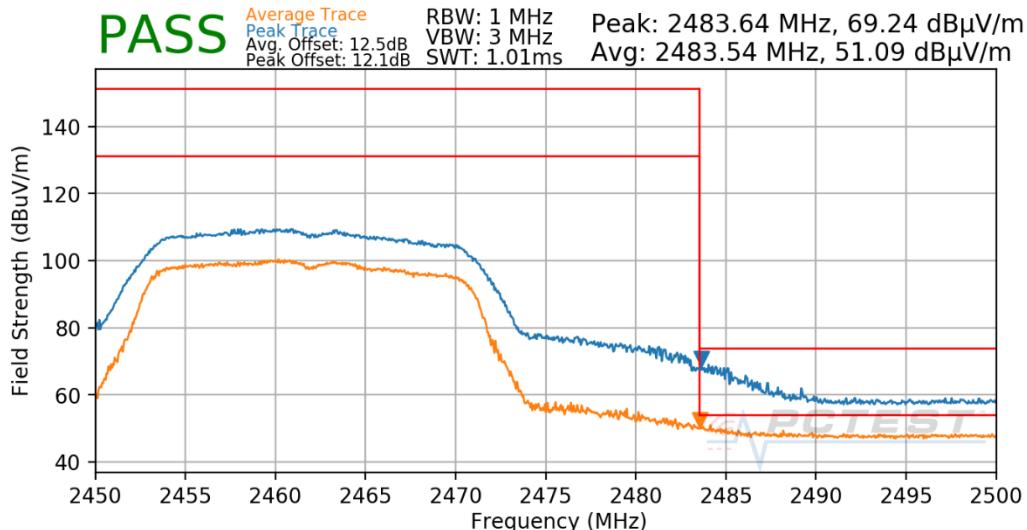
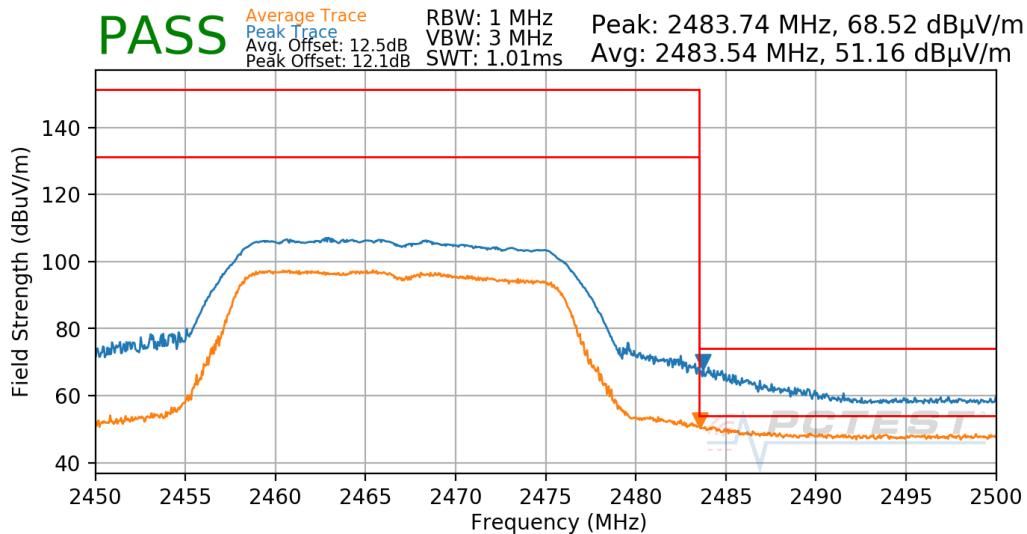


Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11



**Plot 7-110. Radiated Restricted Upper Band Edge Measurement Antenna A**

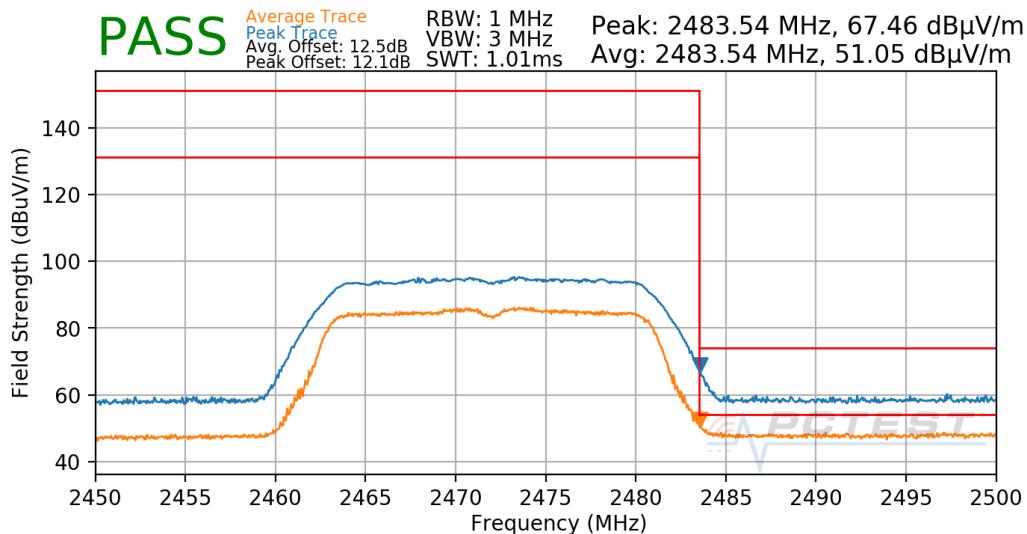
Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2467MHz  
 Channel: 12



**Plot 7-111. Radiated Restricted Upper Band Edge Measurement Antenna A**

FCC ID: BCGA2603 IC: 579C-A2603	 <b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 94 of 112	

Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2472MHz  
 Channel: 13



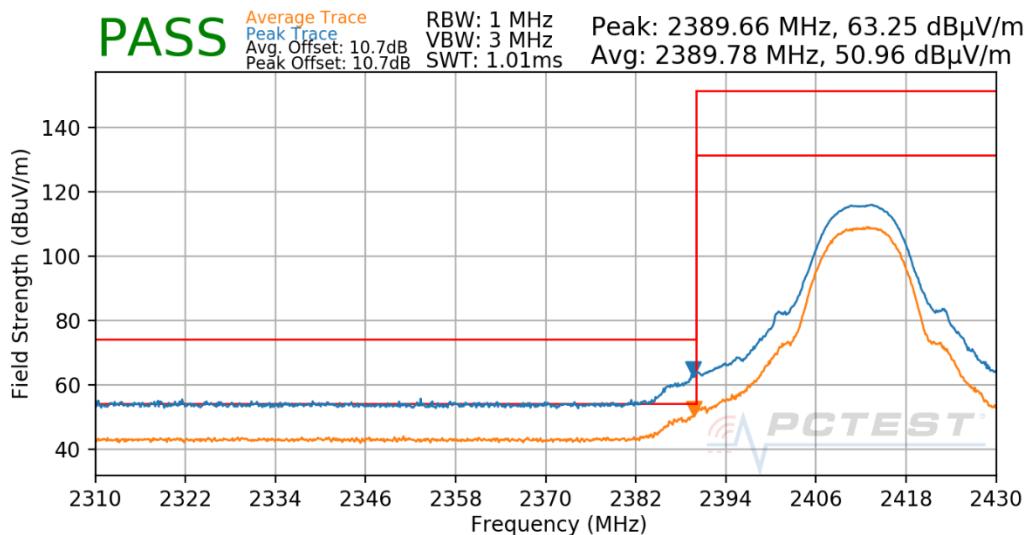
**Plot 7-112. Radiated Restricted Upper Band Edge Measurement Antenna A**

FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device	Page 95 of 112

## 7.7.5 Antenna B Radiated Restricted Band Edge Measurements

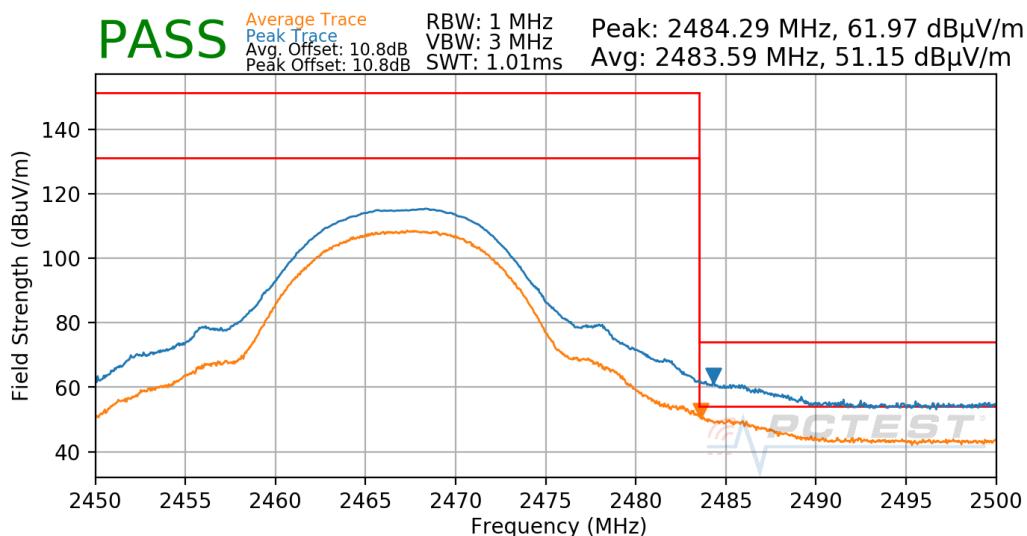
§15.205 §15.209; RSS-Gen [8.9]

Mode: 802.11b  
 Data Rate: 11Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2412MHz  
 Channel: 1



**Plot 7-113. Radiated Restricted Lower Band Edge Measurement Antenna B**

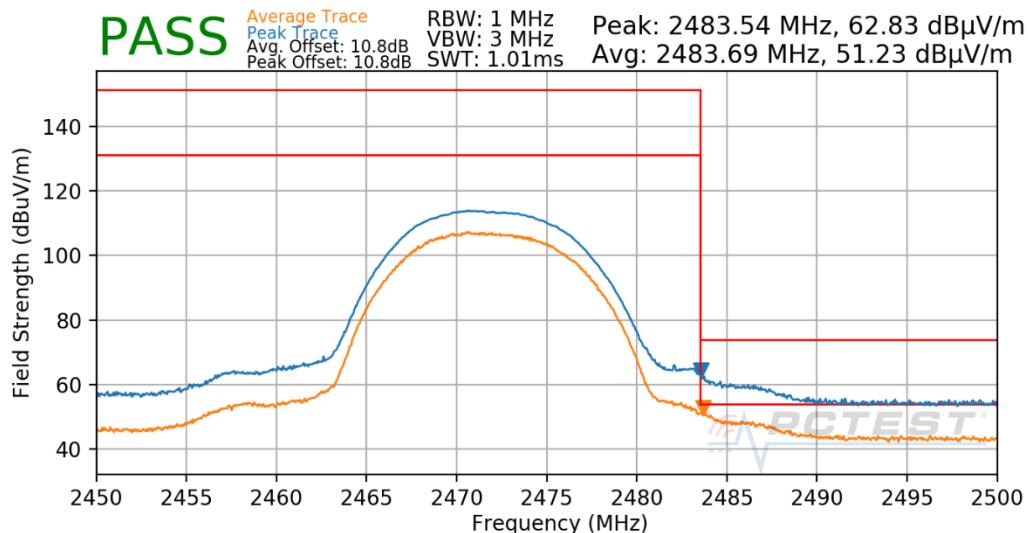
Mode: 802.11b  
 Data Rate: 11Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2467MHz  
 Channel: 12



**Plot 7-114. Radiated Restricted Upper Band Edge Measurement Antenna B**

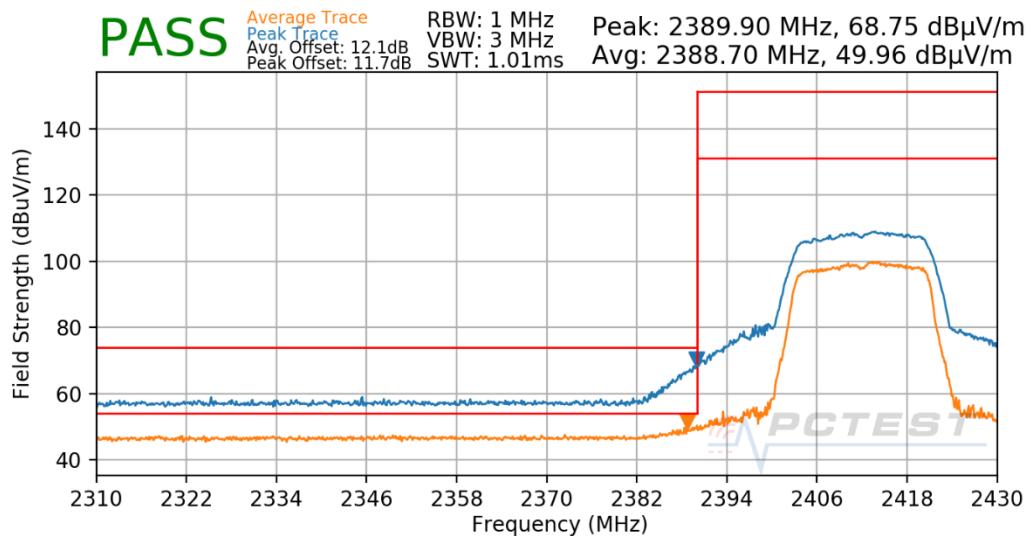
FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 96 of 112	

