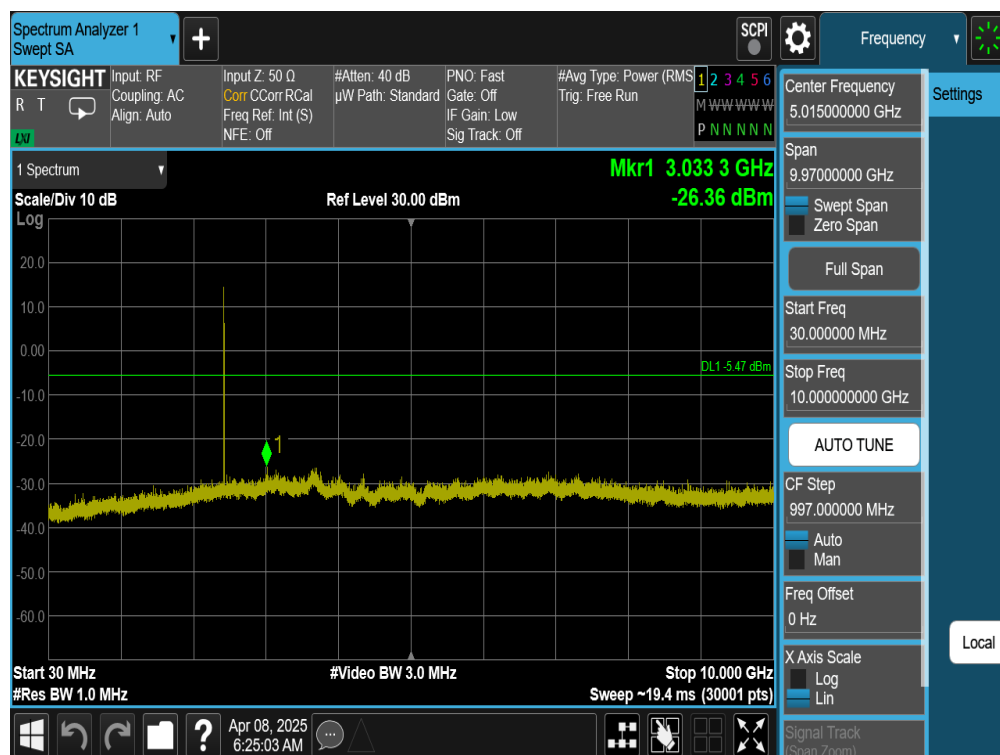
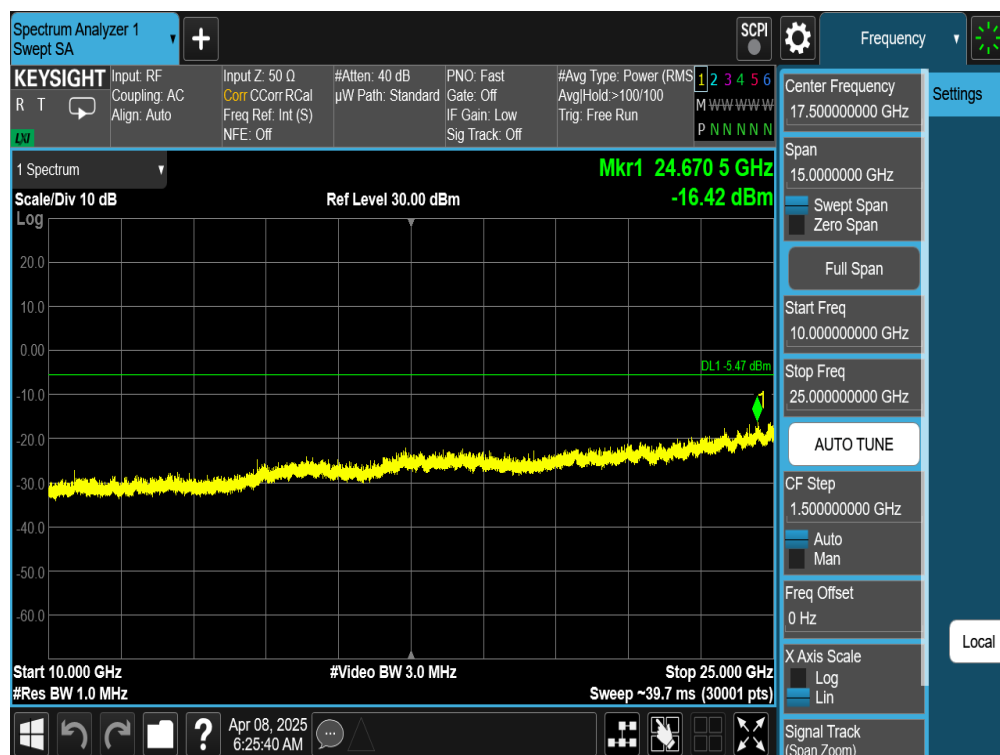




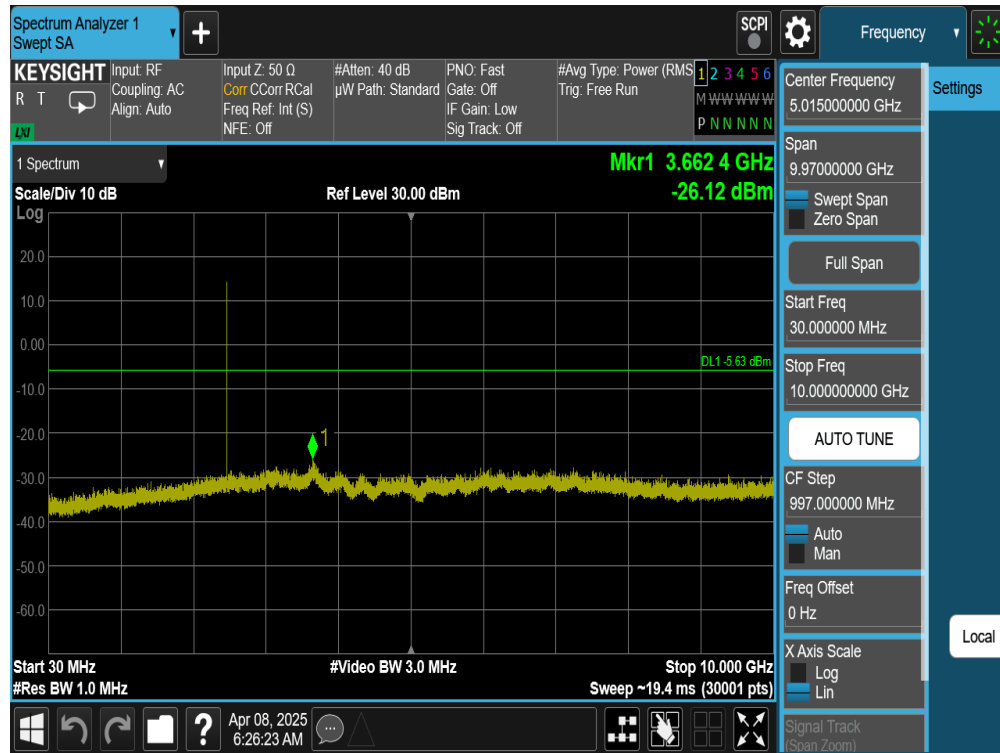
Plot 7-47. Conducted Spurious Plot Antenna 0 (Common) (Bluetooth, GFSK, iPA – Ch. 39)



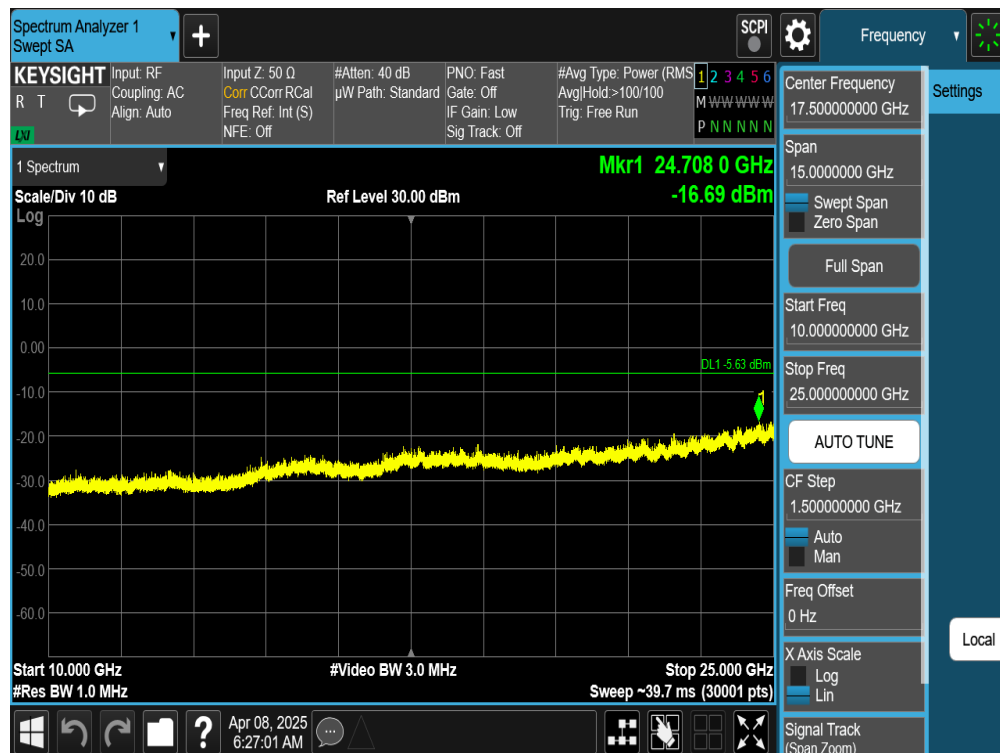
Plot 7-48. Conducted Spurious Plot Antenna 0 (Common) (Bluetooth, GFSK, iPA Ch. 39)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 57 of 84

