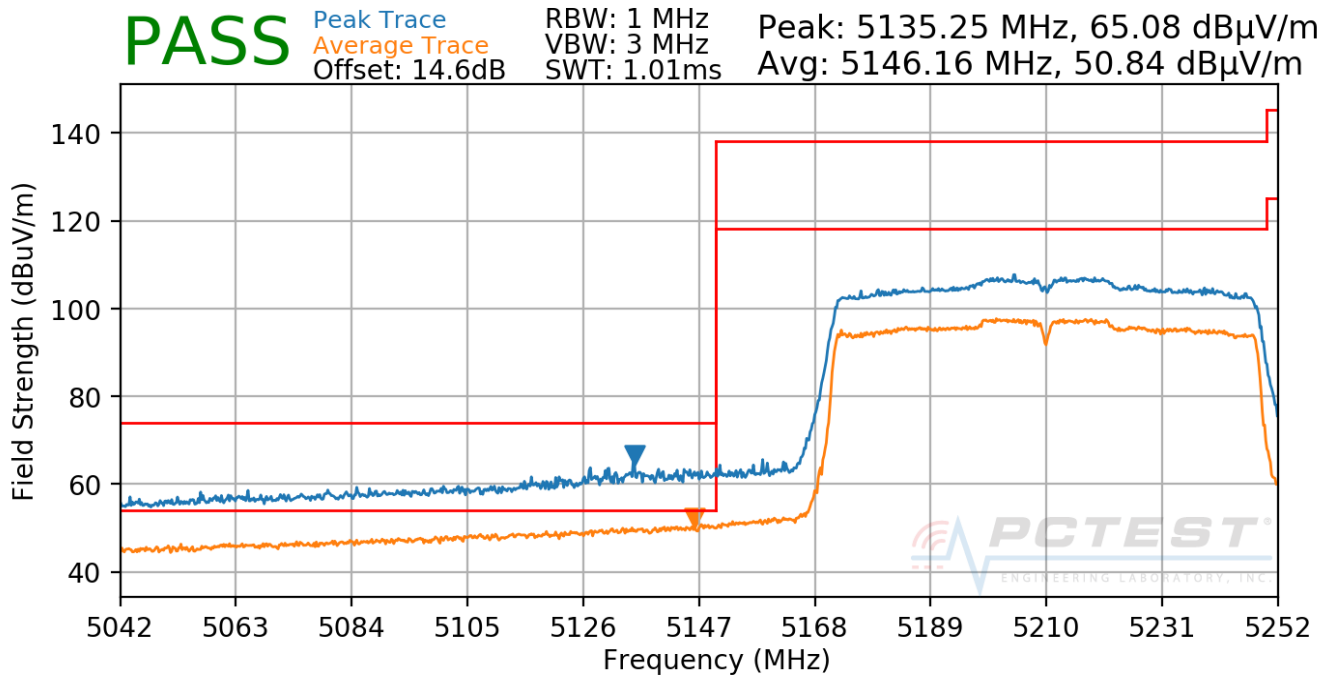


7.6.11 SISO Core 1 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

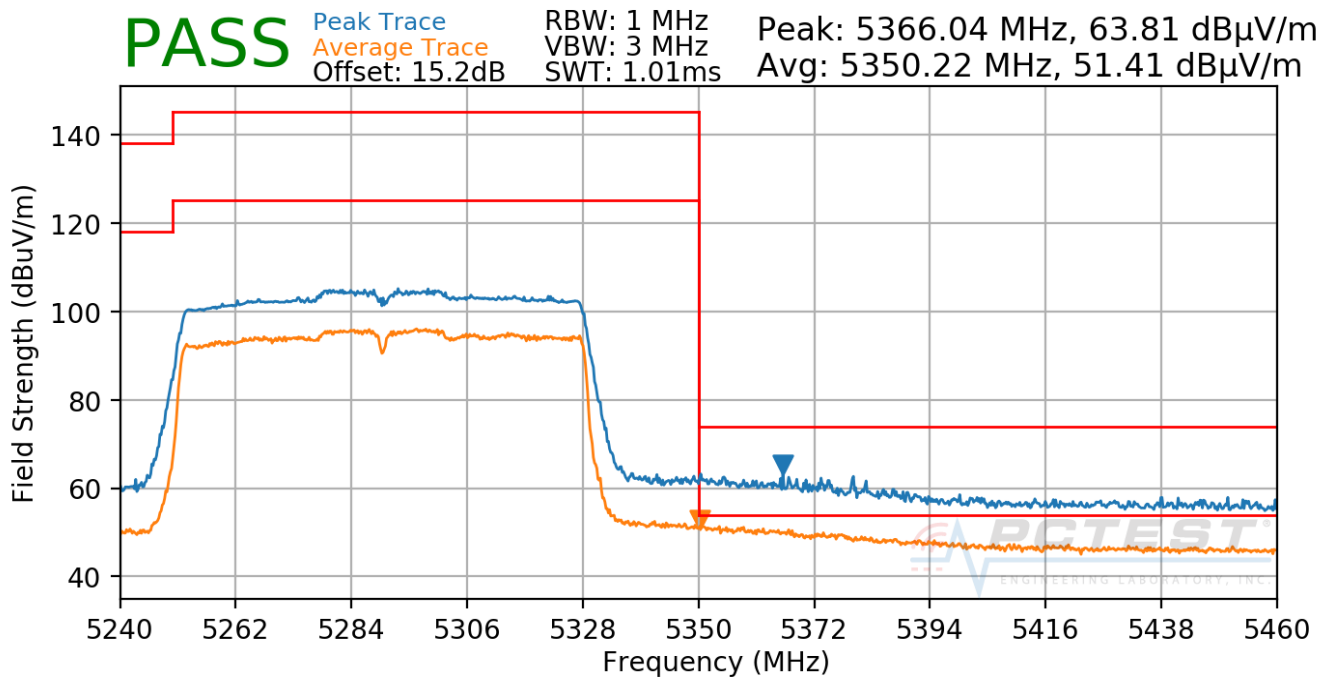
Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MSC0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42



Plot 7-289. Radiated Lower Band Edge Plot SISO CORE 1 (UNII Band 1)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device		Page 235 of 256

