

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
T9	AN02307	Preamplifier	8447D	1/10/2020	1/10/2022
T10	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T11	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T12	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T13	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T14	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	77.300M	46.3	+0.0 +0.0 -27.8 +0.5	+0.1 +0.0 +6.9 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.4	+0.0	32.2	40.0	-7.8	Vert
2	319.600M	41.7	+0.0 +0.0 -27.1 +1.1	+0.2 +0.0 +14.1 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.9	+0.0	36.7	46.0	-9.3	Horiz

3	10478.800 M	47.6	+6.2 +0.0 +0.0 +0.0	+1.4 +0.0 +0.0 +0.0	-11.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0	43.3	54.0	-10.7	Horiz
4	10440.210 M	47.6	+6.2 +0.0 +0.0 +0.0	+1.4 +0.0 +0.0 +0.0	-12.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0	43.2	54.0	-10.8	Horiz
5	98.500M	45.1	+0.0 +0.0 -27.7 +0.6	+0.1 +0.0 +8.0 +0.0	+0.0 +0.0 +5.8 +0.5	+0.0 +0.0 +0.5 +0.5	+0.0	32.4	43.5	-11.1	Vert
6	10361.230 M	47.0	+6.2 +0.0 +0.0 +0.0	+1.3 +0.0 +0.0 +0.0	-12.1 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0	42.4	54.0	-11.6	Horiz
7	118.800M	43.0	+0.0 +0.0 -27.6 +0.6	+0.1 +0.0 +8.0 +0.0	+0.0 +0.0 +5.8 +0.5	+0.0 +0.0 +0.5 +0.5	+0.0	30.4	43.5	-13.1	Vert
8	36.495k	43.8	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +10.6	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	-40.0	14.4	36.3	-21.9	Perp
9	20720.000 M Ave	29.5	+0.0 +1.9 +0.0 +0.0	+0.0 +9.2 +0.0 +0.0	+0.0 +0.9 +0.0 +0.0	-13.9 +1.2 +0.0 +0.0	+0.0	28.8	54.0	-25.2	Horiz
^	20720.000 M	45.0	+0.0 +1.9 +0.0 +0.0	+0.0 +9.2 +0.0 +0.0	+0.0 +0.9 +0.0 +0.0	-13.9 +1.2 +0.0 +0.0	+0.0	44.3	54.0	-9.7	Horiz
11	26.269M	17.2	+0.3 +0.0 +0.0 +0.0	+0.1 +0.0 +0.0 +6.6	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	-20.0	4.2	29.5	-25.3	Perp

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.209 Radiated Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:16:14
 Tested By: Matthew Harrison Sequence#: 31
 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: 9kHz-40GHz Frequency tested: 5190, 5230 MHz Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 40MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No Emissions found above 26GHz
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Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
T9	AN02307	Preamplifier	8447D	1/10/2020	1/10/2022
T10	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T11	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T12	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T13	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T14	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	76.400M	46.8	+0.0 +0.0 -27.8 +0.5	+0.1 +0.0 +6.9 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.4	+0.0	32.7	40.0	-7.3	Vert
2	318.600M	42.6	+0.0 +0.0 -27.1 +1.1	+0.2 +0.0 +14.0 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.9	+0.0	37.5	46.0	-8.5	Horiz

3	102.400M	46.4	+0.0	+0.1	+0.0	+0.0	+0.0	33.8	43.5	-9.7	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.7	+8.1	+5.8	+0.5					
			+0.6	+0.0							
4	118.800M	43.9	+0.0	+0.1	+0.0	+0.0	+0.0	31.3	43.5	-12.2	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.6	+8.0	+5.8	+0.5					
			+0.6	+0.0							
5	10462.150 M	43.9	+6.2	+1.4	-12.0	+0.0	+0.0	39.5	54.0	-14.5	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
6	10378.650 M	43.5	+6.2	+1.3	-12.1	+0.0	+0.0	38.9	54.0	-15.1	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
7	62.439k	41.4	+0.0	+0.0	+0.0	+0.0	-40.0	11.1	31.7	-20.6	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+9.7							
8	20760.000 M Ave	29.7	+0.0	+0.0	+0.0	-14.0	+0.0	29.1	54.0	-24.9	Horiz
			+2.0	+9.3	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	20760.000 M	45.2	+0.0	+0.0	+0.0	-14.0	+0.0	44.6	54.0	-9.4	Horiz
			+2.0	+9.3	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
10	26.239M	17.2	+0.3	+0.1	+0.0	+0.0	-20.0	4.2	29.5	-25.3	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+6.6							

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.209 Radiated Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:17:43
 Tested By: Matthew Harrison Sequence#: 32
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

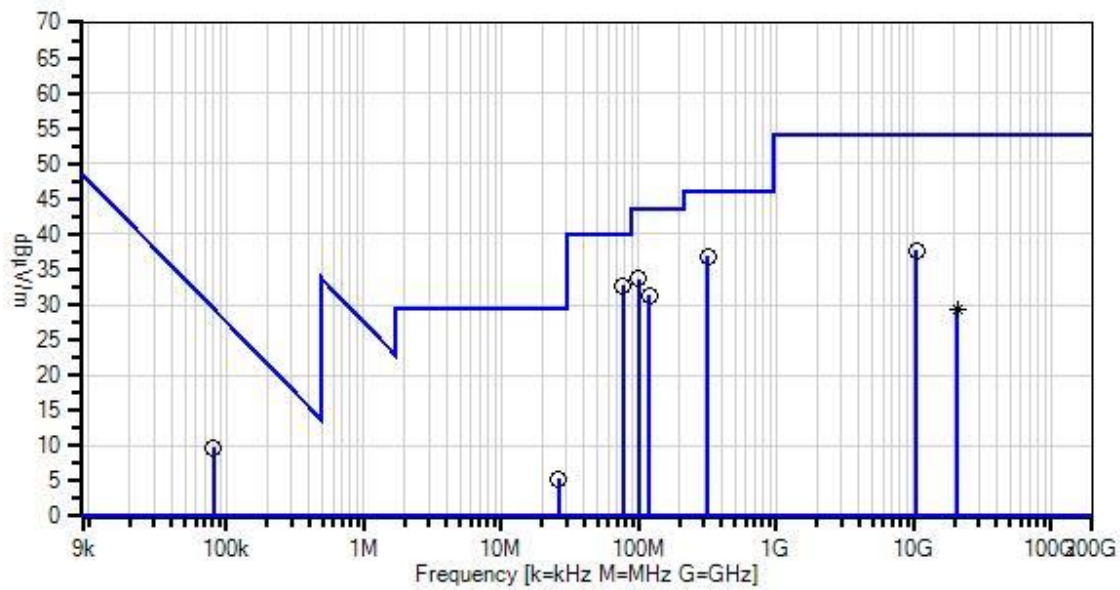
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz - 40GHz Frequency tested: 5210 MHz Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 80MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No Emissions found above 26GHz
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Nalloy, LLC. WO#: 102802 Sequence#: 32 Date: 4/2/2020
15.209 Radiated Emissions Test Distance: 3 Meters Perp



— Sweep Data
x QP Readings
Software Version: 5.03.12

— Readings
* Average Readings
— 1 - 15.209 Radiated Emissions

○ Peak Readings
▼ Ambient

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
T9	AN02307	Preamplifier	8447D	1/10/2020	1/10/2022
T10	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T11	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T12	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T13	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T14	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	77.300M	46.8	+0.0 +0.0 -27.8 +0.5	+0.1 +0.0 +6.9 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.4	+0.0	32.7	40.0	-7.3	Vert
2	318.600M	42.0	+0.0 +0.0 -27.1 +1.1	+0.2 +0.0 +14.0 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.9	+0.0	36.9	46.0	-9.1	Horiz

3	100.500M	46.2	+0.0	+0.1	+0.0	+0.0	+0.0	33.6	43.5	-9.9	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.7	+8.1	+5.8	+0.5					
			+0.6	+0.0							
4	118.800M	44.0	+0.0	+0.1	+0.0	+0.0	+0.0	31.4	43.5	-12.1	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.6	+8.0	+5.8	+0.5					
			+0.6	+0.0							
5	10429.900 M	42.2	+6.2	+1.3	-12.0	+0.0	+0.0	37.7	54.0	-16.3	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
6	80.346k	40.1	+0.0	+0.0	+0.0	+0.0	-40.0	9.8	29.5	-19.7	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+9.7							
7	26.120M	18.3	+0.3	+0.1	+0.0	+0.0	-20.0	5.4	29.5	-24.1	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+6.7							
8	20852.200 M Ave	30.0	+0.0	+0.0	+0.0	-14.1	+0.0	29.3	54.0	-24.7	Horiz
			+2.0	+9.3	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	20852.200 M	44.5	+0.0	+0.0	+0.0	-14.1	+0.0	43.8	54.0	-10.2	Horiz
			+2.0	+9.3	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.209 Radiated Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:05:56
 Tested By: Matthew Harrison Sequence#: 28
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

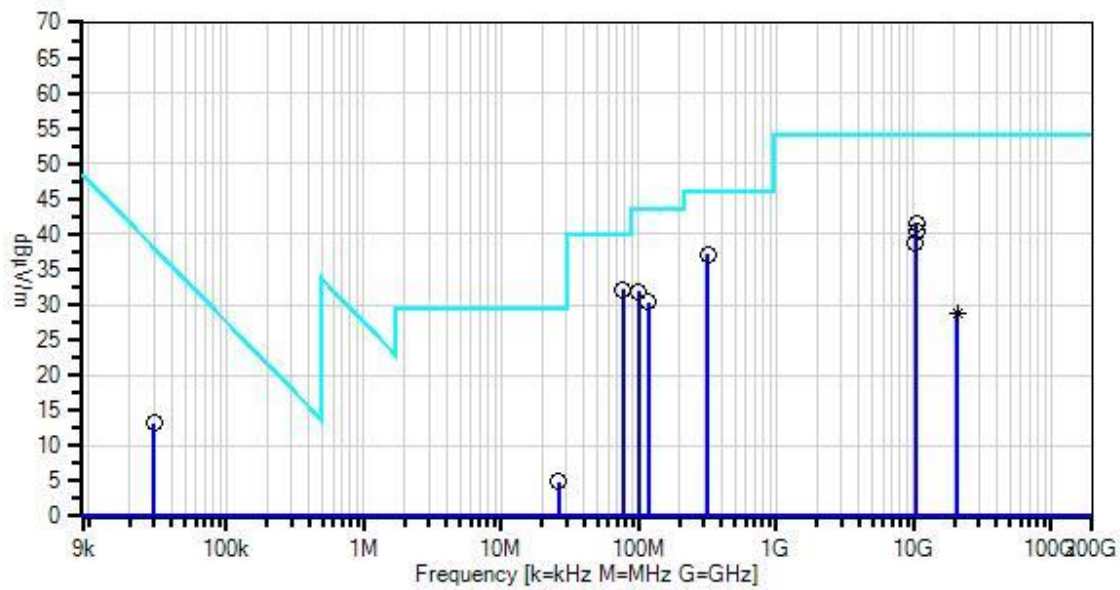
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz-40GHz Frequency tested: 5180, 5220, 5240 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No emissions found above 26GHz

Nalloy, LLC. WO#: 102802 Sequence#: 28 Date: 4/2/2020
15.209 Radiated Emissions Test Distance: 3 Meters Perp



— Sweep Data
x QP Readings
Software Version: 5.03.12

— Readings
* Average Readings
— 1 - 15.209 Radiated Emissions

○ Peak Readings
▼ Ambient

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	AN03540	Preamp	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
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	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
T9	AN02307	Preamp	8447D	1/10/2020	1/10/2022
T10	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T11	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
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T13	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T14	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

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2	317.600M	42.2	+0.0 +0.0 -27.1 +1.1	+0.2 +0.0 +14.0 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.9	+0.0	37.1	46.0	-8.9	Horiz

3	100.500M	44.5	+0.0	+0.1	+0.0	+0.0	+0.0	31.9	43.5	-11.6	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.7	+8.1	+5.8	+0.5					
			+0.6	+0.0							
4	10446.600 M	45.9	+6.2	+1.4	-12.0	+0.0	+0.0	41.5	54.0	-12.5	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
5	117.900M	43.0	+0.0	+0.1	+0.0	+0.0	+0.0	30.4	43.5	-13.1	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.6	+8.0	+5.8	+0.5					
			+0.6	+0.0							
6	10474.840 M	44.7	+6.2	+1.4	-11.9	+0.0	+0.0	40.4	54.0	-13.6	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
7	10362.580 M	43.3	+6.2	+1.3	-12.1	+0.0	+0.0	38.7	54.0	-15.3	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
8	26.030M	17.8	+0.3	+0.1	+0.0	+0.0	-20.0	4.9	29.5	-24.6	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+6.7							
9	29.727k	42.3	+0.0	+0.0	+0.0	+0.0	-40.0	13.3	38.1	-24.8	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+11.0							
10	20720.000 M Ave	29.6	+0.0	+0.0	+0.0	-13.9	+0.0	28.9	54.0	-25.1	Horiz
			+1.9	+9.2	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	20720.000 M	44.8	+0.0	+0.0	+0.0	-13.9	+0.0	44.1	54.0	-9.9	Horiz
			+1.9	+9.2	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.209 Radiated Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:08:26
 Tested By: Matthew Harrison Sequence#: 29
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

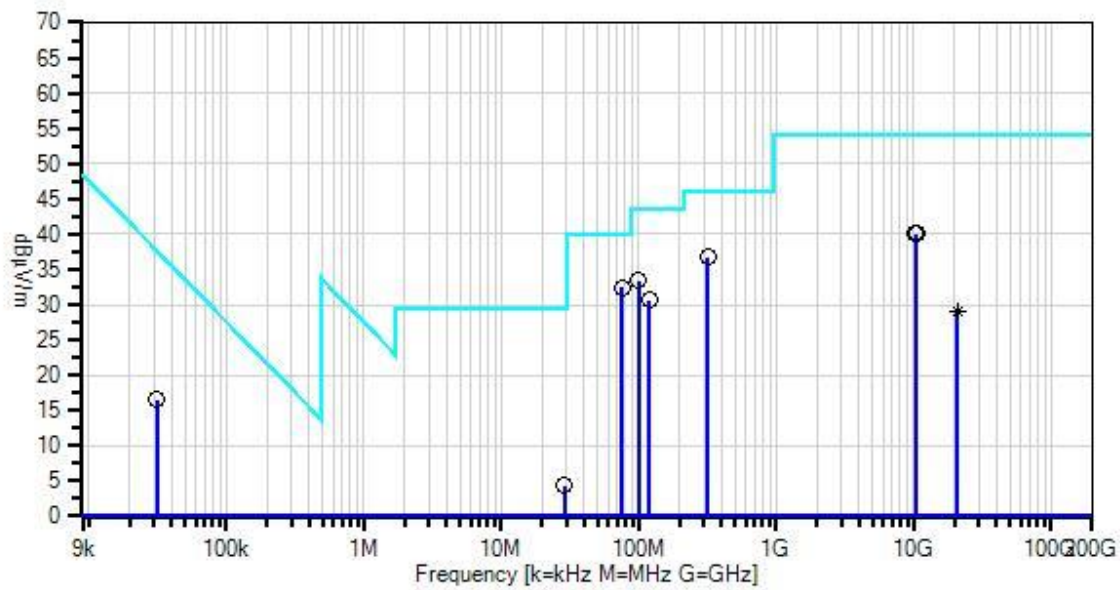
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 9kHz-40GHz Frequency tested: 5190, 5230 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No emissions found above 26GHz

