

7	9848.008M	46.7	+0.0	46.7	86.0	-39.3	Anten
8	118.275k	45.0	+0.0	45.0	86.0	-41.0	Anten
9	1.006M	44.9	+0.0	44.9	86.0	-41.1	Anten
10	23499.546 M	43.4	+0.0	43.4	86.0	-42.6	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 12:21:09
 Tested By: Matthew Harrison Sequence#: 61
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

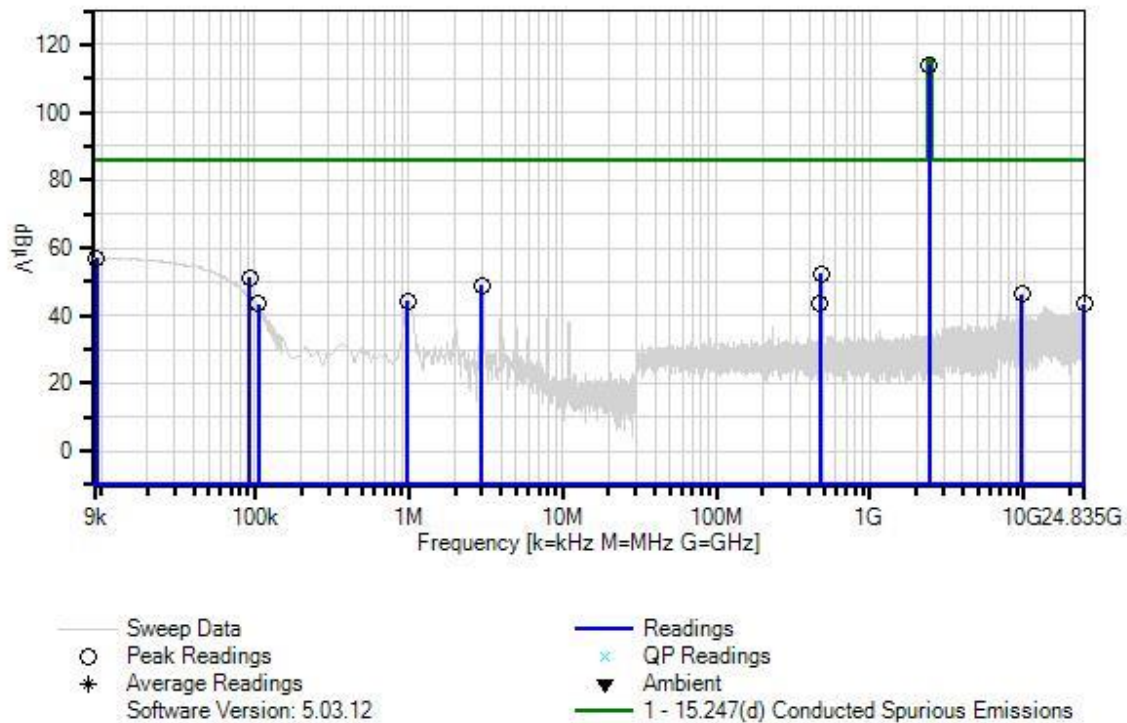
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11b, 1mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 61 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2435.990M	114.0					+0.0	114.0	116.0	-2.0	Anten
2	9.282k	57.1					+0.0	57.1	86.0	-28.9	Anten
3	476.246M	52.3					+0.0	52.3	86.0	-33.7	Anten
4	92.613k	51.1					+0.0	51.1	86.0	-34.9	Anten
5	2.991M	48.8					+0.0	48.8	86.0	-37.2	Anten
6	9747.908M	46.4					+0.0	46.4	86.0	-39.6	Anten

7	985.573k	44.4	+0.0	44.4	86.0	-41.6	Anten
8	474.744M	43.5	+0.0	43.5	86.0	-42.5	Anten
9	24813.078 M	43.3	+0.0	43.3	86.0	-42.7	Anten
10	105.021k	43.3	+0.0	43.3	86.0	-42.7	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 12:29:39
 Tested By: Matthew Harrison Sequence#: 62
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

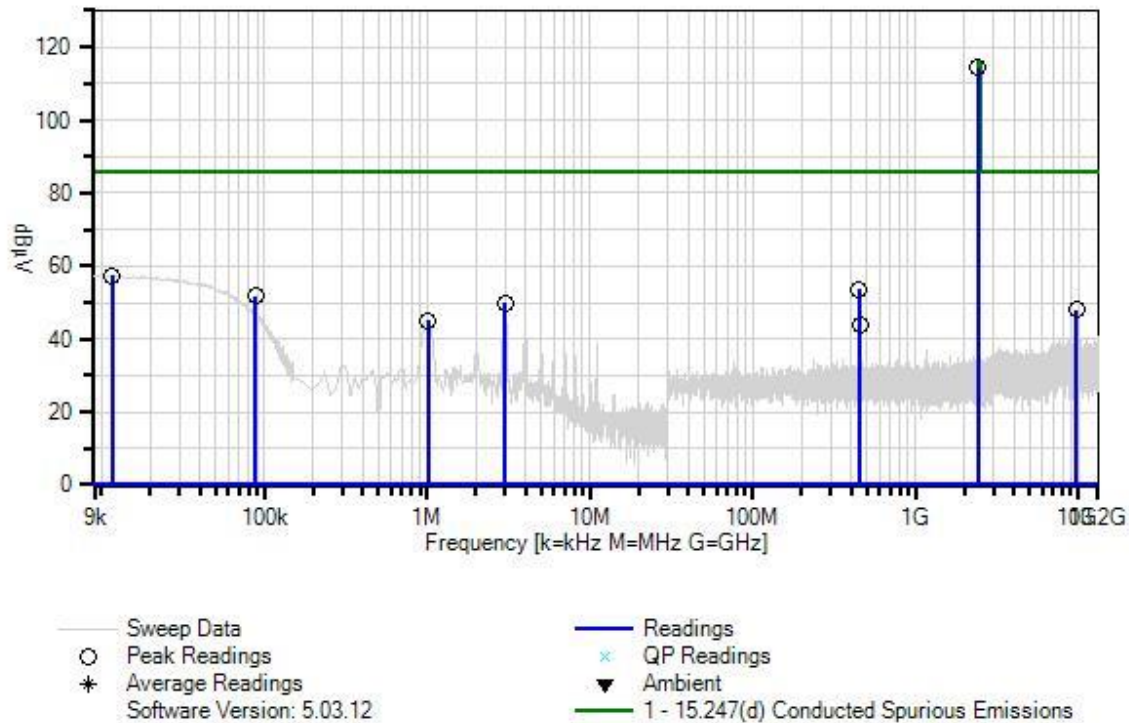
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11b, 1mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 62 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV									
			dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2412.480M	114.3					+0.0	114.3	116.0	-1.7	Anten
2	11.679k	57.4					+0.0	57.4	86.0	-28.6	Anten
3	451.321M	53.7					+0.0	53.7	86.0	-32.3	Anten
4	88.665k	51.7					+0.0	51.7	86.0	-34.3	Anten

5	2.991M	49.8	+0.0	49.8	86.0	-36.2	Anten
6	9647.908M	47.9	+0.0	47.9	86.0	-38.1	Anten
7	1.006M	45.1	+0.0	45.1	86.0	-40.9	Anten
8	452.822M	44.1	+0.0	44.1	86.0	-41.9	Anten

802.11g Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 12:51:24
 Tested By: Matthew Harrison Sequence#: 63
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

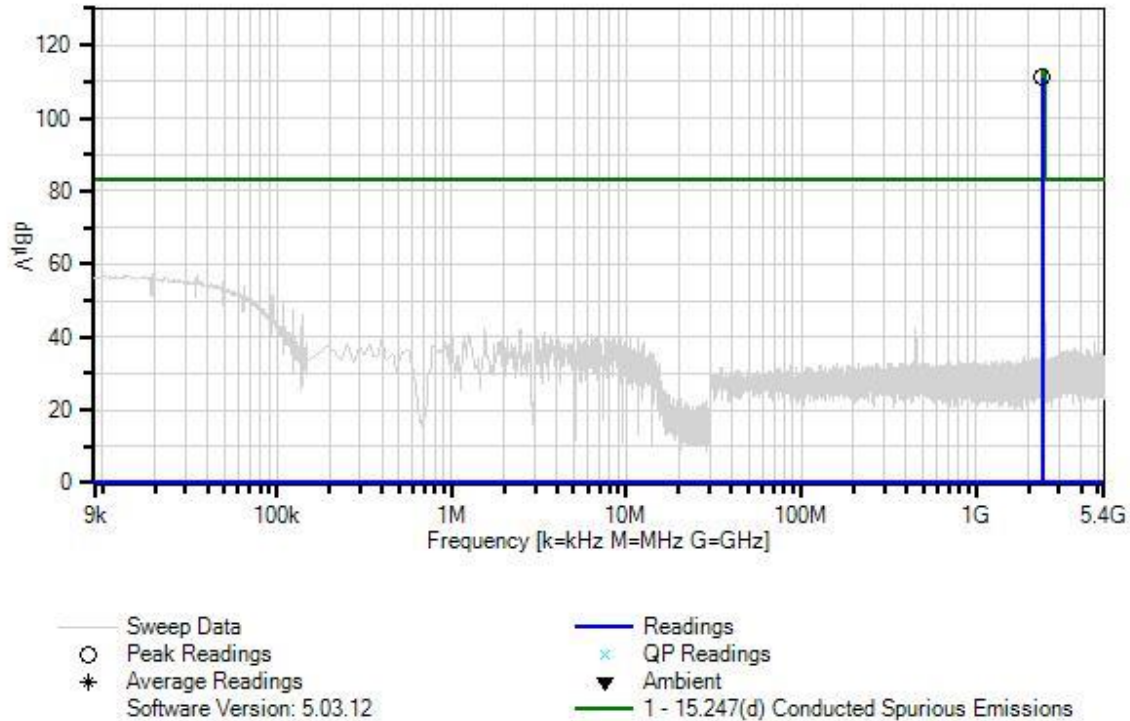
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412 Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 63 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV					Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2413.250M	111.2					+0.0	111.2	113.2	-2.0	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 13:01:23
 Tested By: Matthew Harrison Sequence#: 64
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

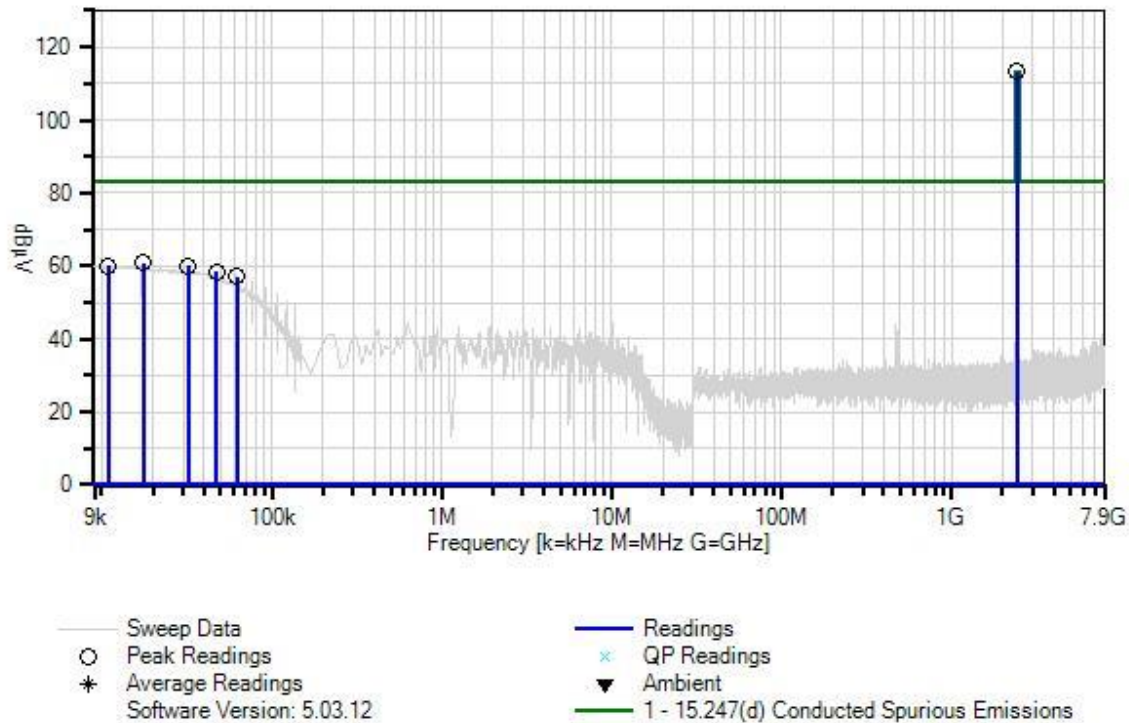
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 64 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2435.710M	113.2					+0.0	113.2	113.2	+0.0	Anten
2	17.460k	60.8					+0.0	60.8	83.2	-22.4	Anten
3	32.406k	60.1					+0.0	60.1	83.2	-23.1	Anten
4	10.833k	60.0					+0.0	60.0	83.2	-23.2	Anten
5	47.352k	58.5					+0.0	58.5	83.2	-24.7	Anten
6	62.439k	57.2					+0.0	57.2	83.2	-26.0	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 13:11:36
 Tested By: Matthew Harrison Sequence#: 65
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

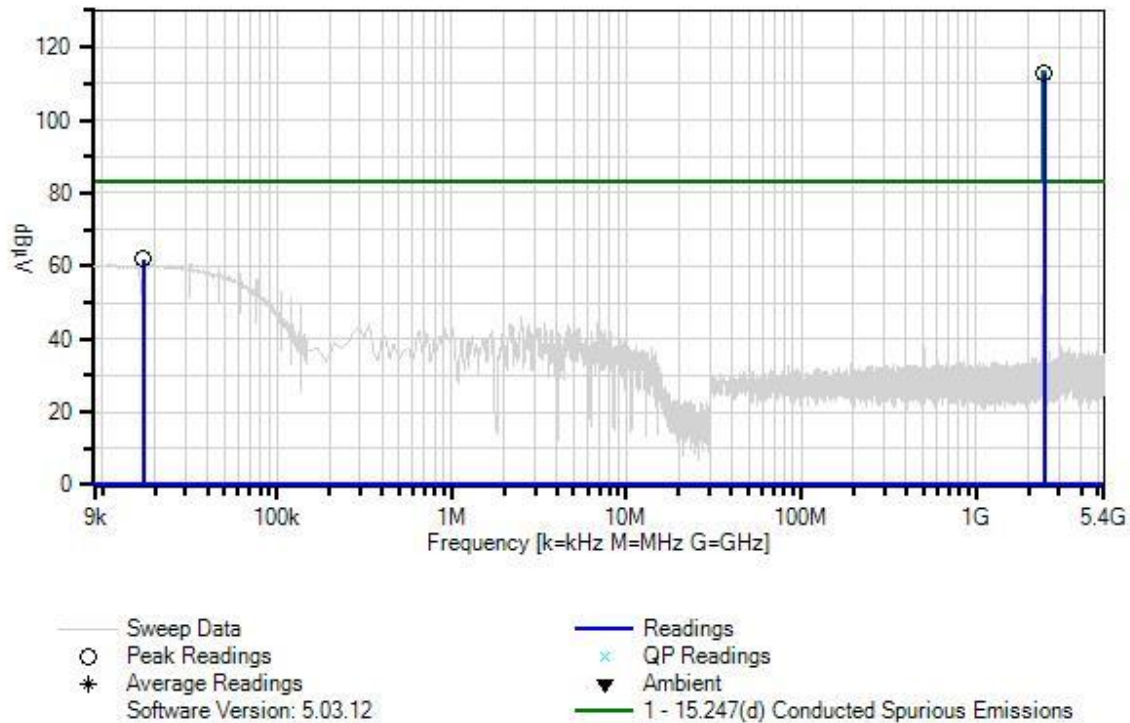
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2462 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 65 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2463.240M	112.9					+0.0	112.9	113.2	-0.3	Anten
2	17.178k	61.8					+0.0	61.8	83.2	-21.4	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 13:22:11
 Tested By: Matthew Harrison Sequence#: 66
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

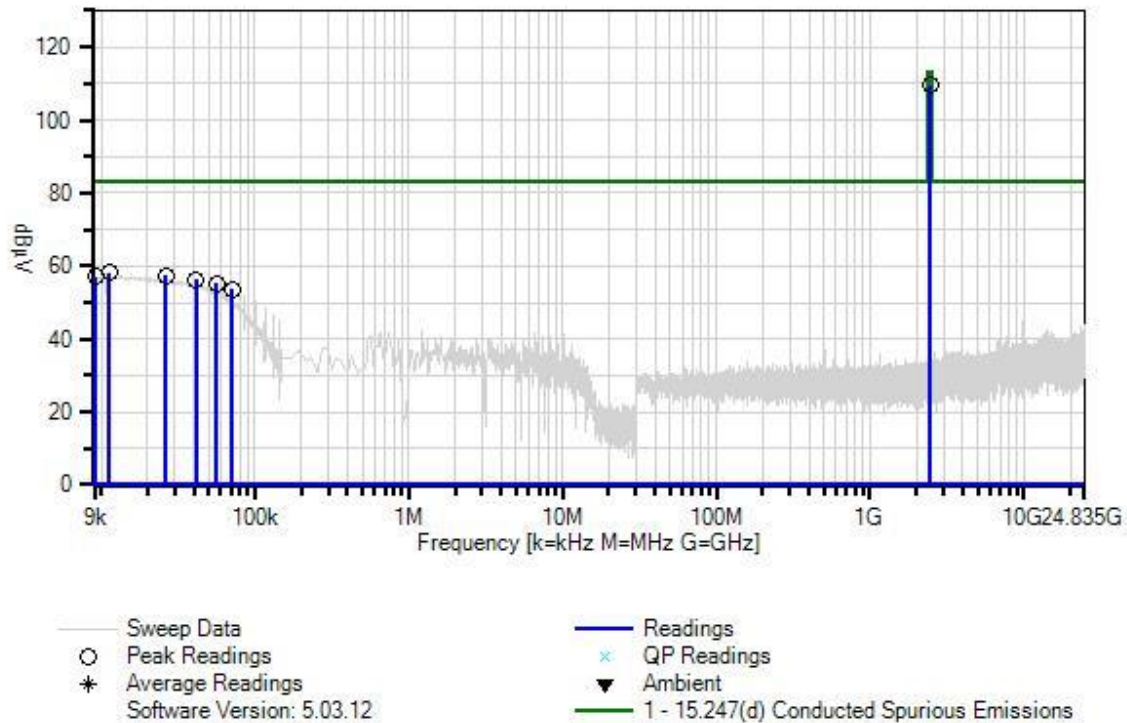
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2462 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 66 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2456.990M	109.4					+0.0	109.4	113.2	-3.8	Anten
2	11.256k	58.3					+0.0	58.3	83.2	-24.9	Anten
3	26.202k	57.4					+0.0	57.4	83.2	-25.8	Anten

4	9.141k	57.1	+0.0	57.1	83.2	-26.1	Anten
5	41.148k	56.4	+0.0	56.4	83.2	-26.8	Anten
6	56.094k	55.2	+0.0	55.2	83.2	-28.0	Anten
7	71.040k	53.7	+0.0	53.7	83.2	-29.5	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 13:30:48
 Tested By: Matthew Harrison Sequence#: 67
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

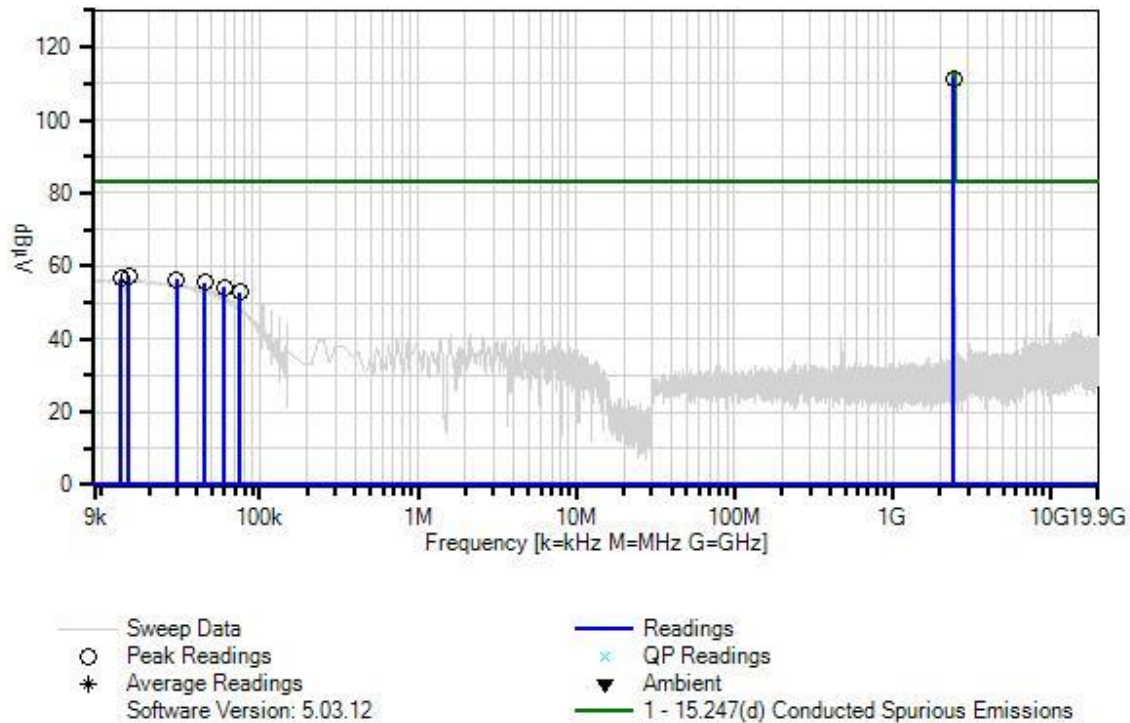
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 67 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2435.720M	111.4					+0.0	111.4	113.2	-1.8	Anten
2	14.922k	57.5					+0.0	57.5	83.2	-25.7	Anten
3	13.230k	56.5					+0.0	56.5	83.2	-26.7	Anten

