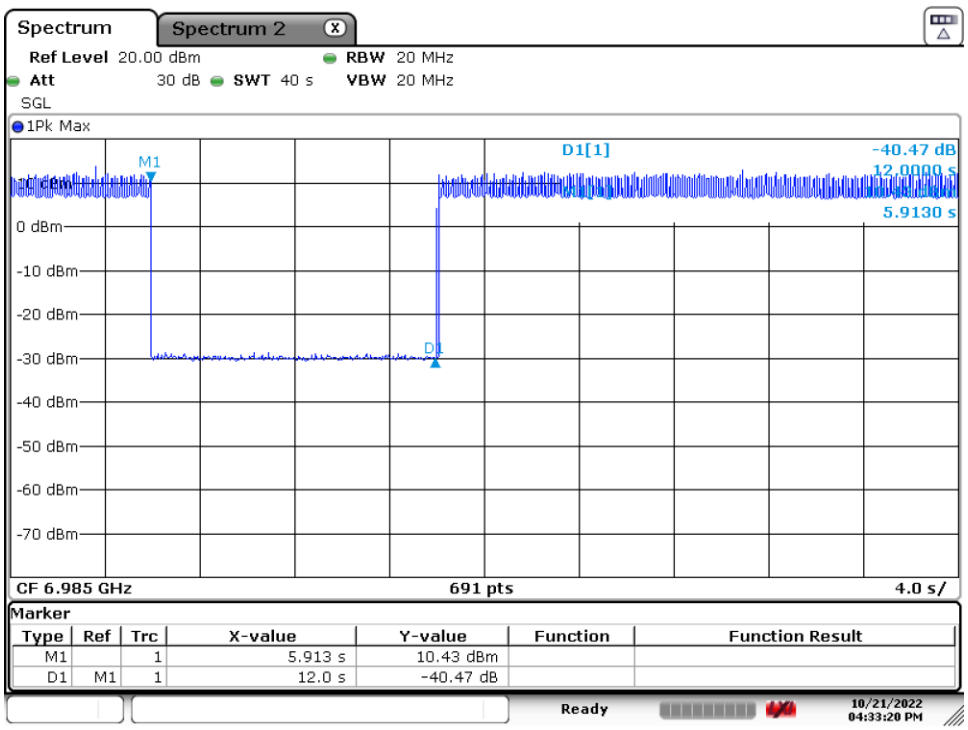
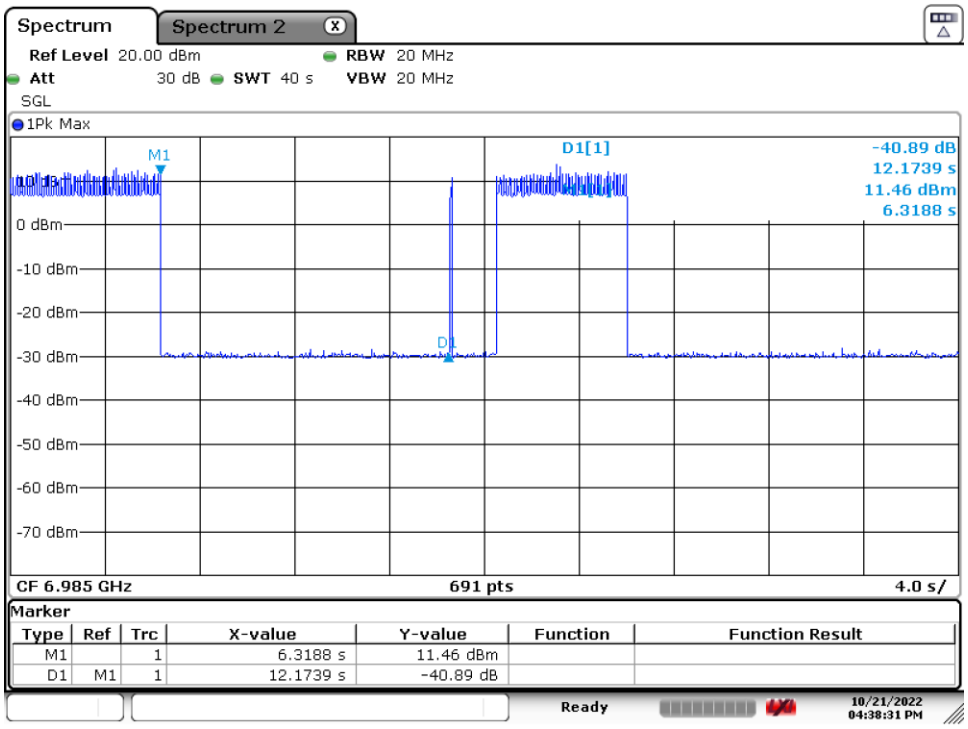


Date: 21.OCT.2022 16:33:21

Plot 7-343. Contention Based Protocol Timing Plot – UNII 8 – 160MHz Ch207 – Mid



Date: 21.OCT.2022 16:38:30

Plot 7-344. Contention Based Protocol Timing Plot – UNII 8 – 160MHz Ch207 - High

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

7.7 Radiated Spurious Emission Measurements – Above 1GHz

§15.205, §15.209, §15.407(b)(6)

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 its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11ax (20/40/80/160MHz), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

For transmitters operating in the 5.925-7.125 GHz band: All emissions outside of the 5.925-7.125 GHz band shall not exceed an EIRP of -27dBm/MHz (68.2dBuV/m at a 3m distance). Emissions found in a restricted band are subject to the limits of 15.209 as shown in the table below.

Frequency	Field Strength [µV/m]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-11. Radiated Limits

Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5
KDB 789033 D02 v02r01 – Section G

Test Settings

Average Measurements above 1GHz (Method AD)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be ≥ 2 x span/RBW)
6. Averaging type = power (RMS)
7. Sweep time = auto couple
8. Trace was averaged over 100 sweeps

Peak Measurements above 1GHz

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

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Test Setup

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

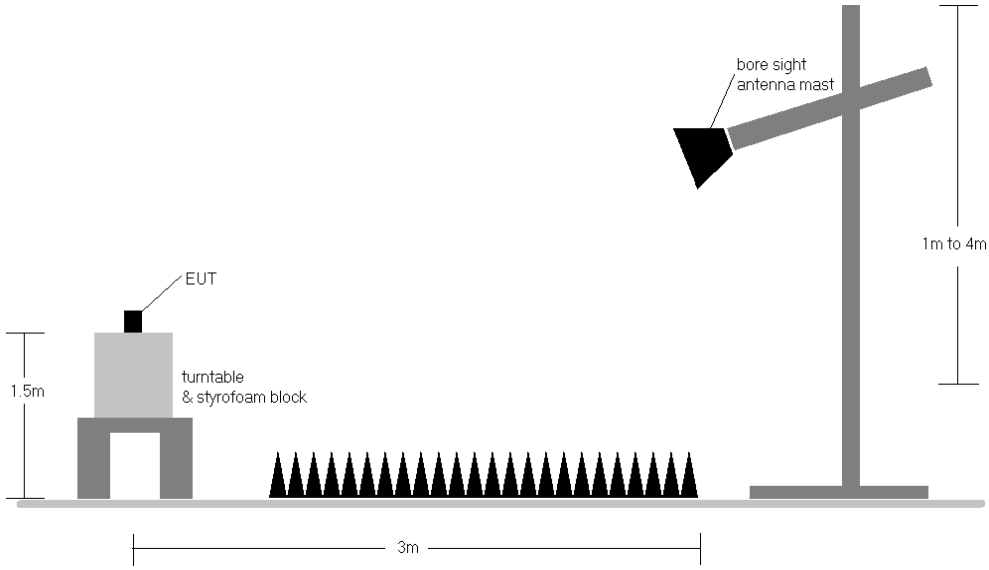


Figure 7-6. Test Instrument & Measurement Setup

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Notes

1. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-11. All spurious emissions that do not lie in a restricted band are subject to an average limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.
2. All spurious emissions that do not lie in a restricted band are subject to a peak limit not to exceed 20dB of the average limit [68.2dBμV/m]. If a peak measurement passes the average limit it was determined no further investigation is necessary.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. This unit was tested with its standard battery.
5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
6. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. 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.
8. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
9. In the case where a peak-detector measurement passed the given RMS limit it was determined sufficient to demonstrate compliance.

Sample Calculations

Determining Spurious Emissions Levels

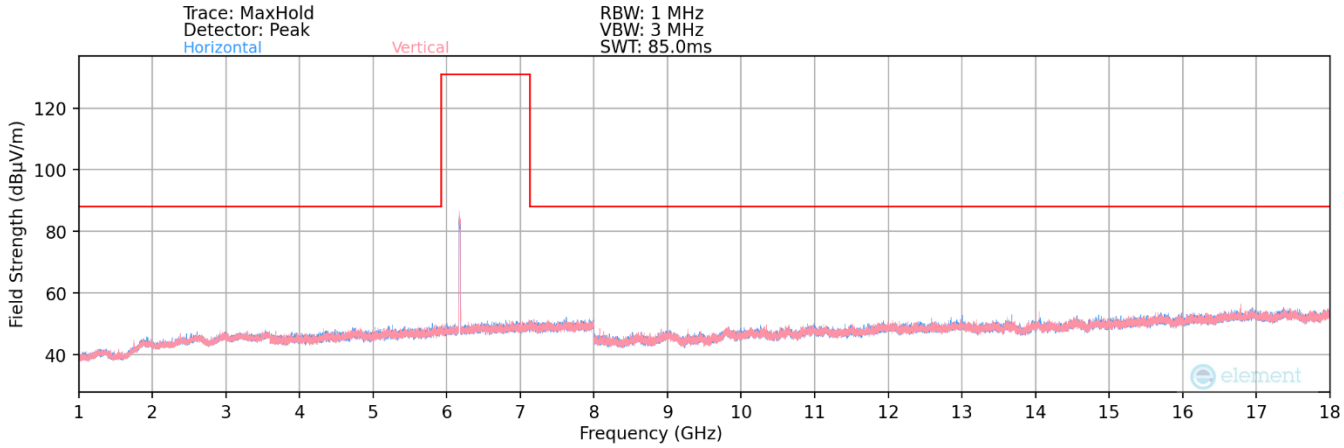
- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB/m]}$
- AFCL $_{[dB/m]}$ = Antenna Factor $_{[dB/m]}$ + Cable Loss $_{[dB]}$
- Margin $_{[dB]}$ = Field Strength Level $_{[dB\mu V/m]}$ – Limit $_{[dB\mu V/m]}$

Radiated Band Edge Measurement Offset

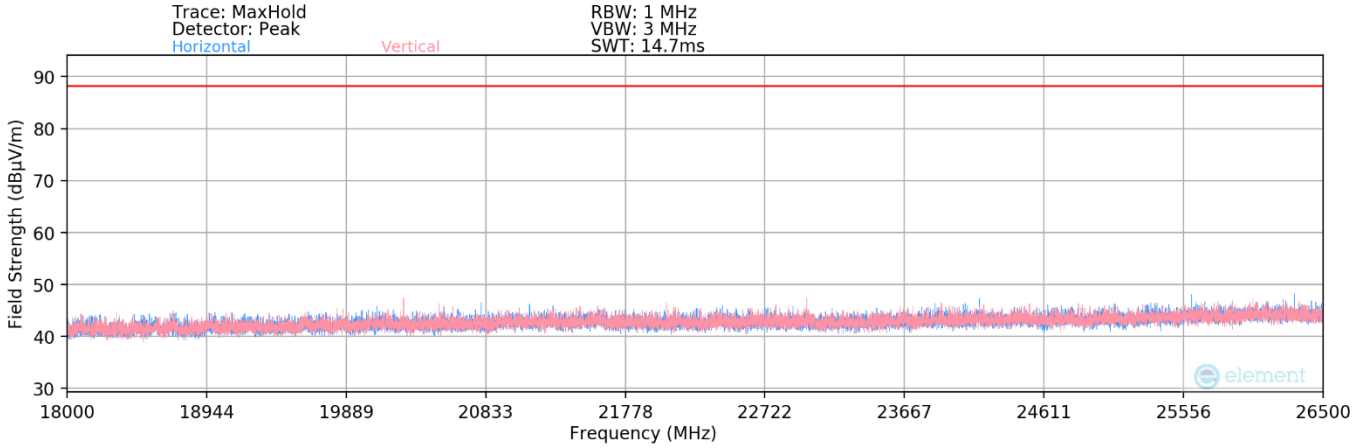
- The amplitude offset shown in the radiated restricted band edge plots was calculated using the formula: Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

