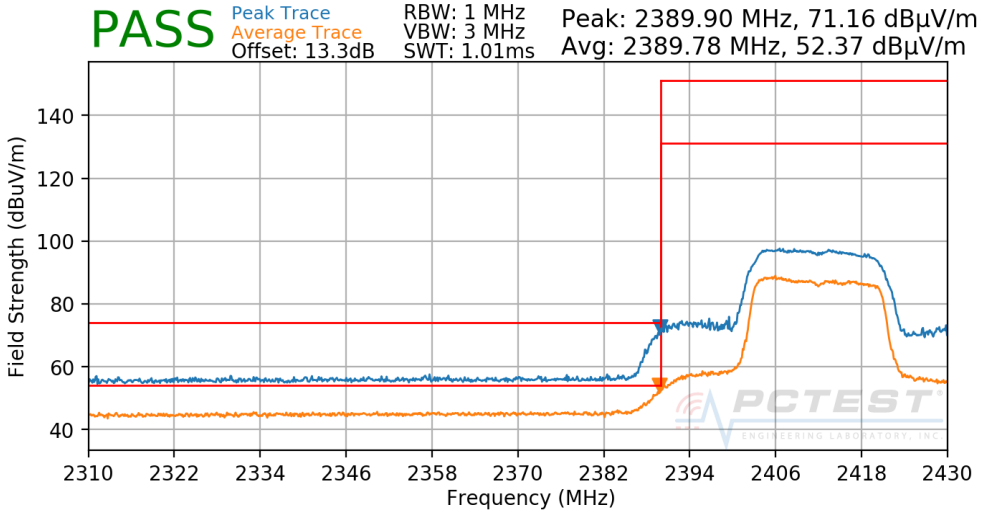
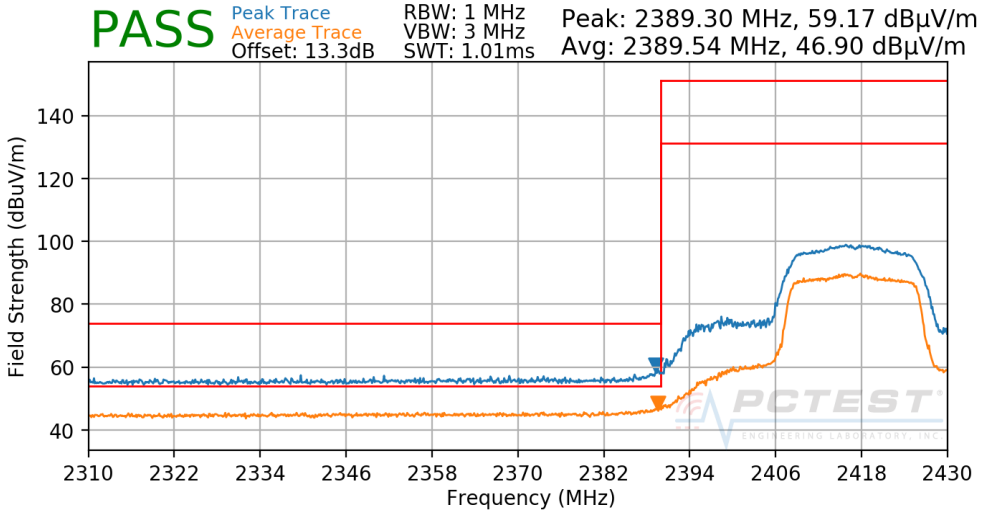
Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



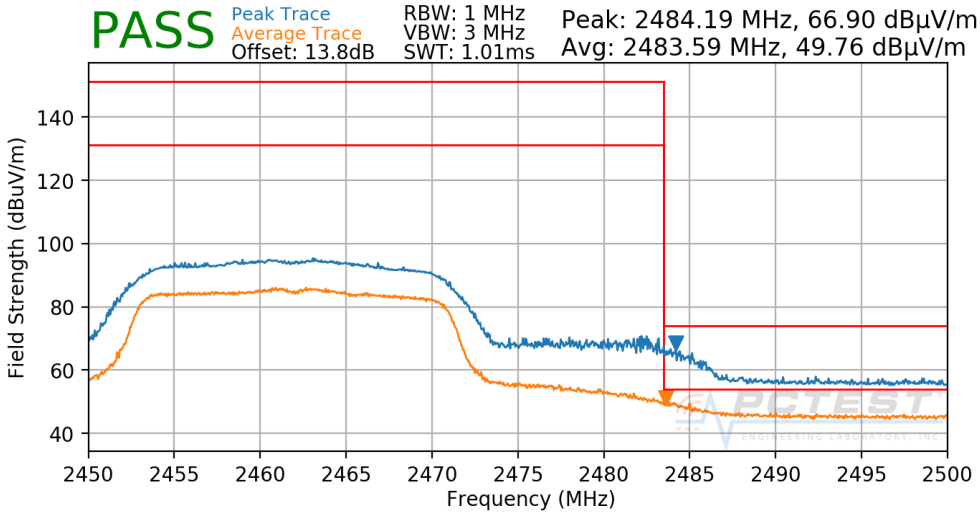
Plot 7-150. Radiated Restricted Lower Band Edge Measurement SISO CORE1 DIVERSITY

