Section 15.407 Subclause (b) (3) / RSS-210 A9.2. (3). Undesirable radiated emissions (Transmitter) 1 to 40 GHz

SPECIFICATION

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 (68.23 dBμV/m at 3 m distance).

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)):

Frequency Range (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	300
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 40000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 1m for the frequency range 1 GHz-40 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

The equipment transmits continuously in the selected channel so it is not necessary a duty cycle correction factor.

Frequency range 30 MHz-1 GHz

The spurious signals detected do not depend on either the operating channel or the modulation mode.

See test results in Appendix A for details.

Frequency range 1 GHz-40 GHz

The results in the next tables show the maximum measured levels in the 1-40 GHz range including the restricted band 5.35-5.46 GHz and adjacent bands 5.46-5.47 GHz and 5.725-5.825 GHz (see next plots).

For OFDM modulation modes (802.11a, 802.11n20, 802.11n40 and 802.11ac80), a preliminary measurement in the central channel in the range 1-18 GHz was performed to determine the worst case. The lowest channel was measured for out-of-band emissions for the worst case (802.11a). The highest channel was measured for out-of-band emissions for channel 144 (ac20 mode 5720 MHz) since the adjusted transmit power is higher than channel 140 (802.11a mode 5700 MHz) in both SISO and MIMO modes.

The field strength at the band edges was evaluated for each mode and on each chain individually on the lowest and highest channels at the rated power for the channel under test. Where the power at the edge channels was lower than the power at the center channels additional measurements were made at the adjacent channels. Single transmission at each chain and simultaneous transmission at both chains modes were fully evaluated.

Spurious signals with peak levels above the average limit (54 dBµV/m at 3 m) are measured with average detector for checking compliance with the average limit.

1. WiFi 5GHz 802.11 a mode.

Lowest frequency (100) 5500 MHz. Out-of-band spurious in the 1-40 GHz range and inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBµV/m)	Measurement Uncertainty (dB)
5.46999	V	Peak	51.49	± 4.00
16.49993	V	Peak	65.06	± 4.00
		Average	53.15	± 4.00
21.99500	V	Peak	54.06	± 4.00
		Average	43.72	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBµV/m)	Measurement Uncertainty (dB)
5.46938	V	Peak	51.73	± 4.00
16.50106	V	Peak	60.44	± 4.00
		Average	49.61	± 4.00
21.99950	V	Peak	53.72	± 4.00

Middle frequency (120) 5600 MHz. Out-of-band spurious emissions in the 1-40 GHz range.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.19986	V	Peak	52.10	± 4.00
16.79848	V	Peak	64.51	± 4.00
		Average	53.81	± 4.00
22.40050	V	Peak	53.61	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.19981	V	Peak	53.27	± 4.00
16.80084	V	Peak	64.33	± 4.00
		Average	53.13	± 4.00
22.39950	V	Peak	53.90	± 4.00

Highest frequency (140) 5700 MHz. Out-of-band spurious emissions in the 1-40 GHz range and inside adjacent band 5.725-5.825 GHz.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72509	V	Peak	53.89	± 4.00
17.09911	V	Peak	59.53	± 4.00
		Average	48.65	± 4.00
22.79950	V	Peak	53.03	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.82428	V	Peak	53.01	± 4.00
11.39947	V	Peak	51.34	± 4.00
17.10229	V	Peak	61.84	± 4.00
		Average	51.54	± 4.00
22.80050	V	Peak	52.88	± 4.00

Channel 104 (5520 MHz): Out-of-band spurious emissions inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46897	V	Peak	52.42	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46894	V	Peak	55.11	± 4.00
		Average	44.81	± 4.00

Channel 136 (5680 MHz). Out-of-band spurious emissions inside adjacent band 5.725-5.825 GHz.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72529	V	Peak	67.19	± 4.00
		Average	53.73	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72686	V	Peak	59.09	± 4.00
		Average	46.05	± 4.00

Verdict: PASS

2. WiFi 5GHz 802.11 n20 mode

Lowest frequency (100) 5500 MHz. Out-of-band spurious emissions inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.43195	V	Peak	50.80	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46978	V	Peak	52.61	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.45676	V	Peak	51.41	± 4.00

Middle frequency (120) 5600MHz. Out-of-band spurious emissions in the 1-40 GHz range.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.19950	V	Peak	50.91	± 4.00
16.79552	V	Peak	63.61	± 4.00
		Average	53.25	± 4.00
22.39950	V	Peak	53.71	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.19930	V	Peak	52.36	± 4.00
16.79980	V	Peak	62.82	± 4.00
		Average	53.07	± 4.00
22.39950	V	Peak	53.63	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.19991	V	Peak	51.25	± 4.00
16.79734	V	Peak	65.48	± 4.00
		Average	51.48	± 4.00
22.39950	V	Peak	53.76	± 4.00

Highest frequency (140) 5700 MHz. Out-of-band spurious emissions inside adjacent band 5.725-5.825 GHz.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72094	V	Peak	56.60	± 4.00
		Average	42.51	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.74842	V	Peak	54.93	± 4.00
		Average	41.49	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.76998	V	Peak	54.97	± 4.00
		Average	41.60	± 4.00

Channel 104 (5520 MHz): Out-of-band spurious emissions inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46845	V	Peak	52.24	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46918	V	Peak	58.82	± 4.00
		Average	45.44	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46624	V	Peak	51.22	± 4.00

Channel 136 (5680 MHz). Out-of-band spurious emissions inside adjacent band 5.725-5.825 GHz.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72659	V	Peak	67.59	± 4.00
		Average	53.35	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72809	V	Peak	60.08	± 4.00
		Average	45.31	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.81096	V	Peak	54.99	± 4.00
		Average	41.98	± 4.00

802.11 ac 20MHz:

Channel 144 (5720 MHz). Out-of-band spurious emissions in the 1-40 GHz range.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.43985	V	Peak	51.71	± 4.00
17.16329	V	Peak	64.51	± 4.00
		Average	53.29	± 4.00
22.87950	V	Peak	52.46	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.44034	V	Peak	55.51	± 4.00
		Average	44.37	± 4.00
17.16348	V	Peak	67.73	± 4.00
		Average	53.70	± 4.00
22.88050	V	Peak	51.77	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.43953	V	Peak	52.37	± 4.09
17.16139	V	Peak	62.19	± 4.09
		Average	51.22	± 4.09
22.88050	V	Peak	51.73	± 4.09

Verdict: PASS

3. WiFi 5GHz 802.11 n40 mode

Lowest frequency (102) 5510MHz. Out-of-band spurious emissions inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band. Highest levels in bands.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46962	V	Peak	57.80	± 4.00
		Average	45.92	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46939	V	Peak	52.92	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46971	V	Peak	56.53	± 4.00
		Average	44.21	± 4.00

Middle frequency (118) 5590 MHz. Out-of-band spurious emissions in the 1-40 GHz.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.16725	V	Peak	48.91	± 4.00
16.76230	V	Peak	61.74	± 4.00
		Average	52.69	± 4.00
22.35950	V	Peak	54.14	± 4.00
		Average	48.44	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
16.77269	V	Peak	59.97	± 4.00
		Average	50.47	± 4.00
22.35950	V	Peak	53.61	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
11.18620	V	Peak	50.36	± 4.00
16.77280	V	Peak	61.88	± 4.00
		Average	50.93	± 4.00
22.36050	V	Peak	53.74	± 4.00

Highest frequency (134) 5670MHz. Out-of-band spurious emissions inside adjacent band 5.725-5.825 GHz.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72763	V	Peak	67.30	± 4.00
		Average	55.71	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72716	V	Peak	56.21	± 4.00
		Average	45.33	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.72699	V	Peak	56.11	± 4.00
		Average	44.27	± 4.00

Channel 110 (5550 MHz). 5510MHz. Out-of-band spurious emissions inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band. Highest spurious levels in bands.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46789	V	Peak	57.64	± 4.00
		Average	44.66	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46830	V	Peak	56.11	± 4.00
		Average	42.83	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.46660	V	Peak	54.60	± 4.00
		Average	41.96	± 4.00

802.11 ac 40MHz:

Channel 142 (5710 MHz). Out-of-band spurious emissions in the 1-40 GHz range.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBµV/m)	Measurement Uncertainty (dB)
11.41991	V	Peak	50.54	± 4.00
17.12374	V	Peak	64.43	± 4.00
		Average	52.87	± 4.00
22.83950	V	Peak	53.03	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBµV/m)	Measurement Uncertainty (dB)
11.41999	V	Peak	53.43	± 4.00
17.12393	V	Peak	62.51	± 4.00
		Average	52.68	± 4.00
22.83950	V	Peak	52.57	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBµV/m)	Measurement Uncertainty (dB)
11.3402	V	Peak	54.29	± 4.00
		Average	43.37	± 4.00
17.0134	V	Peak	61.29	± 4.00
		Average	50.38	± 4.00
22.8395	V	Peak	53.65	± 4.00

Verdict: PASS

4. WiFi 5GHz 802.11 ac80 mode

Lowest frequency (106) 5530MHz. Out-of-band spurious emissions inside restricted band 5.35-5.46 GHz and 5.46-5.47 adjacent band. Highest spurious levels in bands.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.45954	V	Peak	64.38	± 4.00
		Average	52.17	± 4.00
5.46281	V	Peak	65.50	± 4.00
		Average	52.19	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.45879	V	Peak	59.43	± 4.00
		Average	47.15	± 4.00
5.46285	V	Peak	61.97	± 4.00
		Average	46.78	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.45994	V	Peak	58.42	± 4.00
		Average	47.46	± 4.00
5.46539	V	Peak	63.09	± 4.00
		Average	48.14	± 4.00

Middle frequency (122) 5610MHz. Out-of-band spurious emissions in the 1-40 GHz range and emissions inside restricted band 5.725-5.825 GHz adjacent bands.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.79649	V	Peak	56.01	± 4.00
		Average	42.45	± 4.00
16.8484	V	Peak	62.37	± 4.00
	V	Average	49.99	± 4.00
22.4395	V	Peak	53.79	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.785844	V	Peak	55.71	± 4.00
	V	Average	42.41	± 4.00
16.8319	V	Peak	57.69	± 4.00
		Average	46.89	± 4.00
22.4405	V	Peak	53.92	± 4.00

Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.763619	V	Peak	55.35	± 4.00
	V	Average	42.64	± 4.00
11.2398	V	Peak	52.69	± 4.00
16.8594	V	Peak	61.11	± 4.00
		Average	48.92	± 4.00
22.4395	V	Peak	54.74	± 4.00
		Average	48.12	± 4.00

802.11 ac 80MHz:

Channel 138 (5690 MHz). Out-of-band spurious emissions in the 1-40 GHz range.

Chain A

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
17.1111	V	Peak	60.62	± 4.00
		Average	48.07	± 4.00
22.7595	V	Peak	55.24	± 4.00
		Average	50.01	± 4.00

Chain B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
17.09730	V	Peak	59.37	± 4.00
		Average	47.83	± 4.00
22.75950	V	Peak	55.25	± 4.00
		Average	50.37	± 4.00

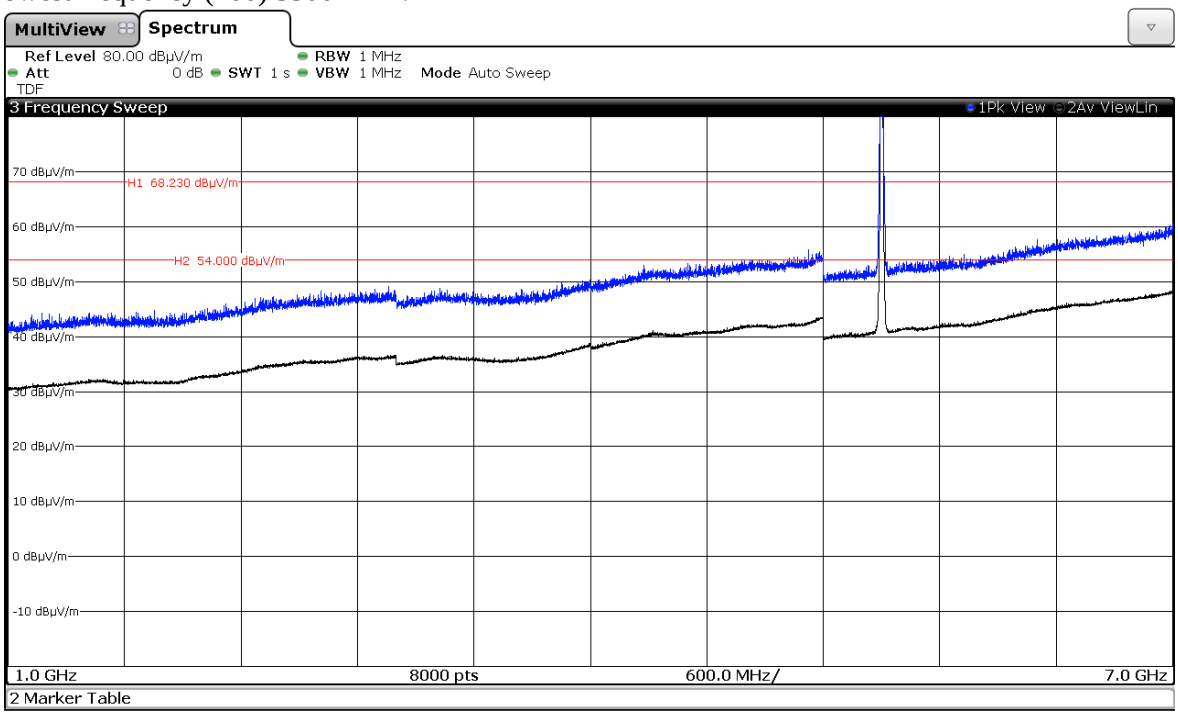
Chain A+B

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
17.1028	V	Peak	60.92	± 4.00
		Average	48.95	± 4.00
22.7595	V	Peak	55.53	± 4.00
		Average	50.33	± 4.00

Verdict: PASS

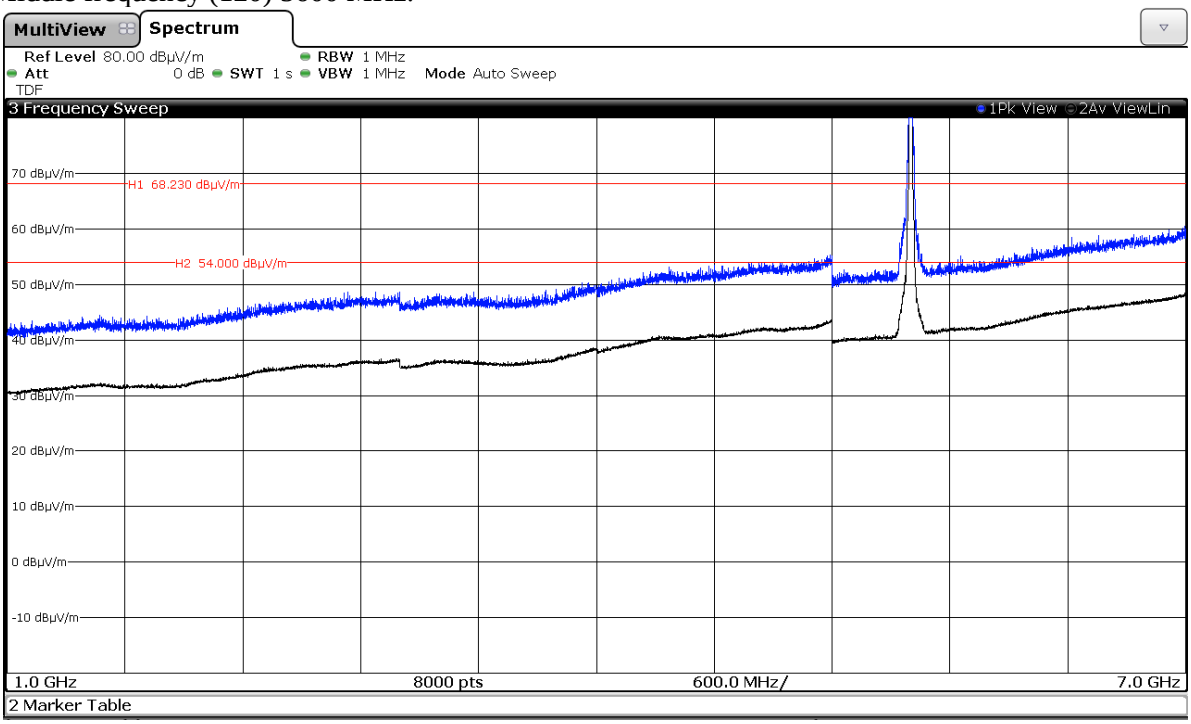
FREQUENCY RANGE 1 GHz to 7 GHz.
WiFi 5GHz 802.11 a mode

Lowest frequency (100) 5500 MHz.



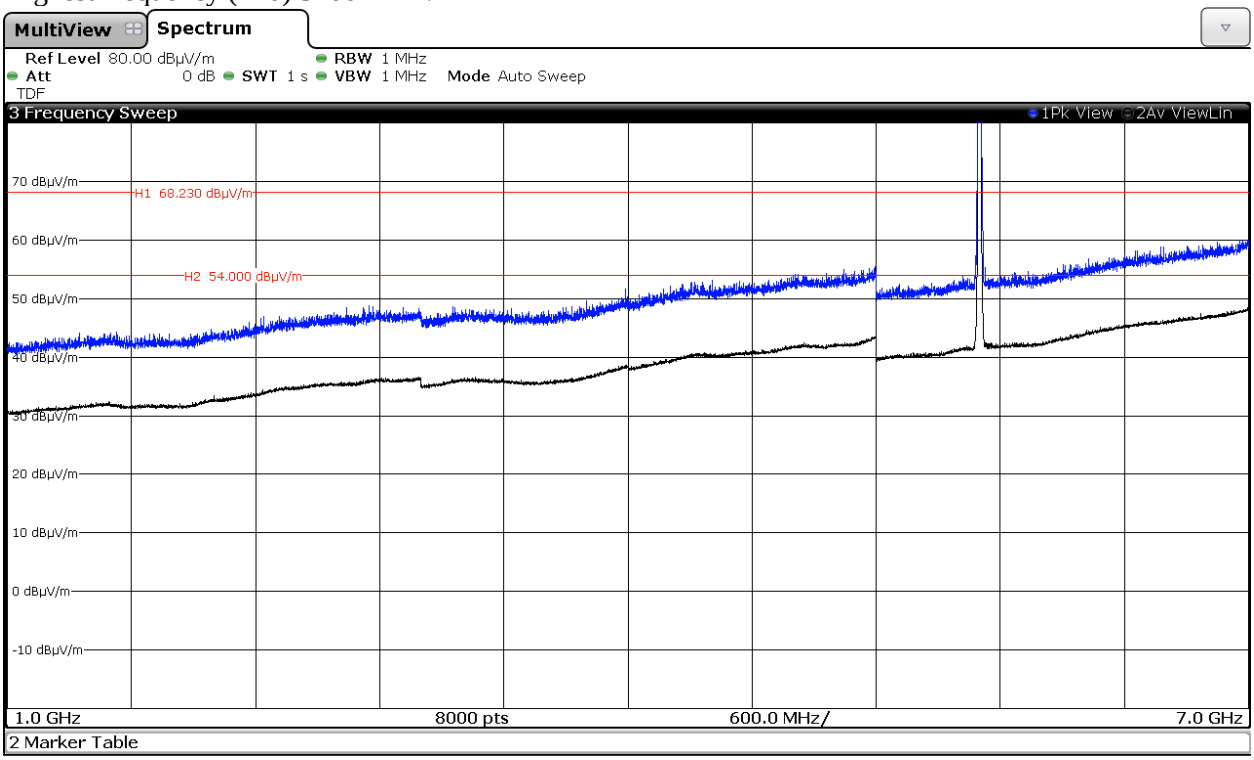
Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B.

Middle frequency (120) 5600 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B.

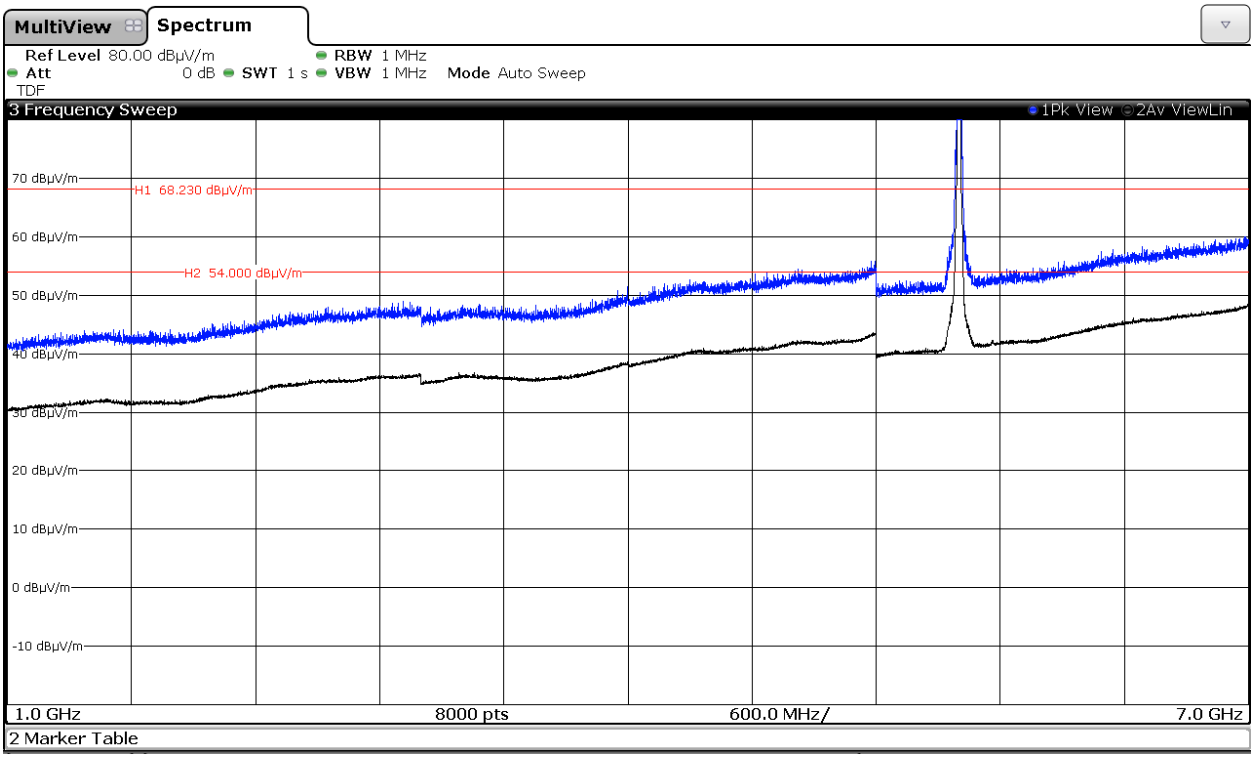
Highest frequency (140) 5700 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B.

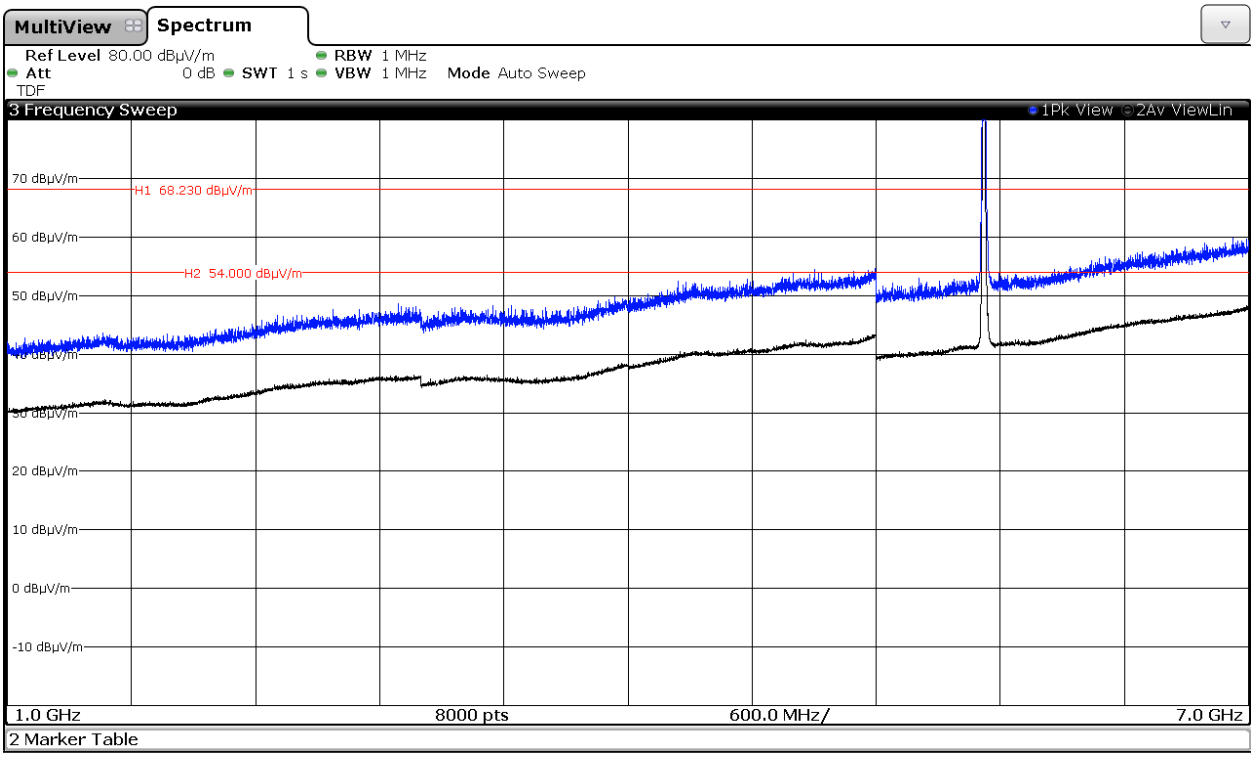
2. WiFi 5GHz 802.11 n20 mode

Middle frequency (120) 5600 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B, Chain A+B.

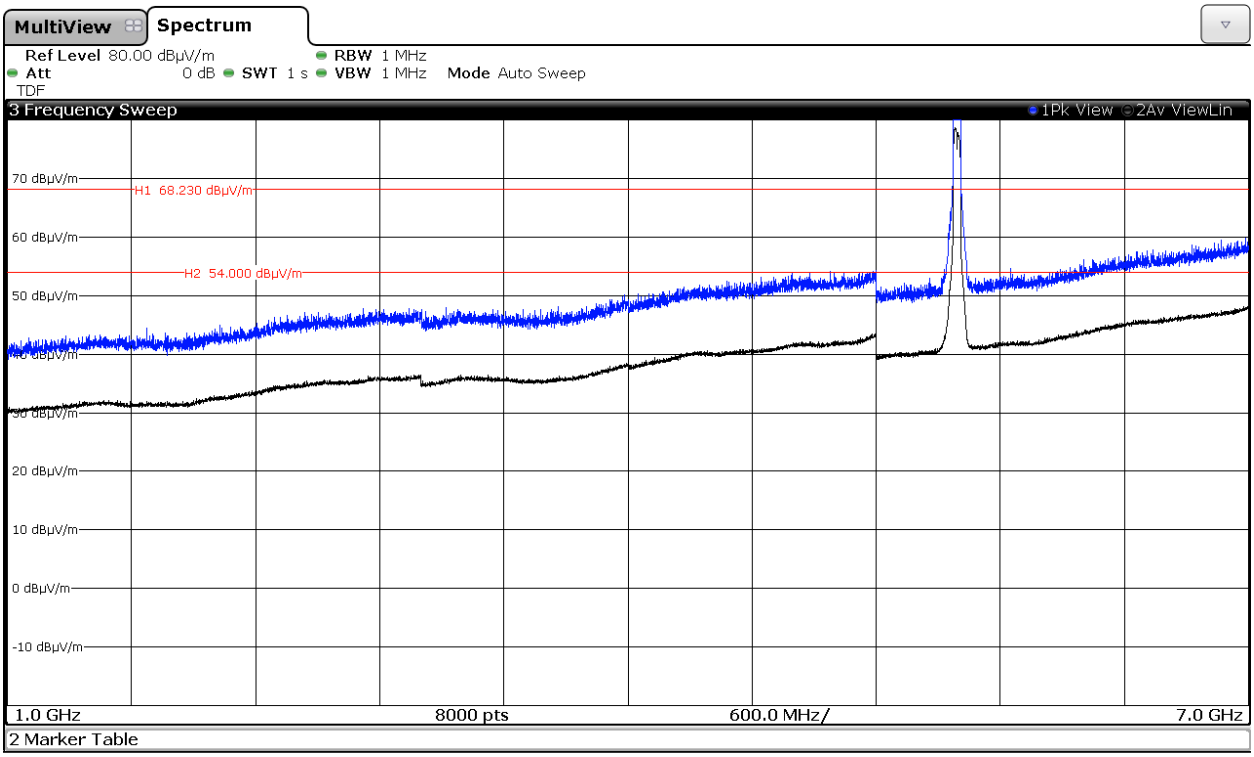
802.11ac20 mode: CH 144 5720 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B, Chain A+B.

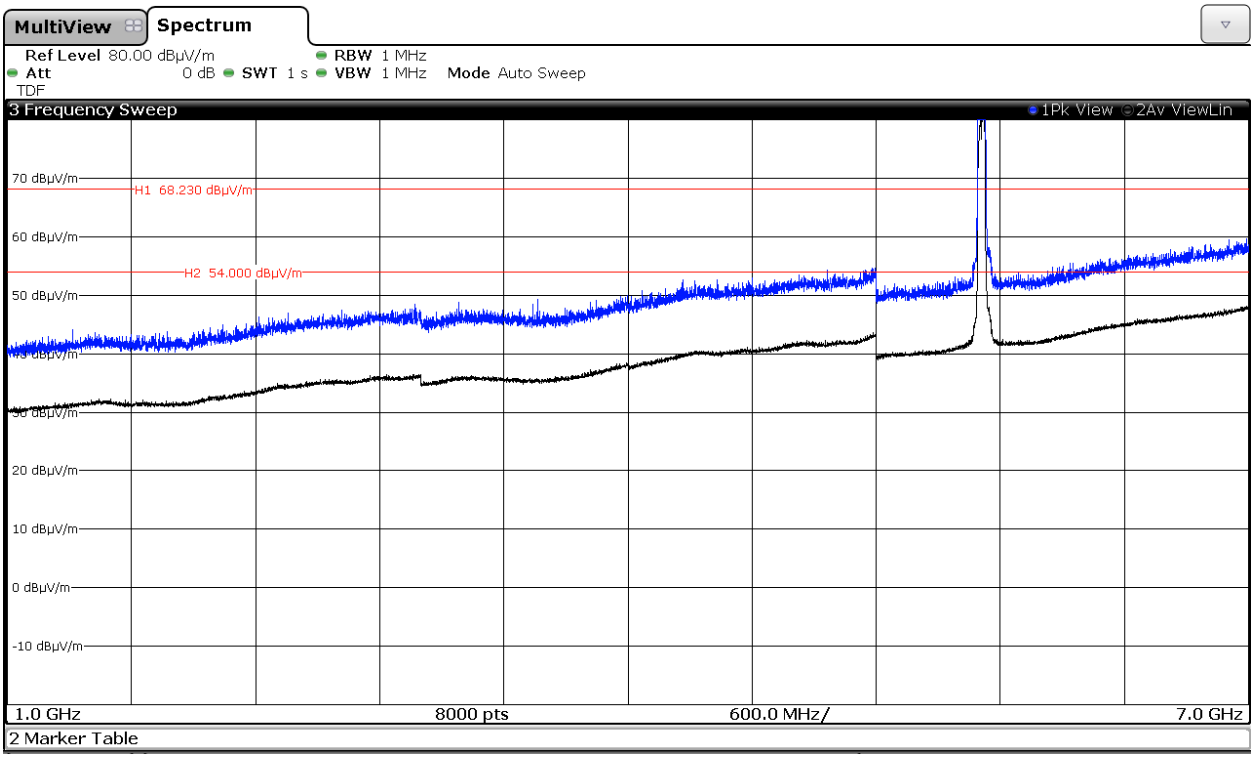
3. WiFi 5GHz 802.11 n40 mode

Middle frequency (118) 5590 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B, Chain A+B.

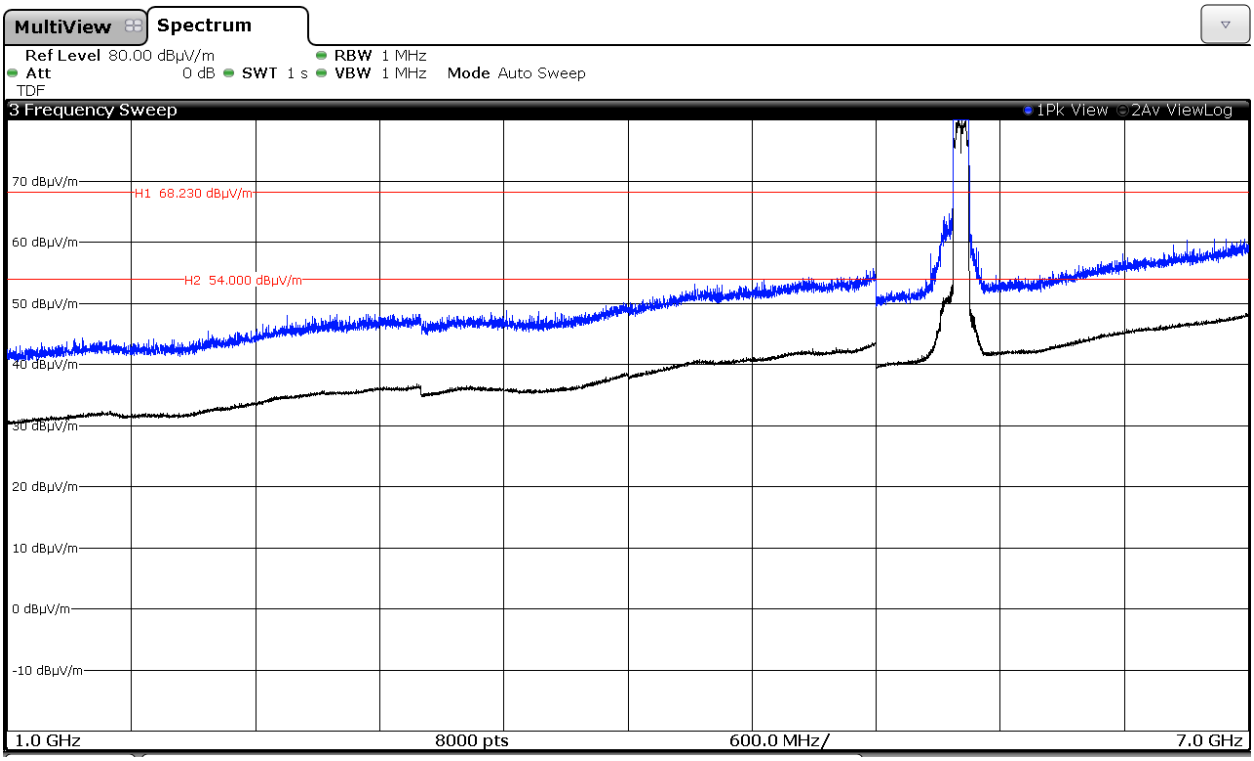
802.11ac40 mode: CH 142 5710 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B, Chain A+B.

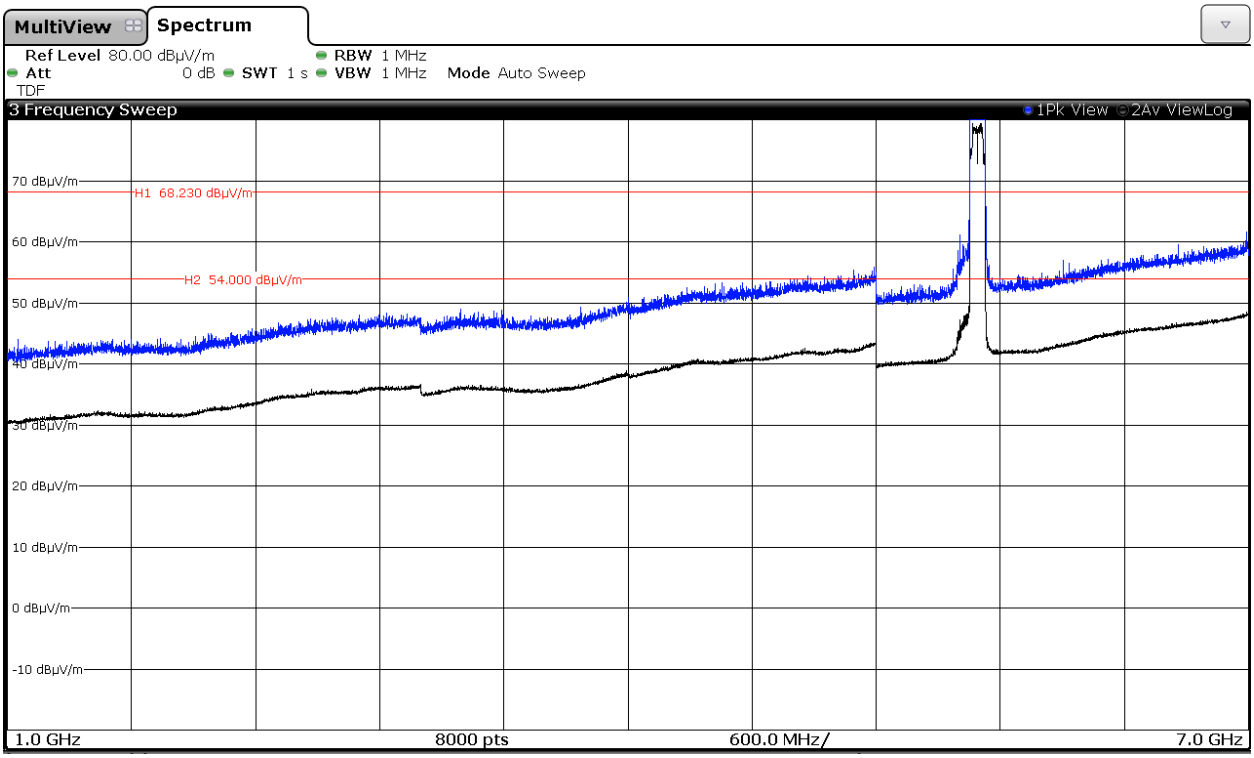
4. WiFi 5GHz 802.11 ac80 mode

Middle frequency (122) 5610 MHz.



Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B, Chain A+B.

802.11ac80 mode: CH 138 5690 MHz.

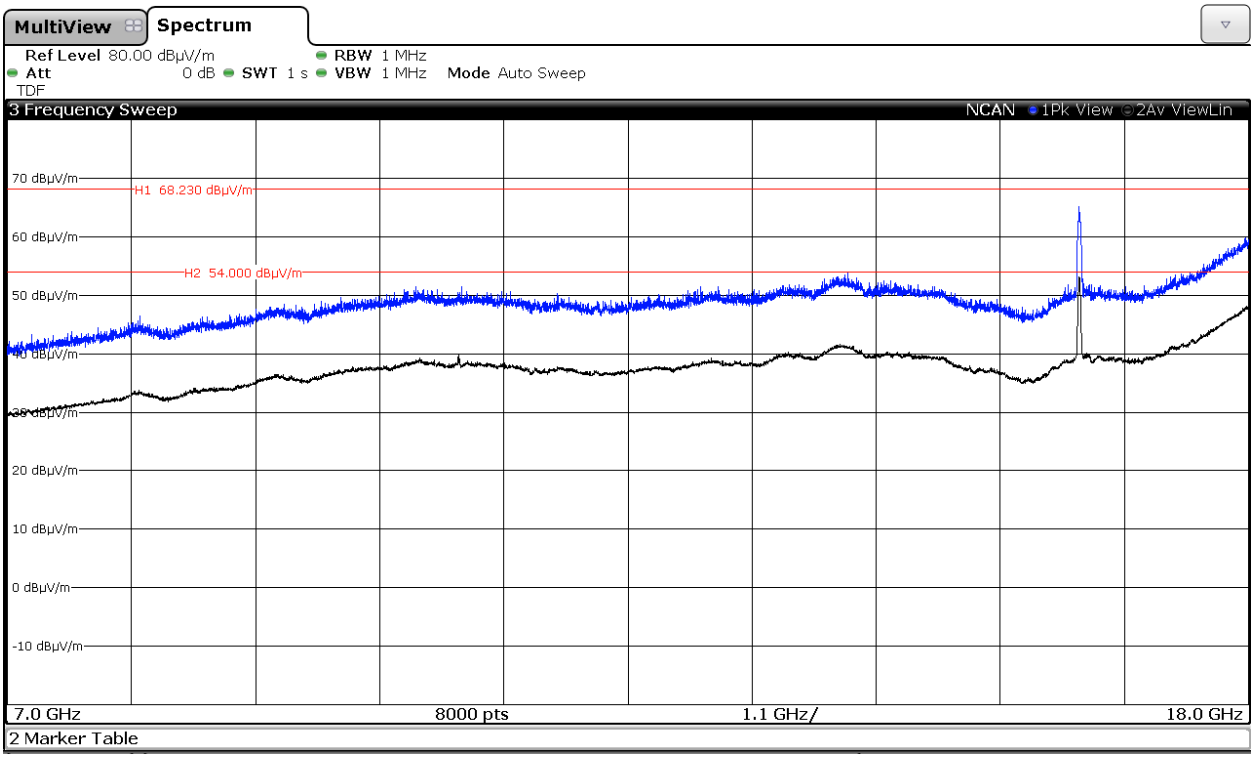


Note: The peak above the limit is the carrier frequency. This plot is valid for both Chain A and Chain B, Chain A+B.

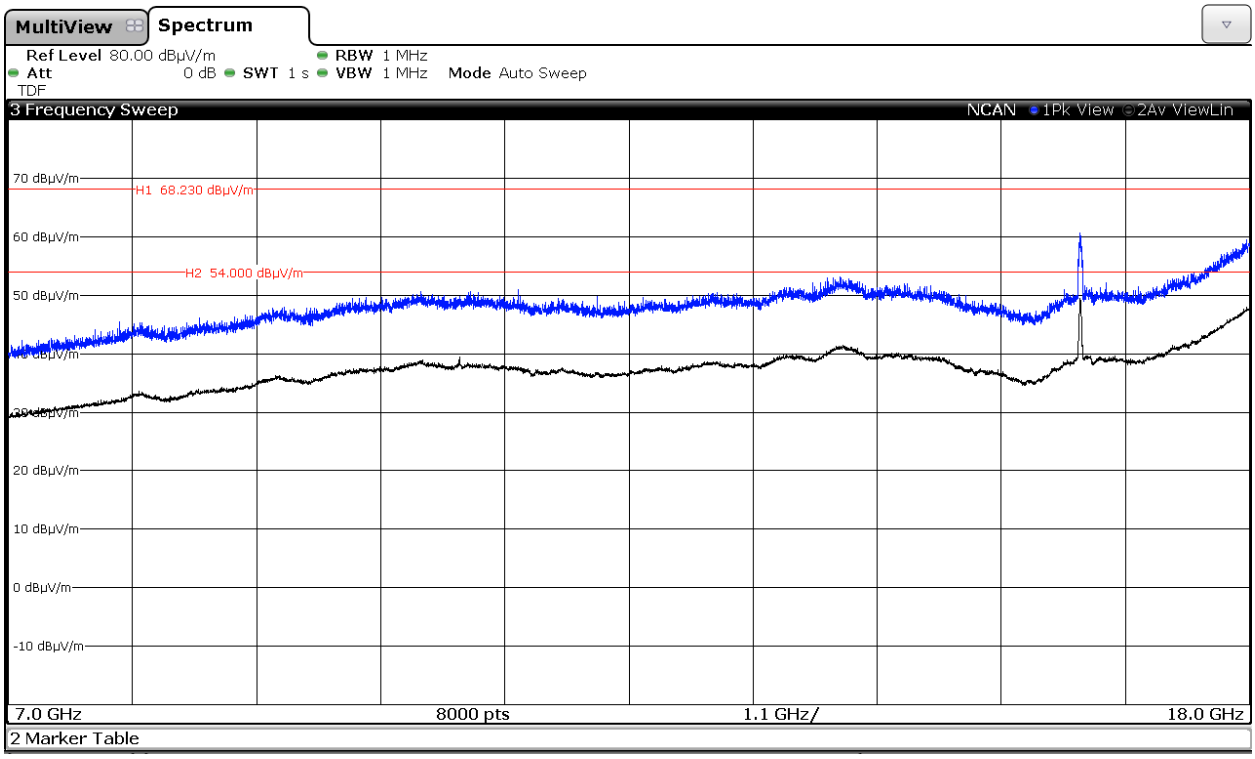
FREQUENCY RANGE 7 GHz to 18 GHz.

1. WiFi 5GHz 802.11 a mode

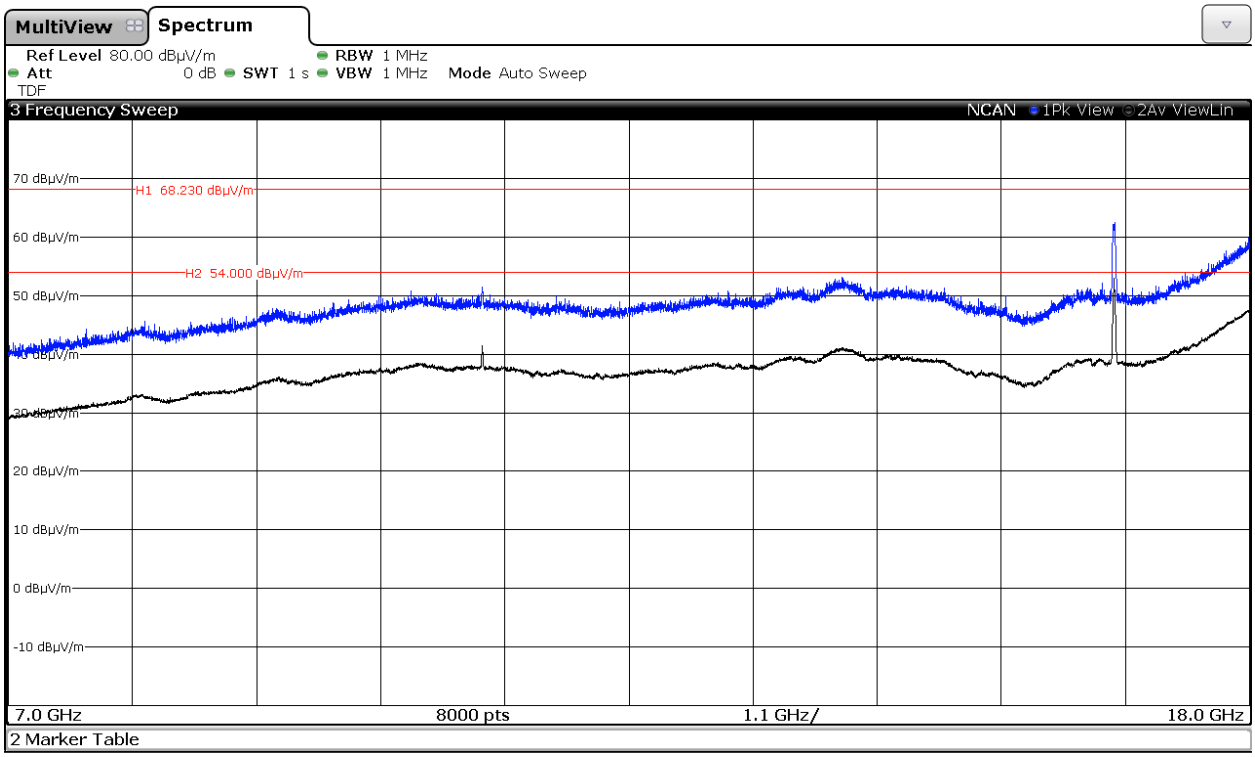
Lowest frequency (100) 5500 MHz.
Chain A



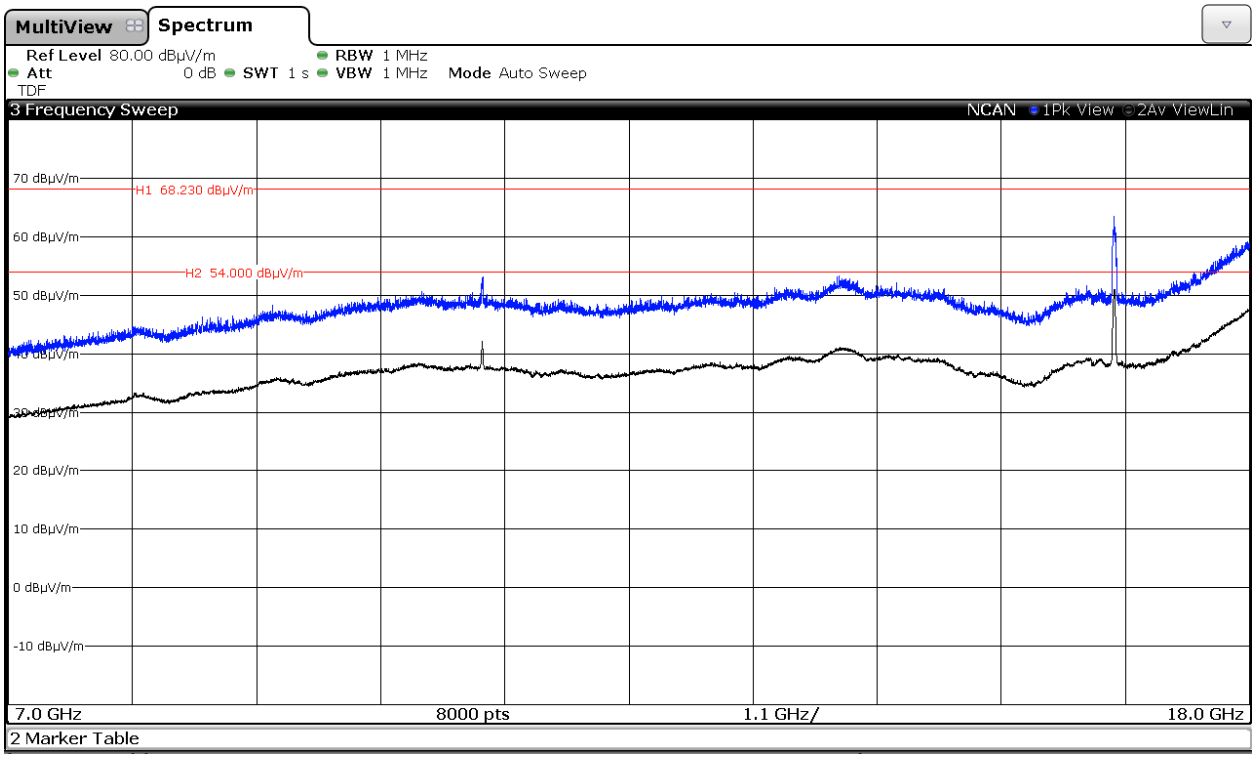
Chain B



Middle frequency (120) 5600 MHz.
Chain A

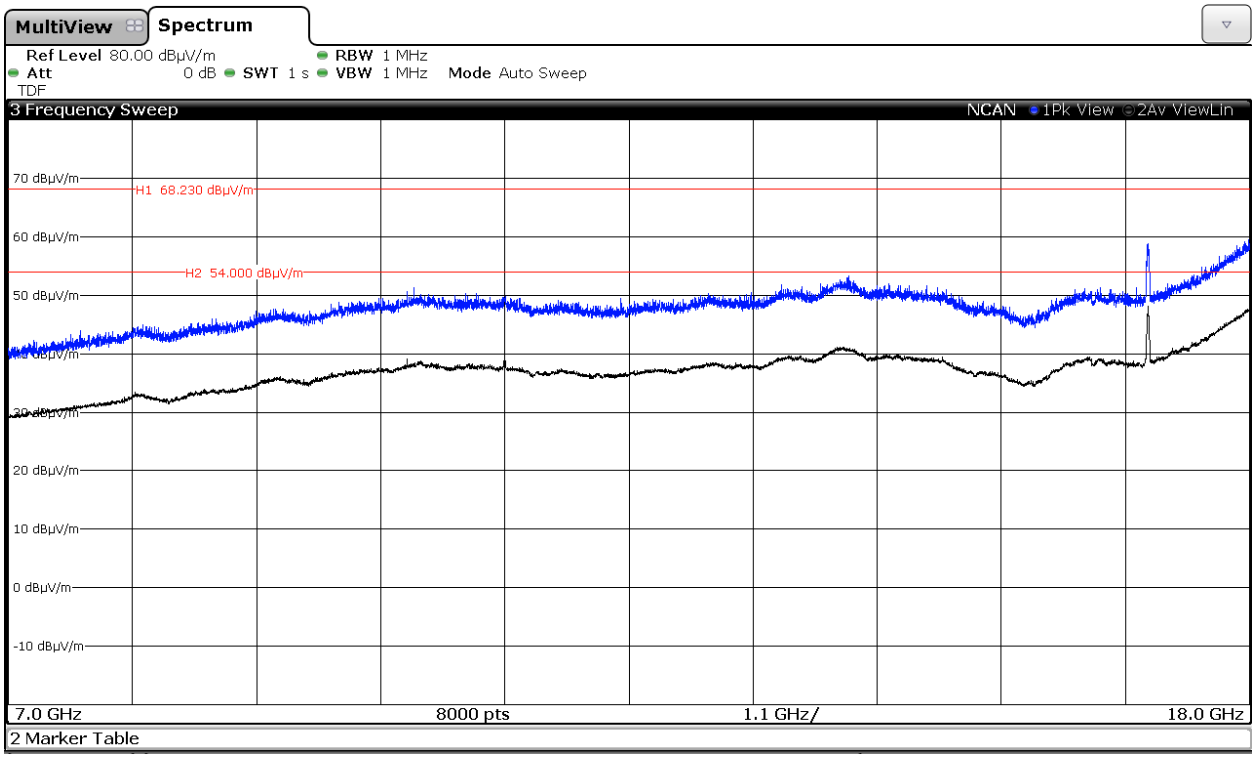


Chain B

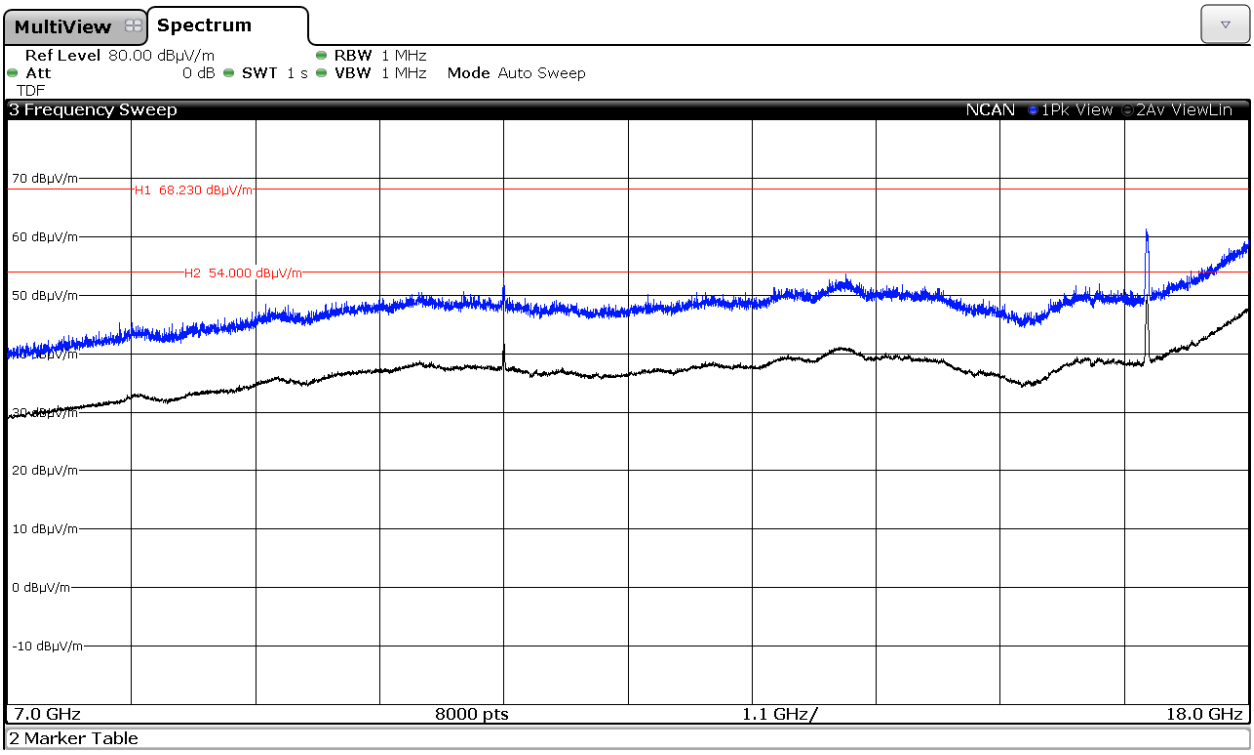


Highest frequency (140) 5700 MHz.

Chain A

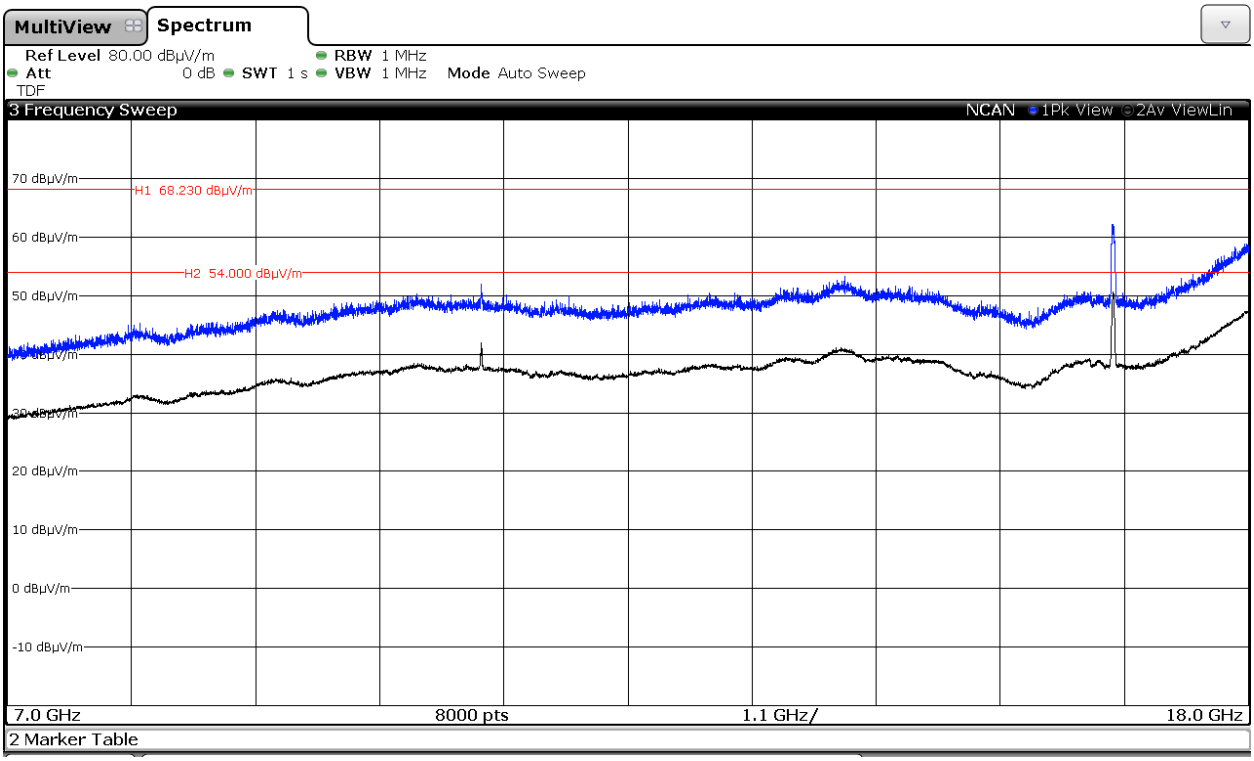


Chain B

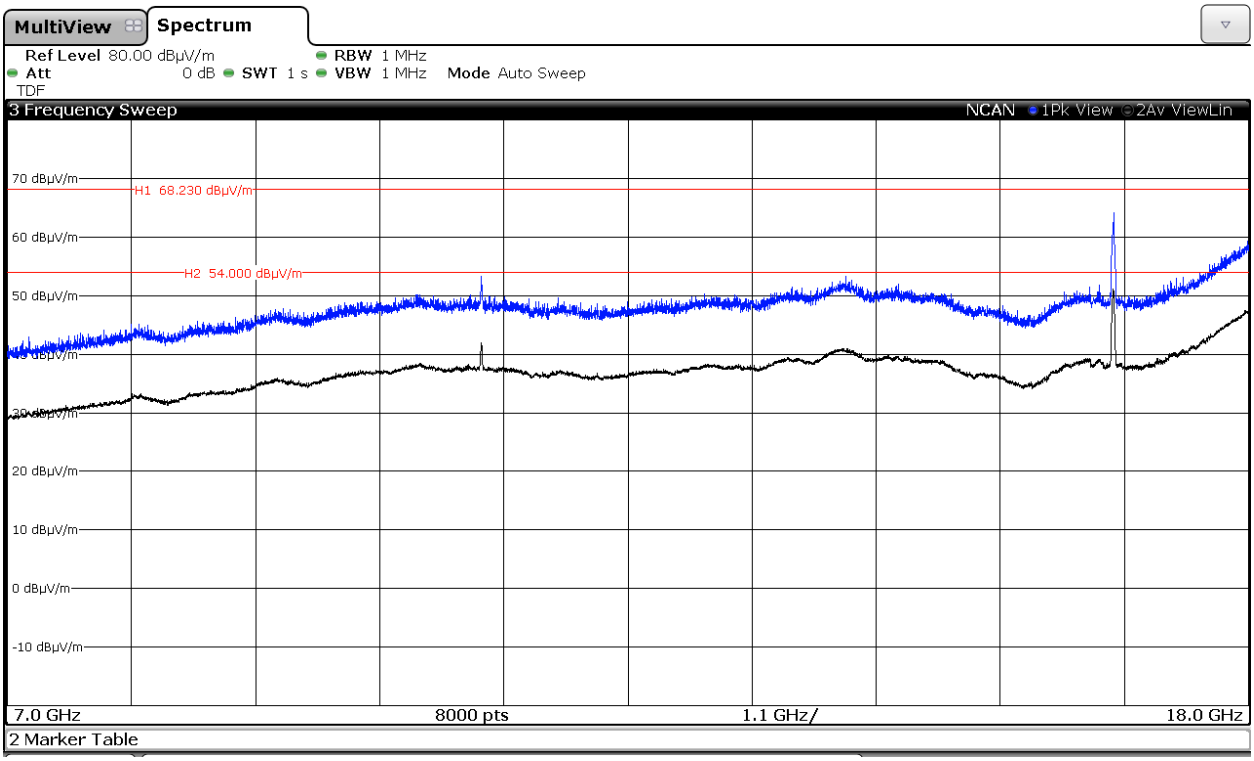


2. WiFi 5GHz 802.11 n20 mode

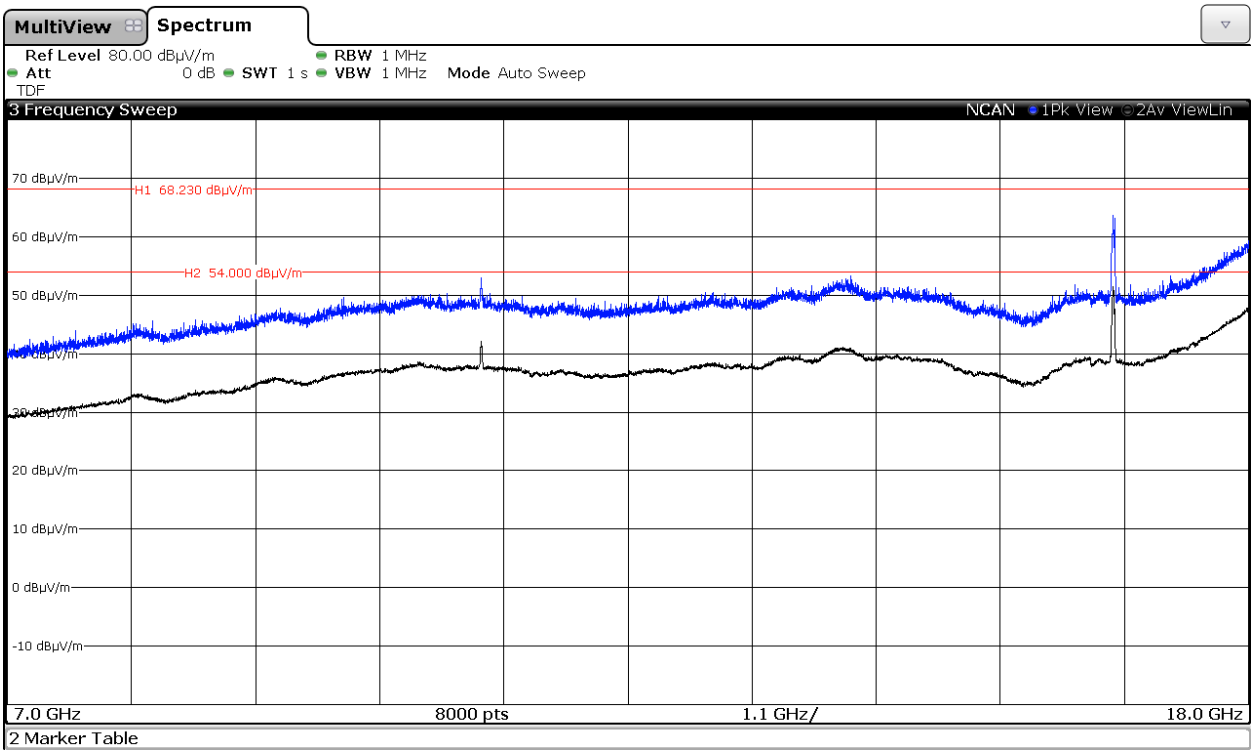
Middle frequency (120) 5600 MHz.
Chain A



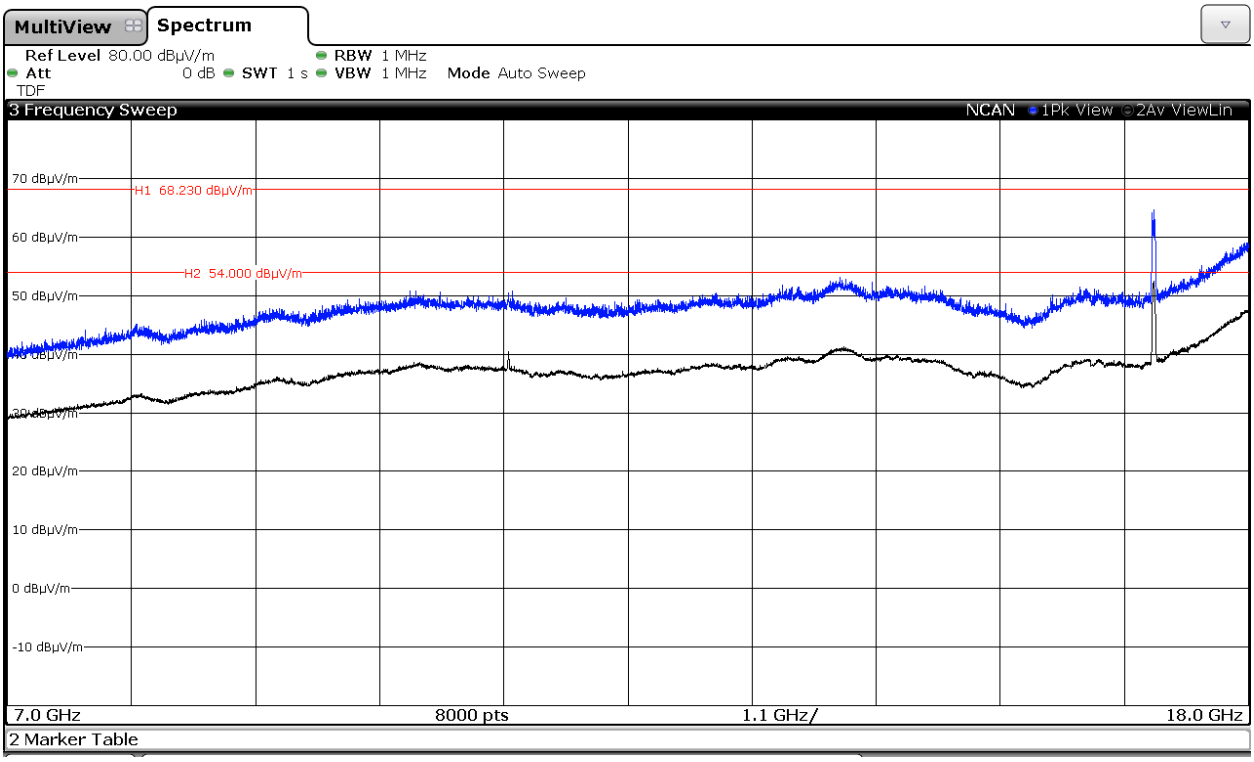
Chain B



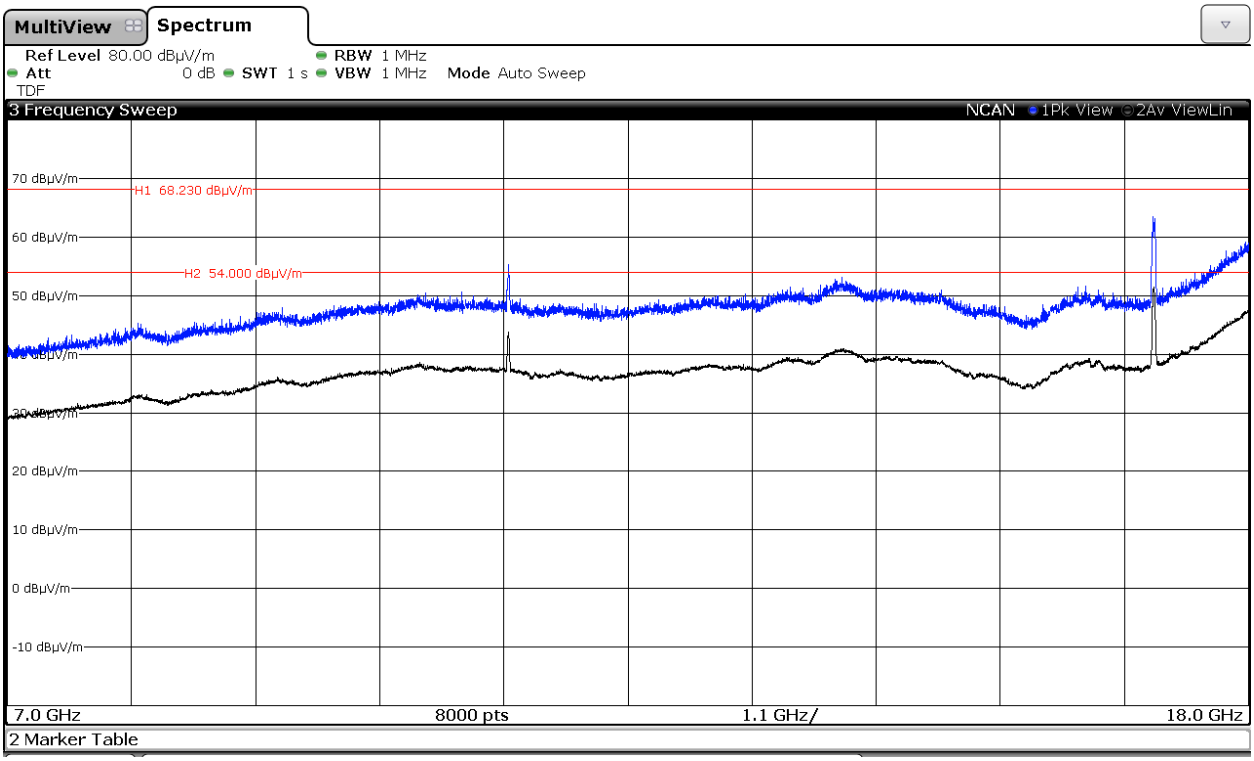
Chain A+B



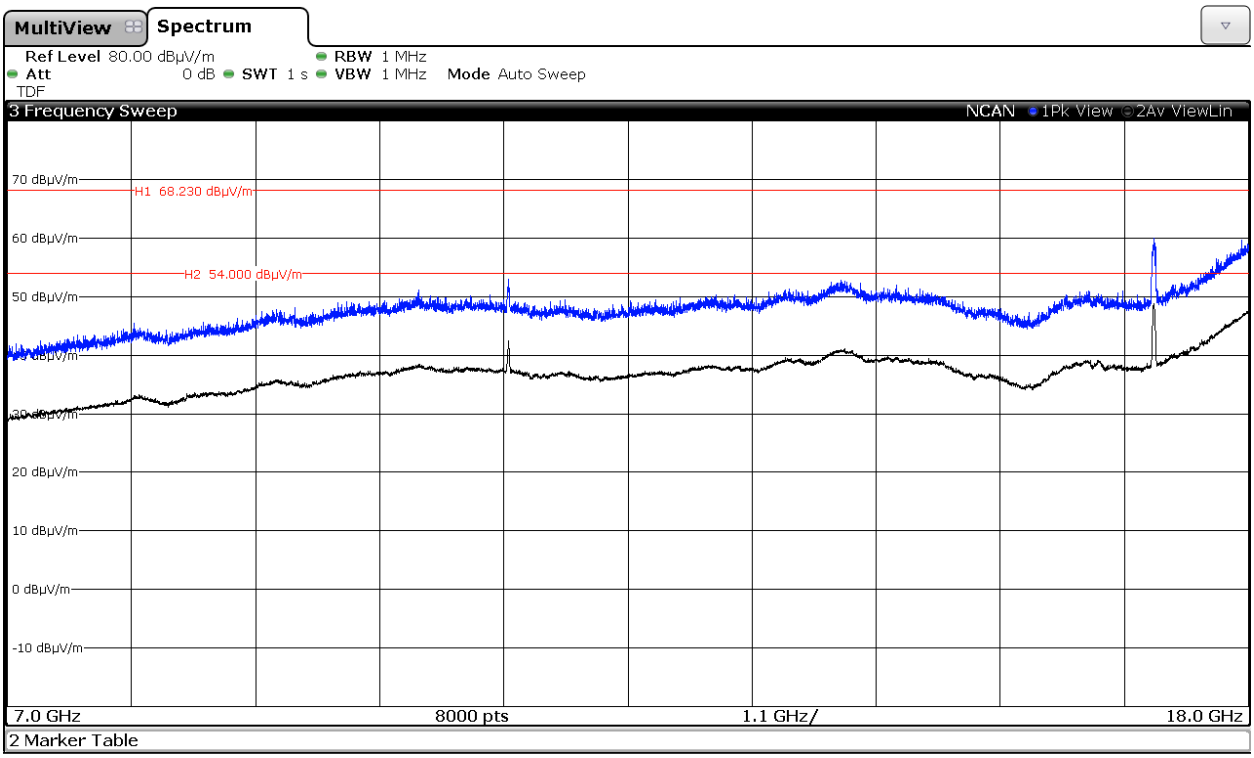
802.11ac20 mode: CH 144 (5720 MHz)
Chain A



