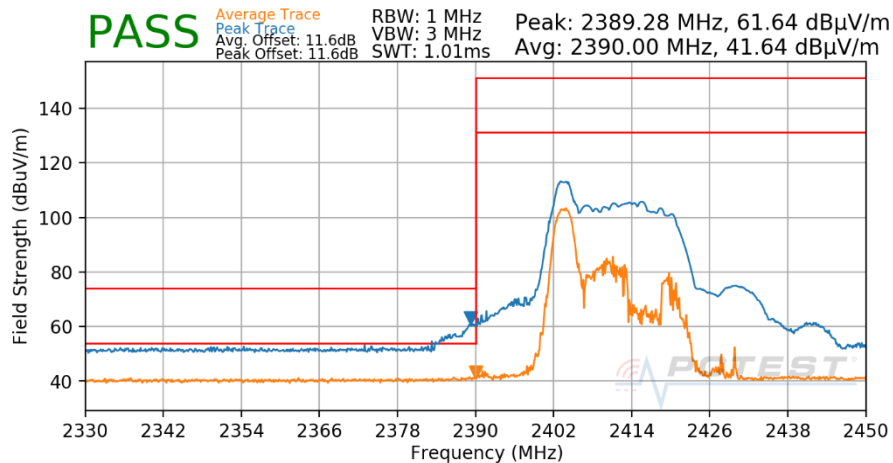


### 7.7.5 Antenna 1a Radiated Restricted Band Edge Measurements §15.205 §15.209; RSS-Gen [8.9]

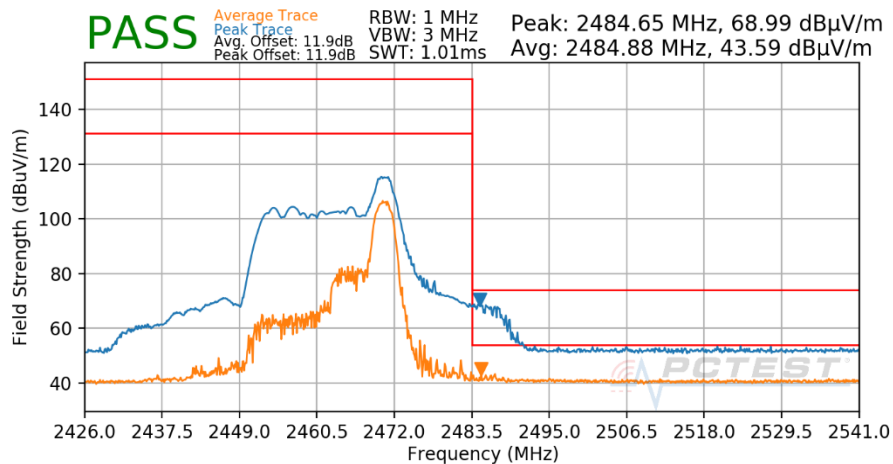
The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

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 7-164. Radiated Restricted Lower Band Edge Measurement Antenna 1a (Peak & Average – RU26)**

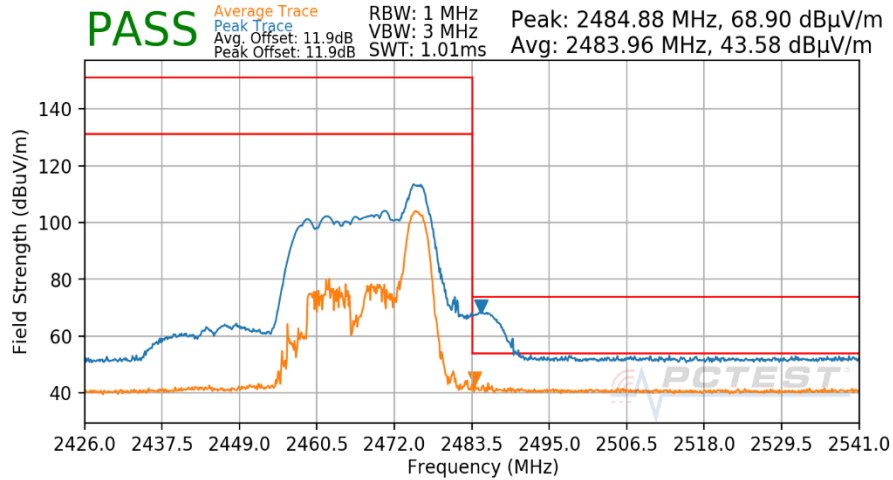
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



**Plot 7-165. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU26)**

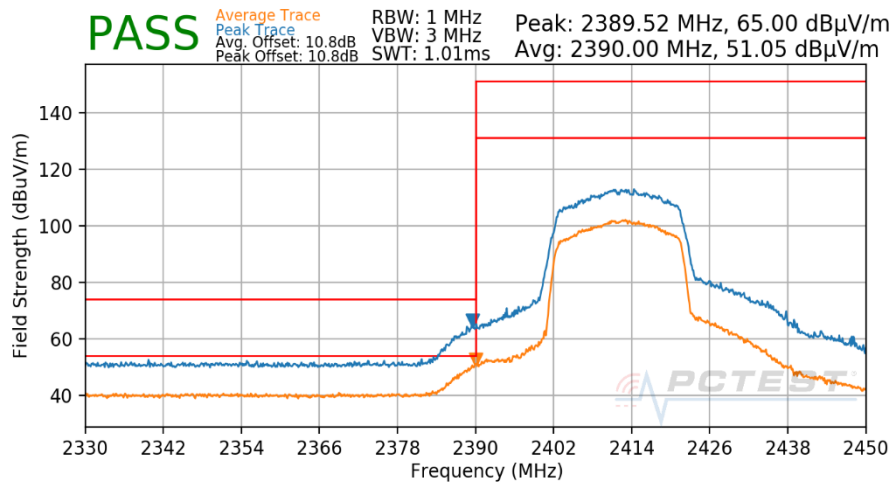
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 128 of 155

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 7-166. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU26)**

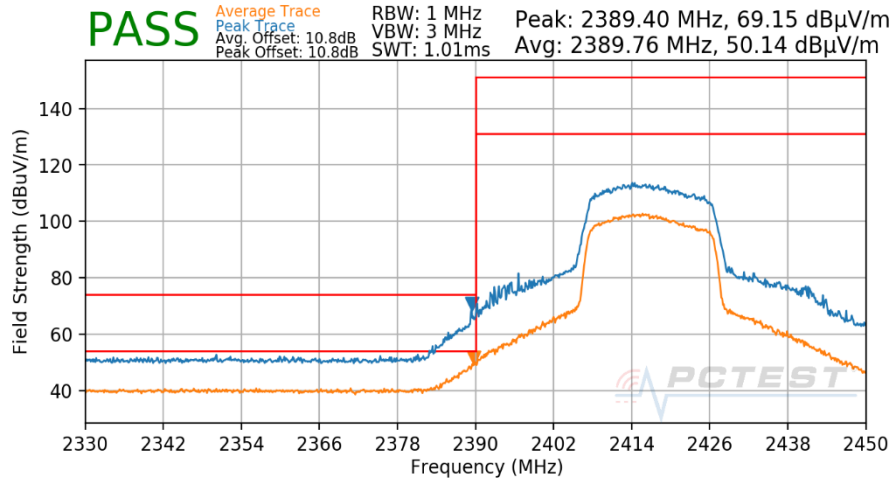
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2412MHz  
 Channel: 1



**Plot 7-167. Radiated Restricted Lower Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

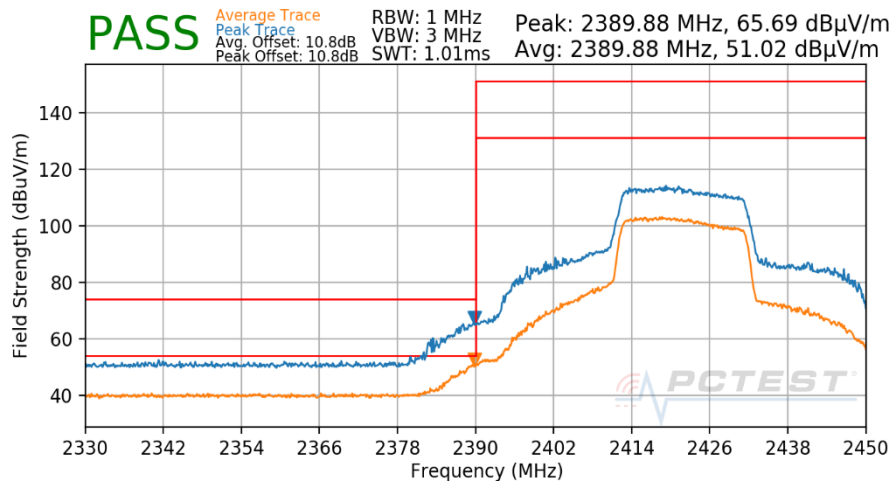
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 129 of 155

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 7-168. Radiated Restricted Lower Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

