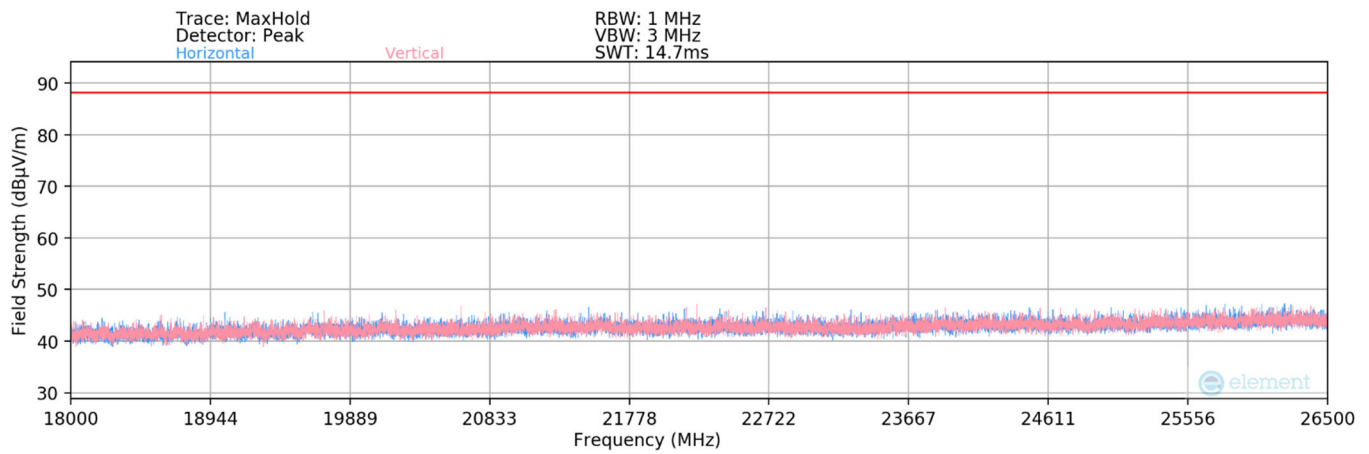
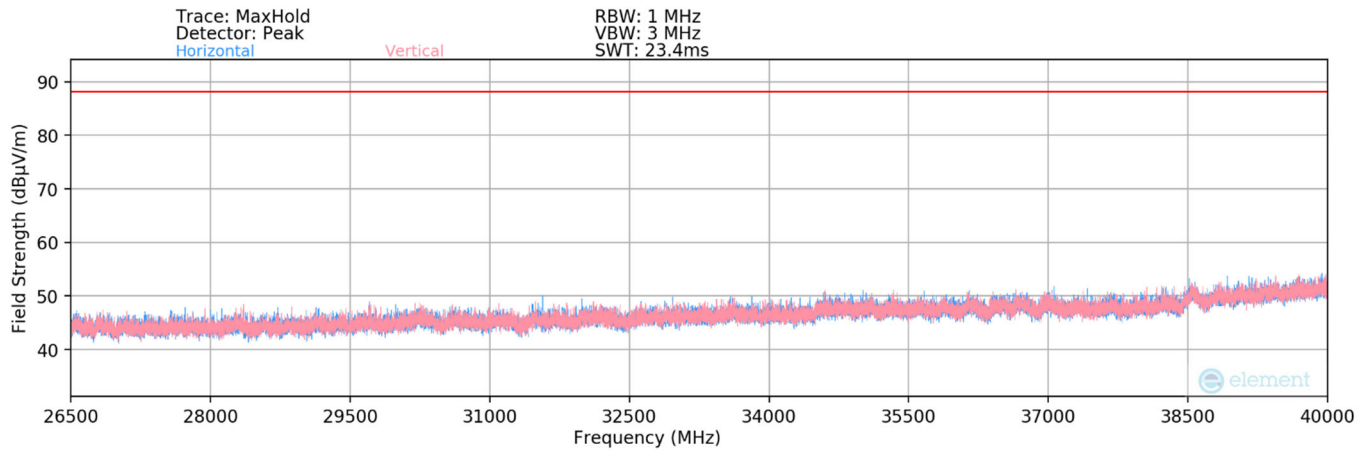


Plot 7-354. Radiated Spurious Plot above 1GHz MIMO (802.11ax- UNII Band 8 - 20MHz - Ch.209)



Plot 7-355. Radiated Spurious Plot above 18GHz - 26.5GHz - CH 209 - MIMO (802.11ax)



Plot 7-356. Radiated Spurious Plot 26.5GHz - 40GHz - CH 209 - MIMO (802.11ax)

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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MIMO Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 6895MHz
 Channel: 189

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
13790.00	Peak	H	-	-	-63.79	13.66	0.00	56.87	68.20	-11.33
* 20685.00	Average	H	-	-	-68.91	3.27	-9.54	31.82	53.98	-22.16
* 20685.00	Peak	H	-	-	-55.92	3.27	-9.54	44.81	73.98	-29.17
27580.00	Peak	H	-	-	-55.50	5.23	-9.54	47.19	68.20	-21.01
34475.00	Peak	H	-	-	-55.42	7.64	-9.54	49.67	68.20	-18.53

Table 7-24. Radiated Measurements MIMO (UNII Band 8 – Low Channel – 20MHz)

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 6995MHz
 Channel: 209

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
13990.00	Peak	H	-	-	-64.67	13.89	0.00	56.22	68.20	-11.98
* 20985.00	Average	H	-	-	-73.19	3.46	-9.54	27.73	53.98	-26.25
* 20985.00	Peak	H	-	-	-62.26	3.46	-9.54	38.66	73.98	-35.32
27980.00	Peak	H	-	-	-61.54	5.02	-9.54	40.93	68.20	-27.27
34975.00	Peak	H	-	-	-57.80	7.91	-9.54	47.56	68.20	-20.64

Table 7-25. Radiated Measurements MIMO (UNII Band 8 – Mid Channel – 20MHz)

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 7115MHz
 Channel: 233

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
14230.00	Peak	H	-	-	-64.34	14.92	0.00	57.58	68.20	-10.62
* 21345.00	Average	H	-	-	-66.71	3.78	-9.54	34.53	53.98	-19.45
* 21345.00	Peak	H	-	-	-56.70	3.78	-9.54	44.54	73.98	-29.44
28460.00	Peak	H	-	-	-56.07	5.45	-9.54	46.84	68.20	-21.36
35575.00	Peak	H	-	-	-54.32	7.65	-9.54	50.79	68.20	-17.41

Table 7-26. Radiated Measurements MIMO (UNII Band 8 – High Channel – 20MHz)

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 6995MHz
 Channel: 209

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
13990.00	Peak	H	-	-	-65.71	13.89	0.00	55.18	68.20	-13.02
* 20985.00	Average	H	-	-	-67.13	3.46	-9.54	33.79	53.98	-20.19
* 20985.00	Peak	H	-	-	-57.17	3.46	-9.54	43.75	73.98	-30.23
27980.00	Peak	H	-	-	-56.21	5.02	-9.54	46.27	68.20	-21.93
34975.00	Peak	H	-	-	-54.81	7.91	-9.54	50.56	68.20	-17.64

