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EMC Test Report

Application for FCC Grant of Equipment Authorization
Class III Permissive Change

FCC Part 15, Subpart E

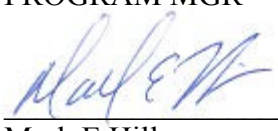
Model: BGW210-700 ARRIS DSL Wireless Residential Gateway

FCC ID:	PGRBGW210
APPLICANT:	ARRIS 310 Providence Mine Road Nevada City, CA 95959
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-4, 2845B-7
REPORT DATE:	March 14, 2017
REISSUE DATE:	March 24, 2017
FINAL TEST DATES:	September 28-30, October 3-11, November 3, December 20-27, 2016 and January 5-6, 2017
TOTAL NUMBER OF PAGES:	209

A2LA ACCREDITED
Testing Cert #0214.26

VALIDATING SIGNATORIES

PROGRAM MGR



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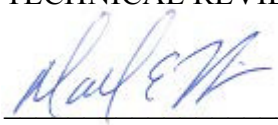

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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	March 14, 2017	First release	
1.0	March 22, 2017	Corrected frequency band reference in the limit section. Clarified 11a in UNII1. Clarified spurious emissions performed. Clarified # of Spatial Streams used for spurious emissions.	MEH

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SCOPE

An electromagnetic emissions test has been performed on the ARRIS model BGW210-700 ARRIS DSL Wireless Residential Gateway, pursuant to the following rules:

FCC Part 15, Subpart E requirements for UNII Devices

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

ANSI C63.10-2013
FCC General UNII Test Procedures KDB789033

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

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

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

Testing included in this report: (1) increase power for bandedge channels in UNII1, and (2) add operation in the DFS bands. The increase power in UNII1 is done via software change, and evaluation of increased number of spatial streams. Bandedge testing in the DFS bands also included evaluation for spatial streams.

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 ARRIS model BGW210-700 ARRIS DSL Wireless Residential Gateway complied with the requirements of the following regulations:

FCC Part 15, Subpart E requirements for UNII Devices

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

The test results recorded herein are based on a single type test of ARRIS model BGW210-700 ARRIS DSL Wireless Residential Gateway and therefore apply only to the tested sample. The sample was selected and prepared by Mark Rieger of ARRIS.

DEVIATIONS FROM THE STANDARDS

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

TEST RESULTS SUMMARY

UNII / LELAN DEVICES

OPERATION IN THE 5.15 – 5.25 GHZ BAND – ACCESS POINTS

FCC Rule Part		Description	Measured Value / Comments	Limit / Requirement	Result
15.407 (a) (1) (ii)		Output Power (Note 1)	n20: 26.9 dBm (495.4mW) n40: 23.1 dBm (205.4mW) ac80: 24.0 dBm (251mW) (Max eirp: 2.21W)	30 dBm EIRP <= 4W	Complies
15.407 (a) (1) (ii)		Power Spectral Density	n20: 14.0 dBm/MHz n40: 7.4 dBm/MHz ac80: 5.1 dBm/MHz	17 dBm/MHz	Complies
15.407(b) (1) / 15.209		Spurious Emissions (Note 2)	53.9 dBµV/m @ 5149.4 MHz (-0.1 dB)	Refer to the limits section (p22) for restricted bands, all others -27 dBm/MHz EIRP	Complies
Note 1: No changes were made to the output power for the 11a mode. No testing was performed. Note 2: Spurious emissions (non-bandedge) were not performed. The spurious emissions in the original filing were performed at higher output levels than the final power levels reported here.					

OPERATION IN THE 5.25 – 5.35 GHZ BAND

FCC Rule Part		Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	>20MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)		Output Power	a: 21.1dBm (129.8mW) n20: 21.4dBm (137.3mW) n40: 23.7 dBm (232.1mW) ac80: 23.4 dBm (218.9mW) (Max eirp: 0.914W)	24 dBm (250 mW) EIRP <= 1W	Complies
15.407(a) (2)		Power Spectral Density	a: 10.0 dBm/MHz n20: 10.0 dBm/MHz n40: 8.7 dBm/MHz ac80: 6.6 dBm/MHz	11 dBm/MHz	Complies
15.407(b) (2) / 15.209		Spurious Emissions (Note 1)	53.8 dBµV/m @ 5350.0 MHz (-0.2 dB)	Refer to the limits section (p22) for restricted bands, all others -27 dBm/MHz EIRP	Complies
Note 1: Spurious emissions below 1GHz, and simultaneous transmission with the 2.4GHz radio was not performed, based on the results in the original filing. No spurious emissions below 1GHz or intermodulation products were observed.					

OPERATION IN THE 5.47 – 5.725 GHZ BAND

FCC Rule Part		Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	>20MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)		Output Power	11a: 20.5dBm (112.2mW) n20: 20.5dBm (112.3mW) n40: 23.8dBm (238.9mW) ac80: 23.9 dBm (247mW) (Max eirp: 0.966W)	24 dBm (250 mW) EIRP <= 1W	Complies
15.407(a) (2)		Power Spectral Density	11a: 9.9 dBm/MHz n20: 9.5 dBm/MHz n40: 9.6 dBm/MHz ac80: 8.5 dBm/MHz	11 dBm/MHz	Complies
15.407(b) (3) / 15.209		Spurious Emissions	53.6 dBµV/m @ 5459.5 MHz (-0.4 dB)	Refer to the limits section (p22) for restricted bands, all others -27 dBm/MHz EIRP	Complies
Note 1: Spurious emissions below 1GHz, and simultaneous transmission with the 2.4GHz radio was not performed, based on the results in the original filing. No spurious emissions below 1GHz or intermodulation products were observed.					

REQUIREMENTS FOR ALL U-NII/LELAN BANDS

FCC Rule Part		Description	Measured Value / Comments	Limit / Requirement	Result
15.407		Modulation	Unchanged from original filing		
15.31 (m)		Channel Selection	Emissions tested at outermost and middle channels in each band	Device was tested on the top, bottom and center channels in each band	N/A
15.407 (c)		Operation in the absence of information to transmit	Unchanged from original filing		
15.407 (g)		Frequency Stability			
15.407 (h1)		Transmit Power Control	TCP mechanism is discussed in the Operational Description	The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW)	Complies
15.407 (h2)		Dynamic frequency Selection (device with radar detection)	Refer to separate test report, reference R103052	Threshold -62dBm (-64dBm if eirp > 200mW) Channel Availability Check > 60s Channel closing transmission time < 260ms Channel move time < 10s Non occupancy period > 30minutes	Complies

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Antennas are internal to the device	Unique or integral antenna required	Complies
15.407 (b) (6)	RSS-Gen Table 3	AC Conducted Emissions	Unchanged from original filing		
15.247 (i) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in separate exhibit	Refer to OET 65, FCC Part 1 and RSS 102	Complies

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 ARRIS model BGW210-700 ARRIS DSL Wireless Residential Gateway is a uDSL Wireless Residential Gateway that is designed to connect to a PSTN Telecommunications network supporting a bonded VDSL2 connection. The electrical rating of the EUT is 12 Volts, 3 Amps DC. It is supplied by an external AC/DC power supply.

The sample was received on September 14, 2016 and tested on September 28-30, October 3-11, November 3, December 20-27, 2016 and January 5-6, 2017. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
ARRIS	BGW210-700	uDSL Wireless Residential Gateway	Refer to test data	PGRBGW210
DIRECTV	EPS36R0-16	AC/DC Adapter	D36HAKM001368	N/A

OTHER EUT DETAILS

2.4GHz radio –802.11bgn (20/40MHz)
Only transmits in 3Tx mode, supports 1 to 3 spatial streams
Beamforming is supported for 11n 20 and 40MHz operation
5GHz radio – 802.11abgn/ac (20/40/80MHz)
Only transmits in 4Tx mode, supports 1 to 4 spatial streams
Beamforming supported for 11n/ac 20, 40, 80MHz operation
Simultaneous transmission of 2.4 and 5GHz supported.

ANTENNA SYSTEM

2.4GHz – three stamped metal antennas. Two are mounted on the interior of the enclosure and one is mounted directly to the motherboard. Peak Gains: 3.11dBi, 3.665dBi, 3.653dBi.

5GHz – four stamped metal antennas. One is mounted on the interior of the enclosure and three are mounted directly to the motherboard.

ENCLOSURE

The EUT enclosure measures approximately 25cm by 20cm by 6cm. It is primarily constructed of uncoated plastic.

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 support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
	-	None	-	-

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

Company	Model	Description	Serial Number	FCC ID
Dell	Latitude 1311	Laptop	-	-

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 1	Laptop	RJ45	Unshielded	10.0
Ethernet 2,3,4	Unterminated	RJ45	Unshielded	2.0
USB 1,2	Unterminated	USB	Shielded	2.0
Broadband	Unterminated	RJ11	Unshielded	2.0
Phone Lines 1&2	Unterminated	RJ11	Unshielded	2.0
DC In	Power Supply DC out	2-wire	Unshielded	1.0
Power Supply AC in	AC mains	2-wire	Unshielded	1.5

EUT OPERATION

During testing, the EUT was configured to continuously transmit at the maximum output power. Channel, data rate, and mode is detailed in the test results.

For radiated beamforming testing, the EUT was configured to establish a connection with a remote client located behind the measurement antenna and data was streamed from the EUT to the client.

Note, antenna port measurements for beamforming operation were performed using the test mode commands since the rf spectrum emissions are identical to non-beamforming transmissions.

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	Designation / Registration Numbers		Location
	FCC	Canada	
Chamber 3	US0027	2845B-3	41039 Boyce Road Fremont, CA 94538-2435
Chamber 4	US0027	2845B-4	
Chamber 5	US0027	2845B-5	
Chamber 7	US0027	2845B-7	

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

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

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

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

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

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

INSTRUMENT CONTROL COMPUTER

Software is used to view and convert 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 software used for radiated and conducted emissions measurements is NTS EMI Test Software (rev 2.10)

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

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

FILTERS/ATTENUATORS

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

ANTENNAS

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

ANTENNA MAST AND EQUIPMENT TURNTABLE

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

ANSI C63.10 specifies that the test height above ground for table mounted devices shall be 80 centimeters for testing below 1GHz, and at 1.5m for testing above 1GHz. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

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

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

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

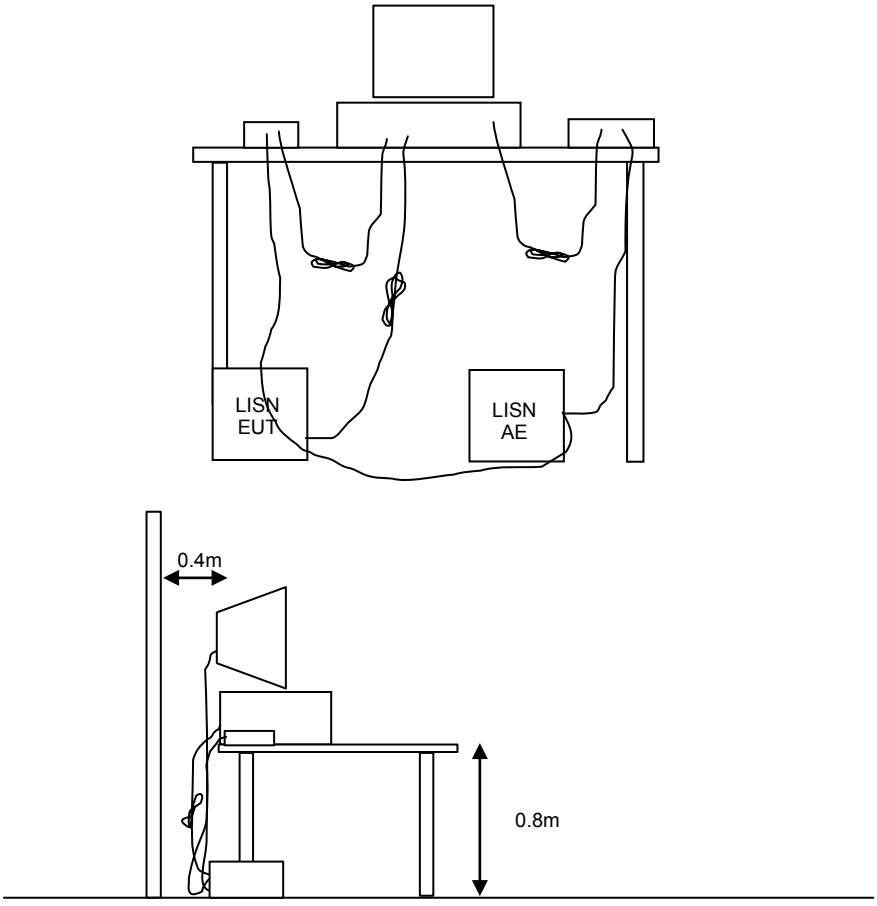


Figure 1 Typical Conducted Emissions Test Configuration

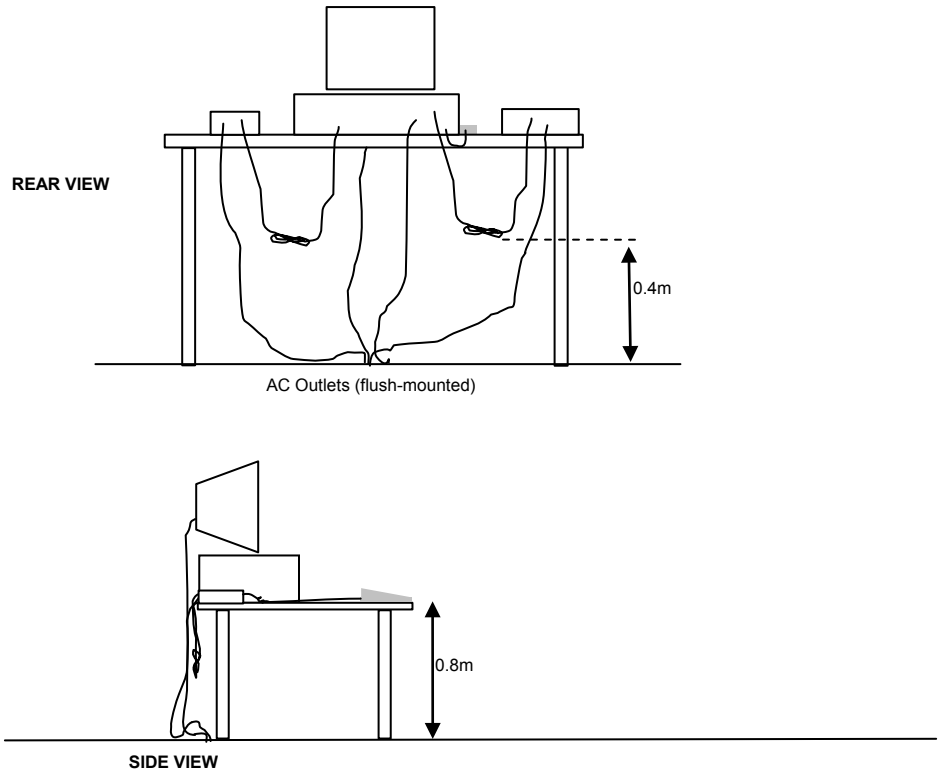
RADIATED EMISSIONS

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

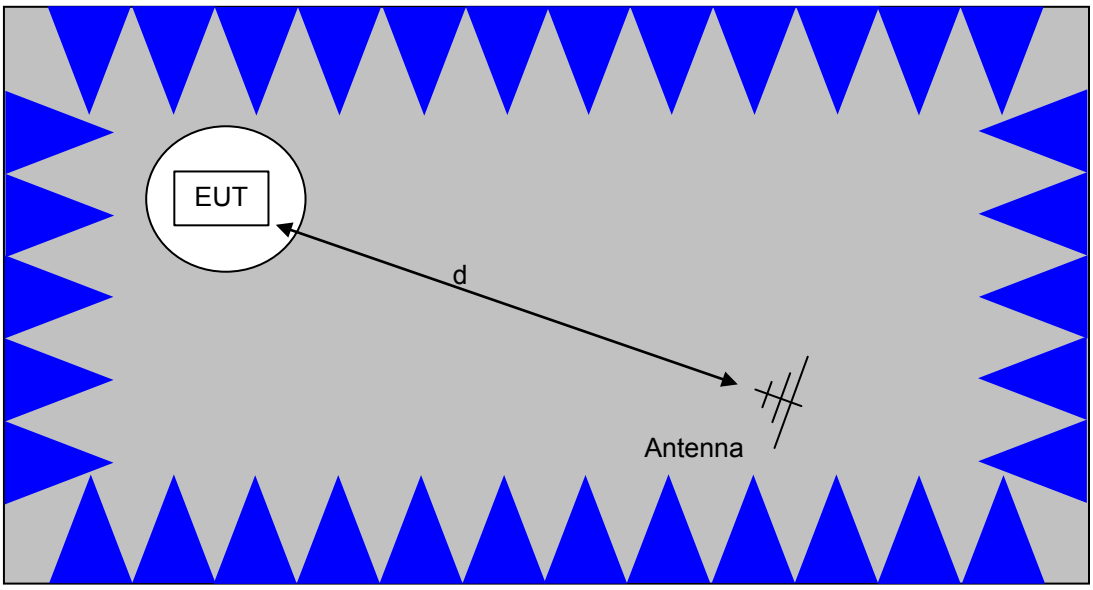
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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

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

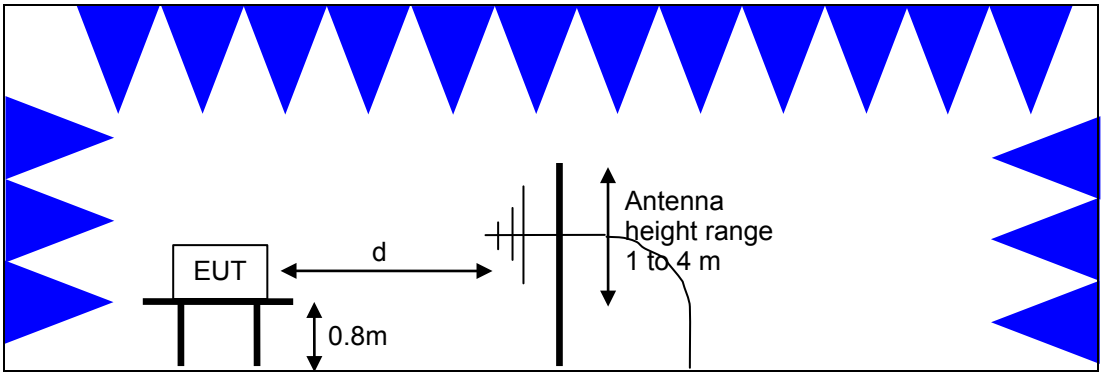


Typical Test Configuration for Radiated Field Strength Measurements



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

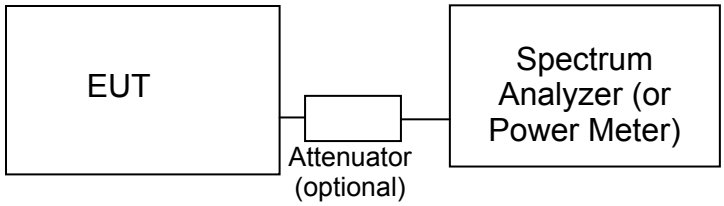
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



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

CONDUCTED EMISSIONS FROM ANTENNA PORT

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



Test Configuration for Antenna Port Measurements

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

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

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

BANDWIDTH MEASUREMENTS

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

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

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

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

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

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

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands[1].

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 and RSS GEN Table 2. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109 and receivers that are not stand-alone are exempt from the ISED Canada requirements per RSS-GEN.

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 15.205 and RSS-Gen Table 6

FCC 15.407 (a) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. For the 5250-5350 and 5470-5725 MHz bands, where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	1Watt (30 dBm)	17 dBm/MHz
5250 – 5350 and 5470-5725	250 mW (24 dBm)	11 dBm/MHz
5725 – 5850	1 Watt (30 dBm)	30 dBm/500kHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi.

SPURIOUS EMISSIONS LIMITS –UNII and LELAN DEVICES

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

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - S = M$$

where:
R_r = Receiver Reading in dBuV
S = Specification Limit in dBuV
M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

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

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

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

where:
F_d = Distance Factor in dB
D_m = Measurement Distance in meters
D_s = Specification Distance in meters

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

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

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

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

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:
R_r = Receiver Reading in dBuV/m
F_d = Distance Factor in dB
R_c = Corrected Reading in dBuV/m
L_s = Specification Limit in dBuV/m
M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

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

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

where P is the eirp (Watts)

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

Appendix A Test Equipment Calibration Data

T102846

Manufacturer	Description	Model	Asset #	Calibrated	Cal Due
Radiated Emissions, 1 - 6 GHz, 28-Sep-16					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/30/2016	6/30/2018
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/29/2016	6/29/2017
Radiated Spurious Emissions, 1,000 - 40,000 MHz, 30-Sep-16					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	10/12/2015	10/12/2016
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/30/2016	6/30/2018
Hewlett Packard	Spectrum Analyzer (SA40) Blue 9 kHz - 40 GHz	8564E (84125C)	1393	3/28/2016	3/28/2017
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/29/2016	6/29/2017
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	9/19/2016	9/19/2017
Radiated Emissions, 1,000 - 40,000 MHz, 30-Sep-16					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/20/2016	9/20/2017
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	10/12/2015	10/12/2016
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/30/2016	6/30/2018
Hewlett Packard	Spectrum Analyzer (SA40) Blue 9 kHz - 40 GHz	8564E (84125C)	1393	3/28/2016	3/28/2017
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/29/2016	6/29/2017
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	9/19/2016	9/19/2017
Radiated Emissions, 1,000 - 40,000 MHz, 03-Oct-16					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/20/2016	9/20/2017
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	10/12/2015	10/12/2016
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/30/2016	6/30/2018
Hewlett Packard	Spectrum Analyzer (SA40) Blue 9 kHz - 40 GHz	8564E (84125C)	1393	3/28/2016	3/28/2017
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/29/2016	6/29/2017
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	9/19/2016	9/19/2017
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1152	6/28/2016	6/28/2017
HP / Miteq	SA40 Head (Blue)	TTA1840-45-5P-HG-S	1620	3/8/2016	3/8/2017
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	5/9/2016	5/9/2017
A. H. Systems	Red System Horn, 18-40GHz	SAS-574, p/n: 2581	2161	7/16/2015	7/16/2017

Manufacturer	Description	Model	Asset #	Calibrated	Cal Due
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/20/2016	9/20/2017
Radiated Emissions, 1,000 - 18,000 MHz, 04-Oct-16					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	10/12/2015	11/12/2016
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/30/2016	6/30/2018
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1152	6/28/2016	6/28/2017
Hewlett Packard	Spectrum Analyzer (SA40) Blue 9 kHz - 40 GHz	8564E (84125C)	1393	3/28/2016	3/28/2017
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	5/9/2016	5/9/2017
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	6/29/2016	6/29/2017
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	9/20/2016	9/20/2017
Radiated Emissions, 30 - 1,000 MHz, 04-Oct-16					
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/19/2015	12/19/2016
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	2197	9/9/2015	9/9/2017
Com-Power	Preamplifier, 30-1000 MHz	PA-103	2465	9/16/2016	9/16/2017
Radiated Emissions, 1000 - 40,000 MHz, 04-Oct-16					
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	10/12/2015	11/12/2016
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/30/2016	6/30/2018
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1152	6/28/2016	6/28/2017
Hewlett Packard	Spectrum Analyzer (SA40) Blue 9 kHz - 40 GHz	8564E (84125C)	1393	3/28/2016	3/28/2017
HP / Miteq	SA40 Head (Blue)	TTA1840-45-5P-HG-S	1620	3/8/2016	3/8/2017
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	5/9/2016	5/9/2017
A. H. Systems	Red System Horn, 18-40GHz	SAS-574, p/n: 2581	2161	7/16/2015	7/16/2017
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2238	9/19/2016	9/19/2017
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	9/19/2016	9/19/2017
Radio Antenna Port (Power and Spurious Emissions), 06-Oct-16 thru 12-Oct-16					
NTS	NTS UNII Power Software (rev 3.8)	N/A	0		N/A
NTS	NTS Capture Analyzer Software (rev 3.8)	N/A	0		N/A
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	6/24/2016	6/24/2017
Radio Antenna Port (Power and Spurious Emissions), 04-Nov-16					
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	5/6/2016	5/6/2017

T103599

Manufacturer	Description	Model	Asset #	Calibrated	Cal Due
Radiated Spurious Emissions, 1000 - 6,000 MHz, 20-Dec-16 and 22-Dec-16					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	9/29/2016	9/29/2018
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	9482	10/28/2016	10/28/2017
Band Edge , 27-Dec-16					
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	9/29/2016	9/29/2018
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	9482	10/28/2016	10/28/2017
Radiated Emissions, 1000 - 6,000 MHz, 04-Jan-17					
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	9/29/2016	9/29/2018
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	2/20/2016	2/20/2017
Radiated Spurious Emissions, 1000 - 6,500 MHz, 05-Jan-17					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
NTS	NTS Capture Analyzer Software (rev 3.8)	N/A	0		N/A
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	9/29/2016	9/29/2018
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	2/20/2016	2/20/2017
Radio Antenna Port (Power and Spurious Emissions), 06-Jan-17					
Rohde & Schwarz	Signal Analyzer 20 Hz - 26.5 GHz	FSQ26	2327	6/17/2016	6/17/2017
Rohde & Schwarz	Open Switch and Control Unit, p/s	OSP120 with B157	3000	6/16/2016	6/16/2017

Appendix B Test Data

T102846 Pages 30 – 115
T103599 Pages 116 – 208

Client:	ARRIS	Job Number:	JD102271
Product	BGW210-700	T-Log Number:	T102846
System Configuration:	-	Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Emissions Standard(s):	FCC 15.B, 15.247, 15.407	Class:	B
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

ARRIS

Product

BGW210-700

Date of Last Test: 12/7/2016

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

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

Ambient Conditions:

Temperature: 21.9 °C
Rel. Humidity: 52 %

Summary of Results

Run #	Mode	Channel	Target Power	Passing Power Setting	Test Performed	Limit	Result / Margin
20MHz Bandwith Modes							
2	a	60 - 5300MHz	23	23	Restricted Band Edge at 5350 MHz	15.209	52.7 dBµV/m @ 5350.1 MHz (-1.3 dB)
	a	64 - 5320MHz	23	19	Restricted Band Edge at 5350 MHz	15.209	53.3 dBµV/m @ 5351.0 MHz (-0.7 dB)
3	a	100 - 5500MHz	23	23	Restricted Band Edge at 5460 MHz	15.209	52.3 dBµV/m @ 5455.6 MHz (-1.7 dB)
	a	100 - 5500MHz	23	23	Band Edge 5460 - 5470 MHz	15E	66.6 dBµV/m @ 5469.8 MHz (-1.7 dB)
	a	136 - 5680MHz	23	23	Band Edge 5725MHz	15E	64.5 dBµV/m @ 5725.2 MHz (-3.8 dB)
	a	140 - 5700MHz	23	20	Band Edge 5725MHz	15E	66.7 dBµV/m @ 5725.2 MHz (-1.6 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Summary of Results

Run #	Mode	Channel	Target Power	Passing Power Setting	Test Performed	Limit	Result / Margin
6	n20	64 - 5320MHz	23	21	Restricted Band Edge at 5350 MHz	15.209	53.1 dBµV/m @ 5351.0 MHz (-0.9 dB)
7	n20	100 - 5500MHz	23	21	Restricted Band Edge at 5460 MHz	15.209	52.2 dBµV/m @ 5460.0 MHz (-1.8 dB)
	n20	100 - 5500MHz	23	21	Band Edge 5460 - 5470 MHz	15E	67.5 dBµV/m @ 5460.9 MHz (-0.8 dB)
	n20	136 - 5680MHz	23	23	Band Edge 5725MHz	15E	65.2 dBµV/m @ 5728.6 MHz (-3.1 dB)
	n20	140 - 5700MHz	23	20	Band Edge 5725MHz	15E	67.1 dBµV/m @ 5730.5 MHz (-1.2 dB)
40MHz Bandwith Modes							
11	n40	110 - 5550MHz	23	23	Restricted Band Edge at 5460 MHz	15.209	47.7 dBµV/m @ 5453.0 MHz (-6.3 dB)
	n40	110 - 5550MHz	23	23	Band Edge 5460 - 5470 MHz	15E	64.9 dBµV/m @ 5467.4 MHz (-3.4 dB)
	n40	134 - 5670MHz	23	23	Band Edge 5725MHz	15E	66.3 dBµV/m @ 5729.3 MHz (-2.0 dB)
80MHz Bandwith Modes							
16	ac80	122 - 5610MHz	23	23	Restricted Band Edge at 5460 MHz	15.209	49.3 dBµV/m @ 5458.0 MHz (-4.7 dB)
	ac80	122 - 5610MHz	23	23	Band Edge 5460 - 5470 MHz	15E	62.0 dBµV/m @ 5460.4 MHz (-6.3 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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mbs	0.89	Yes	0.558	0.51	1.01	1792
n20	MSC0	0.99	Yes	4.96	0	0	10
n40	MCS0	0.97	Yes	2.408	0.11	0.22	415
ac80	VHT0	0.96	Yes	1.139	0.19	0.37	878

Sample Notes

Sample S/N: 184795206016480
Driver:
Antenna: 4x4 internal

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 9/29/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

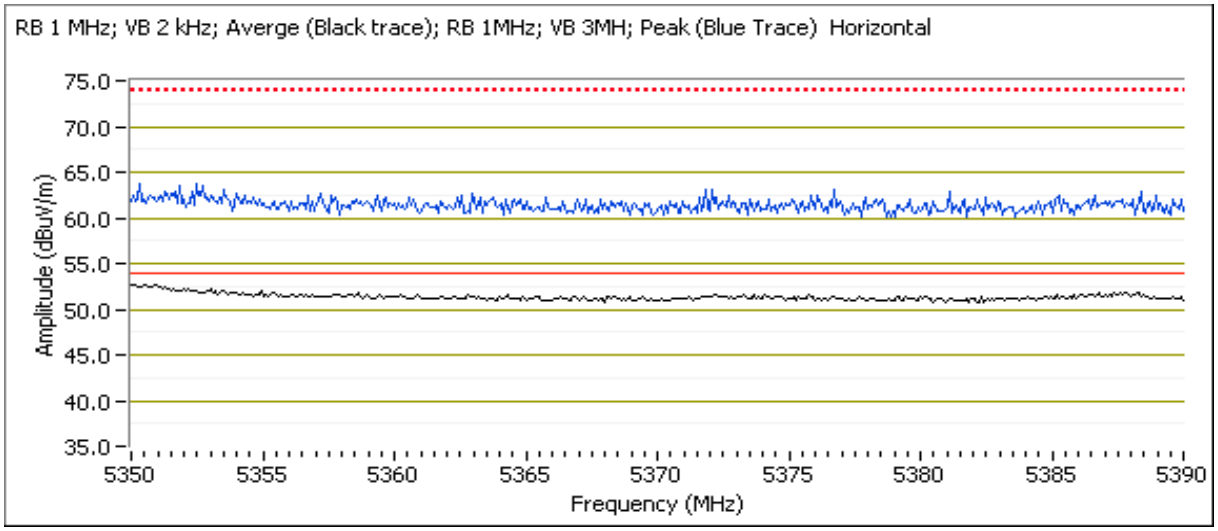
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

Channel: 60 - 5300MHz
Tx Chain: 4Tx
Mode: a
Data Rate: 6 Mbs

EUT Orientation: Flat
Power setting: 23

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.090	**52.7**	H	54.0	**-1.3**	Avg	360	1.2	POS; RB 1 MHz; VB: 2 kHz
5356.340	63.8	H	74.0	-10.2	PK	360	1.2	POS; RB 1 MHz; VB: 3 MHz



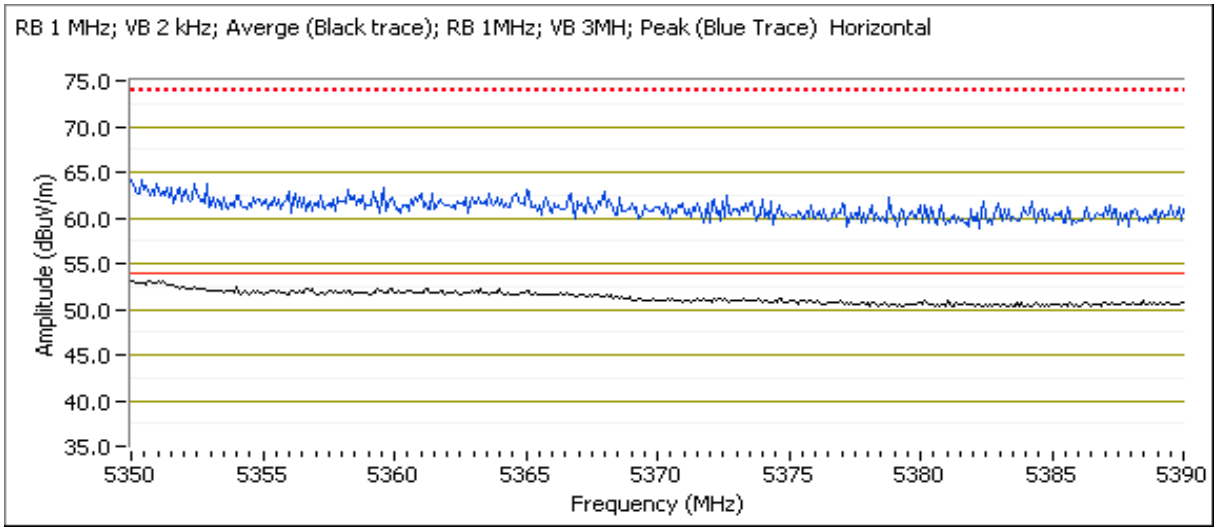
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 64 - 5320MHz
Tx Chain: 4Tx
Mode: a
Data Rate: 6 Mbs

EUT Orientation: Flat
Power setting: 19

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.990	**53.3**	H	54.0	**-0.7**	Avg	360	1.2	POS; RB 1 MHz; VB: 2 kHz
5350.870	64.7	H	74.0	-9.3	PK	360	1.2	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 9/29/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

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

Channel: 100 - 5500MHz
Tx Chain: 4Tx
Mode: a
Data Rate: 6 Mbs

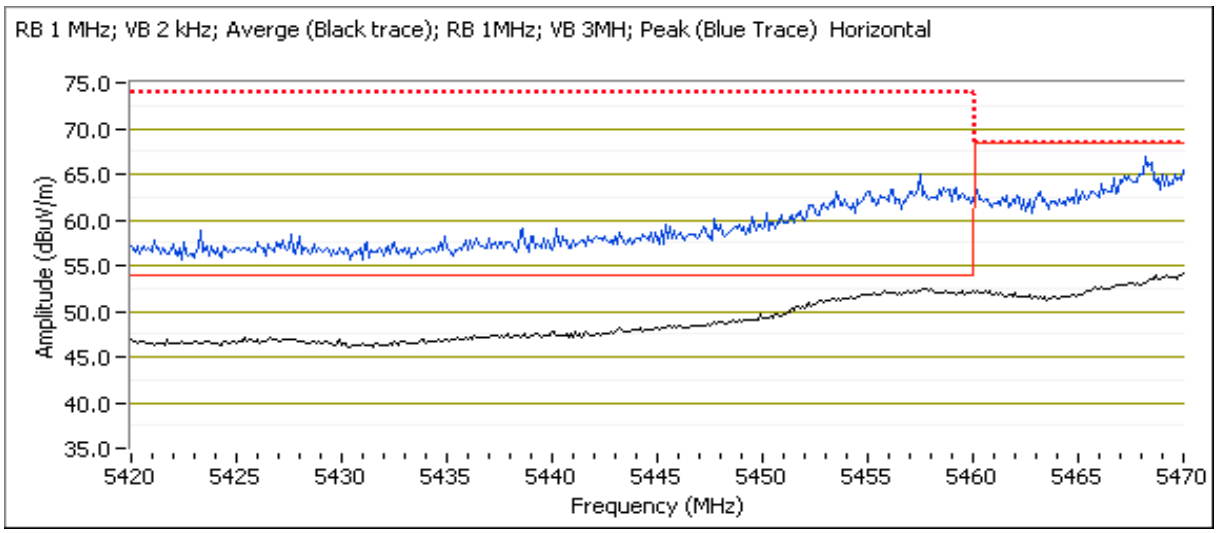
EUT Orientation: Flat
Power setting: 23

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5455.640	**52.3**	H	54.0	**-1.7**	Avg	0	1.5	POS; RB 1 MHz; VB: 2 kHz
5458.170	65.1	H	74.0	-8.9	PK	0	1.5	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.760	**66.6**	H	68.3	**-1.7**	PK	0	1.5	POS; RB 1 MHz; VB: 3 MHz



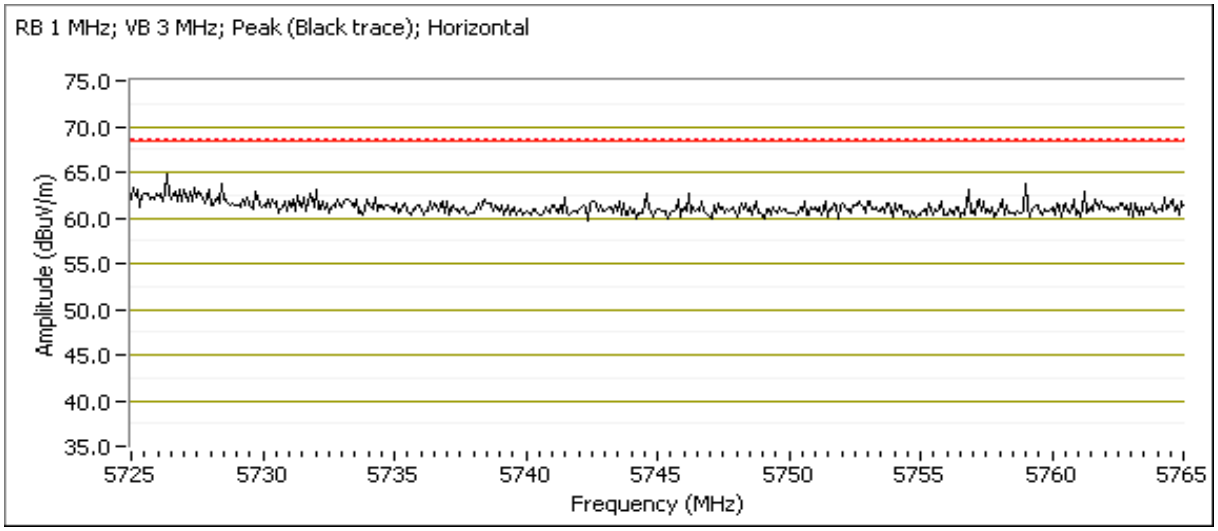
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 136 - 5680MHz
Tx Chain: 4Tx
Mode: a
Data Rate: 6 Mbs

EUT Orientation: Flat
Power setting: 23

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5725.240	**64.5**	H	68.3	**-3.8**	PK	350	1.6	POS; RB 1 MHz; VB: 3 MHz



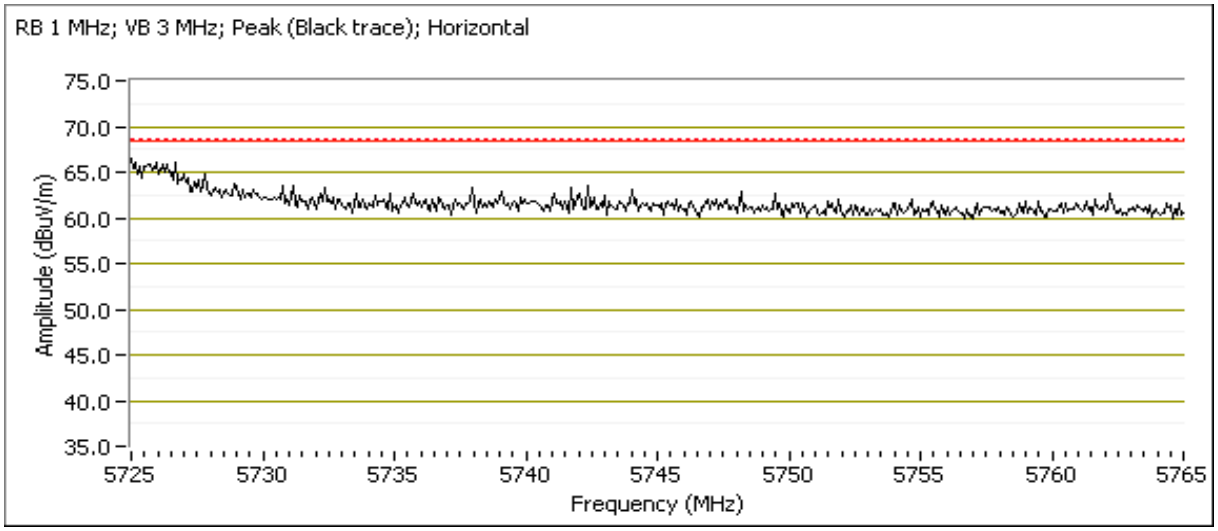
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 140 - 5700MHz
Tx Chain: 4Tx
Mode: a
Data Rate: 6 Mbs

EUT Orientation: Flat
Power setting: 20

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5725.160	**66.7**	H	68.3	**-1.6**	PK	350	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #6: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 9/29/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

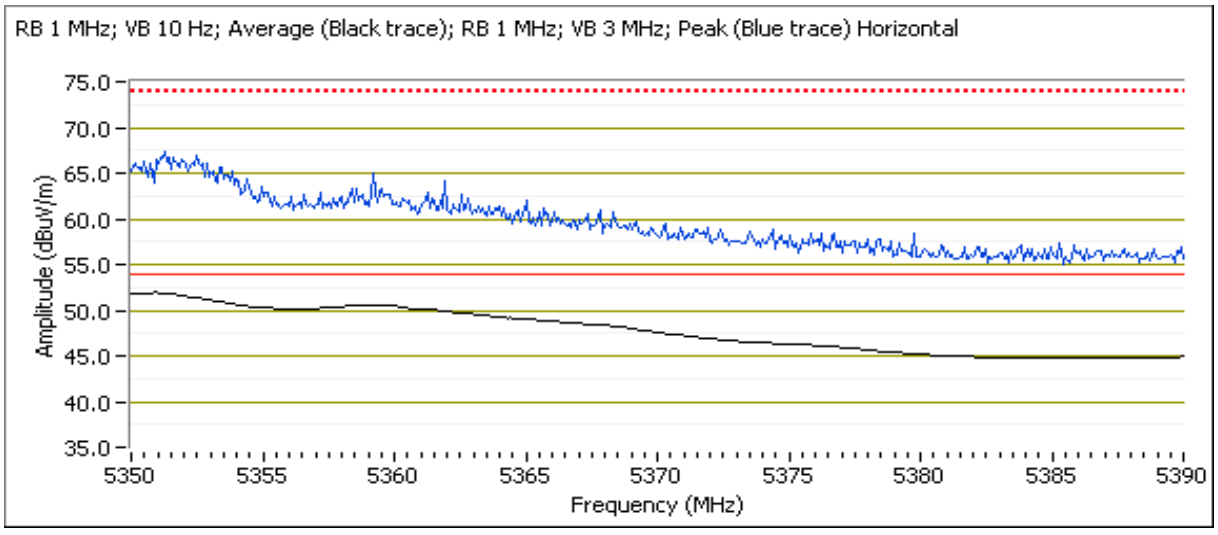
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

Channel: 64 - 5320MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 21

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.960	**53.1**	H	54.0	**-0.9**	AVG	0	1.8	POS; RB 1 MHz; VB: 10 Hz
5351.200	67.8	H	74.0	-6.2	PK	0	1.8	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #7: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 9/29/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

