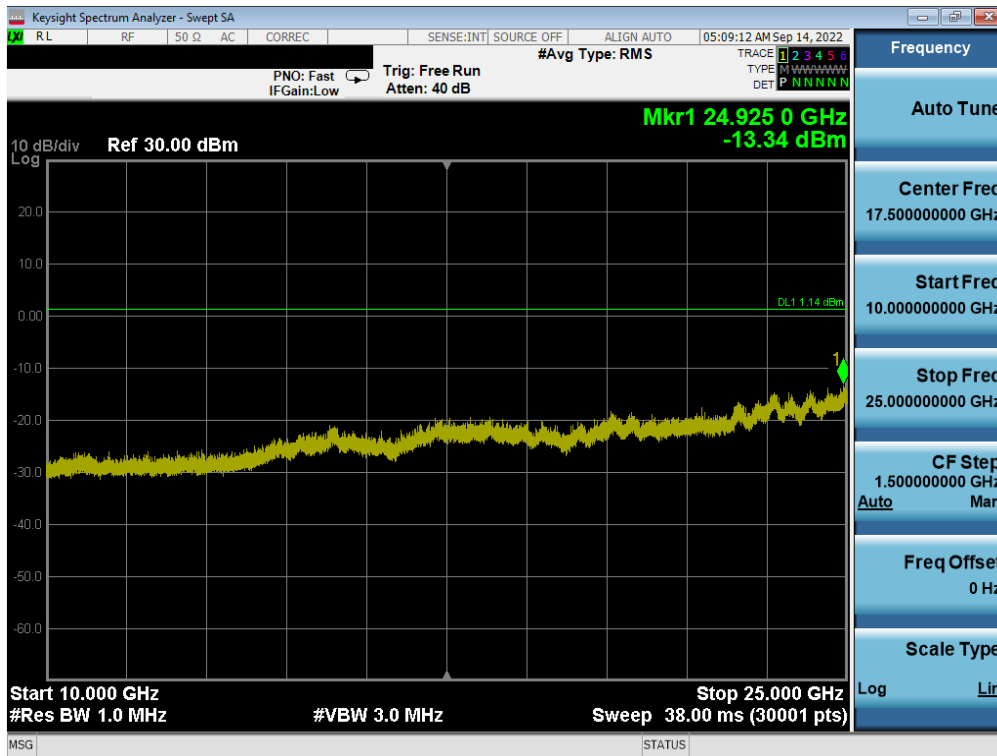
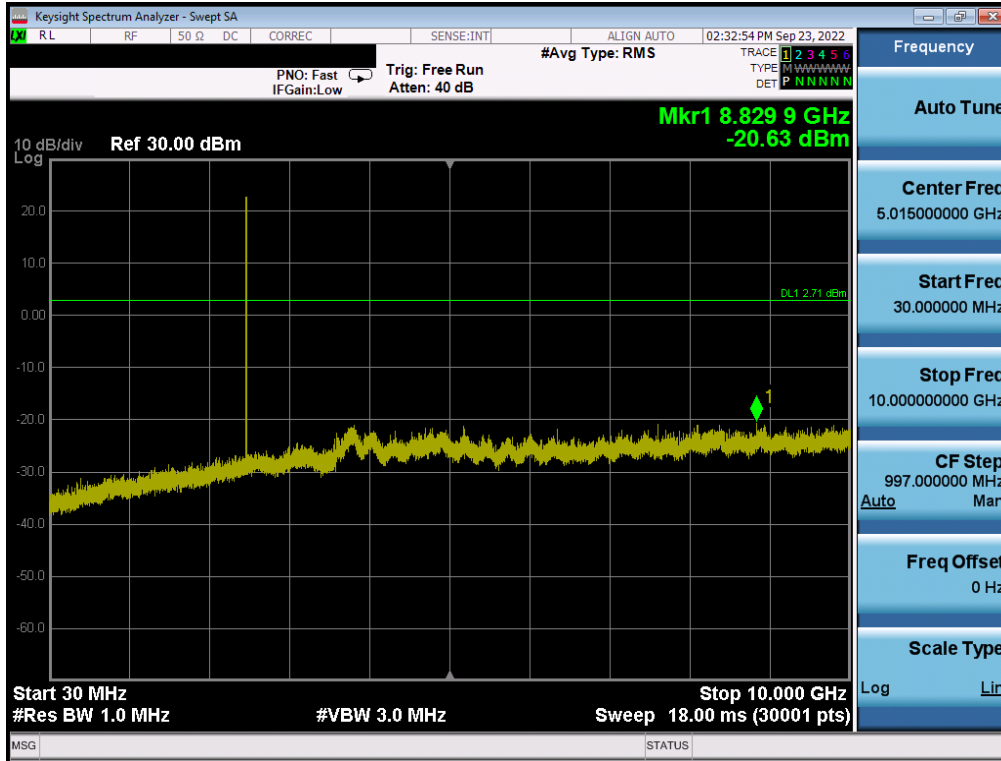


Plot 7-71. Conducted Spurious Plot Antenna WF8 (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

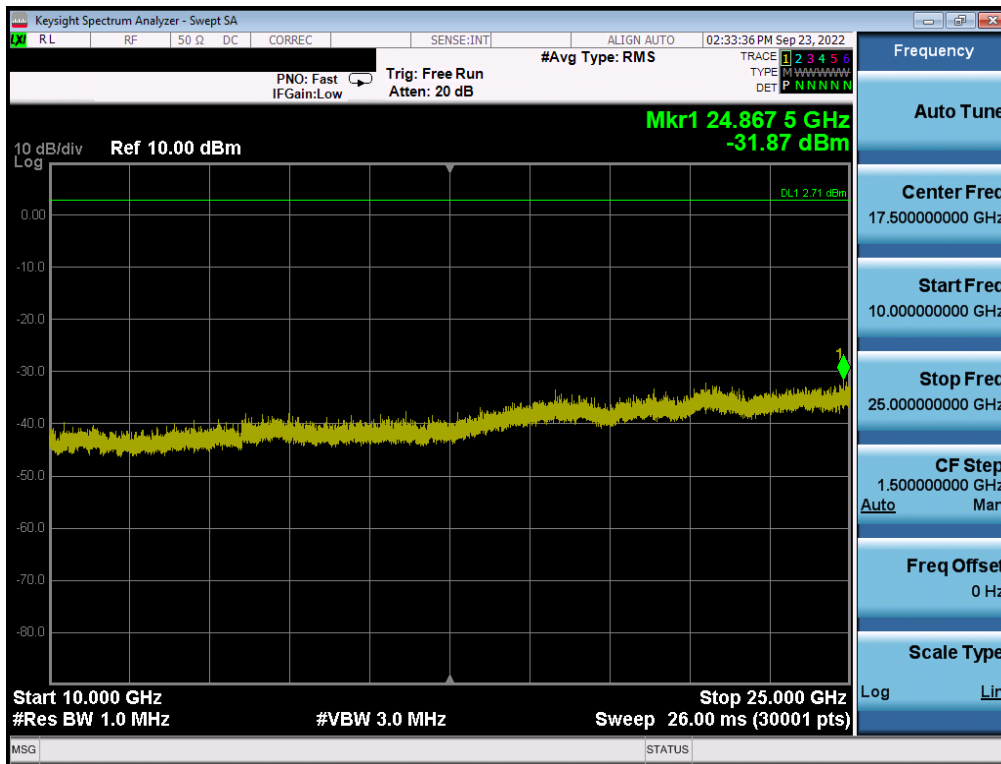


Plot 7-72. Conducted Spurious Plot Antenna WF8 (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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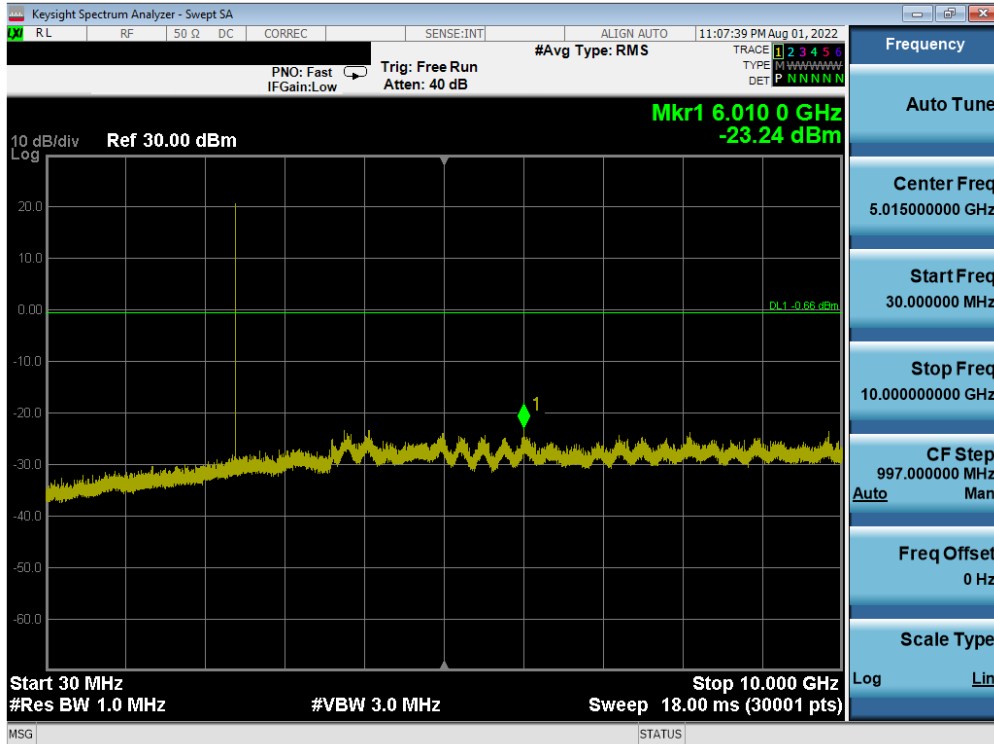
Plot 7-73. Conducted Spurious Plot Antenna WF8 (Bluetooth (LE), 1Mbps, ePA – Ch. 39)



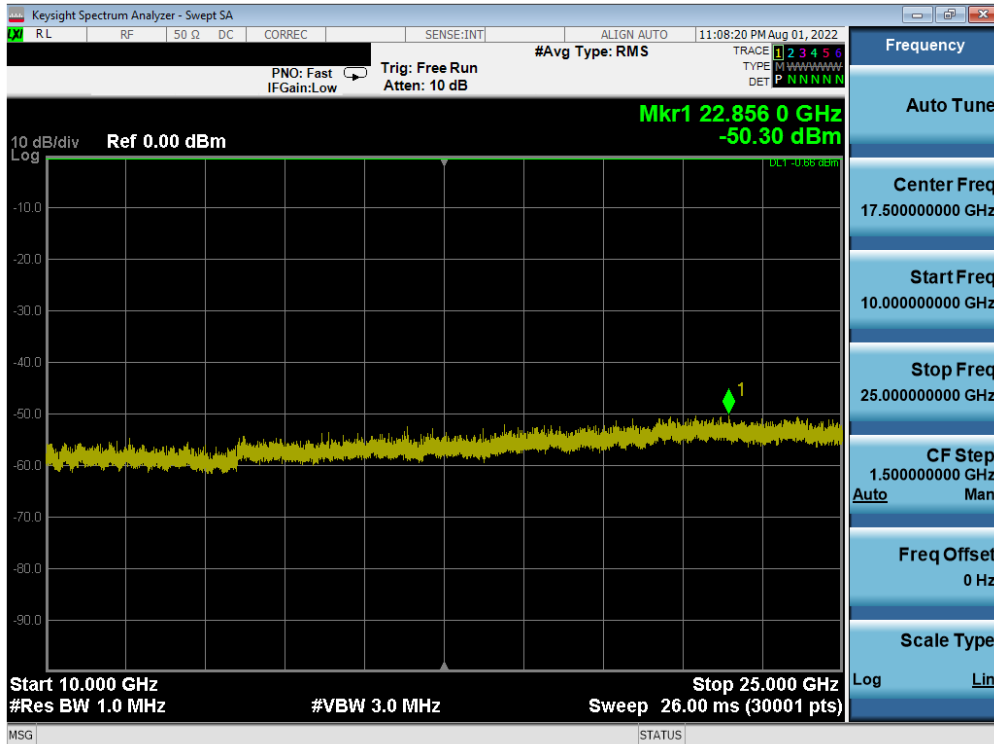
Plot 7-74. Conducted Spurious Plot Antenna WF8 (Bluetooth (LE), 1Mbps, ePA – Ch. 39)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Antenna WF7