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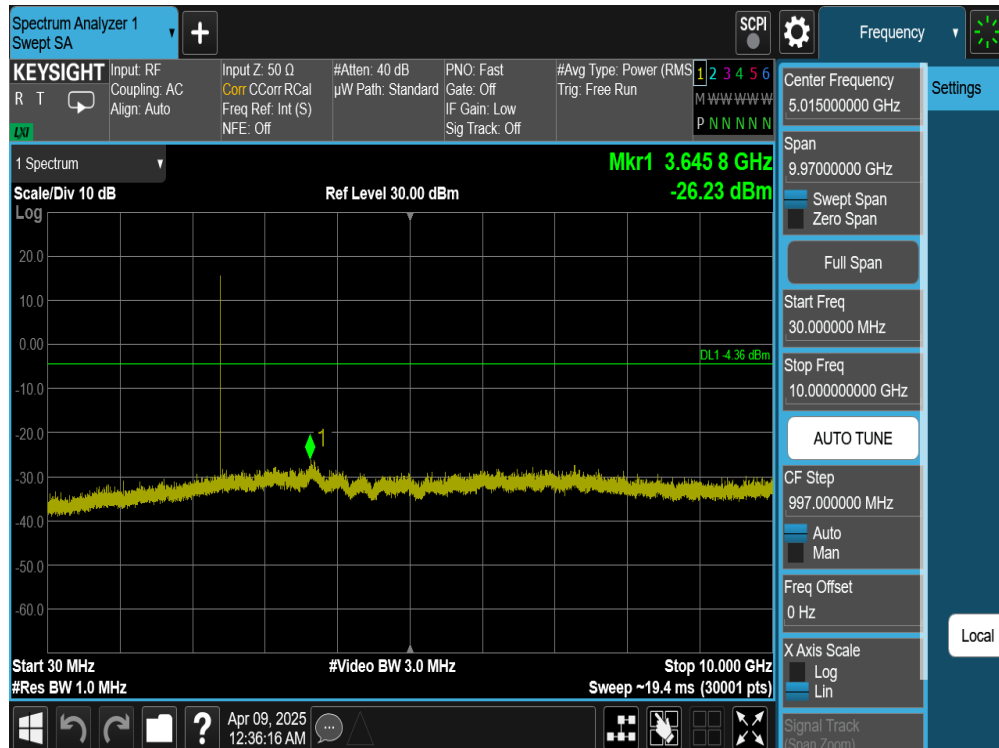
Plot 7-49. Conducted Spurious Plot Antenna 0 (Common) (Bluetooth, GFSK, iPA – Ch. 78)



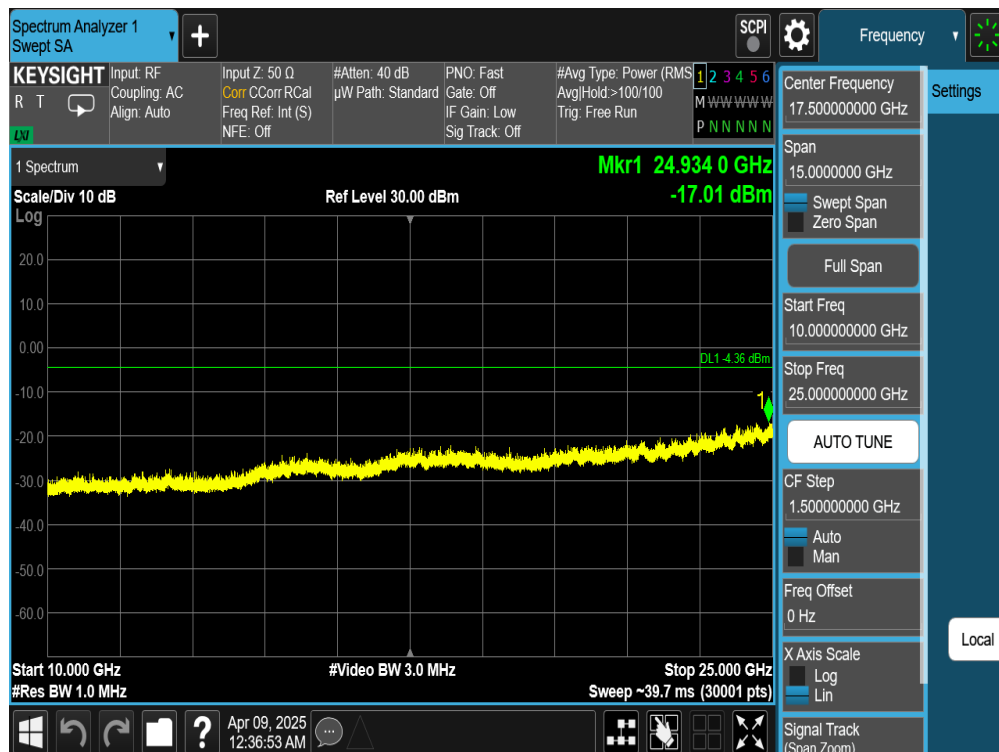
Plot 7-50. Conducted Spurious Plot Antenna 0 (Common) (Bluetooth, GFSK, iPA – Ch. 78)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 58 of 84

Antenna 0 (Dedicated)

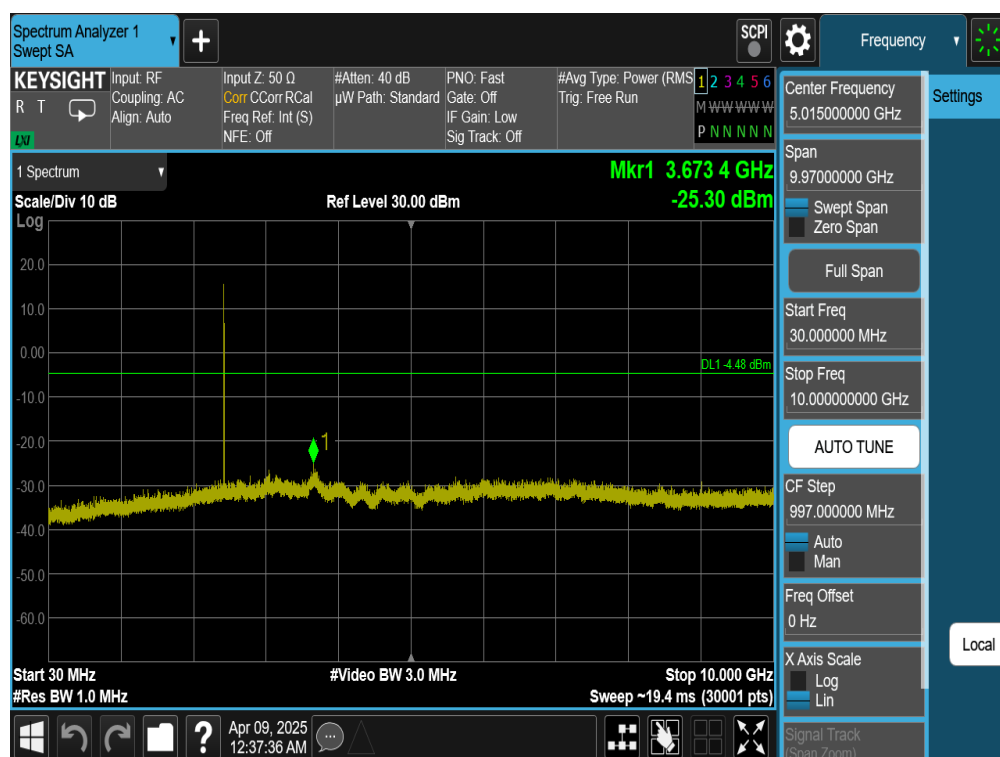


Plot 7-51. Conducted Spurious Plot Antenna 0 (Dedicated) (Bluetooth, GFSK, iPA – Ch. 0)

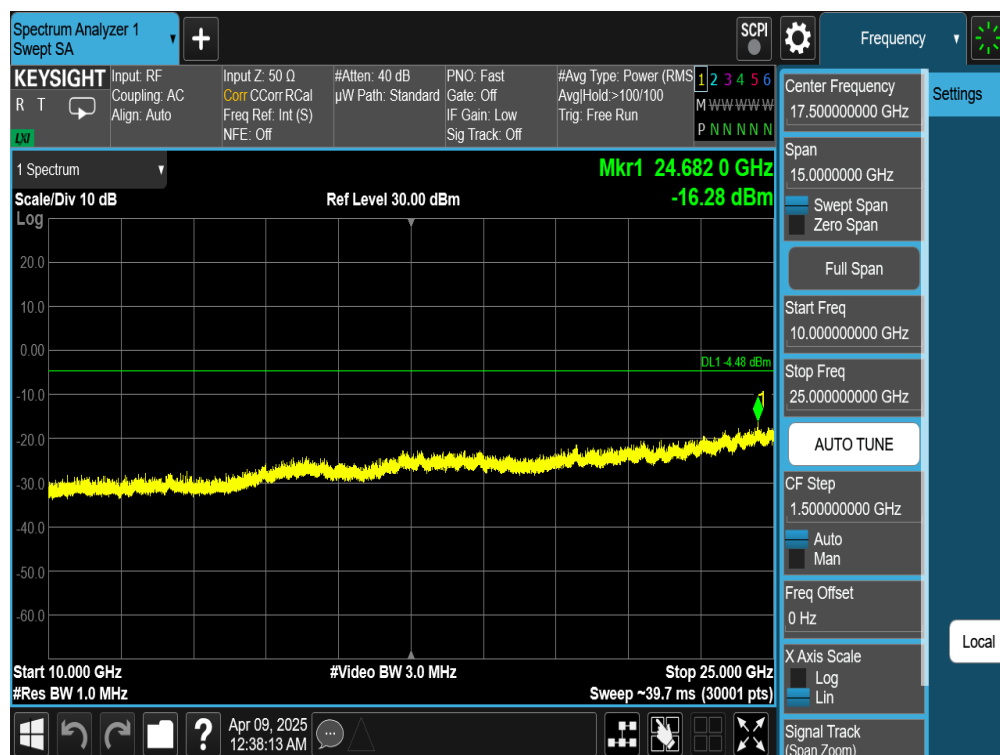


Plot 7-52. Conducted Spurious Plot Antenna 0 (Dedicated) (Bluetooth, GFSK, iPA – Ch. 0)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 59 of 84



