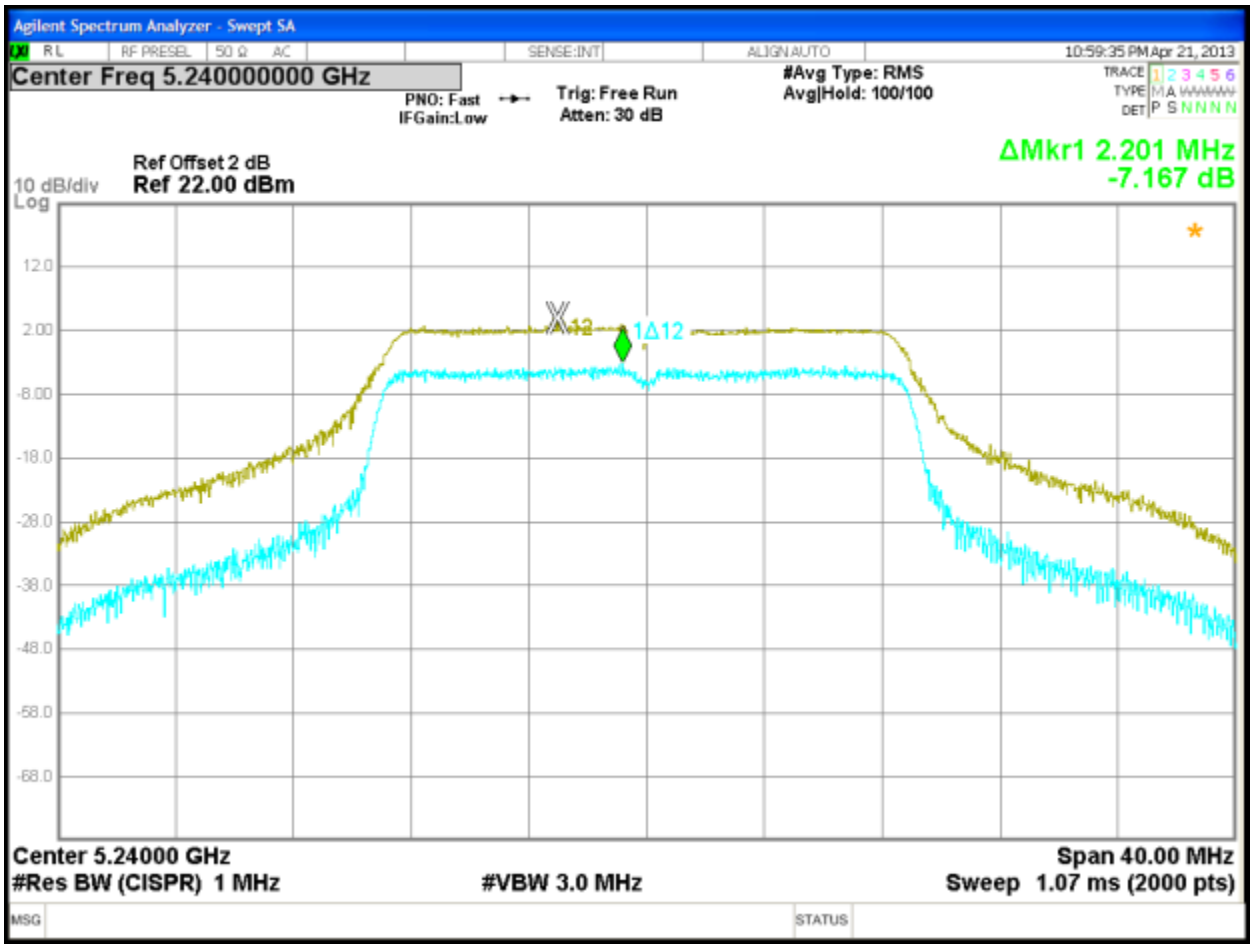


Figure 85: Peak Excursion, 5240 MHz at 802.11n HT20, Chain 0 – 6.5 Mbps

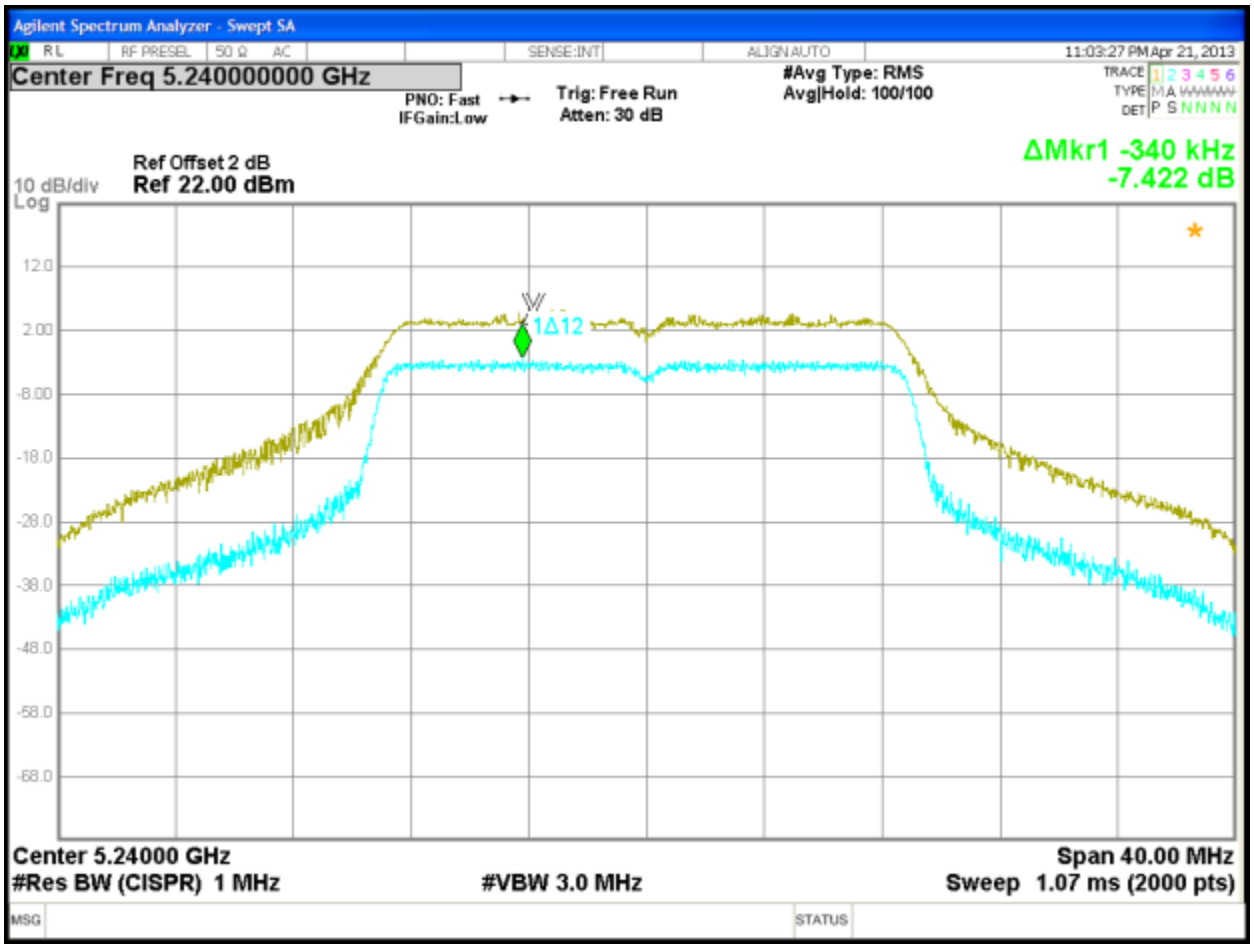


Figure 86: Peak Excursion, 5240 MHz at 802.11n HT20, Chain 1 – 6.5 Mbps

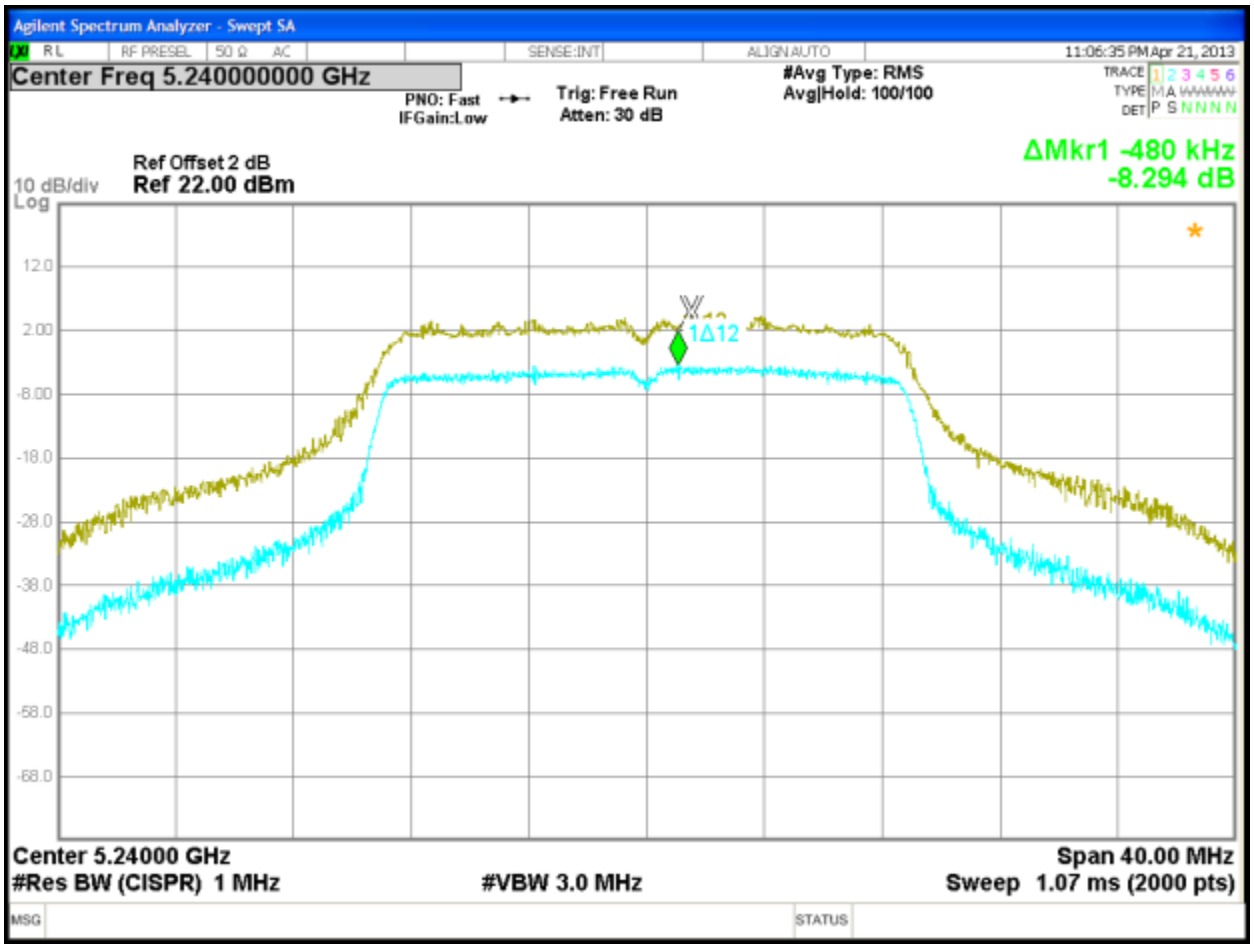


Figure 87: Peak Excursion, 5240 MHz at 802.11n HT20, Chain 2 – 6.5 Mbps

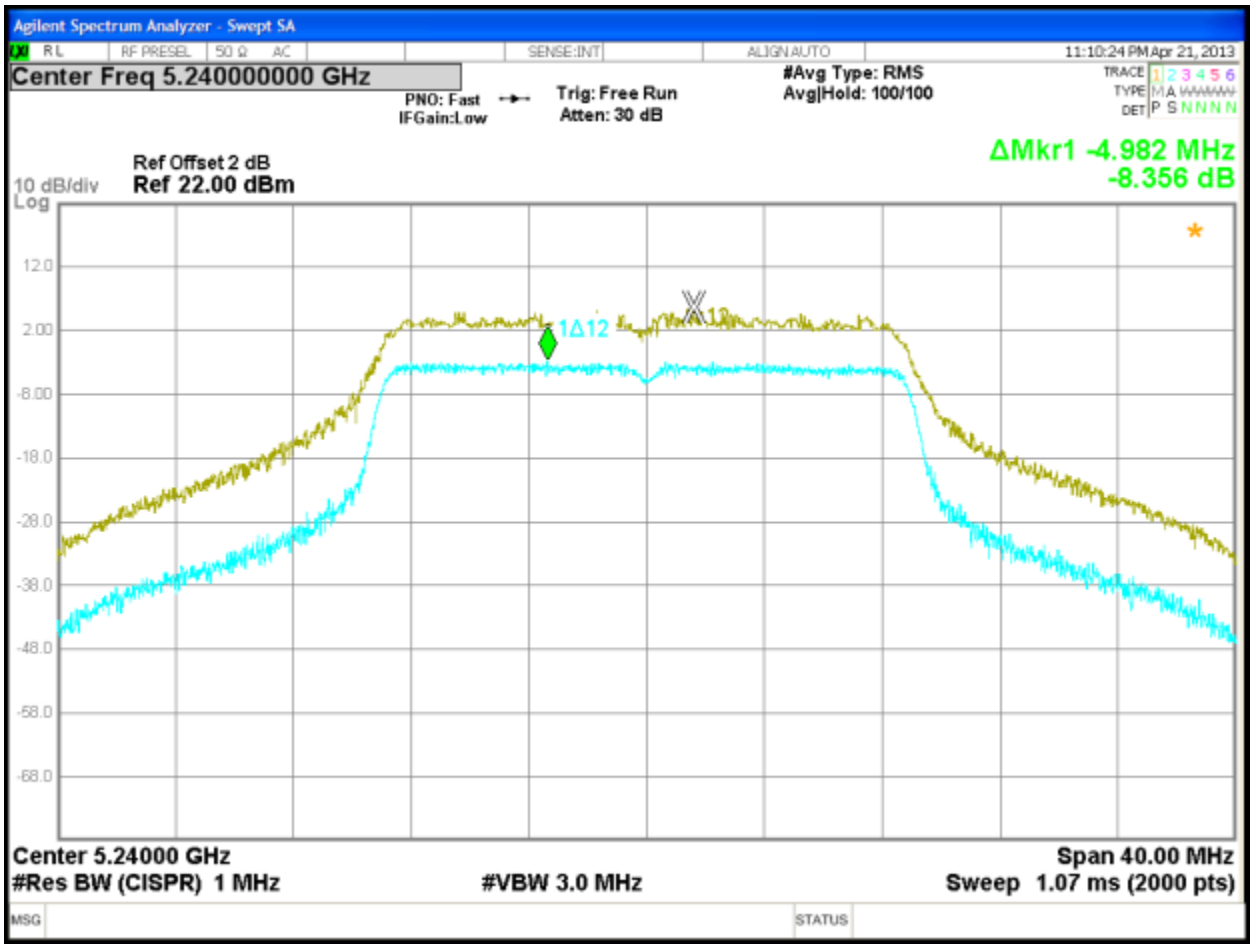


Figure 88: Peak Excursion, 5240 MHz at 802.11n HT20, Chain 3 – 6.5 Mbps

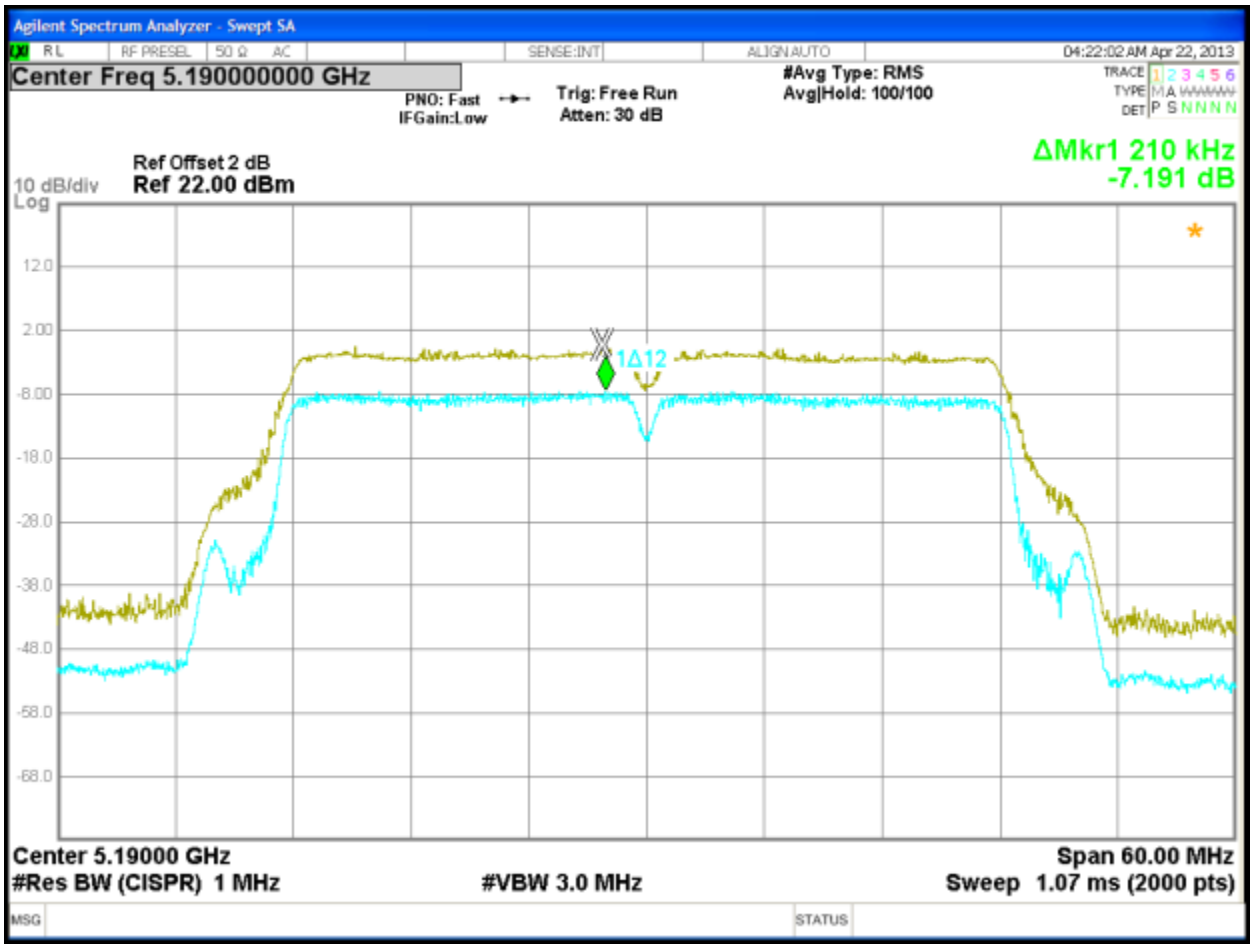


Figure 89: Peak Excursion, 5190 MHz at 802.11n, Chain 0 – 13.5 Mbps

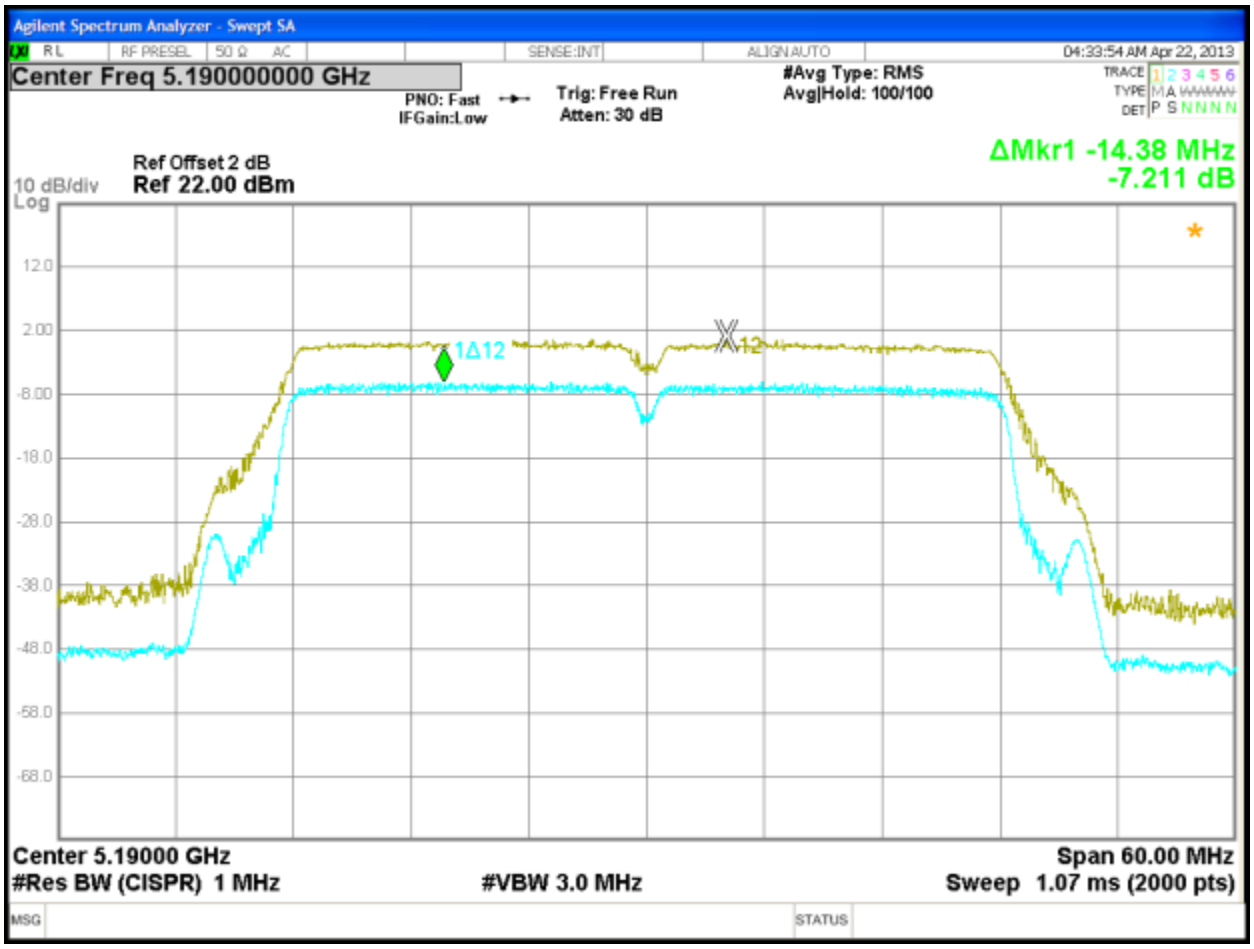


Figure 90: Peak Excursion, 5190 MHz at 802.11n, Chain 1 – 13.5 Mbps

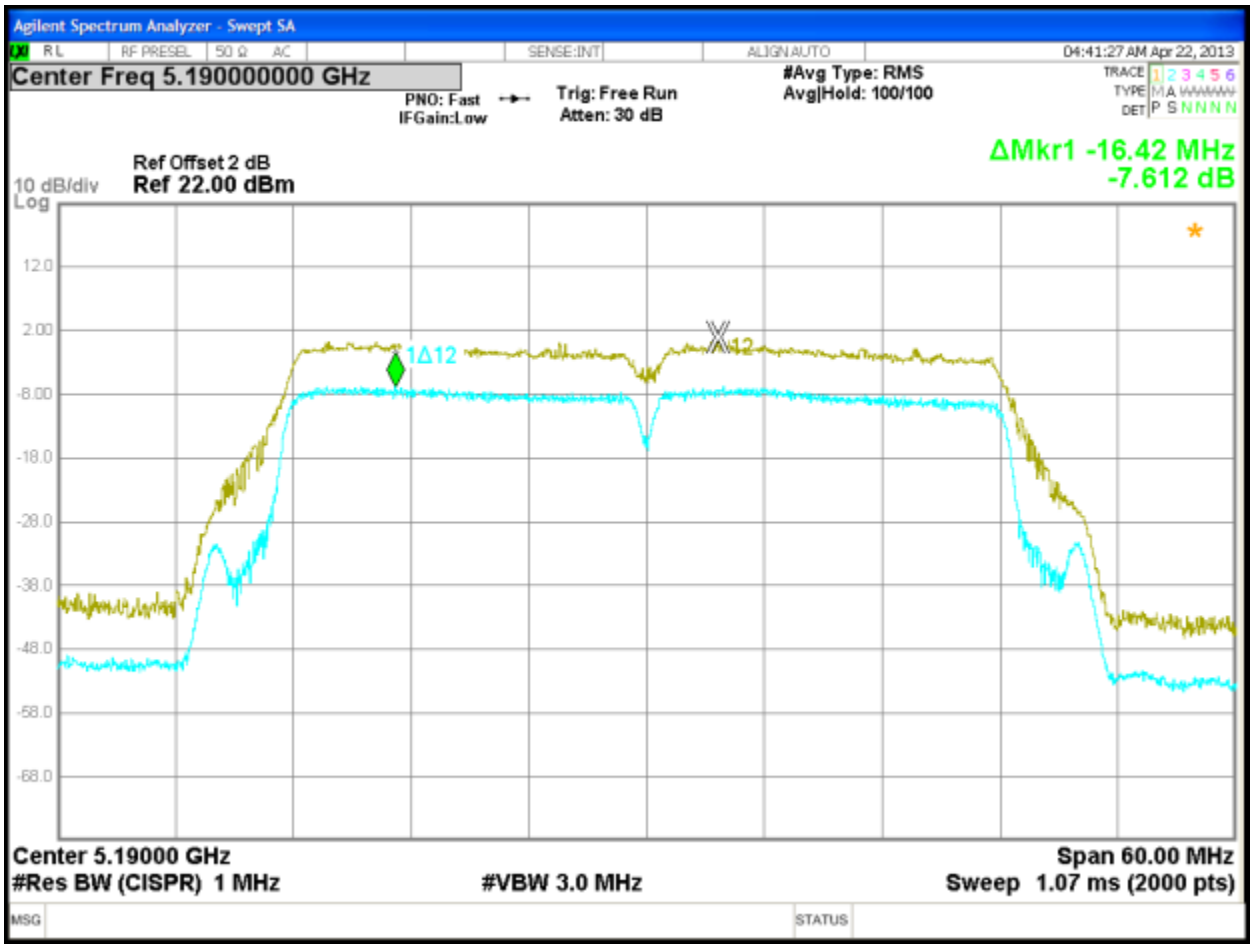


Figure 91: Peak Excursion, 5190 MHz at 802.11n, Chain 2 – 13.5 Mbps

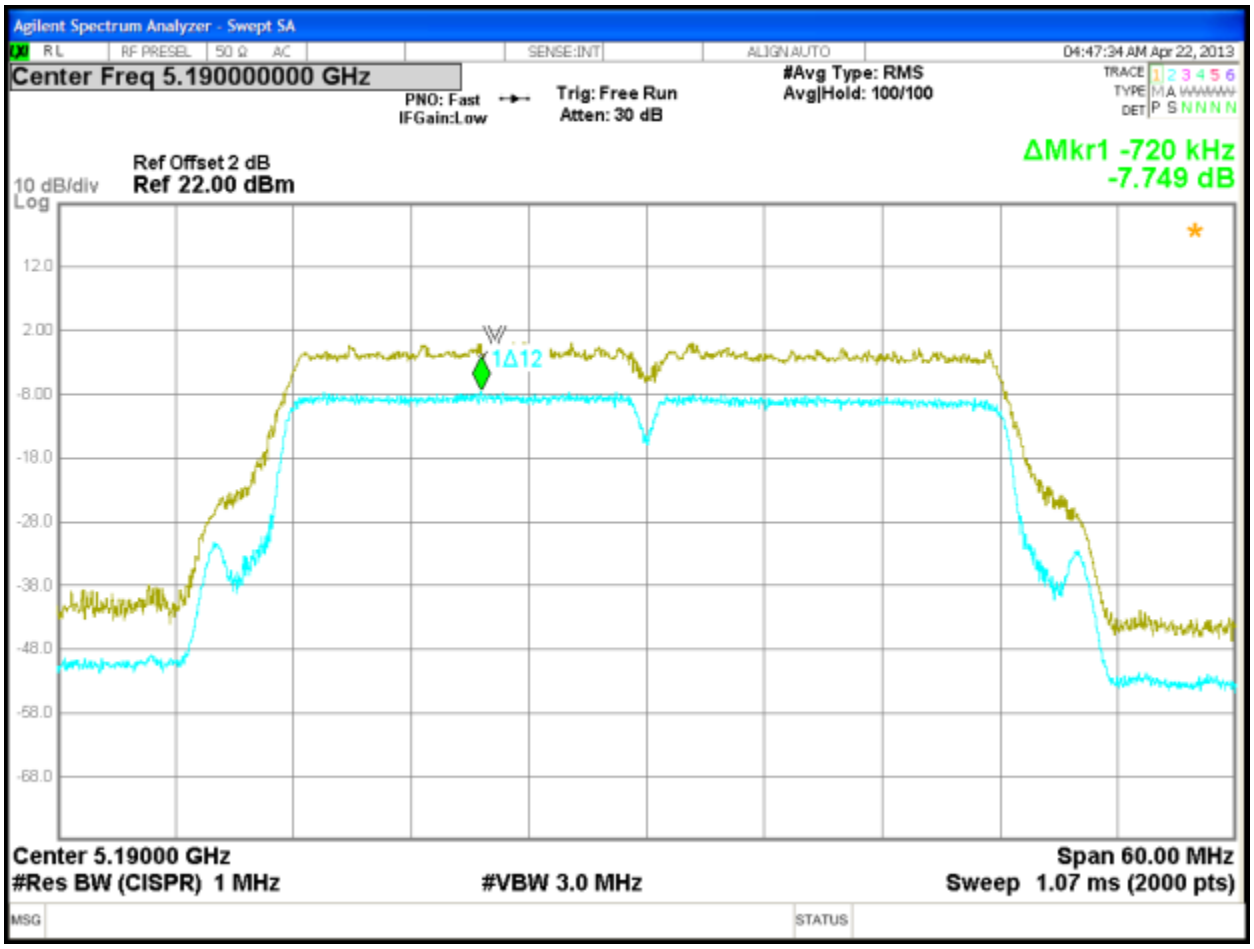


Figure 92: Peak Excursion, 5190 MHz at 802.11n, Chain 3 – 13.5 Mbps

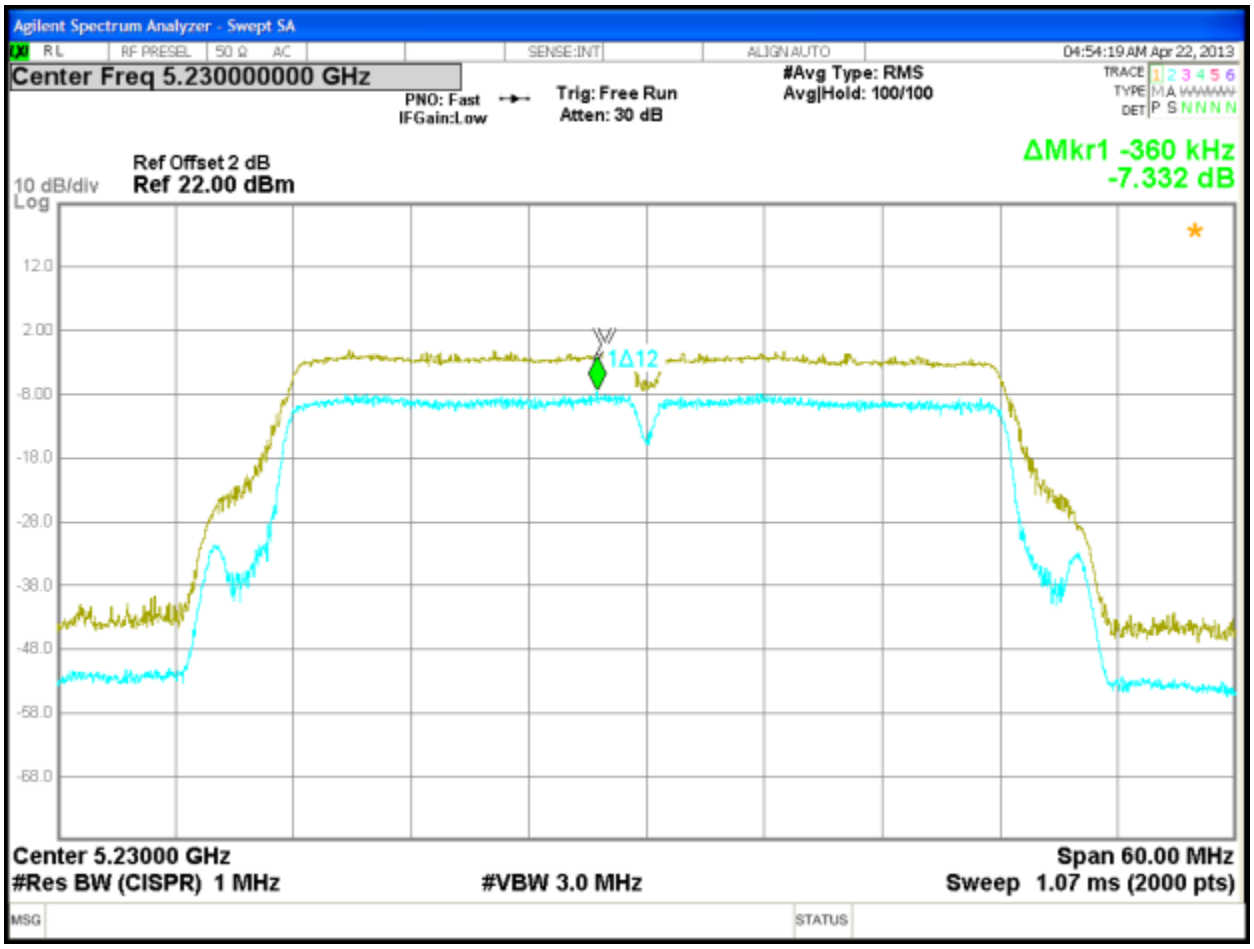


Figure 93: Peak Excursion, 5230 MHz at 802.11n, Chain 0 – 13.5 Mbps

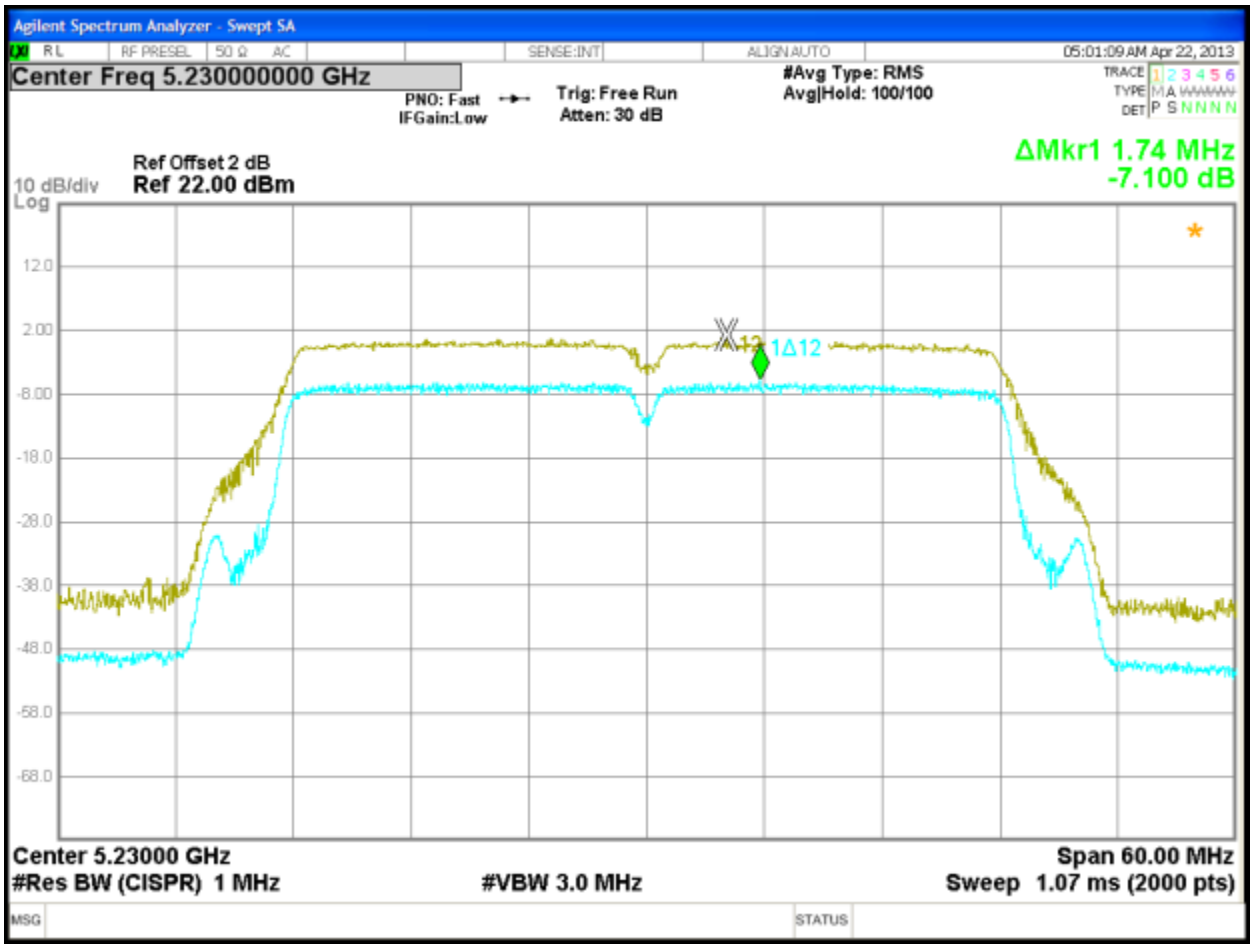


Figure 94: Peak Excursion, 5230 MHz at 802.11n, Chain 1 – 13.5 Mbps

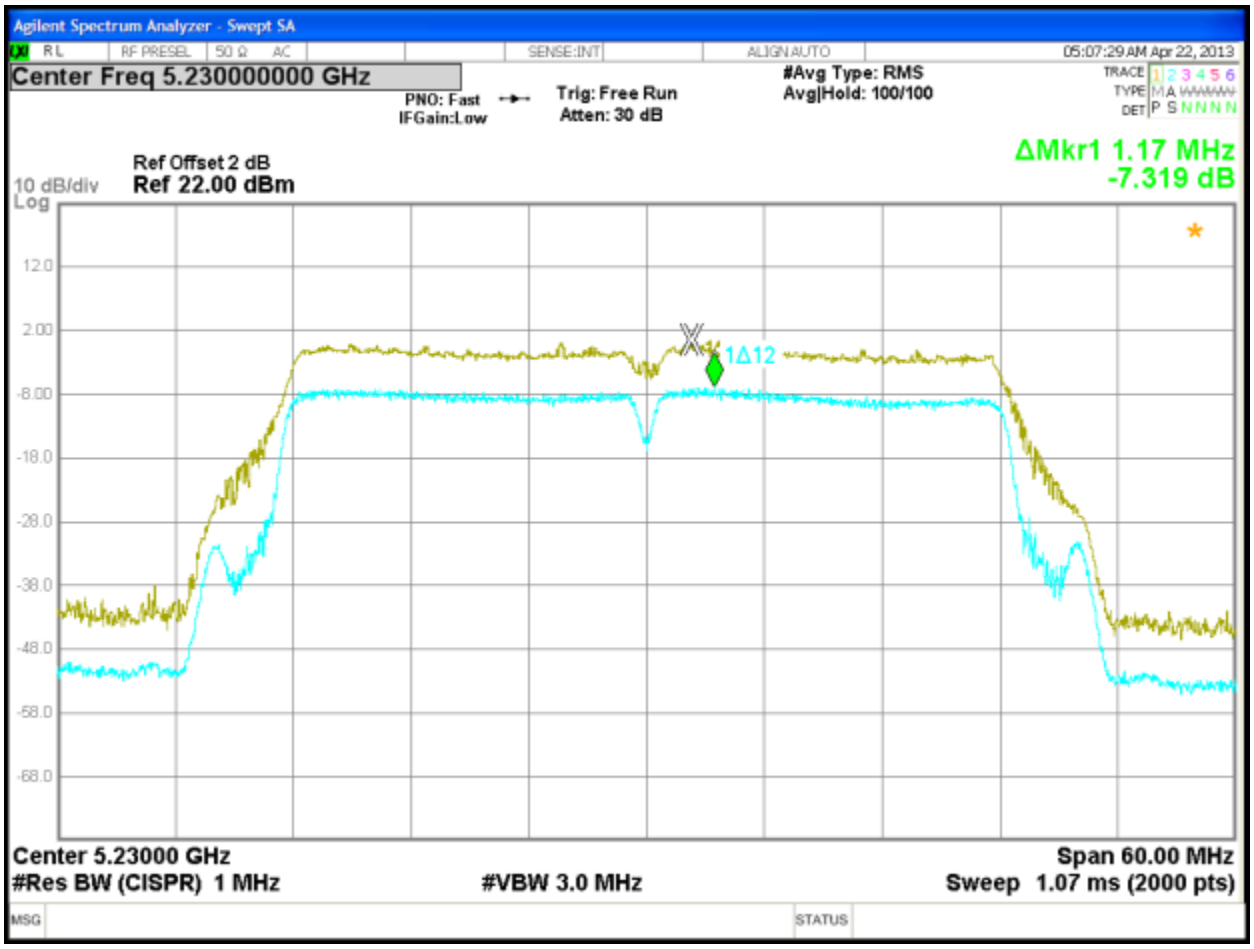


Figure 95: Peak Excursion, 5230 MHz at 802.11n, Chain 2 – 13.5 Mbps

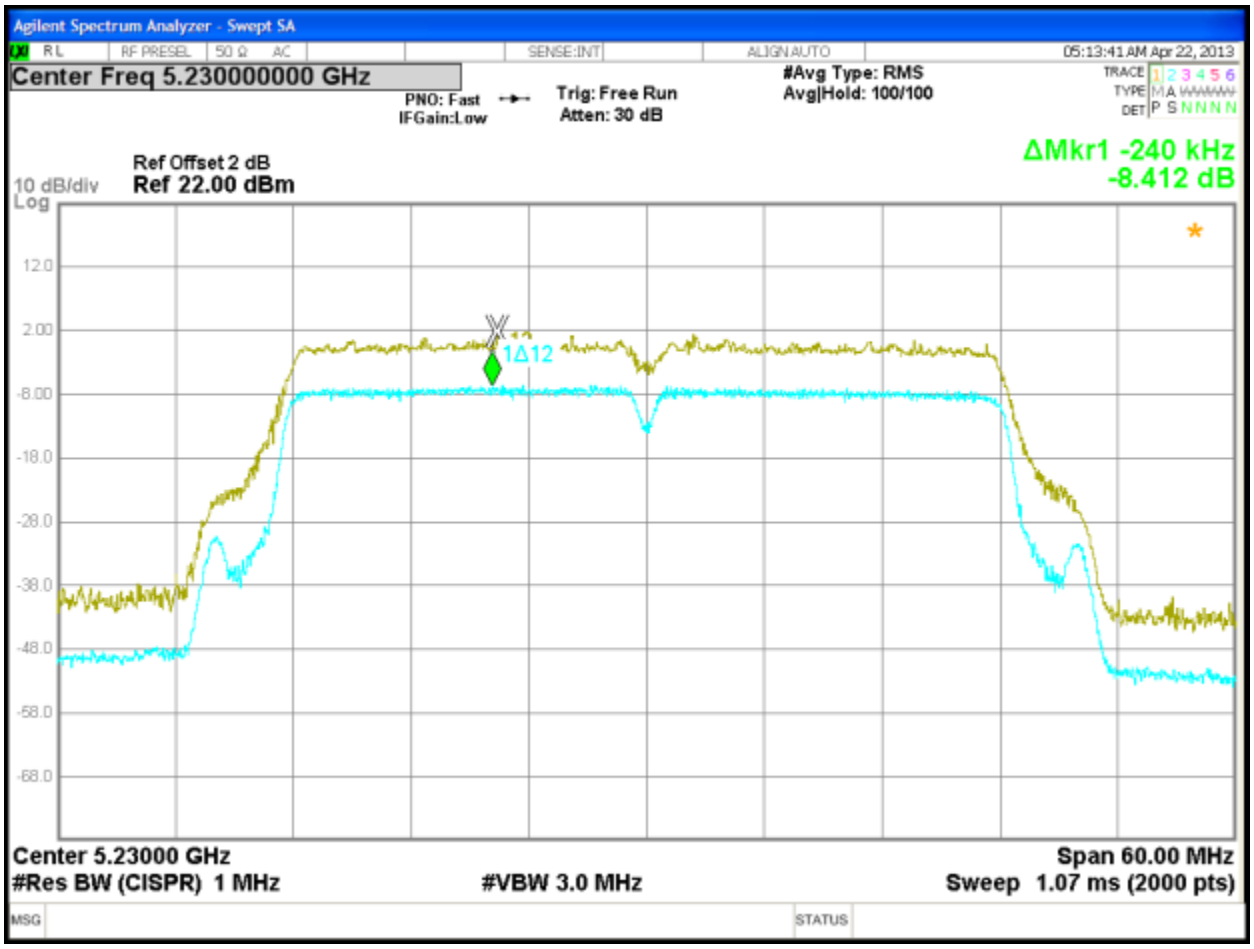


Figure 96: Peak Excursion, 5230 MHz at 802.11n, Chain 3 – 13.5 Mbps

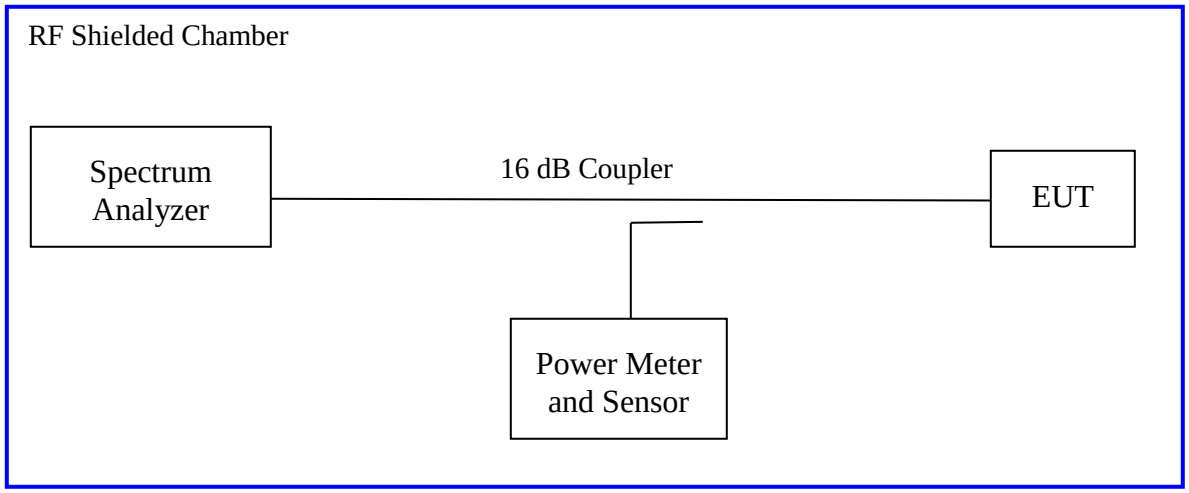
4.4 Peak Power Spectral Density

According to the CFR47 Part 15.407 (a) and RSS 210 (A9.2), the spectral power density output of the antenna port shall be less than 4 dBm in any 1 MHz band during any time interval of continuous transmission.

4.4.1 Test Method

The conducted method was used to measure the channel power output per ANSI C63.10-2009 Section 6.11.2. The measurement was performed with modulation per CFR47 Part 15.407 (a) and RSS 210 (A9.2). The pre-evaluation was performed to find the worst modes. The worst findings were conducted on 3 channels in each operating frequency range of 5150 MHz to 5250 MHz. The worst sample result indicated below.

Test Setup:



4.4.2 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 6: Peak Power Spectral Density – Test Results

Test Conditions: Conducted Measurement, Normal Temperature and Voltage only			
Antenna Type: Integrated		**Power Setting:** See Test plan	
Max. Directional Gain: + 8 dBi		**Signal State:** Modulated at 100%.	
Ambient Temp.: 23° C		**Relative Humidity:**32%	
Peak Power Spectral Density			
802.11a Mode			
Freq. (MHz)	**Total PSD [dBm]**	**Limit [dBm]**	**Margin [dB]**
5180	1.75	2.00	-0.25
5200	0.765	2.00	-1.24
5240	0.077	2.00	-1.92
Note: 1. The highest peak output power was observed at 802.11a 6 Mbps per data stream. 2. All chains will be on at all time and beam performing. Power spectral densities were summed the spectra across the output KDB 662911. 3. The total directional gain would be 8 dBi; 2 dBi +10*Log(4). Per CFR47 Part 15.407 (a), the limit is reduced for every dBi gain exceeding 6 dBi. The limit would be 2 dBi.			
802.11n (HT20) Mode			
Freq. (MHz)	**Total PSD [dBm]**	**Limit [dBm]**	**Margin [dB]**
5180	1.746	2.00	-0.25
5200	0.272	2.00	-1.73
5240	0.195	2.00	-1.81
Note: 1. The highest peak output power was observed at HT20 6.5 Mbps per data stream. 2. All chains will be on at all time and beam performing. Power spectral densities were summed the spectra across the output KDB 662911. 3. The total directional gain would be 8 dBi; 2 dBi +10*Log(4). Per CFR47 Part 15.407 (a), the limit is reduced for every dBi gain exceeding 6 dBi. The limit would be 2 dBi.			

