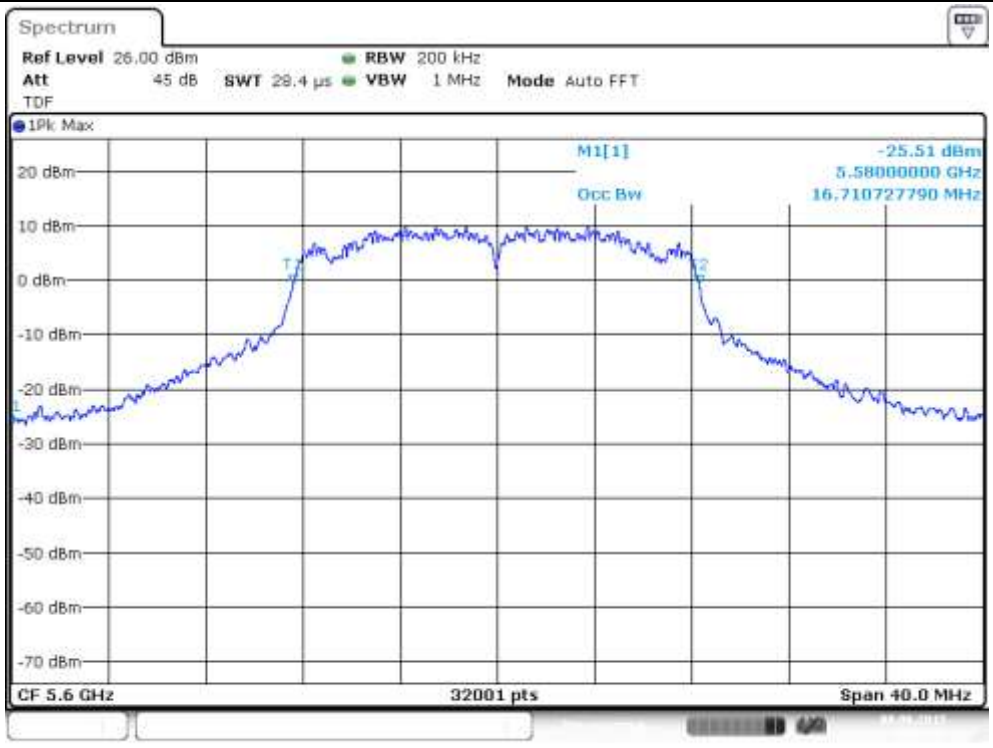
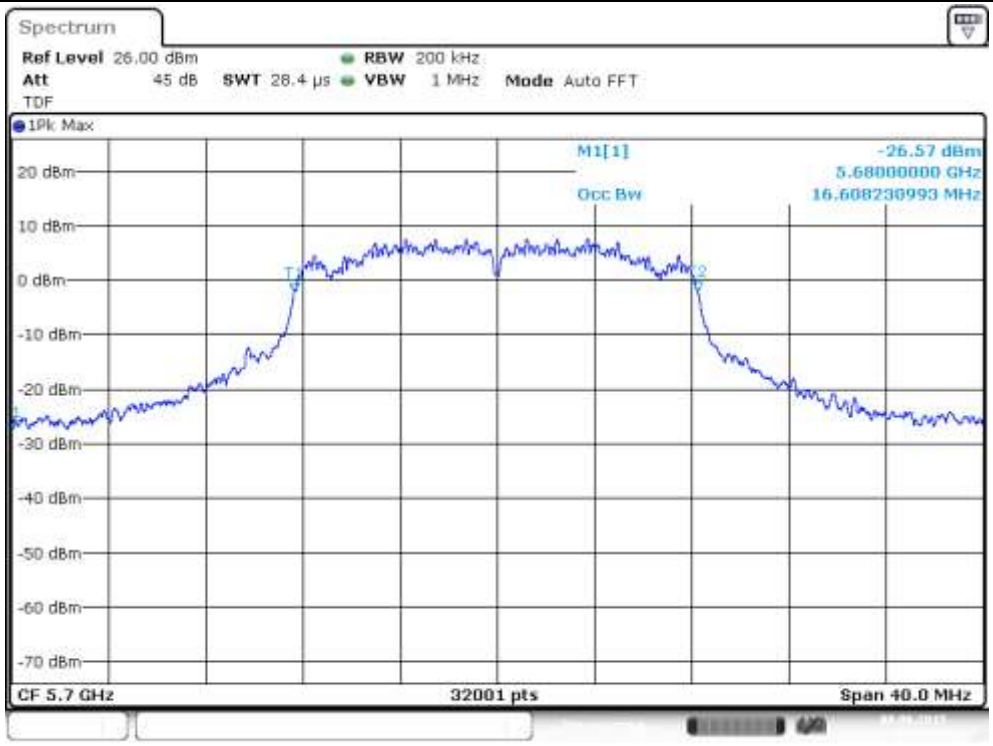
26dB BW – CH120

99% BW – CH120



26dB BW – CH140

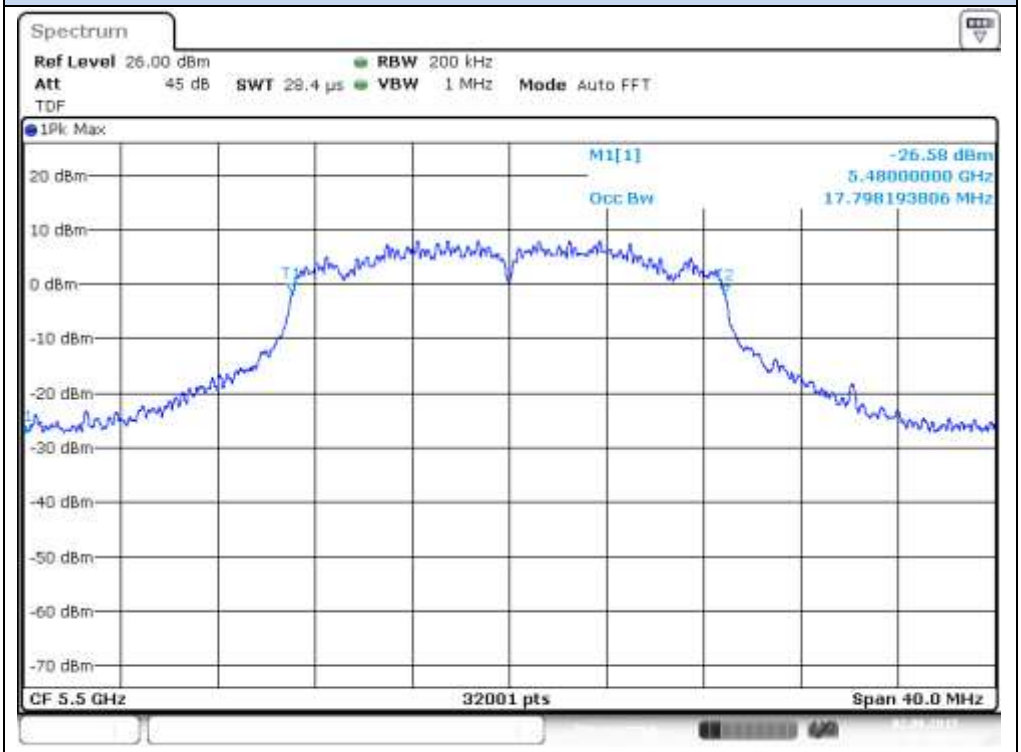
99% BW – CH140



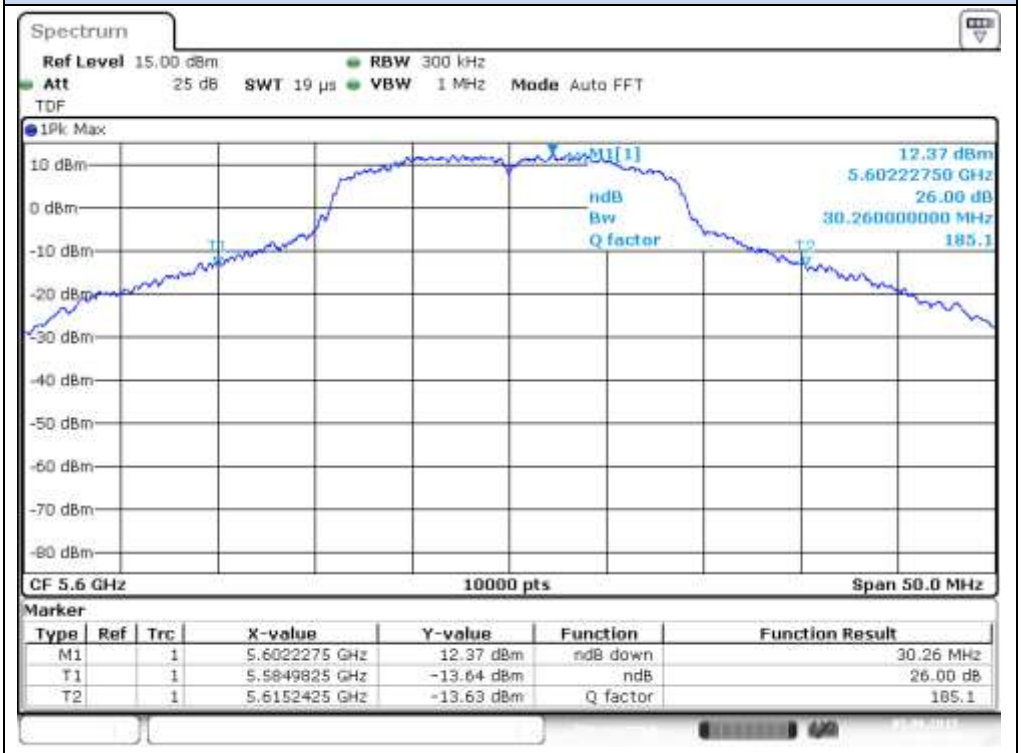
802.11n20, HT0 (SISO) – Chain A

26dB BW – CH100

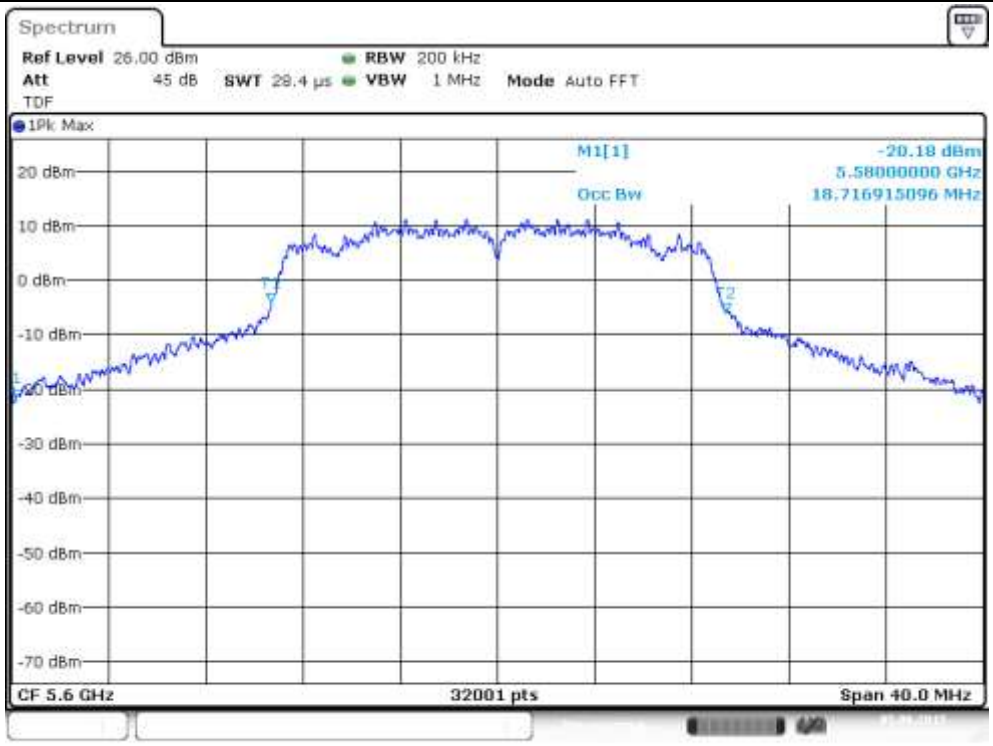
99% BW – CH100



26dB BW – CH120



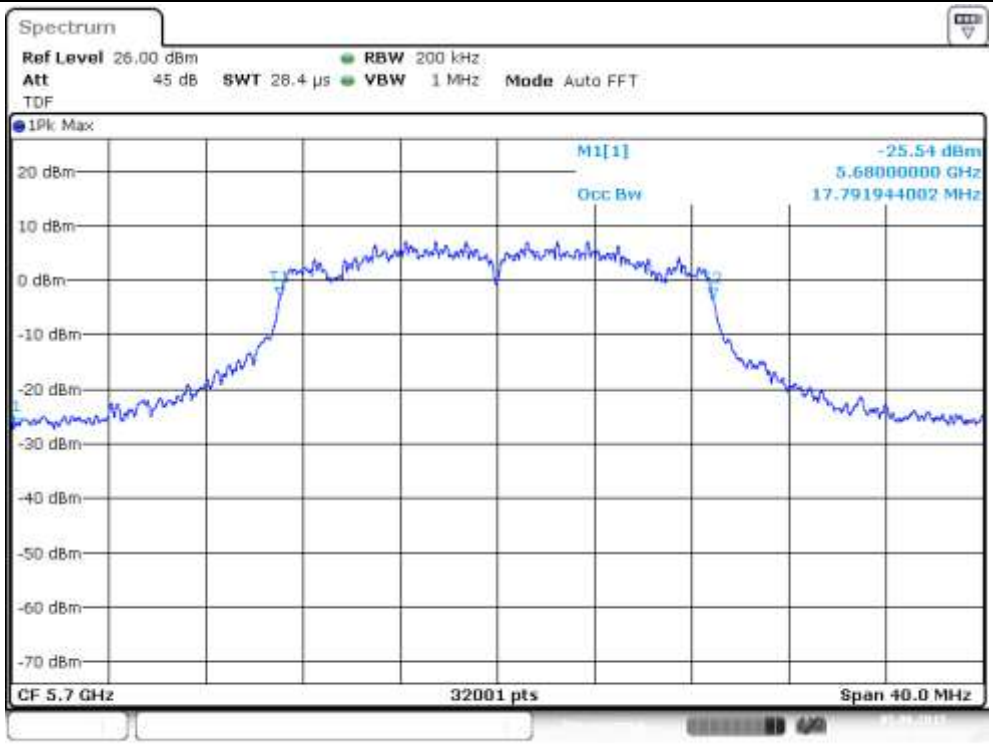
99% BW – CH120



26dB BW – CH140

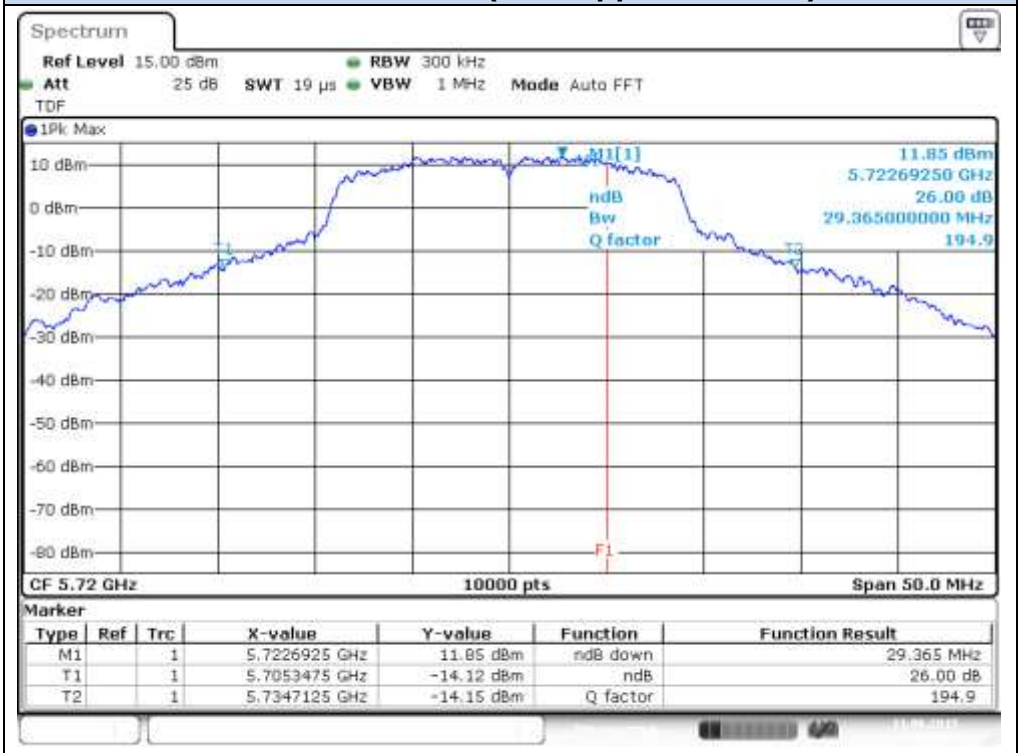
Date: 5.JUN.2015 17:45:01

99% BW – CH140

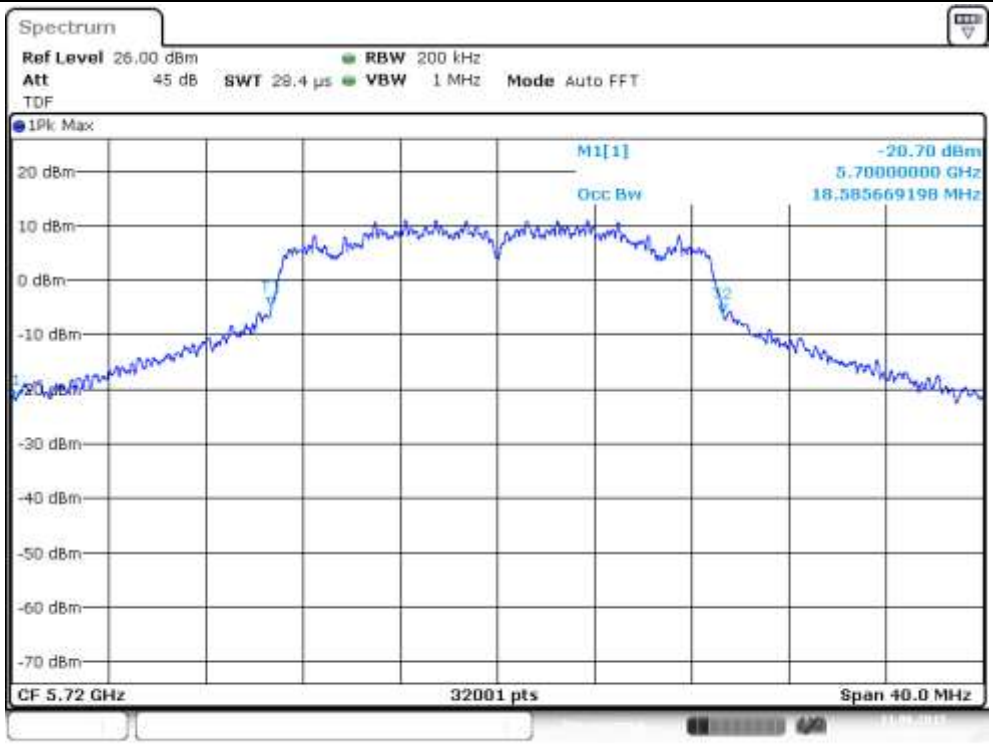


Date: 5.JUN.2015 17:43:57

26dB BW – CH144 (Overlapped Channel)



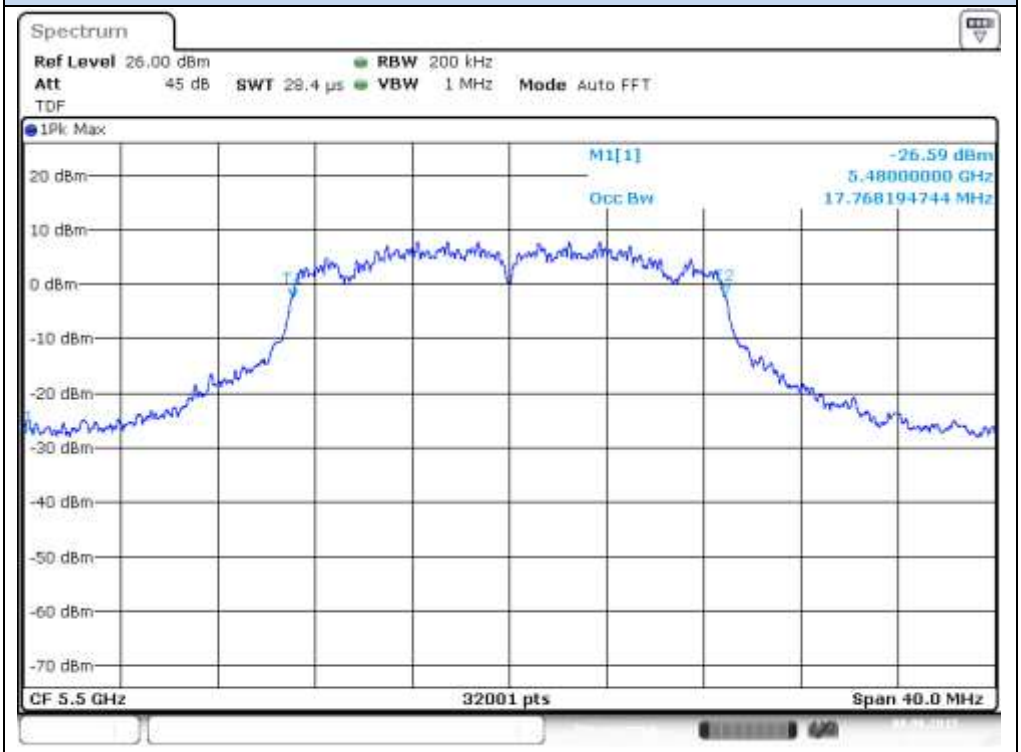
99% BW – CH144 (Overlapped Channel)



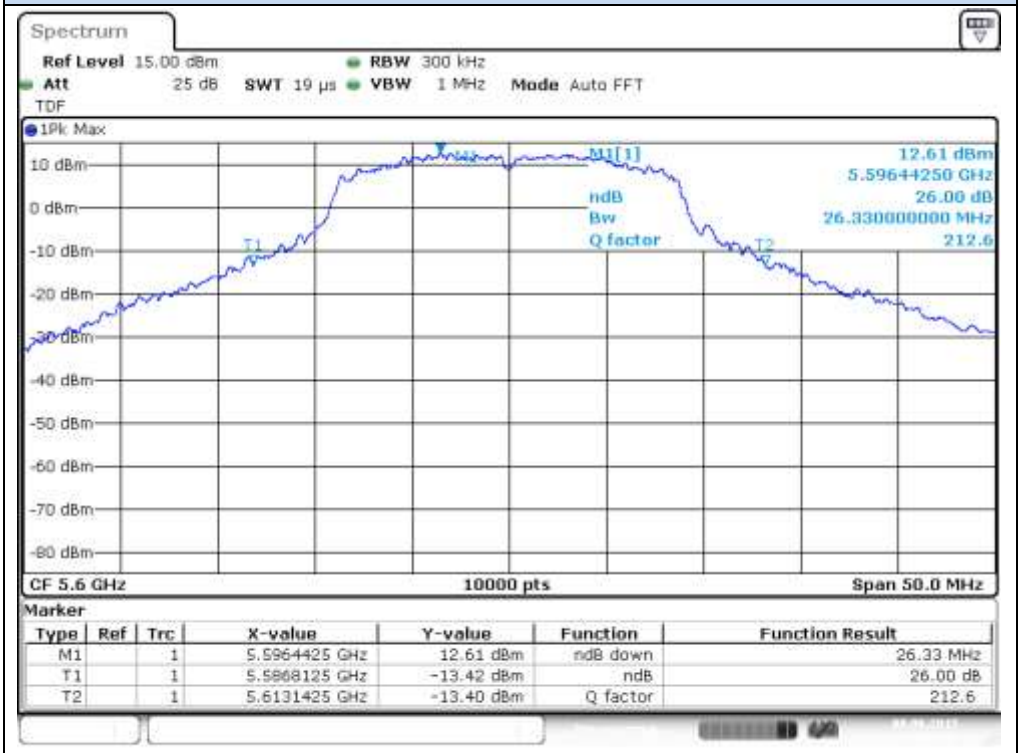
802.11n20, HT0 (SISO) – Chain B

26dB BW – CH100

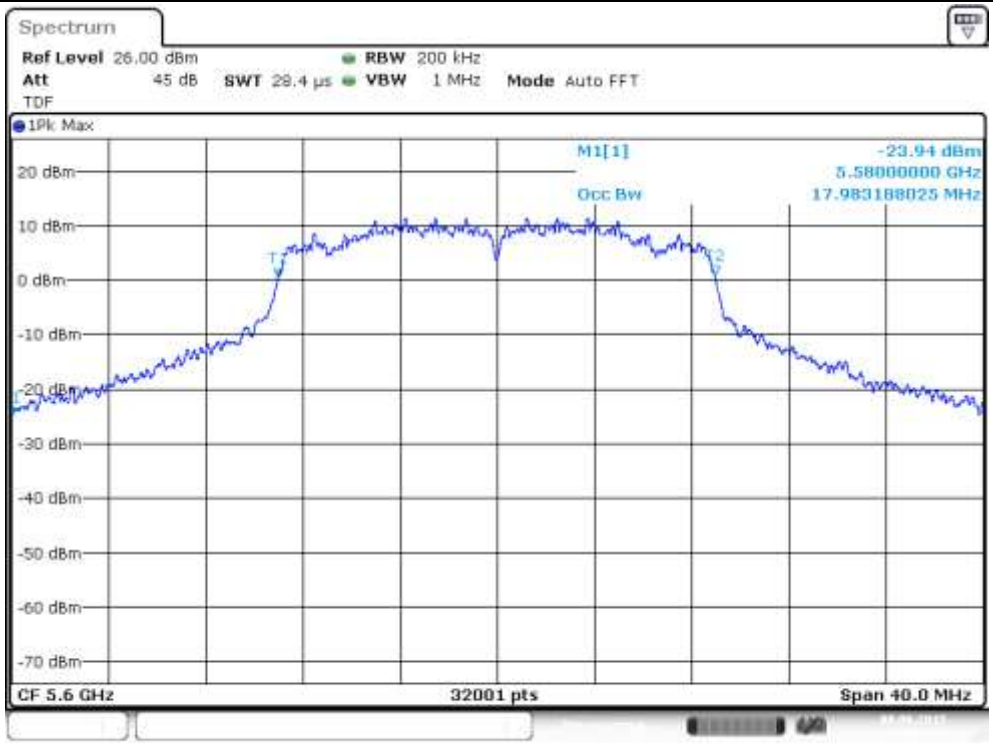
99% BW – CH100



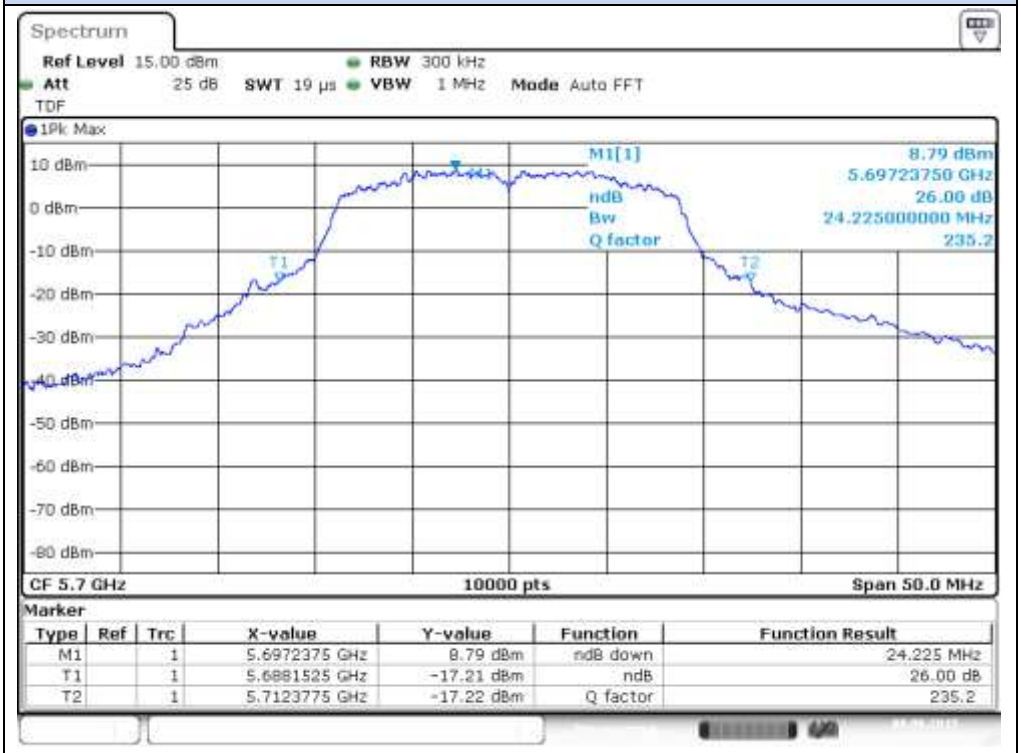
26dB BW – CH120



99% BW – CH120

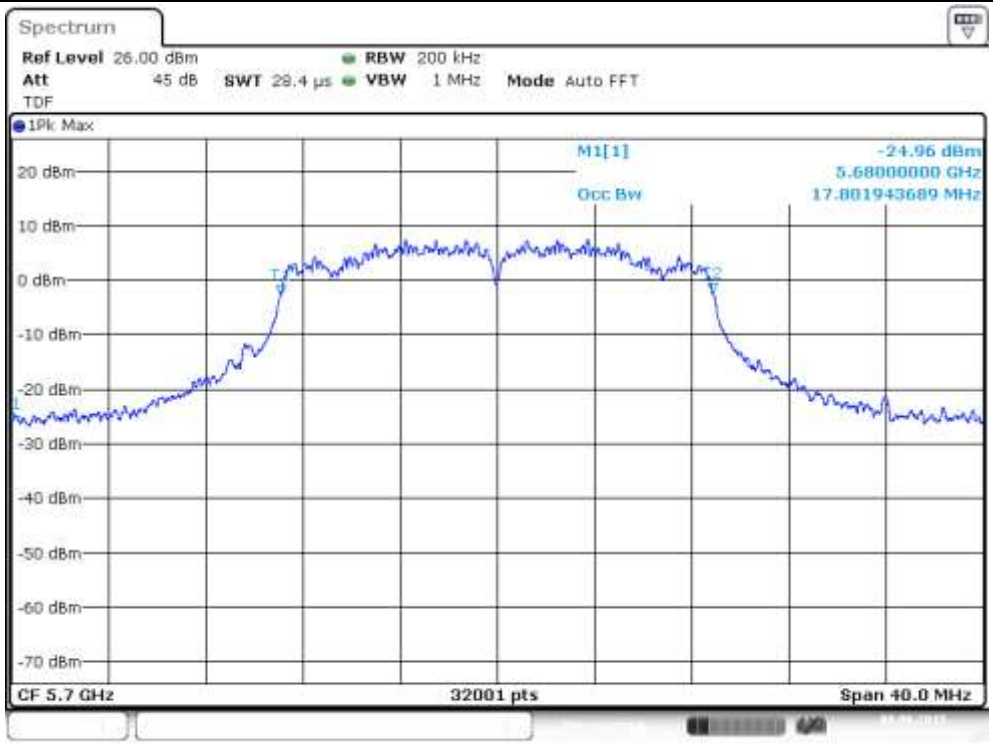


26dB BW – CH140



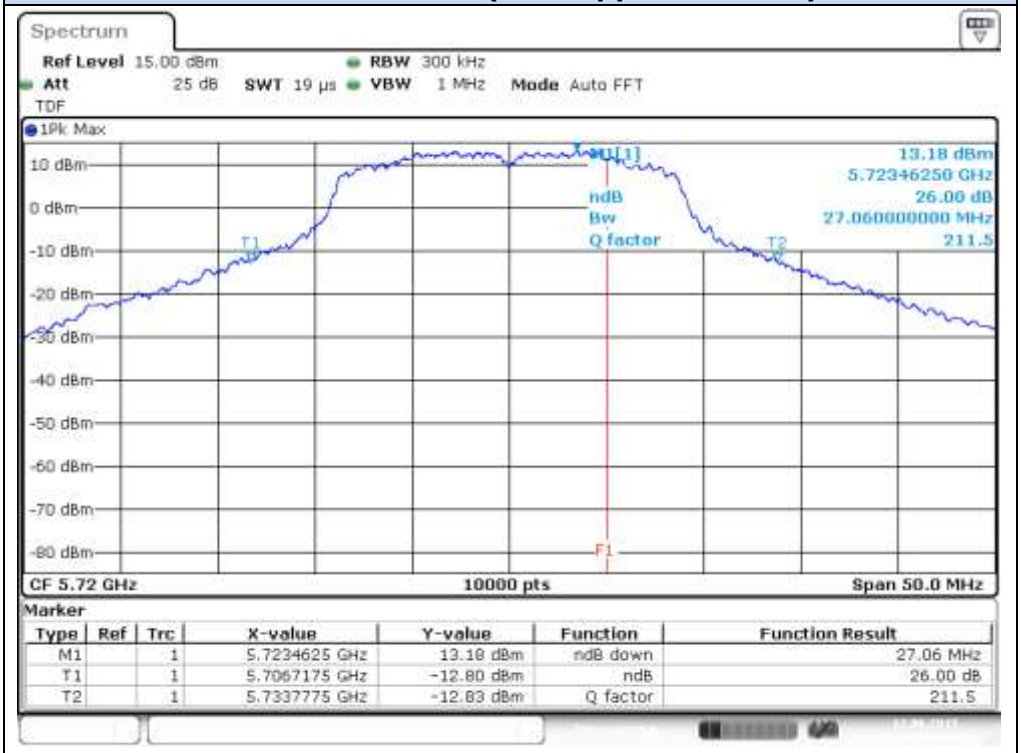
Date: 8.JUN.2015 17:22:08

99% BW – CH140



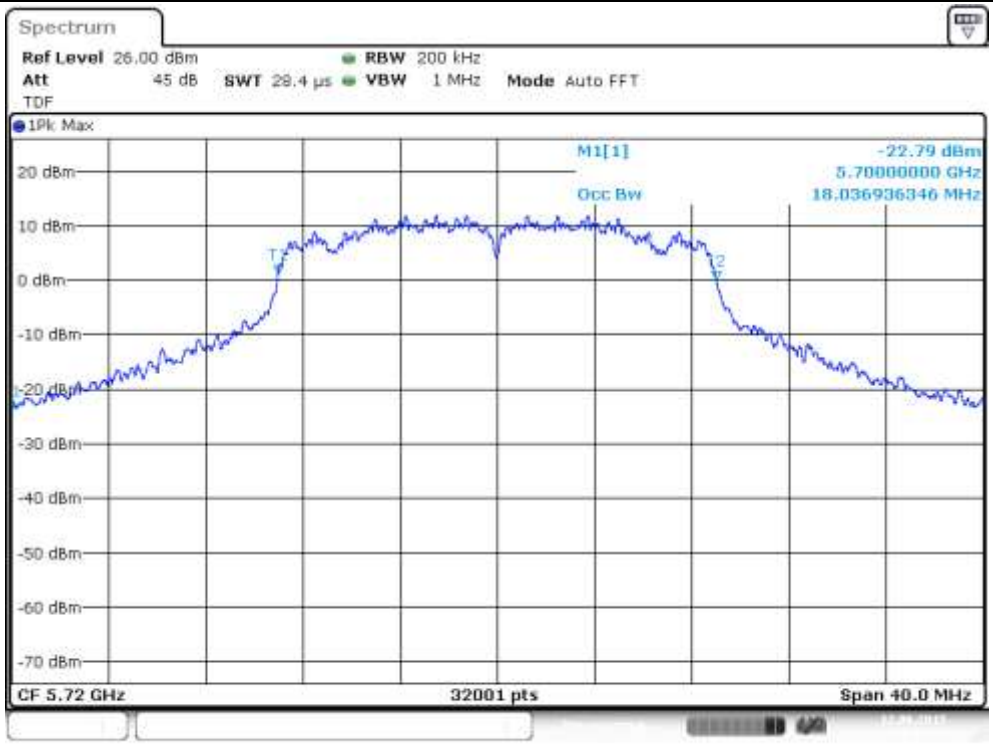
Date: 8.JUN.2015 17:21:27

26dB BW – CH144 (Overlapped Channel)



Date: 12.JUN.2015 11:46:23

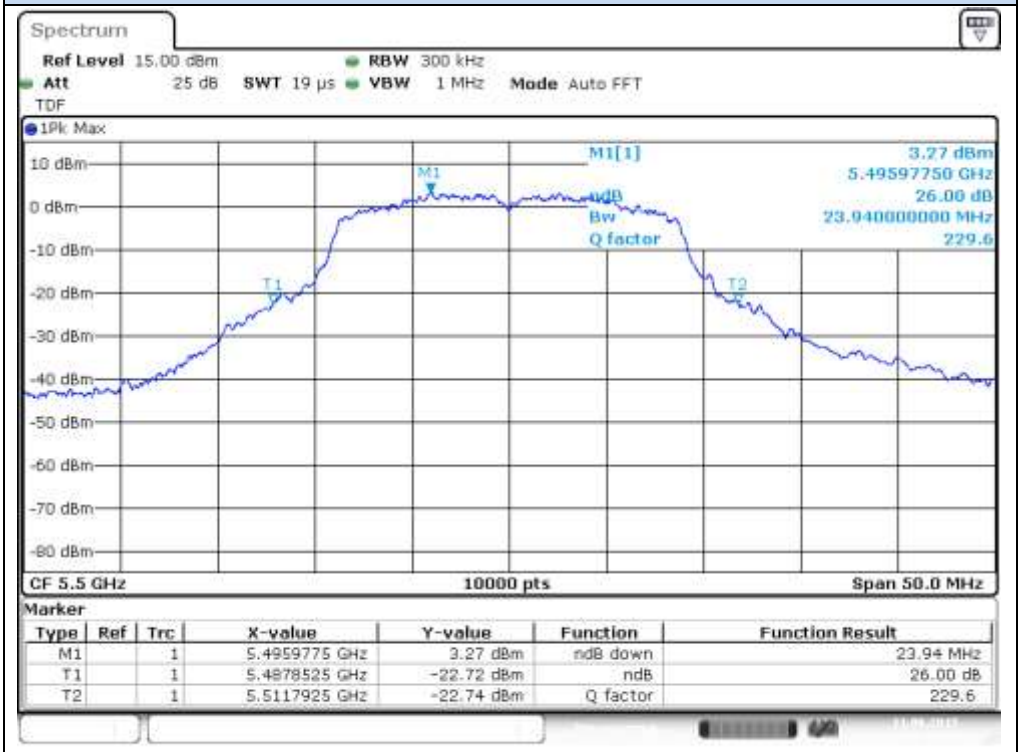
99% BW – CH144 (Overlapped Channel)



