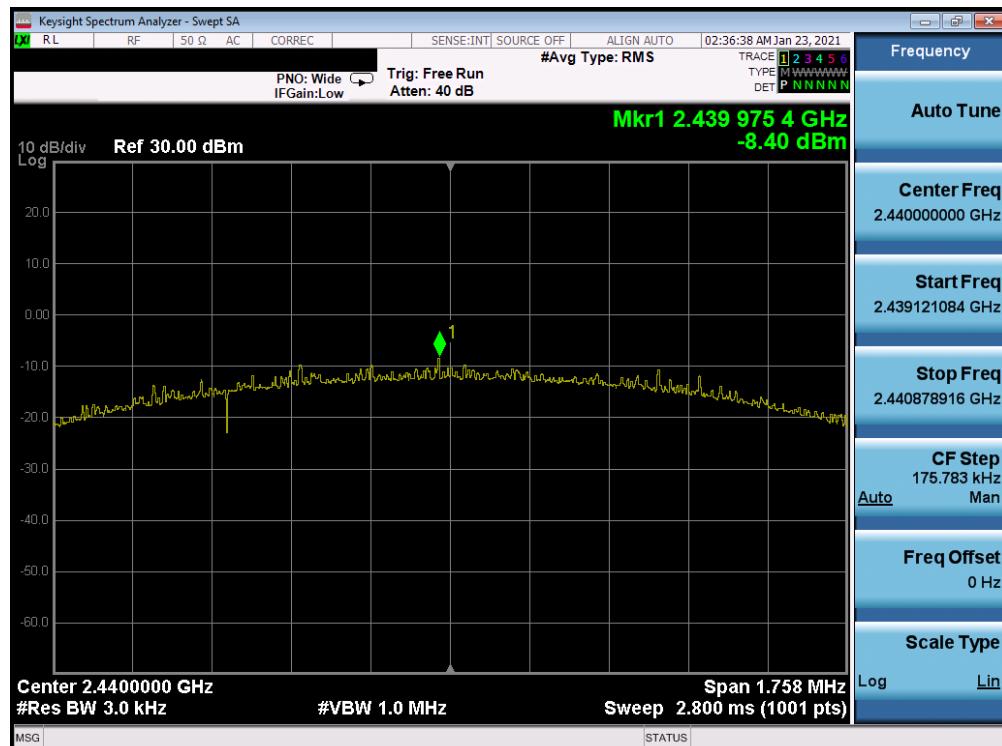
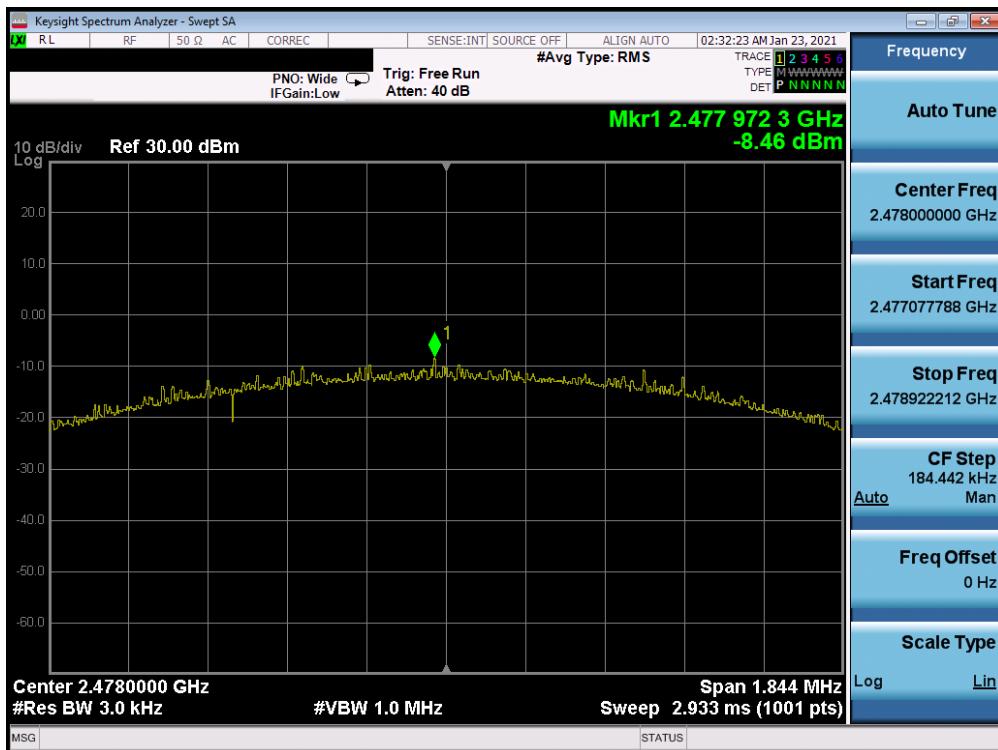


Plot 7-57. Power Spectral Density Plot Antenna 4a (Bluetooth (LE), 2Mbps, iPA – Ch. 19)

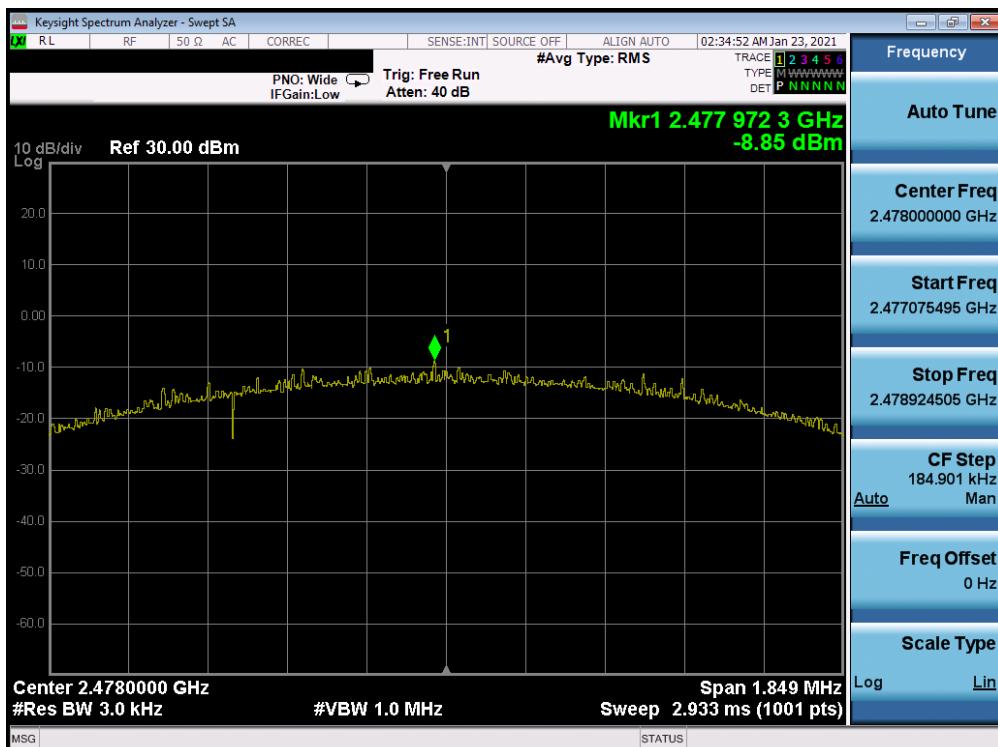


Plot 7-58. Power Spectral Density Plot Antenna 2a (Bluetooth (LE), 2Mbps, iPA – Ch. 19)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-59. Power Spectral Density Plot Antenna 4a (Bluetooth (LE), 2Mbps, iPA – Ch. 38)



Plot 7-60. Power Spectral Density Plot Antenna 2a (Bluetooth (LE), 2Mbps, iPA – Ch. 38)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 54 of 101	

## 7.5 Conducted Authorized Band Edge

§15.247(d); RSS-247 [5.5]

### Test Overview and Limit

For the following out of band conducted spurious emissions plots at the band edge, the EUT was set to transmit at maximum power with the largest packet size available. These settings produced the worst-case emissions.

***The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth.***

### Test Procedure Used

ANSI C63.10-2013 – Section 11.11.3  
 KDB 558074 D01 v05r02 – Section 8.7.2

### Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 100kHz
4. VBW = 300kHz
5. Detector = Peak
6. Number of sweep points  $\geq 2 \times$  Span/RBW
7. Trace mode = max hold
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Setup

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



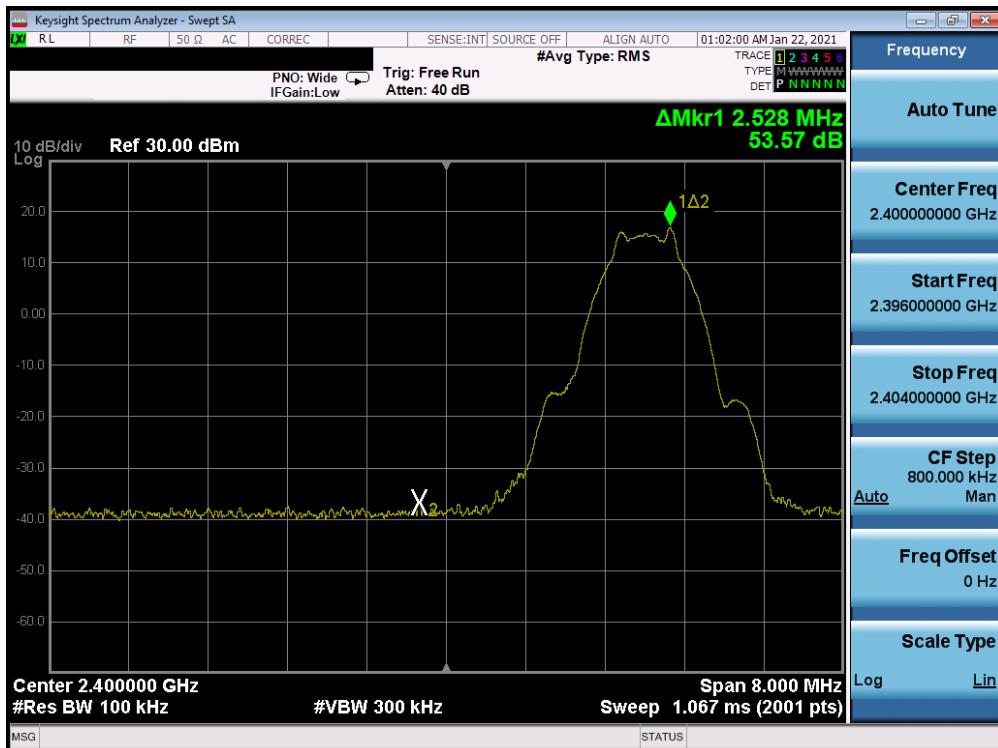
**Figure 7-4. Test Instrument & Measurement Setup**

### Test Notes

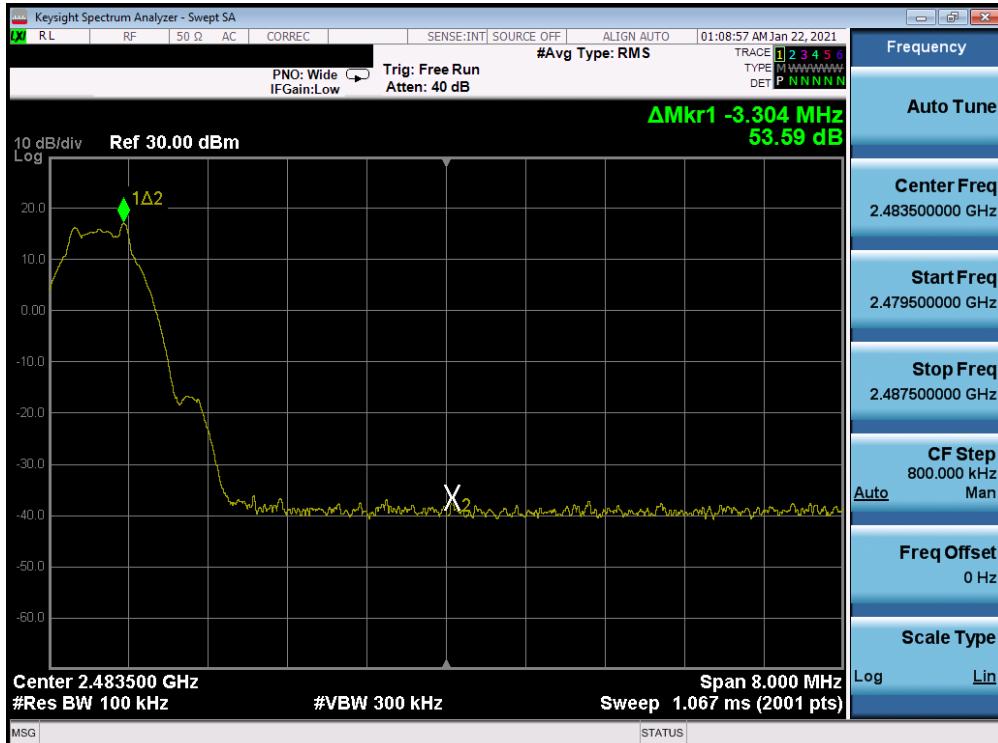
All supported modulations, antennas (including TxBF mode) and power schemes have been tested on the unit and only the worst case configuration is reported.

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 55 of 101

## Antenna 4a

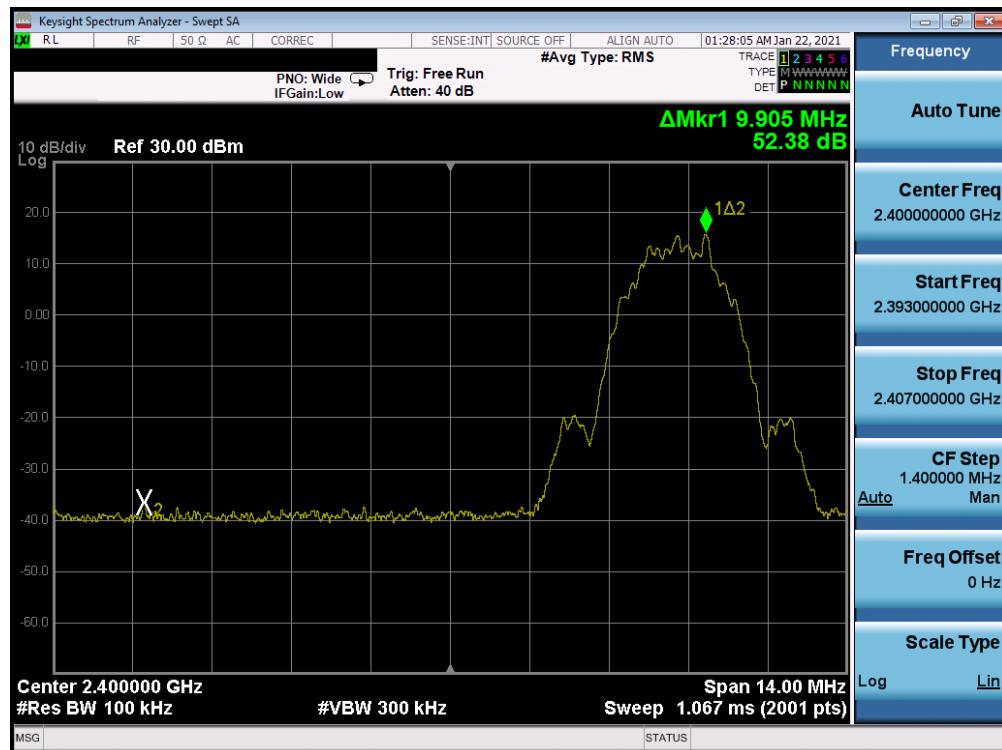


Plot 7-61. Band Edge Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

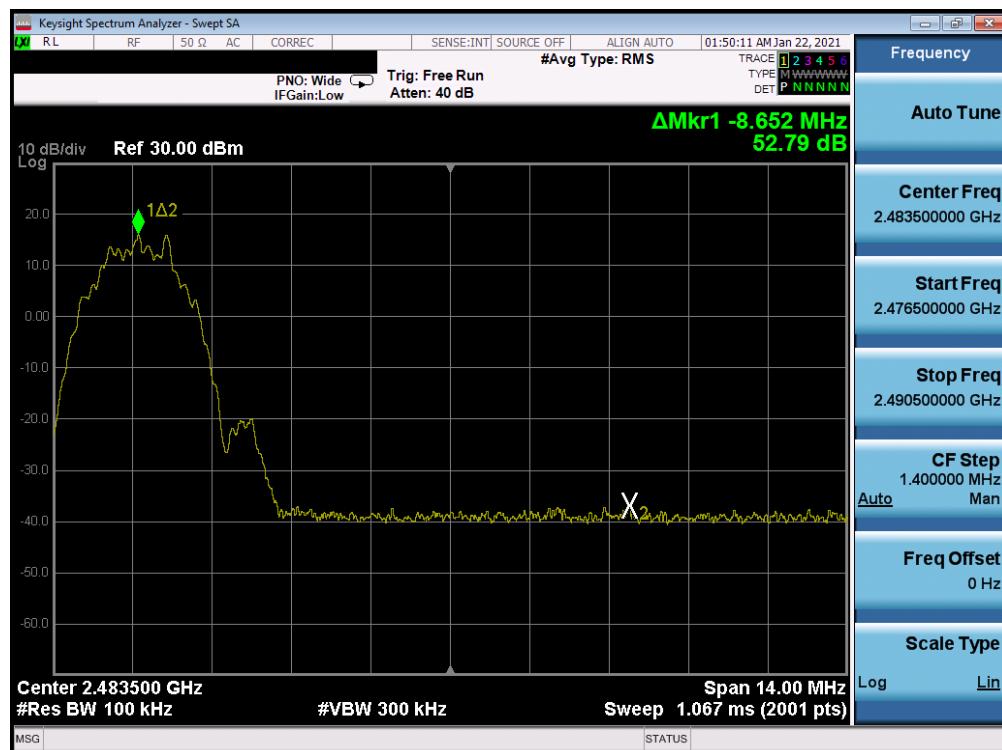


Plot 7-62. Band Edge Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 39)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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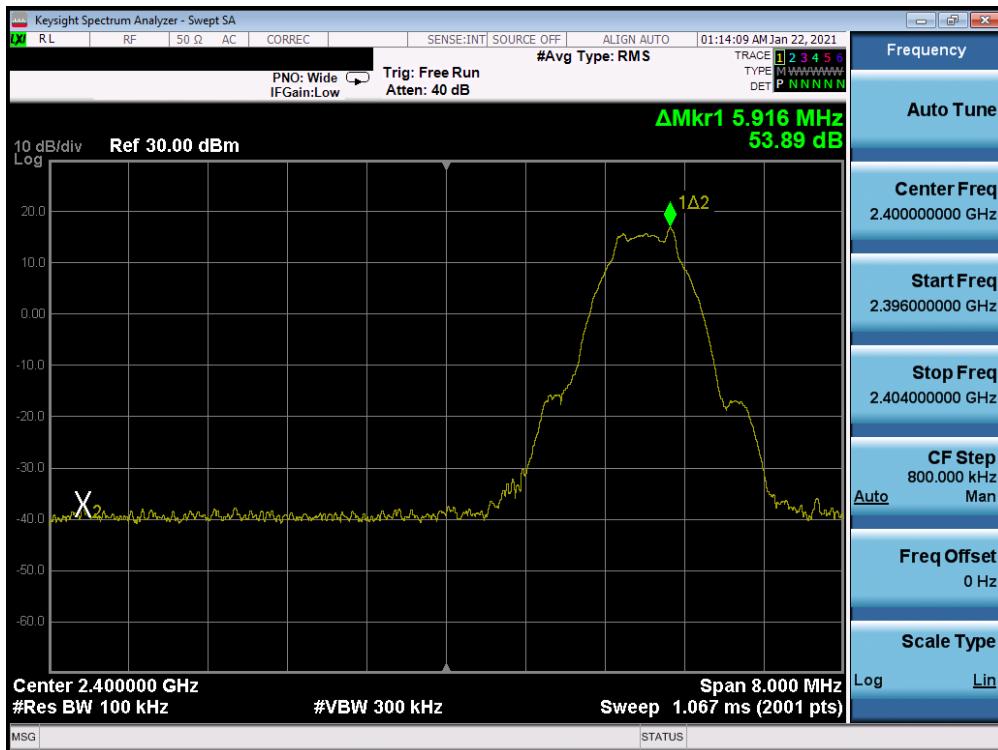
Plot 7-63. Band Edge Plot Antenna 4a (Bluetooth (LE), 2Mbps, ePA – Ch. 1)



