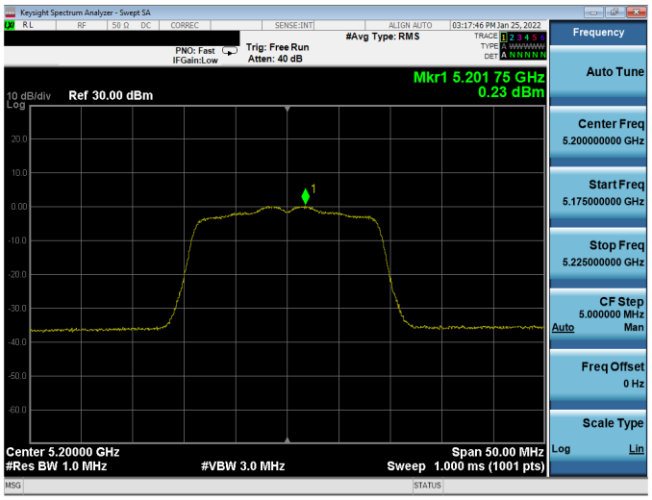
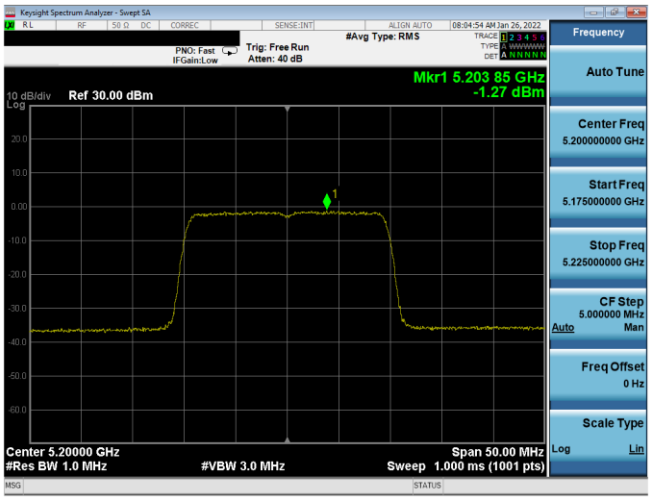
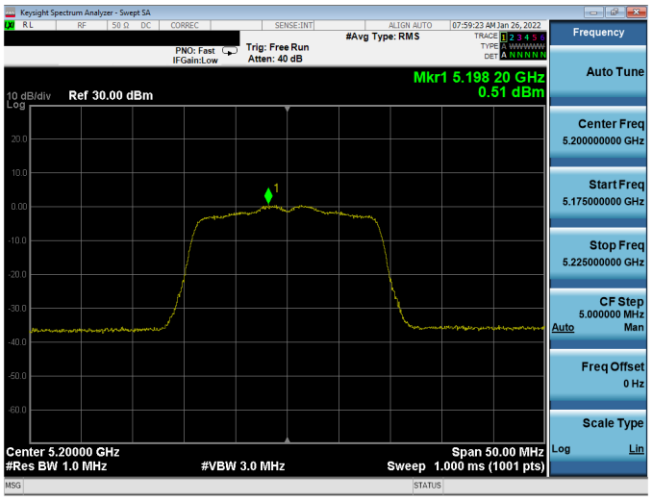
Low Data Rate



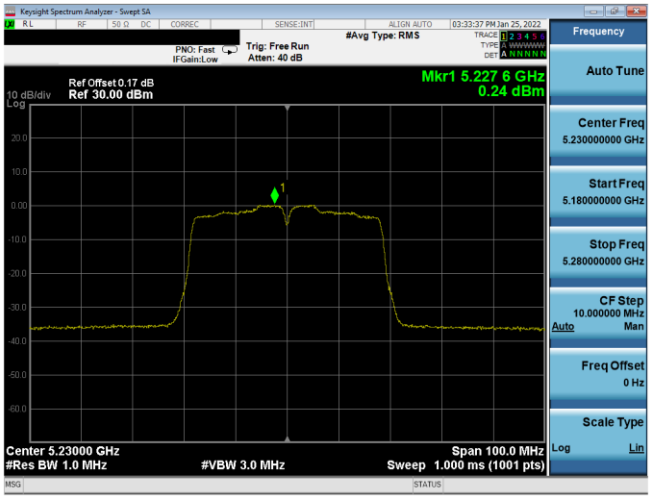
Plot 7-469. ISED PSD SDM Antenna WF8 (20MHz BW 11n – Ch.40, MCS8)



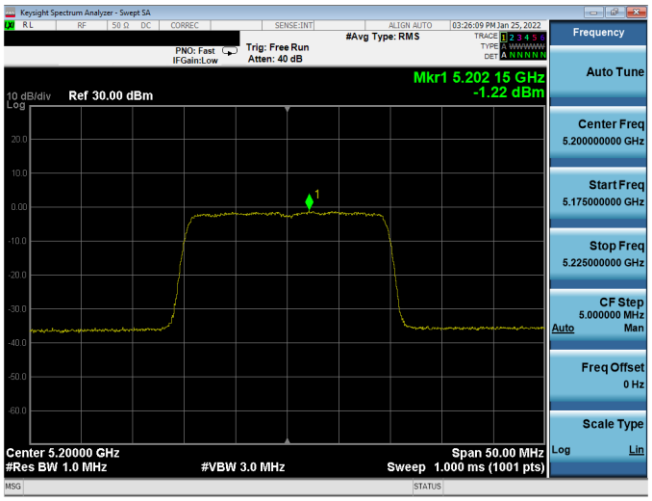
Plot 7-472. ISED PSD SDM Antenna WF7a (20MHz BW 11ax(SU) – Ch.40, MCS0)



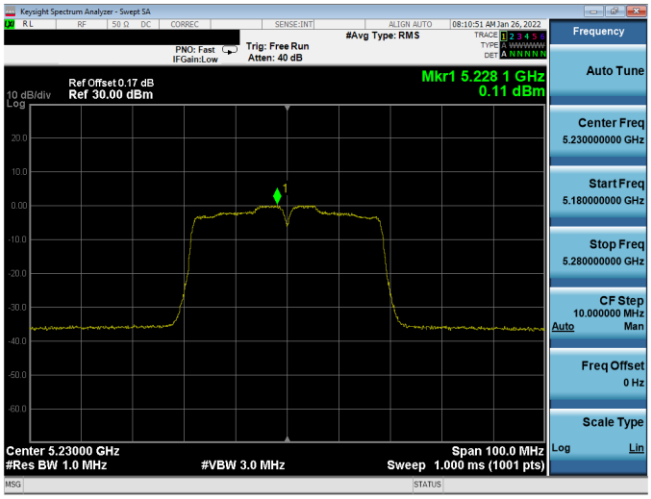
Plot 7-470. ISED PSD SDM Antenna WF7a (20MHz BW 11n – Ch.40, MCS8)



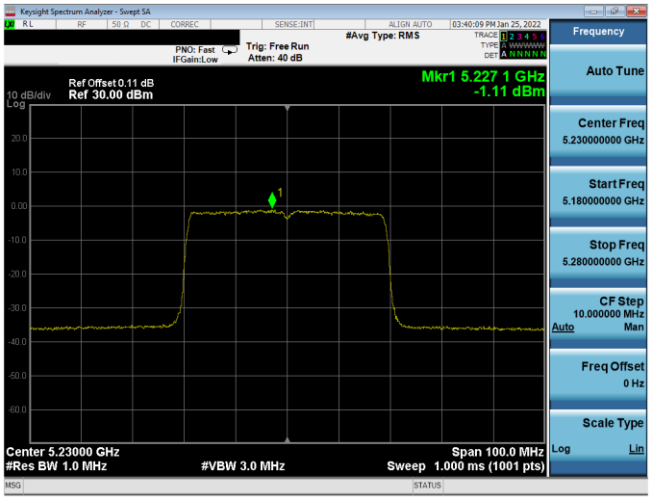
Plot 7-473. ISED PSD SDM Antenna WF8 (40MHz BW 11n – Ch.46, MCS8)



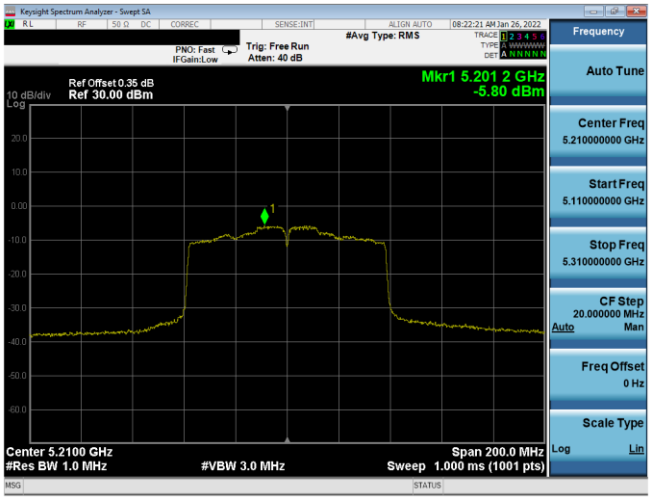
Plot 7-471. ISED PSD SDM Antenna WF8 (20MHz BW 11ax(SU) – Ch.40, MCS0)



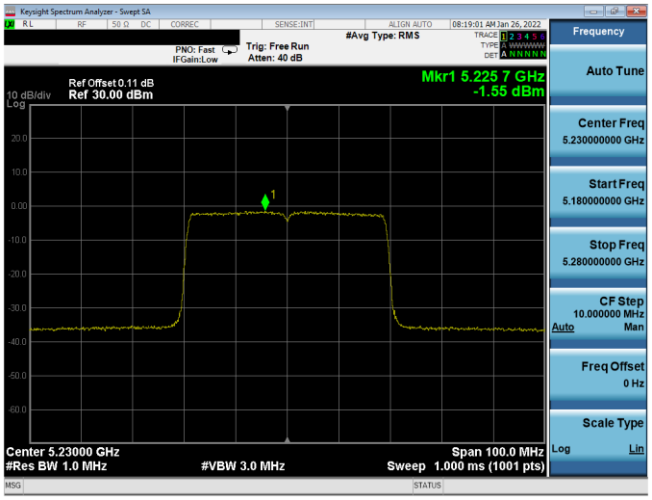
Plot 7-474. ISED PSD SDM Antenna WF7a (40MHz BW 11n – Ch.46, MCS8)



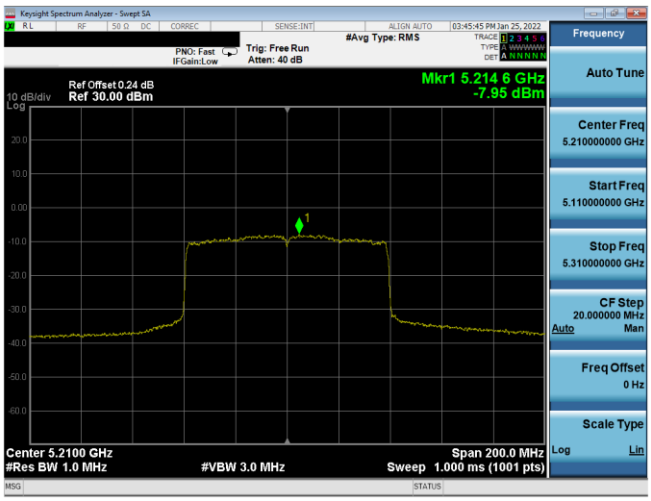
Plot 7-475. ISED PSD SDM Antenna WF8 (40MHz BW 11ax(SU) – Ch.46, MCS0)



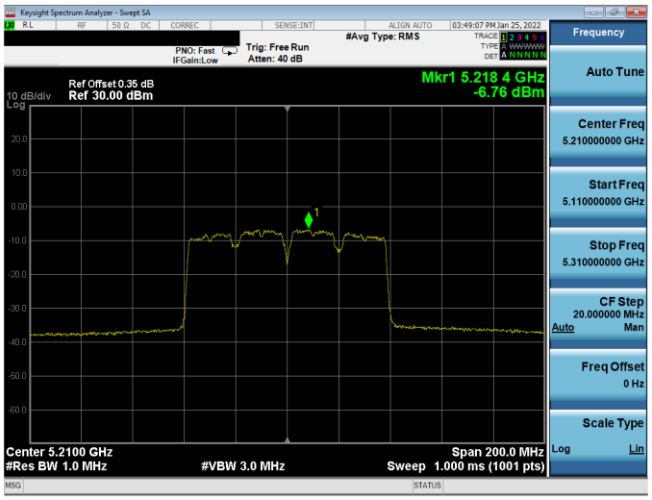
Plot 7-478. ISED PSD CDD Antenna WF7a (80MHz BW 11ac – Ch.42, MCS0)



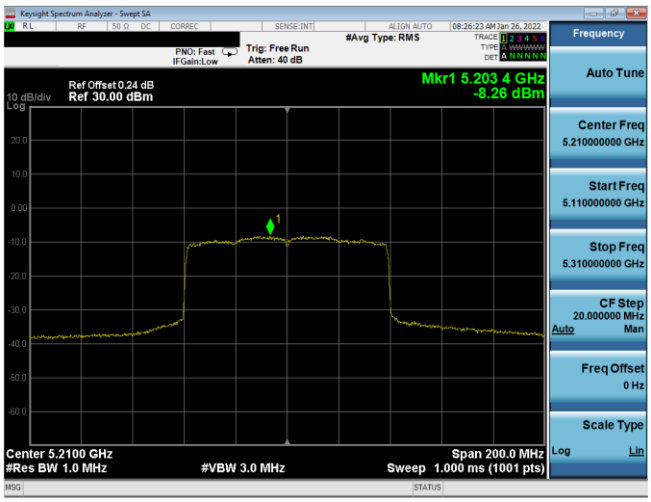
Plot 7-476. ISED SDM PSD Antenna WF7a (40MHz BW 11ax(SU) – Ch.46, MCS0)



Plot 7-479. ISED PSD CDD Antenna WF8 (80MHz BW 11ax (SU) – Ch.42, MCS0)

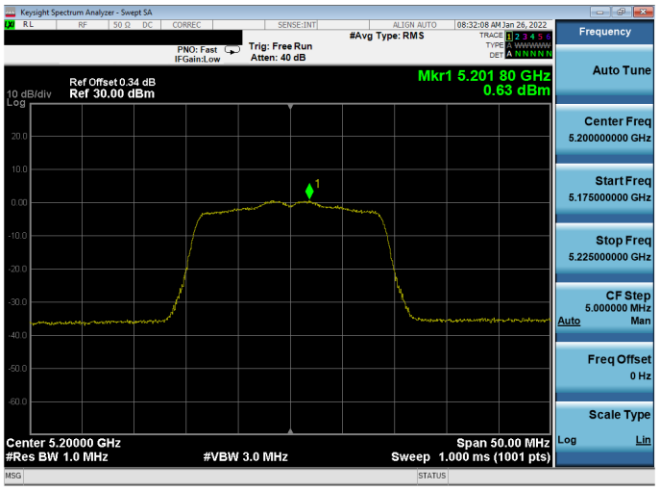


Plot 7-477. ISED PSD CDD Antenna WF8 (80MHz BW 11ac – Ch.42, MCS0)

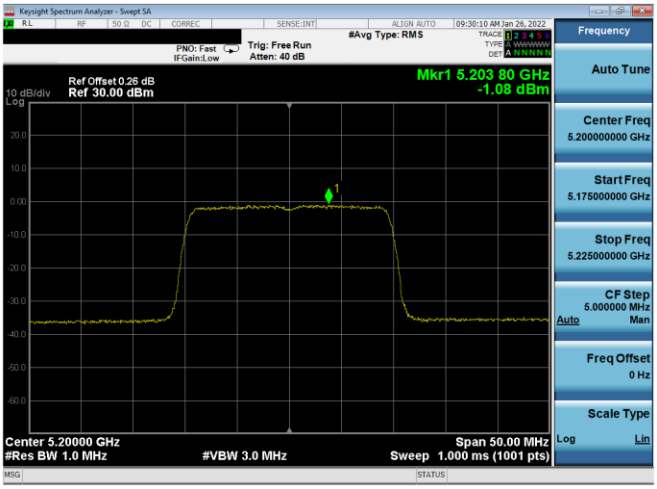


Plot 7-480. ISED PSD CDD Antenna WF7a (80MHz BW 11ax (SU) – Ch.42, MCS0)

