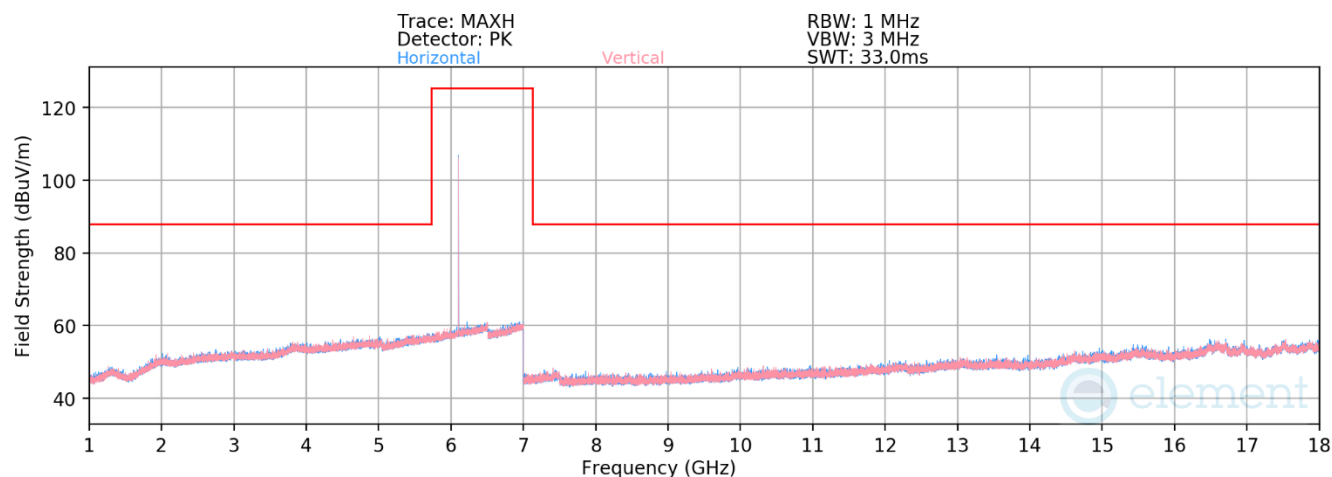


7.8.1 Radiated Spurious Emission (Above 1GHz)



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

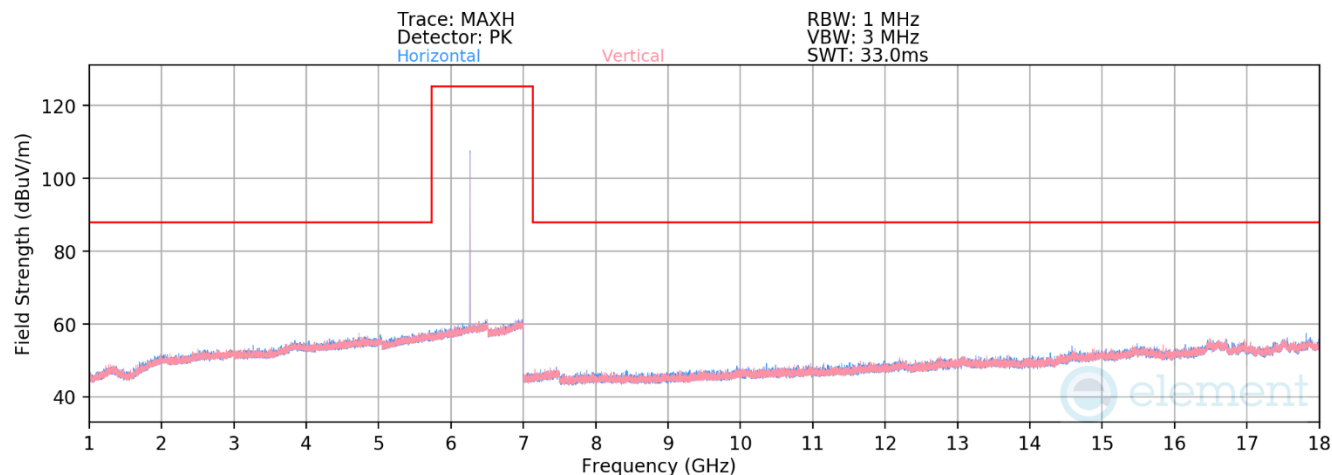
Mode: NB UNII BDR
Data Rate: 1Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 12216.00	Avg	H	-	-	-78.89	10.70	38.81	53.98	-15.17
* 12216.00	Peak	H	-	-	-67.66	10.70	50.04	73.98	-23.94

Table 7-11. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 62 of 94

V 10.5 12/15/2021



Plot 7-63. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6264MHz)

Mode: NB UNII BDR

Data Rate: 1Mbps

Distance of Measurements: 3 Meters

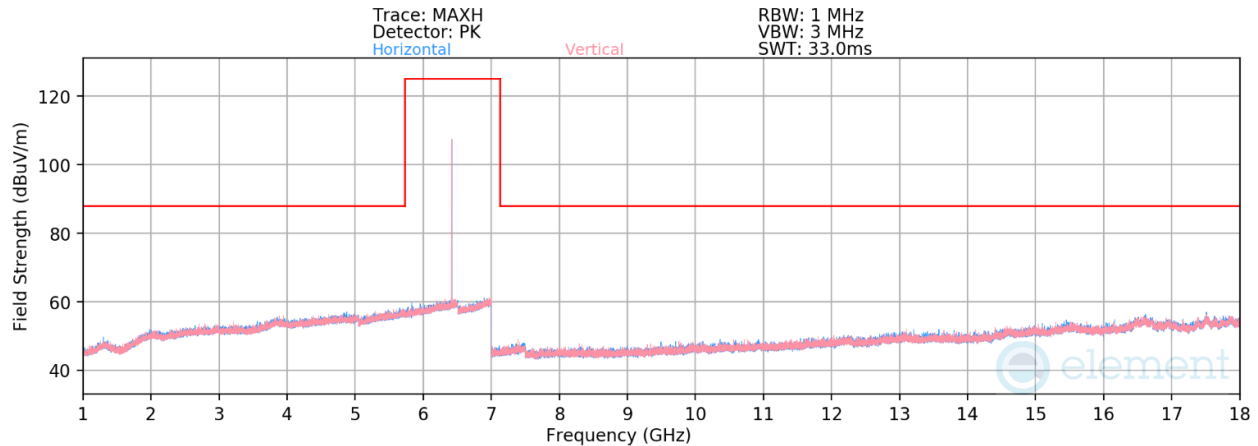
Operating Frequency: 6264MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 12528.00	Avg	H	-	-	-79.10	10.85	38.75	53.98	-15.23
* 12528.00	Peak	H	-	-	-67.50	10.85	50.35	73.98	-23.63

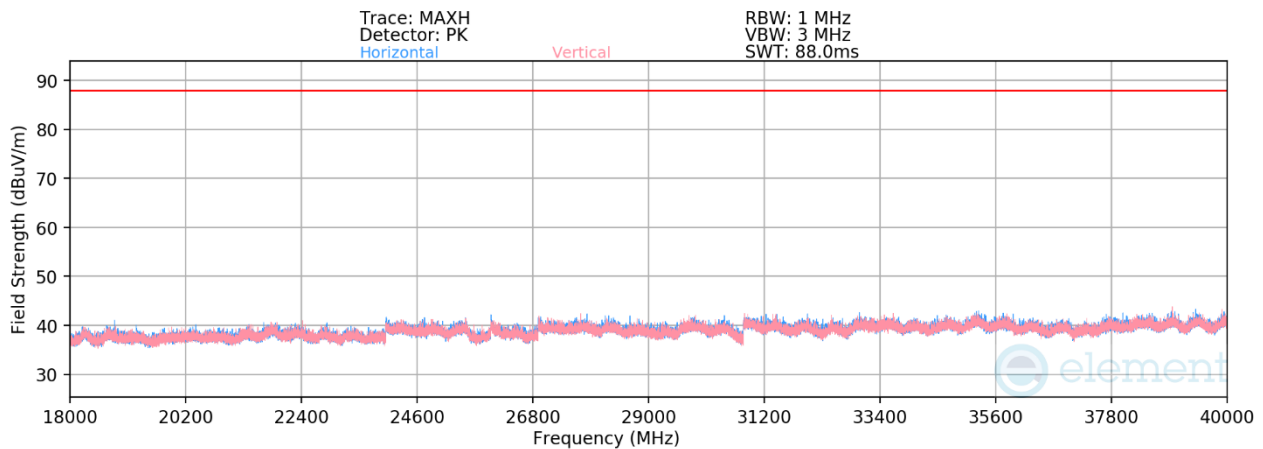
Table 7-12. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 63 of 94

V 10.5 12/15/2021



Plot 7-64. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6420MHz)



Plot 7-65. Radiated Spurious Emissions 18-40GHz (NB UNII BDR– 6420MHz)

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

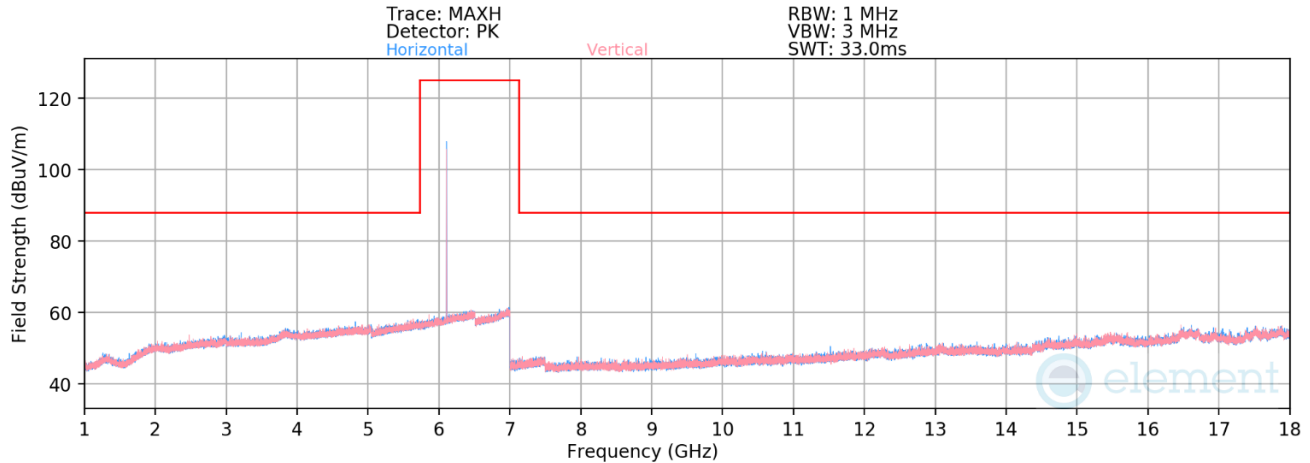
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
12840.00	Avg	V	233	47	-78.92	11.19	1.18	40.45	68.23	-27.78
12840.00	Peak	V	233	47	-68.66	11.19	0.00	49.53	88.23	-38.70
* 19260.00	Avg	H	365	264	-67.41	-7.31	1.18	33.45	53.98	-20.53
* 19260.00	Peak	H	365	264	-57.78	-7.31	0.00	41.90	73.98	-32.08
25680.00	Avg	H	263	233	-69.33	-4.97	1.18	33.88	68.23	-34.35
25680.00	Peak	H	263	233	-60.52	-4.97	0.00	41.50	88.23	-46.73
32100.00	Avg	H	-	-	-74.48	-2.20	0.00	30.32	68.23	-37.91
32100.00	Peak	H	-	-	-62.94	-2.20	0.00	41.86	88.23	-46.37
* 38520.00	Avg	H	-	-	-72.55	-3.21	0.00	31.24	53.98	-22.74
* 38520.00	Peak	H	-	-	-60.92	-3.21	0.00	42.87	73.98	-31.11

