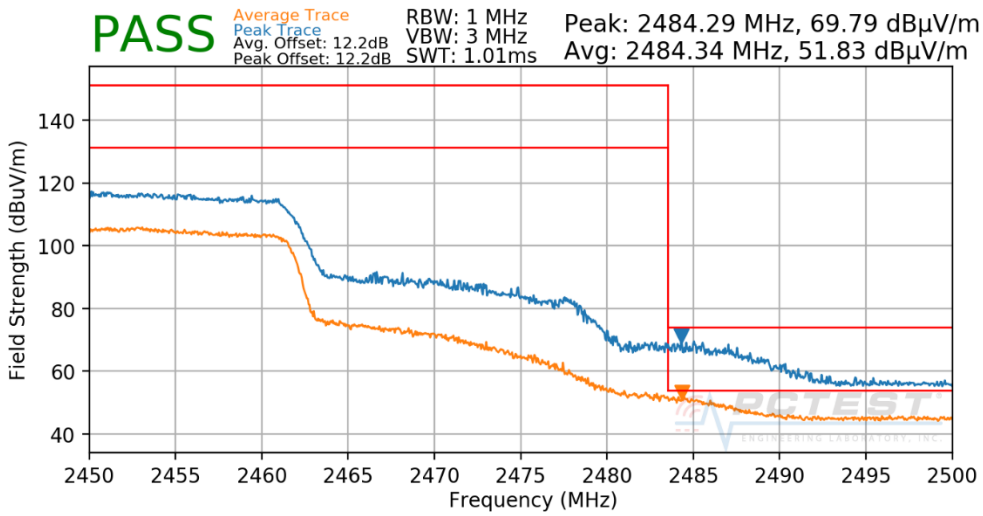
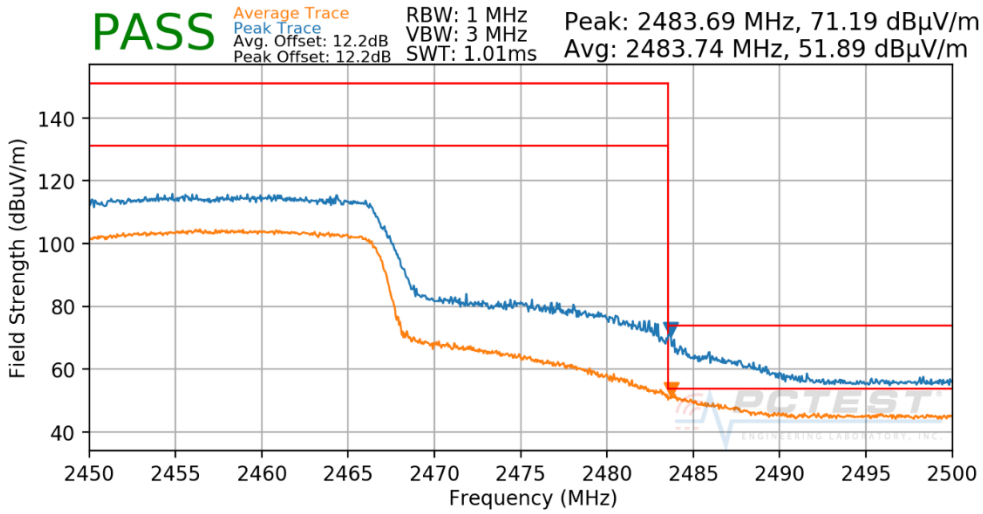
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2452MHz
Channel:	9



Plot 7-151. Radiated Restricted Upper Band Edge Measurement SISO CORE 0 (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



Plot 7-152. Radiated Restricted Upper Band Edge Measurement SISO CORE 0 (Peak & Average) – RU242)

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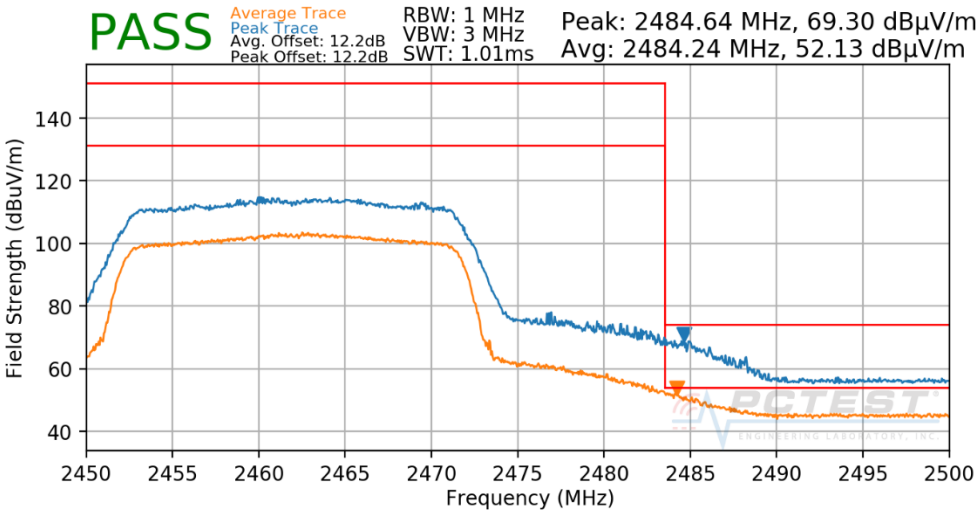
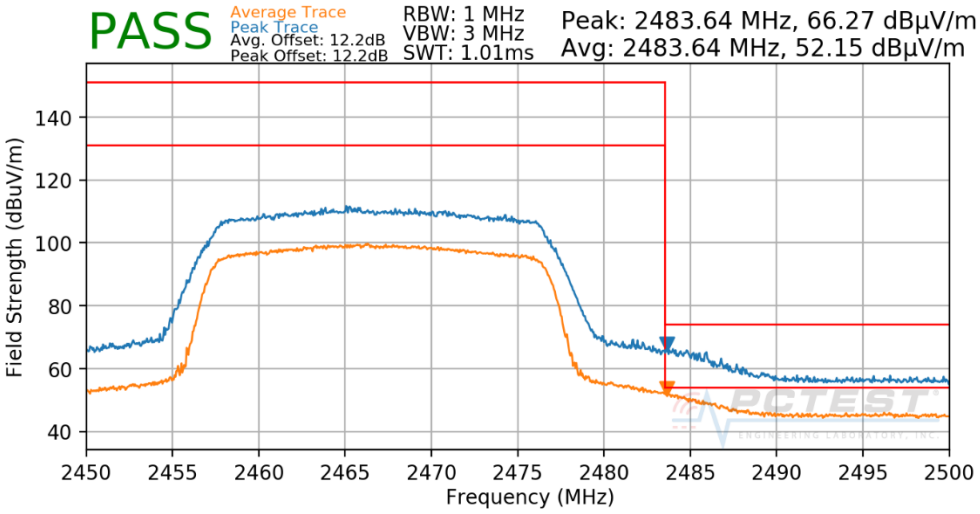
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



Plot 7-153. Radiated Restricted Upper Band Edge Measurement SISO CORE 0 (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-154. Radiated Restricted Upper Band Edge Measurement SISO CORE 0 (Peak & Average) – RU242)