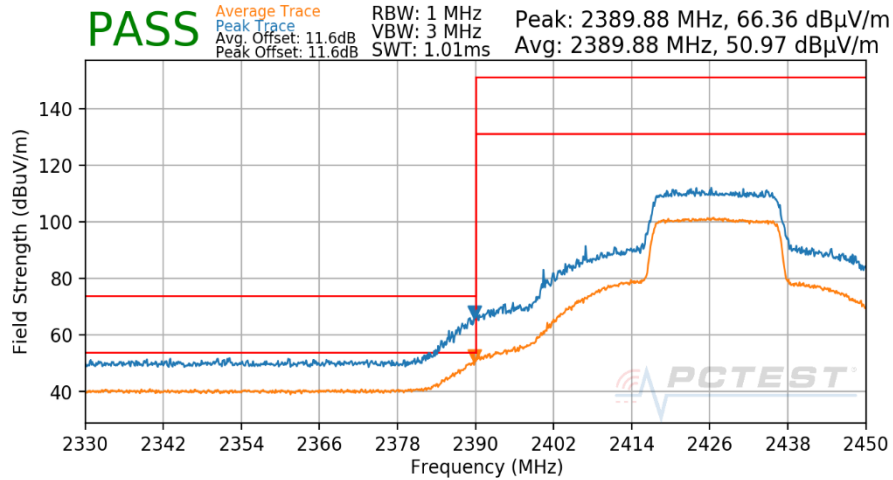
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2422MHz  
 Channel: 3



**Plot 7-169. Radiated Restricted Lower Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

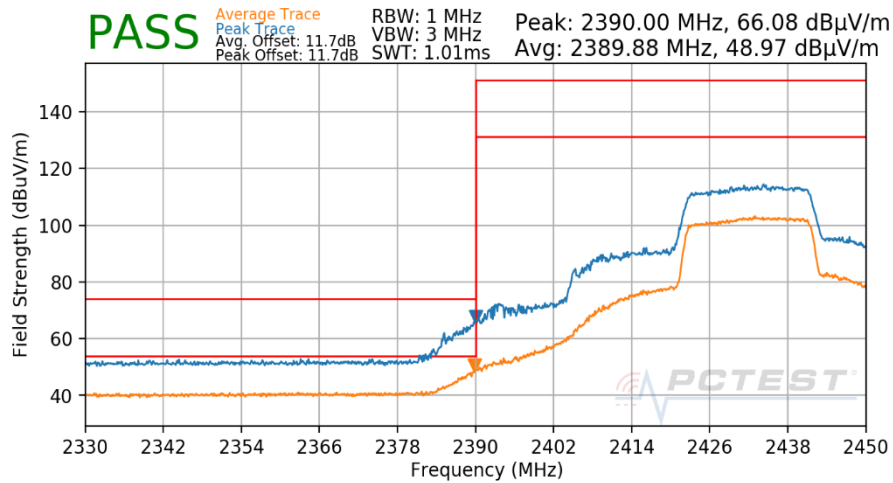
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 130 of 155

Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2427MHz  
 Channel: 4



**Plot 7-170. Radiated Restricted Lower Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

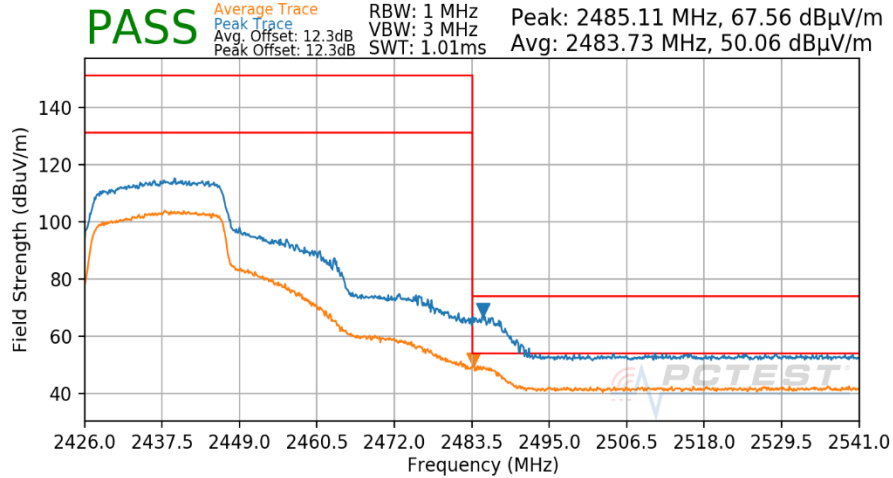
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2432MHz  
 Channel: 5



**Plot 7-171. Radiated Restricted Lower Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

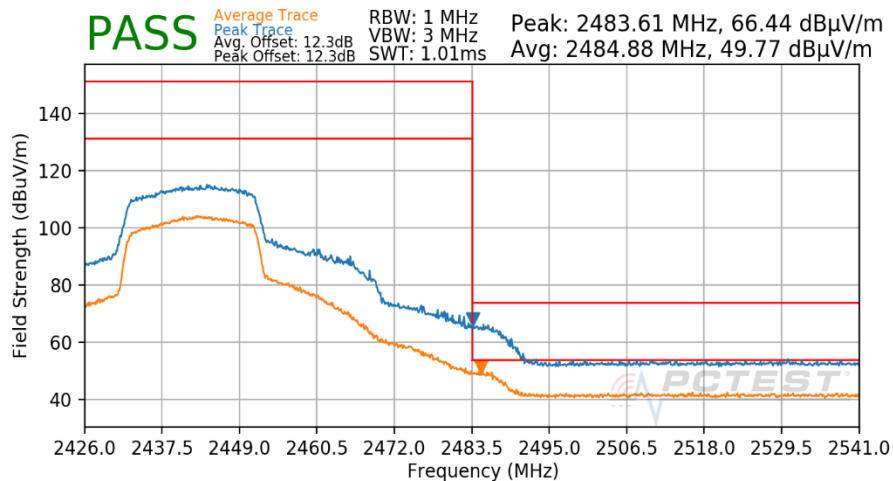
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST® Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 131 of 155

Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2437MHz  
 Channel: 6 (high)



**Plot 7-172. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

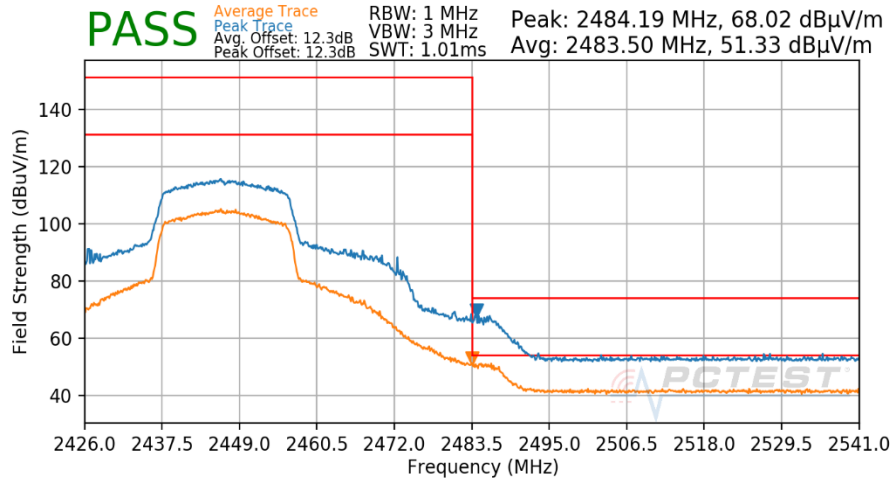
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2442MHz  
 Channel: 7



**Plot 7-173. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

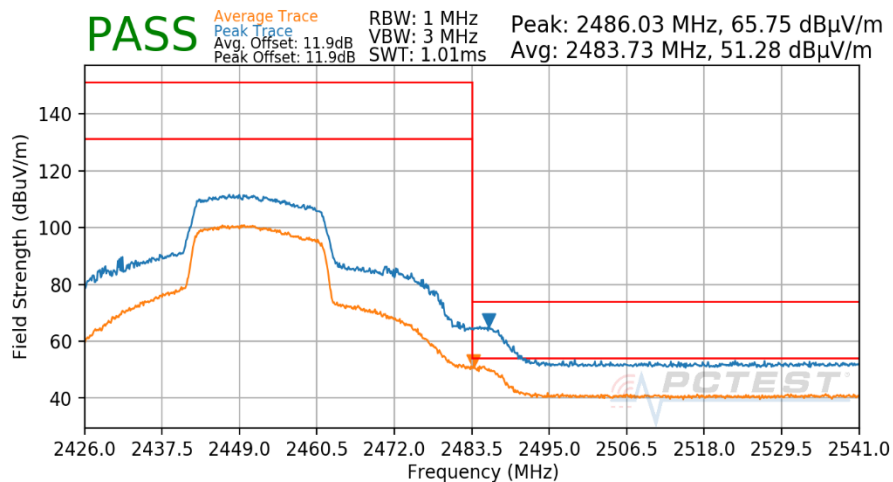
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 132 of 155

Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2447MHz  
 Channel: 8



**Plot 7-174. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

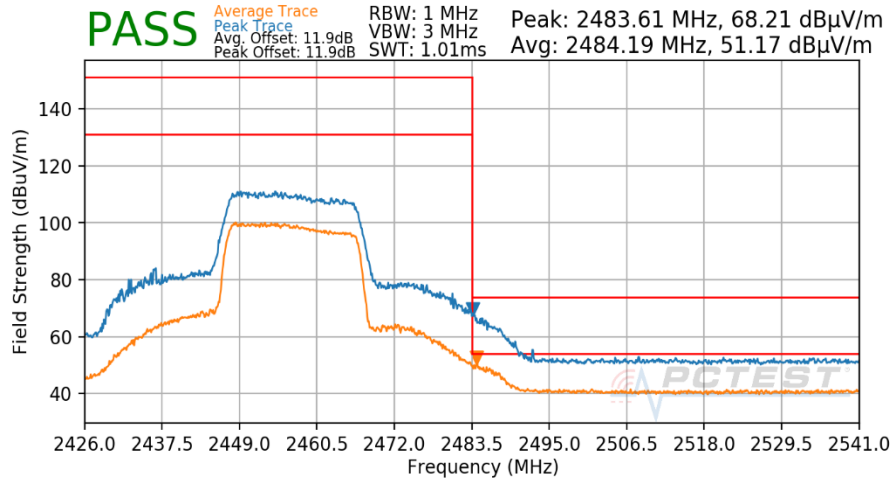
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2452MHz  
 Channel: 9



**Plot 7-175. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

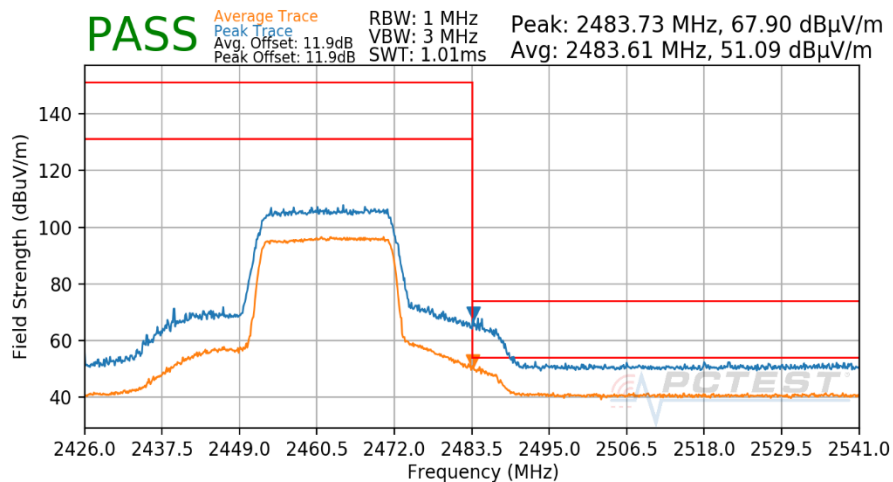
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 133 of 155

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 Antenna 1a (Peak & Average – RU242)**

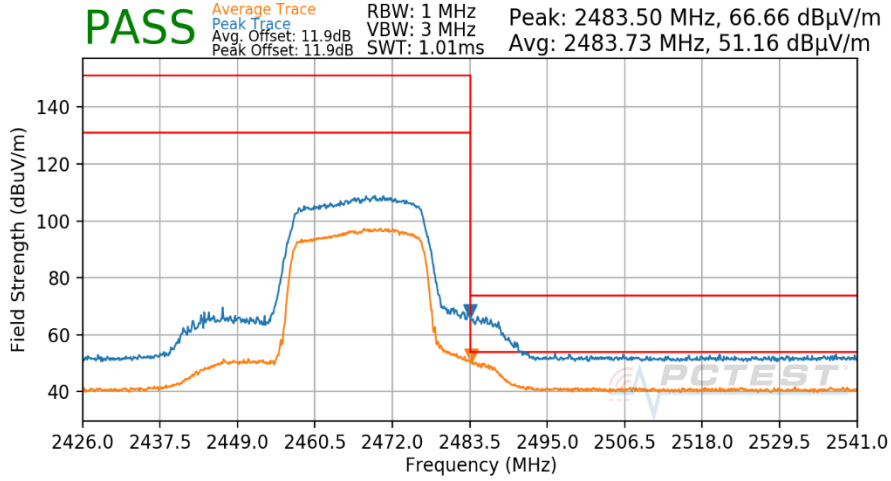
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11



**Plot 7-177. Radiated Restricted Upper Band Edge Measurement Antenna 1a (Peak & Average – RU242)**

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 134 of 155

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 Antenna 1a (Peak & Average – RU242)**

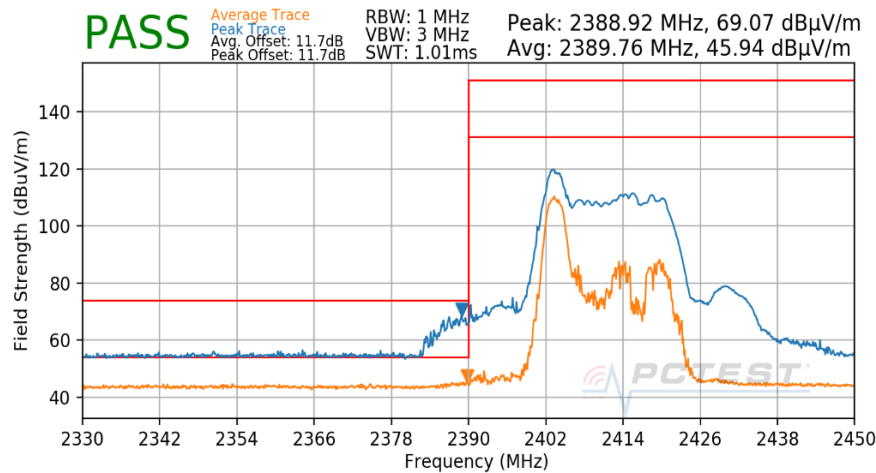
FCC ID: BCGA2589 IC: 579C-A2589		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1C2111150079-09.BCG	<b>Test Dates:</b> 12/02/2021 - 01/31/2022	<b>EUT Type:</b> Tablet Device	Page 135 of 155



### 7.7.6 CDD Radiated Restricted Band Edge Measurements §15.205 §15.209; RSS-Gen [8.9]

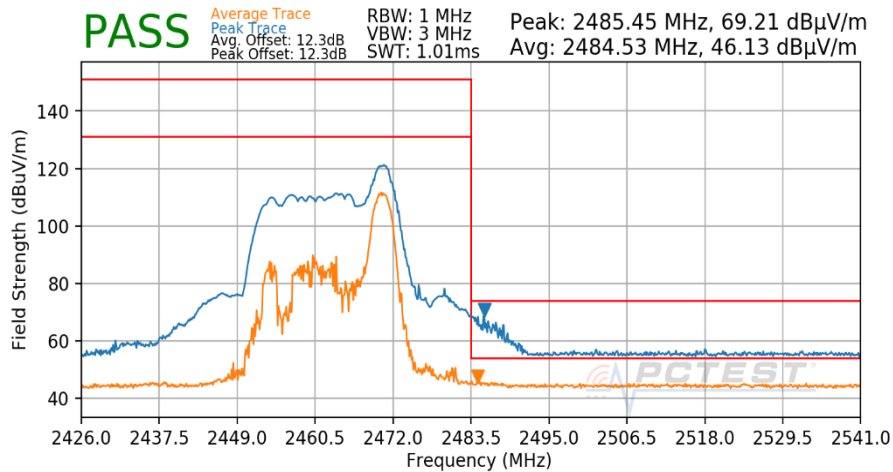
The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

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 7-179. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU26)**

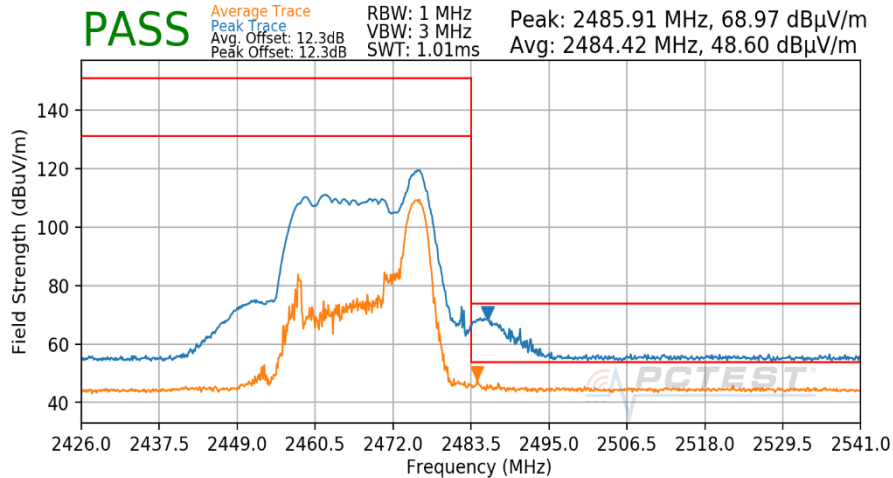
Worst Case Mode:	802.11ax OFDMA
Worst Case Transfer Rate:	MCS0
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	2462MHz
Channel:	11



