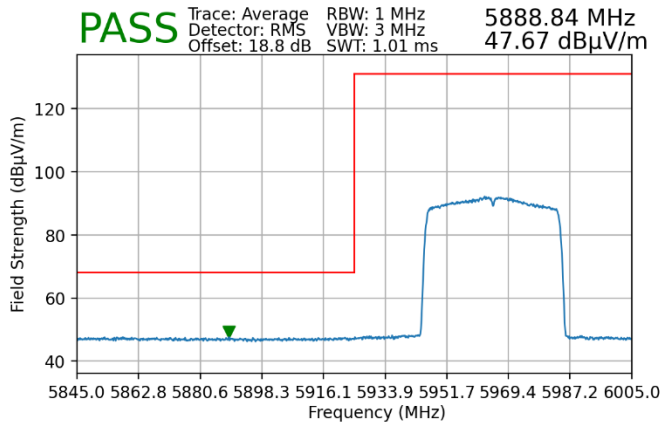
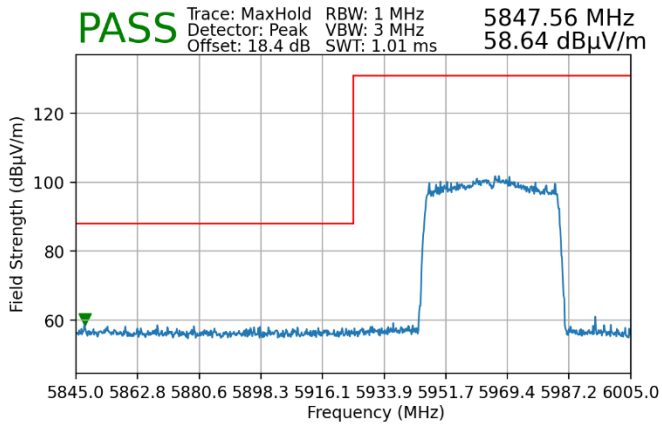
7.8.7 SISO ANT2 Radiated Band Edge Measurements (40MHz BW)

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

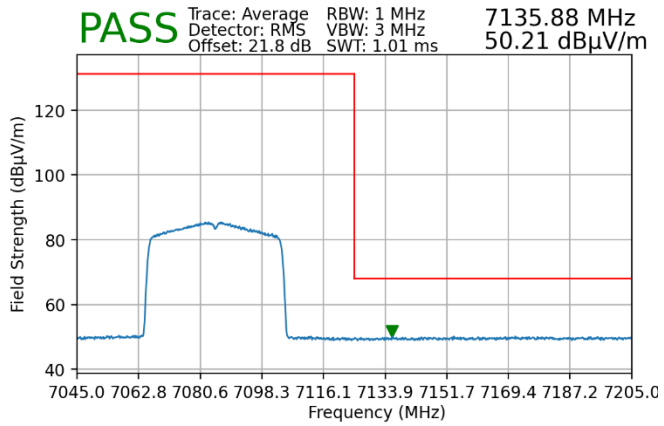


Plot 7-176. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 5)

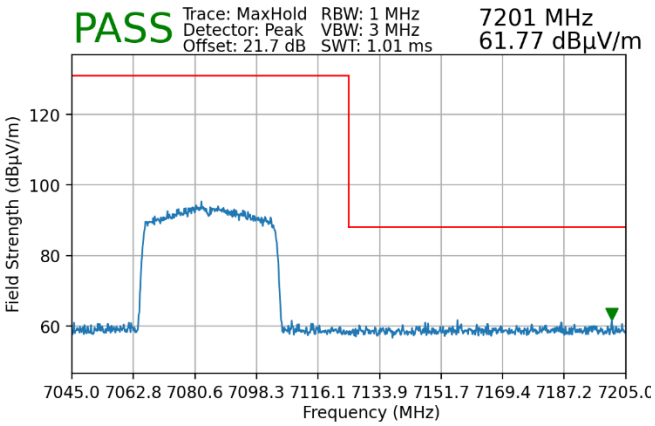


Plot 7-177. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 5)

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



Plot 7-178. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 8)



Plot 7-179. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 8)

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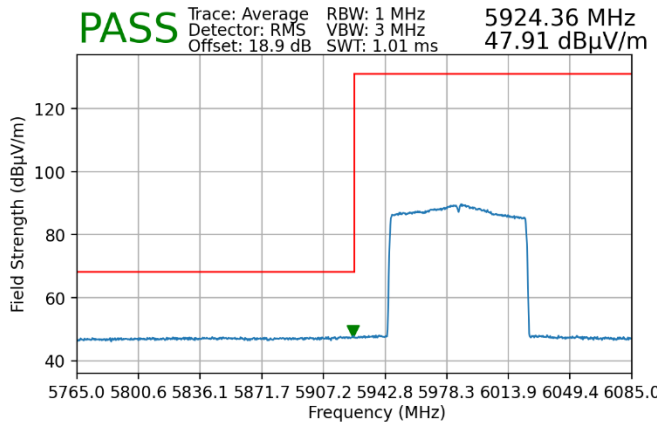
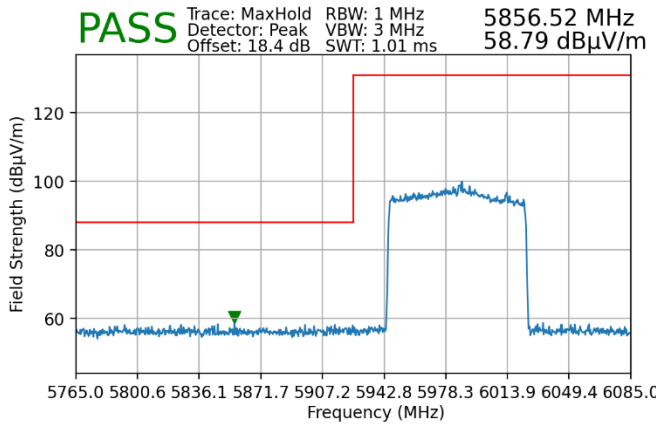
7.8.8 SISO ANT2 Radiated Band Edge Measurements (80MHz BW)

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

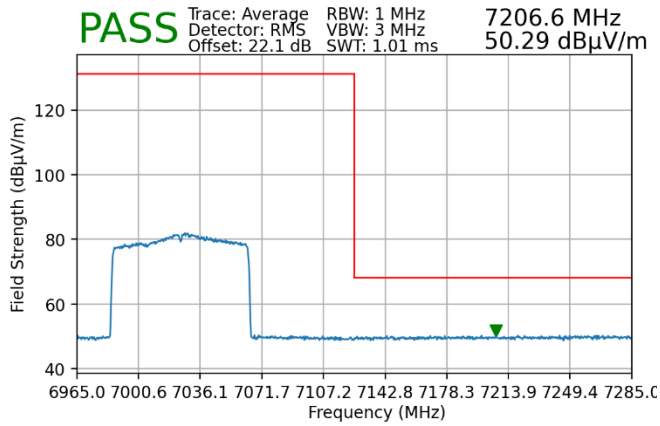


Plot 7-180. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 5)