Table 7-13. Radiated Spurious Emissions Measurements

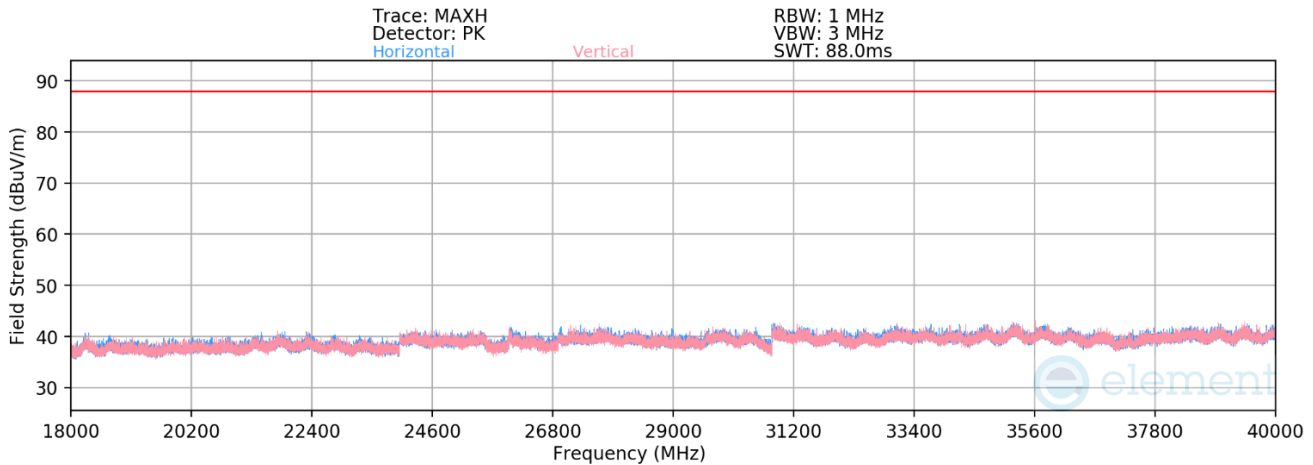
FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 64 of 94

V 10.5 12/15/2021

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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)

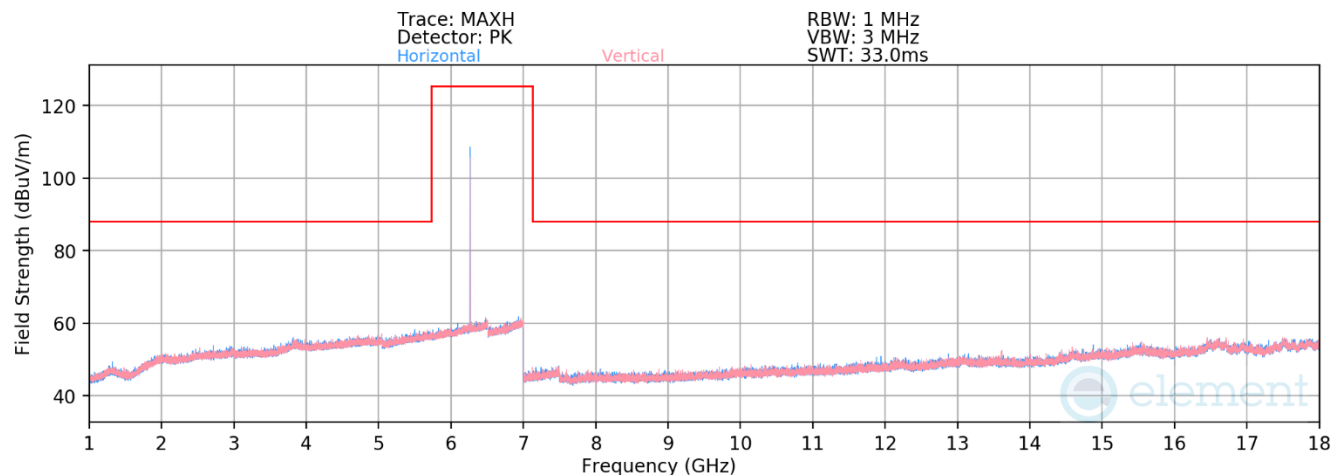
Mode: NB UNII LE
Data Rate: 2Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

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	-	-	-79.10	10.70	0.00	38.60	53.98	-15.38
* 12216.00	Peak	H	-	-	-68.11	10.70	0.00	49.59	73.98	-24.39
24432.00	Avg	V	347	30	-71.70	-4.99	0.56	30.87	68.23	-37.36
24432.00	Peak	V	347	30	-60.32	-4.99	0.00	41.69	88.23	-46.54
30540.00	Avg	H	-	-	-75.48	-1.67	0.00	29.85	68.23	-38.38
30540.00	Peak	H	-	-	-64.07	-1.67	0.00	41.26	88.23	-46.97
* 36648.00	Avg	H	-	-	-70.58	-6.50	0.00	29.92	53.98	-24.06
* 36648.00	Peak	H	-	-	-59.64	-6.50	0.00	40.86	73.98	-33.12

Table 7-14. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 65 of 94

V 10.5 12/15/2021



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

Mode: NB UNII LE

Data Rate: 2Mbps

Distance of Measurements: 3 Meters

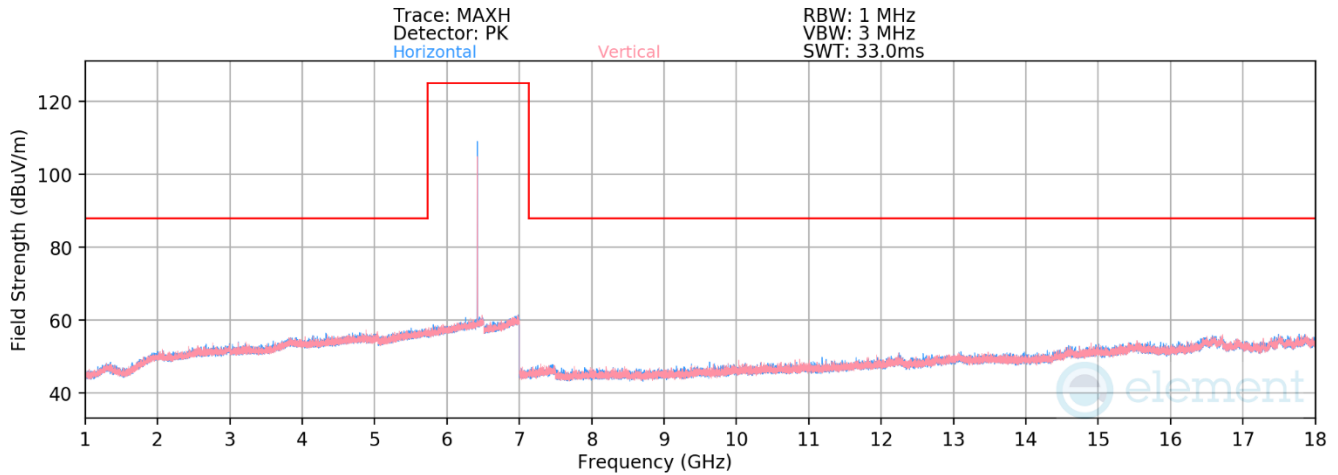
Operating Frequency: 6264MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 12528.00	Avg	H	-	-	-79.02	10.84	38.82	53.98	-15.16
* 12528.00	Peak	H	-	-	-67.84	10.84	50.00	73.98	-23.98

Table 7-15. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 66 of 94

V 10.5 12/15/2021



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

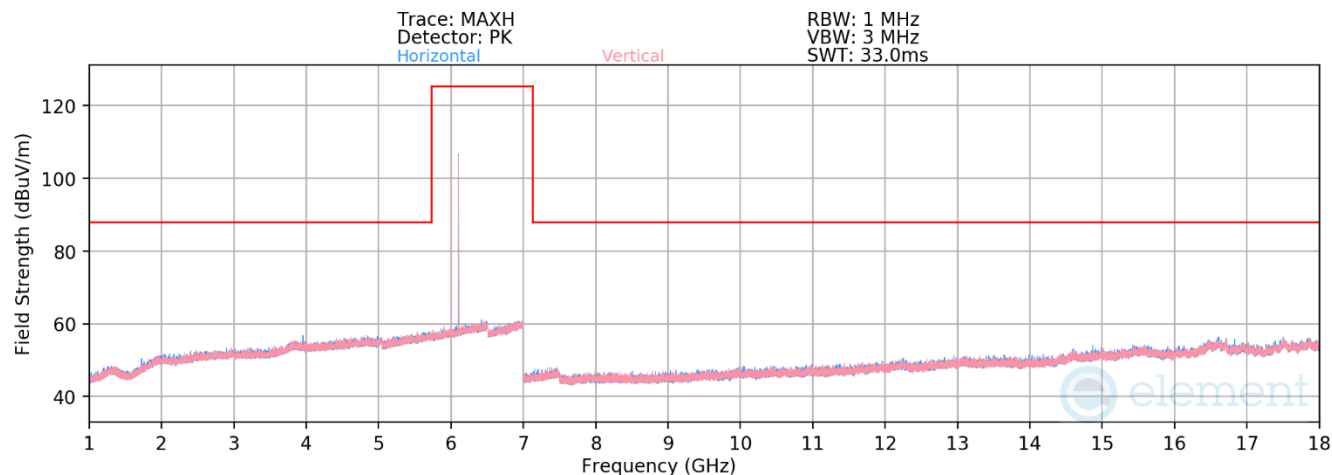
Mode: NB UNII LE
Data Rate: 2Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6420MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
12840.00	Avg	H	-	-	-79.16	11.19	39.03	68.23	-29.20
12840.00	Peak	H	-	-	-68.05	11.19	50.14	88.23	-38.09

Table 7-16. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 67 of 94

V 10.5 12/15/2021



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

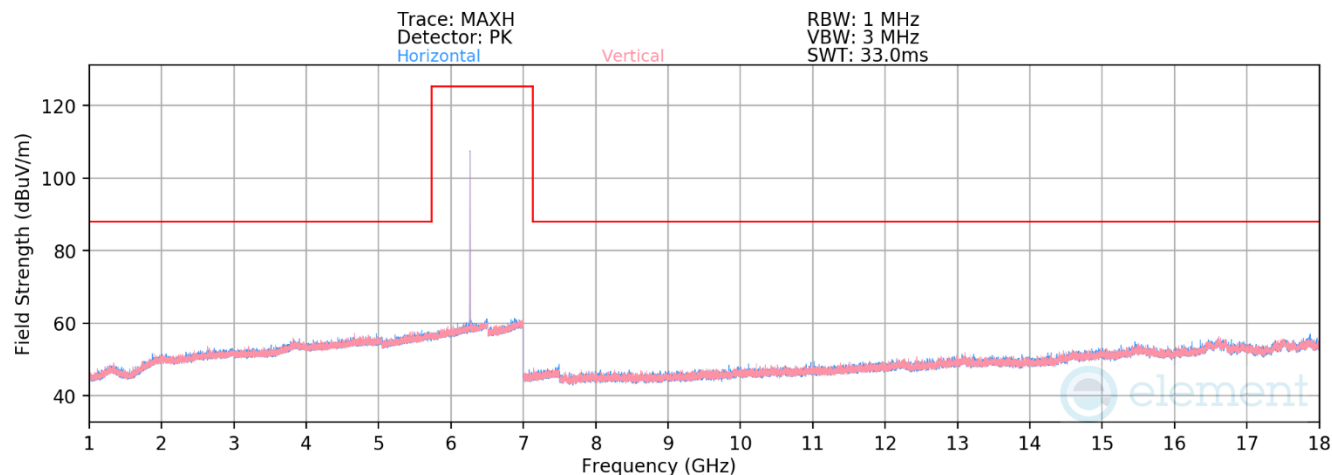
Mode: NB UNII HDR4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12216.00	Avg	H	-	-	-78.99	10.70	38.71	53.98	-15.27
* 12216.00	Peak	H	-	-	-68.56	10.70	49.14	73.98	-24.84