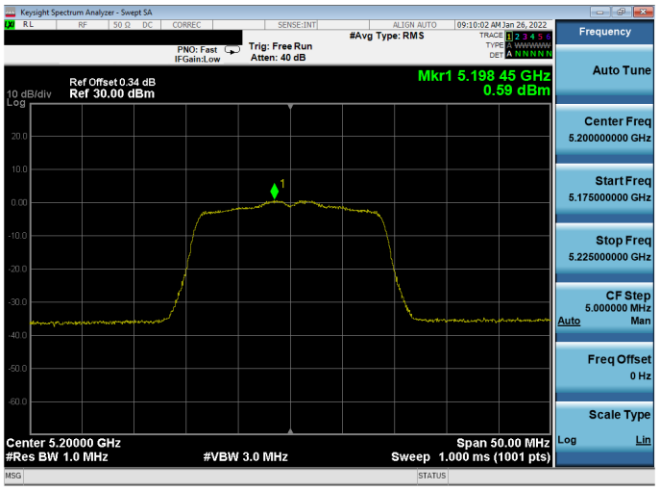
Mid Data Rate



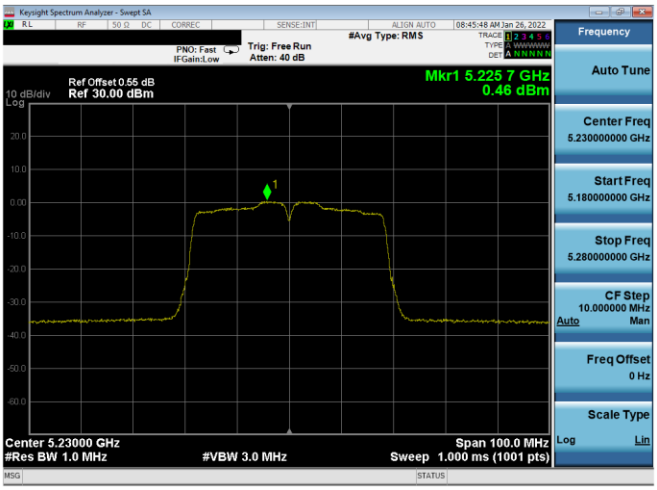
Plot 7-481. ISED PSD SDM Antenna WF8 (20MHz BW 11n – Ch.40, MCS11)



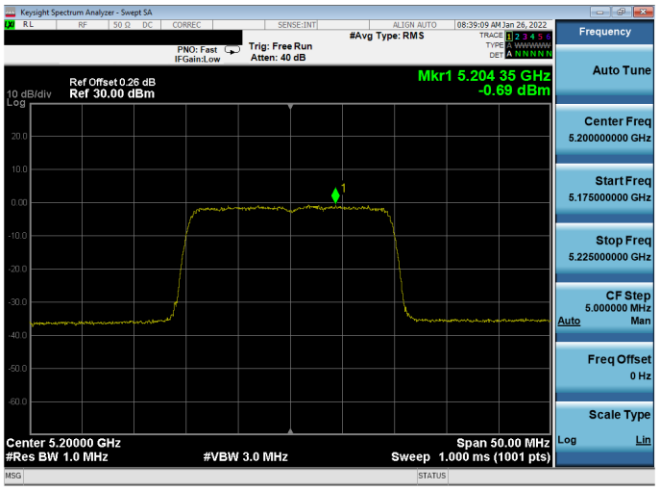
Plot 7-484. ISED PSD SDM Antenna WF7a (20MHz BW 11ax(SU) – Ch.40, MCS3)



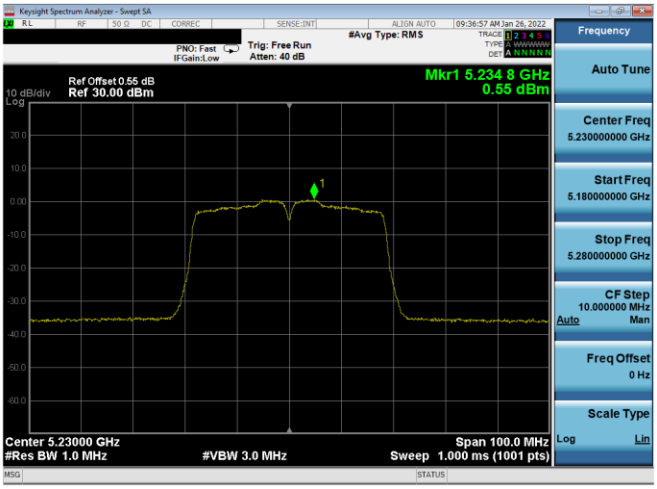
Plot 7-482. ISED PSD SDM Antenna WF7a (20MHz BW 11n – Ch.40, MCS11)



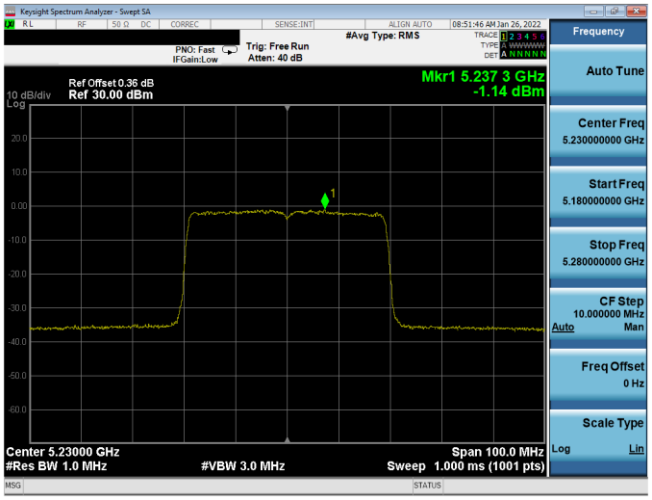
Plot 7-485. ISED PSD SDM Antenna WF8 (40MHz BW 11n – Ch.46, MCS11)



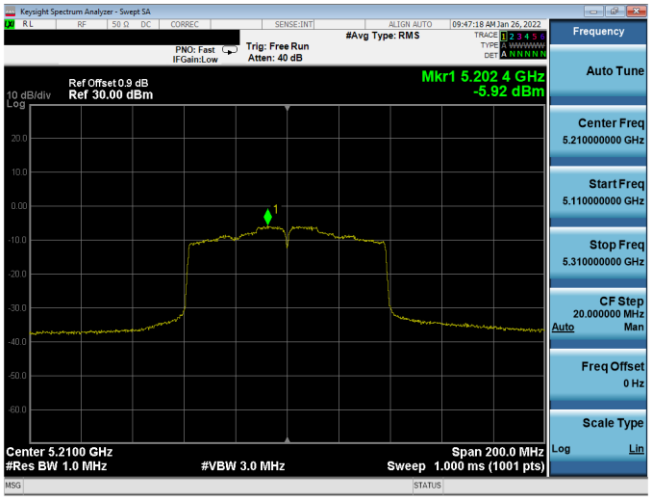
Plot 7-483. ISED PSD SDM Antenna WF8 (20MHz BW 11ax(SU) – Ch.40, MCS3)



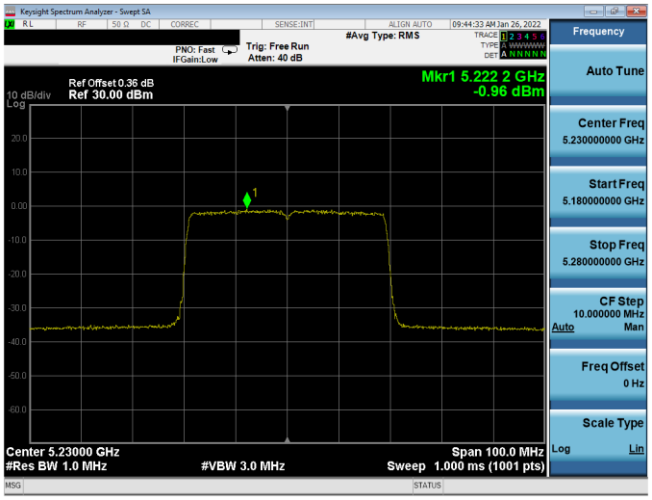
Plot 7-486. ISED PSD SDM Antenna WF7a (40MHz BW 11n – Ch.46, MCS11)



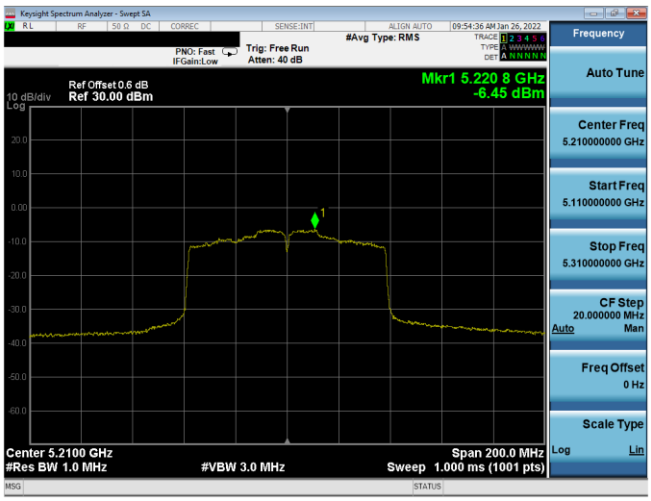
Plot 7-487. ISED PSD SDM Antenna WF8 (40MHz BW 11ax(SU) – Ch.46, MCS3)



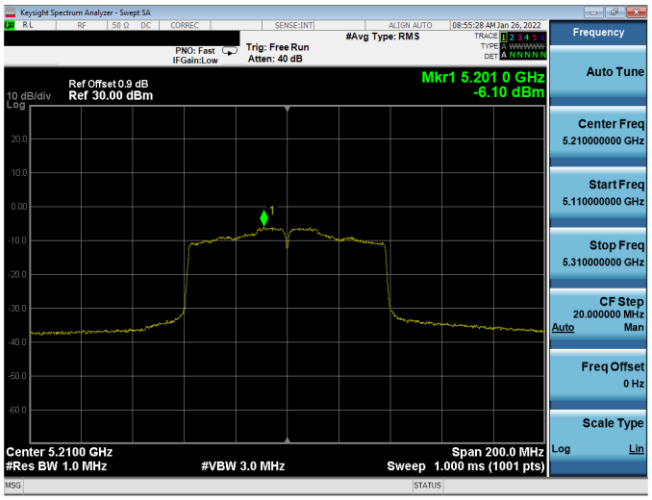
Plot 7-490. ISED PSD Antenna WF7a (80MHz BW 11ac – Ch.42, MCS3)



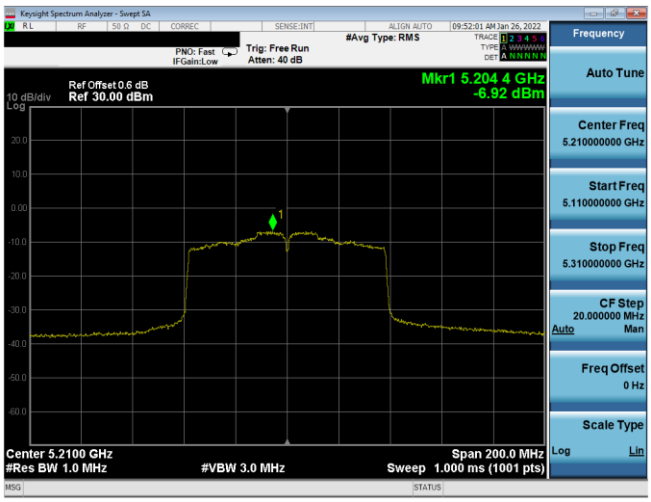
Plot 7-488. ISED PSD SDM Antenna WF7a (40MHz BW 11ax(SU) – Ch.46, MCS3)



Plot 7-491. ISED PSD CDD Antenna WF8 (80MHz BW 11ax (SU) – Ch.42, MCS3)

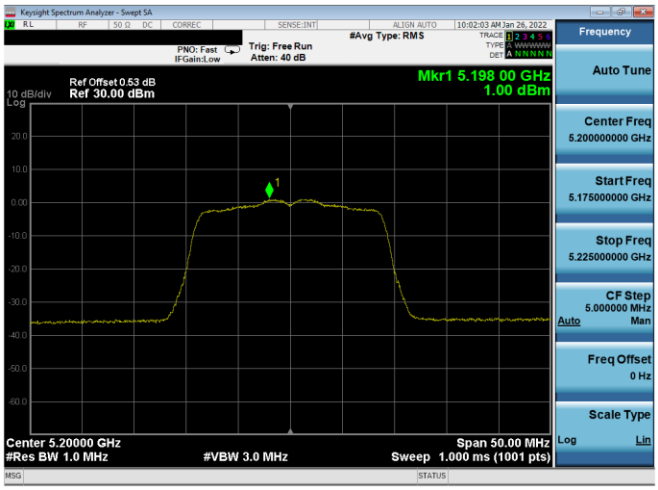


Plot 7-489. ISED PSD CDD Antenna WF8 (80MHz BW 11ac – Ch.42, MCS3)

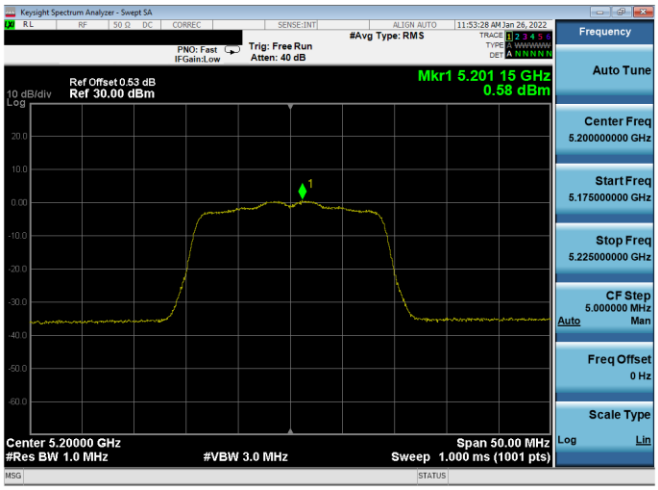


Plot 7-492. ISED PSD CDD Antenna WF7a (80MHz BW 11ax (SU) – Ch.42, MCS3)