Nalloy, LLC. WO#: 102802 Sequence#: 29 Date: 4/2/2020
15.209 Radiated Emissions Test Distance: 3 Meters Perp



— Sweep Data
x QP Readings
Software Version: 5.03.12

— Readings
* Average Readings
— 1 - 15.209 Radiated Emissions

○ Peak Readings
▼ Ambient

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamp	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
T9	AN02307	Preamp	8447D	1/10/2020	1/10/2022
T10	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T11	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T12	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T13	ANP05360	Cable	RG214	2/3/2020	2/3/2022
T14	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	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	75.400M	46.4	+0.0 +0.0 -27.8 +0.5	+0.1 +0.0 +7.0 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.4	+0.0	32.4	40.0	-7.6	Vert
2	319.600M	41.7	+0.0 +0.0 -27.1 +1.1	+0.2 +0.0 +14.1 +0.0	+0.0 +0.0 +5.8	+0.0 +0.0 +0.9	+0.0	36.7	46.0	-9.3	Horiz

3	319.600M	41.7	+0.0	+0.2	+0.0	+0.0	+0.0	36.7	46.0	-9.3	Horiz
			+0.0	+0.0	+0.0	+0.0					
			-27.1	+14.1	+5.8	+0.9					
			+1.1	+0.0							
4	99.500M	46.1	+0.0	+0.1	+0.0	+0.0	+0.0	33.5	43.5	-10.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.7	+8.1	+5.8	+0.5					
			+0.6	+0.0							
5	118.800M	43.3	+0.0	+0.1	+0.0	+0.0	+0.0	30.7	43.5	-12.8	Vert
			+0.0	+0.0	+0.0	+0.0					
			-27.6	+8.0	+5.8	+0.5					
			+0.6	+0.0							
6	10442.500 M	44.5	+6.2	+1.4	-12.0	+0.0	+0.0	40.1	54.0	-13.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
7	10382.300 M	44.7	+6.2	+1.3	-12.1	+0.0	+0.0	40.1	54.0	-13.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
8	31.278k	45.7	+0.0	+0.0	+0.0	+0.0	-40.0	16.6	37.7	-21.1	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+10.9							
9	20760.000 M Ave	29.7	+0.0	+0.0	+0.0	-14.0	+0.0	29.1	54.0	-24.9	Horiz
			+2.0	+9.3	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	20760.000 M	44.8	+0.0	+0.0	+0.0	-14.0	+0.0	44.2	54.0	-9.8	Horiz
			+2.0	+9.3	+0.9	+1.2					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
11	28.985M	18.1	+0.3	+0.1	+0.0	+0.0	-20.0	4.4	29.5	-25.1	Perp
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+5.9							

15.407 Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 15:55:29
 Tested By: Matthew Harrison Sequence#: 27
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

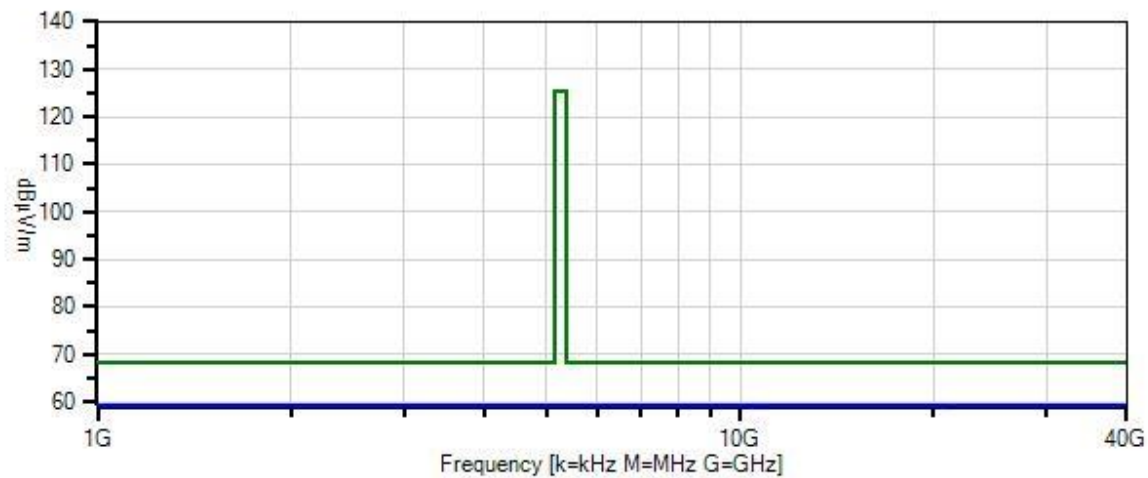
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 1-40GHz Frequency tested: 5180, 5220, 5240 MHz $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2$, for $d = 3 \text{ m}$ Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11a, 20MHz BW, 6Mbps(worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No emissions found above 26GHz
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Nalloy, LLC. W/O#: 102802 Sequence#: 27 Date: 4/2/2020
 15.407(b)(1) Radiated Spurious Emissions - Client Devices Test Distance: 3 Meters Perp



— Sweep Data
 — Readings
 ○ Peak Readings
 × QP Readings
 * Average Readings
 ▼ Ambient
 Software Version: 5.03.12
 — 1 - 15.407(b)(1) Radiated Spurious Emissions - Client Devices

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamp	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
	AN02307	Preamp	8447D	1/10/2020	1/10/2022
	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
	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
	MHz	dB μ V	T5 dB	T6 dB	T7 dB	T8 dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	20720.000 M	44.6	+0.0 +1.9	+0.0 +9.2	+0.0 +0.9	-13.9 +1.2	+0.0	43.9	68.2	-24.3	Horiz
2	10445.070 M	42.7	+6.2 +0.0	+1.4 +0.0	-12.0 +0.0	+0.0 +0.0	+0.0	38.3	68.2	-29.9	Horiz
3	10364.590 M	42.8	+6.2 +0.0	+1.3 +0.0	-12.1 +0.0	+0.0 +0.0	+0.0	38.2	68.2	-30.0	Horiz
4	10480.330 M	42.4	+6.2 +0.0	+1.4 +0.0	-11.9 +0.0	+0.0 +0.0	+0.0	38.1	68.2	-30.1	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:11:37
 Tested By: Matthew Harrison Sequence#: 30
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

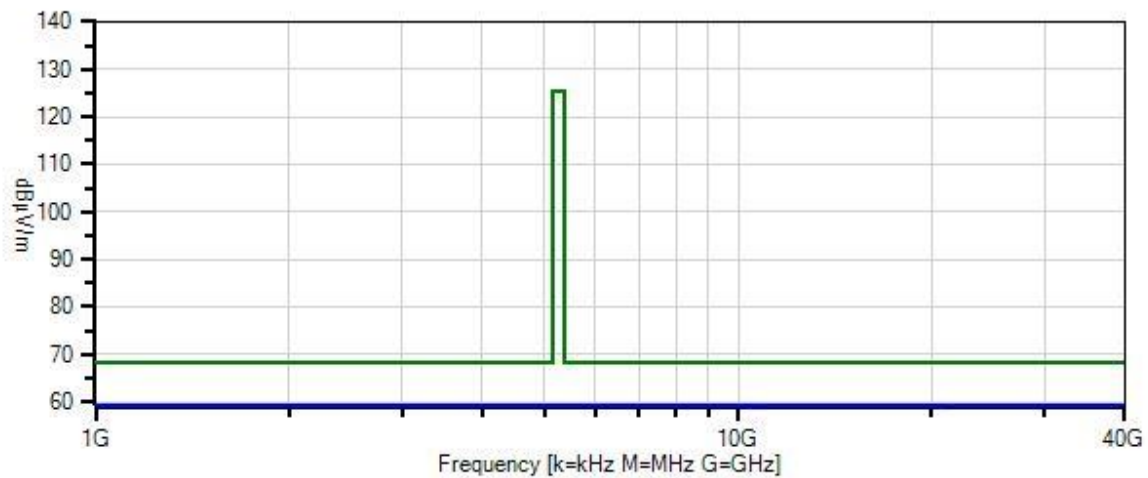
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 1-40GHz Frequency tested: 5180, 5220, 5240 MHz $E[dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ m Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 20MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No emissions found above 26GHz
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Nalloy, LLC. W/O#: 102802 Sequence#: 30 Date: 4/2/2020
 15.407(b)(1) Radiated Spurious Emissions - Client Devices Test Distance: 3 Meters Perp



- Sweep Data
- Readings
- Peak Readings
- × QP Readings
- * Average Readings
- ▼ Ambient
- Software Version: 5.03.12
- 1 - 15.407(b)(1) Radiated Spurious Emissions - Client Devices

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
	AN02307	Preamplifier	8447D	1/10/2020	1/10/2022
	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
	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
	MHz	dB μ V	T5 dB	T6 dB	T7 dB	T8 dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	20720.000 M	45.0	+0.0 +1.9	+0.0 +9.2	+0.0 +0.9	-13.9 +1.2	+0.0	44.3	68.2	-23.9	Horiz
2	10478.800 M	47.6	+6.2 +0.0	+1.4 +0.0	-11.9 +0.0	+0.0 +0.0	+0.0	43.3	68.2	-24.9	Horiz
3	10440.210 M	47.6	+6.2 +0.0	+1.4 +0.0	-12.0 +0.0	+0.0 +0.0	+0.0	43.2	68.2	-25.0	Horiz
4	10361.230 M	47.0	+6.2 +0.0	+1.3 +0.0	-12.1 +0.0	+0.0 +0.0	+0.0	42.4	68.2	-25.8	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:16:14
 Tested By: Matthew Harrison Sequence#: 31
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

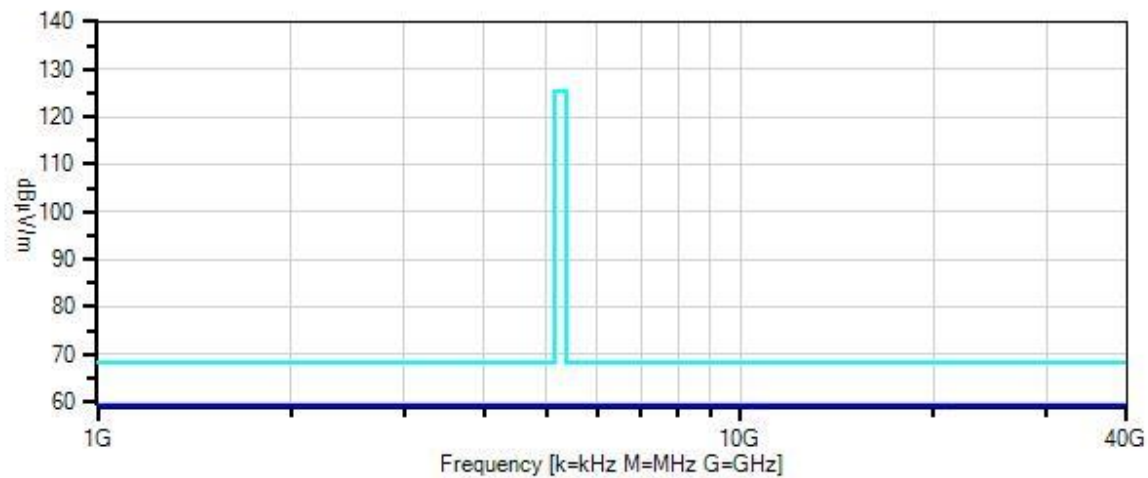
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 1-40GHz Frequency tested: 5190, 5230 MHz $E[dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ m Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 40MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No Emissions found above 26GHz
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Nalloy, LLC. W/O#: 102802 Sequence#: 31 Date: 4/2/2020
 15.407(b)(1) Radiated Spurious Emissions - Client Devices Test Distance: 3 Meters Perp



— Sweep Data
 — Readings
 ○ Peak Readings
 × QP Readings
 * Average Readings
 ▼ Ambient
 Software Version: 5.03.12
 1 - 15.407(b)(1) Radiated Spurious Emissions - Client Devices

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
	AN02307	Preamplifier	8447D	1/10/2020	1/10/2022
	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
	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
	MHz	dBμV	T5	T6	T7	T8	Table	dBμV/m	dBμV/m	dB	Ant
1	20760.000	45.2	+0.0	+0.0	+0.0	-14.0	+0.0	44.6	68.2	-23.6	Horiz
	M		+2.0	+9.3	+0.9	+1.2					
2	10462.150	43.9	+6.2	+1.4	-12.0	+0.0	+0.0	39.5	68.2	-28.7	Horiz
	M		+0.0	+0.0	+0.0	+0.0					
3	10378.650	43.5	+6.2	+1.3	-12.1	+0.0	+0.0	38.9	68.2	-29.3	Horiz
	M		+0.0	+0.0	+0.0	+0.0					

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:17:43
 Tested By: Matthew Harrison Sequence#: 32
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

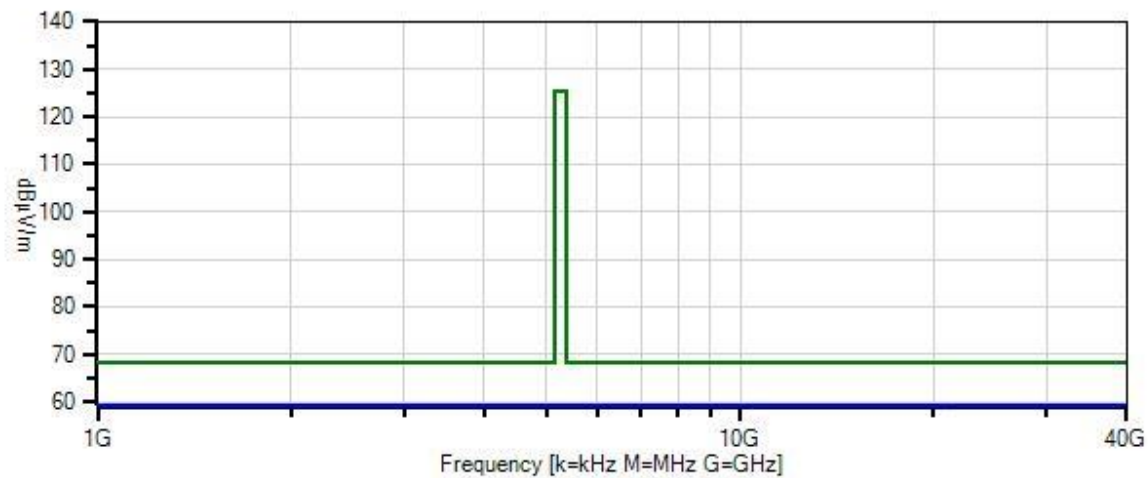
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 1-40GHz Frequency tested: 5210 MHz $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2$, for $d = 3 \text{ m}$ Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 80MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No Emissions found above 26GHz

