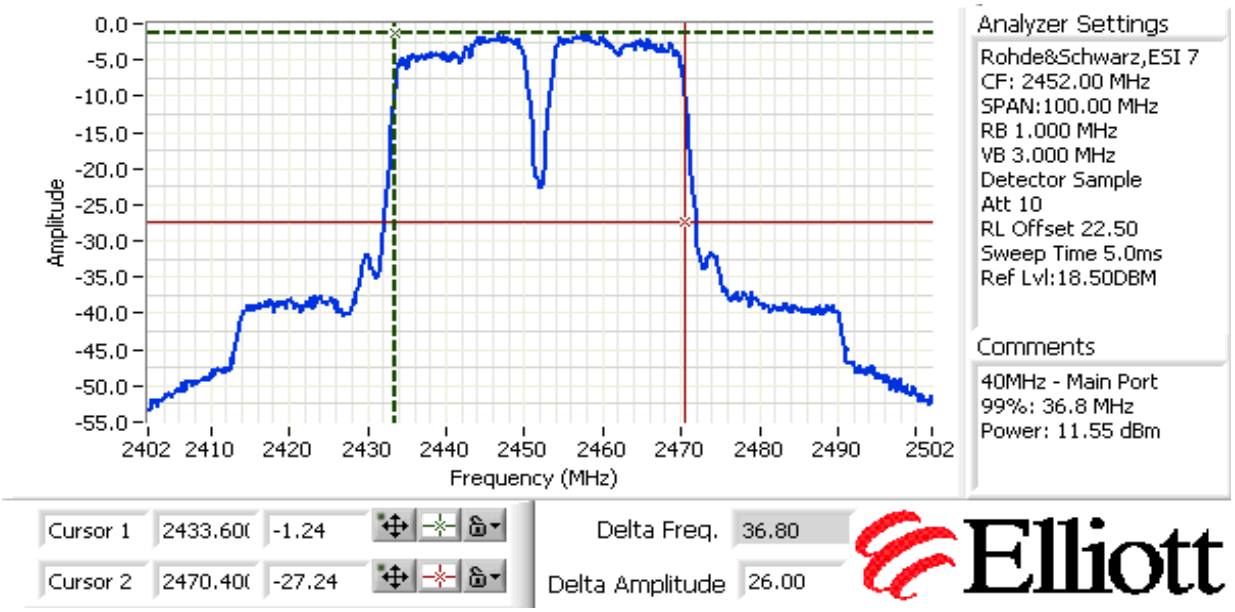
Standard:	FCC 15.247/RSS-210	Class:	N/A





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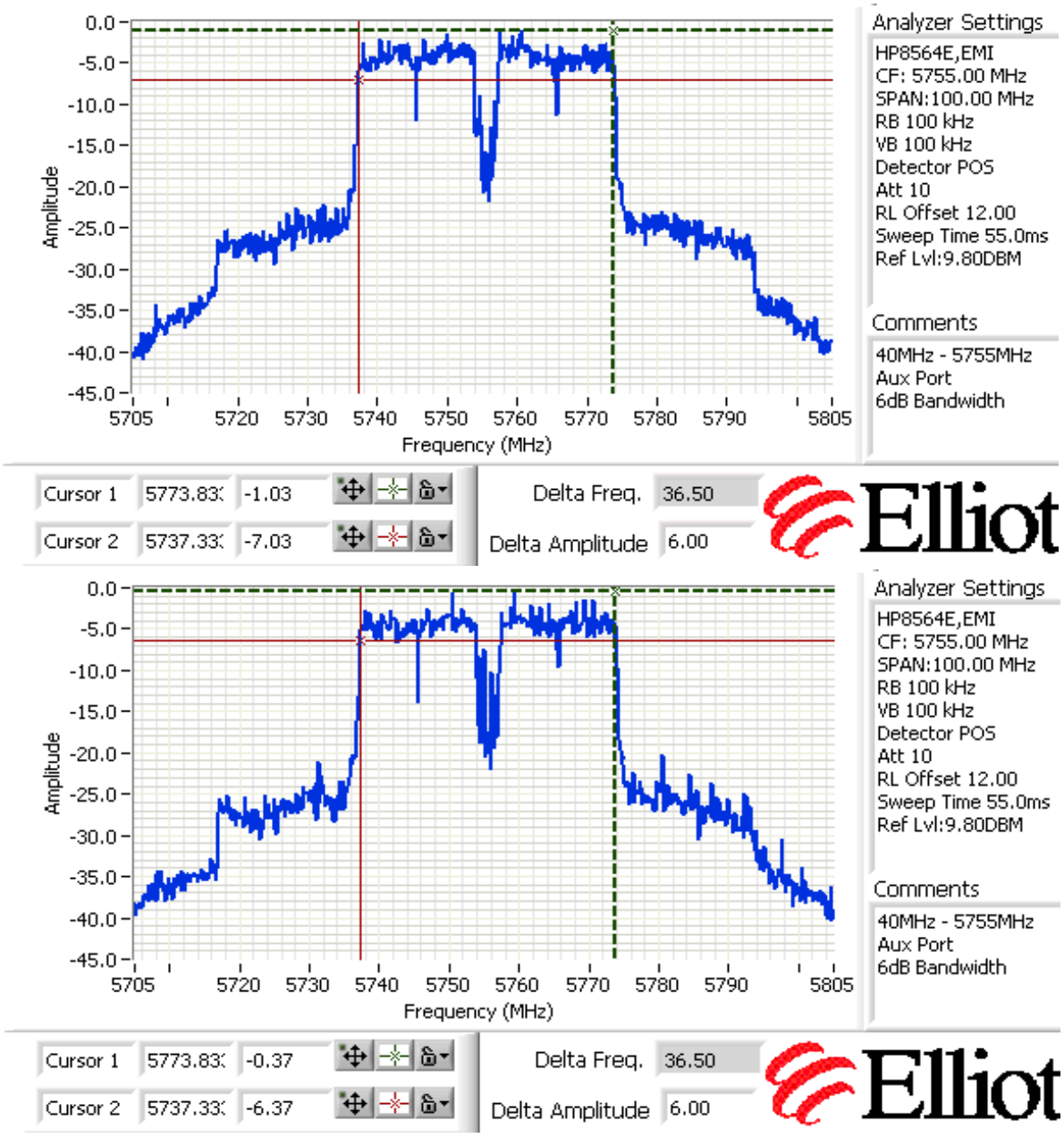

