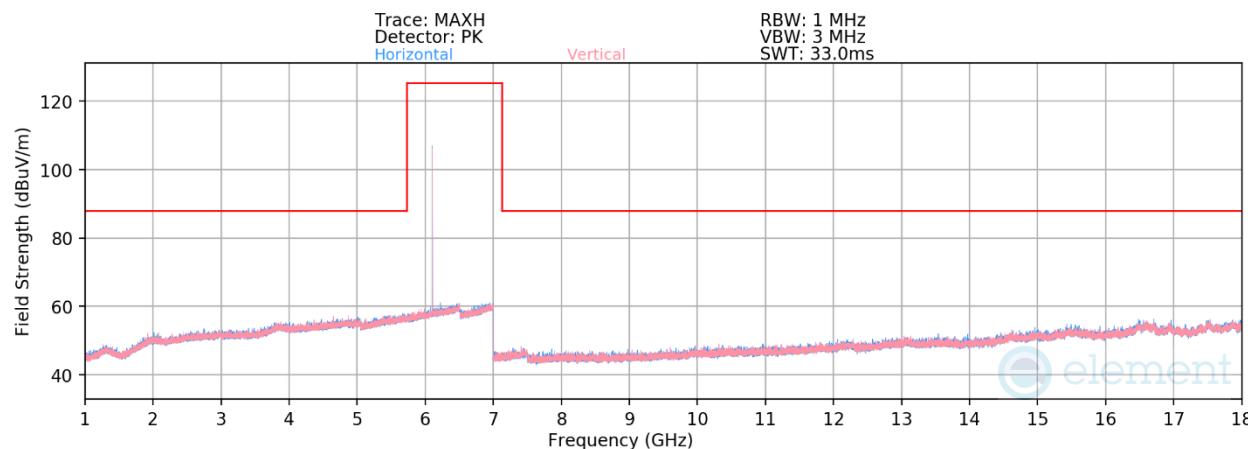
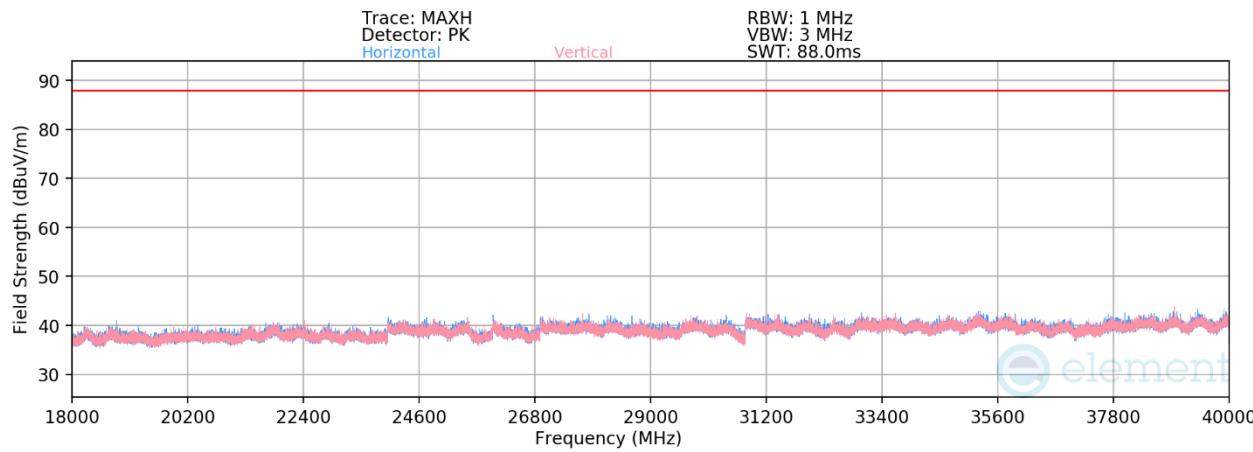


7.8.1 Radiated Spurious Emission (Above 1GHz)



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



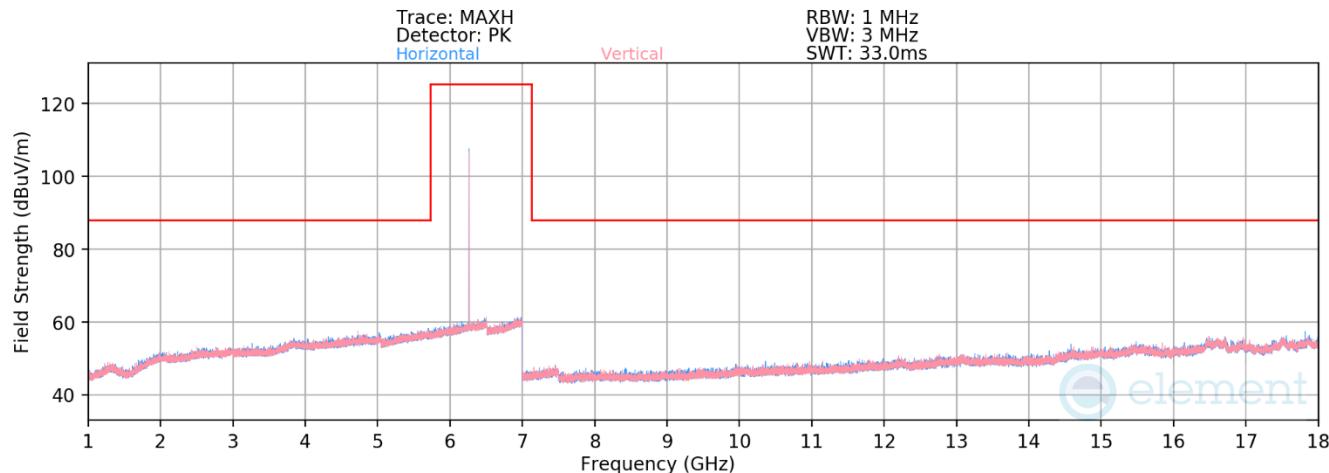
Plot 7-63. Radiated Spurious Emissions 18-40GHz (NB UNII BDR – 6108MHz)

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	V	258	246	-73.44	10.70	1.16	45.42	53.98	-8.56
*	12216.00	Peak	V	258	246	-65.69	10.70	0.00	52.01	73.98	-21.97
*	18324.00	Avg	-	-	-	-70.93	-6.88	0.00	29.20	53.98	-24.78
*	18324.00	Peak	-	-	-	-59.74	-6.88	0.00	40.38	73.98	-33.60
	24432.00	Avg	V	150	141	-71.07	-4.99	1.16	32.10	68.23	-36.13
	24432.00	Peak	V	150	141	-59.15	-4.99	0.00	42.87	88.23	-45.36
	30540.00	Avg	-	-	-	-75.60	-1.67	0.00	29.74	68.23	-38.49
	30540.00	Peak	-	-	-	-63.80	-1.67	0.00	41.54	88.23	-46.70
*	36648.00	Avg	-	-	-	-70.81	-6.50	0.00	29.68	53.98	-24.30
*	36648.00	Peak	-	-	-	-59.31	-6.50	0.00	41.18	73.98	-32.80

Table 7-11. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 62 of 94



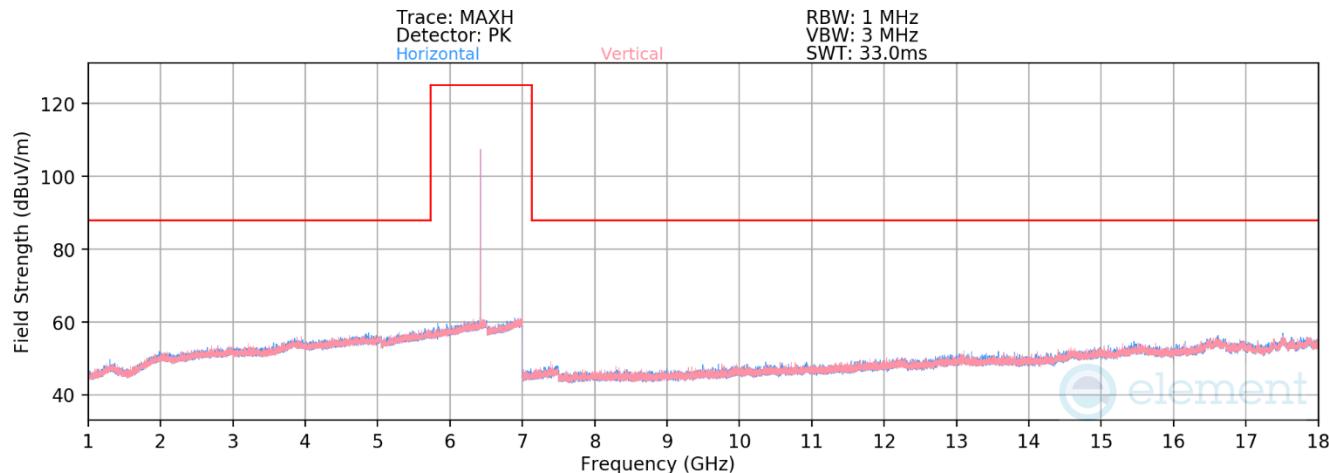
Plot 7-64. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6264MHz)

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]	Duty Cycle Correction [dB]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
* 12528.00	Avg	V	254	294	-76.36	10.85	1.16	42.65	53.98	-11.33
* 12528.00	Peak	V	254	294	-67.14	10.85	0.00	50.71	73.98	-23.27

Table 7-12. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 63 of 94



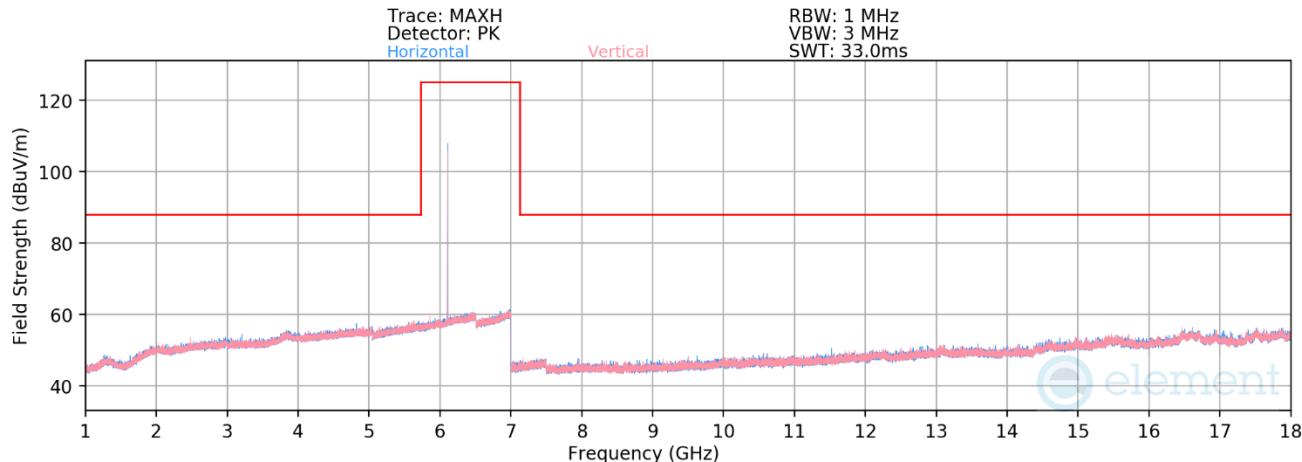
Plot 7-65. Radiated Spurious Emissions 1-18GHz (NB UNII BDR – 6420MHz)