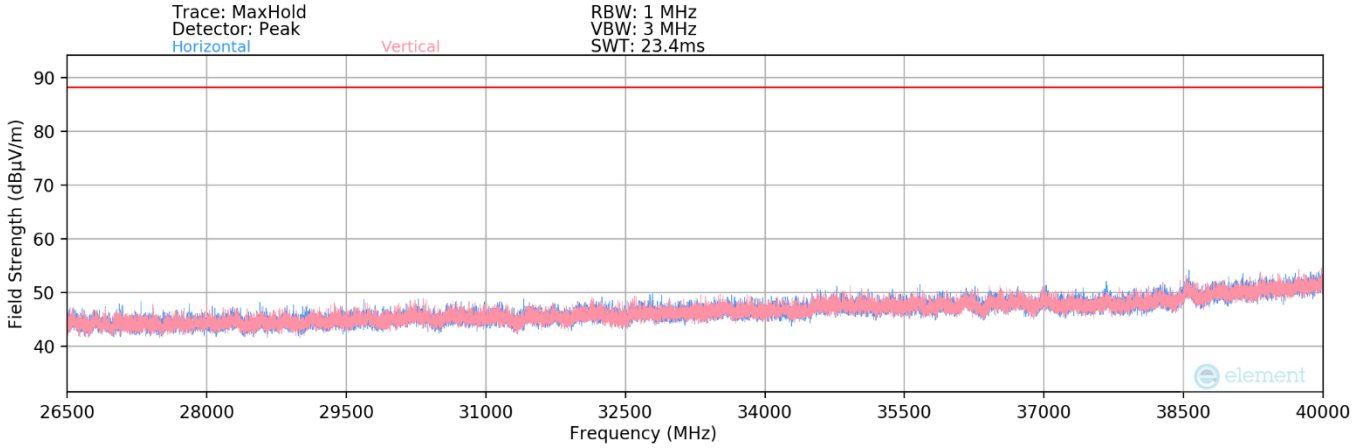
7.7.1 MIMO Radiated Spurious Emission Measurements



Plot 7-345. Radiated Spurious Plot above 1GHz MIMO (802.11ax – UNII Band 5 – 20MHz – Ch.45)



Plot 7-346. Radiated Spurious Plot above 18GHz - 26.5GHz – CH 45 - MIMO (802.11ax)



Plot 7-347. Radiated Spurious Plot 26.5GHz - 40GHz – CH 45 - MIMO (802.11ax)

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

MIMO Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5935MHz
Channel: 2

	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]
*	11870.00	Average	V	-	-	-81.76	14.16	0.00	39.40	53.98	-14.58
*	11870.00	Peak	V	-	-	-71.01	14.16	0.00	50.15	73.98	-23.83
*	17865.00	Average	V	-	-	-82.50	18.26	0.00	42.76	53.98	-11.22
*	17865.00	Peak	V	-	-	-71.98	18.26	0.00	53.28	73.98	-20.70
*	23820.00	Average	V	-	-	-64.99	3.99	-9.54	36.46	53.98	-17.52
*	23820.00	Peak	V	-	-	-58.71	3.99	-9.54	42.74	73.98	-31.24
	29775.00	Peak	V	-	-	-55.01	6.33	-9.54	48.78	68.20	-19.42

Table 7-12. Radiated Measurements MIMO (UNII Band 5 – Low Channel – 20MHz)

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6175MHz
Channel: 45

	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]
*	12350.00	Average	V	-	-	-81.57	13.85	0.00	39.28	53.98	-14.70
*	12350.00	Peak	V	-	-	-71.01	13.85	0.00	49.84	73.98	-24.14
*	18525.00	Average	V	-	-	-69.20	1.68	-9.54	29.94	53.98	-24.04
*	18525.00	Peak	V	-	-	-57.67	1.68	-9.54	41.47	73.98	-32.51
	24700.00	Peak	V	-	-	-57.85	4.25	-9.54	43.86	68.20	-24.34
	30875.00	Peak	V	-	-	-59.19	6.73	-9.54	45.00	68.20	-23.20

Table 7-13. Radiated Measurements MIMO (UNII Band 5 – Mid Channel – 20MHz)

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	6415MHz
Channel:	93

	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]
	12830.00	Peak	V	-	-	-82.51	14.78	0.00	39.27	68.20	-28.93
*	19245.00	Average	V	-	-	-71.11	2.30	-9.54	28.65	53.98	-25.33
*	19245.00	Peak	V	-	-	-59.05	2.30	-9.54	40.71	73.98	-33.27
	25660.00	Peak	V	-	-	-58.16	4.61	-9.54	43.91	68.20	-24.29
	32075.00	Peak	V	-	-	-59.36	7.18	-9.54	45.28	68.20	-22.92

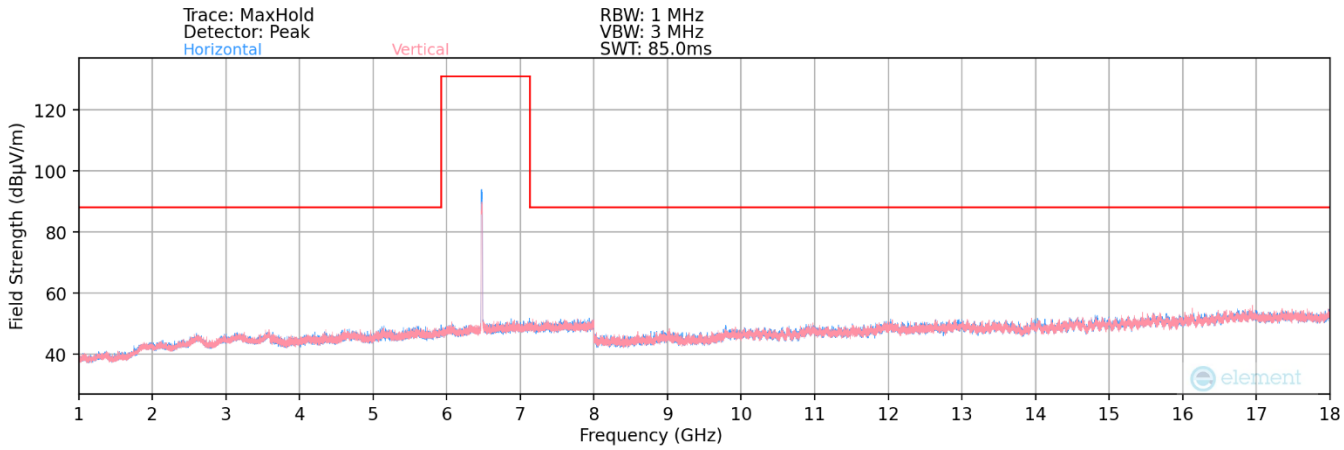
Table 7-14. Radiated Measurements MIMO (UNII Band 5 – High Channel – 20MHz)

	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]
*	12350.00	Average	V	242	229	-74.94	9.80	0.00	41.86	53.98	-12.12
*	12350.00	Peak	V	242	229	-62.12	9.80	0.00	54.68	73.98	-19.30

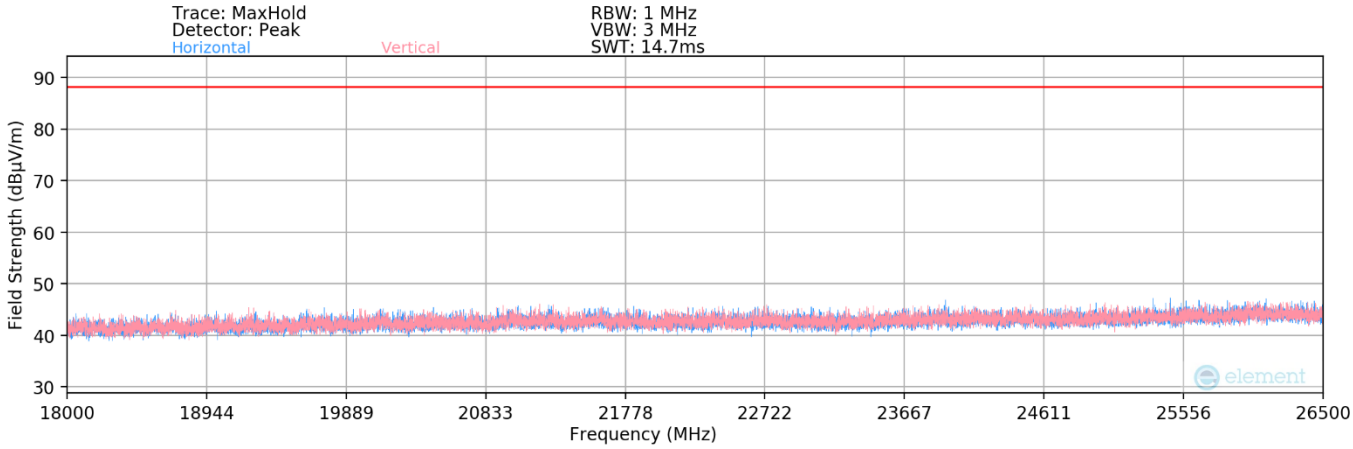
Table 7-15. Radiated Measurements MIMO (UNII Band 5 – Mid Channel – 20MHz) with WCP

© 2022 ELEMENT V 9.0 02/01/2019

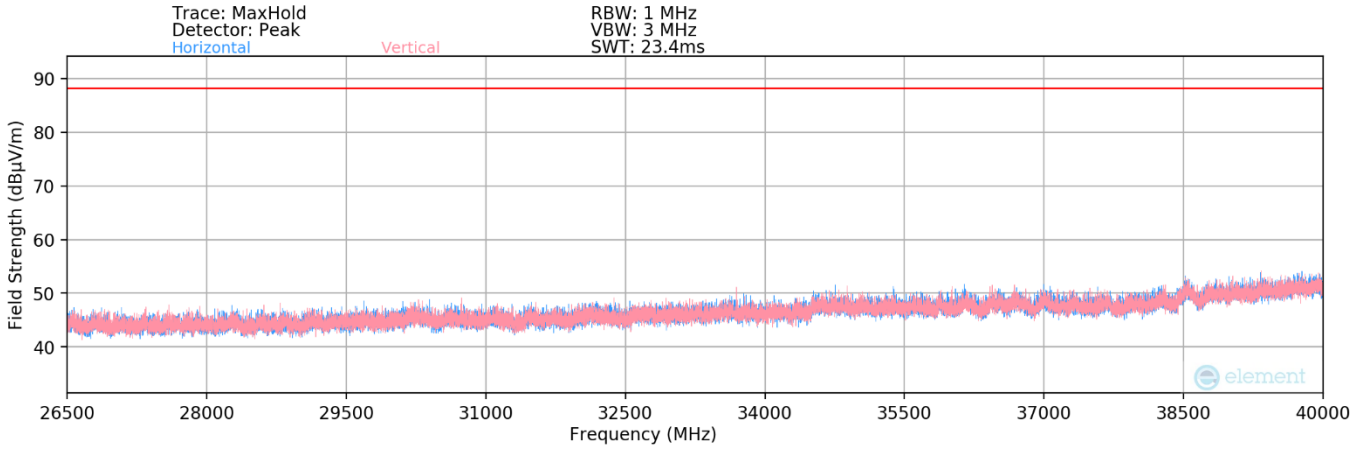
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-348. Radiated Spurious Plot above 1GHz MIMO (802.11ax– UNII Band 6 – 20MHz – Ch.105)



Plot 7-349. Radiated Spurious Plot above 18GHz - 26.5GHz – CH 105 - MIMO (802.11ax)



Plot 7-350. Radiated Spurious Plot 26.5GHz - 40GHz – CH 105 - MIMO (802.11ax)

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

MIMO Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6435MHz
Channel: 97

	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]
	12870.00	Peak	V	-	-	-71.66	14.51	0.00	49.85	68.20	-18.35
*	19305.00	Average	V	-	-	-65.33	2.61	-9.54	34.74	53.98	-19.24
*	19305.00	Peak	V	-	-	-70.98	2.61	-9.54	29.09	73.98	-44.89
	25740.00	Peak	V	-	-	-57.64	4.71	-9.54	44.53	68.20	-23.67
	32175.00	Peak	V	-	-	-58.34	7.21	-9.54	46.33	68.20	-21.87

Table 7-16. Radiated Measurements MIMO (UNII Band 6 – Low Channel – 20MHz)