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

Channel: 100 - 5500MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

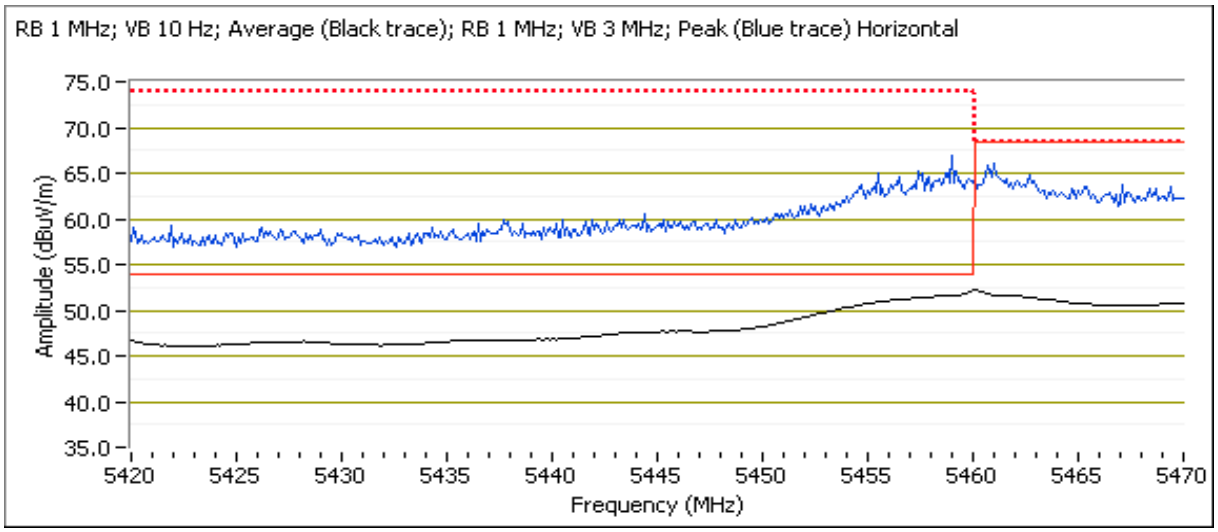
EUT Orientation: Flat
Power setting: 21

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5460.000	**52.2**	H	54.0	**-1.8**	AVG	154	1.7	POS; RB 1 MHz; VB: 10 Hz
5459.120	65.3	H	74.0	-8.7	PK	154	1.7	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5460.900	**67.5**	H	68.3	**-0.8**	PK	154	1.7	POS; RB 1 MHz; VB: 3 MHz



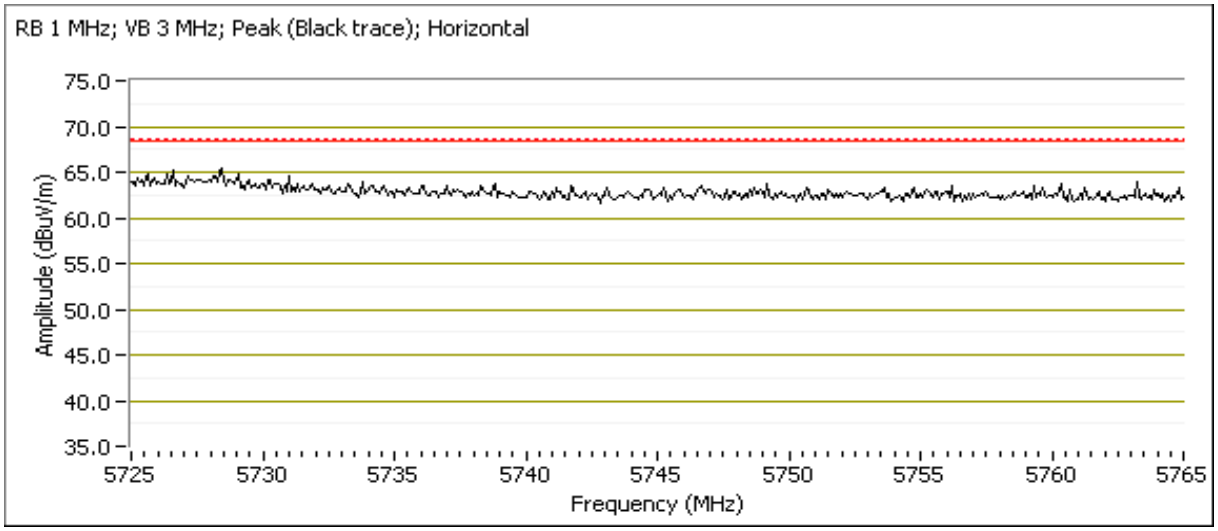
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 136 - 5680MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 23

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5728.610	**65.2**	H	68.3	**-3.1**	PK	360	1.6	POS; RB 1 MHz; VB: 3 MHz



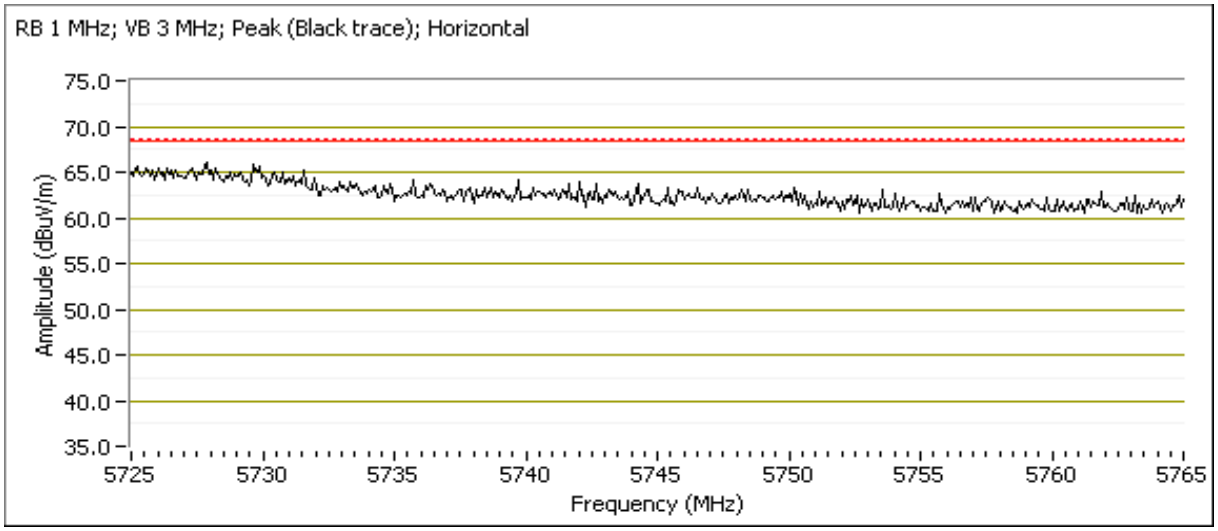
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 140 - 5700MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 20

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5730.450	**67.1**	H	68.3	**-1.2**	PK	360	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #11: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 9/29/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

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

Channel: 110 - 5550MHz
Tx Chain: 4Tx
Mode: n40
Data Rate: MCS0

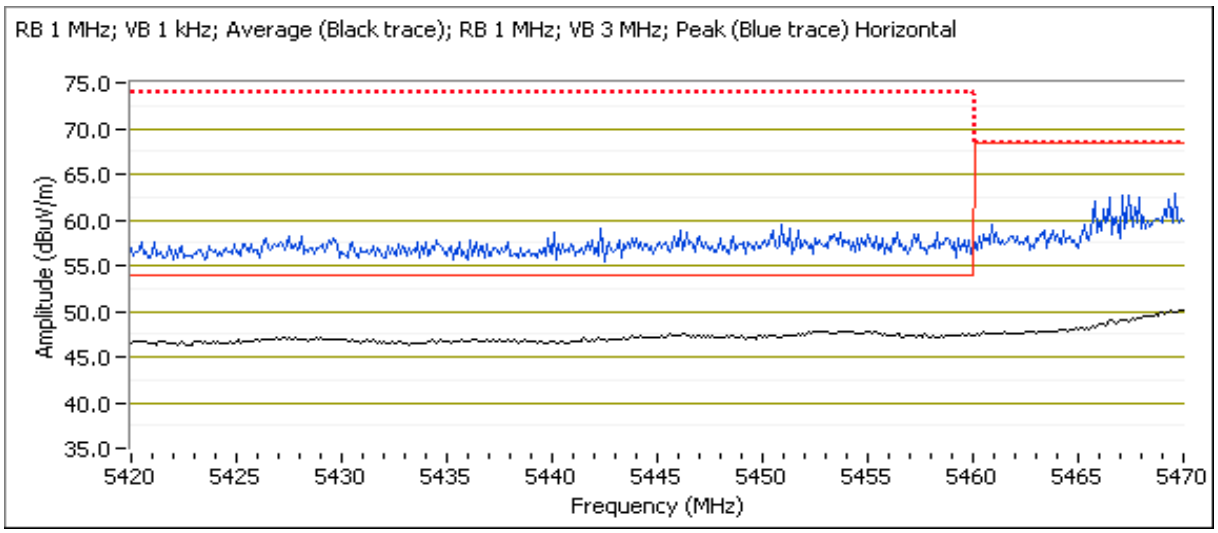
EUT Orientation: Flat
Power setting: 23

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5452.950	**47.7**	H	54.0	**-6.3**	Avg	158	1.7	POS; RB 1 MHz; VB: 1 kHz
5455.670	59.5	H	74.0	-14.5	PK	158	1.7	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5467.370	**64.9**	H	68.3	**-3.4**	PK	158	1.7	POS; RB 1 MHz; VB: 3 MHz



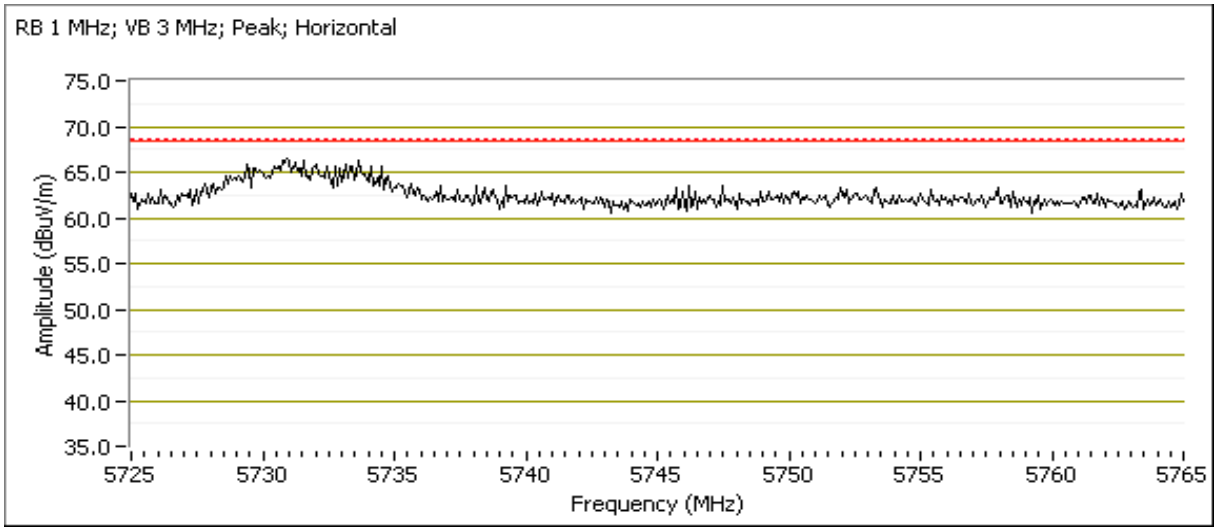
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 134 - 5670MHz
Tx Chain: 4Tx
Mode: n40
Data Rate:

EUT Orientation: Flat
Power setting: 23

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5729.250	**66.3**	H	68.3	**-2.0**	PK	163	1.5	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #15: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 9/30/2016 0:00
Test Engineer: John Caizzi & Kevin Wen
Test Location: Chamber 7

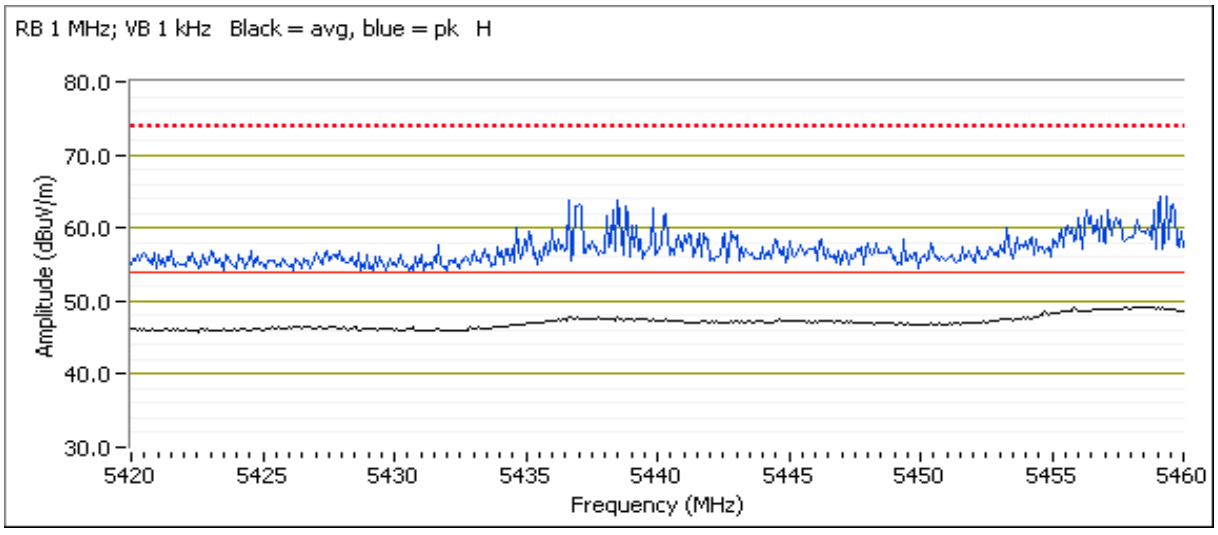
Config. Used: 1
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 122 - 5610 MHz
Tx Chain: 4Tx
Mode: ac80
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 23

5460 MHz Band Edge Signal Radiated Field Strength

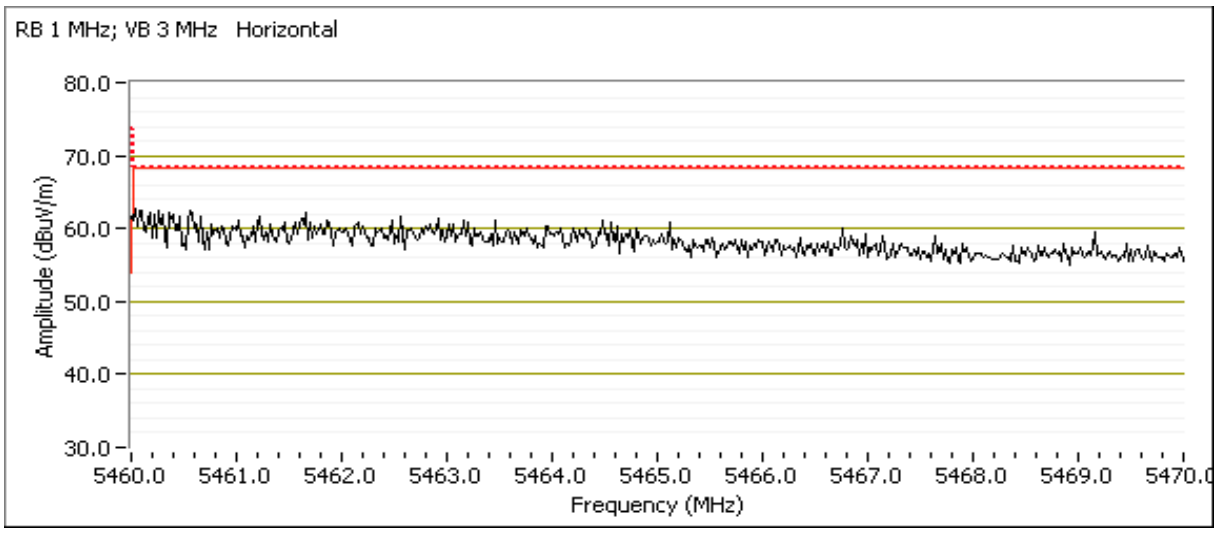
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5458.000	49.3	H	54.0	**-4.7**	Avg	6	1.21	RB 1 MHz, VB 1 kHz, note 3.
5437.230	65.3	H	74.0	-8.7	PK	6	1.21	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5460.440	62.0	H	68.3	**-6.3**	PK	360	1.21	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

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

Ambient Conditions:

Temperature: 22.6 °C
Rel. Humidity: 37 %

Summary of Results

Run #	Mode	Channel	Target Power	Passing Power Setting	Test Performed	Limit	Result / Margin
20MHz Bandwith Modes							
6	n20	60 - 5300MHz	23	23	Restricted Band Edge at 5350 MHz	15.209	53.1 dBµV/m @ 5350.3 MHz (-0.9 dB)
	n20	64 - 5320MHz	23	18	Restricted Band Edge at 5350 MHz	15.209	53.2 dBµV/m @ 5351.9 MHz (-0.8 dB)
7	n20	100 - 5500MHz	23	21	Restricted Band Edge at 5460 MHz	15.209	52.4 dBµV/m @ 5459.7 MHz (-1.6 dB)
	n20	100 - 5500MHz	23	21	Band Edge 5460 - 5470 MHz	15E	67.7 dBµV/m @ 5469.1 MHz (-0.6 dB)
	n20	140 - 5700MHz	23	21	Band Edge 5725MHz	15E	67.4 dBµV/m @ 5737.6 MHz (-0.9 dB)
40MHz Bandwith Modes							
10	n40	54 - 5270MHz	23	23	Restricted Band Edge at 5350 MHz	15.209	52.5 dBµV/m @ 5351.0 MHz (-1.5 dB)
11	n40	110 - 5550MHz	23	23	Restricted Band Edge at 5460 MHz	15.209	48.7 dBµV/m @ 5454.5 MHz (-5.3 dB)
	n40	110 - 5550MHz	23	23	Band Edge 5460 - 5470 MHz	15E	61.6 dBµV/m @ 5461.9 MHz (-6.7 dB)
	n40	134 - 5670MHz	23	21	Band Edge 5725MHz	15E	67.8 dBµV/m @ 5729.3 MHz (-0.5 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11n20	MCS0	83%	NO	4.17	0.79	1.58	240
11n40	MCS0	34%	NO	1.71	4.67	9.33	586
ac80	VHT0	17%	NO	0.84	7.75	15.49	1190

Sample Notes

Sample S/N: 184795206016480
Driver: -
Antenna: 4x4 internal

Measurement Specific Notes:

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

Note - All testing performed using 1SS

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #6: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 9/28/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

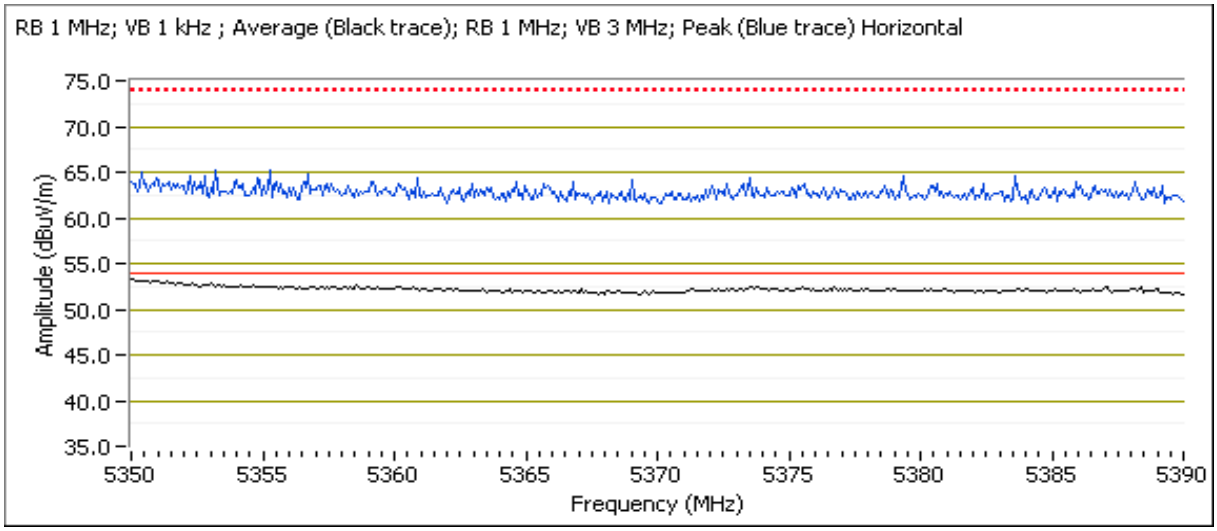
Config. Used: 2
Config Change: None
EUT Voltage: 120V/60Hz

Channel: 60 - 5300MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 23

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.320	**53.1**	H	54.0	**-0.9**	Avg	1	1.5	POS; RB 1 MHz; VB: 1 kHz
5351.600	64.6	H	74.0	-9.4	PK	1	1.5	POS; RB 1 MHz; VB: 3 MHz



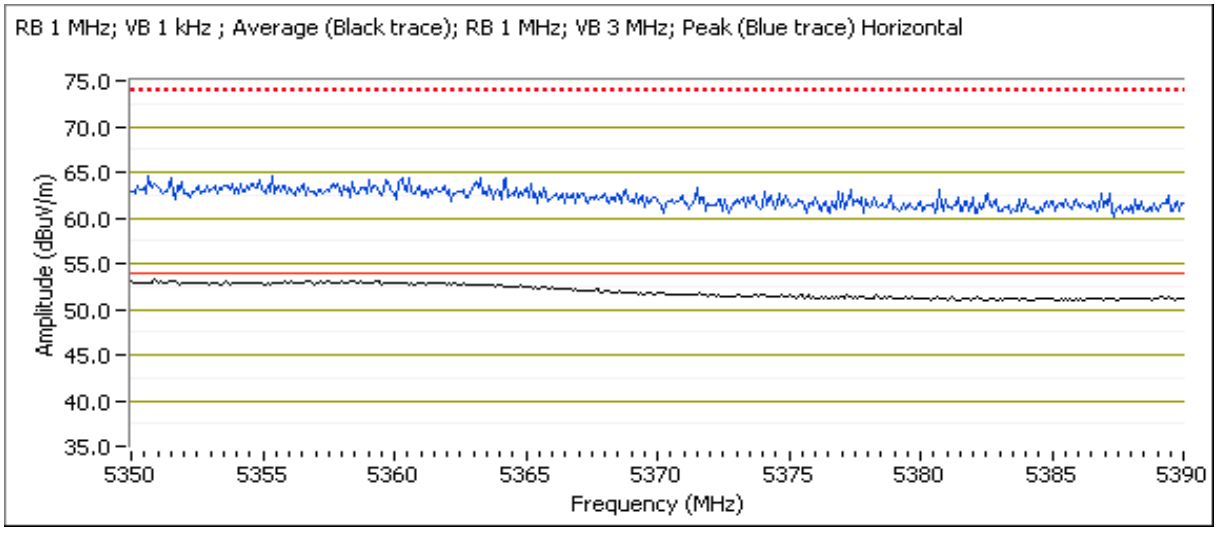
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 64 - 5320MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 18

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5351.920	53.2	H	54.0	-0.8	Avg	1	1.5	POS; RB 1 MHz; VB: 1 kHz
5351.600	65.8	H	74.0	-8.2	PK	1	1.5	POS; RB 1 MHz; VB: 3 MHz
5355.210	51.2	V	54.0	-2.8	Avg	148	1.5	POS; RB 1 MHz; VB: 1 kHz
5359.780	63.2	V	74.0	-10.8	PK	148	1.5	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #7: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 9/28/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

Config. Used: 2
Config Change: None
EUT Voltage: 120V/60Hz

Channel: 100 - 5500MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

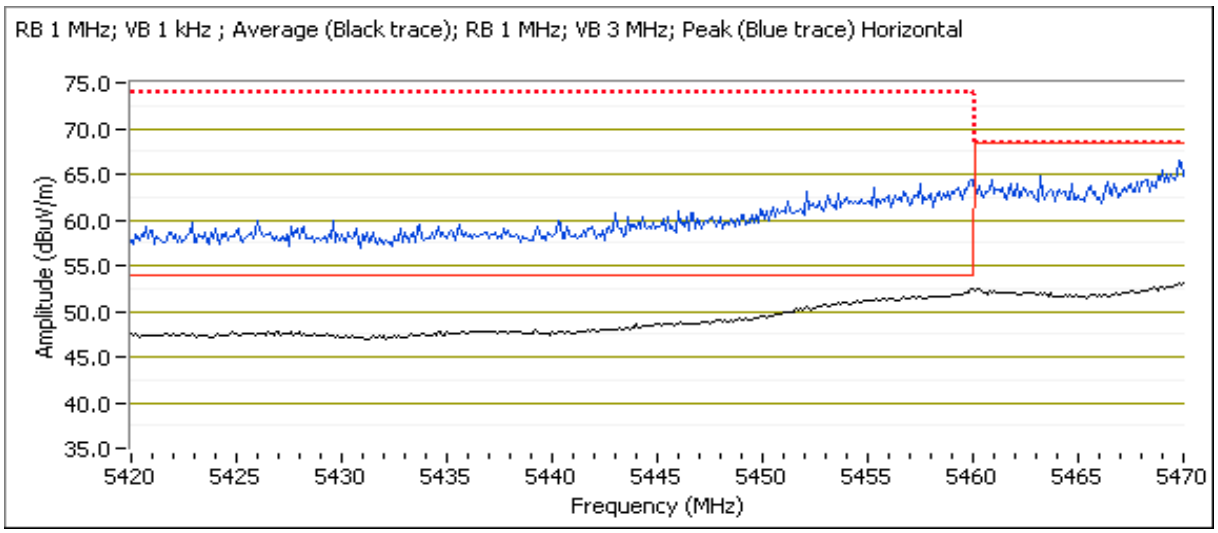
EUT Orientation: Flat
Power setting: 21

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.680	**52.4**	H	54.0	**-1.6**	Avg	164	1.5	POS; RB 1 MHz; VB: 1 kHz
5452.060	63.4	H	74.0	-10.6	PK	164	1.5	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.100	**67.7**	H	68.3	**-0.6**	PK	164	1.5	POS; RB 1 MHz; VB: 3 MHz



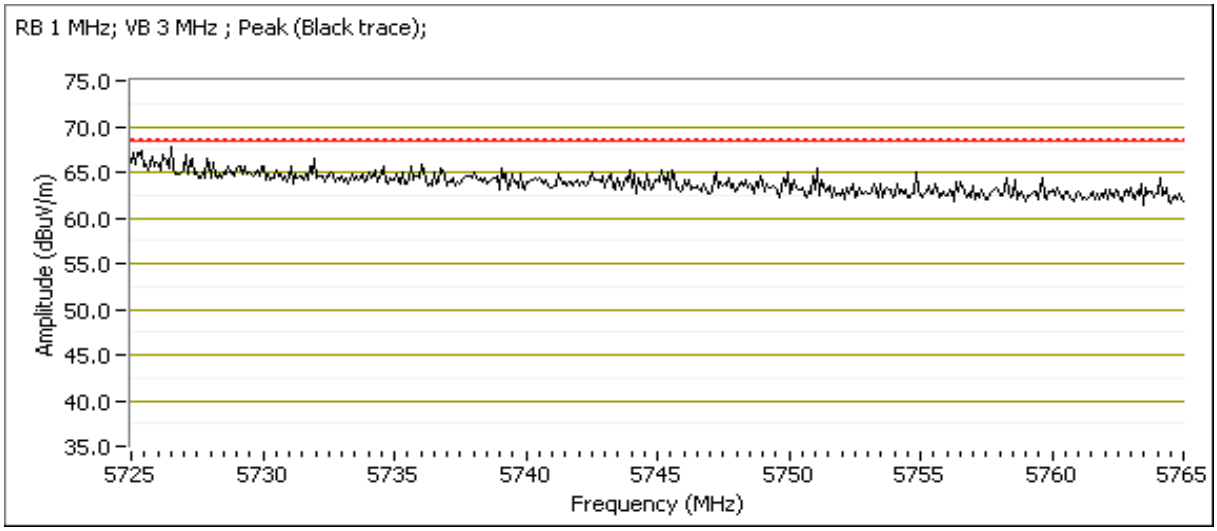
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 140 - 5700MHz
Tx Chain: 4Tx
Mode: n20
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 21

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5737.580	**67.4**	H	68.3	**-0.9**	PK	138	1.4	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #10: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 9/28/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

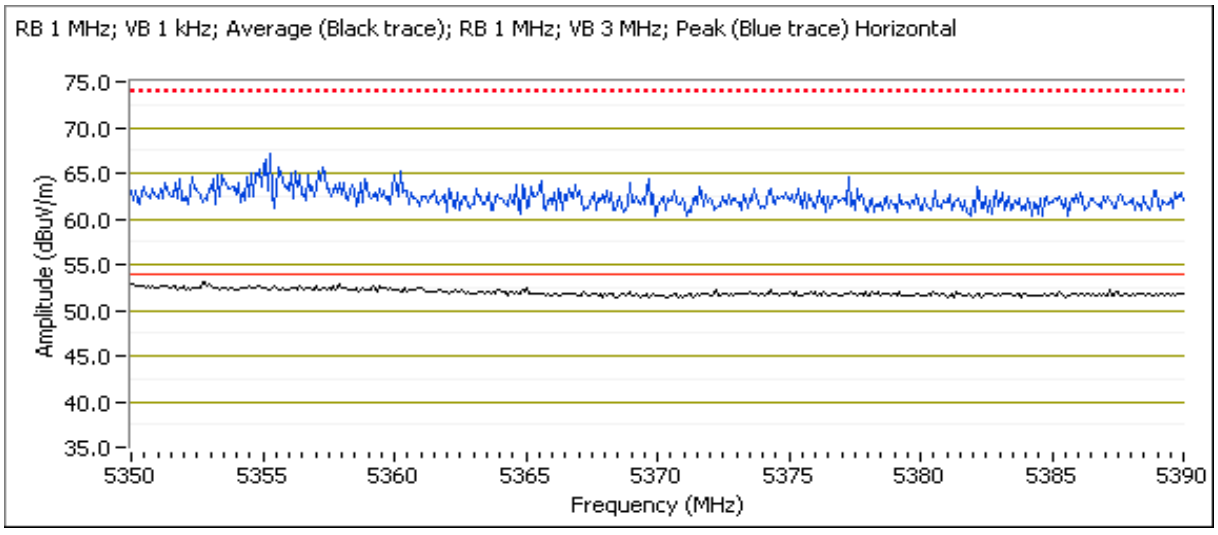
Config. Used: 2
Config Change: None
EUT Voltage: 120V/60Hz

Channel: 54 - 5270MHz
Tx Chain: 4Tx
Mode: n40
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 23

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5351.040	**52.5**	H	54.0	**-1.5**	Avg	360	1.4	POS; RB 1 MHz; VB: 1 kHz
5358.180	66.7	H	74.0	-7.3	PK	360	1.4	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #11: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 9/28/2016
Test Engineer: Rafael Varelas
Test Location: Fremont CH #7

Config. Used: 2
Config Change: None
EUT Voltage: 120V/60Hz

Channel: 110 - 5550MHz
Tx Chain: 4Tx
Mode: n40
Data Rate: MCS0

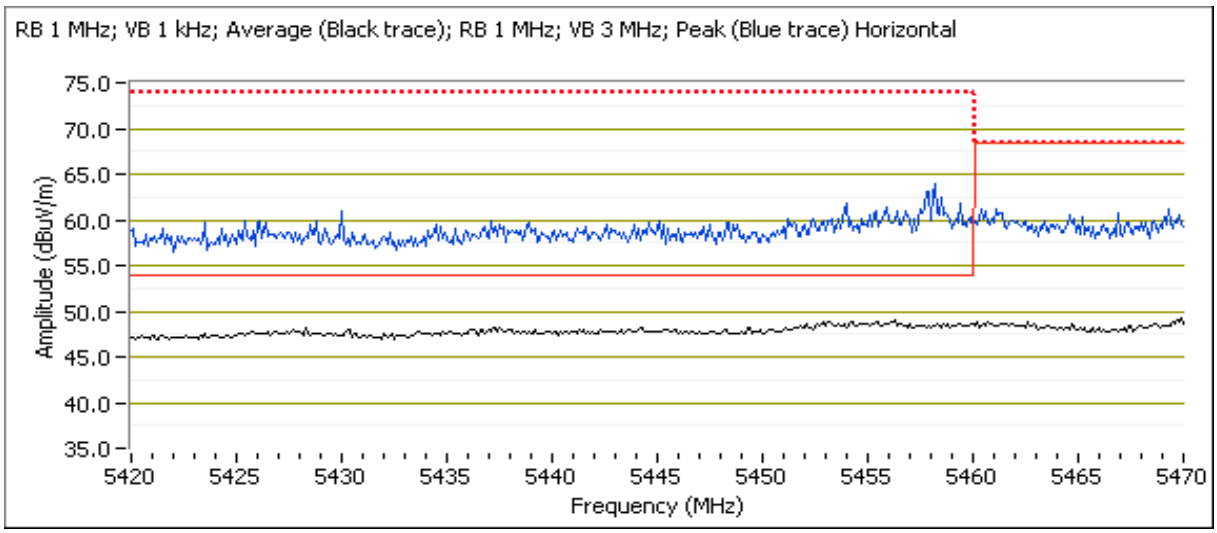
EUT Orientation: Flat
Power setting: 23

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5454.470	**48.7**	H	54.0	**-5.3**	Avg	360	1.1	POS; RB 1 MHz; VB: 1 kHz
5457.520	63.1	H	74.0	-10.9	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5461.920	**61.6**	H	68.3	**-6.7**	PK	360	1.1	POS; RB 1 MHz; VB: 3 MHz



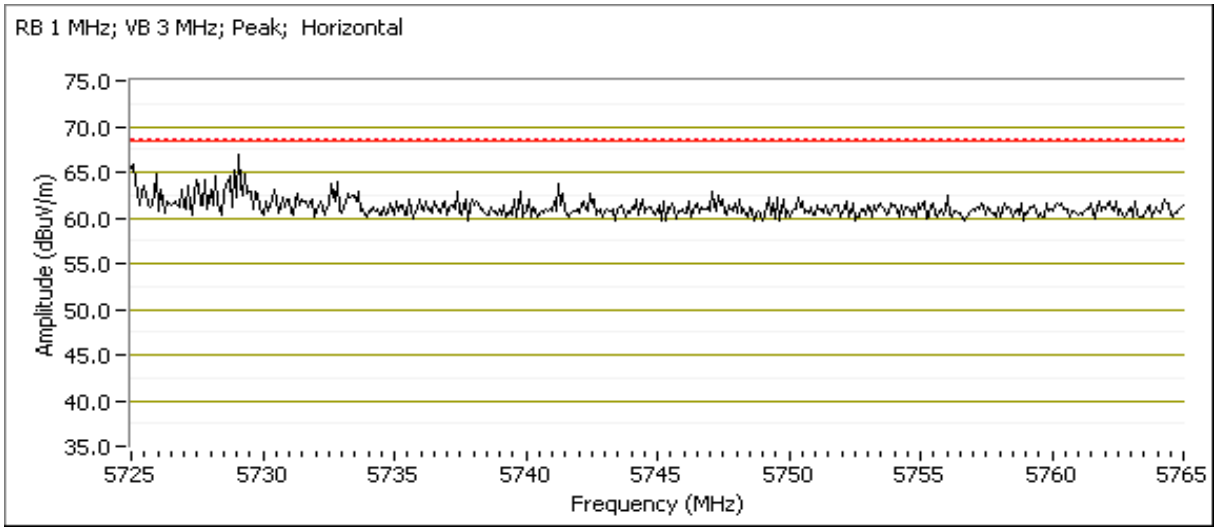
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 134 - 5670MHz
Tx Chain: 4Tx
Mode: n40
Data Rate: MCS0

EUT Orientation: Flat
Power setting: 21

5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5729.330	**67.8**	H	68.3	**-0.5**	PK	5	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

Date of Test: 9/30/2016, 10/3/2016, 10/4/2016
Test Engineer: John Caizzi, Kevin Wen & Rafael V.
Test Location: Chamber #7

Config. Used: 1
Config Change: none
EUT Voltage: 120V/60Hz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.8 °C
Rel. Humidity: 46 %

Summary of Results

Run #	Mode	Channel	Target Power	Passing Power Setting	Test Performed	Limit	Result / Margin
Scans on "center" channel in all four OFDM modes to determine the worst case mode.							
3	a	60 - 5300MHz	23	23	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	39.4 dBµV/m @ 21200 MHz(-14.6 dB)
	n20	60 - 5300MHz		23			refer to test run
	n40	54 - 5270MHz		23			refer to test run
	ac80	58 - 5290MHz		23			refer to test run
Measurements on low and high channels in worst-case OFDM mode.							
4	a	52 - 5260MHz	23	23	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	49.4 dBµV/m @ 5420.3 MHz (-4.6 dB)
	a	64 - 5320MHz	23	23			43.5 dBµV/m @ 10905.1MHz(-10.5 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Summary of Results

Run #	Mode	Channel	Target Power	Passing Power Setting	Test Performed	Limit	Result / Margin
Scans on "center" channel in all four OFDM modes to determine the worst case mode.							
5	a	116 - 5580MHz	23	23	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	63.9 dBµV/m @ 5461.8 MHz (-4.4 dB)
	n20	116 - 5580MHz		23			refer to test run
	n40	110 - 5550MHz		23			refer to test run
	ac80	106 - 5530MHz		23			refer to test run
Measurements on low and high channels in worst-case OFDM mode.							
6	a	100 - 5500MHz	23	23	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.4 dBµV/m @ 7333.4 MHz (-9.6 dB)
	a	144-5720MHz	23	23			47.1 dBµV/m @ 11441.5 MHz (-6.9 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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mbs	0.89	Yes	0.558	0.51	1.01	1792
n20	MSC0	0.99	Yes	4.96	0	0	10
n40	MCS0	0.97	Yes	2.408	0.11	0.22	415
ac80	VHT0	0.96	Yes	1.139	0.19	0.37	878

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Sample Notes

Sample S/N: 184795206016480
Driver:
Antenna: 4x4 internal

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	Emission has constant duty cycle < 98%, average measurement performed: RBW=1MHz, VBW>1/T but not less than 10Hz, peak detector, linear averaging, auto sweep,max hold 50*1/DC traces (method VB of KDB 789033)

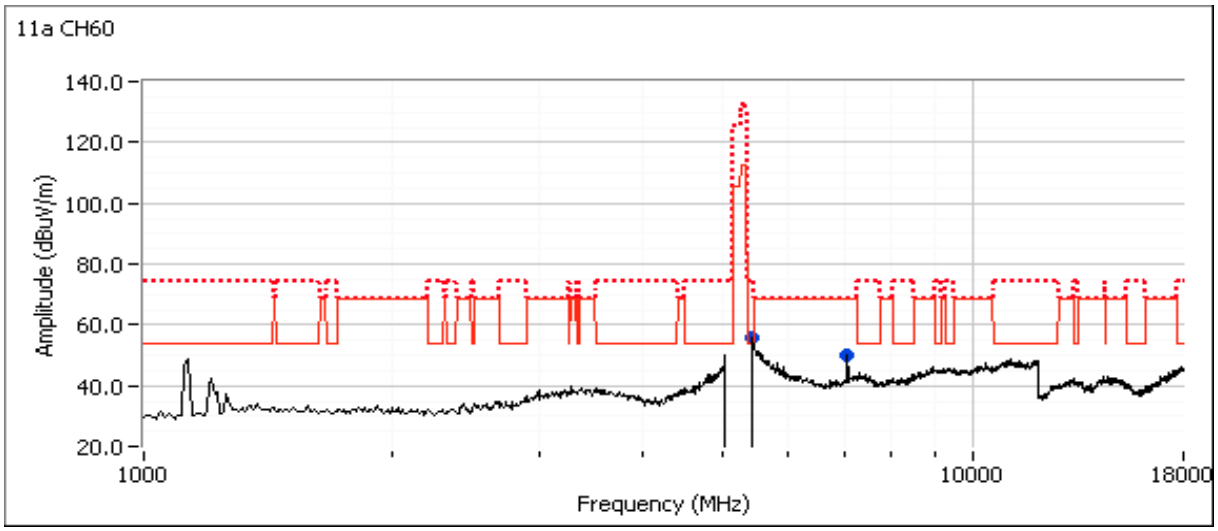
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

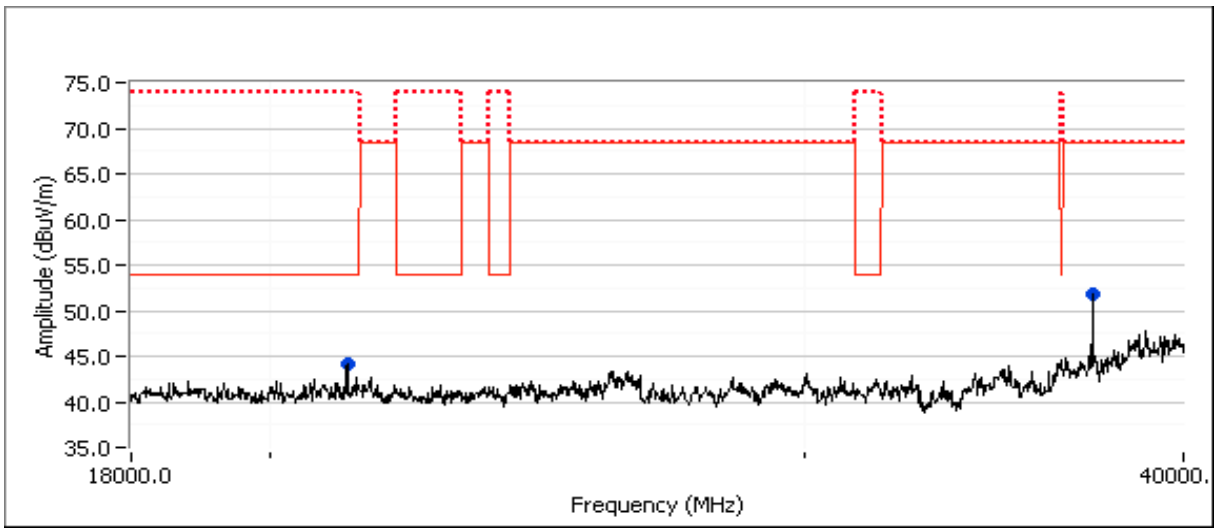
Run #3, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250-5350 MHz Band

Date of Test: 9/30/2016, 10/3/2016 Config. Used: 1
Test Engineer: John Caizzi, Kevin Wen & Rafael V. Config Change: none
Test Location: Chamber 7 EUT Voltage: 120V/60Hz