Chain B

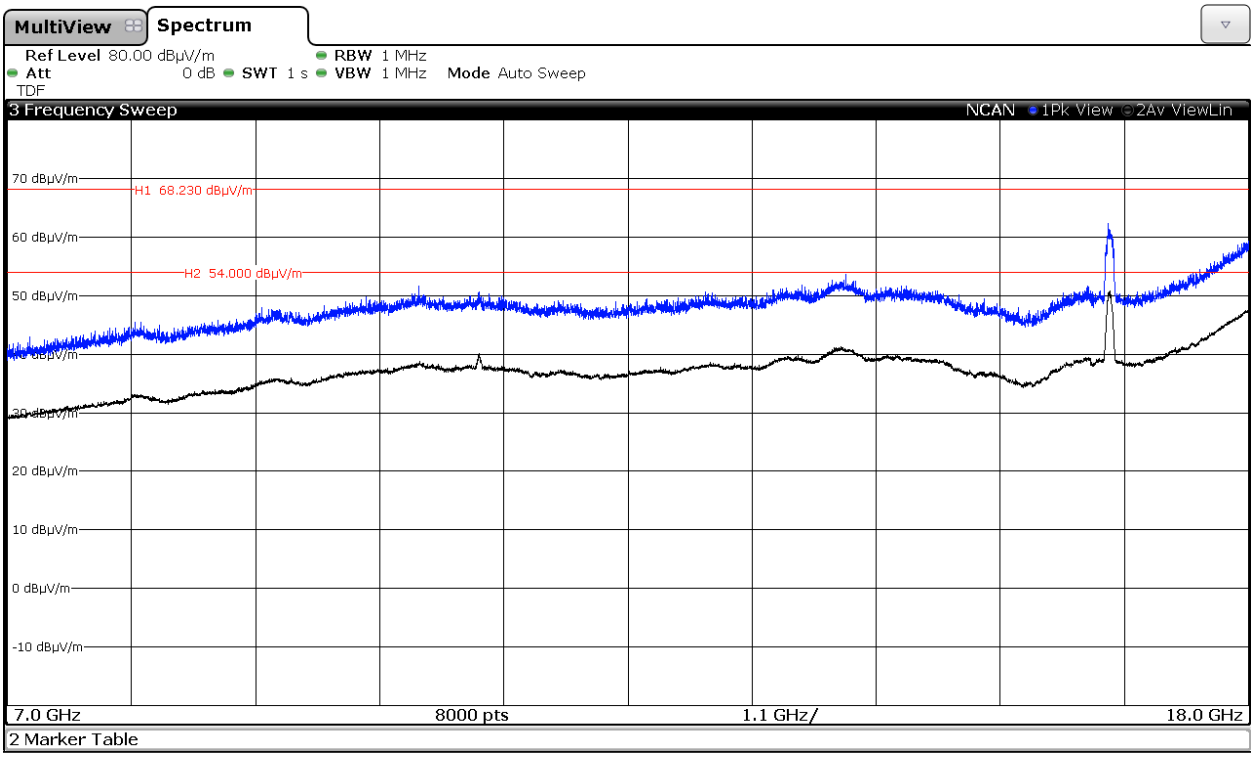


Chain A+B

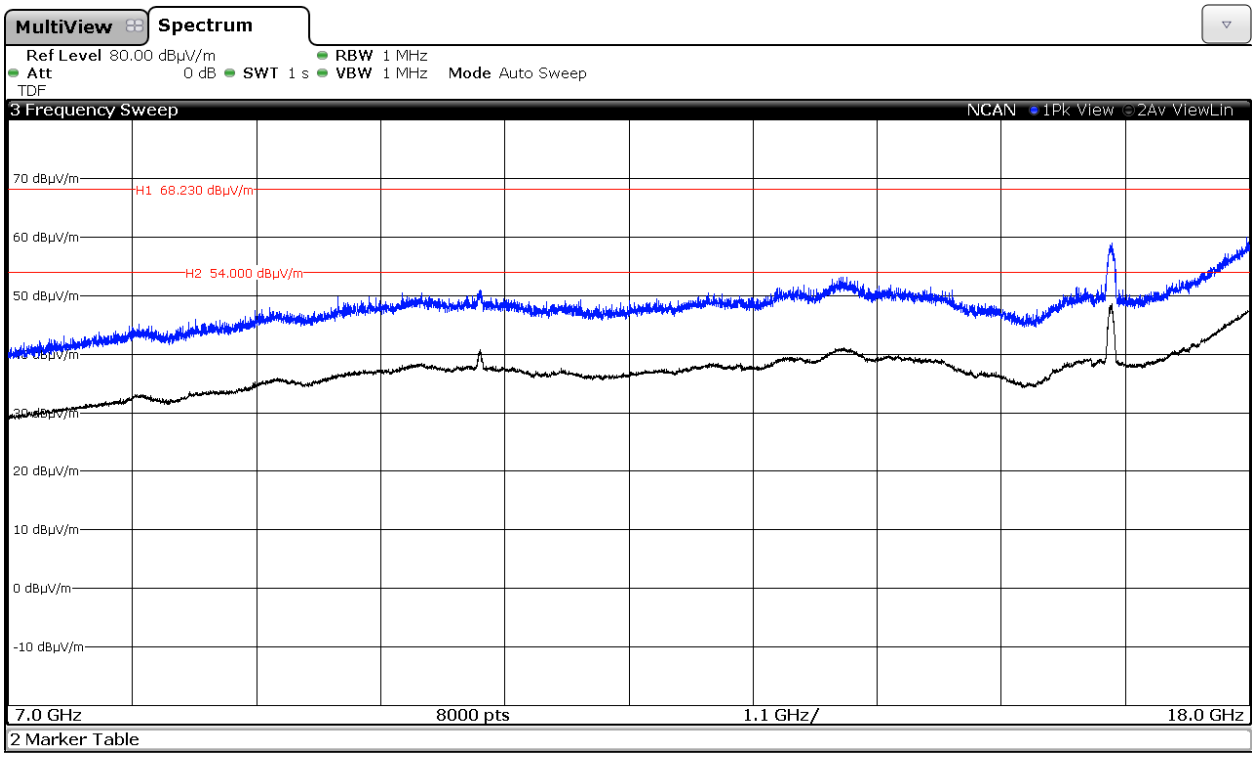


3. WiFi 5GHz 802.11 n40 mode

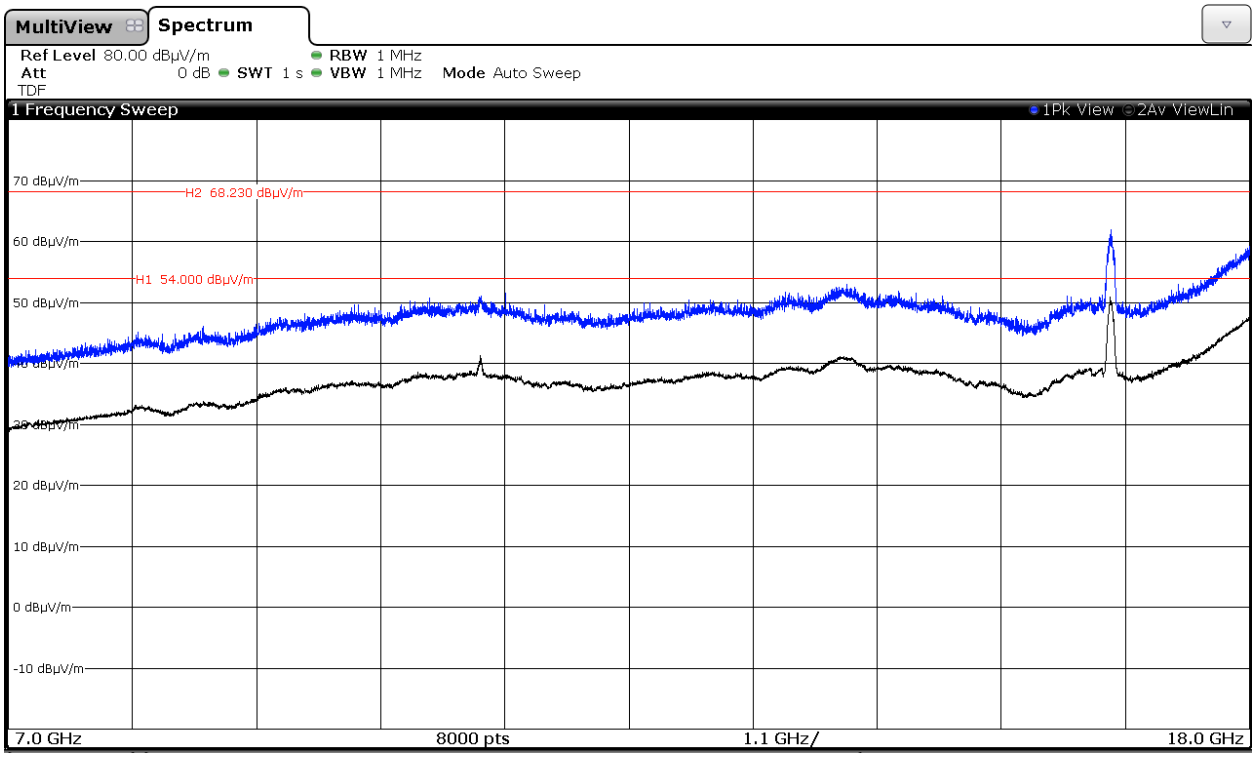
Middle frequency (118) 5590 MHz.
Chain A



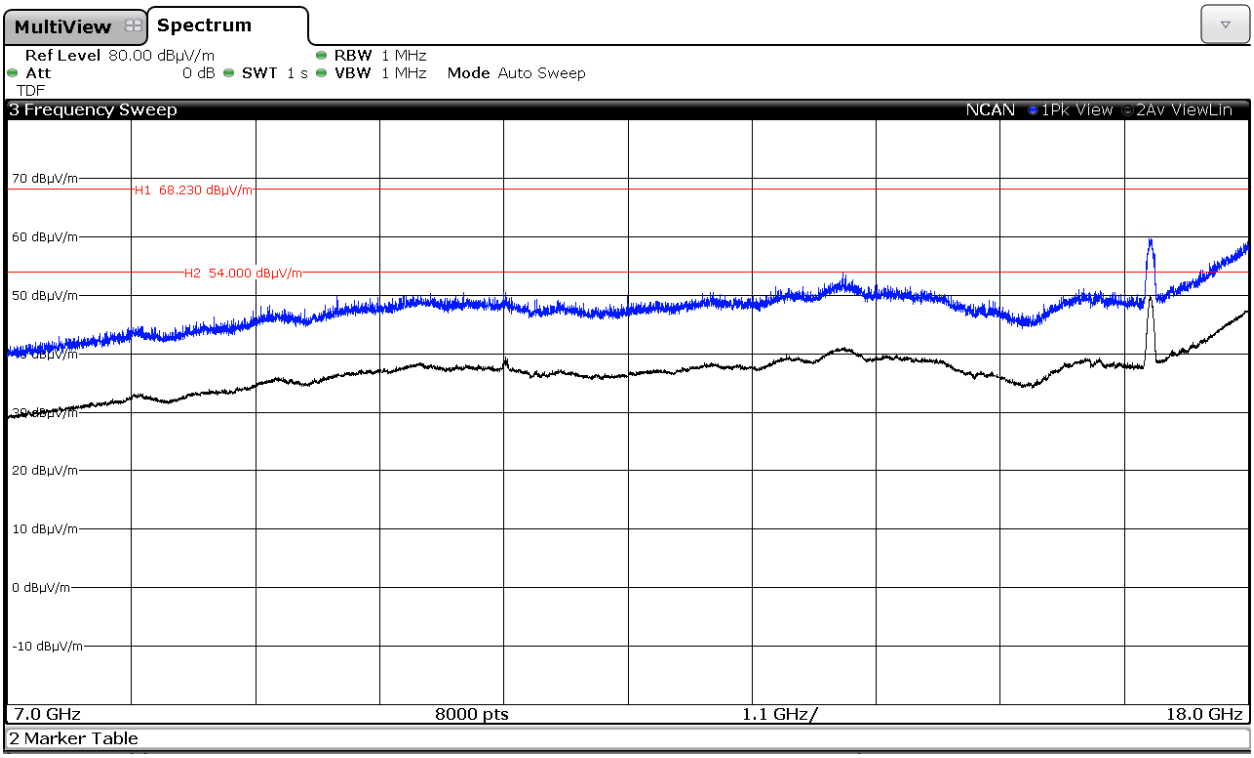
Chain B



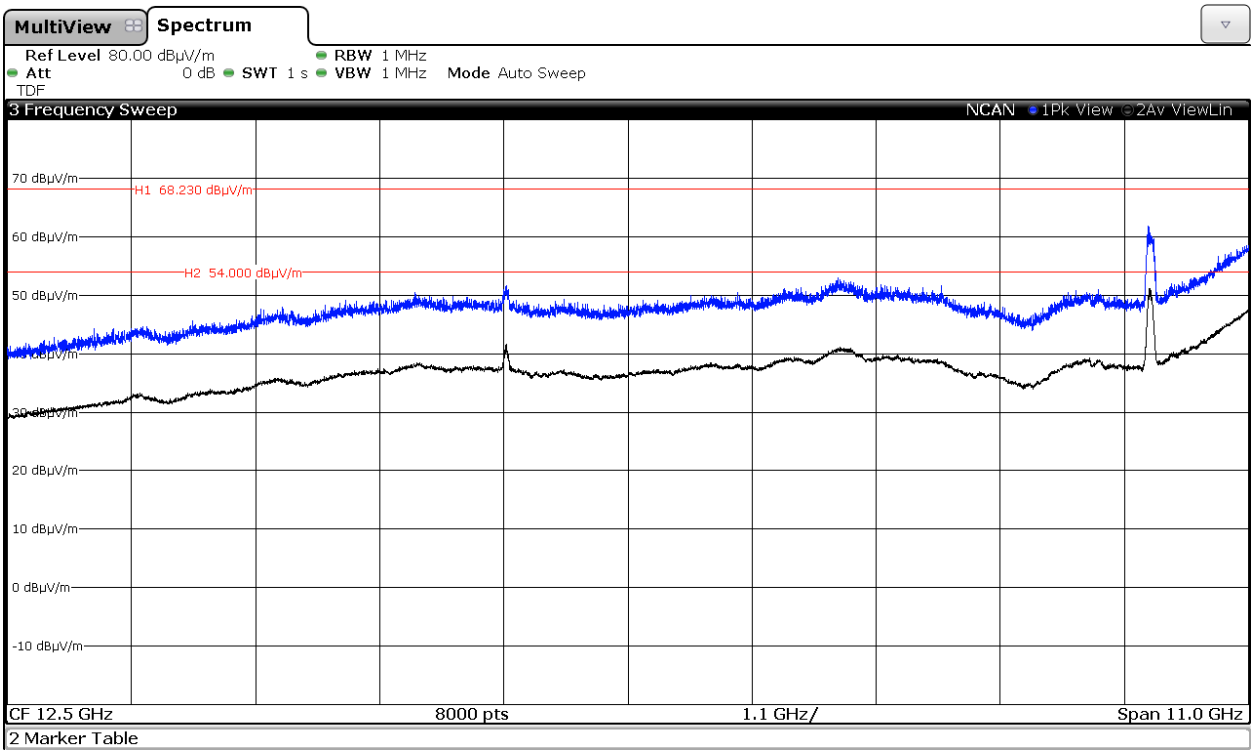
Chain A+B



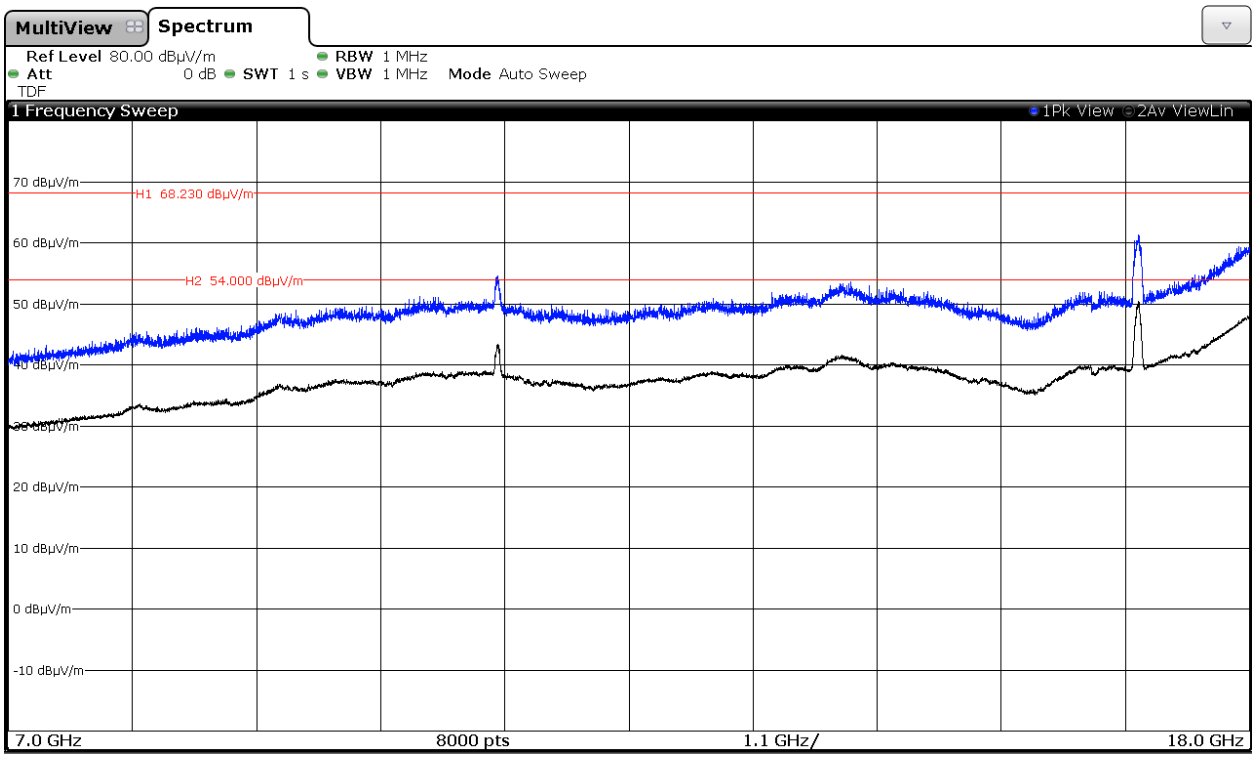
802.11ac40 mode: CH 142 (5710 MHz)
Chain A



Chain B

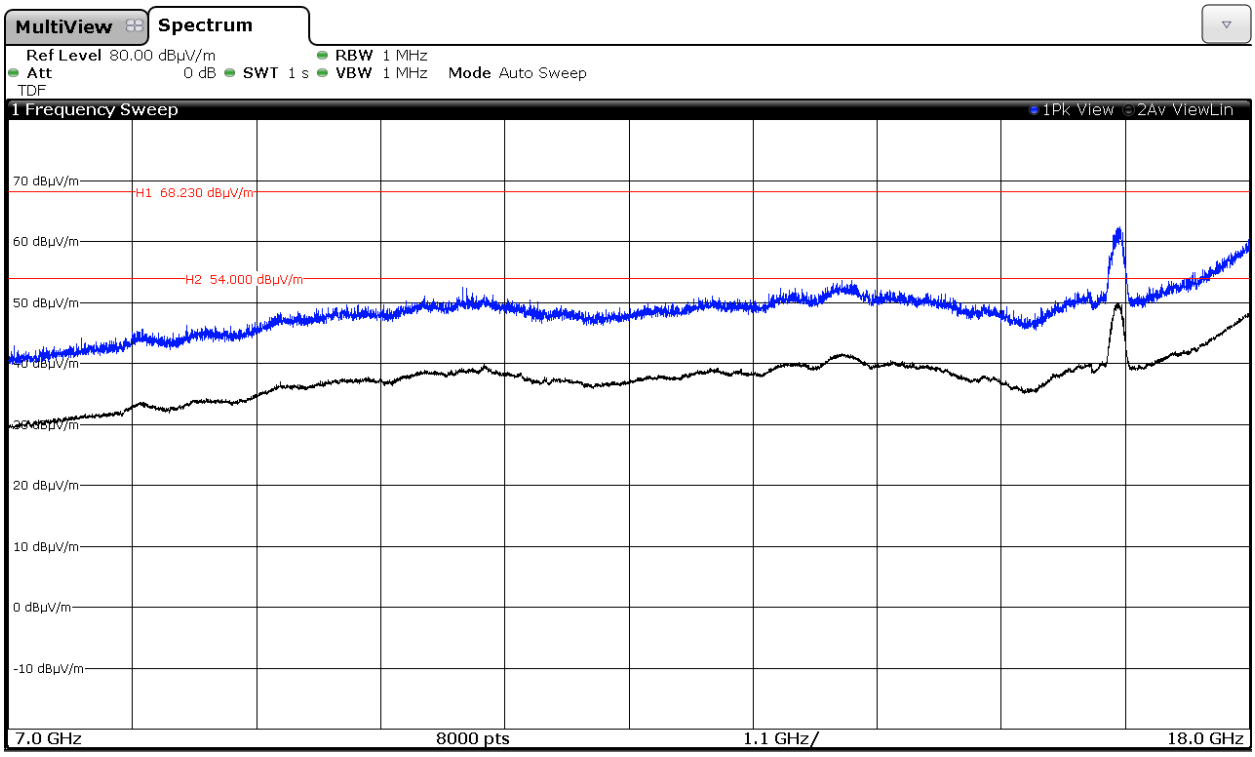


Chain A+B

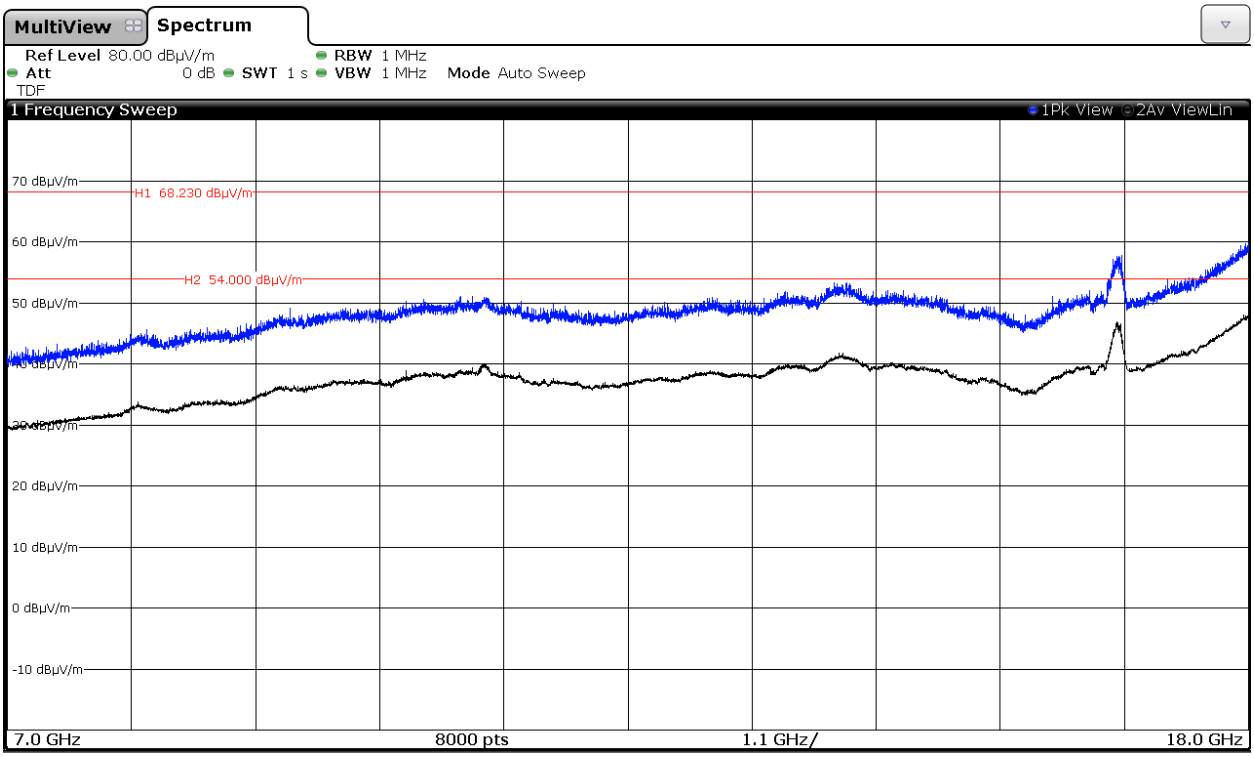


4. WiFi 5GHz 802.11 ac80 mode

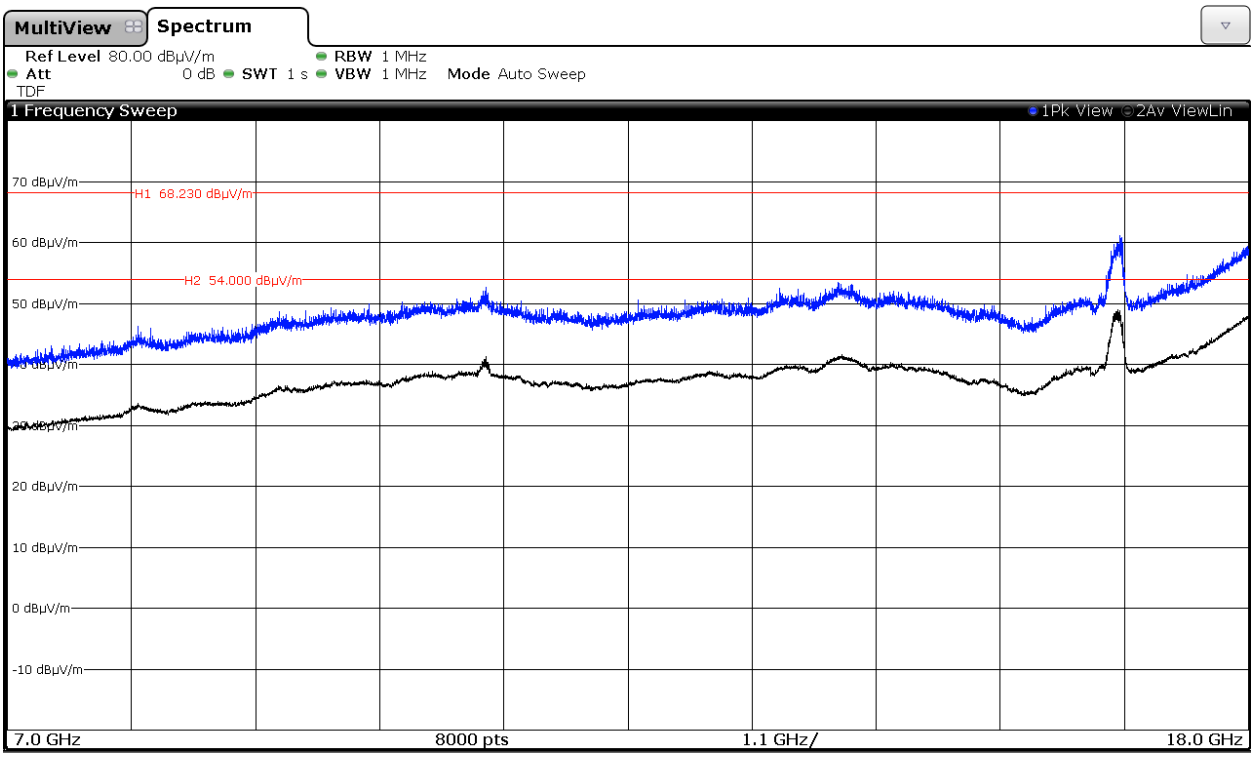
Middle frequency (122) 5610 MHz.
Chain A



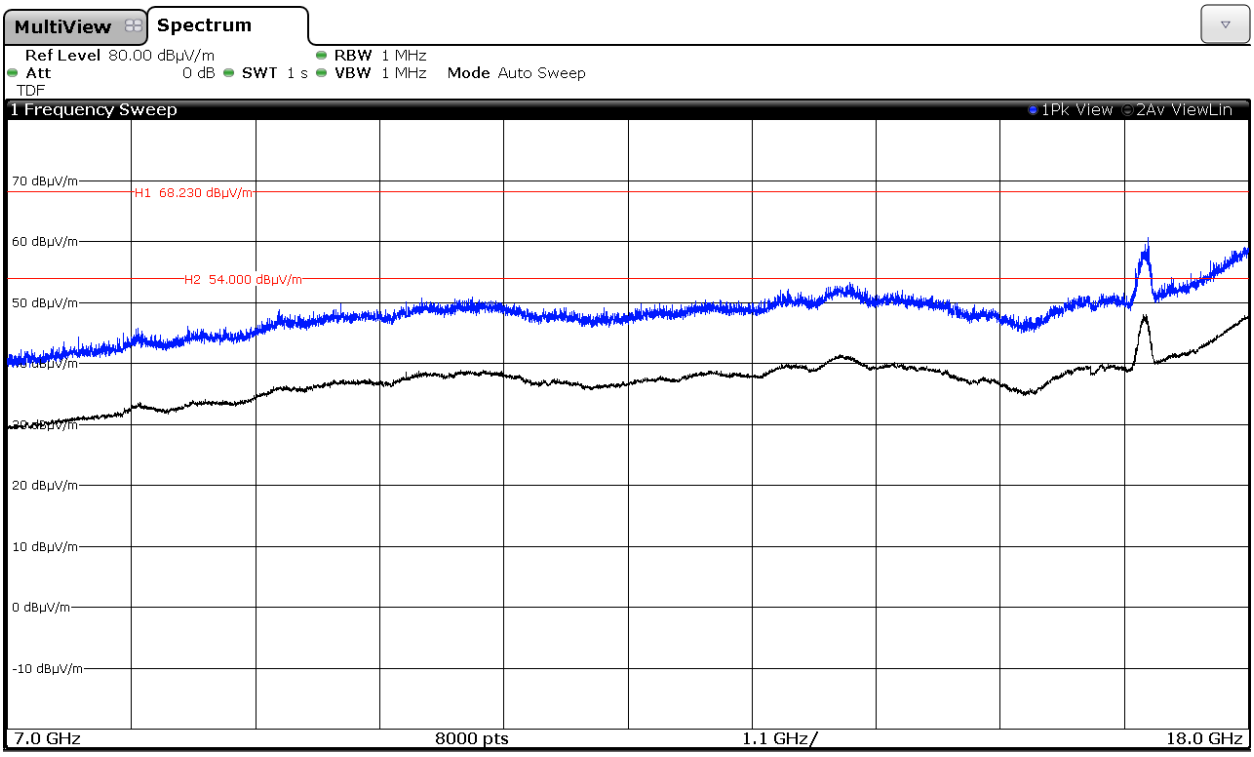
Chain B



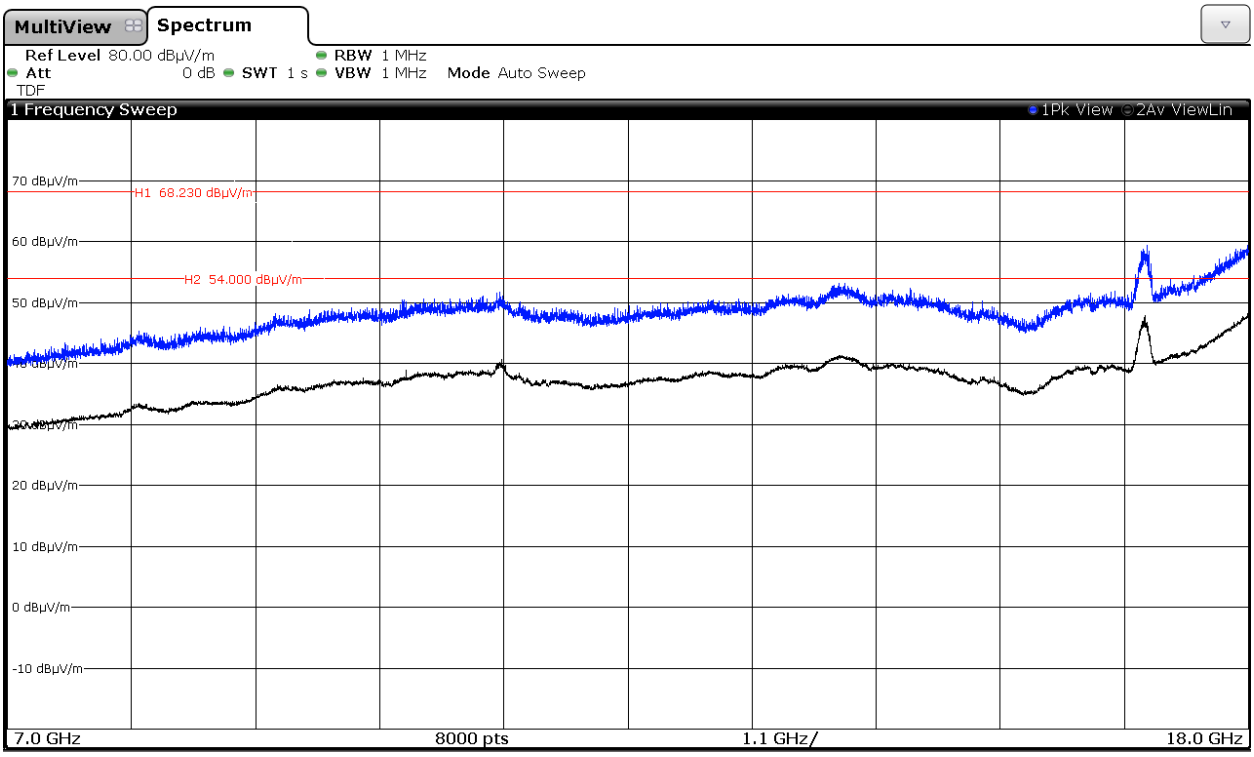
Chain A+B



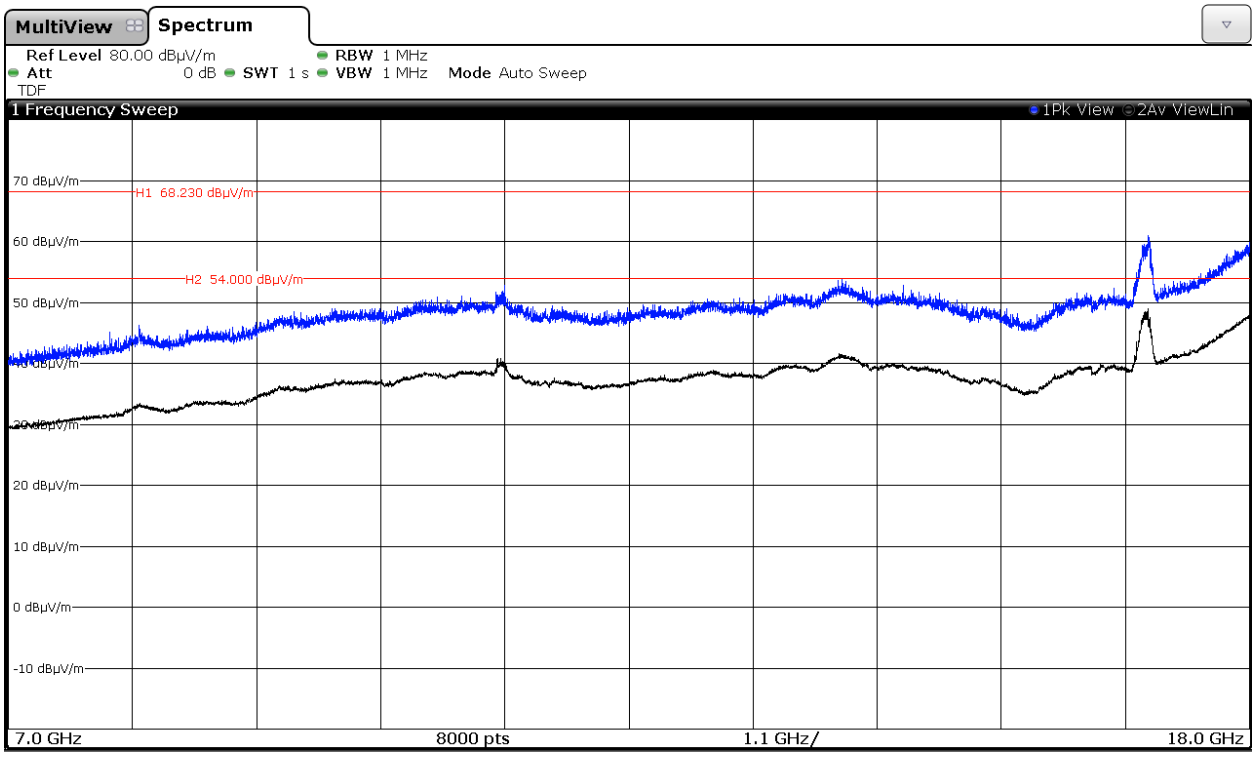
802.11ac80 mode: CH 138 (5690 MHz)
Chain A