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6475MHz
Channel: 105

	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]
	12950.00	Peak	V	-	-	-70.89	14.59	0.00	50.70	68.20	-17.50
*	19425.00	Average	V	-	-	-64.33	2.67	-9.54	35.80	53.98	-18.18
*	19425.00	Peak	V	-	-	-54.69	2.67	-9.54	45.44	73.98	-28.54
	25900.00	Peak	V	-	-	-54.88	4.77	-9.54	47.35	68.20	-20.85
	32375.00	Peak	V	-	-	-55.61	6.96	-9.54	48.81	68.20	-19.39

Table 7-17. Radiated Measurements MIMO (UNII Band 6 – Mid Channel – 20MHz)

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	6515MHz
Channel:	113

	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]
	13030.00	Peak	V	-	-	-70.56	14.61	0.00	51.05	68.20	-17.15
*	19545.00	Average	V	-	-	-64.39	2.63	-9.54	35.70	53.98	-18.28
*	19545.00	Peak	V	-	-	-53.88	2.63	-9.54	46.21	73.98	-27.77
	26060.00	Peak	V	-	-	-54.69	4.83	-9.54	47.60	68.20	-20.60
	32575.00	Peak	V	-	-	-55.54	6.80	-9.54	48.72	68.20	-19.48

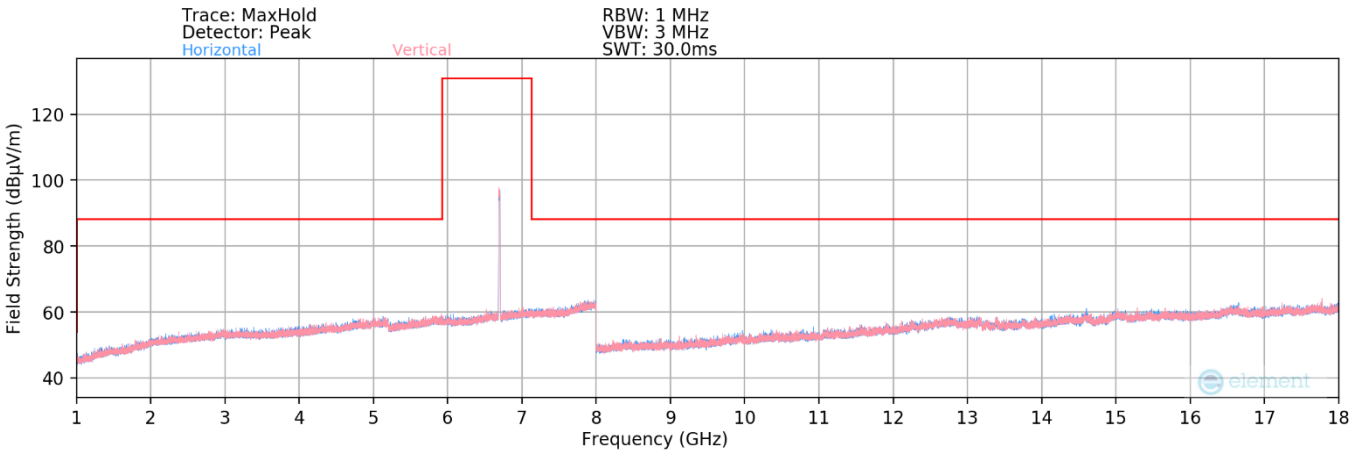
Table 7-18. Radiated Measurements MIMO (UNII Band 6 – High Channel – 20MHz)

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]
12950.00	Peak	V	163	43	-58.62	10.31	0.00	58.69	68.20	-9.51

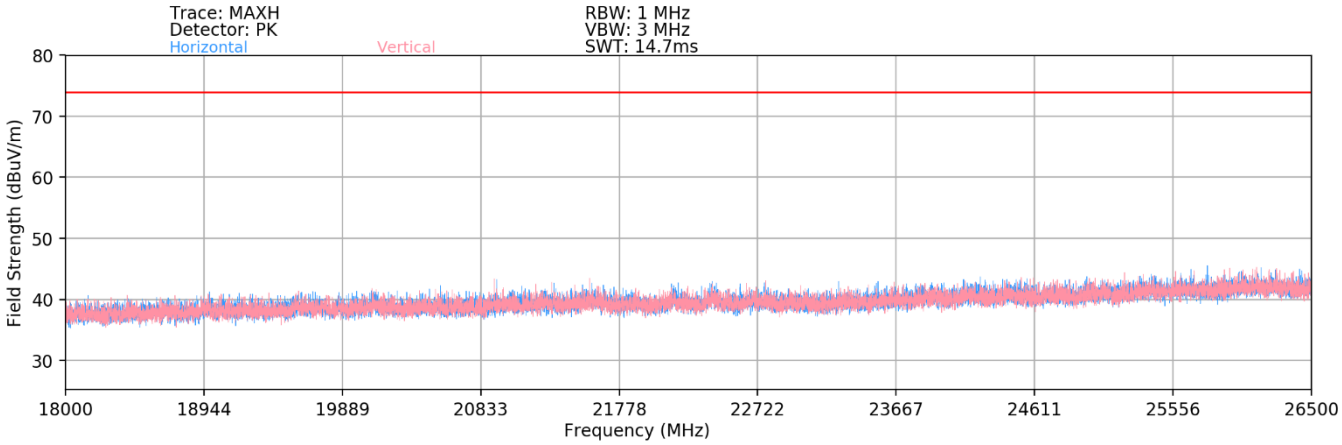
Table 7-19. Radiated Measurements MIMO (UNII Band 6 – Mid Channel – 20MHz) with WCP

© 2022 ELEMENT V 9.0 02/01/2019

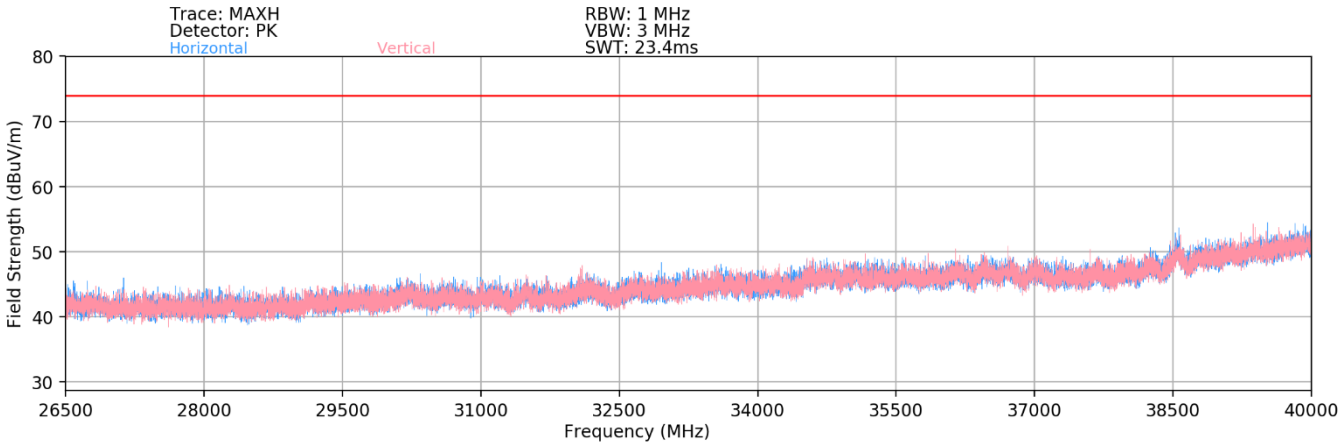
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-351. Radiated Spurious Plot above 1GHz MIMO (802.11ax– UNII Band 7 – 20MHz – Ch.149)



Plot 7-352. Radiated Spurious Plot above 18GHz - 26.5GHz – CH 149 - MIMO (802.11ax)



Plot 7-353. Radiated Spurious Plot 26.5GHz - 40GHz – CH 149 - MIMO (802.11ax)

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

MIMO Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6535MHz
Channel: 117

	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]
	13070.00	Peak	V	-	-	-70.58	14.41	0.00	50.83	68.20	-17.37
*	19605.00	Average	V	-	-	-64.38	2.75	-9.54	35.83	53.98	-18.15
*	19605.00	Peak	V	-	-	-53.91	2.75	-9.54	46.30	73.98	-27.68
	26140.00	Peak	V	-	-	-64.36	5.14	-9.54	38.24	68.20	-29.96
	32675.00	Peak	V	-	-	-55.37	7.15	-9.54	49.24	68.20	-18.96

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

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6695MHz
Channel: 149

	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]
*	13390.00	Average	V	-	-	-71.22	14.18	0.00	49.96	53.98	-4.02
*	13390.00	Peak	V	-	-	-67.11	14.18	0.00	54.07	73.98	-19.91
*	20085.00	Average	V	-	-	-65.29	3.06	-9.54	35.23	53.98	-18.75
*	20085.00	Peak	V	-	-	-56.21	3.06	-9.54	44.31	73.98	-29.67
	26780.00	Peak	V	-	-	-57.33	5.33	-9.54	45.46	68.20	-22.74
	33475.00	Peak	V	-	-	-56.51	7.51	-9.54	48.46	68.20	-19.74

Table 7-21. Radiated Measurements MIMO (UNII Band 7 – Mid Channel – 20MHz)

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	6875MHz
Channel:	185

	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]
	13750.00	Peak	V	-	-	-72.01	14.18	0.00	49.17	68.20	-19.03
*	20625.00	Average	V	-	-	-67.21	3.32	-9.54	33.57	53.98	-20.41
*	20625.00	Peak	V	-	-	-56.32	3.32	-9.54	44.46	73.98	-29.52
	27500.00	Peak	V	-	-	-56.98	4.97	-9.54	45.45	68.20	-22.75
	34375.00	Peak	V	-	-	-56.47	7.82	-9.54	48.81	68.20	-19.39

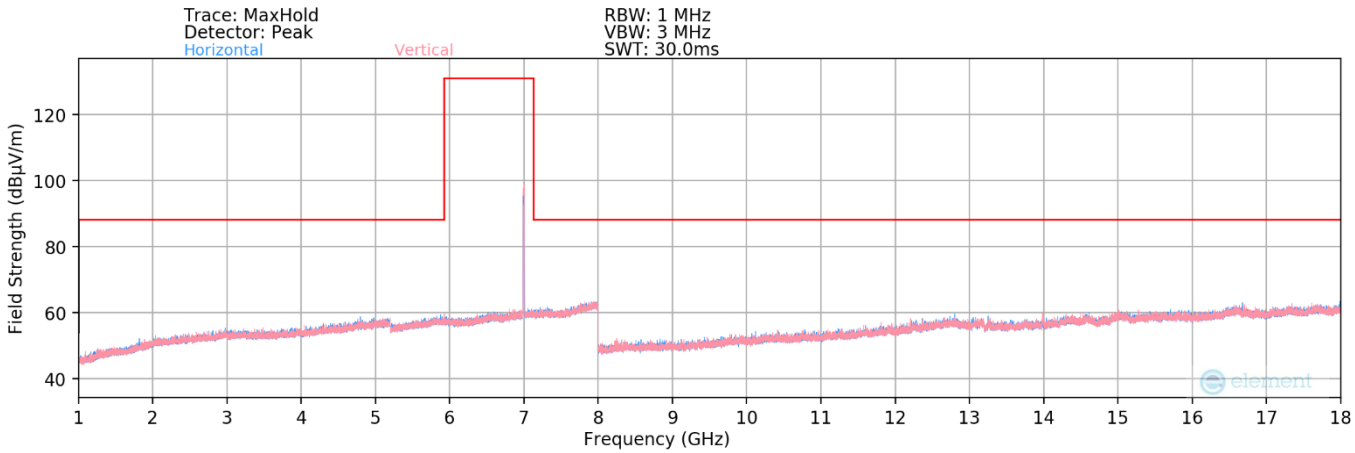
Table 7-22. Radiated Measurements MIMO (UNII Band 7 – High Channel – 20MHz)

	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]
*	13390.00	Average	V	282	232	-70.26	10.71	0.00	47.45	53.98	-6.53
*	13390.00	Peak	V	282	232	-56.74	10.71	0.00	60.97	73.98	-13.01