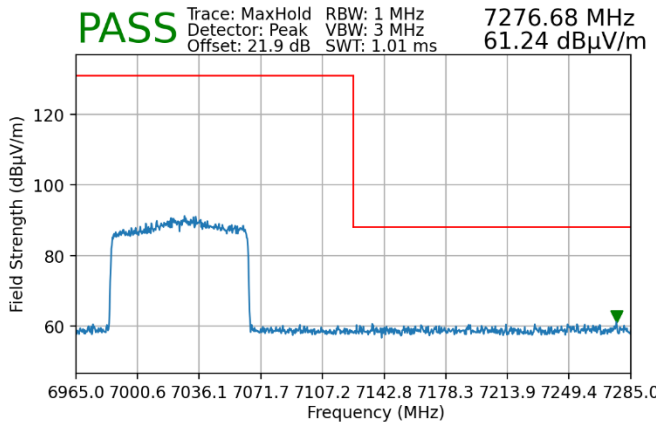


Plot 7-181. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 5)

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



Plot 7-182. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 8)



Plot 7-183. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 8)

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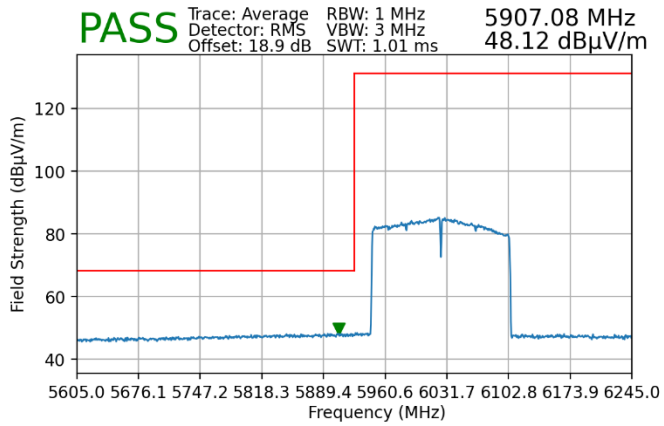
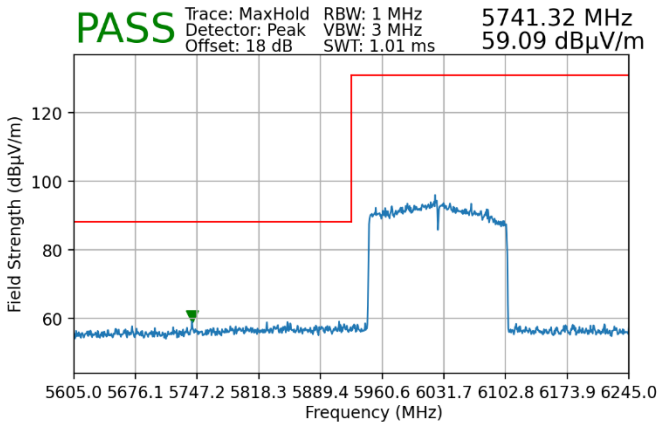
7.8.9 SISO ANT2 Radiated Band Edge Measurements (160MHz BW)

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

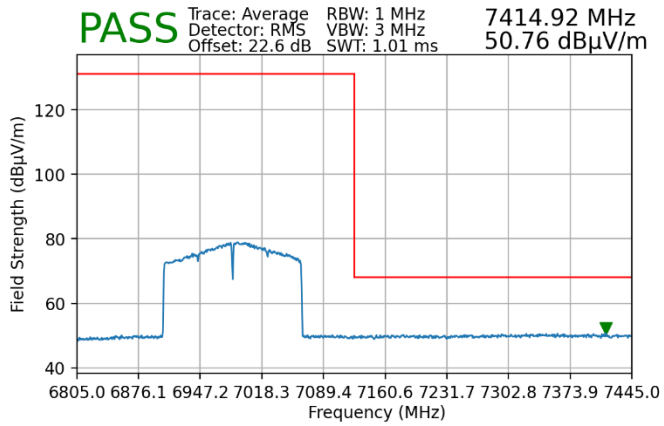


Plot 7-184. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 5)

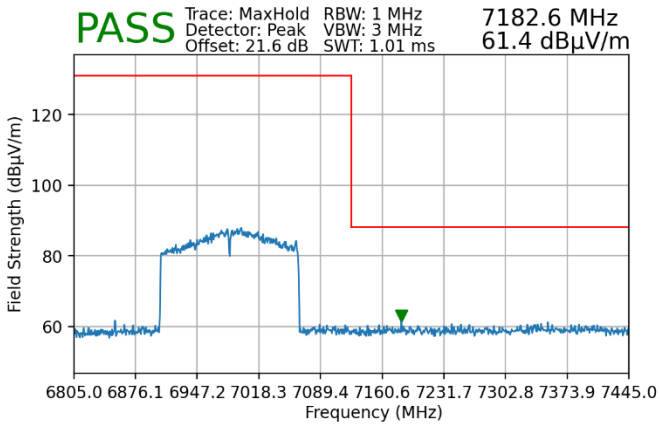


Plot 7-185. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 5)

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



Plot 7-186. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 8)



Plot 7-187. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 8)

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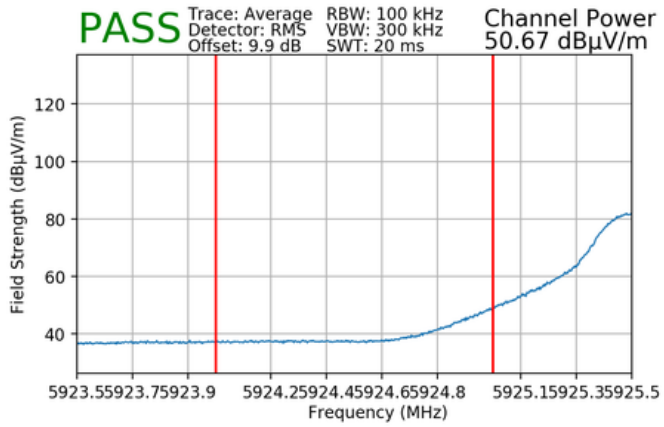
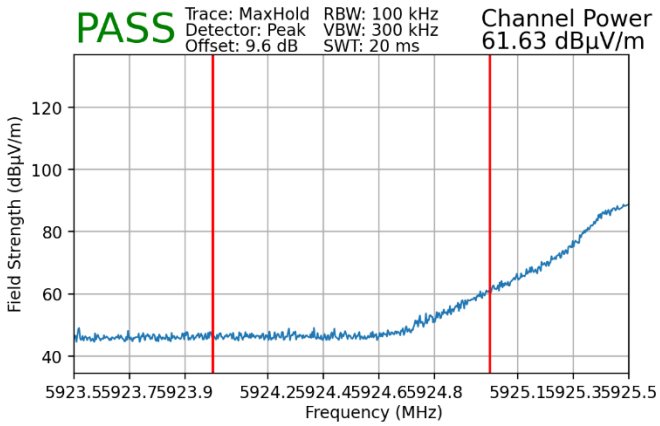
7.8.10 MIMO Radiated Band Edge Measurements (20MHz BW)