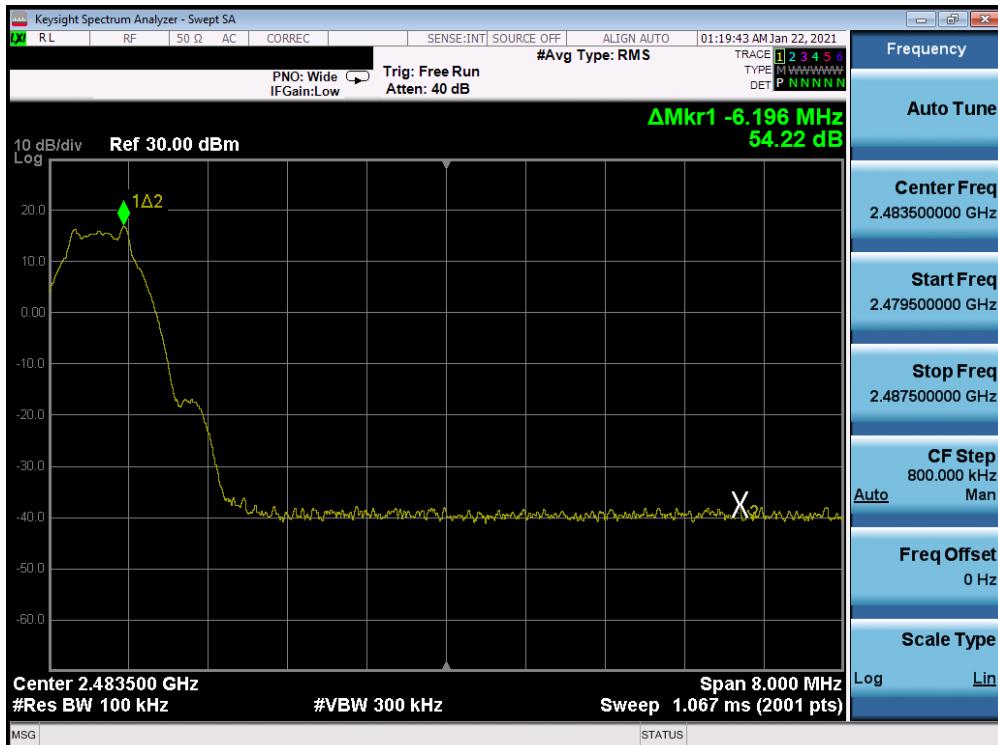
Plot 7-64. Band Edge Plot Antenna 4a (Bluetooth (LE), 2Mbps, ePA – Ch. 38)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 57 of 101

## Antenna 2a

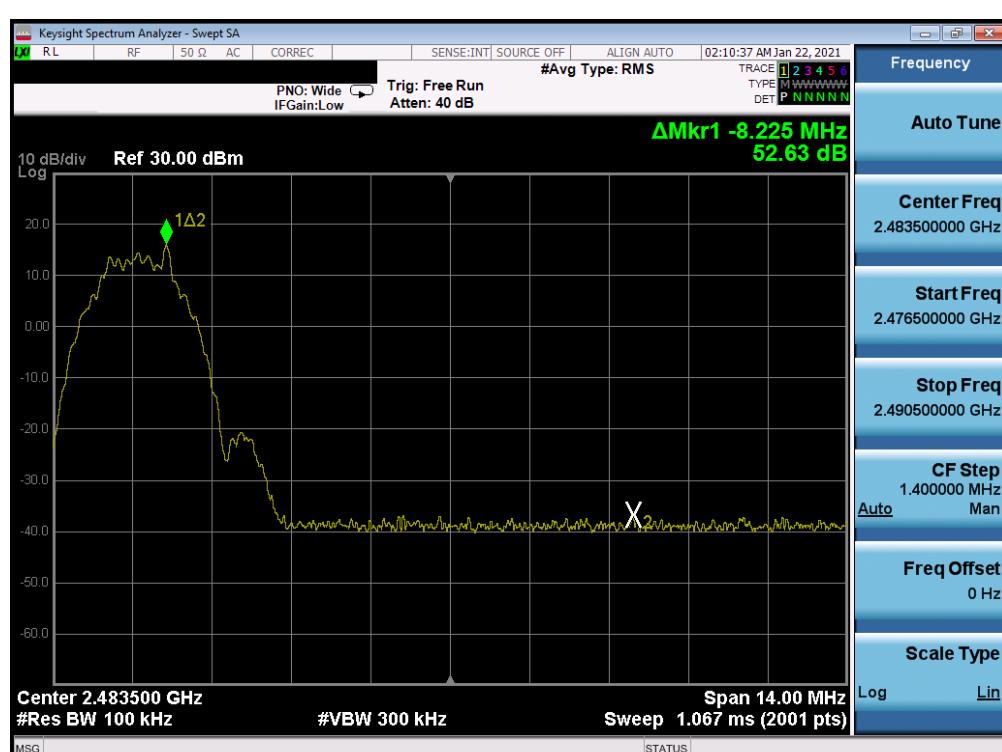
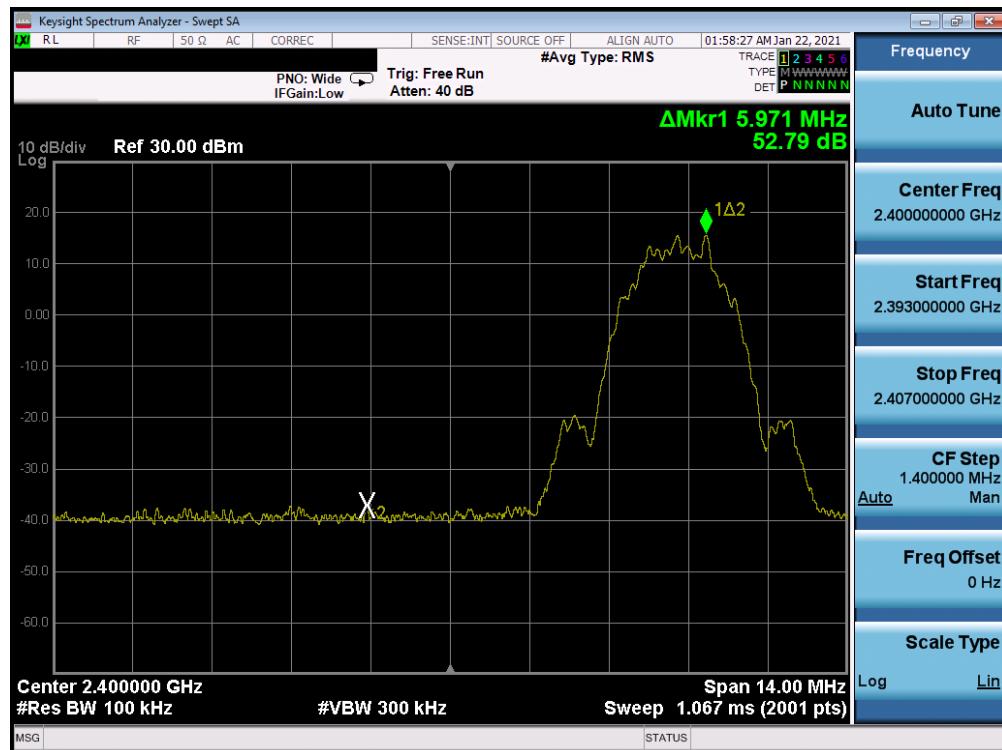


Plot 7-65. Band Edge Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 0)



Plot 7-66. Band Edge Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 39)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 59 of 101	

## 7.6 Conducted Spurious Emissions

§15.247(d); RSS-247 [5.5]

### Test Overview and Limit

For the following out of band conducted spurious emissions plots, the EUT was set to transmit at maximum power with the largest packet size available. The worst case spurious emissions were found in this configuration.

***The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the procedure in Section 8.5 of KDB 558074 D01 v05r02 and Section 11.11 of ANSI C63.10-2013.***

### Test Procedure Used

ANSI C63.10-2013 – Section 11.11.3  
 KDB 558074 D01 v05r02 – Section 8.5

### Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 25GHz (separated into two plots per channel)
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

### Test Setup

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



**Figure 7-5. Test Instrument & Measurement Setup**

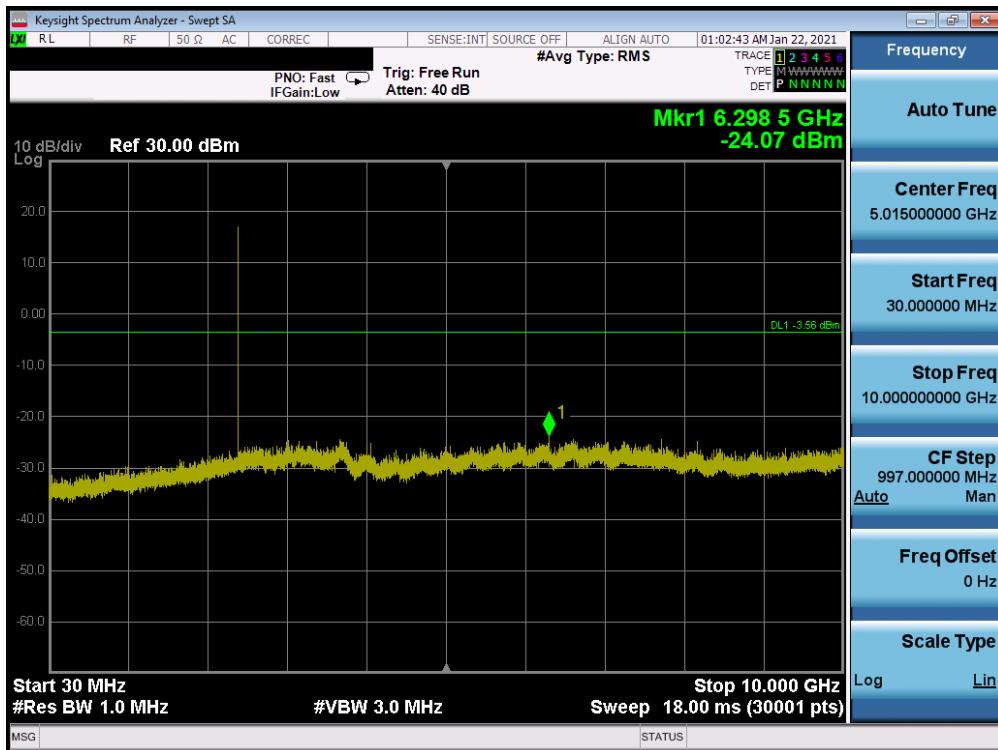
FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST</b> <sup>®</sup> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device		Page 60 of 101

## Test Notes

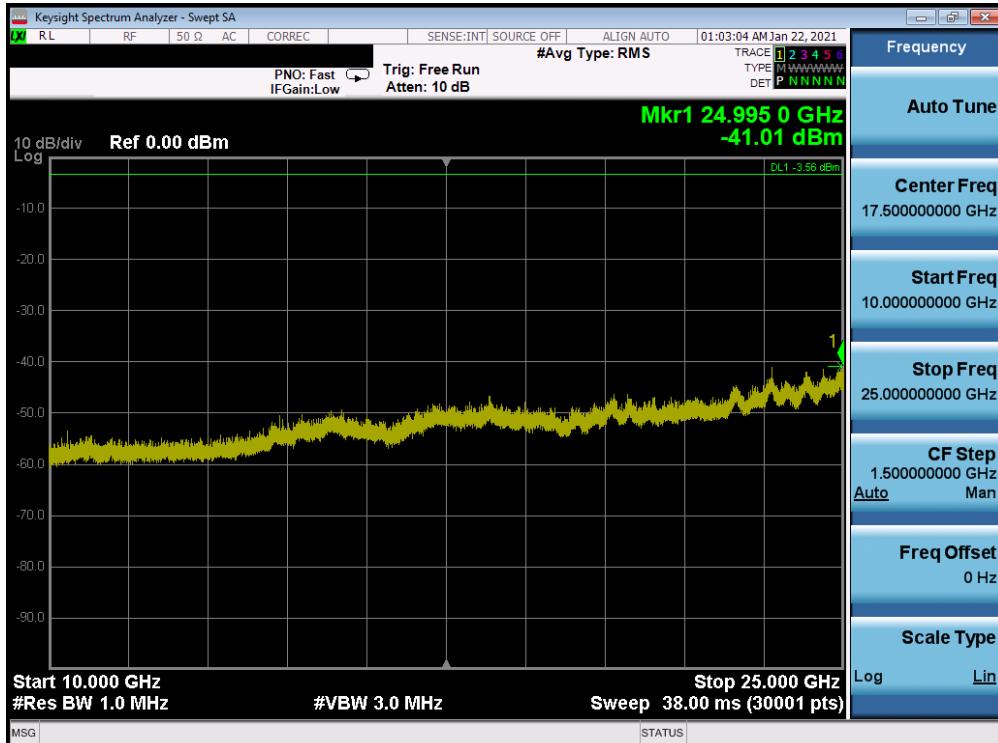
1. RBW was set to 1MHz rather than 100kHz in order to increase the measurement speed.
2. The display line shown in the following plots denotes the limit at 20dB below the fundamental emission level measured in a 100kHz bandwidth. However, since the traces in the following plots are measured with a 1MHz RBW, the display line may not necessarily appear to be 20dB below the level of the fundamental in a 1MHz bandwidth.
3. For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.
4. All supported modulations, antennas (including TxBF mode) and power schemes have been tested on the unit and only the worst case configuration is reported.