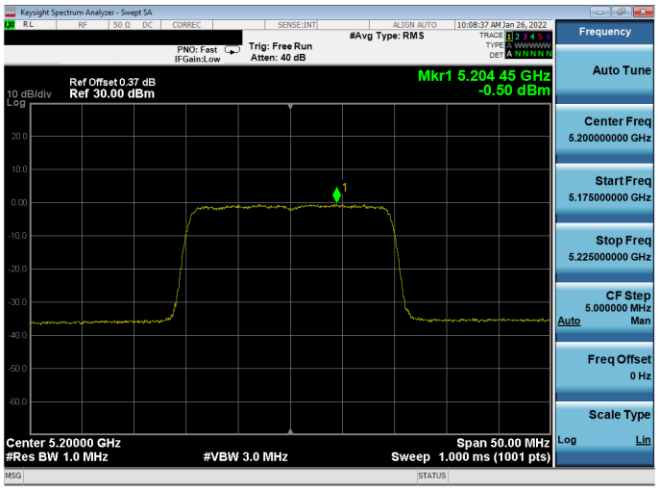
High Data Rate



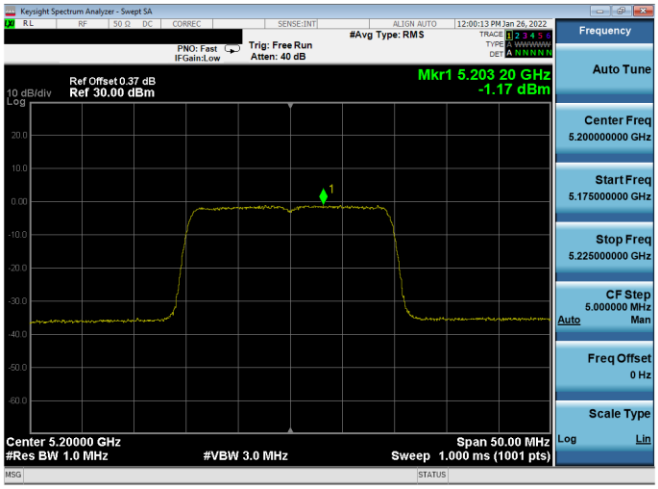
Plot 7-493. ISED PSD SDM Antenna WF8 (20MHz BW 11n – Ch.40, MCS5)



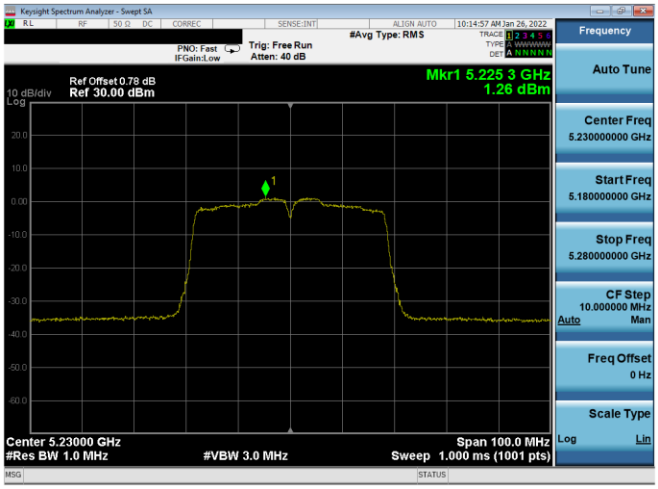
Plot 7-494. ISED PSD SDM Antenna WF7a (20MHz BW 11n – Ch.40, MCS13)



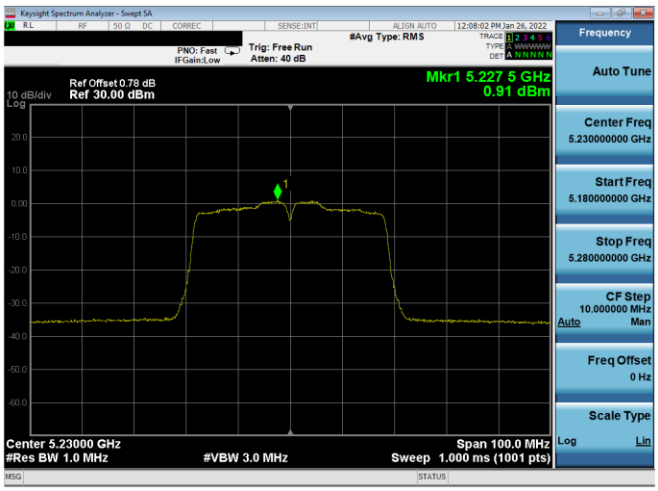
Plot 7-495. ISED PSD SDM Antenna WF8 (20MHz BW 11ax(SU) – Ch.40, MCS5)



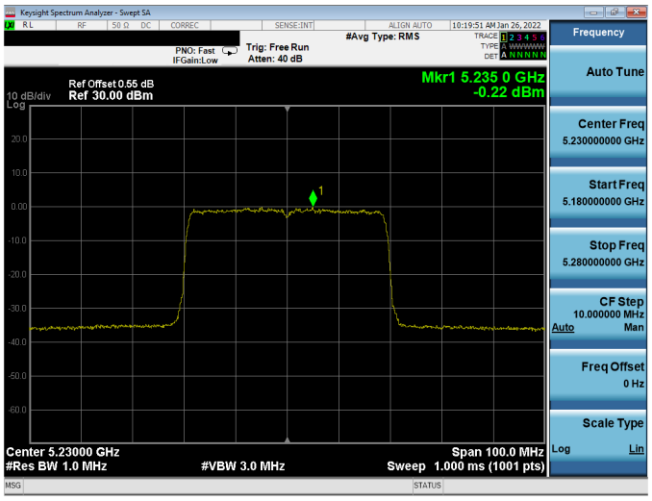
Plot 7-496. ISED PSD SDM Antenna WF7a (20MHz BW 11ax(SU) – Ch.40, MCS5)



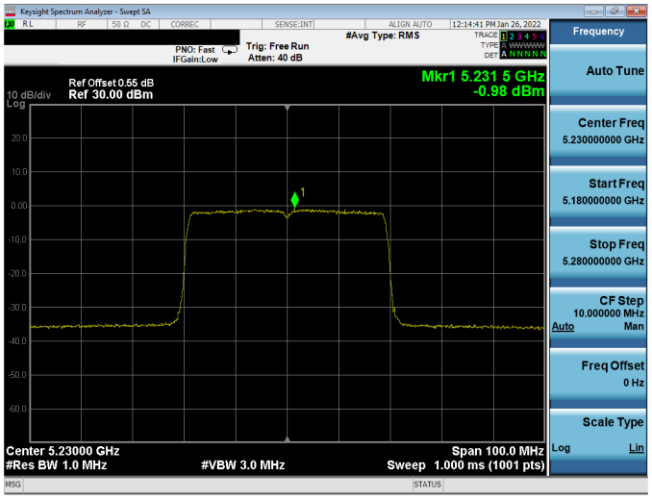
Plot 7-497. ISED PSD SDM Antenna WF8 (40MHz BW 11n – Ch.46, MCS13)



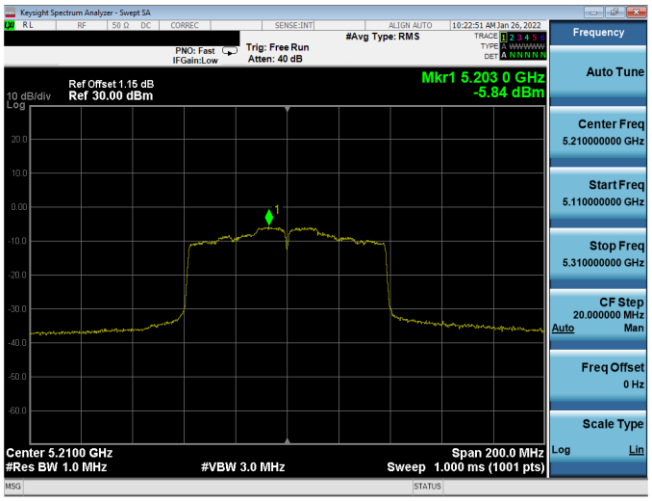
Plot 7-498. ISED PSD SDM Antenna WF7a (40MHz BW 11n – Ch.46, MCS13)



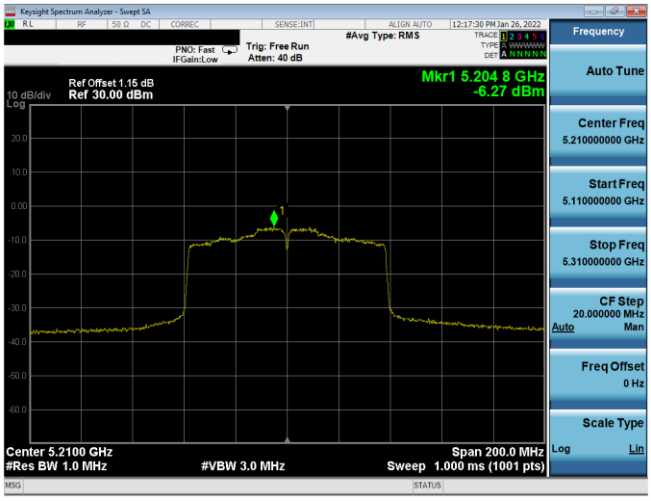
Plot 7-499. ISED PSD SDM Antenna WF8 (40MHz BW 11ax(SU) – Ch.46, MCS5)



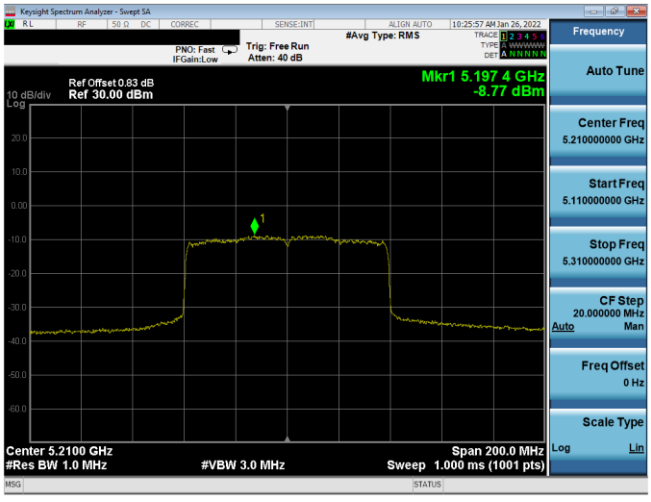
Plot 7-500. ISED PSD SDM Antenna WF7a (40MHz BW 11ax(SU) – Ch.46, MCS5)



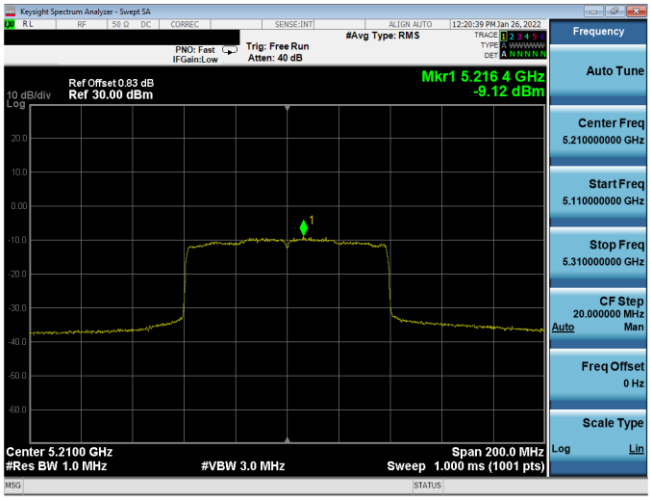
Plot 7-501. ISED PSD CDD Antenna WF8 (80MHz BW 11ac – Ch.42, MCS5)



Plot 7-502. ISED PSD CDD Antenna WF7a (80MHz BW 11ac – Ch.42, MCS5)



Plot 7-503. ISED PSD CDD Antenna WF8 (80MHz BW 11ax(SU) – Ch.42, MCS5)



Plot 7-504. ISED PSD CDD Antenna WF8 (80MHz BW 11ax(SU) – Ch.42, MCS5)

Note:

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna WF8 and Antenna WF7a were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Sample Directional Gain Calculation:

For correlated signals, assuming the antenna gain is 4.7 dBi for Antenna WF8 and 0.6 dBi for Antenna WF7a.

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \ldots + 10^{G_N/20})^2 / N_{ANT}] \text{ dBi}$$
$$= 10 \log[(10^{4.7/20} + 10^{0.6/20} / 2] \text{ dBi}$$
$$= 5.90 \text{ dBi}$$

For uncorrelated signals, assuming the antenna gain is 4.7 dBi for Antenna WF8 and 0.6 dBi for Antenna WF7a.

$$\text{Directional gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \ldots + 10^{G_N/10}) / N_{ANT}] \text{ dBi}$$
$$= 10 \log[(10^{4.7/10} + 10^{0.6/10} / 2] \text{ dBi}$$
$$= 3.12 \text{ dBi}$$

Sample CDD/SDM Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted power spectral density was measured to be -0.05 dBm for Antenna WF7a and -0.22 dBm for Antenna WF7a.

Antenna WF8 + Antenna WF7a = CDD/SDM

(-0.05 dBm + -0.22 dBm) = (0.99 mW + 0.95 mW) = 1.94 mW = 2.88 dBm

Sample e.i.r.p Power Spectral Density Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average CDD/SDM power density was calculated to be 2.88 dBm with directional gain of 3.71 dBi.

e.i.r.p. Power Spectral Density(dBm) = Power Spectral Density (dBm) + Ant gain (dBi)

2.88 dBm + 3.71 dBi = 6.59 dBm

7.6 Radiated Spurious Emissions – Above 1GHz

§15.407(b) §15.205 §15.209; RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at 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, 802.11n, 802.11ax(SU) (20MHz BW), 802.11n, 802.11ax(SU) (40MHz BW), and 802.11ac, 802.11ax(SU) (80MHz), 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 5.15-5.25 GHz and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-119 per Section 15.209 and RSS-Gen (8.9).

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

Table 7-119. 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 Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = 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 Field Strength Measurements

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

Test Setup

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

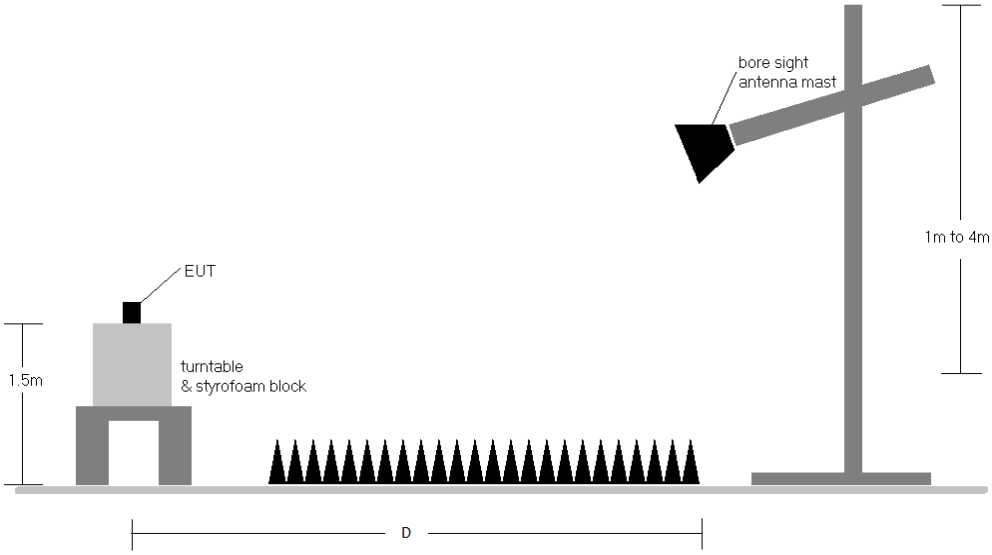


Figure 7-5. Test Instrument & Measurement Setup

Test Notes

1. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-119.
2. All spurious emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-119. All spurious emissions that do not lie in a restricted band are subject to a peak 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.
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.
6. D is the measurement test distance and emissions 1-18GHz were measured at a 3 meters test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. The 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. All data rates were investigated and only the worse case is reported
9. The unit was tested with all possible modes and only the highest emission is reported.
10. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
11. Per RSS-247 Section 6.2.3, transmission on channels which overlap the 5600-5650 MHz is prohibited. This device operates under these frequencies only under the control of a certified master device and does not support active scanning on these channels. This device does not transmit any beacons or initiate any transmissions in UNII Bands 2A or 2C.