**Plot 7-180. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU26)**

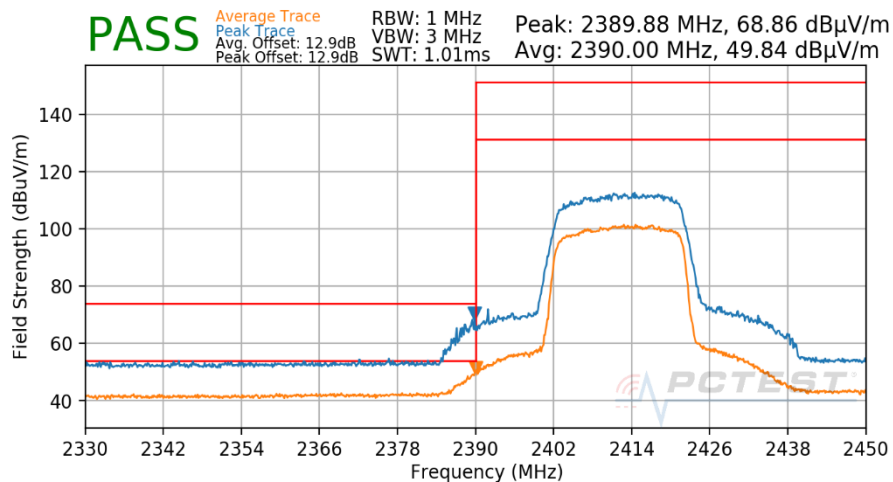
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST® Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 136 of 155

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 7-181. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU26)**

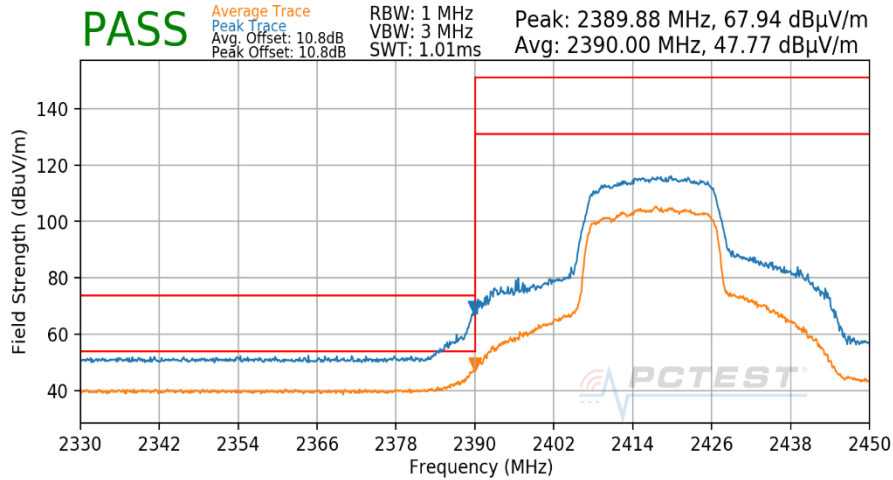
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2412MHz  
 Channel: 1



**Plot 7-182. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU242)**

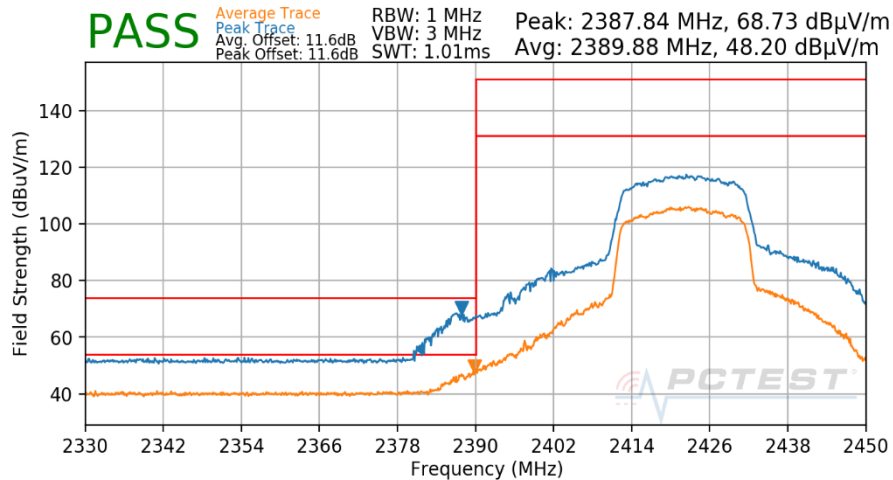
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST® Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 137 of 155

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 7-183. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU242)**

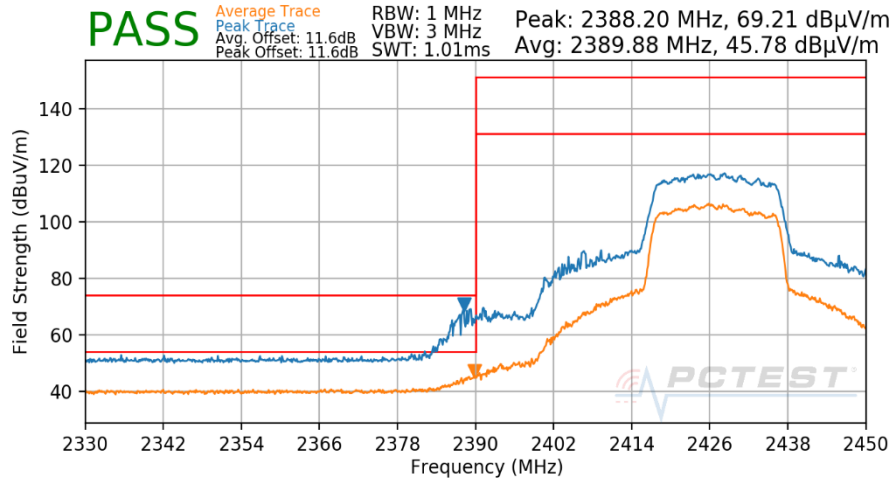
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2422MHz  
 Channel: 3



**Plot 7-184. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU242)**

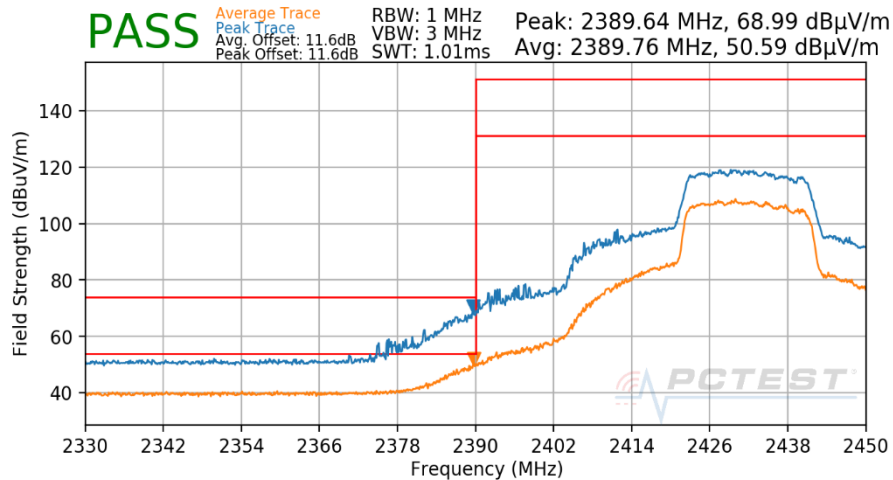
FCC ID: BCGA2589 IC: 579C-A2589		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1C211150079-09.BCG	<b>Test Dates:</b> 12/02/2021 - 01/31/2022	<b>EUT Type:</b> Tablet Device	Page 138 of 155

Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2427MHz  
 Channel: 4



**Plot 7-185. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU242)**

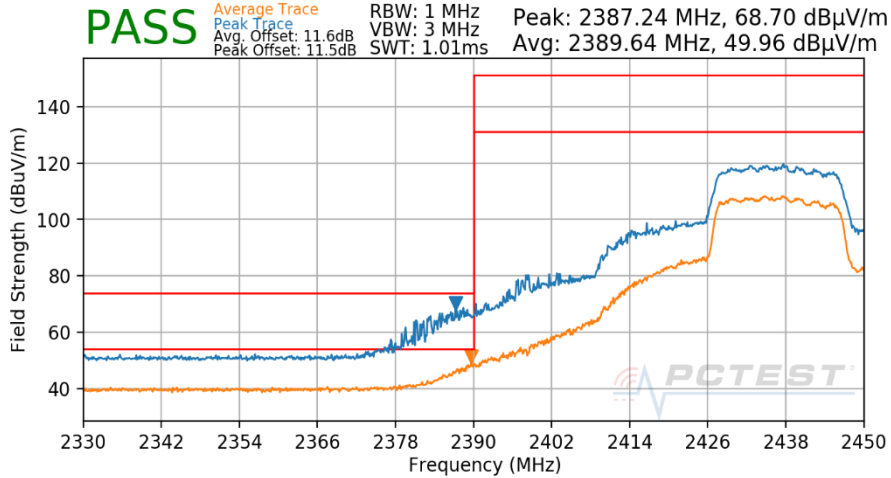
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2432MHz  
 Channel: 5