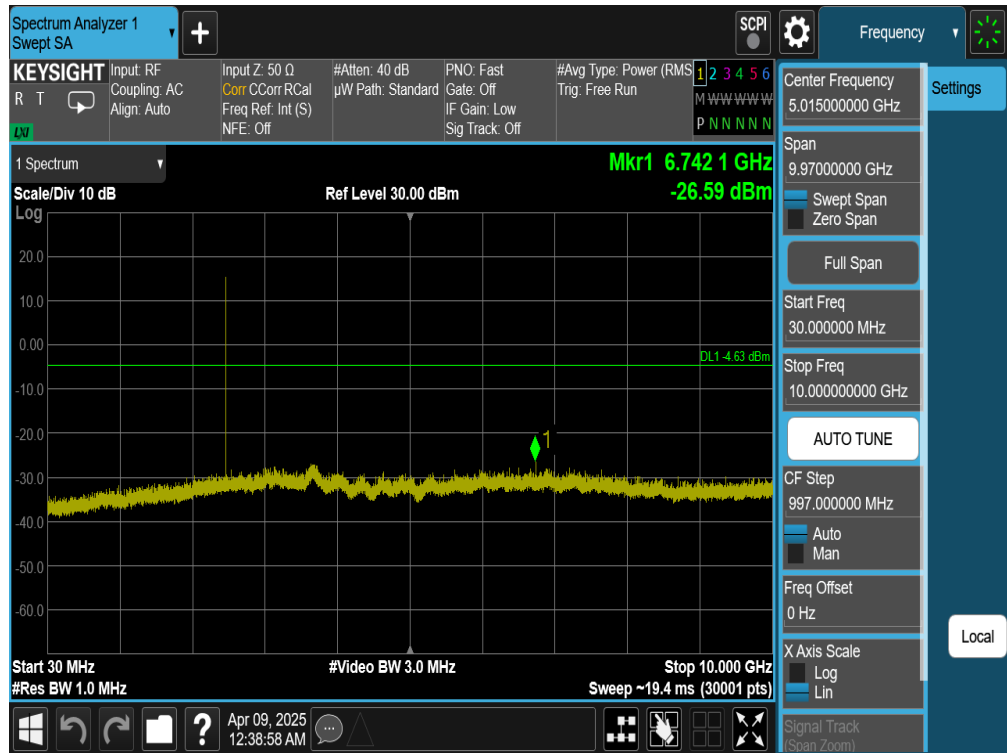
Plot 7-53. Conducted Spurious Plot Antenna 0 (Dedicated) (Bluetooth, GFSK, iPA – Ch. 39)



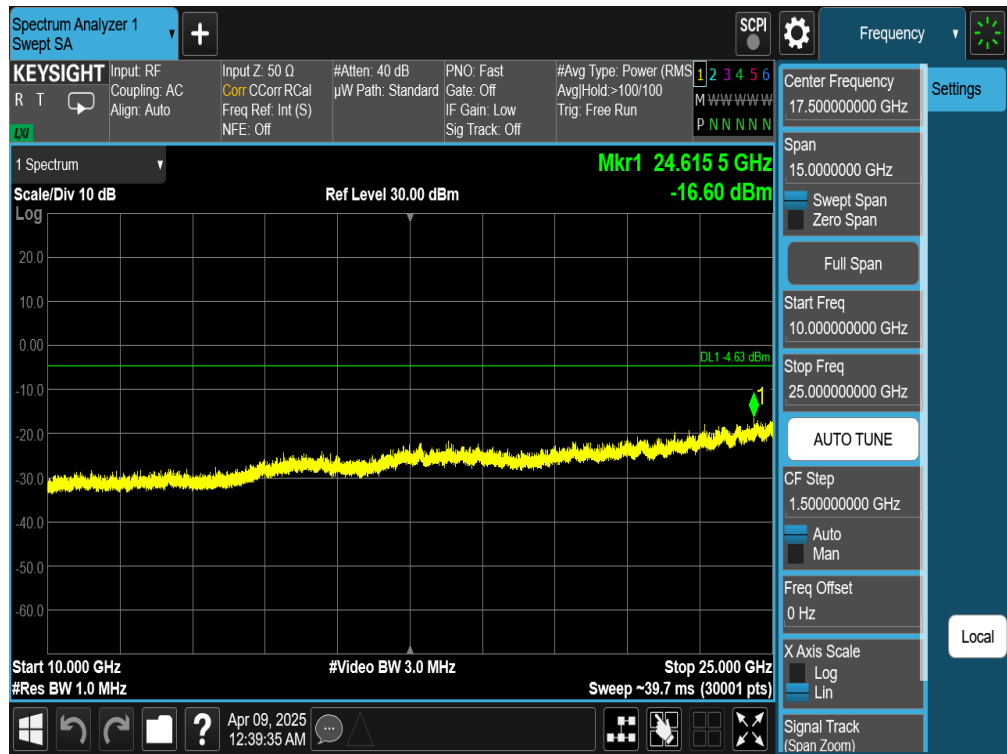
Plot 7-54. Conducted Spurious Plot Antenna 0 (Dedicated) (Bluetooth, GFSK, iPA Ch. 39)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 60 of 84

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Plot 7-55. Conducted Spurious Plot Antenna 0 (Dedicated) (Bluetooth, GFSK, iPA – Ch. 78)



Plot 7-56. Conducted Spurious Plot Antenna 0 (Dedicated) (Bluetooth, GFSK, iPA – Ch. 78)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 61 of 84

7.9 Radiated Spurious Emissions – Above 1GHz

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (7.5) must not exceed the limits shown in Table 7-10 per Section 15.209 and RSS-Gen (7.4.3).

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

Table 7-10. Radiated Limits

Test Procedure Used

ANSI C63.10:2020 + Cor. 1:2023 + C63.10a:2024 + Errata to C63.10a:2024 – Section 6.6.4.3

Test Settings

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
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Test Setup

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

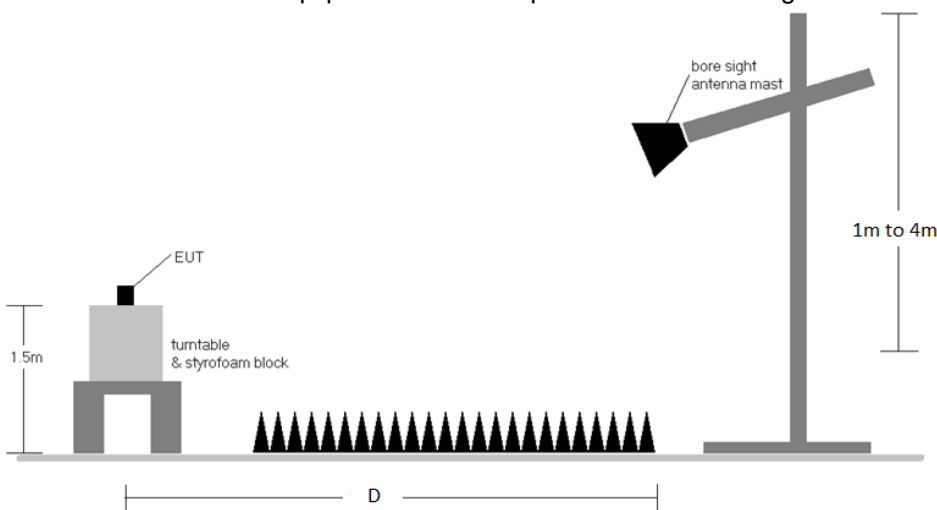


Figure 7-8. Radiated Test Setup >1GHz

Test Notes

1. All emissions lying in restricted bands specified in §15.205 and Section 7.5 of RSS-Gen are below the limit shown in Table 7-10.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested while powered by an AC power source.
4. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
5. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
6. D is the measurement test distance and emissions 1-18GHz were measured at a 3 meters test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
8. All supported modulations have been tested on the unit and only worst case configuration is reported.
9. Average emissions were not reported since the duty cycle correction factor was greater than 20dB.

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 63 of 84

Sample Calculation

Determining Spurious Emissions Levels

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

Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 7.9.2 was calculated using the formula:
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

Duty Cycle Correction Factor Calculation

- Channel hop rate = 800 hops/second (AFH Mode)
- Adjusted channel hop rate for DH5 mode = 133.33 hops/second
- Time per channel hop = $1 / 133.33 \text{ hops/second} = 7.50 \text{ ms}$
- Time to cycle through all channels = $7.50 \times 20 \text{ channels} = 150 \text{ ms}$
- Number of times transmitter hits on one channel = $100 \text{ ms} / 150 \text{ ms} = 1 \text{ time(s)}$
- Worst case dwell time = 7.5 ms

Duty cycle correction factor = $20\log_{10}(7.5\text{ms}/100\text{ms}) = -22.5 \text{ dB}$

Average Emission Calculation

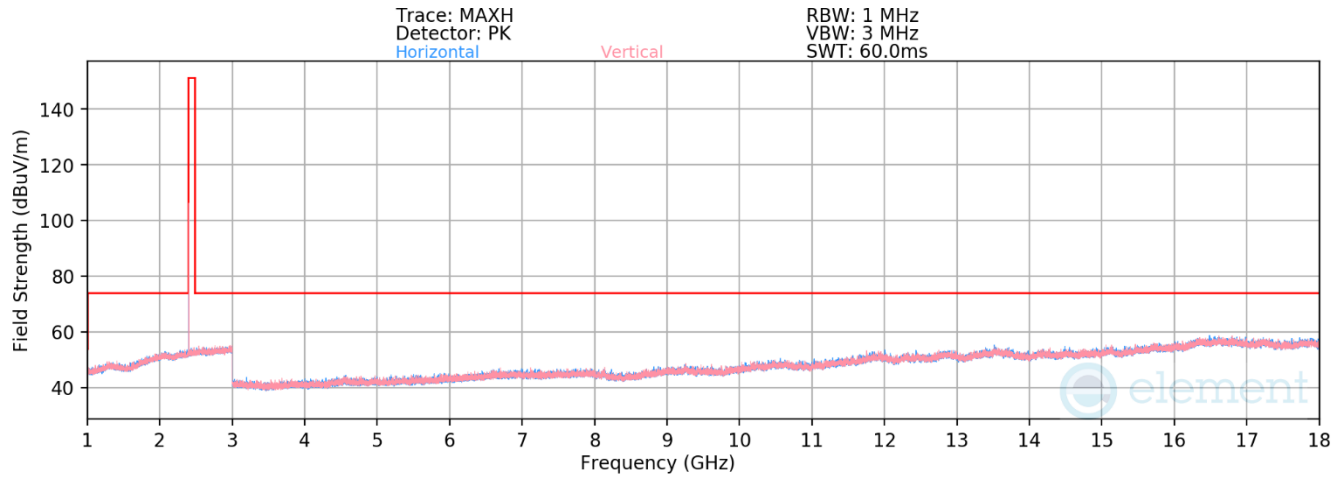
- Average Emission = Measured Peak Emissions $_{[dB\mu V/m]} - \text{Duty Cycle Correction Factor }_{[dB]}$