Sample Calculations

Determining Spurious Emissions Levels

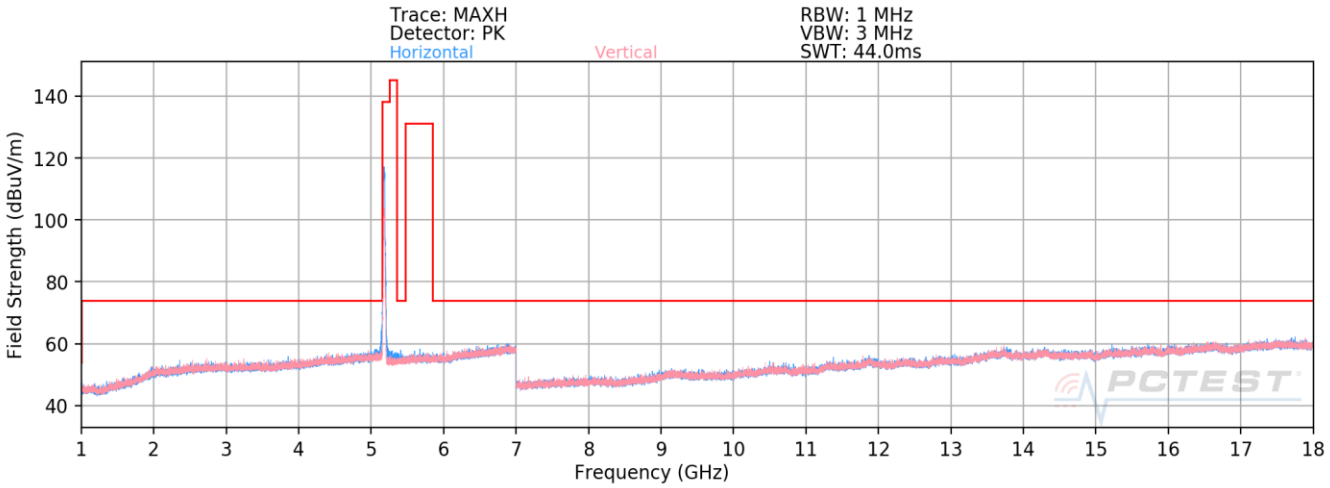
- Field Strength Level [dBµV/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB] – Preamplifier Gain [dB]
- Margin [dB] = Field Strength Level [dBµV/m] – Limit [dBµV/m]

Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 7.6 was calculated using the formula:

  Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

7.6.1 Antenna WF8 Radiated Spurious Emission

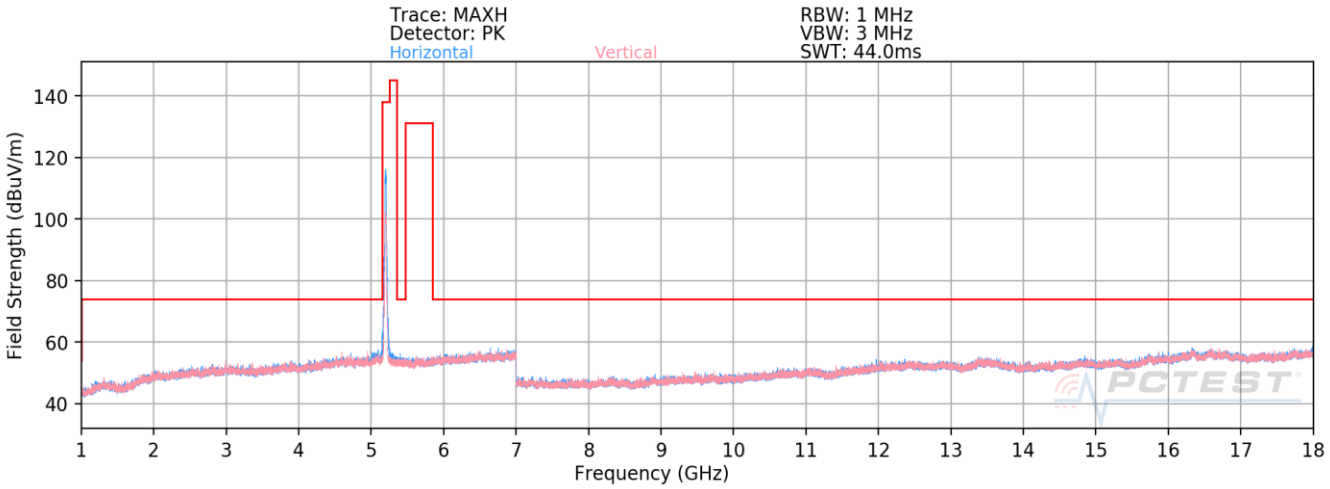


Plot 7-505. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 36)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

	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]
	10360.00	Peak	H	-	-	-68.38	15.09	53.71	68.20	-14.49
*	15540.00	Average	H	-	-	-82.57	22.26	46.69	53.98	-7.29
*	15540.00	Peak	H	-	-	-70.23	22.26	59.03	73.98	-14.95

Table 7-120. Radiated Measurements Antenna WF8

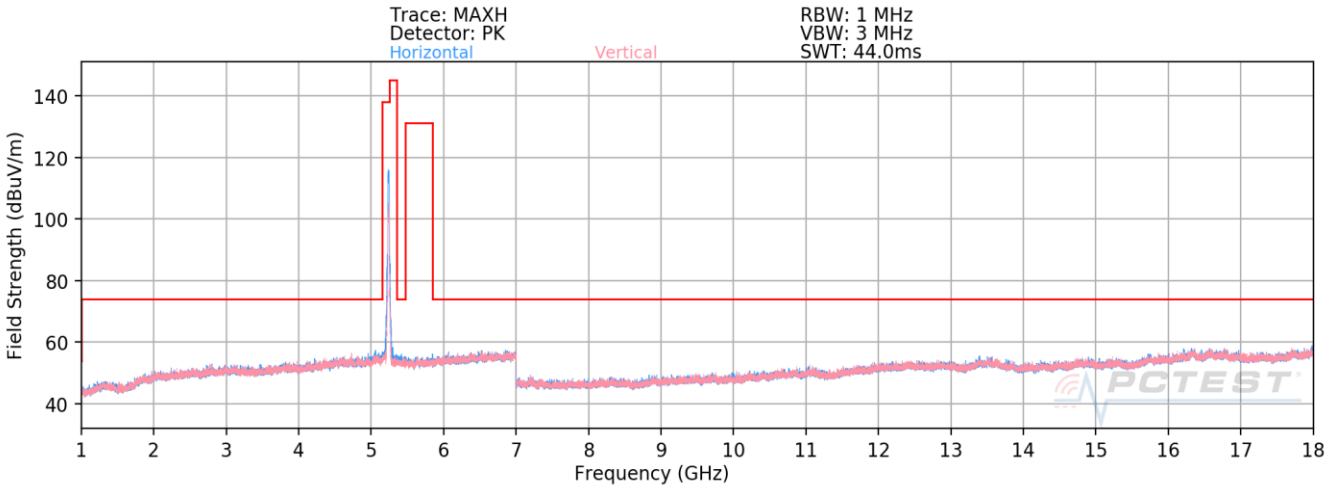


Plot 7-506. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 40)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5200MHz
Channel:	40

	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]
	10400.00	Peak	H	-	-	-74.05	15.47	48.42	68.20	-19.78
*	15600.00	Average	H	-	-	-86.52	22.06	42.54	53.98	-11.44
*	15600.00	Peak	H	-	-	-76.48	22.06	52.58	73.98	-21.40

Table 7-121. Radiated Measurements Antenna WF8

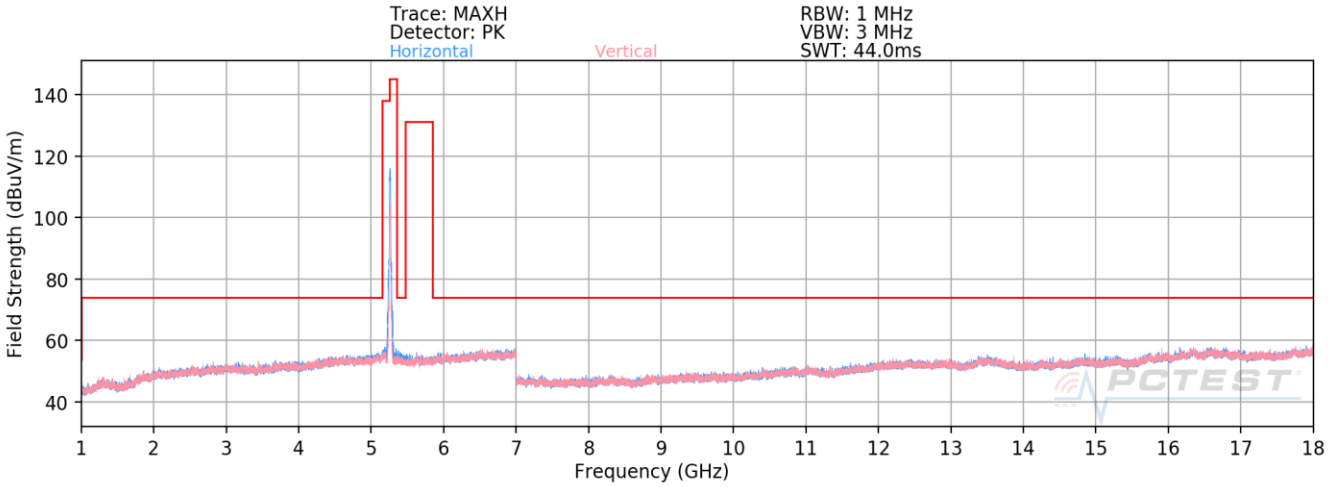


Plot 7-507. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 48)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5240MHz
Channel:	48

	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]
	10480.00	Peak	H	-	-	-75.13	15.73	47.60	68.20	-20.60
*	15720.00	Average	H	-	-	-86.26	22.84	43.58	53.98	-10.40
*	15720.00	Peak	H	-	-	-76.81	22.84	53.03	73.98	-20.95

Table 7-122. Radiated Measurements Antenna WF8

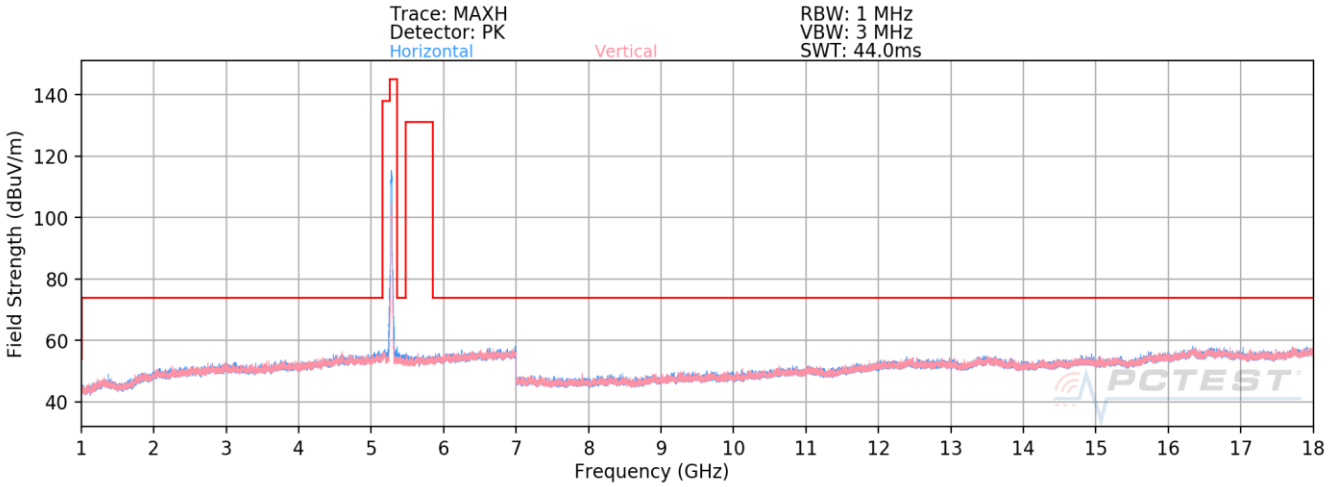


Plot 7-508. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 52)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5260MHz
Channel:	52

	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]
	10520.00	Peak	H	-	-	-74.24	16.61	49.37	68.20	-18.83
*	15780.00	Average	H	-	-	-85.35	20.75	42.40	53.98	-11.58
*	15780.00	Peak	H	-	-	-77.64	20.75	50.11	73.98	-23.87

Table 7-123. Radiated Measurements Antenna WF8

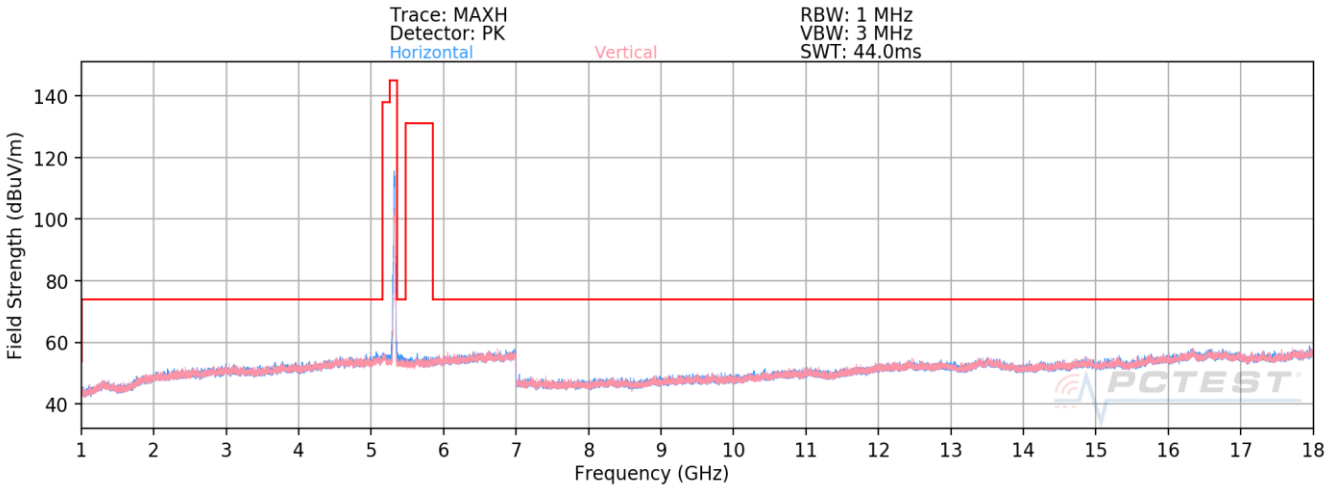


Plot 7-509. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 56)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5280MHz
Channel:	56

	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]
	10560.00	Peak	H	-	-	-74.21	16.45	49.24	68.20	-18.96
*	15840.00	Average	H	-	-	-86.33	20.54	41.21	53.98	-12.76
*	15840.00	Peak	H	-	-	-76.65	20.54	50.89	73.98	-23.08