Nalloy, LLC. W/O#: 102802 Sequence#: 32 Date: 4/2/2020
 15.407(b)(1) Radiated Spurious Emissions - Client Devices Test Distance: 3 Meters Perp



— Sweep Data
 — Readings
 ○ Peak Readings
 × QP Readings
 * Average Readings
 ▼ Ambient
 Software Version: 5.03.12
 — 1 - 15.407(b)(1) Radiated Spurious Emissions - Client Devices

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamp	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
	AN02307	Preamp	8447D	1/10/2020	1/10/2022
	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
	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 T5	T2 T6	T3 T7	T4 T8	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	20852.200 M	44.5	+0.0 +2.0	+0.0 +9.3	+0.0 +0.9	-14.1 +1.2	+0.0	43.8	68.2	-24.4	Horiz
2	10429.900 M	42.2	+6.2 +0.0	+1.3 +0.0	-12.0 +0.0	+0.0 +0.0	+0.0	37.7	68.2	-30.5	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:05:56
 Tested By: Matthew Harrison Sequence#: 28
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

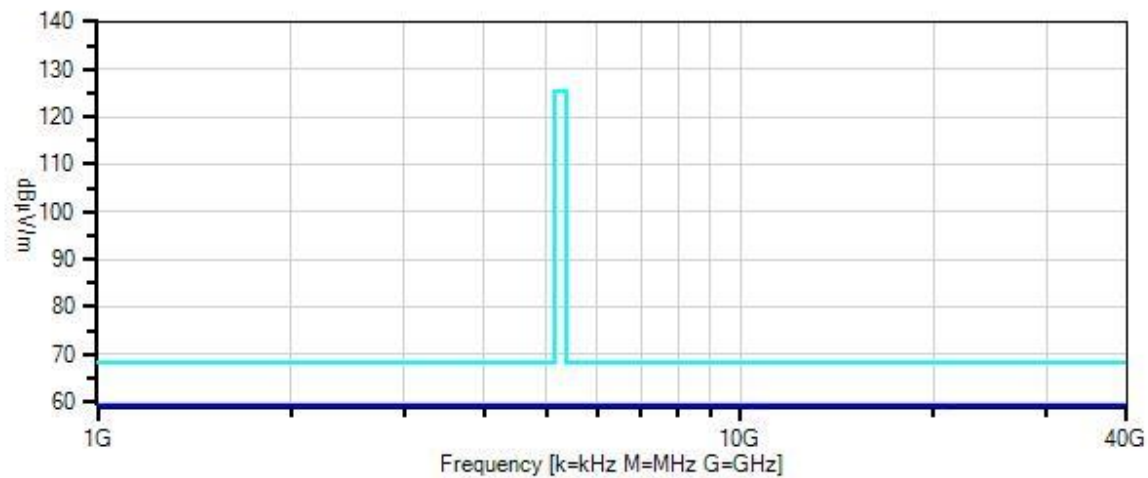
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 1-40GHz Frequency tested: 5180, 5220, 5240 MHz $E[dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ m Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No emissions found above 26GHz

Nalloy, LLC. W/O#: 102802 Sequence#: 28 Date: 4/2/2020
15.407(b)(1) Radiated Spurious Emissions - Client Devices Test Distance: 3 Meters Perp



- Sweep Data
- Readings
- Peak Readings
- × QP Readings
- * Average Readings
- ▼ Ambient
- Software Version: 5.03.12
- 1 - 15.407(b)(1) Radiated Spurious Emissions - Client Devices

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamp	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
	AN02307	Preamp	8447D	1/10/2020	1/10/2022
	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
	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
	MHz	dB μ V	T5 dB	T6 dB	T7 dB	T8 dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	20720.000 M	44.8	+0.0 +1.9	+0.0 +9.2	+0.0 +0.9	-13.9 +1.2	+0.0	44.1	68.2	-24.1	Horiz
2	10446.600 M	45.9	+6.2 +0.0	+1.4 +0.0	-12.0 +0.0	+0.0 +0.0	+0.0	41.5	68.2	-26.7	Horiz
3	10474.840 M	44.7	+6.2 +0.0	+1.4 +0.0	-11.9 +0.0	+0.0 +0.0	+0.0	40.4	68.2	-27.8	Horiz
4	10362.580 M	43.3	+6.2 +0.0	+1.3 +0.0	-12.1 +0.0	+0.0 +0.0	+0.0	38.7	68.2	-29.5	Horiz

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) Radiated Spurious Emissions**
 Work Order #: **102802** Date: 4/2/2020
 Test Type: **Maximized Emissions** Time: 16:08:26
 Tested By: Matthew Harrison Sequence#: 29
 Software: EMITest 5.03.12

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

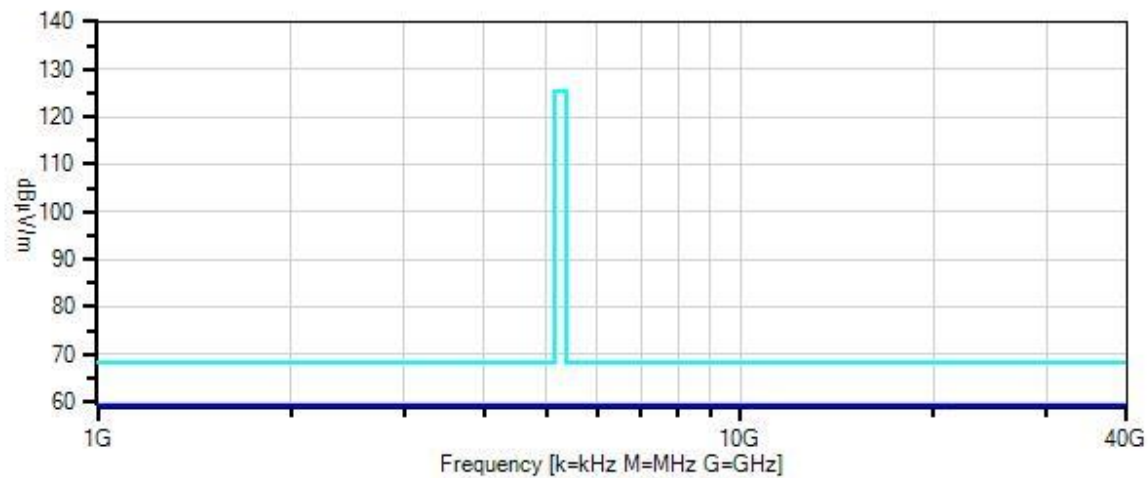
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 45% Pressure: 101.3 kPa Frequency Range: 1-40GHz Frequency tested: 5190, 5230 MHz $E[dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ m Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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. All data rates investigated, worst-case provided No emissions found above 26GHz

Nalloy, LLC. W/O#: 102802 Sequence#: 29 Date: 4/2/2020
15.407(b)(1) Radiated Spurious Emissions - Client Devices Test Distance: 3 Meters Perp



- Sweep Data
- Readings
- Peak Readings
- × QP Readings
- * Average Readings
- ▼ Ambient
- Software Version: 5.03.12
- 1 - 15.407(b)(1) Radiated Spurious Emissions - Client Devices

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01467	Horn Antenna- ANSI C63.5 Calibration	3115	7/5/2019	7/5/2021
T1	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T2	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
	AN03540	Preamplifier	83017A	5/13/2019	5/13/2021
	ANP07504	Cable	CLU40- KMKM-02.00F	1/17/2019	1/17/2021
T3	AN02741	Active Horn Antenna	AMFW-5F- 12001800-20- 10P	4/26/2019	4/26/2021
T4	AN02742	Active Horn Antenna	AMFW-5F- 18002650-20- 10P	10/16/2018	10/16/2020
T5	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T6	ANP06678	Cable	32026-29801- 29801-144	2/20/2020	2/20/2022
T7	ANP07211	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
T8	ANP07212	Cable	32026-29801- 29801-18	8/7/2019	8/7/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
	AN02743	Active Horn Antenna	AMFW-5F- 260400-33-8P	4/26/2019	4/26/2021
	AN02764-70	Waveguide	Multiple	4/23/2018	4/23/2020
	AN02307	Preamplifier	8447D	1/10/2020	1/10/2022
	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
	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.

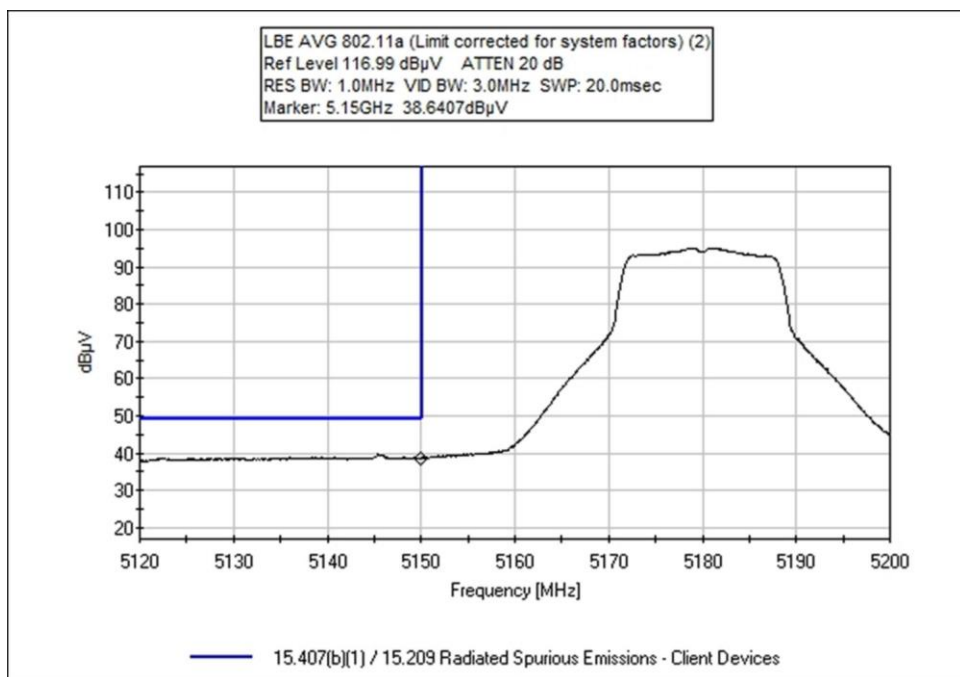
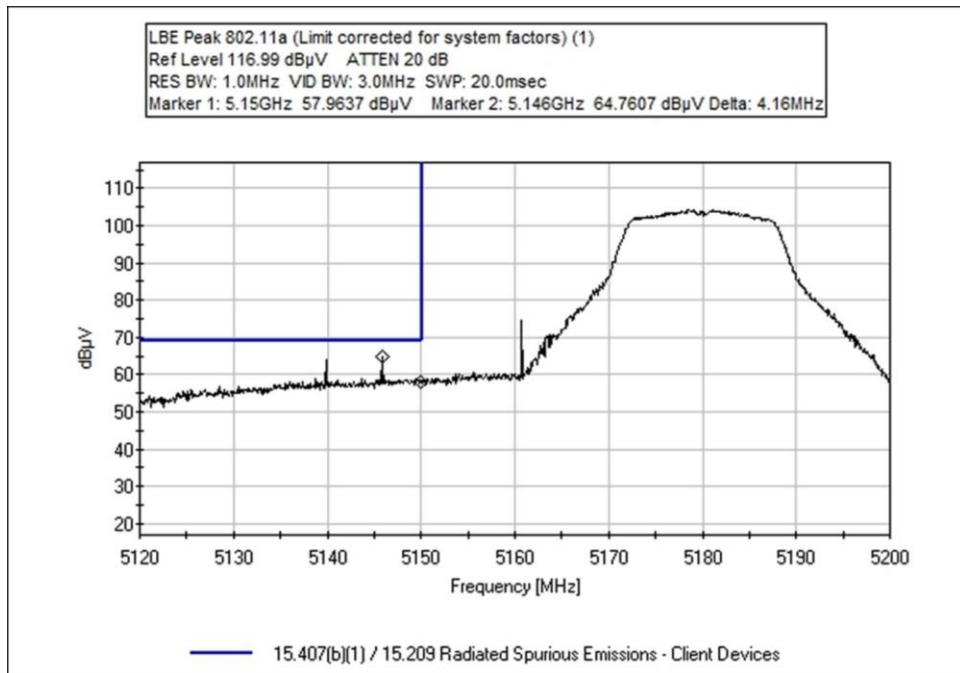
Test Distance: 3 Meters