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



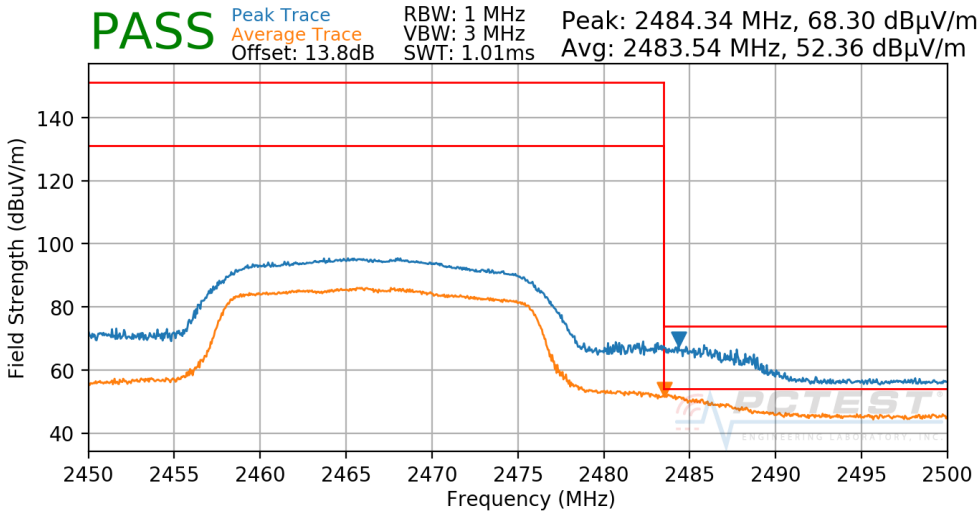
Plot 7-151. Radiated Restricted Lower Band Edge Measurement SISO CORE1 DIVERSITY

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



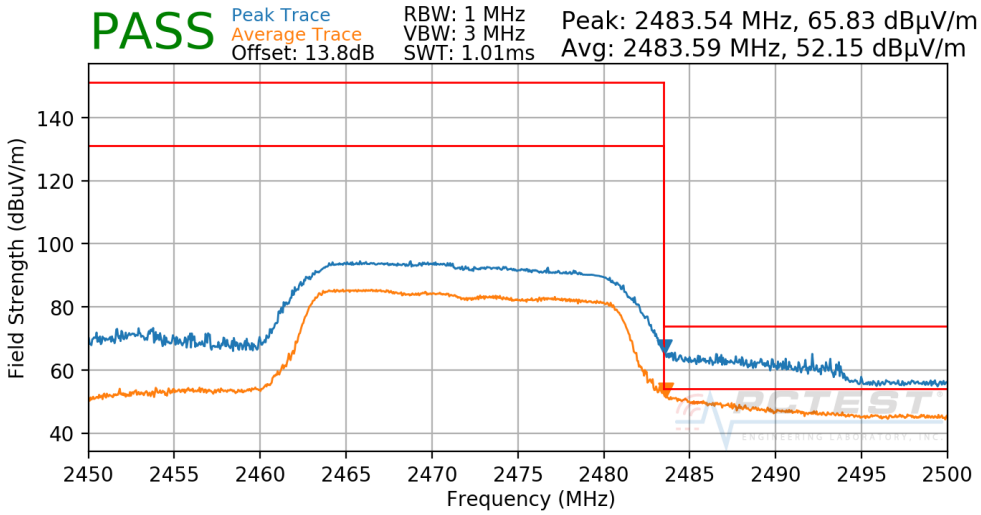
Plot 7-152. Radiated Restricted Upper Band Edge Measurement SISO CORE1 DIVERSITY

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-153. Radiated Restricted Upper Band Edge Measurement SISO CORE1 DIVERSITY

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2472MHz
Channel:	13



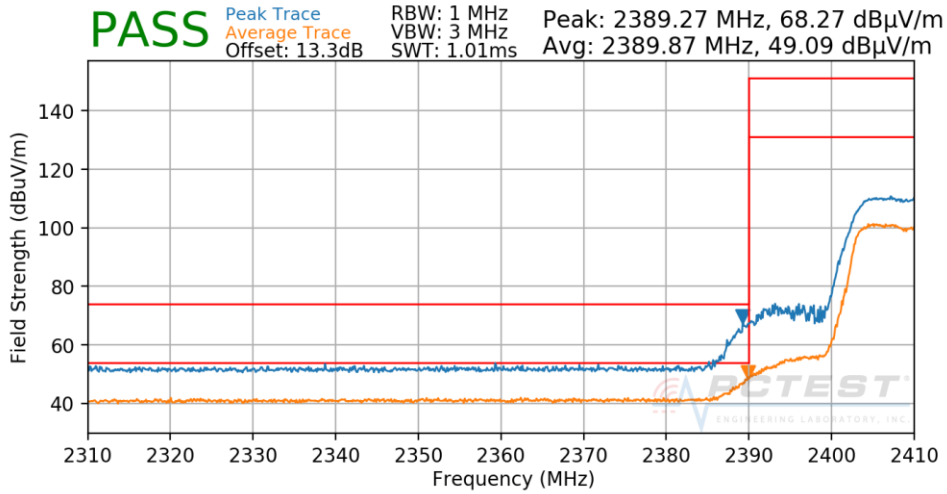
Plot 7-154. Radiated Restricted Upper Band Edge Measurement SISO CORE1 DIVERSITY

7.7.9 CDD Primary Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

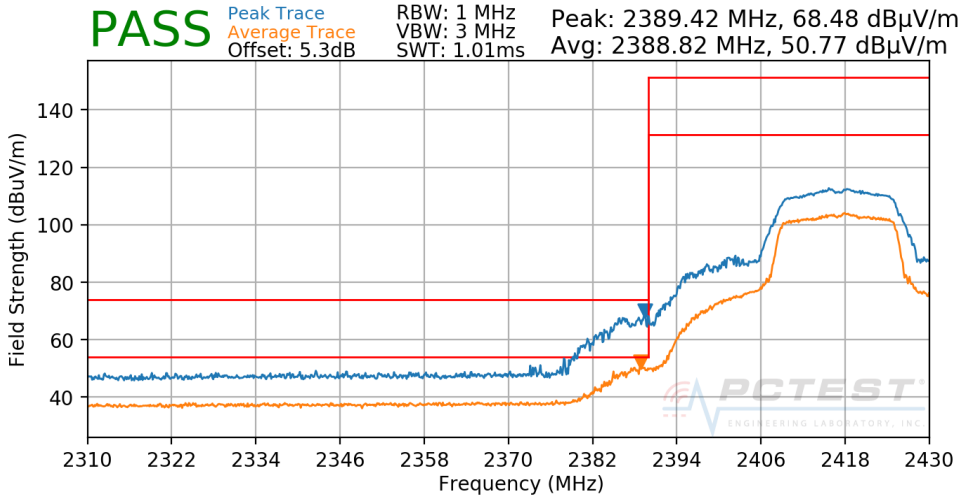
The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