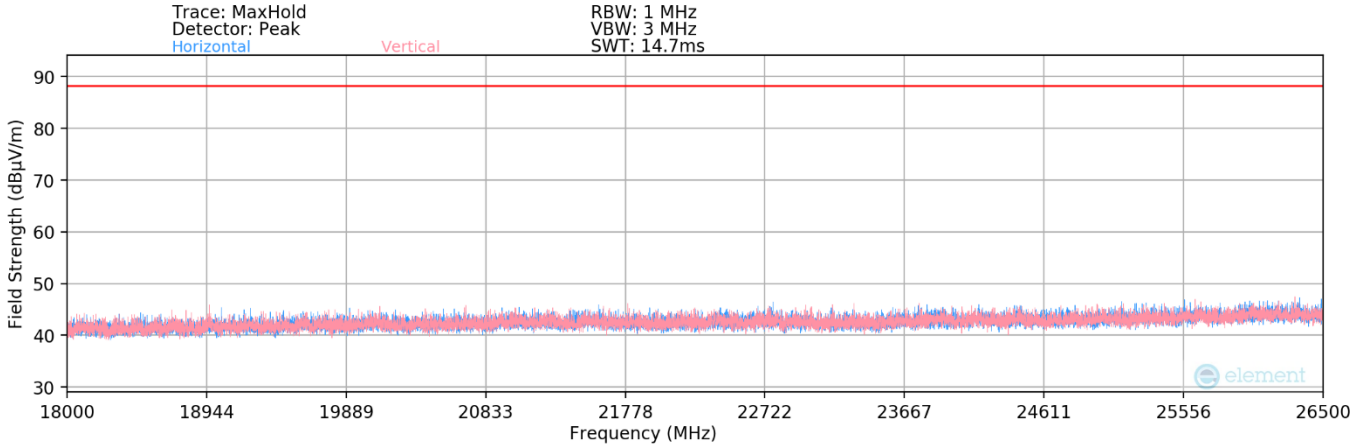
Table 7-23. Radiated Measurements MIMO (UNII Band 7 – Mid Channel – 20MHz) with WCP

© 2022 ELEMENT

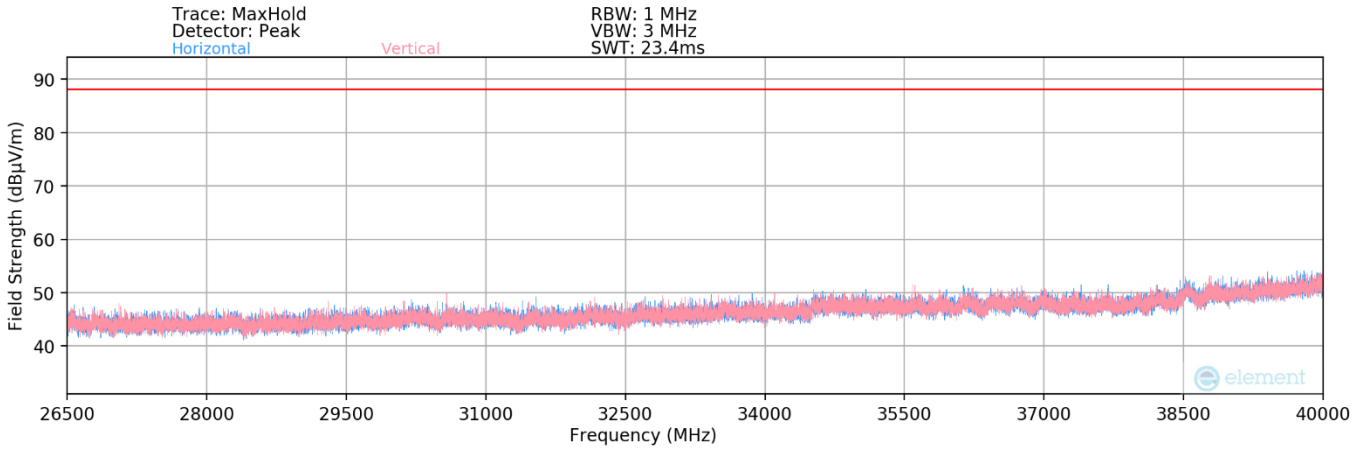
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



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)

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

MIMO Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
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	V	-	-	-71.00	14.62	0.00	50.62	68.20	-17.58
*	20685.00	Average	V	-	-	-66.54	3.24	-9.54	34.16	53.98	-19.82
*	20685.00	Peak	V	-	-	-55.69	3.24	-9.54	45.01	73.98	-28.97
	27580.00	Peak	V	-	-	-56.89	5.11	-9.54	45.68	68.20	-22.52
	34475.00	Peak	V	-	-	-57.01	7.75	-9.54	48.20	68.20	-20.00

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

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
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	V	-	-	-70.55	14.50	0.00	50.95	68.20	-17.25
*	20985.00	Average	V	-	-	-66.39	3.52	-9.54	34.59	53.98	-19.39
*	20985.00	Peak	V	-	-	-55.21	3.52	-9.54	45.77	73.98	-28.21
	27980.00	Peak	V	-	-	-56.32	4.92	-9.54	46.06	68.20	-22.14
	34975.00	Peak	V	-	-	-57.14	8.03	-9.54	48.35	68.20	-19.85

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

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
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	V	-	-	-69.66	15.54	0.00	52.88	68.20	-15.32
*	21345.00	Average	V	-	-	-65.66	3.97	-9.54	35.77	53.98	-18.21
*	21345.00	Peak	V	-	-	-57.01	3.97	-9.54	44.42	73.98	-29.56
	28460.00	Peak	V	-	-	-58.01	5.18	-9.54	44.63	68.20	-23.57
	35575.00	Peak	V	-	-	-57.66	7.82	-9.54	47.62	68.20	-20.58

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

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	V	257	232	-54.38	11.70	0.00	64.32	68.20	-3.88

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

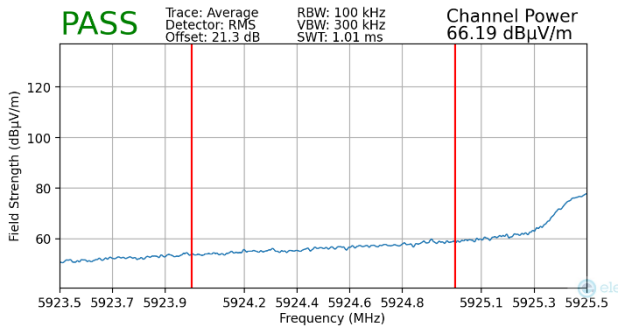
© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

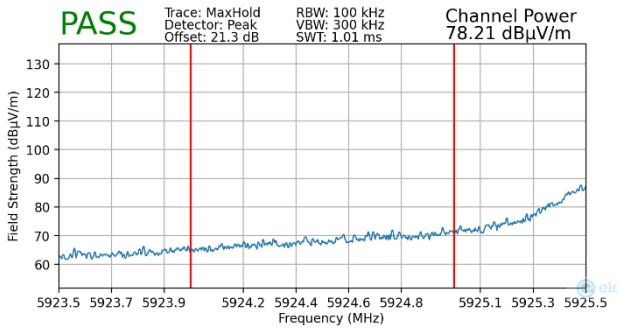
7.7.2 MIMO Radiated Band Edge Measurements (20MHz BW)

§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

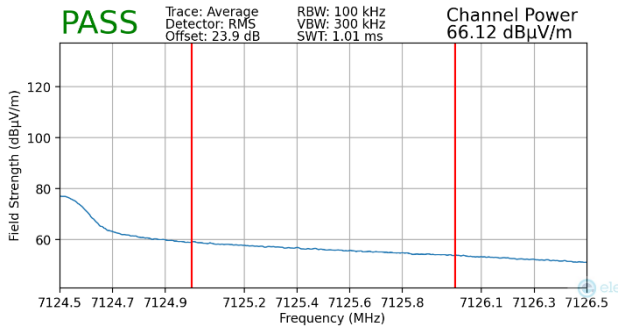


Plot 7-357. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

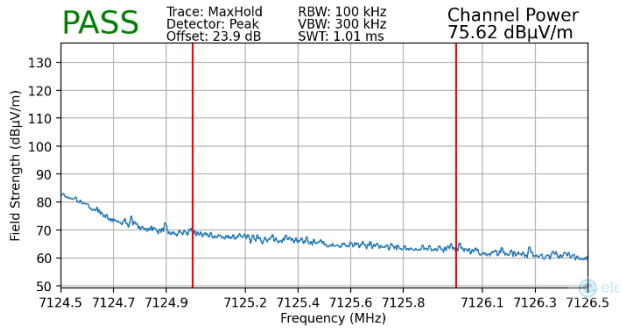


Plot 7-358. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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)

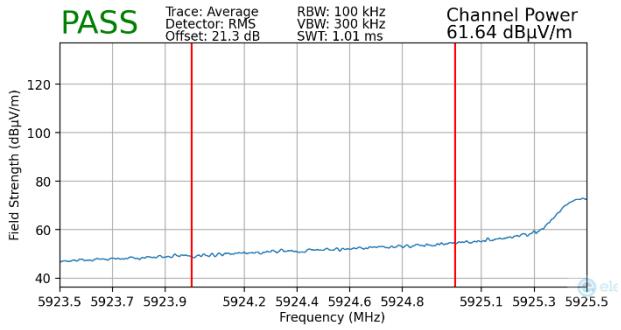


Plot 7-360. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

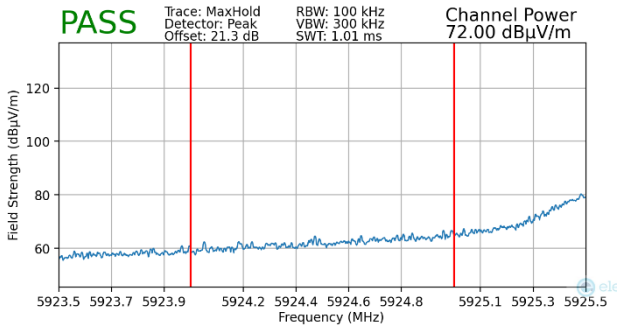
© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

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

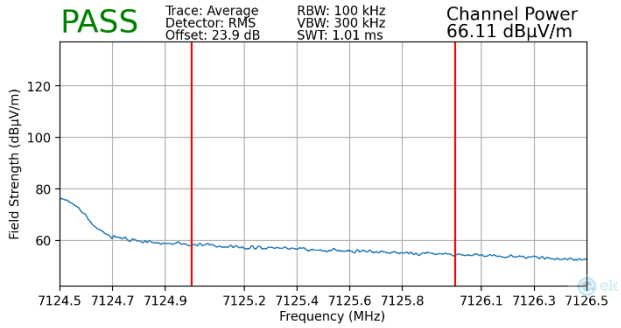


Plot 7-361. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5) with WCP

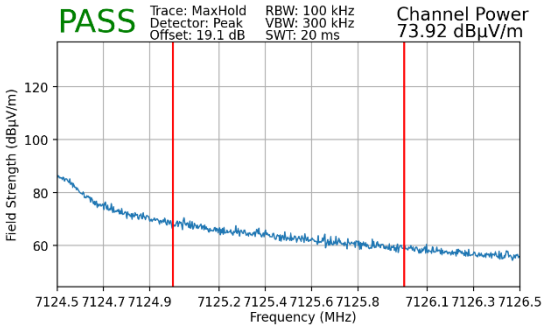


Plot 7-362. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5) with WCP

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



Plot 7-363. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8) with WCP



Plot 7-364. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8) with WCP

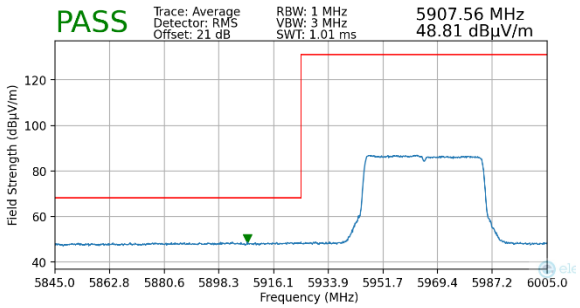
© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

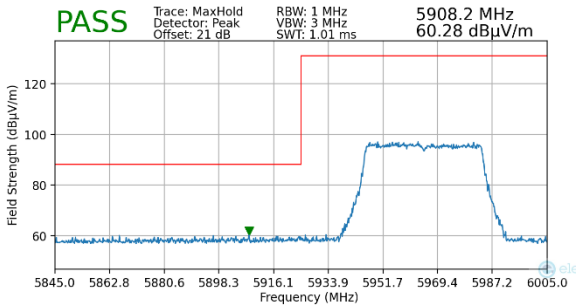
7.7.3 MIMO Radiated Band Edge Measurements (40MHz BW)