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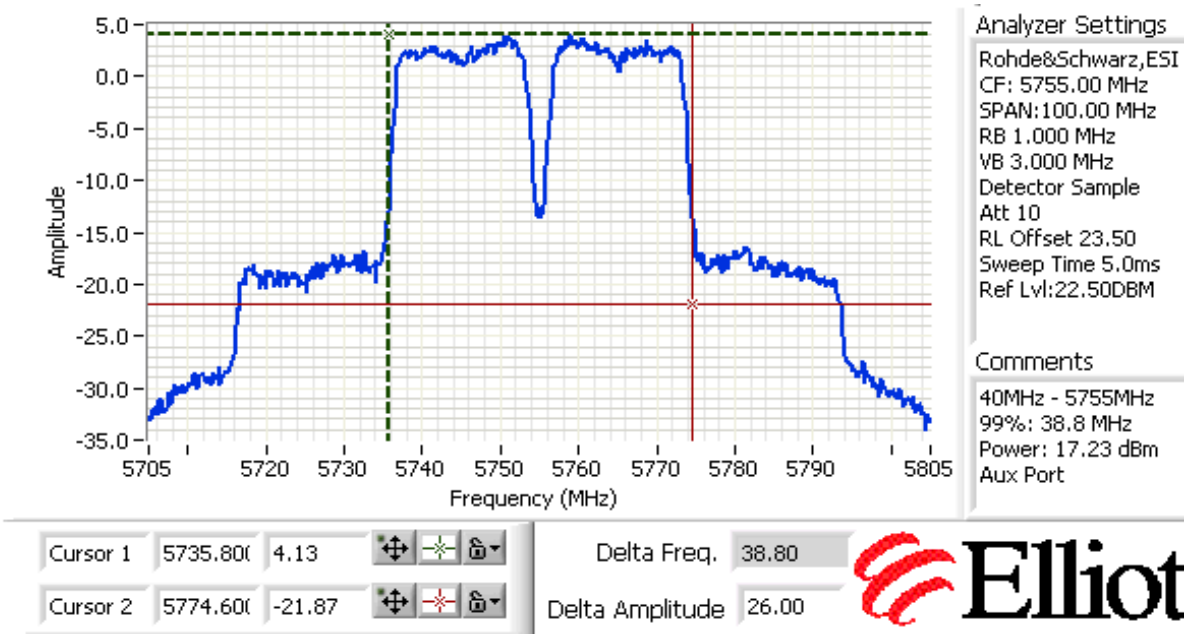
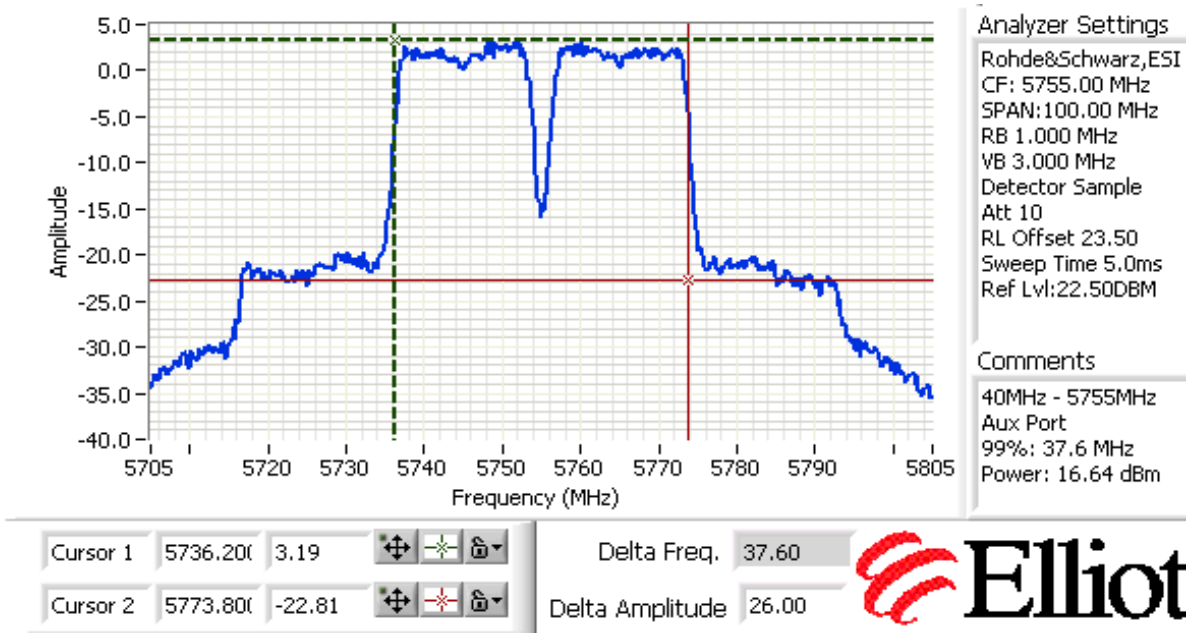
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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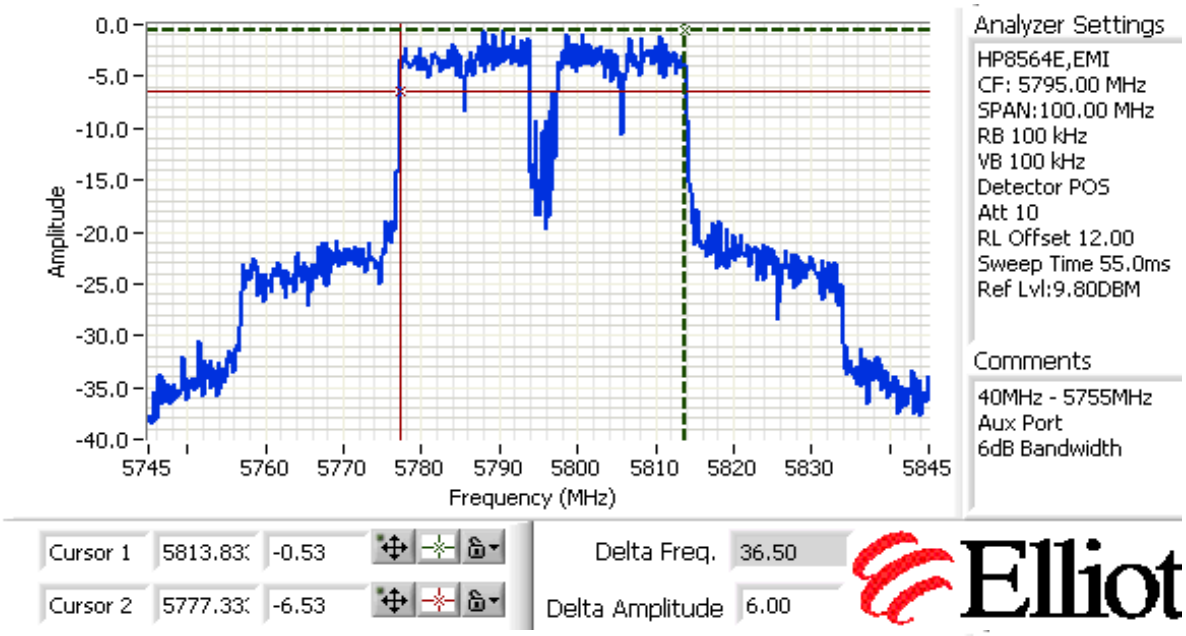
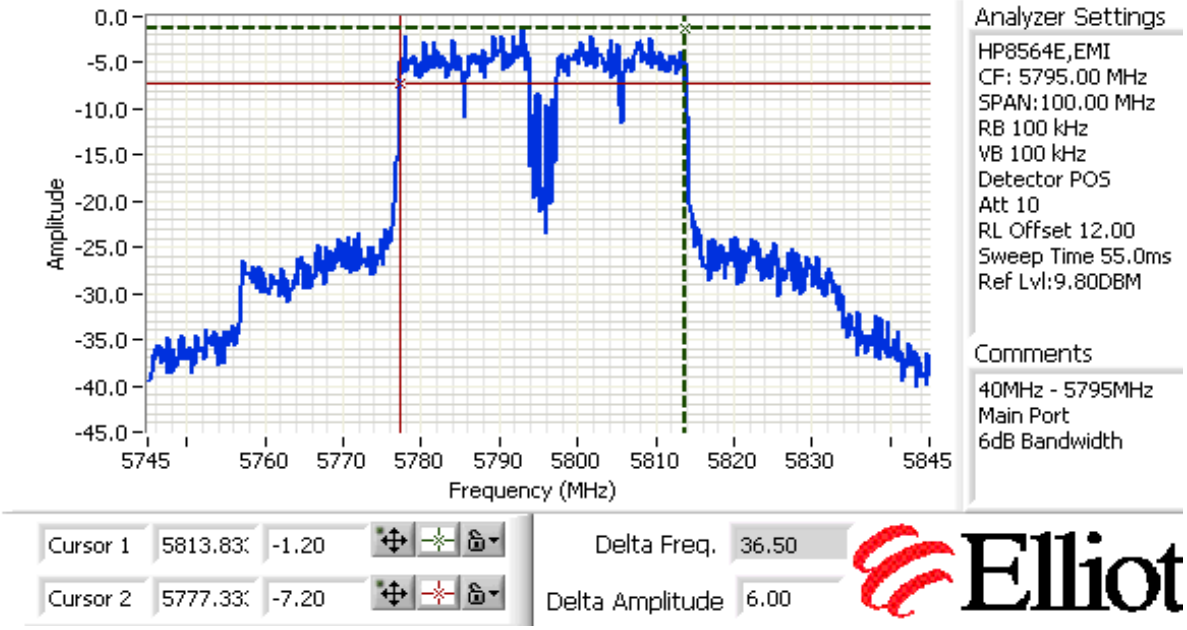
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





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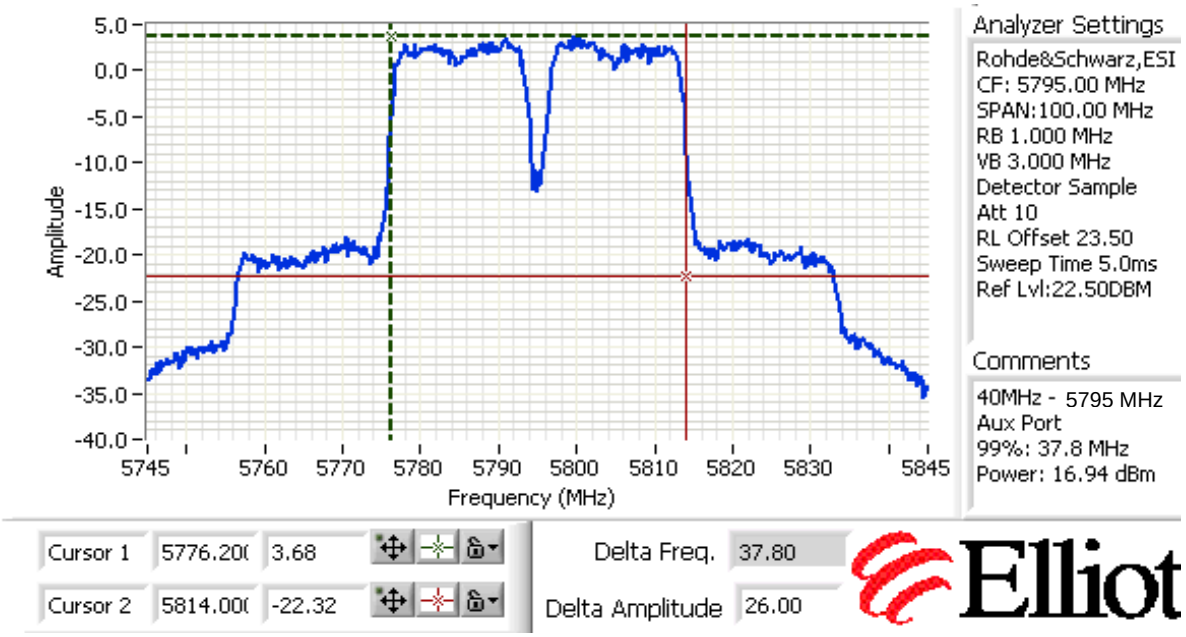
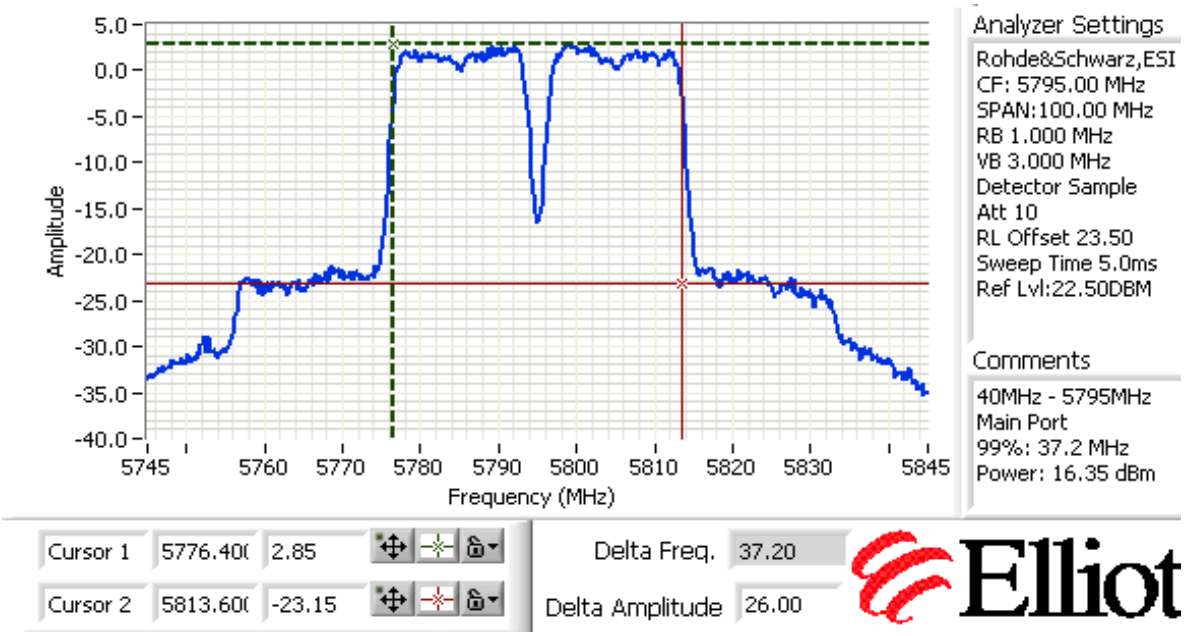
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