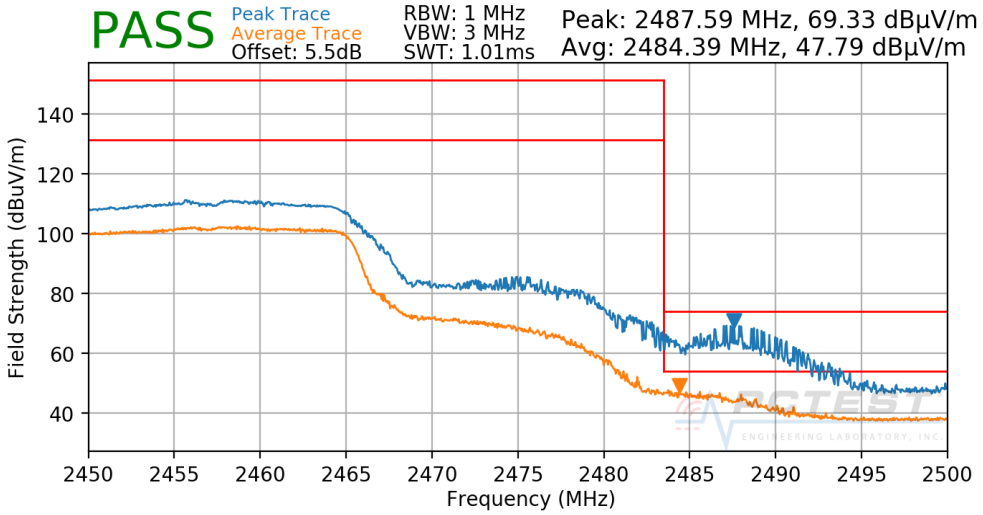
Plot 7-155. Radiated Restricted Lower Band Edge Measurement CDD Primary

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



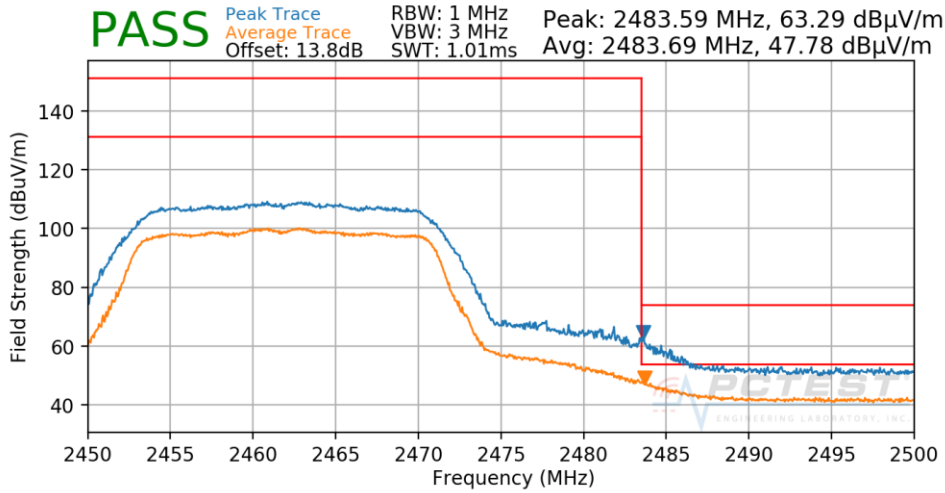
Plot 7-156. Radiated Restricted Lower Band Edge Measurement CDD Primary

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



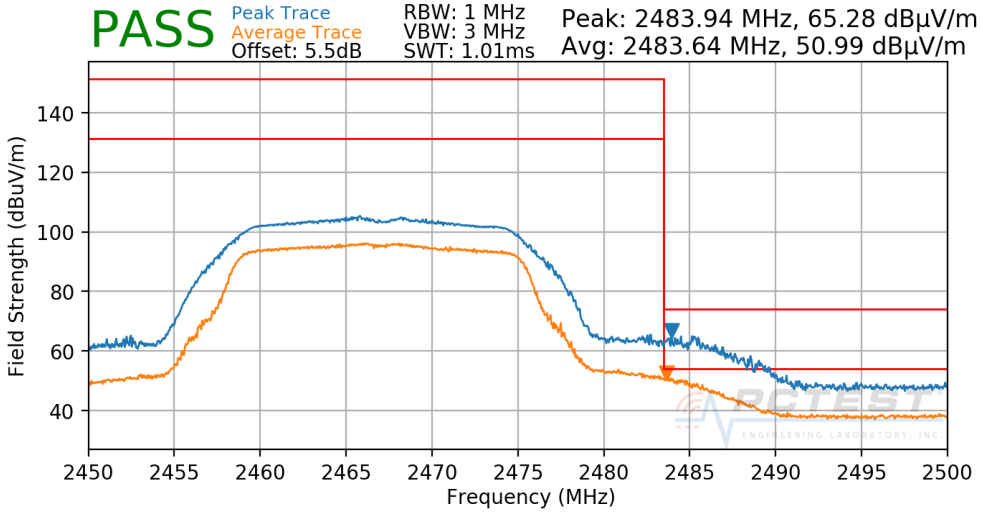
Plot 7-157. Radiated Restricted Upper Band Edge Measurement CDD Primary