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 64 of 84

7.9.1 Radiated Spurious Emission Measurements (1 – 18GHz)

§15.205 §15.209 §15.247 (d); RSS-Gen [7.4.3]

Antenna 0 (Common)



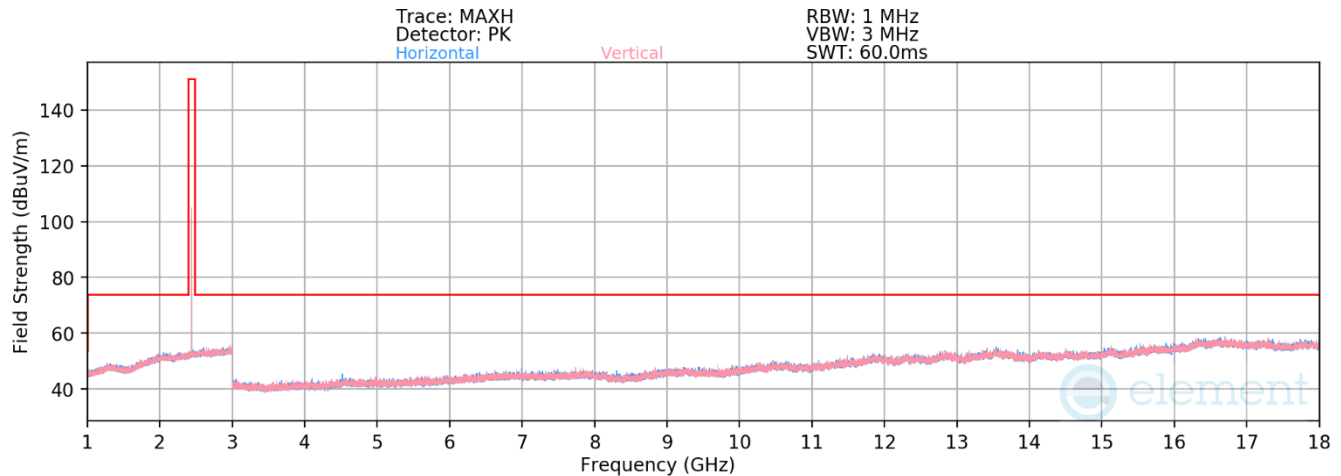
Plot 7-57. Radiated Spurious Emissions 1-18GHz Antenna 0 (Common) (BT GFSK iPA – Ch. 0)

Bluetooth Mode: GFSK
Data Rate: 1Mbps
Power Scheme iPA
Distance of Measurements: 3 Meters
Operating Frequency: 2402MHz
Channel: 0

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
4804.00	Peak	H	-	-	-67.48	6.58	44.13	73.98	-29.85
12010.00	Peak	V	-	-	-68.79	15.69	52.16	73.98	-21.82

Table 7-11. Radiated Measurements Antenna 0 (Common)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 65 of 84



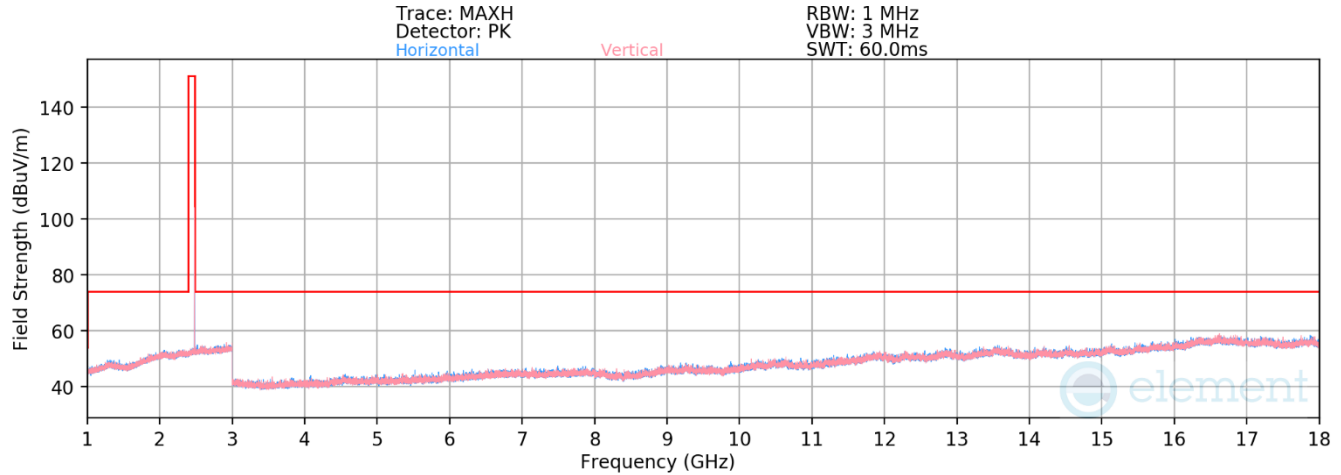
Plot 7-58. Radiated Spurious Emissions 1-18GHz Antenna 0 (Common) (BT GFSK iPA – Ch. 39)

Bluetooth Mode:	GFSK
Data Rate:	1Mbps
Power Scheme	iPA
Distance of Measurements:	3 Meters
Operating Frequency:	2441MHz
Channel:	39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
4882.00	Peak	H	-	-	-67.28	6.66	44.29	73.98	-29.69
7323.00	Peak	H	-	-	-69.46	9.97	46.41	73.98	-27.57
12205.00	Peak	H	-	-	-68.60	15.96	51.41	73.98	-22.57

Table 7-12. Radiated Measurements Antenna 0 (Common)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		



Plot 7-59. Radiated Spurious Emissions 1-18GHz Antenna 0 (Common) (BT GFSK iPA – Ch. 78)

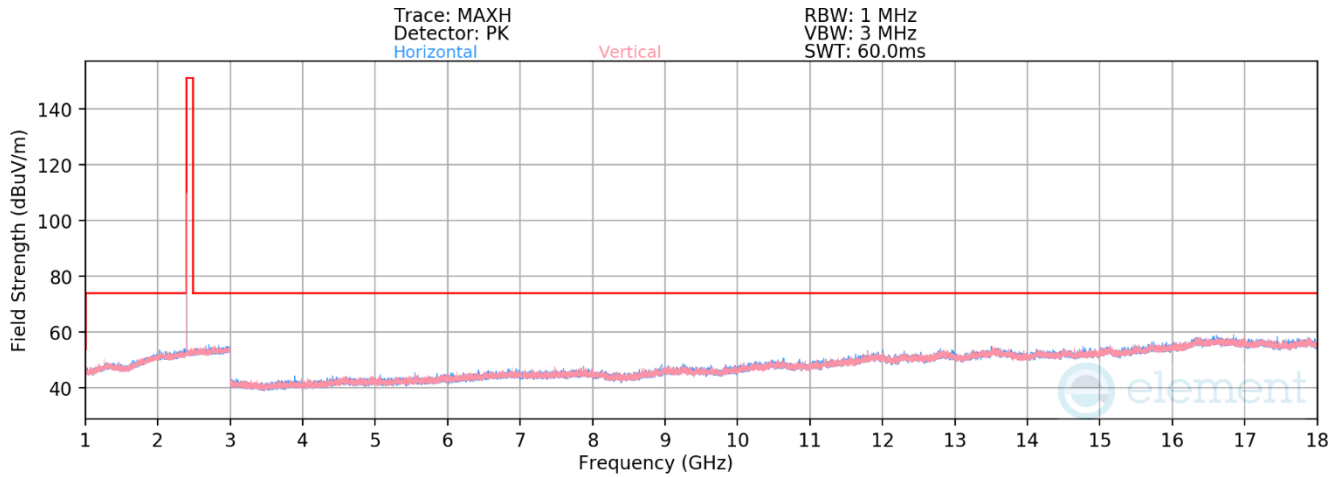
Bluetooth Mode:	GFSK
Data Rate:	1Mbps
Power Scheme	iPA
Distance of Measurements:	3 Meters
Operating Frequency:	2480MHz
Channel:	78

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
4960.00	Peak	H	-	-	-67.02	6.80	44.56	73.98	-29.42
7440.00	Peak	V	-	-	-69.58	10.05	47.29	73.98	-26.69
12400.00	Peak	H	-	-	-68.23	16.12	51.99	73.98	-21.99

Table 7-13. Radiated Measurements Antenna 0 (Common)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 67 of 84

Antenna 0 (Dedicated)