Chain B



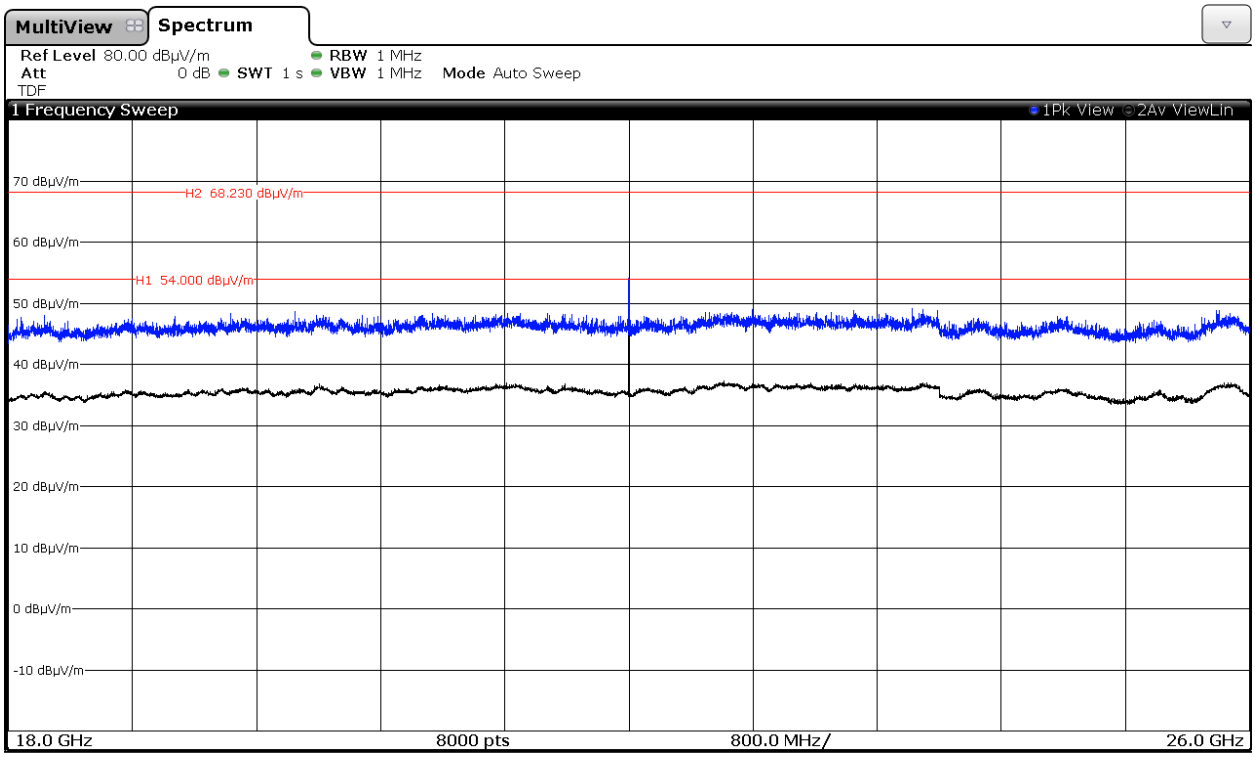
Chain A+B



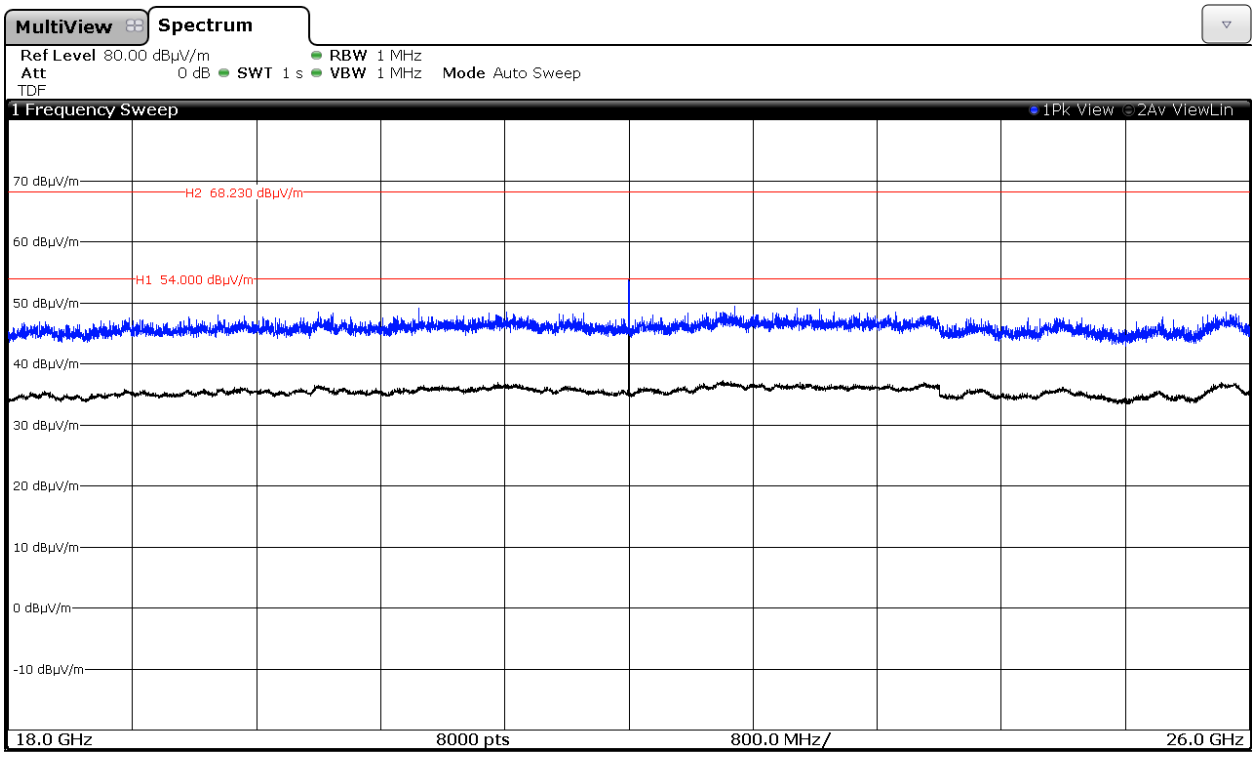
FREQUENCY RANGE 18 GHz to 26 GHz.

1. WiFi 5GHz 802.11 a mode

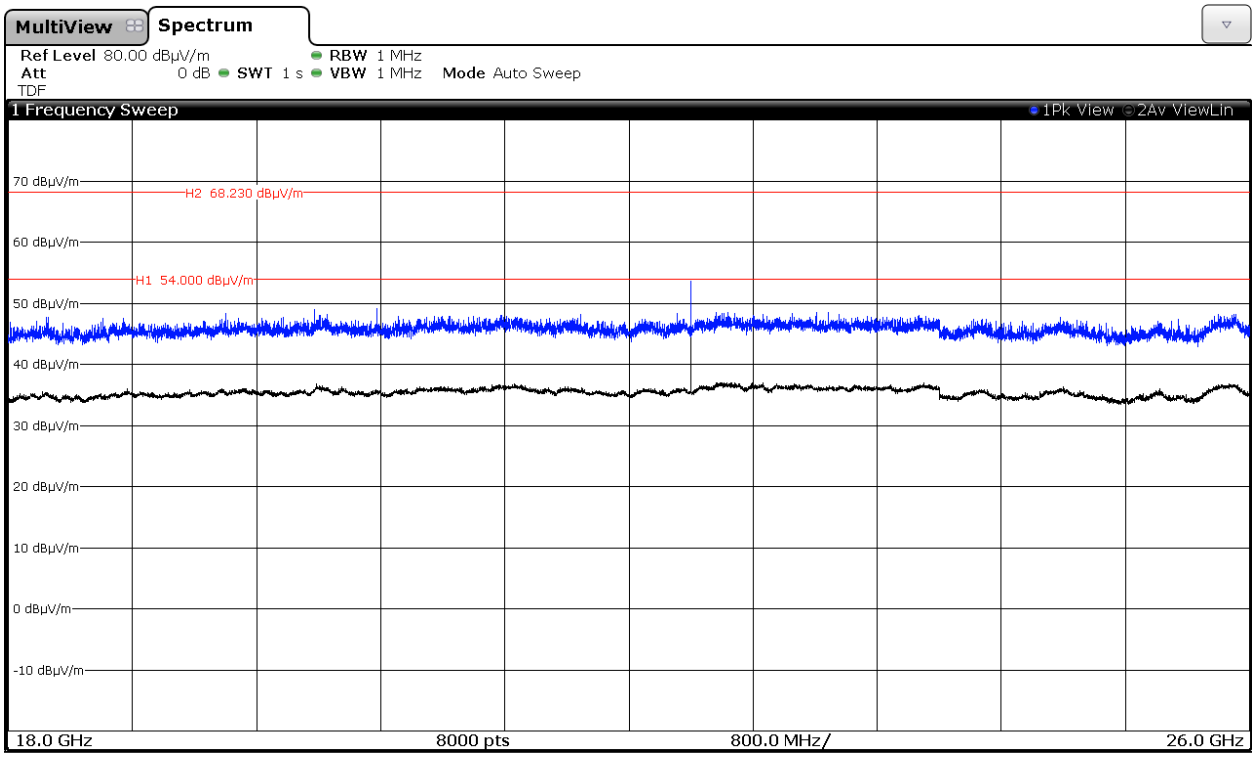
Lowest frequency (100) 5500 MHz.
Chain A



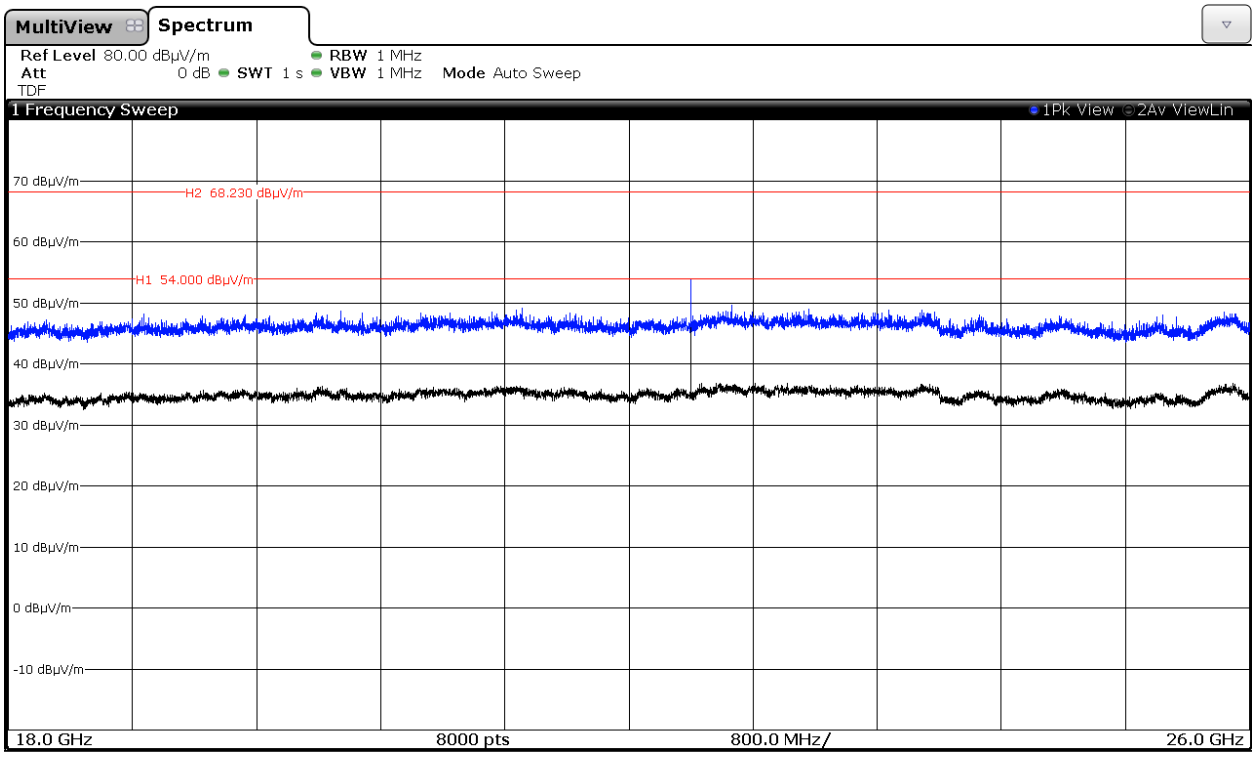
Chain B



Middle frequency (120) 5600 MHz.
Chain A

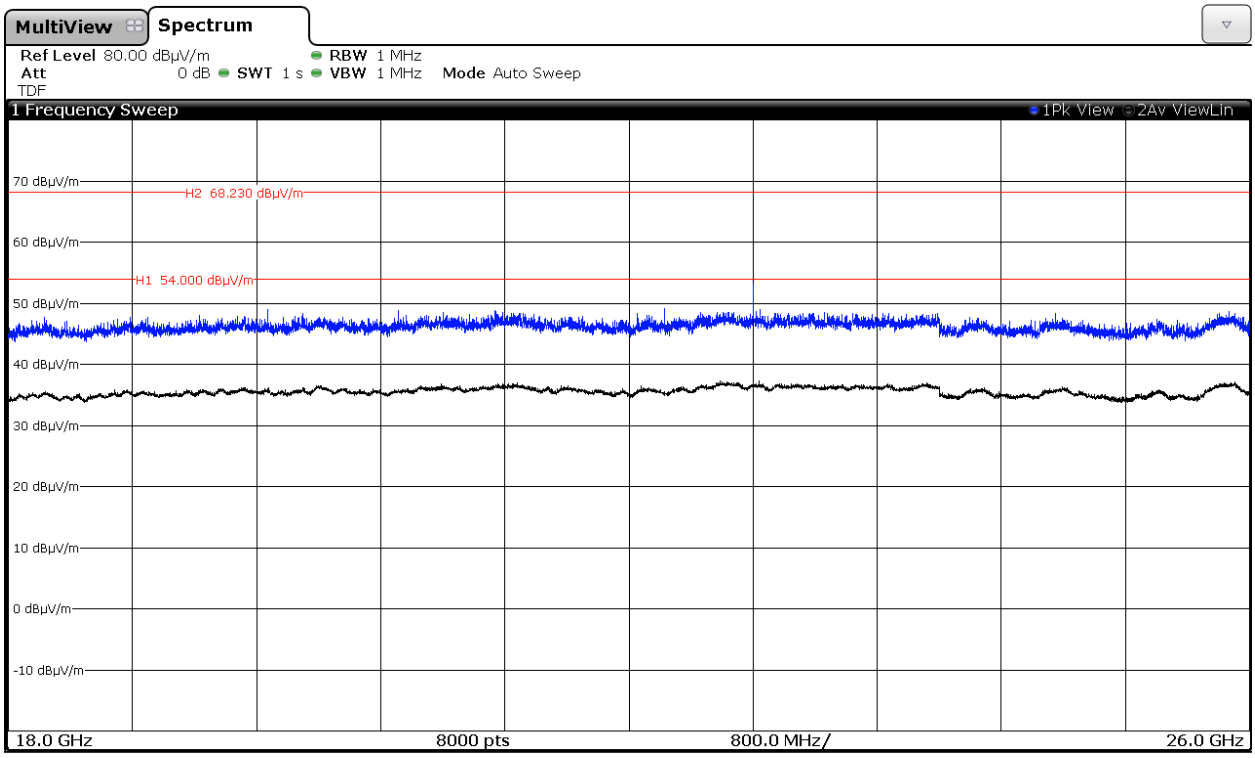


Chain B

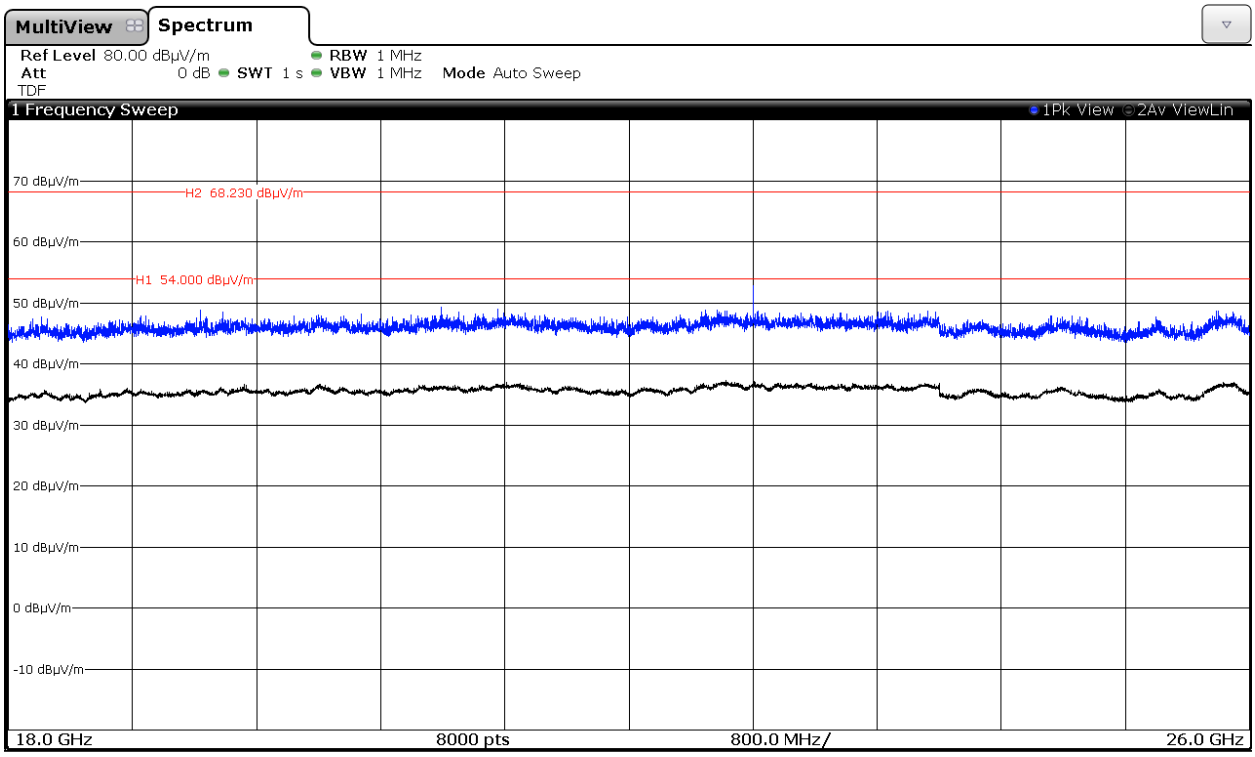


Highest frequency (140) 5700 MHz.

Chain A

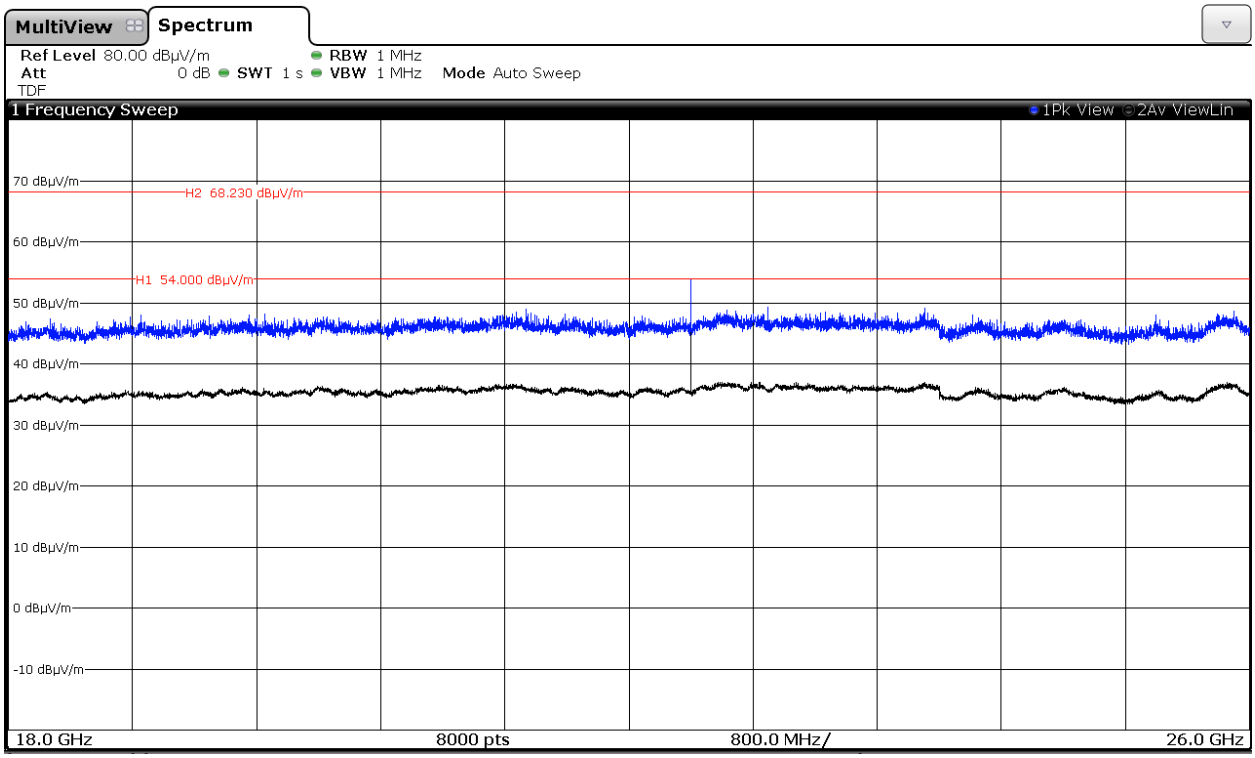


Chain B

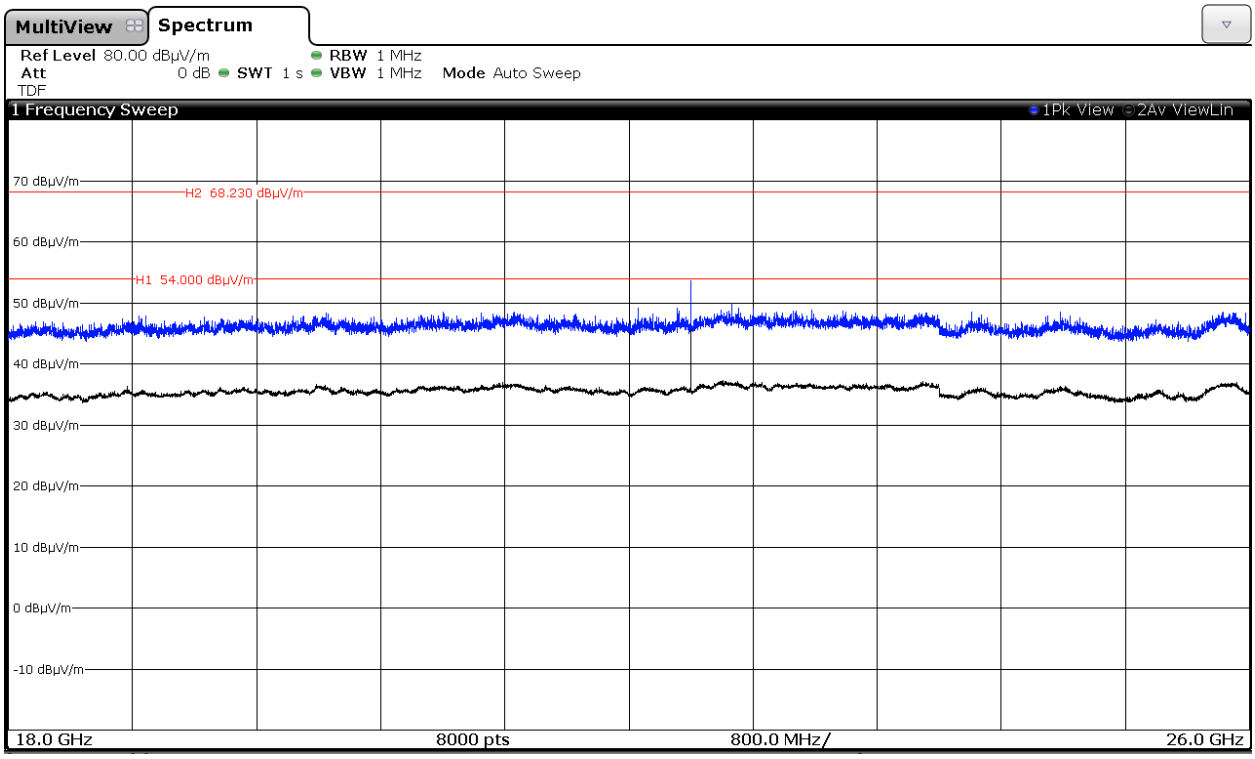


2. WiFi 5GHz 802.11 n20 mode

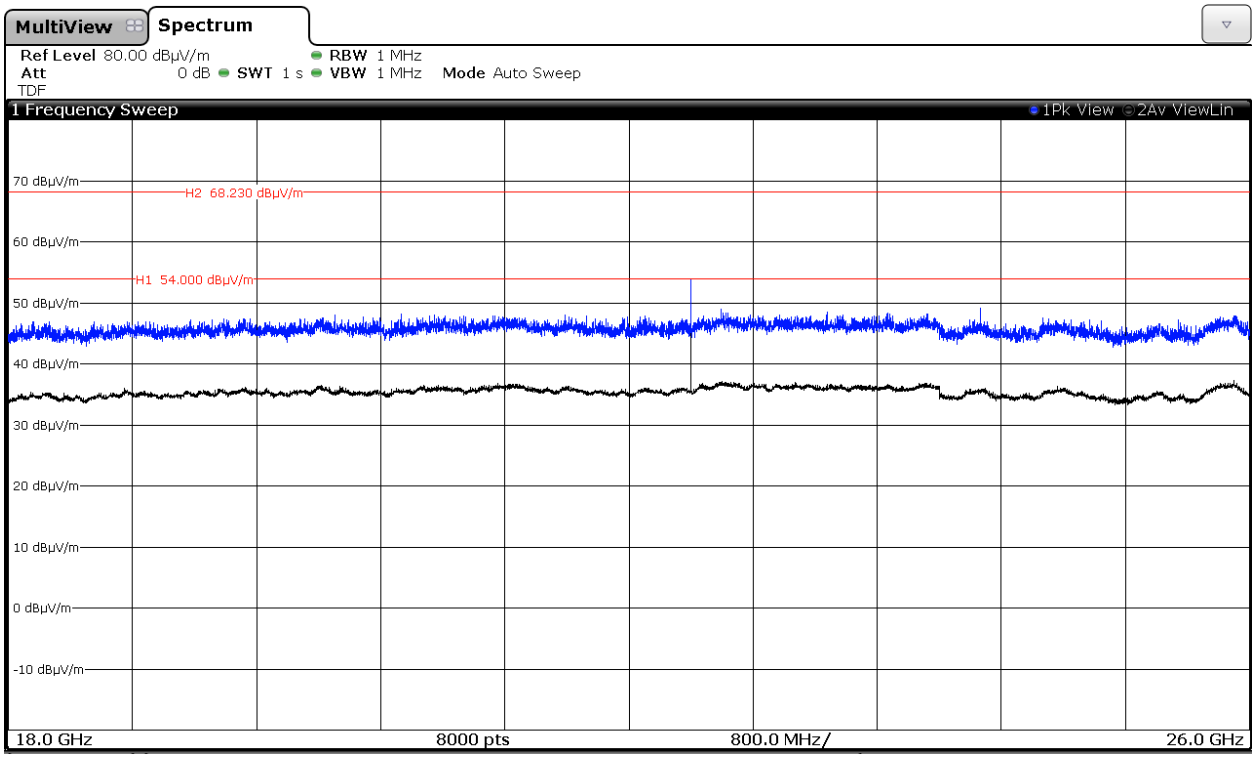
Middle frequency (120) 5600 MHz.
Chain A



Chain B

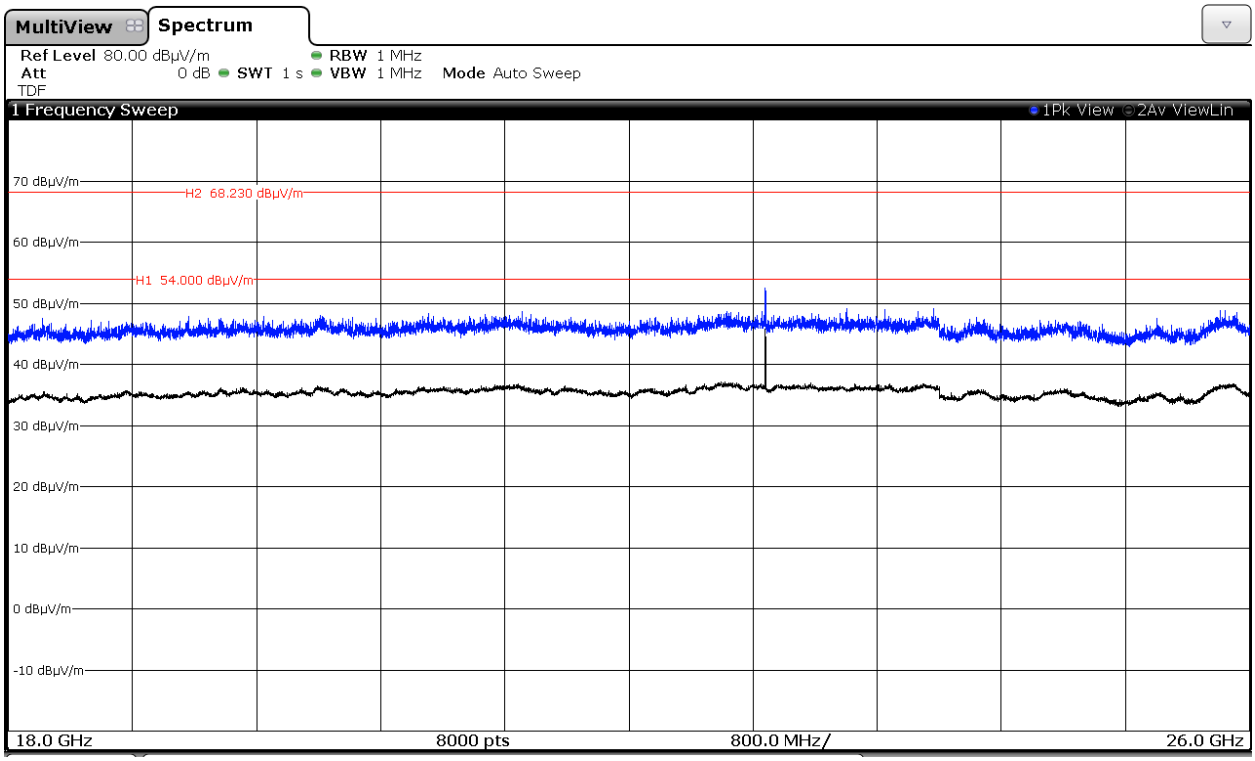


Chain A+B

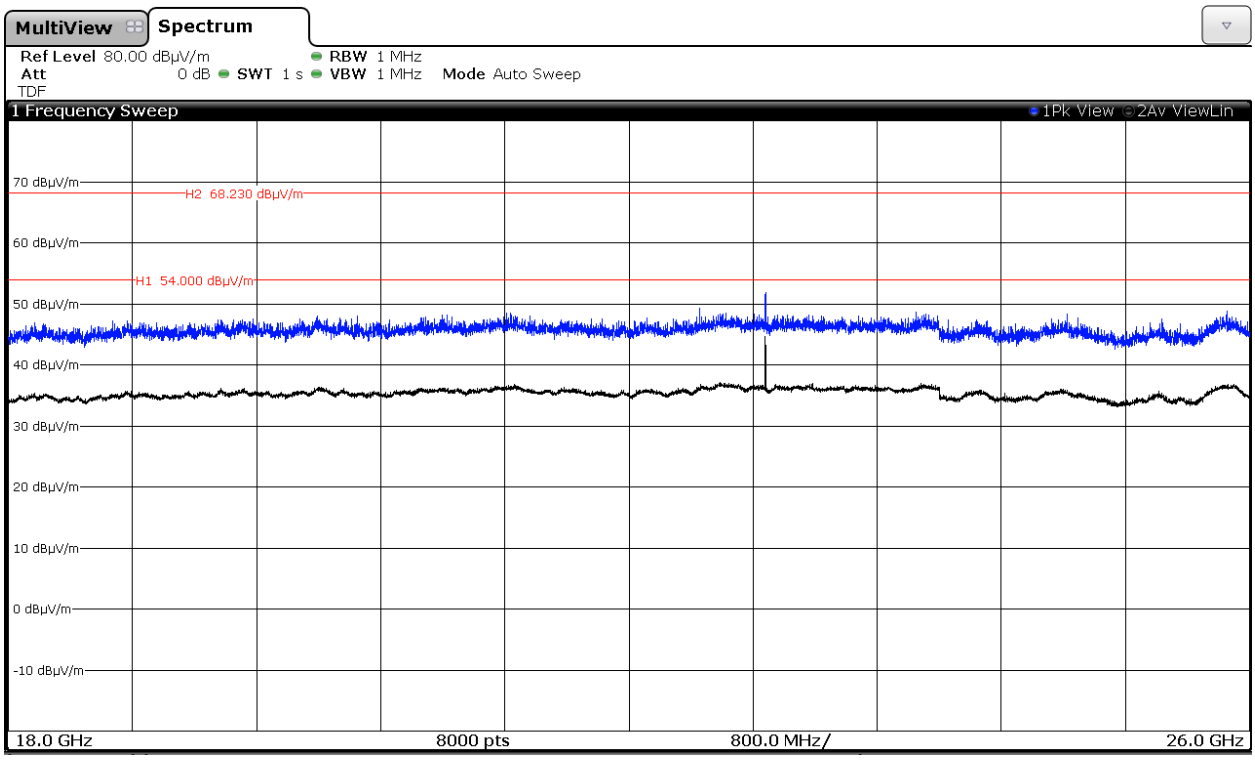


802.11ac20 mode: CH 144 (5720 MHz)