Mode: 802.11b  
 Data Rate: 11Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2472MHz  
 Channel: 13



**Plot 7-115. Radiated Restricted Upper Band Edge Measurement Antenna B**

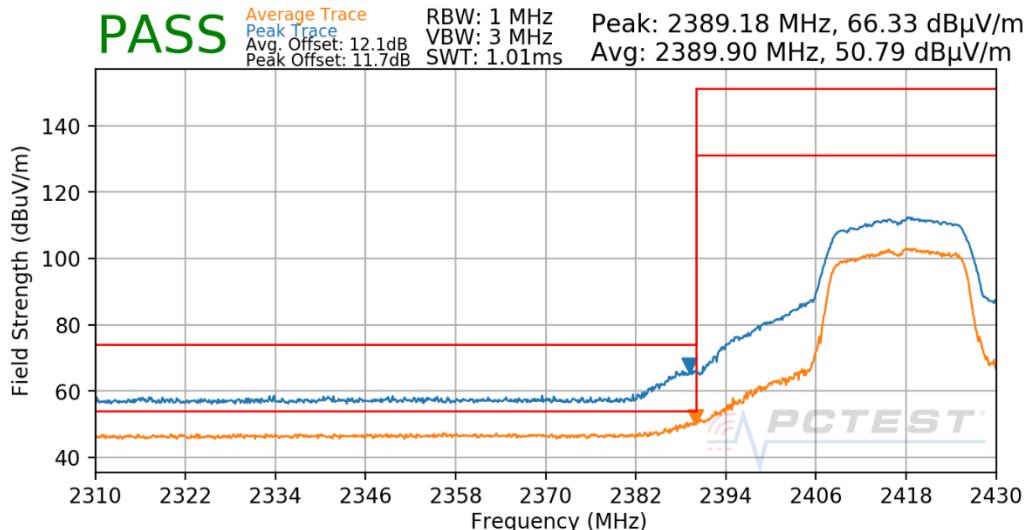
Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2412MHz  
 Channel: 1



**Plot 7-116. Radiated Restricted Lower Band Edge Measurement Antenna B**

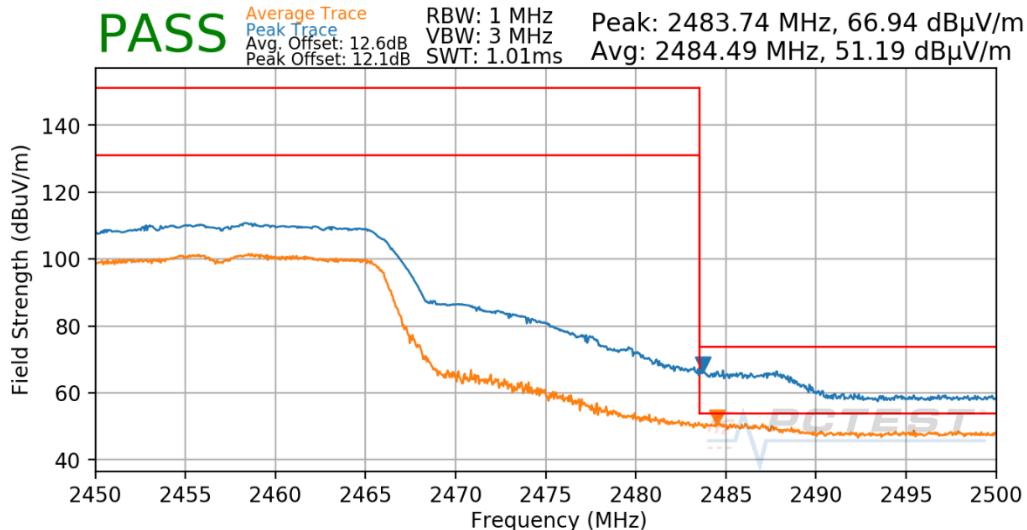
FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 97 of 112

Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2417MHz  
 Channel: 2



**Plot 7-117. Radiated Restricted Lower Band Edge Measurement Antenna B**

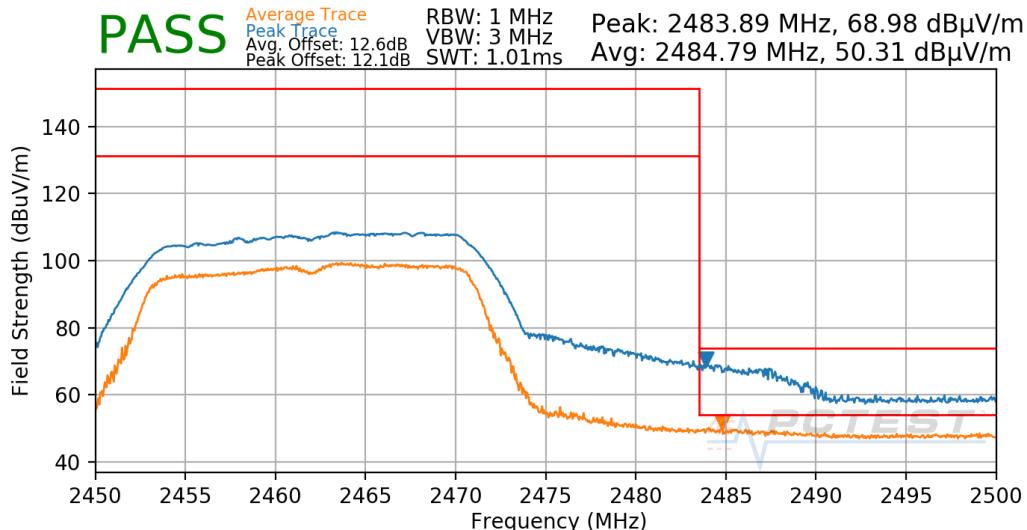
Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2457MHz  
 Channel: 10