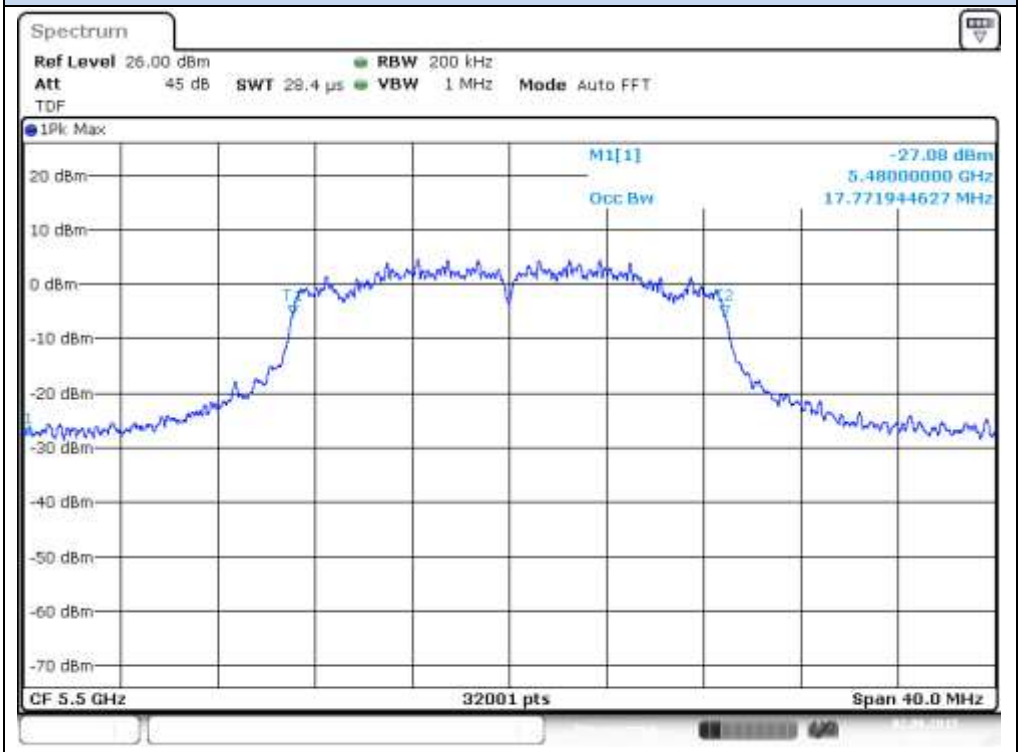
Date: 12.JUN.2015 11:42:32

802.11n20, HT8 (MIMO) – Chain A

26dB BW – CH100

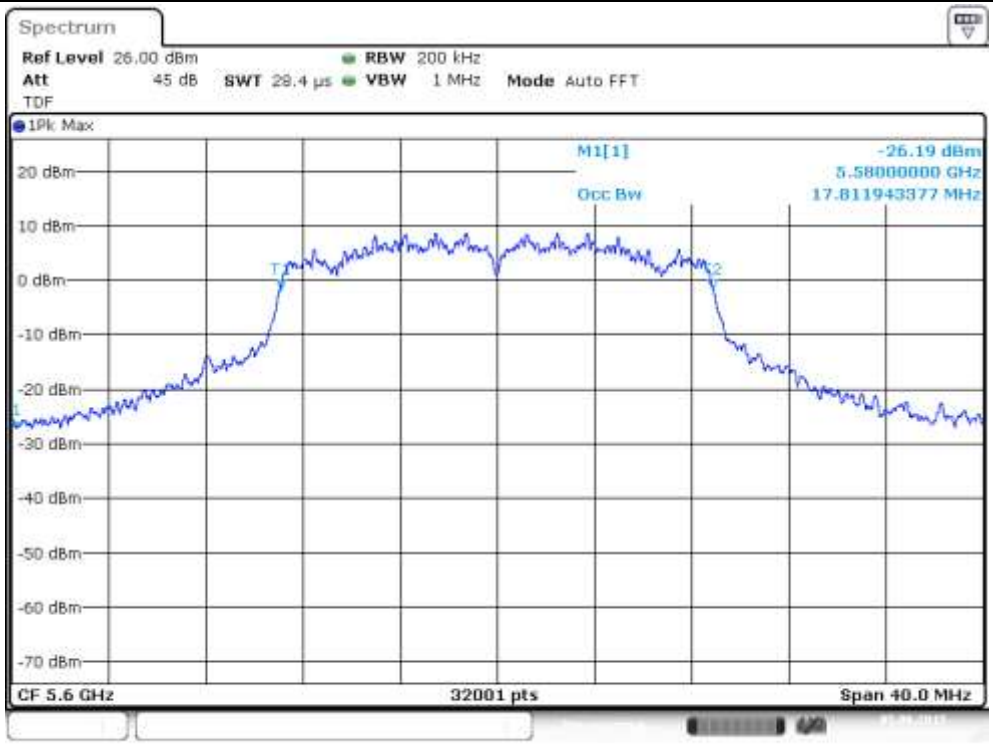


99% BW – CH100

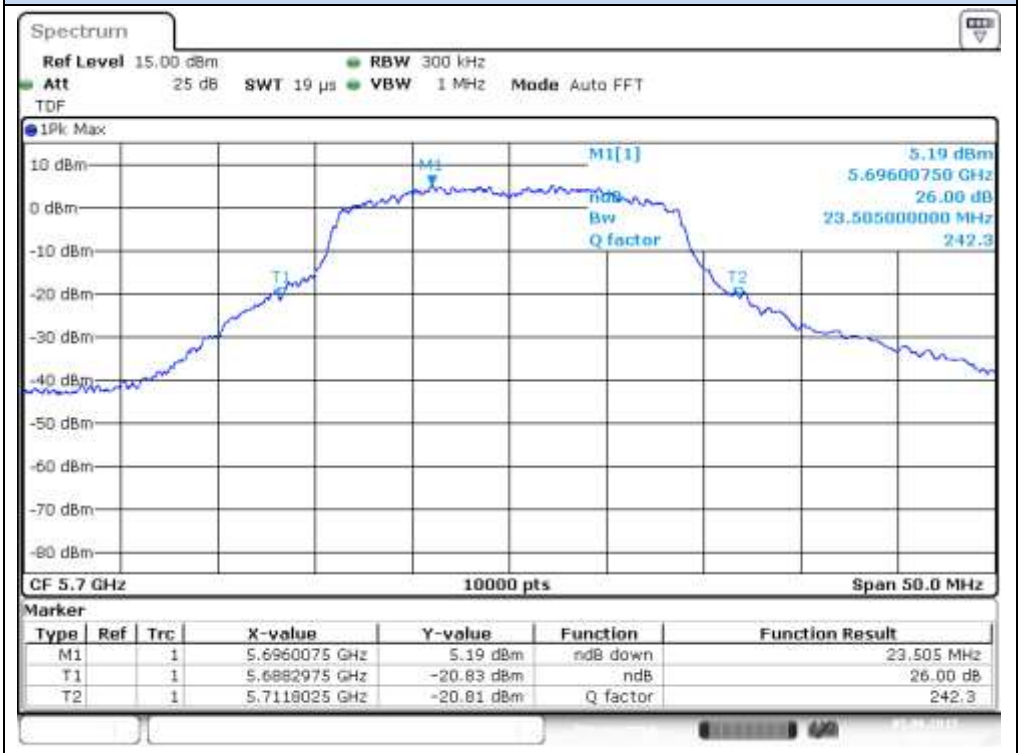


26dB BW – CH120

99% BW – CH120

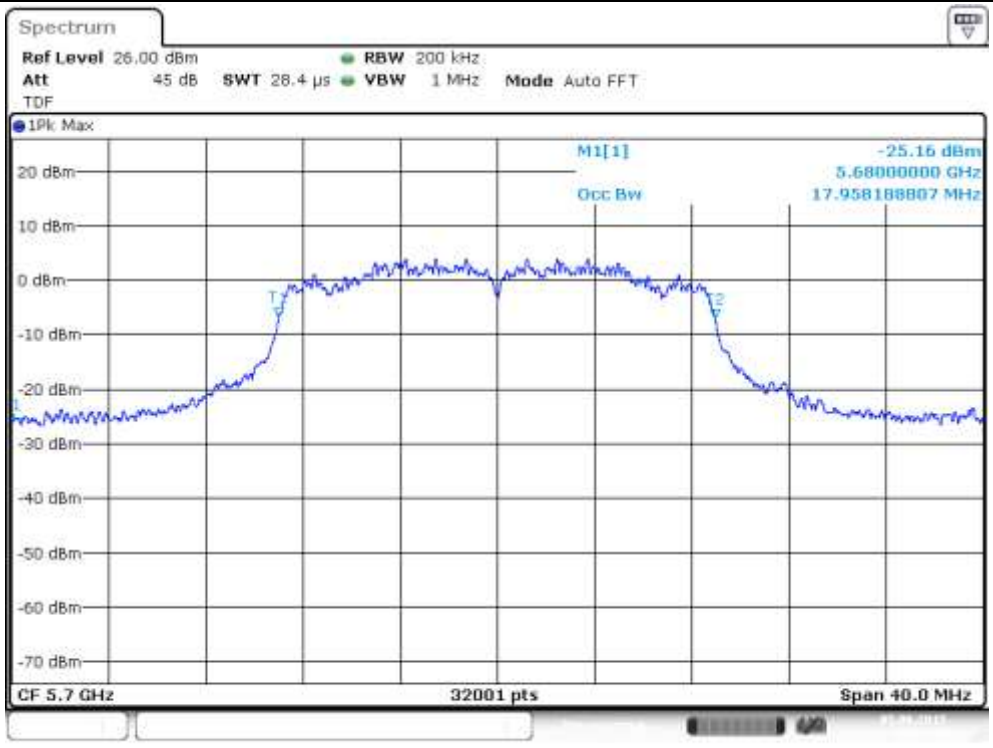


26dB BW – CH140



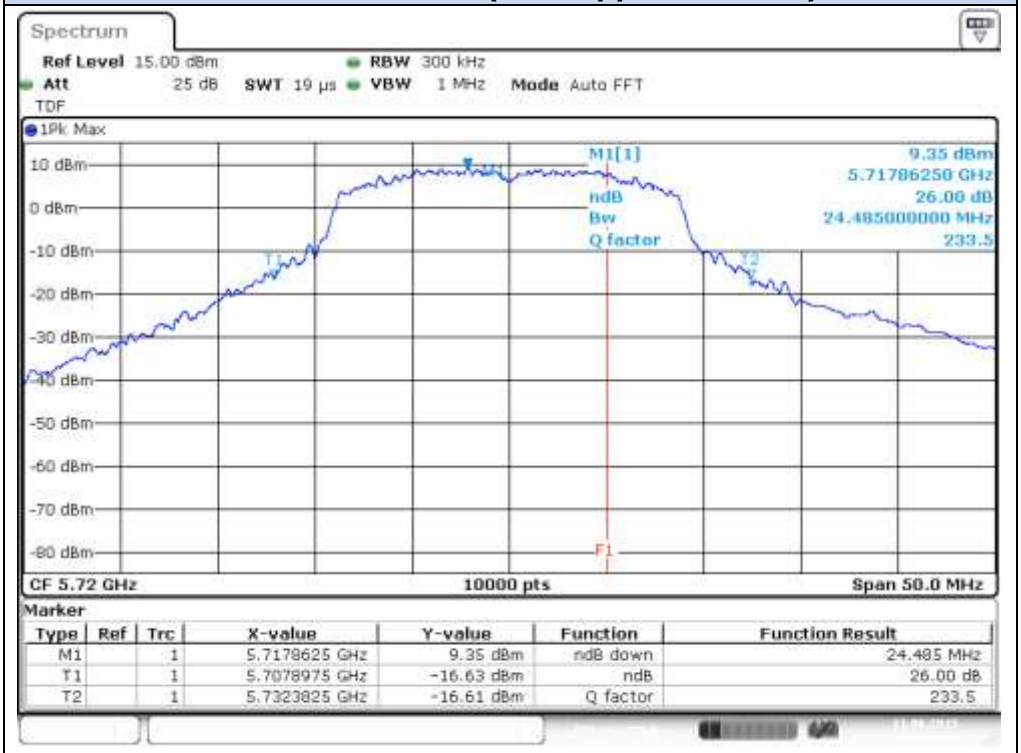
Date: 5.JUN.2015 18:07:06

99% BW – CH140

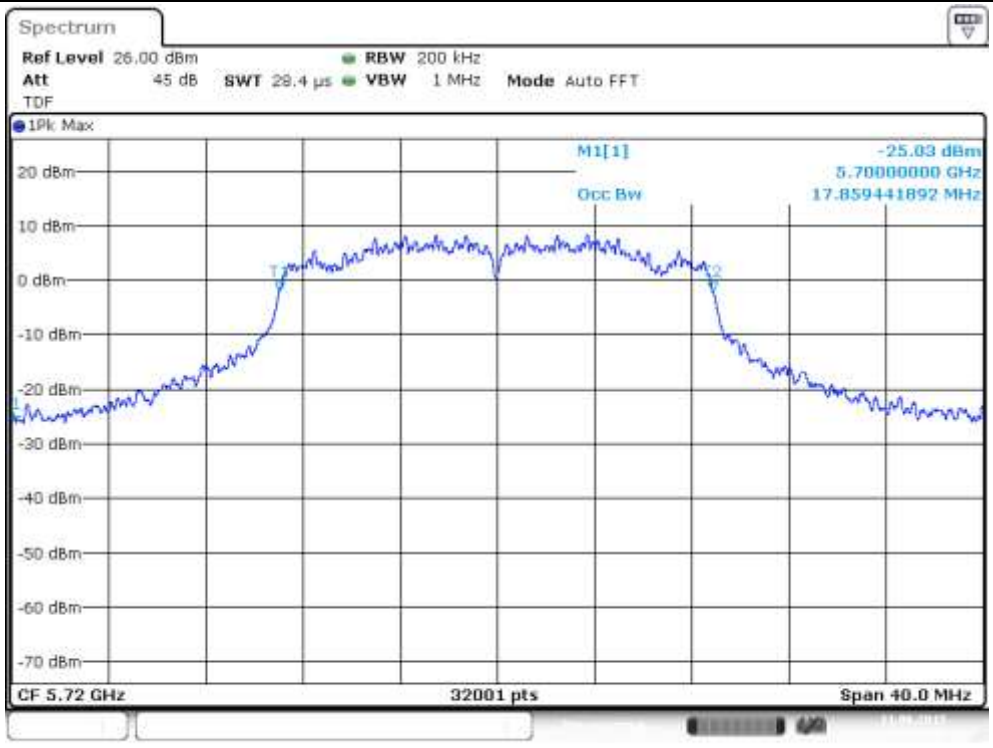


Date: 5.JUN.2015 18:06:19

26dB BW – CH144 (Overlapped Channel)

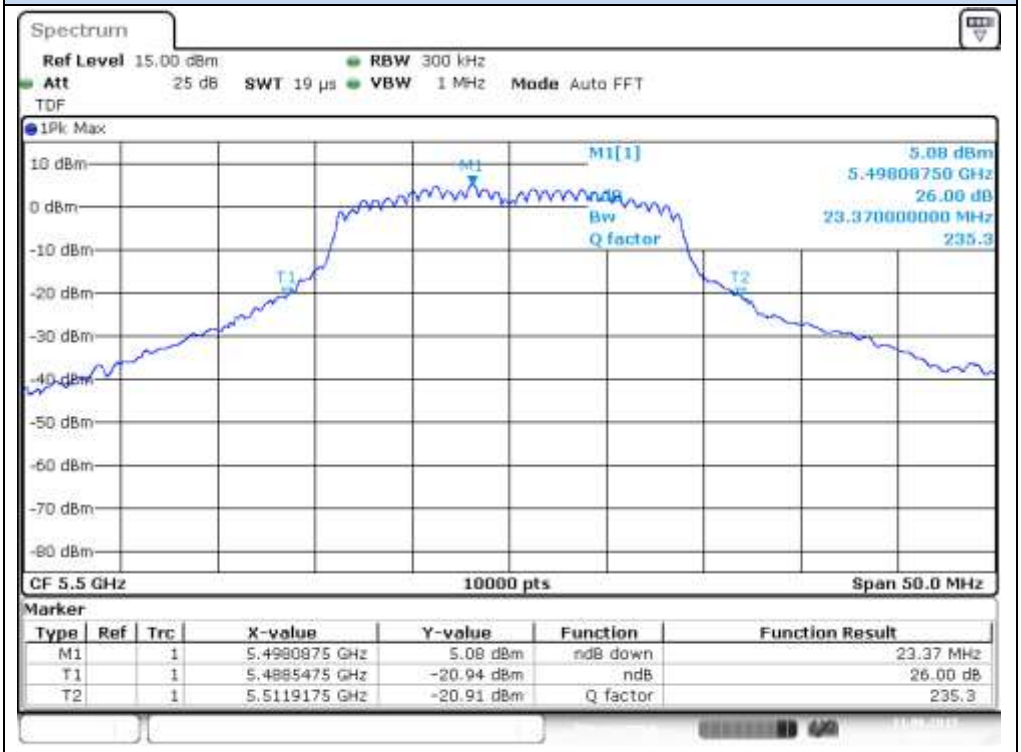


99% BW – CH144 (Overlapped Channel)

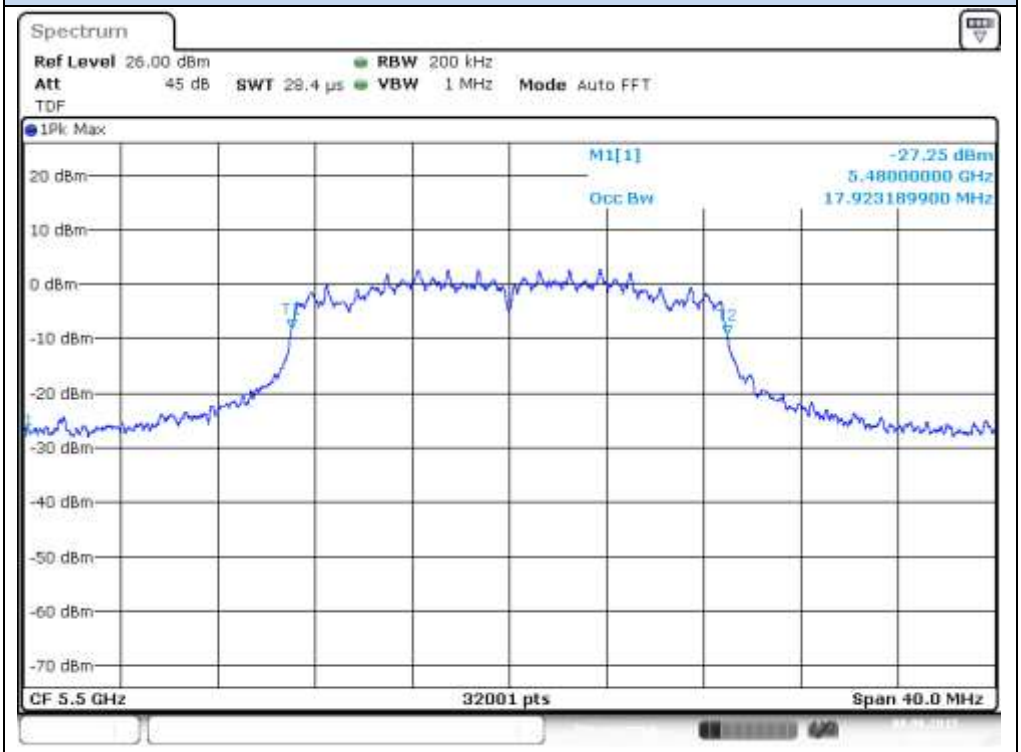


802.11n20, HT8 (MIMO) – Chain B

26dB BW – CH100

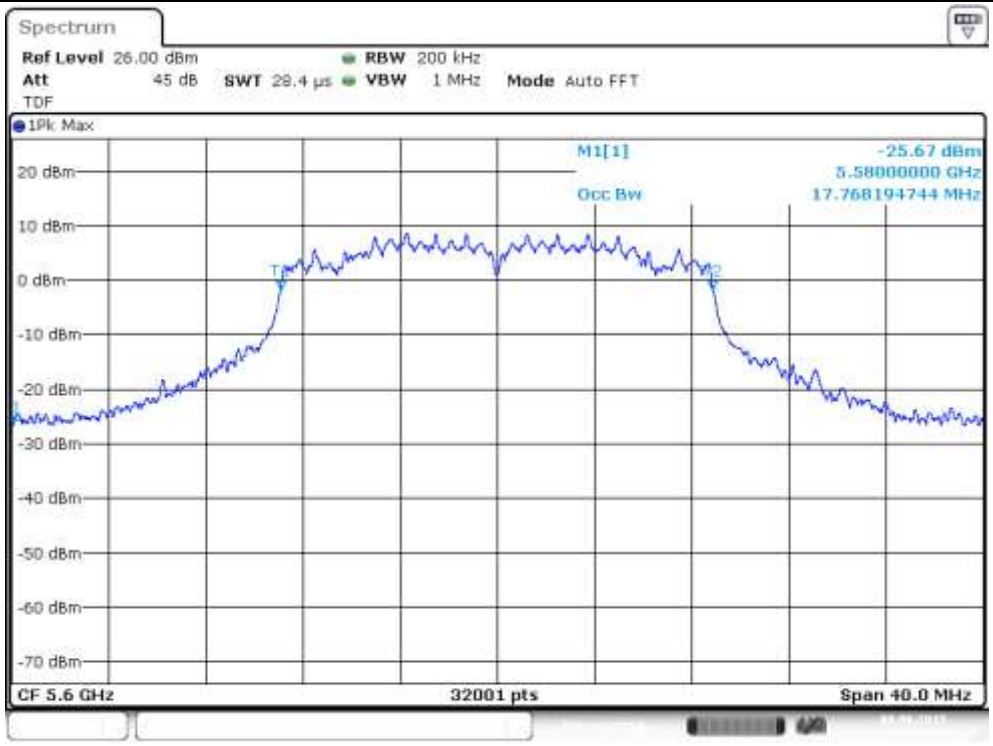


99% BW – CH100

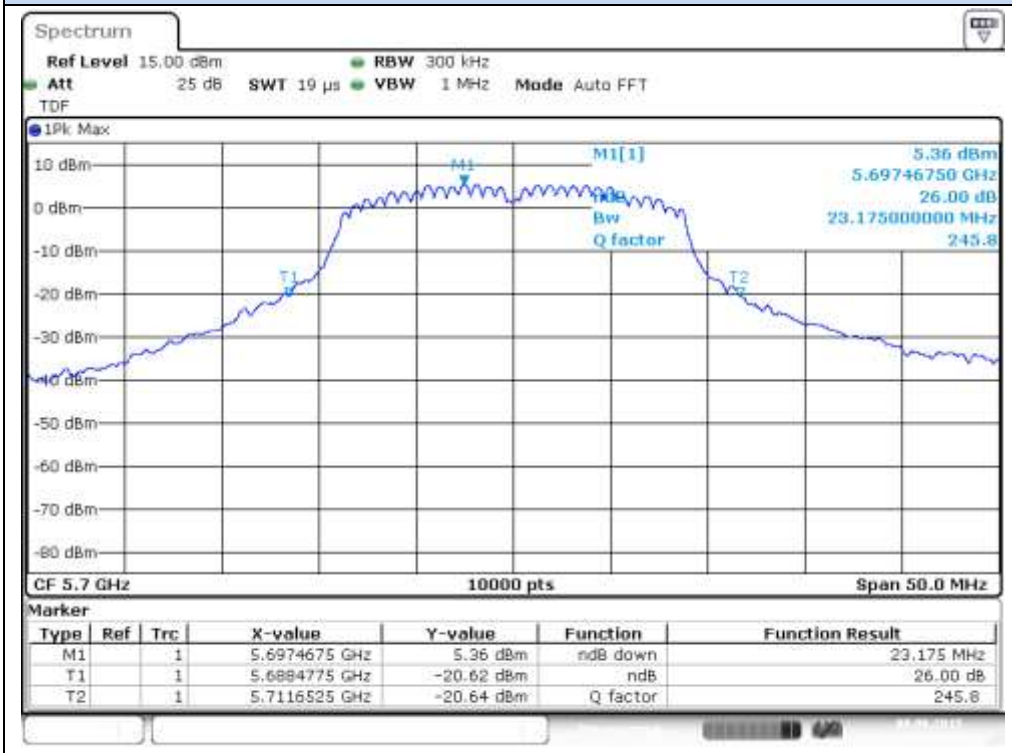


26dB BW – CH120

99% BW – CH120

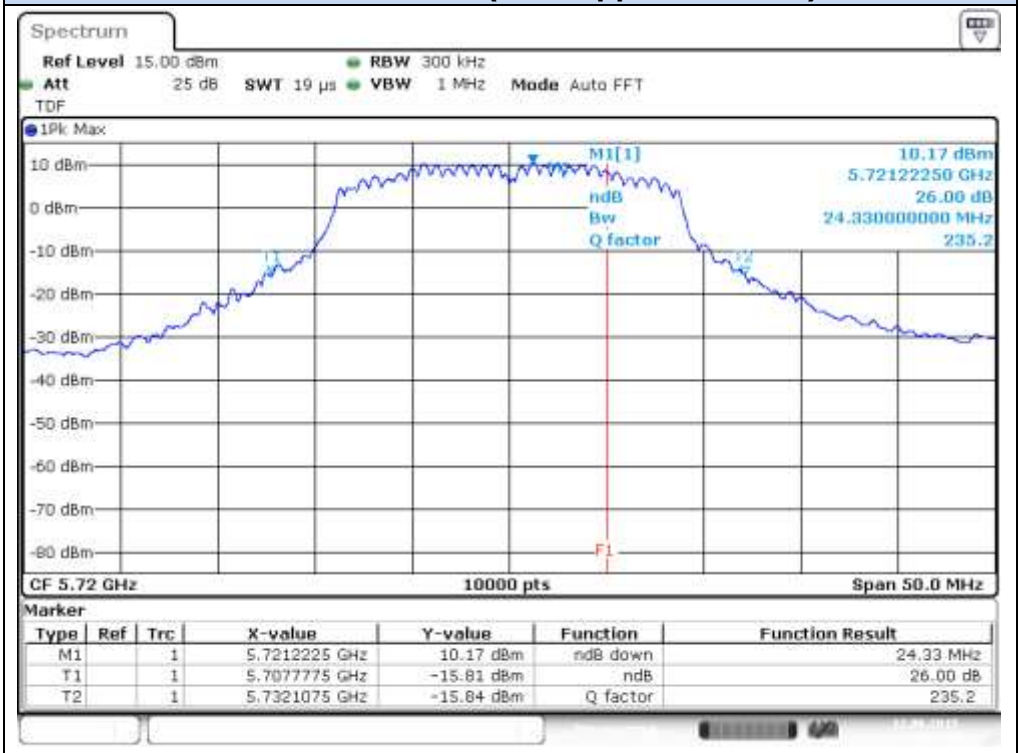


26dB BW – CH140



99% BW – CH140

26dB BW – CH144 (Overlapped Channel)

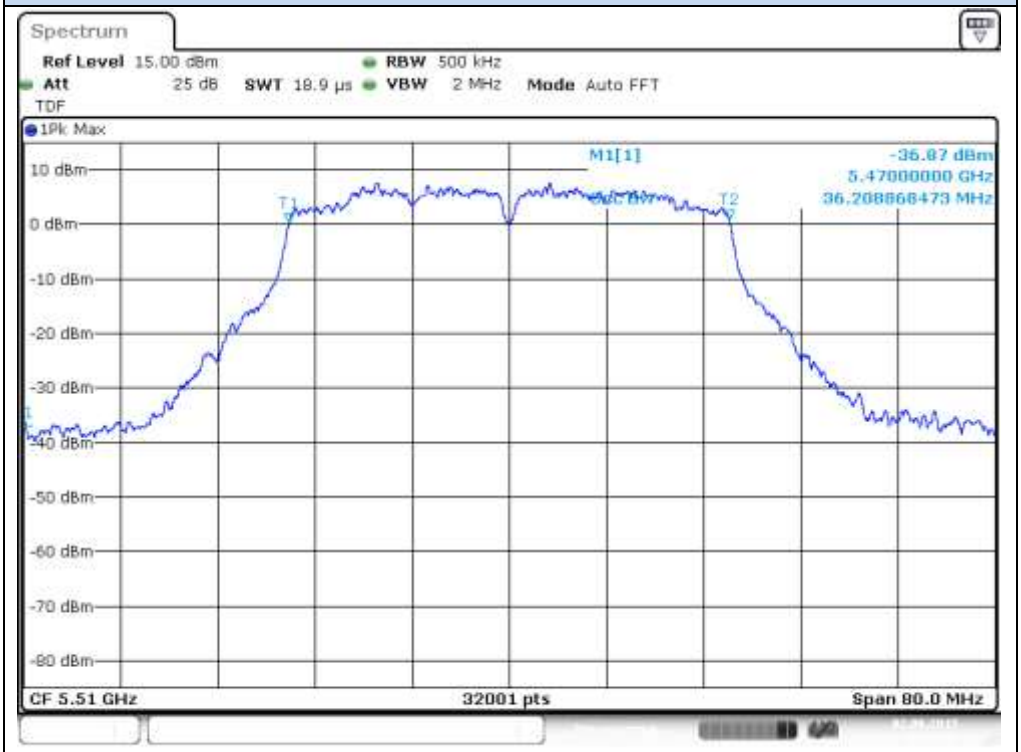


99% BW – CH144 (Overlapped Channel)

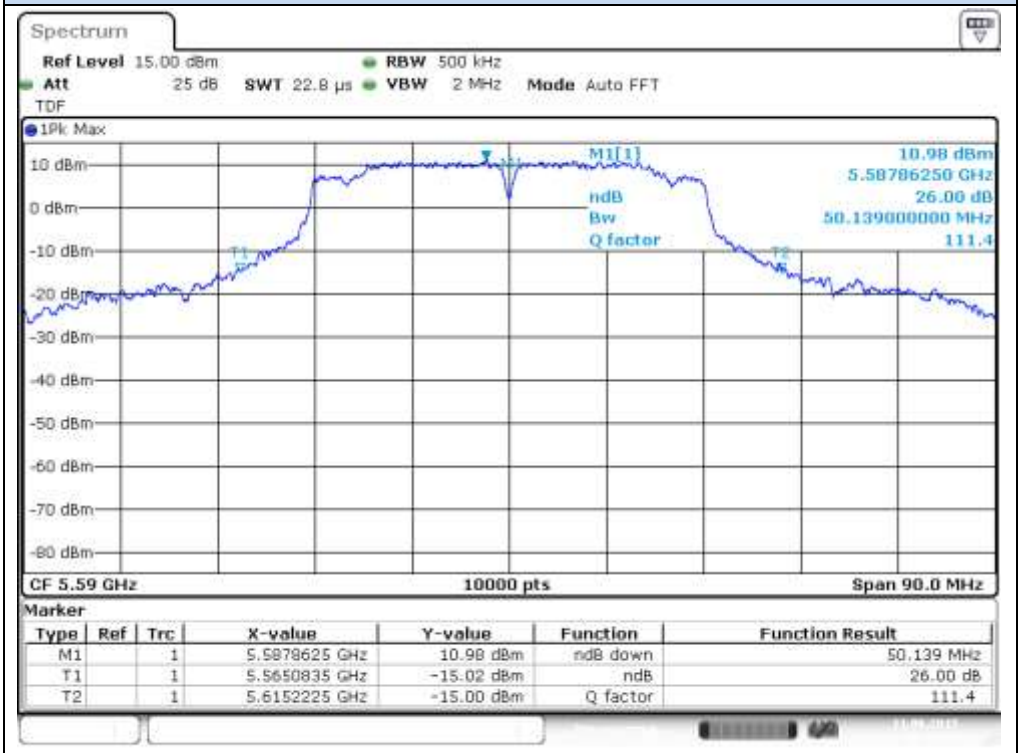
802.11n40, HT0 (SISO) – Chain A

26dB BW – CH102F

99% BW – CH102F



26dB BW – CH118F

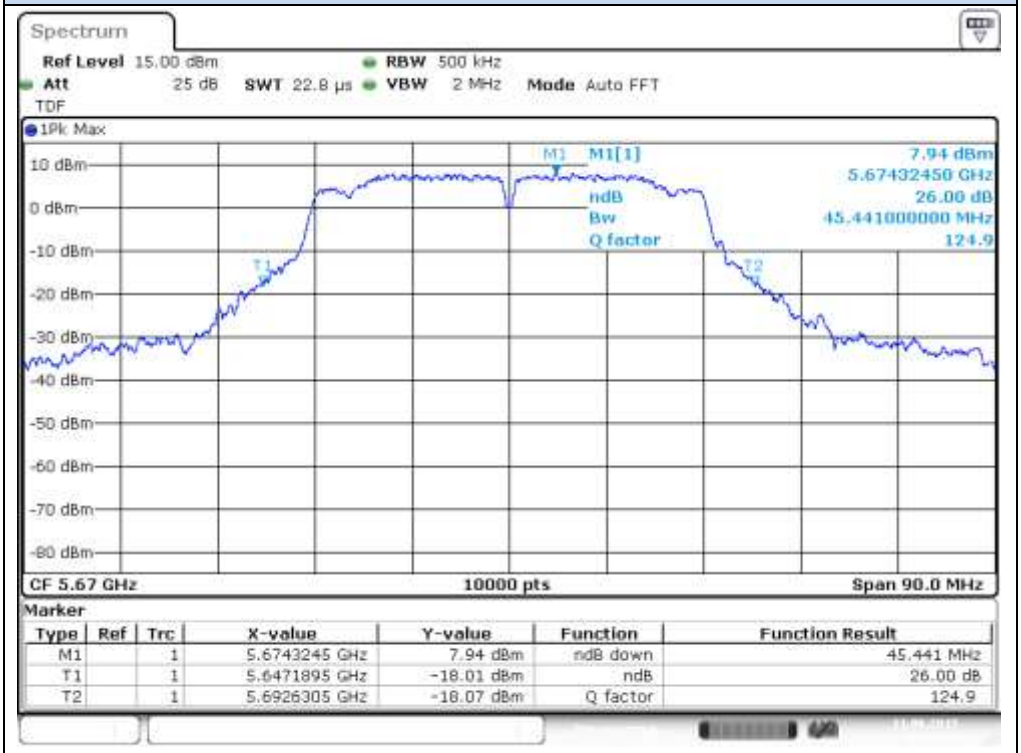


Date: 11.JUN.2015 10:42:06

99% BW – CH118F

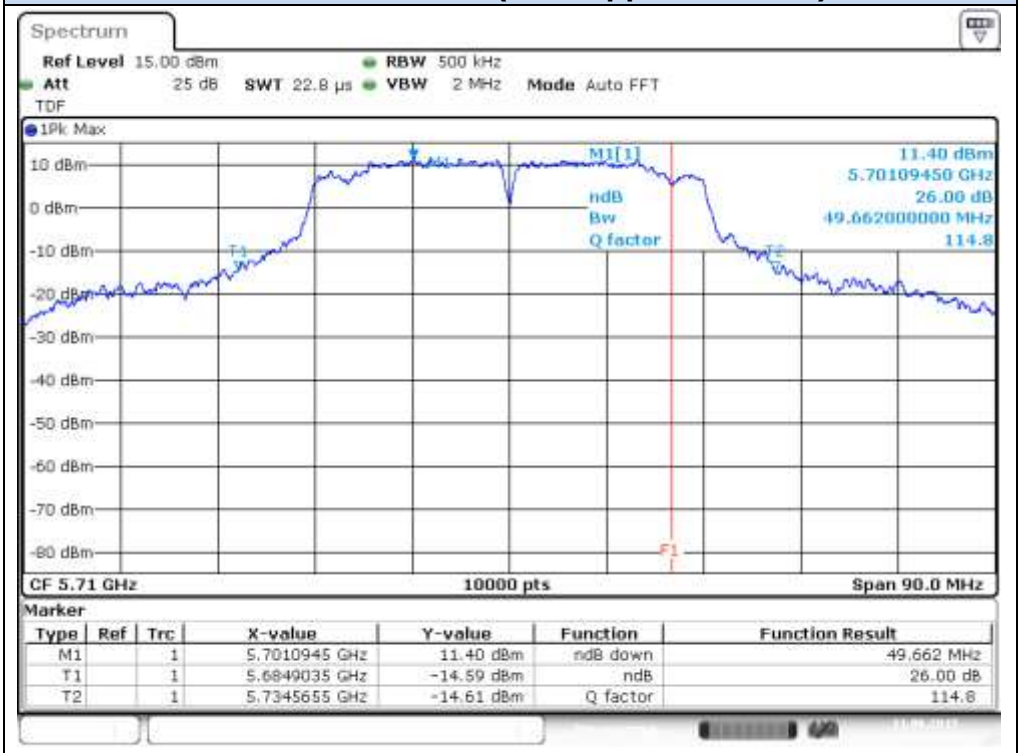
Date: 10.JUN.2015 11:57:26

26dB BW – CH134F



99% BW – CH134F

26dB BW – CH142F (Overlapped Channel)

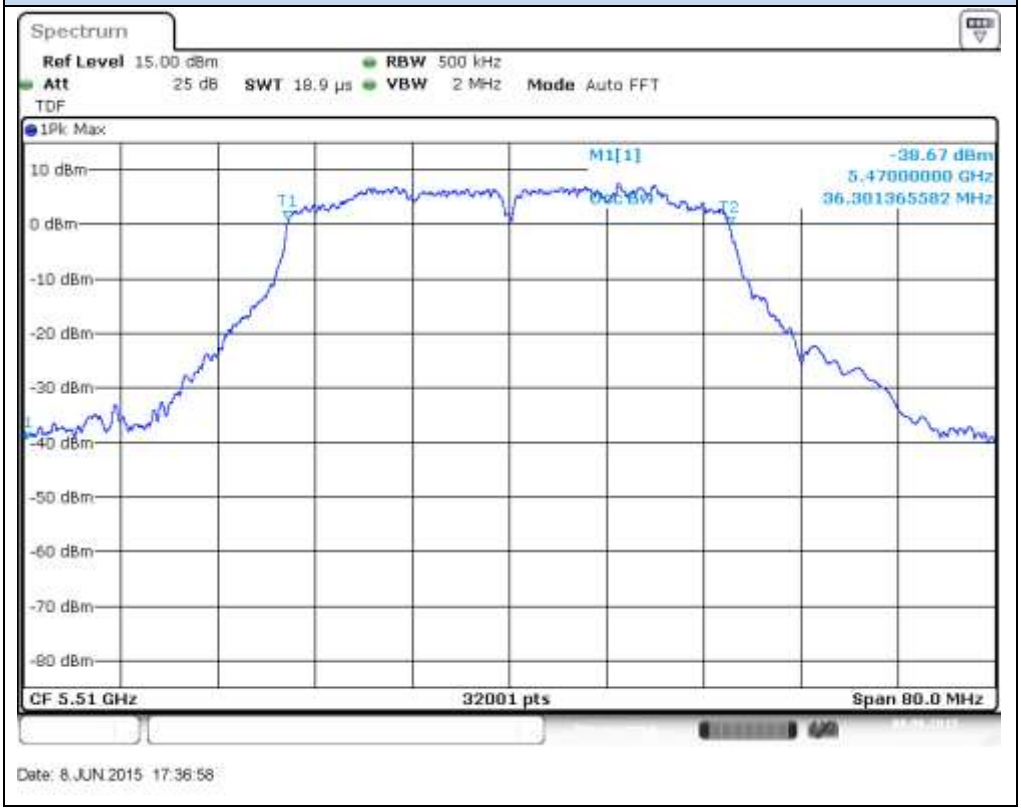


99% BW – CH142F (Overlapped Channel)