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## Antenna 4a

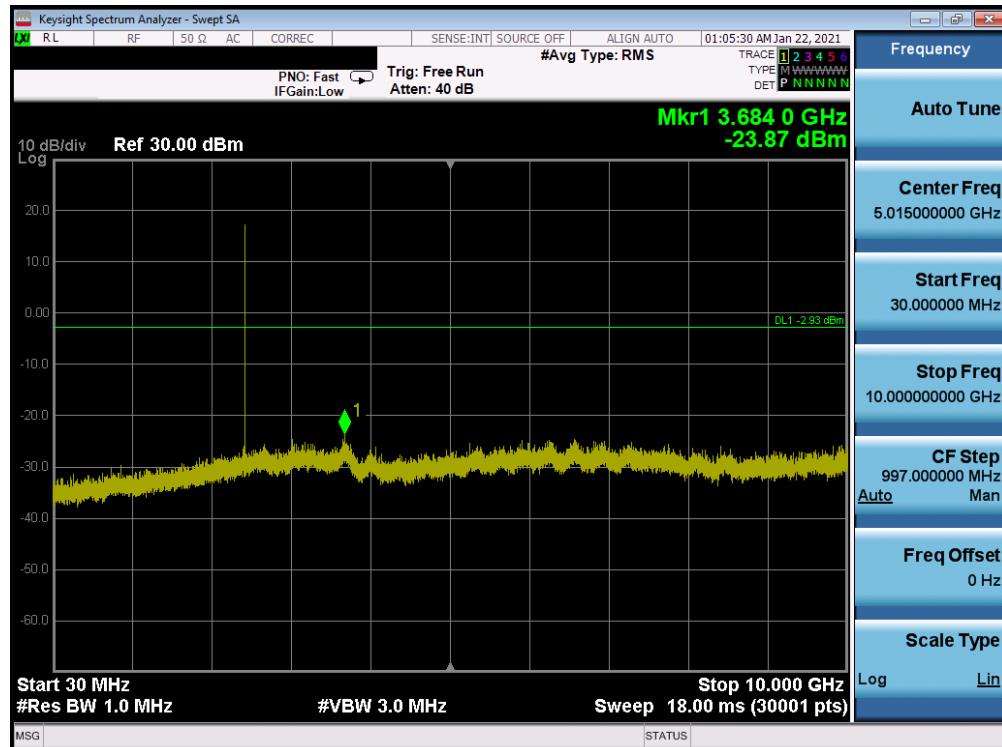


Plot 7-69. Conducted Spurious Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

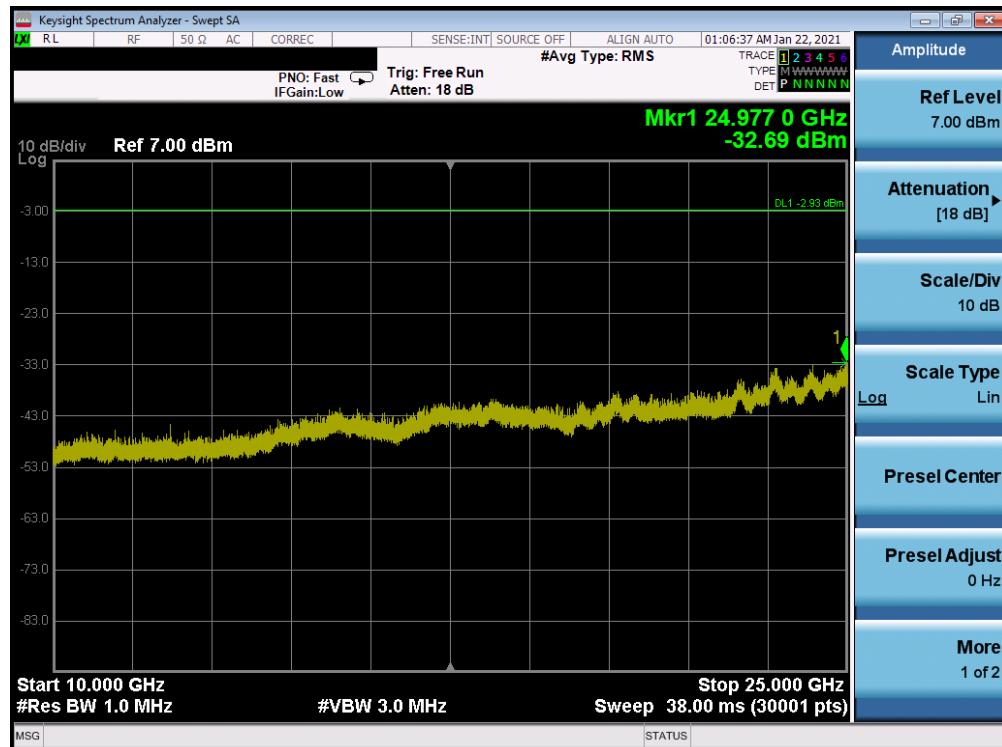


Plot 7-70. Conducted Spurious Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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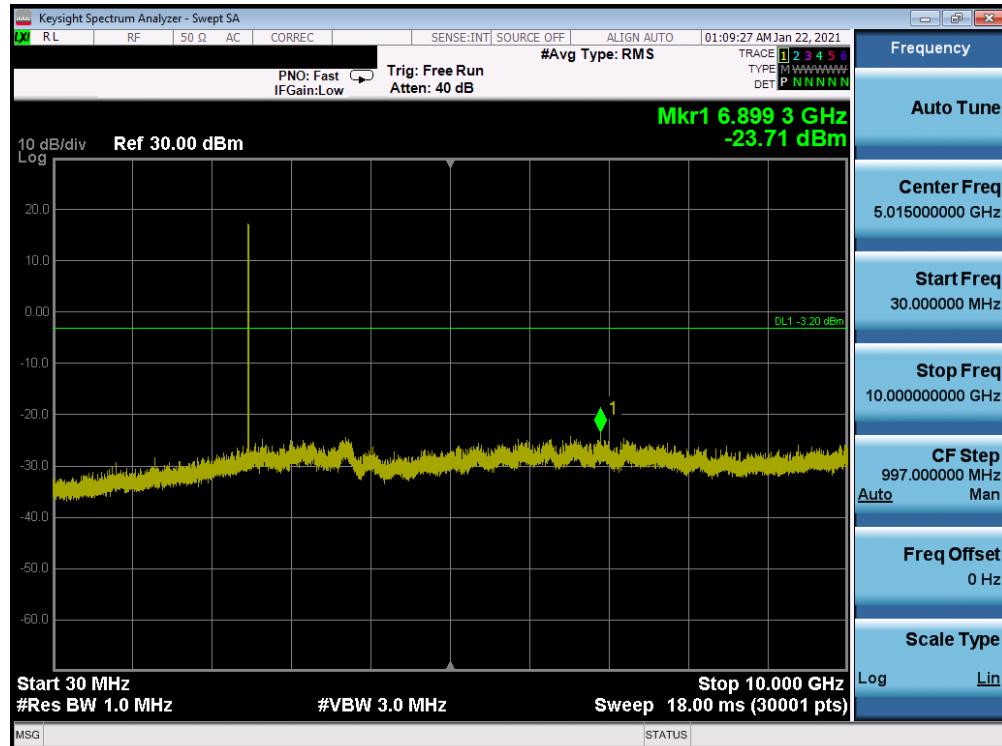


Plot 7-71. Conducted Spurious Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

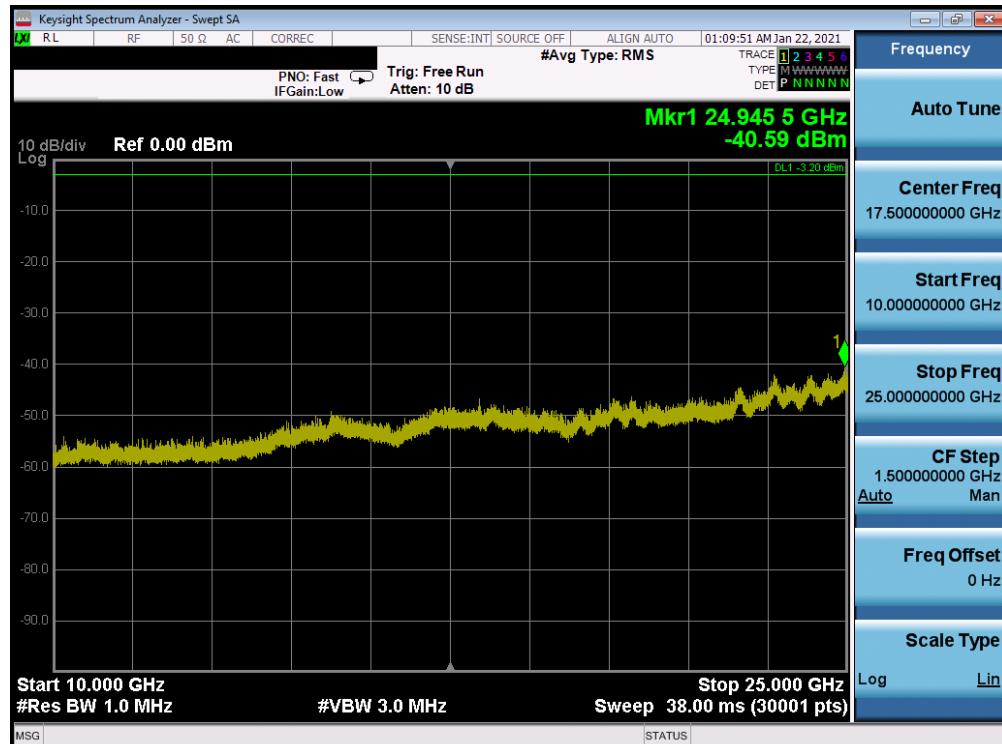


Plot 7-72. Conducted Spurious Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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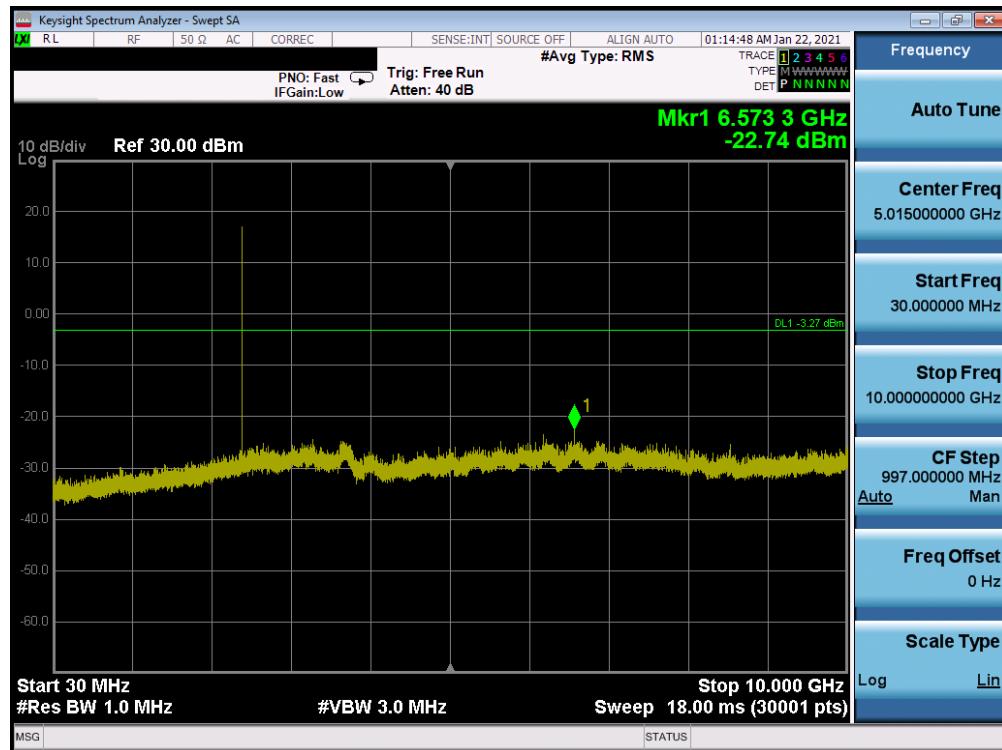
Plot 7-73. Conducted Spurious Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 39)



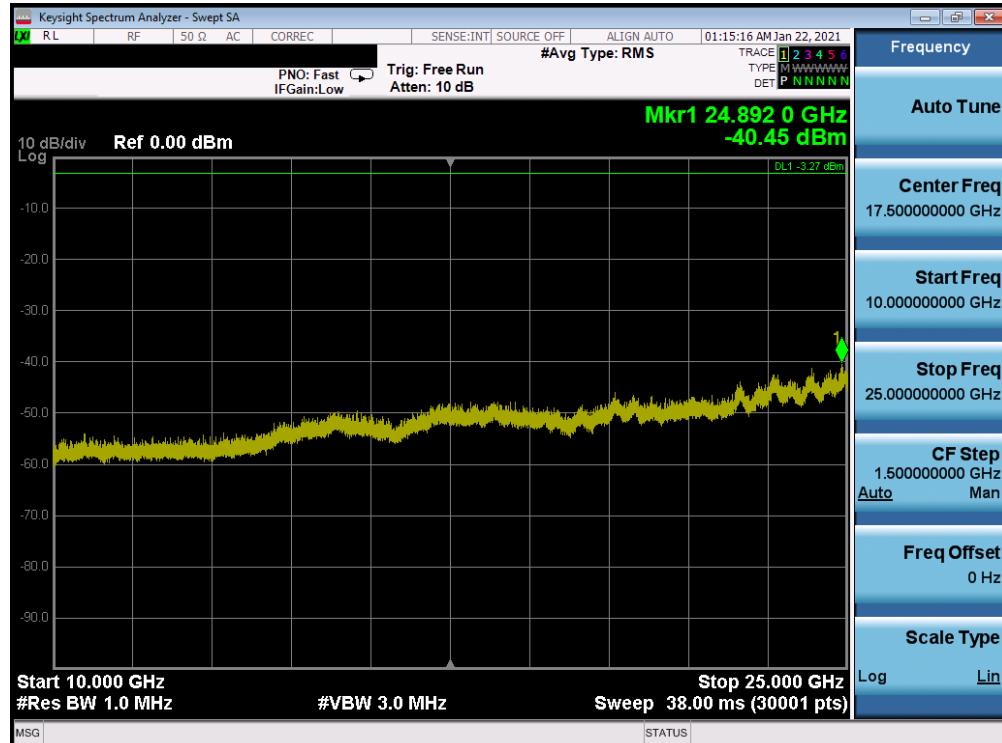
Plot 7-74. Conducted Spurious Plot Antenna 4a (Bluetooth (LE), 1Mbps, ePA – Ch. 39)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 64 of 101

## Antenna 2a

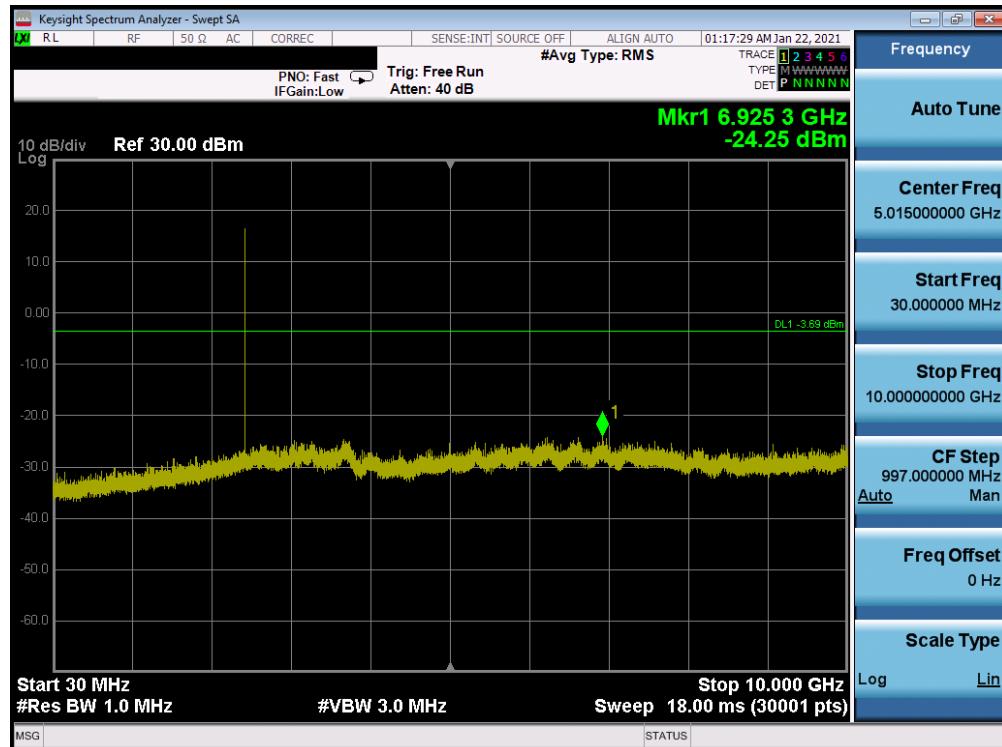


Plot 7-75. Conducted Spurious Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

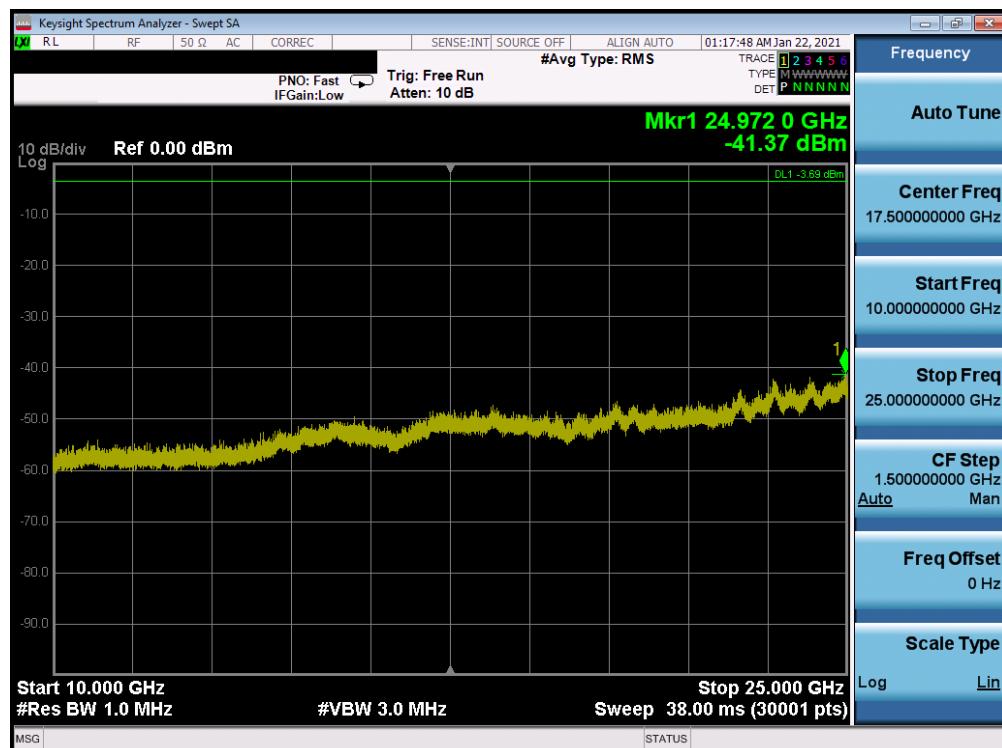


Plot 7-76. Conducted Spurious Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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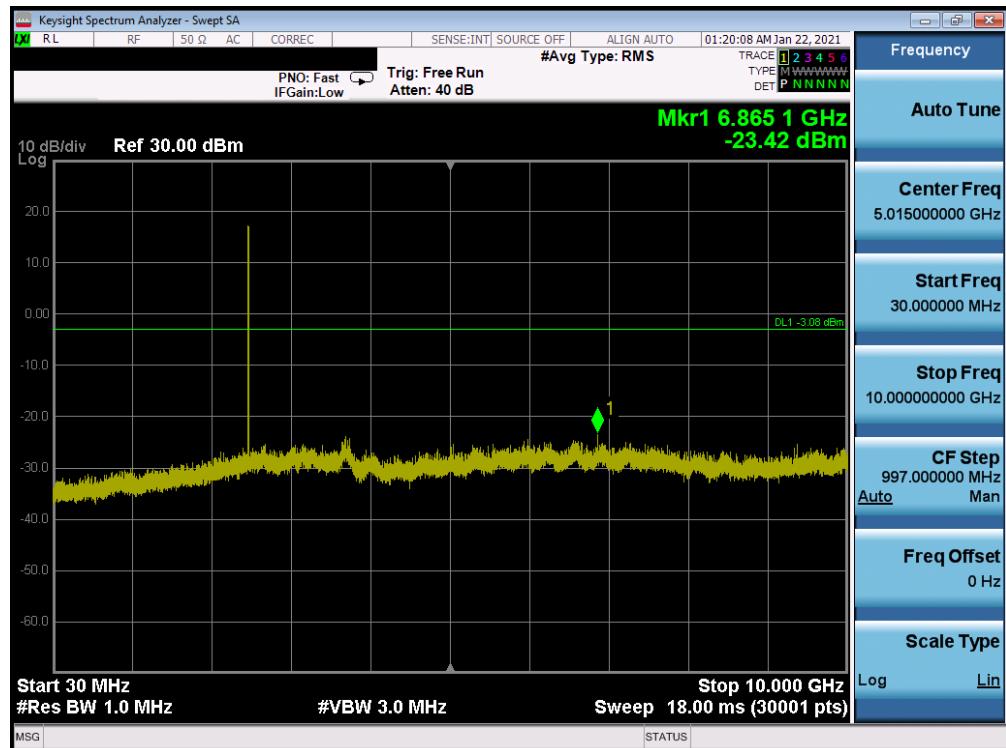