§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

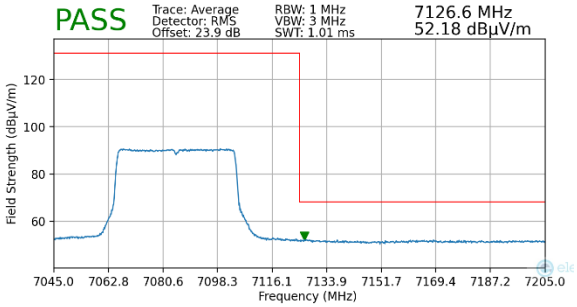


Plot 7-365. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

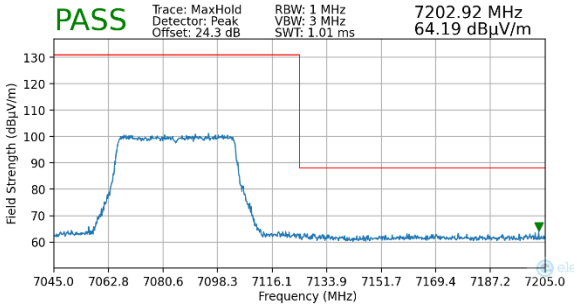


Plot 7-366. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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



Plot 7-367. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-368. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

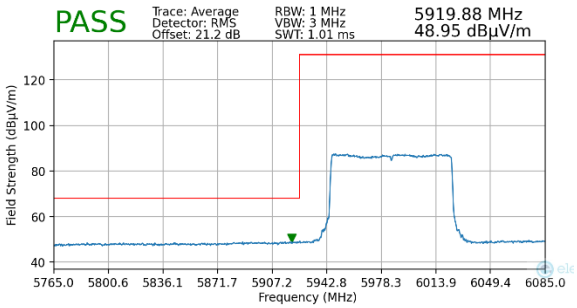
© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

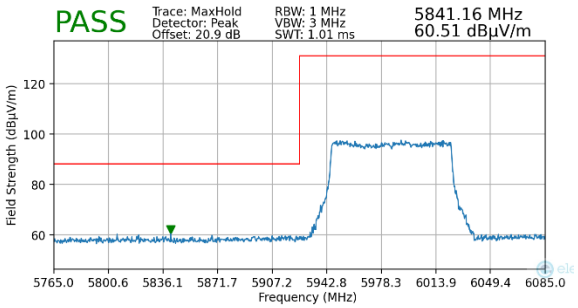
7.7.4 MIMO Radiated Band Edge Measurements (80MHz BW)

§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

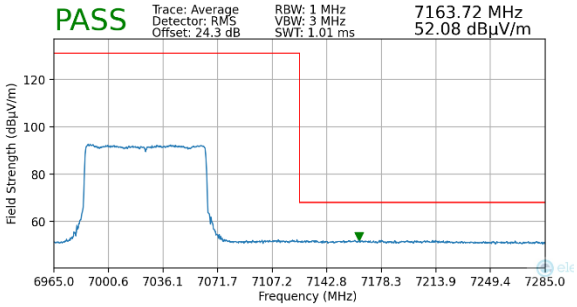


Plot 7-369. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

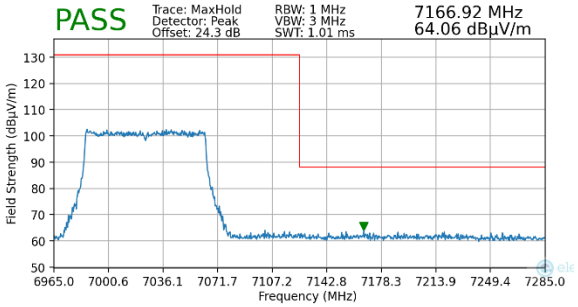


Plot 7-370. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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



Plot 7-371. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-372. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

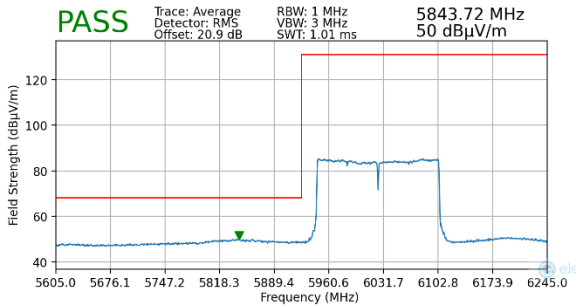
© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

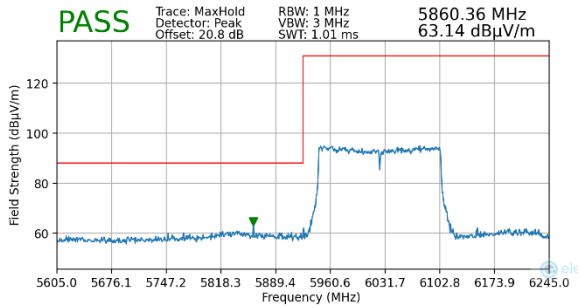
7.7.5 MIMO Radiated Band Edge Measurements (160MHz BW)

§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

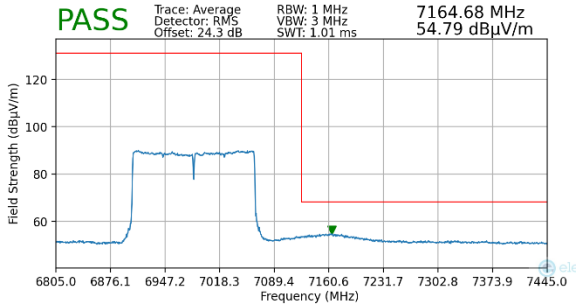


Plot 7-373. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

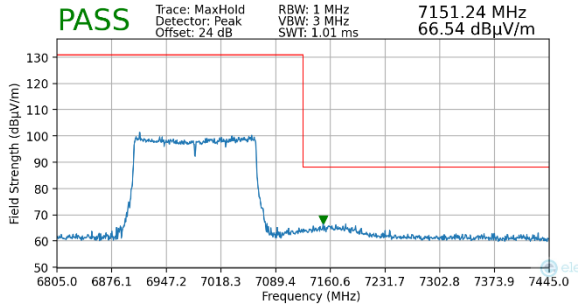


Plot 7-374. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

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



Plot 7-375. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-376. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

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 [µV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-28. 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

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Setup

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

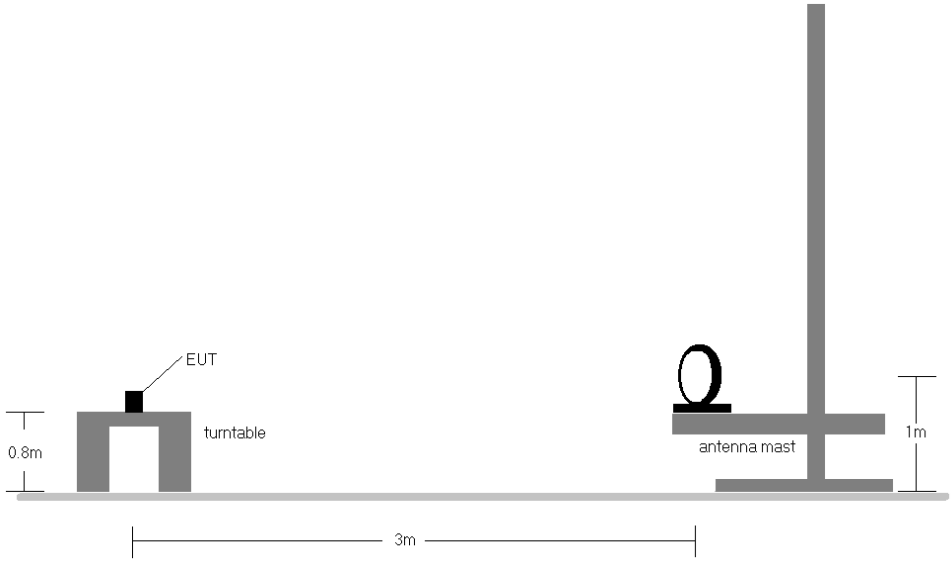


Figure 7-7. Radiated Test Setup < 30MHz

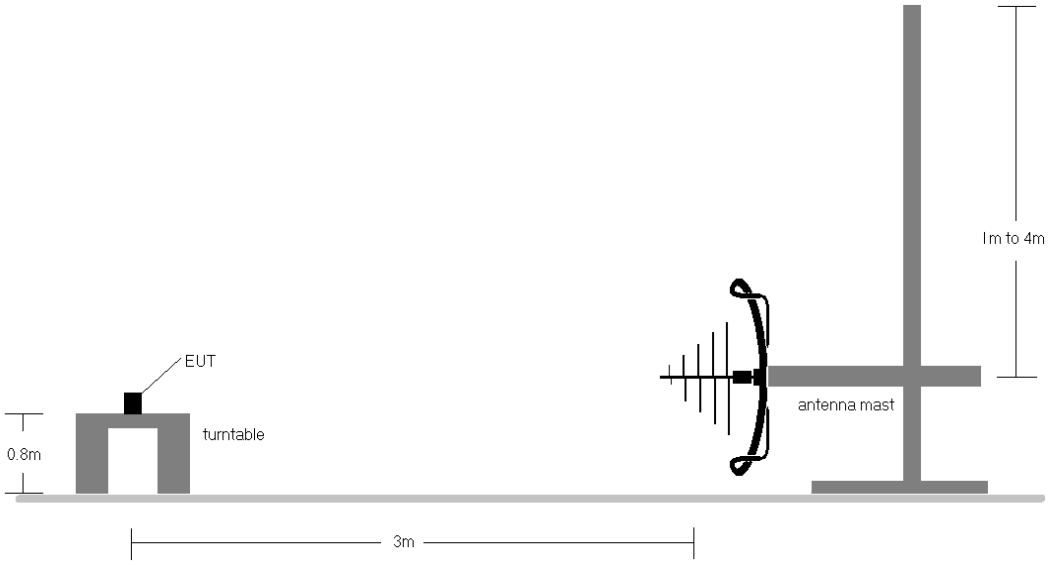


Figure 7-8. Radiated Test Setup < 1GHz

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Notes

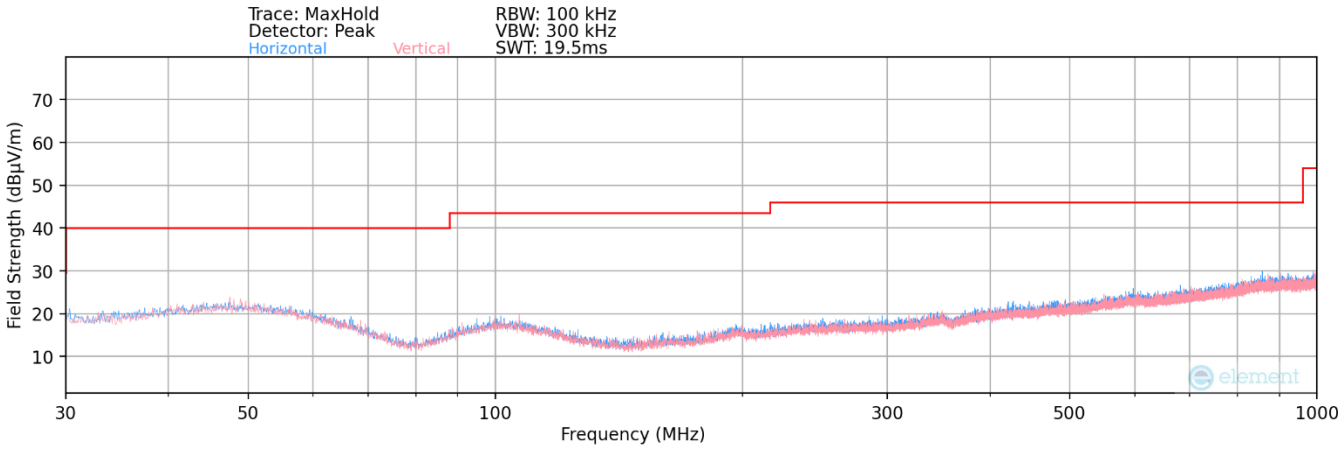
1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-28.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with 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.

