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EMC Test Report

Application for Grant of Equipment Authorization

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

Model: WS-AP3710e

FCC ID:	QQD10E
IC CERTIFICATION #:	5248S-10E
APPLICANT:	Flextronics 21 Richardson Side Road Kanata, ON K2K 2C1, Canada
TEST SITE(S):	NTS Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-4, 2845B-5, 2845B-7
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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	03-12-2013	Initial release	
1	03-19-2013	Added tabular data for 240 MHz emissions	DWB
2	03-20-2013	Revised the tabular test data with the actual frequency instead of the transition frequency of 240 MHz	DWB DMG

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SCOPE

An electromagnetic emissions test has been performed on the Flextronics model WS-AP3710e, pursuant to the following rules:

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

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

ANSI C63.4:2003
FCC DTS Measurement Procedure, KDB 558074
FCC KDB 662911 "Emissions Testing of Transmitters with Multiple Outputs in the Same Band"

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

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

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

OBJECTIVE

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

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

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

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

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

STATEMENT OF COMPLIANCE

The tested sample of Flextronics model WS-AP3710e complied with the requirements of the following regulations:

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

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

The test results recorded herein are based on a single type test of Flextronics model WS-AP3710e and therefore apply only to the tested sample. The sample was selected and prepared by Georges Fares of Flextronics.

DEVIATIONS FROM THE STANDARDS

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

TEST RESULTS SUMMARY

DIGITAL TRANSMISSION SYSTEMS (2400 – 2483.5MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	System uses 802.11b/g/n techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (a)	Min. 6dB Bandwidth	b: 10.2 MHz g: 16.5 MHz n20: 17.5 MHz n40: 36.7 MHz	>500kHz	Complies
15.247 (b) (3)	RSS 210 A8.4 (4)	Output Power (multipoint systems)	b: 24.0 dBm g: 24.1 dBm n20: 24.0 dBm n40: 22.4 dBm EIRP = 2.442 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (b)	Power Spectral Density	b: 1.2 dBm/3kHz g: --1.8 dBm/3kHz n20: -1.3 dBm/3kHz n40: -6.0 dBm/3kHz	8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions 30MHz – 25 GHz	All emissions < -30dBc for 802.11b/g/n20 All emissions < -20dBc for 802.11n40	< -20dBc or < -30dBc Note 2	Complies
15.247(c) / 15.209	RSS 210 A8.5	Radiated Spurious Emissions 30MHz – 25 GHz	53.9 dBµV/m @ 2384.5 MHz (-0.1 dB)	15.207 in restricted bands, all others > 30dBc Note 2	Complies

Note 1: EIRP calculated using antenna gain of 9.8 dBi (three 5 dBi antennas) for the highest EIRP system.
Note 2: A limit of -30dBc was used when the maximum conducted output power was measured and a limit of -20dBc was used when maximum peak conducted output power was measured.

DIGITAL TRANSMISSION SYSTEMS (5725 –5850 MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	System uses 802.11a/n techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (a)	Min. 6dB Bandwidth	a: 16.3 MHz n20: 17.5 MHz n40: 35.6 MHz	>500kHz	Complies
15.247 (b)	RSS 210 A8.4 (4)	Output Power (multipoint systems)	a: 21.7 dBm n20: 21.8 dBm n40: 24.8 dBm EIRP = 1.119 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (b)	Power Spectral Density	a: -3.4 dBm/3kHz n20: -3.8 dBm/3kHz n40: -6.1 dBm/3kHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions – 30MHz – 40 GHz	All spurious emissions < -30dBc for 802.11a and < -20dBc for 802.11 n20 and n40	< -20dBc or < -30dBc Note 2	Complies
15.247(c) / 15.209	RSS 210 A8.5 Table 2, 3	Radiated Spurious Emissions 30MHz – 40 GHz	51.7 dBµV/m @ 5400.0 MHz (-2.3 dB)	15.207 in restricted bands, all others > 30dBc Note 2	Complies

Note 1: EIRP calculated using antenna gain of 8.8 dBi (three 4 dBi antennas) for the highest EIRP system.
Note 2: A limit of -30dBc was used when the maximum conducted output power was measured and a limit of -20dBc was used when maximum peak conducted output power was measured.

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Unique reverse polarity SMA connector used	Unique or integral antenna required	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	36.1 dBµV @ 0.337 MHz(-13.2 dB)	Refer to page 18	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	Refer to User Manual for details	Statement required regarding non-interference	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	Refer to User Manual for details	Statement for products with detachable antenna	Complies
-	RSP 100 RSS GEN 4.4.1	Max. 99% Bandwidth	2.4 GHz b: 14.6 MHz g: 17.6 MHz n20: 18.9 MHz n40: 39.3 MHz 5.8 GHz a: 17.3 MHz n20: 18.3 MHz n40: 37.6 MHz	Information only	N/A

MEASUREMENT UNCERTAINTIES

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

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

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Flextronics model WS-AP3710e is a multiple radio access point, each radio operating in 3x3 MIMO and legacy modes. It incorporates both a 2.4 GHz band 802.11b/g/n and a 5.2 GHz band and 5.8 GHz band 802.11a/n radio in a single enclosure. Since the EUT could be placed in any position 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 48 Volts DC, 0.8 Amps.

The sample was received on January 15, 2013 and tested on January 18, 20, 21, 22, 23, 25, 27, 28, 30, 31, February 1, 4, 26, 27 and 28, 2013. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Flextronics	WS-AP3710e	Access Point	None	QQD10E

ANTENNA SYSTEM

The antenna system consists of a 6 element Omni antenna (gain of 2.0dBi), two Sector antennas (gain of 5 dBi) or two 3 element Panel antennas (gain of 3 dBi in the 2.4 GHz band and 4 dBi in the 5.8 GHz band). When two antennas are used, they are the same for both radios.

Model	Application	Description	Gain (dBi)	Frequency (GHz)	Connector type
WS-AI-DX02360	Indoor	MIMO, Dual-band	2 dBi	2.4 – 2.5 5.15 – 5.85	RSMA
WS-AI-DT04360	Indoor	MIMO, Panel	3.0 dBi 4.0 dBi	2.4 – 2.5 4.9 – 5.9	RSMA
WS-AI-DT05120	Indoor	MIMO, Sector, dual-band	5 dBi	2.3 – 2.7 4.9 – 6.1	RSMA

ENCLOSURE

The EUT enclosure measures approximately 20 by 18.5 by 3 centimeters. It is constructed of uncoated plastic and cast metal.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

SUPPORT EQUIPMENT

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

Company	Model	Description	Serial Number	FCC ID
PowerDsine	9001G-40/SP	POE adapter	N11456519001846A01	-
Dell	Latitude D610	Laptop Computer	26895386773	-

EUT INTERFACE PORTS

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

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
Ethernet/POE	Remote POE adapter or switch	Cat 5	Unshielded	10
Remote POE Data or switch	Laptop	Cat 5	Unshielded	2

The console port was not connected during testing as this is used only during configuration of the radio.

EUT OPERATION

During testing, the EUT was configured to transmit a continuous modulated signal at the selected frequency and power level on all three chains of both radios.

TEST SITE

GENERAL INFORMATION

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

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

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

CONDUCTED EMISSIONS CONSIDERATIONS

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

RADIATED EMISSIONS CONSIDERATIONS

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

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

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

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

INSTRUMENT CONTROL COMPUTER

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

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

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

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

FILTERS/ATTENUATORS

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

ANTENNAS

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

ANTENNA MAST AND EQUIPMENT TURNTABLE

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

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

INSTRUMENT CALIBRATION

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

TEST PROCEDURES

EUT AND CABLE PLACEMENT

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

CONDUCTED EMISSIONS

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

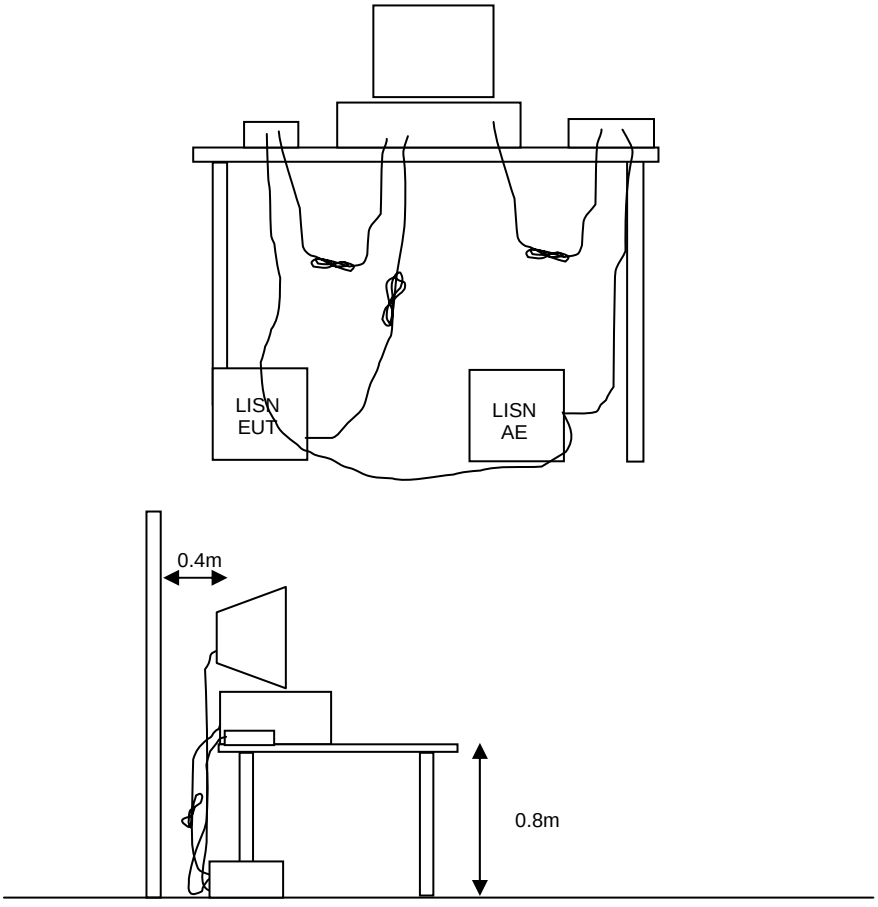


Figure 1 Typical Conducted Emissions Test Configuration

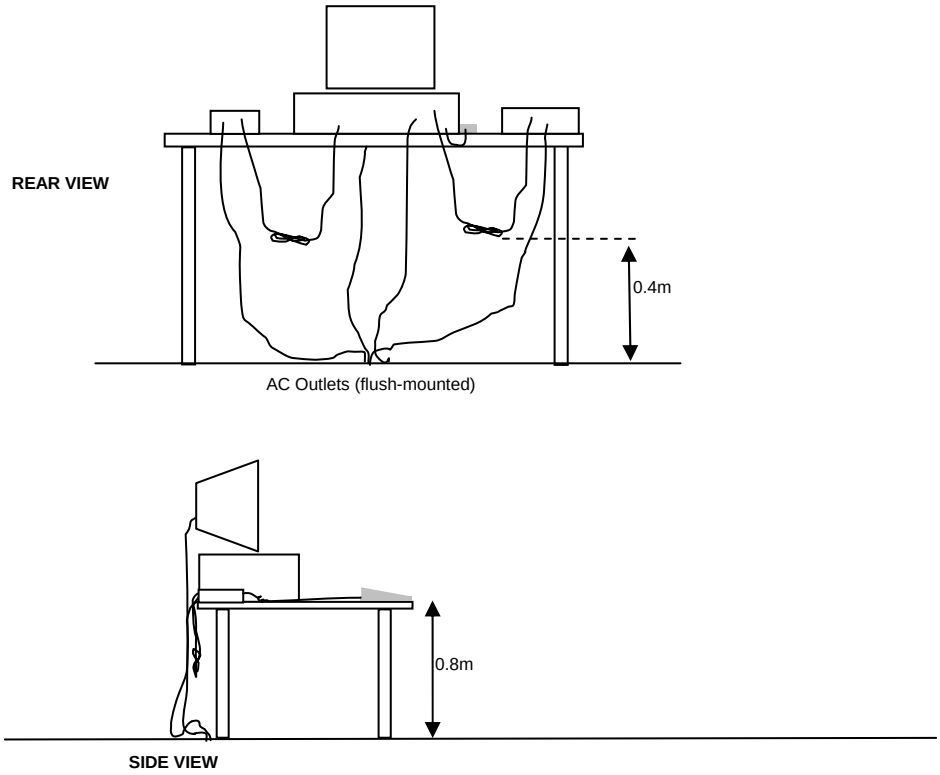
RADIATED EMISSIONS

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

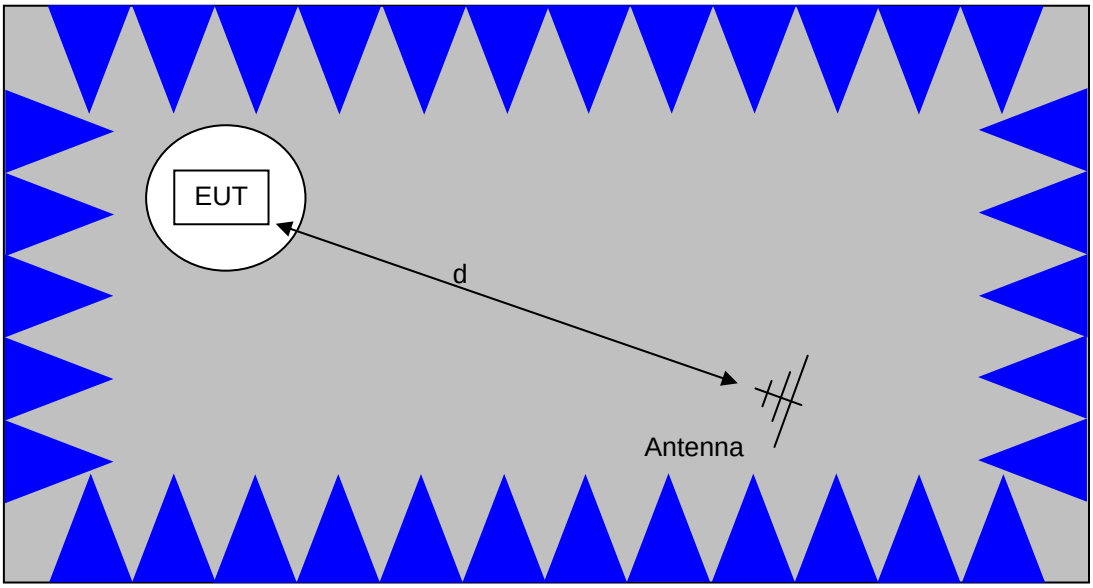
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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

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

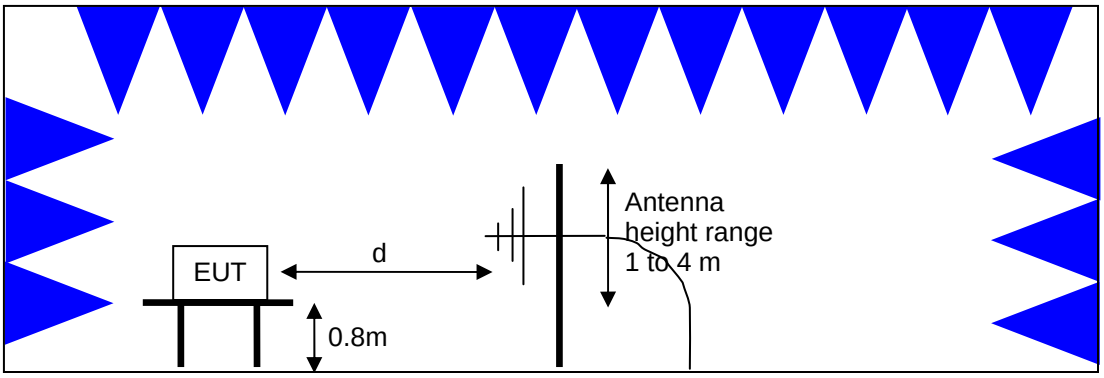


Typical Test Configuration for Radiated Field Strength Measurements



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

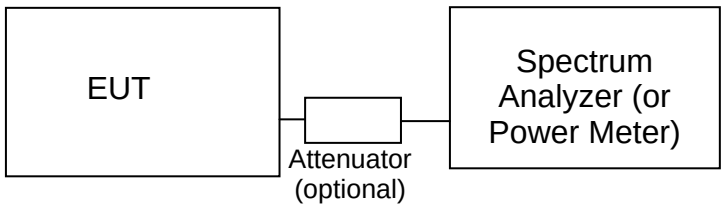
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



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

CONDUCTED EMISSIONS FROM ANTENNA PORT

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



Test Configuration for Antenna Port Measurements

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

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

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

BANDWIDTH MEASUREMENTS

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

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

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

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

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

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

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

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

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

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

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

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

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

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

OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS

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

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

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

TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS

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

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

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

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

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

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_S = Specification Distance in meters

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

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

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

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

$$R_c = R_r + F_d$$

and

$$M = R_c - L_S$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_S = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

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

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

where P is the eirp (Watts)

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

Appendix A Test Equipment Calibration Data

Radiated Emissions, 30 - 1,000 MHz, 18-Jan-13

Manufacturer	Description	Model	Asset #	Cal Due
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1657	6/4/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	5/21/2013
Com-Power Corp.	Preamplifier, 30-1000 MHz	PAM-103	2380	11/9/2013

Conducted Emissions - AC Power Ports, 18-Jan-13

Manufacturer	Description	Model	Asset #	Cal Due
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	1594	5/22/2013
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	5/21/2013
Com-Power	LISN 9KHz-30MHz, 50uH	LI-215A	2672	5/25/2013

Radiated Emissions, 1,000 - 6,500 MHz, 20-Jan-13 to 24-Jan-13

Manufacturer	Description	Model	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	5/21/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Radiated Emissions, 1000 - 26,000 MHz, 25-Jan-13

Manufacturer	Description	Model	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	11/9/2013
Hewlett Packard	Head (Inc flex cable, 1143, 2198) Red	84125C	1145	7/5/2013
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	9/14/2013
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	5/21/2013
A.H. Systems	Red System Horn, 18-40GHz	SAS-574, p/n: 2581	2161	3/20/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Radio Antenna Port (Power and Spurious Emissions), 25-Jan-13 to 30-Jan-13

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/1/2013
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	5/21/2013
Agilent	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	2/23/2013

Radiated Emissions, 1,000 - 40,000 MHz, 30-Jan-13 to 7-Feb-13

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/29/2013
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	11/9/2013
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	2/23/2013
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	Head (Inc flex cable, 1143,	84125C	1145	7/5/2013

	2198) Red			
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	9/14/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/1/2013
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/17/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/23/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	8/2/2013
Hewlett Packard	HF Amplifier, 45 MHz -50 GHz (with 1620)	83051A (84125C)	1742	5/17/2013
Hewlett Packard	HF Amplifier, 45 MHz -50 GHz (with 1620)	83051A (84125C)	1743	5/17/2013
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Agilent	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	2/23/2013
A.H. Systems	Red System Horn, 18-40GHz	SAS-574, p/n: 2581	2161	3/20/2013
A.H. Systems	Spare System Horn, 18-40GHz	SAS-574, p/n: 2581	2162	5/8/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Radio Antenna Port (Power and Spurious Emissions), 26-Feb-13

Manufacturer	Description	Model	Asset #	Cal Due
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1422	1/3/2014
Rohde & Schwarz	Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	NRV-Z32	1536	12/12/2013
Agilent	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	1/28/2014

Radio Antenna Port (Power and Spurious Emissions), 27-Feb-13 to 28-Feb-13

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/29/2013
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/23/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/1/2013
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/17/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/23/2013
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	5/21/2013
A.H. Systems	Spare System Horn, 18-40GHz	SAS-574, p/n: 2581	2162	5/8/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013

Appendix B Test Data

T89830 Pages 25 – 249

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Emissions Standard(s):	15.247, 15.407, RSS-210	Class:	-
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

For The

Flextronics

Model

WS-AP3710e

Date of Last Test: 3/20/2013

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Radiated Emissions 30-1000 MHz, (FCC 15.247/RSS 210)

(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: 1/18/2013
Test Engineer: Rafael Varelas
Test Location: FT Chamber #7

Config. Used: 1
Config Change: None
EUT Voltage: POE

General Test Configuration

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

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

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

Ambient Conditions:

Temperature: 22 °C
Rel. Humidity: 40 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
Initial scans to determine antenna configuration that results in highest amplitude emsisions form the EUT.				
1 - Ant2	Radiated Emissions 30 - 1000 MHz Radio1 5825MHz (TX) Radio2 2437MHz (TX)	FCC 15.247 / RSS 210	Pass	35.7 dBµV/m @ 37.76 MHz (-4.3 dB)
2 - Ant3	Radiated Emissions 30 - 1000 MHz Radio1 5825MHz (TX) Radio2 2437MHz (TX)	FCC 15.247 / RSS 210	Pass	43.7 dBµV/m @ 333.33 MHz (-2.3 dB)
3 - Ant1	Radiated Emissions 30 - 1000 MHz Radio1 5825MHz (TX) Radio2 2437MHz (TX)	FCC 15.247 / RSS 210	Pass	36.0 dBµV/m @ 37.94 MHz (-4.0 dB)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Test Performed	Limit	Result	Margin
Scans to determine if changing channels or modes of operation affect emisisons below 1000 MHz.				
4 - Ant3	Radiated Emissions 30 - 1000 MHz Radio1 5180MHz (TX) Radio2 2412MHz (TX)	FCC 15.247 / RSS 210	Pass	41.4 dBµV/m @ 110.77 MHz (-2.1 dB)
5 - Ant3	Radiated Emissions 30 - 1000 MHz Radio1 5240MHz (TX) Radio2 2462MHz (TX)	FCC 15.247 / RSS 210	Pass	43.5 dBµV/m @ 333.33 MHz (-2.5 dB)

Based on the results from Runs #4 and #5, additional tests on other combinations of frequencies and modes is unnecessary due to the similarity of the results from Runs #2, #4 and #5.

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.

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No

ART GUI Boot File: -
-

ART GUI Calibration file: -
-

Command Line Script: 3710e 2nd Pilot_925942 boot and initialize all 3 radios to NART Command Line Interface - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

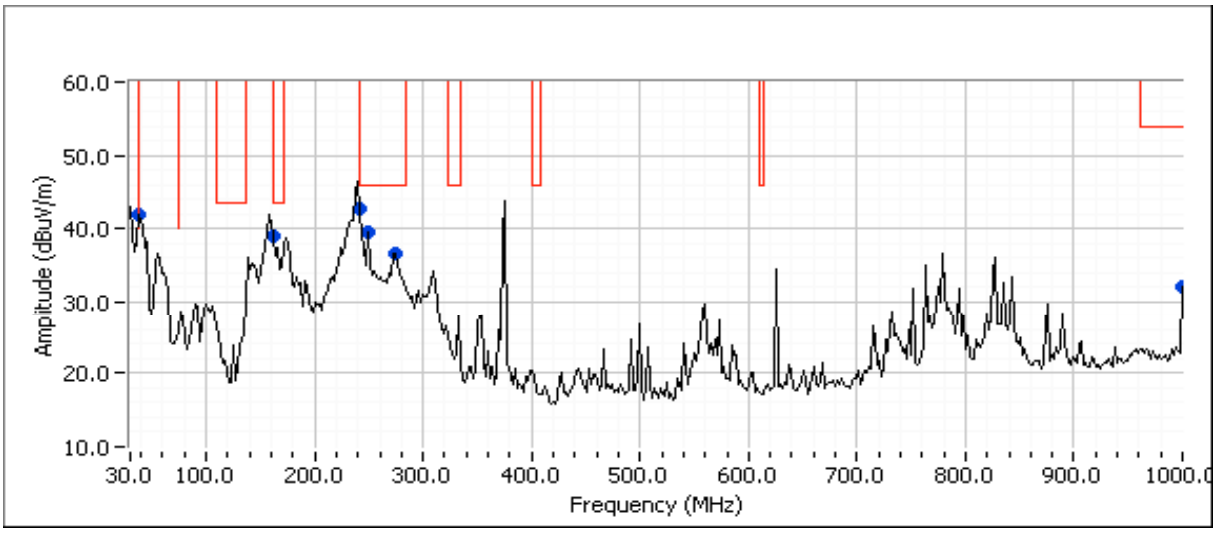
Run #1: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured Radio 1 to Tx , 802.11a 20dBm on each chain (settings 20) on channel 165, Radio 2 to Tx, 802.11b 21dBm on each chain (settings 21) on channel 6, Use Antenna 2

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
2	Enterasys WS-AI-DT05120	Sector	2.4 & 5.8	5	Indoor	2 Xpol / 1 Vert	No

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.760	41.8	V	40.0	1.8	Peak	47	1.0	
162.090	39.0	H	43.5	-4.5	Peak	297	1.5	
241.485	42.8	H	46.0	-3.2	Peak	313	1.0	
274.959	36.5	H	46.0	-9.5	Peak	333	1.0	
250.000	39.6	H	46.0	-6.4	Peak	153	1.0	
999.988	32.0	V	54.0	-22.0	Peak	343	1.5	

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

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.760	35.7	V	40.0	-4.3	QP	60	1.0	QP (1.00s)
250.000	40.3	H	46.0	-5.7	QP	144	1.2	QP (1.00s)
241.485	39.8	H	46.0	-6.2	QP	320	1.0	QP (1.00s)
162.090	36.7	H	43.5	-6.8	QP	280	1.9	QP (1.00s)
274.959	34.1	H	46.0	-11.9	QP	347	1.0	QP (1.00s)
999.988	32.0	V	54.0	-22.0	QP	349	1.0	QP (1.00s)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

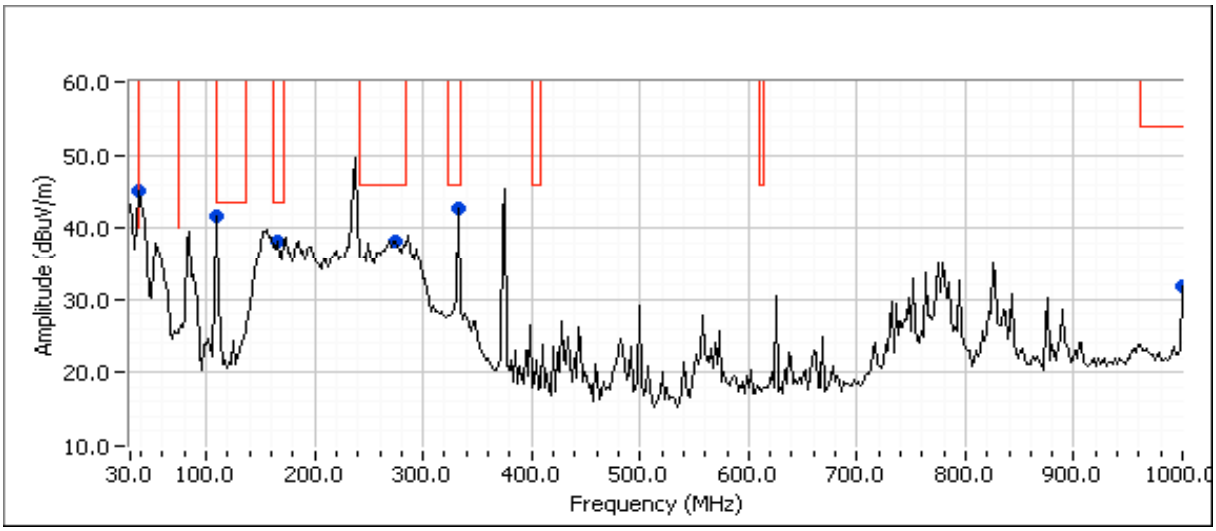
Run #2: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured Radio 1 to Tx , 802.11a 20dBm on each chain (settings 20) on channel 165, Radio 2 to Tx, 802.11b 21dBm on each chain (settings 21) on channel 6, Use Antenna 3

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
3	Enterasys WS-AI-DT04360	Panel	2.4	3	Indoor	No	No
3	Enterasys WS-AI-DT04360	Panel	5.8	4	Indoor	No	No

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



2437MHz

Fundamental emission level @ 3m in 100kHz RBW:	117.3	dBµV/m	
Limit for emissions outside of restricted bands:	97.3	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	87.3	dBµV/m	Limit is -30dBc (UNII power measurement)

5825MHz

Fundamental emission level @ 3m in 100kHz RBW:	112.7	dBµV/m	
Limit for emissions outside of restricted bands:	92.7	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	82.7	dBµV/m	Limit is -30dBc (UNII power measurement)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.890	45.0	V	40.0	5.0	Peak	38	1.0	
110.871	41.6	H	43.5	-1.9	Peak	123	1.5	
166.595	38.3	H	43.5	-5.2	Peak	357	2.0	
274.680	38.1	H	46.0	-7.9	Peak	7	1.0	
333.328	42.8	H	46.0	-3.2	Peak	27	1.0	
1000.000	31.7	H	54.0	-22.3	Peak	197	2.0	

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

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
333.328	43.7	H	46.0	-2.3	QP	11	1.0	QP (1.00s)
110.871	39.8	H	43.5	-3.7	QP	130	1.5	QP (1.00s)
37.890	36.2	V	40.0	-3.8	QP	57	1.0	QP (1.00s)
166.595	34.7	H	43.5	-8.8	QP	360	1.7	QP (1.00s)
274.680	36.9	H	46.0	-9.1	QP	1	1.0	QP (1.00s)
1000.000	32.3	H	54.0	-21.7	QP	223	1.3	QP (1.00s)
237.996	50.0	H	82.7	-32.7	PK	320	1.0	

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

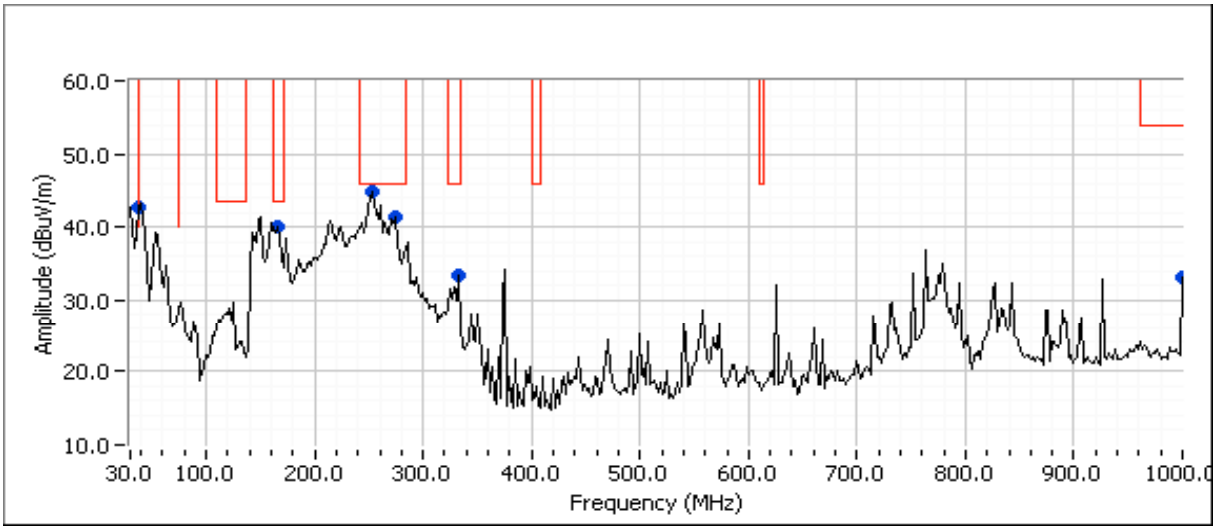
Run #3: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured Radio 1 to Tx , 802.11a 20dBm on each chain (settings 20) on channel 165, Radio 2 to Tx, 802.11b 21dBm on each chain (settings 21) on channel 6, Use Antenna 1

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
1	Enterasys WS-AI-DX02360	Omni	2.4 & 5.8	2	Indoor	No	No

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.942	42.8	V	40.0	2.8	Peak	58	1.5	
166.549	40.1	H	43.5	-3.4	Peak	238	2.0	
253.141	44.8	H	46.0	-1.2	Peak	113	1.0	
273.953	41.5	H	46.0	-4.5	Peak	278	1.0	
333.328	33.5	H	46.0	-12.5	Peak	293	1.0	
1000.000	33.2	H	54.0	-20.8	Peak	342	1.5	

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

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.942	36.0	V	40.0	-4.0	QP	54	1.0	QP (1.00s)
253.141	40.6	H	46.0	-5.4	QP	107	1.0	QP (1.00s)
166.549	37.4	H	43.5	-6.1	QP	233	1.7	QP (1.00s)
273.953	37.4	H	46.0	-8.6	QP	280	1.0	QP (1.00s)
333.328	33.5	H	46.0	-12.5	QP	286	1.0	QP (1.00s)
1000.000	33.1	H	54.0	-20.9	QP	330	1.6	QP (1.00s)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

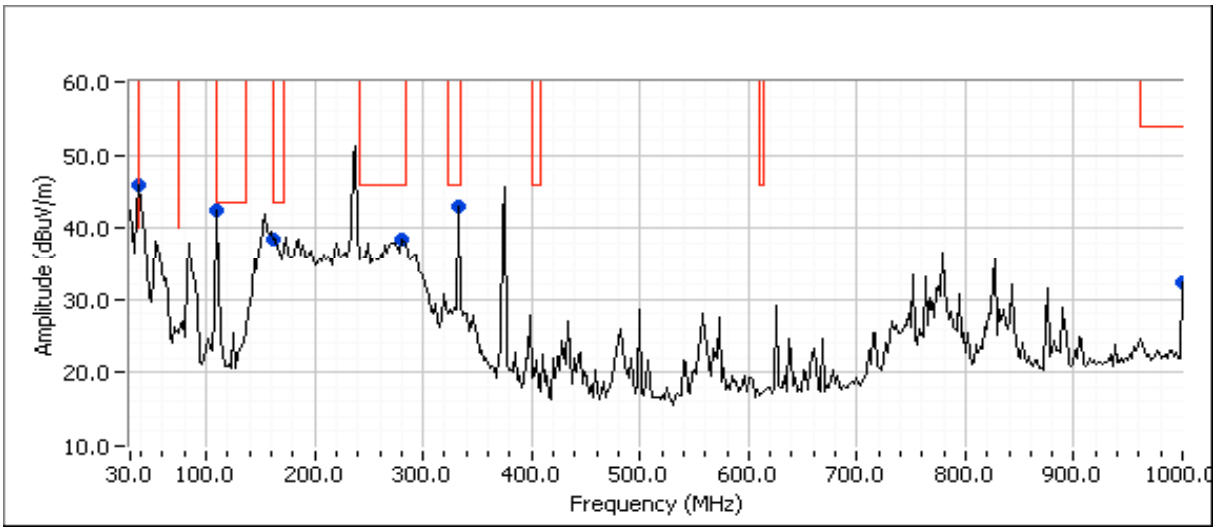
Run #4: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured Radio 1 to Tx , 802.11a 18dBm on each chain (settings 18) on channel 36, Radio 2 to Tx, 802.11b 21dBm on each chain (settings 21) on channel 1, Use Antenna 3

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
3	Enterasys WS-AI-DT04360	Panel	2.4	3	Indoor	No	No
3	Enterasys WS-AI-DT04360	Panel	5.8	4	Indoor	No	No

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



2412MHz

Fundamental emission level @ 3m in 100kHz RBW:	117.1	dBµV/m	
Limit for emissions outside of restricted bands:	97.1	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	87.1	dBµV/m	Limit is -30dBc (UNII power measurement)

5180MHz

Limit for emissions outside of restricted bands:	68.3	dBµV/m

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.955	45.9	V	40.0	5.9	Peak	88	1.0	
110.774	42.5	H	43.5	-1.0	Peak	132	2.0	
162.317	38.4	H	43.5	-5.1	Peak	353	1.5	
280.954	38.4	H	46.0	-7.6	Peak	360	1.0	
333.328	43.1	H	46.0	-2.9	Peak	27	1.0	
1000.000	32.3	H	54.0	-21.7	Peak	217	2.0	

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

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
110.774	41.4	H	43.5	-2.1	QP	155	2.0	QP (1.00s)
37.955	37.9	V	40.0	-2.1	QP	79	1.0	QP (1.00s)
333.328	43.4	H	46.0	-2.6	QP	8	1.0	QP (1.00s)
162.317	35.6	H	43.5	-7.9	QP	349	1.9	QP (1.00s)
280.954	36.7	H	46.0	-9.3	QP	360	1.0	QP (1.00s)
1000.000	32.7	H	54.0	-21.3	QP	221	1.3	QP (1.00s)
237.996	52.0	H	68.3	-16.3	PK	320	1.0	

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

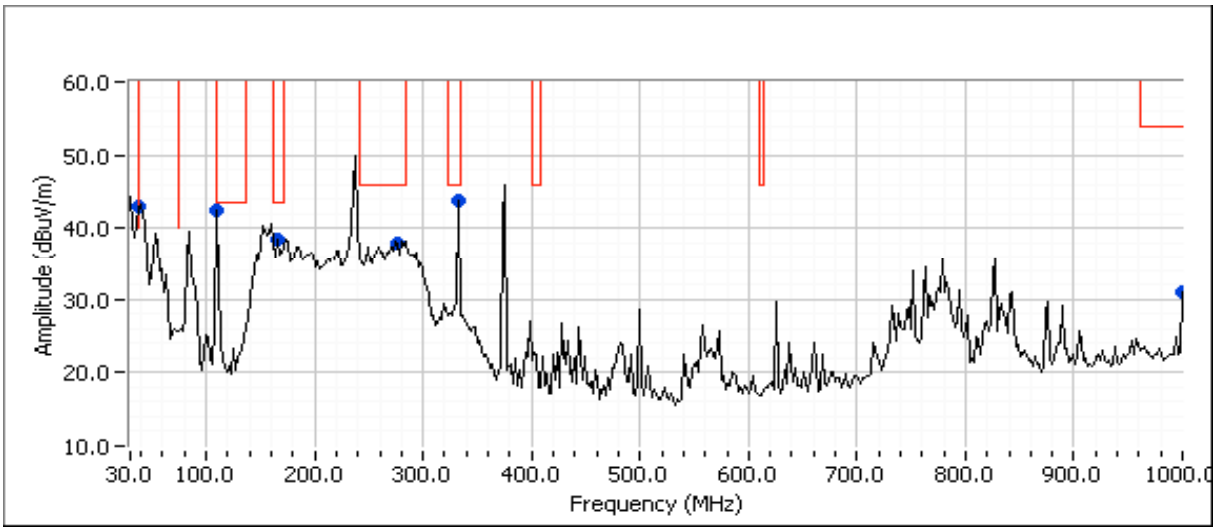
Run #5: Preliminary Radiated Emissions, 30 - 1000 MHz

Configured Radio 1 to Tx , 802.11n20 18dBm on each chain (settings 18) on channel 48, Radio 2 to Tx, 802.11n20 19dBm on each chain (settings 19) on channel 11, Use Antenna 3

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
3	Enterasys WS-AI-DT04360	Panel	2.4	3	Indoor	No	No
3	Enterasys WS-AI-DT04360	Panel	5.8	4	Indoor	No	No

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



2462MHz

Fundamental emission level @ 3m in 100kHz RBW:	113.7	dBµV/m	
Limit for emissions outside of restricted bands:	93.7	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	83.7	dBµV/m	Limit is -30dBc (UNII power measurement)

5240MHz

Limit for emissions outside of restricted bands:	68.3	dBµV/m	Limit is -20dBc (Peak power measurement)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
38.045	43.0	V	40.0	3.0	Peak	103	1.5	
110.916	42.5	H	43.5	-1.0	Peak	128	2.0	
167.166	38.4	H	43.5	-5.1	Peak	187	1.5	
276.494	38.0	H	46.0	-8.0	Peak	233	1.0	
333.328	43.8	H	46.0	-2.2	Peak	3	1.0	
999.988	31.1	H	54.0	-22.9	Peak	222	1.5	

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

Frequency	Level	Pol	FCC 15.47 / RSS 210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
333.328	43.5	H	46.0	-2.5	QP	11	1.0	QP (1.00s)
38.045	36.6	V	40.0	-3.4	QP	71	1.0	QP (1.00s)
110.916	40.0	H	43.5	-3.5	QP	140	1.6	QP (1.00s)
167.166	34.3	H	43.5	-9.2	QP	172	1.5	QP (1.00s)
276.494	34.8	H	46.0	-11.2	QP	235	1.0	QP (1.00s)
999.988	34.0	H	54.0	-20.0	QP	220	1.3	QP (1.00s)
237.996	50.0	H	68.3	-18.3	PK	320	1.0	

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, 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: 1/18/2013
Test Engineer: Rafael Varelas
Test Location: Fremont Chamber #7
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

For tabletop equipment, the EUT was located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN. 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: 20.9 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power,120V/60Hz	FCC 15.207	Pass	36.1 dBµV @ 0.337 MHz(-13.2 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	-

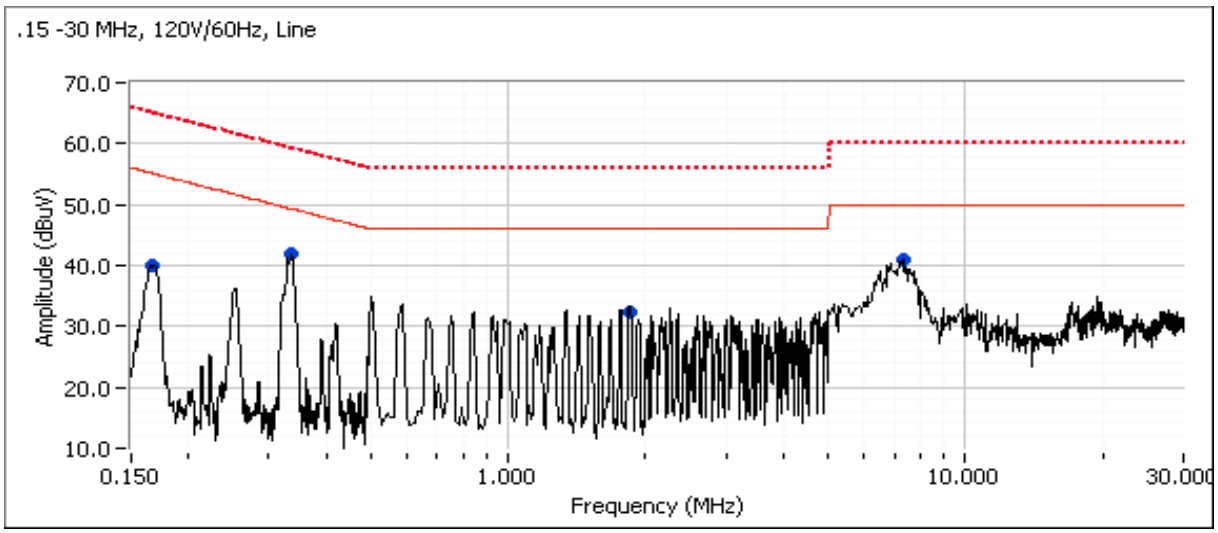
Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz

Antenna:

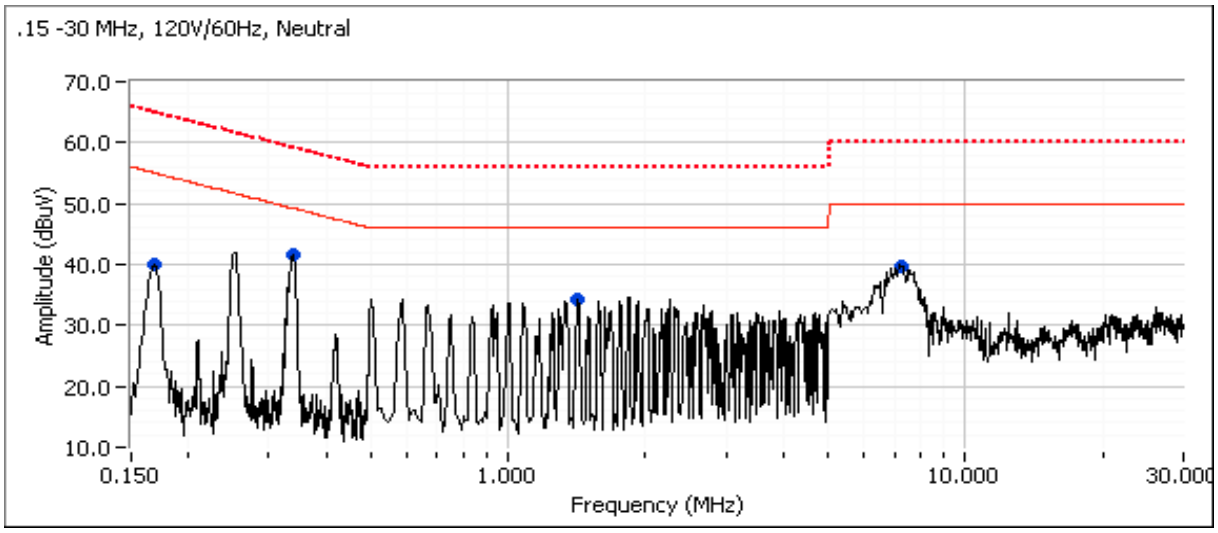
#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
2	Enterasys WS-AI-DT05120	Sector	5.2	5	Indoor	2 Xpol / 1 Vert	No

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

Frequency MHz	Level dBµV	AC Line	FCC 15.207 Limit	FCC 15.207 Margin	Detector QP/Ave	Comments
0.168	40.1	Line 1	55.2	-15.1	Peak	
0.337	41.8	Line 1	49.3	-7.5	Peak	
1.839	32.3	Line 1	46.0	-13.7	Peak	
7.275	40.8	Line 1	50.0	-9.2	Peak	
0.169	39.9	Neutral	55.0	-15.1	Peak	
0.338	41.7	Neutral	49.2	-7.5	Peak	
1.420	34.2	Neutral	46.0	-11.8	Peak	
7.192	39.7	Neutral	50.0	-10.3	Peak	



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	-



Final quasi-peak and average readings

Frequency	Level	AC	FCC 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.337	36.1	Line 1	49.3	-13.2	AVG	AVG (0.10s)
0.168	40.7	Line 1	55.1	-14.4	AVG	AVG (0.10s)
0.338	34.0	Neutral	49.3	-15.3	AVG	AVG (0.10s)
0.169	39.5	Neutral	55.0	-15.5	AVG	AVG (0.10s)
1.420	28.7	Neutral	46.0	-17.3	AVG	AVG (0.10s)
0.168	47.7	Line 1	65.1	-17.4	QP	QP (1.00s)
1.839	28.3	Line 1	46.0	-17.7	AVG	AVG (0.10s)
0.169	47.1	Neutral	65.0	-17.9	QP	QP (1.00s)
0.337	40.7	Line 1	59.3	-18.6	QP	QP (1.00s)
0.338	39.9	Neutral	59.3	-19.4	QP	QP (1.00s)
7.275	39.4	Line 1	60.0	-20.6	QP	QP (1.00s)
7.192	38.7	Neutral	60.0	-21.3	QP	QP (1.00s)
7.275	26.4	Line 1	50.0	-23.6	AVG	AVG (0.10s)
1.839	32.3	Line 1	56.0	-23.7	QP	QP (1.00s)
7.192	26.2	Neutral	50.0	-23.8	AVG	AVG (0.10s)
1.420	32.2	Neutral	56.0	-23.8	QP	QP (1.00s)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Test Specific Details

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

Date of Test: 1/25/2013
Test Engineer: Rafael Varelas/ Jack Liu
Test Location: FT 7

Config. Used: 1
Config Change: None
EUT Voltage: POE

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: 20.4 °C
Rel. Humidity: 35 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Power spectral Density (PSD)	15.247(d)	Pass	1.2 dBm/3kHz
2			Minimum 6dB Bandwidth	15.247(a)	Pass	10.2 MHz
2			99% Bandwidth	RSS GEN	Pass	39.3 MHz
3			Spurious emissions (-30dBc) 802.11b, 802.11g, 802.11n20	15.247(b)	Pass	All emissions below the -30dBc limit
3			Spurious emissions (-20dBc) 802.11n40	15.247(b)	Pass	All emissions below the -20dBc 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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Notes

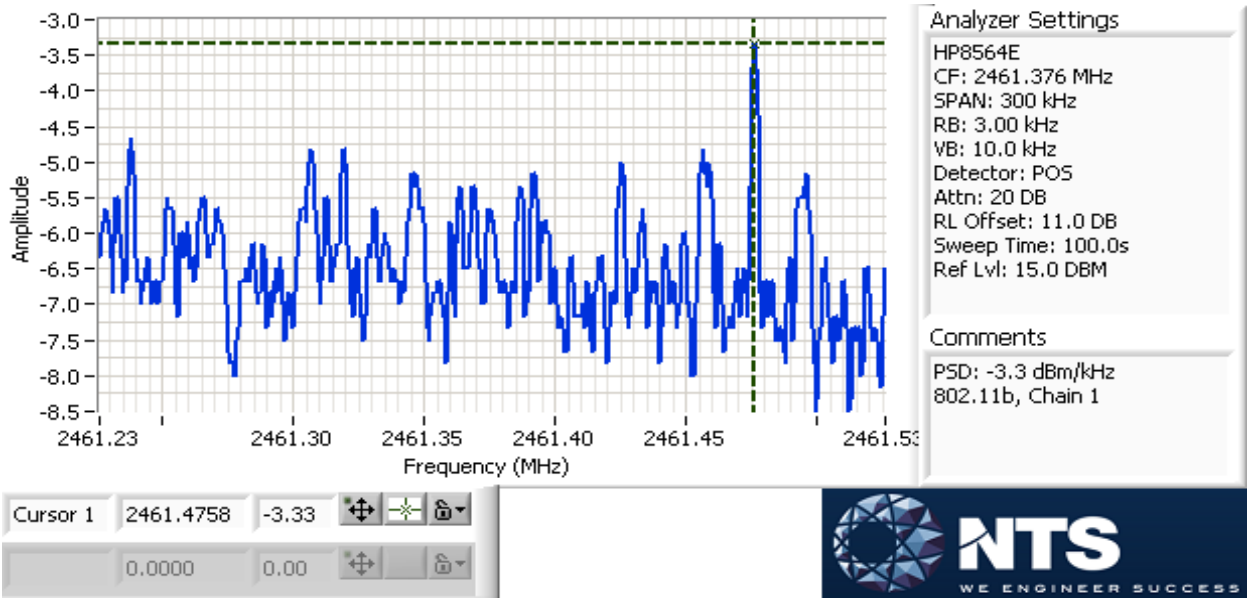
All measurements performed at the antenna port

Run #1: Power spectral Density

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1 Chain 1	Chain 2	Chain 3	Chain 4	Total	Limit dBm/3kHz	Result
802.11b								
17.5	2412	-4.4	-4.1	-4.7		0.4	8.0	Pass
18	2437	-4.5	-4.5	-4.0		0.4	8.0	Pass
19	2462	-3.3	-3.7	-3.7		1.2	8.0	Pass
802.11g								
15	2412	-9.8	-9.5	-10.0		-5.0	8.0	Pass
19	2437	-6.2	-6.8	-6.8		-1.8	8.0	Pass
16	2462	-9.3	-7.8	-9.5		-4.0	8.0	Pass
802.11n20								
14	2412	-10.5	-10.3	-10.3		-5.6	8.0	Pass
20	2437	-6.5	-5.5	-6.2		-1.3	8.0	Pass
15	2462	-10.3	-11.0	-10.7		-5.9	8.0	Pass
802.11n40								
12	2422	-16.0	-13.7	-15.8		-10.3	8.0	Pass
17	2437	-11.0	-11.3	-10.2		-6.0	8.0	Pass
13	2452	-16.0	-14.0	-14.0		-9.8	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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



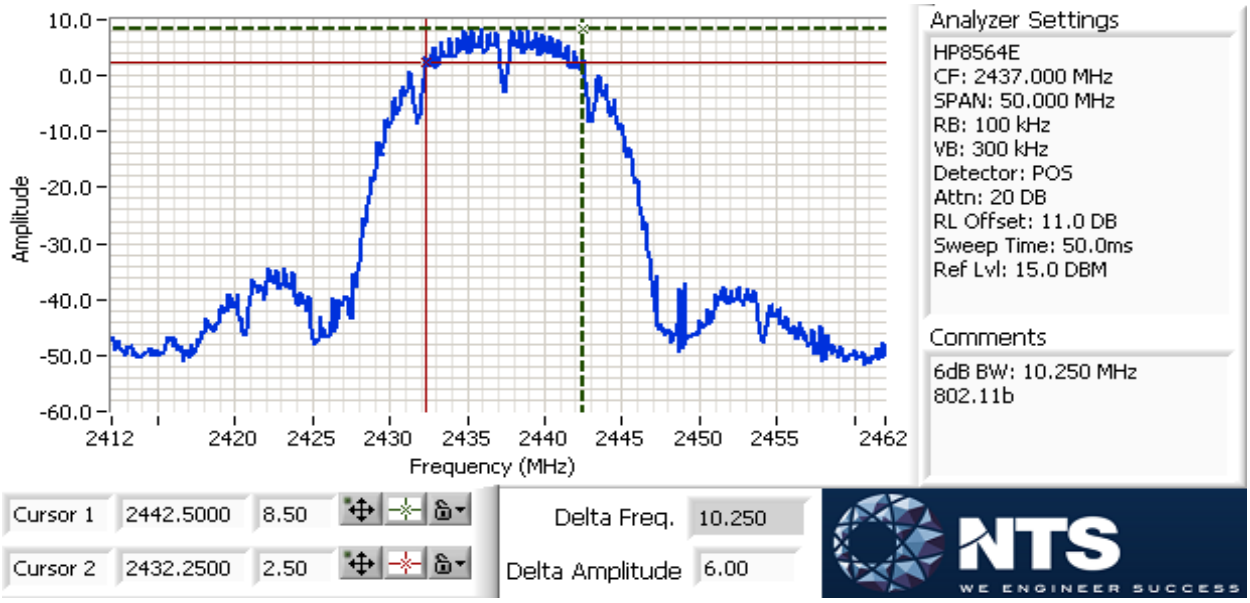
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

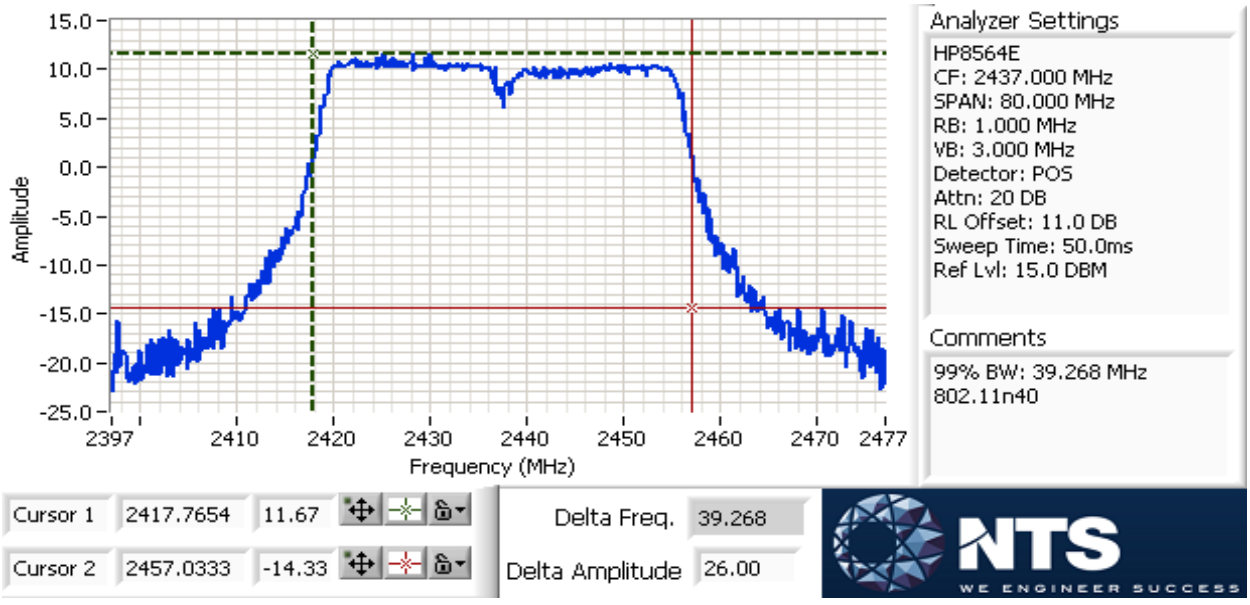
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	Resolution Bandwidth	Bandwidth (MHz) 99%
802.11b					
17.5	2412	100kHz	10.3	1MHz	14.2
18	2437	100kHz	10.3	1MHz	14.6
19	2462	100kHz	10.2	1MHz	14.1
802.11g					
15	2412	100kHz	16.6	1MHz	17.5
19	2437	100kHz	16.5	1MHz	17.6
16	2462	100kHz	16.5	1MHz	17.5
802.11n20					
14	2412	100kHz	17.8	1MHz	18.8
20	2437	100kHz	17.5	1MHz	18.9
15	2462	100kHz	17.8	1MHz	18.6
802.11n40					
12	2422	100kHz	36.8	1MHz	39.0
17	2437	100kHz	36.8	1MHz	39.3
13	2452	100kHz	36.7	1MHz	38.9

Note 1:	Measured on a single chain
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A





Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

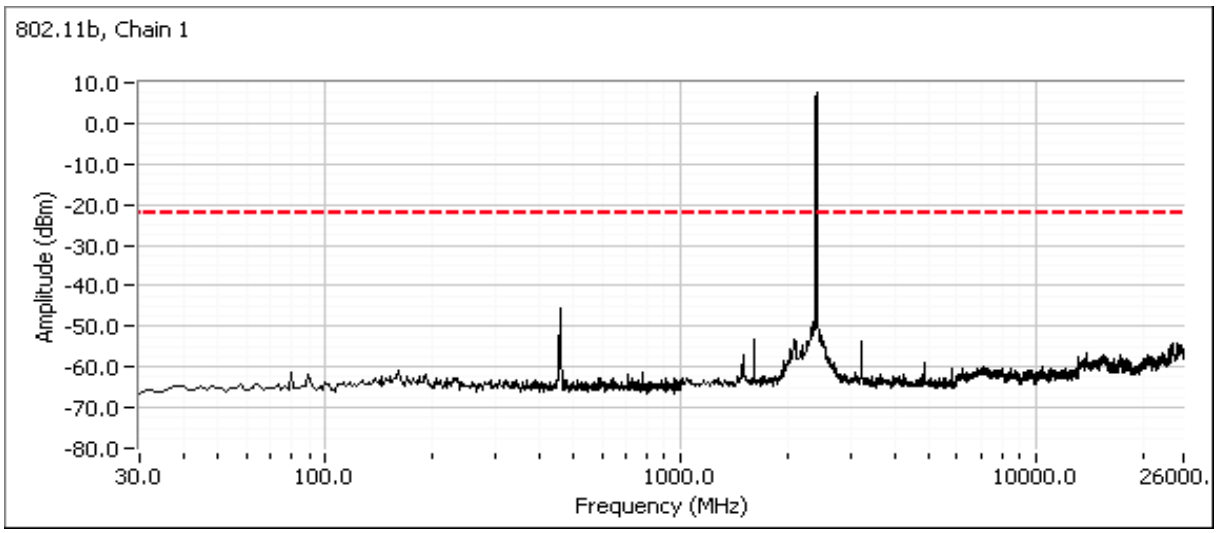
Run #2: Out of Band Spurious Emissions

Power Setting Per Chain #1	#2	#3	#4	Frequency (MHz)	Limit	Result
802.11b						
17.5				2412	-30dBc	Pass
18				2437	-30dBc	Pass
19				2462	-30dBc	Pass
802.11g						
15				2412	-30dBc	Pass
19				2437	-30dBc	Pass
16				2462	-30dBc	Pass
802.11n20						
14				2412	-30dBc	Pass
20				2437	-30dBc	Pass
15				2462	-30dBc	Pass
802.11n40						
12				2422	-20dBc	Pass
17				2437	-20dBc	Pass
13				2452	-20dBc	Pass

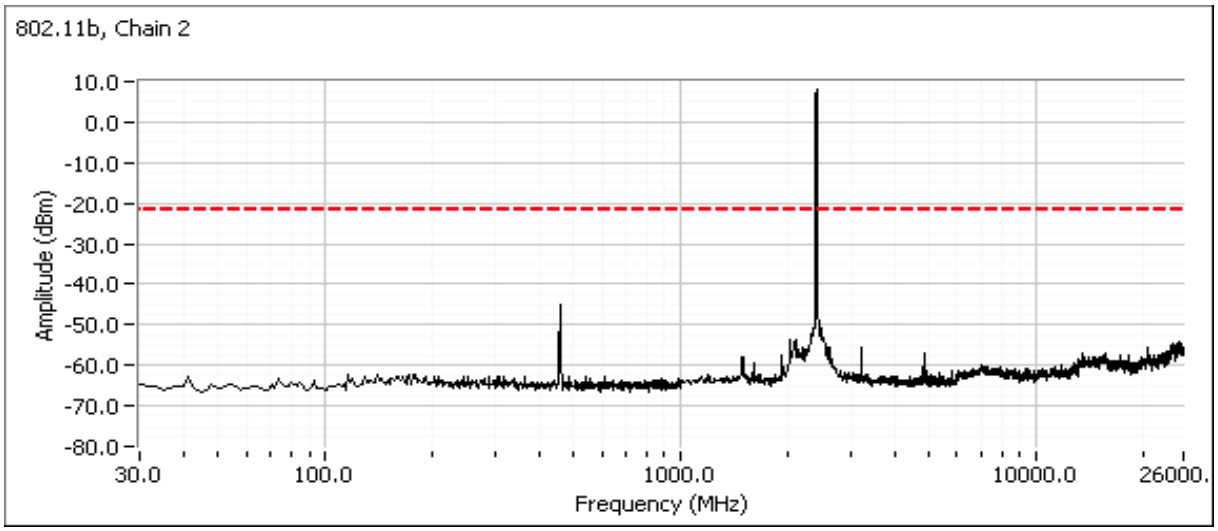
Note 1:	Measured on each chain individually

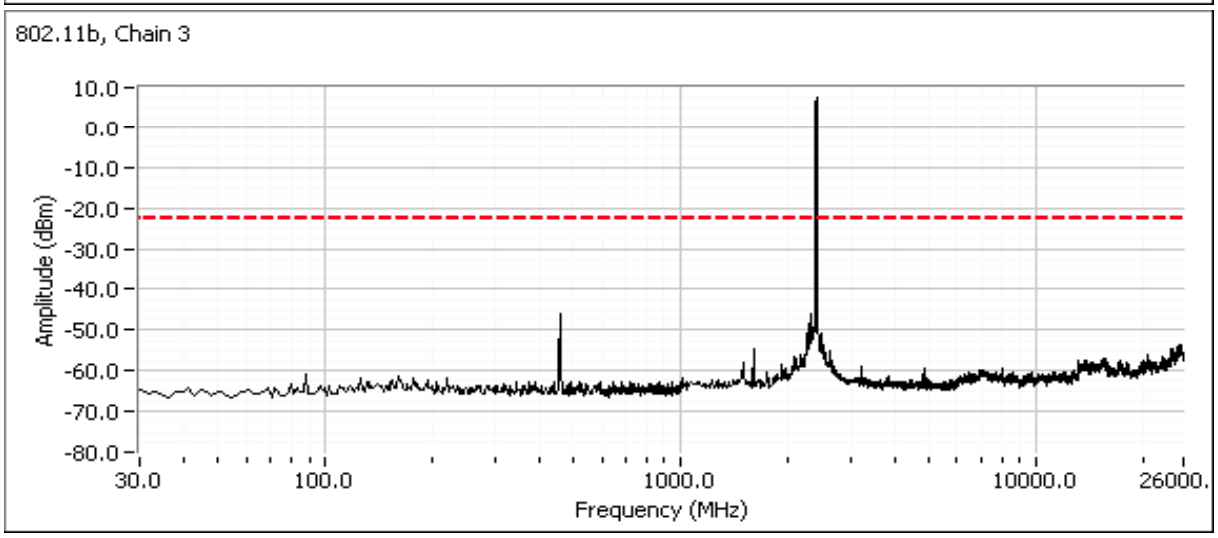
802.11b

Plots for low channel



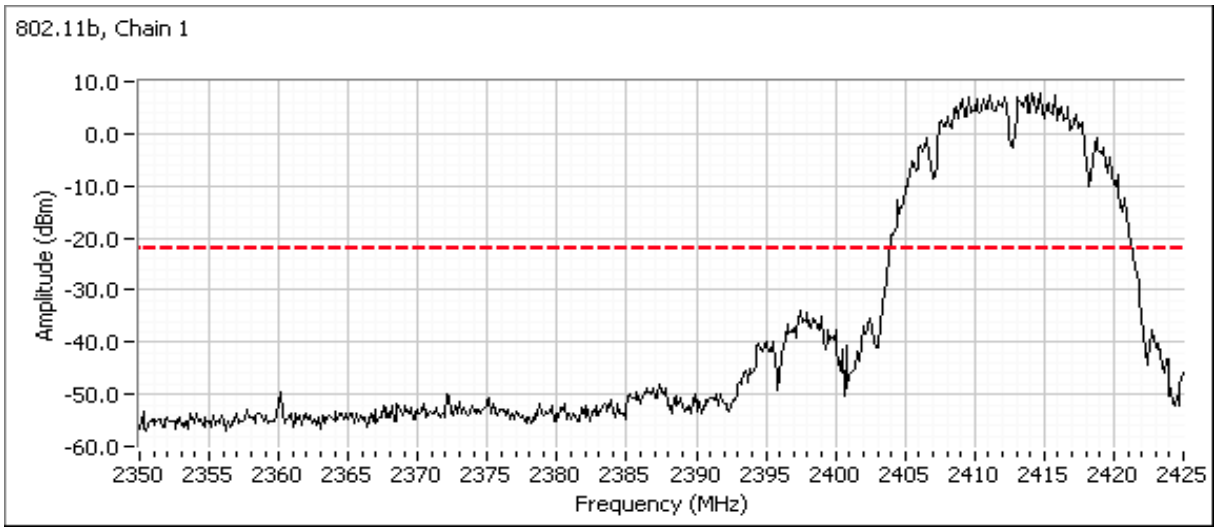
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

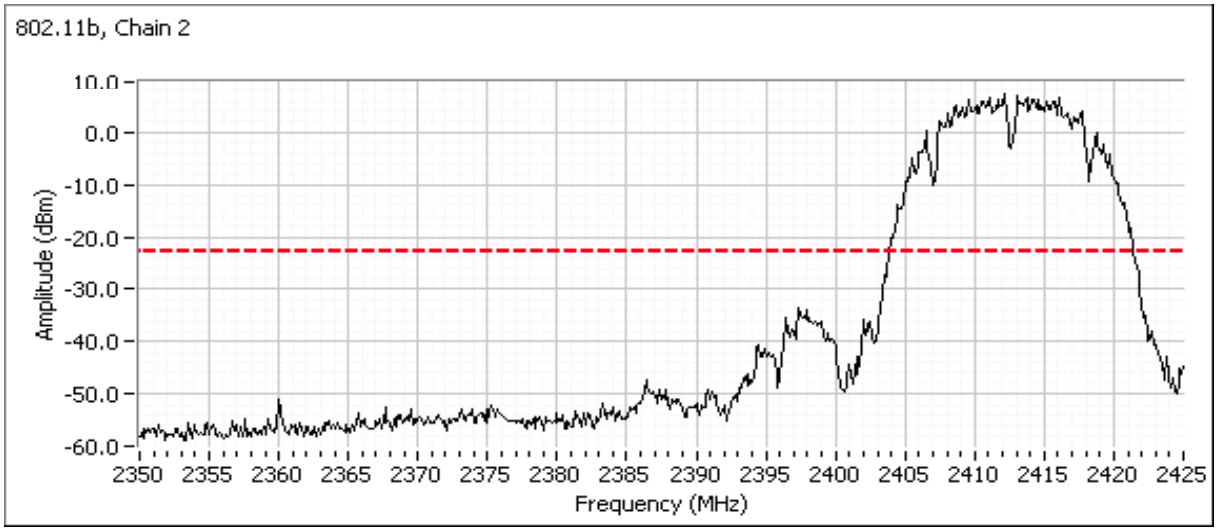




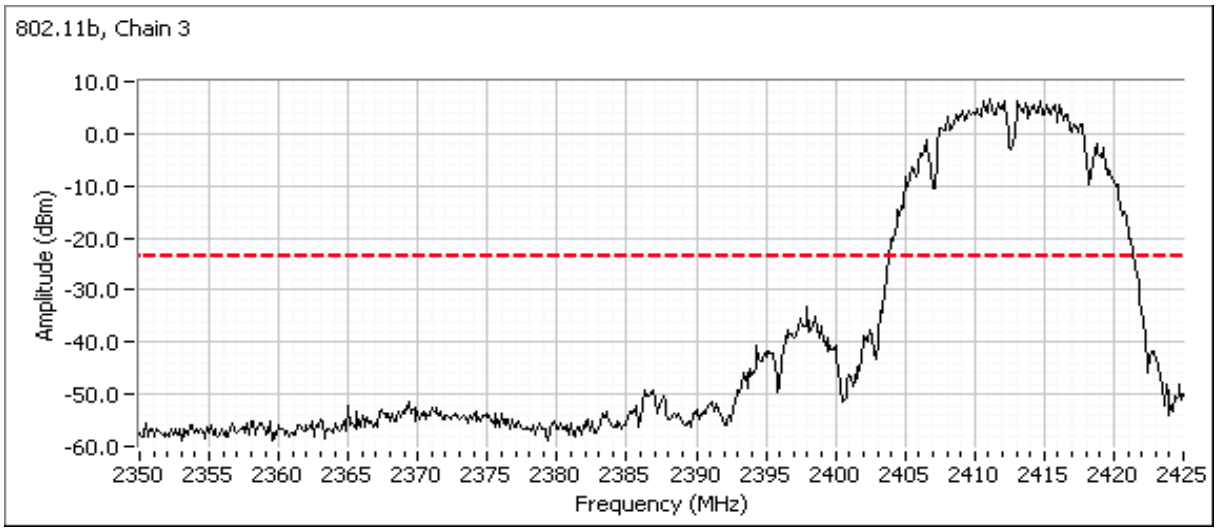
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