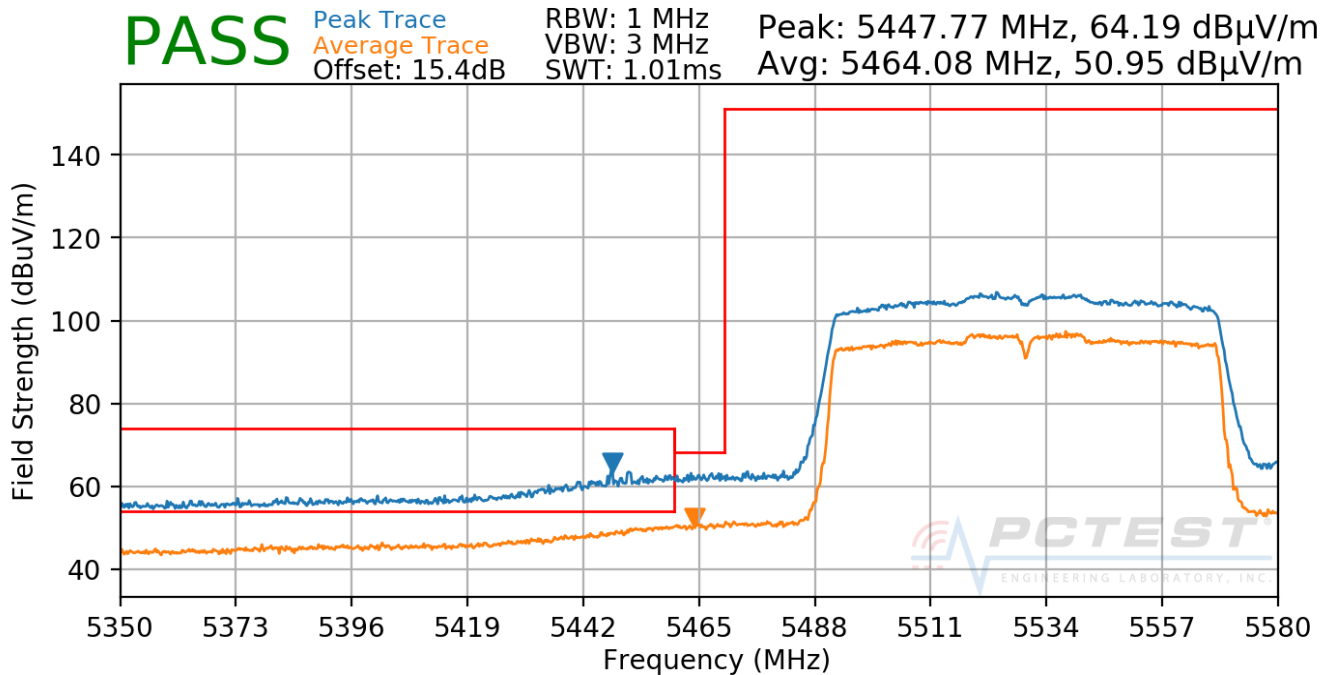
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MSC0
Distance of Measurements: 3 Meters
Operating Frequency: 5290MHz
Channel: 58



Plot 7-290. Radiated Upper Band Edge Plot SISO CORE 1 (UNII Band 2A)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 236 of 256

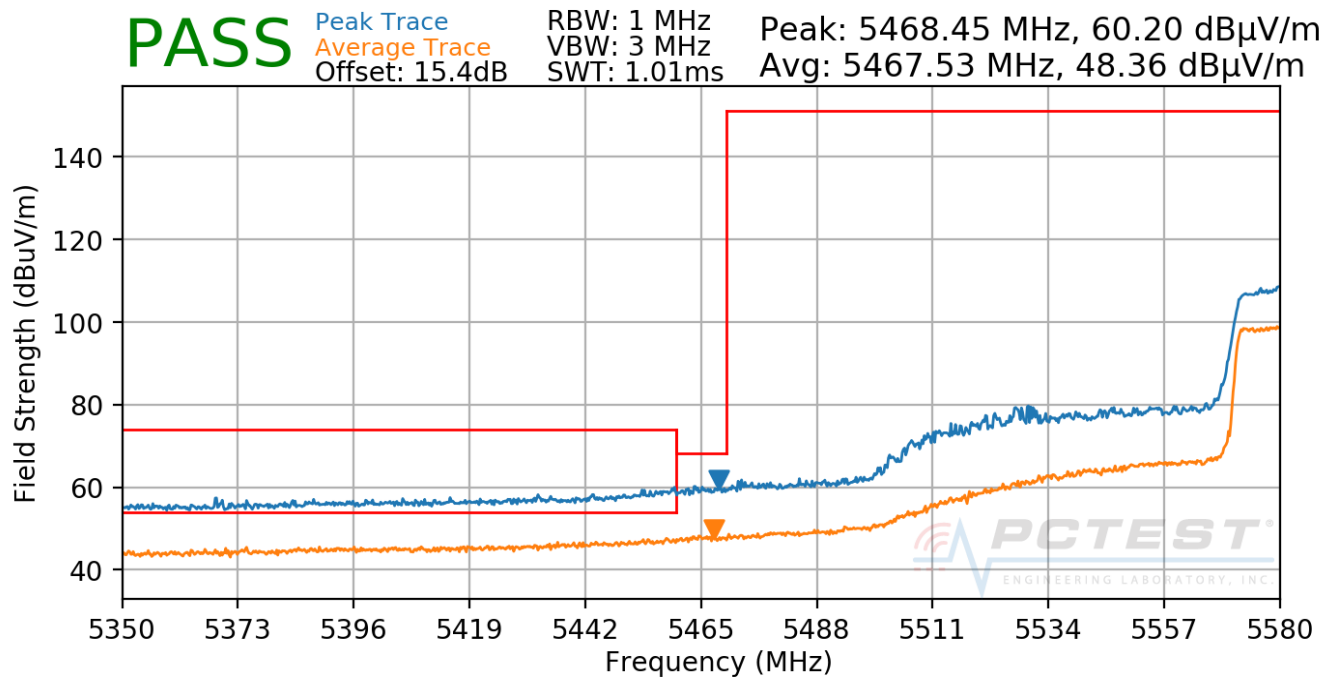
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MSC0
Distance of Measurements: 3 Meters
Operating Frequency: 5530MHz
Channel: 106



Plot 7-291. Radiated Lower Band Edge Plot SISO CORE 1 (UNII Band 2C)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 237 of 256

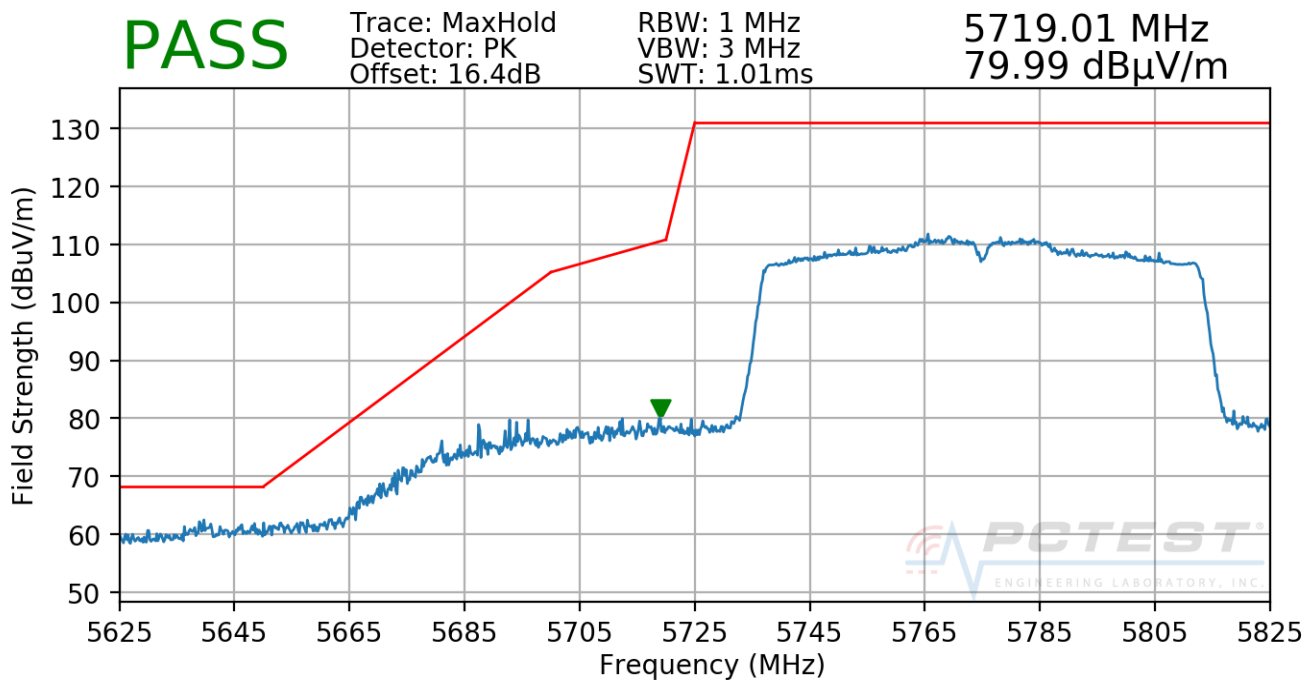
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MSC0
Distance of Measurements: 3 Meters
Operating Frequency: 5610MHz
Channel: 122