802.11n (HT40) Mode								
Freq. (MHz)	**Ch0 [dBm]**	**Ch1 [dBm]**	**Ch2 [dBm]**	**Ch3 [dBm]**	**CF [dB]**	**Max. PPSD [dBm]**	**Limit [dBm]**	**Margin [dB]**
5190	-7.43	-5.87	-6.39	-7.70	6.00	0.13	2.00	-1.87
5230	-7.83	-5.98	-6.85	-6.53	6.00	0.02	2.00	-1.98

Note: 1. The highest peak output power was observed at HT40 13.5 Mbps per data stream.
2. All chains will be on at all time and beam performing. The highest power spectral densities was added 10*Log(4) per KDB 662911, accounted for the number of outputs.
3. The total directional gain would be 8 dBi; 2 dBi +10*Log(4). Per CFR47 Part 15.407 (a), the limit is reduced for every dBi gain exceeding 6 dBi. The limit would be 2 dBi.

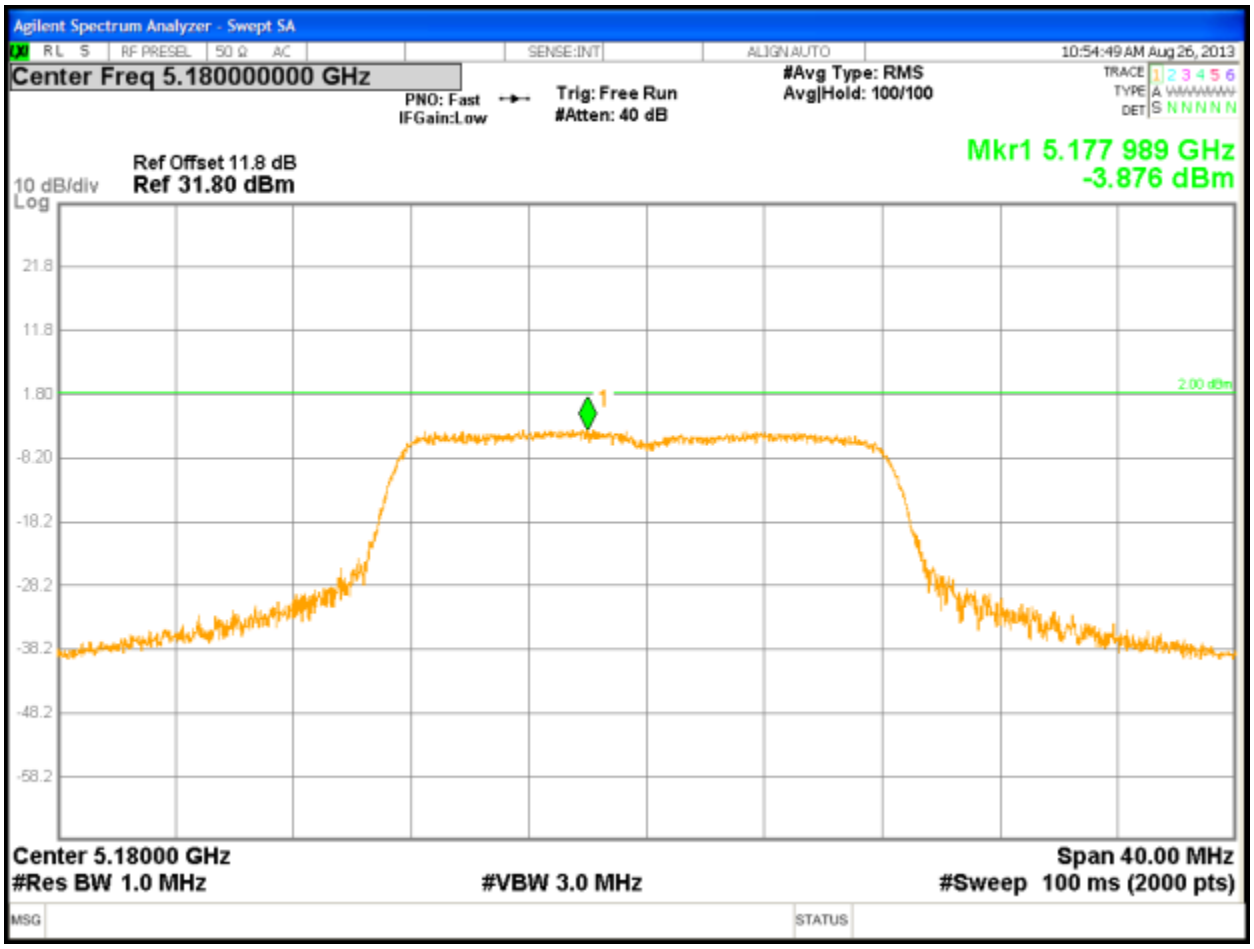


Figure 97: Power Spectral Density, 5180 MHz at 802.11a, Chain 0 – 6 Mbps

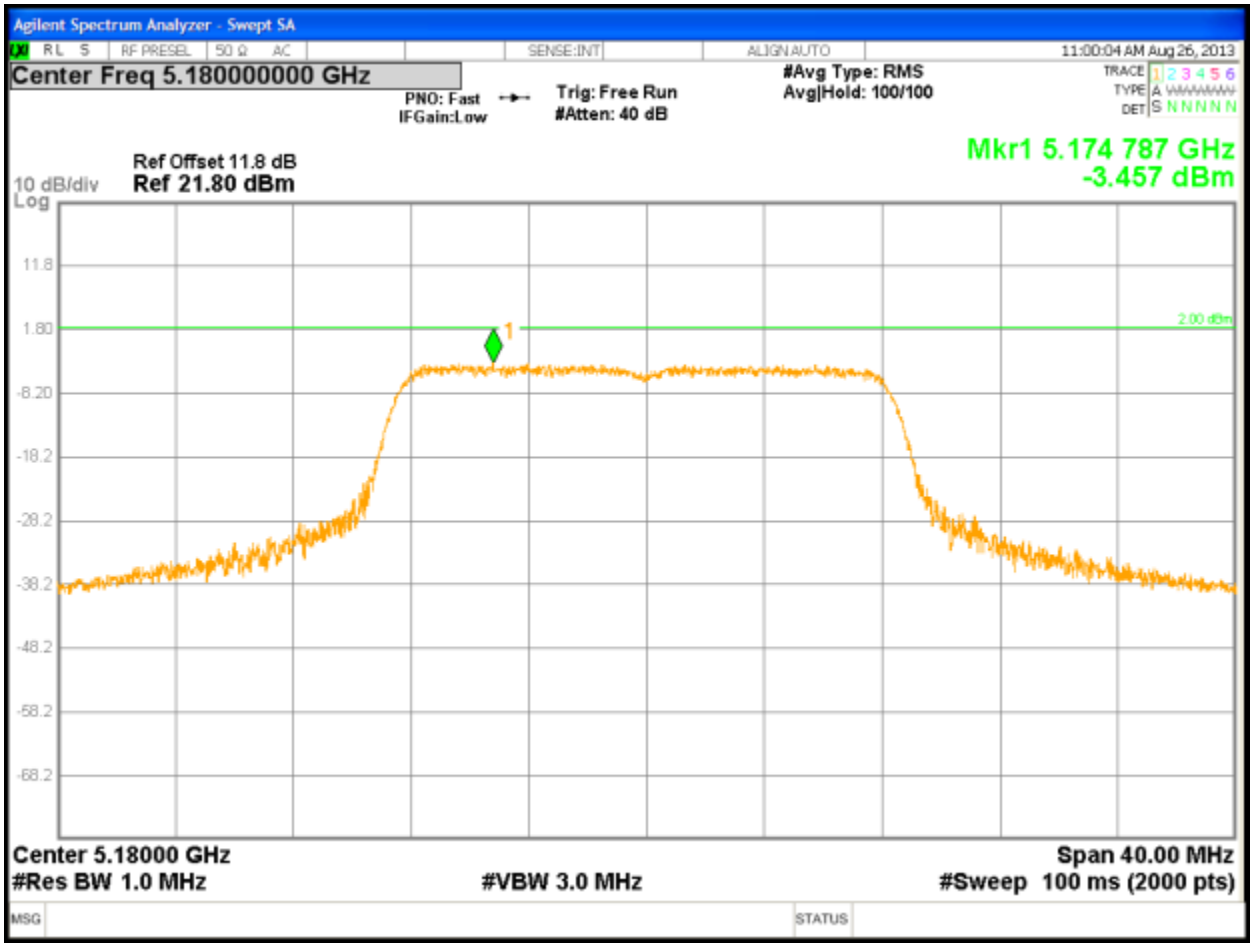


Figure 98: Power Spectral Density, 5180 MHz at 802.11a, Chain 1 – 6 Mbps

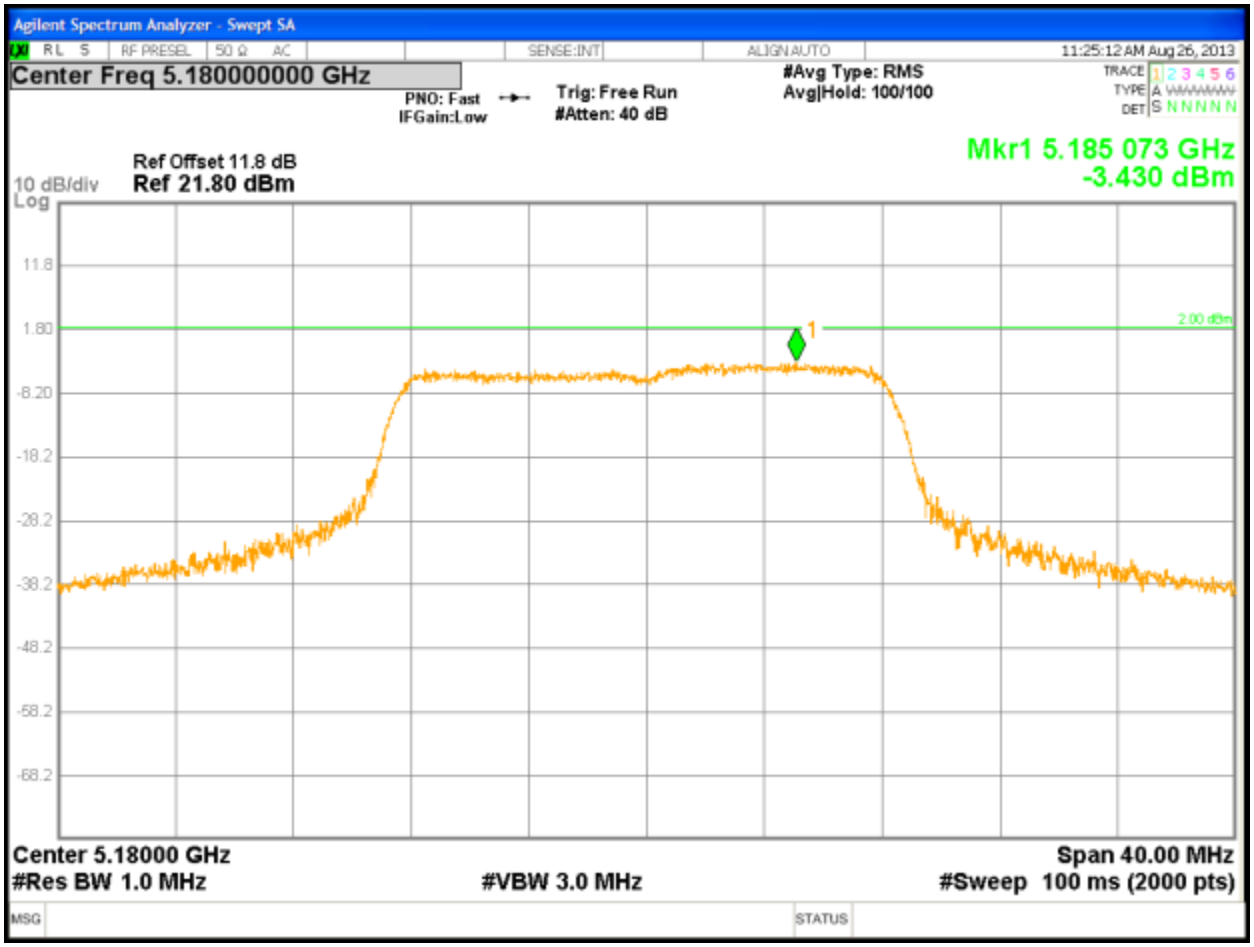


Figure 99: Power Spectral Density, 5180 MHz at 802.11a, Chain 2 – 6 Mbps

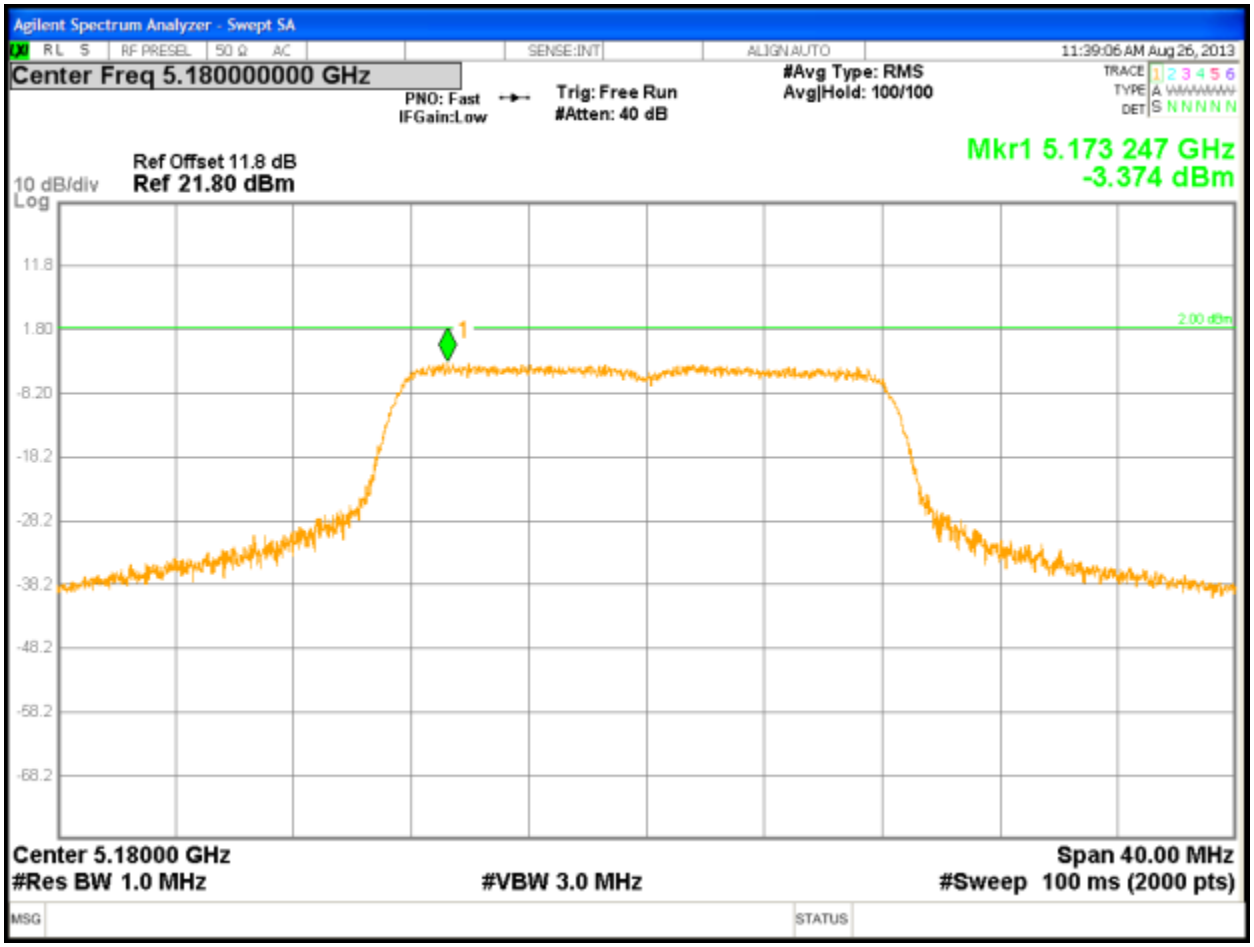


Figure 100: Power Spectral Density, 5180 MHz at 802.11a, Chain 3 – 6 Mbps

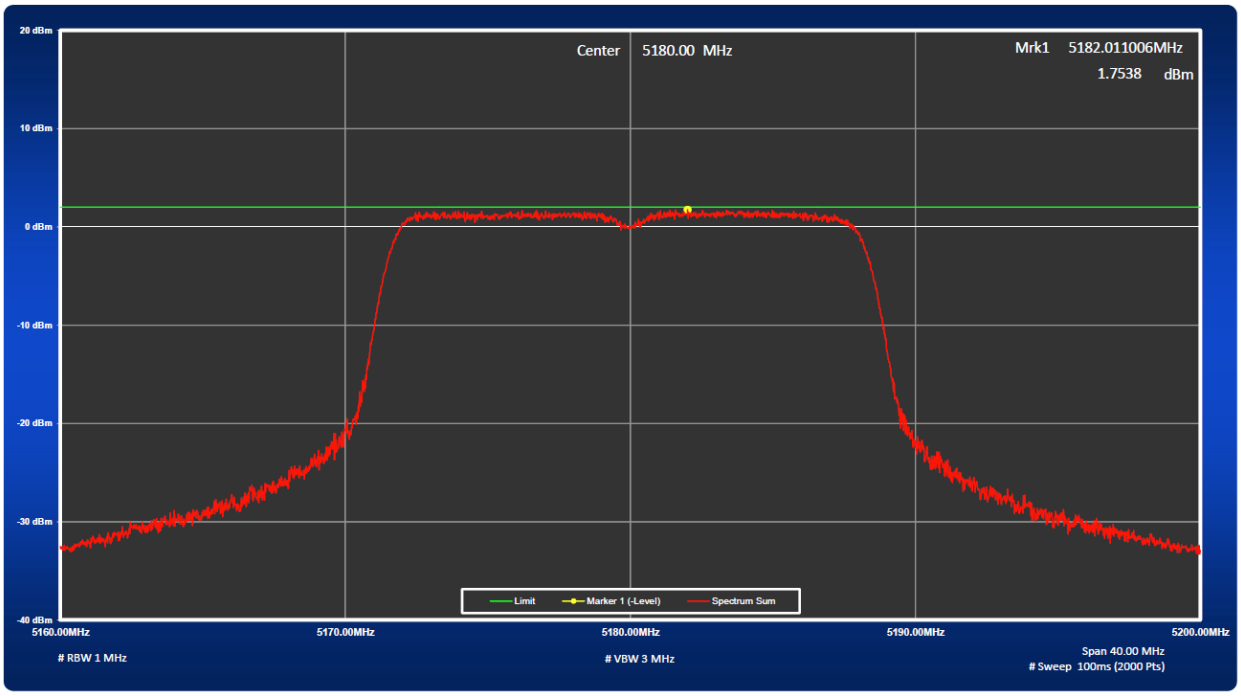


Figure 101: Total Power Spectral Density, 5180 MHz at 802.11a

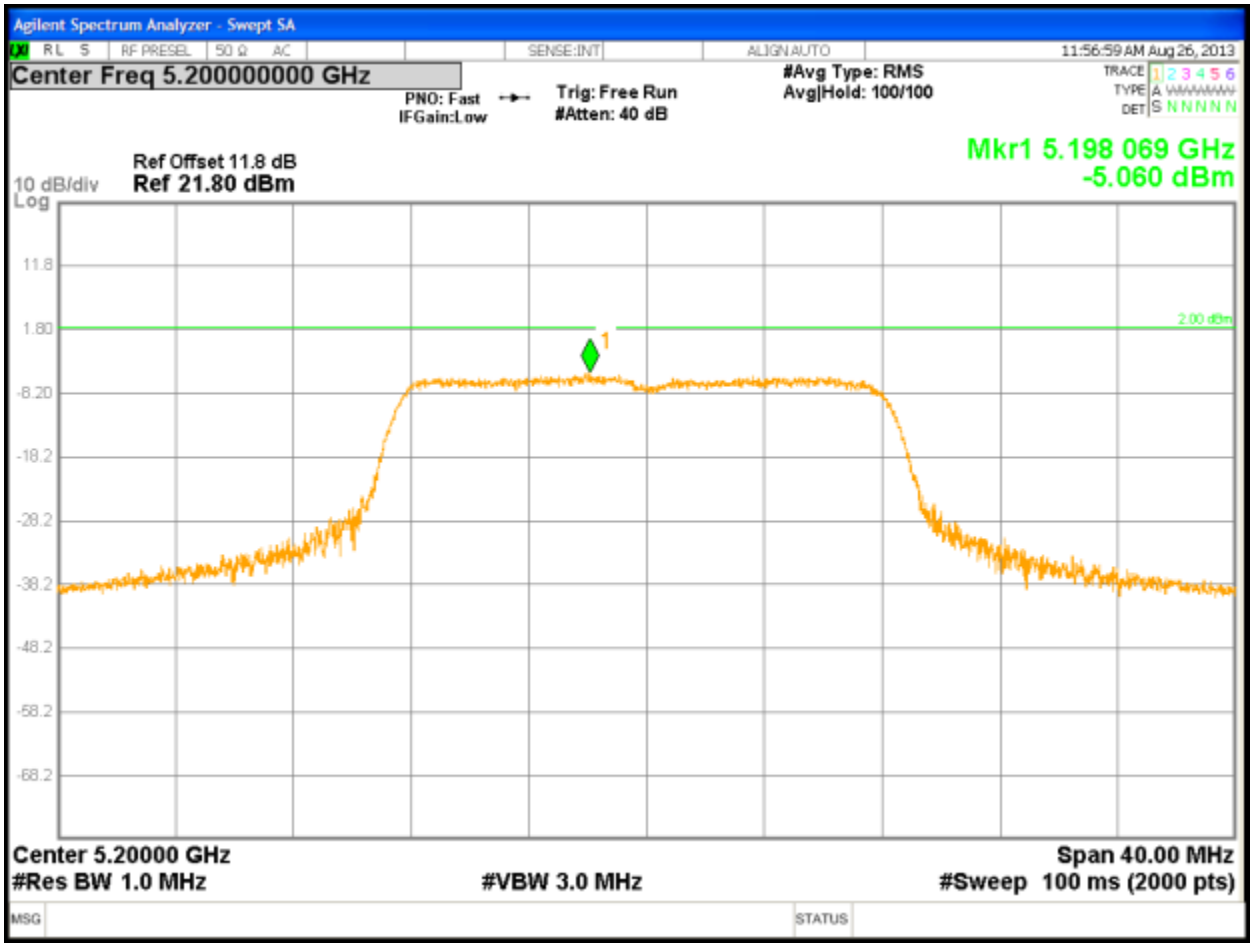


Figure 102: Power Spectral Density, 5200 MHz at 802.11a, Chain 0 – 6 Mbps

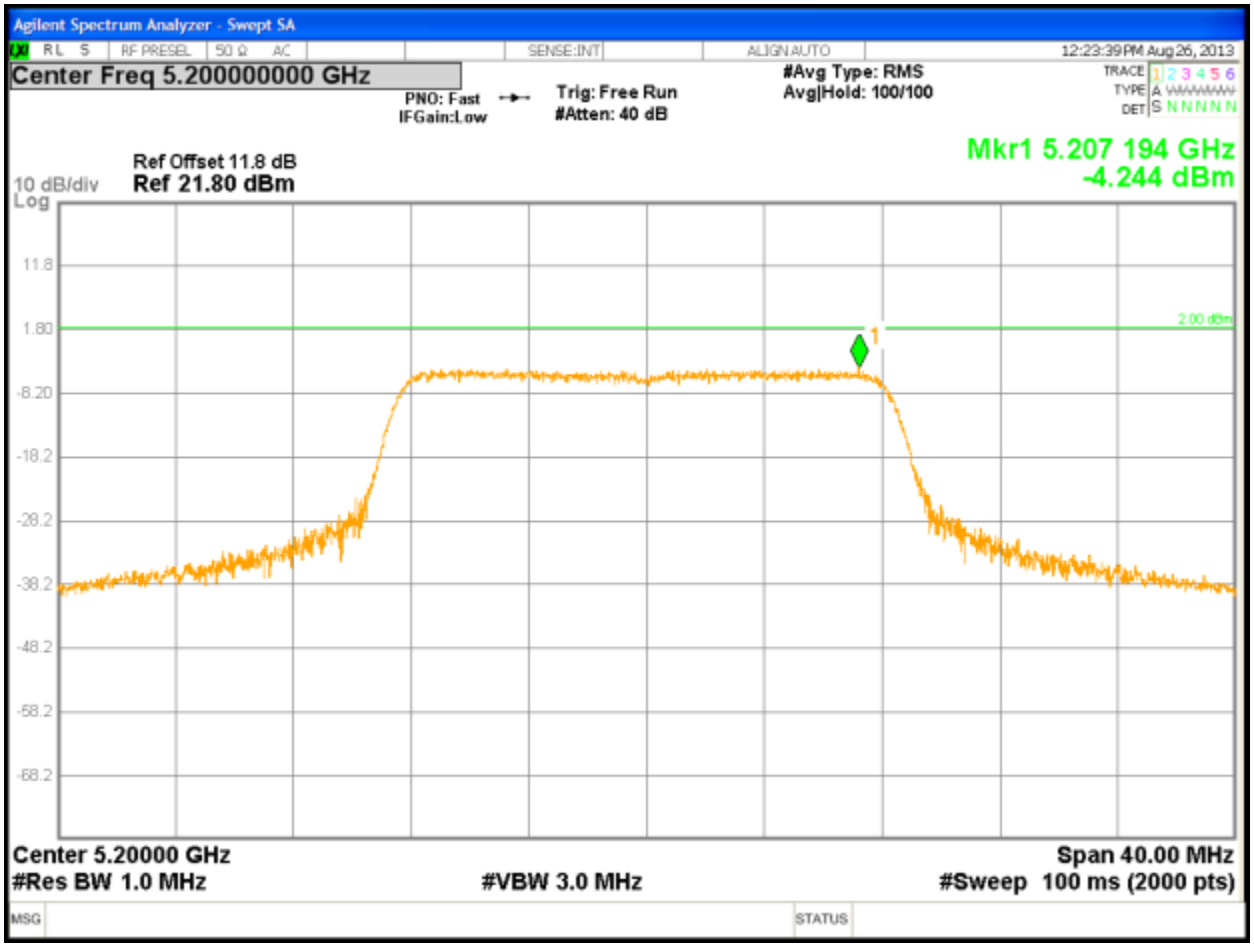


Figure 103: Power Spectral Density, 5200 MHz at 802.11a, Chain 1 – 6 Mbps

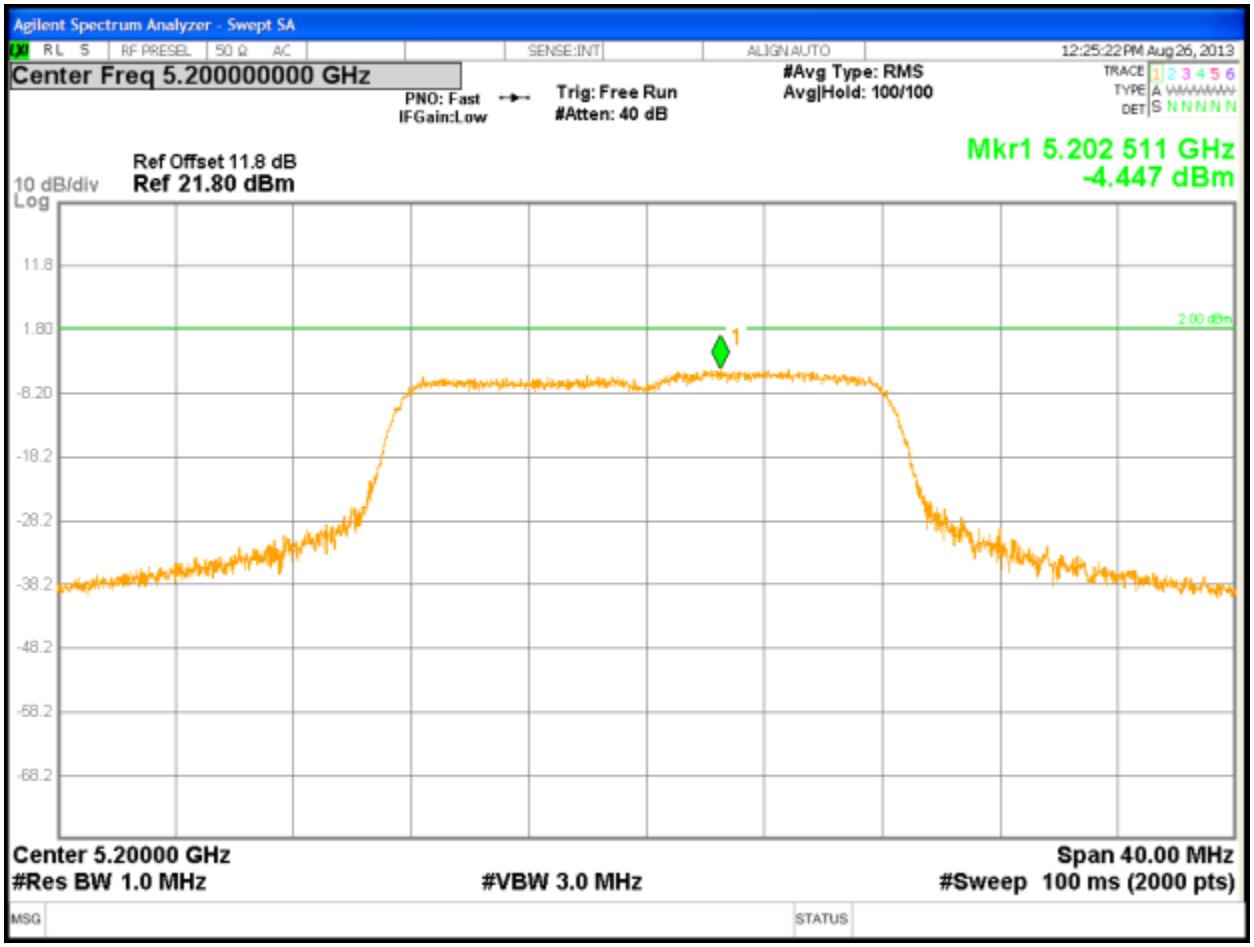


Figure 104: Power Spectral Density, 5200 MHz at 802.11a, Chain 2 – 6 Mbps

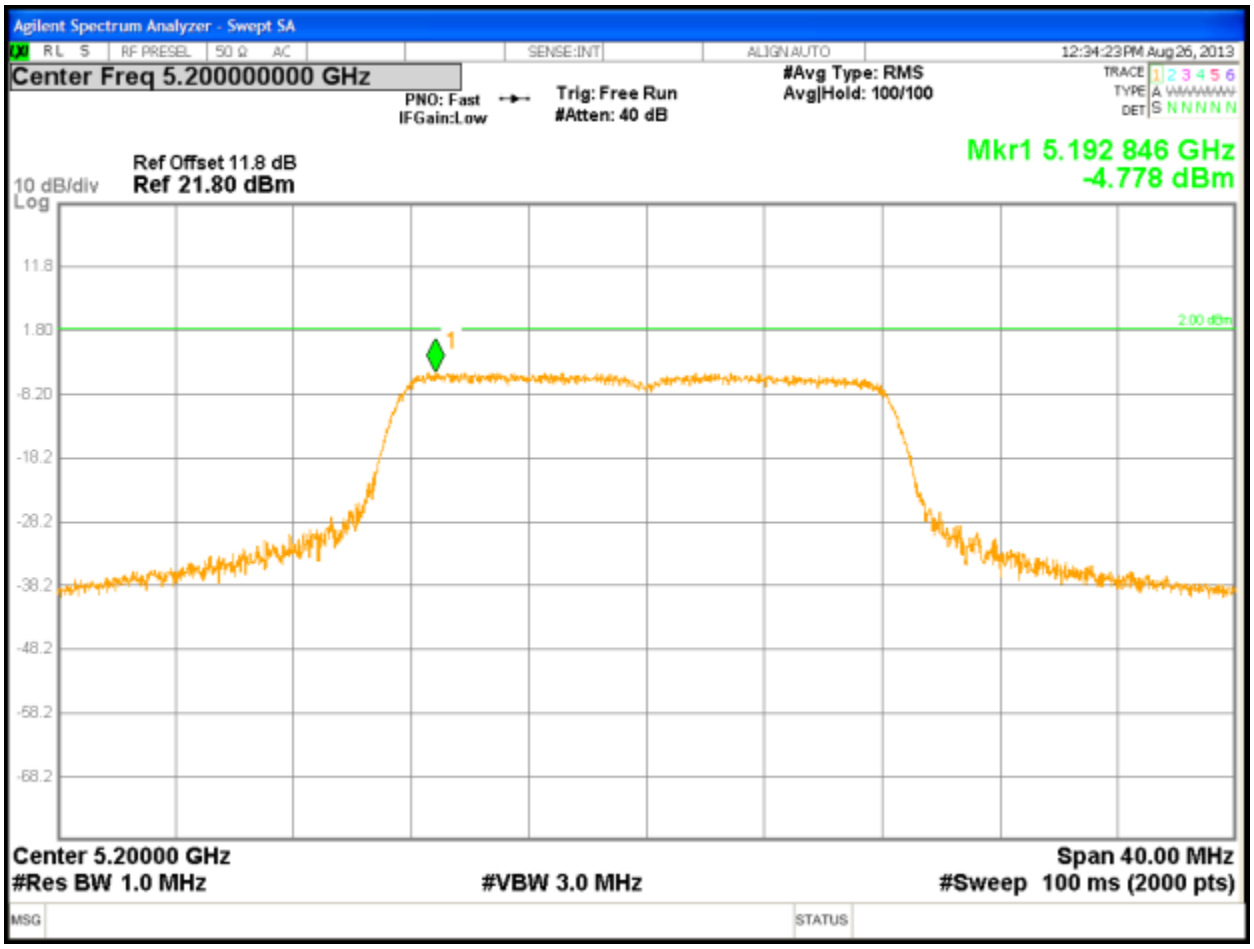


Figure 105: Power Spectral Density, 5200 MHz at 802.11a, Chain 3 – 6 Mbps

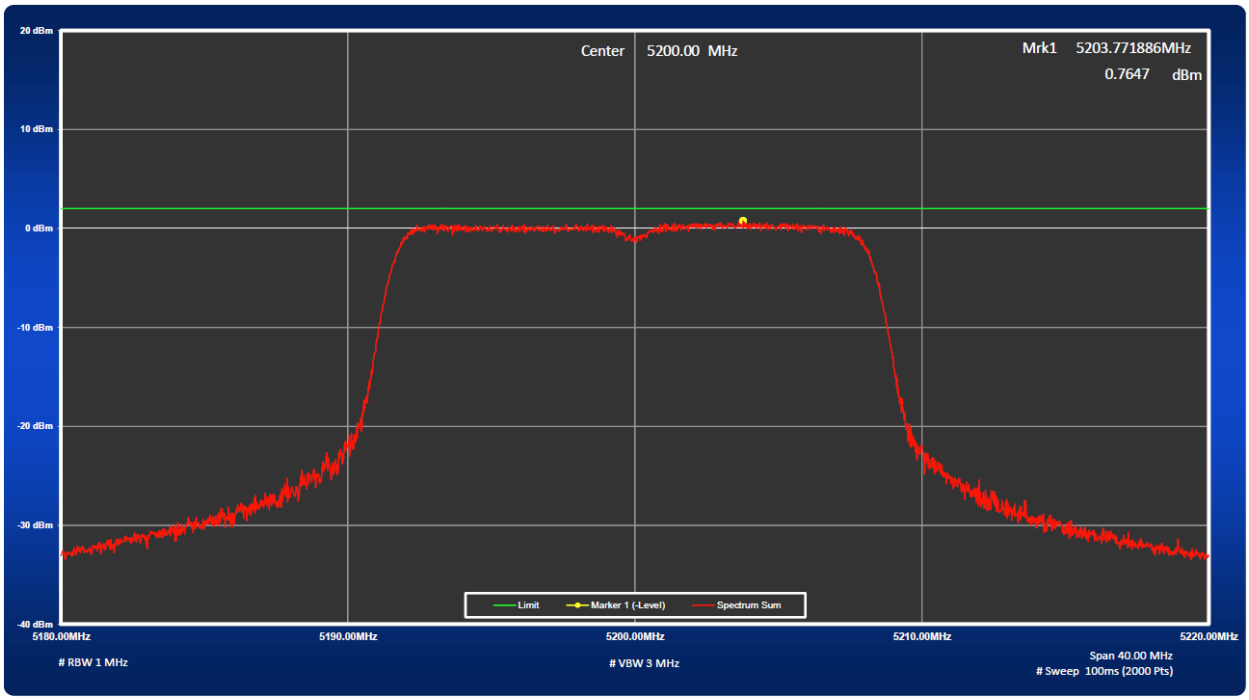


Figure 106: Total Power Spectral Density, 5200 MHz at 802.11a

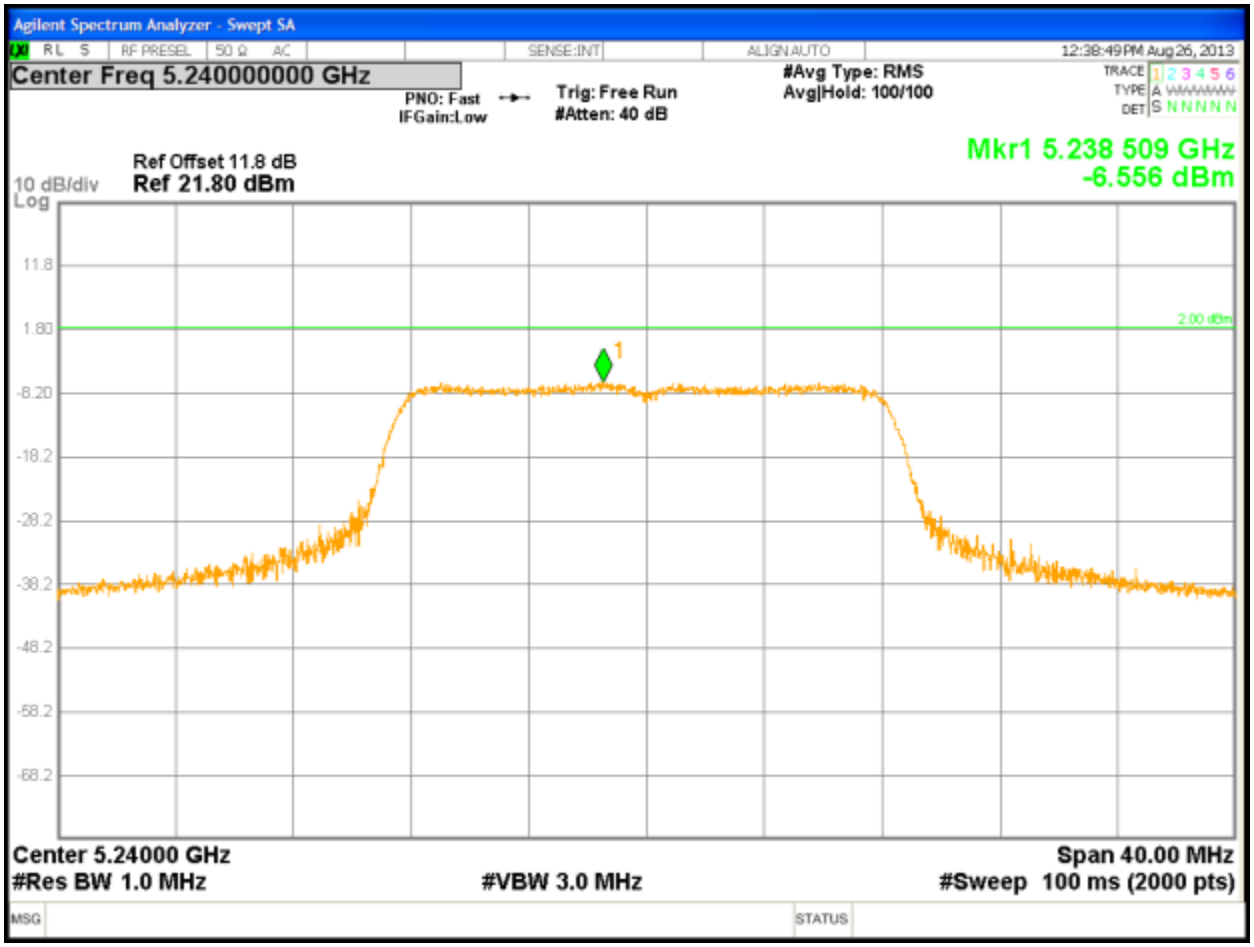


Figure 107: Peak Power Spectral Density, 5240 MHz at 802.11a, Chain 0 – 6 Mbps