**Plot 7-186. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU242)**

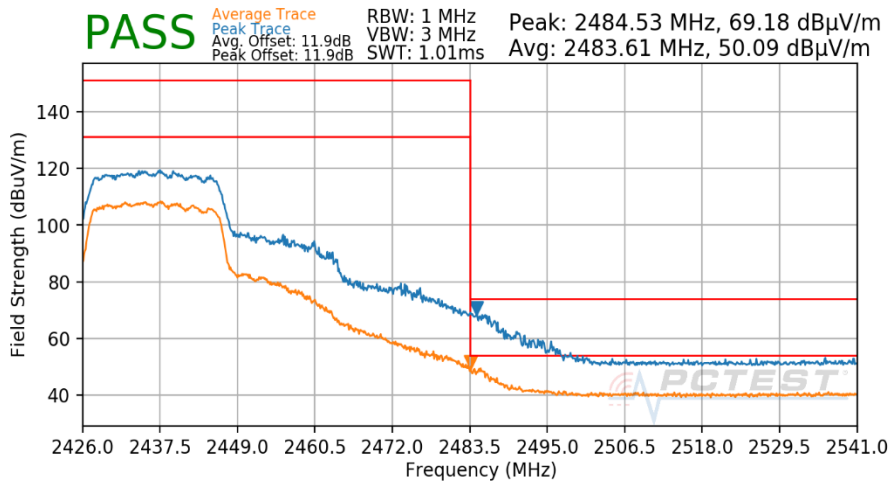
FCC ID: BCGA2589 IC: 579C-A2589		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1C211150079-09.BCG	<b>Test Dates:</b> 12/02/2021 - 01/31/2022	<b>EUT Type:</b> Tablet Device	Page 139 of 155

Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2437MHz  
 Channel: 6 (low)



**Plot 7-187. Radiated Restricted Lower Band Edge Measurement CDD (Peak & Average – RU242)**

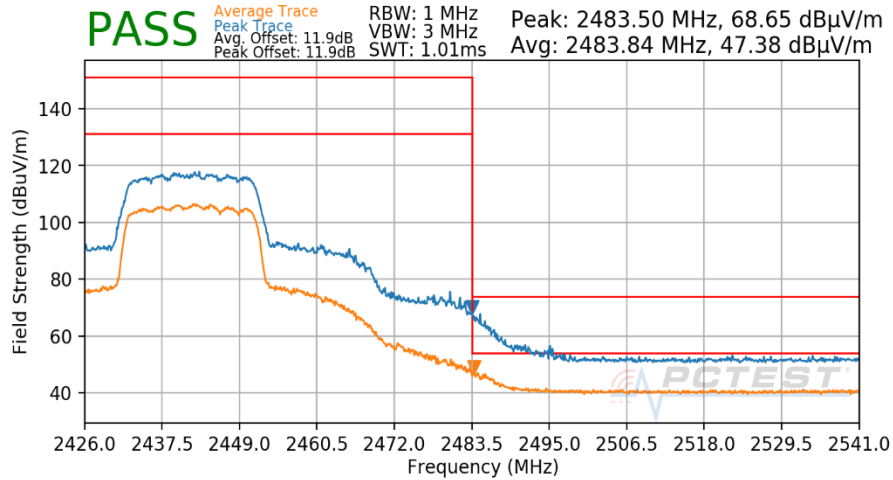
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2437MHz  
 Channel: 6 (high)



**Plot 7-188. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU242)**

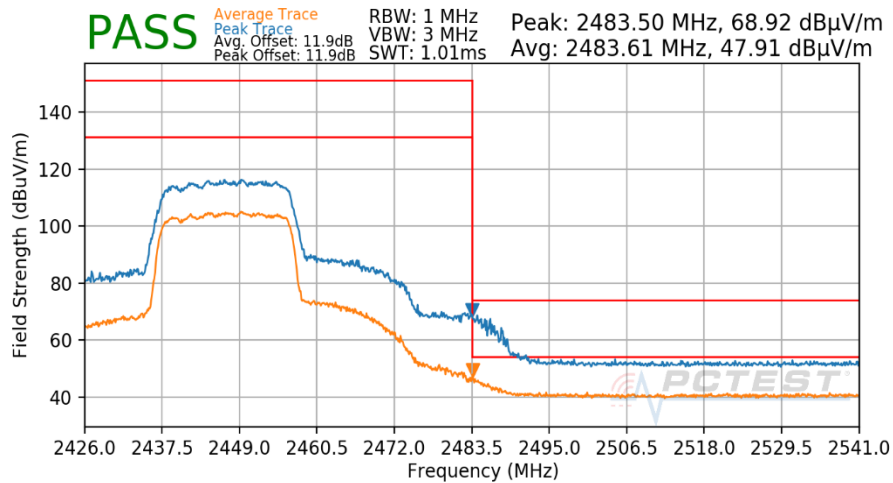
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 140 of 155

Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2442MHz  
 Channel: 7



**Plot 7-189. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU242)**

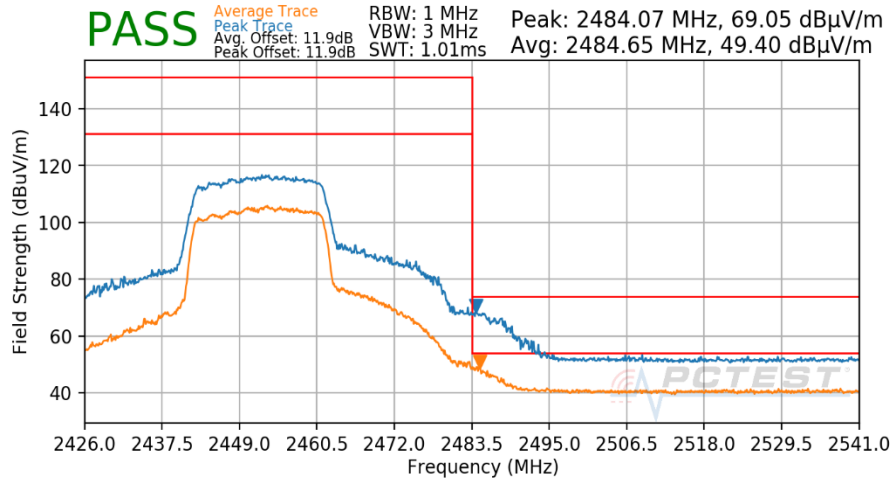
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2447MHz  
 Channel: 8



**Plot 7-190. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU242)**

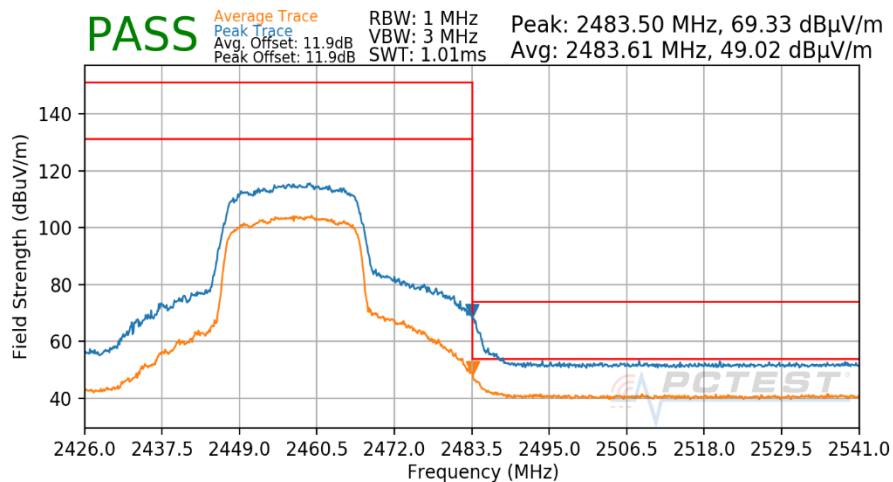
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 141 of 155

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 7-191. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU242)**

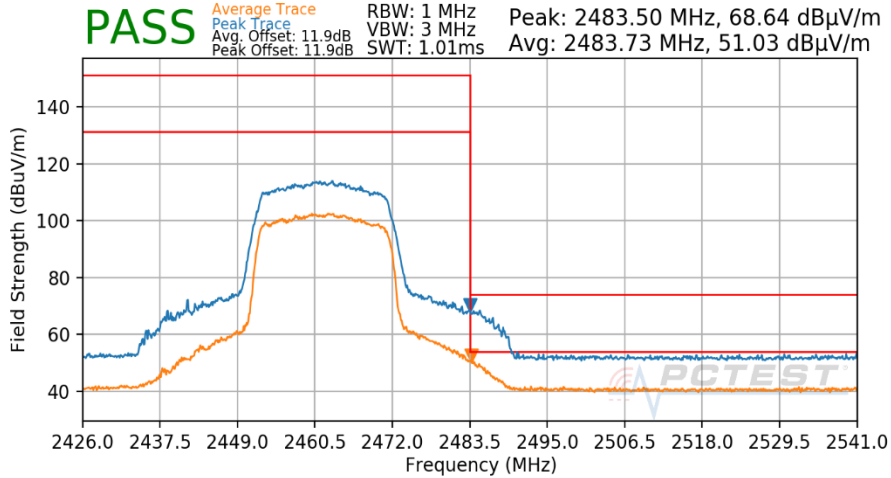
Worst Case Mode: 802.11ax OFDMA  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2457MHz  
 Channel: 10