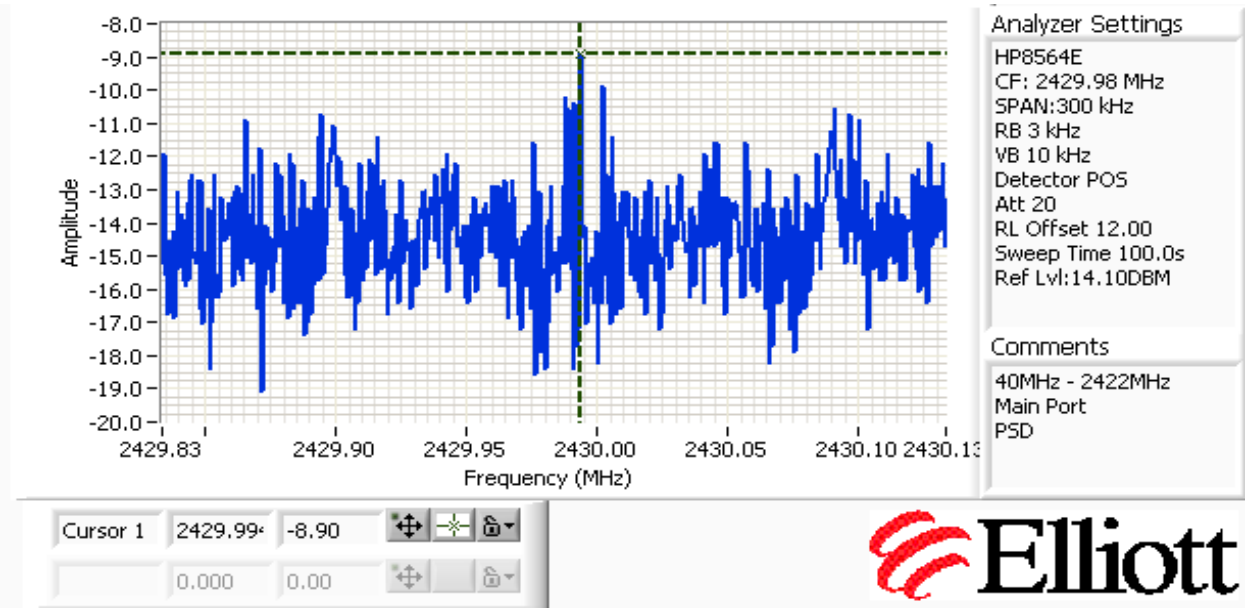
Run # 3: Power spectral Density

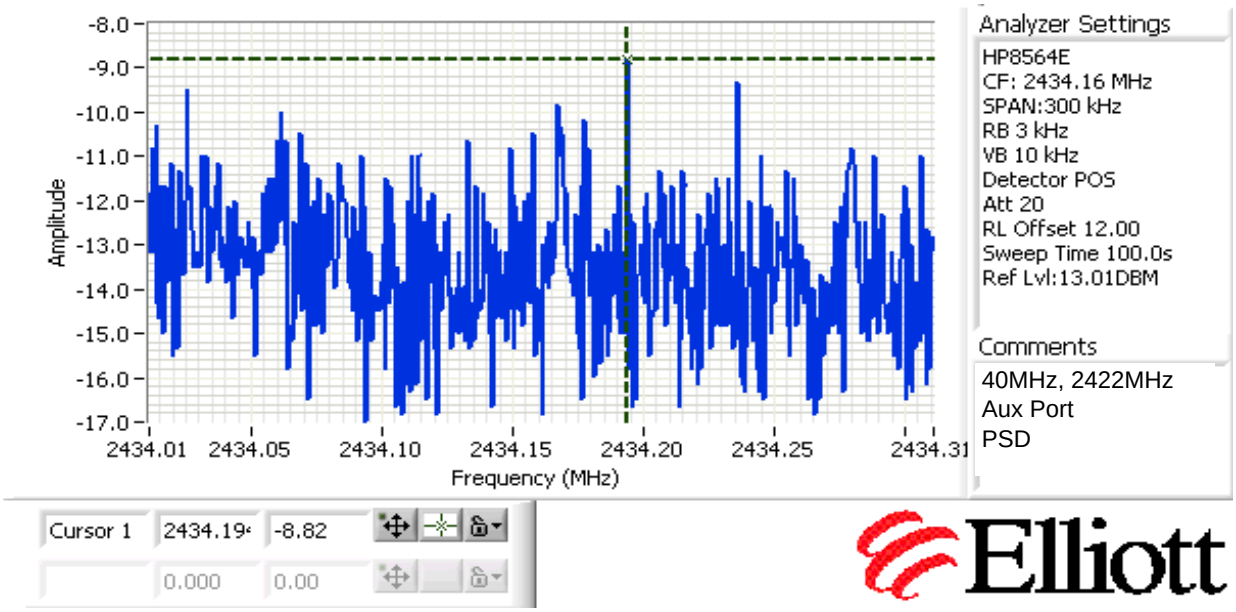
Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1			Limit	Result
		Chain 1	Chain 2	Total	dBm/3kHz	
-	2422	-8.9	-8.8	-5.8	8.0	Pass
-	2437	-7.9	-7.8	-4.8	8.0	Pass
-	2452	-3.1	-7.0	-1.6	8.0	Pass
-	5755	-10.2	-6.2	-4.7	8.0	Pass
-	5795	-11.1	-6.0	-4.8	8.0	Pass