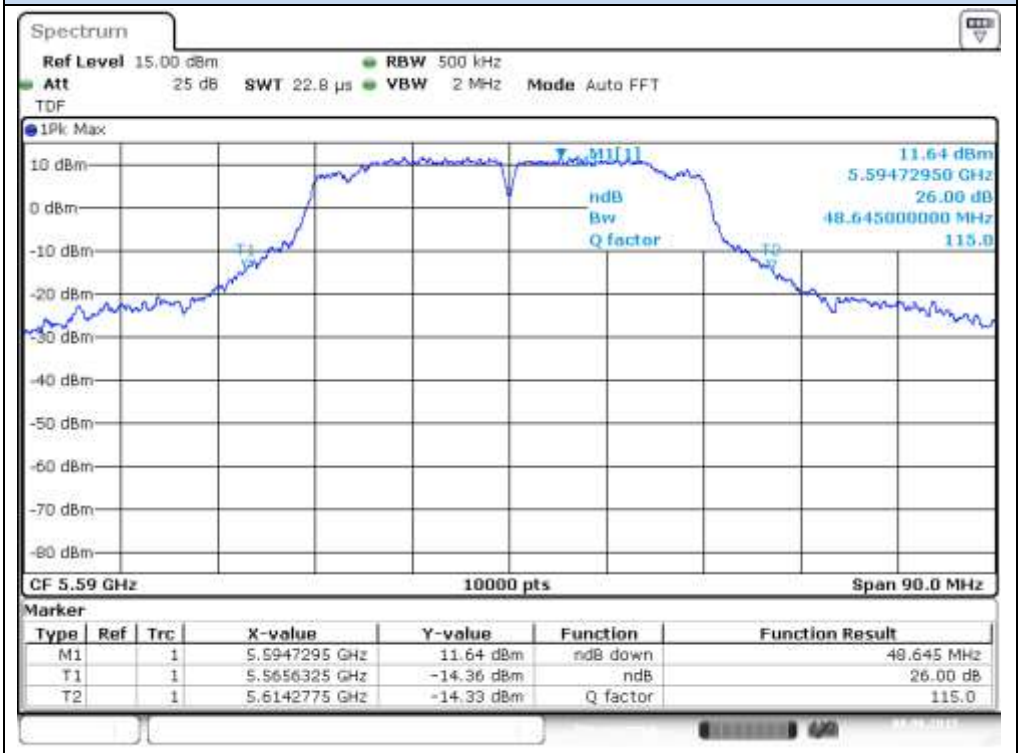
802.11n40, HT0 (SISO) – Chain B

26dB BW – CH102F

99% BW – CH102F



26dB BW – CH118F

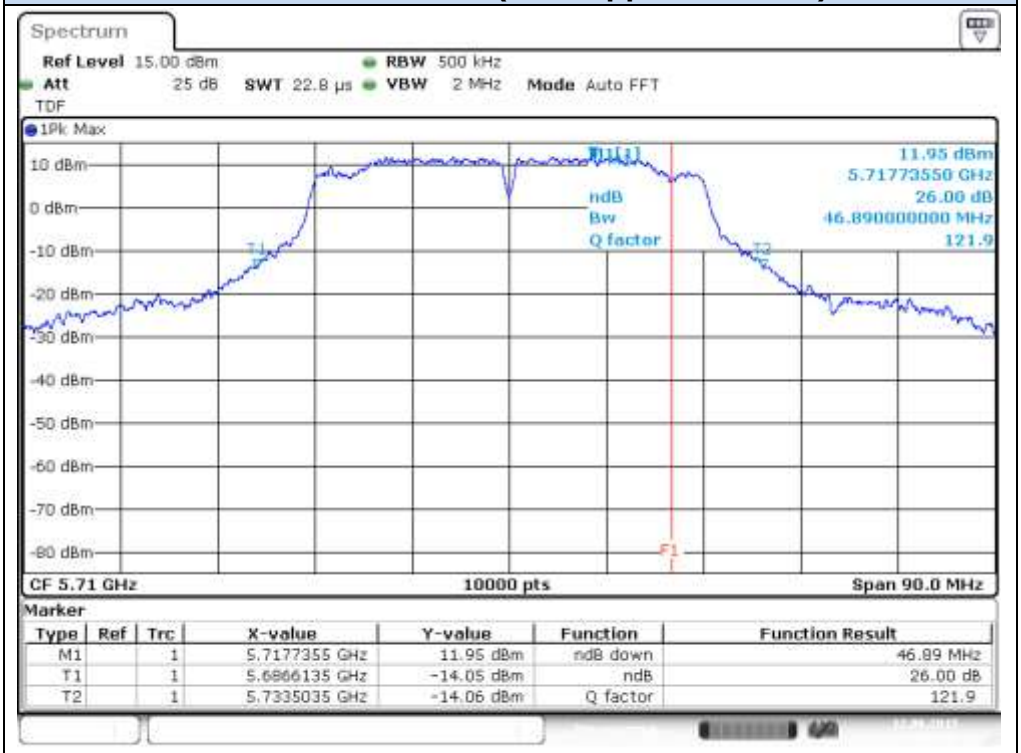


99% BW – CH118F

26dB BW – CH134F

99% BW – CH134F

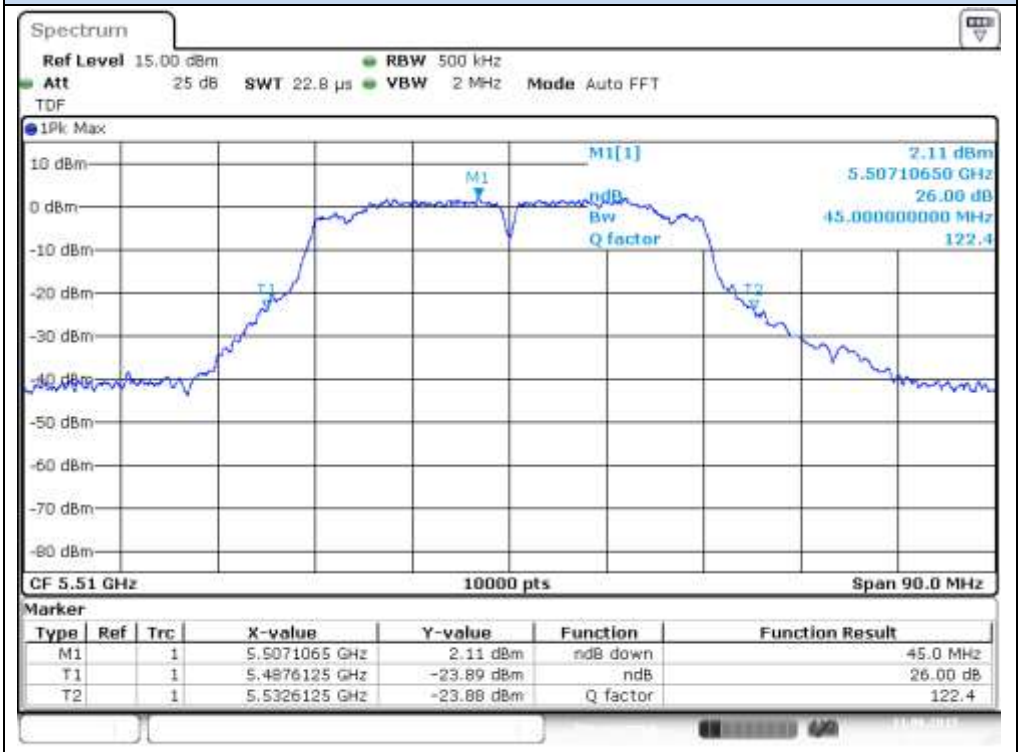
26dB BW – CH142F (Overlapped Channel)



99% BW – CH142F (Overlapped Channel)

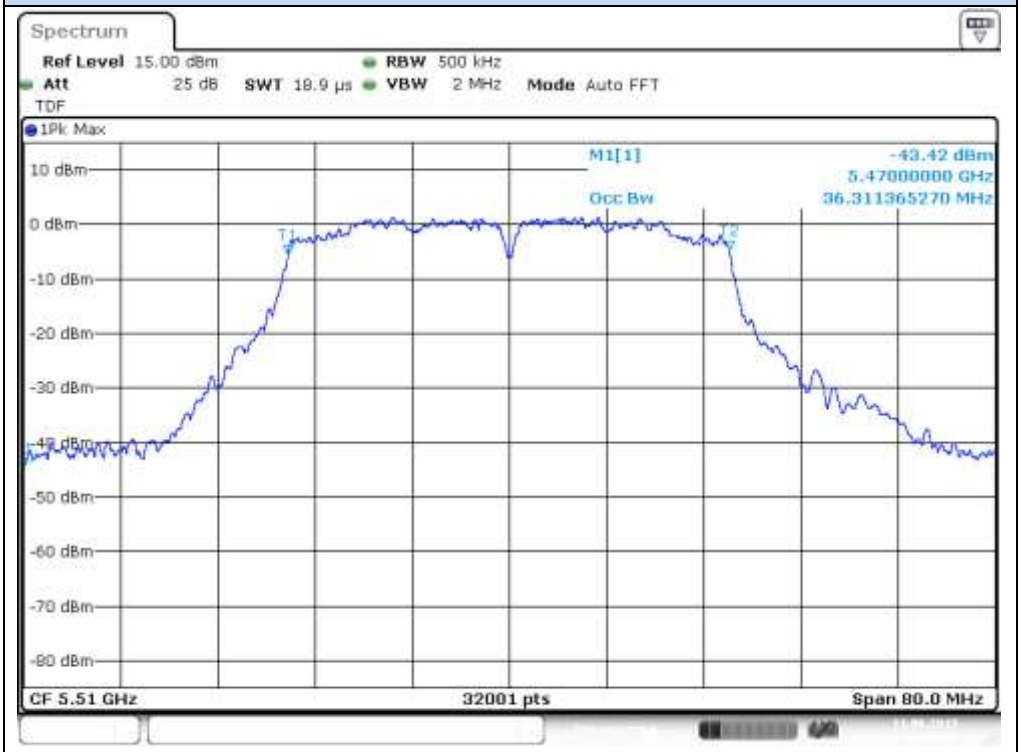
802.11n40, HT8 (MIMO) – Chain A

26dB BW – CH102F



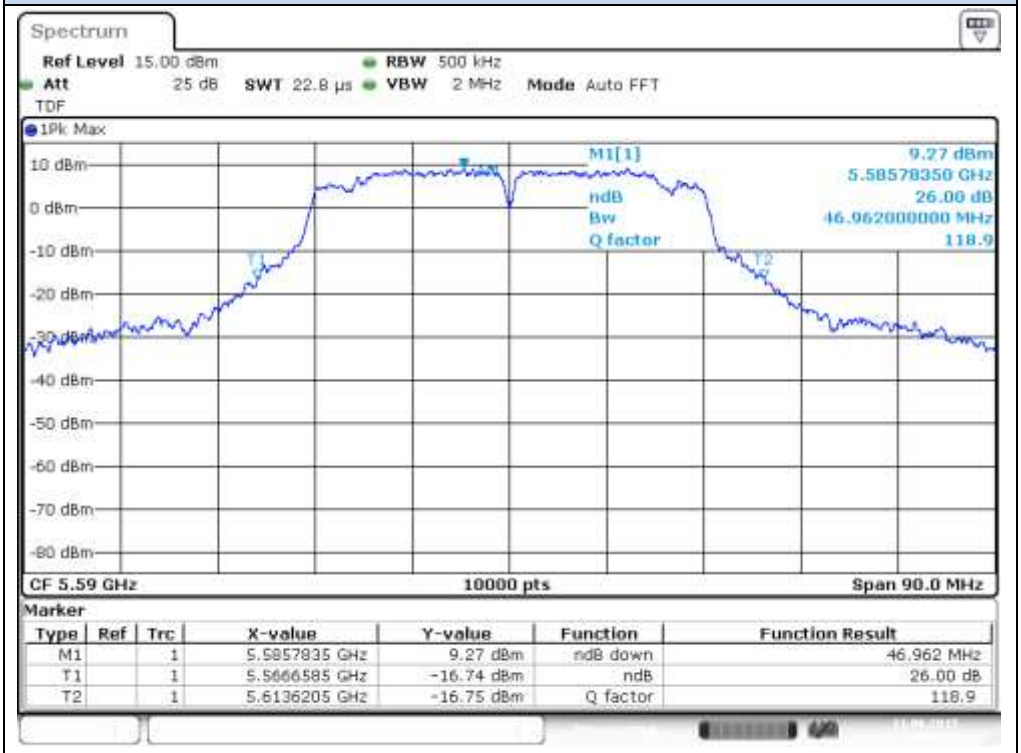
Date: 11.JUN.2015 09:33:54

99% BW – CH102F



Date: 11.JUN.2015 09:32:18

26dB BW – CH118F

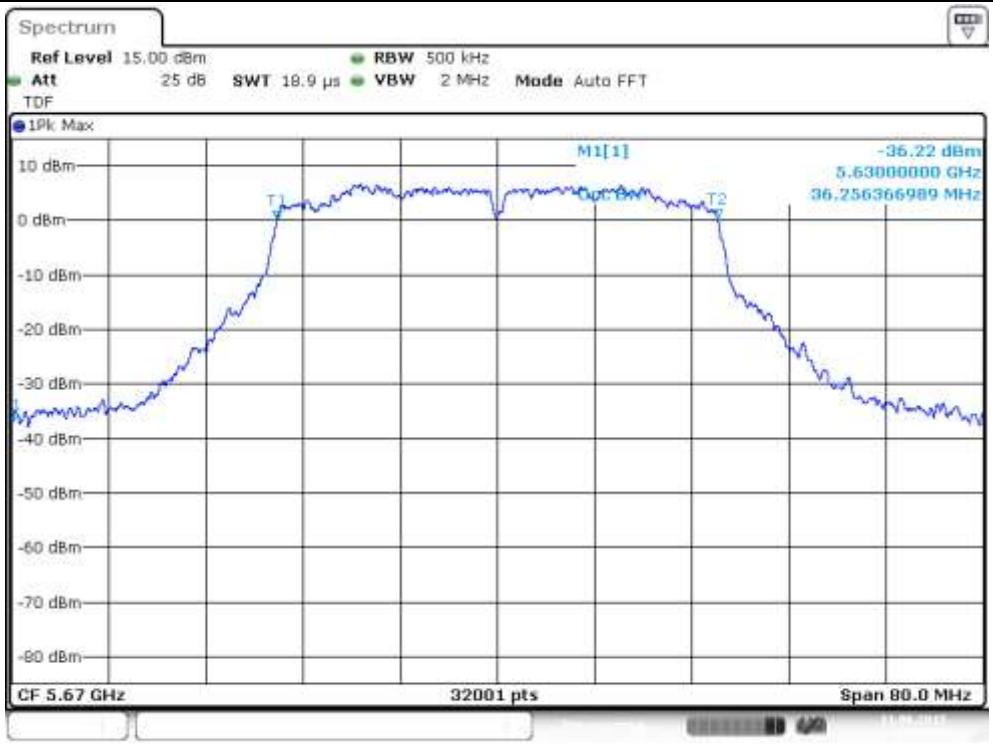


99% BW – CH118F

26dB BW – CH134F

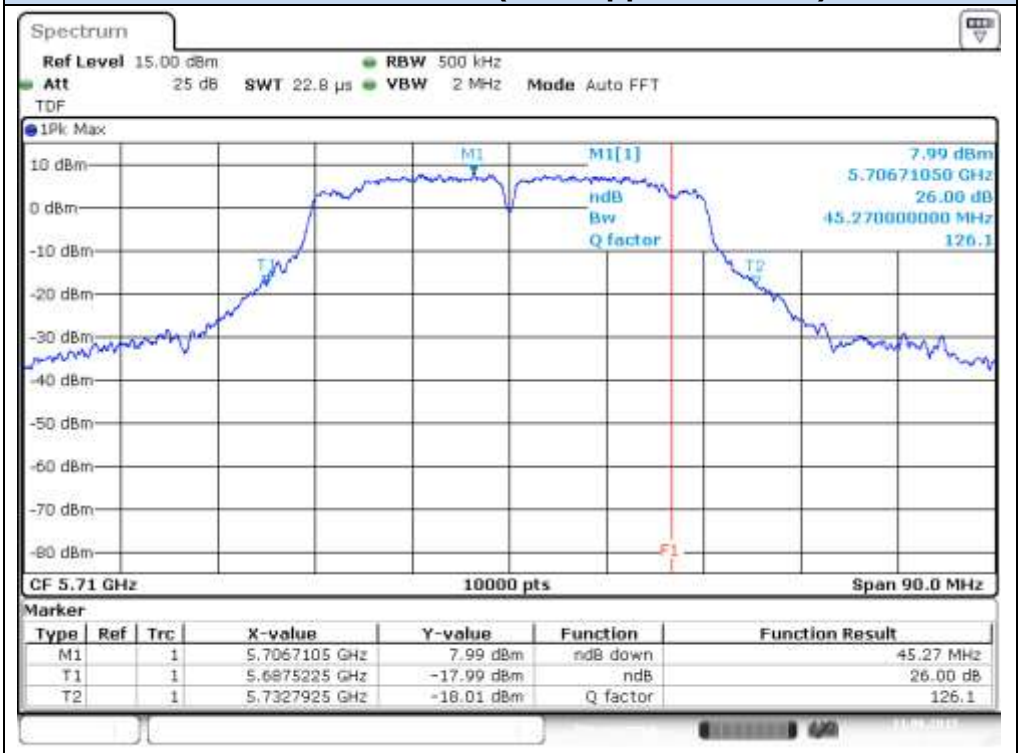
Date: 11.JUN.2015 10:38:06

99% BW – CH134F

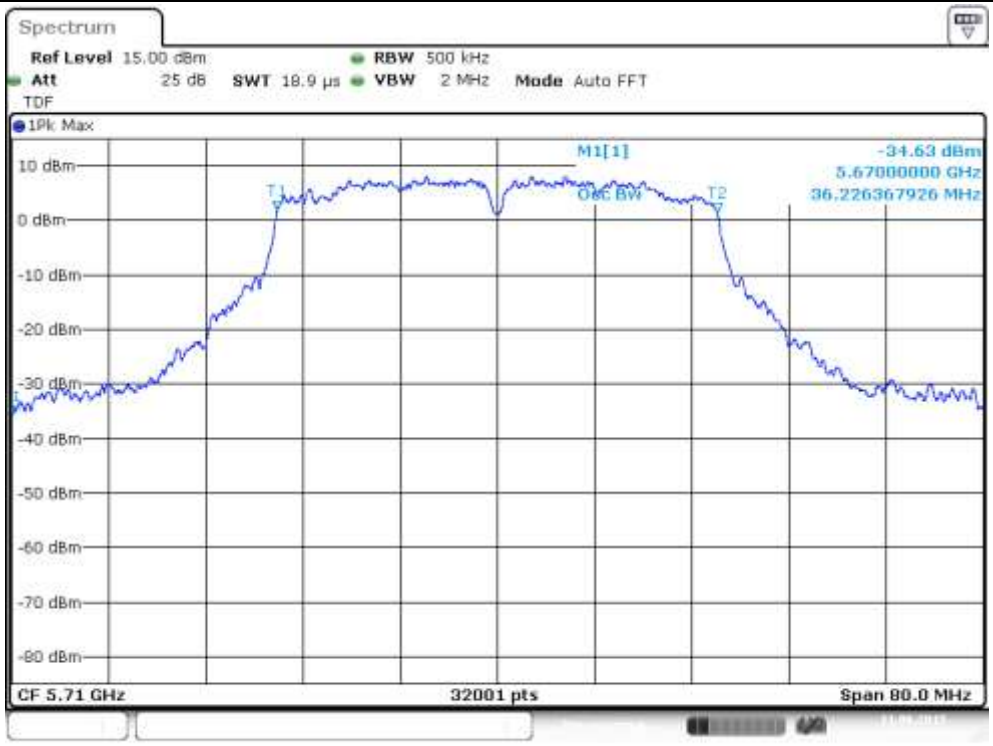


Date: 11.JUN.2015 10:37:37

26dB BW – CH142F (Overlapped Channel)

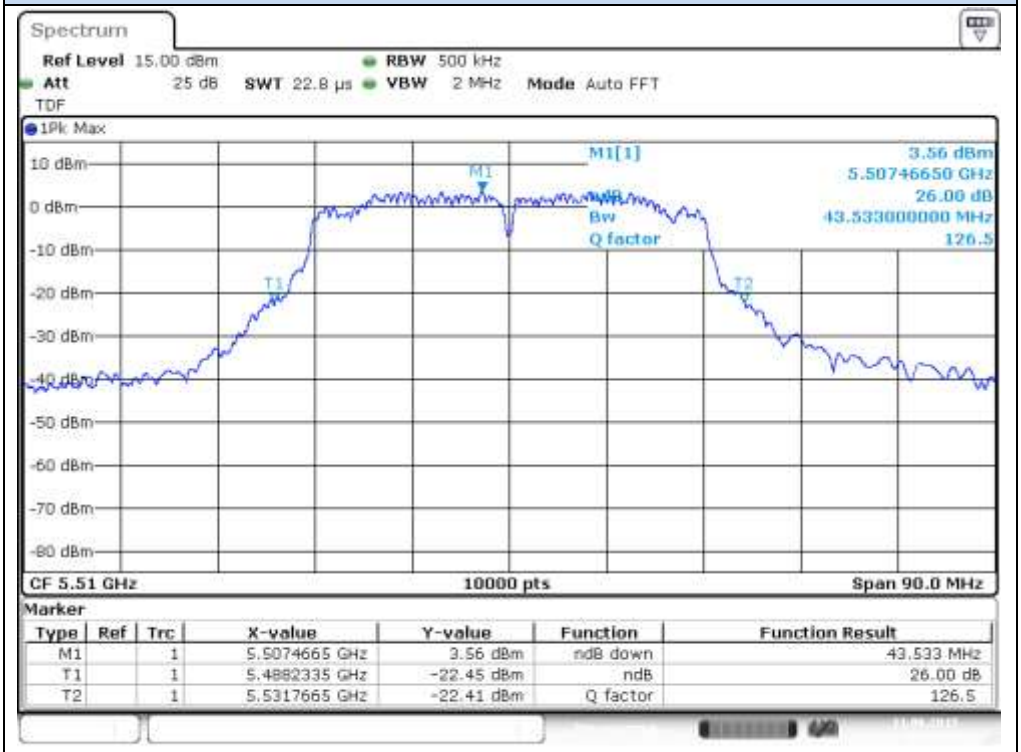


99% BW – CH142F (Overlapped Channel)



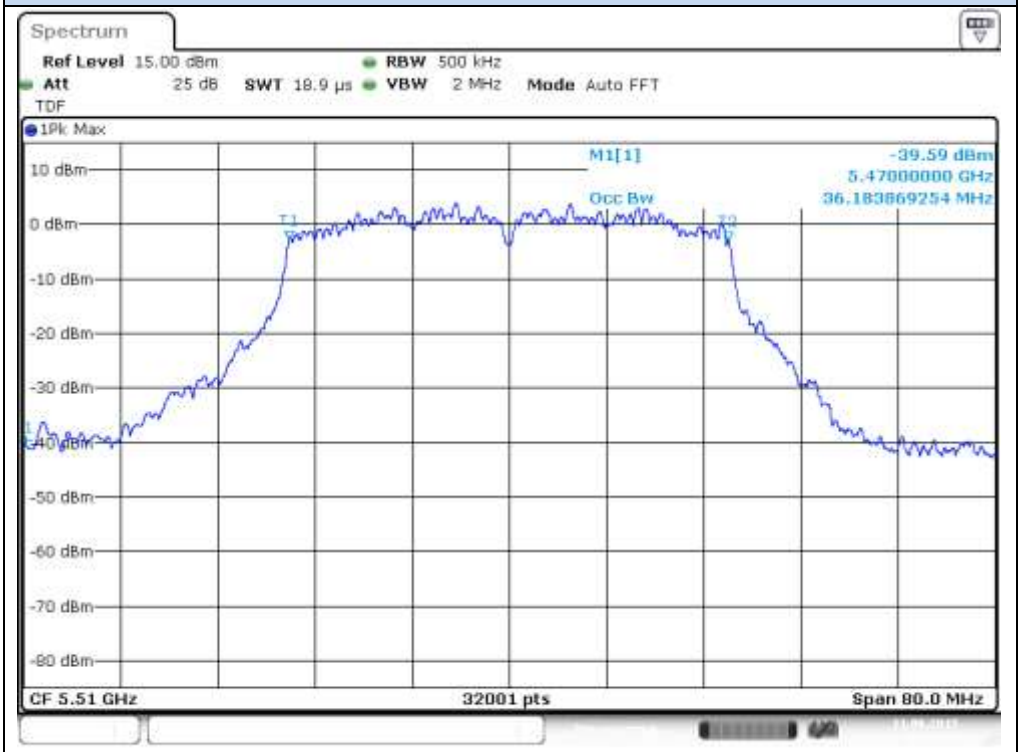
802.11n40, HT8 (MIMO) – Chain B

26dB BW – CH102F



Date: 11.JUN.2015 09:28:44

99% BW – CH102F



Date: 11.JUN.2015 09:28:13

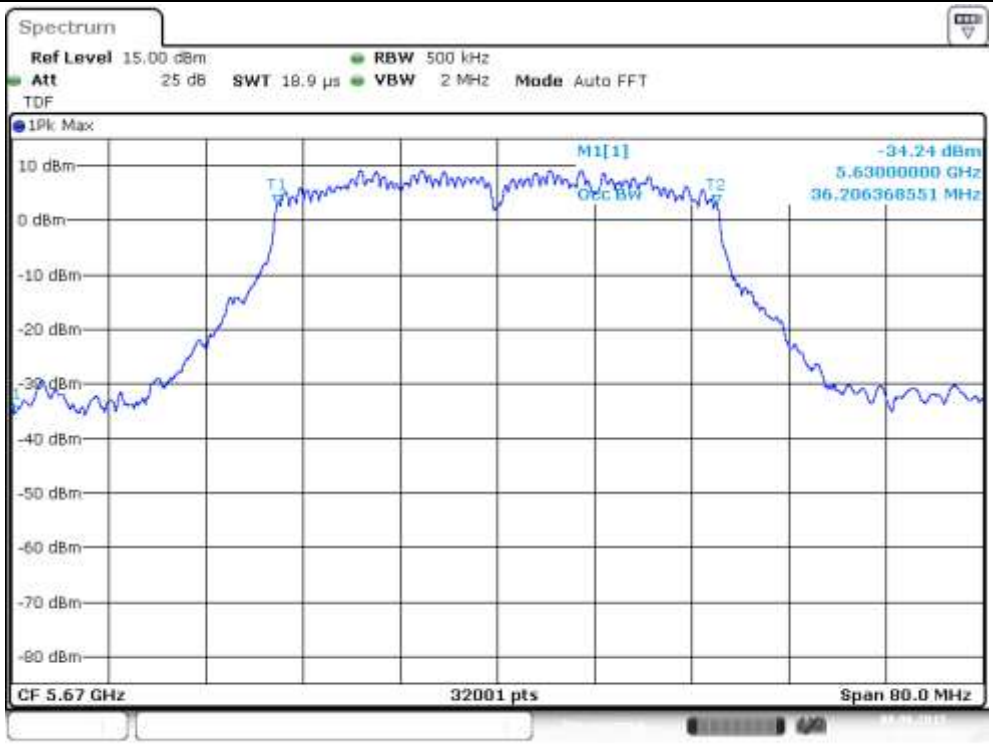
26dB BW – CH118F

99% BW – CH118F

26dB BW – CH134F

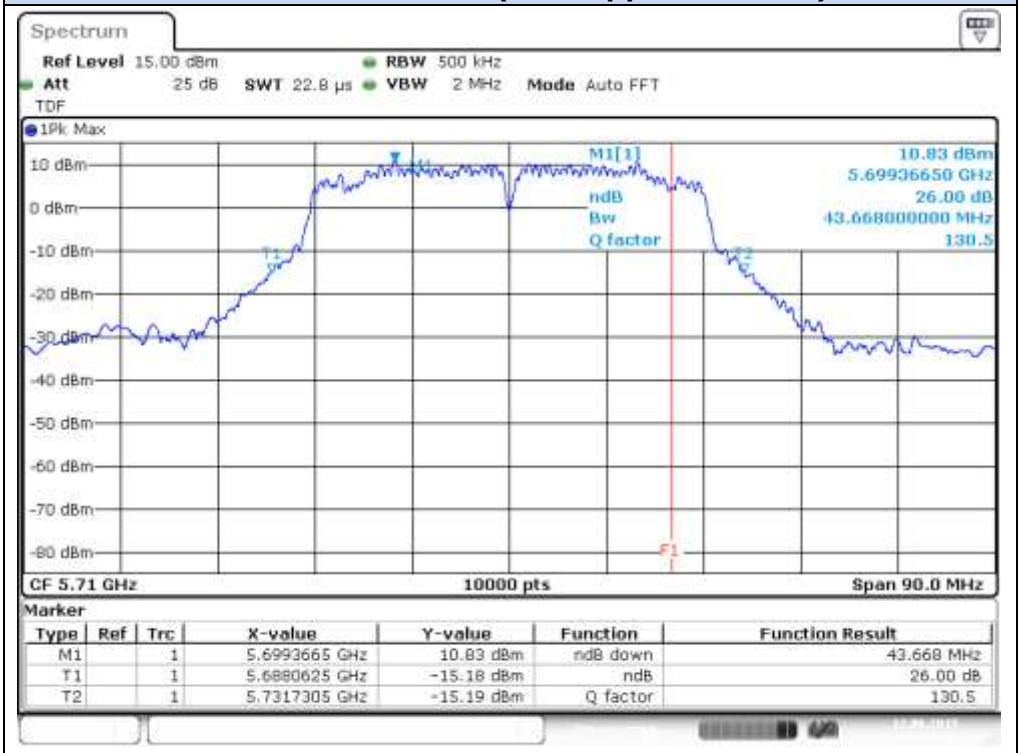
Date: 8.JUN.2015 18:12:40

99% BW – CH134F



Date: 8.JUN.2015 18:12:01

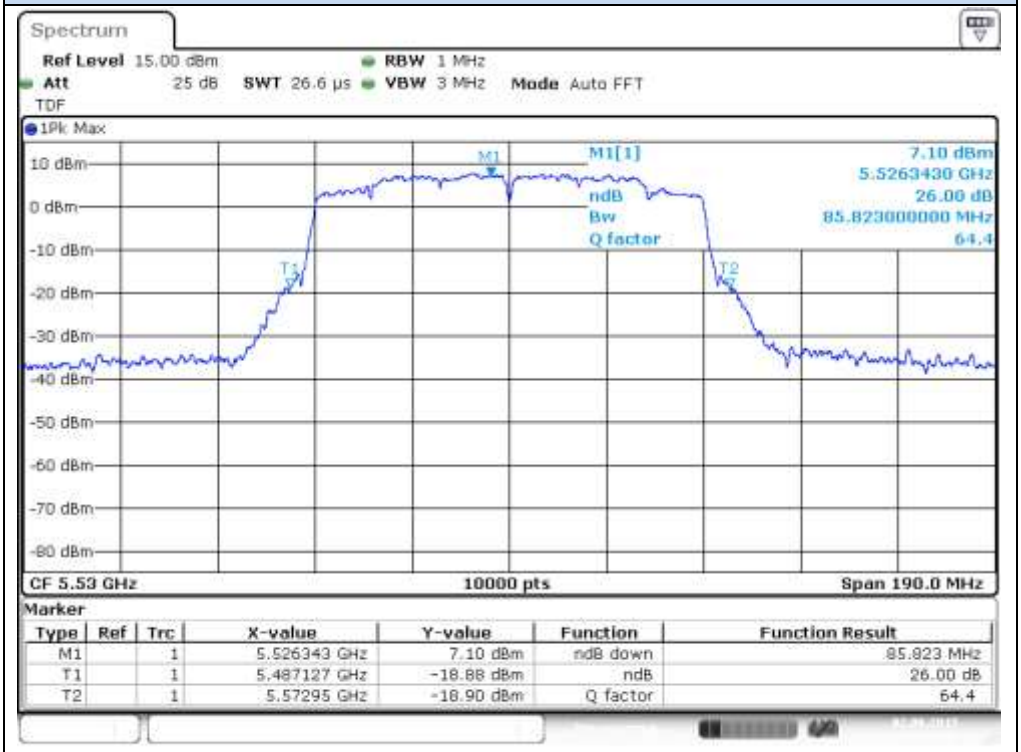
26dB BW – CH142F (Overlapped Channel)



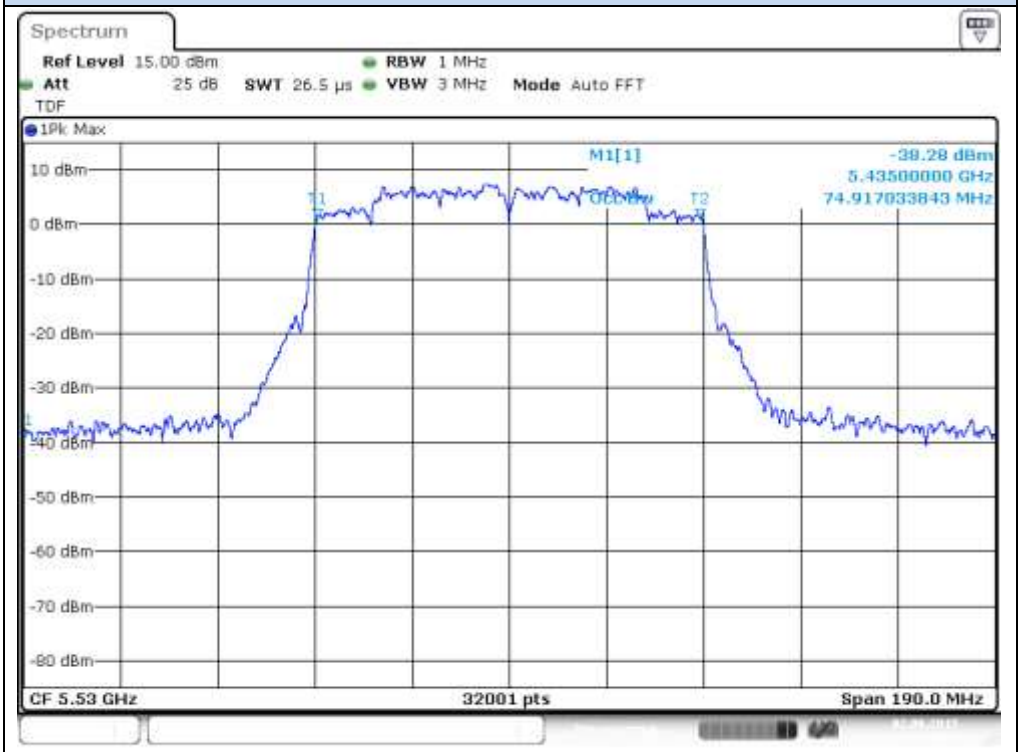
99% BW – CH142F (Overlapped Channel)