Run #3a: Center Channel

Channel: 60 Mode: a
Tx Chain: 4Tx Data Rate: 6Mbps





Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

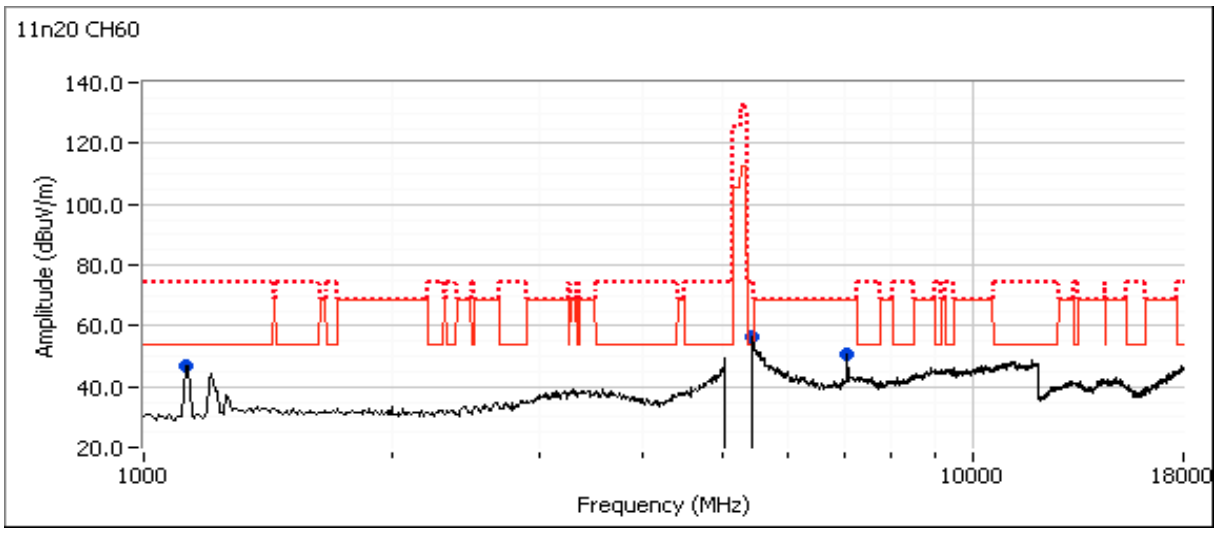
Run #3a: Center Channel

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
21200.040	39.4	V	54.0	-14.6	Avg	37	1.8	RB 1 MHz;VB 3 kHz;Peak
21200.270	50.7	V	74.0	-23.3	PK	37	1.8	RB 1 MHz;VB 3 MHz;Peak
7066.710	54.8	H	68.3	-13.5	PK	172	1.5	RB 1 MHz;VB 3 MHz;Peak
37364.540	39.6	V	68.3	-28.7	Avg	71	1.0	RB 1 MHz;VB 3 kHz;Peak
37369.070	51.3	V	68.3	-17.0	PK	71	1.0	RB 1 MHz;VB 3 MHz;Peak
5425.000	-	H	-	-	Peak	162	2.0	measured at Band Edge

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #3b: Center Channel

Channel: 60 Mode: n20
Tx Chain: 4Tx Data Rate: MCS0



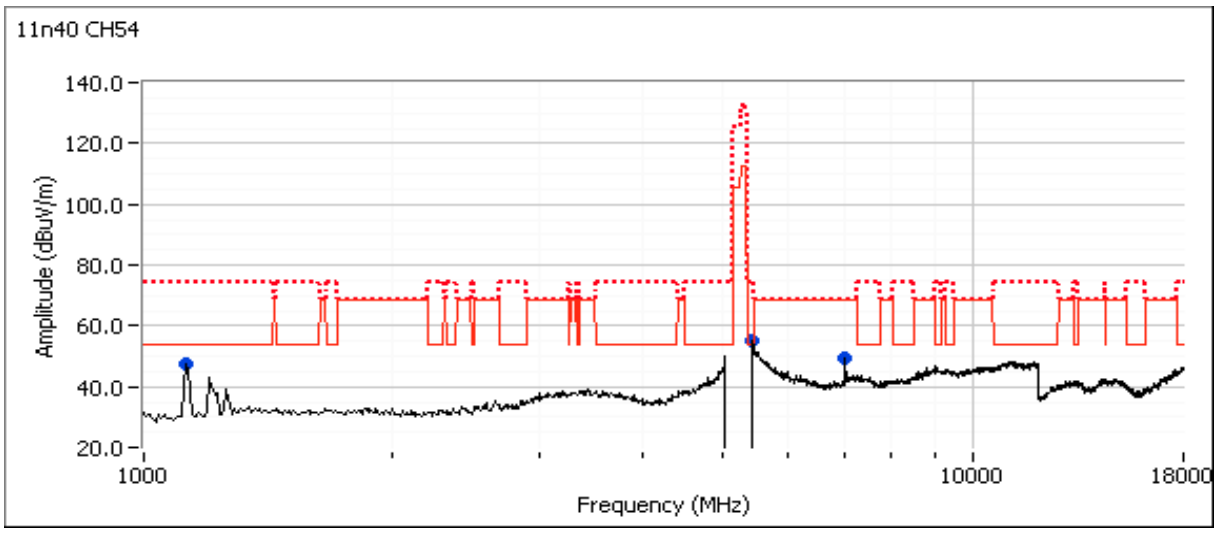
Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	52.0	H	54.0	-2.0	AVG	0	1.3	POS; RB 1 MHz; VB: 10 Hz, note 4
5386.310	63.6	H	74.0	-10.4	PK	0	1.3	POS; RB 1 MHz; VB: 3 MHz, note 4
1125.000	46.9	H	54.0	-7.1	Peak	262	1.5	not related to radio
7066.530	55.2	H	68.3	-13.1	PK	174	1.5	RB 1 MHz;VB 3 MHz;Peak

Note:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range
Note 4:	Measured without bandstop filter with R&S analyzer. Signal is artifact of using filter.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #3c: Center Channel

Channel: 54 Mode: n40
Tx Chain: 4Tx Data Rate: MCS0



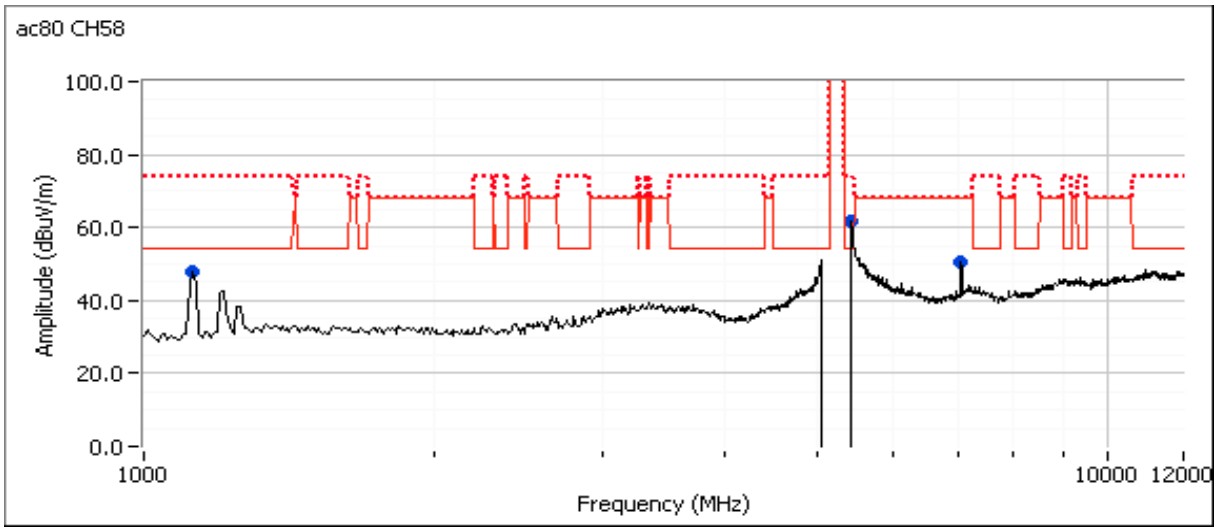
Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7026.780	55.2	H	68.3	-13.1	PK	176	1.7	RB 1 MHz;VB 3 MHz;Peak
1125.000	47.6	H	54.0	-6.4	Peak	6	1.0	not related to radio
5433.330	-	H	-	-	Peak	49	1.0	measured at Band Edge

Note:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #3d: Center Channel

Channel: 58 Mode: ac80
Tx Chain: 4Tx Data Rate: VHT0



Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7053.350	54.9	H	68.3	-13.4	PK	192	1.7	RB 1 MHz;VB 3 MHz;Peak
1125.000	47.8	H	54.0	-6.2	Peak	8	1.0	not related to radio
5350.050	-	H	-	-	Avg	0	1.1	measured at Band Edge
5366.130	-	H	-	-	PK	0	1.1	measured at Band Edge

Note:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

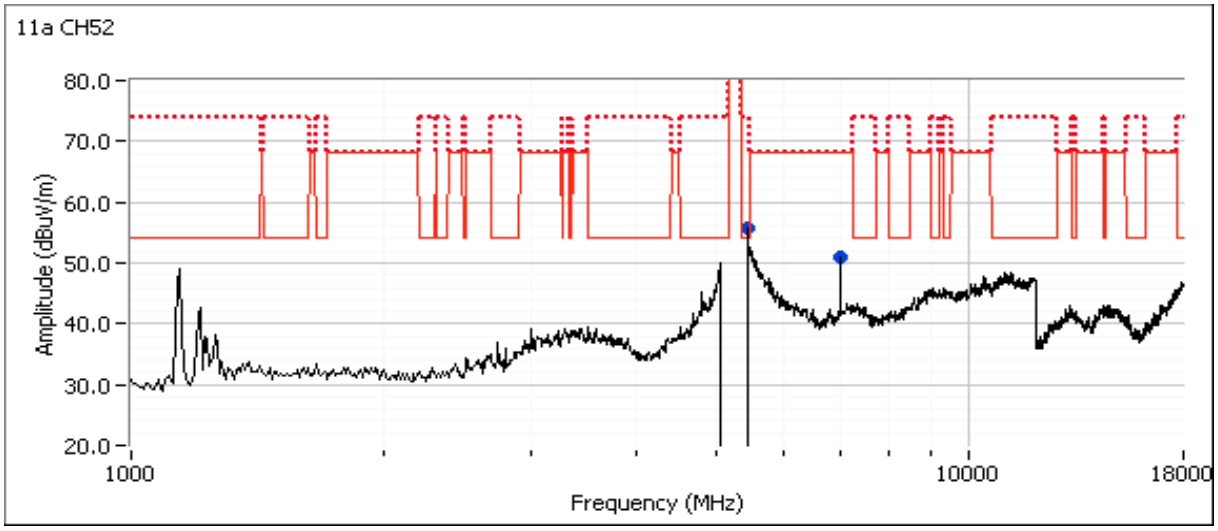
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 10/3/2016, 10/4/2016 Config. Used: 1
Test Engineer: Rafael V. Config Change: none
Test Location: Chamber # 7 EUT Voltage: 120V/60Hz

Run #4a: Low Channel

Channel: 52 Mode: 11a
Tx Chain: 4Tx Data Rate: 6Mbs



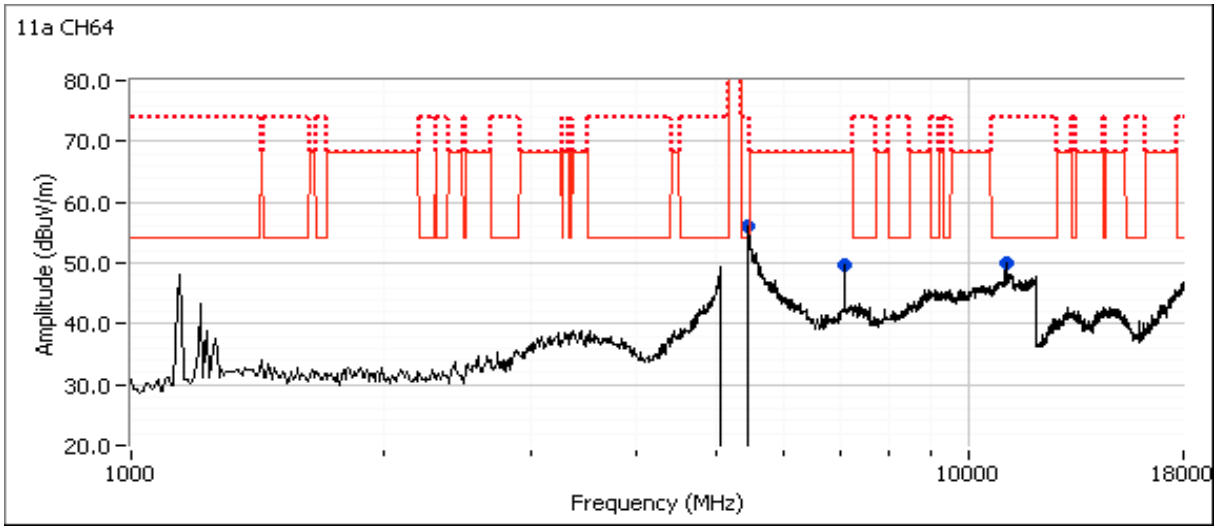
Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5420.320	**49.4**	H	54.0	**-4.6**	Avg	360	1.6	POS; RB 1 MHz; VB: 2 kHz, note 4
5416.570	60.2	H	74.0	-13.8	PK	360	1.6	POS; RB 1 MHz; VB: 3 MHz, note 4
7013.290	55.3	H	68.3	-13.0	PK	197	1.6	RB 1 MHz;VB 3 MHz;Peak

Note 4:	Measured without bandstop filter with R&S analyzer. Signal is artifact of using filter.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #4b: High Channel

Channel: 64 Mode: 11a
Tx Chain: 4Tx Data Rate: 6Mbs



Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
10905.100	**43.5**	H	54.0	**-10.5**	Avg	300	1.0	RB 1 MHz;VB 3 kHz;Peak, note 3
10986.130	54.7	H	74.0	-19.3	PK	300	1.0	RB 1 MHz;VB 3 MHz;Peak
7093.290	49.8	H	68.3	-18.5	Peak	178	1.5	
5436.820	-	H	-	-	Peak	163	1.5	Meausured at Band Edge

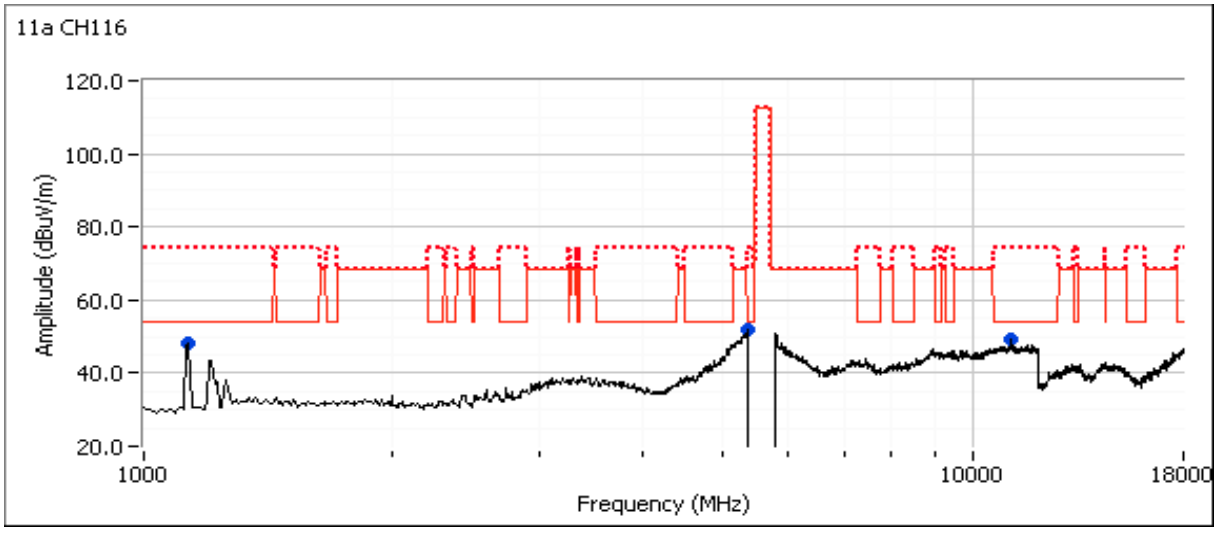
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 9/30/2016, 10/3/2016 Config. Used: 1
Test Engineer: Rafael Varelas Config Change: None
Test Location: Fremont CH #7 EUT Voltage: 120V/60Hz

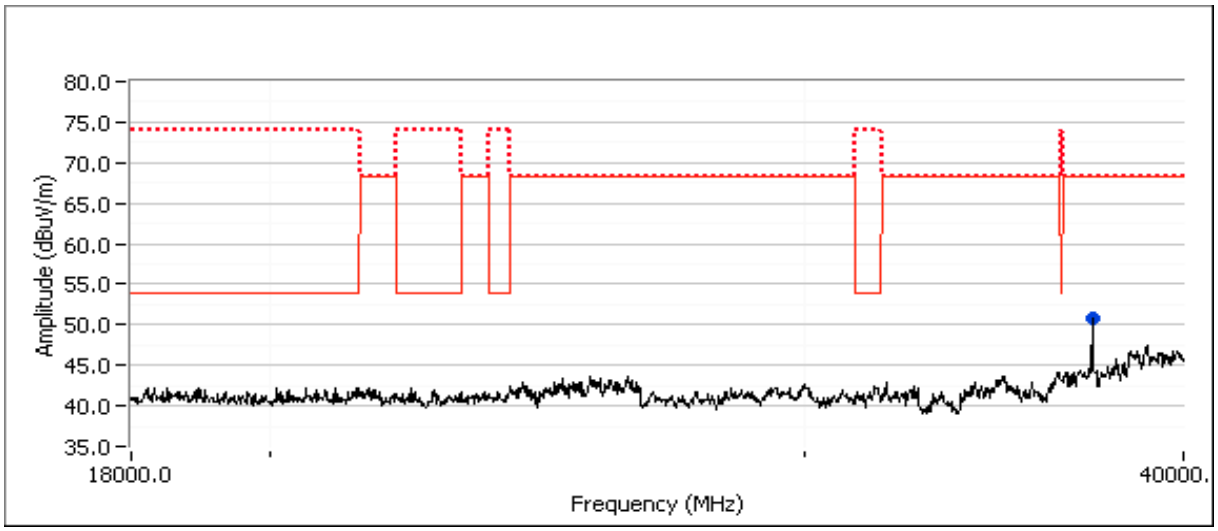
Run #5a: Center Channel

Channel: 116 Mode: a
Tx Chain: 4Tx Data Rate: 6Mbs



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #5a: Center Channel

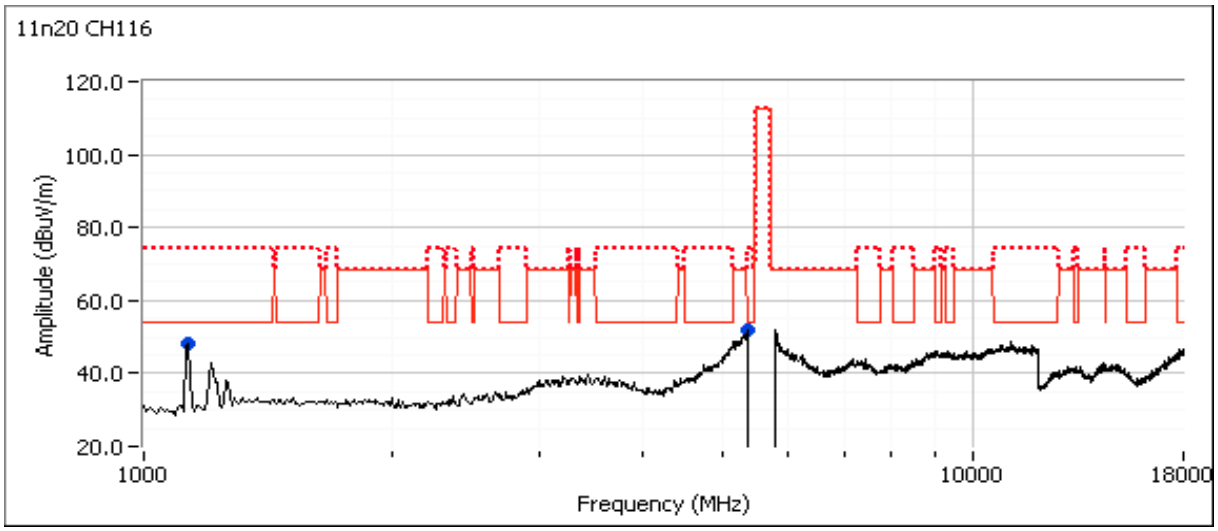


Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5461.780	**63.9**	H	68.3	**-4.4**	PK	165	1.1	POS; RB 1 MHz; VB: 3 MHz
11162.170	45.0	V	54.0	-9.0	Avg	122	2.2	RB 1 MHz;VB 3 kHz;Peak
11165.270	56.4	V	74.0	-17.6	PK	122	2.2	RB 1 MHz;VB 3 MHz;Peak
37030.000	50.5	V	68.3	-17.8	PK	110	1.0	RB 1 MHz;VB 3 MHz;Peak
1133.330	-	H	-	-	Peak	5	1.0	not related to radio

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #5b: Center Channel

Channel: 116 Mode: n20
Tx Chain: 4Tx Data Rate: MSC0



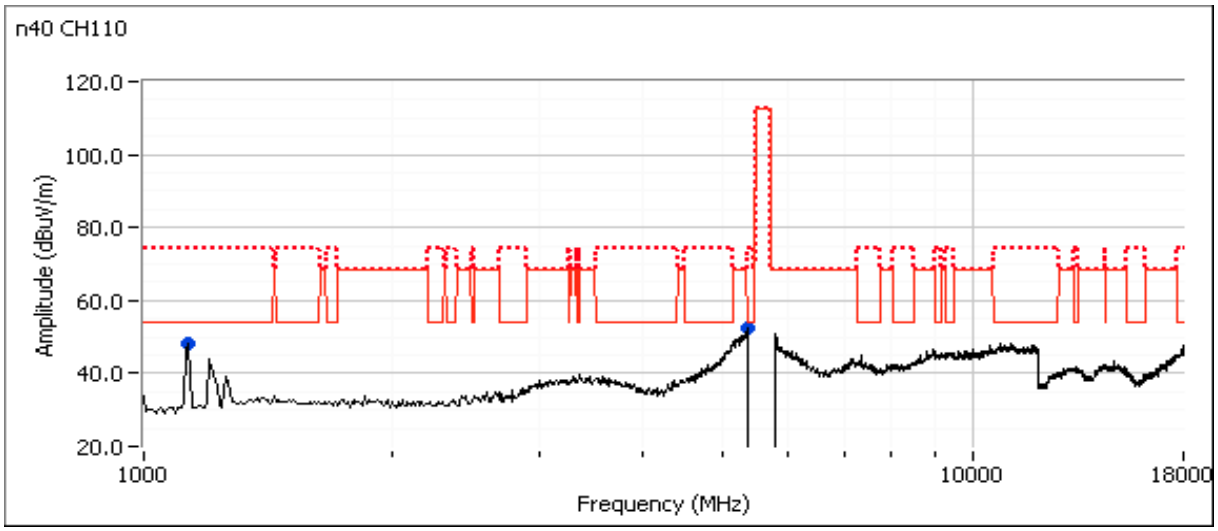
Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5458.160	51.1	H	54.0	-2.9	AVG	164	1.6	POS; RB 1 MHz; VB: 10 Hz
5439.960	63.1	H	74.0	-10.9	PK	164	1.6	POS; RB 1 MHz; VB: 3 MHz
11162.830	43.5	V	54.0	-10.5	AVG	178	2.2	RB 1 MHz;VB 10 Hz;Peak
11162.800	55.6	V	74.0	-18.4	PK	178	2.2	RB 1 MHz;VB 3 MHz;Peak
1133.330	-	H	-	-	Peak	2	1.0	not related to radio

Note:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #5c: Center Channel

Channel: 110 Mode: n40
Tx Chain: 4Tx Data Rate: MCS0



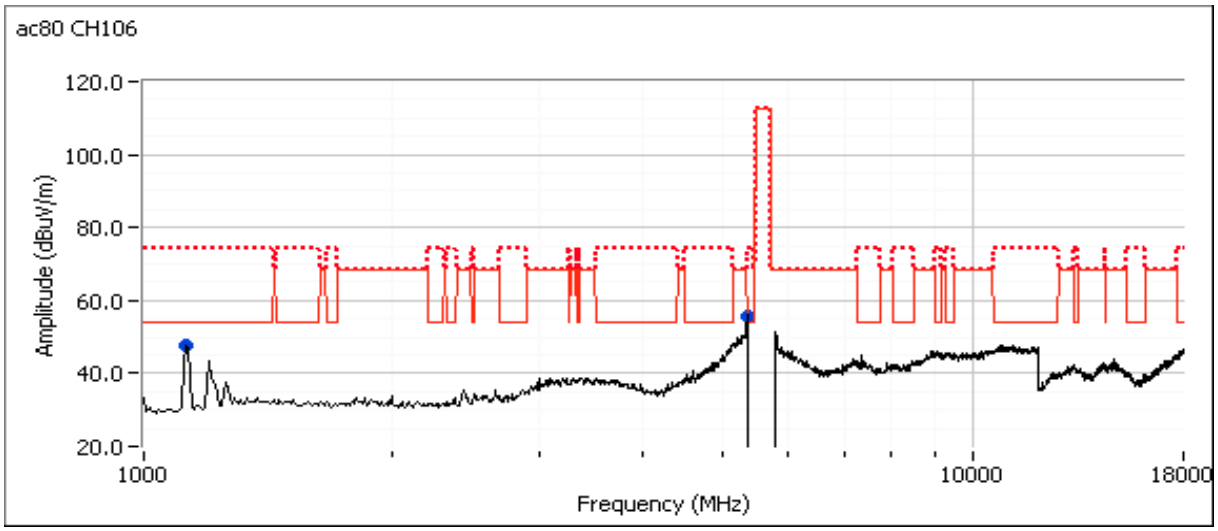
Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1133.330	-	H	-	-	Peak	73	1.6	not related to radio
5366.670	-	H	-	-	Peak	222	1.3	measured at Band Edge

Note:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #5d: Center Channel

Channel: 106 Mode: ac80
Tx Chain: 4Tx Data Rate: VHT0



Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1125.000	-	V	-	-	Peak	40	1.0	not related to radio
5358.330	-	H	-	-	Peak	98	1.6	measured at Band Edge

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

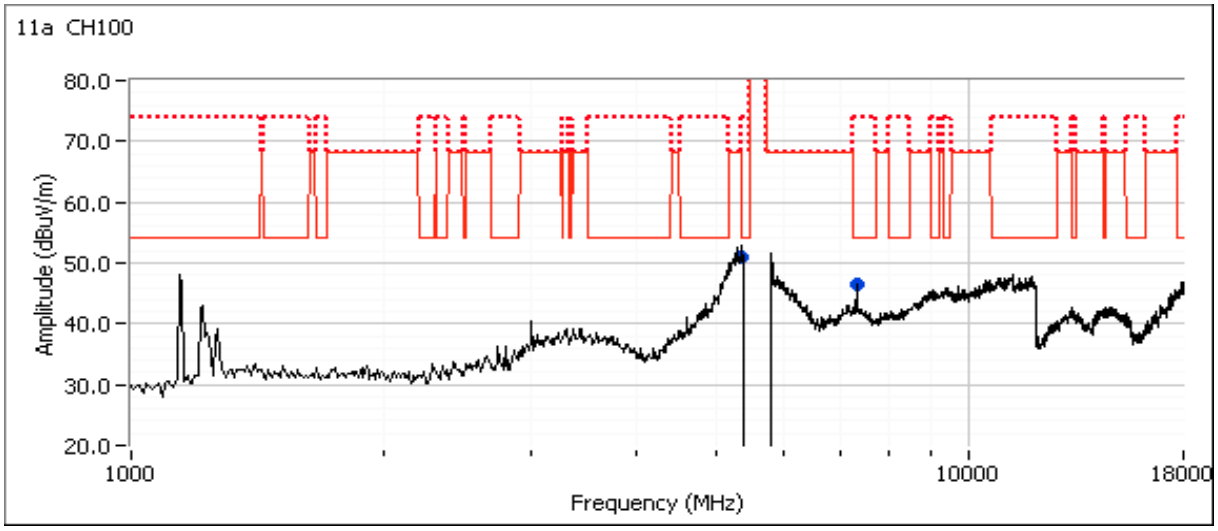
Date of Test: 10/4/2016
Test Engineer: John Caizzi, Kevin Wen
Test Location: Fremont CH #7

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

Run #6a: Low Channel

Channel: 100
Tx Chain: 4Tx

Mode: 11a
Data Rate: 6Mbs

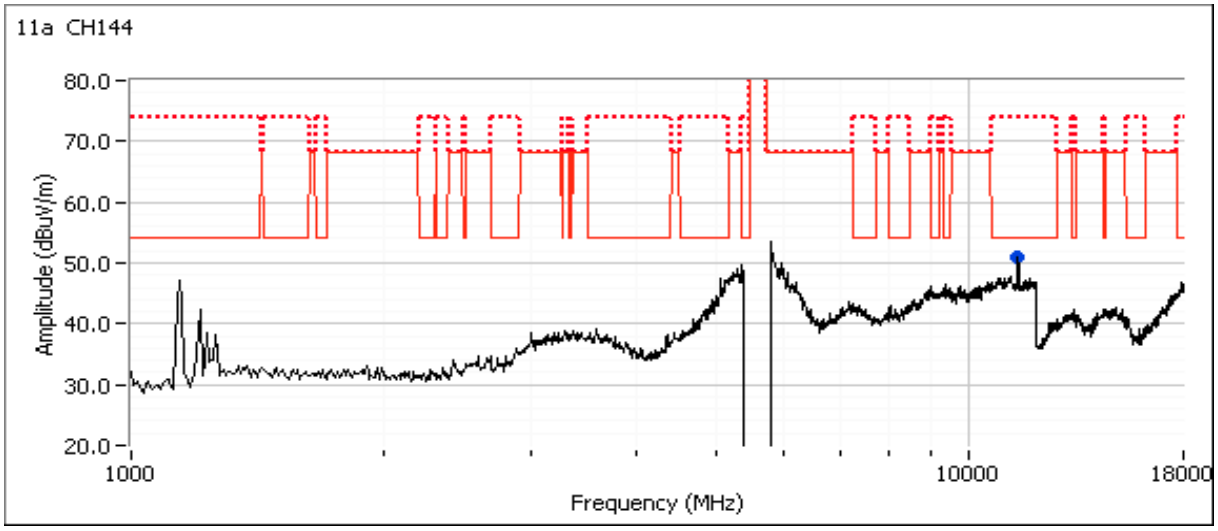


Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7333.400	**44.4**	H	54.0	**-9.6**	Avg	171	1.2	RB 1 MHz, VB 3 kHz; note 3
7333.600	51.0	H	74.0	-23.0	PK	171	1.2	RB 1 MHz, VB 3 MHz
5358.330	-	H	-	-	Peak	157	1.5	measured at Band Edge

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #6b: High Channel

Channel: 144 Mode: 11a
Tx Chain: 4Tx Data Rate: 6Mbs



Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11441.500	**47.1**	V	54.0	**-6.9**	Avg	126	2.5	RB 1 MHz, VB 3 kHz; note 3
11442.970	59.1	V	74.0	-14.9	PK	126	2.5	RB 1 MHz, VB 3 MHz

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5250 - 5350MHz	15.407(a) (2)	Pass	a: 21.1dBm (129.8 mW) n20: 21.4dBm (137.3 mW) n40: 23.1dBm (203.2 mW)
1	PSD, 5250 - 5350MHz	15.407(a) (2)	Pass	a: 10.0 dBm/MHz n20: 10.0 dBm/MHz n40: 8.7 dBm/MHz
1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	Pass	EIRP = 24.0 dBm (250.0 mW)
1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz for all modes
1	99% Bandwidth	RSS-247 (Information only)	N/A	a: 17.2 MHz n20: 18.2 MHz n40: 37.5 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.2 °C
Rel. Humidity: 41.5 %

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mbs	0.89	Yes	0.558	0.51	1.01	1792
n20	MSC0	0.99	Yes	4.96	0	0	10
n40	MCS0	0.97	Yes	2.408	0.11	0.22	415
ac80	VHT0	0.96	Yes	1.139	0.19	0.37	878

Sample Notes

Sample S/N: 184795206016480
Driver:

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 10/6/2016 Config. Used: 1

Test Engineer: Rafael Varelas Config Change: None

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

Note 1:	Duty Cycle ≥ 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, **RMS** detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%) and power integration over the OBW (method SA-1 of ANSI C63.10).
Note 2:	Constant Duty Cycle < 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over the OBW. Tthe measurements were adjusted for duty cycle. This is based on 10log(1/x), where x is the duty cycle. (method SA-2 of ANSI C63.10)
Note 3:	Measured using the same analyzer settings used for output power.
Note 4:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 5:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				No	Yes	Yes	No	0.90	6.50
5250-5350					No	Yes	Yes	No	0.90	6.90
5470-5725					No	Yes	Yes	No	1.10	7.10
5725-5825					No	Yes	Yes	No	0.80	6.50

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power/psd calculated per KDB 662911 D01.
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC

Mode: 11a Max EIRP (mW): 159.7

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[5] mW	Total Power[5] dBm	FCC Limit dBm	Max Power (W)	Result
5260	1	17	23.6	89	14.2	129.8	21.1	24.0	0.130	Pass
	3				14.7					
	4				14.9					
	2				14.6					
5300	1	16	23.7	89	13.9	114.3	20.6	24.0		Pass
	3				14.3					
	4				14.1					
	2				13.9					
5320	1	16	23.2	89	14.0	112.9	20.5	24.0		Pass
	3				14.1					
	4				13.8					
	2				14.1					

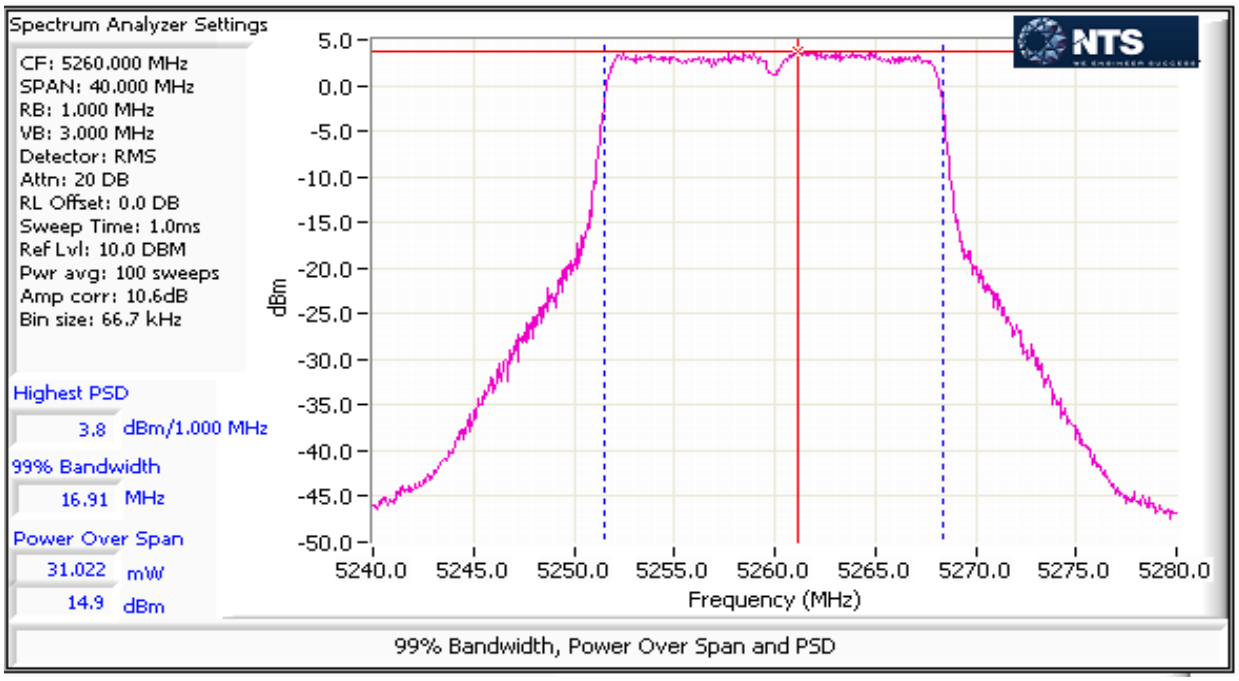
5250-5350 PSD - FCC/IC

Mode: 11a

Frequency (MHz)	Chain	Software Setting	99% BW[4] (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[5] mW/MHz	Total PSD[5] dBm/MHz	FCC Limit dBm/MHz	IC Limit dBm/MHz	Result
5260	1	17		89	3.3	10.1	10.0	10.1	11.0	Pass
	3				3.5					
	4				3.8					
	2				3.4					
5300	1	16		89	2.6	9.0	9.5	10.1	11.0	Pass
	3				3.3					
	4				3.2					
	2				2.9					
5320	1	16		89	2.9	8.8	9.4	10.1	11.0	Pass
	3				3.1					
	4				2.7					
	2				3.0					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC

Mode: n20 Max EIRP (mW): 168.9

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[5] mW	Total Power[5] dBm	FCC Limit dBm	Max Power (W)	Result
5260	1	17	24.3	99	14.7	125.9	21.0	24.0	0.137	Pass
	3				15.2					
	4				15.2					
	2				14.8					
5300	1	17	26.5	99	15.4	137.3	21.4	24.0		Pass
	3				15.0					
	4				15.7					
	2				15.3					
5320	1	17	23.5	99	15.1	136.5	21.4	24.0		Pass
	3				15.7					
	4				15.2					
	2				15.3					

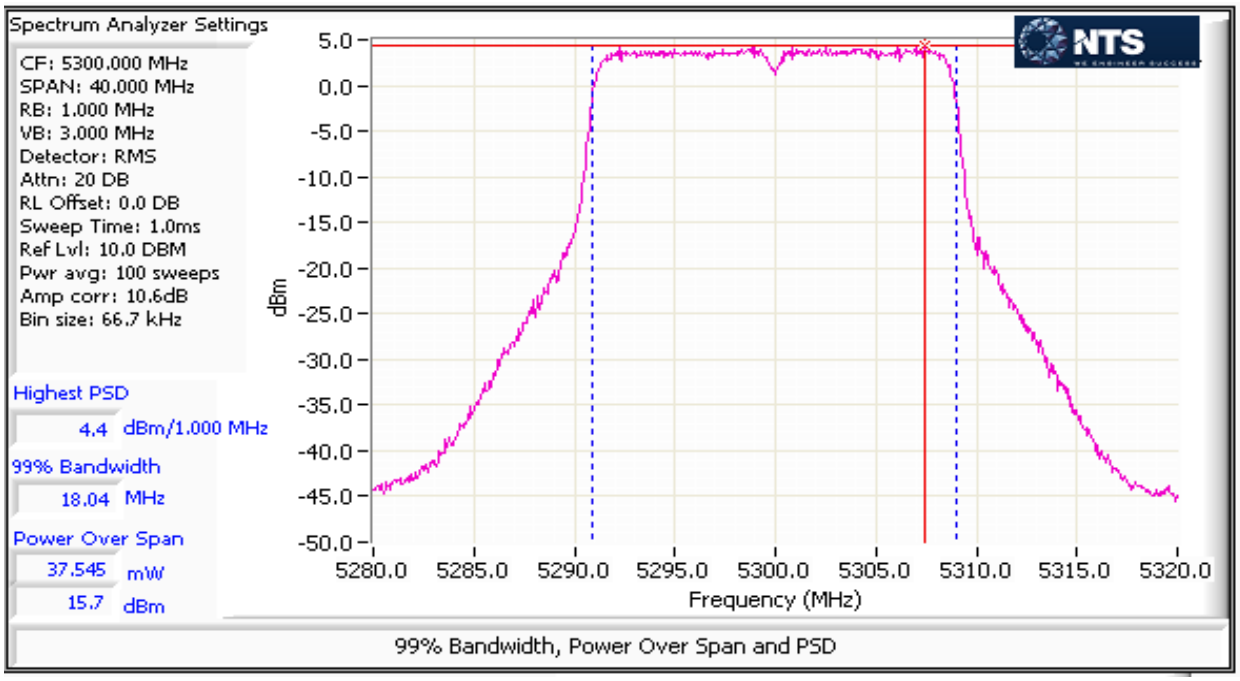
5250-5350 PSD - FCC/IC

Mode: n20

Frequency (MHz)	Chain	Software Setting	99% BW[4] (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[5] mW/MHz	Total PSD[5] dBm/MHz	FCC Limit dBm/MHz	IC Limit dBm/MHz	Result
5260	1	17		99	3.4	9.0	9.5	10.1	11.0	Pass
	3				3.6					
	4				3.7					
	2				3.3					
5300	1	17		99	4.0	10.1	10.0	10.1	11.0	Pass
	3				3.6					
	4				4.4					
	2				4.0					
5320	1	17		99	3.7	9.8	9.9	10.1	11.0	Pass
	3				4.3					
	4				3.7					
	2				3.8					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC

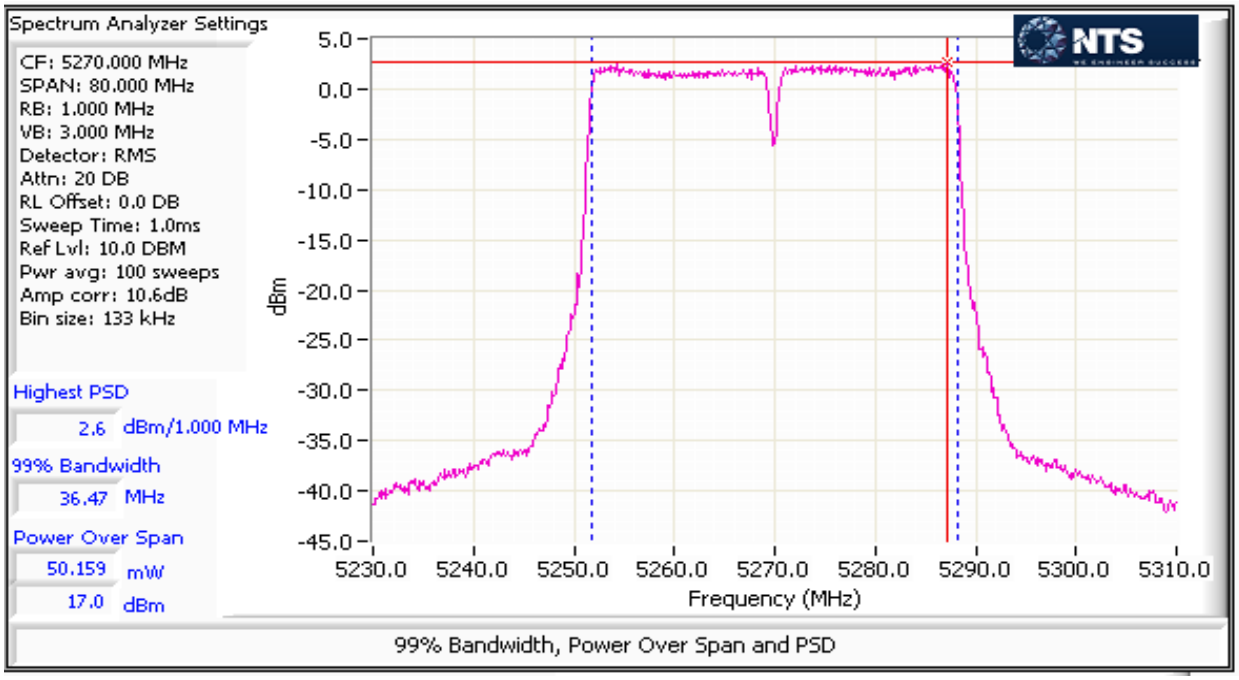
Mode: **n40** Max EIRP (mW): 250.0

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[5] mW	Total Power[5] dBm	FCC Limit dBm	Max Power (W)	Result
5270	1	19	64.7	97	16.9	203.2	23.1	24.0	0.203	Pass
	3				16.8					
	4				17.0					
	2				17.0					

MIMO Device 5250-5350 PSD - FCC/IC

Mode: **n40**

Frequency (MHz)	Chain	Software Setting	99% BW[4] (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[5] mW/MHz	Total PSD[5] dBm/MHz	FCC Limit dBm/MHz	IC Limit dBm/MHz	Result
5270	1	19		97	2.6	7.4	8.7	10.1	11.0	Pass
	3				2.5					
	4				2.5					
	2				2.6					



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5250 - 5350MHz	15.407(a) (2)	Pass	n20: 21.4dBm (137.3mW) n40: 22.4dBm (175.3mW)
1	PSD, 5250 - 5350MHz	15.407(a) (2)	Pass	n20: 10.0 dBm/MHz n40: 8.4dBm/MHz
1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	Pass	EIRP = 29.3dBm (858.6 mW)
1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz for all modes
1	99% Bandwidth	RSS-247 (Information only)	N/A	n20: 18.1 MHz n40: 37.0 MHz ac80: 75.4 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.0 °C
Rel. Humidity: 45.5 %