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

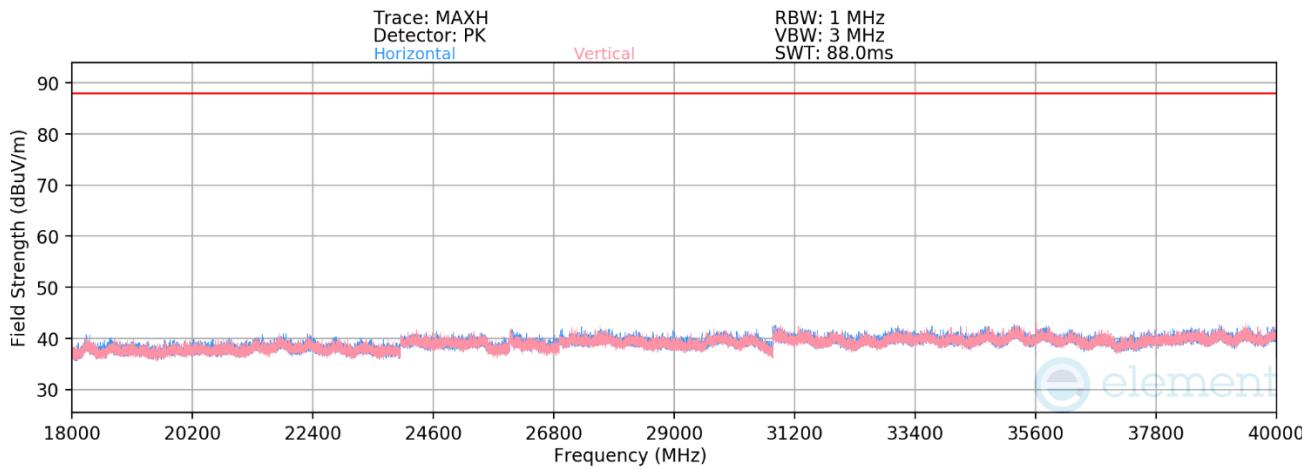
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
12840.00	Avg	H	235	168	-76.34	11.19	1.16	43.01	68.23	-25.22
12840.00	Peak	H	235	168	-67.55	11.19	0.00	50.64	88.23	-37.59

Table 7-13. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 64 of 94



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



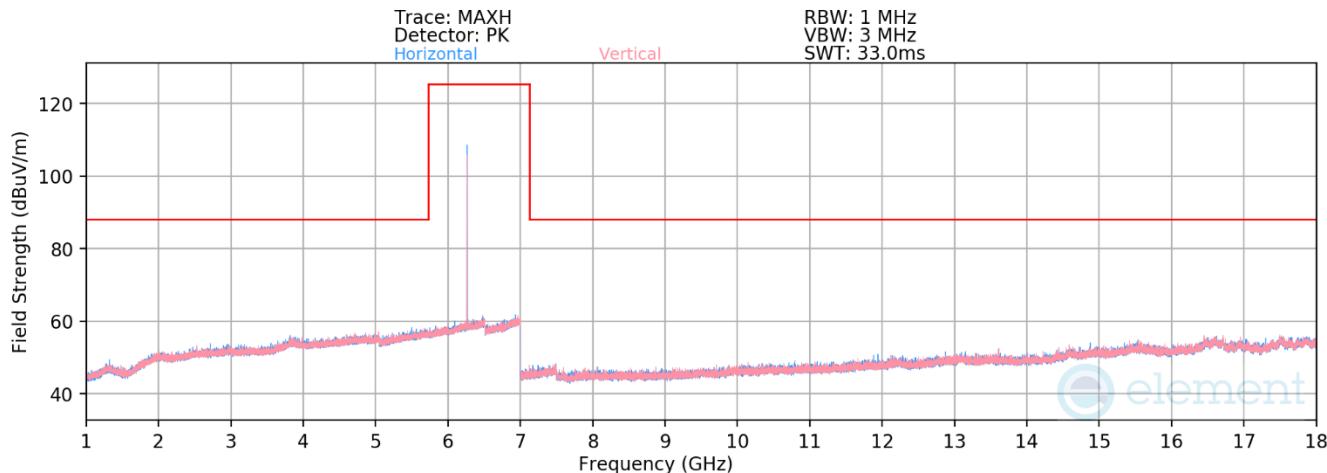
Plot 7-67. Radiated Spurious Emissions 18-40GHz (NB UNII LE2M – 6108MHz)

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 [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
* 12216.00	Avg	-	-	-	-79.22	10.81	0.00	38.59	53.98	-15.39
* 12216.00	Peak	-	-	-	-68.27	10.81	0.00	49.54	73.98	-24.44
24432.00	Avg	V	352	74	-70.24	-4.99	0.62	32.39	68.23	-35.84
24432.00	Peak	V	352	74	-59.07	-4.99	0.00	42.94	88.23	-45.29
30540.00	Avg	-	-	-	-75.56	-1.67	0.00	29.77	68.23	-38.46
30540.00	Peak	-	-	-	-64.13	-1.67	0.00	41.20	88.23	-47.03
* 36648.00	Avg	-	-	-	-70.76	-6.50	0.00	29.74	53.98	-24.25
* 36648.00	Peak	-	-	-	-59.19	-6.50	0.00	41.31	73.98	-32.67

Table 7-14. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 65 of 94



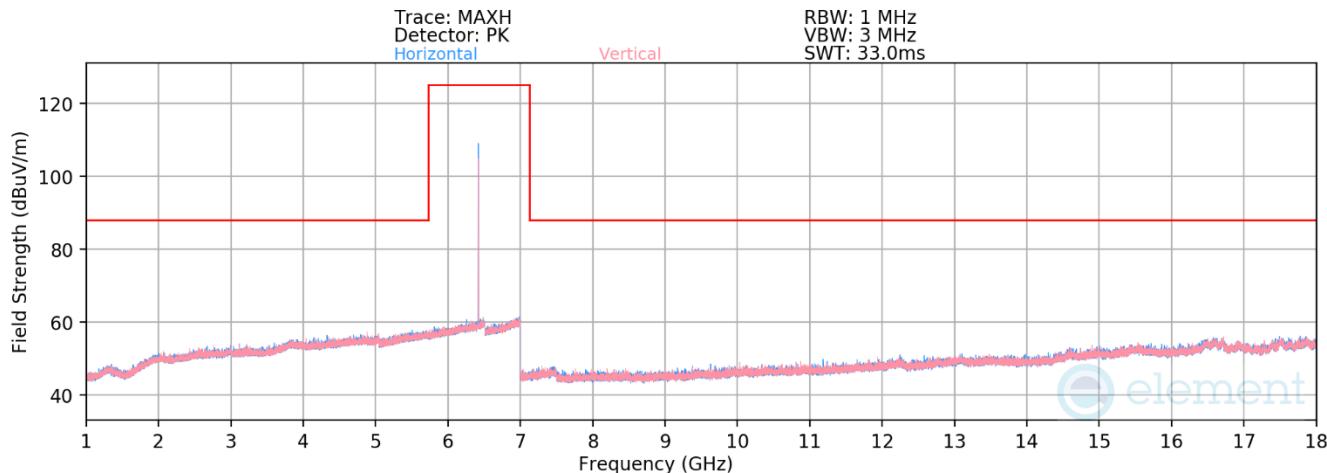
Plot 7-68. Radiated Spurious Emissions 1-18GHz (NB UNII LE2M – 6264MHz)

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	-	-	-	-79.29	11.08	38.79	53.98	-15.19
* 12528.00	Peak	-	-	-	-68.12	11.08	49.97	73.98	-24.01

Table 7-15. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 66 of 94



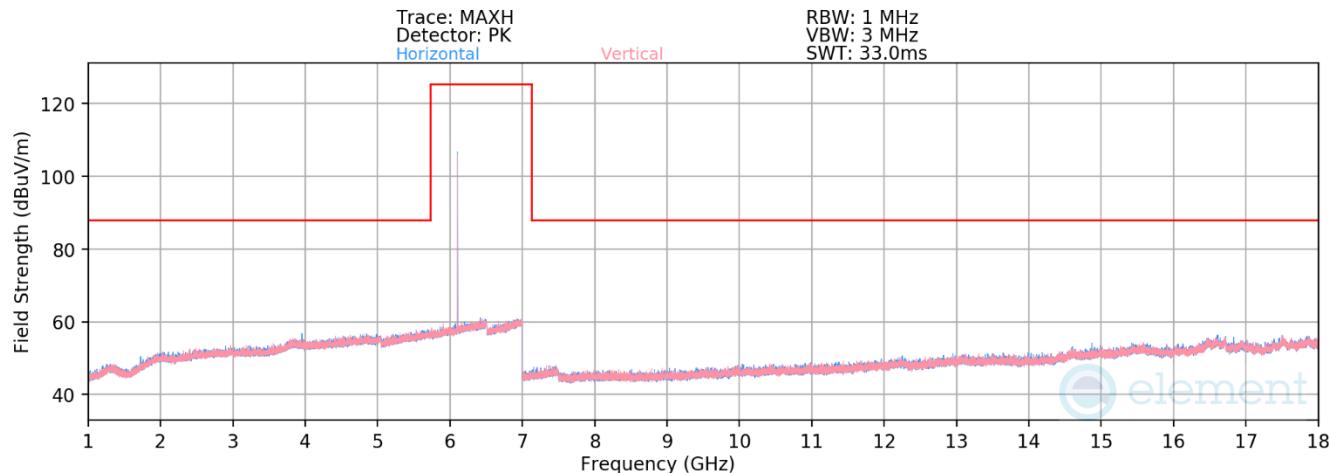
Plot 7-69. Radiated Spurious Emissions 1-18GHz (NB UNII LE2M – 6420MHz)

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	-	-	-	-79.55	11.58	39.03	68.23	-29.20
12840.00	Peak	-	-	-	-68.02	11.58	50.56	88.23	-37.67

Table 7-16. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 67 of 94



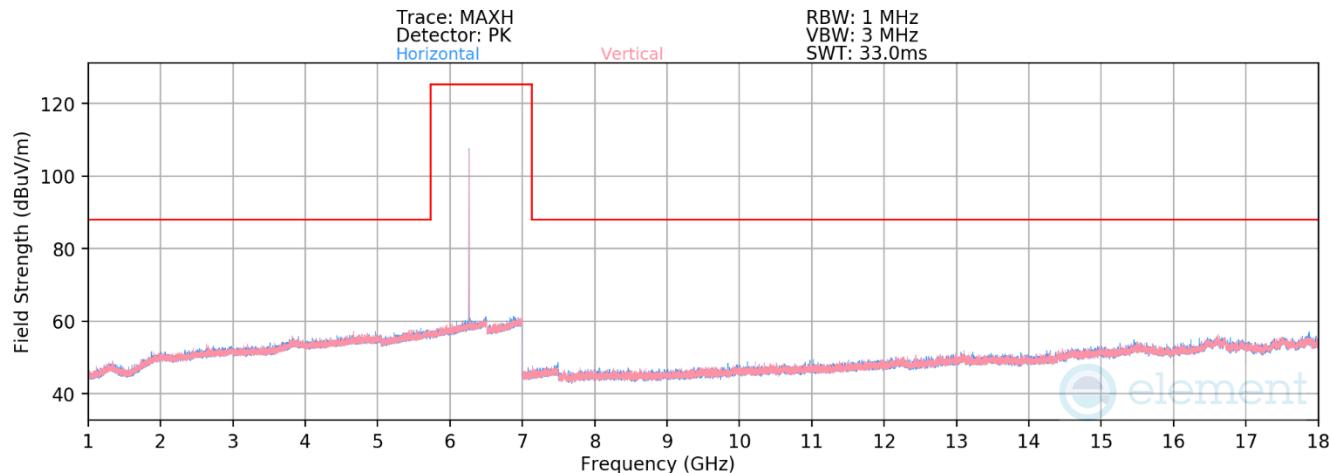
Plot 7-70. Radiated Spurious Emissions 1-18GHz (NB UNII HDR4 – 6108MHz)