**Plot 7-118. Radiated Restricted Upper Band Edge Measurement Antenna B**

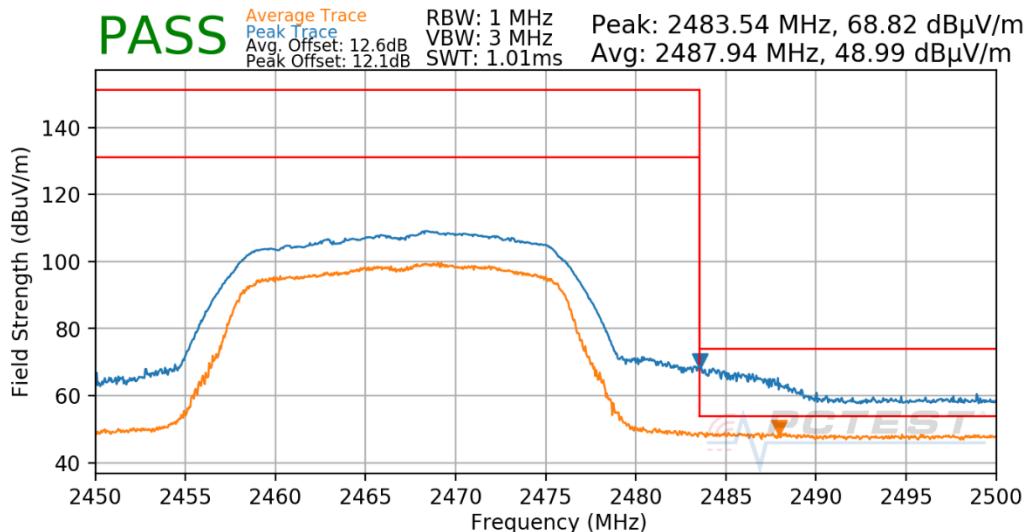
FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 98 of 112

Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11



**Plot 7-119. Radiated Restricted Upper Band Edge Measurement Antenna B**

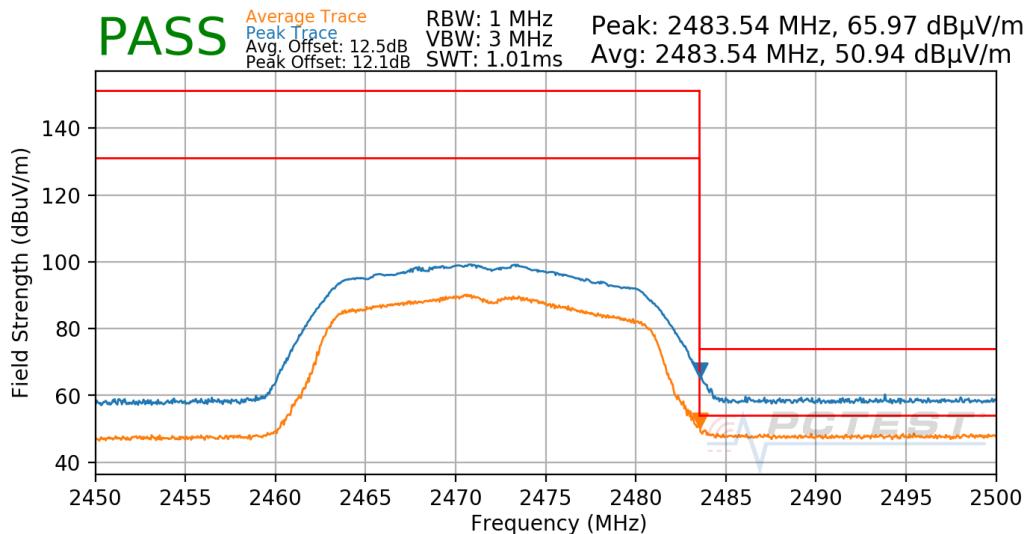
Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2467MHz  
 Channel: 12



**Plot 7-120. Radiated Restricted Upper Band Edge Measurement Antenna B**

FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 99 of 112

Mode: 802.11n  
 Data Rate: MCS7  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2472MHz  
 Channel: 13



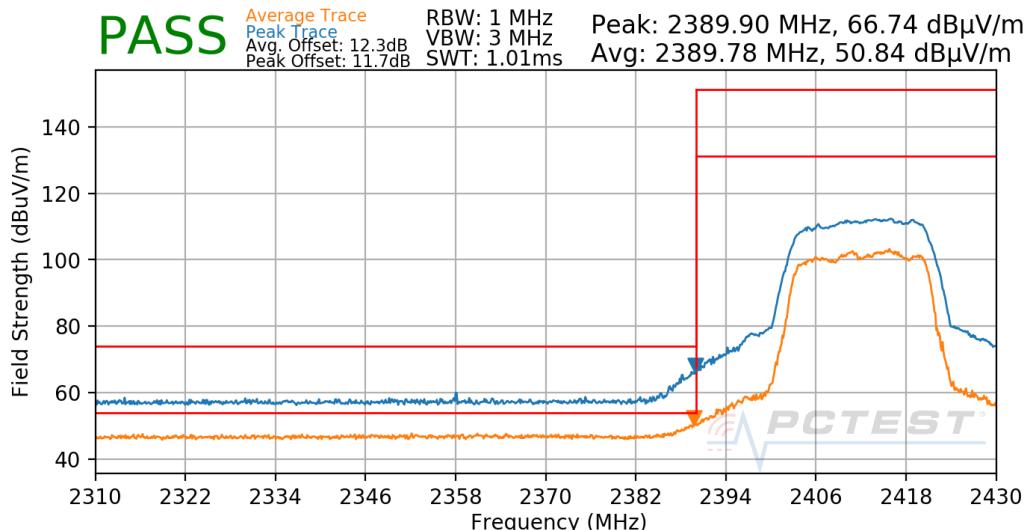
**Plot 7-121. Radiated Restricted Upper Band Edge Measurement Antenna B**

FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device	Page 100 of 112

## 7.7.6 CDD Radiated Restricted Band Edge Measurements

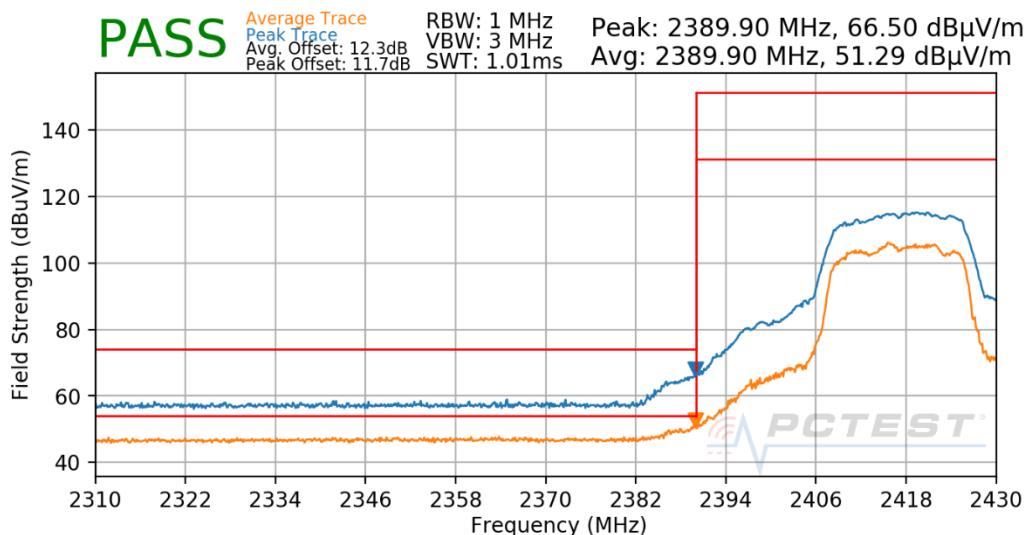
§15.205 §15.209; RSS-Gen [8.9]