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

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

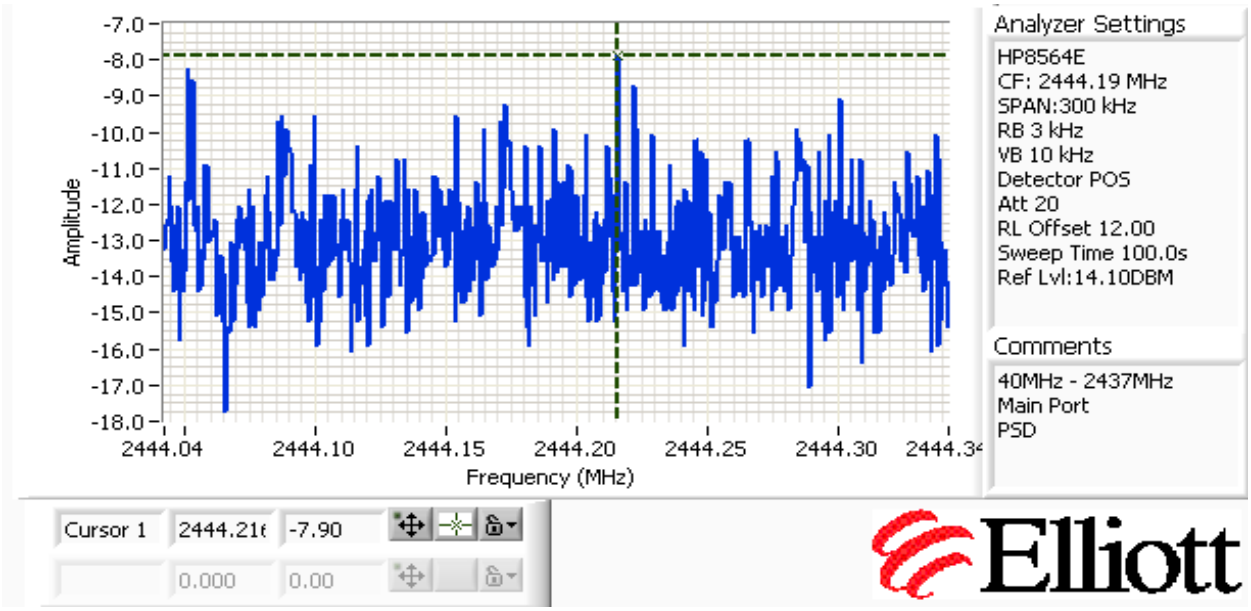
Run # 3: Power spectral Density

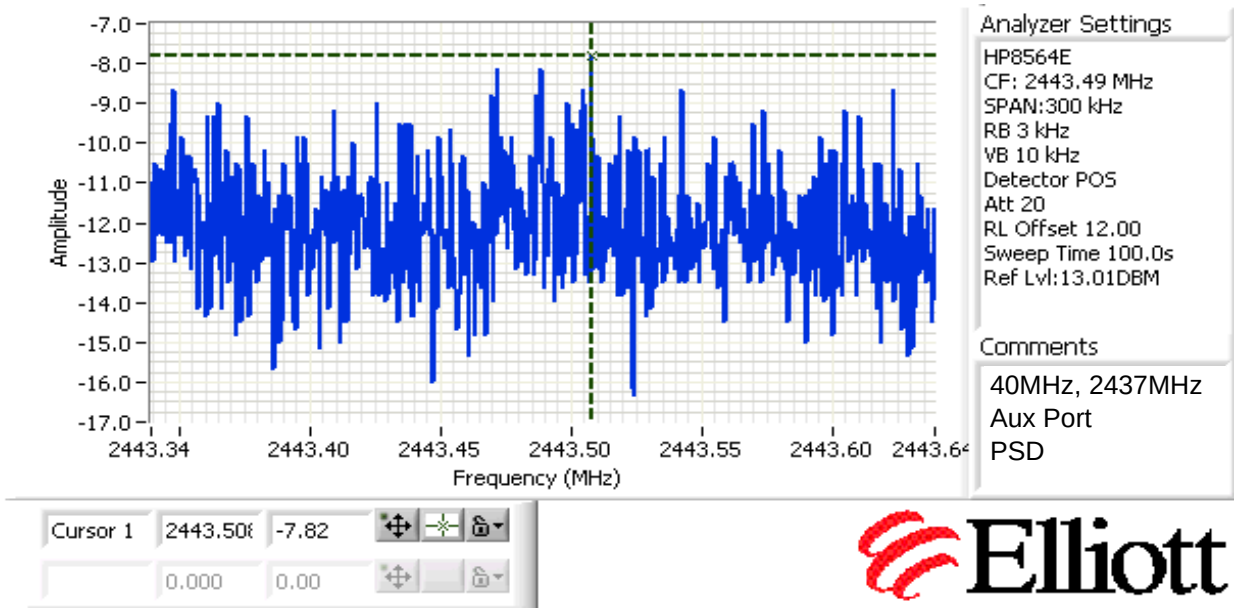




Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

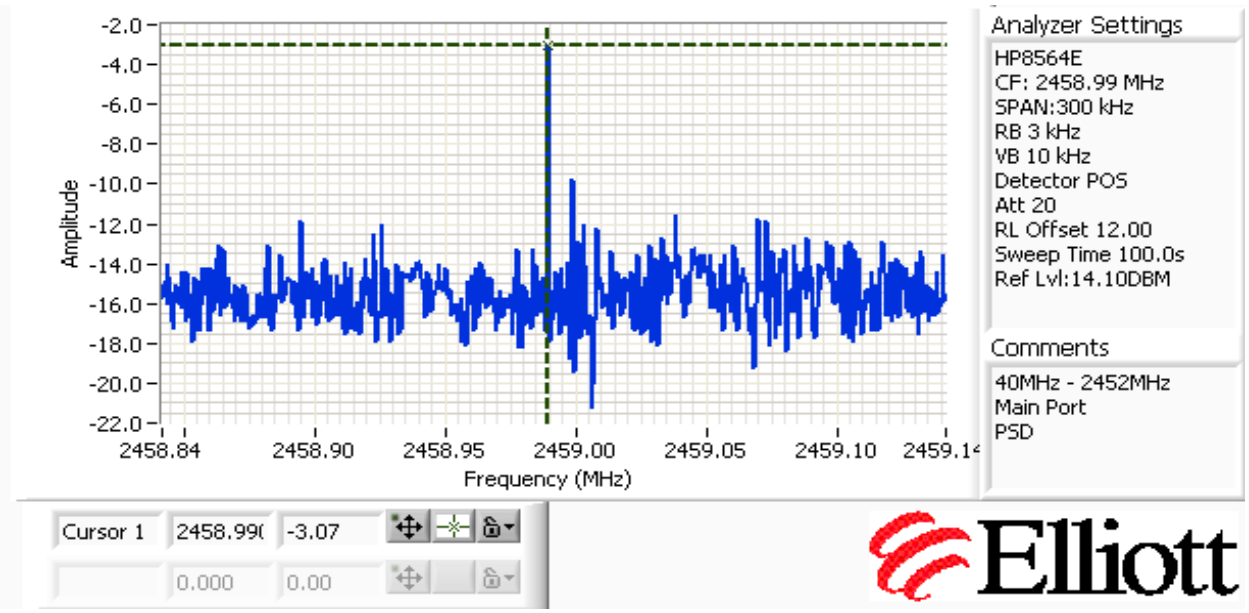
Run # 3: Power spectral Density

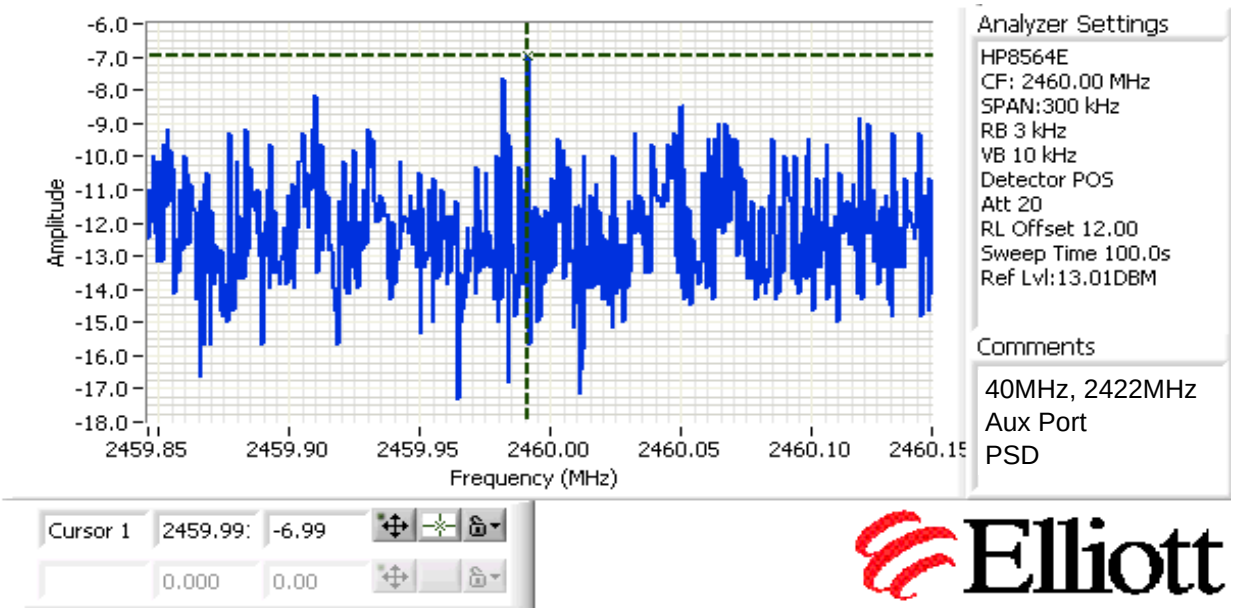




Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

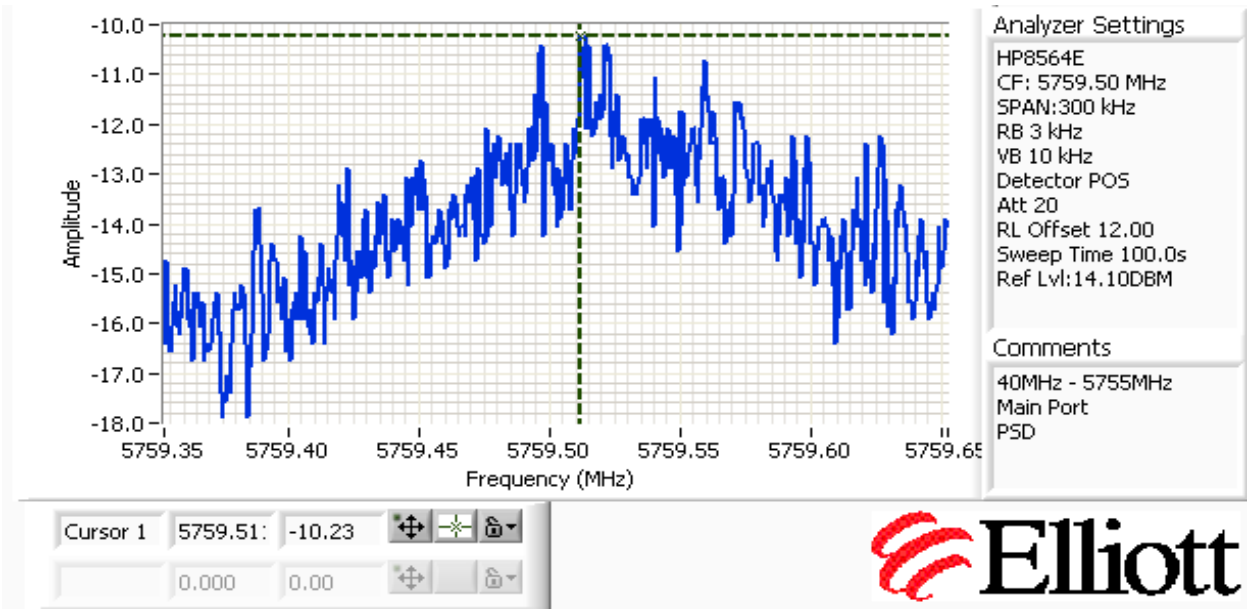
Run # 3: Power spectral Density

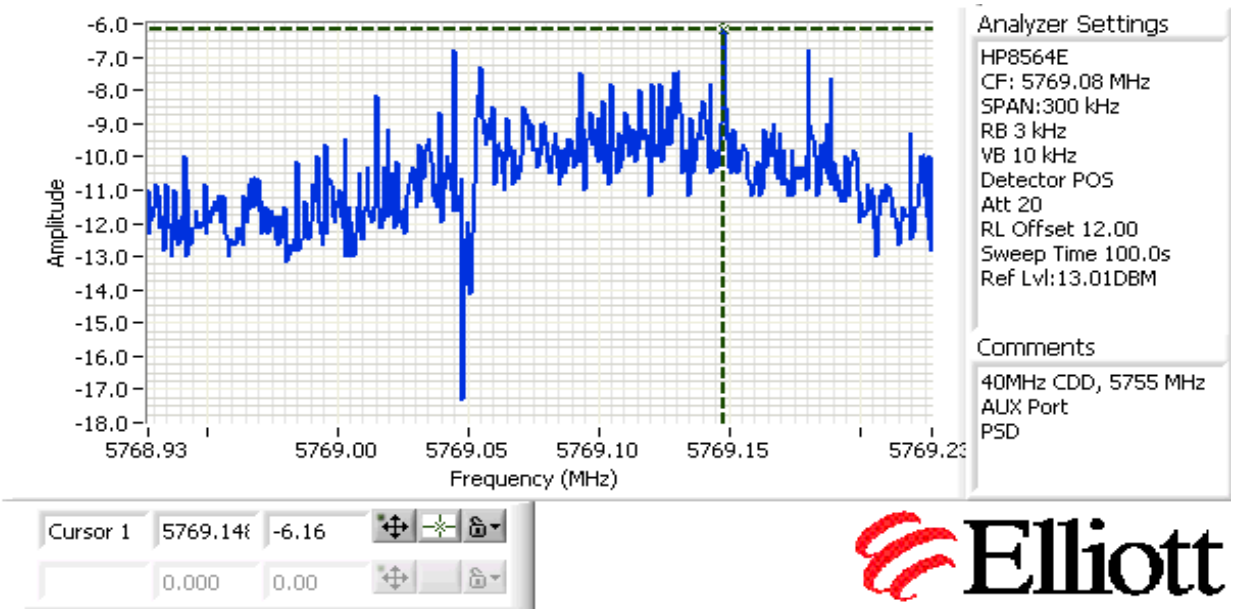




Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run # 3: Power spectral Density