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

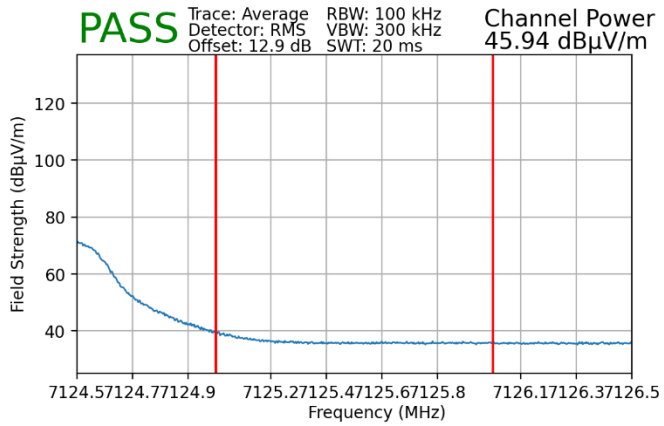


Plot 7-188. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

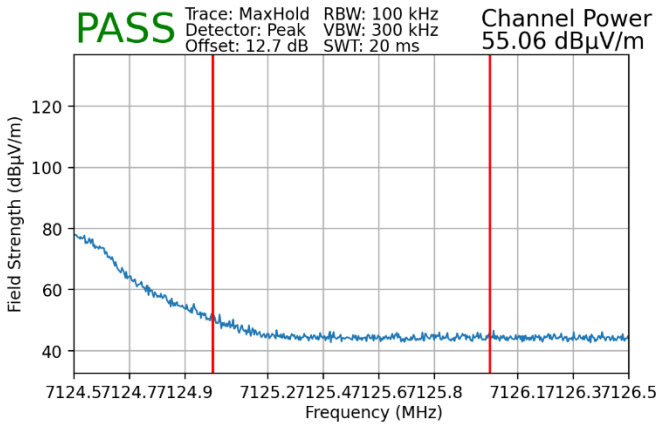


Plot 7-189. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MSC0
Distance of Measurements:	3 Meters
Operating Frequency:	7115MHz
Channel:	233



Plot 7-190. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-191. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

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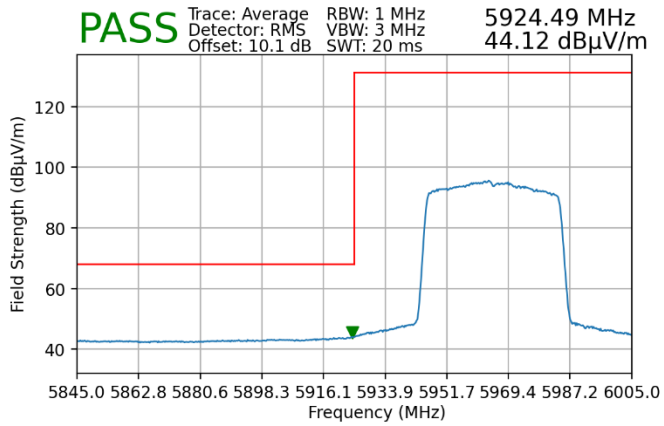
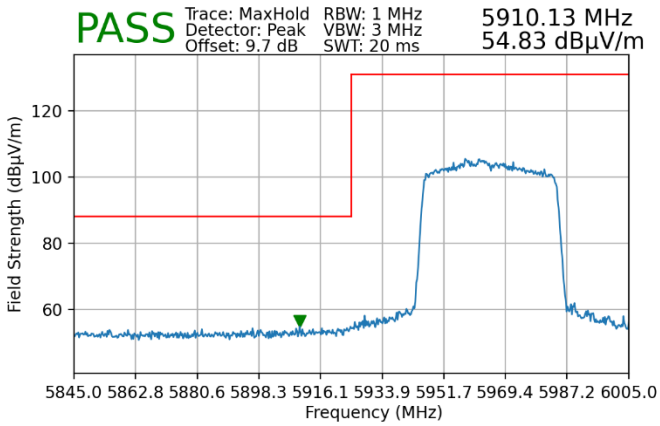
7.8.11 MIMO Radiated Band Edge Measurements (40MHz BW)

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

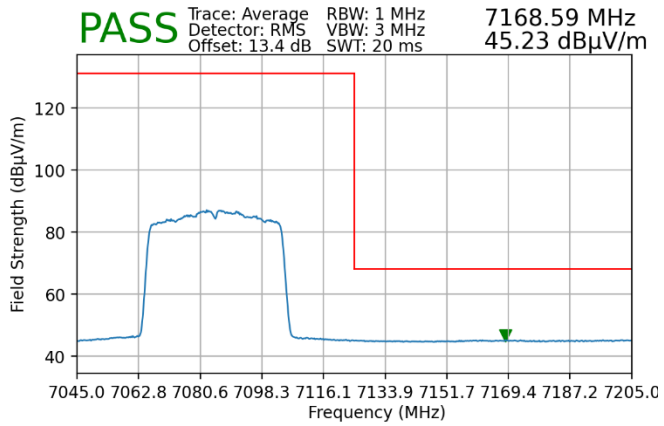


Plot 7-192. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

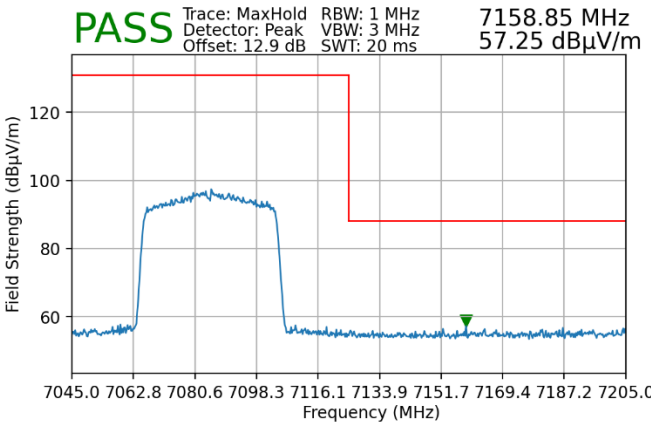


Plot 7-193. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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



Plot 7-194. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-195. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

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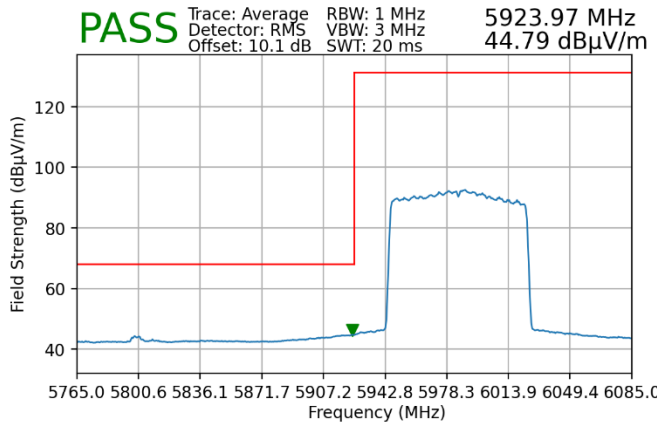
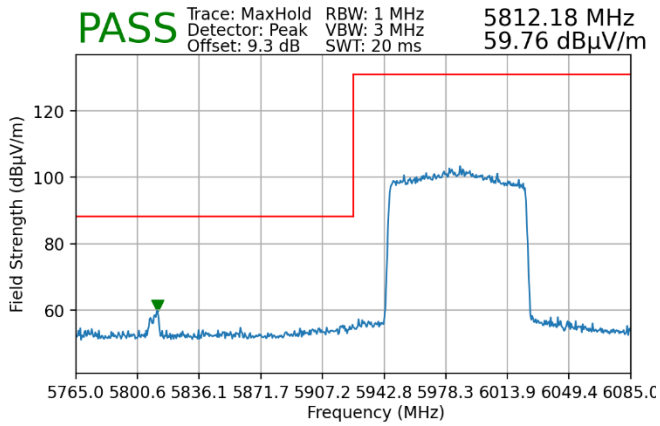
7.8.12 MIMO Radiated Band Edge Measurements (80MHz BW)