802.11ac80, VHT0 (SISO) – Chain A

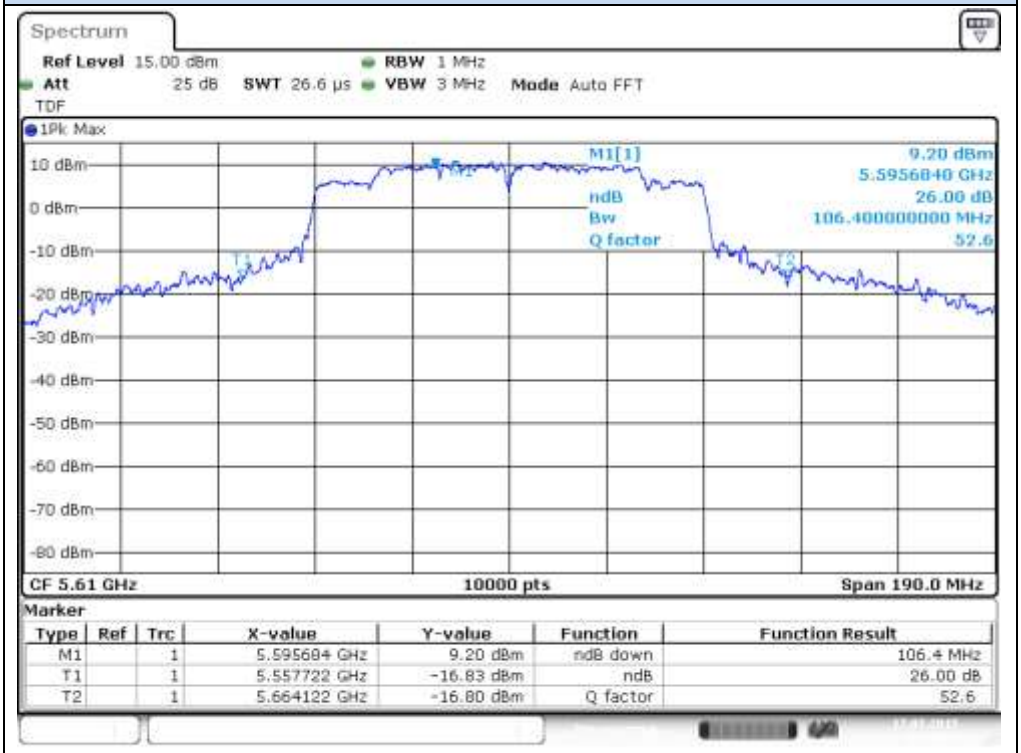
26dB BW – CH106ac80



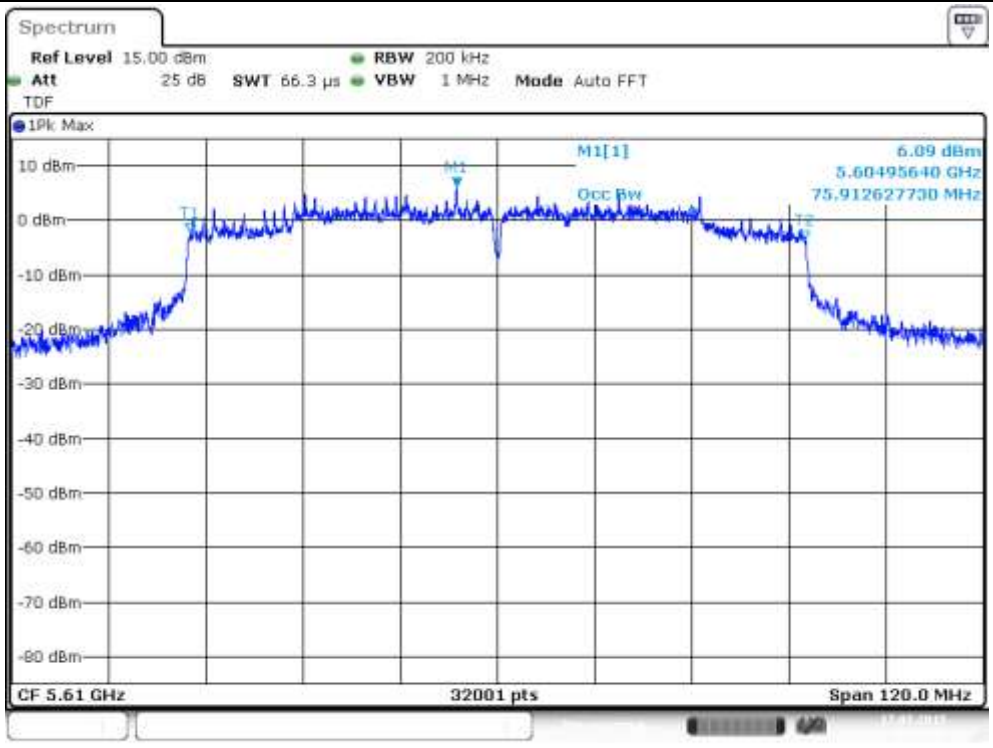
99% BW – CH106ac80



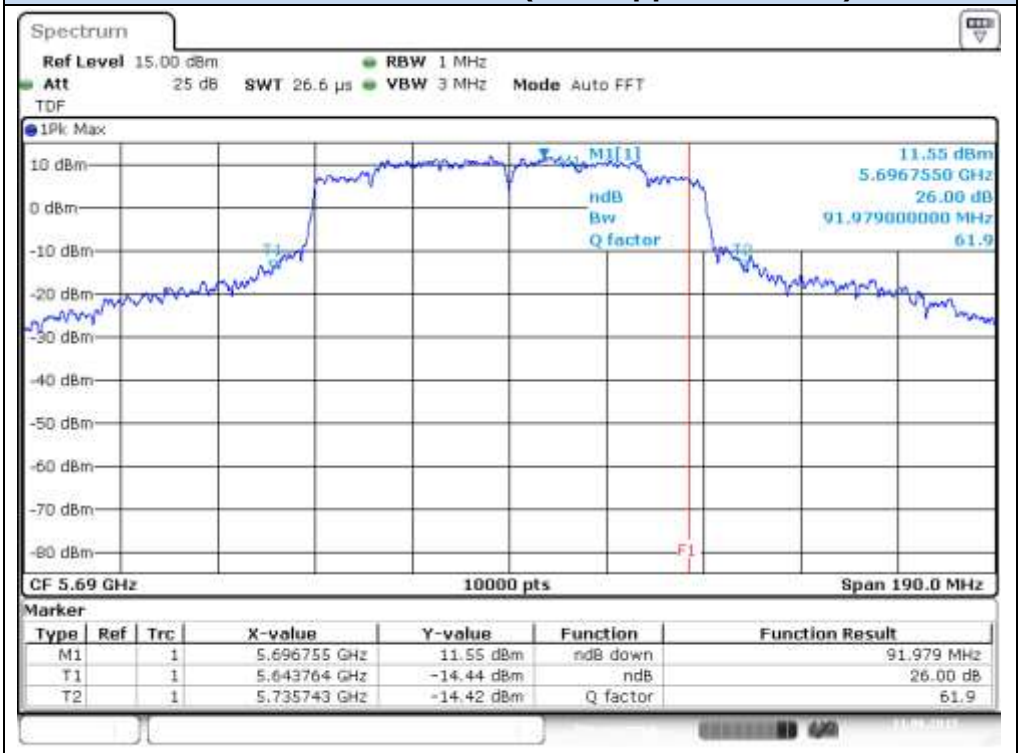
26dB BW – CH122ac80



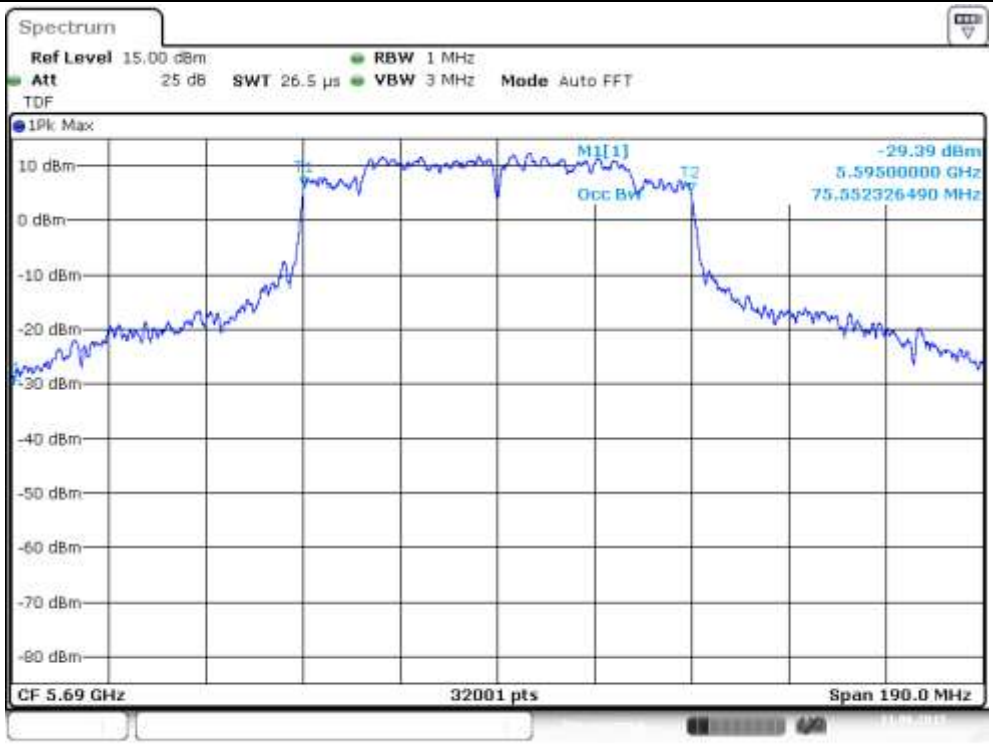
99% BW – CH122ac80



26dB BW – CH138ac80 (Overlapped Channel)



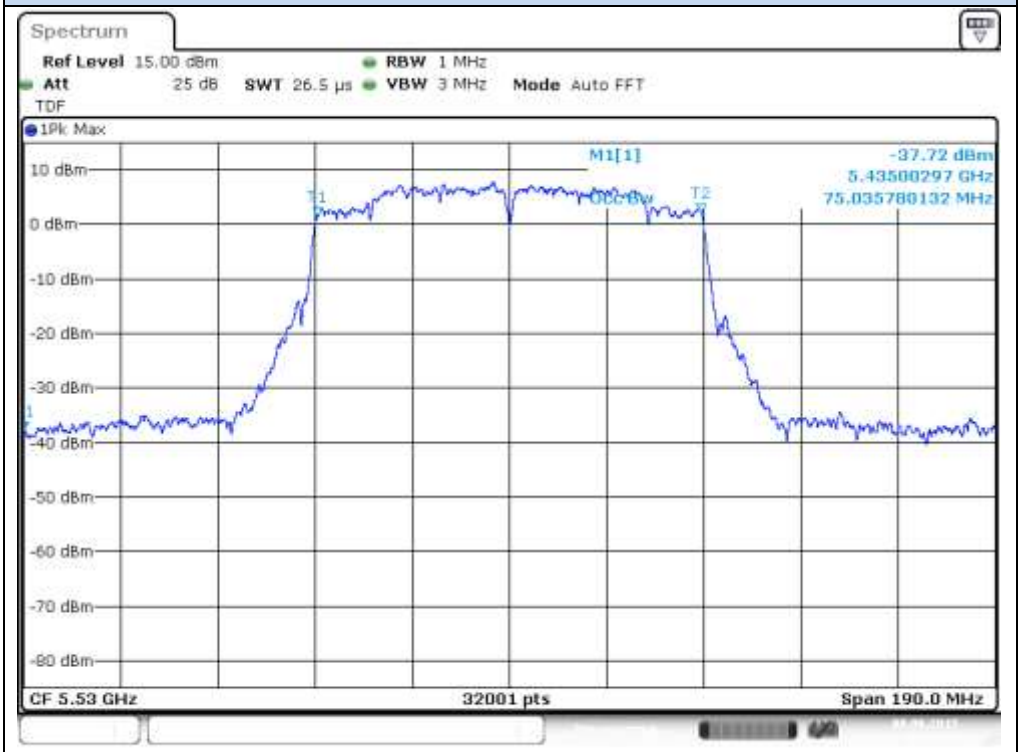
99% BW – CH138ac80 (Overlapped Channel)



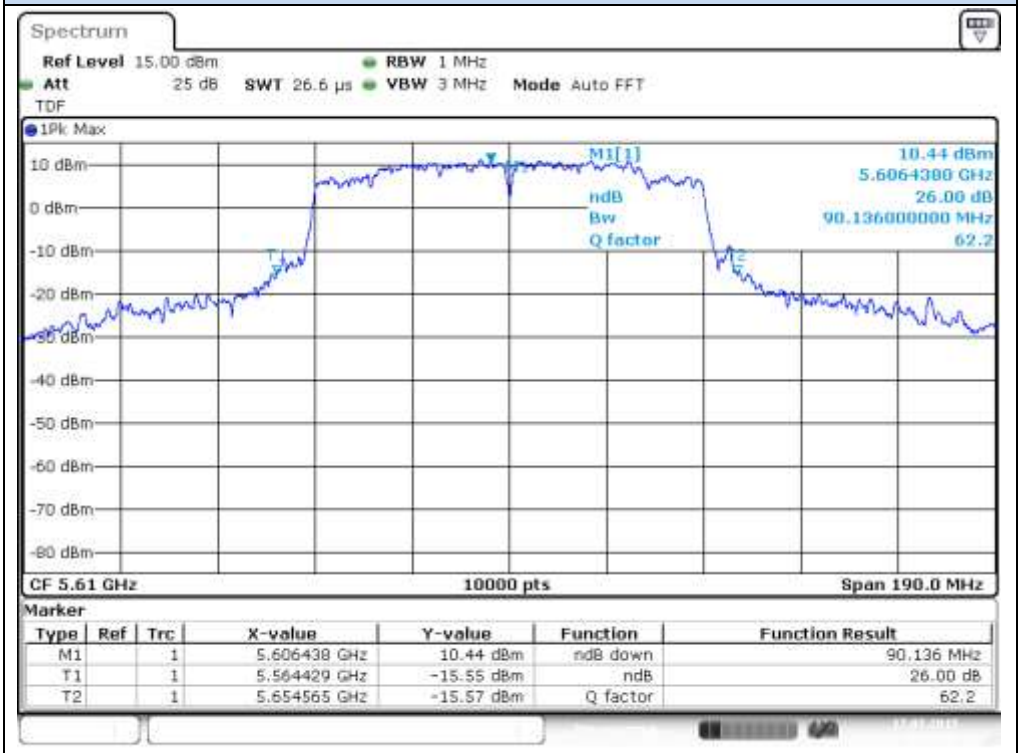
802.11ac80, VHT0 (SISO) – Chain B

26dB BW – CH106ac80

99% BW – CH106ac80

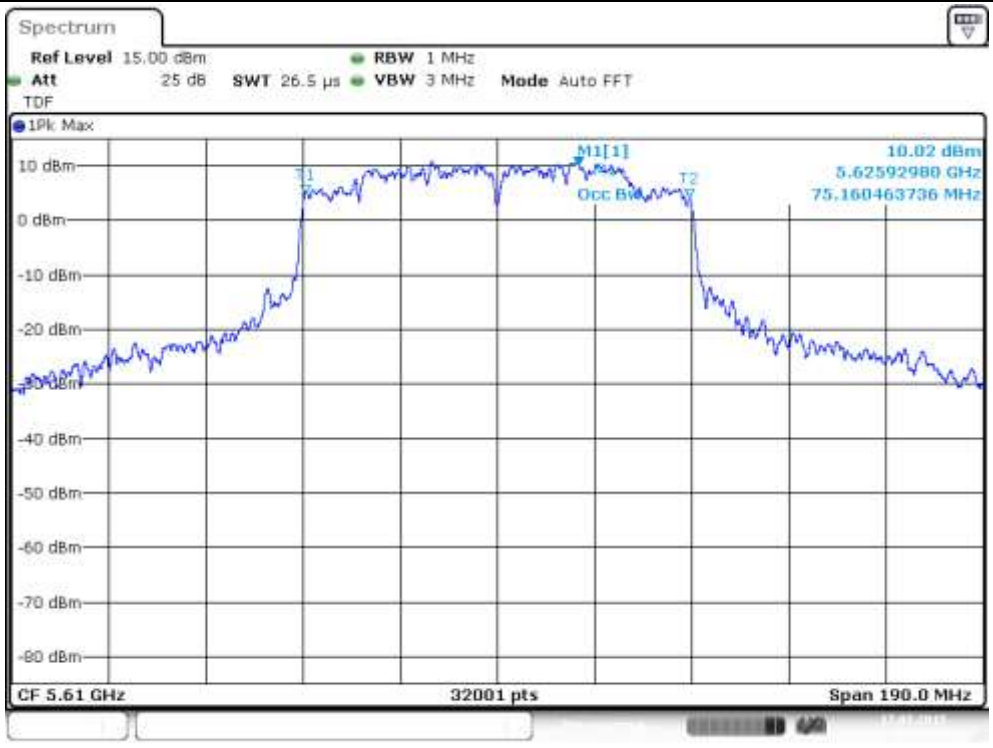


26dB BW – CH122ac80



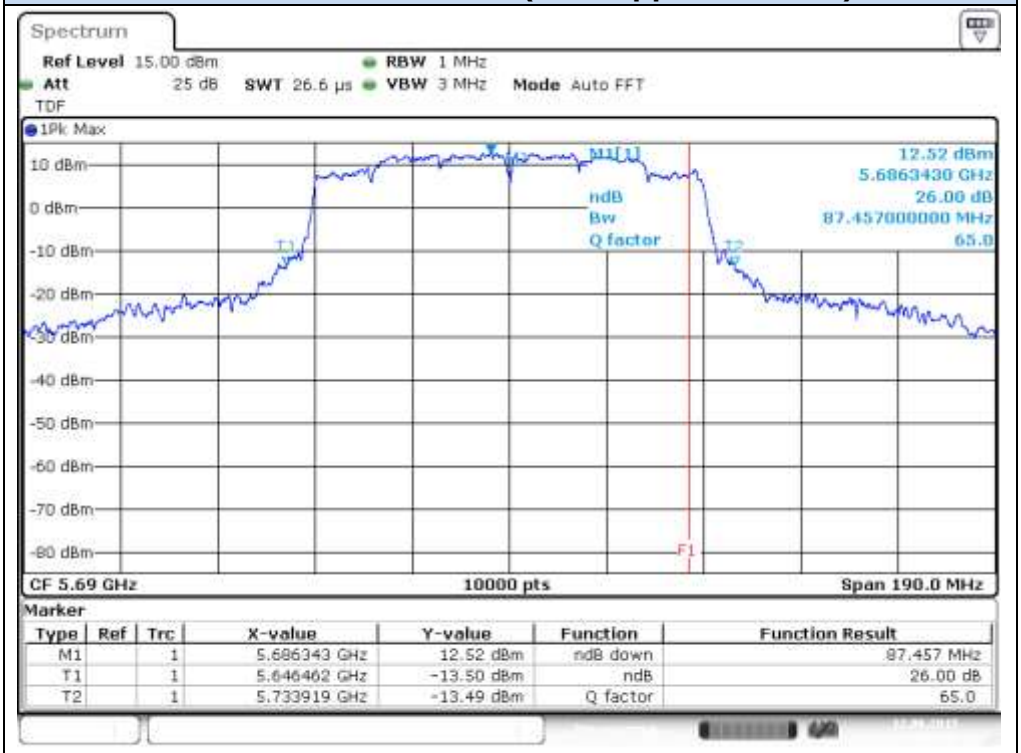
Date: 17.JUL.2015 16:32:36

99% BW – CH122ac80

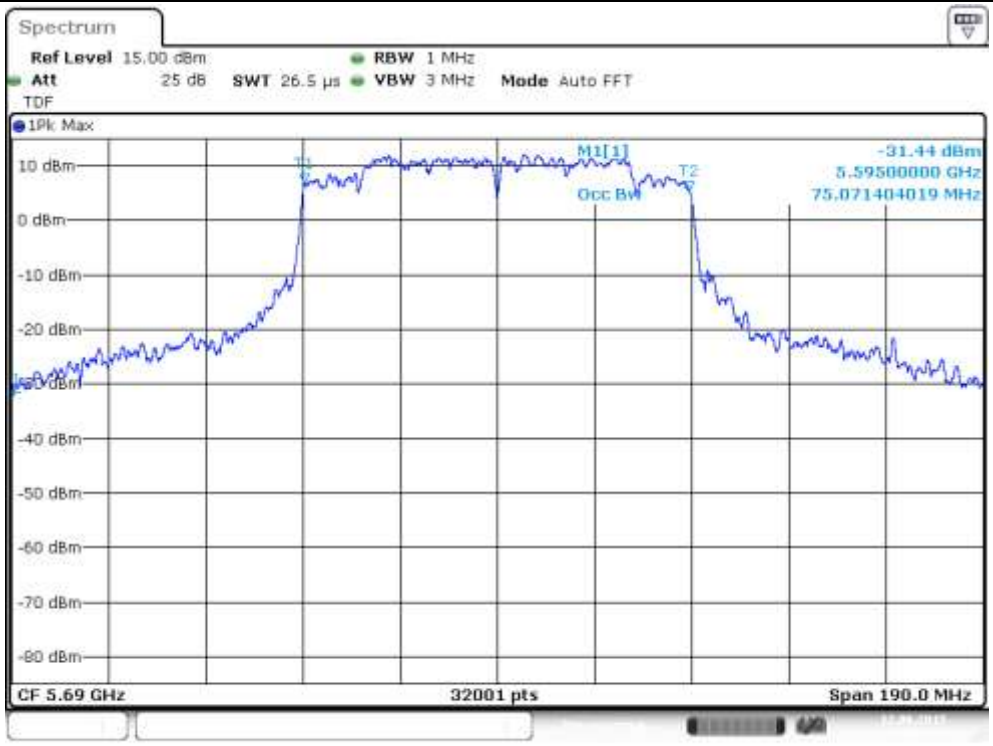


Date: 17.JUL.2015 16:33:29

26dB BW – CH138ac80 (Overlapped Channel)



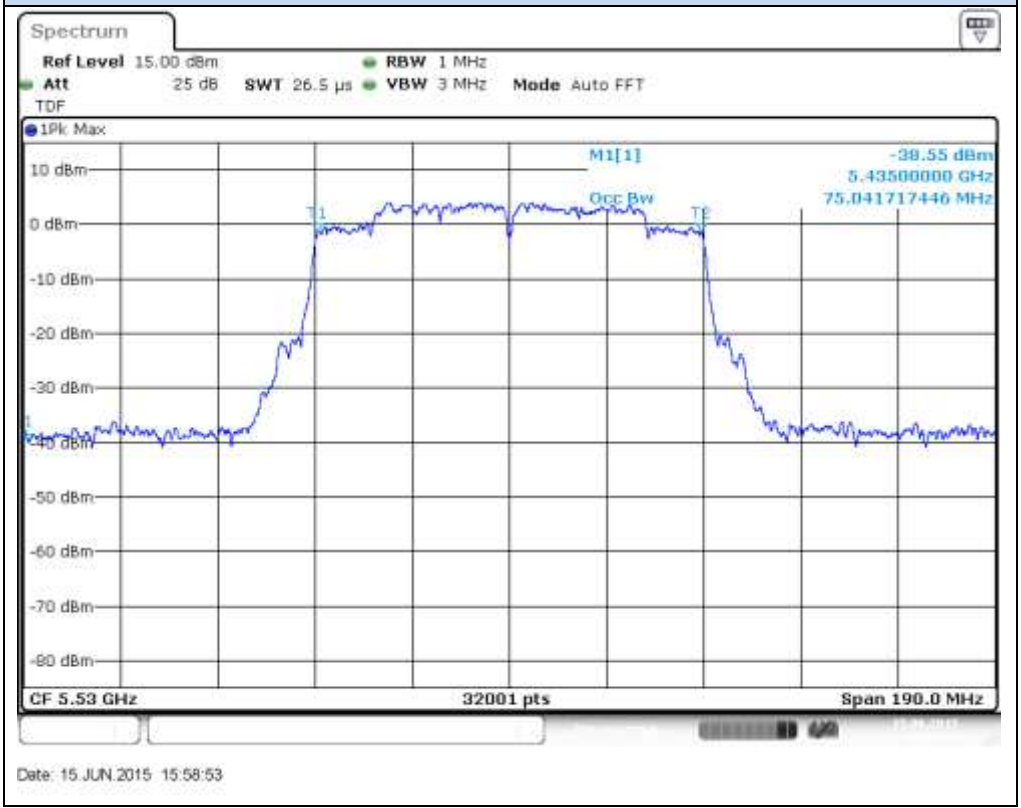
99% BW – CH138ac80 (Overlapped Channel)



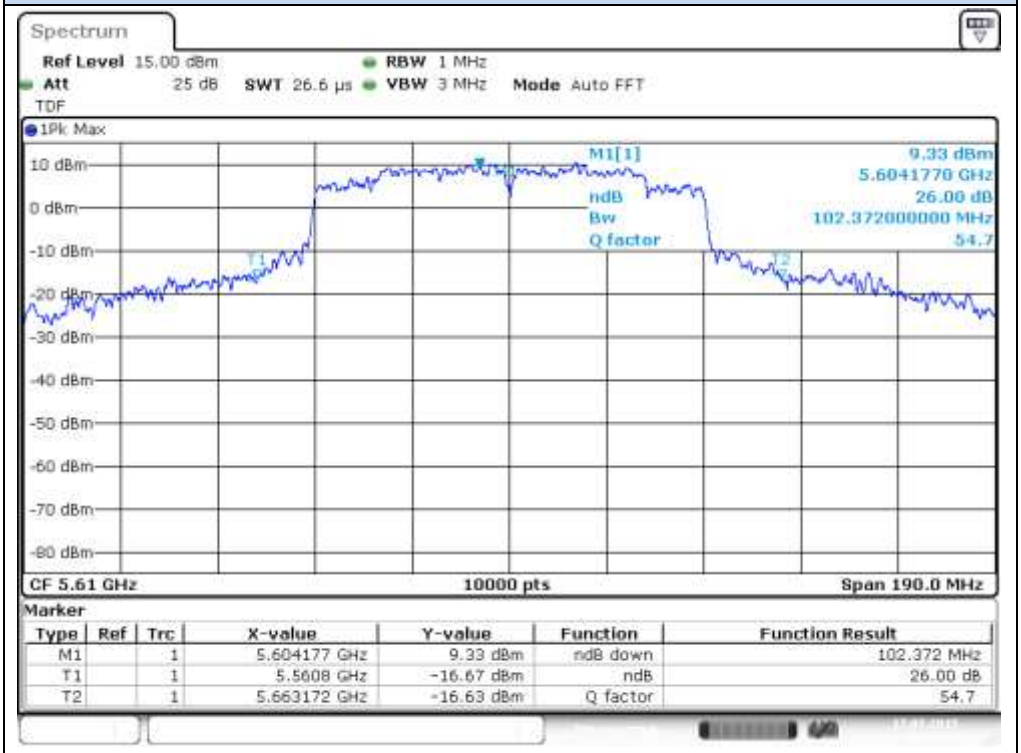
802.11ac80, VHT0 (MIMO) – Chain A

26dB BW – CH106ac80

99% BW – CH106ac80

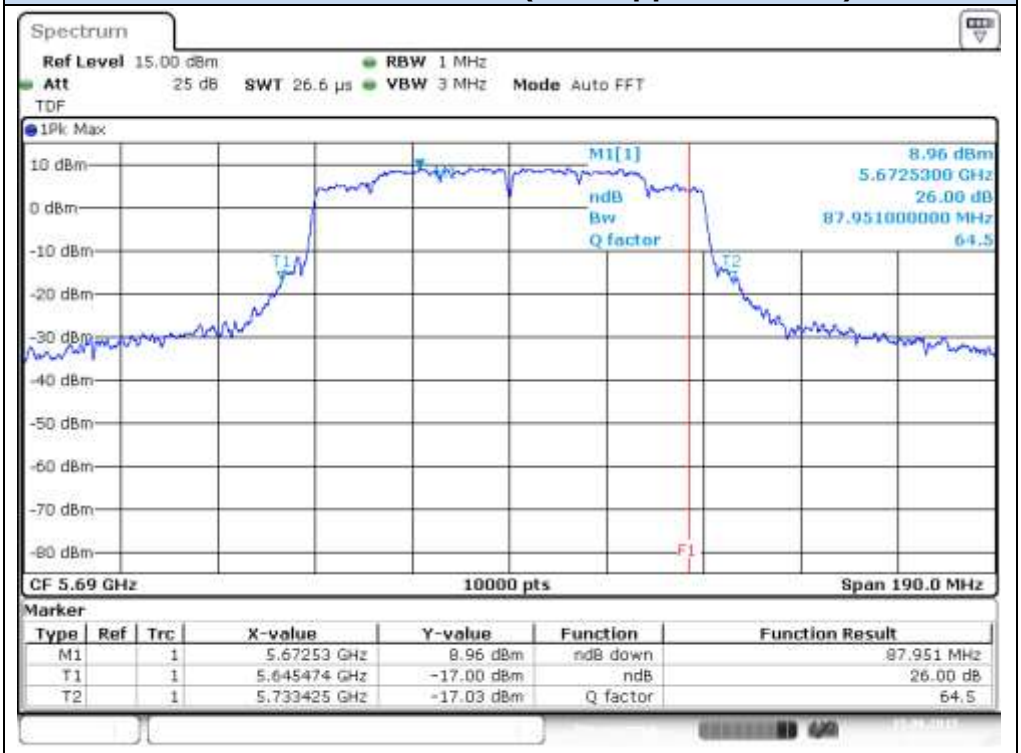


26dB BW – CH122ac80



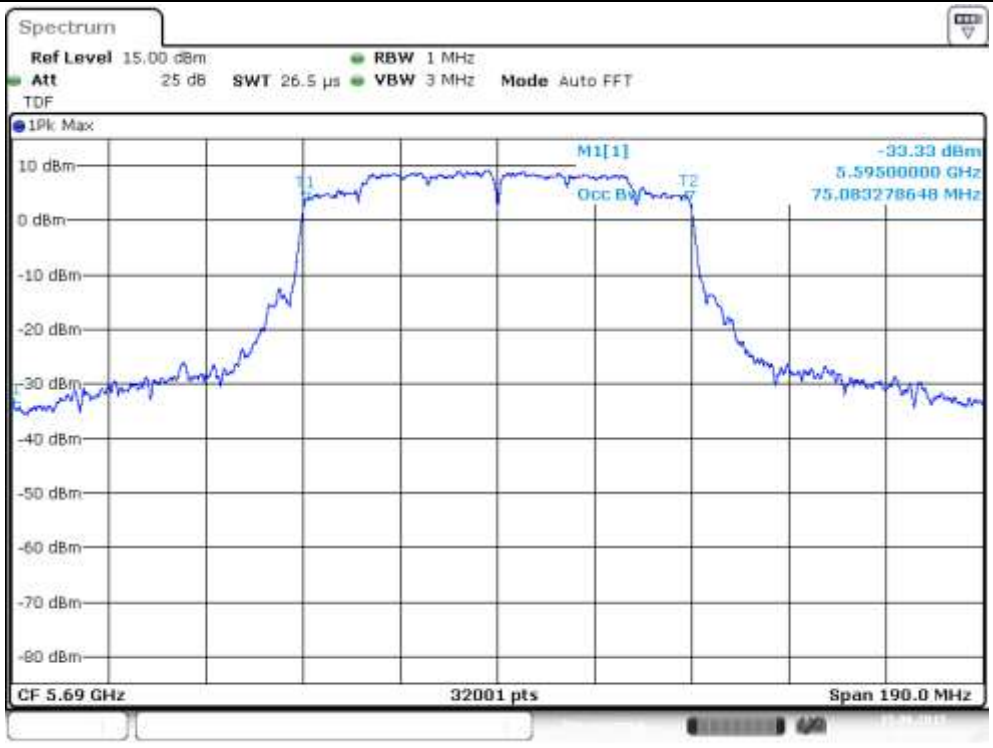
99% BW – CH122ac80

26dB BW – CH138ac80 (Overlapped Channel)



Date: 15.JUN.2015 15:36:53

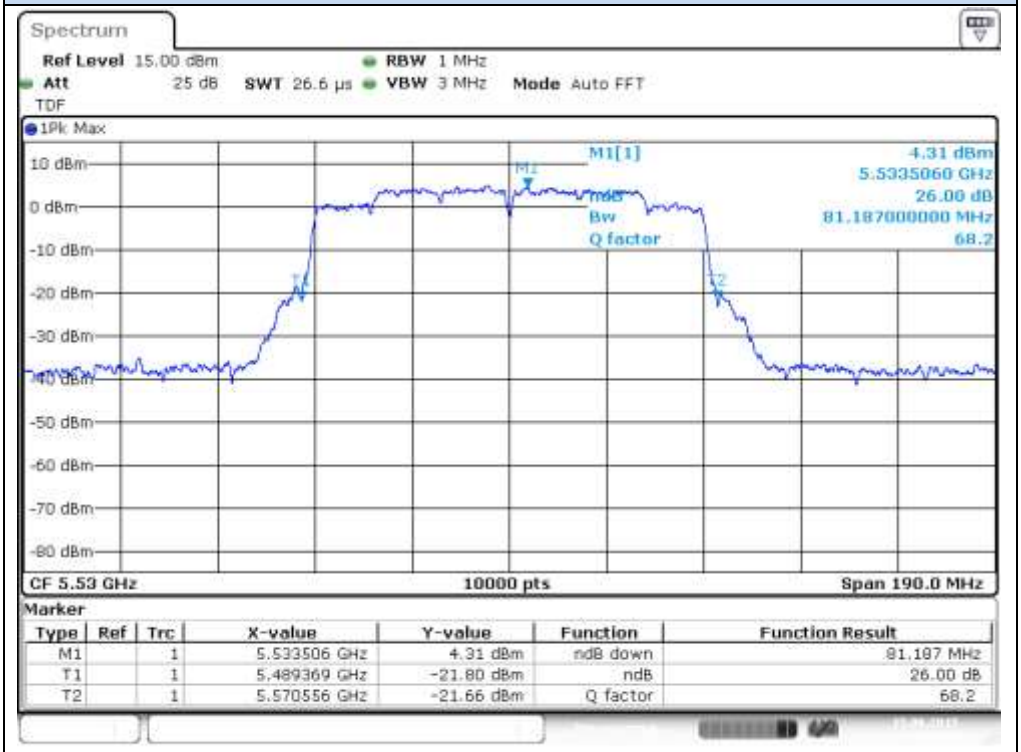
99% BW – CH138ac80 (Overlapped Channel)



Date: 15.JUN.2015 15:33:28

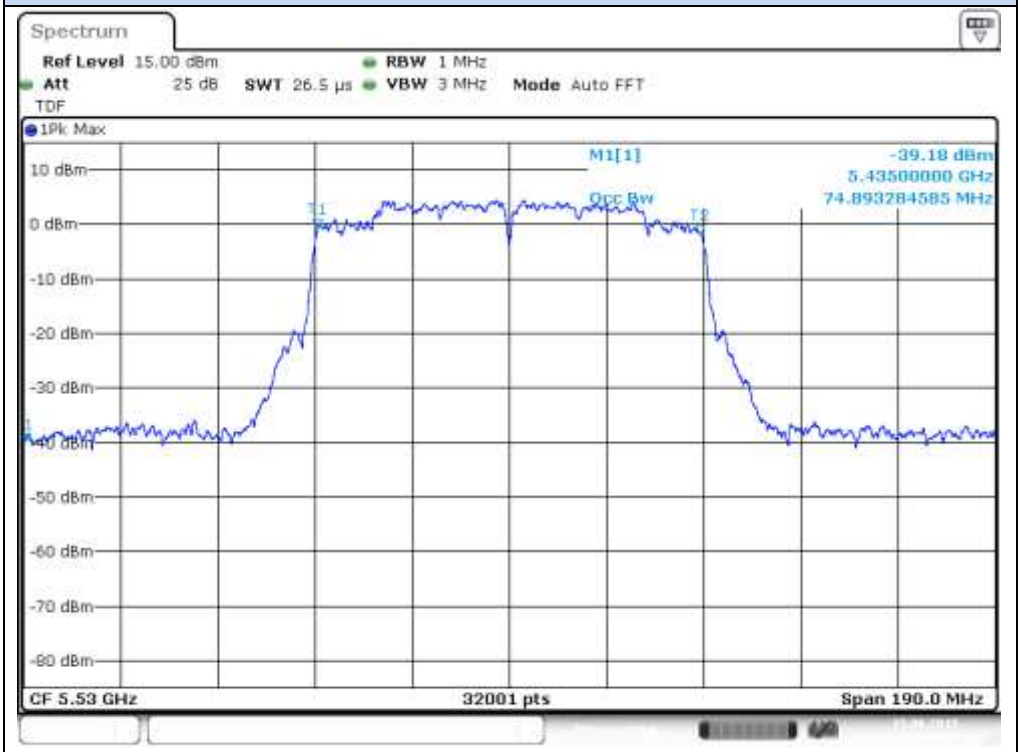
802.11ac80, VHT0 (MIMO) – Chain B

26dB BW – CH106ac80



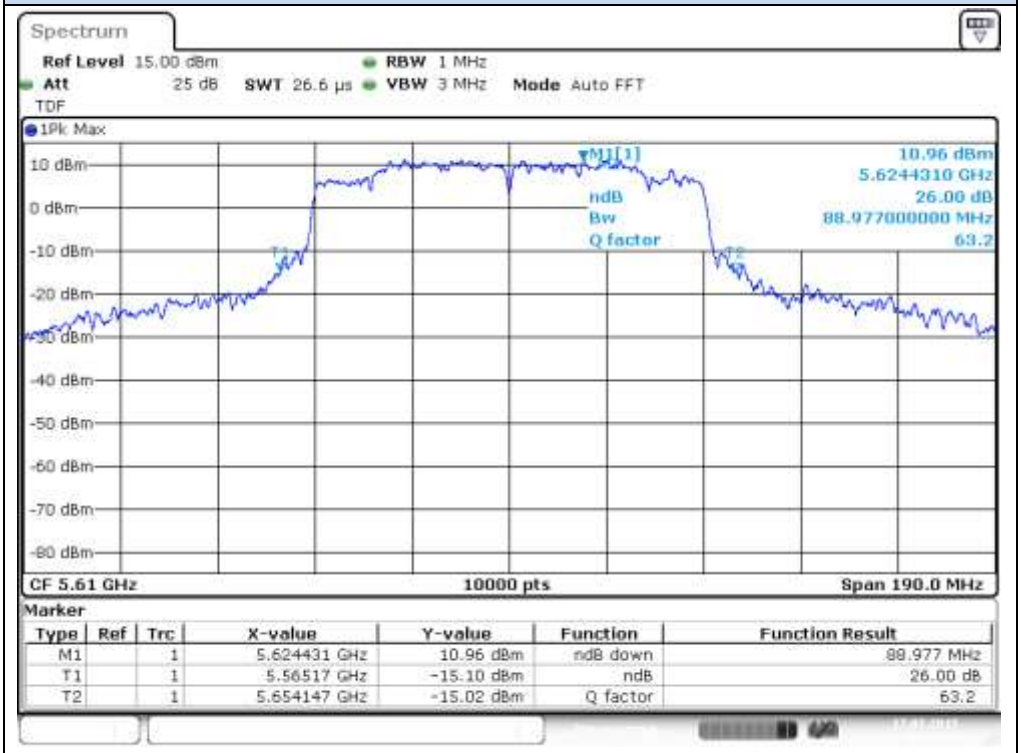
Date: 15.JUN.2015 11:50:50

99% BW – CH106ac80



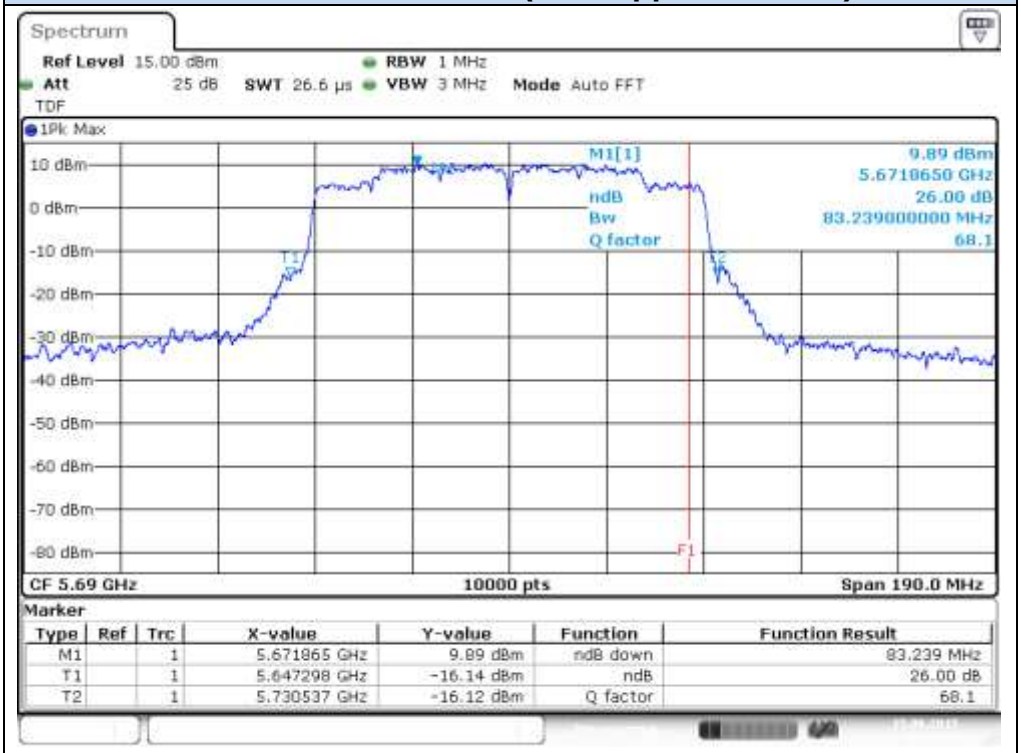
Date: 15.JUN.2015 11:49:06

26dB BW – CH122ac80



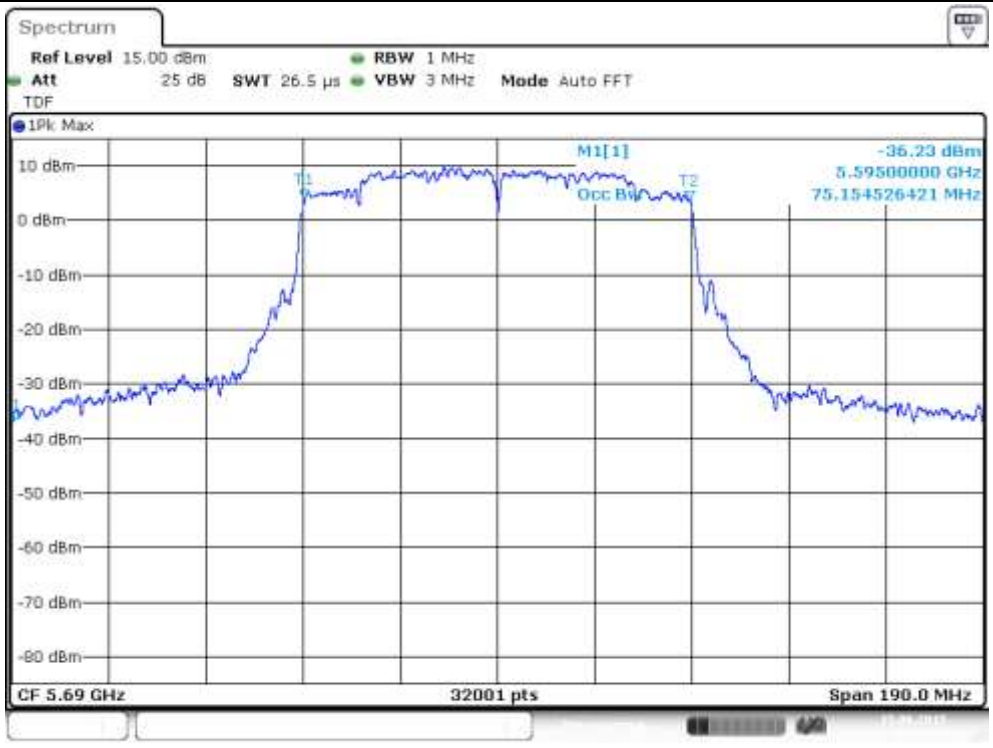
99% BW – CH122ac80

26dB BW – CH138ac80 (Overlapped Channel)



Date: 15.JUN.2015 15:12:44

99% BW – CH138ac80 (Overlapped Channel)



Date: 15.JUN.2015 15:15:51

C.2 Power Limits. Maximum Output power & Peak power spectral density

Test limits:

FCC part	RSS Part	Limits
15.407 (a) (2)	RSS-247 Clause 6.2.3 (1)	For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band.