Plot 7-292. Radiated Lower Band Edge Plot SISO CORE 1 (UNII Band 2C)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 238 of 256

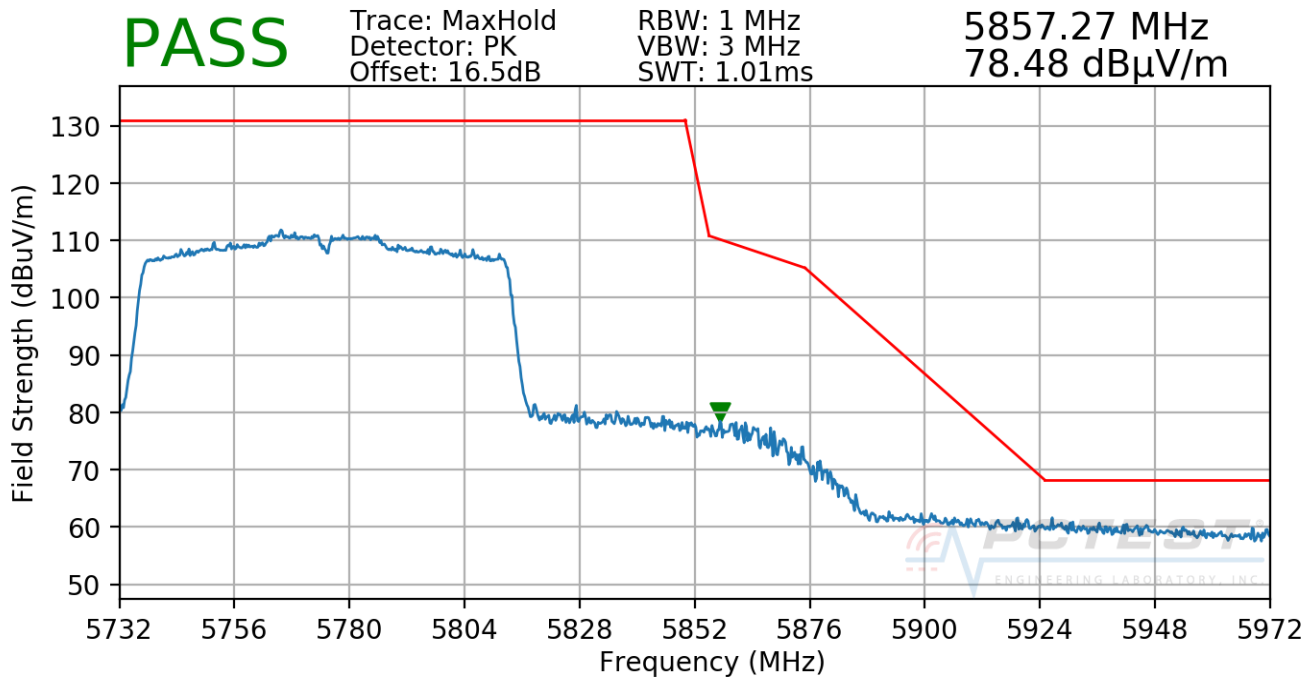
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MSC0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Plot 7-293. Radiated Lower Band Edge Plot SISO CORE 1 (UNII Band 3)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 239 of 256

Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MSC0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



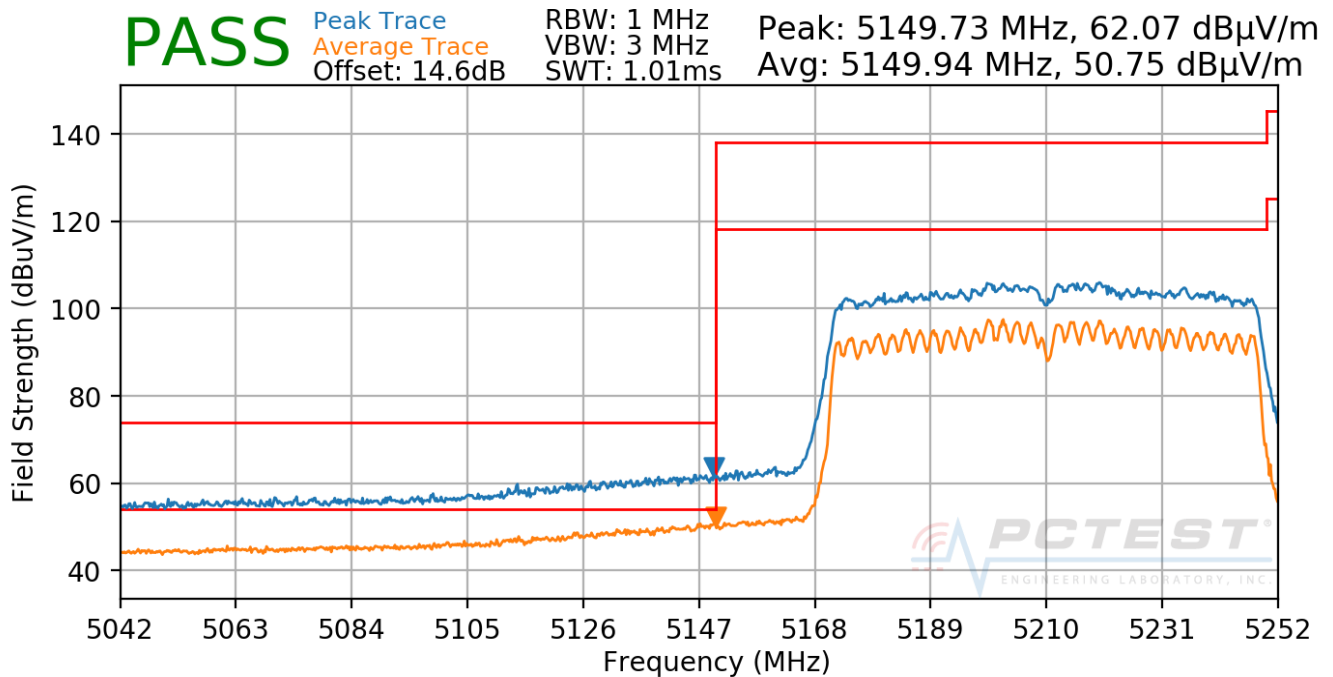
Plot 7-294. Radiated Upper Band Edge Plot SISO CORE 1 (UNII Band 3)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 240 of 256