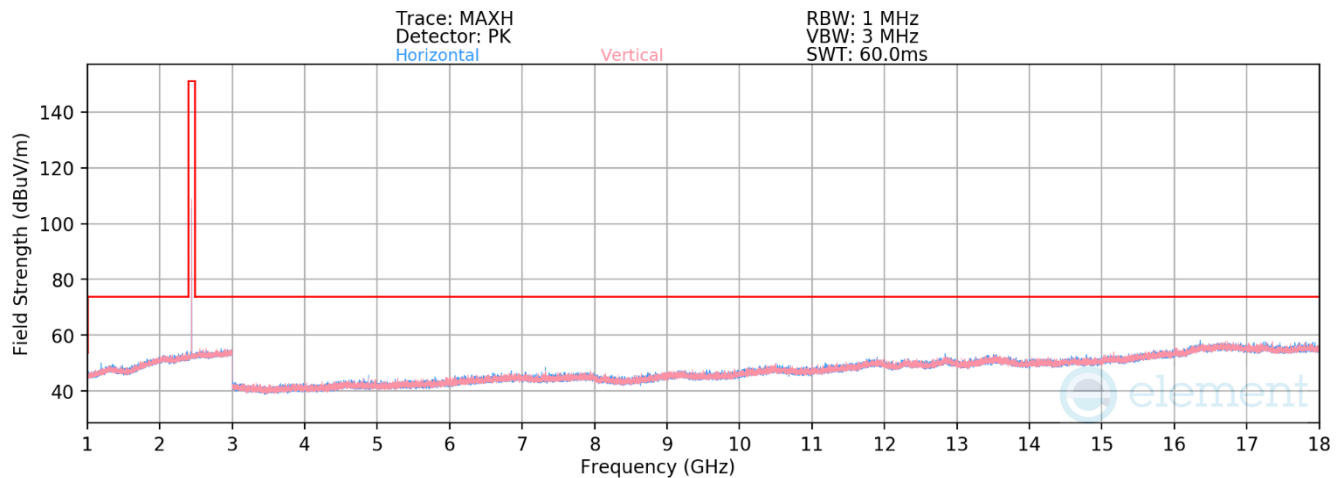
Plot 7-60. Radiated Spurious Emissions 1-18GHz Antenna 0 (Dedicated) (BT GFSK iPA – Ch. 0)

Bluetooth Mode: GFSK
Data Rate: 1Mbps
Power Scheme: iPA
Distance of Measurements: 3 Meters
Operating Frequency: 2402MHz
Channel: 0

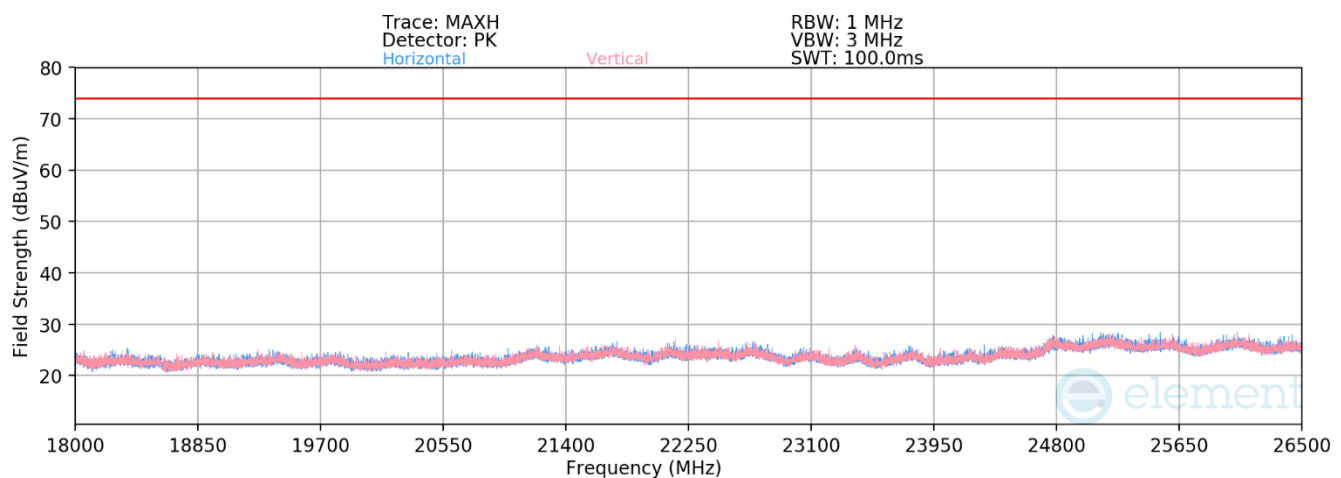
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
4804.00	Peak	V	224	313	-67.48	6.58	46.58	73.98	-27.40
12010.00	Peak	V	267	261	-68.79	15.69	56.95	73.98	-17.03

Table 7-14. Radiated Measurements Antenna 0 (Dedicated)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
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Plot 7-61. Radiated Spurious Emissions 1-18GHz Antenna 0 (Dedicated) (BT GFSK iPA – Ch. 39)



Plot 7-62. Radiated Spurious Emissions Above 18GHz Antenna 0 (Dedicated) (1Mbps, iPA – Ch. 39)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 69 of 84

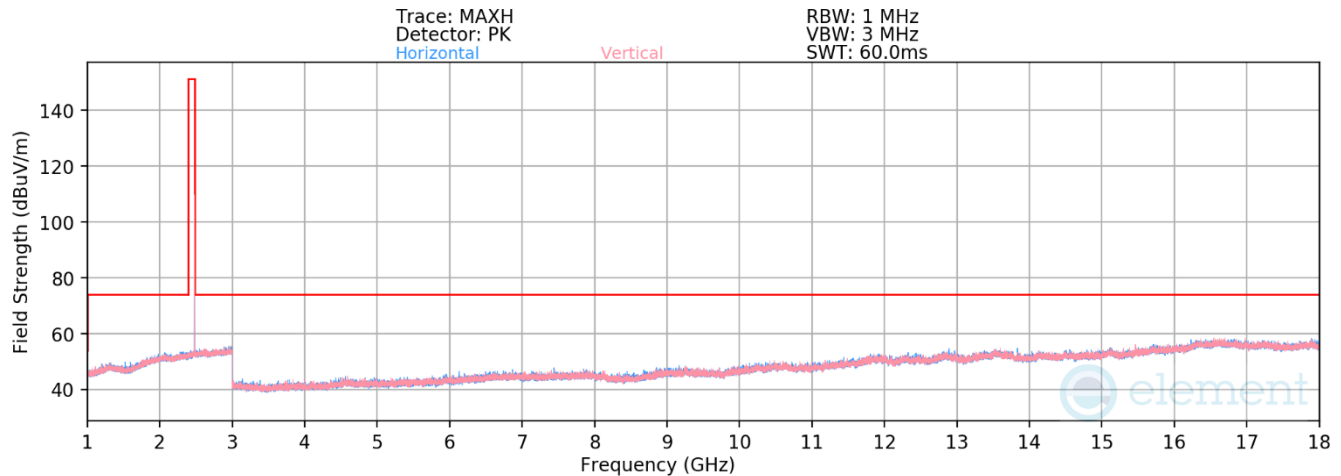
Bluetooth Mode: GFSK
 Data Rate: 1Mbps
 Power Scheme iPA
 Distance of Measurements: 3 Meters
 Operating Frequency: 2441MHz
 Channel: 39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Duty Cycle Correction [dB]	Dist. Corr. Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4882.00	Peak	H	175	312	-65.17	6.70	0.00	0.00	48.54	73.98	-25.44
7323.00	Peak	H	180	267	-62.91	10.04	0.00	0.00	54.13	73.98	-19.85
12205.00	Peak	H	-	-	-72.27	16.76	0.00	0.00	51.48	73.98	-22.50
19528.00	Peak	H	-	-	-67.87	-5.93	0.00	-9.54	23.65	73.98	-50.33

Table 7-15. Radiated Measurements Antenna 0 (Dedicated)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 70 of 84

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Plot 7-63. Radiated Spurious Emissions 1-18GHz Antenna 0 (Dedicated) (BT GFSK iPA – Ch. 78)

Bluetooth Mode:	GFSK
Data Rate:	1Mbps
Power Scheme	iPA
Distance of Measurements:	3 Meters
Operating Frequency:	2480MHz
Channel:	78

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
4960.00	Peak	H	261	260	-67.02	6.80	46.63	73.98	-27.35
7440.00	Peak	V	184	266	-69.58	10.05	55.82	73.98	-18.16
12400.00	Peak	H	-	-	-68.23	16.12	52.49	73.98	-21.49

Table 7-16. Radiated Measurements Antenna 0 (Dedicated)

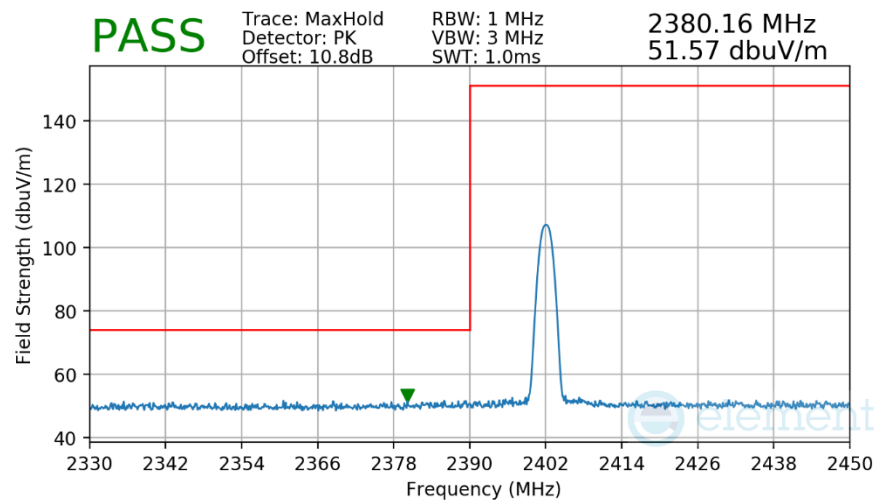
FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 71 of 84

7.9.2 Radiated Restricted Band Edge Measurements

§15.205 §15.209 §15.247 (d); RSS-Gen [7.4.3]