4	29.868k	56.2	+0.0	56.2	83.2	-27.0	Anten
5	44.814k	55.4	+0.0	55.4	83.2	-27.8	Anten
6	59.760k	54.1	+0.0	54.1	83.2	-29.1	Anten
7	74.847k	52.7	+0.0	52.7	83.2	-30.5	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 13:37:20
 Tested By: Matthew Harrison Sequence#: 68
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

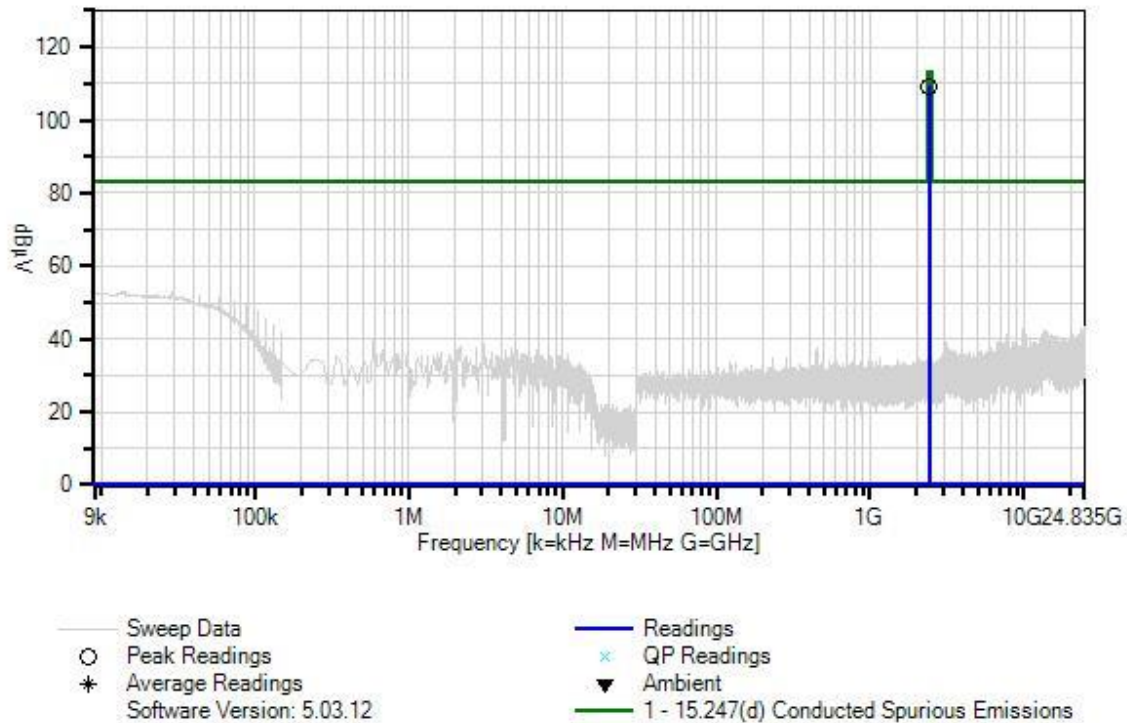
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412 Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Nalloy, LLC. WO#: 102802 Sequence#: 68 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2413.240M	109.1					+0.0	109.1	113.2	-4.1	Anten

802.11n20 Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 13:55:25
 Tested By: Matthew Harrison Sequence#: 69
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C
 Humidity: 28%
 Pressure: 101.3 kPa

 Frequency Range: 9kHz-25GHz
Frequency tested: 2412
 Firmware power setting: 12 dBm for Low Channel
 EUT Firmware:
 Protocol /MCS/Modulation: **802.11n, 20MHz BW, MCS8 (worst-case)**

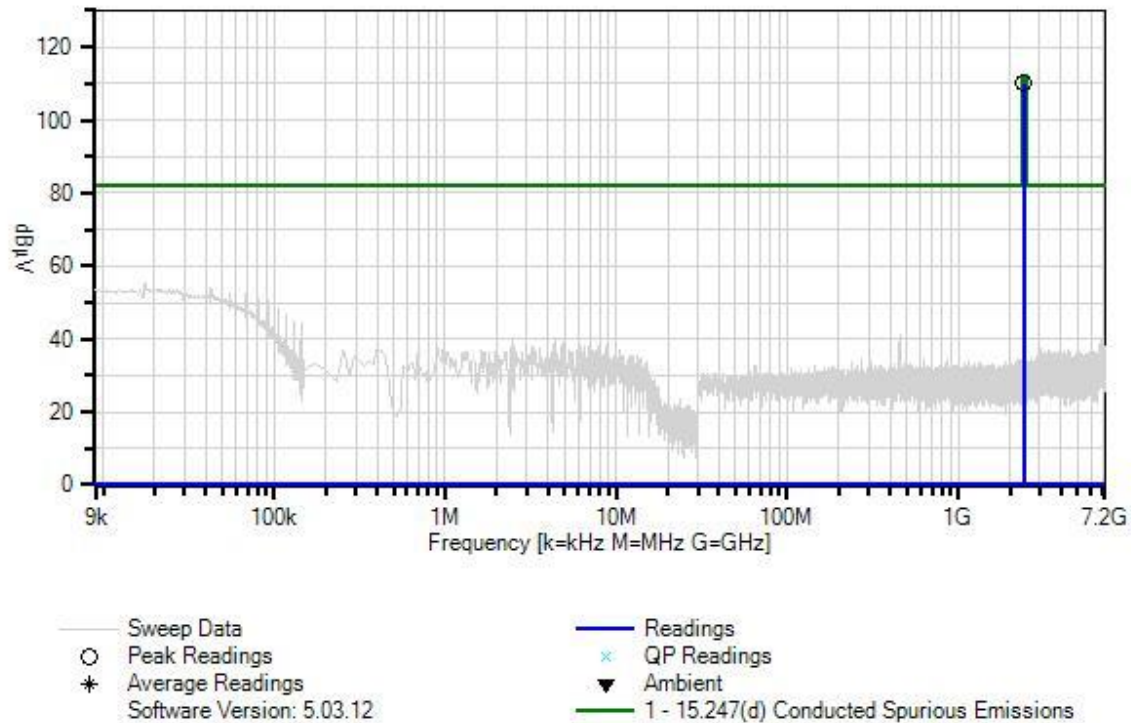
 Antenna type: Linear Polarized
 Antenna Gain : 3.7 dBi.

 Duty Cycle: 100% Modulated

 Test Method: ANSI C63.10: 2013
 Test Mode: Transmitting
 Test Setup: EUT is setup for conducted measurements.
 Modifications Added: None
 Setup: EUT is connected to a Laptop via USB and Audio cable.

 All data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 69 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2413.240M	110.2					+0.0	110.2	112.2	-2.0	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 14:01:09
 Tested By: Matthew Harrison Sequence#: 70
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

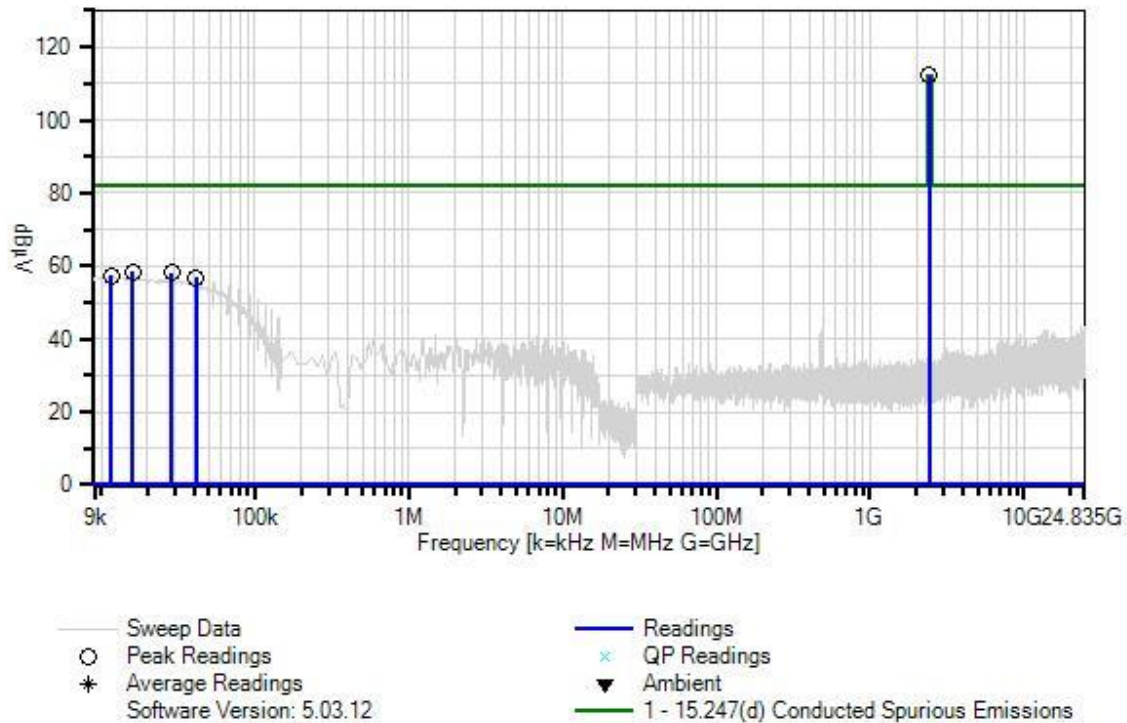
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 70 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2435.720M	112.1					+0.0	112.1	112.2	-0.1	Anten
2	16.050k	58.4					+0.0	58.4	82.2	-23.8	Anten
3	28.740k	58.1					+0.0	58.1	82.2	-24.1	Anten
4	11.538k	57.4					+0.0	57.4	82.2	-24.8	Anten
5	41.289k	56.8					+0.0	56.8	82.2	-25.4	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 14:09:27
 Tested By: Matthew Harrison Sequence#: 71
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

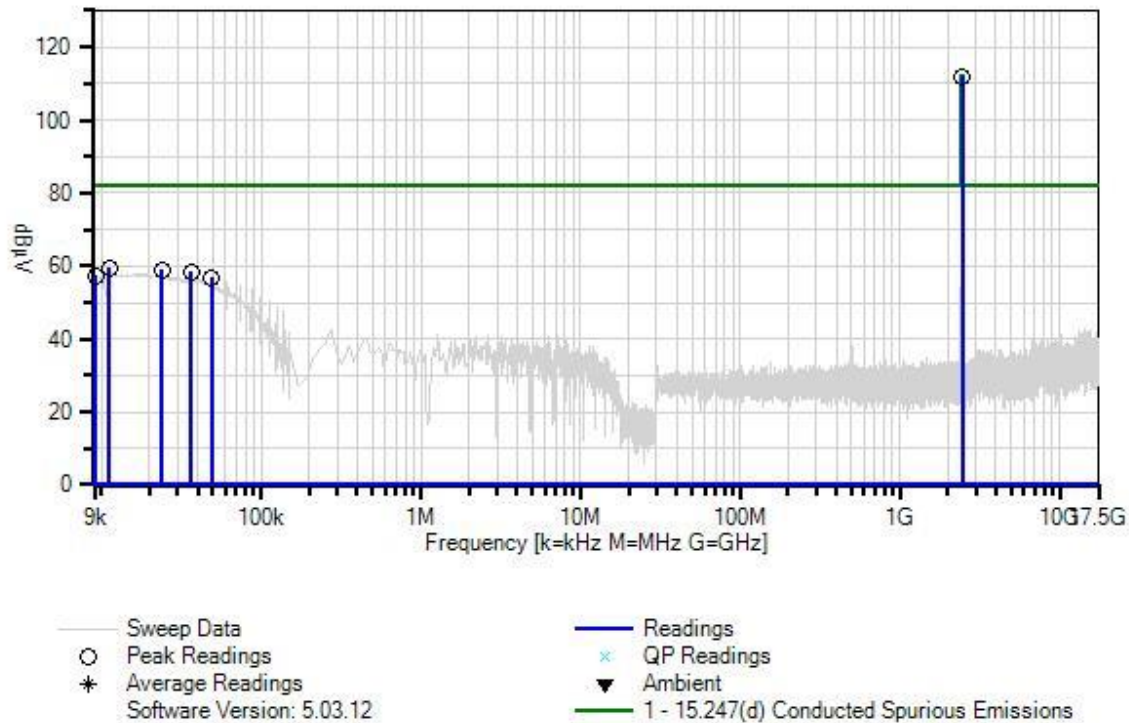
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2462 Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Nalloy, LLC. WO#: 102802 Sequence#: 71 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2460.730M	111.9					+0.0	111.9	112.2	-0.3	Anten
2	11.115k	59.6					+0.0	59.6	82.2	-22.6	Anten
3	23.805k	59.0					+0.0	59.0	82.2	-23.2	Anten
4	36.495k	58.5					+0.0	58.5	82.2	-23.7	Anten
5	9.141k	57.4					+0.0	57.4	82.2	-24.8	Anten
6	49.044k	56.8					+0.0	56.8	82.2	-25.4	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 14:21:58
 Tested By: Matthew Harrison Sequence#: 72
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

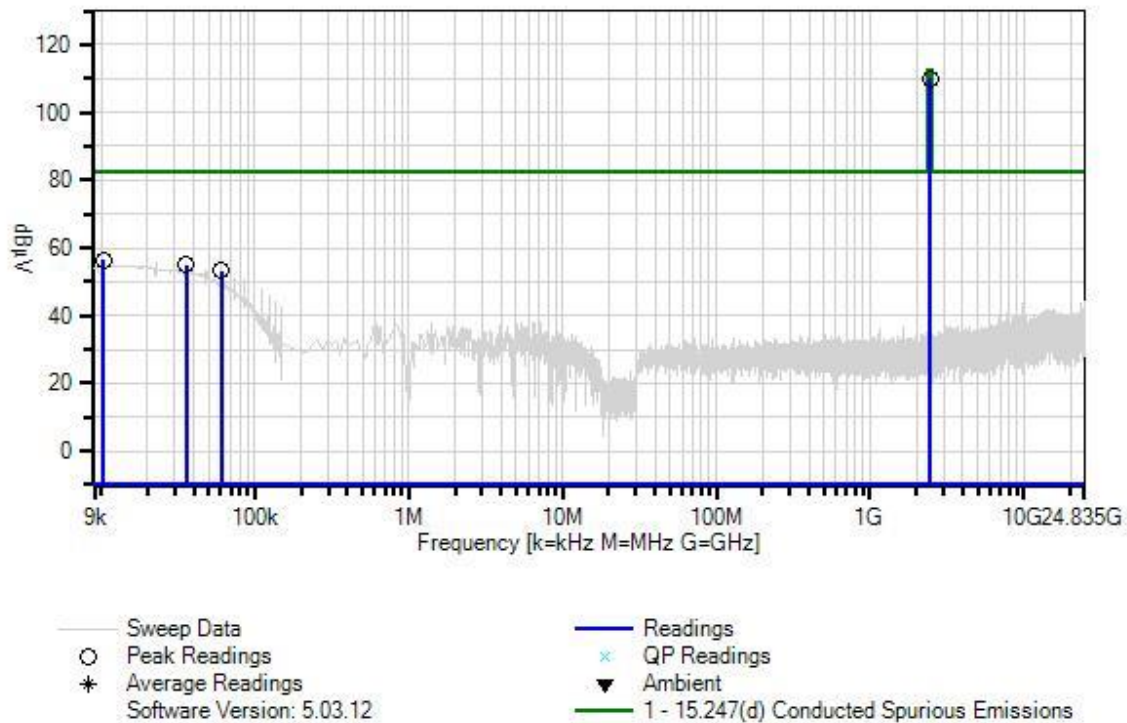
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2462 Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Nalloy, LLC. WO#: 102802 Sequence#: 72 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2463.250M	110.0					+0.0	110.0	112.2	-2.2	Anten
2	10.269k	56.4					+0.0	56.4	82.2	-25.8	Anten
3	35.508k	55.1					+0.0	55.1	82.2	-27.1	Anten
4	60.747k	53.2					+0.0	53.2	82.2	-29.0	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 14:30:55
 Tested By: Matthew Harrison Sequence#: 73
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

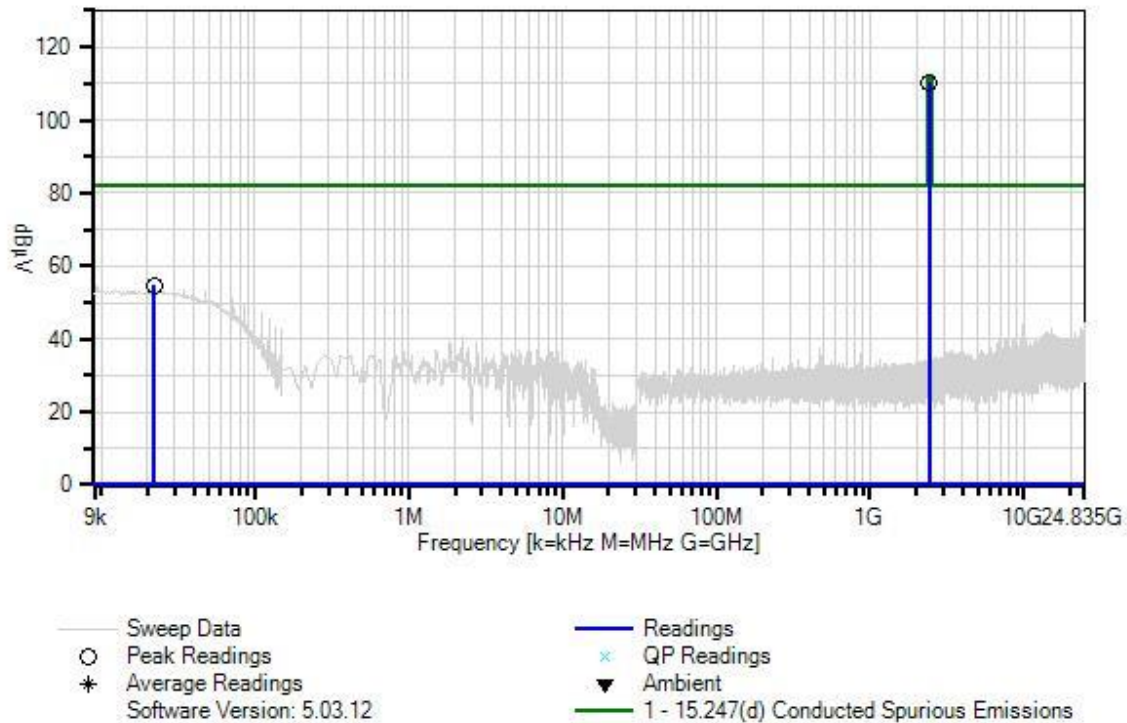
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Nalloy, LLC. WO#: 102802 Sequence#: 73 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2435.730M	110.3					+0.0	110.3	112.2	-1.9	Anten
2	21.972k	54.7					+0.0	54.7	82.2	-27.5	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 14:45:54
 Tested By: Matthew Harrison Sequence#: 74
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412 Firmware power setting: 12 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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802.11n40 Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 14:58:30
 Tested By: Matthew Harrison Sequence#: 75
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

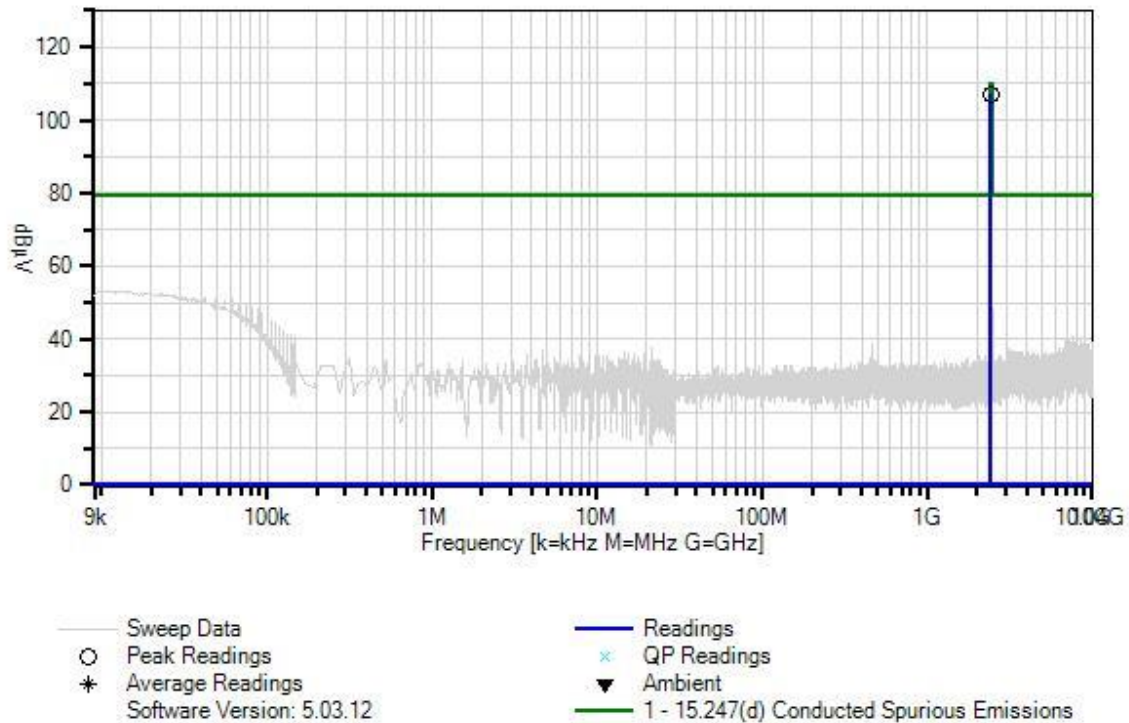
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2422 Firmware power setting: 11 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 75 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV						Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2425.750M	107.2						+0.0	107.2	109.7	-2.5	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 15:06:37
 Tested By: Matthew Harrison Sequence#: 76
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