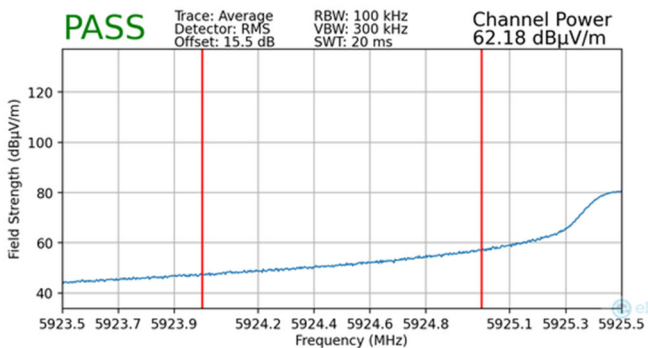
Table 7-27. Radiated Measurements MIMO (UNII Band 8 – Mid Channel – 20MHz) with WCP

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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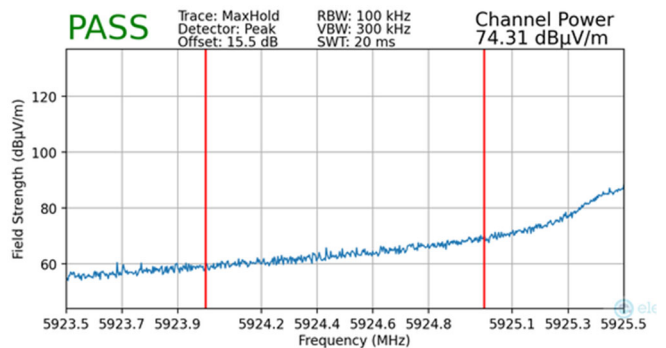
11.7.2 MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b)(6) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5935MHz
Channel:	2

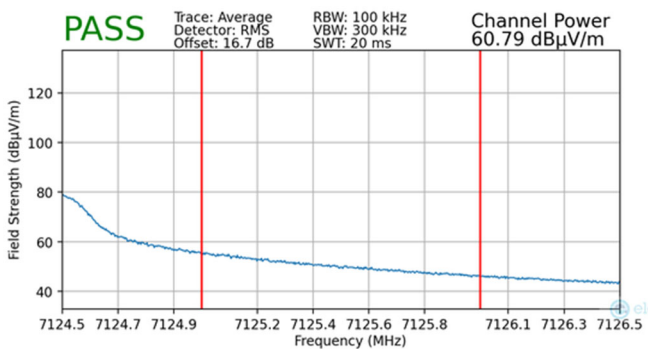


Plot 7-357. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

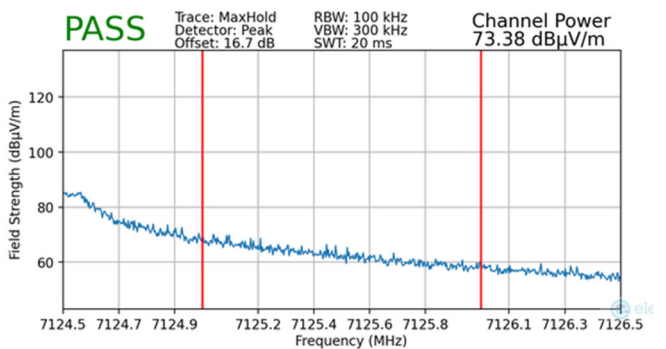


Plot 7-358. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11a
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	7115MHz
Channel:	233



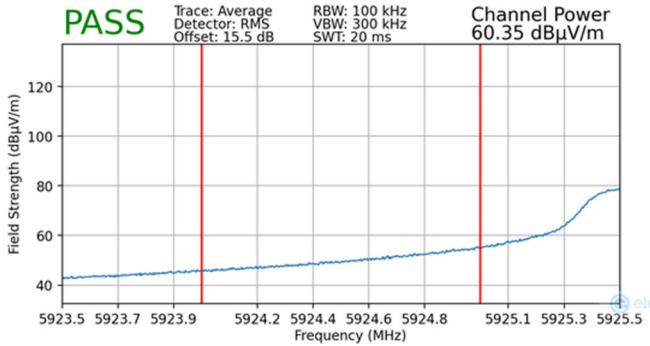
Plot 7-359. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



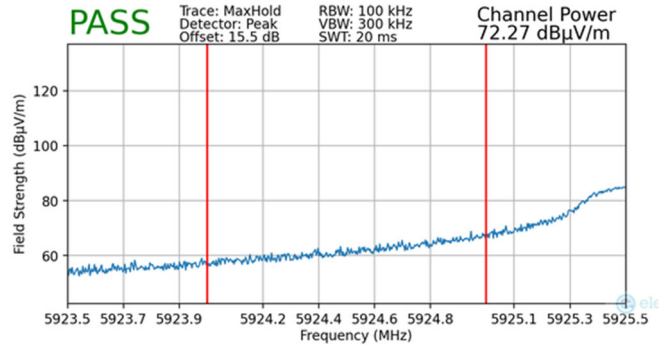
Plot 7-360. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Worst Case Mode: 802.11ax
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5935MHz
 Channel: 2



Plot 7-361. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5) with WCP



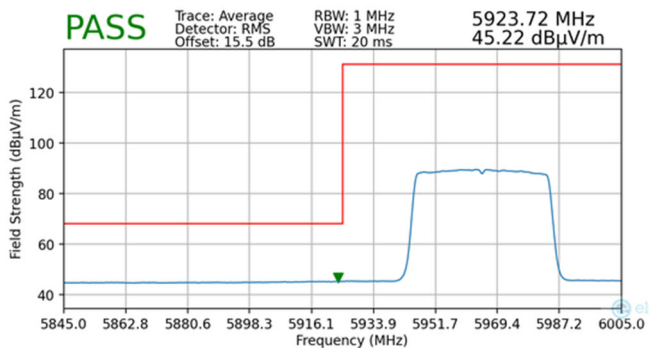
Plot 7-362. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5) with WCP

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2209010096-15.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 224 of 239

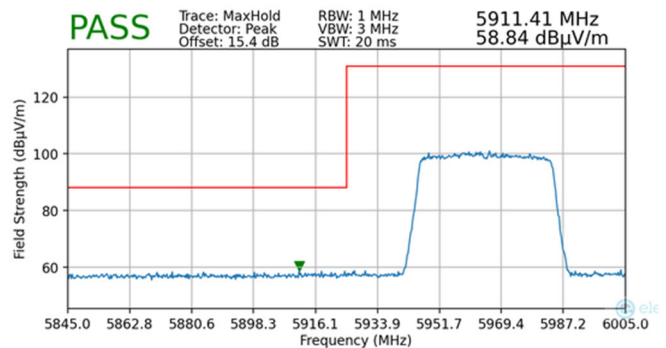
11.7.3 MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.5) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3

