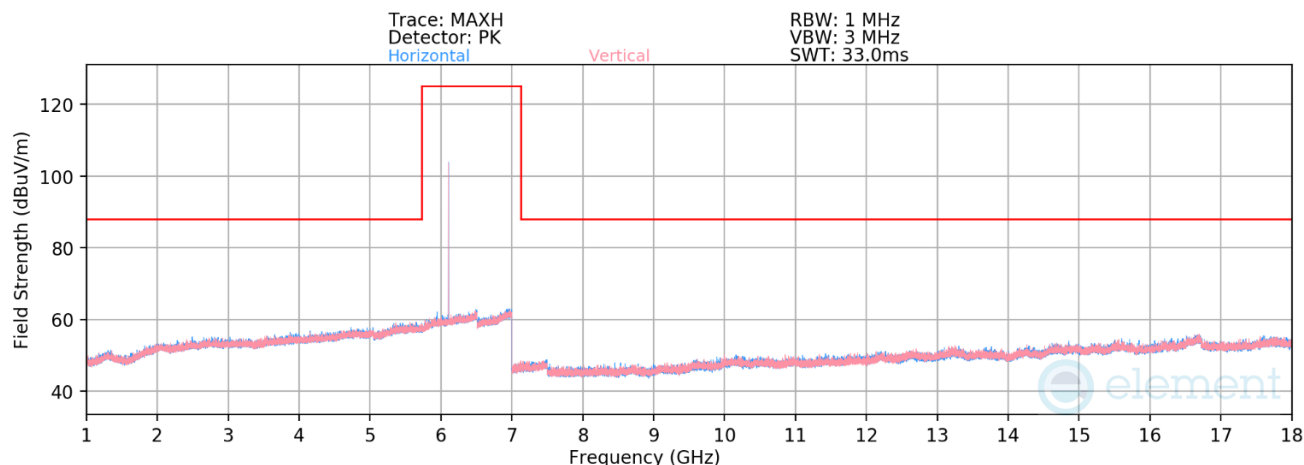
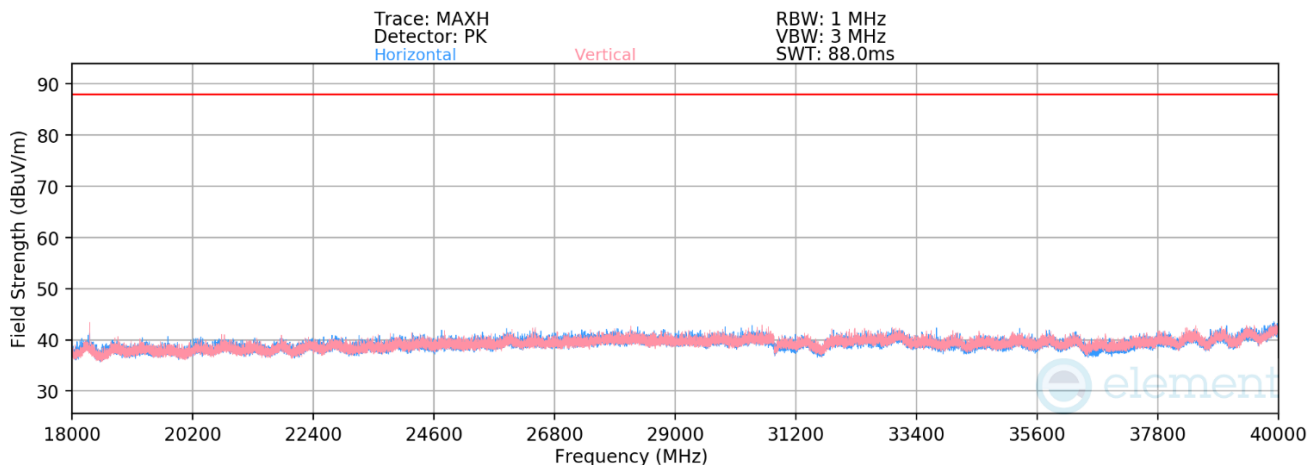


7.8.1 Radiated Spurious Emission (Above 1GHz)



Plot 7-62. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6108MHz)



Plot 7-63. Radiated Spurious Emissions 18-40GHz (NB UNII BDR– 6108MHz)

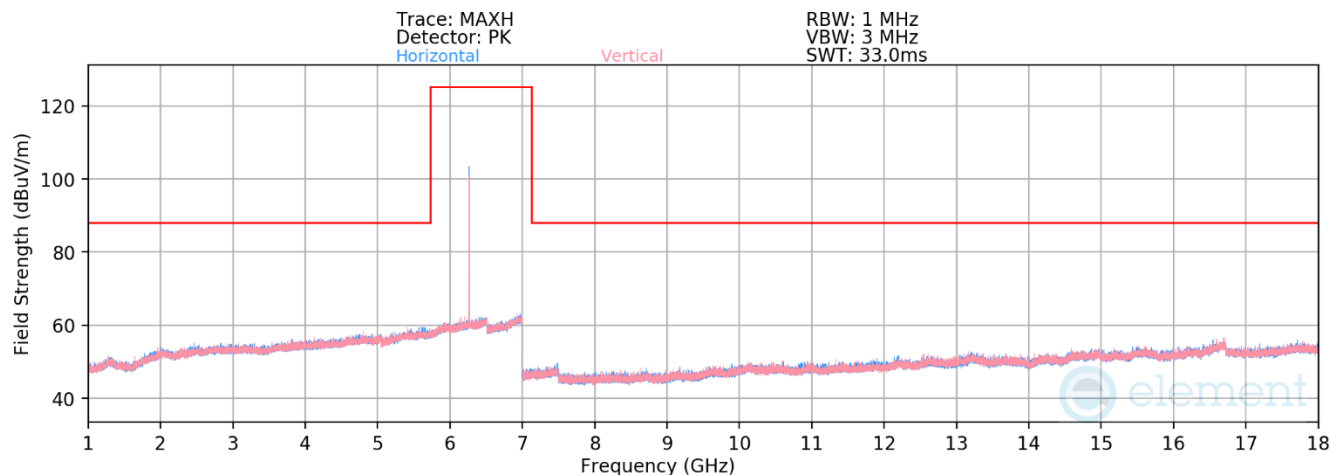
Mode: NB UNII BDR
Data Rate: 1Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12216.00	Avg	H	390	56	-80.37	13.52	1.15	41.30	53.98	-12.68
* 12216.00	Peak	H	390	56	-69.83	13.52	0.00	50.69	73.98	-23.29
* 18324.00	Avg	V	346	130	-62.70	-6.88	1.15	38.57	53.98	-15.41
* 18324.00	Peak	V	346	130	-55.13	-6.88	0.00	44.99	73.98	-28.99
24432.00	Avg	-	-	-	-71.83	-4.99	0.00	30.18	68.23	-38.05
24432.00	Peak	-	-	-	-60.40	-4.99	0.00	41.61	88.23	-46.62
30540.00	Avg	H	38	53	-71.01	-1.67	1.15	35.47	68.23	-32.76
30540.00	Peak	H	38	53	-61.05	-1.67	0.00	44.28	88.23	-43.95
36648.00	Avg	V	339	119	-67.01	-6.50	1.15	34.64	68.23	-33.59
36648.00	Peak	V	339	119	-56.79	-6.50	0.00	43.71	88.23	-44.52

Table 7-11. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 63 of 95

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Plot 7-64. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6264MHz)

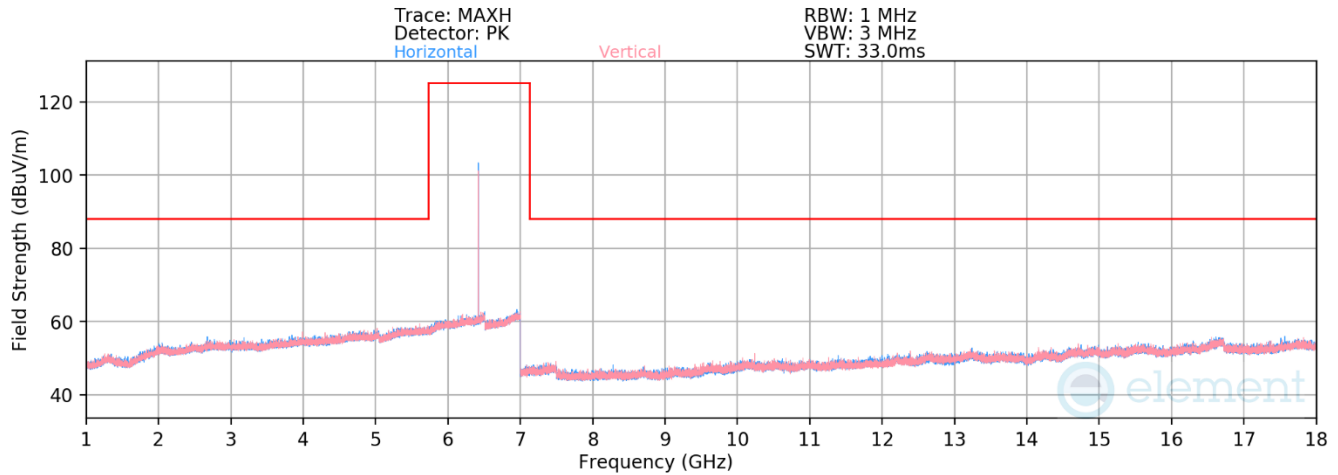
Mode: NB UNII BDR
Data Rate: 1Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6264MHz

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]
* 12528.00	Avg	V	-	-	-80.75	13.45	39.70	53.98	-14.28
* 12528.00	Peak	V	-	-	-70.33	13.45	50.12	73.98	-23.86

Table 7-12. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 64 of 95

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Plot 7-65. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6420MHz)

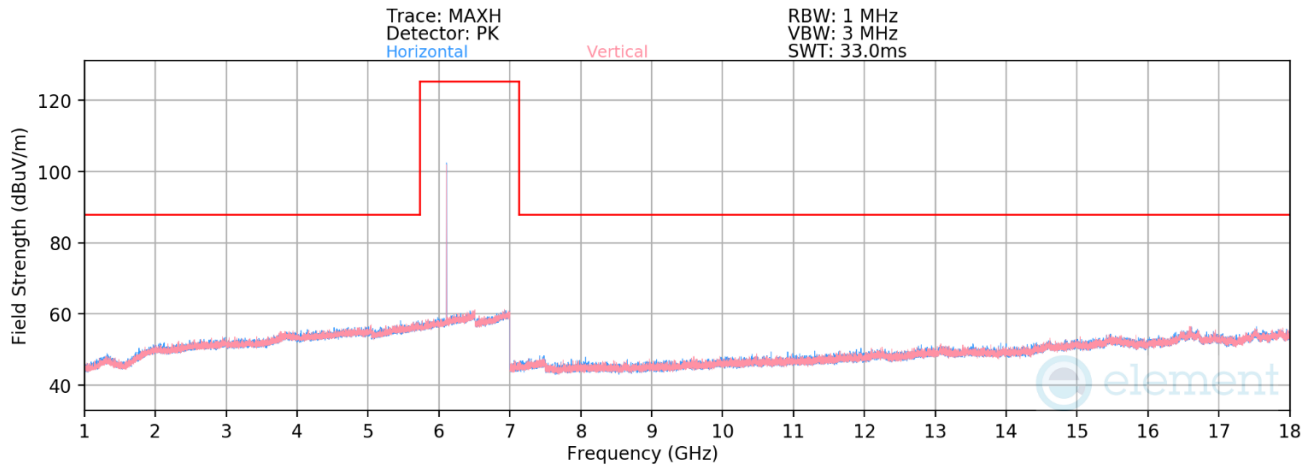
Mode: NB UNII BDR
Data Rate: 1Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6420MHz