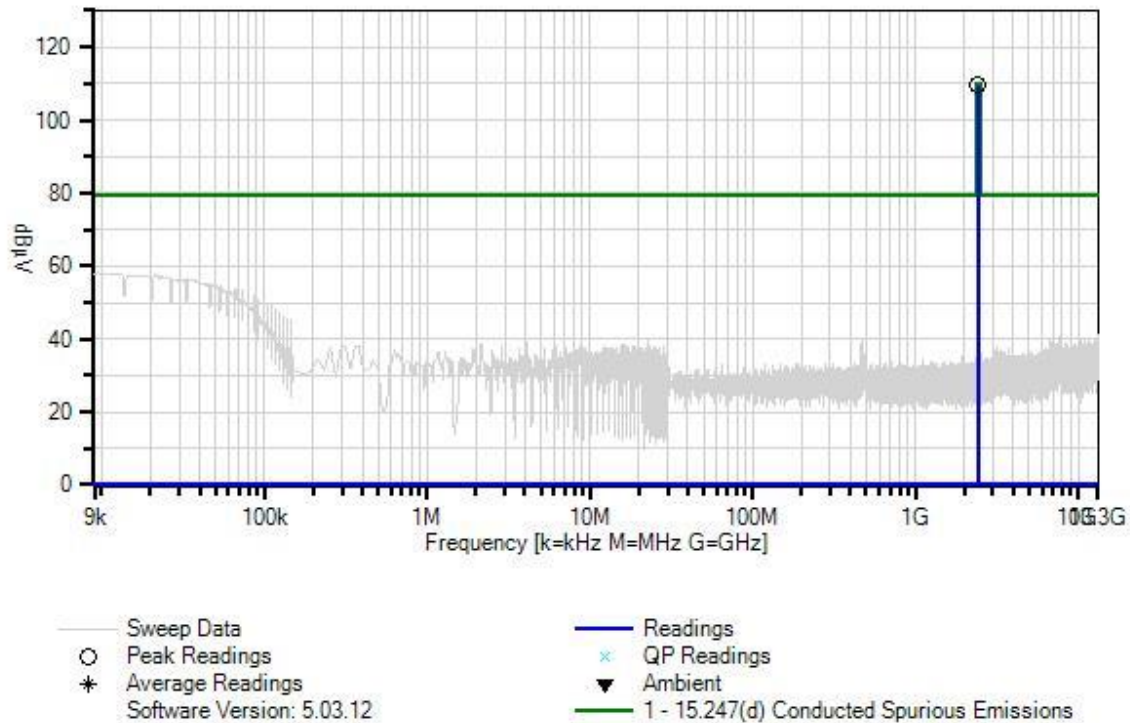
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Nalloy, LLC. WO#: 102802 Sequence#: 76 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2432.000M	109.5					+0.0	109.5	109.7	-0.2	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 15:15:51
 Tested By: Matthew Harrison Sequence#: 77
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

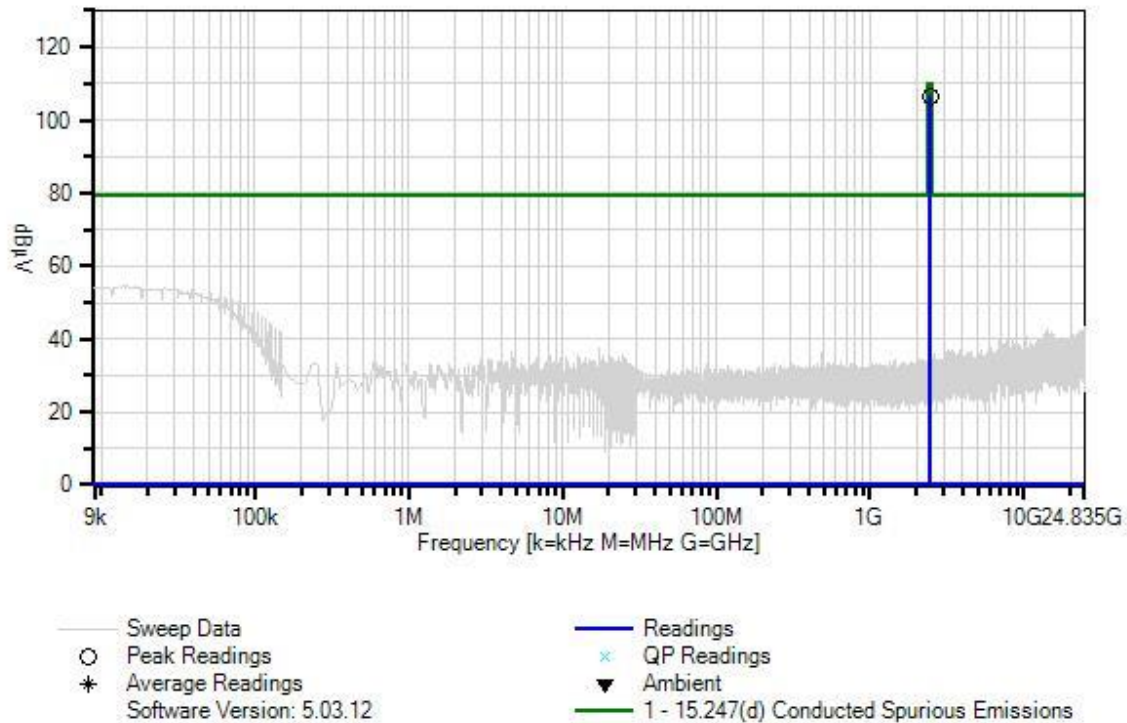
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2452 Firmware power setting: 12 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 77 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 0



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2455.730M	106.6					+0.0	106.6	109.7	-3.1	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 15:21:34
 Tested By: Matthew Harrison Sequence#: 78
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

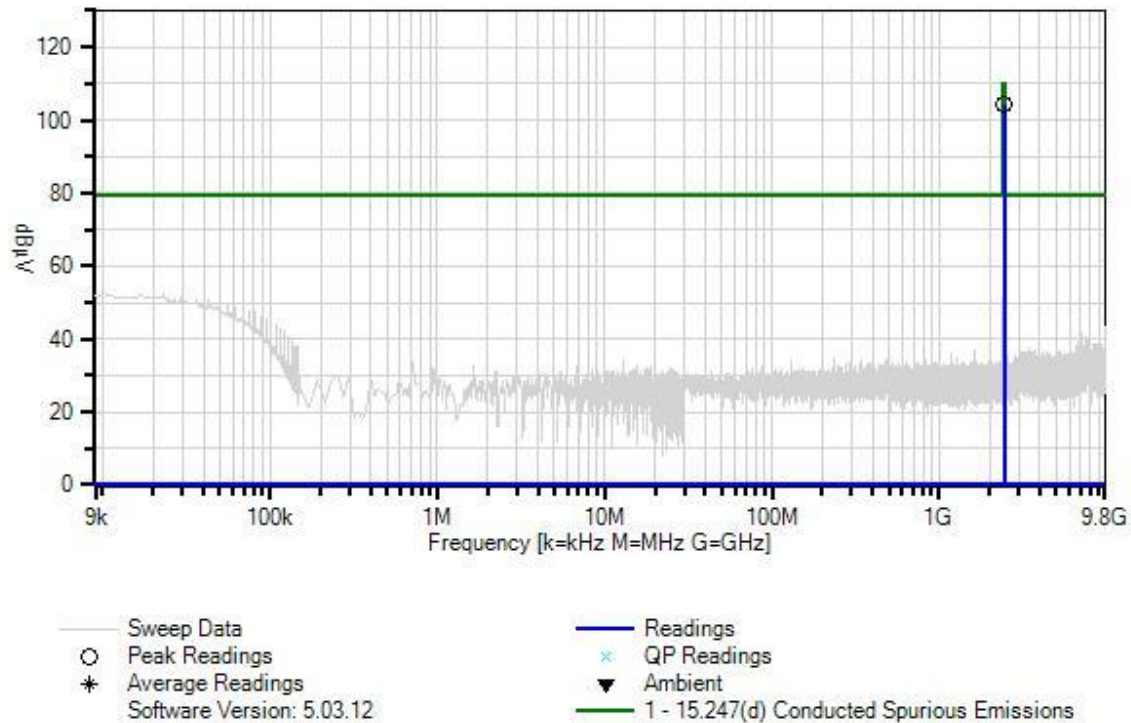
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2452 Firmware power setting: 12 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 78 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2456.950M	104.1					+0.0	104.1	109.7	-5.6	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 15:29:59
 Tested By: Matthew Harrison Sequence#: 79
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

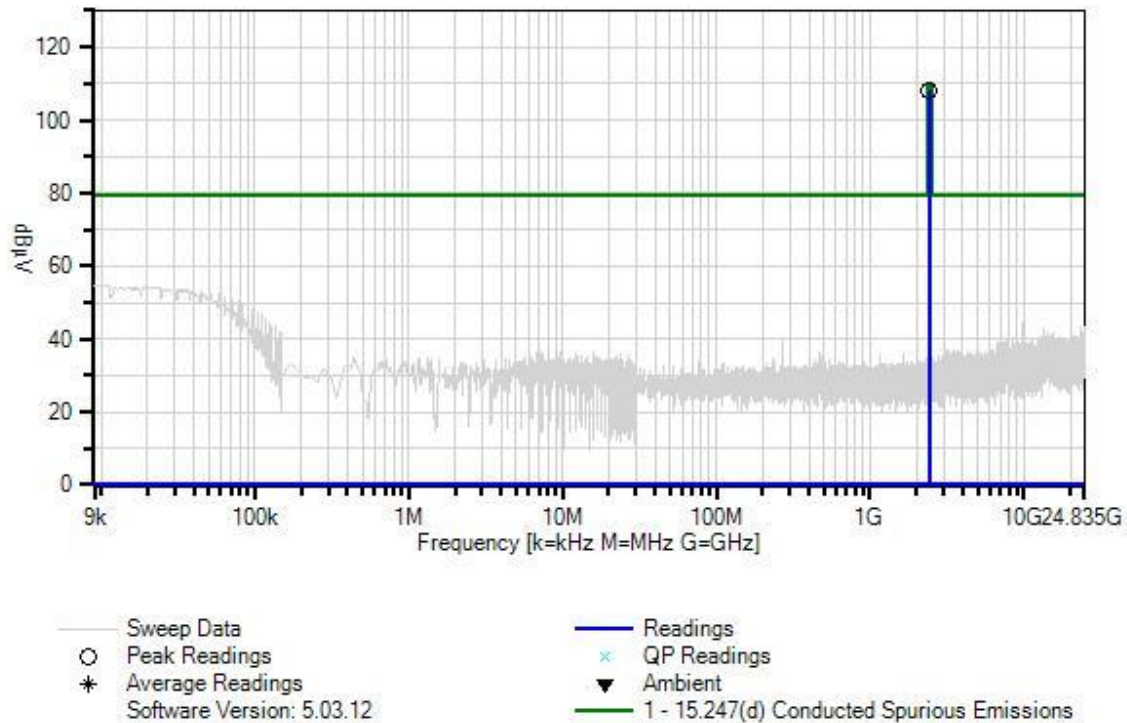
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2437 Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 79 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2431.970M	108.2					+0.0	108.2	109.7	-1.5	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 3/27/2020
 Test Type: **Conducted Emissions** Time: 15:37:43
 Tested By: Matthew Harrison Sequence#: 80
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

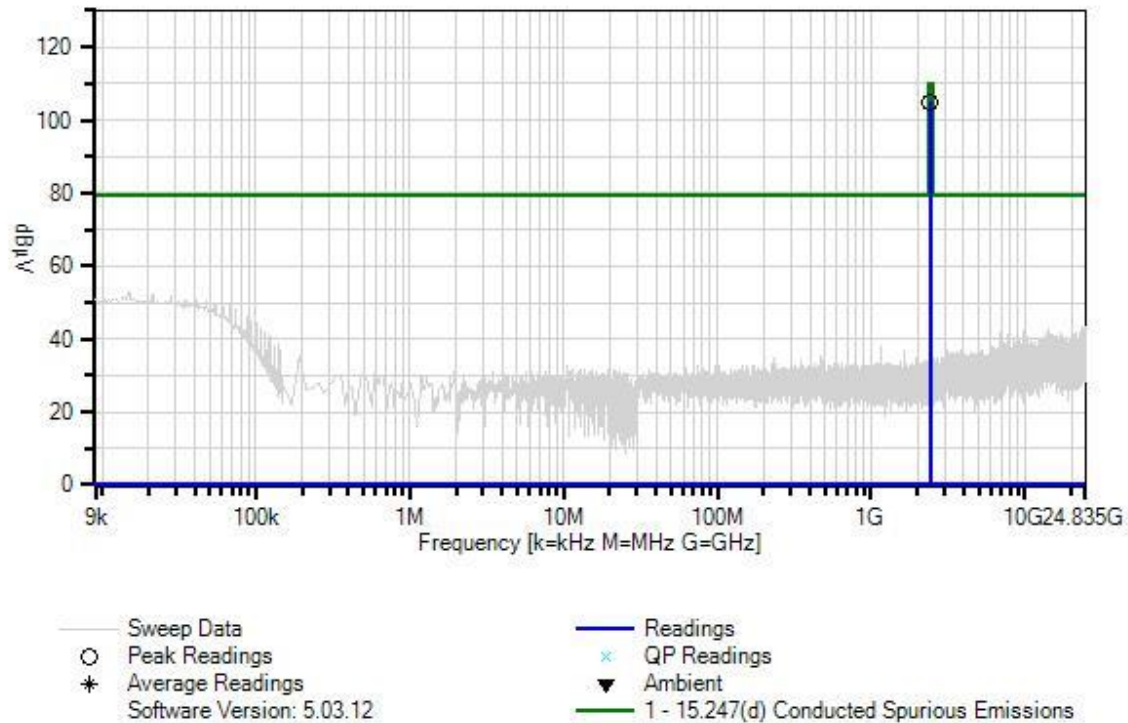
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2422 Firmware power setting: 11 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
--

Nalloy, LLC. WO#: 102802 Sequence#: 80 Date: 3/27/2020
15.247(d) Conducted Spurious Emissions Test Lead: 120V 60Hz Antenna Port 1



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2426.990M	105.0					+0.0	105.0	109.7	-4.7	Anten

Band Edge

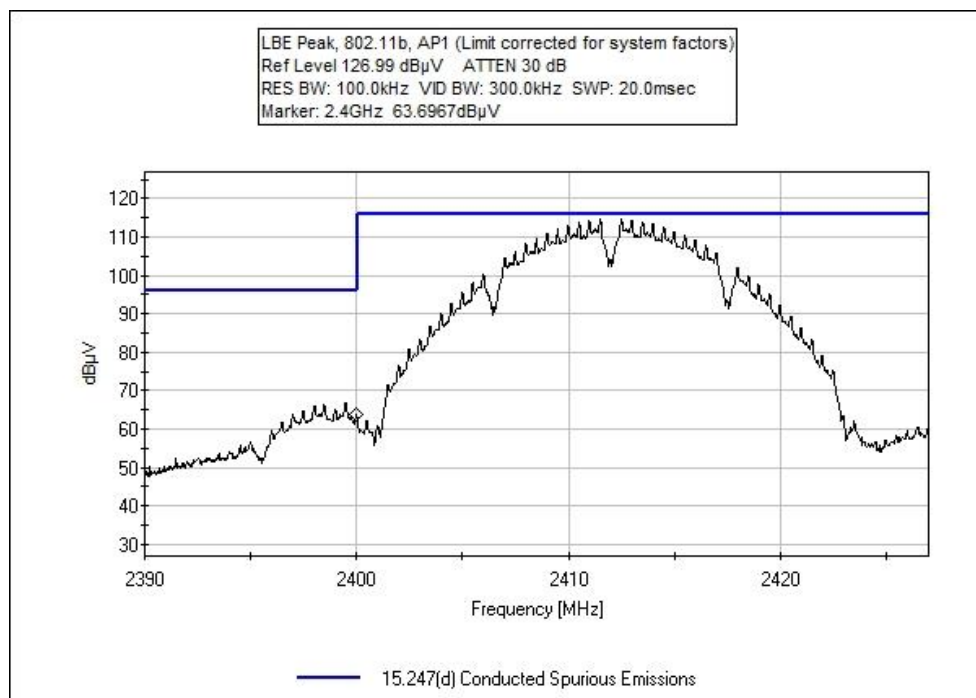
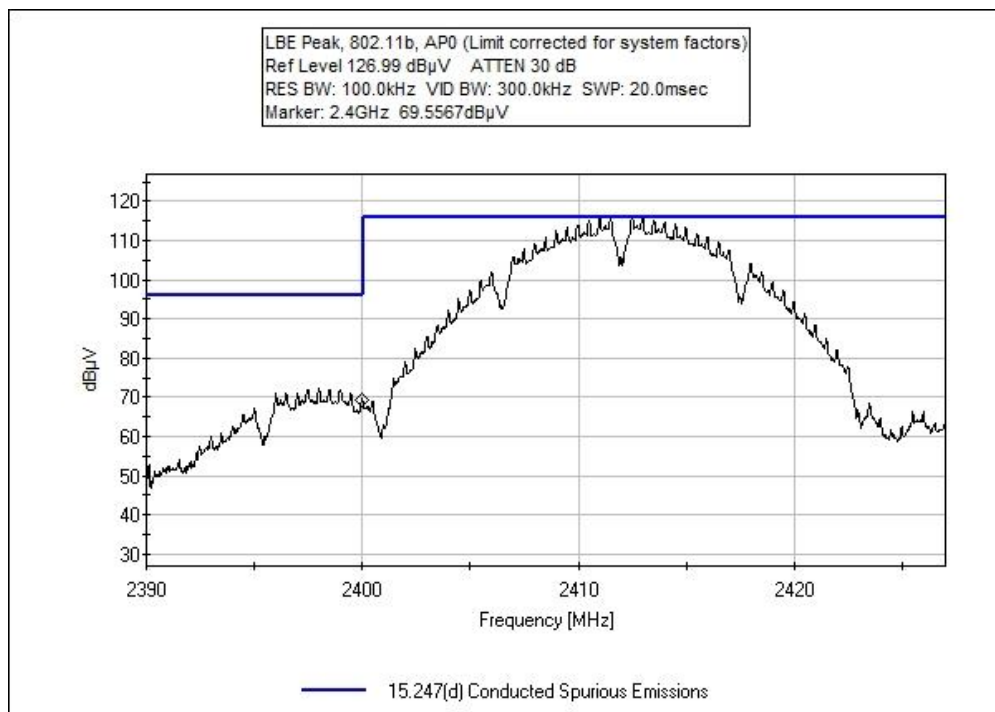
Band Edge Summary

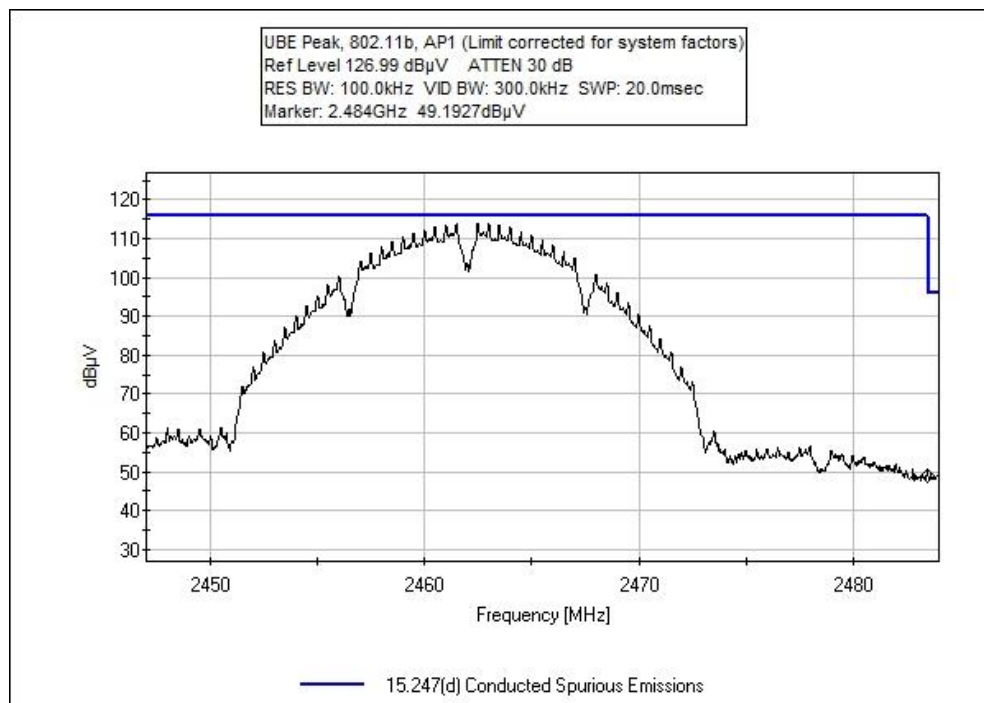
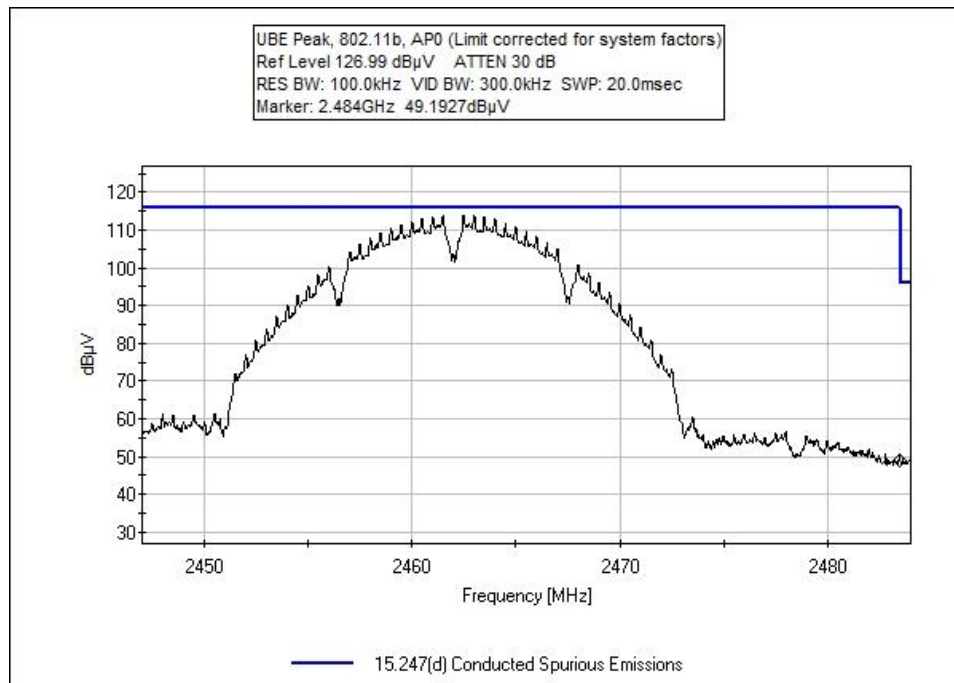
Limit applied: Max Power/100kHz - 20dB.