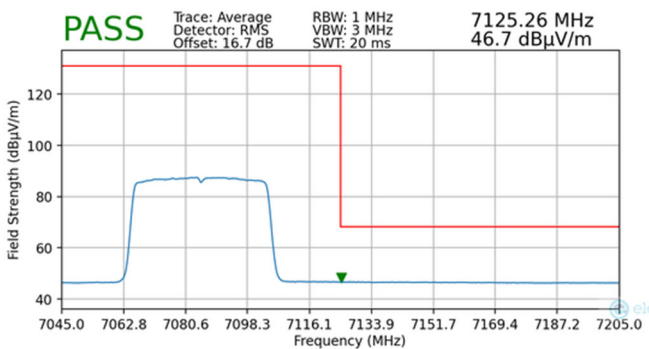


Plot 7-363. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

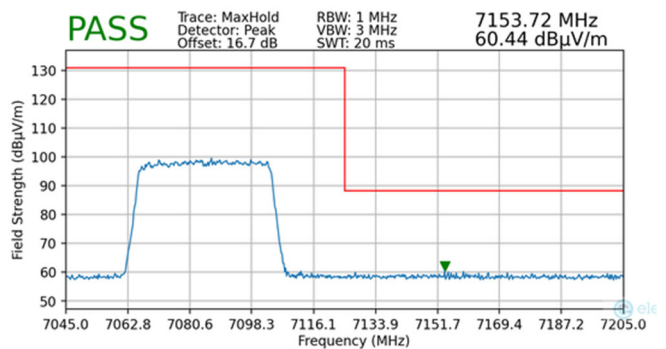


Plot 7-364. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



Plot 7-365. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



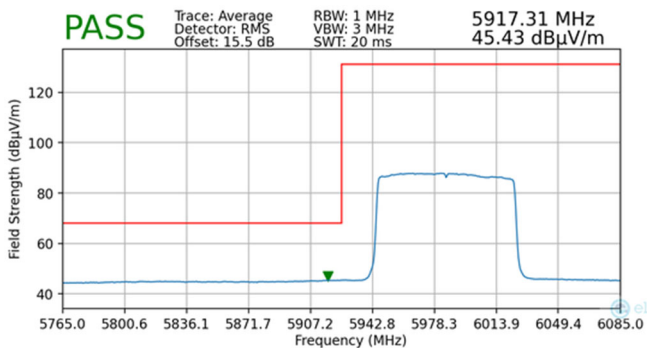
Plot 7-366. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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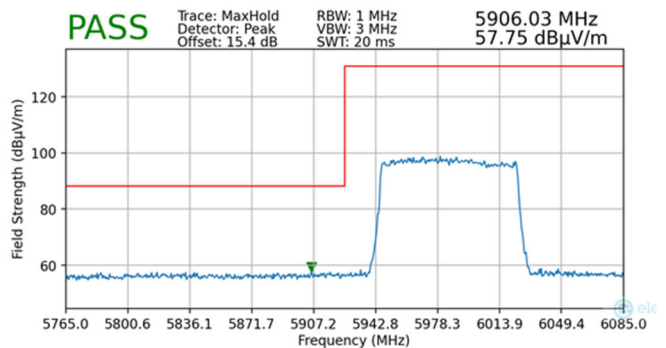
11.7.4 MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.5) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7

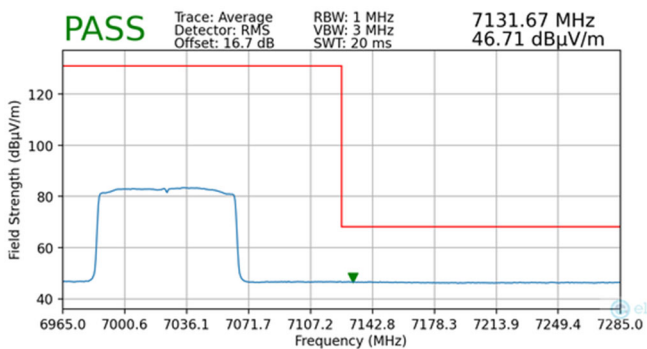


Plot 7-367. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

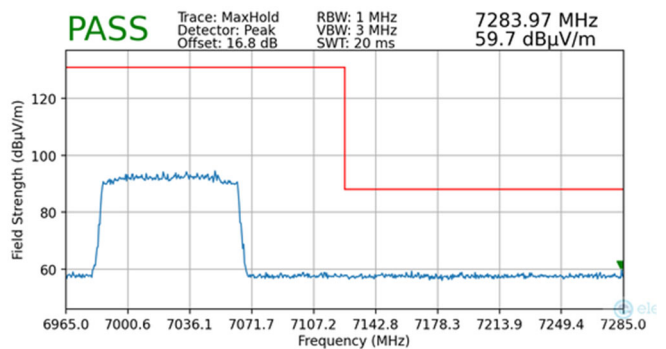


Plot 7-368. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



Plot 7-369. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)

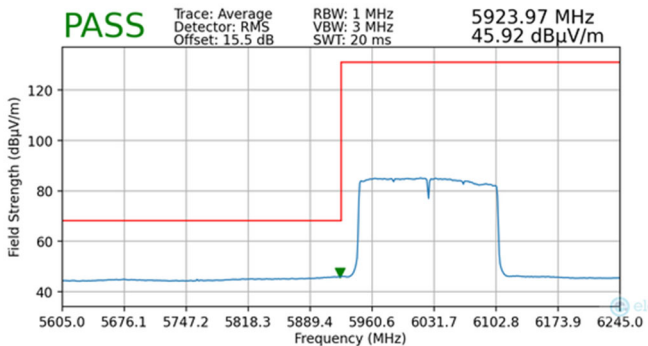


Plot 7-370. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

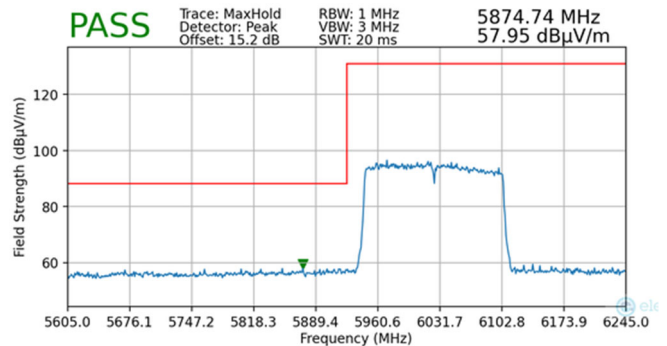
FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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11.7.5 MIMO Radiated Band Edge Measurements (160MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15

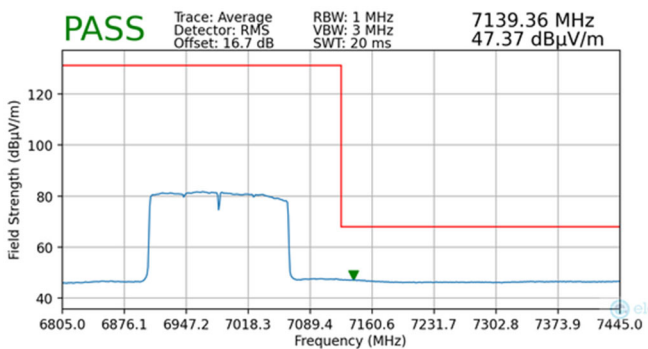


Plot 7-371. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

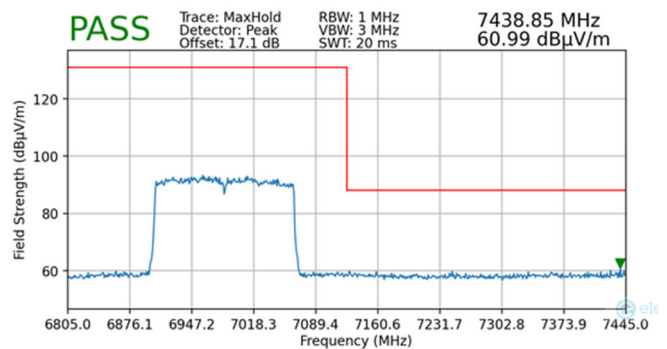


Plot 7-372. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-373. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-374. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