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mbs	0.89	Yes	0.558	0.51	1.01	1792
n20	MSC0	0.99	Yes	4.96	0	0	10
n40	MCS0	0.97	Yes	2.408	0.11	0.22	415
ac80	VHT0	0.96	Yes	1.139	0.19	0.37	878

Note - for antenna port measurements, the EUT was operated in the non-TxBF mode

Sample Notes

Sample S/N: 184795206016480
Driver:

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 10/11/2016 & 11/3/2016 Config. Used: 1

Test Engineer: Rafael Varelas Config Change: None

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

Note 1:	Duty Cycle ≥ 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%) and power integration over the OBW (method SA-1 of ANSI C63.10).
Note 2:	Constant Duty Cycle < 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over the OBW. Tthe measurements were adjusted for duty cycle. This is based on 10log(1/x), where x is the duty cycle. (method SA-2 of ANSI C63.10)
Note 3:	Measured using the same analyzer settings used for output power.
Note 4:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 5:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				Yes	Yes	Yes	No	6.50	6.50
5250-5350					Yes	Yes	Yes	No	6.90	6.90
5470-5725					Yes	Yes	Yes	No	7.10	7.10
5725-5825					Yes	Yes	Yes	No	6.50	6.50

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power/psd calculated per KDB 662911 D01.
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC

Mode: n20 Max EIRP (mW): 672.5

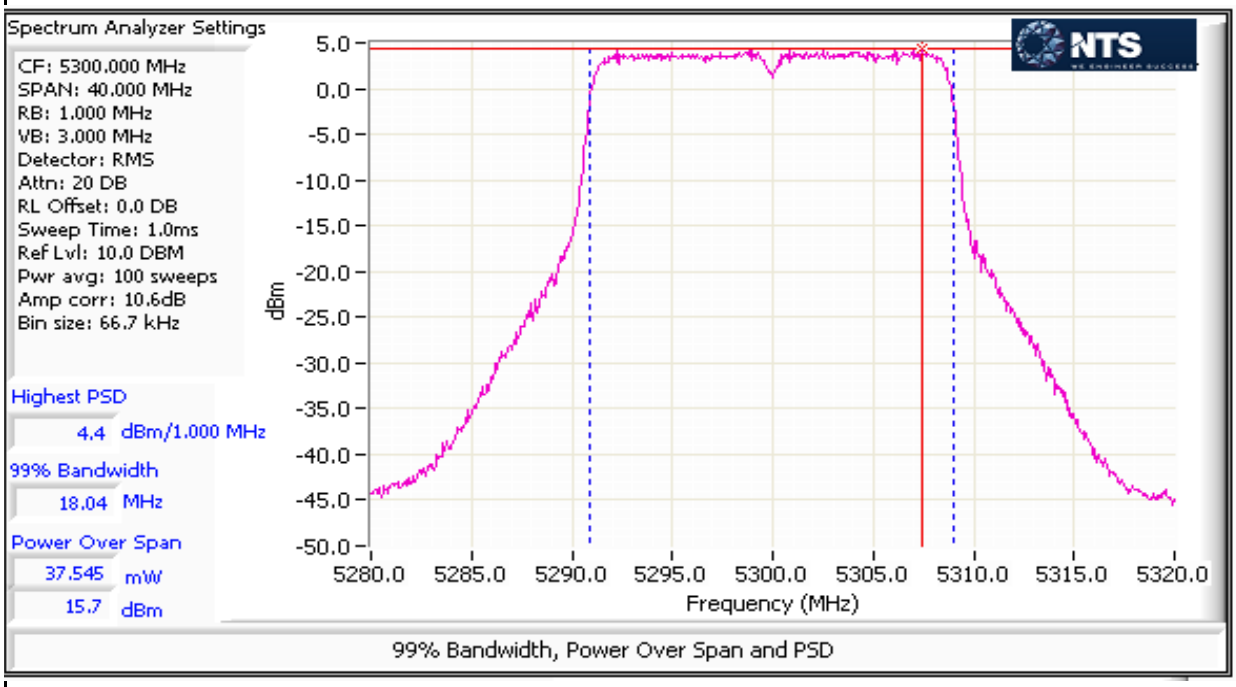
Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power dBm	Total Power[1] mW	Total Power[1] dBm	FCC Limit dBm	Max Power (W)	Result
5260	1	17	24.3	99	14.7	125.9	21.0	23.1	0.137	Pass
	3				15.2					
	4				15.2					
	2				14.8					
5300	1	17	26.5	99	15.4	137.3	21.4	23.1		Pass
	3				15.0					
	4				15.7					
	2				15.3					
5320	1	17	23.5	99	15.1	136.5	21.4	23.1		Pass
	3				15.7					
	4				15.2					
	2				15.3					

5250-5350 PSD - FCC/IC

Mode: n20

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC Limit dBm/MHz	Result
5260	1	17		99	3.4	9.0	9.5	10.1	11.0	Pass
	3				3.6					
	4				3.7					
	2				3.3					
5300	1	17		99	4.0	10.1	10.0	10.1	11.0	Pass
	3				3.6					
	4				4.4					
	2				4.0					
5320	1	17		99	3.7	9.8	9.9	10.1	11.0	Pass
	3				4.3					
	4				3.7					
	2				3.8					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC

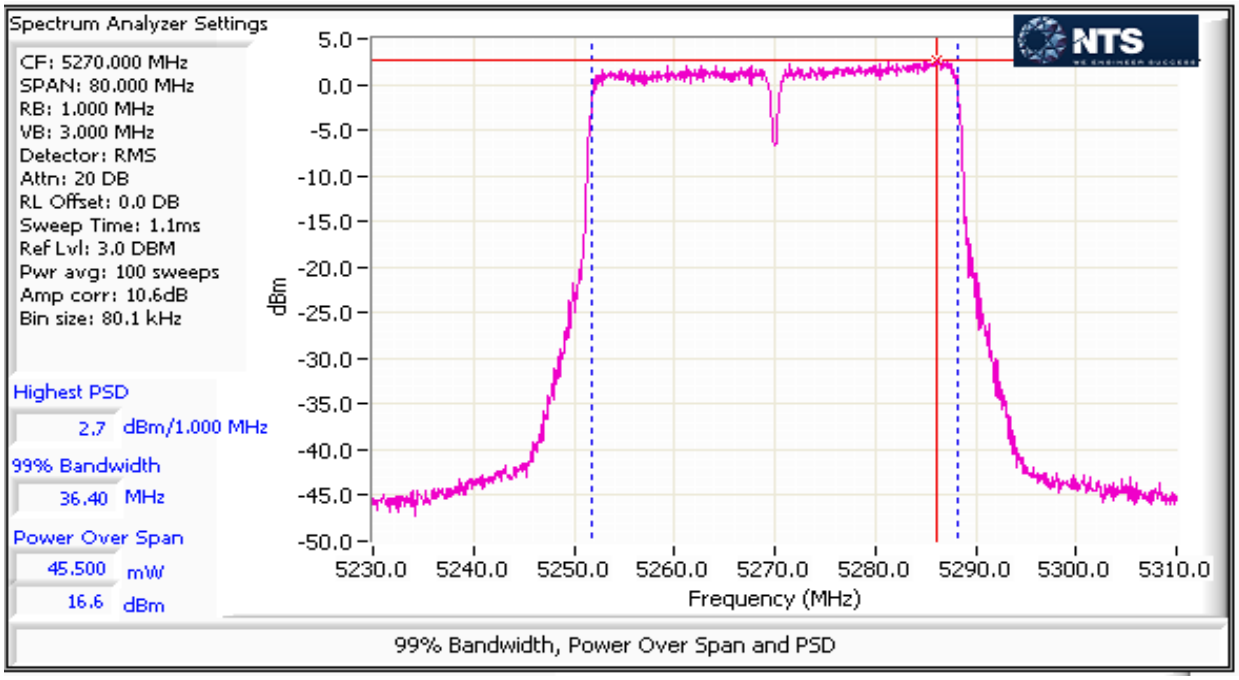
Mode: **n40** Max EIRP (mW): 858.6

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power dBm	Total Power[1] mW	Total Power[1] dBm	FCC Limit dBm	Max Power (W)	Result
5270	1	18	44.2	97	15.9	175.3	22.4	23.1	0.175	Pass
	3				16.6					
	4				16.5					
	2				16.1					

MIMO Device 5250-5350 PSD - FCC/IC

Mode: **n40**

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC Limit dBm/MHz	Result
5270	1	18		97	1.9	6.9	8.4	10.1	11.0	Pass
	3				2.7					
	4				2.3					
	2				2.1					



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5470 - 5725MHz	15.407(a) (2)	Pass	11a: 20.5dBm (112.2mW) n20: 20.5dBm (112.3 mW) n40: 23.8dBm (238.9 mW) ac80: 23.7dBm (234.6 mW)
1	PSD, 5470 - 5725MHz	15.407(a) (2)	Pass	11a: 9.9 dBm/MHz n20: 9.5 dBm/MHz n40: 9.6 dBm/MHz ac80: 7.3 dBm/MHz
1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	Pass	EIRP = 24.9 dBm (307.8 mW)
1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz for all modes
1	99% Bandwidth	RSS-247 (Information only)	N/A	n20: 18.1 MHz n40: 37.2 MHz ac80: 75.4 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.5 °C
Rel. Humidity: 44.7 %

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mbs	0.89	Yes	0.558	0.51	1.01	1792
n20	MSC0	0.99	Yes	4.96	0	0	10
n40	MCS0	0.97	Yes	2.408	0.11	0.22	415
ac80	VHT0	0.96	Yes	1.139	0.19	0.37	878

Sample Notes

Sample S/N: 184795206016480
Driver:

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 10/7/2016, 10/10/2016, 11/3/2016 Config. Used: 1

Test Engineer: Kevin Wen, Rafael Varelas Config Change: None

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

Note 1:	Duty Cycle ≥ 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%) and power integration over the OBW (method SA-1 of ANSI C63.10).
Note 2:	Constant Duty Cycle < 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over the OBW. Tthe measurements were adjusted for duty cycle. This is based on 10log(1/x), where x is the duty cycle. (method SA-2 of ANSI C63.10)
Note 3:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 4:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				No	Yes	Yes	No	0.90	6.50
5250-5350					No	Yes	Yes	No	0.90	6.90
5470-5725					No	Yes	Yes	No	1.10	7.10
5725-5825					No	Yes	Yes	No	0.80	6.50

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power/psd calculated per KDB 662911 D01.
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: **11a** Max EIRP (mW): 144.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5500	1	17	23.7	89	14.0	110.4	20.4	24.0	0.112	Pass
	3				14.0					
	4				14.0					
	2				13.6					
5580	1	17	23.7	89	14.0	109.2	20.4	24.0		Pass
	3				14.1					
	4				13.8					
	2				13.5					
5700	1	17	23.7	89	14.1	112.2	20.5	24.0		Pass
	3				14.5					
	4				13.2					
	2				14.0					
5720	1	16	17.2	89	12.1	73.5	18.7	23.4		Pass
	3				12.5					
	4				11.7					
	2				12.2					
Portion within 5725-5850 MHz band (UNII-3)										
5720	1	16		89	6.3	19.2	12.8	30.0	0.0192	Pass
	3				6.8					
	4				5.3					
	2				6.7					

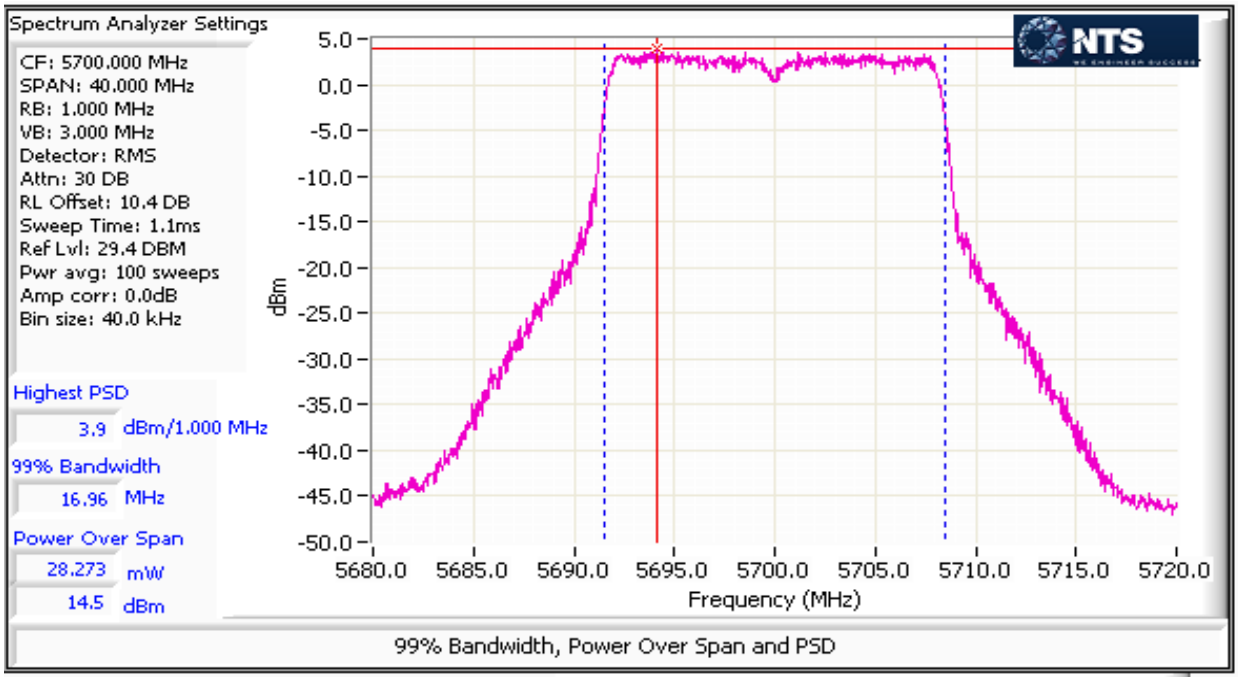
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470-5725 PSD - FCC/IC

Mode: 11a

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5500	1	17		89	3.6	9.7	9.9	9.9	11.0	Pass
	3				3.5					
	4				3.5					
	2				2.8					
5580	1	17		89	3.4	9.5	9.8	9.9	11.0	Pass
	3				3.5					
	4				3.3					
	2				2.7					
5700	1	17		89	3.7	9.7	9.9	9.9	11.0	Pass
	3				3.9					
	4				2.5					
	2				3.2					
5720	1	16		89	2.9	7.9	9.0	9.9	11.0	Pass
	3				2.6					
	4				2.0					
	2				2.3					
Portion within 5725-5850 MHz band (UNII-3)										
5720	1	16		89	2.5	8.1	9.1	28.9	28.9	Pass
	3				3.2					
	4				1.7					
	2				2.8					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: n20 Max EIRP (mW): 144.7

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5500	1	17	23.8	99	14.6	112.3	20.5	24.0	0.112	Pass
	3				14.8					
	4				14.3					
	2				14.2					
5580	1	17	23.8	99	14.0	109.2	20.4	24.0		Pass
	3				14.8					
	4				14.4					
	2				14.2					
5700	1	17	23.4	99	14.2	108.1	20.3	24.0		Pass
	3				14.7					
	4				13.7					
	2				14.6					
5720	1	17	25	99	13.2	83.0	19.2	24.0		Pass
	3				13.6					
	4				12.5					
	2				13.3					
Portion within 5725-5850 MHz band (UNII-3)										
5720	1	17		99	7.5	23.3	13.7	30.0	0.0233	Pass
	3				8.0					
	4				6.9					
	2				8.1					

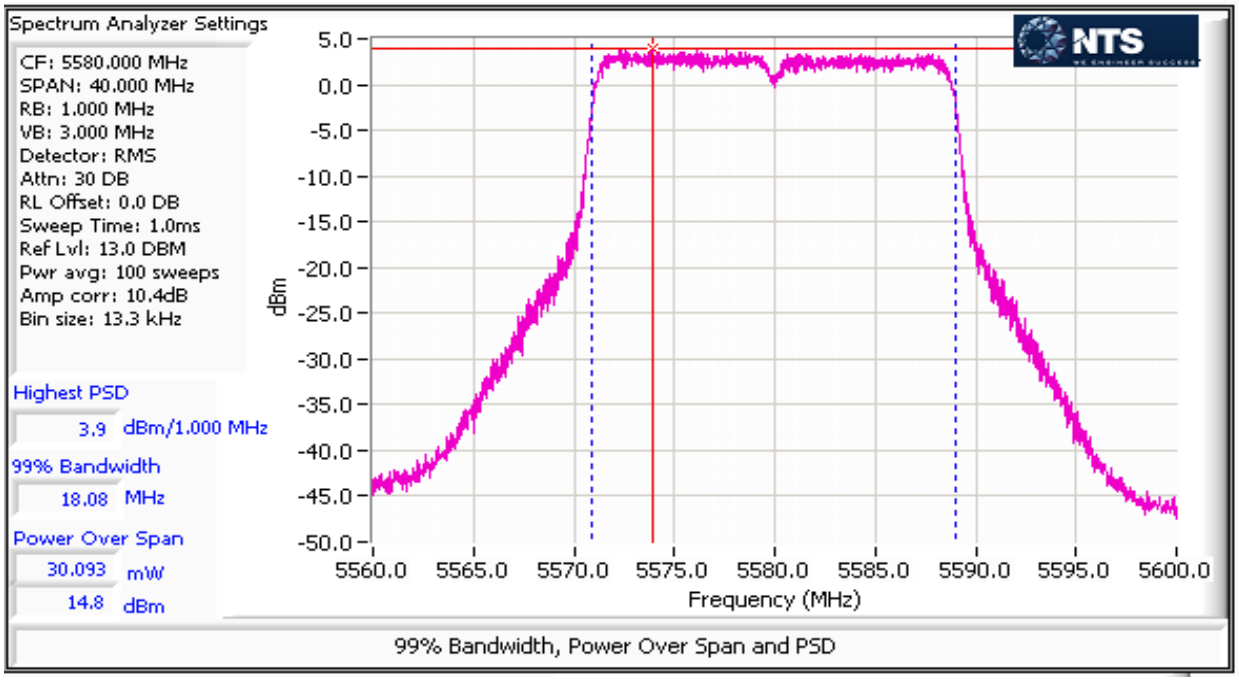
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470-5725 PSD - FCC/IC

Mode: n20

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5500	1	17		99	3.5	9.0	9.5	9.9	11.0	Pass
	3				4.0					
	4				3.3					
	2				3.3					
5580	1	17		99	3.1	9.0	9.5	9.9	11.0	Pass
	3				3.9					
	4				3.5					
	2				3.5					
5700	1	17		99	3.5	8.8	9.4	9.9	11.0	Pass
	3				3.9					
	4				2.6					
	2				3.6					
5720	1	17		99	3.5	8.9	9.5	9.9	11.0	Pass
	3				3.9					
	4				2.5					
	2				3.9					
Portion within 5725-5850 MHz band (UNII-3)										
5720	1	17		99	2.9	8.3	9.2	28.9	28.9	Pass
	3				3.5					
	4				2.3					
	2				3.8					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: n40 Max EIRP (mW): 307.8

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[4] mW	Total Power[4] dBm	FCC Limit dBm	Max Power (W)	Result
5550	1	20	45.2	97	17.8	238.9	23.8	24.0	0.239	Pass
	3				17.8					
	4				17.4					
	2				17.5					
5670	1	20	44.0	97	17.6	228.2	23.6	24.0		Pass
	3				17.7					
	4				17.2					
	2				17.2					
5710	1	19	36.7	97	16.4	179.1	22.5	24.0		Pass
	3				17.0					
	4				15.6					
	2				16.4					

Portion within 5725-5850 MHz band (UNII-3)

5710	1	19		97	9.6	40.5	16.1	30.0	0.0405	Pass
	3				10.3					
	4				9.0					
	2				10.6					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device 5470-5725 PSD - FCC/IC

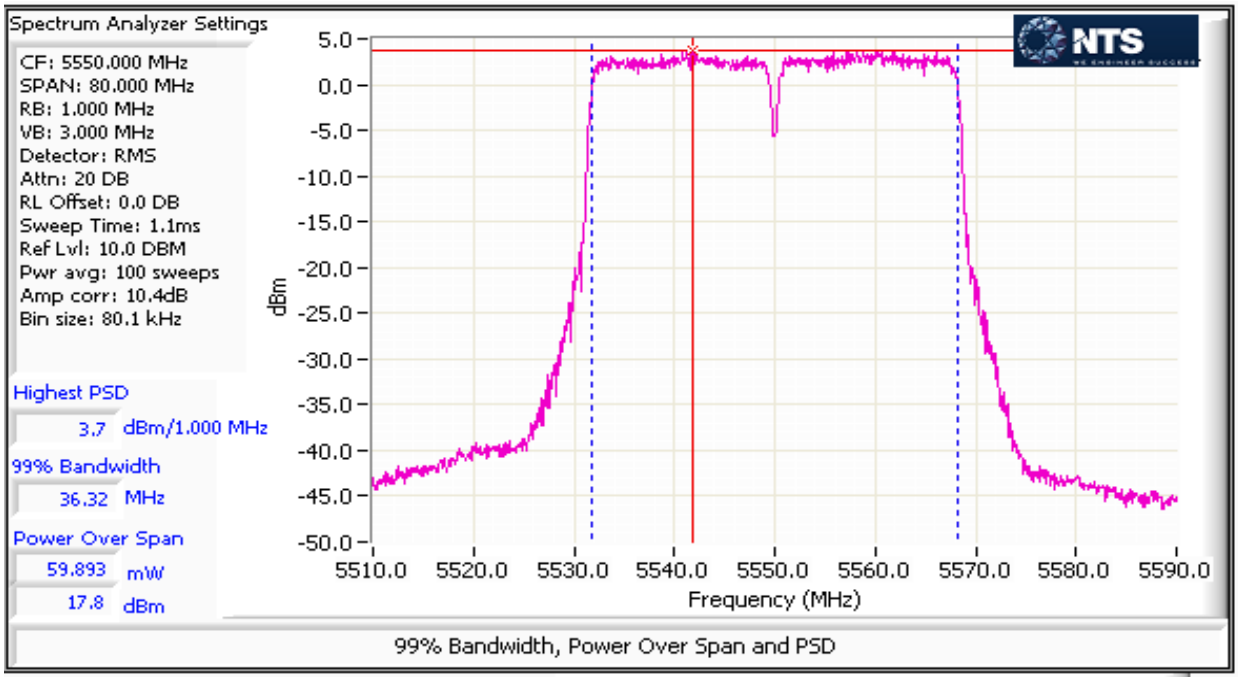
Mode: n40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[4] mW/MHz	Total PSD[4] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5550	1	20		97	3.7	9.1	9.6	9.9	11.0	Pass
	3				3.6					
	4				3.3					
	2				3.2					
5670	1	20		97	3.7	9.0	9.5	9.9	11.0	Pass
	3				3.8					
	4				2.9					
	2				3.0					
5710	1	19		97	2.7	7.7	8.9	9.9	11.0	Pass
	3				3.3					
	4				1.9					
	2				2.8					

Portion within 5725-5850 MHz band (UNII-3)

5710	1	19		97	5.7	16.2	12.1	28.9	28.9	Pass
	3				6.3					
	4				5.3					
	2				6.4					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: ac80 Max EIRP (mW): 302.2

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[4] mW	Total Power[4] dBm	FCC Limit dBm	Max Power (W)	Result
5610	1	20	83.003	96	17.6	234.6	23.7	24.0	0.235	Pass
	3				17.8					
	4				17.2					
	2				17.4					
5690	1	20	78.18	96	17.2	217.5	23.4	24.0		Pass
	3				17.2					
	4				17.0					
	2				17.3					
Portion within 5725-5850 MHz band (UNII-3)										
5690	1	20		96	3.5	10.5	10.2	30.0	0.0105	Pass
	3				3.8					
	4				4.0					
	2				4.6					

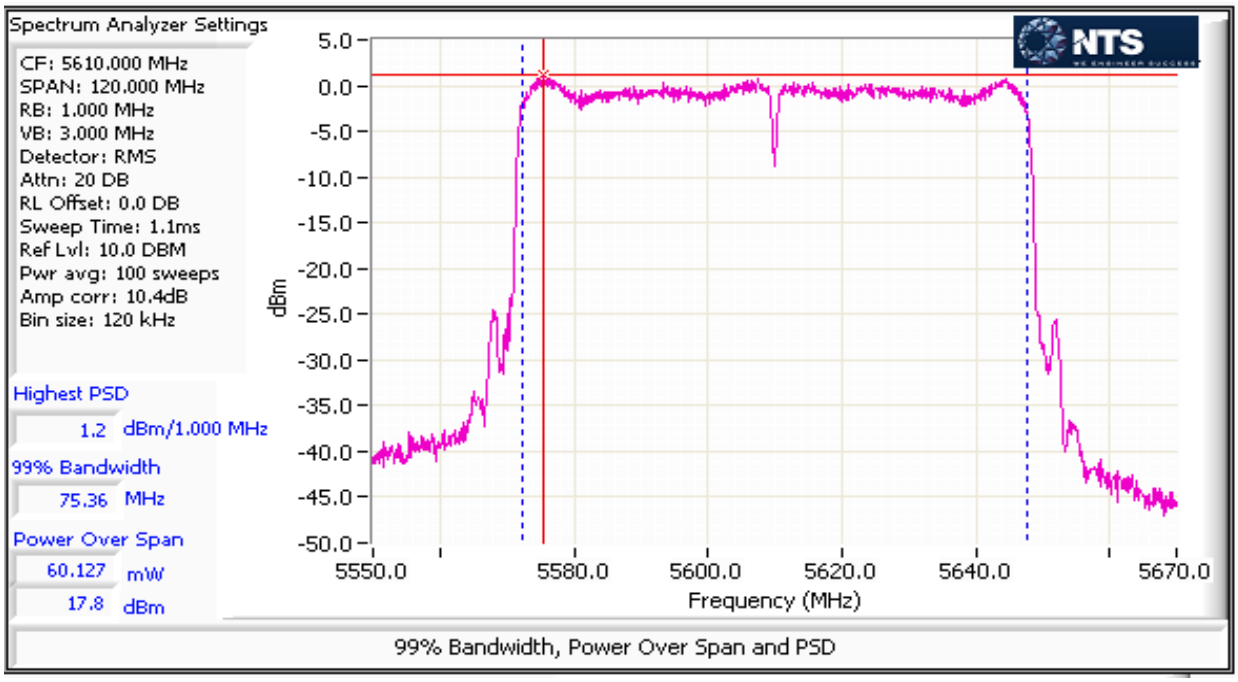
5470-5725 PSD - FCC/IC

Mode: ac80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[4] mW/MHz	Total PSD[4] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5610	1	20		96	0.8	5.2	7.2	9.9	-	Pass
	3				1.2					
	4				0.7					
	2				1.0					
5690	1	20		96	1.3	5.4	7.3	9.9	11.0	Pass
	3				1.1					
	4				0.9					
	2				1.2					
Portion within 5725-5850 MHz band (UNII-3)										
5690	1	20		96	0.7	5.4	7.3	28.9	28.9	Pass
	3				0.6					
	4				1.1					
	2				2.0					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5470 - 5725MHz	15.407(a) (2)	Pass	n20: 20.5dBm (112.3mW) n40: 22.6dBm (182.4mW) ac80: 21.7dBm (148.9mW)
1	PSD, 5470 - 5725MHz	15.407(a) (2)	Pass	n20: 9.5 dBm/MHz n40: 8.9 dBm/MHz ac80: 5.4 dBm/MHz
1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	Pass	EIRP = 29.7 dBm (935.5 mW)
1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz for all modes
1	99% Bandwidth	RSS-247 (Information only)	N/A	n20: 18.1 MHz n40: 36.4 MHz ac80: 83.5 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 22.9 °C
Rel. Humidity: 40 %

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mbs	0.89	Yes	0.558	0.51	1.01	1792
n20	MSC0	0.99	Yes	4.96	0	0	10
n40	MCS0	0.97	Yes	2.408	0.11	0.22	415
ac80	VHT0	0.96	Yes	1.139	0.19	0.37	878

Note - for antenna port measurements, the EUT was operated in the non-TxBF mode

Sample Notes

Sample S/N: 184795206016480
Driver:

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 10/12/2016 0:00 Config. Used: 1
Test Engineer: Kevin Wen Config Change: None
Test Location: Fremont Lab 4A EUT Voltage: 120V/60Hz

Note 1:	Duty Cycle ≥ 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%) and power integration over the OBW (method SA-1 of ANSI C63.10).
Note 2:	Constant Duty Cycle < 98%. Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces , power averaging on and power integration over the OBW. Tthe measurements were adjusted by correcting for duty cycle. This is based on 10log(1/x), where x is the duty cycle. (method SA-2 of ANSI C63.10)
Note 3:	Measured using the same analyzer settings used for output power.
Note 4:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 5:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				Yes	Yes	Yes	No	6.50	6.50
5250-5350					Yes	Yes	Yes	No	6.90	6.90
5470-5725					Yes	Yes	Yes	No	7.10	7.10
5725-5825					Yes	Yes	Yes	No	6.50	6.50

For devices that support CDD modes

Min # of spatial streams: 1
Max # of spatial streams: 4

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: n20 Max EIRP (mW): 575.9

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5500	1	17	23.8	99	14.6	112.3	20.5	22.9	0.112	Pass
	3				14.8					
	4				14.3					
	2				14.2					
5580	1	17	23.8	99	14.0	109.2	20.4	22.9		Pass
	3				14.8					
	4				14.4					
	2				14.2					
5700	1	17	23.4	99	14.2	108.1	20.3	22.9		Pass
	3				14.7					
	4				13.7					
	2				14.6					
5720	1	17	25	99	13.2	83.0	19.2	22.9		Pass
	3				13.6					
	4				12.5					
	2				13.3					

Portion within 5725-5850 MHz band (UNII-3)

5720	1	17		99	7.5	23.3	13.7	28.9	0.0233	Pass
	3				8.0					
	4				6.9					
	2				8.1					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470-5725 PSD - FCC/IC

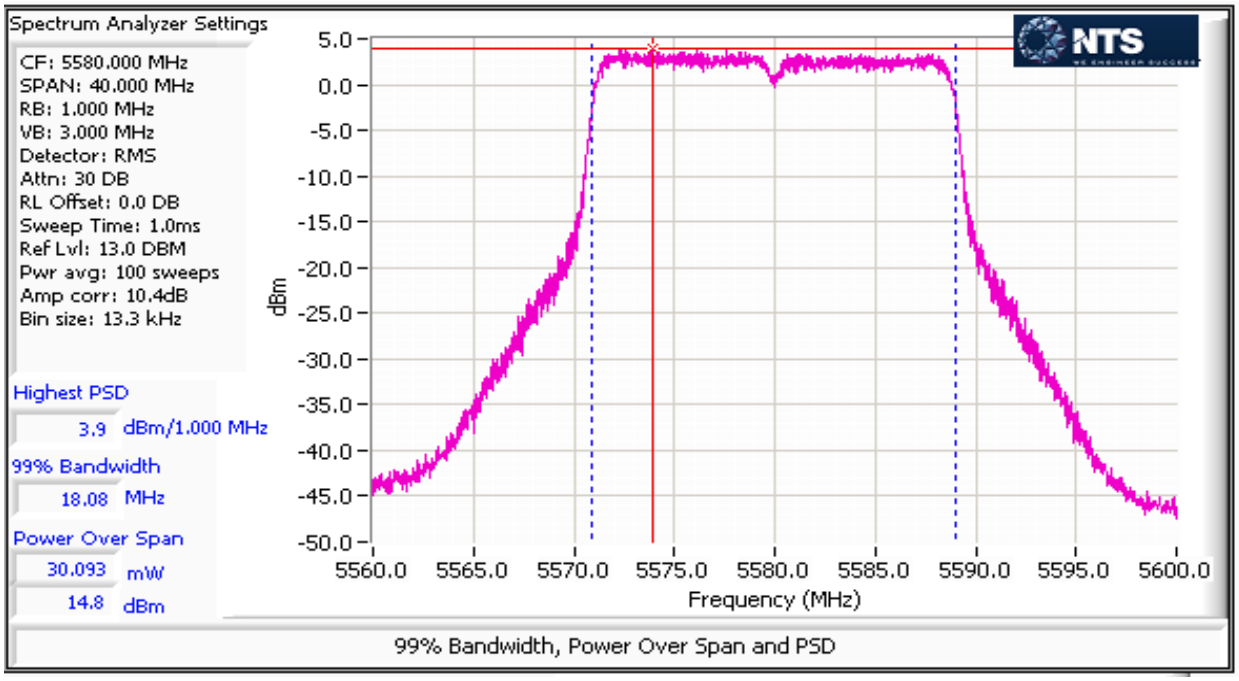
Mode: n20

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5500	1	17		99	3.5	9.0	9.5	9.9	11.0	Pass
	3				4.0					
	4				3.3					
	2				3.3					
5580	1	17		99	3.1	9.0	9.5	9.9	11.0	Pass
	3				3.9					
	4				3.5					
	2				3.5					
5700	1	17		99	3.5	8.7	9.4	9.9	11.0	Pass
	3				3.7					
	4				2.6					
	2				3.6					
5720	1	17		99	3.5	8.9	9.5	9.9	11.0	Pass
	3				3.9					
	4				2.5					
	2				3.9					

Portion within 5725-5850 MHz band (UNII-3)

5720	1	17		99	2.9	8.3	9.2	28.9	28.9	Pass
	3				3.5					
	4				2.3					
	2				3.8					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: n40 Max EIRP (mW): 935.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5550	1	19	45.2	97	16.5	182.4	22.6	22.9	0.182	Pass
	3				16.8					
	4				16.1					
	2				16.4					
5670	1	19	44.0	97	16.3	173.2	22.4	22.9		Pass
	3				16.4					
	4				15.8					
	2				16.4					
5710	1	19	36.7	97	16.4	179.1	22.5	22.9		Pass
	3				17.0					
	4				15.6					
	2				16.4					

Portion within 5725-5850 MHz band (UNII-3)

5710	1	19		97	9.6	40.5	16.1	28.9	0.0405	Pass
	3				10.3					
	4				9.0					
	2				10.6					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device 5470-5725 PSD - FCC/IC

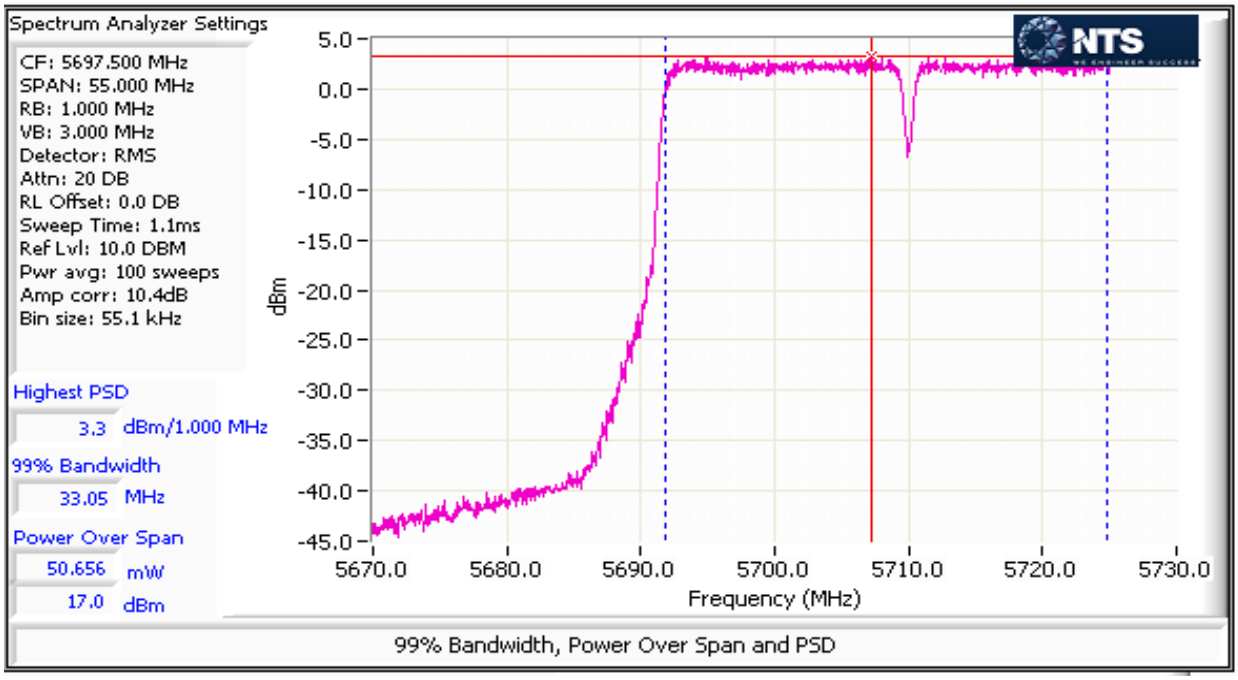
Mode: n40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5550	1	19		97	2.1	6.9	8.4	9.9	11.0	Pass
	3				2.5					
	4				2.0					
	2				2.2					
5670	1	19		97	2.2	6.8	8.3	9.9	11.0	Pass
	3				2.4					
	4				1.7					
	2				2.3					
5710	1	19		97	2.7	7.7	8.9	9.9	11.0	Pass
	3				3.3					
	4				1.9					
	2				2.8					

Portion within 5725-5850 MHz band (UNII-3)

5710	1	19		97	5.7	16.2	12.1	28.9	28.9	Pass
	3				6.3					
	4				5.3					
	2				6.4					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC

Mode: ac80 Max EIRP (mW): 763.7

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5610	1	19	83.00	96	15.1	145.6	21.6	22.9	0.149	Pass
	3				15.8					
	4				15.3					
	2				15.5					
5690	1	19	78.18	96	15.6	148.9	21.7	22.9		Pass
	3				15.5					
	4				15.8					
	2				15.2					
Portion within 5725-5850 MHz band (UNII-3)										
5690	1	19		96	2.1	7.2	8.6	28.9	0.0072	Pass
	3				2.2					
	4				2.4					
	2				2.7					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470-5725 PSD - FCC/IC

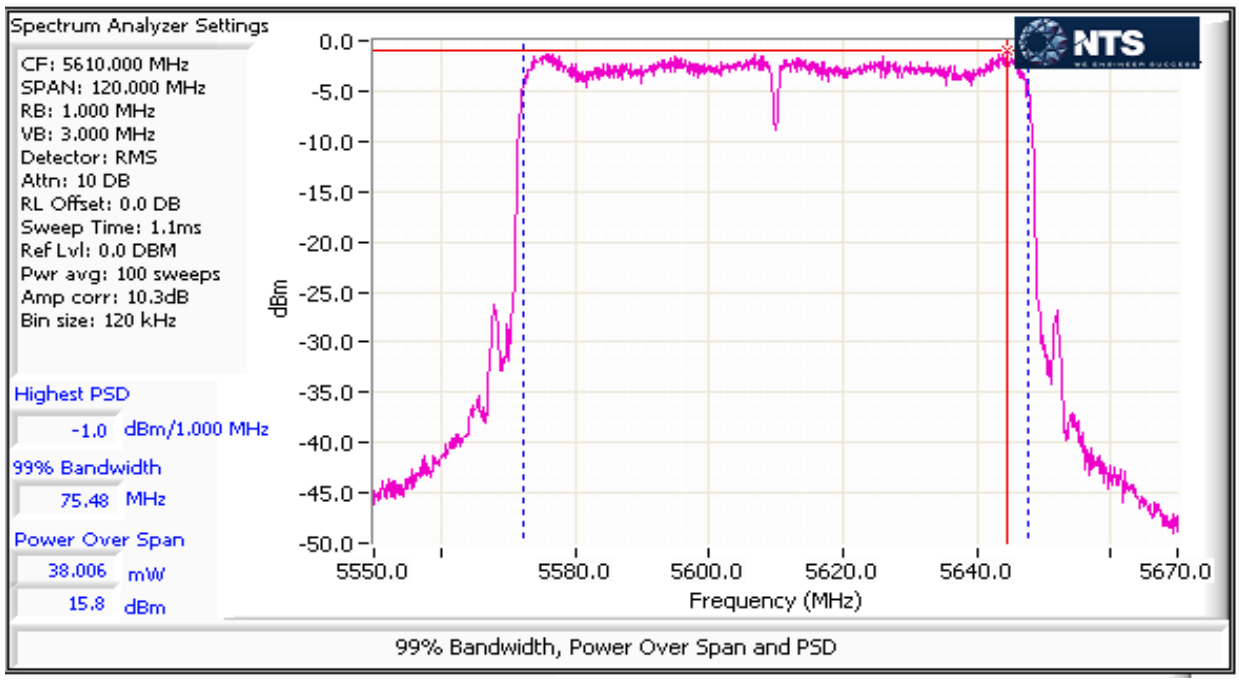
Mode: ac80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz	IC limit dBm/MHz	Result
5610	1	19		96	-0.8	3.3	5.2	9.9	-	Pass
	3				-1.0					
	4				-1.4					
	2				-1.1					
5690	1	19		96	-0.7	3.5	5.4	9.9	-	Pass
	3				-0.7					
	4				-0.5					
	2				-1.0					

Portion within 5725-5850 MHz band (UNII-3)

5690	1	19		96	-0.5	3.9	5.9	28.9	-	Pass
	3				-0.1					
	4				-0.5					
	2				-0.2					

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T102846
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A



Client:	ARRIS	Job Number:	JD102271
Product	BGW210-700	T-Log Number:	T103599
System Configuration:	-	Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Emissions Standard(s):	FCC 15.B, 15.247, 15.407	Class:	B
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

ARRIS

Product

BGW210-700

Date of Last Test: 1/6/2017

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

Date of Test: 01/04/17
Test Engineer: John Caizzi
Test Location: Fremont Chamber #7

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

General Test Configuration

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

Ambient Conditions:

Temperature: 22.3 °C
Rel. Humidity: 40 %

Summary of Results

Run #	Mode	Channel	# of SS	Passing Pwr Setting	Test Performed	Limit	Result / Margin
80MHz Bandwith Modes							
1	ac20	36 - 5180MHz	1	22	Restricted Band Edge at 5150 MHz	15.209	53.0 dBµV/m @ 5149.0 MHz (-1.0 dB)
			4	22			53.1 dBµV/m @ 5149.9 MHz (-0.9 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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)	
1SS	ac20	MCS0	0.99	Yes	9.89	0.00	0.00	10	
4SS	ac20	MCS0	0.96	Yes	2.49	0.18	0.36	402	52.137643

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: internal 4x4

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Channel: 36 - 5180 MHz
Mode: ac 20

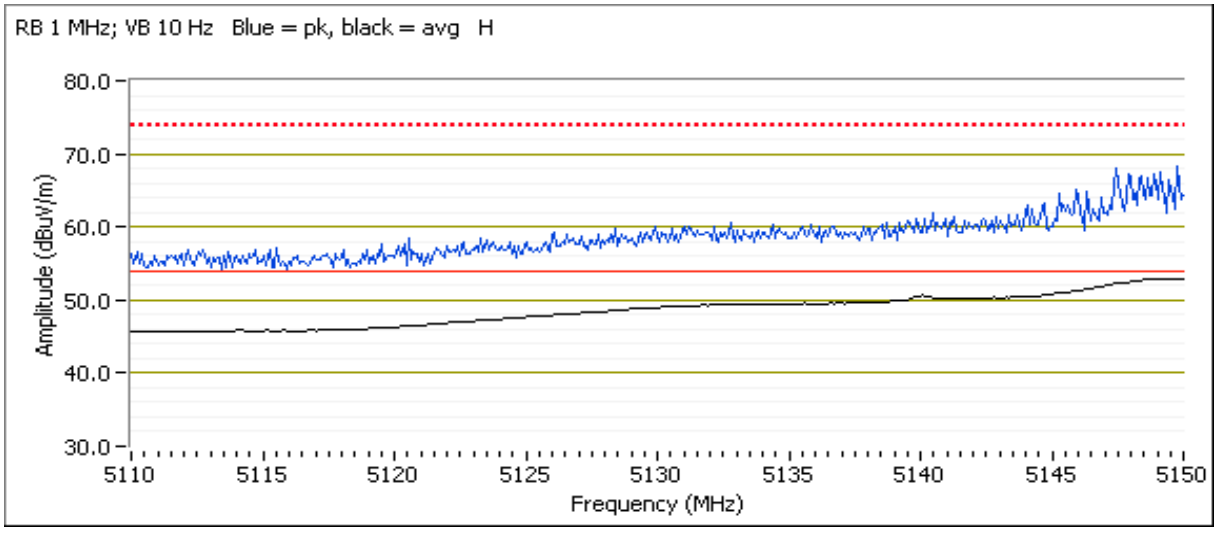
EUT Orientation: Flat
Data Rate: VHT0

Tx Chain: 4Tx
# of SS: 1

Power setting: 22

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.040	53.0	H	54.0	**-1.0**	AVG	0	1.30	
5148.320	69.4	H	74.0	-4.6	PK	0	1.30	