Test procedure:

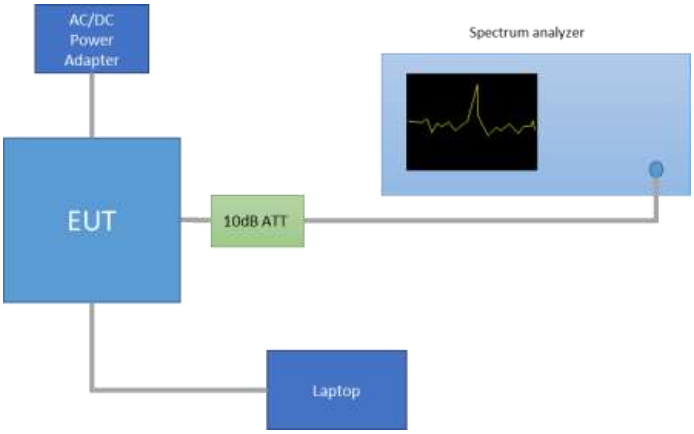
The Maximum Conducted Output Power was measured using the channel integration method according to point E) 2) e) (Method SA-2 Alternative) of Guidance 789033 D01.

The maximum power spectral density (PSD) was measured using the method according to point F) (Method SA-2 Alternative) of Guidance 789033 D01.

In the measure-and-sum approach for MIMO mode, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically in linear power units to determine the total emission level from the device.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power. The declared maximum antenna gain is 5dBi.

The setup below was used to measure the maximum conducted output power and power spectral density. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



For the overlapped channels between U-NII-2C and U-NII-3, and according to FCC KDB 644545 D03, the power is computed based on the portion of the emission bandwidth contained within that band. This rule is only applicable for those channels marked as overlapped.

Results tables:

Mode	Rate	Meas. Duty Cycle	CH	Freq. [MHz]	Antenna	Power [dBm]			
						Meas. Cond RMS	Duty cycle Compensated	EIRP	PSD
802.11a	6Mbps	0.98	100	5500	SISO CHAIN A	18.73	18.80	23.80	7.76
					SISO CHAIN B	19.07	19.14	24.14	8.02
			120	5600	SISO CHAIN A	20.84	20.91	25.91	9.89
					SISO CHAIN B	20.76	20.83	25.83	9.81
			140	5700	SISO CHAIN A	16.97	17.04	22.04	5.98
					SISO CHAIN B	17.13	17.20	22.20	6.19
802.11n20	HT0	0.96	100	5500	SISO CHAIN A	18.46	18.62	23.62	7.34
					SISO CHAIN B	18.67	18.83	23.83	7.54
			120	5600	SISO CHAIN A	20.60	20.76	25.76	9.47
					SISO CHAIN B	20.85	21.01	26.01	9.71
			140	5700	SISO CHAIN A	16.46	16.62	21.62	5.32
					SISO CHAIN B	16.80	16.96	21.96	5.66
			144*	5720	SISO CHAIN A	19.44	19.60	24.60	9.06
					SISO CHAIN B	20.07	20.25	25.25	9.67
	HT8	0.96	100	5500	MIMO CHAIN A	15.43	15.59	20.59	4.35
					MIMO CHAIN B	15.27	15.42	20.42	4.09
			120	5600	MIMO CHAIN A	17.83	17.99	22.99	6.70
					MIMO CHAIN B	17.77	17.93	22.93	6.63
			140	5700	MIMO CHAIN A	13.14	13.30	18.30	1.98
					MIMO CHAIN B	12.83	12.99	17.99	1.70
			144*	5720	MIMO CHAIN A	16.52	16.68	21.68	6.11
					MIMO CHAIN B	16.88	17.04	22.04	6.53
802.11n40	HT0	0.93	102F	5510	SISO CHAIN A	15.39	15.70	20.70	0.94
					SISO CHAIN B	16.01	16.32	21.32	1.63
			118F	5590	SISO CHAIN A	20.44	20.75	25.75	5.98
					SISO CHAIN B	20.92	**21.23**	26.23	6.44
			134F	5610	SISO CHAIN A	17.59	17.90	22.90	3.13
					SISO CHAIN B	18.28	18.59	23.59	3.81
			142F*	5670	SISO CHAIN A	19.86	20.17	25.34	5.57
					SISO CHAIN B	20.91	21.22	25.91	6.68
	HT8	0.93	102F	5510	MIMO CHAIN A	14.73	15.04	20.04	0.22
					MIMO CHAIN B	14.76	15.07	20.07	0.42
			118F	5590	MIMO CHAIN A	18.14	18.45	23.45	3.72
					MIMO CHAIN B	17.67	17.98	22.98	3.33
			134F	5610	MIMO CHAIN A	16.19	16.50	21.50	1.76
					MIMO CHAIN B	16.87	17.18	22.18	2.47
			142F*	5670	MIMO CHAIN A	16.91	17.22	22.93	2.73
					MIMO CHAIN B	17.67	17.98	23.18	3.49

Mode	Rate	Meas. Duty Cycle	CH	Freq. [MHz]	Antenna	Power [dBm]			
						Meas. Cond RMS	Duty cycle Compensated	EIRP	PSD
802.11ac80	VHT0	0.93	106ac80	5530	SISO CHAIN A	14.88	15.17	20.17	-2.15
					SISO CHAIN B	15.17	15.46	20.46	-1.92
			122ac80	5610	SISO CHAIN A	18.88	19.17	24.17	1.72
					SISO CHAIN B	19.31	19.60	24.60	2.13
			138ac80*	5690	SISO CHAIN A	20.05	20.34	25.34	3.01
					SISO CHAIN B	20.62	20.91	25.91	3.52
	VHT0	0.87	106ac80	5530	MIMO CHAIN A	13.69	14.30	19.30	-3.43
					MIMO CHAIN B	12.12	12.72	17.72	-2.99
			122ac80	5610	MIMO CHAIN A	18.08	18.69	23.69	1.05
					MIMO CHAIN B	18.72	19.33	24.33	1.66
			138ac80*	5690	MIMO CHAIN A	16.96	17.56	22.56	0.00
					MIMO CHAIN B	17.19	17.79	22.79	0.17

Max Value

MIMO modes – Combined results

Mode	Rate	Channel	Frequency (MHz)	Antenna	Power [dBm]		
					Combined, Duty Cycle compensated	EIRP	Combined PSD
802.11n20	HT8	100	5500	MIMO CHAIN A + CHAIN B	18.52	23.52	7.23
		120	5600		20.97	25.97	9.68
		140	5700		16.16	21.16	4.85
		144*	5720		19.88	24.88	9.34
802.11n40	HT8	102F	5510		18.06	23.06	3.33
		118F	5590		21.14	26.14	6.37
		134F	5610		19.86	24.86	5.14
		142F*	5670		20.62	25.62	6.14
802.11ac80	VHT0	106ac80	5530		15.67	20.67	-2.00
		122ac80	5610		**22.03**	27.03	4.38
		138ac80*	5690		20.56	25.56	3.10

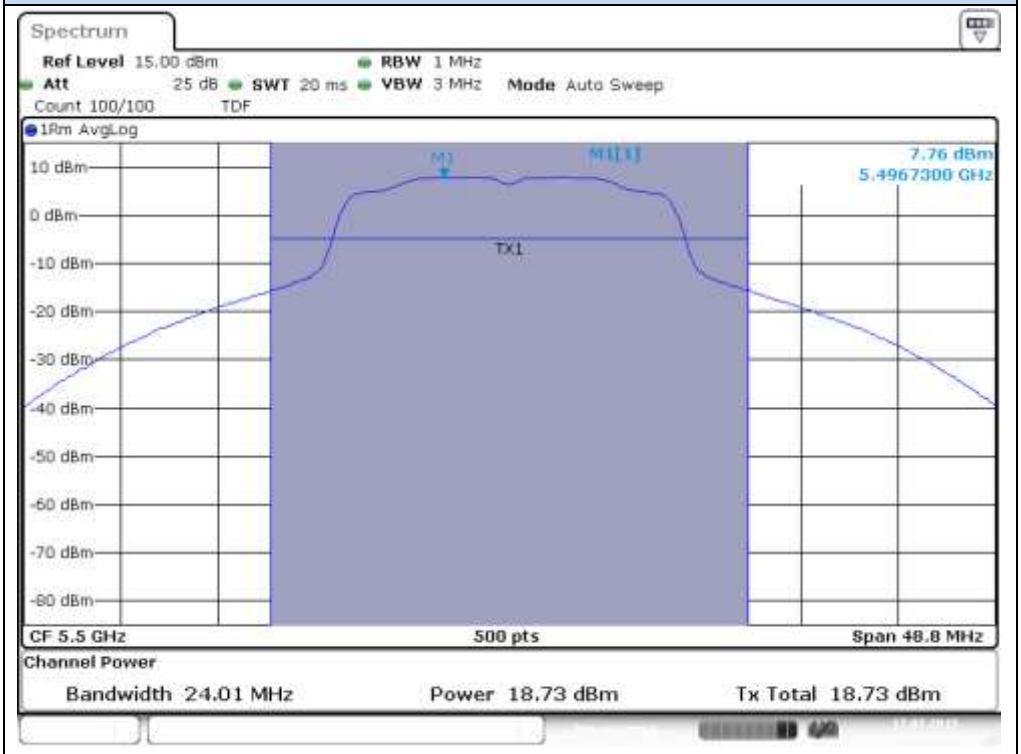
Max Value

**** Overlapped channels between U-NII-2C and U-NII-3***

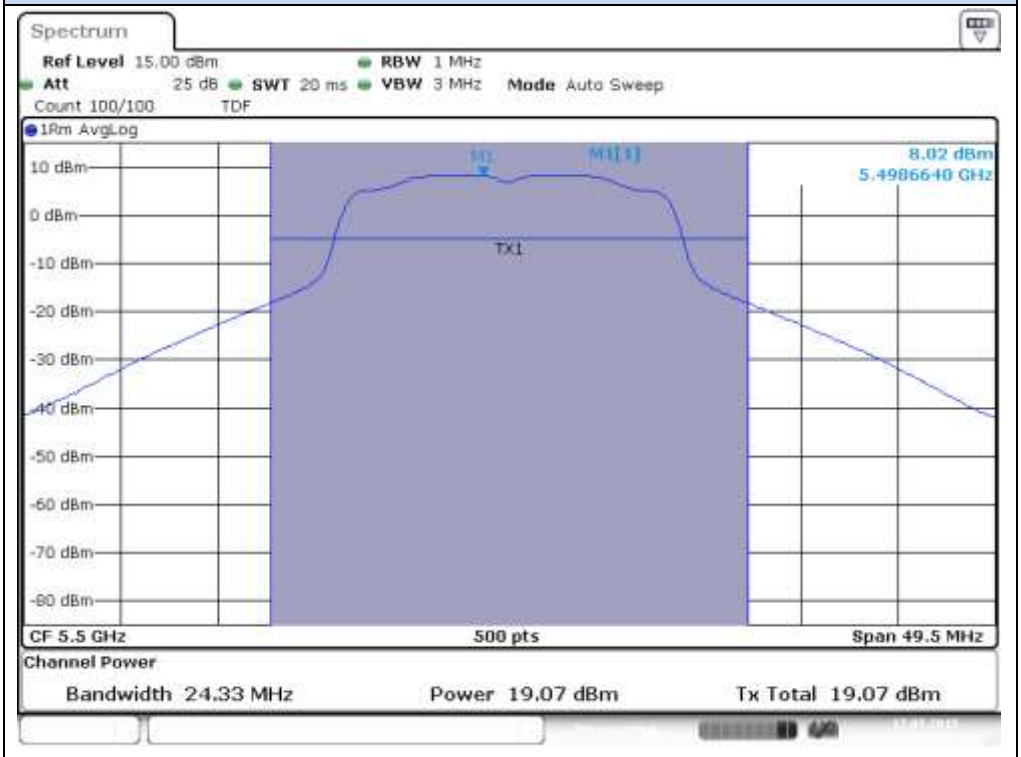
Results screenshot:

802.11a, 6Mbps

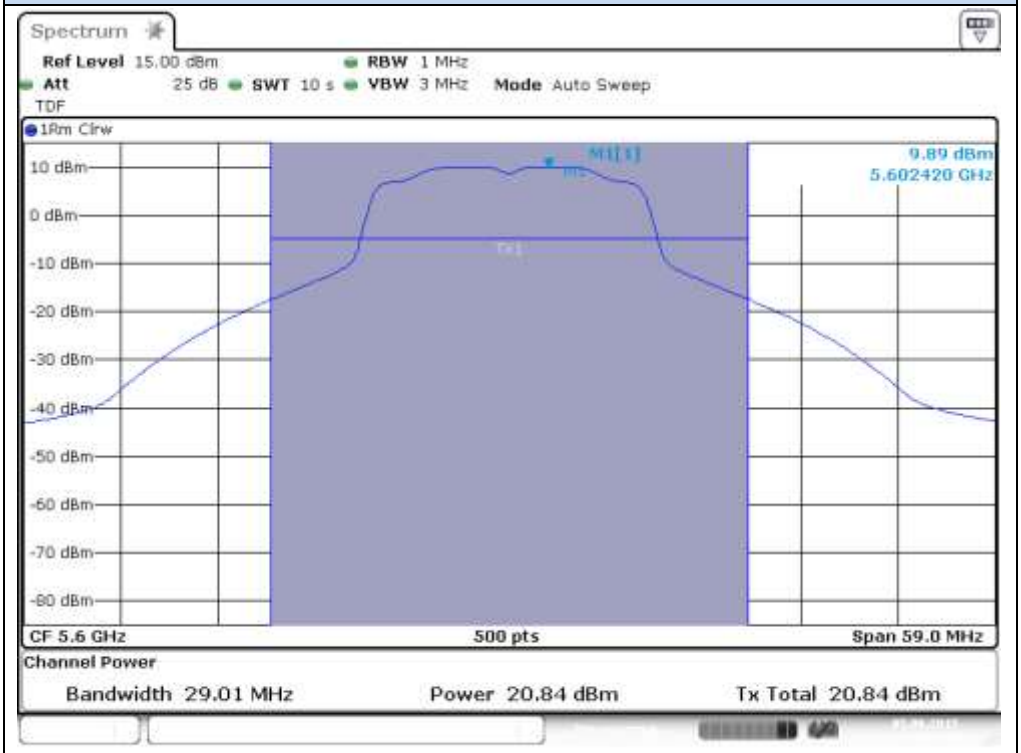
Max Power & PSD, Chain A – CH100



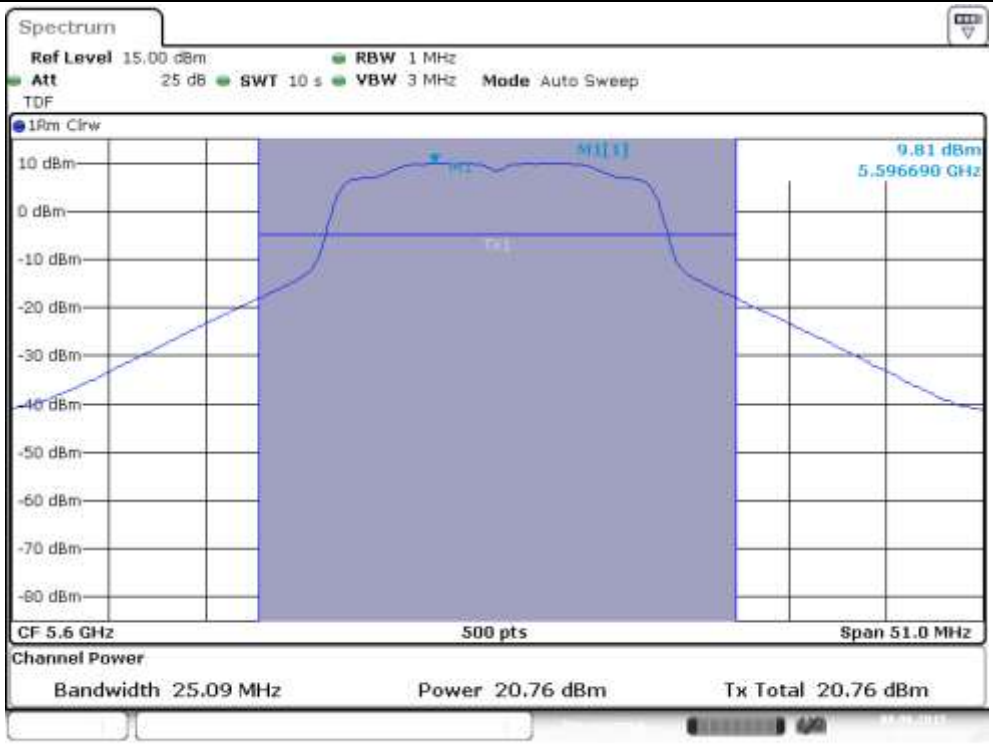
Max Power & PSD, Chain B – CH100



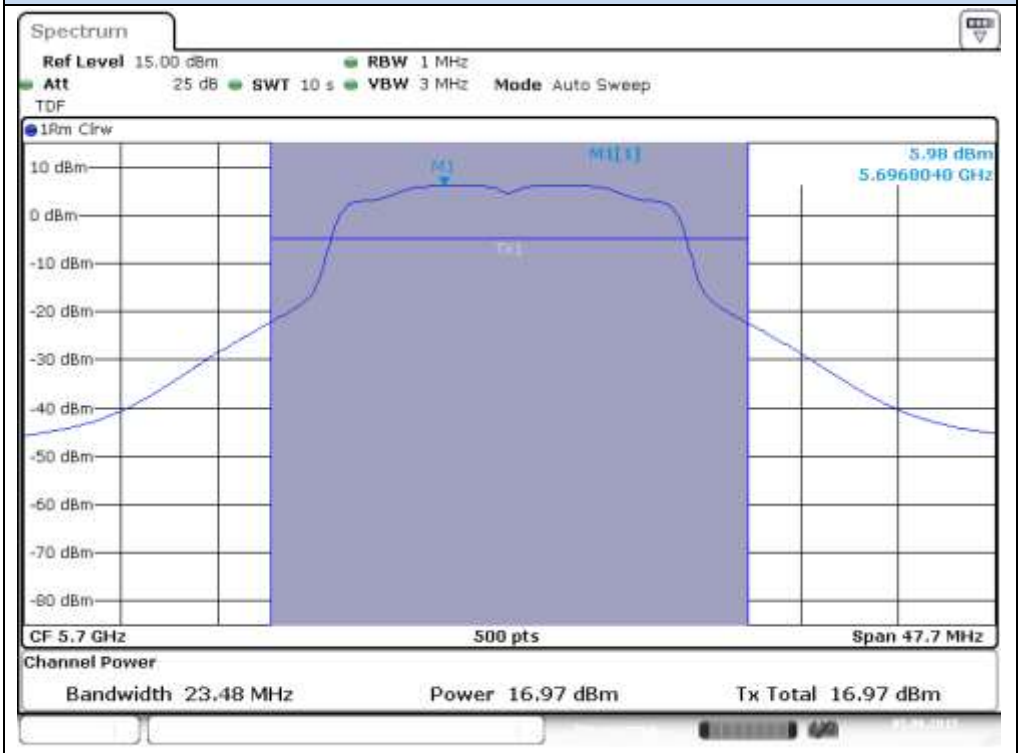
Max Power & PSD, Chain A – CH120



Max Power & PSD, Chain B – CH120

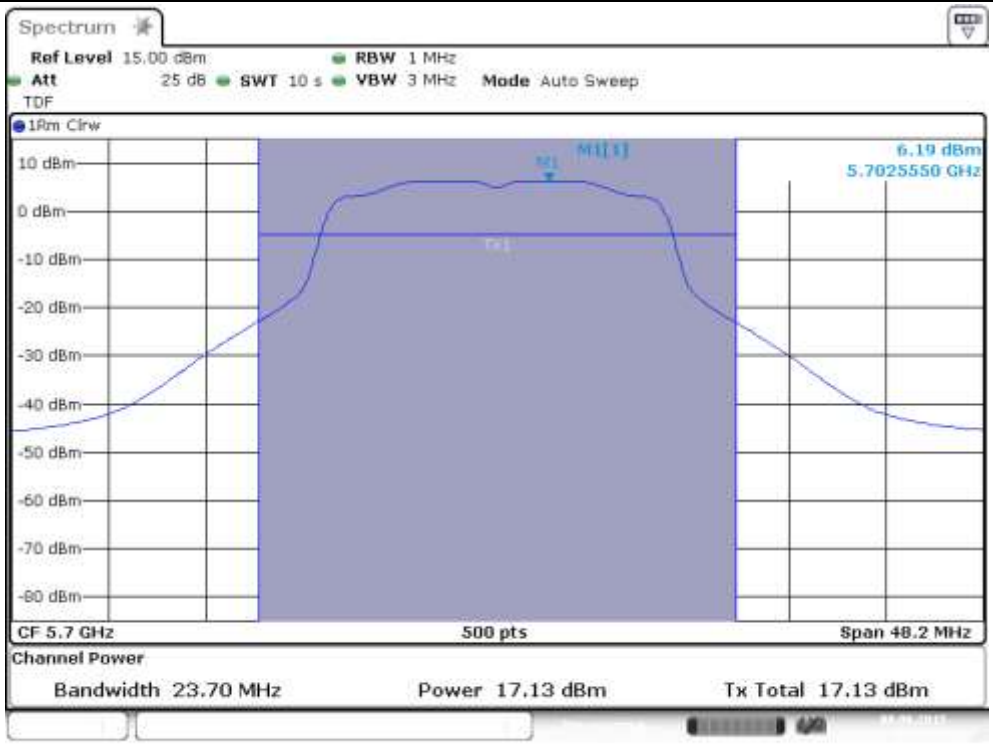


Max Power & PSD, Chain A – CH140



Date: 5.JUN.2015 17:59:42

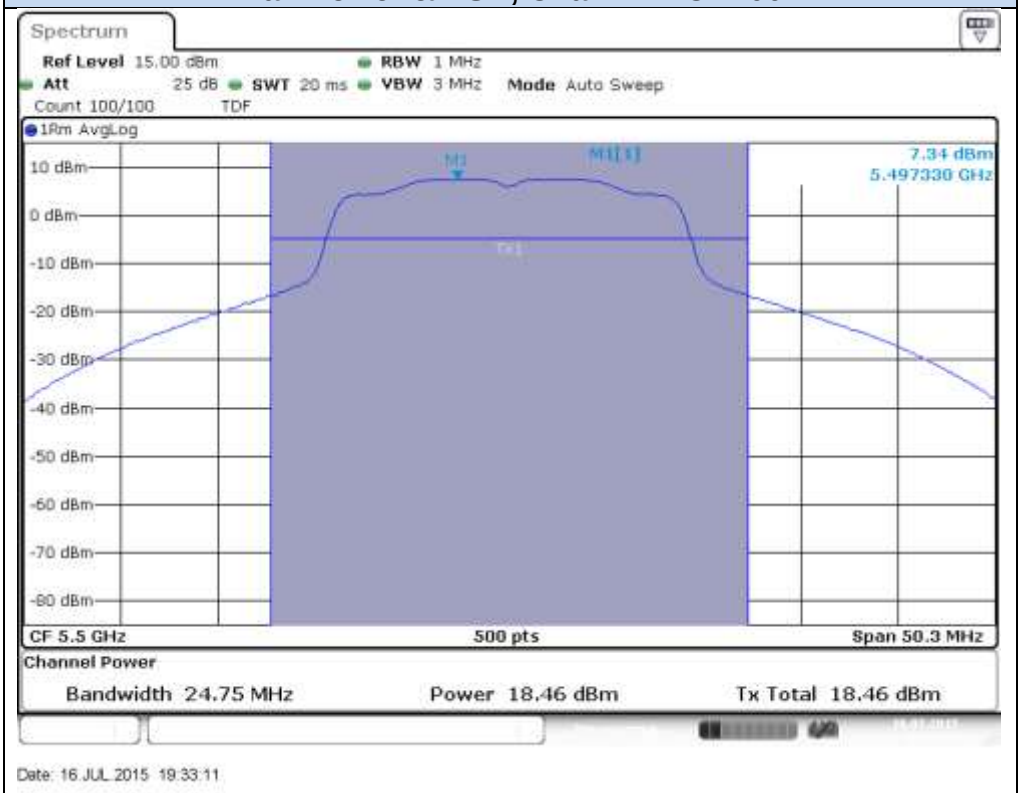
Max Power & PSD, Chain B – CH140



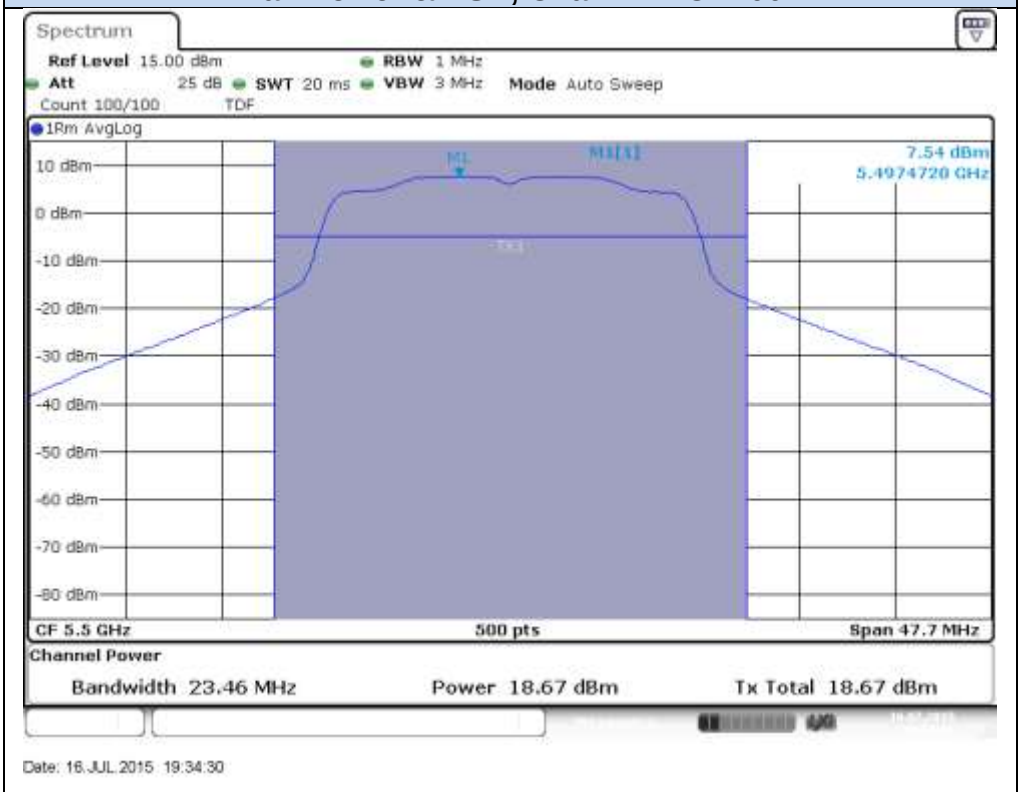
Date: 8.JUN.2015 15:33:15

802.11n20, HT0 (SISO)

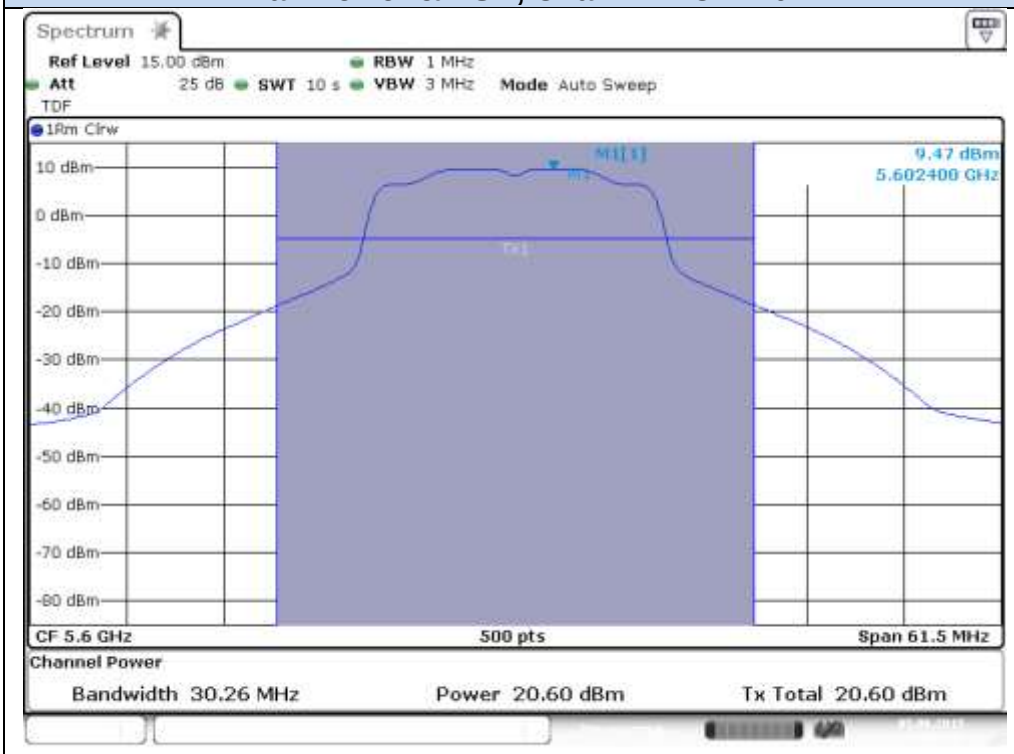
Max Power & PSD, Chain A – CH100



Max Power & PSD, Chain B – CH100



Max Power & PSD, Chain A – CH120



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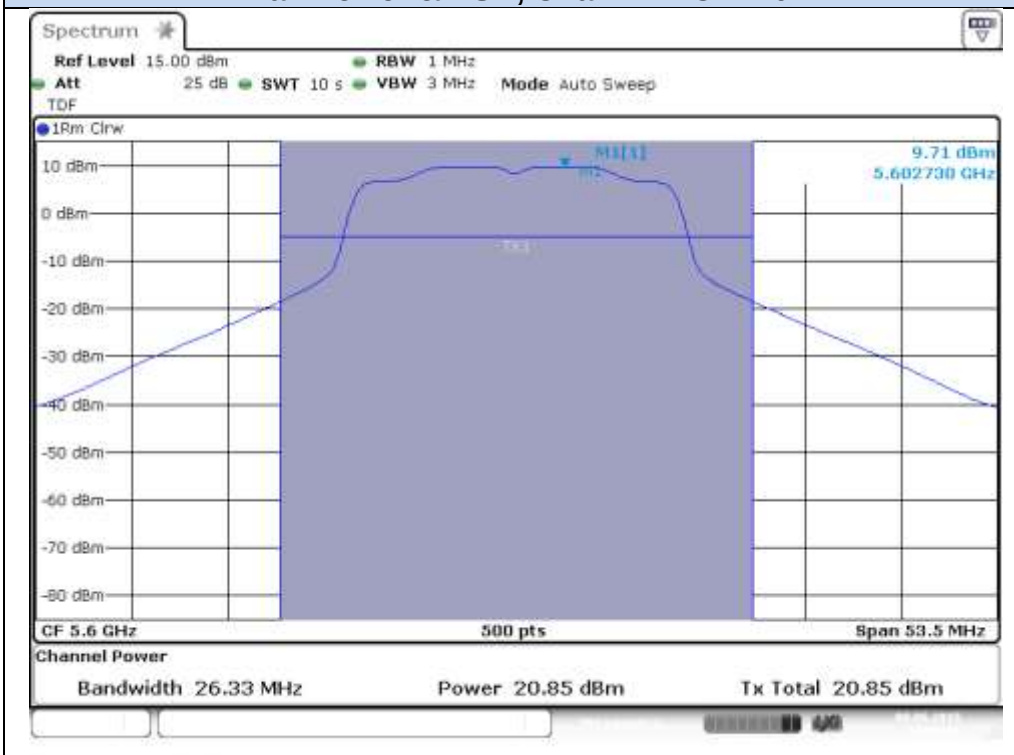
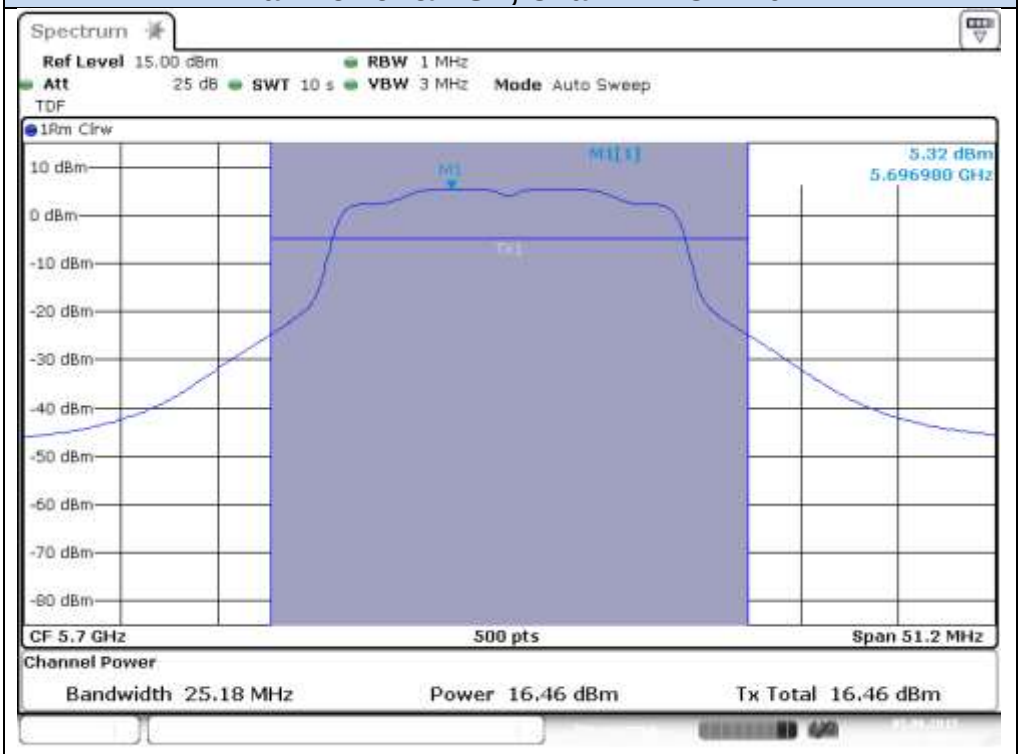
Max Power & PSD, Chain B – CH120