Plot 7-77. Conducted Spurious Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

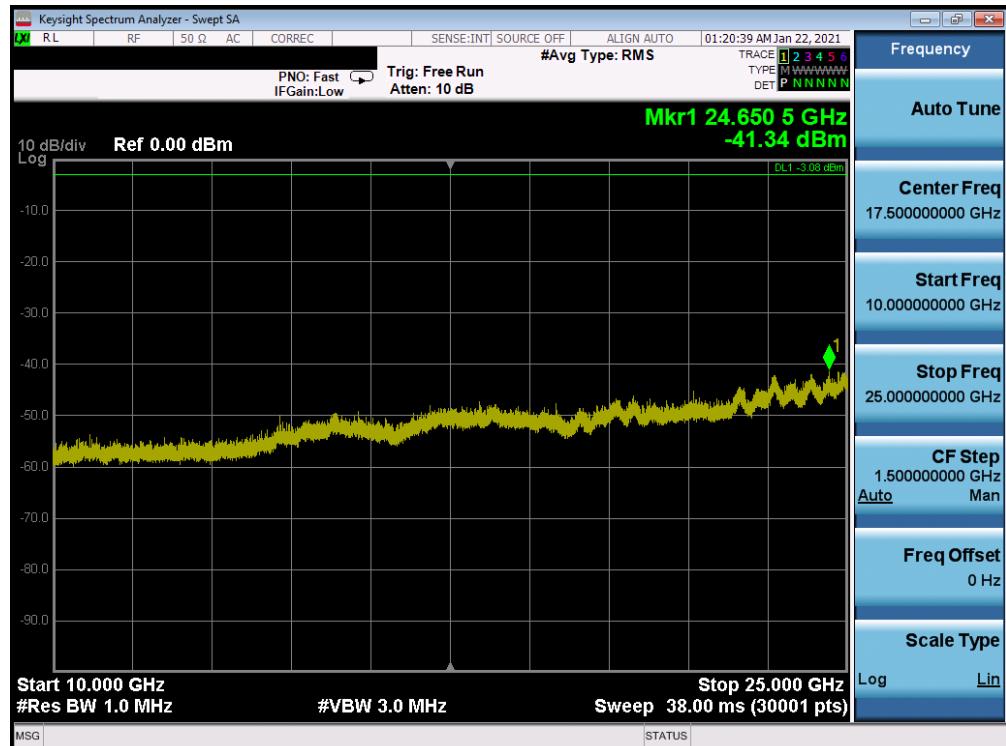


Plot 7-78. Conducted Spurious Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-79. Conducted Spurious Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 39)



Plot 7-80. Conducted Spurious Plot Antenna 2a (Bluetooth (LE), 1Mbps, ePA – Ch. 39)

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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## 7.7 Radiated Spurious Emissions – Above 1GHz

§15.205 §15.209 §15.247(d); 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 maximum power and at the appropriate frequencies. 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 7-13 per Section 15.209 and RSS-Gen (8.9).***

Frequency	Field Strength [ $\mu$ V/m]	Measured Distance [Meters]
Above 960.0 MHz	500	3

**Table 7-13. Radiated Limits**

### Test Procedures Used

ANSI C63.10-2013 – Section 6.6.4.3

KDB 558074 D01 v05r02 – Section 8.6, 8.7

### Test Settings

#### Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be  $\geq 2 \times$  span/RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces

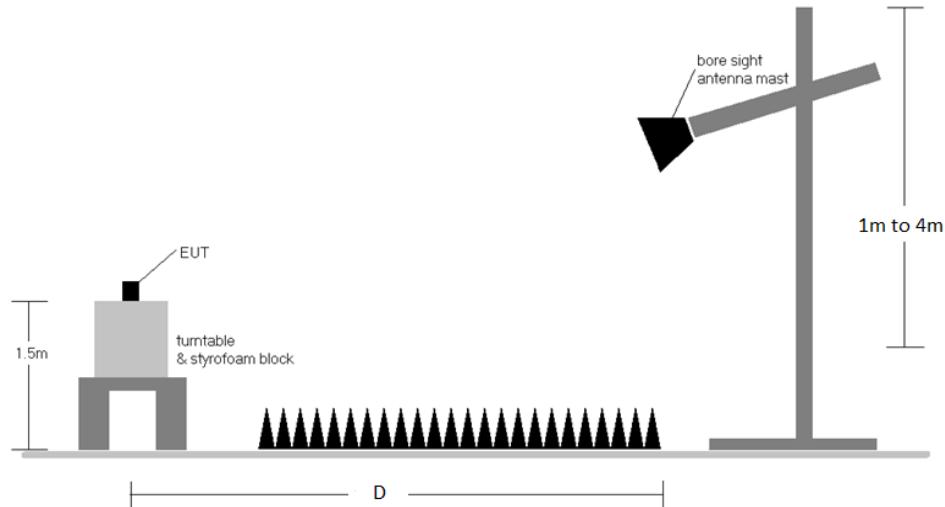
#### Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. 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 7-6. Radiated Test Setup >1GHz**

## Test Notes

1. The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 558074 D01 v05r02 were not used to evaluate this device for compliance to radiated limits. All radiated spurious emissions levels were measured in a radiated test setup.
2. All emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-13.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. This unit was tested with its standard battery.
5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas.
6. D is the measurement test distance and emissions 1-18GHz were measured at a 3 meters test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
8. All supported modulations, antennas (including TxBF mode) and power schemes have been tested on the unit and only the worst case configuration is reported.

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## Sample Calculations

### Determining Spurious Emissions Levels

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

### Radiated Band Edge Measurement Offset

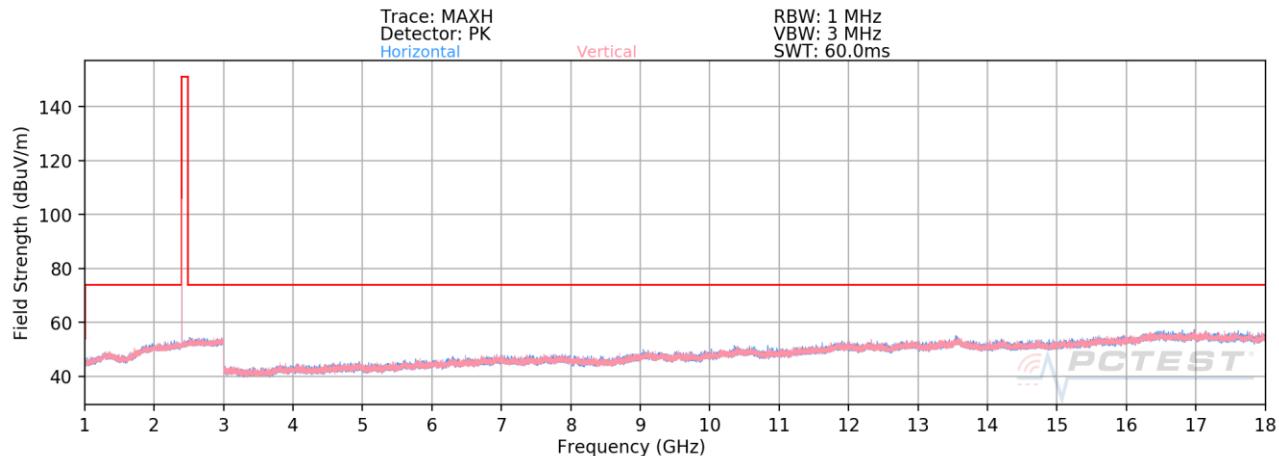
- The amplitude offset shown in the radiated restricted band edge plots in Section 0 was calculated using the formula:  
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

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## Radiated Spurious Emission Measurements (Above 1GHz)

§15.205 §15.209 §15.247(d); RSS-Gen [8.9]

### Antenna 4a



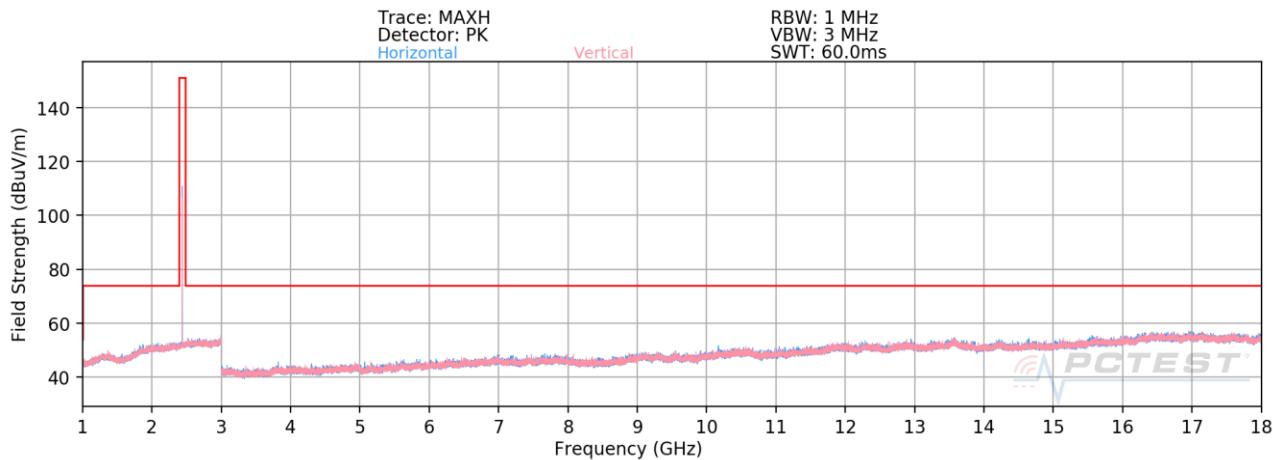
Plot 7-81. Radiated Spurious Plot Above 1GHz Antenna 4a (1Mbps, ePA – Ch. 0)

Bluetooth Mode:	LE
Data Rate:	1Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	2402MHz
Channel:	0

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4804.00	Avg	H	-	-	-80.94	7.86	33.92	53.98	-20.06
4804.00	Peak	H	-	-	-69.11	7.86	45.75	73.98	-28.23
12010.00	Avg	H	-	-	-83.30	16.81	40.51	53.98	-13.47
12010.00	Peak	H	-	-	-71.78	16.81	52.03	73.98	-21.95

Table 7-14. Radiated Measurements Antenna 4a

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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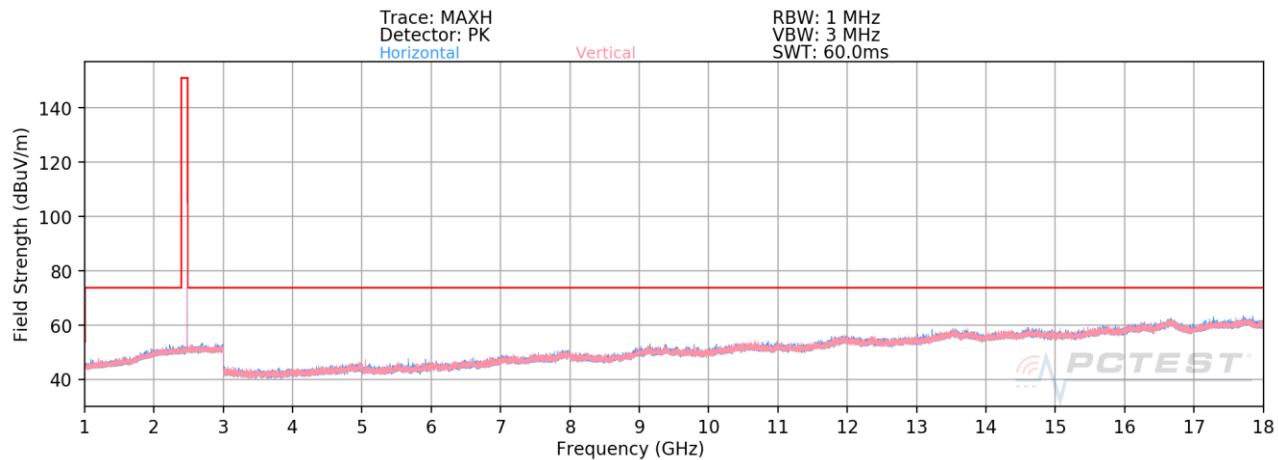
**Plot 7-82. Radiated Spurious Plot Above 1GHz Antenna 4a (1Mbps, ePA – Ch. 19)**

Bluetooth Mode: LE  
Data Rate: 1Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2440MHz  
Channel: 19

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4880.00	Avg	H	-	-	-81.06	7.83	33.77	53.98	-20.21
4880.00	Peak	H	-	-	-68.86	7.83	45.97	73.98	-28.01
7320.00	Avg	H	-	-	-82.07	10.75	35.68	53.98	-18.30
7320.00	Peak	H	-	-	-70.32	10.75	47.43	73.98	-26.55
12200.00	Avg	H	-	-	-84.12	16.97	39.85	53.98	-14.13
12200.00	Peak	H	-	-	-72.60	16.97	51.37	73.98	-22.61

**Table 7-15. Radiated Measurements Antenna 4a**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of  <b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 72 of 101	



**Plot 7-83. Radiated Spurious Plot Above 1GHz Antenna 4a (1Mbps ePA – Ch. 39)**

Bluetooth Mode: LE  
Data Rate: 1Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2480MHz  
Channel: 39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
4960.00	Avg	H	-	-	-81.74	8.74	34.00	53.98	-19.98
4960.00	Peak	H	-	-	-70.07	8.74	45.67	73.98	-28.31
7440.00	Avg	H	-	-	-83.07	12.09	36.02	53.98	-17.96
7440.00	Peak	H	-	-	-71.89	12.09	47.20	73.98	-26.78
12400.00	Avg	H	-	-	-83.89	17.21	40.32	53.98	-13.66
12400.00	Peak	H	-	-	-72.89	17.21	51.32	73.98	-22.66

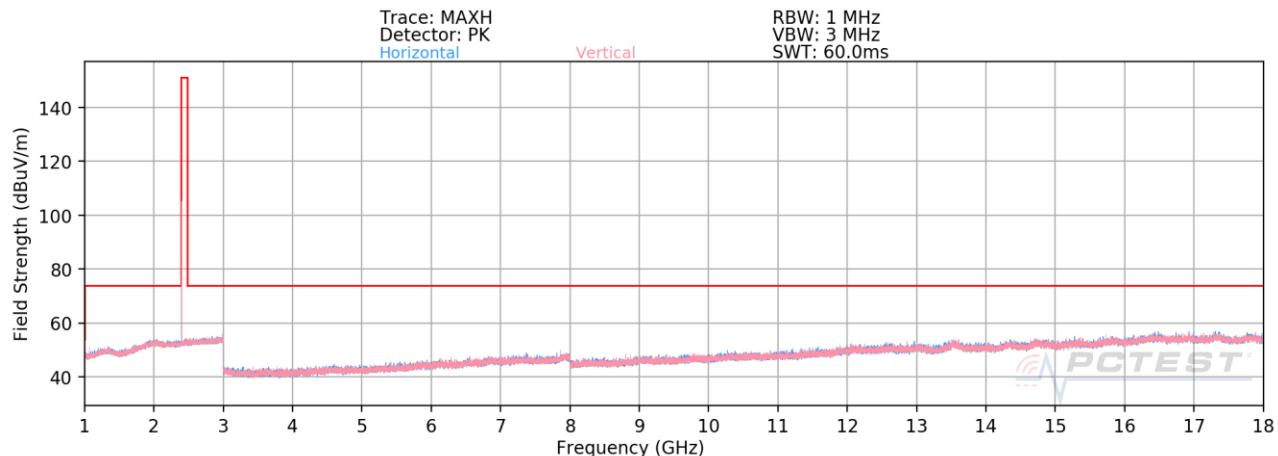
**Table 7-16. Radiated Measurements Antenna 4a**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device			

## Radiated Spurious Emission Measurements (1 – 18GHz)

§15.205 §15.209 §15.247(d); RSS-Gen [8.9]

### Antenna 2a



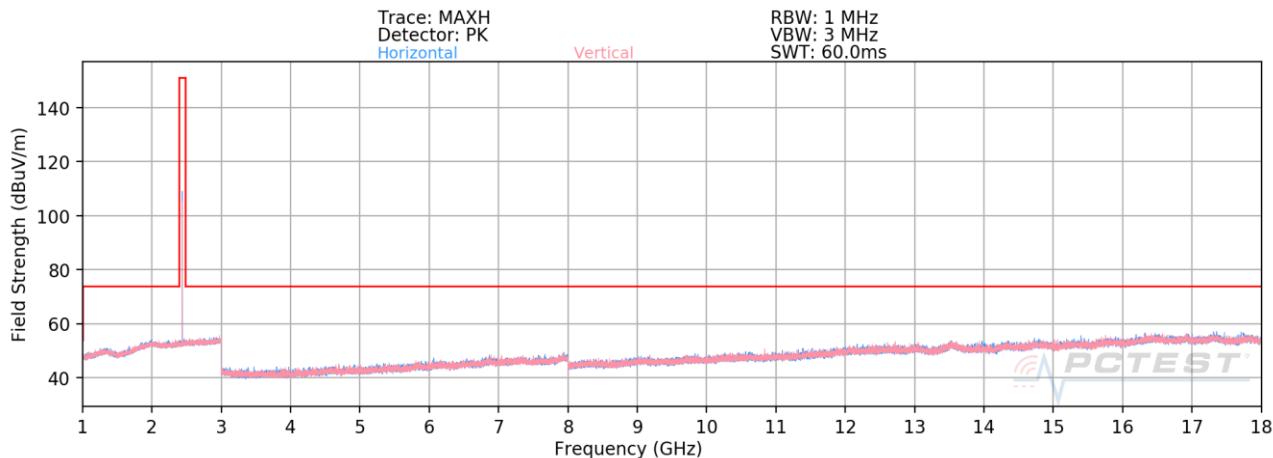
Plot 7-84. Radiated Spurious Plot Above 1GHz Antenna 2a (1Mbps, ePA – Ch. 0)