Table 7-17. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 68 of 94

V 10.5 12/15/2021



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

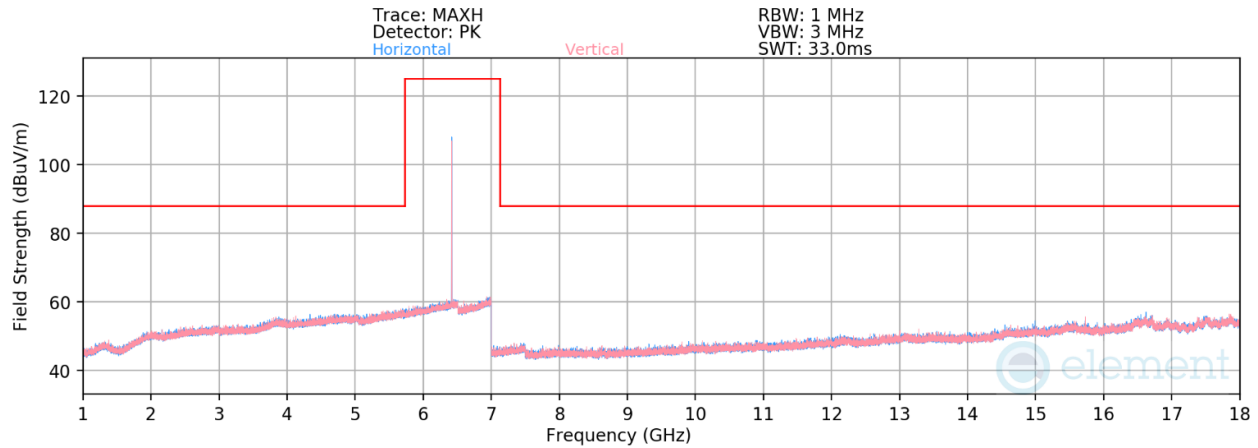
Mode: NB UNII HDR4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6264MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12528.00	Avg	H	-	-	-78.93	10.85	38.92	53.98	-15.06
* 12528.00	Peak	H	-	-	-68.18	10.85	49.67	73.98	-24.31

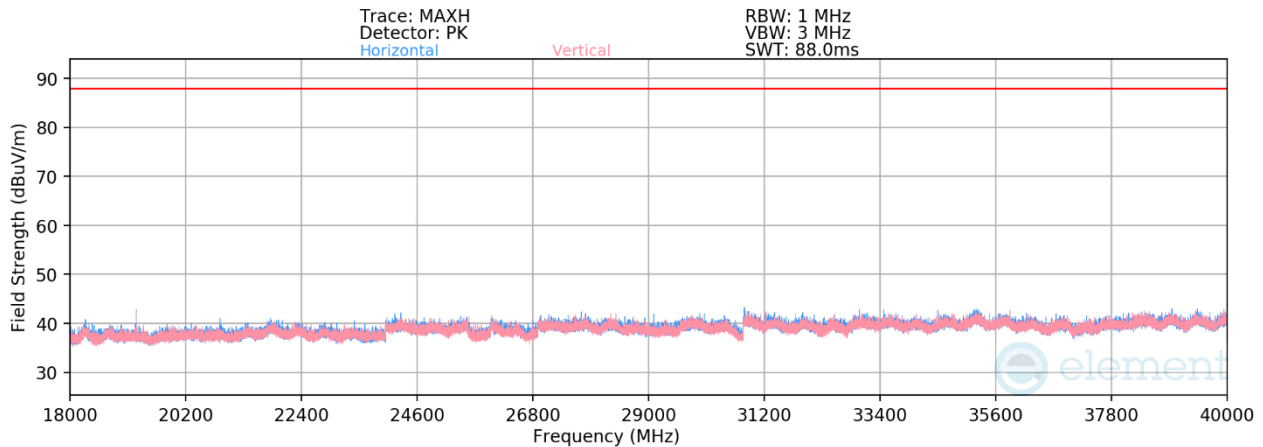
Table 7-18. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 69 of 94

V 10.5 12/15/2021



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



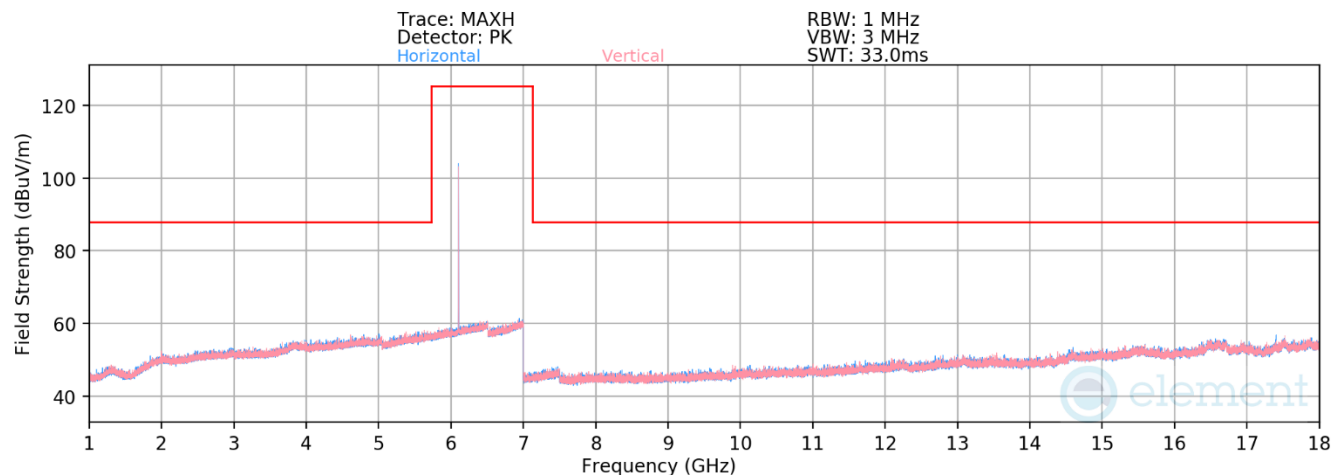
Plot 7-73. Radiated Spurious Emissions Above 18GHz (NB UNII HDR4 – 6420MHz)

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	H	-	-	-79.08	11.19	0.00	39.11	68.23	-29.12
12840.00	Peak	H	-	-	-68.47	11.19	0.00	49.72	88.23	-38.51
* 19260.00	Avg	H	150	273	-62.31	-7.31	1.09	38.47	53.98	-15.51
* 19260.00	Peak	H	150	273	-53.39	-7.31	0.00	46.30	73.98	-27.68
25680.00	Avg	V	150	181	-69.91	-4.97	1.09	33.21	68.23	-35.02
25680.00	Peak	V	150	181	-59.85	-4.97	0.00	42.18	88.23	-46.05
32100.00	Avg	V	150	261	-73.21	-2.20	1.09	32.68	68.23	-35.55
32100.00	Peak	V	150	261	-62.17	-2.20	0.00	42.63	88.23	-45.60
* 38520.00	Avg	H	150	294	-72.08	-3.21	1.09	32.80	53.98	-21.18
* 38520.00	Peak	H	150	294	-60.66	-3.21	0.00	43.13	73.98	-30.85

Table 7-19. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 70 of 94



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

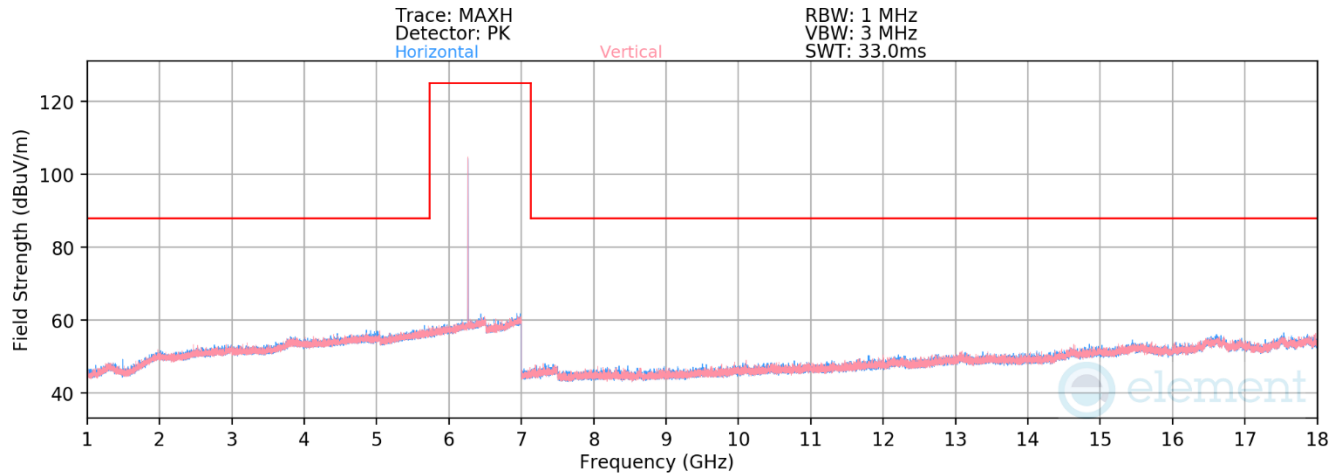
Mode: NB UNII HDRp4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6108MHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12216.00	Avg	H	-	-	-79.06	10.70	38.64	53.98	-15.34
* 12216.00	Peak	H	-	-	-68.26	10.70	49.44	73.98	-24.54

Table 7-20. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 71 of 94

V 10.5 12/15/2021



Plot 7-75. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6264MHz)

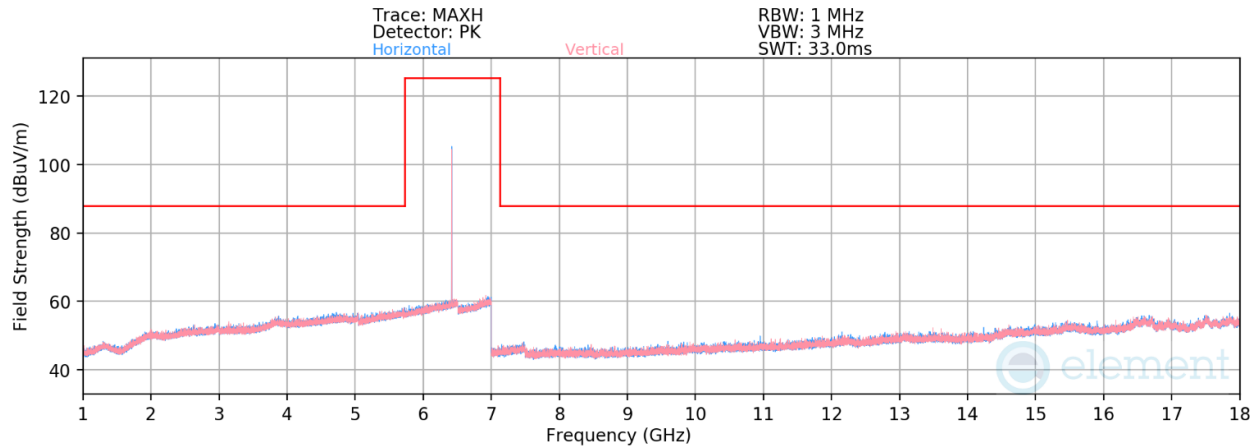
Mode: NB UNII HDRp4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6264MHz

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	H	-	-	-78.94	10.71	38.77	53.98	-15.21
* 12528.00	Peak	H	-	-	-67.91	10.97	50.06	73.98	-23.92