7.6.12 SISO CDD Radiated Band Edge Measurements (80MHz BW)

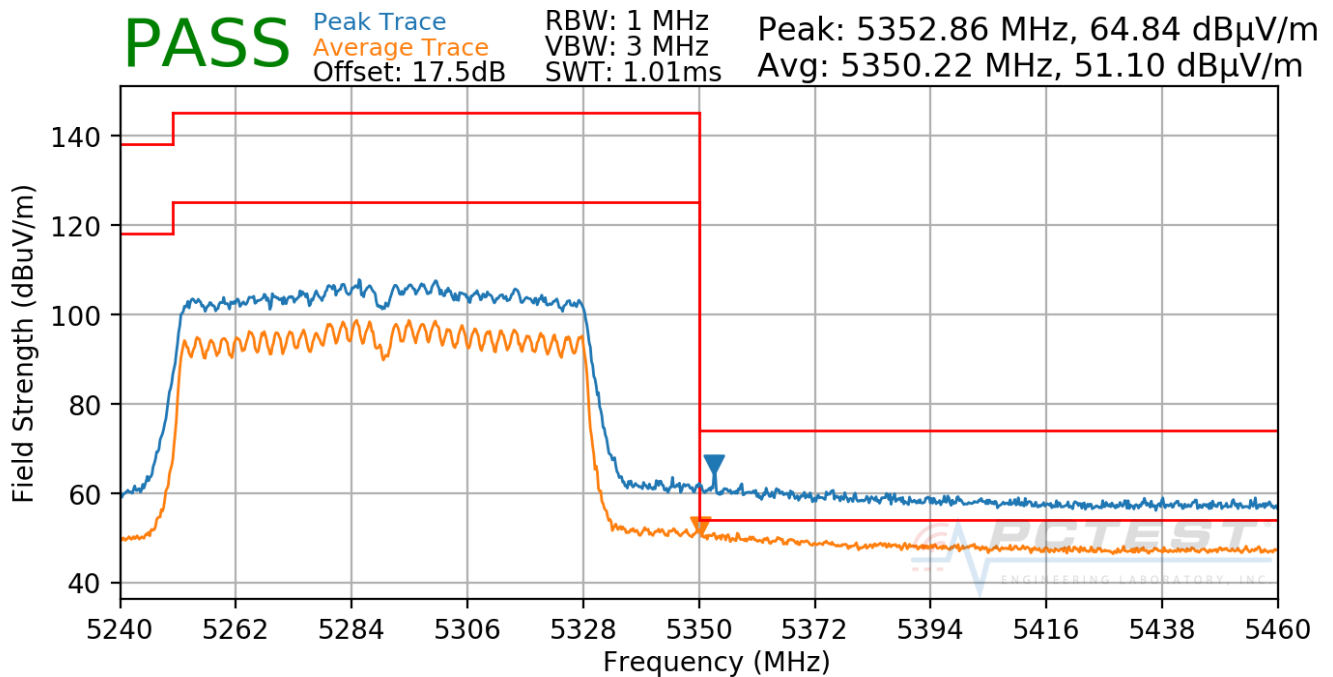
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42



FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 241 of 256

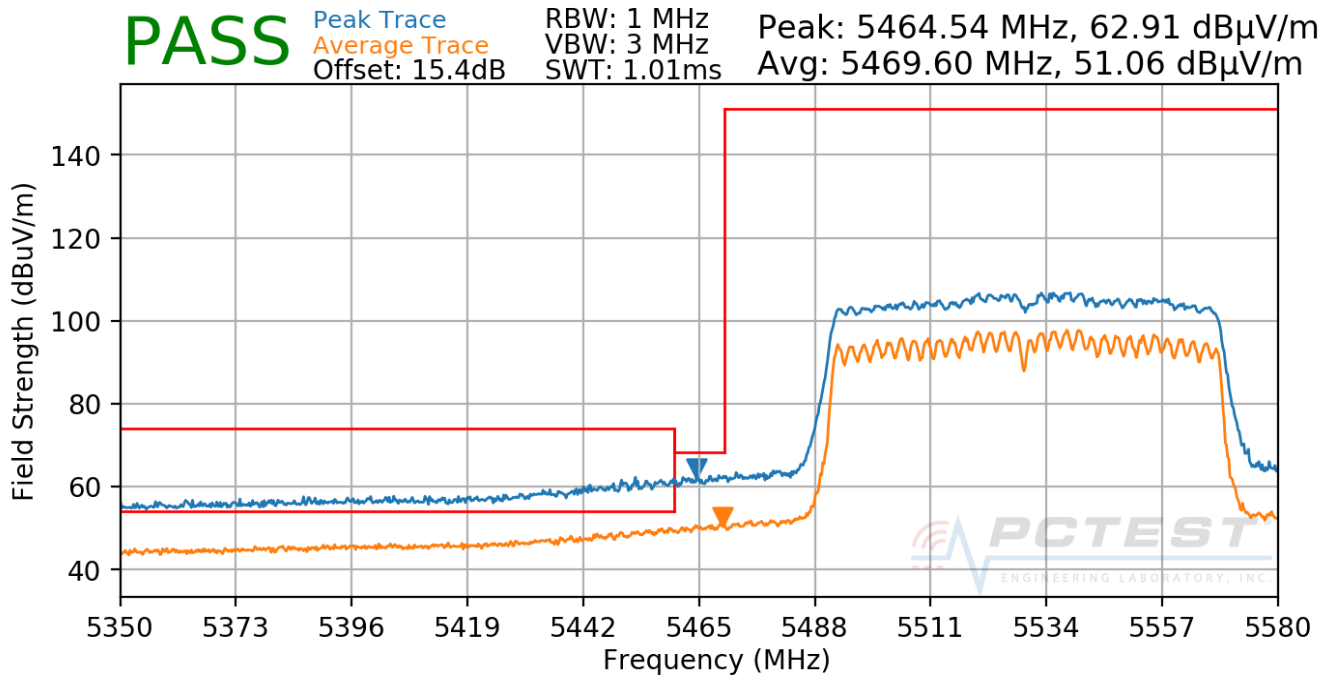
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5290MHz
Channel: 58



Plot 7-296. Radiated Upper Band Edge Plot CDD (UNII Band 2A)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 242 of 256