Bluetooth Mode: LE  
 Data Rate: 1Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2402MHz  
 Channel: 0

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4804.00	Avg	H	-	-	-77.83	4.34	33.51	53.98	-20.47
4804.00	Peak	H	-	-	-66.61	4.34	44.73	73.98	-29.25
12010.00	Avg	H	-	-	-84.41	17.00	39.59	53.98	-14.39
12010.00	Peak	H	-	-	-73.03	17.00	50.97	73.98	-23.01

Table 7-17. Radiated Measurements Antenna 2a

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> <small>Proud to be part of element</small>			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device			



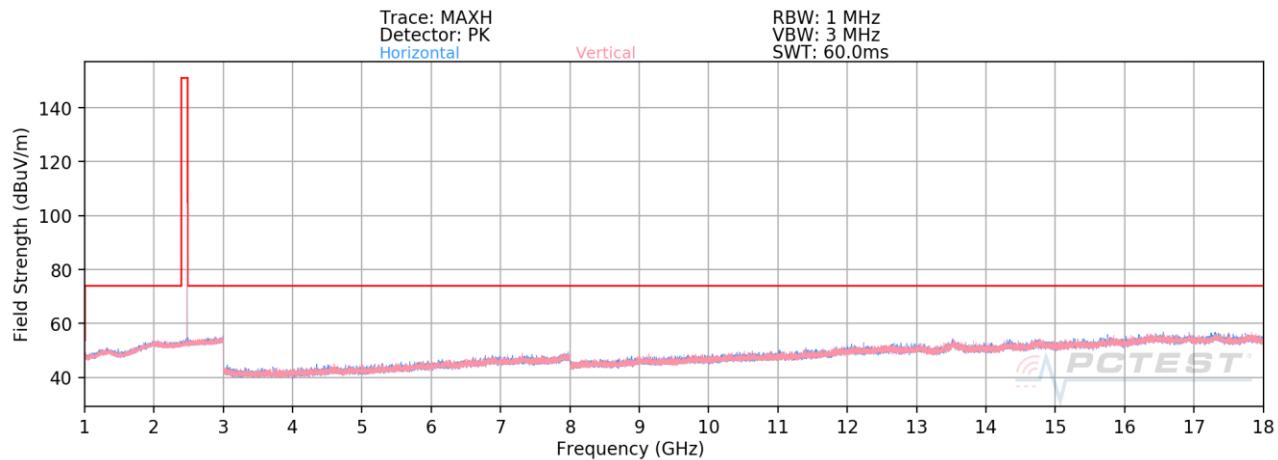
**Plot 7-85. Radiated Spurious Plot Above 1GHz Antenna 2a (1Mbps, ePA – Ch. 19)**

Bluetooth Mode: LE  
Data Rate: 1Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2440MHz  
Channel: 19

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4880.00	Avg	H	-	-	-78.29	4.40	33.11	53.98	-20.87
4880.00	Peak	H	-	-	-65.88	4.40	45.52	73.98	-28.46
7320.00	Avg	H	-	-	-79.82	8.56	35.74	53.98	-18.24
7320.00	Peak	H	-	-	-68.68	8.56	46.88	73.98	-27.10
12200.00	Avg	H	-	-	-84.70	17.19	39.49	53.98	-14.49
12200.00	Peak	H	-	-	-73.24	17.19	50.95	73.98	-23.03

**Table 7-18. Radiated Measurements Antenna 2a**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device			



**Plot 7-86. Radiated Spurious Plot Above 1GHz Antenna 2a (1Mbps, ePA – Ch. 39)**

Bluetooth Mode: LE  
Data Rate: 1Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2480MHz  
Channel: 39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4960.00	Avg	H	-	-	-78.14	4.20	33.06	53.98	-20.92
4960.00	Peak	H	-	-	-66.37	4.20	44.83	73.98	-29.15
7440.00	Avg	H	-	-	-79.70	8.52	35.82	53.98	-18.16
7440.00	Peak	H	-	-	-67.53	8.52	47.99	73.98	-25.99
12400.00	Avg	H	-	-	-85.12	17.41	39.29	53.98	-14.69
12400.00	Peak	H	-	-	-73.16	17.41	51.25	73.98	-22.73

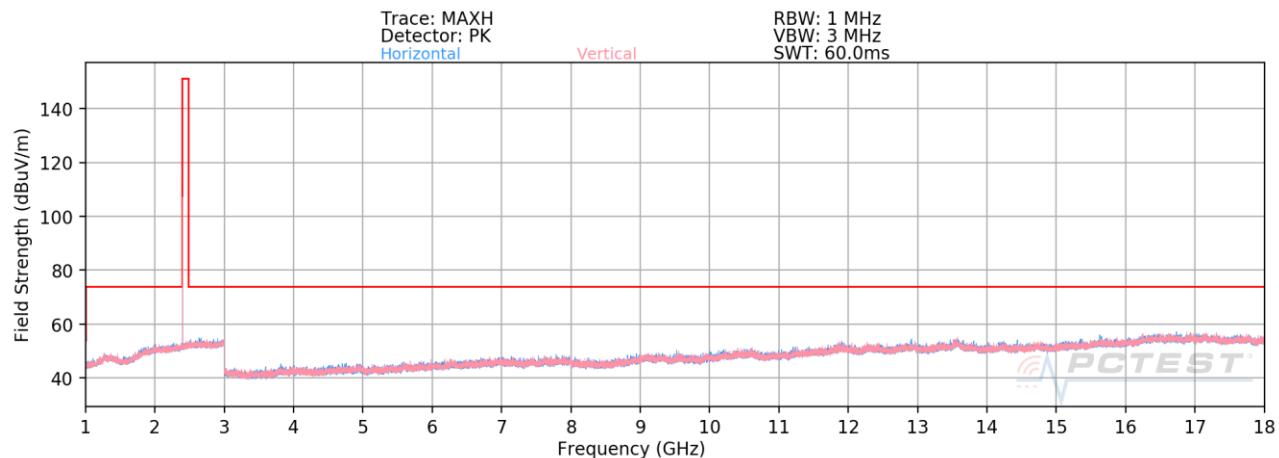
**Table 7-19. Radiated Measurements Antenna 2a**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device			

## Radiated Spurious Emission Measurements (1 – 18GHz)

§15.205 §15.209 §15.247(d); RSS-Gen [8.9]

### TxBF



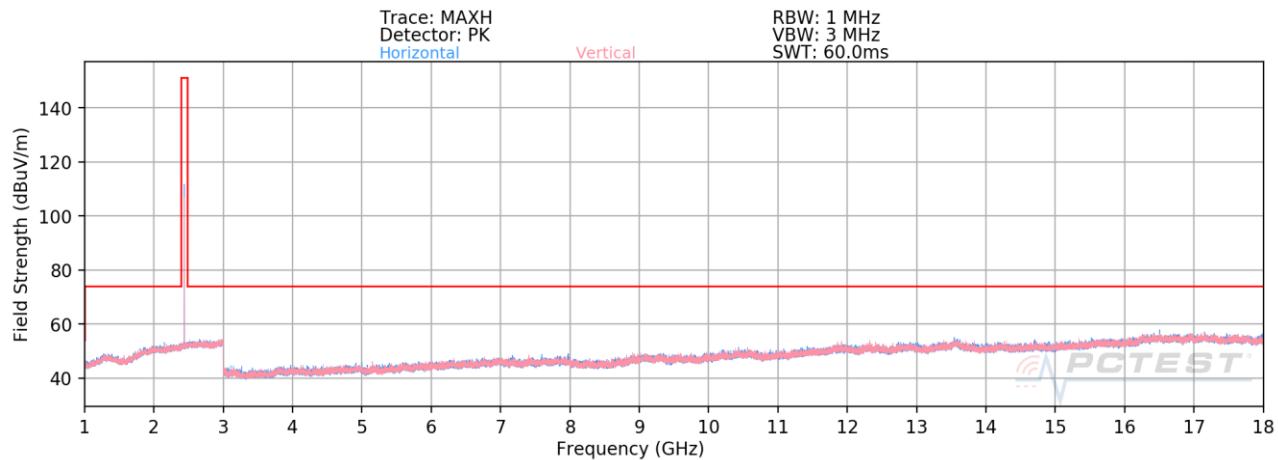
**Plot 7-87. Radiated Spurious Plot Above 1GHz TxBF (1Mbps, ePA – Ch. 0)**

Bluetooth Mode:	LE
Data Rate:	1Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	2402MHz
Channel:	0

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]
4804.00	Avg	H	-	-	-81.12	7.86	33.74	53.98	-20.24
4804.00	Peak	H	-	-	-70.40	7.86	44.46	73.98	-29.52
12010.00	Avg	H	-	-	-83.36	16.81	40.45	53.98	-13.53
12010.00	Peak	H	-	-	-72.35	16.81	51.46	73.98	-22.52

**Table 7-20. Radiated Measurements TxBF**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of  MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 77 of 101	



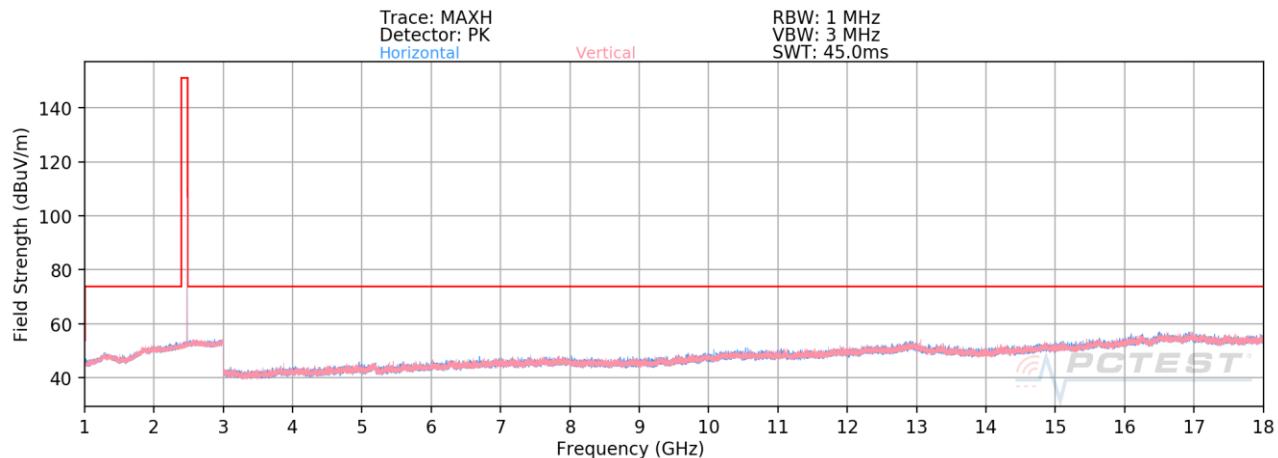
**Plot 7-88. Radiated Spurious Plot Above 1GHz TxBF (1Mbps, ePA – Ch. 19)**

Bluetooth Mode: LE  
Data Rate: 1Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2440MHz  
Channel: 19

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4880.00	Avg	H	-	-	-81.18	7.83	33.65	53.98	-20.33
4880.00	Peak	H	-	-	-70.27	7.83	44.56	73.98	-29.42
7320.00	Avg	H	-	-	-82.48	10.75	35.27	53.98	-18.71
7320.00	Peak	H	-	-	-71.46	10.75	46.29	73.98	-27.69
12200.00	Avg	H	-	-	-84.34	16.97	39.63	53.98	-14.35
12200.00	Peak	H	-	-	-71.85	16.97	52.12	73.98	-21.86

**Table 7-21. Radiated Measurements TxBF**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device			



**Plot 7-89. Radiated Spurious Plot Above 1GHz TxBF (1Mbps, ePA – Ch. 39)**

Bluetooth Mode: LE  
Data Rate: 1Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2480MHz  
Channel: 39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4960.00	Avg	H	-	-	-82.84	8.74	32.90	53.98	-21.08
4960.00	Peak	H	-	-	-71.25	8.74	44.49	73.98	-29.49
7440.00	Avg	H	-	-	-83.15	12.09	35.94	53.98	-18.04
7440.00	Peak	H	-	-	-72.13	12.09	46.96	73.98	-27.02
12400.00	Avg	H	-	-	-85.39	17.21	38.82	53.98	-15.16
12400.00	Peak	H	-	-	-74.97	17.21	49.24	73.98	-24.74

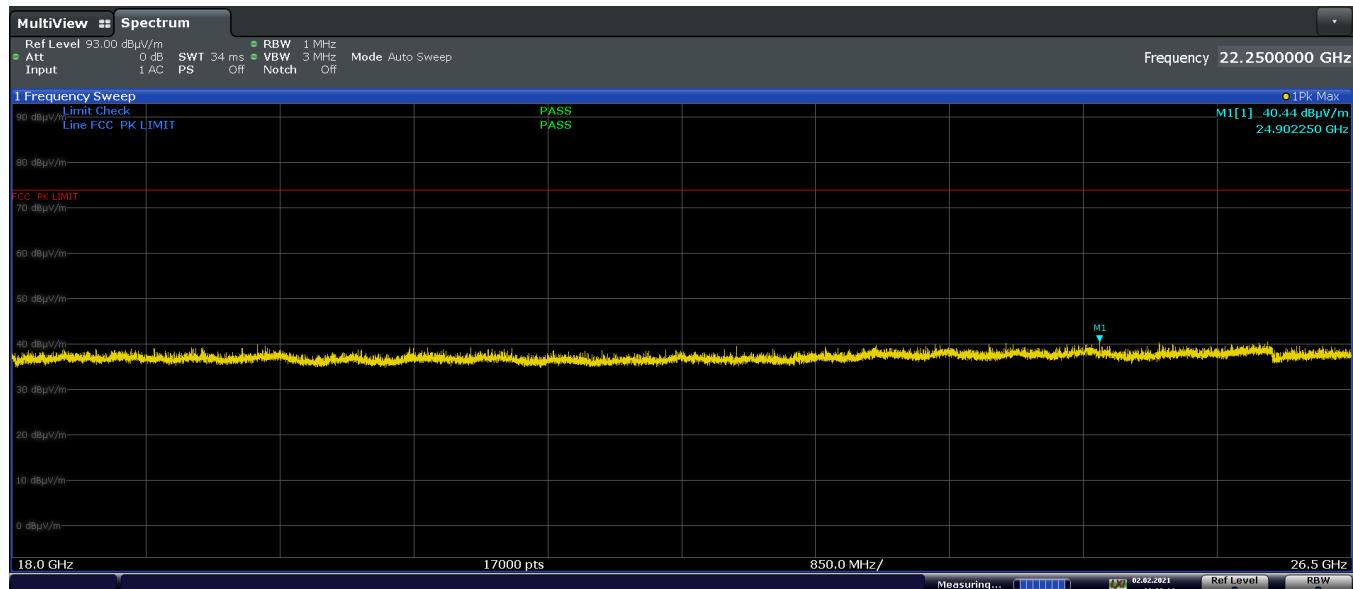
**Table 7-22. Radiated Measurements TxBF**

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device			

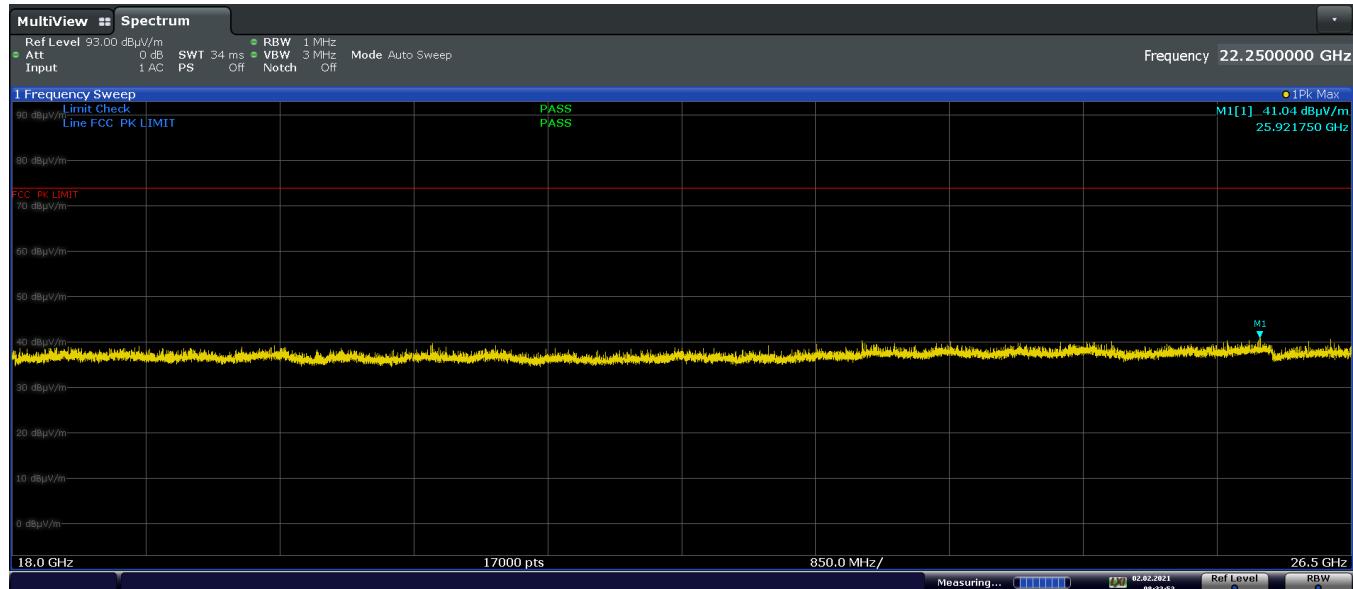
## Radiated Spurious Emissions Measurements (Above 18GHz)

§15.209; RSS-Gen [8.9]

### TxBF



Plot 7-90. Radiated Spurious Emissions Above 18GHz TxBF (1Mbps, ePA – Ch.19, Pol. H)