Mode: 802.11n  
 Data Rate: MCS15  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2412MHz  
 Channel: 1



Plot 7-122. Radiated Restricted Lower Band Edge Measurement CDD

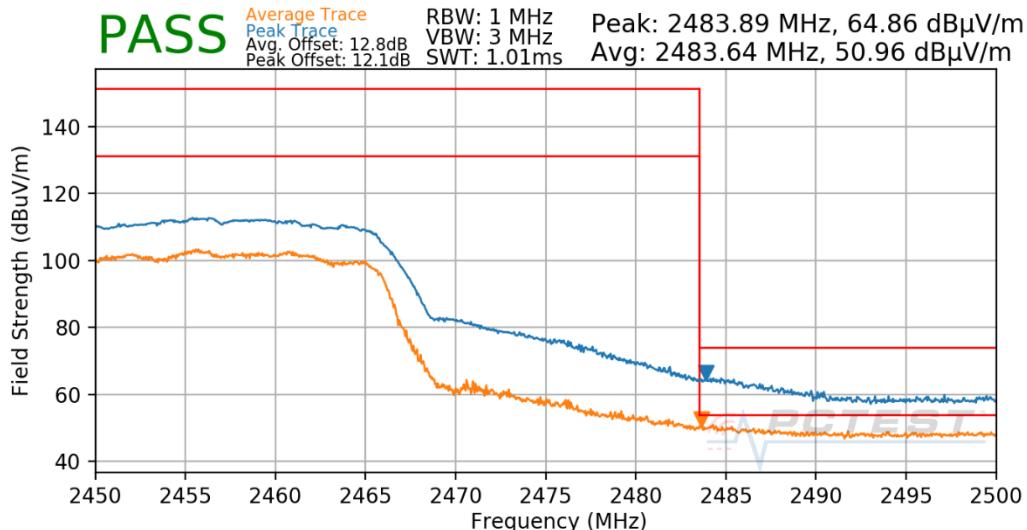
Mode: 802.11n  
 Data Rate: MCS15  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2417MHz  
 Channel: 2



Plot 7-123. Radiated Restricted Lower Band Edge Measurement CDD

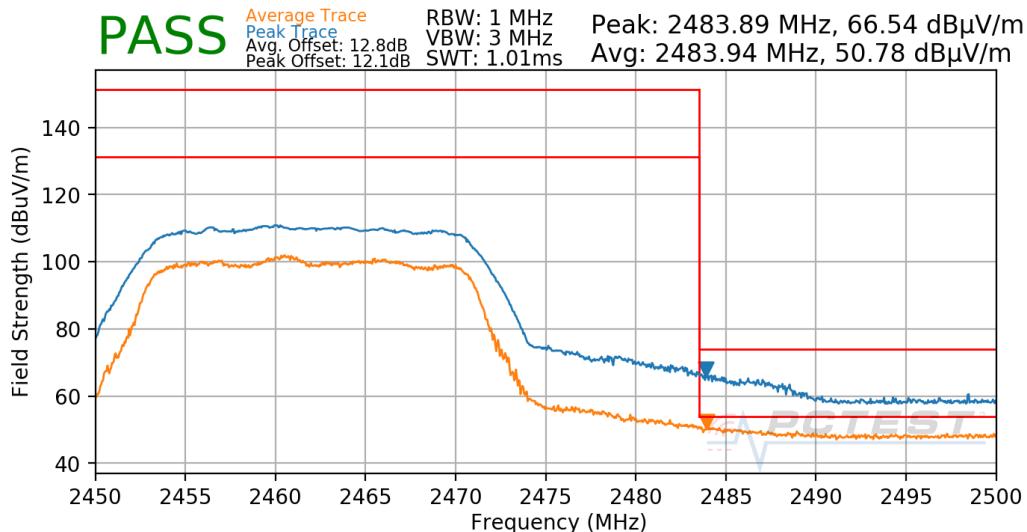
FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 101 of 112	

Mode: 802.11n  
 Data Rate: MCS15  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2457MHz  
 Channel: 10



**Plot 7-124. Radiated Restricted Upper Band Edge Measurement CDD**

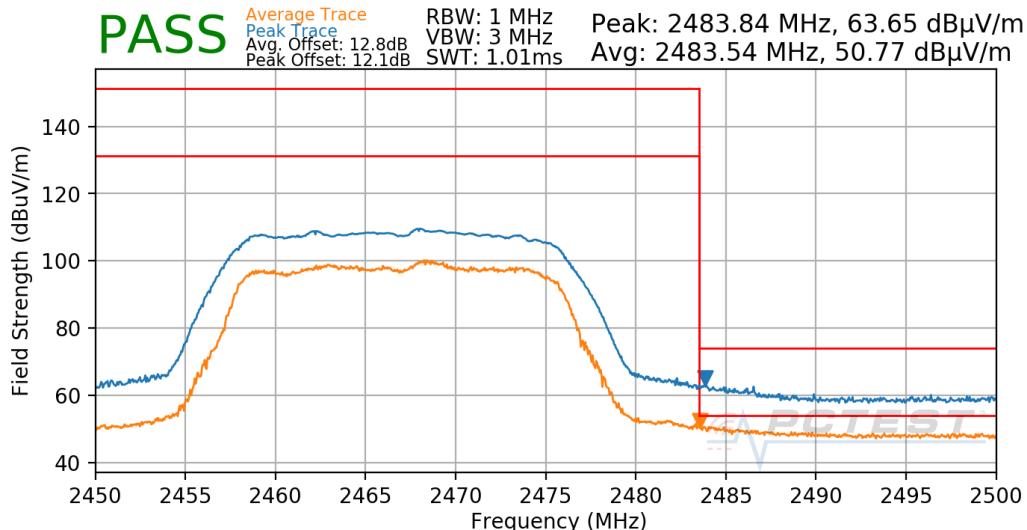
Mode: 802.11n  
 Data Rate: MCS15  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11