For 802.11n MIMO KDB662911 (E)(3)(b) When testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding.

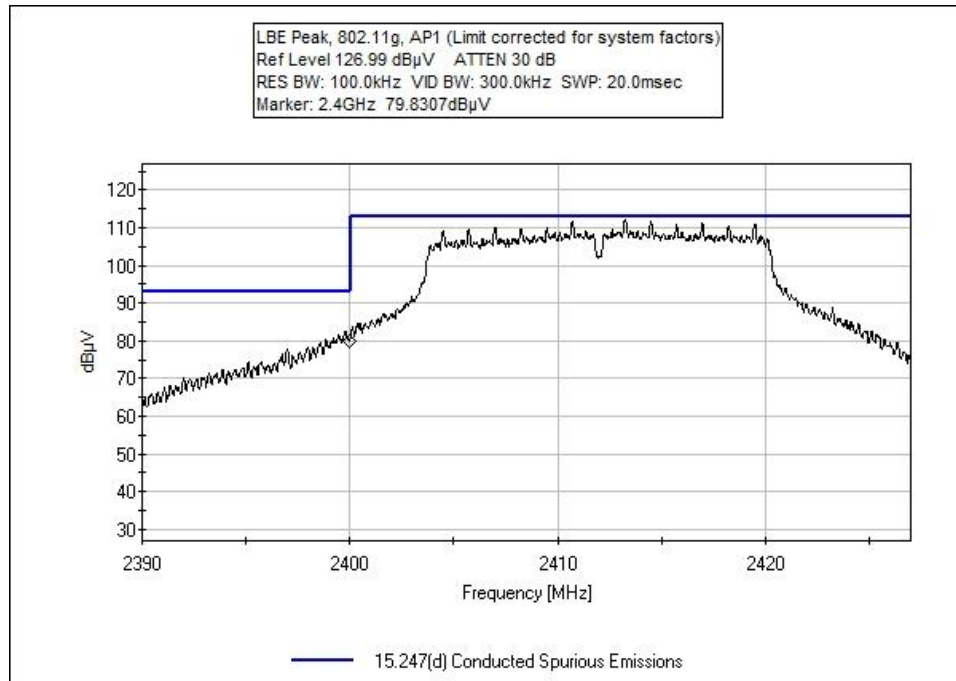
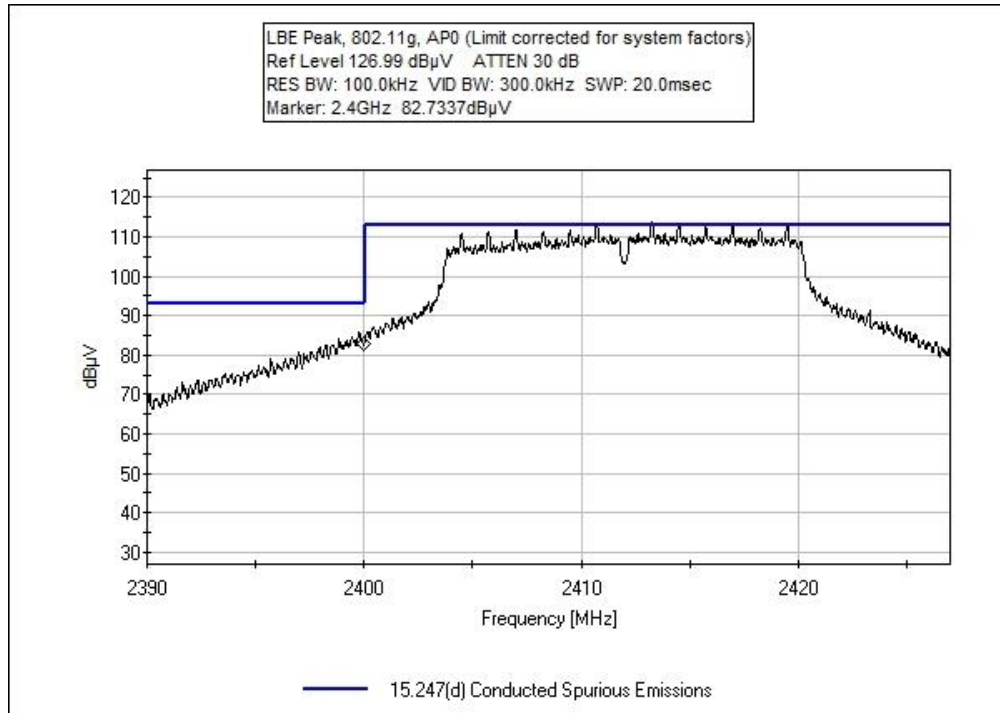
Frequency (MHz)	Modulation	Measured (dBμV)	Limit (dBμV)	Results
2400.0	CCK, AP0	69.6	<96	Pass
2483.5	CCK, AP0	51.2	<96	Pass
2400.0	CCK, AP1	63.6	<96	Pass
2483.5	CCK, AP1	49.2	<96	Pass
2400.0	OFDM, AP0	82.7	<93.2	Pass
2483.5	OFDM, AP0	61.9	<93.2	Pass
2400.0	OFDM, AP1	79.8	<93.2	Pass
2483.5	OFDM, AP1	55.5	<93.2	Pass
2400.0	MCS 20M, AP0	82.2	<93.2	Pass
2483.5	MCS 20M, AP0	62.8	<93.2	Pass
2400.0	MCS 20M, AP1	79.8	<93.2	Pass
2483.5	MCS 20M, AP1	55.5	<93.2	Pass
2400.0	MCS 40M, AP0	69.1	<89.7	Pass
2483.5	MCS 40M, AP0	60.8	<89.7	Pass
2400.0	MCS 40M, AP1	67.3	<89.7	Pass
2483.5	MCS 40M, AP1	54.3	<89.7	Pass

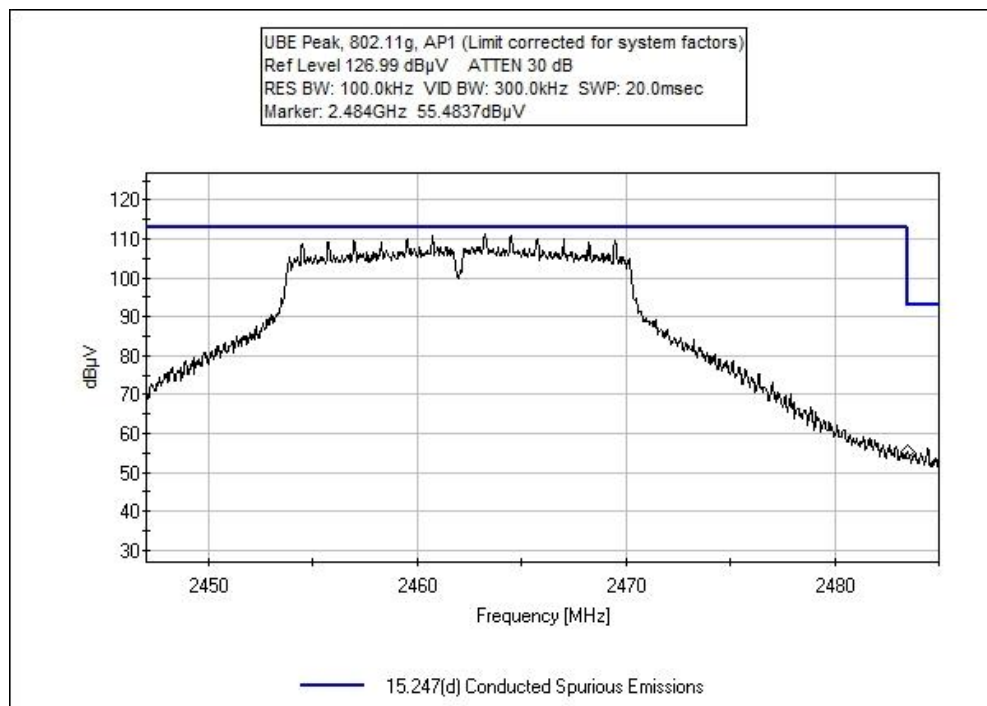
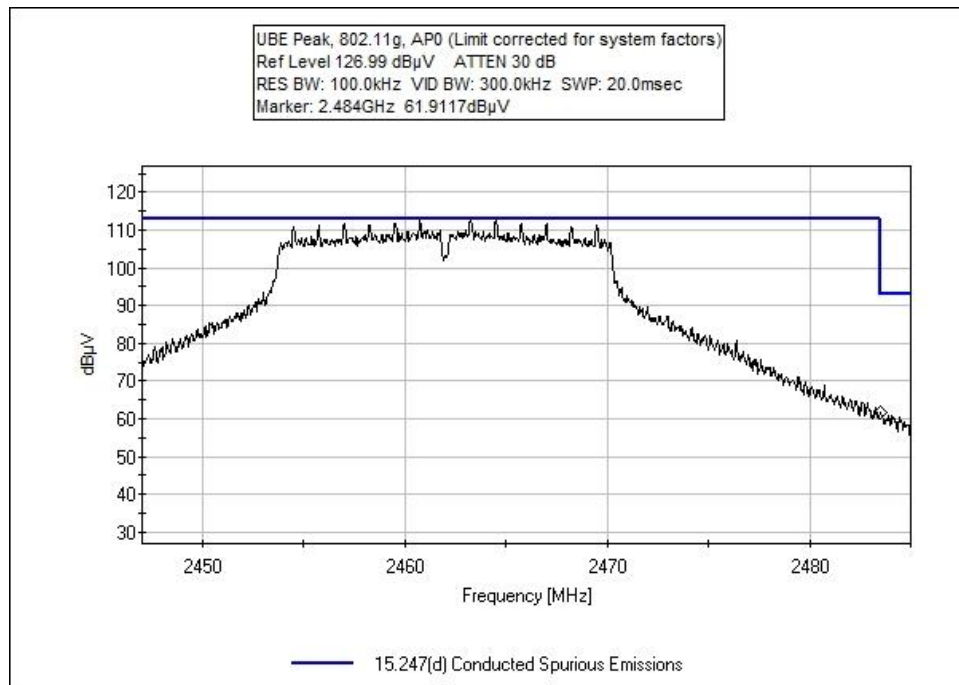
802.11b Band Edge Plots



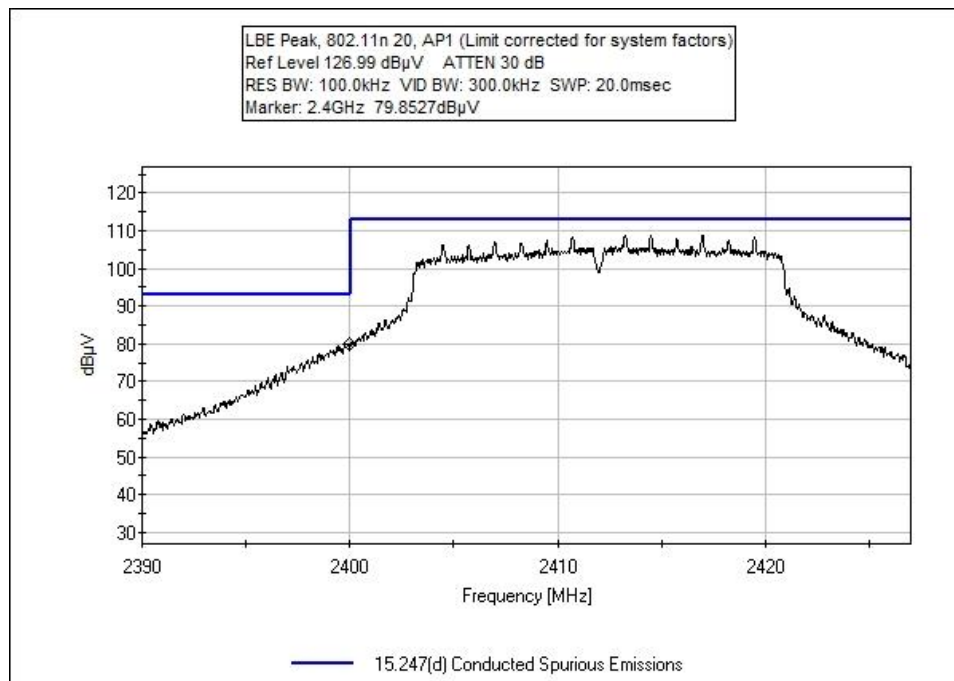
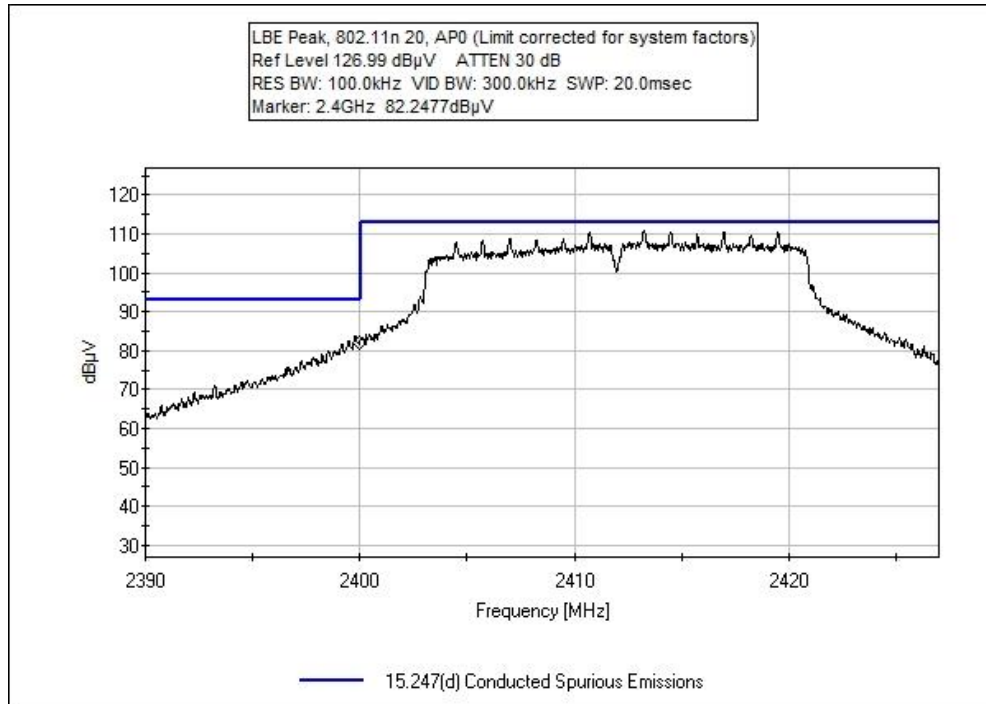


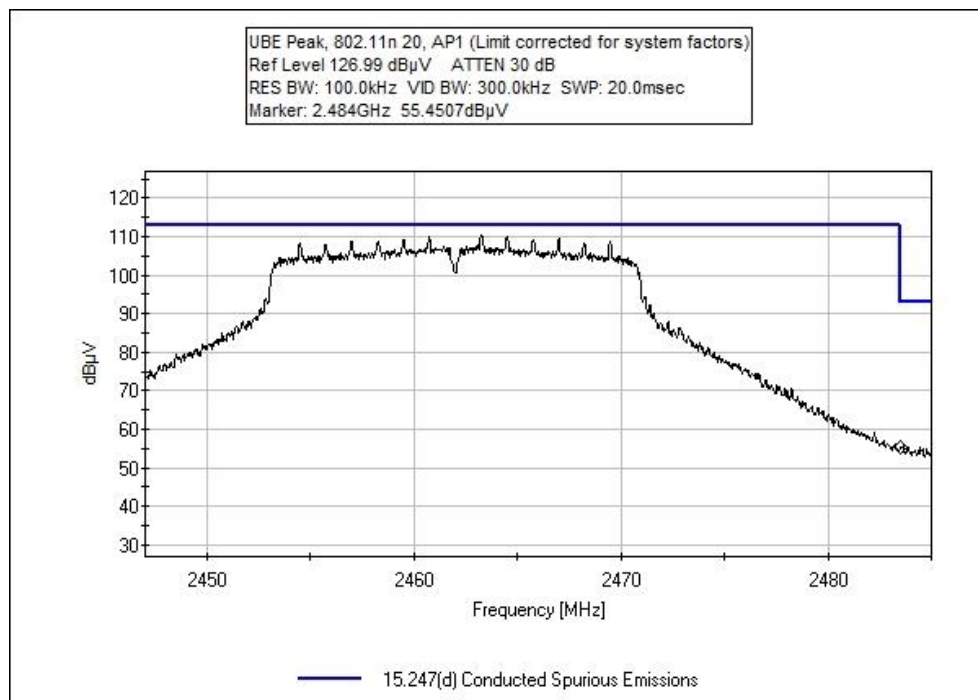
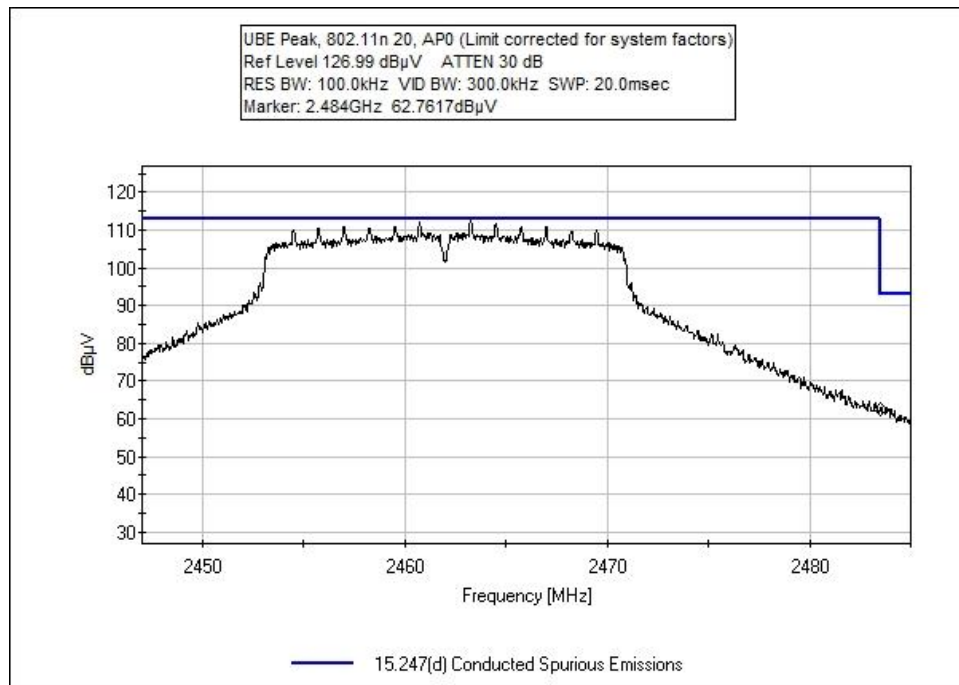
802.11g Band Edge Plots