Client:	Broadcom Corporation	Job Number:	J70300
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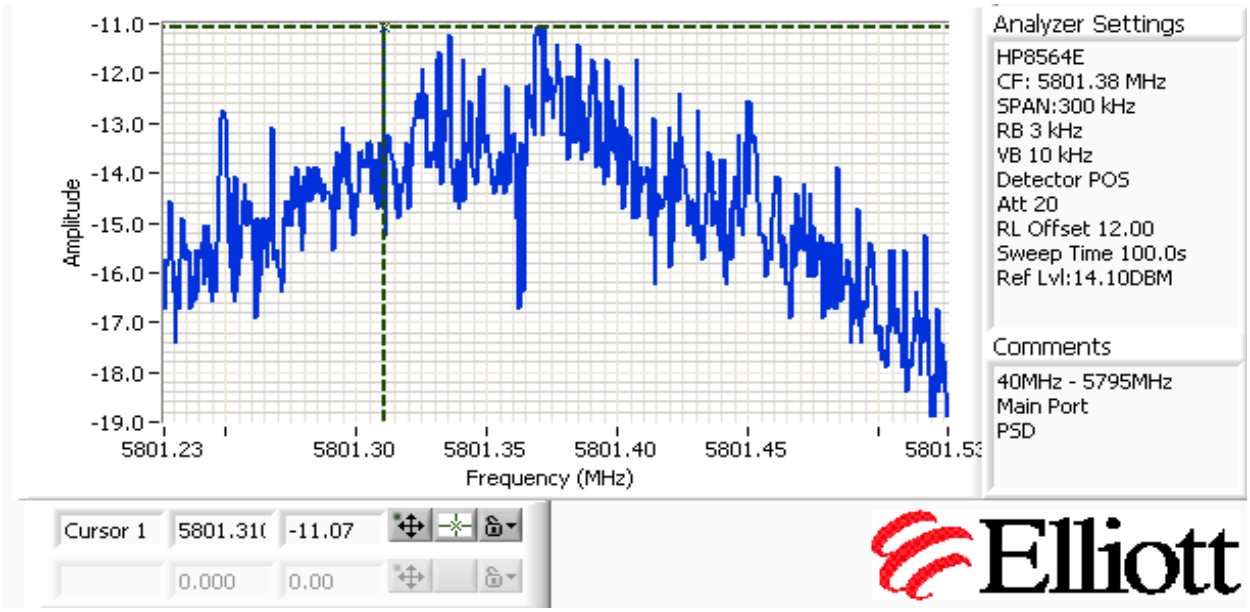
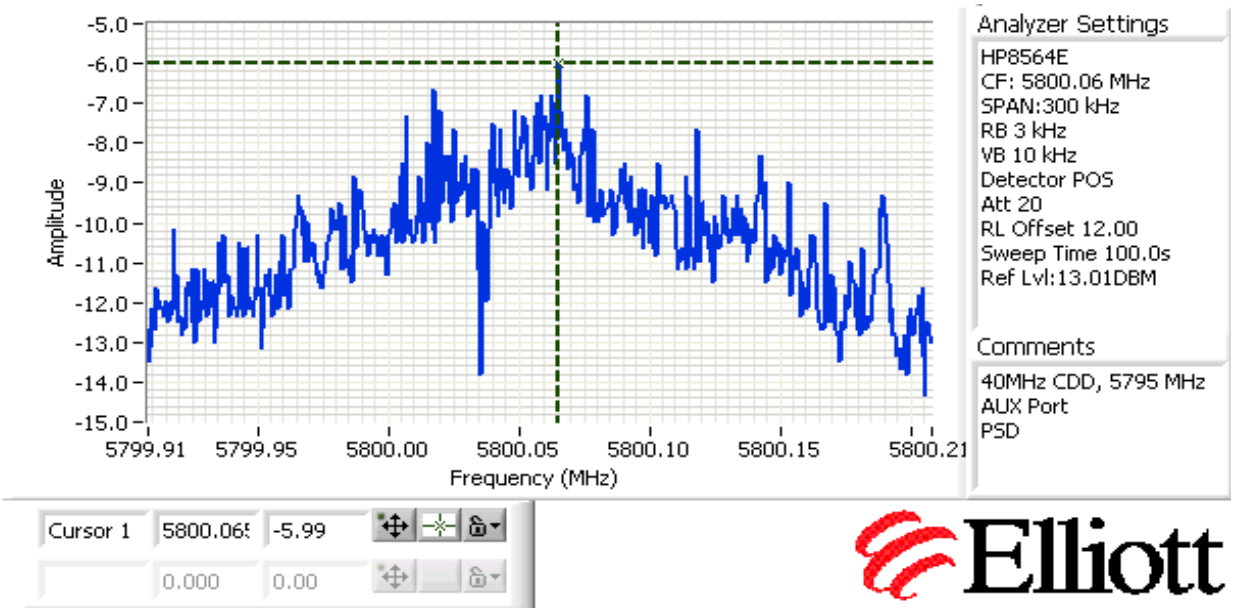
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run # 3: Power spectral Density





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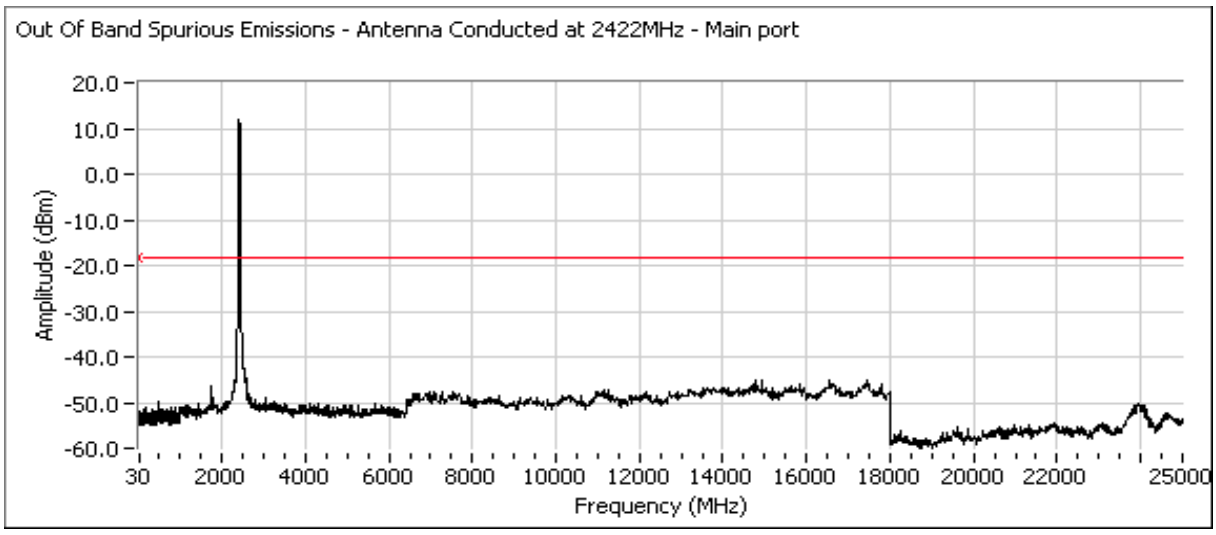
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Power Setting Per Chain			Frequency (MHz)	Limit	Result
#1	#2	#3			
-	-		2422	-30dBc	Pass
-	-		2437	-30dBc	Pass
-	-		2452	-30dBc	Pass
-	-		5755	-30dBc	Pass
-	-		5795	-30dBc	Pass