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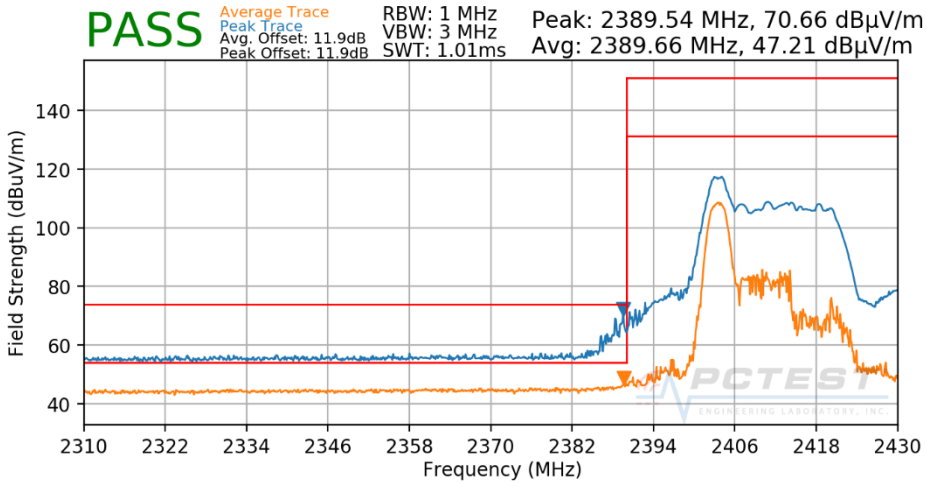
7.7.5 SISO Core 1 Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

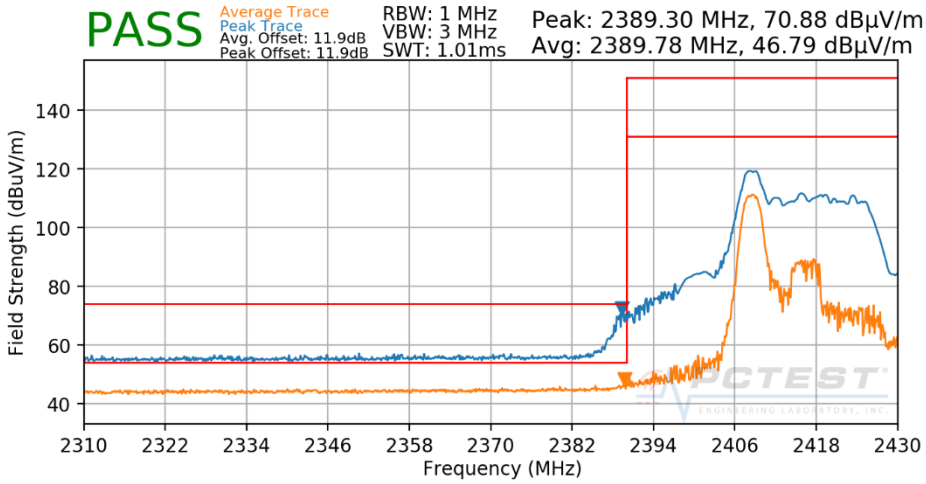
The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



Plot 7-155. Radiated Restricted Lower Band Edge Measurement SISO CORE 1 (Peak & Average) – RU26)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



Plot 7-156. Radiated Restricted Lower Band Edge Measurement SISO CORE 1 (Peak & Average) – RU26)

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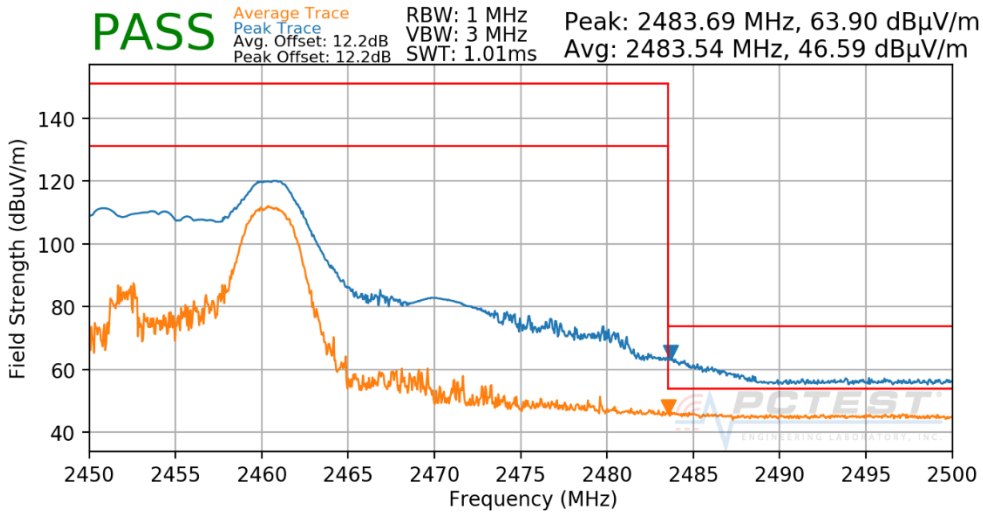
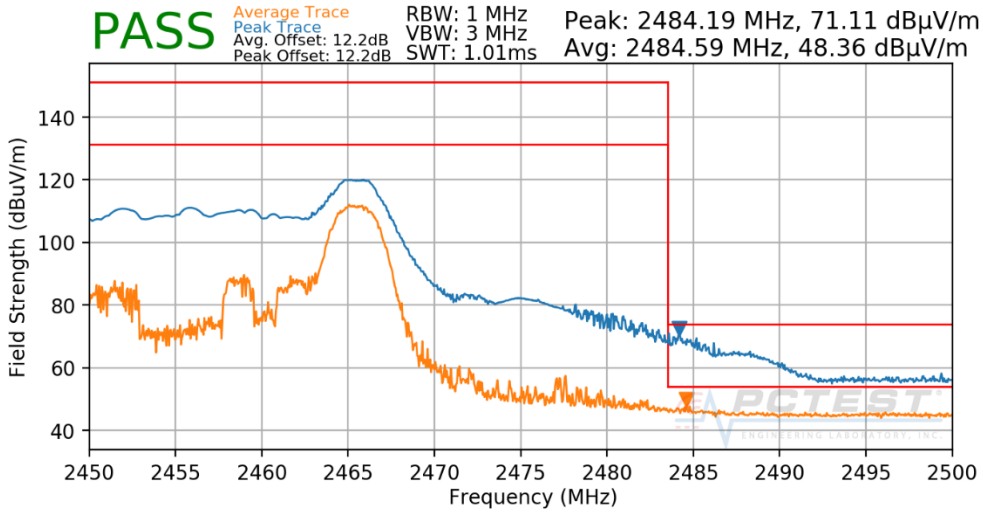
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2452MHz
Channel:	9



Plot 7-157. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU26)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



Plot 7-158. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU26)