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7.8 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209

Test Overview and Limit

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

All emissions < 960MHz must not exceed the limit shown in Table 7-28 per Section 15.209

Frequency	Field Strength [$\mu\text{V/m}$]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-28. Radiated Limits

Test Procedures Used

ANSI C63.10-2013

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

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Test Setup

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

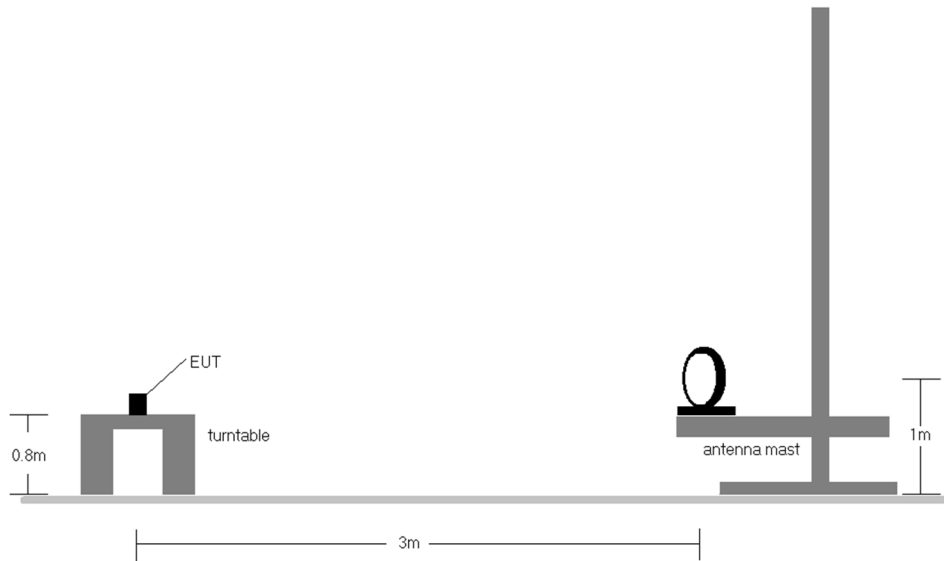


Figure 7-7. Radiated Test Setup < 30MHz

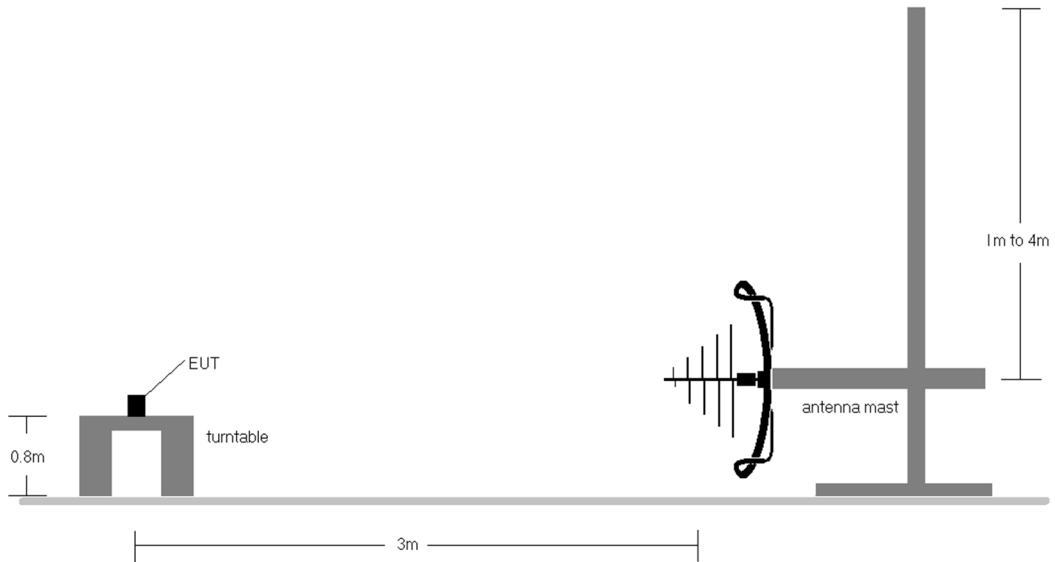


Figure 7-8. Radiated Test Setup < 1GHz

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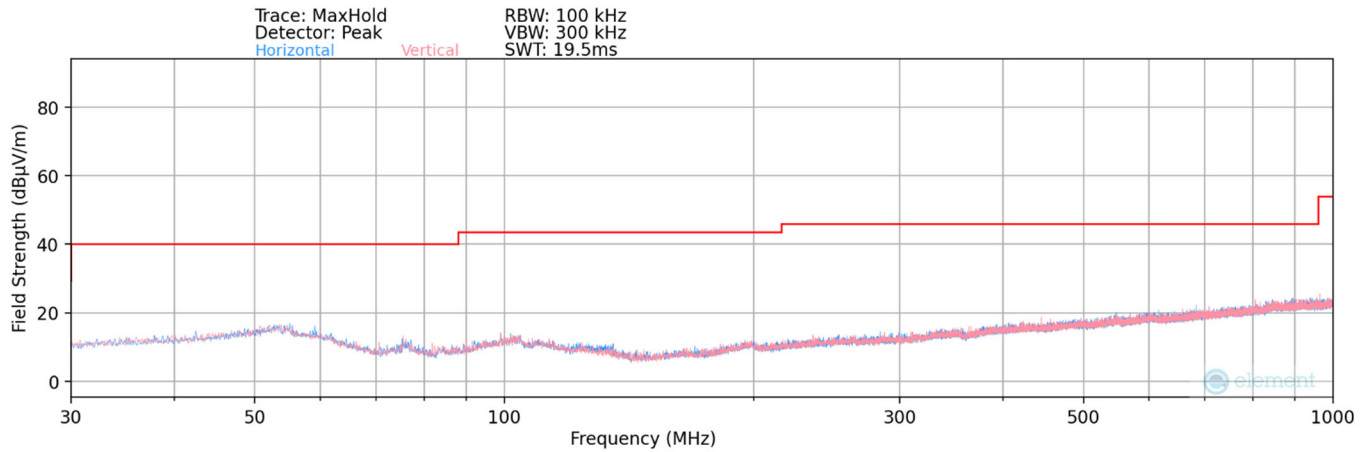
Test Notes

1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-28.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
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. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
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. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

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Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-375. Radiated Spurious Plot below 1GHz

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]
834.00	Quasi-Peak	V	-	-	-91.11	-4.48	11.41	46.02	-34.61

Plot 7-376. Radiated Spurious Data below 1GHz

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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7.9 Line-Conducted Test Data

§15.407(b)(9)

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 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.