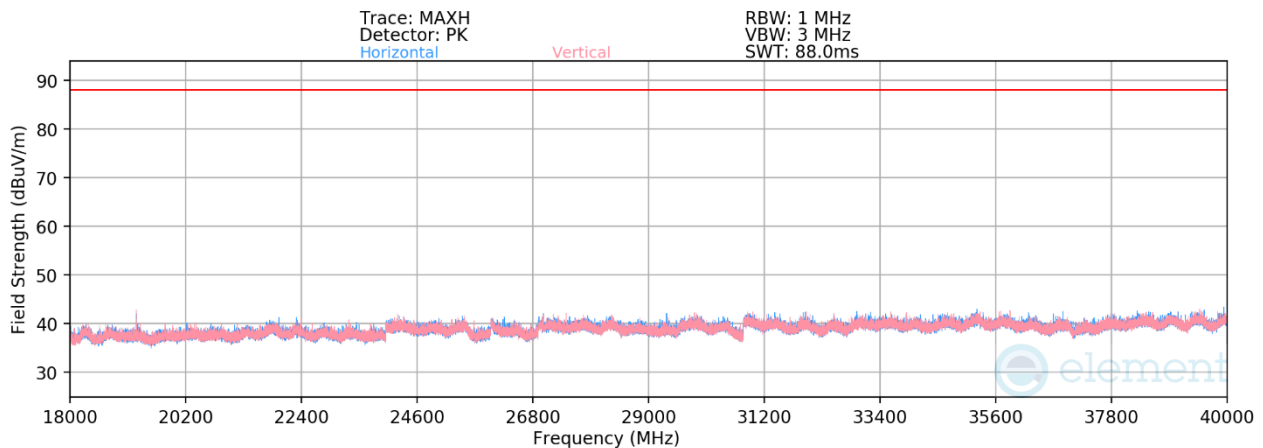
Table 7-21. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 72 of 94

V 10.5 12/15/2021



Plot 7-76. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6420MHz)



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

Mode: NB UNII HDRp4
Data Rate: 4Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 6420MHz

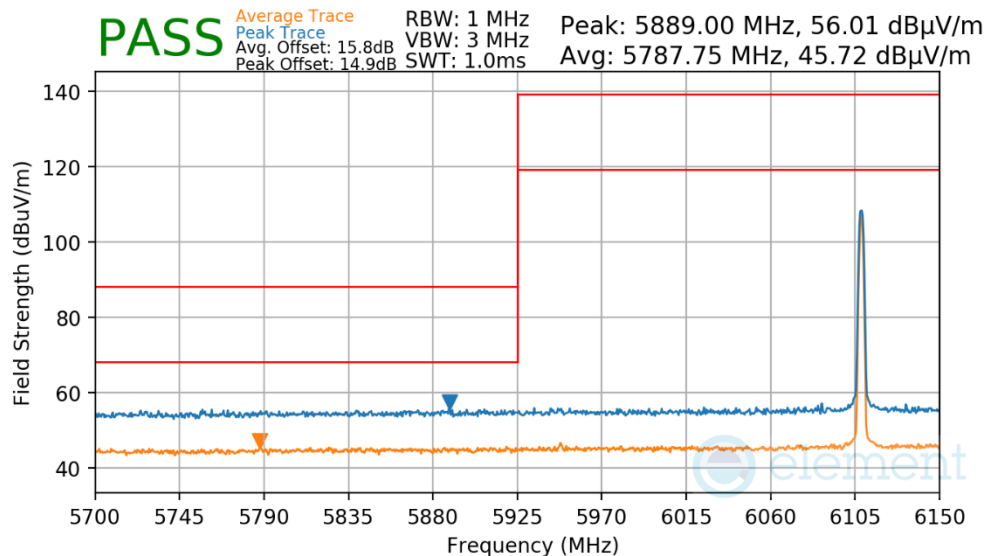
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
12840.00	Avg	H	-	-	-79.20	11.13	0.00	38.93	68.23	-29.30
12840.00	Peak	H	-	-	-68.22	11.23	0.00	50.01	88.23	-38.22
* 19260.00	Avg	H	150	281	-62.59	-7.31	0.58	37.68	53.98	-16.30
* 19260.00	Peak	H	150	281	-54.14	-7.31	0.00	45.55	73.98	-28.43
25680.00	Avg	V	150	192	-70.59	-4.97	0.58	32.02	68.23	-36.21
25680.00	Peak	V	150	192	-60.64	-4.97	0.00	41.39	88.23	-46.84
32100.00	Avg	V	150	274	-73.23	-2.20	0.58	32.15	68.23	-36.08
32100.00	Peak	V	150	274	-62.02	-2.20	0.00	42.78	88.23	-45.45
* 38520.00	Avg	V	150	49	-72.64	-3.21	0.58	31.73	53.98	-22.25
* 38520.00	Peak	V	150	49	-61.08	-3.21	0.00	42.71	73.98	-31.27