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-377. 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 7-378. Radiated Spurious Data below 1GHz

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

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

Table 7-29. 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

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Setup

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

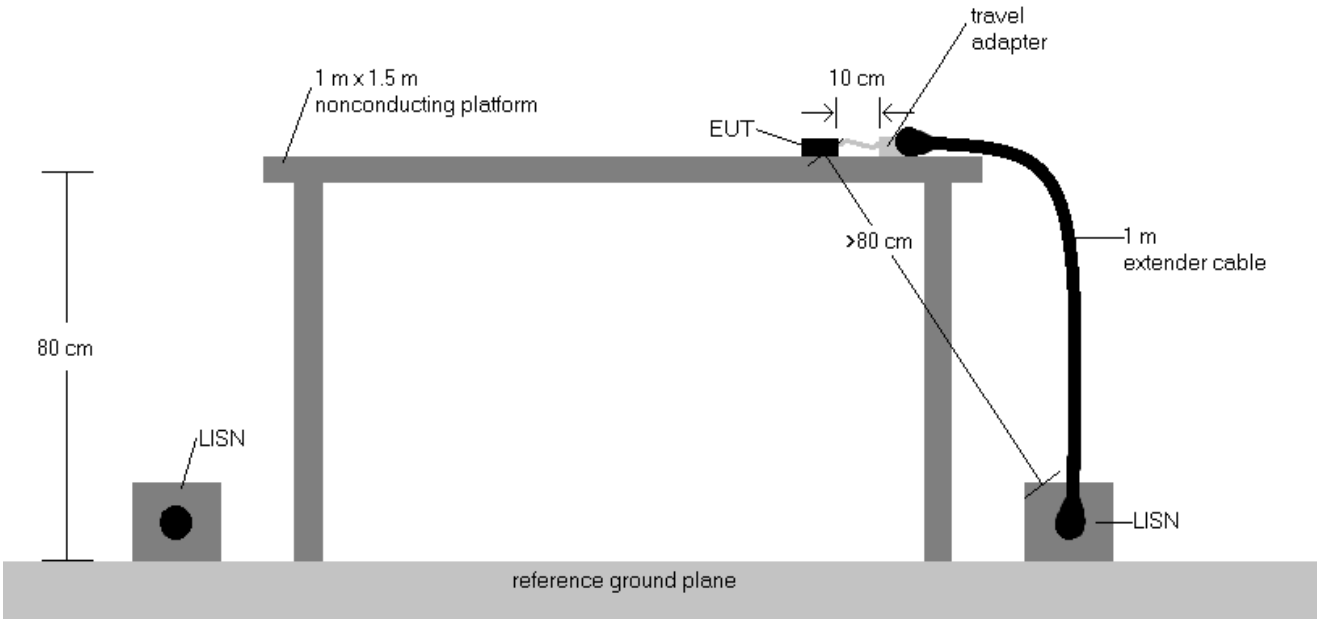
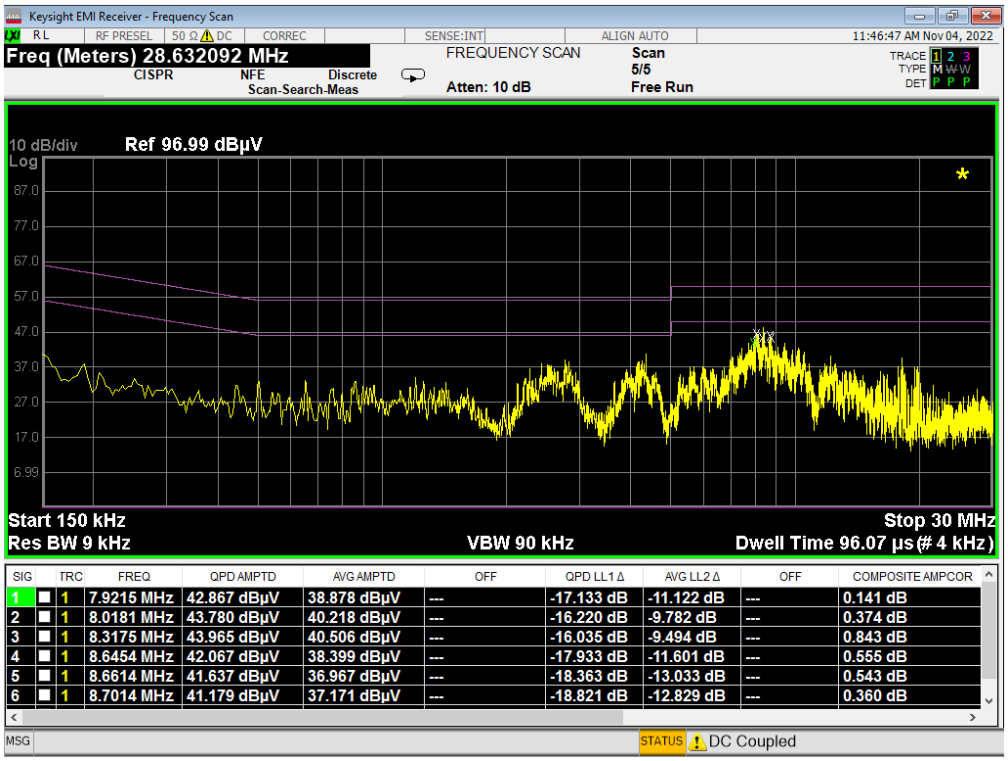


Figure 7-9. Test Instrument & Measurement Setup

Test Notes

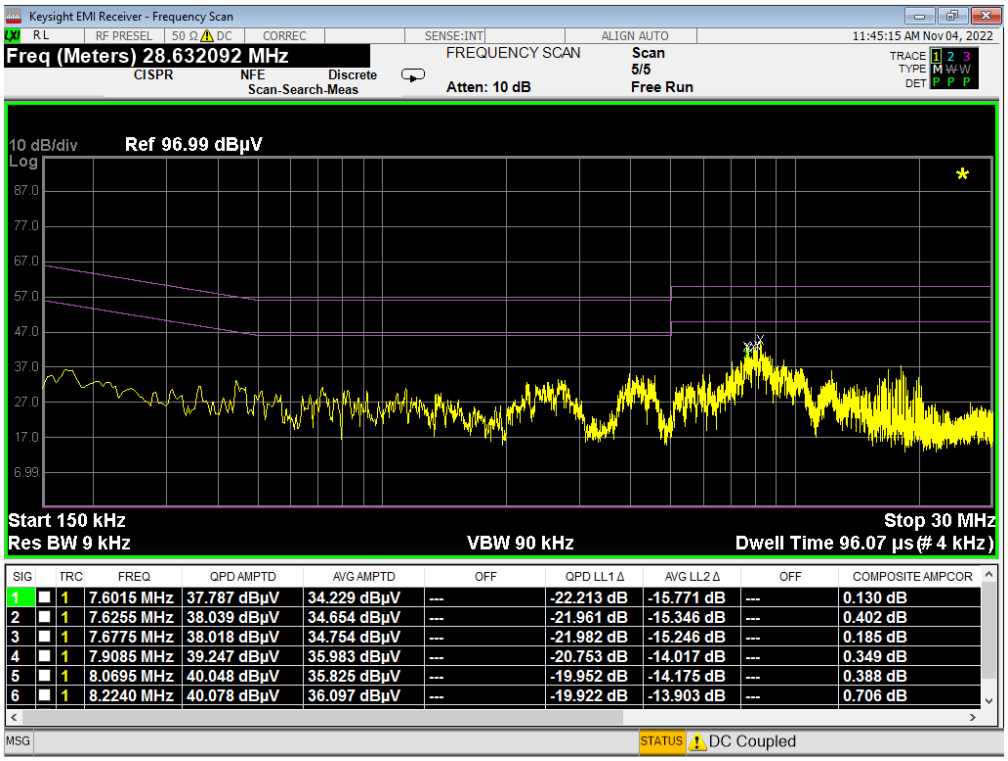
1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207.
3. Corr. (dB) = Cable loss (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.

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.9215 MHz	42.867 dBµV	38.878 dBµV	---	-17.133 dB	-11.122 dB	---	0.141 dB
2	1	8.0181 MHz	43.780 dBµV	40.218 dBµV	---	-16.220 dB	-9.782 dB	---	0.374 dB
3	1	8.3175 MHz	43.965 dBµV	40.506 dBµV	---	-16.035 dB	-9.494 dB	---	0.843 dB
4	1	8.6454 MHz	42.067 dBµV	38.399 dBµV	---	-17.933 dB	-11.601 dB	---	0.555 dB
5	1	8.6614 MHz	41.637 dBµV	36.967 dBµV	---	-18.363 dB	-13.033 dB	---	0.543 dB
6	1	8.7014 MHz	41.179 dBµV	37.171 dBµV	---	-18.821 dB	-12.829 dB	---	0.360 dB

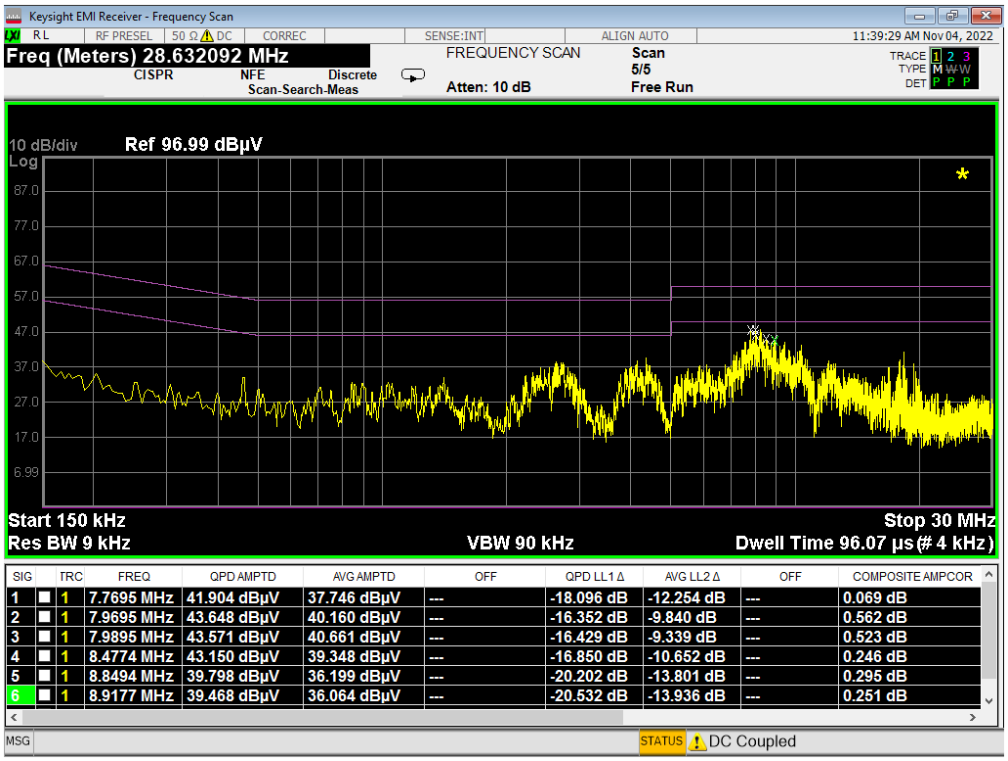
Plot 7-379. Line Conducted Plot with 802.11a UNII Band 5 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.6015 MHz	37.787 dBµV	34.229 dBµV	---	-22.213 dB	-15.771 dB	---	0.130 dB
2	1	7.6255 MHz	38.039 dBµV	34.654 dBµV	---	-21.961 dB	-15.346 dB	---	0.402 dB
3	1	7.6775 MHz	38.018 dBµV	34.754 dBµV	---	-21.982 dB	-15.246 dB	---	0.185 dB
4	1	7.9085 MHz	39.247 dBµV	35.983 dBµV	---	-20.753 dB	-14.017 dB	---	0.349 dB
5	1	8.0695 MHz	40.048 dBµV	35.825 dBµV	---	-19.952 dB	-14.175 dB	---	0.388 dB
6	1	8.2240 MHz	40.078 dBµV	36.097 dBµV	---	-19.922 dB	-13.903 dB	---	0.706 dB