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



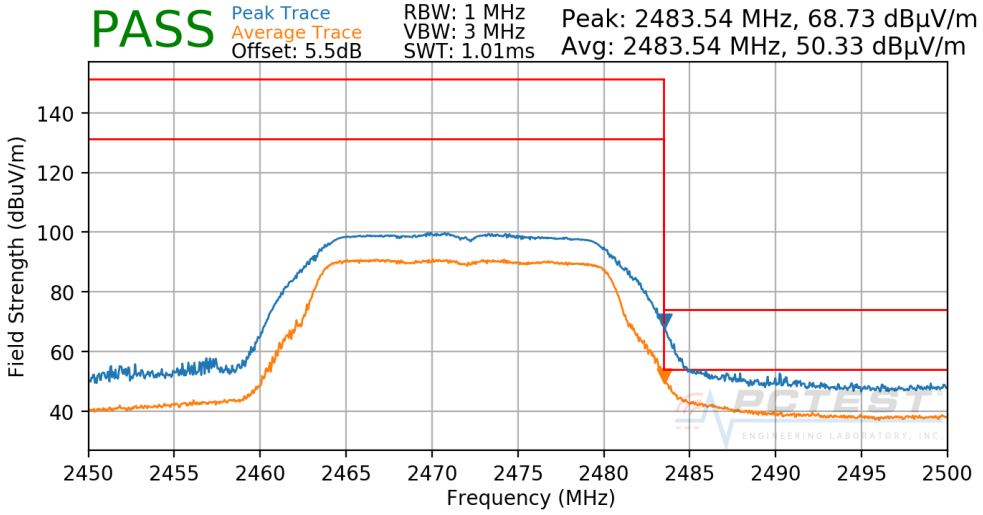
Plot 7-158. Radiated Restricted Upper Band Edge Measurement CDD Primary

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-159. Radiated Restricted Upper Band Edge Measurement CDD Primary

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2472MHz
Channel:	13



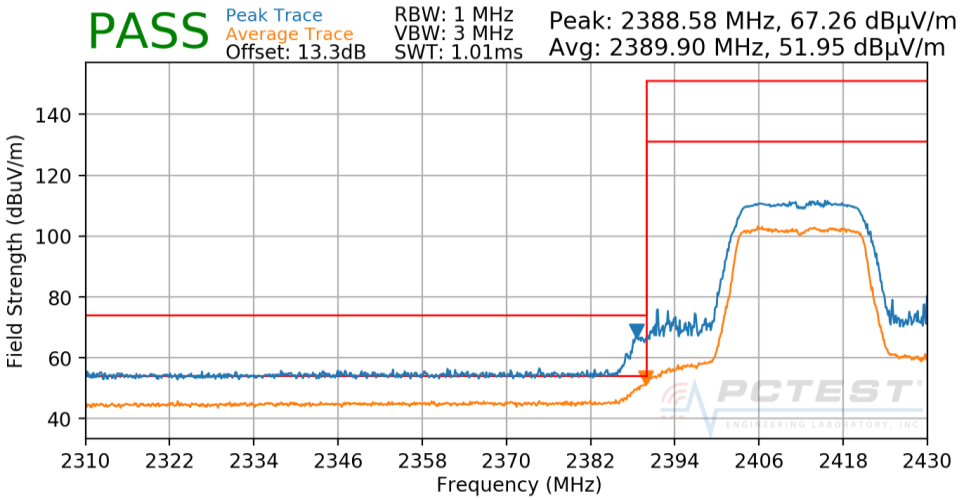
Plot 7-160. Radiated Restricted Upper Band Edge Measurement CDD Primary

7.7.10 CDD Diversity Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

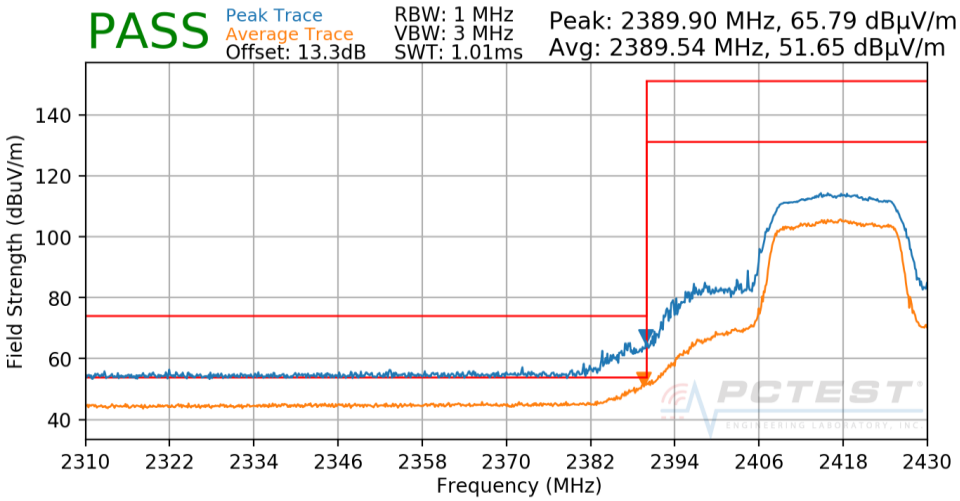
The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