Table 7-22. Radiated Spurious Emissions Measurements

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 73 of 94

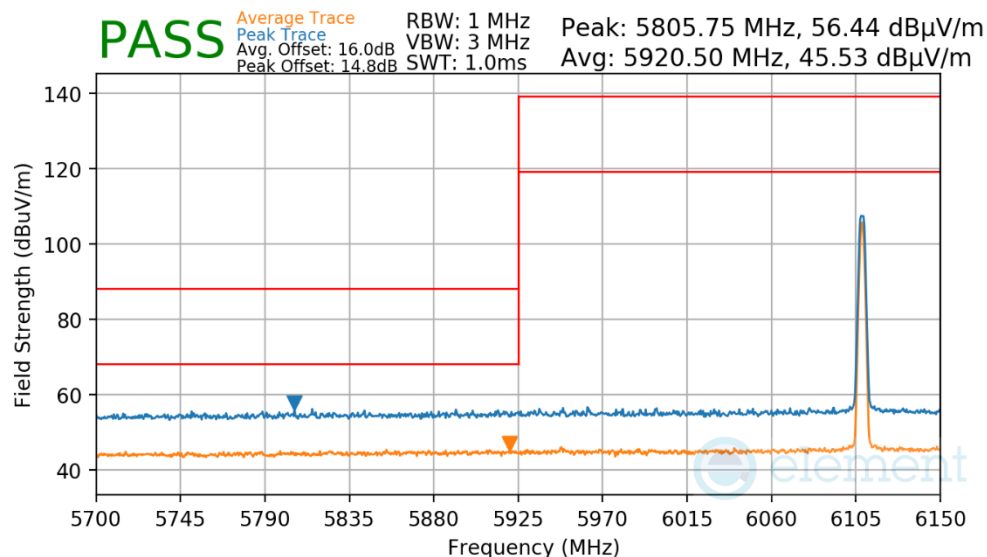
7.8.2 Radiated Band Edge Measurements

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

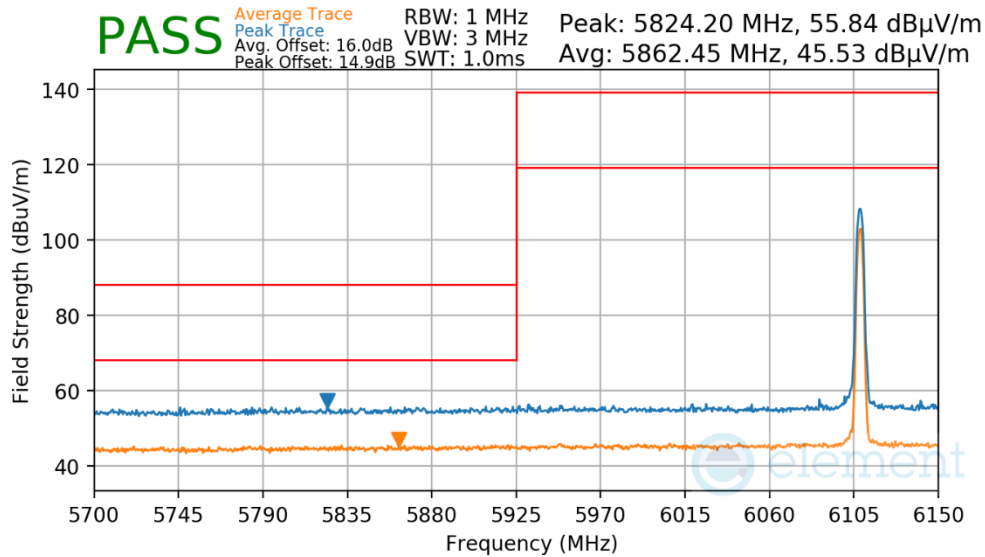


Plot 7-79. Radiated Lower Band Edge Measurement

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 74 of 94

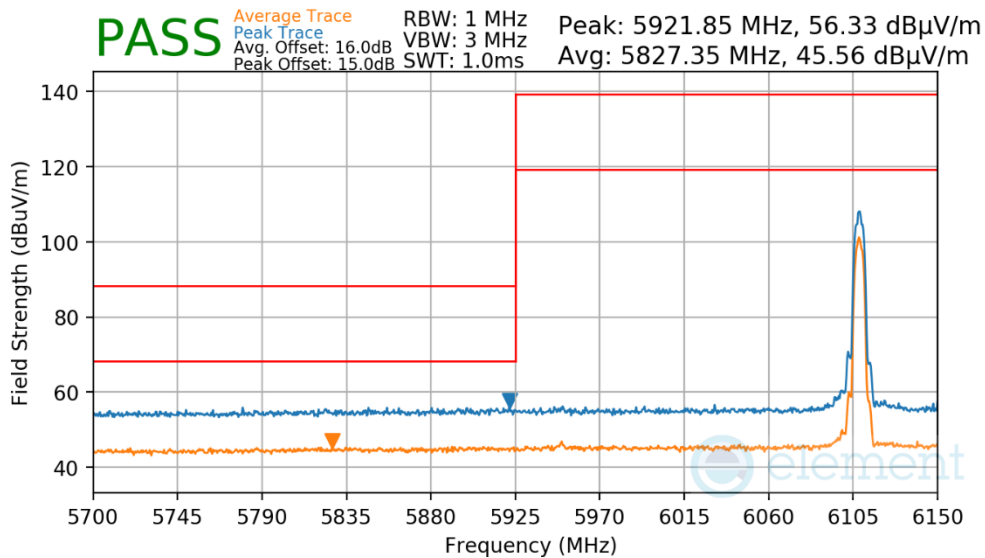
V 10.5 12/15/2021

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

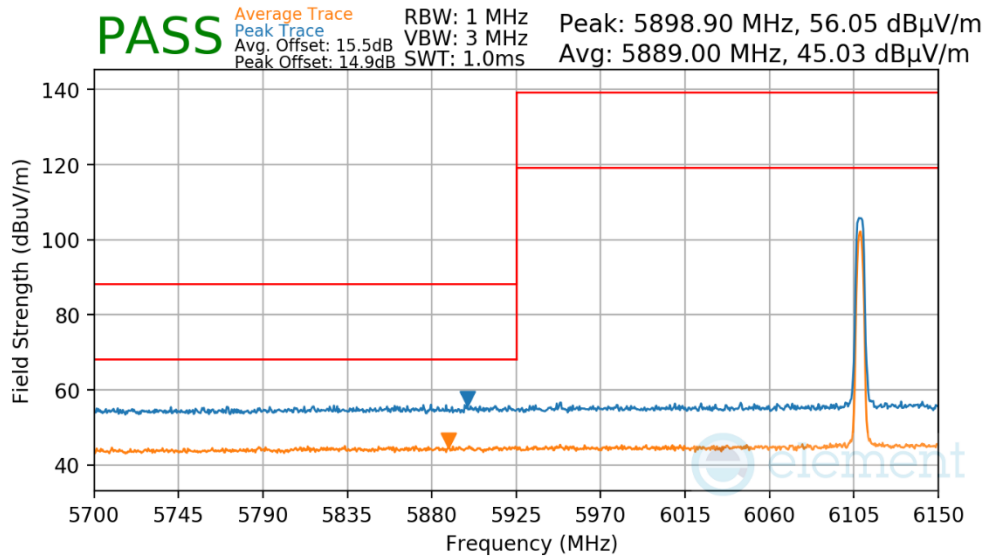


Plot 7-81. Radiated Lower Band Edge Measurement

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 75 of 94

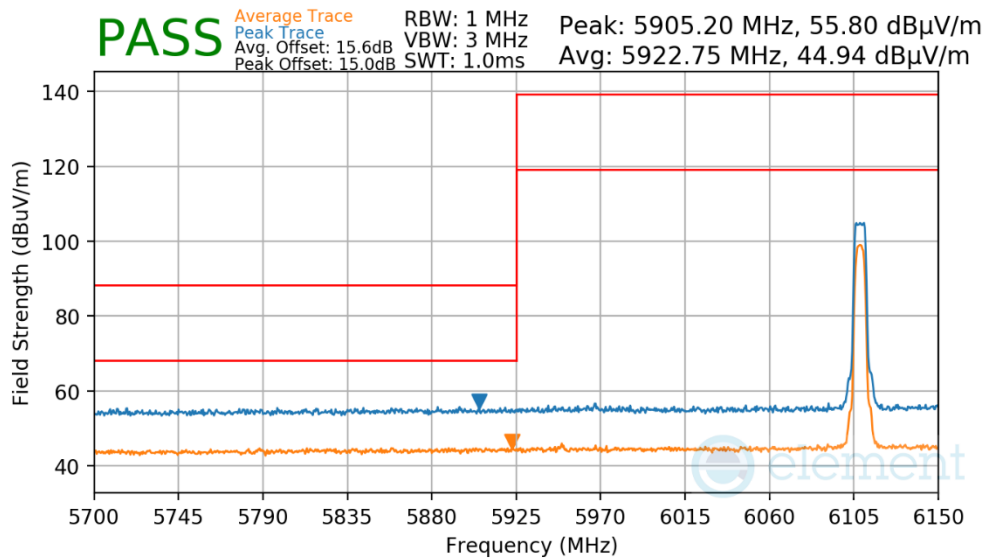
V 10.5 12/15/2021

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: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 76 of 94

V 10.5 12/15/2021

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 must not exceed the limits shown in Table 7-23 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/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

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 77 of 94

V 10.5 12/15/2021

Test Setup

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

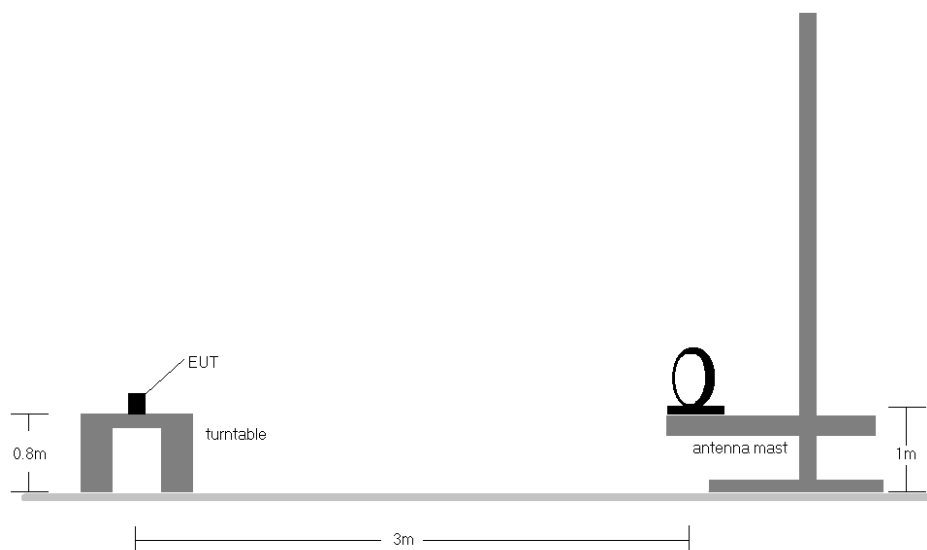


Figure 7-9. Radiated Test Setup < 30MHz

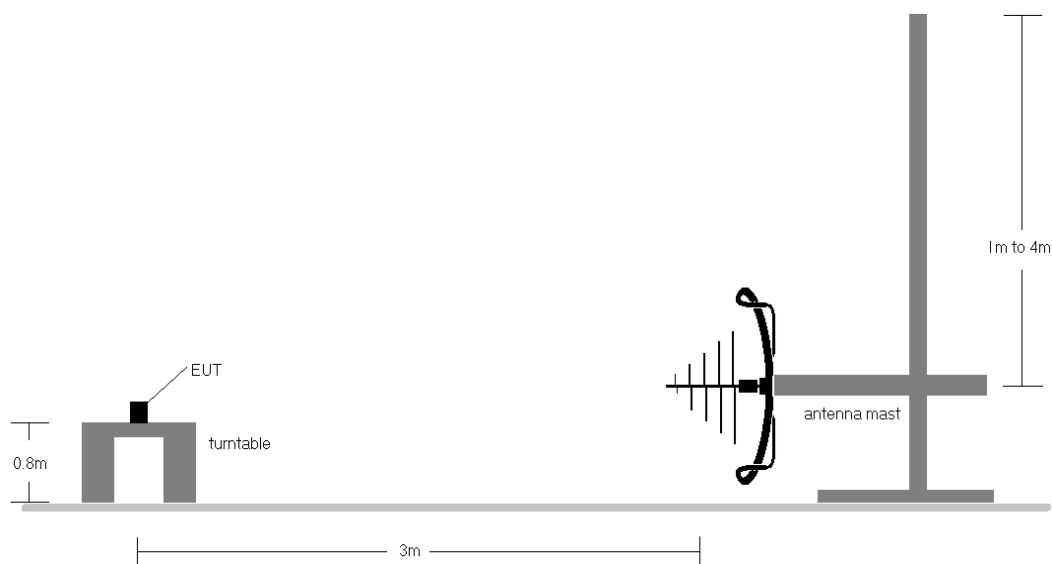


Figure 7-10. Radiated Test Setup < 1GHz

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 78 of 94

V 10.5 12/15/2021

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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 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

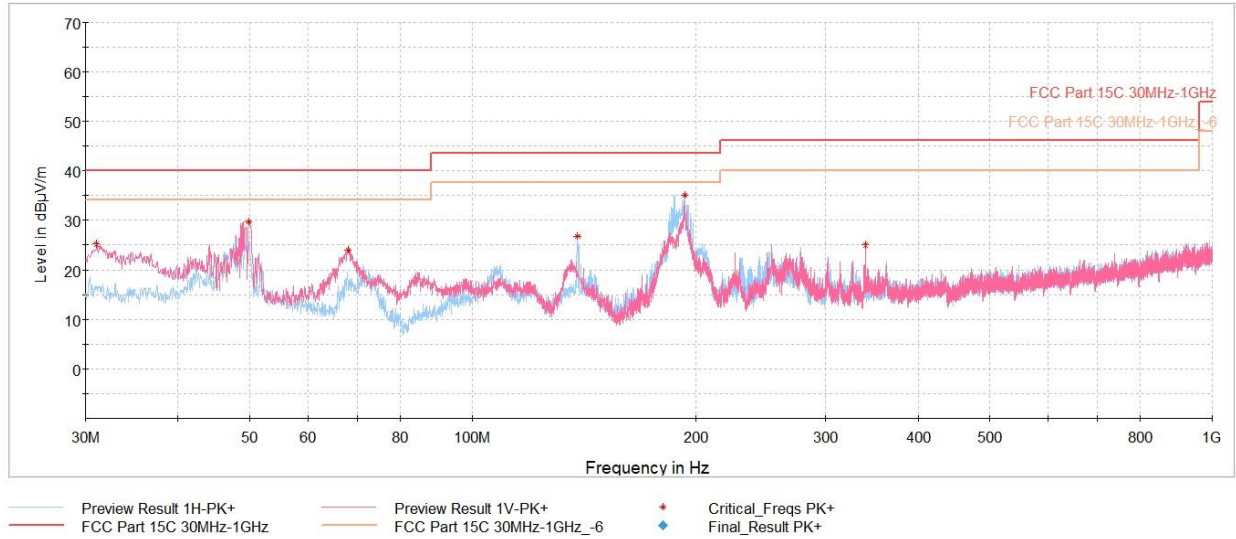
Determining Spurious Emissions Levels

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

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 79 of 94

V 10.5 12/15/2021

Radiated Spurious Emissions (Below 1GHz)



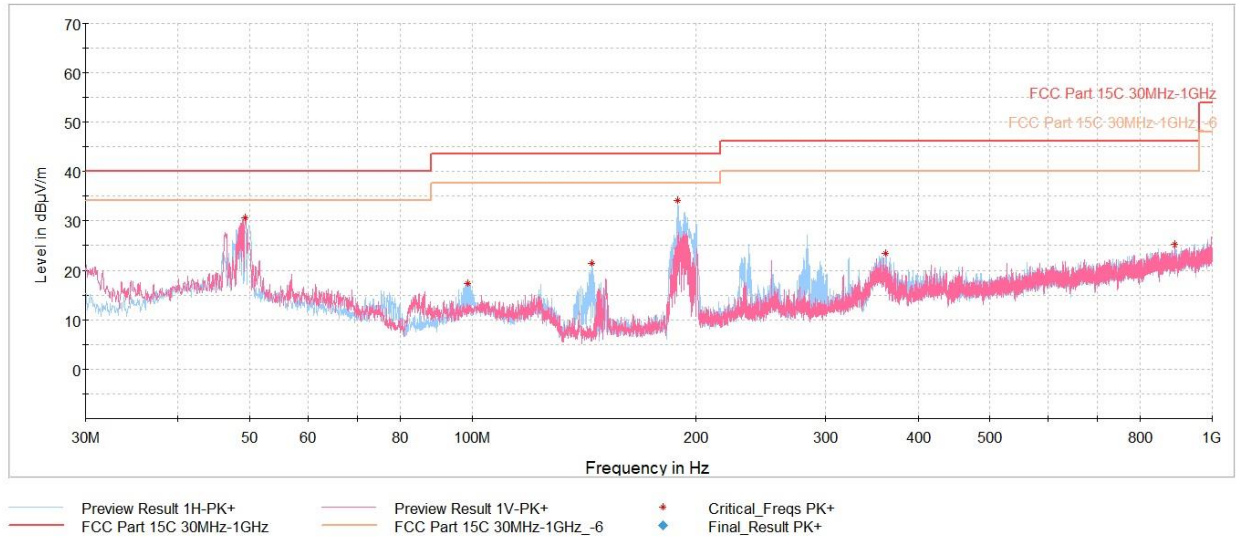
Plot 7-84. Radiated Spurious Emissions Below 1GHz (NB UNII BDR – 6420MHz), with host PC and USB-C cable

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]
31.07	Max-Peak	V	200	108	-65.09	-16.80	25.11	40.00	-14.89
49.89	Max-Peak	V	300	145	-63.68	-13.70	29.62	40.00	-10.38
67.98	Max-Peak	V	200	153	-64.45	-18.50	24.05	40.00	-15.95
138.88	Max-Peak	H	300	357	-59.49	-20.80	26.71	43.52	-16.81
193.30	Max-Peak	H	100	197	-54.21	-17.70	35.09	43.52	-8.43
339.58	Max-Peak	V	100	0	-68.36	-13.60	25.04	46.02	-20.98

Table 7-24. Radiated Spurious Emissions Below 1GHz (NB UNII BDR – 6420MHz), with host PC and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 80 of 94