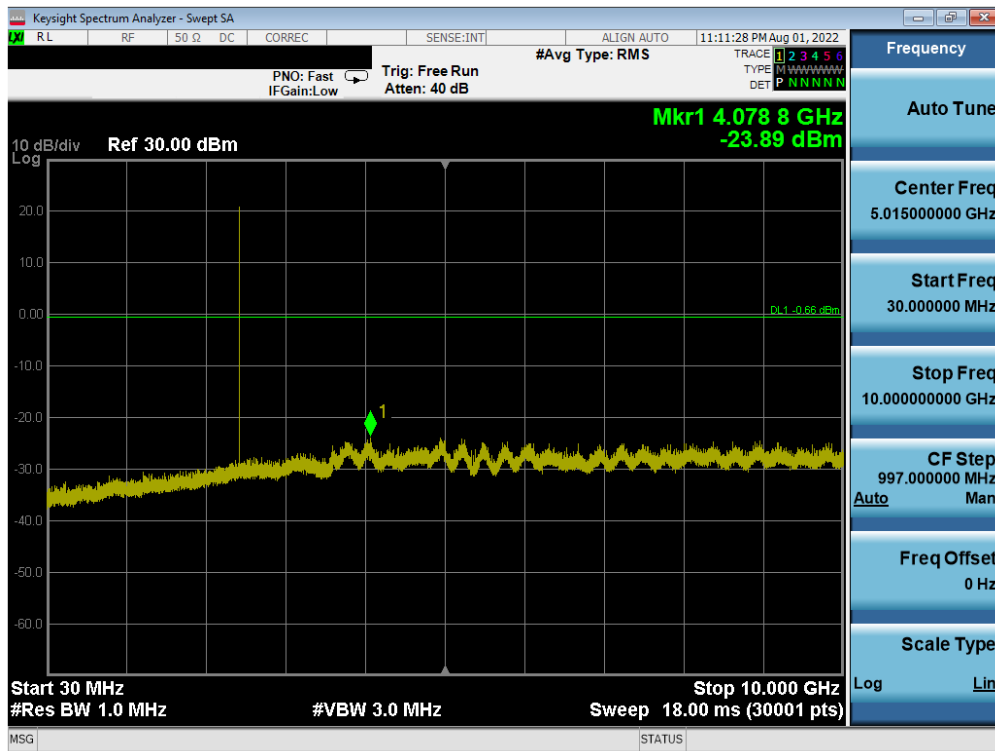


Plot 7-75. Conducted Spurious Plot Antenna WF7 (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

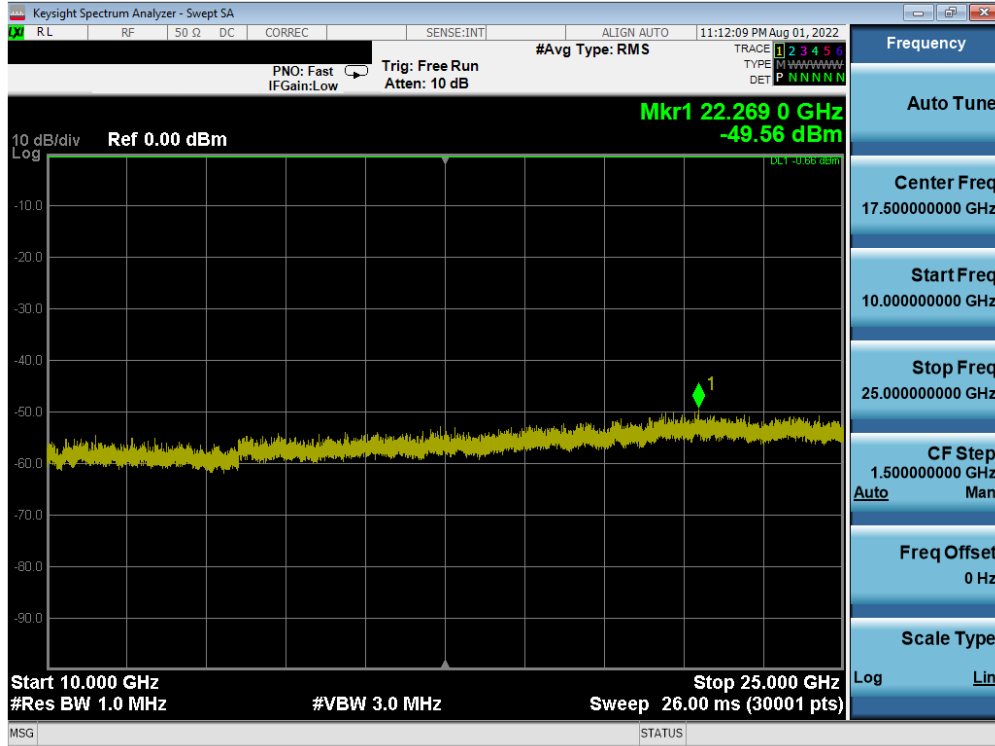


Plot 7-76. Conducted Spurious Plot Antenna WF7 (Bluetooth (LE), 1Mbps, ePA – Ch. 0)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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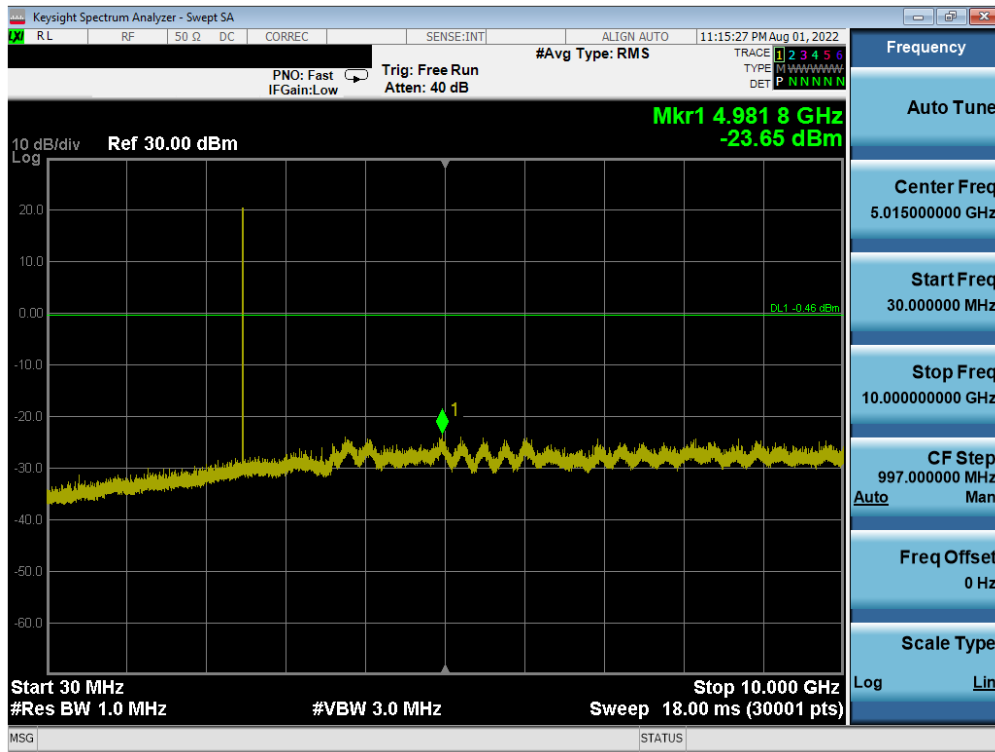


Plot 7-77. Conducted Spurious Plot Antenna WF7 (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

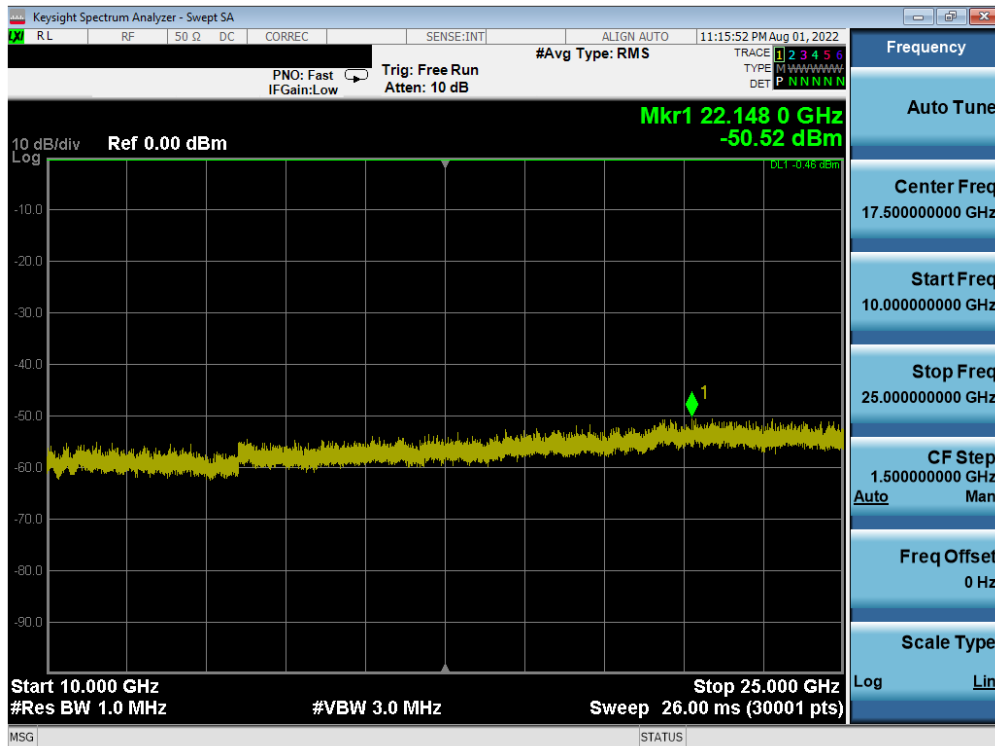


Plot 7-78. Conducted Spurious Plot Antenna WF7 (Bluetooth (LE), 1Mbps, ePA – Ch. 19)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-79. Conducted Spurious Plot Antenna WF7 (Bluetooth (LE), 1Mbps, ePA – Ch. 39)



Plot 7-80. Conducted Spurious Plot Antenna WF7 (Bluetooth (LE), 1Mbps, ePA – Ch. 39)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical 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 [$\mu\text{V/m}$]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-13. Radiated Limits

Test Procedures Used

ANSI C63.10-2013 – Subclause 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 $\geq 2 \times \text{span/RBW}$)
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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V 10.5 12/15/2021

Test Setup

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

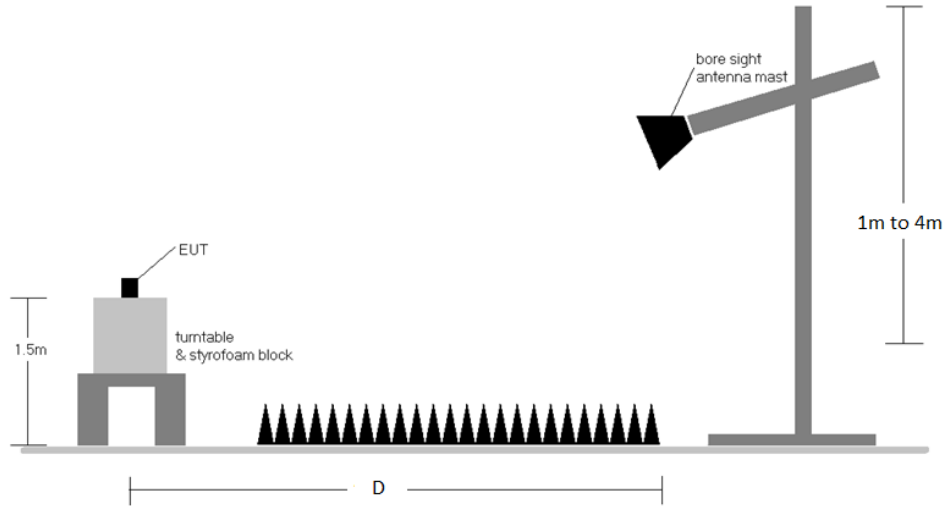


Figure 7-6. Radiated Test Setup >1GHz

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 modulation, antenna (including TxBF mode) and power schemes have been tested on the unit and only worst case configuration is reported.

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Sample Calculations

Determining Spurious Emissions Levels

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

Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 7.7.1 was calculated using the formula:

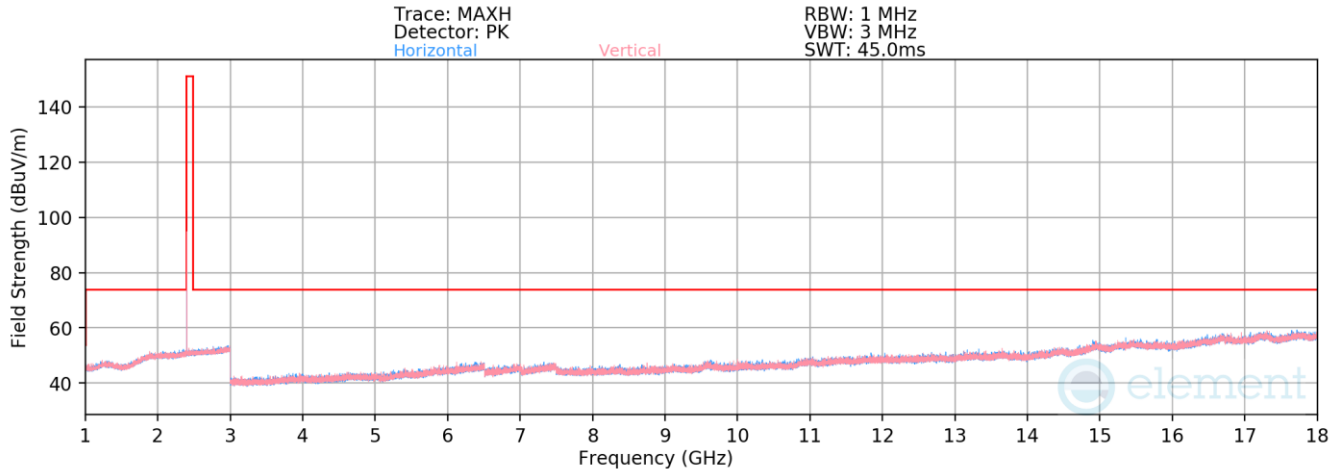
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

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Radiated Spurious Emission Measurements (1 – 18GHz)