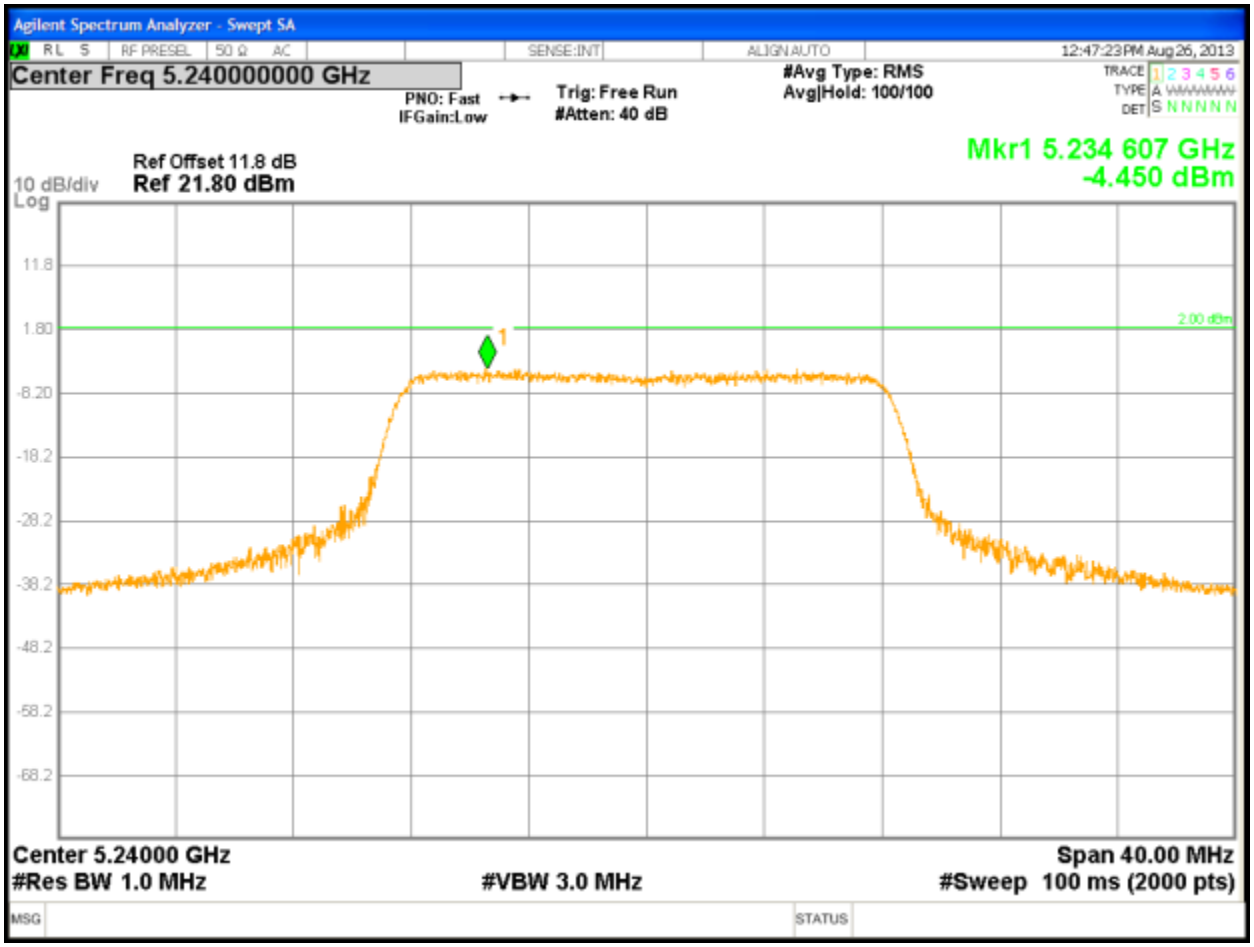


Figure 108: Peak Power Spectral Density, 5240 MHz at 802.11a, Chain 1 – 6 Mbps

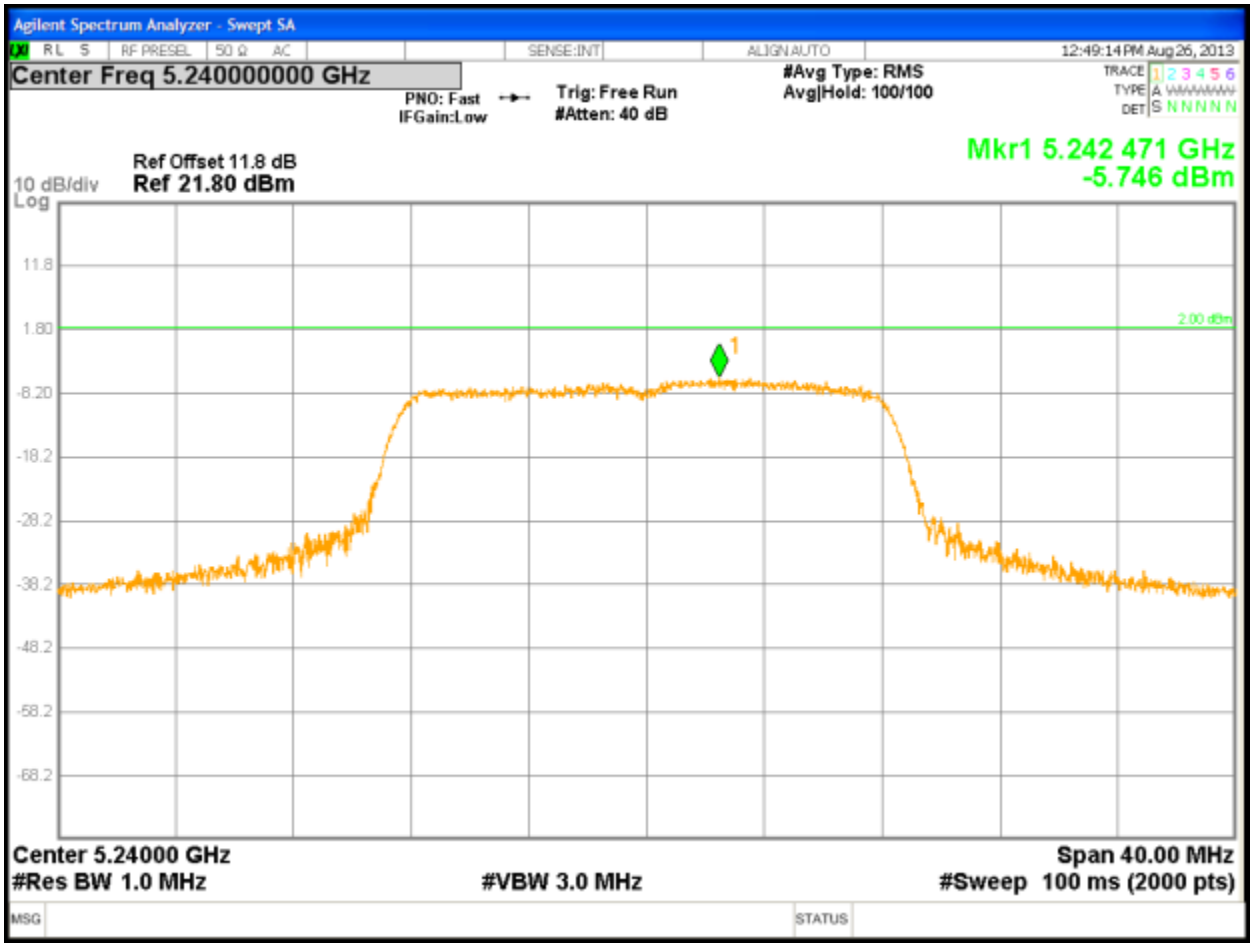


Figure 109: Peak Power Spectral Density, 5240 MHz at 802.11a, Chain 2 – 6 Mbps

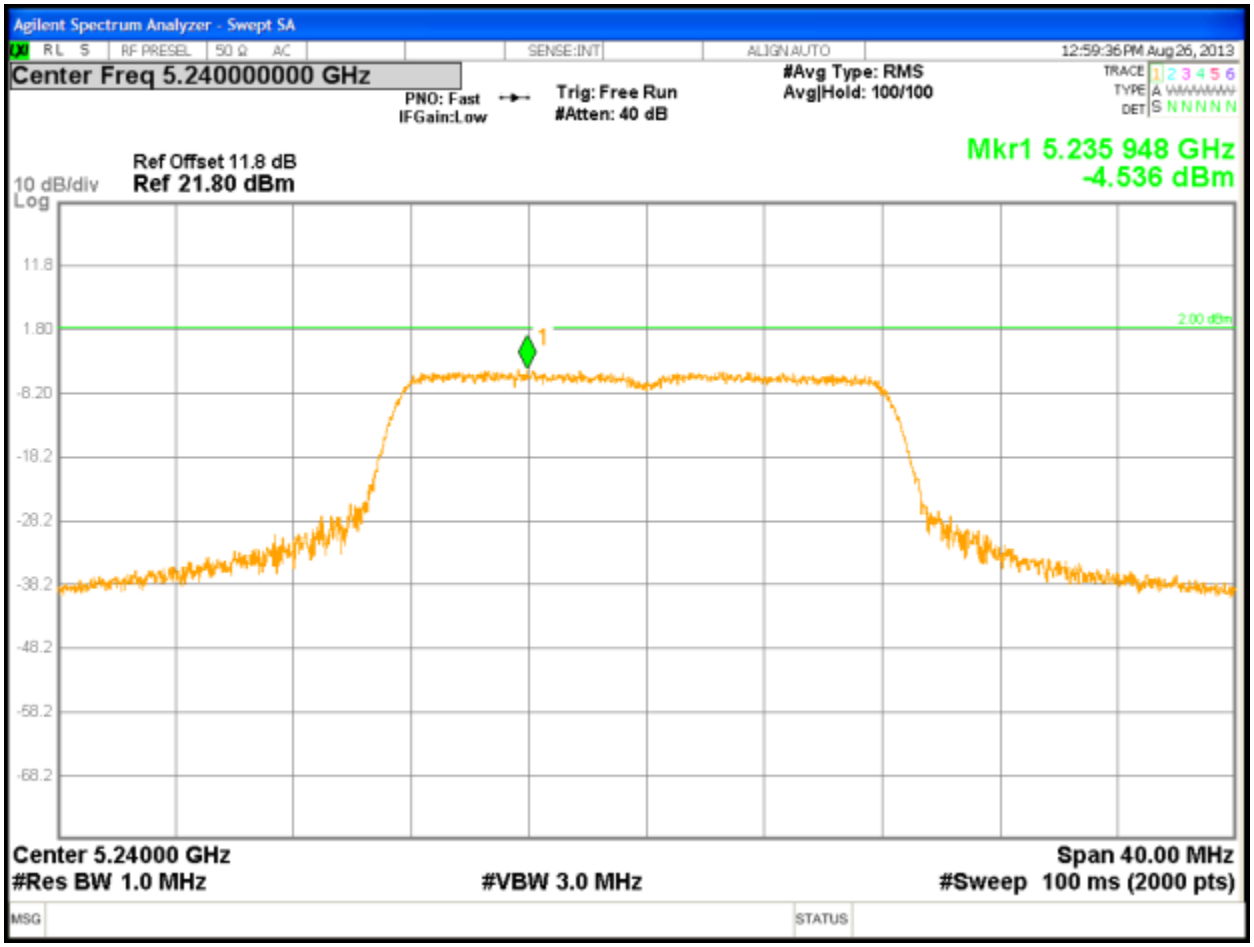


Figure 110: Peak Power Spectral Density, 5240 MHz at 802.11a, Chain 3 – 6 Mbps

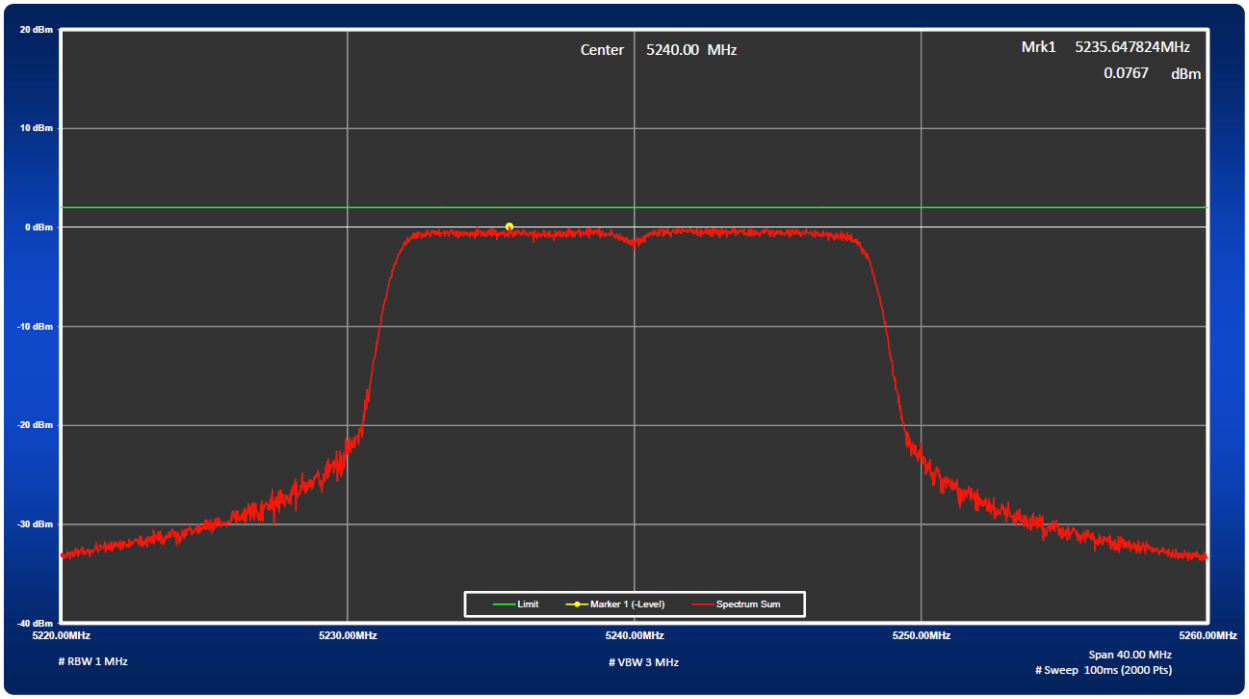


Figure 111: Total Power Spectral Density, 5240 MHz at 802.11a

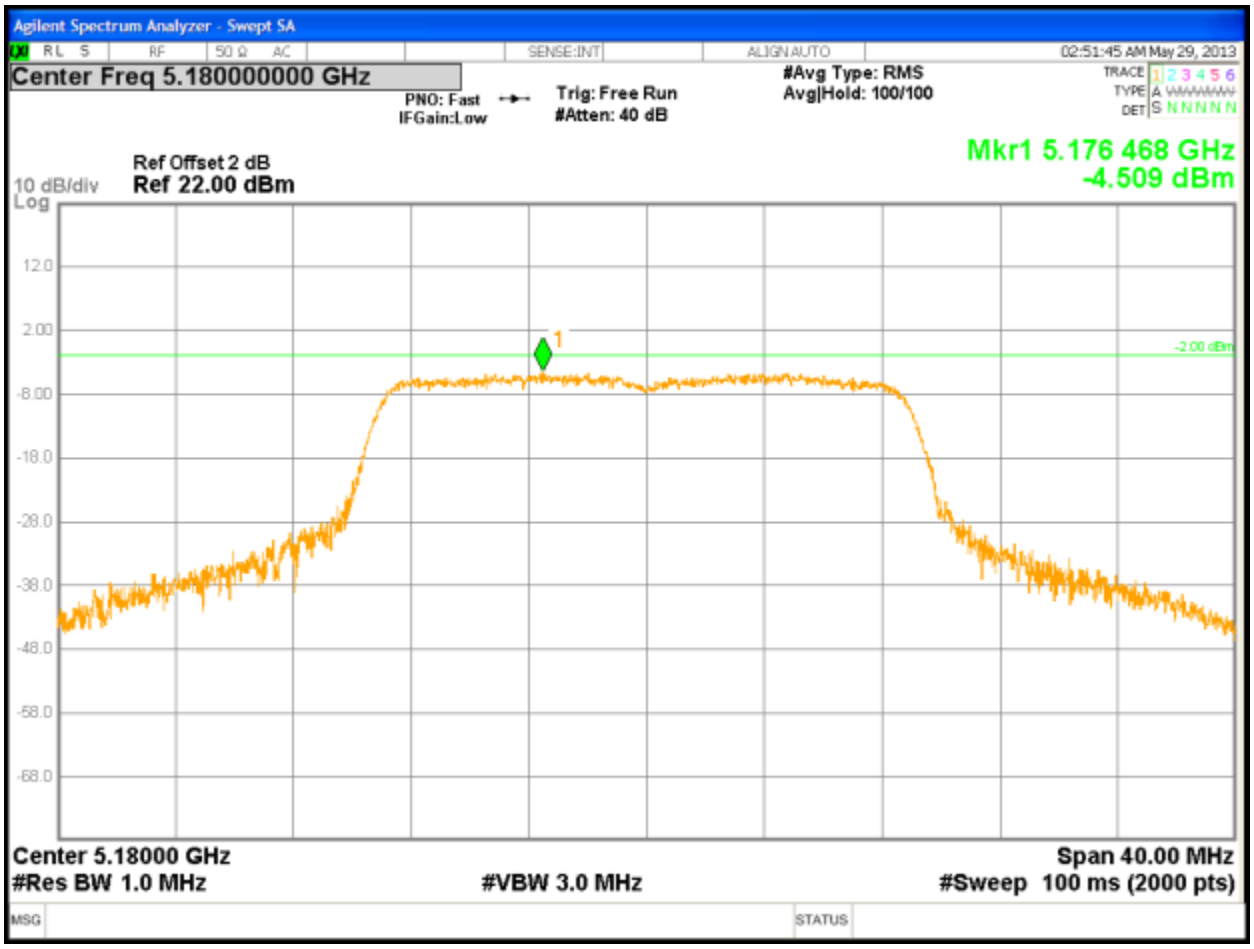


Figure 112: Power Spectral Density, 5180 MHz at 802.11n HT20, Chain 0 – 6.5 Mbps

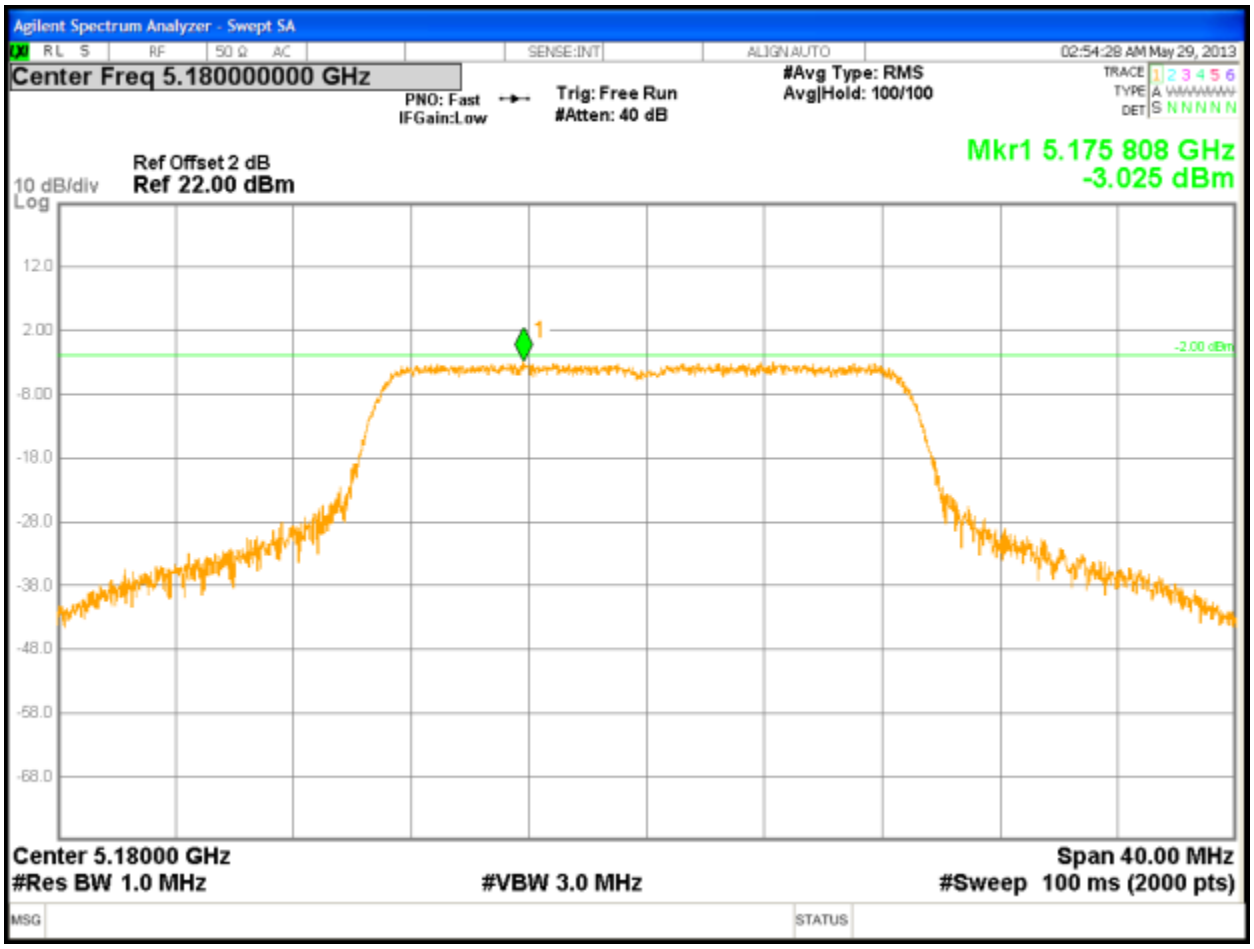


Figure 113: Power Spectral Density, 5180 MHz at 802.11n HT20, Chain 1 – 6.5 Mbps

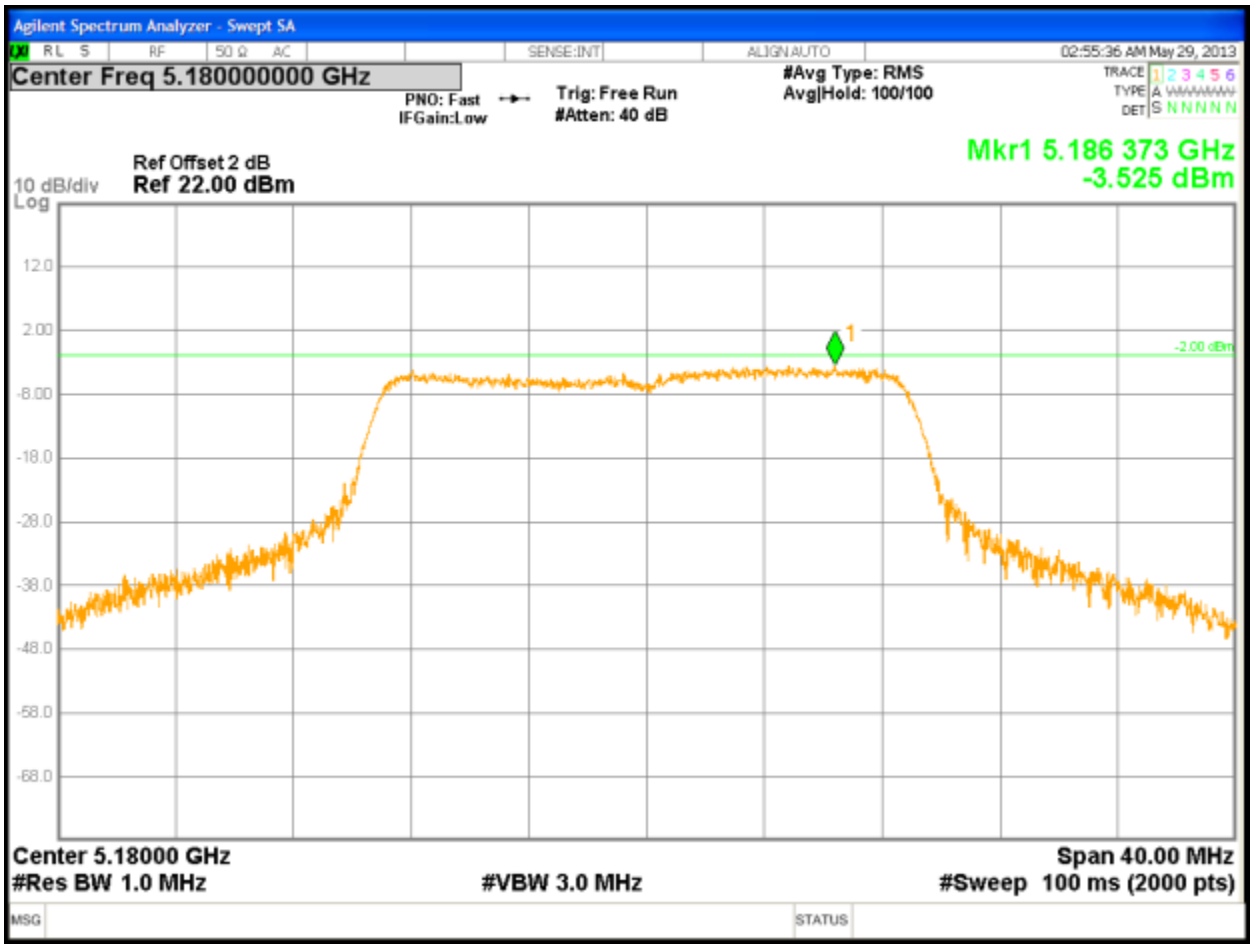


Figure 114: Power Spectral Density, 5180 MHz at 802.11n HT20, Chain 2 – 6.5 Mbps

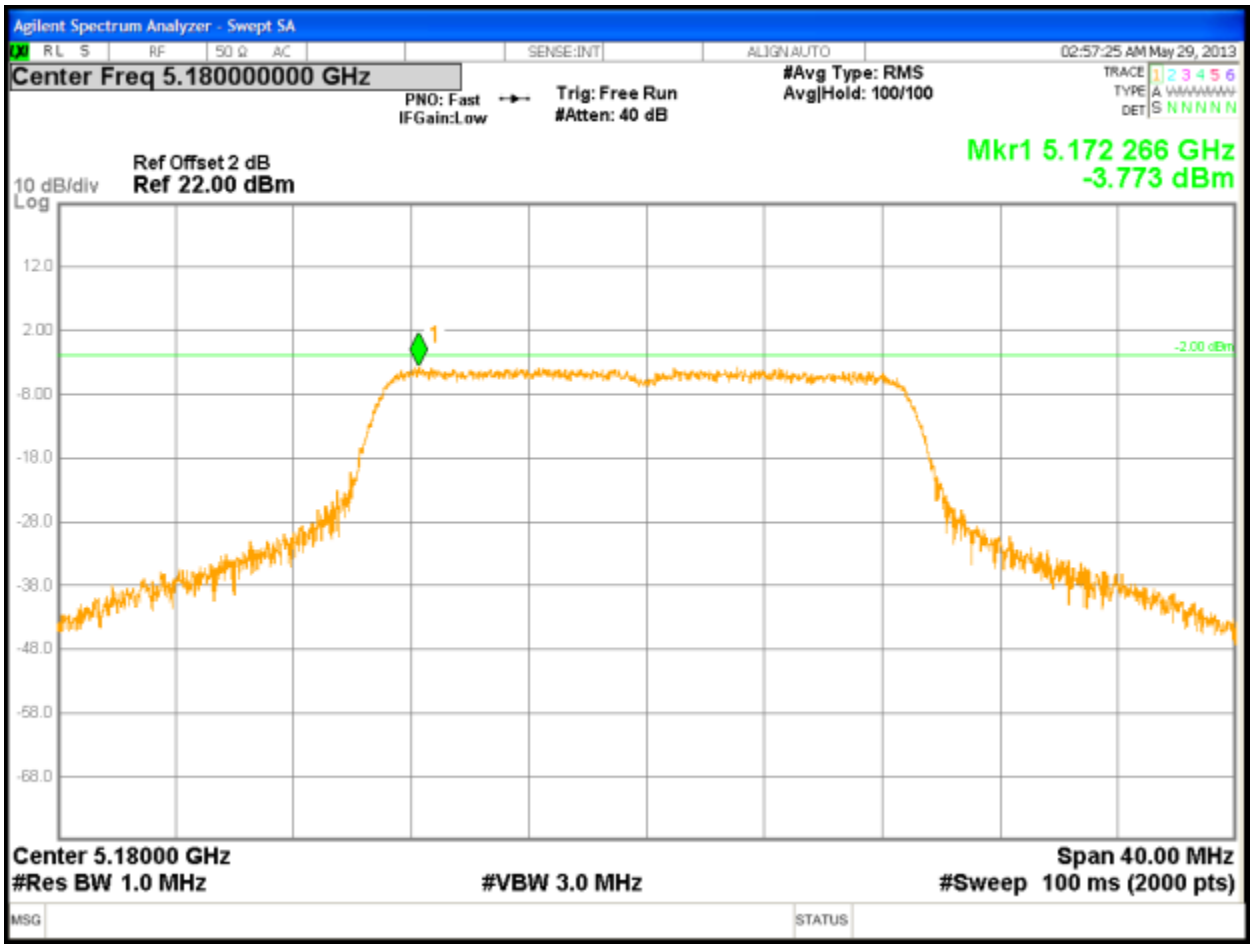


Figure 115: Power Spectral Density, 5180 MHz at 802.11n HT20, Chain 3 – 6.5 Mbps

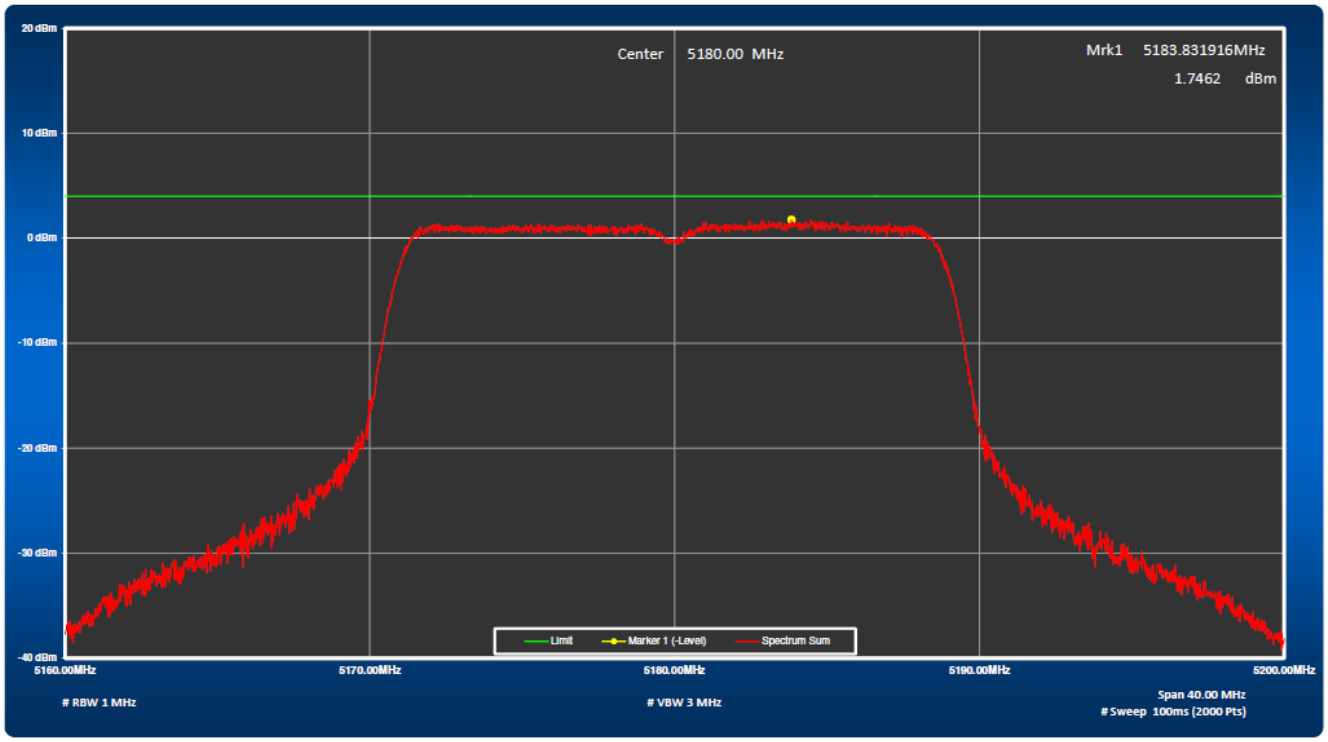


Figure 116: Total Power Spectral Density, 5180 MHz at 802.11n HT20

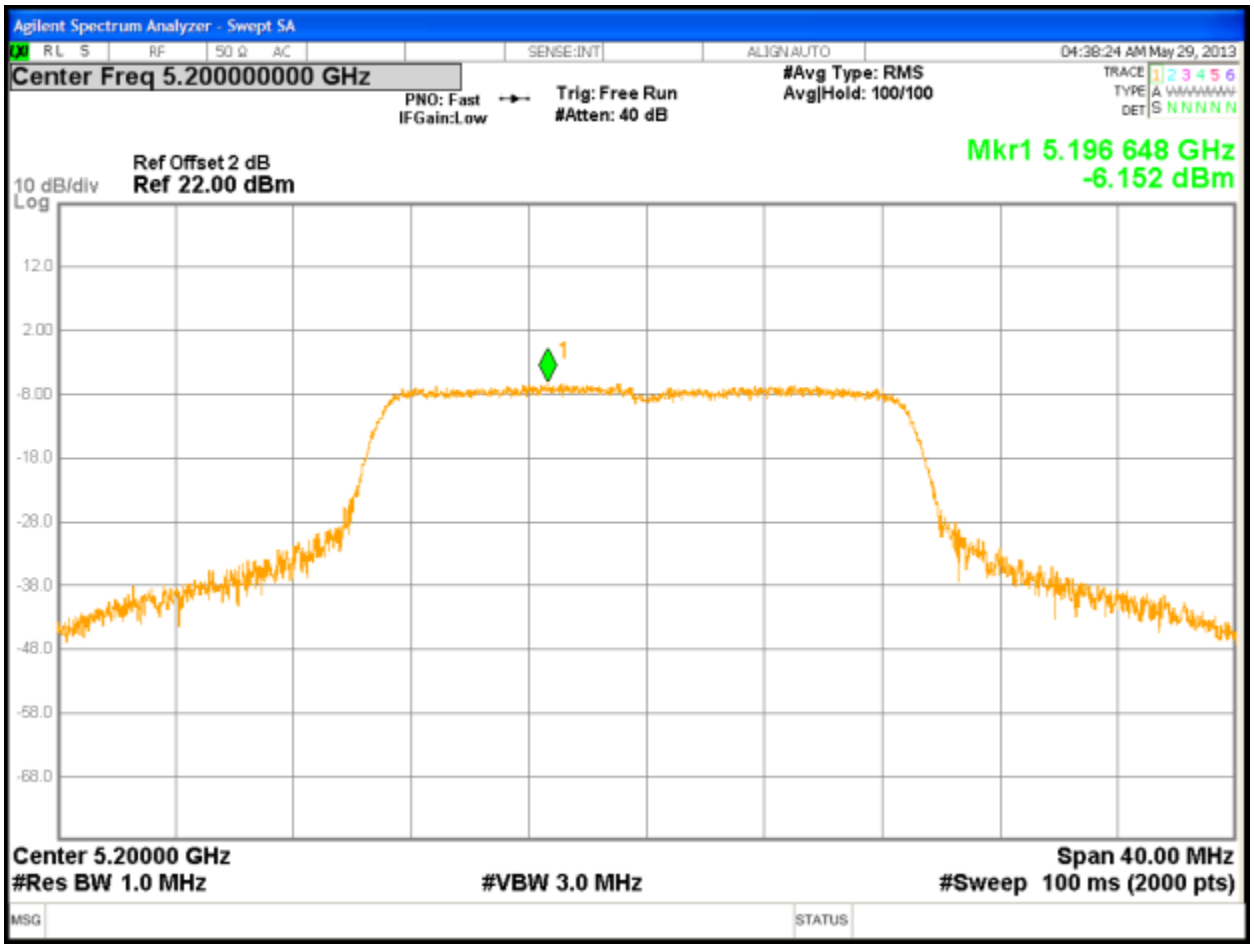


Figure 117: Power Spectral Density, 5200 MHz at 802.11n HT20, Chain 0 – 6.5 Mbps

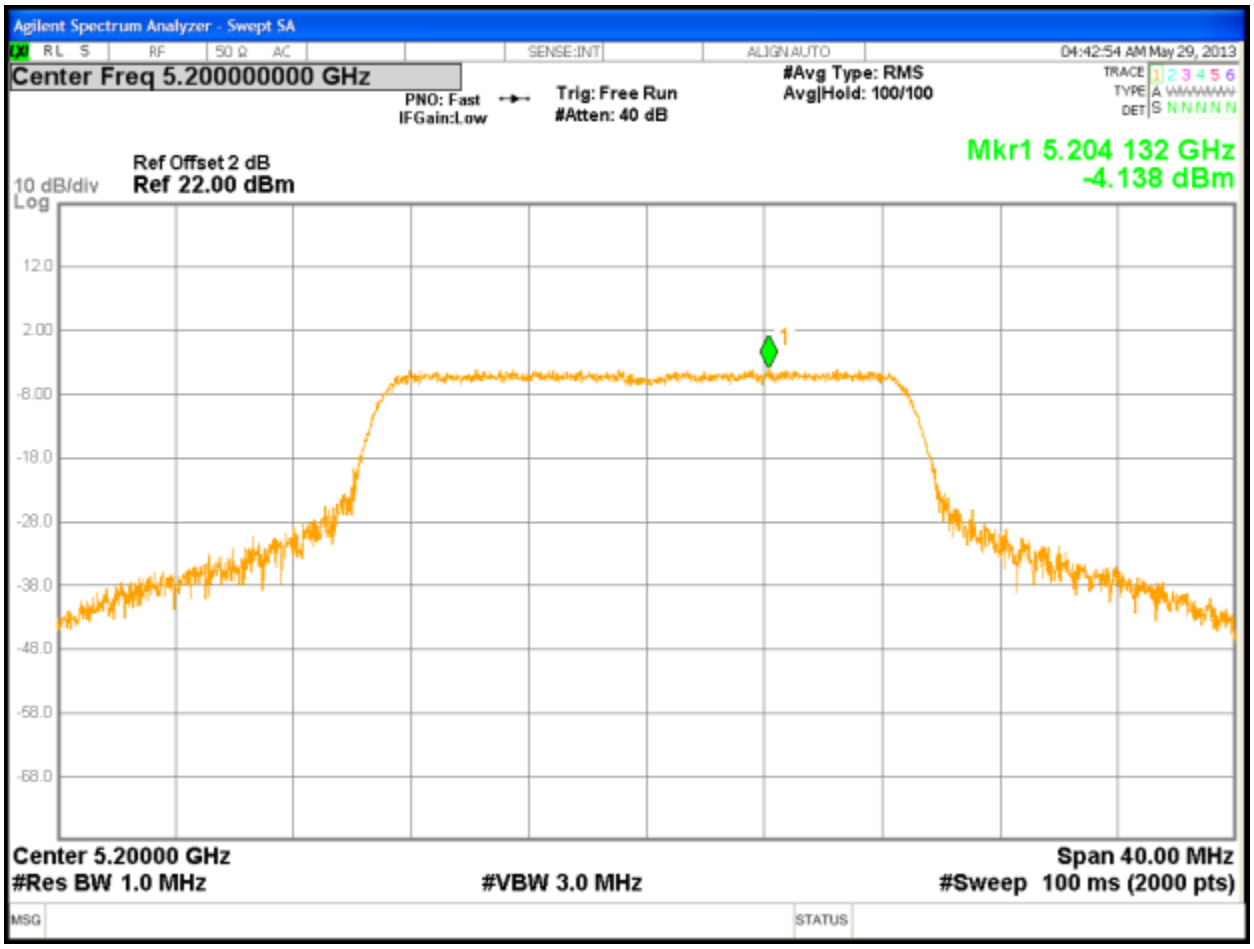


Figure 118: Power Spectral Density, 5200 MHz at 802.11n HT20, Chain 1 – 6.5 Mbps

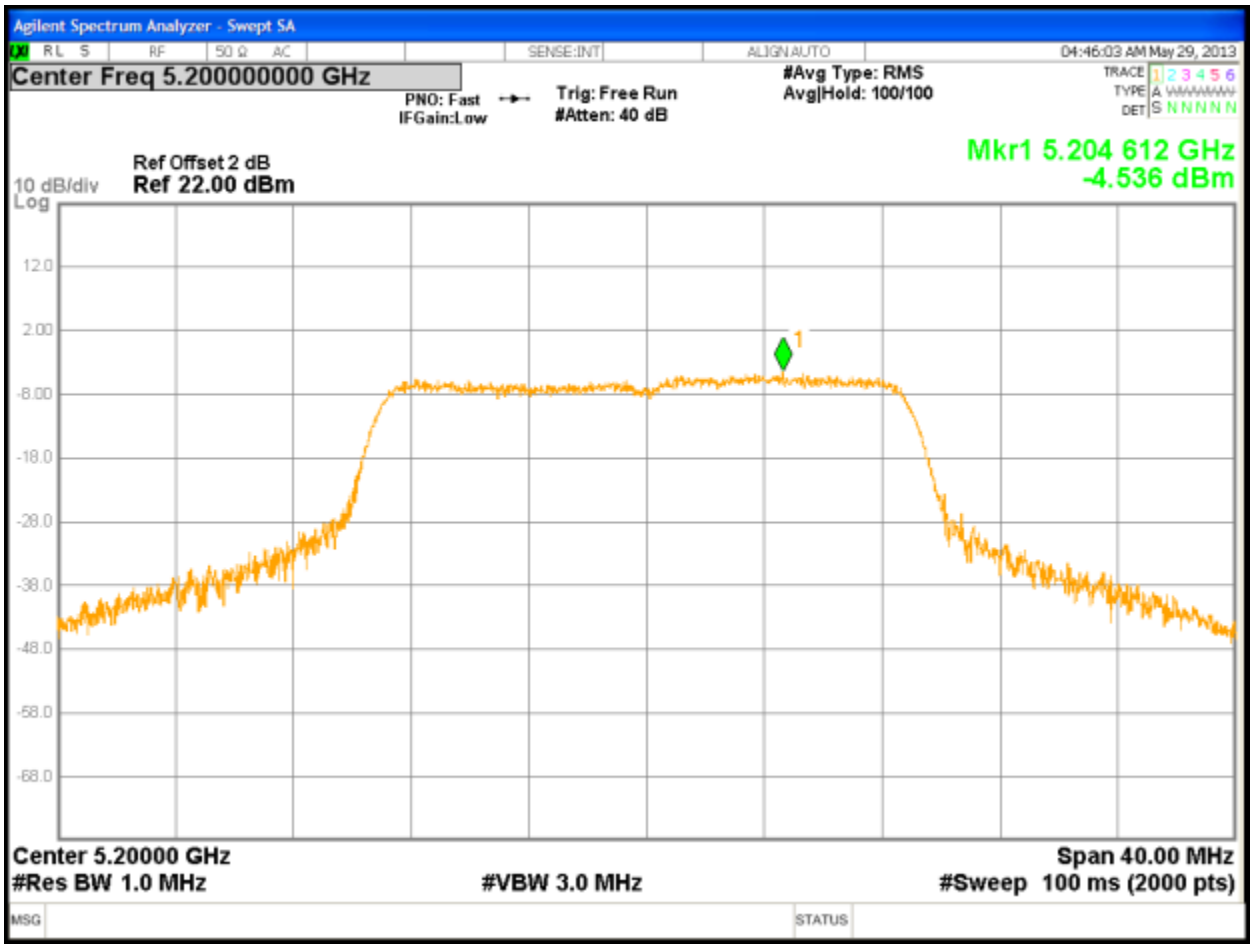


Figure 119: Power Spectral Density, 5200 MHz at 802.11n HT20, Chain 2 – 6.5 Mbps

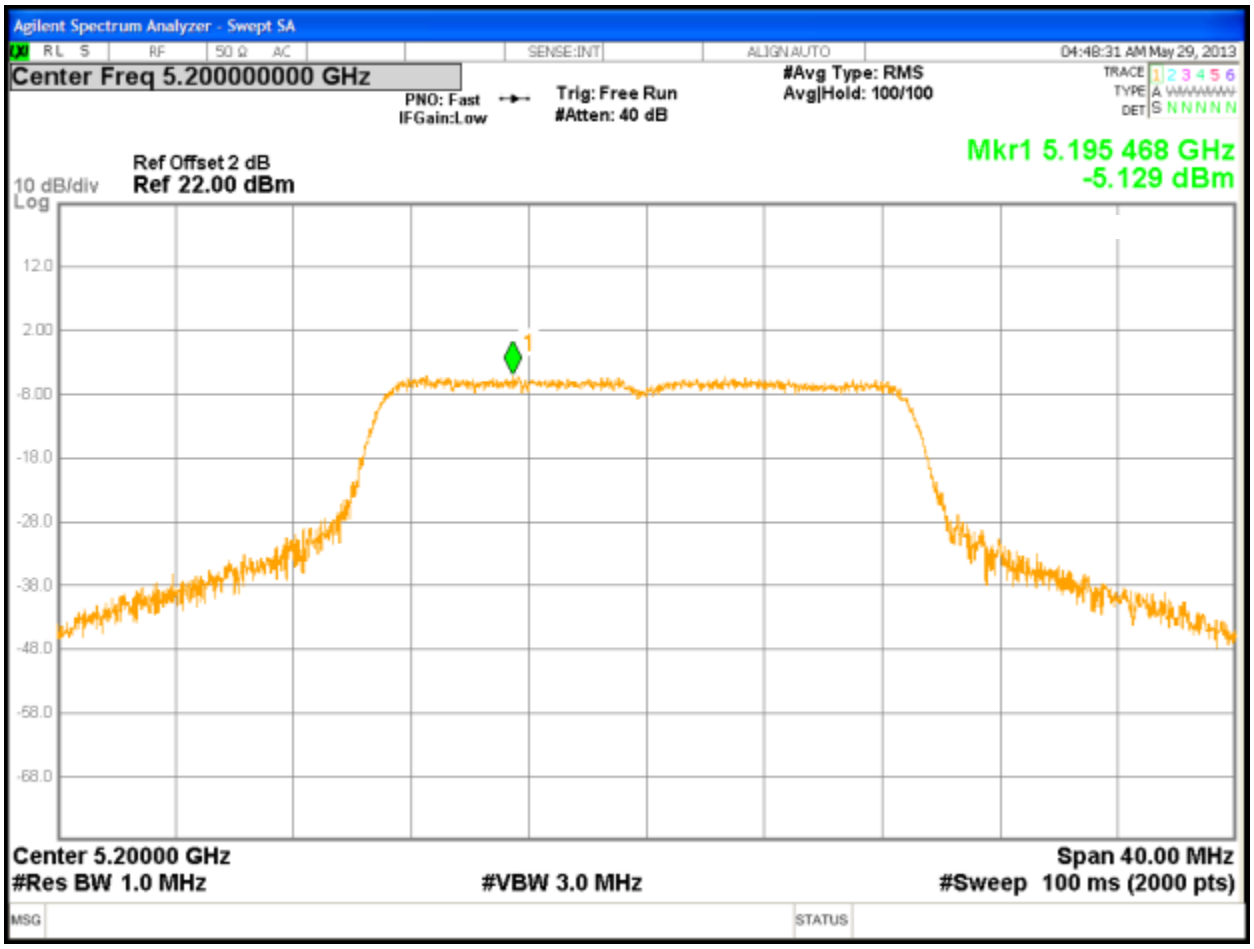


Figure 120: Power Spectral Density, 5200 MHz at 802.11n HT20, Chain 3 – 6.5 Mbps

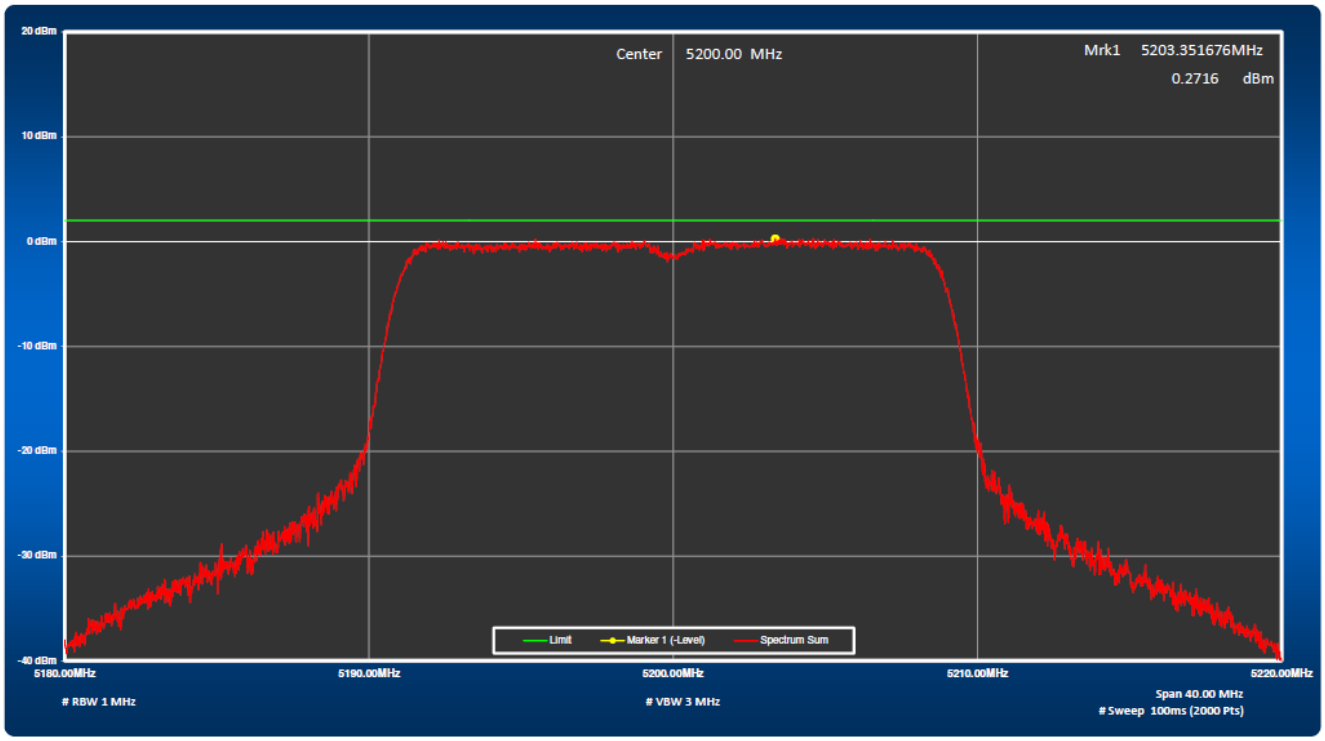


Figure 121: Total Power Spectral Density, 5200 MHz at 802.11n HT20

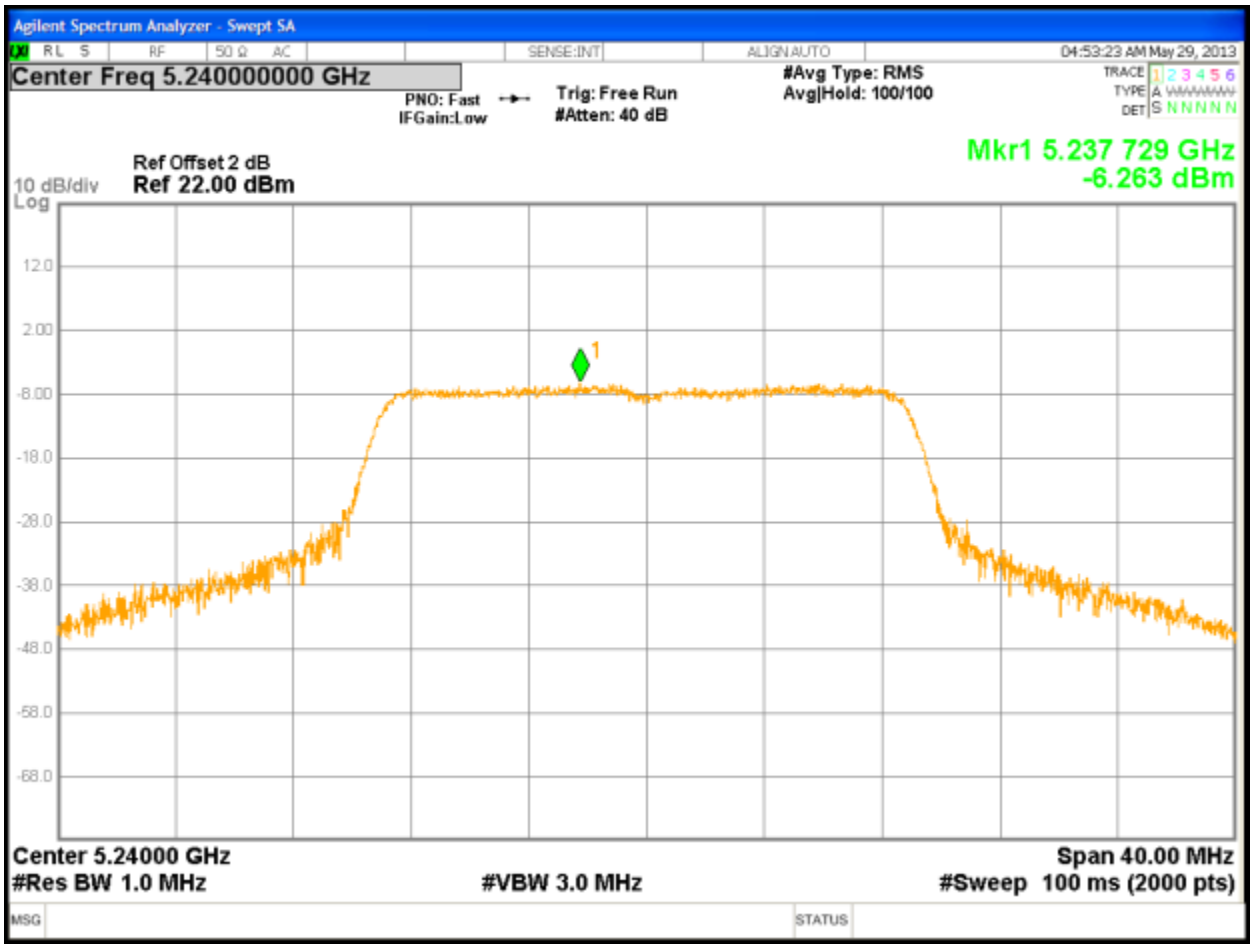


Figure 122: Peak Power Spectral Density, 5240 MHz at 802.11n HT20, Chain 0 – 6.5 Mbps

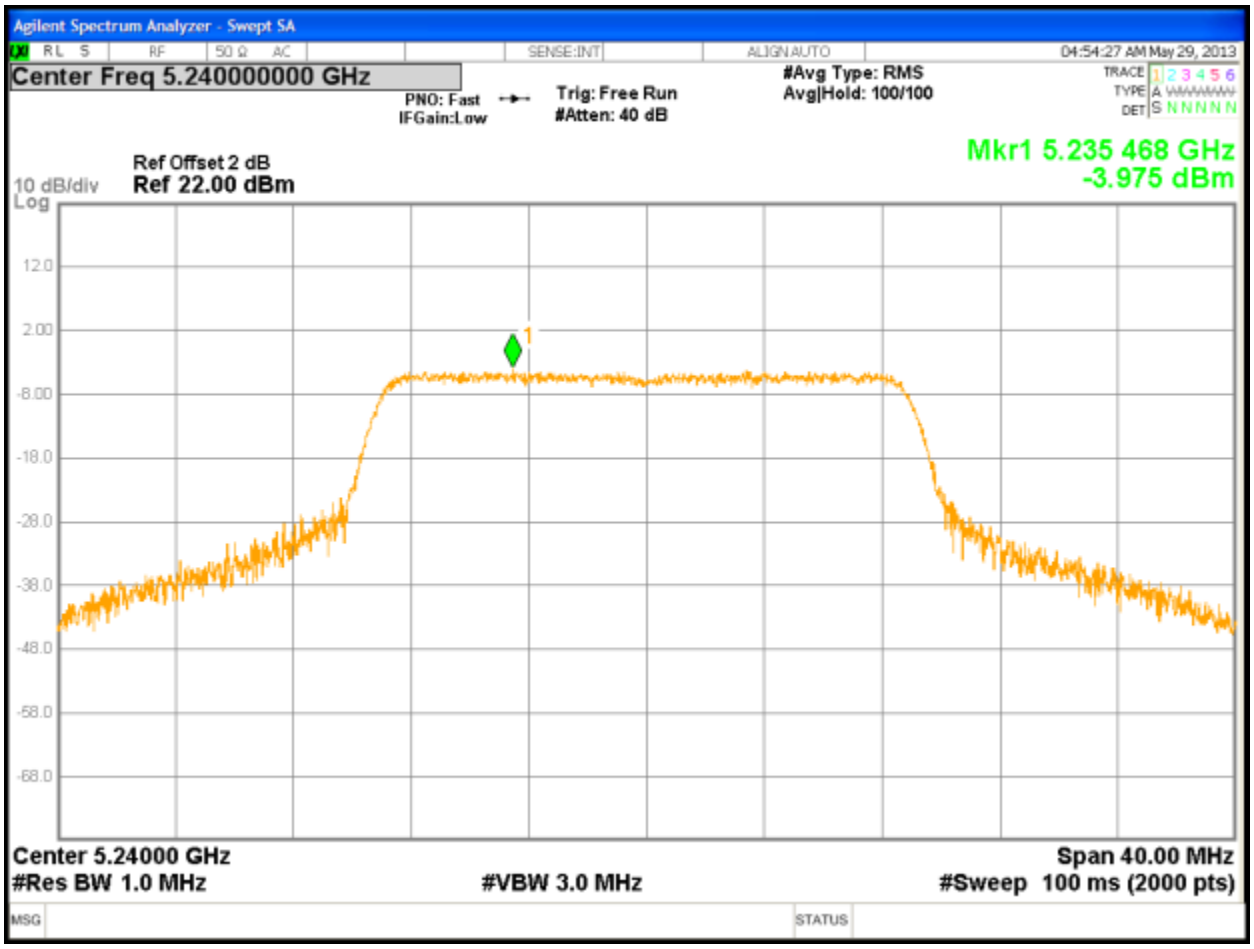


Figure 123: Peak Power Spectral Density, 5240 MHz at 802.11n HT20, Chain 1 – 6.5 Mbps