Note 1:	Measured on each chain individually

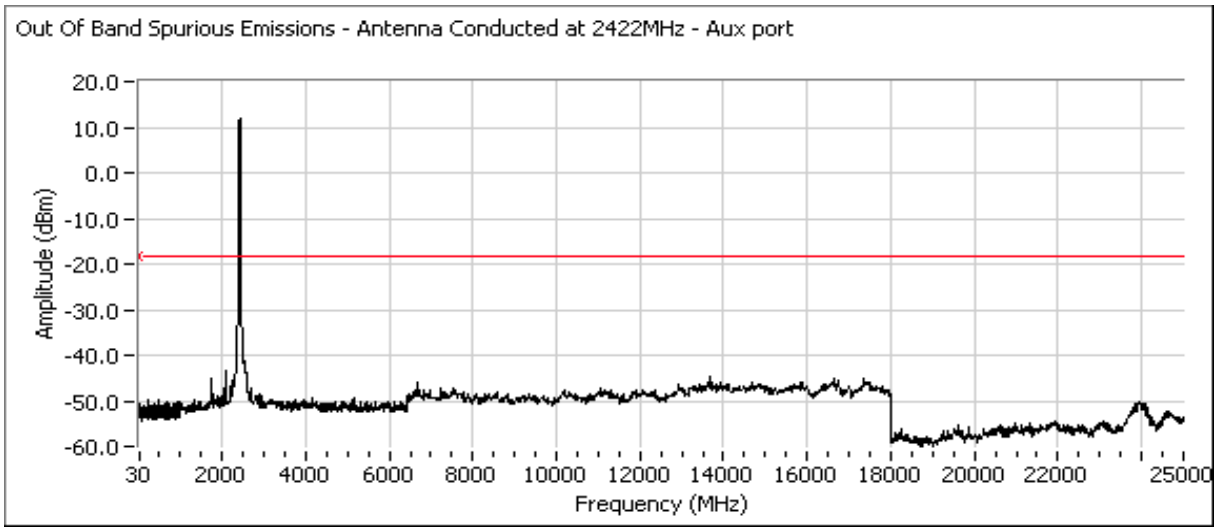
Plots for low channel, Main Port



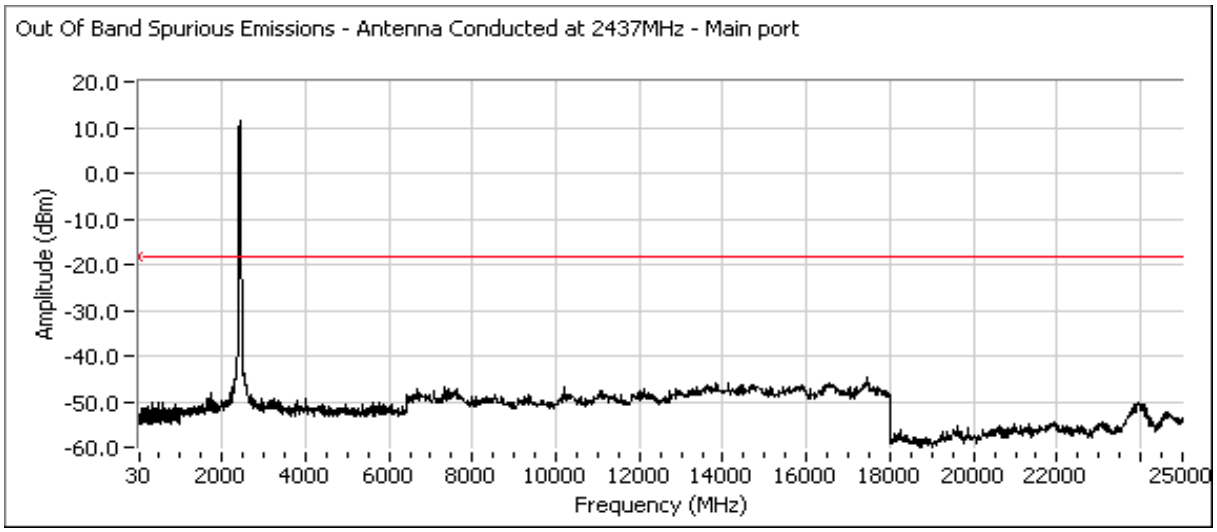
Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Plots for low channel, Aux Port



Plots for center channel, Main Port



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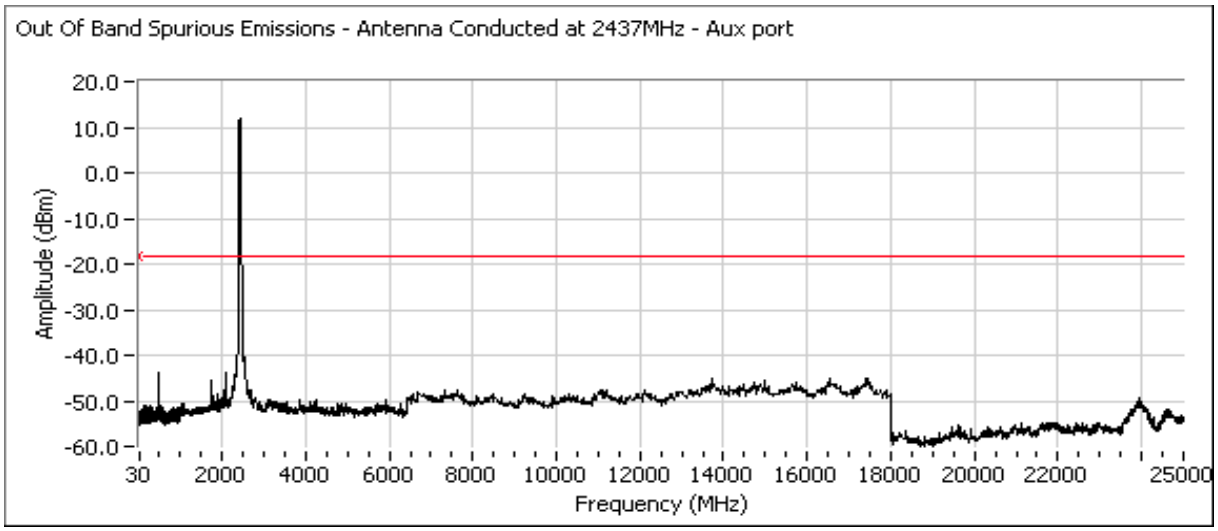
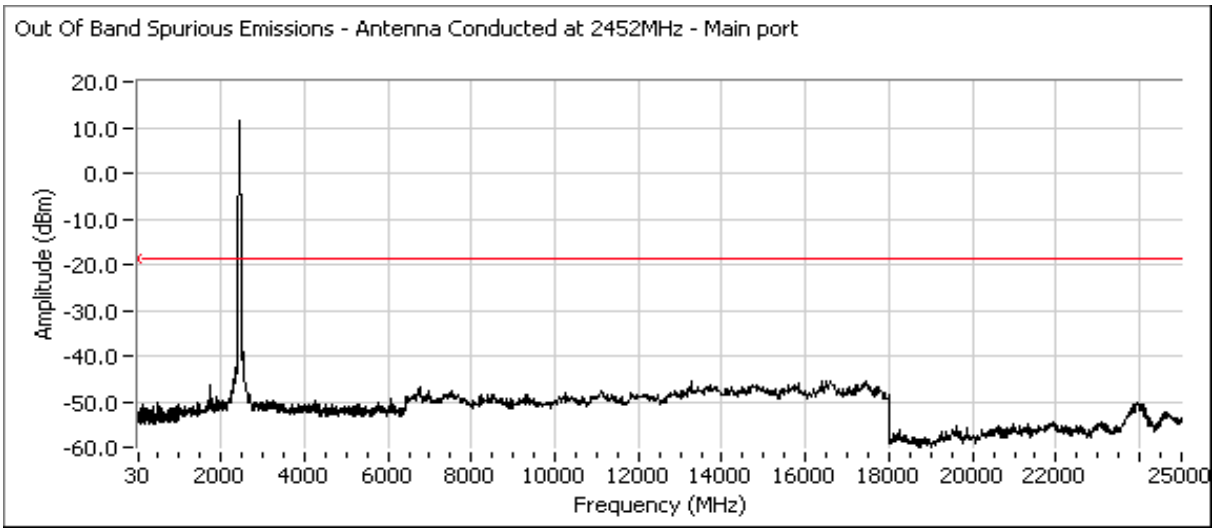
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Plots for center channel, Aux Port



Plots for high channel, Main Port



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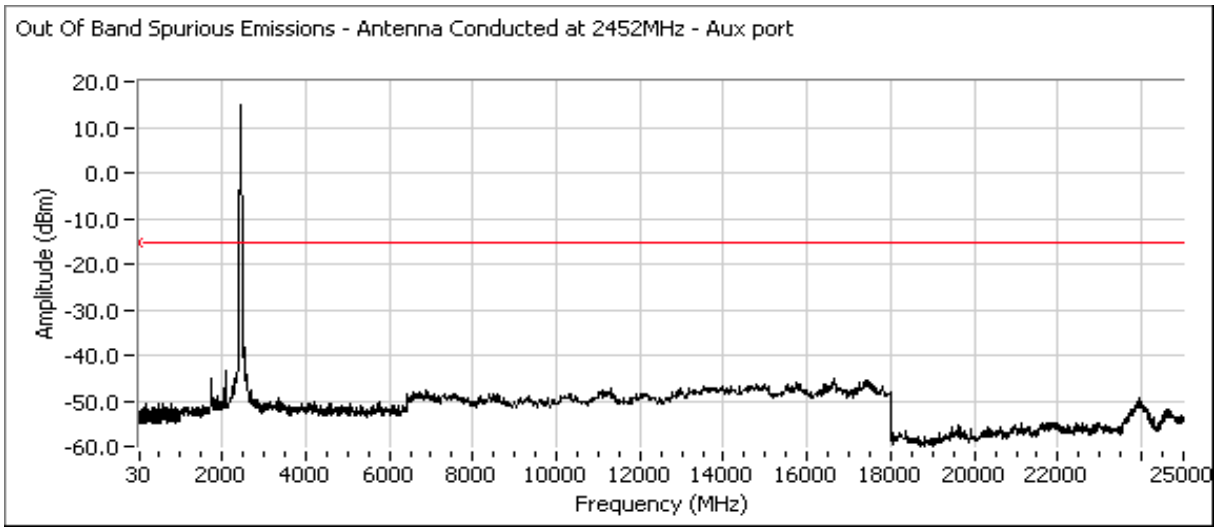
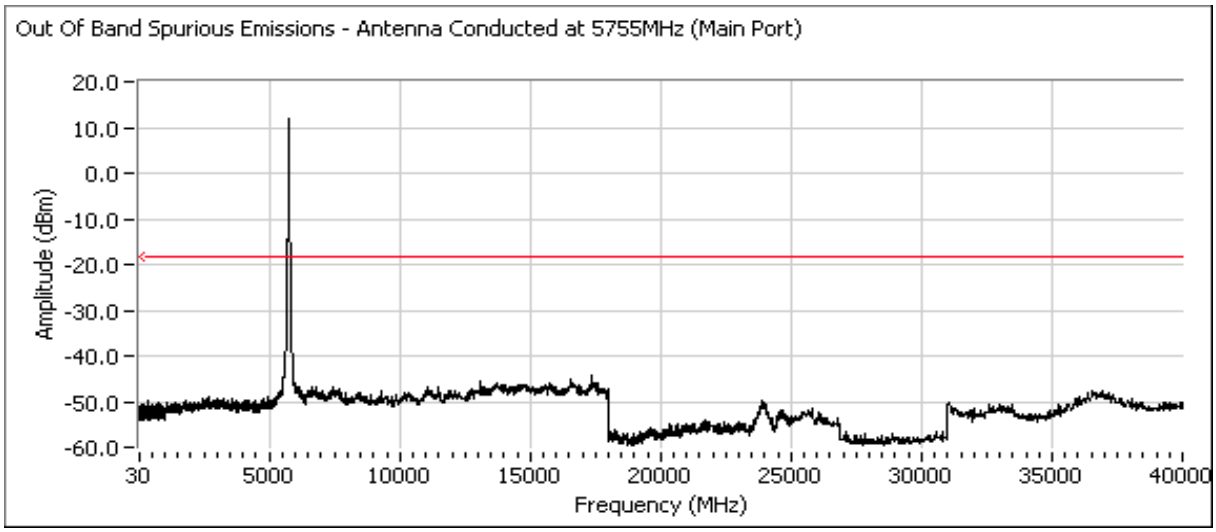
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Plots for high channel, Aux Port