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

Antenna WF8



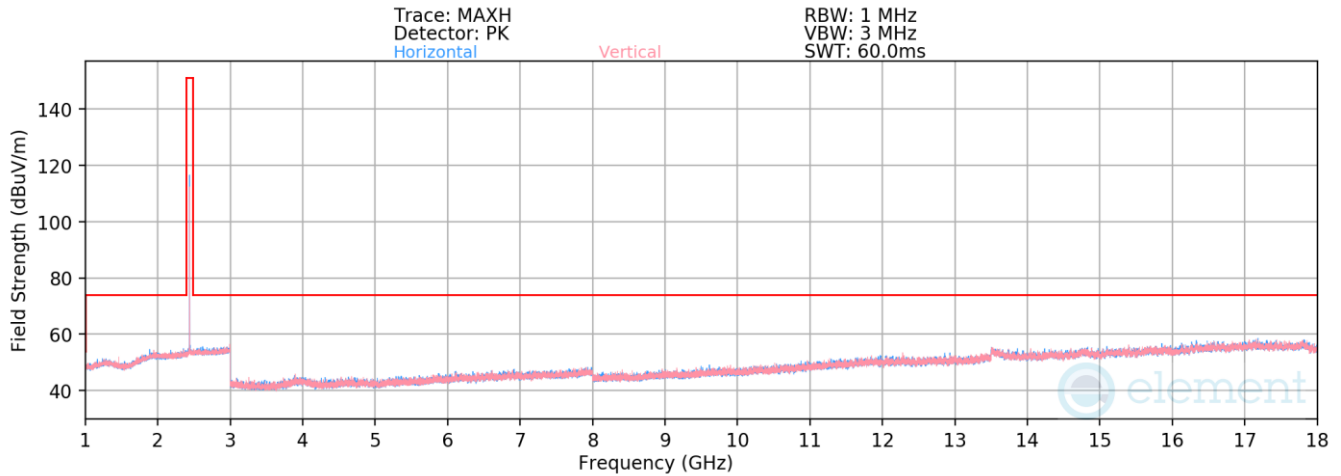
Plot 7-81. Radiated Spurious Emissions 1-18GHz Antenna WF8 (1Mbps, ePA – Ch. 0)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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	-	-	-76.36	4.71	35.35	53.98	-18.62
4804.00	Peak	H	-	-	-64.81	4.71	46.90	73.98	-27.07
12010.00	Avg	H	-	-	-76.55	13.17	43.62	53.98	-10.36
12010.00	Peak	H	-	-	-64.22	13.17	55.95	73.98	-18.03

Table 7-14. Radiated Spurious Emission Measurements Antenna WF8

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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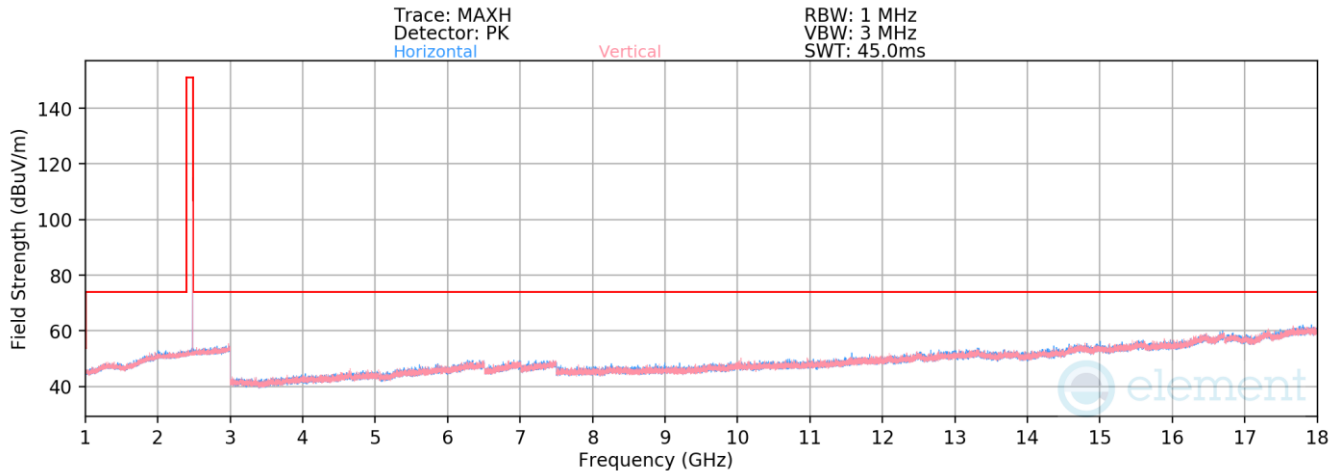
Plot 7-82. Radiated Spurious Emissions 1-18GHz Antenna WF8 (1Mbps, ePA – Ch. 19)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4880.00	Avg	H	-	-	-76.50	4.51	35.01	53.98	-18.97
4880.00	Peak	H	-	-	-65.51	4.51	46.00	73.98	-27.98
7320.00	Avg	H	-	-	-76.01	8.26	39.25	53.98	-14.73
7320.00	Peak	H	-	-	-64.70	8.26	50.56	73.98	-23.42
12200.00	Avg	H	-	-	-79.29	13.22	40.93	53.98	-13.05
12200.00	Peak	H	-	-	-67.64	13.22	52.58	73.98	-21.40

Table 7-15. Radiated Spurious Emission Measurements Antenna WF8

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-83. Radiated Spurious Emissions 1-18GHz Antenna WF8 (1Mbps ePA – Ch. 39)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4960.00	Avg	H	-	-	-80.56	6.45	32.89	53.98	-21.09
4960.00	Peak	H	-	-	-68.27	6.45	45.18	73.98	-28.80
7440.00	Avg	H	-	-	-81.34	9.93	35.59	53.98	-18.39
7440.00	Peak	H	-	-	-69.18	9.93	47.75	73.98	-26.23
12400.00	Avg	H	-	-	-84.50	15.14	37.64	53.98	-16.34
12400.00	Peak	H	-	-	-73.13	15.14	49.01	73.98	-24.97

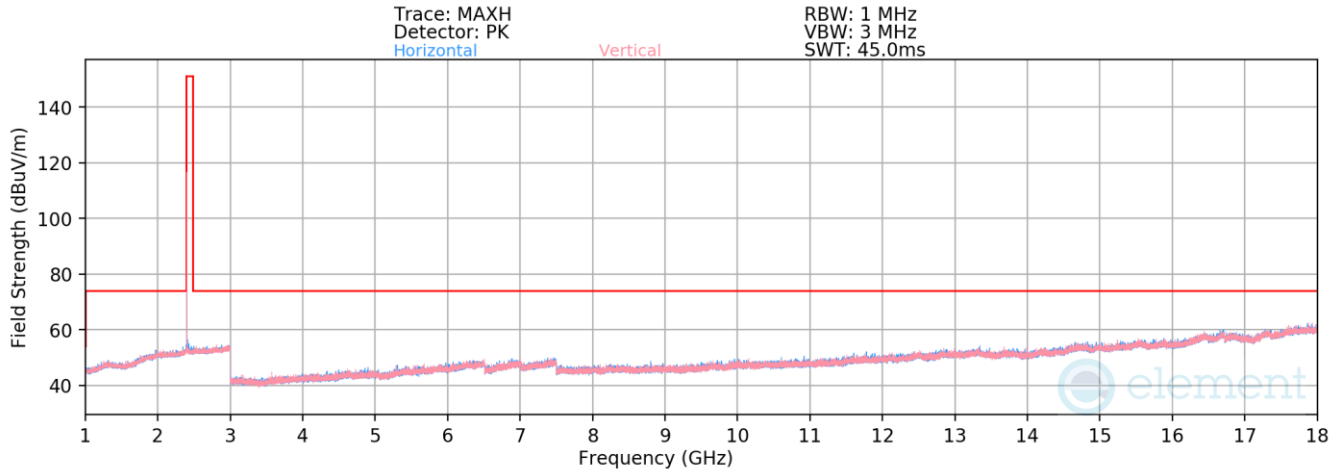
Table 7-16. Radiated Spurious Emission Measurements Antenna WF8

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Radiated Spurious Emission Measurements (1 – 18GHz)

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

Antenna WF7



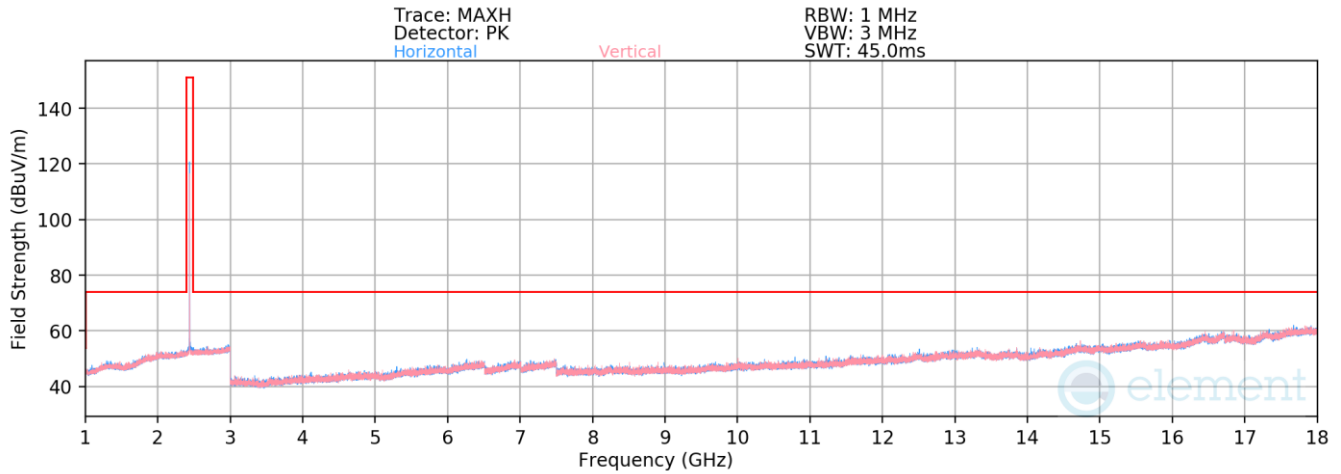
Plot 7-84. Radiated Spurious Emissions 1-18GHz Antenna WF7 (1Mbps, ePA – Ch. 0)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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	-	-	-80.15	5.88	32.73	53.98	-21.25
4804.00	Peak	H	-	-	-68.50	5.88	44.38	73.98	-29.60
12010.00	Avg	H	-	-	-84.41	14.68	37.27	53.98	-16.70
12010.00	Peak	H	-	-	-73.37	14.68	48.31	73.98	-25.66

Table 7-17. Radiated Spurious Emission Measurements Antenna WF7

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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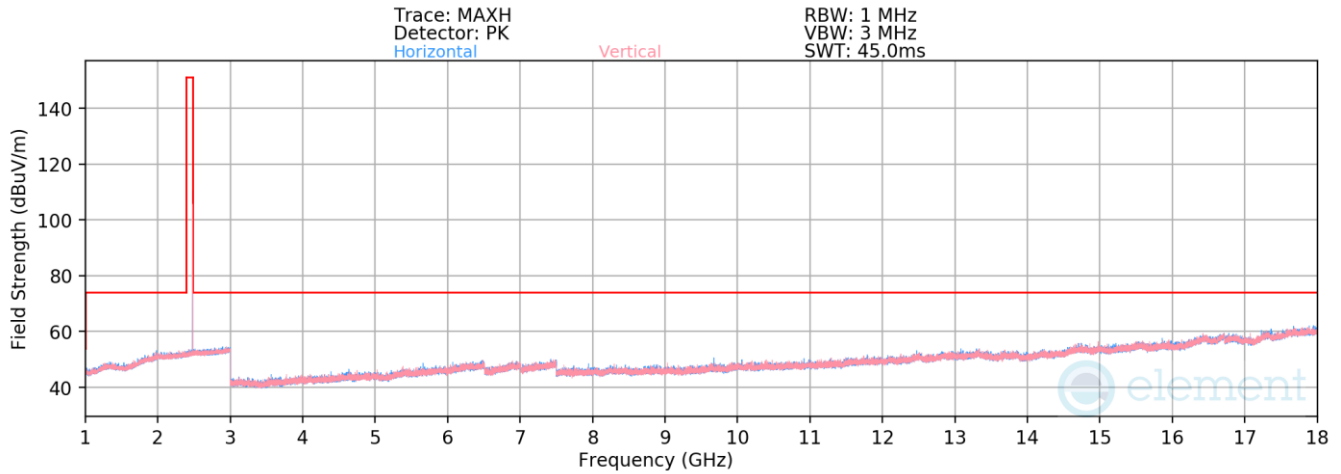
Plot 7-85. Radiated Spurious Emissions 1-18GHz Antenna WF7 (1Mbps, ePA – Ch. 19)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4880.00	Avg	H	-	-	-80.00	6.24	33.24	53.98	-20.74
4880.00	Peak	H	-	-	-68.99	6.24	44.25	73.98	-29.73
7320.00	Avg	H	-	-	-81.22	9.97	35.75	53.98	-18.23
7320.00	Peak	H	-	-	-69.32	9.97	47.65	73.98	-26.33
12200.00	Avg	H	-	-	-84.58	14.86	37.28	53.98	-16.70
12200.00	Peak	H	-	-	-73.16	14.86	48.70	73.98	-25.28

Table 7-18. Radiated Spurious Emission Measurements Antenna WF7

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Plot 7-86. Radiated Spurious Emissions 1-18GHz Antenna WF7 (1Mbps ePA – Ch. 39)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4960.00	Avg	H	-	-	-80.47	6.45	32.98	53.98	-21.00
4960.00	Peak	H	-	-	-69.27	6.45	44.18	73.98	-29.80
7440.00	Avg	H	-	-	-80.00	9.93	36.93	53.98	-17.05
7440.00	Peak	H	-	-	-68.21	9.93	48.72	73.98	-25.26
12400.00	Avg	H	-	-	-84.44	15.14	37.70	53.98	-16.28
12400.00	Peak	H	-	-	-73.06	15.14	49.08	73.98	-24.90