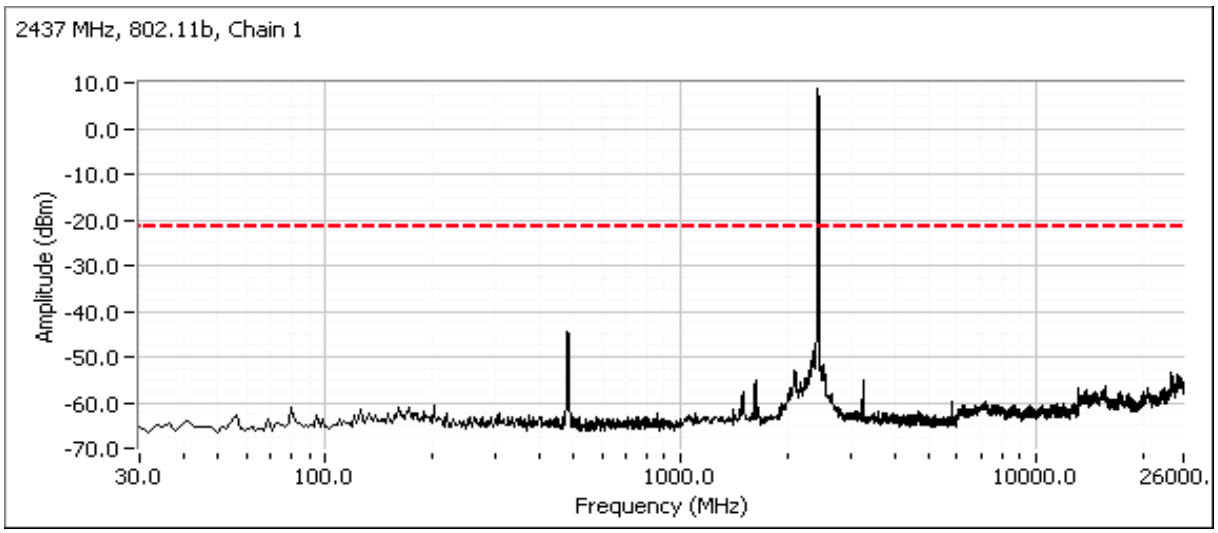




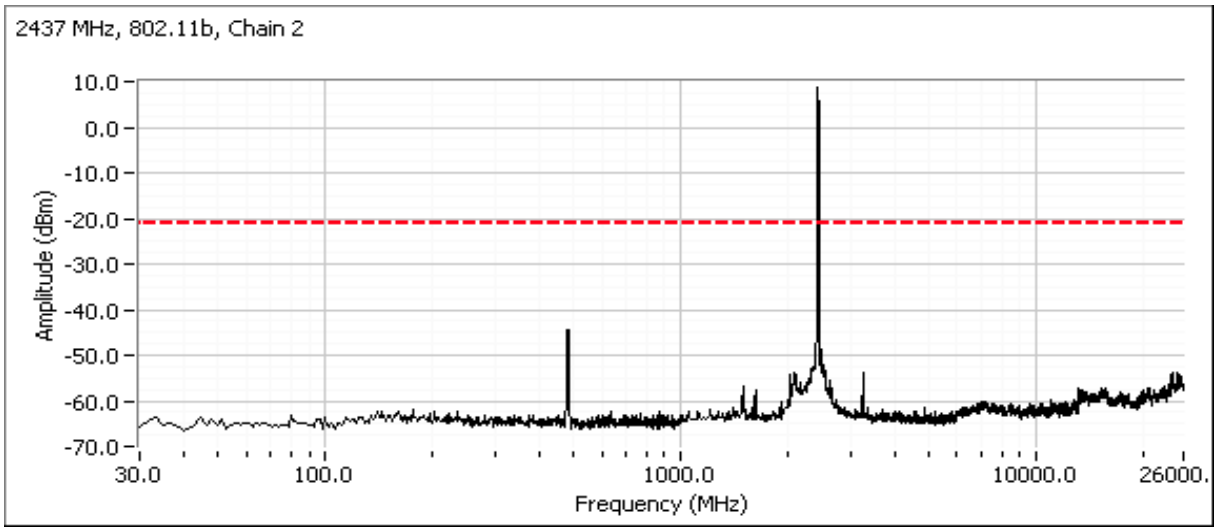
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

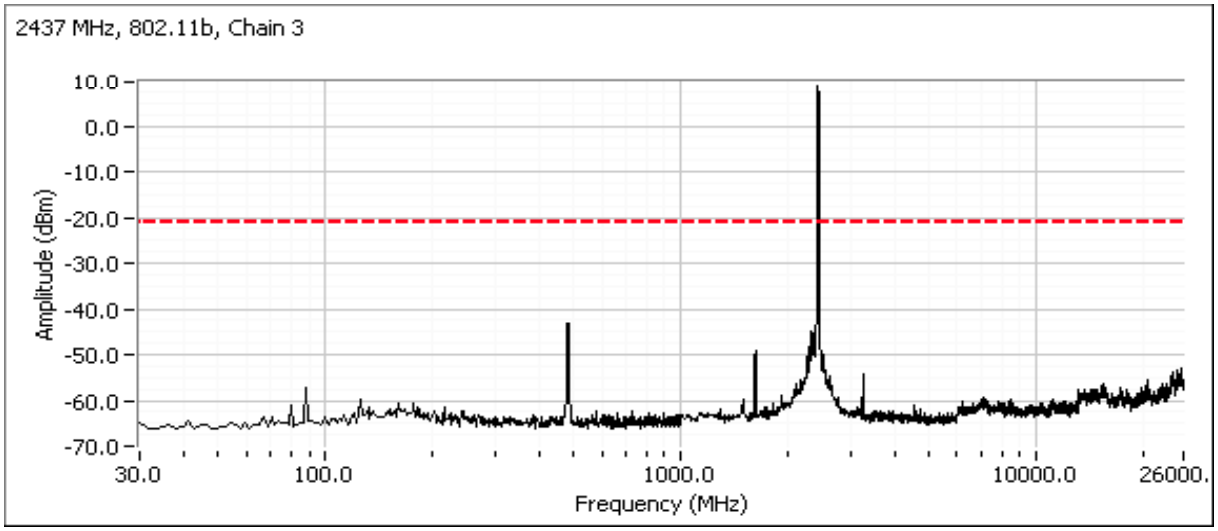


Plots for center channel



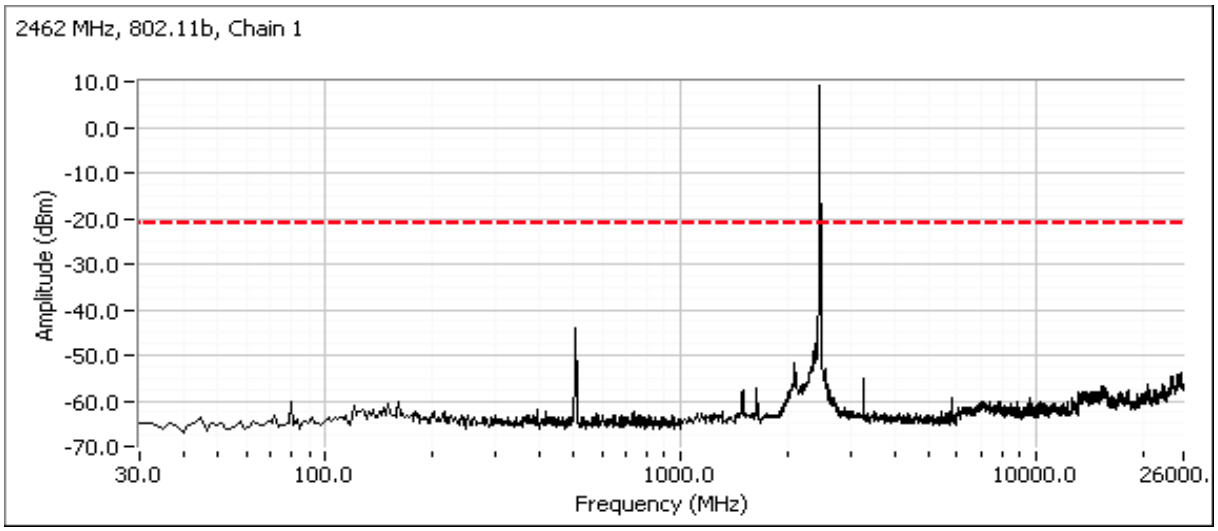
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

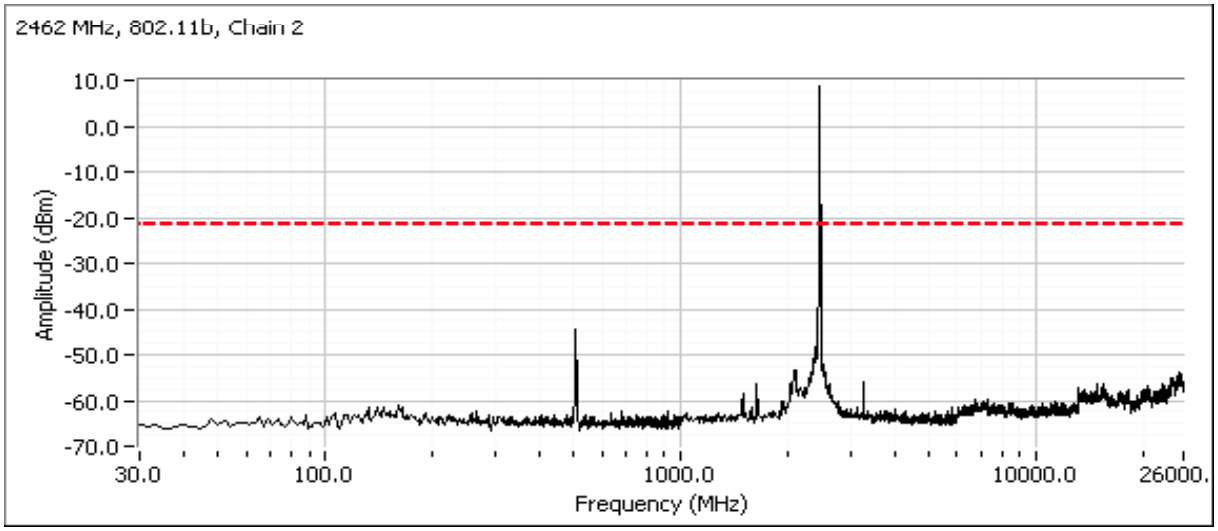




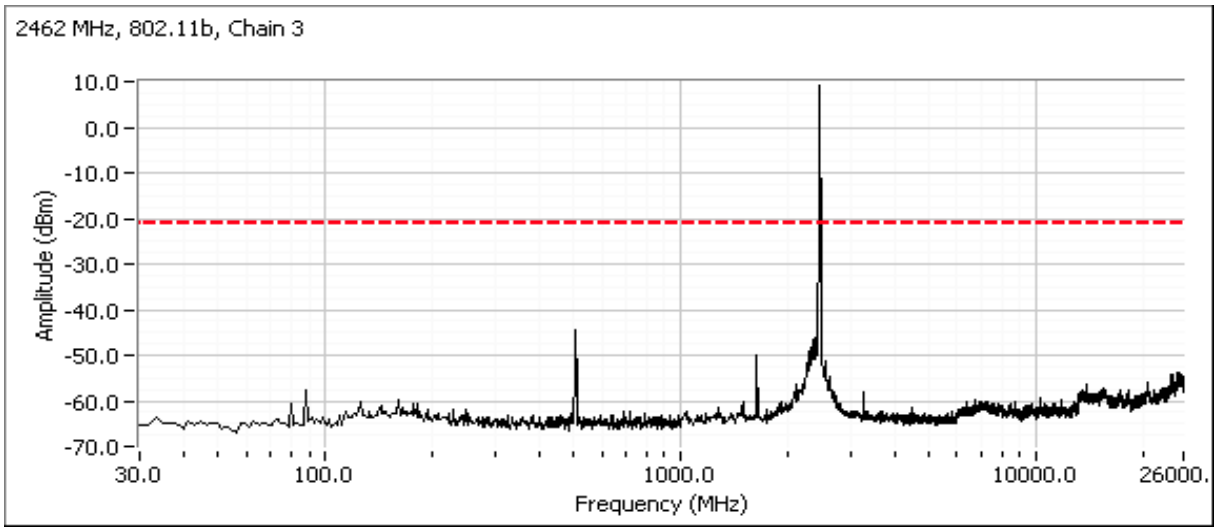
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Plots for high channel





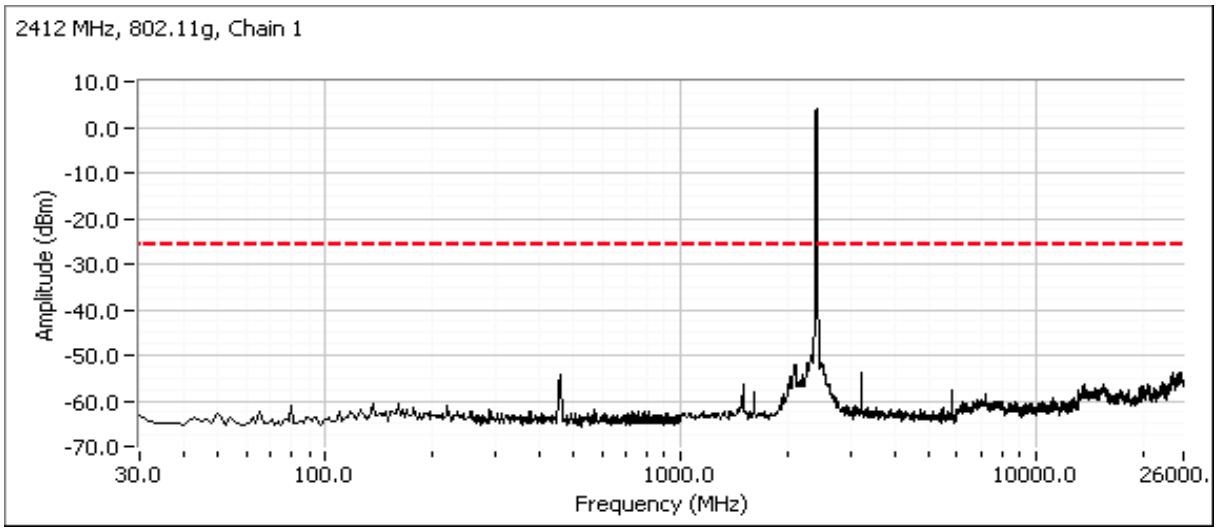
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



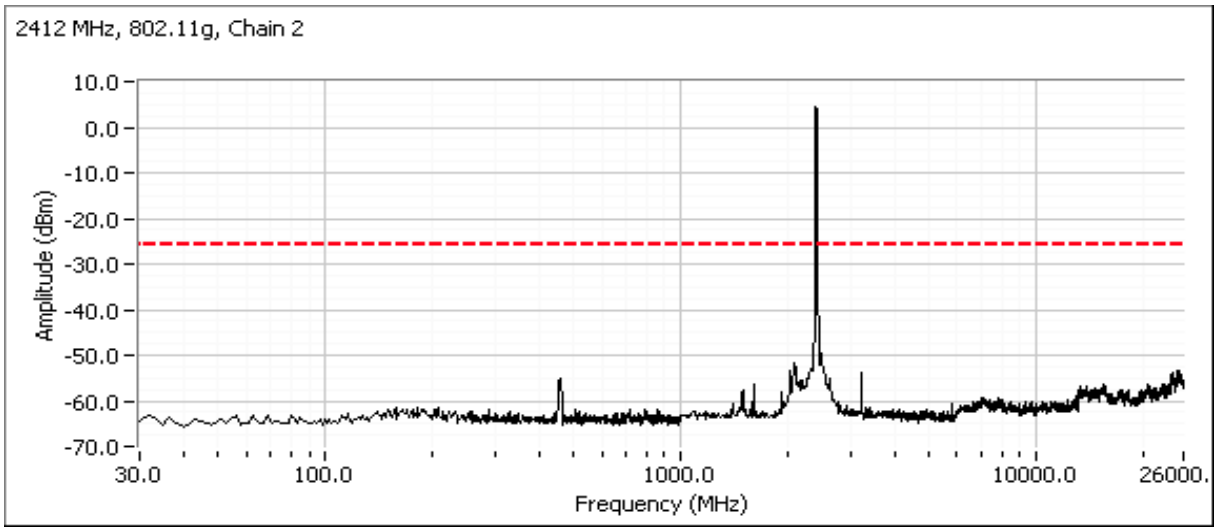
Radiated measurements used to show compliance with the limits in the restricted band above 2483.5 MHz.

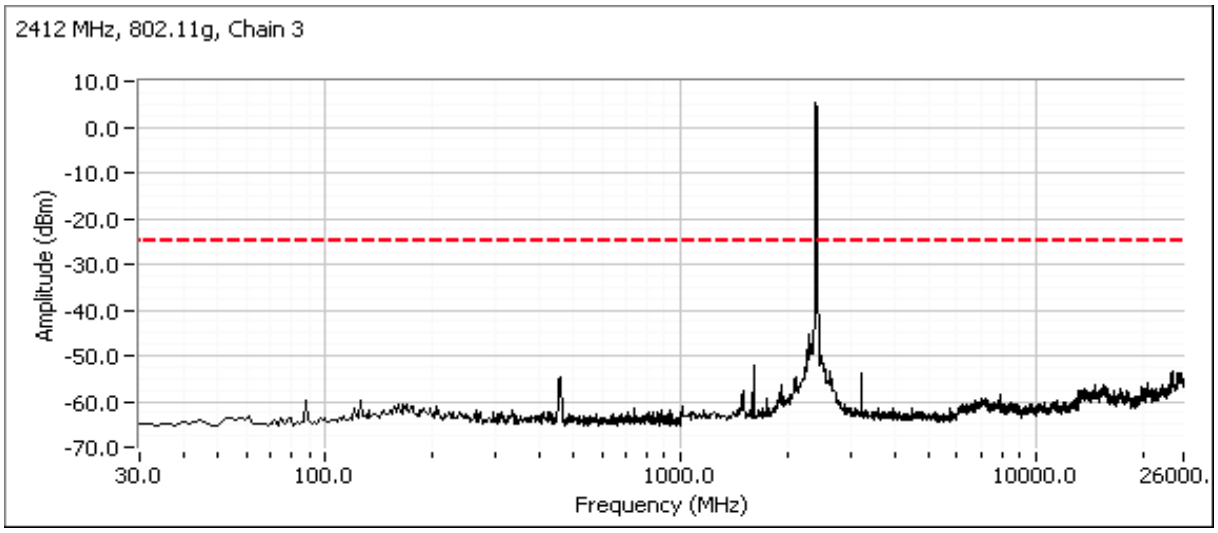
802.11g

Plots for low channel



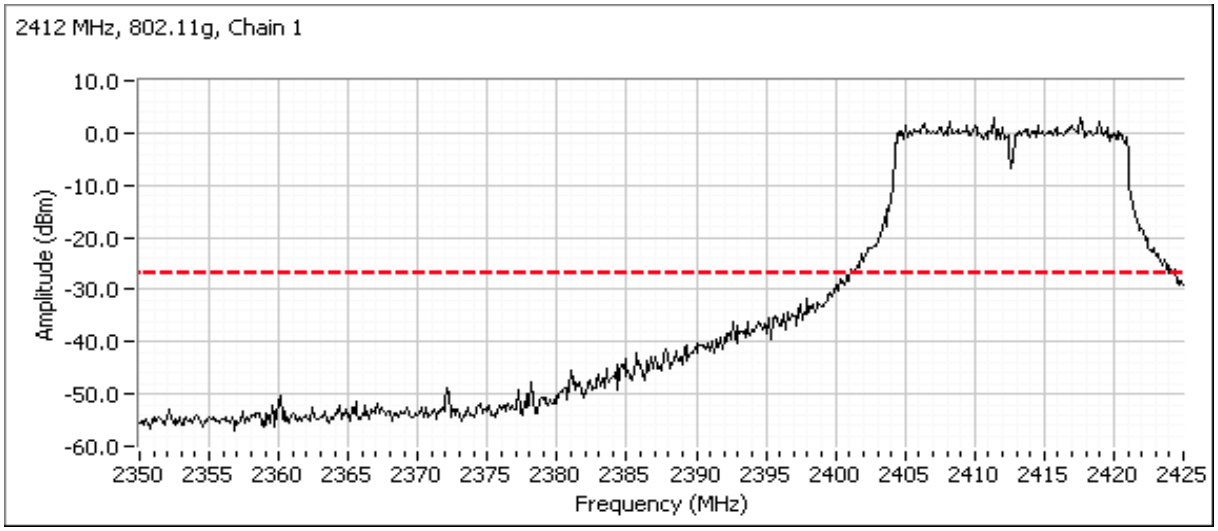
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

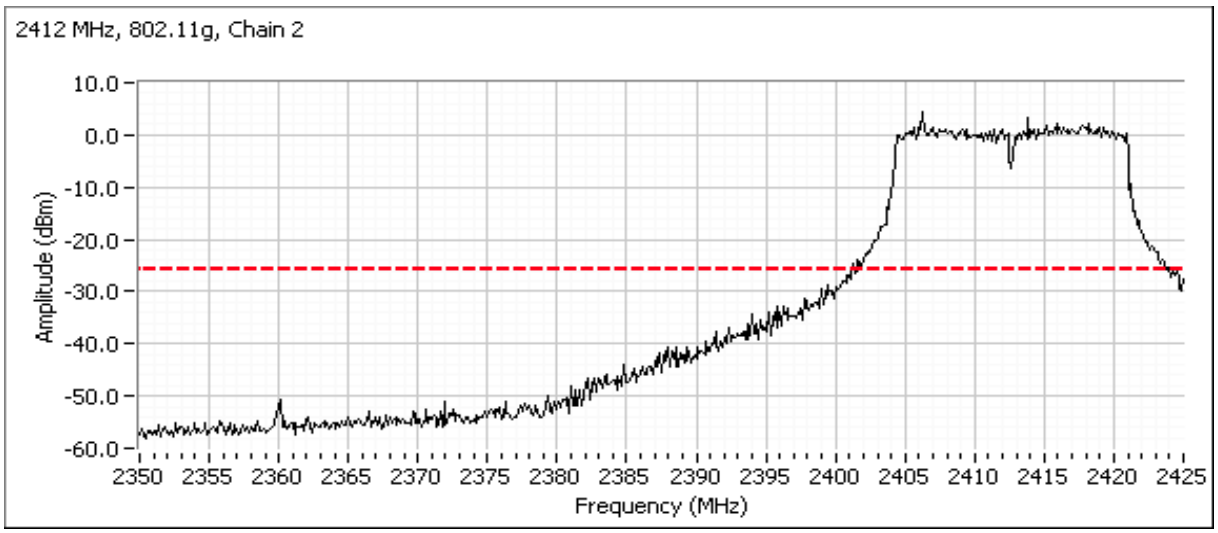




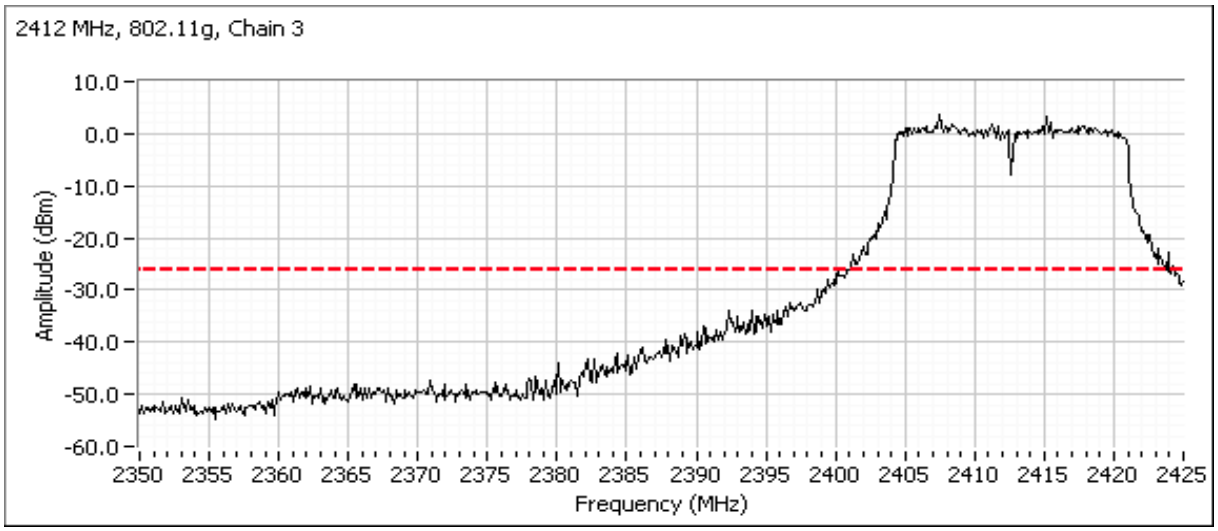
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

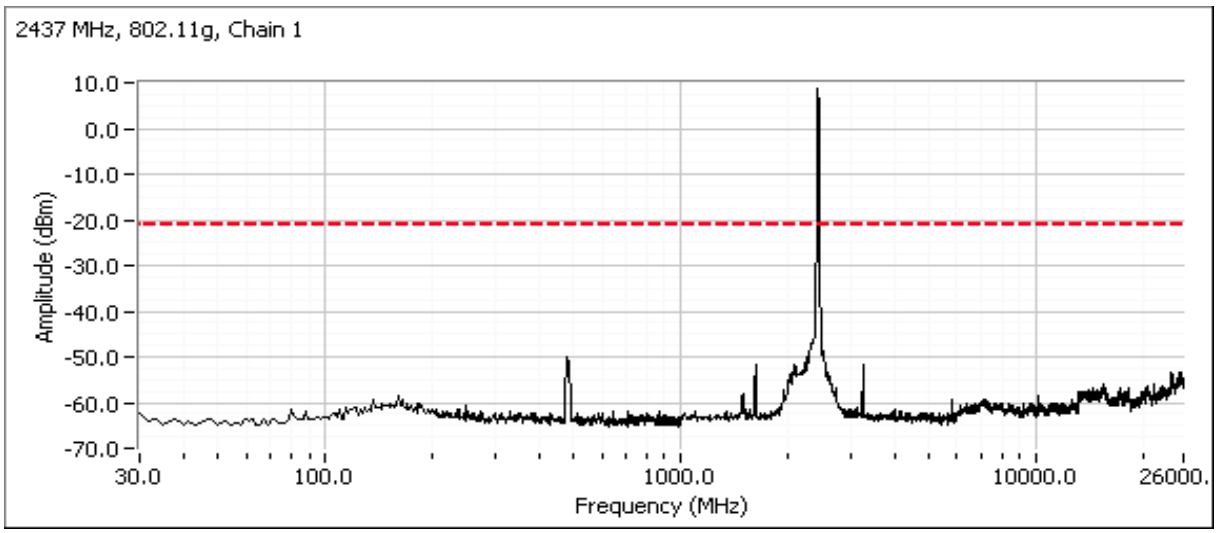




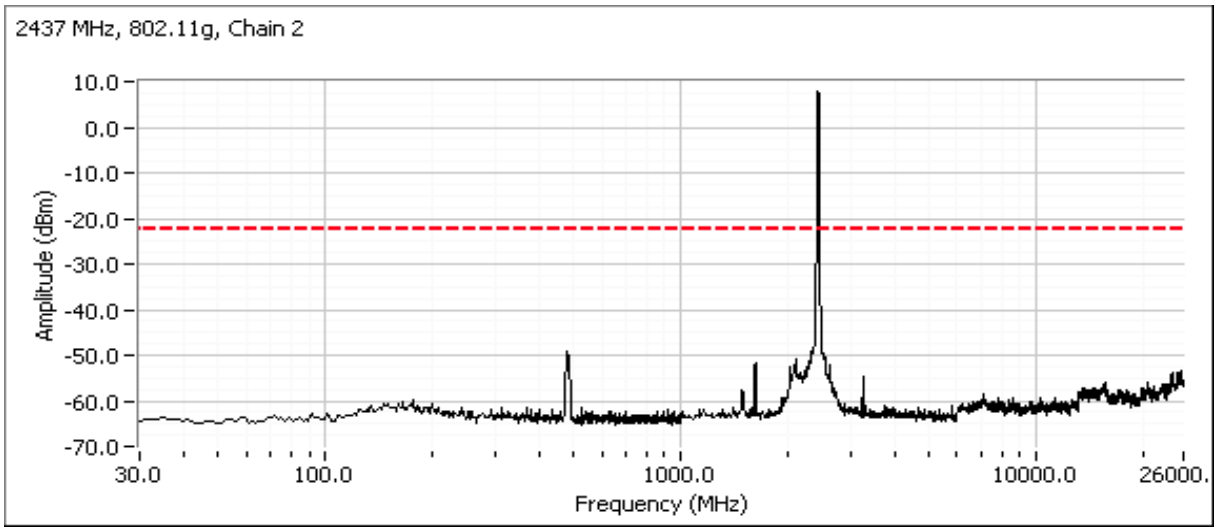
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

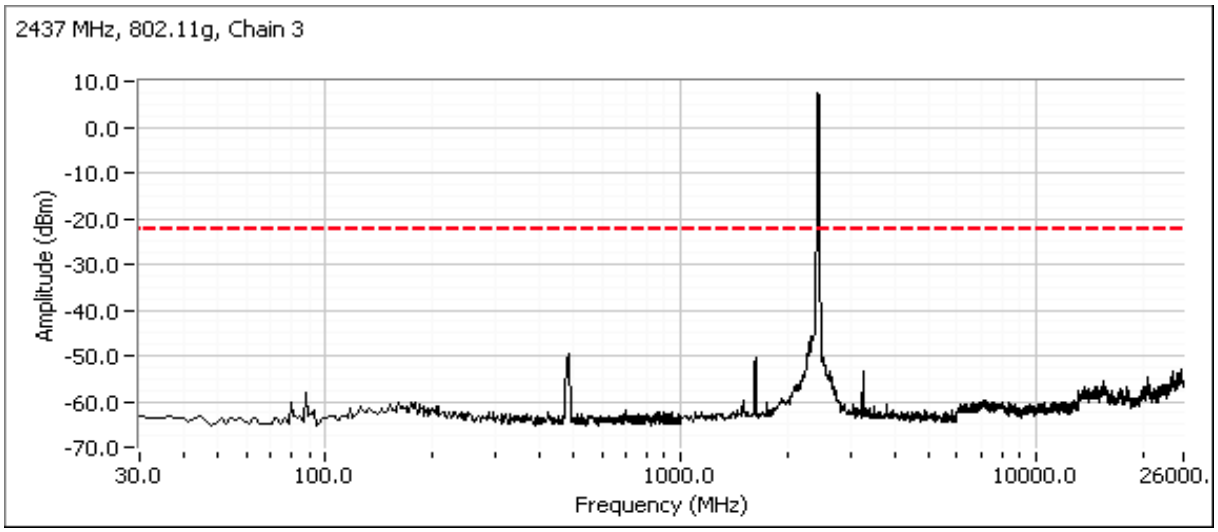


Plots for center channel



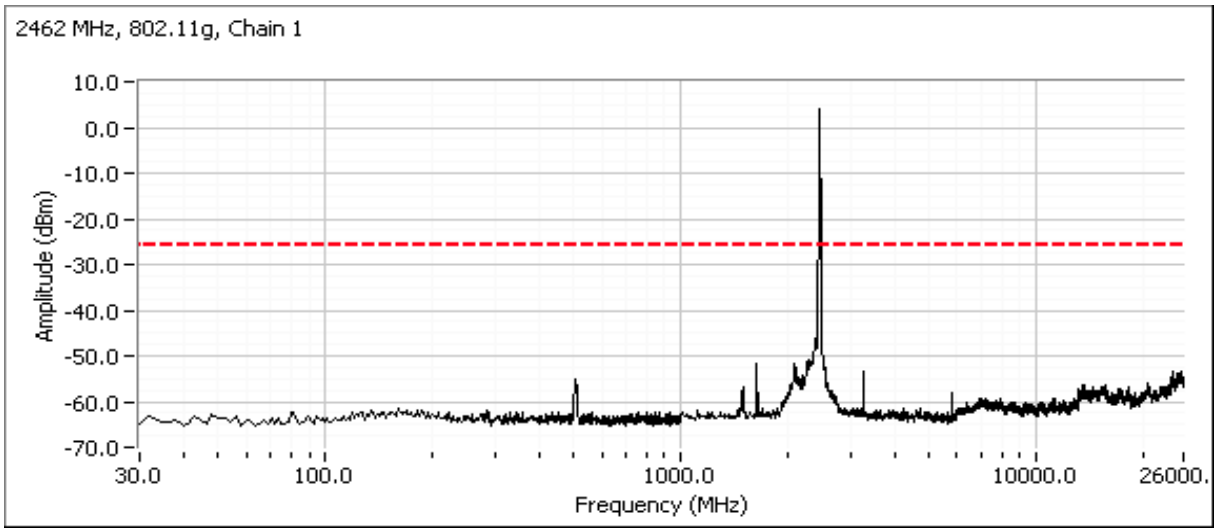
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

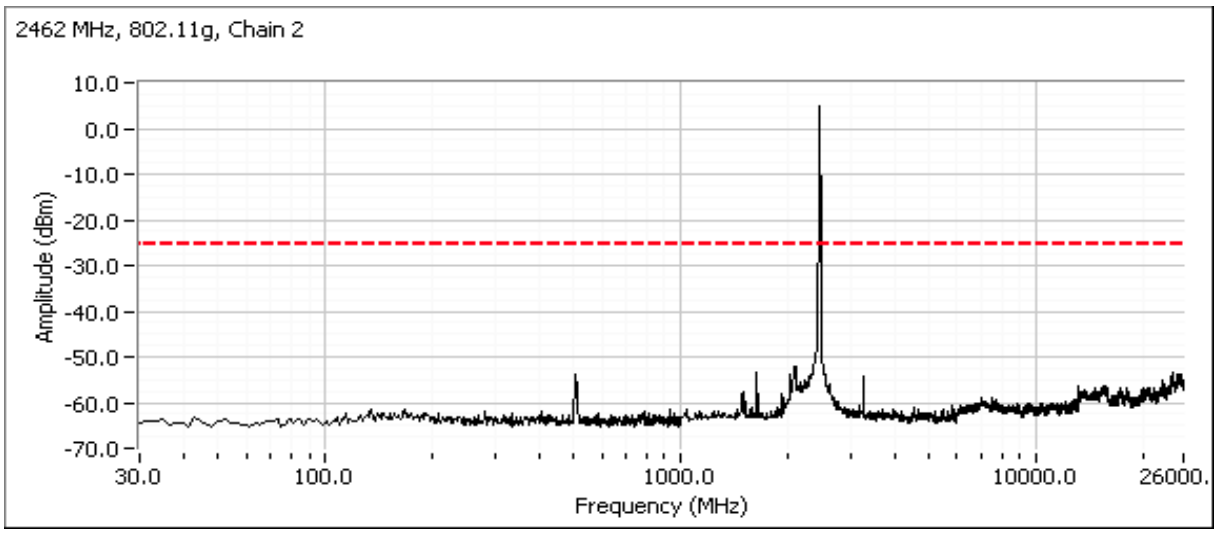




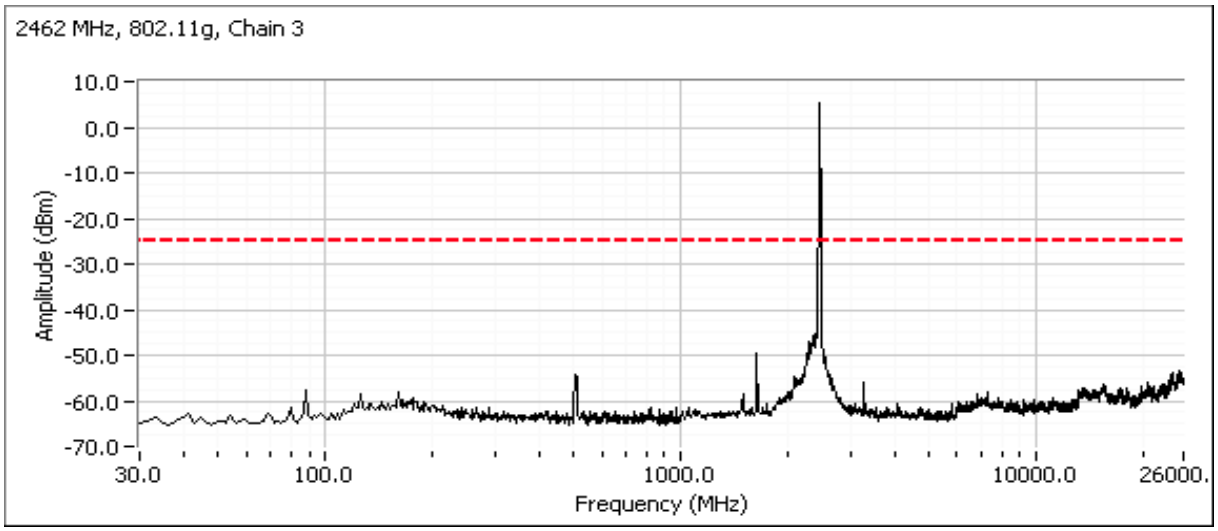
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Plots for high channel





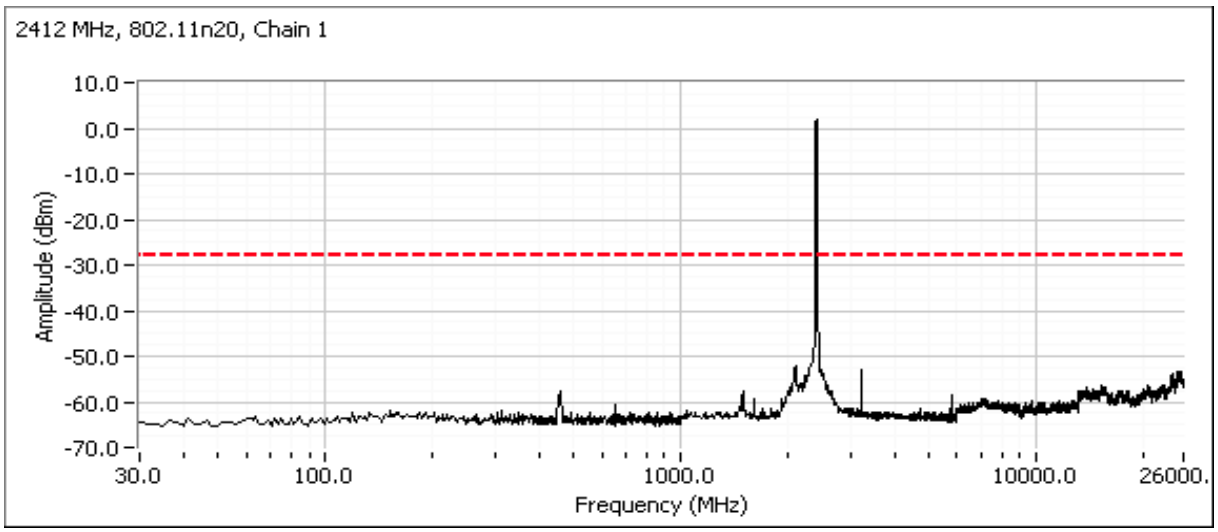
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



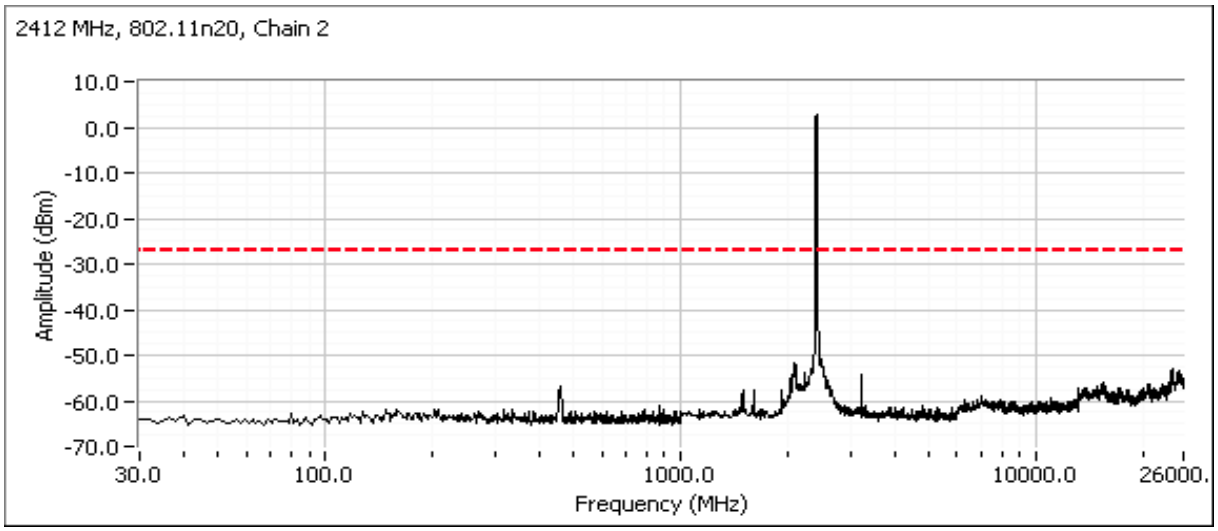
Radiated measurements used to show compliance with the limits in the restricted band above 2483.5 MHz.

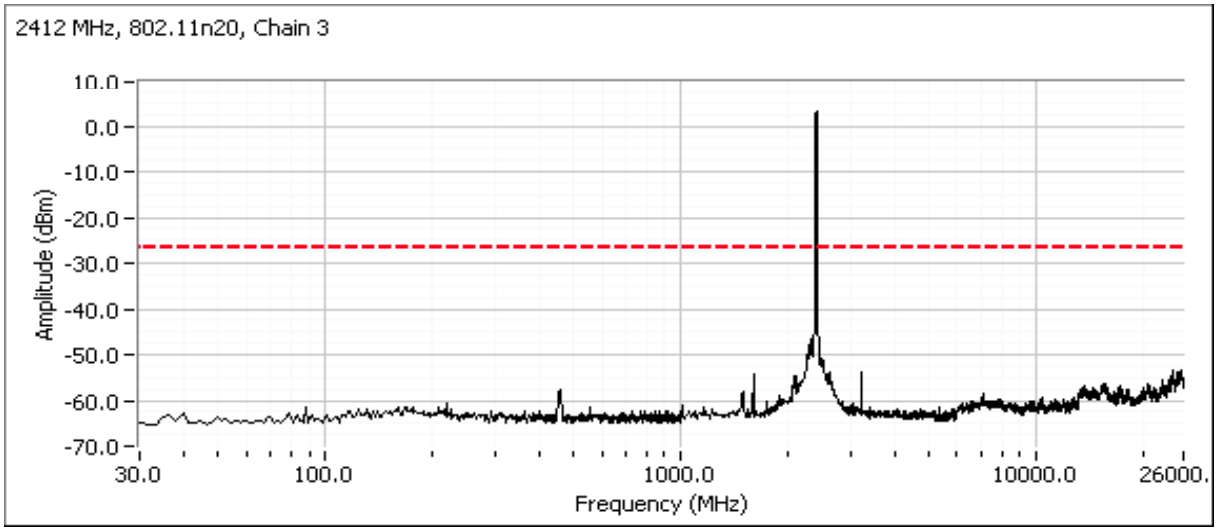
802.11n20

Plots for low channel



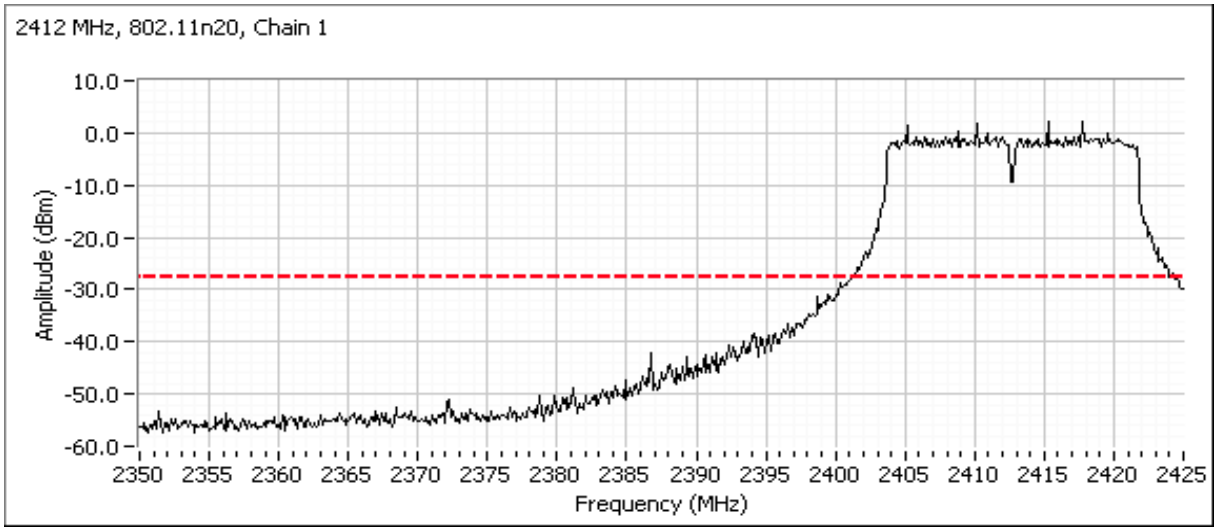
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

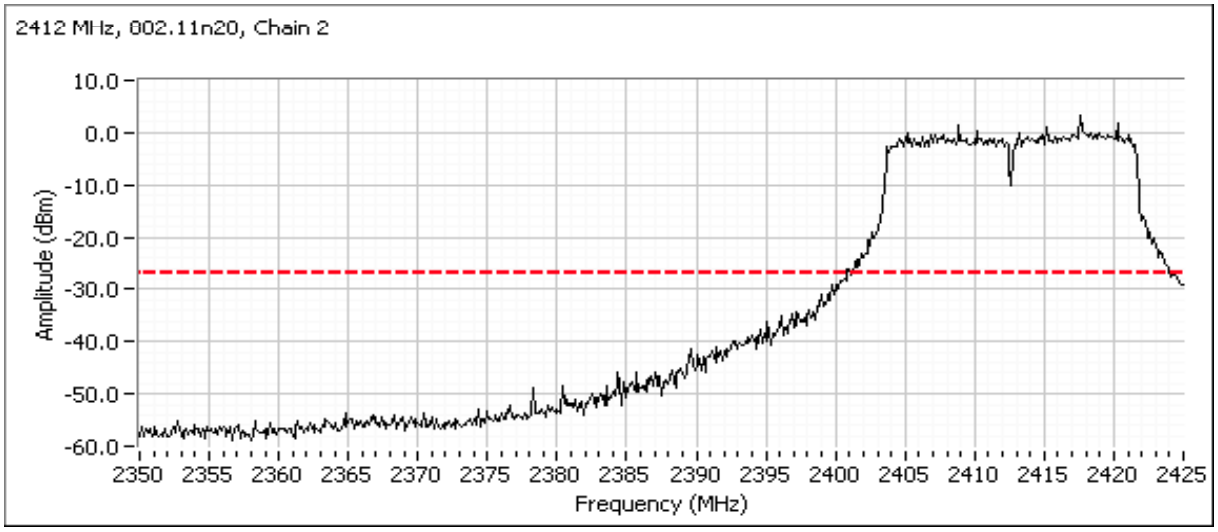




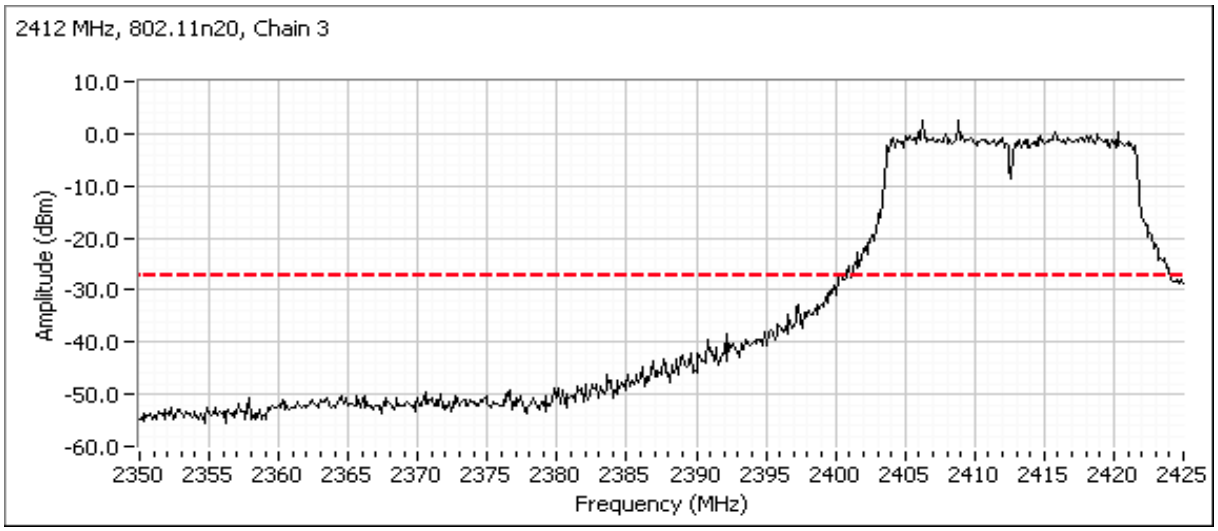
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

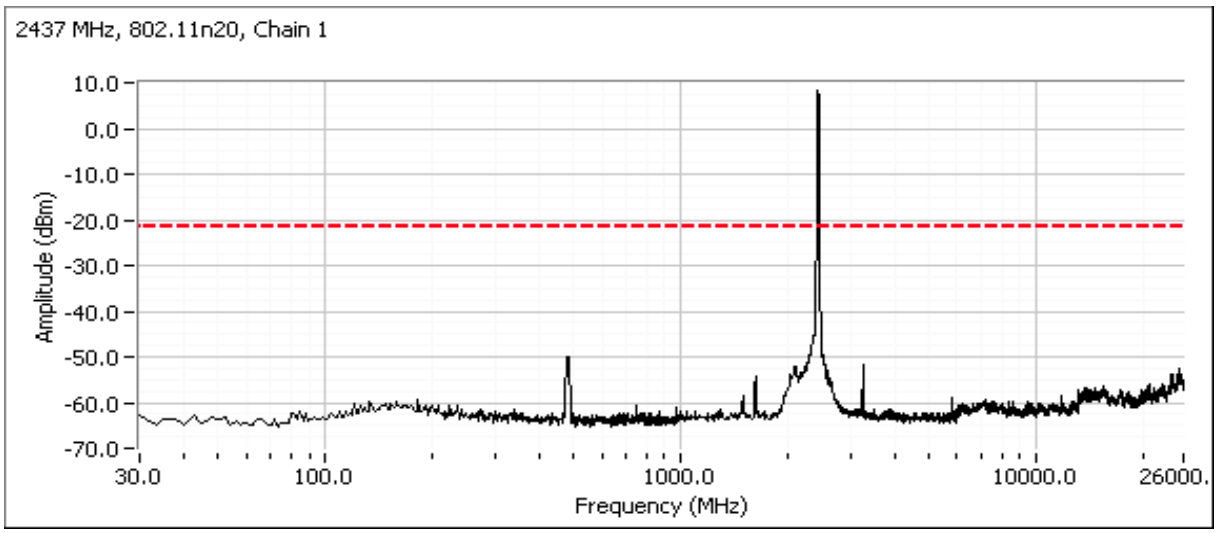




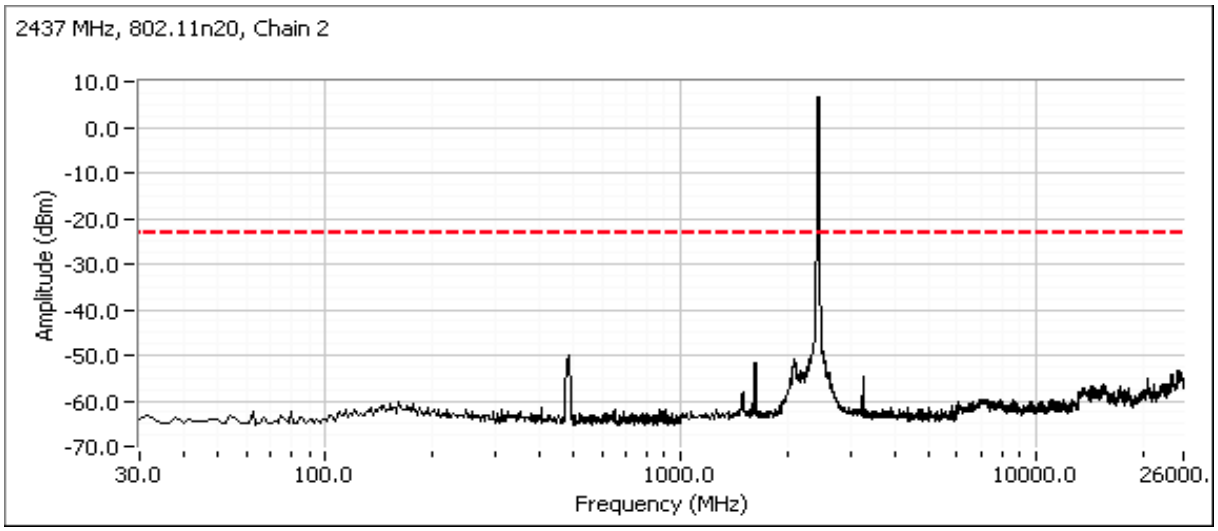
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

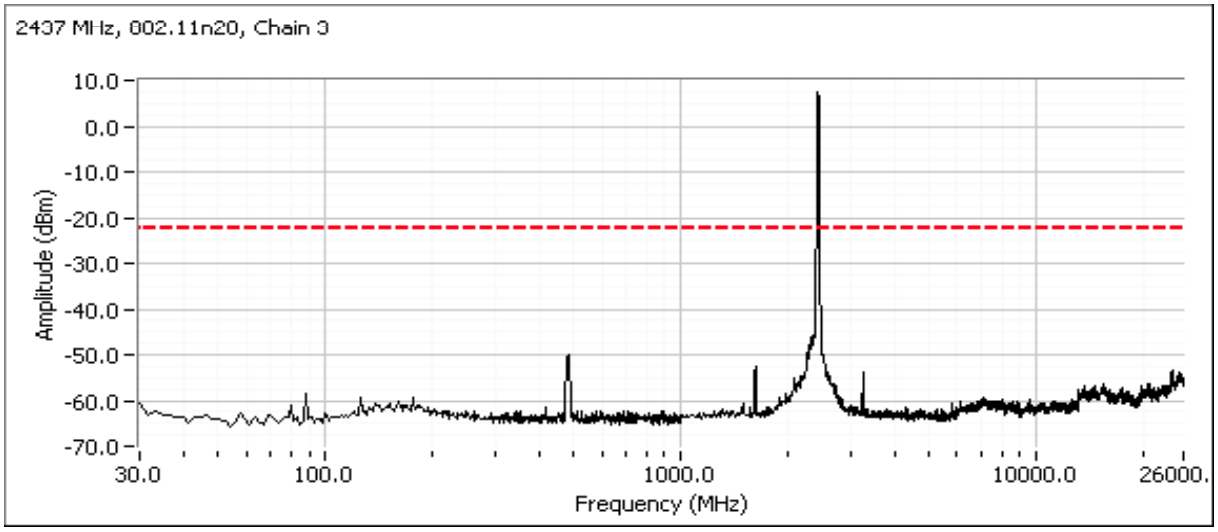


Plots for center channel



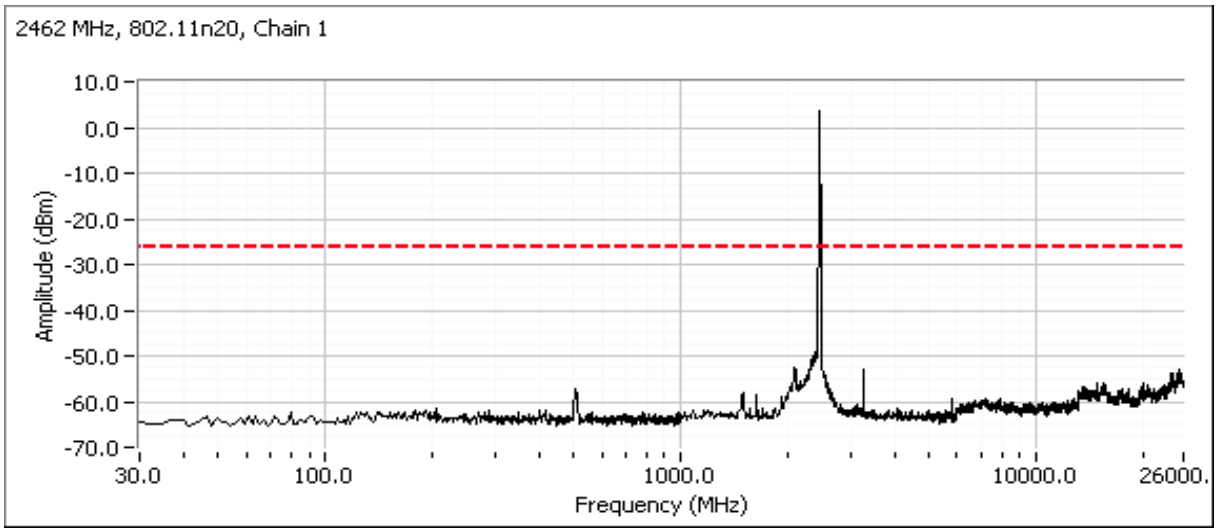
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

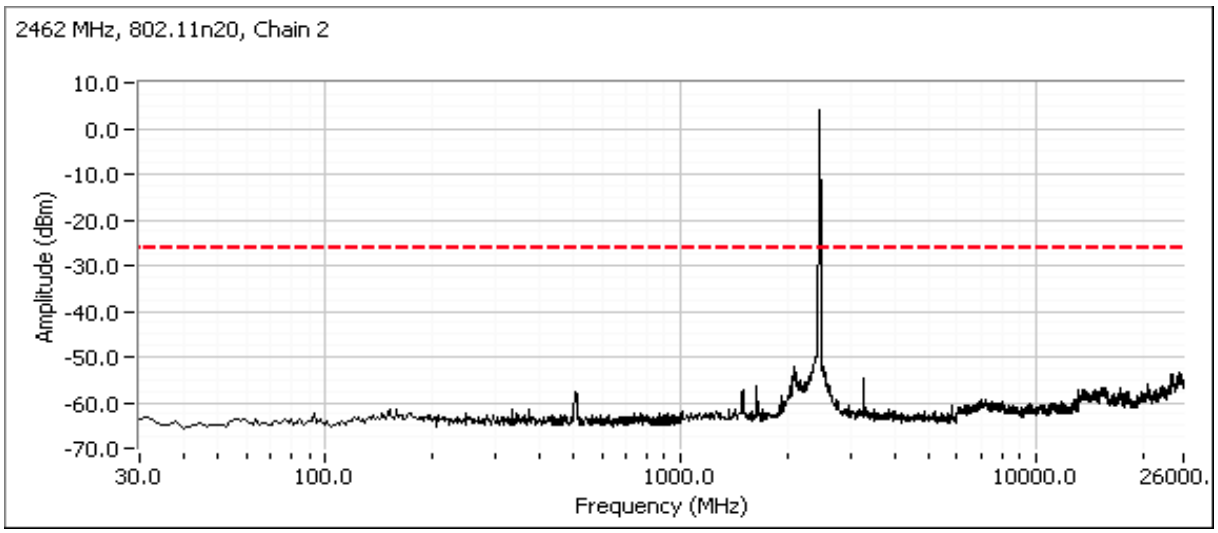




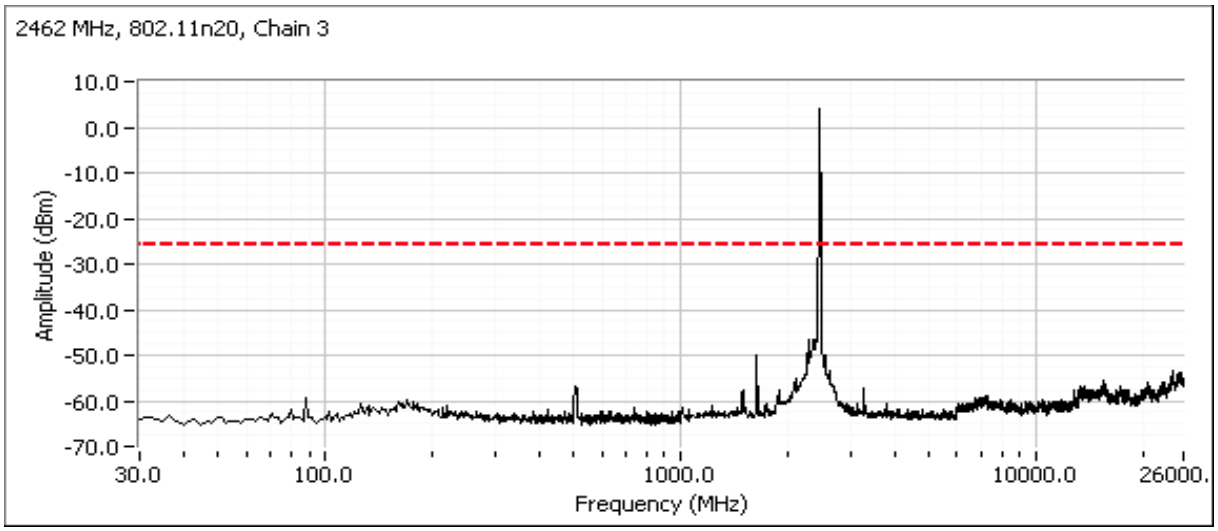
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Plots for high channel





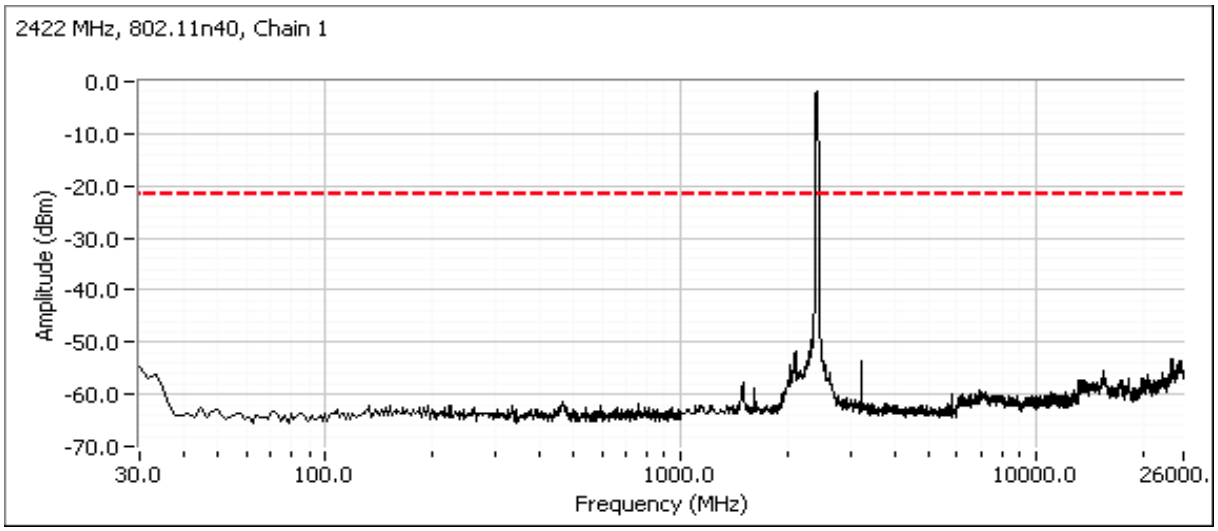
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



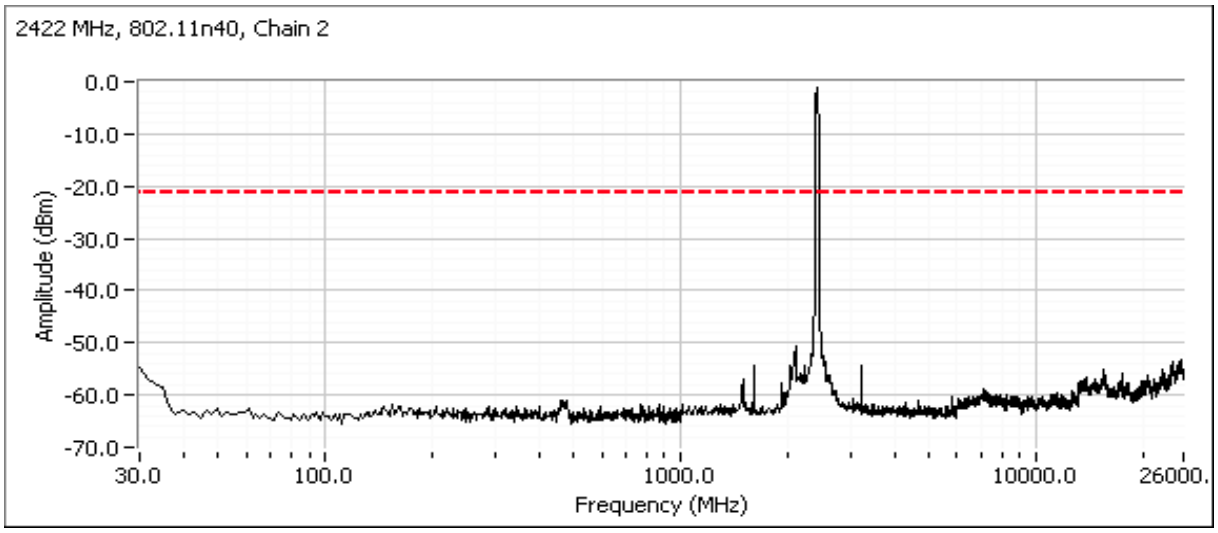
Radiated measurements used to show compliance with the limits in the restricted band above 2483.5 MHz.