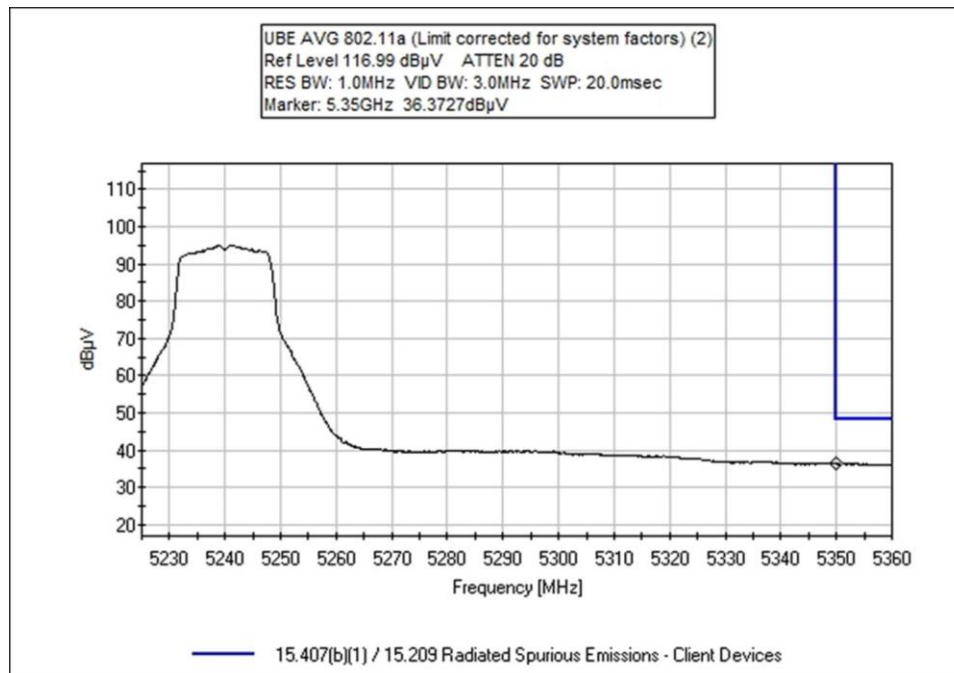
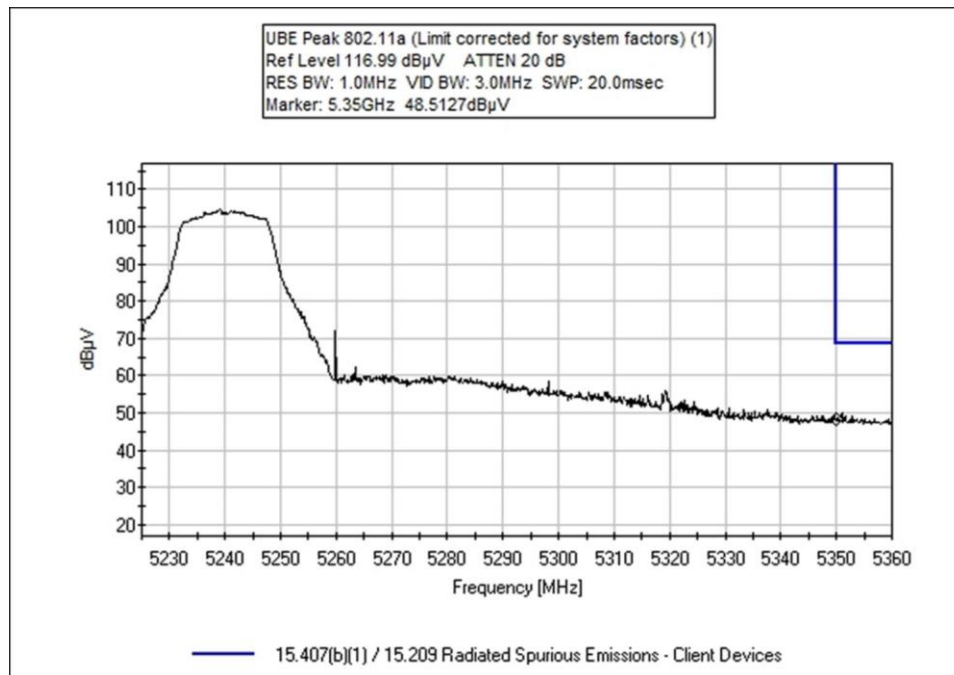
#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	20760.000 M	44.8	+0.0 +2.0	+0.0 +9.3	+0.0 +0.9	-14.0 +1.2	+0.0	44.2	68.2	-24.0	Horiz
2	10442.500 M	44.5	+6.2 +0.0	+1.4 +0.0	-12.0 +0.0	+0.0 +0.0	+0.0	40.1	68.2	-28.1	Horiz
3	10382.300 M	44.7	+6.2 +0.0	+1.3 +0.0	-12.1 +0.0	+0.0 +0.0	+0.0	40.1	68.2	-28.1	Horiz

Band Edge Summary					
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results
5150	802.11a	Linear Polarized / 5.9dBi	43.6	<54	Pass
5350	802.11a	Linear Polarized / 5.9dBi	41.9	<54	Pass
5150	802.11n20	Linear Polarized / 5.9dBi	44.1	<54	Pass
5350	802.11n20	Linear Polarized / 5.9dBi	41.9	<54	Pass
5150	802.11n40	Linear Polarized / 5.9dBi	47.8	<54	Pass
5350	802.11n40	Linear Polarized / 5.9dBi	42.4	<54	Pass
5150	802.11ac20	Linear Polarized / 5.9dBi	44.4	<54	Pass
5350	802.11ac20	Linear Polarized / 5.9dBi	42	<54	Pass
5150	802.11ac40	Linear Polarized / 5.9dBi	49.6	<54	Pass
5350	802.11ac40	Linear Polarized / 5.9dBi	42.5	<54	Pass
5150	802.11ac80	Linear Polarized / 5.9dBi	47.4	<54	Pass
5350	802.11ac80	Linear Polarized / 5.9dBi	41.6	<54	Pass

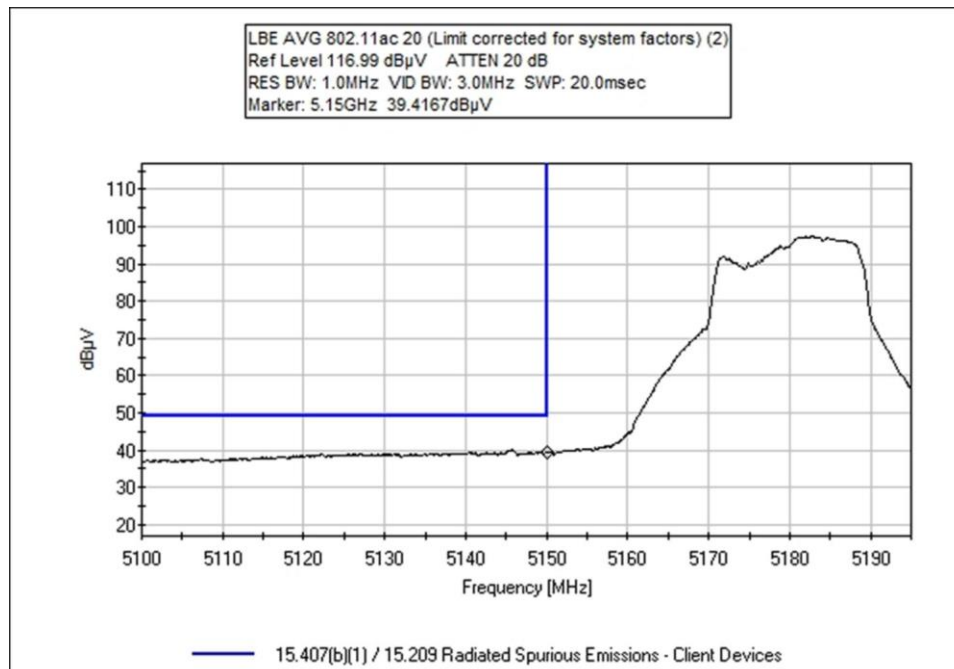
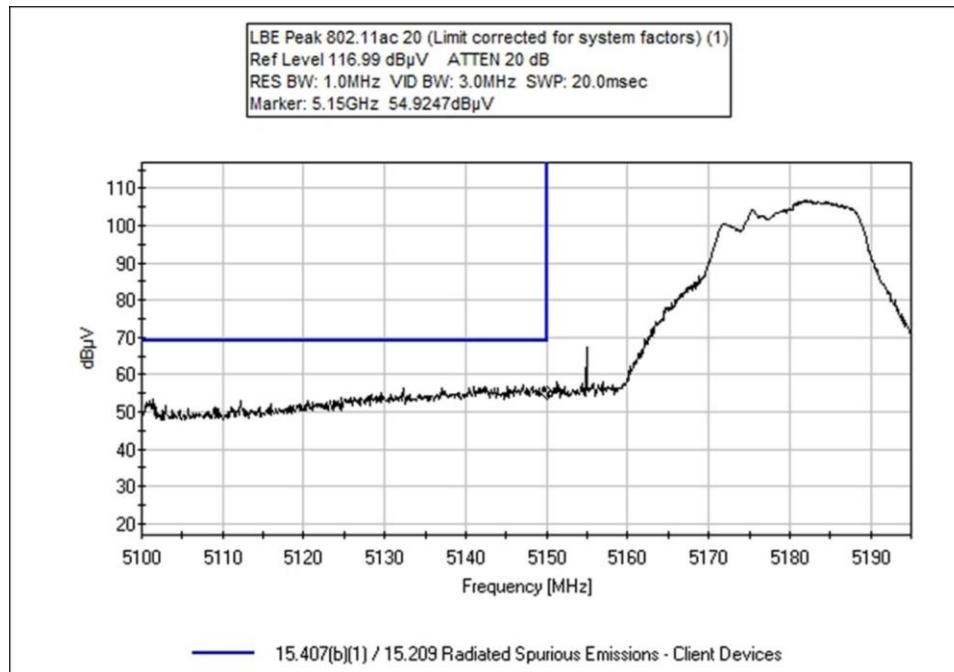
Band Edge Plots

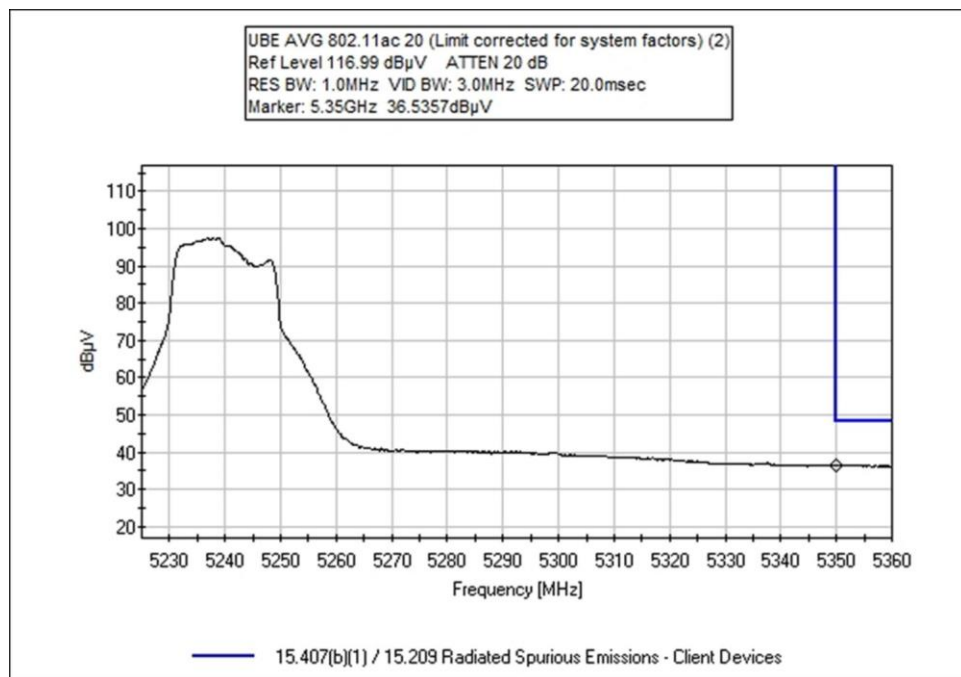
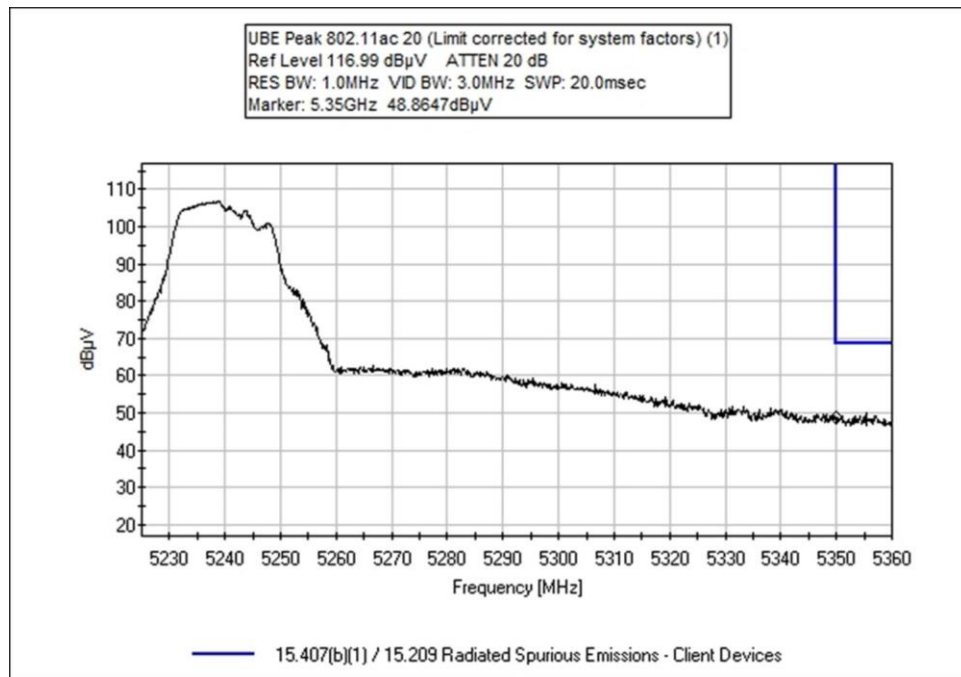
802.11a Plots