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]
12840.00	Avg	V	-	-	-80.86	13.69	39.83	68.23	-28.40
12840.00	Peak	V	-	-	-69.83	13.69	50.86	88.23	-37.37

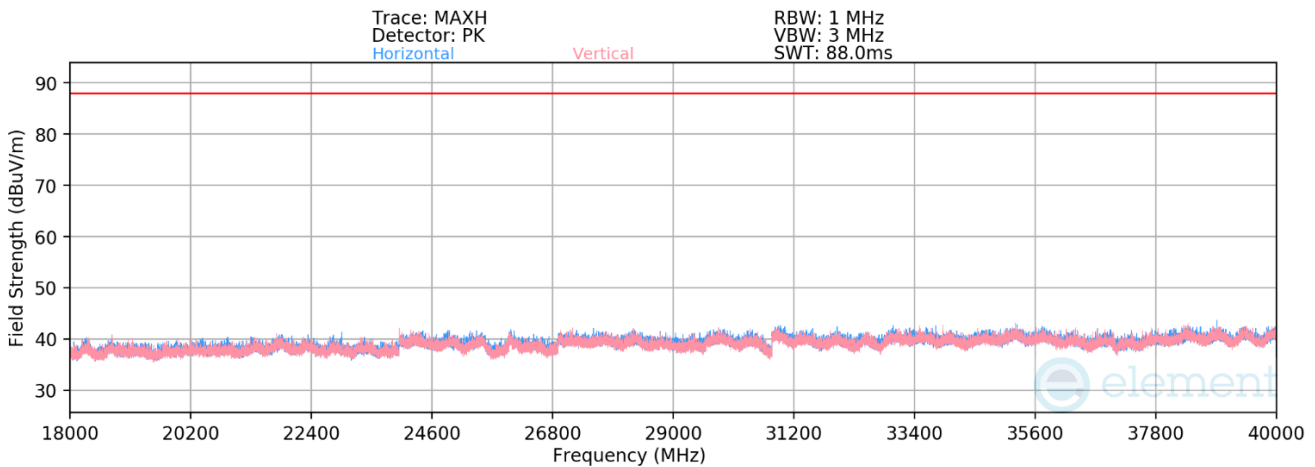
Table 7-13. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 65 of 95

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Plot 7-66. Radiated Spurious Emissions 1-18GHz (NB UNII (LE2M) – 6108MHz)



Plot 7-67. Radiated Spurious Emissions 18-40GHz (NB UNII (LE2M)– 6108MHz)

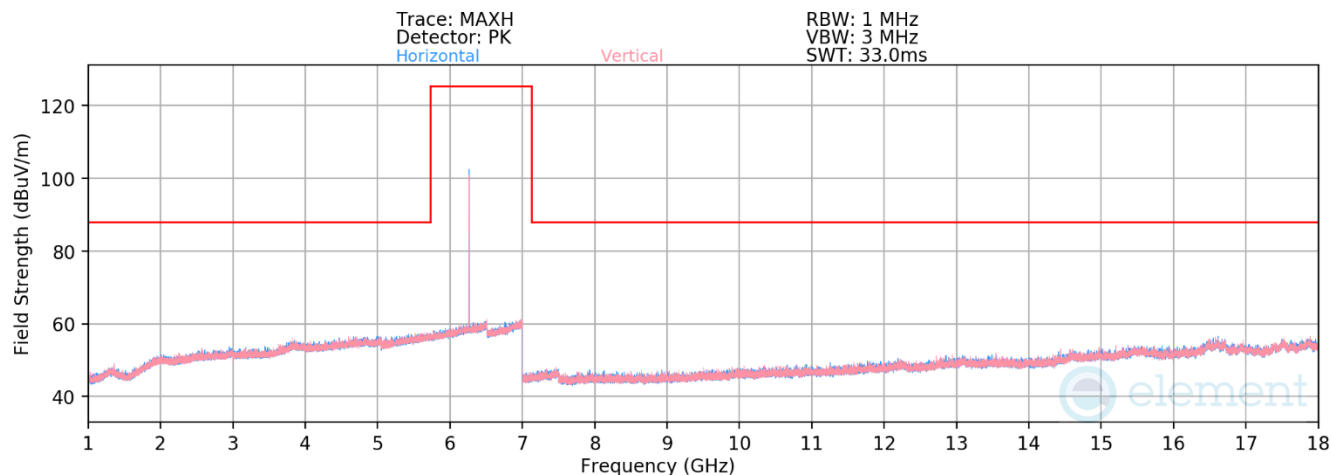
Mode: NB UNII LE
Data Rate: 2Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12216.00	Avg	H	306	150	-78.49	10.70	0.63	39.84	53.98	-14.14
* 12216.00	Peak	H	306	150	-67.29	10.70	0.00	50.41	73.98	-23.58
* 18324.00	Avg	-	-	-	-71.07	-6.88	0.00	29.05	53.98	-24.93
* 18324.00	Peak	-	-	-	-59.11	-6.88	0.00	41.01	73.98	-32.97
24432.00	Avg	-	-	-	-71.43	-4.99	0.00	30.58	68.23	-37.65
24432.00	Peak	-	-	-	-60.22	-4.99	0.00	41.79	88.23	-46.44
30540.00	Avg	-	-	-	-75.36	-1.67	0.00	29.97	68.23	-38.26
30540.00	Peak	-	-	-	-63.39	-1.67	0.00	41.94	88.23	-46.29
36648.00	Avg	-	-	-	-71.12	-6.50	0.00	29.38	68.23	-38.85
36648.00	Peak	-	-	-	-59.70	-6.50	0.00	40.80	88.23	-47.43

Table 7-14. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 66 of 95

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Plot 7-68. Radiated Spurious Emissions 1-18GHz (NB UNII (LE2M) – 6264MHz)

Mode: NB UNII LE

Data Rate: 2Mbps

Distance of Measurements: 3 Meters

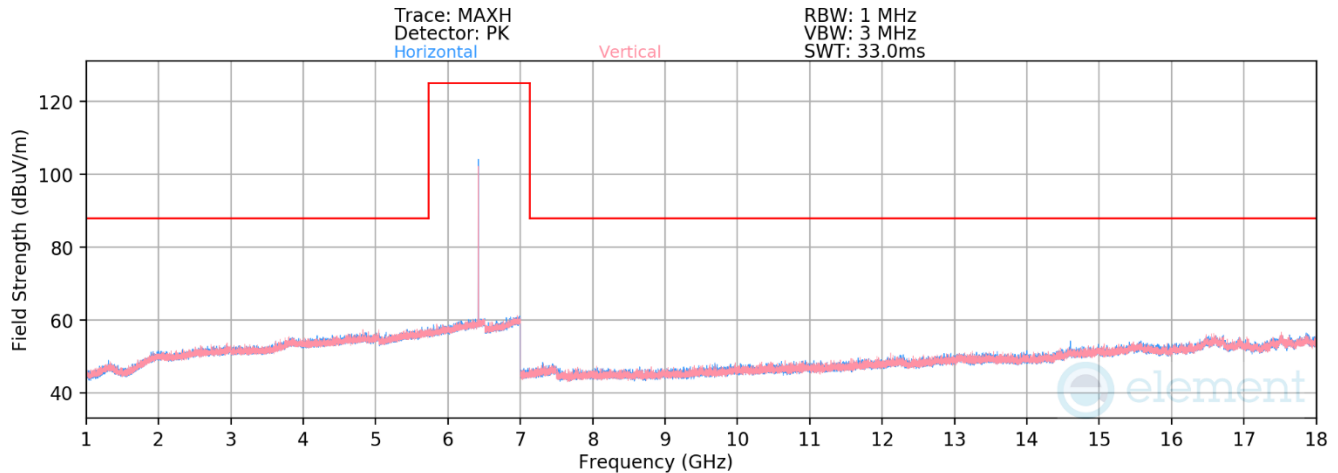
Operating Frequency: 6264MHz

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]
* 12528.00	Avg	-	-	-	-78.70	10.84	39.14	53.98	-14.84
* 12528.00	Peak	-	-	-	-67.50	10.84	50.34	73.98	-23.64

Table 7-15. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 67 of 95

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Plot 7-69. Radiated Spurious Emissions 1-18GHz (NB UNII (LE2M) – 6420MHz)

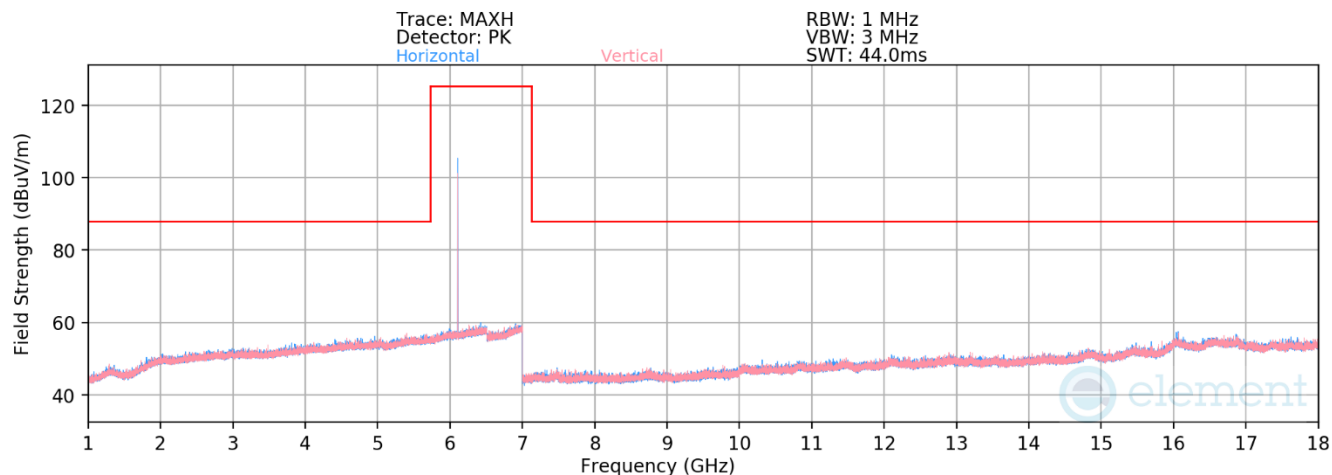
Mode: NB UNII LE
Data Rate: 2Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6420MHz

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]
12840.00	Avg	-	-	-	-93.33	25.31	38.98	68.23	-29.25
12840.00	Peak	-	-	-	-82.22	25.31	50.09	88.23	-38.14

Table 7-16. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 68 of 95

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Plot 7-70. Radiated Spurious Emissions 1-18GHz (NB UNII HDR4 – 6108MHz)

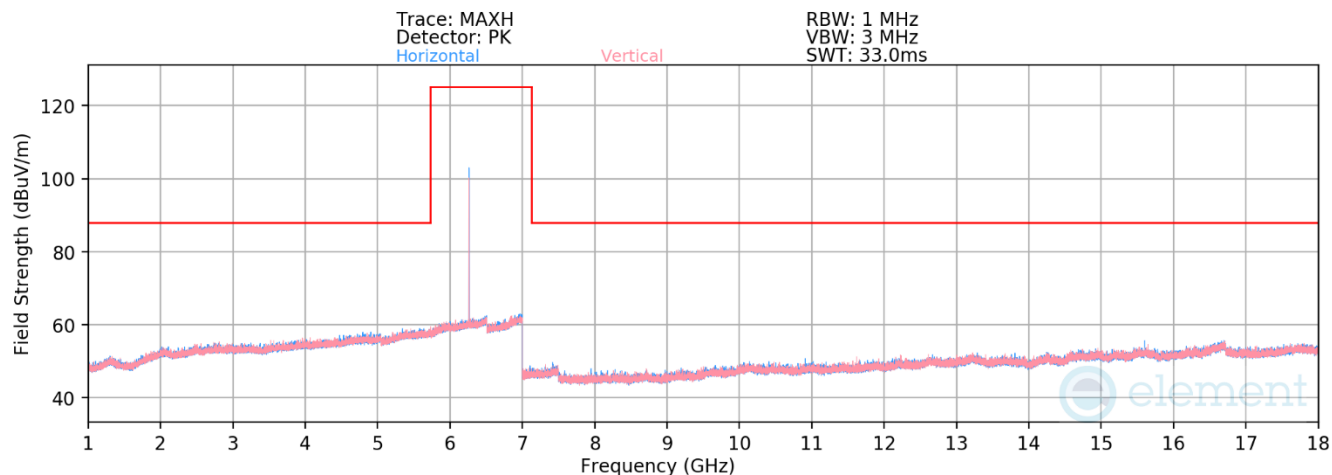
Mode: NB UNII HDR4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