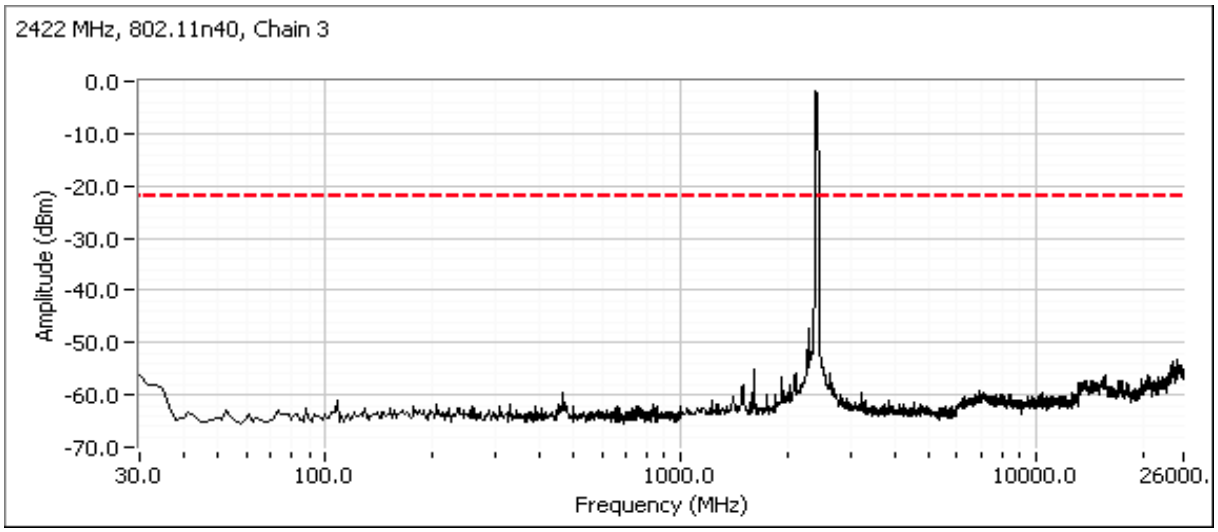
802.11n40

Plots for low channel



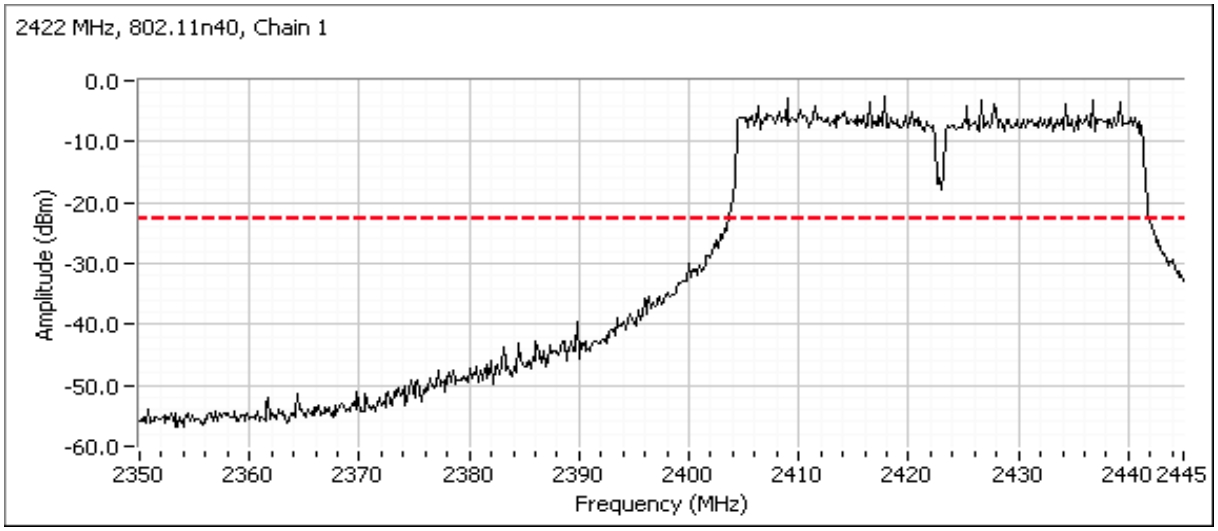
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

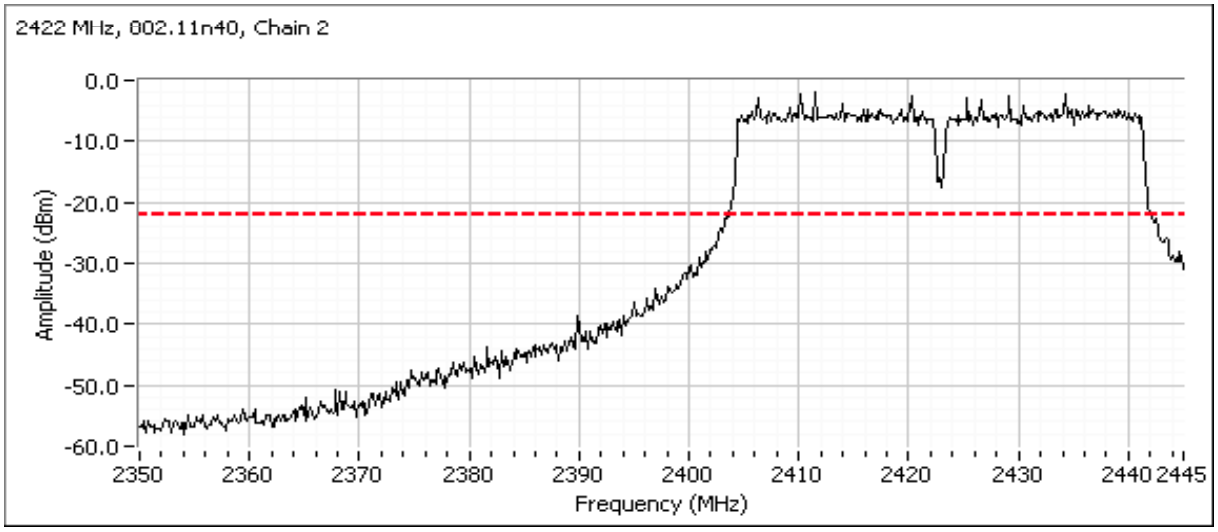




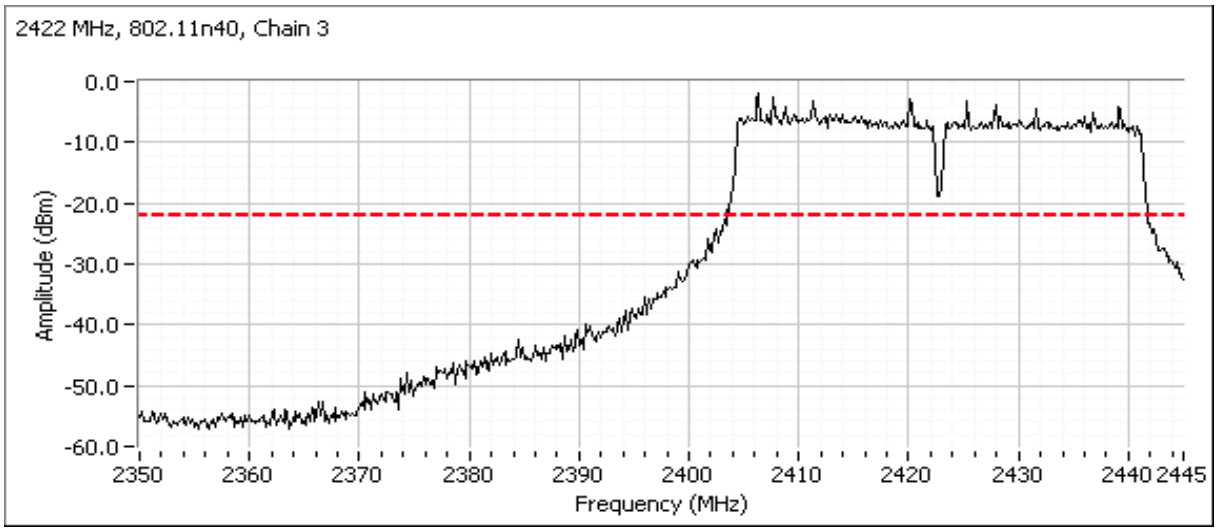
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

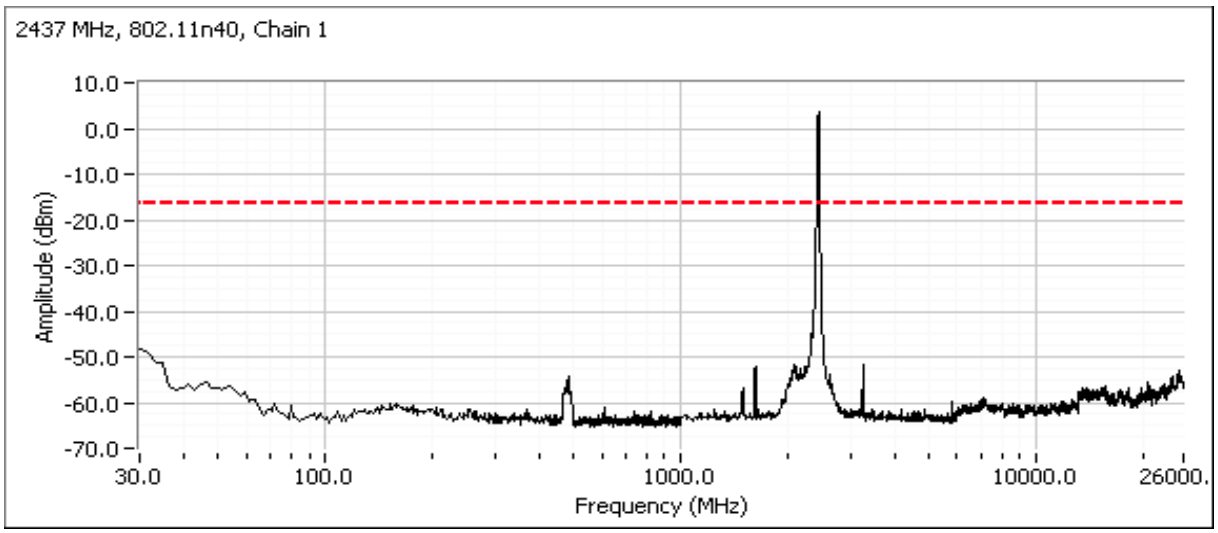




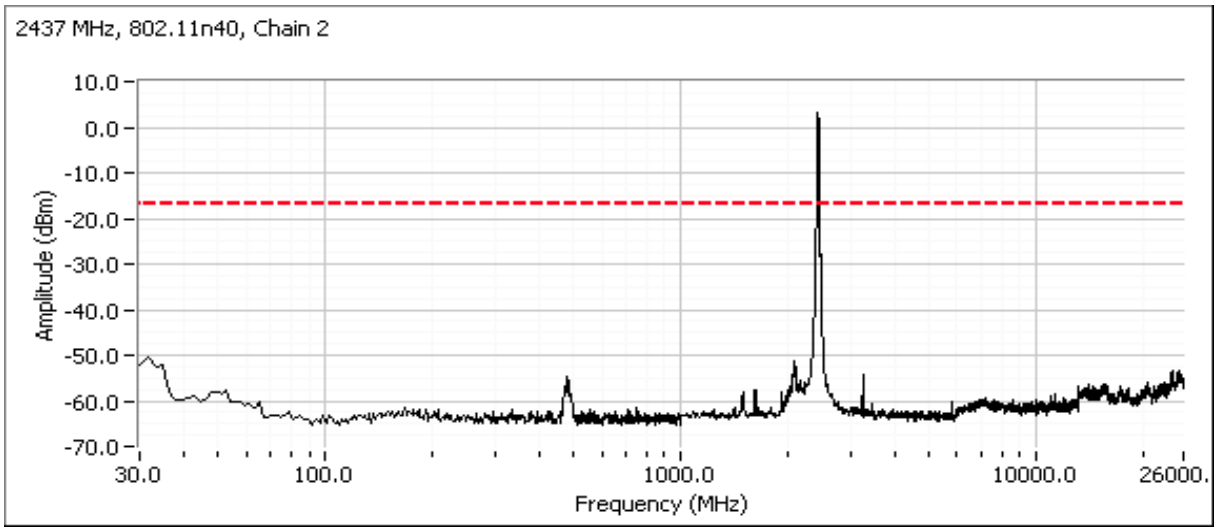
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

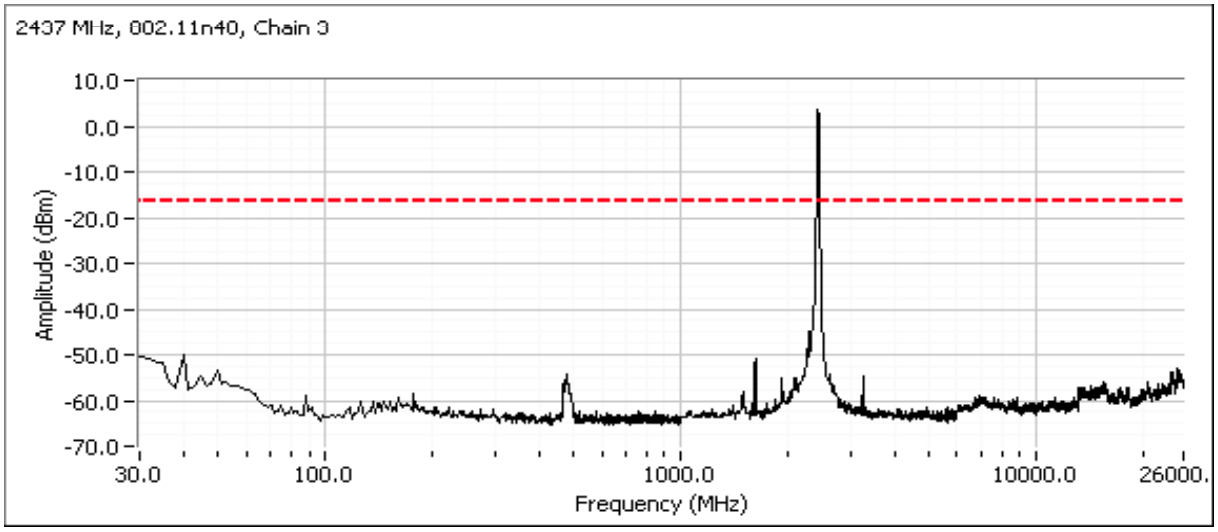


Plots for center channel



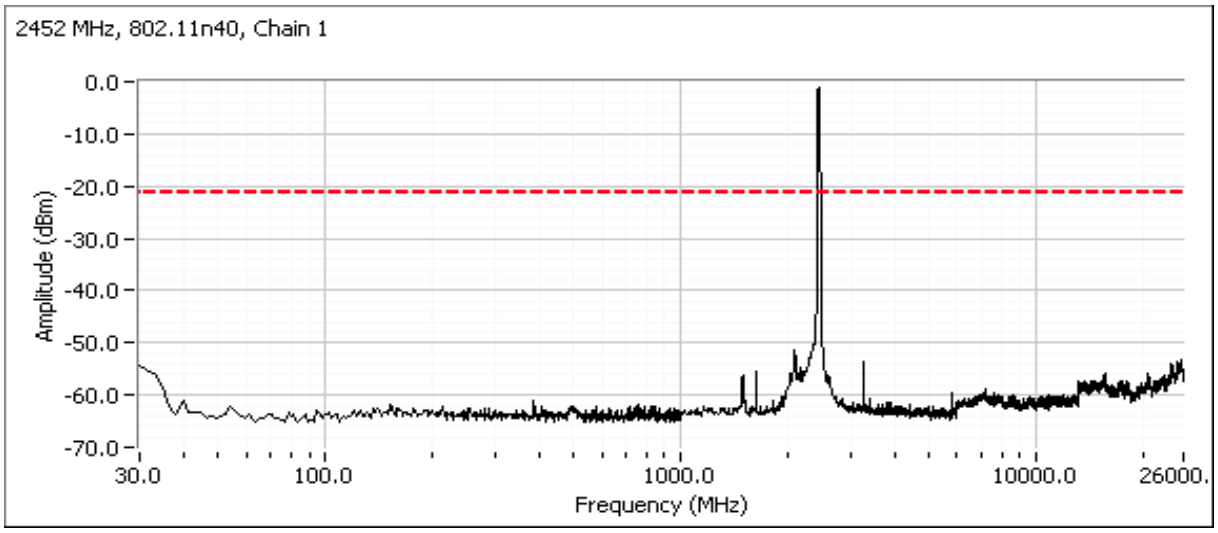
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

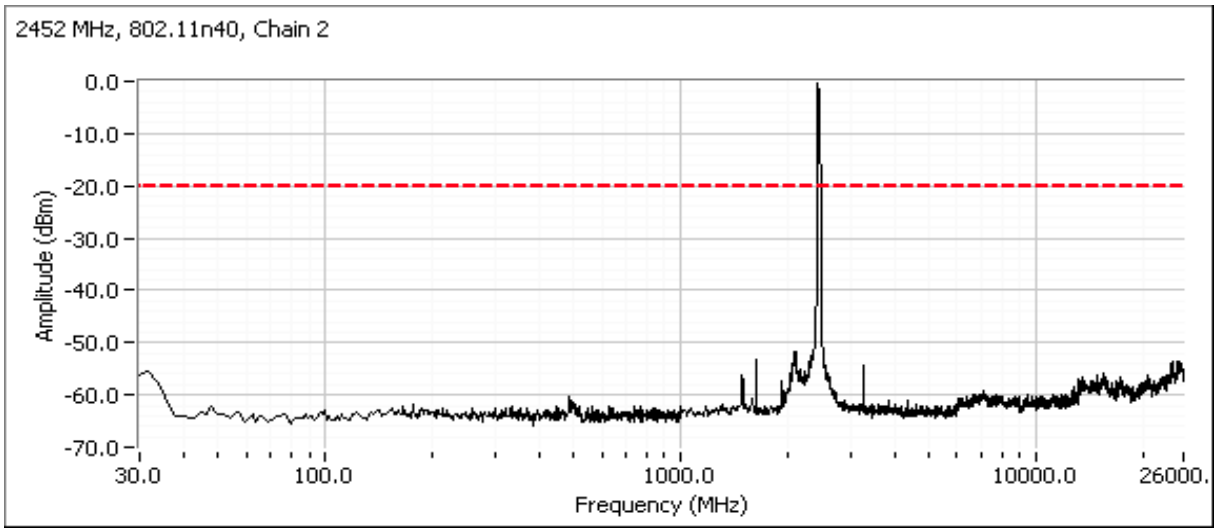




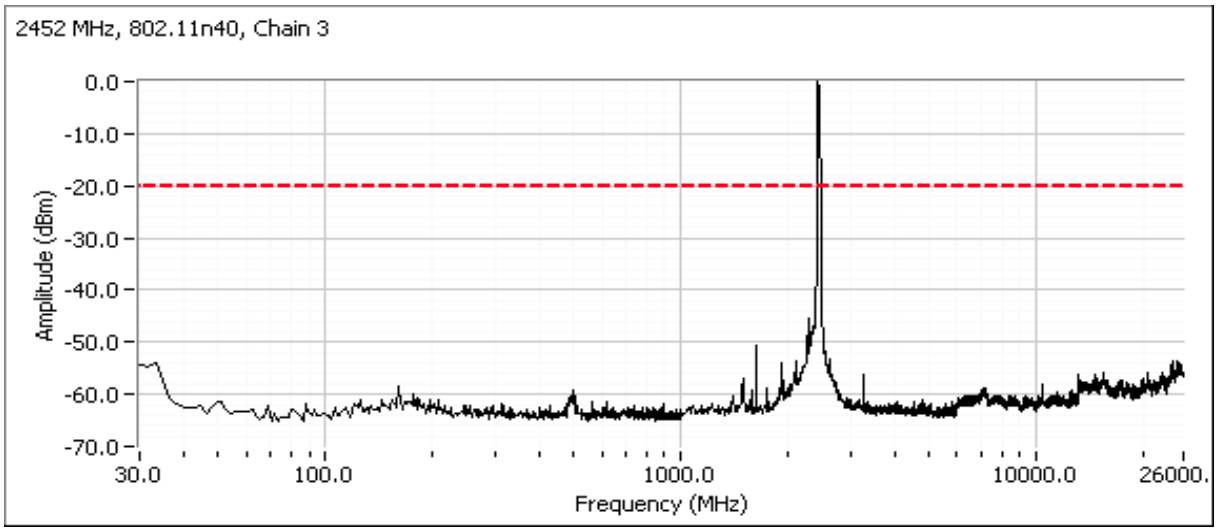
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Plots for high channel





Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Radiated measurements used to show compliance with the limits in the restricted band above 2483.5 MHz.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11b mode

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: 1/25/2013
Test Engineer: Rafael Varelas
Test Location: FT 7

Config. Used: 1
Config Change: None
EUT Voltage: POE

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: 20.6 °C
Rel. Humidity: 35 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11b)	15.247(b)	Pass	24.0 dBm

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.

Notes

All measurements performed at the antenna port

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11b

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11b
Transmitted signal on chain is coherent ? yes

2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.0							
Output Power (dBm) Note 1	18.5	18.8	18.2		23.3 dBm	0.213 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	20.5	20.8	20.2		30.0 dBm	1.011 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	19	19	19.7		24.0 dBm	0.252 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	21	21	21.7		30.8 dBm	1.199 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.5							
Output Power (dBm) Note 1	18.1	18.3	18.7		23.1 dBm	0.206 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	20.1	20.3	20.7		29.9 dBm	0.981 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b:
Antenna: 3dBi Panel

2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.5							
Output Power (dBm) Note 1	18.9	19.1	19		23.8 dBm	0.238 W	28.2 dBm	0.665 W
Antenna Gain (dBi) Note 2	3	3	3		7.8 dBi		Pass	
eirp (dBm) Note 2	21.9	22.1	22		31.5 dBm	1.427 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	19	19	19.7		24.0 dBm	0.252 W	28.2 dBm	0.665 W
Antenna Gain (dBi) Note 2	3	3	3		7.8 dBi		Pass	
eirp (dBm) Note 2	22	22	22.7		31.8 dBm	1.510 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	18.7	18.8	19		23.6 dBm	0.229 W	28.2 dBm	0.665 W
Antenna Gain (dBi) Note 2	3	3	3		7.8 dBi		Pass	
eirp (dBm) Note 2	21.7	21.8	22		31.4 dBm	1.373 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 5dBi Sector

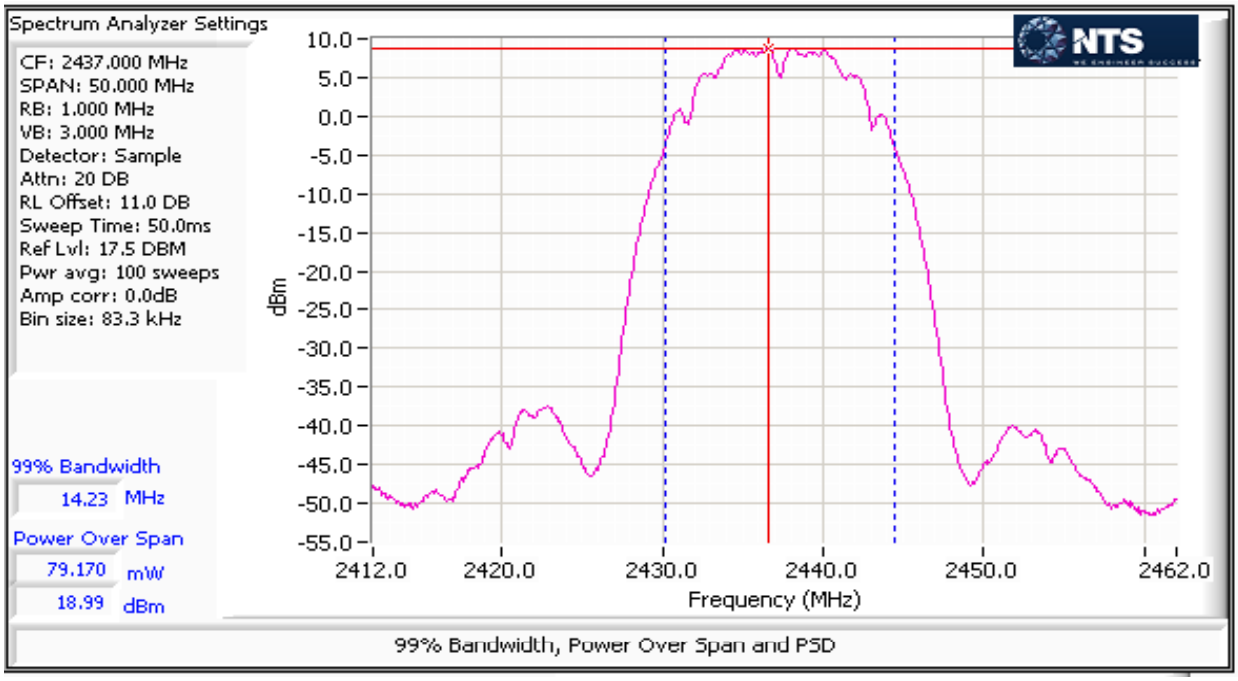
2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.0							
Output Power (dBm) Note 1	18.5	18.8	18.2		23.3 dBm	0.213 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	23.5	23.8	23.2		33.0 dBm	2.018 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	19	19	19.7		24.0 dBm	0.252 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	24	24	24.7		33.8 dBm	2.392 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.5							
Output Power (dBm) Note 1	18.1	18.3	18.7		23.1 dBm	0.206 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	23.1	23.3	23.7		32.9 dBm	1.957 W		

Note 1:	Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50MHz (option #1 in KDB 558074. Spurious limit becomes -30dBc.
Note 2:	As there is coherency between chains the effective antenna gain is the sum of the individual antenna gains and the eirp is the product of the total power and the effective antenna gain
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11g mode

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: 1/25/2013
Test Engineer: Rafael Varelas
Test Location: FT 7

Config. Used: 1
Config Change: None
EUT Voltage: POE

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: 20.6 °C
Rel. Humidity: 35 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11g)	15.247(b)	Pass	24.1 dBm

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.

Notes

All measurements performed at the antenna port

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11g

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11g
Transmitted signal on chain is coherent ? yes

2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	13.5							
Output Power (dBm) Note 1	14.2	14.7	14.7		19.3 dBm	0.085 W	24.4 dBm	0.275 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	16.2	16.7	16.7		26.1 dBm	0.406 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	19.0							
Output Power (dBm) Note 1	19.2	19.4	19.4		24.1 dBm	0.257 W	24.4 dBm	0.275 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	21.2	21.4	21.4		30.9 dBm	1.224 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	15.0							
Output Power (dBm) Note 1	15.3	15.7	15.3		20.2 dBm	0.105 W	24.4 dBm	0.275 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	17.3	17.7	17.3		27.0 dBm	0.499 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b:
Antenna: 3dBi Panel

2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	14.5							
Output Power (dBm) Note 1	15.3	15.8	15.7		20.4 dBm	0.109 W	28.2 dBm	0.665 W
Antenna Gain (dBi) Note 2	3	3	3		7.8 dBi		Pass	
eirp (dBm) Note 2	18.3	18.8	18.7		28.1 dBm	0.653 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	19.0							
Output Power (dBm) Note 1	19.2	19.4	19.4		24.1 dBm	0.257 W	28.2 dBm	0.665 W
Antenna Gain (dBi) Note 2	3	3	3		7.8 dBi		Pass	
eirp (dBm) Note 2	22.2	22.4	22.4		31.9 dBm	1.541 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	14.5							
Output Power (dBm) Note 1	14.7	14.9	15.5		19.8 dBm	0.096 W	28.2 dBm	0.665 W
Antenna Gain (dBi) Note 2	3	3	3		7.8 dBi		Pass	
eirp (dBm) Note 2	17.7	17.9	18.5		27.6 dBm	0.574 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 5dBi Sector

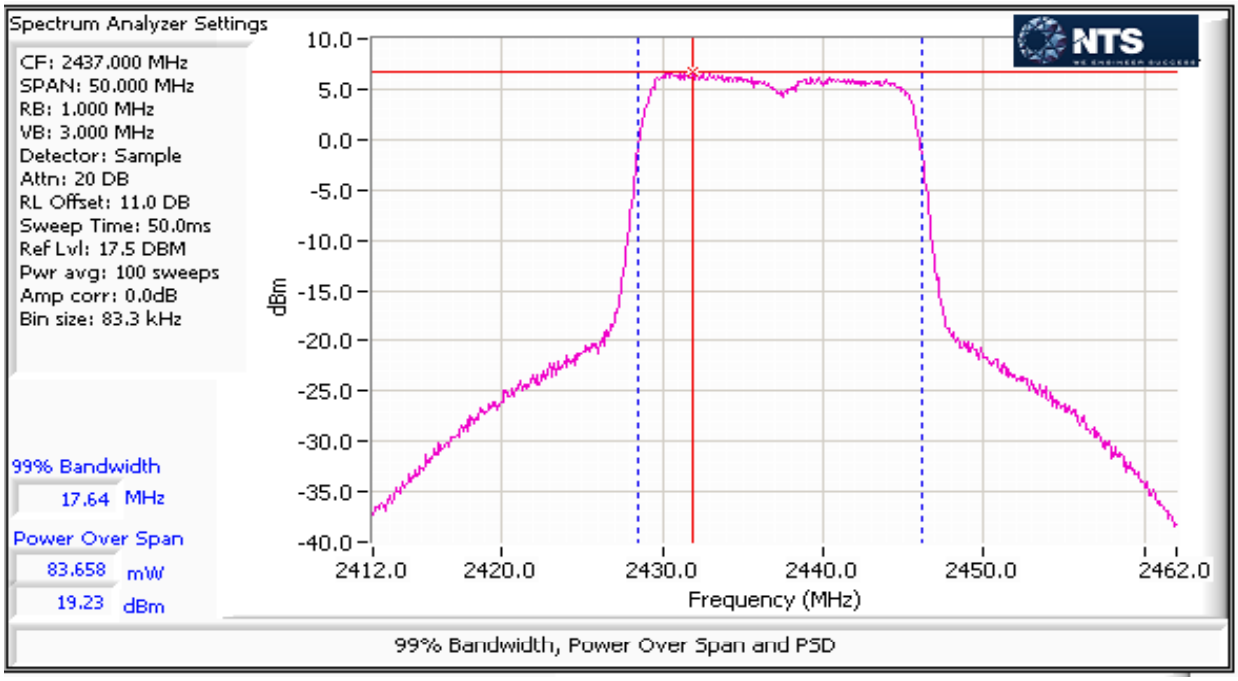
2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		14.5						
Output Power (dBm) Note 1	15.3	15.8	15.7		20.4 dBm	0.109 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	20.3	20.8	20.7		30.1 dBm	1.035 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		19.0						
Output Power (dBm) Note 1	19.2	19.4	19.4		24.1 dBm	0.257 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	24.2	24.4	24.4		33.9 dBm	2.442 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		13.5						
Output Power (dBm) Note 1	13.7	13.9	14.5		18.8 dBm	0.076 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	18.7	18.9	19.5		28.6 dBm	0.723 W		

Note 1:	Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50MHz (option #1 in KDB 558074. Spurious limit becomes -30dBc.
Note 2:	As there is coherency between chains the effective antenna gain is the sum of the individual antenna gains and the eirp is the product of the total power and the effective antenna gain
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11n20 mode

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: 1/27/2013
Test Engineer: Rafael Varelas
Test Location: FT 7

Config. Used: 1
Config Change: None
EUT Voltage: POE

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: 20.2 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11n20)	15.247(b)	Pass	24.0 dBm

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.

Notes

All measurements performed at the antenna port

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11n20

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11n20
Transmitted signal on chain is coherent ? no

2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting[Note 3]	12.5							
Output Power (dBm) [Note 1]	12.7	12.8	12.5		17.4 dBm	0.055 W	24.4 dBm	0.275 W
Antenna Gain (dBi) [Note 2]	2	2	2			2.0 dBi	Pass	
eirp (dBm) [Note 2]	14.7	14.8	14.5		19.4 dBm	0.088 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting[Note 3]	20.0							
Output Power (dBm) [Note 1]	19.3	19.5	18.9		24.0 dBm	0.252 W	24.4 dBm	0.275 W
Antenna Gain (dBi) [Note 2]	2	2	2			2.0 dBi	Pass	
eirp (dBm) [Note 2]	21.3	21.5	20.9		26.0 dBm	0.399 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting[Note 3]	14.0							
Output Power (dBm) [Note 1]	13.7	13.8	14.3		18.7 dBm	0.074 W	24.4 dBm	0.275 W
Antenna Gain (dBi) [Note 2]	2	2	2			2.0 dBi	Pass	
eirp (dBm) [Note 2]	15.7	15.8	16.3		20.7 dBm	0.118 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b:
Antenna: 3dBi Panel

2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		13.0						
Output Power (dBm) Note 1	13.4	13.6	13.1		18.1 dBm	0.065 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	3	3	3			3.0 dBi	Pass	
eirp (dBm) Note 2	16.4	16.6	16.1		21.1 dBm	0.130 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		20.0						
Output Power (dBm) Note 1	19.3	19.5	18.9		24.0 dBm	0.252 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	3	3	3			3.0 dBi	Pass	
eirp (dBm) Note 2	22.3	22.5	21.9		27.0 dBm	0.503 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		14.0						
Output Power (dBm) Note 1	13.7	13.8	14.3		18.7 dBm	0.074 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	3	3	3			3.0 dBi	Pass	
eirp (dBm) Note 2	16.7	16.8	17.3		21.7 dBm	0.148 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 5dBi Sector

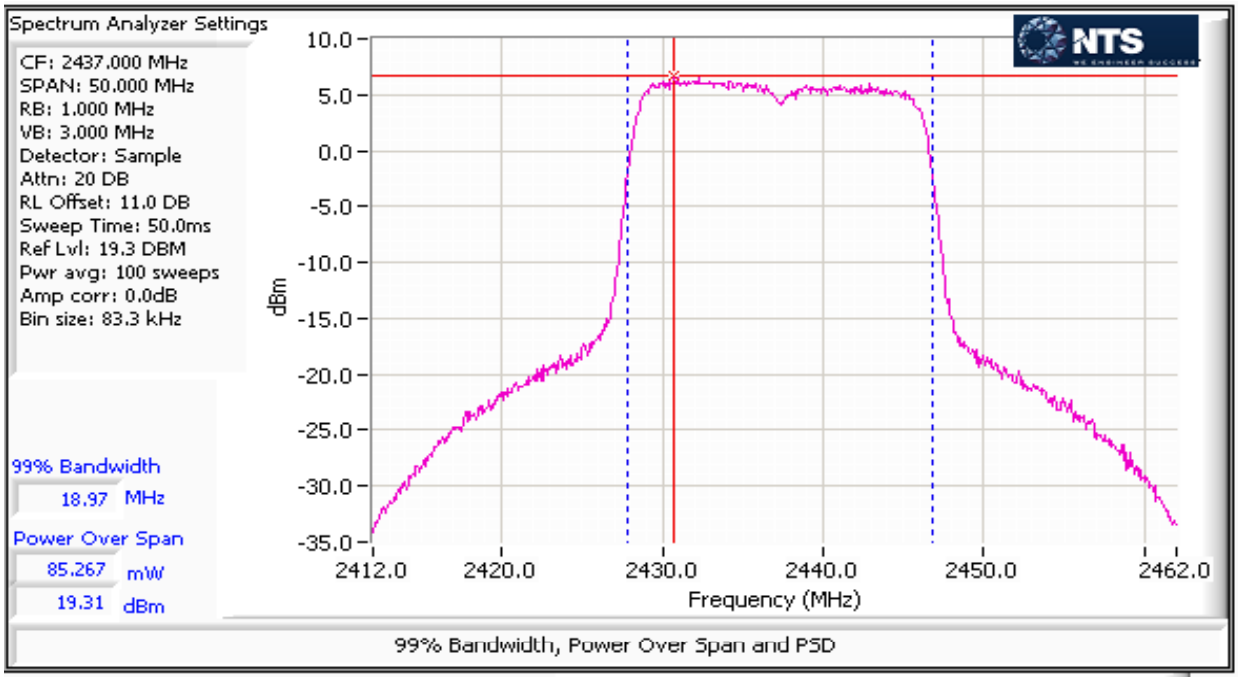
2412 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		12.0						
Output Power (dBm) Note 1	11.9	12.2	11.9		16.8 dBm	0.048 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	16.9	17.2	16.9		21.8 dBm	0.150 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		20.0						
Output Power (dBm) Note 1	19.3	19.5	18.9		24.0 dBm	0.252 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	24.3	24.5	23.9		29.0 dBm	0.796 W		

2462 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		13.0						
Output Power (dBm) Note 1	12.5	12.8	13.4		17.7 dBm	0.059 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	17.5	17.8	18.4		22.7 dBm	0.186 W		

Note 1:	Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50MHz (option #1 in KDB 558074. Spurious limit becomes -30dBc.
Note 2:	As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain.
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11n40 mode

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: 1/27/2013
Test Engineer: Rafael Varelas
Test Location: FT 7

Config. Used: 1
Config Change: None
EUT Voltage: POE

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: 20.2 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11n40)	15.247(b)	Pass	22.4 dBm

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.

Notes

All measurements performed at the antenna port

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11n40

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11n40
Transmitted signal on chain is coherent ? no

2422 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	11.5							
Output Power (dBm) Note 1	14.0	14.3	14.1		18.9 dBm	0.078 W	24.4 dBm	0.275 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	16	16.3	16.1		20.9 dBm	0.123 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	14.5							
Output Power (dBm) Note 1	17.6	17.5	17.9		22.4 dBm	0.175 W	24.4 dBm	0.275 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	19.6	19.5	19.9		24.4 dBm	0.278 W		

2452 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	12.5							
Output Power (dBm) Note 1	14.8	14.9	15.2		19.7 dBm	0.094 W	24.4 dBm	0.275 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	16.8	16.9	17.2		21.7 dBm	0.149 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b:
Antenna: 3dBi Panel

2422 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	11.0							
Output Power (dBm) Note 1	13.3	14.1	13.6		18.5 dBm	0.070 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	3	3	3			3.0 dBi	Pass	
eirp (dBm) Note 2	16.3	17.1	16.6		21.5 dBm	0.140 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	14.5							
Output Power (dBm) Note 1	17.6	17.5	17.9		22.4 dBm	0.175 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	3	3	3			3.0 dBi	Pass	
eirp (dBm) Note 2	20.6	20.5	20.9		25.4 dBm	0.350 W		

2452 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	12.5							
Output Power (dBm) Note 1	14.8	14.9	15.2		19.7 dBm	0.094 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	3	3	3			3.0 dBi	Pass	
eirp (dBm) Note 2	17.8	17.9	18.2		22.7 dBm	0.188 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 5dBi Sector

2422 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		9.5						
Output Power (dBm) Note 1	11.5	12.2	11.6		16.5 dBm	0.045 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	16.5	17.2	16.6		21.5 dBm	0.143 W		

2437 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		13.5						
Output Power (dBm) Note 1	16.3	16.6	17.1		21.5 dBm	0.140 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	21.3	21.6	22.1		26.5 dBm	0.442 W		

2452 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		10.0						
Output Power (dBm) Note 1	11.4	11.3	12.6		16.6 dBm	0.045 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	16.4	16.3	17.6		21.6 dBm	0.144 W		

Note 1:	Output power measured using a peak power meter, spurious limit is -20dBc.
Note 2:	As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain.
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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

Ambient Conditions:

Temperature: 20.3 °C
Rel. Humidity: 37 %

Summary of Results - Device Operating in the DTS Bands

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 1	802.11b Chain A+B+C	#1 2412MHz	17.0	-	Restricted Band Edge at 2390 MHz	15.209	52.2 dBµV/m @ 2386.3 MHz (-1.8 dB)
		#11 2462MHz	17.5	-	Restricted Band Edge at 2483.5 MHz	15.209	52.5 dBµV/m @ 2487.2 MHz (-1.5 dB)
Run # 2	802.11g Chain A+B+C	#1 2412MHz	13.5	-	Restricted Band Edge at 2390 MHz	15.209	52.9 dBµV/m @ 2390.0 MHz (-1.1 dB)
		#2 2417MHz	15.5	-	Restricted Band Edge at 2390 MHz	15.209	53.5 dBµV/m @ 2390.0 MHz (-0.5 dB)
		#3 2422MHz	17.0	-	Restricted Band Edge at 2390 MHz	15.209	73.5 dBµV/m @ 2390.0 MHz (-0.5 dB)
		#10 2457MHz	16.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.5 dBµV/m @ 2483.5 MHz (-0.5 dB)
		#11 2462MHz	15.0	-	Restricted Band Edge at 2483.5 MHz	15.209	52.8 dBµV/m @ 2483.5 MHz (-1.2 dB)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 3	802.11n20 Chain A+B+C	#1 2412MHz	12.5	-	Restricted Band Edge at 2390 MHz	15.209	52.8 dBµV/m @ 2390.0 MHz (-1.2 dB)
		#2 2417MHz	15.0	-	Restricted Band Edge at 2390 MHz	15.209	52.8 dBµV/m @ 2389.7 MHz (-1.2 dB)
		#3 2422MHz	17.0	-	Restricted Band Edge at 2390 MHz	15.209	52.7 dBµV/m @ 2390.0 MHz (-1.3 dB)
		#9 2452MHz	17.0	-	Restricted Band Edge at 2483.5 MHz	15.209	50.4 dBµV/m @ 2484.6 MHz (-3.6 dB)
		#10 2457MHz	15.5	-	Restricted Band Edge at 2483.5 MHz	15.209	52.7 dBµV/m @ 2483.5 MHz (-1.3 dB)
		#11 2462MHz	14.0	-	Restricted Band Edge at 2483.5 MHz	15.209	73.1 dBµV/m @ 2483.6 MHz (-0.9 dB)
Run # 4	802.11n40 Chain A+B+C	#3 2422MHz	11.5	-	Restricted Band Edge at 2390 MHz	15.209	53.9 dBµV/m @ 2384.5 MHz (-0.1 dB)
		#4 2427MHz	12.0	-	Restricted Band Edge at 2390 MHz	15.209	52.5 dBµV/m @ 2390.0 MHz (-1.5 dB)
		#8 2447MHz	13.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.5 dBµV/m @ 2485.9 MHz (-0.5 dB)
		#9 2452MHz	12.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.6 dBµV/m @ 2483.5 MHz (-0.4 dB)

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
1	Enterasys WS-AI-DX02360	Omni	2.4 & 5.8	2	Indoor	No	No

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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Notes

Antenna: antenna(s) connected
Duty Cycle: 99.0%

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No
ART GUI Boot File: -
-
ART GUI Calibration file: -
-
Command Line Script: 3710e 2nd Pilot_925942 boot and initialize all 3 radios to NART Command Line Interface - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/20/2013 Test Location: FT7

Test Engineer: Rafael Varelas Config Change: none

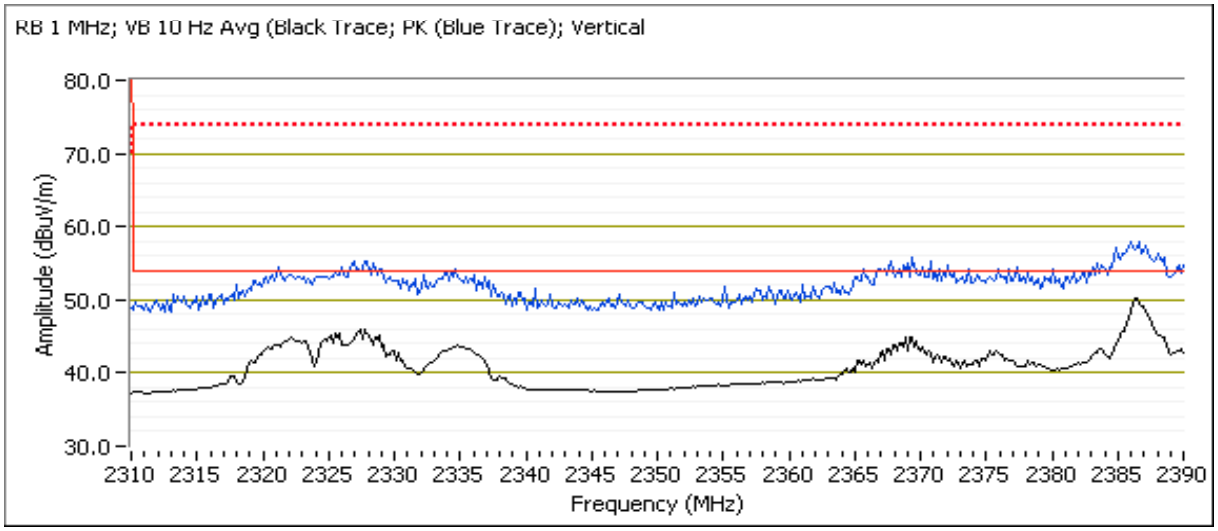
Run # 1a, EUT on Channel #1 2412MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	17.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.270	52.2	V	54.0	-1.8	AVG	70	1.1	POS; RB 1 MHz; VB: 10 Hz
2386.510	57.8	V	74.0	-16.2	PK	70	1.1	POS; RB 1 MHz; VB: 3 MHz
2386.310	41.9	H	54.0	-12.1	AVG	16	1.0	POS; RB 1 MHz; VB: 10 Hz
2386.230	51.2	H	74.0	-22.8	PK	16	1.0	POS; RB 1 MHz; VB: 3 MHz

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



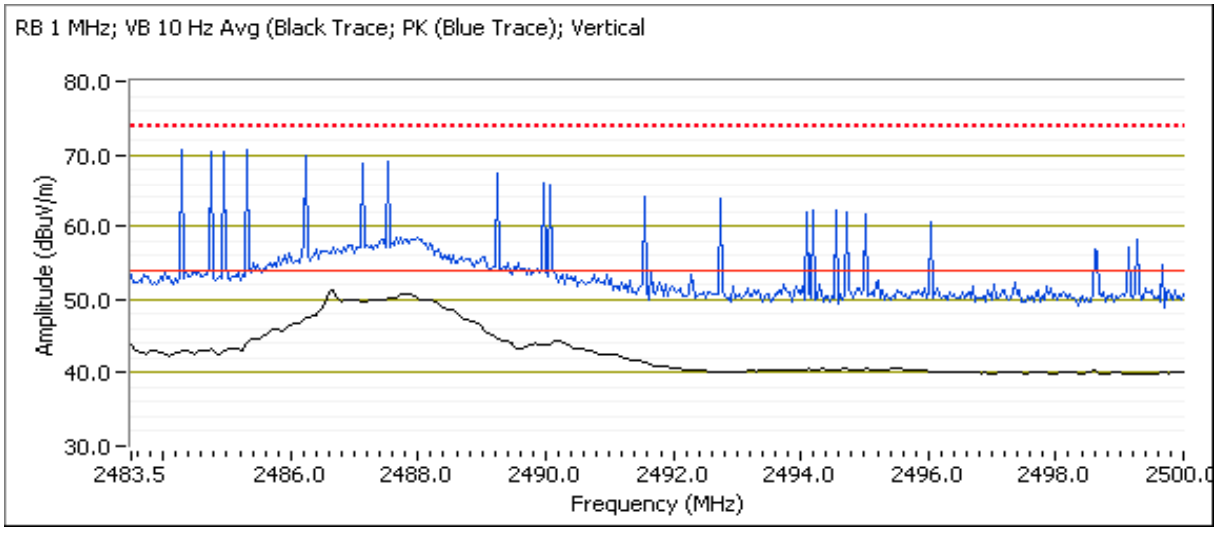
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	17.5

2483.5 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	
2487.170	52.5	V	54.0	-1.5	AVG	57	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.000	70.4	V	74.0	-3.6	PK	57	1.0	POS; RB 1 MHz; VB: 3 MHz
2487.370	43.1	H	54.0	-10.9	AVG	43	1.0	POS; RB 1 MHz; VB: 10 Hz
2485.680	59.6	H	74.0	-14.4	PK	43	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/20/2013 Test Location: FT7

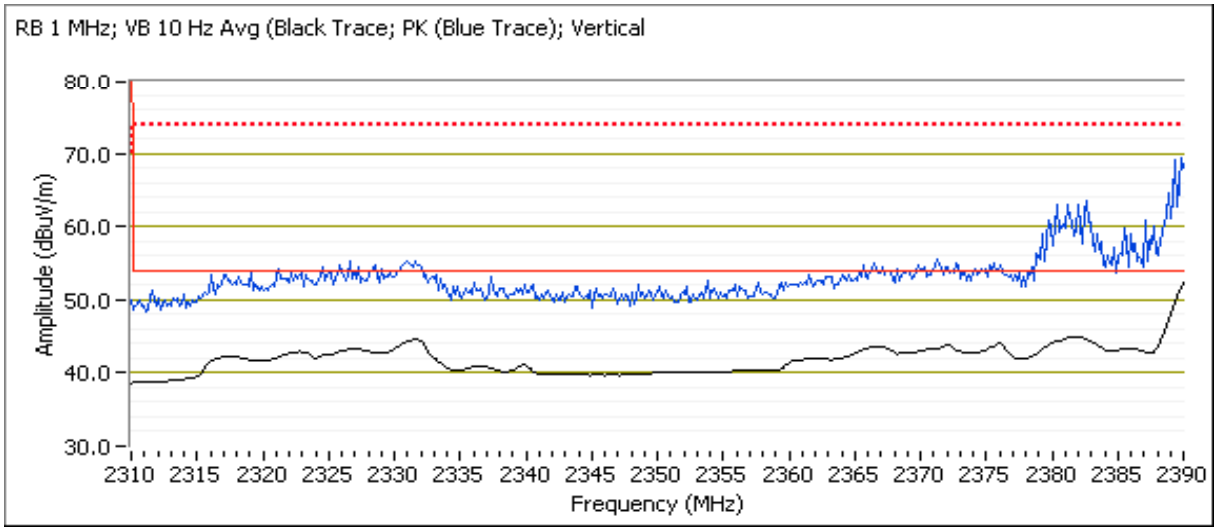
Test Engineer: Rafael Varelas Config Change: none

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

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	13.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.9	V	54.0	-1.1	AVG	76	1.1	POS; RB 1 MHz; VB: 10 Hz
2389.810	71.5	V	74.0	-2.5	PK	76	1.1	POS; RB 1 MHz; VB: 3 MHz
2388.560	40.5	H	54.0	-13.5	AVG	322	1.0	POS; RB 1 MHz; VB: 10 Hz
2386.230	54.0	H	74.0	-20.0	PK	322	1.0	POS; RB 1 MHz; VB: 3 MHz



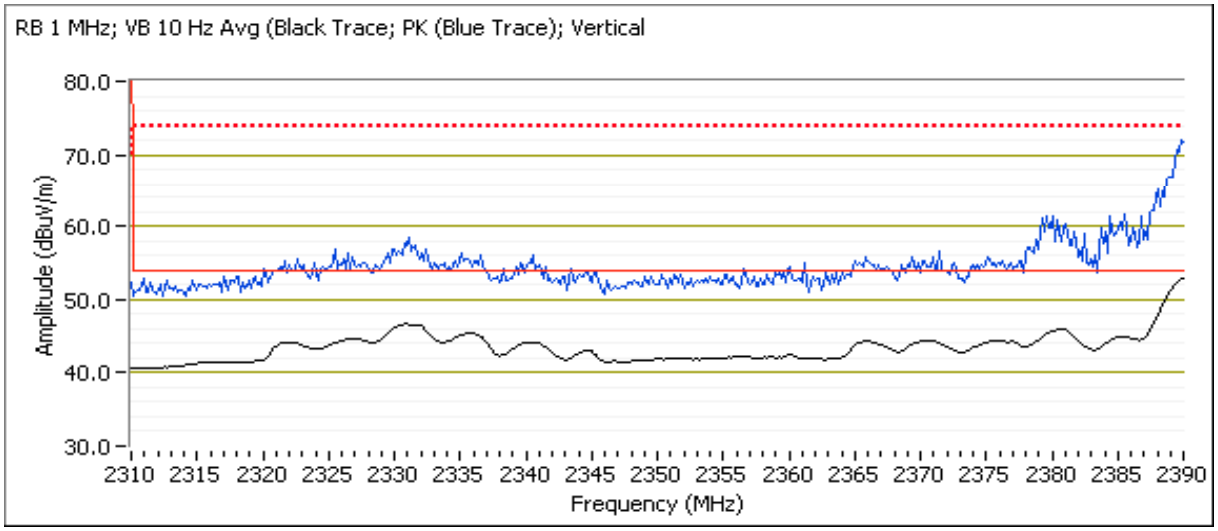
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2b, EUT on Channel #2 2417MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	15.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	53.5	V	54.0	-0.5	AVG	56	1.2	POS; RB 1 MHz; VB: 10 Hz
2389.920	67.4	V	74.0	-6.6	PK	56	1.2	POS; RB 1 MHz; VB: 3 MHz
2390.000	42.7	H	54.0	-11.3	AVG	9	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.600	55.5	H	74.0	-18.5	PK	9	1.0	POS; RB 1 MHz; VB: 3 MHz



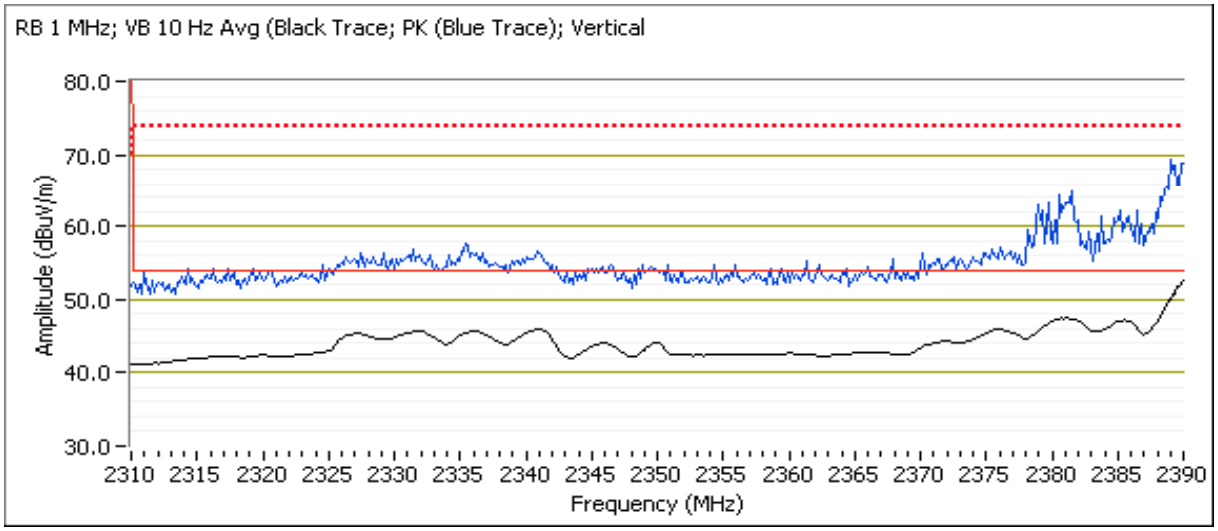
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2c, EUT on Channel #3 2422MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	17.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.960	73.5	V	74.0	-0.5	PK	52	1.1	POS; RB 1 MHz; VB: 3 MHz
2389.980	52.4	V	54.0	-1.6	AVG	52	1.1	POS; RB 1 MHz; VB: 10 Hz
2390.000	41.7	H	54.0	-12.3	AVG	9	1.0	POS; RB 1 MHz; VB: 10 Hz
2388.720	57.7	H	74.0	-16.3	PK	9	1.0	POS; RB 1 MHz; VB: 3 MHz



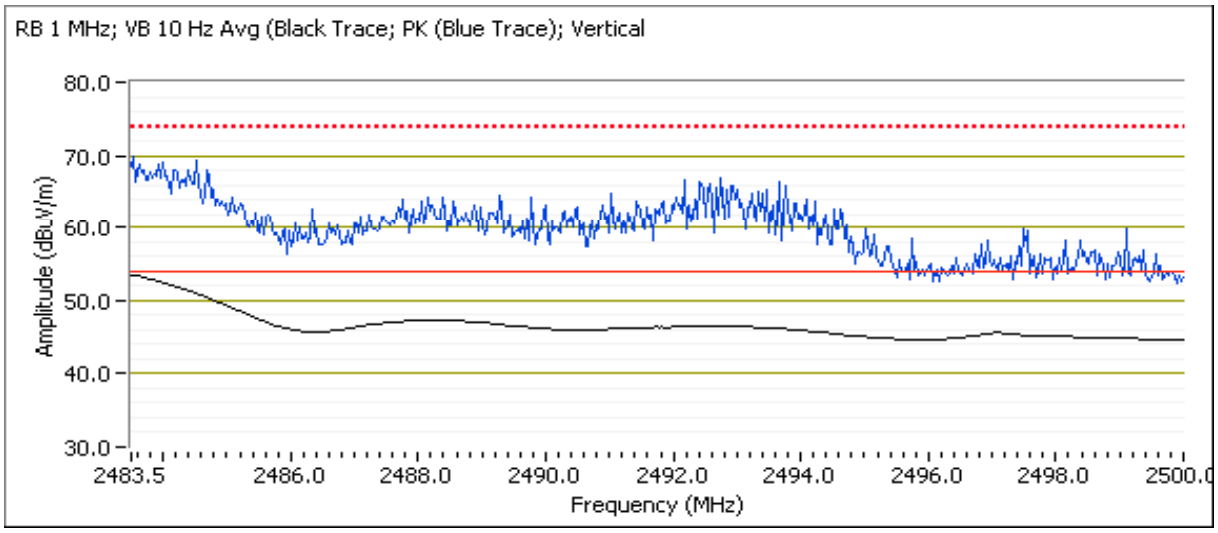
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2d, EUT on Channel #10 2457MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	16.5

2483.5 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	
2483.530	53.5	V	54.0	-0.5	AVG	356	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.600	70.9	V	74.0	-3.1	PK	356	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.600	46.8	H	54.0	-7.2	AVG	126	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.760	61.2	H	74.0	-12.8	PK	126	1.0	POS; RB 1 MHz; VB: 3 MHz



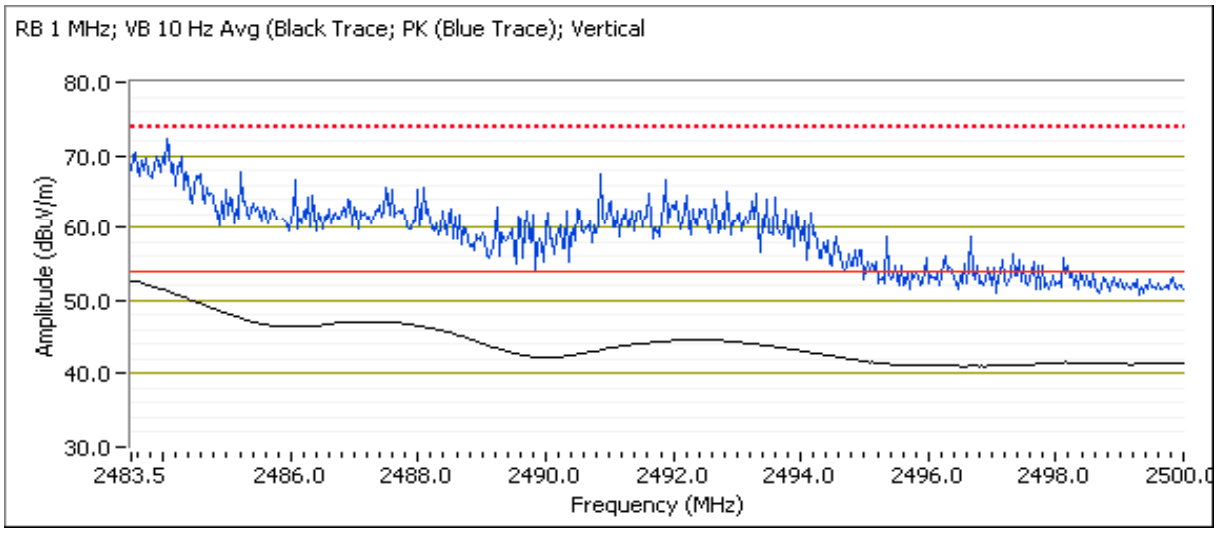
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2f, EUT on Channel #11 2462MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	15.0

2483.5 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	
2483.500	52.8	V	54.0	-1.2	AVG	56	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.230	68.6	V	74.0	-5.4	PK	56	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.630	48.2	H	54.0	-5.8	AVG	250	1.6	POS; RB 1 MHz; VB: 10 Hz
2484.000	67.0	H	74.0	-7.0	PK	250	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/21/2013 Test Location: FT7

Test Engineer: Jack Liu Config Change: none

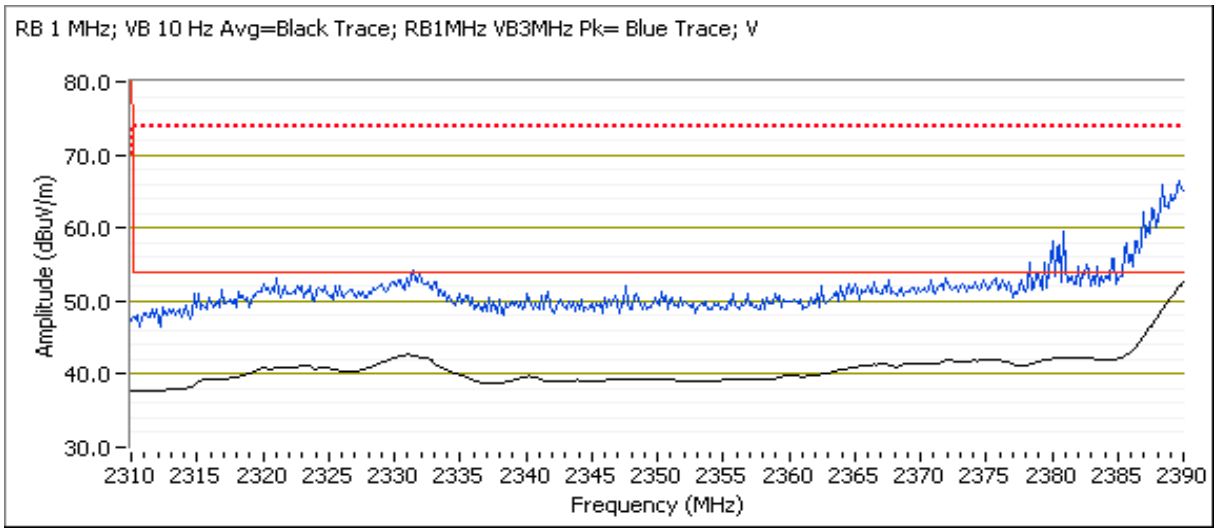
Run #3a, EUT on Channel #1 2412MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	12.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.8	V	54.0	-1.2	AVG	34	1.1	POS; RB 1 MHz; VB: 10 Hz
2390.000	65.9	V	74.0	-8.1	PK	34	1.1	POS; RB 1 MHz; VB: 3 MHz
2390.000	42.5	H	54.0	-11.5	AVG	13	1.0	POS; RB 1 MHz; VB: 10 Hz
2388.560	55.1	H	74.0	-18.9	PK	13	1.0	POS; RB 1 MHz; VB: 3 MHz

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



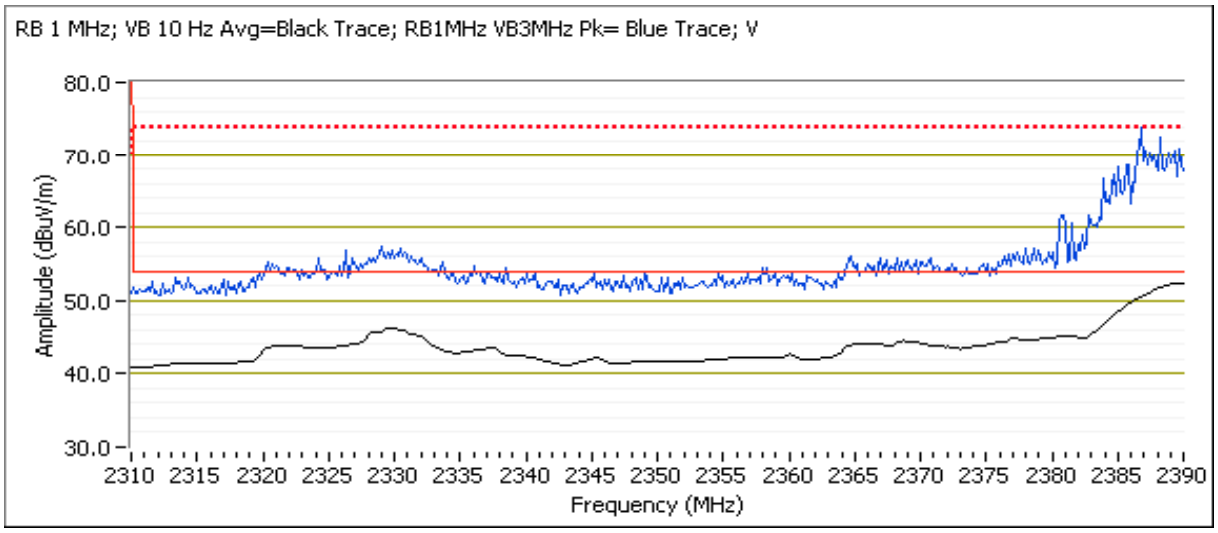
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3b, EUT on Channel #2 2417MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	15.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.680	52.8	V	54.0	-1.2	AVG	56	1.1	POS; RB 1 MHz; VB: 10 Hz
2387.600	69.2	V	74.0	-4.8	PK	56	1.1	POS; RB 1 MHz; VB: 3 MHz
2390.000	44.2	H	54.0	-9.8	AVG	15	1.0	POS; RB 1 MHz; VB: 10 Hz
2387.760	57.4	H	74.0	-16.6	PK	15	1.0	POS; RB 1 MHz; VB: 3 MHz



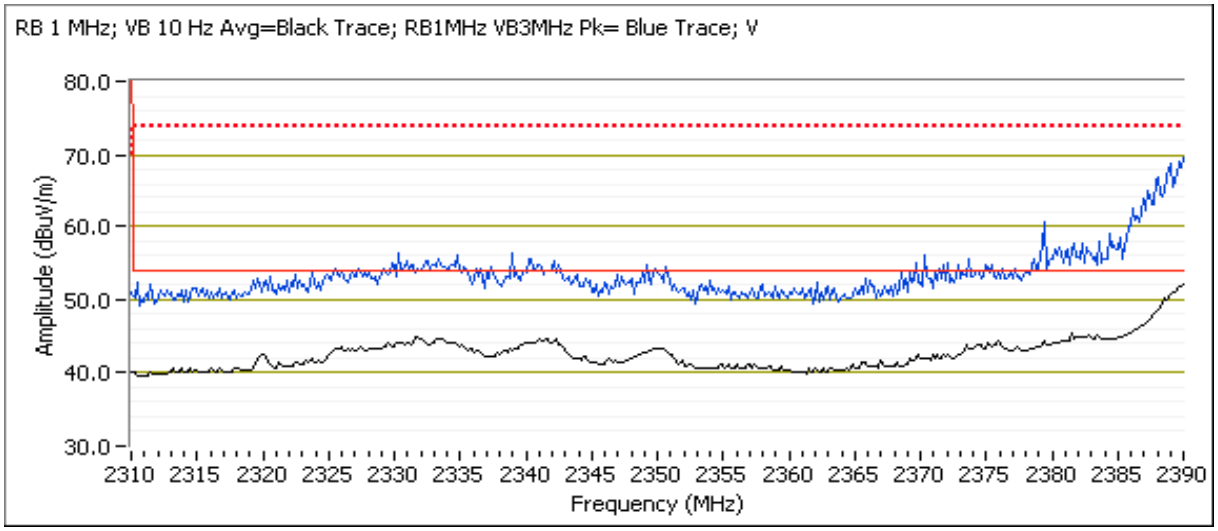
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3c, EUT on Channel #3 2422MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	17.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.7	V	54.0	-1.3	AVG	108	1.1	POS; RB 1 MHz; VB: 10 Hz
2389.680	64.9	V	74.0	-9.1	PK	108	1.1	POS; RB 1 MHz; VB: 3 MHz
2389.200	44.2	H	54.0	-9.8	AVG	325	1.1	POS; RB 1 MHz; VB: 10 Hz
2387.760	57.8	H	74.0	-16.2	PK	325	1.1	POS; RB 1 MHz; VB: 3 MHz



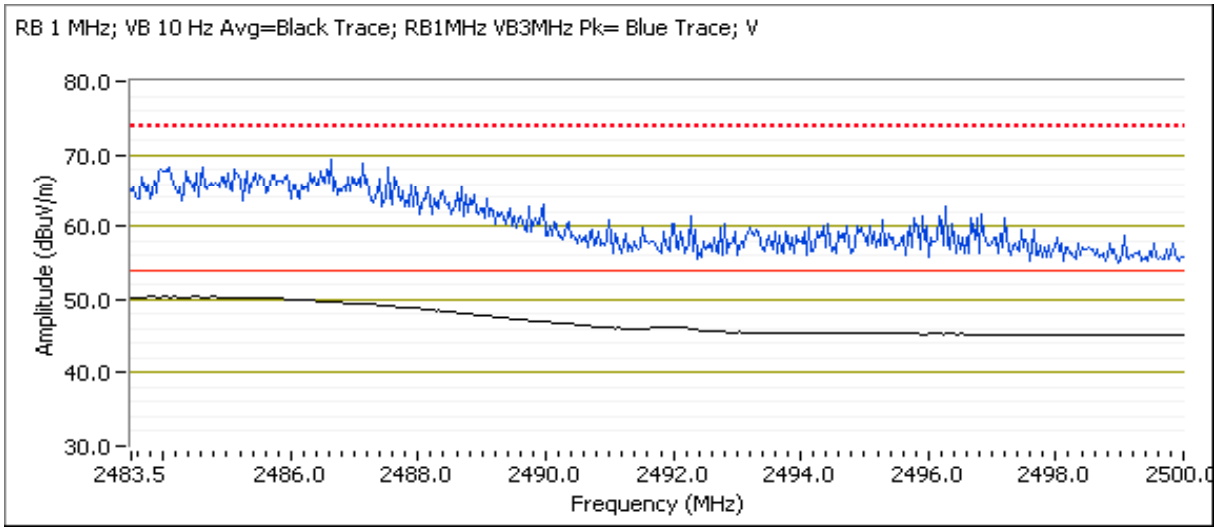
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3d, EUT on Channel #9 2452MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	17.0

2483.5 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	
2484.560	50.4	V	54.0	-3.6	AVG	32	1.0	POS; RB 1 MHz; VB: 10 Hz
2485.420	66.2	V	74.0	-7.8	PK	32	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	45.0	H	54.0	-9.0	AVG	312	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.500	60.8	H	74.0	-13.2	PK	312	1.0	POS; RB 1 MHz; VB: 3 MHz



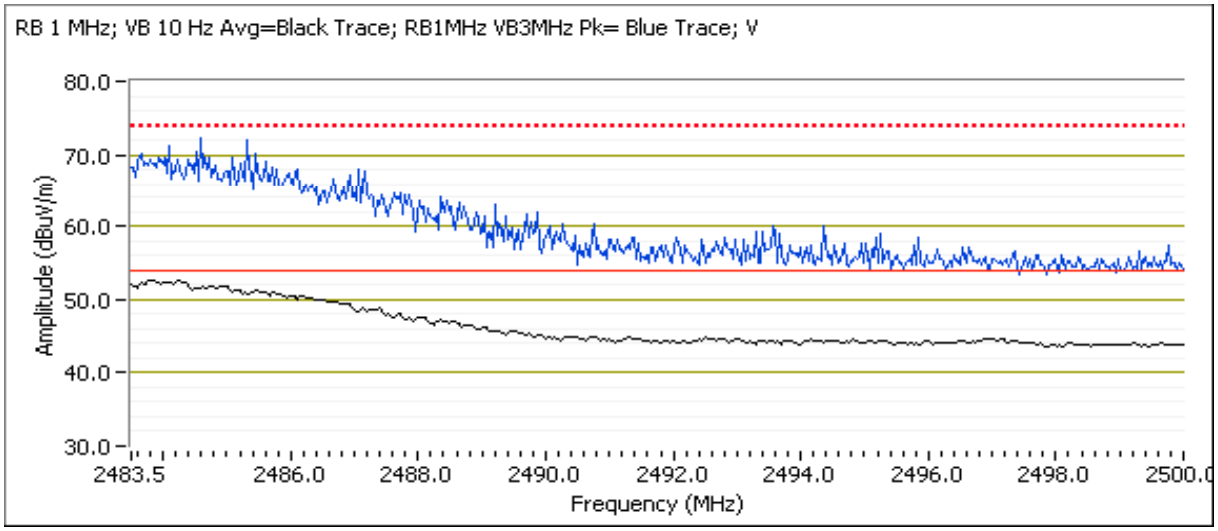
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3e, EUT on Channel #10 2457MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	15.5

2483.5 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	
2483.530	52.7	V	54.0	-1.3	AVG	352	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.260	68.3	V	74.0	-5.7	PK	352	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.900	45.2	H	54.0	-8.8	AVG	7	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.760	63.2	H	74.0	-10.8	PK	7	1.0	POS; RB 1 MHz; VB: 3 MHz



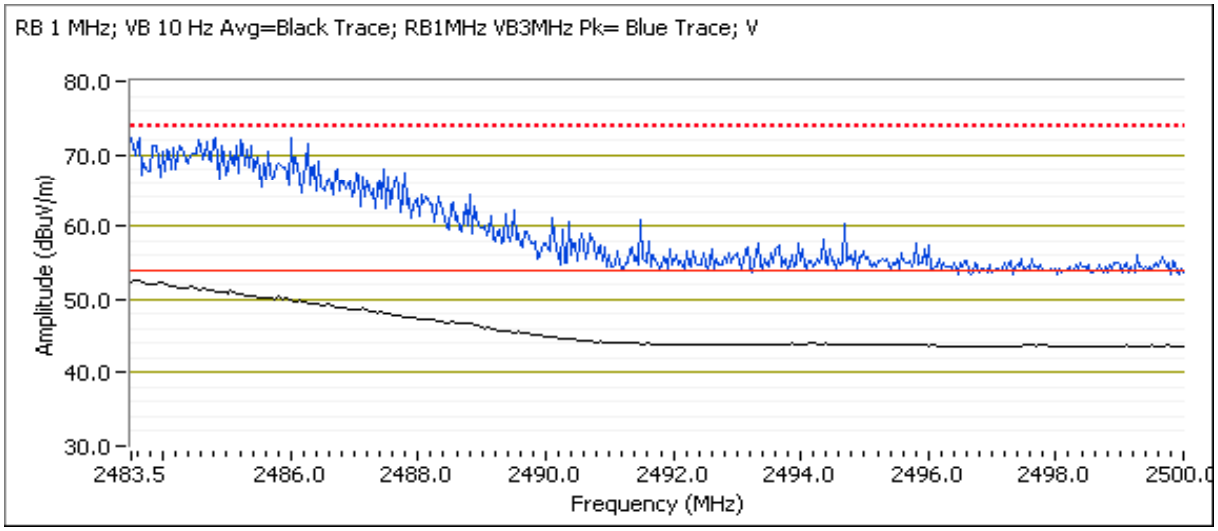
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3f, EUT on Channel #11 2462MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	14.0

2483.5 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	
2483.570	52.6	V	54.0	-1.4	AVG	334	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.600	73.1	V	74.0	-0.9	PK	334	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.670	45.1	H	54.0	-8.9	AVG	0	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.830	62.6	H	74.0	-11.4	PK	0	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4, Band Edge Field Strength - 802.11n40, Chain A+B+C

Date of Test: 1/21/2013 Test Location: FT7

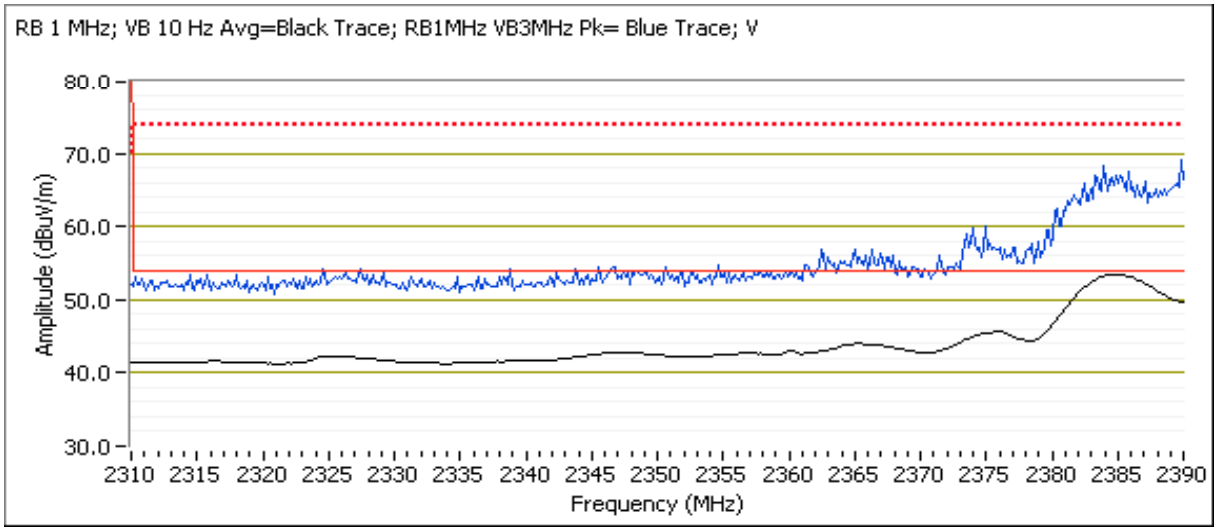
Test Engineer: Rafael Varelas Config Change: none

Run #4a, EUT on Channel #3 2422MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	11.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2384.470	53.9	V	54.0	-0.1	AVG	328	1.1	POS; RB 1 MHz; VB: 10 Hz
2387.520	66.3	V	74.0	-7.7	PK	328	1.1	POS; RB 1 MHz; VB: 3 MHz
2387.920	48.3	H	54.0	-5.7	AVG	242	1.4	POS; RB 1 MHz; VB: 10 Hz
2389.920	59.8	H	74.0	-14.2	PK	242	1.4	POS; RB 1 MHz; VB: 3 MHz