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]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
* 12216.00	Avg	V	255	257	-77.05	11.13	1.06	42.14	53.98	-11.84
* 12216.00	Peak	V	255	257	-66.56	11.13	0.00	51.58	73.98	-22.40

Table 7-17. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 68 of 94



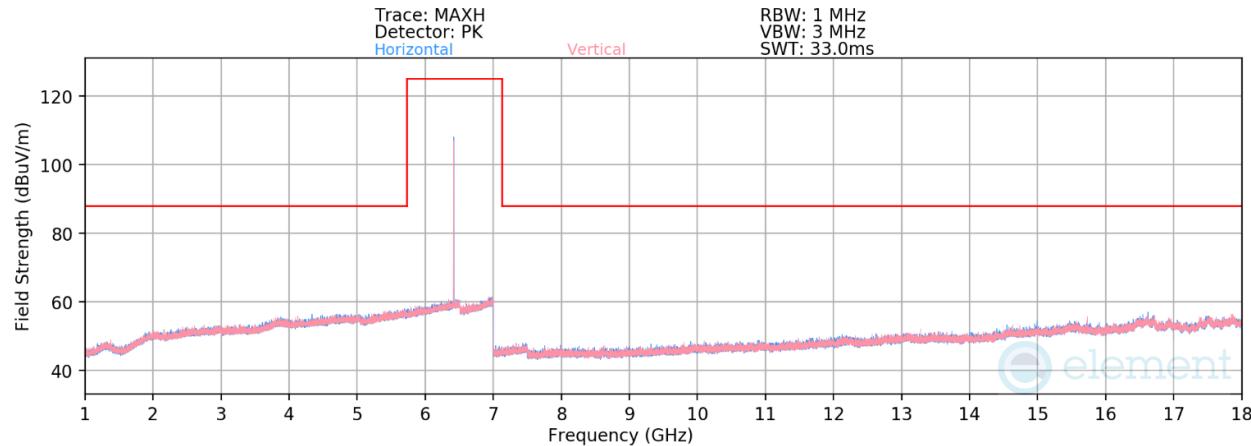
Plot 7-71. Radiated Spurious Emissions 1-18GHz (NB UNII HDR4 – 6264MHz)

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

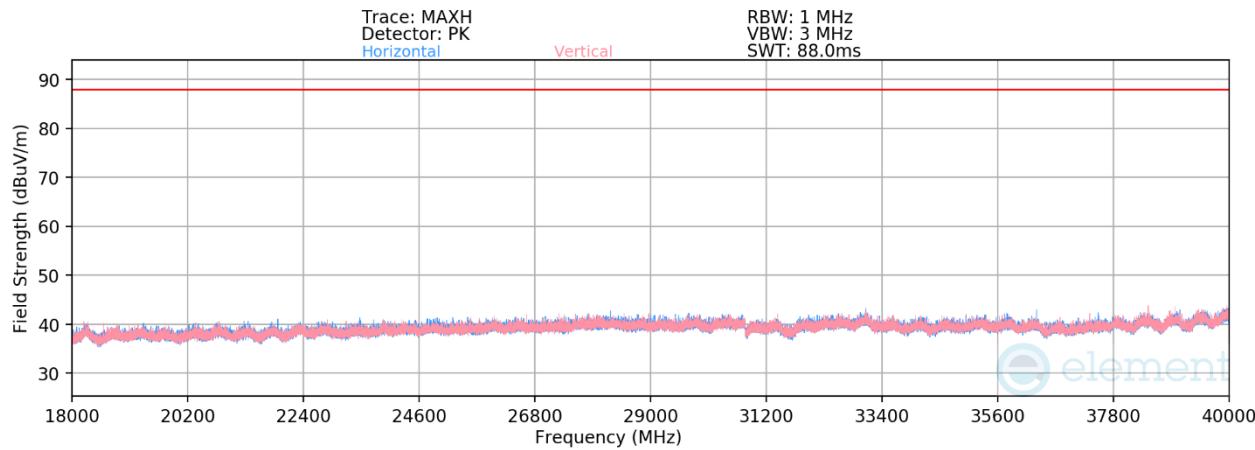
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
* 12528.00	Avg	V	359	257	-78.87	11.35	1.06	40.54	53.98	-13.44
* 12528.00	Peak	V	359	257	-67.90	11.35	0.00	50.45	73.98	-23.53

Table 7-18. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 69 of 94



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



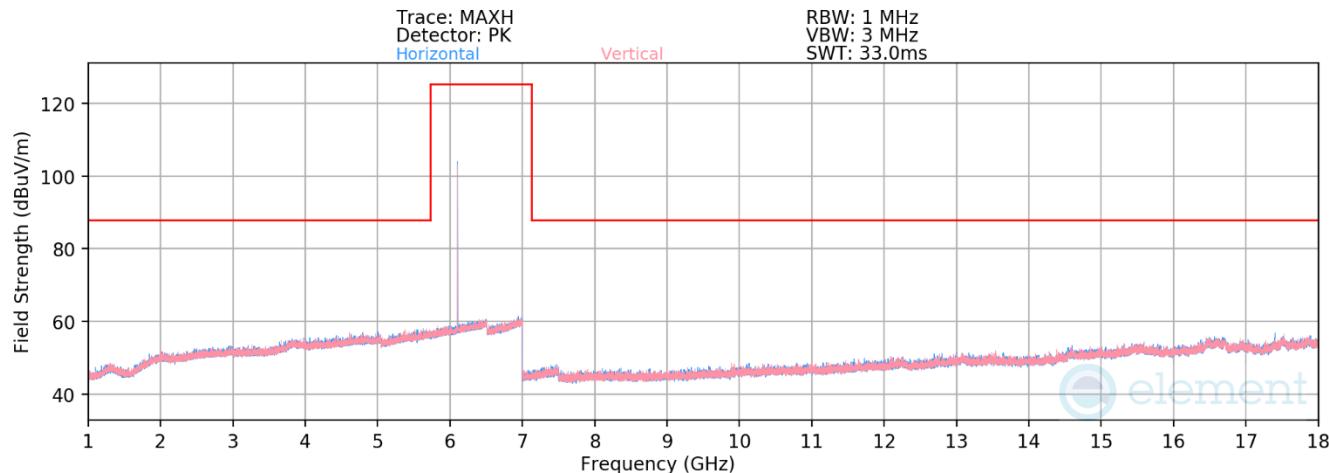
Plot 7-73. Radiated Spurious Emissions Above 18GHz (NB UNII HDR4 – 6420MHz)

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 [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
12840.00	Avg	H	147	177	-72.94	11.92	1.06	47.04	68.23	-21.19
12840.00	Peak	H	147	177	-62.37	11.92	0.00	56.55	88.23	-31.68
* 19260.00	Avg	H	150	226	-68.61	-7.31	1.06	32.13	53.98	-21.85
* 19260.00	Peak	H	150	226	-57.40	-7.31	0.00	42.29	73.98	-31.69
25680.00	Avg	V	326	260	-72.17	-4.97	1.06	30.92	68.23	-37.31
25680.00	Peak	V	326	260	-61.03	-4.97	0.00	41.00	88.23	-47.23
32100.00	Avg	-	-	-	-74.47	-2.20	0.00	30.33	68.23	-37.90
32100.00	Peak	-	-	-	-63.20	-2.20	0.00	41.61	88.23	-46.63
* 38520.00	Avg	-	-	-	-72.06	-3.21	0.00	31.73	53.98	-22.25
* 38520.00	Peak	-	-	-	-60.98	-3.21	0.00	42.81	73.98	-31.17

Table 7-19. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 70 of 94



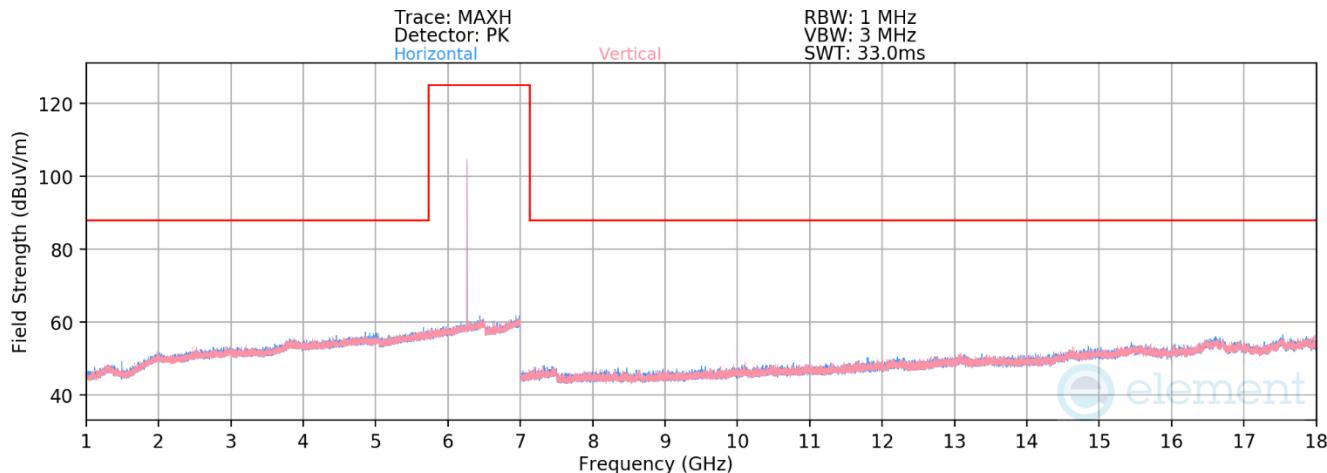
Plot 7-74. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6108MHz)

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]	Duty Cycle Correction [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 12216.00	Avg	V	237	273	-77.88	11.16	0.58	40.86	53.98	-13.12
* 12216.00	Peak	V	237	273	-67.20	11.16	0.00	50.96	73.98	-23.02

Table 7-20. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 71 of 94



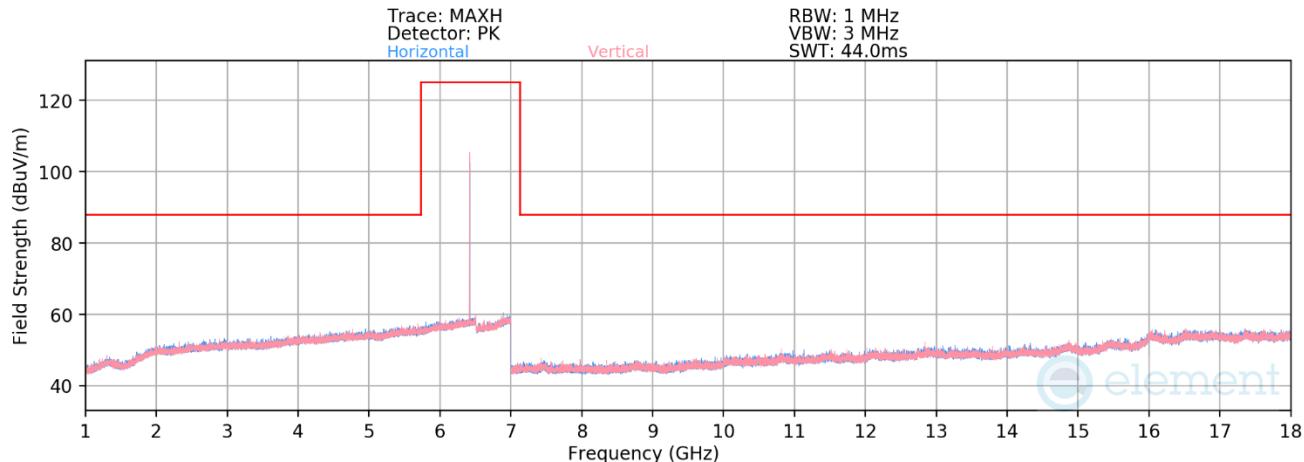
Plot 7-75. Radiated Spurious Emissions 1-18GHz (NB UNII HDRp4 – 6264MHz)