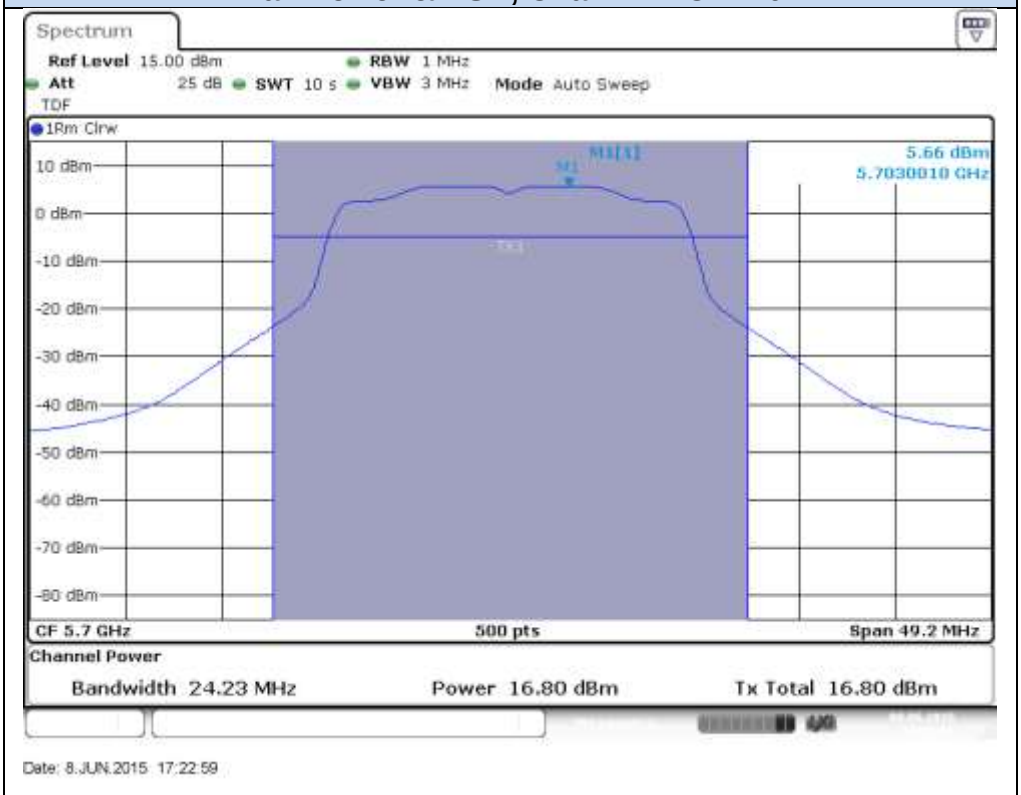


Date: 8.JUN.2015 17:08:26

Max Power & PSD, Chain A – CH140



Max Power & PSD, Chain B – CH140

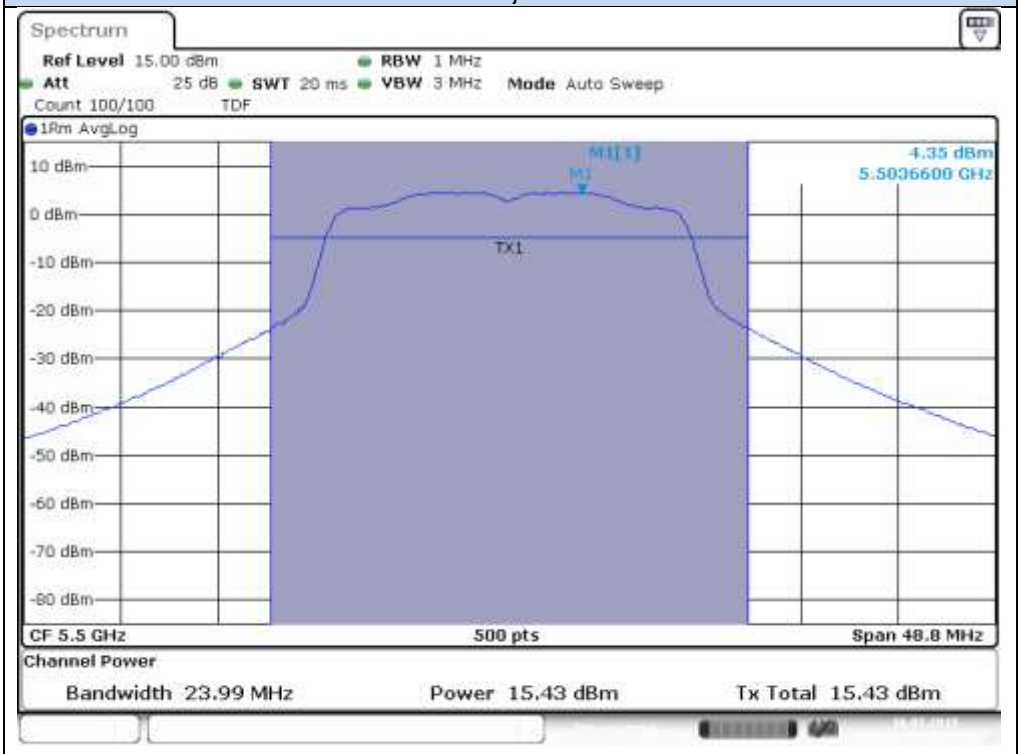


Max Power & PSD, Chain A – CH144 (Overlapped Channel)

Max Power & PSD, Chain B – CH144 (Overlapped Channel)

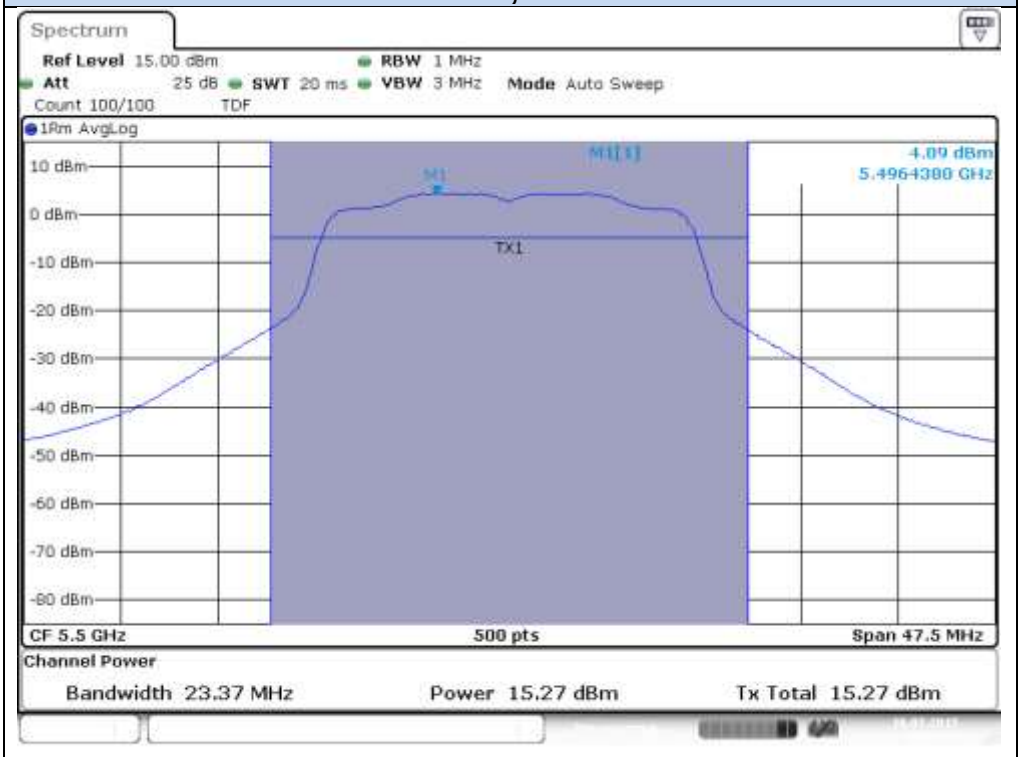
802.11n20, HT8 (MIMO)

Max Power & PSD, Chain A – CH100



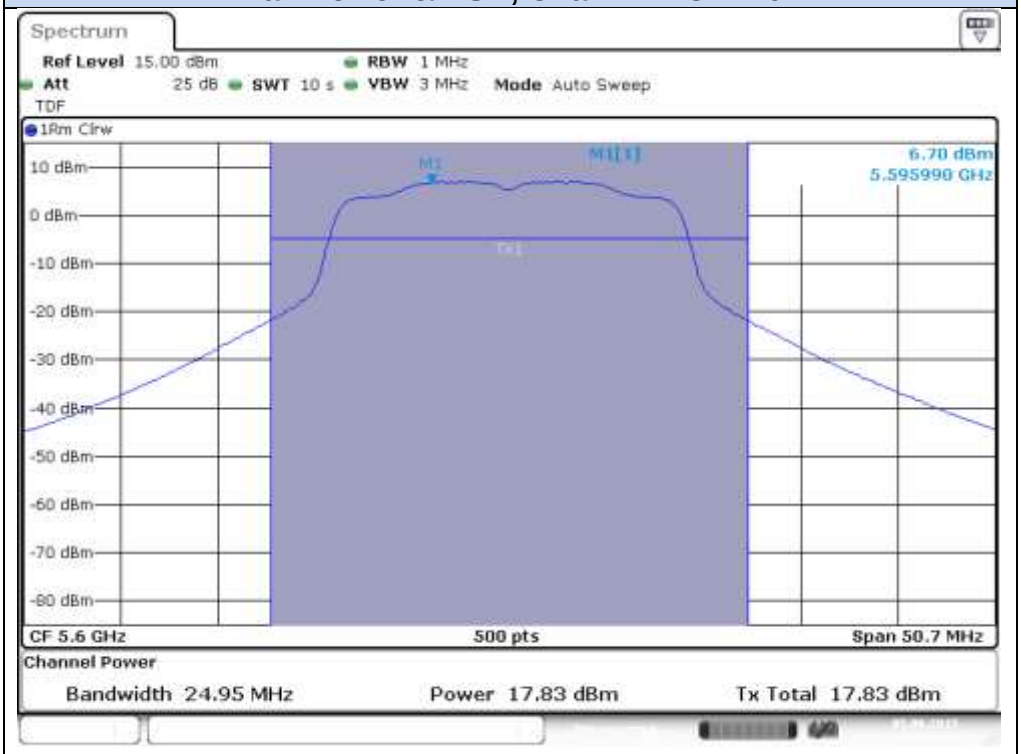
Date: 16.JUL.2015 20:30:03

Max Power & PSD, Chain B – CH100



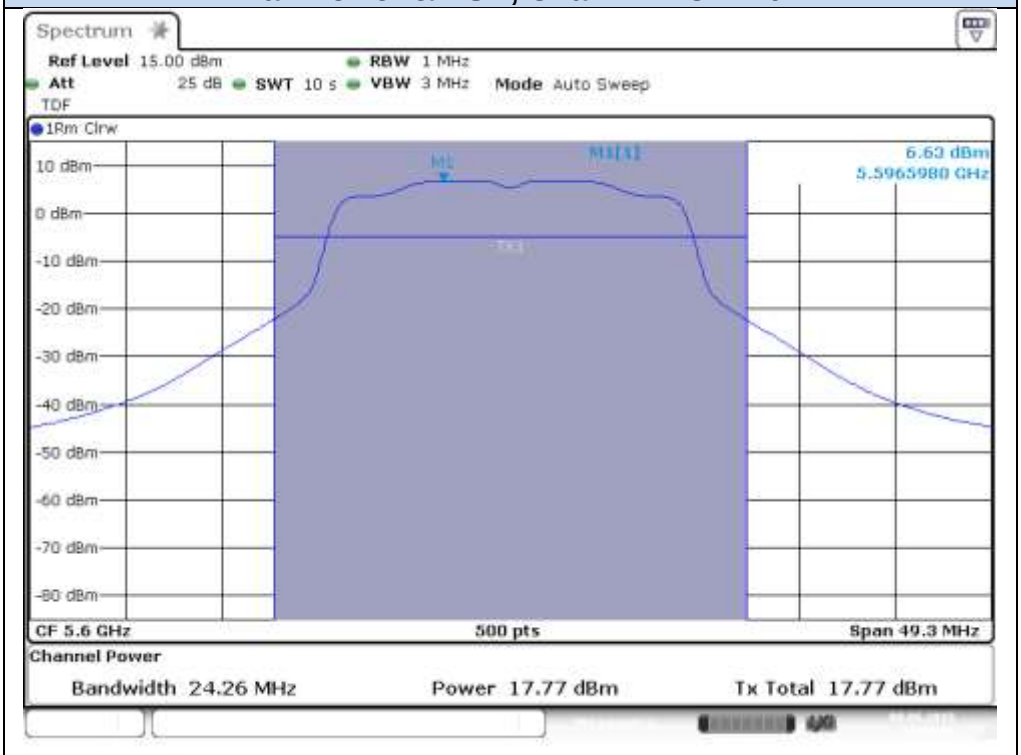
Date: 16.JUL.2015 20:09:34

Max Power & PSD, Chain A – CH120



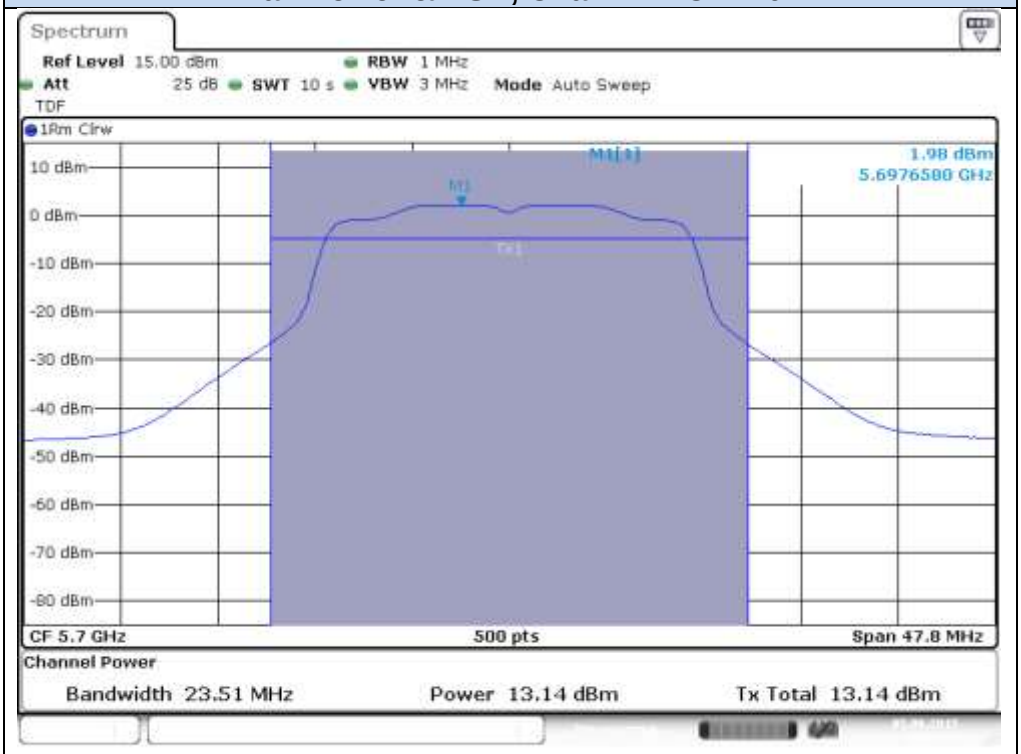
Date: 5.JUN.2015 17:15:03

Max Power & PSD, Chain B – CH120



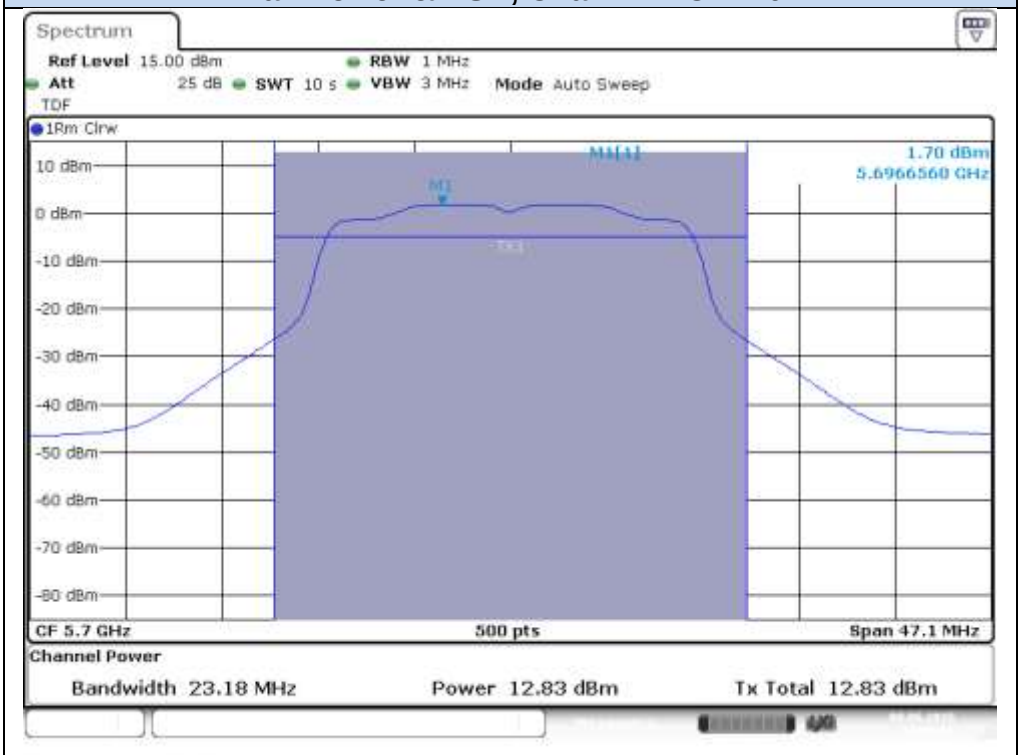
Date: 8.JUN.2015 17:12:49

Max Power & PSD, Chain A – CH140



Date: 5.JUN.2015 18:07:57

Max Power & PSD, Chain B – CH140



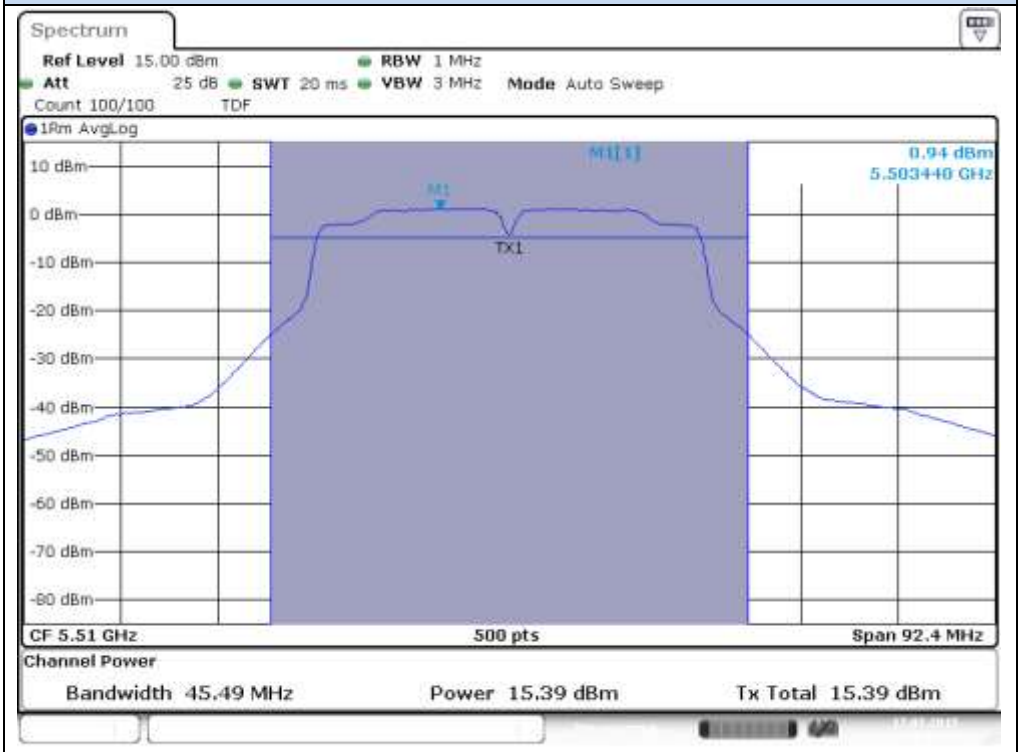
Date: 8.JUN.2015 17:29:51

Max Power & PSD, Chain A – CH144 (Overlapped Channel)

Max Power & PSD, Chain B – CH144 (Overlapped Channel)

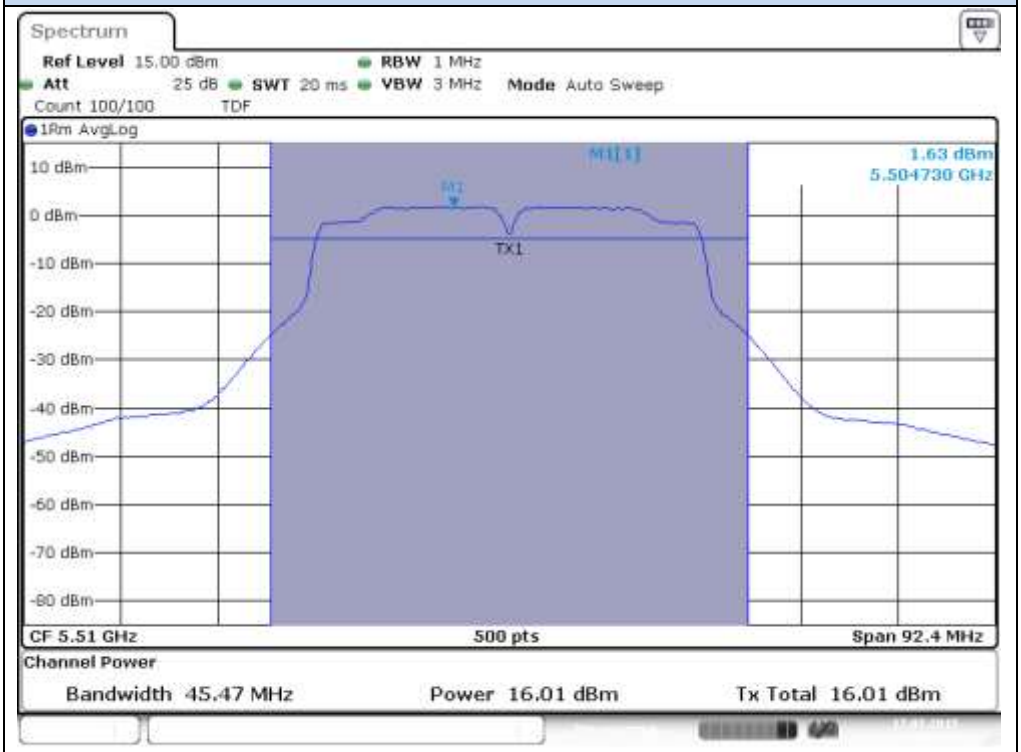
802.11n40, HT0 (SISO)

Max Power & PSD, Chain A – CH102F



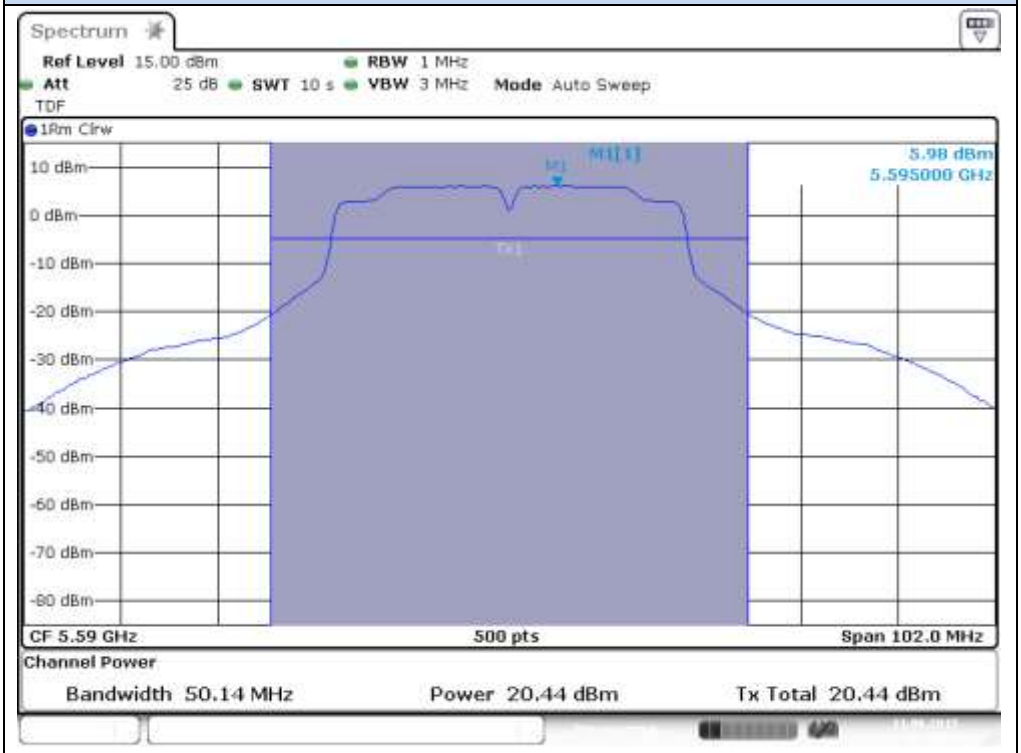
Date: 17.JUL.2015 14:44:11

Max Power & PSD, Chain B – CH102F



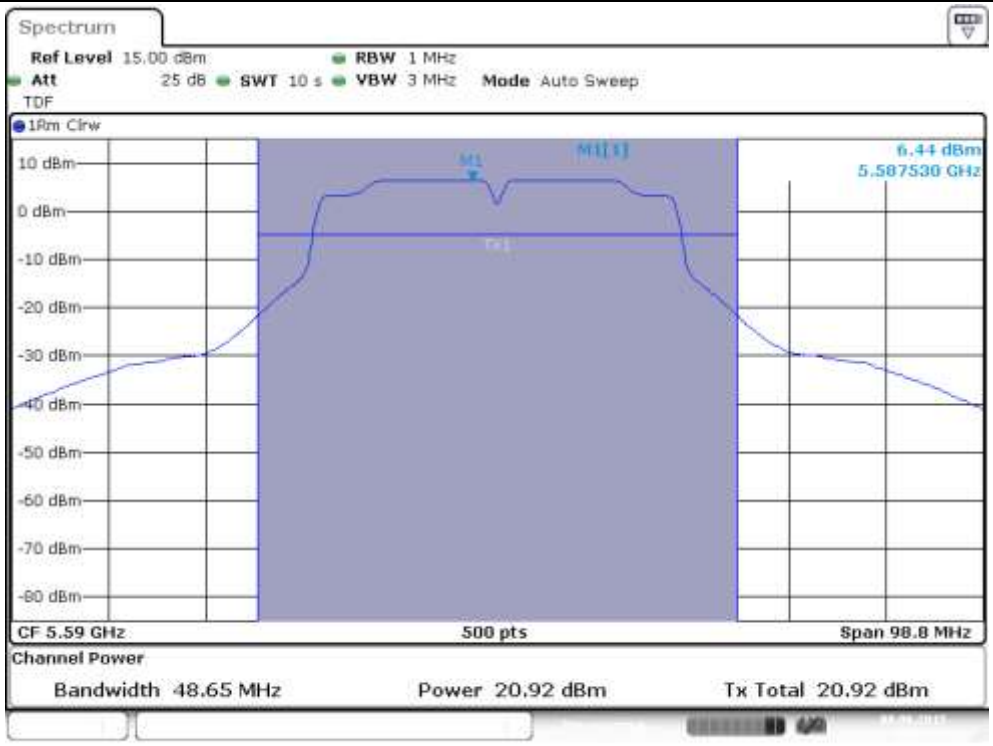
Date: 17.JUL.2015 14:38:14

Max Power & PSD, Chain A – CH118F



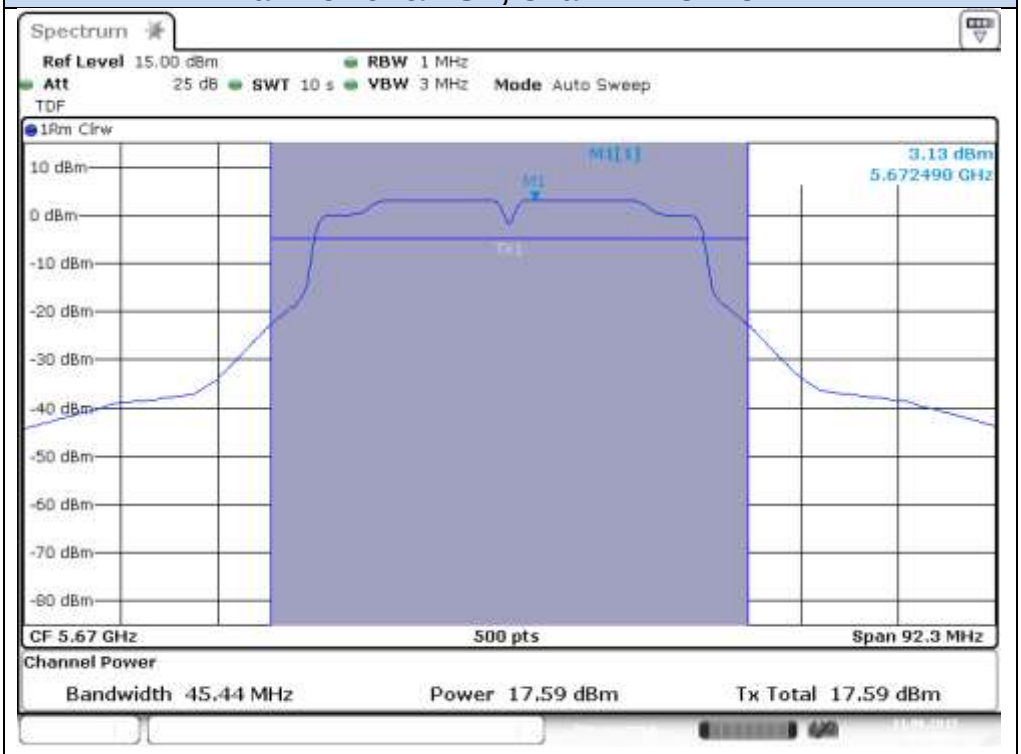
Date: 11.JUN.2015 10:44:02

Max Power & PSD, Chain B – CH118F

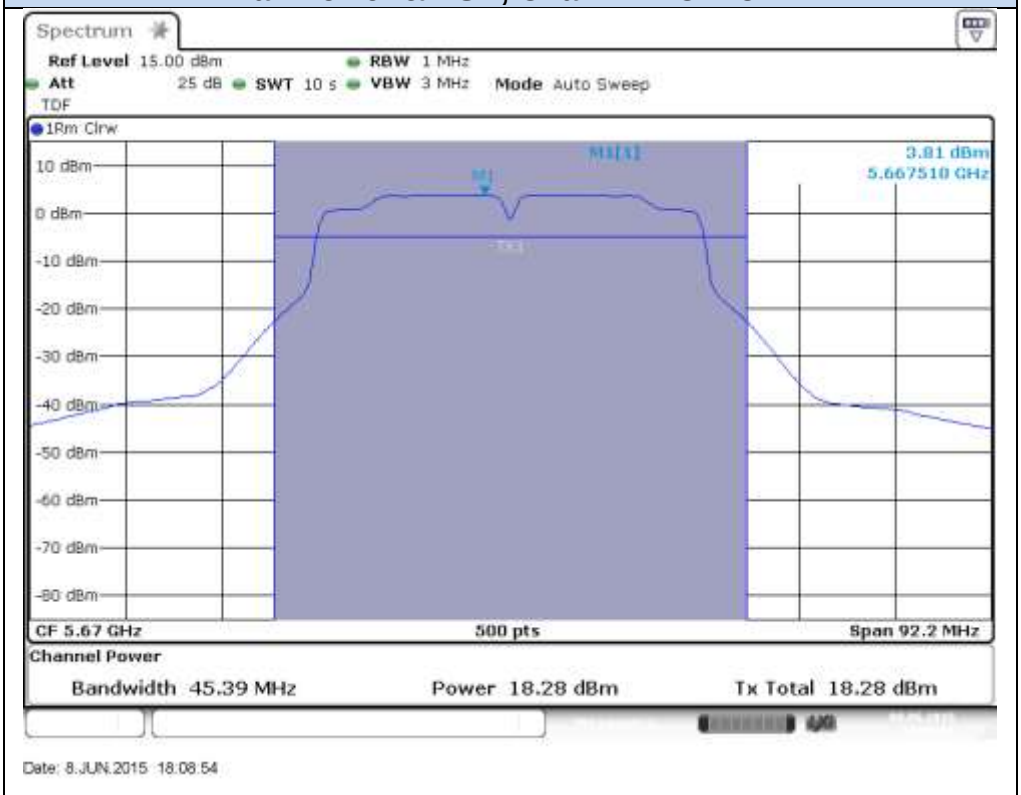


Date: 8.JUN.2015 18:00:26

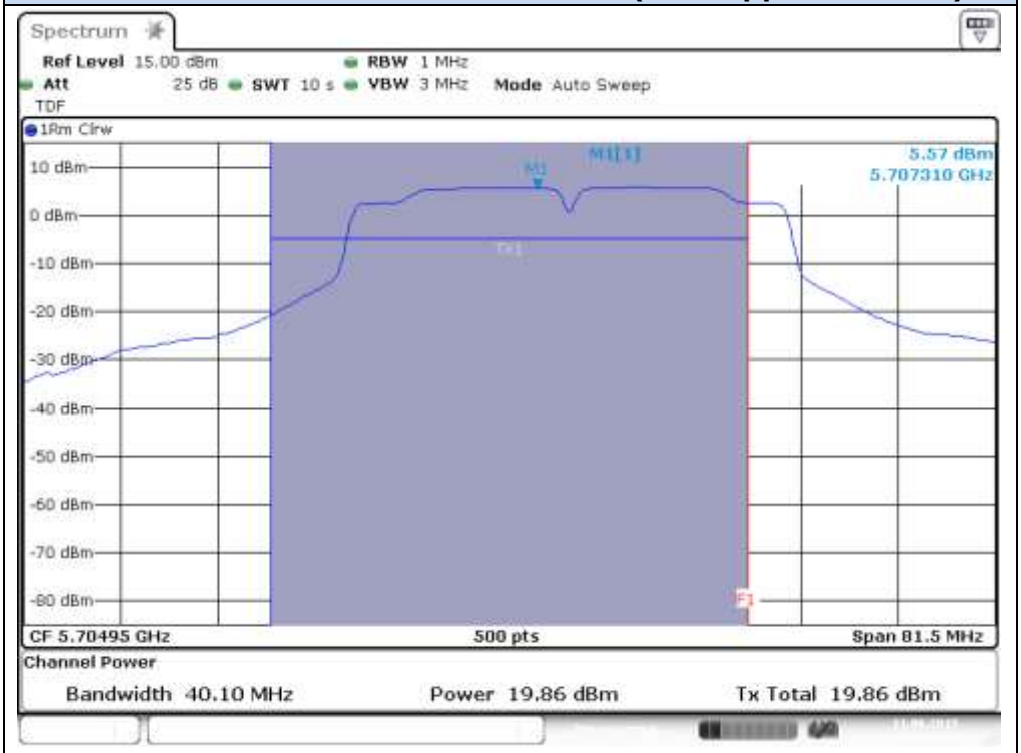
Max Power & PSD, Chain A – CH134F



Max Power & PSD, Chain B – CH134F



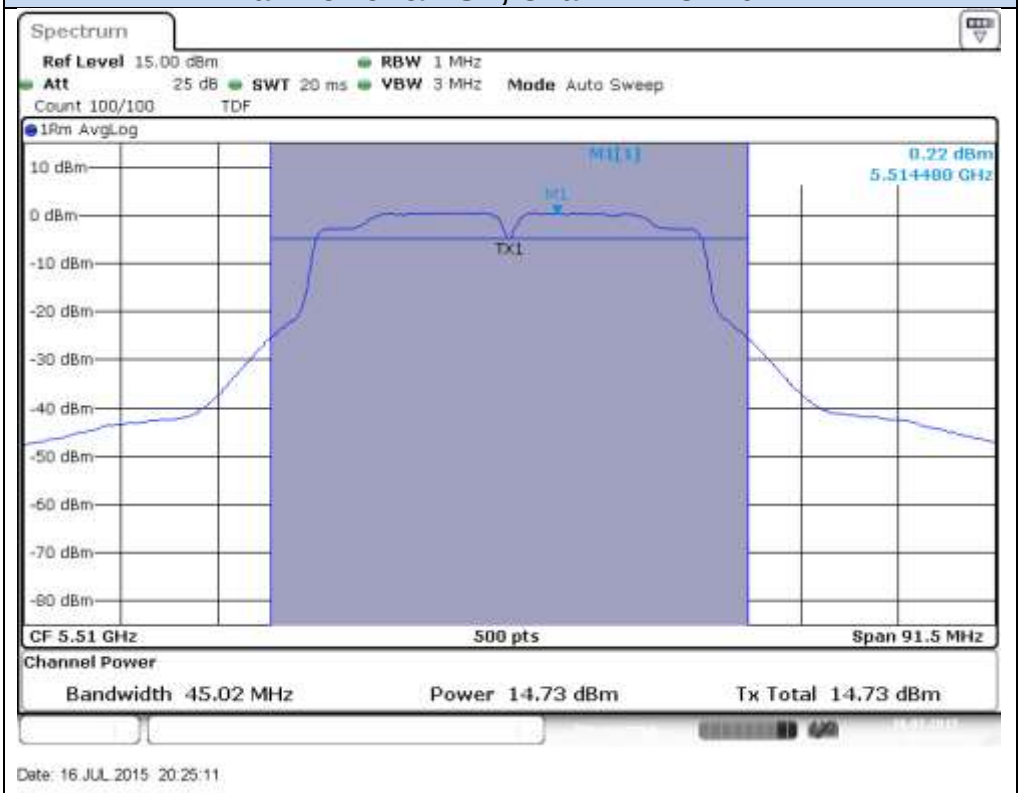
Max Power & PSD, Chain A – CH142F (Overlapped Channel)



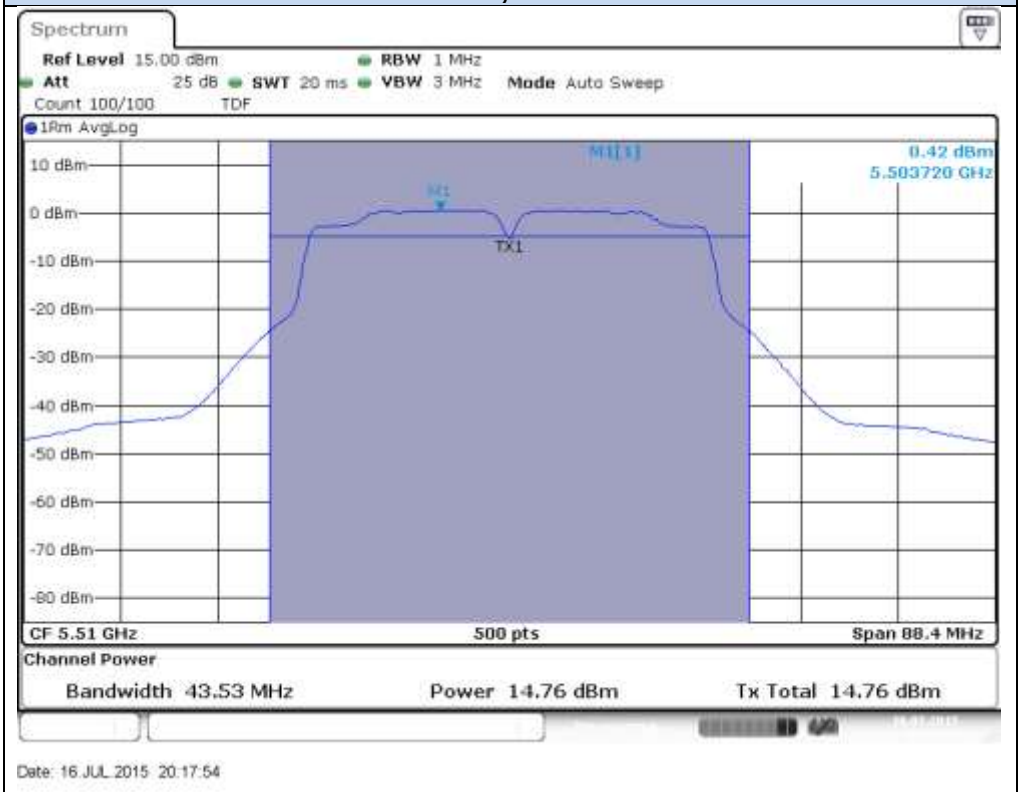
Max Power & PSD, Chain B – CH142F (Overlapped Channel)