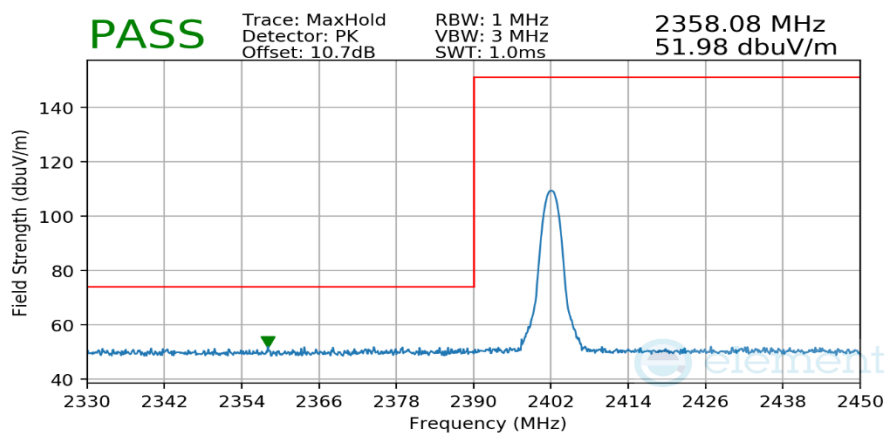
Antenna 0 (Common)

Bluetooth Mode:	GFSK
Power Scheme:	iPA
Measurement Distance:	3 Meters
Operating Frequency:	2402MHz
Channel:	0



Plot 7-64. Radiated Restricted Lower Band Edge Measurement Antenna 0 (Common)

Bluetooth Mode:	8DPSK
Power Scheme:	iPA
Measurement Distance:	3 Meters
Operating Frequency:	2402MHz
Channel:	0

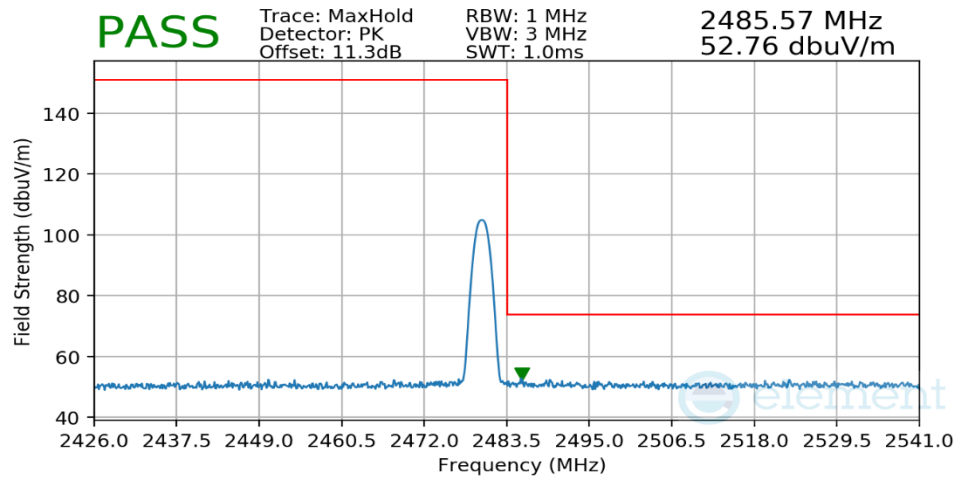


Plot 7-65. Radiated Restricted Lower Band Edge Measurement Antenna 0(Common)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		

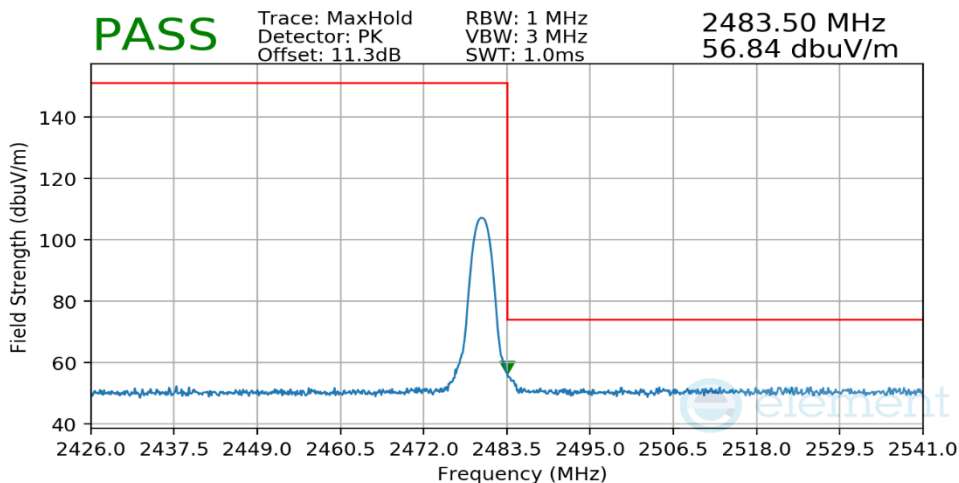
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Bluetooth Mode: GFSK
 Power Scheme: iPA
 Measurement Distance: 3 Meters
 Operating Frequency: 2480MHz
 Channel: 78



Plot 7-66. Radiated Restricted Upper Band Edge Measurement Antenna 0 (Common)

Bluetooth Mode: 8DPSK
 Power Scheme: iPA
 Measurement Distance: 3 Meters
 Operating Frequency: 2480MHz
 Channel: 78

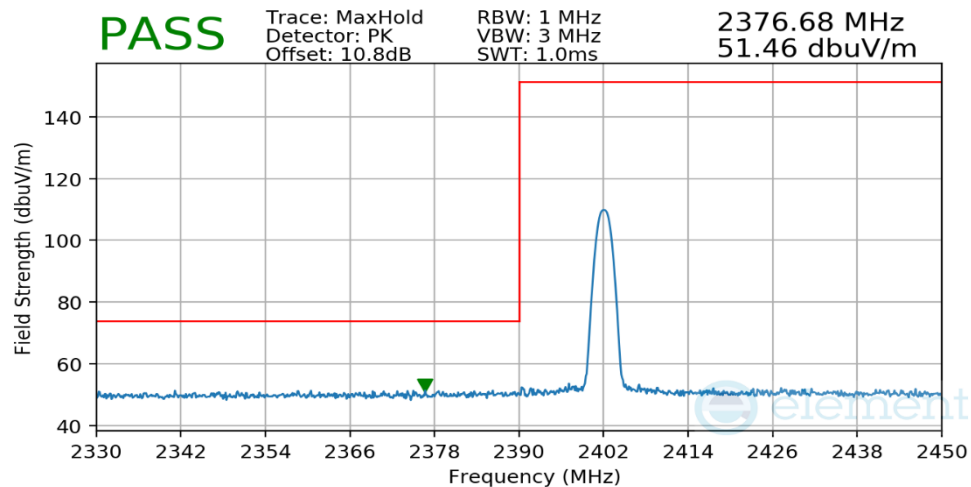


Plot 7-67. Radiated Restricted Upper Band Edge Measurement Antenna 0 (Common)

FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
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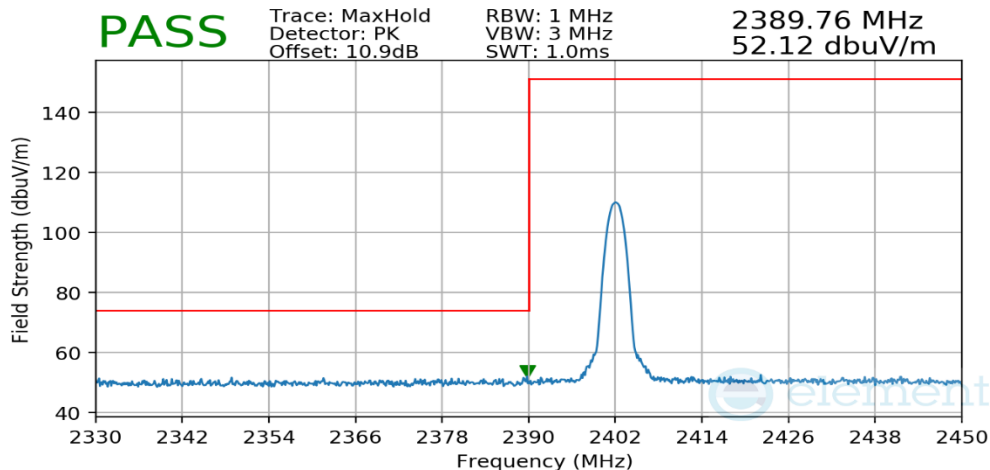
Antenna 0 (Dedicated)

Bluetooth Mode: GFSK
 Power Scheme: iPA
 Measurement Distance: 3 Meters
 Operating Frequency: 2402MHz
 Channel: 0



Plot 7-68. Radiated Restricted Lower Band Edge Measurement Antenna 0 (Dedicated)

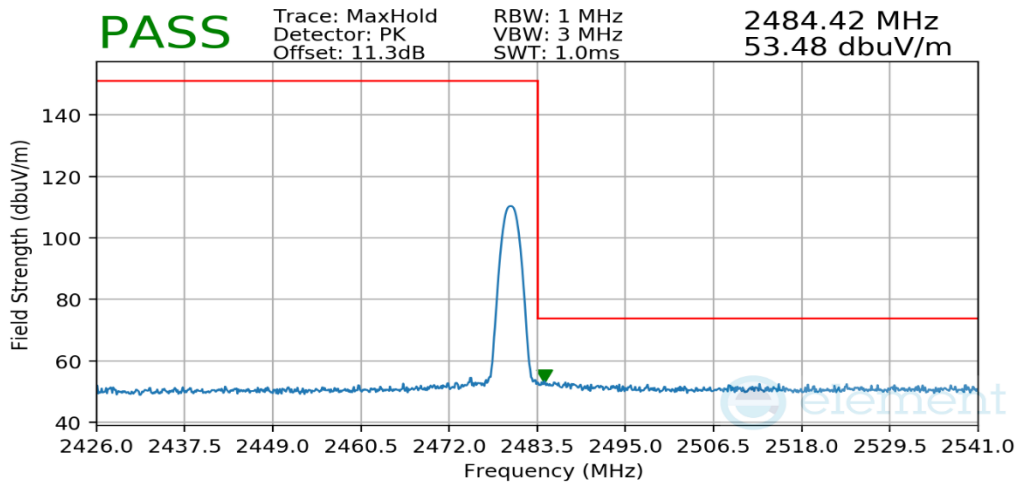
Bluetooth Mode: 8DPSK
 Power Scheme: iPA
 Measurement Distance: 3 Meters
 Operating Frequency: 2402MHz
 Channel: 0