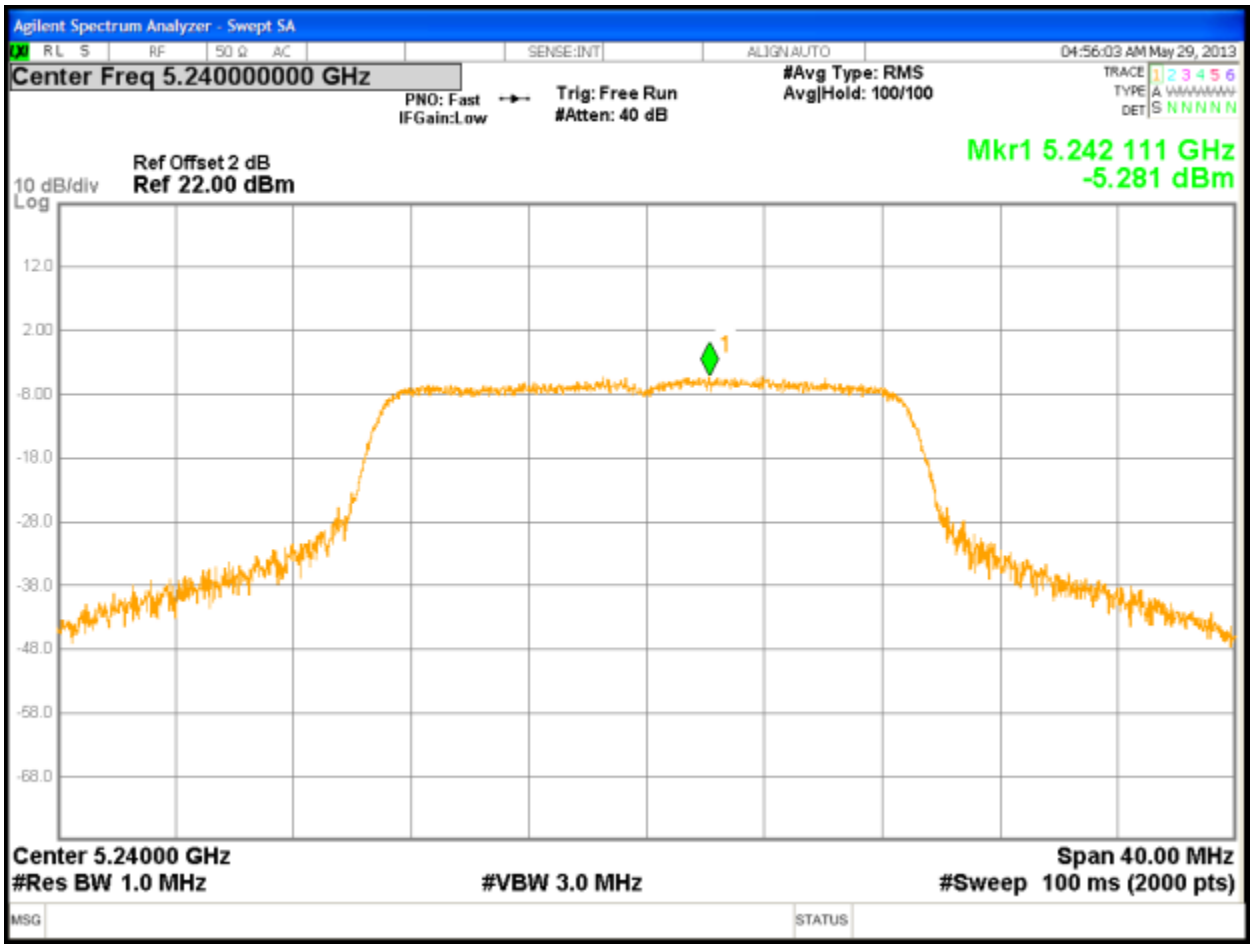


Figure 124: Peak Power Spectral Density, 5240 MHz at 802.11n HT20, Chain 2 – 6.5 Mbps

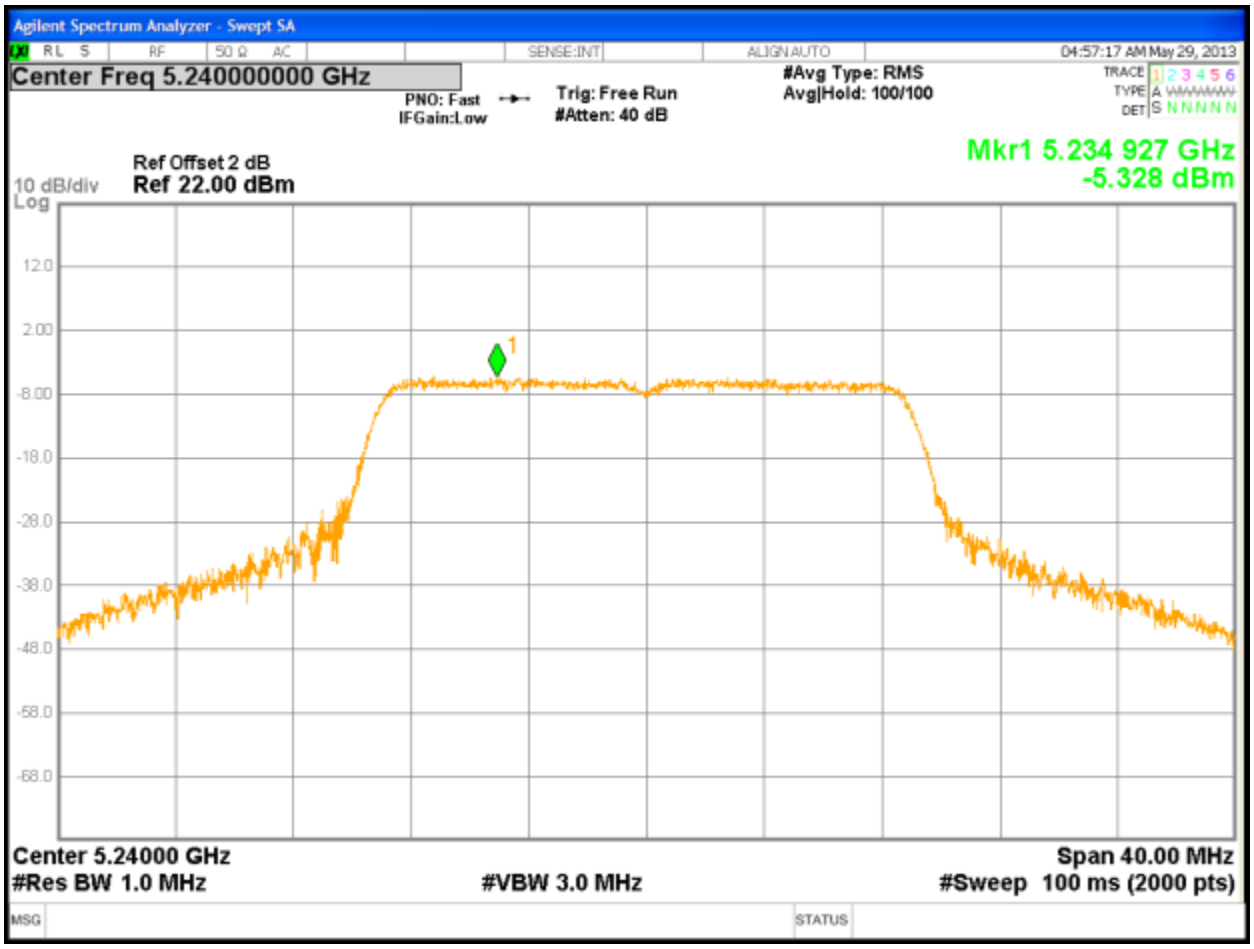


Figure 125: Peak Power Spectral Density, 5240 MHz at 802.11n HT20, Chain 3 – 6.5 Mbps

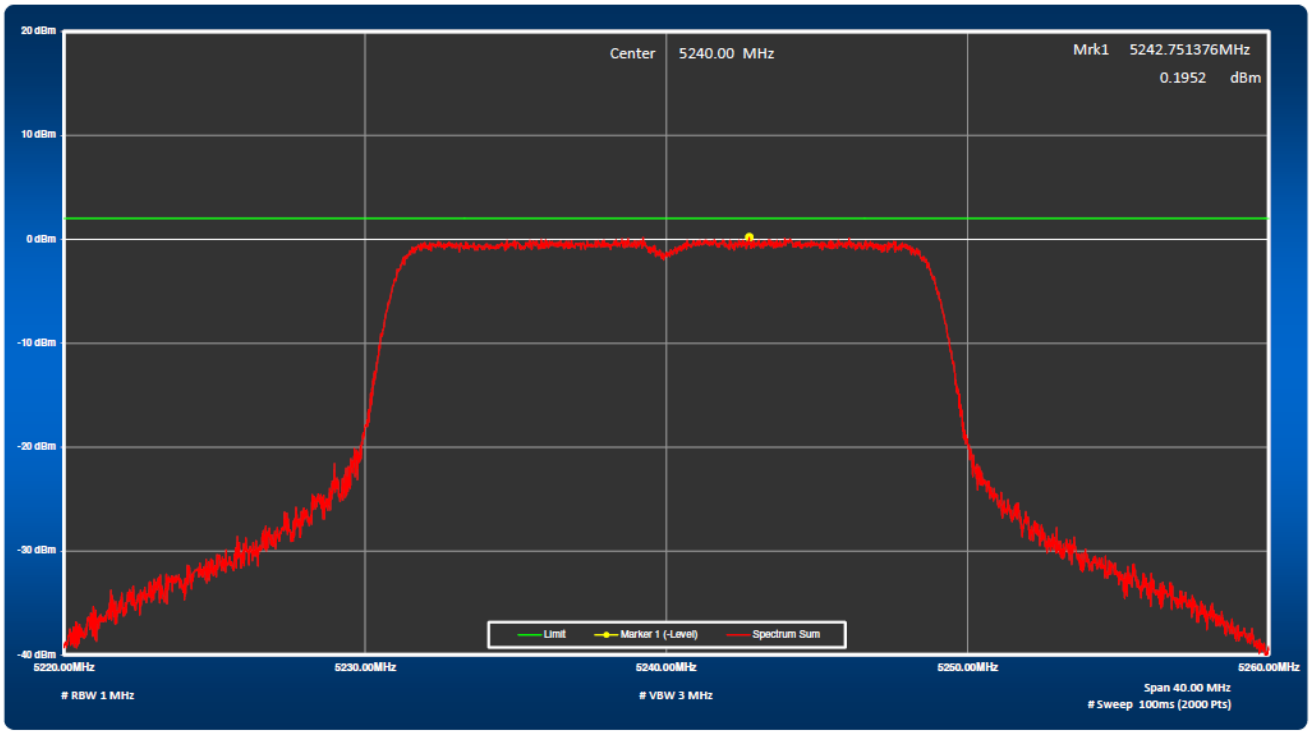


Figure 126: Total Power Spectral Density, 5240 MHz at 802.11n HT20

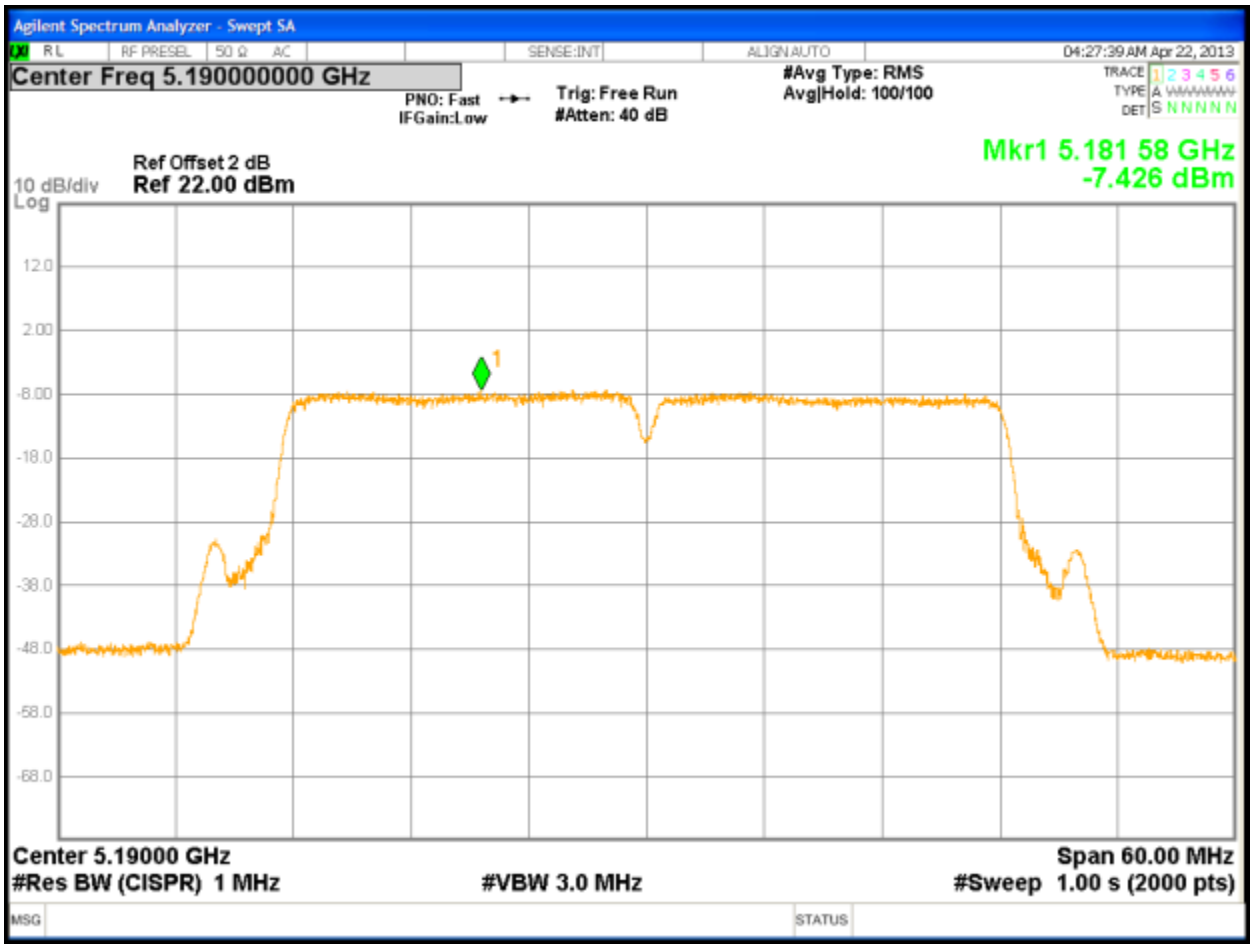


Figure 127: Peak Power Spectral Density, 5190 MHz at 802.11n, Chain 0 – 13.5 Mbps

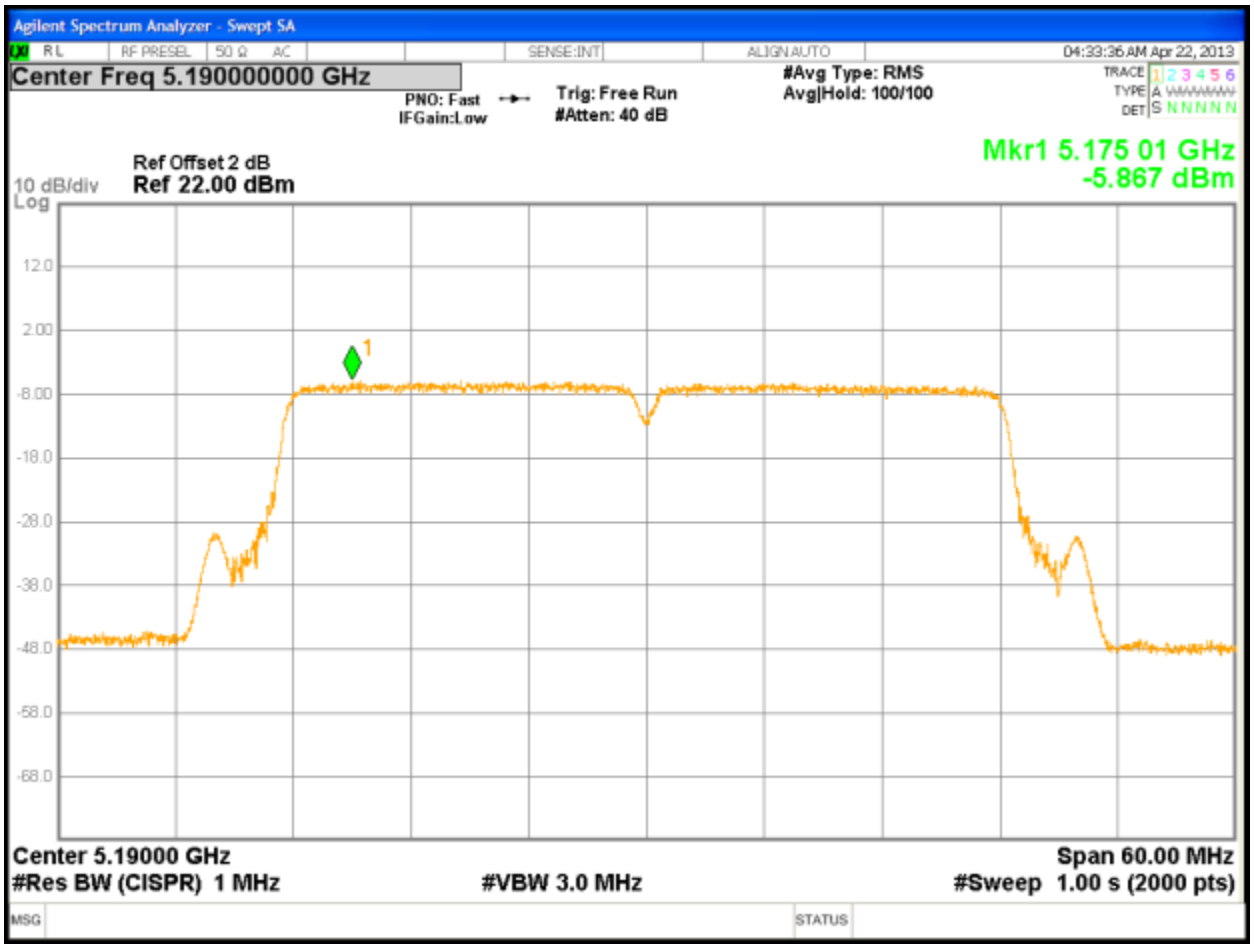


Figure 128: Peak Power Spectral Density, 5190 MHz at 802.11n, Chain 1 – 13.5 Mbps

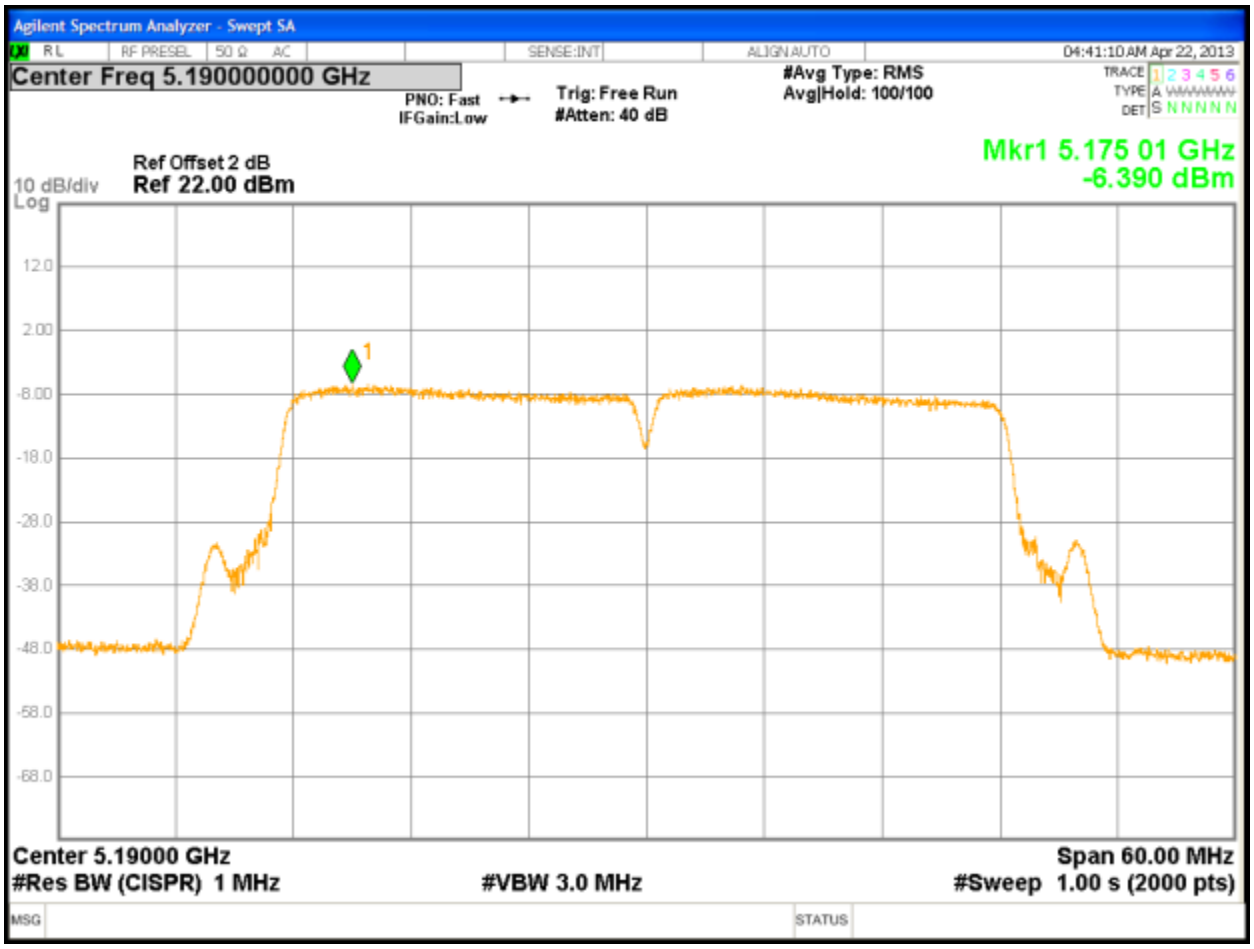


Figure 129: Peak Power Spectral Density, 5190 MHz at 802.11n, Chain 2 – 13.5 Mbps

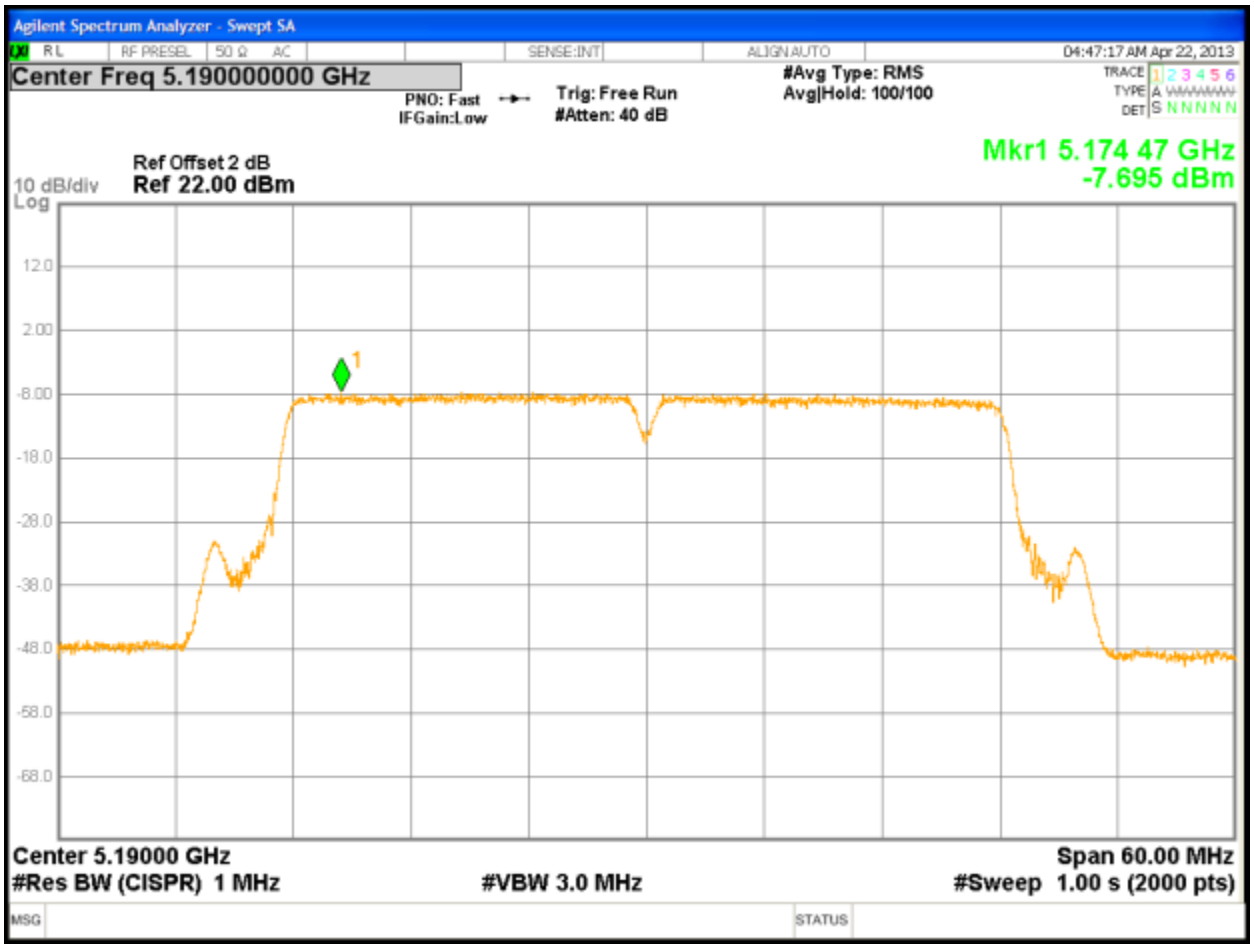


Figure 130: Peak Power Spectral Density, 5190 MHz at 802.11n, Chain 3 – 13.5 Mbps

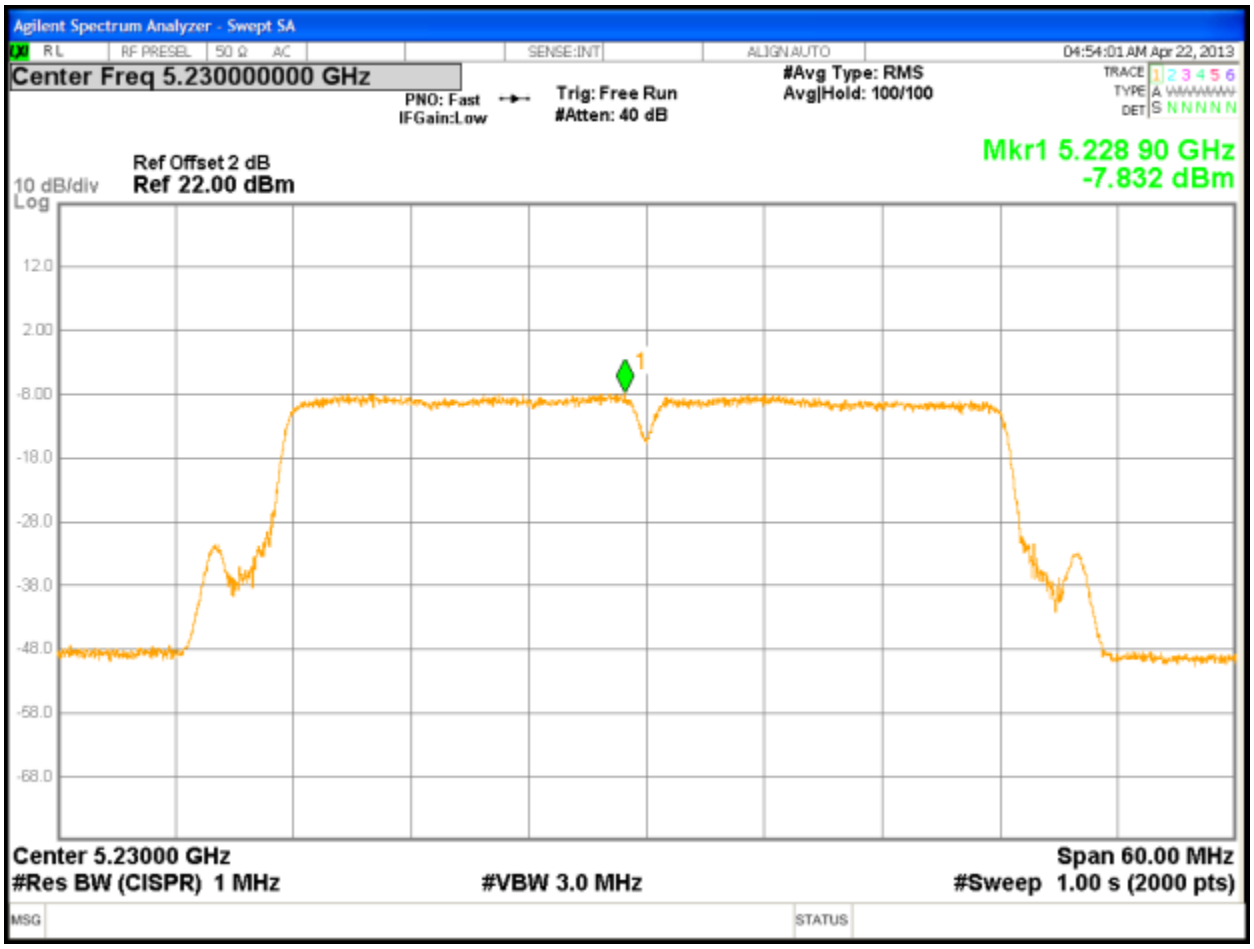


Figure 131: Peak Power Spectral Density, 5230 MHz at 802.11n, Chain 0 – 13.5 Mbps

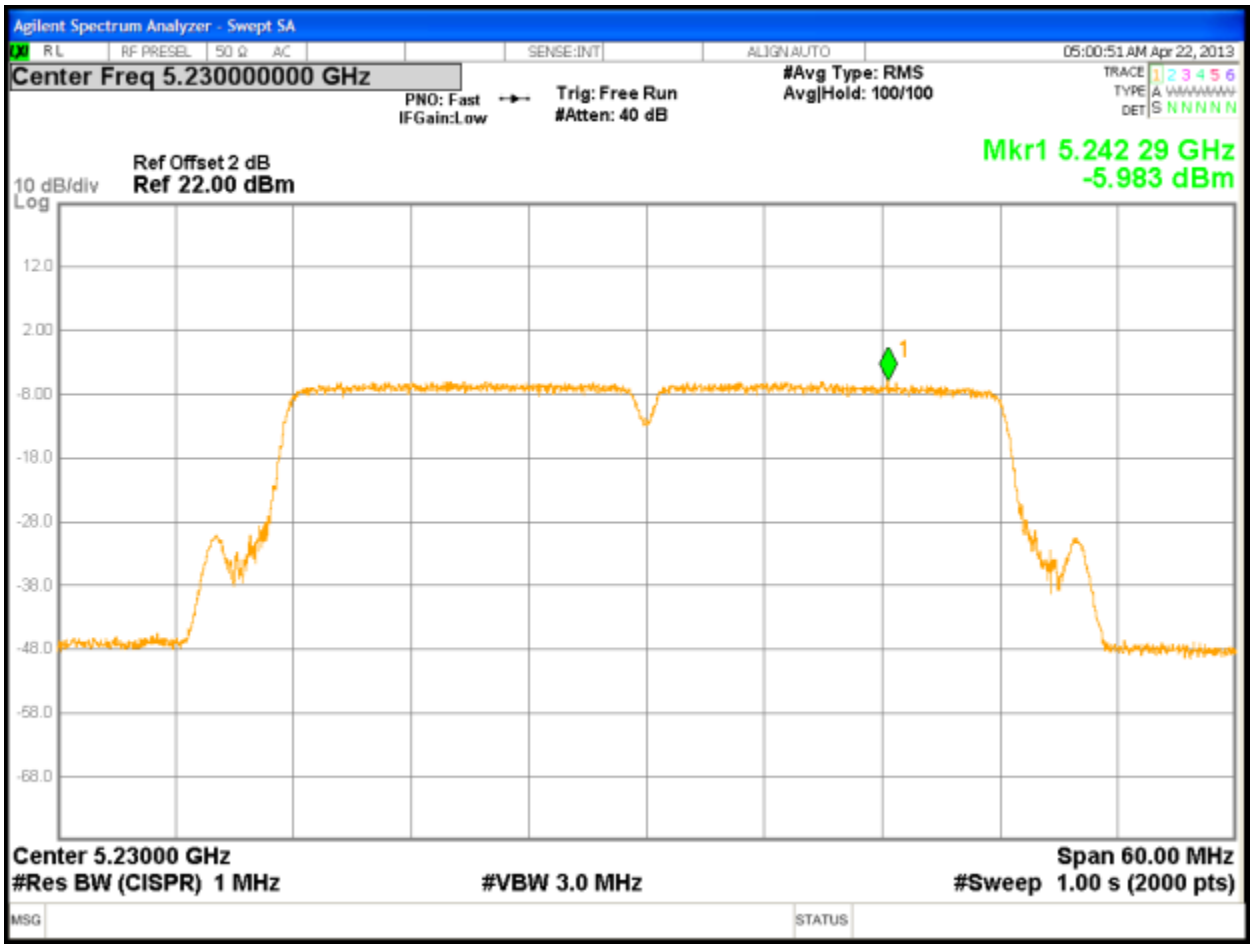


Figure 132: Peak Power Spectral Density, 5230 MHz at 802.11n, Chain 1 – 13.5 Mbps

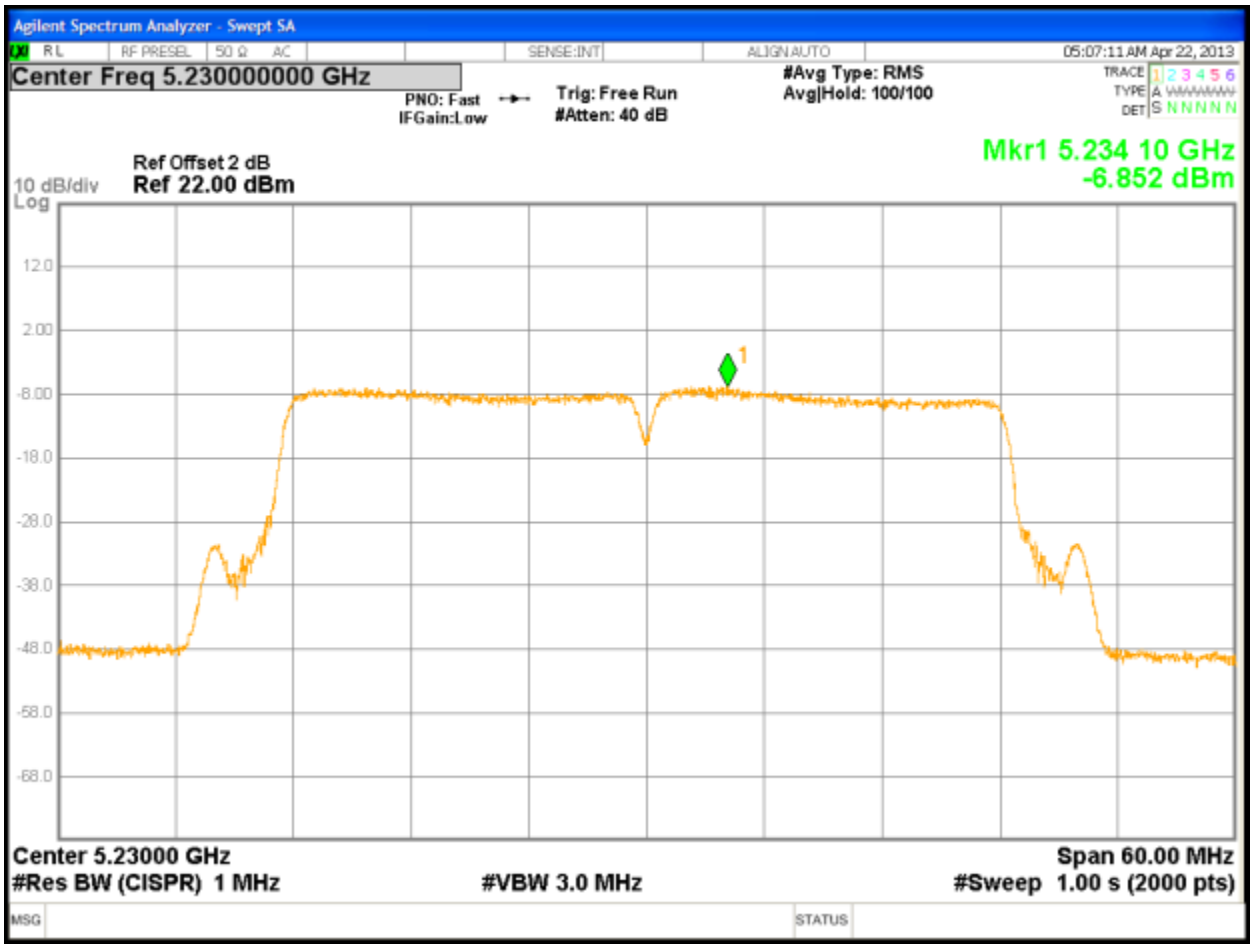


Figure 133: Peak Power Spectral Density, 5230 MHz at 802.11n, Chain 2 – 13.5 Mbps

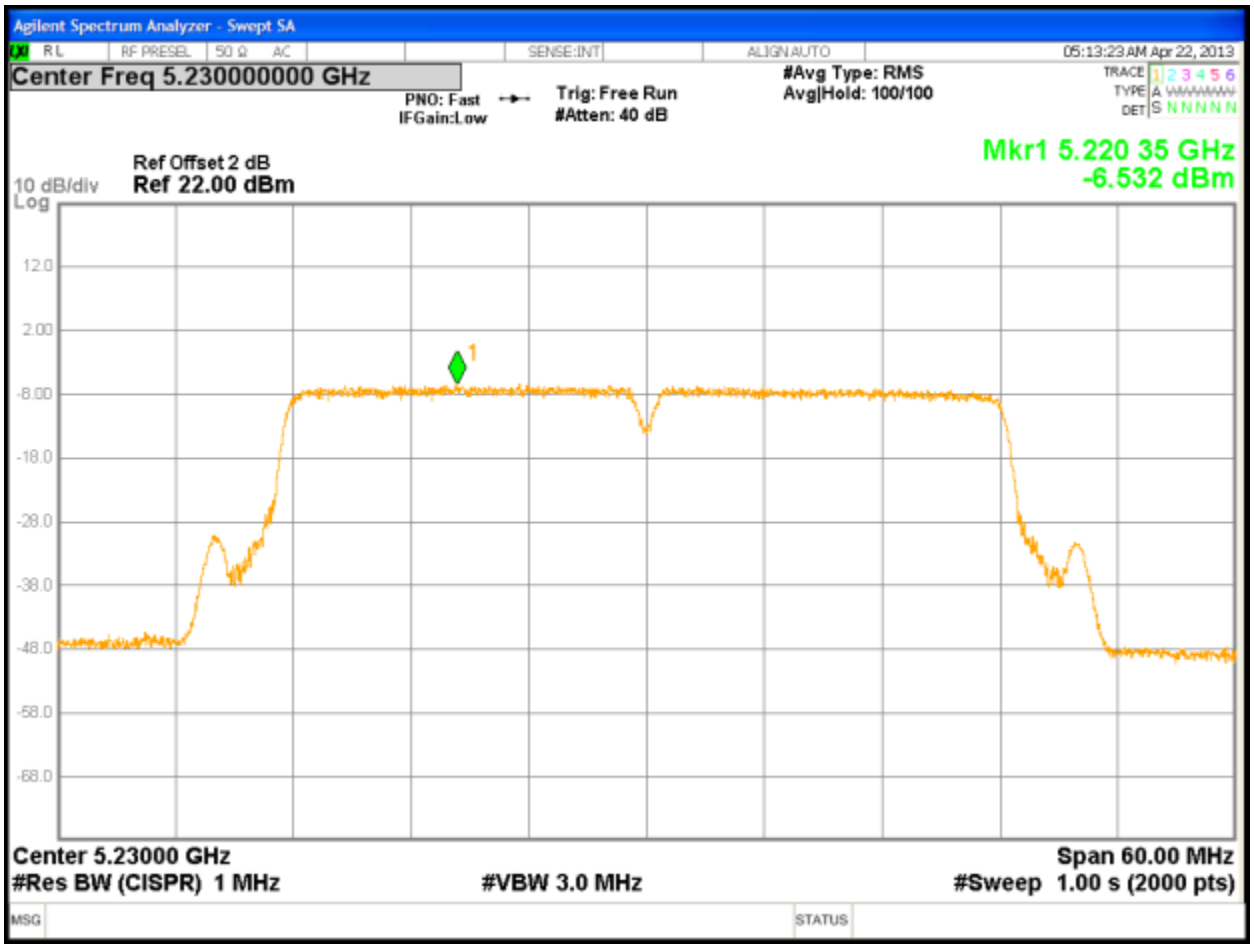


Figure 134: Peak Power Spectral Density, 5230 MHz at 802.11n, Chain 3 – 13.5 Mbps

4.5 Transmitter Spurious Emissions

Transmitter spurious emissions are emissions outside the frequency range of the equipment when the equipment is in transmit mode; per requirement of CFR47 15.205, 15.209, 15.407(b), RSS 210 Sect. A.9.2

4.5.1 Test Methodology

4.5.1.1 Preliminary Test

A test program that controls instrumentation and data logging was used to automate the preliminary RF emission test procedure. The frequency range of interest was divided into sub-ranges to yield a frequency resolution of approximately 120 kHz and provide a reading at each frequency for no more than 12° of turntable rotation. For each frequency sub-range the turntable was rotated 360° while peak emission data was recorded and plotted over the frequency range of interest in horizontal and vertical antenna polarization's.

Preliminary emission profile testing was performed inside the anechoic chamber. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm above the floor. The EUT was positioned as shown in the setup photographs. The receiving antenna was placed at a distance of 3m at a fixed height of 1m. Measurement equipment was located outside of the chamber. A video camera was placed inside the chamber to view the EUT.

Pres-scans were performed to determine the worst axis, data rate/ chains.

4.5.1.2 Final Test

For each frequency measured, the peak emission was maximized by manipulating the receiving antenna from 1 to 4 meters above the ground plane and placing it at the position that produced the maximum signal strength reading. The turntable was then rotated through 360° while observing the peak signal and placing the EUT at the position that produced maximum radiation. The six highest emissions relative to the limit were measured unless such emissions were more than 20 dB below the limit. If less than six emissions are within 20 dB of the limit, than the noise level of the receiver is measured at frequencies where emissions are expected. Multiples of all oscillator and microprocessor frequencies were also checked.

Final testing was performed on an NSA compliant test site. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm above the ground plane. The placement of EUT and cables were the same as for preliminary testing and is shown in the setup photographs.

The final scans performed on the worst axis, Y-Axis, for three operating channels;

6.5 Mbit/s for 802.11n HT20 Mode: 5180 MHz, 5200 MHz, 5240 MHz

13.5 Mbit/s for 802.11n HT40 Mode: 5190 MHz, 5230 MHz

4.5.1.3 Deviations

None.

4.5.2 Transmitter Spurious Emission Limit

The spurious emissions of the transmitter shall not exceed the values in CFR47 Part 15.205, 15.209: 2009 and RSS 210 A1.1.2 2007.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490.....	2400/F(kHz)	300
0.490-1.705.....	24000/F(kHz)	30
1.705-30.0.....	30	30
30-88.....	100 **	3
88-216.....	150 **	3
216-960.....	200 **	3
Above 960.....	500	3

According to CFR47 15.407 (b), all harmonics and spurious emissions which are outside the 5150 MHz - 5250 MHz, 5250 MHz – 5350 MHz, or 5470 MHz – 5725 MHz shall not exceed -27 dBm/MHz. This is equivalent to 68.2 dBuV/m at 3 meter distance.

4.5.3 Test Results

The final measurement data was taken under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and test plan.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 7: Transmit Spurious Emission at Band-Edge Requirements

Test Conditions: Radiated Measurement, Normal Temperature and Voltage only								
Antenna Type: Integrated				**Power Setting:** See test plan				
Max. Directional Gain: + 8 dBi				**Signal State:** Modulated at 100%.				
Ambient Temp.: 23° C				**Relative Humidity:**33%				
Band-Edge Results								
Freq. (MHz)	Level (dBuV/m)	Polarity (H/V)	Limit (dBuV/m)	Margin (dB)	Det.	Table Deg.	Tower (cm)	Note
5150	57.37	H	74.00	-16.63	Pk	61	133	11a, 5180 MHz, 11 dBm
5150	44.10	H	54.00	-9.90	Ave	61	133	11a, 5180 MHz, 11 dBm
5150	67.97	V	74.00	-6.03	Pk	190	129	11a, 5180 MHz, 11 dBm
5150	45.78	V	54.00	-8.22	Ave	190	129	11a, 5180 MHz, 11 dBm
5150	68.04	H	74.00	-5.96	Pk	292	98	11a, 5240 MHz, 11 dBm
5150	43.70	H	54.00	-10.30	Ave	292	98	11a, 5240 MHz, 11 dBm
5150	66.77	V	74.00	-7.23	Pk	184	179	11a, 5240 MHz, 11 dBm
5150	43.85	V	54.00	-10.15	Ave	184	179	11a, 5240 MHz, 11 dBm
5150	62.32	V	74.00	-11.68	Pk	171	135	HT20, 5180 MHz, 11 dBm
5150	45.04	V	54.00	-8.96	Ave	171	135	HT20, 5180 MHz, 11 dBm
5150	63.67	H	74.00	-10.33	Pk	265	193	HT20, 5180 MHz, 11 dBm
5150	44.17	H	54.00	-9.83	Ave	265	193	HT20, 5180 MHz, 11 dBm
5150	62.35	H	74.00	-11.65	Pk	264	232	HT20, 5240 MHz, 11 dBm
5150	43.56	H	54.00	-10.44	Ave	264	232	HT20, 5240 MHz, 11 dBm
5150	63.46	V	74.00	-10.54	Pk	298	173	HT20, 5240 MHz, 11 dBm
5150	43.15	V	54.00	-10.85	Ave	298	173	HT20, 5240 MHz, 11 dBm
5150	64.89	V	74.00	-9.11	Pk	295	176	HT40, 5190 MHz, 11 dBm
5150	48.62	V	54.00	-5.38	Ave	295	176	HT40, 5190 MHz, 11 dBm
5150	64.54	H	74.00	-9.46	Pk	263	192	HT40, 5190 MHz, 11 dBm
5150	48.34	H	54.00	-5.66	Ave	263	192	HT40, 5190 MHz, 11 dBm
5150	62.64	H	74.00	-11.36	Pk	261	190	HT40, 5230 MHz, 11 dBm
5150	42.96	H	54.00	-11.04	Ave	261	190	HT40, 5230 MHz, 11 dBm
5150	62.33	V	74.00	-11.67	Pk	296	190	HT40, 5230 MHz, 11 dBm
5150	42.15	V	54.00	-11.85	Ave	296	190	HT40, 5230 MHz, 11 dBm

Note: 1. Band-edge frequencies were taken at 5150 MHz since 5250-5350 MHz band is not a restricted band.

2. All the band-edge measurements met the restricted band requirements of CFR47 15.205.

3. It is also complied with the -27 dBm/MHz (68.2 dBuV/m at 3m) requirements as stated in CFR47 15.407 (b) (1) to 15.407 (b) (3).