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

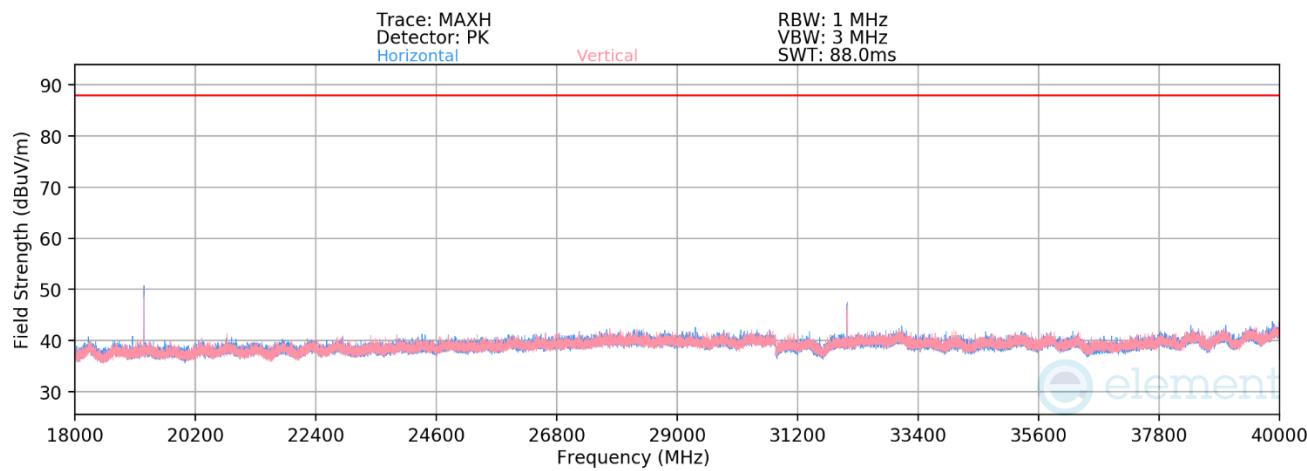
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 12528.00	Avg	V	276	264	-78.39	11.38	0.58	40.57	53.98	-13.41
* 12528.00	Peak	V	276	264	-68.04	11.38	0.00	50.34	73.98	-23.64

Table 7-21. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 72 of 94



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

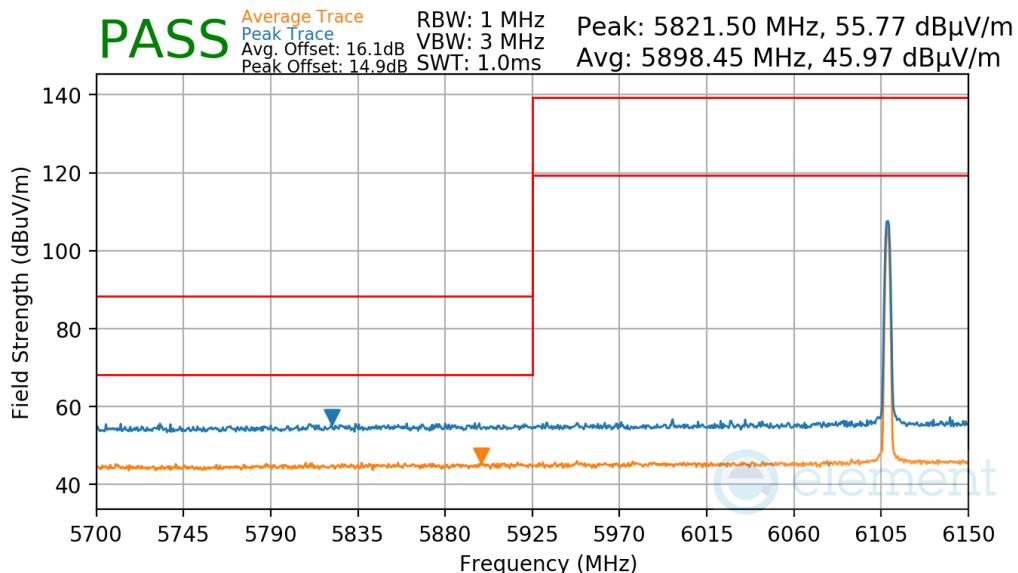
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
12840.00	Avg	V	300	228	-73.67	11.92	0.58	45.83	68.23	-22.40
12840.00	Peak	V	300	228	-64.85	11.92	0.00	54.07	88.23	-34.16
* 19260.00	Avg	H	343	186	-52.39	-7.31	0.58	47.88	53.98	-6.10
* 19260.00	Peak	H	343	186	-45.98	-7.31	0.00	53.70	73.98	-20.28
25680.00	Avg	V	150	209	-70.10	-4.97	0.58	32.50	68.23	-35.73
25680.00	Peak	V	150	209	-59.54	-4.97	0.00	42.49	88.23	-45.74
32100.00	Avg	H	150	208	-62.80	-2.20	0.58	42.58	68.23	-25.65
32100.00	Peak	H	150	208	-53.97	-2.20	0.00	50.83	88.23	-37.40
* 38520.00	Avg	V	360	236	-70.19	-3.21	0.58	34.17	53.98	-19.81
* 38520.00	Peak	V	360	236	-58.87	-3.21	0.00	44.92	73.98	-29.06

Table 7-22. Radiated Spurious Emissions Measurements

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 73 of 94

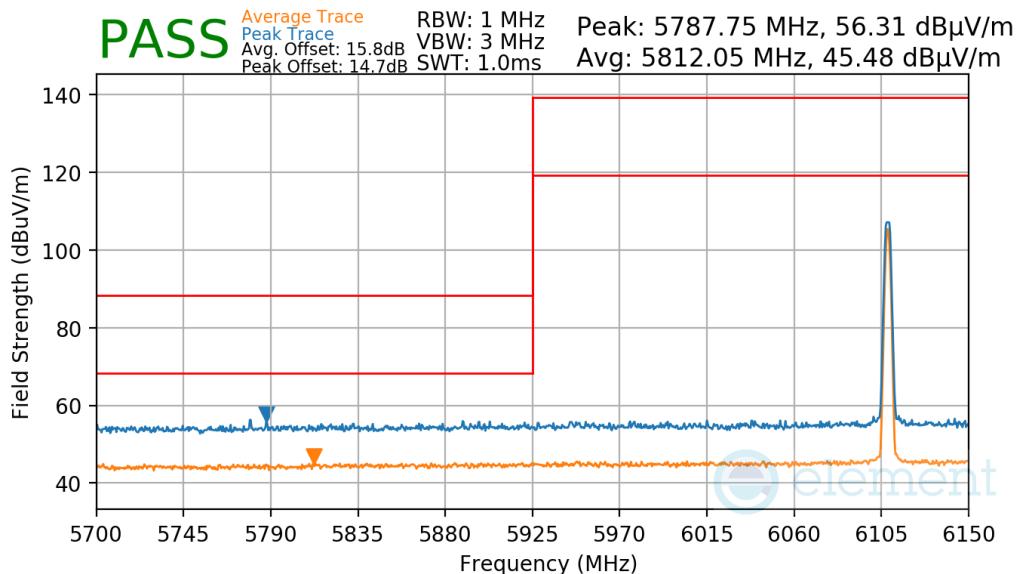
7.8.2 Radiated Band Edge Measurements

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



Plot 7-78. Radiated Lower Band Edge Measurement

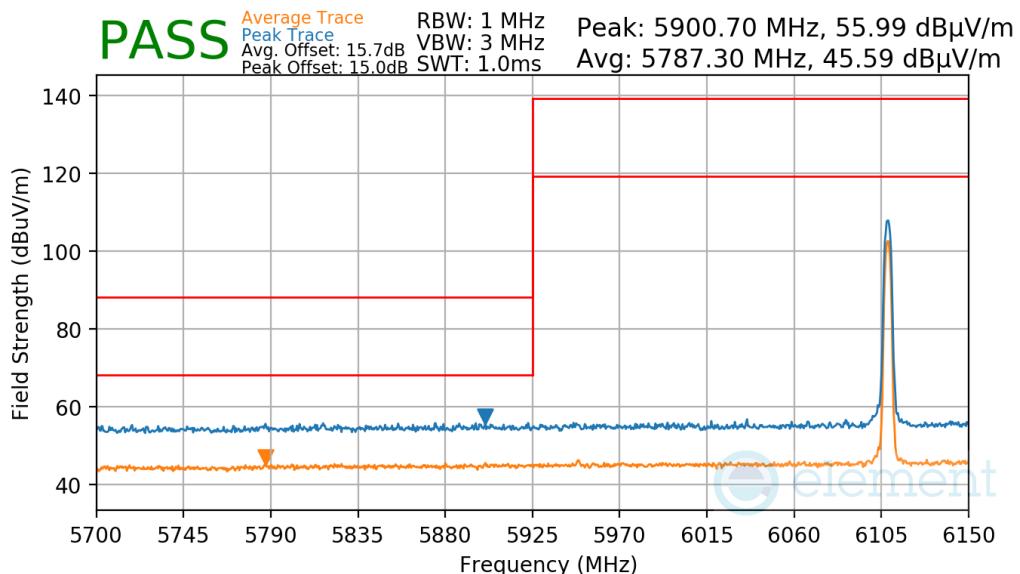
Mode: NB UNII LE
 Data Rate: 2Mbps
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz



Plot 7-79. Radiated Lower Band Edge Measurement

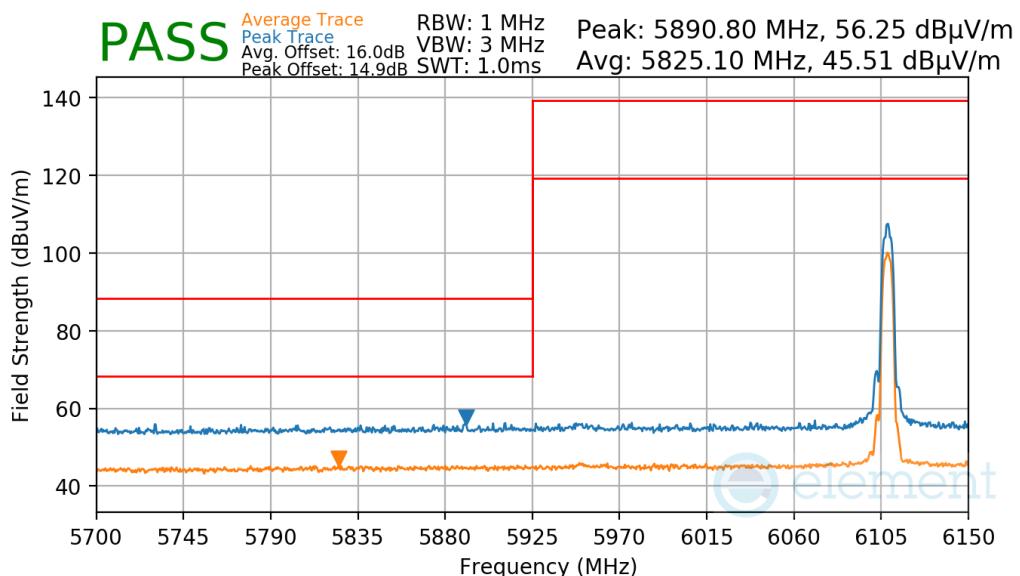
FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 74 of 94