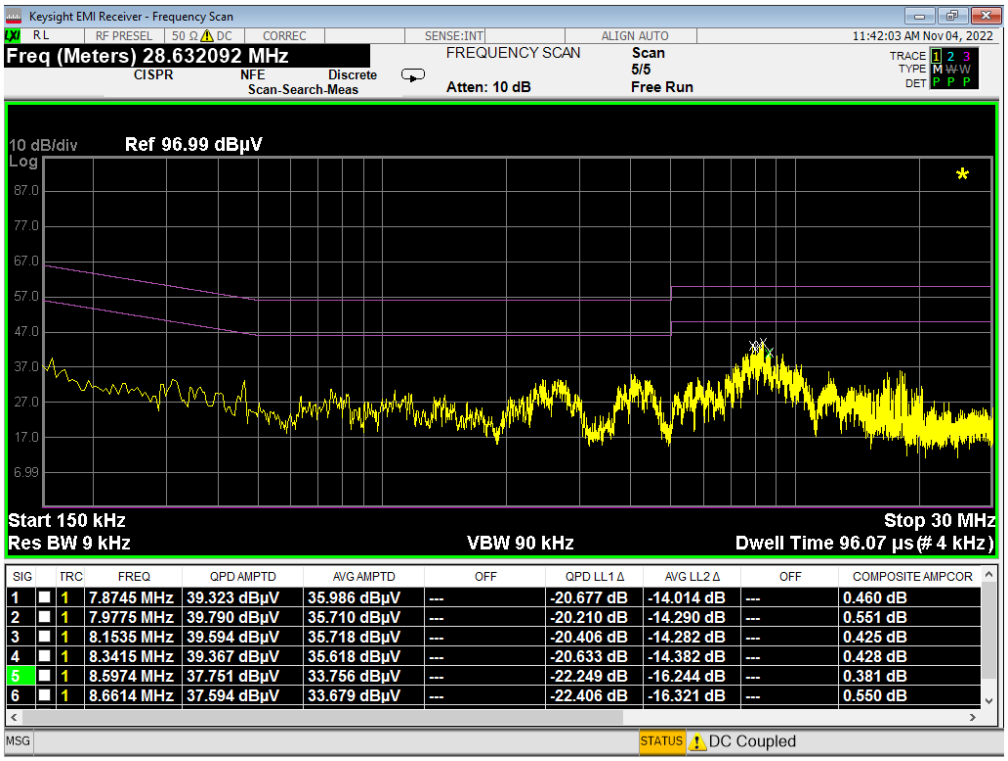
Plot 7-380. Line Conducted Plot with 802.11a UNII Band 5 (N)

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.7695 MHz	41.904 dBµV	37.746 dBµV	---	-18.096 dB	-12.254 dB	---	0.069 dB
2	1	7.9695 MHz	43.648 dBµV	40.160 dBµV	---	-16.352 dB	-9.840 dB	---	0.562 dB
3	1	7.9895 MHz	43.571 dBµV	40.661 dBµV	---	-16.429 dB	-9.339 dB	---	0.523 dB
4	1	8.4774 MHz	43.150 dBµV	39.348 dBµV	---	-16.850 dB	-10.652 dB	---	0.246 dB
5	1	8.8494 MHz	39.798 dBµV	36.199 dBµV	---	-20.202 dB	-13.801 dB	---	0.295 dB
6	1	8.9177 MHz	39.468 dBµV	36.064 dBµV	---	-20.532 dB	-13.936 dB	---	0.251 dB

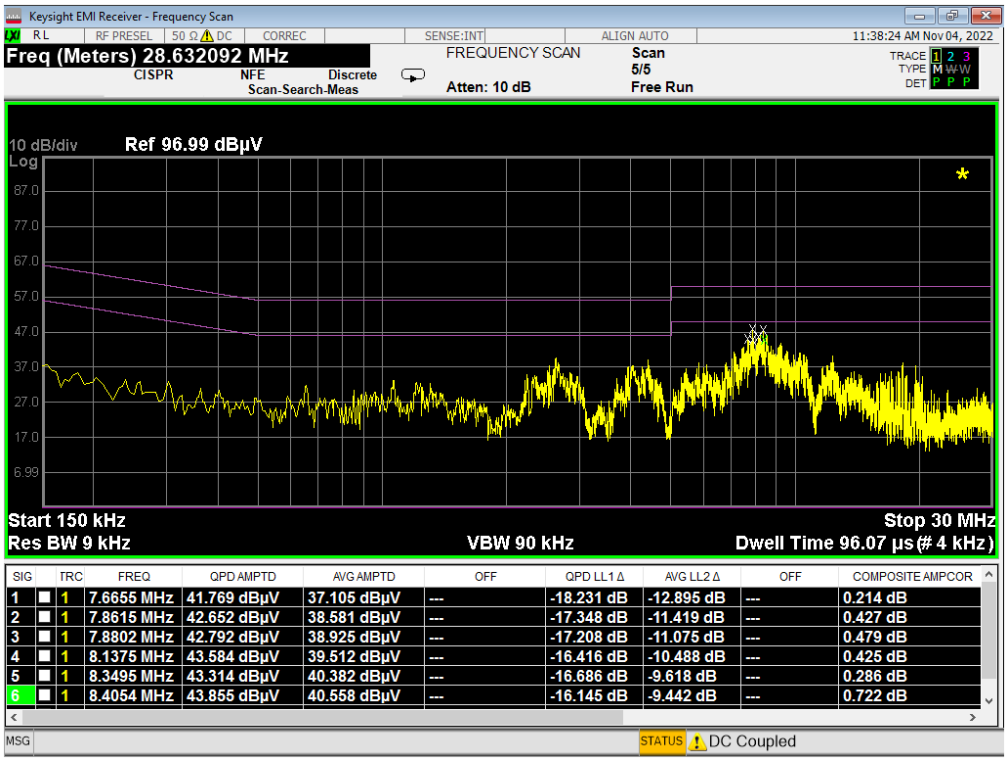
Plot 7-381. Line Conducted Plot with 802.11a UNII Band 6 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.8745 MHz	39.323 dBµV	35.986 dBµV	---	-20.677 dB	-14.014 dB	---	0.460 dB
2	1	7.9775 MHz	39.790 dBµV	35.710 dBµV	---	-20.210 dB	-14.290 dB	---	0.551 dB
3	1	8.1535 MHz	39.594 dBµV	35.718 dBµV	---	-20.406 dB	-14.282 dB	---	0.425 dB
4	1	8.3415 MHz	39.367 dBµV	35.618 dBµV	---	-20.633 dB	-14.382 dB	---	0.428 dB
5	1	8.5974 MHz	37.751 dBµV	33.756 dBµV	---	-22.249 dB	-16.244 dB	---	0.381 dB
6	1	8.6614 MHz	37.594 dBµV	33.679 dBµV	---	-22.406 dB	-16.321 dB	---	0.550 dB

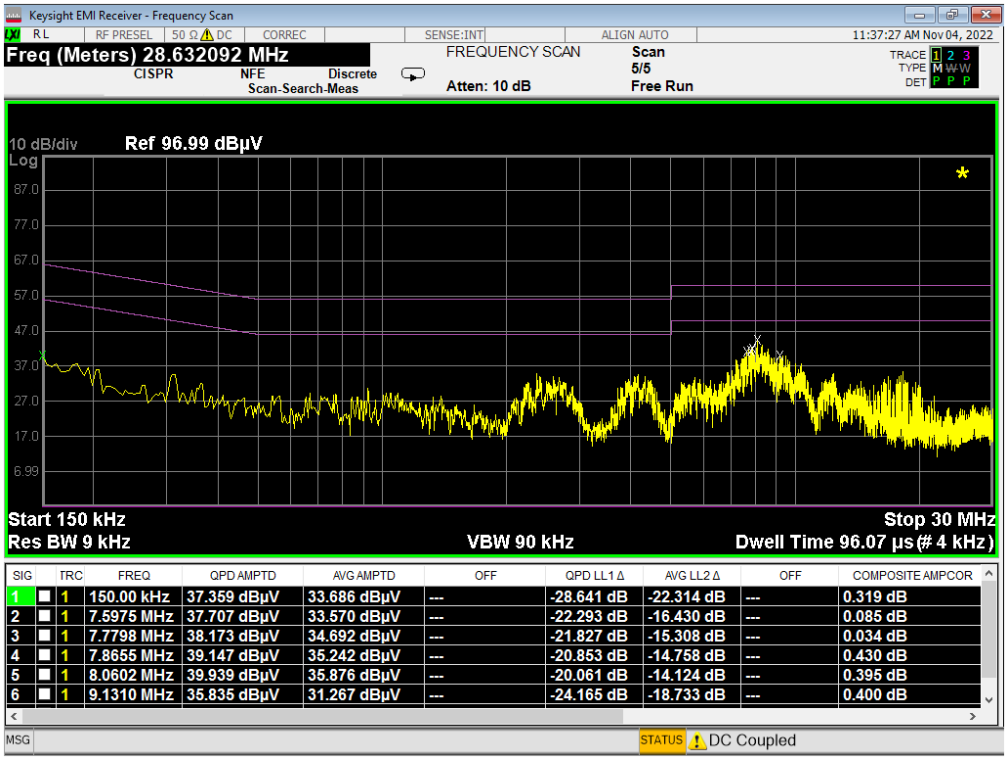
Plot 7-382. Line Conducted Plot with 802.11a UNII Band 6 (N)

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.6655 MHz	41.769 dBµV	37.105 dBµV	---	-18.231 dB	-12.895 dB	---	0.214 dB
2	1	7.8615 MHz	42.652 dBµV	38.581 dBµV	---	-17.348 dB	-11.419 dB	---	0.427 dB
3	1	7.8802 MHz	42.792 dBµV	38.925 dBµV	---	-17.208 dB	-11.075 dB	---	0.479 dB
4	1	8.1375 MHz	43.584 dBµV	39.512 dBµV	---	-16.416 dB	-10.488 dB	---	0.425 dB
5	1	8.3495 MHz	43.314 dBµV	40.382 dBµV	---	-16.686 dB	-9.618 dB	---	0.286 dB
6	1	8.4054 MHz	43.855 dBµV	40.558 dBµV	---	-16.145 dB	-9.442 dB	---	0.722 dB

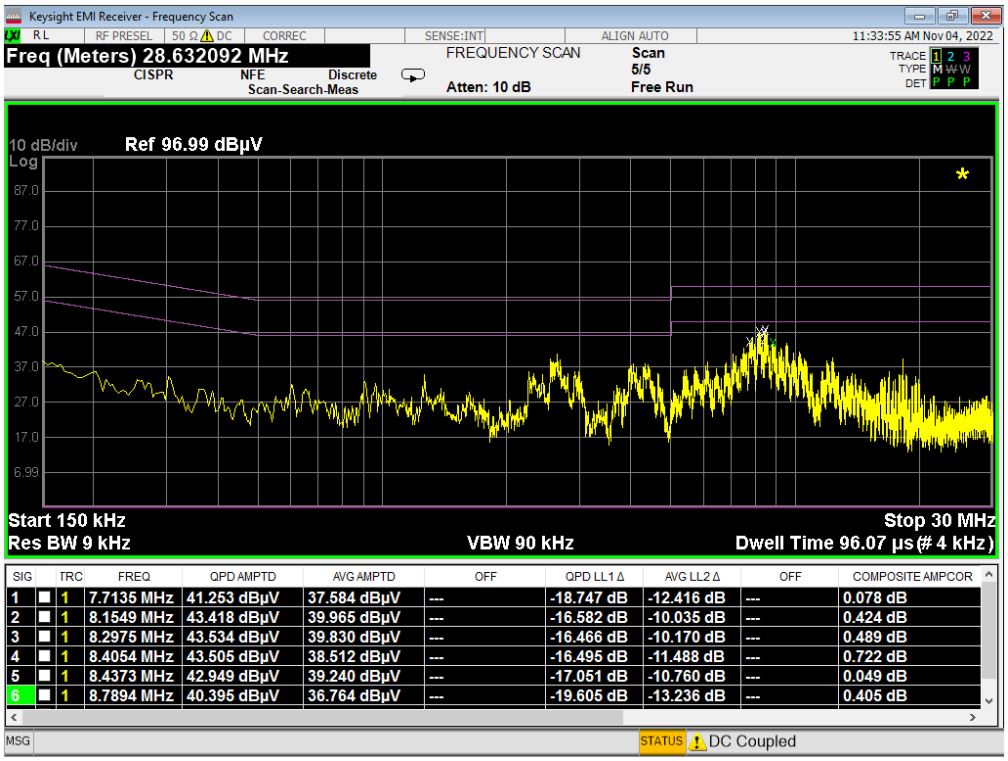
Plot 7-383. Line Conducted Plot with 802.11a UNII Band 7 (L1)