Plot 7-91. Radiated Spurious Emissions Above 18GHz TxBF (1Mbps, ePA – Ch.19, Pol. V)

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 80 of 101

## 7.8 Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

### Antenna 4a

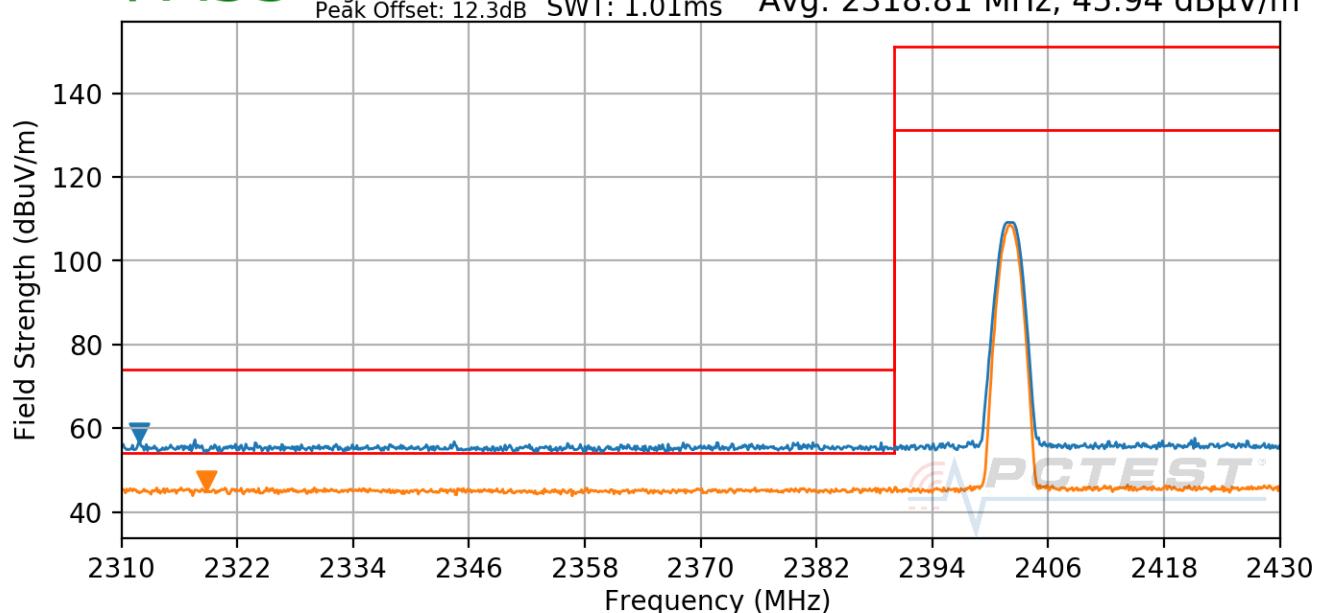
Bluetooth Mode:	<u>LE – Antenna 4a</u>
Data Rate:	<u>1Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2402MHz</u>
Channel:	<u>0</u>

**PASS**

Average Trace  
Peak Trace  
Avg. Offset: 13.0dB  
Peak Offset: 12.3dB

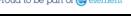
RBW: 1 MHz  
VBW: 3 MHz  
SWT: 1.01ms

Peak: 2311.86 MHz, 57.39 dB $\mu$ V/m  
Avg: 2318.81 MHz, 45.94 dB $\mu$ V/m



**Plot 7-92. Radiated Restricted Lower Band Edge Measurement Antenna 4a (Average & Peak)**

$$\text{DCCF} = 10^{\ast}\log(1/\text{DC}) = 10^{\ast}\log(1/0.849) = 0.71\text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device		Page 81 of 101

## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

Bluetooth Mode: LE – Antenna 4a  
 Data Rate: GFSK  
 Power Scheme: ePA  
 Measurement Distance: 3 Meters  
 Operating Frequency: 2480MHz  
 Channel: 39

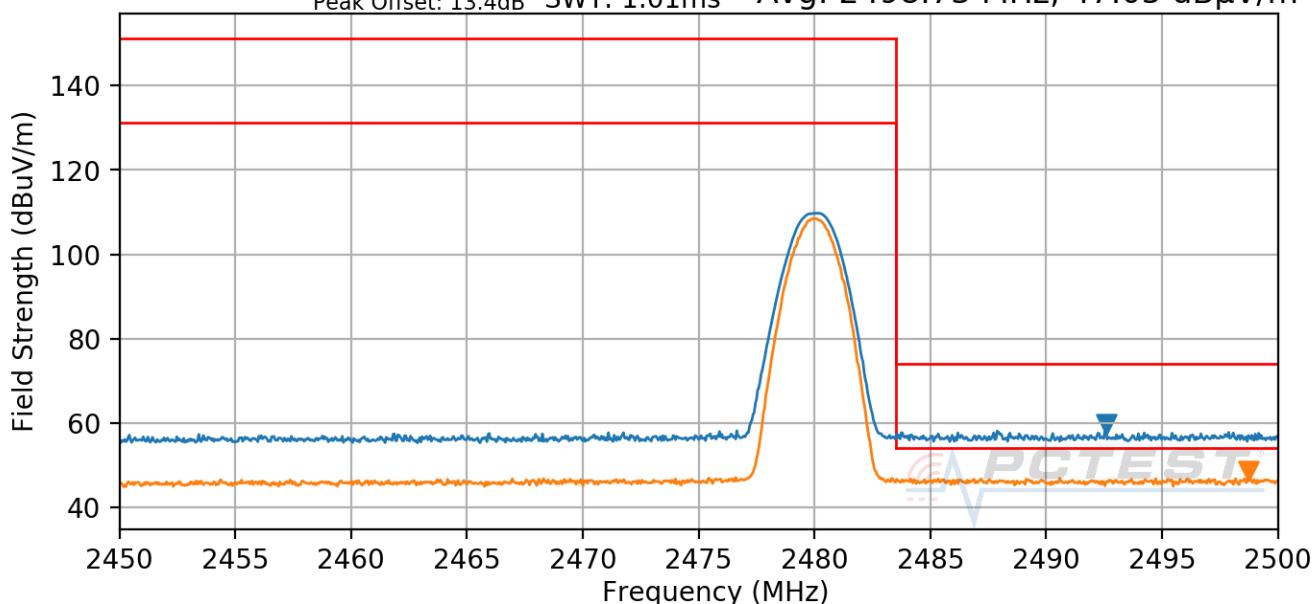
**PASS**

Average Trace  
 Peak Trace

RBW: 1 MHz  
 Avg. Offset: 14.1dB  
 Peak Offset: 13.4dB

VBW: 3 MHz  
 SWT: 1.01ms

Peak: 2492.58 MHz, 58.34 dB $\mu$ V/m  
 Avg: 2498.73 MHz, 47.05 dB $\mu$ V/m



**Plot 7-93. Radiated Restricted Upper Band Edge Measurement Antenna 4a (Average & Peak)**

$$\text{DCCF} = 10 \cdot \log(1/\text{DC}) = 10 \cdot \log(1/0.849) = 0.71 \text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 82 of 101	

## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

Bluetooth Mode: LE – Antenna 4a  
 Data Rate: 2Mbps  
 Power Scheme: ePA  
 Measurement Distance: 3 Meters  
 Operating Frequency: 2404MHz  
 Channel: 1

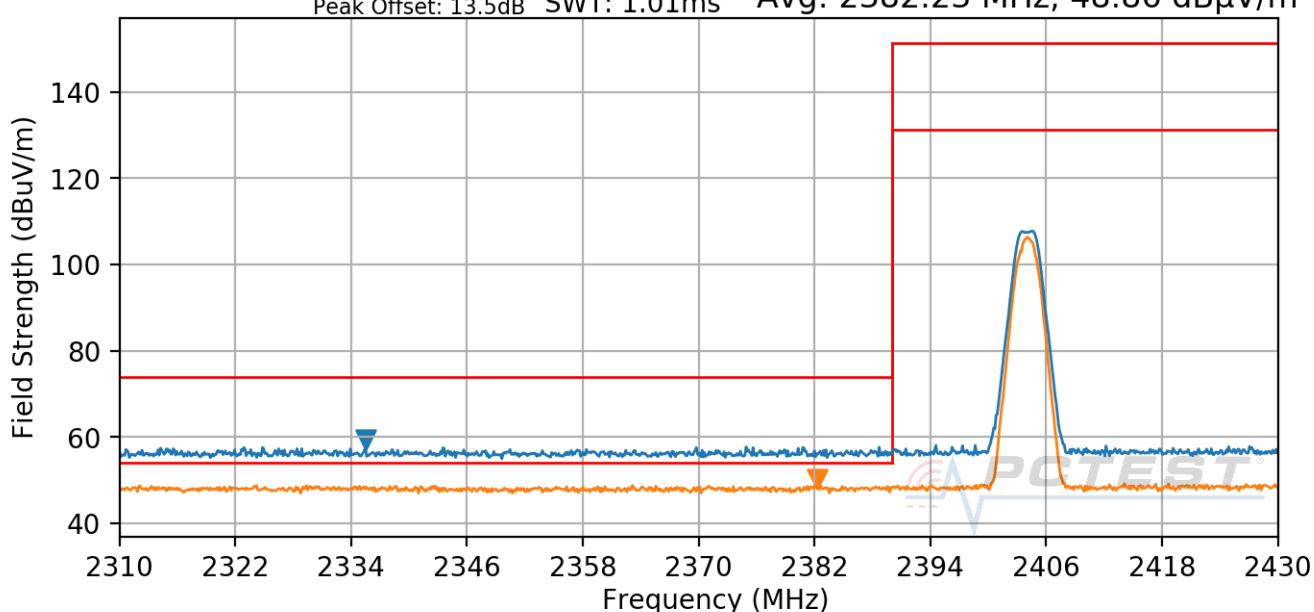
**PASS**

Average Trace  
 Peak Trace

RBW: 1 MHz  
 VBW: 3 MHz  
 Avg. Offset: 16.0dB  
 Peak Offset: 13.5dB

SWT: 1.01ms

Peak: 2335.47 MHz, 57.89 dB $\mu$ V/m  
 Avg: 2382.23 MHz, 48.86 dB $\mu$ V/m



**Plot 7-94. Radiated Restricted Lower Band Edge Measurement Antenna 4a (Average & Peak)**

$$\text{DCCF} = 10 \cdot \log(1/\text{DC}) = 10 \cdot \log(1/0.569) = 2.45 \text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device		Page 83 of 101

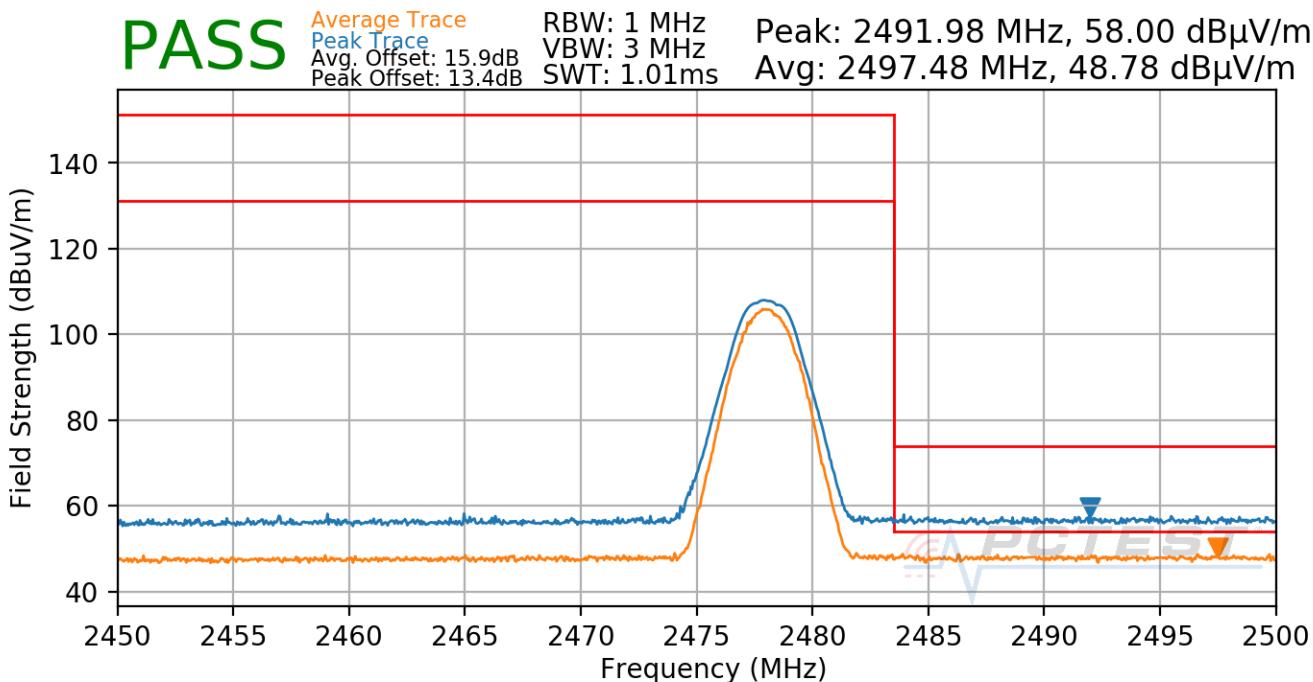
## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

Bluetooth Mode:	LE – Antenna 4a
Data Rate:	2Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2478MHz
Channel:	38



**Plot 7-95. Radiated Restricted Upper Band Edge Measurement Antenna 4a (Average & Peak)**

$$DCCF = 10 \cdot \log(1/DC) = 10 \cdot \log(1/0.569) = 2.45 \text{ dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 84 of 101

## Radiated Restricted Band Edge Measurements

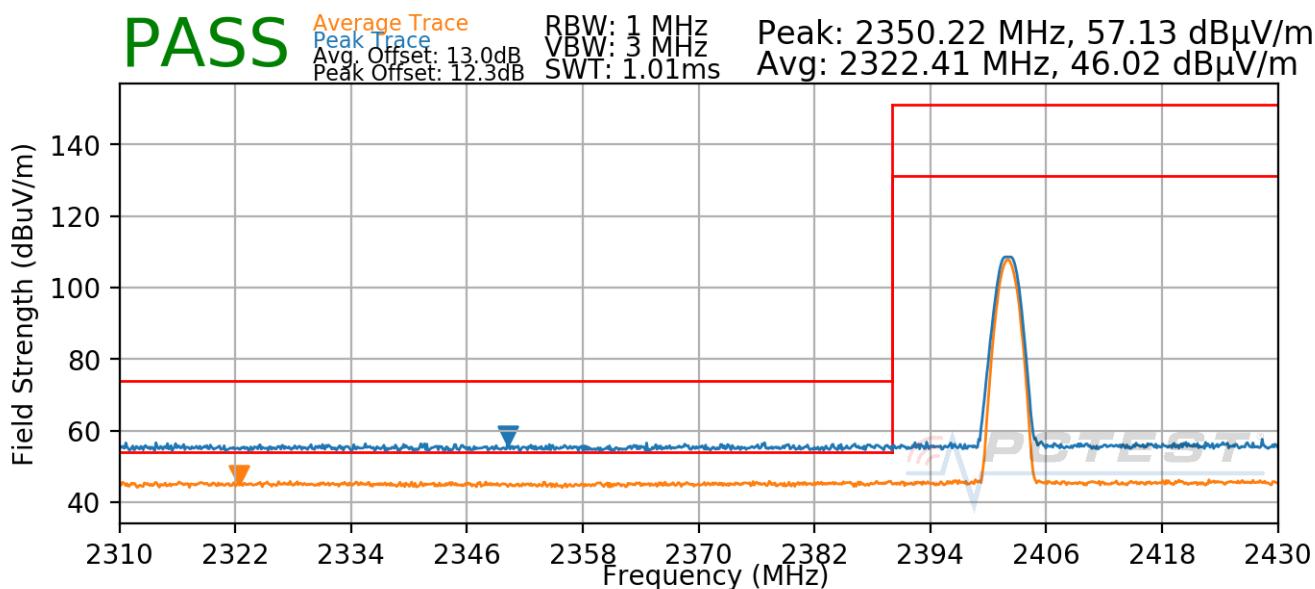
§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

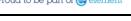
### Antenna 2a

Bluetooth Mode:	<u>LE – Antenna 2a</u>
Data Rate:	<u>1Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2402MHz</u>
Channel:	<u>0</u>



**Plot 7-96. Radiated Restricted Lower Band Edge Measurement Antenna 2a (Average & Peak)**

$$\text{DCCF} = 10^{\log(1/\text{DC})} = 10^{\log(1/0.850)} = 0.71\text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device		Page 85 of 101

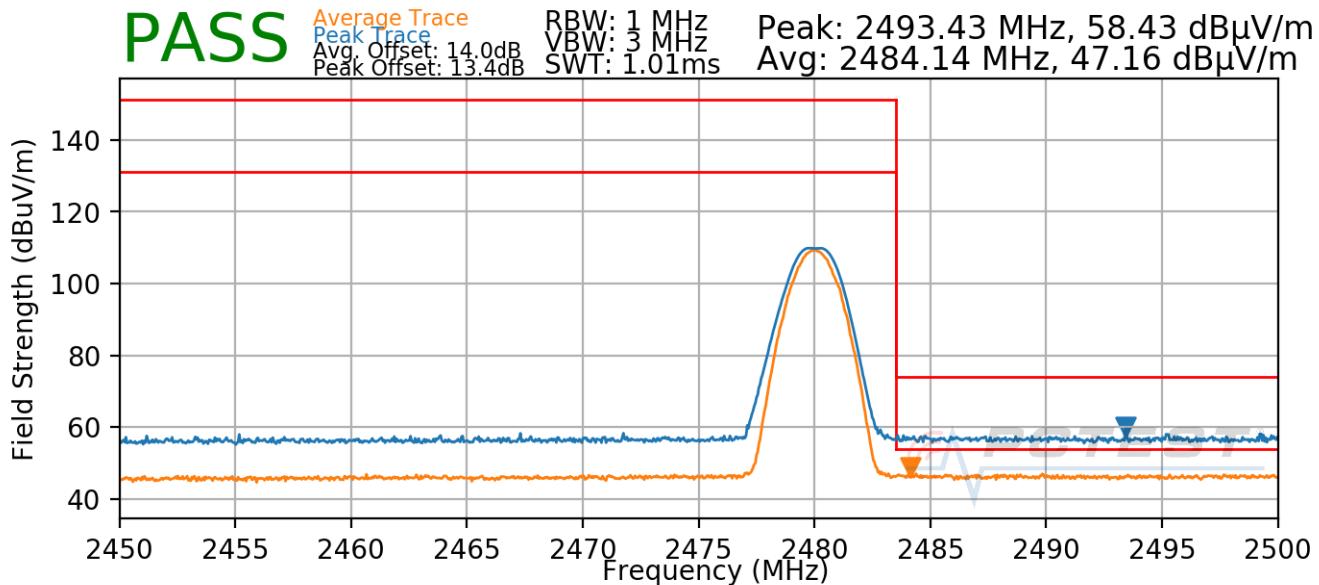
## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