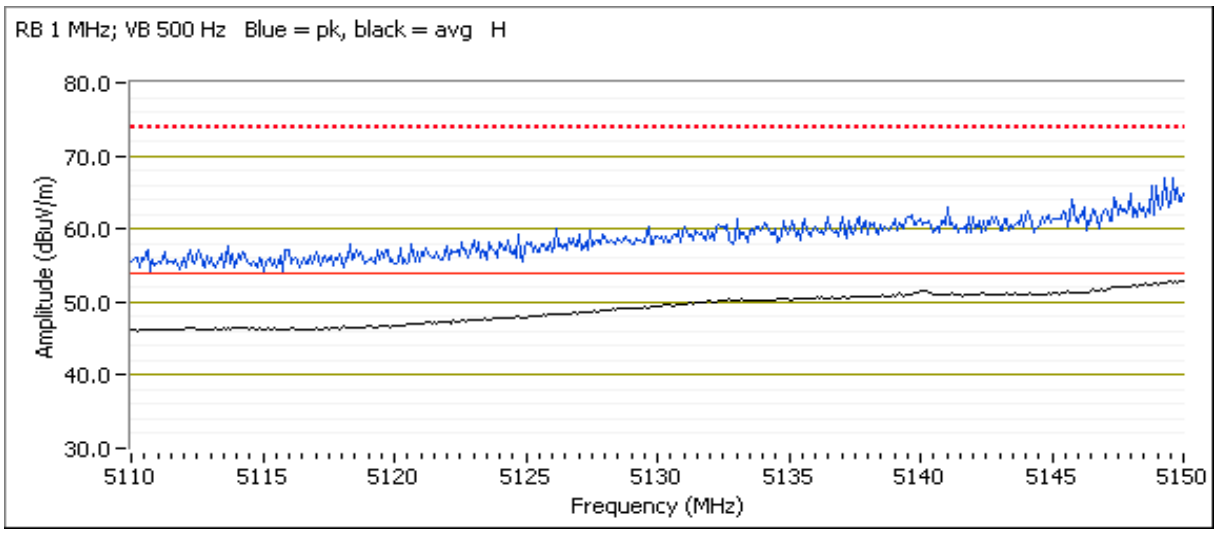


Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Tx Chain: 4Tx Power setting: 22
# of SS: 4

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.920	53.1	H	54.0	**-0.9**	Avg	357	1.29	VB: 500 Hz, note 3.
5148.800	66.0	H	74.0	-8.0	PK	357	1.29	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

Date of Test: 12/20/16
Test Engineer: M. Birgani
Test Location: Fremont Chamber #4

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

General Test Configuration

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

Ambient Conditions:

Temperature: 22.3 °C
Rel. Humidity: 40 %

Summary of Results

Run #	Mode	Channel	# of SS	Passing Pwr Setting	Test Performed	Limit	Result / Margin
2	ac40	38 - 5190MHz	1	17	Restricted Band Edge at 5150 MHz	15.209	53.5 dBµV/m @ 5148.5 MHz (-0.5 dB)
			3	17			53.8 dBµV/m @ 5150.0 MHz (-0.2 dB)
			4	17			53.9 dBµV/m @ 5149.8 MHz (-0.1 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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac40	MCS0	0.99	Yes	5.29	0.00	0.00	10
3SS	ac40	MCS0	0.98	Yes	1.65	0.10	0.20	10
4SS	ac40	MCS0	0.96	Yes	1.25	0.16	0.33	803

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: internal 4x4

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #2: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 12/20/16
Test Engineer: M. Birgani
Test Location: FT Chamber #4

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

Channel: 38 - 5180 MHz
Mode: ac 40

EUT Orientation: Flat
Data Rate: VHT0

Tx Chain: 4Tx Power setting: 17
# of SS: **1 (spatial mapping on - using BF config = 0)**
5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5148.480	**53.5**	H	54.0	**-0.5**	AVG	93	1.5	POS; RB 1 MHz; VB: 300 Hz
5148.520	68.2	H	74.0	-5.8	PK	93	1.5	POS; RB 1 MHz; VB: 3 MHz

Tx Chain: 4Tx Power setting: 17
# of SS: **3 (spatial mapping on - using BF config = 2)**
5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5150.000	**53.8**	H	54.0	**-0.2**	AVG	354	1.4	POS; RB 1 MHz; VB: 1 kHz
5148.160	65.9	H	74.0	-8.1	PK	354	1.4	POS; RB 1 MHz; VB: 3 MHz

Tx Chain: 4Tx Power setting: 17
# of SS: **4 (spatial mapping on - using BF config = 2)**
5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.760	**53.9**	H	54.0	**-0.1**	AVG	357	1.5	POS; RB 1 MHz; VB: 1 kHz
5149.920	66.5	H	74.0	-7.5	PK	357	1.5	POS; RB 1 MHz; VB: 3 MHz

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

Date of Test: 12/20/2016 0:00
Test Engineer: John Caizzi
Test Location: Fremont Chamber #4

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

General Test Configuration

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

Ambient Conditions:

Temperature: 22.3 °C
Rel. Humidity: 40 %

Summary of Results

Run #	Mode	Channel	# of SS	Passing Pwr Setting	Test Performed	Limit	Result / Margin
80MHz Bandwith Modes							
13	ac80	42 - 5210MHz	1	17	Restricted Band Edge at 5150 MHz	15.209	53.9 dBµV/m @ 5148.8 MHz (-0.1 dB)
			4	18			53.9 dBµV/m @ 5147.6 MHz (-0.1 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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac80	VHT0	0.96	Yes	2.214	0.19	0.39	452
2SS	ac80	VHT0	0.97	Yes	2.236	0.11	0.23	447
3SS	ac80	VHT0	0.92	Yes	0.784	0.37	0.73	1276
4SS	ac80	VHT0	0.89	Yes	0.551	0.51	1.01	1815

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: internal 4x4

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #13: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 12/20/2016 0:00
Test Engineer: John Caizzi
Test Location: FT Chamber #4

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

Channel: 42 - 5210 MHz
Tx Chain: 4Tx
Mode: ac 80
# of SS: 1

EUT Orientation: Flat
Power setting: 17, spatial mapping off
Data Rate: VHT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5148.800	53.9	H	54.0	**-0.1**	Avg	355	1.00	POS; RB 1 MHz; VB: 500 Hz
5148.400	68.3	H	74.0	-5.7	PK	355	1.00	

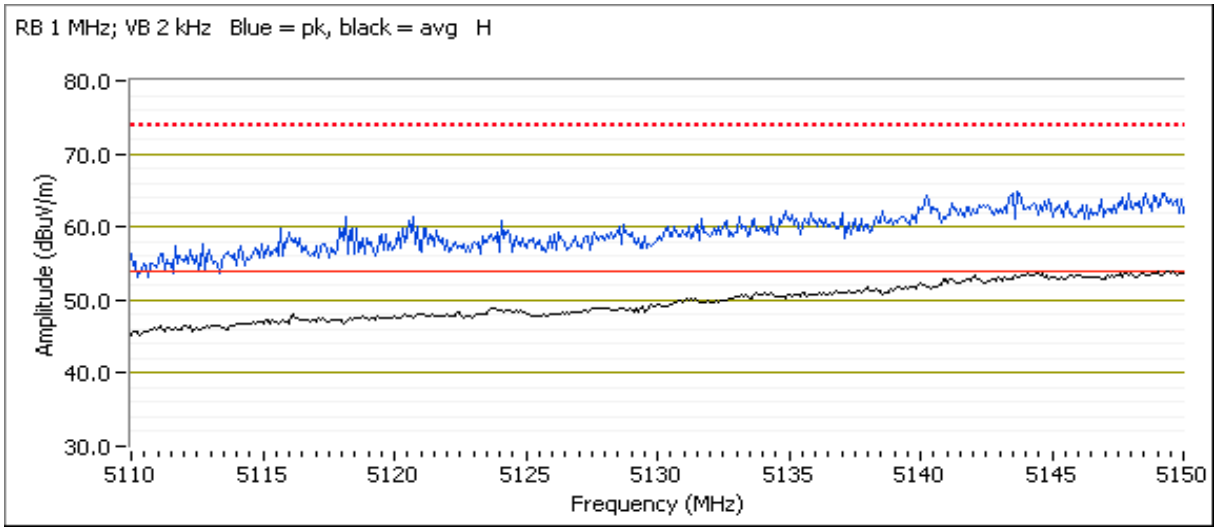
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 42 - 5210 MHz
Tx Chain: 4Tx
Mode: ac 80
# of SS: 4

EUT Orientation: Flat
Power setting: 18, spatial mapping off
Data Rate: VHT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5147.600	53.9	H	54.0	**-0.1**	Avg	350	1.24	POS; RB 1 MHz; VB: 2 kHz
5149.360	65.3	H	74.0	-8.7	PK	350	1.24	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

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

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 45 %

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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Summary of Results

Run #	Mode	Channel	Spatial Streams	Passing Power Setting	Test Performed	Limit	Result / Margin
80MHz Bandwith Modes							
1	ac 80	42 - 5210MHz	1SS	16	Restricted Band Edge at 5150 MHz	15.209	53.2 dBµV/m @ 5148.7 MHz (-0.8 dB)
			2SS	17			53.8 dBµV/m @ 5149.6 MHz (-0.2 dB)
			3SS	18			54.0 dBµV/m @ 5147.4 MHz (0.0 dB)
			4SS	18			53.3 dBµV/m @ 5149.5 MHz (-0.7 dB)
40MHz Bandwith Modes							
2	ac 40	38 - 5190MHz	1SS	16	Restricted Band Edge at 5150 MHz	15.209	53.6 dBµV/m @ 5149.7 MHz (-0.4 dB)
			2SS	18			53.6 dBµV/m @ 5149.7 MHz (-0.4 dB)
			3SS	18			53.5 dBµV/m @ 5149.9 MHz (-0.5 dB)
			4SS	18			53.9 dBµV/m @ 5149.5 MHz (-0.1 dB)
20MHz Bandwith Modes							
3	ac 20	36 - 5180MHz	1SS	21	Restricted Band Edge at 5150 MHz	15.209	53.9 dBµV/m @ 5149.4 MHz (-0.1 dB)
			4SS	22			53.6 dBµV/m @ 5149.7 MHz (-0.4 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac20	MCS0	0.90	No	0.37	0.46	0.92	2732
2SS	ac20	MCS0	0.93	No	0.34	0.32	0.63	2985
3SS	ac20	MCS0	0.94	No	0.34	0.27	0.54	2941
4SS	ac20	MCS0	0.94	No	0.335	0.27	0.54	2985
1SS	ac40	MCS0	0.79	No	0.844	1.0	2.0	1185
2SS	ac40	MCS0	0.89	No	0.366	0.5	1.0	2732
3SS	ac40	MCS0	0.95	No	0.348	0.2	0.4	2874
4SS	ac40	MCS0	0.71	No	0.68	1.5	3.0	1471
1SS	ac80	VHT0	0.92	No	1.16	0.3	0.7	862
2SS	ac80	VHT0	0.70	No	0.31	1.5	3.0	3226
3SS	ac80	VHT0	0.82	No	0.49	0.9	1.8	2041
4SS	ac80	VHT0	0.82	No	0.54	0.9	1.7	1852

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: internal 4x4

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 1/5/2017
Test Engineer: John Caizzi
Test Location: Chamber 7

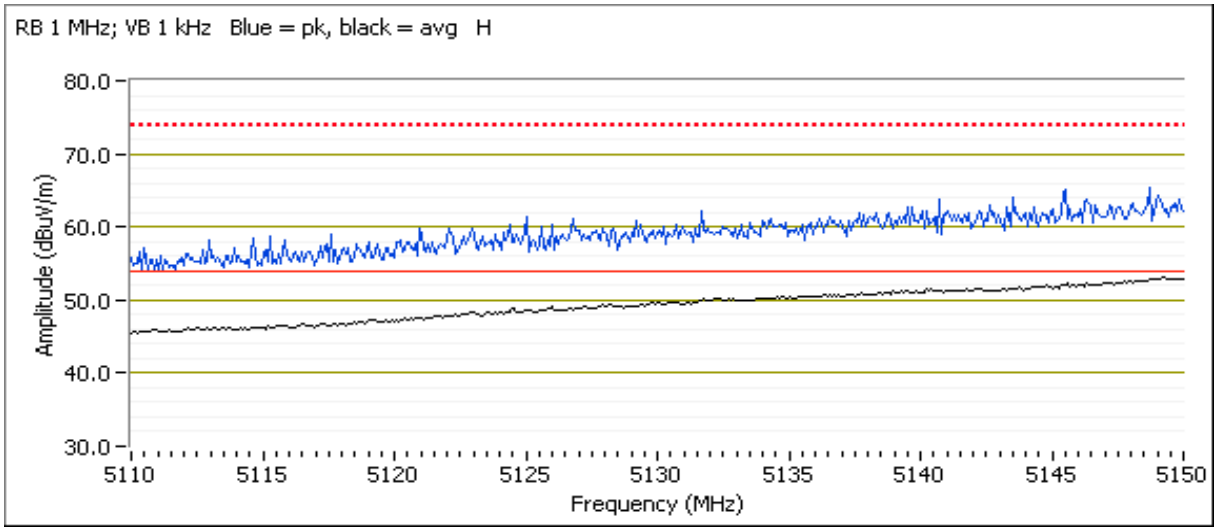
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 42 - 5210 MHz
Tx Chain: 4Tx
Mode: ac 80
Streams: 1SS

EUT Orientation: Flat
Power setting: 16
Data Rate: VHT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5148.720	53.2	H	54.0	**-0.8**	Avg	358	1.28	VB: 1 kHz, note 3.
5148.640	65.0	H	74.0	-9.0	PK	358	1.28	



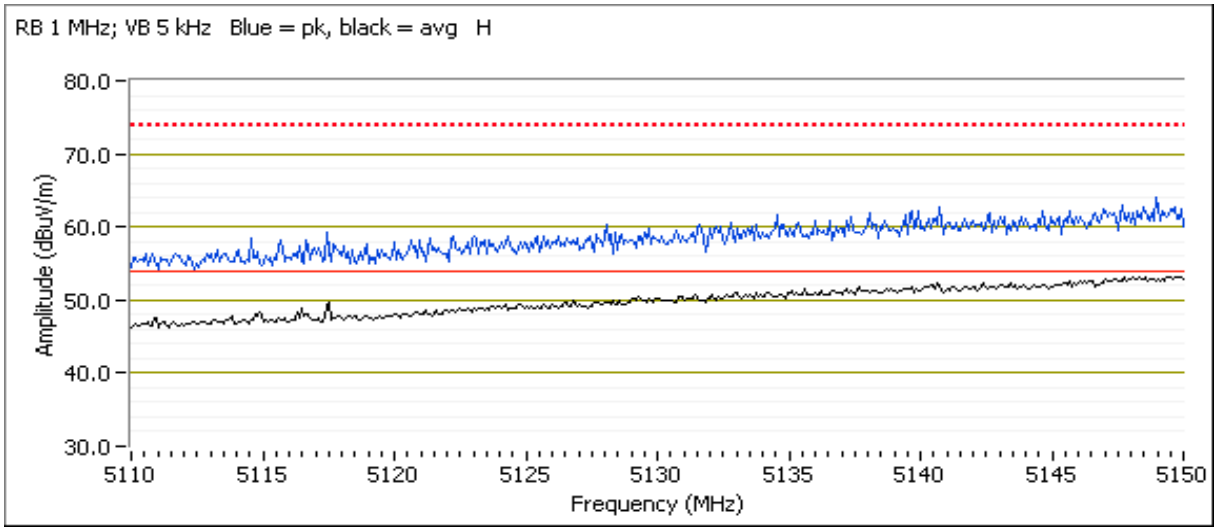
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 42 - 5210 MHz
Tx Chain: 4Tx
Mode: ac 80
Streams: 2SS

EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.560	53.8	H	54.0	**-0.2**	Avg	0	1.38	VB: 5 kHz, note 3.
5148.280	64.8	H	74.0	-9.2	PK	0	1.38	



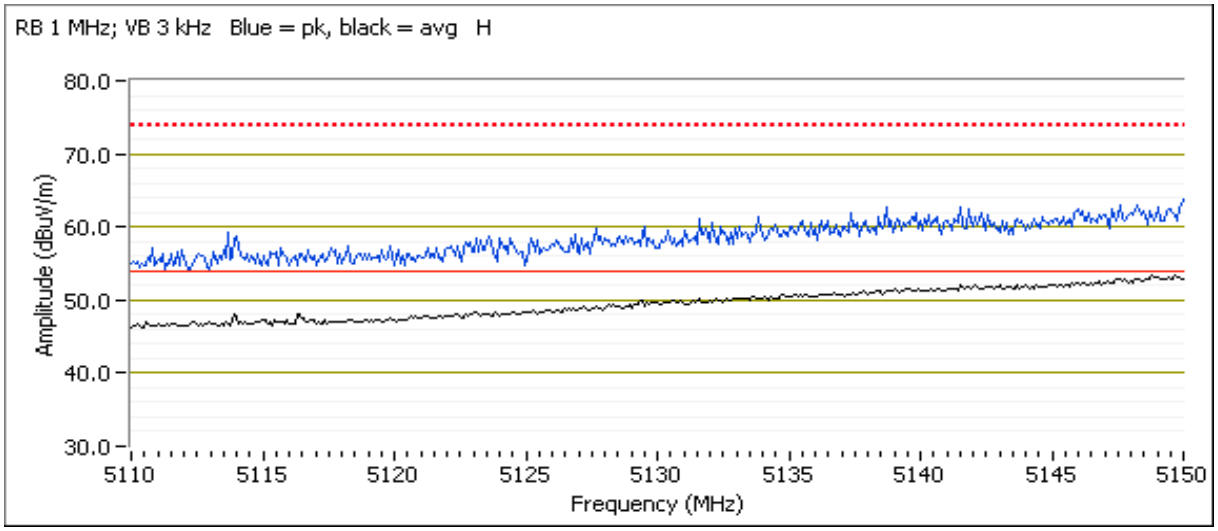
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 42 - 5210 MHz
Tx Chain: 4Tx
Mode: ac 80
Streams: 3SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5147.350	54.0	H	54.0	**0.0**	Avg	356	1.48	VB: 3 kHz, note 3.
5148.720	64.5	H	74.0	-9.5	PK	356	1.48	



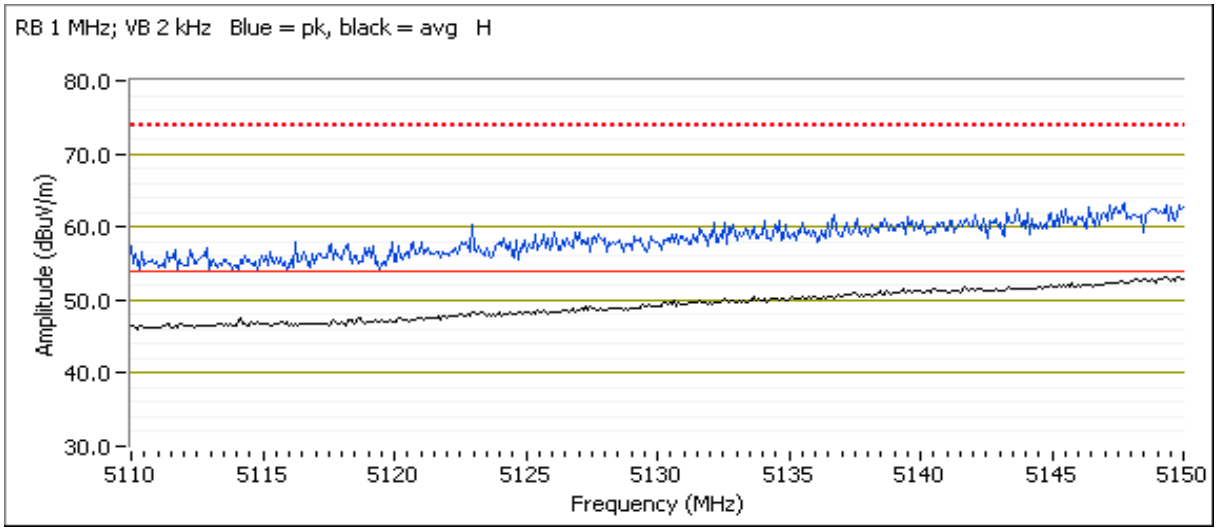
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 42 - 5210 MHz
Tx Chain: 4Tx
Mode: ac 80
Streams: 4SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.520	53.3	H	54.0	**-0.7**	Avg	357	1.49	VB: 2 kHz, note 3.
5147.520	63.7	H	74.0	-10.3	PK	357	1.49	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #2: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 1/5/2017
Test Engineer: John Caizzi
Test Location: Chamber 7

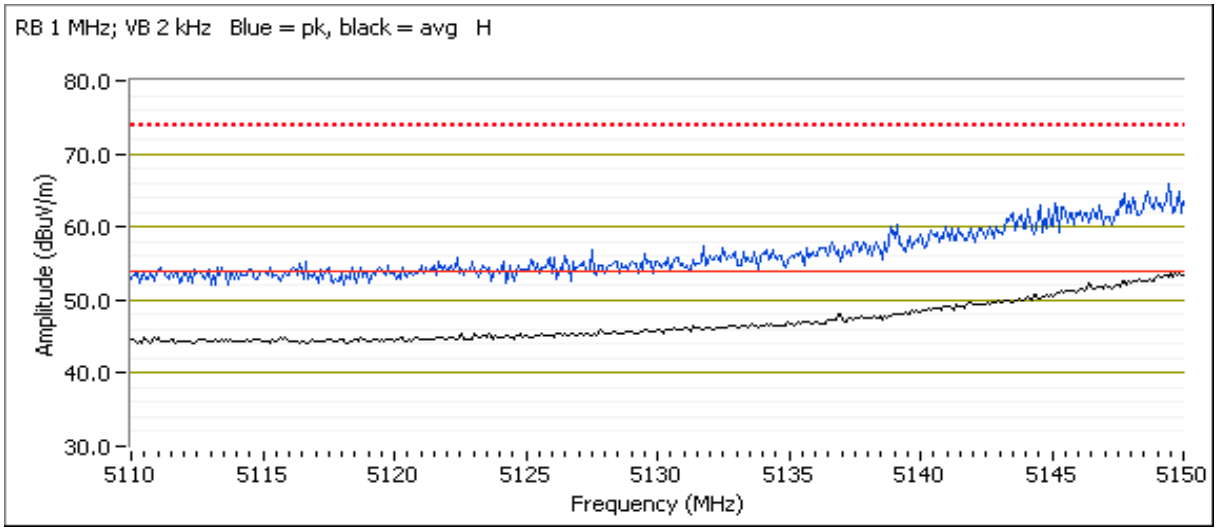
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 38 - 5190 MHz
Tx Chain: 4Tx
Mode: ac 40
Streams: 1SS

EUT Orientation: Flat
Power setting: 16
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.680	53.6	H	54.0	**-0.4**	Avg	357	1.31	VB: 2 kHz, note 3.
5148.960	65.4	H	74.0	-8.6	PK	357	1.31	



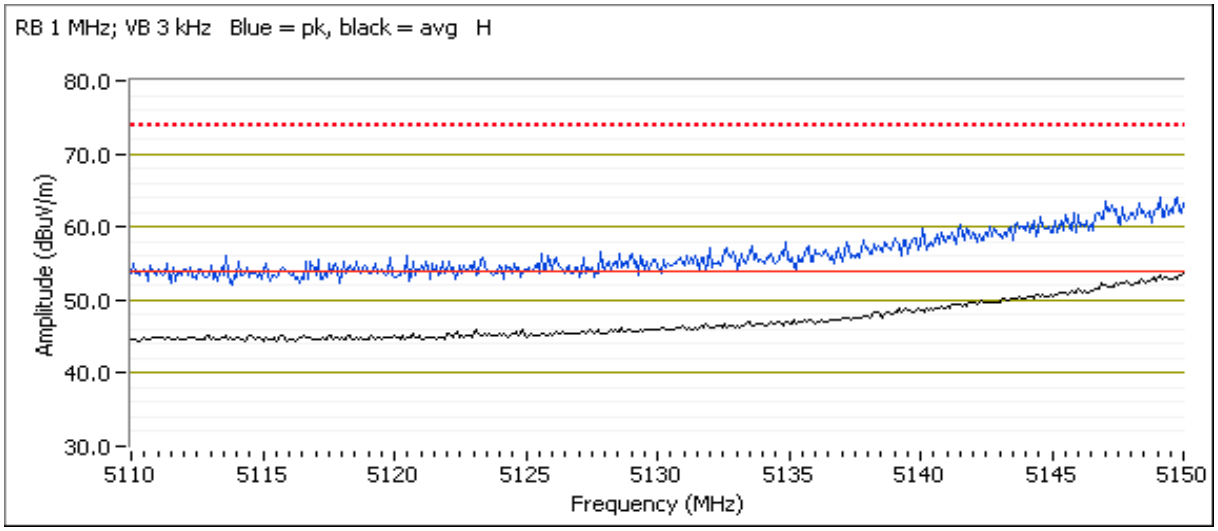
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 38 - 5190 MHz
Tx Chain: 4Tx
Mode: ac 40
Streams: 2SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.640	53.6	H	54.0	**-0.4**	??	355	1.30	VB: 3 kHz, note 3.
5149.780	65.4	H	74.0	-8.6	PK	355	1.30	



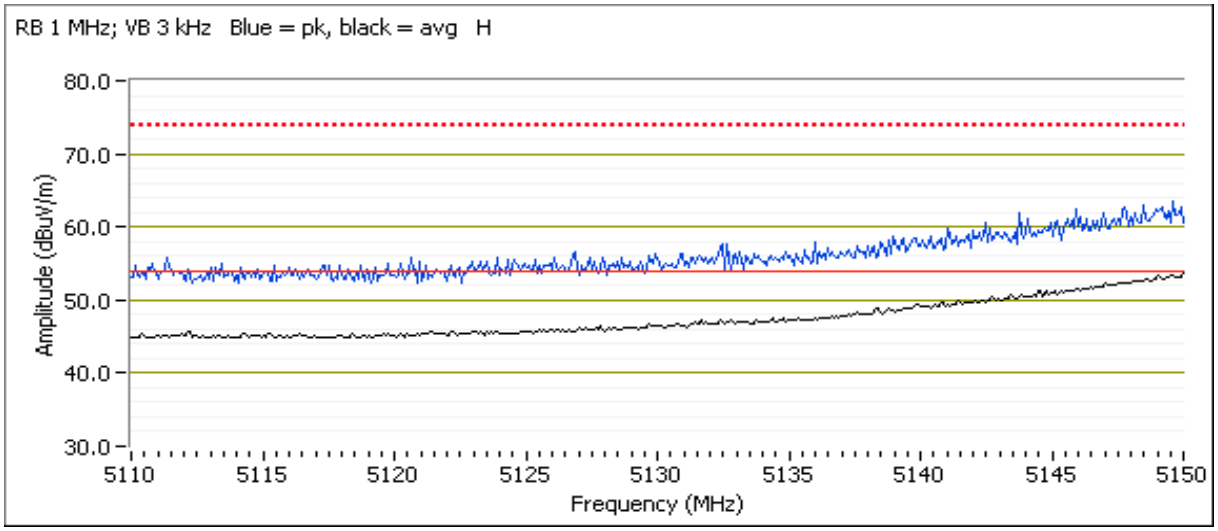
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 38 - 5190 MHz
Tx Chain: 4Tx
Mode: ac 40
Streams: 3SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.920	53.5	H	54.0	**-0.5**	Avg	356	1.31	VB: 3 kHz, note 3.
5146.430	64.8	H	74.0	-9.2	PK	356	1.31	



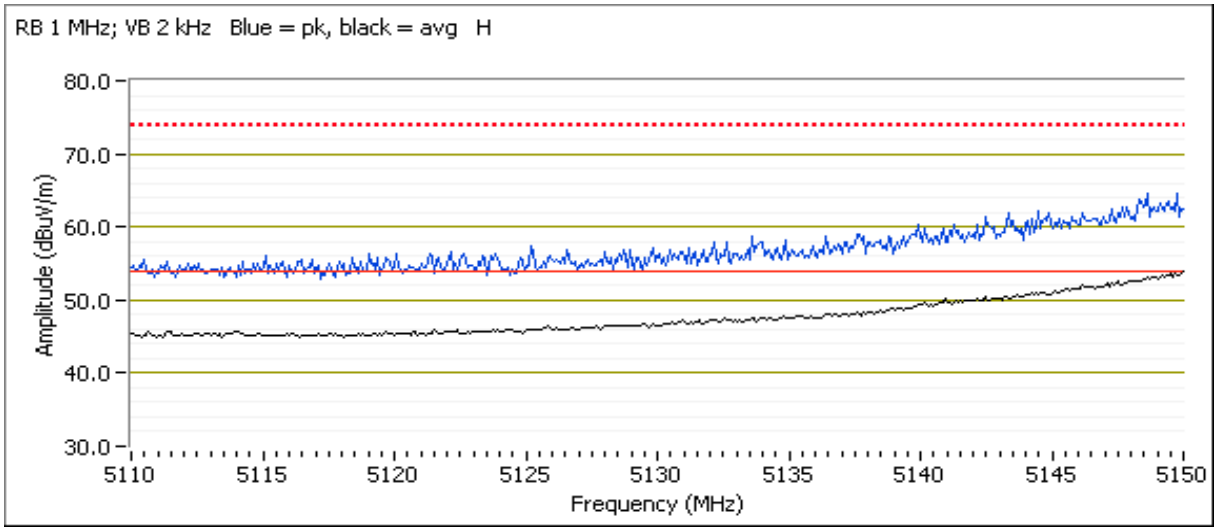
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 38 - 5190 MHz
Tx Chain: 4Tx
Mode: ac 40
Streams: 4SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.460	53.9	H	54.0	**-0.1**	Avg	356	1.29	VB: 2 kHz, note 3.
5149.980	67.3	H	74.0	-6.7	PK	356	1.29	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #3: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 1/5/2017
Test Engineer: John Caizzi
Test Location: Chamber 7

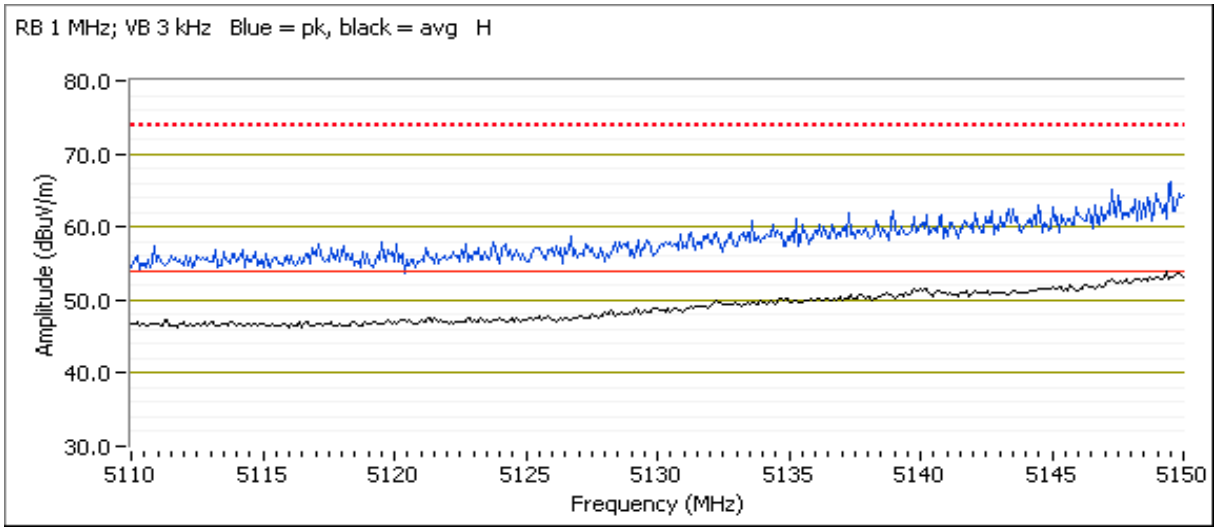
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 36 - 5180 MHz
Tx Chain: 4Tx
Mode: ac 20
Streams: 1SS

EUT Orientation: Flat
Power setting: 21
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.360	53.9	H	54.0	**-0.1**	Avg	18	1.28	VB: 3 kHz, note 3.
5148.960	66.2	H	74.0	-7.8	PK	18	1.28	



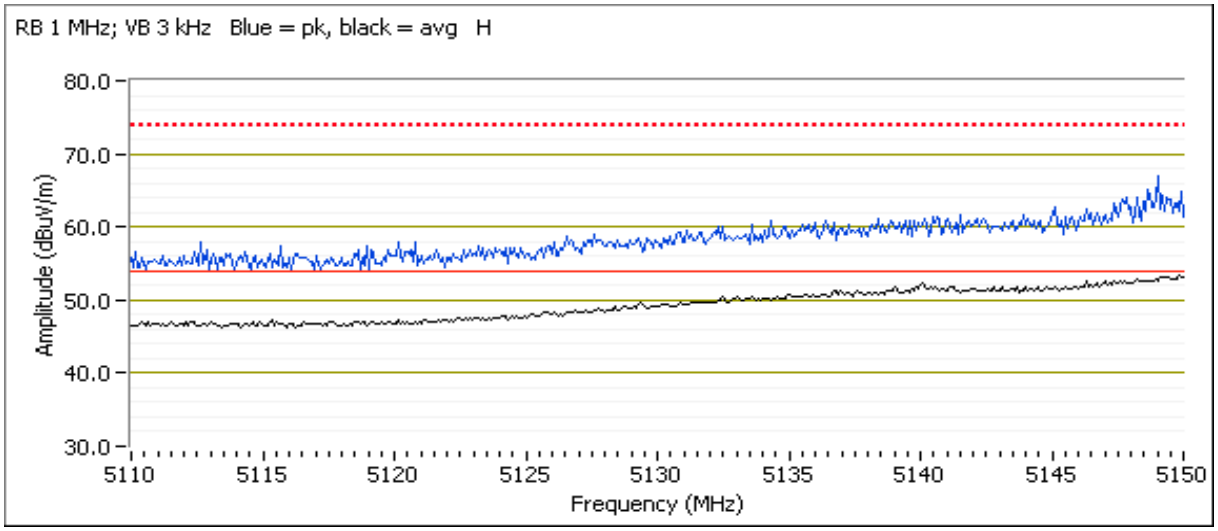
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 36 - 5180 MHz
Tx Chain: 4Tx
Mode: ac 20
Streams: 4SS

EUT Orientation: Flat
Power setting: 22
Data Rate: MCS 0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.740	53.6	H	54.0	**-0.4**	Avg	356	1.30	VB: 3 kHz, note 3.
5149.300	67.0	H	74.0	-7.0	PK	356	1.30	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

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

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 30 %

Summary of Results

Run #	Mode	Channel	NSS	Passing Power Setting	Test Performed	Limit	Result / Margin
40MHz Bandwith Modes							
1	ac 40	62 - 5310MHz	1SS	18	Restricted Band Edge at 5350 MHz	15.209	53.8 dBµV/m @ 5350.0 MHz (-0.2 dB)
			4SS	18			53.7 dBµV/m @ 5351.0 MHz (-0.3 dB)
2	ac 40	102 - 5510MHz	1SS	20	Restricted Band Edge at 5460 MHz	15.209	53.3 dBµV/m @ 5460.0 MHz (-0.7 dB)
				17	Band Edge 5460 - 5470 MHz	15E	67.6 dBµV/m @ 5469.7 MHz (-0.7 dB)
			3SS	17	Restricted Band Edge at 5460 MHz	15.209	50.5 dBµV/m @ 5460.0 MHz (-3.7 dB)
					Band Edge 5460 - 5470 MHz	15E	67.2 dBµV/m @ 5467.6 MHz (-1.1 dB)
			4SS	18	Restricted Band Edge at 5460 MHz	15.209	51.4 dBµV/m @ 5459.5 MHz (-2.6 dB)
					Band Edge 5460 - 5470 MHz	15E	67.4 dBµV/m @ 5468.2 MHz (-0.9 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #	Mode	Channel	NSS	Passing Power Setting	Test Performed	Limit	Result / Margin
80MHz Bandwith Modes							
3	ac80	58 - 5290MHz	1SS	17	Restricted Band Edge at 5350 MHz	15.209	53.3 dBµV/m @ 5350.1 MHz (-0.7 dB)
			2SS	19			51.4 dBµV/m @ 5350.6 MHz (-2.6 dB)
			4SS	20			53.7 dBµV/m @ 5350.2 MHz (-0.3 dB)
4	ac80	106 - 5530MHz	1SS	16	Restricted Band Edge at 5460 MHz	15.209	53.1 dBµV/m @ 5459.0 MHz (-0.9 dB)
					Band Edge 5460 - 5470 MHz	15E	66.2 dBµV/m @ 5466.6 MHz (-2.1 dB)
			3SS	17	Restricted Band Edge at 5460 MHz	15.209	52.9 dBµV/m @ 5460.0 MHz (-1.1 dB)
					Band Edge 5460 - 5470 MHz	15E	65.3 dBµV/m @ 5469.4 MHz (-3.0 dB)
			4SS	18	Restricted Band Edge at 5460 MHz	15.209	53.0 dBµV/m @ 5459.4 MHz (-1.0 dB)
					Band Edge 5460 - 5470 MHz	15E	65.6 dBµV/m @ 5467.3 MHz (-2.7 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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)	
1SS	ac40	MCS0	0.99	Yes	5.29	0.00	0.0	10	
2SS	ac40	MCS0	0.99	Yes	4.79	0.00	0.0	10	
3SS	ac40	MCS0	0.98	Yes	1.65	0.10	0.2	10	
4SS	ac40	MCS0	0.96	Yes	1.25	0.16	0.3	803	
1SS	ac80	VHT0	0.96	Yes	2.214	0.19	0.4	452	
2SS	ac80	VHT0	0.97	Yes	2.236	0.11	0.2	447	
3SS	ac80	VHT0	0.92	Yes	0.784	0.37	0.7	1276	54.347826
4SS	ac80	VHT0	0.89	Yes	0.551	0.51	1.0	1815	

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: internal 4x4

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #1: Radiated Bandedge Measurements, 5250-5350 MHz

Date of Test: 12/22/2016
Test Engineer: John Caizzi
Test Location: Chamber 4

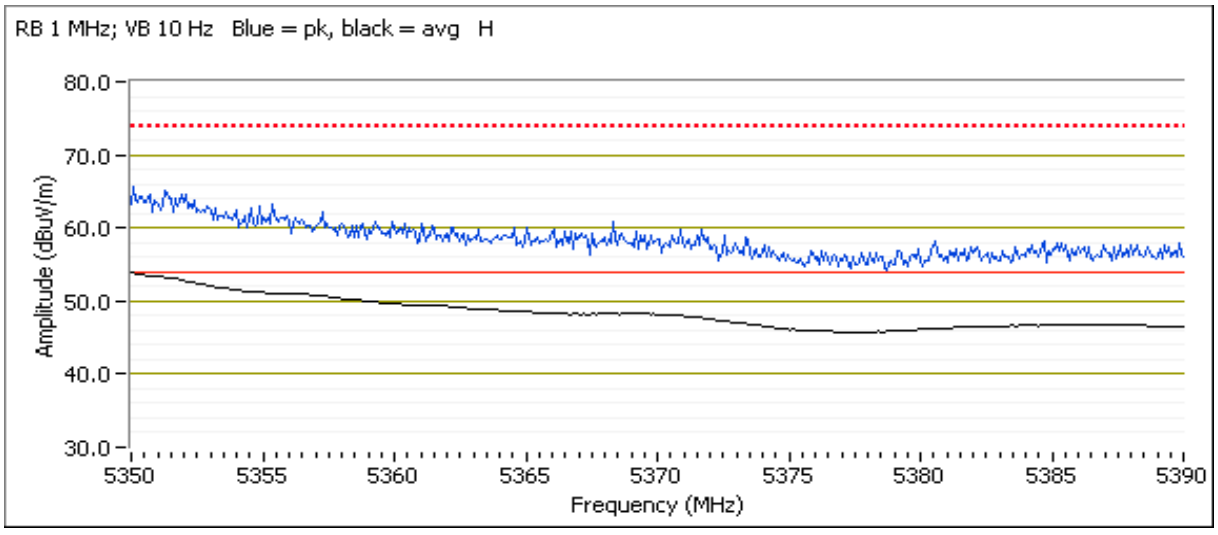
Config. Used: 1
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 62 - 5310 MHz
Tx Chain: 4Tx
Mode: ac40
Streams: 1SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	53.8	H	54.0	**-0.2**	AVG	344	1.39	
5351.200	66.6	H	74.0	-7.4	PK	344	1.39	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

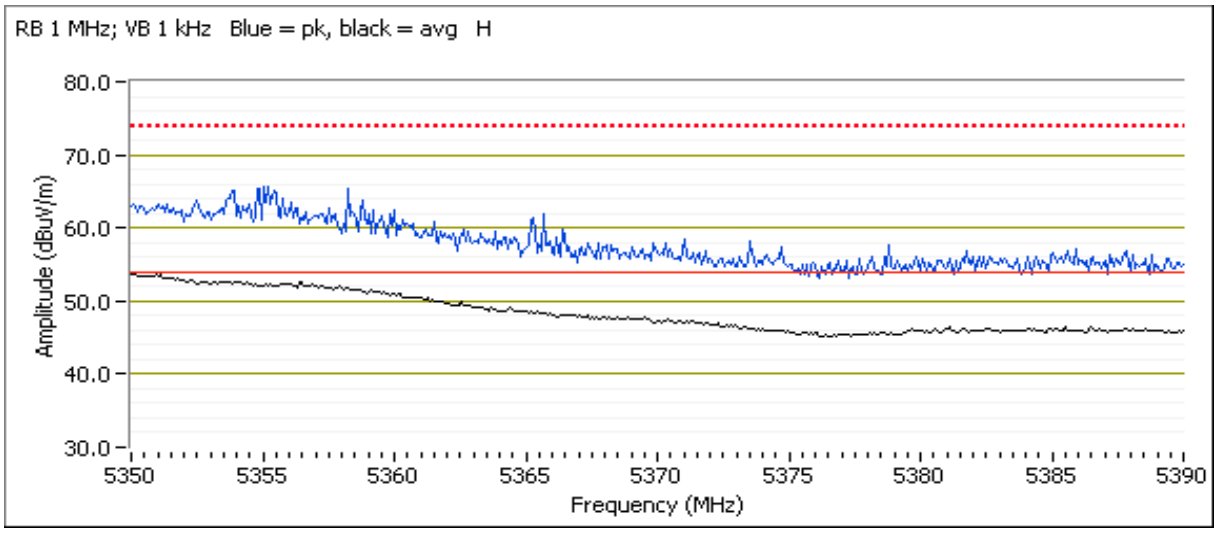
Run #1: Radiated Bandedge Measurements, 5250-5350 MHz

Channel: 62 - 5310 MHz
Tx Chain: 4Tx
Mode: ac40
Streams: 4SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.960	53.7	H	54.0	**-0.3**	Avg	78	1.39	VB: 1 kHz, note 3.
5354.010	67.1	H	74.0	-6.9	PK	78	1.39	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #2: Radiated Bandedge Measurements, 5470-5725 MHz

Date of Test: 1/5/2017
Test Engineer: John Caizzi
Test Location: Chamber 4

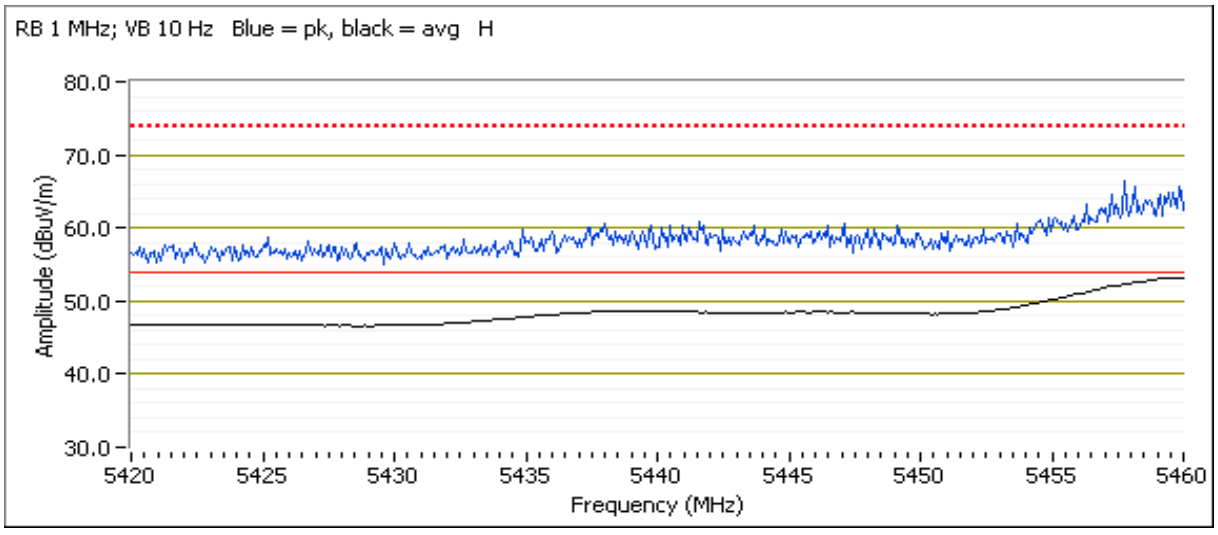
Config. Used: 1
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 102 - 5510 MHz
Tx Chain: 4Tx
Mode: ac40
Streams: 1SS

EUT Orientation: Flat
Power setting: 20
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

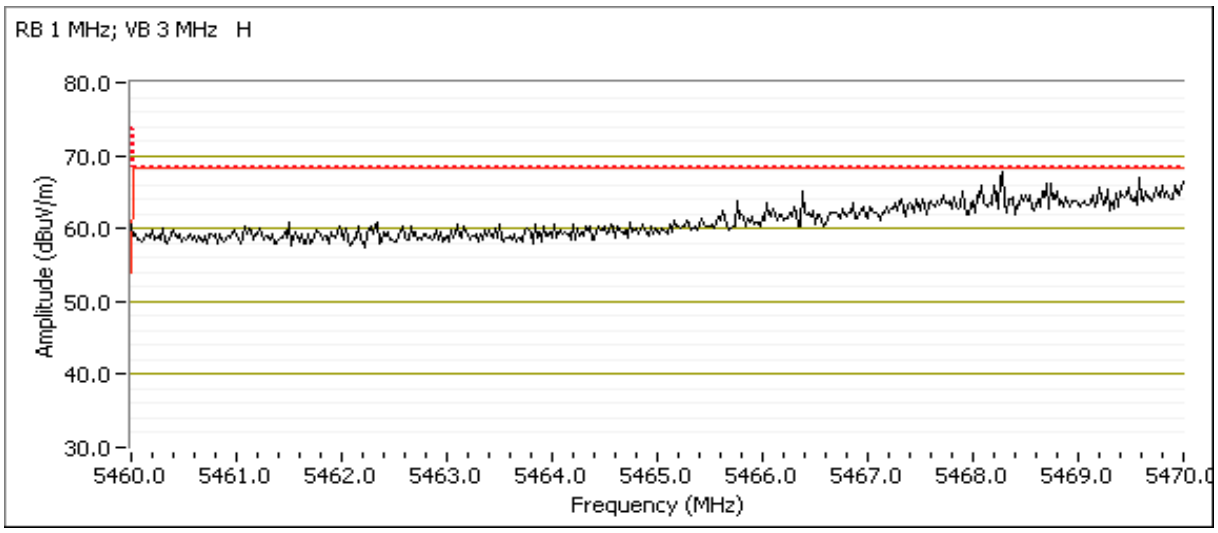
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5460.000	53.3	H	54.0	**-0.7**	AVG	3	1.43	Setting = 20
5459.040	65.6	H	74.0	-8.4	PK	3	1.43	Setting = 20



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength, remeasured 1/5/17.