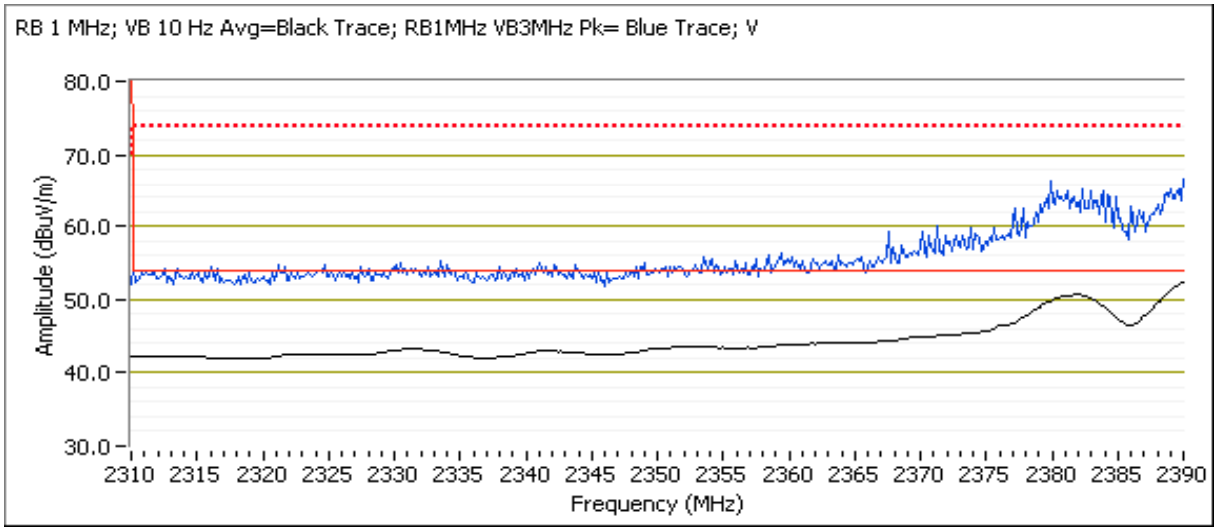
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4b, EUT on Channel #4 2427MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2427 MHz	12.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.5	V	54.0	-1.5	AVG	71	1.1	POS; RB 1 MHz; VB: 10 Hz
2389.680	63.9	V	74.0	-10.1	PK	71	1.1	POS; RB 1 MHz; VB: 3 MHz
2387.430	45.3	H	54.0	-8.7	AVG	2	1.0	POS; RB 1 MHz; VB: 10 Hz
2387.350	56.9	H	74.0	-17.1	PK	2	1.0	POS; RB 1 MHz; VB: 3 MHz



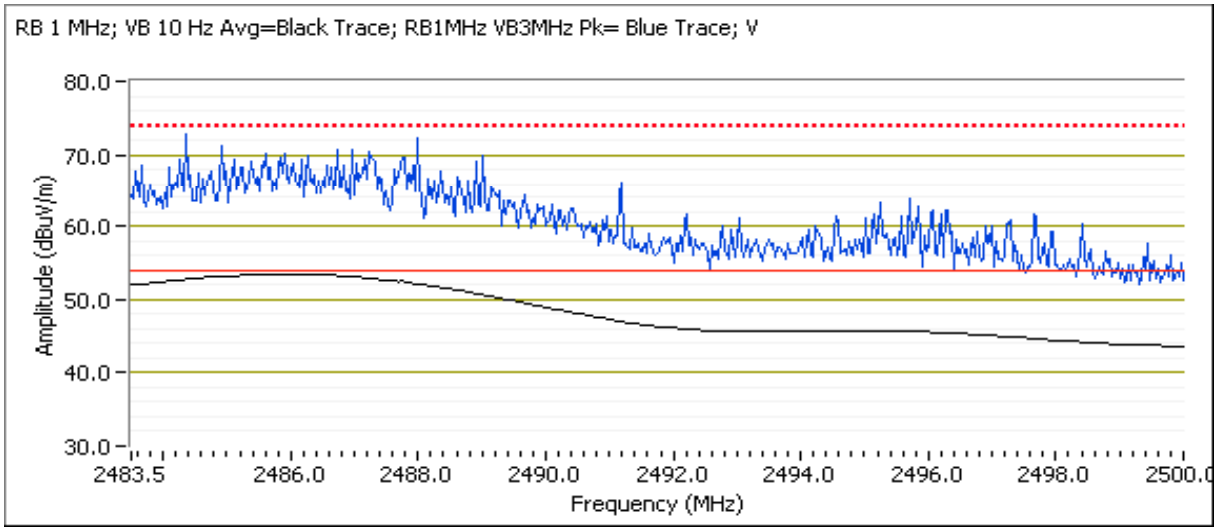
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4e, EUT on Channel #8 2447MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2447 MHz	13.5

2483.5 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	
2485.880	53.5	V	54.0	-0.5	AVG	64	1.0	POS; RB 1 MHz; VB: 10 Hz
2486.180	72.9	V	74.0	-1.1	PK	64	1.0	POS; RB 1 MHz; VB: 3 MHz
2487.070	45.6	H	54.0	-8.4	AVG	245	1.6	POS; RB 1 MHz; VB: 10 Hz
2487.300	62.5	H	74.0	-11.5	PK	245	1.6	POS; RB 1 MHz; VB: 3 MHz



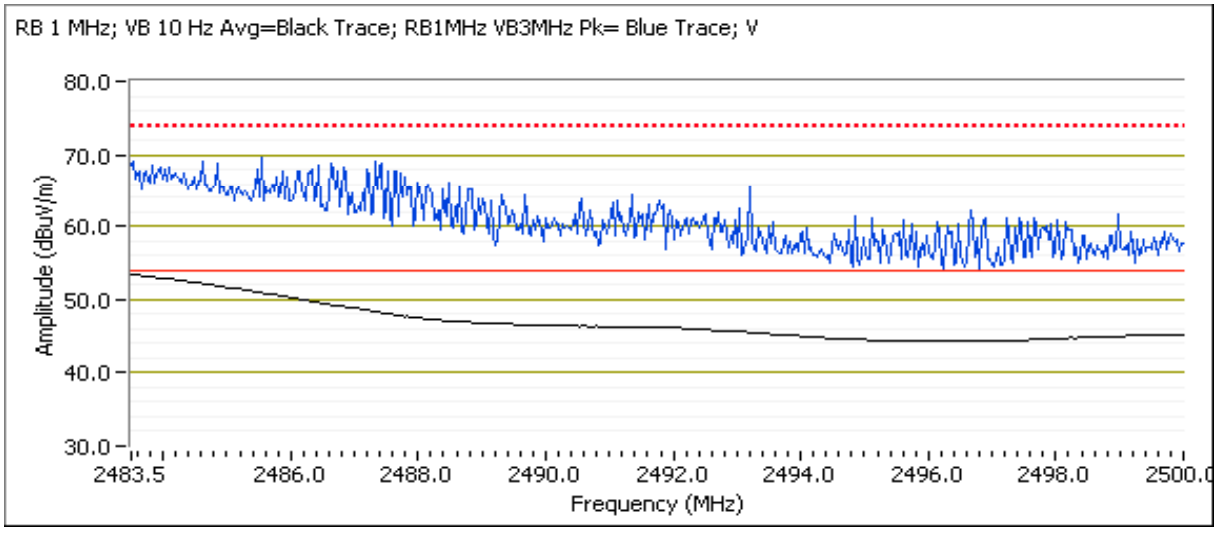
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4f, EUT on Channel #9 2452MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	12.5

2483.5 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	
2483.500	53.6	V	54.0	-0.4	AVG	61	1.3	POS; RB 1 MHz; VB: 10 Hz
2486.610	68.2	V	74.0	-5.8	PK	61	1.3	POS; RB 1 MHz; VB: 3 MHz
2483.530	46.9	H	54.0	-7.1	AVG	247	1.6	POS; RB 1 MHz; VB: 10 Hz
2488.000	61.2	H	74.0	-12.8	PK	247	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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

Ambient Conditions:

Temperature: 20.4 °C
Rel. Humidity: 36 %

Summary of Results - Device Operating in the DTS Bands

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 1	802.11b Chain A+B+C	#1 2412MHz	17.0	-	Restricted Band Edge at 2390 MHz	15.209	53.7 dBµV/m @ 2386.4 MHz (-0.3 dB)
		#11 2462MHz	17.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.5 dBµV/m @ 2487.8 MHz (-0.5 dB)
Run # 2	802.11g Chain A+B+C	#1 2412MHz	14.5	-	Restricted Band Edge at 2390 MHz	15.209	53.9 dBµV/m @ 2388.7 MHz (-0.1 dB)
		#2 2417MHz	15.0	-	Restricted Band Edge at 2390 MHz	15.209	73.7 dBµV/m @ 2389.6 MHz (-0.3 dB)
		#3 2422MHz	16.0	-	Restricted Band Edge at 2390 MHz	15.209	52.5 dBµV/m @ 2390.0 MHz (-1.5 dB)
		#4 2427MHz	17.5	-	Restricted Band Edge at 2390 MHz	15.209	52.9 dBµV/m @ 2384.5 MHz (-1.1 dB)
		#9 2452MHz	17.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.8 dBµV/m @ 2486.3 MHz (-0.2 dB)
		#10 2457MHz	15.0	-	Restricted Band Edge at 2483.5 MHz	15.209	52.9 dBµV/m @ 2483.7 MHz (-1.1 dB)
		#11 2462MHz	13.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.2 dBµV/m @ 2483.6 MHz (-0.8 dB)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 3	802.11n20 Chain A+B+C	#1 2412MHz	12.0	-	Restricted Band Edge at 2390 MHz	15.209	53.4 dBµV/m @ 2390.0 MHz (-0.6 dB)
		#2 2417MHz	14.0	-	Restricted Band Edge at 2390 MHz	15.209	53.5 dBµV/m @ 2390.0 MHz (-0.5 dB)
		#3 2422MHz	15.5	-	Restricted Band Edge at 2390 MHz	15.209	52.8 dBµV/m @ 2390.0 MHz (-1.2 dB)
		#4 2427MHz	17.0	-	Restricted Band Edge at 2390 MHz	15.209	53.7 dBµV/m @ 2389.8 MHz (-0.3 dB)
		#8 2447MHz	17.0	-	Restricted Band Edge at 2483.5 MHz	15.209	52.7 dBµV/m @ 2485.5 MHz (-1.3 dB)
		#9 2452MHz	16.0	-	Restricted Band Edge at 2483.5 MHz	15.209	52.8 dBµV/m @ 2483.5 MHz (-1.2 dB)
		#10 2457MHz	14.5	-	Restricted Band Edge at 2483.5 MHz	15.209	52.8 dBµV/m @ 2483.6 MHz (-1.2 dB)
		#11 2462MHz	13.0	-	Restricted Band Edge at 2483.5 MHz	15.209	53.7 dBµV/m @ 2483.6 MHz (-0.3 dB)
Run # 4	802.11n40 Chain A+B+C	#3 2422MHz	9.5	-	Restricted Band Edge at 2390 MHz	15.209	52.6 dBµV/m @ 2385.0 MHz (-1.4 dB)
		#4 2427MHz	10.5	-	Restricted Band Edge at 2390 MHz	15.209	53.0 dBµV/m @ 2389.5 MHz (-1.0 dB)
		#5 2432MHz	11.5	-	Restricted Band Edge at 2390 MHz	15.209	53.4 dBµV/m @ 2389.9 MHz (-0.6 dB)
		#8 2447MHz	11.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.8 dBµV/m @ 2487.2 MHz (-0.2 dB)
		#9 2452MHz	10.0	-	Restricted Band Edge at 2483.5 MHz	15.209	53.7 dBµV/m @ 2483.7 MHz (-0.3 dB)

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
2	Enterasys WS-AI-DT05120	Sector	2.4 & 5.8	5	Indoor	2 Xpol / 1 Vert	No

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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Notes

Antenna: antenna(s) connected
Duty Cycle: 99.0%

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No
ART GUI Boot File: -
-
ART GUI Calibration file: -
-
Command Line Script: 3710e 2nd Pilot_925942 boot and initialize all 3 radios to NART Command Line Interface - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/22/2013 Test Location: FT7

Test Engineer: Rafael Varelas Config Change: none

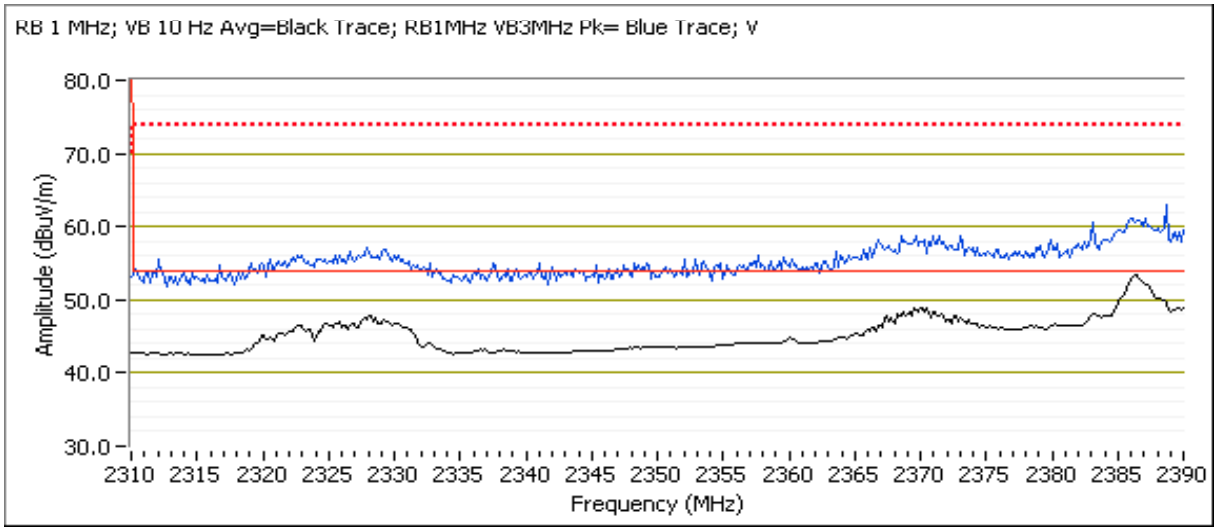
Run # 1a, EUT on Channel #1 2412MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	17.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.390	53.7	V	54.0	-0.3	AVG	348	1.0	POS; RB 1 MHz; VB: 10 Hz
2385.990	60.6	V	74.0	-13.4	PK	348	1.0	POS; RB 1 MHz; VB: 3 MHz
2386.470	49.7	H	54.0	-4.3	AVG	6	1.9	POS; RB 1 MHz; VB: 10 Hz
2384.950	57.0	H	74.0	-17.0	PK	6	1.9	POS; RB 1 MHz; VB: 3 MHz

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



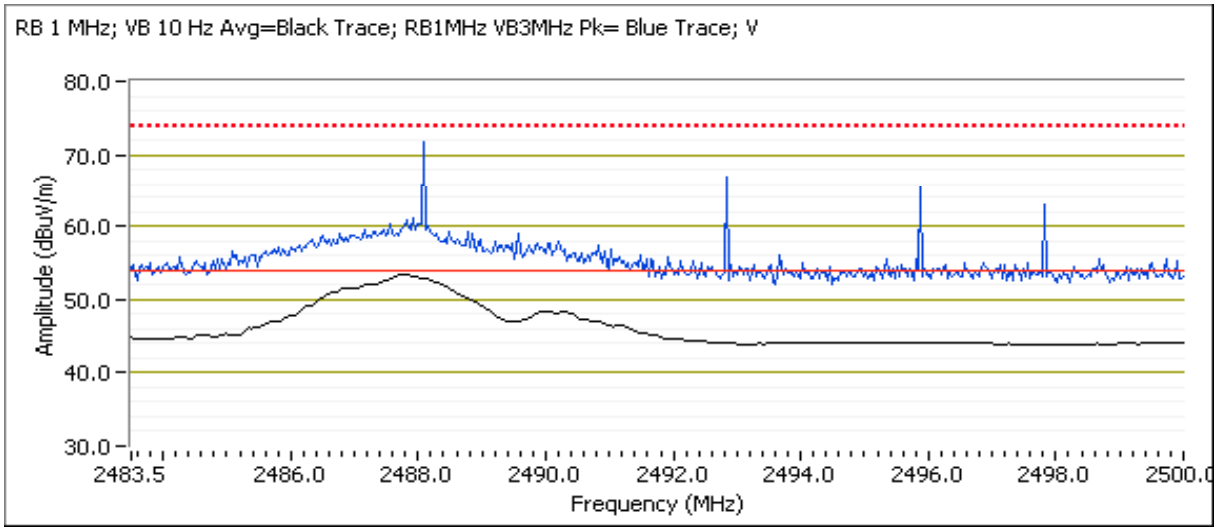
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	17.5

2483.5 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	
2487.800	53.5	V	54.0	-0.5	AVG	339	1.0	POS; RB 1 MHz; VB: 10 Hz
2488.290	72.0	V	74.0	-2.0	PK	339	1.0	POS; RB 1 MHz; VB: 3 MHz
2487.770	52.1	H	54.0	-1.9	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2487.570	59.1	H	74.0	-14.9	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/22/2013 Test Location: FT7

Test Engineer: Rafael Varelas Config Change: none

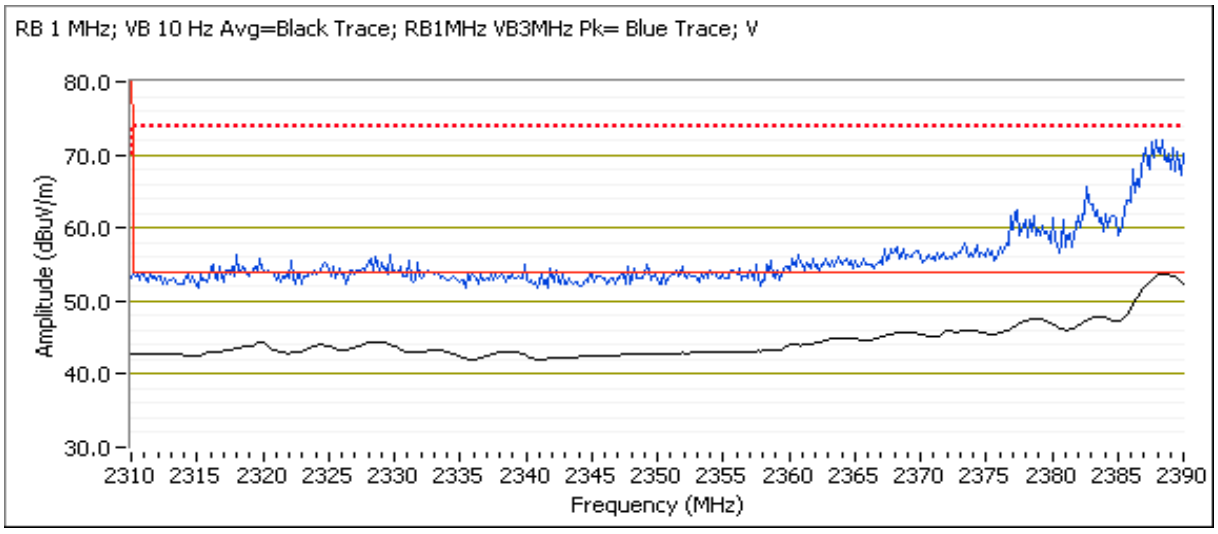
Run # 2a, EUT on Channel #1 2412MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	14.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2388.670	53.9	V	54.0	-0.1	AVG	348	1.0	POS; RB 1 MHz; VB: 10 Hz
2388.120	73.0	V	74.0	-1.0	PK	348	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	52.6	H	54.0	-1.4	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2389.440	66.3	H	74.0	-7.7	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz

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



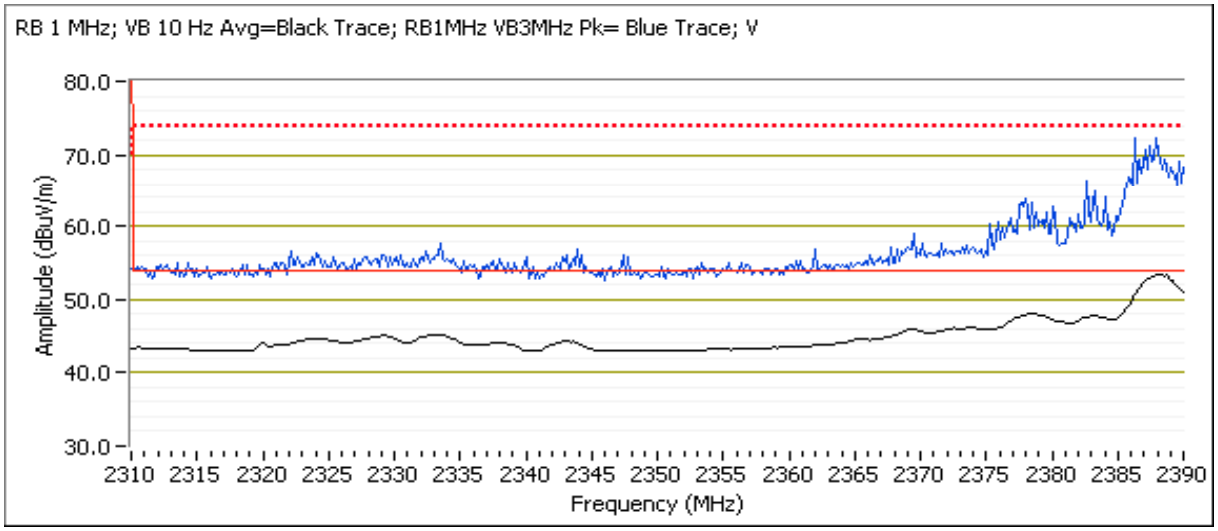
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2b, EUT on Channel #2 2417MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	15.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.620	73.7	V	74.0	-0.3	PK	337	1.7	POS; RB 1 MHz; VB: 3 MHz
2389.810	52.7	V	54.0	-1.3	AVG	337	1.7	POS; RB 1 MHz; VB: 10 Hz
2389.440	49.0	H	54.0	-5.0	AVG	2	1.9	POS; RB 1 MHz; VB: 10 Hz
2383.350	66.4	H	74.0	-7.6	PK	2	1.9	POS; RB 1 MHz; VB: 3 MHz



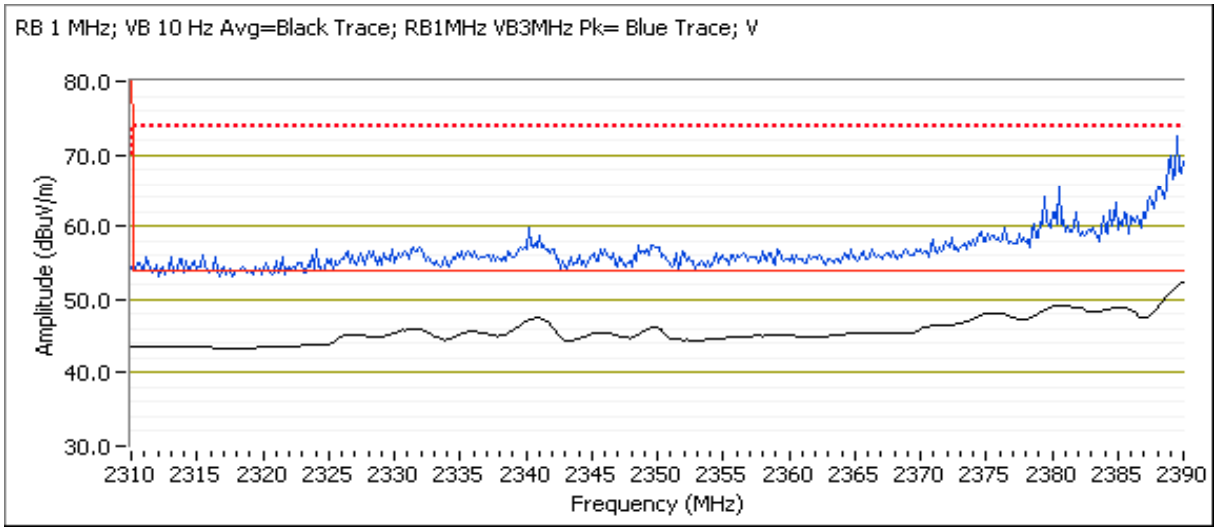
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2c, EUT on Channel #3 2422MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	16.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.990	52.5	V	54.0	-1.5	AVG	26	1.2	POS; RB 1 MHz; VB: 10 Hz
2388.230	71.4	V	74.0	-2.6	PK	26	1.2	POS; RB 1 MHz; VB: 3 MHz
2384.390	47.6	H	54.0	-6.4	AVG	4	1.1	POS; RB 1 MHz; VB: 10 Hz
2384.630	61.2	H	74.0	-12.8	PK	4	1.1	POS; RB 1 MHz; VB: 3 MHz



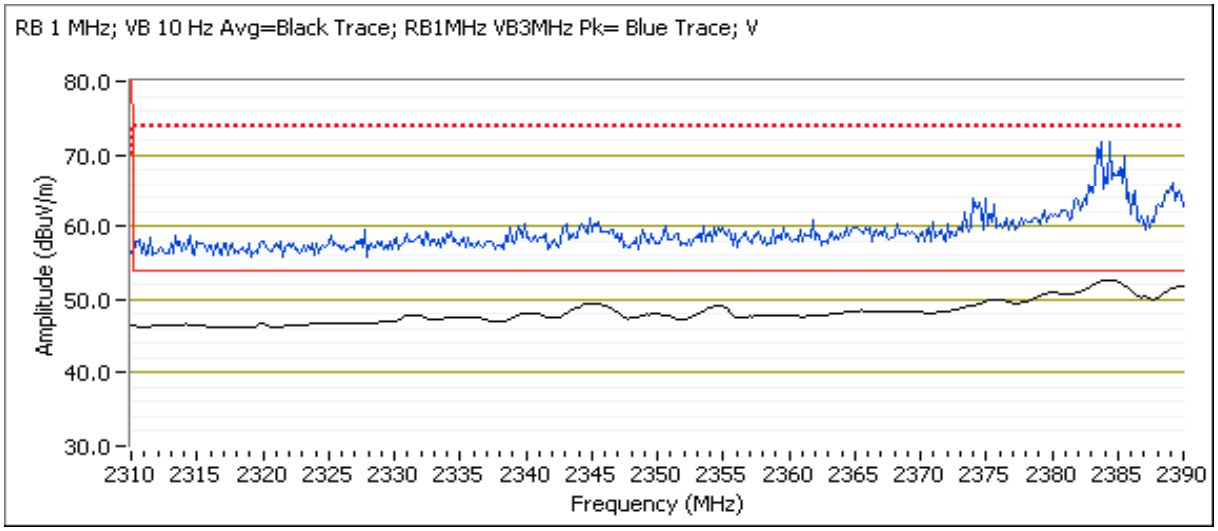
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2d, EUT on Channel #4 2427MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2427 MHz	17.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2384.470	52.9	V	54.0	-1.1	AVG	0	1.0	POS; RB 1 MHz; VB: 10 Hz
2383.510	66.5	V	74.0	-7.5	PK	0	1.0	POS; RB 1 MHz; VB: 3 MHz
2388.560	48.8	H	54.0	-5.2	AVG	340	2.0	POS; RB 1 MHz; VB: 10 Hz
2382.300	62.1	H	74.0	-11.9	PK	340	2.0	POS; RB 1 MHz; VB: 3 MHz



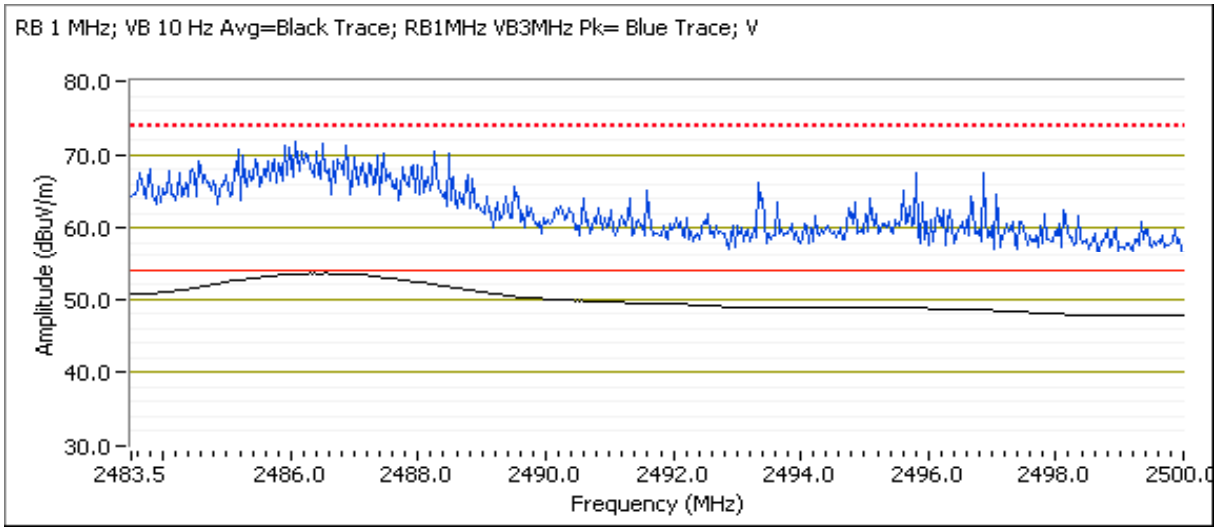
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2e, EUT on Channel #9 2452MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	17.5

2483.5 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	
2486.300	53.8	V	54.0	-0.2	AVG	32	1.0	POS; RB 1 MHz; VB: 10 Hz
2485.770	72.2	V	74.0	-1.8	PK	32	1.0	POS; RB 1 MHz; VB: 3 MHz



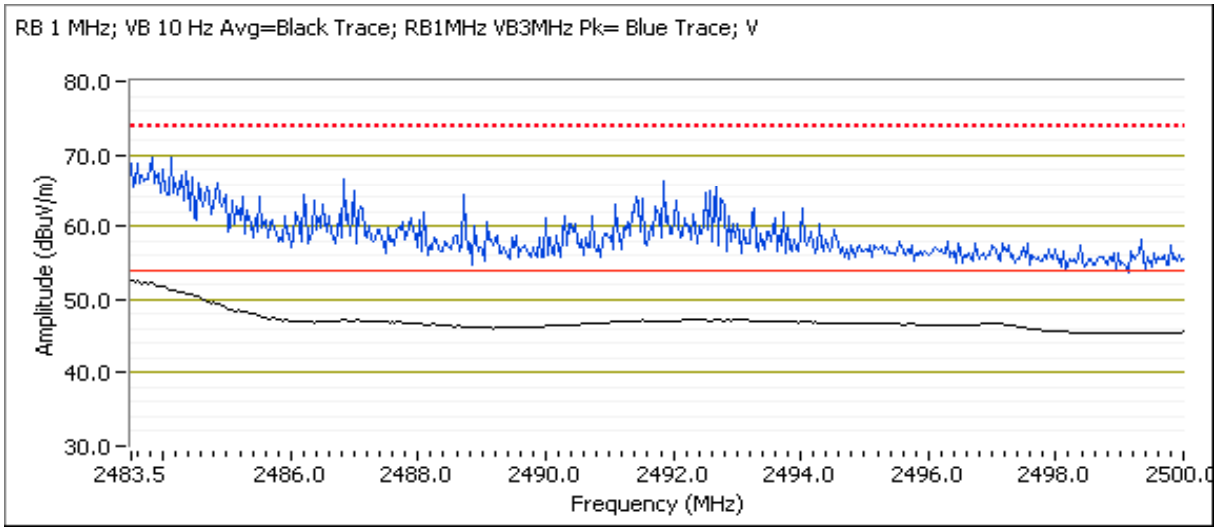
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2f, EUT on Channel #10 2457MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	15.0

2483.5 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	
2483.650	52.9	V	54.0	-1.1	AVG	360	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.830	70.0	V	74.0	-4.0	PK	360	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.570	49.7	H	54.0	-4.3	AVG	6	1.1	POS; RB 1 MHz; VB: 10 Hz
2483.730	65.0	H	74.0	-9.0	PK	6	1.1	POS; RB 1 MHz; VB: 3 MHz



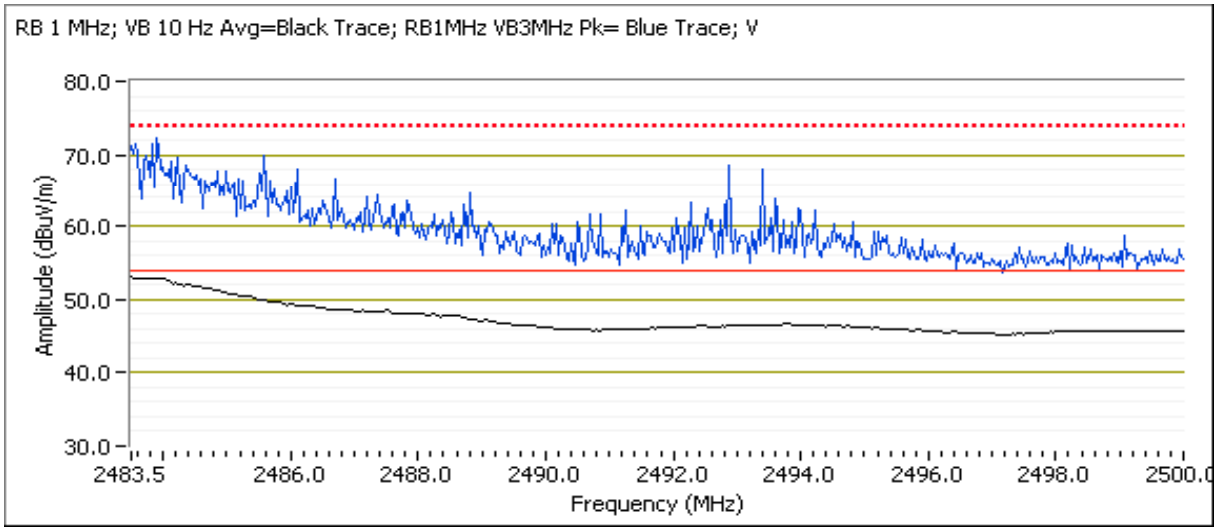
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2g, EUT on Channel #11 2462MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	13.5

2483.5 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	
2483.580	53.2	V	54.0	-0.8	AVG	13	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.570	71.9	V	74.0	-2.1	PK	13	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	49.9	H	54.0	-4.1	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2484.660	66.0	H	74.0	-8.0	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/23/2013 Test Location: FT7

Test Engineer: Jack Liu Config Change: none

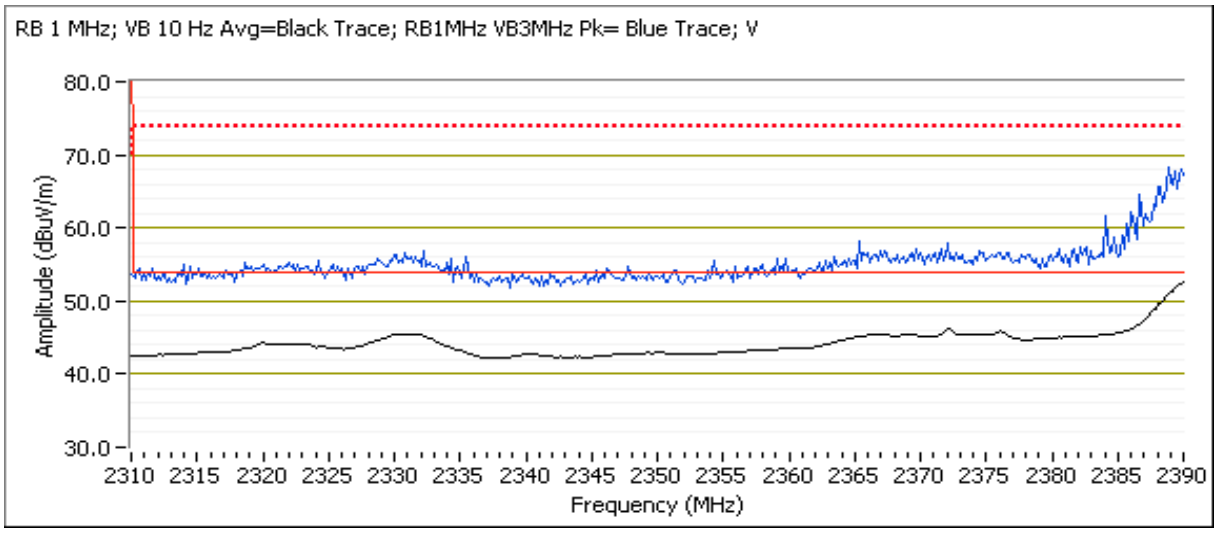
Run #3a, EUT on Channel #1 2412MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	12.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	53.4	V	54.0	-0.6	AVG	42	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.600	67.0	V	74.0	-7.0	PK	42	1.0	POS; RB 1 MHz; VB: 3 MHz
2389.920	47.9	H	54.0	-6.1	AVG	18	1.1	POS; RB 1 MHz; VB: 10 Hz
2389.920	60.0	H	74.0	-14.0	PK	18	1.1	POS; RB 1 MHz; VB: 3 MHz

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



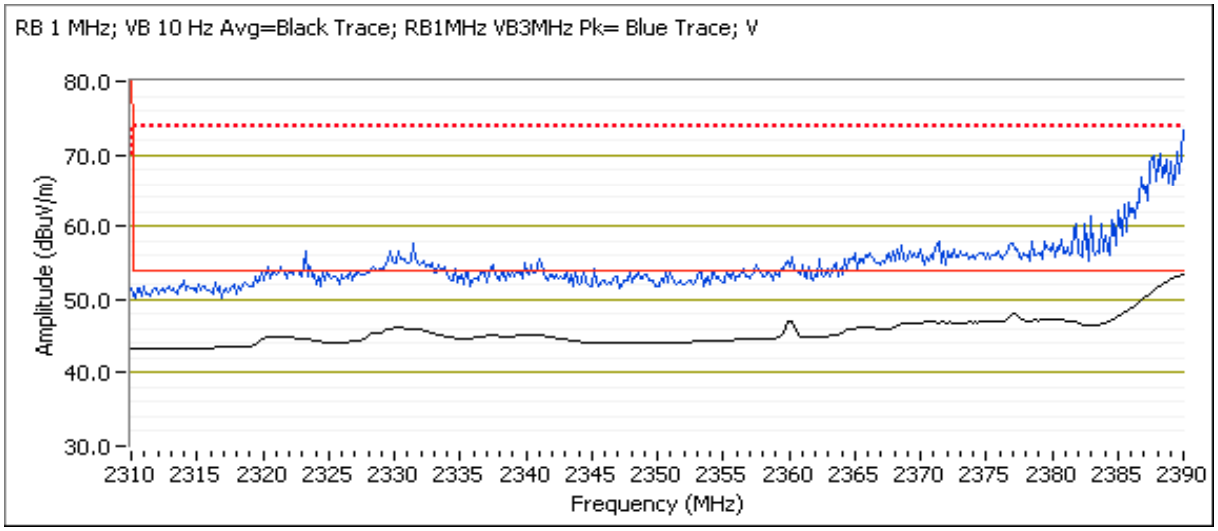
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3b, EUT on Channel #2 2417MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	14.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	53.5	V	54.0	-0.5	AVG	350	1.3	POS; RB 1 MHz; VB: 10 Hz
2387.760	71.0	V	74.0	-3.0	PK	350	1.3	POS; RB 1 MHz; VB: 3 MHz
2385.190	47.4	H	54.0	-6.6	AVG	342	2.0	POS; RB 1 MHz; VB: 10 Hz
2386.230	65.0	H	74.0	-9.0	PK	342	2.0	POS; RB 1 MHz; VB: 3 MHz



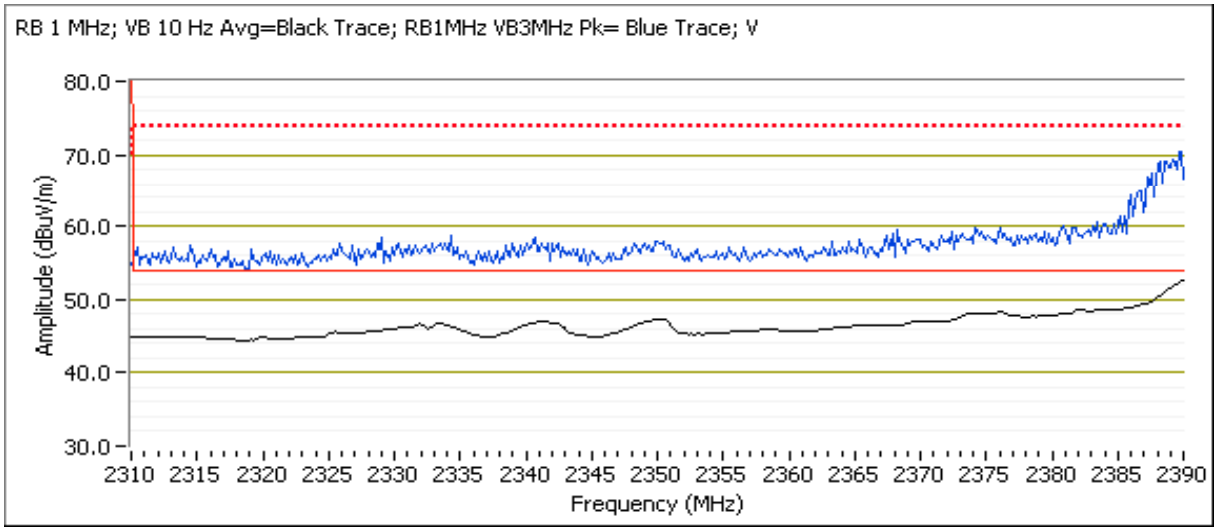
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3c, EUT on Channel #3 2422MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	15.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.8	V	54.0	-1.2	AVG	42	1.0	POS; RB 1 MHz; VB: 10 Hz
2390.000	69.9	V	74.0	-4.1	PK	42	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	48.0	H	54.0	-6.0	AVG	15	1.1	POS; RB 1 MHz; VB: 10 Hz
2388.960	60.8	H	74.0	-13.2	PK	15	1.1	POS; RB 1 MHz; VB: 3 MHz



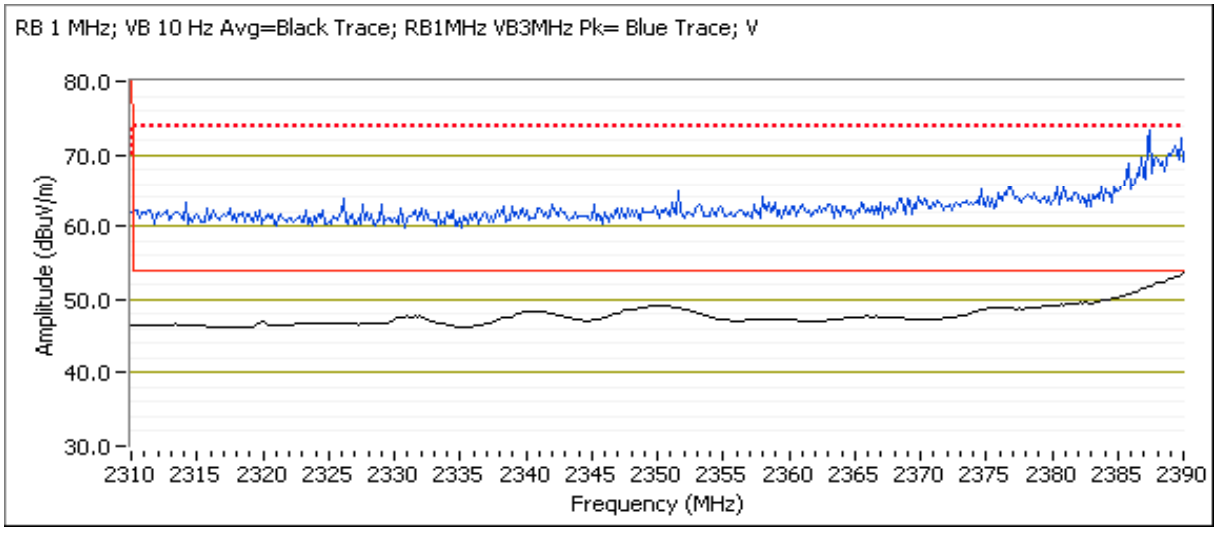
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3d, EUT on Channel #4 2427MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2427 MHz	17.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.760	53.7	V	54.0	-0.3	AVG	15	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.200	70.0	V	74.0	-4.0	PK	15	1.0	POS; RB 1 MHz; VB: 3 MHz
2389.920	48.7	H	54.0	-5.3	AVG	30	1.1	POS; RB 1 MHz; VB: 10 Hz
2389.360	62.0	H	74.0	-12.0	PK	30	1.1	POS; RB 1 MHz; VB: 3 MHz



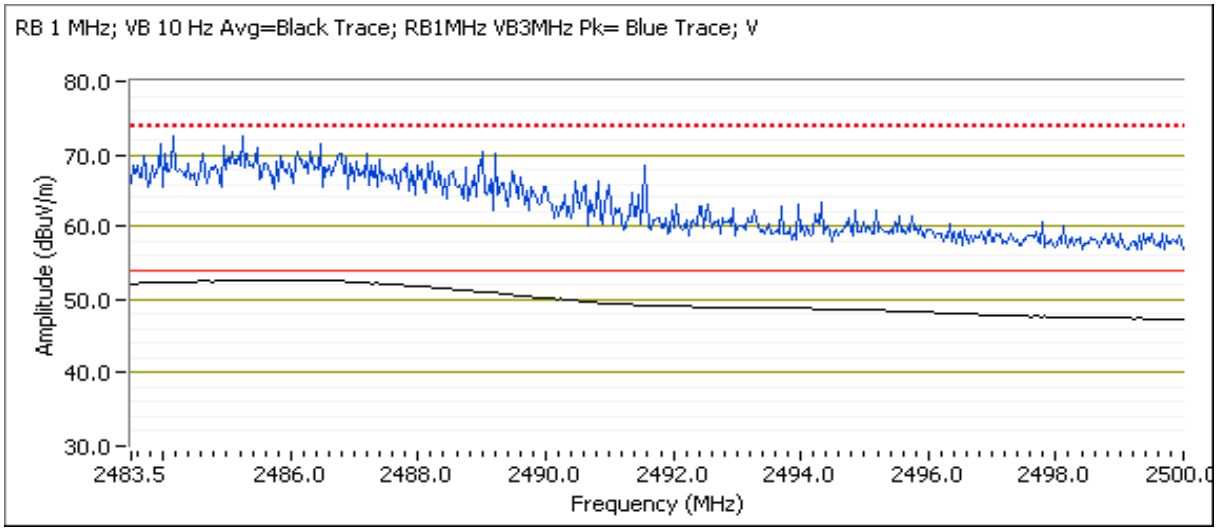
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3e, EUT on Channel #8 2447MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2447 MHz	17.0

2483.5 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	
2485.480	52.7	V	54.0	-1.3	AVG	32	1.0	POS; RB 1 MHz; VB: 10 Hz
2486.080	70.4	V	74.0	-3.6	PK	32	1.0	POS; RB 1 MHz; VB: 3 MHz
2484.820	50.4	H	54.0	-3.6	AVG	7	1.1	POS; RB 1 MHz; VB: 10 Hz
2483.800	67.6	H	74.0	-6.4	PK	7	1.1	POS; RB 1 MHz; VB: 3 MHz



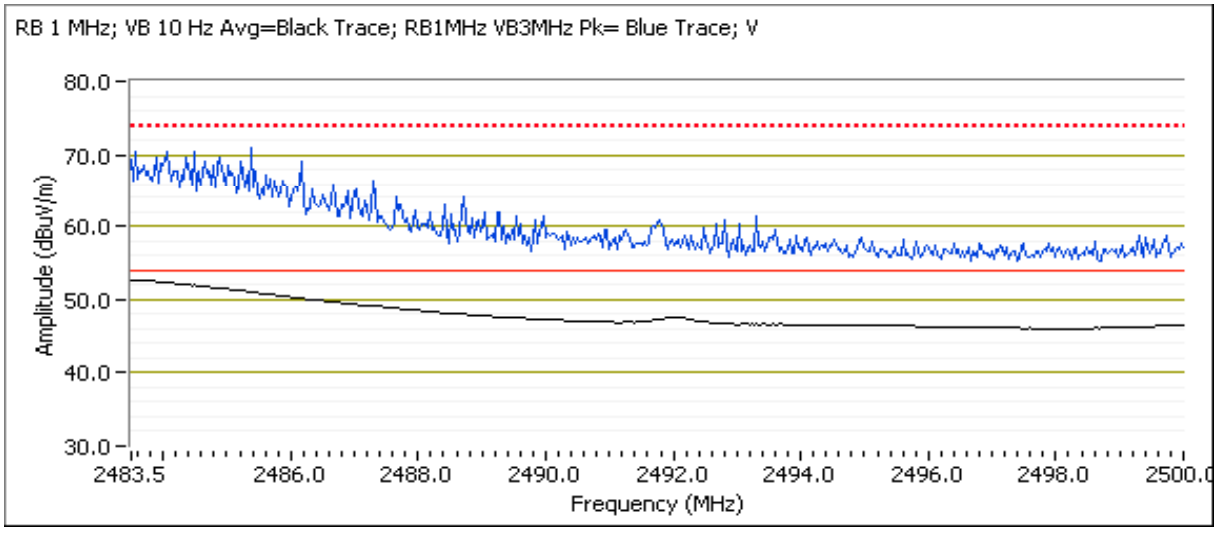
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3f, EUT on Channel #9 2452MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	16.0

2483.5 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	
2483.500	52.8	V	54.0	-1.2	AVG	360	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.390	68.2	V	74.0	-5.8	PK	360	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.530	49.8	H	54.0	-4.2	AVG	12	1.1	POS; RB 1 MHz; VB: 10 Hz
2484.000	66.0	H	74.0	-8.0	PK	12	1.1	POS; RB 1 MHz; VB: 3 MHz



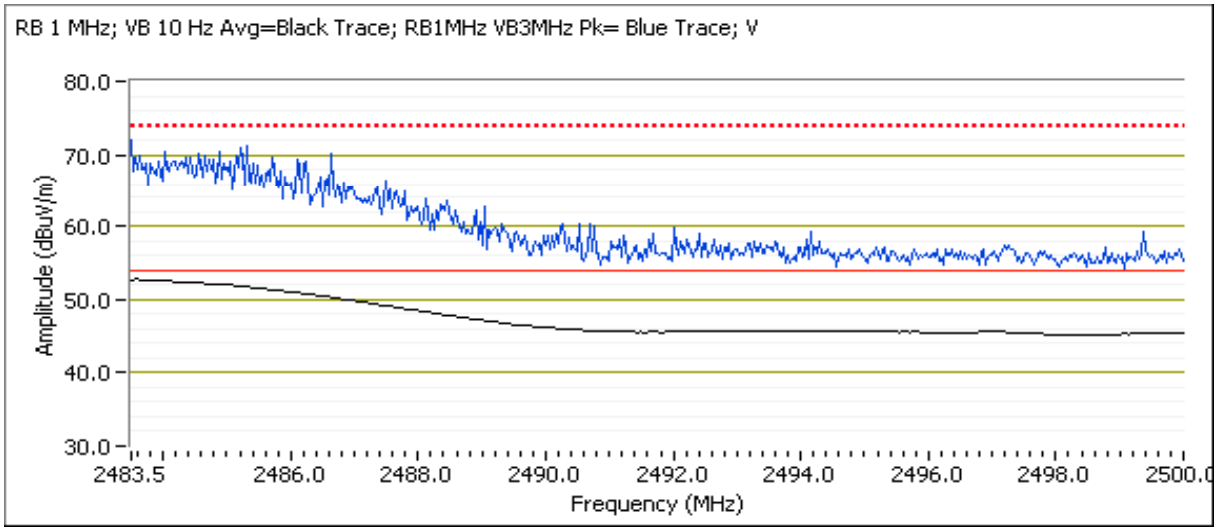
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3g, EUT on Channel #10 2457MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	14.5

2483.5 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	
2483.570	52.8	V	54.0	-1.2	AVG	18	1.0	POS; RB 1 MHz; VB: 10 Hz
2485.250	71.3	V	74.0	-2.7	PK	18	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	50.1	H	54.0	-3.9	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2483.860	67.3	H	74.0	-6.7	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz



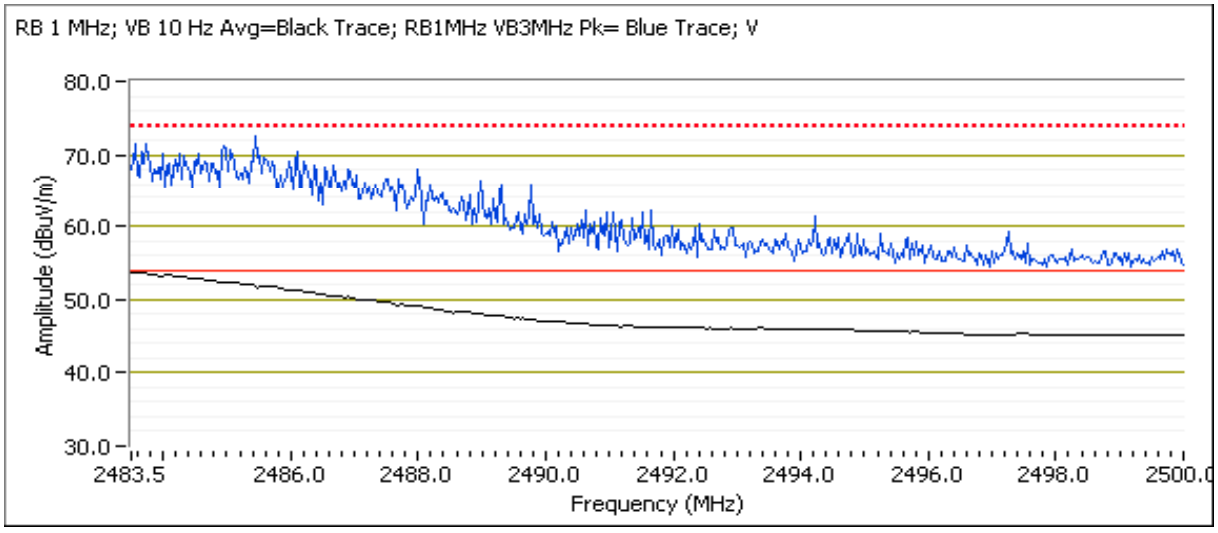
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3h, EUT on Channel #11 2462MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	13.0

2483.5 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	
2483.570	53.7	V	54.0	-0.3	AVG	16	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.190	68.3	V	74.0	-5.7	PK	16	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.530	50.7	H	54.0	-3.3	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2483.570	68.5	H	74.0	-5.5	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4, Band Edge Field Strength - 802.11n40, Chain A+B+C

Date of Test: 1/23/2013 Test Location: FT 7

Test Engineer: Jack Liu Config Change: none

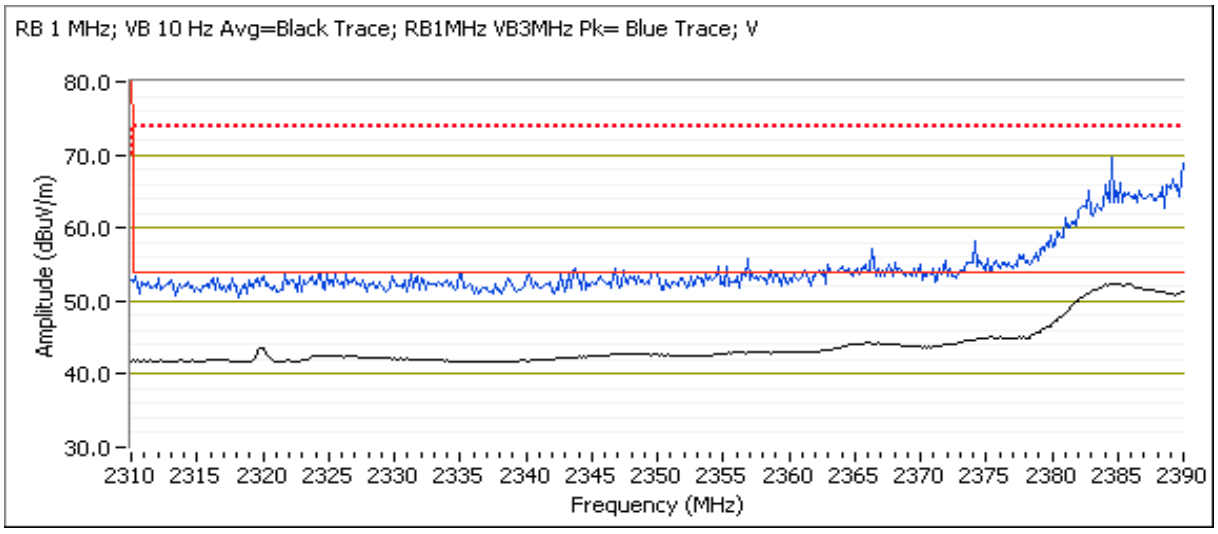
Run #4a, EUT on Channel #3 2422MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	9.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2384.950	52.6	V	54.0	-1.4	AVG	352	1.3	POS; RB 1 MHz; VB: 10 Hz
2390.000	67.1	V	74.0	-6.9	PK	352	1.3	POS; RB 1 MHz; VB: 3 MHz
2389.920	49.1	H	54.0	-4.9	AVG	344	2.0	POS; RB 1 MHz; VB: 10 Hz
2387.920	61.5	H	74.0	-12.5	PK	344	2.0	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

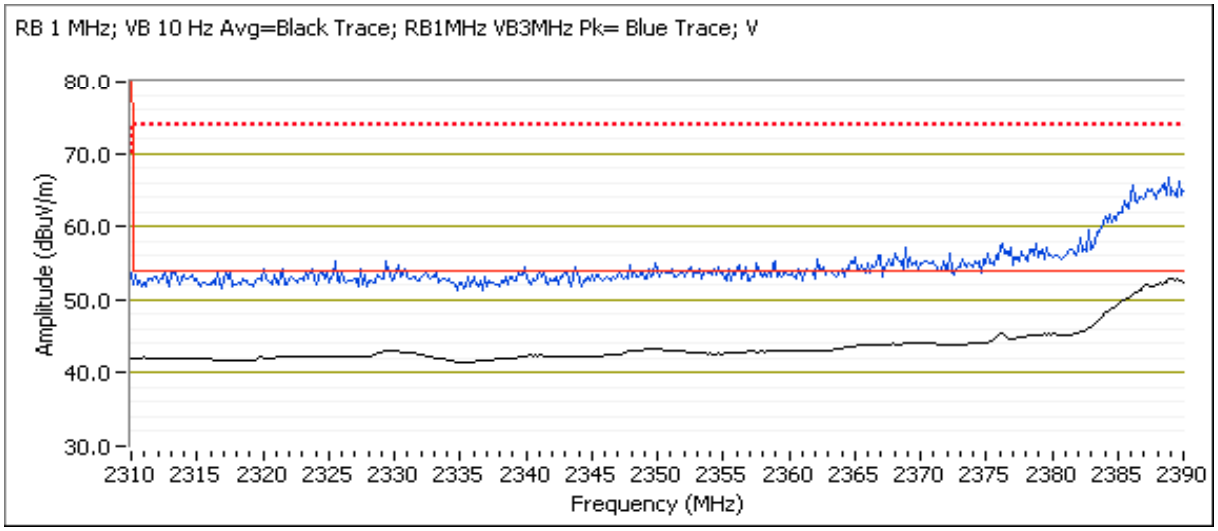
Run #4b, EUT on Channel #4 2427MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2427 MHz	10.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.520	53.0	V	54.0	-1.0	AVG	360	1.5	POS; RB 1 MHz; VB: 10 Hz
2386.870	66.1	V	74.0	-7.9	PK	360	1.5	POS; RB 1 MHz; VB: 3 MHz
2389.920	48.8	H	54.0	-5.2	AVG	8	1.4	POS; RB 1 MHz; VB: 10 Hz
2388.480	58.7	H	74.0	-15.3	PK	8	1.4	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

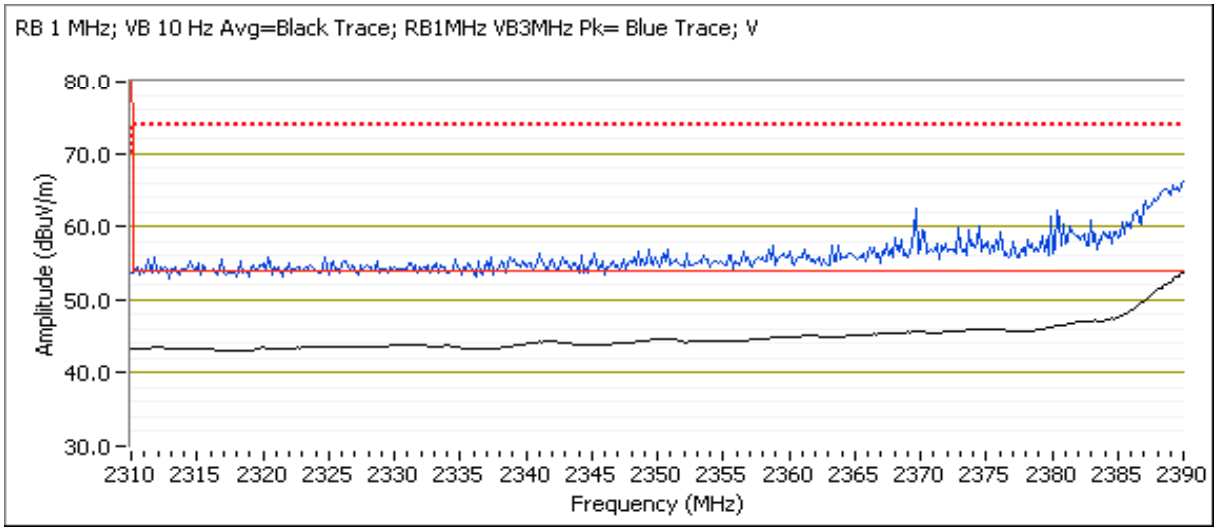
Run #4c, EUT on Channel #5 2432MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2432 MHz	11.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.920	53.4	V	54.0	-0.6	AVG	7	1.3	POS; RB 1 MHz; VB: 10 Hz
2389.040	65.0	V	74.0	-9.0	PK	7	1.3	POS; RB 1 MHz; VB: 3 MHz
2389.680	48.8	H	54.0	-5.2	AVG	342	2.0	POS; RB 1 MHz; VB: 10 Hz
2388.640	61.5	H	74.0	-12.5	PK	342	2.0	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

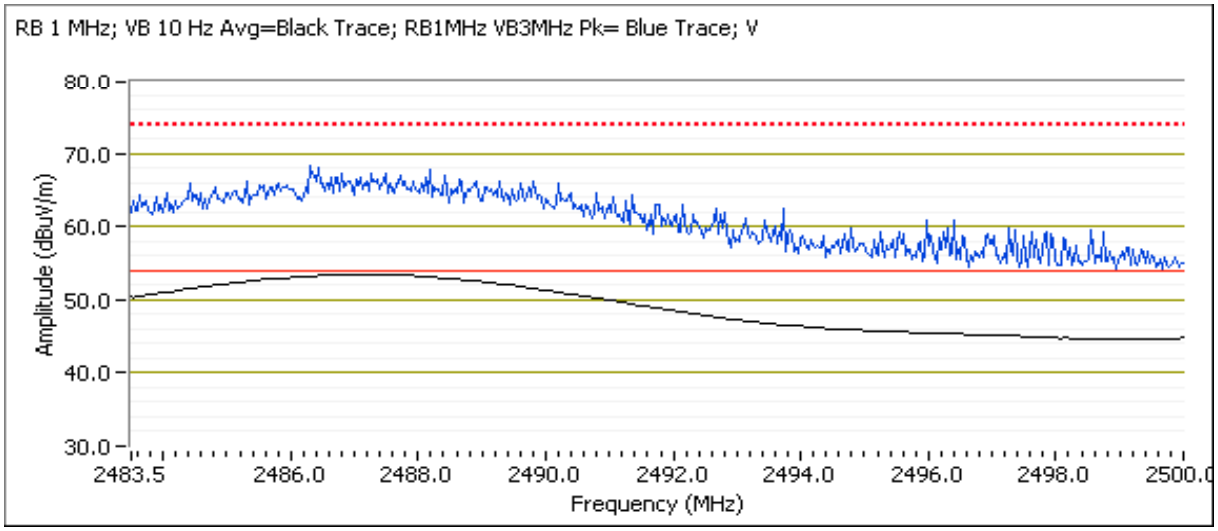
Run #4d, EUT on Channel #8 2447MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2447 MHz	11.5

2483.5 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	
2487.240	53.8	V	54.0	-0.2	AVG	360	1.0	POS; RB 1 MHz; VB: 10 Hz
2486.150	66.5	V	74.0	-7.5	PK	360	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.730	50.8	H	54.0	-3.2	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2484.390	62.1	H	74.0	-11.9	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

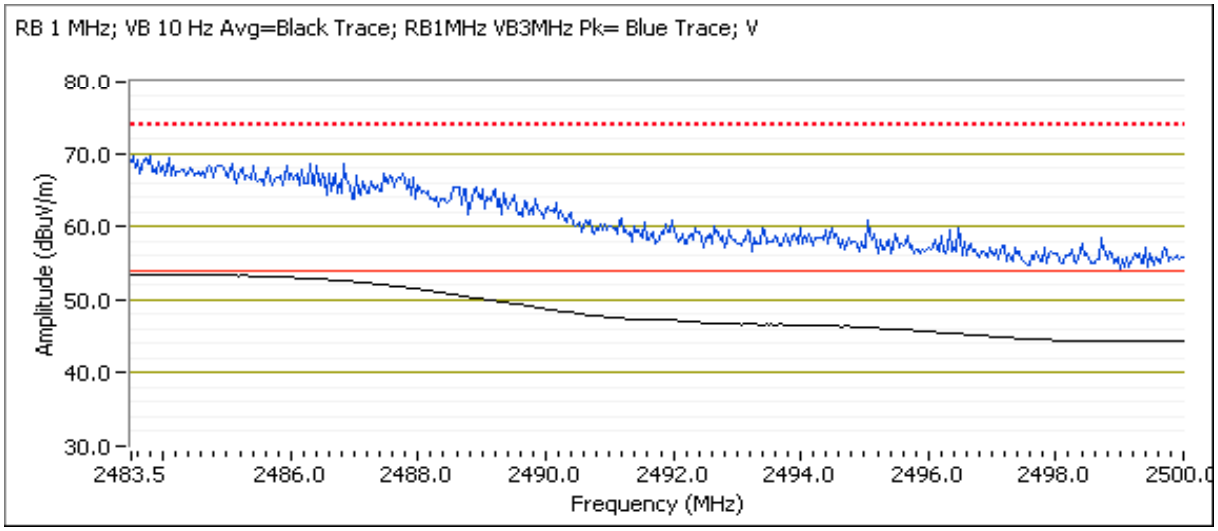
Run #4e, EUT on Channel #9 2452MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	10.0

2483.5 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	
2483.660	53.7	V	54.0	-0.3	AVG	10	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.570	69.4	V	74.0	-4.6	PK	10	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.570	50.8	H	54.0	-3.2	AVG	360	1.1	POS; RB 1 MHz; VB: 10 Hz
2483.500	64.5	H	74.0	-9.5	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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

Ambient Conditions:

Temperature: 20.1 °C
Rel. Humidity: 35 %

Summary of Results - Device Operating in the DTS Bands

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 1	802.11b Chain A+B+C	#1 2412MHz	17.5	-	Restricted Band Edge at 2390 MHz	15.209	53.3 dBµV/m @ 2386.2 MHz (-0.7 dB)
		#2 2417MHz	19.0	-	Restricted Band Edge at 2390 MHz	15.209	53.2 dBµV/m @ 2388.4 MHz (-0.8 dB)
		#9 2452MHz	20.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.8 dBµV/m @ 2488.8 MHz (-0.2 dB)
		#10 2457MHz	18.5	-	Restricted Band Edge at 2483.5 MHz	15.209	52.6 dBµV/m @ 2483.5 MHz (-1.4 dB)
		#11 2462MHz	18.0	-	Restricted Band Edge at 2483.5 MHz	15.209	53.6 dBµV/m @ 2483.5 MHz (-0.4 dB)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 2	802.11g Chain A+B+C	#1 2412MHz	14.5	-	Restricted Band Edge at 2390 MHz	15.209	53.7 dBµV/m @ 2389.9 MHz (-0.3 dB)
		#2 2417MHz	14.5	-	Restricted Band Edge at 2390 MHz	15.209	53.2 dBµV/m @ 2390.0 MHz (-0.8 dB)
		#3 2422MHz	17.5	-	Restricted Band Edge at 2390 MHz	15.209	52.6 dBµV/m @ 2383.3 MHz (-1.4 dB)
		#9 2452MHz	17.0	-	Restricted Band Edge at 2483.5 MHz	15.209	53.1 dBµV/m @ 2483.5 MHz (-0.9 dB)
		#10 2457MHz	16.0	-	Restricted Band Edge at 2483.5 MHz	15.209	53.7 dBµV/m @ 2483.7 MHz (-0.3 dB)
		#11 2462MHz	14.5	-	Restricted Band Edge at 2483.5 MHz	15.209	52.8 dBµV/m @ 2487.3 MHz (-1.2 dB)
Run # 3	802.11n20 Chain A+B+C	#1 2412MHz	13.0	-	Restricted Band Edge at 2390 MHz	15.209	52.3 dBµV/m @ 2390.0 MHz (-1.7 dB)
		#2 2417MHz	16.0	-	Restricted Band Edge at 2390 MHz	15.209	53.6 dBµV/m @ 2390.0 MHz (-0.4 dB)
		#3 2422MHz	16.5	-	Restricted Band Edge at 2390 MHz	15.209	53.2 dBµV/m @ 2389.0 MHz (-0.8 dB)
		#9 2452MHz	17.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.3 dBµV/m @ 2483.9 MHz (-0.7 dB)
		#10 2457MHz	15.5	-	Restricted Band Edge at 2483.5 MHz	15.209	52.3 dBµV/m @ 2483.5 MHz (-1.7 dB)
		#11 2462MHz	14.0	-	Restricted Band Edge at 2483.5 MHz	15.209	52.0 dBµV/m @ 2483.6 MHz (-2.0 dB)

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 4	802.11n40 Chain A+B+C	#3 2422MHz	11.0	-	Restricted Band Edge at 2390 MHz	15.209	53.4 dBµV/m @ 2384.1 MHz (-0.6 dB)
		#4 2427MHz	12.5	-	Restricted Band Edge at 2390 MHz	15.209	53.5 dBµV/m @ 2387.1 MHz (-0.5 dB)
		#9 2452MHz	12.5	-	Restricted Band Edge at 2483.5 MHz	15.209	53.0 dBµV/m @ 2488.6 MHz (-1.0 dB)

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
3	Enterasys WS-AI-DT04360	Panel	2.4	3	Indoor	No	No
3	Enterasys WS-AI-DT04360	Panel	5.8	4	Indoor	No	No

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.