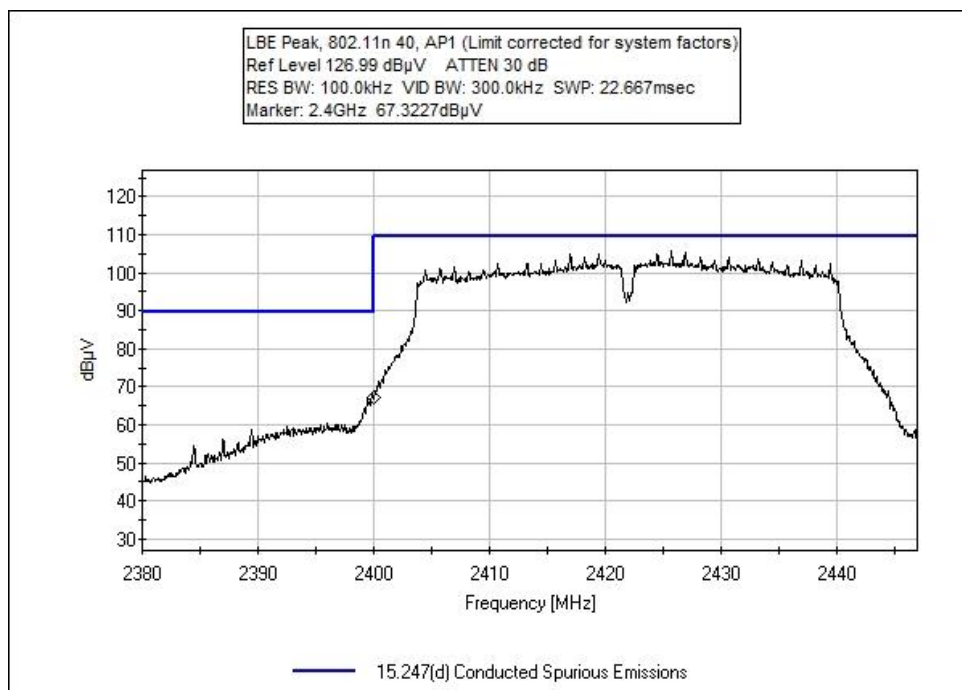
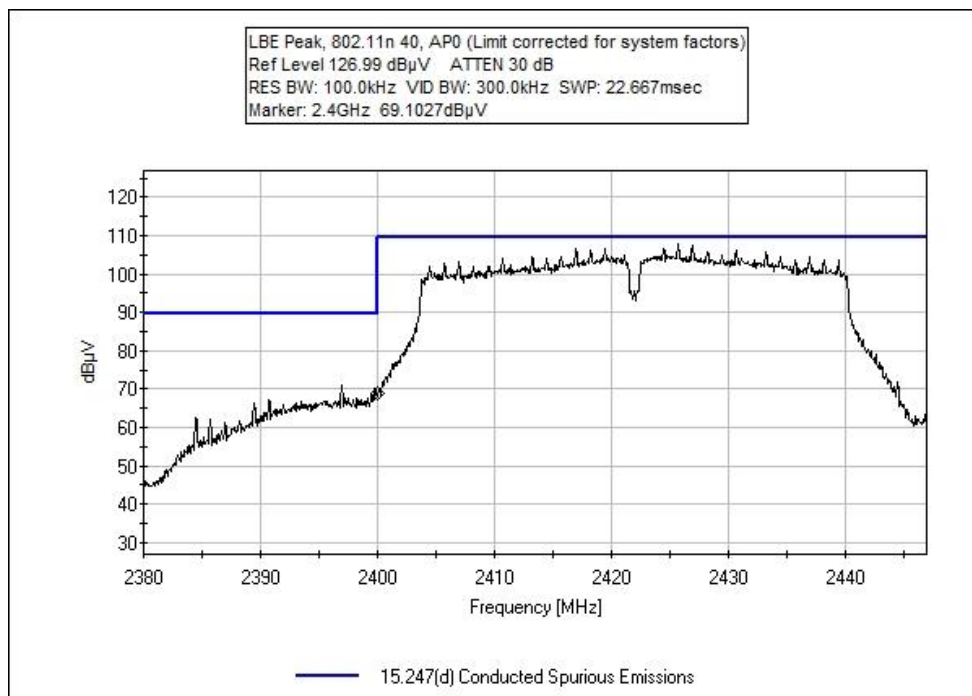


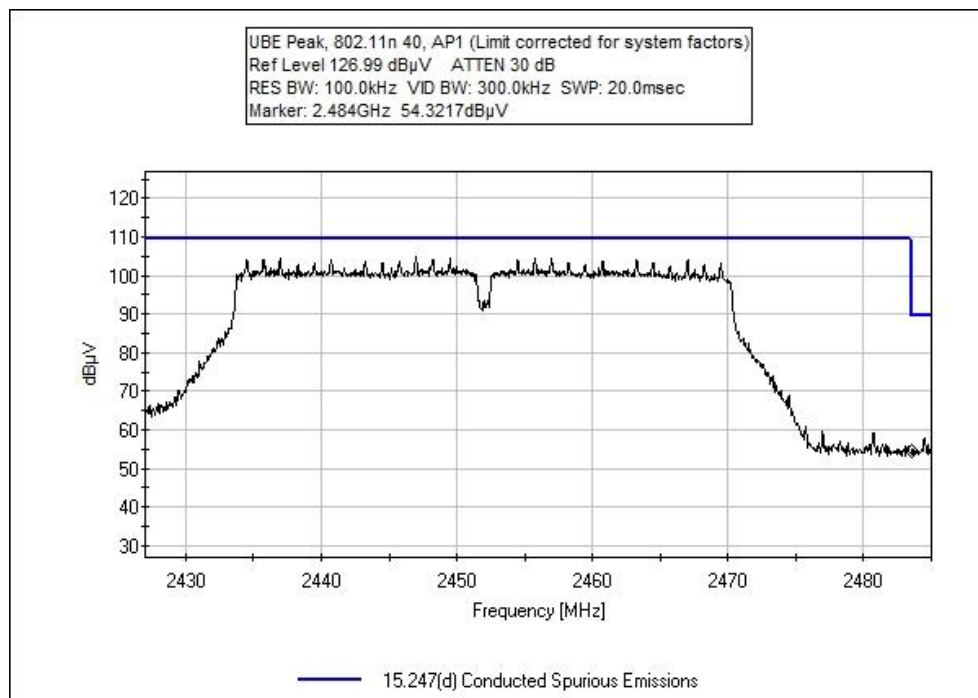
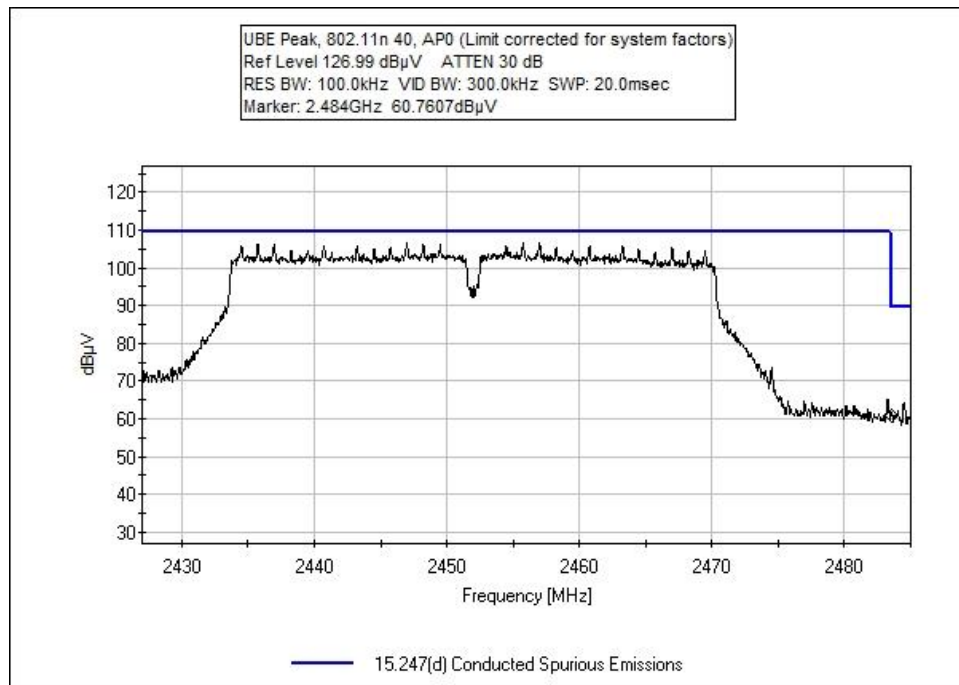
802.11n20 Band Edge Plots





802.11n40 Band Edge Plots





Test Setup / Conditions / Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 4/3/2020
 Test Type: **Conducted Emissions** Time: 09:37:07
 Tested By: Matthew Harrison Sequence#: 112
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 2.4-2483.5GHz Frequency tested: 2412, 2462 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11b , 1mbps (worst-case) Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Lead: Antenna Port 0

#	Freq MHz	Rdng dB μ V					Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	2400.000M	69.6					+0.0	69.6	96.0	-26.4	Anten
2	2400.000M	63.6					+0.0	63.6	96.0	-32.4	Anten
3	2483.500M	51.1					+0.0	51.1	96.0	-44.9	Anten
4	2483.500M	49.2					+0.0	49.2	96.0	-46.8	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 4/3/2020
 Test Type: **Conducted Emissions** Time: 10:10:52
 Tested By: Matthew Harrison Sequence#: 113
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412, 2462 Firmware power setting: 13 dBm for Low Channel, 15 for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11g , 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.
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Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2400.000M	82.7	+0.0				+0.0	82.7	93.2	-10.5	Anten
2	2400.000M	79.8	+0.0				+0.0	79.8	93.2	-13.4	Anten
3	2483.500M	61.9	+0.0				+0.0	61.9	93.2	-31.3	Anten
4	2483.500M	55.5	+0.0				+0.0	55.5	93.2	-37.7	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 4/3/2020
 Test Type: **Conducted Emissions** Time: 10:51:11
 Tested By: Matthew Harrison Sequence#: 114
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412, 2462 Firmware power setting: 12 dBm for Low Channel, 14 dBm for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11n , 20MHz BW, MCS8 (worst-case) KDB662911 (E)(3)(b) When testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding. Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 0

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2400.000M	82.2					+0.0	82.2	93.2	-11.0	Anten
2	2400.000M	79.9					+0.0	79.9	93.2	-13.3	Anten
3	2483.500M	62.8					+0.0	62.8	93.2	-30.4	Anten
4	2483.500M	55.5					+0.0	55.5	93.2	-37.7	Anten

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) Conducted Spurious Emissions**
 Work Order #: **102802** Date: 4/3/2020
 Test Type: **Conducted Emissions** Time: 11:20:41
 Tested By: Matthew Harrison Sequence#: 115
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2422, 2452 Firmware power setting: 11 dBm for Low Channel, 12 dBm for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) KDB662911 (E)(3)(b) When testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding. Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup for conducted measurements. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

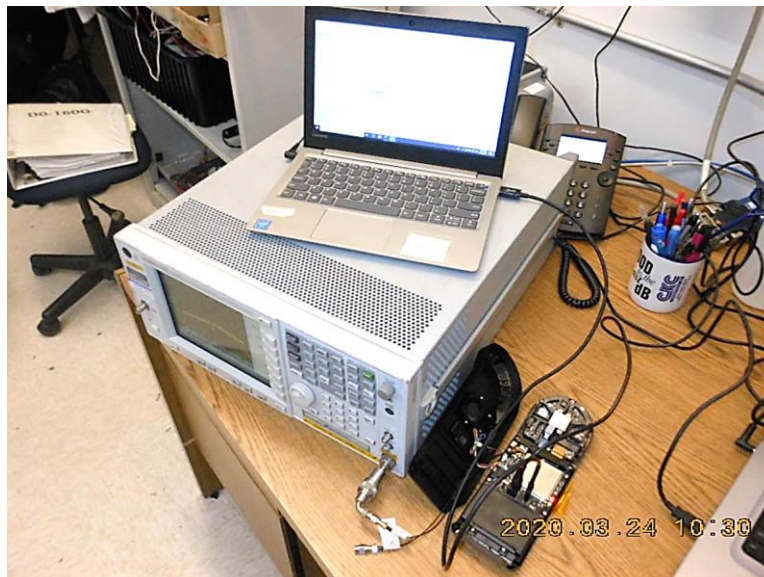
Measurement Data:

Reading listed by margin.

Test Lead: Antenna Port 1

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2400.000M	69.1	+0.0				+0.0	69.1	89.7	-20.6	Anten
2	2400.000M	67.3	+0.0				+0.0	67.3	89.7	-22.4	Anten
3	2483.500M	60.8	+0.0				+0.0	60.8	89.7	-28.9	Anten
4	2483.500M	54.3	+0.0				+0.0	54.3	89.7	-35.4	Anten

Test Setup Photo(s)



15.247(d) Radiated Emissions & Band Edge

Test Setup / Conditions / Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 15:10:06
 Tested By: Matthew Harrison Sequence#: 5
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

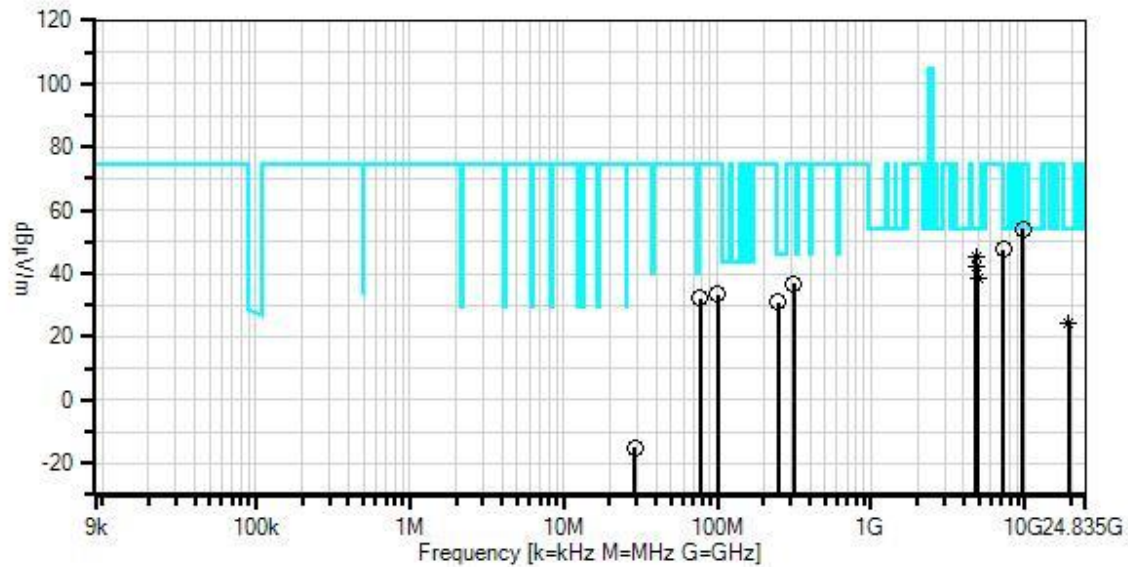
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz-25 GHz Frequency tested: 2412, 2437, 2462 MHz Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11b, 1mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a styrofoam table. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. Low, Mid, and High channels along with all data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 5 Date: 4/2/2020
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Perp



— Readings
× QP Readings
▼ Ambient
○ Peak Readings
* Average Readings
Software Version: 5.03.12

1 - 15.247(d) / 15.209 Radiated Spurious Emissions

Test Equipment:

ID	Asset #	Description	Model	Cal Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T4	AN03540	Preamp	83017A	5/13/2019	5/13/2021
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/17/2019	1/17/2021
T6	AN03116	High Pass Filter	11SH10-00313	1/22/2019	1/22/2021
T7	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	10/16/2018	10/16/2020
T8	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T9	ANP06678	Cable	32026-29801-29801-144	2/20/2020	2/20/2022
T10	ANP07211	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
T11	ANP07212	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
T12	AN02307	Preamp	8447D	1/10/2020	1/10/2022
T13	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T14	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T15	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T16	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T17	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14	T15	T16					
			T17								
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	4823.820M	40.3	+32.4	+4.1	+0.9	-33.6	+0.0	45.2	54.0	-8.8	Horiz
	Ave		+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	4823.820M	46.6	+32.4	+4.1	+0.9	-33.6	+0.0	51.5	54.0	-2.5	Horiz
			+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
3	4874.000M	37.3	+32.5	+4.2	+0.9	-33.6	+0.0	42.4	54.0	-11.6	Horiz
	Ave		+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	4874.000M	43.8	+32.5	+4.2	+0.9	-33.6	+0.0	48.9	54.0	-5.1	Horiz
			+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								

5	250.100M	37.9	+0.0	+0.0	+0.2	+0.0	+0.0	30.9	46.0	-15.1	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.0					
			+12.2	+5.8	+0.8	+1.0					
			+0.0								
6	4924.000M	33.5	+32.6	+4.2	+0.9	-33.6	+0.0	38.6	54.0	-15.4	Horiz
	Ave		+0.5	+0.5	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	4924.000M	41.3	+32.6	+4.2	+0.9	-33.6	+0.0	46.4	54.0	-7.6	Horiz
			+0.5	+0.5	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
8	9648.280M	41.5	+37.6	+6.2	+1.3	-33.9	+0.0	54.1	74.6	-20.5	Horiz
			+0.5	+0.9	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
9	7236.000M	37.8	+36.6	+5.3	+1.1	-34.5	+0.0	47.5	74.6	-27.1	Horiz
			+0.5	+0.7	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
10	19296.000	25.0	+0.0	+0.0	+0.0	+0.0	+0.0	24.6	54.0	-29.4	Horiz
	M		+0.0	+0.0	-13.0	+1.8					
	Ave		+8.9	+0.9	+1.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	19296.000	38.4	+0.0	+0.0	+0.0	+0.0	+0.0	38.0	54.0	-16.0	Horiz
	M		+0.0	+0.0	-13.0	+1.8					
			+8.9	+0.9	+1.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
12	315.700M	41.9	+0.0	+0.0	+0.2	+0.0	+0.0	36.7	74.6	-37.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.1					
			+13.9	+5.8	+0.9	+1.1					
			+0.0								
13	100.500M	46.0	+0.0	+0.0	+0.1	+0.0	+0.0	33.4	74.6	-41.2	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.7					
			+8.1	+5.8	+0.5	+0.6					
			+0.0								
14	77.300M	46.4	+0.0	+0.0	+0.1	+0.0	+0.0	32.3	74.6	-42.3	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.8					
			+6.9	+5.8	+0.4	+0.5					
			+0.0								

15	29.075M	18.6	+0.0	+0.3	+0.1	+0.0	-40.0	-15.2	74.6	-89.8	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+5.8								
16	75.130k	39.6	+0.0	+0.0	+0.0	+0.0	-80.0	-30.7	74.6	-105.3	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+9.7								

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 15:17:52
 Tested By: Matthew Harrison Sequence#: 6
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

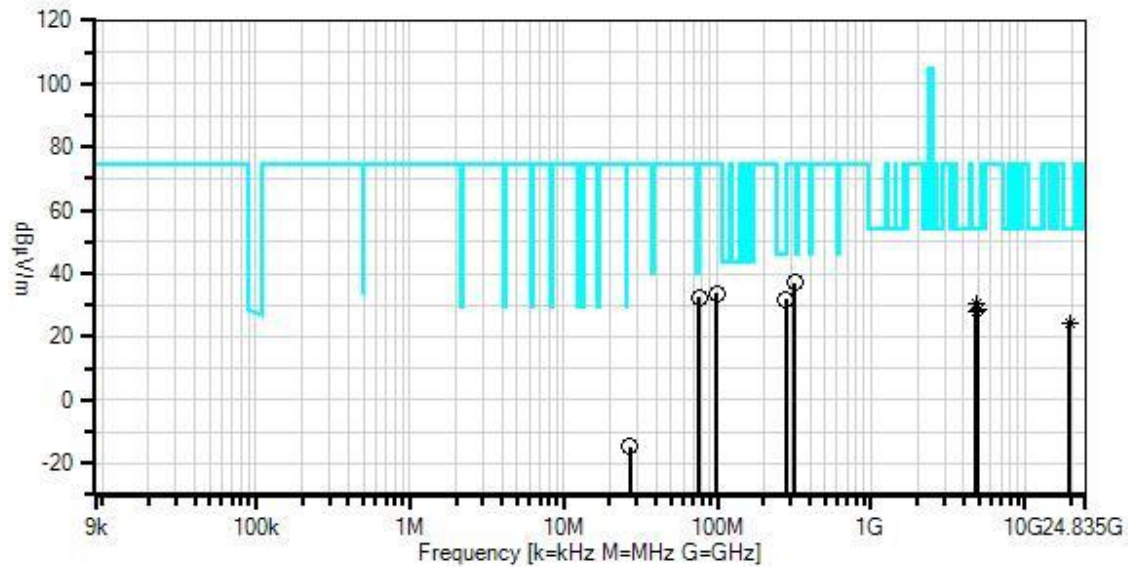
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412, 2437, 2462 Firmware power setting: 13 dBm for Low Channel, 15 dBm for Mid and High Channels EUT Firmware: Protocol /MCS/Modulation: 802.11g, 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a styrofoam table. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. Low, Mid, and High channels along with all data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 6 Date: 4/2/2020
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Perp



— Readings
× QP Readings
▼ Ambient
○ Peak Readings
* Average Readings
1 - 15.247(d) / 15.209 Radiated Spurious Emissions
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Cal Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T4	AN03540	Preamp	83017A	5/13/2019	5/13/2021
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/17/2019	1/17/2021
T6	AN03116	High Pass Filter	11SH10-00313	1/22/2019	1/22/2021
T7	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	10/16/2018	10/16/2020
T8	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T9	ANP06678	Cable	32026-29801-29801-144	2/20/2020	2/20/2022
T10	ANP07211	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
T11	ANP07212	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
T12	AN02307	Preamp	8447D	1/10/2020	1/10/2022
T13	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T14	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T15	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T16	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T17	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14	T15	T16					
			T17								
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	277.100M	38.2	+0.0	+0.0	+0.2	+0.0	+0.0	31.7	46.0	-14.3	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.0					
			+12.7	+5.8	+0.8	+1.0					
			+0.0								
2	4824.000M	25.9	+32.4	+4.1	+0.9	-33.6	+0.0	30.8	54.0	-23.2	Horiz
	Ave		+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	4824.000M	41.4	+32.4	+4.1	+0.9	-33.6	+0.0	46.3	54.0	-7.7	Horiz
			+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								