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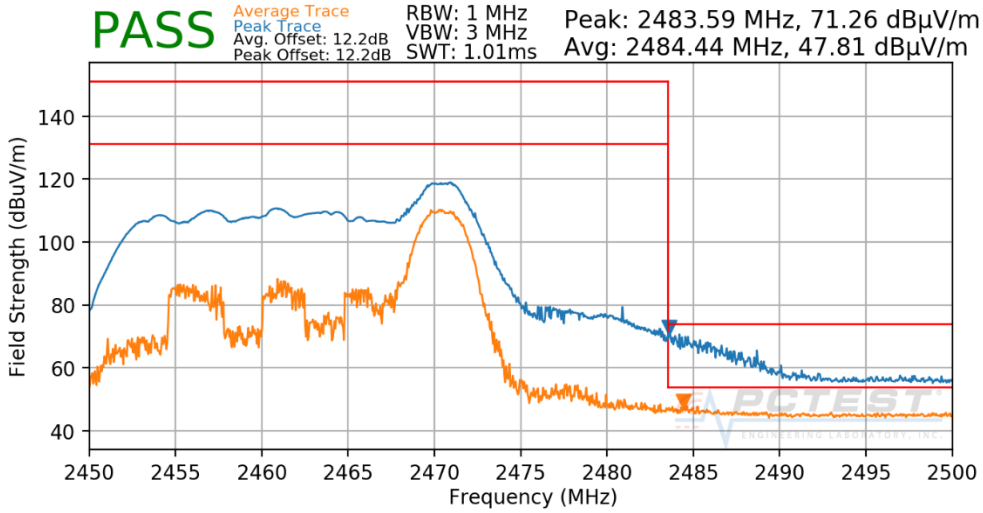
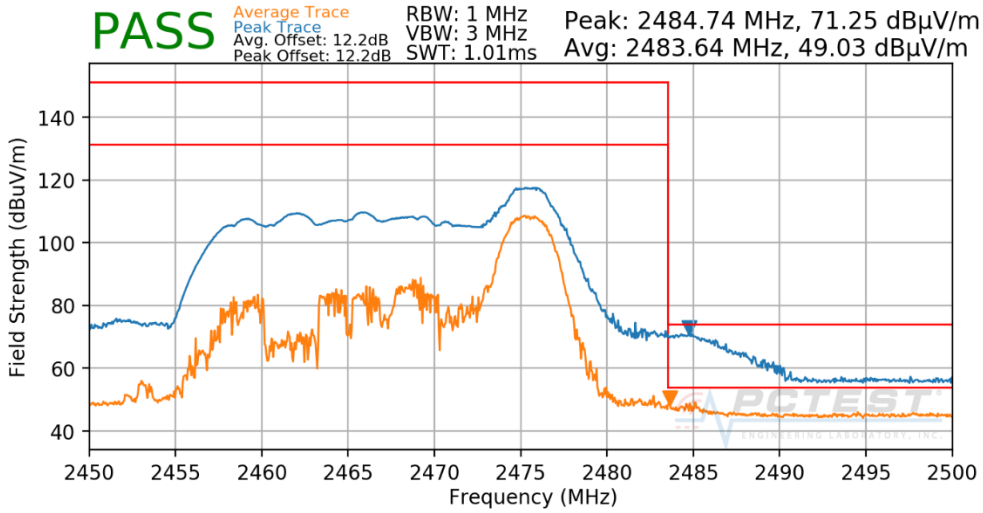
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



Plot 7-159. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU26)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-160. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU26)

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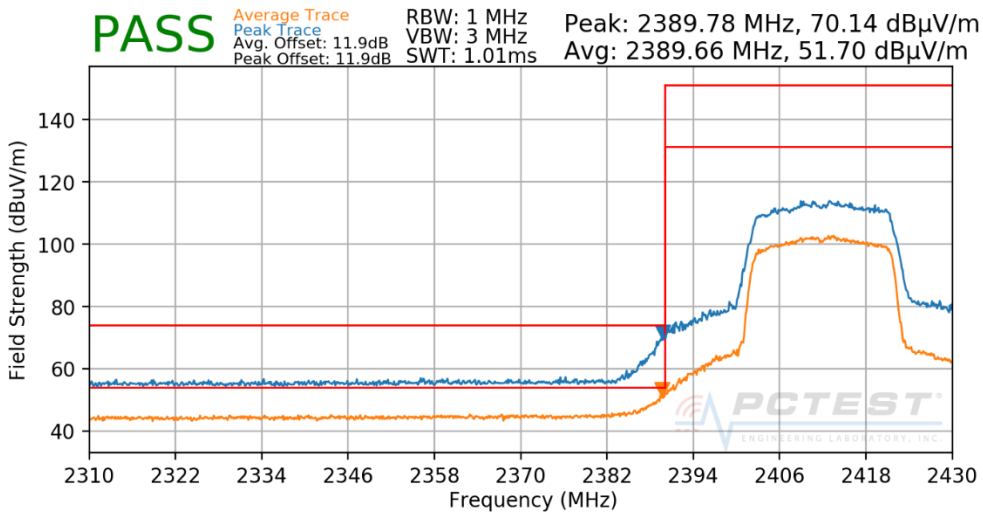
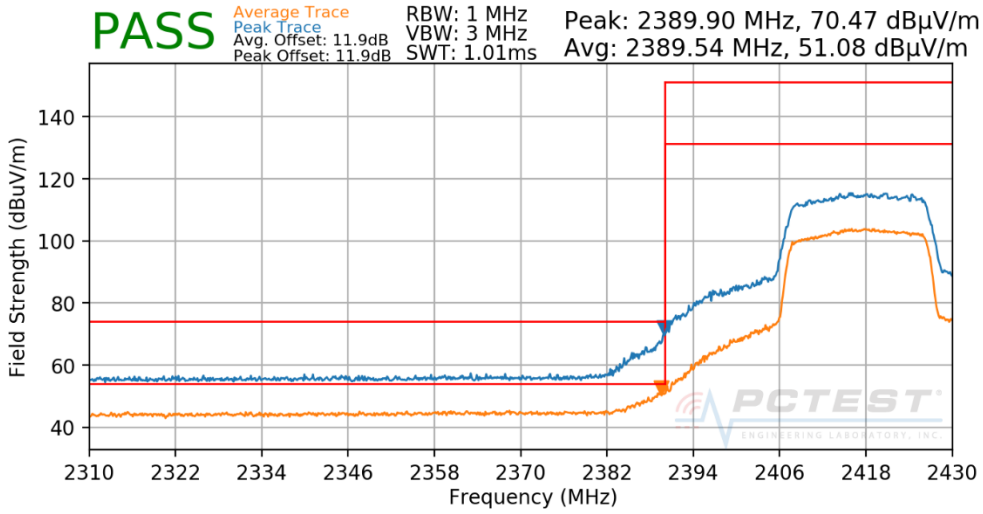
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



Plot 7-161. Radiated Restricted Lower Band Edge Measurement SISO CORE 1 (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



Plot 7-162. Radiated Restricted Lower Band Edge Measurement SISO CORE 1 (Peak & Average) – RU242)