Table 7-124. Radiated Measurements Antenna WF8

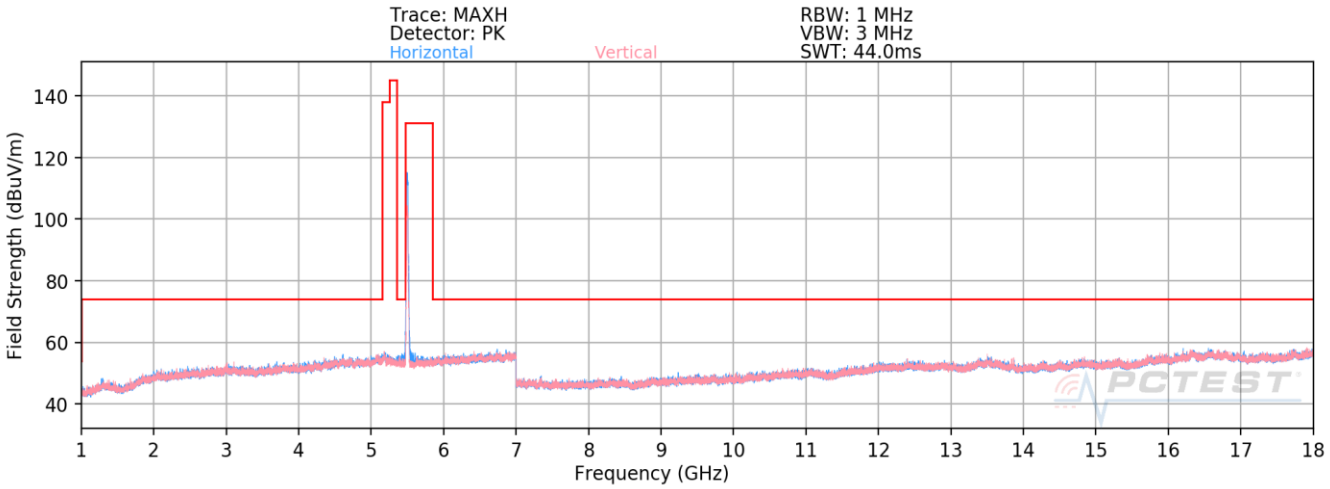


Plot 7-510. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 64)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64

	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]
*	10640.00	Average	H	-	-	-84.93	16.52	38.59	53.98	-15.38
*	10640.00	Peak	H	-	-	-74.06	16.52	49.46	73.98	-24.51
*	15960.00	Average	H	-	-	-85.73	20.96	42.23	53.98	-11.75
*	15960.00	Peak	H	-	-	-74.45	20.96	53.51	73.98	-20.47

Table 7-125. Radiated Measurements Antenna WF8

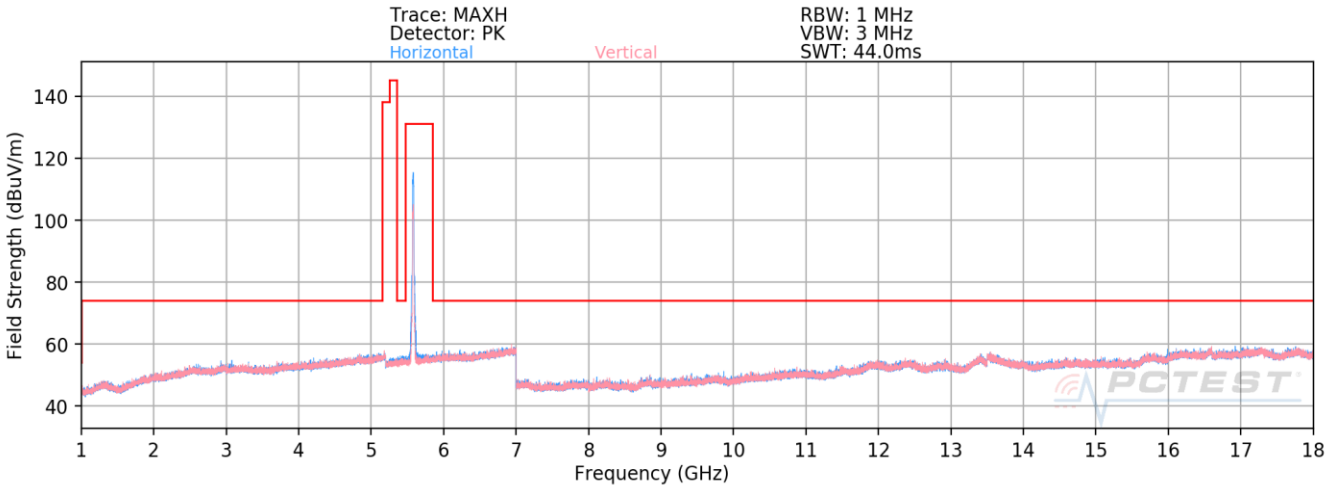


Plot 7-511. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 100)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

	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]
*	11000.00	Average	H	-	-	-84.60	16.30	38.70	53.98	-15.28
*	11000.00	Peak	H	-	-	-73.70	16.30	49.60	73.98	-24.38
	16500.00	Peak	H	-	-	-74.30	21.98	54.68	68.20	-13.52

Table 7-126. Radiated Measurements Antenna WF8

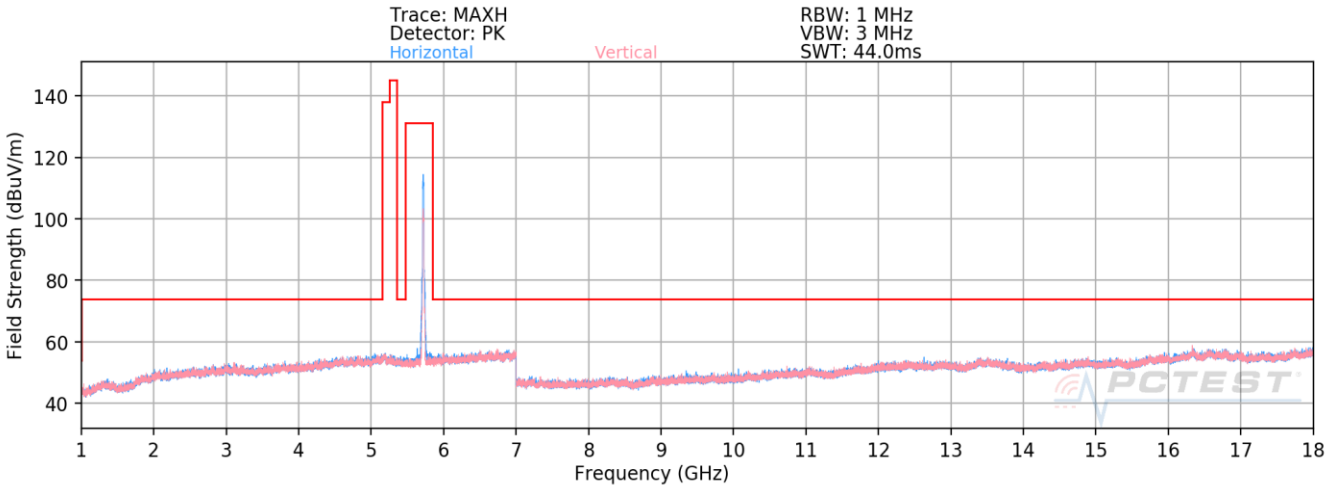


Plot 7-512. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 116)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5580Hz
Channel:	116

	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]
*	11160.00	Average	H	-	-	-84.96	16.06	38.10	53.98	-15.88
*	11160.00	Peak	H	-	-	-74.89	16.06	48.17	73.98	-25.81
	16740.00	Peak	H	-	-	-75.52	22.43	53.91	68.20	-14.29

Table 7-127. Radiated Measurements Antenna WF8

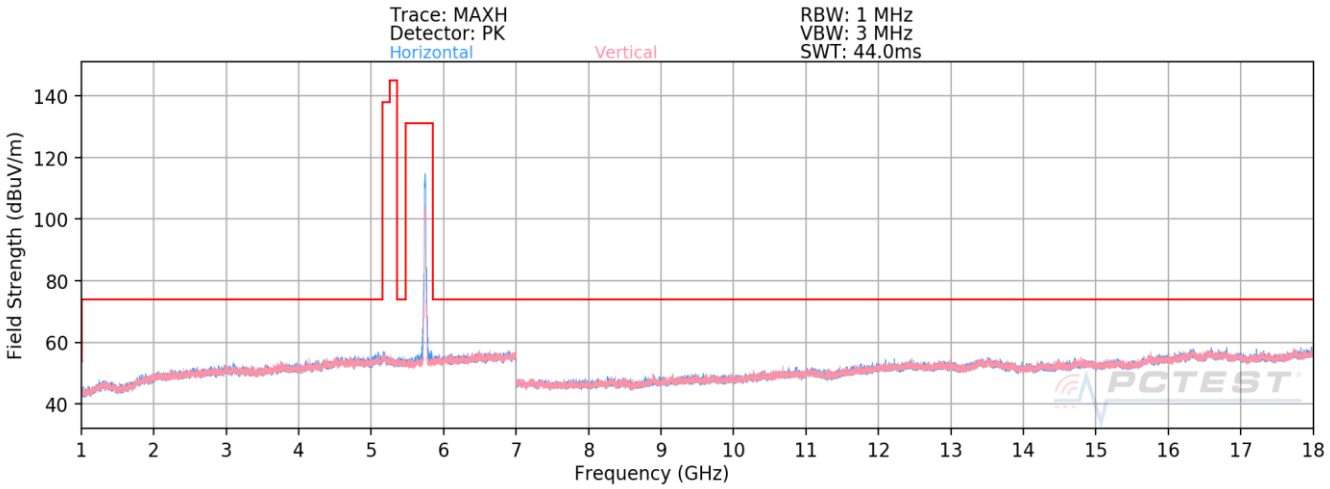


Plot 7-513. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 144)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5720
Channel:	144

	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]
*	11440.00	Average	H	-	-	-85.03	16.90	38.87	53.98	-15.11
*	11440.00	Peak	H	-	-	-75.52	16.90	48.38	73.98	-25.60
	17160.00	Peak	H	-	-	-76.19	22.09	52.90	68.20	-15.30

Table 7-128. Radiated Measurements Antenna WF8

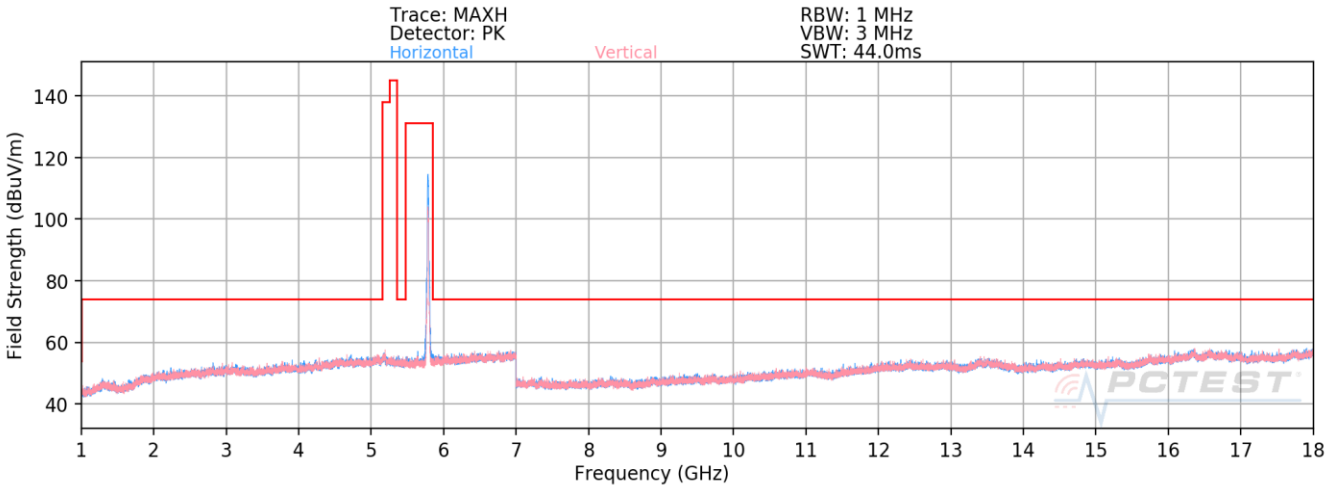


Plot 7-514. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 149)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5745MHz
Channel:	149

	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]
*	11490.00	Average	H	-	-	-85.62	16.64	38.02	53.98	-15.96
*	11490.00	Peak	H	-	-	-74.85	16.64	48.79	73.98	-25.19
	17235.00	Peak	H	-	-	-75.84	22.84	54.00	68.20	-14.20

Table 7-129. Radiated Measurements Antenna WF8

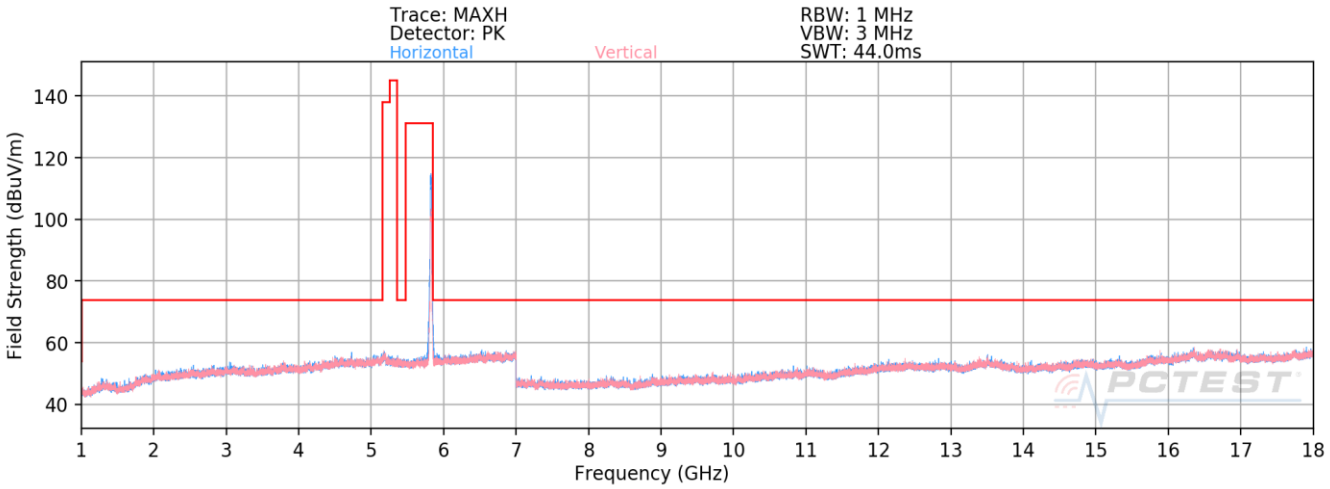


Plot 7-515. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 157)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5785MHz
Channel:	157

	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]
*	11570.00	Average	H	-	-	-84.75	16.85	39.10	53.98	-14.88
*	11570.00	Peak	H	-	-	-74.24	16.85	49.61	73.98	-24.37
	17355.00	Peak	H	-	-	-76.24	22.26	53.02	68.20	-15.18

Table 7-130. Radiated Measurements Antenna WF8

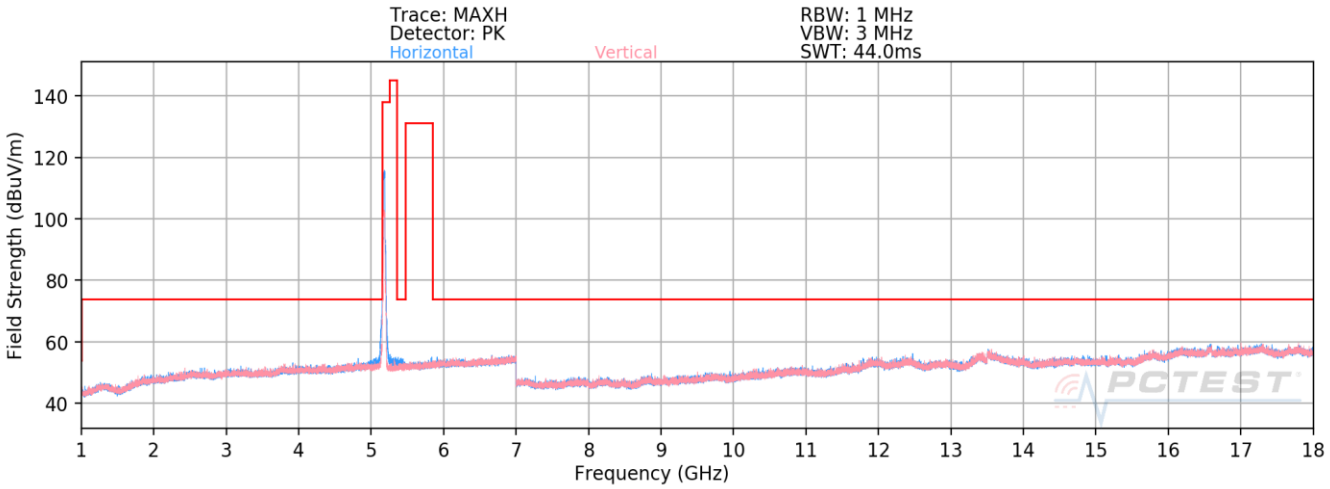


Plot 7-516. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11n – Ch. 165)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