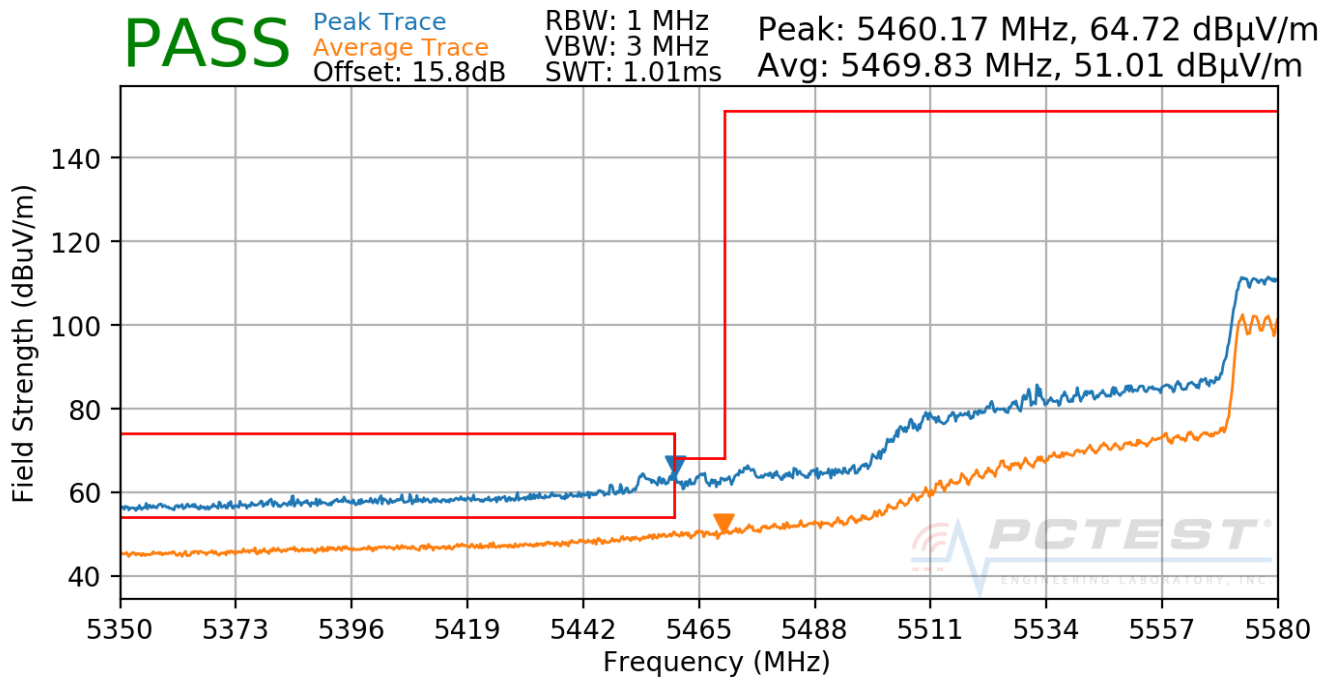
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5530MHz
Channel: 106



Plot 7-297. Radiated Lower Band Edge Plot CDD (UNII Band 2C)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 243 of 256

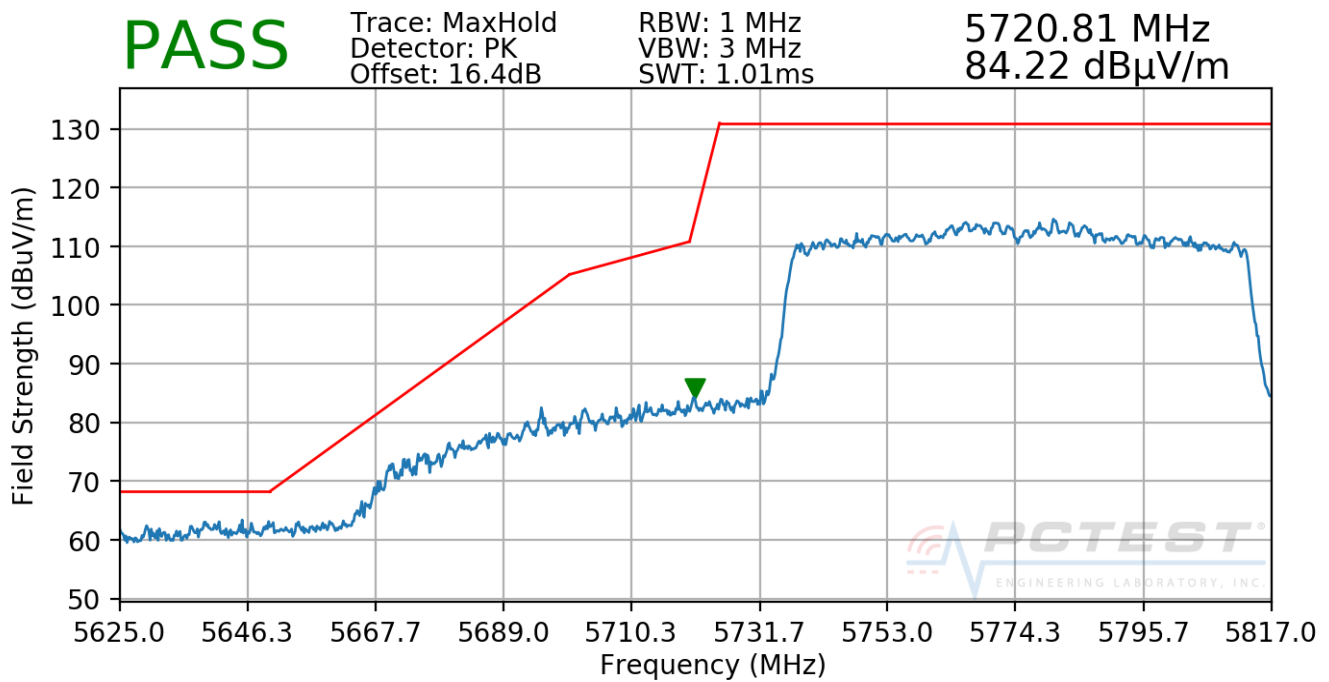
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5610MHz
Channel: 122



Plot 7-298. Radiated Upper Band Edge Plot CDD (UNII Band 2C)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 244 of 256