Plots for low channel (5G band), Main Port



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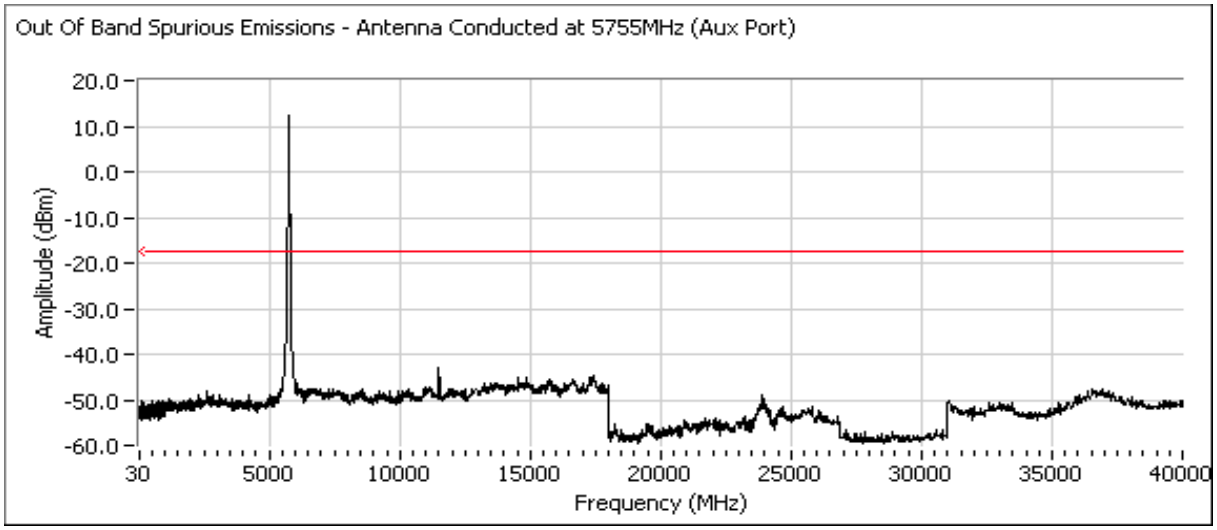
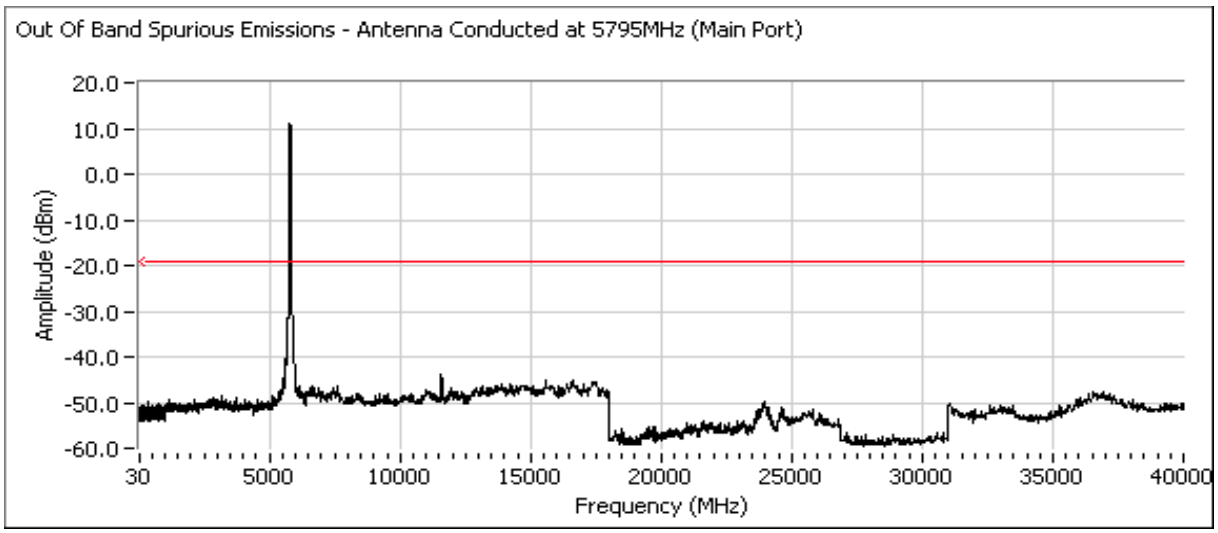
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Plots for low channel (5G band), Aux Port



Plots for high channel (5G band), Main Port



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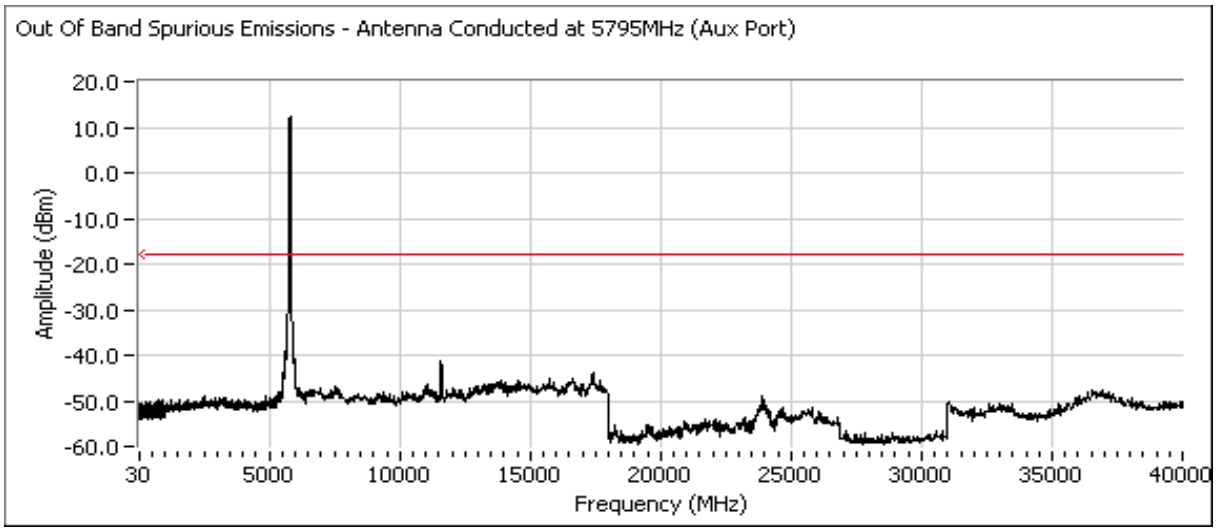
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

Plots for high channel (5G band), Aux Port



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Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Maximum Permissible Exposure

Test Specific Details

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

Date of Test: 1/16/2008
Test Engineer: Mark Hill

General Test Configuration

Calculation uses the free space transmission formula:

$$S = (PG)/(4 \pi d^2)$$

Where: S is power density (W/m^2), P is output power (W), G is antenna gain relative to isotropic, d is separation distance from the transmitting antenna (m).

Summary of Results

Device complies with Power Density requirements at 20cm separation:	Yes
Worst Case Power Density (S) in mW/cm^2	0.147

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:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #1: MPE for 2.4GHz band transmission - 802.11b and 802.11g

Use: General
Antenna: 3.9 dBi

2.4 GHz band - 802.11b and 802.11g mode worse case

Freq. MHz	EUT Power dBm	EUT Power mW*	Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm^2	MPE Limit at 20 cm mW/cm^2
2412	22.0	158.5	0	3.9	22.0	389.05	0.077	1.000
2437	21.9	154.9	0	3.9	21.9	380.19	0.076	1.000
2462	21.6	144.5	0	3.9	21.6	354.81	0.071	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm^2	MPE Limit mW/cm^2	Distance where S <= MPE Limit
2412	0.077	1.000	5.6cm
2437	0.076	1.000	5.5cm
2462	0.071	1.000	5.3cm

Run #2: MPE for 2.4GHz band transmission - 802.11n 20 MHz CDD

Use: General
Antenna: 3.9 dBi - Effective gain 6.9 dBi

2.4 GHz band - 802.11n 20MHz CDD

Freq. MHz	EUT Power dBm	EUT Power mW*	Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm^2	MPE Limit at 20 cm mW/cm^2
2412	17.0	50.1	0	6.9	17.0	245.47	0.049	1.000
2437	21.8	151.4	0	6.9	21.8	741.31	0.147	1.000
2462	16.7	46.8	0	6.9	16.7	229.09	0.046	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm^2	MPE Limit mW/cm^2	Distance where S <= MPE Limit
2412	0.049	1.000	4.4cm
2437	0.147	1.000	7.7cm
2462	0.046	1.000	4.3cm

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #3: MPE for 2.4GHz band transmission - 802.11n 40 MHz CDD