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

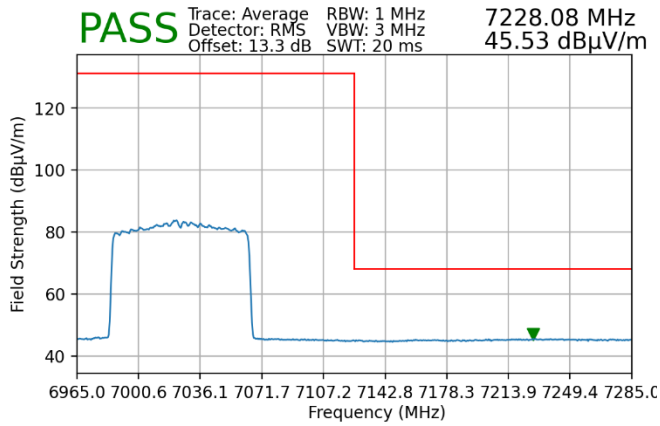


Plot 7-196. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

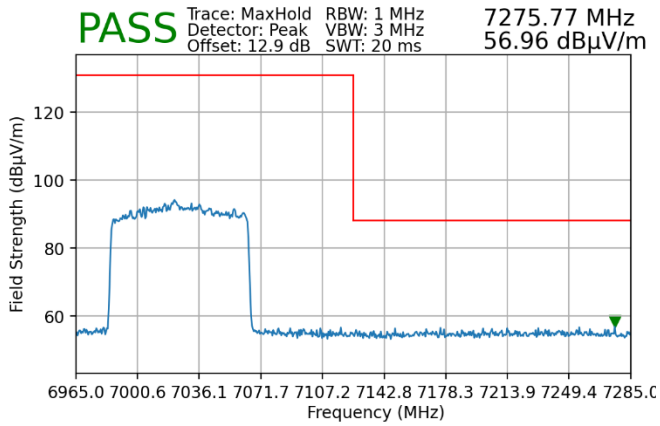


Plot 7-197. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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



Plot 7-198. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-199. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

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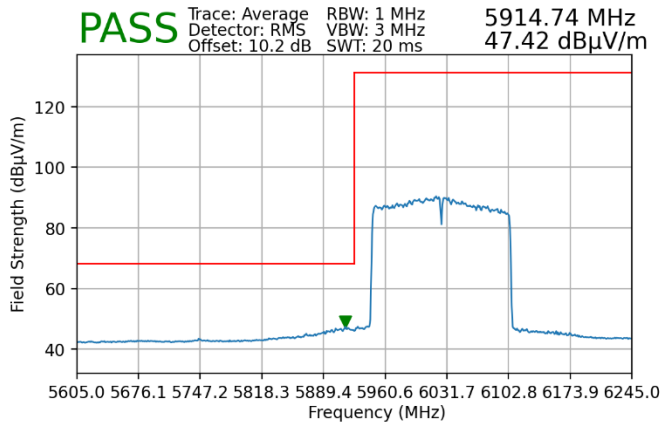
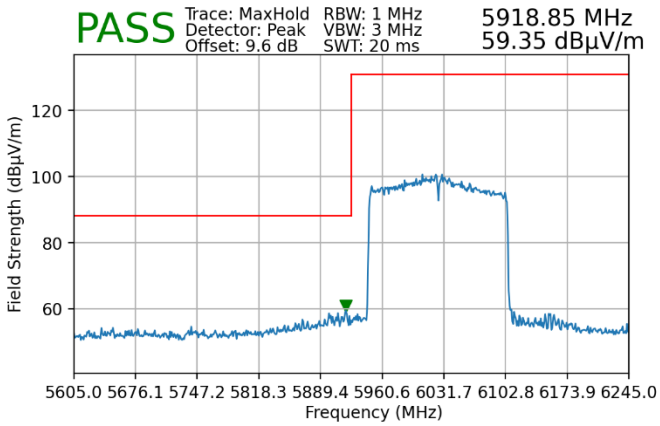
7.8.13 MIMO Radiated Band Edge Measurements (160MHz BW)

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

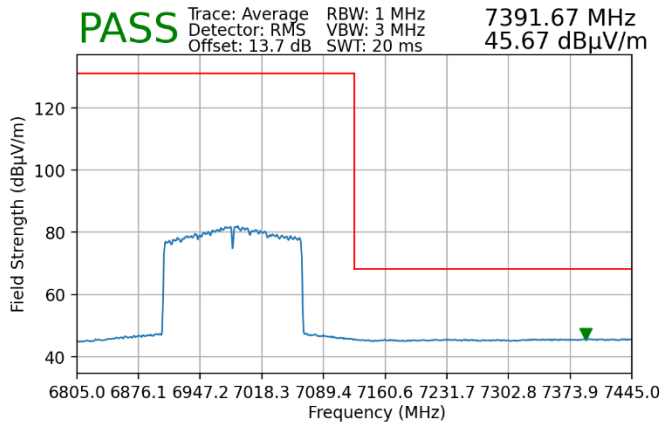


Plot 7-200. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

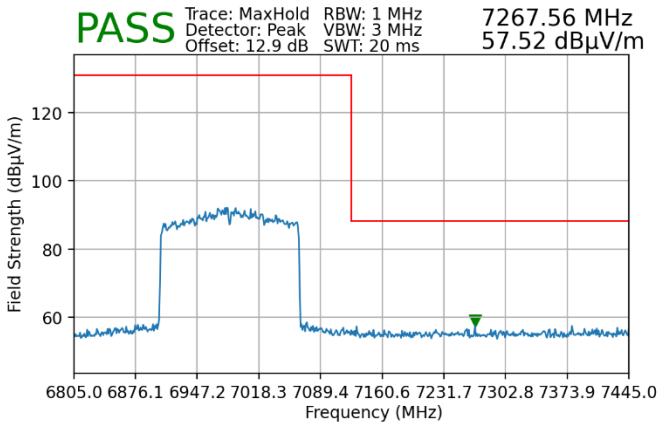


Plot 7-201. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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



Plot 7-202. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-203. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

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7.9 Line Conducted Test Data

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 (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-32. 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.