	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]
*	11650.00	Average	H	-	-	-85.20	17.56	39.36	53.98	-14.62
*	11650.00	Peak	H	-	-	-74.89	17.56	49.67	73.98	-24.31
	17475.00	Peak	H	-	-	-75.08	22.39	54.31	68.20	-13.89

Table 7-131. Radiated Measurements Antenna WF8

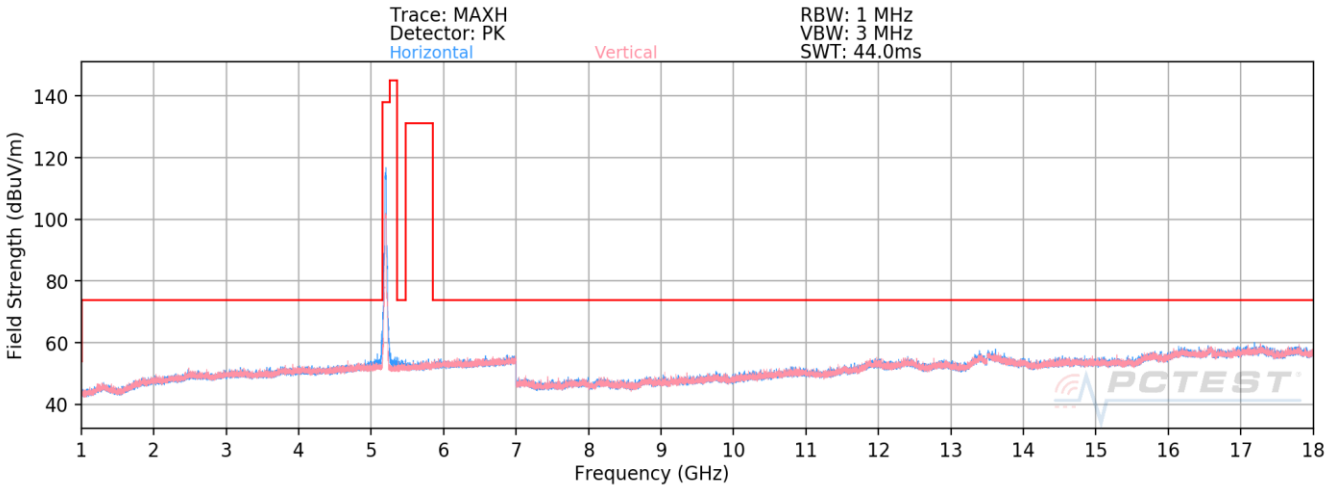


Plot 7-517. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 36)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

	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]
	10360.00	Peak	H	-	-	-75.15	18.13	49.98	68.20	-18.22
*	15540.00	Average	H	-	-	-87.21	23.07	42.86	53.98	-11.12
*	15540.00	Peak	H	-	-	-75.95	23.07	54.12	73.98	-19.86

Table 7-132. Radiated Measurements Antenna WF8

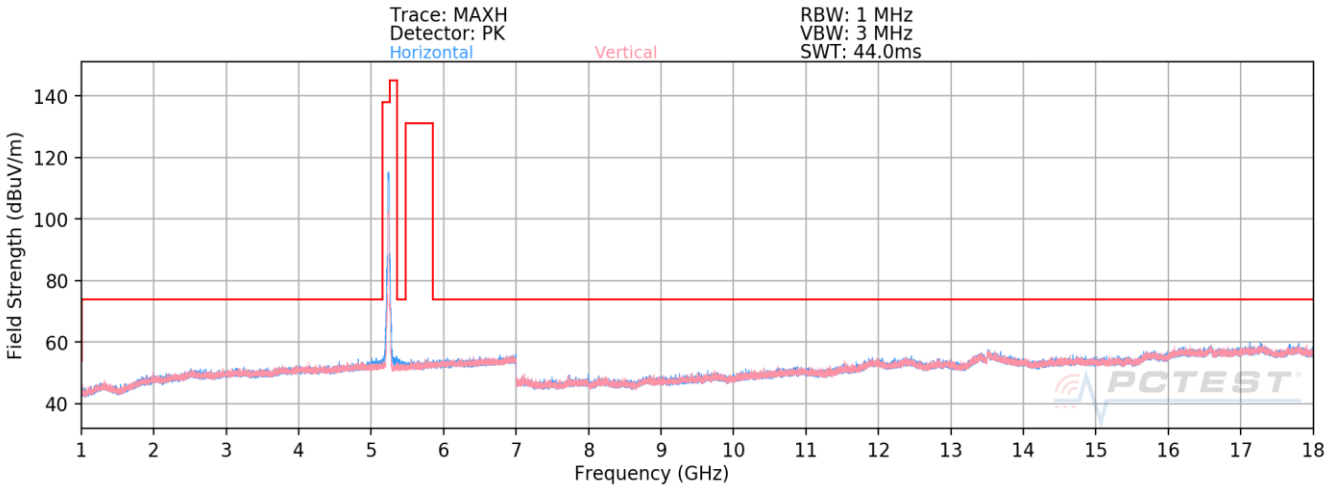


Plot 7-518. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 40)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5200MHz
Channel:	40

	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]
	10400.00	Peak	H	-	-	-75.20	17.92	49.72	68.20	-18.48
*	15600.00	Average	H	-	-	-87.24	23.15	42.91	53.98	-11.07
*	15600.00	Peak	H	-	-	-75.65	23.15	54.50	73.98	-19.48

Table 7-133. Radiated Measurements Antenna WF8

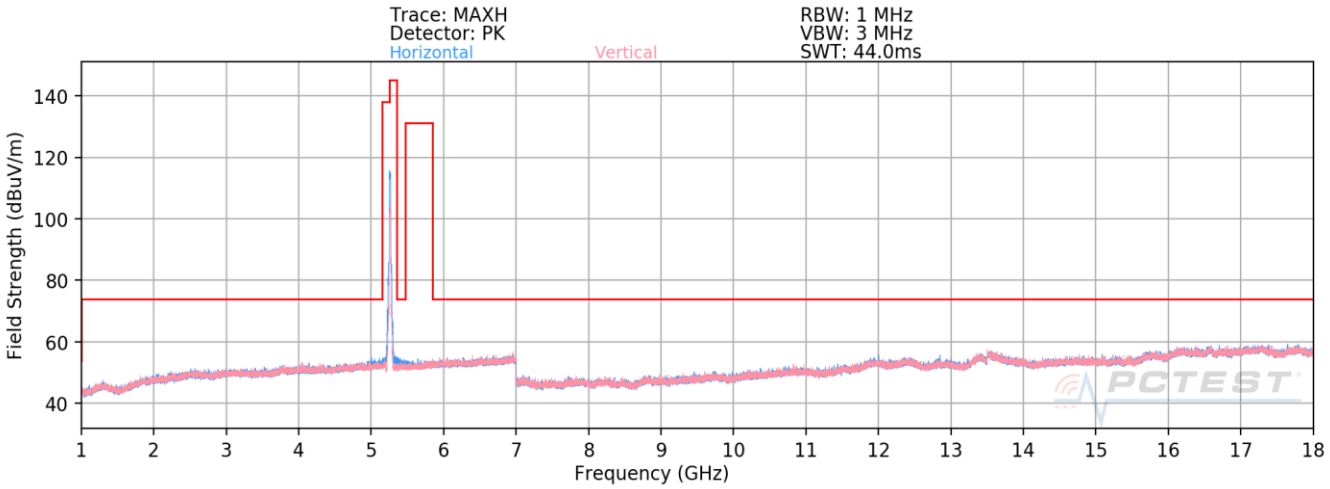


Plot 7-519. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 48)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5240MHz
Channel:	48

	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]
	10480.00	Peak	H	-	-	-75.56	18.33	49.77	68.20	-18.43
*	15720.00	Average	H	-	-	-87.69	24.43	43.74	53.98	-10.24
*	15720.00	Peak	H	-	-	-76.13	24.43	55.30	73.98	-18.68

Table 7-134. Radiated Measurements Antenna WF8

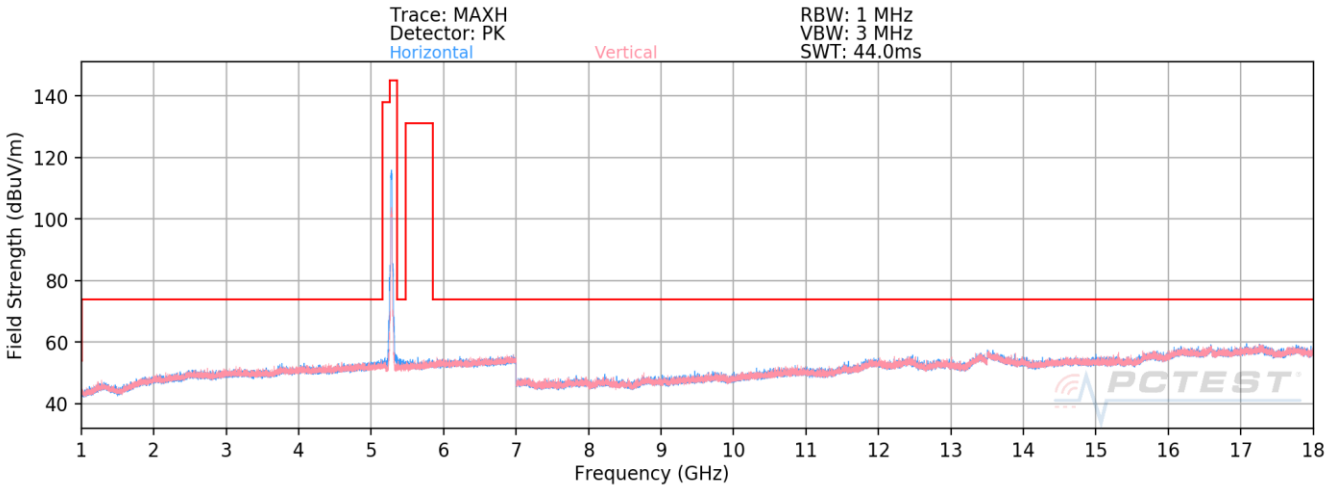


Plot 7-520. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 52)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5260MHz
Channel:	52

	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]
	10520.00	Peak	H	-	-	-76.07	18.15	49.08	68.20	-19.12
*	15780.00	Average	H	-	-	-87.86	24.73	43.87	53.98	-10.11
*	15780.00	Peak	H	-	-	-76.75	24.73	54.98	73.98	-19.00

Table 7-135. Radiated Measurements Antenna WF8

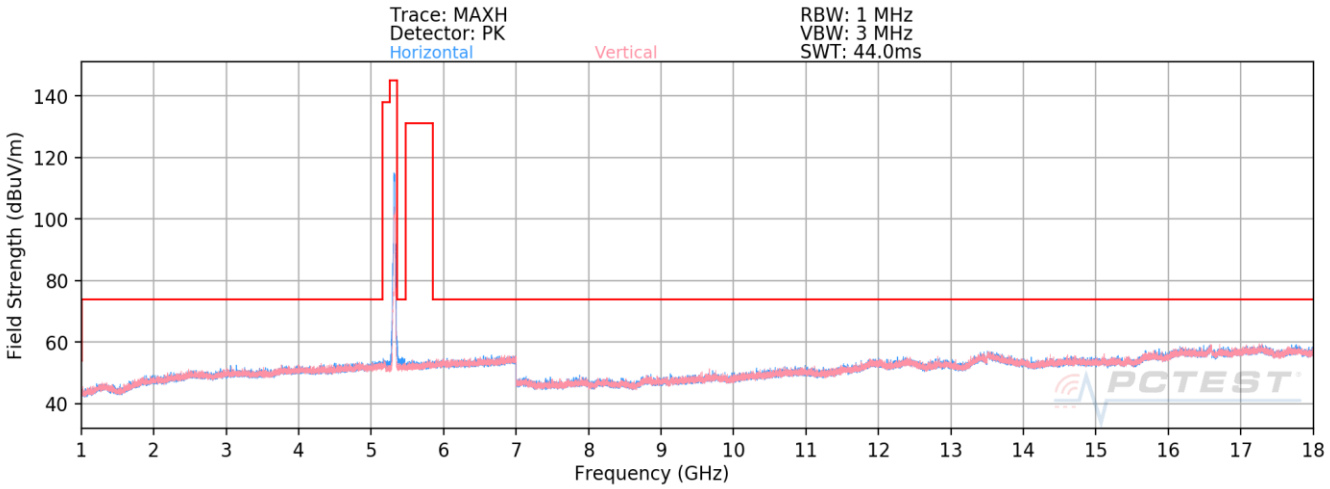


Plot 7-521. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 56)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5280MHz
Channel:	56

	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]
	10560.00	Peak	H	-	-	-75.81	18.41	49.60	68.20	-18.60
*	15840.00	Average	H	-	-	-87.66	24.63	43.97	53.98	-10.01
*	15840.00	Peak	H	-	-	-77.11	24.63	54.52	73.98	-19.46

Table 7-136. Radiated Measurements Antenna WF8

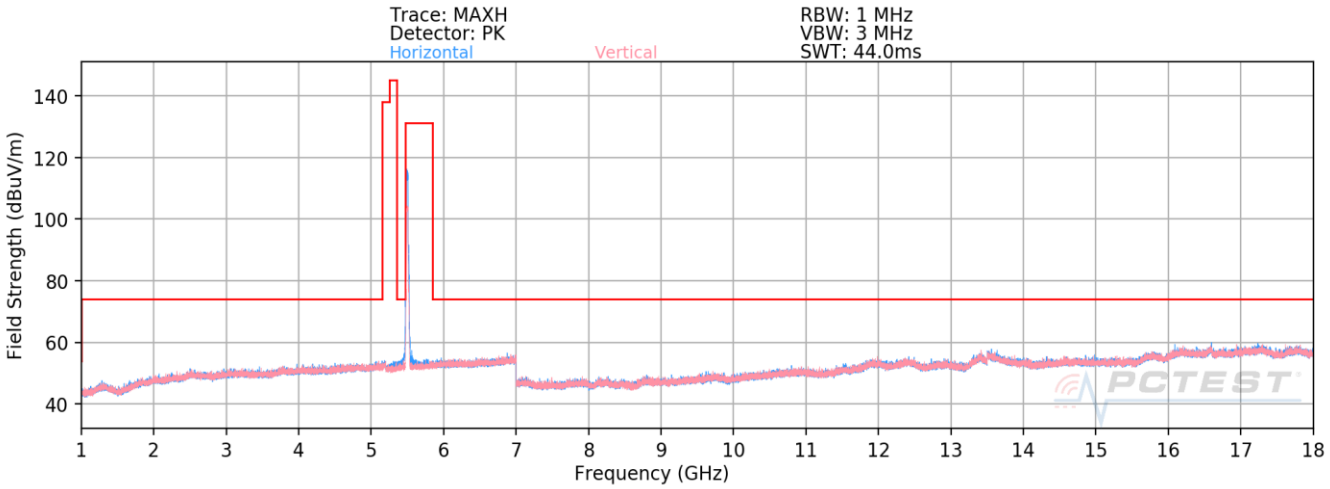


Plot 7-522. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 64)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64