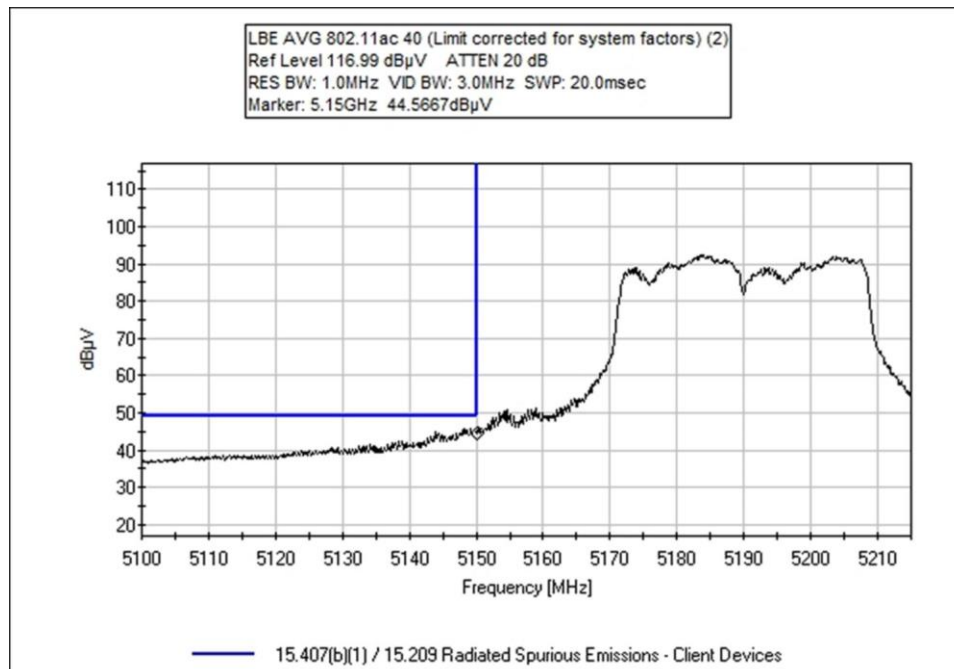
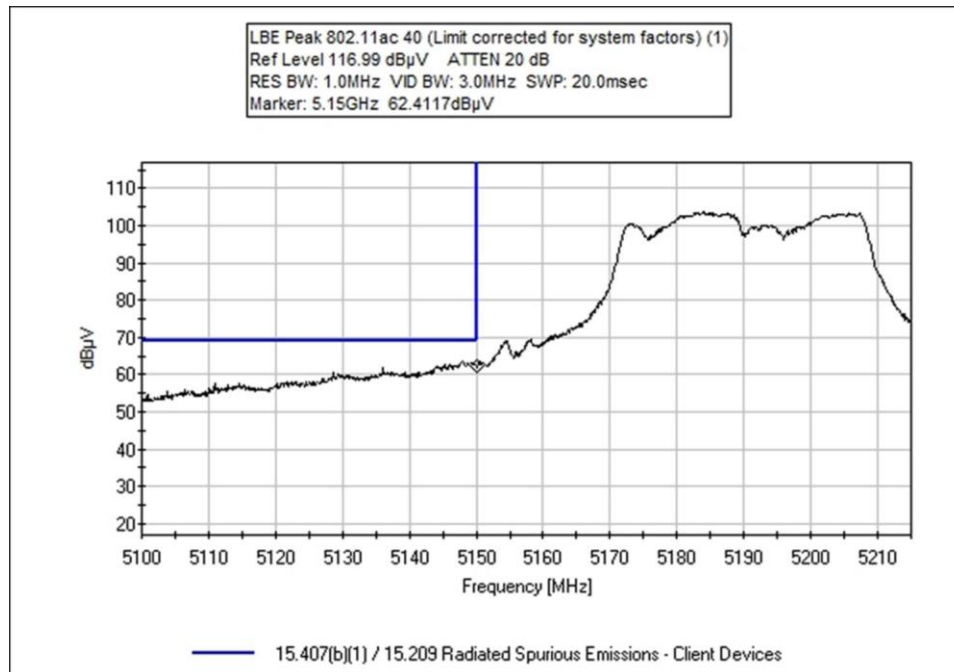


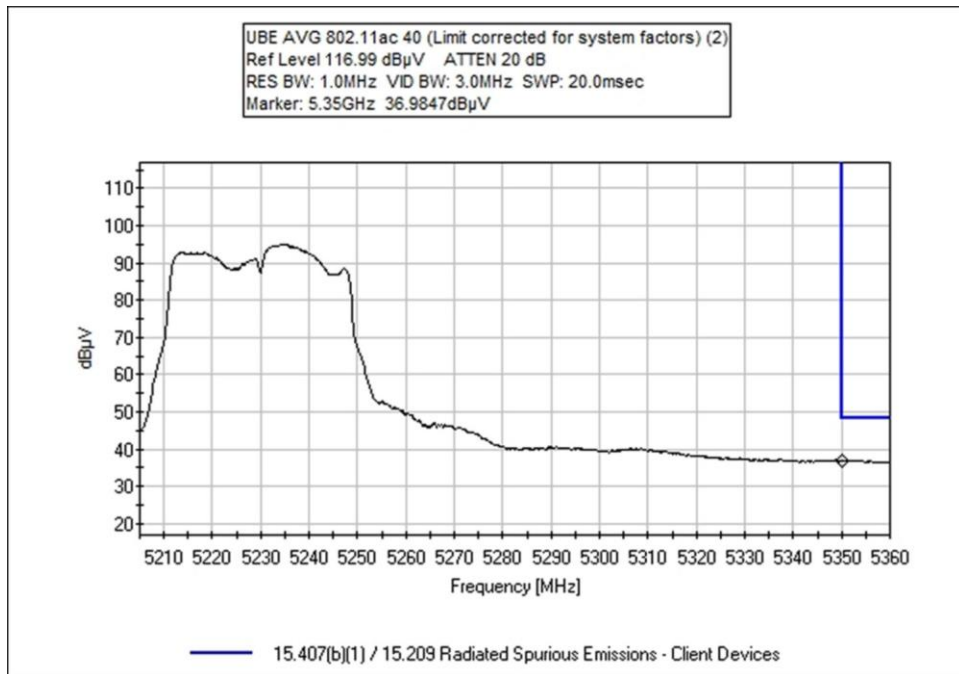
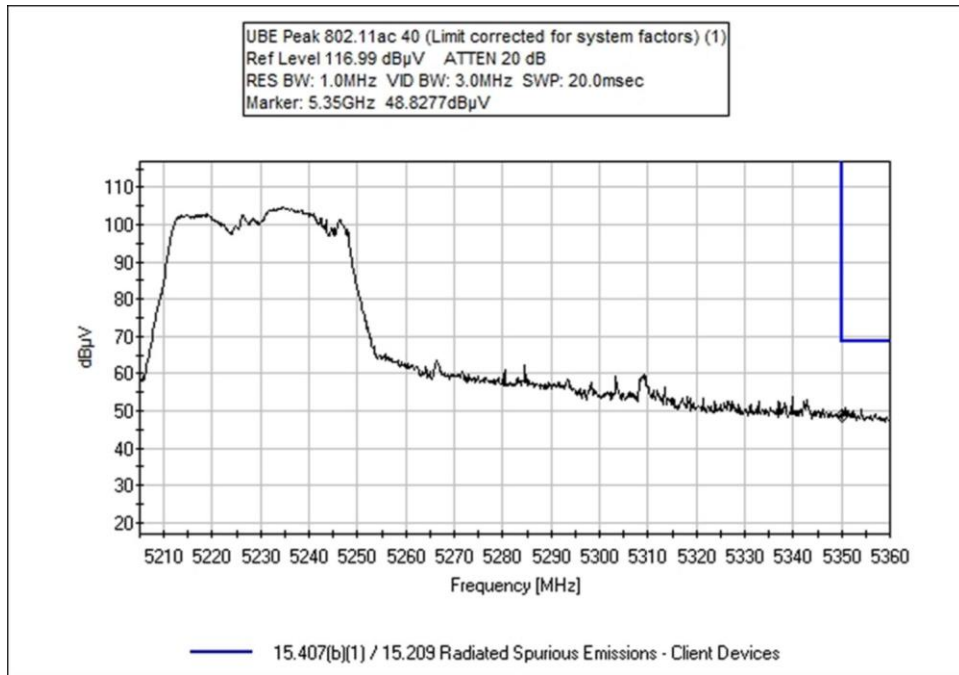
802.11ac20 Plots



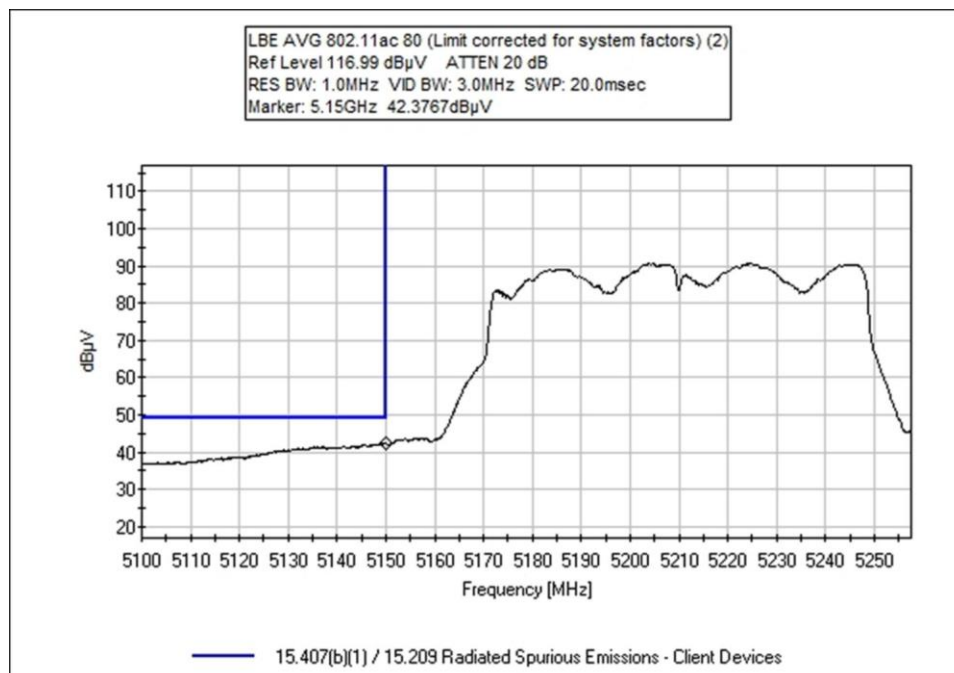
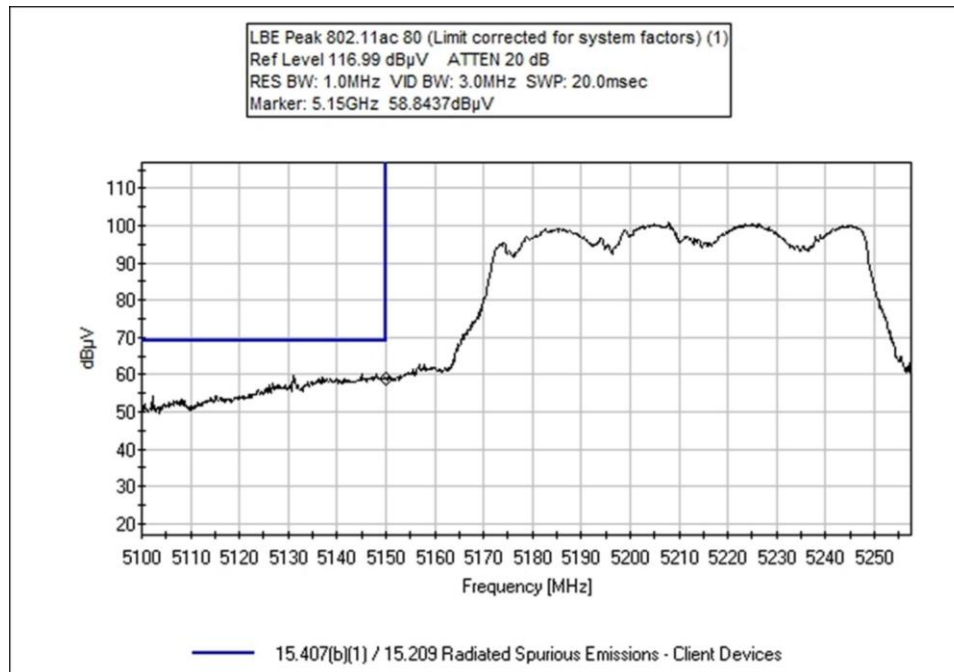


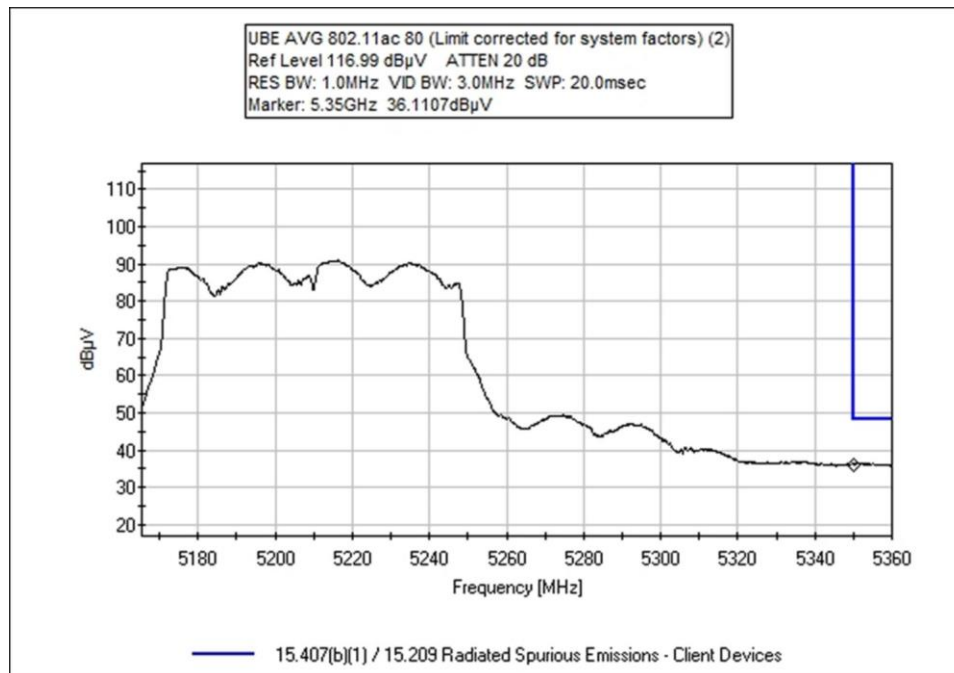
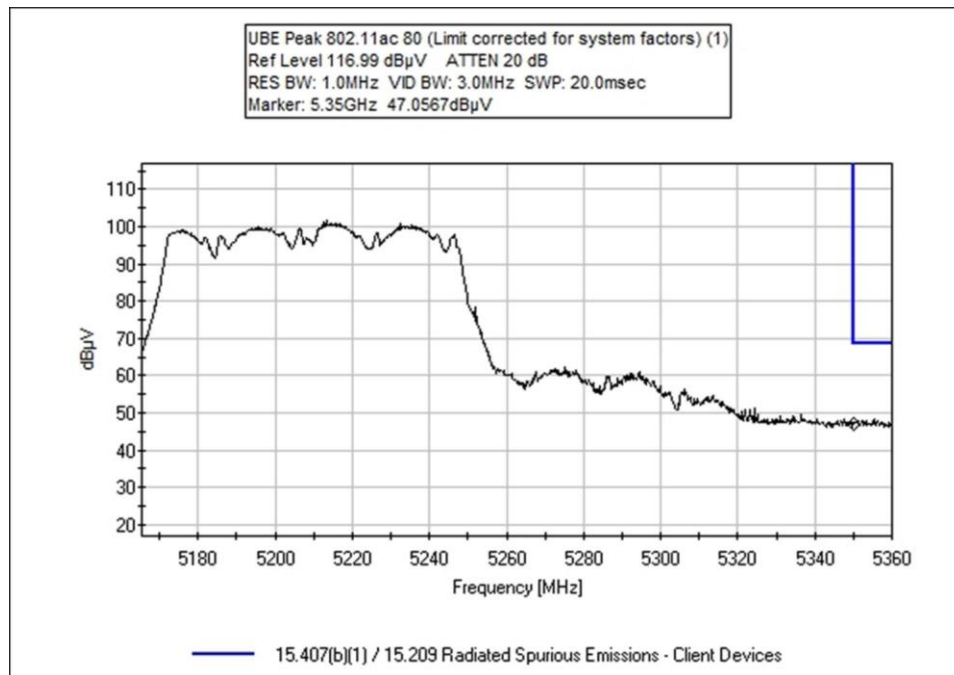
802.11ac40 Plots