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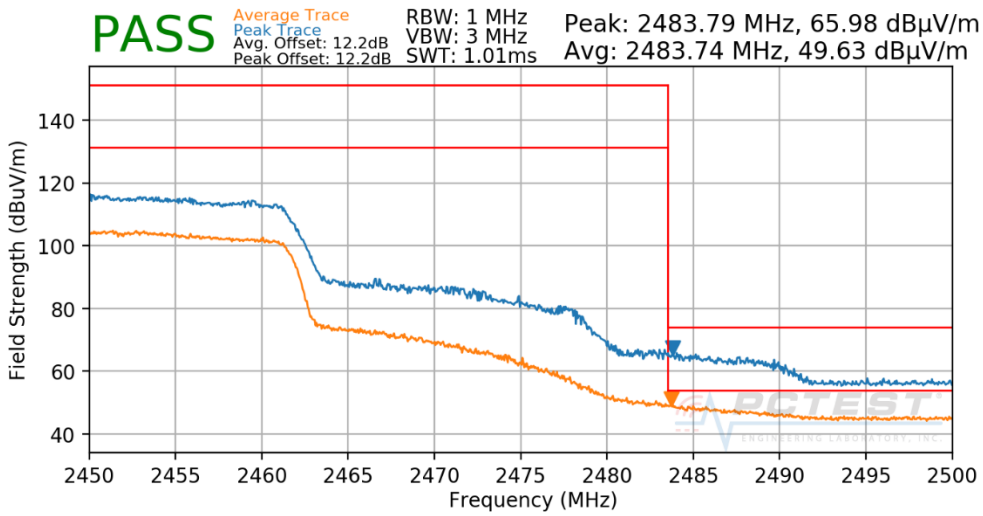
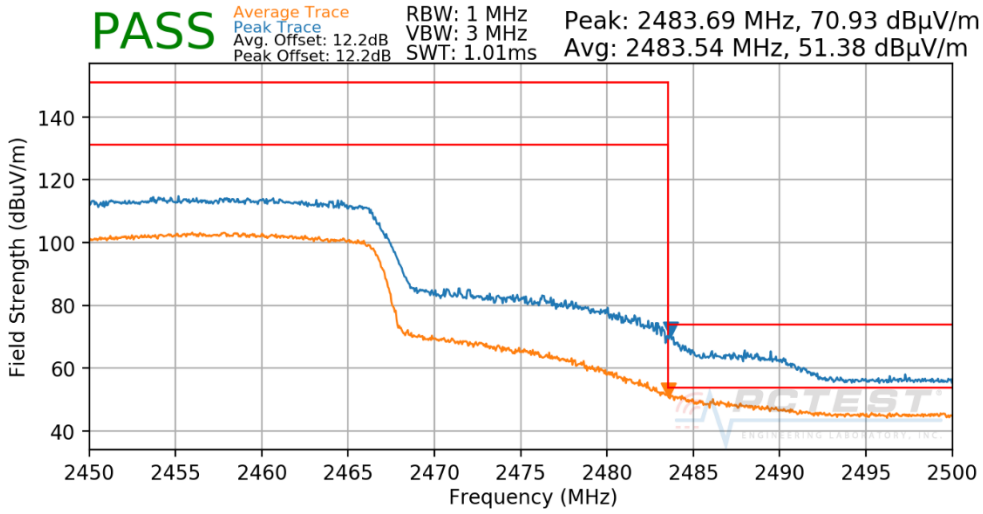
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2452MHz
Channel:	9



Plot 7-163. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



Plot 7-164. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU242)

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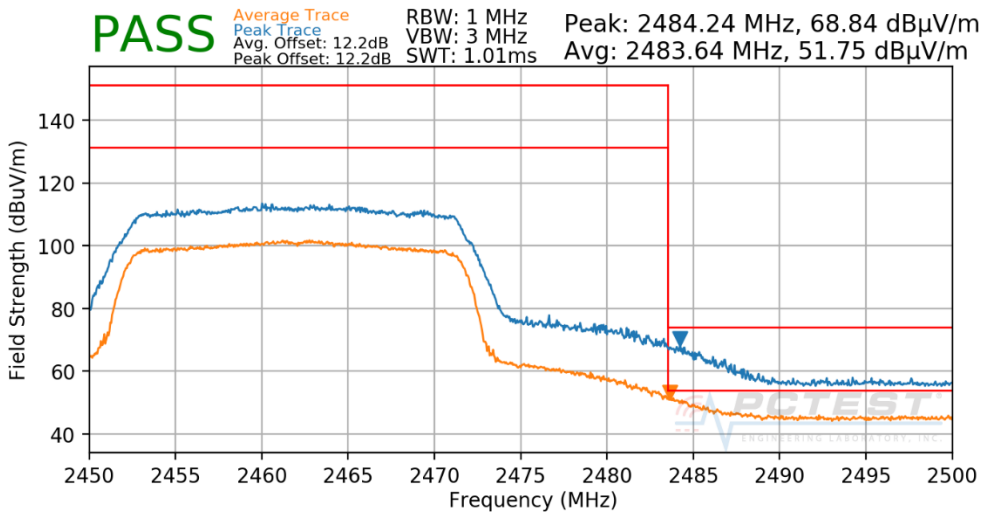
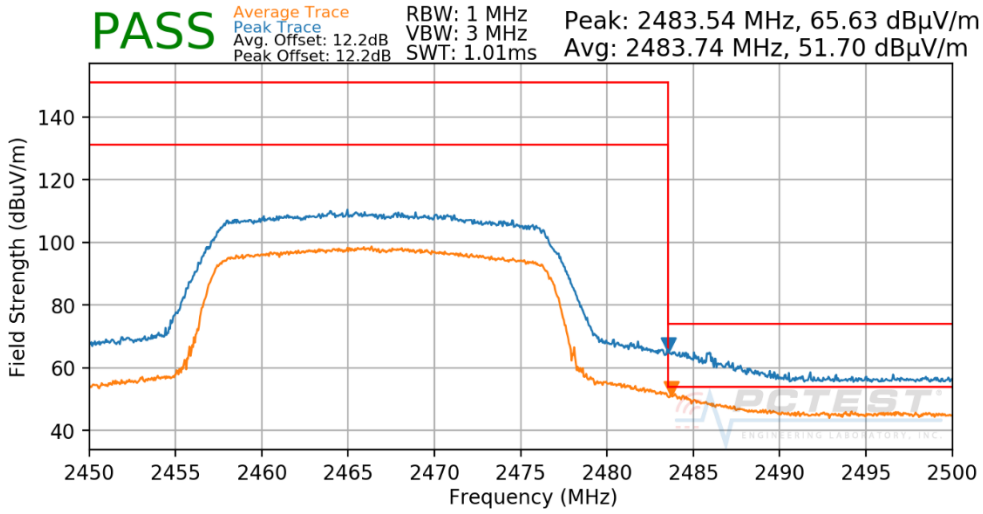
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



Plot 7-165. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-166. Radiated Restricted Upper Band Edge Measurement SISO CORE 1 (Peak & Average) – RU242)

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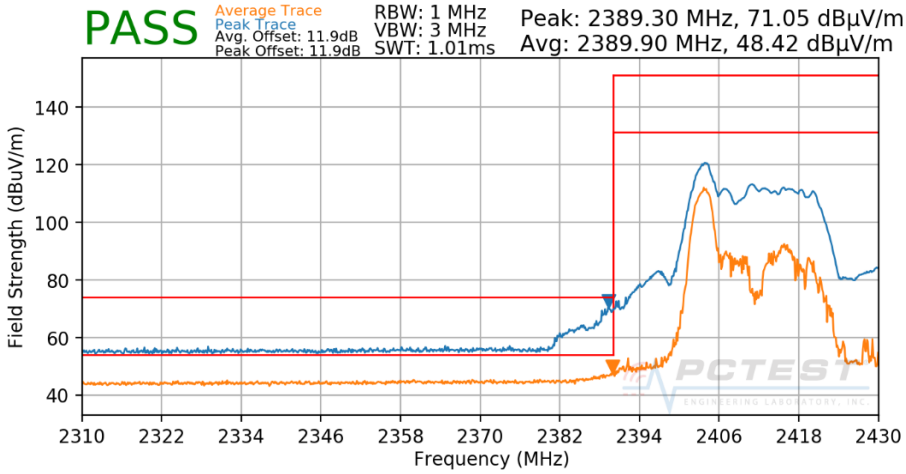
7.7.6 CDD Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