4	4924.000M Ave	23.5	+32.6 +0.5 +0.0 +0.0 +0.0	+4.2 +0.5 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	28.6	54.0	-25.4	Horiz
^	4924.000M	39.7	+32.6 +0.5 +0.0 +0.0 +0.0	+4.2 +0.5 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	44.8	54.0	-9.2	Horiz
6	4874.000M Ave	23.1	+32.5 +0.5 +0.0 +0.0 +0.0	+4.2 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	28.2	54.0	-25.8	Horiz
^	4874.000M	37.5	+32.5 +0.5 +0.0 +0.0 +0.0	+4.2 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	42.6	54.0	-11.4	Horiz
8	19496.000 M Ave	24.4	+0.0 +0.0 +9.0 +0.0 +0.0	+0.0 +0.0 +1.0 +0.0 +0.0	+0.0 -12.9 +0.8 +0.0 +0.0	+0.0 +1.8 +0.0 +0.0 +0.0	+0.0	24.1	54.0	-29.9	Horiz
^	19496.000 M	36.5	+0.0 +0.0 +9.0 +0.0 +0.0	+0.0 +0.0 +1.0 +0.0 +0.0	+0.0 -12.9 +0.8 +0.0 +0.0	+0.0 +1.8 +0.0 +0.0 +0.0	+0.0	36.2	54.0	-17.8	Horiz
10	319.600M	42.2	+0.0 +0.0 +0.0 +14.1 +0.0	+0.0 +0.0 +0.0 +5.8 +0.0	+0.2 +0.0 +0.0 +0.9 +0.0	+0.0 +0.0 -27.1 +1.1 +0.0	+0.0	37.2	74.6	-37.4	Horiz
11	98.500M	46.4	+0.0 +0.0 +0.0 +8.0 +0.0	+0.0 +0.0 +0.0 +5.8 +0.0	+0.1 +0.0 +0.0 +0.5 +0.0	+0.0 +0.0 -27.7 +0.6 +0.0	+0.0	33.7	74.6	-40.9	Vert

12	76.400M	46.7	+0.0	+0.0	+0.1	+0.0	+0.0	32.6	74.6	-42.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.8					
			+6.9	+5.8	+0.4	+0.5					
			+0.0								
13	27.015M	18.4	+0.0	+0.3	+0.1	+0.0	-40.0	-14.8	74.6	-89.4	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+6.4								
14	54.120k	39.2	+0.0	+0.0	+0.0	+0.0	-80.0	-30.8	74.6	-105.4	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+10.0								

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 15:24:41
 Tested By: Matthew Harrison Sequence#: 7
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

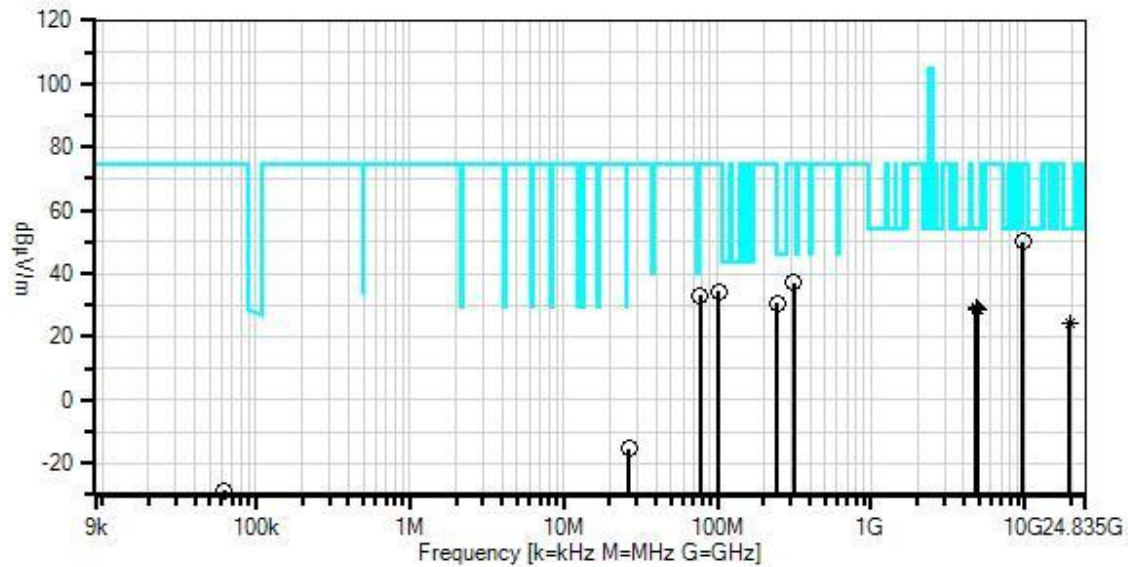
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2412, 2437, 2462 Firmware power setting: 12 dBm for Low Channel, 14 dBm for Mid and High Channels EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a styrofoam table. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. Low, Mid, and High channels along with all data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 7 Date: 4/2/2020
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Perp



— Readings
 × QP Readings
 ▼ Ambient
 ○ Peak Readings
 * Average Readings
 Software Version: 5.03.12

1 - 15.247(d) / 15.209 Radiated Spurious Emissions

Test Equipment:

ID	Asset #	Description	Model	Cal Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T4	AN03540	Preamp	83017A	5/13/2019	5/13/2021
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/17/2019	1/17/2021
T6	AN03116	High Pass Filter	11SH10-00313	1/22/2019	1/22/2021
T7	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	10/16/2018	10/16/2020
T8	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T9	ANP06678	Cable	32026-29801-29801-144	2/20/2020	2/20/2022
T10	ANP07211	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
T11	ANP07212	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
T12	AN02307	Preamp	8447D	1/10/2020	1/10/2022
T13	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T14	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T15	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T16	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T17	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14	T15	T16					
			T17								
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	245.300M	38.1	+0.0	+0.0	+0.2	+0.0	+0.0	30.8	46.0	-15.2	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.1					
			+12.0	+5.8	+0.8	+1.0					
			+0.0								
2	9748.120M	37.7	+37.5	+6.3	+1.3	-33.9	+0.0	50.0	74.6	-24.6	Horiz
			+0.4	+0.7	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
3	4824.000M Ave	24.1	+32.4	+4.1	+0.9	-33.6	+0.0	29.0	54.0	-25.0	Horiz
			+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	4824.000M	39.3	+32.4	+4.1	+0.9	-33.6	+0.0	44.2	54.0	-9.8	Horiz
			+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								

5	4924.000M Ave	23.5	+32.6 +0.5 +0.0 +0.0 +0.0	+4.2 +0.5 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	28.6	54.0	-25.4	Horiz
^	4924.000M	39.2	+32.6 +0.5 +0.0 +0.0 +0.0	+4.2 +0.5 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	44.3	54.0	-9.7	Horiz
7	4874.000M Ave	23.4	+32.5 +0.5 +0.0 +0.0 +0.0	+4.2 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	28.5	54.0	-25.5	Horiz
^	4874.000M	38.5	+32.5 +0.5 +0.0 +0.0 +0.0	+4.2 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	43.6	54.0	-10.4	Horiz
9	19496.000 M Ave	24.3	+0.0 +0.0 +9.0 +0.0 +0.0	+0.0 +0.0 +1.0 +0.0 +0.0	+0.0 -12.9 +0.8 +0.0 +0.0	+0.0 +1.8 +0.0 +0.0 +0.0	+0.0	24.0	54.0	-30.0	Horiz
^	19496.000 M	36.1	+0.0 +0.0 +9.0 +0.0 +0.0	+0.0 +0.0 +1.0 +0.0 +0.0	+0.0 -12.9 +0.8 +0.0 +0.0	+0.0 +1.8 +0.0 +0.0 +0.0	+0.0	35.8	54.0	-18.2	Horiz
11	314.700M	42.5	+0.0 +0.0 +0.0 +13.8 +0.0	+0.0 +0.0 +0.0 +5.8 +0.0	+0.2 +0.0 +0.0 +0.9 +0.0	+0.0 +0.0 -27.1 +1.1 +0.0	+0.0	37.2	74.6	-37.4	Horiz
12	101.400M	47.0	+0.0 +0.0 +0.0 +8.1 +0.0	+0.0 +0.0 +0.0 +5.8 +0.0	+0.1 +0.0 +0.0 +0.5 +0.0	+0.0 +0.0 -27.7 +0.6 +0.0	+0.0	34.4	74.6	-40.2	Vert

13	77.300M	47.2	+0.0	+0.0	+0.1	+0.0	+0.0	33.1	74.6	-41.5	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	-27.8					
			+6.9	+5.8	+0.4	+0.5					
			+0.0								
14	26.627M	17.7	+0.0	+0.3	+0.1	+0.0	-40.0	-15.4	74.6	-90.0	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+6.5								
15	62.580k	41.7	+0.0	+0.0	+0.0	+0.0	-80.0	-28.6	74.6	-103.2	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+9.7								

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 15:29:31
 Tested By: Matthew Harrison Sequence#: 8
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

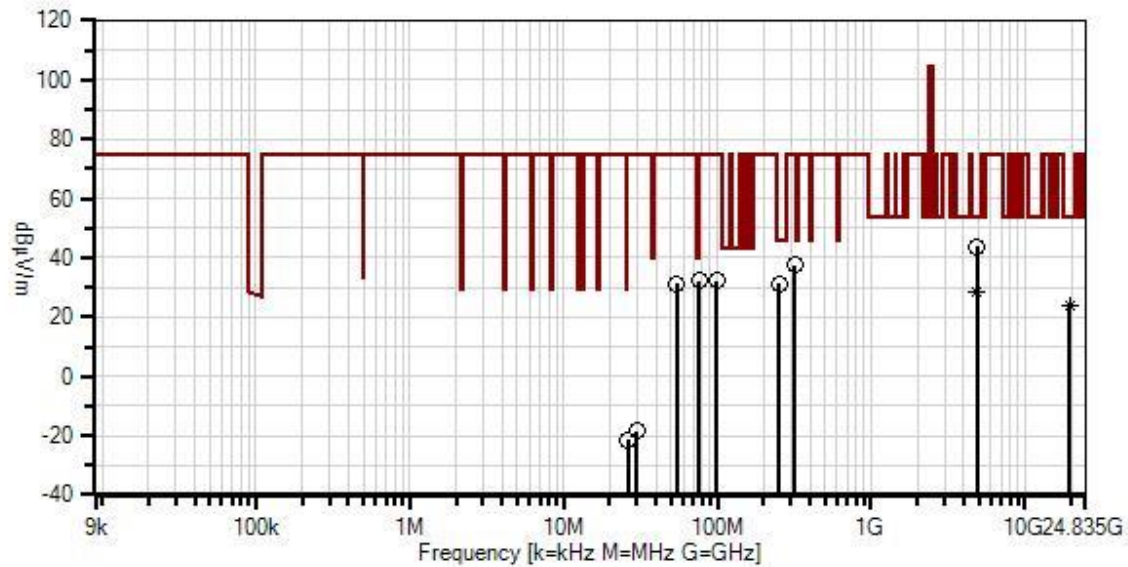
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz-25GHz Frequency tested: 2422, 2437, 2452 Firmware power setting: 11 dBm for Low Channel, 14dBm for Mid Channel, 12 dBm for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain : 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a styrofoam table. Modifications Added: None Setup: EUT is connected to a Laptop via USB and Audio cable. Low, Mid, and High channels along with all data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 8 Date: 4/2/2020
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Perp



— Readings
× QP Readings
▼ Ambient
— 1 - 15.247(d) / 15.209 Radiated Spurious Emissions
○ Peak Readings
* Average Readings
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Cal Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T4	AN03540	Preamp	83017A	5/13/2019	5/13/2021
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/17/2019	1/17/2021
T6	AN03116	High Pass Filter	11SH10-00313	1/22/2019	1/22/2021
T7	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	10/16/2018	10/16/2020
T8	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T9	ANP06678	Cable	32026-29801-29801-144	2/20/2020	2/20/2022
T10	ANP07211	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
T11	ANP07212	Cable	32026-29801-29801-18	8/7/2019	8/7/2021
T12	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
T13	AN02307	Preamp	8447D	1/10/2020	1/10/2022
T14	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T15	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T16	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T17	ANP05360	Cable	RG214	2/3/2020	2/3/2022
	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14	T15	T16					
			T17								
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	4851.850M	38.8	+32.4	+4.1	+0.9	-33.6	+0.0	43.7	54.0	-10.3	Horiz
			+0.5	+0.6	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
2	253.000M	38.2	+0.0	+0.0	+0.2	+0.0	+0.0	31.3	46.0	-14.7	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			-27.0	+12.3	+5.8	+0.8					
			+1.0								
3	4904.000M Ave	23.5	+32.5	+4.2	+0.9	-33.6	+0.0	28.5	54.0	-25.5	Horiz
			+0.5	+0.5	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	4904.000M	39.3	+32.5	+4.2	+0.9	-33.6	+0.0	44.3	54.0	-9.7	Horiz
			+0.5	+0.5	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								

5	4874.000M Ave	23.1	+32.5 +0.5 +0.0 +0.0 +0.0	+4.2 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	28.2	54.0	-25.8	Horiz
6	4844.000M Ave	23.3	+32.4 +0.5 +0.0 +0.0 +0.0	+4.1 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	28.2	54.0	-25.8	Horiz
^	4844.000M	38.6	+32.4 +0.5 +0.0 +0.0 +0.0	+4.1 +0.6 +0.0 +0.0 +0.0	+0.9 +0.0 +0.0 +0.0 +0.0	-33.6 +0.0 +0.0 +0.0 +0.0	+0.0	43.5	54.0	-10.5	Horiz
8	19496.000 M Ave	24.3	+0.0 +0.0 +9.0 +0.0 +0.0	+0.0 +0.0 +1.0 +0.0 +0.0	+0.0 -12.9 +0.8 +0.0 +0.0	+0.0 +1.8 +0.0 +0.0 +0.0	+0.0	24.0	54.0	-30.0	Horiz
^	19496.000 M	36.0	+0.0 +0.0 +9.0 +0.0 +0.0	+0.0 +0.0 +1.0 +0.0 +0.0	+0.0 -12.9 +0.8 +0.0 +0.0	+0.0 +1.8 +0.0 +0.0 +0.0	+0.0	35.7	54.0	-18.3	Horiz
10	318.600M	42.7	+0.0 +0.0 +0.0 -27.1 +1.1	+0.0 +0.0 +0.0 +14.0 +5.8	+0.2 +0.0 +0.0 +0.9 +0.9	+0.0 +0.0 +0.0 +0.0 +0.0	+0.0	37.6	74.6	-37.0	Horiz
11	98.500M	45.1	+0.0 +0.0 +0.0 -27.7 +0.6	+0.0 +0.0 +0.0 +8.0 +5.8	+0.1 +0.0 +0.0 +0.5 +0.5	+0.0 +0.0 +0.0 +0.0 +0.0	+0.0	32.4	74.6	-42.2	Vert
12	76.400M	46.3	+0.0 +0.0 +0.0 -27.8 +0.5	+0.0 +0.0 +0.0 +6.9 +5.8	+0.1 +0.0 +0.0 +0.4 +0.4	+0.0 +0.0 +0.0 +0.0 +0.0	+0.0	32.2	74.6	-42.4	Vert
13	54.200M	44.8	+0.0 +0.0 +0.0 -27.9 +0.4	+0.0 +0.0 +0.0 +7.5 +5.8	+0.1 +0.0 +0.0 +0.4 +0.4	+0.0 +0.0 +0.0 +0.0 +0.0	+0.0	31.1	74.6	-43.5	Vert
14	29.881M	21.2	+0.0 +0.0 +0.0 +0.0 +0.0	+0.3 +0.0 +0.0 +0.0 +0.0	+0.1 +0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0 +0.0	-40.0	-18.4	74.6	-93.0	Perp

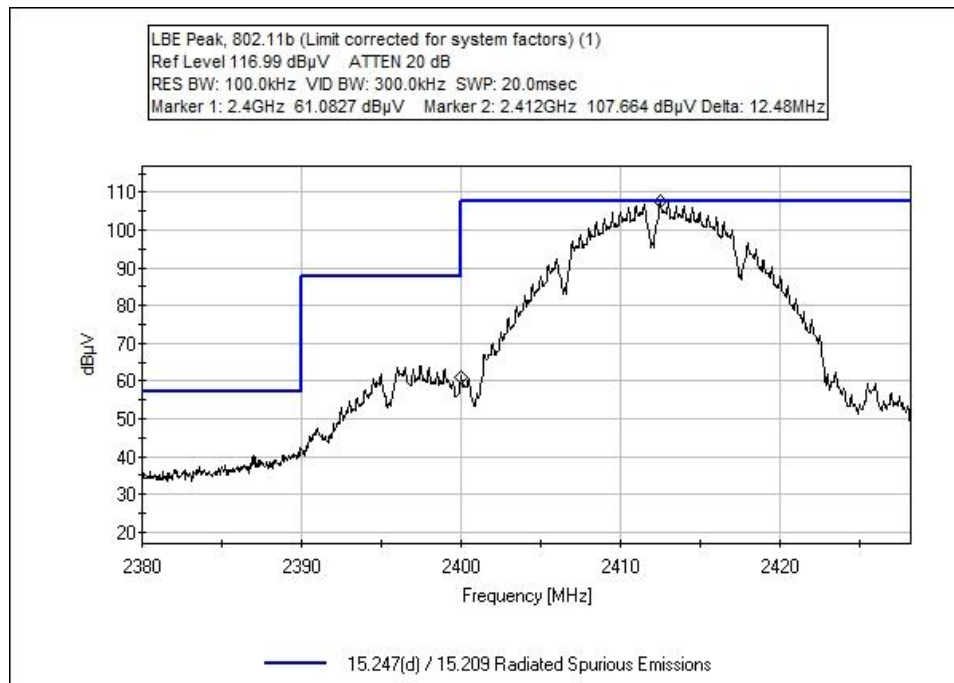
15	26.209M	18.2	+0.0	+0.3	+0.1	+0.0	-40.0	-21.4	74.6	-96.0	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
16	62.580k	39.6	+0.0	+0.0	+0.0	+0.0	-80.0	-40.4	74.6	-115.0	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0								

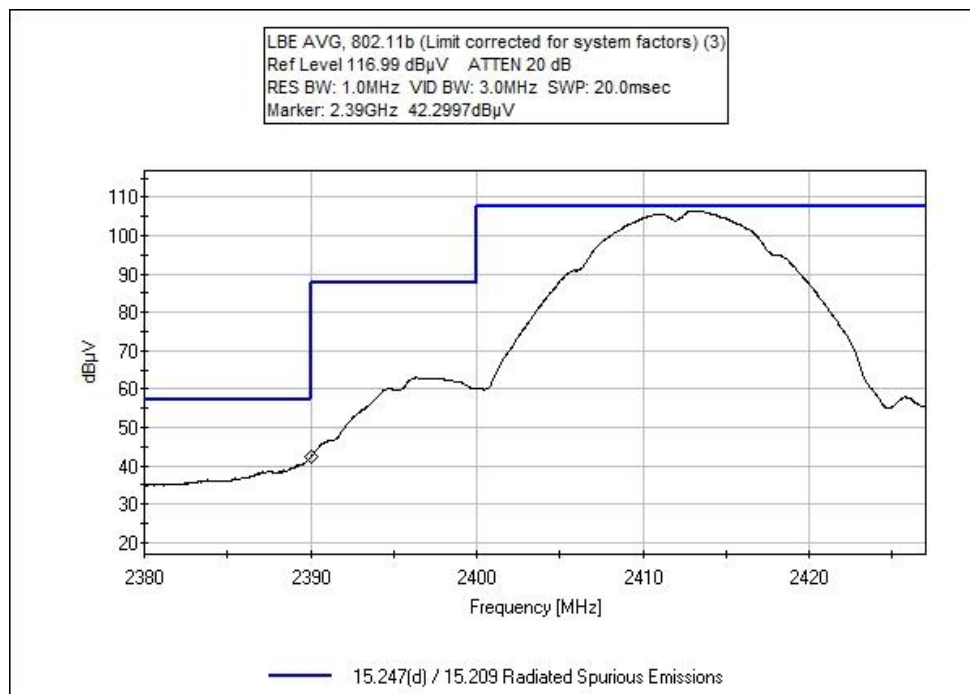
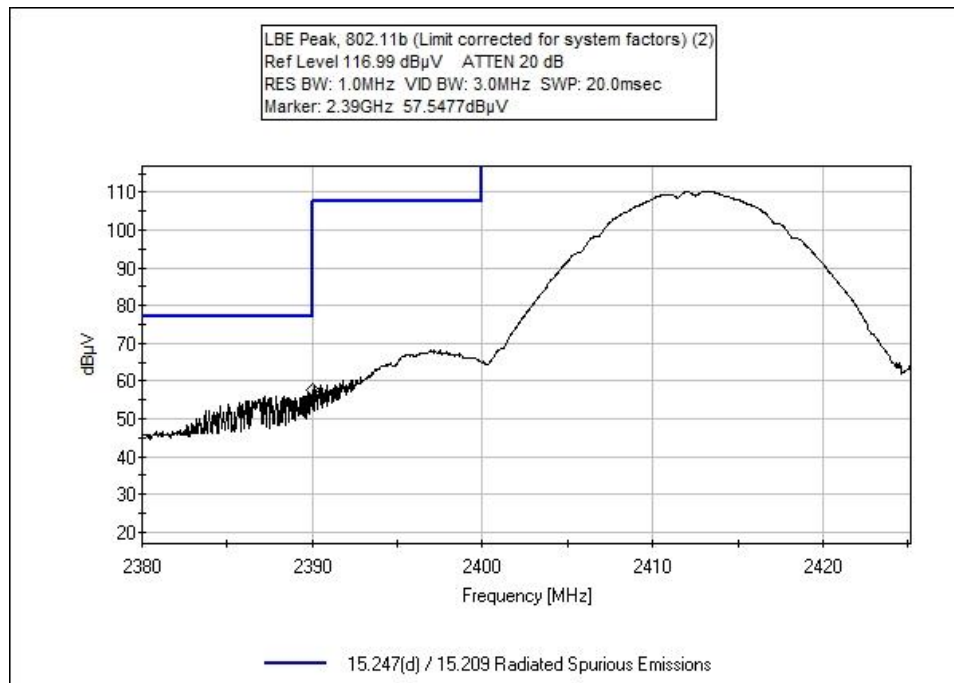
Band Edge