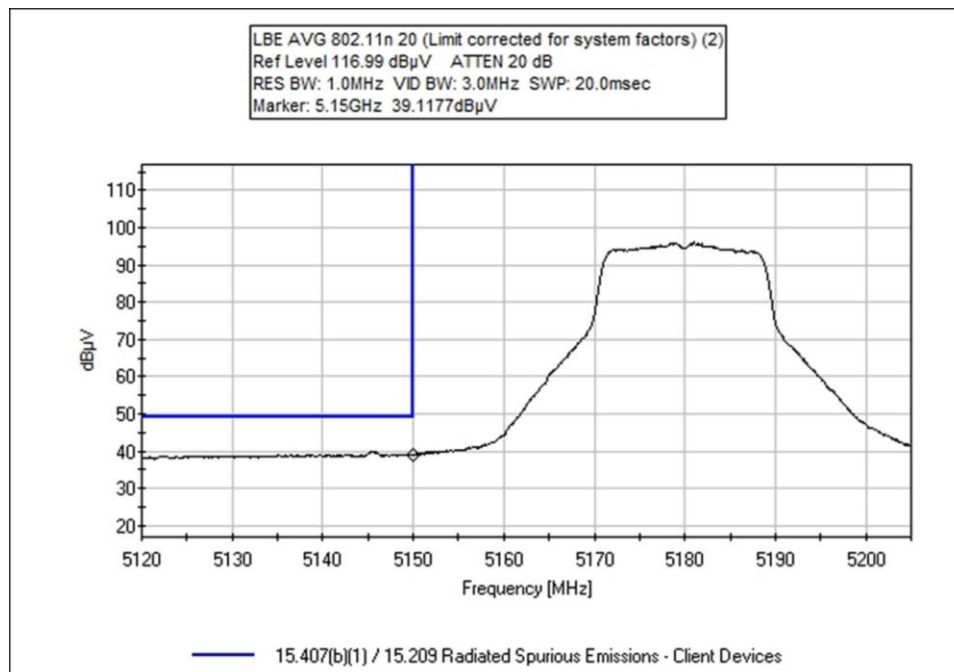
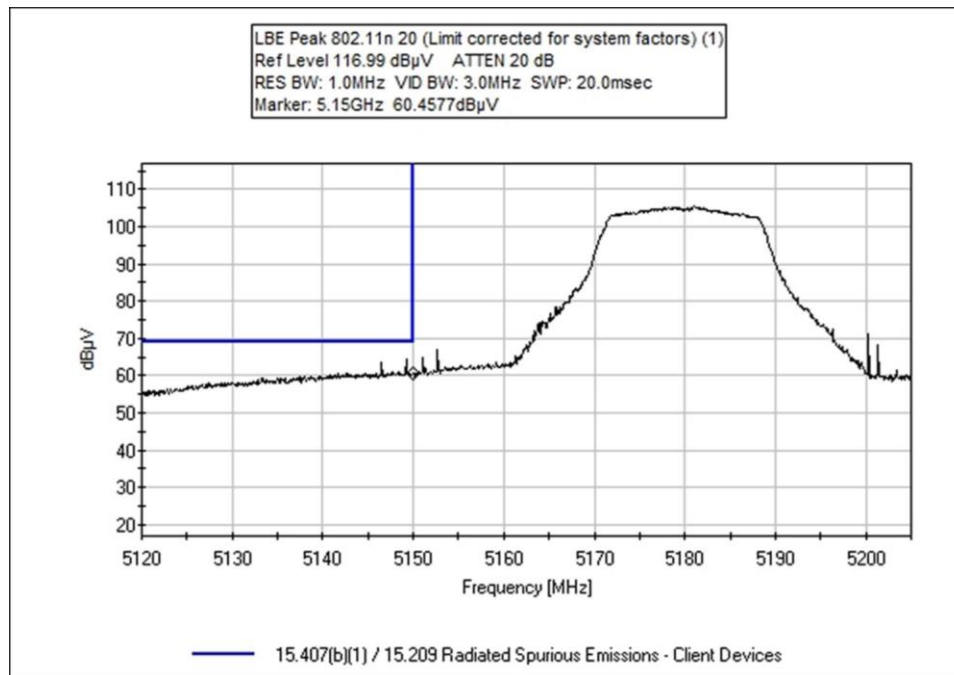


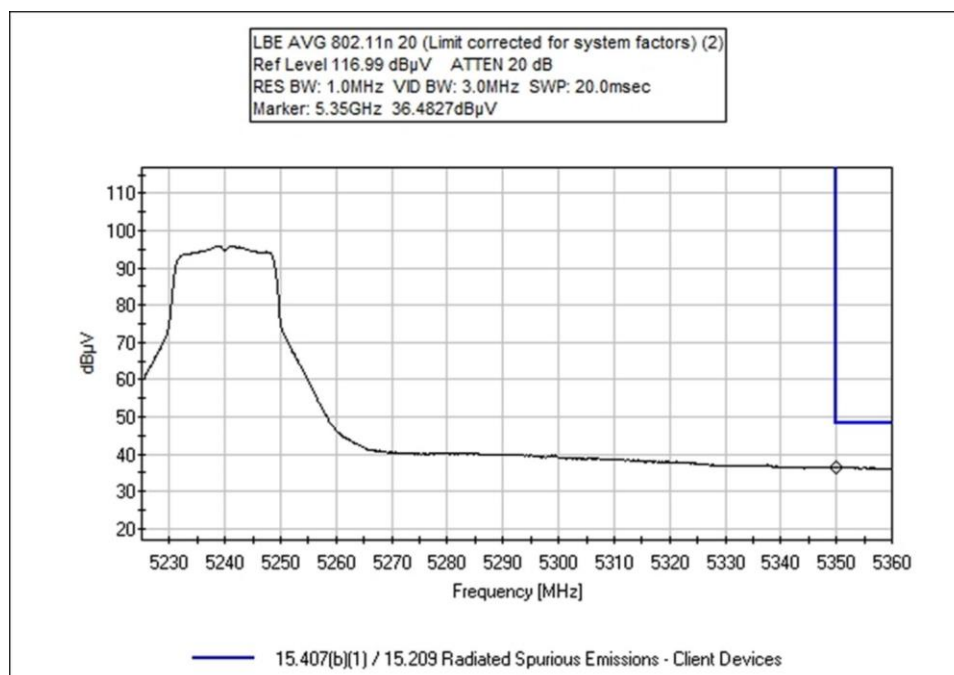
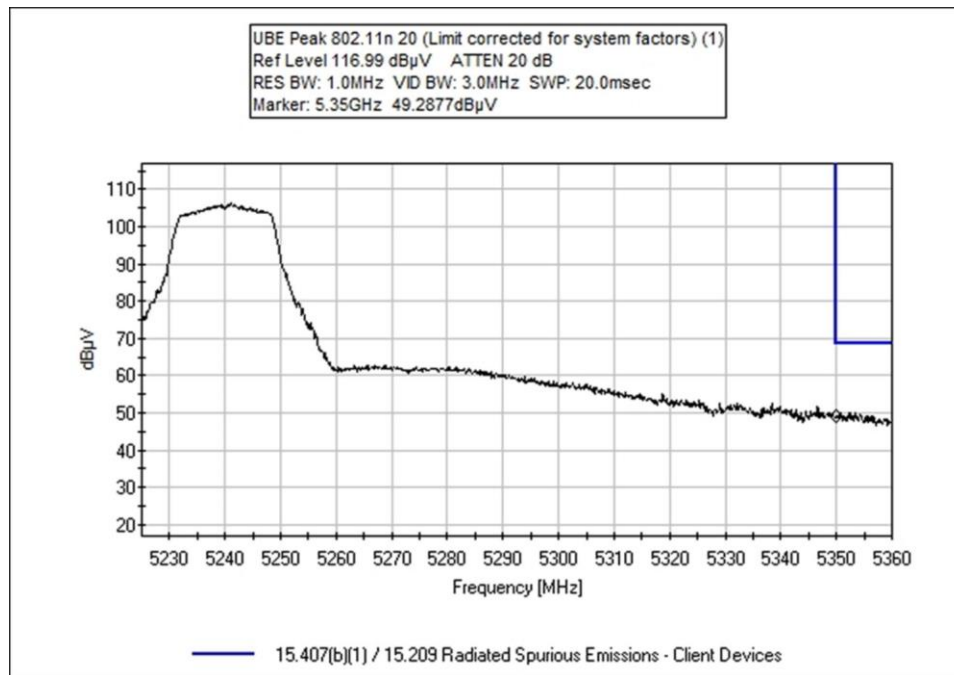
802.11ac80 Plots



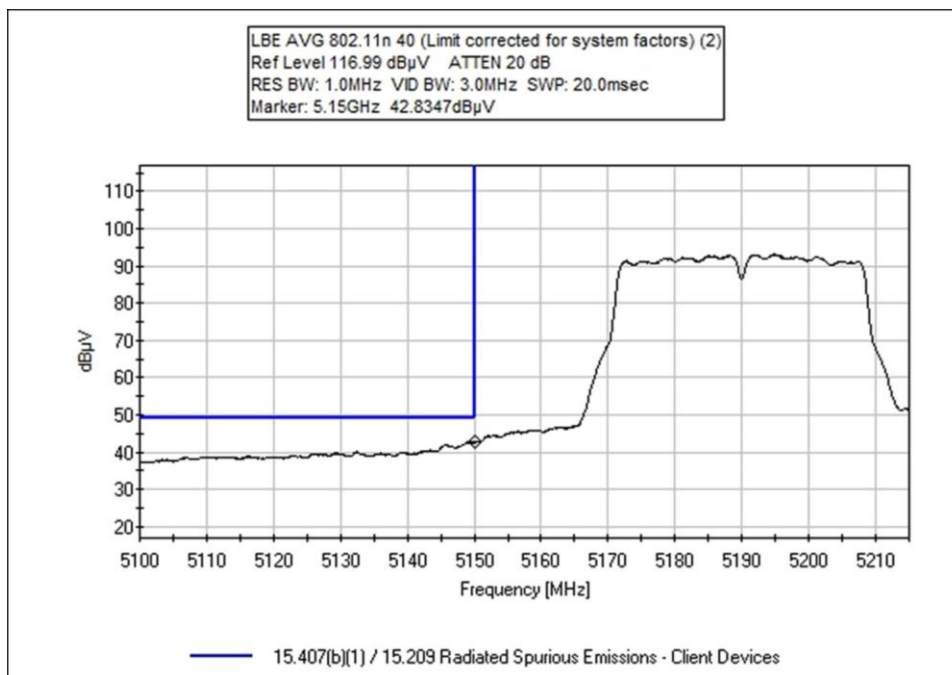
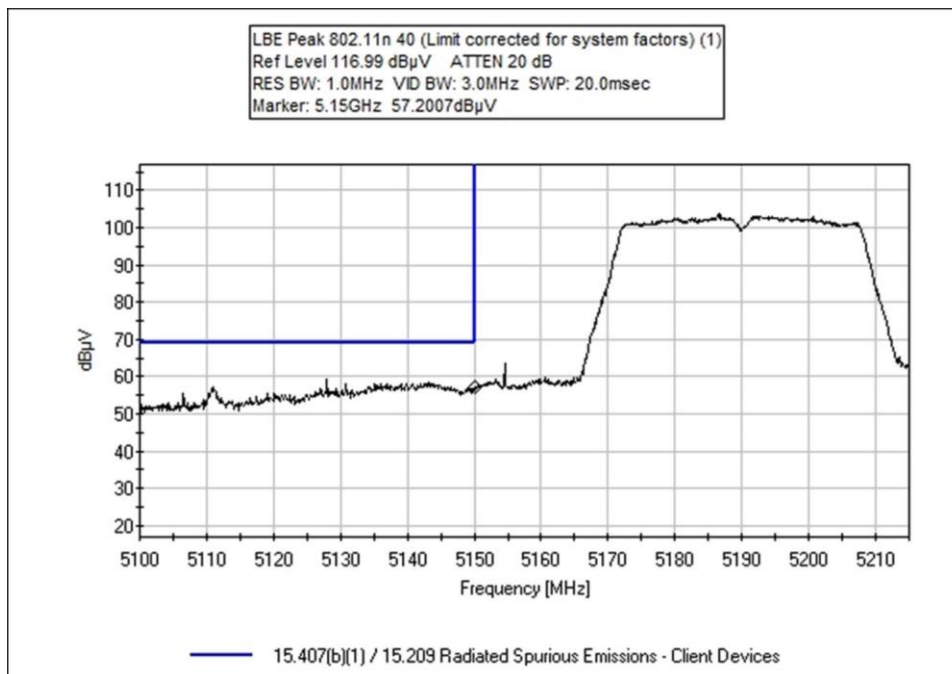