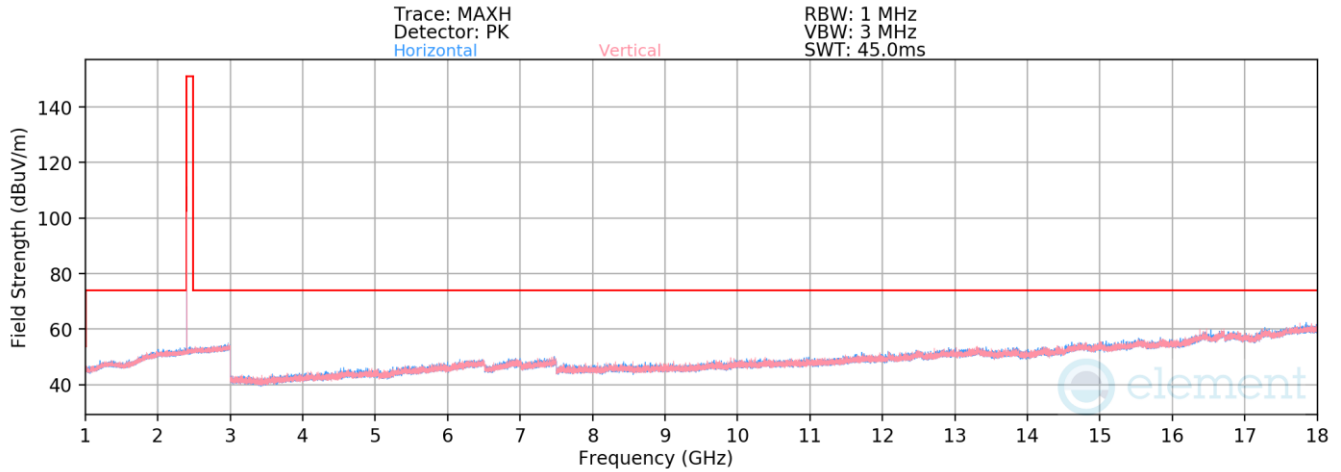
Table 7-19. Radiated Spurious Measurements Antenna WF7

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Radiated Spurious Emission Measurements (1-18GHz)

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

TxBF



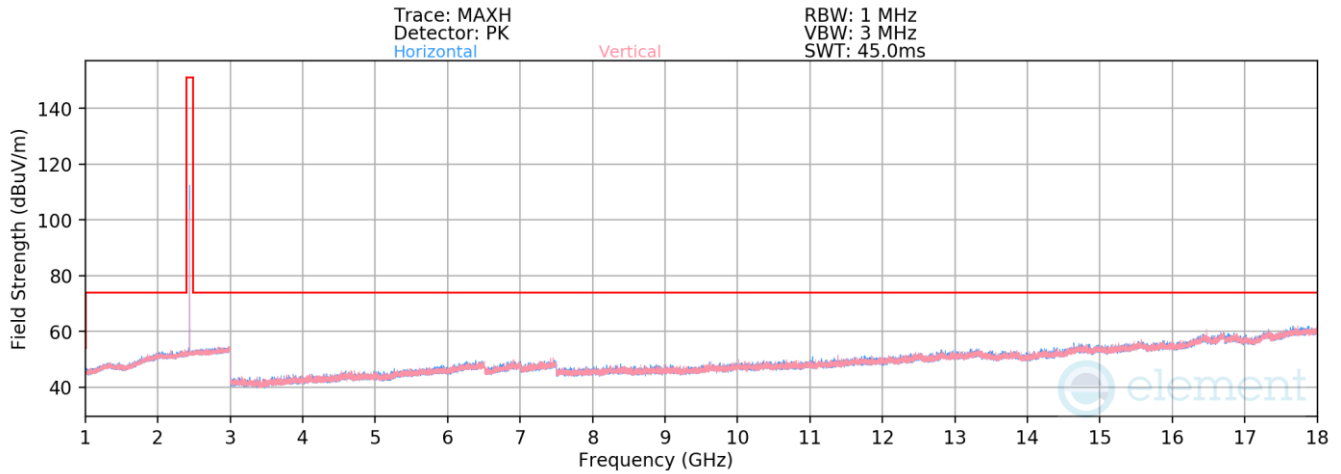
Plot 7-87. Radiated Spurious Emissions 1-18GHz TxBF (1Mbps, ePA – Ch. 0)

Bluetooth Mode:	LE
Data Rate:	1Mbps
Power Scheme	ePA
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	-	-	-79.96	5.88	32.92	53.98	-21.06
4804.00	Peak	H	-	-	-67.34	5.88	45.54	73.98	-28.44
12010.00	Avg	H	-	-	-84.36	14.68	37.32	53.98	-16.65
12010.00	Peak	H	-	-	-72.19	14.68	49.49	73.98	-24.48

Table 7-20. Radiated Spurious Emission Measurements TxBF

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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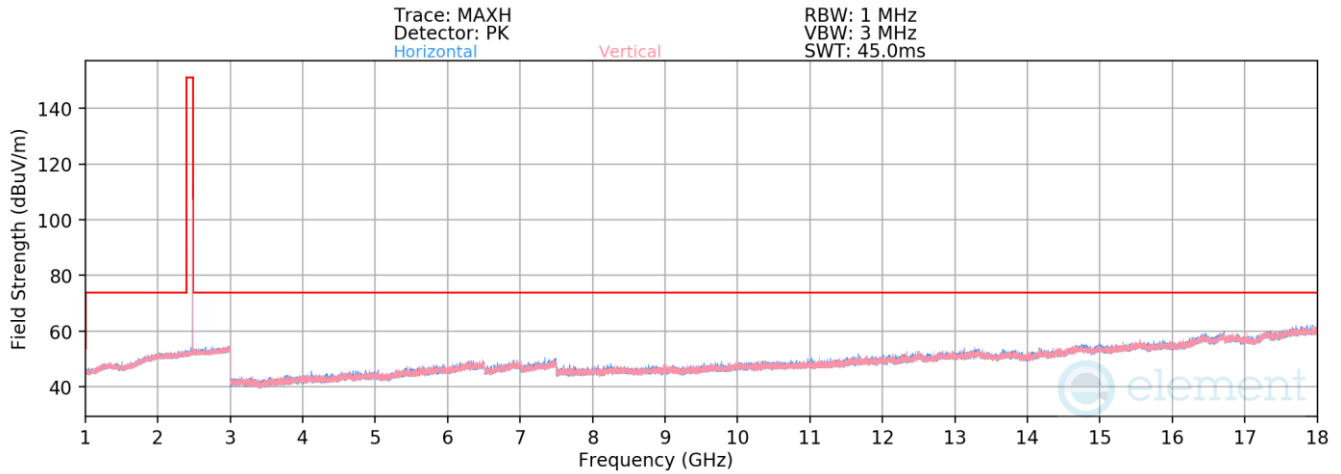
Plot 7-88. Radiated Spurious Emissions 1-18GHz TxBF (1Mbps, ePA – Ch. 19)

Bluetooth Mode: LE
 Data Rate: 1Mbps
 Power Scheme: ePA
 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 [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4880.00	Avg	H	-	-	-80.12	6.24	33.12	53.98	-20.86
4880.00	Peak	H	-	-	-68.11	6.24	45.13	73.98	-28.85
7320.00	Avg	H	-	-	-80.49	9.97	36.48	53.98	-17.50
7320.00	Peak	H	-	-	-68.24	9.97	48.73	73.98	-25.25
12200.00	Avg	H	-	-	-84.57	14.86	37.29	53.98	-16.69
12200.00	Peak	H	-	-	-73.48	14.86	48.38	73.98	-25.60

Table 7-21. Radiated Spurious Emission Measurements TxBF

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-89. Radiated Spurious Emissions 1-18GHz TxBF (1Mbps ePA – Ch. 39)

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

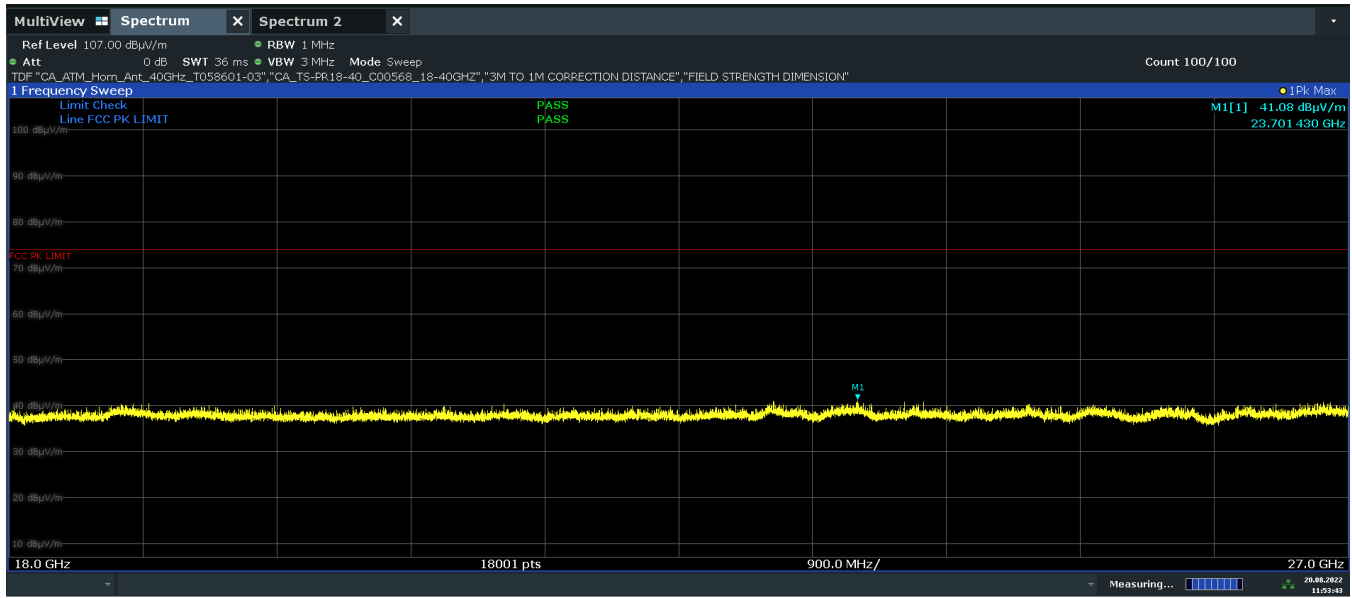
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4960.00	Avg	H	-	-	-80.26	6.45	33.19	53.98	-20.79
4960.00	Peak	H	-	-	-68.96	6.45	44.49	73.98	-29.49
7440.00	Avg	H	-	-	-79.97	9.93	36.96	53.98	-17.02
7440.00	Peak	H	-	-	-67.88	9.93	49.05	73.98	-24.93
12400.00	Avg	H	-	-	-84.36	15.14	37.78	53.98	-16.20
12400.00	Peak	H	-	-	-73.31	15.14	48.83	73.98	-25.15

Table 7-22. Radiated Spurious Emission Measurements TxBF

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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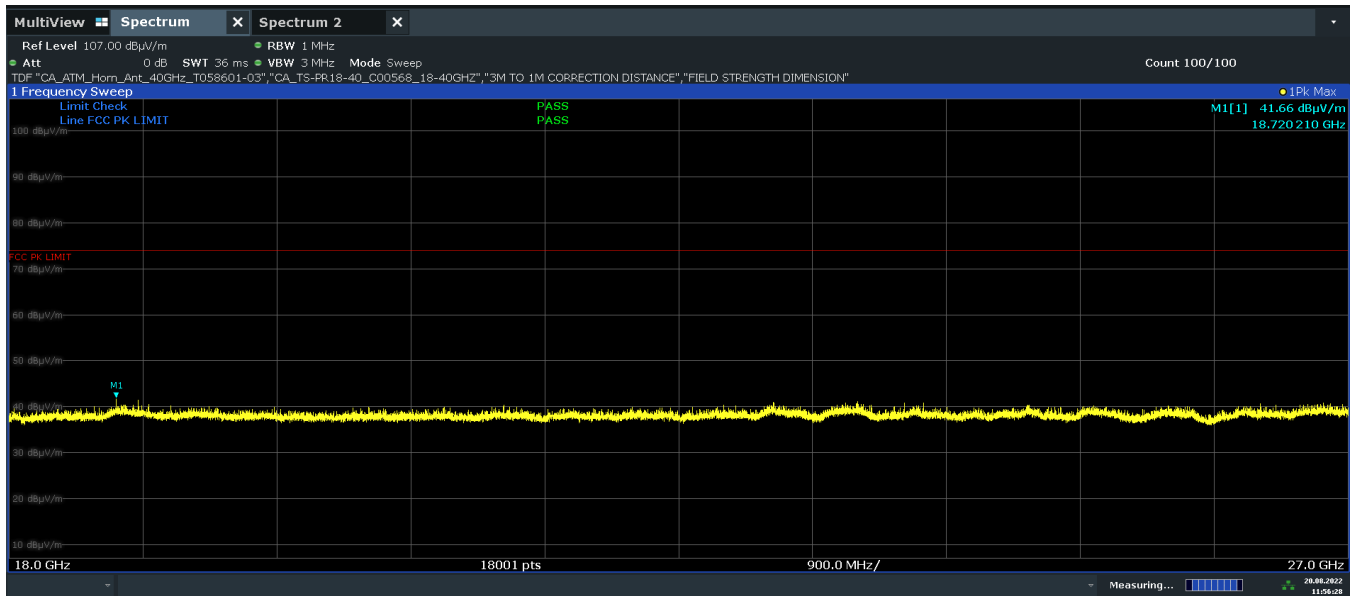