**Plot 7-125. Radiated Restricted Upper Band Edge Measurement CDD**

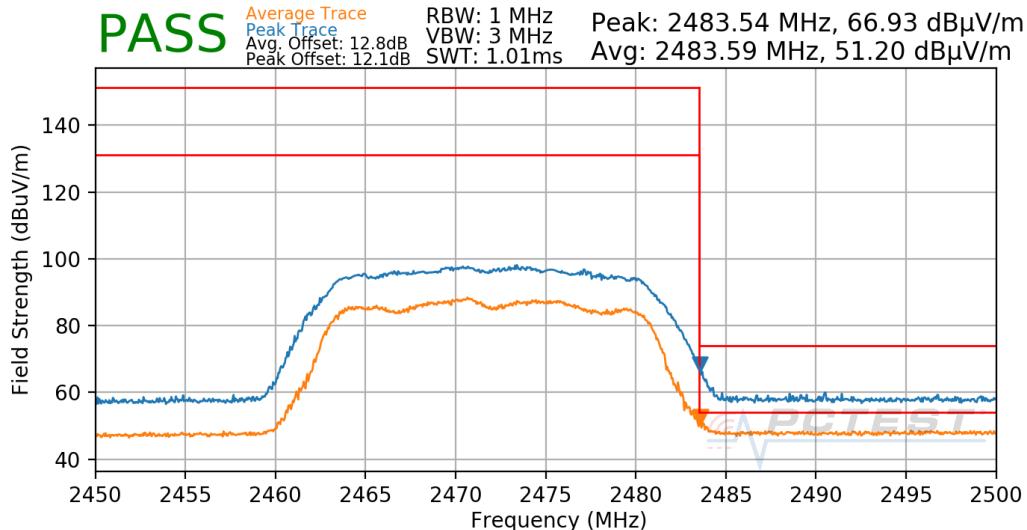
FCC ID: BCGA2603 IC: 579C-A2603	 <b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 102 of 112	

Mode: 802.11n  
 Data Rate: MCS15  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2467MHz  
 Channel: 12



**Plot 7-126. Radiated Restricted Upper Band Edge Measurement CDD**

Mode: 802.11n  
 Data Rate: MCS15  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2472MHz  
 Channel: 13



**Plot 7-127. Radiated Restricted Upper Band Edge Measurement CDD**

FCC ID: BCGA2603 IC: 579C-A2603	 <b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 - 07/23/2021	EUT Type: Tablet Device	Page 103 of 112	

## 7.8 Radiated Spurious Emissions – 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 7-25 per Section 15.209 and RSS-Gen (8.9).***

Frequency	Field Strength [ $\mu$ V/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 7-25. 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. VBW = 300kHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold

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## Test Setup

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

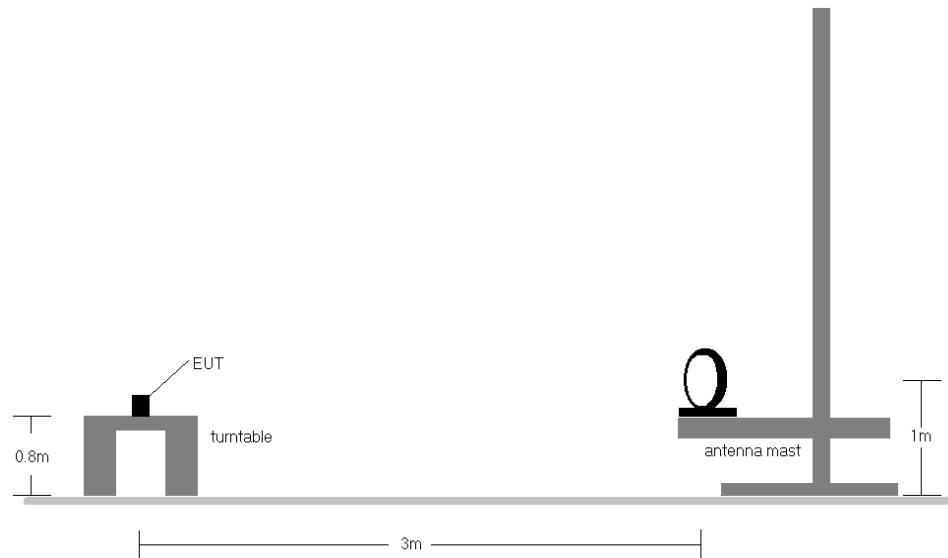


Figure 7-7. Radiated Test Setup < 30Mhz

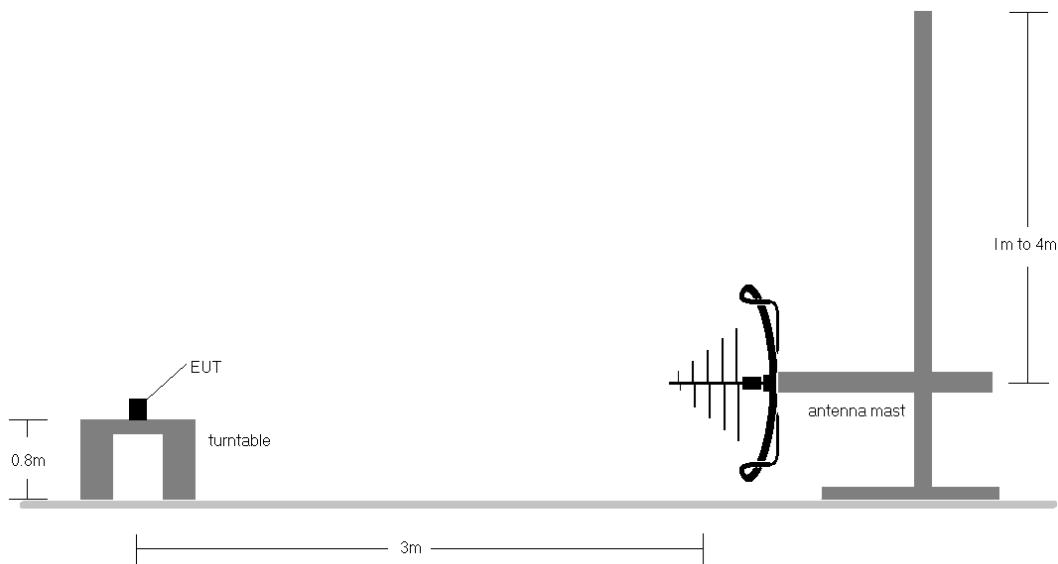


Figure 7-8. Radiated Test Setup < 1GHz

FCC ID: BCGA2603 IC: 579C-A2603	 PCTEST <sup>®</sup> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device	Page 105 of 112

## 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 7-25.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes. For below 30MHz the loop antenna was positioned in 3 orthogonal planes (X front, Y side, Z top) to determine the orientation resulting in the worst case emissions.
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 for emissions within 6dB of the limit.
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. Both configurations below were investigated, and the worst case has been reported.
  - a. EUT powered by AC/DC adaptor via USB-C cable with wire charger
  - b. EUT powered by host PC via USB-C cable with wire charger
9. 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.
10. The unit was tested with all possible modes and only the highest emission is reported.
11. All antenna configurations were investigated and only the worst case is reported.