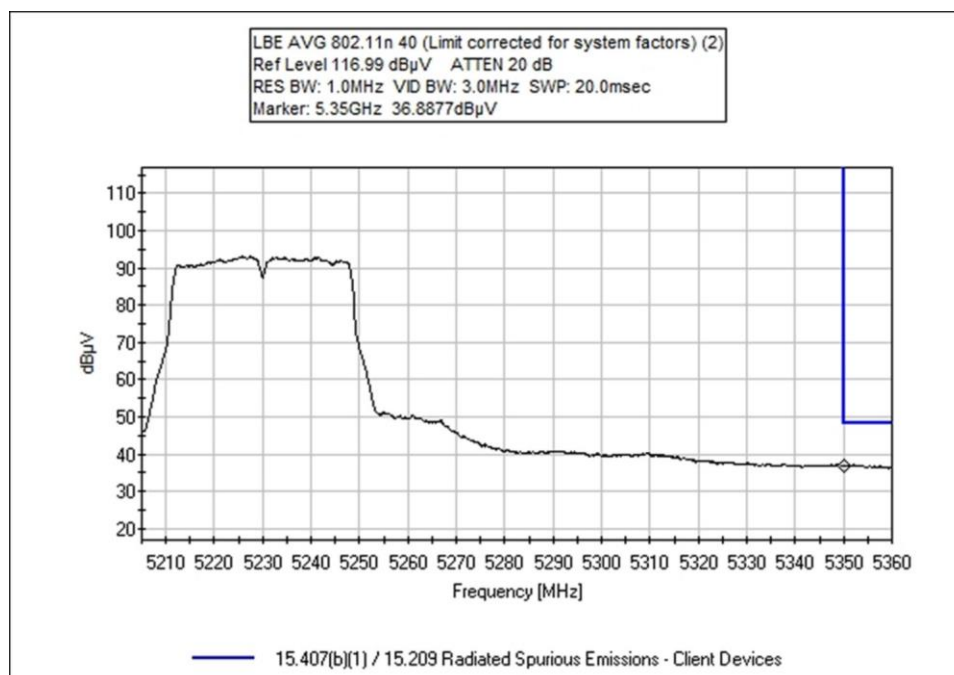
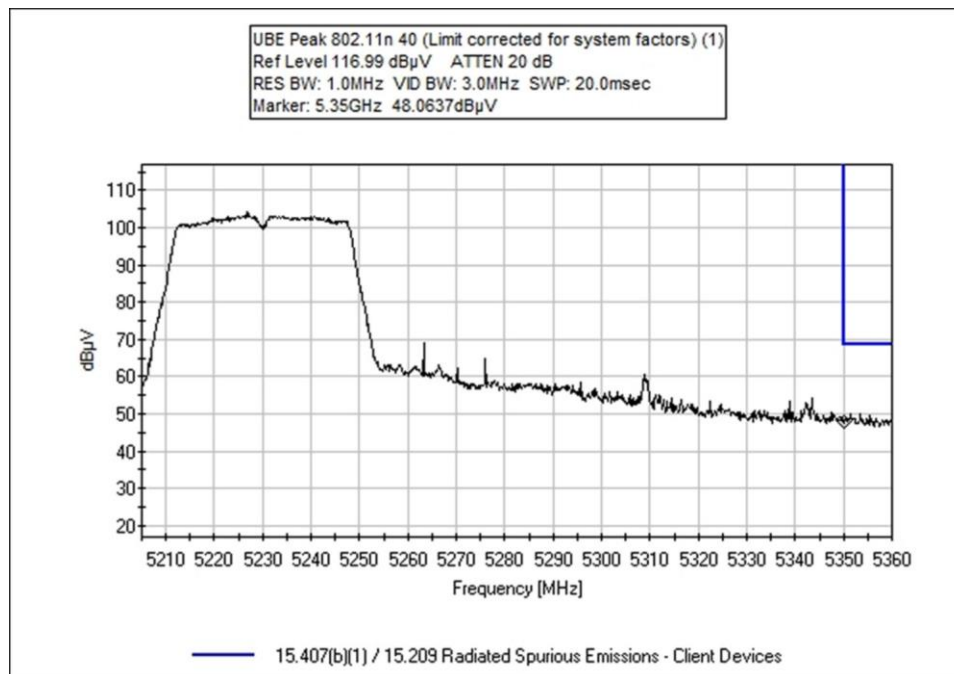
802.11n20 Plots





802.11n40 Plots





Test Setup / Conditions / Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/19/2020
 Test Type: **Maximized Emissions** Time: 14:29:44
 Tested By: Matthew Harrison Sequence#: 11
 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: 5150-4350 MHz Frequency tested: 5180, 5240 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 20MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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

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	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5 dB	T6 dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	5150.000M	39.4	+32.9	+4.3	+0.9	+0.0	+0.0	44.4	54.0	-9.6	Horiz
	Ave		-33.6	+0.5							
^	5150.000M	54.9	+32.9	+4.3	+0.9	+0.0	+0.0	59.9	74.0	-14.1	Horiz
			-33.6	+0.5							
3	5350.000M	36.5	+33.3	+4.4	+0.9	+0.0	+0.0	42.0	54.0	-12.0	Horiz
	Ave		-33.6	+0.5							
^	5350.000M	48.9	+33.3	+4.4	+0.9	+0.0	+0.0	54.4	74.0	-19.6	Horiz
			-33.6	+0.5							
5	5237.825M	106.9	+33.1	+4.3	+0.9	+0.0	+0.0	112.1	125.2	-13.1	Horiz
			-33.6	+0.5			302				185
6	5182.270M	107.0	+33.0	+4.3	+0.9	+0.0	+0.0	112.1	125.2	-13.1	Horiz
			-33.6	+0.5							

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/19/2020
 Test Type: **Maximized Emissions** Time: 13:15:16
 Tested By: Matthew Harrison Sequence#: 9
 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: 5150-4350 MHz Frequency tested: 5180, 5240 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11a, 20MHz BW, 6Mbps(worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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 MHz	Rdng dBμV	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	5145.840M	39.3	+32.9	+4.3	+0.9	+0.0	+0.0	44.3	54.0	-9.7	Horiz
	Ave		-33.6	+0.5							
^	5145.840M	64.8	+32.9	+4.3	+0.9	+0.0	+0.0	69.8	74.0	-4.2	Horiz
			-33.6	+0.5							
3	5150.000M	38.6	+32.9	+4.3	+0.9	+0.0	+0.0	43.6	54.0	-10.4	Horiz
	Ave		-33.6	+0.5							
^	5150.000M	58.0	+32.9	+4.3	+0.9	+0.0	+0.0	63.0	74.0	-11.0	Horiz
			-33.6	+0.5							
5	5350.000M	36.4	+33.3	+4.4	+0.9	+0.0	+0.0	41.9	54.0	-12.1	Horiz
	Ave		-33.6	+0.5							
^	5350.000M	48.5	+33.3	+4.4	+0.9	+0.0	+0.0	54.0	74.0	-20.0	Horiz
			-33.6	+0.5							
7	5239.010M	104.4	+33.1	+4.3	+0.9	+0.0	+0.0	109.6	125.2	-15.6	Horiz
			-33.6	+0.5			300				180
8	5178.560M	104.1	+33.0	+4.3	+0.9	+0.0	+0.0	109.2	125.2	-16.0	Horiz
			-33.6	+0.5			300				180

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/19/2020
 Test Type: **Maximized Emissions** Time: 14:08:52
 Tested By: Matthew Harrison Sequence#: 10
 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: 5150-4350 MHz Frequency tested: 5180, 5240 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 20MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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	5150.000M	39.1	+32.9	+4.3	+0.9	+0.0	+0.0	44.1	54.0	-9.9	Horiz
	Ave		-33.6	+0.5							
^	5150.000M	60.5	+32.9	+4.3	+0.9	+0.0	+0.0	65.5	74.0	-8.5	Horiz
			-33.6	+0.5							
3	5350.000M	36.4	+33.3	+4.4	+0.9	+0.0	+0.0	41.9	54.0	-12.1	Horiz
	Ave		-33.6	+0.5							
^	5350.000M	49.3	+33.3	+4.4	+0.9	+0.0	+0.0	54.8	74.0	-19.2	Horiz
			-33.6	+0.5							
5	5181.030M	105.6	+33.0	+4.3	+0.9	+0.0	+0.0	110.7	125.2	-14.5	Horiz
			-33.6	+0.5			302				180
6	5241.200M	105.5	+33.1	+4.3	+0.9	+0.0	+0.0	110.7	125.2	-14.5	Horiz
			-33.6	+0.5							

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/19/2020
 Test Type: **Maximized Emissions** Time: 15:15:29
 Tested By: Matthew Harrison Sequence#: 13
 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: 5150-5350 MHz Frequency tested: 5190, 5230 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 40MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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

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	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5 dB	T6 dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	5150.000M	44.6	+32.9	+4.3	+0.9	+0.0	+0.0	49.6	54.0	-4.4	Horiz
	Ave		-33.6	+0.5							
^	5150.000M	62.4	+32.9	+4.3	+0.9	+0.0	+0.0	67.4	74.0	-6.6	Horiz
			-33.6	+0.5							
3	5350.000M	37.0	+33.3	+4.4	+0.9	+0.0	+0.0	42.5	54.0	-11.5	Horiz
	Ave		-33.6	+0.5							
^	5350.000M	48.8	+33.3	+4.4	+0.9	+0.0	+0.0	54.3	74.0	-19.7	Horiz
			-33.6	+0.5							
5	5234.605M	104.7	+33.1	+4.3	+0.9	+0.0	+0.0	109.9	125.2	-15.3	Horiz
			-33.6	+0.5			302				185
6	5184.060M	103.7	+33.0	+4.3	+0.9	+0.0	+0.0	108.8	125.2	-16.4	Horiz
			-33.6	+0.5							

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/19/2020
 Test Type: **Maximized Emissions** Time: 14:59:28
 Tested By: Matthew Harrison Sequence#: 12
 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: 5150-5350 MHz Frequency tested: 5190, 5230 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11n, 40MHz BW, MCS8 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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	5150.000M	42.8	+32.9	+4.3	+0.9	+0.0	+0.0	47.8	54.0	-6.2	Horiz
	Ave		-33.6	+0.5							
^	5150.000M	57.2	+32.9	+4.3	+0.9	+0.0	+0.0	62.2	74.0	-11.8	Horiz
			-33.6	+0.5							
3	5350.000M	36.9	+33.3	+4.4	+0.9	+0.0	+0.0	42.4	54.0	-11.6	Horiz
	Ave		-33.6	+0.5							
^	5350.000M	48.1	+33.3	+4.4	+0.9	+0.0	+0.0	53.6	74.0	-20.4	Horiz
			-33.6	+0.5							
5	5226.700M	104.4	+33.1	+4.3	+0.9	+0.0	+0.0	109.6	125.2	-15.6	Horiz
			-33.6	+0.5							
6	5186.750M	104.2	+33.0	+4.3	+0.9	+0.0	+0.0	109.3	125.2	-15.9	Horiz
			-33.6	+0.5			302				185

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.407(b)(1) / 15.209 Radiated Spurious Emissions**
 Work Order #: **102802** Date: 3/19/2020
 Test Type: **Maximized Emissions** Time: 15:34:03
 Tested By: Matthew Harrison Sequence#: 14
 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: 5150-5350 MHz Frequency tested: 5210 MHz Firmware power setting: 13 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11ac, 80MHz BW, MCS0 (worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 2013 KDB 789033 v02r01 December 14, 2017) 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

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	5150.000M	42.4	+32.9	+4.3	+0.9	+0.0	+0.0	47.4	54.0	-6.6	Horiz
	Ave		-33.6	+0.5							
^	5150.000M	58.8	+32.9	+4.3	+0.9	+0.0	+0.0	63.8	74.0	-10.2	Horiz
			-33.6	+0.5							
3	5350.000M	36.1	+33.3	+4.4	+0.9	+0.0	+0.0	41.6	54.0	-12.4	Horiz
			-33.6	+0.5							
4	5226.190M	100.6	+33.1	+4.3	+0.9	+0.0	+0.0	105.8	125.2	-19.4	Horiz
			-33.6	+0.5							
5	5350.000M	47.1	+33.3	+4.4	+0.9	+0.0	+0.0	52.6	74.0	-21.4	Horiz
			-33.6	+0.5							

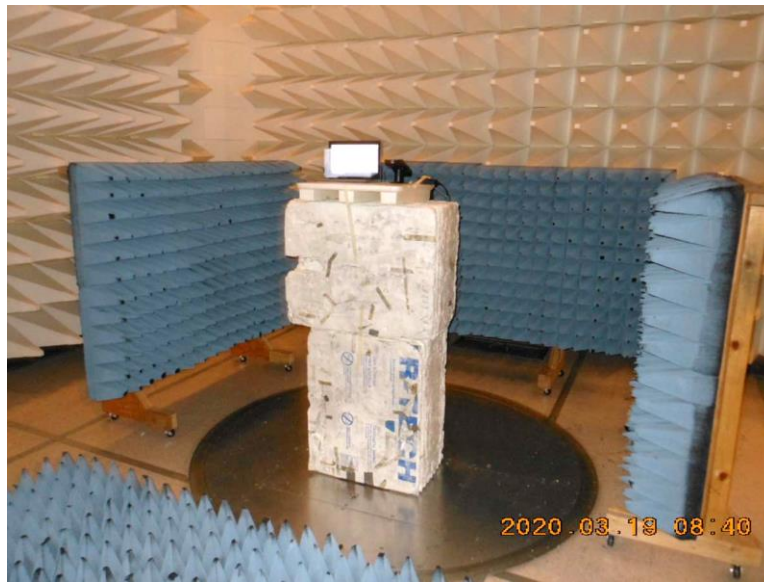
Test Setup Photo(s)



Below 1GHz



Below 1GHz



Above 1GHz



Above 1GHz

15.207 AC Conducted Emissions

Test Setup / Conditions / Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **102802** Date: 4/1/2020
 Test Type: **Conducted Emissions** Time: 07:52:37
 Tested By: Matthew Harrison Sequence#: 86
 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: 150kHz-30MHz
 Frequency tested: 5180 MHz
 Firmware power setting: 14 dBm
 EUT Firmware:
 Protocol /MCS/Modulation: 802.11a, 20MHz BW, 6Mbps(worst-case)

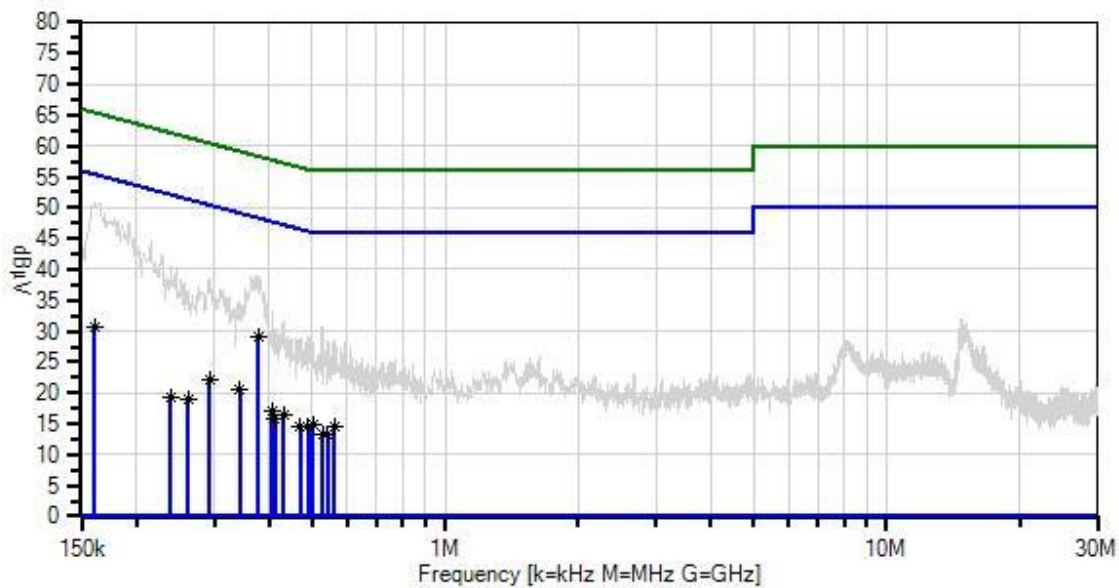
 Antenna type: Linear Polarized
 Antenna Gain: 5.9 dBi.

 Duty Cycle: 100% Modulated

 Test Method: ANSI C63.10: 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 modes, channels, and data rates investigated, worst-case provided.