Radiated Spurious Emission Measurements (Above 18GHz) \$15.205 \$15.209; RSS-Gen [8.9]



11:53:44 20.08.2022

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



11:56:28 20.08.2022

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

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 83 of 104

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7.7.1 Radiated Restricted Band Edge Measurements

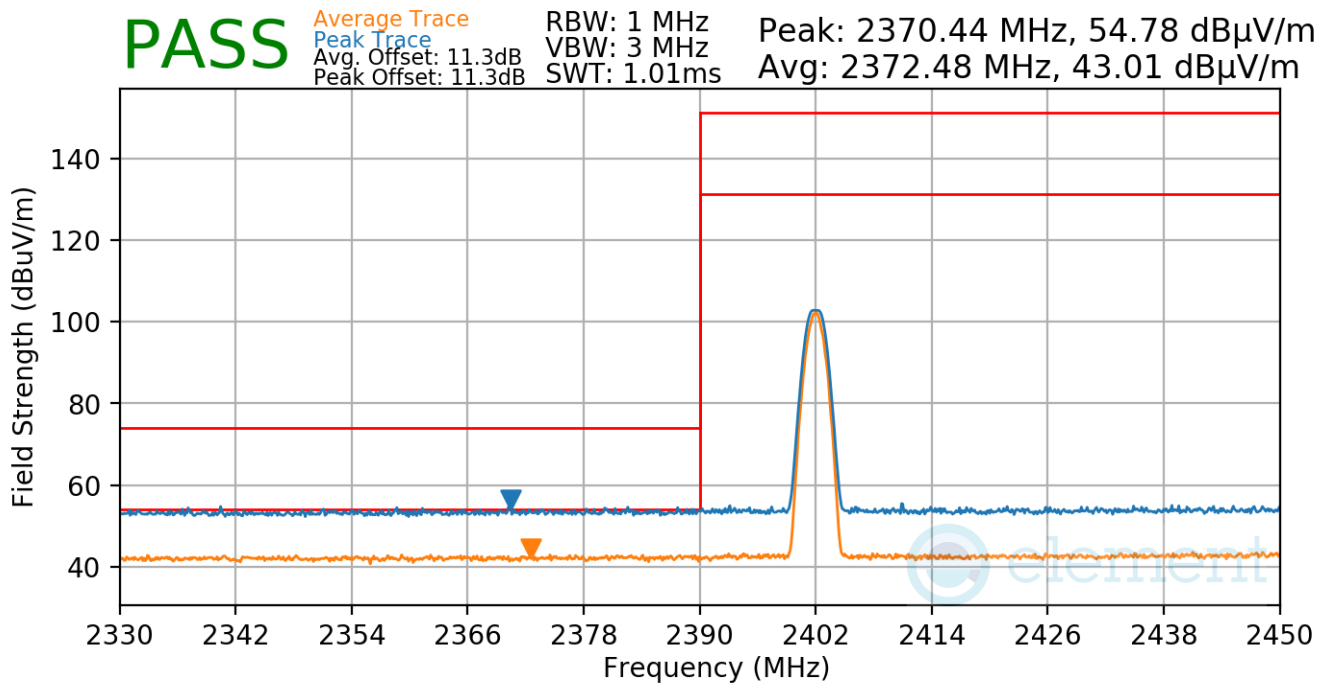
§15.205 §15.209; RSS-Gen [8.9]

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 WF8

Bluetooth Mode:	LE
Data Rate:	1Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2402MHz
Channel:	0



Plot 7-92. Radiated Restricted Lower Band Edge Measurement Antenna WF8 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 84 of 104

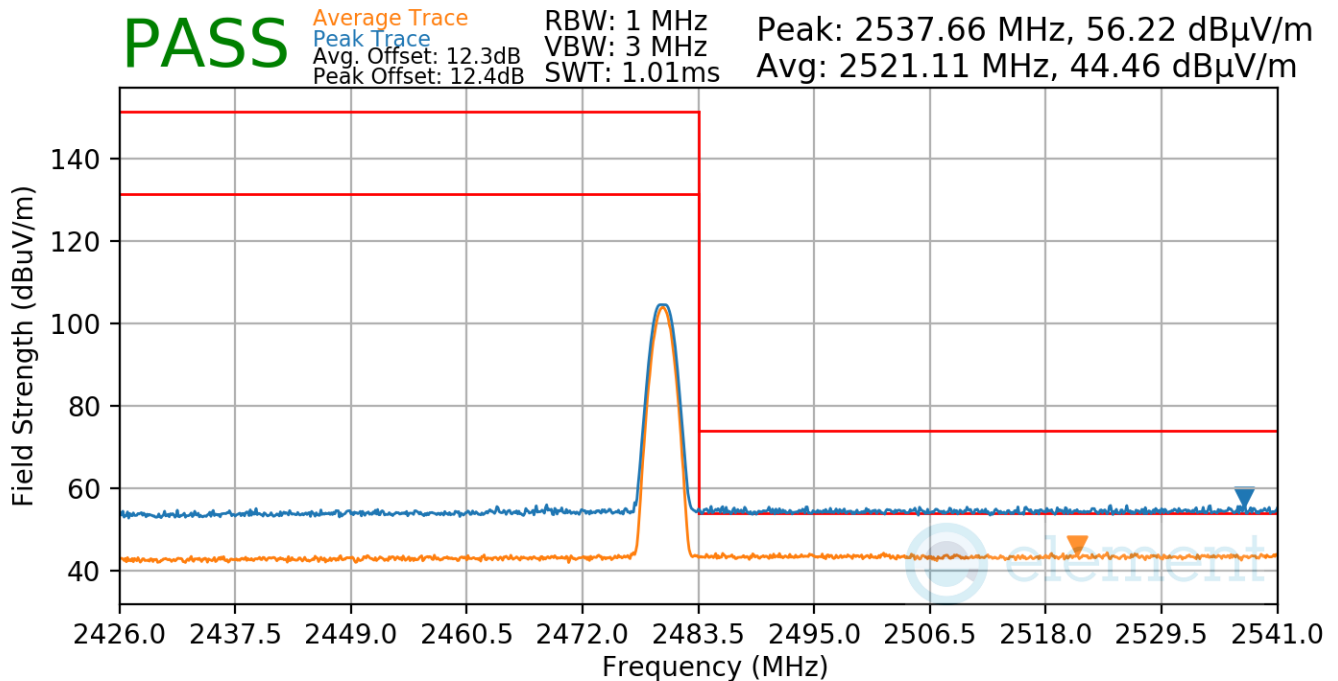
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>1Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2480MHz</u>
Channel:	<u>39</u>



Plot 7-93. Radiated Restricted Upper Band Edge Measurement Antenna WF8 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 85 of 104

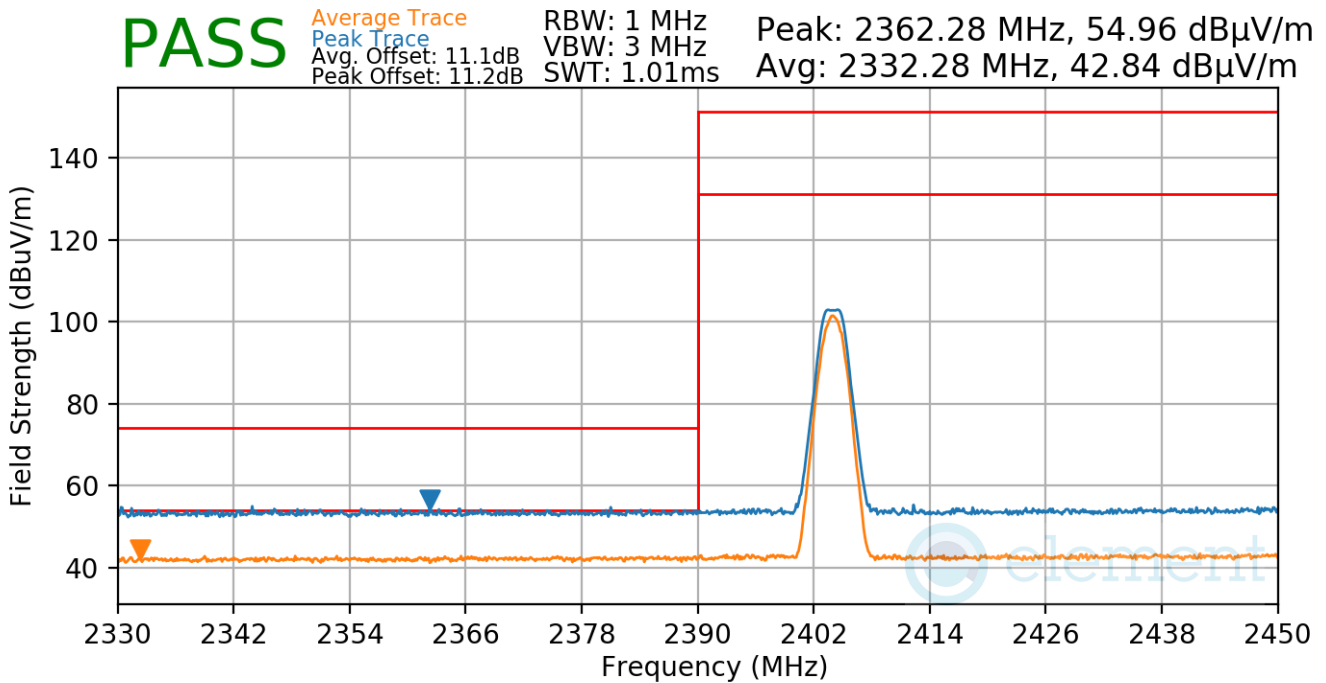
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>2Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2404MHz</u>
Channel:	<u>1</u>



Plot 7-94. Radiated Restricted Lower Band Edge Measurement Antenna WF8 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 86 of 104

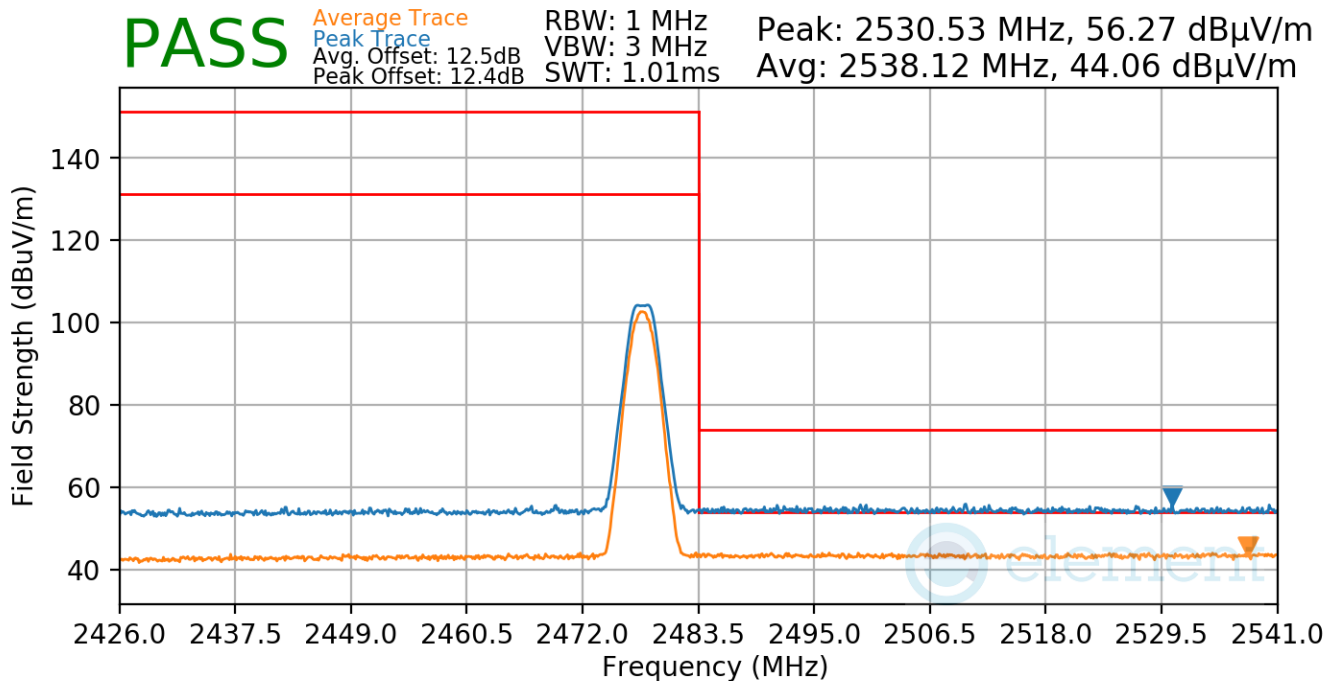
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>2Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2478MHz</u>
Channel:	<u>38</u>



Plot 7-95. Radiated Restricted Upper Band Edge Measurement Antenna WF8 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 87 of 104