802.11n40, HT8 (MIMO)

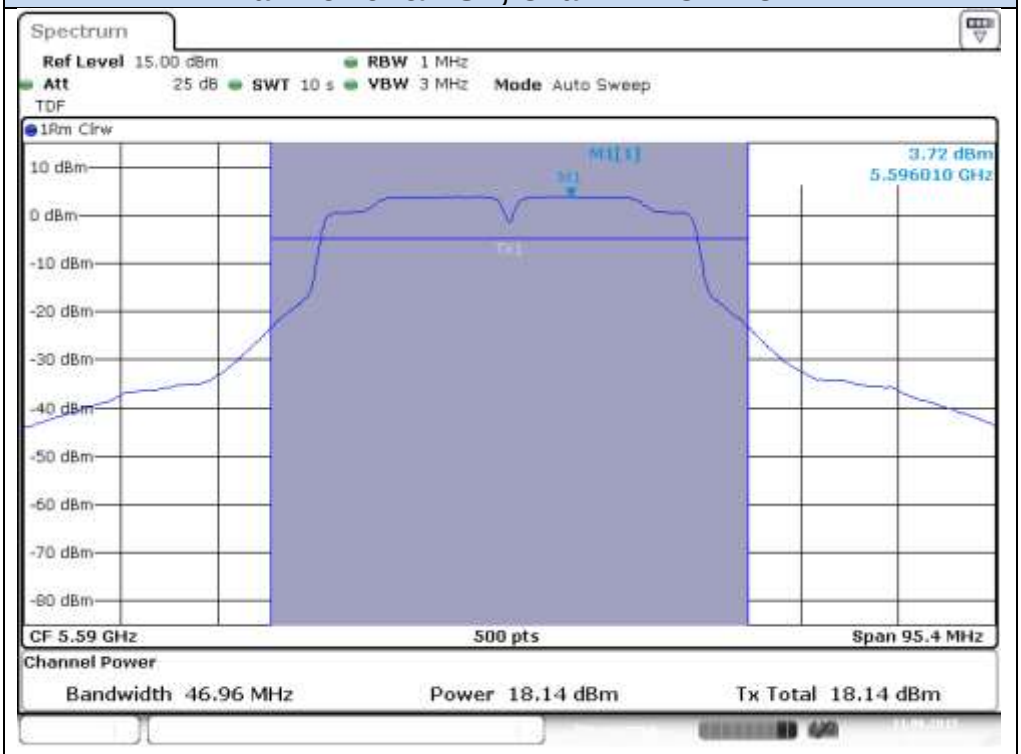
Max Power & PSD, Chain A – CH102F



Max Power & PSD, Chain B – CH102F

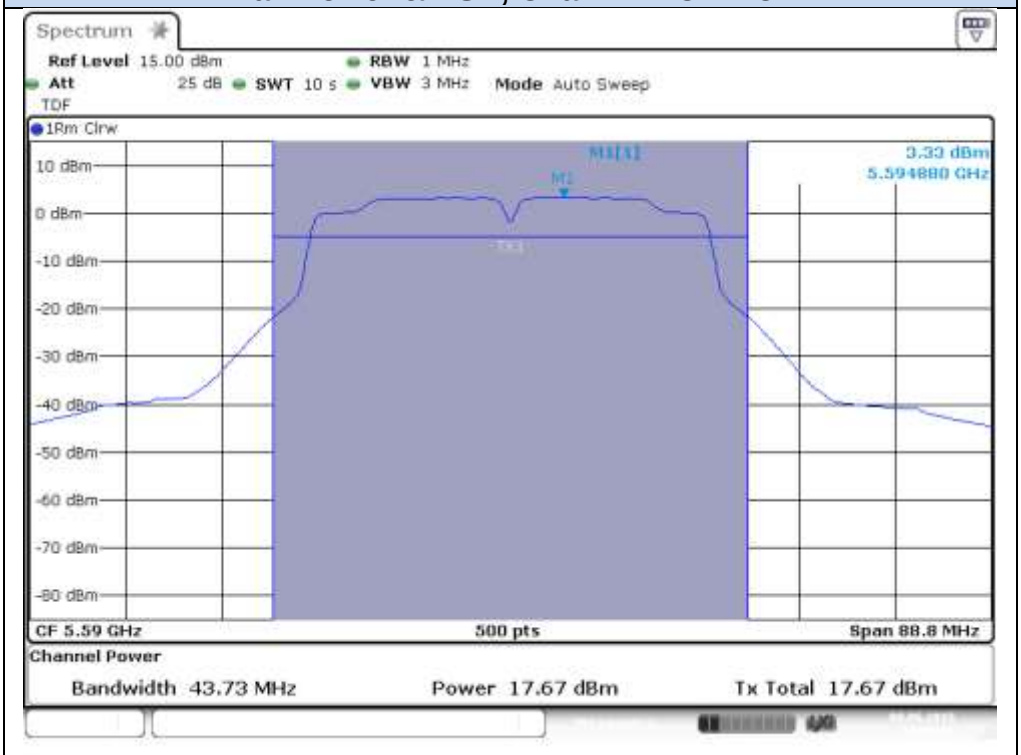


Max Power & PSD, Chain A – CH118F



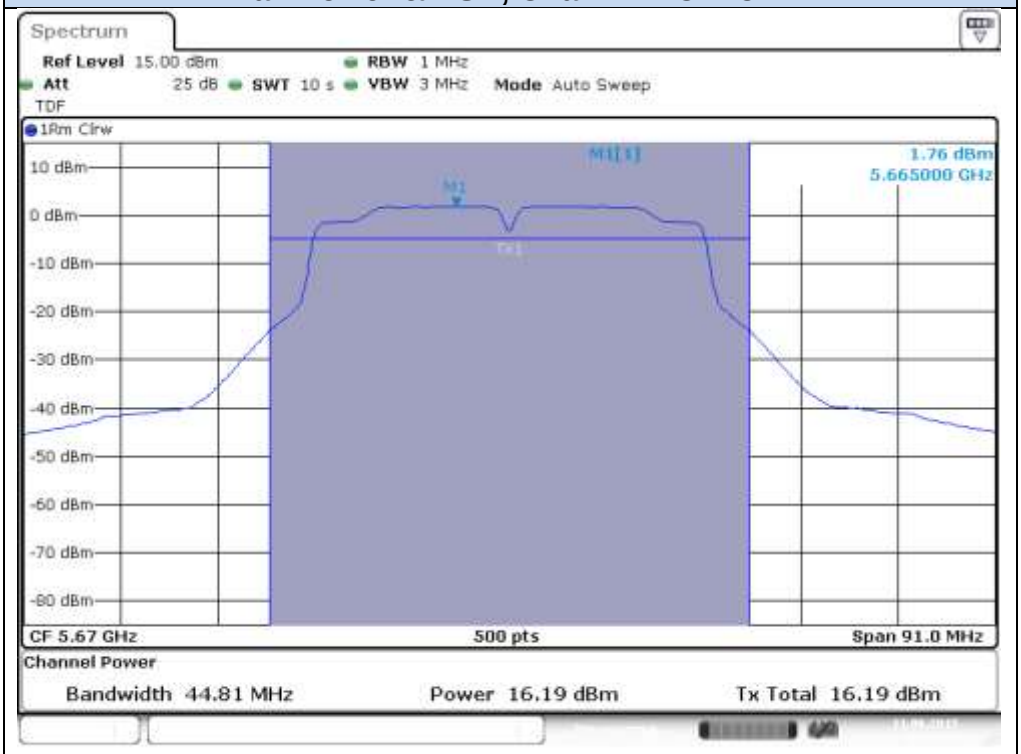
Date: 11.JUN.2015 10:12:56

Max Power & PSD, Chain B – CH118F

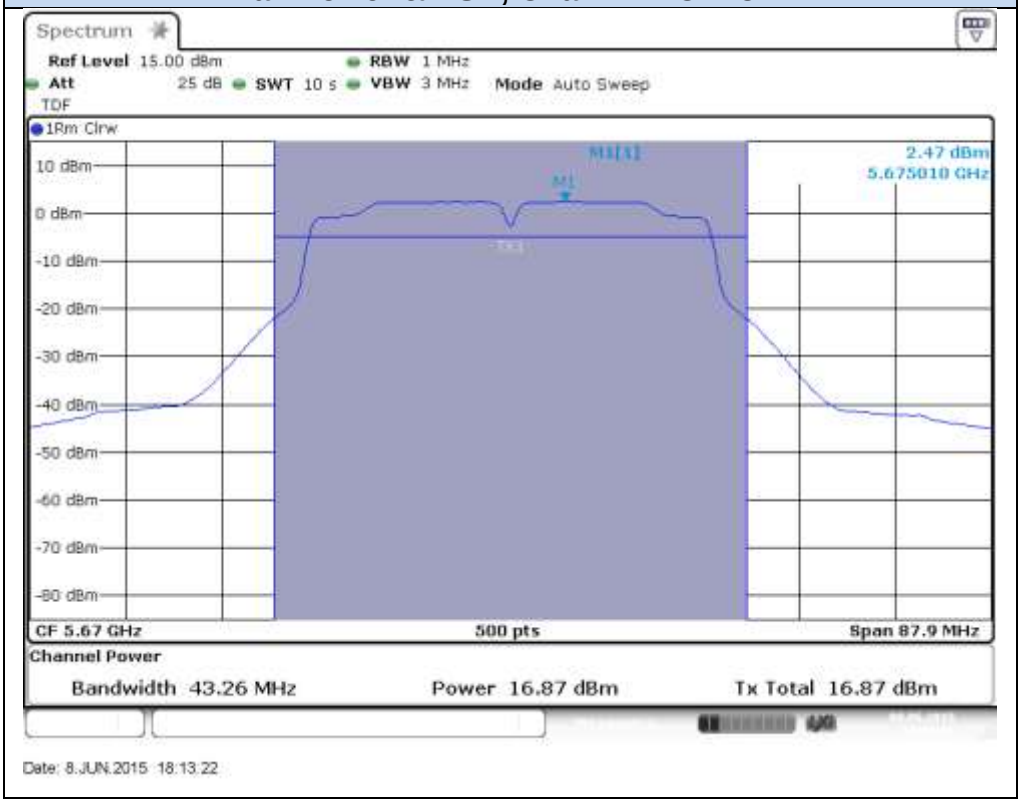


Date: 8.JUN.2015 18:03:49

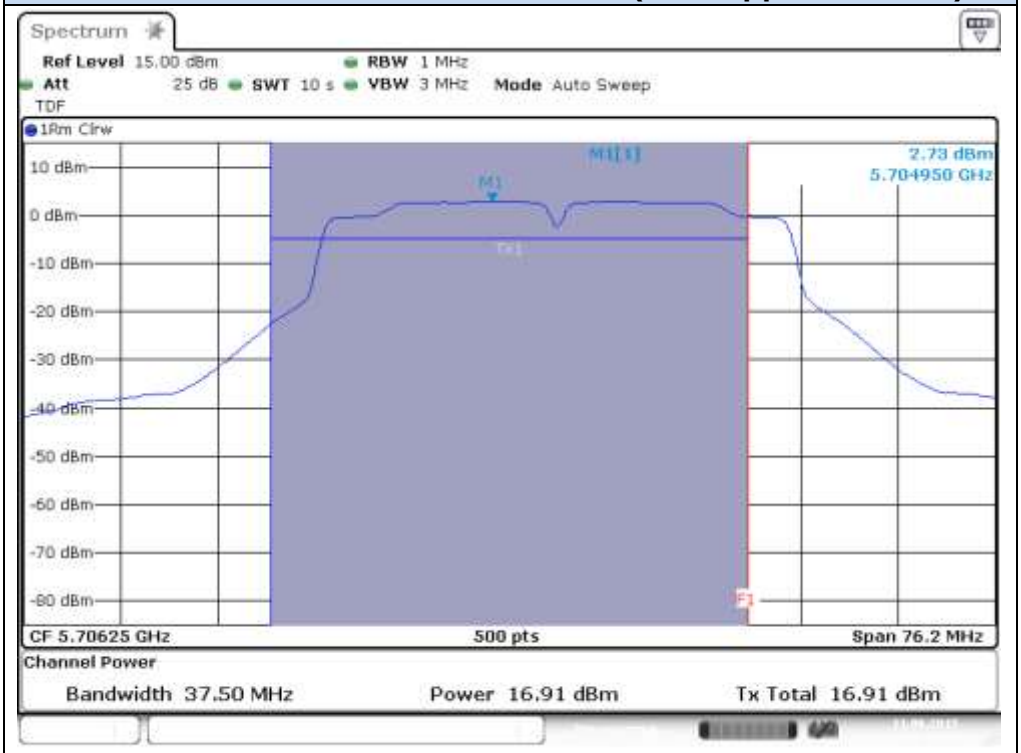
Max Power & PSD, Chain A – CH134F



Max Power & PSD, Chain B – CH134F



Max Power & PSD, Chain A – CH142F (Overlapped Channel)



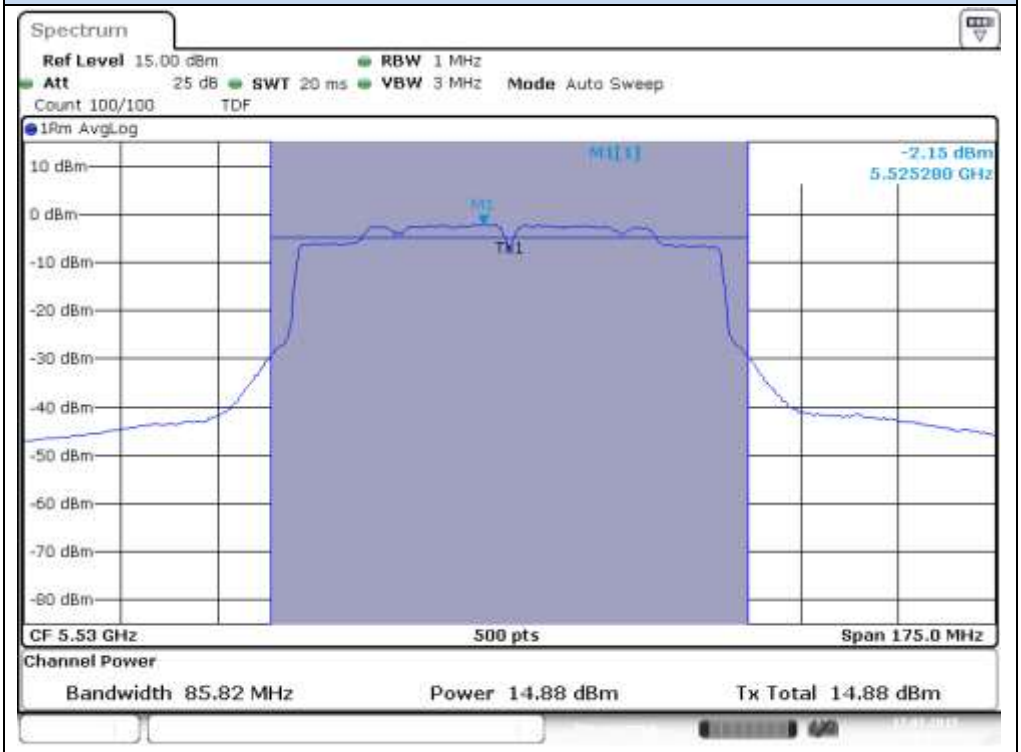
Date: 11.JUN.2015 17:41:56

Max Power & PSD, Chain B – CH142F (Overlapped Channel)

Date: 12.JUN.2015 12:14:15

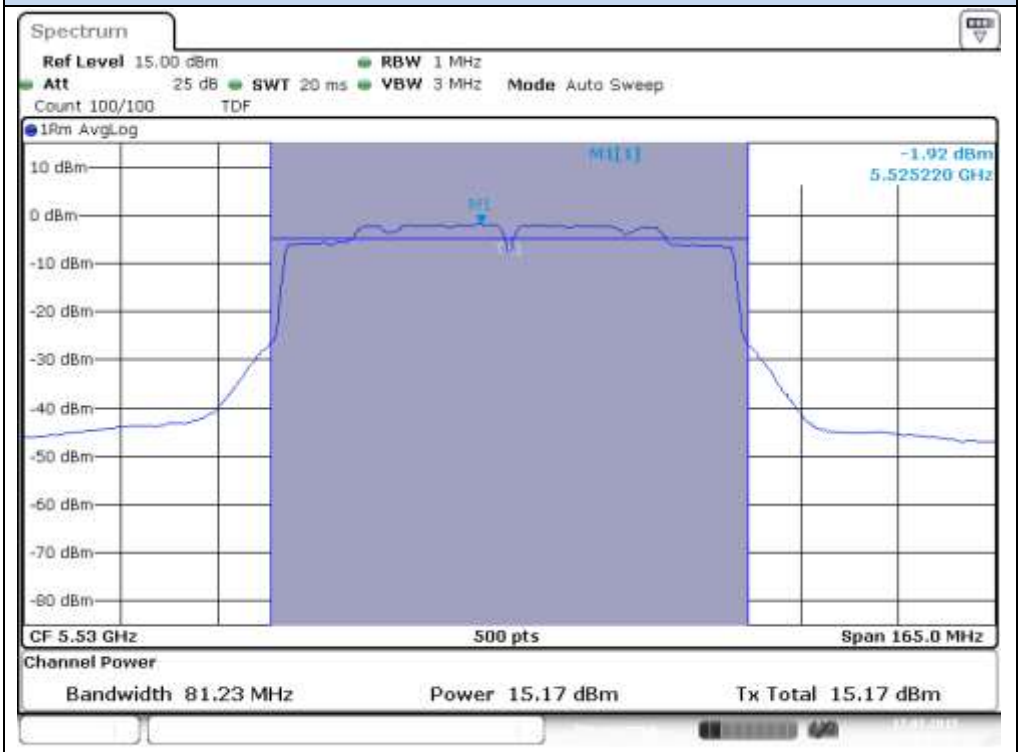
802.11ac80, VHT0 (SISO)

Max Power & PSD, Chain A – CH106ac80



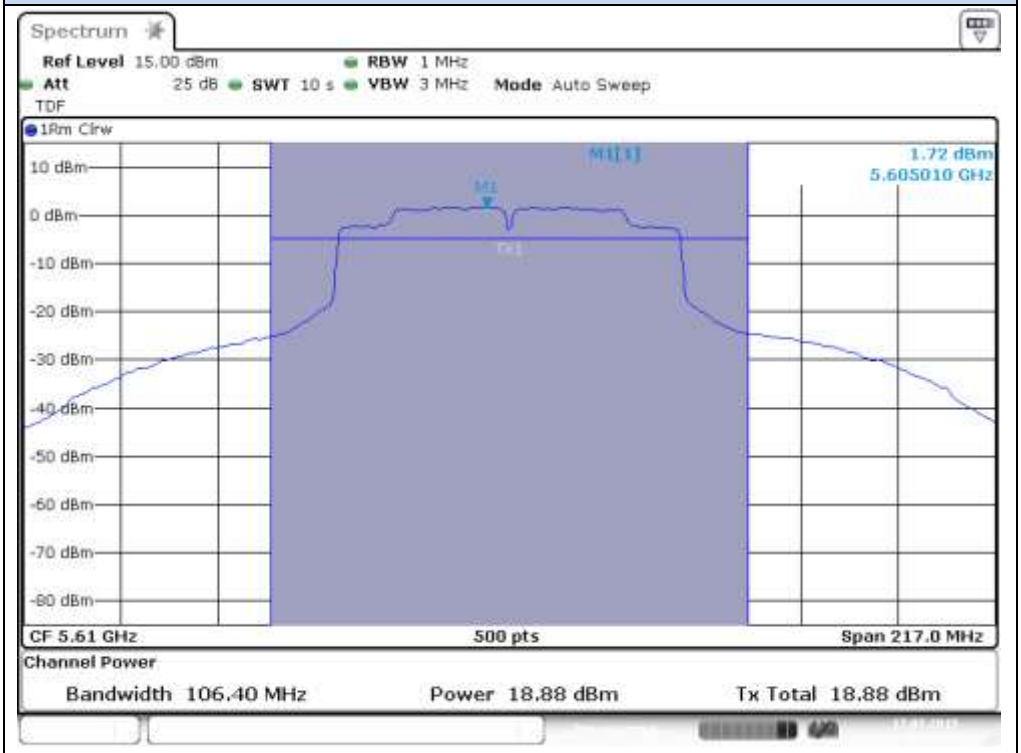
Date: 17.JUL.2015 14:45:40

Max Power & PSD, Chain B – CH106ac80

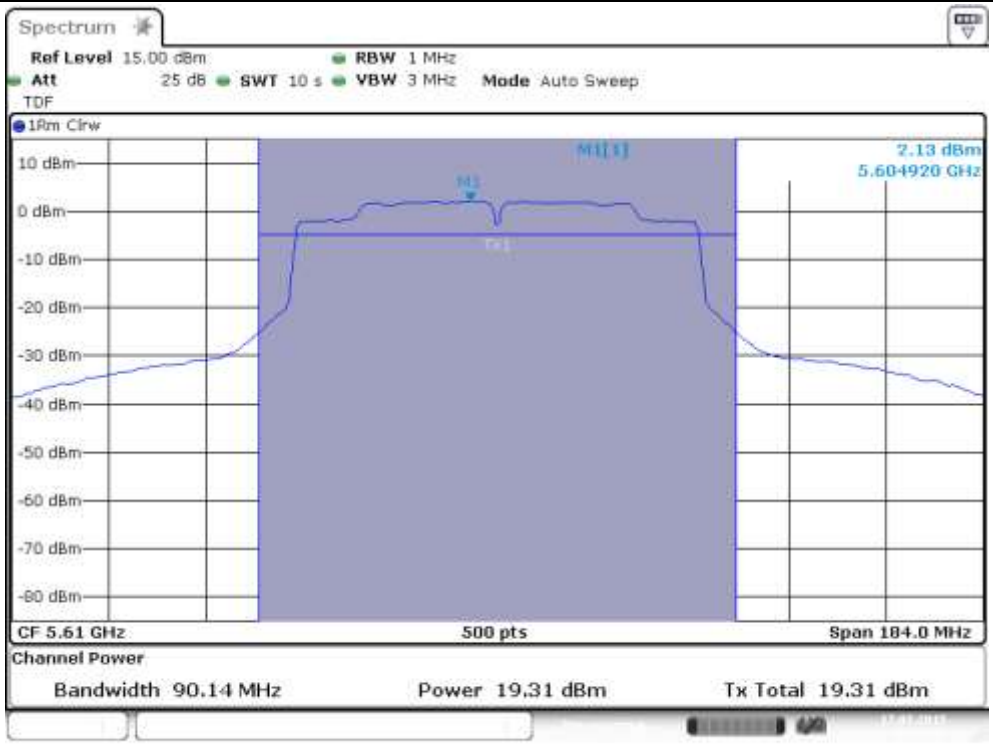


Date: 17.JUL.2015 14:47:15

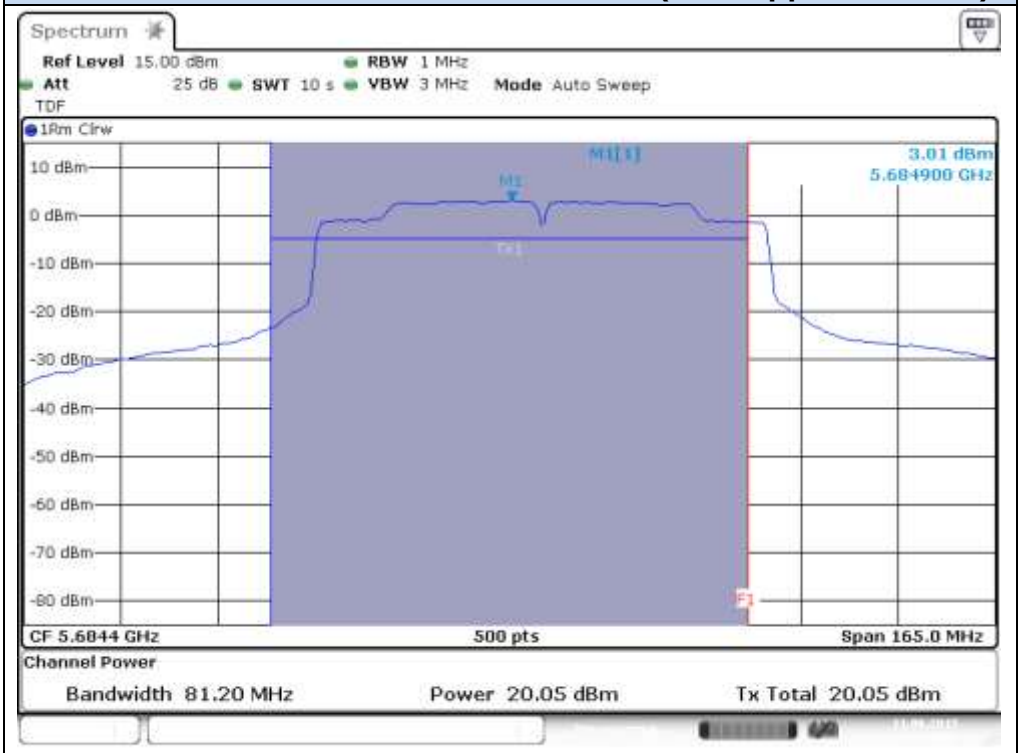
Max Power & PSD, Chain A – CH122ac80



Max Power & PSD, Chain B – CH122ac80

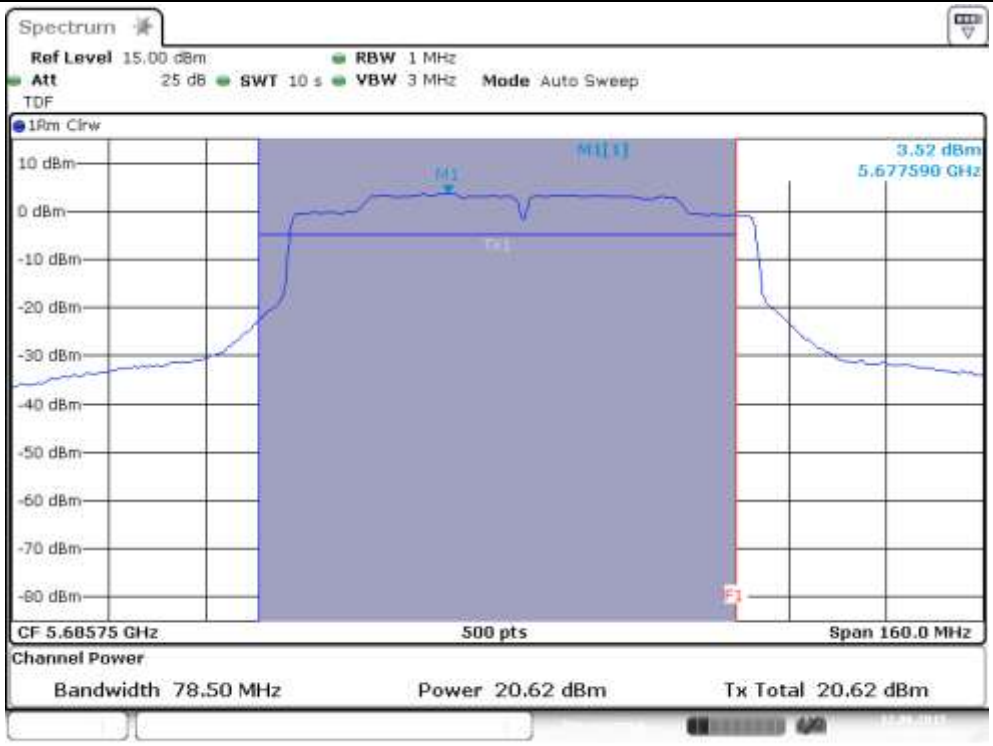


Max Power & PSD, Chain A – CH138ac80 (Overlapped Channel)



Date: 11.JUN.2015 17:28:07

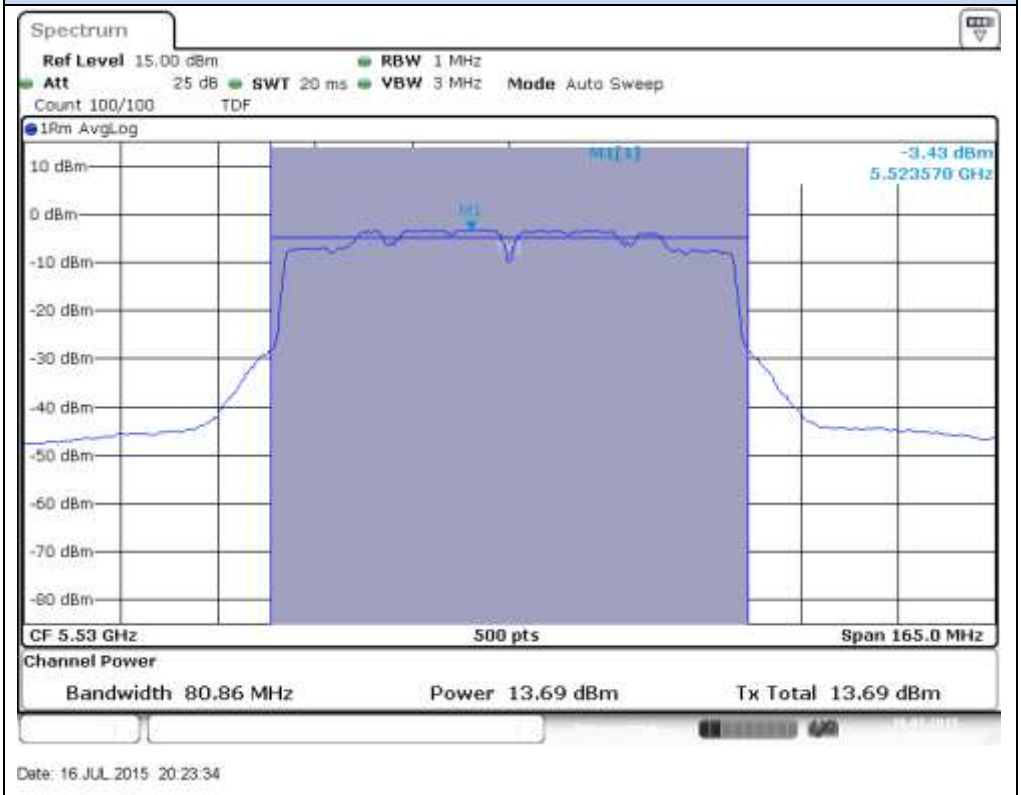
Max Power & PSD, Chain B – CH138ac80 (Overlapped Channel)



Date: 12.JUN.2015 12:08:30

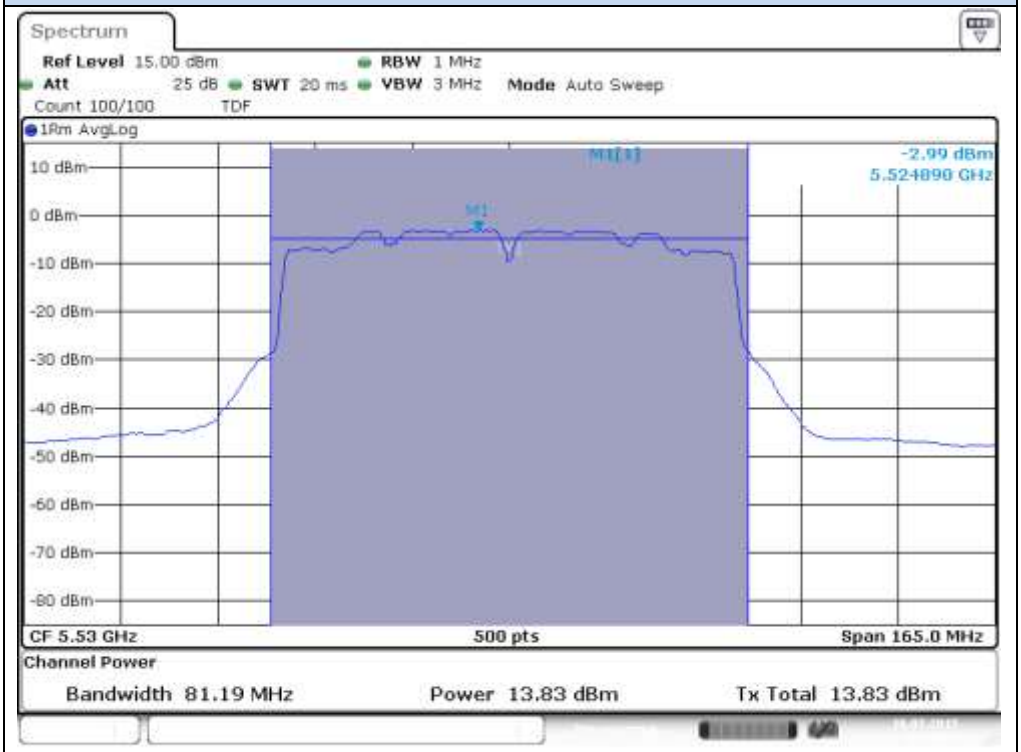
802.11ac80, VHT0 (MIMO)

Max Power & PSD, Chain A – CH106ac80



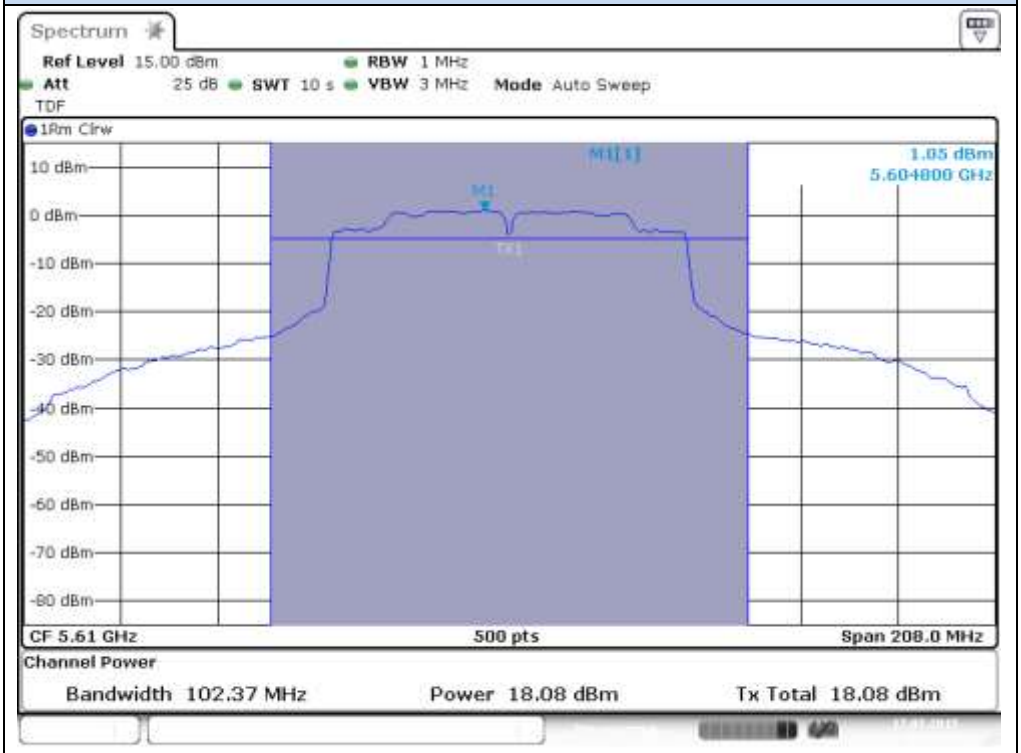
Date: 16.JUL.2015 20:23:34

Max Power & PSD, Chain B – CH106ac80

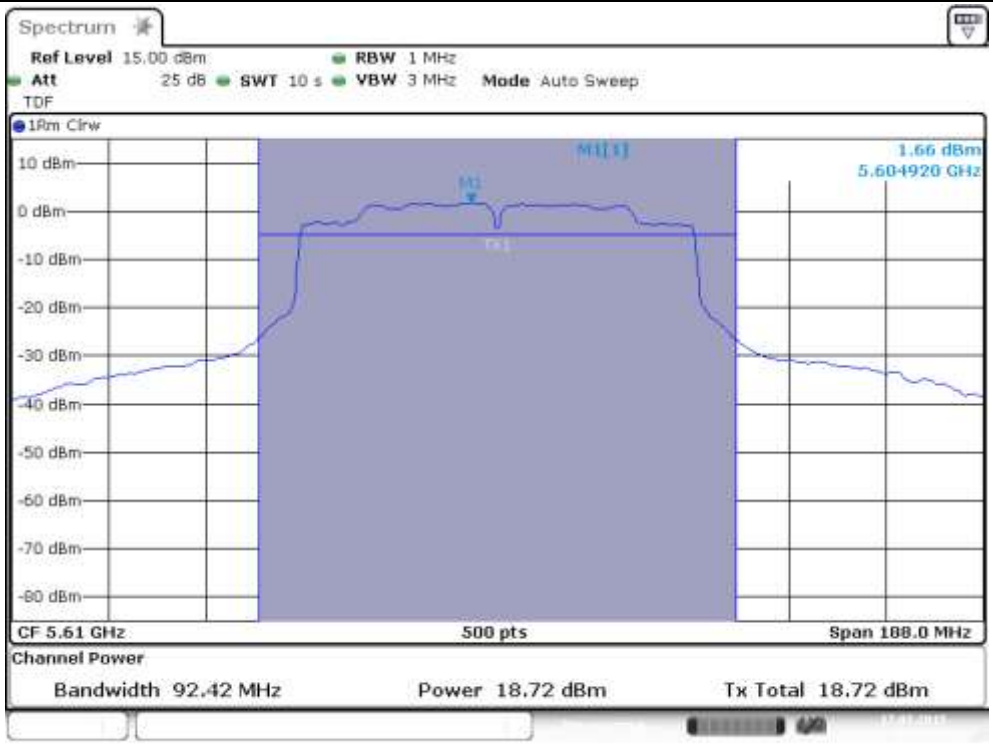


Date: 16.JUL.2015 20:20:53

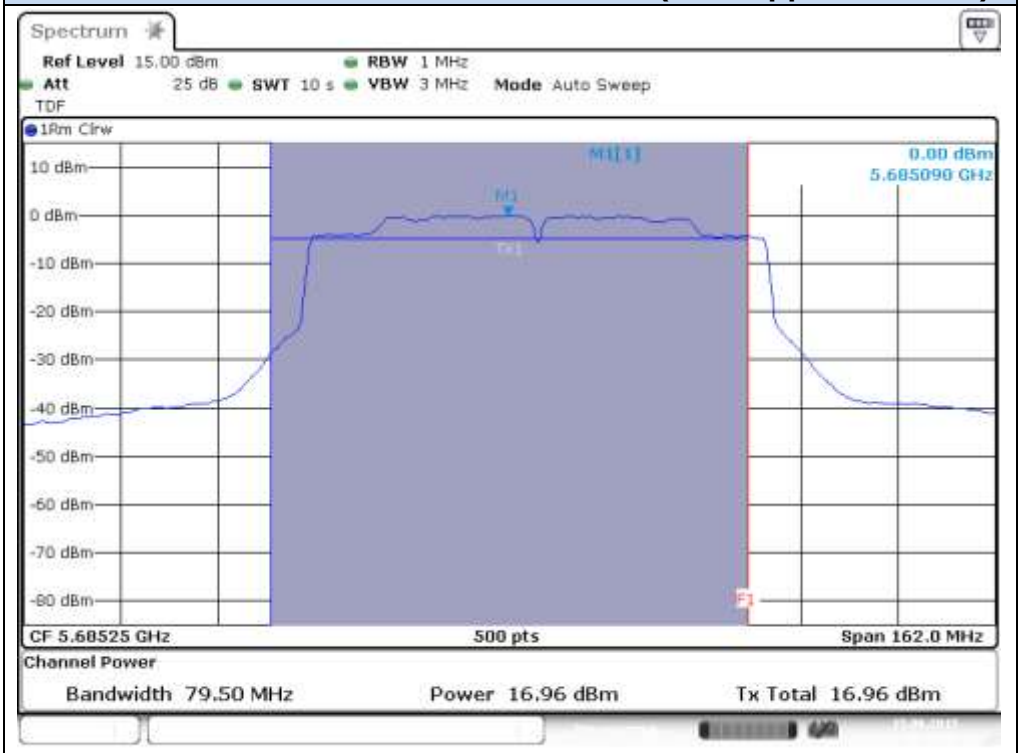
Max Power & PSD, Chain A – CH122ac80



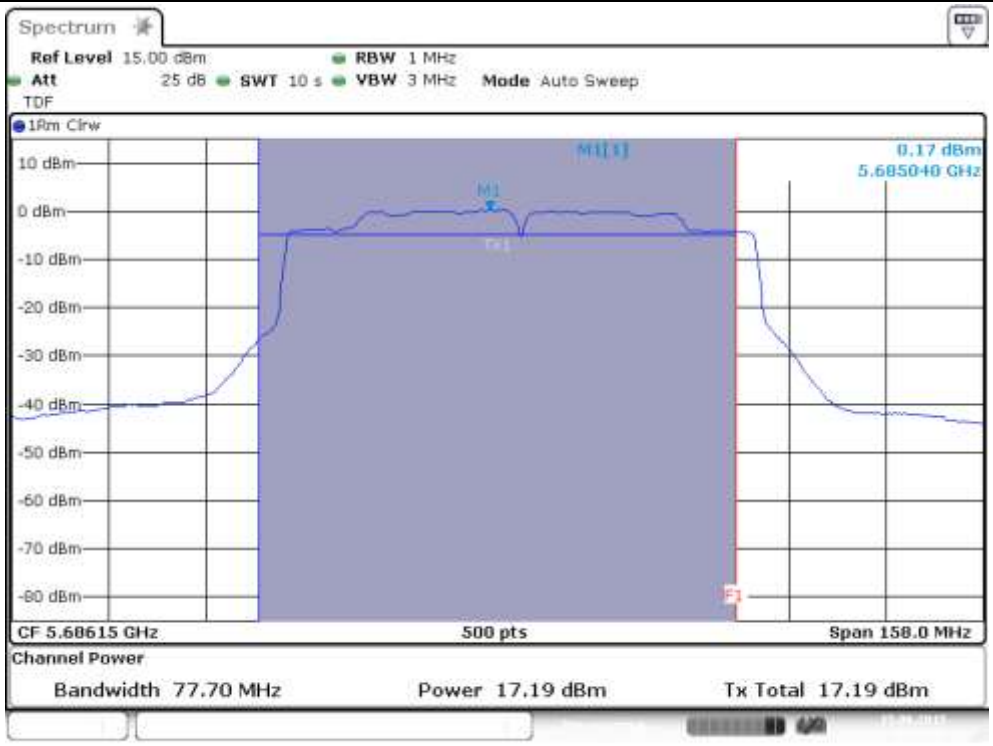
Max Power & PSD, Chain B – CH122ac80



Max Power & PSD, Chain A – CH138ac80 (Overlapped Channel)