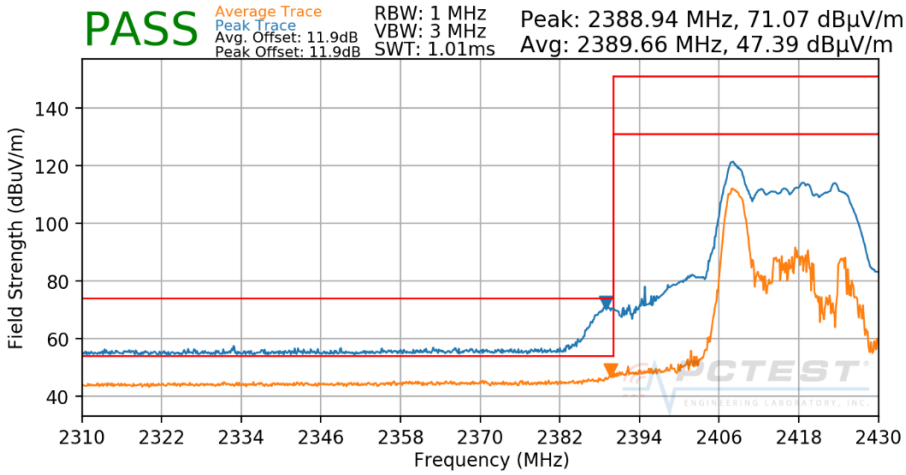
The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



Plot 7-167. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average) – RU26)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



Plot 7-168. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average) – RU26)

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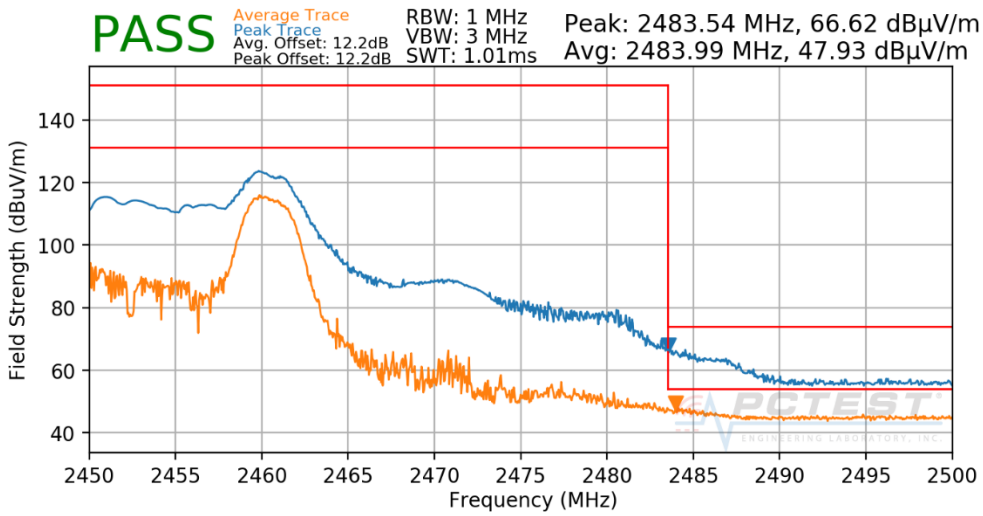
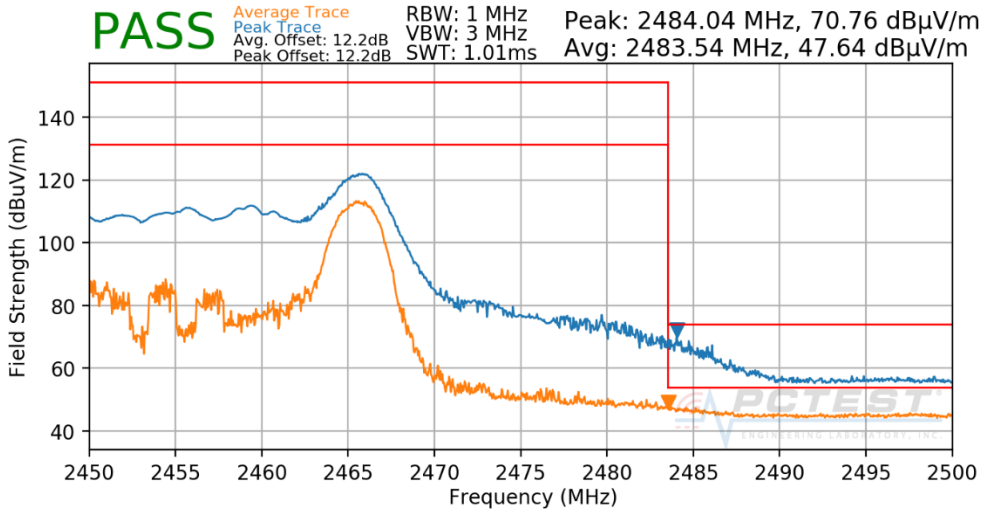
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	9



Plot 7-169. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU26)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



Plot 7-170. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU26)