Radiated Restricted Band Edge Measurements

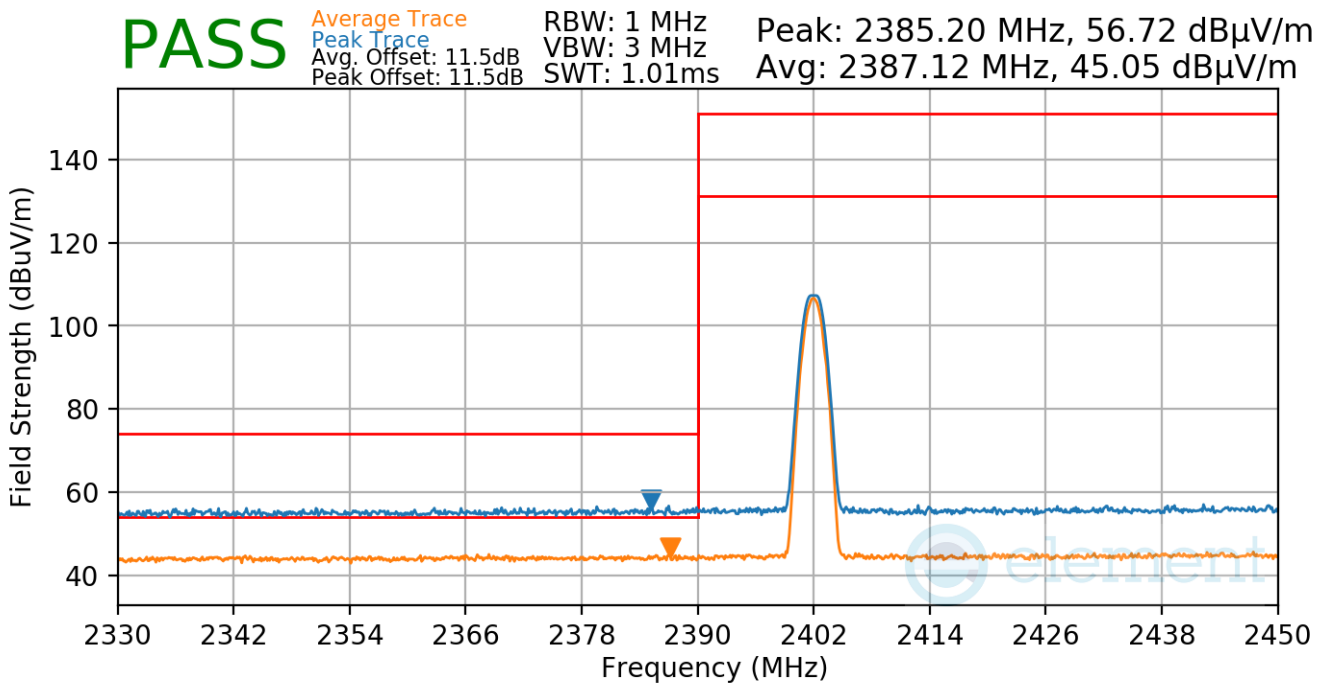
§15.205 §15.209; RSS-Gen [8.9]

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 WF7

Bluetooth Mode:	<u>LE</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 WF7 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 88 of 104

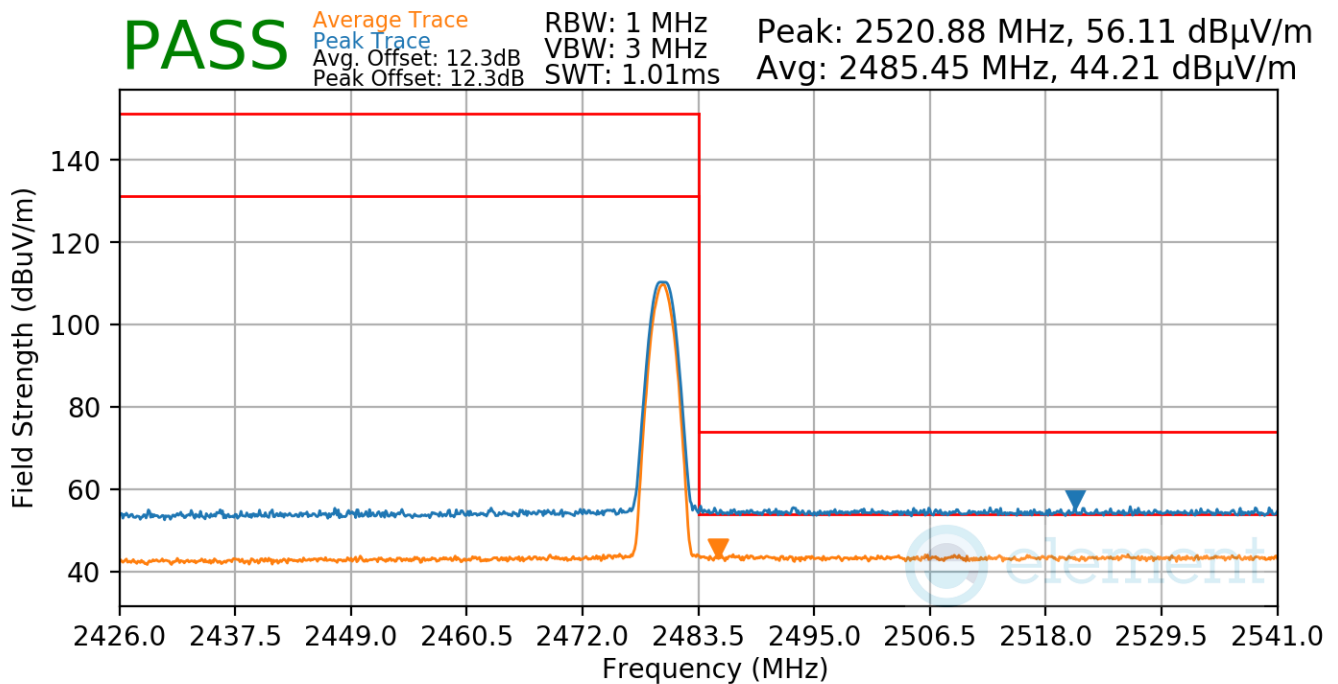
Radiated Restricted Band Edge Measurements

§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
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 WF7 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 89 of 104

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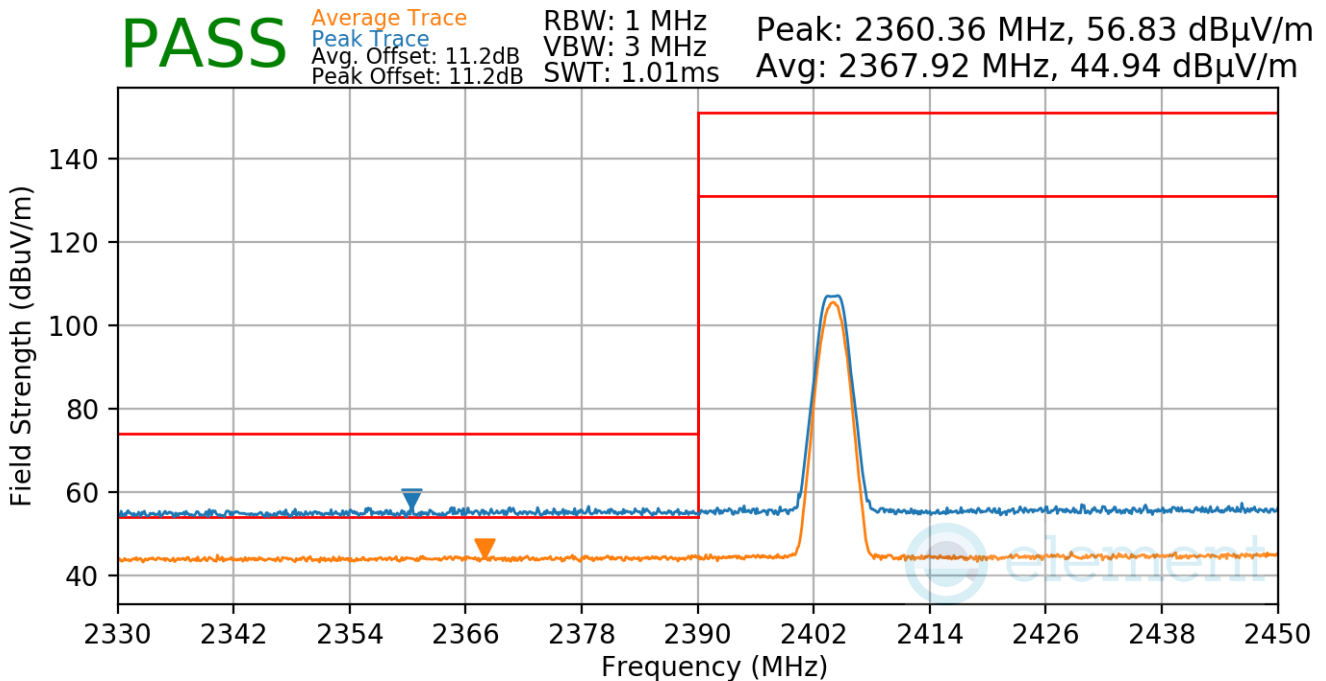
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>2Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2404MHz</u>
Channel:	<u>1</u>



Plot 7-98. Radiated Restricted Lower Band Edge Measurement Antenna WF7 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 90 of 104

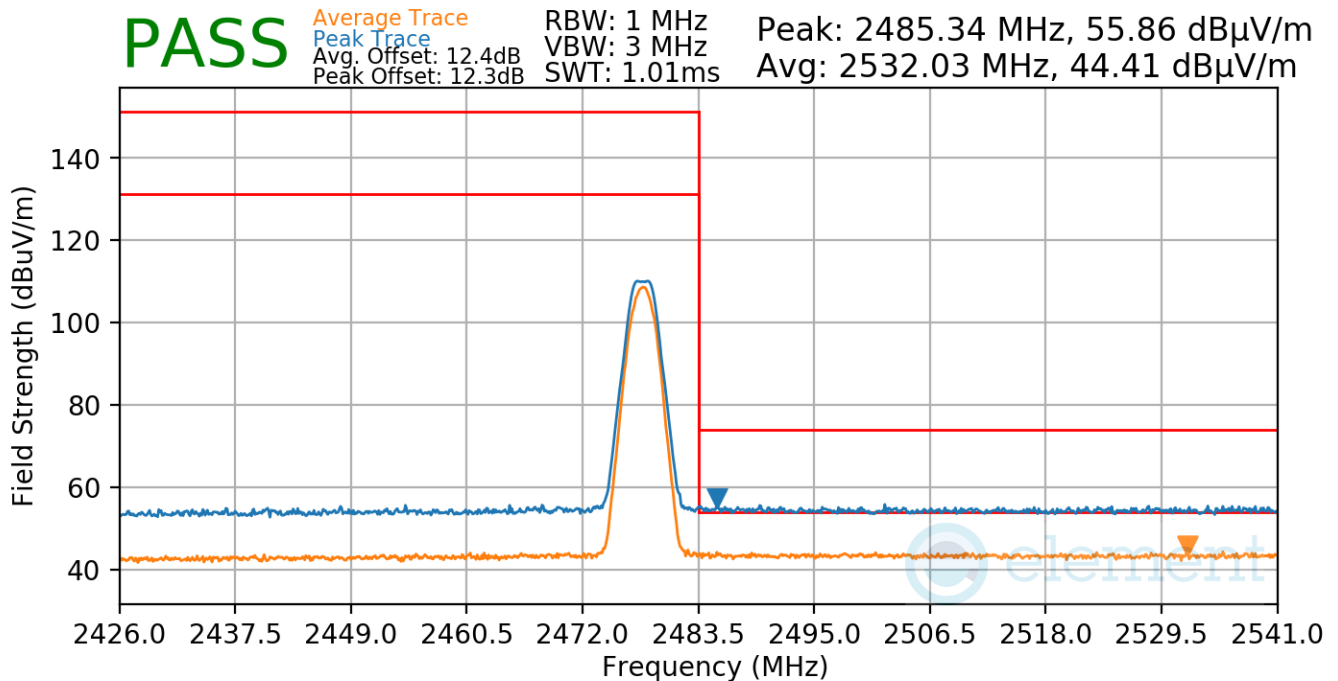
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>2Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2478MHz</u>
Channel:	<u>38</u>



Plot 7-99. Radiated Restricted Upper Band Edge Measurement Antenna WF7 (Average & Peak)

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Radiated Restricted Band Edge Measurements

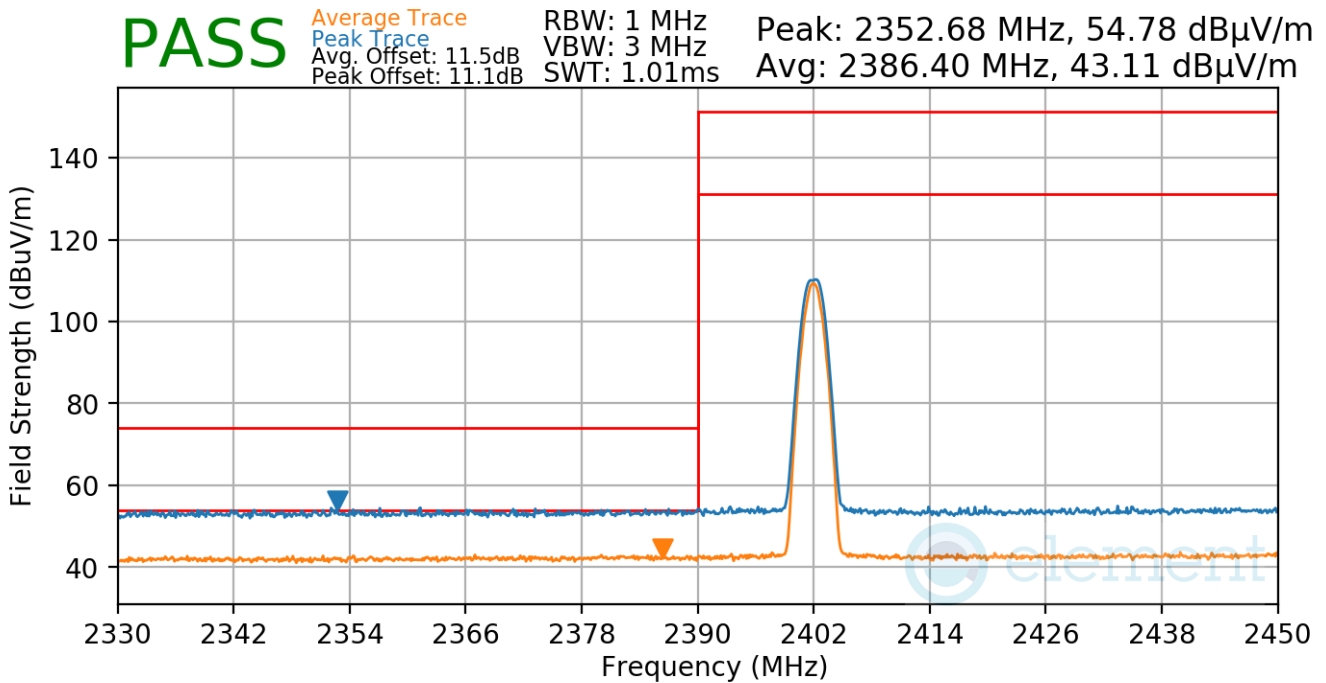
§15.205 §15.209; RSS-Gen [8.9]