Use: General
Antenna: 3.9 dBi - Effective gain 6.9 dBi

2.4 GHz band - 802.11n 40MHz CDD

Freq. MHz	EUT Power dBm	EUT Power mW*	Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm^2	MPE Limit at 20 cm mW/cm^2
2422	16.1	40.7	0	6.9	16.1	199.53	0.040	1.000
2437	16.8	47.9	0	6.9	16.8	234.42	0.047	1.000
2452	14.8	30.2	0	6.9	14.8	147.91	0.029	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm^2	MPE Limit mW/cm^2	Distance where S <= MPE Limit
2422	0.040	1.000	4.0cm
2437	0.047	1.000	4.3cm
2452	0.029	1.000	3.4cm

Run #4: MPE for 5.7GHz band transmission - 802.11a Legacy

Use: General
Antenna: 5.8

5.7 GHz band - 802.11a Legacy

Freq. MHz	EUT Power dBm	EUT Power mW*	Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm^2	MPE Limit at 20 cm mW/cm^2
5745	16.6	45.7	0	5.8	16.6	173.78	0.035	1.000
5785	16.6	45.7	0	5.8	16.6	173.78	0.035	1.000
5825	16.7	46.8	0	5.8	16.7	177.83	0.035	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm^2	MPE Limit mW/cm^2	Distance where S <= MPE Limit
5745	0.035	1.000	3.7cm
5785	0.035	1.000	3.7cm
5825	0.035	1.000	3.8cm

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		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	N/A

Run #5: MPE for 5.7GHz band transmission - 802.11n 20MHz CDD

Use: General
Antenna: Two 5.8 antenna - Effective 8.8 dBi

5.7 GHz band - 802.11n 20MHz CDD

Freq. MHz	EUT Power dBm	EUT Power mW*	Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm^2	MPE Limit at 20 cm mW/cm^2
5745	19.8	95.5	0	8.8	19.8	724.44	0.144	1.000
5785	19.4	87.1	0	8.8	19.4	660.69	0.131	1.000
5825	19.6	91.2	0	8.8	19.6	691.83	0.138	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm^2	MPE Limit mW/cm^2	Distance where S <= MPE Limit
5745	0.144	1.000	7.6cm
5785	0.131	1.000	7.3cm
5825	0.138	1.000	7.4cm

Run #6: MPE for 5.7GHz band transmission - 802.11n 40MHz CDD

Use: General
Antenna: Two 5.8 antenna - Effective 8.8 dBi

5.7 GHz band - 802.11n 40MHz CDD

Freq. MHz	EUT Power dBm	EUT Power mW*	Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm^2	MPE Limit at 20 cm mW/cm^2
5755	19.9	97.7	0	8.8	19.9	741.31	0.147	1.000
5795	19.7	93.3	0	8.8	19.7	707.95	0.141	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm^2	MPE Limit mW/cm^2	Distance where S <= MPE Limit
5755	0.147	1.000	7.7cm
5795	0.141	1.000	7.5cm

Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	-

Conducted Emissions

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

Test Specific Details

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

Date of Test: 1/10/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #4

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

General Test Configuration

For tabletop equipment, the EUT and host system were located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN. A second LISN was used for all local support equipment. Remote support equipment was located outside of the semi-anechoic chamber. Any cables running to remote support equipment where routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

Ambient Conditions:

Temperature: 19 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power,120V/60Hz	FCC Class B	Pass	31.4dBµV (37.2µV) @ 2.174MHz (-14.6dB)

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:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
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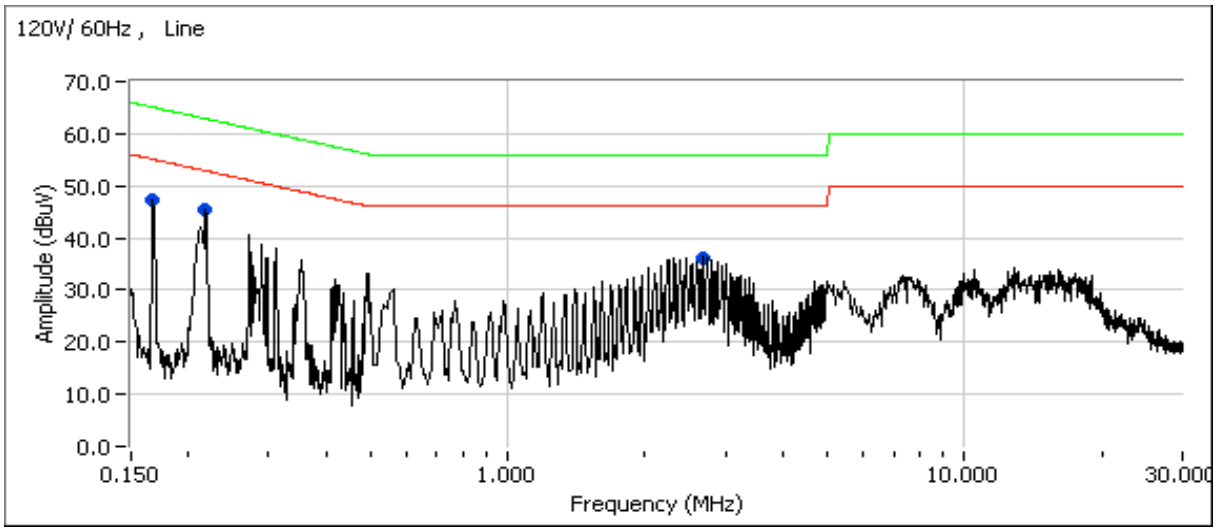
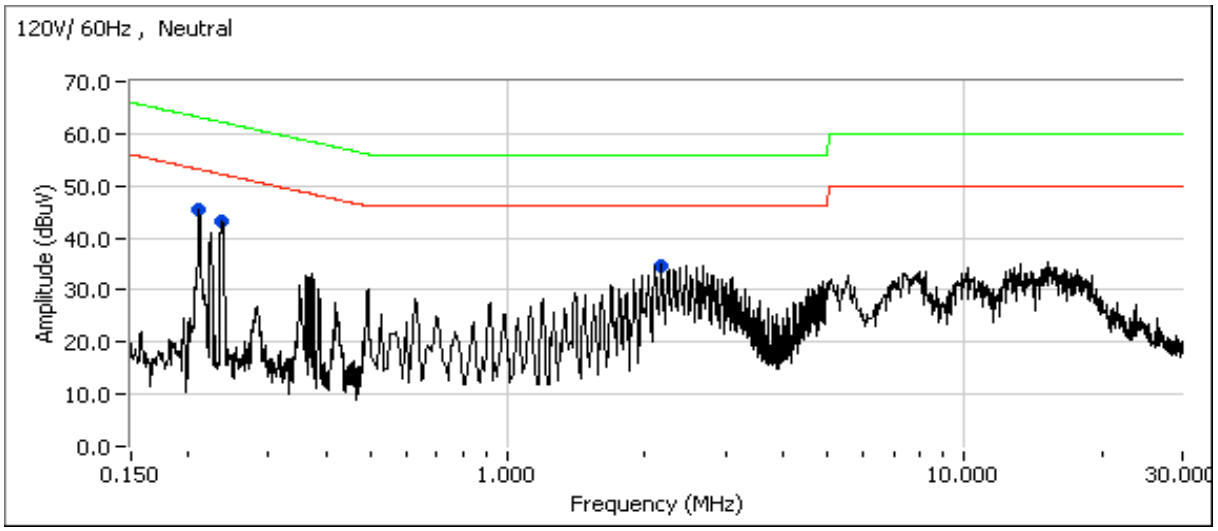
Standard:	FCC 15.247/RSS-210	Class:	-

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





Client:	Broadcom Corporation	Job Number:	J70300
Model:	BCM94322HM8L 802.11ag/Draft 802.11n WLAN PCI-E Minicard	T-Log Number:	T70322
		Account Manager:	Dean Eriksen
Contact:	David Boldy		
Standard:	FCC 15.247/RSS-210	Class:	-

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

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

Frequency	Level	AC	FCC Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.218	45.5	Line 1	52.9	-7.4	Peak	
0.167	47.4	Line 1	55.1	-7.7	Peak	
0.211	45.4	Neutral	53.2	-7.8	Peak	
0.237	43.1	Neutral	52.2	-9.1	Peak	
2.663	36.0	Line 1	46.0	-10.0	Peak	
2.174	34.5	Neutral	46.0	-11.5	Peak	

Final quasi-peak and average readings

Frequency	Level	AC	FCC Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
2.174	31.4	Neutral	46.0	-14.6	AVG	
2.663	30.5	Line 1	46.0	-15.5	AVG	
0.167	44.3	Line 1	65.1	-20.8	QP	
0.211	32.3	Neutral	53.2	-20.9	AVG	
2.174	33.7	Neutral	56.0	-22.3	QP	
2.663	33.5	Line 1	56.0	-22.5	QP	
0.218	38.4	Line 1	62.9	-24.5	QP	
0.211	37.9	Neutral	63.2	-25.3	QP	
0.237	35.2	Neutral	62.2	-27.0	QP	
0.218	20.8	Line 1	52.9	-32.1	AVG	
0.167	17.6	Line 1	55.1	-37.5	AVG	
0.237	13.1	Neutral	52.2	-39.1	AVG	

EXHIBIT 3: Photographs of Test Configurations

2 Pages

EXHIBIT 4: Proposed FCC ID Label & Label Location

EXHIBIT 5: Detailed Photographs of Broadcom Corporation Model BCM94322HM8LConstruction

4 Pages

EXHIBIT 6: Operator's Manual for Broadcom Corporation Model BCM94322HM8L

18 Pages

EXHIBIT 7: Block Diagram of Broadcom Corporation Model BCM94322HM8L

1 Page

EXHIBIT 8: Schematic Diagrams for Broadcom Corporation Model BCM94322HM8L

4 Pages

EXHIBIT 9: Theory of Operation for Broadcom Corporation Model BCM94322HM8L

4 Pages

EXHIBIT 10: RF Exposure Information

2 Pages