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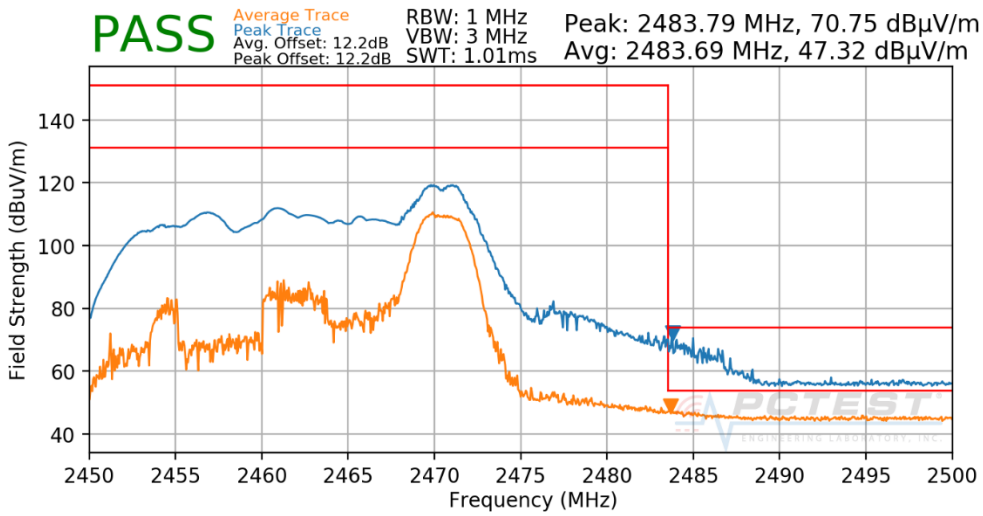
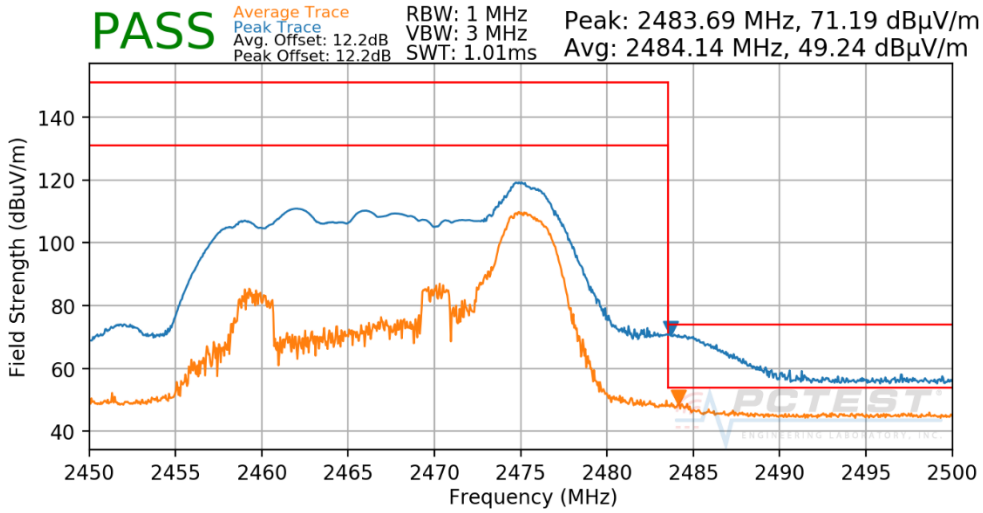
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



Plot 7-171. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU26)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-172. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU26)

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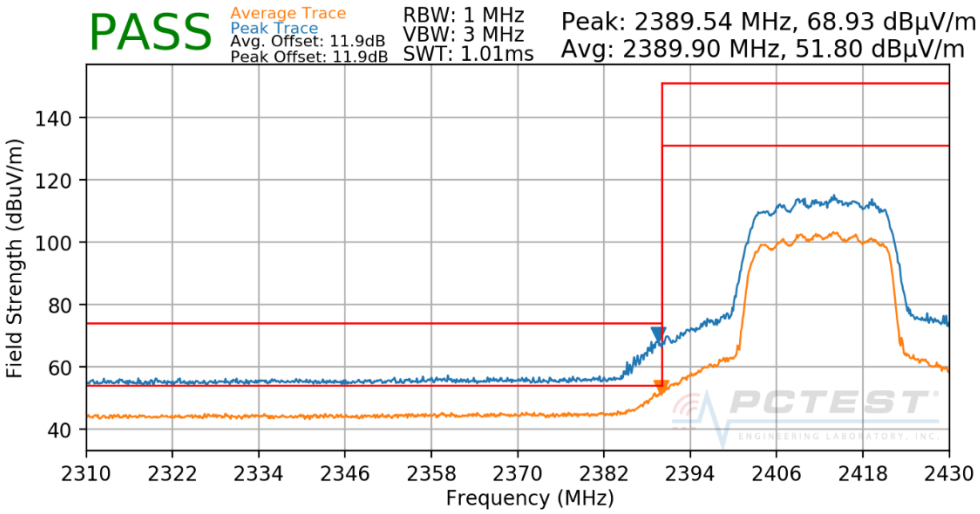
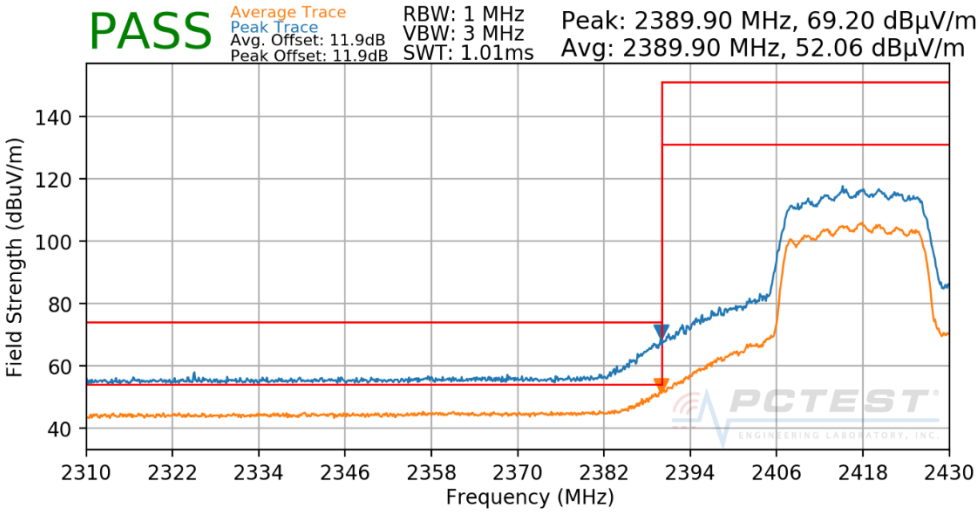
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1



Plot 7-173. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



Plot 7-174. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average) – RU242)

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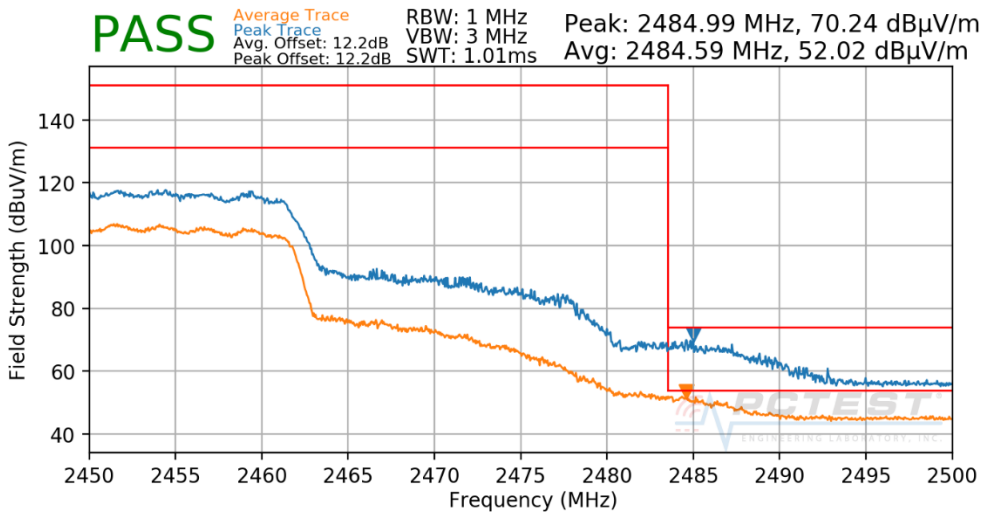
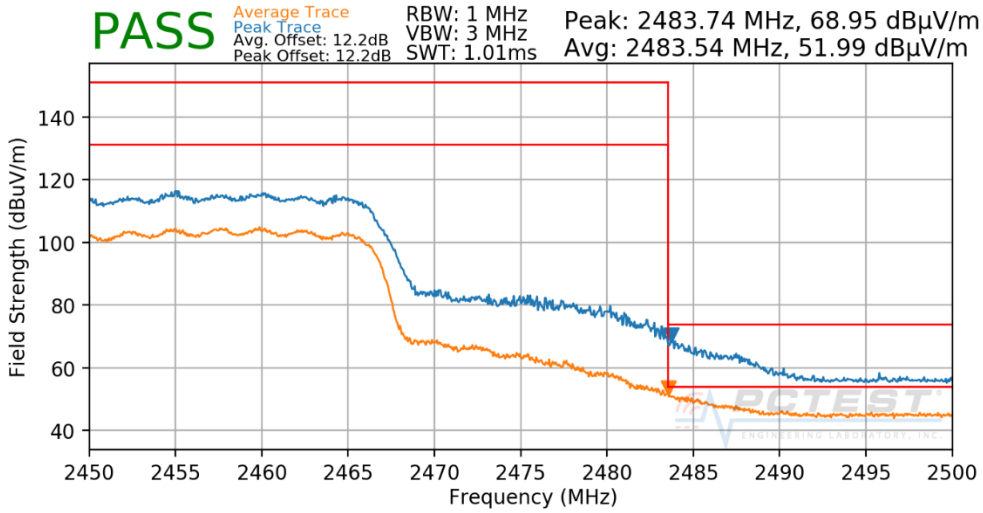
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	9