Nalloy, LLC. WO#: 102802 Sequence#: 86 Date: 4/1/2020
15.207 AC Mains - Average Test Lead: 120V 60Hz Line



— Sweep Data
× QP Readings
Software Version: 5.03.12
— Readings
* Average Readings
— 1 - 15.207 AC Mains - Average
○ Peak Readings
▼ Ambient
— 2 - 15.207 AC Mains - Quasi-peak

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T1	ANP06219	Attenuator	768-10	4/13/2018	4/13/2020
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
T4	AN01311	50uH LISN-Line1 (L)	3816/2	2/24/2020	2/24/2022
	AN01311	50uH LISN-Line2 (N)	3816/2	2/24/2020	2/24/2022
T5	AN02611	High Pass Filter	HE9615-150K-50-720B	1/10/2020	1/10/2022

Measurement Data:

Reading listed by margin.

Test Lead: Line

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	376.887k	20.5	+9.1	+0.0	+0.0	-0.6	+0.0	29.2	48.3	-19.1	Line
	Ave		+0.2								
^	376.887k	30.4	+9.1	+0.0	+0.0	-0.6	+0.0	39.1	48.3	-9.2	Line
			+0.2								
3	160.907k	22.6	+9.1	+0.0	+0.0	-1.7	+0.0	30.6	55.4	-24.8	Line
	Ave		+0.6								
^	160.907k	43.0	+9.1	+0.0	+0.0	-1.7	+0.0	51.0	55.4	-4.4	Line
			+0.6								
5	293.259k	13.6	+9.1	+0.0	+0.0	-0.7	+0.0	22.1	50.4	-28.3	Line
	Ave		+0.1								
^	293.258k	30.2	+9.1	+0.0	+0.0	-0.7	+0.0	38.7	50.4	-11.7	Line
			+0.1								
7	342.709k	11.8	+9.1	+0.0	+0.0	-0.6	+0.0	20.4	49.1	-28.7	Line
	Ave		+0.1								
^	342.708k	26.3	+9.1	+0.0	+0.0	-0.6	+0.0	34.9	49.1	-14.2	Line
			+0.1								
9	405.248k	8.4	+9.1	+0.0	+0.0	-0.5	+0.0	17.2	47.7	-30.5	Line
	Ave		+0.2								
^	405.248k	24.4	+9.1	+0.0	+0.0	-0.5	+0.0	33.2	47.7	-14.5	Line
			+0.2								
11	430.701k	7.5	+9.1	+0.1	+0.0	-0.5	+0.0	16.4	47.2	-30.8	Line
	Ave		+0.2								
^	430.700k	22.7	+9.1	+0.1	+0.0	-0.5	+0.0	31.6	47.2	-15.6	Line
			+0.2								
13	501.239k	6.0	+9.1	+0.0	+0.0	-0.4	+0.0	14.9	46.0	-31.1	Line
	Ave		+0.2								
^	501.239k	19.5	+9.1	+0.0	+0.0	-0.4	+0.0	28.4	46.0	-17.6	Line
			+0.2								
15	561.598k	5.6	+9.1	+0.0	+0.0	-0.4	+0.0	14.6	46.0	-31.4	Line
	Ave		+0.3								
^	561.597k	19.6	+9.1	+0.0	+0.0	-0.4	+0.0	28.6	46.0	-17.4	Line
			+0.3								
17	490.331k	5.5	+9.1	+0.0	+0.0	-0.4	+0.0	14.4	46.2	-31.8	Line
	Ave		+0.2								
^	490.331k	20.2	+9.1	+0.0	+0.0	-0.4	+0.0	29.1	46.2	-17.1	Line
			+0.2								
19	412.520k	6.9	+9.1	+0.0	+0.0	-0.5	+0.0	15.7	47.6	-31.9	Line
	Ave		+0.2								
^	412.520k	21.8	+9.1	+0.0	+0.0	-0.5	+0.0	30.6	47.6	-17.0	Line
			+0.2								
21	470.697k	5.7	+9.1	+0.1	+0.0	-0.5	+0.0	14.6	46.5	-31.9	Line
	Ave		+0.2								
^	470.696k	20.1	+9.1	+0.1	+0.0	-0.5	+0.0	29.0	46.5	-17.5	Line
			+0.2								

23	261.262k	10.4	+9.1	+0.0	+0.0	-0.8	+0.0	18.9	51.4	-32.5	Line
	Ave		+0.2								
^	261.261k	28.0	+9.1	+0.0	+0.0	-0.8	+0.0	36.5	51.4	-14.9	Line
			+0.2								
25	526.692k	4.4	+9.1	+0.0	+0.0	-0.4	+0.0	13.4	46.0	-32.6	Line
	Ave		+0.3								
^	526.691k	21.9	+9.1	+0.0	+0.0	-0.4	+0.0	30.9	46.0	-15.1	Line
			+0.3								
27	541.963k	4.3	+9.1	+0.0	+0.0	-0.4	+0.0	13.3	46.0	-32.7	Line
	Ave		+0.3								
^	541.963k	19.5	+9.1	+0.0	+0.0	-0.4	+0.0	28.5	46.0	-17.5	Line
			+0.3								
29	239.445k	11.1	+9.1	+0.0	+0.0	-1.0	+0.0	19.4	52.1	-32.7	Line
	Ave		+0.2								
^	239.445k	32.2	+9.1	+0.0	+0.0	-1.0	+0.0	40.5	52.1	-11.6	Line
			+0.2								

Test Location: CKC Laboratories, Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362
 Customer: **Nalloy, LLC.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **102802** Date: 4/1/2020
 Test Type: **Conducted Emissions** Time: 08:00:30
 Tested By: Matthew Harrison Sequence#: 87
 Software: EMITest 5.03.12 120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

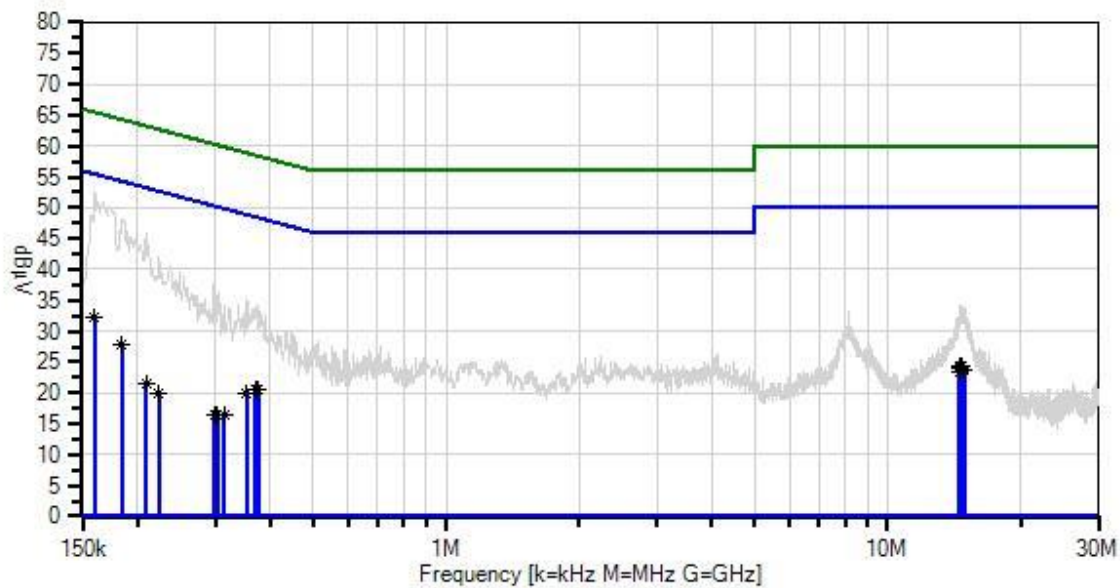
Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Environmental Conditions: Temperature: 22° C Humidity: 28% Pressure: 101.3 kPa Frequency Range: 150kHz-30MHz Frequency tested: 5180 MHz Firmware power setting: 14 dBm EUT Firmware: Protocol /MCS/Modulation: 802.11a, 20MHz BW, 6Mbps(worst-case) Antenna type: Linear Polarized Antenna Gain: 5.9 dBi. Duty Cycle: 100% Modulated Test Method: ANSI C63.10: 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 modes, channels, and data rates investigated, worst-case provided.
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Nalloy, LLC. WO#: 102802 Sequence#: 87 Date: 4/1/2020
15.207 AC Mains - Average Test Lead: 120V 60Hz Neutral



— Sweep Data
× QP Readings
Software Version: 5.03.12
— Readings
* Average Readings
— 1 - 15.207 AC Mains - Average
○ Peak Readings
▼ Ambient
— 2 - 15.207 AC Mains - Quasi-peak

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02872	Spectrum Analyzer	E4440A	11/18/2019	11/18/2021
T1	ANP06219	Attenuator	768-10	4/13/2018	4/13/2020
T2	ANP06515	Cable	Heliac	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliac	8/23/2019	8/23/2021
	AN01311	50uH LISN-Line1 (L)	3816/2	2/24/2020	2/24/2022
T4	AN01311	50uH LISN-Line2 (N)	3816/2	2/24/2020	2/24/2022
T5	AN02611	High Pass Filter	HE9615-150K-50-720B	1/10/2020	1/10/2022

Measurement Data: Reading listed by margin. Test Lead: Neutral

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	160.180k	24.1	+9.1	+0.0	+0.0	-1.6	+0.0	32.2	55.5	-23.3	Neutr
	Ave		+0.6								
^	160.179k	44.4	+9.1	+0.0	+0.0	-1.6	+0.0	52.5	55.5	-3.0	Neutr
			+0.6								
3	14.770M	15.3	+9.1	+0.2	+0.1	-0.6	+0.0	24.3	50.0	-25.7	Neutr
	Ave		+0.2								
^	14.770M	25.3	+9.1	+0.2	+0.1	-0.6	+0.0	34.3	50.0	-15.7	Neutr
			+0.2								
5	14.643M	15.2	+9.1	+0.2	+0.1	-0.6	+0.0	24.2	50.0	-25.8	Neutr
	Ave		+0.2								
^	14.643M	25.0	+9.1	+0.2	+0.1	-0.6	+0.0	34.0	50.0	-16.0	Neutr
			+0.2								
7	14.607M	15.1	+9.1	+0.2	+0.1	-0.6	+0.0	24.1	50.0	-25.9	Neutr
	Ave		+0.2								
^	14.607M	24.8	+9.1	+0.2	+0.1	-0.6	+0.0	33.8	50.0	-16.2	Neutr
			+0.2								
9	14.923M	14.8	+9.1	+0.2	+0.1	-0.6	+0.0	23.8	50.0	-26.2	Neutr
	Ave		+0.2								
^	14.923M	24.9	+9.1	+0.2	+0.1	-0.6	+0.0	33.9	50.0	-16.1	Neutr
			+0.2								
11	14.526M	14.5	+9.1	+0.2	+0.1	-0.6	+0.0	23.5	50.0	-26.5	Neutr
	Ave		+0.2								
^	14.526M	25.2	+9.1	+0.2	+0.1	-0.6	+0.0	34.2	50.0	-15.8	Neutr
			+0.2								
13	184.178k	19.5	+9.1	+0.0	+0.0	-1.3	+0.0	27.7	54.3	-26.6	Neutr
	Ave		+0.4								
^	184.177k	40.0	+9.1	+0.0	+0.0	-1.3	+0.0	48.2	54.3	-6.1	Neutr
			+0.4								
15	375.433k	11.9	+9.1	+0.0	+0.0	-0.6	+0.0	20.6	48.4	-27.8	Neutr
	Ave		+0.2								
^	375.432k	25.7	+9.1	+0.0	+0.0	-0.6	+0.0	34.4	48.4	-14.0	Neutr
			+0.2								
17	370.342k	11.8	+9.1	+0.0	+0.0	-0.6	+0.0	20.5	48.5	-28.0	Neutr
	Ave		+0.2								
^	370.342k	25.1	+9.1	+0.0	+0.0	-0.6	+0.0	33.8	48.5	-14.7	Neutr
			+0.2								
19	353.617k	11.2	+9.1	+0.0	+0.0	-0.6	+0.0	19.8	48.9	-29.1	Neutr
	Ave		+0.1								
^	353.616k	26.7	+9.1	+0.0	+0.0	-0.6	+0.0	35.3	48.9	-13.6	Neutr
			+0.1								
21	209.630k	13.3	+9.1	+0.0	+0.0	-1.1	+0.0	21.5	53.2	-31.7	Neutr
	Ave		+0.2								
^	209.629k	37.7	+9.1	+0.0	+0.0	-1.1	+0.0	45.9	53.2	-7.3	Neutr
			+0.2								

23	223.447k	11.5	+9.1	+0.0	+0.0	-1.0	+0.0	19.9	52.7	-32.8	Neutr
	Ave		+0.3								
^	223.446k	33.6	+9.1	+0.0	+0.0	-1.0	+0.0	42.0	52.7	-10.7	Neutr
			+0.3								
25	315.075k	7.9	+9.1	+0.0	+0.0	-0.7	+0.0	16.4	49.8	-33.4	Neutr
	Ave		+0.1								
^	315.074k	25.8	+9.1	+0.0	+0.0	-0.7	+0.0	34.3	49.8	-15.5	Neutr
			+0.1								
27	303.439k	8.0	+9.1	+0.0	+0.0	-0.7	+0.0	16.5	50.1	-33.6	Neutr
	Ave		+0.1								
^	303.439k	27.5	+9.1	+0.0	+0.0	-0.7	+0.0	36.0	50.1	-14.1	Neutr
			+0.1								
29	298.349k	7.9	+9.1	+0.0	+0.0	-0.7	+0.0	16.4	50.3	-33.9	Neutr
	Ave		+0.1								
^	298.349k	29.4	+9.1	+0.0	+0.0	-0.7	+0.0	37.9	50.3	-12.4	Neutr
			+0.1								

Test Setup Photo(s)



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

Uncertainties reported are worst case for all CKC Laboratories' sites and represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k=2$. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in $\text{dB}\mu\text{V}/\text{m}$, the spectrum analyzer reading in $\text{dB}\mu\text{V}$ was corrected by using the following formula. This reading was then compared to the applicable specification limit. Individual measurements were compared with the displayed limit value in the margin column. The margin was calculated based on subtracting the limit value from the corrected measurement value; a positive margin represents a measurement exceeding the limit, while a negative margin represents a measurement less than the limit.

SAMPLE CALCULATIONS		
	Meter reading	($\text{dB}\mu\text{V}$)
+	Antenna Factor	(dB/m)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	($\text{dB}\mu\text{V}/\text{m}$)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or caret ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point, the measuring device is set into the linear mode and the scan time is reduced.