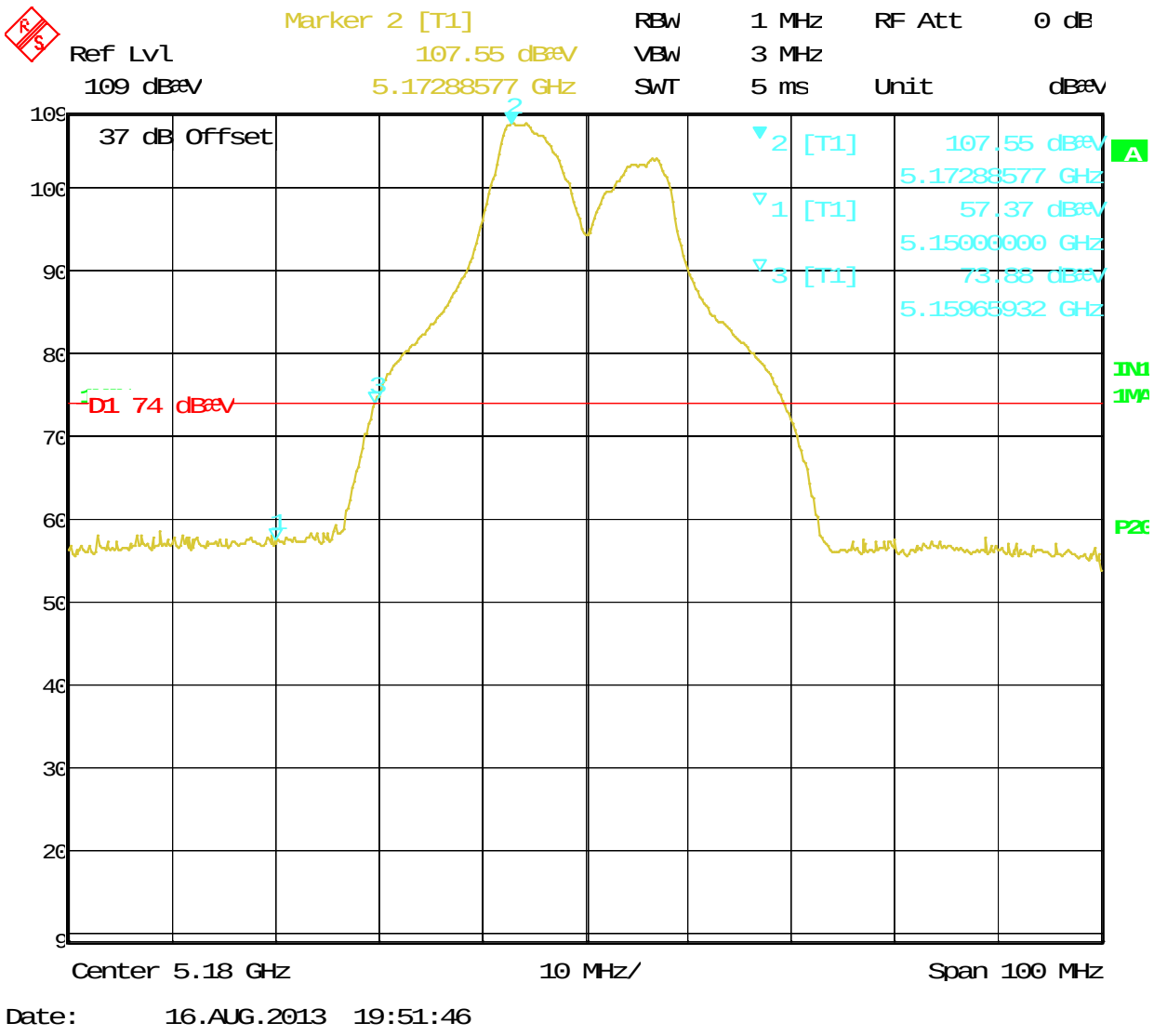


Figure 135: Radiated Emission at the Edge for Channel 5180 MHz at 6 Mbps – Horz. (Peak)

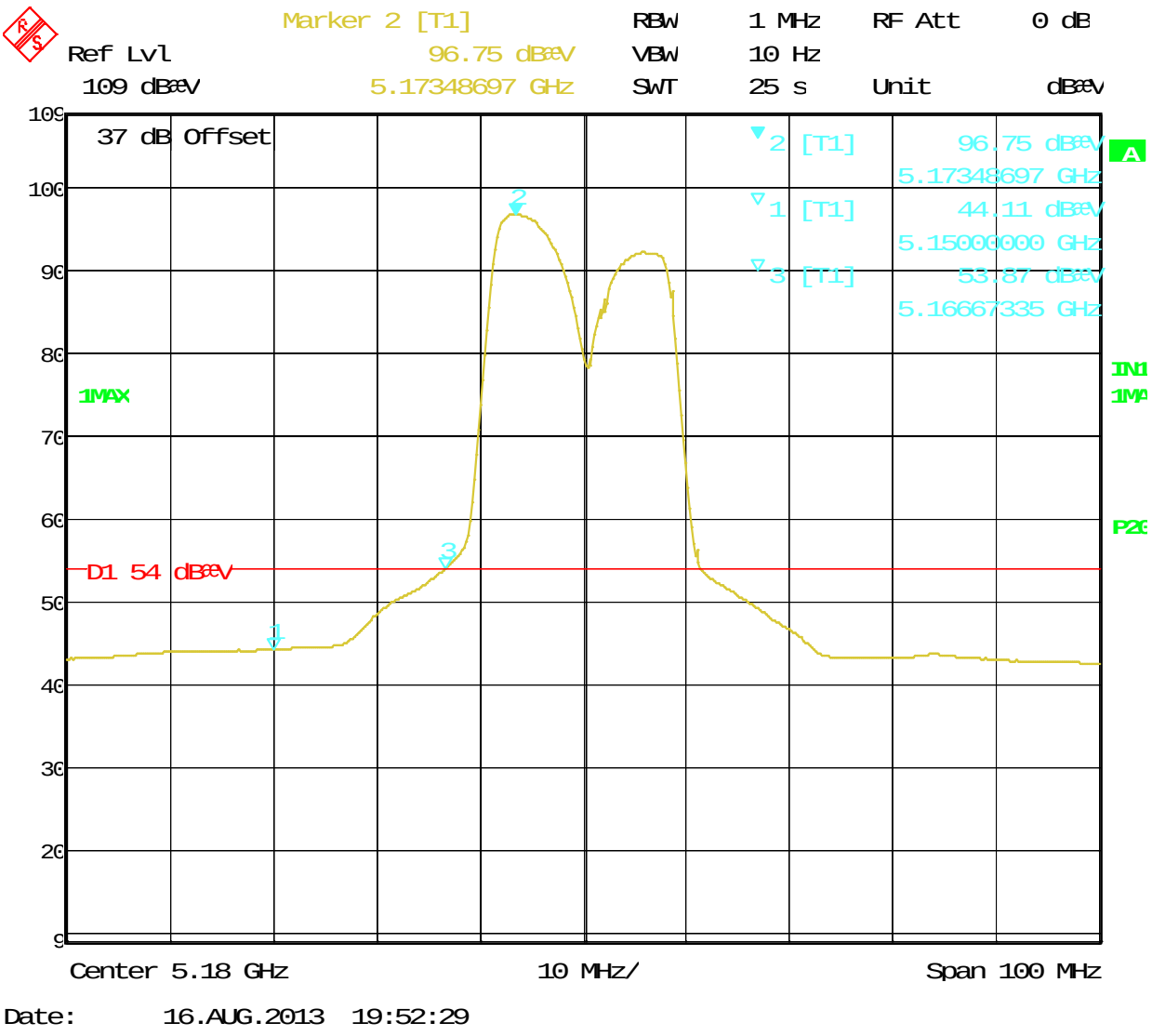


Figure 136: Radiated Emission at the Edge for Channel 5180 MHz at 6 Mbps – Horz. (Ave.)

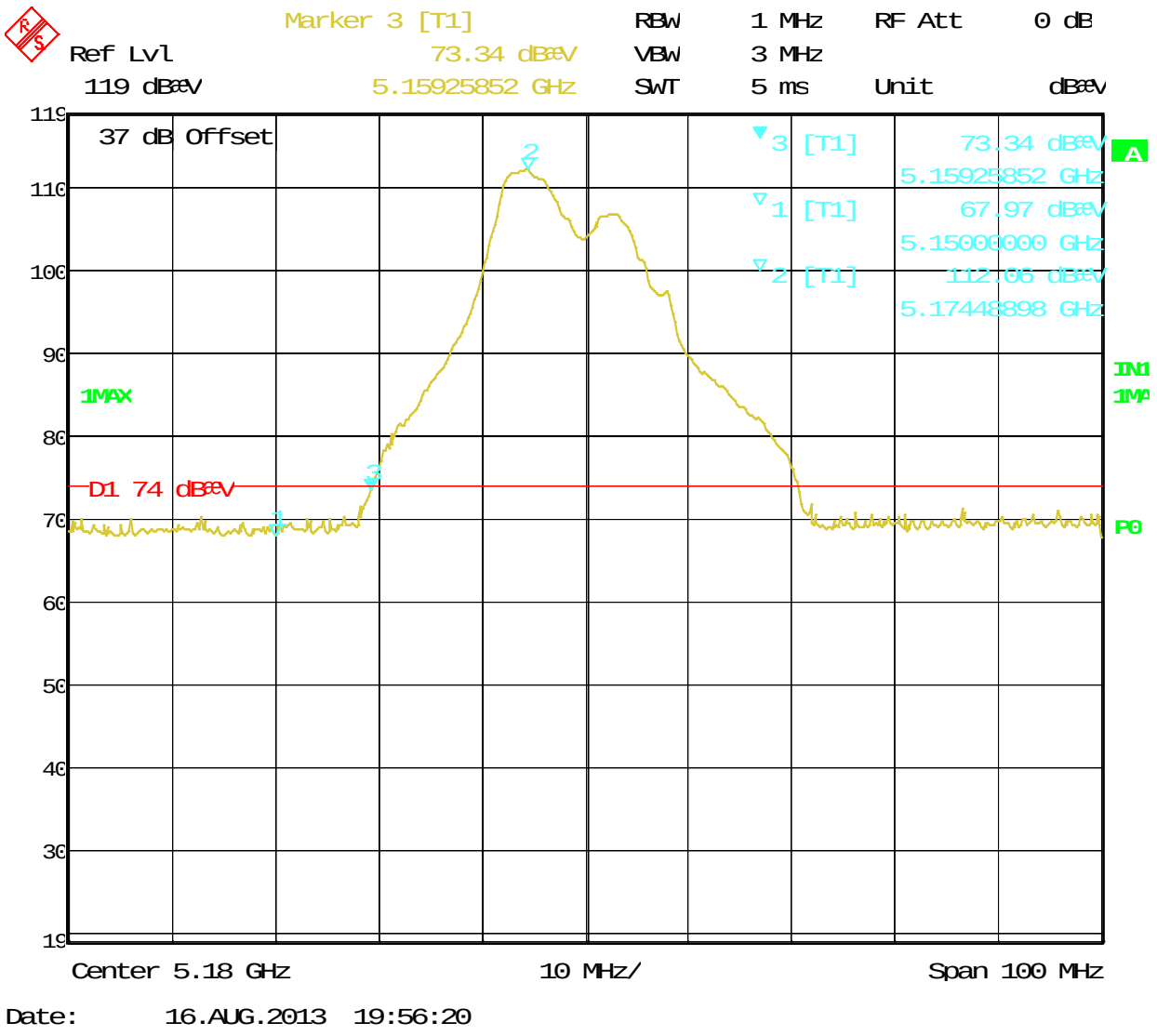


Figure 137: Radiated Emission at the Edge for Channel 5180 MHz at 6 Mbps – Vert. (Peak)

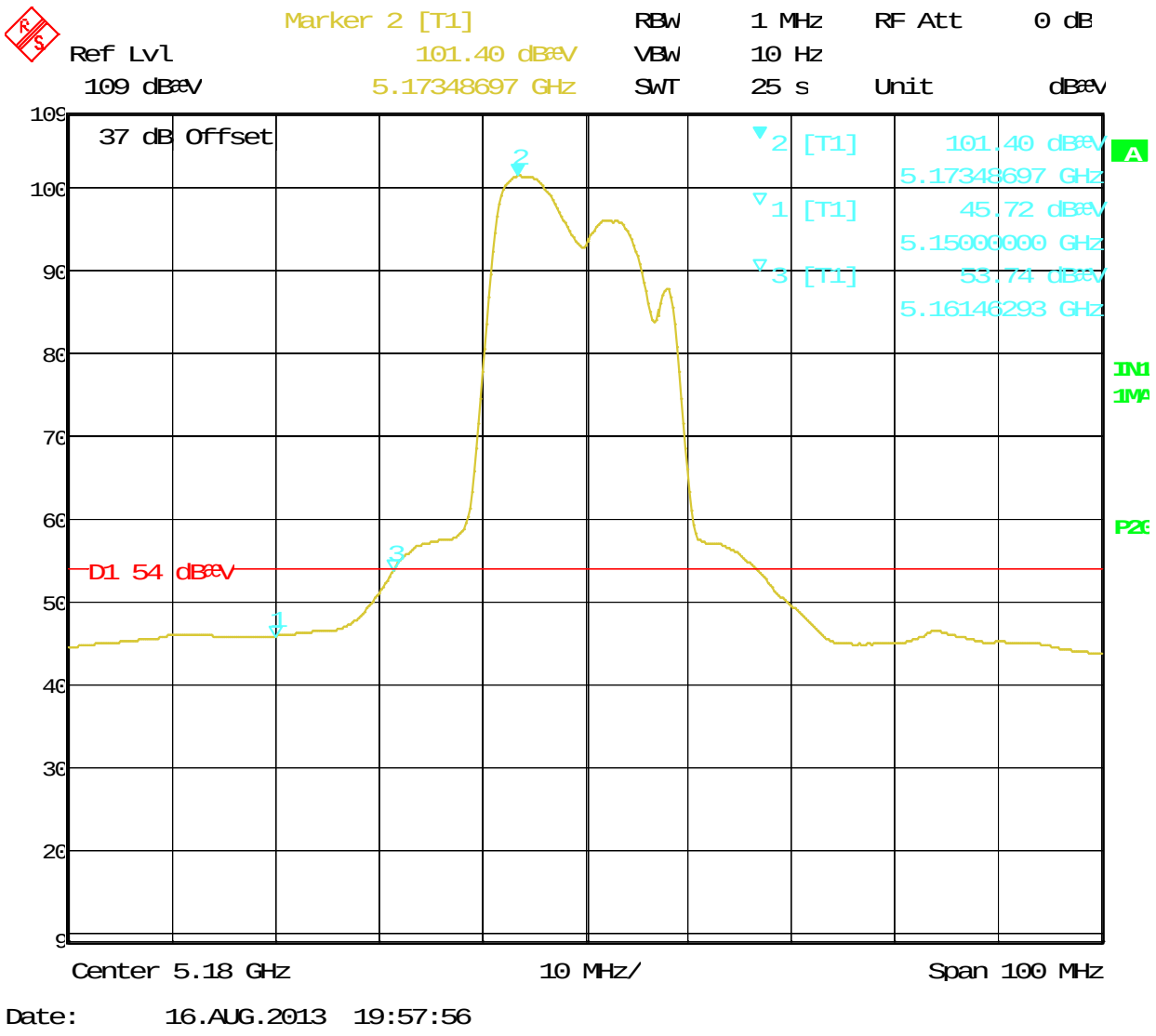


Figure 138: Radiated Emission at the Edge for Channel 5180 MHz at 6 Mbps – Vert. (Ave.)

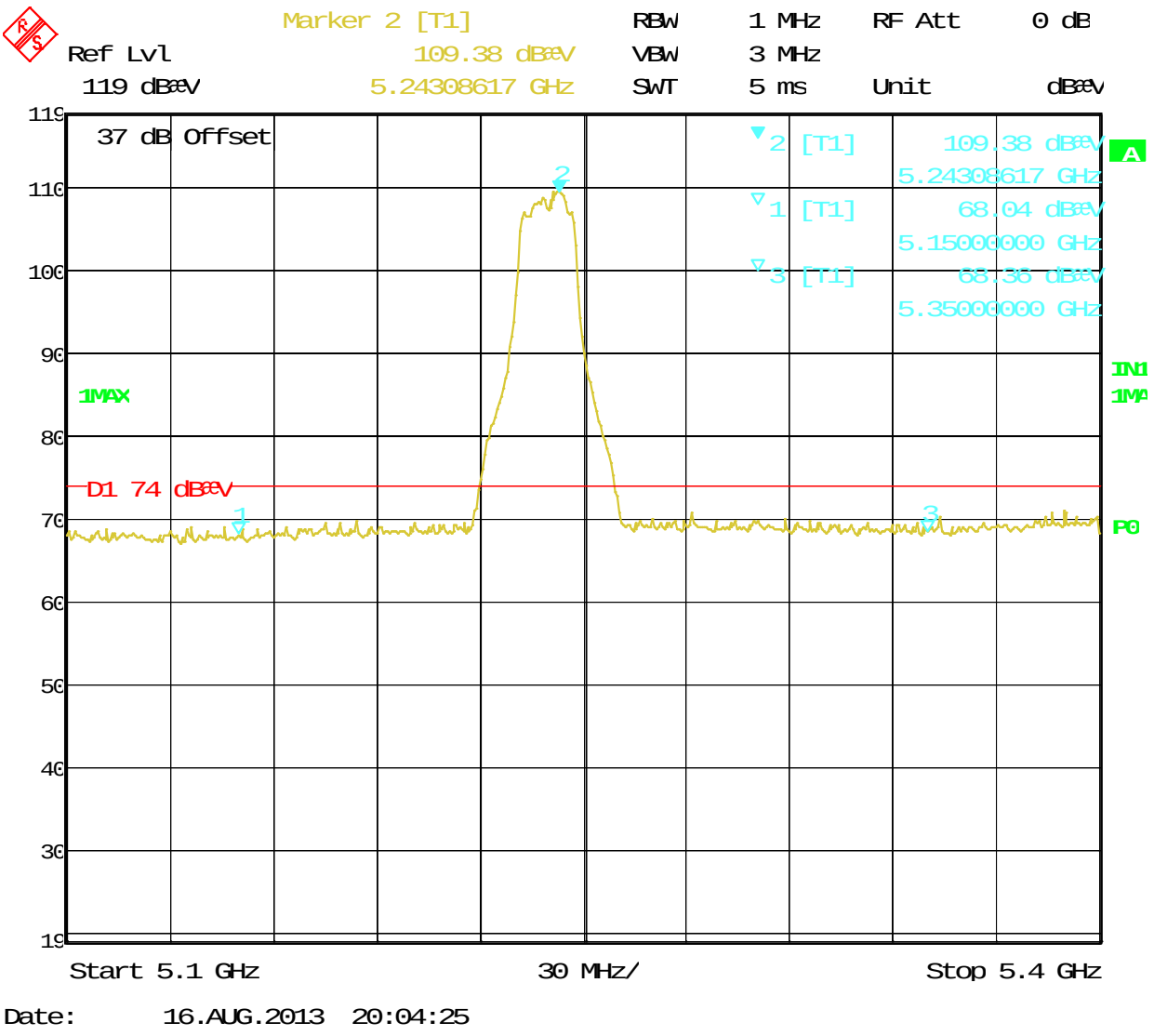


Figure 139: Radiated Emission at the Edge for Channel 5240 MHz at 6 Mbps – Horz. (Peak)

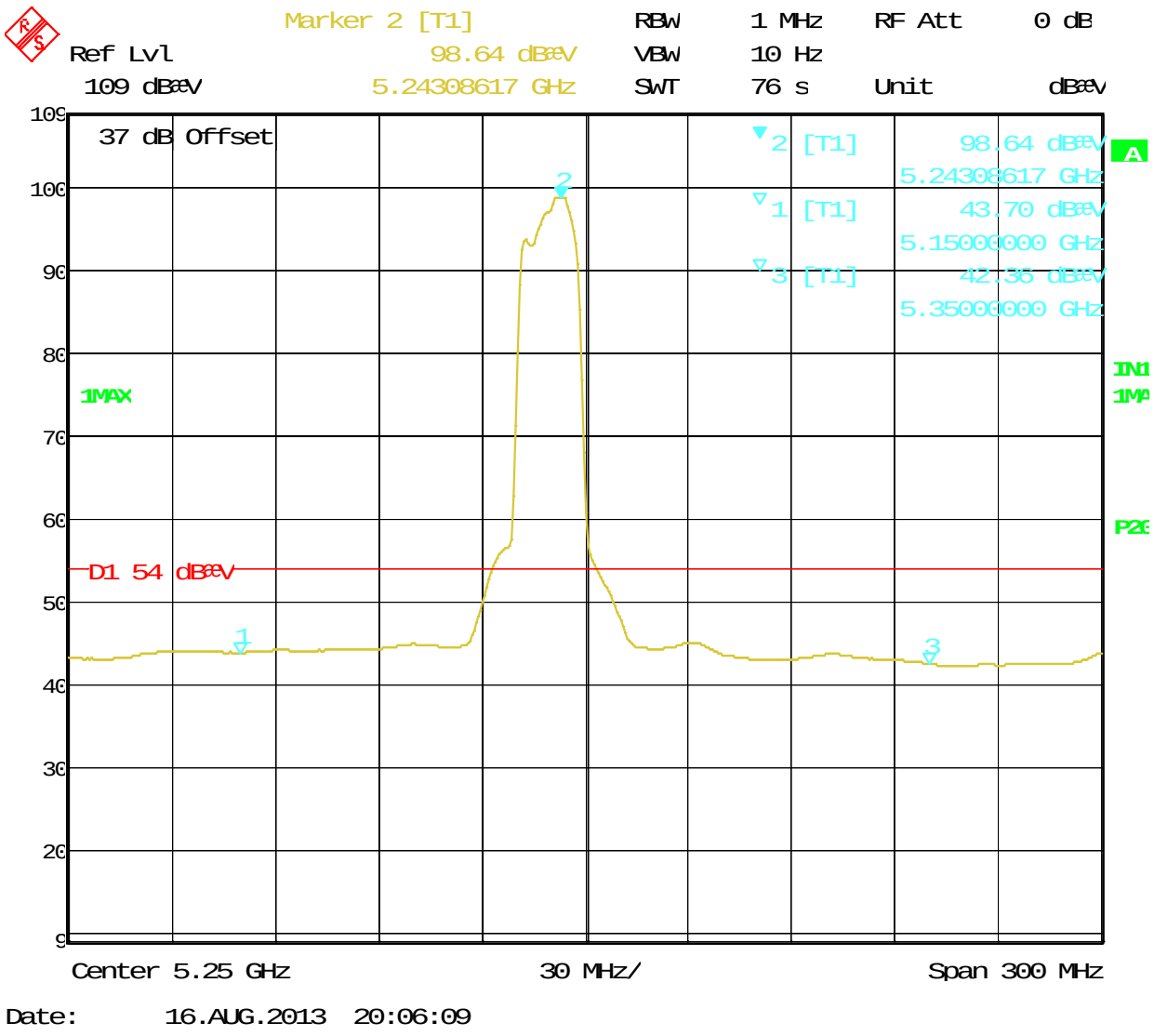


Figure 140: Radiated Emission at the Edge for Channel 5240 MHz at 6 Mbps – Horz. (Ave.)

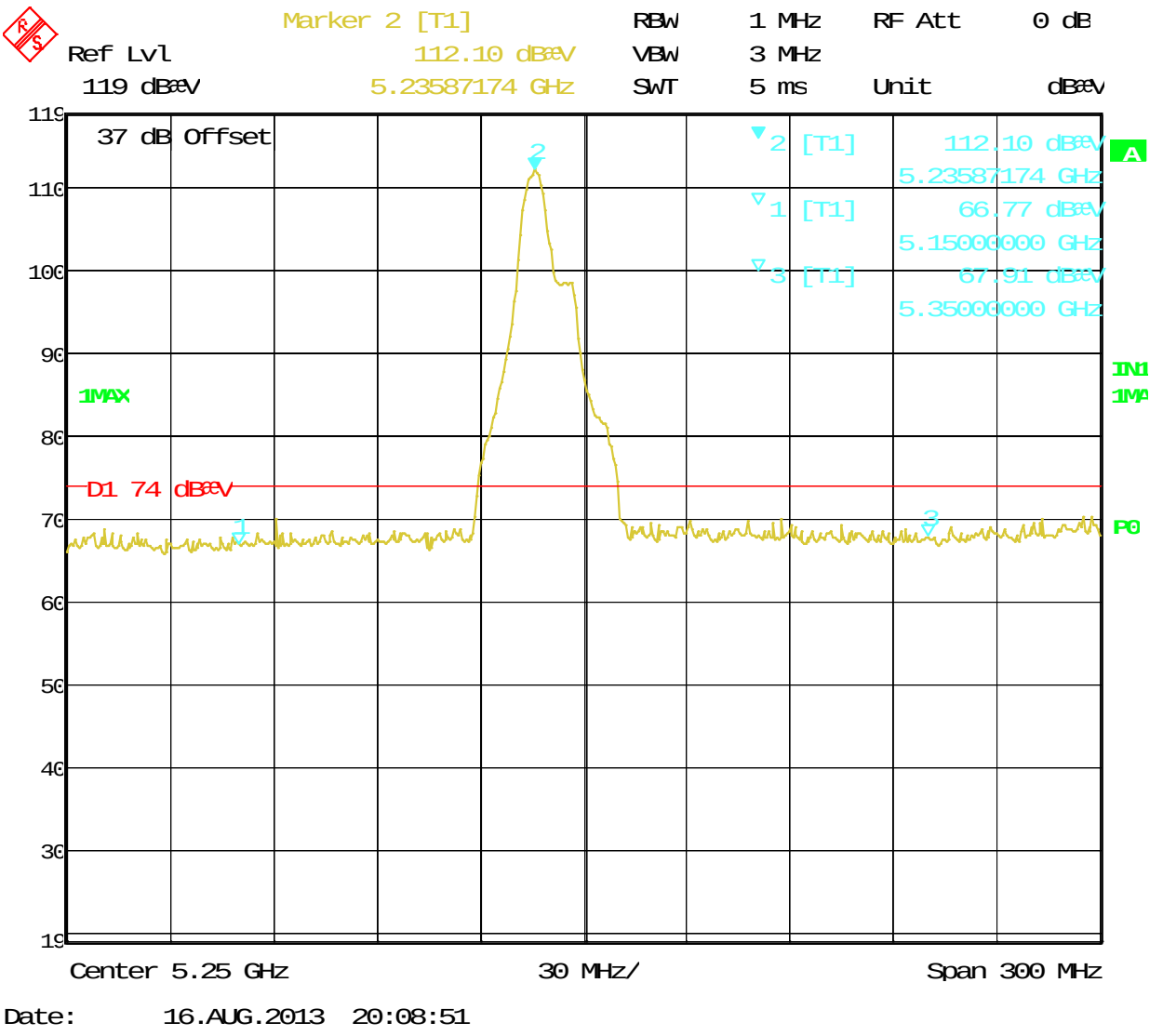


Figure 141: Radiated Emission at the Edge for Channel 5240 MHz at 6 Mbps – Vert. (Peak)

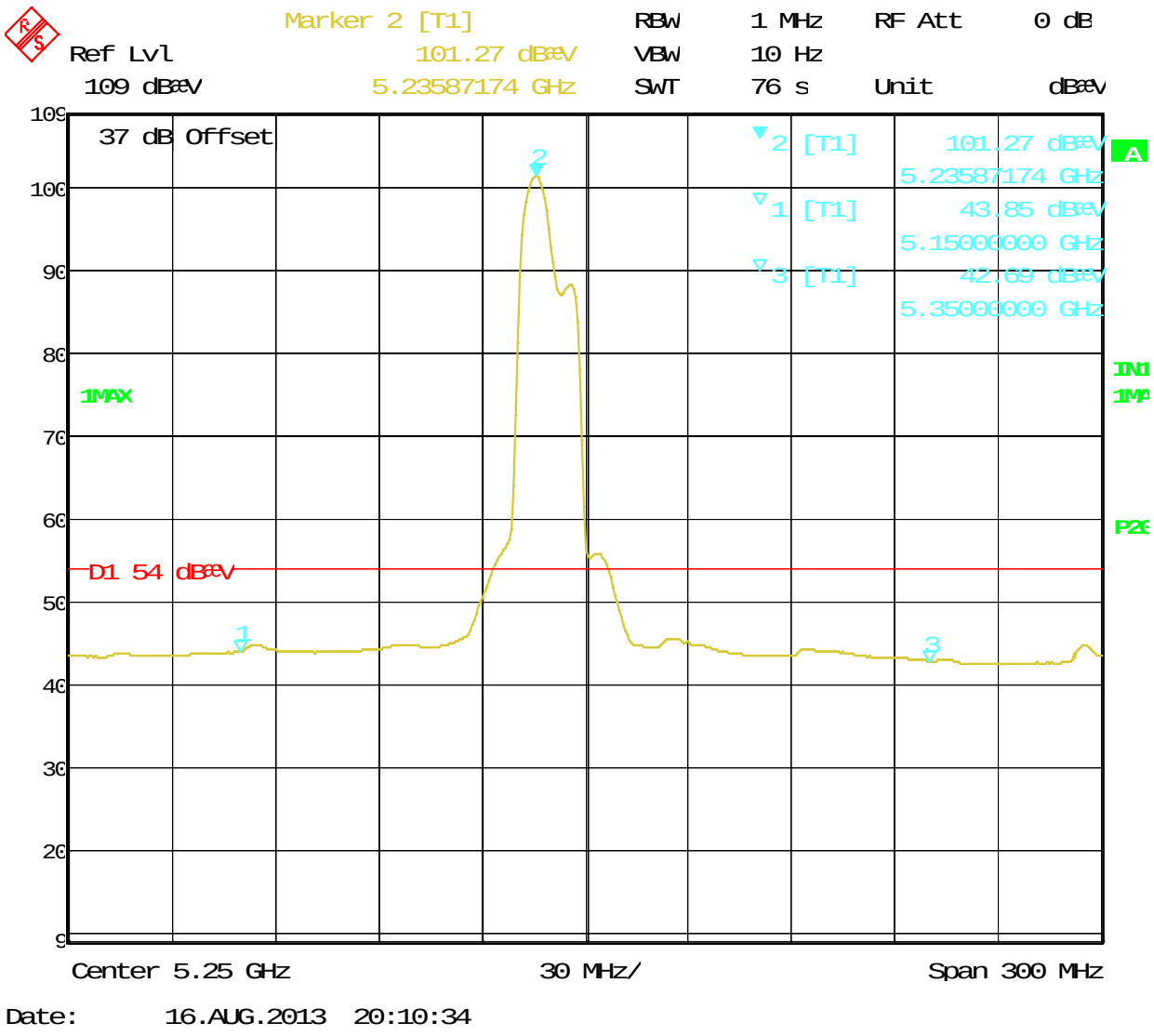


Figure 142: Radiated Emission at the Edge for Channel 5240 MHz at 6 Mbps – Vert. (Ave.)

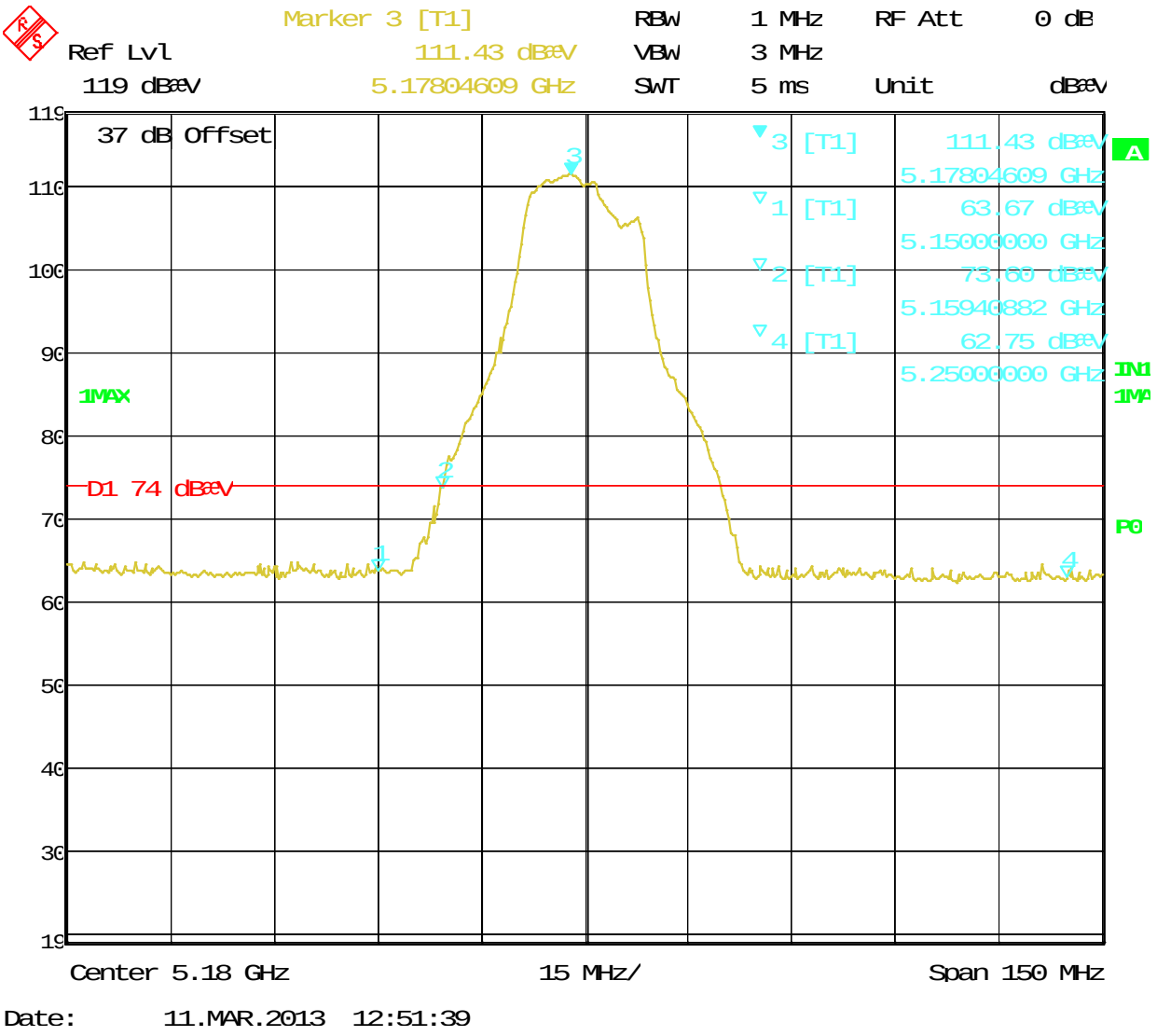


Figure 143: Radiated Emission at the Edge for Channel 5180 MHz at 6.5Mbps – Horz. (Peak)

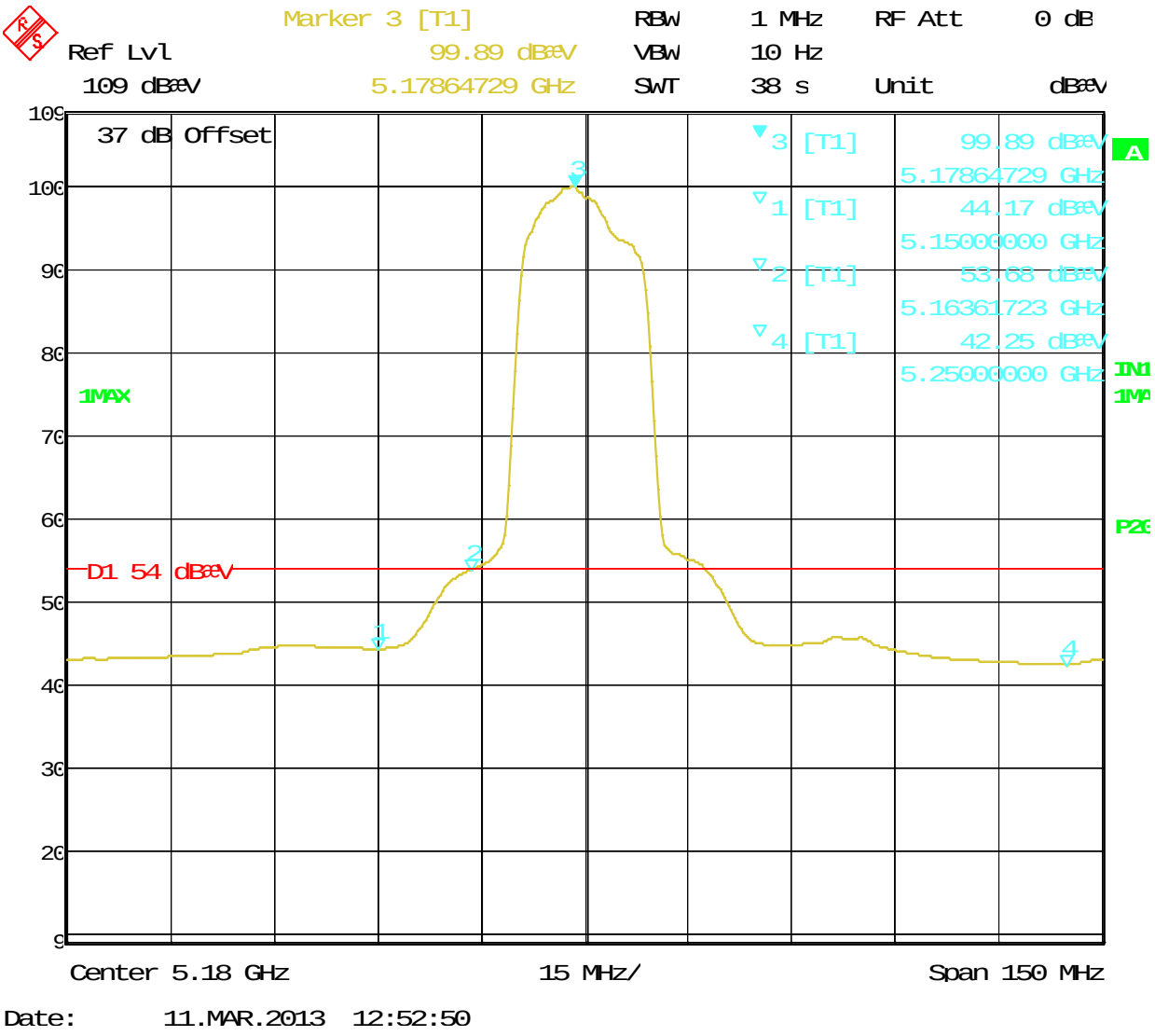


Figure 144: Radiated Emission at the Edge for Channel 5180 MHz at 6.5Mbps – Horz. (Ave.)

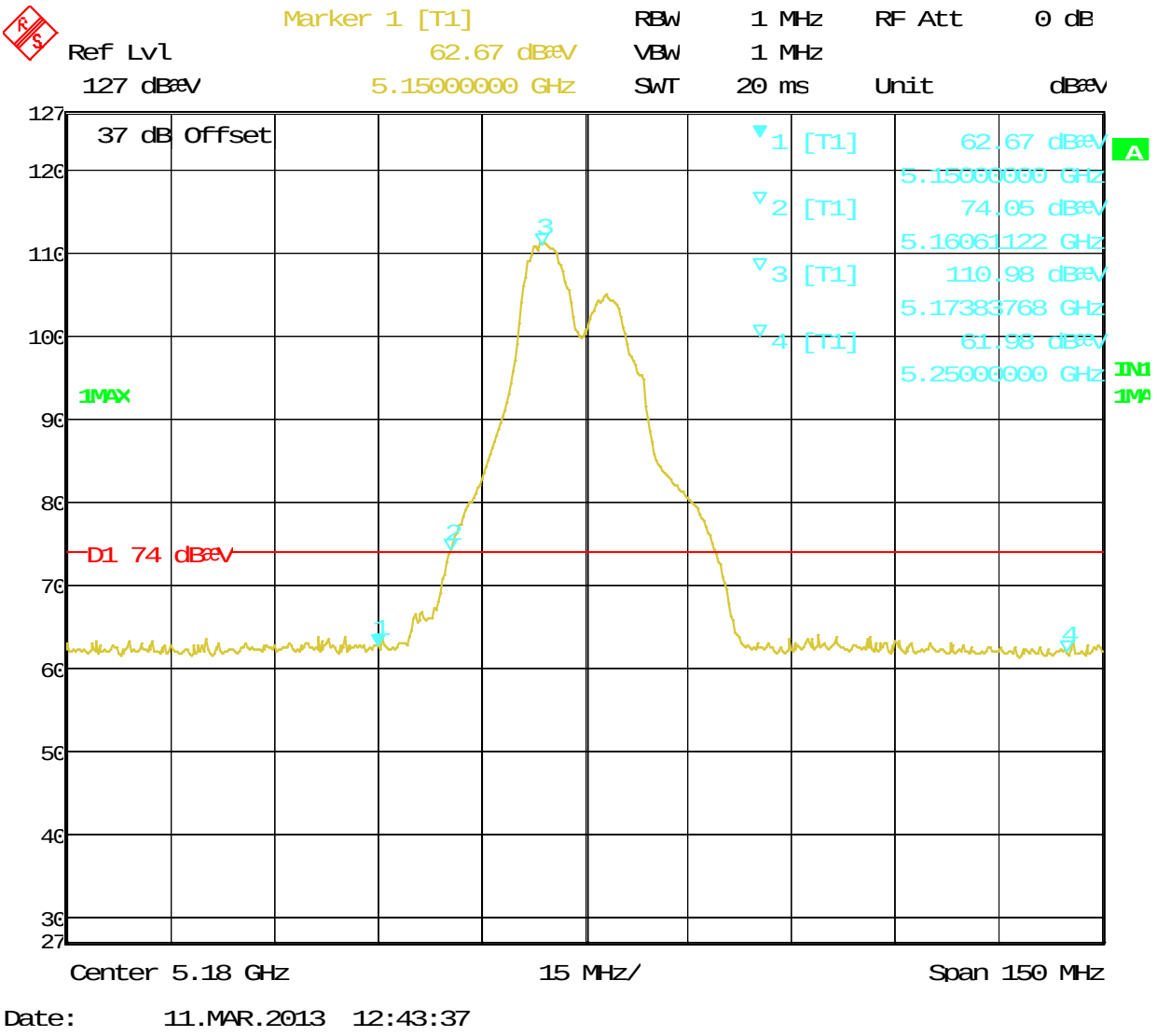


Figure 145: Radiated Emission at the Edge for Channel 5180 MHz at 6.5Mbps – Vert. (Peak)

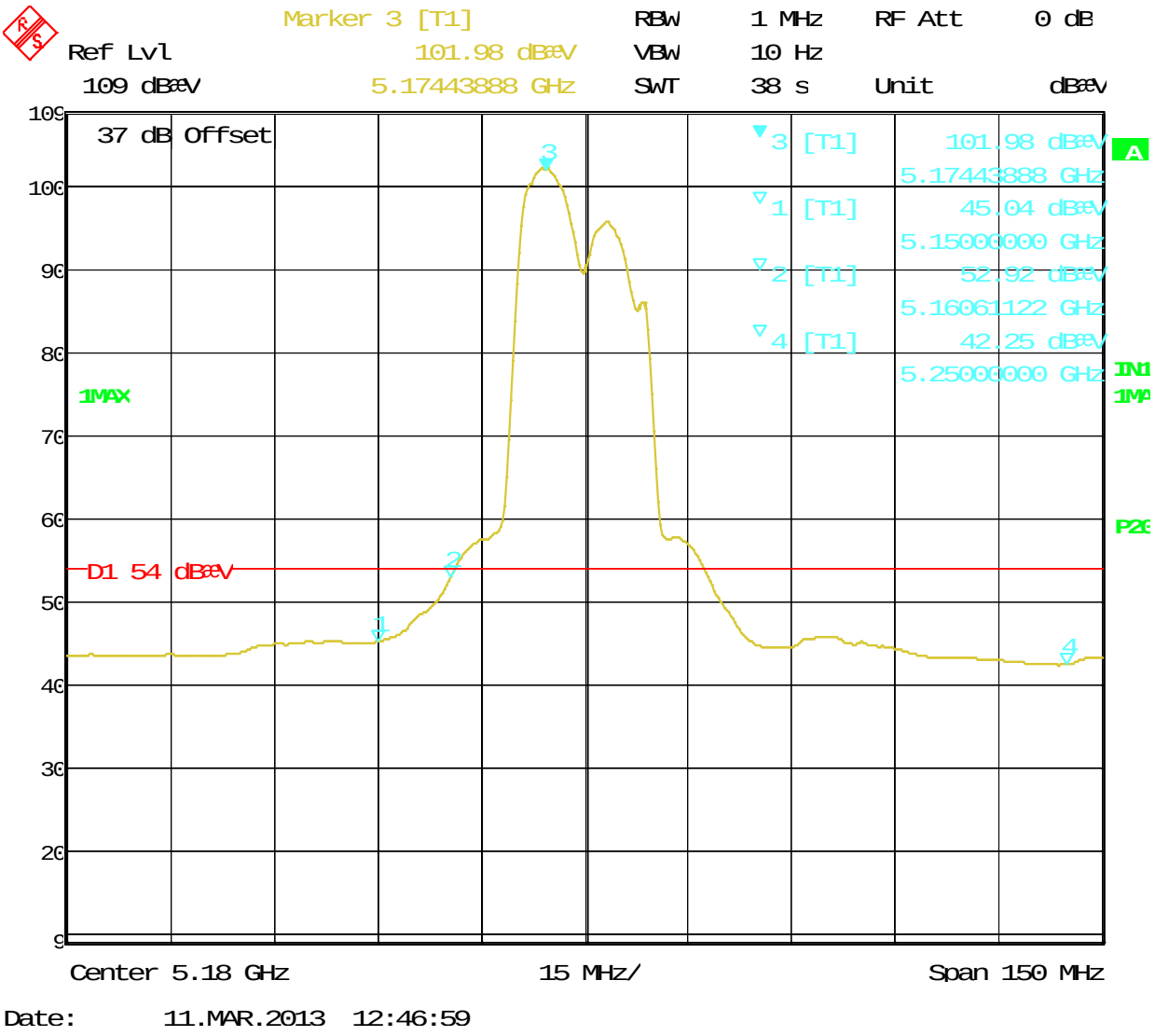


Figure 146: Radiated Emission at the Edge for Channel 5180 MHz at 6.5Mbps – Vert. (Ave.)

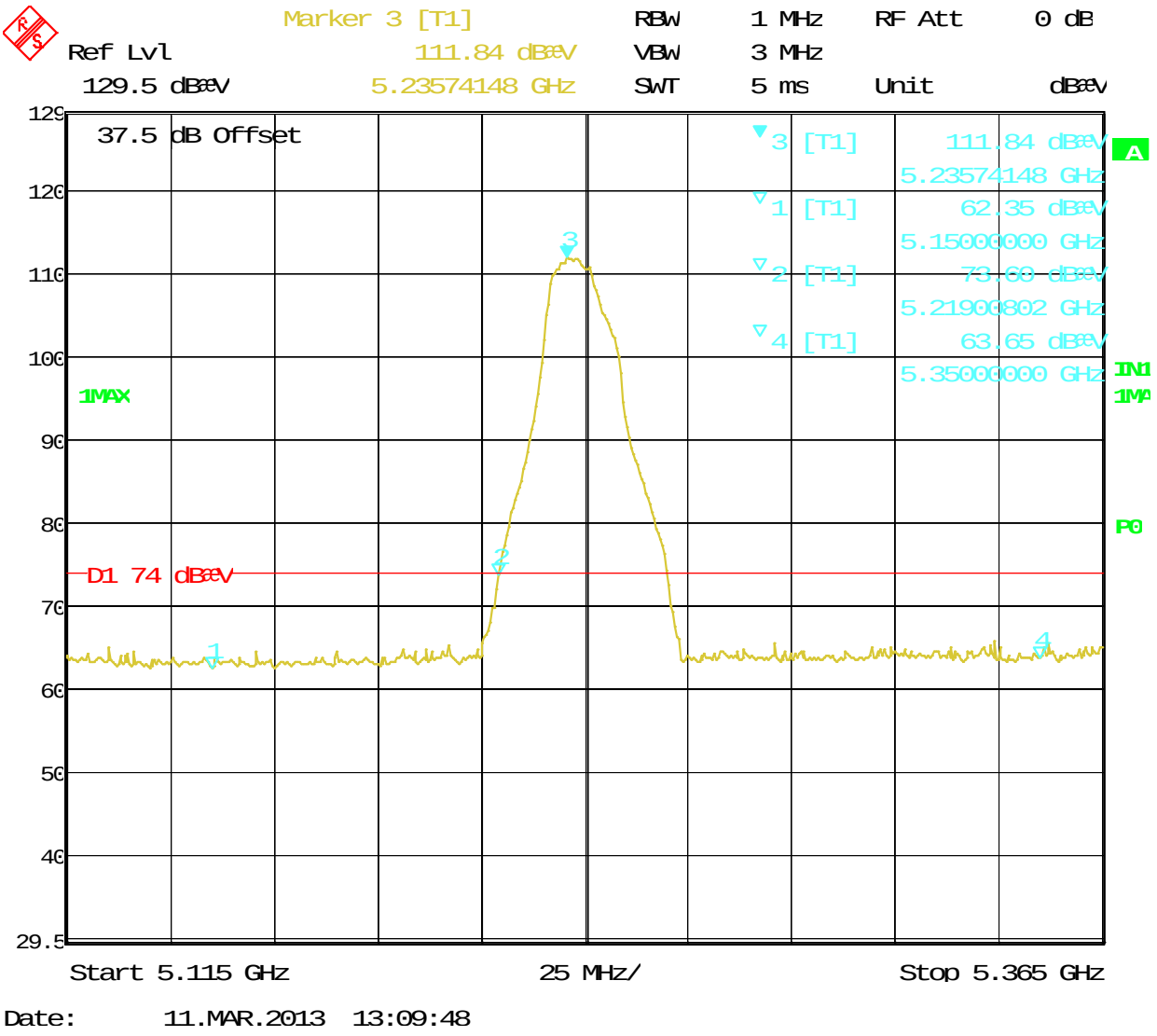


Figure 147: Radiated Emission at the Edge for Channel 5240 MHz at 6.5Mbps – Horz. (Peak)

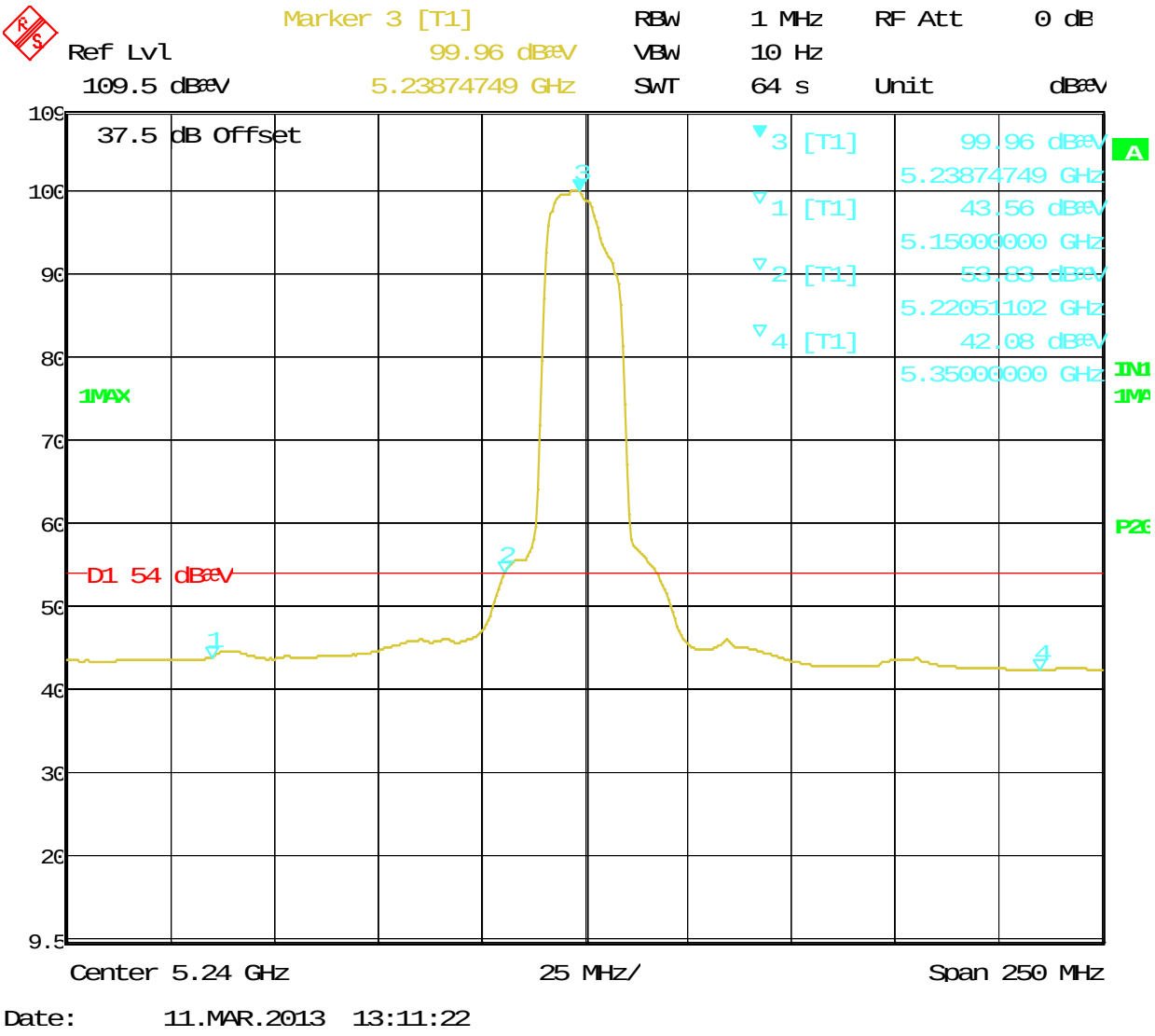


Figure 148: Radiated Emission at the Edge for Channel 5240 MHz at 6.5Mbps – Horz. (Ave.)