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 7-29. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Field Strength 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 Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

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Test Setup

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

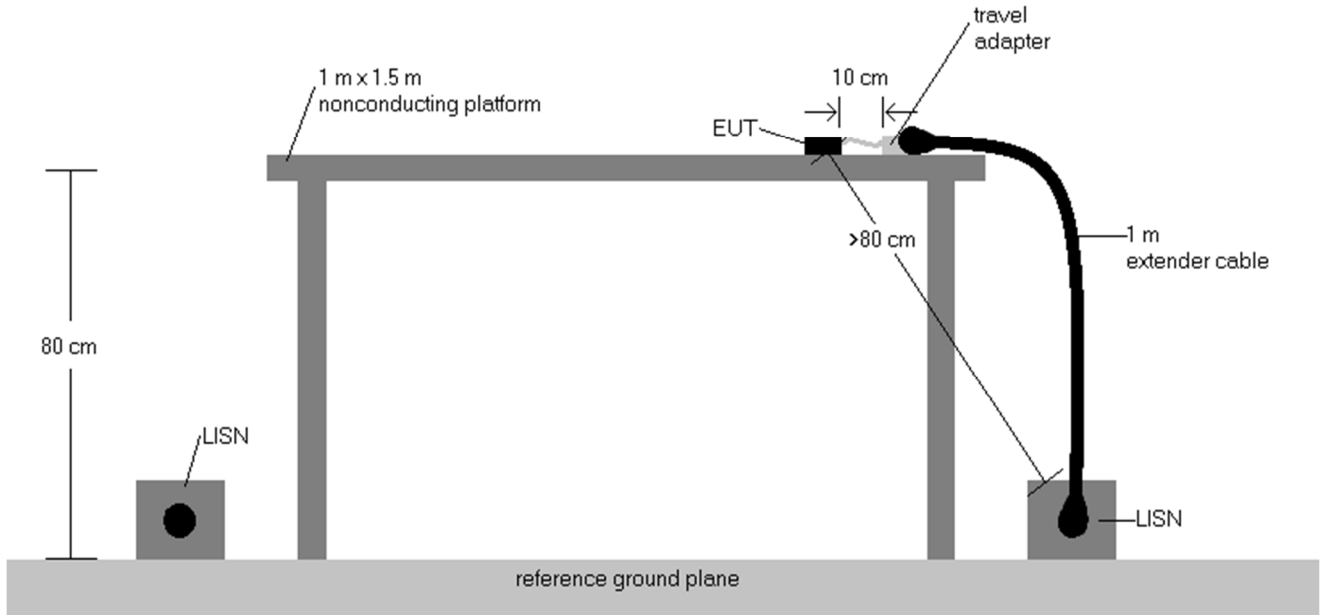
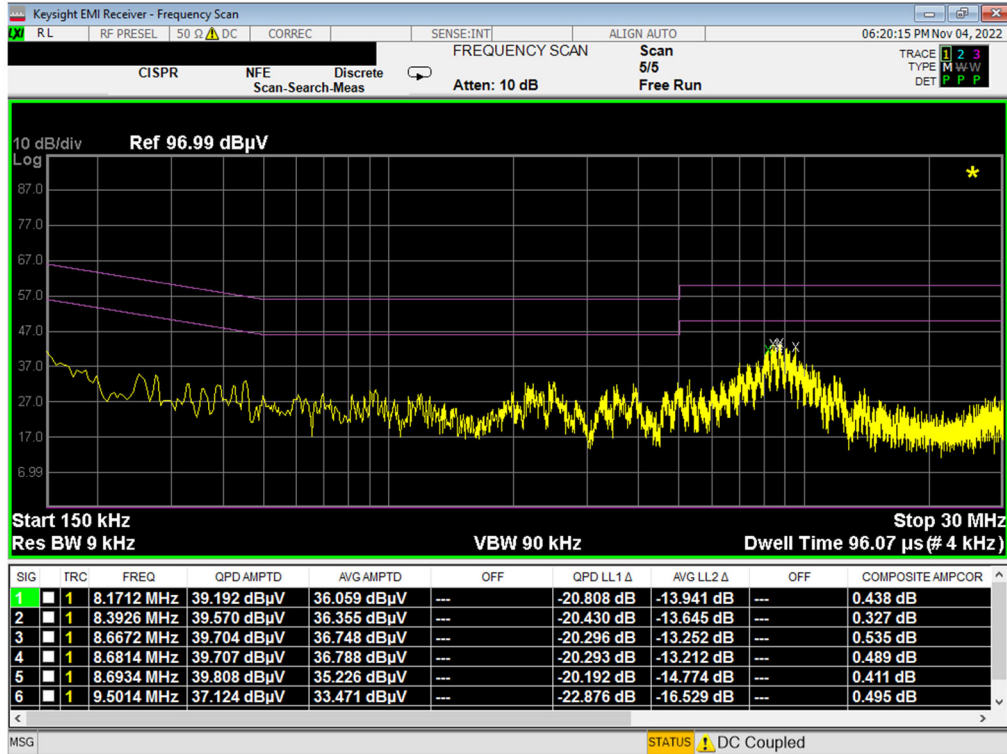


Figure 7-9. Test Instrument & Measurement Setup

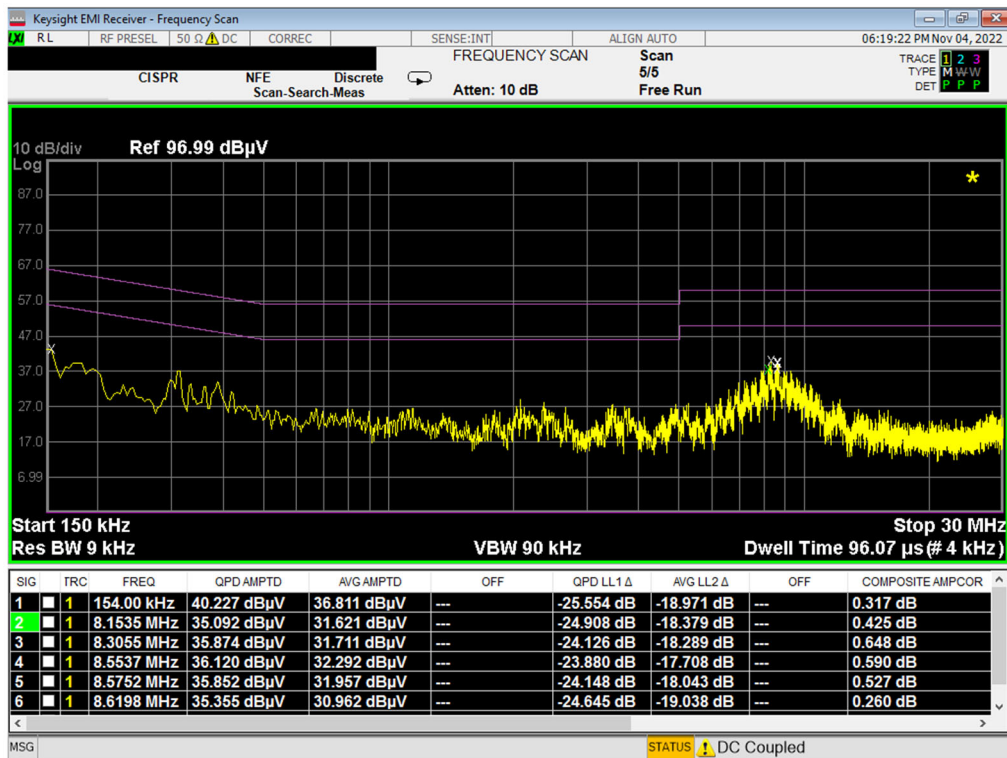
Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207.
3. $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
4. $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Corr. (dB)}$
5. $\text{Margin (dB)} = \text{QP/AV Limit (dB}\mu\text{V)} - \text{QP/AV Level (dB}\mu\text{V)}$
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