Plot 7-69. Radiated Restricted Lower Band Edge Measurement Antenna 0 (Dedicated)

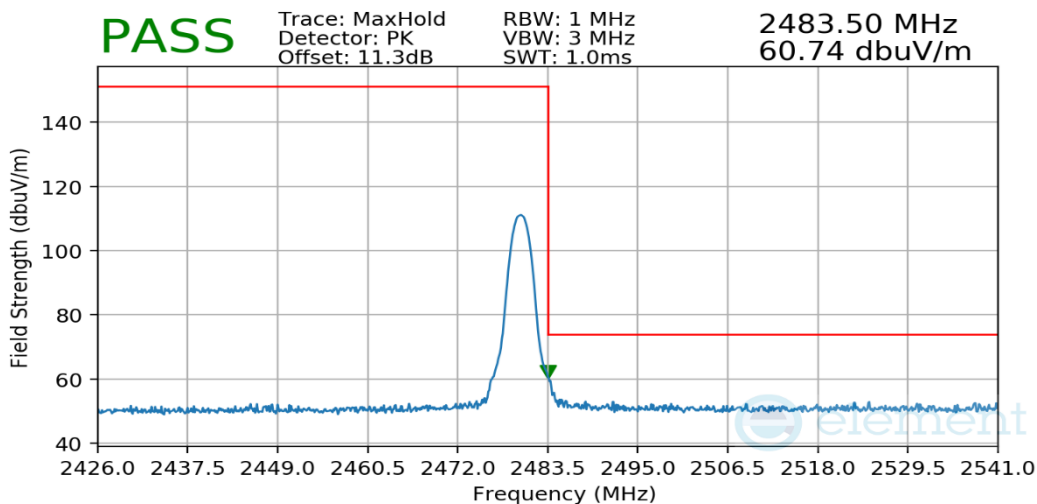
FCC ID: BCGA3300 IC: 579C-A3300		Test Dates: 3/24/2025 - 6/09/2025	EUT Type: Smart Speaker with Display	Approved by: Technical Manager
Test Report S/N: 1C2503170028-01-R2.BCG		This report is Blockchain Verified. To verify the report authenticity, please visit https://www.blockchain-verified.com or by clicking on the Blockchain logo.		Page 74 of 84

Bluetooth Mode: GFSK
 Power Scheme: iPA
 Measurement Distance: 3 Meters
 Operating Frequency: 2480MHz
 Channel: 78



Plot 7-70. Radiated Restricted Upper Band Edge Measurement Antenna 0 (Dedicated)

Bluetooth Mode: 8DPSK
 Power Scheme: iPA
 Measurement Distance: 3 Meters
 Operating Frequency: 2480MHz
 Channel: 78



Plot 7-71. Radiated Restricted Upper Band Edge Measurement Antenna 0 (Dedicated)

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7.10 Radiated Spurious Emissions – Below 1GHz

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (7.5) must not exceed the limits shown in Table 7-21 per Section 15.209 and RSS-Gen (7.4.3).

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 7-21. Radiated Limits

Test Procedures Used

ANSI C63.10:2020 + Cor. 1:2023 + C63.10a:2024 + Errata to C63.10a:2024

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

Test Setup

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

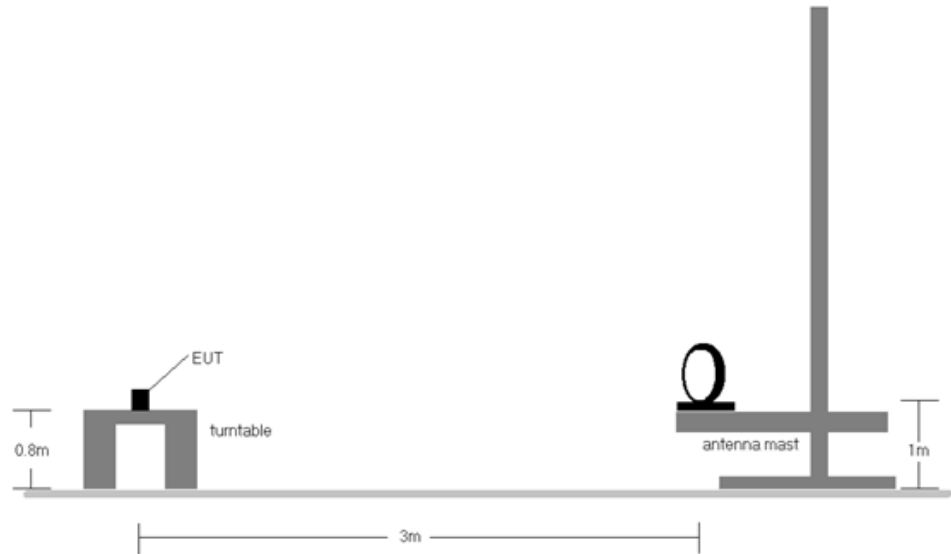


Figure 7-9. Radiated Test Setup < 30MHz

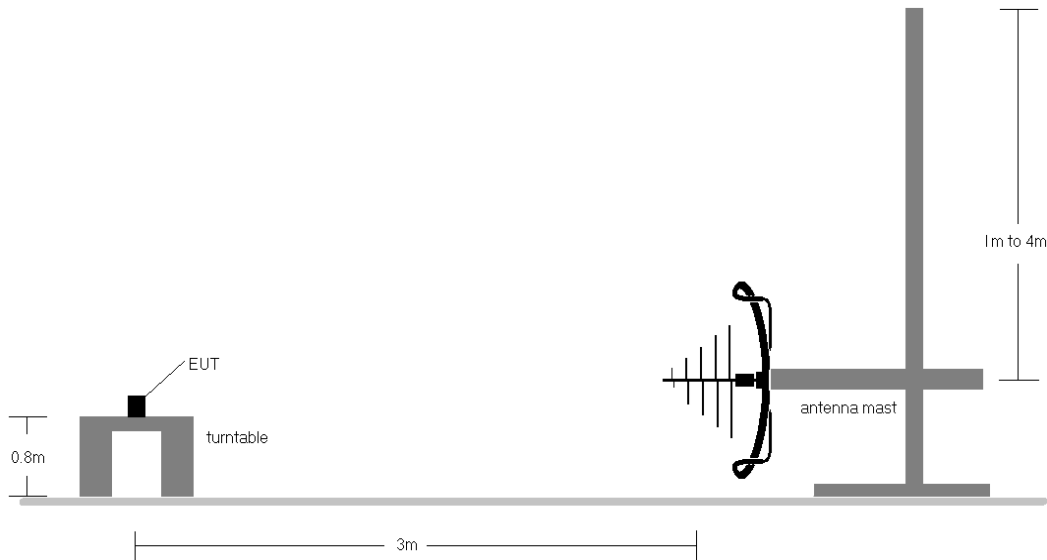


Figure 7-10. Radiated Test Setup < 1GHz

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Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (7.5) are below the limit shown in Table 7-21.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three screen angles. 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 while powered by an AC power source.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector on emissions that were within 6dB of the limit.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. All supported modulation, antenna and power schemes have been tested on the unit and only worst case configuration is reported.
10. The configurations below were investigated, and the worst case has been reported.
 - a. EUT powered by AC Power Cable

Sample Calculations

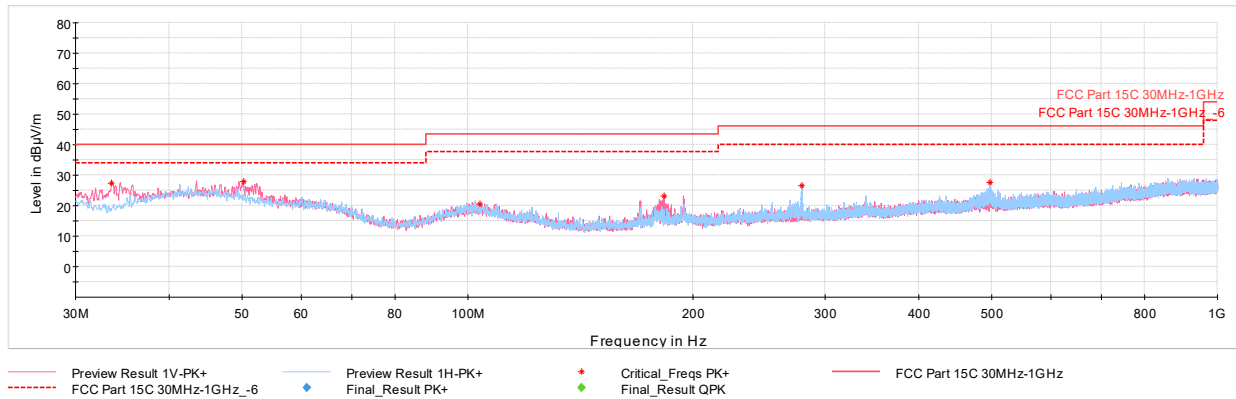
Determining Spurious Emissions Levels

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

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Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [7.4.3]



Plot 7-72. Radiated Spurious Emissions Below 1GHz Antenna 0 (Dedicated) (GFSK iPA – Ch.39, EUT powered by AC Power 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]
33.49	Max-Peak	V	100	309	-61.39	-18.24	27.37	40.00	-12.63
50.27	Max-Peak	V	100	303	-64.91	-14.22	27.87	40.00	-12.13
103.96	Max-Peak	V	200	90	-70.27	-16.33	20.40	43.52	-23.12
182.87	Max-Peak	V	100	181	-66.32	-17.63	23.05	43.52	-20.47
279.19	Max-Peak	H	100	158	-66.65	-13.88	26.47	46.02	-19.55
497.78	Max-Peak	H	100	32	-70.78	-8.66	27.56	46.02	-18.46

Table 7-22. Radiated Spurious Emissions Below 1GHz Antenna 0 (Dedicated) (GFSK iPA – Ch.39, EUT powered by AC Power Cable)

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7.11 AC Line-Conducted Emissions Measurement

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for AC Line conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (7.4.2).