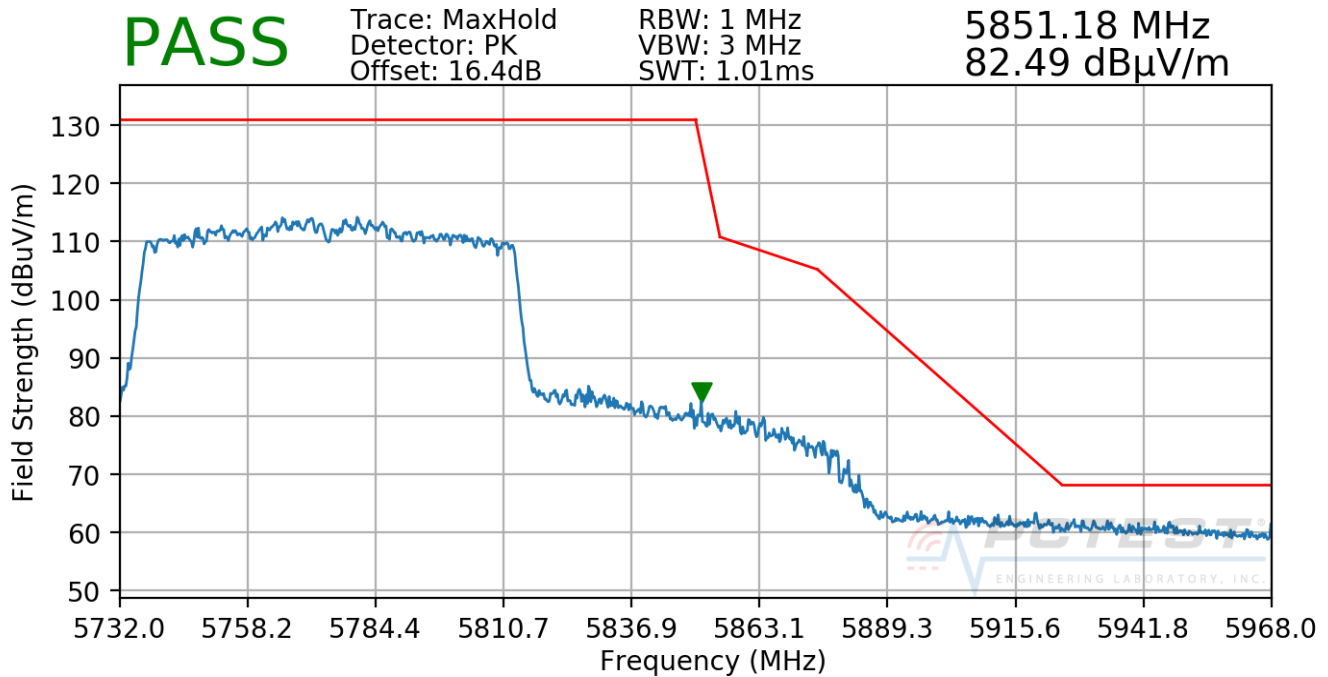
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Plot 7-299. Radiated Lower Band Edge Plot CDD (UNII Band 3)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 245 of 256

Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Plot 7-300. Radiated Upper Band Edge Plot CDD (UNII Band 3)

FCC ID: BCGA1876	PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device		Page 246 of 256

7.7 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 7-75 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 7-75. 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

FCC ID: BCGA1876	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Test Setup

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

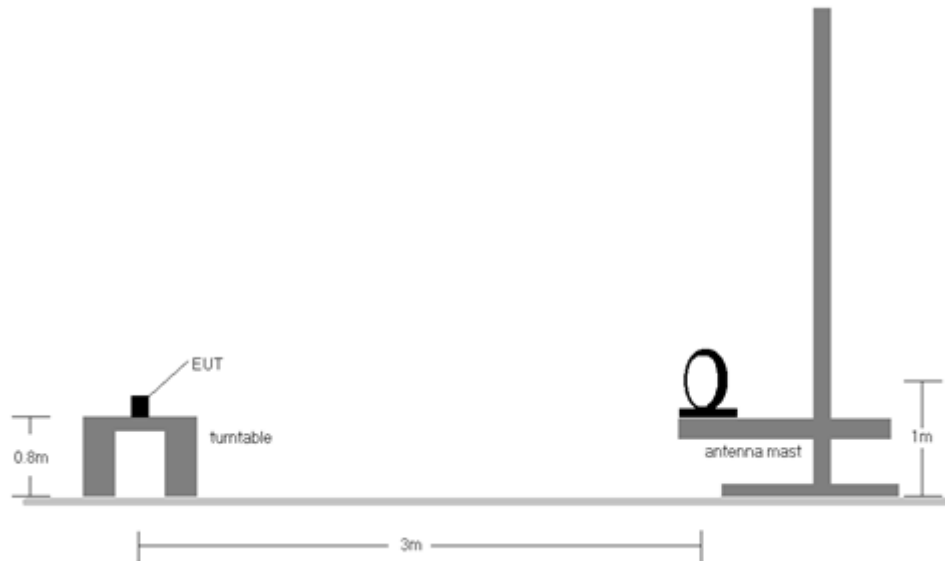


Figure 7-6. Radiated Test Setup < 30MHz

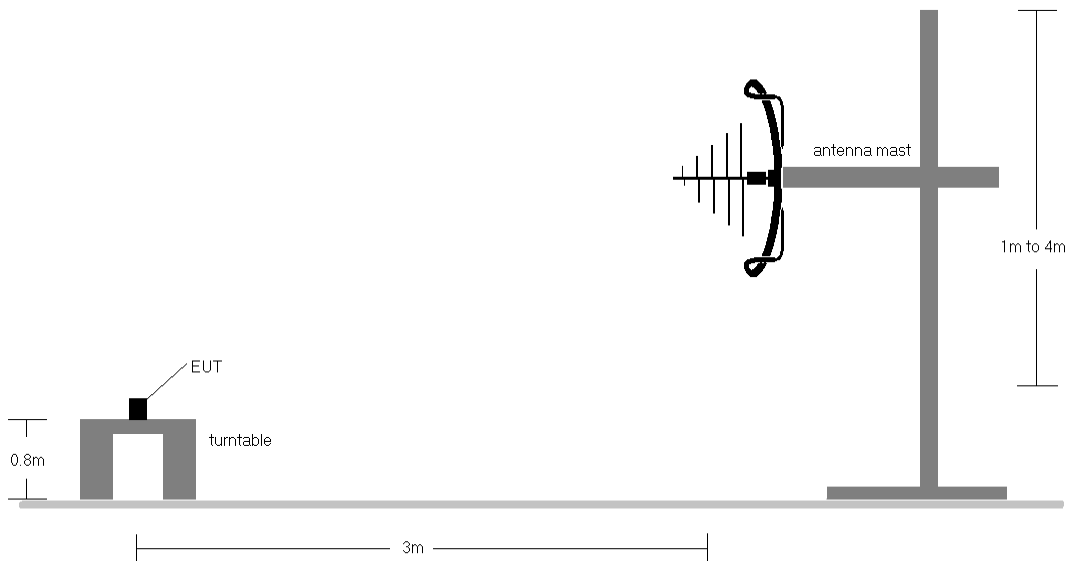


Figure 7-7. Radiated Test Setup < 1GHz

FCC ID: BCGA1876	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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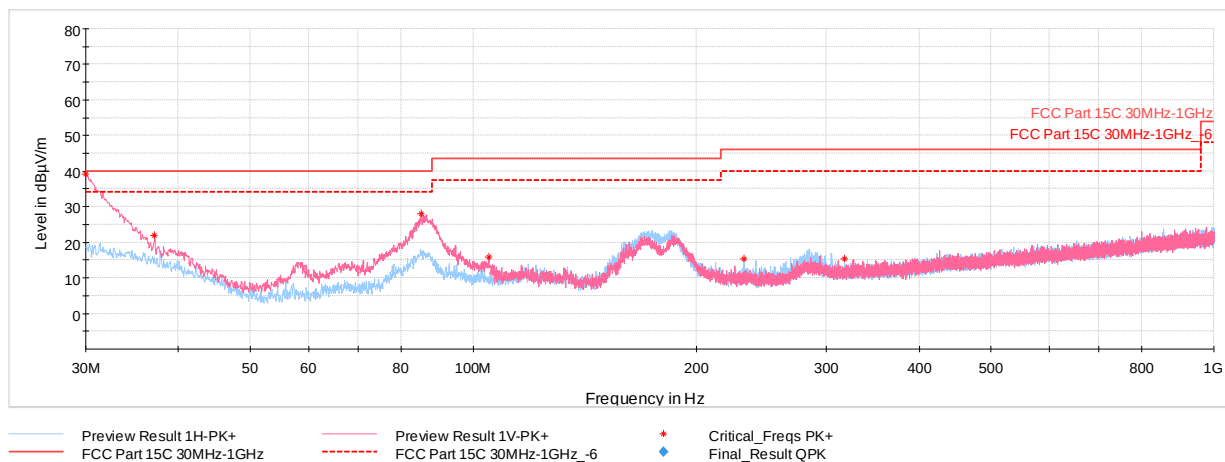
Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-75.
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.