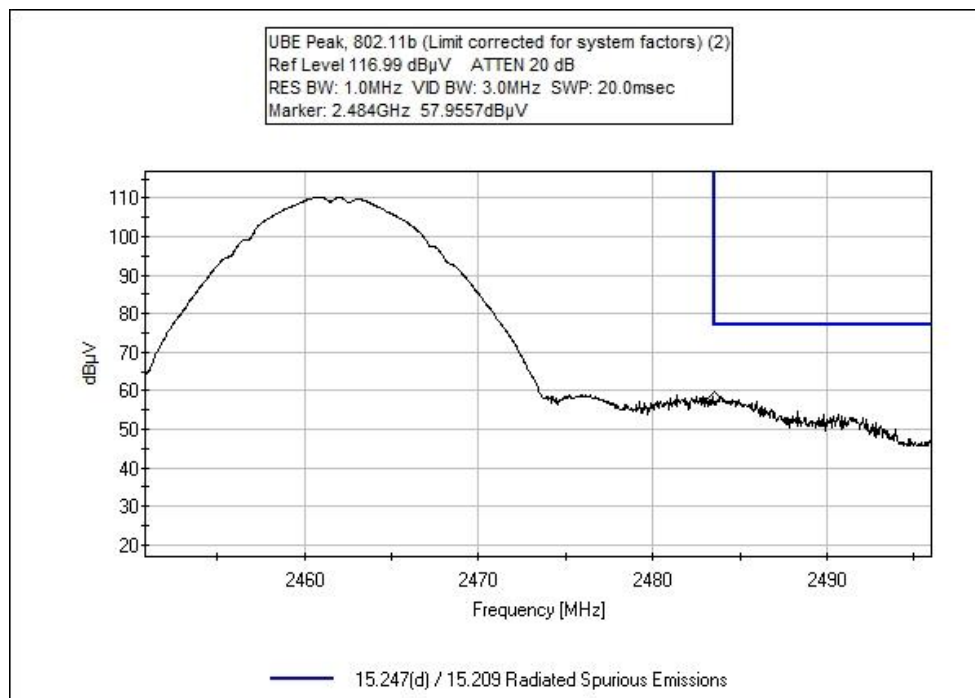
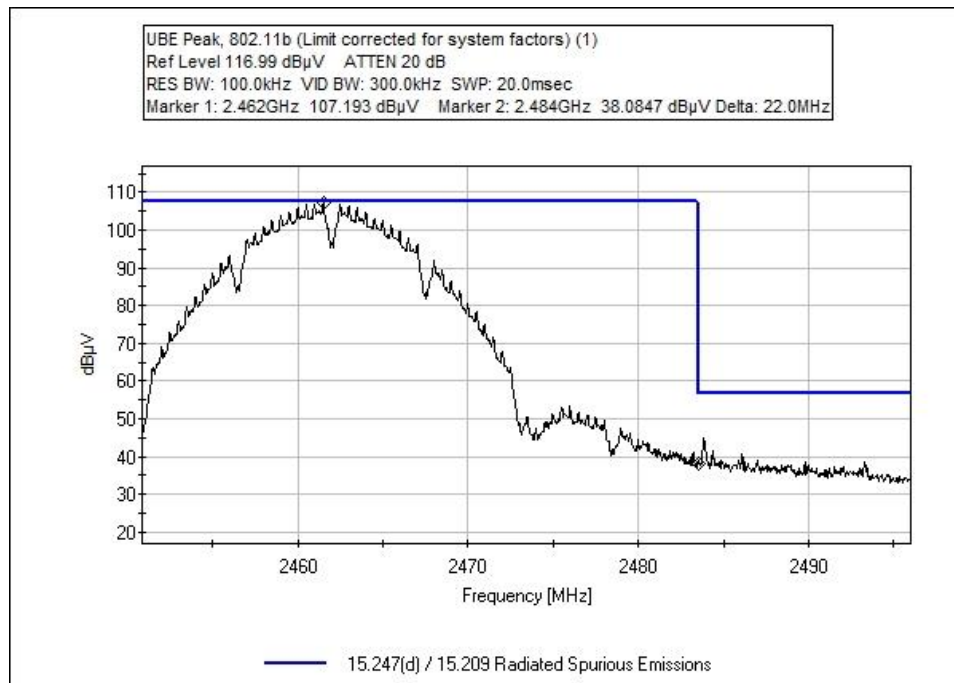
Band Edge Summary

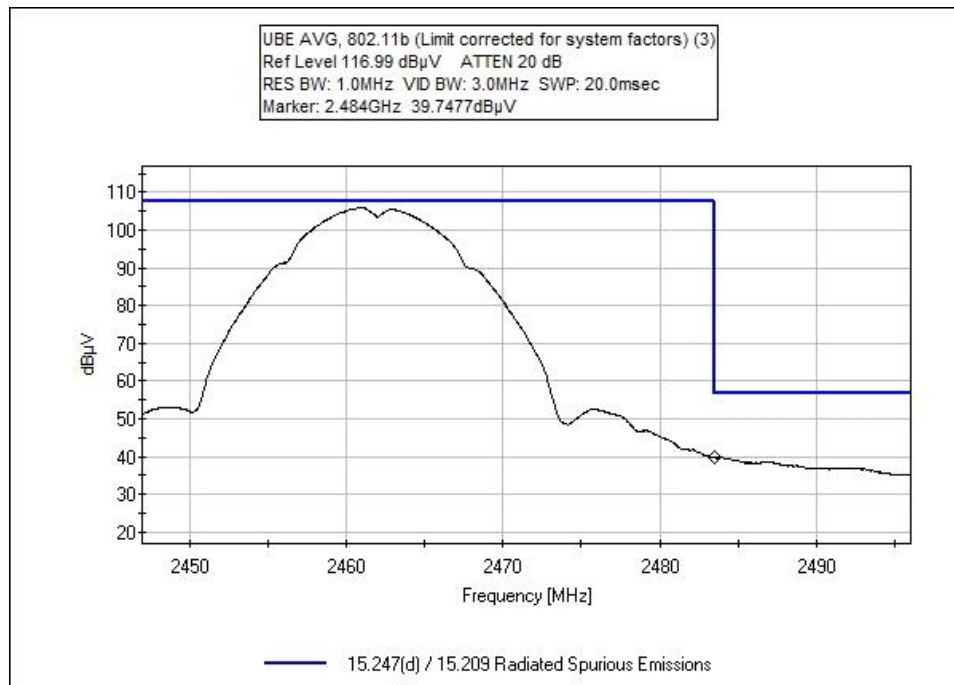
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results
2390.0	OOK	Linear Polarized	39.2	<54	Pass
2400.0	OOK	Linear Polarized	58	<84.6	Pass
2483.5	OOK	Linear Polarized	36.7	<54	Pass
2390.0	OFDM	Linear Polarized	50.2	<54	Pass
2400.0	OFDM	Linear Polarized	66.8	<82	Pass
2483.5	OFDM	Linear Polarized	48.2	<54	Pass
2390.0	MCS (20M)	Linear Polarized	49.2	<54	Pass
2400.0	MCS (20M)	Linear Polarized	70.6	<82.6	Pass
2483.5	MCS (20M)	Linear Polarized	48.9	<54	Pass
2390.0	MCS (40M)	Linear Polarized	49.7	<54	Pass
2400.0	MCS (40M)	Linear Polarized	66	<79.2	Pass
2483.5	MCS (40M)	Linear Polarized	49.4	<54	Pass

802.11b Band Edge Plots

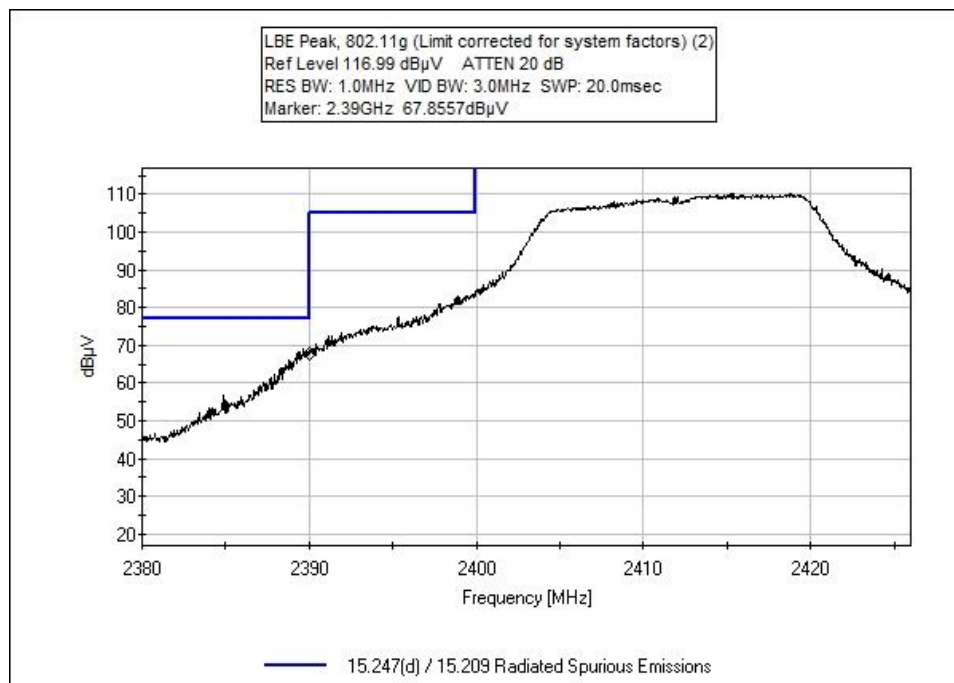
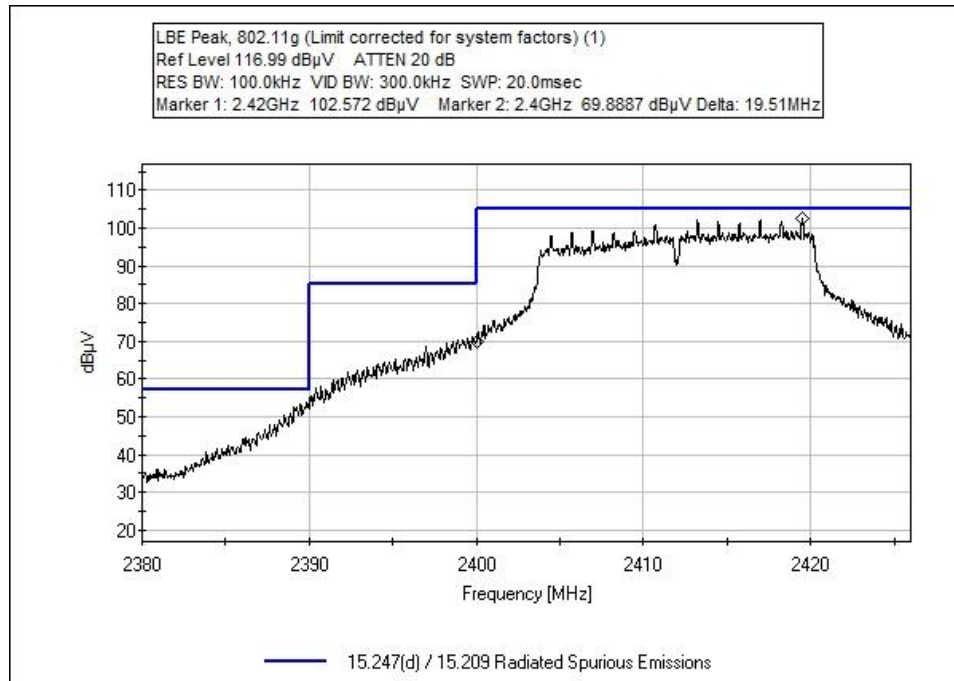


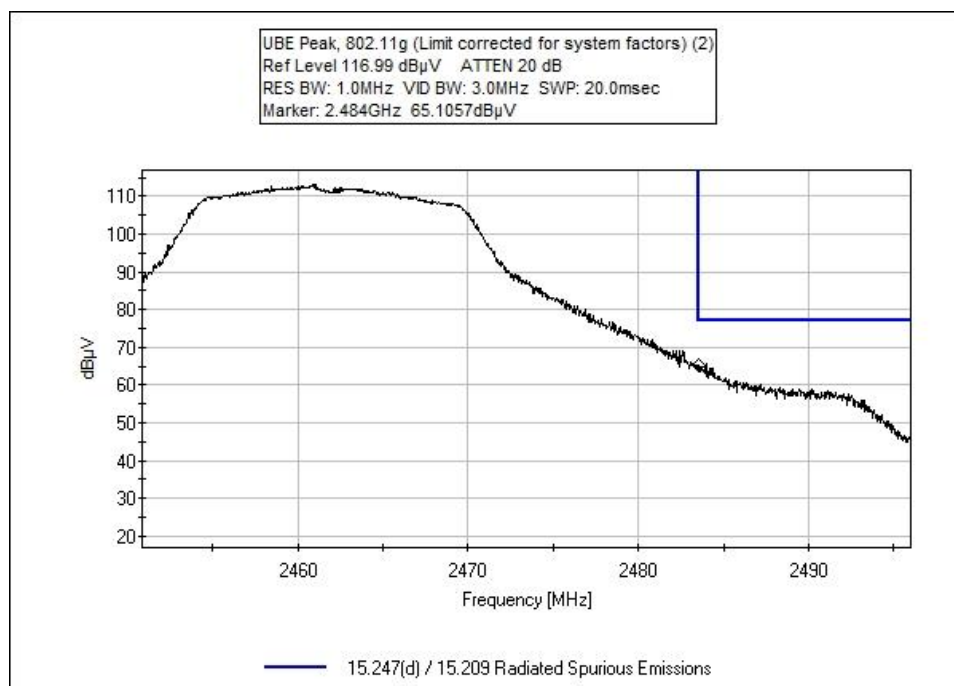
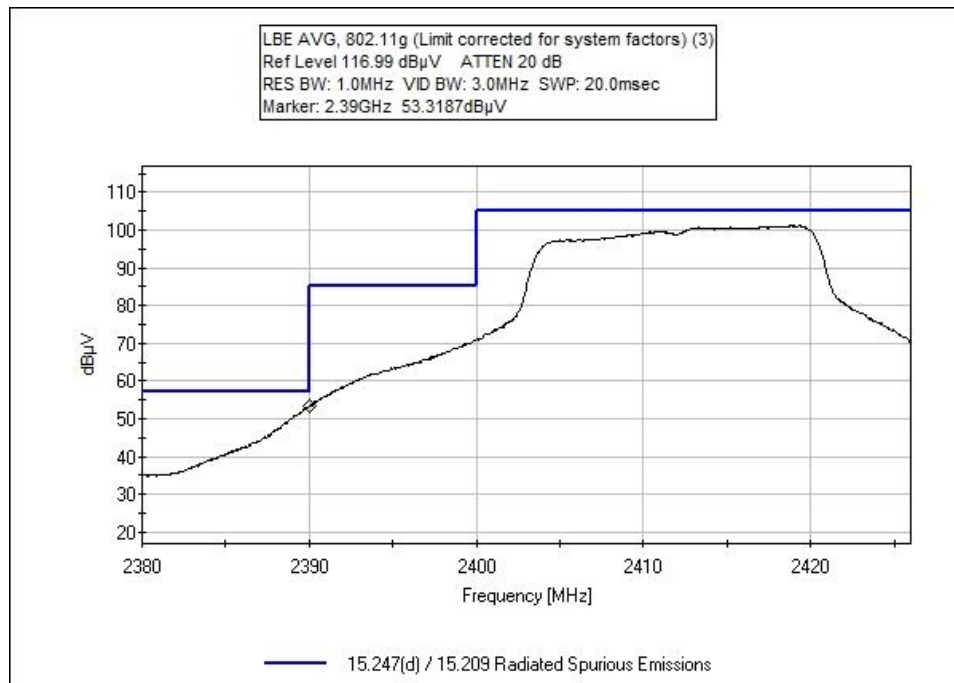


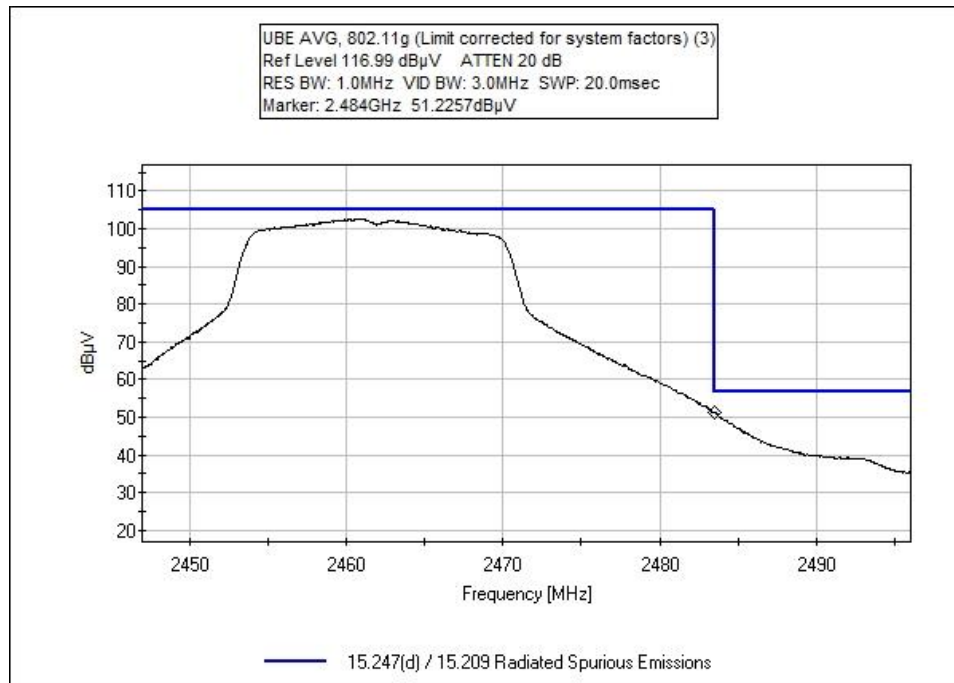




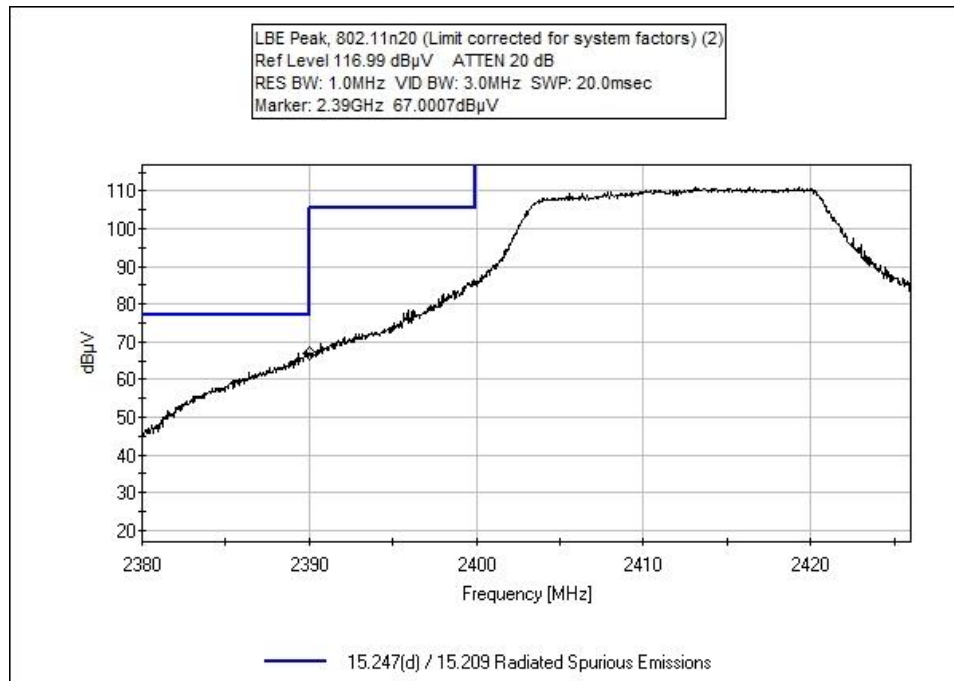
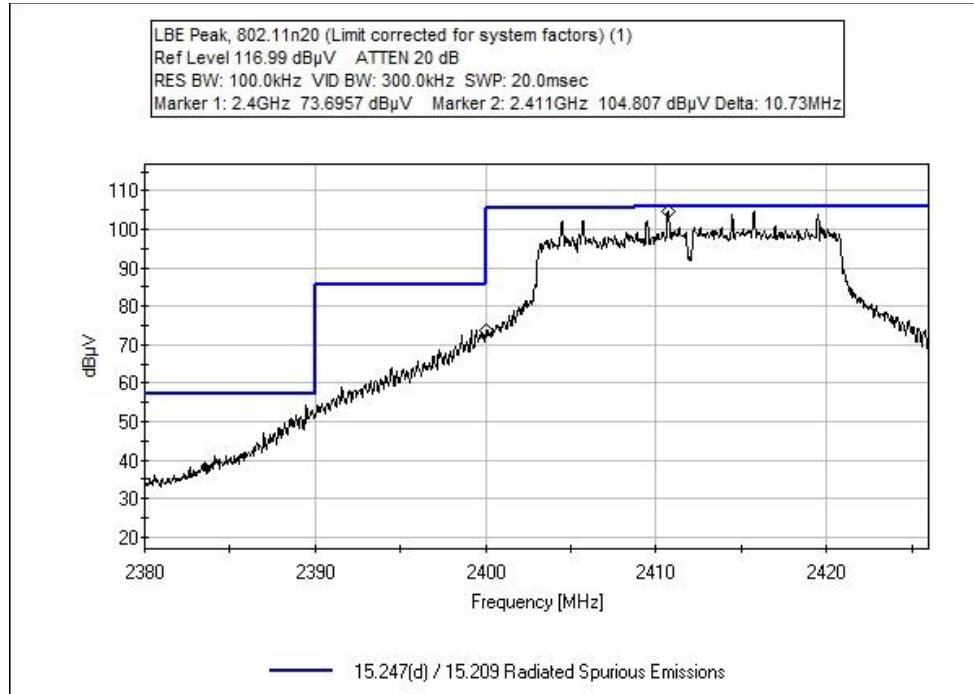
802.11g Band Edge Plots