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



Plot 7-80. Radiated Lower Band Edge Measurement

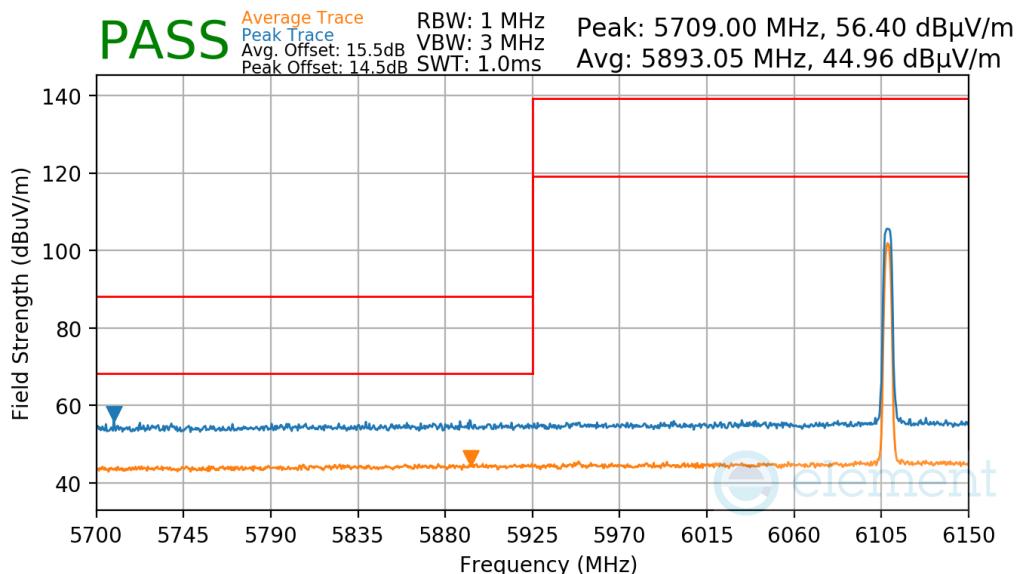
Mode: NB UNII HDR8
 Measurement Distance: 3 Meters
 Operating Frequency: 6108MHz



Plot 7-81. Radiated Lower Band Edge Measurement

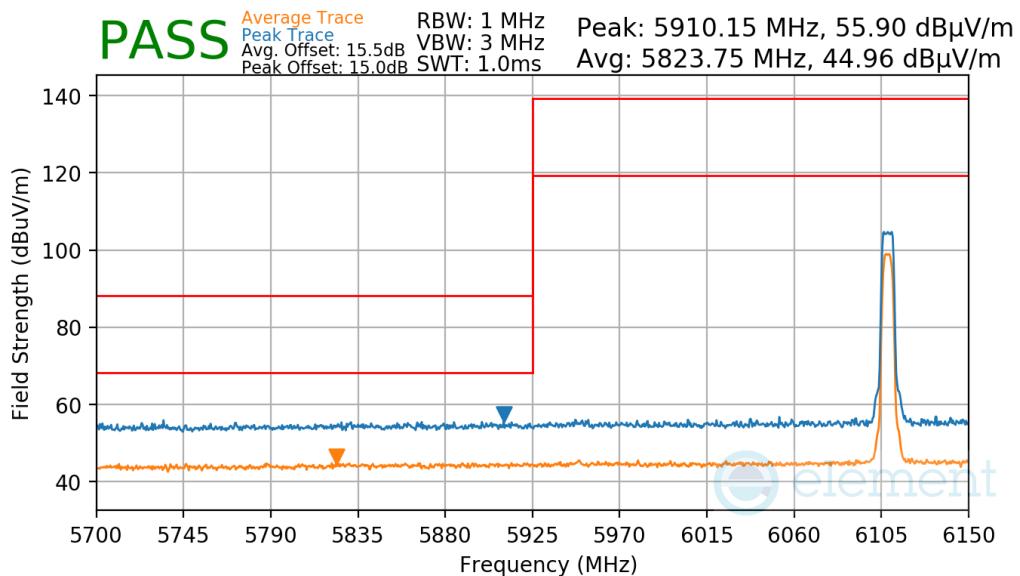
FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 75 of 94

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: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 76 of 94

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 [μ 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.

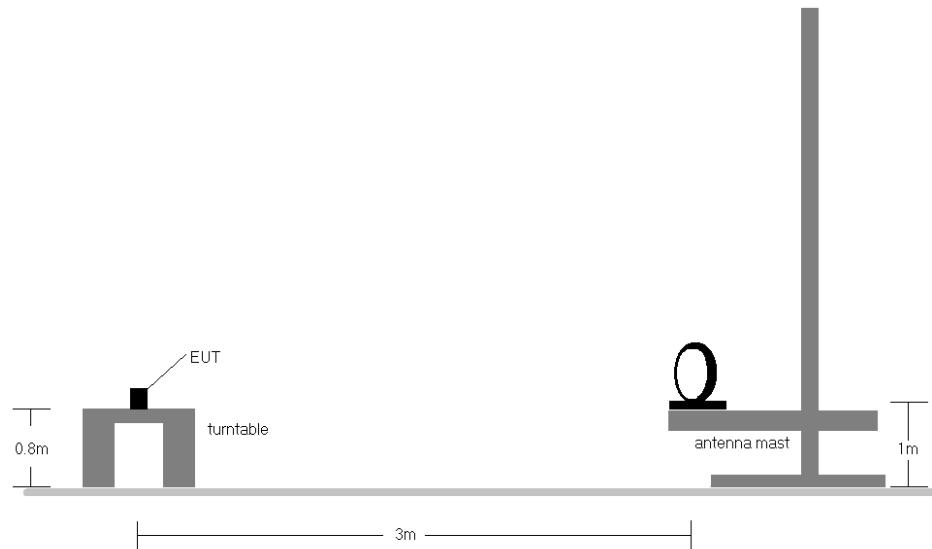


Figure 7-9. Radiated Test Setup < 30MHz

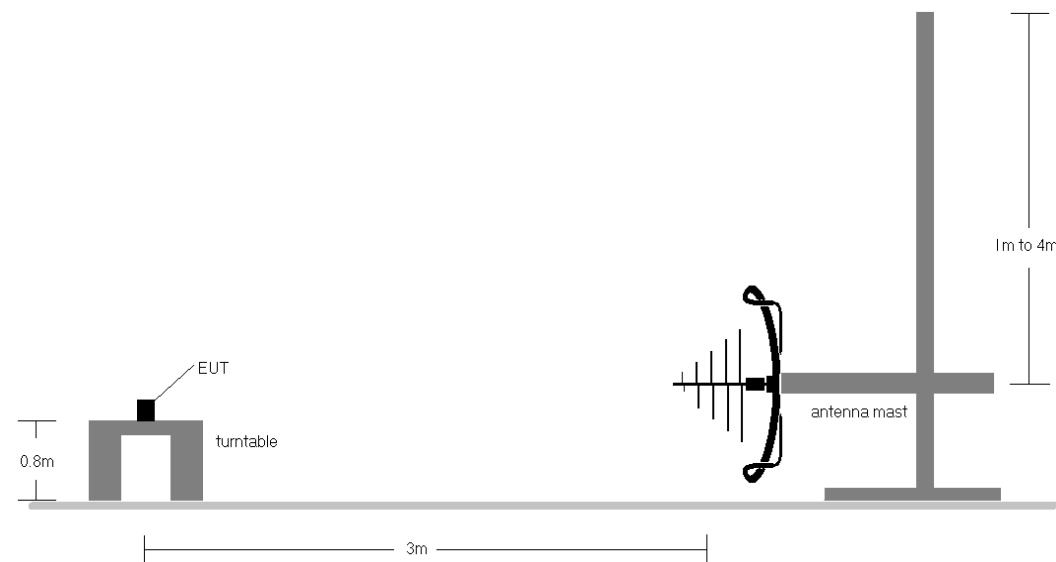


Figure 7-10. Radiated Test Setup < 1GHz

FCC ID: BCGA3157 IC: 579C-A3157	 element	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 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.

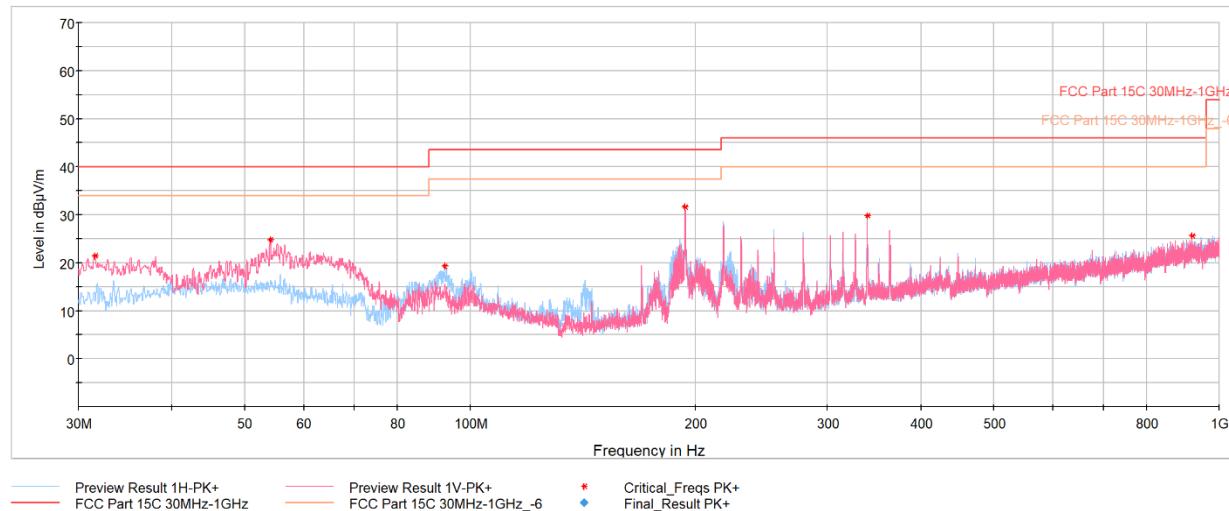
Sample Calculations

Determining Spurious Emissions Levels

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

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Radiated Spurious Emissions (Below 1GHz)