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CDD Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-301. Radiated Spurious Plot below 1GHz CDD with AC/DC Adapter (802.11n – U1 Ch. 36)

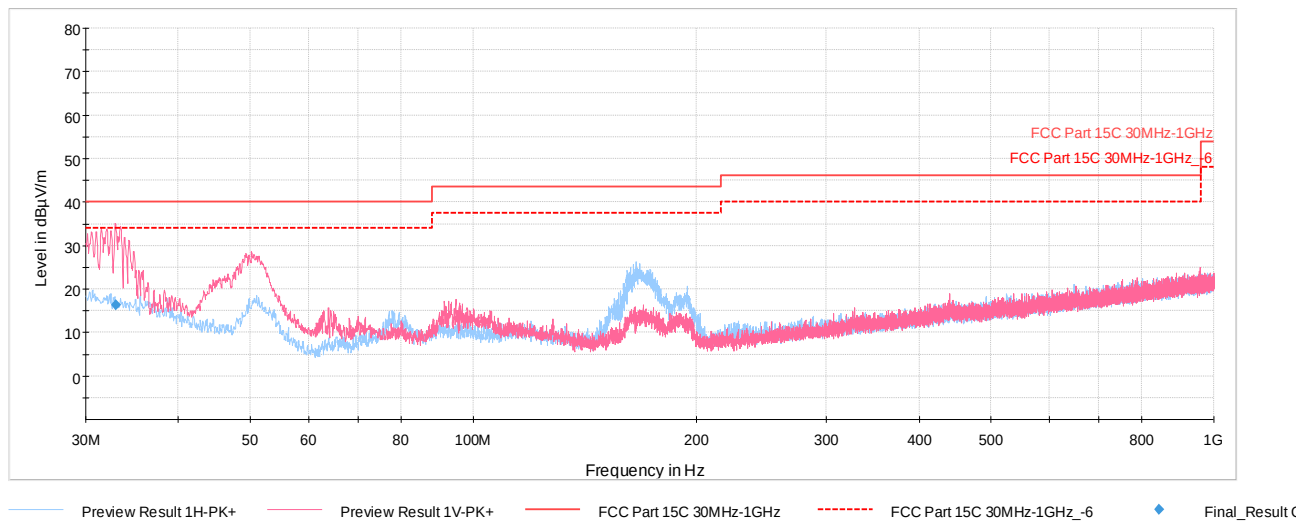
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
30.00	Quasi-Peak	V	104	141	-59.96	-9.80	37.24	40.00	-2.76
37.13	Max Peak	V	100	6	-71.77	-13.34	21.89	40.00	-18.11
85.10	Max Peak	V	100	44	-59.98	-19.10	27.92	40.00	-12.08
104.98	Max Peak	V	100	137	-72.98	-18.20	15.82	43.52	-27.70
231.91	Max Peak	H	100	227	-73.37	-18.17	15.46	46.02	-30.56
317.27	Max Peak	H	100	201	-76.21	-15.35	15.44	46.02	-30.58

Table 7-76. Radiated Spurious Emissions below 1GHz SISO CORE 0

FCC ID: BCGA1876	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Simultaneous Tx Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-302. Radiated Spurious Plot below 1GHz with AC/DC Adapter (2.4GHz – 5GHz)

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]
32.91	Max Peak	V	114	153	-60.66	-11.36	34.98	40.00	-5.02
50.18	Max Peak	V	100	35	-56.19	-22.40	28.41	40.00	-11.59
69.96	Max Peak	V	100	243	-72.74	-20.51	13.75	40.00	-26.25
78.06	Max Peak	H	250	189	-72.55	-19.59	14.86	40.00	-25.14
167.74	Max Peak	H	100	261	-62.77	-18.35	25.88	43.52	-17.64
440.26	Max Peak	V	100	248	-75.96	-12.30	18.74	46.02	-27.28

Table 7-77. Radiated Spurious Plot below 1GHz (Dual Band Simultaneous TX)

FCC ID: BCGA1876	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.8 AC Line-Conducted Test Data

§15.407; 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 7-78. 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

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Test Setup

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

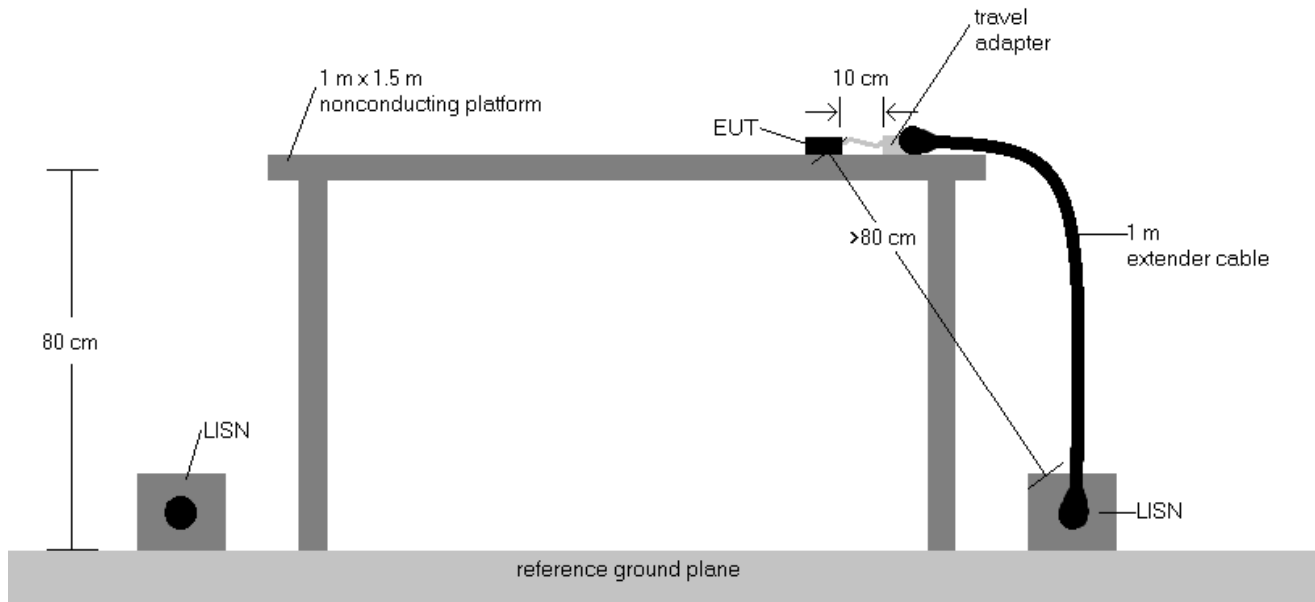
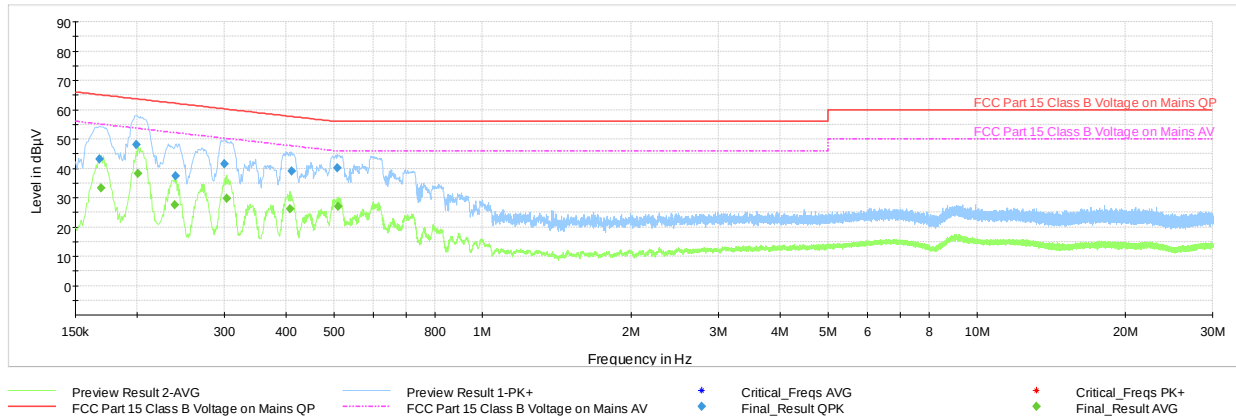