**Plot 7-192. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU242)**

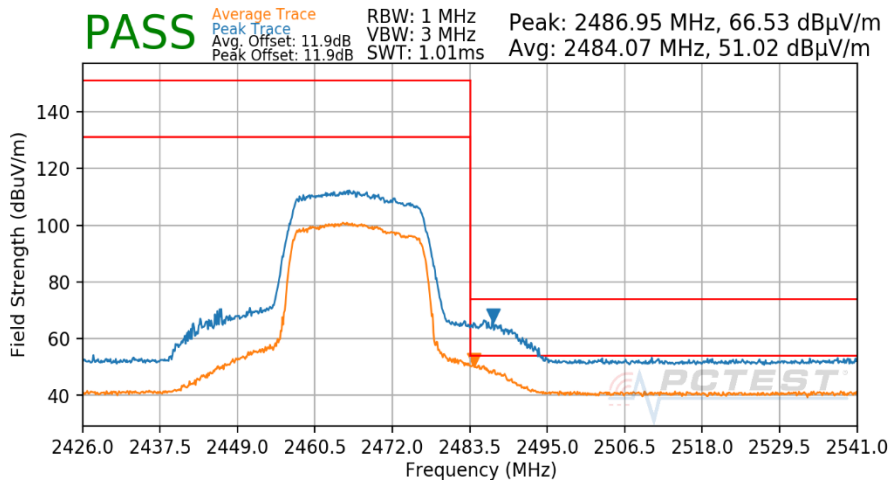
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 142 of 155

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 7-193. 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 7-194. Radiated Restricted Upper Band Edge Measurement CDD (Peak & Average – RU242)**

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 143 of 155



## 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 7-38 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 7-38. 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

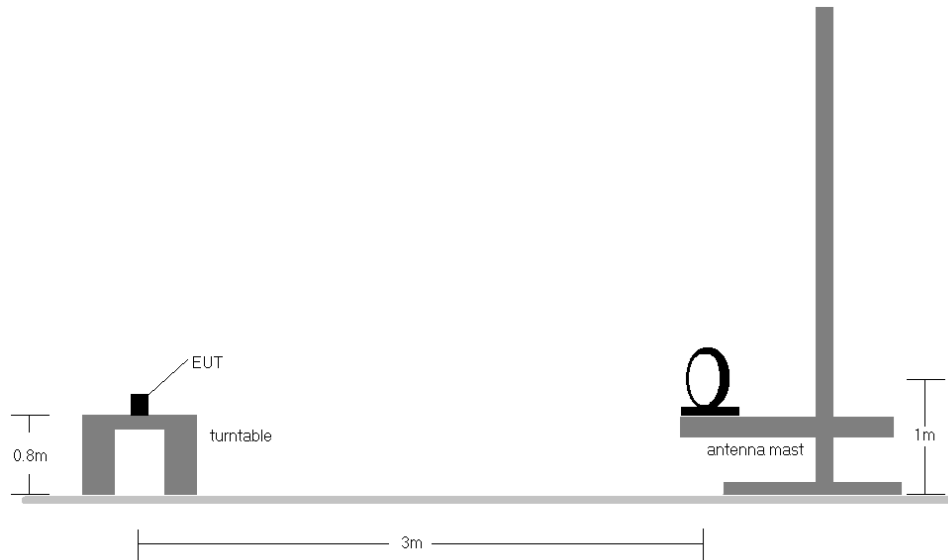
#### Peak Field Strength Measurements

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. VBW = 300kHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

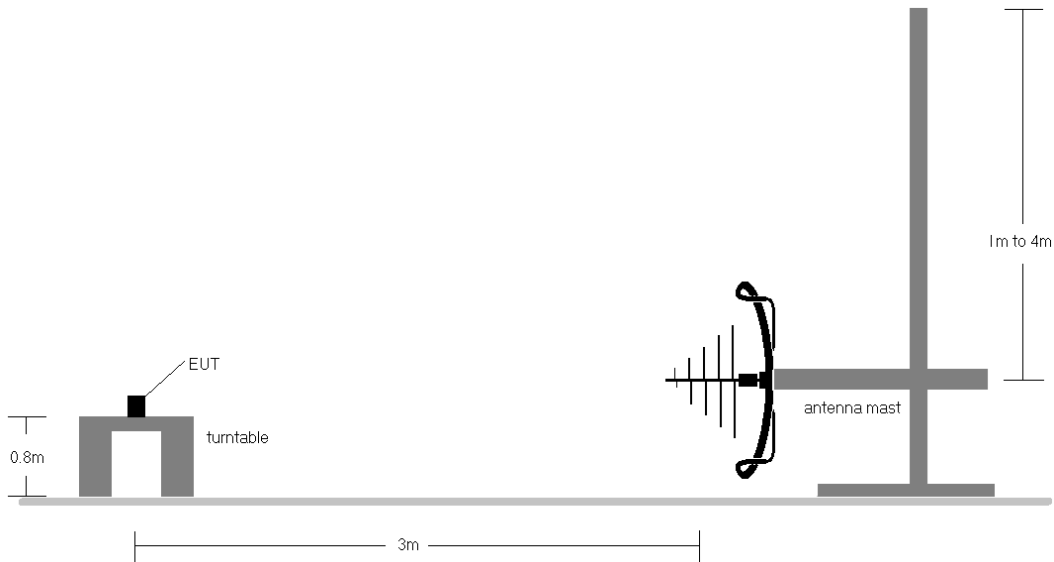
FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C211150079-09.BCG	Test Dates: 12/02/2021 - 01/31/2022	EUT Type: Tablet Device	Page 144 of 155

**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**

<p>FCC ID: BCGA2589 IC: 579C-A2589</p>		<p>MEASUREMENT REPORT (CERTIFICATION)</p>	<p>Approved by: Technical Manager</p>
<p>Test Report S/N: 1C2111150079-09.BCG</p>	<p>Test Dates: 12/02/2021 - 01/31/2022</p>	<p>EUT Type: Tablet Device</p>	<p>Page 145 of 155</p>

## 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. 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. 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. All antenna configurations and data rates were investigated and only the worst case are reported.
10. 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.
11. 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

## Sample Calculations

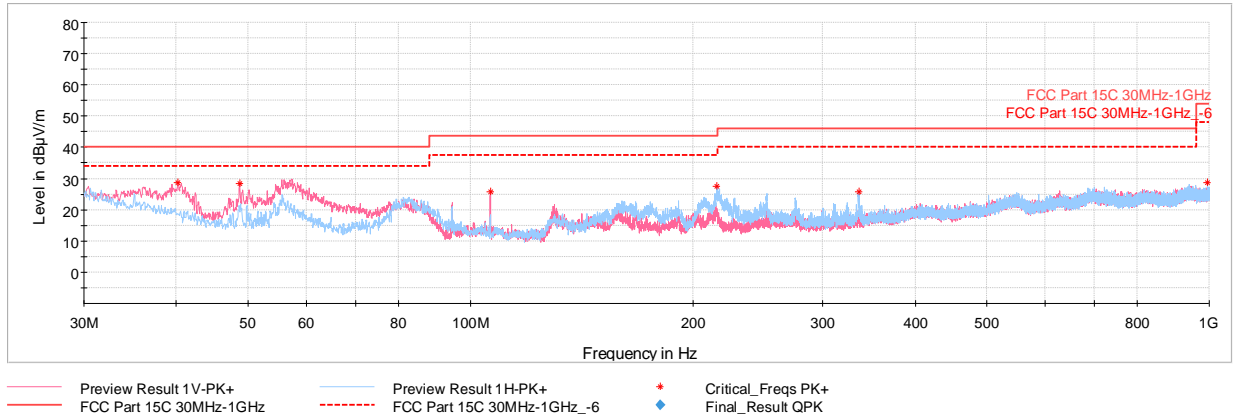
### Determining Spurious Emissions Levels

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

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## CDD Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]

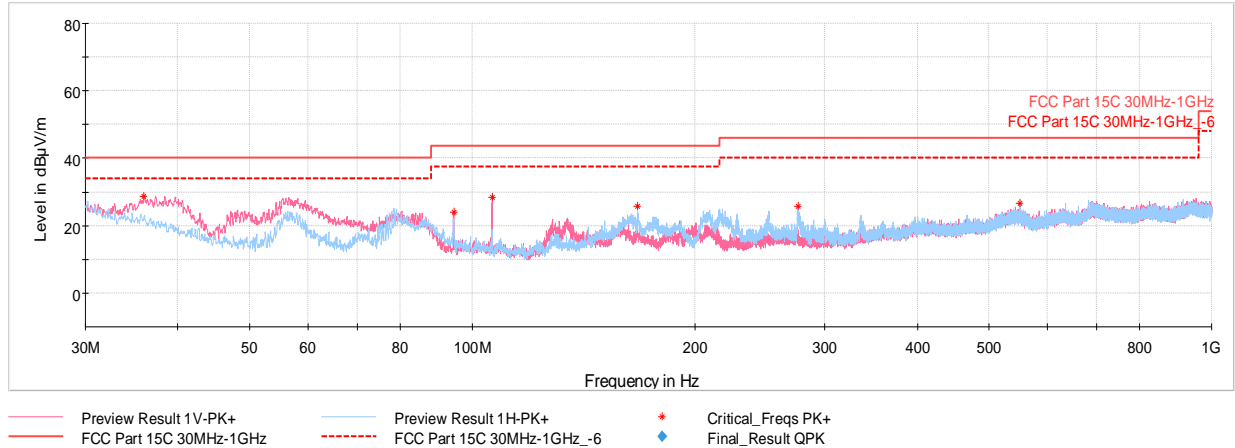


Plot 7-195. Radiated Spurious Emissions below 1GHz CDD Ch.6 (RU26), with AC/DC Adapter