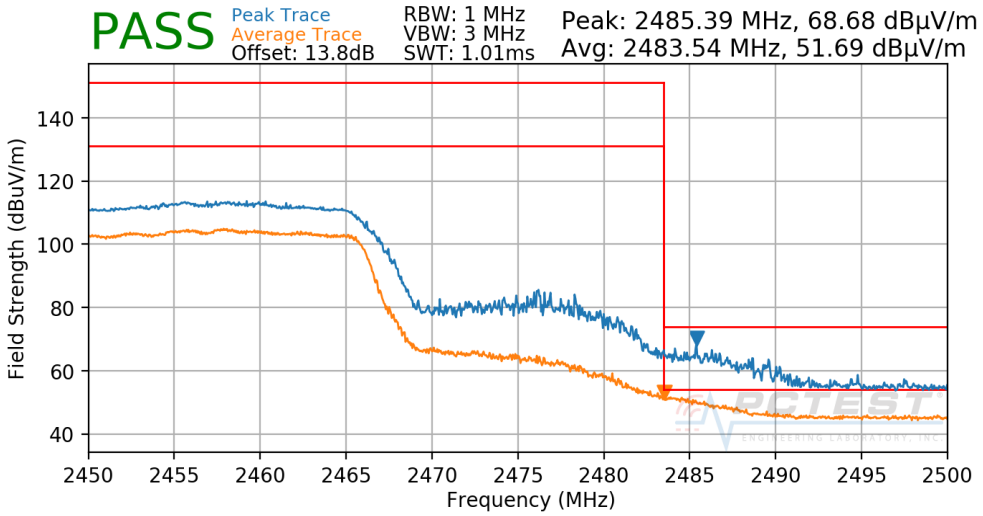
Plot 7-161. Radiated Restricted Lower Band Edge Measurement CDD Diversity

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



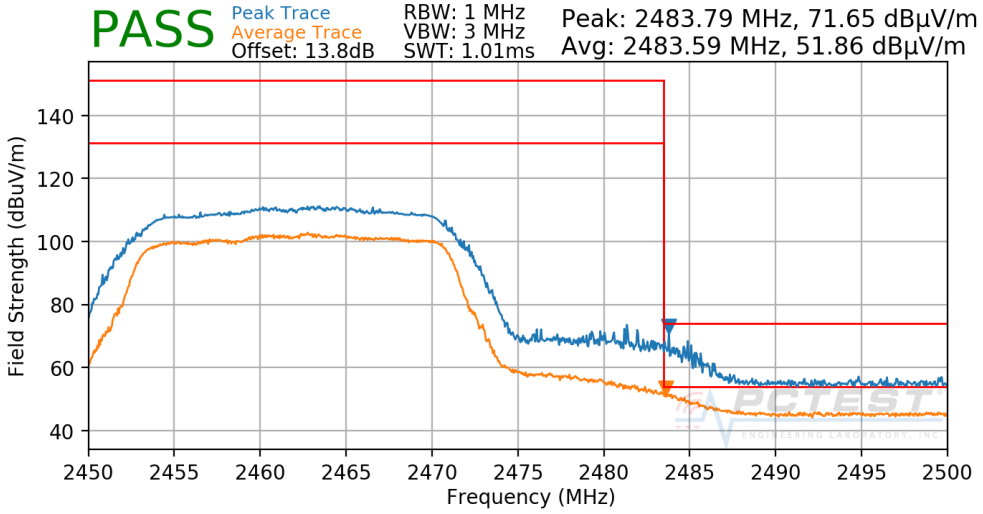
Plot 7-162. Radiated Restricted Lower Band Edge Measurement CDD Diversity

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



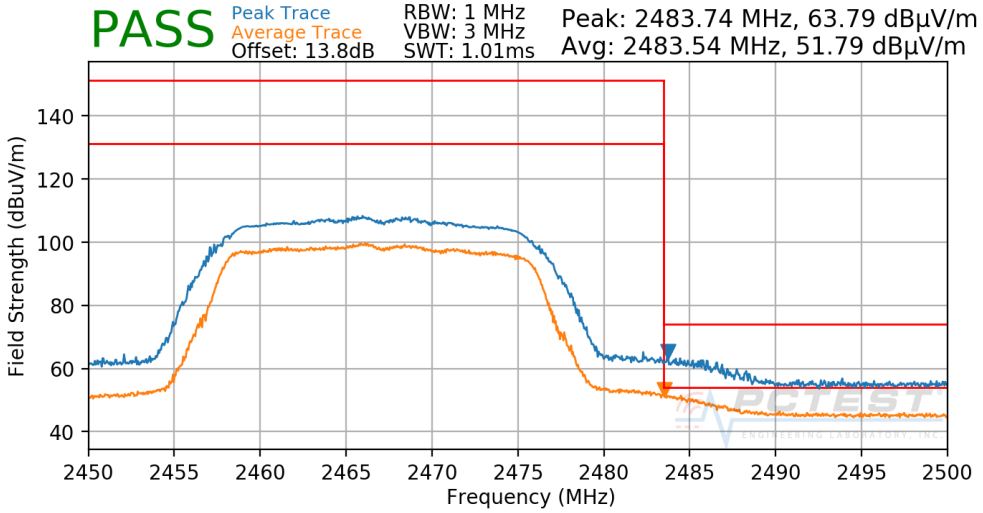
Plot 7-163. Radiated Restricted Upper Band Edge Measurement CDD Diversity