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	150.00 kHz	37.359 dBµV	33.686 dBµV	---	-28.641 dB	-22.314 dB	---	0.319 dB
2	1	7.5975 MHz	37.707 dBµV	33.570 dBµV	---	-22.293 dB	-16.430 dB	---	0.085 dB
3	1	7.7798 MHz	38.173 dBµV	34.692 dBµV	---	-21.827 dB	-15.308 dB	---	0.034 dB
4	1	7.8655 MHz	39.147 dBµV	35.242 dBµV	---	-20.853 dB	-14.758 dB	---	0.430 dB
5	1	8.0602 MHz	39.939 dBµV	35.876 dBµV	---	-20.061 dB	-14.124 dB	---	0.395 dB
6	1	9.1310 MHz	35.835 dBµV	31.267 dBµV	---	-24.165 dB	-18.733 dB	---	0.400 dB

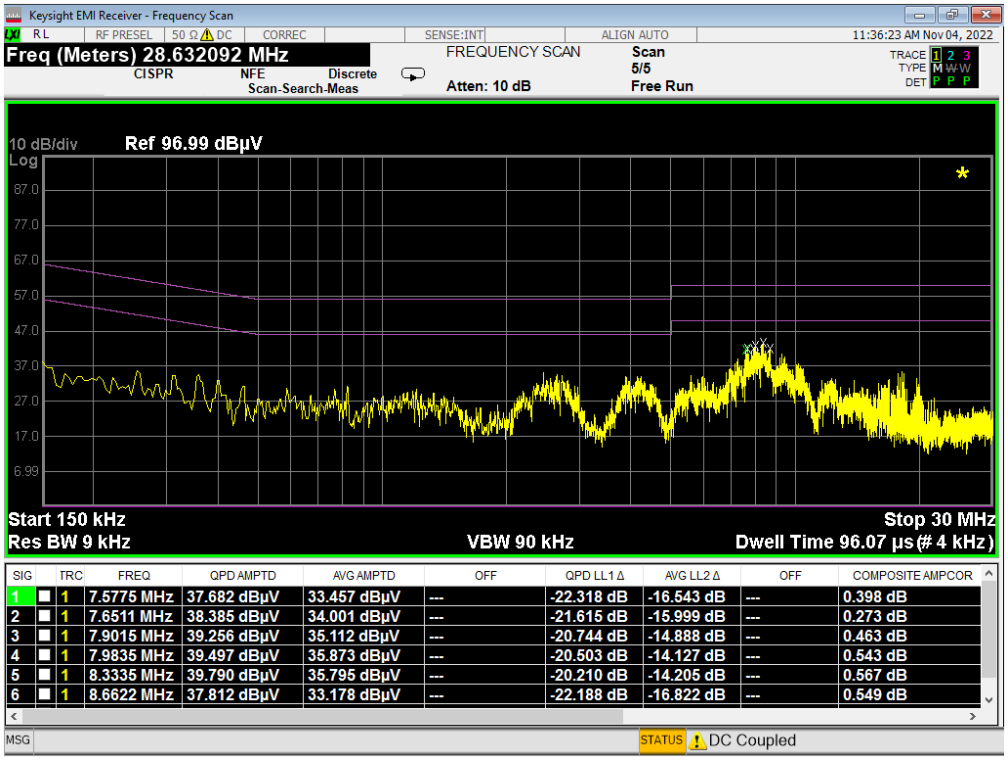
Plot 7-384. Line Conducted Plot with 802.11a UNII Band 7 (N)

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.7135 MHz	41.253 dBµV	37.584 dBµV	---	-18.747 dB	-12.416 dB	---	0.078 dB
2	1	8.1549 MHz	43.418 dBµV	39.965 dBµV	---	-16.582 dB	-10.035 dB	---	0.424 dB
3	1	8.2975 MHz	43.534 dBµV	39.830 dBµV	---	-16.466 dB	-10.170 dB	---	0.489 dB
4	1	8.4054 MHz	43.505 dBµV	38.512 dBµV	---	-16.495 dB	-11.488 dB	---	0.722 dB
5	1	8.4373 MHz	42.949 dBµV	39.240 dBµV	---	-17.051 dB	-10.760 dB	---	0.049 dB
6	1	8.7894 MHz	40.395 dBµV	36.764 dBµV	---	-19.605 dB	-13.236 dB	---	0.405 dB

Plot 7-385. Line Conducted Plot with 802.11a UNII Band 8 (L1)

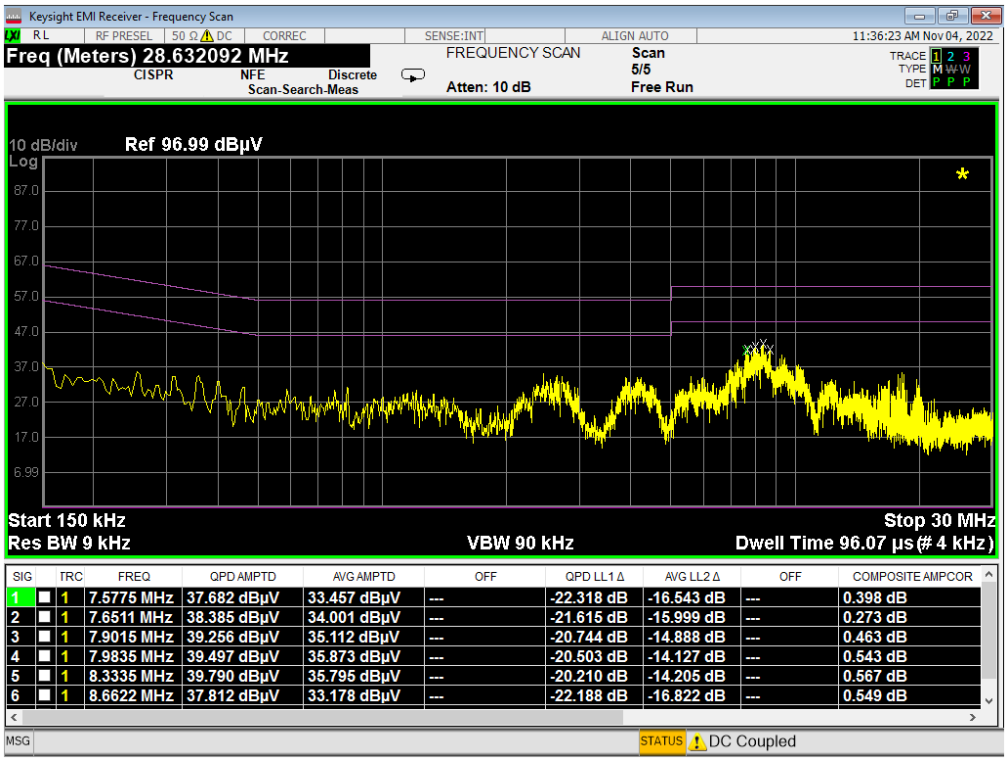


SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.5775 MHz	37.682 dBµV	33.457 dBµV	---	-22.318 dB	-16.543 dB	---	0.398 dB
2	1	7.6511 MHz	38.385 dBµV	34.001 dBµV	---	-21.615 dB	-15.999 dB	---	0.273 dB
3	1	7.9015 MHz	39.256 dBµV	35.112 dBµV	---	-20.744 dB	-14.888 dB	---	0.463 dB
4	1	7.9835 MHz	39.497 dBµV	35.873 dBµV	---	-20.503 dB	-14.127 dB	---	0.543 dB
5	1	8.3335 MHz	39.790 dBµV	35.795 dBµV	---	-20.210 dB	-14.205 dB	---	0.567 dB
6	1	8.6622 MHz	37.812 dBµV	33.178 dBµV	---	-22.188 dB	-16.822 dB	---	0.549 dB

Plot 7-386. Line Conducted Plot with 802.11a UNII Band 8 (N)

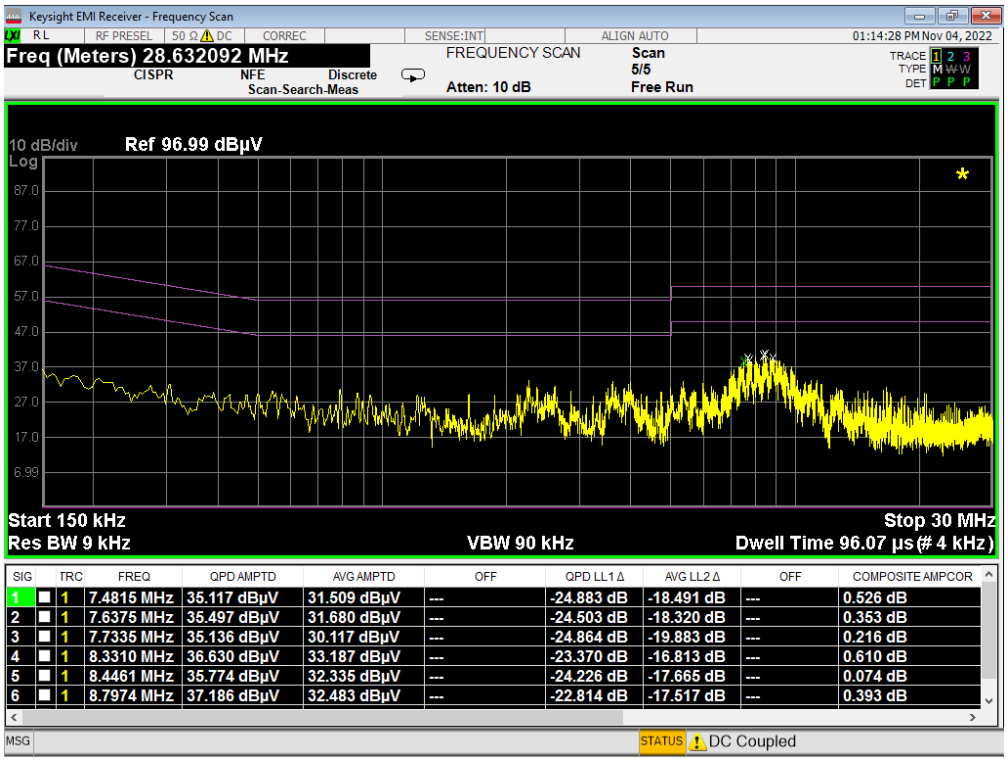
© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.5775 MHz	37.682 dBµV	33.457 dBµV	---	-22.318 dB	-16.543 dB	---	0.398 dB
2	1	7.6511 MHz	38.385 dBµV	34.001 dBµV	---	-21.615 dB	-15.999 dB	---	0.273 dB
3	1	7.9015 MHz	39.256 dBµV	35.112 dBµV	---	-20.744 dB	-14.888 dB	---	0.463 dB
4	1	7.9835 MHz	39.497 dBµV	35.873 dBµV	---	-20.503 dB	-14.127 dB	---	0.543 dB
5	1	8.3335 MHz	39.790 dBµV	35.795 dBµV	---	-20.210 dB	-14.205 dB	---	0.567 dB
6	1	8.6622 MHz	37.812 dBµV	33.178 dBµV	---	-22.188 dB	-16.822 dB	---	0.549 dB

Plot 7-387. Line Conducted Plot with 802.11a UNII Band 5 (L1) with WCP



SIG	TRC	FREQ	QPD AMPTD	AVG AMPTD	OFF	QPD LL1 Δ	AVG LL2 Δ	OFF	COMPOSITE AMPCOR
1	1	7.4815 MHz	35.117 dBµV	31.509 dBµV	---	-24.883 dB	-18.491 dB	---	0.526 dB
2	1	7.6375 MHz	35.497 dBµV	31.680 dBµV	---	-24.503 dB	-18.320 dB	---	0.353 dB
3	1	7.7335 MHz	35.136 dBµV	30.117 dBµV	---	-24.864 dB	-19.883 dB	---	0.216 dB
4	1	8.3310 MHz	36.630 dBµV	33.187 dBµV	---	-23.370 dB	-16.813 dB	---	0.610 dB
5	1	8.4461 MHz	35.774 dBµV	32.335 dBµV	---	-24.226 dB	-17.665 dB	---	0.074 dB
6	1	8.7974 MHz	37.186 dBµV	32.483 dBµV	---	-22.814 dB	-17.517 dB	---	0.393 dB

Plot 7-388. Line Conducted Plot with 802.11a UNII Band 5 (N) with WCP

© 2022 ELEMENT V 9.0 02/01/2019
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC: A3LSMS918U** is in compliance with FCC Part Subpart E (15.407) of the FCC rules for operation as a client device.

© 2022 ELEMENT V 9.0 02/01/2019

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.