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]
40.23	Max Peak	V	100	78	-61.24	-17.10	28.66	40.00	-11.34
48.72	Max Peak	V	100	15	-58.29	-20.28	28.43	40.00	-11.57
106.44	Max Peak	V	100	251	-61.21	-19.93	25.86	43.52	-17.66
215.71	Max Peak	H	100	245	-64.19	-15.39	27.42	43.52	-16.10
335.65	Max Peak	H	100	146	-69.92	-11.43	25.65	46.02	-20.37
993.45	Max Peak	H	100	304	-77.64	-0.60	28.76	53.98	-25.22

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

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Plot 7-196. Radiated Spurious Emissions below 1GHz CDD Ch.6 (RU242), 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]
36.01	Max Peak	V	100	56	-64.01	-14.36	28.63	40.00	-11.37
94.46	Max Peak	V	100	230	-62.55	-20.44	24.01	43.52	-19.51
106.48	Max Peak	V	100	242	-58.81	-19.92	28.27	43.52	-15.25
167.40	Max Peak	H	200	62	-64.72	-16.59	25.69	43.52	-17.83
275.80	Max Peak	H	100	277	-68.44	-12.86	25.70	46.02	-20.32
550.31	Max Peak	H	200	270	-76.62	-3.72	26.66	46.02	-19.36

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

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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## 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 7-41. Conducted Limits**

\*Decreases with the logarithm of the frequency.

#### Test Procedures Used

ANSI C63.10-2013, Subclause 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

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## Test Setup

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

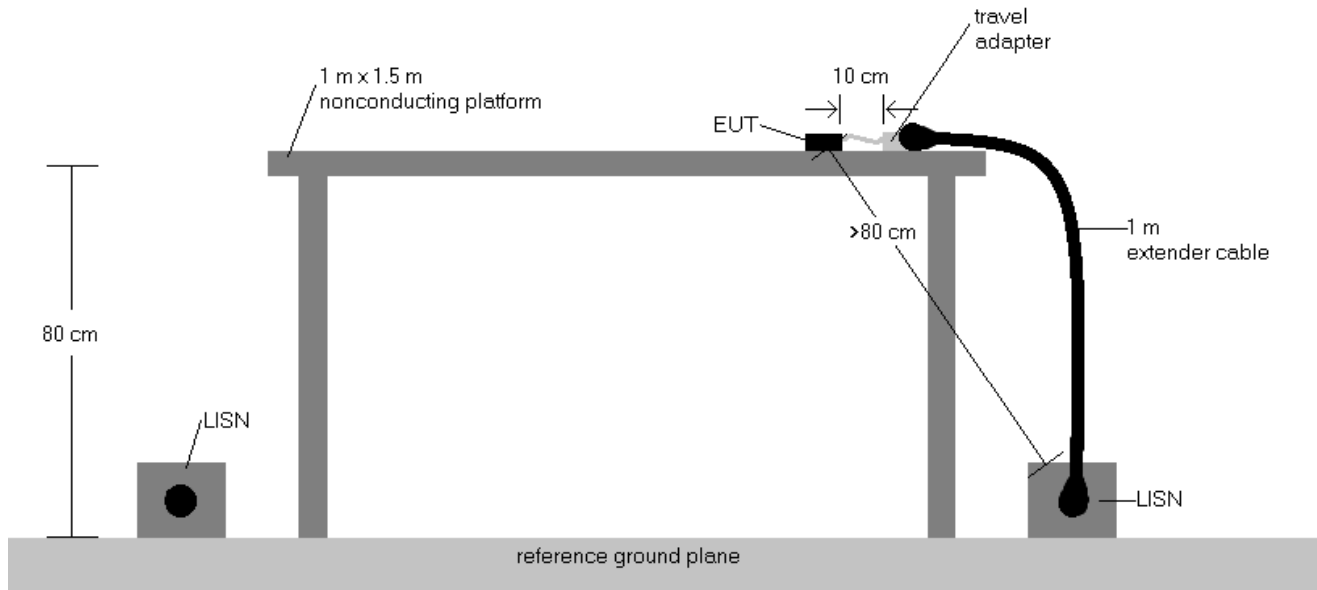
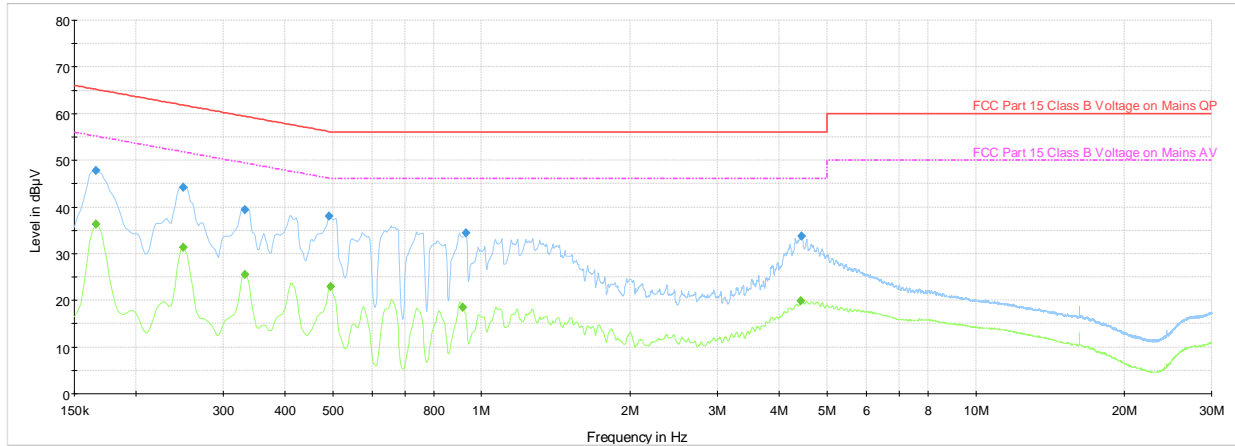


Figure 7-9. Test Instrument & Measurement Setup

## 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.  $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
5.  $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Correction Factor (dB)}$
6.  $\text{Margin (dB)} = \text{QP/AV Level (dB}\mu\text{V)} - \text{QP/AV Limit (dB}\mu\text{V)}$
7. Traces shown in plot are made using quasi peak and average detectors.
8. Deviations to the Specifications: None.
9. All RU's were investigated and only worst case partially-loaded and fully-loaded RU's are reported.

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— Preview Result 2-AVG      — Preview Result 1-QPK      ◆ Critical\_Freqs AVG  
— FCC Part 15 Class B Voltage on Mains QP      — FCC Part 15 Class B Voltage on Mains AV      ◆ Final\_Result QPK      + Critical\_Freqs QPK  
◆ Final\_Result AVG

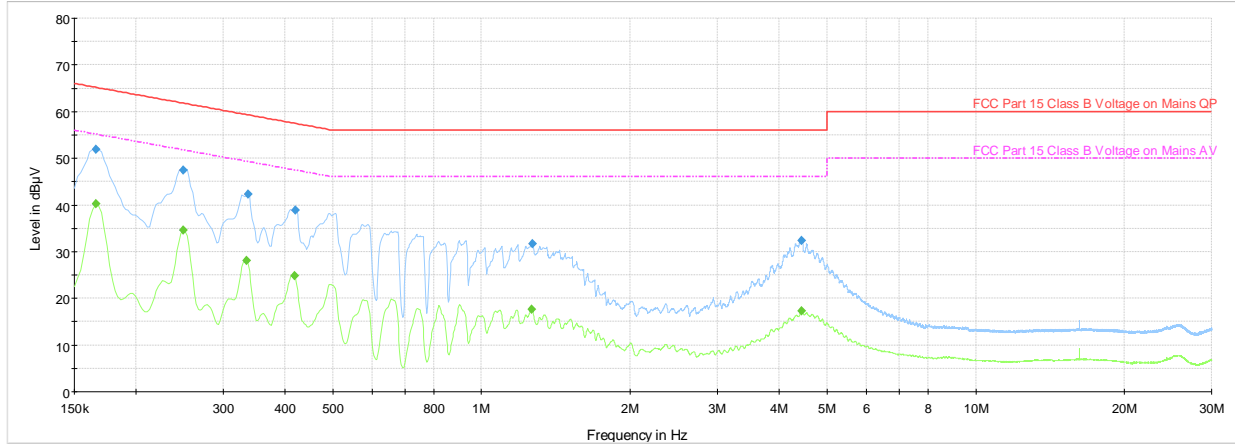
**Plot 7-197. AC Line Conducted Emissions with 802.11ax (RU26) Ch.6 (L1, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.166	FINAL	—	36.29	55.17	-18.88	L1	GND
0.166	FINAL	47.7	—	65.17	-17.45	L1	GND
0.249	FINAL	—	31.29	51.79	-20.50	L1	GND
0.249	FINAL	44.2	—	61.79	-17.64	L1	GND
0.332	FINAL	—	25.52	49.40	-23.87	L1	GND
0.332	FINAL	39.4	—	59.40	-20.00	L1	GND
0.492	FINAL	38.1	—	56.13	-18.07	L1	GND
0.494	FINAL	—	22.93	46.10	-23.17	L1	GND
0.915	FINAL	—	18.49	46.00	-27.51	L1	GND
0.929	FINAL	34.4	—	56.00	-21.65	L1	GND
4.427	FINAL	—	19.80	46.00	-26.20	L1	GND
4.441	FINAL	33.7	—	56.00	-22.31	L1	GND