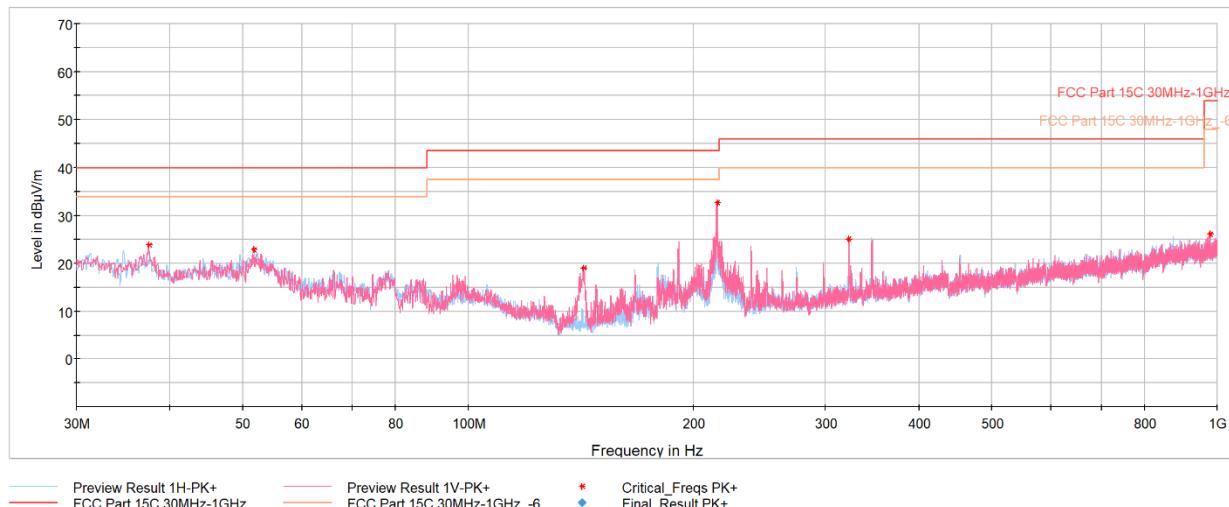


Plot 7-84. Radiated Spurious Emissions Below 1GHz (NB UNII BDR – 6108MHz), with AC/DC Adapter and USB-C Cable

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]
31.55	Max Peak	V	200	0	-68.73	-16.79	21.48	40.00	-18.52
54.11	Max Peak	V	200	64	-67.88	-14.31	24.81	40.00	-15.19
92.61	Max Peak	H	200	21	-70.18	-17.55	19.27	43.52	-24.25
193.64	Max Peak	H	100	316	-57.67	-17.63	31.70	43.52	-11.82
338.85	Max Peak	H	100	256	-63.51	-13.66	29.83	46.02	-16.19
919.88	Max Peak	H	100	88	-77.97	-3.42	25.61	46.02	-20.41

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
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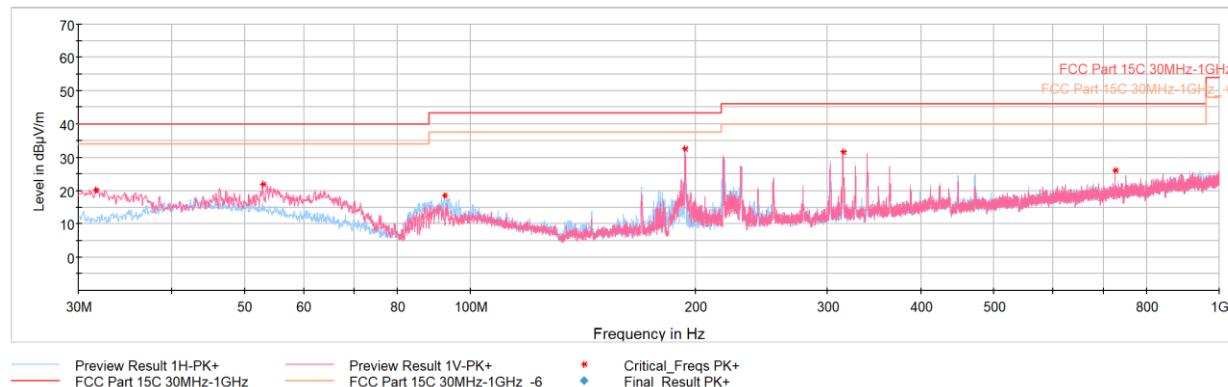


Plot 7-85. Radiated Spurious Emissions Below 1GHz (NB UNII LE2M – 6108MHz), with AC/DC Adapter and USB-C Cable

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]
37.52	Max Peak	V	100	359	-68.02	-15.13	23.85	40.00	-16.15
51.78	Max Peak	H	100	316	-70.18	-13.88	22.94	40.00	-17.06
142.47	Max Peak	V	200	89	-67.16	-20.90	18.94	43.52	-24.58
214.83	Max Peak	V	200	307	-56.79	-17.56	32.65	43.52	-10.87
322.16	Max Peak	H	100	121	-67.50	-14.38	25.12	46.02	-20.90
978.76	Max Peak	H	100	240	-77.67	-3.29	26.04	53.98	-27.94

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-86. Radiated Spurious Emissions Below 1GHz (NB UNII HDR4 – 6420MHz), with AC/DC Adapter and USB-C Cable

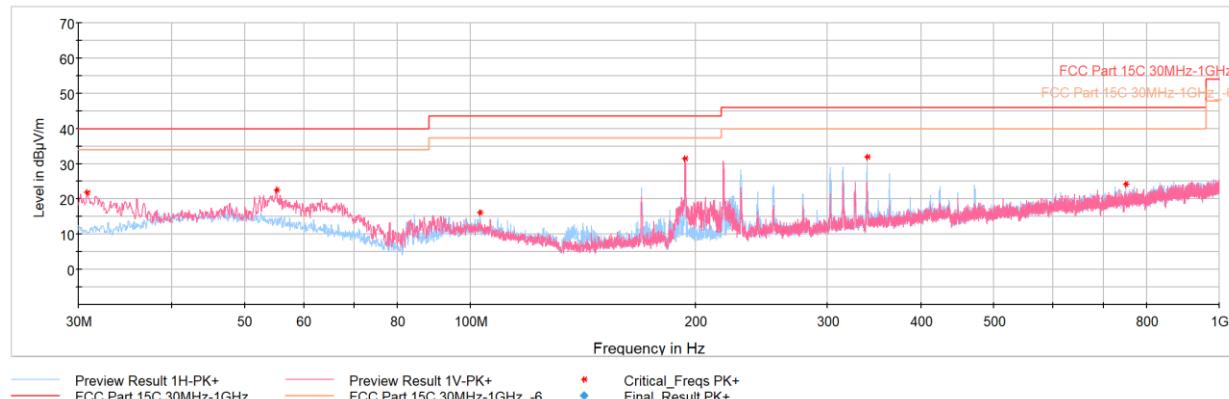
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
31.65	Max Peak	V	200	334	-70.06	-16.80	20.14	40.00	-19.86
52.89	Max Peak	V	200	3	-71.03	-14.12	21.85	40.00	-18.15
92.52	Max Peak	H	300	21	-70.98	-17.57	18.45	43.52	-25.07
193.69	Max Peak	H	100	316	-56.75	-17.63	32.62	43.52	-10.90
314.70	Max Peak	V	100	289	-60.58	-14.73	31.69	46.02	-14.33
726.41	Max Peak	H	100	0	-74.23	-6.76	26.01	46.02	-20.01

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
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Plot 7-87. Radiated Spurious Emissions Below 1GHz (NB UNII HDRp4 – 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]
30.83	Max Peak	V	100	262	-68.52	-16.68	21.80	40.00	-18.20
55.17	Max Peak	V	100	262	-69.90	-14.55	22.55	40.00	-17.45
103.09	Max Peak	H	300	184	-73.75	-17.08	16.17	43.52	-27.35
193.59	Max Peak	V	100	93	-57.96	-17.64	31.40	43.52	-12.12
338.90	Max Peak	H	100	293	-61.44	-13.65	31.91	46.02	-14.11
749.45	Max Peak	H	100	306	-76.56	-6.23	24.21	46.02	-21.81

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud			

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7.10 AC Line Conducted Emissions Measurement

§15.207; RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for AC Line conducted spurious emissions. 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 (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 7-28. 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.

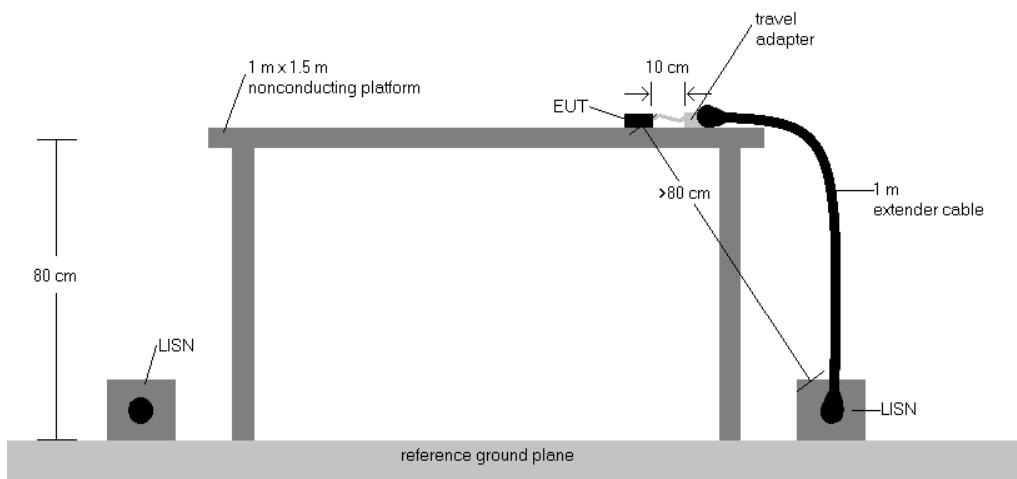
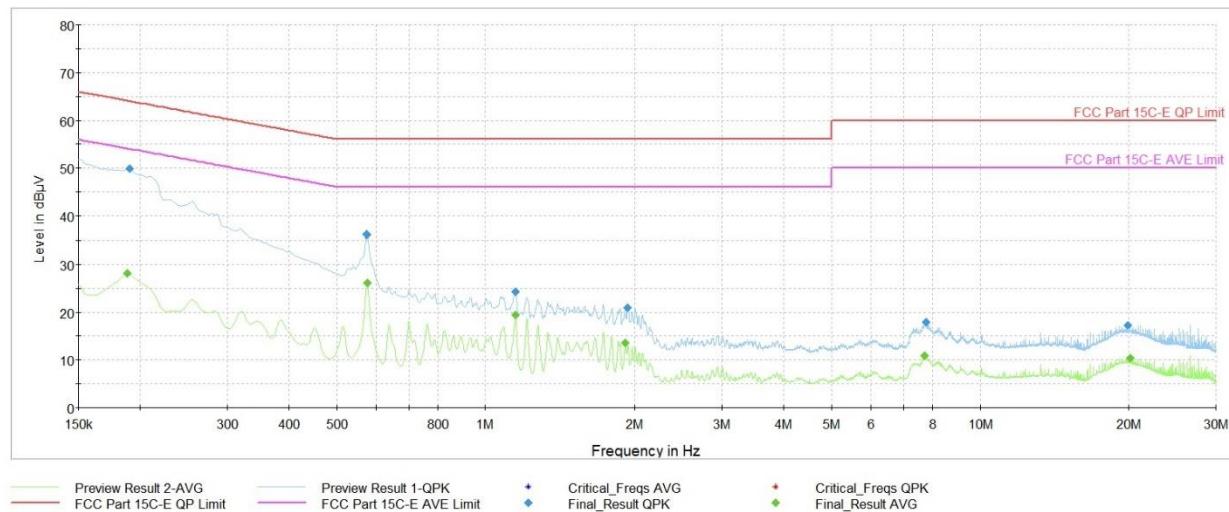


Figure 7-11. Test Instrument & Measurement Setup

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 and RSS-Gen (8.8).
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dB μ V) = QP/AV Analyzer/Receiver Level (dB μ V) + Correction Factor (dB)
6. Margin (dB) = QP/AV Level (dB μ V) - QP/AV Limit (dB μ V)
7. Traces shown in plots are made using quasi-peak and average detectors.
8. Deviations to the Specifications: None.