V 10.5 12/15/2021



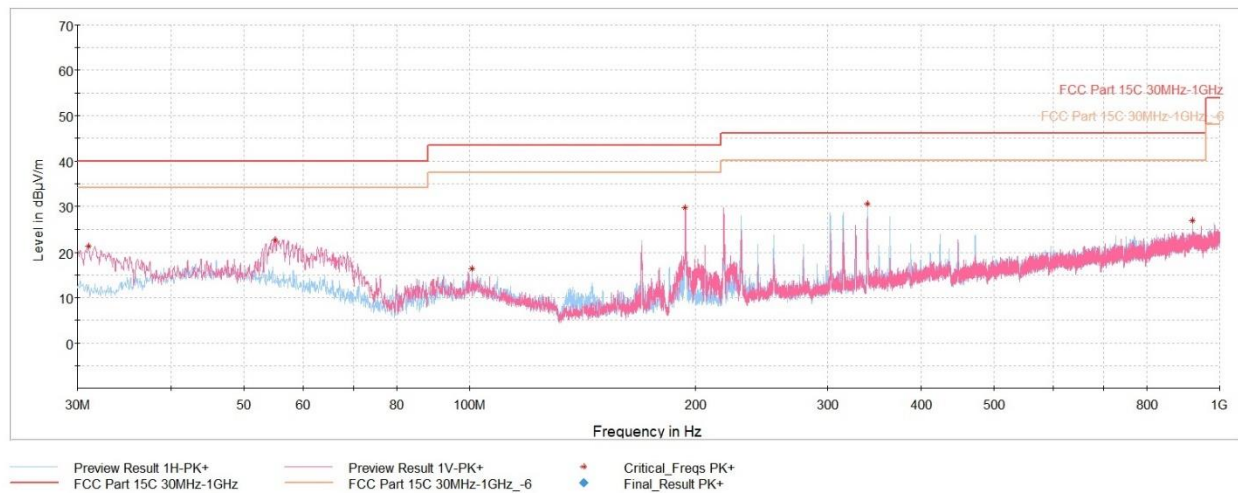
Plot 7-85. Radiated Spurious Emissions Below 1GHz (NB UNII LE2M – 6108MHz), with host PC and USB-C cable

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]
49.35	Max-Peak	V	200	20	-62.78	-13.69	30.53	40.00	-9.47
98.77	Max-Peak	H	200	3	-72.23	-17.28	17.49	43.52	-26.03
144.75	Max-Peak	H	200	81	-64.51	-20.98	21.51	43.52	-22.01
189.18	Max-Peak	H	100	266	-54.68	-18.28	34.04	43.52	-9.48
361.26	Max-Peak	H	100	170	-69.58	-13.86	23.56	46.02	-22.46
890.10	Max-Peak	V	200	77	-77.77	-4.01	25.22	46.02	-20.80

Table 7-25. Radiated Spurious Emissions Below 1GHz (NB UNII LE2M – 6108MHz), with host PC and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 81 of 94

V 10.5 12/15/2021

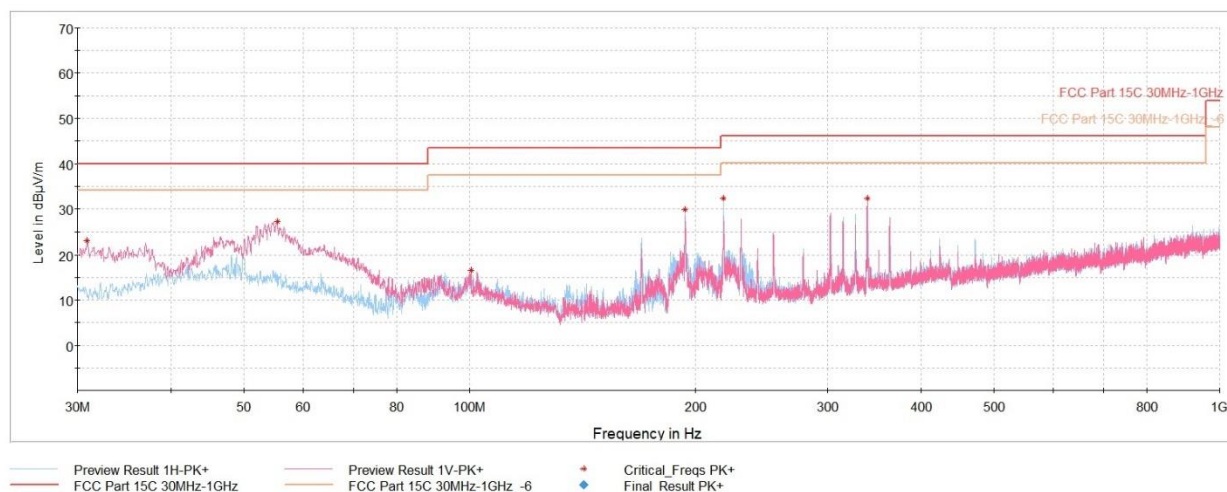


Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
31.02	Max-Peak	V	100	23	-68.94	-16.78	21.28	40.00	-18.72
55.08	Max-Peak	V	100	23	-69.68	-14.53	22.79	40.00	-17.21
100.91	Max-Peak	H	300	171	-73.38	-17.18	16.44	43.52	-27.08
193.54	Max-Peak	V	100	95	-59.65	-17.64	29.71	43.52	-13.81
338.80	Max-Peak	H	100	293	-62.75	-13.66	30.59	46.02	-15.43
919.44	Max-Peak	H	100	19	-76.71	-3.47	26.82	46.02	-19.20

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

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 82 of 94

V 10.5 12/15/2021



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]
30.92	Max-Peak	V	100	0	-67.24	-16.74	23.02	40.00	-16.98
55.41	Max-Peak	V	100	119	-65.23	-14.61	27.16	40.00	-12.84
100.62	Max-Peak	H	300	171	-73.30	-17.18	16.52	43.52	-27.00
193.59	Max-Peak	H	200	148	-59.46	-17.64	29.90	43.52	-13.62
217.74	Max-Peak	H	100	334	-57.39	-17.36	32.25	46.02	-13.77
338.90	Max-Peak	V	100	307	-60.97	-13.65	32.38	46.02	-13.64

Table 7-27. Radiated Spurious Emissions Below 1GHz (NB UNII HDRp4 – 6420MHz), with AC/DC adaptor and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 83 of 94

V 10.5 12/15/2021

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. 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 and RSS-Gen (8.8).

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

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 84 of 94

V 10.5 12/15/2021

Test Setup

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

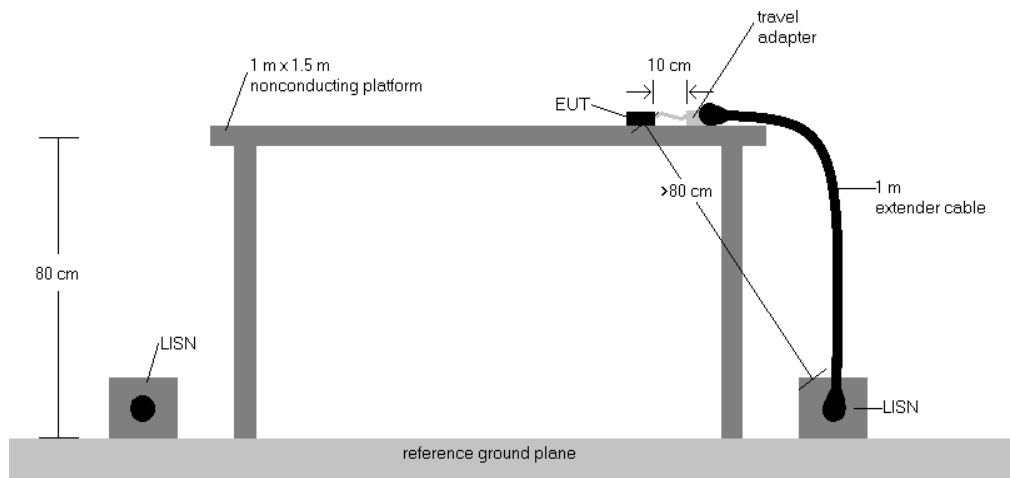


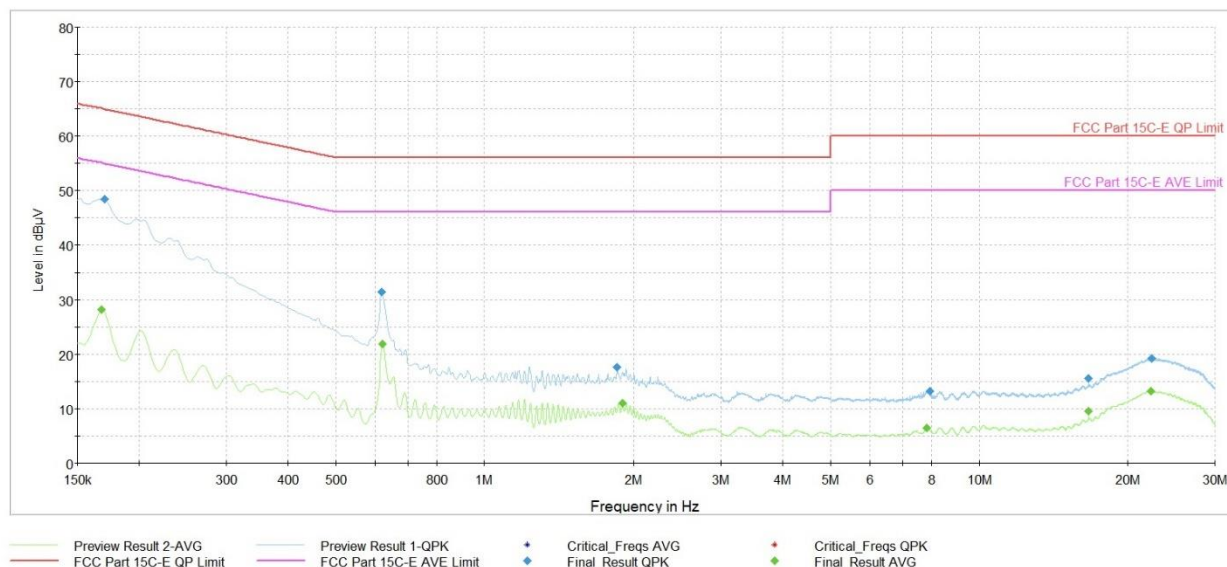
Figure 7-11. Test Instrument & Measurement Setup

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 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 plots are made using quasi-peak and average detectors.
8. Deviations to the Specifications: None.