Plot 7-175. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2457MHz
Channel:	10



Plot 7-176. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU242)

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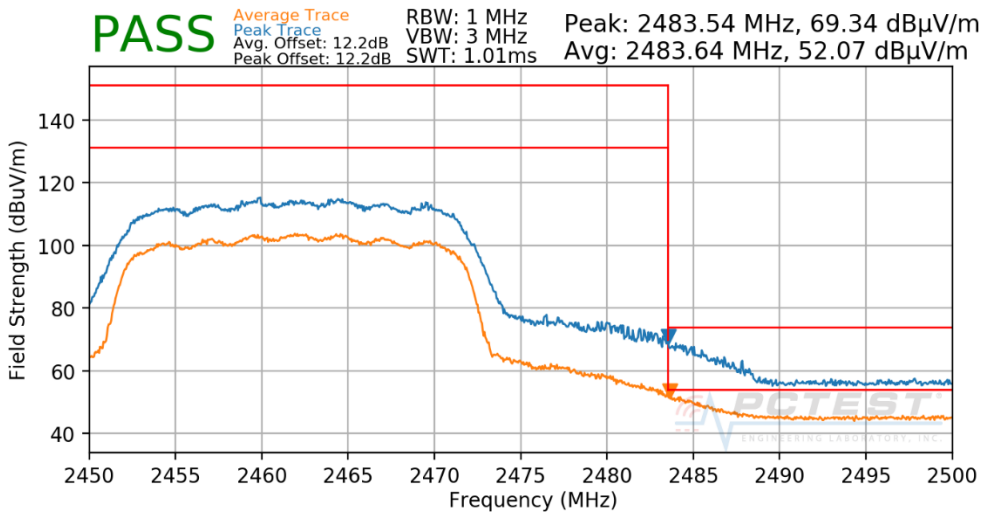
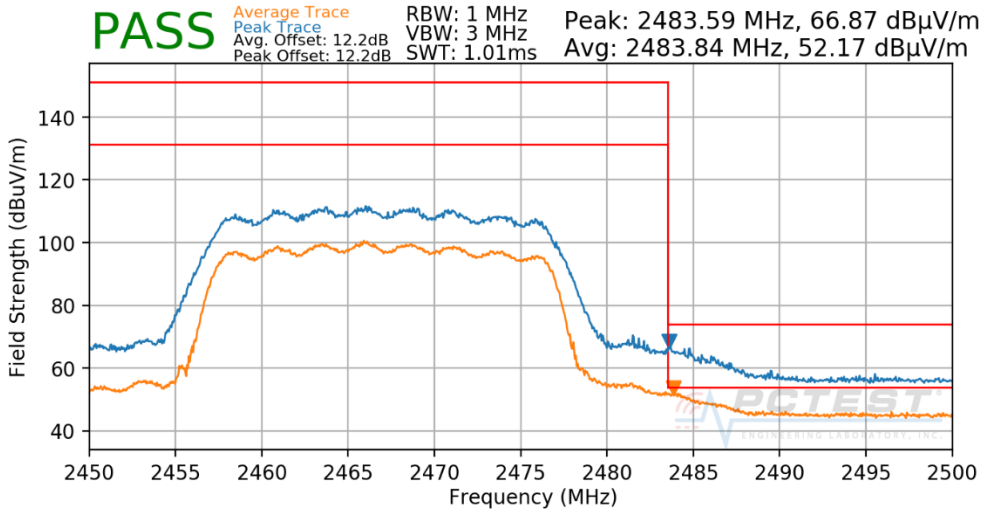
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



Plot 7-177. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU242)

Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	2467MHz
Channel:	12



Plot 7-178. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average) – RU242)

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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 7 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-38 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 7-38. 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