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



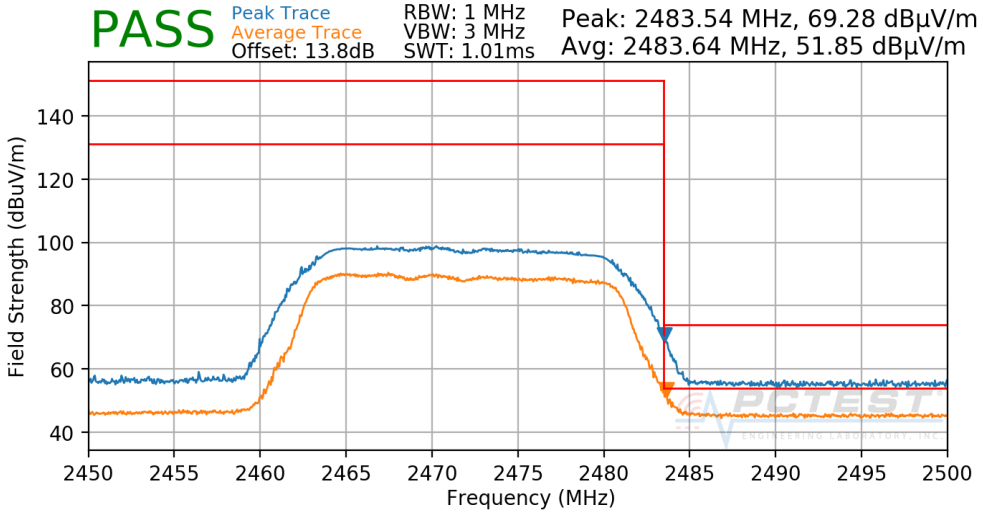
Plot 7-164. Radiated Restricted Upper Band Edge Measurement CDD Diversity

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-165. Radiated Restricted Upper Band Edge Measurement CDD Diversity

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2472MHz
Channel:	13



Plot 7-166. Radiated Restricted Upper Band Edge Measurement CDD Diversity

7.8 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209; RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-40 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-40. Radiated Limits

Test Procedures Used

ANSI C63.10-2013

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagrams below.