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 85 of 94

V 10.5 12/15/2021

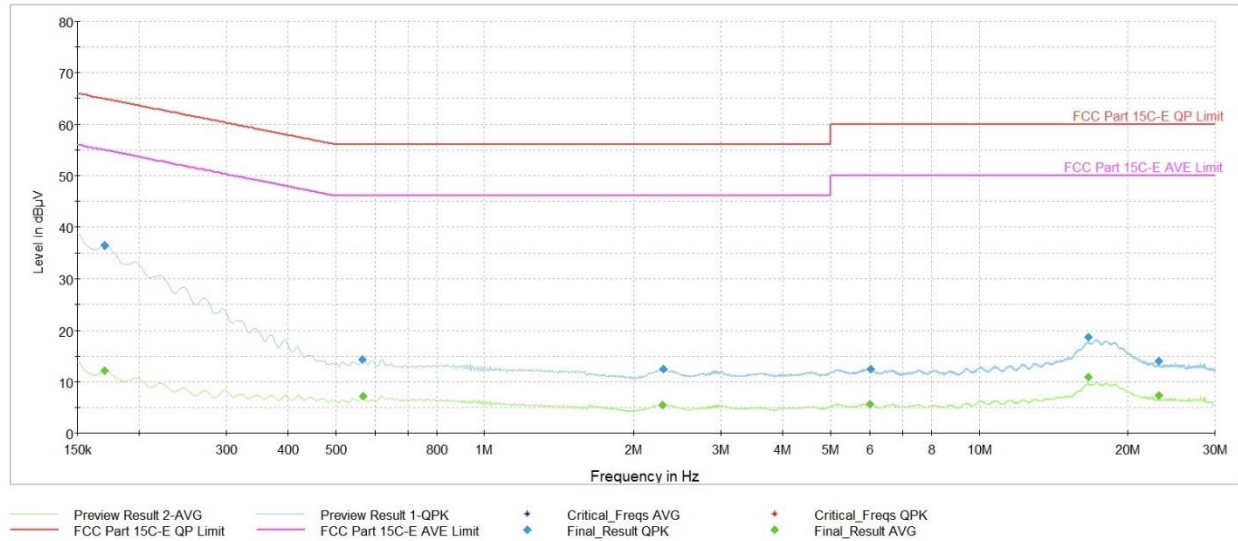


Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.168	FINAL	—	28.24	55.06	-26.82	L1	GND
0.170	FINAL	48.4	—	64.95	-16.60	L1	GND
0.620	FINAL	31.4	—	56.00	-24.58	L1	GND
0.623	FINAL	—	21.98	46.00	-24.02	L1	GND
1.851	FINAL	17.6	—	56.00	-38.37	L1	GND
1.894	FINAL	—	10.98	46.00	-35.02	L1	GND
7.825	FINAL	—	6.46	50.00	-43.54	L1	GND
7.935	FINAL	13.3	—	60.00	-46.73	L1	GND
16.616	FINAL	15.6	—	60.00	-44.44	L1	GND
16.616	FINAL	—	9.50	50.00	-40.50	L1	GND
22.290	FINAL	—	13.23	50.00	-36.77	L1	GND
22.317	FINAL	19.2	—	60.00	-40.76	L1	GND

Table 7-29. AC Line Conducted Data (NB UNII BDR – 6420MHz) (L1) with host PC with USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 86 of 94

V 10.5 12/15/2021



Plot 7-89. AC Line Conducted Plot (NB UNII BDR – 6420MHz) (N) with host PC and USB-C cable

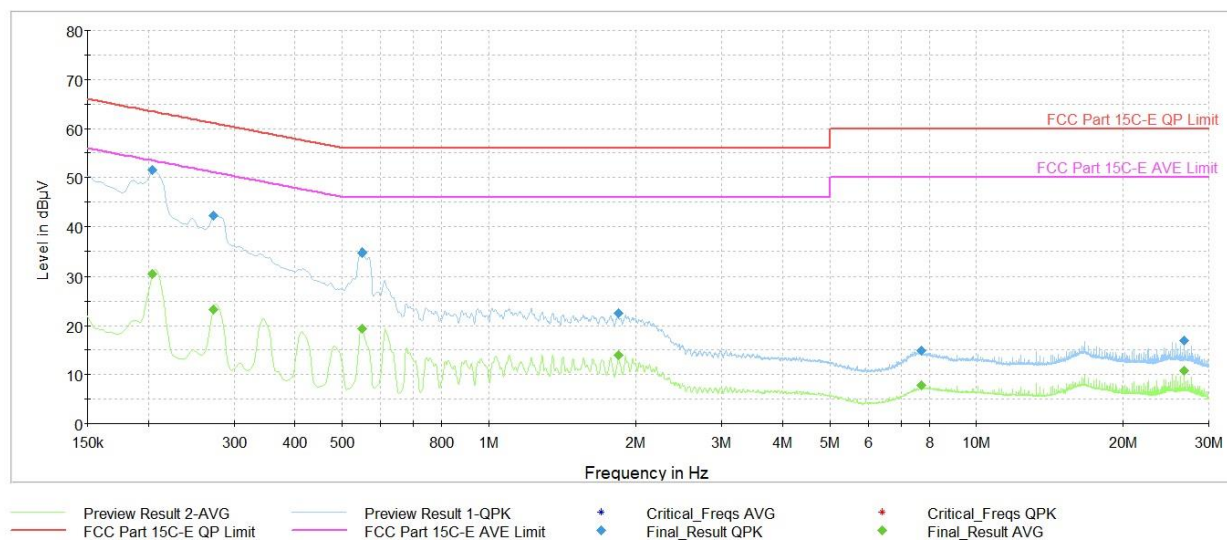
Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.170	FINAL	—	12.06	54.95	-42.88	N	GND
0.170	FINAL	36.4	—	64.95	-28.53	N	GND
0.566	FINAL	14.4	—	56.00	-41.62	N	GND
0.569	FINAL	—	7.09	46.00	-38.91	N	GND
2.283	FINAL	—	5.45	46.00	-40.55	N	GND
2.292	FINAL	12.4	—	56.00	-43.56	N	GND
6.018	FINAL	—	5.64	50.00	-44.36	N	GND
6.032	FINAL	12.5	—	60.00	-47.52	N	GND
16.613	FINAL	—	10.83	50.00	-39.17	N	GND
16.616	FINAL	18.6	—	60.00	-41.39	N	GND
23.129	FINAL	—	7.25	50.00	-42.75	N	GND
23.129	FINAL	13.9	—	60.00	-46.06	N	GND

Table 7-30. AC Line Conducted Data (NB UNII BDR – 6420MHz) (N) with host PC and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 87 of 94

V 10.5 12/15/2021

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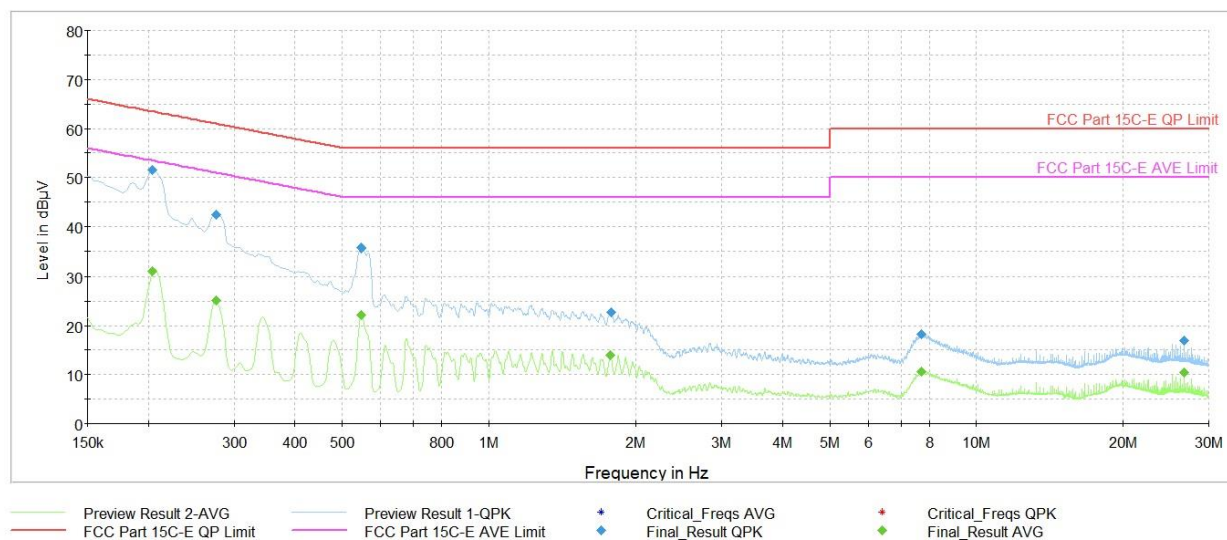
Plot 7-90. AC Line Conducted Plot (NB UNII LE2M – 6108MHz) (L1) with host PC and USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.204	FINAL	—	30.53	53.45	-22.91	L1	GND
0.204	FINAL	51.5	—	63.45	-12.00	L1	GND
0.272	FINAL	—	23.35	51.07	-27.72	L1	GND
0.272	FINAL	42.2	—	61.07	-18.92	L1	GND
0.551	FINAL	—	19.27	46.00	-26.73	L1	GND
0.551	FINAL	34.8	—	56.00	-21.24	L1	GND
1.838	FINAL	22.5	—	56.00	-33.48	L1	GND
1.838	FINAL	—	13.87	46.00	-32.13	L1	GND
7.701	FINAL	14.9	—	60.00	-45.11	L1	GND
7.701	FINAL	—	7.79	50.00	-42.21	L1	GND
26.671	FINAL	—	10.76	50.00	-39.24	L1	GND
26.671	FINAL	17.0	—	60.00	-43.02	L1	GND

Table 7-31. AC Line Conducted Data (NB UNII LE2M – 6108MHz) (L1) with host PC and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 88 of 94

V 10.5 12/15/2021



Plot 7-91. AC Line Conducted Data (NB UNII LE2M – 6108MHz) (N) with host PC and USB-C cable

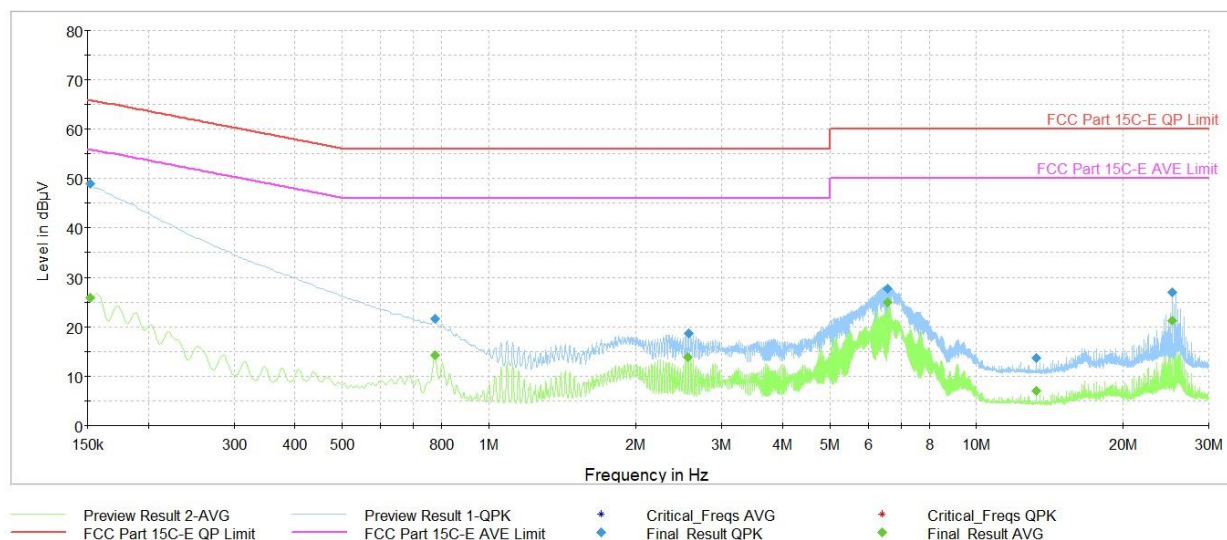
Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.204	FINAL	—	31.02	53.45	-22.43	N	GND
0.204	FINAL	51.5	—	63.45	-11.94	N	GND
0.276	FINAL	—	25.04	50.94	-25.90	N	GND
0.276	FINAL	42.5	—	60.94	-18.48	N	GND
0.548	FINAL	—	22.07	46.00	-23.93	N	GND
0.548	FINAL	35.7	—	56.00	-20.35	N	GND
1.772	FINAL	—	13.90	46.00	-32.10	N	GND
1.775	FINAL	22.7	—	56.00	-33.35	N	GND
7.701	FINAL	18.2	—	60.00	-41.82	N	GND
7.701	FINAL	—	10.63	50.00	-39.37	N	GND
26.671	FINAL	—	10.50	50.00	-39.50	N	GND
26.671	FINAL	16.9	—	60.00	-43.09	N	GND