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]
* 12216.00	Avg	-	-	-	-79.09	11.13	39.04	53.98	-14.94
* 12216.00	Peak	-	-	-	-68.21	11.07	49.86	73.98	-24.12

Table 7-17. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 69 of 95

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Plot 7-71. Radiated Spurious Emissions 1-18GHz (NB UNII HDR4 – 6264MHz)

Mode: NB UNII HDR4

Data Rate: 4Mbps

Distance of Measurements: 3 Meters

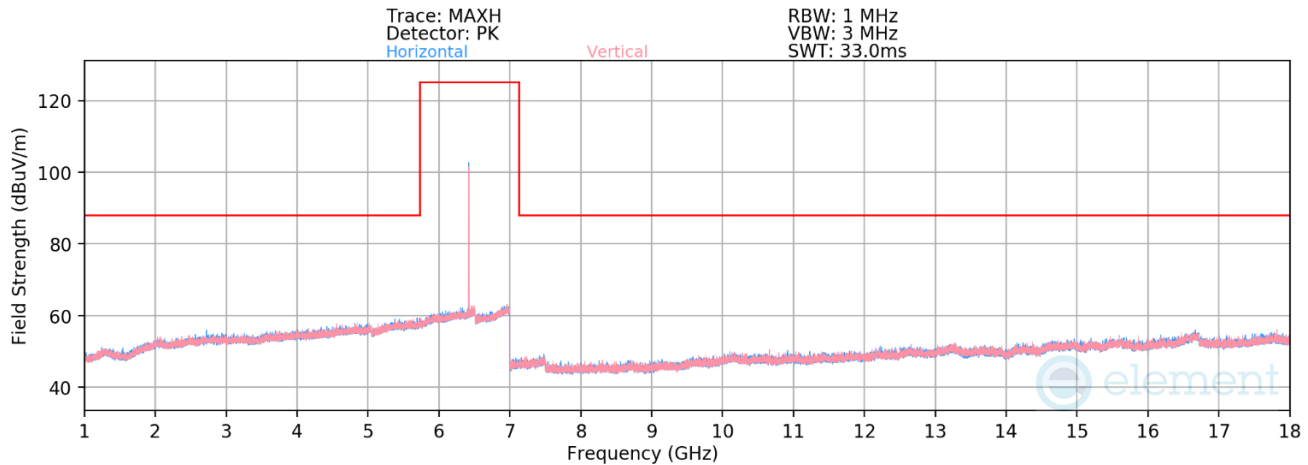
Operating Frequency: 6264MHz

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]
* 12528.00	Avg	-	-	-	-81.05	13.45	39.40	53.98	-14.58
* 12528.00	Peak	-	-	-	-70.01	13.45	50.44	73.98	-23.54

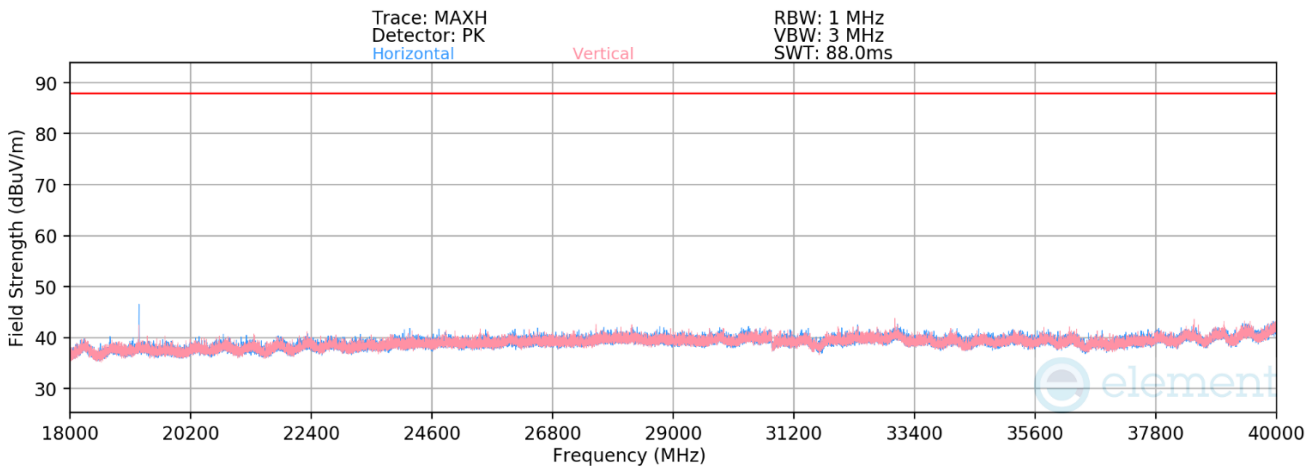
Table 7-18. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 70 of 95

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Plot 7-72. Radiated Spurious Emissions 1-18GHz (NB UNII HDR4 – 6420MHz)



Plot 7-73. Radiated Spurious Emissions Above 18GHz (NB UNII HDR4 – 6420MHz)

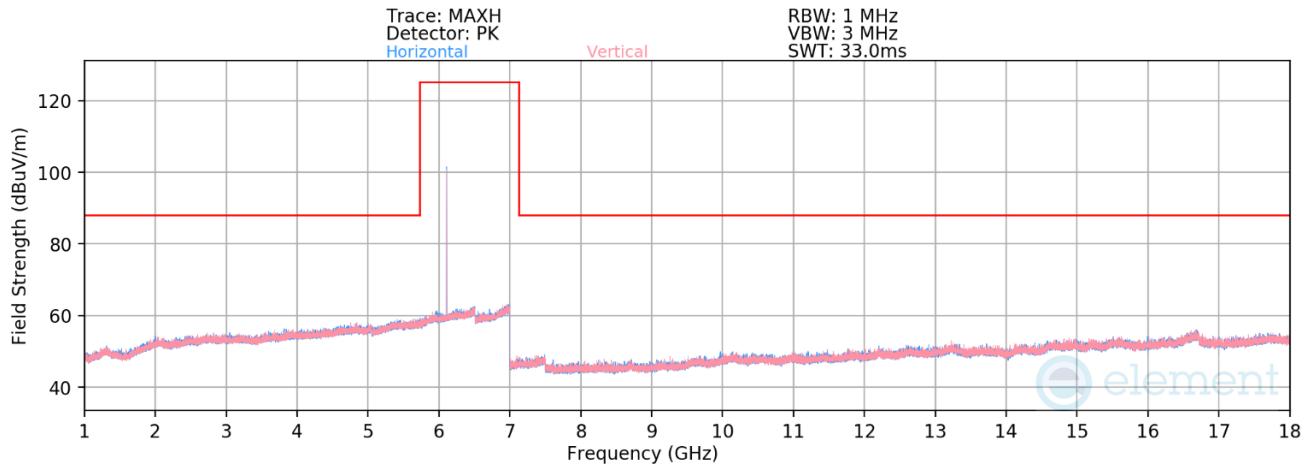
Mode: NB UNII HDR4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6420MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
12840.00	Avg	-	-	-	-80.79	13.69	0.00	39.90	68.23	-28.33
12840.00	Peak	-	-	-	-69.65	13.69	0.00	51.04	88.23	-37.19
* 19260.00	Avg	V	5	180	-65.17	-7.31	1.08	35.60	53.98	-18.38
* 19260.00	Peak	V	5	180	-54.36	-7.31	0.00	45.33	73.98	-28.65
25680.00	Avg	-	-	-	-72.39	-4.97	0.00	29.64	68.23	-38.59
25680.00	Peak	-	-	-	-61.18	-4.97	0.00	40.85	88.23	-47.38
32100.00	Avg	V	106	318	-69.72	-2.20	1.08	36.16	68.23	-32.07
32100.00	Peak	V	106	318	-59.14	-2.20	0.00	45.66	88.23	-42.57
38520.00	Avg	-	-	-	-72.15	-3.21	0.00	31.64	68.23	-36.59
38520.00	Peak	-	-	-	-61.23	-3.21	0.00	42.56	88.23	-45.67

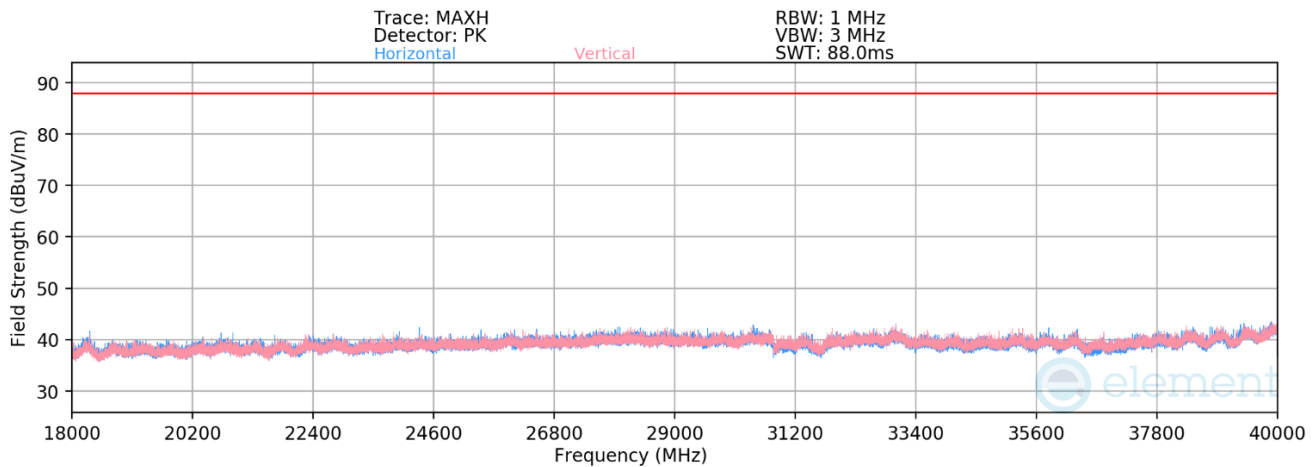
Table 7-19. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 71 of 95

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Plot 7-74. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6108MHz)