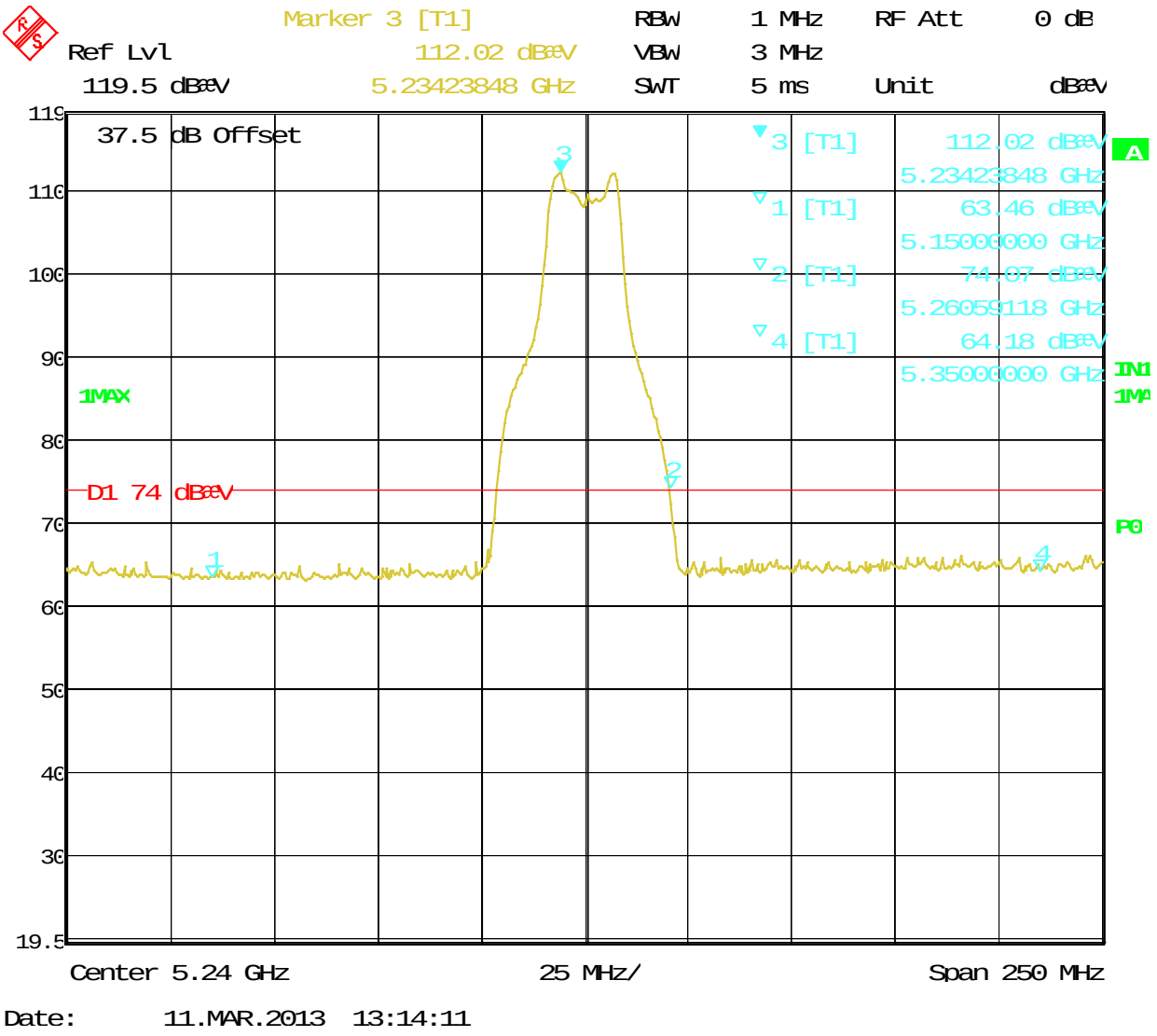


Figure 149: Radiated Emission at the Edge for Channel 5240 MHz at 6.5Mbps – Vert. (Peak)

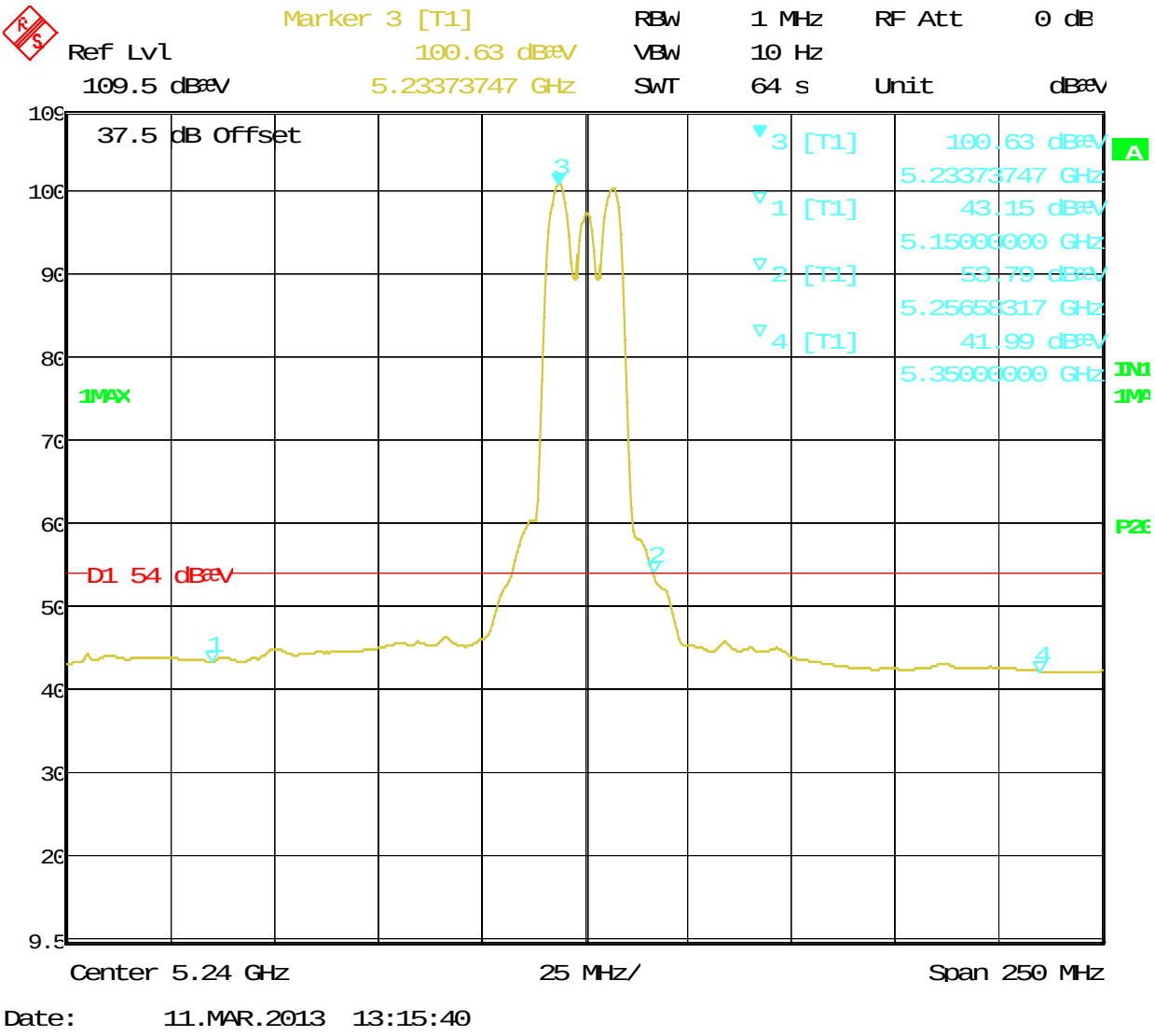


Figure 150: Radiated Emission at the Edge for Channel 5240 MHz at 6.5Mbps – Vert. (Ave.)

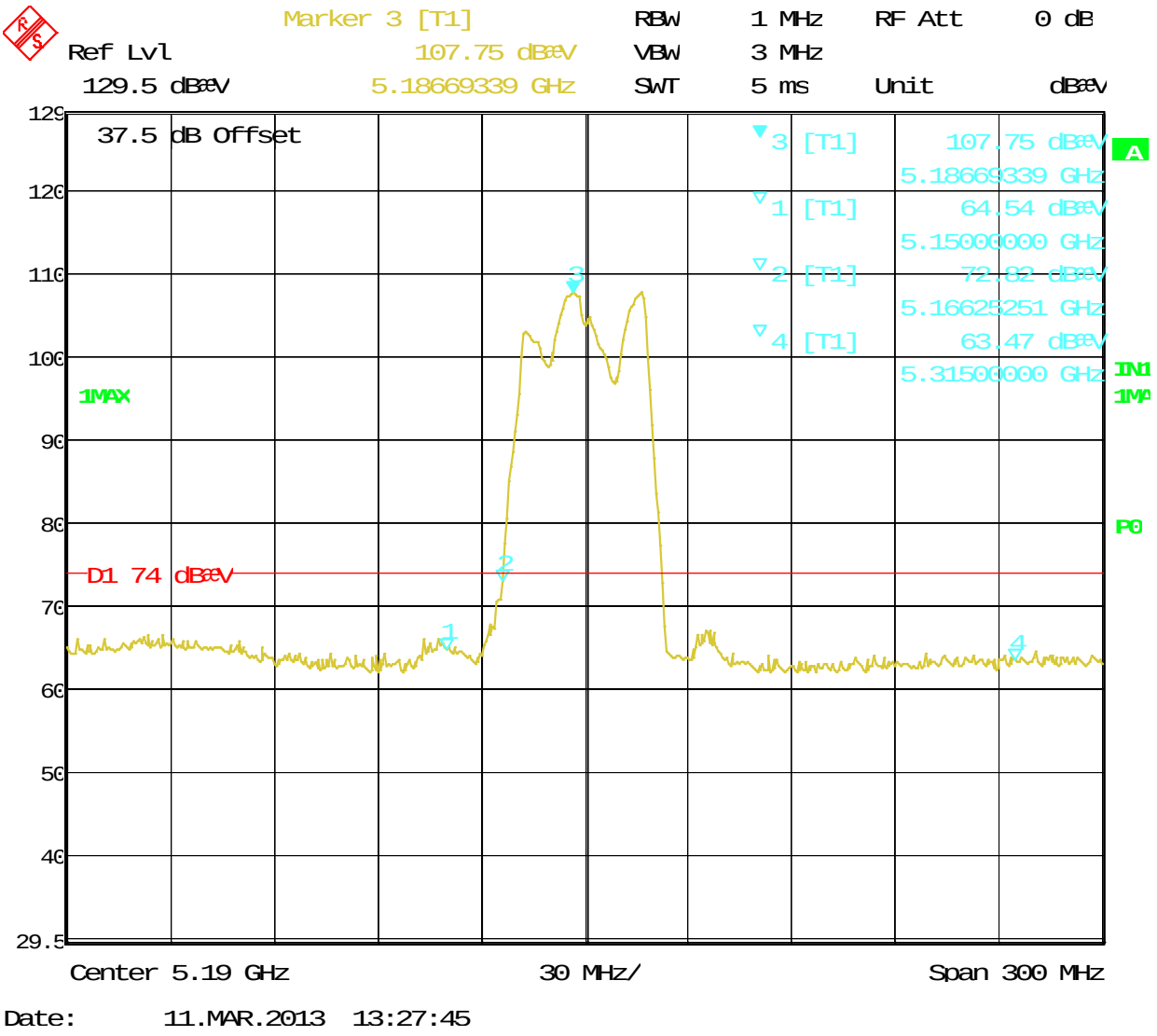


Figure 151: Radiated Emission at the Edge for Channel 5190 MHz at 13.5Mbps – Horz. (Peak)

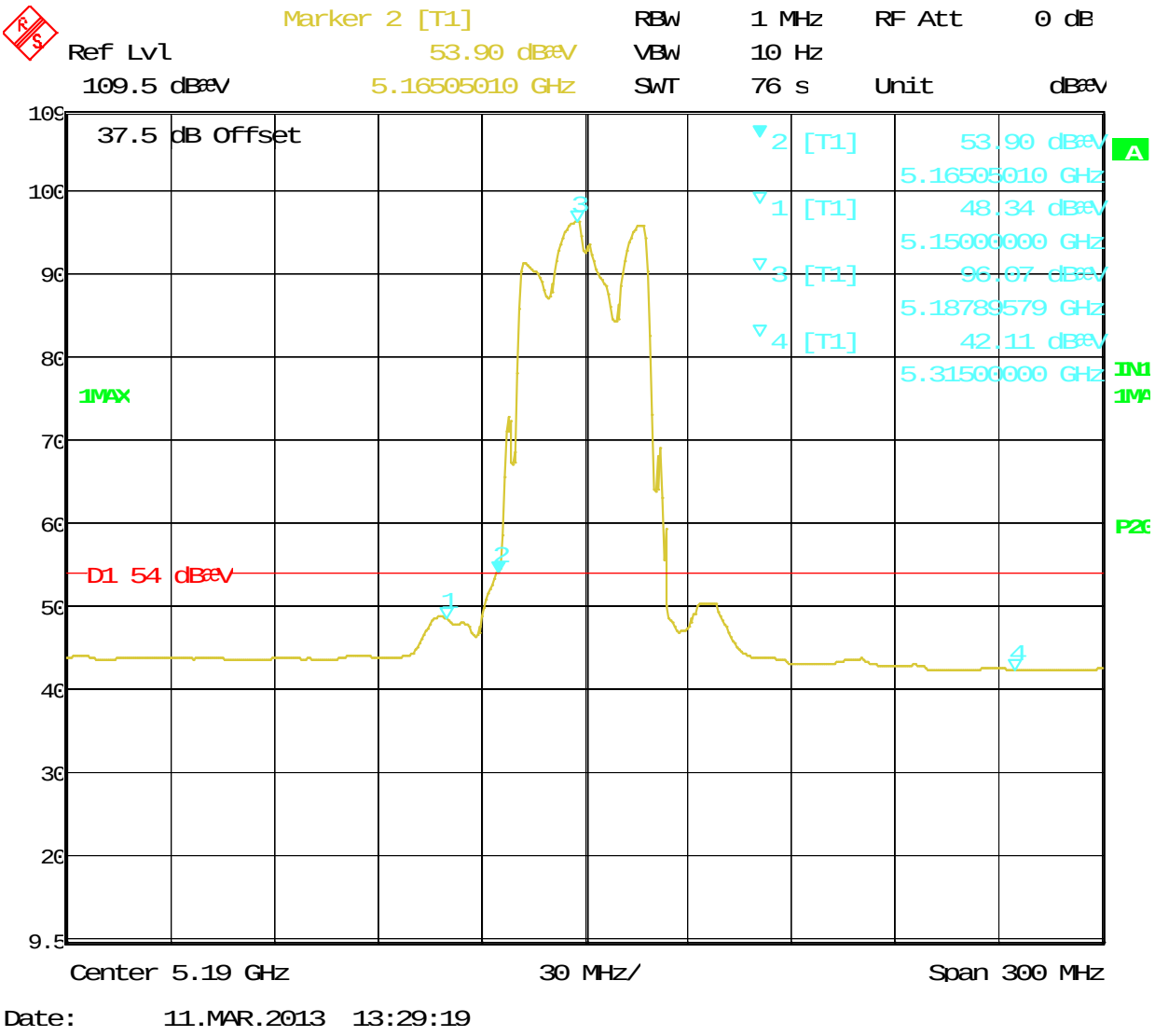


Figure 152: Radiated Emission at the Edge for Channel 5190 MHz at 13.5Mbps – Horz. (Ave.)

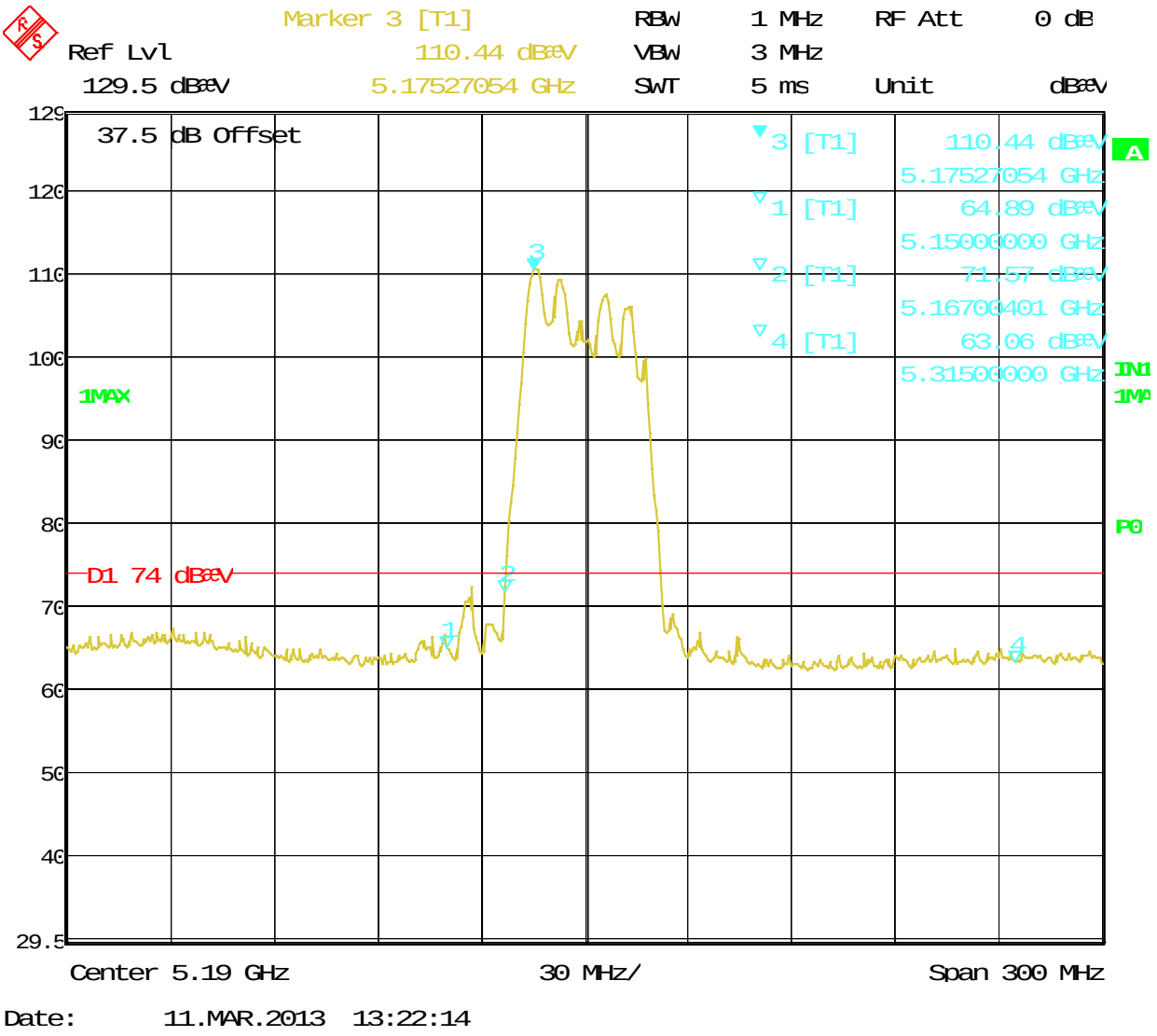


Figure 153: Radiated Emission at the Edge for Channel 5190 MHz at 13.5Mbps – Vert. (Peak)

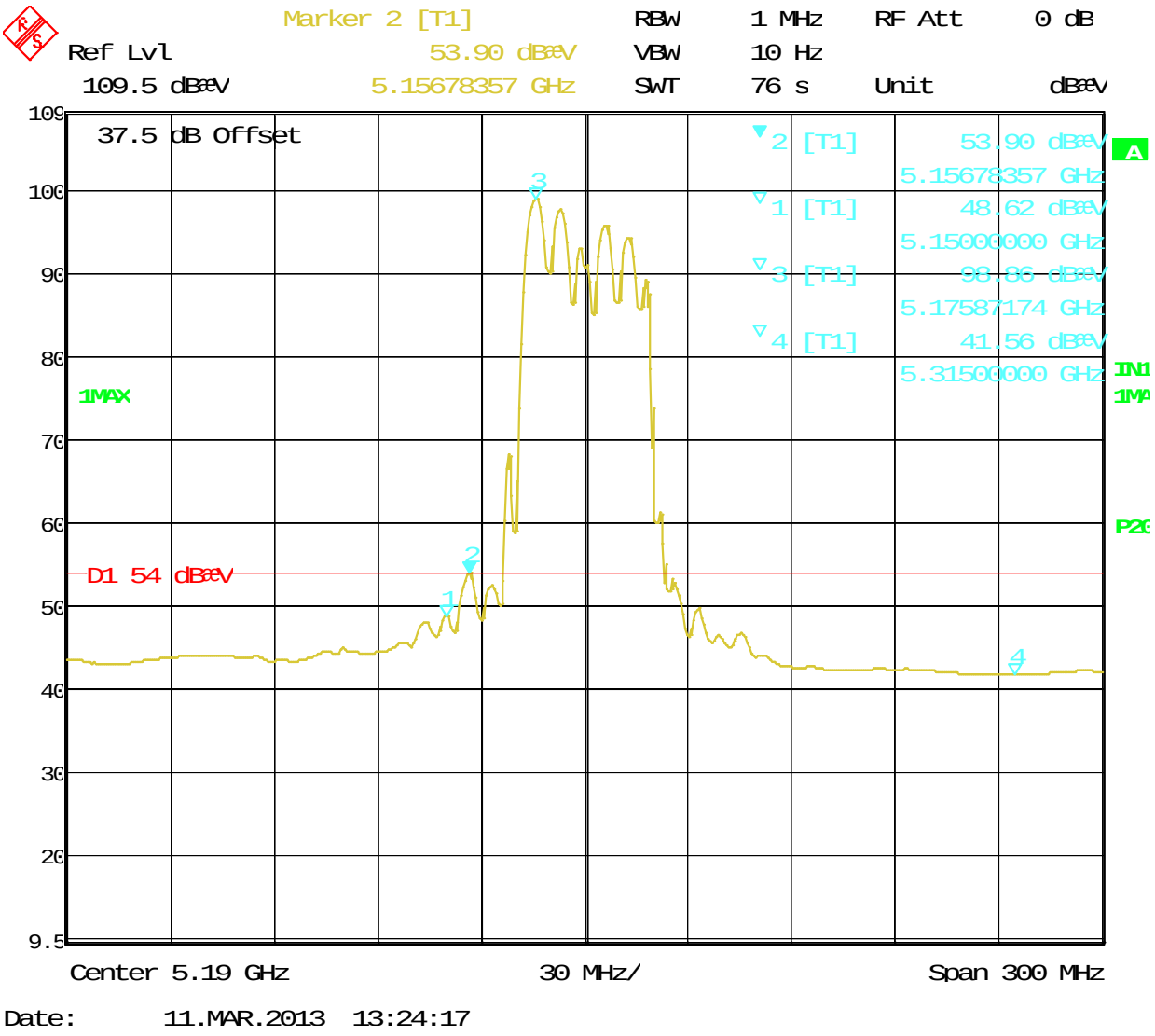


Figure 154: Radiated Emission at the Edge for Channel 5190 MHz at 13.5Mbps – Vert. (Ave.)

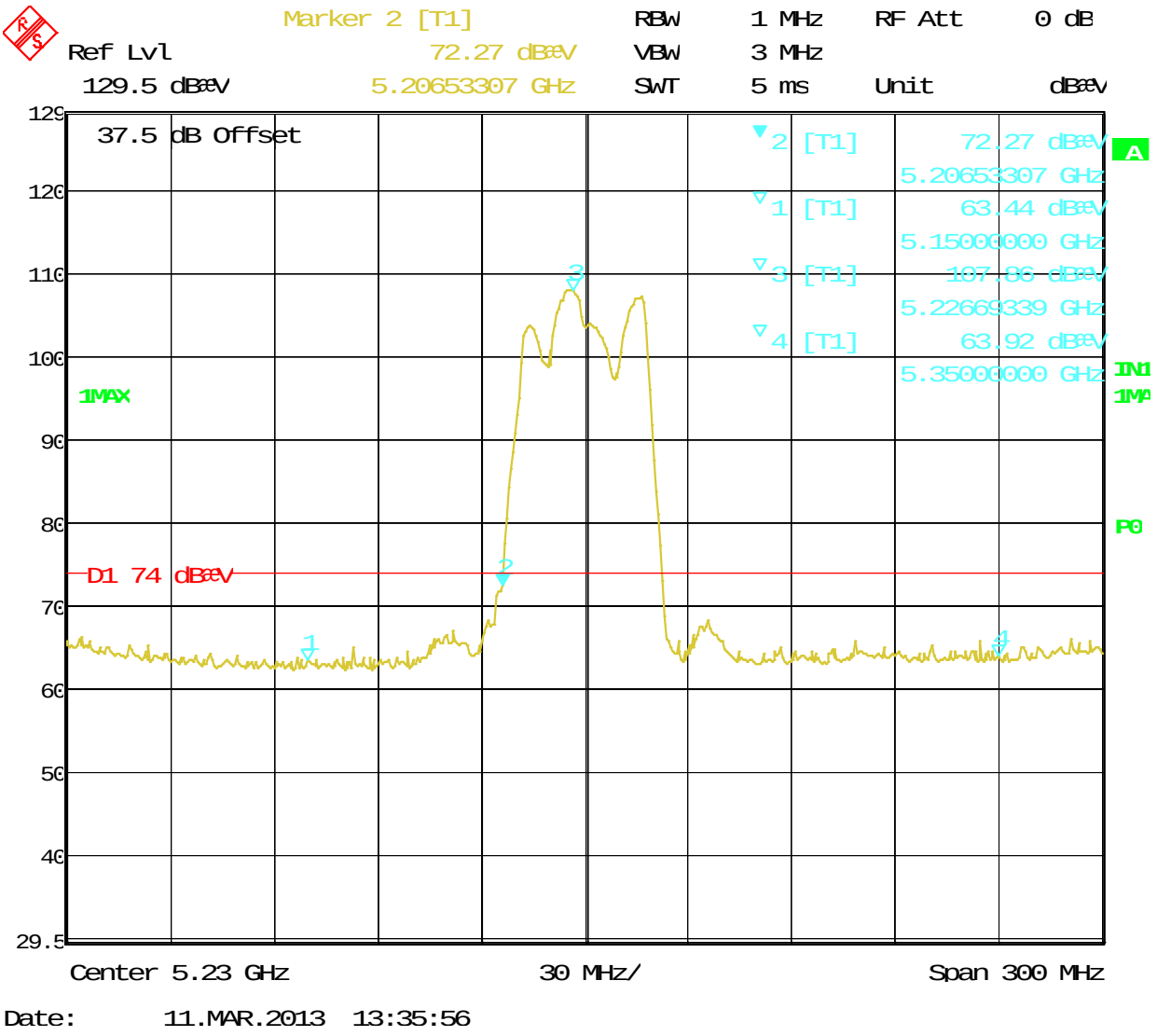


Figure 155: Radiated Emission at the Edge for Channel 5230 MHz at 13.5Mbps – Horz (Peak)

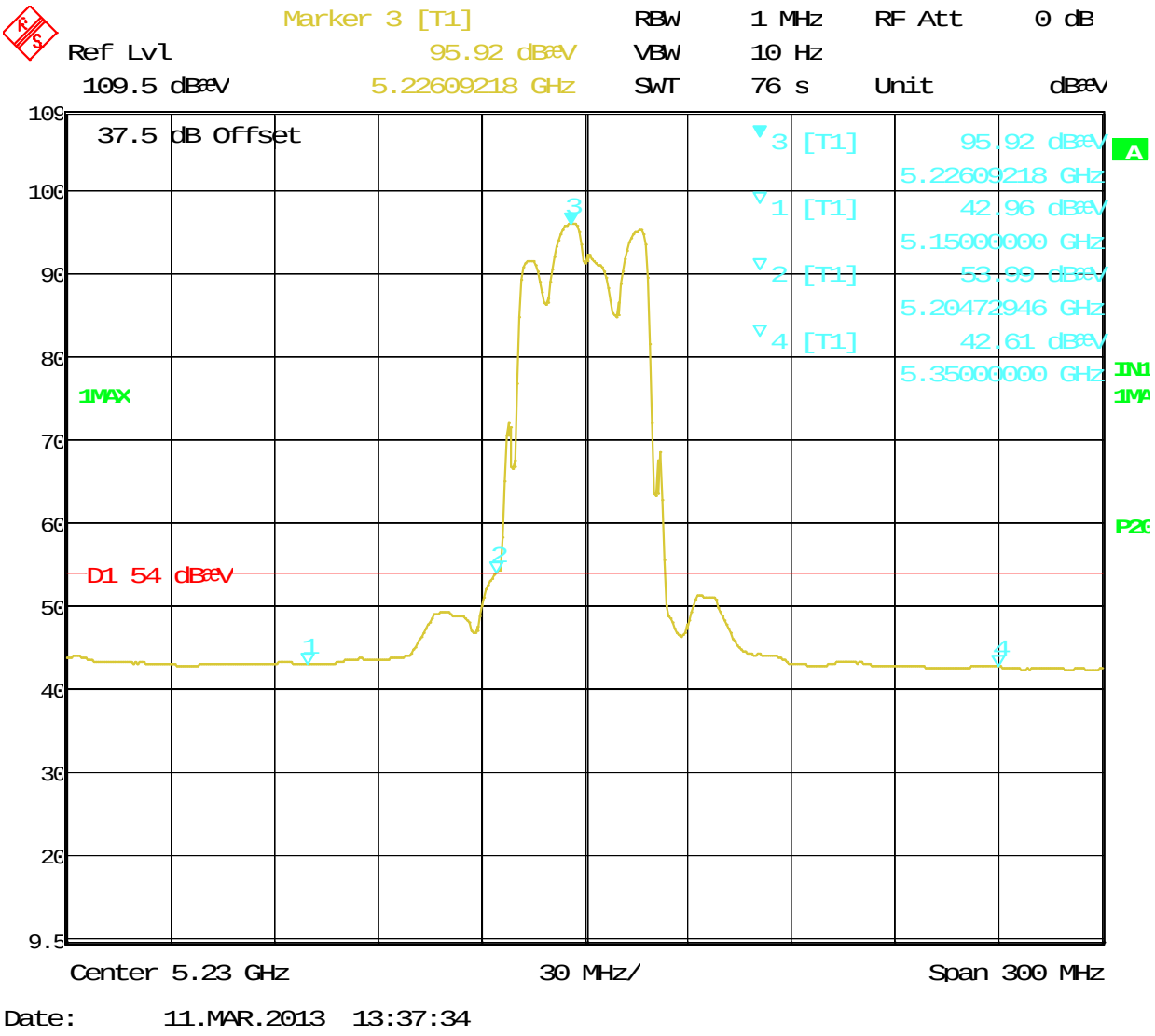


Figure 156: Radiated Emission at the Edge for Channel 5230 MHz at 13.5Mbps – Horz (Ave.)

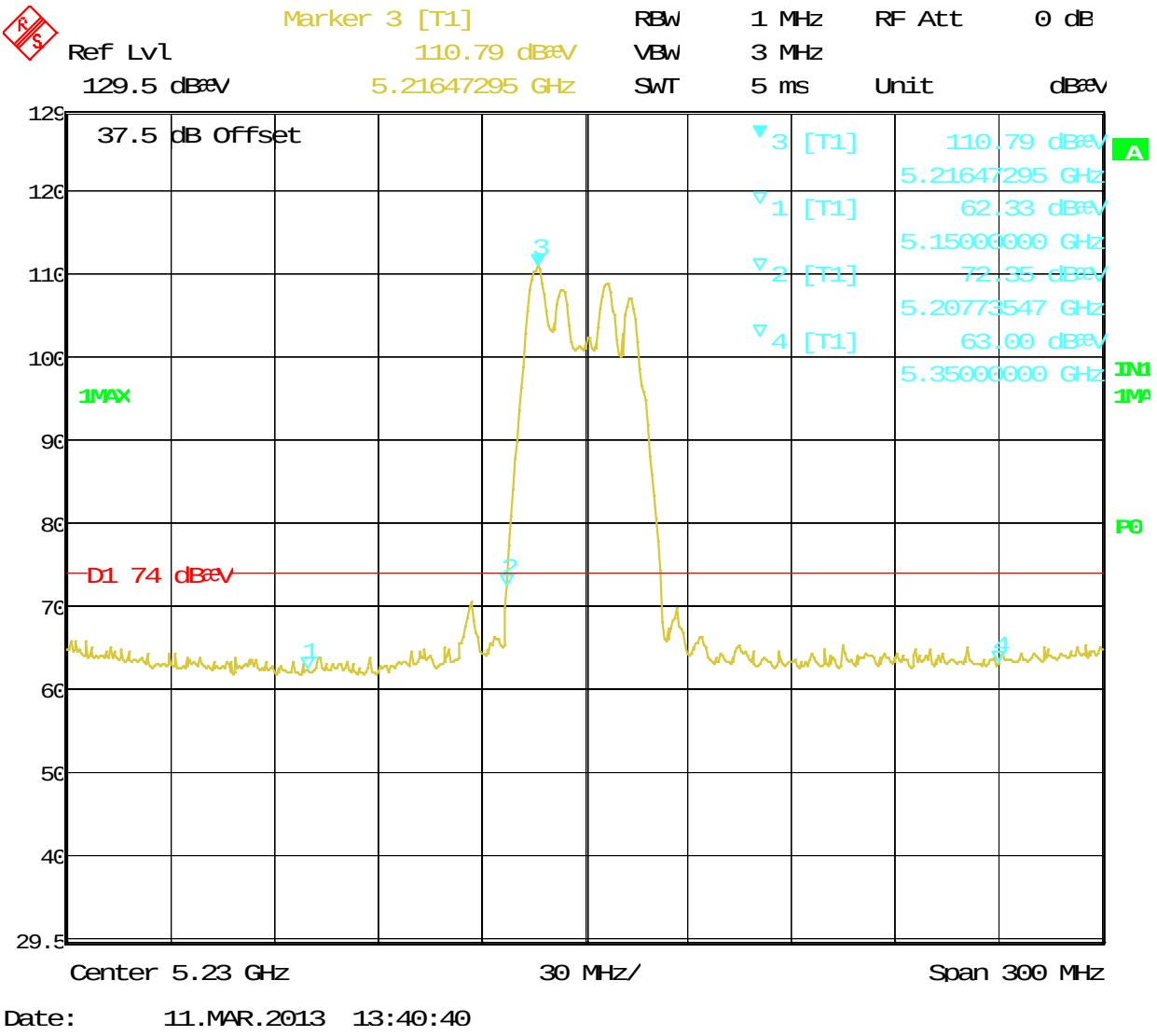


Figure 157: Radiated Emission at the Edge for Channel 5230 MHz at 13.5Mbps – Vert (Peak)

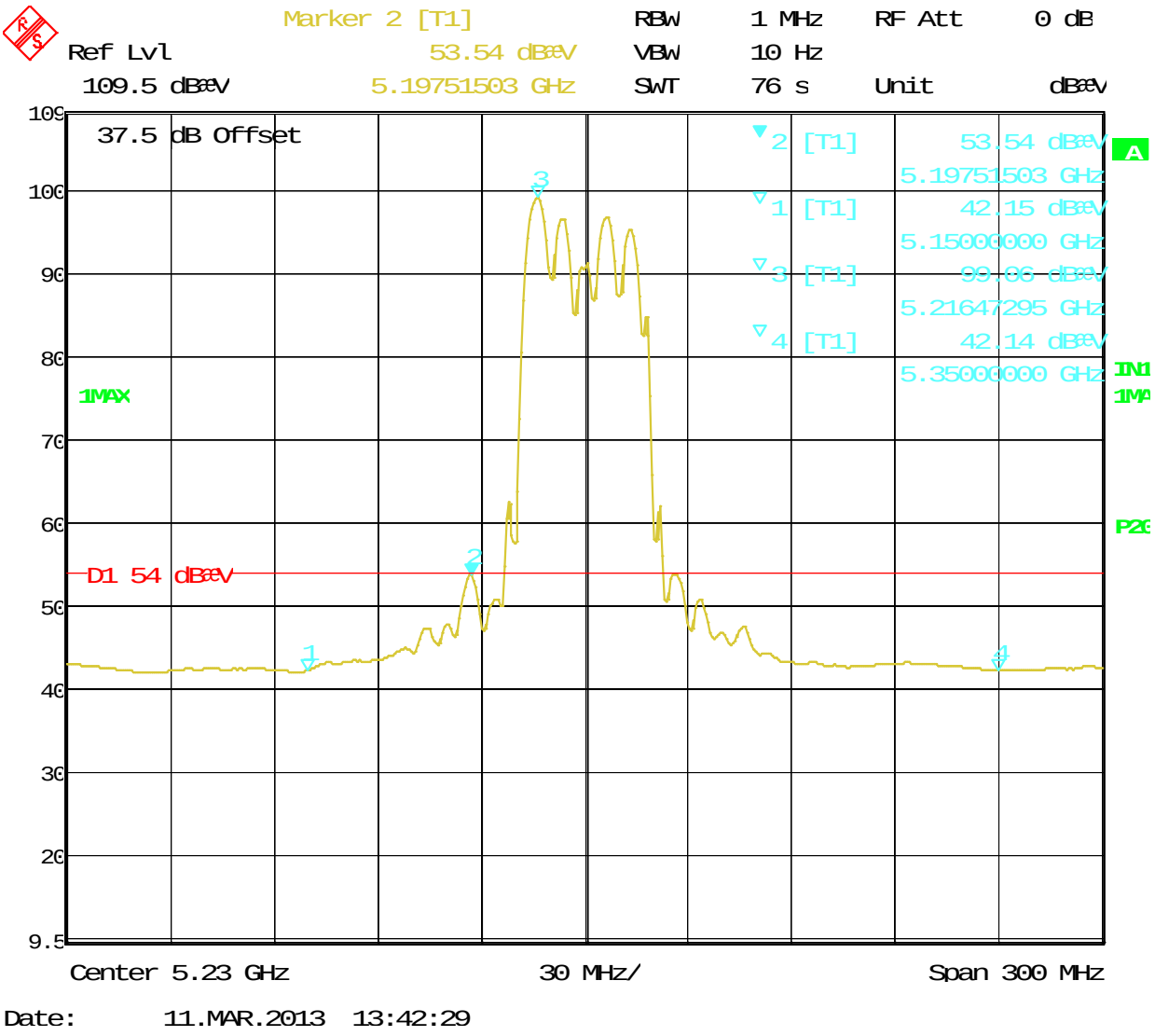


Figure 158: Radiated Emission at the Edge for Channel 5230 MHz at 13.5Mbps – Vert (Ave.)

SOP 1 Radiated Emissions — Tracking # 31360999.001 Page 1 of 21

EUT Name	Wireless Video Access Point	**Date**	April 30, 2013
EUT Model	405	**Temp / Hum in**	23° C / 28%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps/ chain	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	120 kHz/ 300 kHz
Dist/Ant Used	3m / JB3	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (cm)	Table Pos (deg)	FIM QP (dBuV/m)	Total CF dBuV	E-Field Ave (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)	Type
30 MHz to 1 GHzTransmitted at 802.11n HT20, 5200 MHz 6.5 Mbps/chain									
47.08	V	125	182	49.78	-17.17	32.61	40.00	-7.39	Spurious
70.17	V	99	220	49.87	-18.10	31.77	40.00	-8.23	Spurious
145.07	V	99	226	51.75	-12.89	38.87	43.50	-4.63	Spurious
167.63	V	129	176	49.88	-13.43	36.45	43.50	-7.05	Spurious
206.24	V	102	56	50.07	-13.64	36.44	43.50	-7.06	Spurious
245.53	V	123	60	51.04	-12.69	38.36	46.00	-7.65	Spurious
279.97	V	153	52	48.46	-10.88	37.58	46.00	-8.42	Spurious
320.00	H	99	78	54.67	-10.13	44.54	46.00	-1.46	Spurious
575.02	V	99	264	49.72	-5.84	43.88	46.00	-2.13	Spurious
640.00	V	115	98	46.08	-4.75	41.33	46.00	-4.67	Spurious

Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

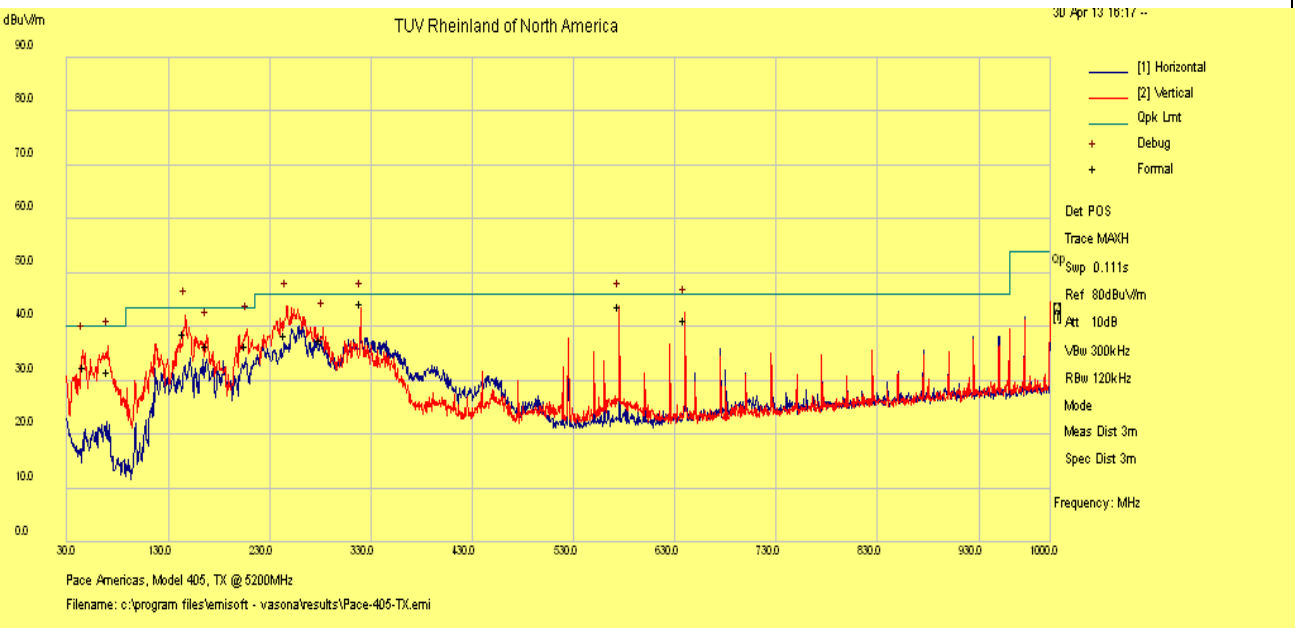
Notes: Worst case was observed on Y-axis at 802.11n HT20, 5200 MHz 6.5 Mbps.
All other emissions passed Class B limit.

SOP 1 Radiated Emissions

Tracking # 31360999.001 Page 2 of 21

EUT Name	Wireless Video Access Point	**Date**	April 30, 2013
EUT Model	405	**Temp / Hum in**	23° C / 28%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps/ chain	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	120 kHz / 300 kHz
Dist/Ant Used	3m – JB3	**Performed by**	Jeremy Luong

30 MHz to 1 GHz Plots for Transmit Mode at 5300 MHz



Notes: FCC Class B Limit.

SOP 1 Radiated Emissions — Tracking # 31360999.001 Page 3 of 21

EUT Name	Wireless Video Access Point	**Date**	August 17, 2013
EUT Model	405	**Temp / Hum in**	23° C / 40%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m / EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (cm)	Table Pos (deg)	Peak (dBuV/m)	Average (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)	Type
Transmitted Data at 5180 MHz @ 11 dBm								
1000.00	H	265	320	45.37	44.72	54.00	-9.28	Spurious
1280.00	H	178	72	49.09	47.94	54.00	-6.06	Spurious
2437.03	H	167	166	40.63	30.40	54.00	-23.60	Spurious
3199.97	H	271	129	42.21	39.25	54.00	-14.75	Spurious
4947.19	V	201	288	47.13	37.11	54.00	-16.89	Spurious
5648.44	V	194	248	47.95	34.72	54.00	-19.28	Spurious
6906.88	V	160	318	46.57	42.10	54.00	-11.90	Spurious
10360.63	H	229	36	46.19	38.30	54.00	-15.70	Harmonics
12182.81	H	155	14	46.59	35.20	54.00	-18.80	Spurious
25900.20	V	100	67	51.57	44.05	64.00	-19.95	Harmonics
20719.90	H	106	116	61.58	60.06	64.00	-3.94	Harmonics
20719.80	V	98	142	59.16	57.48	64.00	-6.52	Harmonics
Transmitted Data at 5200 MHz @ 11 dBm								
1000.00	H	271	308	46.10	45.66	54.00	-8.35	Spurious
1174.94	H	120	296	40.40	35.75	54.00	-18.25	Spurious
1279.95	H	111	68	49.37	48.17	54.00	-5.83	Spurious
3199.95	H	192	122	40.52	39.60	54.00	-14.40	Spurious
5034.84	H	102	266	43.57	35.40	54.00	-18.60	Spurious
5595.31	V	282	300	48.71	36.70	54.00	-17.30	Spurious
6933.31	V	137	232	50.62	38.60	54.00	-15.40	Spurious
10400.00	V	232	314	44.41	39.30	54.00	-14.70	Harmonics
20799.80	V	104	152	59.38	57.45	64.00	-6.55	Harmonics
20799.80	H	104	118	61.05	59.30	64.00	-4.70	Harmonics
25999.80	H	104	147	49.72	42.26	64.00	-21.74	Harmonics
25999.90	V	103	67	49.07	42.14	64.00	-21.86	Harmonics
Transmitted Data at 5240 MHz @ 11 dBm								
1000.00	H	263	304	47.21	46.10	54.00	-7.90	Spurious
1024.97	H	246	312	43.83	43.22	54.00	-10.78	Spurious
1279.94	H	100	68	49.83	48.62	54.00	-5.38	Spurious
3199.97	H	194	120	41.75	39.30	54.00	-14.70	Spurious
4995.00	H	229	282	49.41	37.64	54.00	-16.36	Spurious
6987.19	H	229	212	47.70	35.80	54.00	-18.20	Spurious
5475.78	V	133	310	50.75	38.58	54.00	-15.42	Harmonics
10479.94	V	290	78	45.97	38.00	54.00	-16.00	Harmonics
20959.90	V	101	92	58.40	55.93	64.00	-8.07	Harmonics
20959.90	H	100	113	61.41	59.89	64.00	-4.11	Harmonics

Spec Margin = E-Field Average - Limit, E-Field Average = Field Meas.+ Total CF ± Uncertainty Total CF= Amp Gain + Cable Loss + ANT Factor
Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence
Notes: Worst case was observed on Y-axis, 6.5 Mbps.