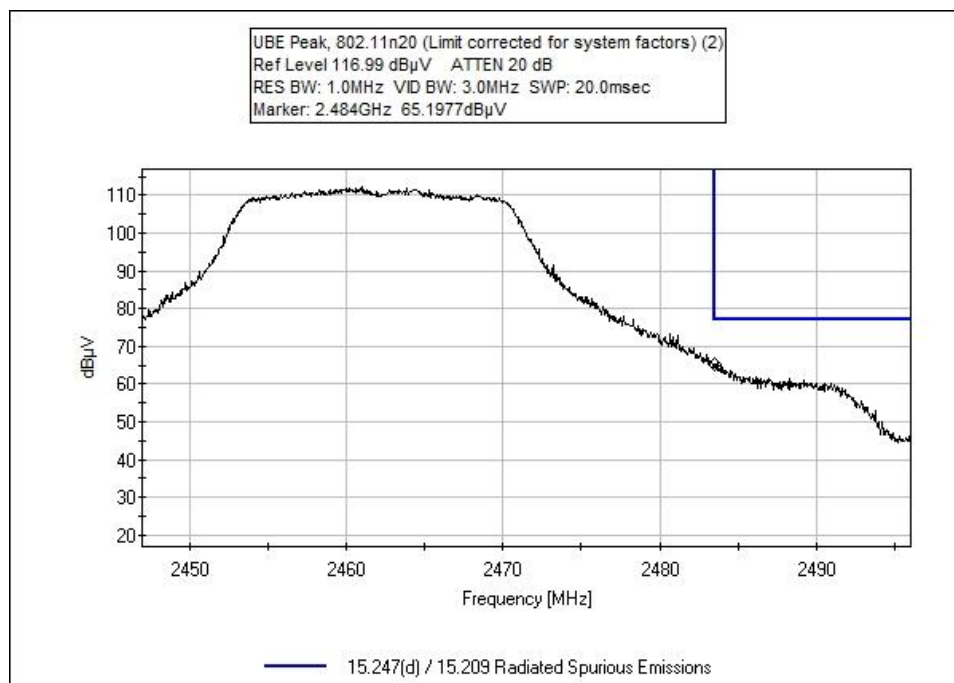
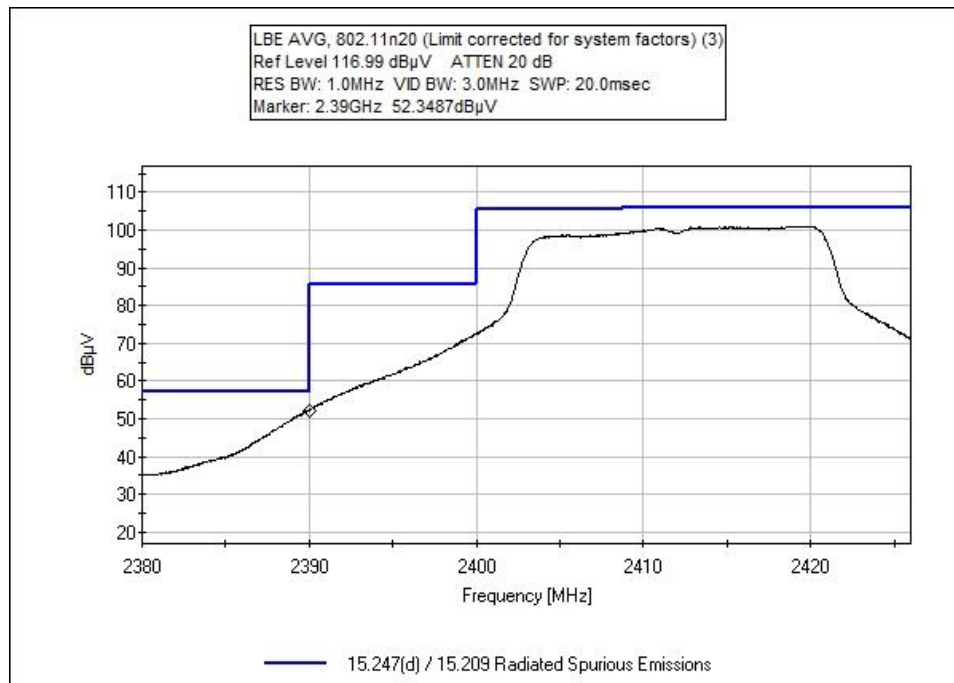


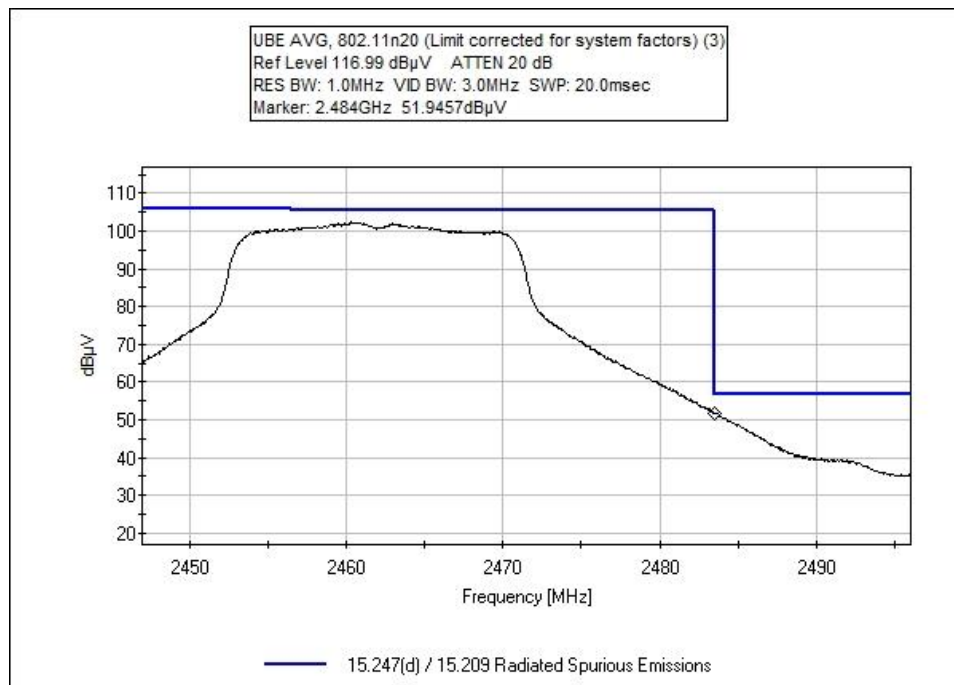




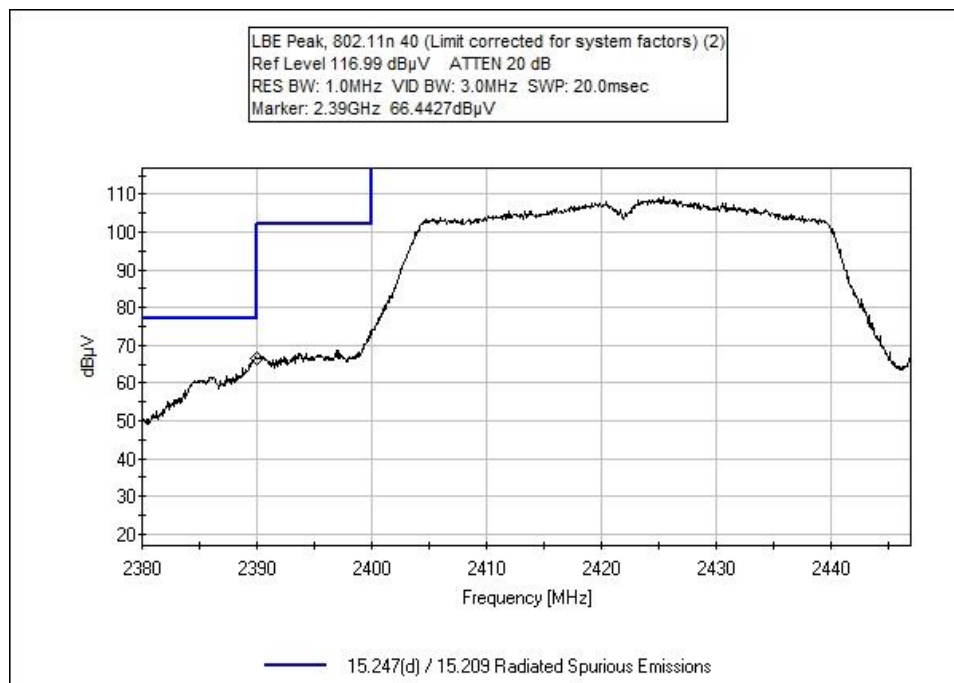
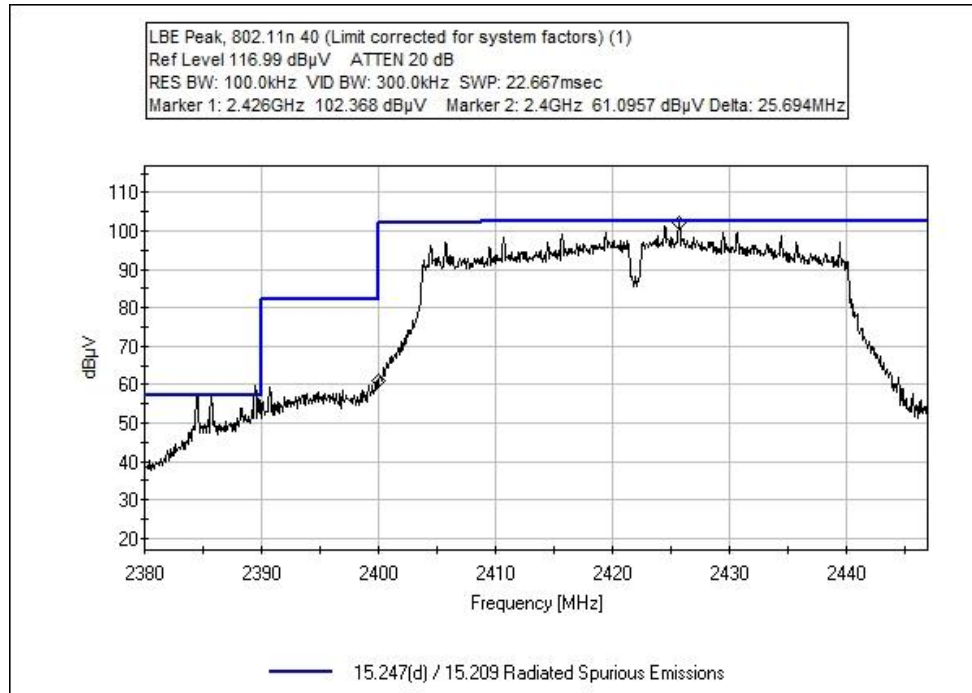
802.11n20 Band Edge Plots

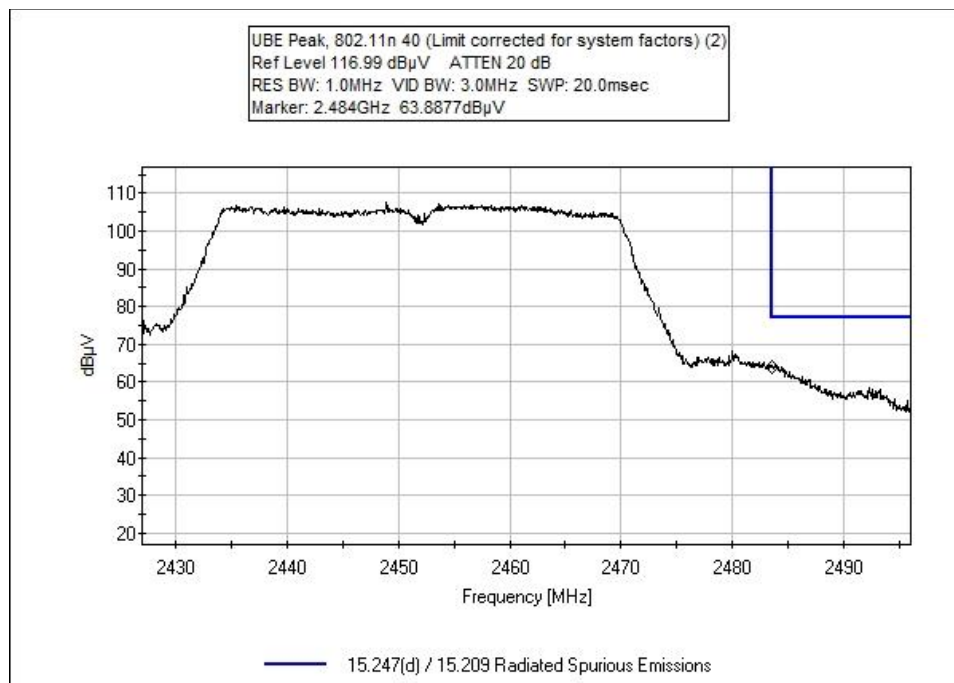
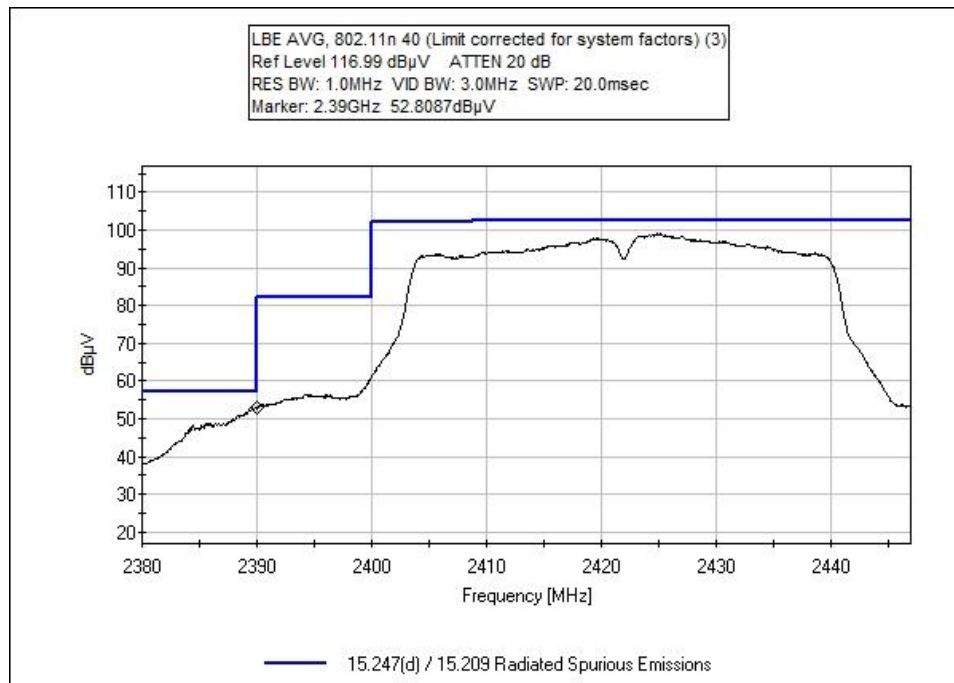


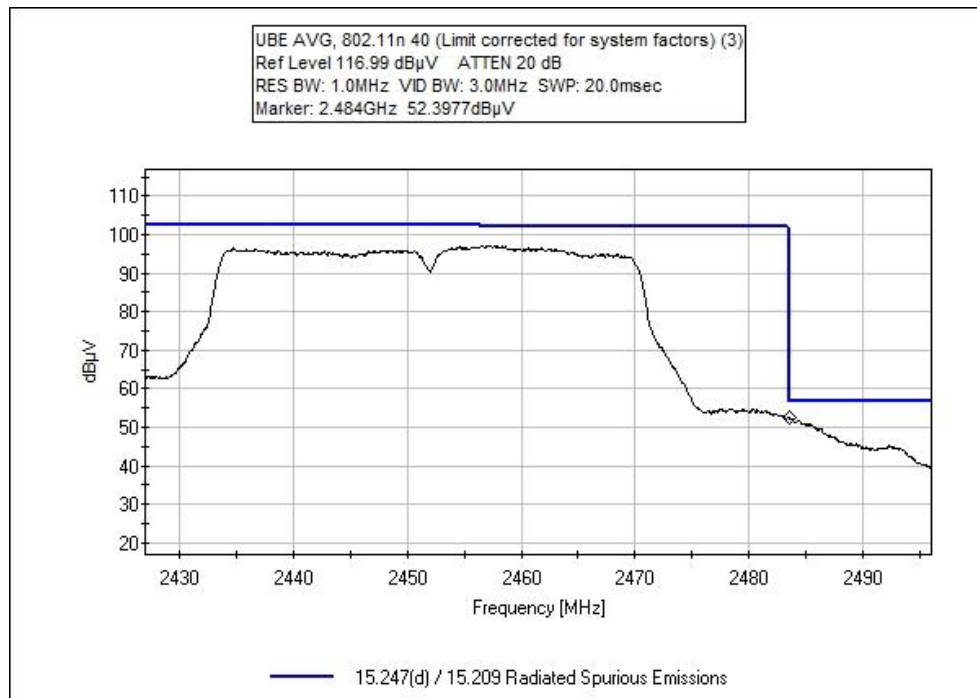




802.11n40 Band Edge Plots







Test Setup / Conditions / Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/18/2020
 Test Type: **Maximized Emissions** Time: 14:21:04
 Tested By: Matthew Harrison Sequence#: 1
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 2390-2483.5 MHz Frequency tested: 2412, 2462 Firmware power setting: 15 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11b , 1mbps (worst-case) Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a Styrofoam table. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided
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Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
T4	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T5	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
T6	ANP07504	Cable	CLU40-KMKM- 02.00F	1/17/2019	1/17/2021

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	2412.480M	107.7	+27.6 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	104.5	104.6	-0.1	Horiz 190
2	2461.500M	107.2	+27.6 -34.3	+2.7 +0.3	+0.6	+0.0	+0.0 350	104.1	104.6	-0.5	Horiz 210
3	2390.000M Ave	42.3	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	39.2	54.0 1MHz RBW	-14.8	Horiz
^	2390.000M	57.5	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	54.4	74.0 1MHz RBW	-19.6	Horiz
5	2483.500M Ave	39.7	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	36.7	54.0 1MHz RBW	-17.3	Horiz
^	2483.500M	58.0	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	55.0	74.0 1MHz RBW	-19.0	Horiz
7	2400.000M	61.1	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	58.0	84.6	-26.6	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/18/2020
 Test Type: **Maximized Emissions** Time: 14:13:07
 Tested By: Matthew Harrison Sequence#: 2
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 2390-2483.5 MHz Frequency tested: 2412, 2462 Firmware power setting: 13 dBm for Low Channel, 15 dBm for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11g , 6 mbps (worst-case) Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a Styrofoam table. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided
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Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
T4	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T5	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
T6	ANP07504	Cable	CLU40-KMKM- 02.00F	1/17/2019	1/17/2021

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	2460.730M	105.1	+27.6 -34.3	+2.7 +0.3	+0.6	+0.0	+0.0 350	102.0	102.0	+0.0	Horiz 210
2	2419.510M	102.6	+27.6 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	99.4	102.0	-2.6	Horiz
3	2390.000M Ave	53.3	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	50.2	54.0 1MHz RBW	-3.8	Horiz
^	2390.000M	67.9	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	64.8	74.0 1MHz RBW	-9.2	Horiz
5	2483.500M Ave	51.2	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	48.2	54.0 1MHz RBW	-5.8	Horiz
^	2483.500M	50.6	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	47.6	54.0	-6.4	Horiz
^	2483.500M	65.1	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	62.1	74.0 1MHz RBW	-11.9	Horiz
8	2400.000M	69.9	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	66.8	82.0	-15.2	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/18/2020
 Test Type: **Maximized Emissions** Time: 14:41:46
 Tested By: Matthew Harrison Sequence#: 3
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 2390-2483.5 MHz Frequency tested: 2412, 2462 Firmware power setting: 12 dBm for Low Channel, 14 dBm for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11n , 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a Styrofoam table. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided
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Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
T4	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T5	AN03540	Preamp	83017A	5/13/2019	5/13/2021
T6	ANP07504	Cable	CLU40-KMKM- 02.00F	1/17/2019	1/17/2021

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	2460.720M	105.7	+27.6 -34.3	+2.7 +0.3	+0.6	+0.0	+0.0 350	102.6	102.6	+0.0	Horiz 190
2	2410.730M	104.8	+27.6 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0 350	101.6	102.6	-1.0	Horiz 189
3	2390.000M Ave	52.3	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	49.2	54.0 1MHz RBW	-4.8	Horiz
^	2390.000M	67.0	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	63.9	74.0 1MHz RBW	-10.1	Horiz
5	2483.500M Ave	51.9	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	48.9	54.0 1MHz RBW	-5.1	Horiz
^	2483.500M	53.2	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	50.2	54.0	-3.8	Horiz
^	2483.500M	65.2	+27.6 -34.2	+2.7 +0.3	+0.6	+0.0	+0.0	62.2	74.0 1MHz RBW	-11.8	Horiz
8	2400.000M	73.7	+27.7 -34.3	+2.6 +0.3	+0.6	+0.0	+0.0	70.6	82.6	-12.0	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/18/2020
 Test Type: **Maximized Emissions** Time: 16:43:03
 Tested By: Matthew Harrison Sequence#: 4
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 2390-2483.5 MHz Frequency tested: 2422, 2452 Firmware power setting: 11 dBm for Low Channel, 12 dBm for High Channel EUT Firmware: Protocol /MCS/Modulation: 802.11n , 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 3.7 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 558074 (v05r02 APRIL 2, 2019) KDB 662911 (v02r01 October 31, 2013) Test Mode: Transmitting Test Setup: EUT is setup 1.5m high on a Styrofoam table. Setup: EUT is connected to a Laptop via USB and Audio cable. All data rates investigated, worst-case provided
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