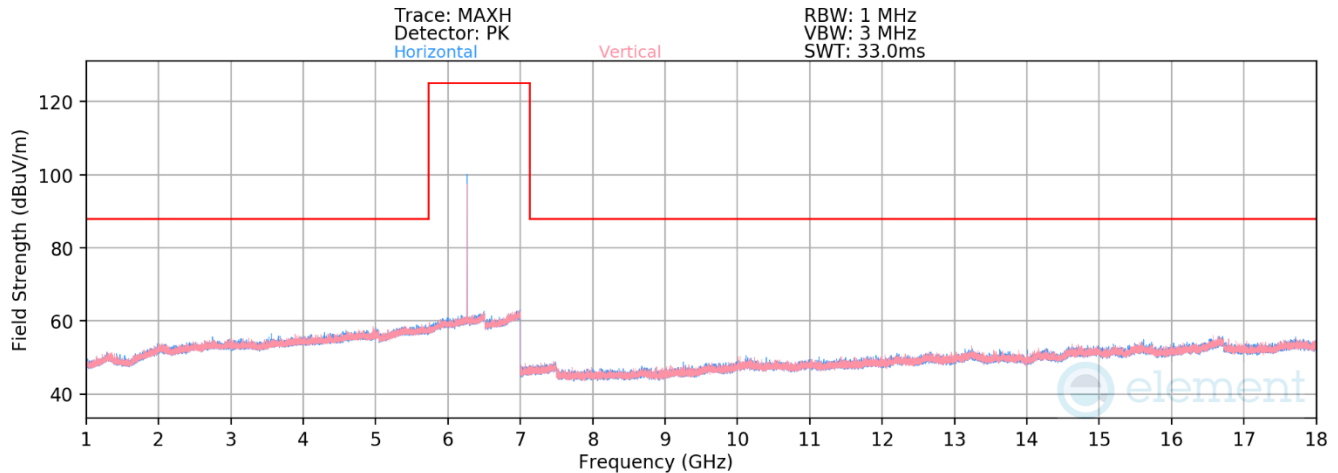
Plot 7-75. Radiated Spurious Emissions Above 18GHz (NB UNII HDRp4 – 6108MHz)

Mode: NB UNII HDRp4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12216.00	Avg	-	-	-	-80.53	13.52	0.00	39.99	53.98	-13.99
* 12216.00	Peak	-	-	-	-70.26	13.52	0.00	50.26	73.98	-23.72
* 18324.00	Avg	V	70	214	-66.68	-6.88	0.59	34.03	53.98	-19.95
* 18324.00	Peak	V	70	214	-57.04	-6.88	0.00	43.08	73.98	-30.90
24432.00	Avg	-	-	-	-71.85	-4.99	0.00	30.16	68.23	-38.07
24432.00	Peak	-	-	-	-60.74	-4.99	0.00	41.27	88.23	-46.96
30540.00	Avg	H	10	196	-73.65	-1.67	0.59	32.27	68.23	-35.96
30540.00	Peak	H	10	196	-62.49	-1.67	0.00	42.84	88.23	-45.39
36648.00	Avg	H	308	169	-70.15	-6.50	0.59	30.94	68.23	-37.29
36648.00	Peak	H	308	169	-59.40	-6.50	0.00	41.10	88.23	-47.13

Table 7-20. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 72 of 95



Plot 7-76. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6264MHz)

Mode: NB UNII HDRp4

Data Rate: 4Mbps

Distance of Measurements: 3 Meters

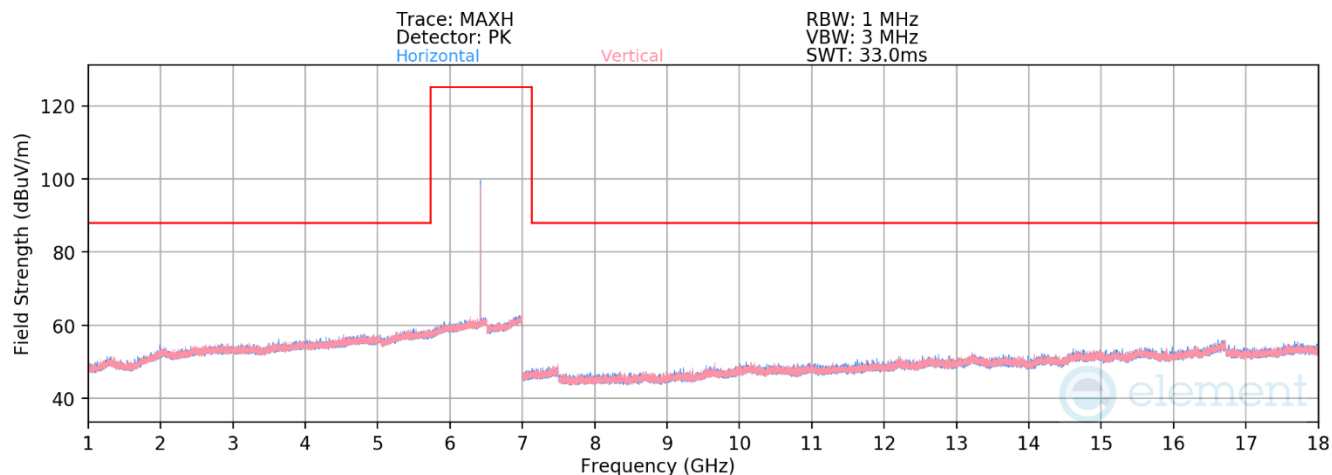
Operating Frequency: 6264MHz

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]
* 12528.00	Avg	-	-	-	-81.10	13.45	39.35	53.98	-14.63
* 12528.00	Peak	-	-	-	-70.40	13.45	50.05	73.98	-23.93

Table 7-21. Radiated Spurious Emissions Measurements

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 73 of 95

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Plot 7-77. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6420MHz)

Mode: NB UNII HDRp4

Data Rate: 4Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 6420MHz

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]
12840.00	Avg	-	-	-	-81.21	13.69	39.48	68.23	-28.75
12840.00	Peak	-	-	-	-70.57	13.69	50.12	88.23	-38.11

Table 7-22. Radiated Spurious Emissions Measurements

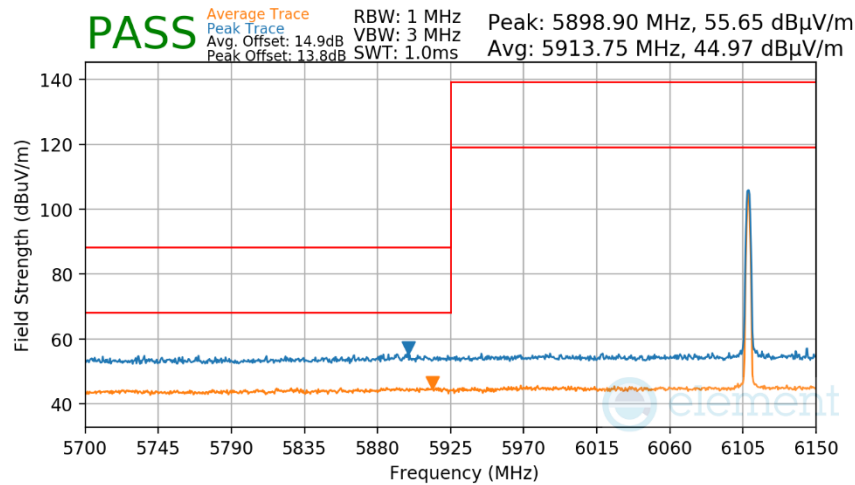
FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 74 of 95

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7.8.2 Radiated Band Edge Measurements

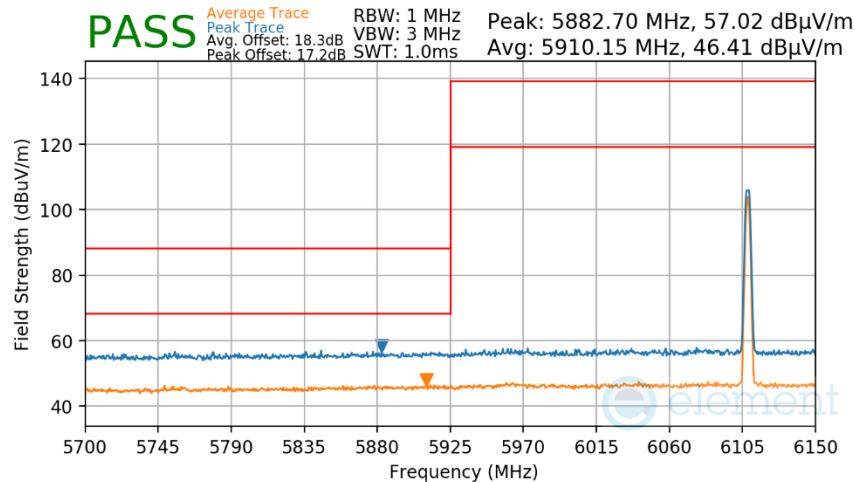
§15.407(b) §15.205 §15.209

Mode: NB UNII BDR
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz



Plot 7-78. Radiated Lower Band Edge Measurement

Mode: NB UNII LE
 Data Rate: 2Mbps
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz

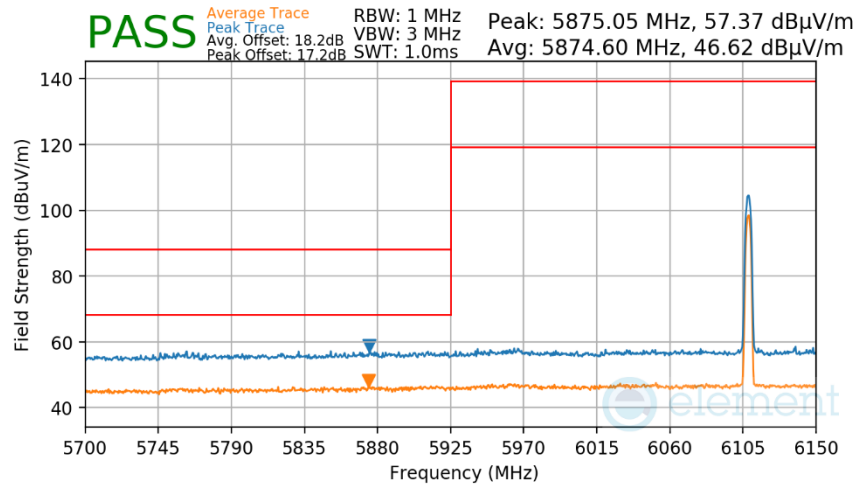


Plot 7-79. Radiated Lower Band Edge Measurement

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 75 of 95

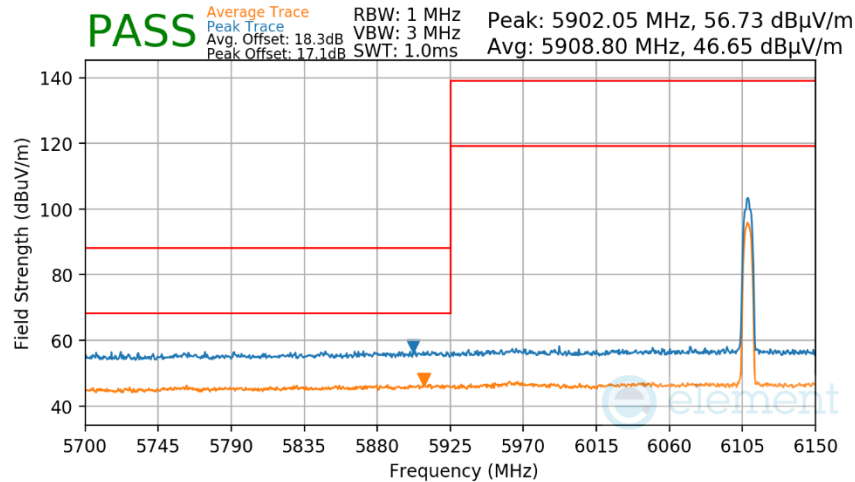
V 10.6 10/27/2023

Mode: NB UNII HDR4
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz



Plot 7-80. Radiated Lower Band Edge Measurement

Mode: NB UNII HDR8
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz

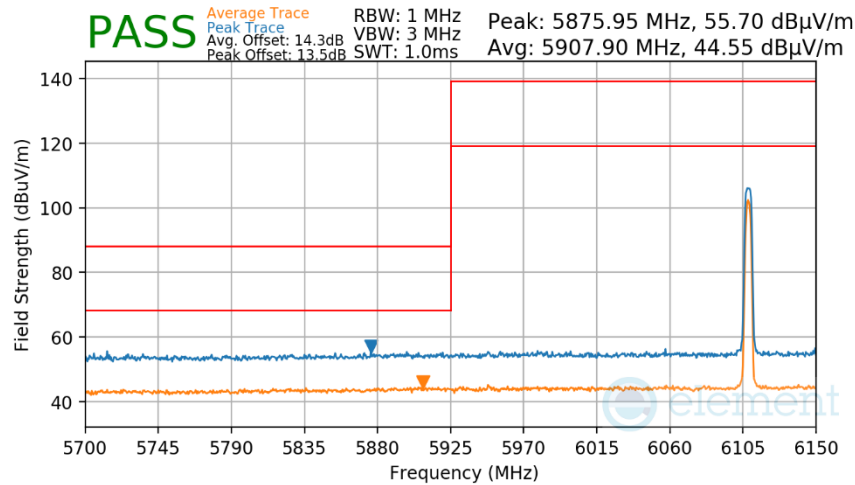


Plot 7-81. Radiated Lower Band Edge Measurement

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 76 of 95

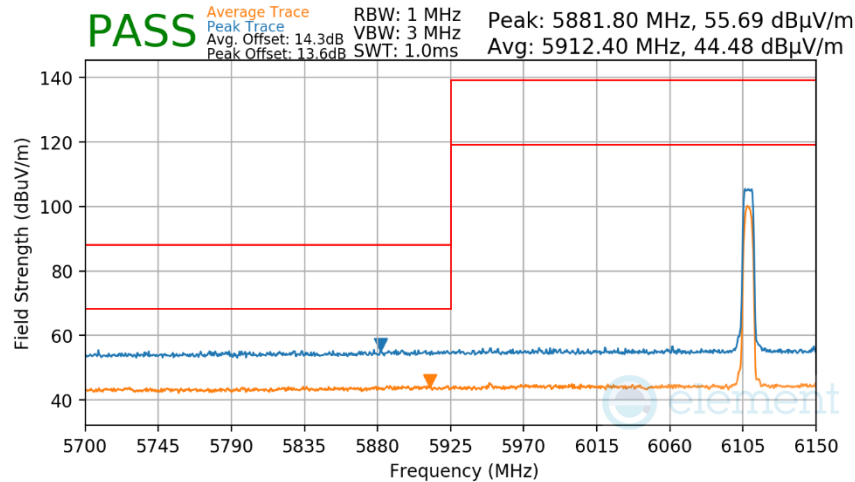
V 10.6 10/27/2023

Mode: NB UNII HDRp4
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz



Plot 7-82. Radiated Lower Band Edge Measurement

Mode: NB UNII HDRp8
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz



Plot 7-83. Radiated Lower Band Edge Measurement

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 77 of 95

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7.9 Radiated Spurious Emissions – Below 1GHz

§15.209

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 must not exceed the limits shown in Table 7-23 per Section 15.209.

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 C63.10-2020

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.

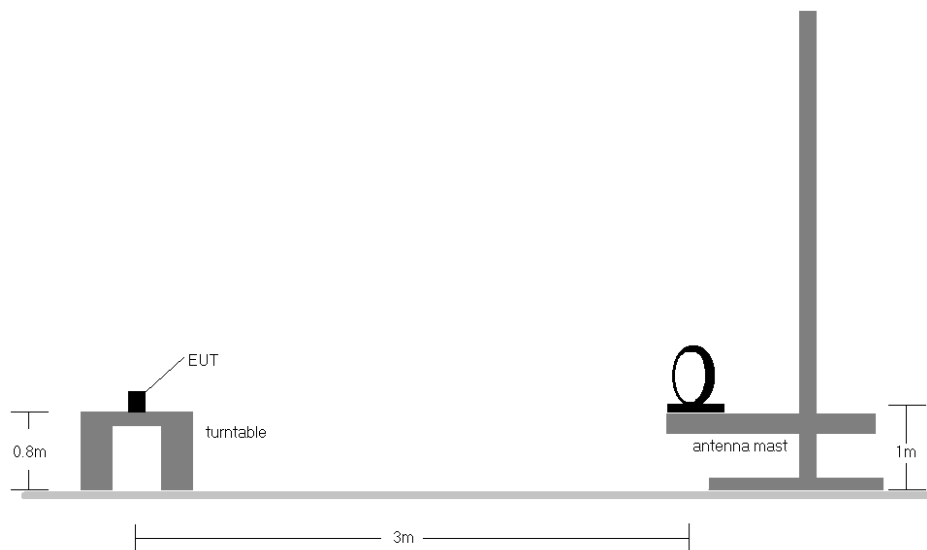


Figure 7-9. Radiated Test Setup < 30MHz

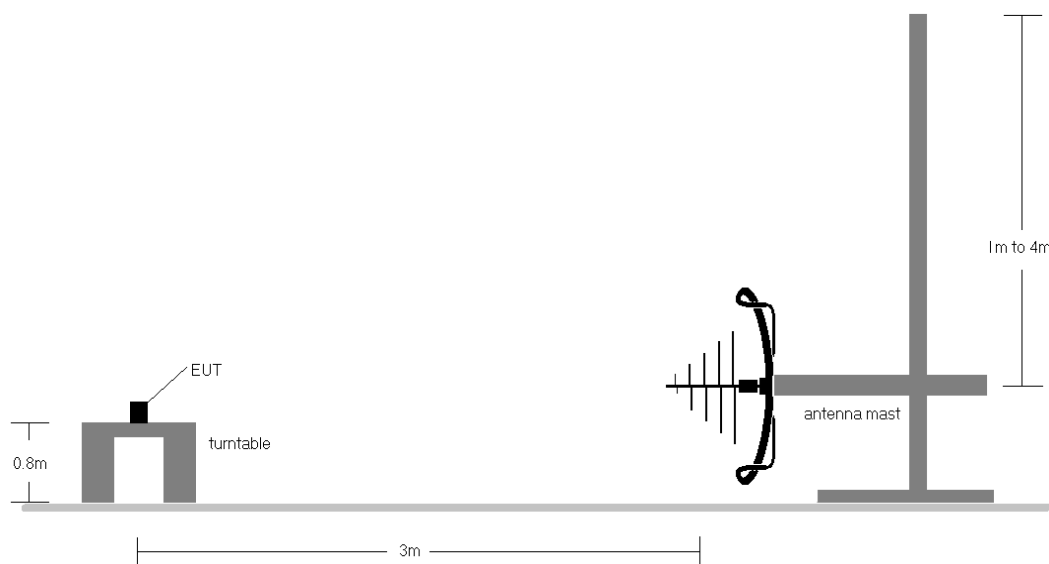


Figure 7-10. Radiated Test Setup < 1GHz

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Test Notes

1. All emissions lying in restricted bands specified in §15.205 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 for emissions within 6dB of the limit.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. Both configurations below were investigated, and the worst case has been reported.
 - a. EUT charged by charging case and powered by AC/DC adaptor with USB-C cable.
 - b. EUT charged by charging case and powered by host PC with USB-C cable.

Sample Calculations

Determining Spurious Emissions Levels

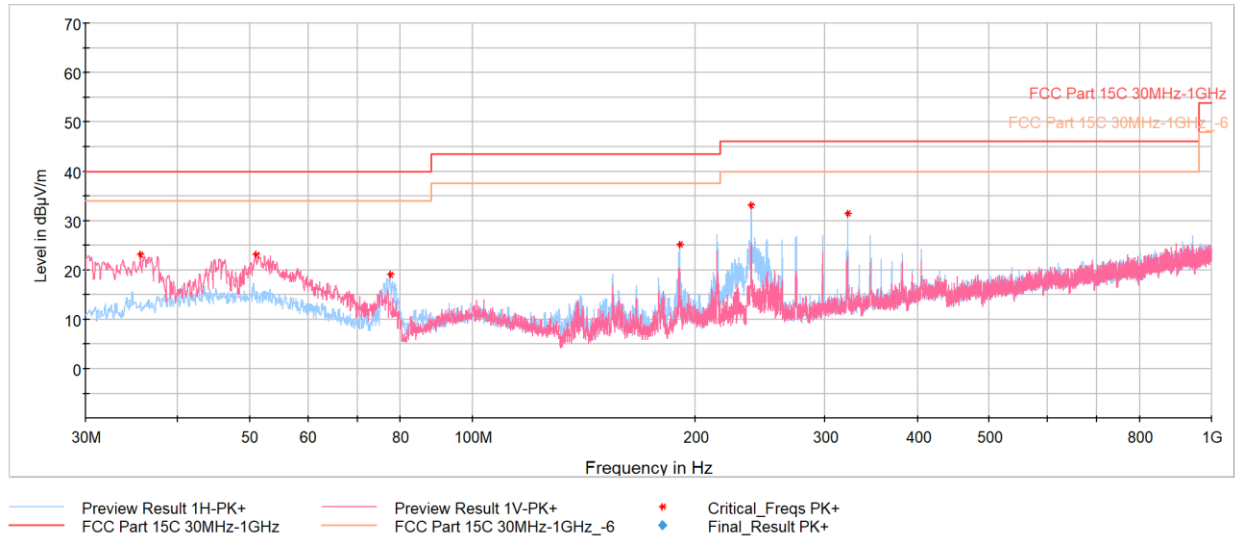
- Field Strength Level $_{[dB_{\mu V/m}]}$ = Analyzer Level $_{[dBm]} + 107 + AFCL_{[dB/m]}$
- $AFCL_{[dB/m]} = \text{Antenna Factor}_{[dB/m]} + \text{Cable Loss}_{[dB]} - \text{Preamplifier Gain}_{[dB]}$
- Margin $_{[dB]} = \text{Field Strength Level}_{[dB_{\mu V/m}]} - \text{Limit}_{[dB_{\mu V/m}]}$

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Radiated Spurious Emissions (Below 1GHz)

§15.209



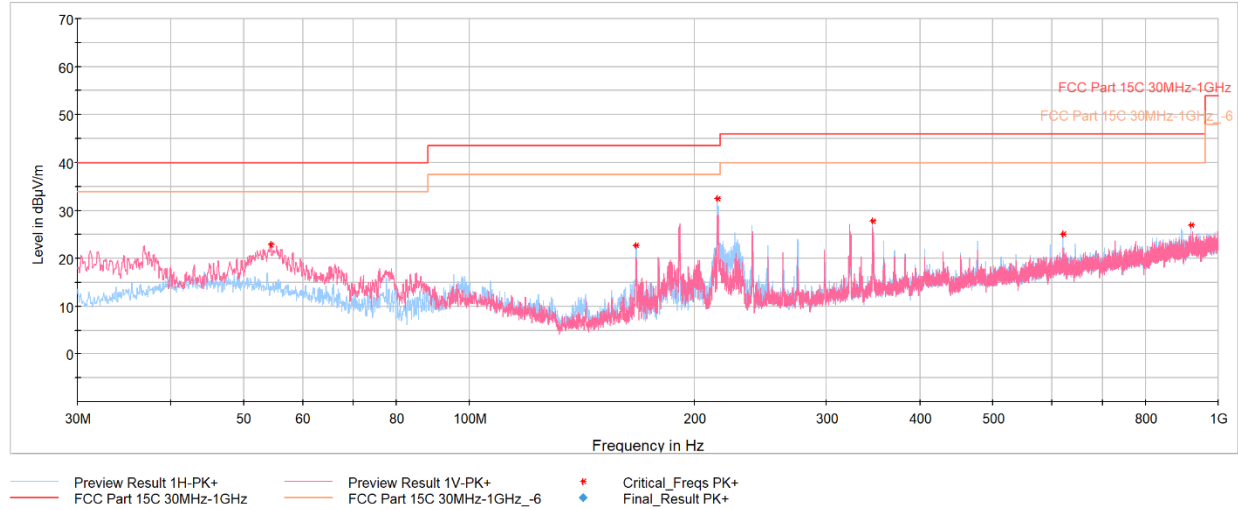
Plot 7-84. Radiated Spurious Emissions Below 1GHz (NB UNII BDR – 6108MHz), with AC/DC Adapter and USB-C Cable