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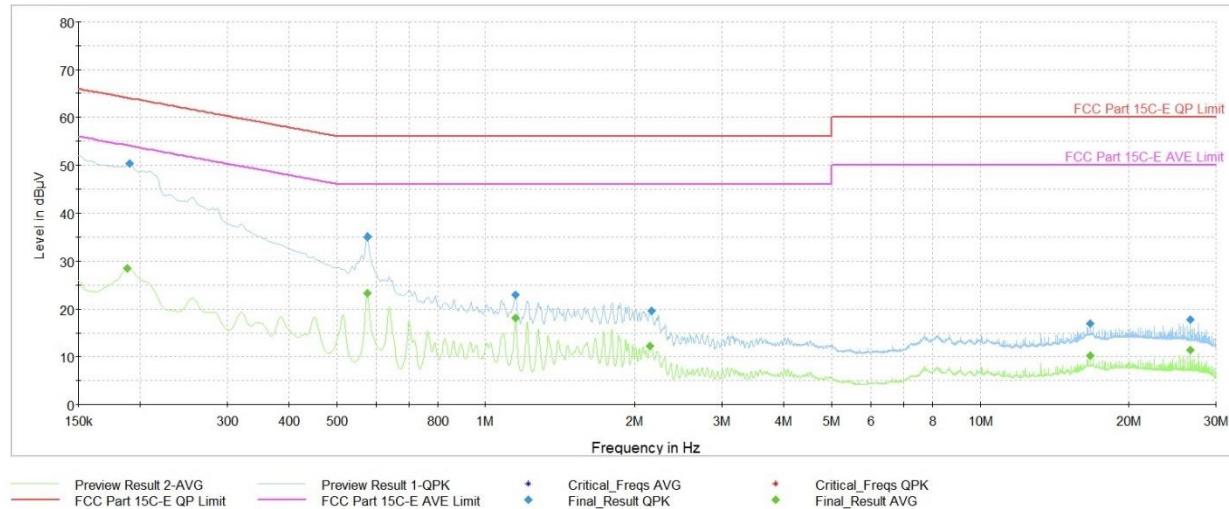


Plot 7-88. AC Line Conducted Plot (NB UNII BDR – 6108MHz) (L1) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dB μ V]	Average [dB μ V]	Limit [dB μ V]	Margin [dB]	Line	PE
0.188	FINAL	—	28.10	54.11	-26.02	L1	GND
0.191	FINAL	49.9	—	64.02	-14.10	L1	GND
0.575	FINAL	36.2	—	56.00	-19.79	L1	GND
0.578	FINAL	—	26.15	46.00	-19.85	L1	GND
1.151	FINAL	24.3	—	56.00	-31.66	L1	GND
1.151	FINAL	—	19.40	46.00	-26.60	L1	GND
1.914	FINAL	—	13.51	46.00	-32.49	L1	GND
1.934	FINAL	21.0	—	56.00	-35.01	L1	GND
7.703	FINAL	—	10.92	50.00	-39.08	L1	GND
7.782	FINAL	17.9	—	60.00	-42.06	L1	GND
19.910	FINAL	17.2	—	60.00	-42.81	L1	GND
20.146	FINAL	—	10.38	50.00	-39.62	L1	GND

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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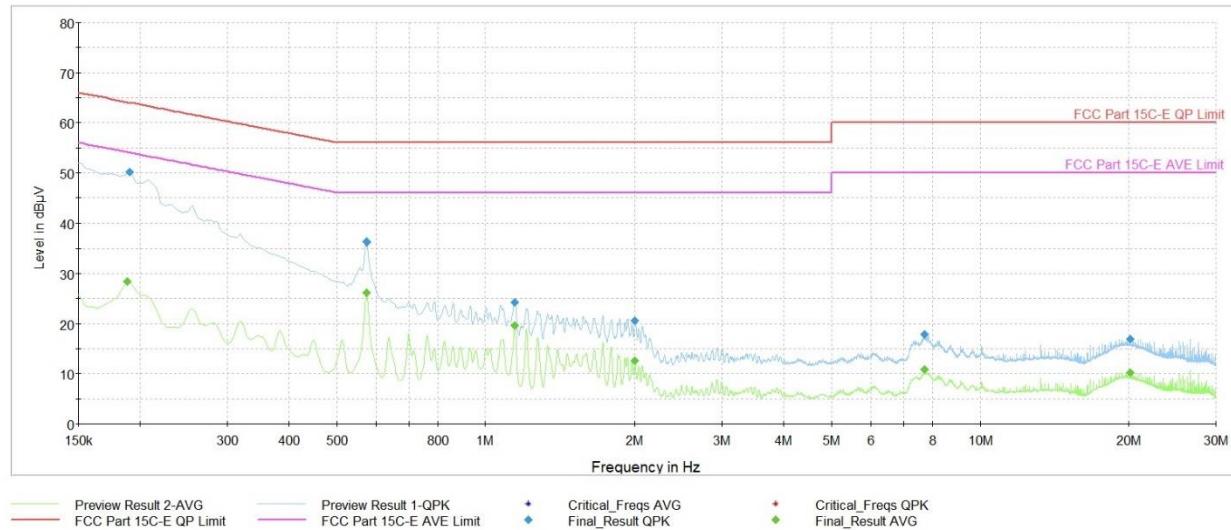


Plot 7-89. AC Line Conducted Plot (NB UNII BDR – 6108MHz) (N) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dB μ V]	Average [dB μ V]	Limit [dB μ V]	Margin [dB]	Line	PE
0.188	FINAL	—	28.52	54.11	-25.59	N	GND
0.191	FINAL	50.3	—	64.02	-13.76	N	GND
0.578	FINAL	—	23.34	46.00	-22.66	N	GND
0.578	FINAL	35.1	—	56.00	-20.93	N	GND
1.151	FINAL	—	18.07	46.00	-27.93	N	GND
1.151	FINAL	23.0	—	56.00	-32.99	N	GND
2.146	FINAL	—	12.16	46.00	-33.84	N	GND
2.159	FINAL	19.6	—	56.00	-36.37	N	GND
16.708	FINAL	17.0	—	60.00	-42.99	N	GND
16.708	FINAL	—	10.15	50.00	-39.85	N	GND
26.671	FINAL	—	11.41	50.00	-38.59	N	GND
26.671	FINAL	17.8	—	60.00	-42.17	N	GND

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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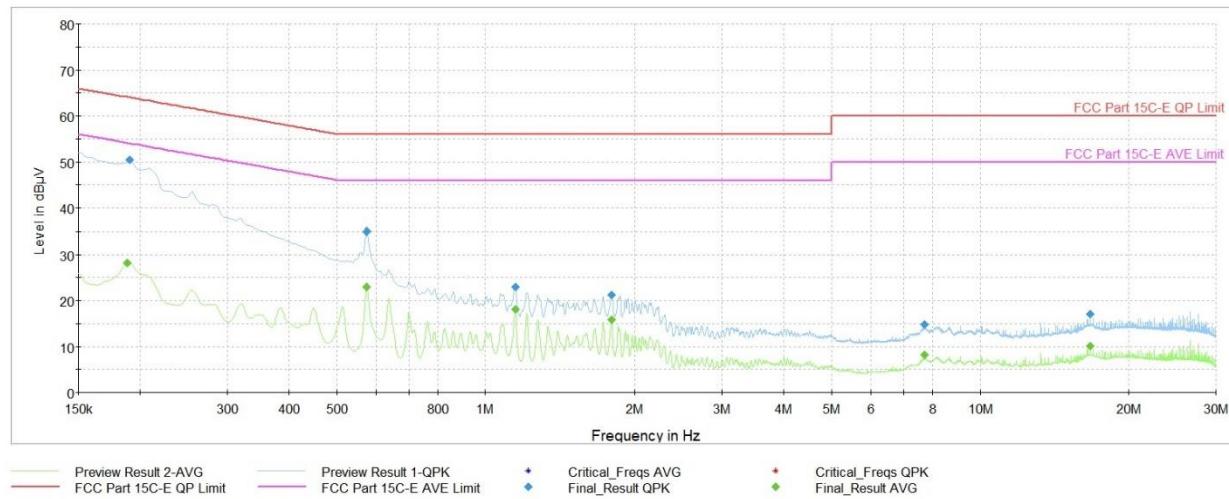


Plot 7-90. AC Line Conducted Plot (NB UNII LE2M – 6108MHz) (L1) with host PC and USB-C Cable

Frequency [MHz]	Process State	QuasiPeak [dB μ V]	Average [dB μ V]	Limit [dB μ V]	Margin [dB]	Line	PE
0.188	FINAL	—	28.39	54.11	-25.73	L1	GND
0.191	FINAL	50.2	—	64.02	-13.81	L1	GND
0.575	FINAL	—	26.22	46.00	-19.78	L1	GND
0.575	FINAL	36.2	—	56.00	-19.77	L1	GND
1.147	FINAL	—	19.66	46.00	-26.34	L1	GND
1.147	FINAL	24.4	—	56.00	-31.65	L1	GND
2.000	FINAL	20.5	—	56.00	-35.46	L1	GND
2.000	FINAL	—	12.68	46.00	-33.32	L1	GND
7.703	FINAL	17.8	—	60.00	-42.16	L1	GND
7.703	FINAL	—	10.90	50.00	-39.10	L1	GND
20.146	FINAL	—	10.25	50.00	-39.75	L1	GND
20.146	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: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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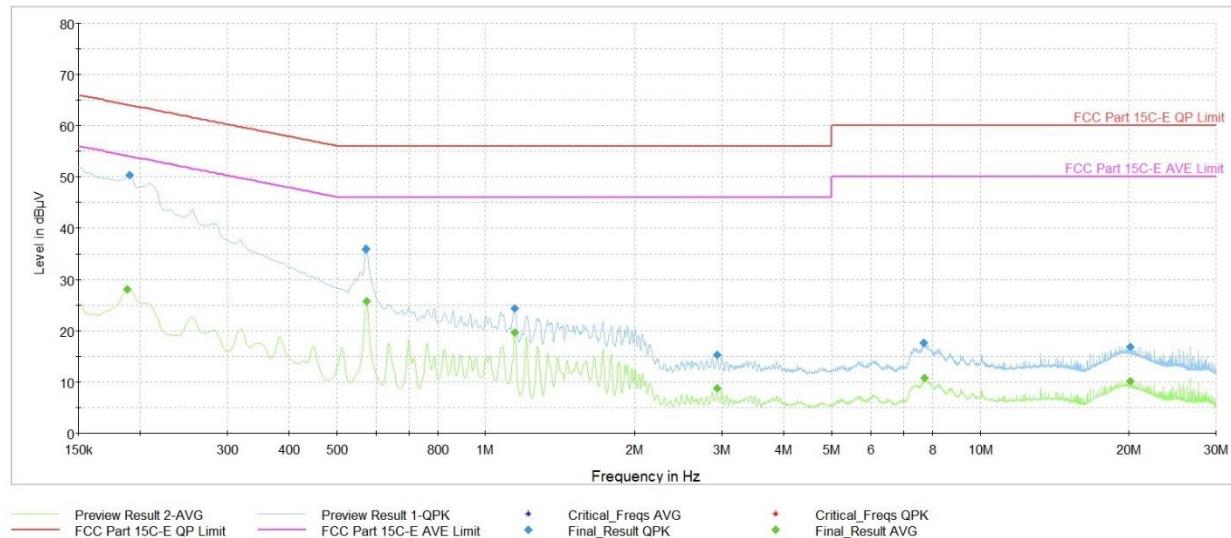


Plot 7-91. AC Line Conducted Data (NB UNII LE2M – 6108MHz) (N) with host PC and USB-C Cable