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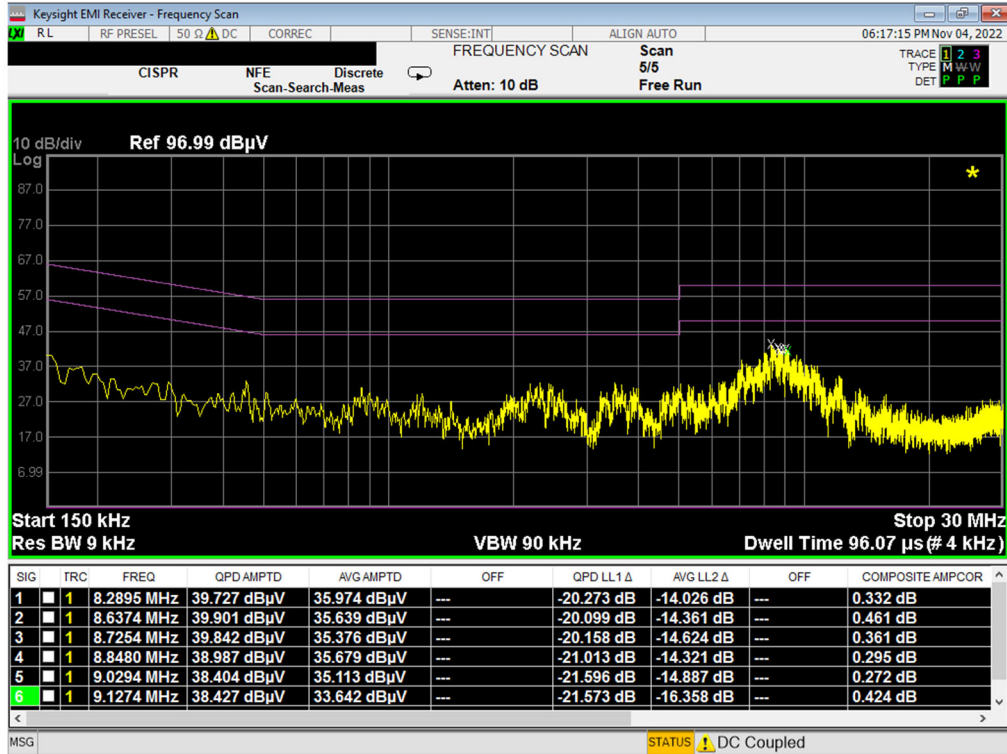


Plot 7-377. Line Conducted Plot with 802.11a UNII Band 5 (L1)

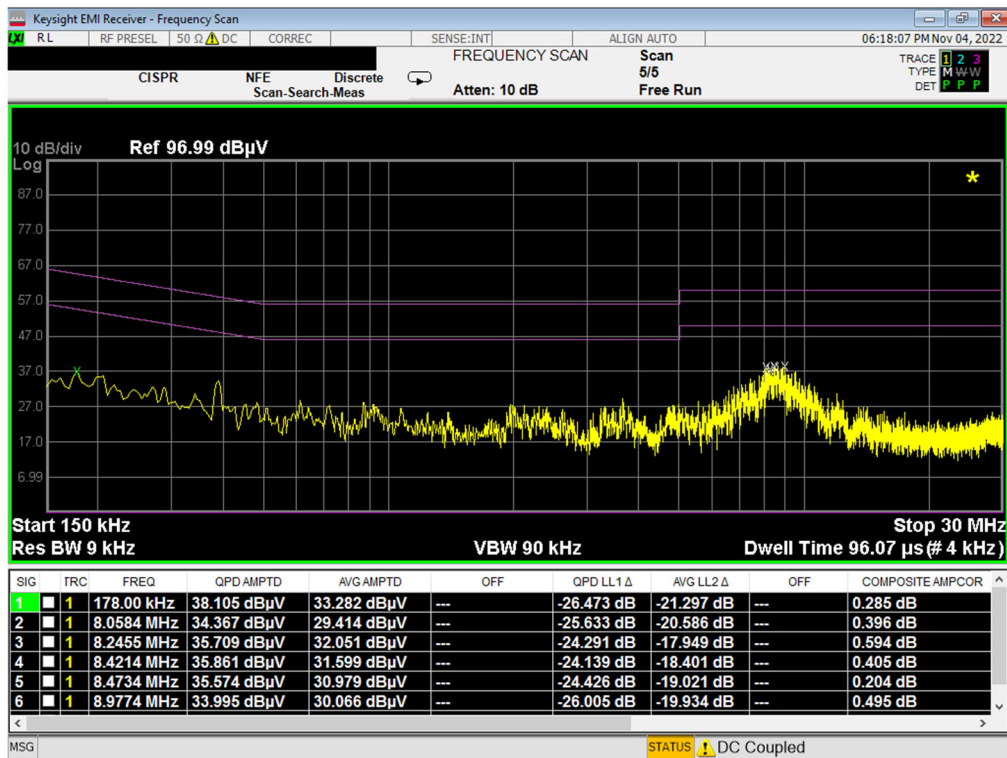


Plot 7-378. Line Conducted Plot with 802.11a UNII Band 5 (N)

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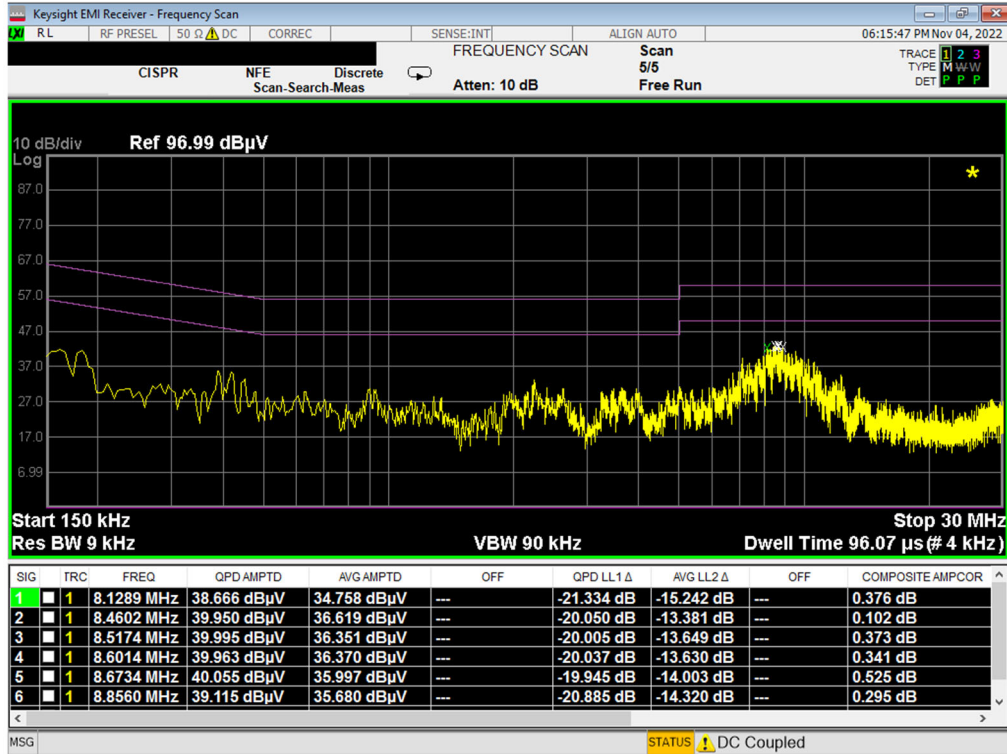