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

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Test Setup

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

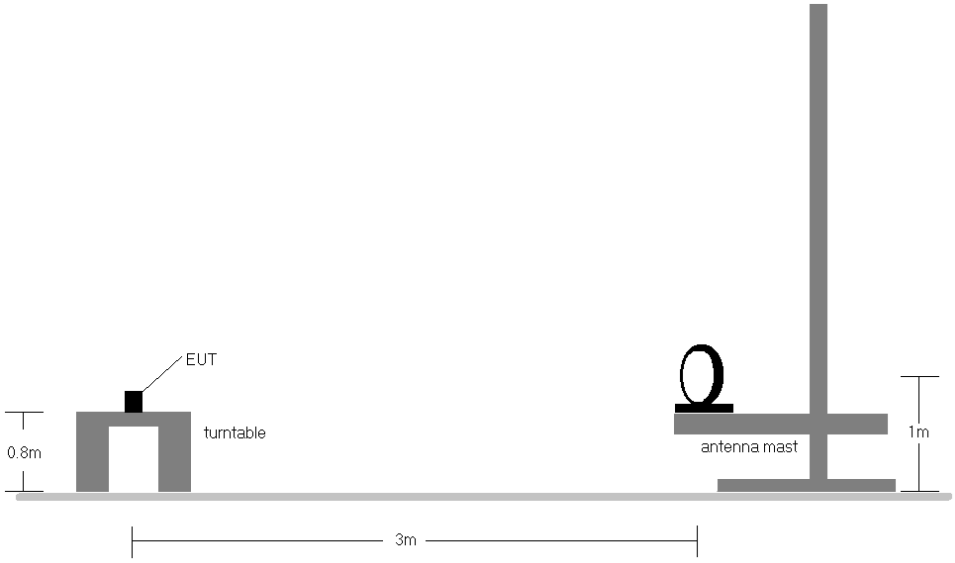

Figure 7-7. Radiated Test Setup < 30Mhz

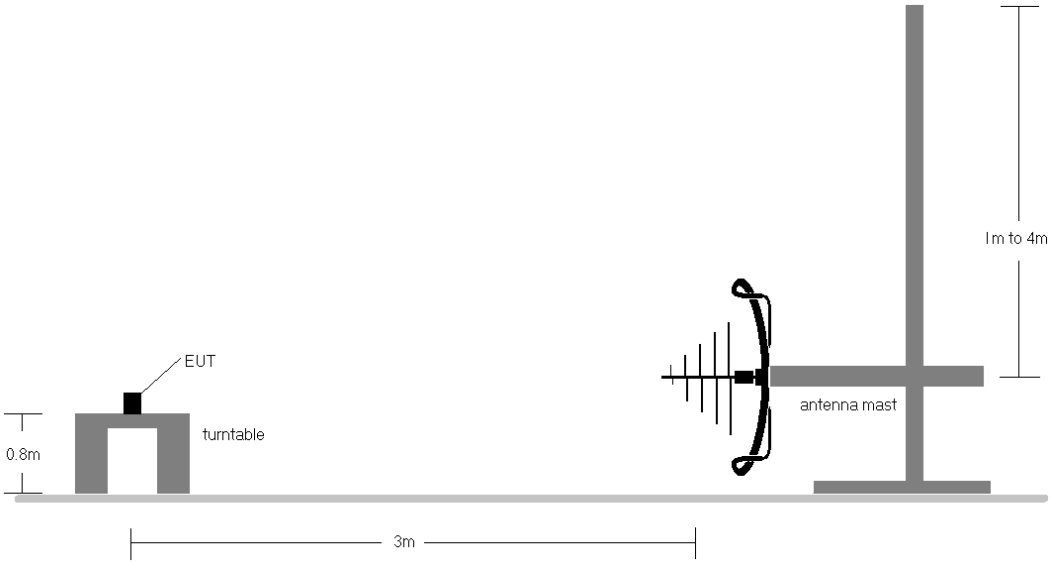

Figure 7-8. Radiated Test Setup < 1GHz

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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 7-38.
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 on emissions that were within 6dB of the limit. 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.
10. All antenna configurations were investigated and only the worst case is reported.
11. For radiated measurements, emissions were investigated for the fully-loaded RU configuration and for all the partially-loaded RU configurations. Among all of the available partially-loaded RU configurations, only the configuration with the worst case emissions is reported.

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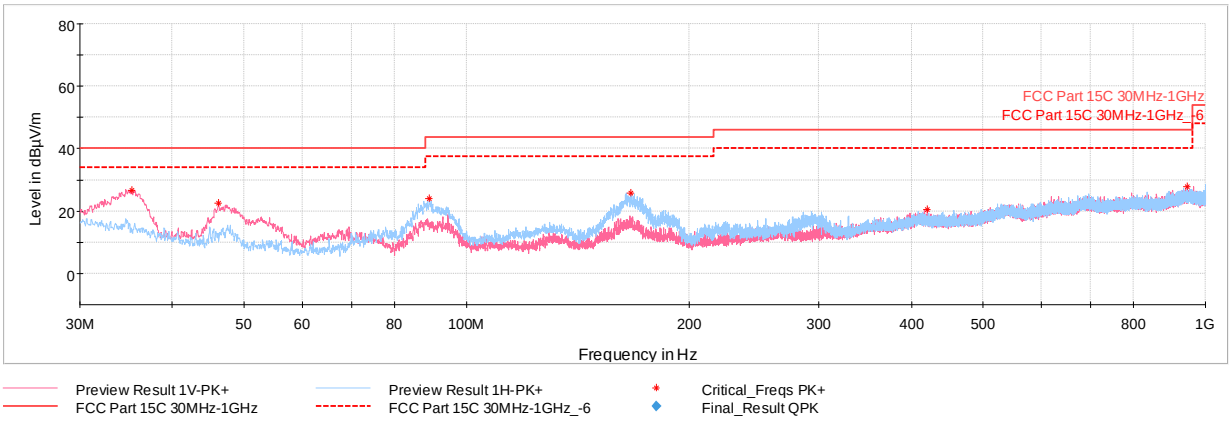
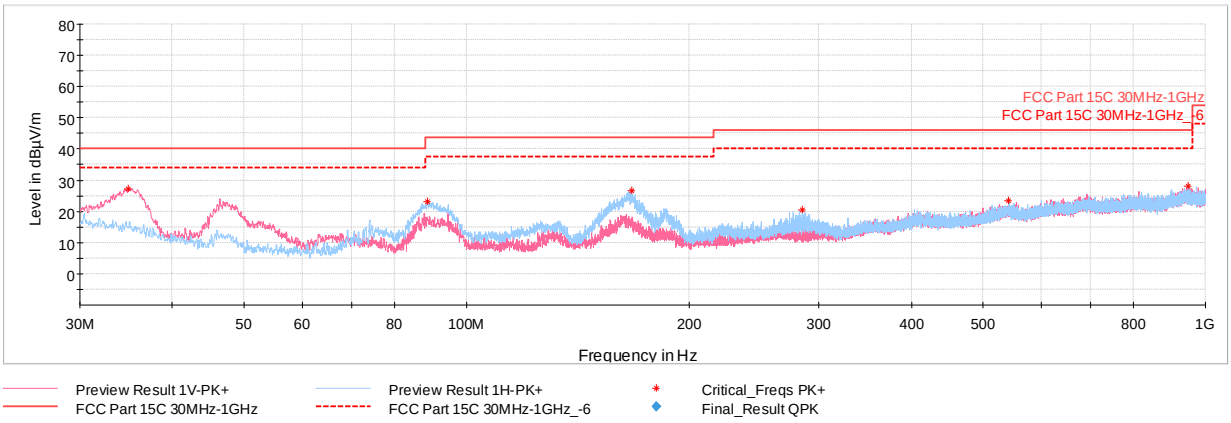
CDD Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-179. Radiated Spurious Plot below 1GHz CDD Ch.6 (RU26), with AC/DC Adapter



Plot 7-180. Radiated Spurious Plot below 1GHz CDD Ch.6 (RU242) , with AC/DC Adapter

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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]
35.24	Max Peak	V	100	292	-65.62	-14.77	26.61	40.00	-13.39
46.20	Max Peak	V	100	15	-64.12	-20.44	22.44	40.00	-17.56
89.07	Max Peak	H	250	212	-62.06	-20.94	24.00	43.52	-19.52
167.11	Max Peak	H	100	76	-63.60	-17.76	25.64	43.52	-17.88
419.84	Max Peak	V	100	246	-77.76	-8.70	20.54	46.02	-25.48
945.20	Max Peak	H	100	246	-79.49	0.32	27.83	46.02	-18.19

Table 7-39. Radiated Spurious Emissions below 1GHz CDD Ch.6 (RU26), with AC/DC Adapter

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]
34.90	Max Peak	V	100	310	-65.25	-14.56	27.19	40.00	-12.81
88.64	Max Peak	H	250	188	-62.77	-21.00	23.23	43.52	-20.29
167.26	Max Peak	H	100	81	-62.61	-17.75	26.64	43.52	-16.89
284.67	Max Peak	H	100	40	-71.99	-14.44	20.57	46.02	-25.45
541.19	Max Peak	V	100	152	-78.82	-4.70	23.48	46.02	-22.55
947.14	Max Peak	H	250	160	-79.21	0.33	28.12	46.02	-17.90

Table 7-40. Radiated Spurious Emissions below 1GHz CDD Ch.6 (RU242), with AC/DC Adapter

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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA2232** 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.

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