## Sample Calculations

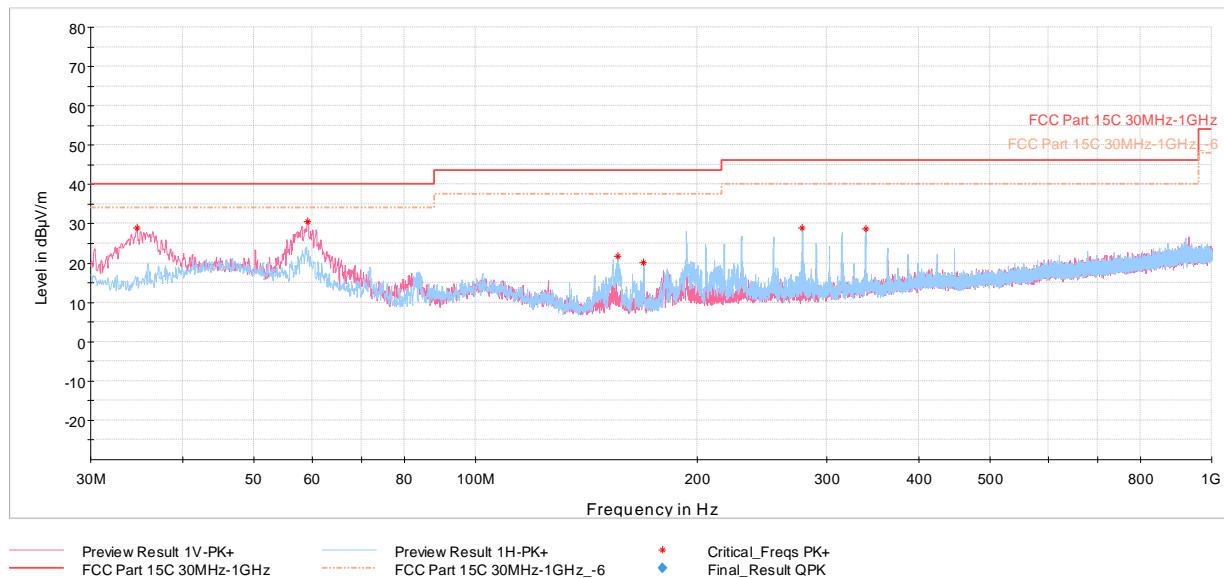
### Determining Spurious Emissions Levels

- Field Strength Level  $[\text{dB}_{\mu\text{V/m}}]$  = Analyzer Level  $[\text{dBm}] + 107 + \text{AFCL} [\text{dB/m}]$
- AFCL  $[\text{dB/m}]$  = Antenna Factor  $[\text{dB/m}] + \text{Cable Loss} [\text{dB}] - \text{Preamplifier Gain} [\text{dB}]$
- Margin  $[\text{dB}]$  = Field Strength Level  $[\text{dB}_{\mu\text{V/m}}] - \text{Limit} [\text{dB}_{\mu\text{V/m}}]$

FCC ID: BCGA2603 IC: 579C-A2603	 PCTEST <sup>®</sup> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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## CDD Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-128. Radiated Spurious Emissions Below 1GHz CDD 11n Ch.11, 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]
34.66	Max-Peak	V	100	84	-61.66	-16.30	29.04	40.00	-10.96
59.10	Max-Peak	V	100	121	-61.99	-14.53	30.48	40.00	-9.52
155.95	Max-Peak	H	100	311	-67.11	-18.21	21.68	43.52	-21.84
169.29	Max-Peak	H	250	149	-69.23	-17.59	20.18	43.52	-23.34
278.08	Max-Peak	H	100	334	-64.58	-13.42	29.00	46.02	-17.02
338.70	Max-Peak	H	100	0	-66.88	-11.46	28.66	46.02	-17.36

Table 7-26. Radiated Spurious Emissions Below 1GHz CDD 11n Ch.11, with AC/DC Adapter

FCC ID: BCGA2603 IC: 579C-A2603	 <b>PCTEST<sup>®</sup></b> Proud to be part of element			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device			

## 7.9 AC Line-Conducted Emissions Measurement

§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 AC Line 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 (dB $\mu$ V)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

**Table 7-27. Conducted Limits**

\*Decreases with the logarithm of the frequency.

### Test Procedures Used

ANSI C63.10-2013, Section 6.2

### Test Settings

#### Quasi-Peak 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 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

FCC ID: BCGA2603 IC: 579C-A2603	 PCTEST <sup>®</sup> Proud to be part of element	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 diagram below.

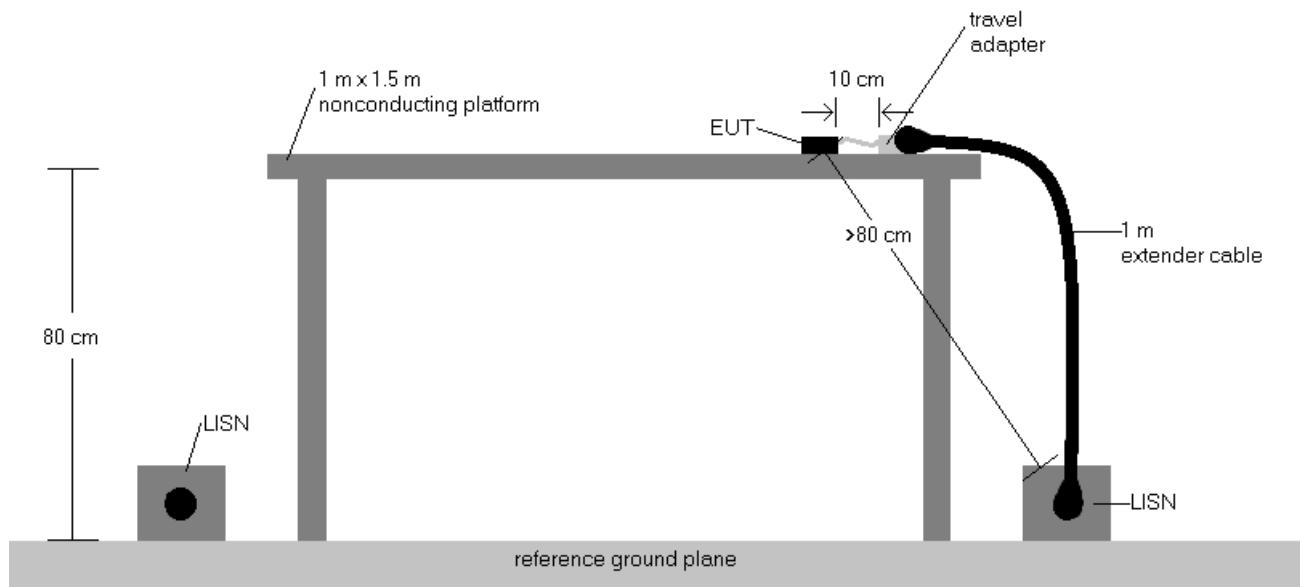
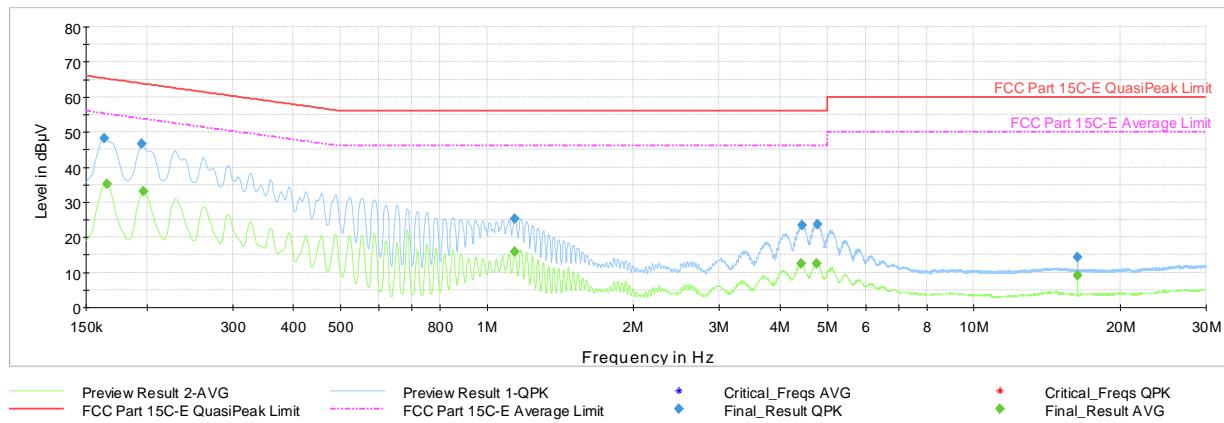