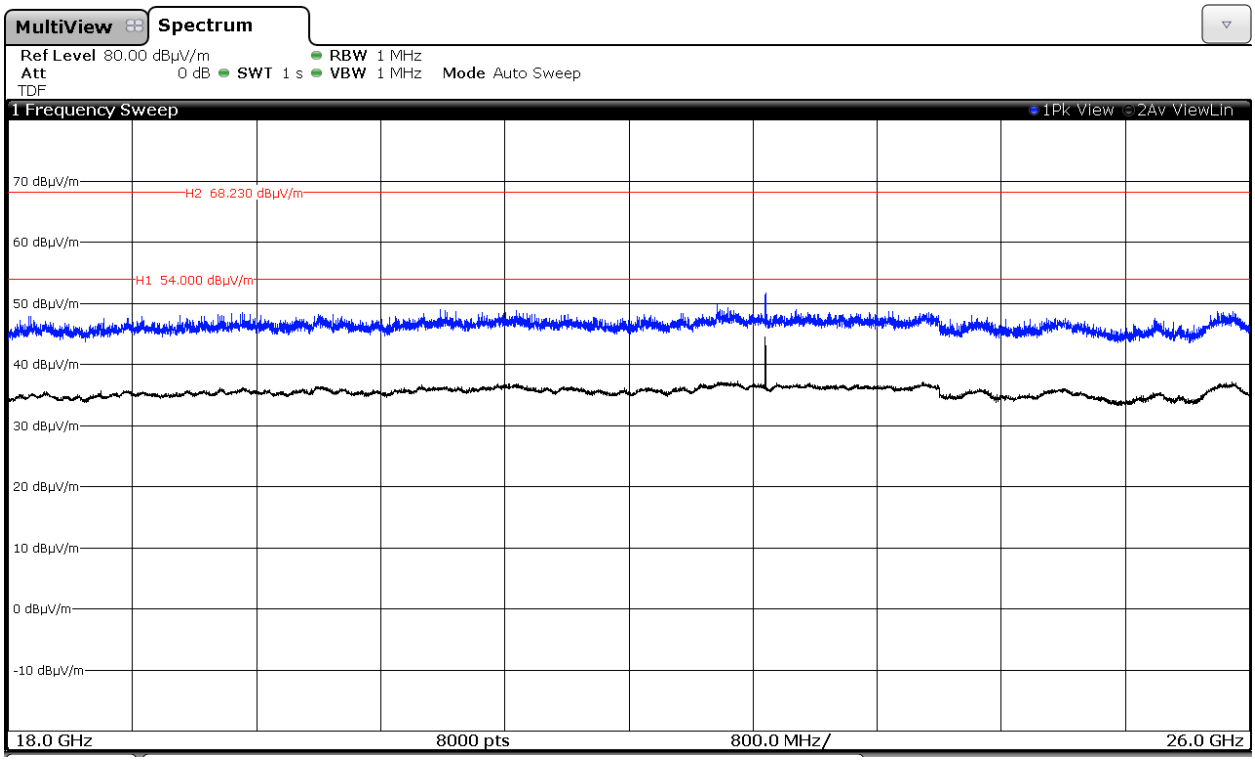
Chain A



Chain B

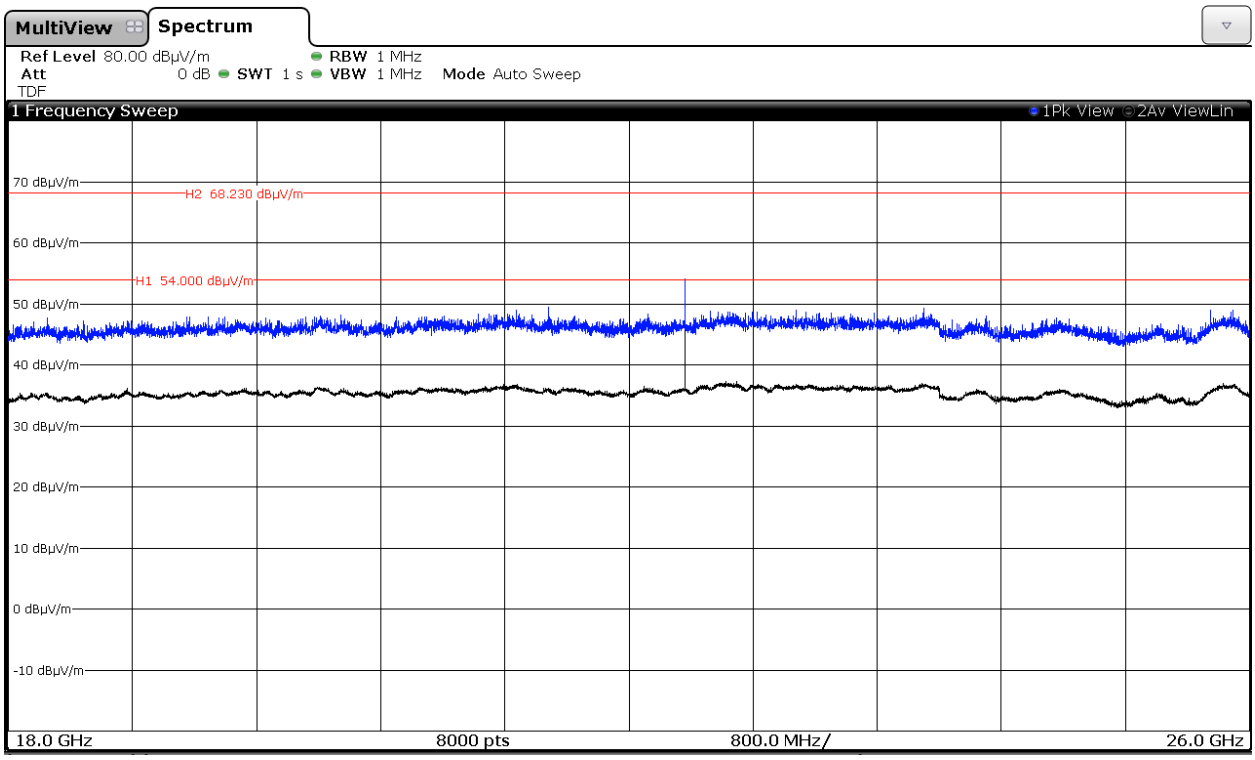


Chain A+B

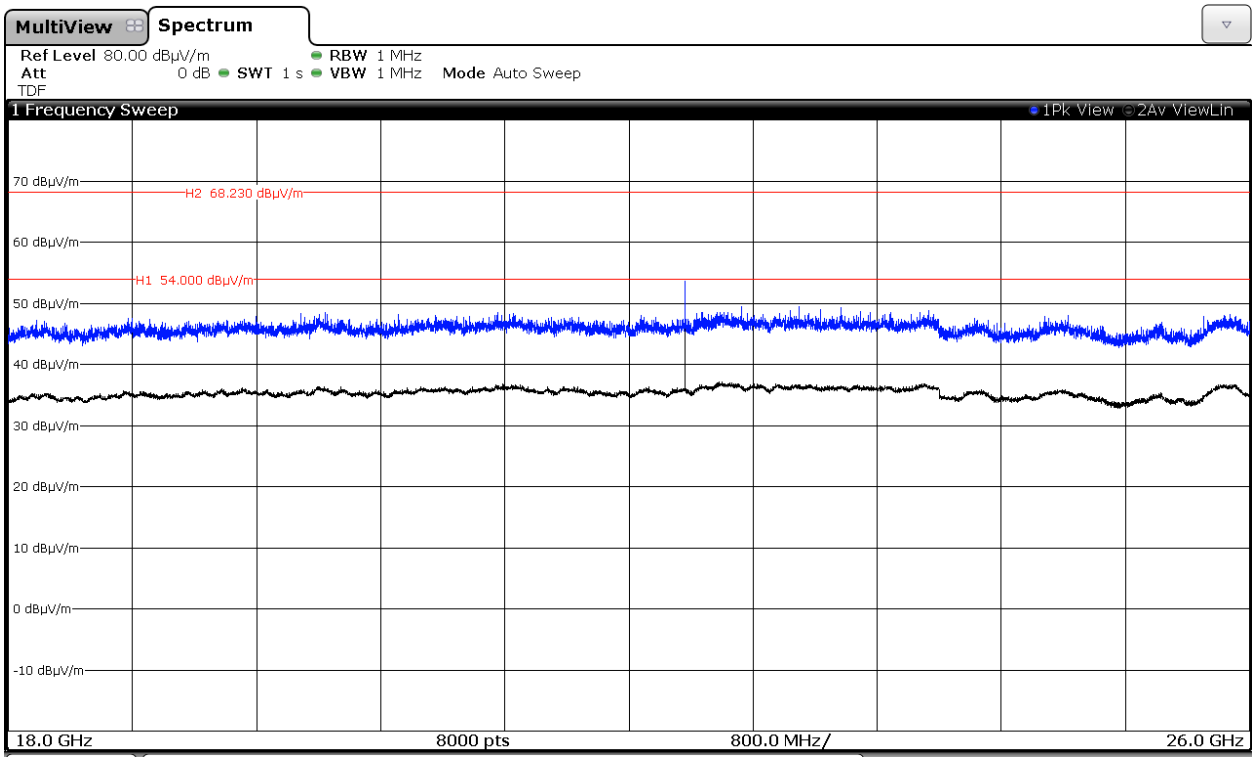


3. WiFi 5GHz 802.11 n40 mode

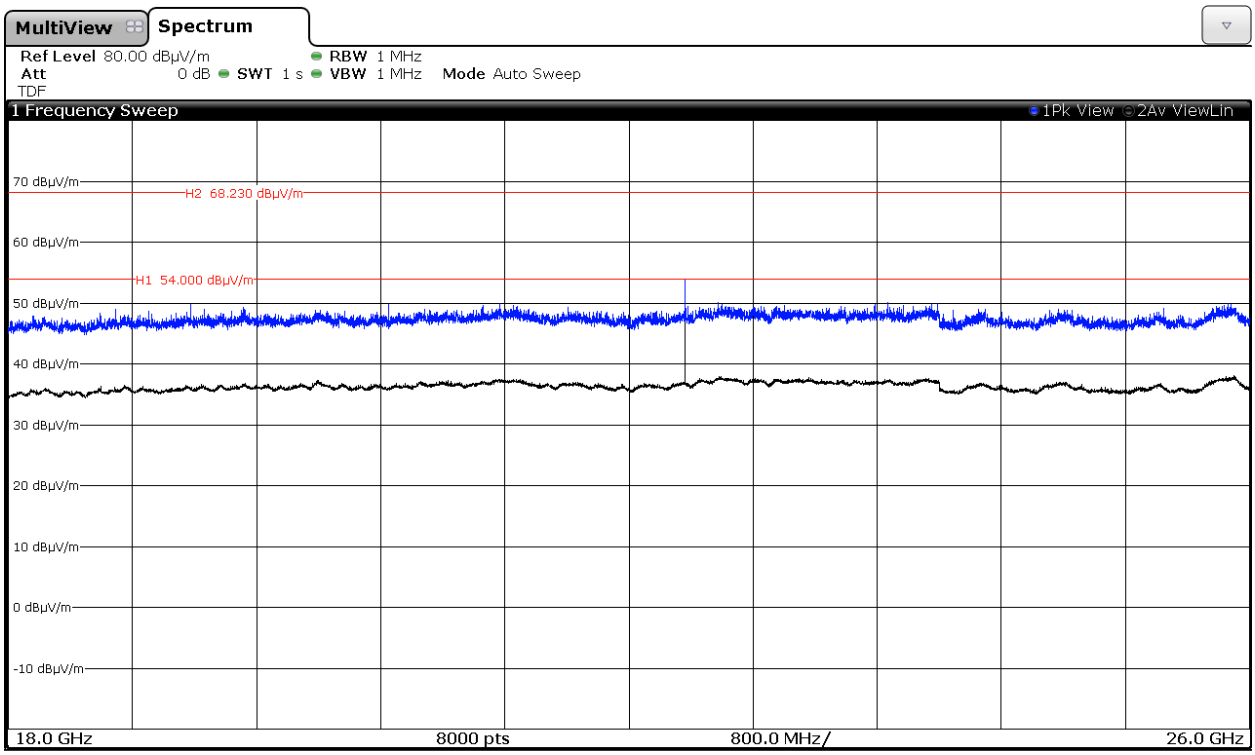
Middle frequency (118) 5590 MHz.
Chain A



Chain B

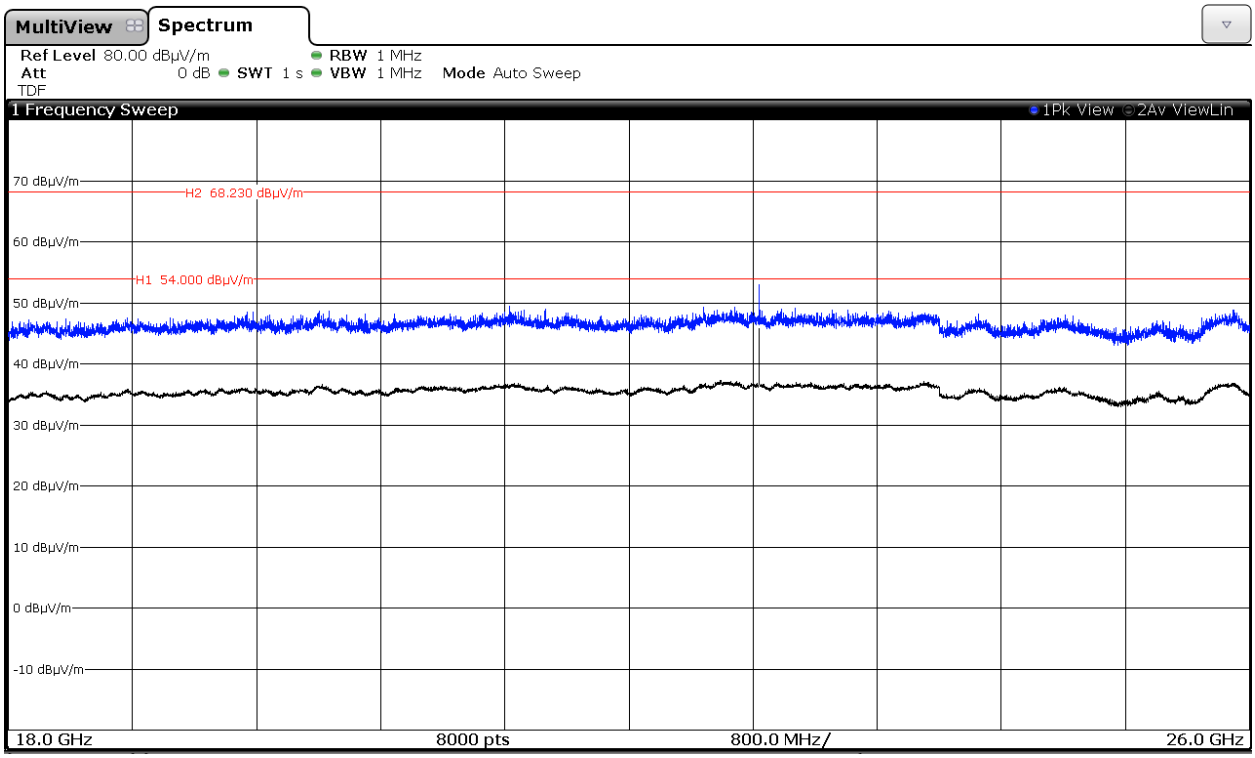


Chain A+B

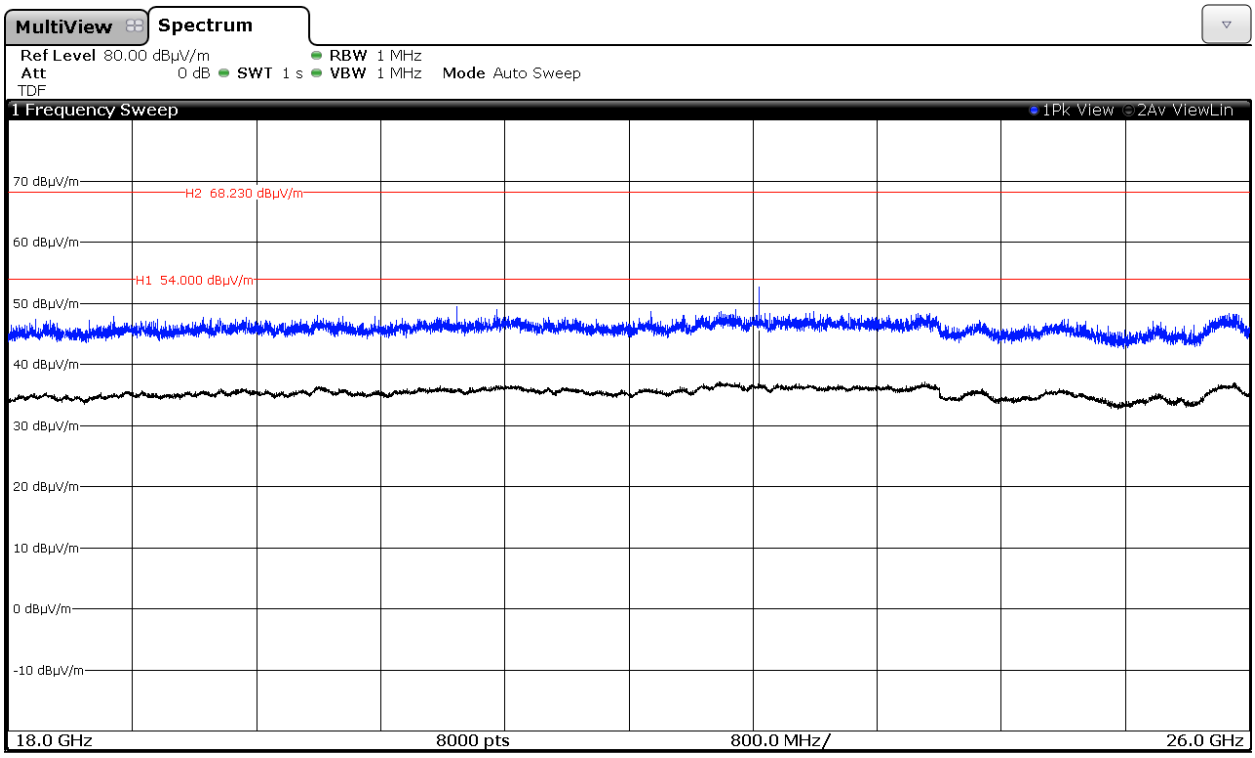


802.11ac40 mode: CH 142 (5710 MHz)

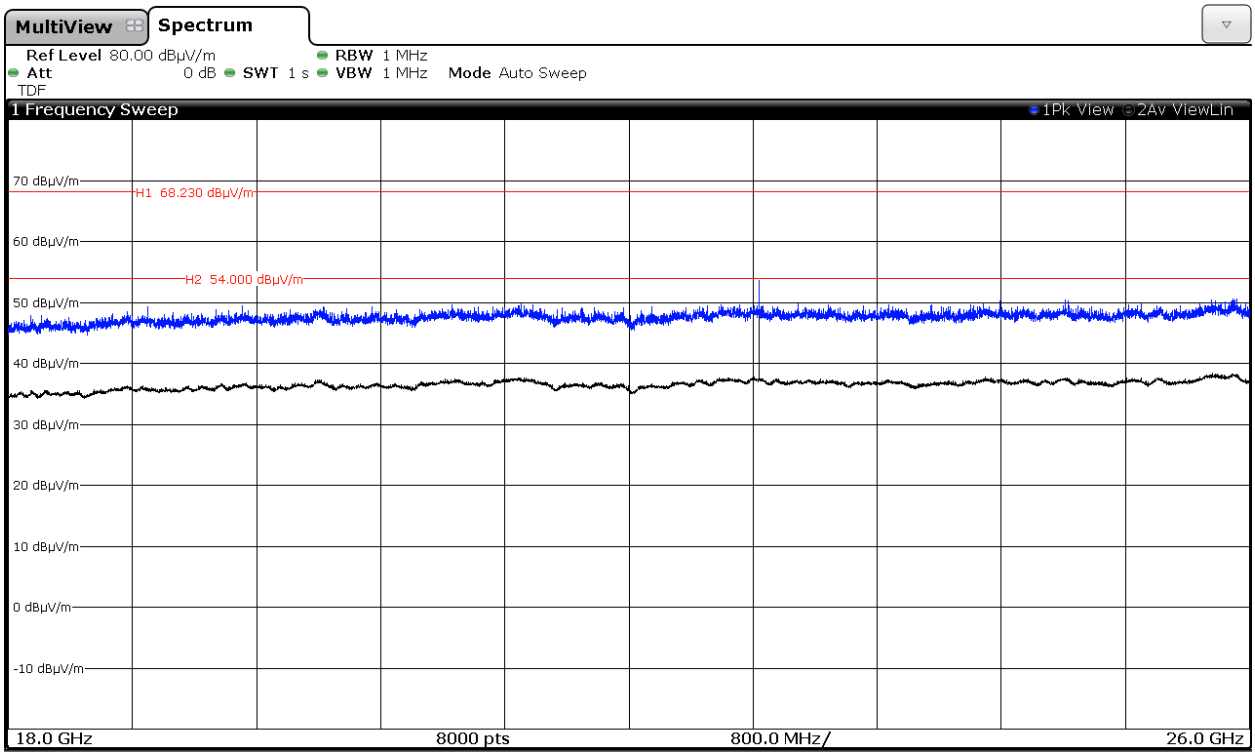
Chain A



Chain B

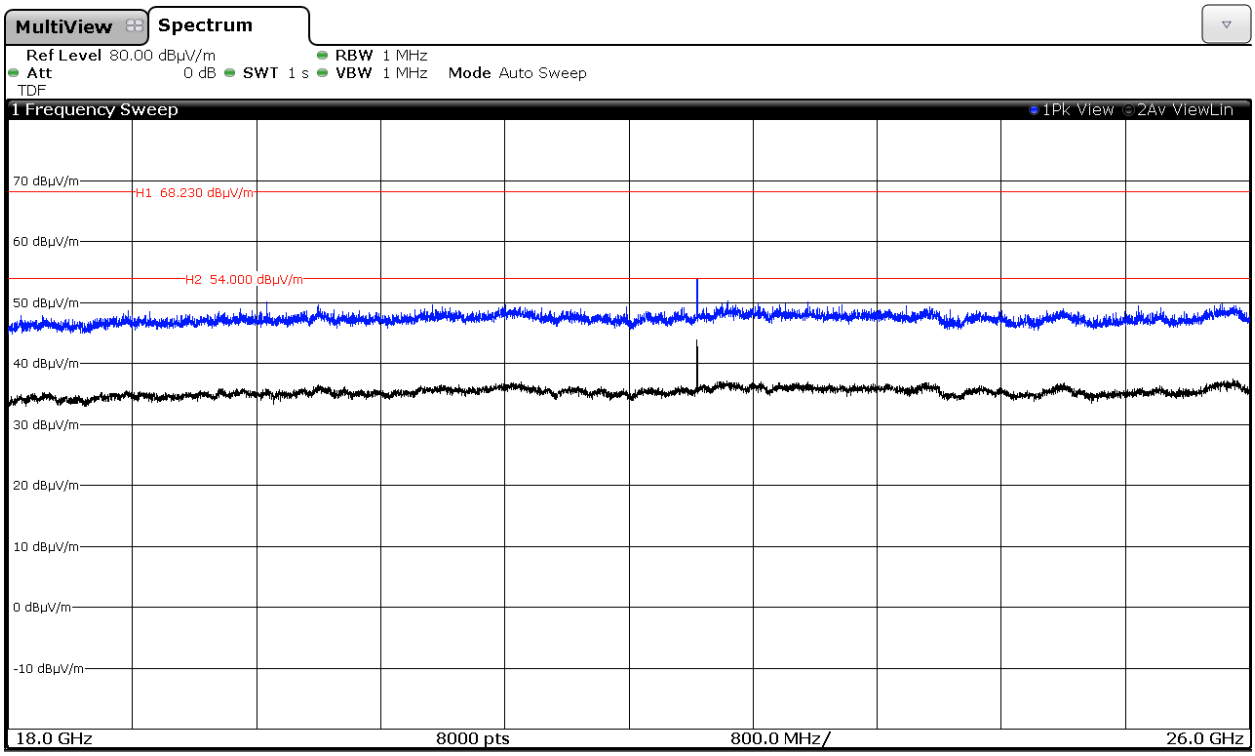


Chain A+B

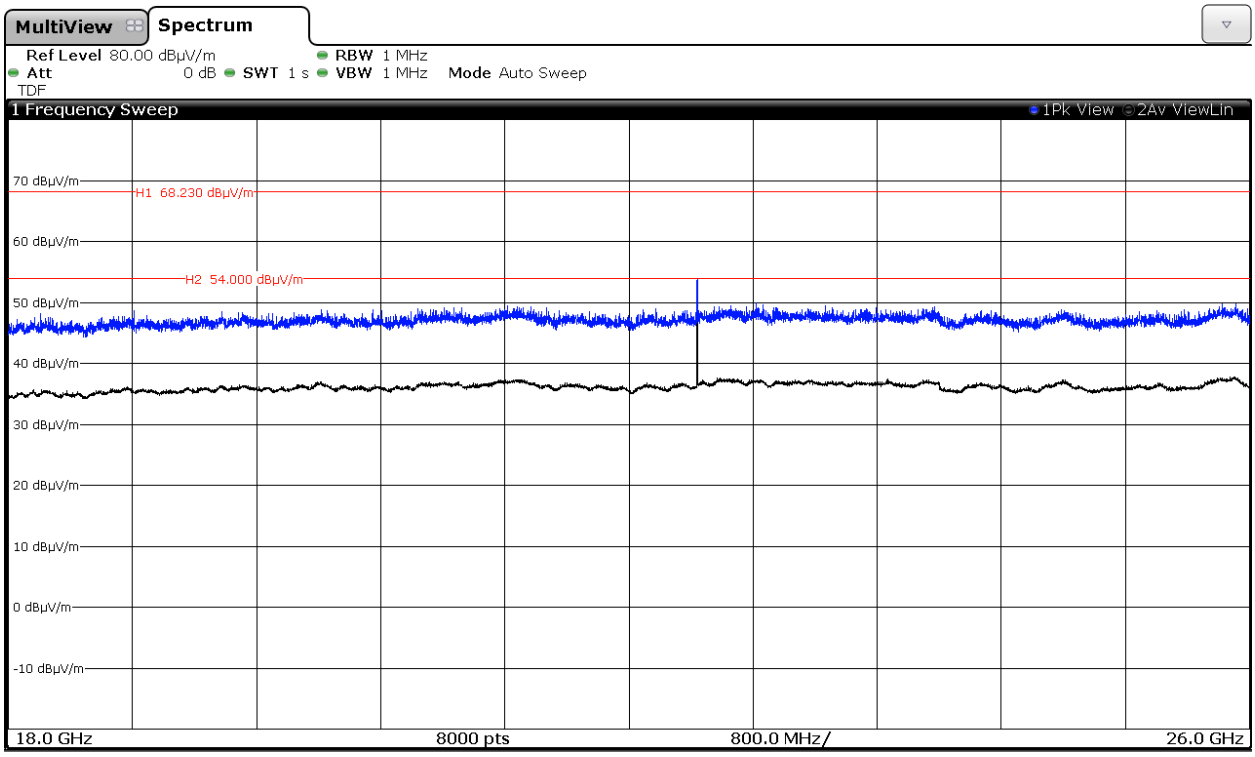


4. WiFi 5GHz 802.11 ac80 mode

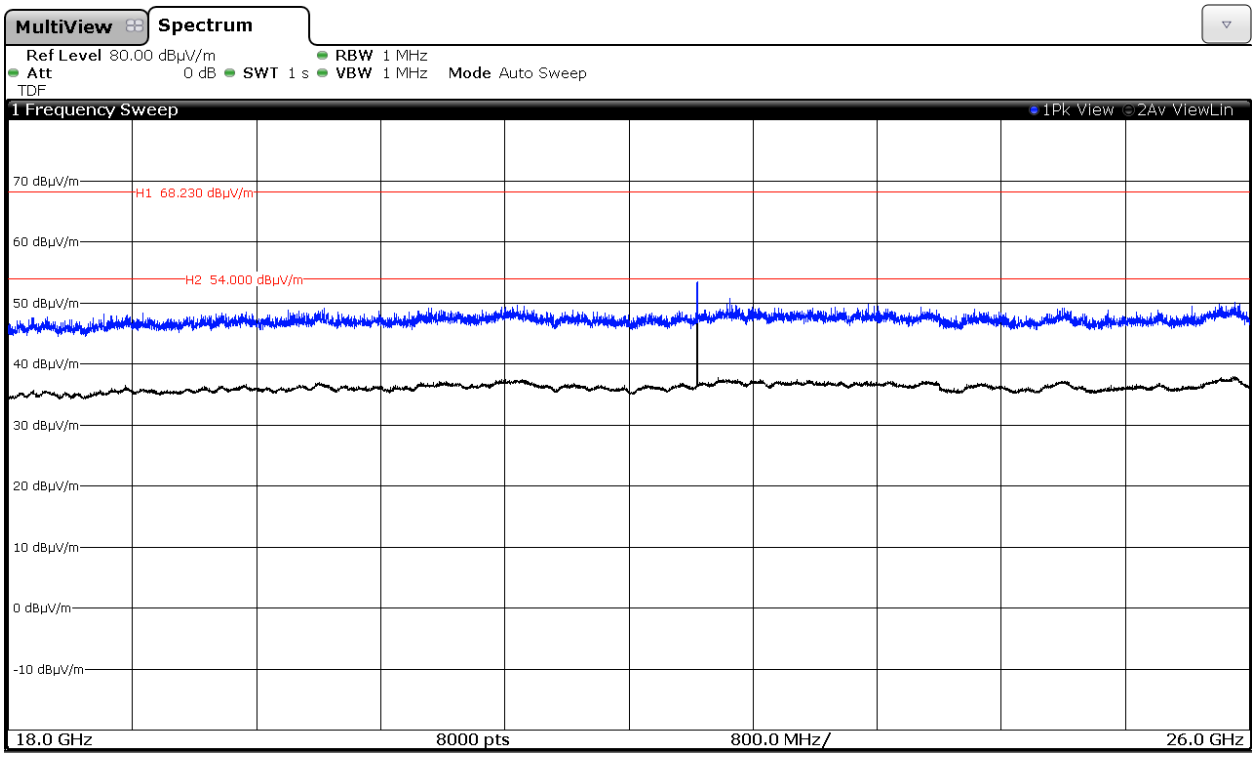
Middle frequency (122) 5610 MHz.
Chain A



Chain B

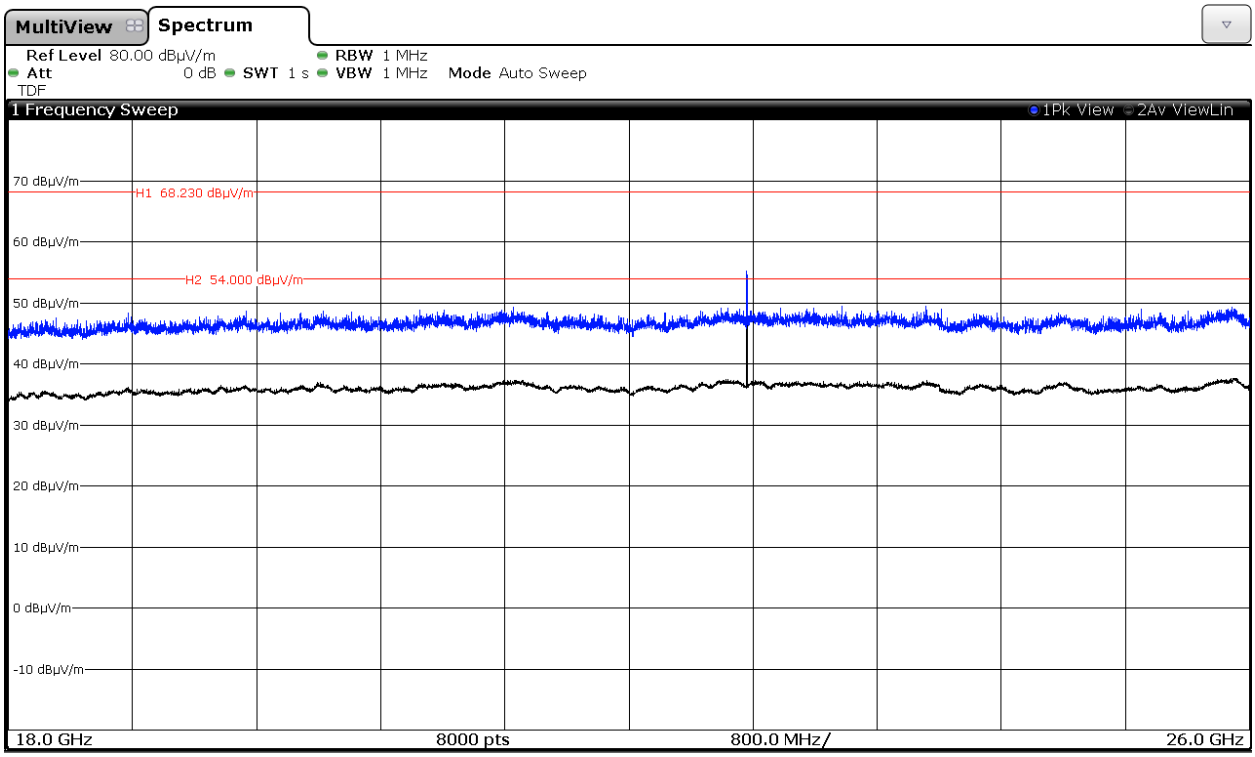


Chain A+B

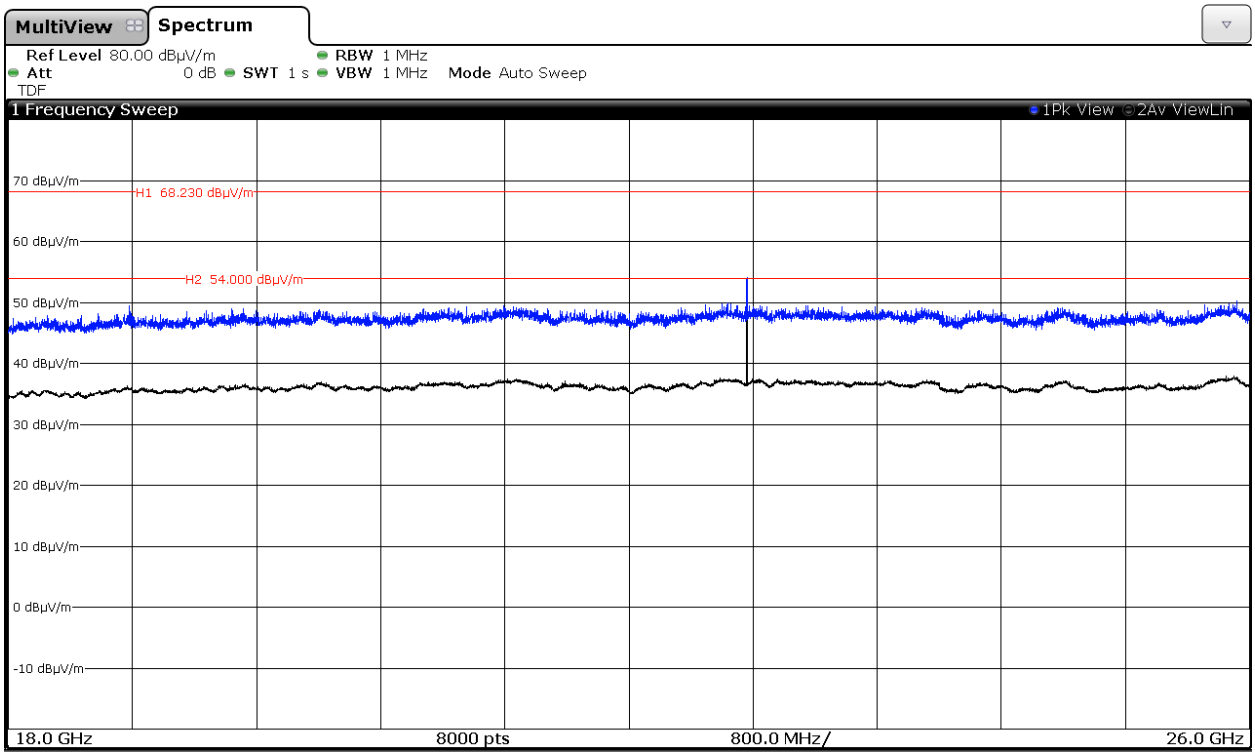


802.11ac80 mode: CH 138 (5690 MHz)

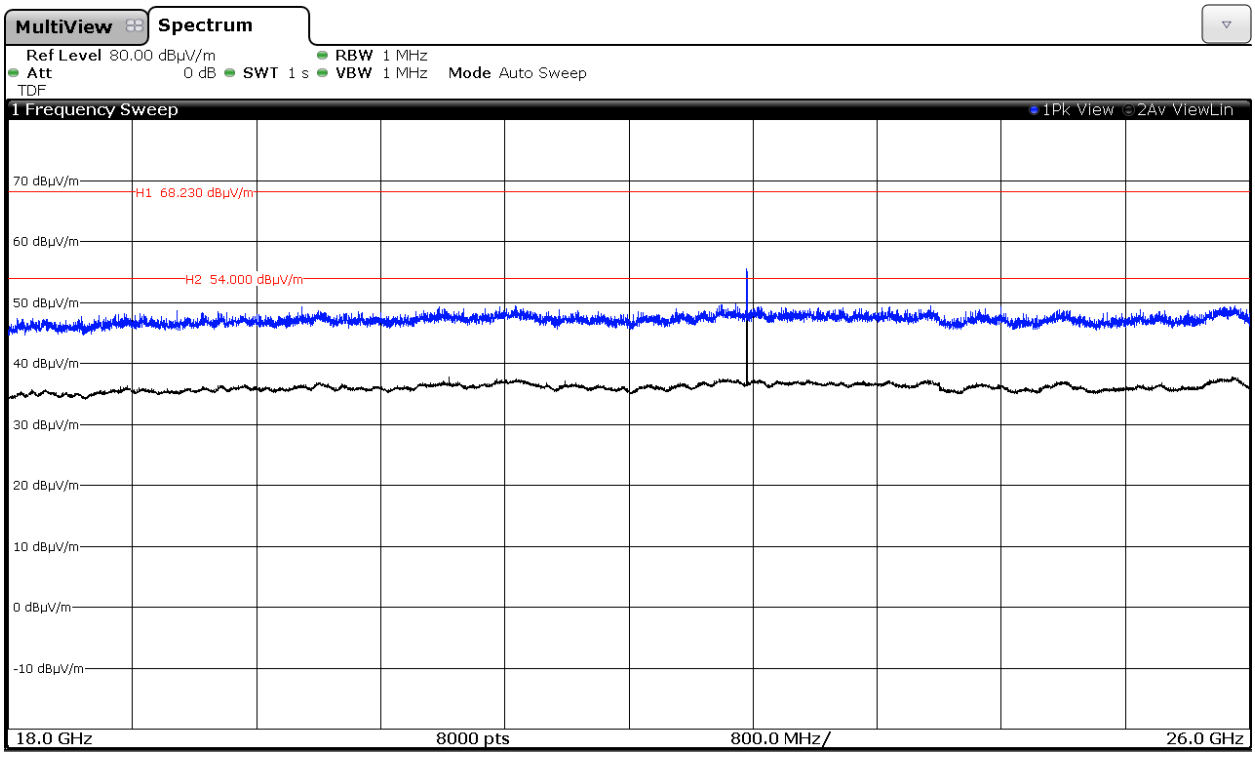
Chain A



Chain B

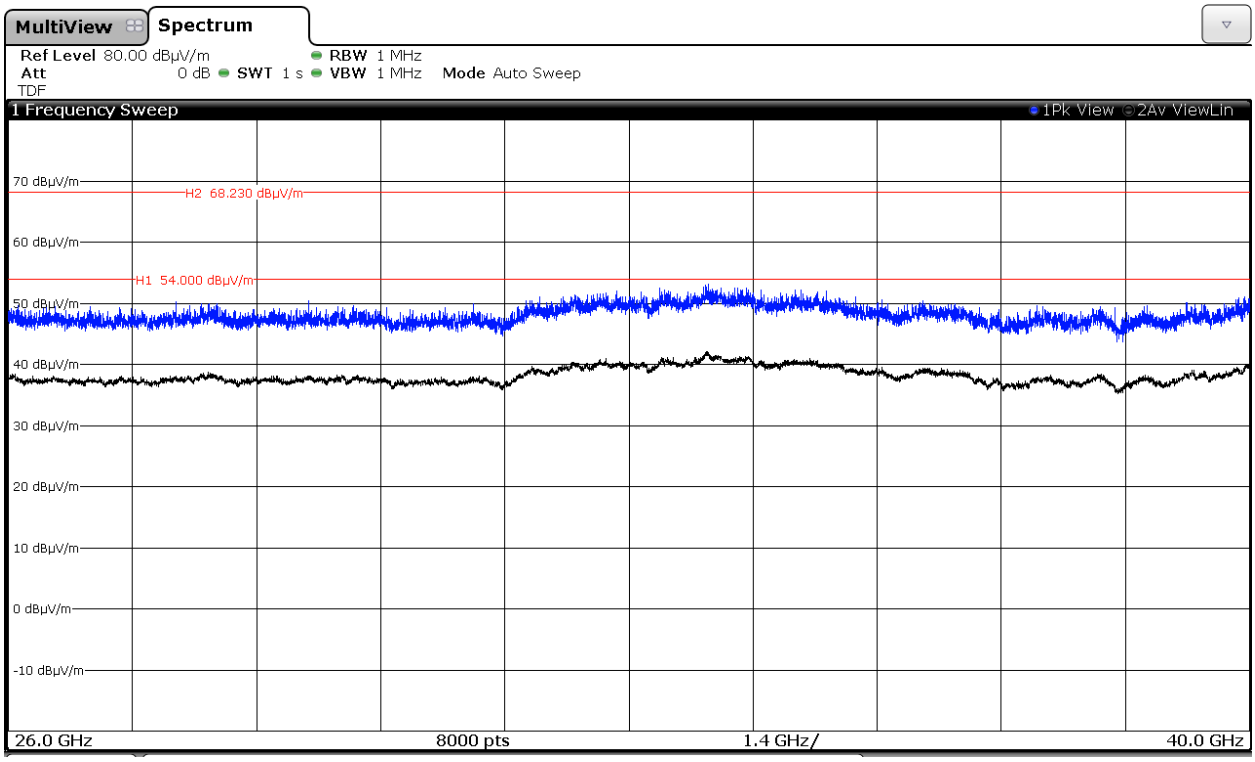


Chain A+B



FREQUENCY RANGE 26GHz to 40GHz.