	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]
*	10640.00	Average	H	-	-	-86.75	18.24	38.49	53.98	-15.49
*	10640.00	Peak	H	-	-	-75.59	18.24	49.65	73.98	-24.33
*	15960.00	Average	H	-	-	-87.04	23.97	43.93	53.98	-10.05
*	15960.00	Peak	H	-	-	-76.30	23.97	54.67	73.98	-19.31

Table 7-137. Radiated Measurements Antenna WF8

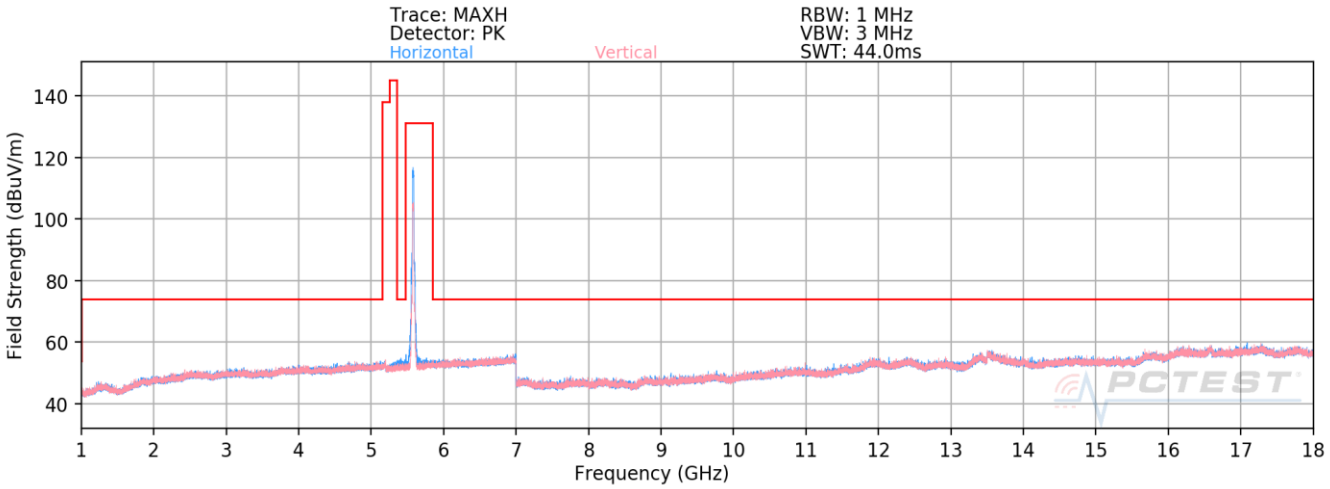


Plot 7-523. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 100)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

	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]
*	11000.00	Average	H	-	-	-86.52	18.58	39.06	53.98	-14.92
*	11000.00	Peak	H	-	-	-75.60	18.58	49.98	73.98	-24.00
	16500.00	Peak	H	-	-	-74.40	24.63	57.23	68.20	-10.97

Table 7-138. Radiated Measurements Antenna WF8

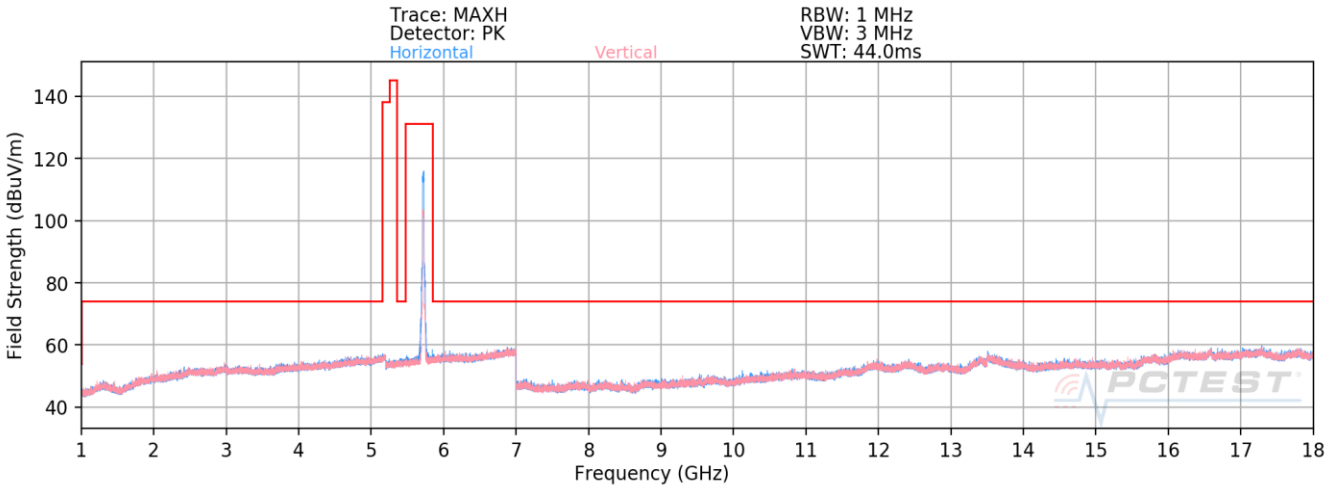


Plot 7-524. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 116)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5580MHz
Channel:	116

	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]
*	11160.00	Average	H	-	-	-87.20	18.82	38.62	53.98	-15.36
*	11160.00	Peak	H	-	-	-76.22	18.82	49.60	73.98	-24.38
	16740.00	Peak	H	-	-	-76.15	25.33	56.18	68.20	-12.02

Table 7-139. Radiated Measurements Antenna WF8

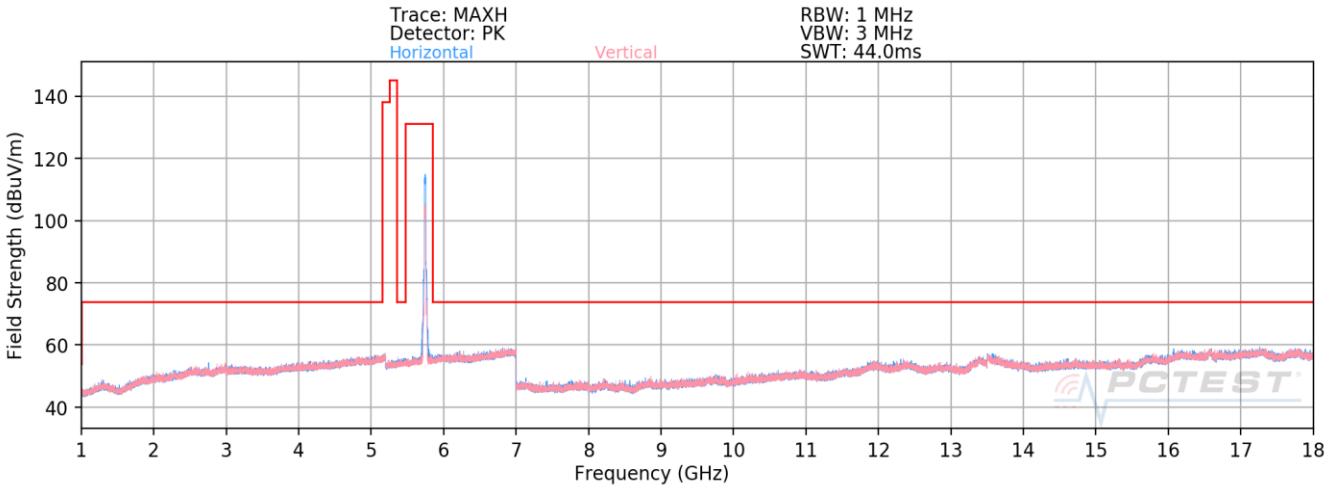


Plot 7-525. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 144)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5720MHz
Channel:	144

	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]
*	11440.00	Average	H	-	-	-87.44	19.10	38.66	53.98	-15.32
*	11440.00	Peak	H	-	-	-75.78	19.10	50.32	73.98	-23.66
	17160.00	Peak	H	-	-	-75.26	24.93	56.67	68.20	-11.53

Table 7-140. Radiated Measurements Antenna WF8

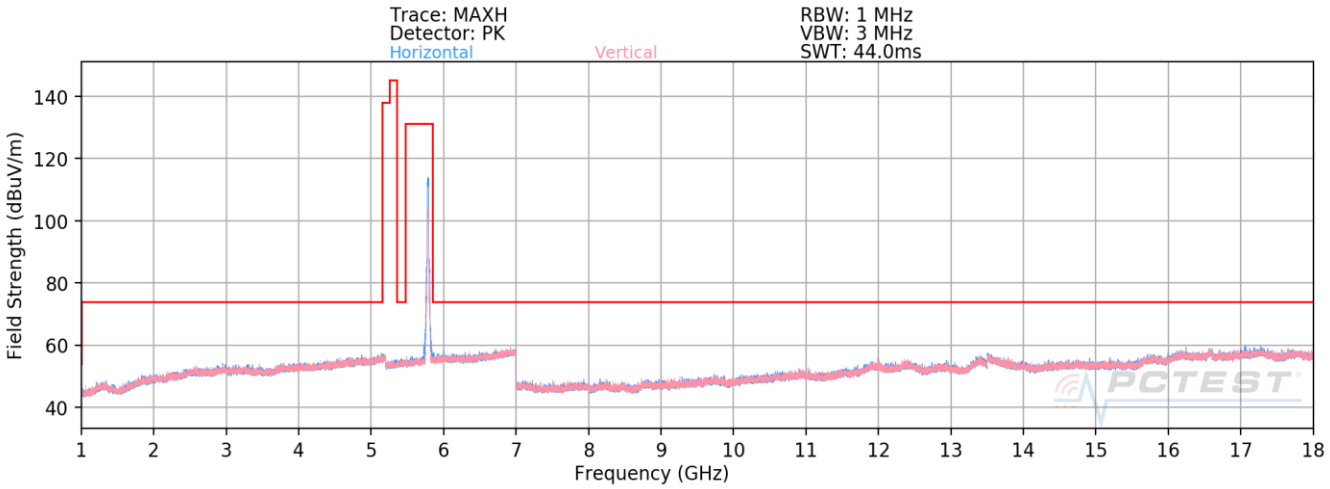


Plot 7-526. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 149)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5745MHz
Channel:	149

	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]
*	11490.00	Average	H	-	-	-87.25	19.25	39.00	53.98	-14.98
*	11490.00	Peak	H	-	-	-75.85	19.25	50.40	73.98	-23.58
	17235.00	Peak	H	-	-	-76.14	25.55	56.41	68.20	-11.79

Table 7-141. Radiated Measurements Antenna WF8

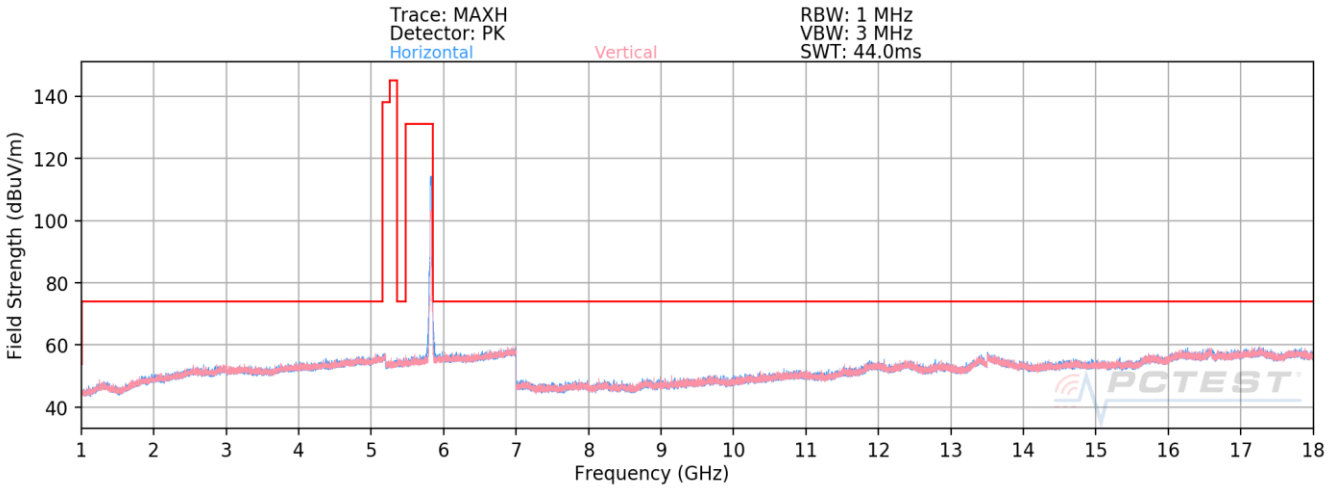


Plot 7-527. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 157)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5785MHz
Channel:	157

	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]
*	11570.00	Average	H	-	-	-87.20	19.47	39.27	53.98	-14.71
*	11570.00	Peak	H	-	-	-76.16	19.47	50.31	73.98	-23.67
	17355.00	Peak	H	-	-	-75.39	25.65	57.26	68.20	-10.94

Table 7-142. Radiated Measurements Antenna WF8



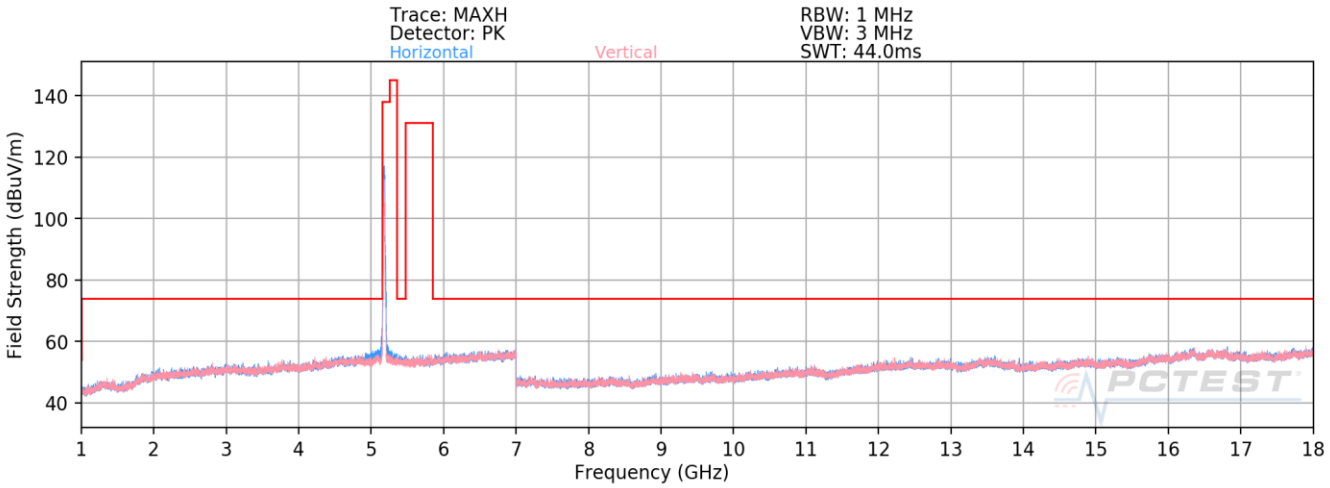
Plot 7-528. Radiated Spurious Emissions above 1GHz Antenna WF8 (802.11ax(SU) – Ch. 165)

Mode:	802.11ax(SU)
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

	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]
*	11650.00	Average	H	-	-	-86.78	19.78	40.00	53.98	-13.98
*	11650.00	Peak	H	-	-	-75.77	19.78	51.01	73.98	-22.97
	17475.00	Peak	H	-	-	-75.31	25.26	56.95	68.20	-11.25