Plot 7-379. Line Conducted Plot with 802.11a UNII Band 6 (L1)

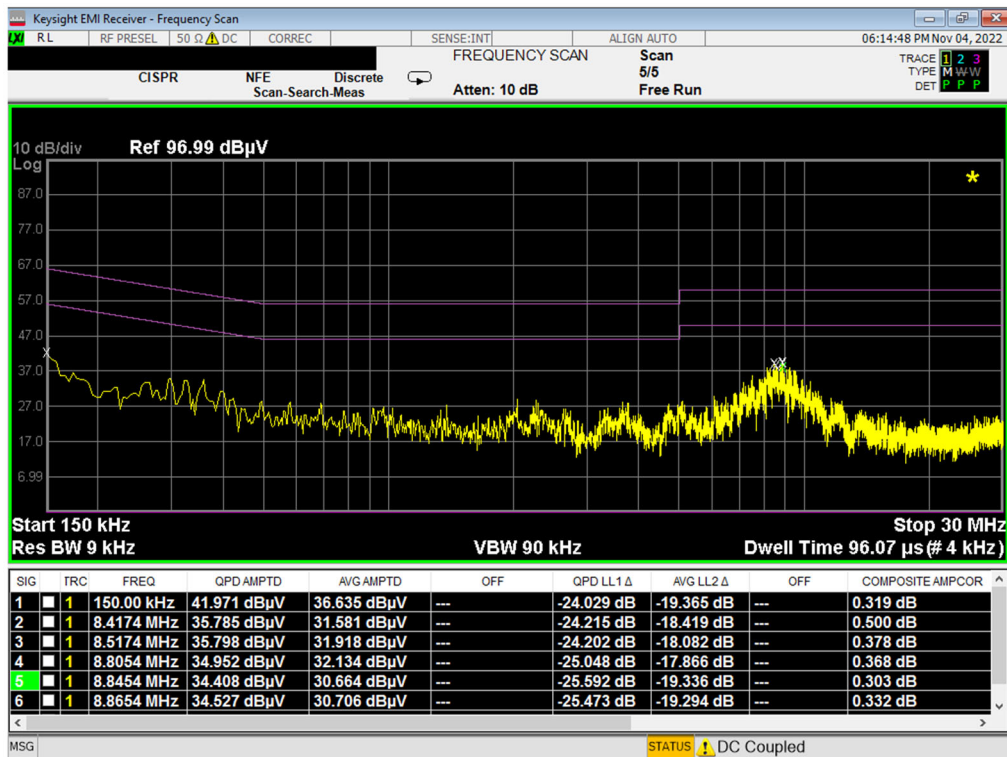


Plot 7-380. Line Conducted Plot with 802.11a UNII Band 6 (N)

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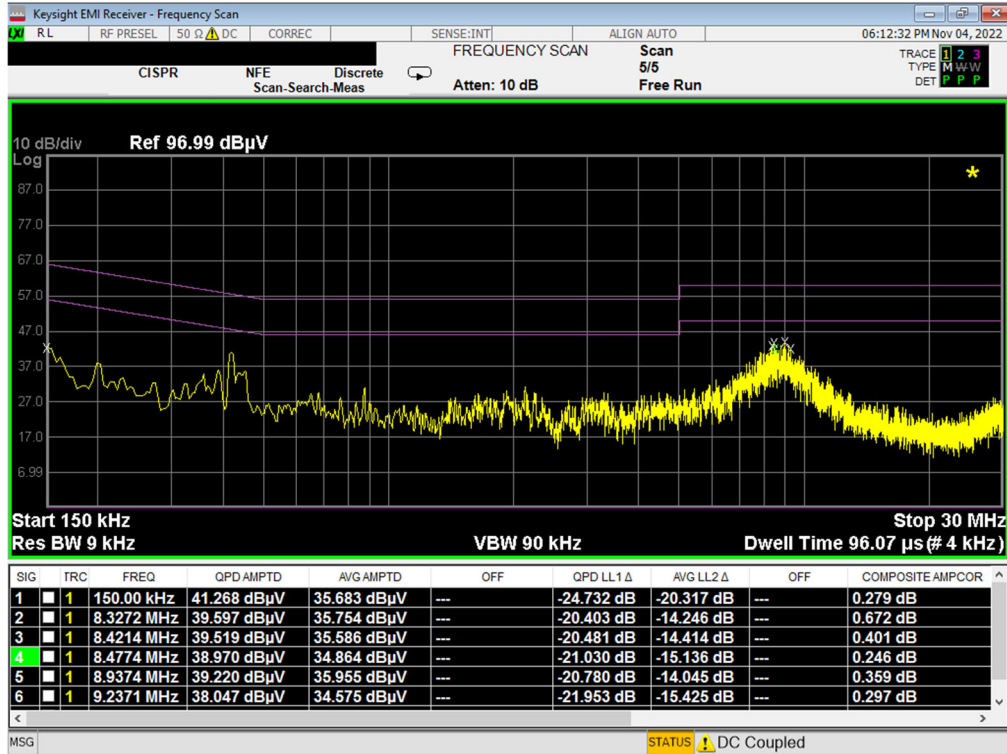


Plot 7-381. Line Conducted Plot with 802.11a UNII Band 7 (L1)