Notes

Antenna: antenna(s) connected
Duty Cycle: 99.0%

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No
ART GUI Boot File: -
-
ART GUI Calibration file: -
-
Command Line Script: 3710e 2nd Pilot_925942 boot and initialize all 3 radios to NART Command Line Interface - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/21/2013 Test Location: FT7

Test Engineer: Rafael Varelas Config Change: none

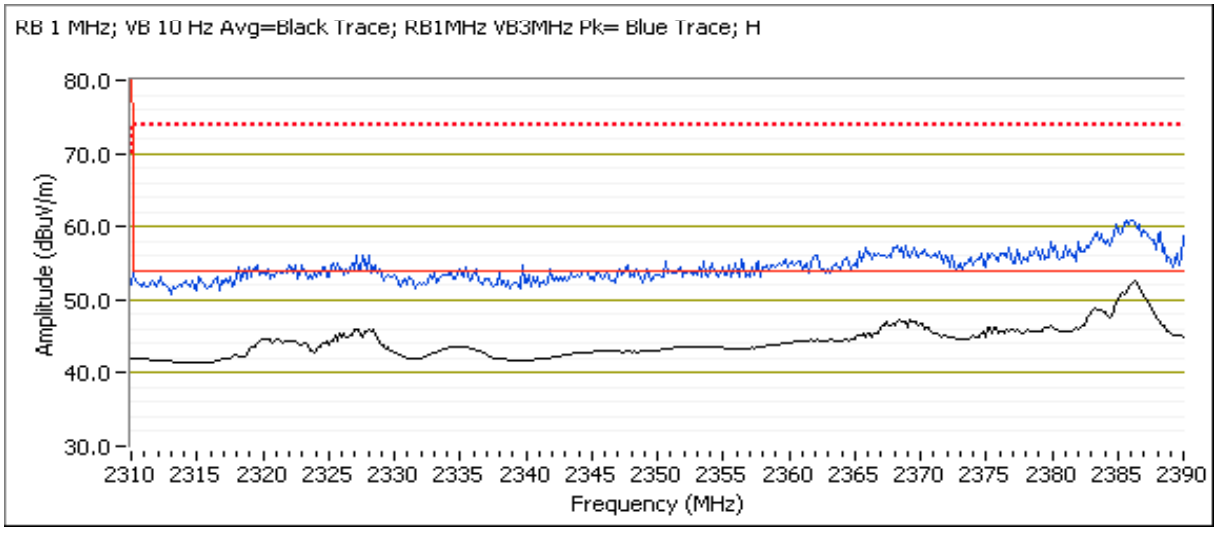
Run # 1a, EUT on Channel #1 2412MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	17.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.230	53.3	H	54.0	-0.7	AVG	314	1.0	POS; RB 1 MHz; VB: 10 Hz
2386.230	60.6	H	74.0	-13.4	PK	314	1.0	POS; RB 1 MHz; VB: 3 MHz
2386.630	46.1	V	54.0	-7.9	AVG	352	1.6	POS; RB 1 MHz; VB: 10 Hz
2385.270	54.8	V	74.0	-19.2	PK	352	1.6	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

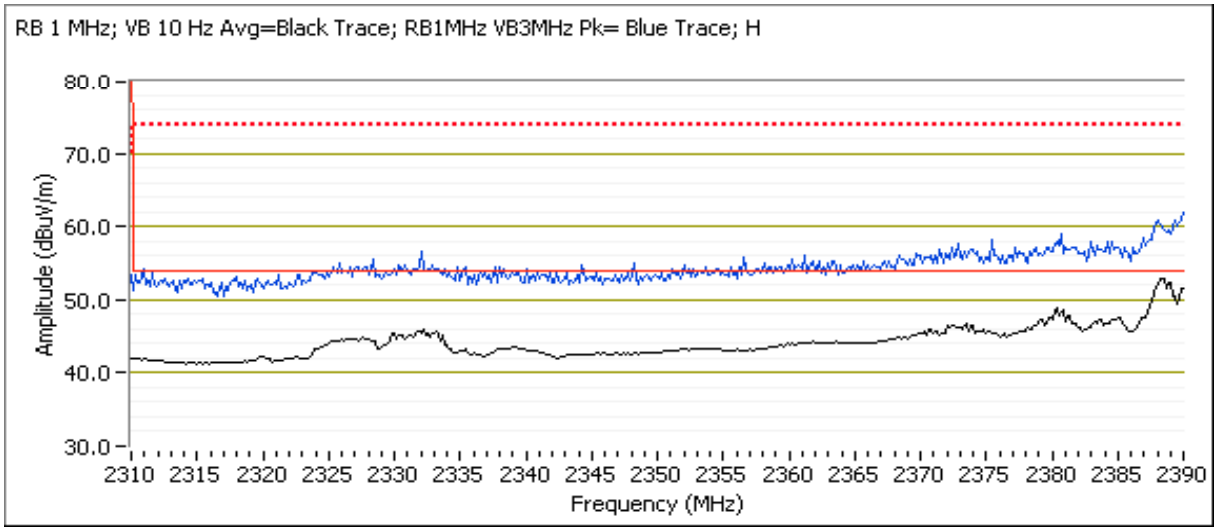
Run # 1b, EUT on Channel #2 2417MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	19.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2388.400	53.2	H	54.0	-0.8	AVG	308	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.680	60.2	H	74.0	-13.8	PK	308	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	49.1	V	54.0	-4.9	AVG	356	2.0	POS; RB 1 MHz; VB: 10 Hz
2390.000	57.2	V	74.0	-16.8	PK	356	2.0	POS; RB 1 MHz; VB: 3 MHz

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



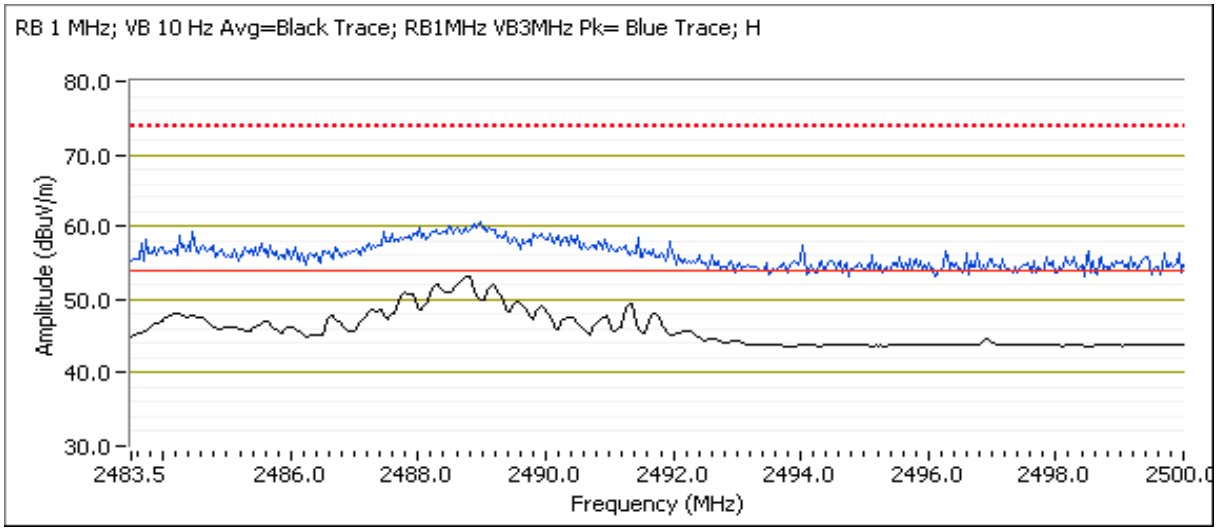
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 1c, EUT on Channel #9 2452MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	20.5

2483.5 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	
2488.790	53.8	H	54.0	-0.2	AVG	343	1.0	POS; RB 1 MHz; VB: 10 Hz
2488.820	60.4	H	74.0	-13.6	PK	343	1.0	POS; RB 1 MHz; VB: 3 MHz
2489.020	50.9	V	54.0	-3.1	AVG	2	1.7	POS; RB 1 MHz; VB: 10 Hz
2489.020	58.1	V	74.0	-15.9	PK	2	1.7	POS; RB 1 MHz; VB: 3 MHz



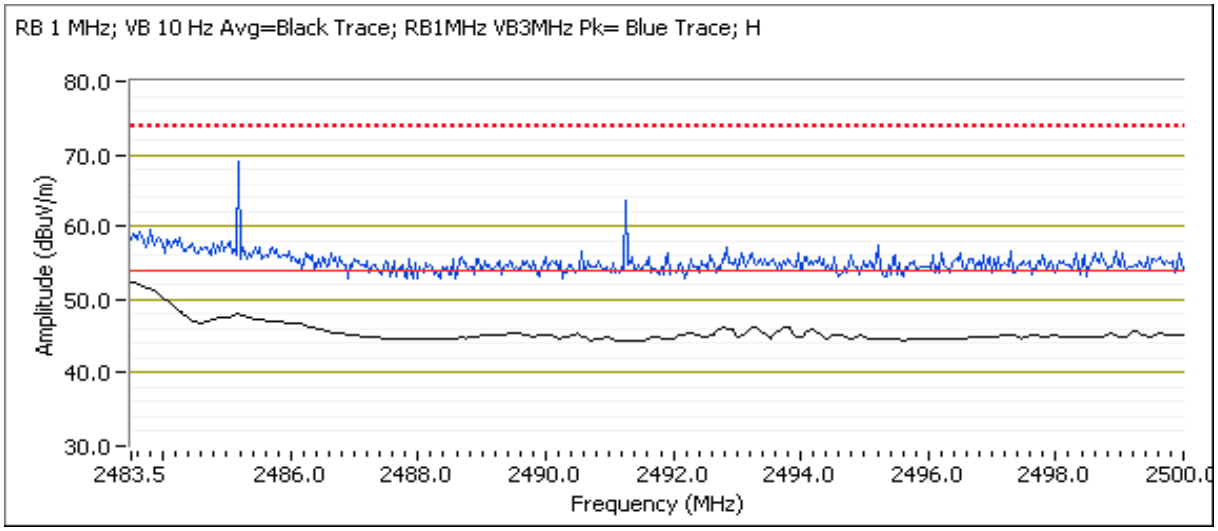
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 1d, EUT on Channel #10 2457MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	18.5

2483.5 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	
2483.500	52.6	H	54.0	-1.4	AVG	310	1.0	POS; RB 1 MHz; VB: 10 Hz
2487.930	67.1	H	74.0	-6.9	PK	310	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	50.5	V	54.0	-3.5	AVG	360	1.9	POS; RB 1 MHz; VB: 10 Hz
2485.780	57.1	V	74.0	-16.9	PK	360	1.9	POS; RB 1 MHz; VB: 3 MHz



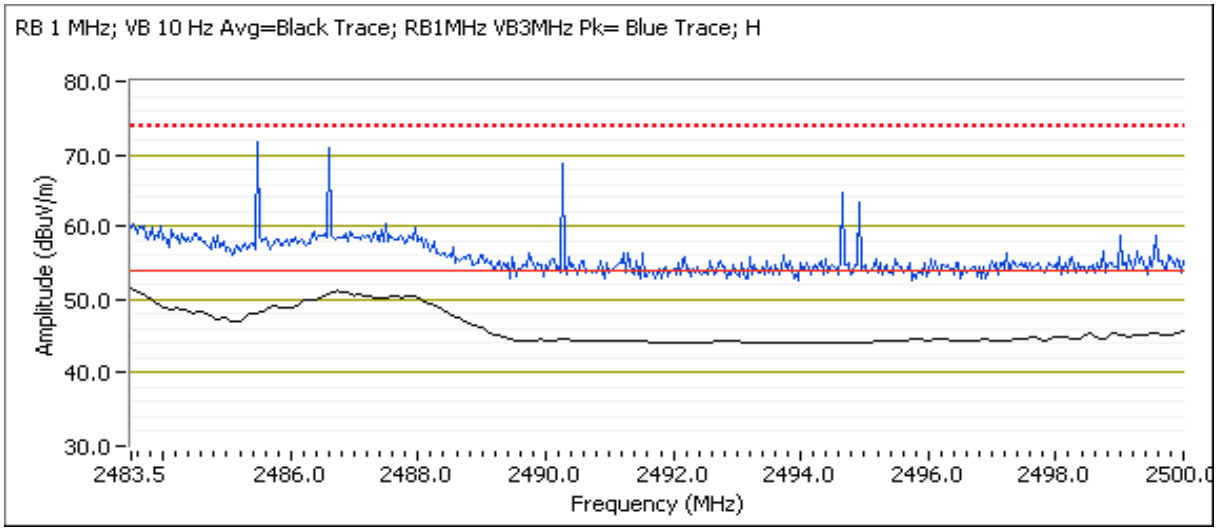
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 1e, EUT on Channel #11 2462MHz - 802.11b, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	18.0

2483.5 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	
2483.500	53.6	H	54.0	-0.4	AVG	318	1.0	POS; RB 1 MHz; VB: 10 Hz
2487.730	70.5	H	74.0	-3.5	PK	318	1.0	POS; RB 1 MHz; VB: 3 MHz
2487.800	48.0	V	54.0	-6.0	AVG	342	1.3	POS; RB 1 MHz; VB: 10 Hz
2486.740	62.1	V	74.0	-11.9	PK	342	1.3	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/21/2013 Test Location: FT7

Test Engineer: Rafael Varelas Config Change: none

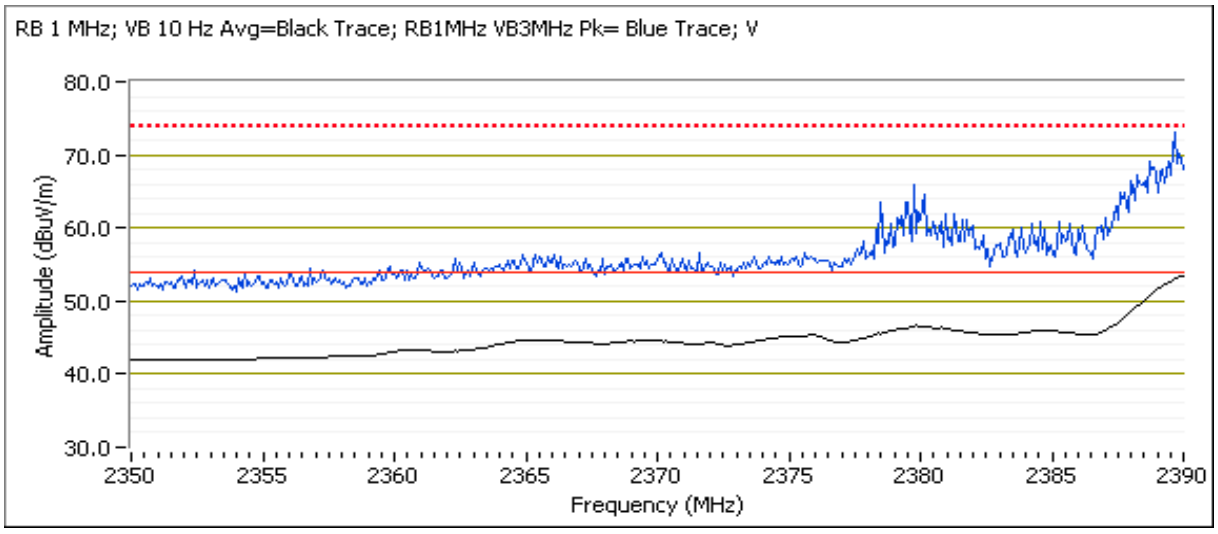
Run # 2a, EUT on Channel #1 2412MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	14.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.920	53.7	V	54.0	-0.3	AVG	356	1.7	POS; RB 1 MHz; VB: 10 Hz
2385.270	72.5	V	74.0	-1.5	PK	299	1.0	POS; RB 1 MHz; VB: 3 MHz
2385.830	53.1	H	54.0	-0.9	AVG	299	1.0	POS; RB 1 MHz; VB: 10 Hz
2386.230	68.8	H	74.0	-5.2	PK	303	1.0	POS; RB 1 MHz; VB: 3 MHz

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



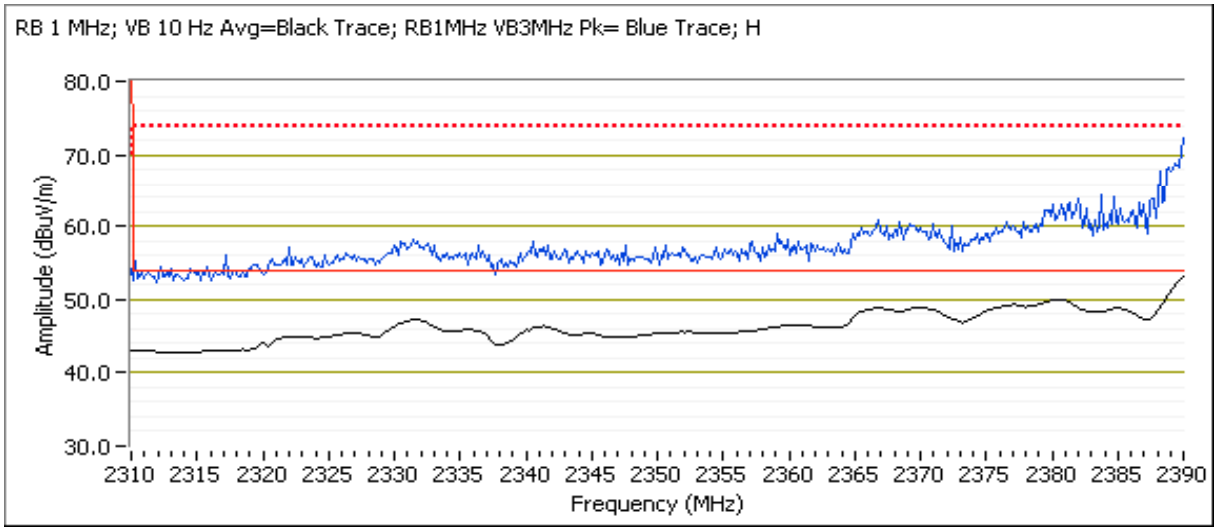
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2b, EUT on Channel #2 2417MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	14.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	53.2	H	54.0	-0.8	AVG	305	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.200	66.2	H	74.0	-7.8	PK	305	1.0	POS; RB 1 MHz; VB: 3 MHz
2389.990	46.7	V	54.0	-7.3	AVG	355	1.7	POS; RB 1 MHz; VB: 10 Hz
2389.770	61.8	V	74.0	-12.2	PK	355	1.7	POS; RB 1 MHz; VB: 3 MHz



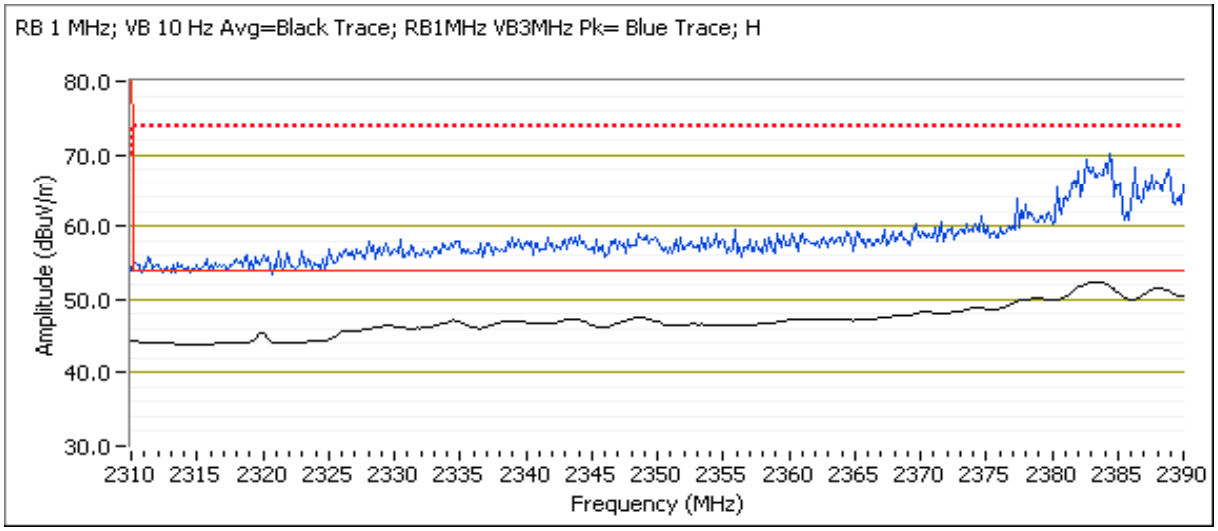
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2c, EUT on Channel #3 2422MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	17.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2383.270	52.6	H	54.0	-1.4	AVG	300	1.0	POS; RB 1 MHz; VB: 10 Hz
2382.630	68.9	H	74.0	-5.1	PK	300	1.0	POS; RB 1 MHz; VB: 3 MHz
2387.920	50.2	V	54.0	-3.8	AVG	352	1.7	POS; RB 1 MHz; VB: 10 Hz
2387.190	65.3	V	74.0	-8.7	PK	352	1.7	POS; RB 1 MHz; VB: 3 MHz



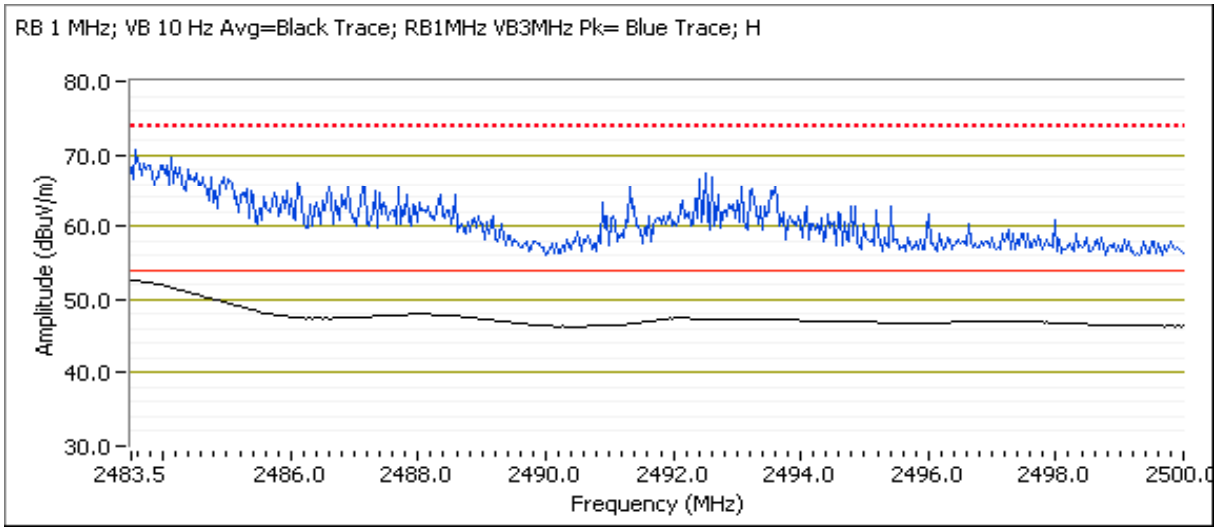
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2d, EUT on Channel #9 2452MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	17.0

2483.5 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	
2483.500	53.1	H	54.0	-0.9	AVG	300	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.310	70.9	H	74.0	-3.1	PK	300	1.0	POS; RB 1 MHz; VB: 3 MHz
2485.750	46.6	V	54.0	-7.4	AVG	0	1.0	POS; RB 1 MHz; VB: 10 Hz
2486.150	62.8	V	74.0	-11.2	PK	0	1.0	POS; RB 1 MHz; VB: 3 MHz



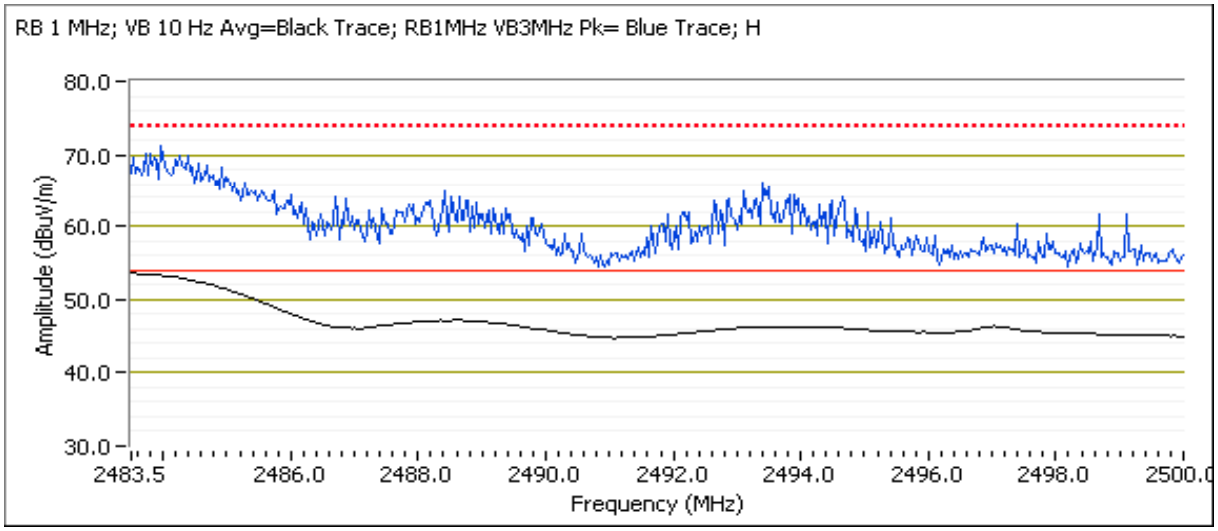
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2e, EUT on Channel #10 2457MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	16.0

2483.5 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	
2483.720	53.7	H	54.0	-0.3	AVG	342	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.440	72.6	H	74.0	-1.4	PK	342	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	50.1	V	54.0	-3.9	AVG	360	1.6	POS; RB 1 MHz; VB: 10 Hz
2483.830	64.3	V	74.0	-9.7	PK	360	1.6	POS; RB 1 MHz; VB: 3 MHz



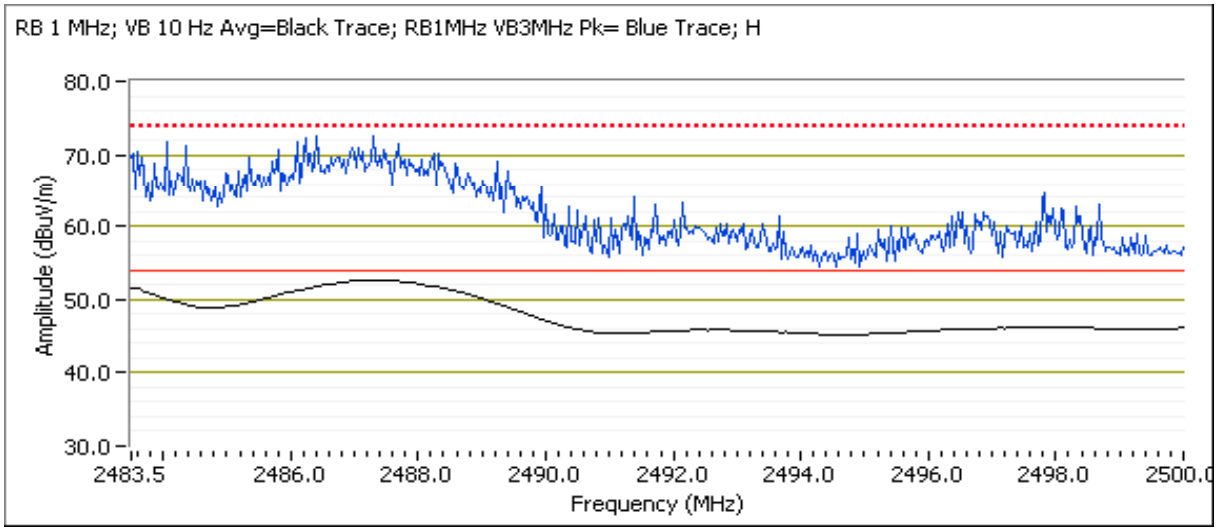
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run # 2f, EUT on Channel #11 2462MHz - 802.11g, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	14.5

2483.5 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	
2487.340	52.8	H	54.0	-1.2	AVG	309	1.0	POS; RB 1 MHz; VB: 10 Hz
2487.470	71.8	H	74.0	-2.2	PK	309	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	49.5	V	54.0	-4.5	AVG	360	1.6	POS; RB 1 MHz; VB: 10 Hz
2491.400	64.7	V	74.0	-9.3	PK	360	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

Date of Test: 1/22/2013 Test Location: FT7

Test Engineer: Jack Liu Config Change: none

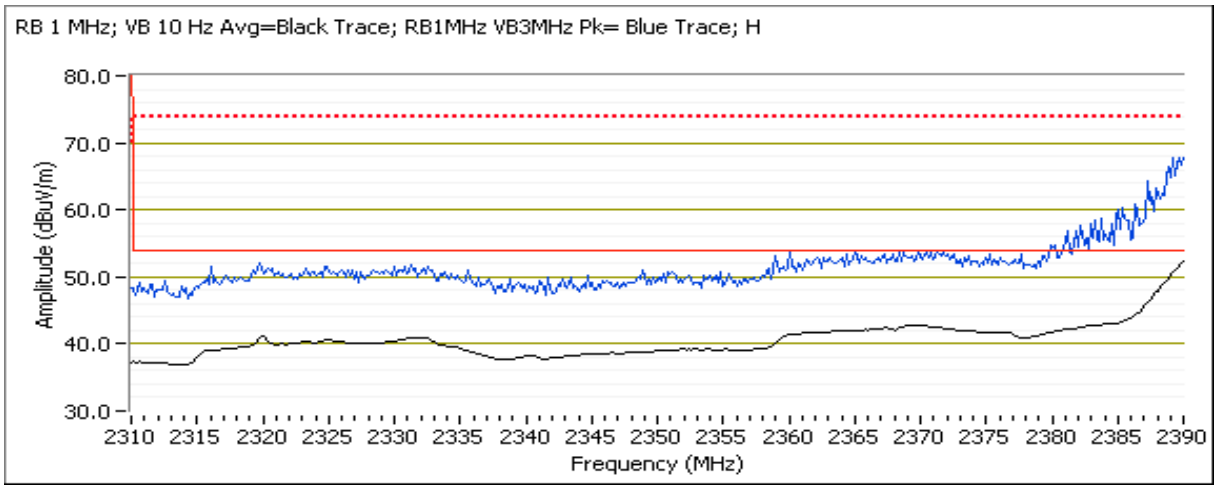
Run #3a, EUT on Channel #1 2412MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	13.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	52.3	H	54.0	-1.7	AVG	318	1.0	POS; RB 1 MHz; VB: 10 Hz
2390.000	66.6	H	74.0	-7.4	PK	318	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	48.5	V	54.0	-5.5	AVG	0	1.8	POS; RB 1 MHz; VB: 10 Hz
2388.720	61.1	V	74.0	-12.9	PK	0	1.8	POS; RB 1 MHz; VB: 3 MHz

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



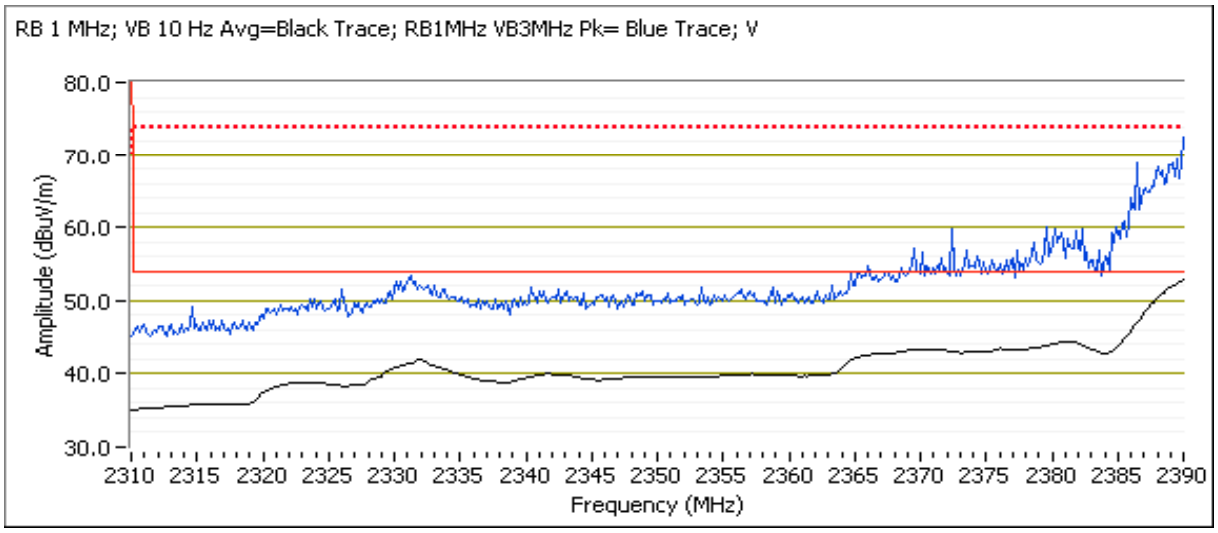
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3b, EUT on Channel #2 2417MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2417 MHz	16.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	53.6	V	54.0	-0.4	AVG	0	1.7	POS; RB 1 MHz; VB: 10 Hz
2389.440	70.8	V	74.0	-3.2	PK	0	1.7	POS; RB 1 MHz; VB: 3 MHz
2384.870	53.4	H	54.0	-0.6	AVG	300	1.0	POS; RB 1 MHz; VB: 10 Hz
2385.510	68.1	H	74.0	-5.9	PK	300	1.0	POS; RB 1 MHz; VB: 3 MHz



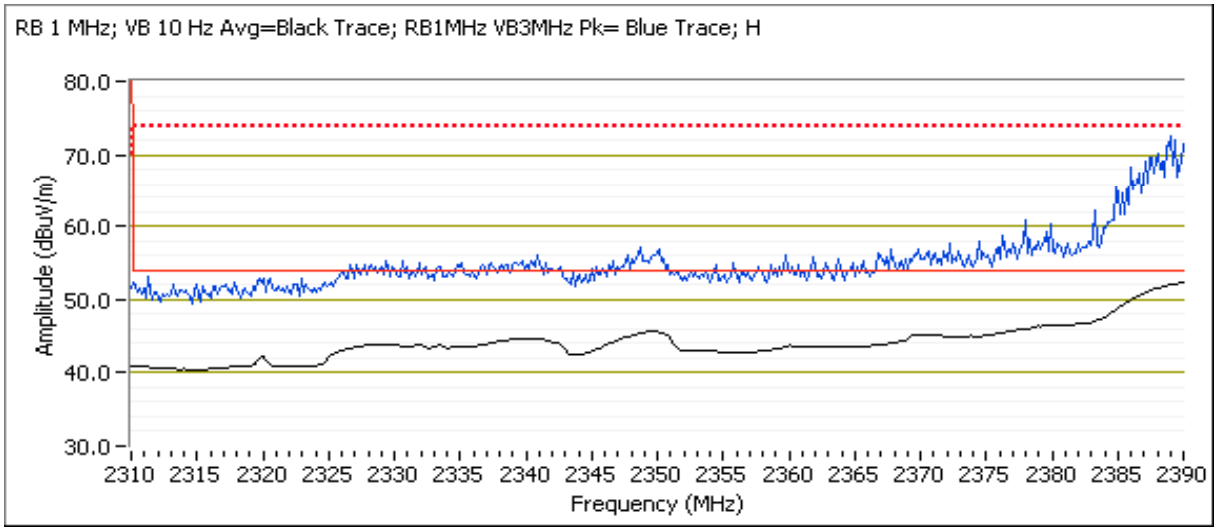
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3c, EUT on Channel #3 2422MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	16.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2388.960	53.2	H	54.0	-0.8	AVG	304	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.120	70.2	H	74.0	-3.8	PK	304	1.0	POS; RB 1 MHz; VB: 3 MHz
2389.520	44.6	V	54.0	-9.4	AVG	272	2.0	POS; RB 1 MHz; VB: 10 Hz
2385.590	59.1	V	74.0	-14.9	PK	272	2.0	POS; RB 1 MHz; VB: 3 MHz



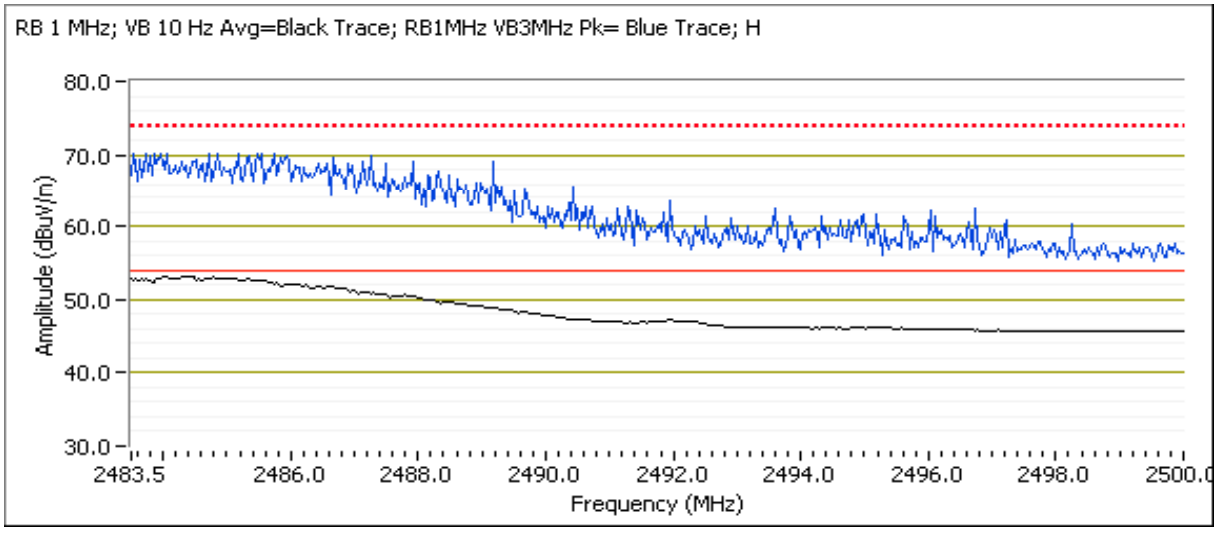
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3d, EUT on Channel #9 2452MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	17.5

2483.5 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	
2483.860	53.3	H	54.0	-0.7	AVG	340	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.930	69.9	H	74.0	-4.1	PK	340	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.530	52.6	V	54.0	-1.4	AVG	360	2.0	POS; RB 1 MHz; VB: 10 Hz
2484.190	65.4	V	74.0	-8.6	PK	360	2.0	POS; RB 1 MHz; VB: 3 MHz



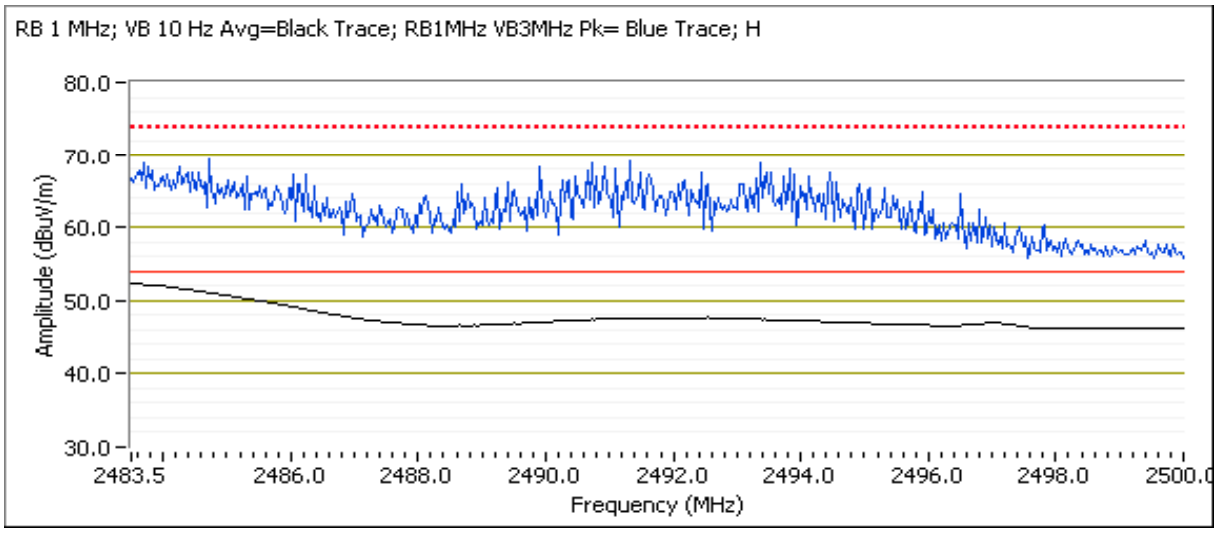
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3e, EUT on Channel #10 2457MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2457 MHz	15.5

2483.5 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	
2483.500	52.3	H	54.0	-1.7	AVG	306	1.0	POS; RB 1 MHz; VB: 10 Hz
2483.500	67.1	H	74.0	-6.9	PK	306	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.530	50.2	V	54.0	-3.8	AVG	359	2.0	POS; RB 1 MHz; VB: 10 Hz
2484.390	64.7	V	74.0	-9.3	PK	359	2.0	POS; RB 1 MHz; VB: 3 MHz



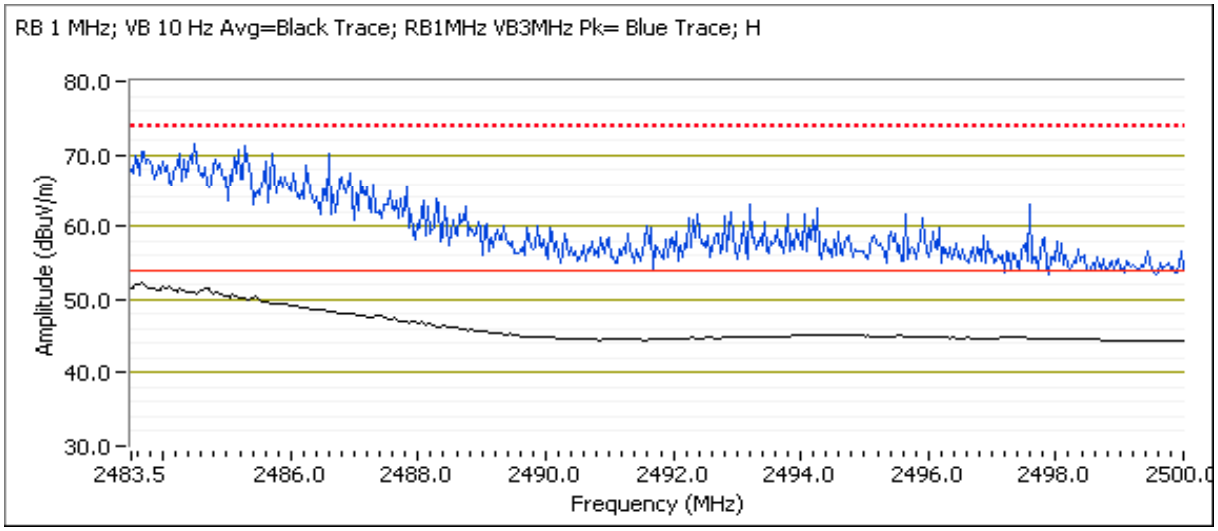
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3f, EUT on Channel #11 2462MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2462 MHz	14.0

2483.5 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	
2483.630	52.0	H	54.0	-2.0	AVG	326	1.0	POS; RB 1 MHz; VB: 10 Hz
2484.330	69.3	H	74.0	-4.7	PK	326	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.600	48.3	V	54.0	-5.7	AVG	1	2.0	POS; RB 1 MHz; VB: 10 Hz
2483.800	65.4	V	74.0	-8.6	PK	1	2.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4, Band Edge Field Strength - 802.11n40, Chain A+B+C

Date of Test: 1/22/2013 Test Location: FT7

Test Engineer: Jack Liu Config Change: none

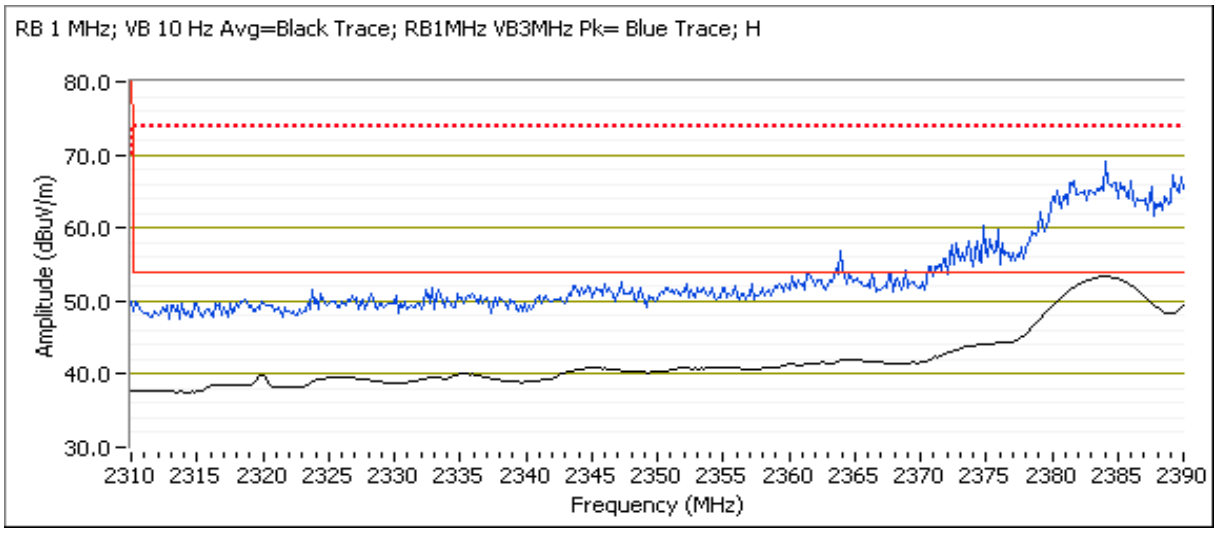
Run #4a, EUT on Channel #3 2422MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2422 MHz	11.0

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2384.070	53.4	H	54.0	-0.6	AVG	302	1.0	POS; RB 1 MHz; VB: 10 Hz
2389.520	65.1	H	74.0	-8.9	PK	302	1.0	POS; RB 1 MHz; VB: 3 MHz
2390.000	52.6	V	54.0	-1.4	AVG	0	1.7	POS; RB 1 MHz; VB: 10 Hz
2389.600	65.4	V	74.0	-8.6	PK	0	1.7	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

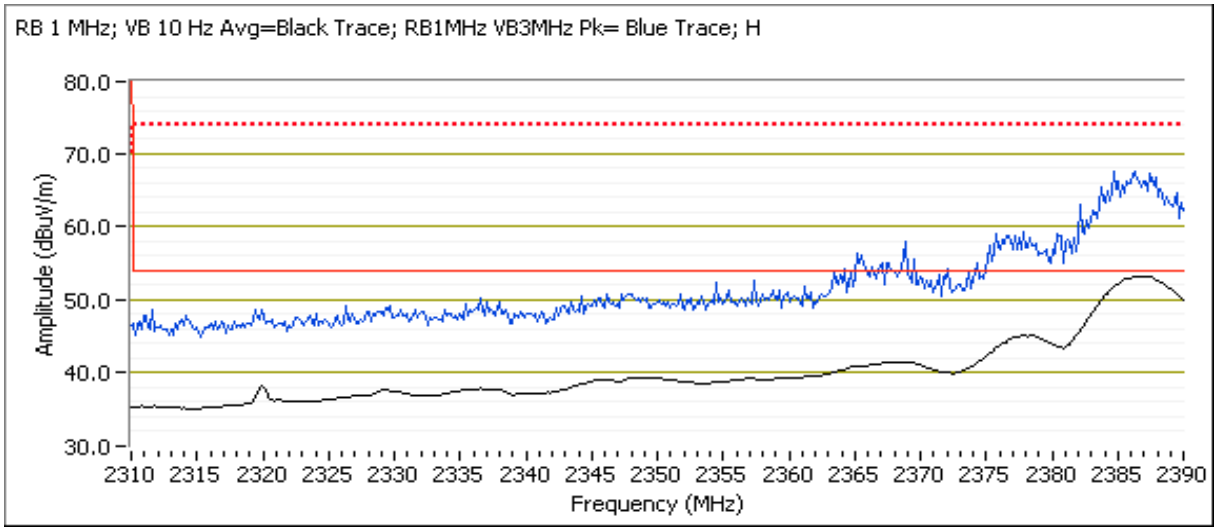
Run #4b, EUT on Channel #4 2427MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2427 MHz	12.5

2390 MHz Band Edge Signal Field Strength

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2387.110	53.5	H	54.0	-0.5	AVG	337	1.0	POS; RB 1 MHz; VB: 10 Hz
2387.190	67.5	H	74.0	-6.5	PK	337	1.0	POS; RB 1 MHz; VB: 3 MHz
2383.990	51.9	V	54.0	-2.1	AVG	359	1.7	POS; RB 1 MHz; VB: 10 Hz
2383.670	63.4	V	74.0	-10.6	PK	359	1.7	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

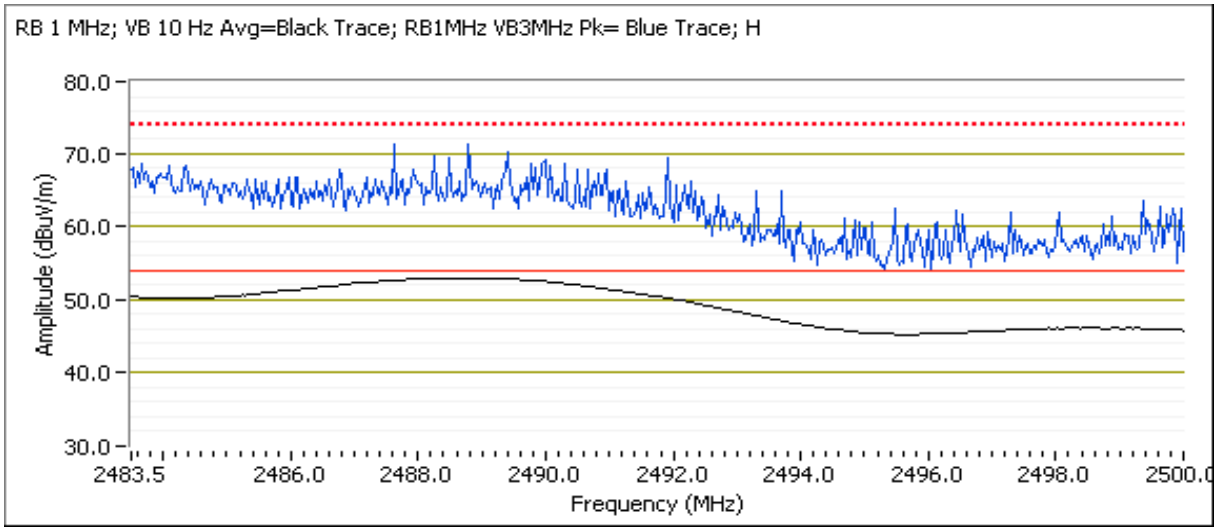
Run #4c, EUT on Channel #9 2452MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2452 MHz	12.5

2483.5 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	
2488.560	53.0	H	54.0	-1.0	AVG	327	1.0	POS; RB 1 MHz; VB: 10 Hz
2490.540	68.5	H	74.0	-5.5	PK	327	1.0	POS; RB 1 MHz; VB: 3 MHz
2483.500	51.4	V	54.0	-2.6	AVG	360	2.0	POS; RB 1 MHz; VB: 10 Hz
2485.580	68.3	V	74.0	-5.7	PK	360	2.0	POS; RB 1 MHz; VB: 3 MHz

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements

PSD, Bandwidth and Spurious Emissions (MIMO)

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: 1/27/2013 & 1/28/13
Test Engineer: Rafael Varelas/ Jack Liu
Test Location: FT 7

Config. Used: 1
Config Change: None
EUT Voltage: POE

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: 20.2 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Power spectral Density (PSD)	15.247(d)	Pass	-3.4 dBm/3kHz
2			Minimum 6dB Bandwidth	15.247(a)	Pass	16.3 MHz
2			99% Bandwidth	RSS GEN	Pass	37.6 MHz
3			Spurious emissions (-30dBc) 802.11a, 802.11n20	15.247(b)	Pass	All emissions below the -30dBc limit
3			Spurious emissions (-20dBc) 802.11n40	15.247(b)	Pass	All emissions below the -20dBc 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.

Notes

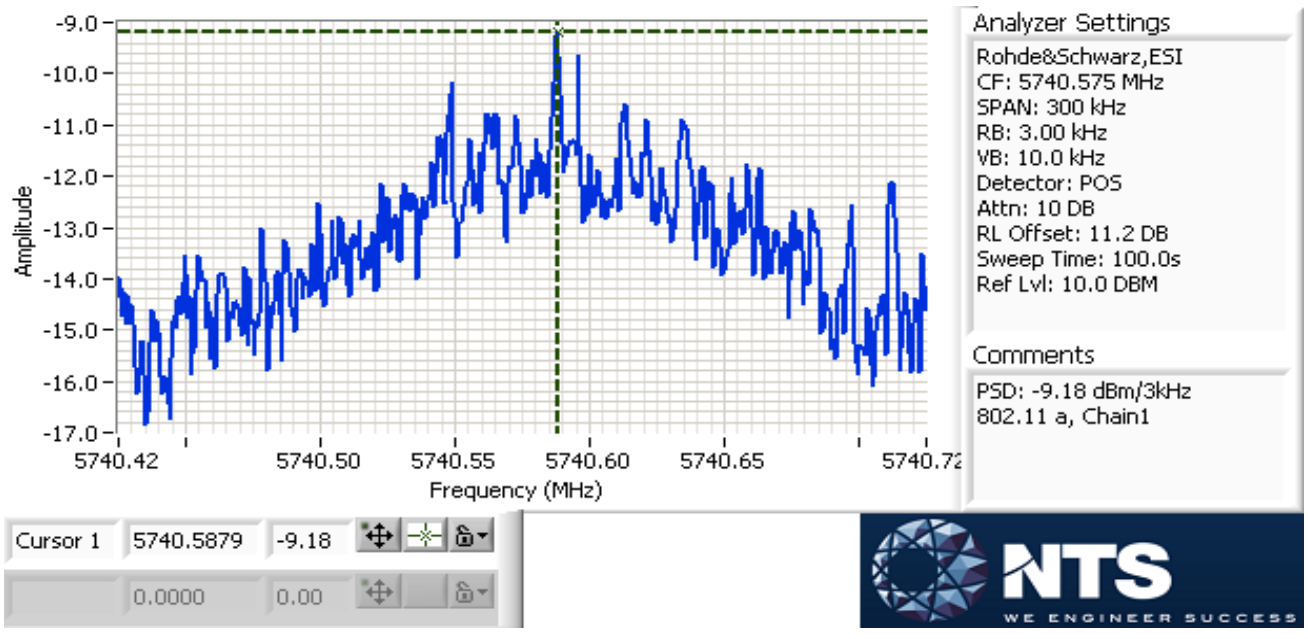
All measurements performed at the antenna port

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Power spectral Density

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1 Chain 1	Chain 2	Chain 3	Chain 4	Total	Limit dBm/3kHz	Result
802.11a								
19	5745	-9.2	-7.6	-7.9		-3.4	8.0	Pass
19	5785	-9.1	-8.4	-8.6		-3.9	8.0	Pass
19	5825	-9.3	-8.8	-8.3		-4.0	8.0	Pass
802.11n20								
19	5745	-9.0	-8.9	-8.0		-3.8	8.0	Pass
19	5785	-9.8	-9.1	-8.6		-4.4	8.0	Pass
19	5825	-9.8	-8.5	-9.0		-4.3	8.0	Pass
802.11n40								
19	5755	-12.6	-11.0	-9.6		-6.1	8.0	Pass
19	5795	-12.1	-12.2	-11.5		-7.1	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.

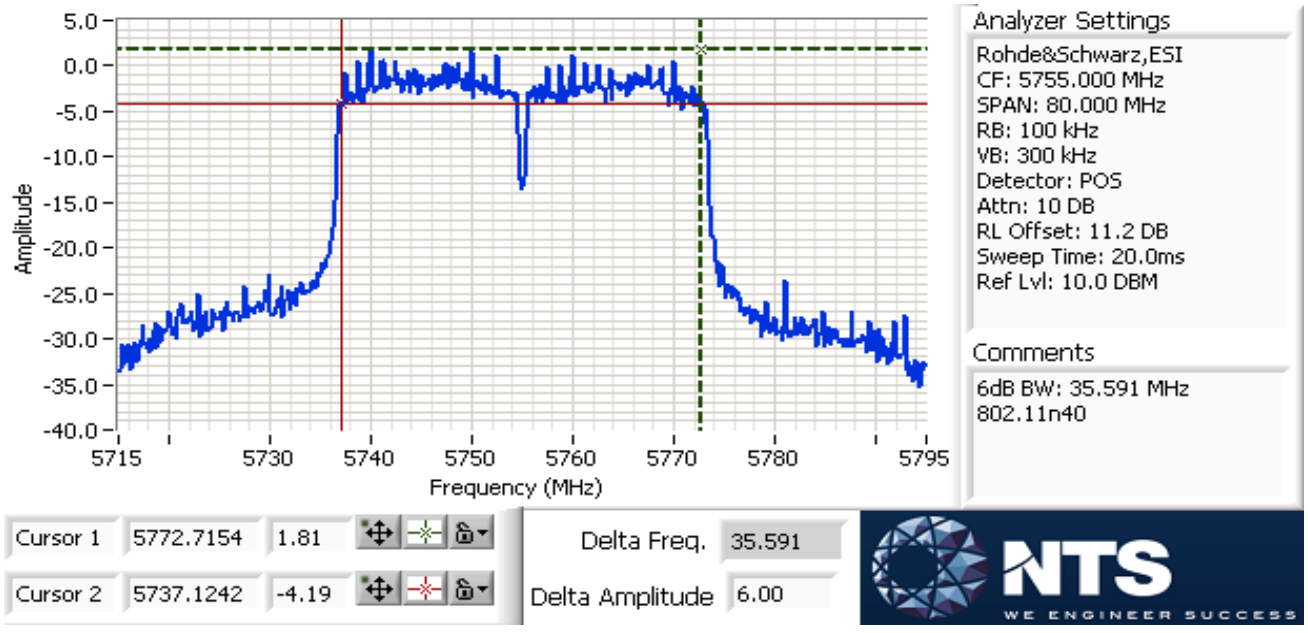


Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

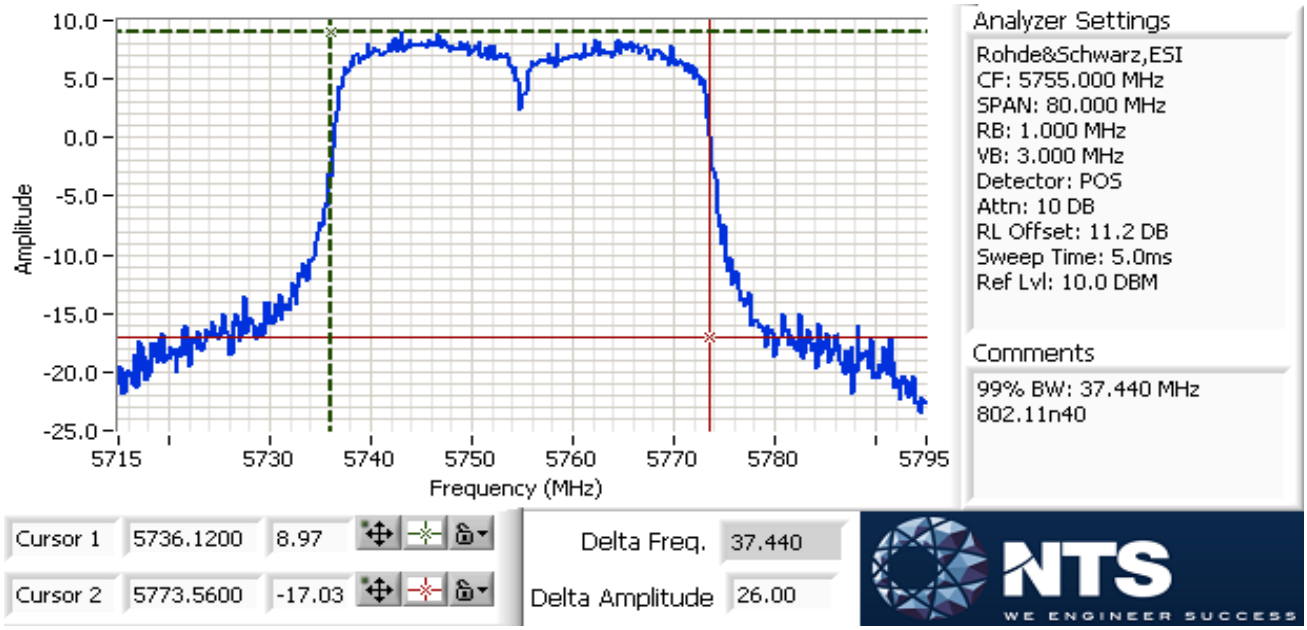
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz) 6dB	Resolution Bandwidth	Bandwidth (MHz) 99%
802.11a					
19	5745	100kHz	16.3	1MHz	17.0
19	5785	100kHz	16.3	1MHz	17.1
19	5825	100kHz	16.3	1MHz	17.3
802.11n20					
19	5745	100kHz	17.5	1MHz	18.2
19	5785	100kHz	17.5	1MHz	18.2
19	5825	100kHz	17.5	1MHz	18.3
802.11n40					
19	5755	100kHz	35.6	1MHz	37.4
19	5795	100kHz	35.9	1MHz	37.6

Note 1:	Measured on a single chain
Note 2:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB, see power plots for a and n20 modes.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

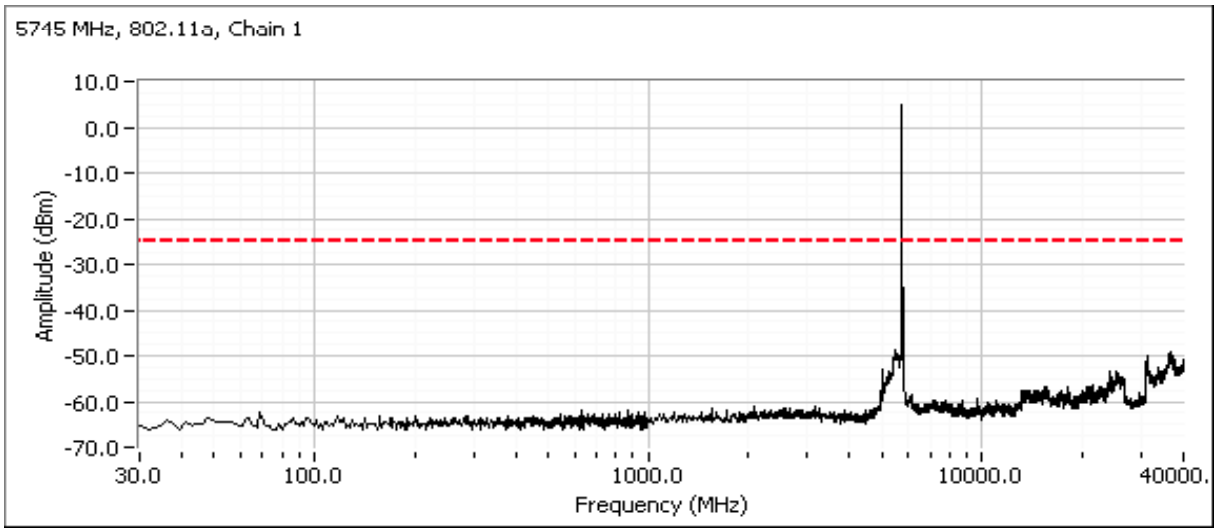
Run #3: Out of Band Spurious Emissions

Power Setting Per Chain #1	#2	#3	#4	Frequency (MHz)	Limit	Result
802.11a						
19				5745	-30dBc	Pass
19				5785	-30dBc	Pass
19				5825	-30dBc	Pass
802.11n20						
19				5745	-30dBc	Pass
19				5785	-30dBc	Pass
19				5825	-30dBc	Pass
802.11n40						
19				5755	-20dBc	Pass
19				5795	-20dBc	Pass

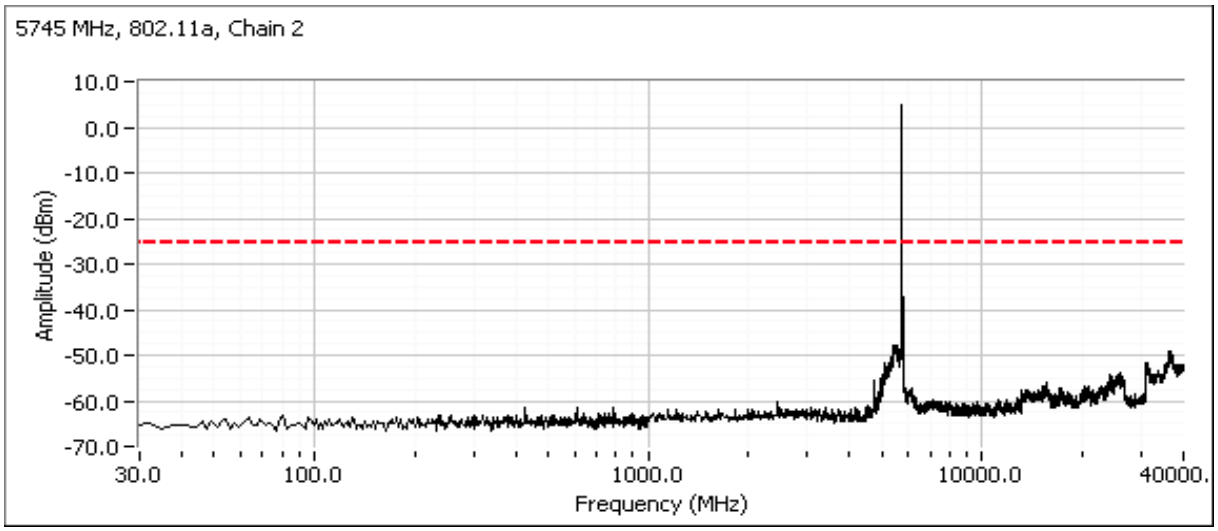
Note 1:	Measured on each chain individually

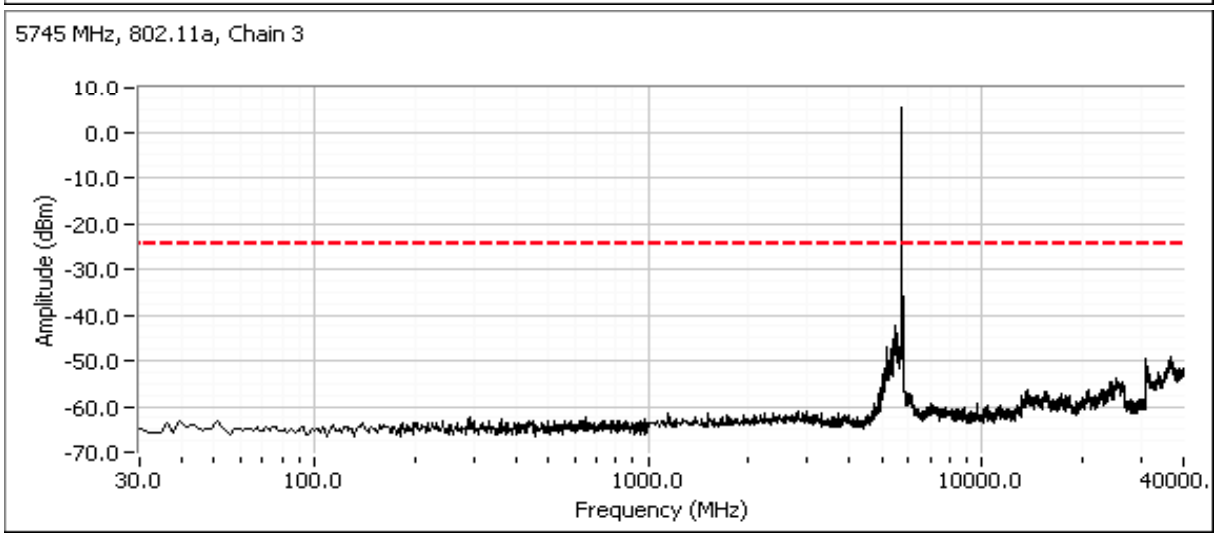
802.11a

Plots for low channel



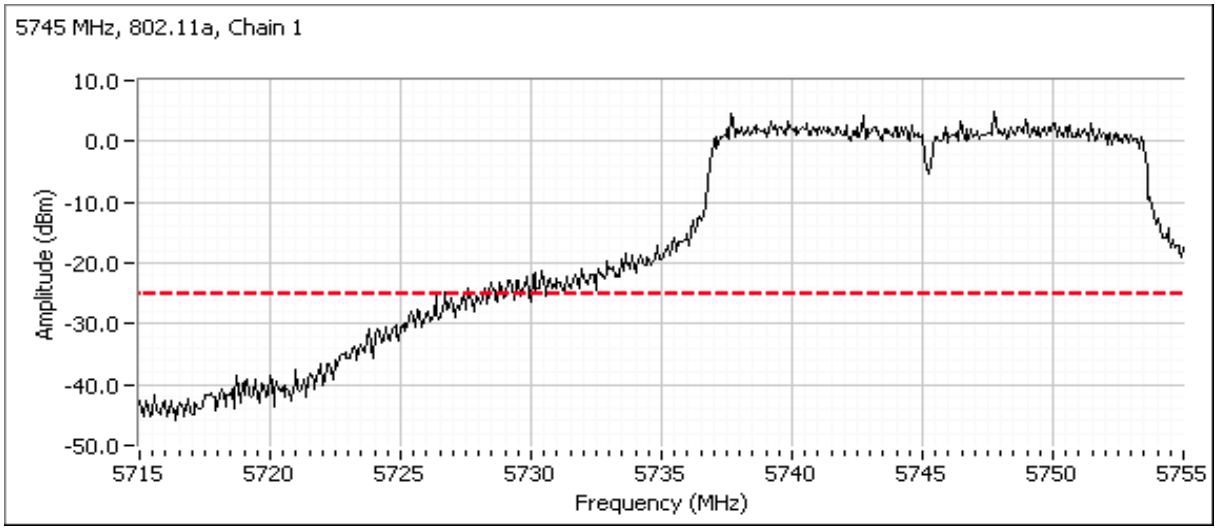
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

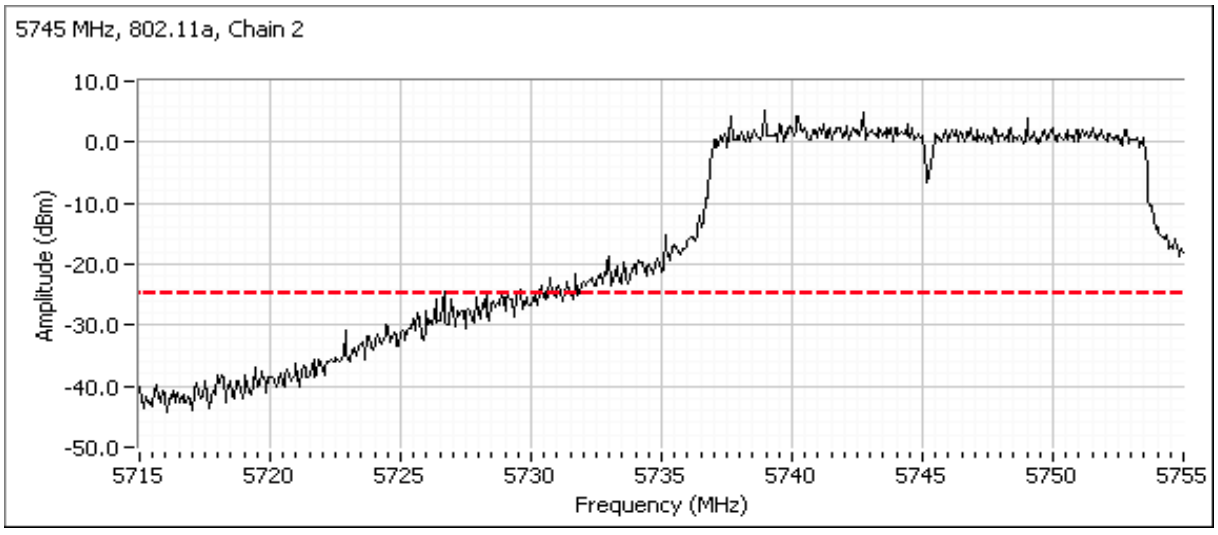




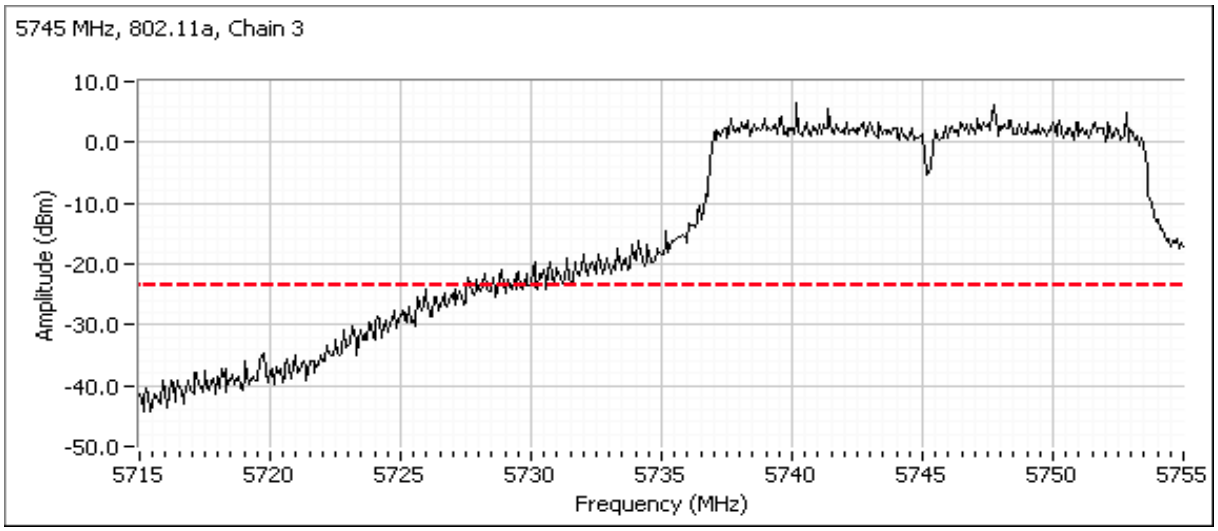
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