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EUT Name	Wireless Video Access Point	**Date**	April 10, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11 HT20 at 6.5 Mbps	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m / EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (cm)	Table Pos (deg)	Peak (dBuV/m)	Average (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)	Type
Transmitted Data at 5180 MHz @ 11 dBm								
1025.02	H	151	277	45.52	43.83	53.98	-10.15	Spurious
1279.94	H	172	42	47.67	43.72	53.98	-10.26	Spurious
4932.66	V	166	-53	53.57	42.60	53.98	-11.38	Spurious
4968.31	H	167	273	51.84	41.82	53.98	-12.16	Spurious
5582.82	V	164	233	53.51	43.19	53.98	-10.79	Spurious
6906.62	V	162	-48	54.14	45.12	53.98	-8.86	Spurious
10278.80	V	205	63	47.56	36.19	53.98	-17.79	Harmonics
20719.90	V	98	101	58.13	56.44	64.00	-7.56	Harmonics
20719.90	H	121	112	63.14	61.98	64.00	-2.02	Harmonics
25899.80	V	127	105	52.05	45.83	64.00	-18.17	Harmonics
25899.90	H	87	124	51.79	47.00	64.00	-17.00	Harmonics
Transmitted Data at 5200 MHz @ 11 dBm								
1024.97	H	274	402	43.53	41.57	53.98	-12.41	Spurious
1279.98	H	177	60	48.98	44.97	53.98	-9.01	Spurious
4952.39	H	333	274	54.25	43.51	53.98	-10.47	Spurious
4959.93	V	239	89	50.61	41.56	53.98	-12.42	Spurious
6933.33	V	318	-83	56.31	44.37	53.98	-9.61	Spurious
10399.80	H	217	131	49.17	40.58	53.98	-13.40	Harmonics
10399.90	V	216	126	49.62	41.59	53.98	-12.39	Harmonics
20799.80	V	101	134	57.73	55.55	64.00	-8.45	Harmonics
20799.90	H	98	422	63.27	61.69	64.00	-2.31	Harmonics
25999.70	H	93	123	51.13	41.29	64.00	-22.71	Harmonics
25999.80	V	95	149	52.86	46.83	64.00	-17.17	Harmonics
Transmitted Data at 5240 MHz @ 11 dBm								
1025.00	H	97	137	42.08	38.98	53.98	-15.00	Spurious
1280.00	H	172	304	47.39	43.38	53.98	-10.60	Spurious
4992.66	V	259	7	54.65	43.80	53.98	-10.18	Spurious
4992.75	H	306	271	57.47	47.11	53.98	-6.87	Spurious
5471.83	V	159	312	59.61	48.53	53.98	-5.45	Spurious
6986.66	V	206	-42	52.60	45.74	53.98	-8.24	Spurious
10479.90	V	101	470	49.76	43.07	53.98	-10.91	Harmonics
10479.90	H	114	51	50.22	43.21	53.98	-10.77	Harmonics
20959.90	V	101	133	56.44	55.24	64.00	-8.76	Harmonics

20959.90	H	93	95	63.58	62.20	64.00	-1.80	Harmonics
Spec Margin = E-Field Average - Limit, E-Field Average = Field Meas.+ Total CF ± Uncertainty Total CF= Amp Gain + Cable Loss + ANT Factor								
Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence								
Notes: Worst case was observed on Y-axis, 6.5 Mbps.								

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EUT Name	Wireless Video Access Point	**Date**	April 10, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11 HT40 at 13.5 Mbps	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m / EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (cm)	Table Pos (deg)	Peak (dBuV/m)	Average (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)	Type
Transmitted Data at 5190 MHz @ 11 dBm								
1025.00	H	258	311	44.78	43.32	53.98	-10.66	Spurious
1280.00	H	101	55	49.89	46.17	53.98	-7.81	Spurious
4959.87	V	145	358	51.26	41.77	53.98	-12.21	Spurious
4968.08	H	277	-84	51.93	42.42	53.98	-11.56	Spurious
5531.24	V	185	178	51.19	40.12	53.98	-13.86	Spurious
6926.67	V	246	319	52.67	44.72	53.98	-9.26	Spurious
10389.90	H	159	406	50.39	44.00	53.98	-9.98	Harmonics
10390.00	V	111	104	49.57	40.96	53.98	-13.02	Harmonics
20759.90	V	112	133	59.13	56.96	64.00	-7.04	Harmonics
20759.80	H	111	86	63.98	62.54	64.00	-1.46	Harmonics
25949.80	H	113	130	51.65	45.79	64.00	-18.21	Harmonics
25949.90	V	111	129	52.51	46.45	64.00	-17.55	Harmonics
Transmitted Data at 5230 MHz @ 11 dBm								
1025.00	H	173	215	41.10	37.85	53.98	-16.13	Spurious
1279.98	H	175	44	50.97	47.29	53.98	-6.69	Spurious
4959.95	H	207	276	50.89	40.18	53.98	-13.80	Spurious
4973.66	V	186	301	52.70	41.42	53.98	-12.56	Spurious
5486.84	V	168	123	50.85	39.71	53.98	-14.27	Spurious
6973.22	H	260	220	54.93	39.30	53.98	-14.68	Spurious
6973.24	V	262	241	55.95	40.51	53.98	-13.47	Spurious
10459.90	V	176	63	52.77	41.20	53.98	-12.78	Harmonics
10459.90	H	157	161	49.25	39.95	53.98	-14.03	Harmonics
20919.80	V	112	95	55.68	52.85	64.00	-11.15	Harmonics
20919.80	H	120	63	63.94	62.84	64.00	-1.16	Harmonics

Spec Margin = E-Field Average - Limit, E-Field Average = Field Meas.+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: Worst case was observed on Y-axis, 13.5 Mbps.

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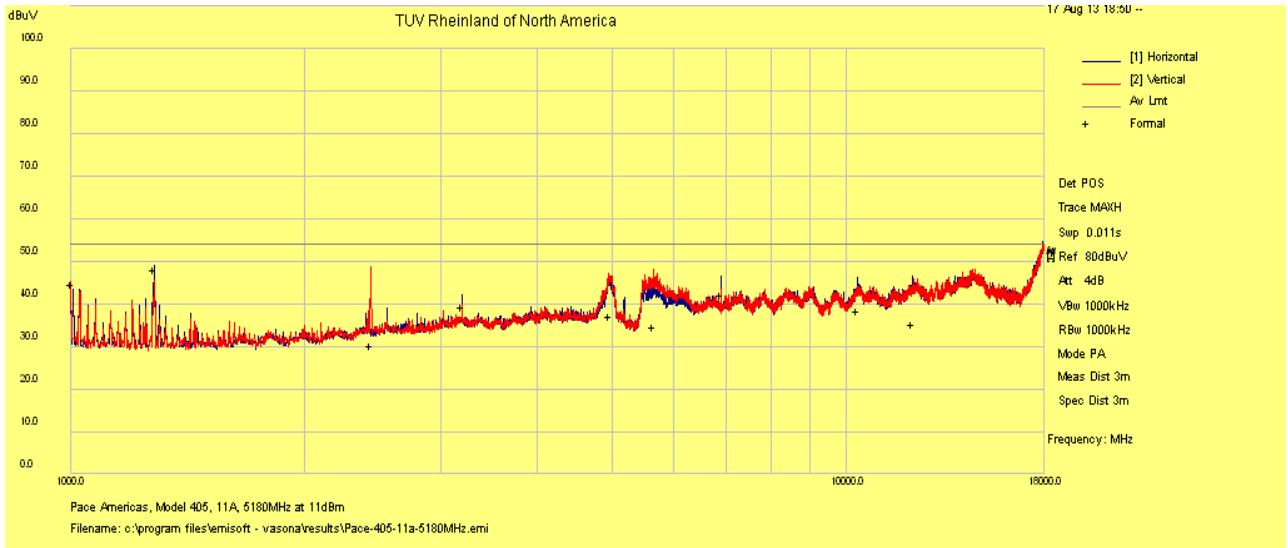
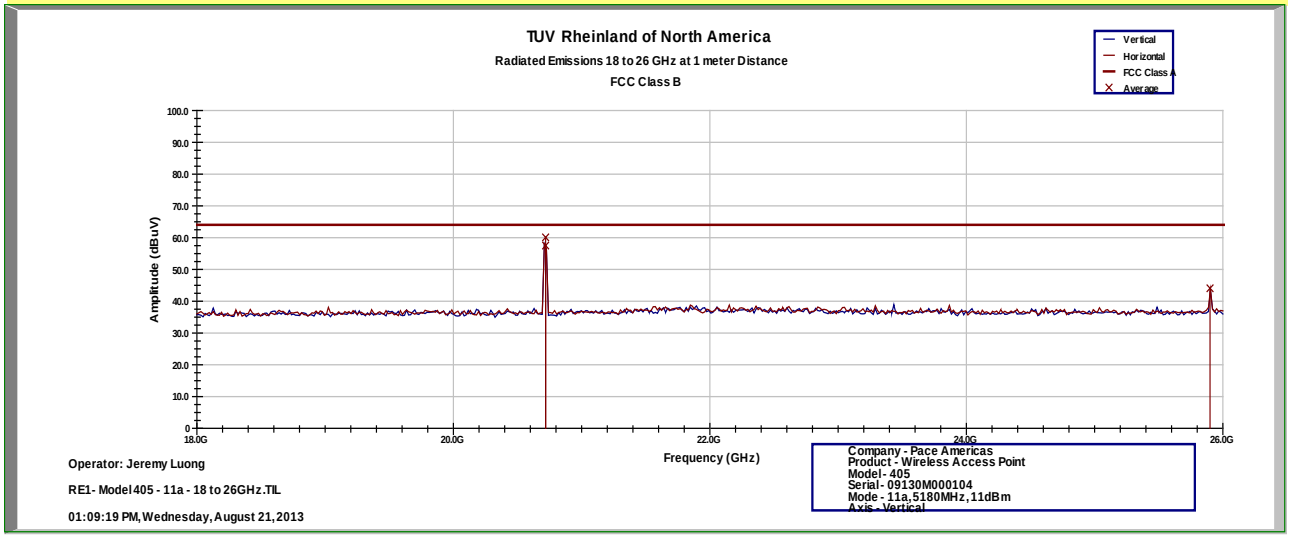
EUT Name	Wireless Video Access Point	**Date**	August 17 & 21, 2013
EUT Model	405	**Temp / Hum in**	23° C / 40%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5180 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

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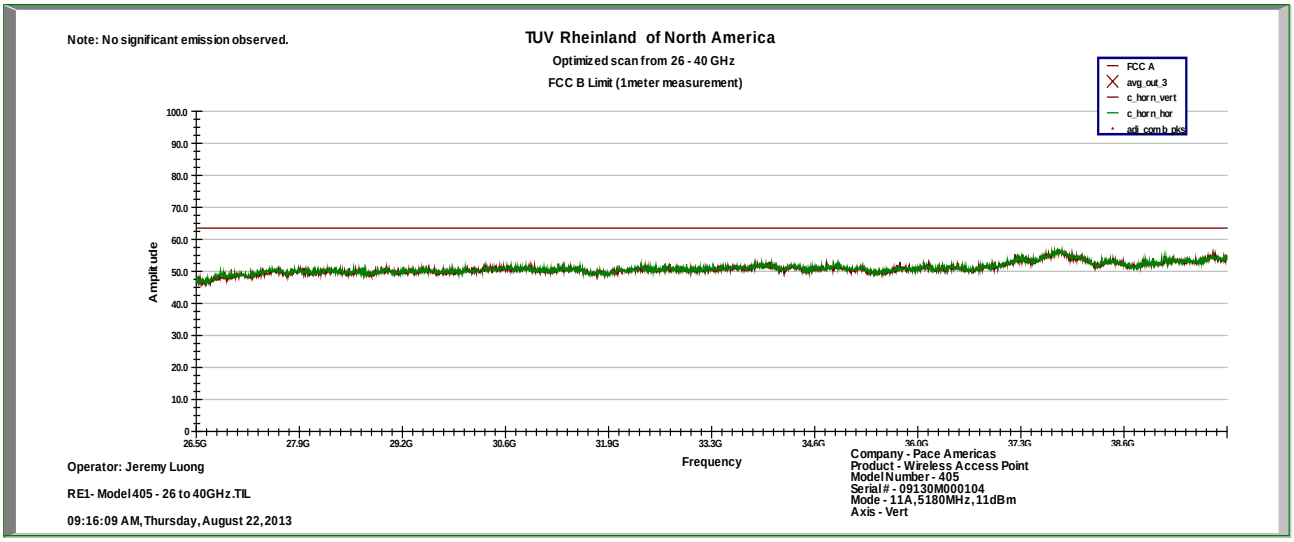
EUT Name	Wireless Video Access Point	**Date**	August 22, 2013
EUT Model	405	**Temp / Hum in**	22° C / 42%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5180 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

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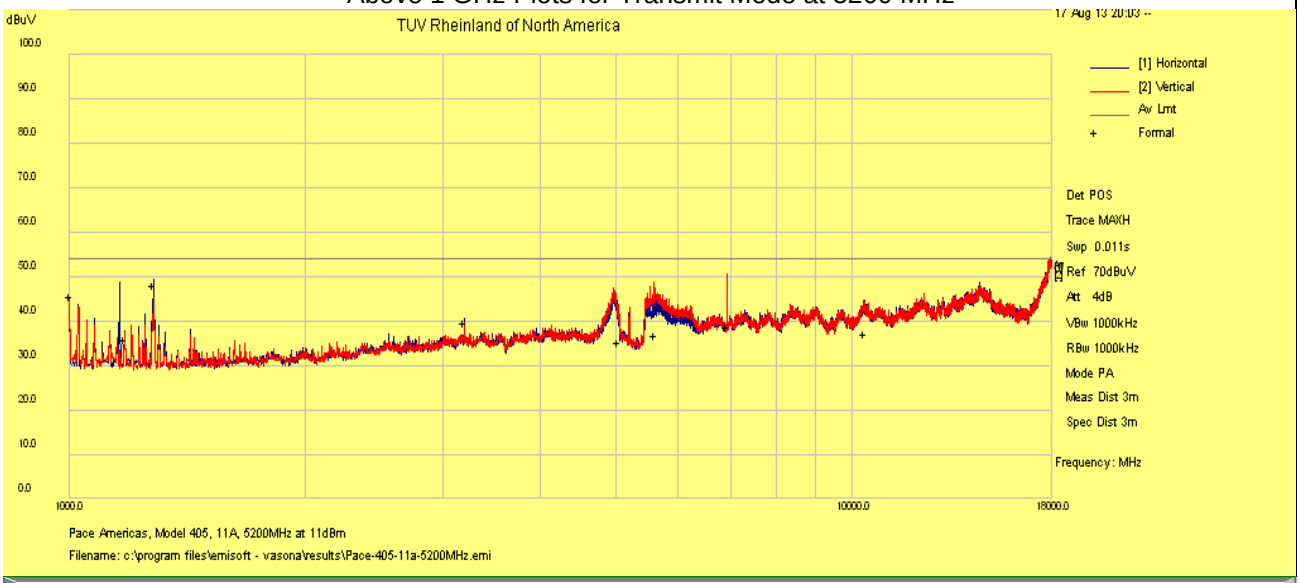
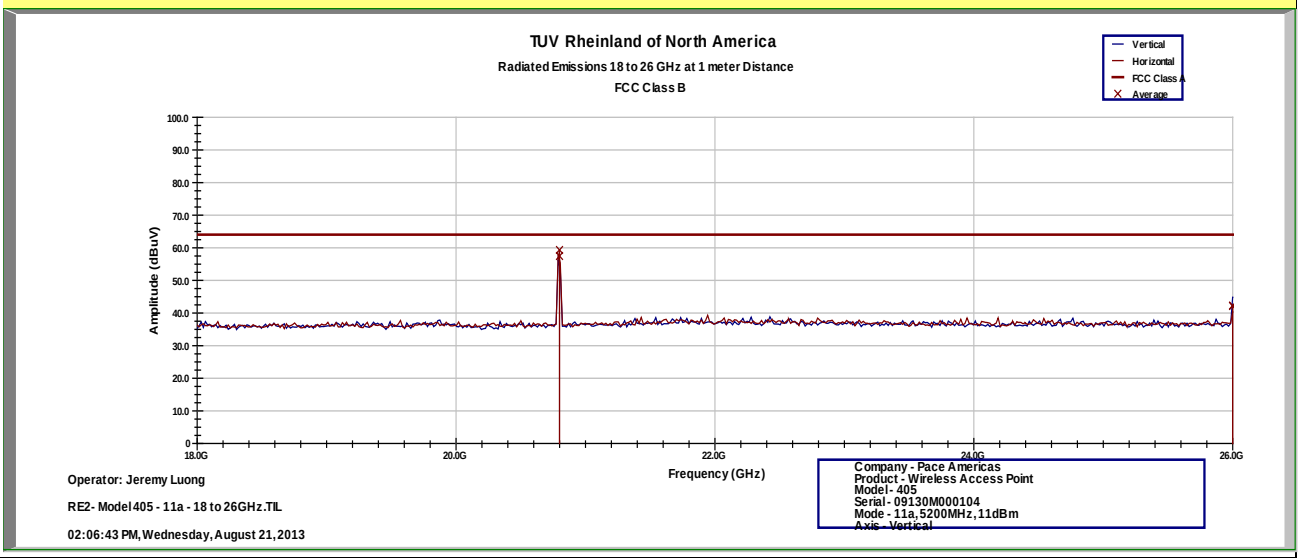
EUT Name	Wireless Video Access Point	**Date**	August 17 & 21, 2013
EUT Model	405	**Temp / Hum in**	23° C / 40%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5200 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

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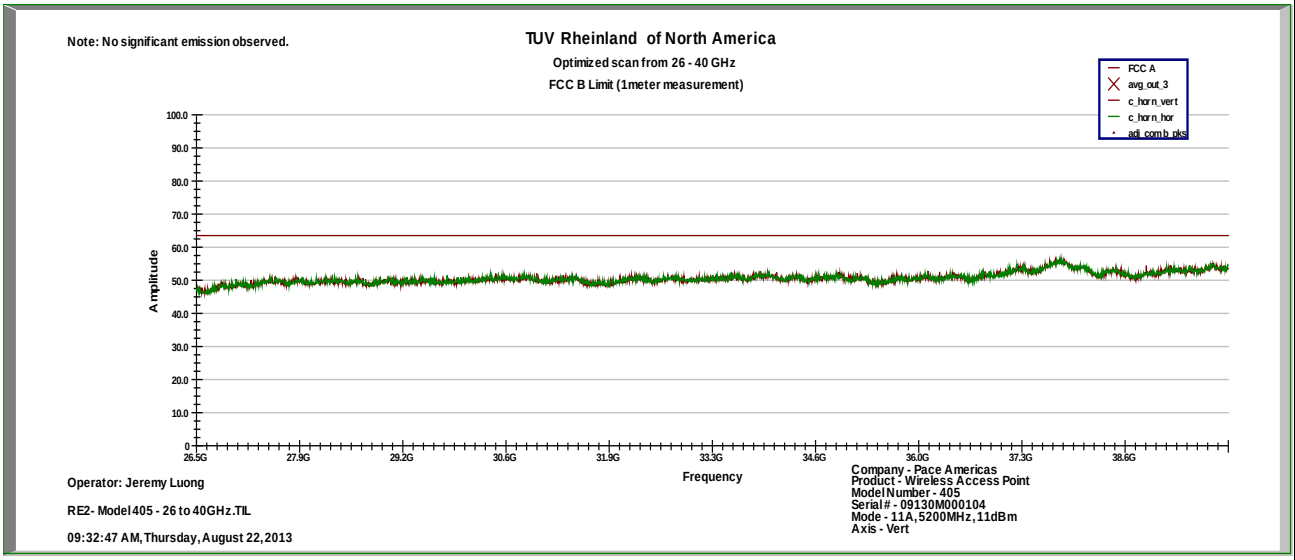
EUT Name	Wireless Video Access Point	**Date**	August 22, 2013
EUT Model	405	**Temp / Hum in**	22° C / 42%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5200 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

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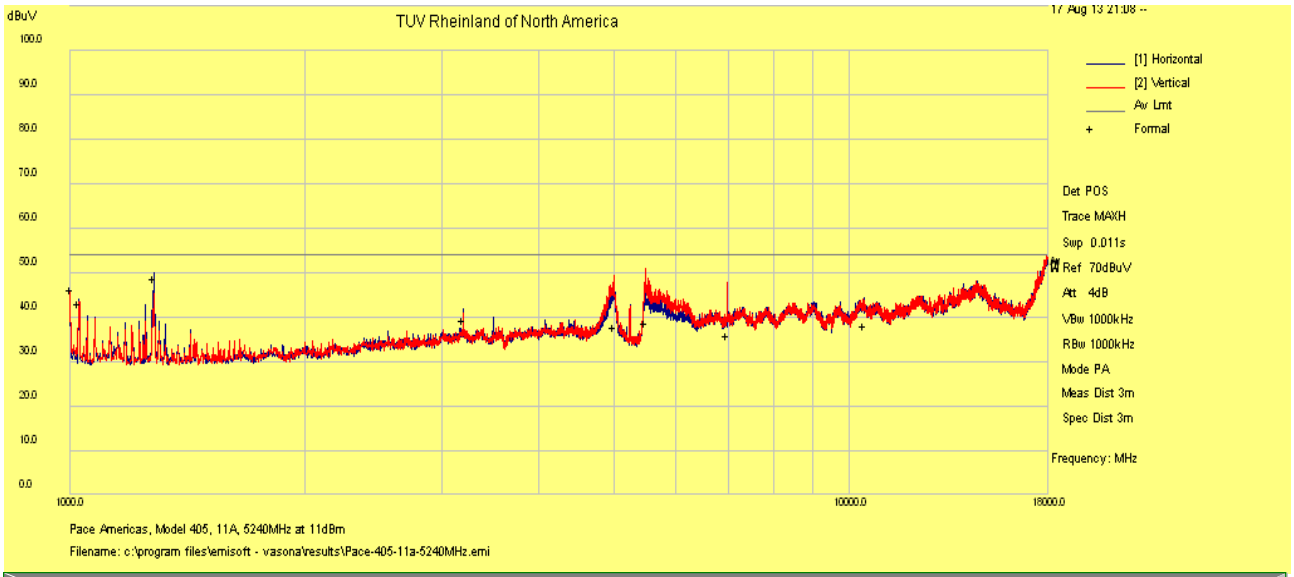
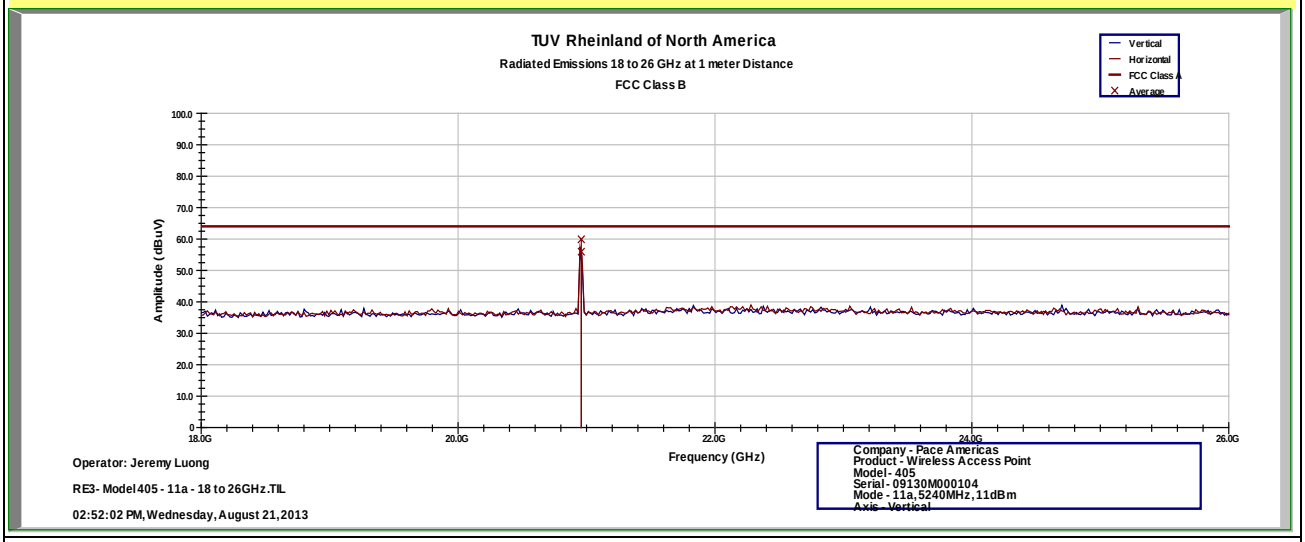
EUT Name	Wireless Video Access Point	**Date**	August 17 & 21, 2013
EUT Model	405	**Temp / Hum in**	23° C / 40%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5240 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

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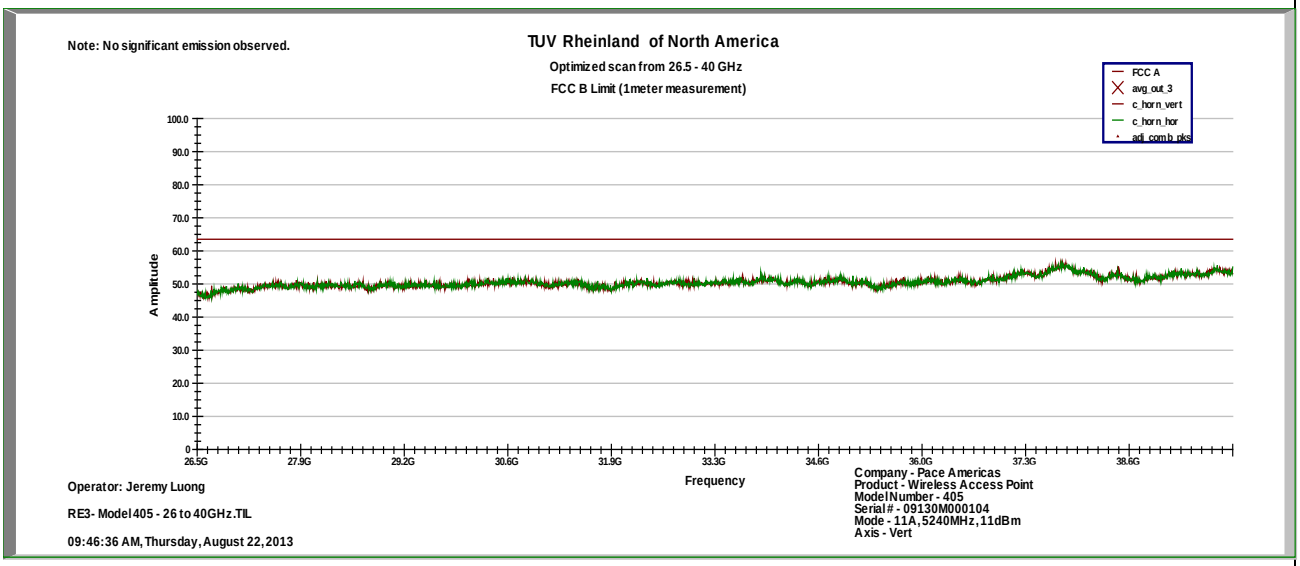
EUT Name	Wireless Video Access Point	**Date**	August 22, 2013
EUT Model	405	**Temp / Hum in**	22° C / 42%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11a at 6 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5240 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

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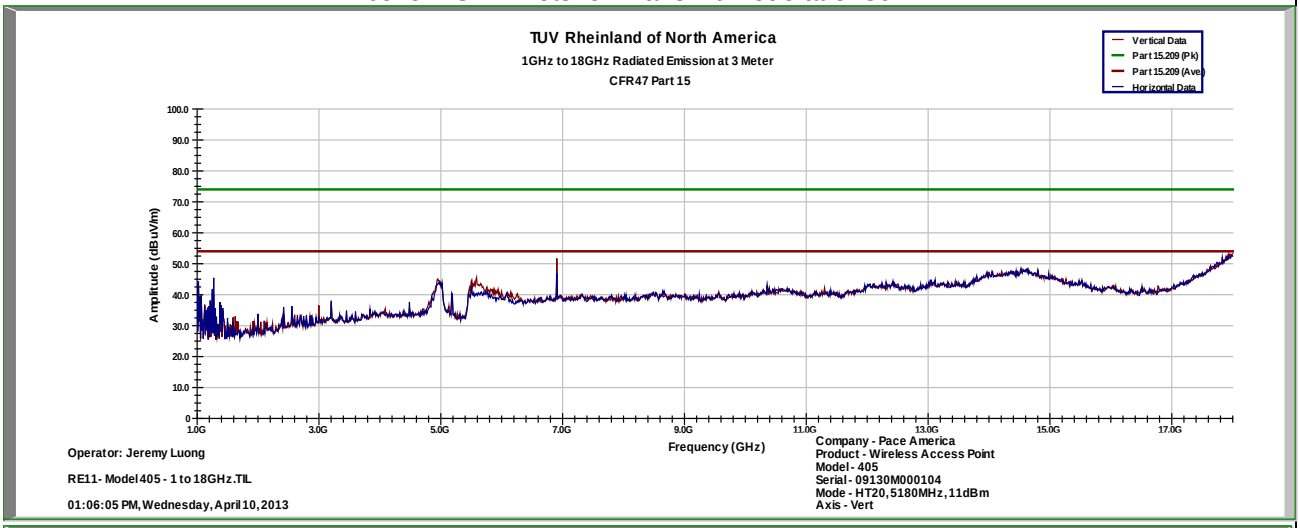
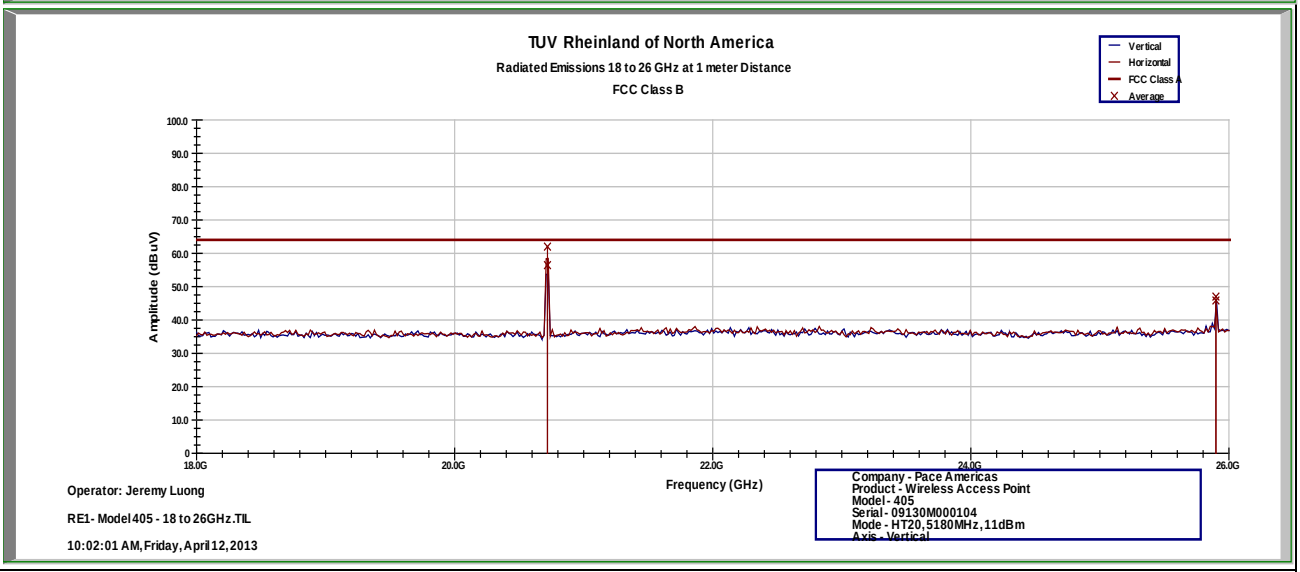
EUT Name	Wireless Video Access Point	**Date**	April 10 & 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5180 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

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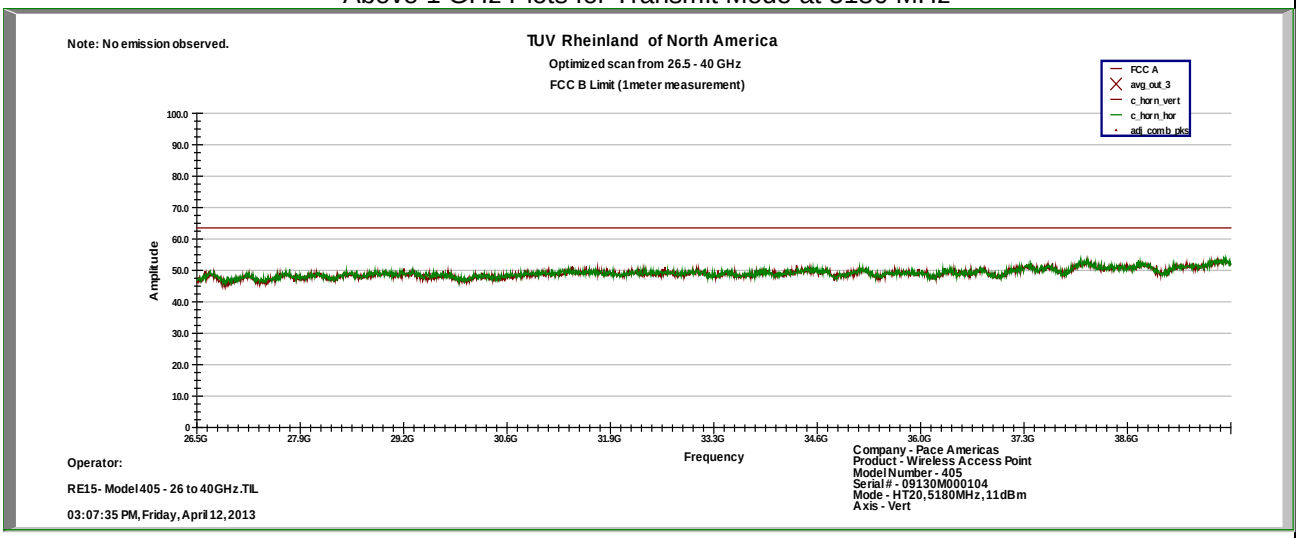
EUT Name	Wireless Video Access Point	**Date**	April 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5180 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

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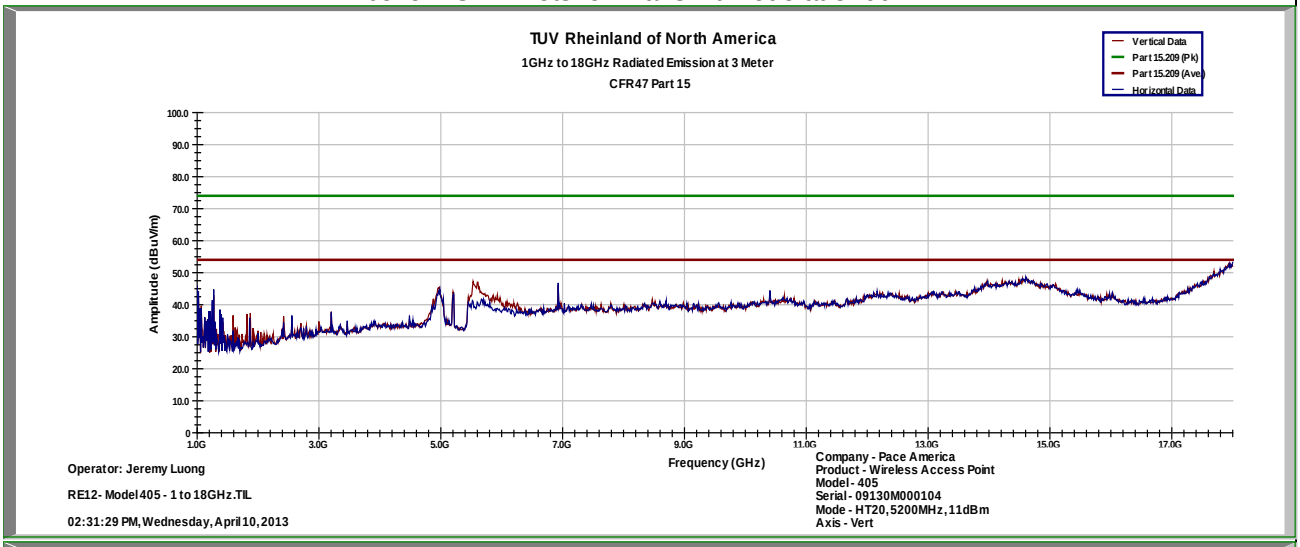
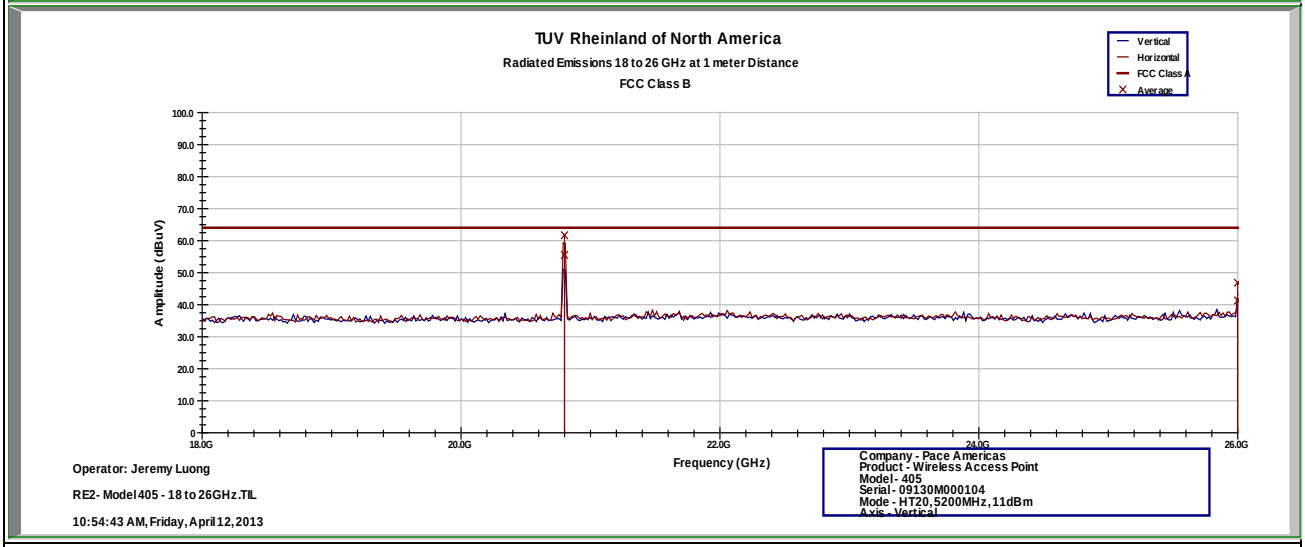
EUT Name	Wireless Video Access Point	**Date**	April 10 & 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5200 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

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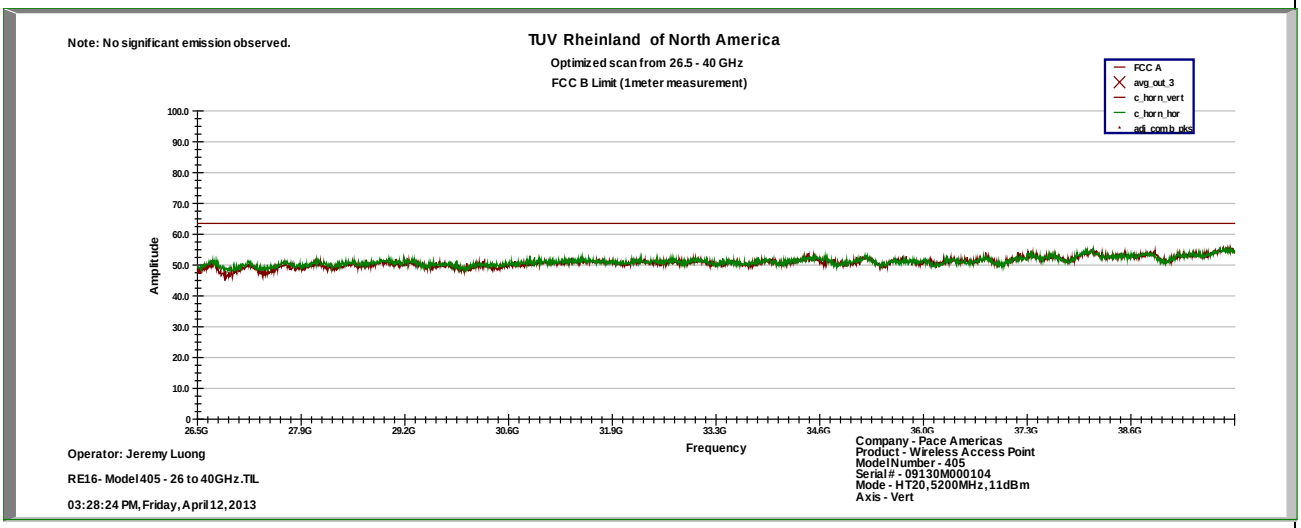
EUT Name	Wireless Video Access Point	**Date**	April 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5200 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

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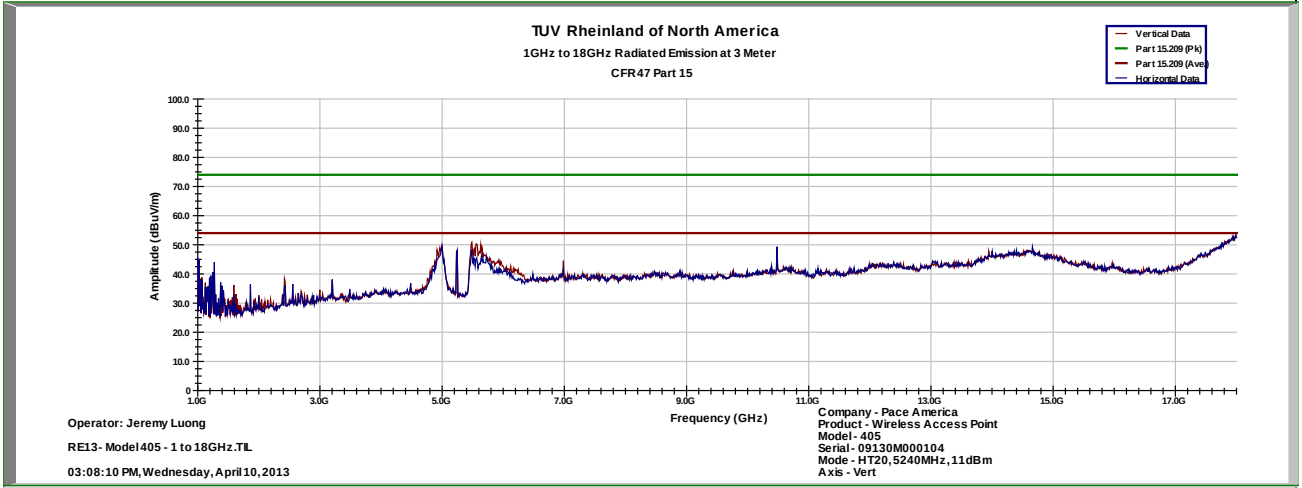
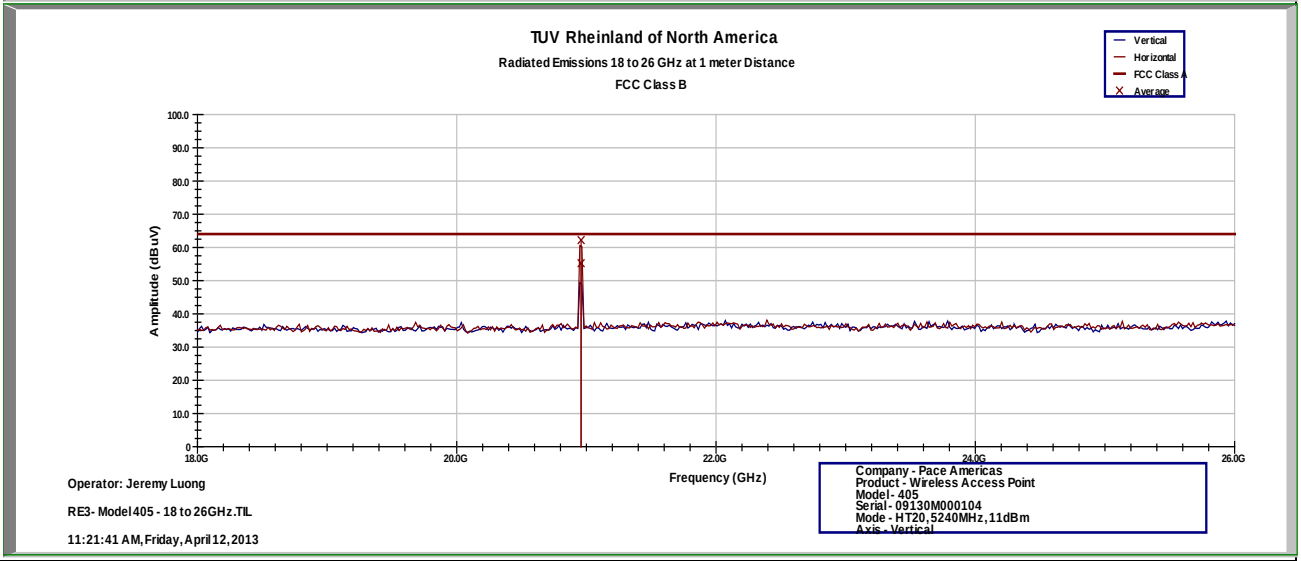
EUT Name	Wireless Video Access Point	**Date**	April 10 & 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5240 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

SOP 1 Radiated Emissions

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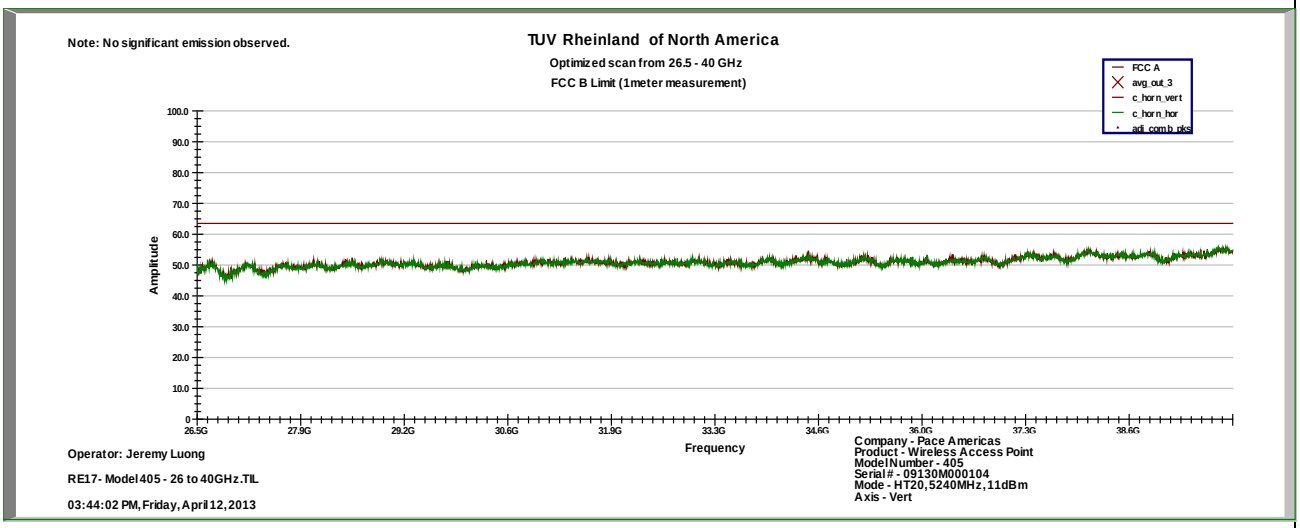
EUT Name	Wireless Video Access Point	**Date**	April 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11n HT20 at 6.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5240 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

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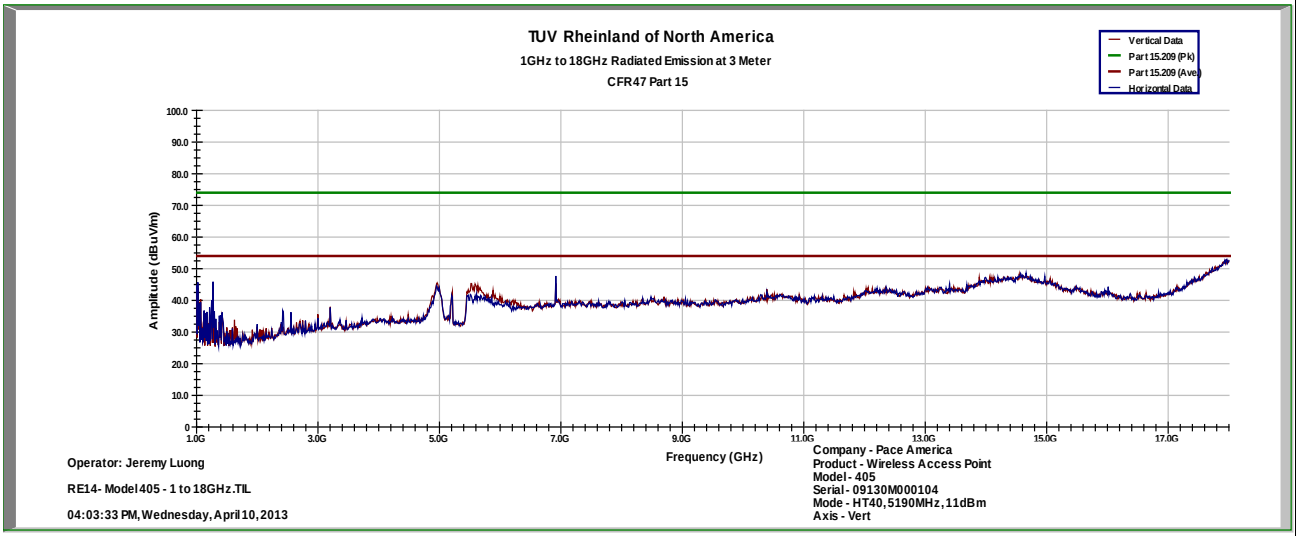
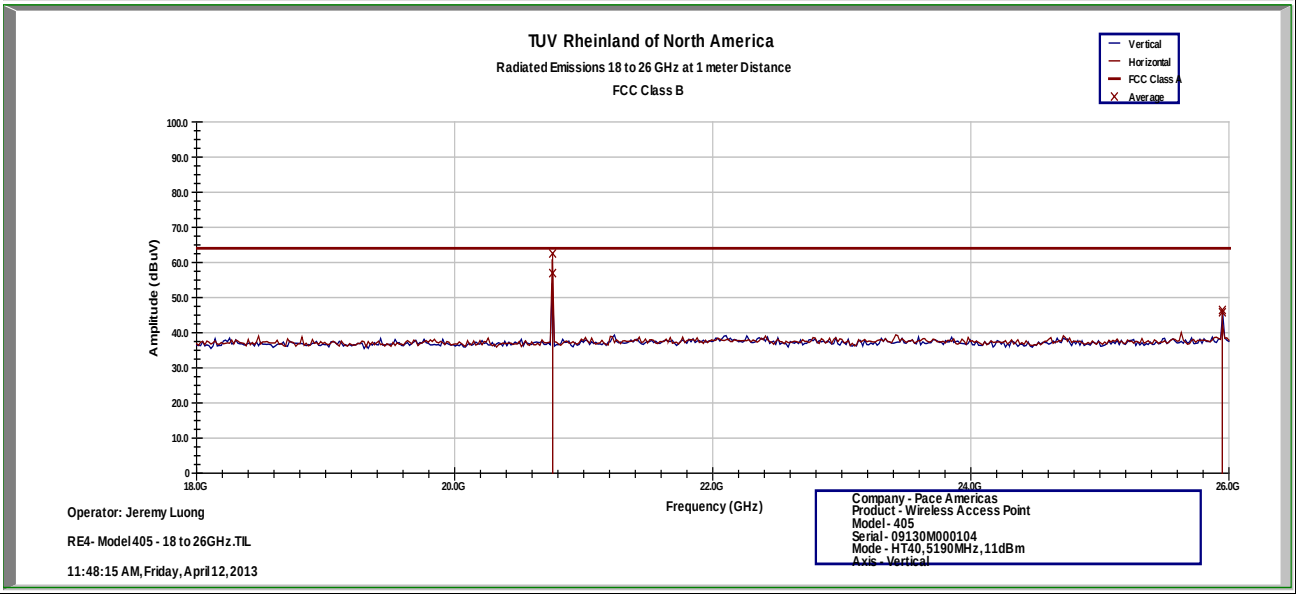
EUT Name	Wireless Video Access Point	**Date**	April 10 & 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11 HT40 at 13.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5190 MHz





Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.