Table 7-143. Radiated Measurements Antenna WF8

7.6.2 Antenna WF7a Radiated Spurious Emission

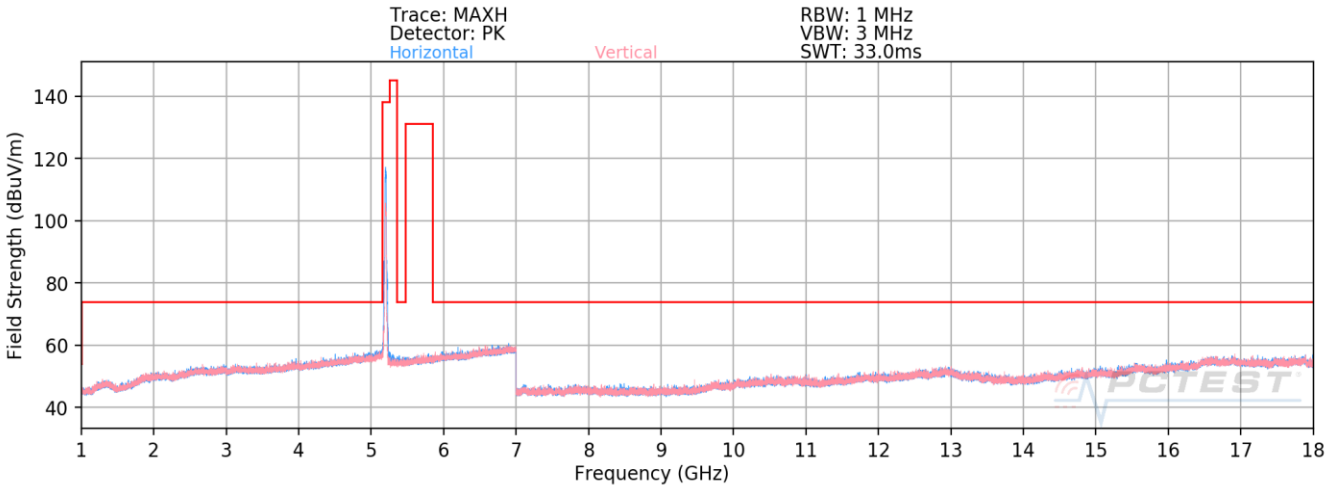


Plot 7-529. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 36)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

	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]
	10360.00	Peak	H	-	-	-75.06	15.17	47.11	68.20	-21.09
*	15540.00	Average	H	-	-	-85.96	20.94	41.98	53.98	-12.00
*	15540.00	Peak	H	-	-	-76.45	20.94	51.49	73.98	-22.49

Table 7-144. Radiated Measurements Antenna WF7a

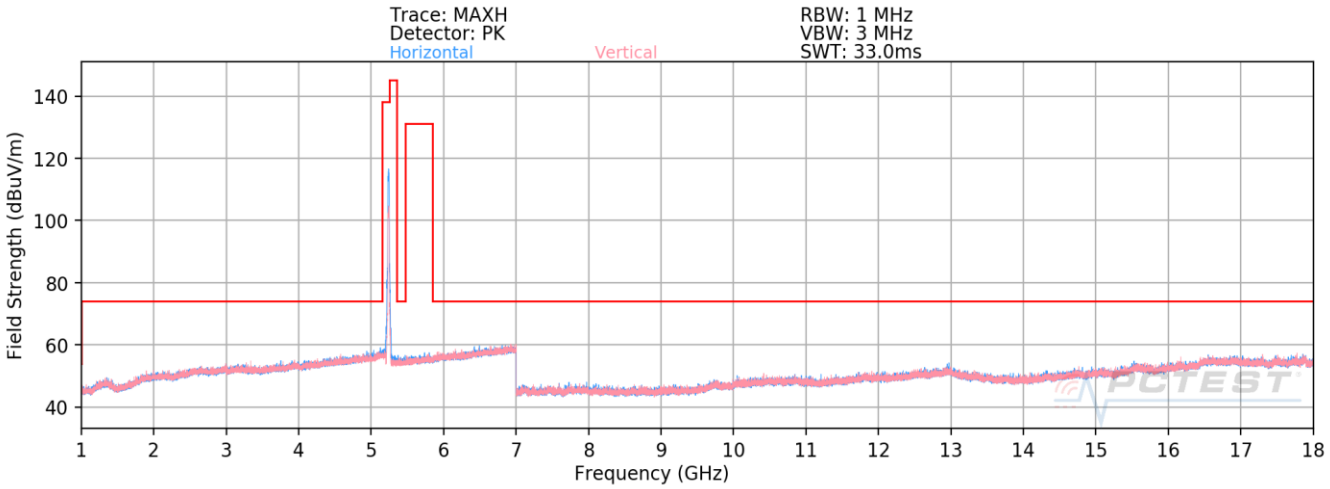


Plot 7-530. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 40)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5200MHz
Channel:	40

	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]
	10400.00	Peak	V	-	-	-75.67	15.42	46.75	68.20	-21.45
*	15600.00	Average	H	-	-	-86.23	20.71	41.48	53.98	-12.50
*	15600.00	Peak	H	-	-	-76.56	20.71	51.15	73.98	-22.83

Table 7-145. Radiated Measurements Antenna WF7a

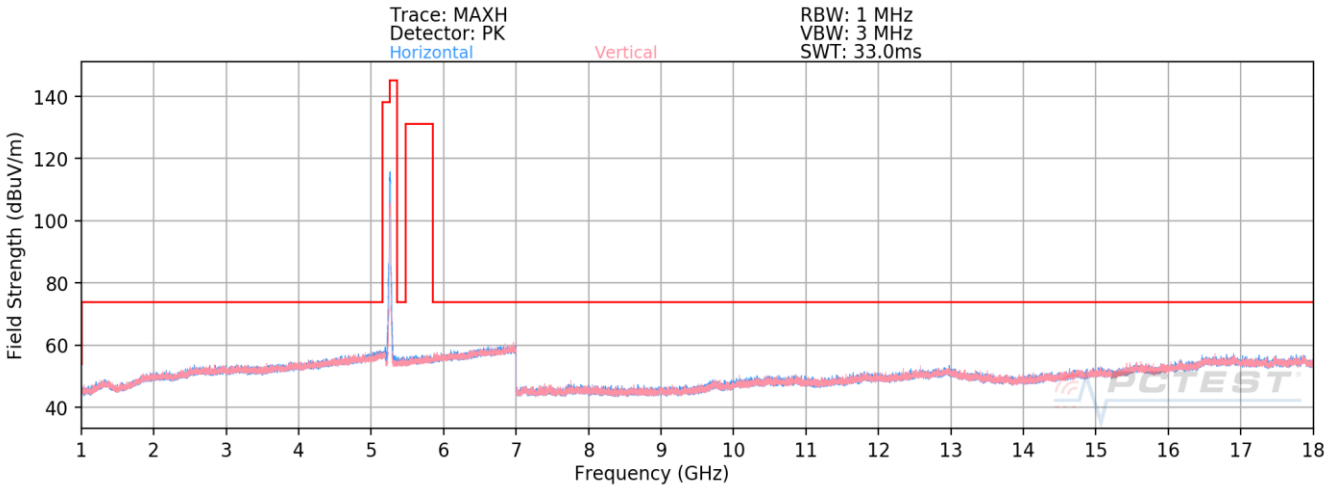


Plot 7-531. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 48)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5240MHz
Channel:	48

	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]
	10480.00	Peak	H	-	-	-75.61	16.41	47.80	68.20	-20.40
*	15720.00	Average	H	-	-	-86.79	20.69	40.90	53.98	-13.08
*	15720.00	Peak	H	-	-	-75.46	20.69	52.23	73.98	-21.75

Table 7-146. Radiated Measurements Antenna WF7a

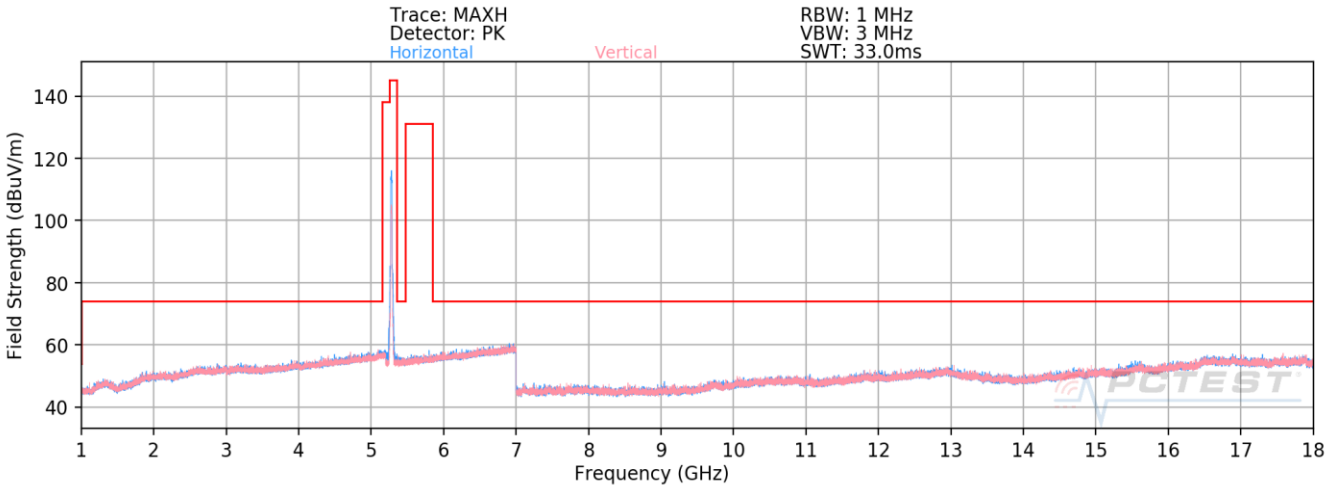


Plot 7-532. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 52)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5260MHz
Channel:	52

	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]
	10520.00	Peak	H	-	-	-75.75	16.61	47.86	68.20	-20.34
*	15780.00	Average	H	-	-	-86.43	20.75	41.32	53.98	-12.66
*	15780.00	Peak	H	-	-	-74.91	20.75	52.84	73.98	-21.14

Table 7-147. Radiated Measurements Antenna WF7a

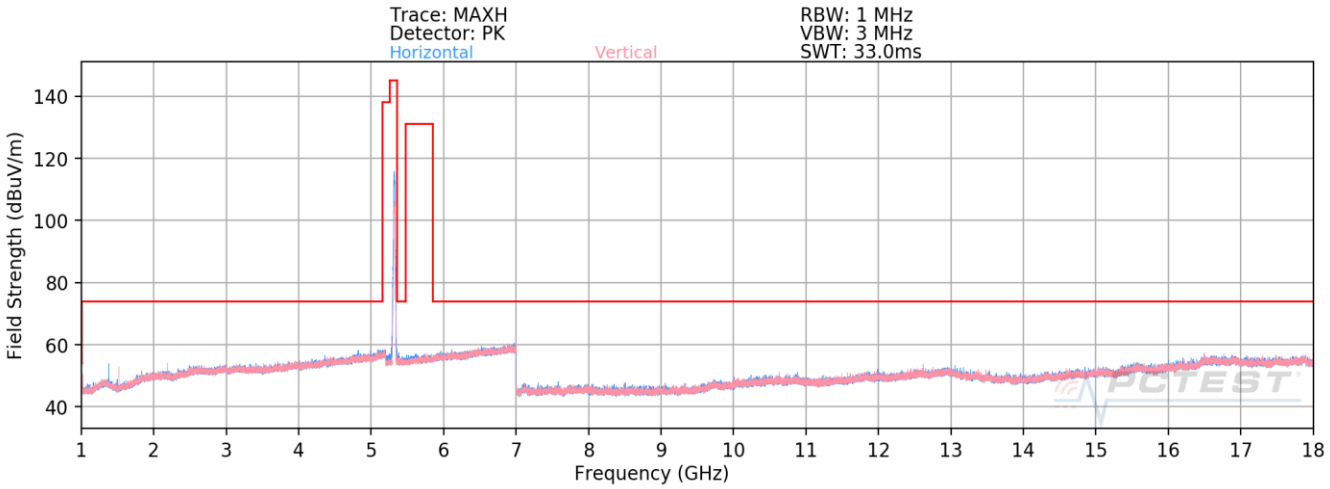


Plot 7-533. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 56)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5280MHz
Channel:	56

	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]
	10560.00	Peak	H	-	-	-74.63	16.45	48.82	68.20	-19.38
*	15840.00	Average	H	-	-	-86.41	20.54	41.13	53.98	-12.84
*	15840.00	Peak	H	-	-	-74.73	20.54	52.81	73.98	-21.16

Table 7-148. Radiated Measurements Antenna WF7a

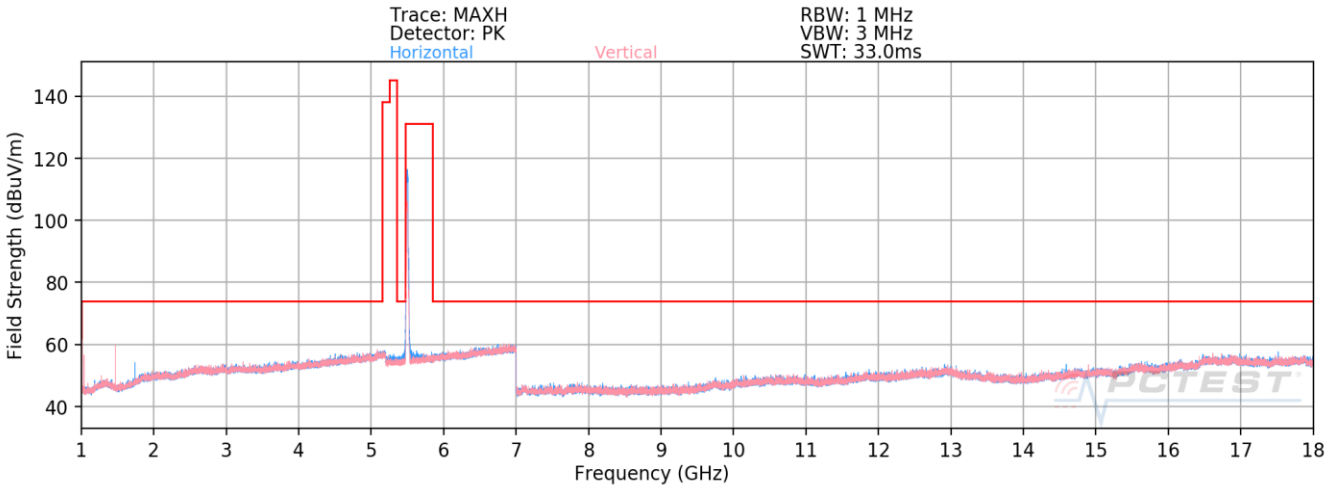


Plot 7-534. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 64)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64

	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]
*	10640.00	Average	H	-	-	-85.60	16.52	37.92	53.98	-16.05
*	10640.00	Peak	H	-	-	-74.56	16.52	48.96	73.98	-25.01
*	15960.00	Average	H	-	-	-86.61	20.96	41.35	53.98	-12.63
*	15960.00	Peak	H	-	-	-75.11	20.96	52.85	73.98	-21.13

Table 7-149. Radiated Measurements Antenna WF7a



Plot 7-535. Radiated Spurious Emissions above 1GHz Antenna WF7a (802.11n – Ch. 100)

Mode:	802.11n
Data Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

	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]
*	11000.00	Average	H	-	-	-85.96	16.30	37.34	53.98	-16.64
*	11000.00	Peak	H	-	-	-74.46	16.30	48.84	73.98	-25.14
	16500.00	Peak	H	-	-	-74.22	21.98	54.76	68.20	-13.44

Table 7-150. Radiated Measurements Antenna WF7a