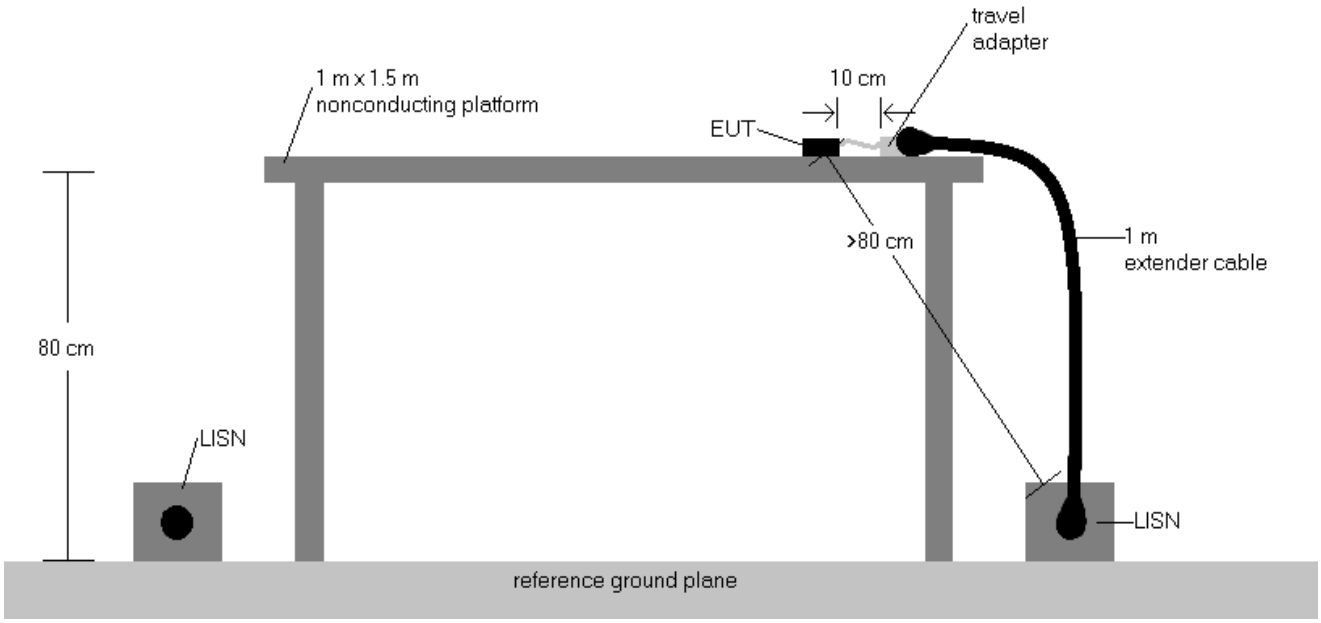

Figure 7-9. Test Instrument & Measurement Setup

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 is specified in 15.207.
3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
5. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

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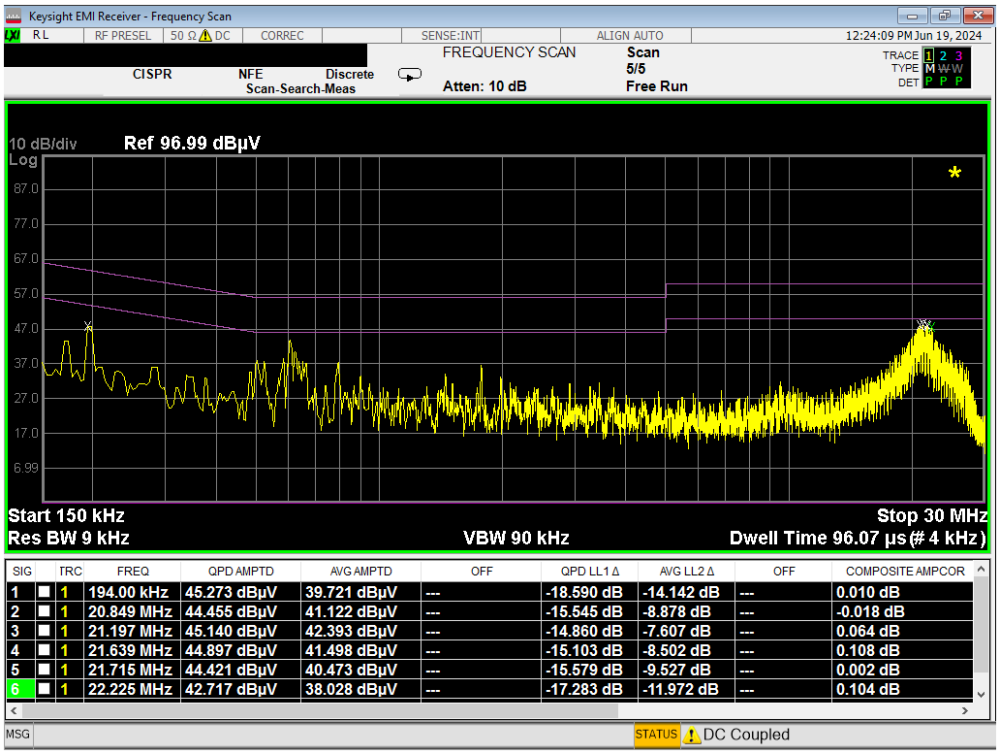
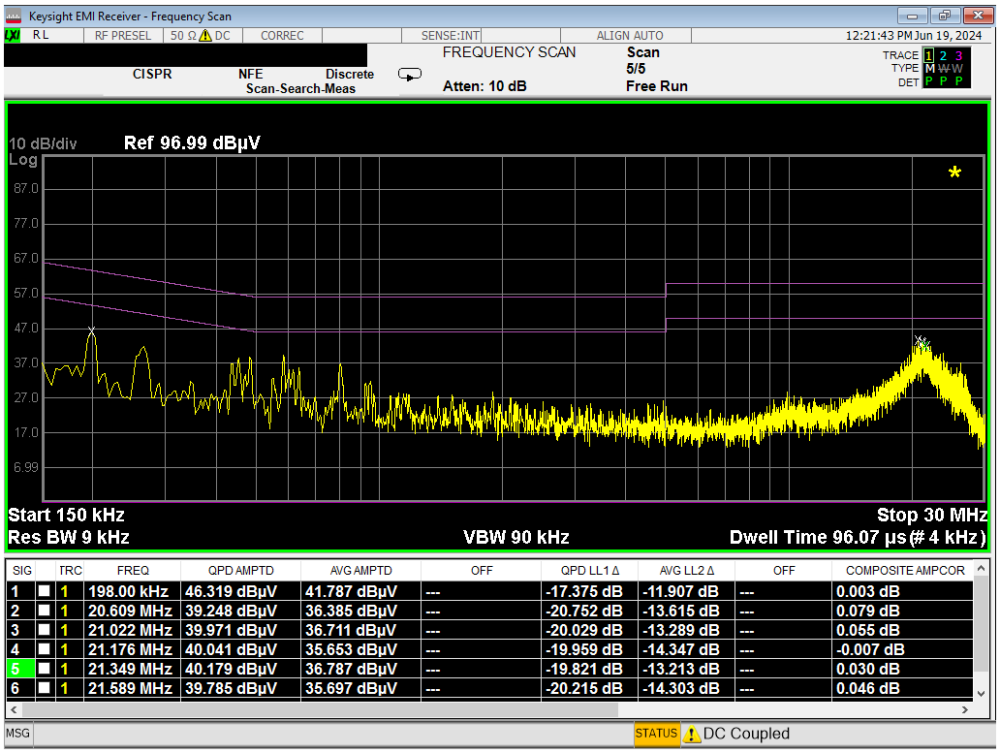


SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	194.00 kHz	45.273 dBµV	39.721 dBµV	---	-18.590 dB	-14.142 dB	---	0.010 dB
2	1	20.849 MHz	44.455 dBµV	41.122 dBµV	---	-15.545 dB	-8.878 dB	---	-0.018 dB
3	1	21.197 MHz	45.140 dBµV	42.393 dBµV	---	-14.860 dB	-7.607 dB	---	0.064 dB
4	1	21.639 MHz	44.897 dBµV	41.498 dBµV	---	-15.103 dB	-8.502 dB	---	0.108 dB
5	1	21.715 MHz	44.421 dBµV	40.473 dBµV	---	-15.579 dB	-9.527 dB	---	0.002 dB
6	1	22.225 MHz	42.717 dBµV	38.028 dBµV	---	-17.283 dB	-11.972 dB	---	0.104 dB

Plot 7-204. Line Conducted Plot with 802.11a UNII Band 5 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	198.00 kHz	46.319 dBµV	41.787 dBµV	---	-17.375 dB	-11.907 dB	---	0.003 dB
2	1	20.609 MHz	39.248 dBµV	36.385 dBµV	---	-20.752 dB	-13.615 dB	---	0.079 dB
3	1	21.022 MHz	39.971 dBµV	36.711 dBµV	---	-20.029 dB	-13.289 dB	---	0.055 dB
4	1	21.176 MHz	40.041 dBµV	35.653 dBµV	---	-19.959 dB	-14.347 dB	---	-0.007 dB
5	1	21.349 MHz	40.179 dBµV	36.787 dBµV	---	-19.821 dB	-13.213 dB	---	0.030 dB
6	1	21.589 MHz	39.785 dBµV	35.697 dBµV	---	-20.215 dB	-14.303 dB	---	0.046 dB

Plot 7-205. Line Conducted Plot with 802.11a UNII Band 5 (N)

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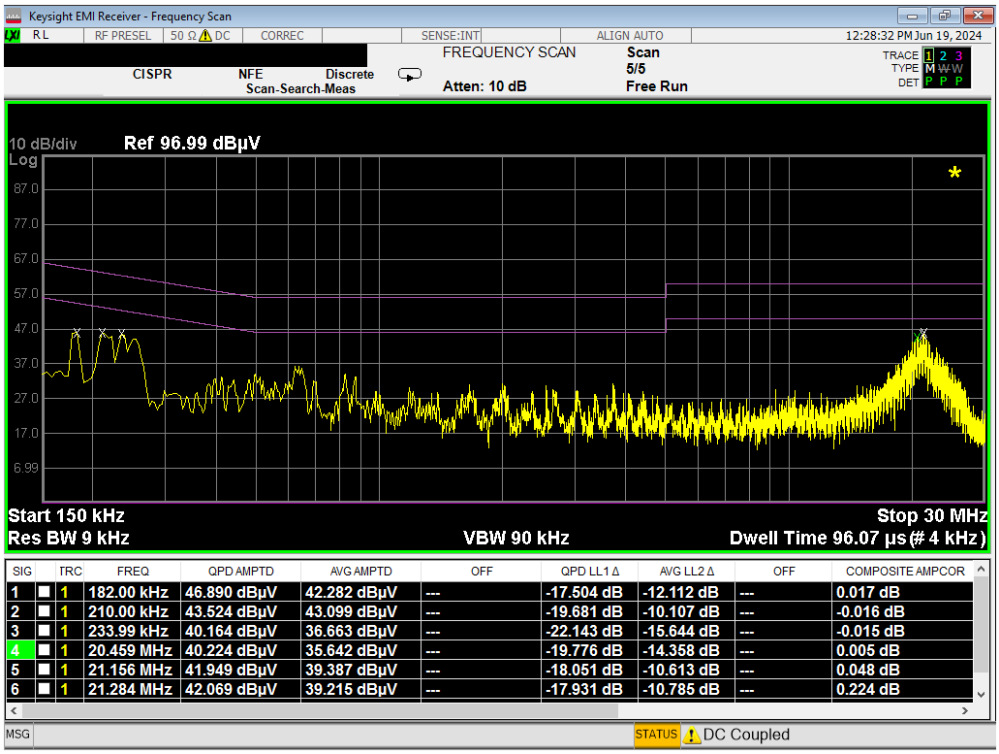
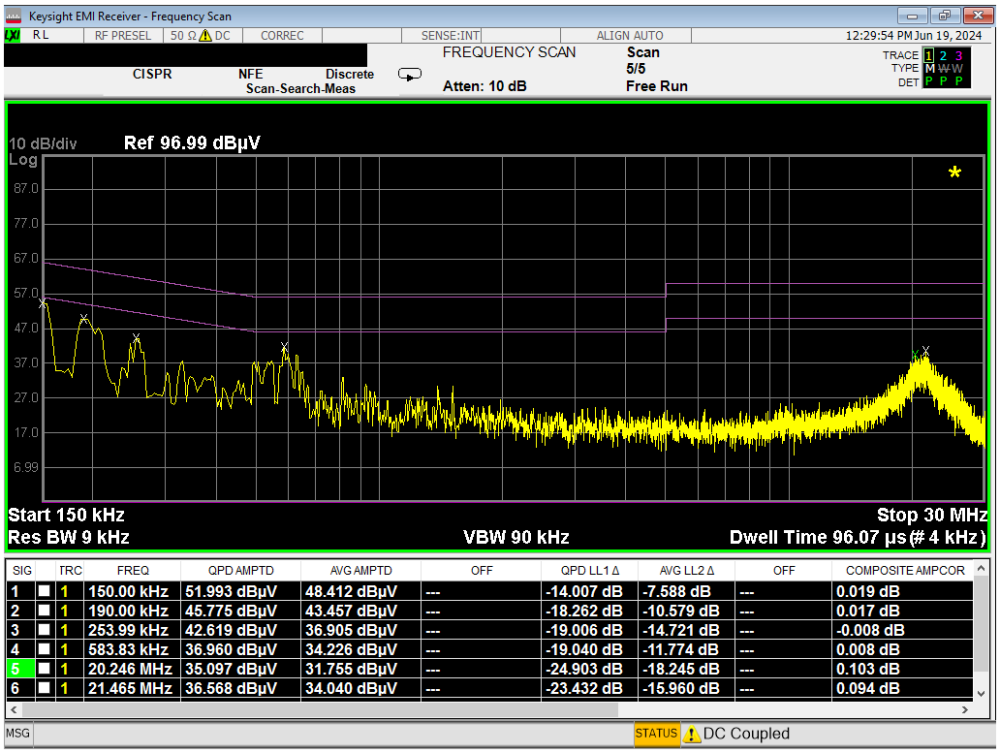


SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	182.00 kHz	46.890 dBµV	42.282 dBµV	---	-17.504 dB	-12.112 dB	---	0.017 dB
2	1	210.00 kHz	43.524 dBµV	43.099 dBµV	---	-19.681 dB	-10.107 dB	---	-0.016 dB
3	1	233.99 kHz	40.164 dBµV	36.663 dBµV	---	-22.143 dB	-15.644 dB	---	-0.015 dB
4	1	20.459 MHz	40.224 dBµV	35.642 dBµV	---	-19.776 dB	-14.358 dB	---	0.005 dB
5	1	21.156 MHz	41.949 dBµV	39.387 dBµV	---	-18.051 dB	-10.613 dB	---	0.048 dB
6	1	21.284 MHz	42.069 dBµV	39.215 dBµV	---	-17.931 dB	-10.785 dB	---	0.224 dB