No spurious signals were found in all modulations and channels tested.

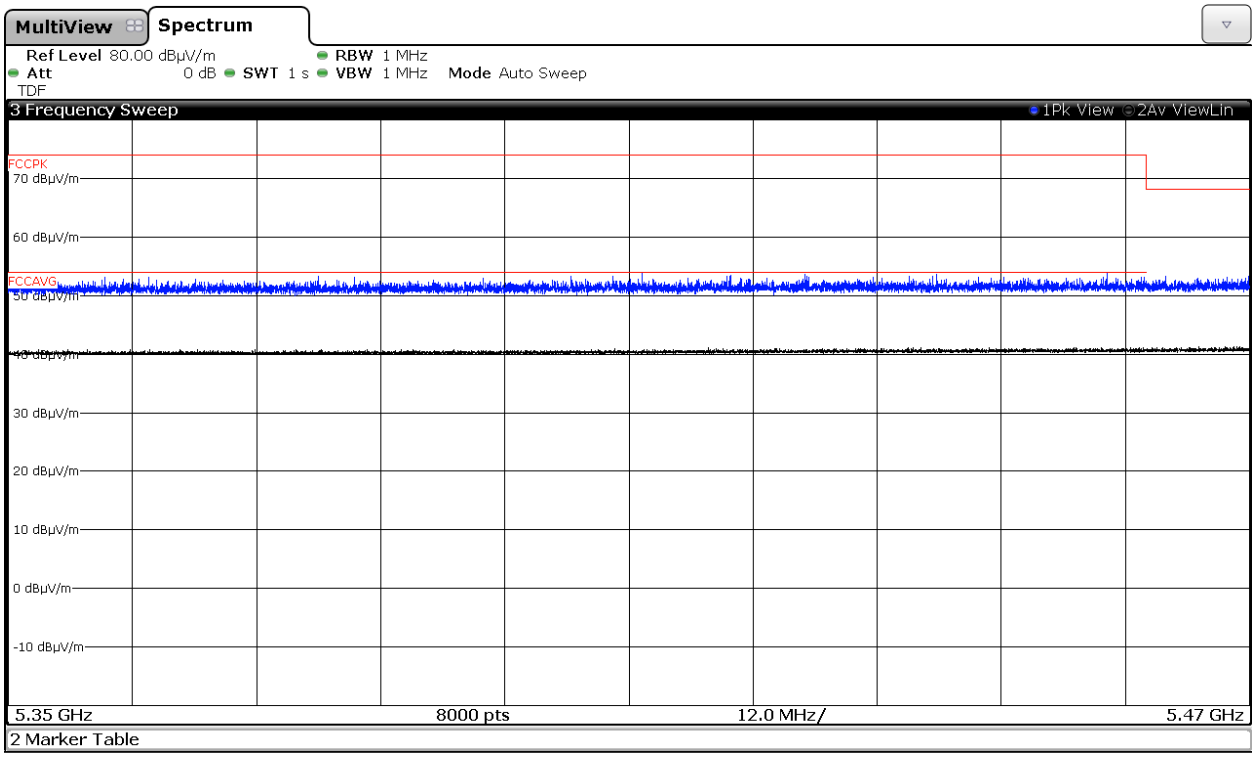


(This plot is valid for both SISO and MIMO).

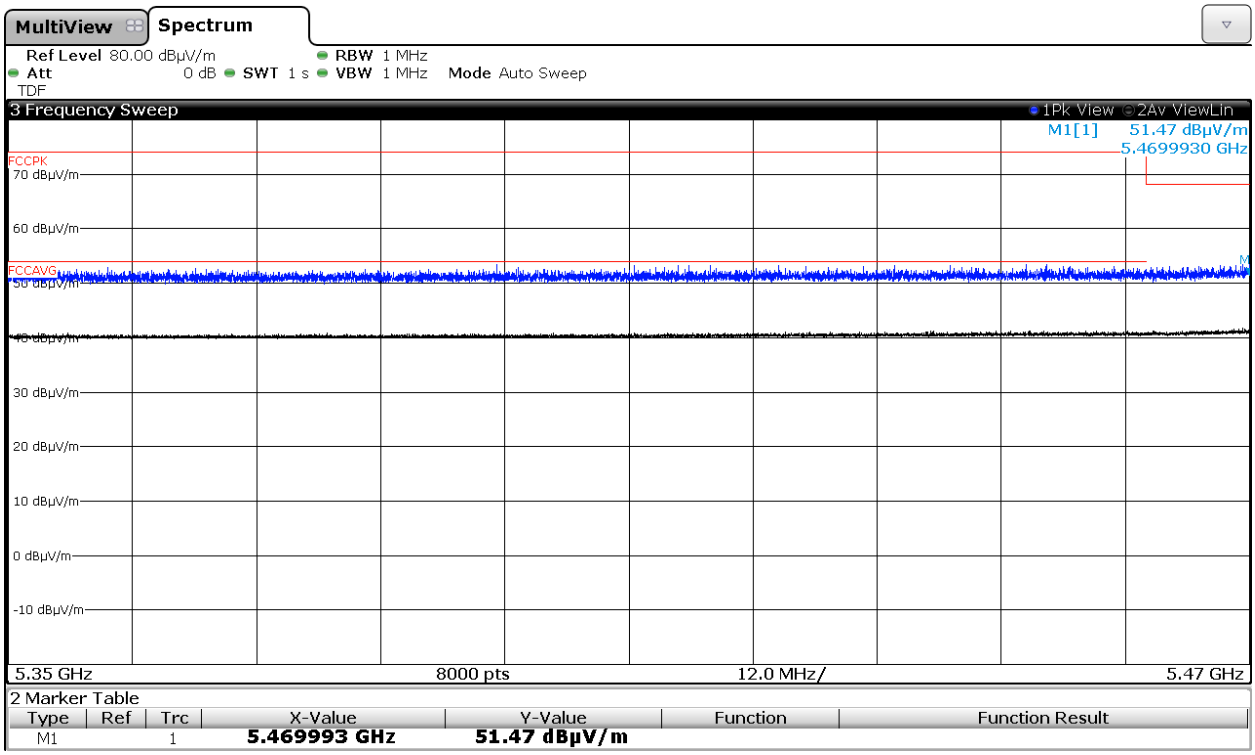
Radiated spurious emissions at band-edges and inside restricted band 5.35 – 5.46 GHz and adjacent band 5.46 – 5.47 GHz.

1. WiFi 5GHz 802.11 a mode

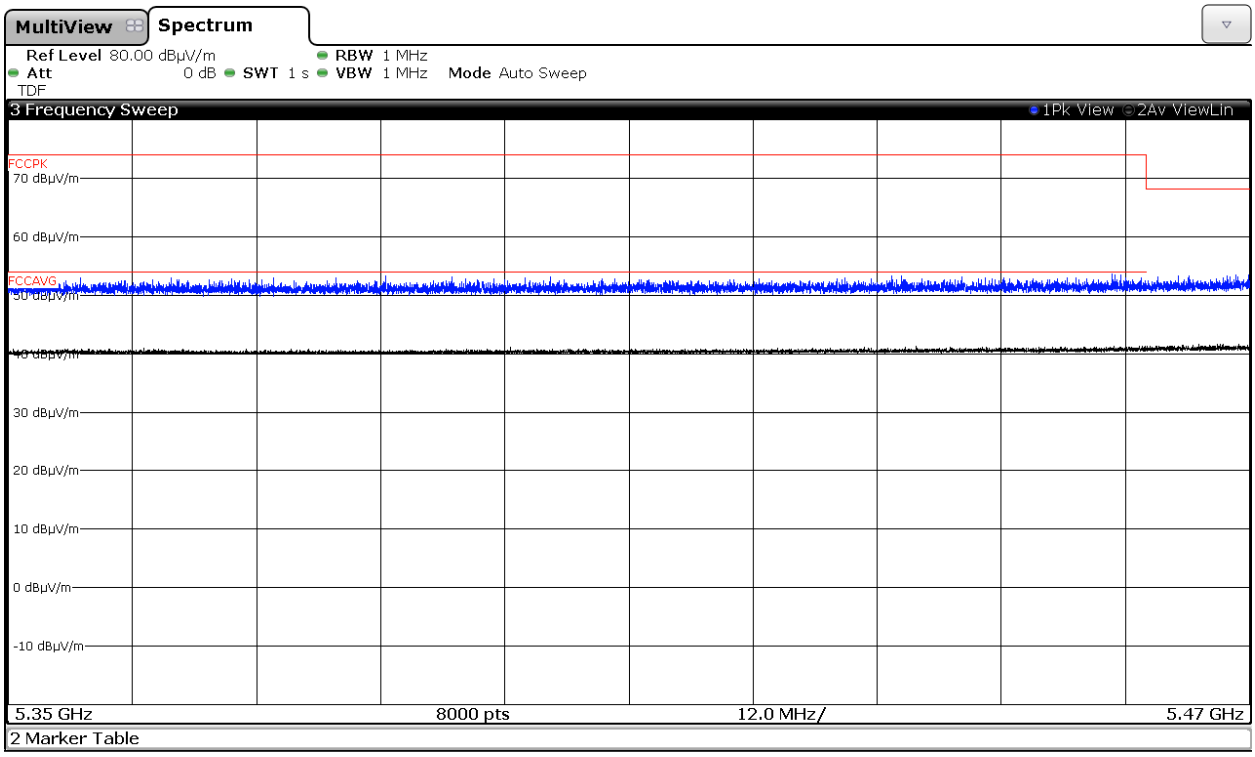
Lowest Channel (100) 5500 MHz. Chain A.



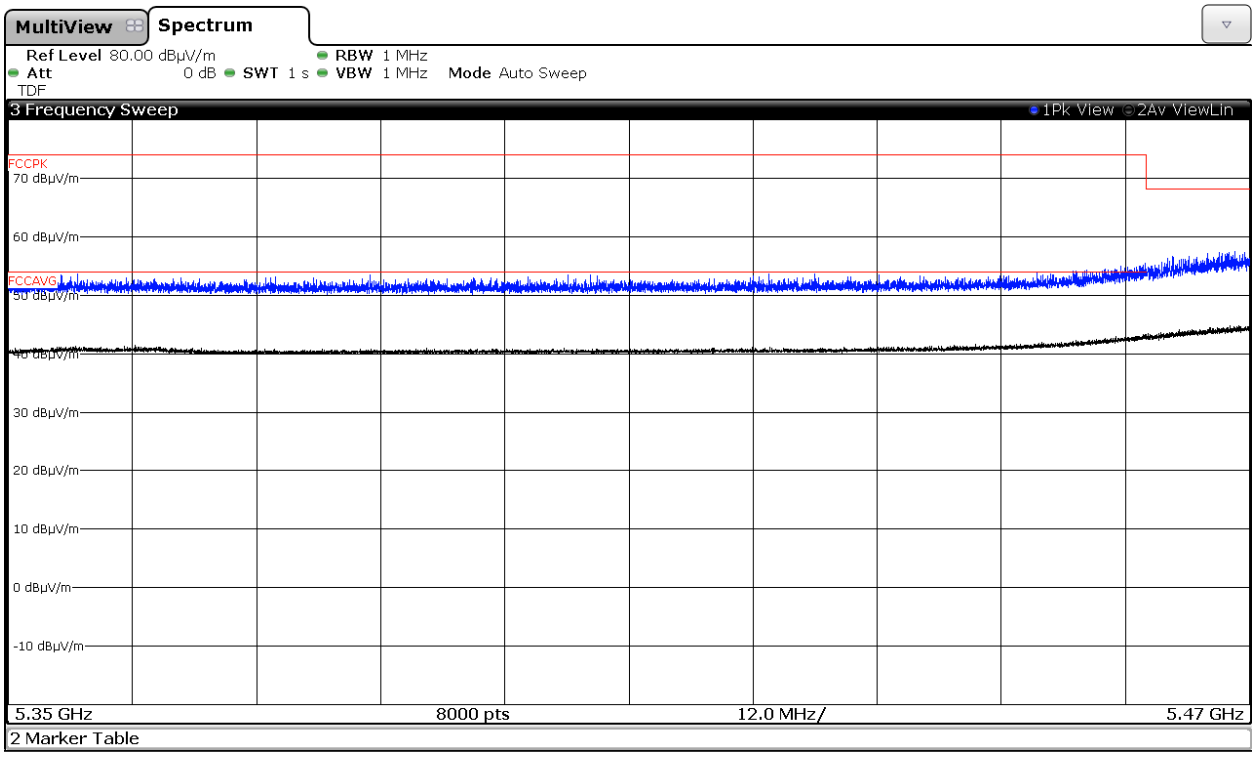
Lowest Channel (100) 5500MHz. Chain B.



Channel 104. 5520MHz. Chain A.

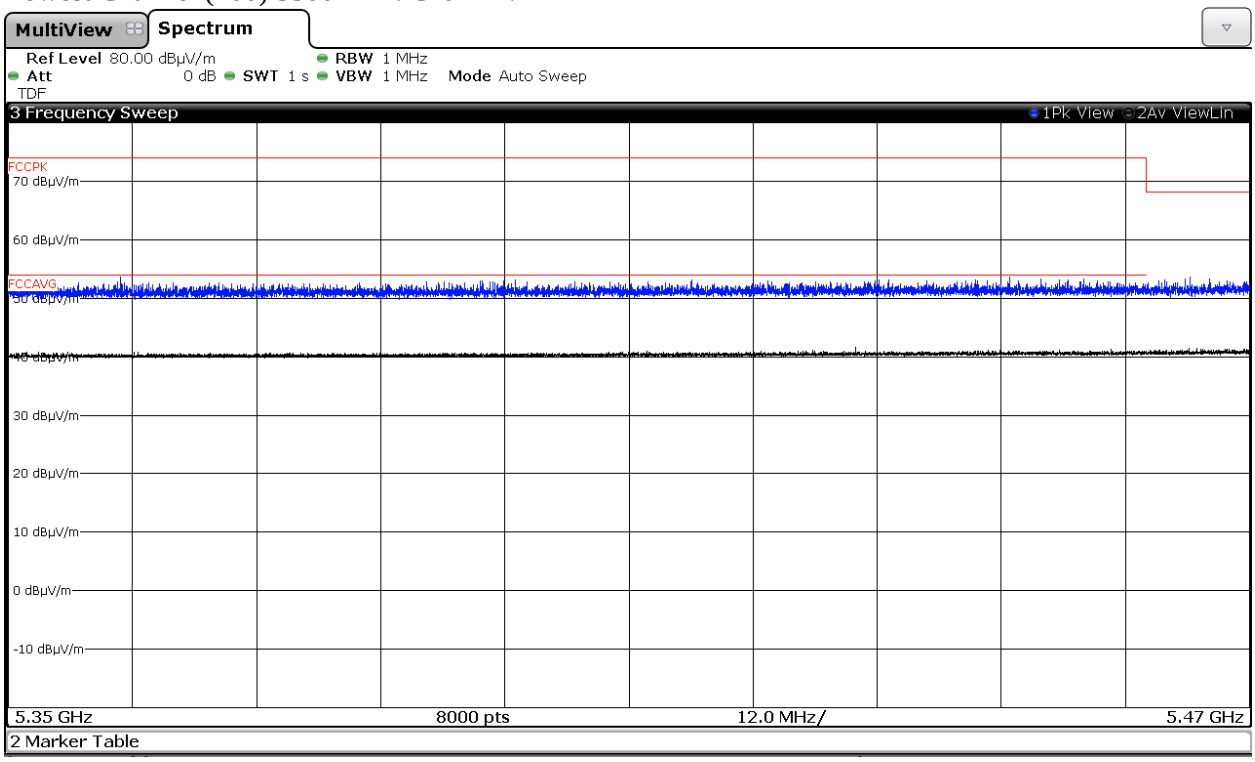


Channel 104. 5520MHz. Chain B.

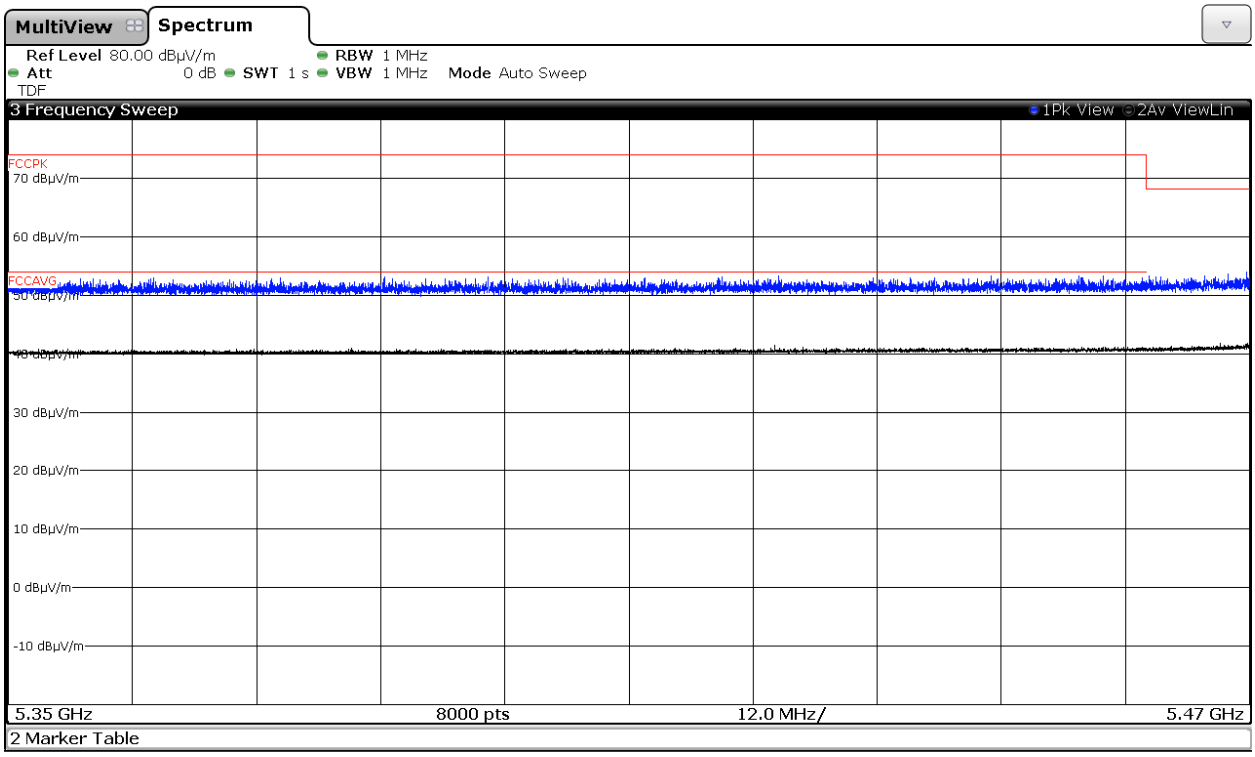


2. WiFi 5GHz 802.11 n20 mode

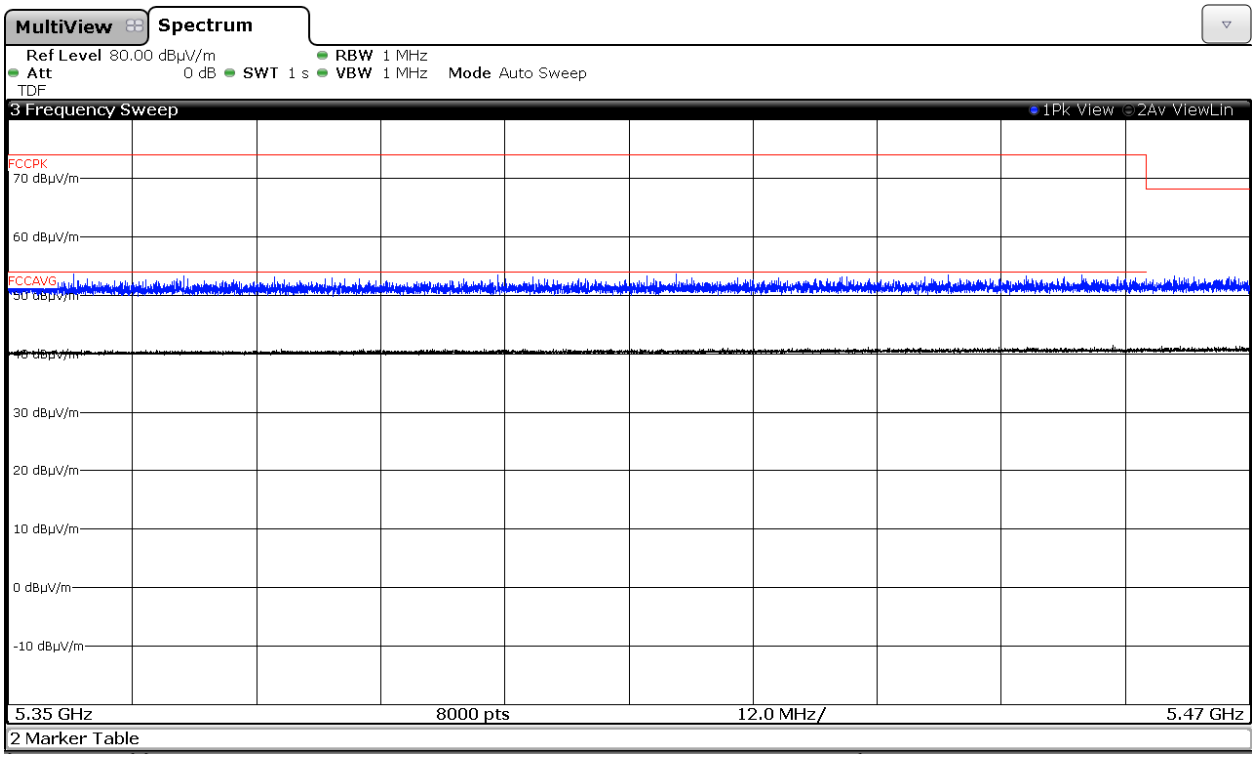
Lowest Channel (100) 5500MHz. Chain A.



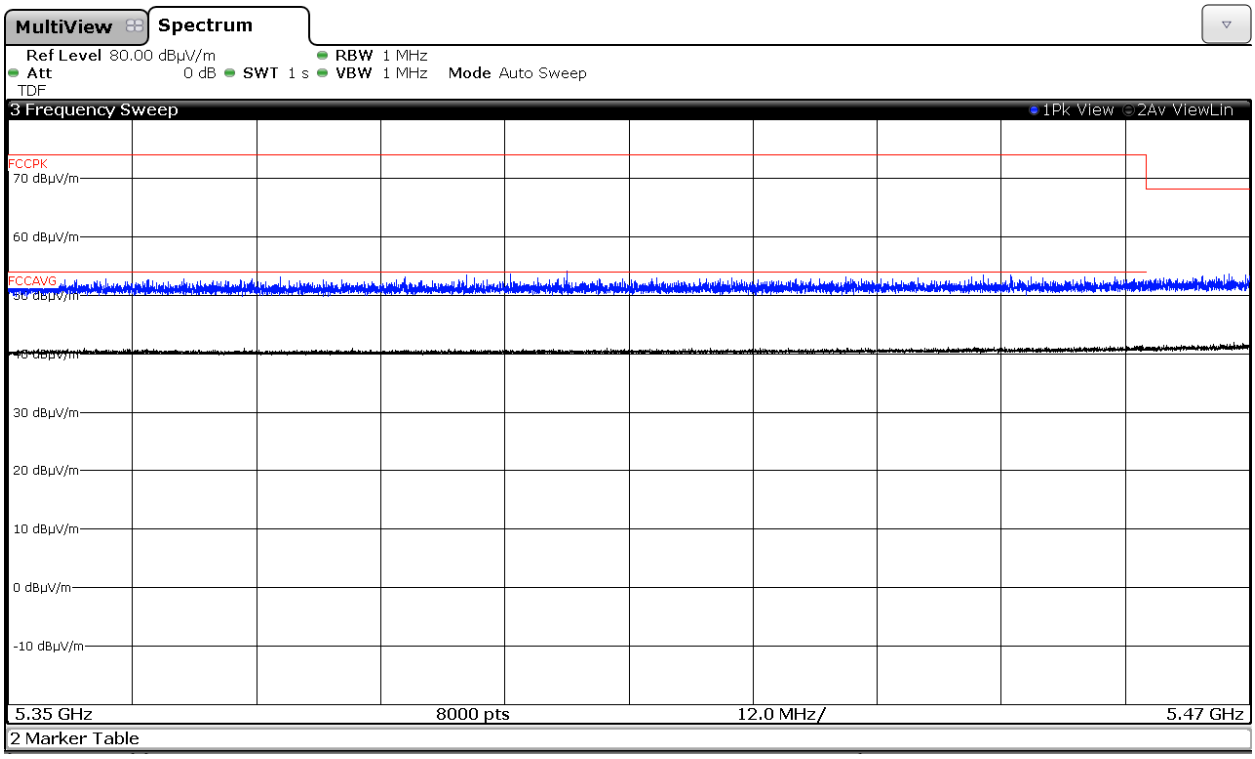
Lowest Channel (100) 5500MHz. Chain B.



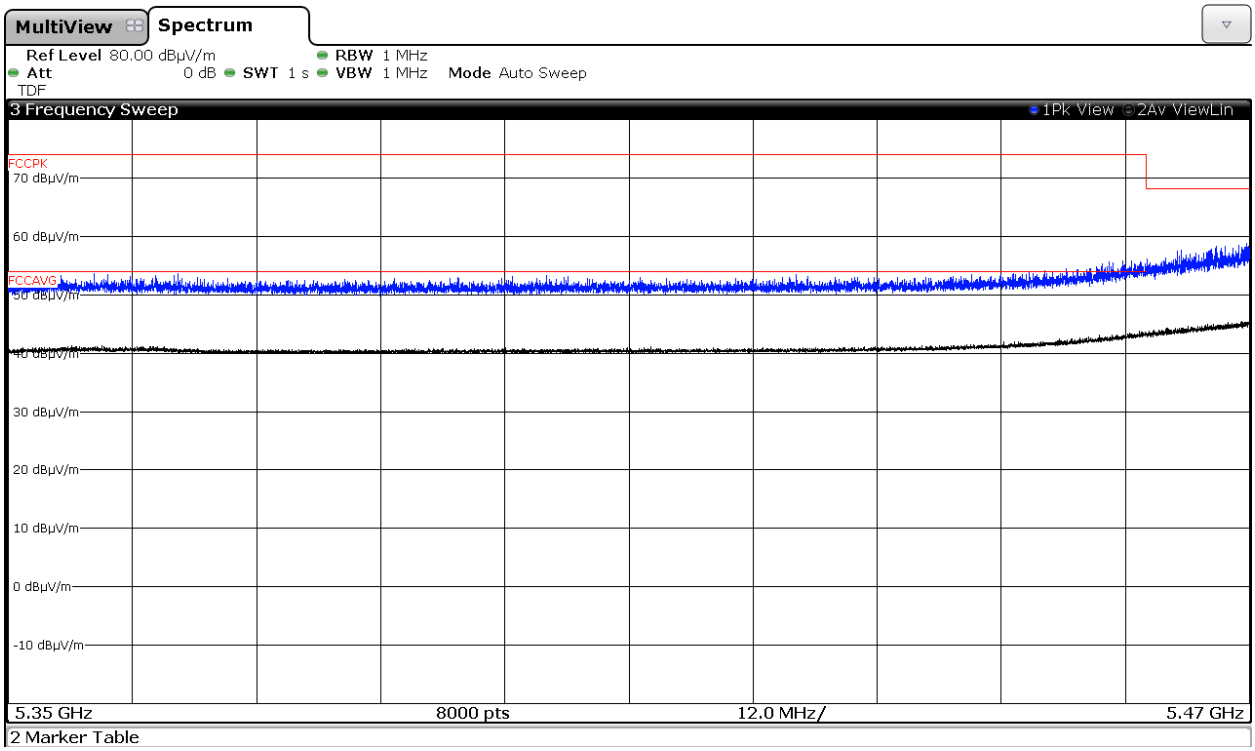
Lowest Channel (100) 5500MHz. Chain A+B.



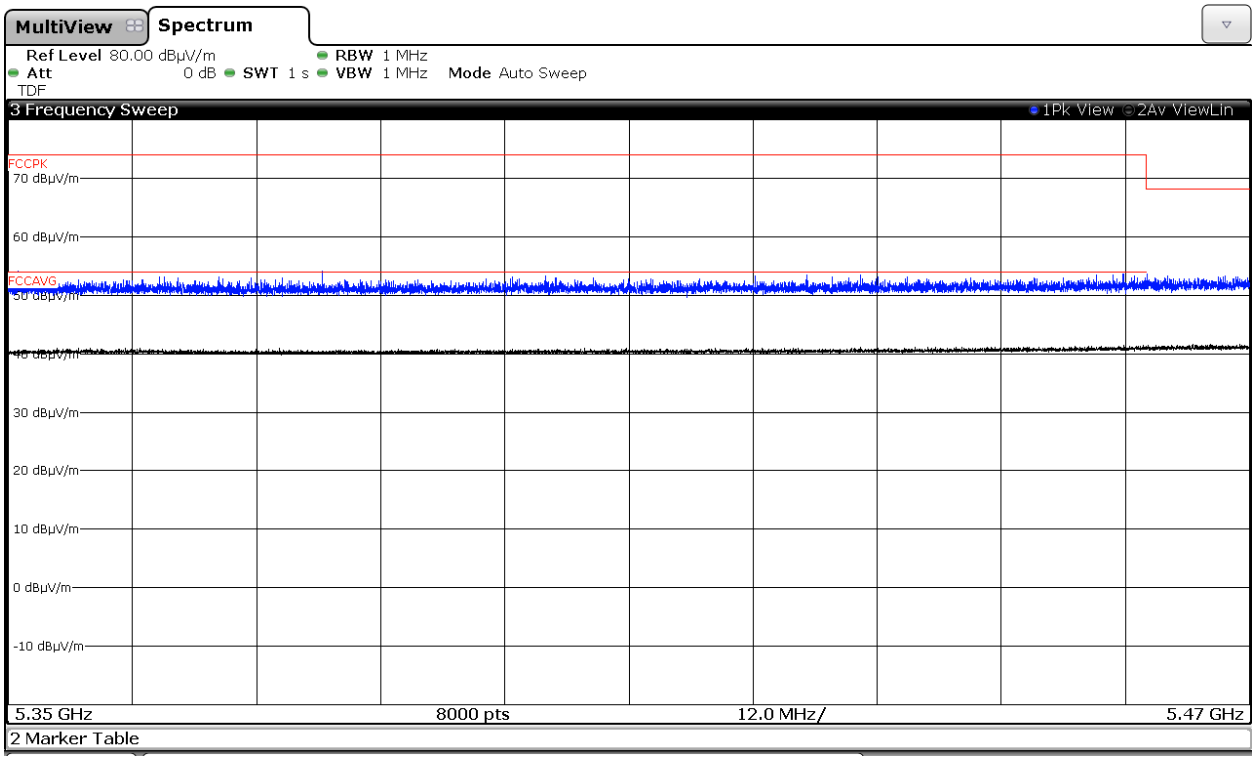
Channel 104. 5520MHz. Chain A.



Channel 104. 5520MHz. Chain B.

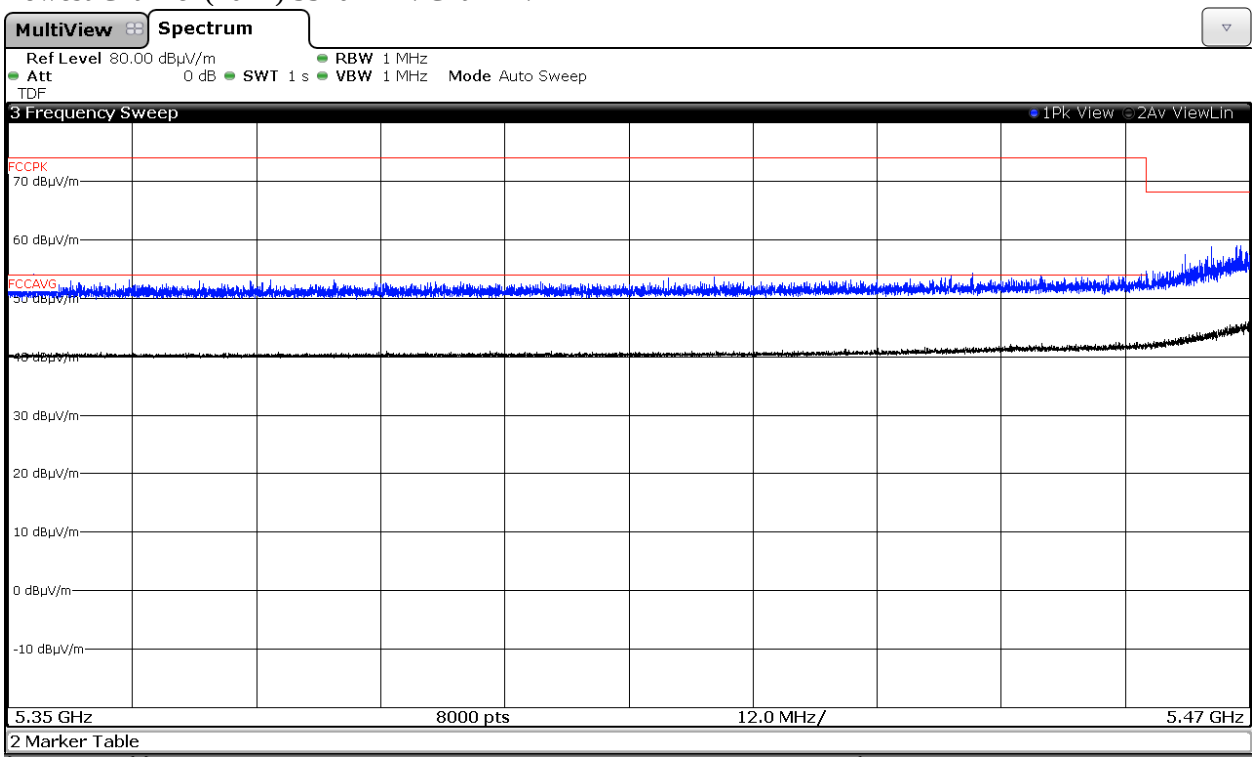


Channel 104. 5520MHz. Chain A+B.