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.680	67.6	H	68.3	**-0.7**	PK	158	1.49	Setting = 17



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

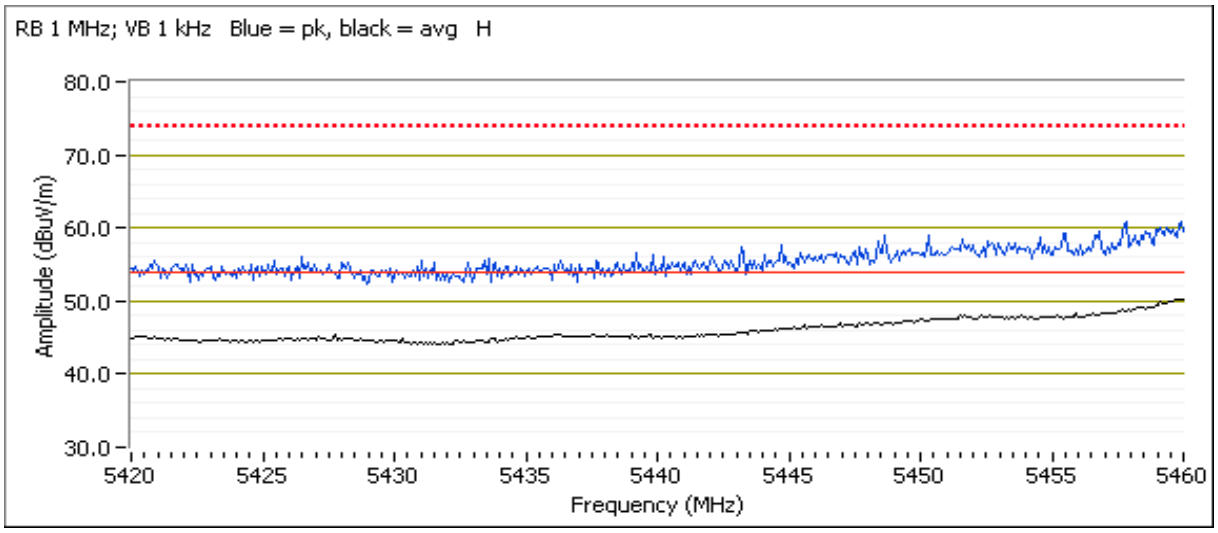
Run #2: Radiated Bandedge Measurements, 5470-5725 MHz

Channel: 102 - 5510 MHz
Tx Chain: 4Tx
Mode: ac40
Streams: 3SS

EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

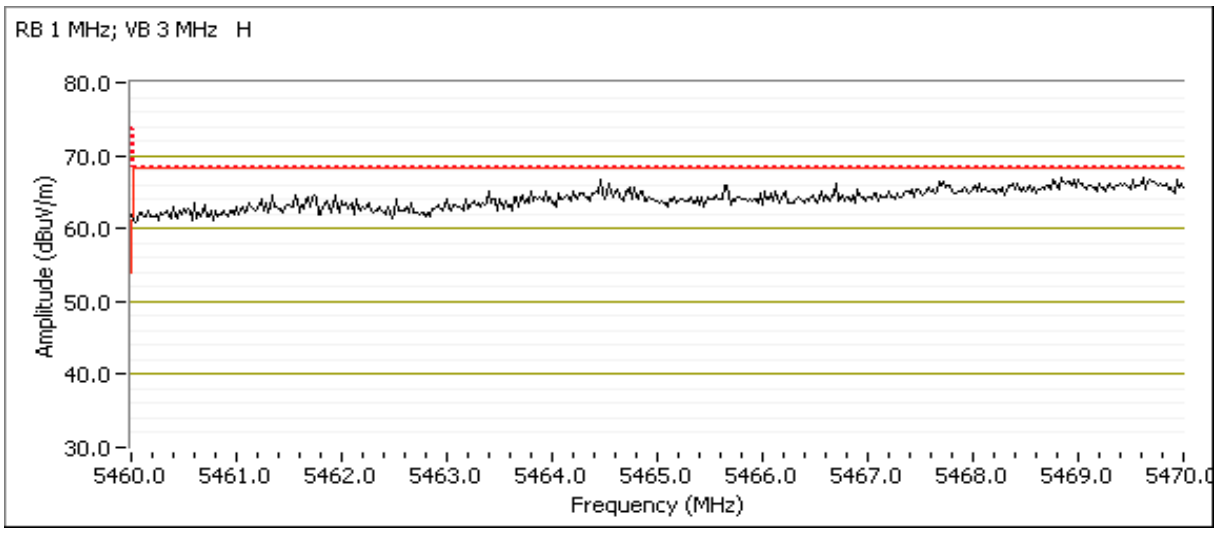
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5460.000	50.5	H	54.0	**-3.7**	Avg	359	1.48	VB: 1 kHz, note 3.
5456.950	61.1	H	74.0	-12.9	PK	359	1.48	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5467.620	67.2	H	68.3	**-1.1**	PK	359	1.35	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

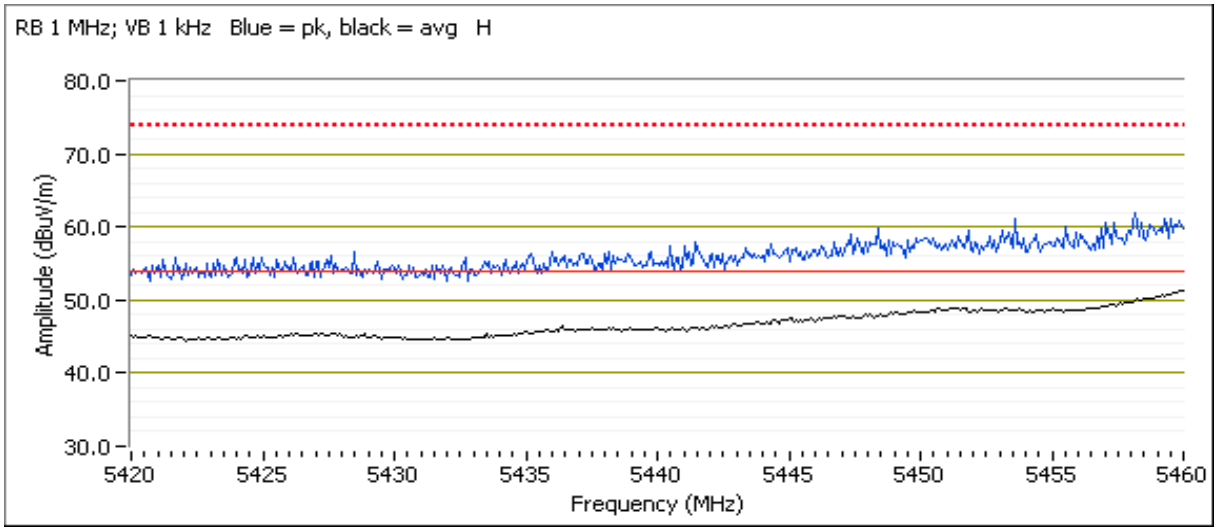
Run #2: Radiated Bandedge Measurements, 5470-5725 MHz

Channel: 102 - 5510 MHz
Tx Chain: 4Tx
Mode: ac40
Streams: 4SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

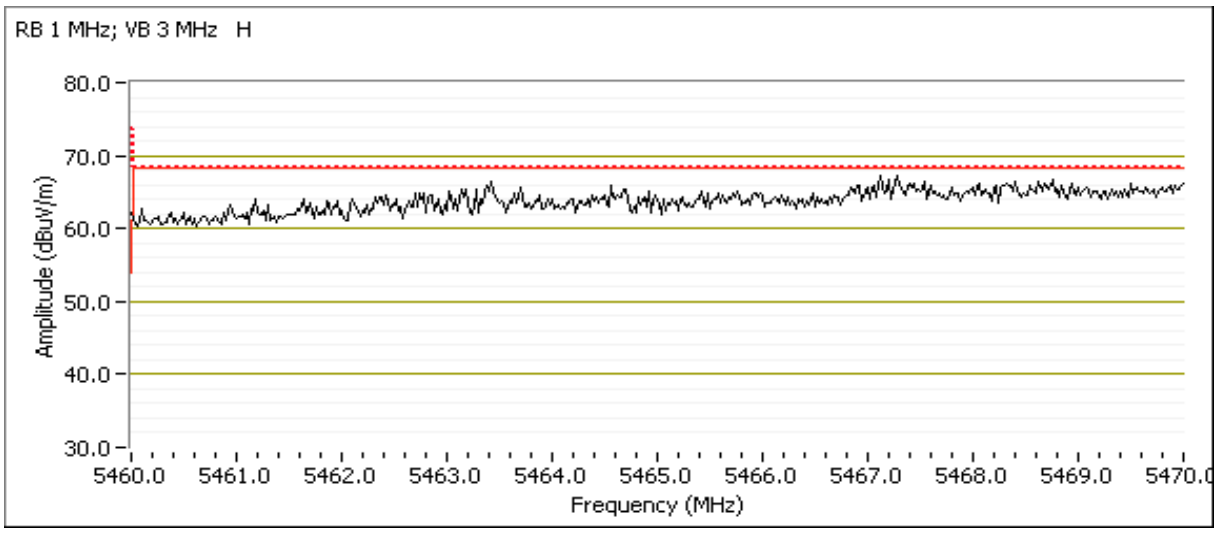
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.520	51.4	H	54.0	**-2.6**	Avg	2	1.37	VB: 1 kHz, note 3.
5457.840	61.8	H	74.0	-12.2	PK	2	1.37	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5468.240	67.4	H	68.3	**-0.9**	PK	1	1.35	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #3: Radiated Bandedge Measurements, 5250-5350 MHz

Date of Test: 1/4/2017
Test Engineer: Rafael Varelas
Test Location: Chamber 7

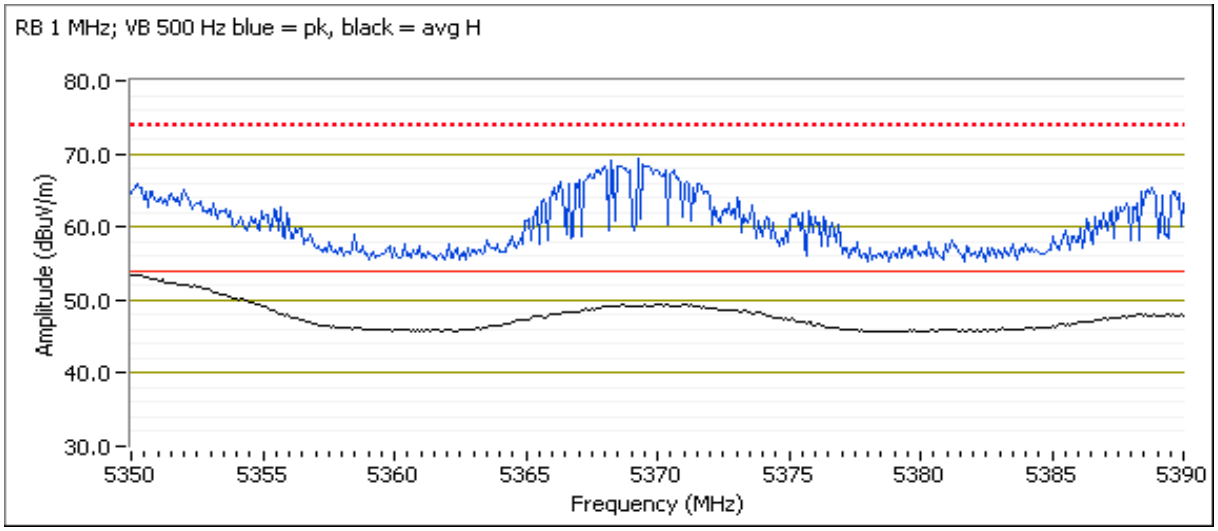
Config. Used: 1
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Streams: 1SS

EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.120	53.3	H	54.0	**-0.7**	Avg	165	1.7	VB: 500 Hz, note 3
5352.710	65.7	H	74.0	-8.3	PK	165	1.7	POS; RB 1 MHz; VB: 3 MHz



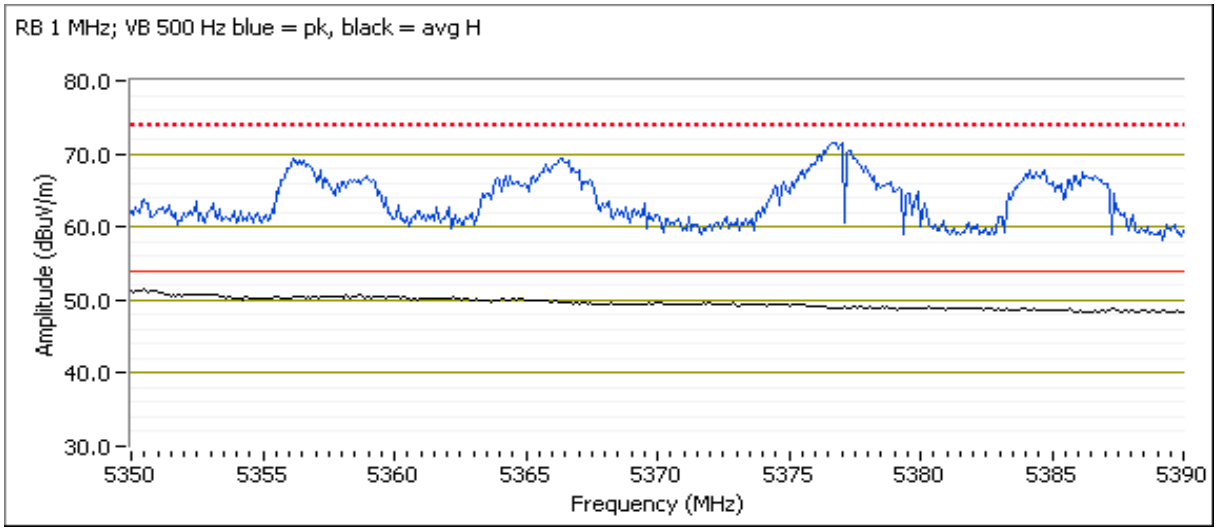
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Streams: 2SS

EUT Orientation: Flat
Power setting: 19
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.640	51.4	H	54.0	**-2.6**	Avg	77	1.3	POS; RB 1 MHz; VB: 500 Hz
5376.930	71.3	H	74.0	-2.7	PK	77	1.3	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 1/4/2017
Test Engineer: Rafael Varelas
Test Location: Chamber 7

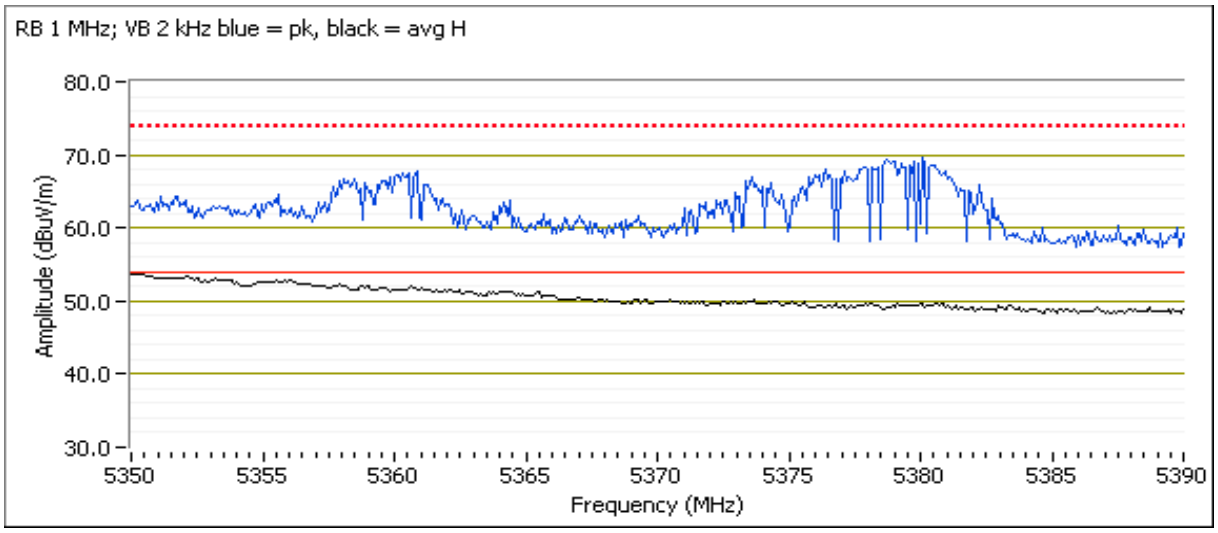
Config. Used: 1
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Streams: 4SS

EUT Orientation: Flat
Power setting: 20
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.240	53.7	H	54.0	**-0.3**	Avg	36	1.0	POS; RB 1 MHz; VB: 2 kHz
5379.660	68.9	H	74.0	-5.1	PK	36	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #4: Radiated Bandedge Measurements, 5470-5725 MHz

Date of Test: 12/27/2016
Test Engineer: John Caizzi
Test Location: Chamber 4

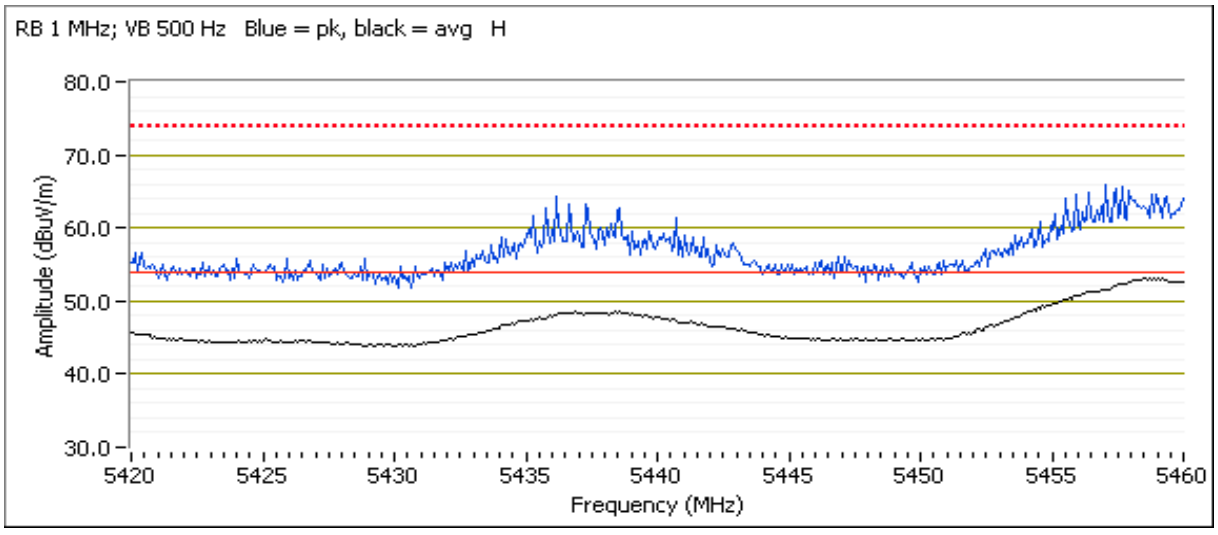
Config. Used: 1
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Streams: 1SS

EUT Orientation: Flat
Power setting: 16
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

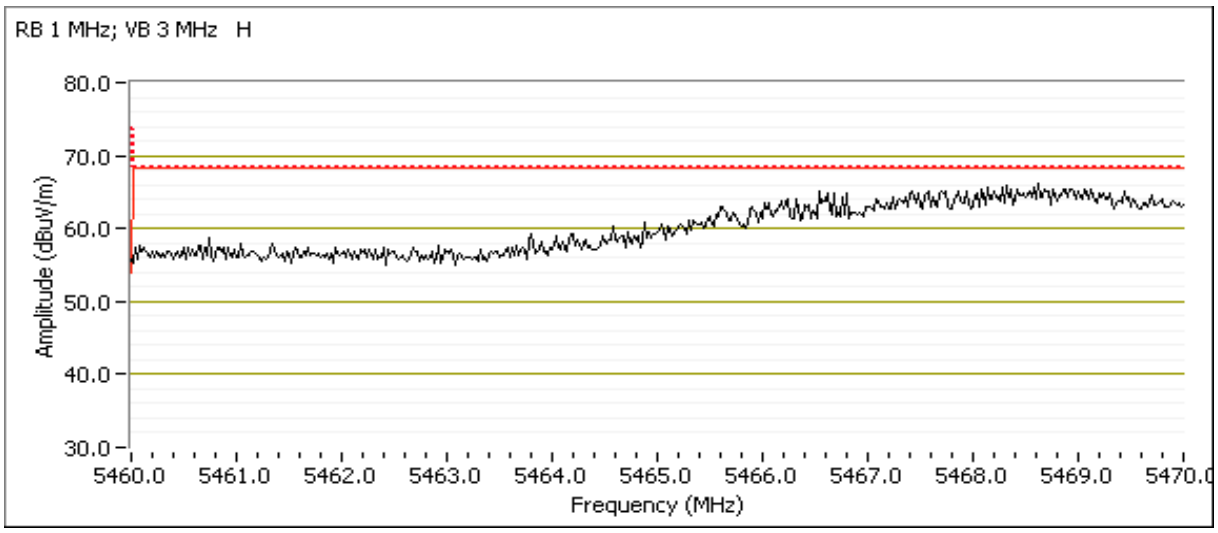
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5458.960	53.1	H	54.0	**-0.9**	Avg	360	1.28	VB: 500 Hz, note 3.
5457.270	66.3	H	74.0	-7.7	PK	360	1.28	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5466.630	66.2	H	68.3	**-2.1**	PK	159	1.45	



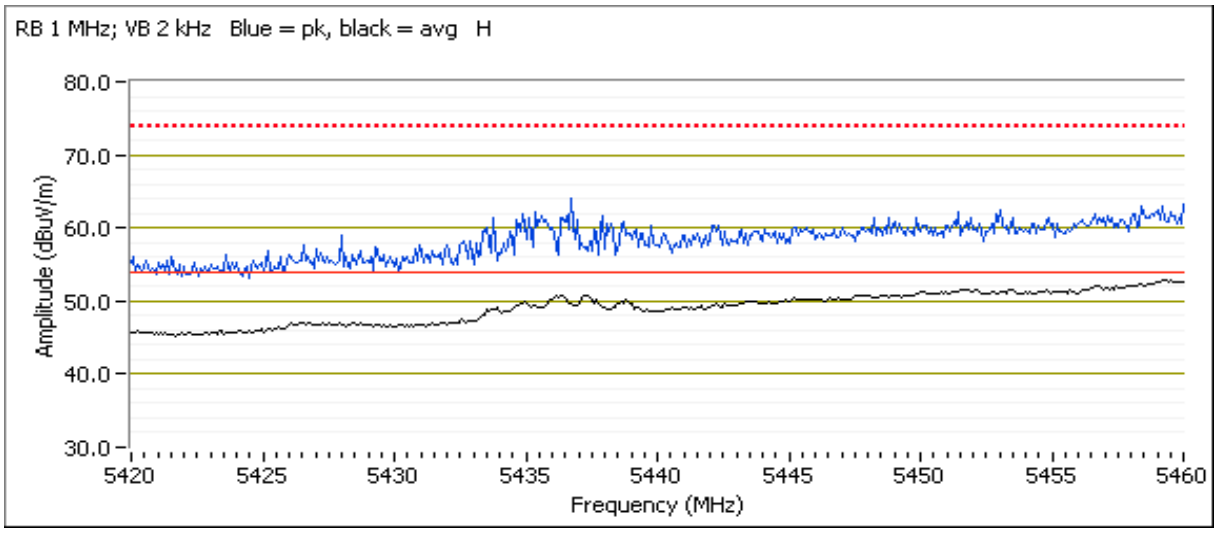
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Streams: 3SS

EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

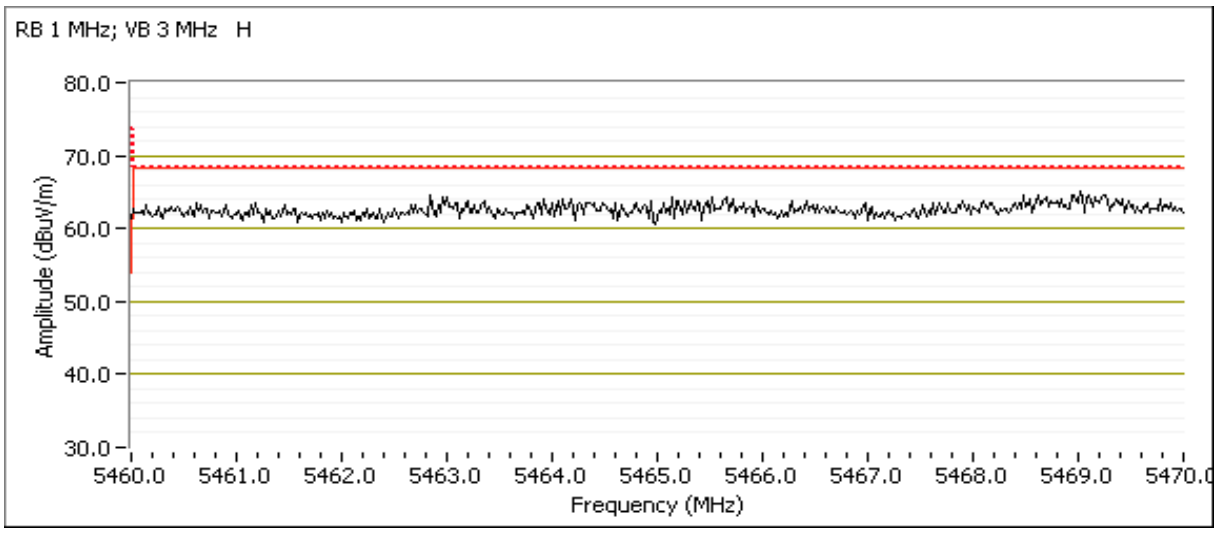
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5460.000	52.9	H	54.0	**-1.1**	Avg	0	1.07	VB: 2 kHz, note 3.
5458.480	64.3	H	74.0	-9.7	PK	0	1.07	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.440	65.3	H	68.3	**-3.0**	PK	354	1.07	



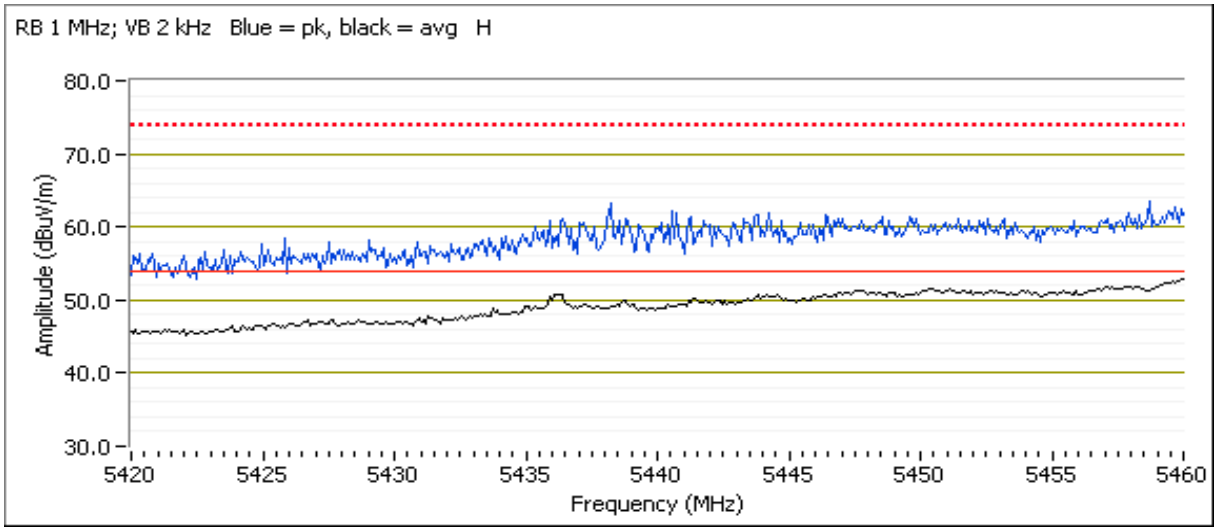
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Streams: 4SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

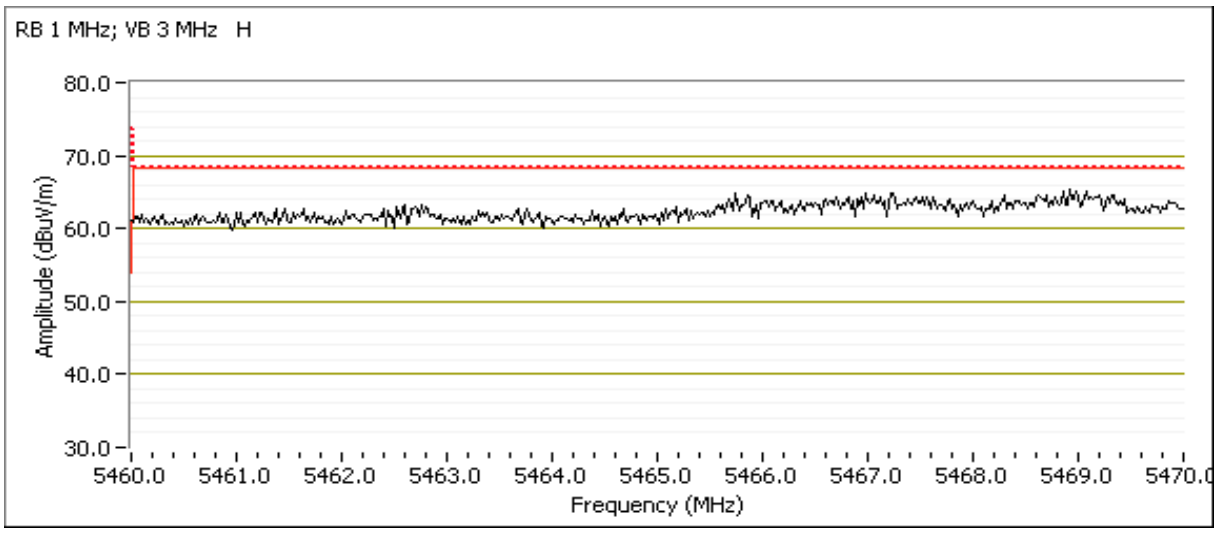
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.360	53.0	H	54.0	**-1.0**	Avg	0	1.06	VB: 2 kHz, note 3.
5447.330	63.6	H	74.0	-10.4	PK	0	1.06	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5467.310	65.6	H	68.3	**-2.7**	PK	11	1.06	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

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

Ambient Conditions:

Temperature: 15-18 °C
Rel. Humidity: 30-35 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results

Run #	Mode	Channel	NSS	Passing Power Setting	Test Performed	Limit	Result / Margin
40MHz Bandwith Modes							
1	ac40	62 - 5310MHz	1SS	18	Restricted Band Edge at 5350 MHz	15.209	53.2 dBµV/m @ 5350.1 MHz (-0.8 dB)
			4SS	19			53.7 dBµV/m @ 5351.0 MHz (-0.3 dB)
2		102 - 5510MHz	1SS	17	Restricted Band Edge at 5460 MHz	15.209	50.7 dBµV/m @ 5459.8 MHz (-3.3 dB)
				17	Band Edge 5460 - 5470 MHz	15E	67.3 dBµV/m @ 5469.4 MHz (-1.0 dB)
			4SS	18	Restricted Band Edge at 5460 MHz	15.209	50.5 dBµV/m @ 5458.5 MHz (-3.5 dB)
				18	Band Edge 5460 - 5470 MHz	15E	66.2 dBµV/m @ 5468.0 MHz (-2.1 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Summary of Results

Run #	Mode	Channel	NSS	Passing Power Setting	Test Performed	Limit	Result / Margin
80MHz Bandwith Modes							
3	ac80	58 - 5290MHz	1SS	16	Restricted Band Edge at 5350 MHz	15.209	53.3 dBµV/m @ 5350.0 MHz (-0.7 dB)
	ac80	58 - 5290MHz	2SS	16	Restricted Band Edge at 5350 MHz	15.209	53.7 dBµV/m @ 5350.5 MHz (-0.3 dB)
	ac80	58 - 5290MHz	3SS	17	Restricted Band Edge at 5350 MHz	15.209	53.3 dBµV/m @ 5350.2 MHz (-0.7 dB)
	ac80	58 - 5290MHz	4SS	19	Restricted Band Edge at 5350 MHz	15.209	53.5 dBµV/m @ 5350.4 MHz (-0.5 dB)
4	ac80	106 - 5530MHz	1SS	15	Restricted Band Edge at 5460 MHz	15.209	53.4 dBµV/m @ 5459.6 MHz (-0.6 dB)
	ac80	106 - 5530MHz	1SS	15	Band Edge 5460 - 5470 MHz	15E	67.6 dBµV/m @ 5468.7 MHz (-0.7 dB)
	ac80	106 - 5530MHz	2SS	17	Restricted Band Edge at 5460 MHz	15.209	53.0 dBµV/m @ 5459.7 MHz (-1.0 dB)
	ac80	106 - 5530MHz	2SS	17	Band Edge 5460 - 5470 MHz	15E	66.4 dBµV/m @ 5467.9 MHz (-1.9 dB)
	ac80	106 - 5530MHz	3SS	18	Restricted Band Edge at 5460 MHz	15.209	53.6 dBµV/m @ 5459.9 MHz (-0.4 dB)
	ac80	106 - 5530MHz	3SS	18	Band Edge 5460 - 5470 MHz	15E	66.1 dBµV/m @ 5468.3 MHz (-2.2 dB)
	ac80	106 - 5530MHz	4SS	21	Restricted Band Edge at 5460 MHz	15.209	53.6 dBµV/m @ 5459.5 MHz (-0.4 dB)
	ac80	106 - 5530MHz	4SS	21	Band Edge 5460 - 5470 MHz	15E	66.1 dBµV/m @ 5467.1 MHz (-2.2 dB)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac40	MCS0	0.79	No	0.844	1.0	2.0	1185
4SS	ac40	MCS0	0.71	No	0.68	1.5	3	1471
1SS	ac80	VHT0	0.92	No	1.16	0.3	0.7	862
2SS	ac80	VHT0	0.70	No	0.31	1.5	3.0	3226
3SS	ac80	VHT0	0.82	No	0.49	0.9	1.8	2041
4SS	ac80	VHT0	0.82	No	0.54	0.9	1.7	1852

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: internal 4x4

Measurement Specific Notes:

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

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #1: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 01/04/17
Test Engineer: John Caizzi
Test Location: Chamber 7

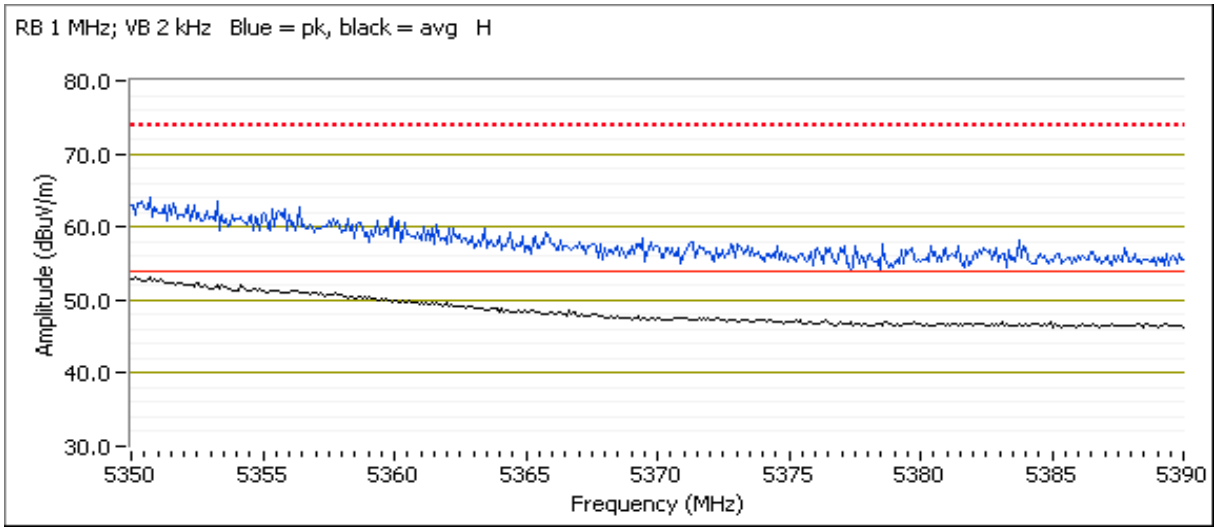
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 62 - 5310 MHz
Tx Chain: 4Tx
Mode: n40
Steams: 1SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.080	53.2	H	54.0	**-0.8**	Avg	360	1.49	VB: 2 kHz, note 3.
5350.880	64.1	H	74.0	-9.9	PK	360	1.49	



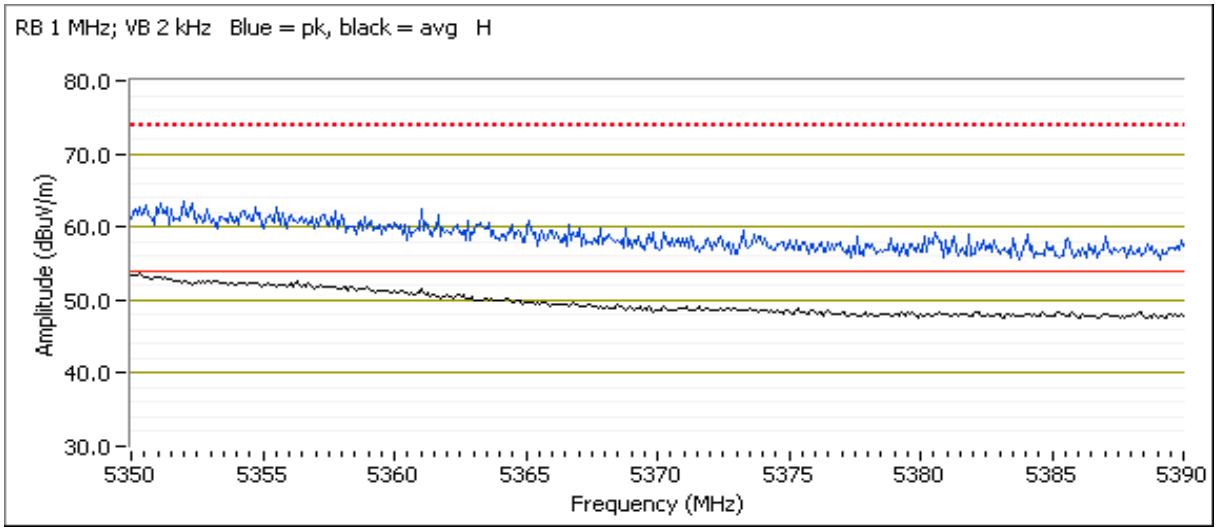
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 62 - 5310 MHz
Tx Chain: 4Tx
Mode: n40
Steams: 4SS