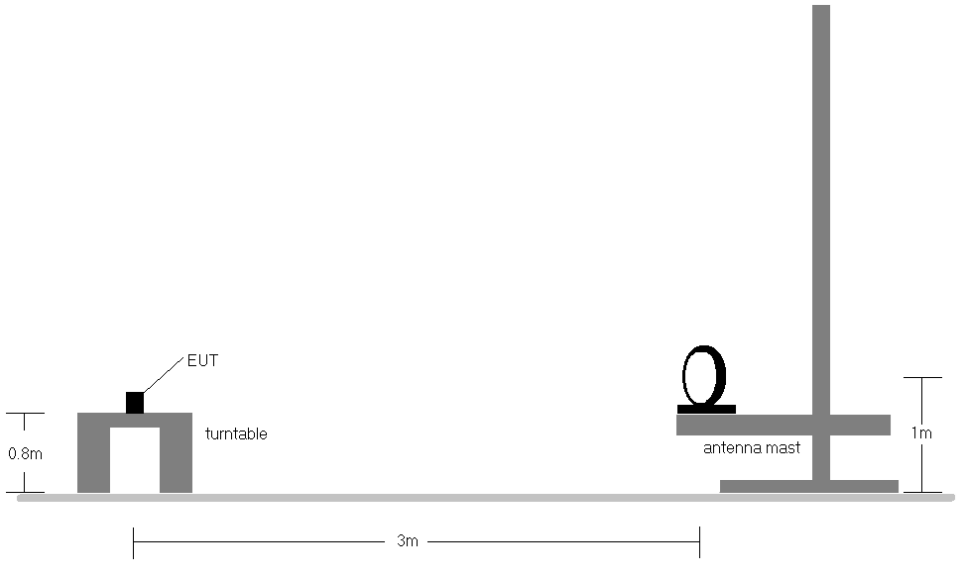


Figure 7-7. Radiated Test Setup < 30Mhz

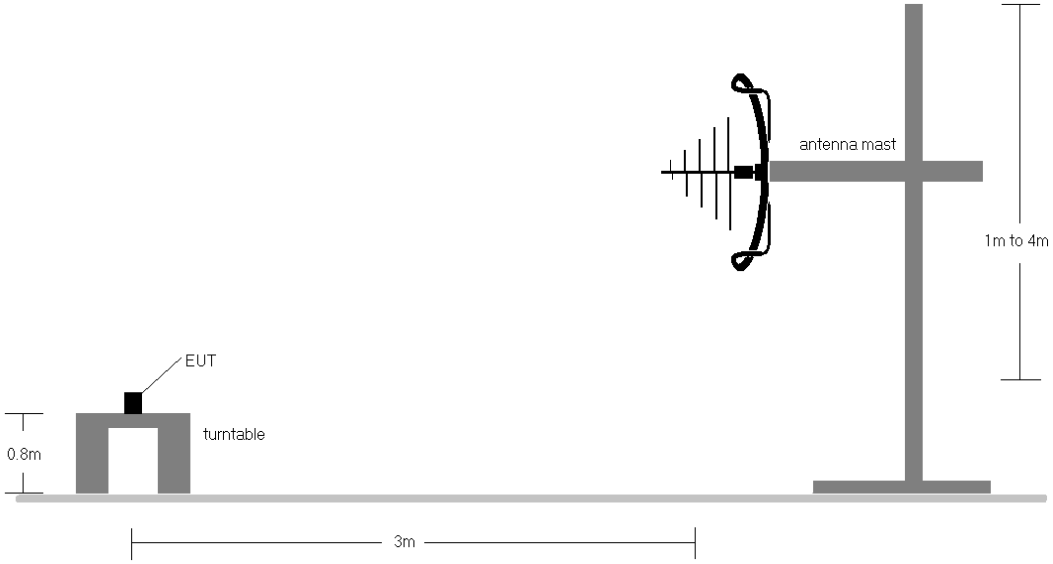


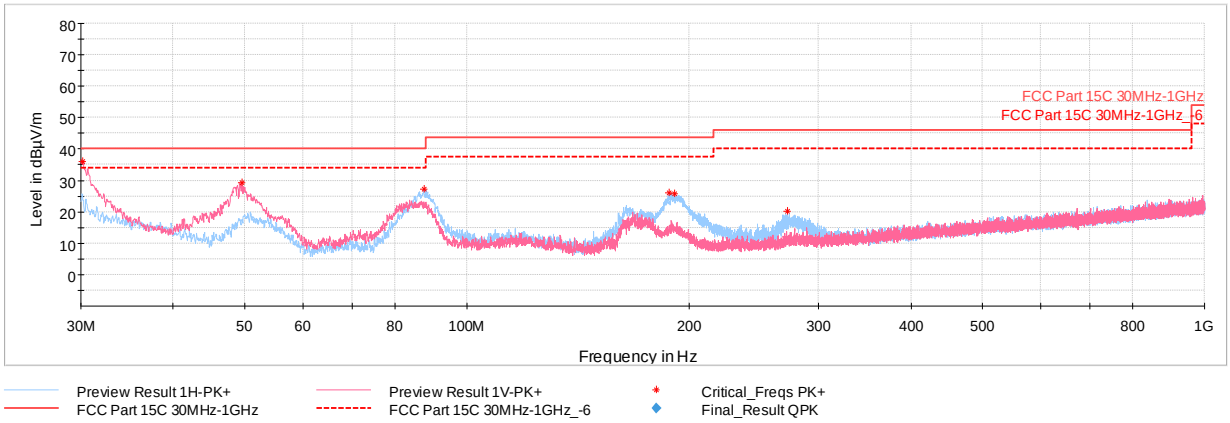
Figure 7-8. Radiated Test Setup < 1GHz

Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen(8.10) are below the limit shown in Table 7-40.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

CDD Primary Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-167. Radiated Spurious Plot below 1GHz CDD Primary

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
30.19	Quasi-Peak	V	100	240	-67.52	-9.88	29.60	40.00	-10.40
49.55	Max Peak	V	100	48	-55.80	-21.94	29.26	40.00	-10.74
87.47	Max Peak	H	250	175	-60.87	-19.03	27.10	40.00	-12.90
188.01	Max Peak	H	100	121	-61.07	-20.00	25.93	43.52	-17.59
191.46	Max Peak	H	100	107	-61.53	-19.79	25.68	43.52	-17.84
272.02	Max Peak	H	100	280	-69.90	-16.91	20.19	46.02	-25.83

Table 7-41. Radiated Spurious Emissions below 1GHz CDD Primary

7.9 Line-Conducted Test Data

§15.207; RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (8.8).

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-42. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

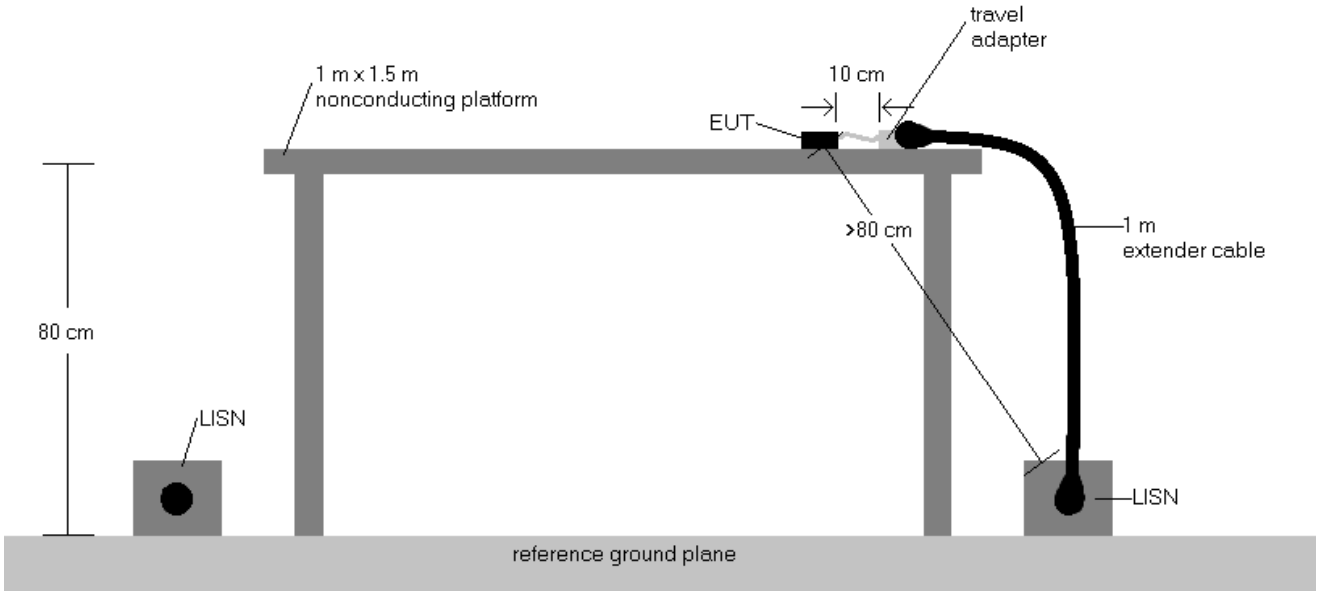
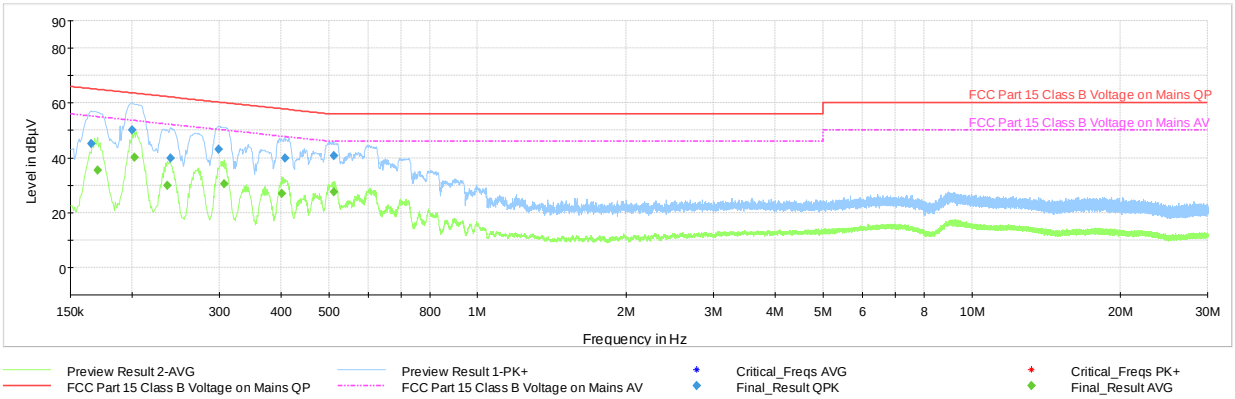