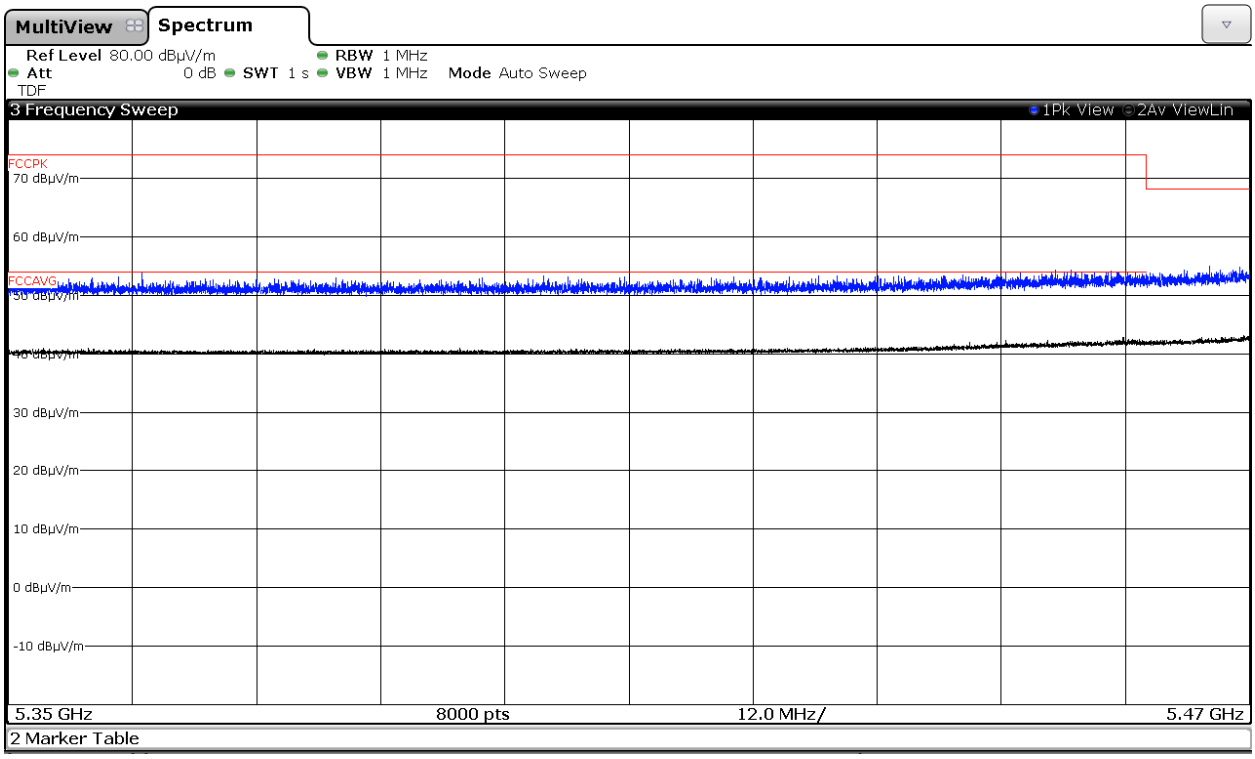


3. WiFi 5GHz 802.11 n40 mode

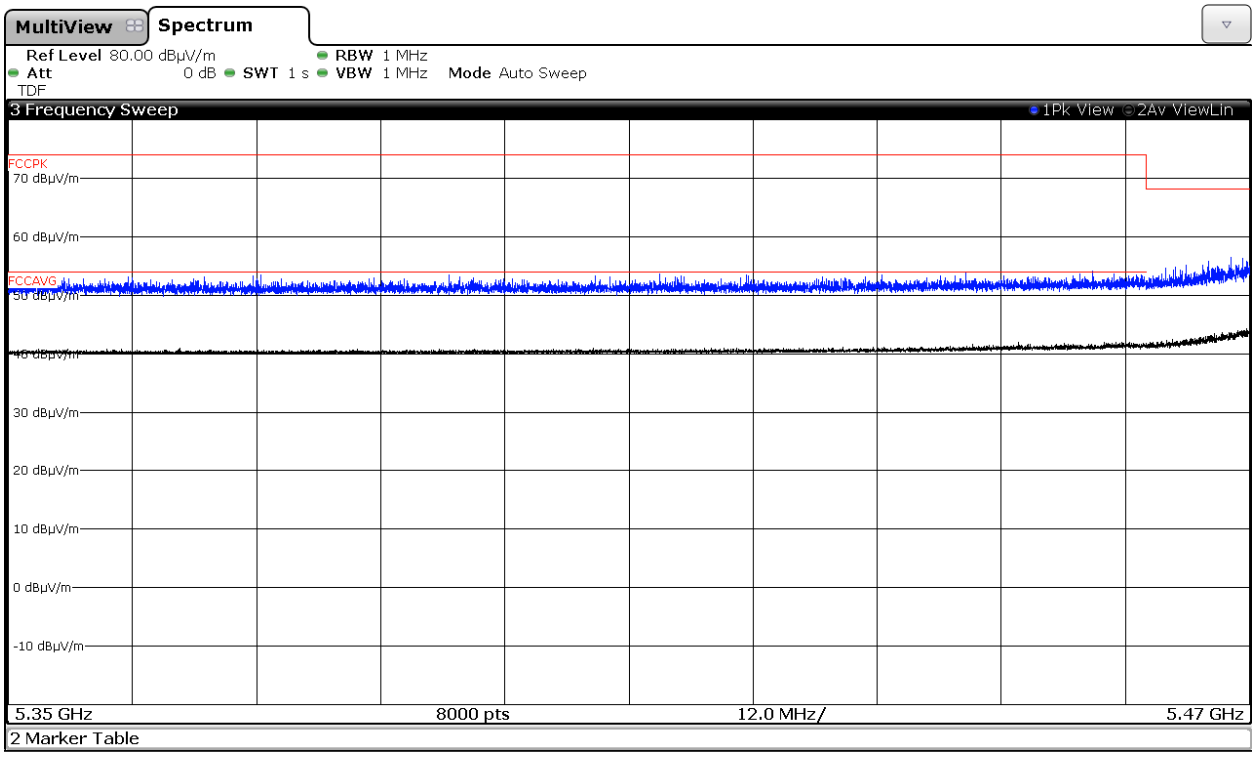
Lowest Channel (102F) 5510MHz. Chain A.



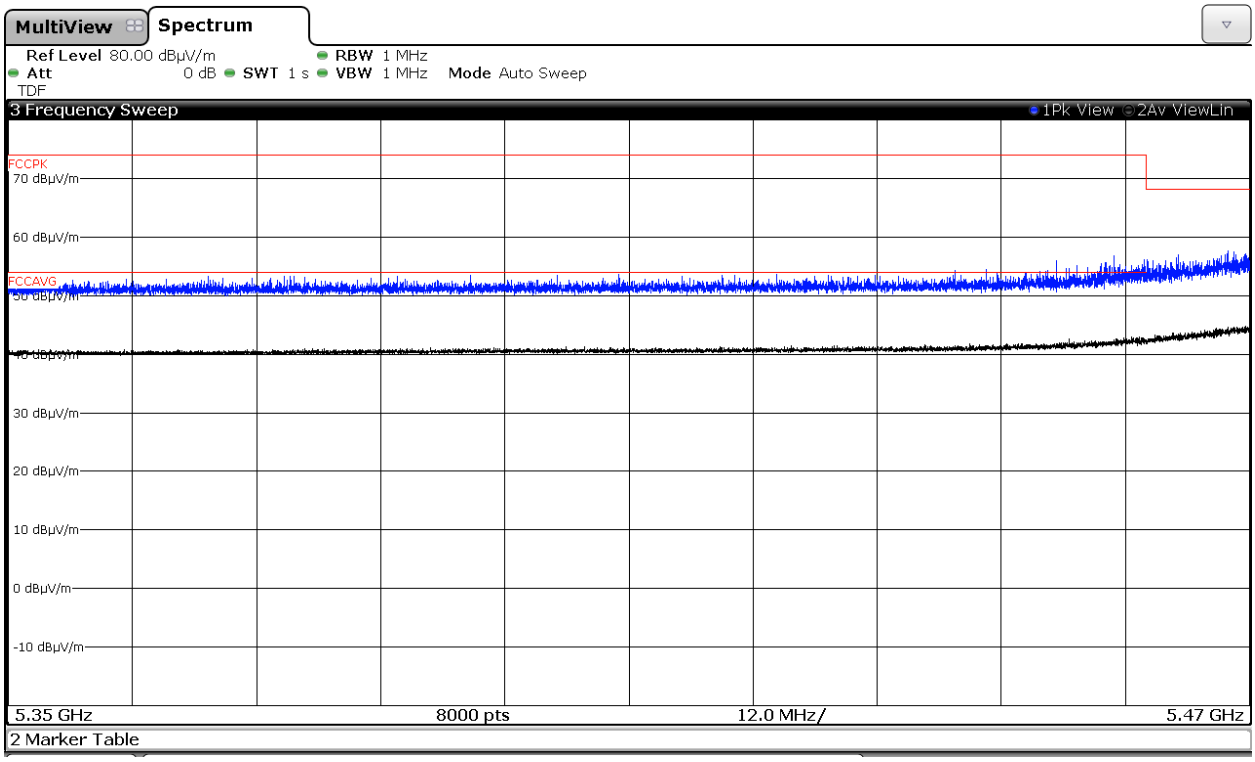
Lowest Channel (102F) 5510MHz. Chain B.



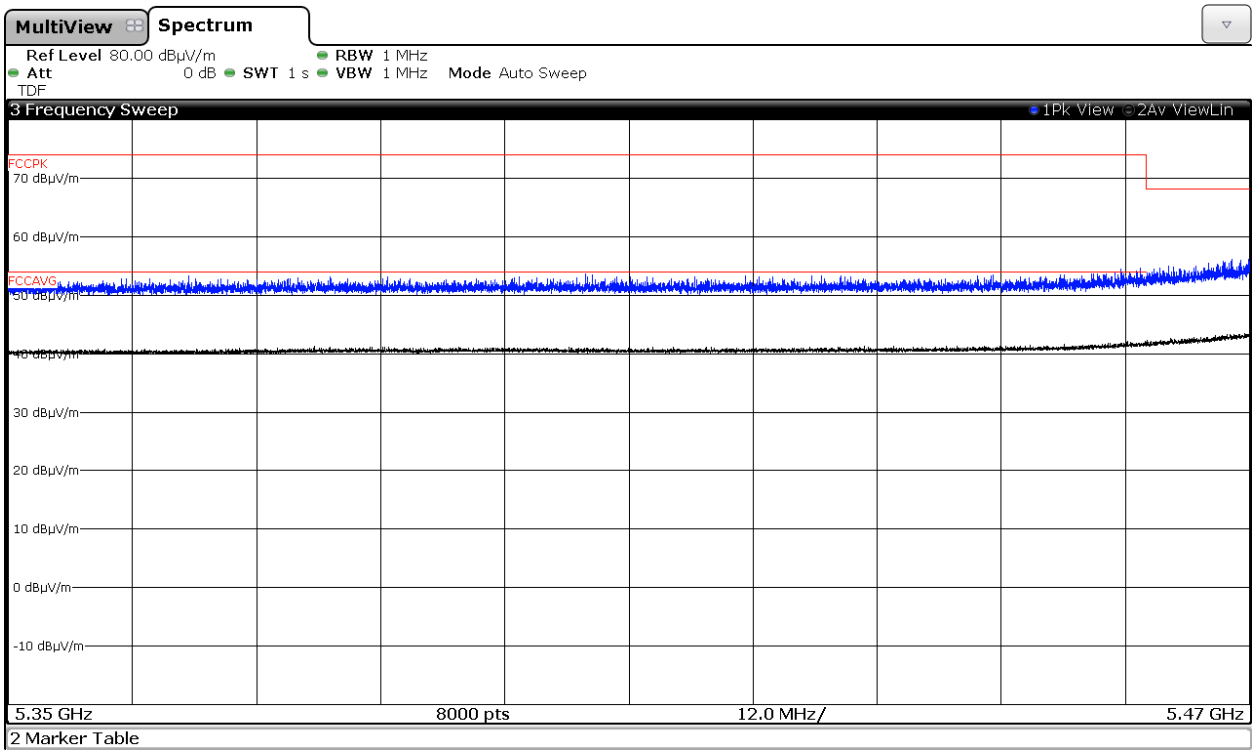
Lowest Channel (102F) 5510MHz. Chain A+B.



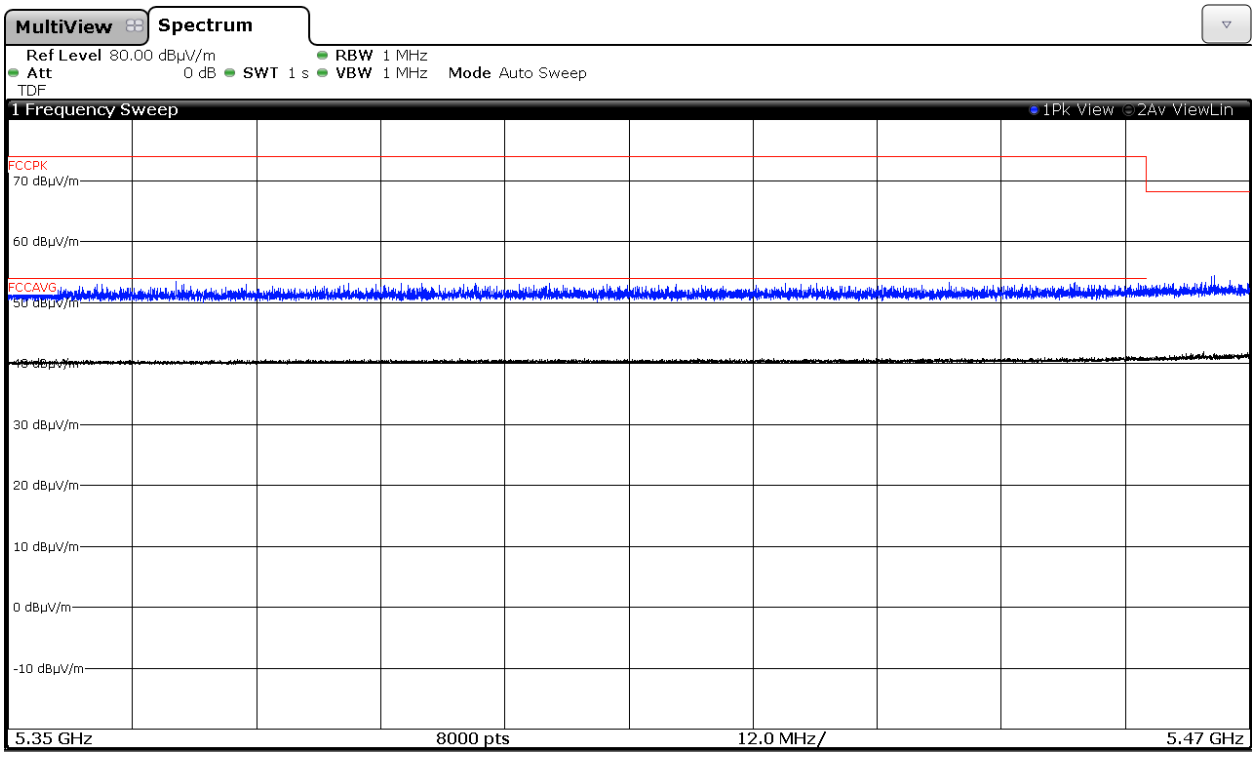
Channel 110F. 5550MHz. Chain A.



Channel 110F. 5550MHz. Chain B.

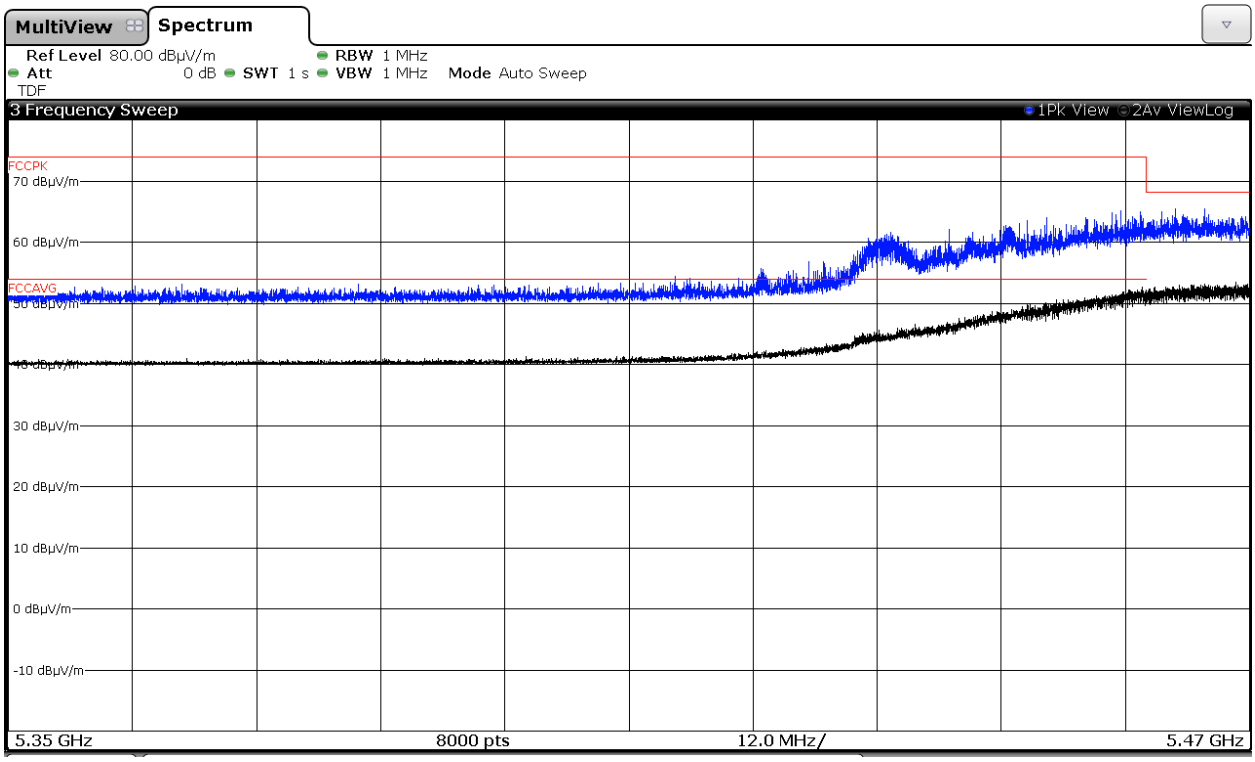


Channel 110F. 5550MHz. Chain A+B.

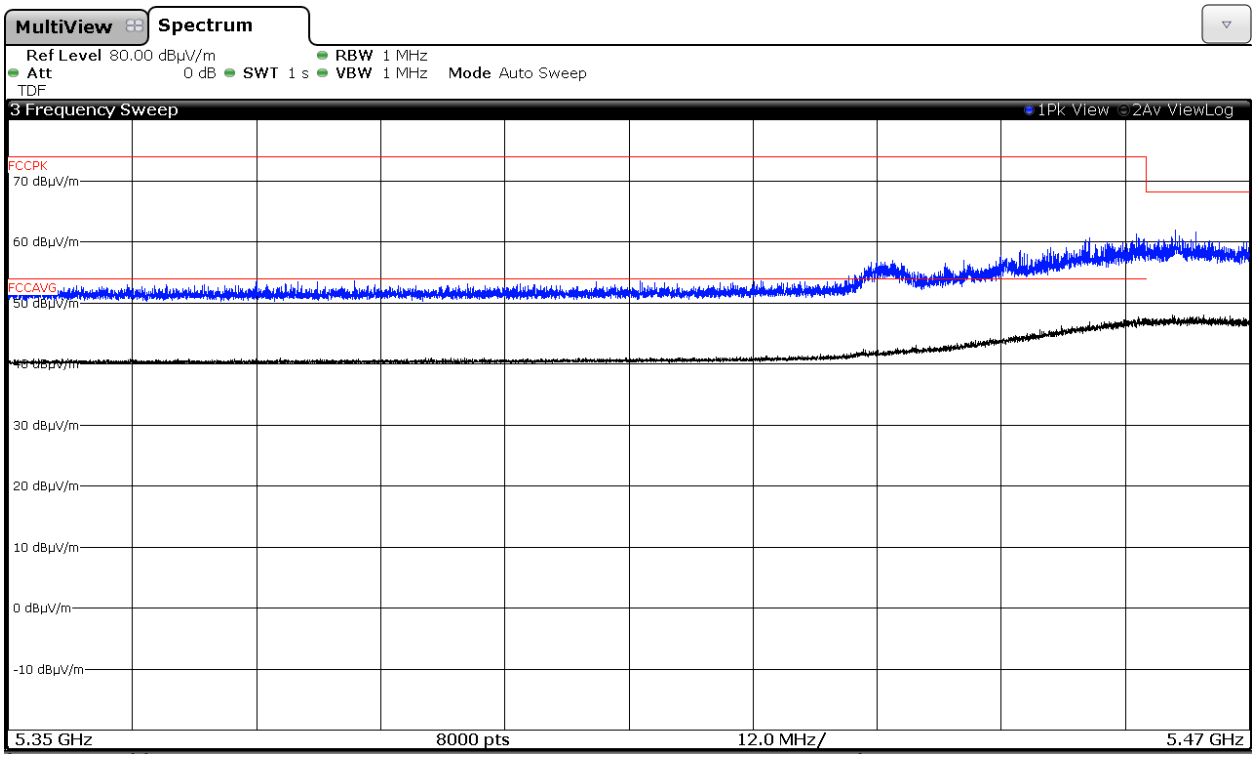


4. WiFi 5GHz 802.11 ac80 mode

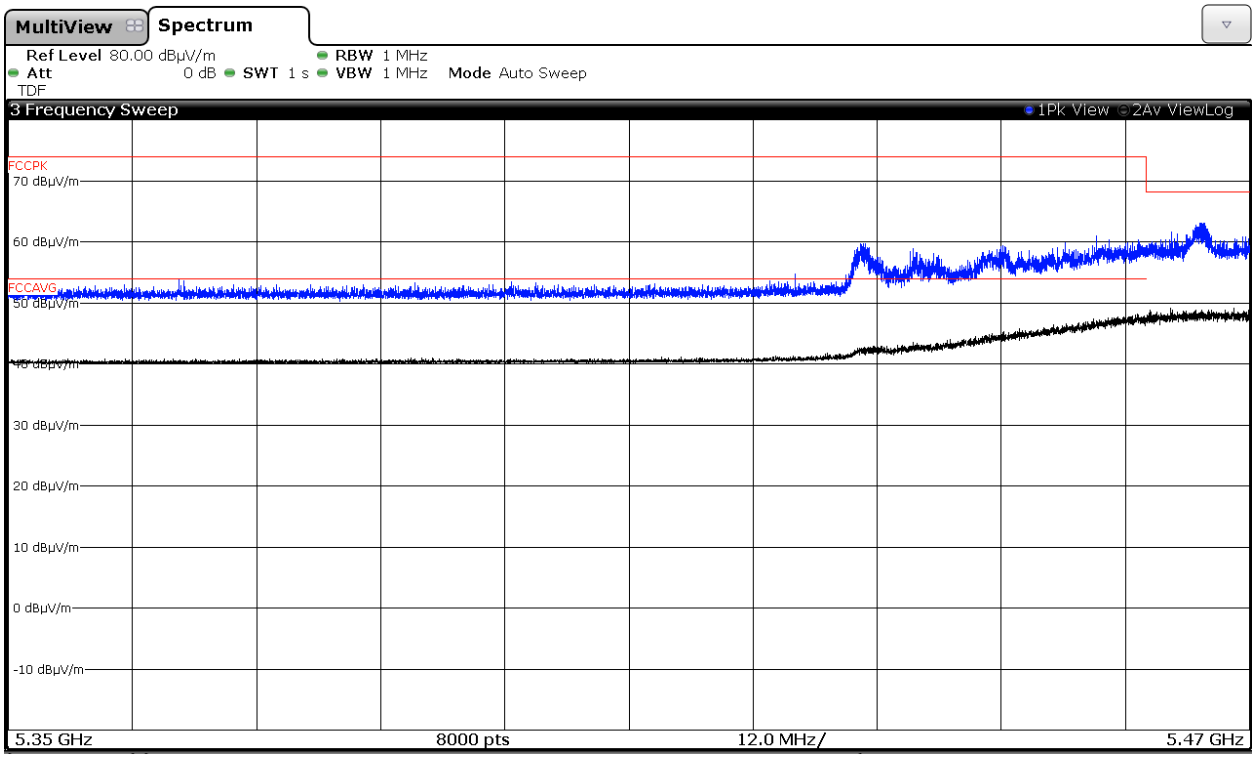
Lowest Channel (106) 5530MHz. Chain A.



Lowest Channel (106) 5530MHz. Chain B.



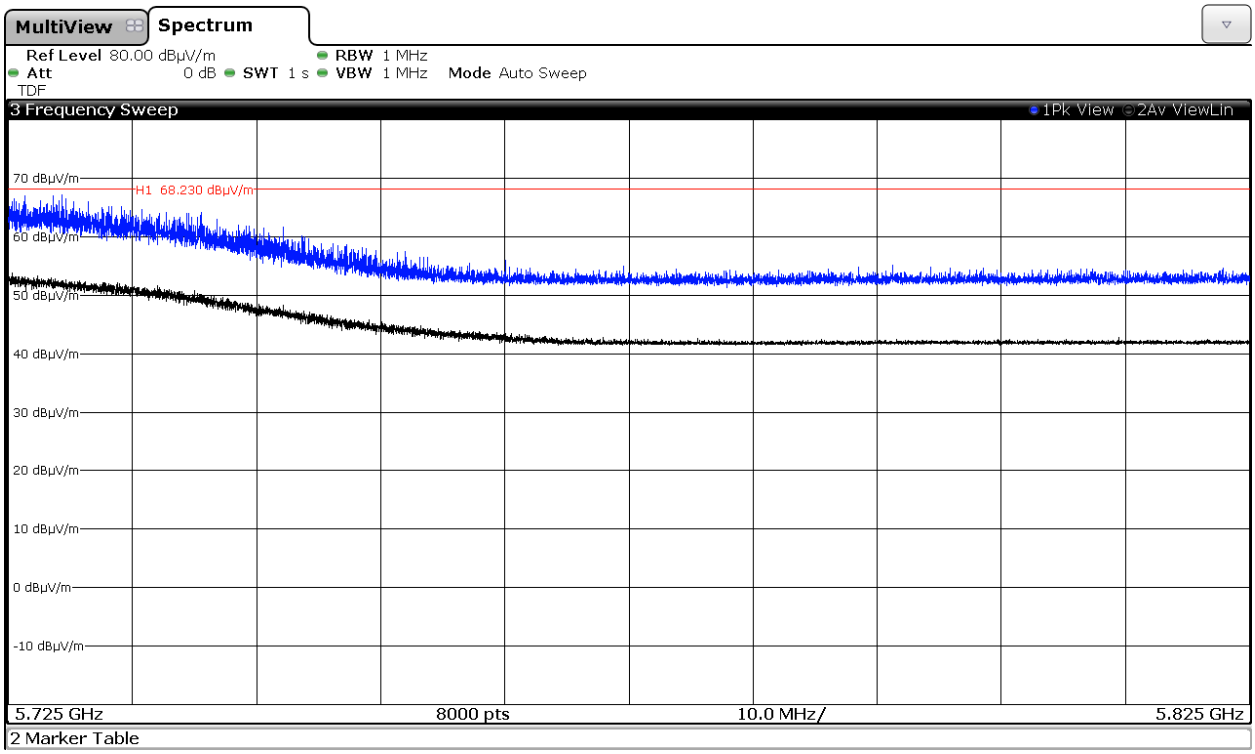
Lowest Channel (106) 5530MHz. Chain A+B.



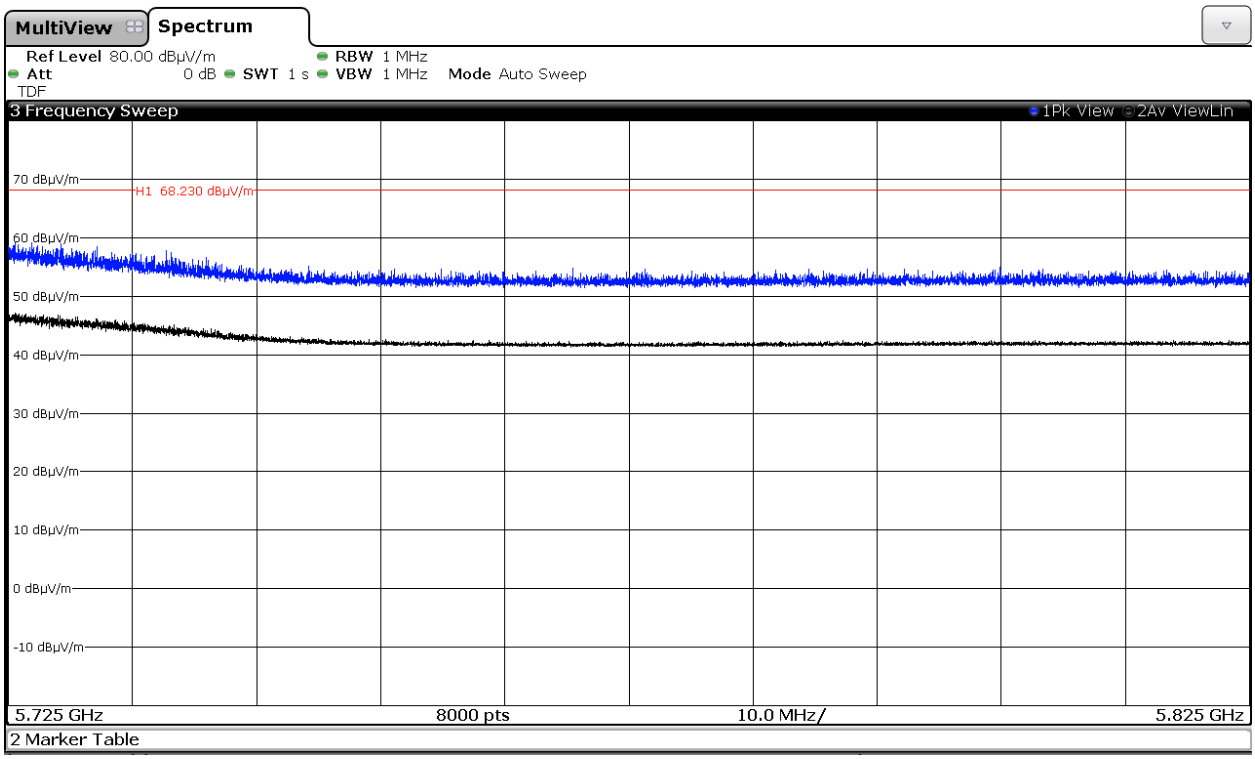
Radiated spurious emissions at band-edges and inside adjacent band 5.725 – 5.825 GHz.

1. WiFi 5GHz 802.11 a mode

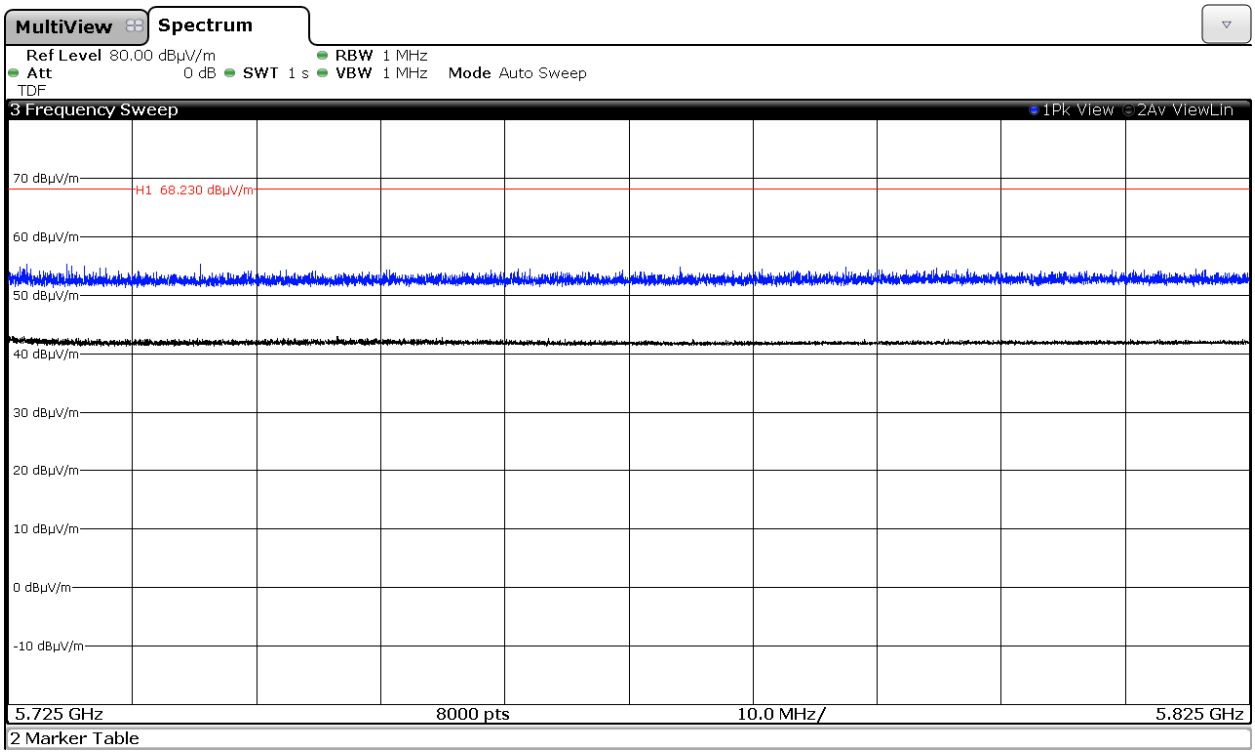
Channel 136. 5680MHz. Chain A.



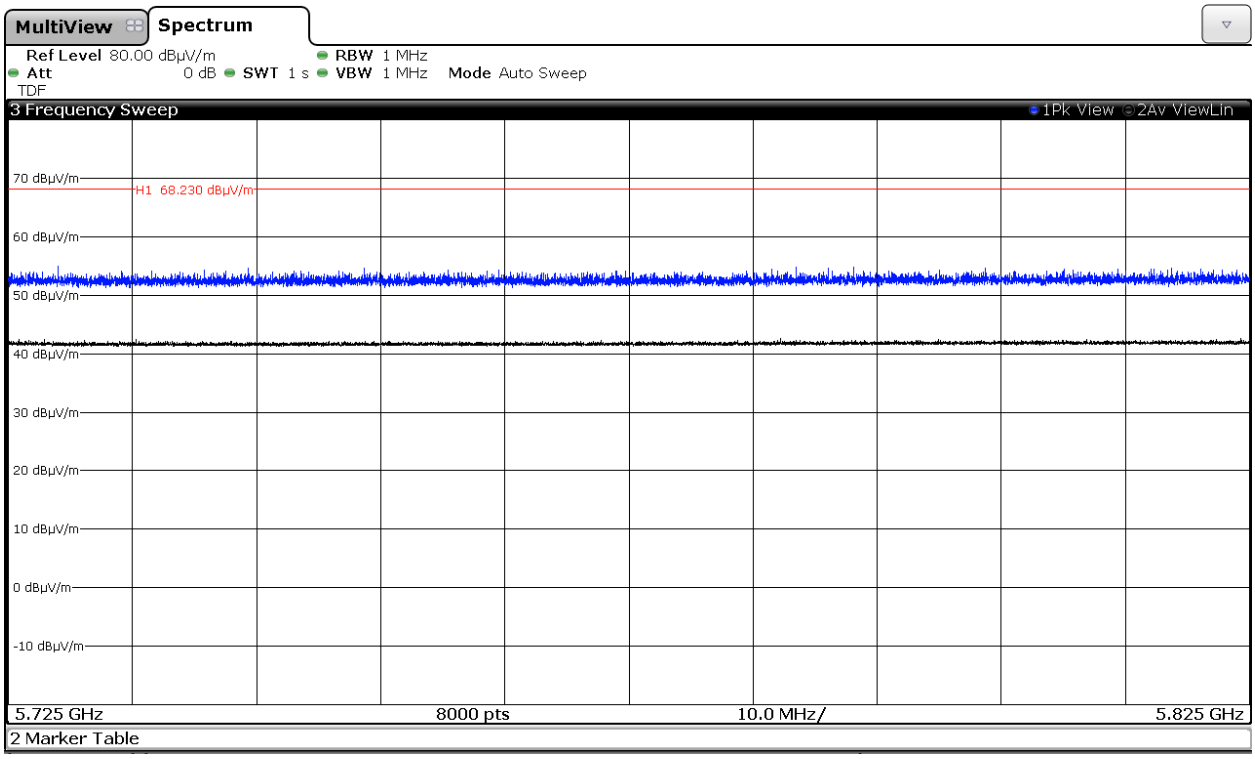
Channel 136. 5680MHz. Chain B.



Highest Channel (140) 5700 MHz. Chain A.

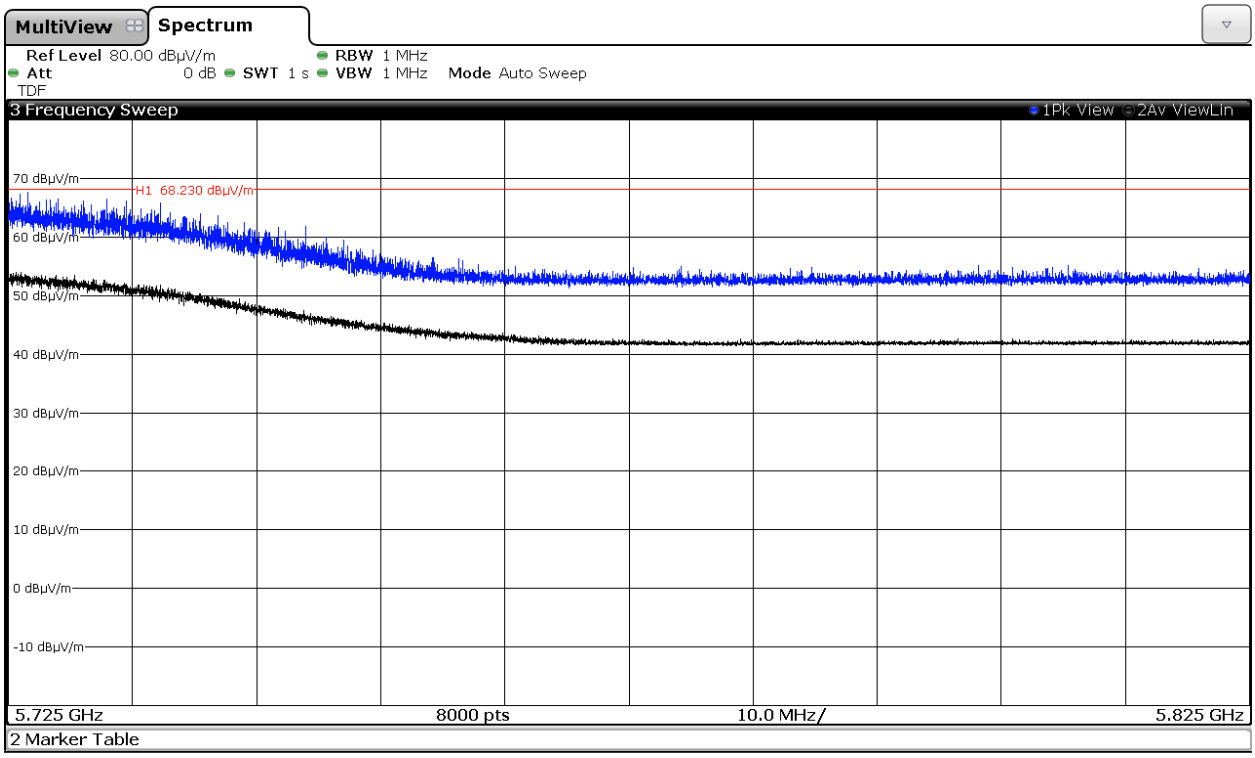


Highest Channel (140) 5700 MHz. Chain B.