EUT Orientation: Flat
Power setting: 19
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.960	53.7	H	54.0	**-0.3**	Avg	0	1.49	VB: 2 kHz, note 3.
5355.690	65.3	H	74.0	-8.7	PK	0	1.49	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #2: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 01/04/17
Test Engineer: Rafael Varelas
Test Location: Chamber 7

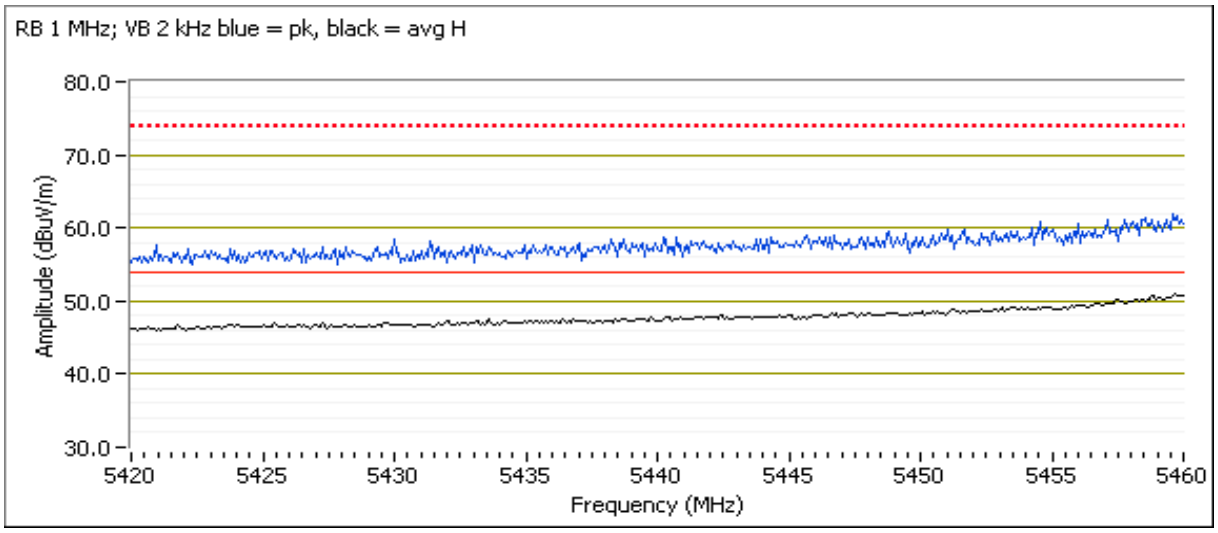
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 102 - 5510 MHz
Tx Chain: 4Tx
Mode: n40
Steams: 1SS

EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

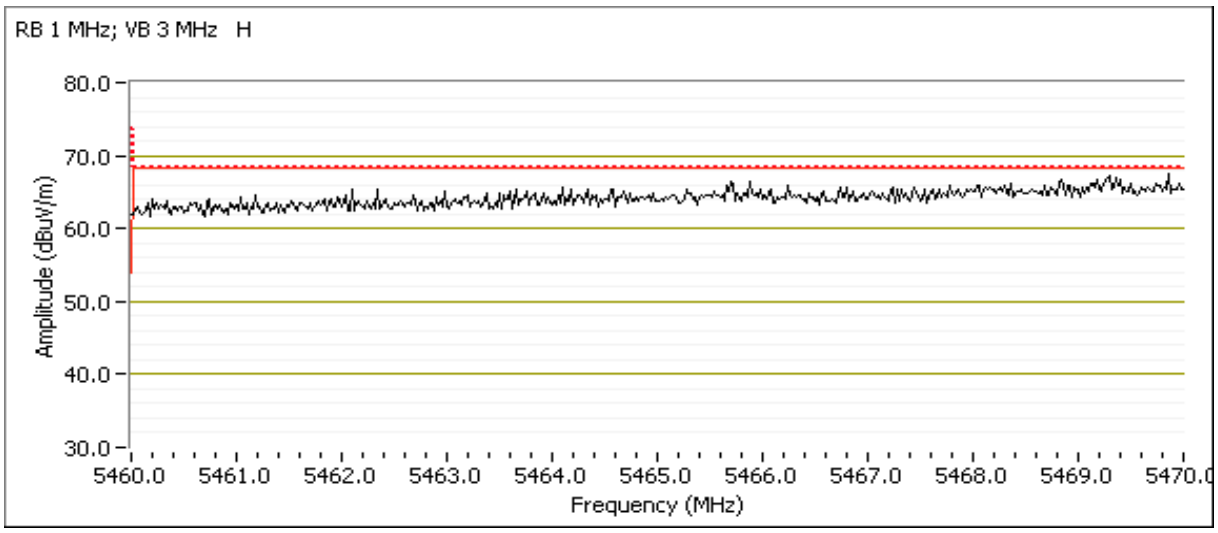
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.760	50.7	H	54.0	**-3.3**	Avg	42	1.1	POS; RB 1 MHz; VB: 2 kHz
5459.280	61.6	H	74.0	-12.4	PK	42	1.1	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.440	67.3	H	68.3	**-1.0**	PK	42	1.1	POS; RB 1 MHz; VB: 3 MHz



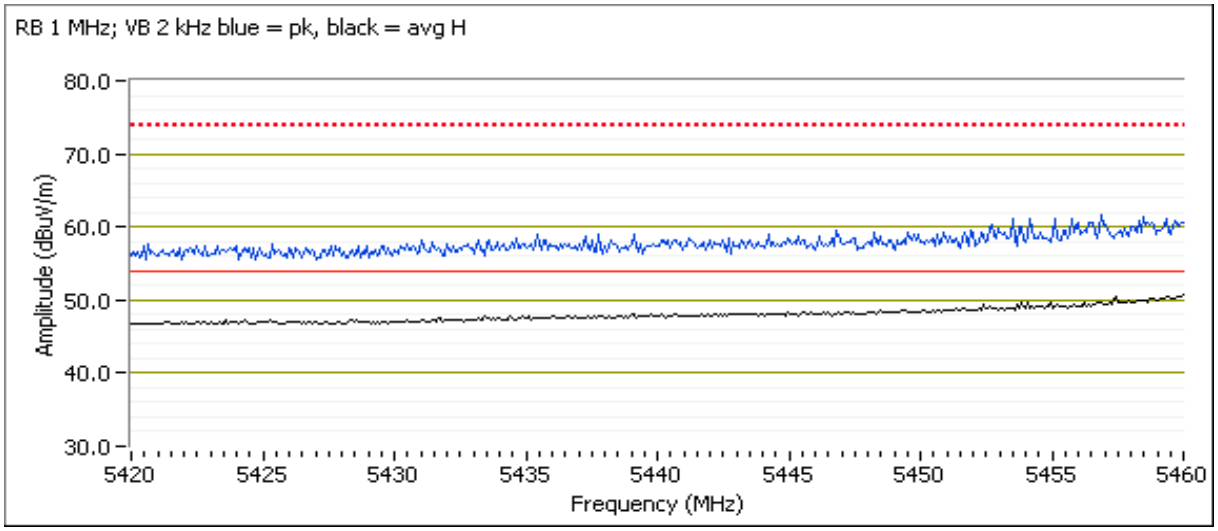
Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Channel: 102 - 5510 MHz
Tx Chain: 4Tx
Mode: n40
Steams: 4SS

EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

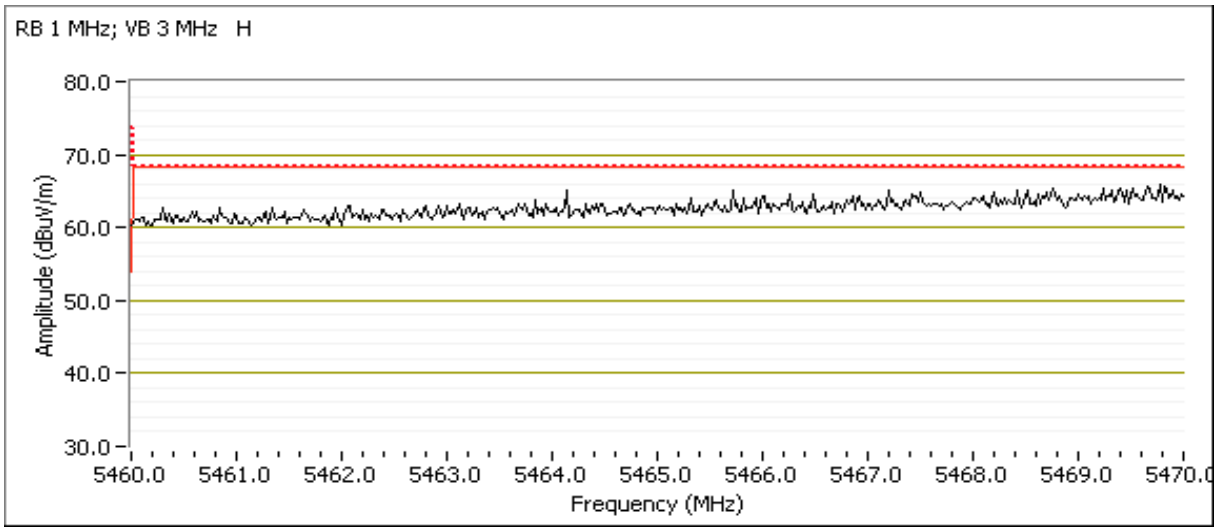
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5458.520	50.5	H	54.0	-3.5	Avg	355	1.6	POS; RB 1 MHz; VB: 2 kHz
5458.540	63.2	H	74.0	-10.8	PK	355	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5468.040	66.2	H	68.3	-2.1	PK	355	1.6	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #3: Radiated Bandedge Measurements, 5250-5350 MHz

Date of Test: 01/04/17
Test Engineer: John Caizzi
Test Location: Chamber 7

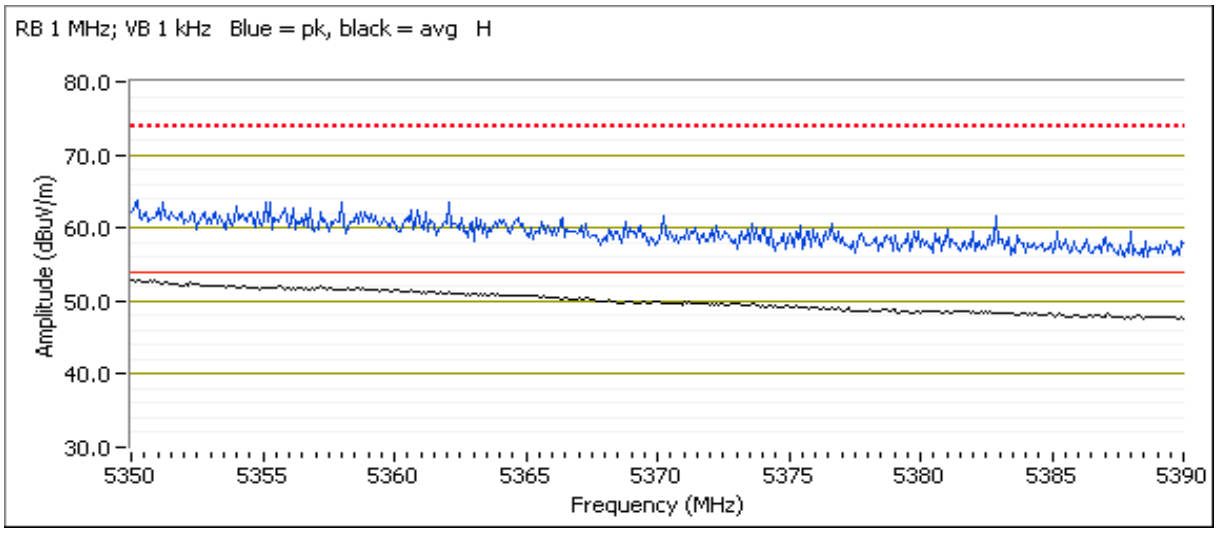
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 1SS

EUT Orientation: Flat
Power setting: 16
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.000	53.3	H	54.0	**-0.7**	Avg	161	1.72	VB: 1 kHz, note 3.
5350.000	63.7	H	74.0	-10.3	PK	161	1.72	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 12/27/16
Test Engineer: Mehran Birgani
Test Location: Chamber 4

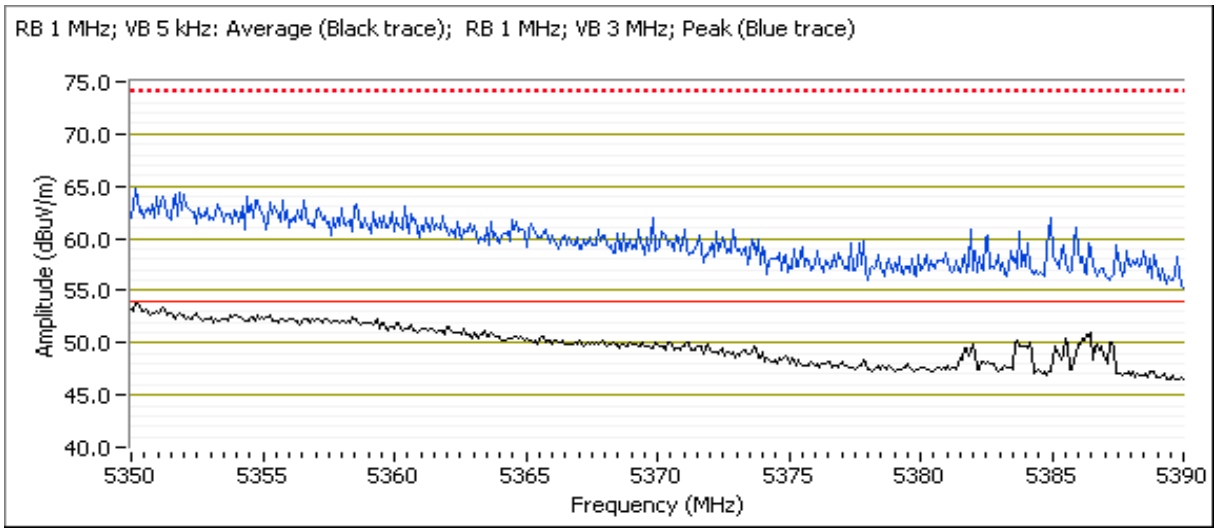
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 2SS

EUT Orientation: Flat
Power setting: 16
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.540	**53.7**	H	54.0	**-0.3**	AVG	2	1.2	POS; RB 1 MHz; VB: 5 kHz; note 3
5357.940	65.1	H	74.0	-8.9	PK	2	1.2	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 12/27/16
Test Engineer: Mehran Birgani
Test Location: Chamber 4

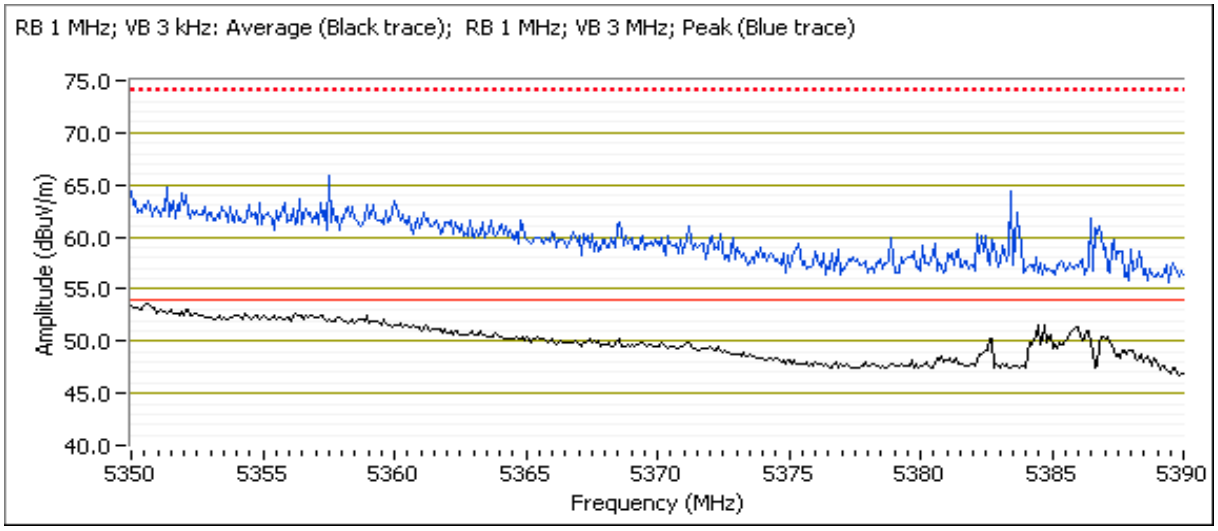
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 3SS

EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.160	**53.3**	H	54.0	**-0.7**	AVG	1	1.2	POS; RB 1 MHz; VB: 3 kHz; note 3
5351.290	65.7	H	74.0	-8.3	PK	1	1.2	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 01/04/17
Test Engineer: John Caizzi
Test Location: Chamber 7

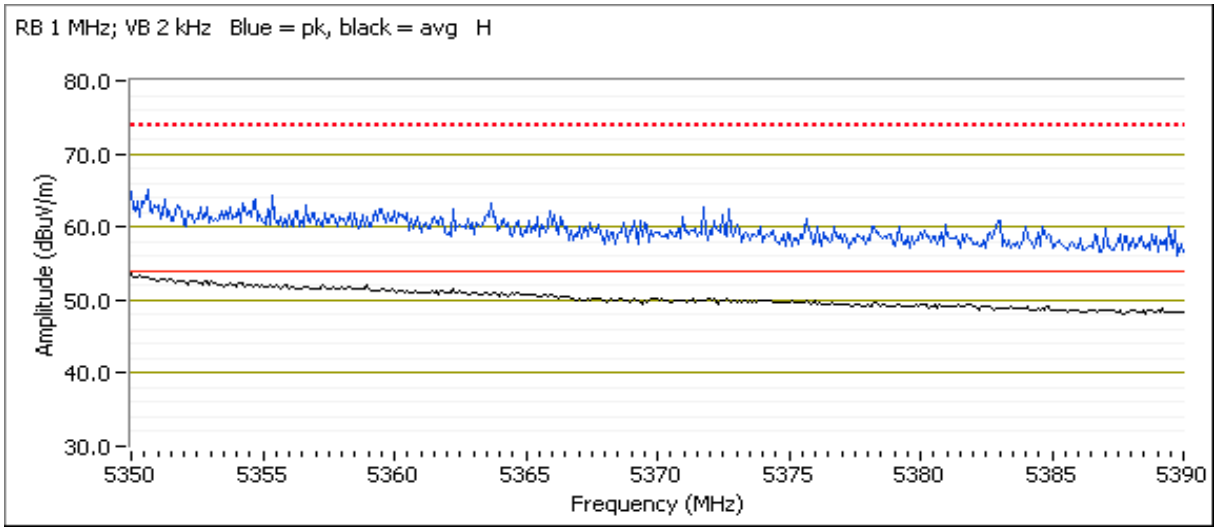
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 58 - 5290MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 4SS

EUT Orientation: Flat
Power setting: 19
Data Rate: MCS 0

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.400	53.5	H	54.0	**-0.5**	Avg	159	1.60	VB: 2 kHz, note 3.
5350.560	69.3	H	74.0	-4.7	PK	159	1.60	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Run #4: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 12/27/16
Test Engineer: Mehran Birgani
Test Location: Chamber 4

Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 1SS

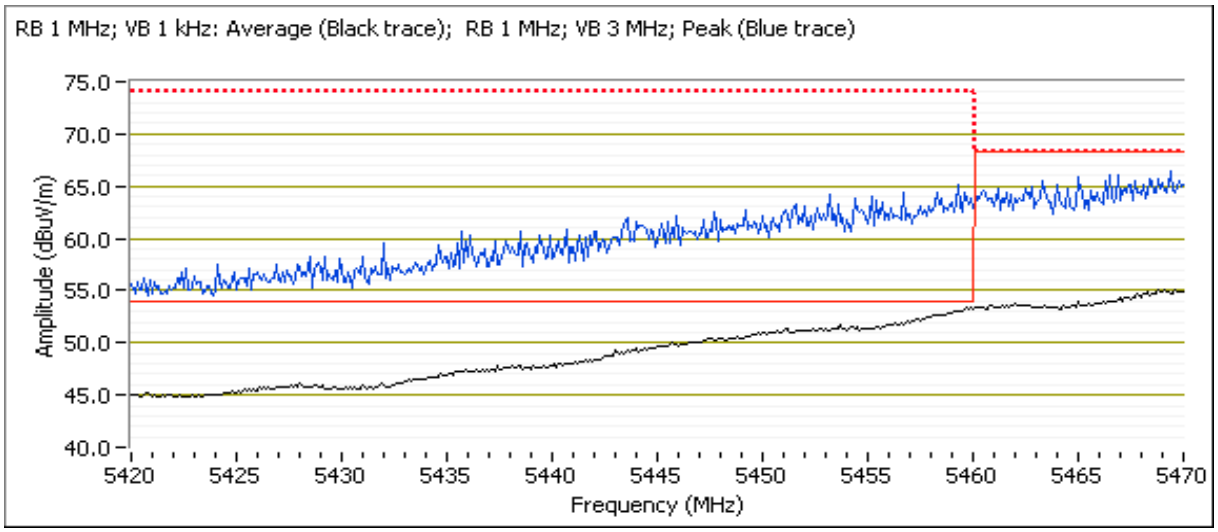
EUT Orientation: Flat
Power setting: 15
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.560	**53.4**	H	54.0	**-0.6**	AVG	155	1.4	POS; RB 1 MHz; VB: 1 kHz
5458.770	66.9	H	74.0	-7.1	PK	155	1.4	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5468.680	**67.6**	H	68.3	**-0.7**	PK	155	1.4	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 12/27/16
Test Engineer: Mehran Birgani
Test Location: Chamber 4

Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 2SS

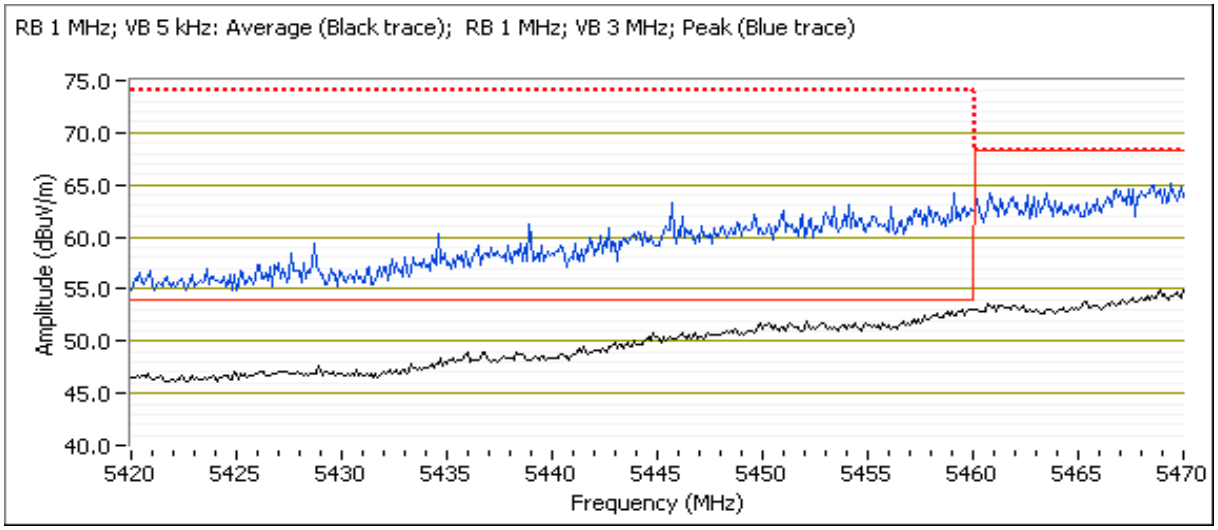
EUT Orientation: Flat
Power setting: 17
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.730	**53.0**	H	54.0	**-1.0**	AVG	153	1.4	POS; RB 1 MHz; VB: 5 kHz
5457.500	64.5	H	74.0	-9.5	PK	153	1.4	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5467.900	**66.4**	H	68.3	**-1.9**	PK	153	1.4	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 12/27/16
Test Engineer: Mehran Birgani
Test Location: Chamber 4

Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 3SS

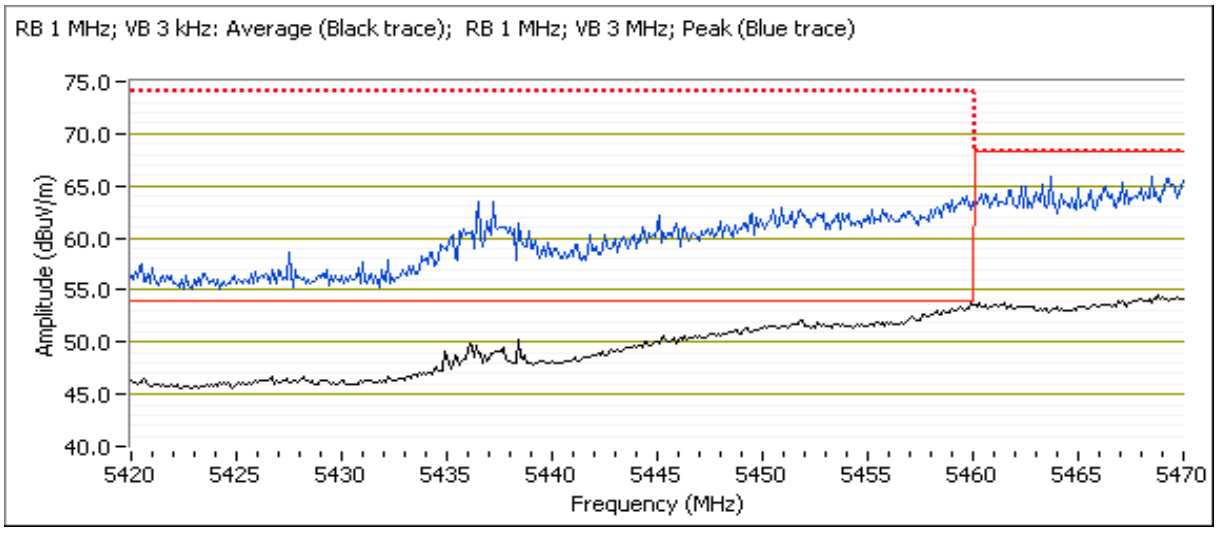
EUT Orientation: Flat
Power setting: 18
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.900	**53.6**	H	54.0	**-0.4**	AVG	357	1.4	POS; RB 1 MHz; VB: 3 kHz; note 3
5458.850	65.6	H	74.0	-8.4	PK	357	1.4	POS; RB 1 MHz; VB: 3 MHz

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5468.320	**66.1**	H	68.3	**-2.2**	PK	357	1.4	POS; RB 1 MHz; VB: 3 MHz



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Date of Test: 01/03/17
Test Engineer: John Caizzi
Test Location: Chamber 7

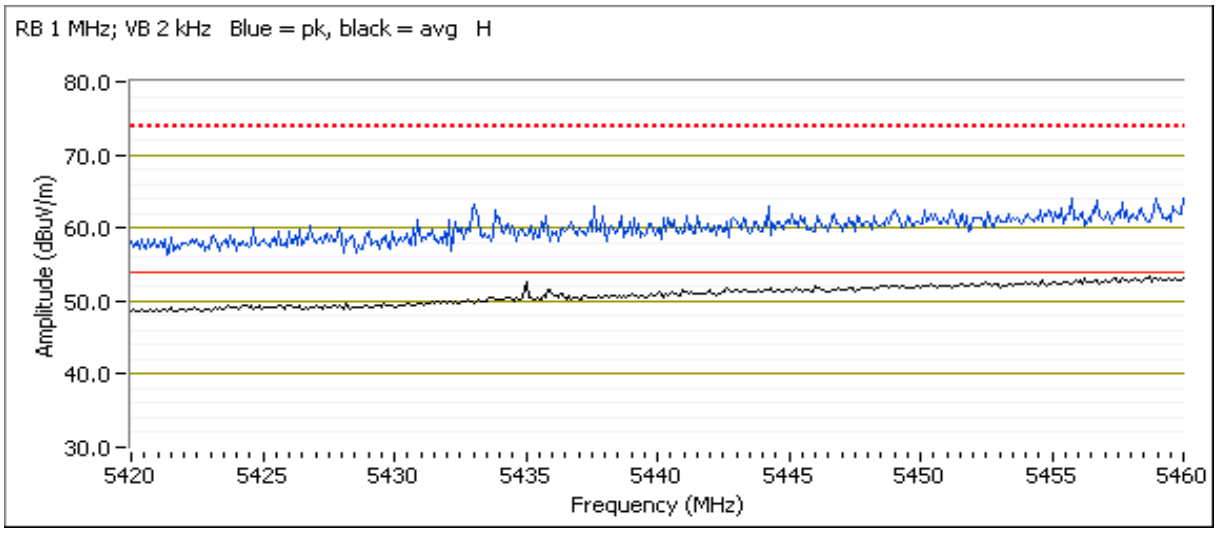
Config. Used: 2
Config Change: none
EUT Voltage: 120V / 60Hz

Channel: 106 - 5530 MHz
Tx Chain: 4Tx
Mode: ac80
Steams: 4SS

EUT Orientation: Flat
Power setting: 21
Data Rate: MCS 0

5460 MHz Band Edge Signal Radiated Field Strength

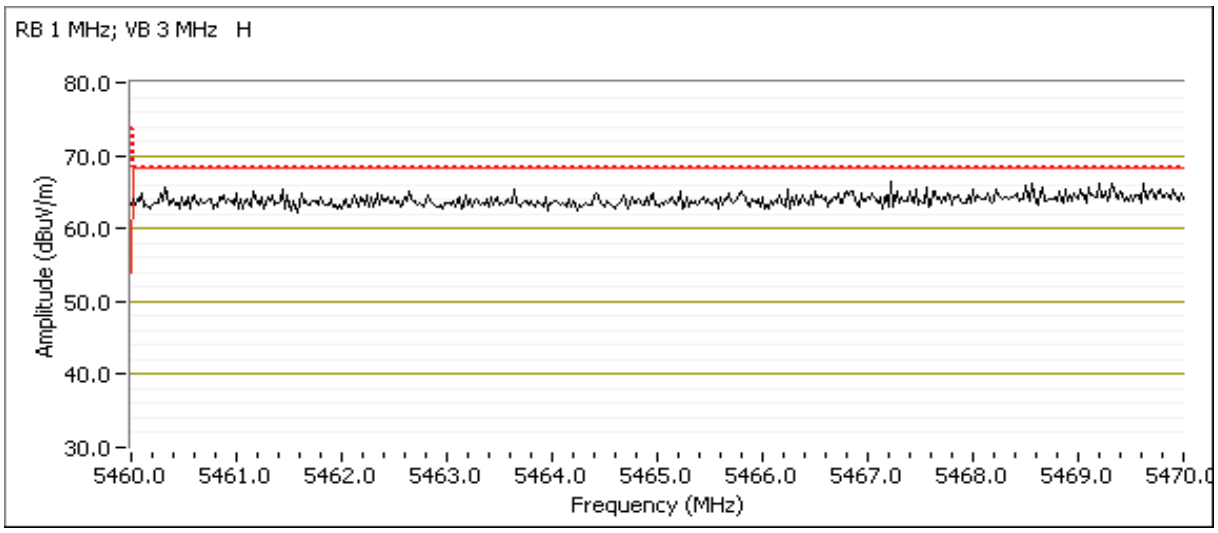
Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.530	53.6	H	54.0	**-0.4**	Avg	355	1.47	VB: 2 kHz, note 3.
5454.220	65.4	H	74.0	-8.6	PK	355	1.47	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5467.110	66.1	H	68.3	**-2.2**	PK	72	1.52	



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5150 - 5250MHz	15.407(a) (1) (ii)	Pass	n20: 26.9 dBm (495.4mW) n40: 22.7 dBm (184.1mW) ac80: 24.0 dBm (251mW)
1	PSD, 5150 - 5250MHz	15.407(a) (1) (ii)	Pass	n20: 14.0 dBm/MHz n40: 7.4 dBm/MHz ac80: 5.1 dBm/MHz
1	99% Bandwidth	RSS-247 (Information only)	N/A	n20: 18.6 MHz n40: 36.8 MHz ac80: 75.8 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.9 °C
Rel. Humidity: 41.2 %

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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac20	MCS0	0.99	Yes	9.89	0.00	0.00	10
4SS	ac20	MCS0	0.96	Yes	2.49	0.18	0.36	402
1SS	ac40	MCS0	0.99	Yes	5.29	0.00	0.00	10
3SS	ac40	MCS0	0.98	Yes	1.65	0.10	0.20	10
4SS	ac40	MCS0	0.96	Yes	1.25	0.16	0.33	803
1SS	ac80	VHT0	0.96	Yes	2.214	0.19	0.39	452
2SS	ac80	VHT0	0.97	Yes	2.236	0.11	0.23	447
3SS	ac80	VHT0	0.92	Yes	0.784	0.37	0.73	1276
4SS	ac80	VHT0	0.89	Yes	0.551	0.51	1.01	1815

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: 4x4 internal

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 1/6/2017 0:00
Test Engineer: J. Caizzi / R. Varelas
Test Location: FT Lab #4B

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

Note 1:	Power measurements performed using a gated averge power meter.
Note 1:	PSD measurements - Duty Cycle ≥ 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%).
Note 2:	PSD measurements - Duty Cycle < 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, **RMS** detector, trace average 100 traces, power averaging on. The measurements were adjusted by correcting for duty cycle. (method SA-2 of ANSI C63.10)
Note 5:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 6:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				No	Yes	Yes	No	0.90	6.50
5250-5350					No	Yes	Yes	No	0.90	6.90
5470-5725					No	Yes	Yes	No	1.10	7.10
5725-5825					No	Yes	Yes	No	0.80	6.50

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power taken from antenna spec in operational description. As the device operates using CDD, the Dir G (PWR) used the "Uncorrelated" value provided; PSD used the "Correlated". This is per KDB 662911 F)2)f).
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

FCC UNII-1 Limits

		Pwr	PSD
	Outdoor AP	30	17
X	Indoor AP	30	17
	Station (e.g. Client)	24	11
	Outdoor AP (>30° Elv.)	21	-

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC, 4SS

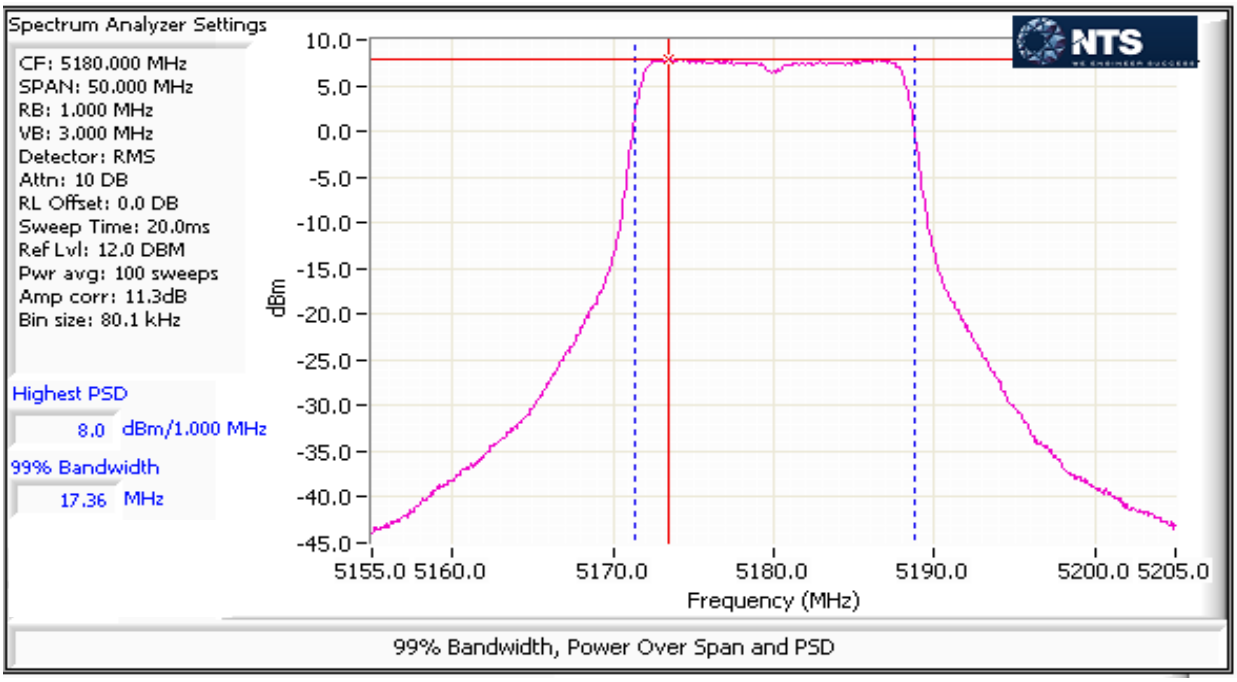
Mode: ac 20 Max EIRP (mW): 609.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5180	1	22		-	20.8	495.4	26.9	30.0	0.495	Pass
	3				21.1					
	4				20.7					
	2				21.1					

5150-5250 PSD - FCC, 4SS

Mode: ac 20

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5180	1	22		95.9	7.7	24.9	14.0	16.5	Pass
	3				8.0				
	4				7.6				
	2				7.7				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC, 4SS

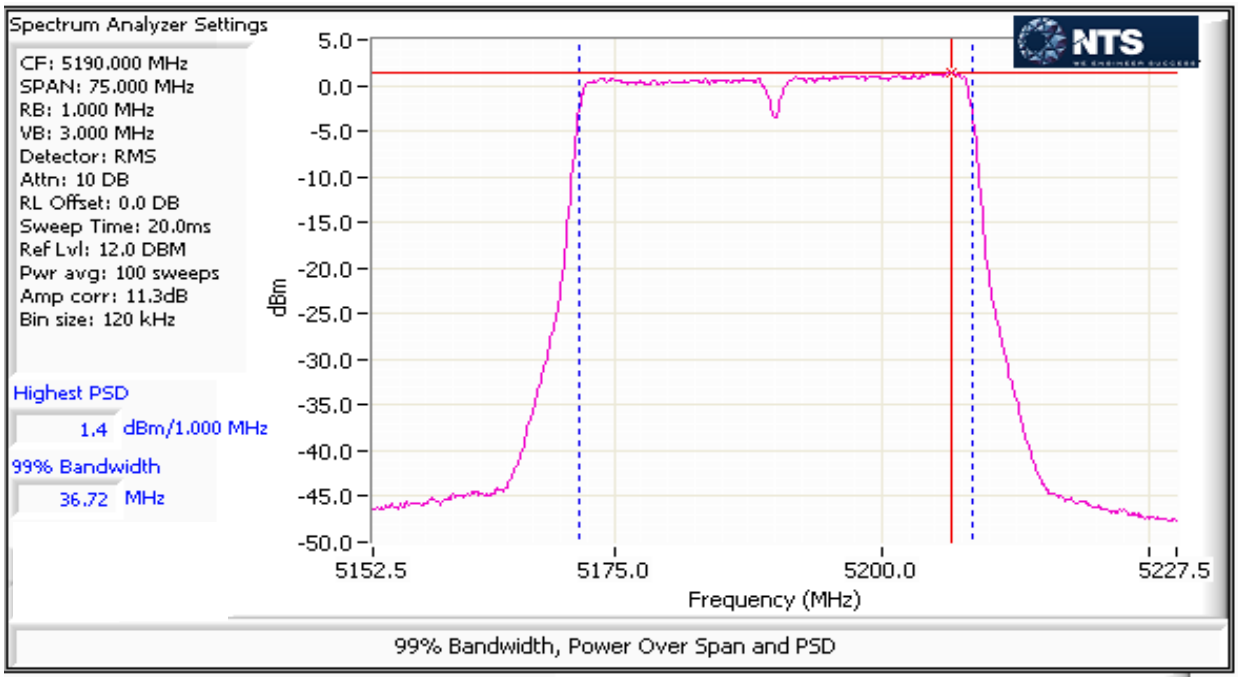
Mode: ac 40 Max EIRP (mW): 226.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5190	1	17		-	16.8	184.1	22.7	30.0	0.184	Pass
	3				16.7					
	4				16.3					
	2				16.7					

5150-5250 PSD - FCC, 4SS

Mode: ac 40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5190	1	18		96.3	0.9	5.5	7.4	16.5	Pass
	3				1.4				
	4				1.3				
	2				1.3				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC, 4SS

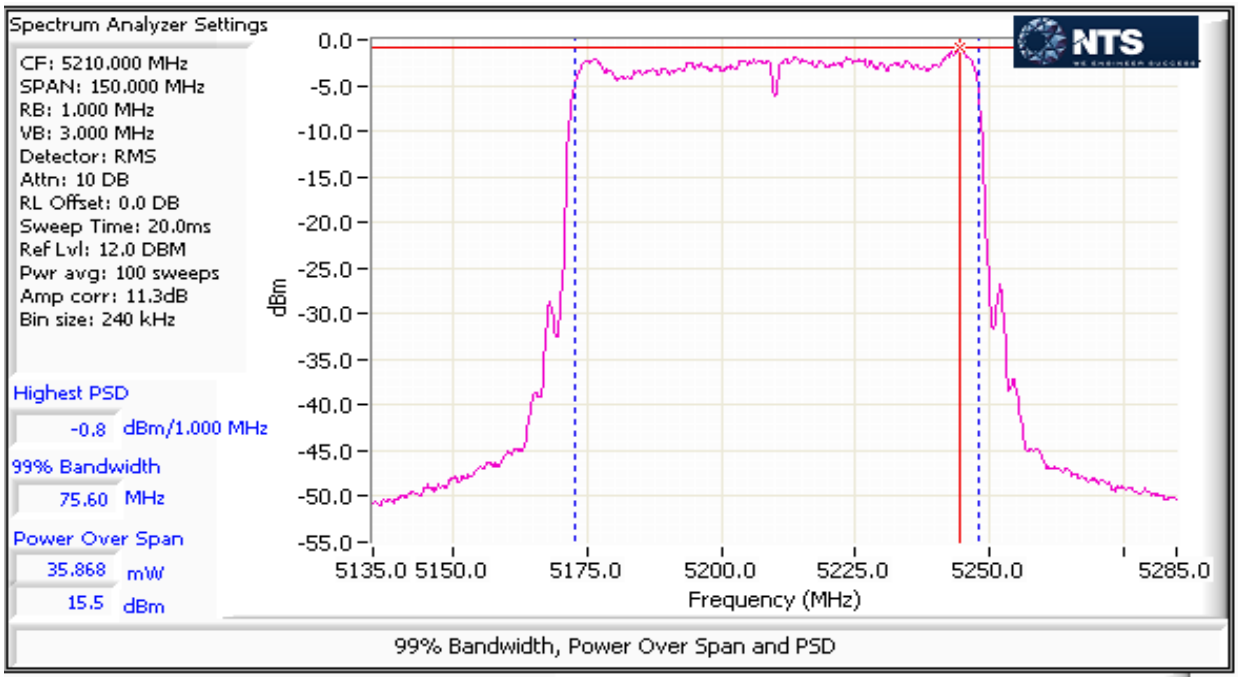
Mode: ac 80 Max EIRP (mW): 308.8

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5210	1	18		-	18.2	251.0	24.0	30.0	0.251	Pass
	3				17.9					
	4				17.9					
	2				17.9					

5150-5250 PSD - FCC, 4SS

Mode: ac 80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5210	1	18		89.0	-1.6	3.2	5.1	16.5	Pass
	3				-0.8				
	4				-1.8				
	2				-1.8				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5150 - 5250MHz	15.407(a) (1) (ii)	Pass	n20: 26.9 dBm (495.4mW) n40: 23.1 dBm (205.4mW) ac80: 24.0 dBm (251mW)
1	PSD, 5150 - 5250MHz	15.407(a) (1) (ii)	Pass	n20: 14.0 dBm/MHz n40: 7.4 dBm/MHz ac80: 5.1 dBm/MHz
1	99% Bandwidth	RSS-247 (Information only)	N/A	n20: 17.4 MHz n40: 36.7 MHz ac80: 75.6 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.9 °C
Rel. Humidity: 41.2 %

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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac20	MCS0	0.99	Yes	9.89	0.00	0.00	10
4SS	ac20	MCS0	0.96	Yes	2.49	0.18	0.36	402
1SS	ac40	MCS0	0.99	Yes	5.29	0.00	0.00	10
3SS	ac40	MCS0	0.98	Yes	1.65	0.10	0.20	10
4SS	ac40	MCS0	0.96	Yes	1.25	0.16	0.33	803
1SS	ac80	VHT0	0.96	Yes	2.214	0.19	0.39	452
2SS	ac80	VHT0	0.97	Yes	2.236	0.11	0.23	447
3SS	ac80	VHT0	0.92	Yes	0.784	0.37	0.73	1276
4SS	ac80	VHT0	0.89	Yes	0.551	0.51	1.01	1815

Note - for antenna port measurements, the EUT was operated in the non-TxBF mode

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: 4x4 internal

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 1/5/2017 0:00 Config. Used: 1
Test Engineer: M. Birgani / R. Varelas Config Change: None
Test Location: FT Lab #4B EUT Voltage: 120V/60Hz

Note 1:	Power measurements performed using a gated averge power meter.
Note 1:	PSD measurements - Duty Cycle ≥ 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%).
Note 2:	PSD measurements - Duty Cycle < 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, **RMS** detector, trace average 100 traces, power averaging on. The measurements were adjusted by correcting for duty cycle. (method SA-2 of ANSI C63.10)
Note 5:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 6:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				Yes		Yes	No	6.50	6.50
5250-5350					Yes		Yes	No	6.90	6.90
5470-5725					Yes		Yes	No	7.10	7.10
5725-5825					Yes		Yes	No	6.50	6.50

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power taken from antenna spec in operational description. As the device operates using CDD, the Dir G (PWR) used the "Uncorrelated" value provided; PSD used the "Correlated". This is per KDB 662911 F)2)f).
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

FCC UNII-1 Limits

		Pwr	PSD
	Outdoor AP	30	17
X	Indoor AP	30	17
	Station (e.g. Client)	24	11
	Outdoor AP (>30° Elv.)	21	-

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Power measurements performed at the highest power setting from the bandedge measurements for any number of SS.