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

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

TxBF

Bluetooth Mode:	LE
Data Rate:	1Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2402MHz
Channel:	0



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

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 92 of 104

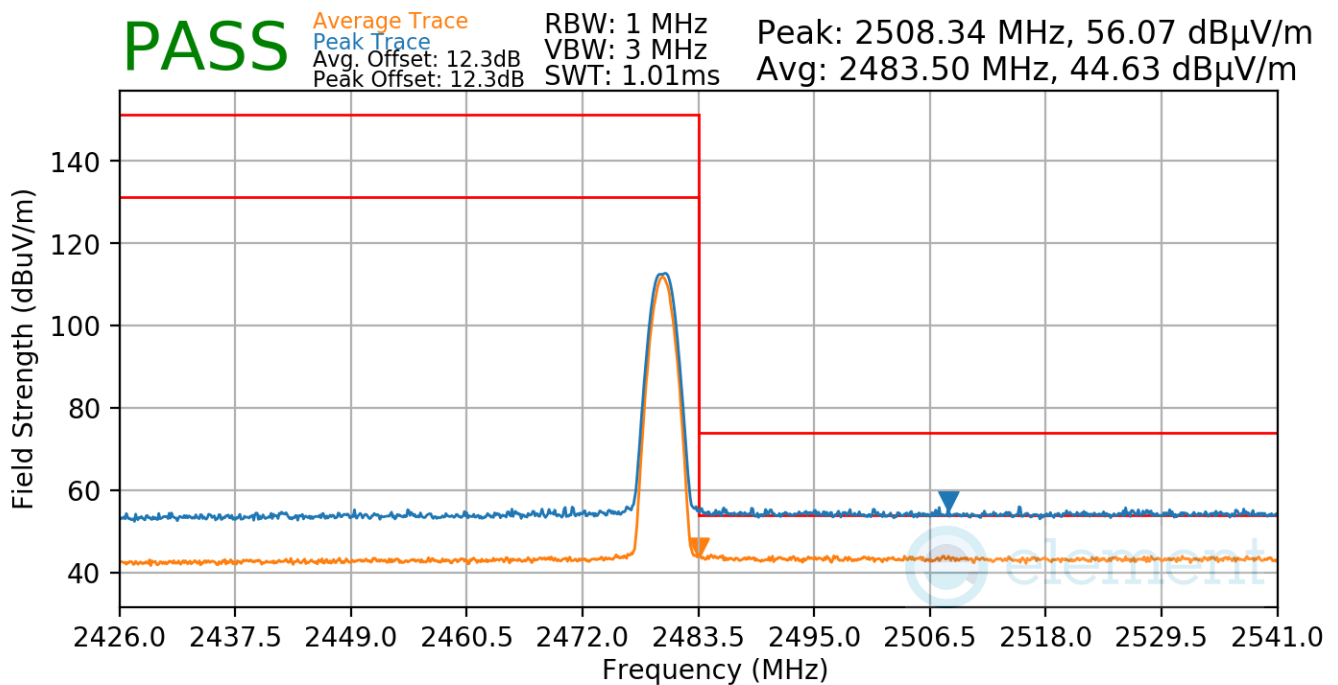
Radiated Restricted Band Edge Measurements

§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
Data Rate:	1Mbps
Power Scheme:	ePA
Measurement Distance:	3 Meters
Operating Frequency:	2480MHz
Channel:	39



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

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 93 of 104	

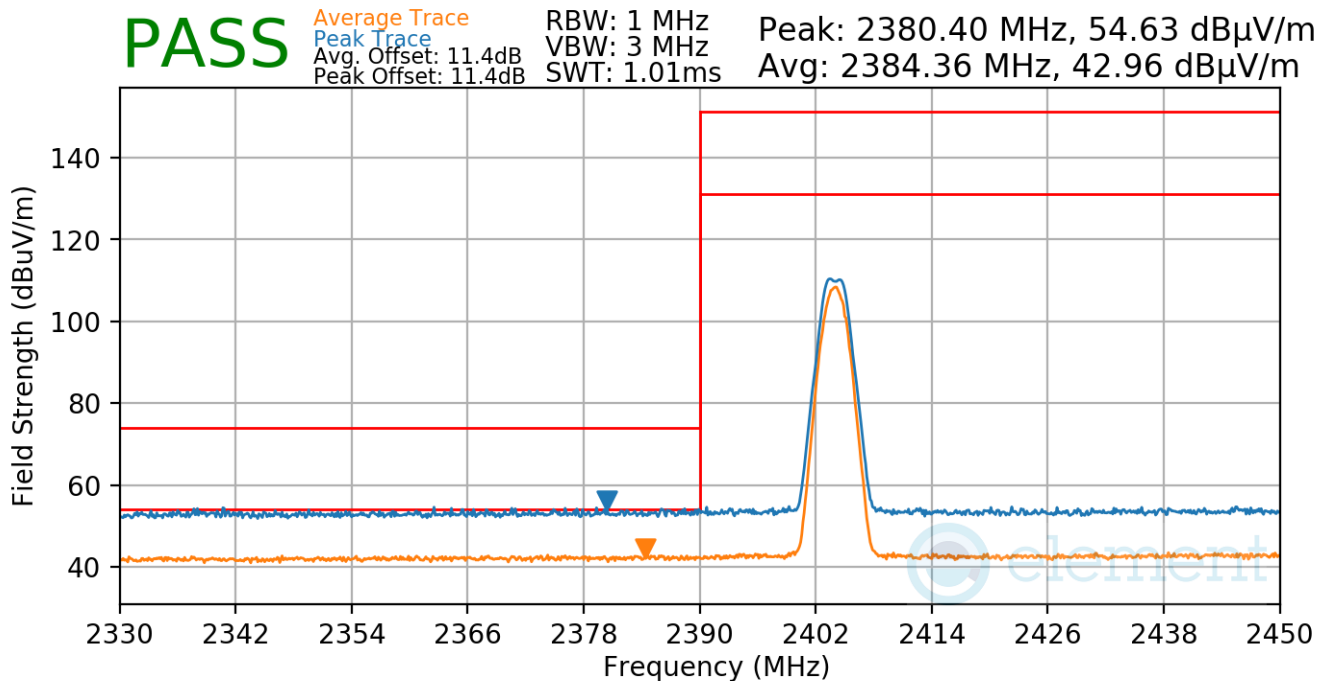
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>2Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2404MHz</u>
Channel:	<u>1</u>



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

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 94 of 104	

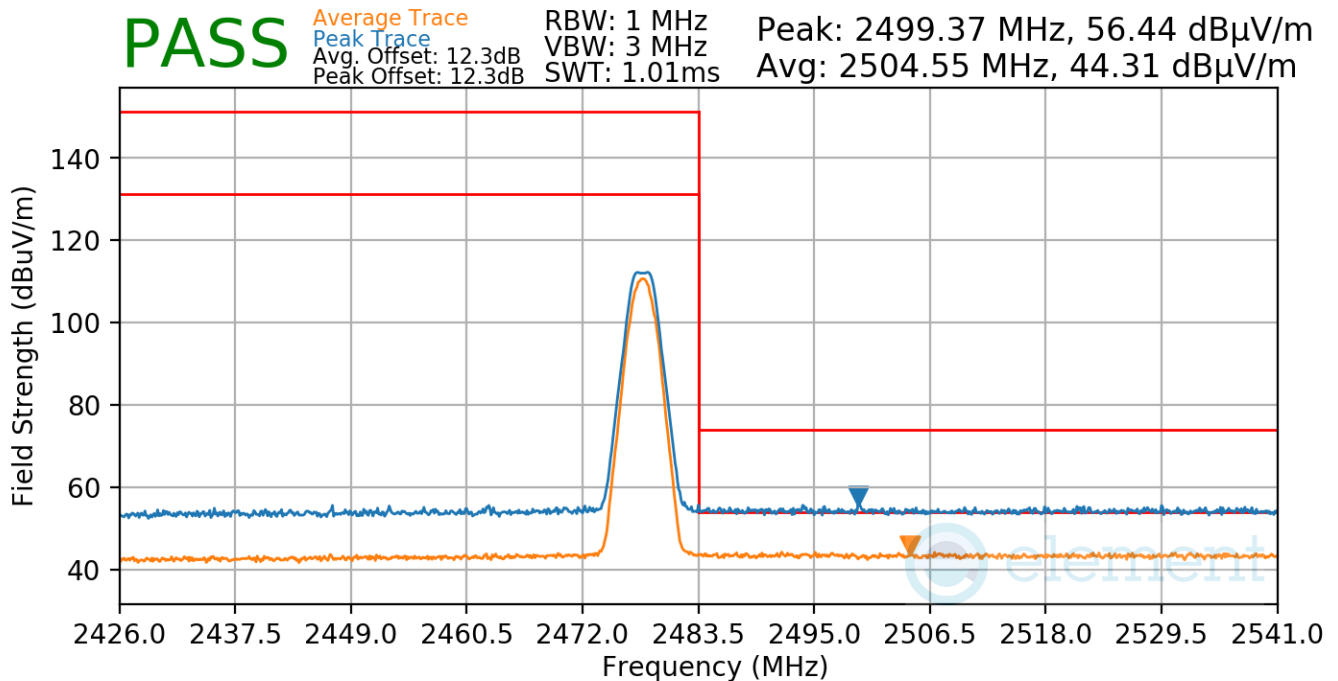
Radiated Restricted Band Edge Measurements

§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:	<u>LE</u>
Data Rate:	<u>2Mbps</u>
Power Scheme:	<u>ePA</u>
Measurement Distance:	<u>3 Meters</u>
Operating Frequency:	<u>2478MHz</u>
Channel:	<u>38</u>



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

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 95 of 104

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 7-23 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [$\mu\text{V/m}$]	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

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Test Setup

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

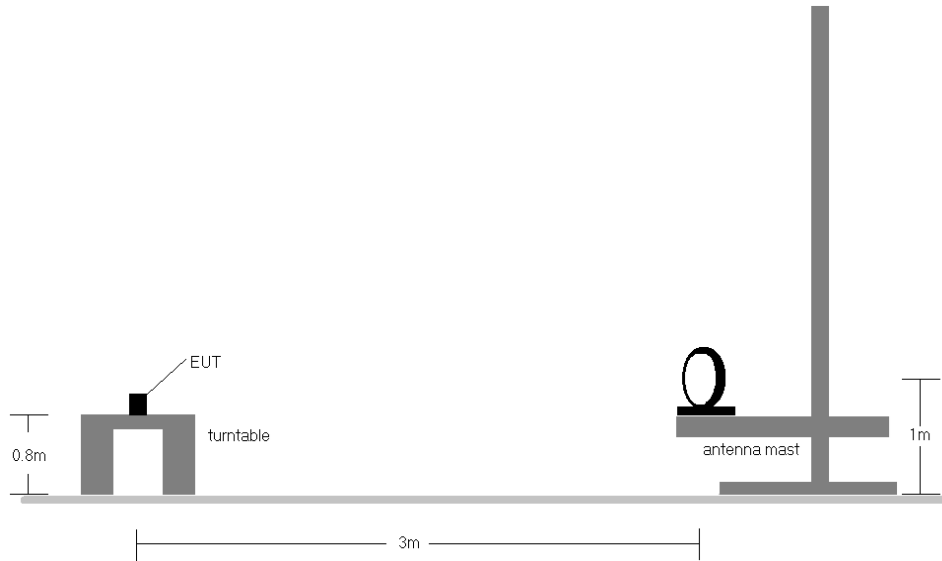


Figure 7-7. Radiated Test Setup < 30MHz

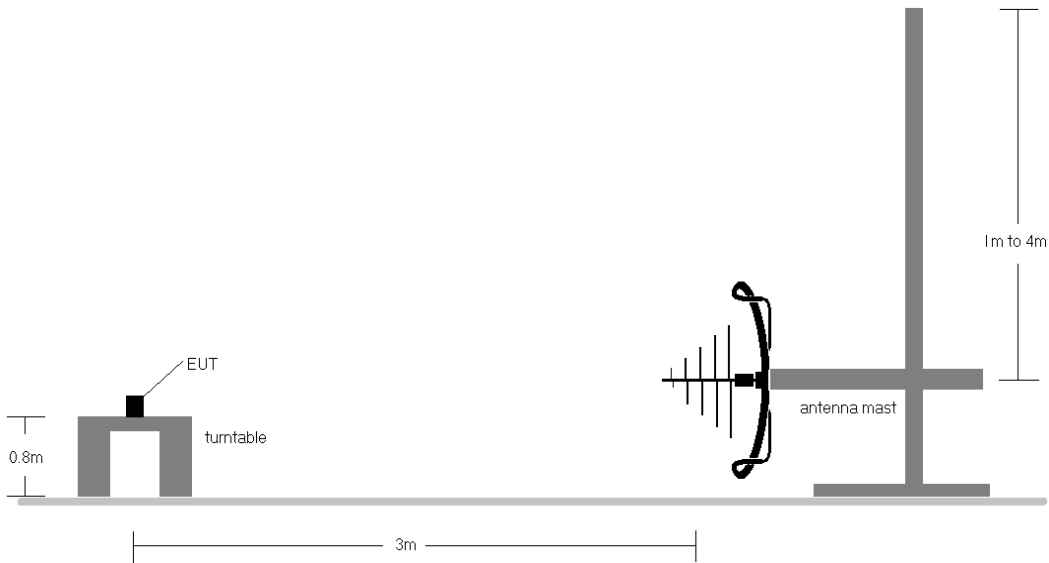


Figure 7-8. Radiated Test Setup < 1GHz

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen(8.10) are below the limit shown in Table 7-23.
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. All supported modulation, antenna (including TxBF mode) and power schemes have been tested on the unit and only worst case configuration is reported.
10. 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