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]
35.58	Max Peak	V	100.0	301.0	-67.91	-15.85	23.24	40.00	-16.76
51.00	Max Peak	V	100.0	26.0	-70.06	-13.77	23.17	40.00	-16.83
77.48	Max Peak	H	300.0	9.0	-66.29	-21.71	19.00	40.00	-21.00
190.78	Max Peak	H	200.0	95.0	-63.85	-18.03	25.12	43.52	-18.40
238.40	Max Peak	H	100.0	5.0	-57.43	-16.37	33.20	46.02	-12.82
321.68	Max Peak	H	100.0	232.0	-61.19	-14.41	31.40	46.02	-14.62

Table 7-24. Radiated Spurious Emissions Below 1GHz (NB UNII BDR – 6108MHz), with AC/DC Adapter and USB-C Cable

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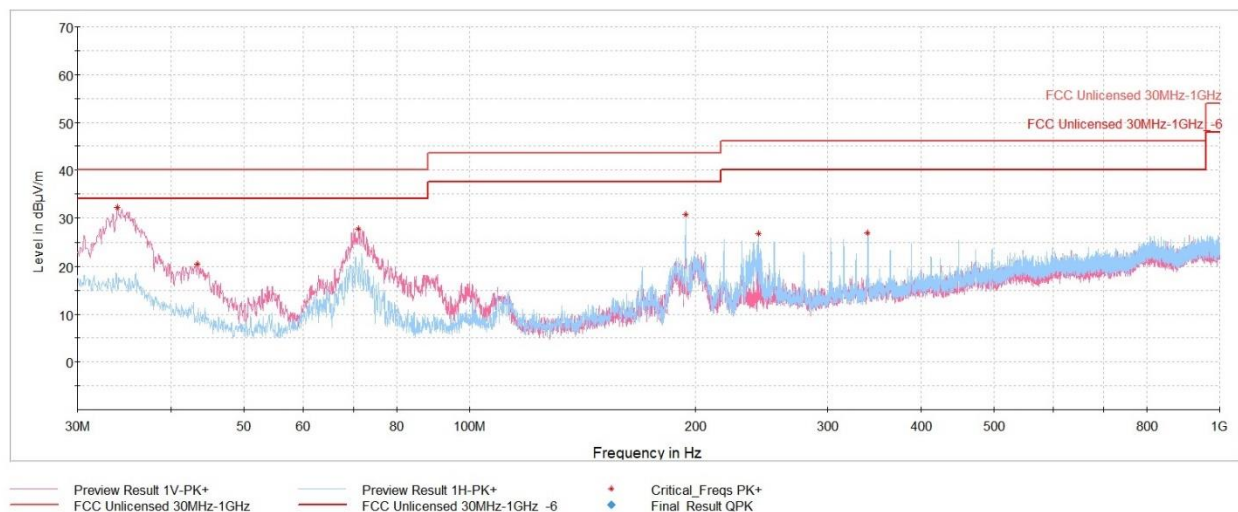
Plot 7-85. Radiated Spurious Emissions Below 1GHz (NB UNII (LE2M) – 6108MHz), with AC/DC Adapter and USB-C Cable

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]
54.35	Max Peak	V	100.0	150.0	-69.75	-14.36	22.89	40.00	-17.11
167.06	Max Peak	H	200.0	209.0	-64.43	-19.83	22.74	43.52	-20.78
214.69	Max Peak	H	100.0	242.0	-57.00	-17.58	32.42	43.52	-11.10
345.83	Max Peak	H	100.0	61.0	-65.88	-13.42	27.70	46.02	-18.32
620.29	Max Peak	H	100.0	271.0	-73.37	-8.54	25.09	46.02	-20.93
918.81	Max Peak	H	100.0	110.0	-76.61	-3.51	26.88	46.02	-19.14

Table 7-25. Radiated Spurious Emissions Below 1GHz (NB UNII (LE2M) – 6108MHz), with AC/DC Adapter and USB-C Cable

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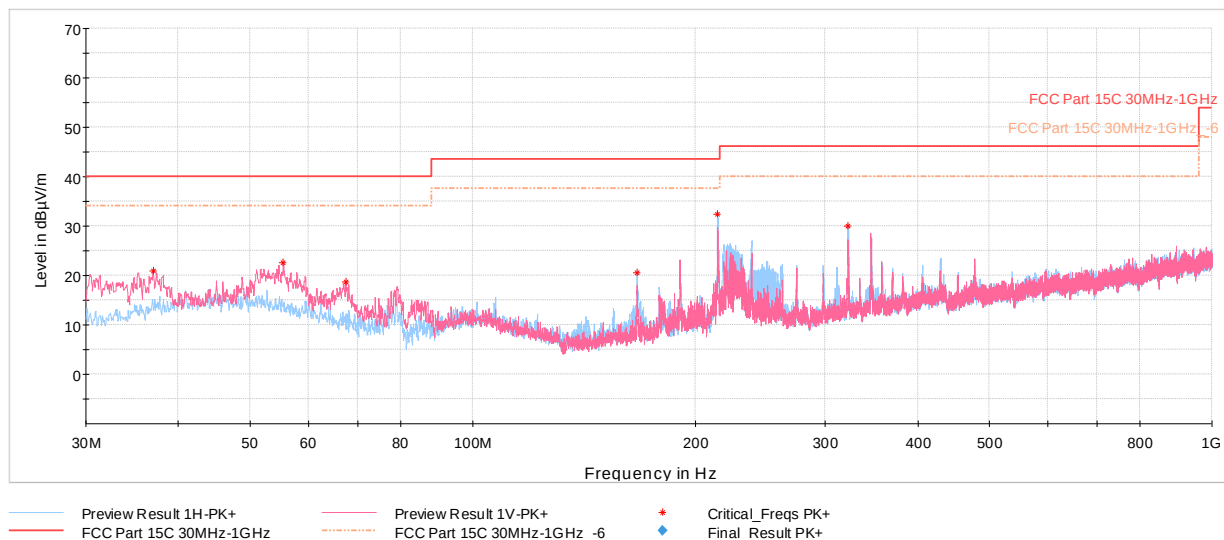
Plot 7-86. Radiated Spurious Emissions Below 1GHz (NB UNII HDR4 – 6420MHz), with AC/DC Adapter and USB-C Cable

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]
33.93	Max Peak	V	100	349	-57.12	-17.66	32.22	40.00	-7.78
71.13	Max Peak	V	100	262	-56.12	-23.20	27.68	40.00	-12.32
43.39	Max Peak	V	100	144	-64.15	-22.41	20.44	40.00	-19.56
193.93	Max Peak	H	100	328	-57.93	-18.44	30.63	43.52	-12.89
339.33	Max Peak	H	100	226	-66.90	-13.31	26.79	46.02	-19.23
242.38	Max Peak	H	100	193	-64.81	-15.61	26.58	46.02	-19.44

Table 7-26. Radiated Spurious Emissions Below 1GHz (NB UNII HDR4 – 6420MHz), with AC/DC Adapter and USB-C Cable

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Plot 7-87. Radiated Spurious Emissions Below 1GHz (NB UNII HDRp4 – 6108MHz), with AC/DC Adapter and USB-C Cable

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]
36.98	Max Peak	V	100	355	-70.77	-15.31	20.92	40.00	-19.08
55.46	Max Peak	V	100	355	-69.79	-14.62	22.59	40.00	-17.41
67.39	Max Peak	V	200	143	-70.13	-18.24	18.63	40.00	-21.37
167.01	Max Peak	H	200	191	-66.64	-19.83	20.53	43.52	-22.99
214.59	Max Peak	H	100	323	-57.06	-17.59	32.35	43.52	-11.17
321.97	Max Peak	H	100	314	-62.63	-14.38	29.99	46.02	-16.03

Table 7-27. Radiated Spurious Emissions Below 1GHz (NB UNII HDRp4 – 6108MHz), with AC/DC Adapter and USB-C Cable

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7.10 AC Line Conducted Emissions Measurement

§15.207

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. All data rates and modes were investigated for AC Line conducted spurious emissions.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207.

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-28. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2020, 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.

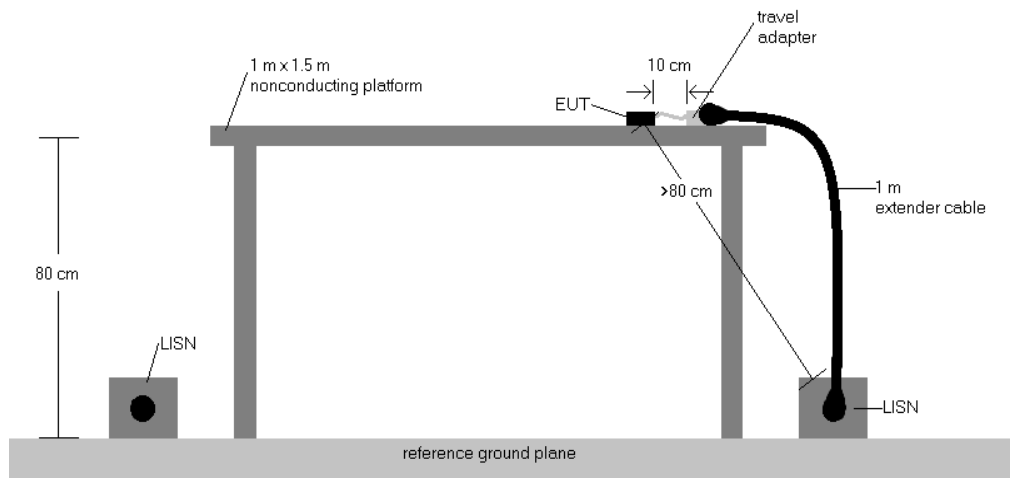


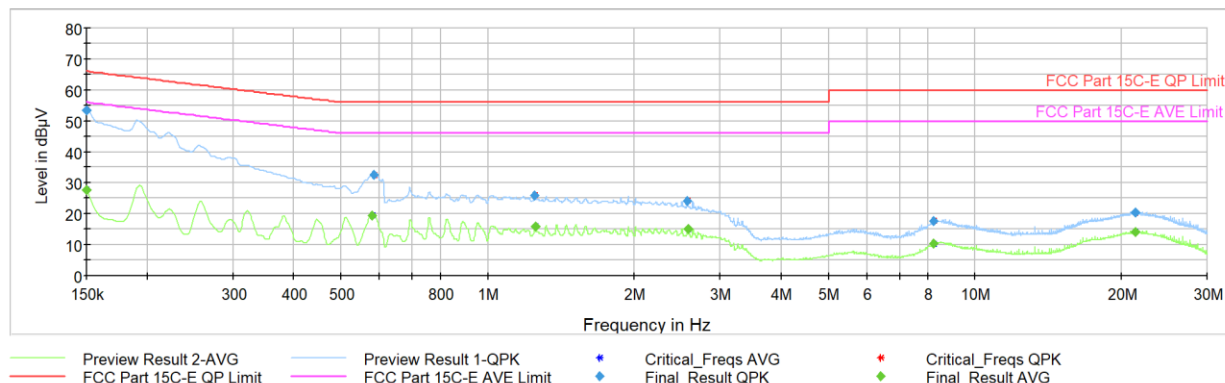
Figure 7-11. Test Instrument & Measurement Setup

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 charged by charging case and powered by AC/DC adaptor with USB-C cable.
 - b. EUT charged by charging case and powered by host PC with USB-C cable.
3. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207.
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 plots are made using quasi-peak and average detectors.
8. Deviations to the Specifications: None.