Bluetooth Mode: LE – Antenna 2a  
 Data Rate: 1Mbps  
 Power Scheme: ePA  
 Measurement Distance: 3 Meters  
 Operating Frequency: 2480MHz  
 Channel: 39



**Plot 7-97. Radiated Restricted Upper Band Edge Measurement Antenna 2a (Average & Peak)**

$$\text{DCCF} = 10^{\log(1/\text{DC})} = 10^{\log(1/0.850)} = 0.71\text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 86 of 101

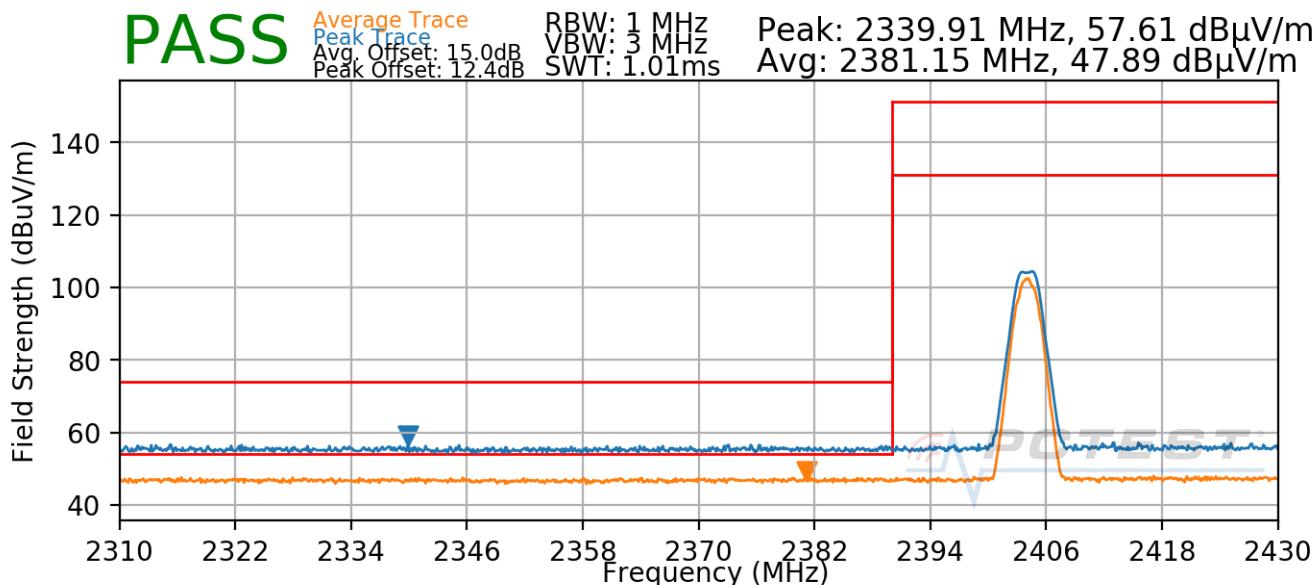
## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

Bluetooth Mode:	LE – Antenna 2a
Data Rate:	2Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2404MHz
Channel:	1



**Plot 7-98. Radiated Restricted Lower Band Edge Measurement Antenna 2a (Average & Peak)**

$$DCCF = 10 \cdot \log(1/DC) = 10 \cdot \log(1/0.57) = 2.45 \text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> <sup>®</sup> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device		Page 87 of 101

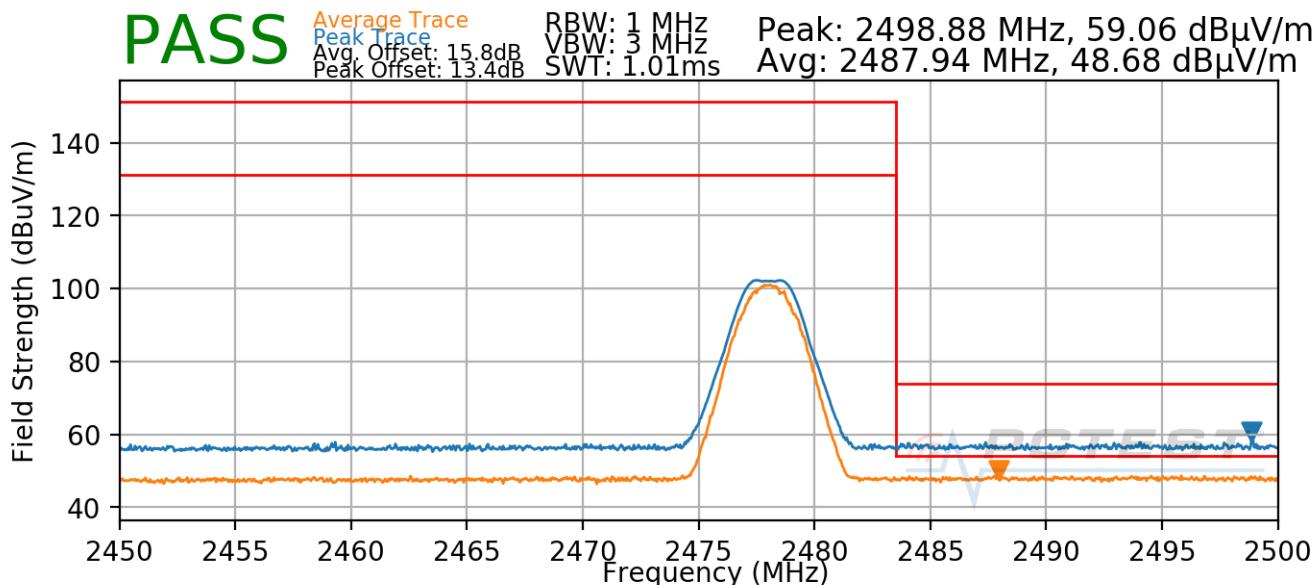
## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

Bluetooth Mode:	LE – Antenna 2a
Data Rate:	2Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2478MHz
Channel:	38



**Plot 7-99. Radiated Restricted Upper Band Edge Measurement Antenna 2a (Average & Peak)**

$$DCCF = 10 \cdot \log(1/DC) = 10 \cdot \log(1/0.57) = 2.45 \text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C2101020002-12.BCG	Test Dates: 12/15/2020-2/25/2021	EUT Type: Tablet Device	Page 88 of 101	

## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

### TxBF

Bluetooth Mode:	<u>LE – TxBF</u>
Data Rate:	<u>1Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2402MHz</u>
Channel:	<u>0</u>

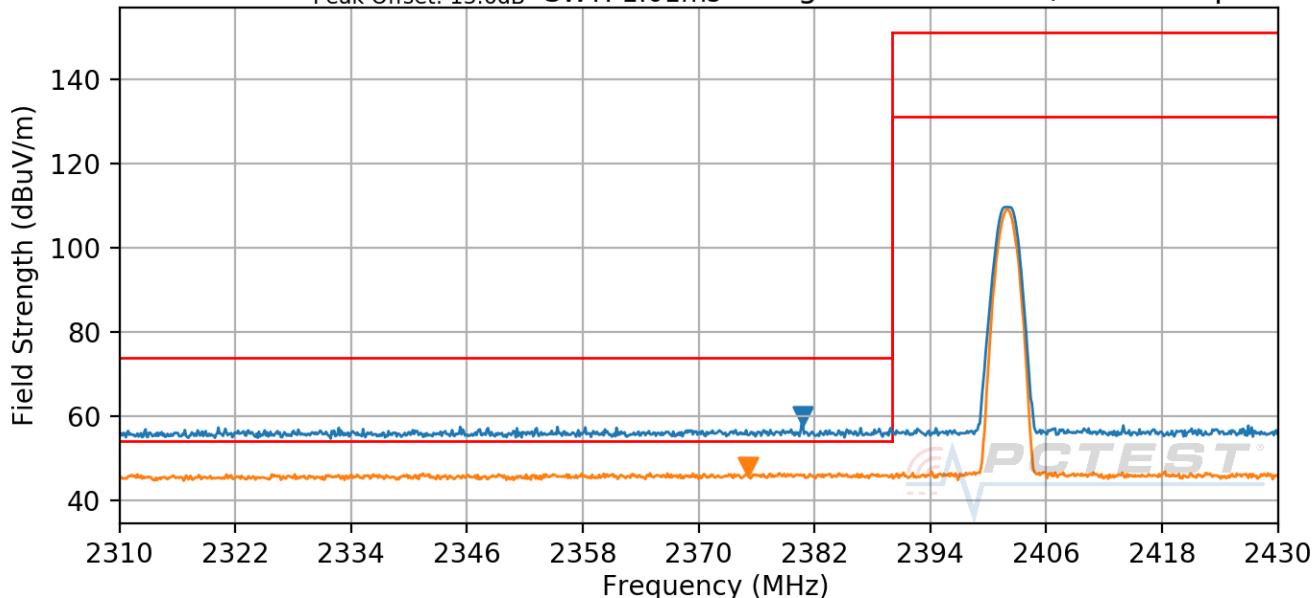
**PASS**

Average Trace  
Peak Trace

Avg. Offset: 14.3dB  
Peak Offset: 13.6dB

RBW: 1 MHz  
VBW: 3 MHz  
SWT: 1.01ms

Peak: 2380.79 MHz, 58.43 dB $\mu$ V/m  
Avg: 2375.15 MHz, 46.54 dB $\mu$ V/m



**Plot 7-100. Radiated Restricted Lower Band Edge Measurement TxBF (Average & Peak)**

$$\text{DCCF} = 10^{\ast}\log(1/\text{DC}) = 10^{\ast}\log(1/0.849) = 0.71\text{dB}$$

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## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

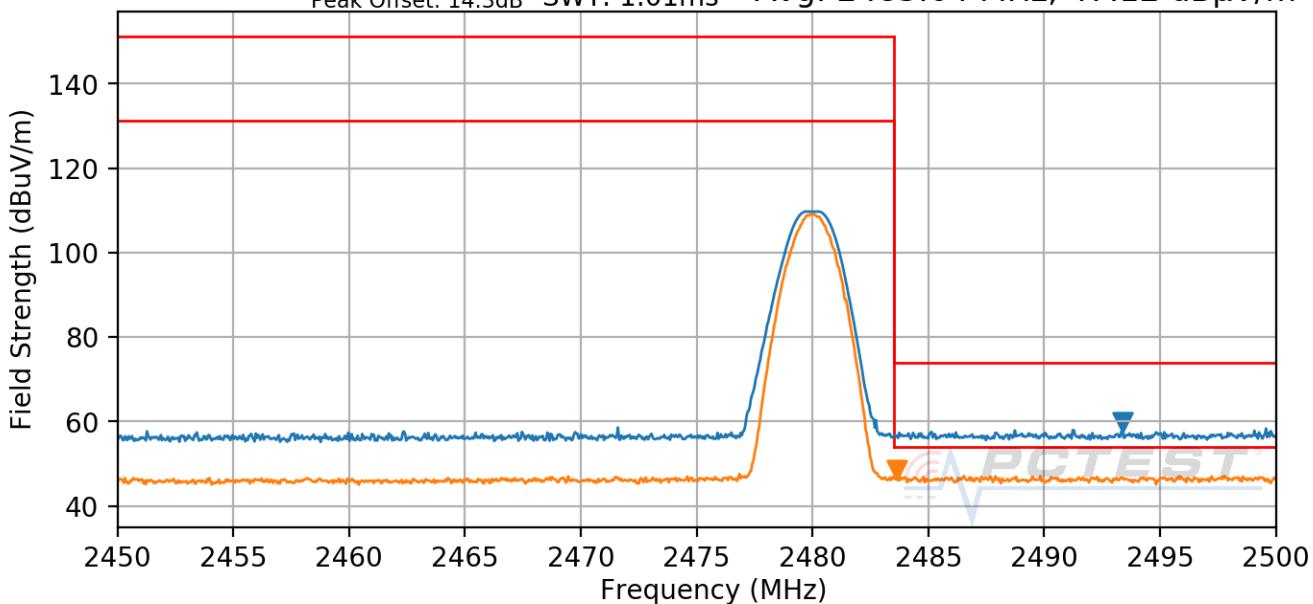
The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

Bluetooth Mode: LE - TxBF  
 Data Rate: 1Mbps  
 Power Scheme: ePA  
 Measurement Distance: 3 Meters  
 Operating Frequency: 2480MHz  
 Channel: 39

**PASS**

Average Trace      Peak Trace      RBW: 1 MHz      Peak: 2493.38 MHz, 58.40 dB $\mu$ V/m  
 Avg. Offset: 14.9dB      VBW: 3 MHz      Avg: 2483.64 MHz, 47.12 dB $\mu$ V/m  
 Peak Offset: 14.3dB      SWT: 1.01ms



Plot 7-101. Radiated Restricted Upper Band Edge Measurement TxBF (Average & Peak)

$$\text{DCCF} = 10 \cdot \log(1/\text{DC}) = 10 \cdot \log(1/0.849) = 0.71 \text{dB}$$

FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

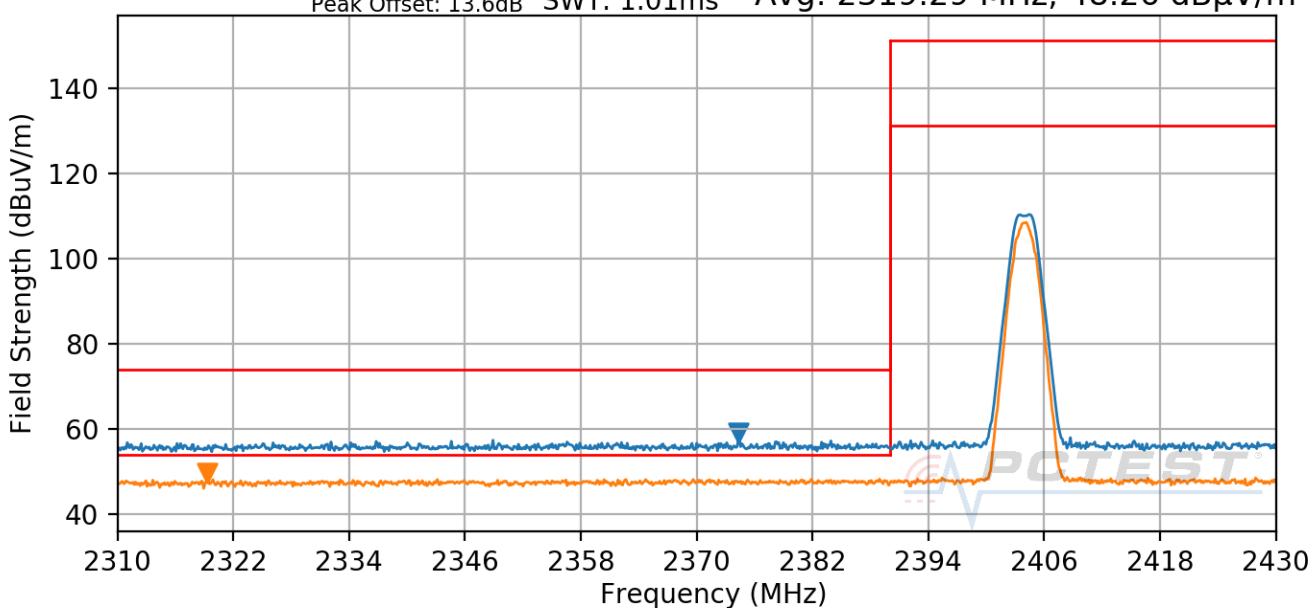
Bluetooth Mode:	LE - TxBF
Data Rate:	2Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2404MHz
Channel:	1

**PASS**

Average Trace  
Peak Trace

RBW: 1 MHz  
VBW: 3 MHz  
Avg. Offset: 16.0dB  
Peak Offset: 13.6dB

Peak: 2374.32 MHz, 57.64 dB $\mu$ V/m  
Avg: 2319.29 MHz, 48.26 dB $\mu$ V/m



Plot 7-102. Radiated Restricted Lower Band Edge Measurement TxBF (Average & Peak)

$$DCCF = 10 \cdot \log(1/DC) = 10 \cdot \log(1/0.569) = 2.45 \text{ dB}$$

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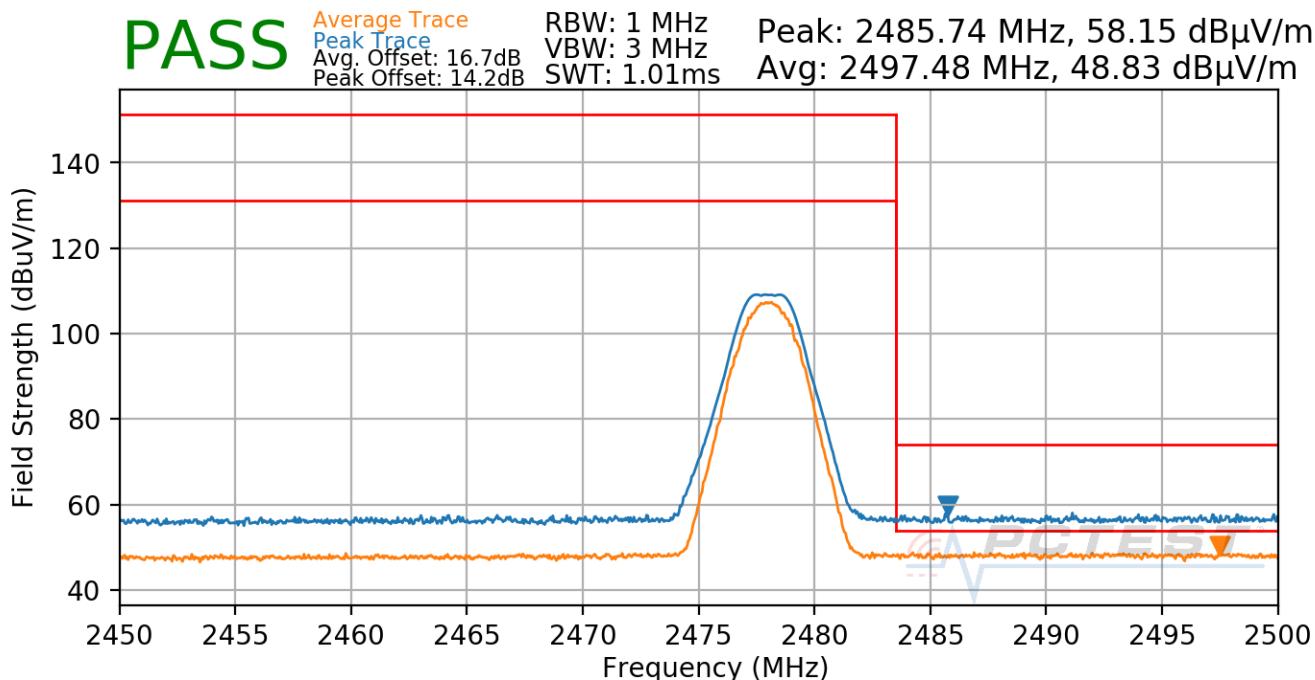
## Radiated Restricted Band Edge Measurements