Figure 7-8. Test Instrument & Measurement Setup

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 15.207 and RSS-Gen (8.8).
3. $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
4. $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Corr. (dB)}$
5. $\text{Margin (dB)} = \text{QP/AV Limit (dB}\mu\text{V)} - \text{QP/AV Level (dB}\mu\text{V)}$
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

FCC ID: BCGA1876	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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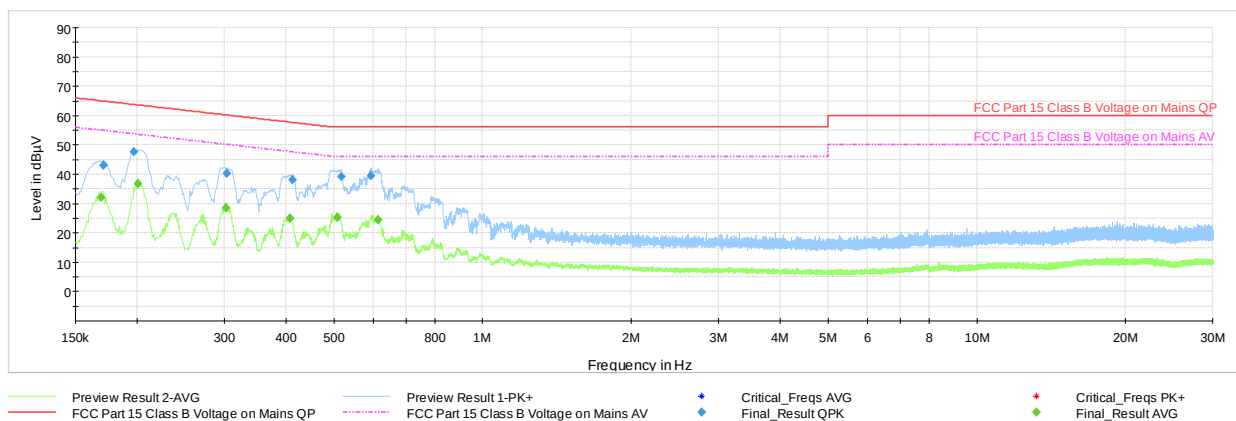


Plot 7-303. Line Conducted Plot with 802.11n UNII Band 1 Ch.36 (L1) with AC/DC Adapter

Frequency MHz	Process State	QuasiPeak dBμV	Average dBμV	Limit dBμV	Margin dB	Bandwidth kHz	Line	PE
0.168000	FINAL	43.23	—	65.06	-21.83	9.000	L1	GND
0.169000	FINAL	—	33.18	55.01	-21.83	9.000	L1	GND
0.199000	FINAL	48.20	—	63.65	-15.45	9.000	L1	GND
0.201000	FINAL	—	38.32	53.57	-15.25	9.000	L1	GND
0.238000	FINAL	—	27.59	52.17	-24.58	9.000	L1	GND
0.239000	FINAL	37.52	—	62.13	-24.61	9.000	L1	GND
0.300000	FINAL	41.44	—	60.24	-18.80	9.000	L1	GND
0.304000	FINAL	—	29.74	50.13	-20.39	9.000	L1	GND
0.407000	FINAL	—	26.13	47.71	-21.58	9.000	L1	GND
0.411000	FINAL	39.05	—	57.63	-18.58	9.000	L1	GND
0.508000	FINAL	40.25	—	56.00	-15.75	9.000	L1	GND
0.510000	FINAL	—	26.95	46.00	-19.05	9.000	L1	GND

Table 7-79. Line Conducted Data with 802.11n UNII Band 1 (L1)

FCC ID: BCGA1876	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Plot 7-304. Line Conducted Plot with 802.11n UNII Band 1 Ch.36 (N) with AC/DC Adapter

Frequency MHz	Process State	QuasiPeak dBμV	Average dBμV	Limit dBμV	Margin dB	Bandwidth kHz	Line	PE
0.169000	FINAL	—	32.15	55.01	-22.86	9.000	N	GND
0.171000	FINAL	42.96	—	64.91	-21.95	9.000	N	GND
0.197000	FINAL	47.55	—	63.74	-16.19	9.000	N	GND
0.201000	FINAL	—	36.74	53.57	-16.83	9.000	N	GND
0.302000	FINAL	—	28.57	50.19	-21.62	9.000	N	GND
0.304000	FINAL	40.33	—	60.13	-19.80	9.000	N	GND
0.407000	FINAL	—	24.84	47.71	-22.87	9.000	N	GND
0.413000	FINAL	38.05	—	57.59	-19.54	9.000	N	GND
0.508000	FINAL	—	25.20	46.00	-20.80	9.000	N	GND
0.517000	FINAL	39.29	—	56.00	-16.71	9.000	N	GND
0.594000	FINAL	39.38	—	56.00	-16.62	9.000	N	GND
0.615000	FINAL	—	24.36	46.00	-21.64	9.000	N	GND

Table 7-80. Line Conducted Data with 802.11n UNII Band 1 (N)

FCC ID: BCGA1876	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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: BCGA1876** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules and RSS-247 of the Innovation, Science and Economic Development Canada Rules.

FCC ID: BCGA1876	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1806050010-07.BCG	Test Dates: 07/27/2018-10/09/2018	EUT Type: Tablet Device	Page 256 of 256