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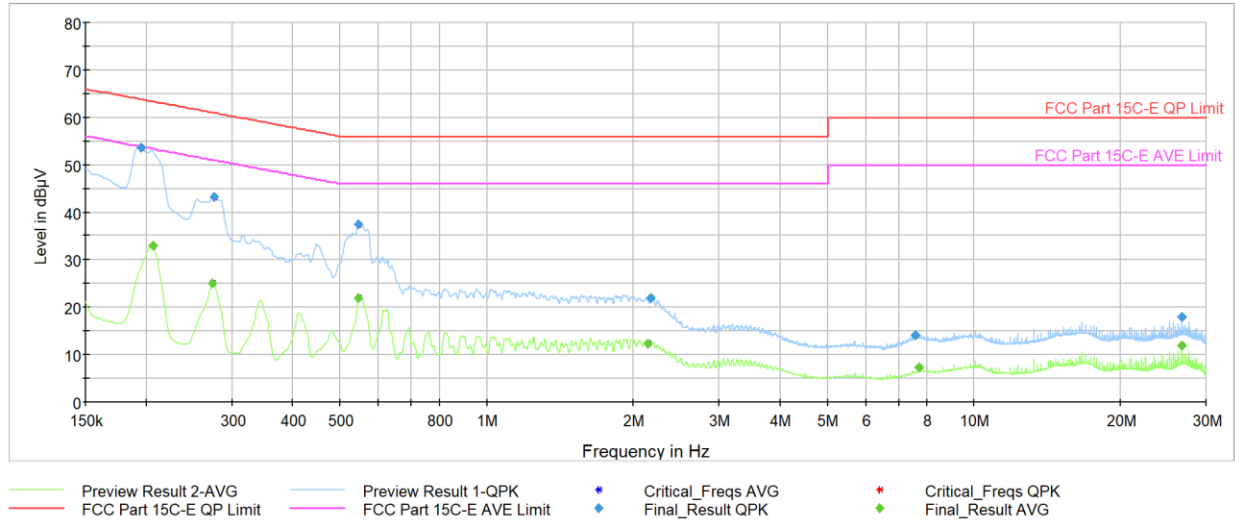
Plot 7-88. AC Line Conducted Plot (NB UNII BDR – 6108MHz) (L1) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.150	FINAL	—	27.79	56.00	-28.21	L1	GND
0.150	FINAL	53.5	—	66.00	-12.51	L1	GND
0.580	FINAL	—	19.61	46.00	-26.39	L1	GND
0.584	FINAL	32.5	—	56.00	-23.49	L1	GND
1.250	FINAL	25.9	—	56.00	-30.06	L1	GND
1.253	FINAL	—	15.91	46.00	-30.09	L1	GND
2.569	FINAL	24.1	—	56.00	-31.87	L1	GND
2.571	FINAL	—	15.20	46.00	-30.80	L1	GND
8.230	FINAL	—	10.23	50.00	-39.77	L1	GND
8.232	FINAL	17.8	—	60.00	-42.16	L1	GND
21.329	FINAL	—	14.23	50.00	-35.77	L1	GND
21.338	FINAL	20.5	—	60.00	-39.51	L1	GND

Table 7-29. AC Line Conducted Data (NB UNII BDR – 6108MHz) (L1) with host PC with USB-C cable

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Plot 7-89. AC Line Conducted Plot (NB UNII BDR – 6108MHz) (N) with host PC with USB-C cable

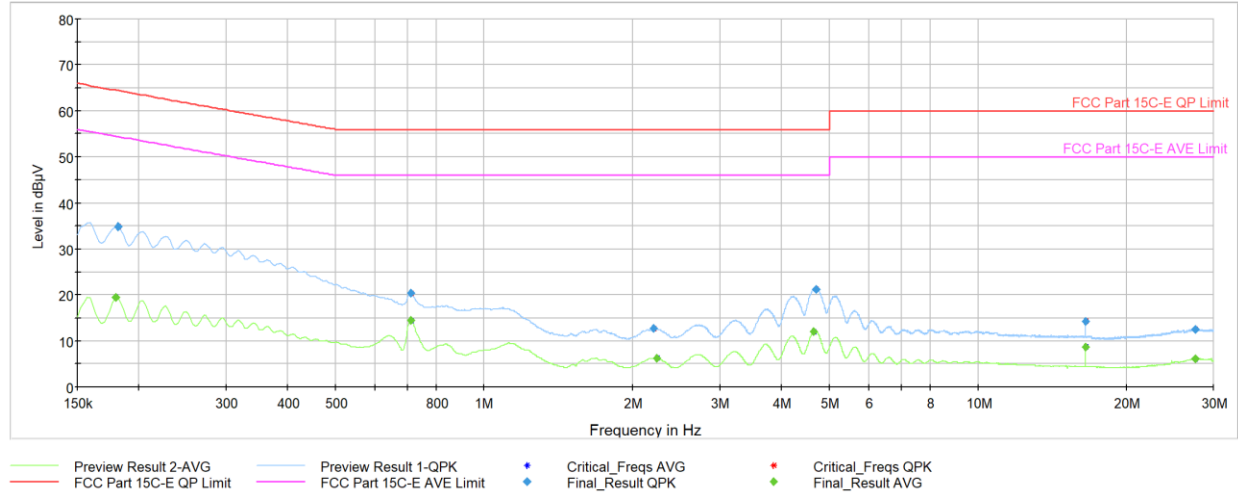
Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.195	FINAL	53.6	—	63.82	-10.27	N	GND
0.206	FINAL	—	33.04	53.36	-20.31	N	GND
0.274	FINAL	—	25.05	51.00	-25.95	N	GND
0.276	FINAL	43.2	—	60.94	-17.73	N	GND
0.546	FINAL	—	21.89	46.00	-24.11	N	GND
0.546	FINAL	37.3	—	56.00	-18.69	N	GND
2.141	FINAL	—	12.27	46.00	-33.73	N	GND
2.168	FINAL	21.9	—	56.00	-34.12	N	GND
7.573	FINAL	14.1	—	60.00	-45.94	N	GND
7.701	FINAL	—	7.29	50.00	-42.71	N	GND
26.671	FINAL	—	11.94	50.00	-38.06	N	GND
26.671	FINAL	18.0	—	60.00	-42.05	N	GND

Table 7-30. AC Line Conducted Data (NB UNII BDR – 6108MHz) (N) with host PC with USB-C cable

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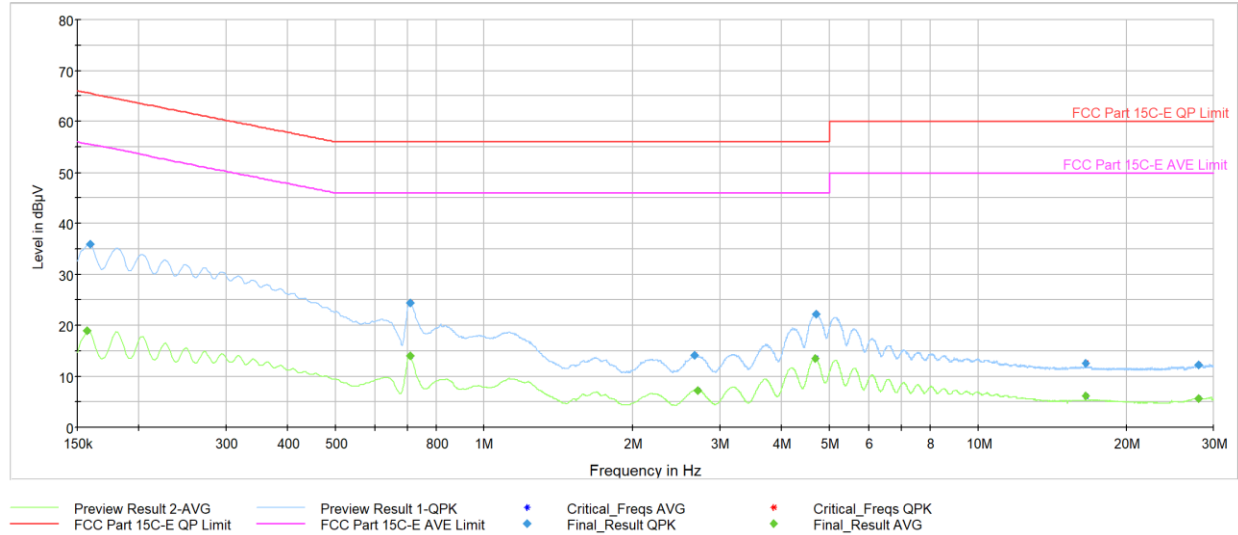
Plot 7-90. AC Line Conducted Plot (NB UNII (LE2M) – 6108MHz) (L1) with AC/DC Adapter and USB-C Cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.179	FINAL	—	19.49	54.52	-35.03	L1	GND
0.182	FINAL	34.8	—	64.42	-29.63	L1	GND
0.710	FINAL	—	14.47	46.00	-31.53	L1	GND
0.710	FINAL	20.3	—	56.00	-35.66	L1	GND
2.204	FINAL	12.7	—	56.00	-43.34	L1	GND
2.231	FINAL	—	6.27	46.00	-39.73	L1	GND
4.652	FINAL	—	12.07	46.00	-33.93	L1	GND
4.704	FINAL	21.3	—	56.00	-34.68	L1	GND
16.496	FINAL	14.2	—	60.00	-45.79	L1	GND
16.496	FINAL	—	8.76	50.00	-41.24	L1	GND
27.548	FINAL	—	6.15	50.00	-43.85	L1	GND
27.571	FINAL	12.6	—	60.00	-47.41	L1	GND

Table 7-31. AC Line Conducted Data (NB UNII (LE2M) – 6108MHz) (L1) with AC/DC Adapter and USB-C Cable

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Plot 7-91. AC Line Conducted Data (NB UNII (LE2M) – 6108MHz) (N) with AC/DC Adapter and USB-C Cable

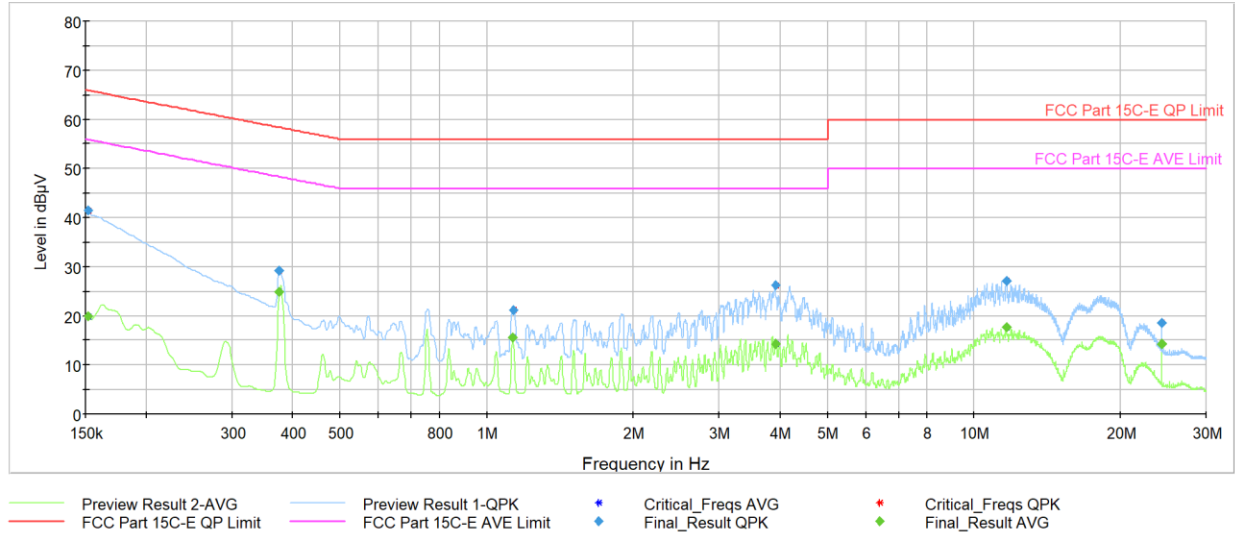
Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.157	FINAL	—	18.92	55.63	-36.72	N	GND
0.159	FINAL	36.0	—	65.52	-29.56	N	GND
0.708	FINAL	—	13.95	46.00	-32.05	N	GND
0.708	FINAL	24.5	—	56.00	-31.53	N	GND
2.663	FINAL	14.1	—	56.00	-41.89	N	GND
2.708	FINAL	—	7.24	46.00	-38.76	N	GND
4.684	FINAL	—	13.53	46.00	-32.47	N	GND
4.704	FINAL	22.2	—	56.00	-33.80	N	GND
16.490	FINAL	12.5	—	60.00	-47.47	N	GND
16.490	FINAL	—	6.16	50.00	-43.84	N	GND
27.917	FINAL	—	5.61	50.00	-44.39	N	GND
27.949	FINAL	12.2	—	60.00	-47.78	N	GND