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

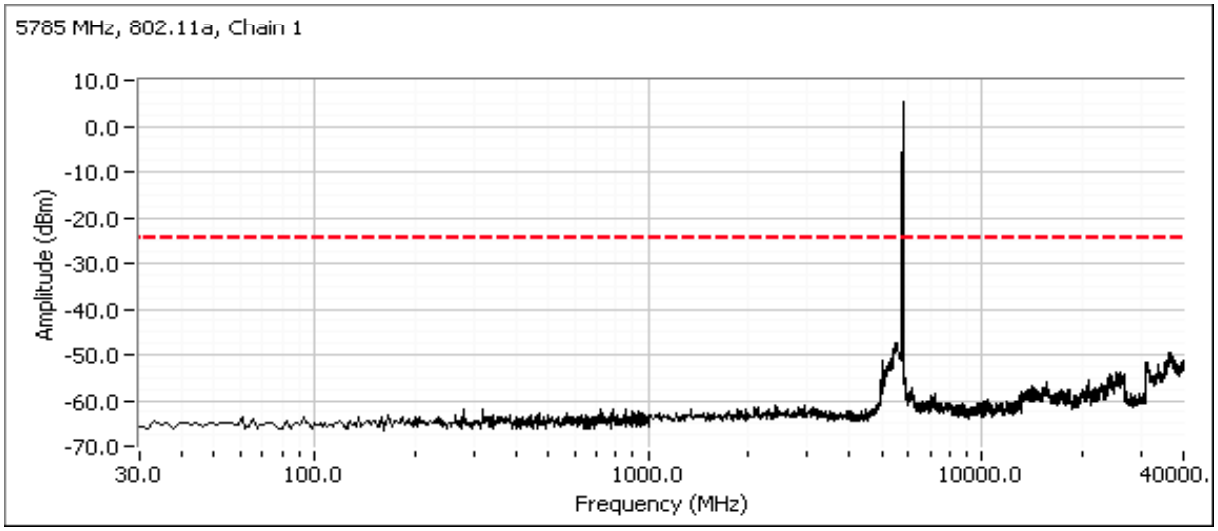




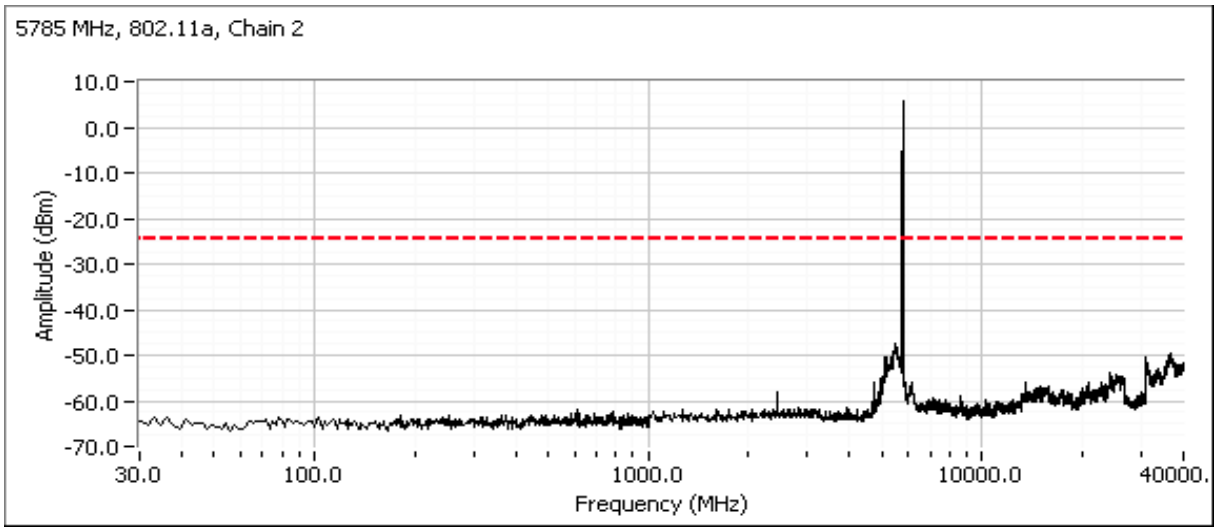
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

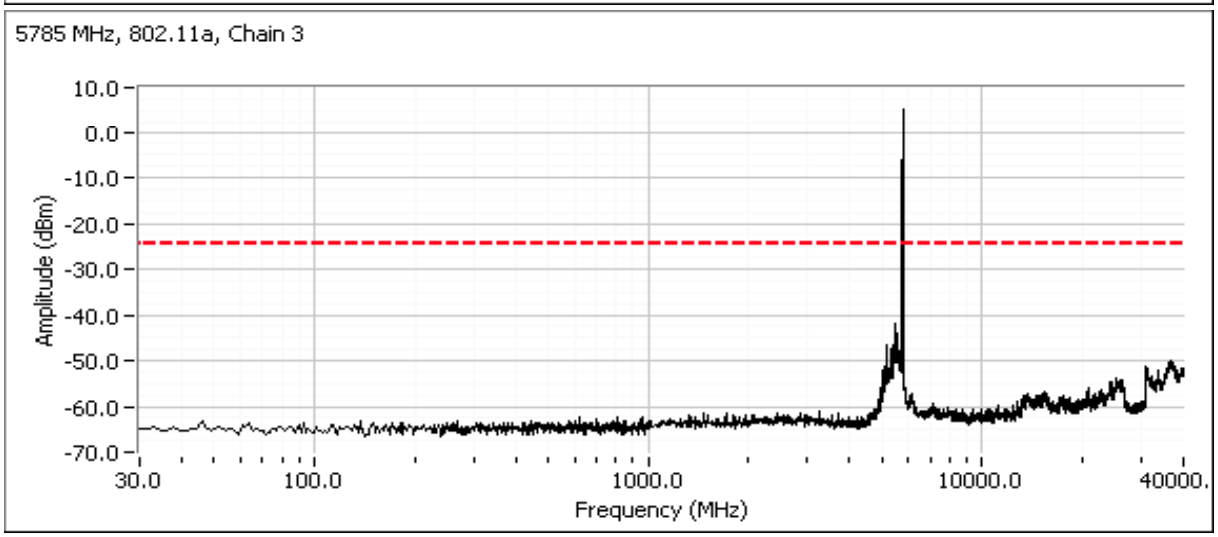


Plots for center channel



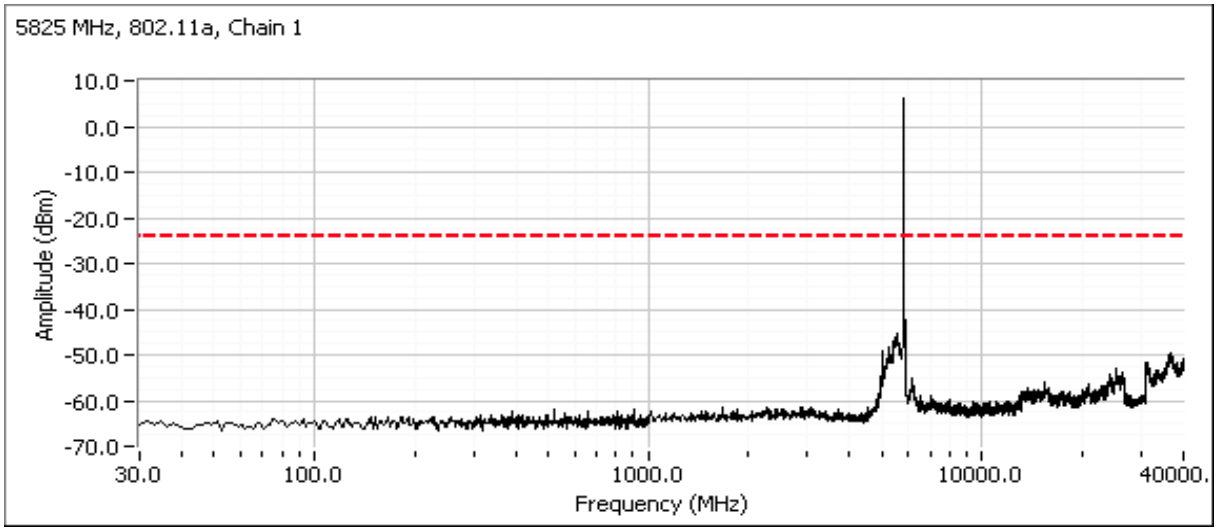
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

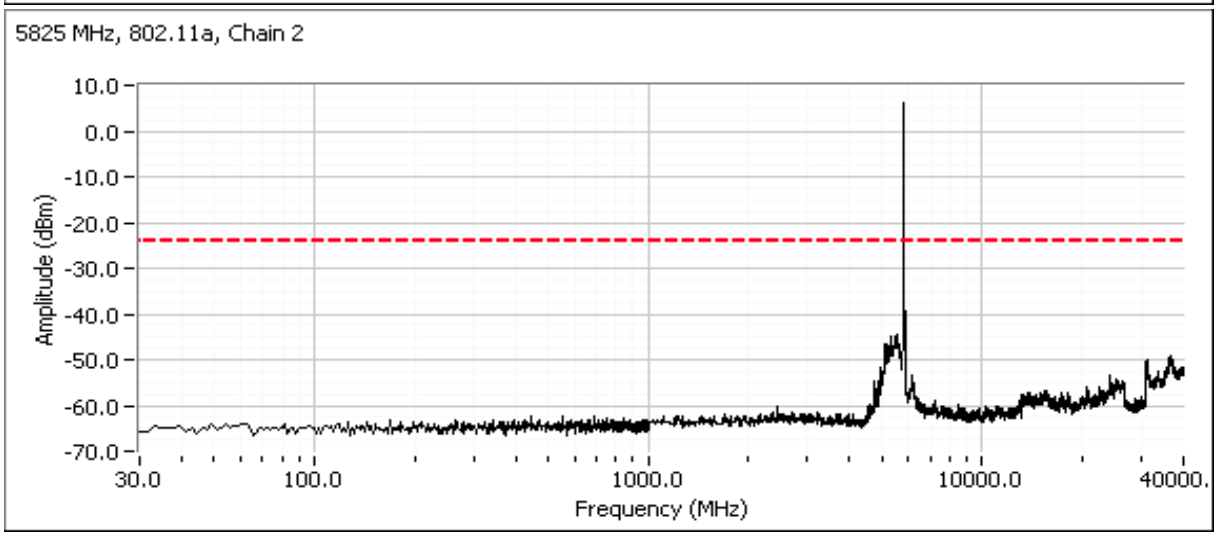




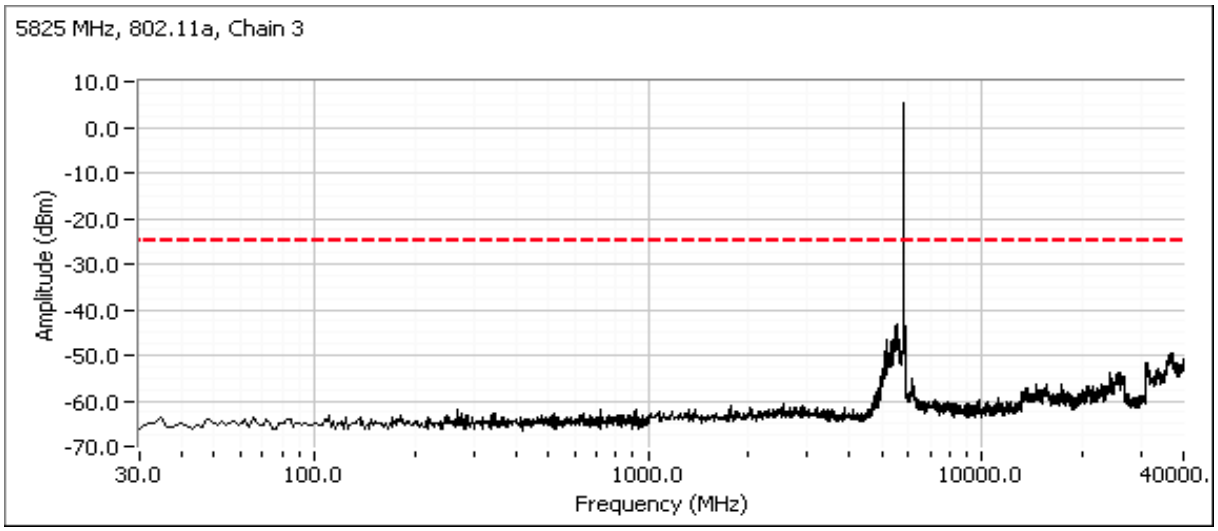
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Plots for high channel

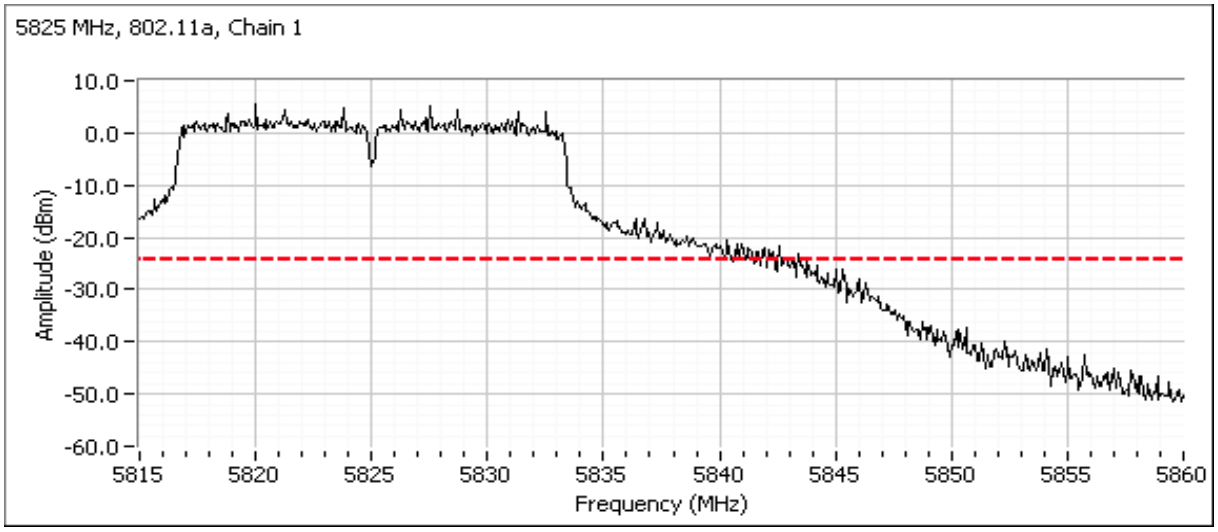




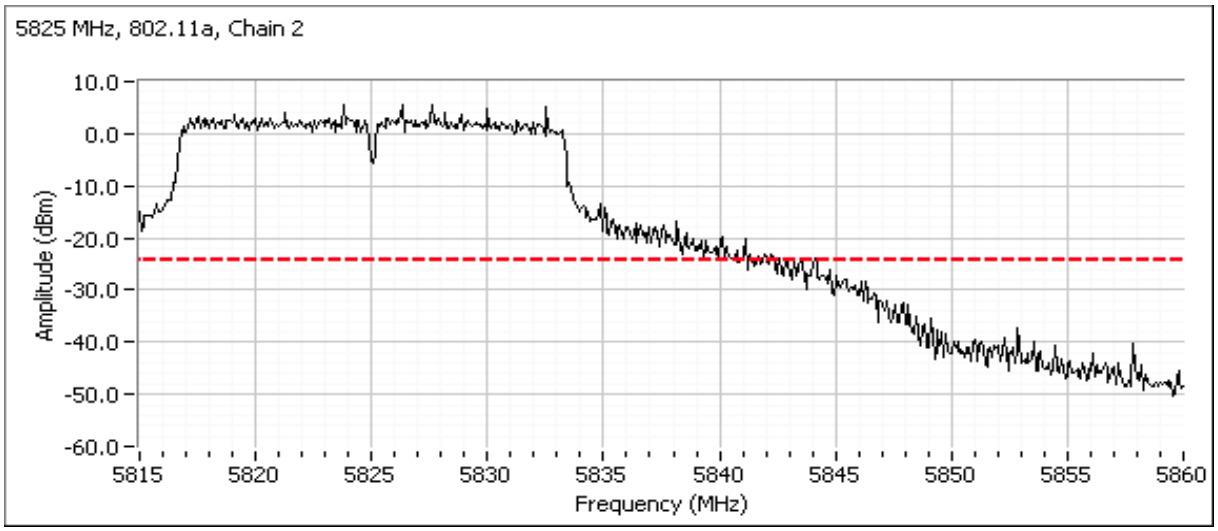
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

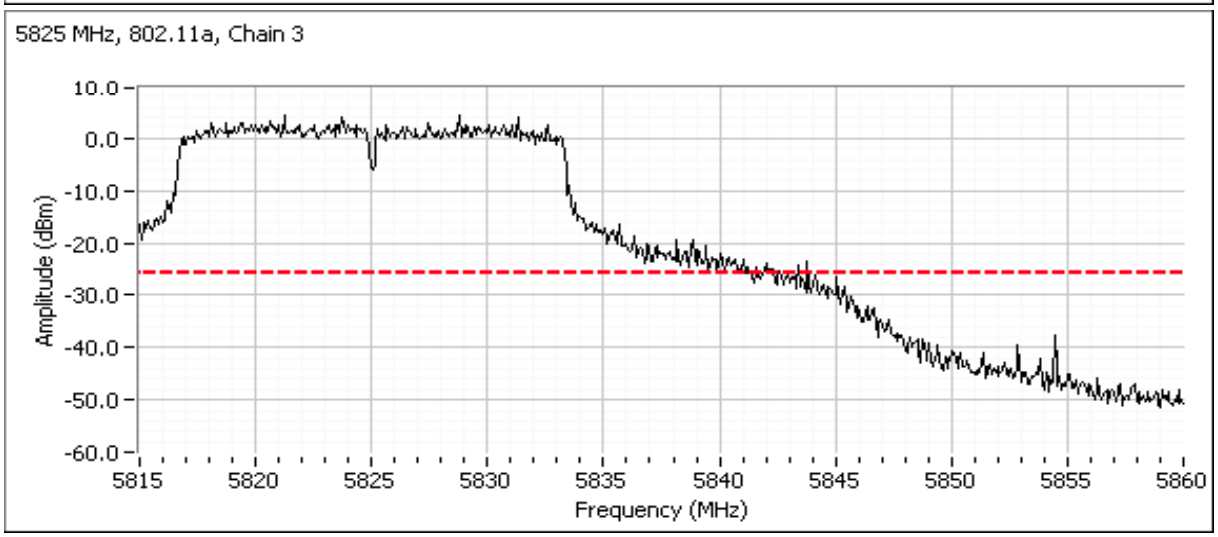


Additional plot from 5820 - 5860 MHz showing compliance with -30dBc at the band edge.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

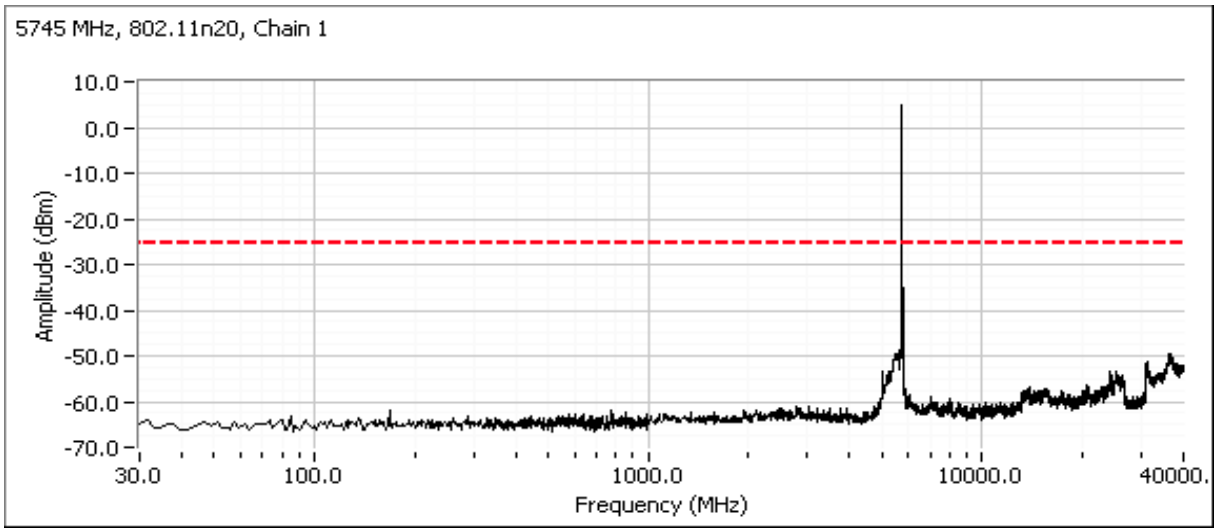


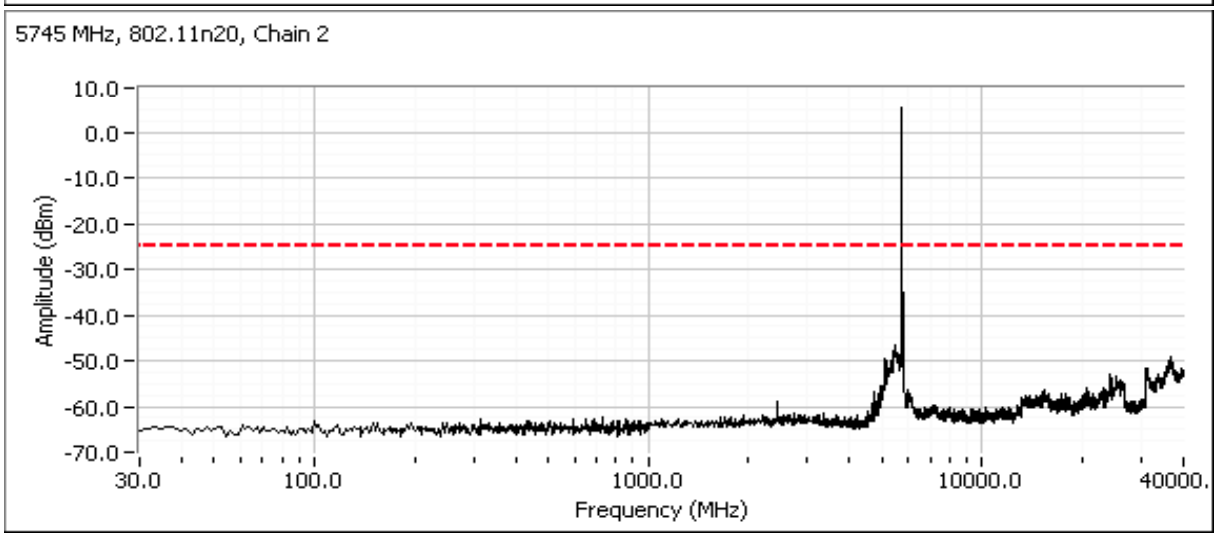


Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

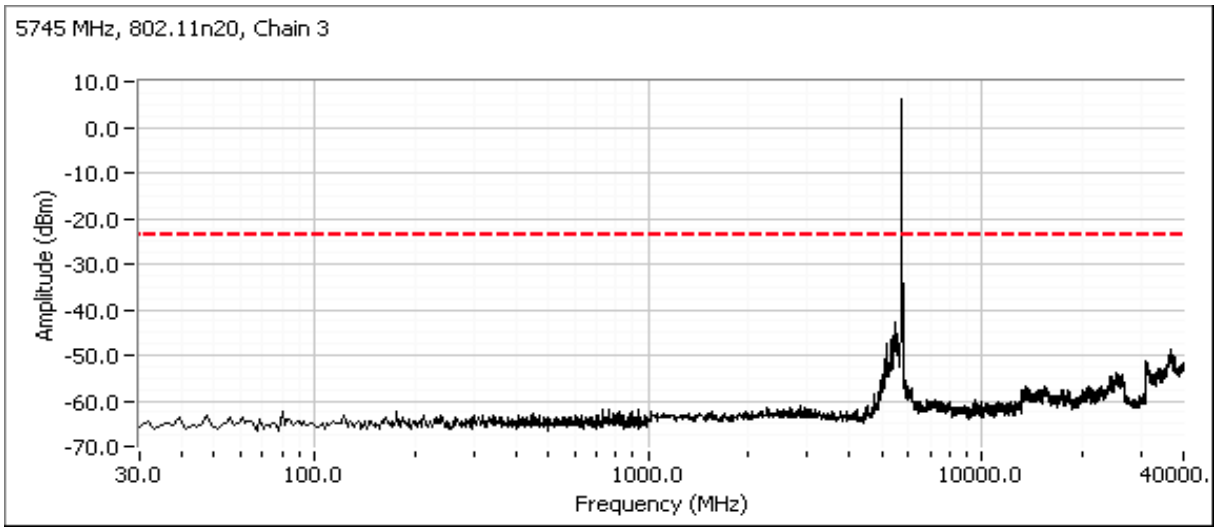
802.11n20

Plots for low channel

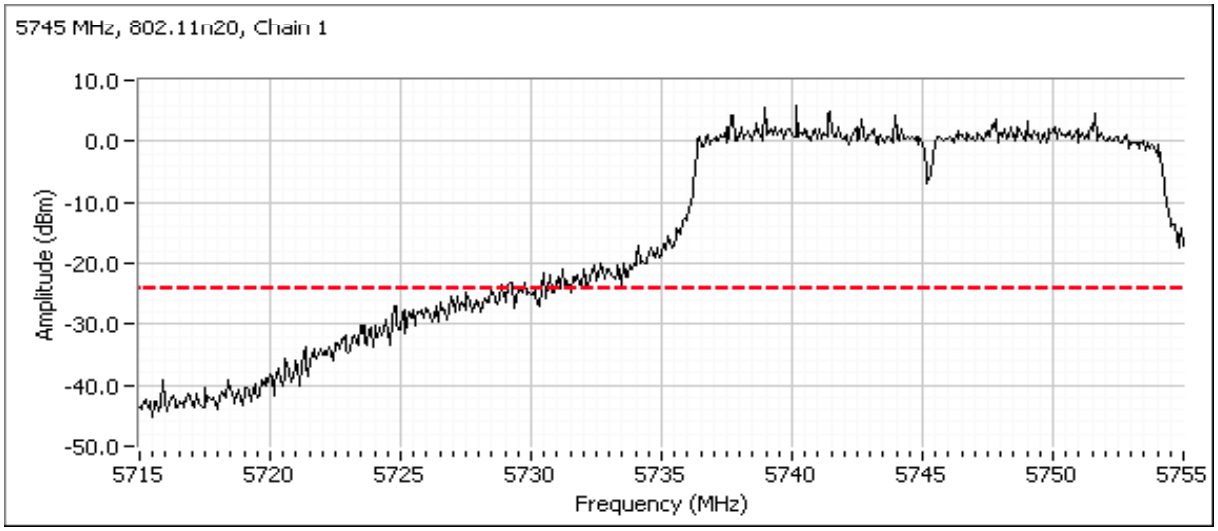




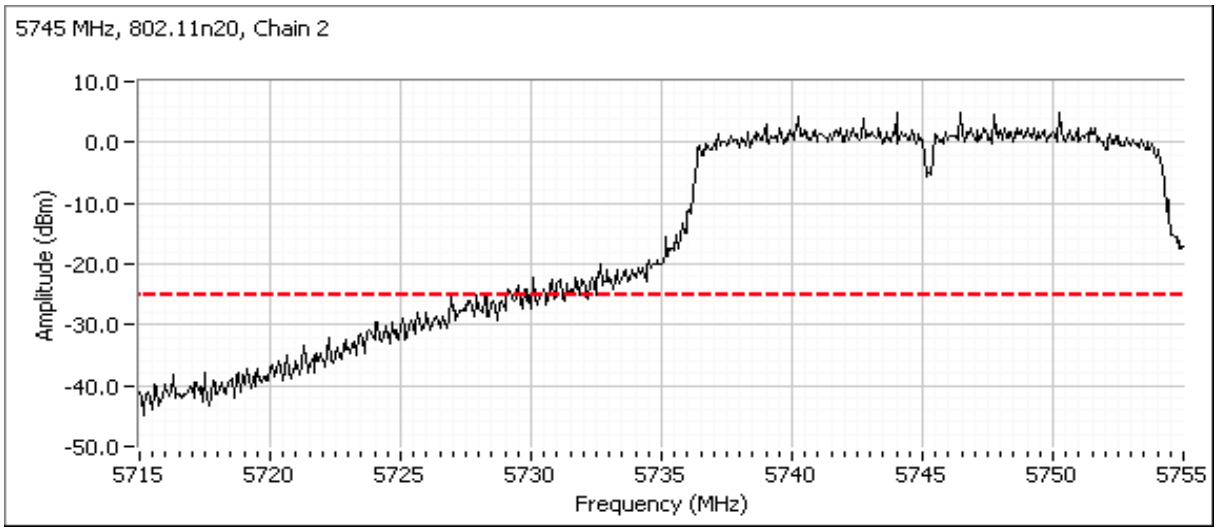
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

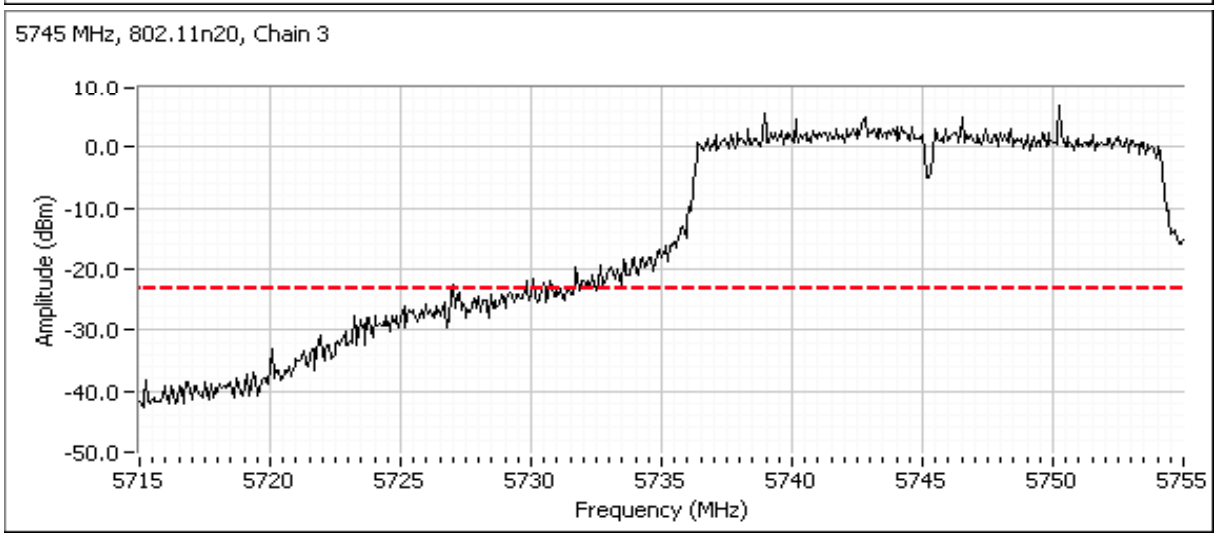


Additional plot from 5715 - 5755 MHz showing compliance with -30dBc at the band edge.



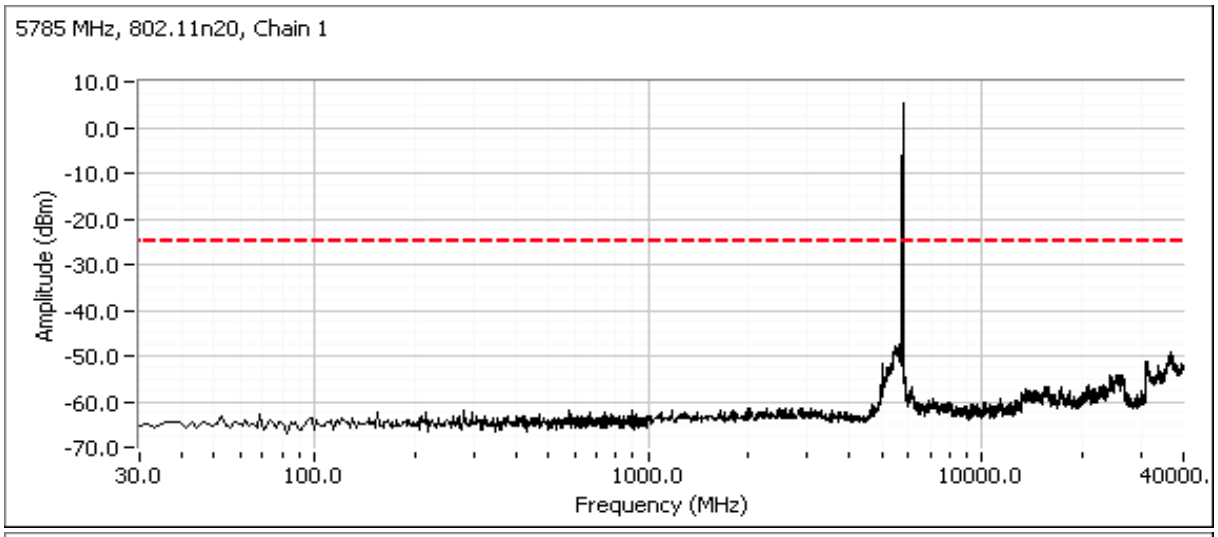
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

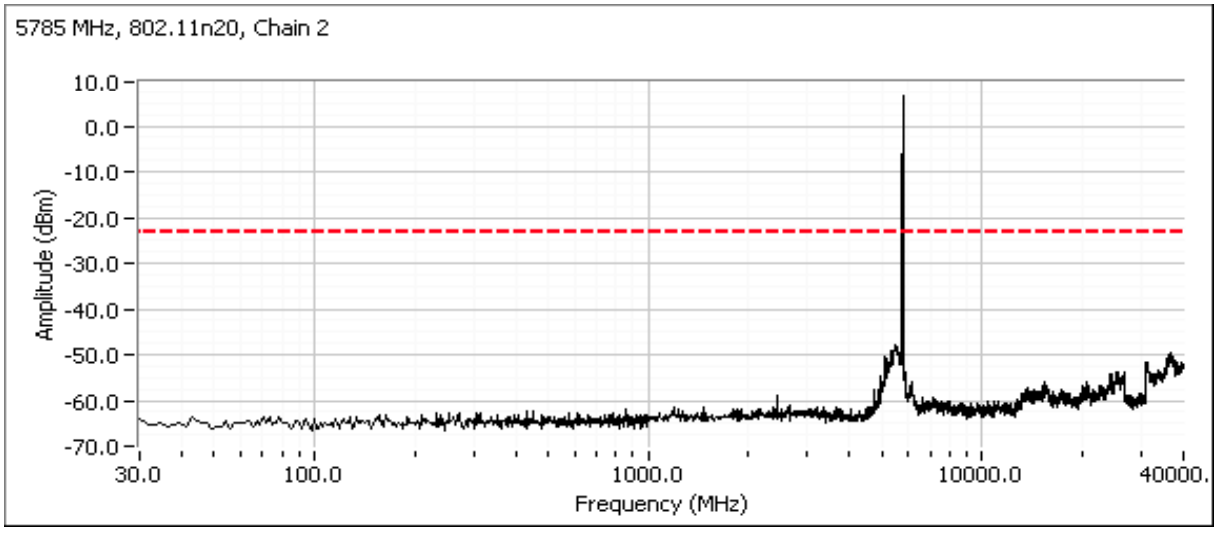




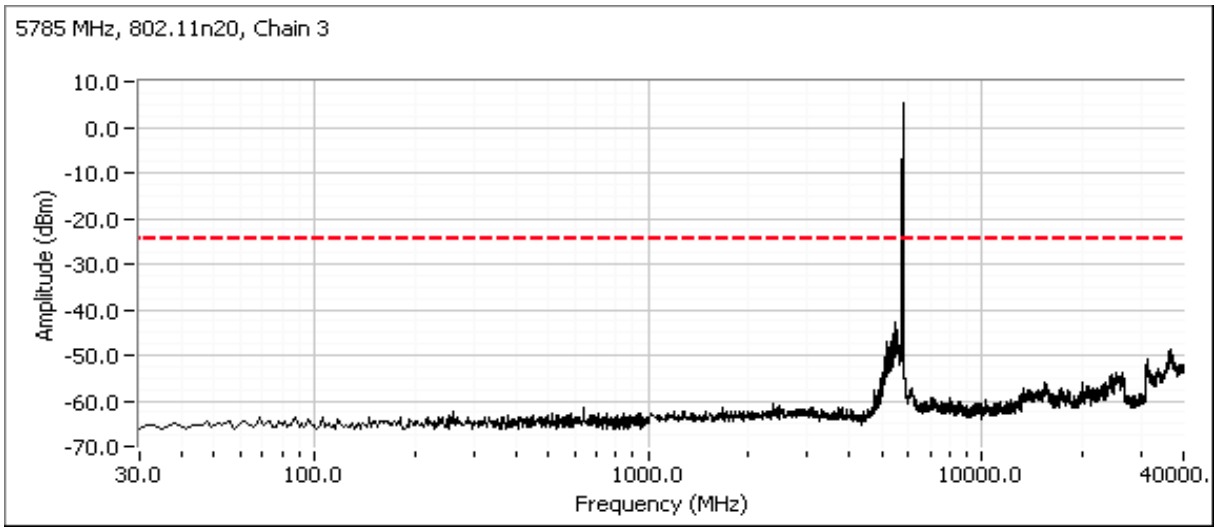
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Plots for center channel

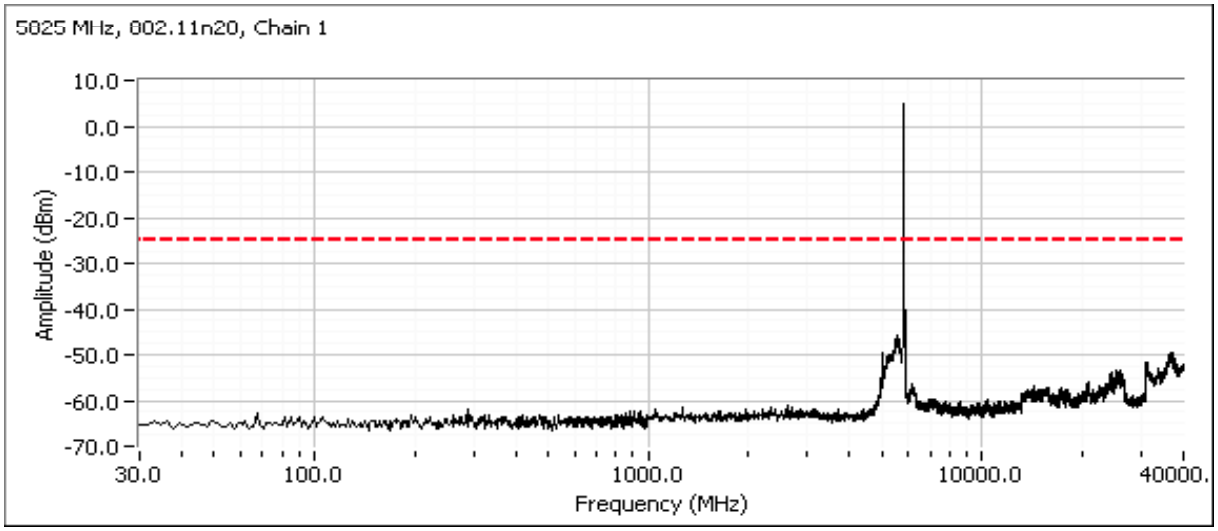




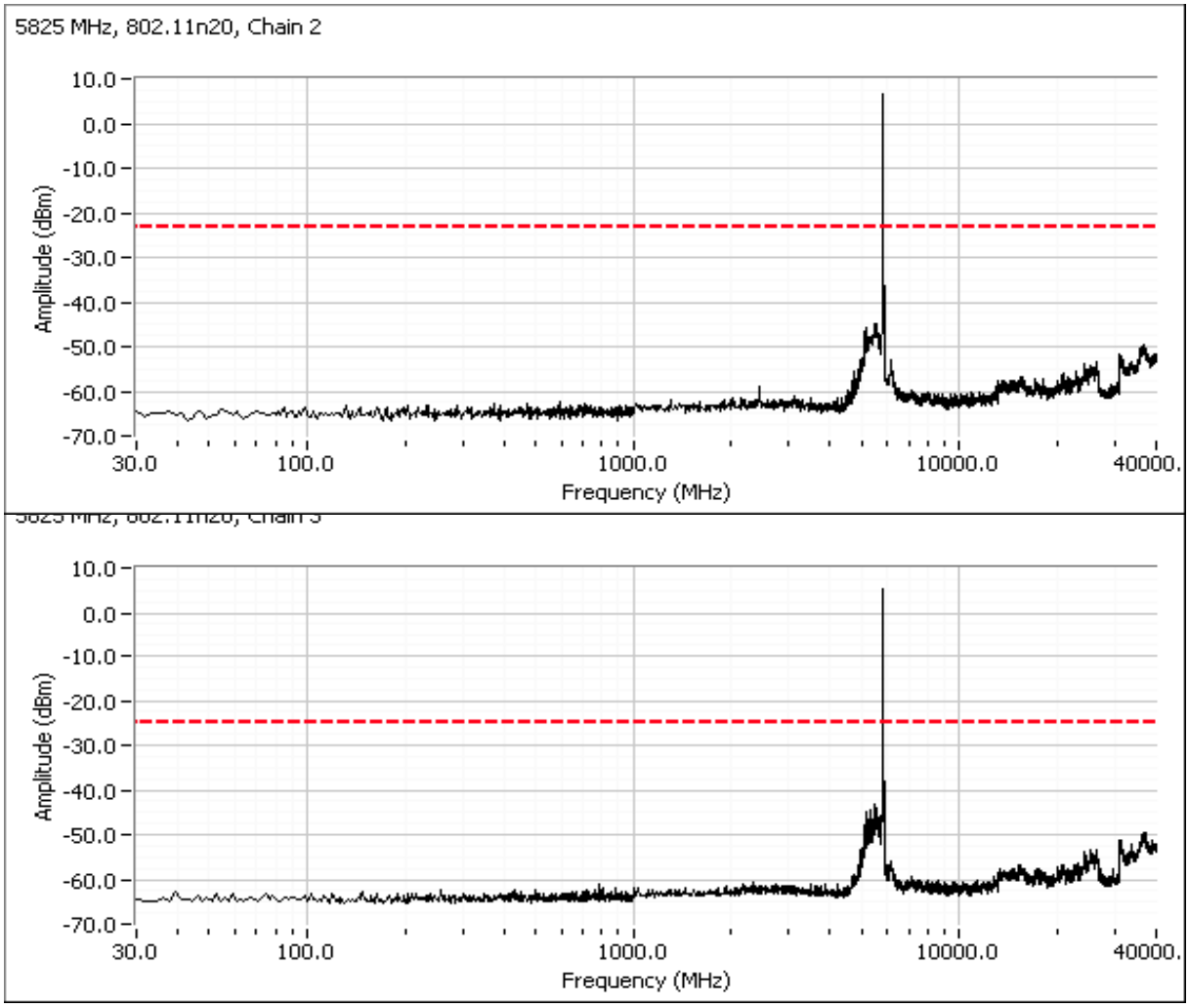
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Plots for high channel

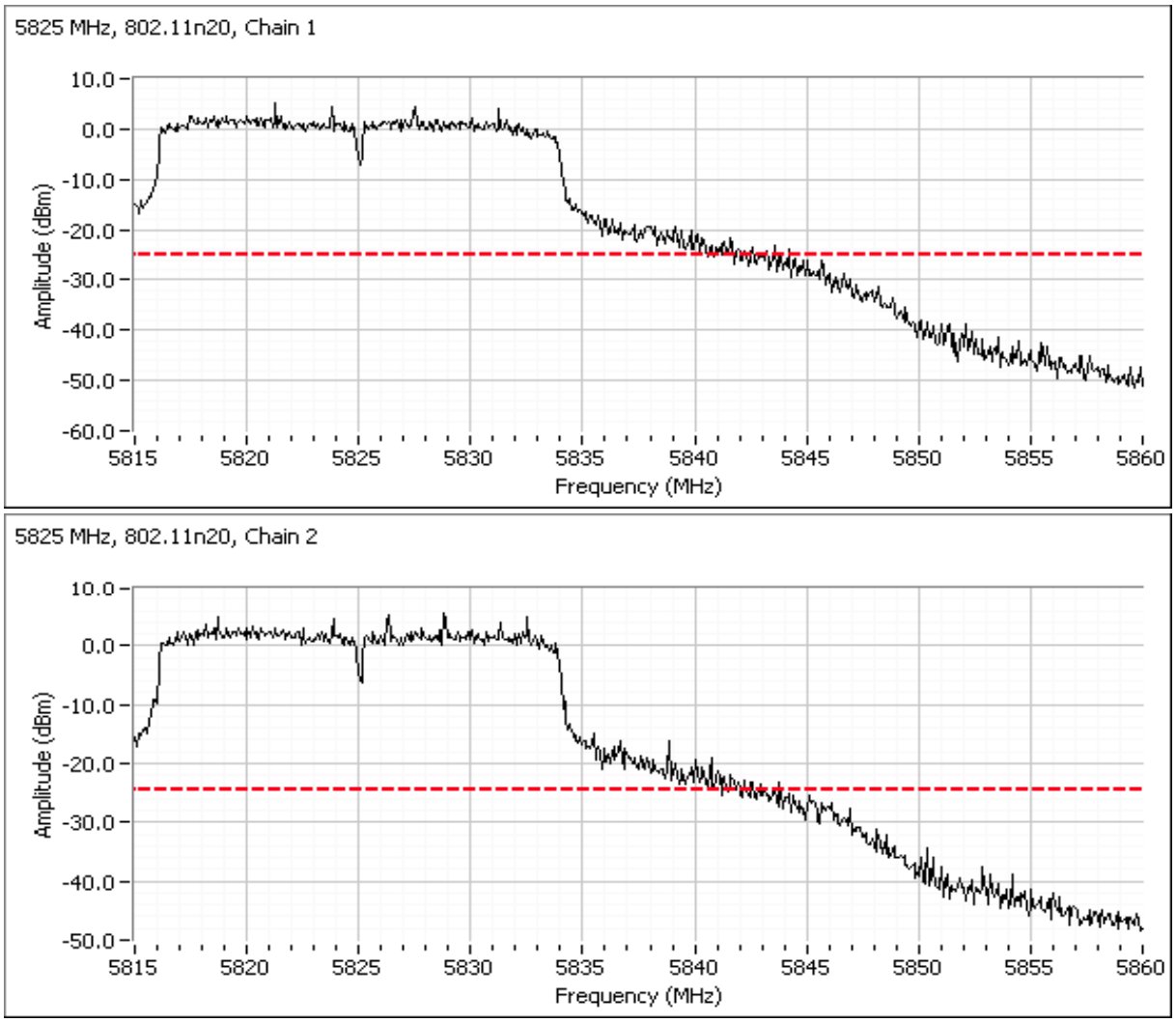


Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

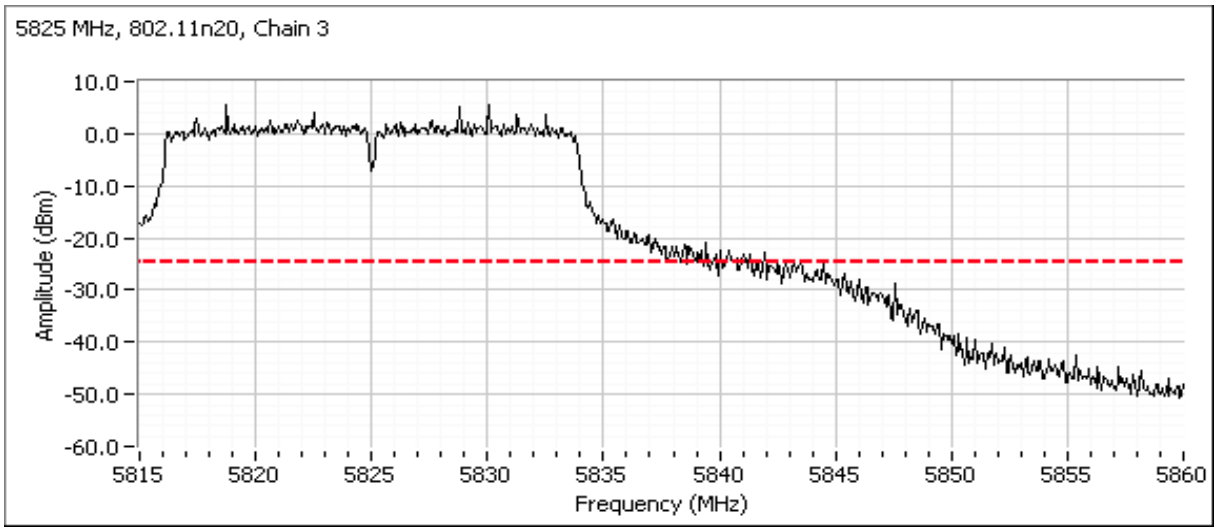


Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Additional plot from 5820 - 5860 MHz showing compliance with -30dBc at the band edge.

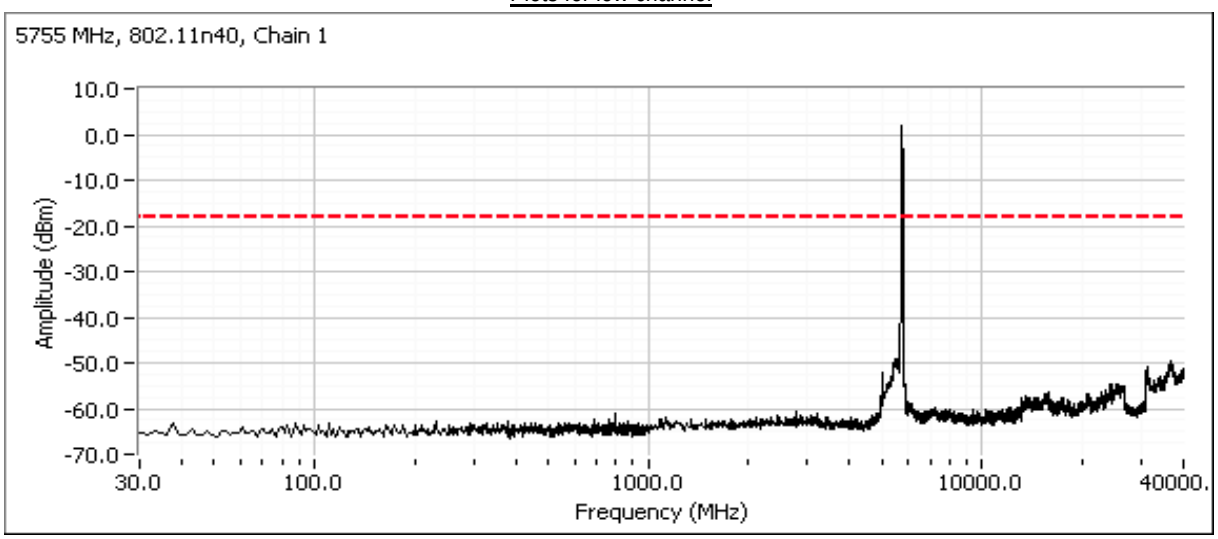


Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

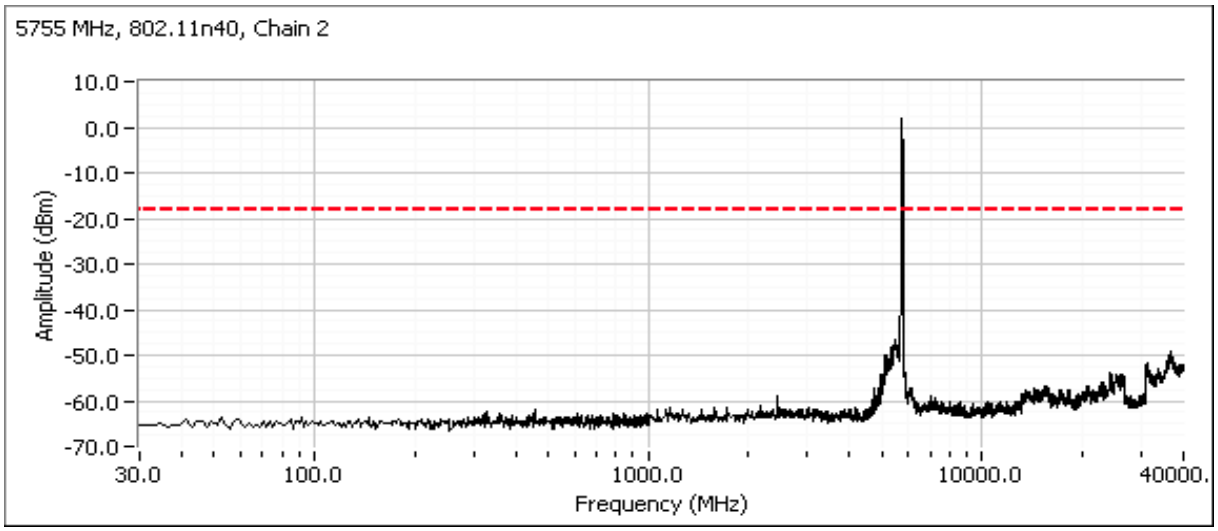


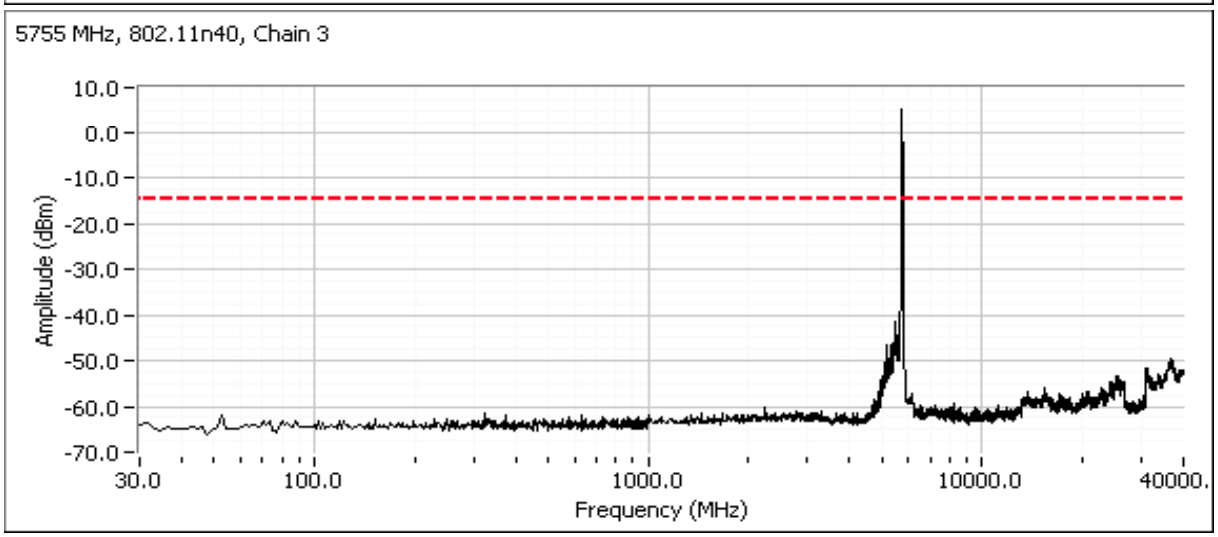
802.11n40

Plots for low channel



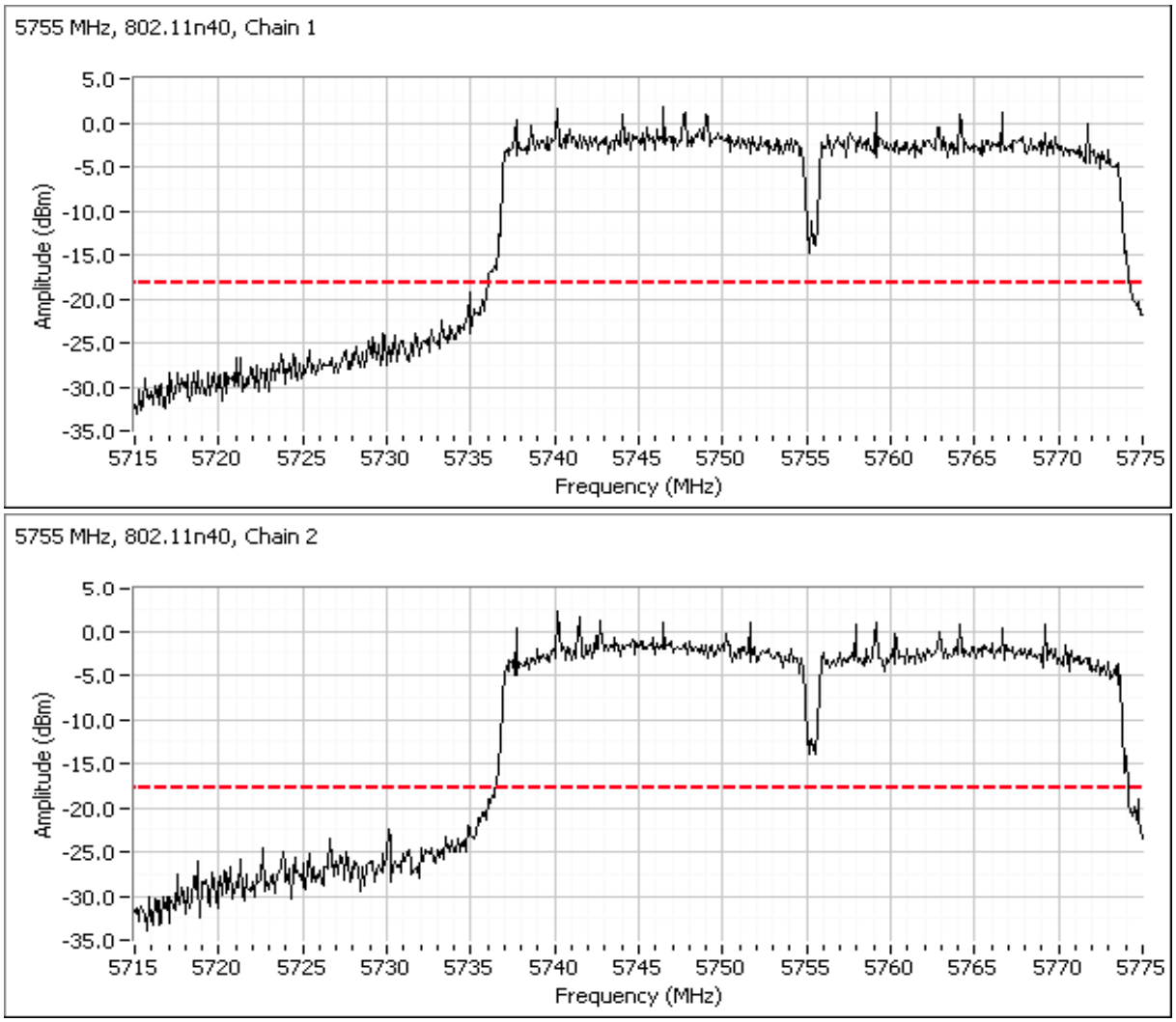
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



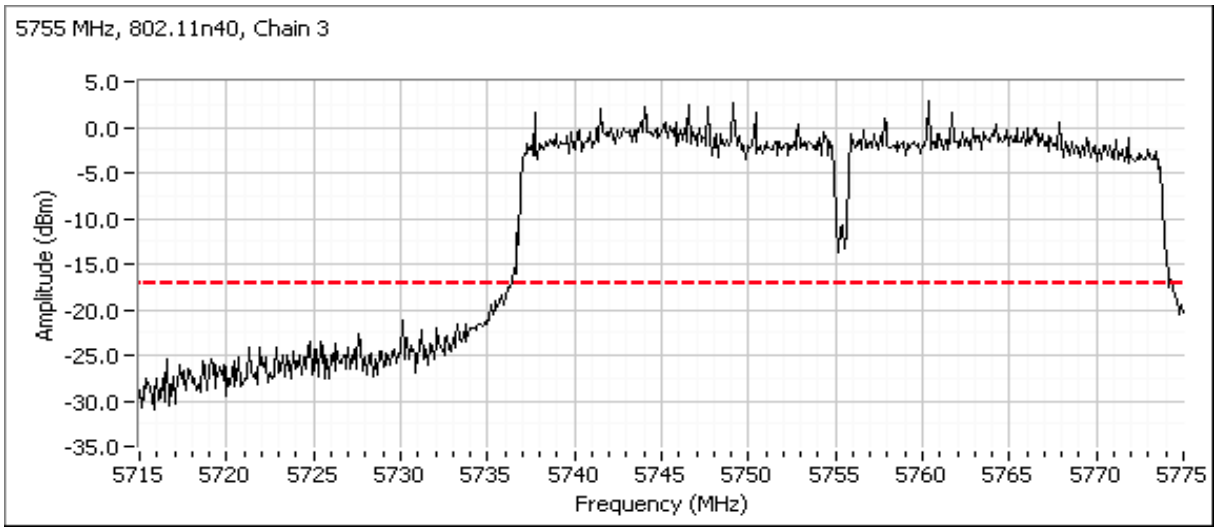


Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

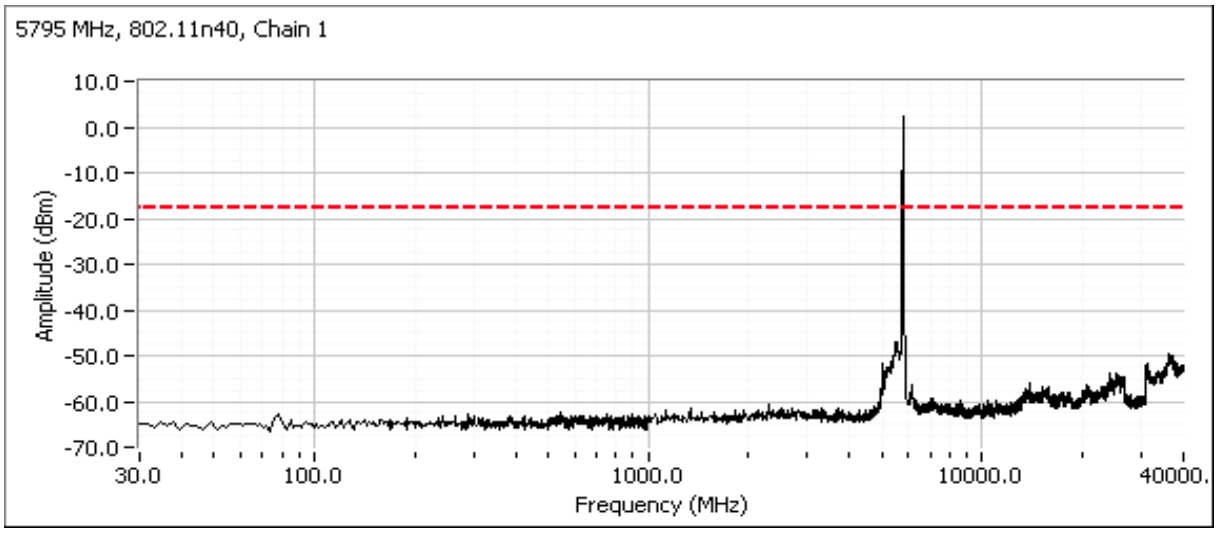
Additional plot from 5715 - 5755 MHz showing compliance with -20dBc at the band edge.



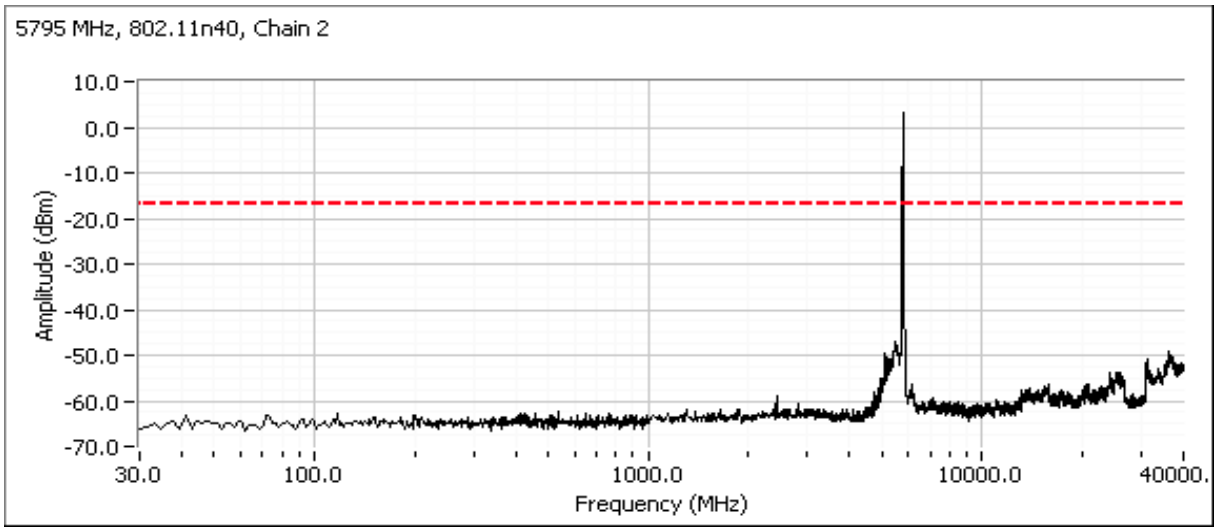
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

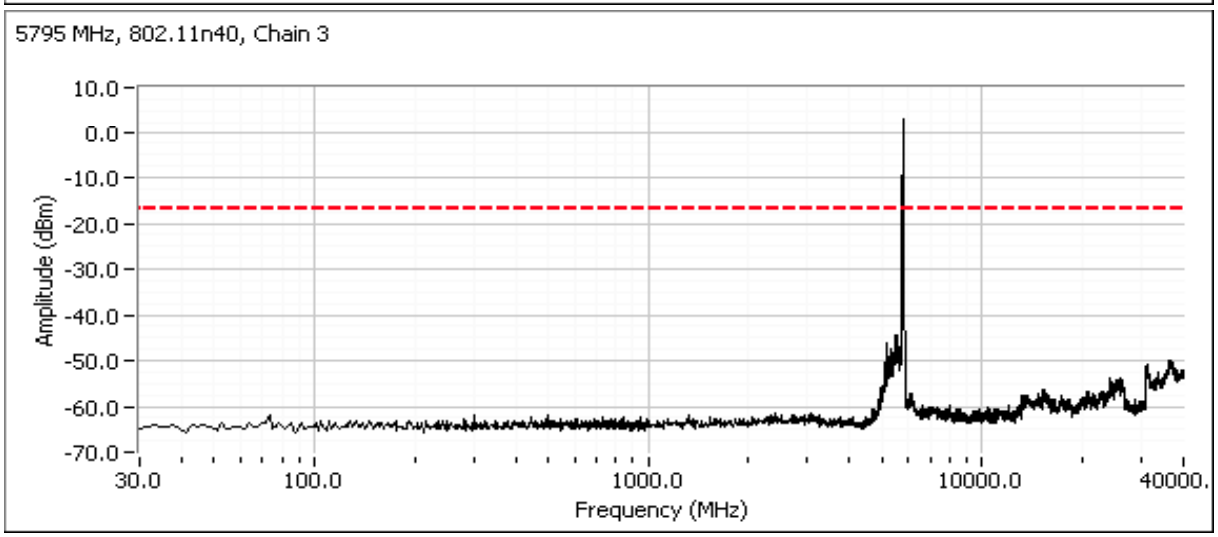


Plots for high channel



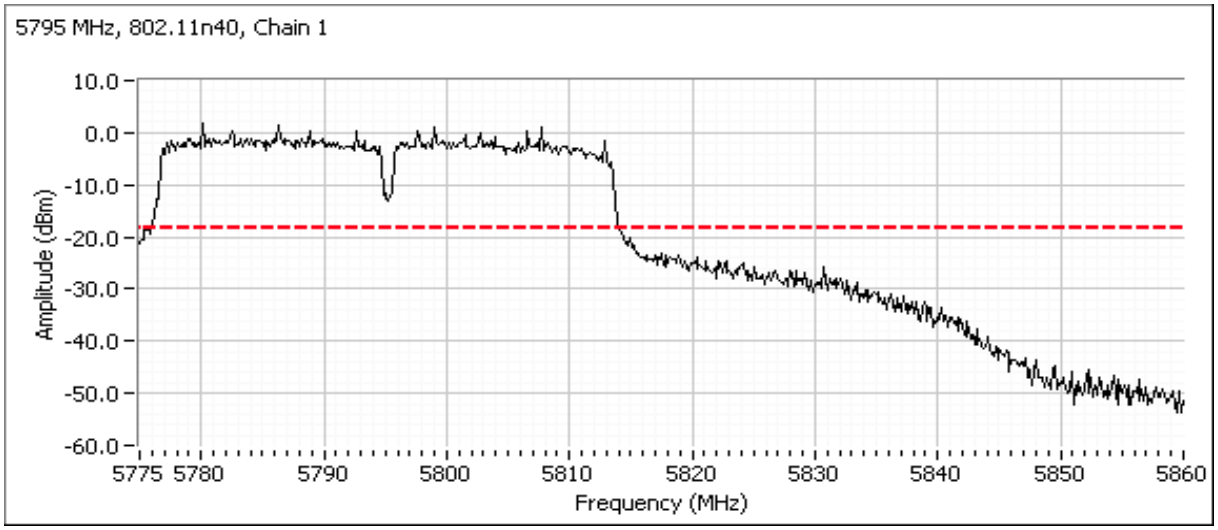
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

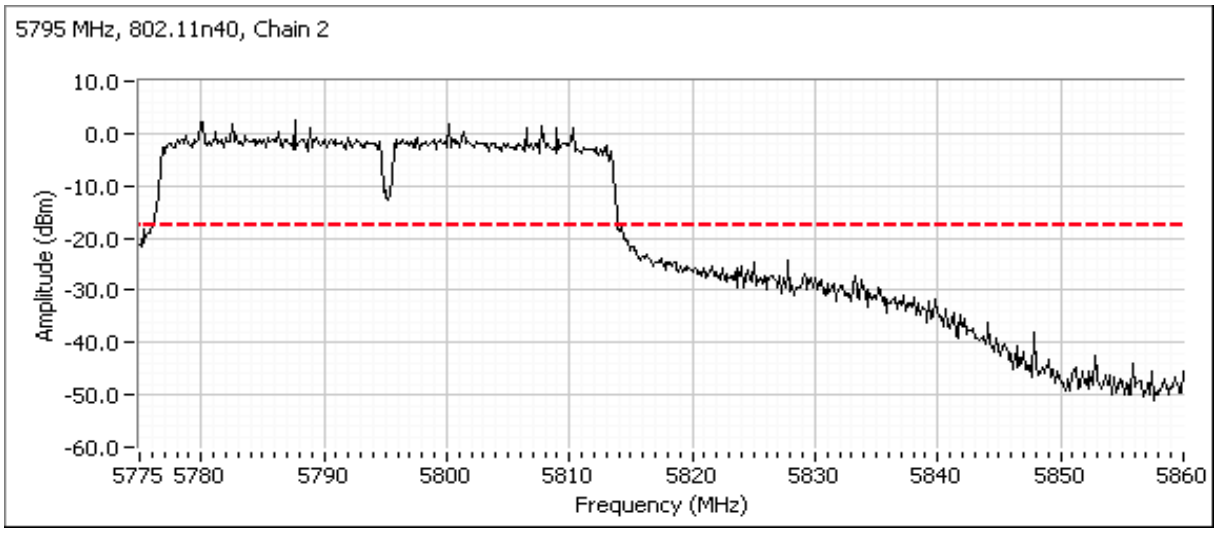




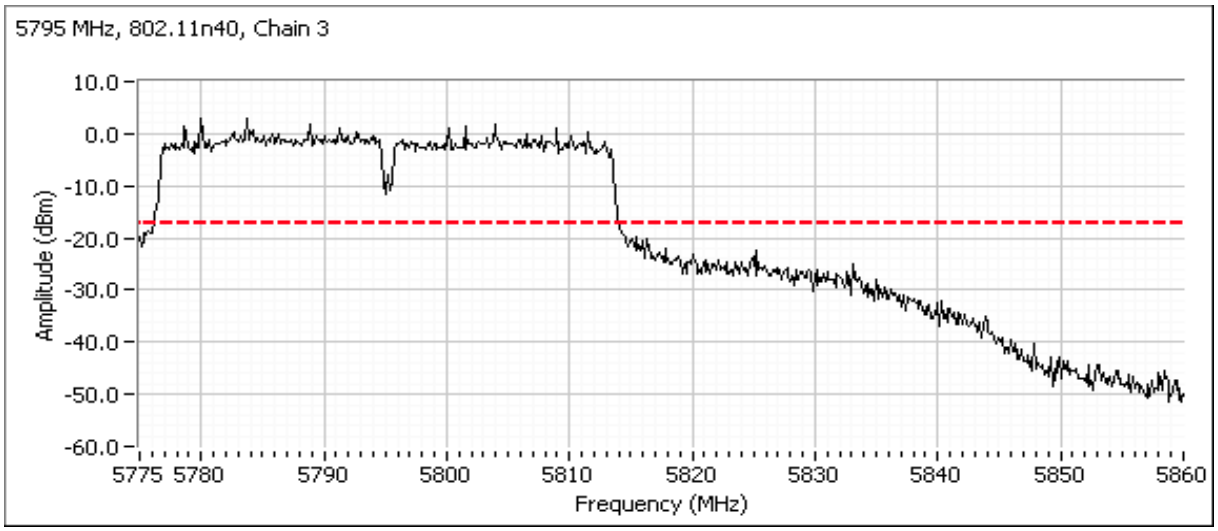
Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Additional plot from 5820 - 5860 MHz showing compliance with -20dBc at the band edge.





Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11a mode

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: 2/26/2013
Test Engineer: Rafael Varelas
Test Location: FT Lab 4b

Config. Used: 1
Config Change: None
EUT Voltage: POE

General Test Configuration

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

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

Ambient Conditions:

Temperature: 20.5 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11a)	15.247(b)	Pass	21.7 dBm

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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Notes

All measurements performed at the antenna port

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used:	No
ART GUI Boot File:	-
	-
ART GUI Calibration file:	-
	-
Command Line Script:	3710e Pilot_115942 boot and initialize all 3 radios to NART Command Line Interface from 15T - HIGH POWER

EUT S/N: 3706123503115942

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11a

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11a
Transmitted signal on chain is coherent ? yes

5745 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	17.4	16.6	16.8		21.7 dBm	0.149 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	19.4	18.6	18.8		28.5 dBm	0.706 W		

5785 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	17.2	16.1	16.5		21.4 dBm	0.138 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	19.2	18.1	18.5		28.2 dBm	0.656 W		

5825 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.1	17	16.5		21.6 dBm	0.146 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2		6.8 dBi		Pass	
eirp (dBm) Note 2	19.1	19	18.5		28.4 dBm	0.695 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b:
Antenna: 5dBi Sector

5745 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		14.0						
Output Power (dBm) Note 1	14.2	13.7	13.7		18.6 dBm	0.073 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	19.2	18.7	18.67		28.4 dBm	0.693 W		

5785 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		15.0						
Output Power (dBm) Note 1	15.3	14.2	14.6		19.5 dBm	0.088 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	20.26	19.2	19.56		29.2 dBm	0.839 W		

5825 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		14.5						
Output Power (dBm) Note 1	14.6	14.1	13.4		18.8 dBm	0.076 W	26.2 dBm	0.420 W
Antenna Gain (dBi) Note 2	5	5	5		9.8 dBi		Pass	
eirp (dBm) Note 2	19.6	19.1	18.4		28.6 dBm	0.725 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 4dBi Panel

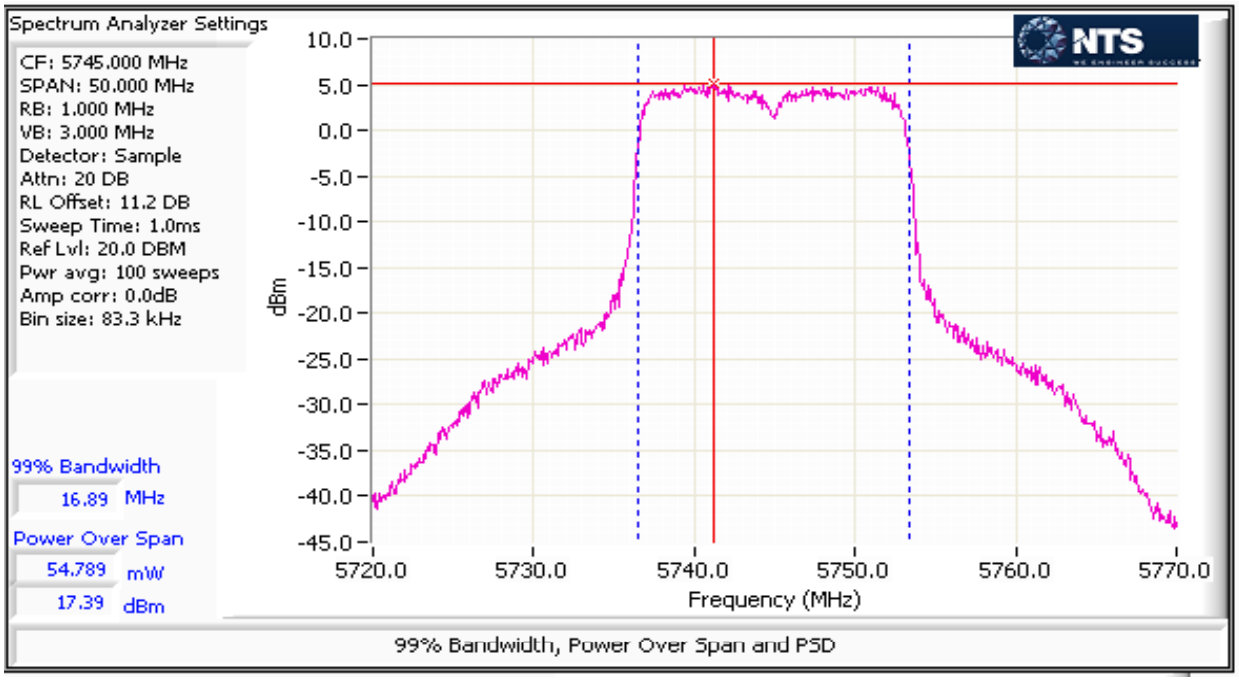
5745 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	17.4	16.6	16.8		21.7 dBm	0.149 W	27.2 dBm	0.528 W
Antenna Gain (dBi) Note 2	4	4	4		8.8 dBi		Pass	
eirp (dBm) Note 2	21.4	20.6	20.8		30.5 dBm	1.119 W		

5785 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.0							
Output Power (dBm) Note 1	17.2	16.1	16.5		21.4 dBm	0.138 W	27.2 dBm	0.528 W
Antenna Gain (dBi) Note 2	4	4	4		8.8 dBi		Pass	
eirp (dBm) Note 2	21.2	20.1	20.5		30.2 dBm	1.039 W		

5825 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.1	17	16.5		21.6 dBm	0.146 W	27.2 dBm	0.528 W
Antenna Gain (dBi) Note 2	4	4	4		8.8 dBi		Pass	
eirp (dBm) Note 2	21.1	21	20.5		30.4 dBm	1.101 W		

Note 1:	Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz (option #1 in KDB 558074). Spurious limit becomes -30dBc.
Note 2:	As there is coherency between chains the effective antenna gain is the sum of the individual antenna gains and the eirp is the product of the total power and the effective antenna gain
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11n20 mode

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: 2/26/2013
Test Engineer: Rafael Varelas
Test Location: FT Lab 4b

Config. Used: 1
Config Change: None
EUT Voltage: POE

General Test Configuration

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

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

Ambient Conditions:

Temperature: 20.5 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11n20)	15.247(b)	Pass	21.8 dBm

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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Notes

All measurements performed at the antenna port

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used:	No
ART GUI Boot File:	-
	-
ART GUI Calibration file:	-
	-
Command Line Script:	3710e Pilot_115942 boot and initialize all 3 radios to NART Command Line Interface from 15T - HIGH POWER

EUT S/N: 3706123503115942

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11n20

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11n20
Transmitted signal on chain is coherent ? No

5745 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.4	16.3	16.7		21.6 dBm	0.143 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	19.35	18.29	18.67		23.6 dBm	0.227 W		

5785 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.2	17.3	16.7		21.8 dBm	0.152 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	19.19	19.27	18.7		23.8 dBm	0.242 W		

5825 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.1	17.1	16.4		21.7 dBm	0.146 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	19.1	19.1	18.4		23.7 dBm	0.232 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b:
Antenna: 5dBi Sector

5745 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		14.5						
Output Power (dBm) Note 1	14.7	13.4	13.9		18.8 dBm	0.076 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	19.7	18.44	18.9		23.8 dBm	0.241 W		

5785 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		15.5						
Output Power (dBm) Note 1	15.6	14.6	14.4		19.7 dBm	0.093 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	20.64	19.59	19.4		24.7 dBm	0.294 W		

5825 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		15.0						
Output Power (dBm) Note 1	14.7	14.5	13.9		19.1 dBm	0.082 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	19.7	19.47	18.86		24.1 dBm	0.259 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 4dBi Panel

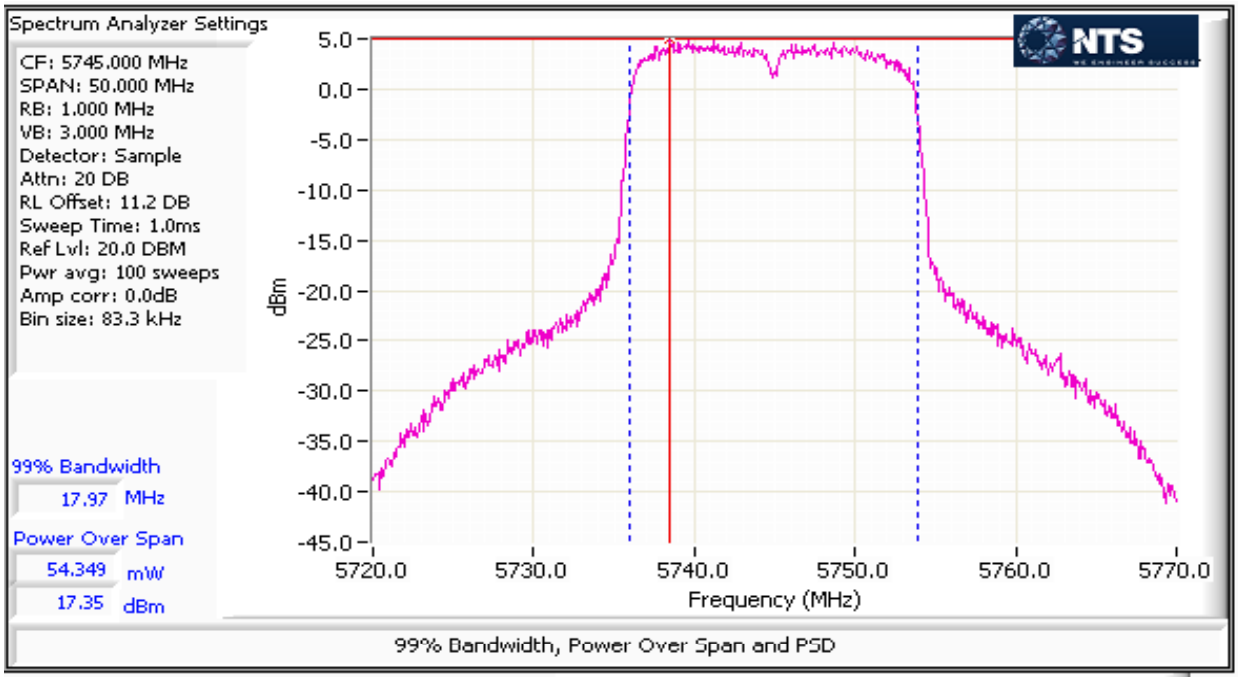
5745 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.4	16.3	16.7		21.6 dBm	0.143 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	4	4	4			4.0 dBi	Pass	
eirp (dBm) Note 2	21.35	20.29	20.67		25.6 dBm	0.360 W		

5785 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.2	17.3	16.7		21.8 dBm	0.152 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	4	4	4			4.0 dBi	Pass	
eirp (dBm) Note 2	21.19	21.27	20.7		25.8 dBm	0.383 W		

5825 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	18.5							
Output Power (dBm) Note 1	17.1	17.1	16.4		21.7 dBm	0.146 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	4	4	4			4.0 dBi	Pass	
eirp (dBm) Note 2	21.1	21.1	20.4		25.7 dBm	0.367 W		

Note 1:	Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz (option #1 in KDB 558074). Spurious limit becomes -30dBc.
Note 2:	As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain.
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power - 802.11n40 mode

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: 2/26/2013
Test Engineer: Rafael Varelas
Test Location: FT Lab 4b

Config. Used: 1
Config Change: None
EUT Voltage: POE

General Test Configuration

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

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

Ambient Conditions:

Temperature: 20.5 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Pwr setting	Avg Pwr	Test Performed	Limit	Pass / Fail	Result / Margin
Chain A + B + C						
1			Output Power (802.11n40)	15.247(b)	Pass	24.8 dBm

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:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Notes

All measurements performed at the antenna port

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used:	No
ART GUI Boot File:	-
	-
ART GUI Calibration file:	-
	-
Command Line Script:	3710e Pilot_115942 boot and initialize all 3 radios to NART Command Line Interface from 15T - HIGH POWER

EUT S/N: 3706123503115942

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1: Output Power - Chain A + B + C - 802.11n40

Run #1a:
Antenna: 2dBi Omni

Operating Mode: 802.11n40
Transmitted signal on chain is coherent ? No

5755 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	15.0							
Output Power (dBm) Note 1	20.4	19.3	20.3		24.8 dBm	0.302 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	22.4	21.3	22.3		26.8 dBm	0.479 W		

5795 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	15.0							
Output Power (dBm) Note 1	20.2	18.3	20.2		24.4 dBm	0.277 W	29.2 dBm	0.837 W
Antenna Gain (dBi) Note 2	2	2	2			2.0 dBi	Pass	
eirp (dBm) Note 2	22.2	20.3	22.2		26.4 dBm	0.439 W		

Run #1b:
Antenna: 5dBi Sector

5755 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	14.5							
Output Power (dBm) Note 1	20.1	18.4	19.8		24.3 dBm	0.267 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	25.1	23.4	24.8		29.3 dBm	0.844 W		

5795 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	14.0							
Output Power (dBm) Note 1	19.6	18.5	19.5		24.0 dBm	0.251 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	5	5	5			5.0 dBi	Pass	
eirp (dBm) Note 2	24.6	23.5	24.5		29.0 dBm	0.794 W		

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c:
Antenna: 4dBi Panel

5755 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		15.0						
Output Power (dBm) Note 1	20.4	19.3	20.3		24.8 dBm	0.302 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	4	4	4			4.0 dBi	Pass	
eirp (dBm) Note 2	24.4	23.3	24.3		28.8 dBm	0.758 W		

5795 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3		15.0						
Output Power (dBm) Note 1	20.2	18.3	20.2		24.4 dBm	0.277 W	30.0 dBm	1.000 W
Antenna Gain (dBi) Note 2	4	4	4			4.0 dBi	Pass	
eirp (dBm) Note 2	24.2	22.3	24.2		28.4 dBm	0.696 W		

Note 1:	Output power measured using a peak power meter, spurious limit is -20dBc.
Note 2:	As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain.
Note 3:	Power setting - if a single number the same power setting was used for each chain. If multiple numbers the power setting for each chain is separated by a comma (e.g. x,y would indicate power setting x for chain 1, power setting y for chain 2.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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

Ambient Conditions:

Temperature: 20.6 °C
Rel. Humidity: 35 %

Summary of Results - Device Operating in the DTS Bands

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run #1	802.11b	2412 MHz	21	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	47.0 dBµV/m @ 5453.2 MHz (-7.0 dB)
		5745 MHz	19				
	802.11a	2437 MHz	21	-			48.1 dBµV/m @ 5400.1 MHz (-5.9 dB)
		5785 MHz	19				
	Chain A+B+C	2462 MHz	21	-			48.2 dBµV/m @ 5040.0 MHz (-5.8 dB)
		5825 MHz	19				
Run # 2	802.11g	2412 MHz	19	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	48.2 dBµV/m @ 5040.0 MHz (-5.8 dB)
		5745 MHz	19				
	802.11a	2437 MHz	19	-			48.0 dBµV/m @ 3249.4 MHz (-6.0 dB)
		5785 MHz	19				
	Chain A+B+C	2462 MHz	19	-			48.1 dBµV/m @ 5080.0 MHz (-5.9 dB)
		5825 MHz	19				
Run # 3	802.11n20	2412 MHz	20	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	48.5 dBµV/m @ 3215.9 MHz (-5.5 dB)
		5745 MHz	20				
	802.11n20	2437 MHz	20	-			49.0 dBµV/m @ 3249.4 MHz (-5.0 dB)
		5785 MHz	20				
	Chain A+B+C	2462 MHz	20	-			49.4 dBµV/m @ 3282.7 MHz (-4.6 dB)
		5825 MHz	20				

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 4	802.11n40	2422MHz	16	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	48.7 dBµV/m @ 3229.2 MHz (-5.3 dB)
		5755MHz	19				
	802.11n40	2437MHz	16	-			48.0 dBµV/m @ 3249.2 MHz (-6.0 dB)
		5795MHz	19				
	Chain A+B+C	2452MHz	16	-			46.6 dBµV/m @ 3269.4 MHz (-7.4 dB)
		5795MHz	19				

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
1	Enterasys WS-AI-DX02360	Omni	2.4 & 5.8	2	Indoor	No	No

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.

Notes

Antenna: antenna(s) connected
Duty Cycle: 99.0%

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No
ART GUI Boot File: -
-
ART GUI Calibration file: -
-
Command Line Script: 3710e 2nd Pilot_925942 boot and initialize all 3 radios to NART Command Line Interface - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1, Radiated Spurious Emissions, 1-40GHz, 802.11b/802.11a, Chain A+B+C
Run #1a, EUT on Channel #1 2412MHz - 802.11b and Channel #149 5745MHz - 802.11a - Chain A+B+C

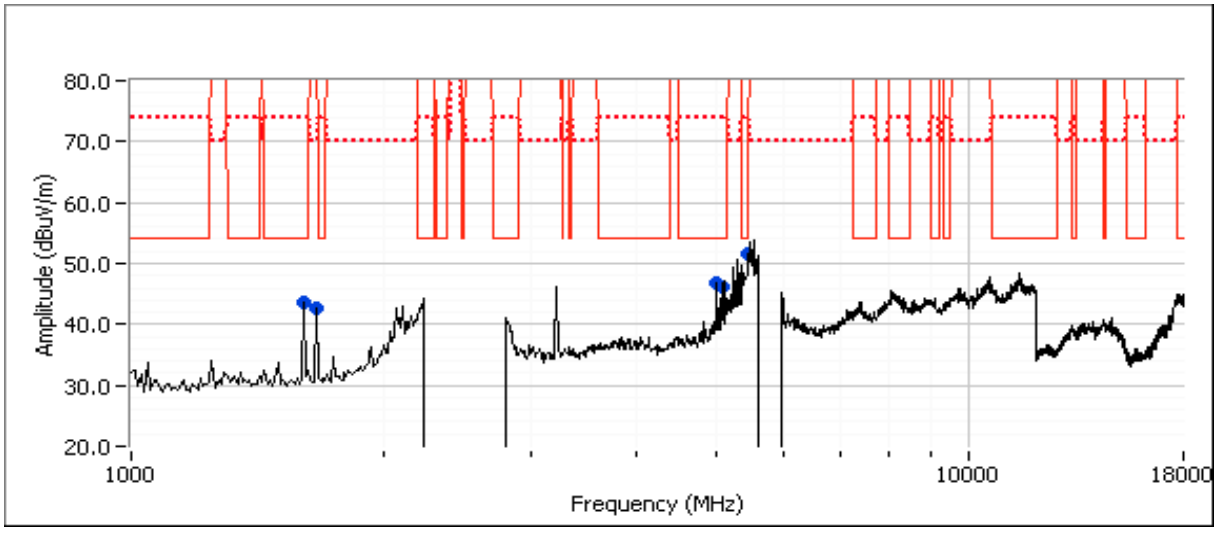
Date of Test: 1/30/2013 Test Location: FT7
Test Engineer: Rafael Varelas Config Change: None

Radio	Freq	Power Setting
1	5745 MHz	19.0
2	2412 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5453.170	47.0	V	54.0	-7.0	AVG	111	1.5	
5448.320	58.6	V	74.0	-15.4	PK	111	1.5	
1608.050	44.2	V	54.0	-9.8	AVG	313	1.1	
1608.070	47.1	V	74.0	-26.9	PK	313	1.1	
5080.040	44.1	V	54.0	-9.9	AVG	289	1.0	
5079.930	52.2	V	74.0	-21.8	PK	289	1.0	
1666.640	41.4	H	54.0	-12.6	AVG	117	1.0	
1666.780	45.3	H	74.0	-28.7	PK	117	1.0	
5000.080	45.0	V	54.0	-9.0	AVG	12	1.1	
5000.000	52.9	V	74.0	-21.1	PK	12	1.1	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

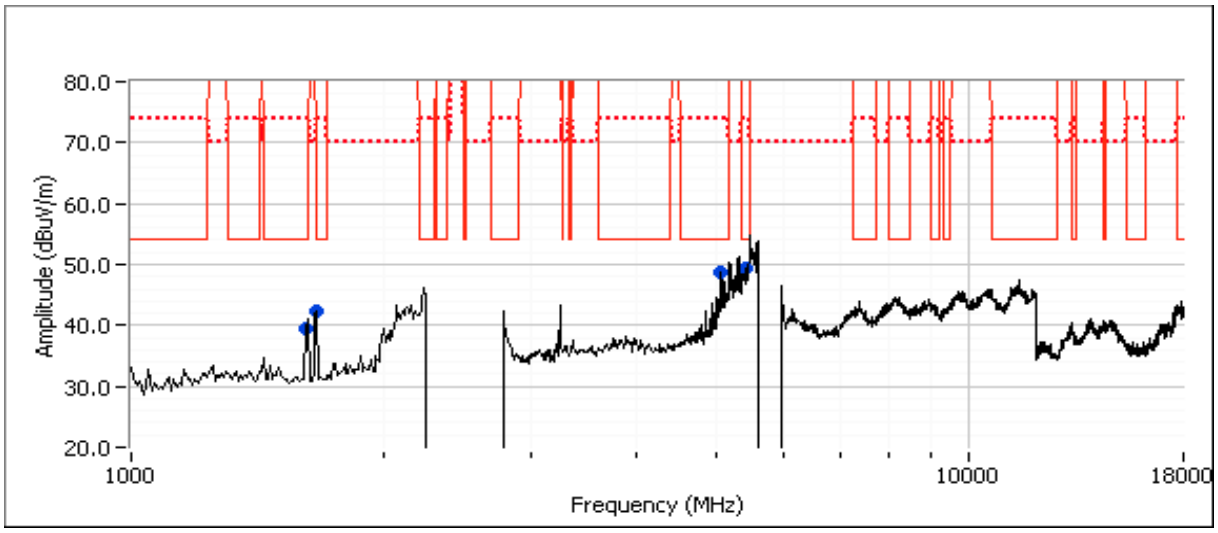
Run #1b, EUT on Channel #6 2437MHz - 802.11b and Channel #157 5785MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	19.0
2	2437 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5400.080	48.1	V	54.0	-5.9	AVG	259	1.0	
5400.100	59.1	V	74.0	-14.9	PK	259	1.0	
5040.060	48.0	V	54.0	-6.0	AVG	4	1.0	
5040.070	54.9	V	74.0	-19.1	PK	4	1.0	
1624.680	39.7	V	54.0	-14.3	AVG	134	1.5	
1624.630	44.2	V	74.0	-29.8	PK	134	1.5	
1666.710	39.5	H	54.0	-14.5	AVG	242	1.0	
1666.510	44.6	H	74.0	-29.4	PK	242	1.0	

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

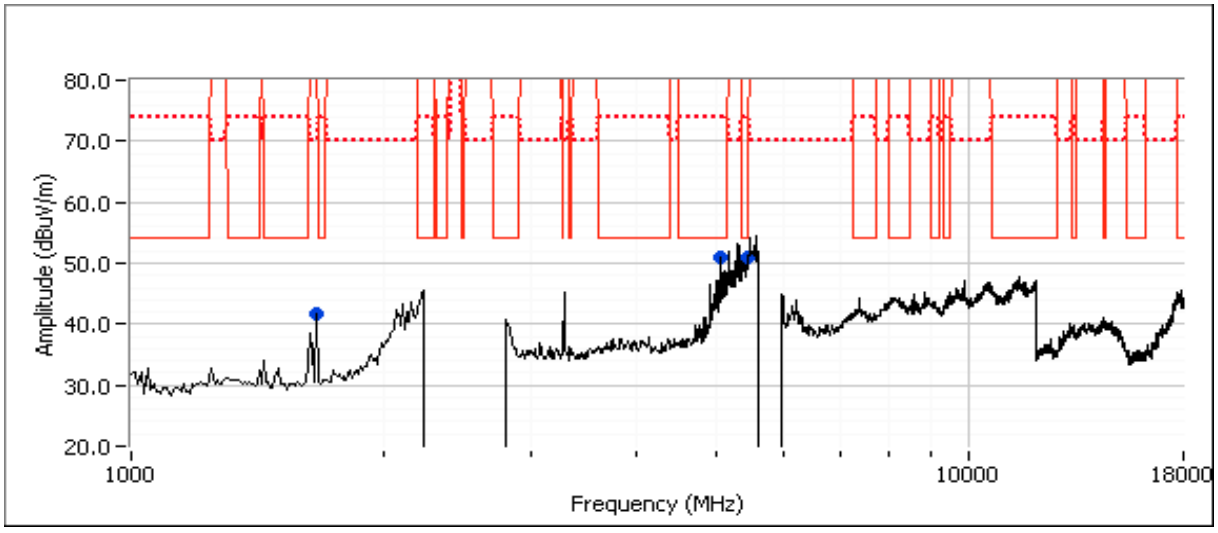
Run #1c, EUT on Channel #11 2462MHz - 802.11b and Channel #165 5825MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	19.0
2	2462 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5040.040	48.2	V	54.0	-5.8	AVG	110	1.3	
5040.430	55.2	V	74.0	-18.8	PK	110	1.3	
1666.670	41.3	V	54.0	-12.7	AVG	123	1.0	
1666.580	45.0	V	74.0	-29.0	PK	123	1.0	
5456.790	48.2	V	54.0	-5.8	AVG	2	1.0	
5449.140	60.2	V	74.0	-13.8	PK	2	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #2, Radiated Spurious Emissions, 1-40GHz, 802.11g/802.11a, Chain A+B+C

Run #2a, EUT on Channel #1 2412MHz - 802.11g and Channel #149 5745MHz - 802.11a - Chain A+B+C

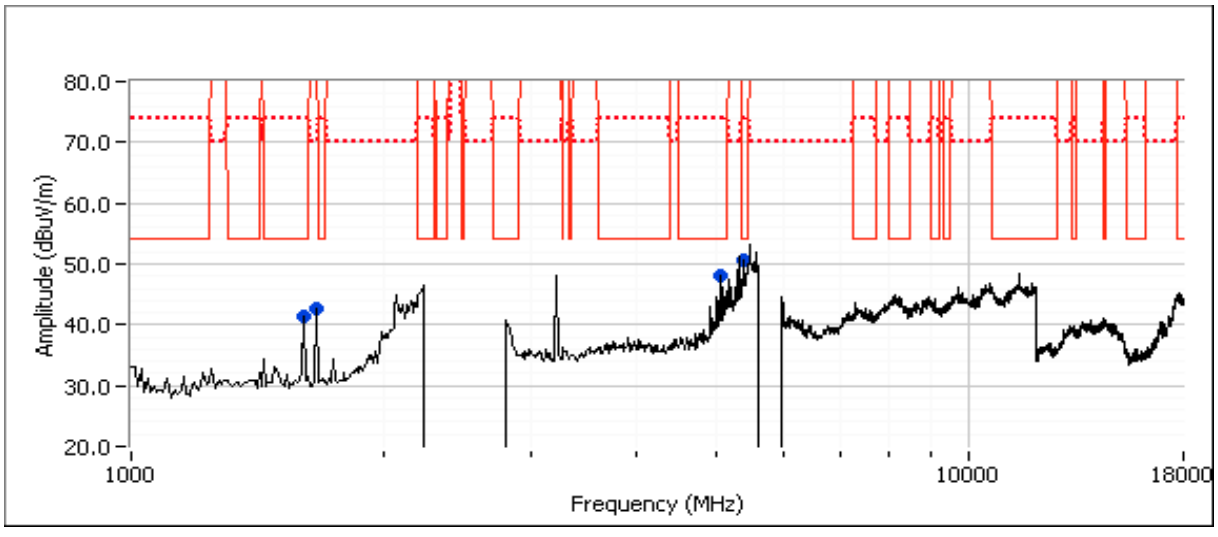
Date of Test: 1/30/13&1/31/13& 2/1/13 Test Location: FT7
Test Engineer: Rafael Varelas& Jack Liu Config Change: None

Radio	Freq	Power Setting
1	5745 MHz	19.0
2	2412 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5040.020	48.2	V	54.0	-5.8	AVG	112	1.6	
5039.930	54.2	V	74.0	-19.8	PK	112	1.6	
1666.690	41.0	V	54.0	-13.0	AVG	120	1.0	
1666.640	45.0	V	74.0	-29.0	PK	120	1.0	
5400.120	47.6	V	54.0	-6.4	AVG	251	1.0	
5400.060	56.5	V	74.0	-17.5	PK	251	1.0	
1608.000	40.5	V	54.0	-13.5	AVG	306	1.0	
1608.170	45.5	V	74.0	-28.5	PK	306	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

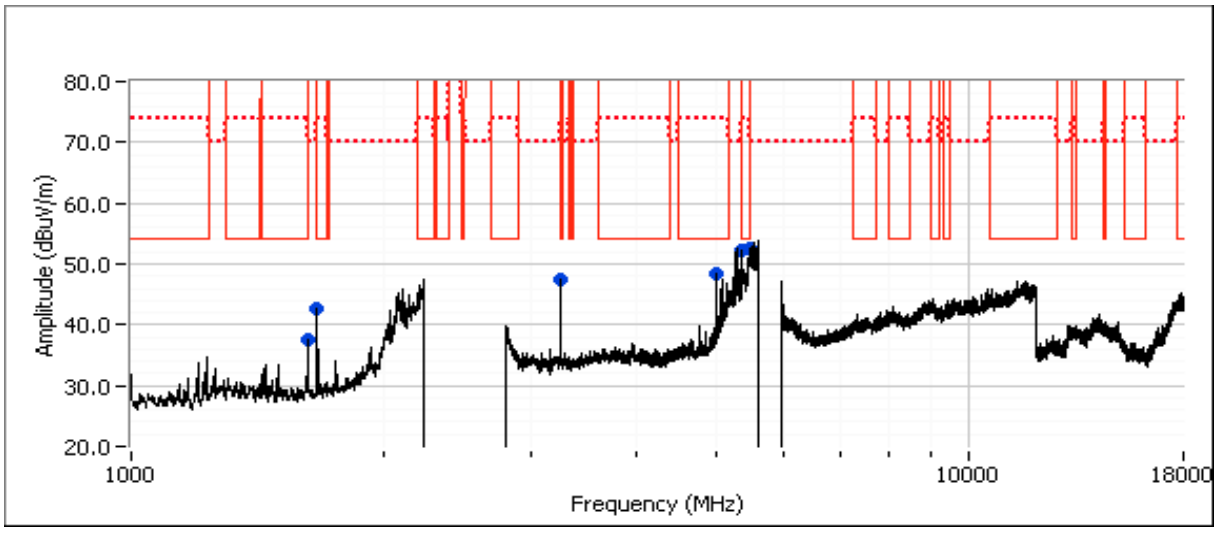
Run #2b, EUT on Channel #6 2437MHz - 802.11g and Channel #157 5785MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	19.0
2	2437 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3249.380	48.0	V	54.0	-6.0	PK	22	1.0	Note 2
5400.030	45.9	V	54.0	-8.1	AVG	112	1.9	
5394.670	51.4	V	74.0	-22.6	PK	112	1.9	
1666.720	40.0	V	54.0	-14.0	AVG	64	1.3	
1666.570	42.4	V	74.0	-31.6	PK	64	1.3	
4999.990	44.2	V	54.0	-9.8	AVG	115	1.8	
5000.020	51.1	V	74.0	-22.9	PK	115	1.8	
5360.090	43.6	V	54.0	-10.4	AVG	114	1.9	
5360.660	52.6	V	74.0	-21.4	PK	114	1.9	
1624.660	37.3	V	54.0	-16.7	AVG	305	1.0	
1624.560	41.0	V	74.0	-33.0	PK	305	1.0	

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

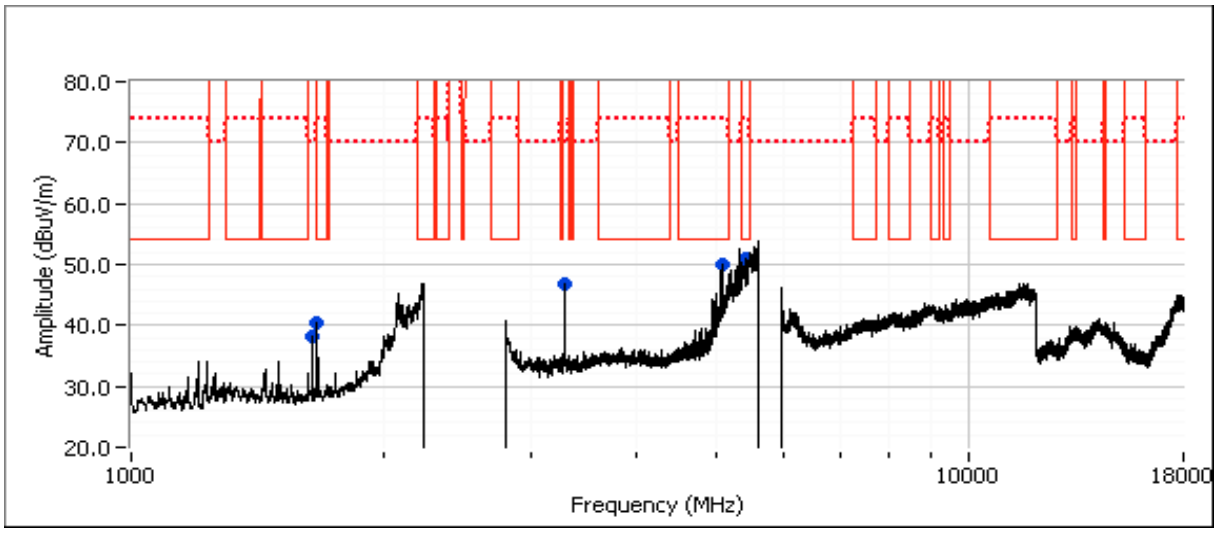
Run #2c, EUT on Channel #11 2462MHz - 802.11g and Channel #165 5825MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	19.0
2	2462 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5080.010	48.1	V	54.0	-5.9	AVG	111	1.3	
5080.010	52.4	V	74.0	-21.6	PK	111	1.3	
1666.660	39.3	V	54.0	-14.7	AVG	254	1.6	
1666.370	41.7	V	74.0	-32.3	PK	254	1.6	
5400.000	46.2	V	54.0	-7.8	AVG	9	1.0	
5396.800	55.4	V	74.0	-18.6	PK	9	1.0	
1641.260	40.4	V	54.0	-13.6	PK	318	1.0	Note2
3282.430	48.5	V	54.0	-5.5	PK	27	1.0	Note2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3, Radiated Spurious Emissions, 1-40GHz, 802.11n20/802.11n20, Chain A+B+C

Run #3a, EUT on Channel #1 2412MHz - 802.11n20 and Channel #149 5745MHz - 802.11n20 - Chain A+B+C

Date of Test: 1/31/2013& 2/1/13 Test Location: FT7
Test Engineer: Rafael Varelas& Jack Liu Config Change: None

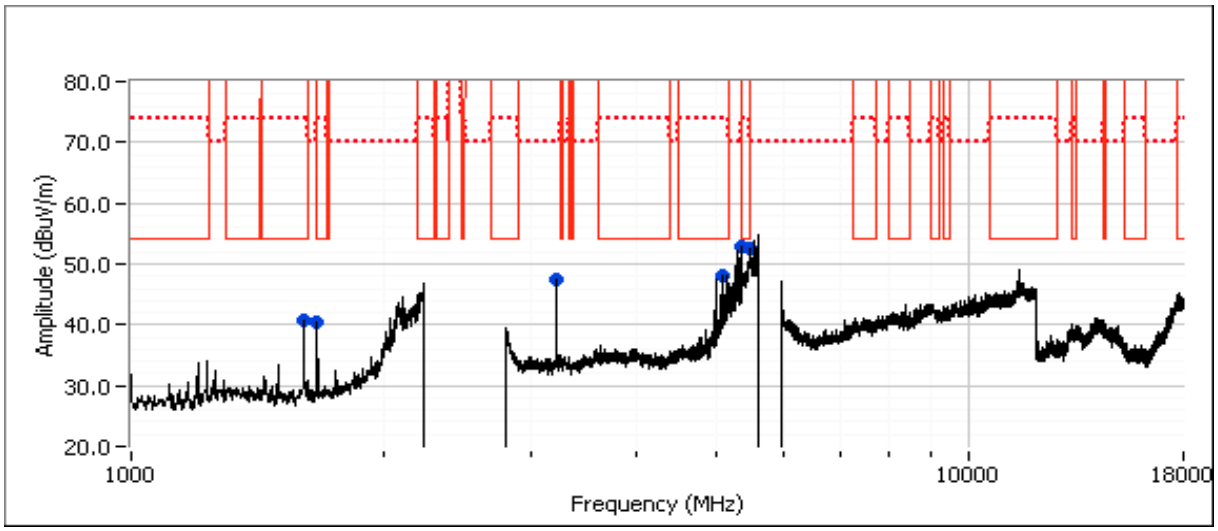
Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3215.940	48.5	V	54.0	-5.5	PK	23	1.0	Note2
5079.990	46.7	V	54.0	-7.3	AVG	121	1.7	
5079.760	51.3	V	74.0	-22.7	PK	121	1.7	
5400.030	45.6	V	54.0	-8.4	AVG	273	1.6	
5451.720	52.5	V	74.0	-21.5	PK	273	1.6	
5399.920	45.9	V	54.0	-8.1	AVG	275	1.6	
5391.980	52.5	V	74.0	-21.5	PK	275	1.6	
1666.620	40.6	V	54.0	-13.4	AVG	62	1.4	
1666.760	41.9	V	74.0	-32.1	PK	62	1.4	
1607.990	40.0	V	54.0	-14.0	AVG	310	1.1	
1608.140	43.6	V	74.0	-30.4	PK	310	1.1	
5359.860	43.4	V	54.0	-10.6	AVG	332	1.1	
5360.520	51.0	V	74.0	-23.0	PK	332	1.1	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

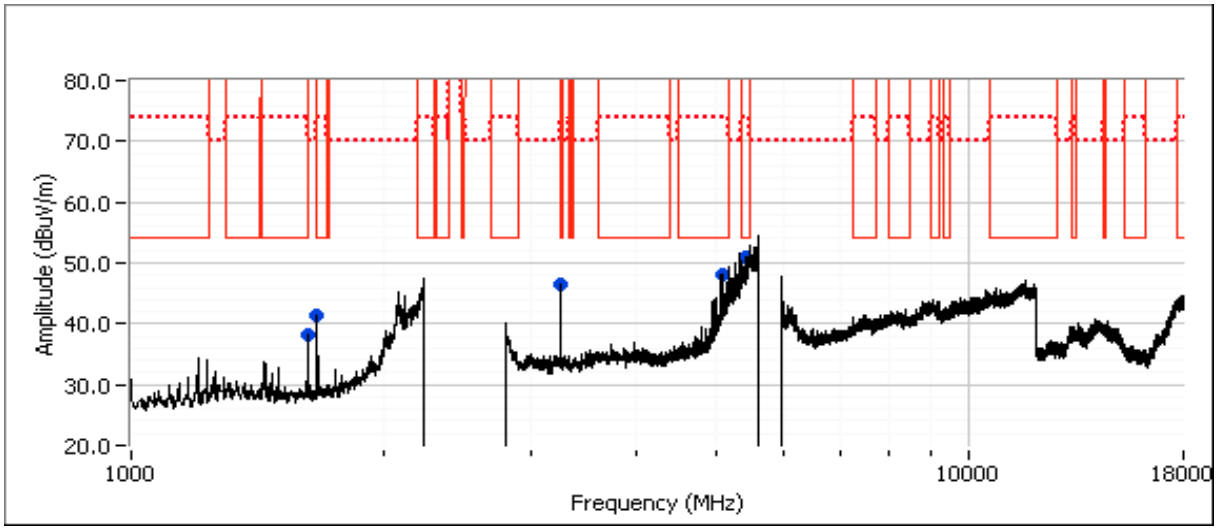
Run #3b: , EUT on Channel #6 2437MHz - 802.11n20 and Channel #157 5785MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	20.0
2	2437 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3249.400	49.0	V	54.0	-5.0	PK	15	1.0	Note2
5079.900	47.4	V	54.0	-6.6	AVG	117	1.9	
5079.670	51.9	V	74.0	-22.1	PK	117	1.9	
5400.000	46.5	V	54.0	-7.5	AVG	7	1.4	
5404.620	54.8	V	74.0	-19.2	PK	7	1.4	
1666.650	37.7	V	54.0	-16.3	AVG	76	1.0	
1666.570	41.2	V	74.0	-32.8	PK	76	1.0	
1624.680	37.1	V	54.0	-16.9	AVG	304	1.0	
1624.900	40.8	V	74.0	-33.2	PK	304	1.0	

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

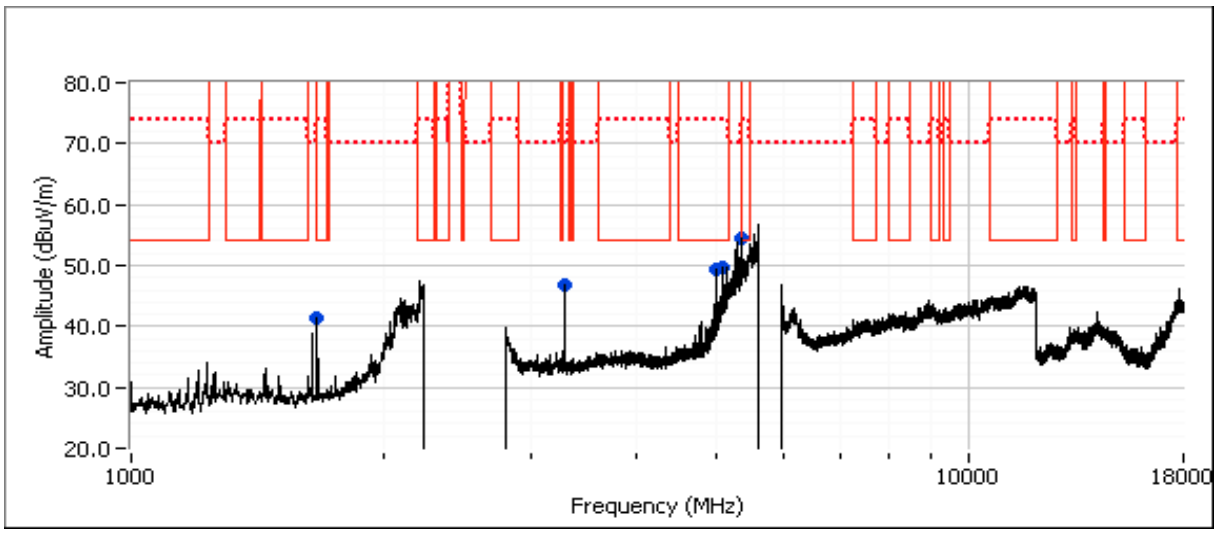
Run #3c: , EUT on Channel #11 2462MHz - 802.11n20 and Channel #165 5825MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	20.0
2	2462 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3282.670	49.4	V	54.0	-4.6	PK	27	1.0	Note 2
5079.890	49.0	V	54.0	-5.0	AVG	112	1.6	
5079.790	52.7	V	74.0	-21.3	PK	112	1.6	
5359.910	47.7	V	54.0	-6.3	AVG	124	1.9	
5360.010	55.4	V	74.0	-18.6	PK	124	1.9	
5000.020	44.2	V	54.0	-9.8	AVG	107	1.6	
5000.040	52.0	V	74.0	-22.0	PK	107	1.6	
1666.650	37.1	V	54.0	-16.9	AVG	76	1.0	
1666.720	40.2	V	74.0	-33.8	PK	76	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4, Radiated Spurious Emissions, 1-40GHz, 802.11n40/802.11n40, Chain A+B+C
Run #4a, EUT on Channel #3 2422MHz - 802.11n40 and Channel #151 5755MHz - 802.11n40 - Chain A+B+C

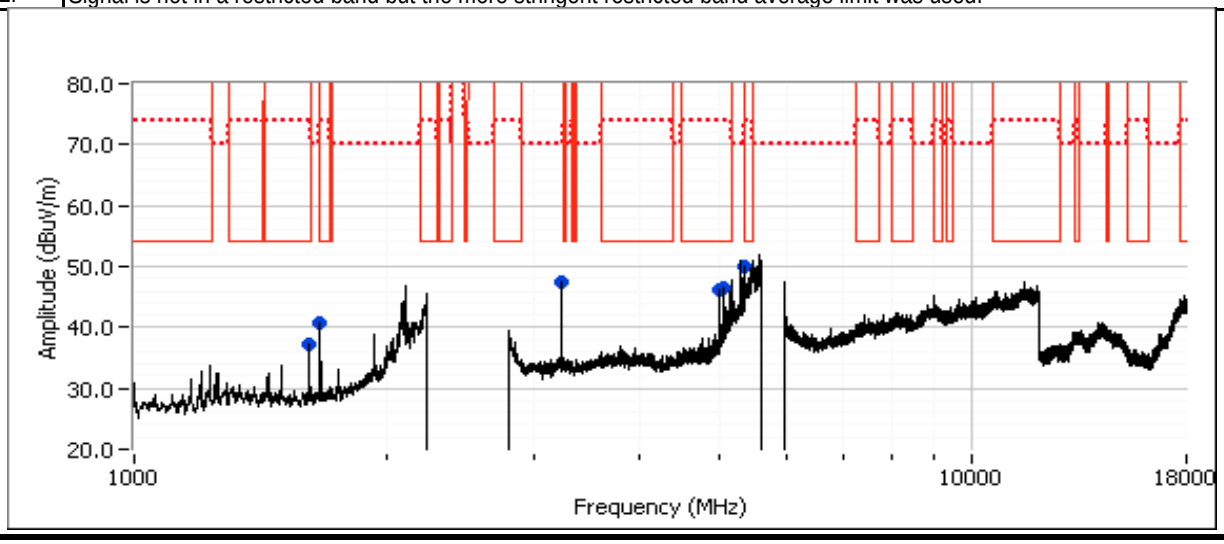
Date of Test: 1/31/2013& 2/1/13 Test Location: FT7
Test Engineer: Rafael Varelas& Jack Liu Config Change: None

Radio	Freq	Power Setting
1	5755 MHz	19.0
2	2422 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3229.210	48.7	V	54.0	-5.3	PK	22	1.0	Note2
5039.940	45.5	V	54.0	-8.5	AVG	121	1.0	
5039.850	49.1	V	74.0	-24.9	PK	121	1.0	
5000.000	39.3	V	54.0	-14.7	AVG	44	1.0	
5000.290	47.9	V	74.0	-26.1	PK	44	1.0	
1666.640	39.6	V	54.0	-14.4	AVG	255	1.6	
1666.410	41.8	V	74.0	-32.2	PK	255	1.6	
5373.610	43.1	V	54.0	-10.9	AVG	236	1.4	
5369.190	54.7	V	74.0	-19.3	PK	236	1.4	
1614.660	36.5	V	54.0	-17.5	AVG	315	1.0	
1614.530	40.3	V	74.0	-33.7	PK	315	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

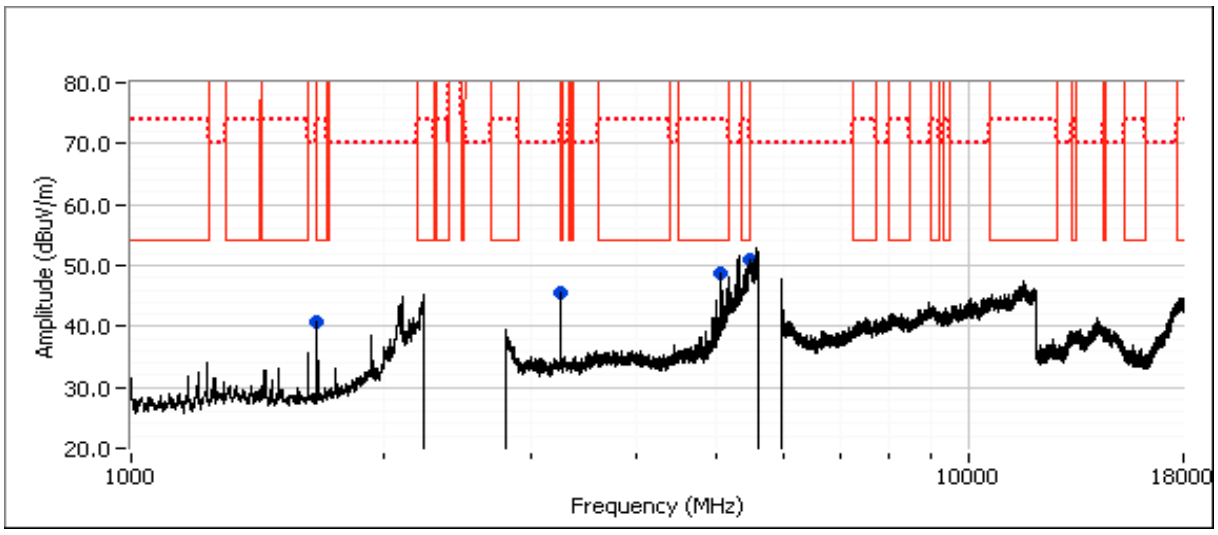
Run #4b: , EUT on Channel #6 2437MHz - 802.11n20 and Channel #159 5795MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5795 MHz	19.0
2	2437 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3249.150	48.0	V	54.0	-6.0	PK	20	1.0	Note 2
5455.930	46.5	V	54.0	-7.5	AVG	4	1.0	
5456.930	56.6	V	74.0	-17.4	PK	4	1.0	
1666.660	40.1	H	54.0	-13.9	AVG	4	1.0	
1666.620	43.1	H	74.0	-30.9	PK	4	1.0	
5040.000	39.7	V	54.0	-14.3	AVG	113	1.3	
5039.850	46.4	V	74.0	-27.6	PK	113	1.3	

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

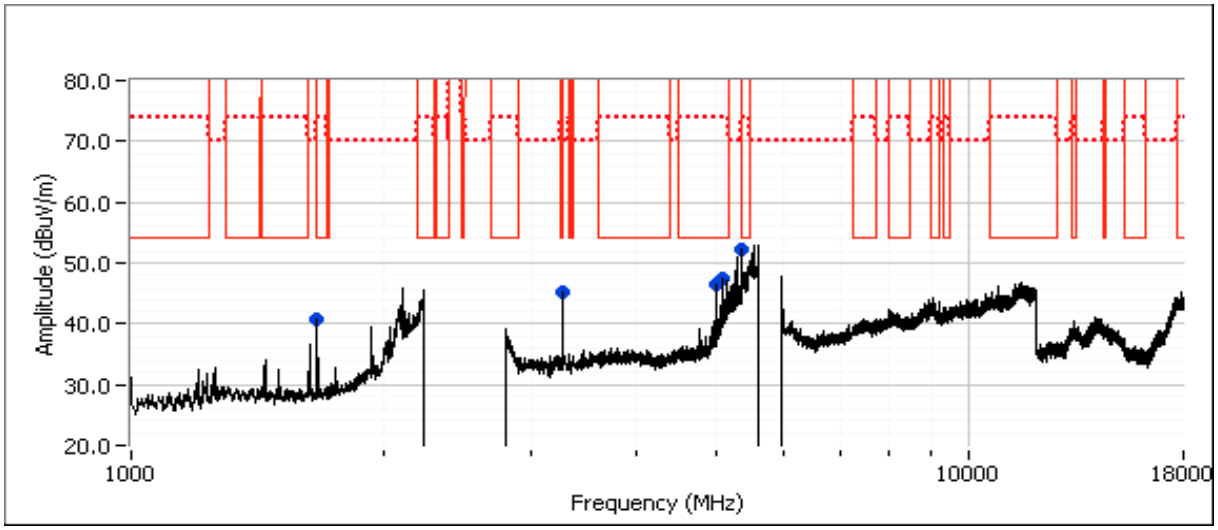
Run #4c: , EUT on Channel #9 2452MHz - 802.11n20 and Channel #159 5795MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5795 MHz	19.0
2	2452 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3269.410	46.6	V	54.0	-7.4	PK	18	1.0	Note2
5360.060	45.5	V	54.0	-8.5	AVG	119	1.5	
5359.830	54.3	V	74.0	-19.7	PK	119	1.5	
5000.000	44.9	V	54.0	-9.1	AVG	115	1.2	
4999.320	50.1	V	74.0	-23.9	PK	115	1.2	
5079.910	43.7	V	54.0	-10.3	AVG	120	1.6	
5080.040	49.9	V	74.0	-24.1	PK	120	1.6	
1666.670	39.4	V	54.0	-14.6	AVG	209	1.0	
1666.610	42.0	V	74.0	-32.0	PK	209	1.0	

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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

Ambient Conditions:

Temperature: 20.7 °C
Rel. Humidity: 36 %

Summary of Results - Device Operating in the DTS Bands

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run #1	802.11b	2412 MHz	21	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	52.7 dBµV/m @ 9647.9 MHz (-1.3 dB)
		5745 MHz	16				
	802.11a	2437 MHz	21	-			52.3 dBµV/m @ 9748.1 MHz (-1.7 dB)
		5785 MHz	16				
	Chain A+B+C	2462 MHz	21	-			48.7 dBµV/m @ 5119.9 MHz (-5.3 dB)
		5825 MHz	14.5				
Run # 2	802.11g	2412 MHz	19	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	50.1 dBµV/m @ 5440.0 MHz (-3.9 dB)
		5745 MHz	15				
	802.11a	2437 MHz	19	-			48.8 dBµV/m @ 5439.9 MHz (-5.2 dB)
		5785 MHz	15.5				
	Chain A+B+C	2462 MHz	19	-			49.9 dBµV/m @ 5440.0 MHz (-4.1 dB)
		5825 MHz	14.5				
Run # 3	802.11n20	2412 MHz	20	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	49.5 dBµV/m @ 3216.1 MHz (-4.5 dB)
		5745 MHz	16				
	802.11n20	2437 MHz	20	-			50.8 dBµV/m @ 5120.0 MHz (-3.2 dB)
		5785 MHz	16				
	Chain A+B+C	2462 MHz	20	-			51.7 dBµV/m @ 5400.0 MHz (-2.3 dB)
		5825 MHz	15				

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 4	802.11n40	2422MHz 5755MHz	16 16.5	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	49.2 dBµV/m @ 1936.1 MHz (-4.8 dB)
	802.11n40	2437MHz 5795MHz	16 16	-			48.4 dBµV/m @ 5440.0 MHz (-5.6 dB)
	Chain A+B+C	2452MHz 5795MHz	16 14.5	-			48.4 dBµV/m @ 5440.0 MHz (-5.6 dB)

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
2	Enterasys WS-AI-DT05120	Sector	2.4 & 5.8	5	Indoor	2 Xpol / 1 Vert	No

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.

Notes

Antenna: antenna(s) connected
Duty Cycle: 99.0%

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No
ART GUI Boot File: -
-
ART GUI Calibration file: -
-
Command Line Script: 3710e Pilot_115942 boot and initialize all 3 radios to NART Command Line Interface from 15T - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1, Radiated Spurious Emissions, 1-40GHz, 802.11b/802.11a, Chain A+B+C

Run #1a, EUT on Channel #1 2412MHz - 802.11b and Channel #149 5745MHz - 802.11a - Chain A+B+C

Date of Test: 2/27/2013 Test Location: FT7

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

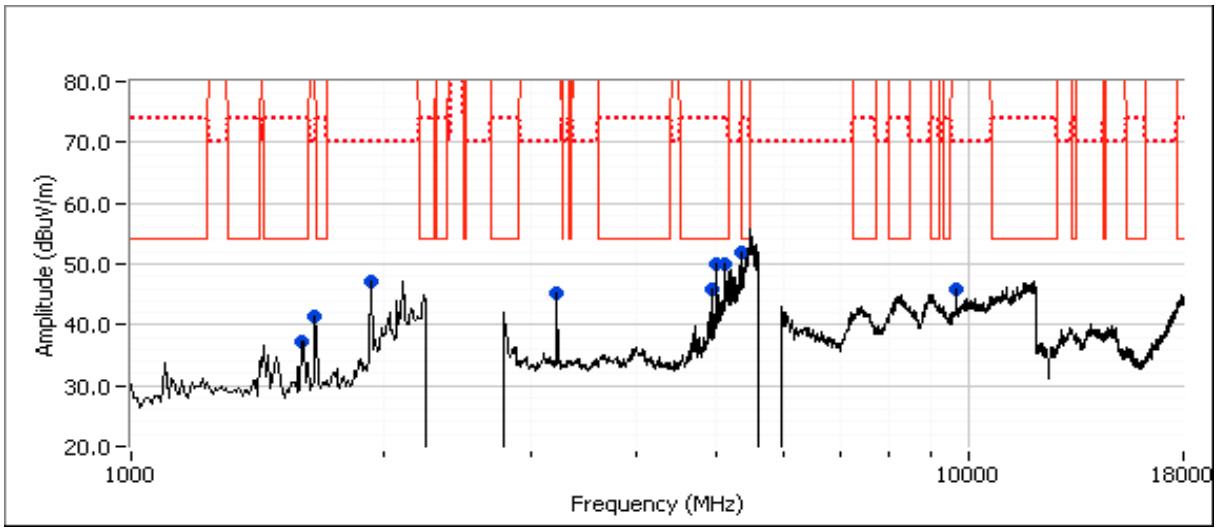
Radio	Freq	Power Setting
1	5745 MHz	16.0
2	2412 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
9647.900	52.7	V	54.0	-1.3	PK	103	1.2	Note 2
4999.900	43.2	V	54.0	-10.8	AVG	1	1.0	RB 1 MHz;VB 10 Hz;Peak
4999.000	52.4	V	74.0	-21.6	PK	1	1.0	RB 1 MHz;VB 3 MHz;Peak
4919.990	35.7	V	54.0	-18.3	AVG	350	1.0	RB 1 MHz;VB 10 Hz;Peak
4924.040	46.3	V	74.0	-27.7	PK	350	1.0	RB 1 MHz;VB 3 MHz;Peak
5360.010	46.8	V	54.0	-7.2	AVG	10	1.5	RB 1 MHz;VB 10 Hz;Peak
5359.700	55.5	V	74.0	-18.5	PK	10	1.5	RB 1 MHz;VB 3 MHz;Peak
3215.990	47.8	V	54.0	-6.2	PK	30	1.3	Note 2
1936.050	48.3	V	54.0	-5.7	PK	16	1.0	Note 2
1666.680	37.4	H	54.0	-16.6	AVG	186	1.0	RB 1 MHz;VB 10 Hz;Peak
1666.550	41.4	H	74.0	-32.6	PK	186	1.0	RB 1 MHz;VB 3 MHz;Peak
1607.980	39.7	V	54.0	-14.3	AVG	350	1.0	RB 1 MHz;VB 10 Hz;Peak
1607.900	42.8	V	74.0	-31.2	PK	350	1.0	RB 1 MHz;VB 3 MHz;Peak
5119.970	46.2	V	54.0	-7.8	AVG	360	1.6	RB 1 MHz;VB 10 Hz;Peak
5119.890	52.5	V	74.0	-21.5	PK	360	1.6	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1b, EUT on Channel #6 2437MHz - 802.11b and Channel #157 5785MHz - 802.11a, Chain A+B+C

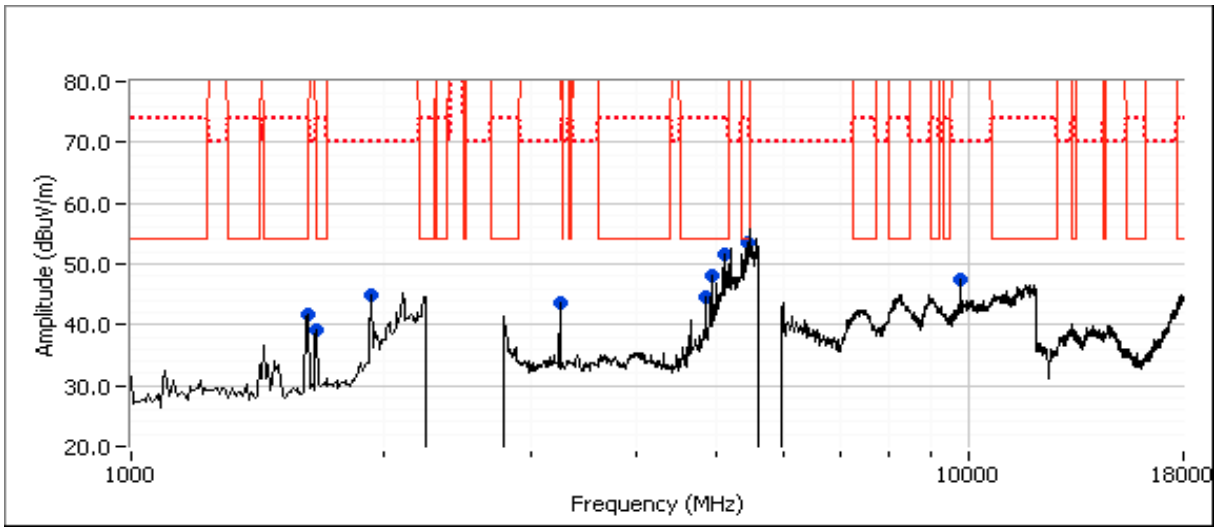
Radio	Freq	Power Setting
1	5785 MHz	16.0
2	2437 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
9748.070	52.3	V	54.0	-1.7	PK	229	1.1	Note 2
5440.000	45.9	V	54.0	-8.1	AVG	1	1.2	RB 1 MHz;VB 10 Hz;Peak
5453.130	55.7	V	74.0	-18.3	PK	1	1.2	RB 1 MHz;VB 3 MHz;Peak
4839.960	40.9	V	54.0	-13.1	AVG	8	1.1	RB 1 MHz;VB 10 Hz;Peak
4839.880	47.9	V	74.0	-26.1	PK	8	1.1	RB 1 MHz;VB 3 MHz;Peak
4919.970	45.0	V	54.0	-9.0	AVG	4	1.3	RB 1 MHz;VB 10 Hz;Peak
4920.100	50.5	V	74.0	-23.5	PK	4	1.3	RB 1 MHz;VB 3 MHz;Peak
5120.000	50.2	V	54.0	-3.8	AVG	11	1.0	RB 1 MHz;VB 10 Hz;Peak
5119.800	56.1	V	74.0	-17.9	PK	11	1.0	RB 1 MHz;VB 3 MHz;Peak
1666.540	37.6	V	54.0	-16.4	AVG	22	1.0	RB 1 MHz;VB 10 Hz;Peak
1666.380	42.0	V	74.0	-32.0	PK	22	1.0	RB 1 MHz;VB 3 MHz;Peak
1936.060	46.9	V	54.0	-7.1	PK	12	1.0	Note 2
3249.430	46.5	V	54.0	-7.5	PK	32	1.0	Note 2
1624.650	40.9	V	54.0	-13.1	AVG	321	1.3	RB 1 MHz;VB 10 Hz;Peak
1624.590	43.7	V	74.0	-30.3	PK	321	1.3	RB 1 MHz;VB 3 MHz;Peak

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

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1c, EUT on Channel #11 2462MHz - 802.11b and Channel #165 5825MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	14.5
2	2462 MHz	21.0

2462MHz

Fundamental emission level @ 3m in 100kHz RBW:	115.3	dBµV/m	
Limit for emissions outside of restricted bands:	85.3	dBµV/m	Limit is -30dBc (Average power measurement)

5825MHz

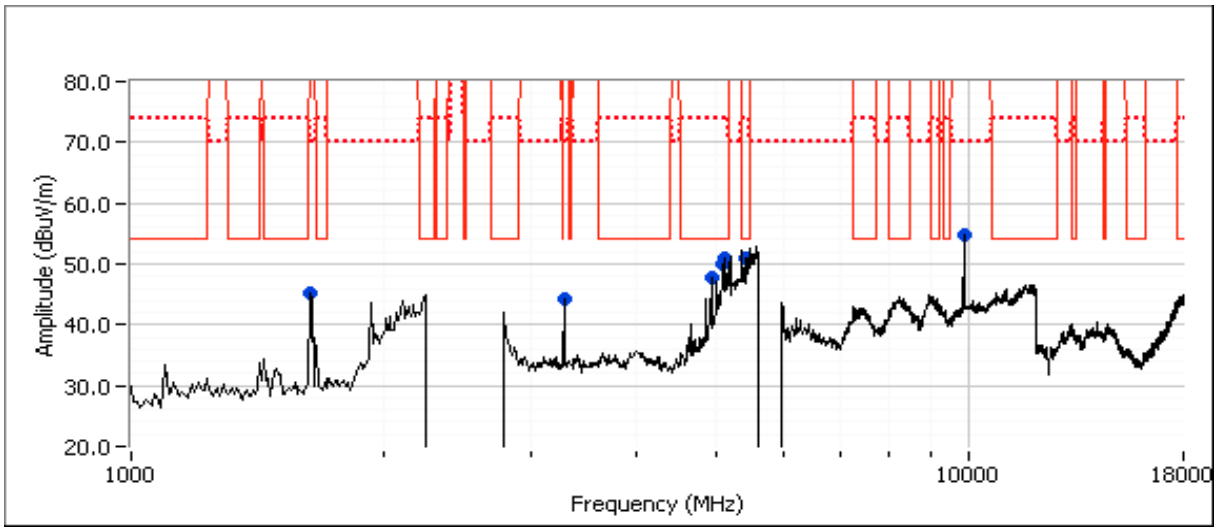
Fundamental emission level @ 3m in 100kHz RBW:	102	dBµV/m	
Limit for emissions outside of restricted bands:	72	dBµV/m	Limit is -30dBc (Average power measurement)

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	
5119.940	48.7	V	54.0	-5.3	AVG	12	1.0	RB 1 MHz;VB 10 Hz;Peak
5119.910	56.2	V	74.0	-17.8	PK	12	1.0	RB 1 MHz;VB 3 MHz;Peak
5079.950	43.3	V	54.0	-10.7	AVG	360	1.8	RB 1 MHz;VB 10 Hz;Peak
5079.710	52.3	V	74.0	-21.7	PK	360	1.8	RB 1 MHz;VB 3 MHz;Peak
1641.360	47.2	H	72.0	-24.8	PK	359	1.0	RB=VB=100 kHz, Note 1
9847.800	58.7	V	85.3	-26.6	PK	127	1.4	RB=VB=100 kHz, Note 1
3282.650	46.4	V	72.0	-25.6	PK	22	1.0	RB=VB=100 kHz, Note 1
5399.980	47.5	V	54.0	-6.5	AVG	15	1.3	RB 1 MHz;VB 10 Hz;Peak
5400.190	56.8	V	74.0	-17.2	PK	15	1.3	RB 1 MHz;VB 3 MHz;Peak
4919.920	43.6	V	54.0	-10.4	AVG	14	1.0	RB 1 MHz;VB 10 Hz;Peak
4919.950	50.2	V	74.0	-23.8	PK	14	1.0	RB 1 MHz;VB 3 MHz;Peak

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

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #2, Radiated Spurious Emissions, 1-40GHz, 802.11g/802.11a, Chain A+B+C
Run #2a, EUT on Channel #1 2412MHz - 802.11g and Channel #149 5745MHz - 802.11a - Chain A+B+C