Figure 7-9. Test Instrument & Measurement Setup

Test Notes

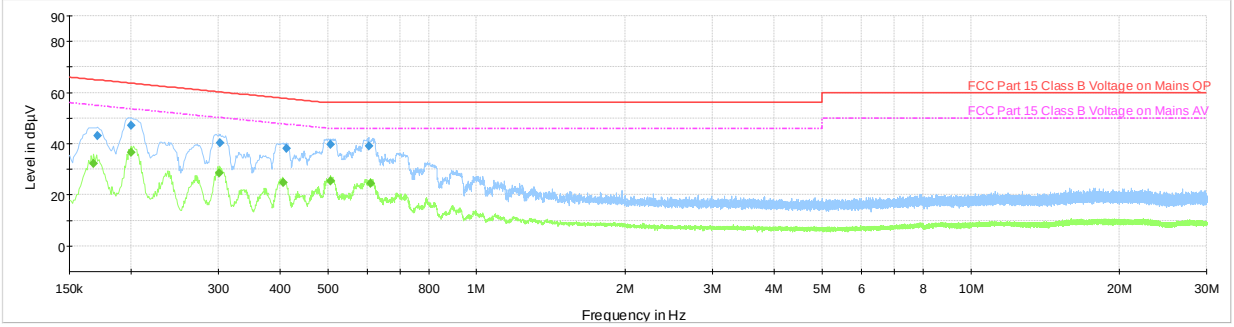
1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.207 and RSS-Gen(8.8).
3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
5. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.



Plot 7-168. Line Conducted Plot with 802.11n CDD Primary (L1, with AC/DC Adapter)

Frequency MHz	Process State	QuasiPeak dBµV	Average dBµV	Limit dBµV	Margin dB	Bandwidth kHz	Line	PE
0.165000	FINAL	45.13	—	65.21	-20.08	9.000	L1	GND
0.170000	FINAL	—	35.59	54.96	-19.37	9.000	L1	GND
0.200000	FINAL	50.09	—	63.61	-13.52	9.000	L1	GND
0.202000	FINAL	—	40.23	53.53	-13.30	9.000	L1	GND
0.236000	FINAL	—	29.79	52.24	-22.45	9.000	L1	GND
0.239000	FINAL	39.92	—	62.13	-22.21	9.000	L1	GND
0.299000	FINAL	43.08	—	60.27	-17.19	9.000	L1	GND
0.307000	FINAL	—	30.41	50.05	-19.64	9.000	L1	GND
0.401000	FINAL	—	26.81	47.83	-21.02	9.000	L1	GND
0.407000	FINAL	39.71	—	57.71	-18.00	9.000	L1	GND
0.511000	FINAL	40.76	—	56.00	-15.24	9.000	L1	GND
0.512000	FINAL	—	27.57	46.00	-18.43	9.000	L1	GND

Table 7-43. Line Conducted Measurements with 802.11n CDD Primary (L1, with AC/DC Adapter)



Plot 7-169. Line Conducted Plot with 802.11n CDD Primary (N, with AC/DC Adapter)

Frequency MHz	Process State	QuasiPeak dBµV	Average dBµV	Limit dBµV	Margin dB	Bandwidth kHz	Line	PE
0.168000	FINAL	—	32.21	55.06	-22.85	9.000	N	GND
0.171000	FINAL	43.12	—	64.91	-21.79	9.000	N	GND
0.200000	FINAL	—	36.61	53.61	-17.00	9.000	N	GND
0.200000	FINAL	47.06	—	63.61	-16.55	9.000	N	GND
0.301000	FINAL	—	28.63	50.22	-21.59	9.000	N	GND
0.303000	FINAL	40.45	—	60.16	-19.71	9.000	N	GND
0.406000	FINAL	—	24.86	47.73	-22.87	9.000	N	GND
0.412000	FINAL	38.13	—	57.61	-19.48	9.000	N	GND
0.507000	FINAL	39.67	—	56.00	-16.33	9.000	N	GND
0.507000	FINAL	—	25.36	46.00	-20.64	9.000	N	GND
0.605000	FINAL	39.09	—	56.00	-16.91	9.000	N	GND
0.610000	FINAL	—	24.35	46.00	-21.65	9.000	N	GND

Table 7-44. Line Conducted Measurements with 802.11n CDD Primary (N, with AC/DC Adapter)

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA2013** is in compliance with Part 15 Subpart C (15.247) of the FCC Rules and RSS-247 of the Innovation, Science and Economic Development Canada Rules.