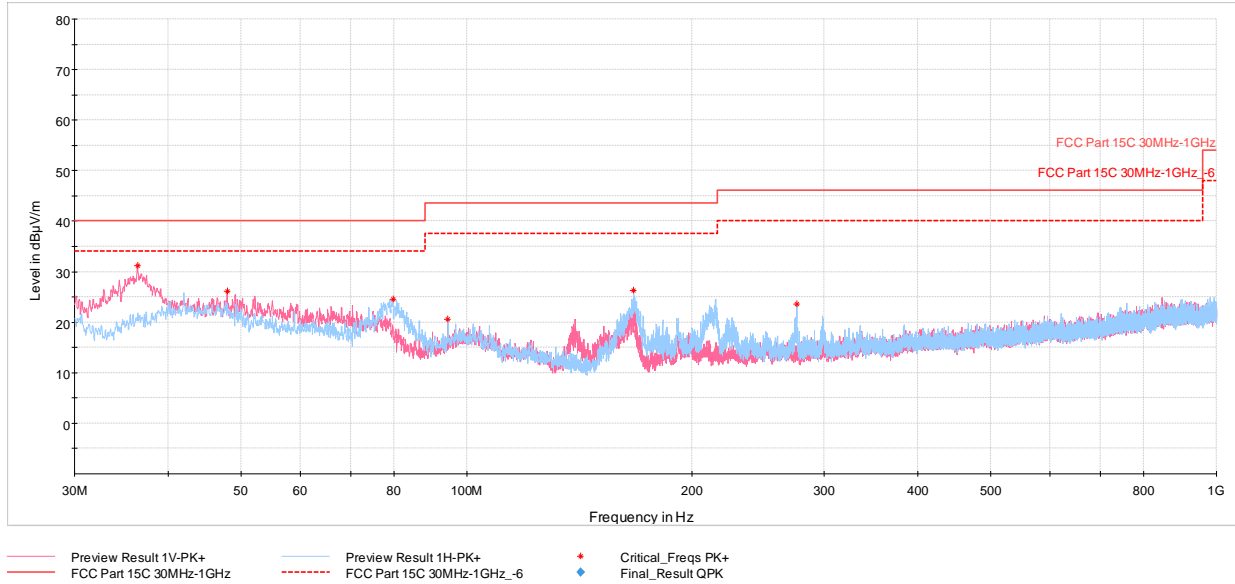
- Field Strength Level $_{[dB\mu V/m]} = \text{Analyzer Level }_{[dBm]} + 107 + \text{AFCL }_{[dB/m]}$
- $\text{AFCL }_{[dB/m]} = \text{Antenna Factor }_{[dB/m]} + \text{Cable Loss }_{[dB]} - \text{Preamplifier Gain }_{[dB]}$
- $\text{Margin }_{[dB]} = \text{Field Strength Level }_{[dB\mu V/m]} - \text{Limit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

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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]
36.402	Max-Peak	V	100	309	-57.81	-18	31.19	40.00	-8.81
47.945	Max-Peak	V	100	289	-65.90	-15	26.10	40.00	-13.90
79.761	Max-Peak	H	200	298	-59.43	-23	24.57	40.00	-15.43
94.360	Max-Peak	V	200	74	-67.48	-19	20.52	43.52	-23.00
166.916	Max-Peak	H	100	169	-60.77	-20	26.23	43.52	-17.29
275.507	Max-Peak	H	100	141	-67.39	-16	23.61	46.02	-22.41

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

FCC ID: BCGA2759 IC: 579C-A2759		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 μ 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, 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.

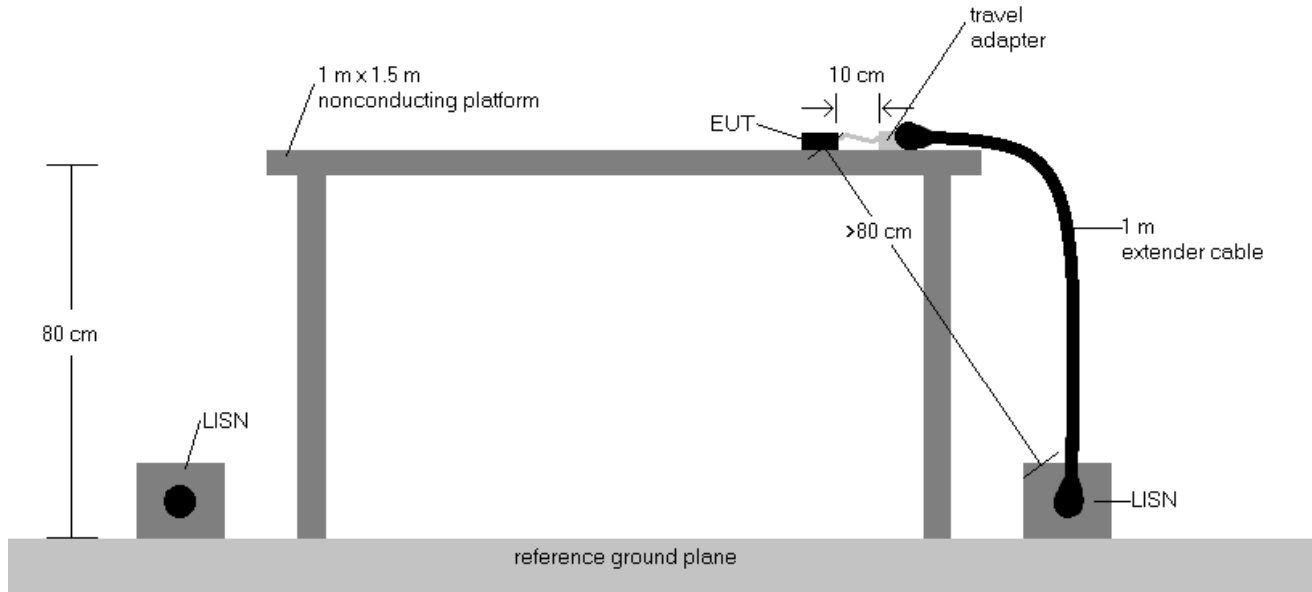


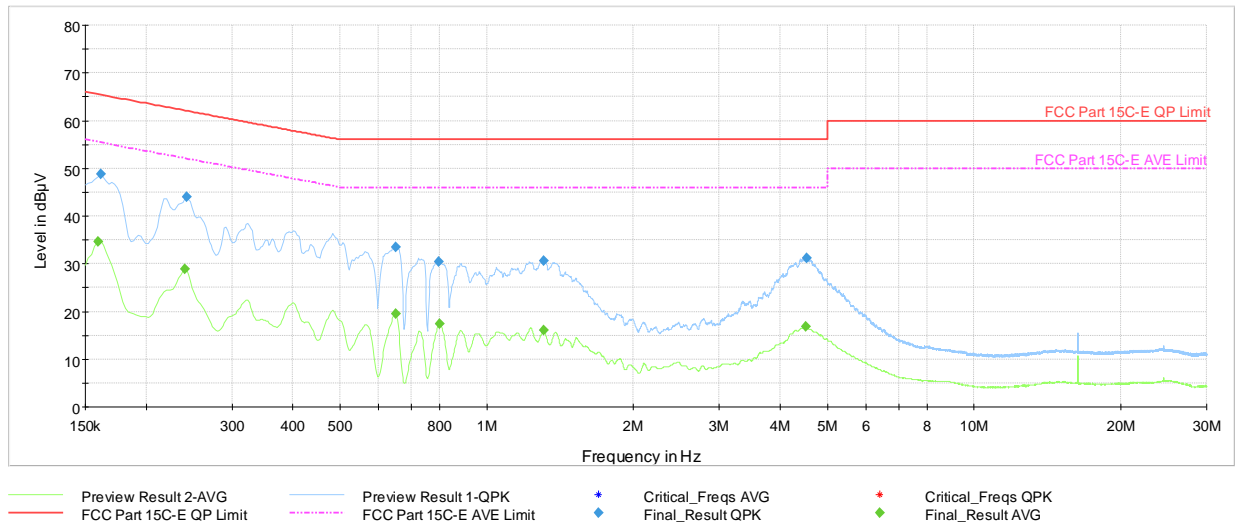
Figure 7-9. Test Instrument & Measurement Setup

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 a quasi peak and average detectors.
8. Deviations to the Specifications: None.

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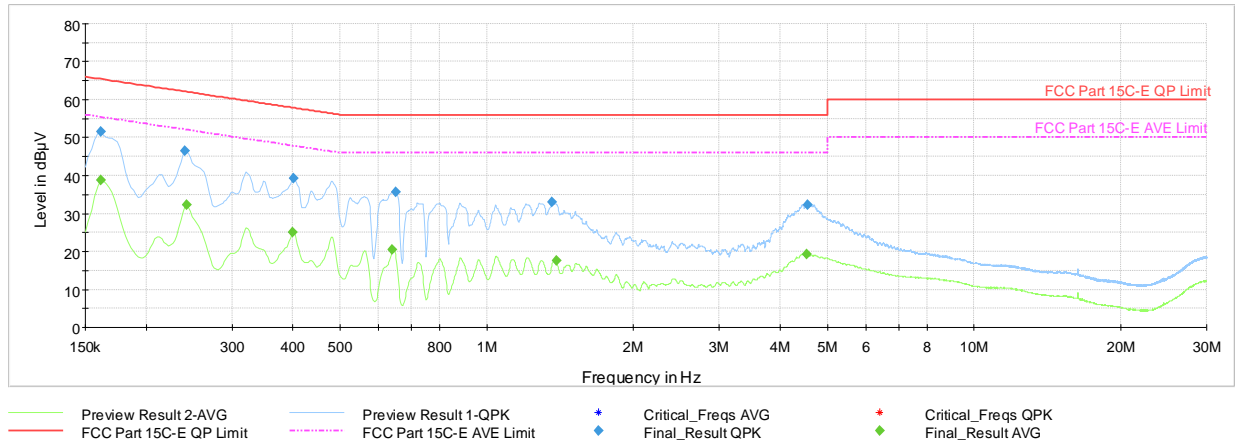


Plot 7-105. AC Line Conducted Plot with Bluetooth LE Tx BF (L1, 1Mbps ePA – Ch.19 with AC/DC Adapter)

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.159	FINAL	---	34.69	55.52	-20.83	L1	GND
0.161	FINAL	48.85	---	65.40	-16.55	L1	GND
0.240	FINAL	---	28.91	52.10	-23.19	L1	GND
0.242	FINAL	44.08	---	62.02	-17.94	L1	GND
0.650	FINAL	---	19.53	46.00	-26.47	L1	GND
0.650	FINAL	33.45	---	56.00	-22.55	L1	GND
0.796	FINAL	30.40	---	56.00	-25.60	L1	GND
0.800	FINAL	---	17.34	46.00	-28.66	L1	GND
1.307	FINAL	30.60	---	56.00	-25.40	L1	GND
1.307	FINAL	---	16.10	46.00	-29.90	L1	GND
4.506	FINAL	---	16.78	46.00	-29.22	L1	GND
4.538	FINAL	31.19	---	56.00	-24.81	L1	GND

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

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Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device	Page 102 of 104	



Plot 7-106. AC Line Conducted Plot with Bluetooth LE Tx BF (N, 1Mbps ePA – Ch.19, with AC/DC Adapter)

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.161	FINAL	---	38.78	55.40	-16.62	N	GND
0.161	FINAL	51.53	---	65.40	-13.87	N	GND
0.240	FINAL	46.52	---	62.10	-15.58	N	GND
0.242	FINAL	---	32.22	52.02	-19.80	N	GND
0.400	FINAL	---	25.06	47.86	-22.80	N	GND
0.402	FINAL	39.22	---	57.81	-18.60	N	GND
0.641	FINAL	---	20.56	46.00	-25.44	N	GND
0.650	FINAL	35.57	---	56.00	-20.43	N	GND
1.361	FINAL	33.04	---	56.00	-22.96	N	GND
1.388	FINAL	---	17.57	46.00	-28.43	N	GND
4.535	FINAL	---	19.18	46.00	-26.82	N	GND
4.547	FINAL	32.31	---	56.00	-23.69	N	GND

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

FCC ID: BCGA2759 IC: 579C-A2759		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device		Page 103 of 104

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA2759 and IC: 579C-A2759** 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: BCGA2759 IC: 579C-A2759	 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090024-04.BCG	Test Dates: 07/21/2022-09/23/2022	EUT Type: Tablet Device
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