§15.205 §15.209; RSS-Gen [8.9]

The amplitude offset shown in the following plots for average measurements was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

Bluetooth Mode: LE – TxBF  
 Data Rate: 2Mbps  
 Power Scheme: ePA  
 Measurement Distance: 3 Meters  
 Operating Frequency: 2478MHz  
 Channel: 38



**Plot 7-103. Radiated Restricted Upper Band Edge Measurement TxBF (Average & Peak)**

$$\text{DCCF} = 10 \cdot \log(1/\text{DC}) = 10 \cdot \log(1/0.569) = 2.45 \text{dB}$$

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## 7.9 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 7-23 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 7-23. 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

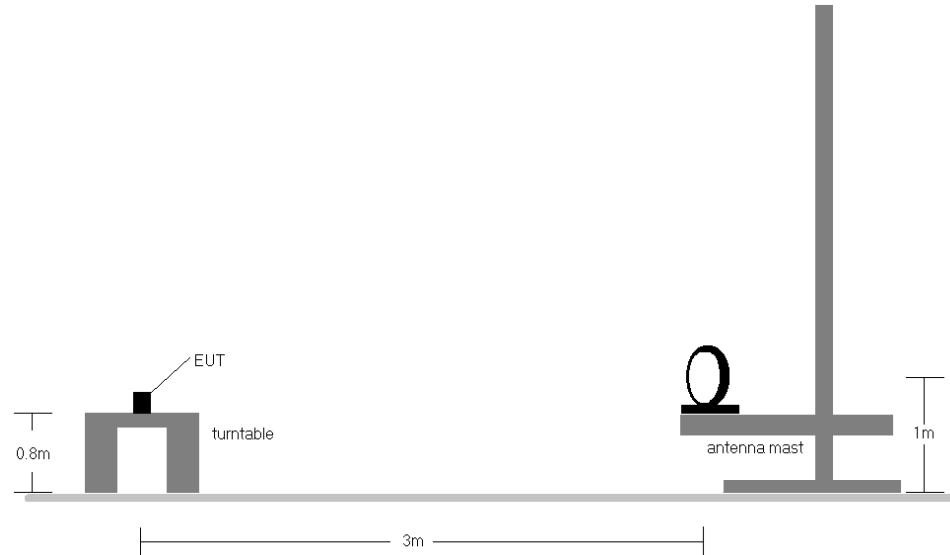
#### Peak Field Strength Measurements

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

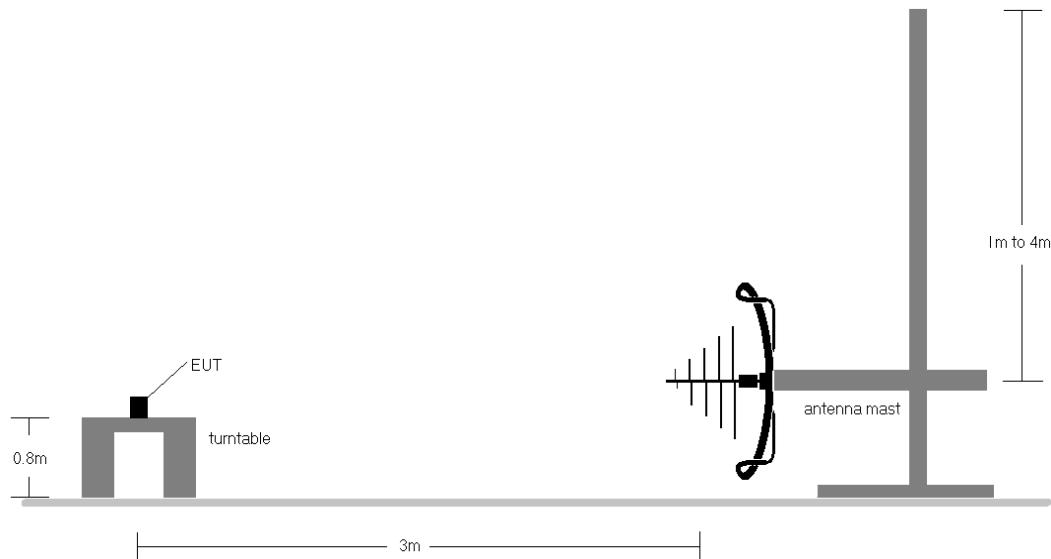
FCC ID: BCGA2301 IC: 579C-A2301	 <b>PCTEST®</b> Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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## Test Setup

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



**Figure 7-7. 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 7-23.
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 on emissions that were 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. 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 supported modulations, antennas (including TxBF mode) and power schemes have been tested on the unit and only the worst case configuration 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

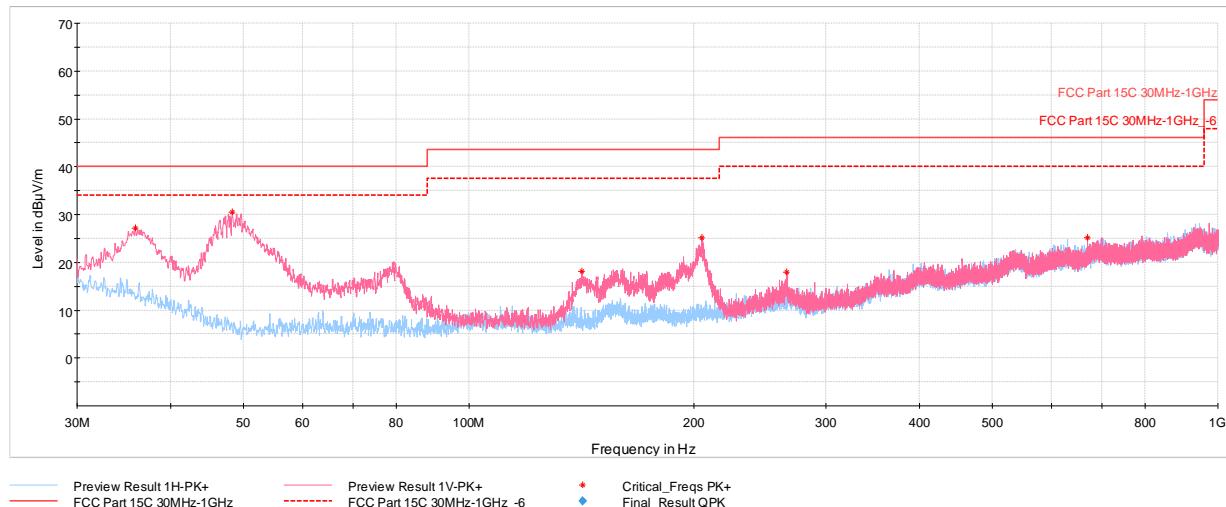
- Field Strength Level  $[\text{dB}_{\mu\text{V/m}}]$  = Analyzer Level  $[\text{dBm}] + 107 + \text{AFCL} [\text{dB}/\text{m}]$
- AFCL  $[\text{dB}/\text{m}]$  = Antenna Factor  $[\text{dB}/\text{m}] + \text{Cable Loss} [\text{dB}] - \text{Preamplifier Gain} [\text{dB}]$
- Margin  $[\text{dB}]$  = Field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

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## Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]

### TxBF



**Plot 7-104. Radiated Spurious Emissions Below 1GHz TxBF (1Mbps, ePA – Ch.19, Pol. H & V, 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]
35.87	Max Peak	V	100	285	-65.06	-14.73	27.21	40.00	-12.79
48.33	Max Peak	V	100	5	-55.81	-20.74	30.45	40.00	-9.55
141.70	Max Peak	V	100	234	-70.16	-18.79	18.05	43.52	-25.47
204.65	Max Peak	V	250	225	-65.22	-16.71	25.07	43.52	-18.45
265.47	Max Peak	V	100	253	-75.32	-13.69	17.99	46.02	-28.03
669.76	Max Peak	V	250	64	-77.87	-3.92	25.21	46.02	-20.81

**Table 7-24. Radiated Spurious Emissions Below 1GHz TxBF (1Mbps, ePA – Ch.19, Pol. H & V, with AC/DC Adapter)**

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## 7.10 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 7-25. 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

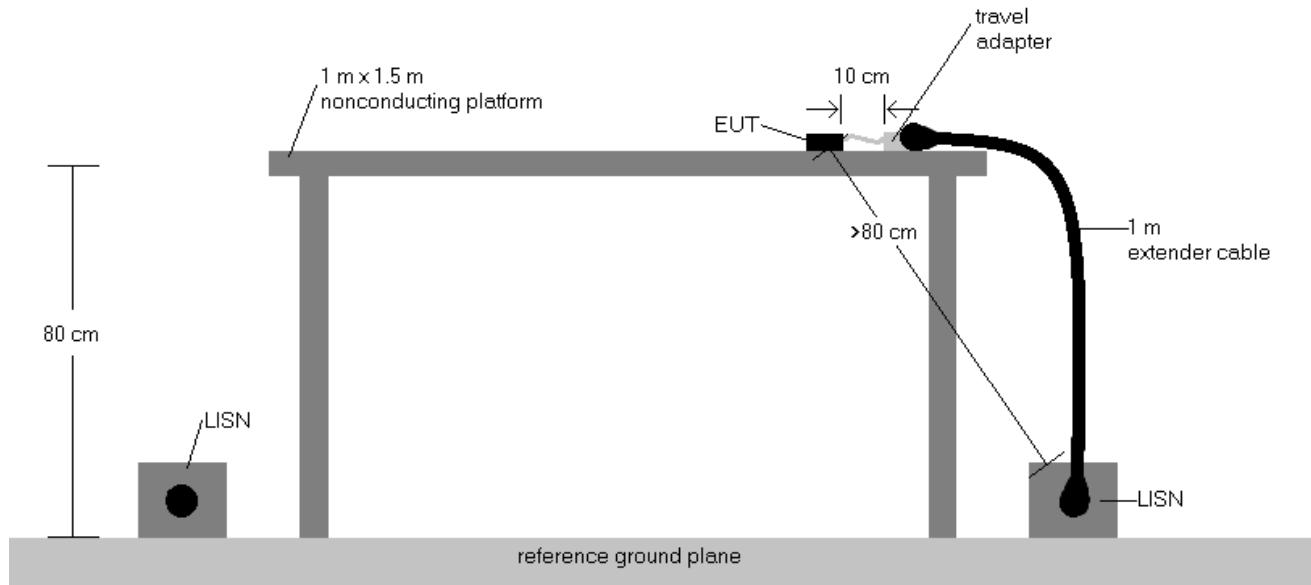
#### Average Measurements

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

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## Test Setup

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

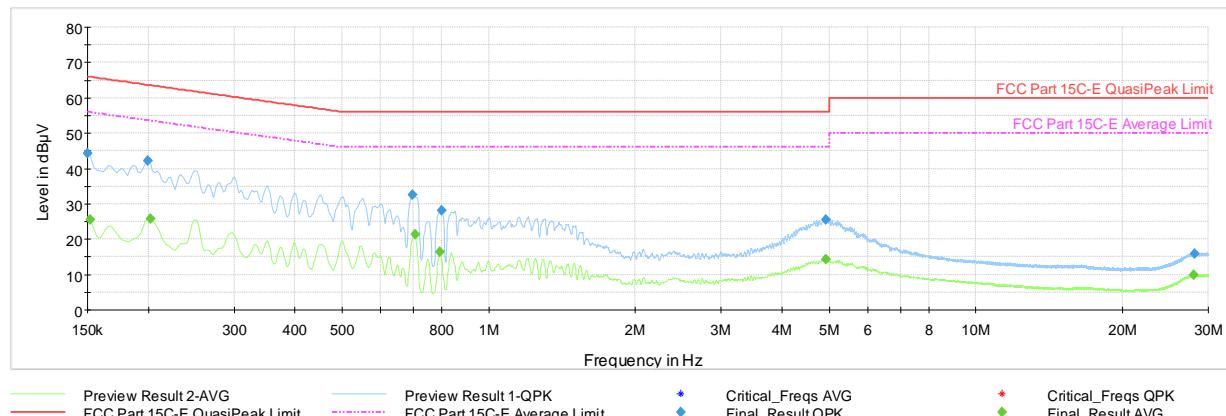


**Figure 7-9. Test Instrument & Measurement Setup**

## 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. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.207 and RSS-Gen (8.8).
3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
5. Margin (dB) = QP/AV Level (dB $\mu$ V) - QP/AV Limit (dB $\mu$ V)
6. Traces shown in plot are made using a quasi peak and average detectors.
7. Deviations to the Specifications: None.
8. All supported modulations, antennas (including TxBF mode) and power schemes have been tested on the unit and only the worst case configuration is reported.
9. 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

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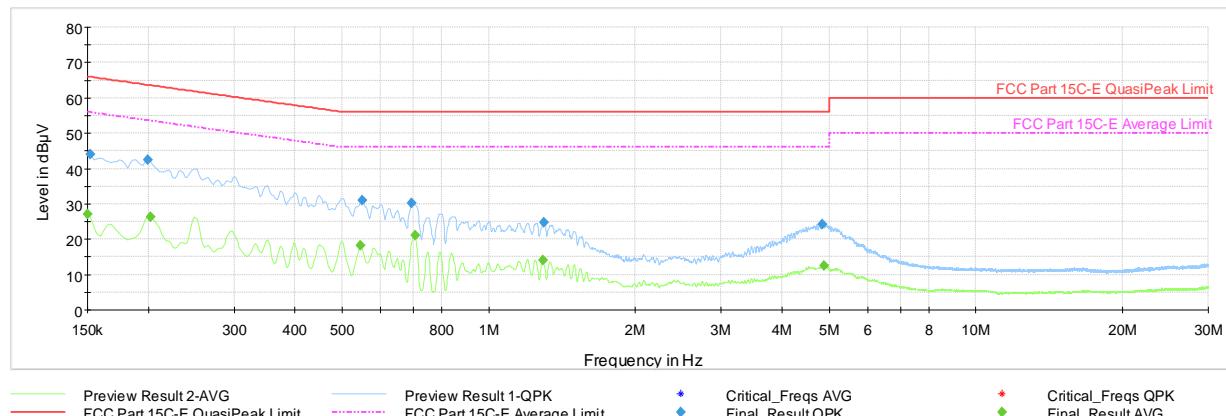


**Plot 7-105. AC Line Conducted Plot with Bluetooth LE TxBF (1Mbps, ePA – Ch.19, L1, with AC/DC Adapter)**

Frequency [MHz]	Process State	QuasiPeak [dB $\mu$ V]	Average [dB $\mu$ V]	Limit [dB $\mu$ V]	Margin [dB]	Line	PE
0.150	FINAL	44.2	—	66.00	-21.78	L1	GND
0.152	FINAL	—	25.65	55.88	-30.22	L1	GND
0.200	FINAL	42.1	—	63.63	-21.54	L1	GND
0.202	FINAL	—	25.73	53.54	-27.81	L1	GND
0.697	FINAL	32.7	—	56.00	-23.30	L1	GND
0.706	FINAL	—	21.25	46.00	-24.75	L1	GND
0.794	FINAL	—	16.35	46.00	-29.65	L1	GND
0.800	FINAL	28.1	—	56.00	-27.86	L1	GND
4.916	FINAL	25.5	—	56.00	-30.51	L1	GND
4.929	FINAL	—	14.20	46.00	-31.80	L1	GND
27.971	FINAL	—	9.78	50.00	-40.22	L1	GND
28.088	FINAL	15.8	—	60.00	-44.23	L1	GND

**Table 7-26. AC Line Conducted Data with Bluetooth LE TxBF (1Mbps, ePA – Ch.19, L1, with AC/DC Adapter)**

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**Plot 7-106. AC Line Conducted Plot with Bluetooth LE TxBF (1Mbps, ePA – Ch.19, 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
0.150	FINAL	—	27.20	56.00	-28.80	N	GND
0.152	FINAL	44.1	—	65.88	-21.80	N	GND
0.200	FINAL	42.6	—	63.63	-21.05	N	GND
0.202	FINAL	—	26.22	53.54	-27.32	N	GND
0.546	FINAL	—	18.14	46.00	-27.86	N	GND
0.551	FINAL	31.0	—	56.00	-25.03	N	GND
0.695	FINAL	30.2	—	56.00	-25.84	N	GND
0.706	FINAL	—	21.09	46.00	-24.91	N	GND
1.291	FINAL	—	14.14	46.00	-31.86	N	GND
1.300	FINAL	24.7	—	56.00	-31.34	N	GND
4.837	FINAL	24.1	—	56.00	-31.88	N	GND
4.880	FINAL	—	12.44	46.00	-33.56	N	GND

**Table 7-27. AC Line Conducted Data with Bluetooth LE TxBF (1Mbps, ePA – Ch.19, N, with AC/DC Adapter)**

FCC ID: BCGA2301 IC: 579C-A2301	<b>PCTEST</b> <sup>®</sup> Proud to be part of 			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: BCGA2301, IC: 579C-A2301** 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: BCGA2301 IC: 579C-A2301	 PCTEST <sup>®</sup> Proud to be part of element		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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