Figure 7-9. Test Instrument & Measurement Setup

## Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported. The emissions found were not affected by the choice of channel used during testing.
2. Both configurations below were investigated, and the worst case has been reported.
  - a. EUT powered by AC/DC adaptor via USB-C cable with wire charger
  - b. EUT powered by host PC via USB-C cable with wire charger
3. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.207 and RSS-Gen(8.8).
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
6. Margin (dB) = QP/AV Level (dB $\mu$ V) - QP/AV Limit (dB $\mu$ V)
7. Traces shown in plot are made using quasi peak and average detectors.
8. Deviations to the Specifications: None.
9. The unit was tested with all possible modes and only the highest emission is reported.

FCC ID: BCGA2603 IC: 579C-A2603	 PCTEST <sup>®</sup> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device	Page 109 of 112

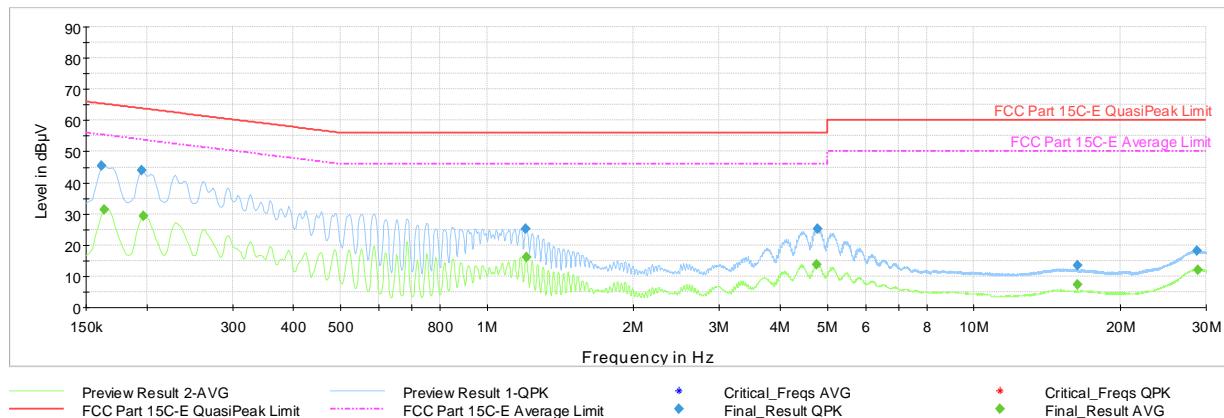


**Plot 7-129. AC Line Conducted Plot with CDD 11n Ch.6 (L1, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dB $\mu$ V]	Average [dB $\mu$ V]	Limit [dB $\mu$ V]	Margin [dB]	Line	PE
0.164	FINAL	48.3	—	65.28	-16.98	L1	GND
0.166	FINAL	—	35.20	55.17	-19.97	L1	GND
0.195	FINAL	46.6	—	63.82	-17.23	L1	GND
0.197	FINAL	—	33.03	53.73	-20.70	L1	GND
1.140	FINAL	—	15.92	46.00	-30.08	L1	GND
1.140	FINAL	25.3	—	56.00	-30.74	L1	GND
4.425	FINAL	—	12.52	46.00	-33.48	L1	GND
4.430	FINAL	23.3	—	56.00	-32.67	L1	GND
4.751	FINAL	—	12.60	46.00	-33.40	L1	GND
4.776	FINAL	23.7	—	56.00	-32.28	L1	GND
16.323	FINAL	14.5	—	60.00	-45.55	L1	GND
16.323	FINAL	—	9.19	50.00	-40.81	L1	GND

**Table 7-28. AC Line Conducted Data with CDD 11n Ch.6 (L1, with AC/DC Adapter)**

FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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**Plot 7-130. AC Line Conducted Plot with CDD 11n Ch.6 (N, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dB $\mu$ V]	Average [dB $\mu$ V]	Limit [dB $\mu$ V]	Margin [dB]	Line	PE
0.161	FINAL	45.3	—	65.40	-20.06	N	GND
0.164	FINAL	—	31.29	55.28	-24.00	N	GND
0.195	FINAL	44.0	—	63.82	-19.78	N	GND
0.197	FINAL	—	29.29	53.73	-24.44	N	GND
1.199	FINAL	25.2	—	56.00	-30.82	N	GND
1.203	FINAL	—	16.00	46.00	-30.00	N	GND
4.749	FINAL	—	13.65	46.00	-32.35	N	GND
4.772	FINAL	25.2	—	56.00	-30.85	N	GND
16.341	FINAL	—	7.29	50.00	-42.71	N	GND
16.341	FINAL	13.6	—	60.00	-46.41	N	GND
28.705	FINAL	18.0	—	60.00	-41.96	N	GND
28.797	FINAL	—	11.96	50.00	-38.04	N	GND

**Table 7-29. AC Line Conducted Data with CDD 11n Ch.6 (N, with AC/DC Adapter)**

FCC ID: BCGA2603 IC: 579C-A2603	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device	Page 111 of 112

## 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Tablet Device** **FCC ID: BCGA2603, IC: 579C-A2603** 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.

FCC ID: BCGA2603 IC: 579C-A2603	 PCTEST <sup>®</sup> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2106080051-06.BCG	Test Dates: 05/28/2021 – 07/23/2021	EUT Type: Tablet Device	Page 112 of 112