**Table 7-42. AC Line Conducted Data with 802.11ax (RU26) Ch.6 (L1, with AC/DC Adapter)**

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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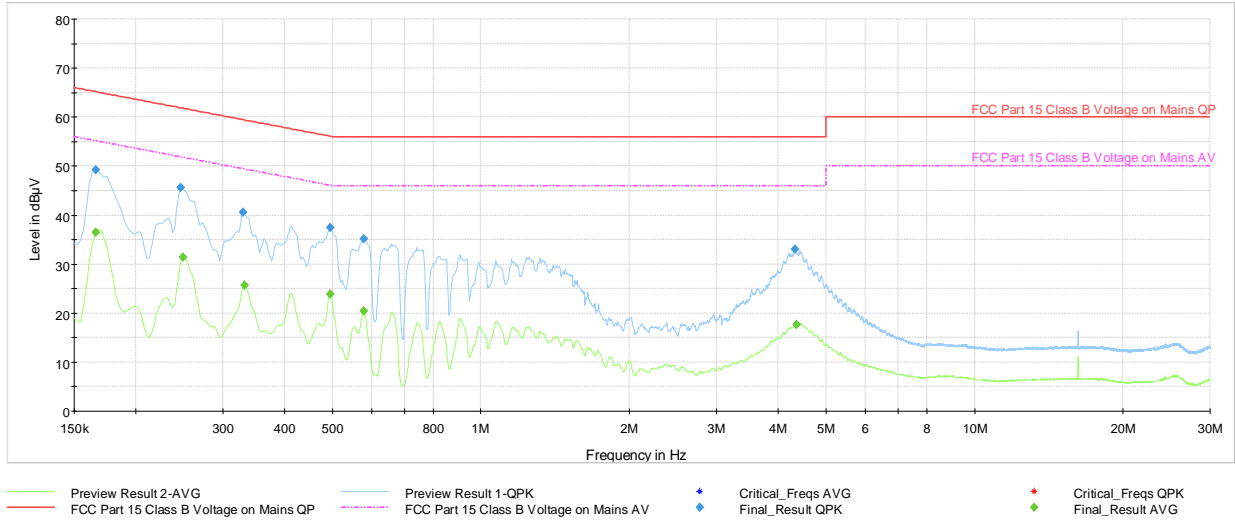
— Preview Result 2-AVG      — Preview Result 1-QPK      ♦ Critical\_Freqs AVG      ♦ Critical\_Freqs QPK  
— FCC Part 15 Class B Voltage on Mains QP      — FCC Part 15 Class B Voltage on Mains AV      ♦ Final\_Result QPK      ♦ Final\_Result AVG

**Plot 7-198. AC Line Conducted Emissions with 802.11ax (RU26) Ch.6 (N, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.166	FINAL	—	40.23	55.17	-14.94	N	GND
0.166	FINAL	51.9	—	65.17	-13.31	N	GND
0.249	FINAL	—	34.63	51.79	-17.16	N	GND
0.249	FINAL	47.5	—	61.79	-14.27	N	GND
0.335	FINAL	—	28.13	49.34	-21.21	N	GND
0.337	FINAL	42.3	—	59.28	-16.99	N	GND
0.418	FINAL	—	24.83	47.49	-22.66	N	GND
0.420	FINAL	38.9	—	57.45	-18.52	N	GND
1.264	FINAL	—	17.69	46.00	-28.31	N	GND
1.268	FINAL	31.7	—	56.00	-24.28	N	GND
4.436	FINAL	—	17.27	46.00	-28.73	N	GND
4.448	FINAL	32.4	—	56.00	-23.58	N	GND

**Table 7-43. AC Line Conducted Data with 802.11ax (RU26) Ch.6 (N, with AC/DC Adapter)**

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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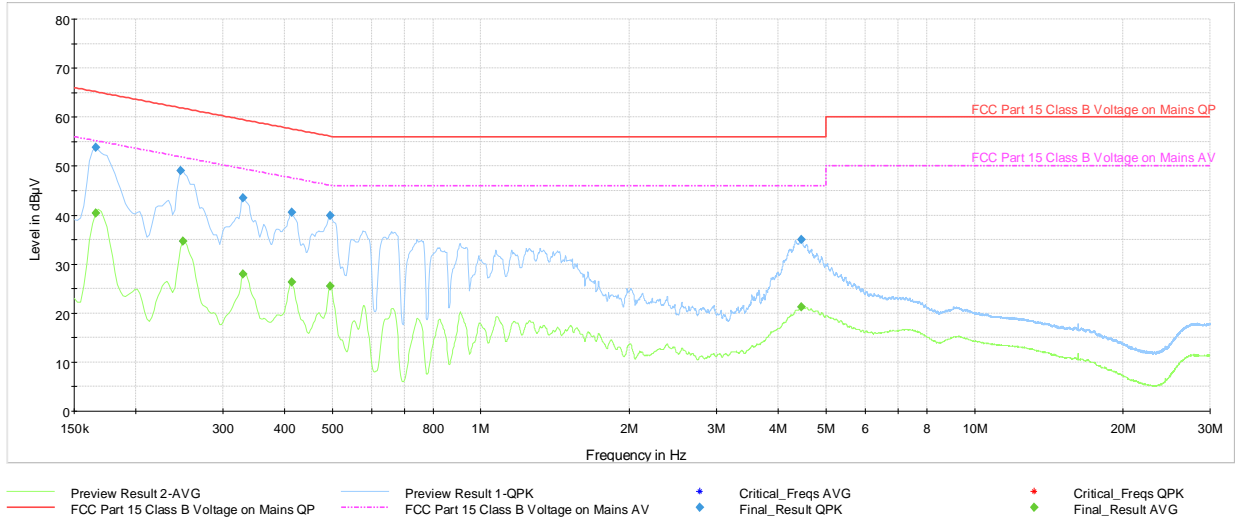


**Plot 7-199. AC Line Conducted Emissions with 802.11ax (RU242) Ch.6 (L1, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.166	FINAL	—	36.47	55.17	-18.70	L1	GND
0.166	FINAL	49.3	—	65.17	-15.86	L1	GND
0.247	FINAL	45.7	—	61.87	-16.21	L1	GND
0.249	FINAL	—	31.47	51.79	-20.32	L1	GND
0.330	FINAL	40.6	—	59.45	-18.84	L1	GND
0.332	FINAL	—	25.61	49.40	-23.78	L1	GND
0.494	FINAL	37.4	—	56.10	-18.69	L1	GND
0.494	FINAL	—	23.85	46.10	-22.25	L1	GND
0.580	FINAL	35.1	—	56.00	-20.86	L1	GND
0.580	FINAL	—	20.48	46.00	-25.52	L1	GND
4.333	FINAL	33.0	—	56.00	-22.98	L1	GND
4.353	FINAL	—	17.66	46.00	-28.34	L1	GND

**Table 7-44. AC Line Conducted Data with 802.11ax (RU242) Ch.6 (L1, with AC/DC Adapter)**

FCC ID: BCGA2589 IC: 579C-A2589		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
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**Plot 7-200. AC Line Conducted Emissions with 802.11ax (RU242) Ch.6 (N, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.166	FINAL	—	40.45	55.17	-14.72	N	GND
0.166	FINAL	53.8	—	65.17	-11.39	N	GND
0.247	FINAL	49.1	—	61.87	-12.79	N	GND
0.249	FINAL	—	34.65	51.79	-17.14	N	GND
0.330	FINAL	—	27.97	49.45	-21.48	N	GND
0.330	FINAL	43.5	—	59.45	-15.97	N	GND
0.413	FINAL	40.6	—	57.58	-17.00	N	GND
0.413	FINAL	—	26.29	47.58	-21.29	N	GND
0.494	FINAL	39.9	—	56.10	-16.17	N	GND
0.494	FINAL	—	25.48	46.10	-20.61	N	GND
4.459	FINAL	—	21.26	46.00	-24.74	N	GND
4.461	FINAL	35.1	—	56.00	-20.93	N	GND

**Table 7-45. AC Line Conducted Data with 802.11ax (RU242) Ch.6 (N, with AC/DC Adapter)**

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical 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: BCGA2589, IC: 579C-A2589** 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.

<b>FCC ID:</b> BCGA2589 <b>IC:</b> 579C-A2589	 <b>PCTEST</b> <small>Proud to be part of  element</small>	<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>Approved by:</b> Technical Manager
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