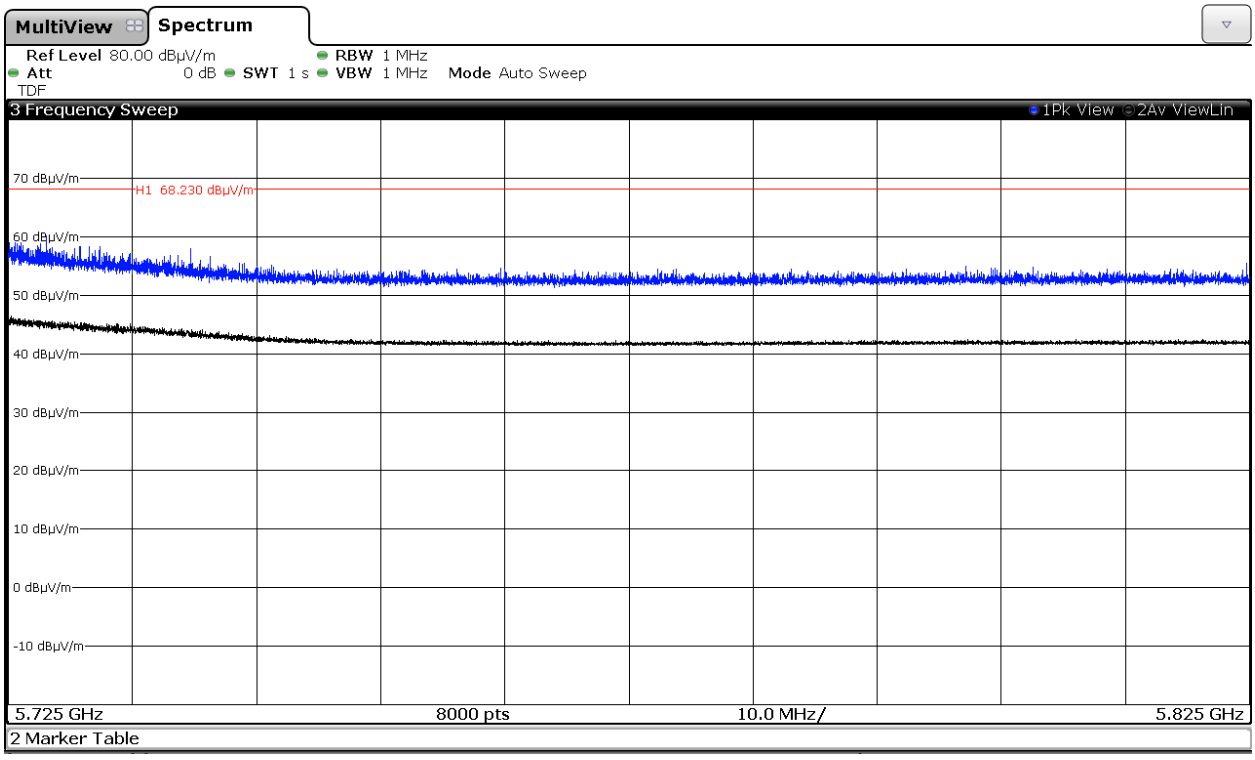


2. WiFi 5GHz 802.11 n20 mode

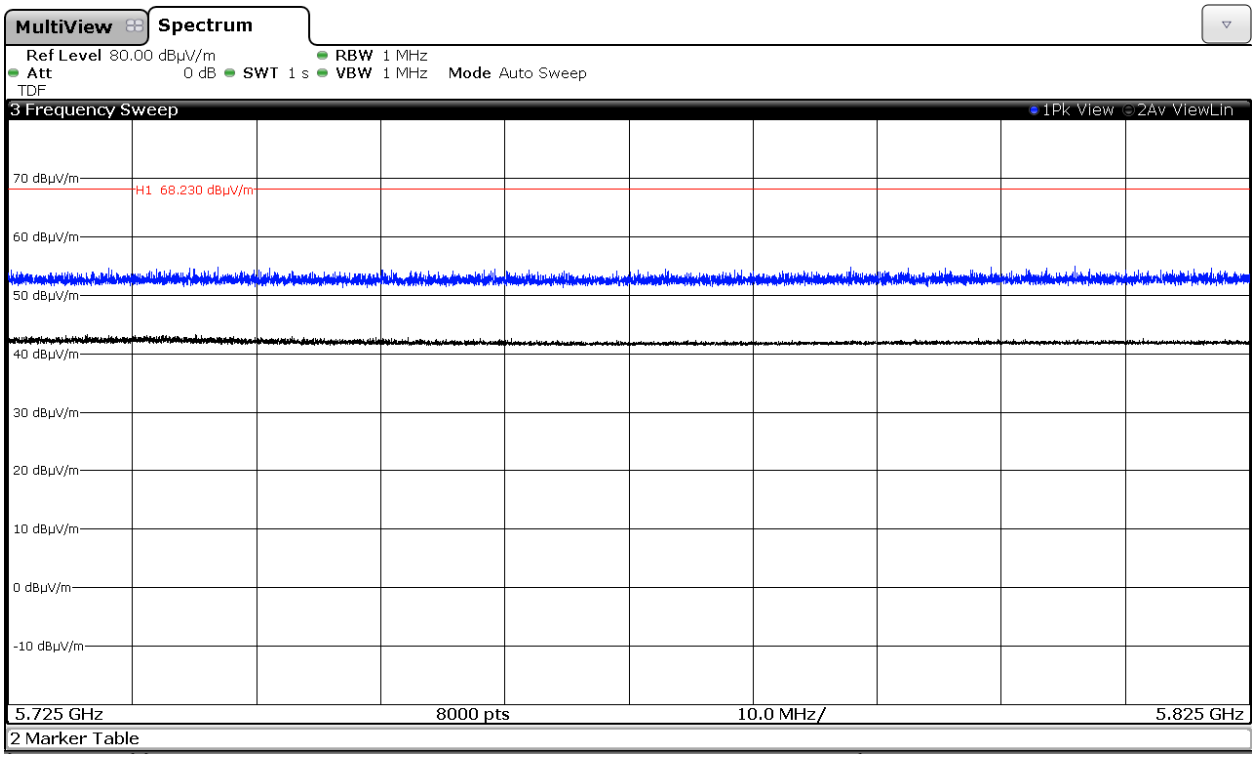
Channel 136. 5680MHz. Chain A.



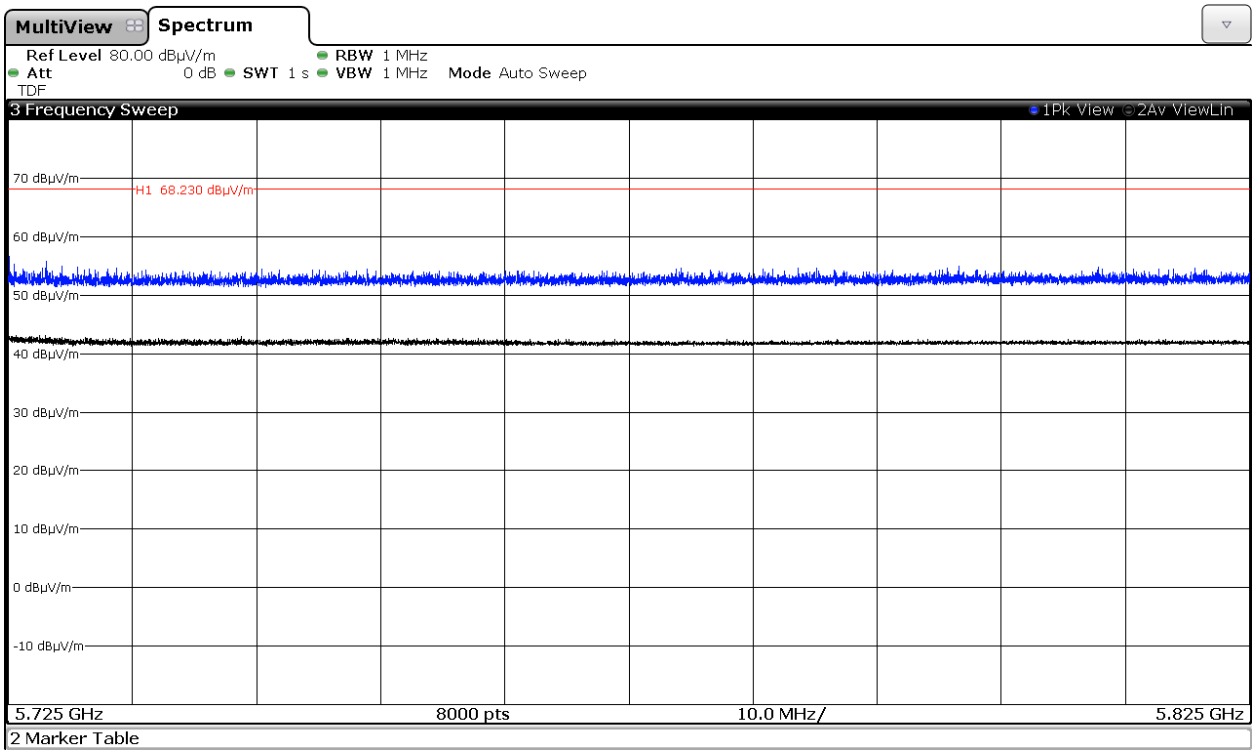
Channel 136. 5680MHz. Chain B.



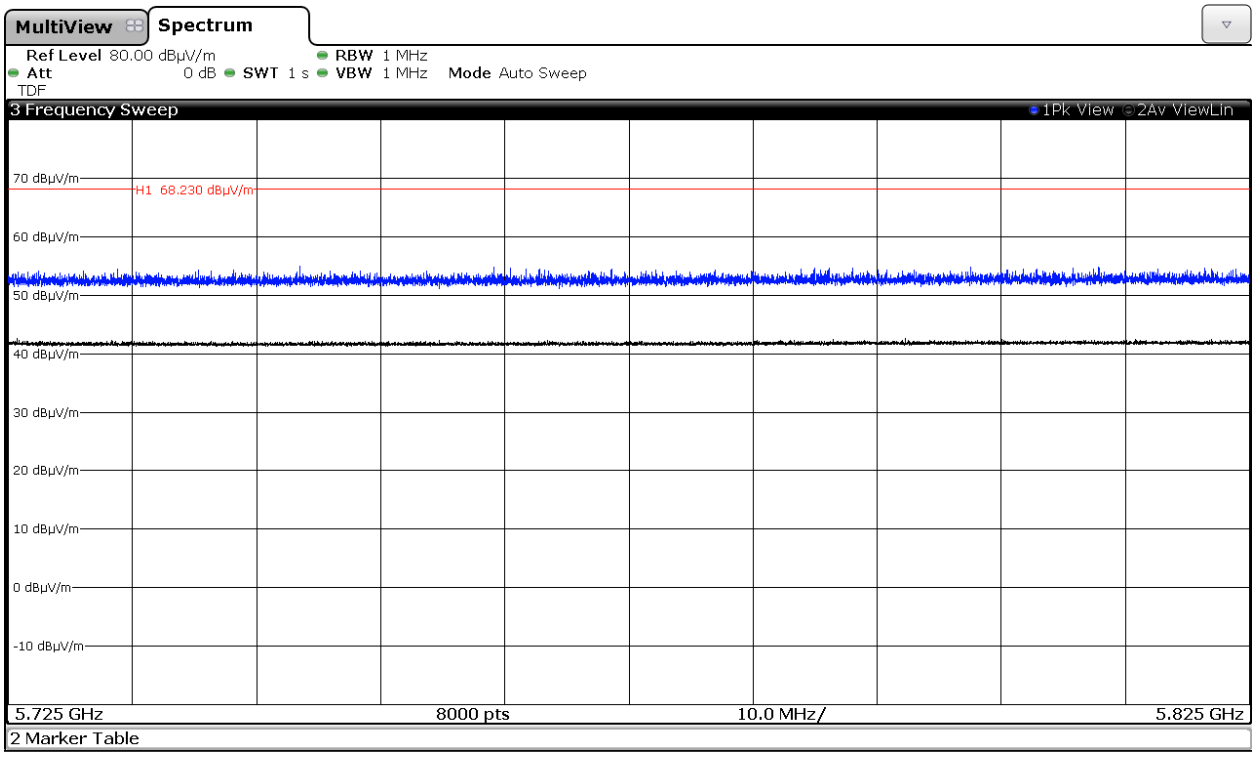
Channel 136. 5680MHz. Chain A+B.



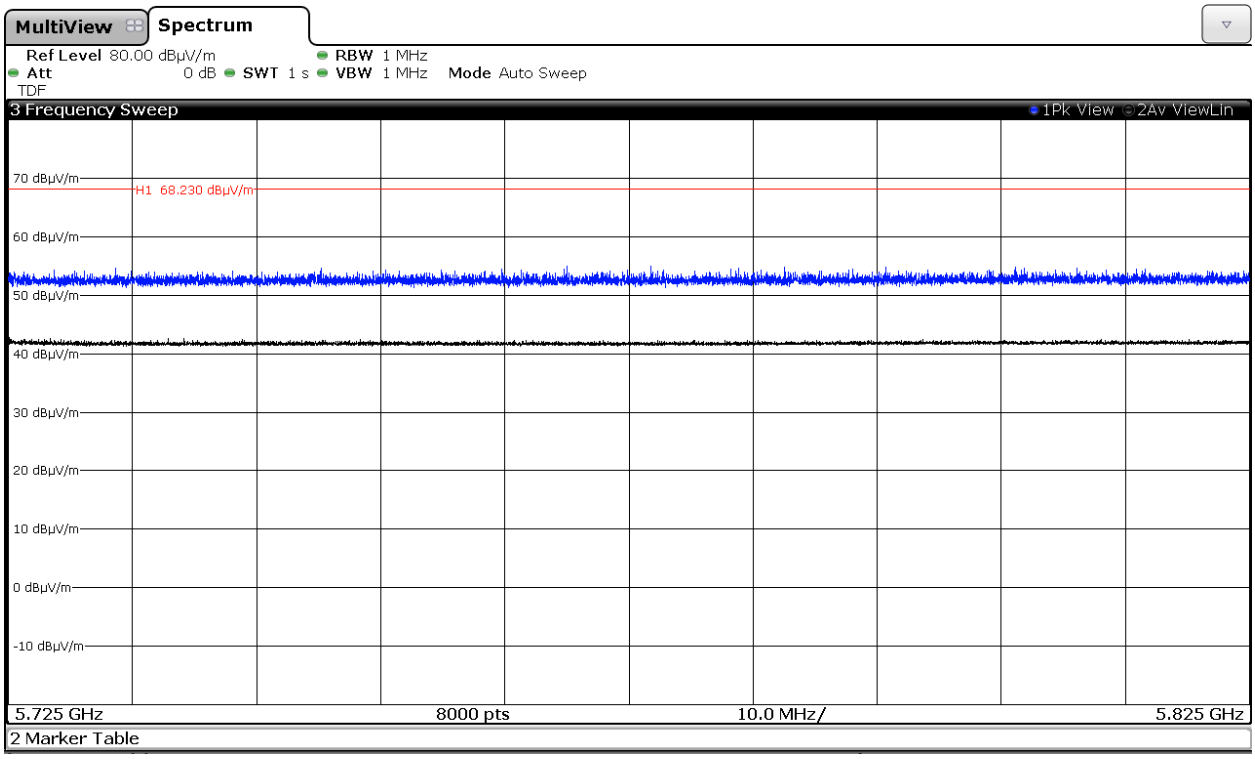
Highest Channel (140) 5700 MHz. Chain A.



Highest Channel (140) 5700 MHz. Chain B.

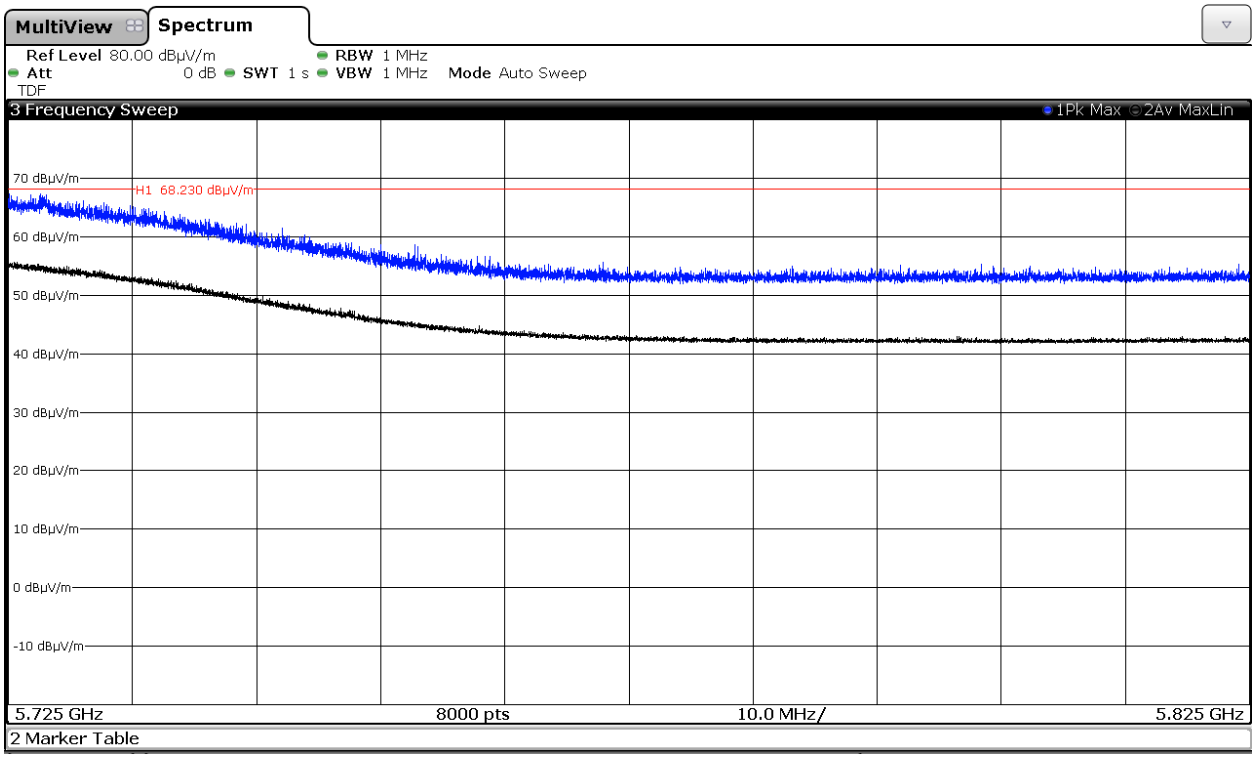


Highest Channel (140) 5700 MHz. Chain A+B.

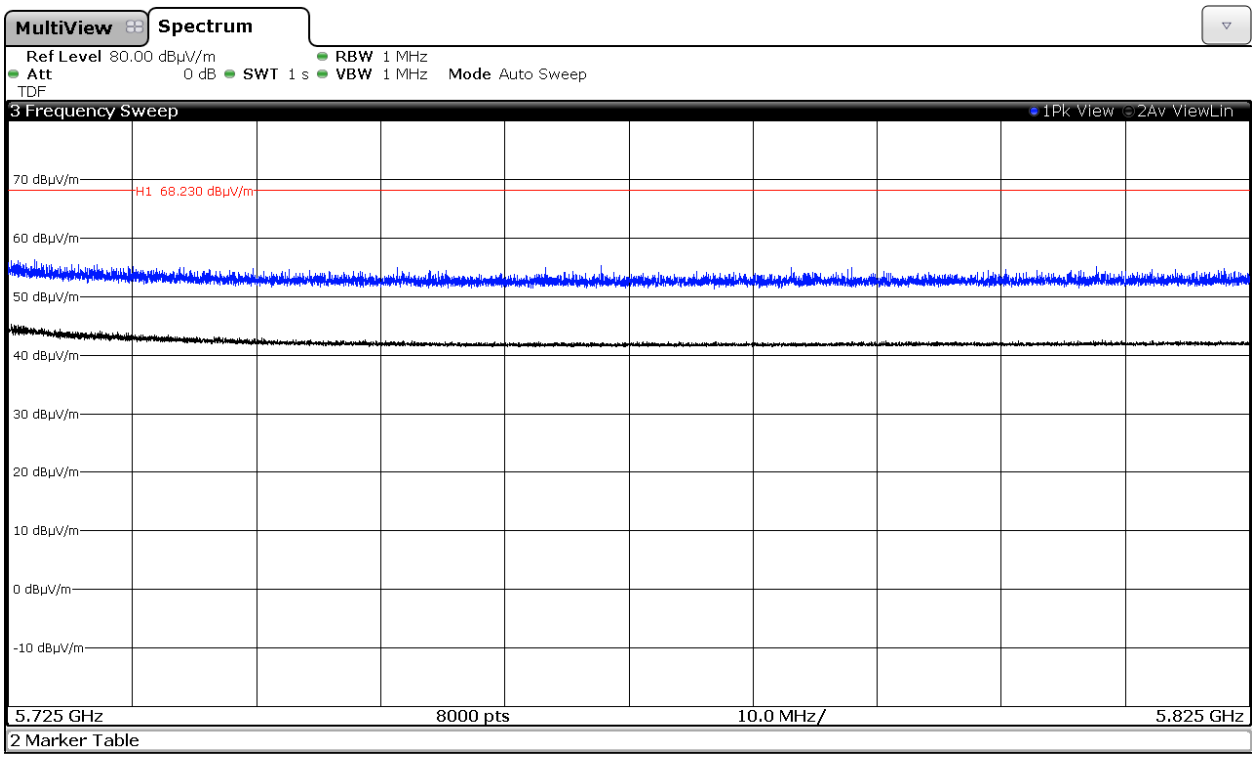


3. WiFi 5GHz 802.11 n40 mode

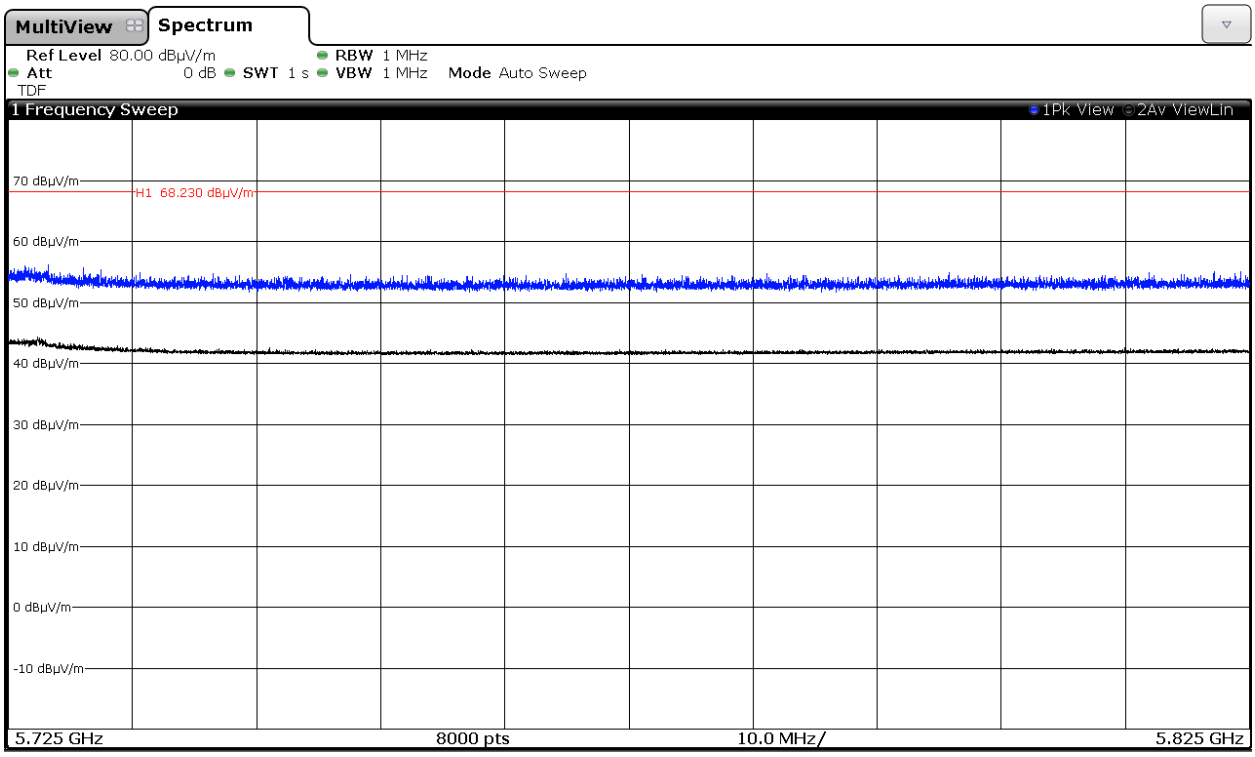
Highest Channel (134) 5670 MHz. Chain A.



Highest Channel (134) 5670 MHz. Chain B.

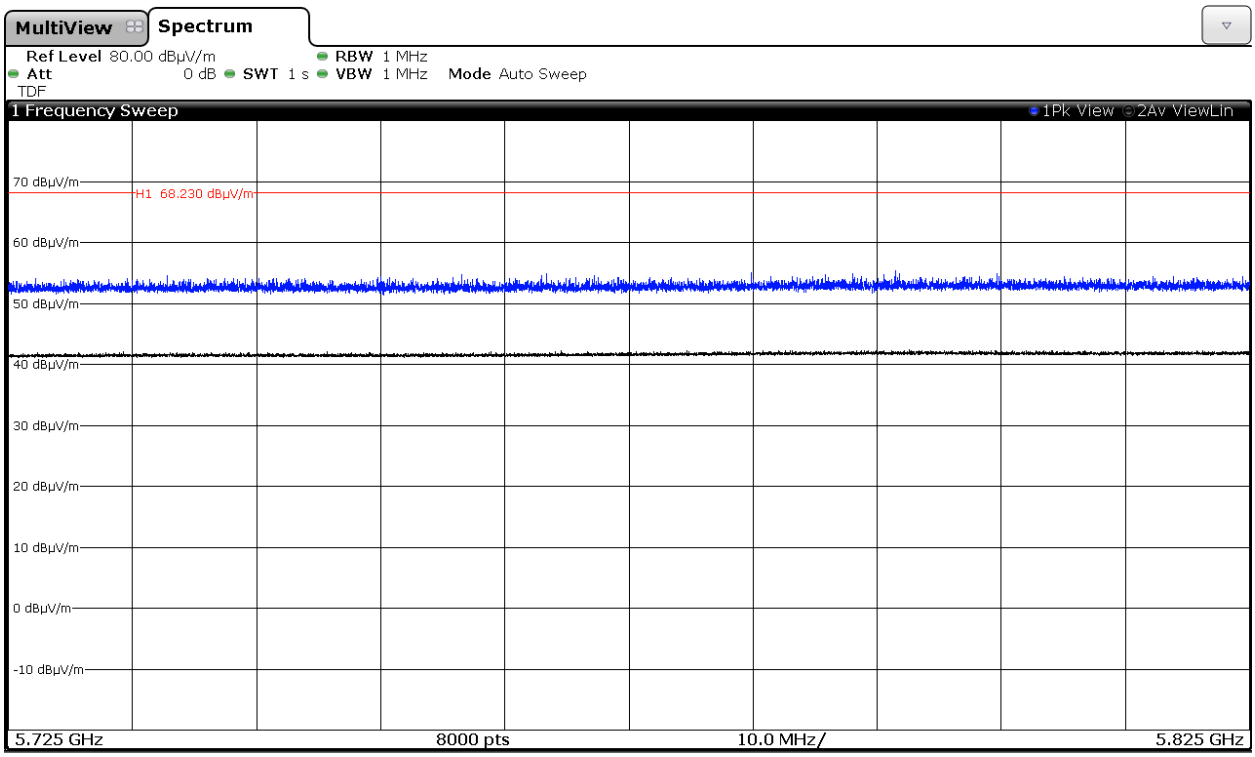


Highest Channel (134) 5670 MHz. Chain A+B.

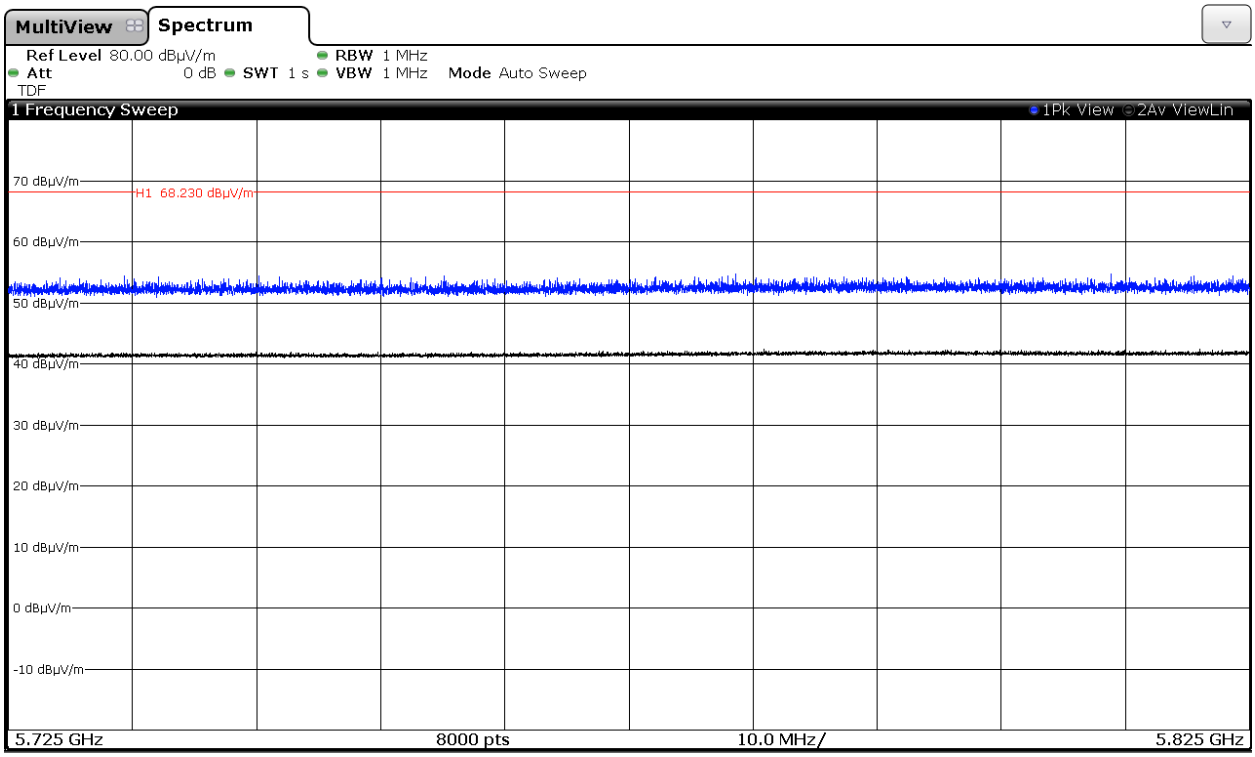


4. WiFi 5GHz 802.11 ac80 mode

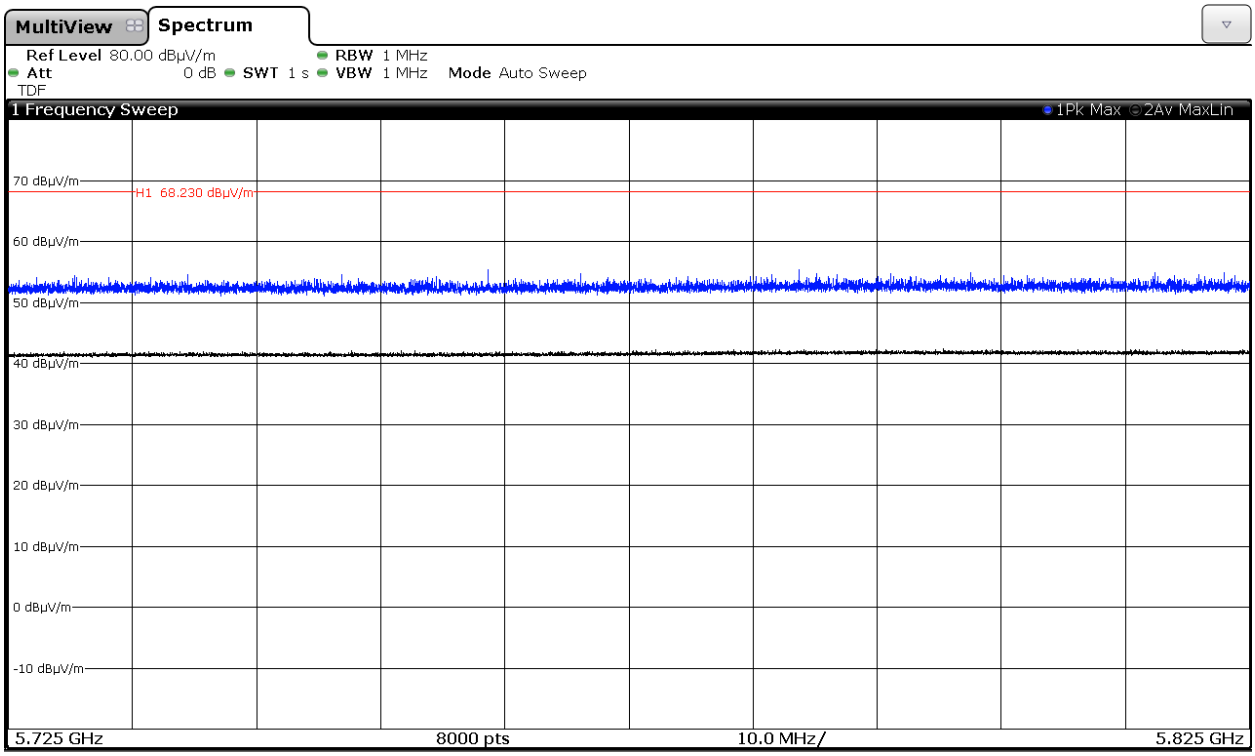
Middle Channel (122) 5610 MHz. Chain A.



Middle Channel (122) 5610 MHz. Chain B.



Middle Channel (122) 5610 MHz. Chain A+B.



Summary

Considering the results of the performed test according to standard USA FCC Parts 15.407, and 15.209 / RSS-210, the item under test is **IN COMPLIANCE** with the requested specifications specified in the standard.

NOTE: The results presented in this Test Report apply only to the particular item under test established in page 1 of this document, as presented for test on the date(s) shown in section, "USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS".

Remarks and comments

1: The calculated E.I.R.P. is less than 500 mW (27 dBm) and therefore a TPC mechanism is not required and requirement 15.407 (h) (1) / RSS-210 A9.2. (2), (3). "Transmit Power Control (TPC)" is not applicable.

2: The compliance with requirement 15.407 (g) "Frequency stability" is checked through a description of how this requirement is met that is provided by the applicant.

3: Compliance with requirement 15.407 (h) (2) / RSS-210 A9.2. (2), (3). Dynamic Frequency Selection (DFS) is shown in separate test report 44948RRF.004.

List of equipment used during the test

Conducted Measurements

		Last Cal. date	Cal. due date
1.	Spectrum Analyzer Agilent E4440A	2012/04	2014/04
2.	Spectrum analyser Rohde & Schwarz FSW50	2013/10	2015/10
3.	Universal Power Meter R&S NRP-Z11	2012/12	2014/12
4.	Signal Analyzer R&S FSQ8	2012/04	2014/04

Radiated Measurements

		Last Cal. date	Cal. due date
1.	Semianechoic Absorber Lined Chamber IR 11. BS	N.A.	N.A.
2.	Control Chamber IR 12.BC	N.A.	N.A.
3.	Hybrid Bilog antenna Sunol Sciences Corporation JB6	2011/05	2014/05
4.	Antenna mast EM 1072 NMT	N.A.	N.A.
5.	Rotating table EM 1084-4. ON	N.A.	N.A.
6.	Double-ridge Guide Horn antenna 1-18 GHz HP 11966E	2011/05	2014/05
7.	Double-ridge Guide Horn antenna 18-40 GHz Agilent 119665J	2011/09	2014/09
8.	EMI Test Receiver R&S ESPI3	2013/12	2015/12
9.	RF pre-amplifier Miteq JS4-12002600-30-5A.	2012/07	2014/07
10.	Multi Device Controller EMCO 2090	N.A.	N.A.
11.	Spectrum analyser Rohde & Schwarz FSW50	2013/10	2015/10
12.	RF pre-amplifier Miteq AFS5-04001300-15-10P-6.	2012/07	2014/07
13.	RF pre-amplifier Schaffner CPA 9231.	2013/06	2015/06
14.	RF pre-amplifier Schwarzbeck BBV 9718	2014/02	2015/02