Table 7-32. AC Line Conducted Data (NB UNII LE2M – 6108MHz) (N) with host PC and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 89 of 94

V 10.5 12/15/2021

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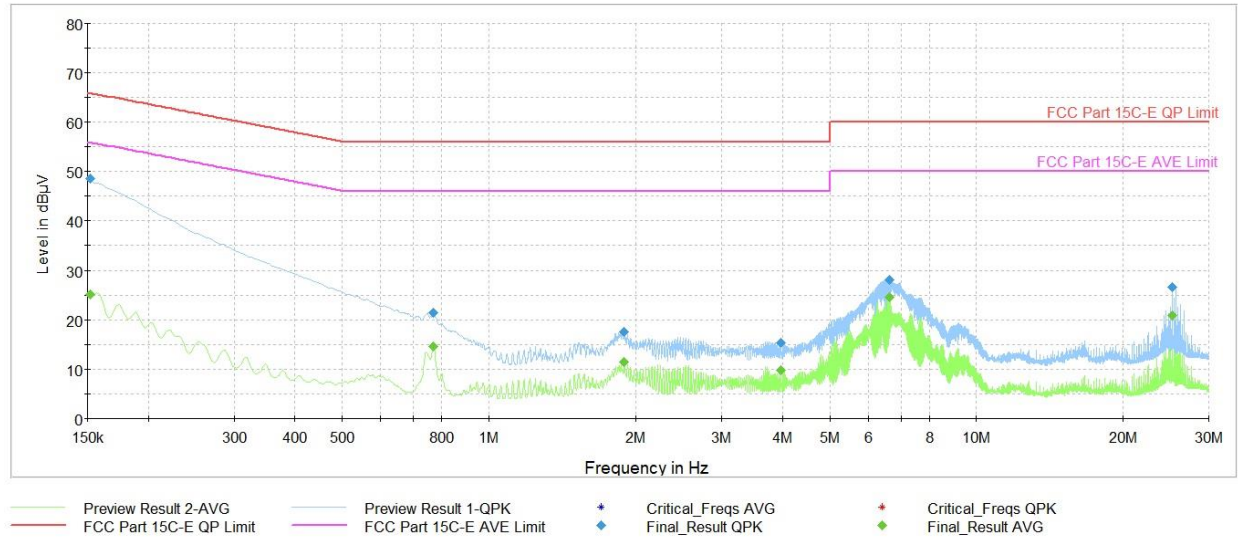
Plot 7-92. AC Line Conducted Plot (NB UNII HDR4 – 6420MHz) (L1) with host PC and USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.152	FINAL	—	25.95	55.88	-29.92	L1	GND
0.152	FINAL	48.8	—	65.88	-17.07	L1	GND
0.776	FINAL	—	14.28	46.00	-31.72	L1	GND
0.776	FINAL	21.7	—	56.00	-34.27	L1	GND
2.558	FINAL	—	13.80	46.00	-32.20	L1	GND
2.560	FINAL	18.7	—	56.00	-37.29	L1	GND
6.556	FINAL	27.8	—	60.00	-32.18	L1	GND
6.556	FINAL	—	24.93	50.00	-25.07	L1	GND
13.272	FINAL	13.6	—	60.00	-46.39	L1	GND
13.272	FINAL	—	7.13	50.00	-42.87	L1	GND
25.249	FINAL	—	21.22	50.00	-28.78	L1	GND
25.249	FINAL	27.0	—	60.00	-32.97	L1	GND

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

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 90 of 94

V 10.5 12/15/2021



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

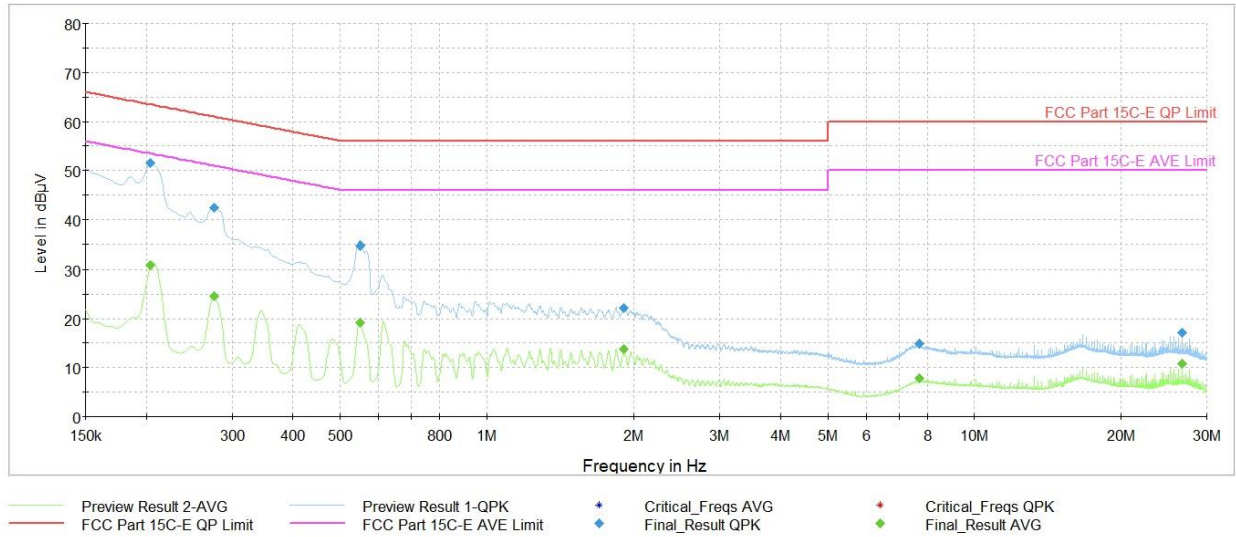
Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.152	FINAL	—	25.20	55.88	-30.68	N	GND
0.152	FINAL	48.6	—	65.88	-17.31	N	GND
0.769	FINAL	21.5	—	56.00	-34.53	N	GND
0.771	FINAL	—	14.72	46.00	-31.28	N	GND
1.889	FINAL	17.6	—	56.00	-38.45	N	GND
1.892	FINAL	—	11.53	46.00	-34.47	N	GND
3.966	FINAL	—	9.90	46.00	-36.10	N	GND
3.968	FINAL	15.3	—	56.00	-40.69	N	GND
6.619	FINAL	28.1	—	60.00	-31.90	N	GND
6.619	FINAL	—	24.65	50.00	-25.35	N	GND
25.247	FINAL	26.7	—	60.00	-33.33	N	GND
25.249	FINAL	—	20.97	50.00	-29.03	N	GND

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

FCC ID: BCGA3158 IC: 579C-A3158			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud		Page 91 of 94

V 10.5 12/15/2021

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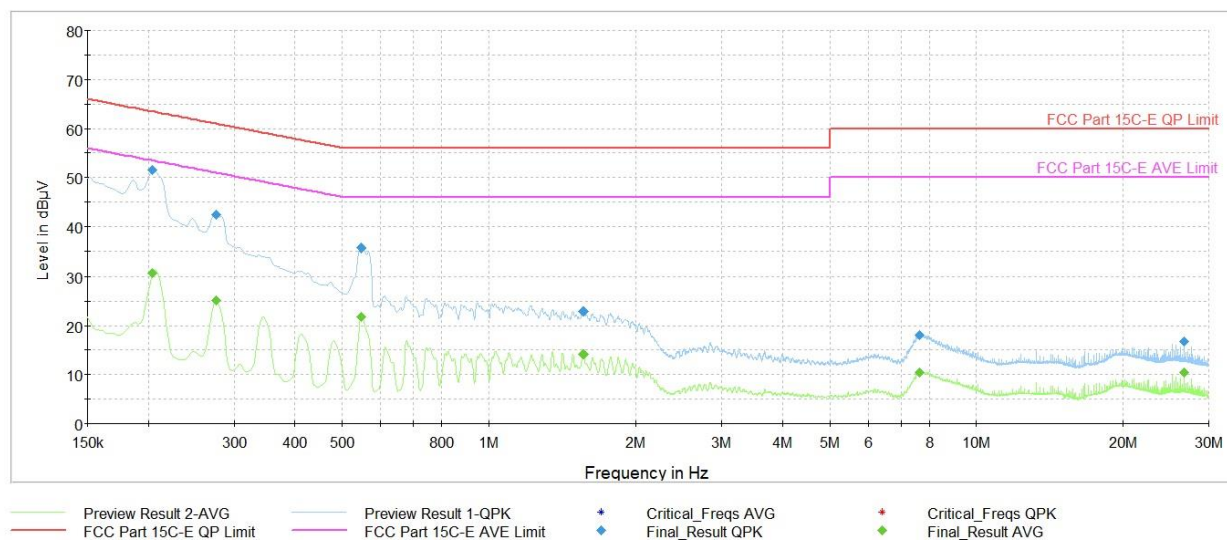
Plot 7-94. AC Line Conducted Plot (NB UNII HDRp4 – 6420MHz) (L1) with host PC and USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.204	FINAL	—	30.84	53.45	-22.61	L1	GND
0.204	FINAL	51.6	—	63.45	-11.89	L1	GND
0.276	FINAL	—	24.62	50.94	-26.32	L1	GND
0.276	FINAL	42.5	—	60.94	-18.43	L1	GND
0.551	FINAL	34.9	—	56.00	-21.13	L1	GND
0.551	FINAL	—	19.23	46.00	-26.77	L1	GND
1.903	FINAL	22.2	—	56.00	-33.79	L1	GND
1.903	FINAL	—	13.83	46.00	-32.17	L1	GND
7.701	FINAL	—	7.78	50.00	-42.22	L1	GND
7.703	FINAL	14.9	—	60.00	-45.13	L1	GND
26.671	FINAL	—	10.74	50.00	-39.26	L1	GND
26.671	FINAL	17.1	—	60.00	-42.88	L1	GND

Table 7-35. AC Line Conducted Data (NB UNII HDRp4 – 6420MHz) (L1) with host PC and USB-C cable

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Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 92 of 94

V 10.5 12/15/2021



Plot 7-95. AC Line Conducted Plot (NB UNII HDRp4 – 6420MHz) (N) with host PC and USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.204	FINAL	—	30.67	53.45	-22.78	N	GND
0.204	FINAL	51.5	—	63.45	-11.94	N	GND
0.276	FINAL	—	25.03	50.94	-25.91	N	GND
0.276	FINAL	42.4	—	60.94	-18.56	N	GND
0.548	FINAL	—	21.77	46.00	-24.23	N	GND
0.548	FINAL	35.8	—	56.00	-20.24	N	GND
1.559	FINAL	22.8	—	56.00	-33.19	N	GND
1.559	FINAL	—	14.08	46.00	-31.92	N	GND
7.643	FINAL	18.1	—	60.00	-41.88	N	GND
7.643	FINAL	—	10.34	50.00	-39.66	N	GND
26.671	FINAL	—	10.48	50.00	-39.52	N	GND
26.671	FINAL	16.8	—	60.00	-43.22	N	GND

Table 7-36. AC Line Conducted Data (NB UNII HDRp4 – 6420MHz) (N) with host PC and USB-C cable

FCC ID: BCGA3158 IC: 579C-A3158			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud		Page 93 of 94

V 10.5 12/15/2021

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Wireless Left Earbud FCC ID: BCGA3158** and **IC: 579C-A3158** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules and RSS-248 of the Innovation, Science and Economic Development Canada Rules.

FCC ID: BCGA3158 IC: 579C-A3158		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230028-07.BCG	Test Dates: 06/25/2024 - 08/23/2024	EUT Type: Wireless Earbud	Page 94 of 94

V 10.5 12/15/2021

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