Frequency [MHz]	Process State	QuasiPeak [dB μ V]	Average [dB μ V]	Limit [dB μ V]	Margin [dB]	Line	PE
0.188	FINAL	—	28.26	54.11	-25.86	N	GND
0.191	FINAL	50.4	—	64.02	-13.64	N	GND
0.575	FINAL	—	22.91	46.00	-23.09	N	GND
0.575	FINAL	34.9	—	56.00	-21.08	N	GND
1.149	FINAL	—	18.10	46.00	-27.90	N	GND
1.149	FINAL	22.9	—	56.00	-33.07	N	GND
1.790	FINAL	—	15.79	46.00	-30.21	N	GND
1.795	FINAL	21.2	—	56.00	-34.77	N	GND
7.703	FINAL	14.8	—	60.00	-45.23	N	GND
7.703	FINAL	—	8.23	50.00	-41.77	N	GND
16.708	FINAL	—	10.09	50.00	-39.91	N	GND
16.708	FINAL	17.0	—	60.00	-43.03	N	GND

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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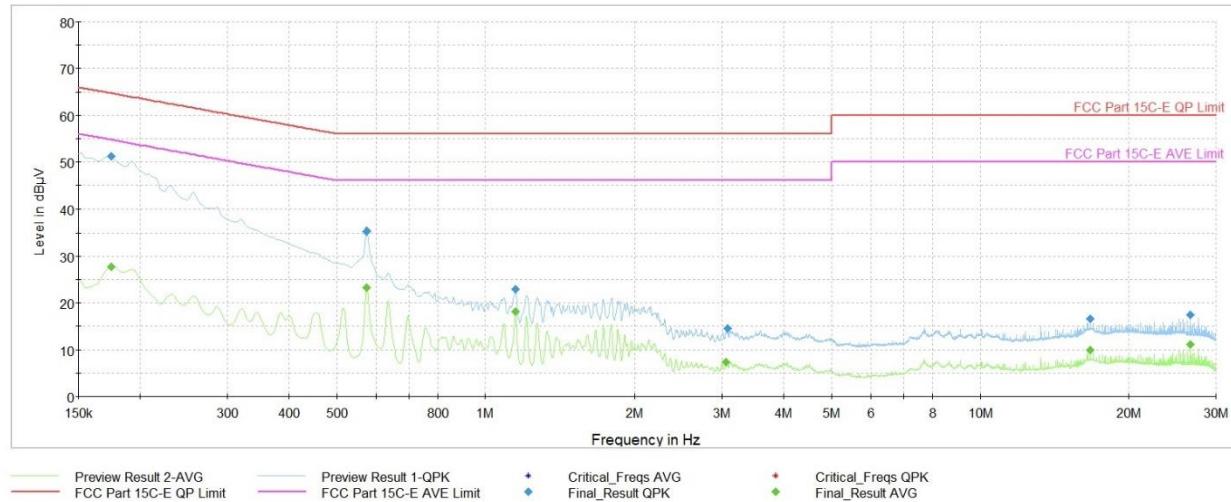


Plot 7-92. AC Line Conducted Plot (NB UNII HDR4 – 6420MHz) (L1) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dB μ V]	Average [dB μ V]	Limit [dB μ V]	Margin [dB]	Line	PE
0.188	FINAL	—	28.19	54.11	-25.93	L1	GND
0.191	FINAL	50.3	—	64.02	-13.68	L1	GND
0.573	FINAL	36.0	—	56.00	-19.99	L1	GND
0.575	FINAL	—	25.82	46.00	-20.18	L1	GND
1.147	FINAL	24.4	—	56.00	-31.64	L1	GND
1.147	FINAL	—	19.71	46.00	-26.29	L1	GND
2.931	FINAL	—	8.68	46.00	-37.32	L1	GND
2.933	FINAL	15.4	—	56.00	-40.63	L1	GND
7.699	FINAL	17.6	—	60.00	-42.39	L1	GND
7.703	FINAL	—	10.81	50.00	-39.19	L1	GND
20.146	FINAL	—	10.13	50.00	-39.87	L1	GND
20.146	FINAL	16.8	—	60.00	-43.16	L1	GND

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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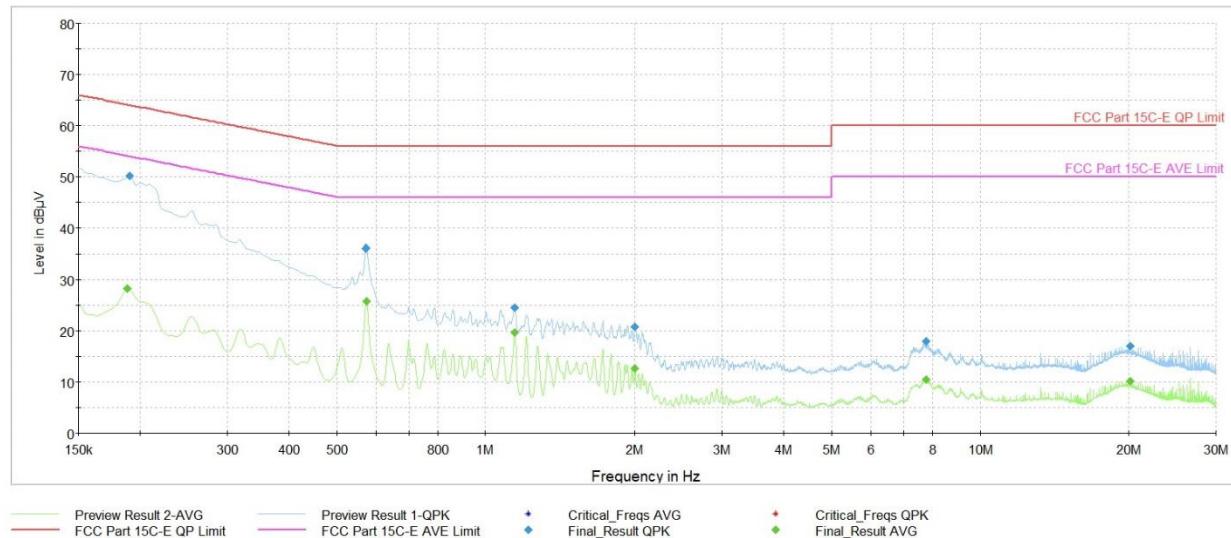


Plot 7-93. AC Line Conducted Plot (NB UNII HDR4 – 6420MHz) (N) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.175	FINAL	—	27.69	54.73	-27.04	N	GND
0.175	FINAL	51.2	—	64.73	-13.55	N	GND
0.575	FINAL	—	23.37	46.00	-22.63	N	GND
0.575	FINAL	35.3	—	56.00	-20.74	N	GND
1.149	FINAL	23.0	—	56.00	-32.97	N	GND
1.151	FINAL	—	18.19	46.00	-27.81	N	GND
3.059	FINAL	—	7.43	46.00	-38.57	N	GND
3.082	FINAL	14.6	—	56.00	-41.38	N	GND
16.708	FINAL	16.7	—	60.00	-43.32	N	GND
16.708	FINAL	—	9.87	50.00	-40.13	N	GND
26.671	FINAL	—	11.05	50.00	-38.95	N	GND
26.671	FINAL	17.4	—	60.00	-42.61	N	GND

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 91 of 94

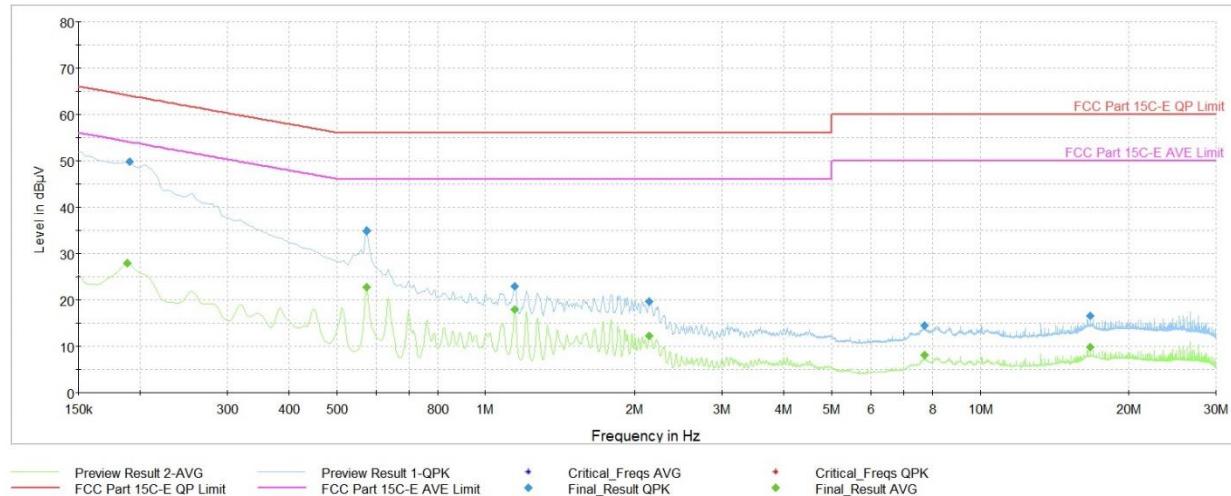


Plot 7-94. AC Line Conducted Plot (NB UNII HDRp4 – 6420MHz) (L1) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dB μ V]	Average [dB μ V]	Limit [dB μ V]	Margin [dB]	Line	PE
0.188	FINAL	—	28.24	54.11	-25.87	L1	GND
0.191	FINAL	50.2	—	64.02	-13.86	L1	GND
0.573	FINAL	36.1	—	56.00	-19.95	L1	GND
0.575	FINAL	—	25.82	46.00	-20.18	L1	GND
1.147	FINAL	24.5	—	56.00	-31.52	L1	GND
1.147	FINAL	—	19.63	46.00	-26.37	L1	GND
2.000	FINAL	20.7	—	56.00	-35.28	L1	GND
2.000	FINAL	—	12.72	46.00	-33.28	L1	GND
7.764	FINAL	—	10.47	50.00	-39.53	L1	GND
7.771	FINAL	18.0	—	60.00	-42.00	L1	GND
20.146	FINAL	—	10.15	50.00	-39.85	L1	GND
20.146	FINAL	17.0	—	60.00	-42.99	L1	GND

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

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud			



Plot 7-95. AC Line Conducted Plot (NB UNII HDRp4 – 6264MHz) (N) with host PC with USB-C cable

Frequency [MHz]	Process State	QuasiPeak [dBμV]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	PE
0.188	FINAL	—	27.98	54.11	-26.13	N	GND
0.191	FINAL	49.7	—	64.02	-14.33	N	GND
0.575	FINAL	—	22.77	46.00	-23.23	N	GND
0.575	FINAL	35.0	—	56.00	-21.04	N	GND
1.147	FINAL	—	18.05	46.00	-27.95	N	GND
1.147	FINAL	23.0	—	56.00	-33.02	N	GND
2.139	FINAL	19.8	—	56.00	-36.25	N	GND
2.139	FINAL	—	12.27	46.00	-33.73	N	GND
7.703	FINAL	14.6	—	60.00	-45.43	N	GND
7.703	FINAL	—	8.04	50.00	-41.96	N	GND
16.708	FINAL	—	9.89	50.00	-40.11	N	GND
16.708	FINAL	16.6	—	60.00	-43.36	N	GND

Table 7-36. AC Line Conducted Data (NB UNII HDRp4 – 6264MHz) (N) with host PC with USB-C cable

FCC ID: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 93 of 94

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Wireless Right Earbud** **FCC ID: BCGA3157** and **IC: 579C-A3157** 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: BCGA3157 IC: 579C-A3157	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2405230027-07.BCG	Test Dates: 06/25/2024 - 08/27/2024	EUT Type: Wireless Earbud	Page 94 of 94

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