Plot 7-206. Line Conducted Plot with 802.11a UNII Band 6 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	150.00 kHz	51.993 dBµV	48.412 dBµV	---	-14.007 dB	-7.588 dB	---	0.019 dB
2	1	190.00 kHz	45.775 dBµV	43.457 dBµV	---	-18.262 dB	-10.579 dB	---	0.017 dB
3	1	253.99 kHz	42.619 dBµV	36.905 dBµV	---	-19.006 dB	-14.721 dB	---	-0.008 dB
4	1	583.83 kHz	36.960 dBµV	34.226 dBµV	---	-19.040 dB	-11.774 dB	---	0.008 dB
5	1	20.246 MHz	35.097 dBµV	31.755 dBµV	---	-24.903 dB	-18.245 dB	---	0.103 dB
6	1	21.465 MHz	36.568 dBµV	34.040 dBµV	---	-23.432 dB	-15.960 dB	---	0.094 dB

Plot 7-207. Line Conducted Plot with 802.11a UNII Band 6 (N)

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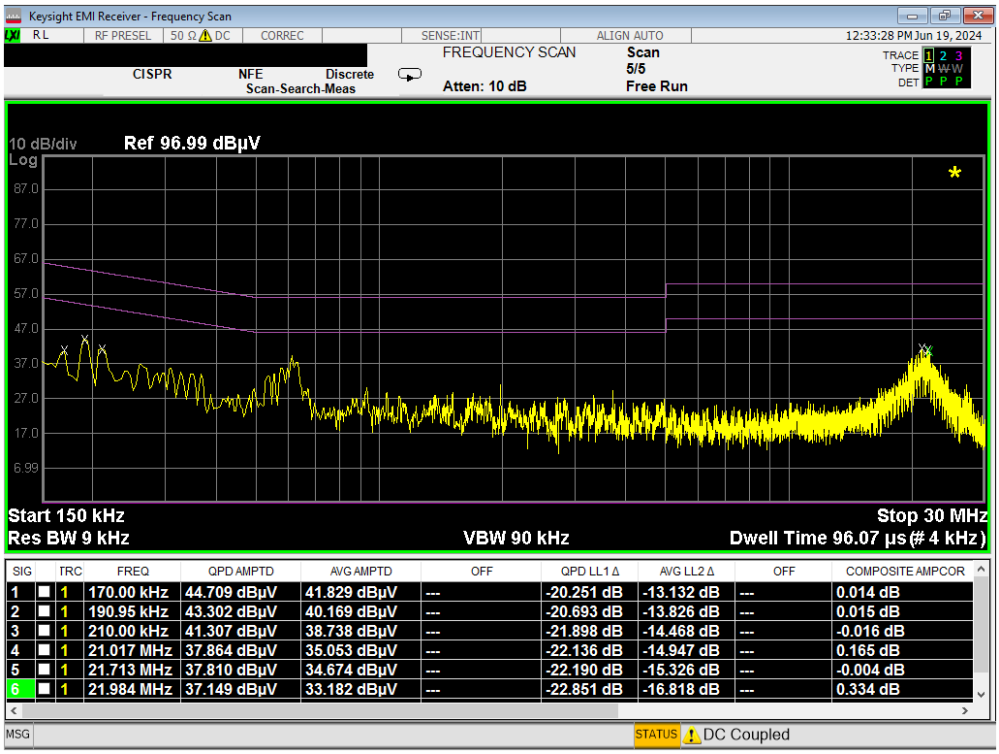
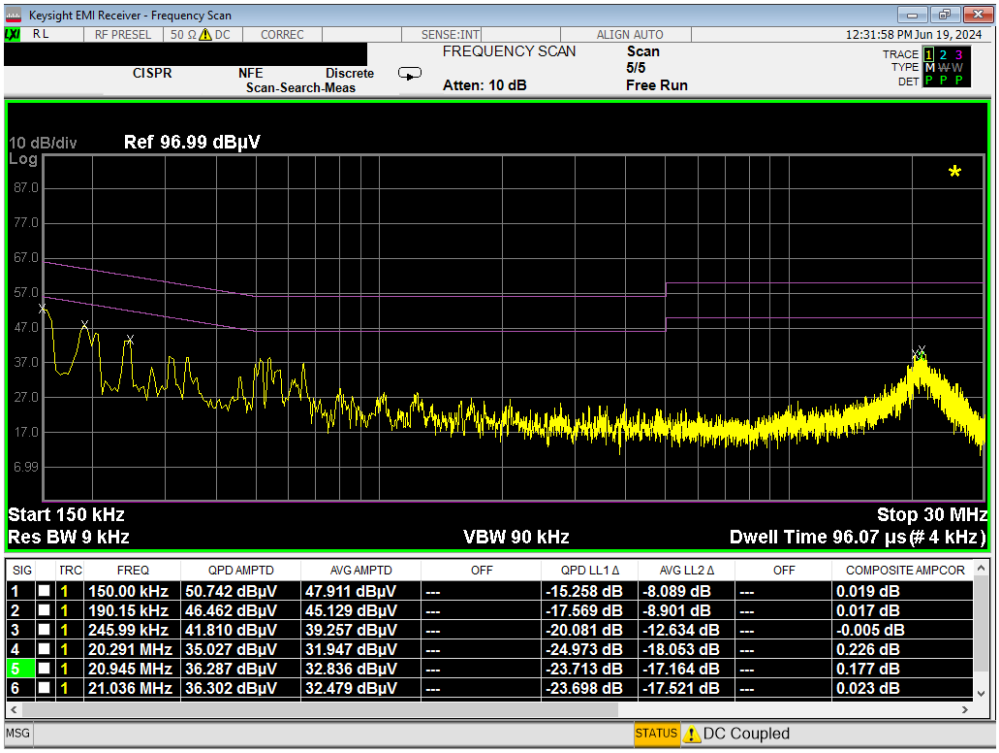


SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	170.00 kHz	44.709 dBµV	41.829 dBµV	---	-20.251 dB	-13.132 dB	---	0.014 dB
2	1	190.95 kHz	43.302 dBµV	40.169 dBµV	---	-20.693 dB	-13.826 dB	---	0.015 dB
3	1	210.00 kHz	41.307 dBµV	38.738 dBµV	---	-21.898 dB	-14.468 dB	---	-0.016 dB
4	1	21.017 MHz	37.864 dBµV	35.053 dBµV	---	-22.136 dB	-14.947 dB	---	0.165 dB
5	1	21.713 MHz	37.810 dBµV	34.674 dBµV	---	-22.190 dB	-15.326 dB	---	-0.004 dB
6	1	21.984 MHz	37.149 dBµV	33.182 dBµV	---	-22.851 dB	-16.818 dB	---	0.334 dB

Plot 7-208. Line Conducted Plot with 802.11a UNII Band 7 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	150.00 kHz	50.742 dBµV	47.911 dBµV	---	-15.258 dB	-8.089 dB	---	0.019 dB
2	1	190.15 kHz	46.462 dBµV	45.129 dBµV	---	-17.569 dB	-8.901 dB	---	0.017 dB
3	1	245.99 kHz	41.810 dBµV	39.257 dBµV	---	-20.081 dB	-12.634 dB	---	-0.005 dB
4	1	20.291 MHz	35.027 dBµV	31.947 dBµV	---	-24.973 dB	-18.053 dB	---	0.226 dB
5	1	20.945 MHz	36.287 dBµV	32.836 dBµV	---	-23.713 dB	-17.164 dB	---	0.177 dB
6	1	21.036 MHz	36.302 dBµV	32.479 dBµV	---	-23.698 dB	-17.521 dB	---	0.023 dB