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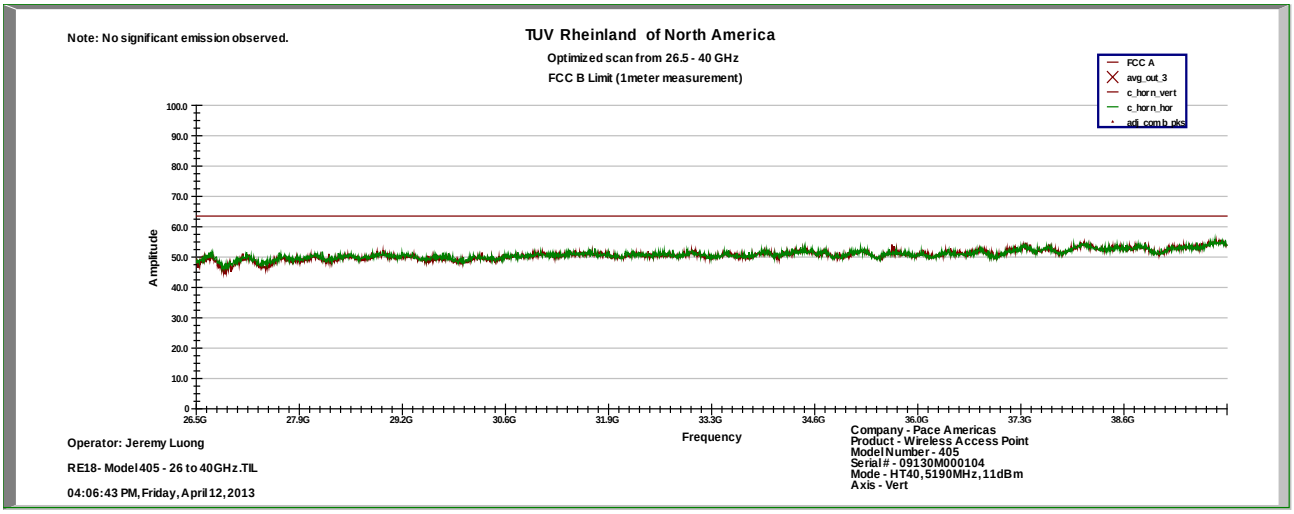
EUT Name	Wireless Video Access Point	**Date**	April 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11 HT40 at 13.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5190 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

SOP 1 Radiated Emissions

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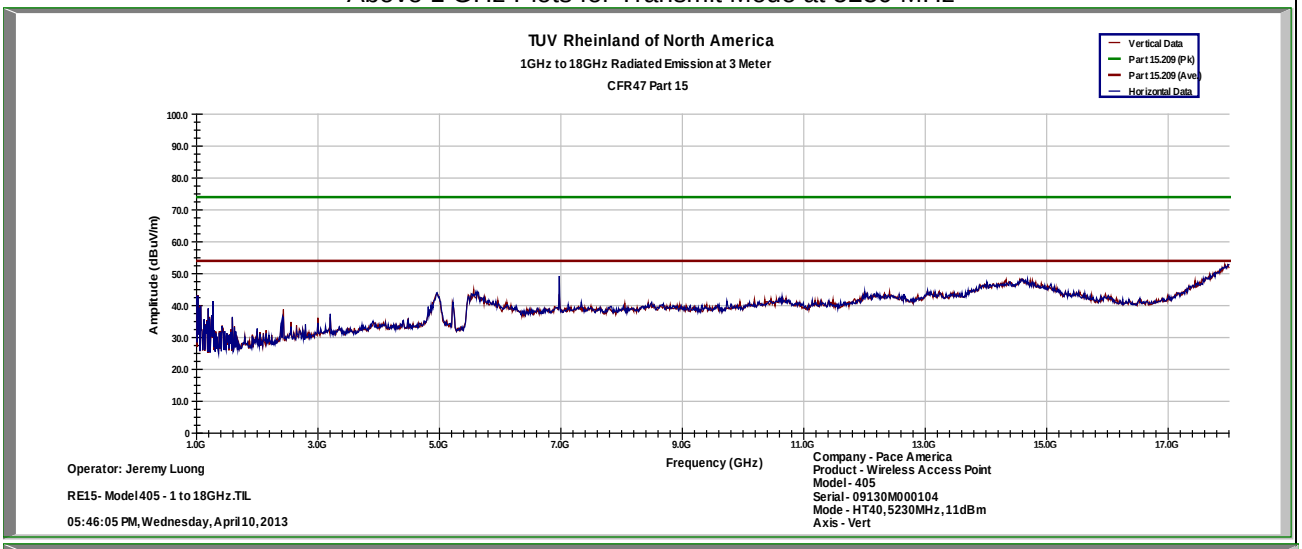
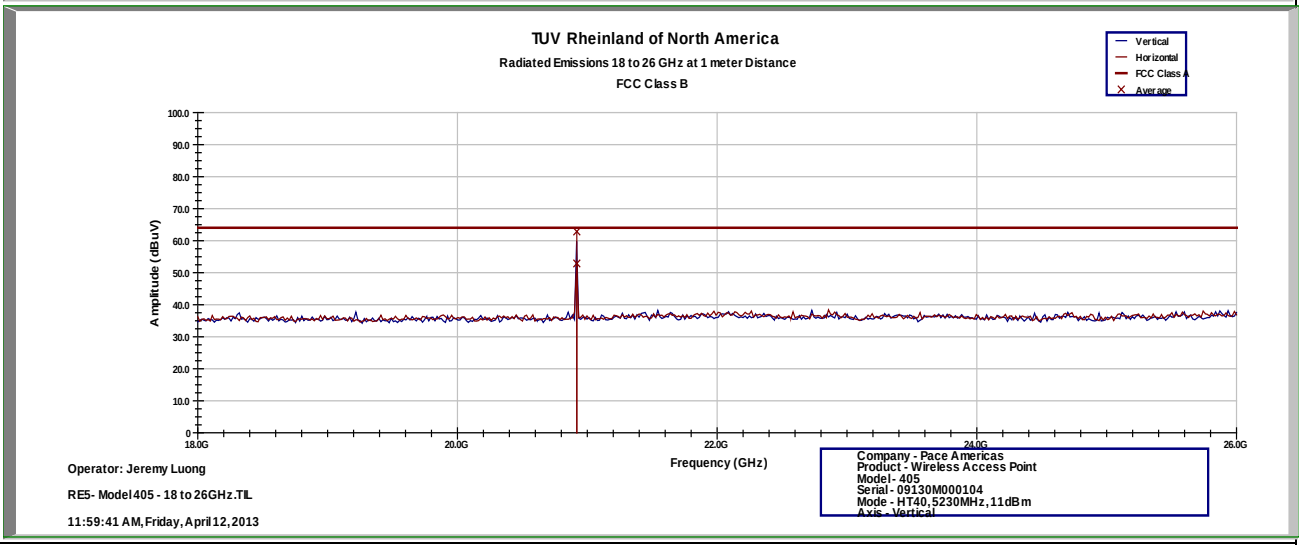
EUT Name	Wireless Video Access Point	**Date**	April 10 & 12, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11 HT40 at 13.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5230 MHz

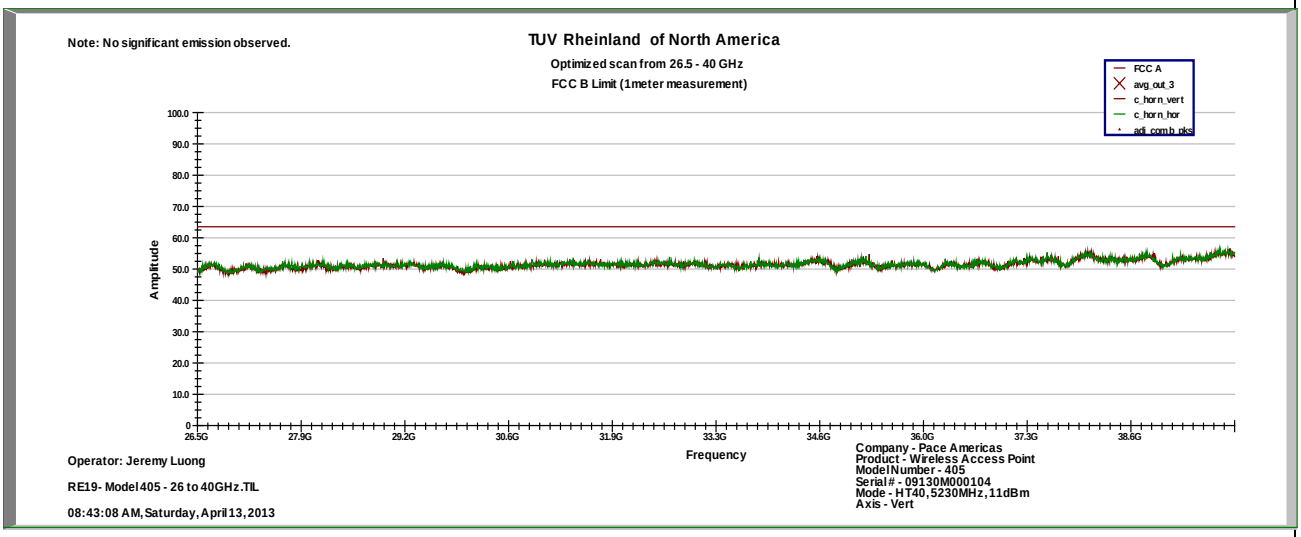




Notes: Limit was extrapolated to 1m distance for 18 GHz – 26.5 GHz range.
1 GHz – 25 GHz Setting: RBW = 1 MHz/ VBW = 3 MHz

SOP 1 Radiated Emissions		Tracking # 31360999.001 Page 21 of 21	
EUT Name	Wireless Video Access Point	**Date**	April 13, 2013
EUT Model	405	**Temp / Hum in**	23° C / 33%rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Y-Axis, 802.11 HT40 at 13.5 Mbps	**Line AC**	120Vac 60Hz
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz / 3 MHz
Dist/Ant Used	3m - EMCO3115 / 1m - RA42-K-F-4B-C	**Performed by**	Jeremy Luong

Above 1 GHz Plots for Transmit Mode at 5230 MHz



Notes: Limit was extrapolated to 1m distance for 18 GHz – 40 GHz range.

4.5.4 Sample Calculation

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

Field Strength (dBμV/m) = FIM - AMP + CBL + ACF

Where: FIM = Field Intensity Meter (dBμV)
AMP = Amplifier Gain (dB)
CBL = Cable Loss (dB)
ACF = Antenna Correction Factor (dB/m)

$$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$$

4.6 AC Conducted Emissions

Testing was performed in accordance with ANSI C63.4: 2010. These test methods are listed under the laboratory's A2LA Scope of Accreditation.

This test measures the levels emanating from the EUT's AC input port, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

The AC conducted emissions of equipment under test shall not exceed the values in CFR47 Part 15.207: 2012 and RSS 210: 2010.

4.6.1 Test Methodology

A test program that controls instrumentation and data logging was used to automate the AC Power Line Conducted emission test procedure. The frequency range of interest was divided into sub-ranges such as to yield a frequency resolution of 9 kHz. Each phase and neutral of the AC power line were measured with respect to ground. Measurements were performed using a set of 50µH / 50Ω LISNs.

Testing is either performed in Lab 2. The setup photographs clearly identify which site was used. The vertical ground plane used in the semi-anechoic chamber is a 2m x 2m solid aluminum frame and panel, and it is bonded to the horizontal ground plane.

In the case of tabletop equipment, the EUT is placed on a 1.0m x 1.5m non-conductive table 80cm above the ground plane and 40cm from a vertical ground reference plane. The rear of the EUT was positioned flush with the backside of the table and directly over the LISNs. The power and I/O cables were routed over the edge of the table and bundled approximately 40cm from the ground plane. Support equipment was powered from a separate LISN.

4.6.1.1 Deviations

There were no deviations from this test methodology.

4.6.2 Test Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 8: AC Conducted Emissions – Test Results

Test Conditions: Conducted Measurement at Normal Conditions only		
Antenna Type: Attached	**Power Level:** See Test Plan	
AC Power: 120 Vac/60 Hz	**Configuration:** Tabletop	
Ambient Temperature: 22° C	**Relative Humidity:** 37% RH	
Configuration	**Frequency Range**	**Test Result**
Line 1 (Hot)	0.15 to 30 MHz	Pass
Line 2 (Neutral)	0.15 to 30 MHz	Pass

SOP 2 Conducted Emissions

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EUT Name	Wireless Video Access Point	**Date**	April 20, 2013
EUT Model	405	**Temp / Hum in**	23° C / 34% rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Attached Antenna	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15.207	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #2 /Com-Power, Line 1	**Performed by**	Jeremy Luong

Frequency	Raw	Limiter	Ins. Loss	Level	Detector	Line	Limit	Margin	Result
MHz	dBuV	dB	dB	dBuV		Line	dBuV	dB	
0.150	38.68	10.12	-0.72	48.08	QP	Live	66.00	-17.92	Pass
0.150	23.81	10.12	-0.72	33.21	Ave	Live	56.00	-22.79	Pass
0.151	38.19	10.12	-0.72	47.60	QP	Live	65.96	-18.36	Pass
0.151	22.88	10.12	-0.72	32.29	Ave	Live	55.96	-23.67	Pass
0.175	33.92	10.12	-0.64	43.40	QP	Live	64.72	-21.32	Pass
0.175	18.79	10.12	-0.64	28.27	Ave	Live	54.72	-26.45	Pass
0.495	23.54	10.17	-0.31	33.39	QP	Live	56.09	-22.70	Pass
0.495	15.47	10.17	-0.31	25.32	Ave	Live	46.09	-20.77	Pass
5.480	21.80	10.28	-0.13	31.95	QP	Live	60.00	-28.05	Pass
5.480	15.99	10.28	-0.13	26.14	Ave	Live	50.00	-23.86	Pass
7.263	21.19	10.34	-0.12	31.41	QP	Live	60.00	-28.59	Pass
7.263	15.59	10.34	-0.12	25.81	Ave	Live	50.00	-24.19	Pass
11.586	21.80	10.46	-0.08	32.17	QP	Live	60.00	-27.83	Pass
11.586	15.51	10.46	-0.08	25.88	Ave	Live	50.00	-24.12	Pass
13.479	21.85	10.47	-0.07	32.25	QP	Live	60.00	-27.75	Pass
13.479	15.64	10.47	-0.07	26.04	Ave	Live	50.00	-23.96	Pass
16.228	22.80	10.53	-0.04	33.30	QP	Live	60.00	-26.70	Pass
16.228	18.11	10.53	-0.04	28.61	Ave	Live	50.00	-21.39	Pass

Spec Margin = QP./Ave. - Limit, ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: EUT was setup as table top equipment and transmitted at 5200 MHz in HT20 at 6.5 Mbps

SOP 2 Conducted Emissions

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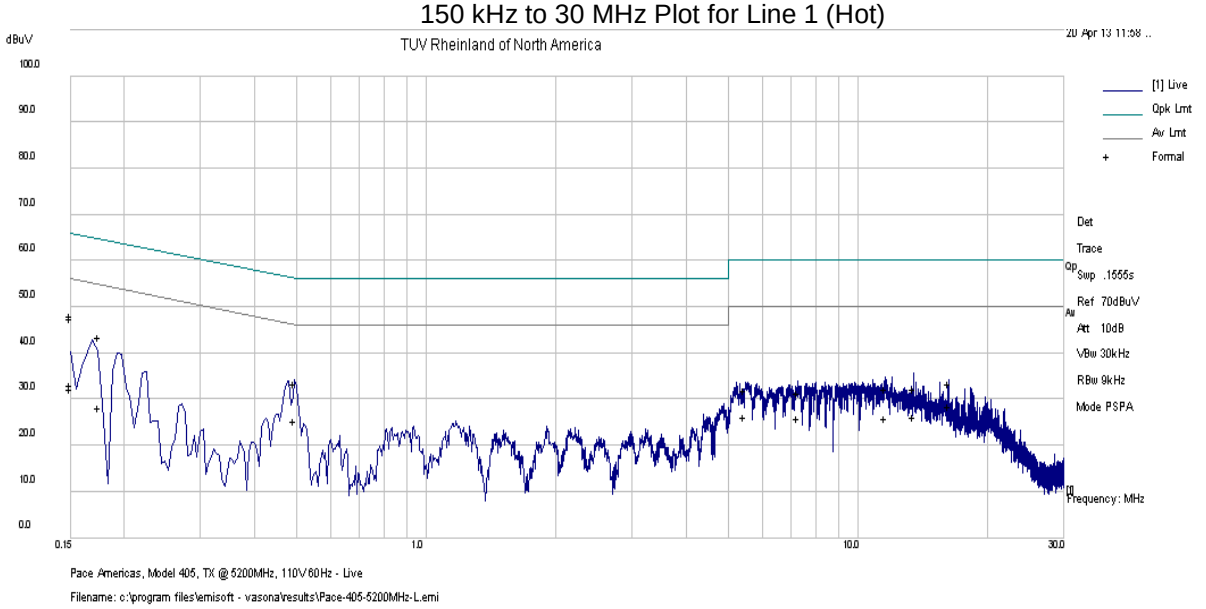
EUT Name	Wireless Video Access Point	**Date**	April 20, 2013
EUT Model	405	**Temp / Hum in**	23° C / 34% rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Attached Antenna	**Line AC**	120Vac/60Hz
Standard	CFR47 Part 15.207	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #2 /Com-Power, Line 1	**Performed by**	Jeremy Luong

150 kHz to 30 MHz Plot for Line 1 (Hot)



Notes: Meet FCC Class B limit.

SOP 2 Conducted Emissions

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EUT Name	Wireless Video Access Point	**Date**	April 20, 2013
EUT Model	405	**Temp / Hum in**	23° C / 34% rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Attached Antenna	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15.207	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #2 /Com-Power, Line 2	**Performed by**	Jeremy Luong

Frequency	Raw	Limiter	Ins. Loss	Level	Detector	Line	Limit	Margin	Result
MHz	dBuV	dB	dB	dBuV		Line	dBuV	dB	
0.150	37.27	10.12	-0.72	46.67	QP	Neutral	65.99	-19.32	Pass
0.150	22.84	10.12	-0.72	32.24	Ave	Neutral	55.99	-23.75	Pass
0.151	36.48	10.12	-0.72	45.89	QP	Neutral	65.95	-20.06	Pass
0.151	21.16	10.12	-0.72	30.57	Ave	Neutral	55.95	-25.38	Pass
0.482	26.44	10.17	-0.32	36.29	QP	Neutral	56.30	-20.01	Pass
0.482	16.54	10.17	-0.32	26.39	Ave	Neutral	46.30	-19.91	Pass
6.850	21.25	10.33	-0.12	31.46	QP	Neutral	60.00	-28.54	Pass
6.850	15.11	10.33	-0.12	25.32	Ave	Neutral	50.00	-24.68	Pass
7.901	21.06	10.37	-0.11	31.32	QP	Neutral	60.00	-28.68	Pass
7.901	15.19	10.37	-0.11	25.45	Ave	Neutral	50.00	-24.55	Pass
8.227	21.04	10.38	-0.11	31.31	QP	Neutral	60.00	-28.69	Pass
8.227	15.13	10.38	-0.11	25.40	Ave	Neutral	50.00	-24.60	Pass
9.938	21.96	10.42	-0.10	32.28	QP	Neutral	60.00	-27.72	Pass
9.938	15.85	10.42	-0.10	26.17	Ave	Neutral	50.00	-23.83	Pass
11.592	20.55	10.46	-0.08	30.92	QP	Neutral	60.00	-29.08	Pass
11.592	14.29	10.46	-0.08	24.66	Ave	Neutral	50.00	-25.34	Pass
16.227	22.17	10.53	-0.04	32.67	QP	Neutral	60.00	-27.33	Pass
16.227	17.39	10.53	-0.04	27.89	Ave	Neutral	50.00	-22.11	Pass

Spec Margin = QP./Ave. - Limit, ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: EUT was setup as table top equipment and transmitted at 5200 MHz in HT20 at 6.5 Mbps

SOP 2 Conducted Emissions

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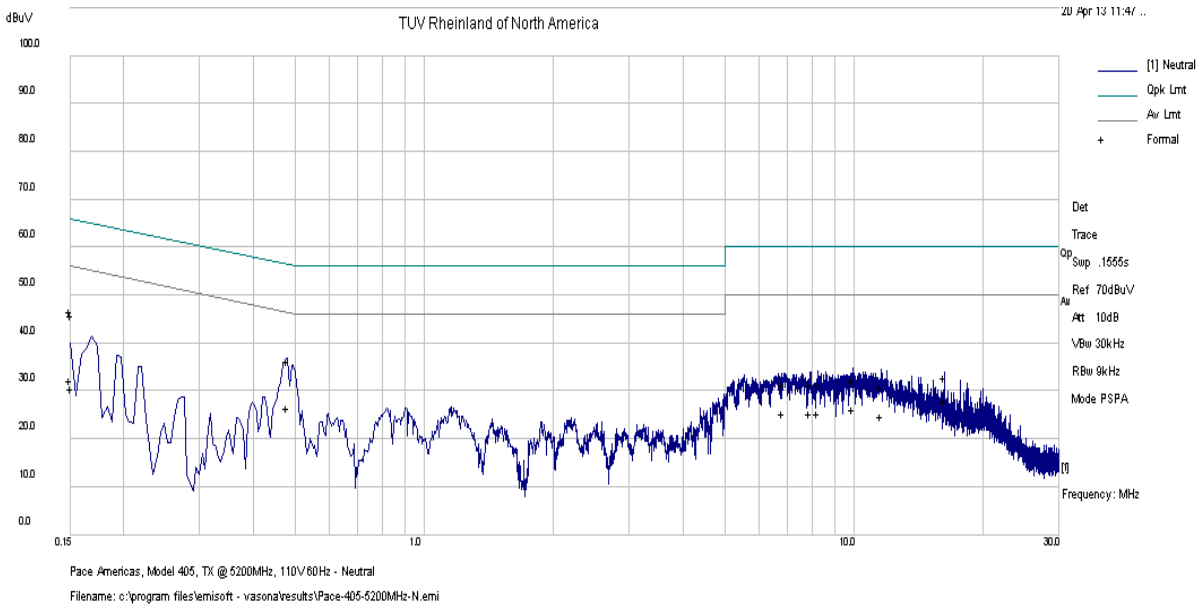
EUT Name	Wireless Video Access Point	**Date**	April 20, 2013
EUT Model	405	**Temp / Hum in**	23° C / 34% rh
EUT Serial	Prototype	**Temp / Hum out**	N/A
EUT Config.	Attached Antenna	**Line AC**	120Vac/60Hz
Standard	CFR47 Part 15.107	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #2 /Com-Power, Line 2	**Performed by**	Jeremy Luong

150 kHz to 30 MHz Plot for Line 2 (Neutral)



Note: Meets FCC Class B Limit.

4.7 Frequency Stability

In accordance with 47 CFR Part 15.407(g) the frequency stability of U-NII devices must be such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual. The Manufacturer calls out operating temperature ranges of +0º to +40º C

4.7.1 Test Methodology

The manufacturer of the equipment is responsible for ensuring that the frequency stability is such that emissions are always maintained within the band of operation under all conditions. This test performs according to ANSI C63.10-2009 Section 6.8

4.7.2 Manufacturer Declaration

The frequency stability of the reference oscillator sets the frequency stability of the RF transceiver signals. Therefore all of the RF signal should have ±20 ppm stability.

This stability accounts for room temp tolerance of the crystal oscillator circuit, frequency variation across temperature, and crystal ageing.

Worst case:
5.200 GHz - ±20 ppm/104 kHz

±20 ppm at 5 GHz translates to a maximum frequency shift of ±103 kHz. As the edge of the channels are at least one MHz from either of the band edges, ±103 kHz is more than sufficient to guarantee that the intentional emission will remain in the band over the entire operating range of the radio.

4.7.3 Limit

CFR47 Part 407(g) - Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

4.7.4 Test results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s) since the maximum frequency drift was 6.84 ppm.

Table 9: Frequency Stability – Test Results

Temperature	Time	-6 dB Lower Edge (MHz)	+6 dB Upper Edge (MHz)	Center Frequency (MHz)	PPM
40° C	Start	5198.93220	5201.01530	5199.97375	5.05
	2 Min.	5198.94570	5200.98520	5199.96545	6.64
	5 Min	5198.88210	5201.04680	5199.96445	6.84
	10 min	5198.88210	5201.04930	5199.96570	6.60
30° C	Start	5198.93220	5201.04080	5199.98650	2.60
	2 Min.	5198.93070	5201.01830	5199.97450	4.90
	5 Min	5198.93220	5201.01080	5199.97150	5.48
	10 min	5198.93220	5201.00780	5199.97000	5.77
20° C	Start	5198.93970	5201.06180	5200.00075	0.14
	2 Min.	5198.93670	5201.03780	5199.98725	2.45
	5 Min	5198.93520	5201.03180	5199.98350	3.17
	10 min	5198.93520	5201.02880	5199.98200	3.46
10° C	Start	5198.94420	5201.08130	5200.01275	2.45
	2 Min.	5198.93820	5201.06030	5199.99925	0.14
	5 Min	5198.93670	5201.05580	5199.99625	0.72
	10 min	5198.93670	5201.05430	5199.99550	0.87
0° C	Start	5198.94420	5201.09030	5200.01725	3.32
	2 Min.	5198.94420	5201.08130	5200.01275	2.45
	5 Min	5198.94420	5201.07680	5200.01050	2.02
	10 min	5198.94420	5201.07680	5200.01050	2.02
Note: All frequency drifts were less than ±20 ppm. The worst frequency drift was 6.84 ppm/ 35.55 kHz.					

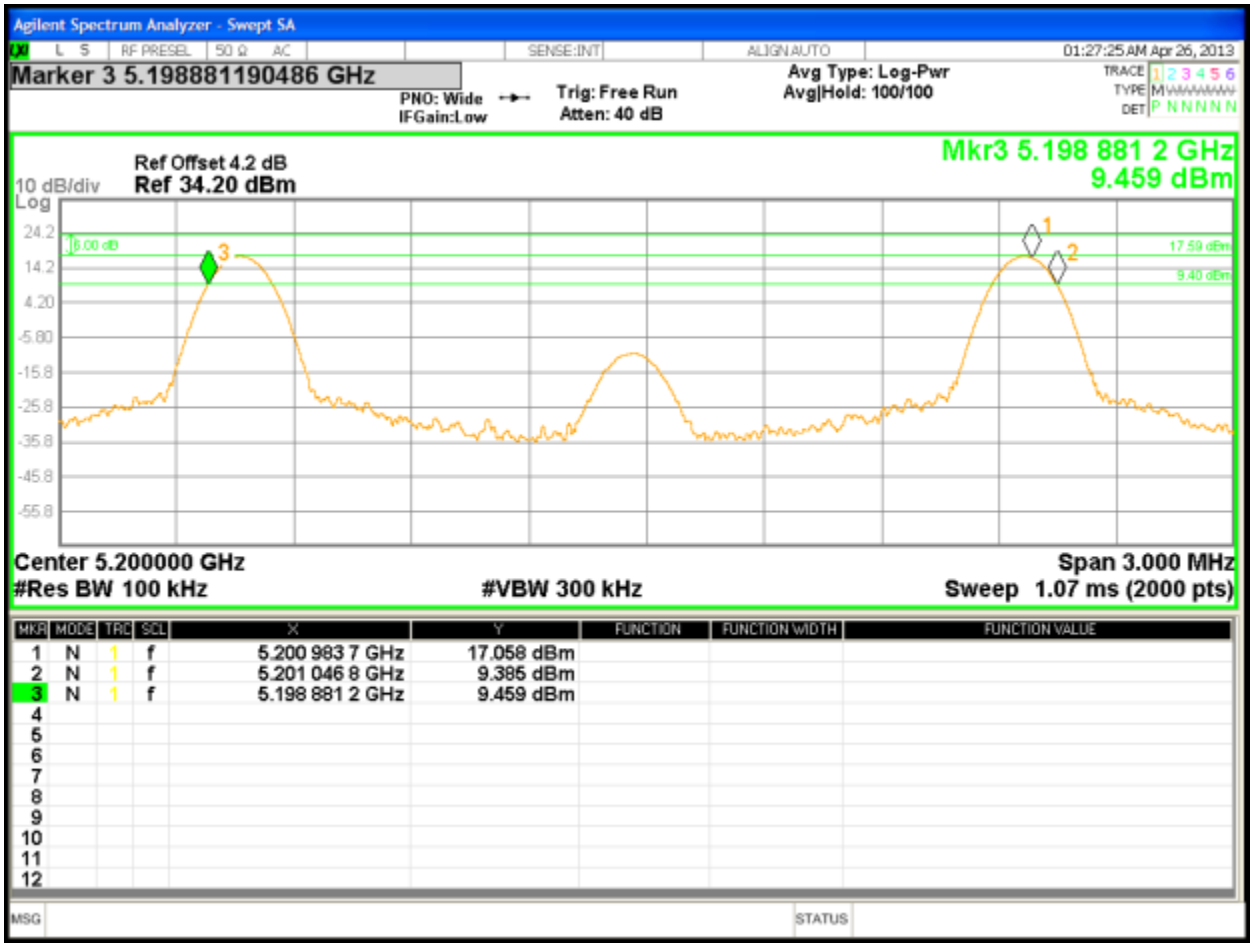


Figure 159: Frequency Stability – Worst Case

4.8 Voltage Variation

In accordance with 47 CFR Part 15.31 (e) intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

4.8.1 Test Methodology

The ac supply voltage was varied between 85% and 115% of the nominal rated supply voltage. The fundamental frequency was observed during the variation. The access point was powered 120V/60Hz by programmable power supply. The voltage was varied from 102Vac to 138Vac mean while the fundamental frequencies were observed and record for the maximum drift in ppm; part per millions.

4.8.2 Test results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s). The fundamental frequencies drifted less than ±20 ppm.

Table 10: Voltage Variation – Test Results

Frequency MHz	Nominal (120 Vac) MHz	Low Voltage (102 Vac) MHz	High Voltage (138 Vac) MHz	Max Drift ppm
5180	5179.96475	5179.96550	5179.96475	6.81
5200	5199.96650	5199.96575	5199.96350	7.02
5240	5239.96325	5239.96250	5239.96775	7.16

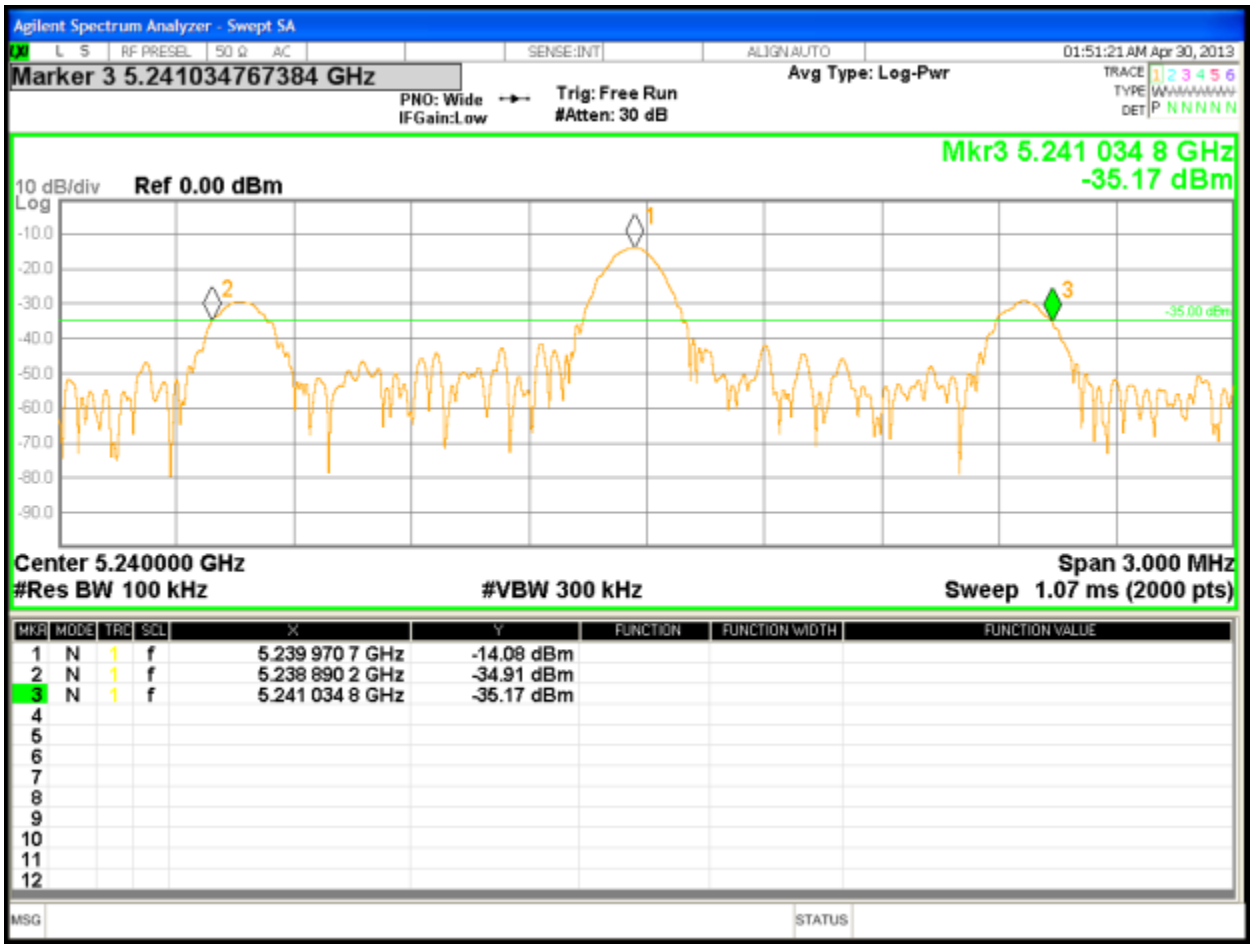


Figure 160: Voltage Variation – Worst Case

4.9 Maximum Permissible Exposure

4.9.1 Test Methodology

In this document, we try to prove the safety of radiation harmfulness to the human body for our product. The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The Gain of the antenna used in this calculation is declared by the manufacturer, and the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis transmission formula is a far field assumption, the calculated result of that is an over-prediction for near field power density. We will take that as the worst case to specify the safety range.

4.9.2 RF Exposure Limit

According to FCC 1.1310 table 1: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
(A)Limits For Occupational / Control Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	…	…	1.0	6
300 - 1500	…	…	f/300	6
1500 - 100,000	…	…	5	6
(B)Limits For General Population / Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/ f^2$)	30
30–300	27.5	0.037	0.2	30
300 - 1500	…	…	f/1500	30
1500 - 100,000	…	…	1.0	30

F = Frequency in MHz
* = Plane-wave equivalent power density

4.9.3 EUT Operating Condition

The software provided by Manufacturer enabled the EUT to transmit data at lowest, middle and highest channel individually.

4.9.4 Classification

The antenna of the product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance with the antenna should be included in user's manual. So, this device is classified as a **Mobile Device**.

4.9.5 Test Results

4.9.5.1 Antenna Gain

The transmitting antenna was integrated. The directional antenna gain was +8.00 dBi or 6.31 (numeric).

4.9.5.2 Output Power into Antenna & RF Exposure value at distance 20cm:

Calculations for this report are based on highest power measurement.

Limit for MPE (from FCC part 1.1310 table1) is 1.0 mW/cm^2

The highest measured total power is +14.87 dBm or 30.690mW

Using the Friss transmission formula, the EIRP is Pout*G, and R is 20cm.

Pd = (30.690*6.31) / (1600π) = 0.0385 mW/cm2, which is 0.96145 mW/cm2 below to the limit.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

4.9.6 Sample Calculation

The Friss transmission formula: $Pd = (Pout*G) / (4*\pi*R^2)$

Where;

Pd = power density in mW/cm_2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
$\pi \approx 3.1416$
R = distance between observation point and center of the radiator in cm

Ref. : David K. Cheng, *Field and Wave Electromagnetics*, Second Edition, Page 640, Eq. (11-133).

5 Test Equipment List

5.1 Equipment List

Equipment	Manufacturer	Model #	Serial/Inst #	Last Cal mm/dd/yy	Next Cal mm/dd/yy
Bilog Antenna	Sunol Sciences	JB3	A102606	05/15/2012	05/15/2014
Horn Antenna	Sunol Sciences	DRH-118	A040806	11/05/2012	11/05/2014
Antenna (18-26GHz)	CMT	RA42-K-F-4B-C	020131-004	03/05/2013	03/05/2014
Antenna (26-40 GHz)	CMT	RA28-K-F-4B-C	011469R-003	11/20/2012	11/20/2014
EMI Receiver	Hewlett Packard	8546A	3807A00445	01/18/2013	01/18/2014
Preselector	Hewlett Packard	85460A	3704A00407	01/18/2013	01/18/2014
Amplifier	Hewlett Packard	8447D	2944A07996	01/16/2013	01/16/2014
Spectrum Analyzer	Rhode Schwarz	ESIB	832427/002	01/16/2013	01/16/2014
Amplifier	Rohde & Schwarz	TS-PR18	3545.7008.03	01/16/2013	01/16/2014
Amplifier	Rohde & Schwarz	TS-PR26	100011	03/05/2013	03/05/2014
Amplifier	Rohde & Schwarz	TS-PR40	100012	11/20/2012	11/20/2014
Signal Generator	Anritsu	MG3694A	42803	01/19/2013	01/19/2014
Notch Filter	Micro-Tronics	BRM50702	37	01/16/2013	01/16/2014
Notch Filter	Micro-Tronics	BRC50703	11	01/16/2013	01/16/2014
Notch Filter	Micro-Tronics	BRC50704	8	01/16/2013	01/16/2014
Notch Filter	Micro-Tronics	BRC50705	9	01/16/2013	01/16/2014
High Pass Filter (3.5 GHz)	Hewlett Packard	84300-80038	820004	01/16/2013	01/16/2014
High Pass Filter (8.5 GHz)	Micro-Tronics	HPM50107	4	01/16/2013	01/16/2014
Power Supplier	Kikusui	PCR8000W	CM000912	01/17/2013	01/17/2014
Digital Multimeter	Fluke	177	92780314	01/17/2013	01/17/2014
Power Meter	Agilent	E4418B	MY45103902	01/19/2013	01/19/2014
Power Sensor	Hewlett Packard	8482A	55-5131	01/19/2013	01/19/2014
EMI Receiver	Hewlett Packard	8546A	3942A00514	07/02/2012	07/02/2013
Preselector	Hewlett Packard	85460A	3704A00485	07/02/2012	07/02/2013
LISN	Com-Power	LI-215	12100	01/16/2013	01/16/2014
Transient Limiter	Com-Power	LIT-930	531582	01/16/2013	01/16/2014
Thermometer	Fluke	52II	88650033	07/26/2012	07/26/2013
Thermo Chamber	Espec	BTZ-133	0613436	03/11/2013	03/11/2014
Spectrum Analyzer	Rohde & Schwarz	FSL6	100169	02/07/2013	02/07/2014
Spectrum Analyzer	Agilent	N9038A	MY51210195	01/19/2013	01/19/2014
Vector Signal Generator	Rohde & Schwarz	SMU 200A	1141.2005.02	11/24/2011	11/24/2013
Amplifier	Hewlett Packard	8449B	30008A01014	01/17/2013	01/17/2014

* Calibration of equipment past due for re-calibration will be performed expeditiously. If any equipment is found to be out of tolerance at that time, affected customers will be notified accordingly.

6 EMC Test Plan

6.1 Introduction

This section provides a description of the Equipment Under Test (EUT), configurations, operating conditions, and performance acceptance criteria. It is an overview of information provided by the manufacturer so that the test laboratory may perform the requested testing.

6.2 Customer

Table 11: Customer Information

Company Name	Pace Americas
Address	310 Providence Mine Road, Ste. 200
City, State, Zip	Nevada City, CA 95959
Country	USA
Phone	(530) 274 5440
Fax	(530) 273 6340

Table 12: Technical Contact Information

Name	Mark Rieger
E-mail	Mark.Rieger@pace.com
Phone	(530) 274 5440
Fax	(530) 273 6340

6.3 Equipment Under Test (EUT)

Table 13: EUT Specifications

EUT Specifications	
Dimensions	6.0” x 5.6” x 1.3”
AC Adapter (Pace M/N:T018WA1225, S/N:810611302000003156)	Input Voltage: 120 Vac 50-60 Hz Input Current: 680 mA Output Voltage: 12 Vdc Output Current: 1.5 A
Environment	Indoor and Outdoor
Operating Temperature Range:	0 to 40 degrees C
Multiple Feeds:	☐ Yes and how many ☒ No
Hardware Version	Rev. A1C
Part Number	297T1001700
RF Software Version	Busy Box V1.10.3
802.11-radio modules	
Operating Mode	802.11n HT20 and HT40
Transmitter Frequency Band	5.15 GHz to 5.25 GHz (Indoor Use) 5.25 GHz to 5.35 GHz 5.47 GHz to 5.725 GHz (exclude 5.6 GHz to 5.65 GHz) 5.725 GHz to 5.85 GHz
Max. Rated Power Output	See Channel Planning Table.
Power Setting @ Operating Channel	See Channel Planning Table.
Antenna Type	3 integrated PCB Antennas and 1 stamped metal loop antenna
Antenna Gain	+2 dBi per antenna. (Same for both antenna type) +8 dBi directional gain.
Modulation Type	☐ AM ☐ FM ☒ DSSS ☒ OFDM ☐ Other describe:
Data Rate	802.11a: 4 Spatial Streams: 6, 9, 12, 18, 24, 32, 36, 48, 54 Mbps 802.11n HT20: 4 Spatial Streams: 26, 52, 78, 104, 156, 208, 234, 260 Mbps 802.11n HT40: 4 Spatial Streams: 54, 108, 162, 216, 324, 432, 486, 540 Mbps
TX/RX Chain (s)	MIMO (4x4)
Directional Gain Type	☒ Correlated ☒ Beam-Forming ☐ Other describe:

EUT Specifications	
Type of Equipment	☒ Table Top ☐ Wall-mount ☐ Floor standing cabinet ☐ Other
Note: 1. All four chains will be on / transmitted at all time. 2.This report only documents the radio characteristics for 5150 – 5250 MHz band	

Table 14: EUT Channel Power Specifications

No.	Frequency (MHz)	Target Power Value				
		802.11b	802.11g	802.11a	802.11n HT20	802.11n HT40
36	5180			10.0	10.0	11.0
40	5200			9.0	9.0	
44	5220			9.0	9.0	11.0
48	5240			9.0	9.0	
52	5260			15.0	15.0	17.0
56	5280			15.0	15.0	
60	5300			15.0	15.0	14.0
64	5320			15.0	15.0	
100	5500			16.0	16.0	16.0
104	5520			16.0	16.0	
108	5540			16.0	16.0	18.0
112	5560			16.0	16.0	
116	5580			16.0	16.0	
120	5600					
124	5620					
128	5640					
132	5660			16.0	16.0	18.0
136	5680			16.0	16.0	
140	5700			15.0	15.0	
149	5745			22.0	22.0	22.0
153	5765			22.0	22.0	
157	5785			22.0	22.0	22.0
159	5795			22.0	22.0	
161	5805			22.0	22.0	
165	5825			22.0	22.0	

Note: 1. The center operating frequency is shifted upward by 10 MHz for HT40.
2. The final adjusted power targets are updated at the above indicated frequencies.

Table 15: Interface Specifications

Interface Type	Cabled with what type of cable?	Is the cable shielded?	Maximum potential length of the cable?	Metallic (M), Coax (C), Fiber (F), or Not Applicable?
RJ45	CAT-5 Ethernet	☐ No	☒ Metric: 10 m	☒ M

Table 16: Supported Equipment

Equipment	Manufacturer	Model	Serial	Used for
Laptop	Dell	PP23LB	9271001233	Setup EUT operating channel
Note: None.				

Table 17: Description of Sample used for Testing

Device	Serial	RF Connection	CFR47 Part 15.247
405	09130M000104	Integrated Antenna	TX Emission, AC Conducted Emission
		Direct via Murada Connection	Peak Transmit Power, Peak Power Spectral Density, Peak Excursion Ratio Occupied Bandwidth Frequency Stability Voltage Variation

Table 18: Description of Test Configuration used for Radiated Measurement.

Device	Antenna	Mode	Setup Photo (X-Axis)	Setup Photo (Y-Axis)	Setup Photo (Z-Axis)
405	Integrated	Transmit	EUT laid flat.	EUT stood upright	N/A
Note: Pre-scans were performed in 2 supporting axis, and Y-axis was worst.					

Table 19: Final Test Mode for 5150 - 5250 Bands

Test	802.11a	802.11n HT20	802.11n HT40
Occupied Bandwidth FCC Part 15.407(a)	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6 Mbps/ stream	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6.5 Mbps/ stream	Band 1: 5190, 5230 MHz 4 Streams – 13.5 Mbps/ stream
Output Power FCC Part 15.407(a)(1-2)	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6 Mbps/ stream	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6.5 Mbps/ stream	Band 1: 5190, 5230 MHz 4 Streams – 13.5 Mbps/ stream
Peak Excursion Ratio FCC Part 15.407(a)(6)	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6 Mbps/ stream	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6.5 Mbps/ stream	Band 1: 5190, 5230 MHz 4 Streams – 13.5 Mbps/ stream

Test	802.11a	802.11n HT20	802.11n HT40
Peak Power Spectral Density FCC Part 15.407(a)	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6 Mbps/ stream	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6.5 Mbps/ stream	Band 1: 5190, 5230 MHz 4 Streams – 13.5 Mbps/ stream
Band-Edge (Radiated) FCC Part 15.205, 15.209, 15.407(b)	Band 1: 5180, 5240 MHz 4 Streams – 6 Mbps/ stream	Band 1: 5180, 5240 MHz 4 Streams – 6.5 Mbps/ stream (Y-Axis)	Band 1: 5190, 5230 MHz 4 Streams – 13.5 Mbps/ stream (Y-Axis)
Transmitted Spurious Emission (30 MHz – 1 GHz) FCC Part 15.205, 15.209, 15.407(b)		Worst Case: 5200 MHz 4 Streams – 6.5 Mbps/ stream (Y-Axis)	
Transmitted Spurious Emission (Above 1 GHz) FCC Part 15.205, 15.209, 15.407(b)	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6 Mbps/ stream (Y-Axis)	Band 1: 5180, 5220, 5240 MHz 4 Streams – 6.5 Mbps/ stream (Y-Axis)	Band 1: 5190, 5230 MHz 4 Streams – 13.5 Mbps/ stream (Y-Axis)
Conducted Spurious Emission (antenna port). FCC Part 15.407 (b)	According to CFR47 15.407 (b) EIPR shall not exceed -27 dBm/MHz. This is equivalent to the field strength of 68.2 dBuV/m at 3 meter test distance. The EUT satisfied the requirement by meeting the limit under CFR47 Part 15.209.		
AC Conducted Emission FCC Part 15.207		5200 MHz at 4 Data Stream: 6.5 Mbp	
Frequency Stability FCC Part 15.407 (g)	CW Tone at 5200 MHz, (Send_cw_signal 40 0 0 3 1 0).		
Voltage Variation FCC Part 15.31 (e)	Continuous wave at 5180, 5200, 5240,MHz, (Send_cw_signal 40 0 0 3 1 0)		
Dynamic Frequency Selection FCC Part 15.407 (h)	5150 – 5250 MHz band does not support DFS.		

Note: 1. All final radiated emission performed on Y-Axis.
2. All four chains will be on at all time.
3. All tests were pre-scanned for worst case before final testing.

6.4 Test Specifications

Testing requirements

Table 20: Test Specifications

Emissions and Immunity	
Standard	**Requirement**
CFR 47 Part 15.407: 2012	All
RSS 210 Issue 8, 2010	All

END OF REPORT