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 7-25. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10:2020 + Cor. 1:2023 + C63.10a:2024 + Errata to C63.10a:2024, 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.

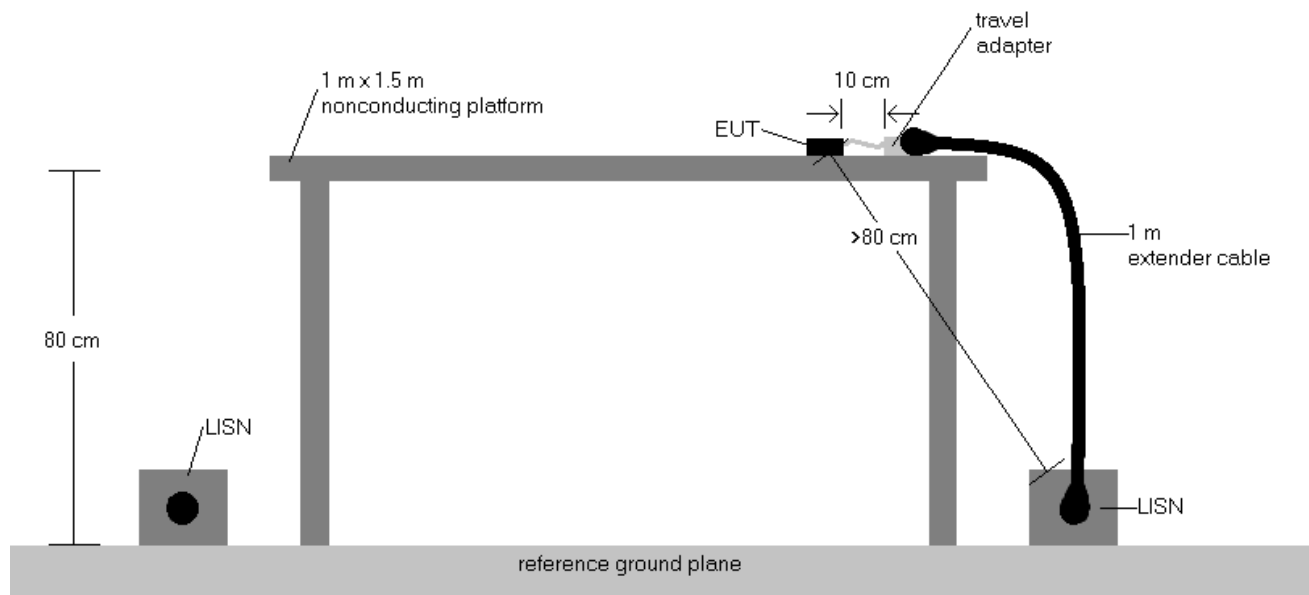
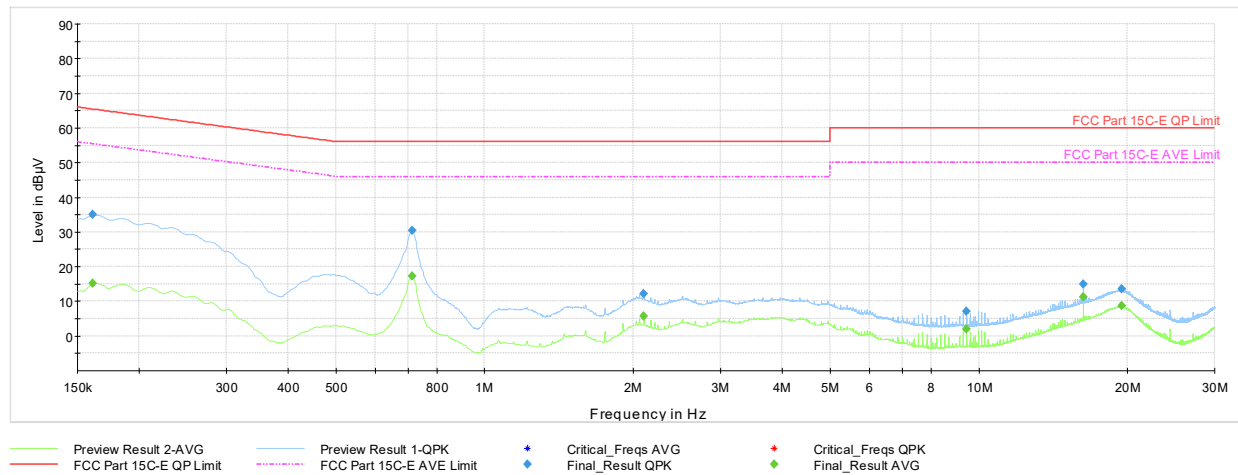


Figure 7-11. Test Instrument & Measurement Setup

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. The configurations below were investigated, and the worst case has been reported.
 - a. EUT powered by AC Power Cable
3. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.207 and RSS-Gen (7.4.2).
4. $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
5. $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Correction Factor (dB)}$
6. $\text{Margin (dB)} = \text{QP/AV Level (dB}\mu\text{V)} - \text{QP/AV Limit (dB}\mu\text{V)}$
7. Traces shown in plot are made using a quasi peak and average detectors.
8. Deviations to the Specifications: None.

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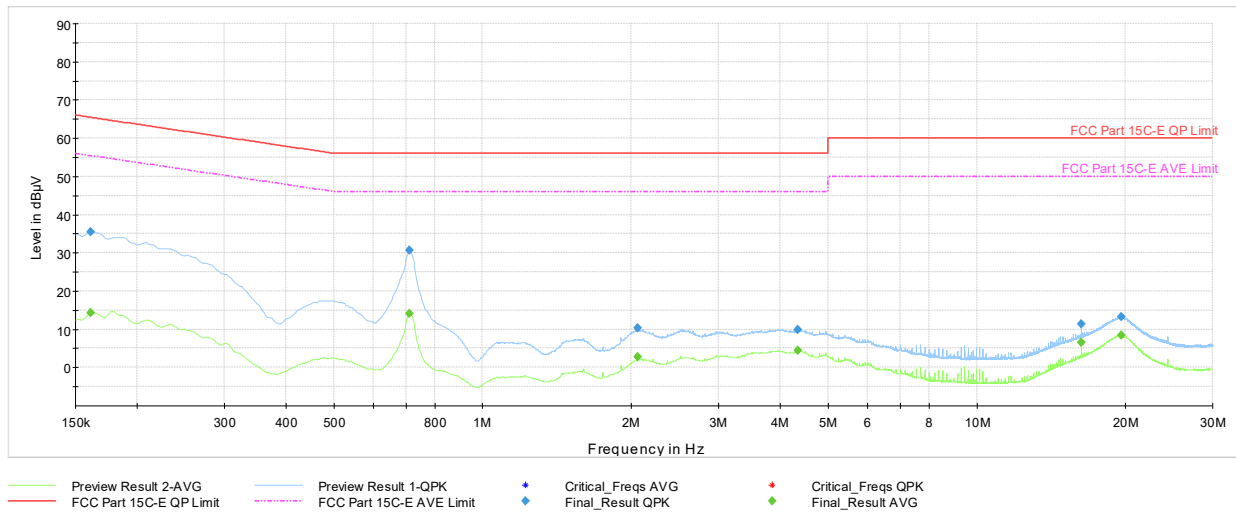


Plot 7-73. AC Line-Conducted Test Plot Antenna 0 (Dedicated) (L1, GFSK iPA – Ch.39, EUT powered by AC Power Cable)

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.161	FINAL	—	15.23	55.40	-40.17	L1	GND
0.161	FINAL	35.02	—	65.40	-30.38	L1	GND
0.713	FINAL	—	17.29	46.00	-28.71	L1	GND
0.713	FINAL	30.31	—	56.00	-25.69	L1	GND
2.099	FINAL	—	5.79	46.00	-40.21	L1	GND
2.099	FINAL	12.28	—	56.00	-43.72	L1	GND
9.449	FINAL	7.03	—	60.00	-52.97	L1	GND
9.449	FINAL	—	2.10	50.00	-47.90	L1	GND
16.258	FINAL	15.02	—	60.00	-44.98	L1	GND
16.258	FINAL	—	11.24	50.00	-38.76	L1	GND
19.430	FINAL	—	8.68	50.00	-41.32	L1	GND
19.430	FINAL	13.52	—	60.00	-46.48	L1	GND

Table 7-26. AC Line-Conducted Test Data Antenna 0 (Dedicated) (L1, GFSK iPA – Ch.39, EUT powered by AC Power Cable)

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Plot 7-74. AC Line-Conducted Test Plot Antenna 0 (Dedicated) (N, GFSK iPA – Ch.39, EUT powered by AC Power Cable)

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.161	FINAL	—	14.29	55.40	-41.11	N	GND
0.161	FINAL	35.6	—	65.40	-29.83	N	GND
0.710	FINAL	—	14.15	46.00	-31.85	N	GND
0.710	FINAL	30.6	—	56.00	-25.41	N	GND
2.058	FINAL	—	2.76	46.00	-43.24	N	GND
2.058	FINAL	10.2	—	56.00	-45.76	N	GND
4.344	FINAL	10.0	—	56.00	-46.01	N	GND
4.344	FINAL	—	4.43	46.00	-41.57	N	GND
16.251	FINAL	11.4	—	60.00	-48.56	N	GND
16.251	FINAL	—	6.62	50.00	-43.38	N	GND
19.581	FINAL	—	8.46	50.00	-41.54	N	GND
19.581	FINAL	13.2	—	60.00	-46.77	N	GND

Table 7-27. AC Line-Conducted Test Data Antenna 0 (Dedicated) (N, GFSK iPA – Ch.39, EUT powered by AC Power Cable)

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Apple Smart Speaker with Display** **FCC ID: BCGA3300 and IC: 579C-A3300** is in compliance with Part 15 Subpart C (15.247) of the FCC Rules and RSS-247 of the Innovation, Science and Economic Development Canada Rules.

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