Plot 7-209. Line Conducted Plot with 802.11a UNII Band 7 (N)

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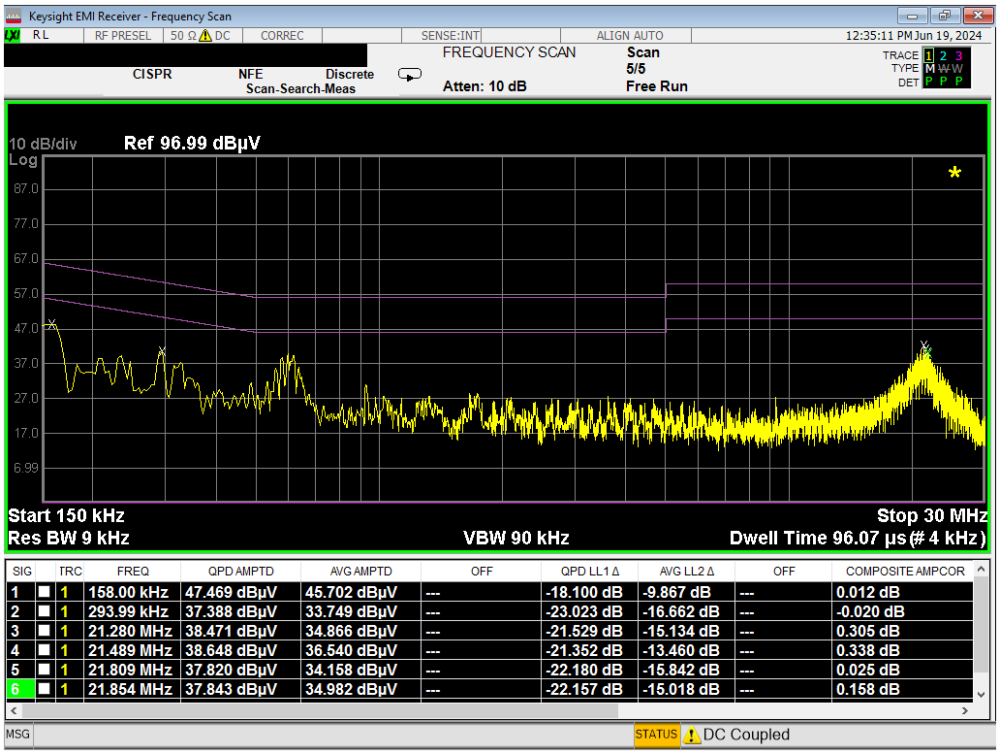
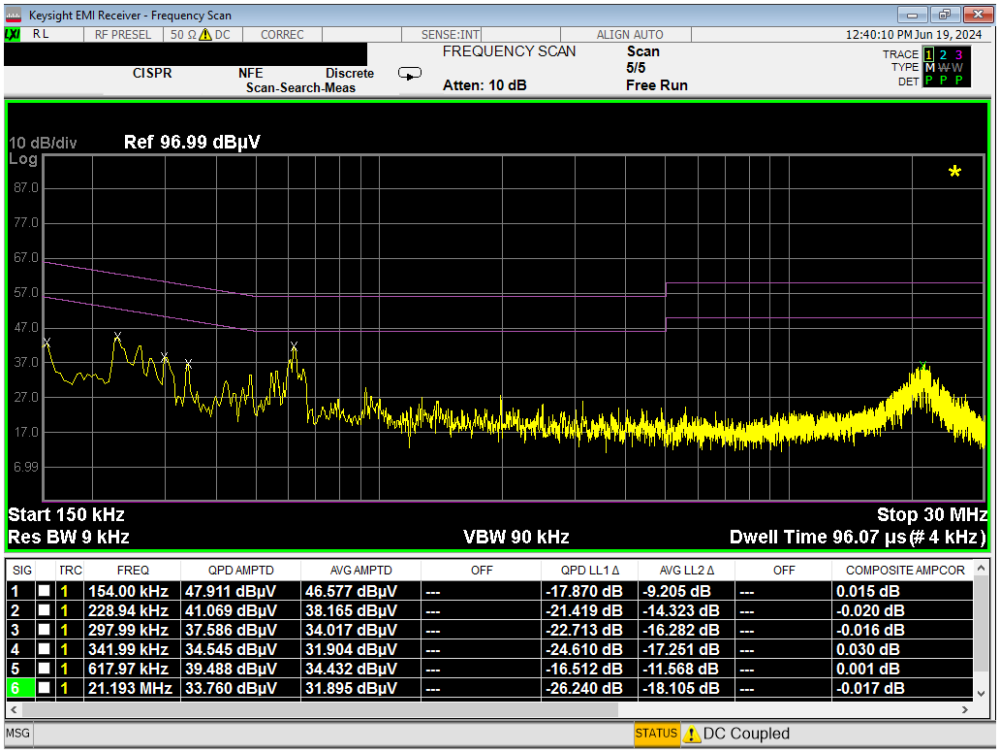


SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	158.00 kHz	47.469 dBµV	45.702 dBµV	---	-18.100 dB	-9.867 dB	---	0.012 dB
2	1	293.99 kHz	37.388 dBµV	33.749 dBµV	---	-23.023 dB	-16.662 dB	---	-0.020 dB
3	1	21.280 MHz	38.471 dBµV	34.866 dBµV	---	-21.529 dB	-15.134 dB	---	0.305 dB
4	1	21.489 MHz	38.648 dBµV	36.540 dBµV	---	-21.352 dB	-13.460 dB	---	0.338 dB
5	1	21.809 MHz	37.820 dBµV	34.158 dBµV	---	-22.180 dB	-15.842 dB	---	0.025 dB
6	1	21.854 MHz	37.843 dBµV	34.982 dBµV	---	-22.157 dB	-15.018 dB	---	0.158 dB

Plot 7-210. Line Conducted Plot with 802.11a UNII Band 8 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	154.00 kHz	47.911 dBµV	46.577 dBµV	---	-17.870 dB	-9.205 dB	---	0.015 dB
2	1	228.94 kHz	41.069 dBµV	38.165 dBµV	---	-21.419 dB	-14.323 dB	---	-0.020 dB
3	1	297.99 kHz	37.586 dBµV	34.017 dBµV	---	-22.713 dB	-16.282 dB	---	-0.016 dB
4	1	341.99 kHz	34.545 dBµV	31.904 dBµV	---	-24.610 dB	-17.251 dB	---	0.030 dB
5	1	617.97 kHz	39.488 dBµV	34.432 dBµV	---	-16.512 dB	-11.568 dB	---	0.001 dB
6	1	21.193 MHz	33.760 dBµV	31.895 dBµV	---	-26.240 dB	-18.105 dB	---	-0.017 dB

Plot 7-211. Line Conducted Plot with 802.11a UNII Band 8 (N)

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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Tablet FCC ID: A3LSMX820** is in compliance with FCC Part Subpart E (15.407) of the FCC rules for operation as a client device.

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