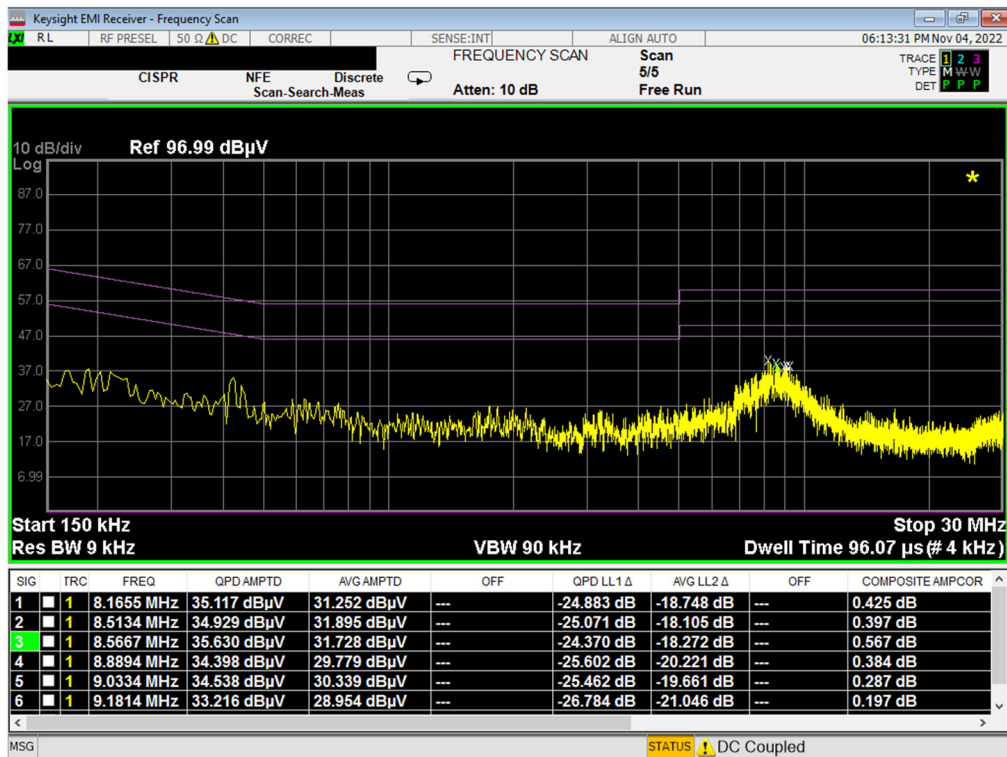


Plot 7-382. Line Conducted Plot with 802.11a UNII Band 7 (N)

MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
FCC: A3LSMS911U	Test Report S/N: 1M2209010096-15.A3L	Test Dates: 9/3/2022 – 11/22/2022	Page 236 of 239
EUT Type: Portable Handset			

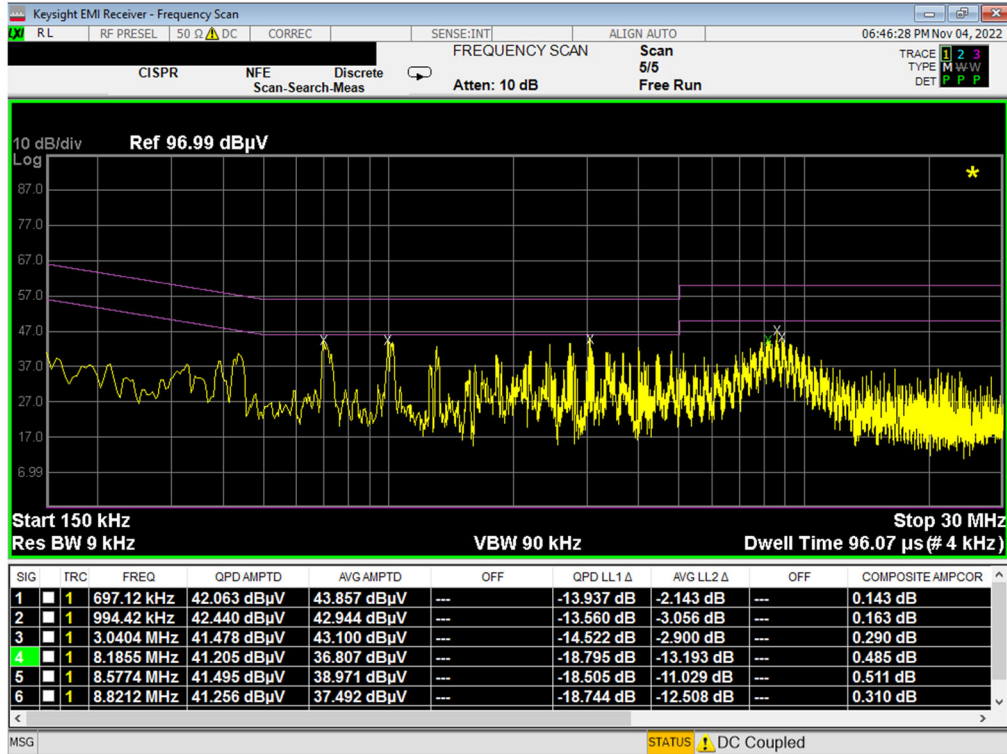


Plot 7-383. Line Conducted Plot with 802.11a UNII Band 8 (L1)

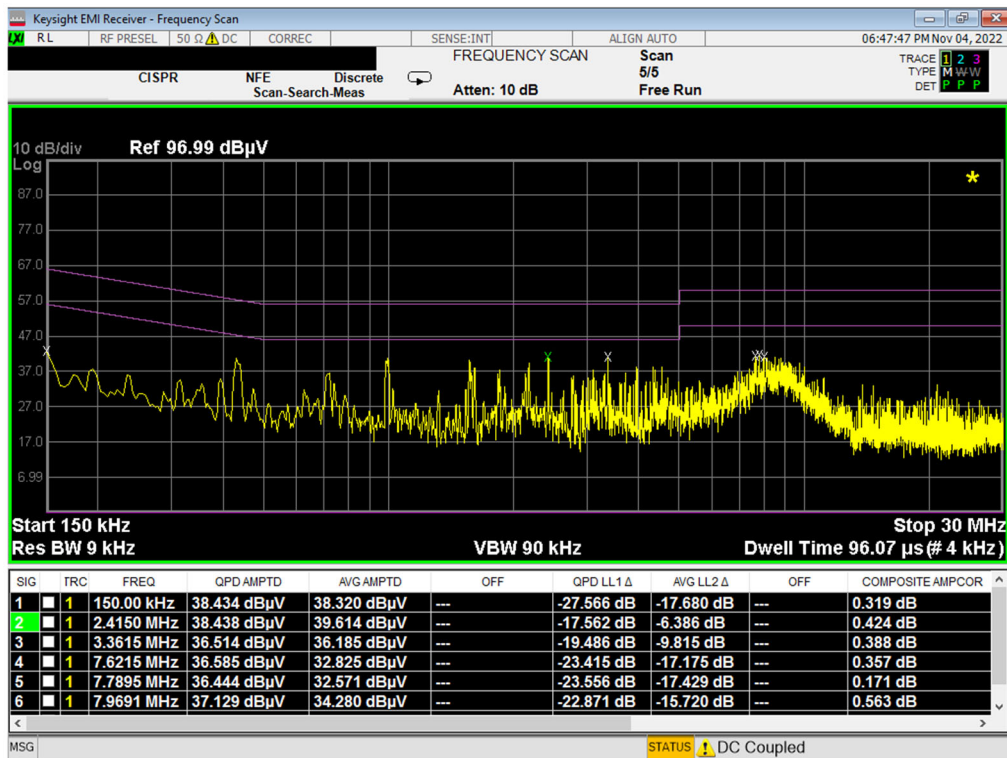


Plot 7-384. Line Conducted Plot with 802.11a UNII Band 8 (N)

MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
FCC: A3LSMS911U	Test Report S/N: 1M2209010096-15.A3L	Test Dates: 9/3/2022 – 11/22/2022	Page 237 of 239
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Plot 7-385. Line Conducted Plot with 802.11a UNII Band 5 (L1) with WCP



Plot 7-386. Line Conducted Plot with 802.11a UNII Band 5 (N) with WCP

MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
FCC: A3LSMS911U	Test Report S/N: 1M2209010096-15.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset
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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC: A3LSMS911U** is in compliance with FCC Part Subpart E (15.407) of the FCC rules for operation as a client device.

FCC: A3LSMS911U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2209010096-15.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 239 of 239