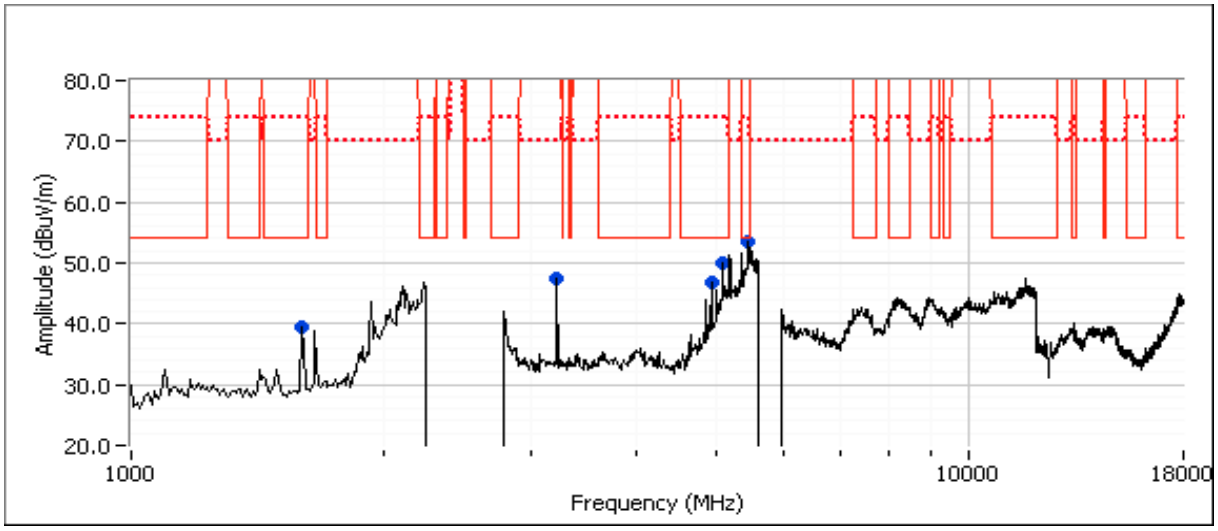
Date of Test: 2/27/2013 Test Location: FT7
Test Engineer: Rafael Varelas Config Change: None

Radio	Freq	Power Setting
1	5745 MHz	15.0
2	2412 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.980	50.1	V	54.0	-3.9	AVG	2	1.3	RB 1 MHz;VB 10 Hz;Peak
5439.880	58.4	V	74.0	-15.6	PK	2	1.3	RB 1 MHz;VB 3 MHz;Peak
1607.980	39.5	H	54.0	-14.5	AVG	2	1.0	RB 1 MHz;VB 10 Hz;Peak
1608.130	42.8	H	74.0	-31.2	PK	2	1.0	RB 1 MHz;VB 3 MHz;Peak
4919.980	43.1	V	54.0	-10.9	AVG	18	1.0	RB 1 MHz;VB 10 Hz;Peak
4919.980	49.6	V	74.0	-24.4	PK	18	1.0	RB 1 MHz;VB 3 MHz;Peak
5079.970	45.9	V	54.0	-8.1	AVG	8	1.0	RB 1 MHz;VB 10 Hz;Peak
5079.770	53.7	V	74.0	-20.3	PK	8	1.0	RB 1 MHz;VB 3 MHz;Peak
3216.040	49.3	V	54.0	-4.7	PK	31	1.1	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #2b, EUT on Channel #6 2437MHz - 802.11g and Channel #157 5785MHz - 802.11a, Chain A+B+C

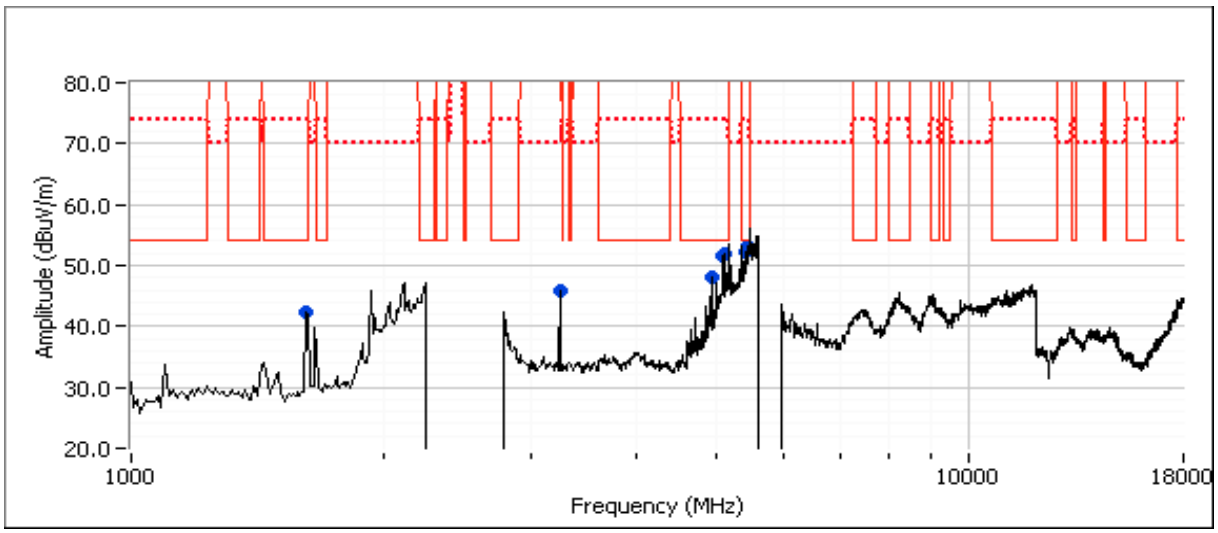
Radio	Freq	Power Setting
1	5785 MHz	15.5
2	2437 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.900	48.8	V	54.0	-5.2	AVG	11	1.4	RB 1 MHz;VB 10 Hz;Peak
5439.970	57.2	V	74.0	-16.8	PK	11	1.4	RB 1 MHz;VB 3 MHz;Peak
4919.950	41.8	V	54.0	-12.2	AVG	15	1.2	RB 1 MHz;VB 10 Hz;Peak
4919.920	49.4	V	74.0	-24.6	PK	15	1.2	RB 1 MHz;VB 3 MHz;Peak
1624.660	42.6	H	54.0	-11.4	AVG	4	1.0	RB 1 MHz;VB 10 Hz;Peak
1624.670	45.4	H	74.0	-28.6	PK	4	1.0	RB 1 MHz;VB 3 MHz;Peak
5080.000	47.2	V	54.0	-6.8	AVG	10	1.0	RB 1 MHz;VB 10 Hz;Peak
5079.980	54.4	V	74.0	-19.6	PK	10	1.0	RB 1 MHz;VB 3 MHz;Peak
5120.020	44.6	V	54.0	-9.4	AVG	14	1.0	RB 1 MHz;VB 10 Hz;Peak
5120.120	53.1	V	74.0	-20.9	PK	14	1.0	RB 1 MHz;VB 3 MHz;Peak
5400.000	44.6	V	54.0	-9.4	AVG	16	1.4	RB 1 MHz;VB 10 Hz;Peak
5399.970	54.3	V	74.0	-19.7	PK	16	1.4	RB 1 MHz;VB 3 MHz;Peak
3249.370	46.7	V	54.0	-7.3	PK	33	1.0	Note 2

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

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

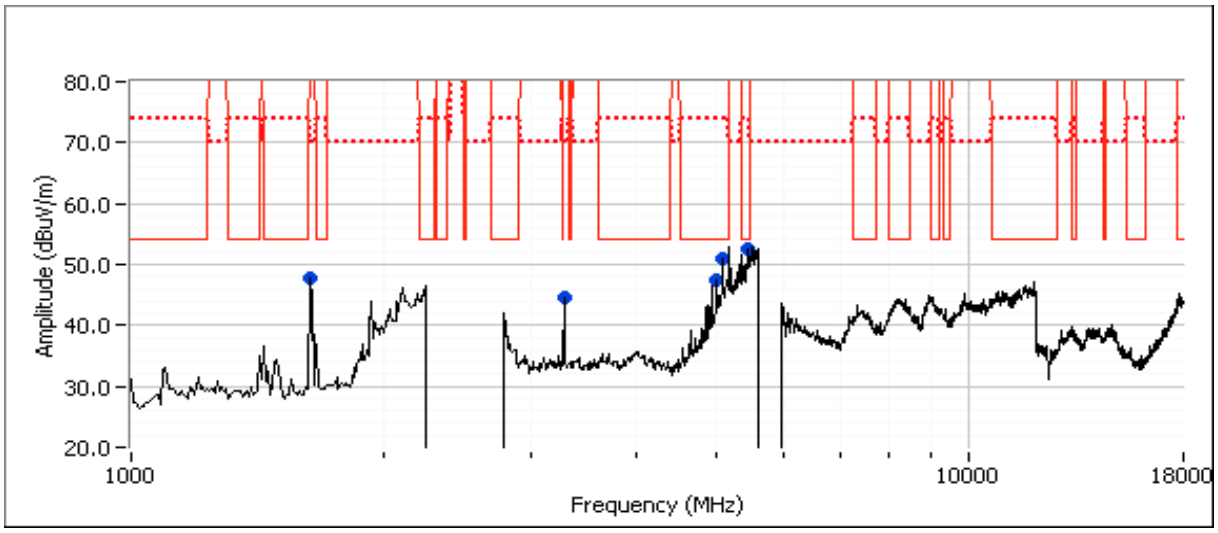
Run #2c, EUT on Channel #11 2462MHz - 802.11g and Channel #165 5825MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	14.5
2	2462 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5440.030	49.9	V	54.0	-4.1	AVG	4	1.0	RB 1 MHz;VB 10 Hz;Peak
5440.390	58.6	V	74.0	-15.4	PK	4	1.0	RB 1 MHz;VB 3 MHz;Peak
4999.920	44.5	V	54.0	-9.5	AVG	2	1.0	RB 1 MHz;VB 10 Hz;Peak
4997.620	53.4	V	74.0	-20.6	PK	2	1.0	RB 1 MHz;VB 3 MHz;Peak
5079.900	48.2	V	54.0	-5.8	AVG	12	1.0	RB 1 MHz;VB 10 Hz;Peak
5079.830	56.2	V	74.0	-17.8	PK	12	1.0	RB 1 MHz;VB 3 MHz;Peak
3282.670	47.4	V	54.0	-6.6	PK	30	1.0	Note 2
1641.270	49.4	H	54.0	-4.6	PK	360	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3, Radiated Spurious Emissions, 1-40GHz, 802.11n20/802.11n20, Chain A+B+C
Run #3a, EUT on Channel #1 2412MHz - 802.11n20 and Channel #149 5745MHz - 802.11n20 - Chain A+B+C

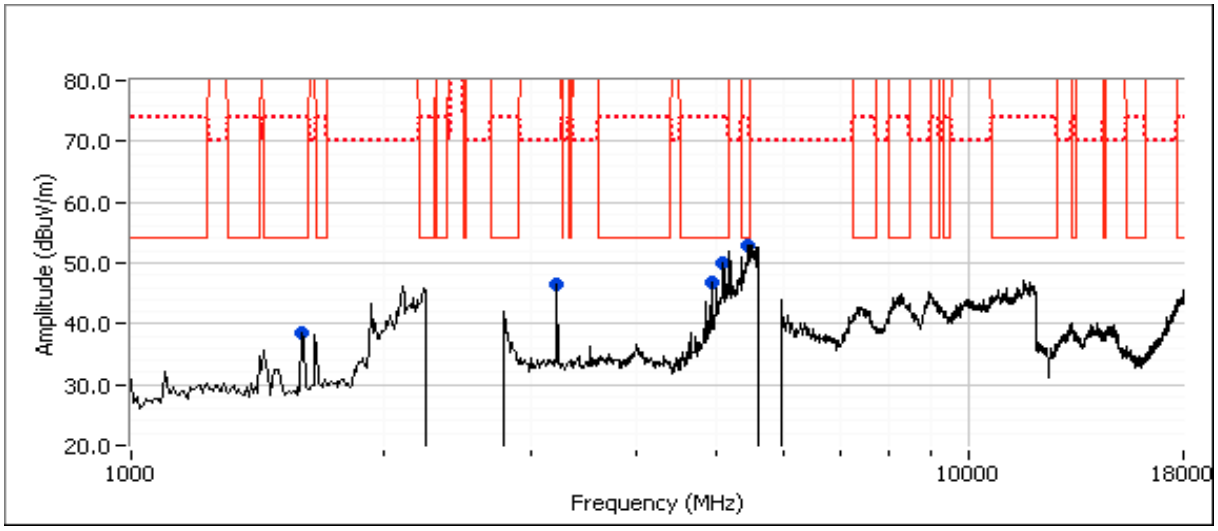
Date of Test: 2/27/2013 Test Location: FT7
Test Engineer: Rafael Varelas Config Change: None

Radio	Freq	Power Setting
1	5745 MHz	16.0
2	2412 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3216.060	49.5	V	54.0	-4.5	PK	28	1.1	Note 2
1607.990	39.4	H	54.0	-14.6	AVG	14	1.1	RB 1 MHz;VB 10 Hz;Peak
1608.080	42.6	H	74.0	-31.4	PK	14	1.1	RB 1 MHz;VB 3 MHz;Peak
4919.940	42.3	V	54.0	-11.7	AVG	18	1.0	RB 1 MHz;VB 10 Hz;Peak
4920.100	48.9	V	74.0	-25.1	PK	18	1.0	RB 1 MHz;VB 3 MHz;Peak
5079.930	43.9	V	54.0	-10.1	AVG	10	1.0	RB 1 MHz;VB 10 Hz;Peak
5080.030	52.5	V	74.0	-21.5	PK	10	1.0	RB 1 MHz;VB 3 MHz;Peak
5439.970	46.8	V	54.0	-7.2	AVG	2	1.3	RB 1 MHz;VB 10 Hz;Peak
5440.160	56.4	V	74.0	-17.6	PK	2	1.3	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

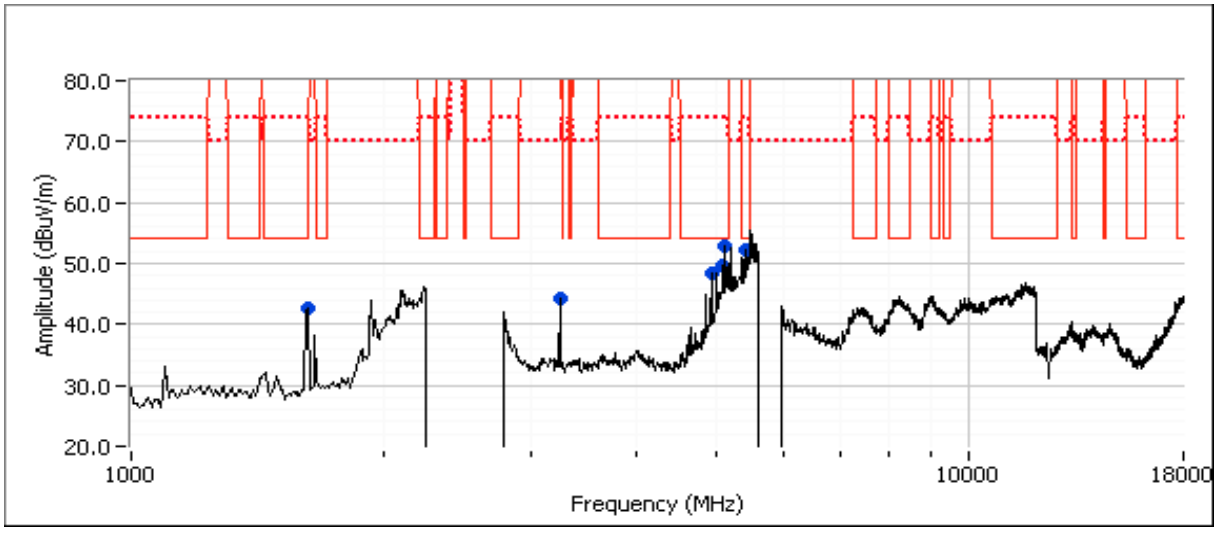
Run #3b: , EUT on Channel #6 2437MHz - 802.11n20 and Channel #157 5785MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	16.0
2	2437 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5119.980	50.8	V	54.0	-3.2	AVG	10	1.0	RB 1 MHz;VB 10 Hz;Peak
5120.040	56.2	V	74.0	-17.8	PK	10	1.0	RB 1 MHz;VB 3 MHz;Peak
5399.990	46.8	V	54.0	-7.2	AVG	19	1.3	RB 1 MHz;VB 10 Hz;Peak
5399.580	56.2	V	74.0	-17.8	PK	19	1.3	RB 1 MHz;VB 3 MHz;Peak
1624.670	42.4	H	54.0	-11.6	AVG	10	1.0	RB 1 MHz;VB 10 Hz;Peak
1624.620	45.3	H	74.0	-28.7	PK	10	1.0	RB 1 MHz;VB 3 MHz;Peak
4919.900	44.3	V	54.0	-9.7	AVG	16	1.0	RB 1 MHz;VB 10 Hz;Peak
4920.100	50.7	V	74.0	-23.3	PK	16	1.0	RB 1 MHz;VB 3 MHz;Peak
5079.970	43.6	V	54.0	-10.4	AVG	7	1.0	RB 1 MHz;VB 10 Hz;Peak
5079.720	52.6	V	74.0	-21.4	PK	7	1.0	RB 1 MHz;VB 3 MHz;Peak
3249.330	46.8	V	54.0	-7.2	PK	28	1.2	Note 2

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

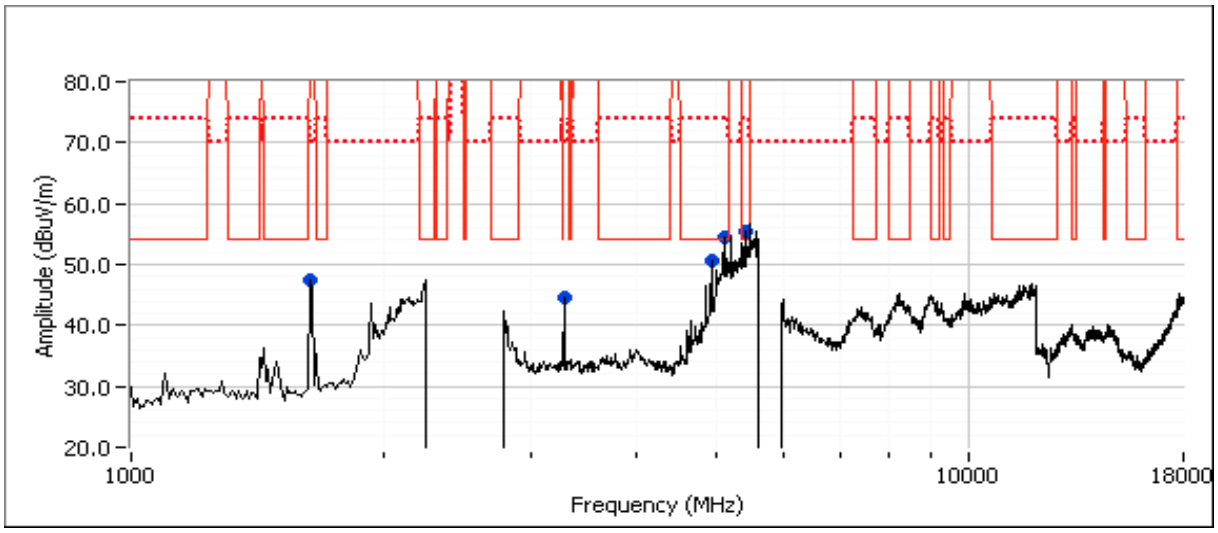
Run #3c: , EUT on Channel #11 2462MHz - 802.11n20 and Channel #165 5825MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	15.0
2	2462 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5399.950	51.7	V	54.0	-2.3	AVG	18	1.0	RB 1 MHz;VB 10 Hz;Peak
5400.100	59.0	V	74.0	-15.0	PK	18	1.0	RB 1 MHz;VB 3 MHz;Peak
4919.950	46.4	V	54.0	-7.6	AVG	15	1.0	RB 1 MHz;VB 10 Hz;Peak
4919.790	53.2	V	74.0	-20.8	PK	15	1.0	RB 1 MHz;VB 3 MHz;Peak
3282.610	47.4	V	54.0	-6.6	PK	20	1.0	Note 2
1641.370	49.4	H	54.0	-4.6	PK	358	1.1	Note 2
5119.970	51.3	V	54.0	-2.7	AVG	358	1.7	RB 1 MHz;VB 10 Hz;Peak
5119.900	57.4	V	74.0	-16.6	PK	358	1.7	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4, Radiated Spurious Emissions, 1-40GHz, 802.11n40/802.11n40, Chain A+B+C
Run #4a, EUT on Channel #3 2422MHz - 802.11n40 and Channel #151 5755MHz - 802.11n40 - Chain A+B+C

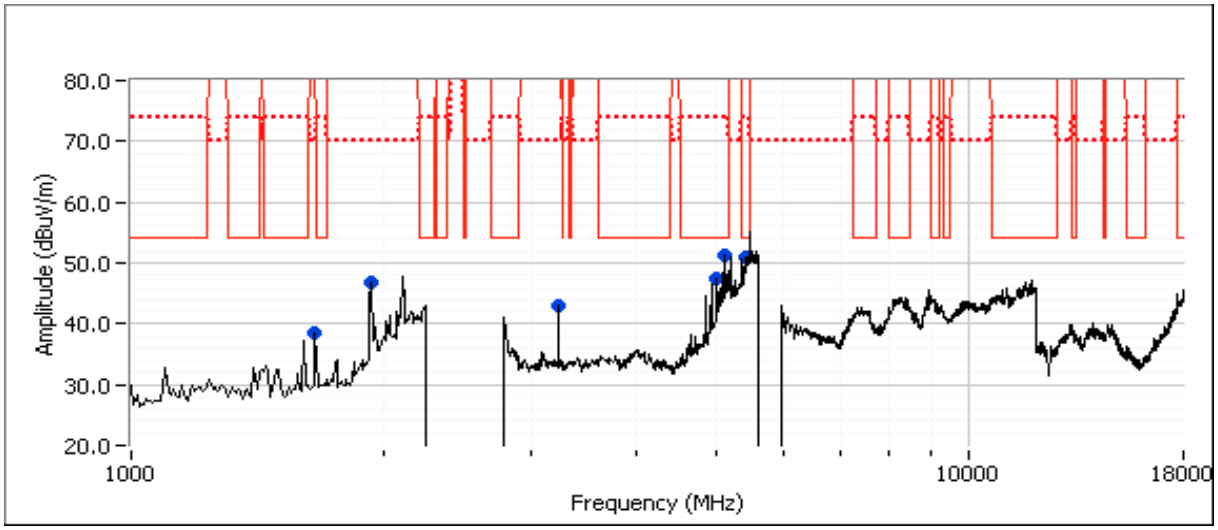
Date of Test: 2/28/2013 Test Location: FT7
Test Engineer: Jack Liu / Rafael Varelas Config Change: None

Radio	Freq	Power Setting
1	5755 MHz	16.5
2	2422 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1936.070	49.2	V	54.0	-4.8	PK	353	1.0	Note 2
1666.530	37.6	H	54.0	-16.4	AVG	187	1.0	RB 1 MHz;VB 10 Hz;Peak
1666.630	42.7	H	74.0	-31.3	PK	187	1.0	RB 1 MHz;VB 3 MHz;Peak
3229.280	45.4	H	54.0	-8.6	PK	22	1.1	Note 2
5400.010	46.6	V	54.0	-7.4	AVG	18	1.3	RB 1 MHz;VB 10 Hz;Peak
5400.030	55.5	V	74.0	-18.5	PK	18	1.3	RB 1 MHz;VB 3 MHz;Peak
5119.990	47.7	V	54.0	-6.3	AVG	10	1.0	RB 1 MHz;VB 10 Hz;Peak
5119.980	54.3	V	74.0	-19.7	PK	10	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -20dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

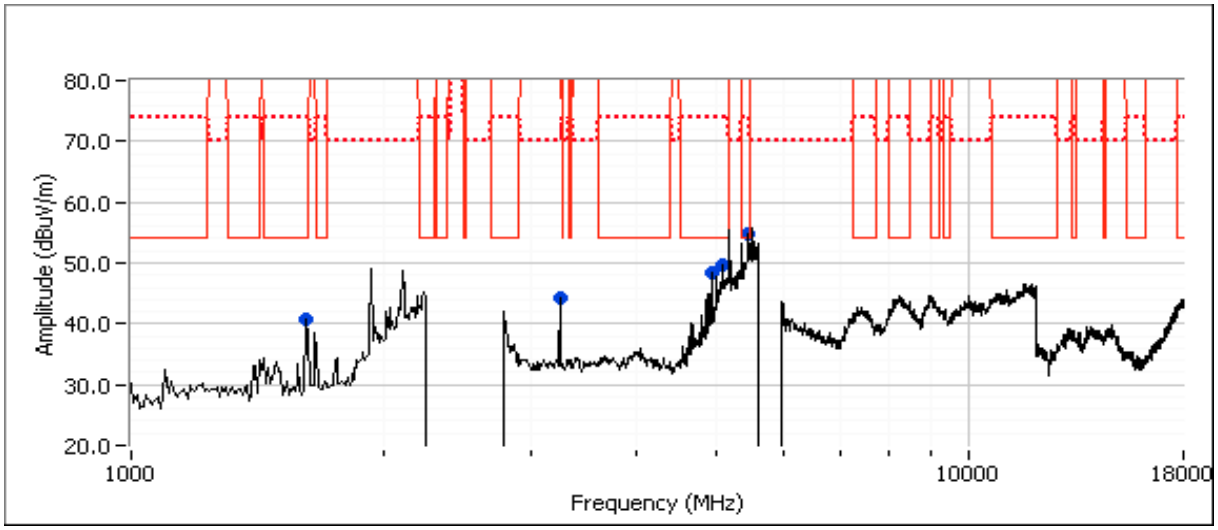
Run #4b: , EUT on Channel #6 2437MHz - 802.11n40 and Channel #159 5795MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5795 MHz	16.0
2	2437 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.960	48.4	V	54.0	-5.6	AVG	11	1.3	RB 1 MHz;VB 10 Hz;Peak
5440.090	57.2	V	74.0	-16.8	PK	11	1.3	RB 1 MHz;VB 3 MHz;Peak
4919.960	44.8	V	54.0	-9.2	AVG	16	1.1	RB 1 MHz;VB 10 Hz;Peak
4919.830	50.9	V	74.0	-23.1	PK	16	1.1	RB 1 MHz;VB 3 MHz;Peak
5079.990	47.2	V	54.0	-6.8	AVG	8	1.0	RB 1 MHz;VB 10 Hz;Peak
5080.100	54.6	V	74.0	-19.4	PK	8	1.0	RB 1 MHz;VB 3 MHz;Peak
3249.400	47.0	V	54.0	-7.0	PK	28	1.2	Note 2
1624.670	39.7	V	54.0	-14.3	AVG	322	1.4	RB 1 MHz;VB 10 Hz;Peak
1624.630	43.0	V	74.0	-31.0	PK	322	1.4	RB 1 MHz;VB 3 MHz;Peak

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

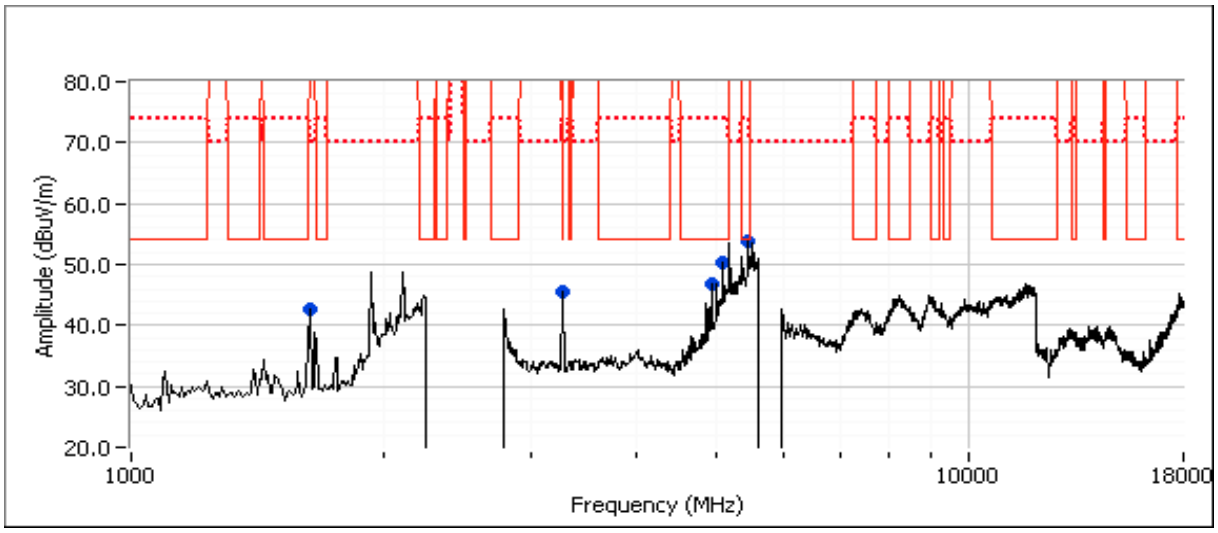
Run #4c: , EUT on Channel #9 2452MHz - 802.11n40 and Channel #159 5795MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5795 MHz	14.5
2	2452 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.980	48.4	V	54.0	-5.6	AVG	12	1.3	RB 1 MHz;VB 10 Hz;Peak
5439.790	57.4	V	74.0	-16.6	PK	12	1.3	RB 1 MHz;VB 3 MHz;Peak
1634.680	44.8	V	54.0	-9.2	PK	316	1.3	Note 2
3269.450	46.8	V	54.0	-7.2	PK	24	1.6	Note 2
5079.900	46.7	V	54.0	-7.3	AVG	5	1.0	RB 1 MHz;VB 10 Hz;Peak
5079.560	53.1	V	74.0	-20.9	PK	5	1.0	RB 1 MHz;VB 3 MHz;Peak
4919.960	43.8	V	54.0	-10.2	AVG	16	1.0	RB 1 MHz;VB 10 Hz;Peak
4920.080	50.0	V	74.0	-24.0	PK	16	1.0	RB 1 MHz;VB 3 MHz;Peak

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -20dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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

Ambient Conditions:

Temperature: °C
Rel. Humidity: %

Summary of Results - Device Operating in the DTS Bands

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run #1	802.11b	2412 MHz	21	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	53.5 dBµV/m @ 1608.0 MHz (-0.5 dB)
		5745 MHz	19				
	802.11a	2437 MHz	21	-			53.2 dBµV/m @ 5440.0 MHz (-0.8 dB)
		5785 MHz	18.5				
	Chain A+B+C	2462 MHz	21	-			52.1 dBµV/m @ 5440.0 MHz (-1.9 dB)
		5825 MHz	19				
Run # 2	802.11g	2412 MHz	19	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	53.8 dBµV/m @ 3216.0 MHz (-0.2 dB)
		5745 MHz	19				
	802.11a	2437 MHz	19	-			52.6 dBµV/m @ 5440.0 MHz (-1.4 dB)
		5785 MHz	19				
	Chain A+B+C	2462 MHz	19	-			52.8 dBµV/m @ 5439.9 MHz (-1.2 dB)
		5825 MHz	19				
Run # 3	802.11n20	2412 MHz	20	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	52.1 dBµV/m @ 5440.0 MHz (-1.9 dB)
		5745 MHz	20				
	802.11n20	2437 MHz	20	-			52.3 dBµV/m @ 3249.3 MHz (-1.7 dB)
		5785 MHz	20				
	Chain A+B+C	2462 MHz	20	-			50.7 dBµV/m @ 5400.0 MHz (-3.3 dB)
		5825 MHz	20				

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Run # 4	802.11n40	2422MHz	16	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15.247	52.1 dBµV/m @ 3229.3 MHz (-1.9 dB)
		5755MHz	19				
	802.11n40	2437MHz	16	-			50.3 dBµV/m @ 5400.0 MHz (-3.7 dB)
		5795MHz	19				
	Chain A+B+C	2452MHz	16	-			49.8 dBµV/m @ 5400.0 MHz (-4.2 dB)
		5795MHz	19				

Antenna:

#	Model	Type	Freq. Band (GHz)	Gain (dBi)	Ind/Out	Xpol?	Pt to Pt?
3	Enterasys WS-AI-DT04360	Panel	2.4	3	Indoor	No	No
3	Enterasys WS-AI-DT04360	Panel	5.8	4	Indoor	No	No

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.

Notes

Antenna: antenna(s) connected
Duty Cycle: 99.0%

ART GUI (Singleradio test) Or Command Line Script (multiple radio test)

ART GUI Used: No
ART GUI Boot File: -
-
ART GUI Calibration file: -
-
Command Line Script: 3710e 2nd Pilot_925942 boot and initialize all 3 radios to NART Command Line Interface - HIGH POWER

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #1, Radiated Spurious Emissions, 1-40GHz, 802.11b/802.11a, Chain A+B+C

Run #1a, EUT on Channel #1 2412MHz - 802.11b and Channel #149 5745MHz - 802.11a - Chain A+B+C

Date of Test: 2/1/13 & 2/4/13 Test Location: FT7
Test Engineer: Rafael Varelas/ Jack Liu Config Change: None

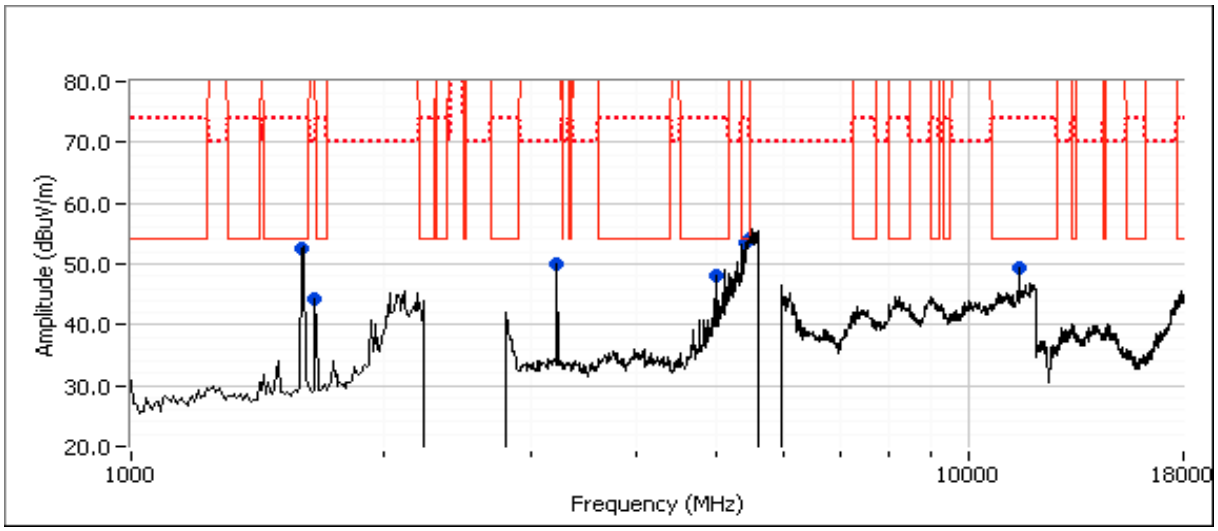
Radio	Freq	Power Setting
1	5745 MHz	19.0
2	2412 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1608.030	53.5	H	54.0	-0.5	AVG	72	1.0	
1608.030	54.0	H	74.0	-20.0	PK	72	1.0	
4999.550	40.6	H	54.0	-13.4	AVG	83	1.0	
5000.770	50.1	H	74.0	-23.9	PK	83	1.0	
5440.030	53.0	H	54.0	-1.0	AVG	57	1.0	
5440.060	59.1	H	74.0	-14.9	PK	57	1.0	
5400.020	49.5	H	54.0	-4.5	AVG	69	1.0	
5399.620	56.4	H	74.0	-17.6	PK	69	1.0	
11487.400	43.0	V	54.0	-11.0	AVG	150	1.3	
11470.670	53.2	V	74.0	-20.8	PK	150	1.3	
1666.660	44.3	V	54.0	-9.7	AVG	196	1.0	
1666.680	46.3	V	74.0	-27.7	PK	196	1.0	
3216.090	52.5	H	54.0	-1.5	PK	323	1.0	Note2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

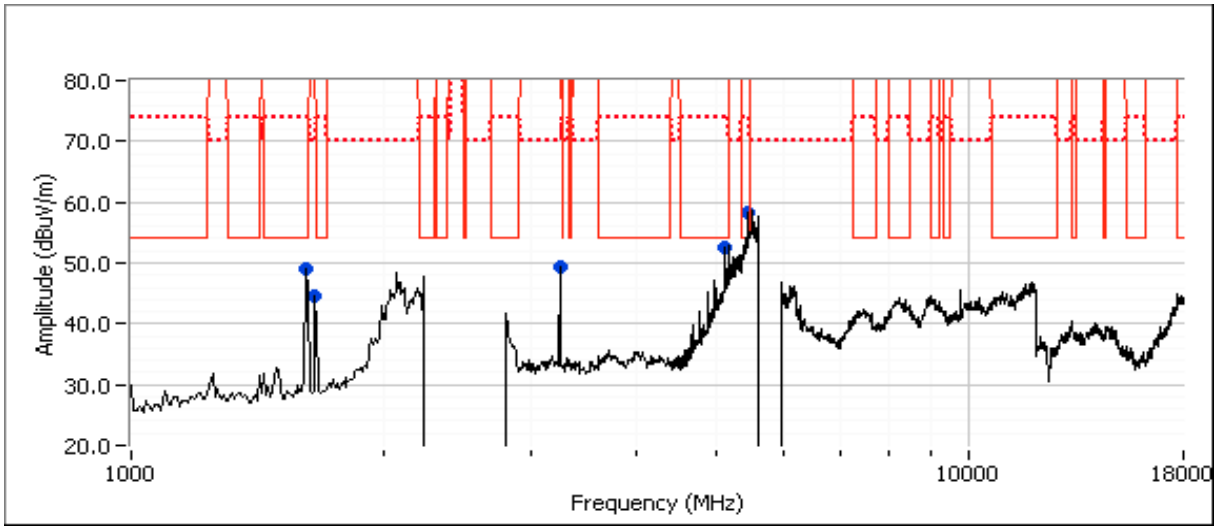
Run #1b, EUT on Channel #6 2437MHz - 802.11b and Channel #157 5785MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	18.5
2	2437 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5440.010	53.2	H	54.0	-0.8	AVG	62	1.0	
5440.370	60.4	H	74.0	-13.6	PK	62	1.0	
5120.030	51.0	H	54.0	-3.0	AVG	324	1.0	
5120.180	56.9	H	74.0	-17.1	PK	324	1.0	
1666.640	43.8	V	54.0	-10.2	AVG	196	1.0	
1666.560	46.5	V	74.0	-27.5	PK	196	1.0	
1624.740	49.1	H	54.0	-4.9	AVG	81	1.0	
1624.620	50.2	H	74.0	-23.8	PK	81	1.0	
3249.320	50.8	H	54.0	-3.2	PK	328	1.0	Note 2

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

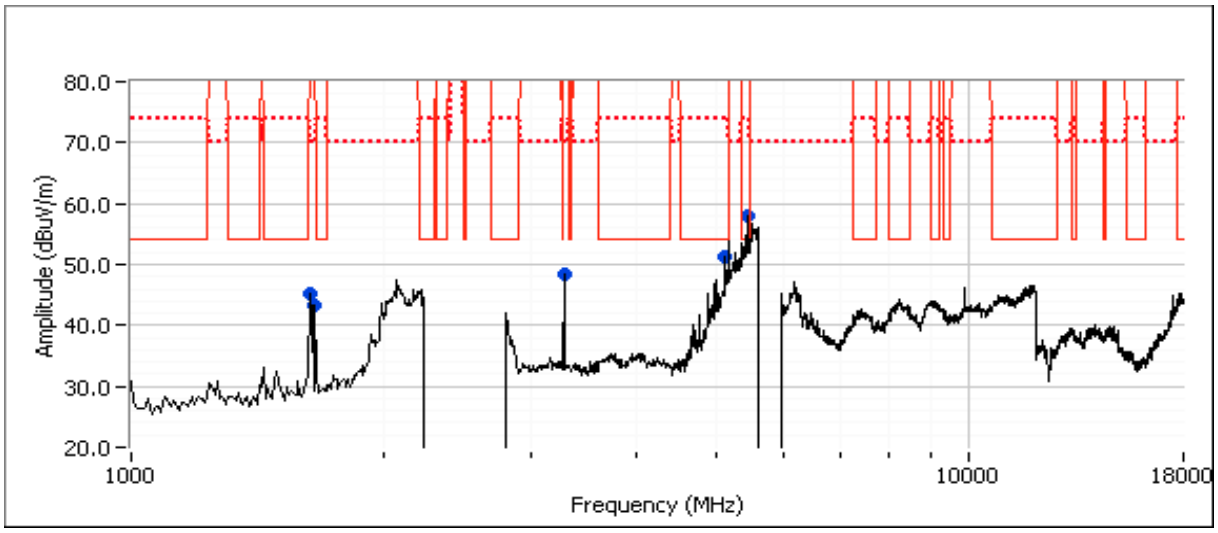
Run #1c, EUT on Channel #11 2462MHz - 802.11b and Channel #165 5825MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	19.0
2	2462 MHz	21.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5440.000	52.1	H	54.0	-1.9	AVG	66	1.0	
5440.040	59.6	H	74.0	-14.4	PK	66	1.0	
1666.610	44.3	V	54.0	-9.7	AVG	195	1.0	
1666.760	46.5	V	74.0	-27.5	PK	195	1.0	
5120.010	47.8	H	54.0	-6.2	AVG	326	1.1	
5120.250	56.0	H	74.0	-18.0	PK	326	1.1	
1641.370	47.2	H	54.0	-6.8	PK	76	1.0	Note 2
3282.680	50.2	H	54.0	-3.8	PK	324	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #2, Radiated Spurious Emissions, 1-40GHz, 802.11g/802.11a, Chain A+B+C
Run #2a, EUT on Channel #1 2412MHz - 802.11g and Channel #149 5745MHz - 802.11a - Chain A+B+C

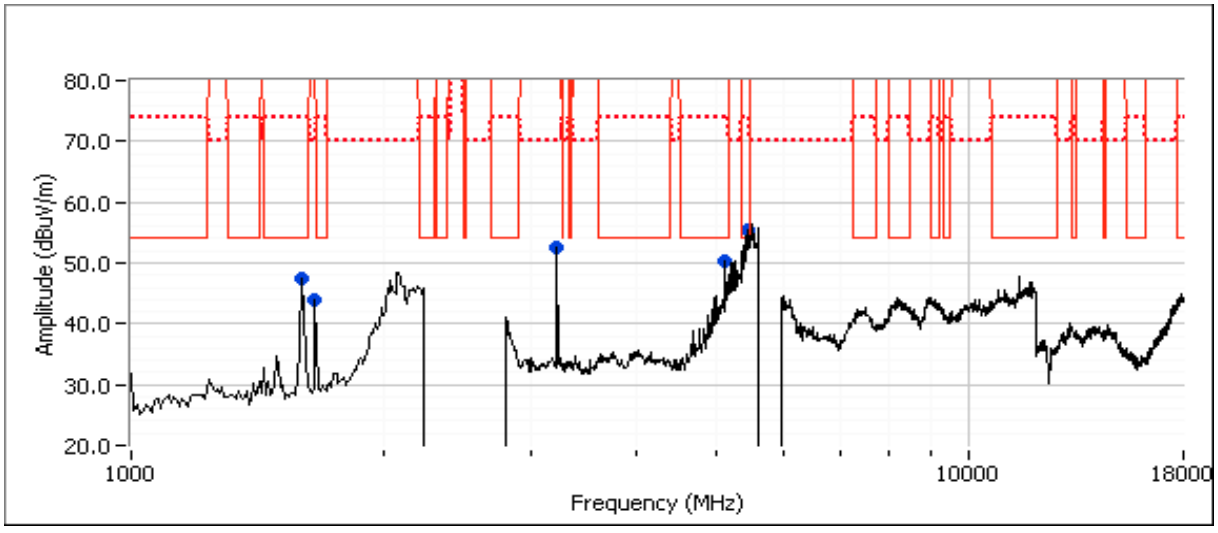
Date of Test: 2/1/13 & 2/4/13 Test Location: FT7
Test Engineer: Rafael Varelas/ Jack Liu Config Change: None

Radio	Freq	Power Setting
1	5745 MHz	19.0
2	2412 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3215.990	53.8	H	54.0	-0.2	PK	324	1.0	Note 2
5439.970	51.6	H	54.0	-2.4	AVG	59	1.0	
5440.100	59.0	H	74.0	-15.0	PK	59	1.0	
5112.770	39.4	H	54.0	-14.6	AVG	326	1.0	
5111.650	50.8	H	74.0	-23.2	PK	326	1.0	
1666.650	44.4	V	54.0	-9.6	AVG	200	1.0	
1666.590	46.1	V	74.0	-27.9	PK	200	1.0	
1607.960	36.7	H	54.0	-17.3	AVG	213	1.0	
1607.800	43.0	H	74.0	-31.0	PK	213	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

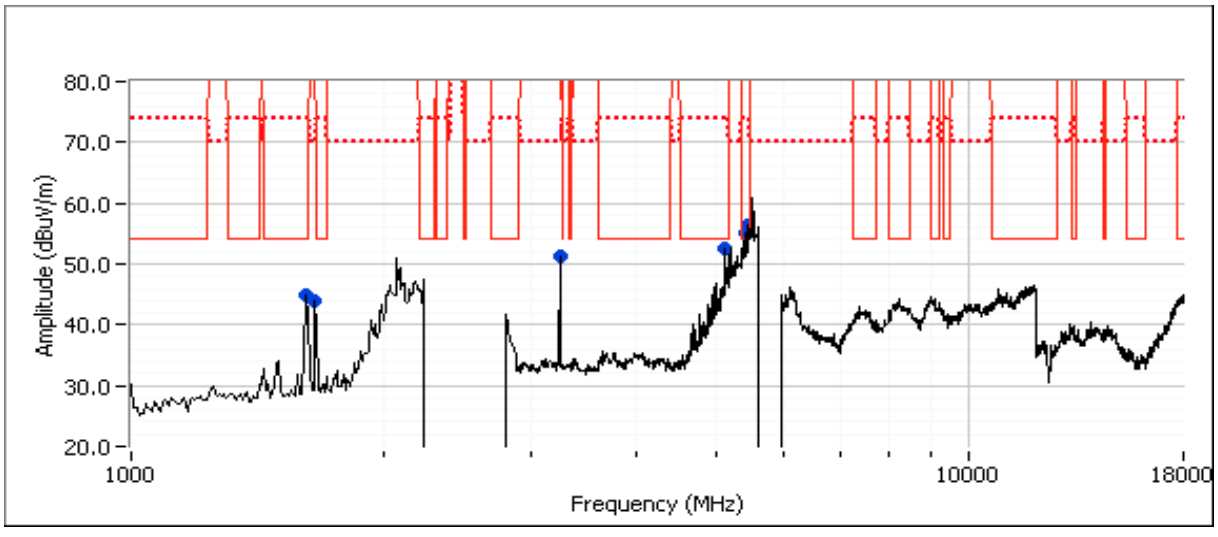
Run #2b, EUT on Channel #6 2437MHz - 802.11g and Channel #157 5785MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	19.0
2	2437 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.970	52.6	H	54.0	-1.4	AVG	63	1.0	
5440.290	61.5	H	74.0	-12.5	PK	63	1.0	
5400.000	51.8	H	54.0	-2.2	AVG	70	1.0	
5400.130	60.0	H	74.0	-14.0	PK	70	1.0	
1624.690	44.0	H	54.0	-10.0	AVG	79	1.0	
1624.650	48.9	H	74.0	-25.1	PK	79	1.0	
1666.650	43.8	V	54.0	-10.2	AVG	196	1.0	
1666.660	46.3	V	74.0	-27.7	PK	196	1.0	
5119.940	49.6	H	54.0	-4.4	AVG	326	1.0	
5120.040	56.6	H	74.0	-17.4	PK	326	1.0	
3249.360	52.5	H	54.0	-1.5	PK	326	1.0	Note 2

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

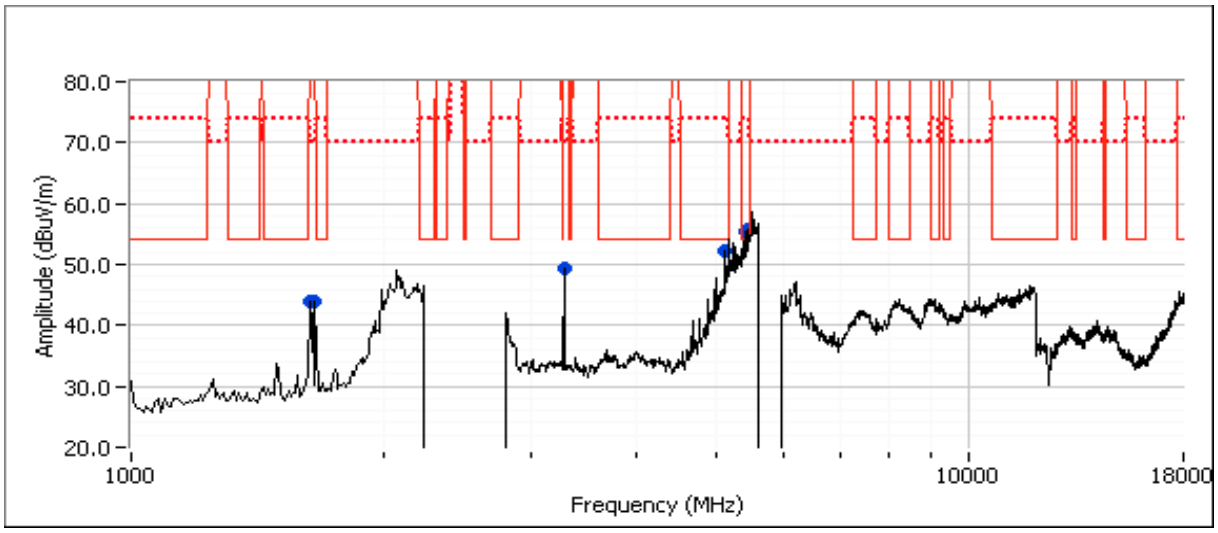
Run #2c, EUT on Channel #11 2462MHz - 802.11g and Channel #165 5825MHz - 802.11a, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	19.0
2	2462 MHz	19.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.940	52.8	H	54.0	-1.2	AVG	67	1.0	
5439.890	59.7	H	74.0	-14.3	PK	67	1.0	
5120.040	49.3	H	54.0	-4.7	AVG	324	1.0	
5120.050	55.4	H	74.0	-18.6	PK	324	1.0	
1666.690	44.5	V	54.0	-9.5	AVG	196	1.0	
1666.610	46.5	V	74.0	-27.5	PK	196	1.0	
5399.970	50.1	H	54.0	-3.9	AVG	70	1.0	
5399.920	59.4	H	74.0	-14.6	PK	70	1.0	
1641.270	47.6	H	54.0	-6.4	PK	86	1.0	Note 2
3282.560	50.7	H	54.0	-3.3	PK	323	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #3, Radiated Spurious Emissions, 1-40GHz, 802.11n20/802.11n20, Chain A+B+C
Run #3a, EUT on Channel #1 2412MHz - 802.11n20 and Channel #149 5745MHz - 802.11n20 - Chain A+B+C

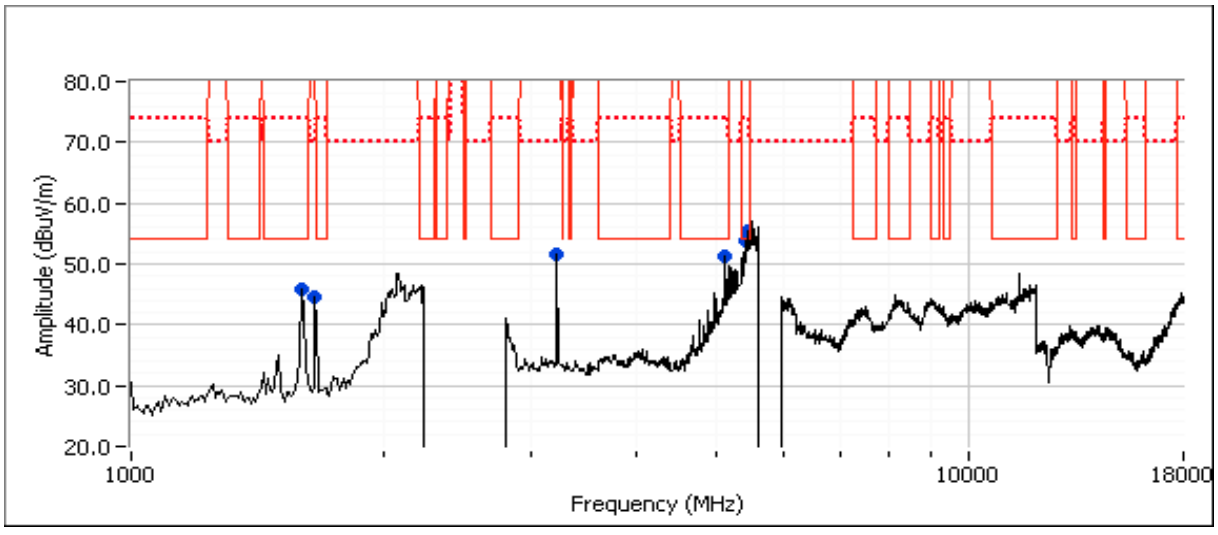
Date of Test: 2/1/13 & 2/4/13 Test Location: FT7
Test Engineer: Rafael Varelas/ Jack Liu Config Change: None

Radio	Freq	Power Setting
1	5745 MHz	20.0
2	2412 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5439.970	52.1	H	54.0	-1.9	AVG	66	1.0	
5440.130	60.1	H	74.0	-13.9	PK	66	1.0	
1608.010	44.5	H	54.0	-9.5	AVG	71	1.0	
1608.050	50.8	H	74.0	-23.2	PK	71	1.0	
5399.940	49.9	H	54.0	-4.1	AVG	72	1.0	
5399.920	58.0	H	74.0	-16.0	PK	72	1.0	
1666.660	44.5	V	54.0	-9.5	AVG	200	1.0	
1666.600	46.3	V	74.0	-27.7	PK	200	1.0	
5119.980	47.8	H	54.0	-6.2	AVG	329	1.0	
5119.780	53.8	H	74.0	-20.2	PK	329	1.0	
3215.740	42.7	H	54.0	-11.3	PK	221	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

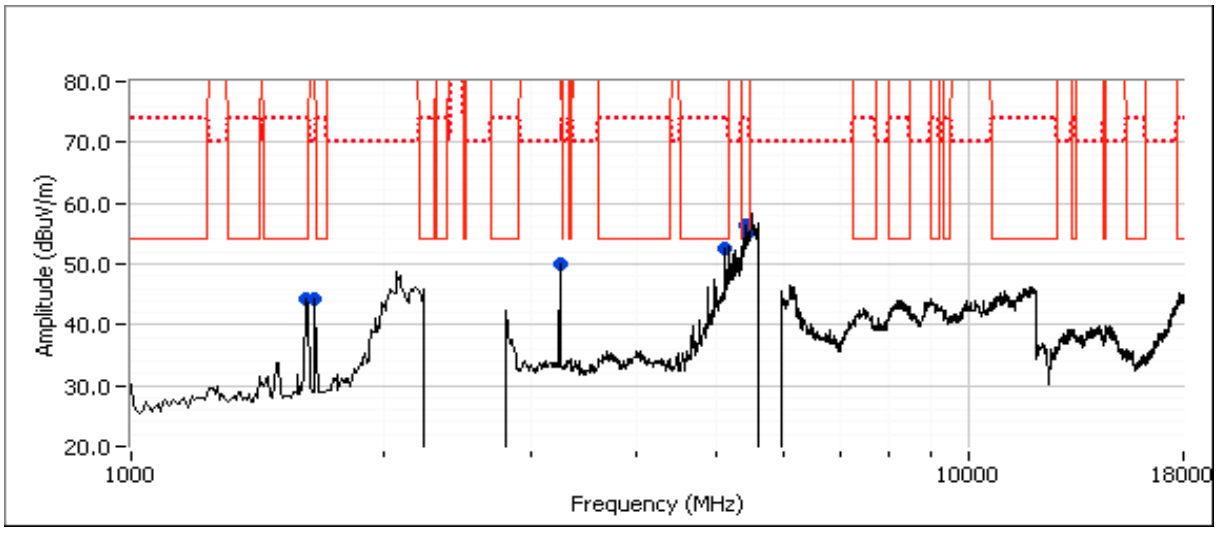
Run #3b: , EUT on Channel #6 2437MHz - 802.11n20 and Channel #157 5785MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5785 MHz	20.0
2	2437 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3249.310	52.3	H	54.0	-1.7	PK	328	1.0	Note 2
5399.980	51.8	H	54.0	-2.2	AVG	66	1.0	
5399.870	60.3	H	74.0	-13.7	PK	66	1.0	
5440.000	50.3	H	54.0	-3.7	AVG	332	1.2	
5440.270	58.7	H	74.0	-15.3	PK	332	1.2	
5119.950	43.8	H	54.0	-10.2	AVG	348	1.0	
5119.920	52.8	H	74.0	-21.2	PK	348	1.0	
1666.660	44.6	V	54.0	-9.4	AVG	202	1.0	
1666.610	46.5	V	74.0	-27.5	PK	202	1.0	
1624.650	42.9	H	54.0	-11.1	AVG	85	1.0	
1624.720	48.6	H	74.0	-25.4	PK	85	1.0	

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



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

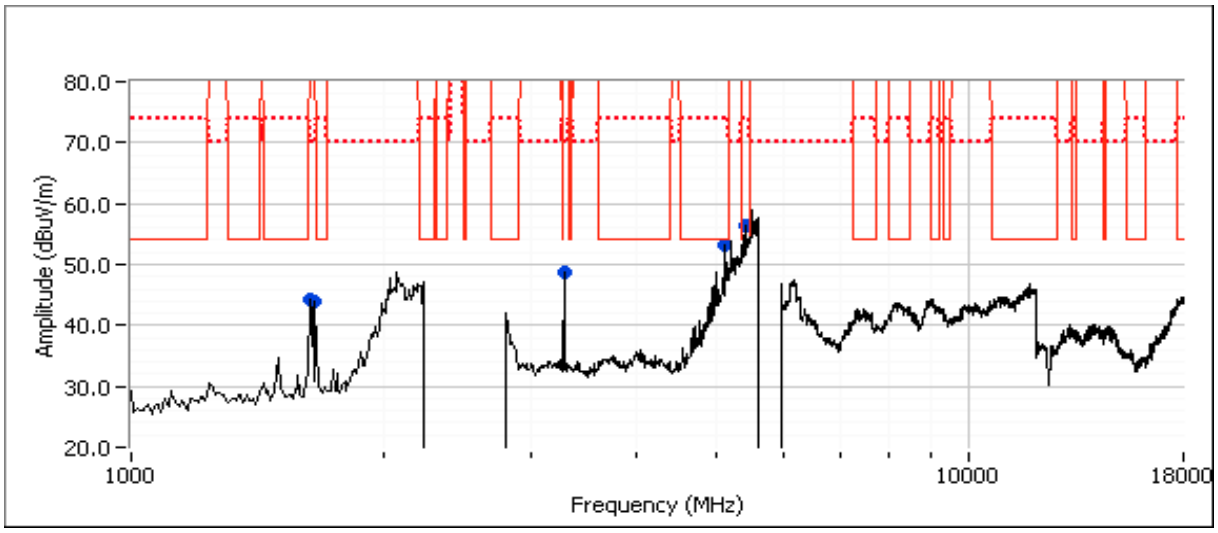
Run #3c: , EUT on Channel #11 2462MHz - 802.11n20 and Channel #165 5825MHz - 802.11n20, Chain A+B+C

Radio	Freq	Power Setting
1	5825 MHz	20.0
2	2462 MHz	20.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5400.000	50.7	H	54.0	-3.3	AVG	72	1.0	
5400.190	60.3	H	74.0	-13.7	PK	72	1.0	
1666.650	44.1	V	54.0	-9.9	AVG	202	1.0	
1666.650	46.4	V	74.0	-27.6	PK	202	1.0	
5120.230	50.4	H	54.0	-3.6	AVG	328	1.0	
5120.020	55.5	H	74.0	-18.5	PK	328	1.0	
1641.320	48.0	H	54.0	-6.0	PK	89	1.0	Note 2
3282.670	50.5	H	54.0	-3.5	PK	330	1.1	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4, Radiated Spurious Emissions, 1-40GHz, 802.11n40/802.11n40, Chain A+B+C
Run #4a, EUT on Channel #3 2422MHz - 802.11n40 and Channel #151 5755MHz - 802.11n40 - Chain A+B+C

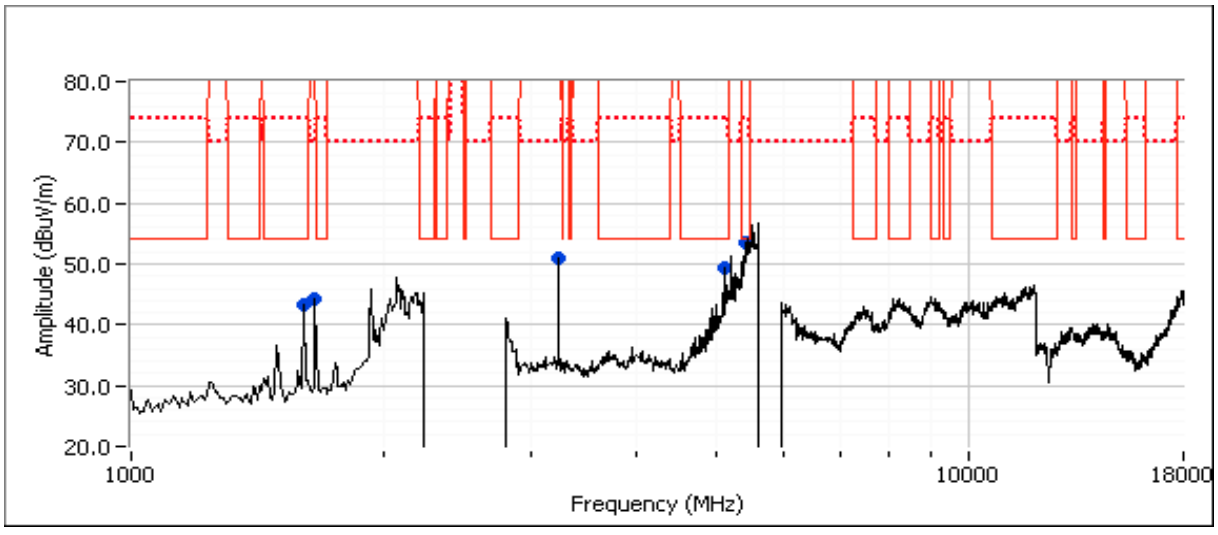
Date of Test: 2/1/13 & 2/4/13 Test Location: FT7
Test Engineer: Rafael Varelas/ Jack Liu Config Change: None

Radio	Freq	Power Setting
1	5755 MHz	19.0
2	2412 MHz	16.0

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209/15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3229.250	52.1	H	54.0	-1.9	PK	327	1.0	Note 2
5399.980	49.6	H	54.0	-4.4	AVG	68	1.0	
5399.920	58.3	H	74.0	-15.7	PK	68	1.0	
5120.020	46.9	H	54.0	-7.1	AVG	330	1.0	
5119.850	54.0	H	74.0	-20.0	PK	330	1.0	
1666.600	44.4	V	54.0	-9.6	AVG	204	1.0	
1666.720	46.3	V	74.0	-27.7	PK	204	1.0	
1614.690	43.5	H	54.0	-10.5	AVG	82	1.0	
1614.490	46.8	H	74.0	-27.2	PK	82	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band average limit was used.



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4b: , EUT on Channel #6 2437MHz - 802.11n40 and Channel #159 5795MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5795 MHz	19.0
2	2437 MHz	16.0

2437MHz

Fundamental emission level @ 3m in 100kHz RBW:	104.2	dBµV/m	
Limit for emissions outside of restricted bands:	84.2	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	74.2	dBµV/m	Limit is -30dBc (UNII power measurement)

5795MHz

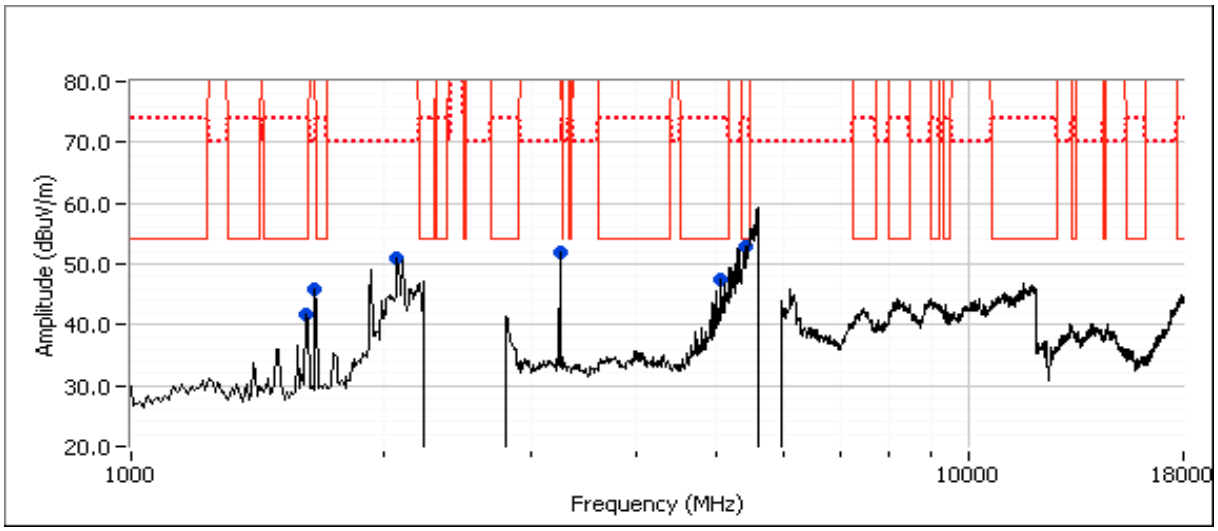
Fundamental emission level @ 3m in 100kHz RBW:	105.6	dBµV/m	
Limit for emissions outside of restricted bands:	85.6	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	75.6	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
5781.570	96.4	V	-	-	PK	19	1.4	POS; RB 100 kHz; VB: 100 kHz
5784.700	105.6	H	-	-	PK	350	1.0	POS; RB 100 kHz; VB: 100 kHz
2450.190	98.4	V	-	-	PK	2	1.7	POS; RB 100 kHz; VB: 100 kHz
2439.770	104.2	H	-	-	PK	324	1.1	POS; RB 100 kHz; VB: 100 kHz
5400.000	50.3	H	54.0	-3.7	AVG	74	1.0	
5400.070	57.6	H	74.0	-16.4	PK	74	1.0	
1666.710	44.9	V	54.0	-9.1	AVG	200	1.0	
1666.650	47.1	V	74.0	-26.9	PK	200	1.0	
5040.000	39.5	H	54.0	-14.5	AVG	50	1.3	
5040.140	46.2	H	74.0	-27.8	PK	50	1.3	
1624.700	42.6	H	54.0	-11.4	AVG	82	1.0	
1624.820	46.3	H	74.0	-27.7	PK	82	1.0	
2087.530	54.7	H	74.2	-19.5	PK	352	1.0	Note 1
3249.330	52.1	H	74.2	-22.1	PK	331	1.0	Note 1

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -30dBc for peak measurements in a measurement bandwidth of 100kHz.
Note 2:	Scans made between 18 - 40GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no signifcant emissions in this frequency range

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A

Run #4c: , EUT on Channel #9 2452MHz - 802.11n40 and Channel #159 5795MHz - 802.11n40, Chain A+B+C

Radio	Freq	Power Setting
1	5795 MHz	19.0
2	2452 MHz	16.0

2452MHz

Fundamental emission level @ 3m in 100kHz RBW:	105.1	dBµV/m	
Limit for emissions outside of restricted bands:	85.1	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	75.1	dBµV/m	Limit is -30dBc (UNII power measurement)

5795MHz

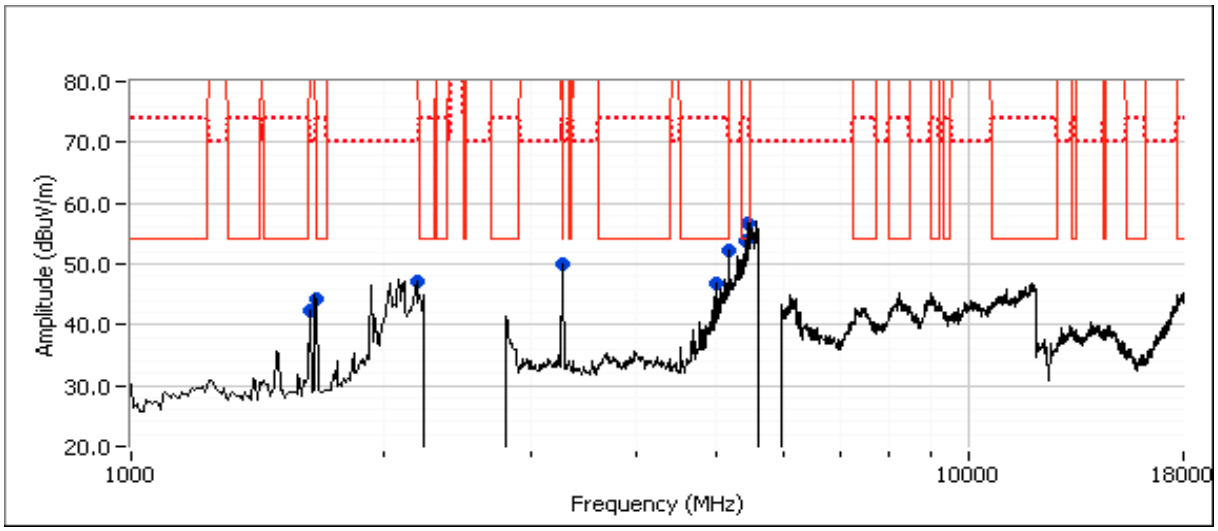
Fundamental emission level @ 3m in 100kHz RBW:	105.6	dBµV/m	
Limit for emissions outside of restricted bands:	85.6	dBµV/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	75.6	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
5781.570	96.4	V	-	-	PK	19	1.4	POS; RB 100 kHz; VB: 100 kHz
5784.700	105.6	H	-	-	PK	350	1.0	POS; RB 100 kHz; VB: 100 kHz
2435.210	97.8	V	-	-	PK	3	1.7	POS; RB 100 kHz; VB: 100 kHz
2442.980	105.1	H	-	-	PK	326	1.1	POS; RB 100 kHz; VB: 100 kHz
5400.000	49.8	H	54.0	-4.2	AVG	64	1.0	RB 1 MHz;VB 10 Hz;Peak
5399.980	57.4	H	74.0	-16.6	PK	64	1.0	RB 1 MHz;VB 3 MHz;Peak
1666.690	45.1	V	54.0	-8.9	AVG	202	1.0	RB 1 MHz;VB 10 Hz;Peak
1666.670	46.5	V	74.0	-27.5	PK	202	1.0	RB 1 MHz;VB 3 MHz;Peak
5439.940	47.9	H	54.0	-6.1	AVG	51	1.1	RB 1 MHz;VB 10 Hz;Peak
5439.340	55.2	H	74.0	-18.8	PK	51	1.1	RB 1 MHz;VB 3 MHz;Peak
4999.930	43.6	H	54.0	-10.4	AVG	91	1.0	RB 1 MHz;VB 10 Hz;Peak
5000.000	51.8	H	74.0	-22.2	PK	91	1.0	RB 1 MHz;VB 3 MHz;Peak
5160.280	55.9	H	75.6	-19.7	PK	328	1.2	Note 1
3269.350	51.6	H	75.1	-23.5	PK	328	1.0	Note 1
1634.730	45.1	H	75.1	-30.0	PK	85	1.0	Note 1
2199.690	53.5	H	75.1	-21.6	PK	72	1.0	Note 1

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

Client:	Flextronics	Job Number:	J89632
Model:	WS-AP3710e	T-Log Number:	T89830
		Account Manager:	Christine Krebill
Contact:	George Fares		
Standard:	15.247, 15.407, RSS-210	Class:	N/A



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