MIMO Device - 5150-5250 MHz Band - FCC, 4SS

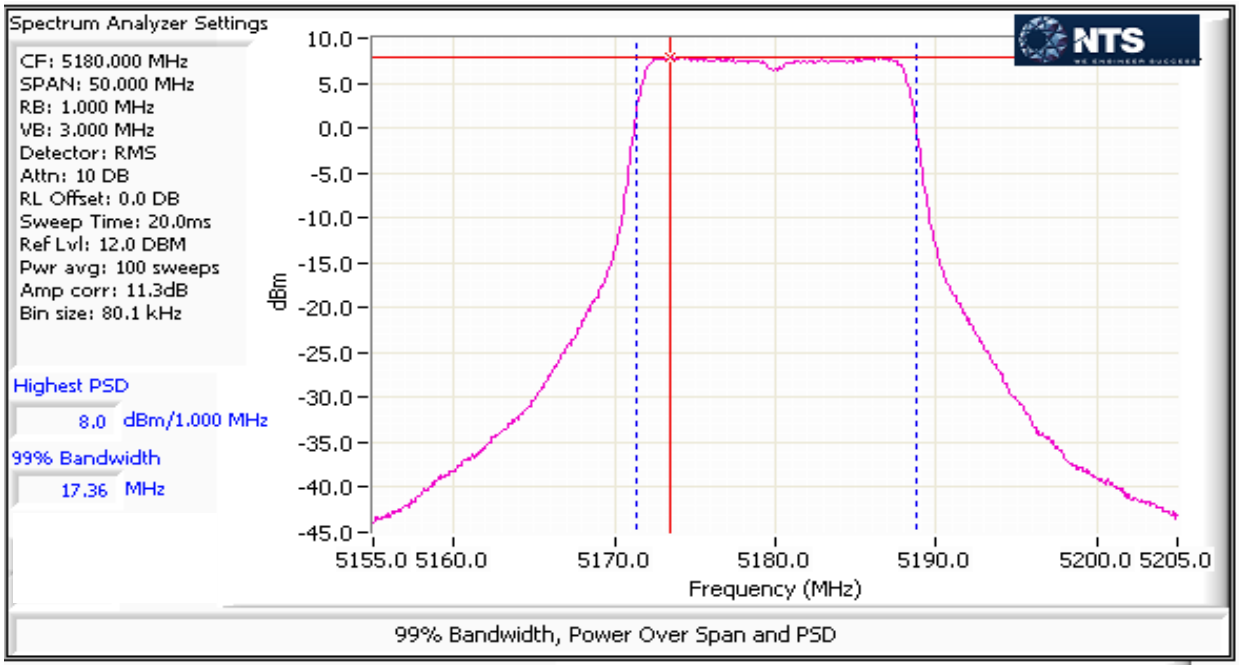
Mode: ac 20 Max EIRP (mW): 2212.9

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5180	1	22		-	20.8	495.4	26.9	29.5	0.495	Pass
	3				21.1					
	4				20.7					
	2				21.1					

5150-5250 PSD - FCC, 4SS

Mode: ac 20

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5180	1	22		95.9	7.7	24.9	14.0	16.5	Pass
	3				8.0				
	4				7.6				
	2				7.7				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC, 4SS

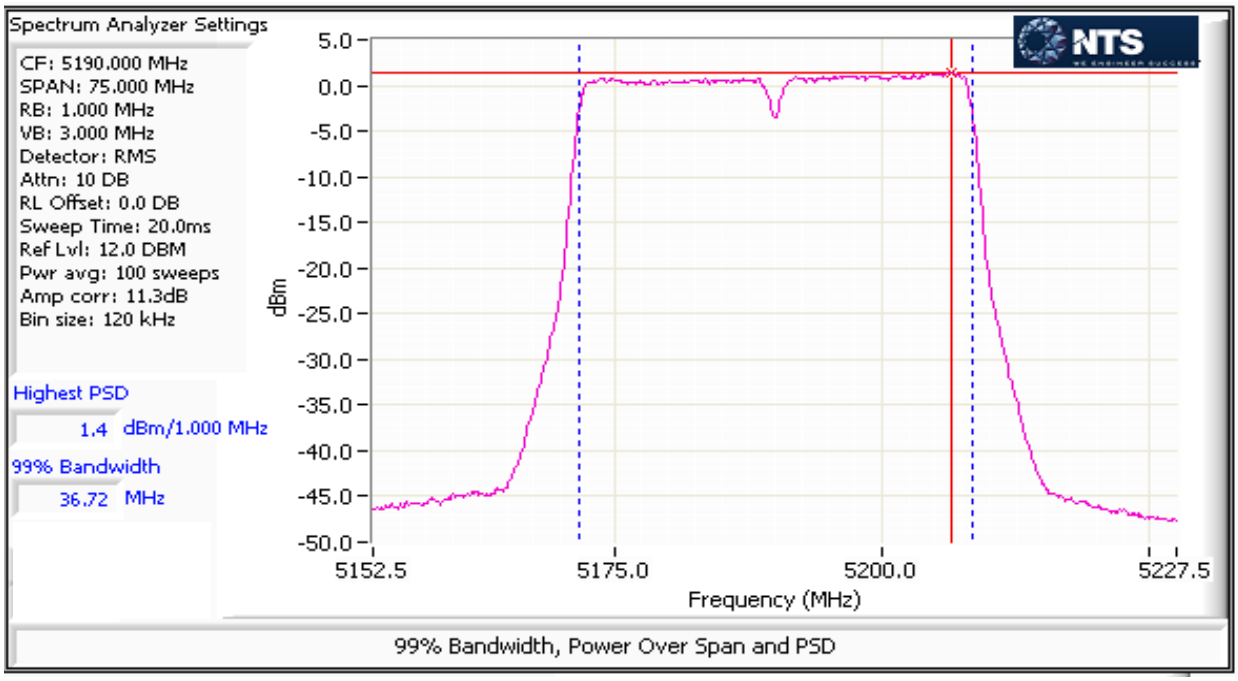
Mode: ac 40 Max EIRP (mW): 917.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5190	1	18		-	17.3	205.4	23.1	29.5	0.205	Pass
	3				17.2					
	4				16.7					
	2				17.2					

5150-5250 PSD - FCC, 4SS

Mode: ac 40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5190	1	18		96.3	0.9	5.5	7.4	16.5	Pass
	3				1.4				
	4				1.3				
	2				1.3				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC, 4SS

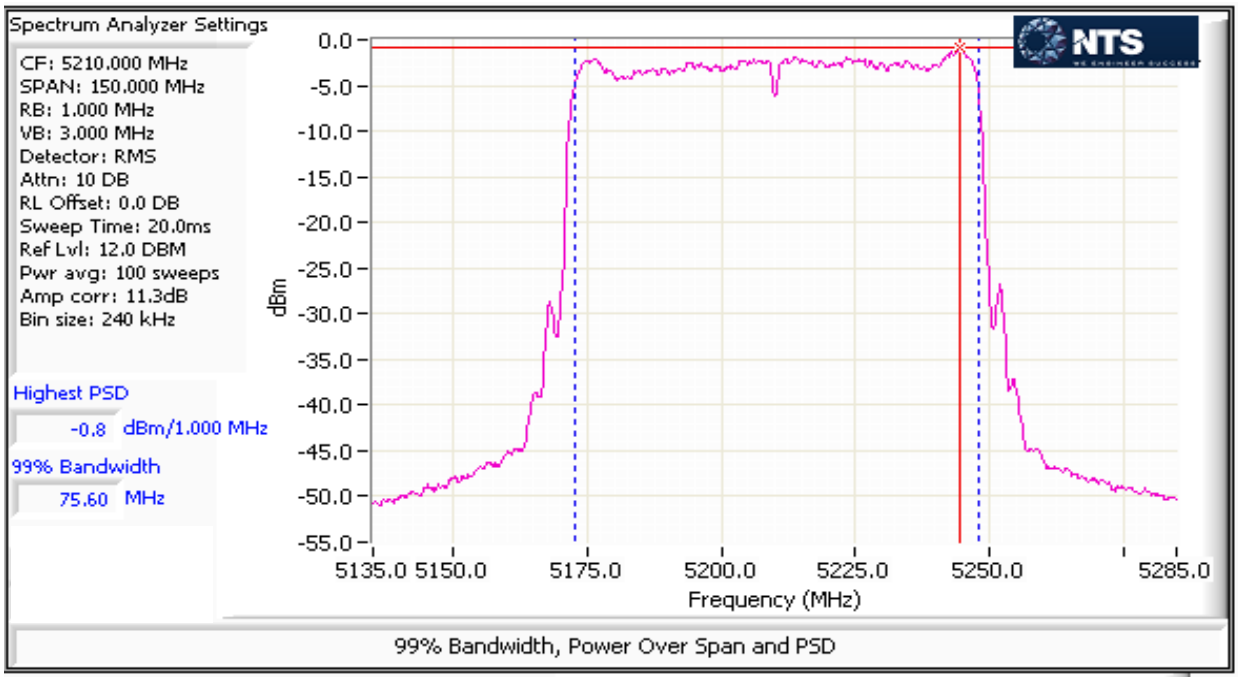
Mode: ac 80 Max EIRP (mW): 1121.2

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5210	1	18		-	18.2	251.0	24.0	29.5	0.251	Pass
	3				17.9					
	4				17.9					
	2				17.9					

5150-5250 PSD - FCC, 4SS

Mode: ac 80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5210	1	18		89.0	-1.6	3.2	5.1	16.5	Pass
	3				-0.8				
	4				-1.8				
	2				-1.8				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5250 - 5350MHz	15.407 (a)(2)	Pass	n40: 23.7 dBm (232.1mW) ac80: 23.4 dBm (218.9mW)
1	PSD 5250 - 5350MHz	15.407 (a)(2)	Pass	n40: 8.1 dBm/MHz ac80: 6.6 dBm/MHz
1	Power, 5470 - 5725MHz	15.407 (a)(2)	Pass	n40: 23.6 dBm (229.1 mW) ac80: 23.9 dBm (247 mW)
1	PSD, 5470 - 5725MHz	15.407 (a)(2)	Pass	n40: 7.9 dBm/MHz ac80: 8.5 dBm/MHz
1	99% Bandwidth	RSS-247 (Information only)	N/A	n40: 36.8 MHz ac80: 75.8 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.9 °C
Rel. Humidity: 41.2 %

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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac20	MCS0	0.99	Yes	9.89	0.00	0.00	10
4SS	ac20	MCS0	0.96	Yes	2.49	0.18	0.36	402
1SS	ac40	MCS0	0.99	Yes	5.29	0.00	0.00	10
3SS	ac40	MCS0	0.98	Yes	1.65	0.10	0.20	10
4SS	ac40	MCS0	0.96	Yes	1.25	0.16	0.33	803
1SS	ac80	VHT0	0.96	Yes	2.214	0.19	0.39	452
2SS	ac80	VHT0	0.97	Yes	2.236	0.11	0.23	447
3SS	ac80	VHT0	0.92	Yes	0.784	0.37	0.73	1276
4SS	ac80	VHT0	0.89	Yes	0.551	0.51	1.01	1815

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: 4x4 internal

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 1/6/2017 0:00 Config. Used: 1
Test Engineer: J. Caizzi / R. Varelas Config Change: None
Test Location: FT Lab #4B EUT Voltage: 120V/60Hz

Note 1:	Power measurements performed using a gated averge power meter.
Note 1:	PSD measurements - Duty Cycle ≥ 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%).
Note 2:	PSD measurements - Duty Cycle < 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, **RMS** detector, trace average 100 traces, power averaging on. The measurements were adjusted by correcting for duty cycle. (method SA-2 of ANSI C63.10)
Note 5:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 6:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				No	Yes	Yes	No	0.90	6.50
5250-5350					No	Yes	Yes	No	0.90	6.90
5470-5725					No	Yes	Yes	No	1.10	7.10
5725-5825					No	Yes	Yes	No	0.80	6.50

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power taken from antenna spec in operational description. As the device operates using CDD, the Dir G (PWR) used the "Uncorrelated" value provided; PSD used the "Correlated". This is per KDB 662911 F)2)f).
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC, 4SS

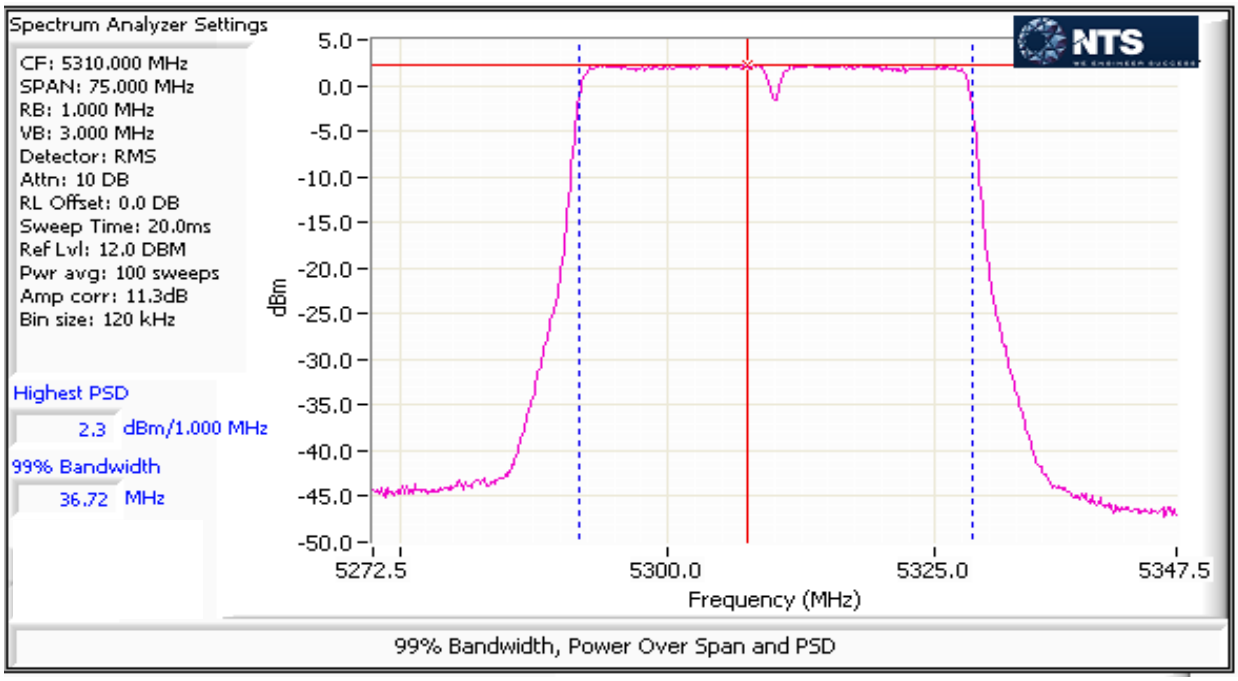
Mode: ac 40 Max EIRP (mW): 285.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5310	1	18	43.9	-	18.1	232.1	23.7	24.0	0.232	Pass
	3				17.6					
	4				17.6					
	2				17.2					

5250-5350 PSD - FCC, 4SS

Mode: ac 40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5310	1	19	36.8	96.3	2.3	6.5	8.1	10.1	Pass
	3				2.1				
	4				1.7				
	2				1.7				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC, 4SS

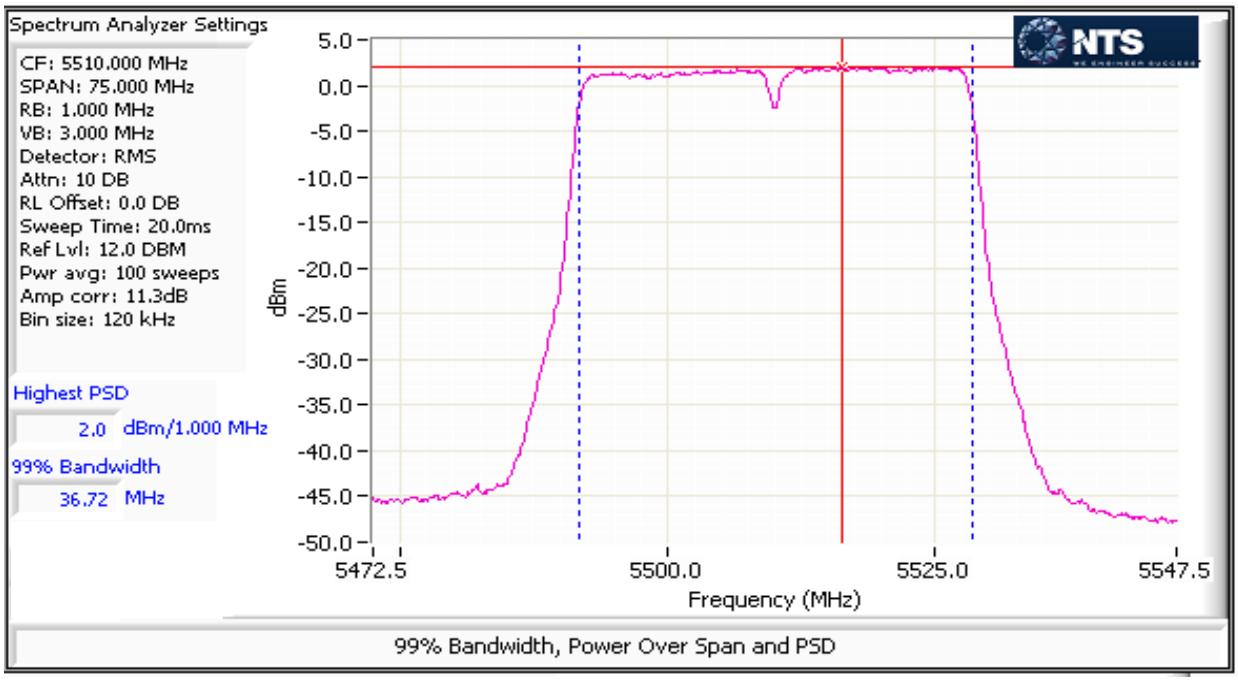
Mode: ac 40 Max EIRP (mW): 295.1

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5510	1	18	44.1	-	17.9	229.1	23.6	24.0	0.229	Pass
	3				17.6					
	4				17.5					
	2				17.3					

5470-5725 PSD - FCC, 4SS

Mode: ac 40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5510	1	18	36.7	96.3	2.0	6.1	7.9	9.9	Pass
	3				1.9				
	4				1.3				
	2				1.5				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC, 4SS

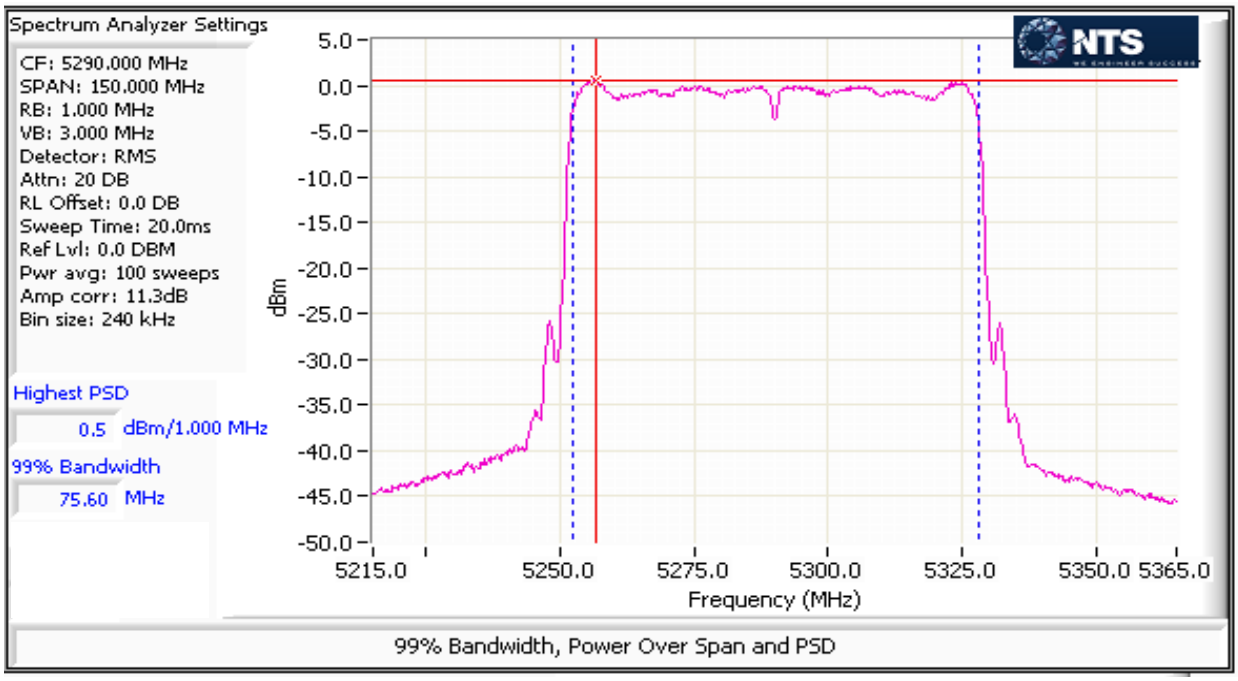
Mode: ac 80 Max EIRP (mW): 269.3

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5290	1	18	82.4	-	17.7	218.9	23.4	24.0	0.219	Pass
	3				17.5					
	4				17.2					
	2				17.1					

5250-5350 PSD - FCC, 4SS

Mode: ac 80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5290	1	20		89.0	0.5	4.6	6.6	10.1	Pass
	3				0.1				
	4				0.1				
	2				-0.5				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC, 4SS

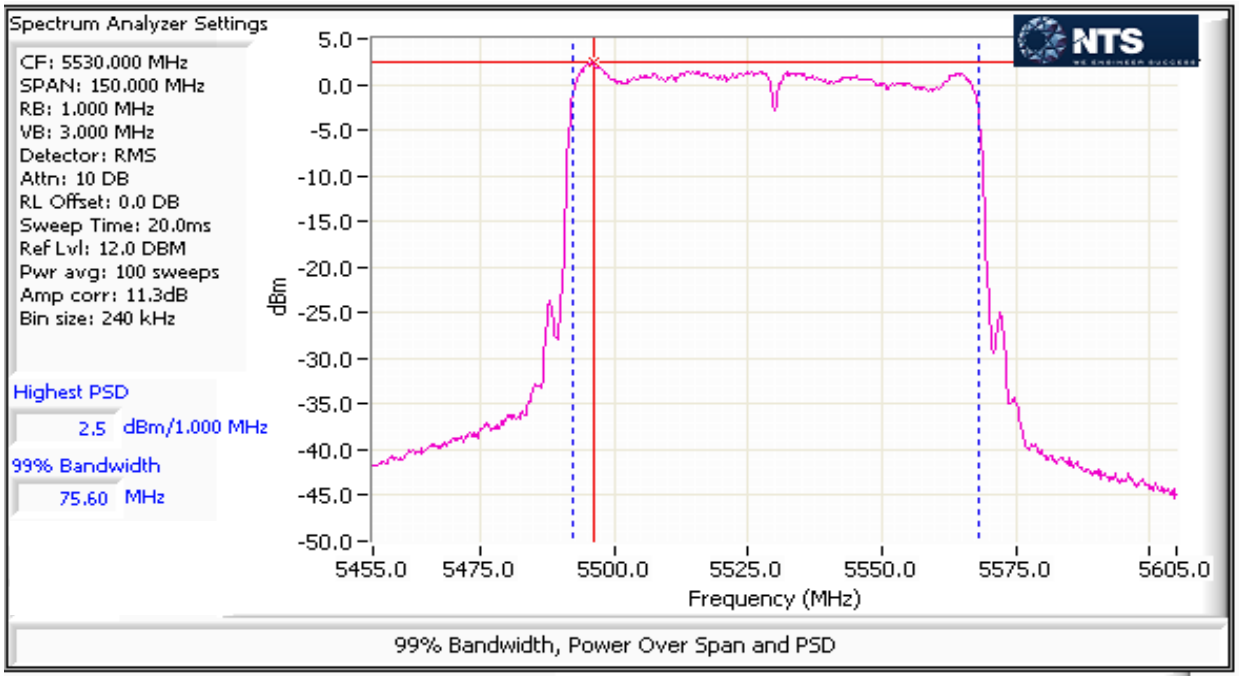
Mode: ac 80 Max EIRP (mW): 318.2

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5530	1	18	82.4	-	18.1	247.0	23.9	24.0	0.247	Pass
	3				18.0					
	4				18.0					
	2				17.5					

5470-5725 PSD - FCC, 4SS

Mode: ac 80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5530	1	21	75.6	89.0	1.9	7.0	8.5	9.9	Pass
	3				2.5				
	4				1.7				
	2				1.4				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, 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.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5250 - 5350MHz	15.407 (a)(2)	Pass	n40: 22.7 dBm (186.6 mW) ac80: 22.4 dBm (173.1 mW)
1	PSD, 5250 - 5350MHz	15.407 (a)(2)	Pass	n40: 8.1 dBm/MHz ac80: 6.6 dBm/MHz
1	Power, 5470 - 5725MHz	15.407 (a)(2)	Pass	n40: 22.7 dBm (188.3 mW) ac80: 22.0 dBm (157.6 mW)
1	PSD, 5470 - 5725MHz	15.407 (a)(2)	Pass	n40: 7.9 dBm/MHz ac80: 8.5 dBm/MHz
1	99% Bandwidth	RSS-247 (Information only)	N/A	n20: 18.6 MHz n40: 36.8 MHz ac80: 75.8 MHz

General Test Configuration

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

Ambient Conditions:

Temperature: 23.9 °C
Rel. Humidity: 41.2 %

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:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
1SS	ac20	MCS0	0.99	Yes	9.89	0.00	0.00	10
4SS	ac20	MCS0	0.96	Yes	2.49	0.18	0.36	402
1SS	ac40	MCS0	0.99	Yes	5.29	0.00	0.00	10
3SS	ac40	MCS0	0.98	Yes	1.65	0.10	0.20	10
4SS	ac40	MCS0	0.96	Yes	1.25	0.16	0.33	803
1SS	ac80	VHT0	0.96	Yes	2.214	0.19	0.39	452
2SS	ac80	VHT0	0.97	Yes	2.236	0.11	0.23	447
3SS	ac80	VHT0	0.92	Yes	0.784	0.37	0.73	1276
4SS	ac80	VHT0	0.89	Yes	0.551	0.51	1.01	1815

Note - for antenna port measurements, the EUT was operated in the non-TxBF mode

Sample Notes

Sample S/N: 184795206016304
Driver: d21
Antenna: 4x4 internal

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

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

Date of Test: 1/5/2017 0:00 Config. Used: 1
Test Engineer: M. Birgani / R. Varelas Config Change: None
Test Location: FT Lab #4B EUT Voltage: 120V/60Hz

Note 1:	Power measurements performed using a gated averge power meter.
Note 2:	PSD measurements - Duty Cycle ≥ 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, auto sweep, RMS detector, power averaging on (transmitted signal was continuous, duty cycle ≥ 98%).
Note 2:	PSD measurements - Duty Cycle < 98%. RBW=1MHz, VB=3 MHz, Span > OBW, # of points in sweep ≥ 2*span/RBW, **RMS** detector, trace average 100 traces, power averaging on. The measurements were adjusted by correcting for duty cycle. (method SA-2 of ANSI C63.10)
Note 5:	99% Bandwidth measured in accordance with C63.10 - RB between 1-5 % of OBW and VB ≥ 3*RB, Span between 1.5 and 5 times OBW.
Note 6:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

Antenna Gain Information

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	Refer to antenna spec in operational description				Yes		Yes	No	6.50	6.50
5250-5350					Yes		Yes	No	6.90	6.90
5470-5725					Yes		Yes	No	7.10	7.10
5725-5825					Yes		Yes	No	6.50	6.50

For devices that support CDD modes

Min # of spatial streams: 1

Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power taken from antenna spec in operational description. As the device operates using CDD, the Dir G (PWR) used the "Uncorrelated" value provided; PSD used the "Correlated". This is per KDB 662911 F)2)f).
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

FCC UNII-1 Limits

		Pwr	PSD
	Outdoor AP	30	17
X	Indoor AP	30	17
	Station (e.g. Client)	24	11
	Outdoor AP (>30° Elv.)	21	-

Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC, 4SS

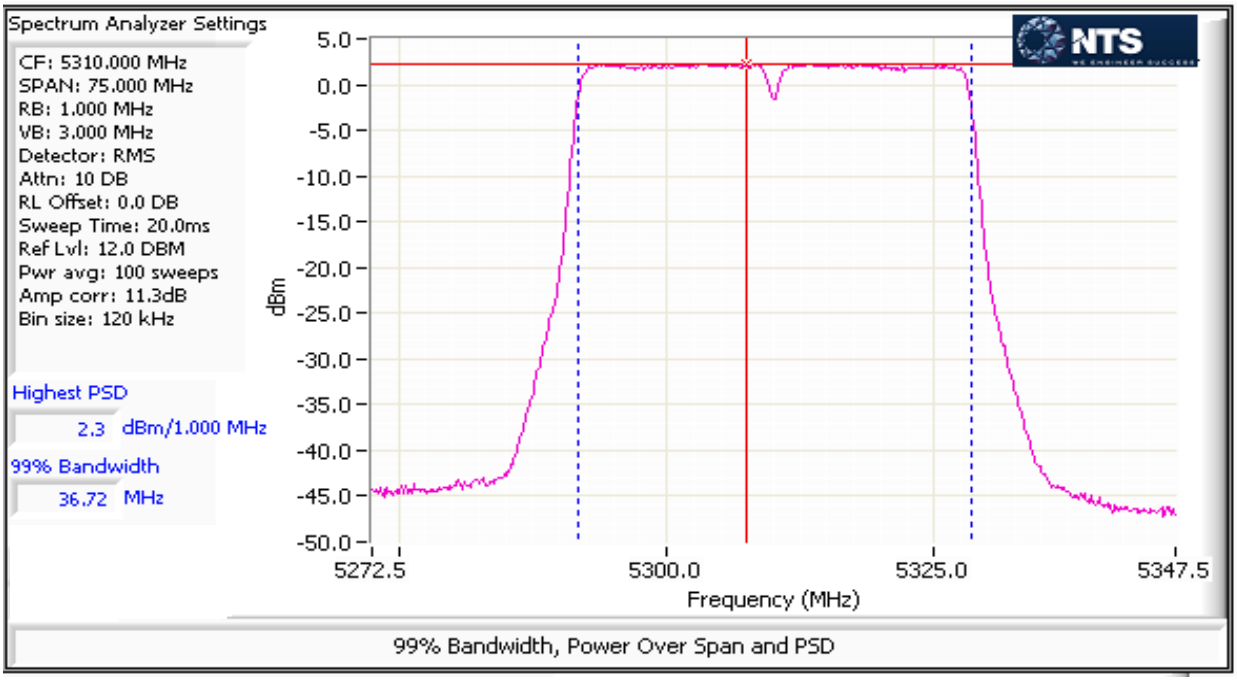
Mode: **ac 40** Max EIRP (mW): 913.9

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5310	1	17	43.9	-	17.1	186.6	22.7	23.1	0.187	Pass
	3				16.9					
	4				16.5					
	2				16.2					

5250-5350 PSD - FCC, 4SS

Mode: **ac 40**

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5310	1	19	36.8	96.3	2.3	6.5	8.1	10.1	Pass
	3				2.1				
	4				1.7				
	2				1.7				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC, 4SS

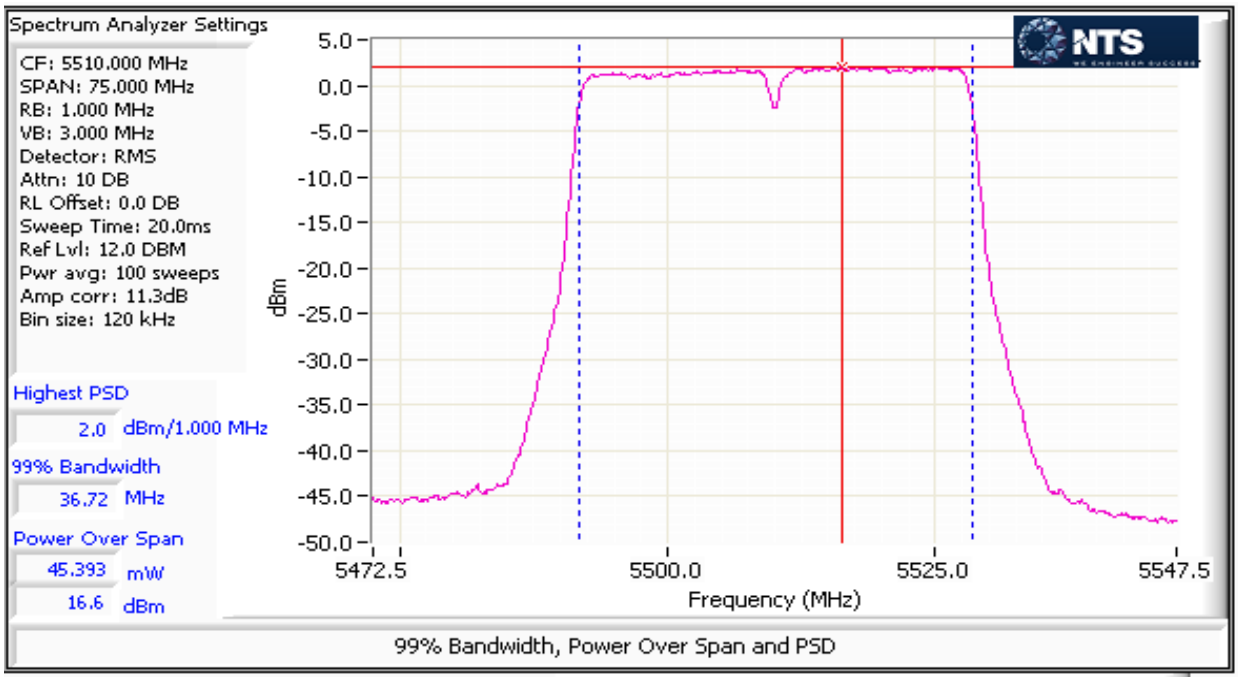
Mode: ac 40 Max EIRP (mW): 965.7

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5510	1	17	44.1	-	16.7	188.3	22.7	22.9	0.188	Pass
	3				16.5					
	4				16.8					
	2				16.9					

5470-5725 PSD - FCC, 4SS

Mode: ac 40

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5510	1	18	36.7	96.3	2.0	6.1	7.9	9.9	Pass
	3				1.9				
	4				1.3				
	2				1.5				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5250-5350 MHz Band - FCC, 4SS

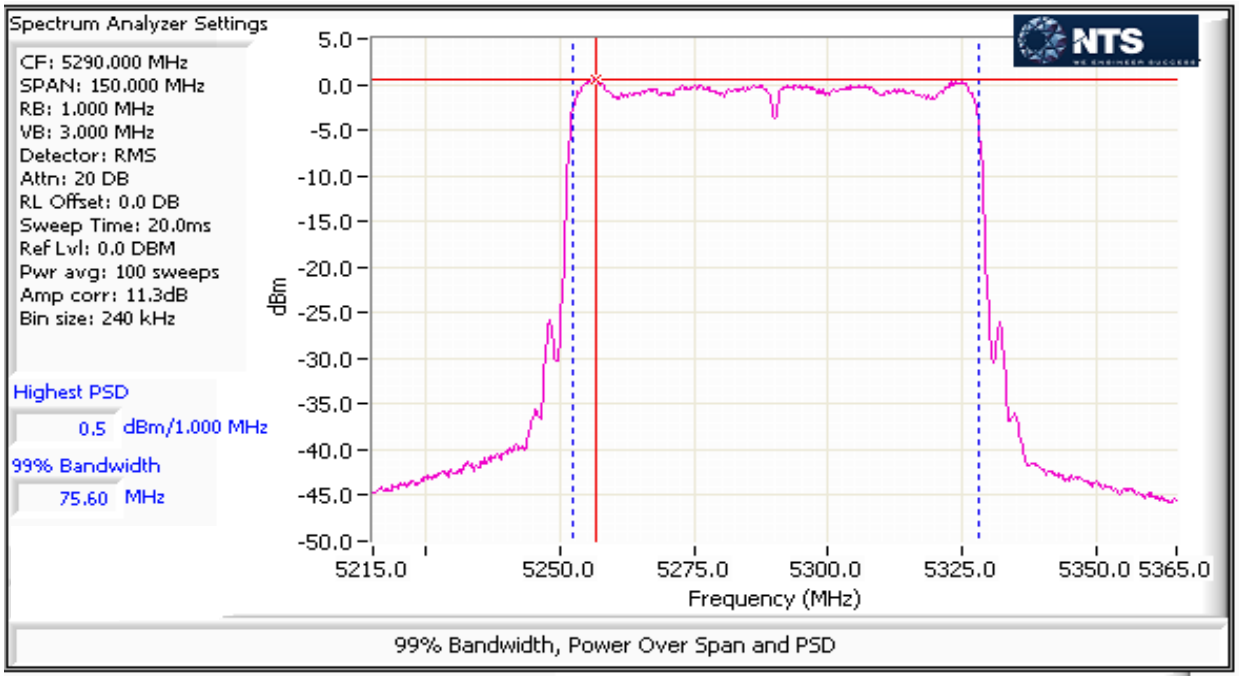
Mode: ac 80 Max EIRP (mW): 847.8

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5290	1	17	82.4	-	16.9	173.1	22.4	23.1	0.173	Pass
	3				16.1					
	4				16.2					
	2				16.2					

5250-5350 PSD - FCC, 4SS

Mode: ac 80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5290	1	20	75.6	89.0	0.5	4.6	6.6	10.1	Pass
	3				0.1				
	4				0.1				
	2				-0.5				



Client:	ARRIS	Job Number:	JD102271
Model:	BGW210-700	T-Log Number:	T103599
		Project Manager:	Irene Rademacher
Contact:	Mark Rieger	Project Coordinator:	-
Standard:	FCC 15.B, 15.247, 15.407	Class:	N/A

MIMO Device - 5470-5725 MHz Band - FCC, 4SS

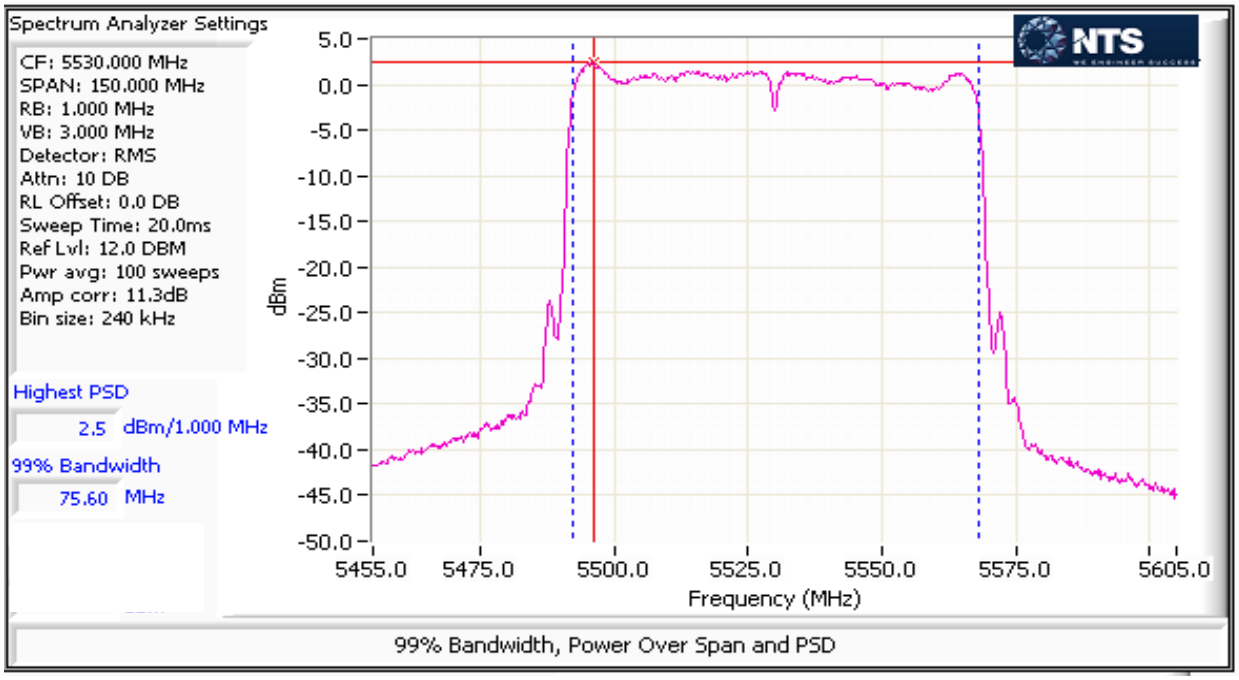
Mode: ac 80 Max EIRP (mW): 808.3

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[2] dBm	Total Power[6] mW	Total Power[6] dBm	FCC Limit dBm	Max Power (W)	Result
5530	1	16	82.4	-	16.2	157.6	22.0	22.9	0.158	Pass
	3				16.1					
	4				15.7					
	2				15.8					

5470-5725 PSD - FCC, 4SS

Mode: ac 80

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD[3] dBm/MHz	Total PSD[6] mW/MHz	Total PSD[6] dBm/MHz	FCC Limit dBm/MHz	Result
5530	1	21	75.6	89.0	1.9	7.0	8.5	9.9	Pass
	3				2.5				
	4				1.7				
	2				1.4				



End of Report

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marks the last page of this test report.