Table 7-32. AC Line Conducted Data (NB UNII (LE2M) – 6108MHz) (N) with AC/DC Adapter and USB-C Cable

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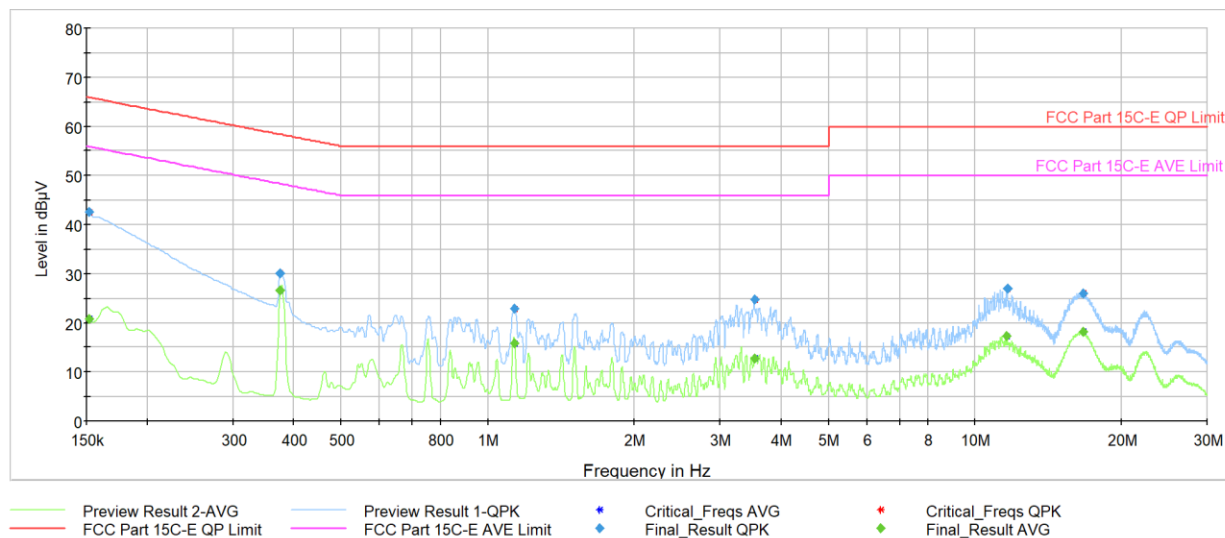


Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.152	FINAL	—	19.83	55.88	-36.05	L1	GND
0.152	FINAL	41.4	—	65.88	-24.47	L1	GND
0.375	FINAL	—	24.94	48.39	-23.45	L1	GND
0.375	FINAL	29.3	—	58.39	-29.12	L1	GND
1.131	FINAL	—	15.58	46.00	-30.42	L1	GND
1.133	FINAL	21.2	—	56.00	-34.79	L1	GND
3.912	FINAL	26.2	—	56.00	-29.85	L1	GND
3.917	FINAL	—	14.32	46.00	-31.68	L1	GND
11.648	FINAL	—	17.70	50.00	-32.30	L1	GND
11.670	FINAL	27.1	—	60.00	-32.89	L1	GND
24.268	FINAL	—	14.34	50.00	-35.66	L1	GND
24.268	FINAL	18.6	—	60.00	-41.44	L1	GND

Table 7-33. AC Line Conducted Data (NB UNII HDR4 – 6420MHz) (L1) with host PC with USB-C cable

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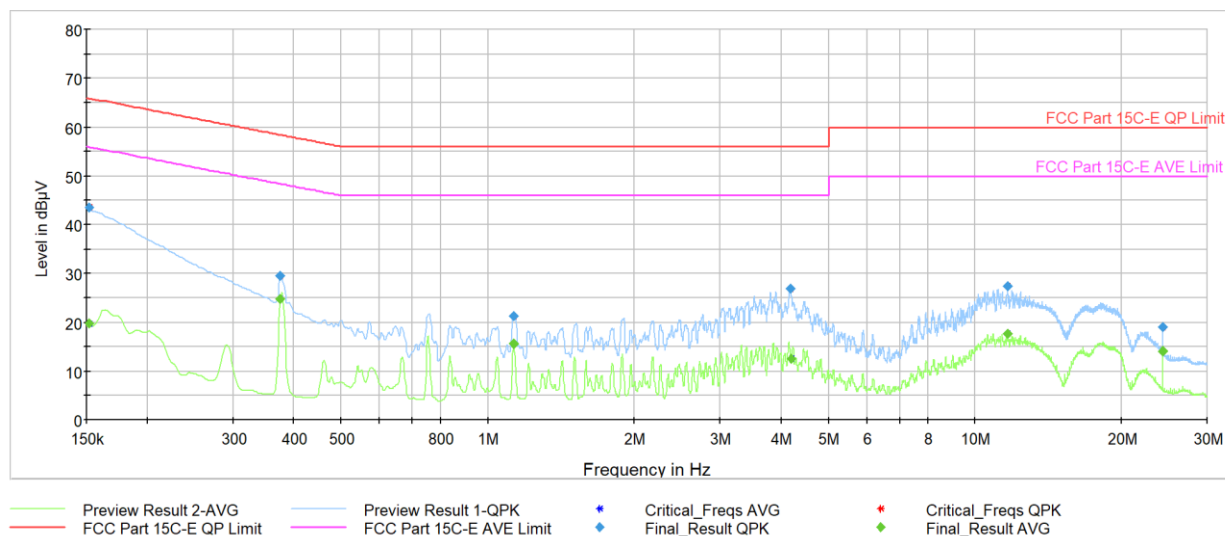
Plot 7-93. AC Line Conducted Plot (NB UNII HDR4 – 6420MHz) (N) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.152	FINAL	—	20.86	55.88	-35.01	N	GND
0.152	FINAL	42.6	—	65.88	-23.28	N	GND
0.375	FINAL	—	26.57	48.39	-21.82	N	GND
0.375	FINAL	30.1	—	58.39	-28.32	N	GND
1.136	FINAL	22.9	—	56.00	-33.14	N	GND
1.136	FINAL	—	15.85	46.00	-30.15	N	GND
3.527	FINAL	24.7	—	56.00	-31.35	N	GND
3.527	FINAL	—	12.89	46.00	-33.11	N	GND
11.632	FINAL	—	17.39	50.00	-32.61	N	GND
11.643	FINAL	26.9	—	60.00	-33.06	N	GND
16.708	FINAL	—	18.27	50.00	-31.73	N	GND
16.708	FINAL	26.1	—	60.00	-33.89	N	GND

Table 7-34. AC Line Conducted Data (NB UNII HDR4 – 6420MHz) (N) with host PC with USB-C cable

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-94. AC Line Conducted Plot (NB UNII HDRp4 – 6108MHz) (L1) with host PC with USB-C cable

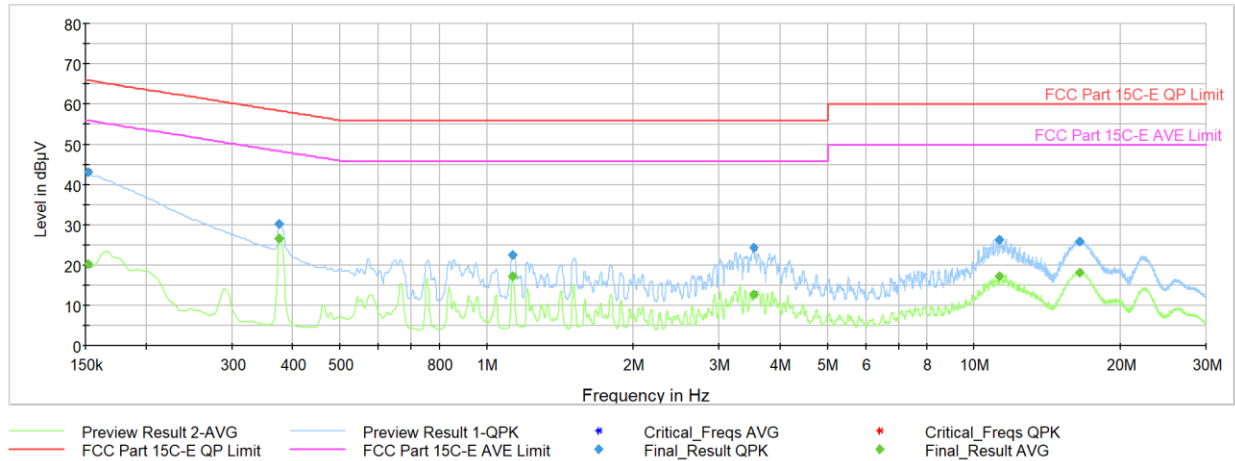
Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.152	FINAL	—	19.69	55.88	-36.19	L1	GND
0.152	FINAL	43.6	—	65.88	-22.28	L1	GND
0.375	FINAL	—	24.87	48.39	-23.52	L1	GND
0.375	FINAL	29.5	—	58.39	-28.89	L1	GND
1.129	FINAL	21.2	—	56.00	-34.81	L1	GND
1.131	FINAL	—	15.50	46.00	-30.50	L1	GND
4.184	FINAL	26.8	—	56.00	-29.20	L1	GND
4.187	FINAL	—	12.57	46.00	-33.43	L1	GND
11.645	FINAL	—	17.67	50.00	-32.33	L1	GND
11.666	FINAL	27.4	—	60.00	-32.61	L1	GND
24.266	FINAL	—	14.13	50.00	-35.87	L1	GND
24.266	FINAL	19.0	—	60.00	-41.01	L1	GND

Table 7-35. AC Line Conducted Data (NB UNII HDRp4 – 6108MHz) (L1) with host PC with USB-C cable

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.152	FINAL	—	20.18	55.88	-35.69	N	GND
0.152	FINAL	43.2	—	65.88	-22.72	N	GND
0.375	FINAL	—	26.61	48.39	-21.78	N	GND
0.375	FINAL	30.1	—	58.39	-28.25	N	GND
1.131	FINAL	22.5	—	56.00	-33.49	N	GND
1.131	FINAL	—	17.24	46.00	-28.76	N	GND
3.532	FINAL	24.4	—	56.00	-31.61	N	GND
3.532	FINAL	—	12.66	46.00	-33.34	N	GND
11.258	FINAL	—	17.38	50.00	-32.62	N	GND
11.267	FINAL	26.3	—	60.00	-33.67	N	GND
16.472	FINAL	—	18.16	50.00	-31.84	N	GND
16.472	FINAL	25.9	—	60.00	-34.10	N	GND

Table 7-36. AC Line Conducted Data (NB UNII HDRp4 – 6108MHz) (N) with host PC with USB-C cable

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Wireless Right Earbud FCC ID: BCG-A3050** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules.

FCC ID: BCG-A3050		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230023-06.BCG	Test Dates: 5/23/2024 - 8/15/2024	EUT Type: Wireless Earbud	Page 95 of 95

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