Max Power & PSD, Chain B – CH138ac80 (Overlapped Channel)



C.3 Undesirable emissions limits: Band Edge (conducted)

Test limits:

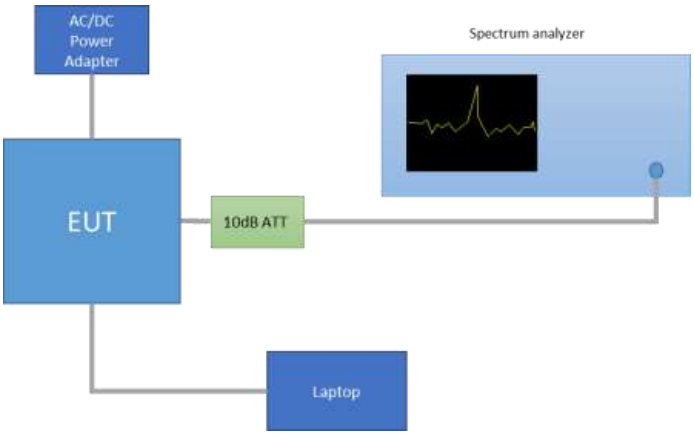
<table>
<tr><th>FCC part</th><th>RSS Part</th><th>Limits</th></tr>
<tr><td>15.407 (b) (3)</td><td>RSS-247 Clause 6.2.3 (2)</td><td>For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.</td></tr>
<tr><td>15.209</td><td>RSS-247 Clause 6.2.3 (2)</td><td>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):
<table>
<tr><th>Freq Range (MHz)</th><th>Field Stregth (µV/m)</th><th>Field Stregth (dBµV/m)</th><th>Meas. Distance (m)</th></tr>
<tr><td>0.009-0.490</td><td>2400/f(kHz)</td><td>-</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/f(kHz)</td><td>-</td><td>300</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>-</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr>
<tr><td>960-25000</td><td>500</td><td>54</td><td>3</td></tr>
</table>
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 specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.</td></tr>
</table>

Test procedure:

The setup below was used to measure undesirable emissions on the Band Edge domain. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss and the declared Antenna Gain.

In case of Band Edge measurements falling in restricted bands, the declared Antenna Gain is also compensated in the graph.

The declared maximum antenna gain is 5dBi.



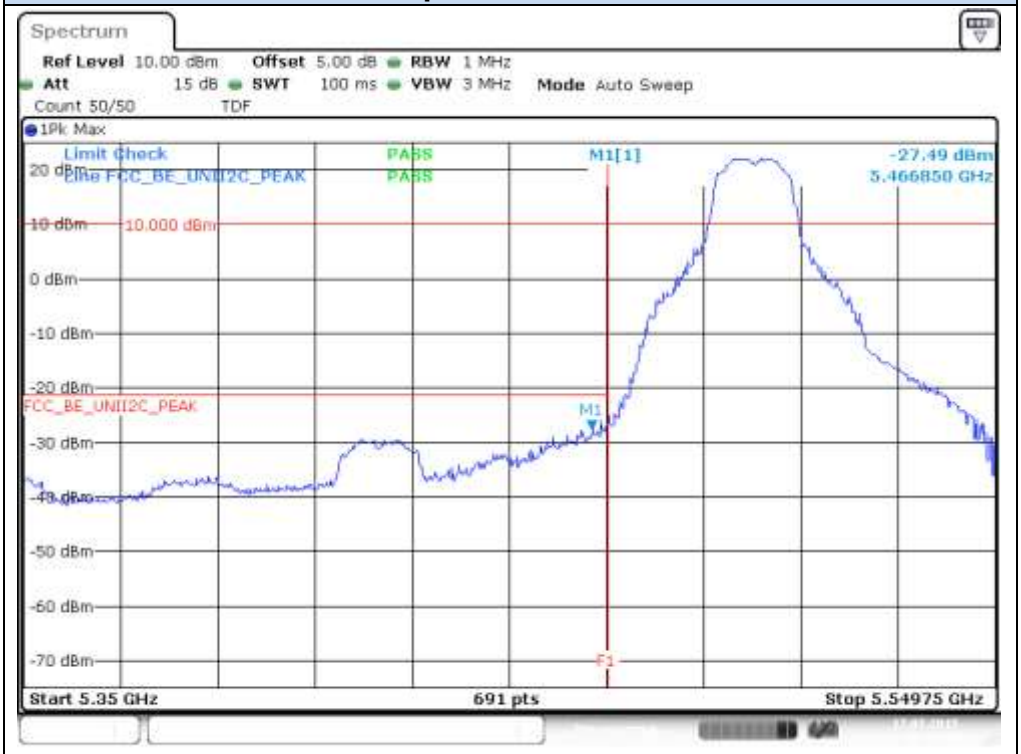
The following limits in dBm were applied for the average detector after the conversion from the limits detailed above in dBµV/m, according to FCC 47 CFR part 15 - Subpart C – §15.209(a). The limits in dBm for peak detector are 20dB above the indicated values in the table.

§15.209(a)			Converted values	
Freq Range (MHz)	Distance (m)	Field strength (microvolts/meter)	Field strength (dB microvolts/meter)	Power (dBm)
960-25000	3	500	53.98	-41.28

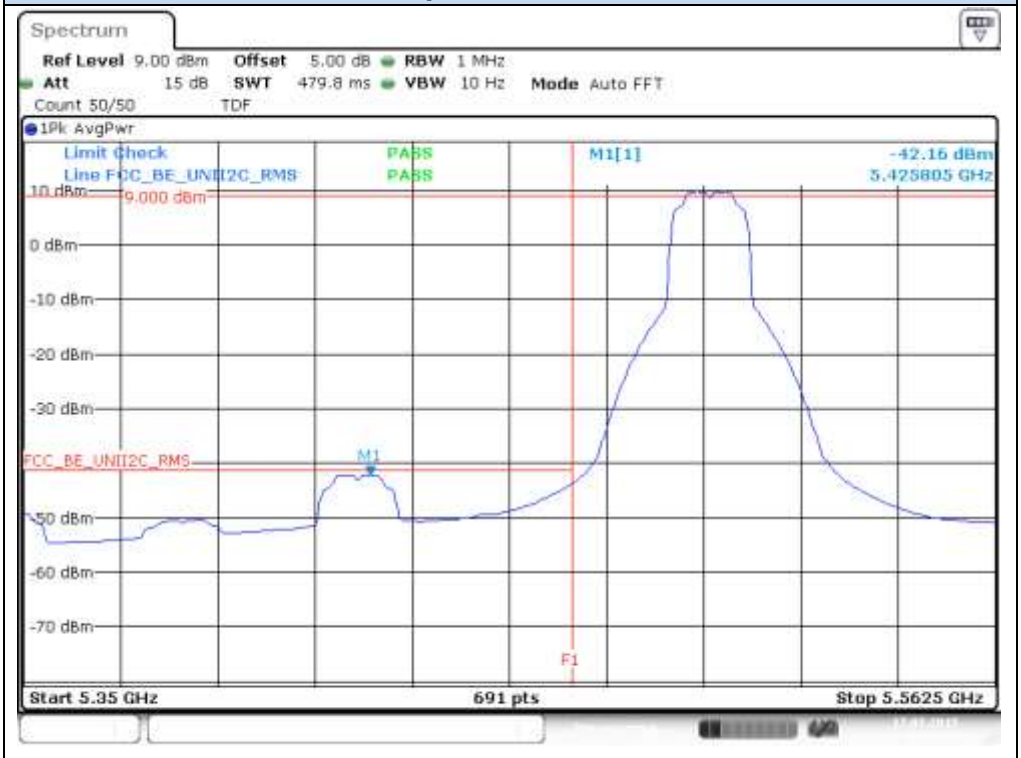
Results Screenshot:

802.11a, 6Mbps – Chain A

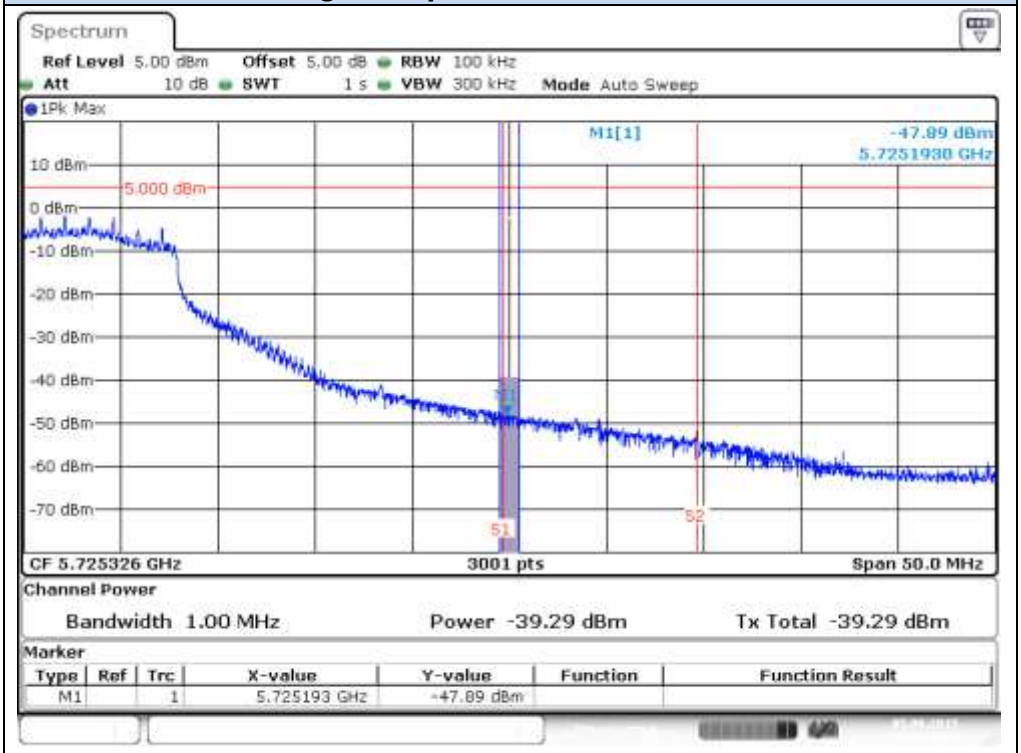
BE Low Freq Section, Peak – CH100



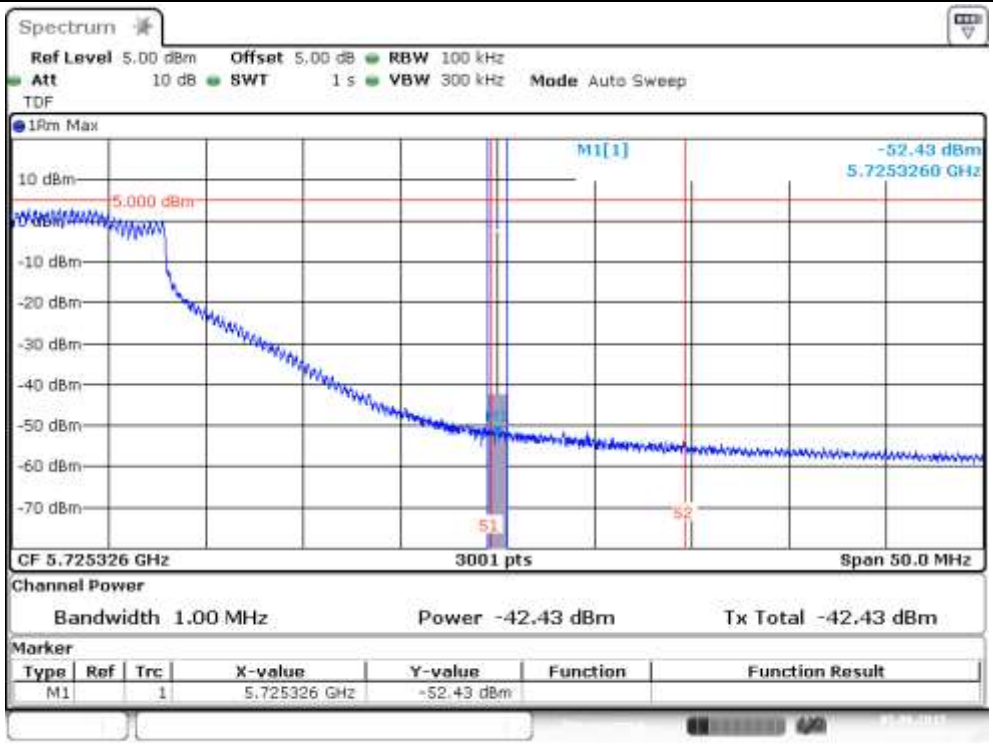
BE Low Freq Section, RMS – CH100



BE High Freq Section, Peak – CH140

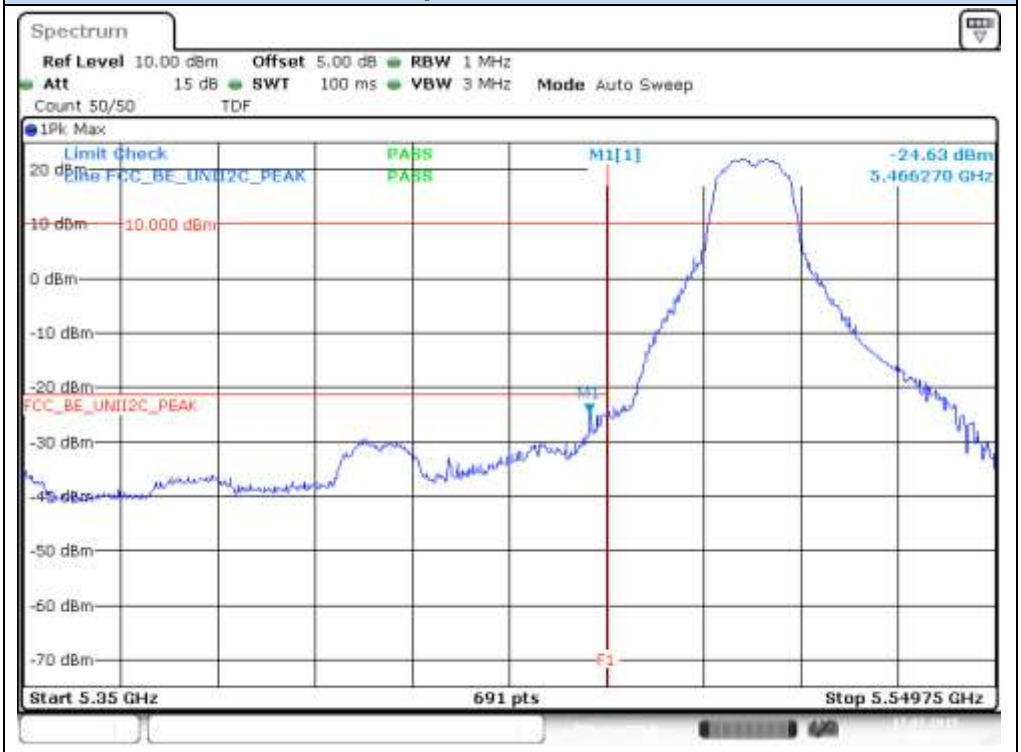


BE High Freq Section, RMS – CH140

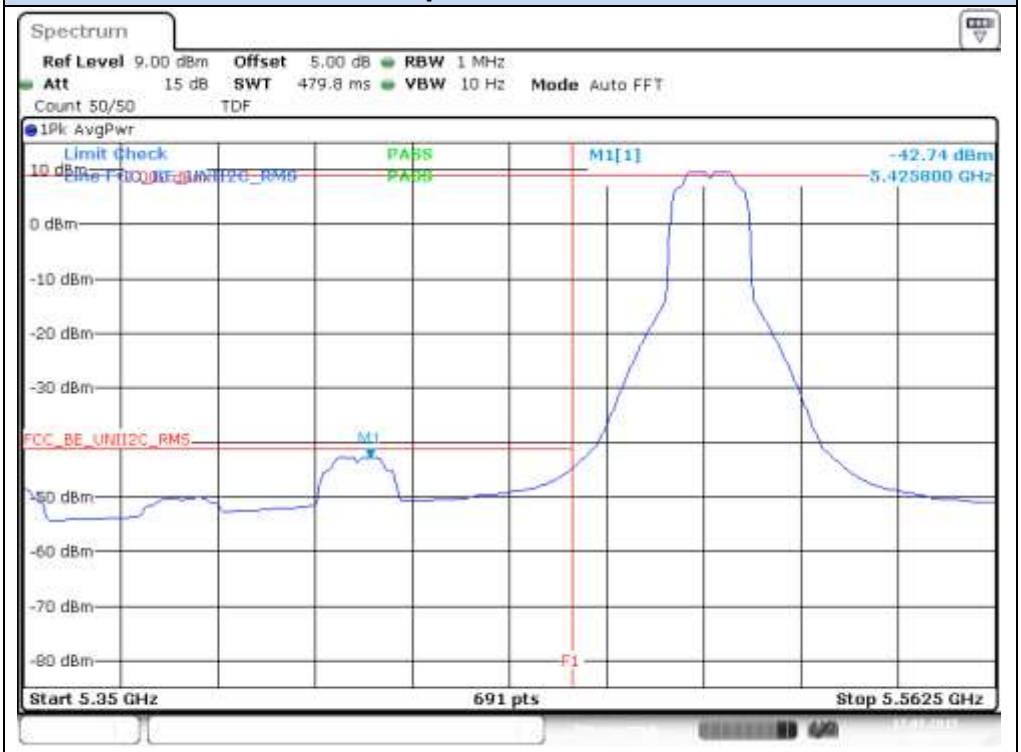


802.11a, 6Mbps – Chain B

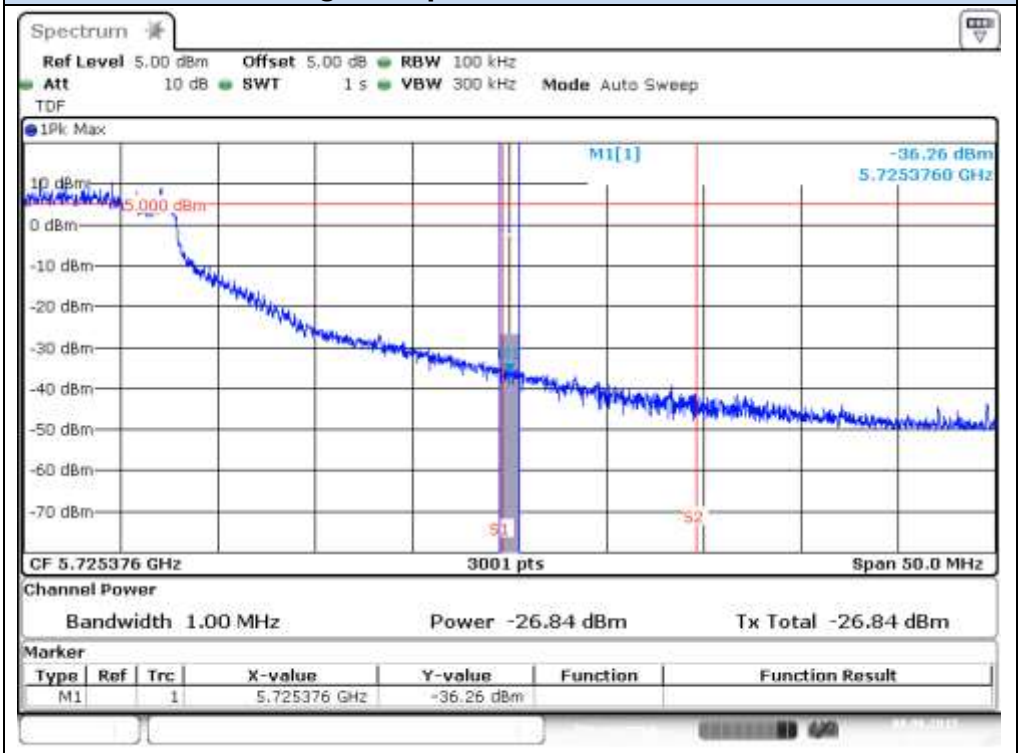
BE Low Freq Section, Peak – CH100



BE Low Freq Section, RMS – CH100

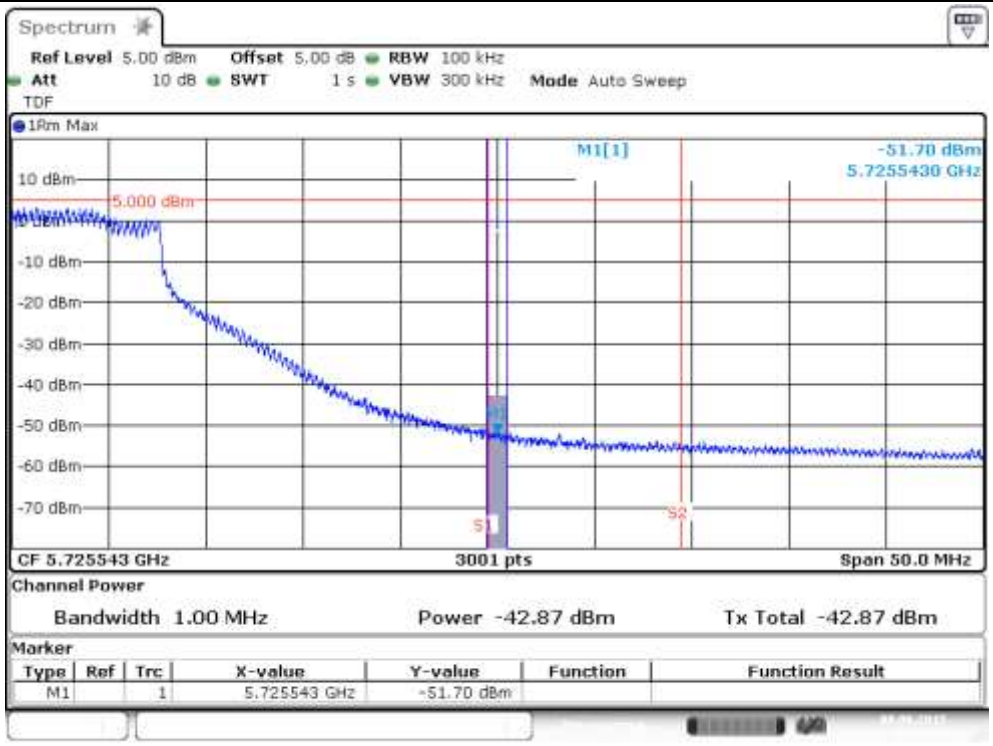


BE High Freq Section, Peak – CH140



Date: 8.JUN.2015 15:26:54

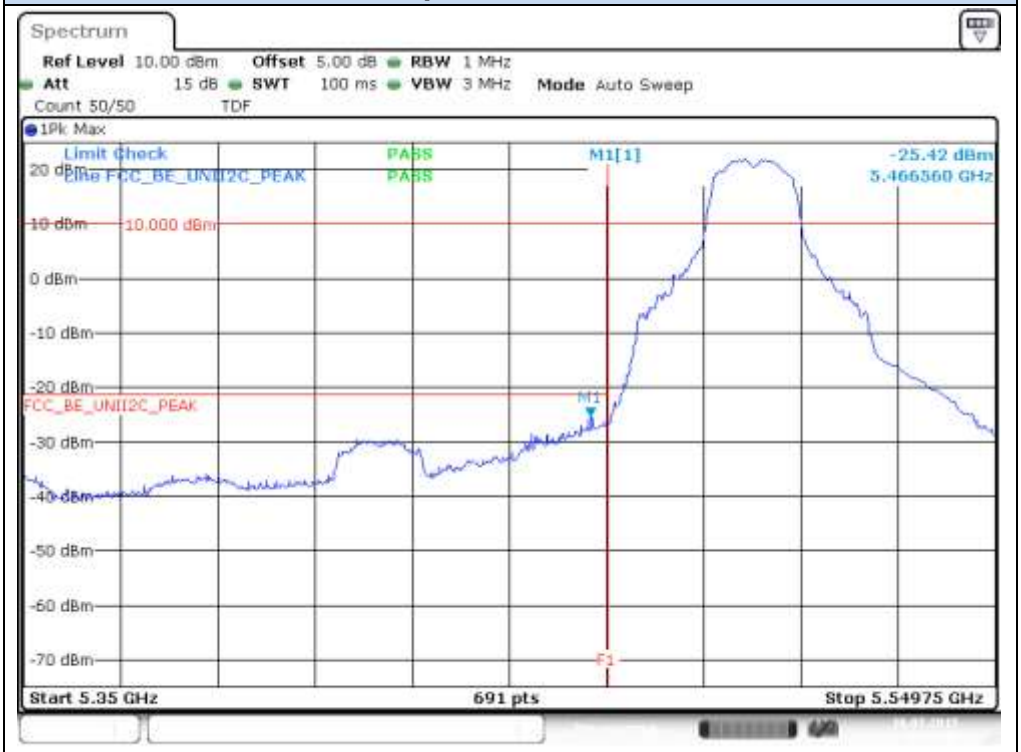
BE High Freq Section, RMS – CH140



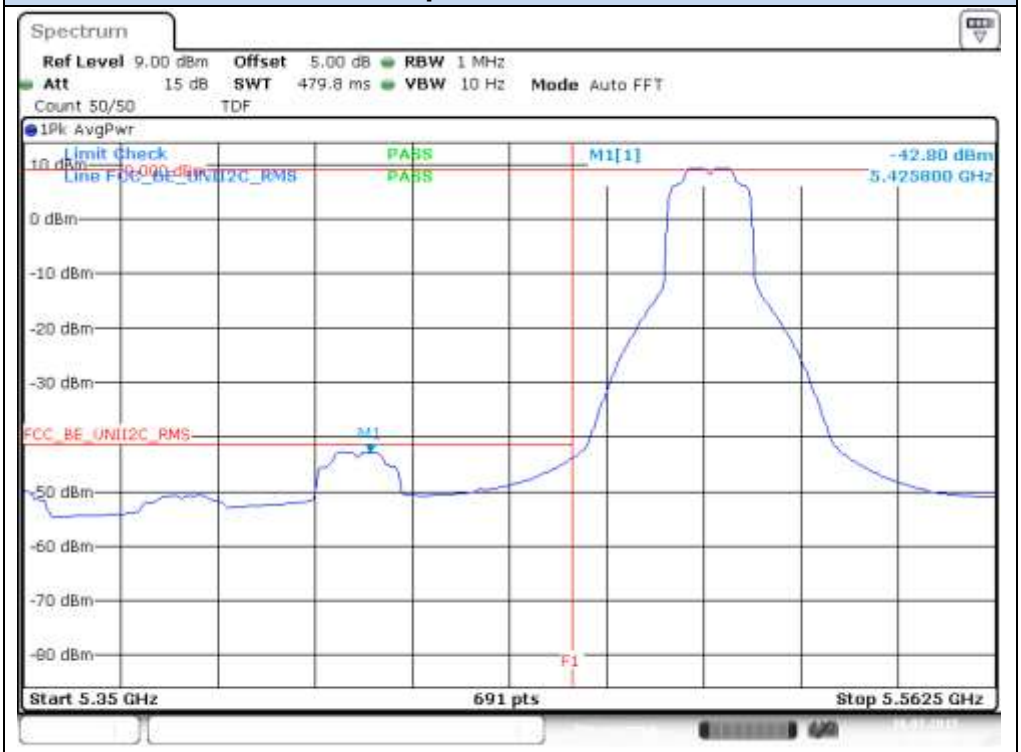
Date: 8.JUN.2015 15:25:51

802.11n20, HT0 (SISO) – Chain A

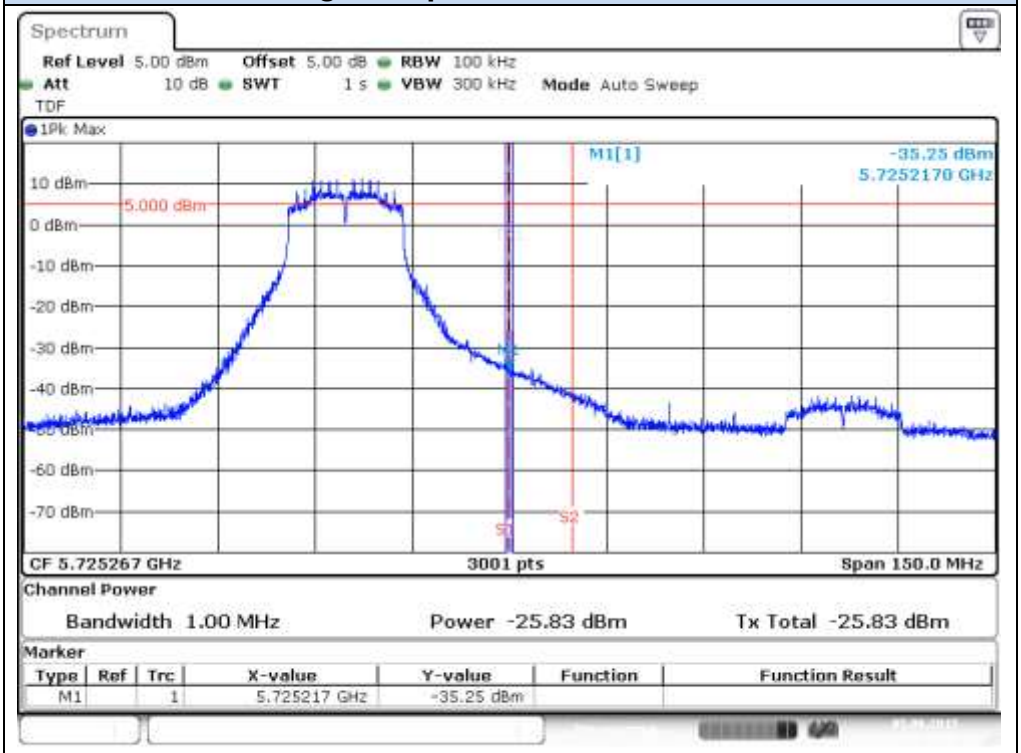
BE Low Freq Section, Peak – CH100



BE Low Freq Section, RMS – CH100

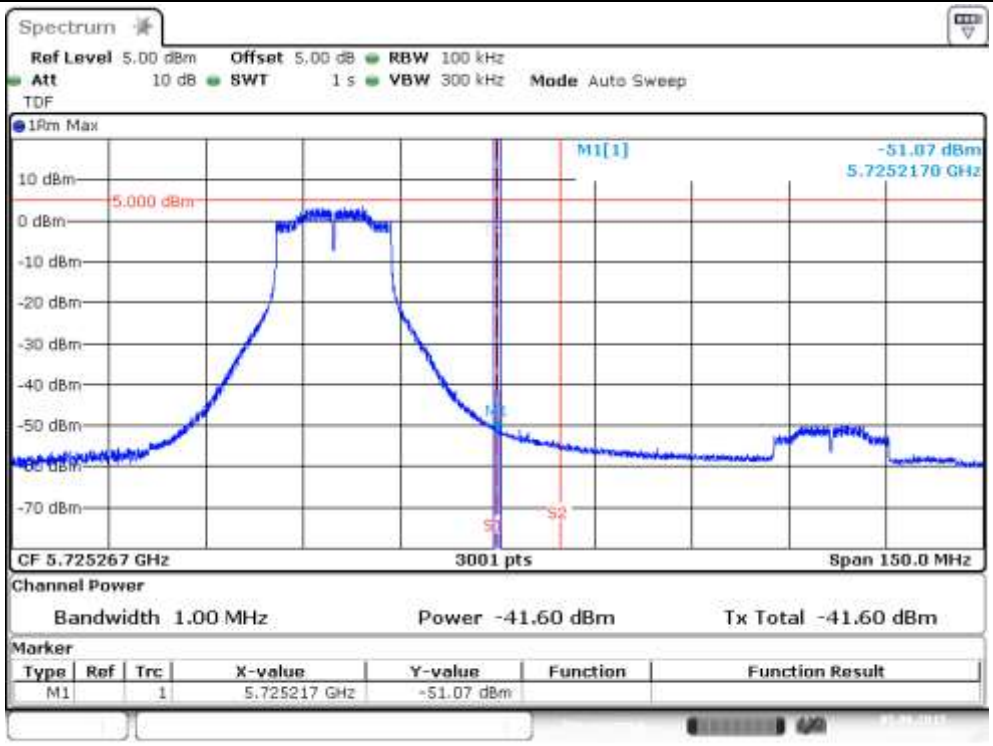


BE High Freq Section, Peak – CH140



Date: 5.JUN.2015 17:40:18

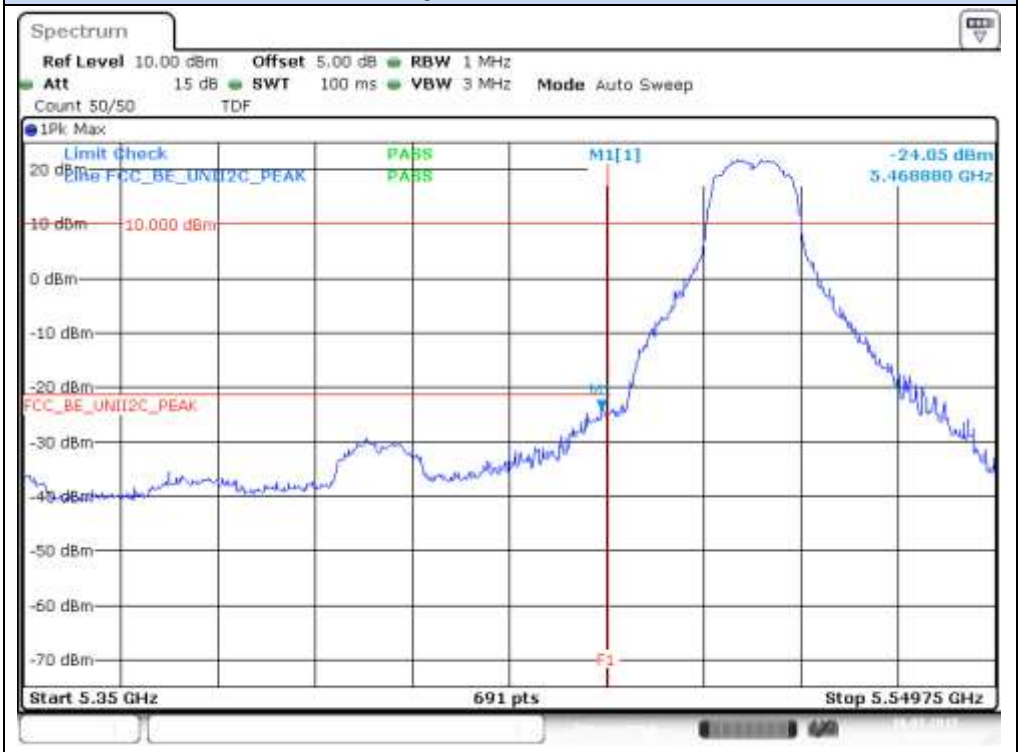
BE High Freq Section, RMS – CH140



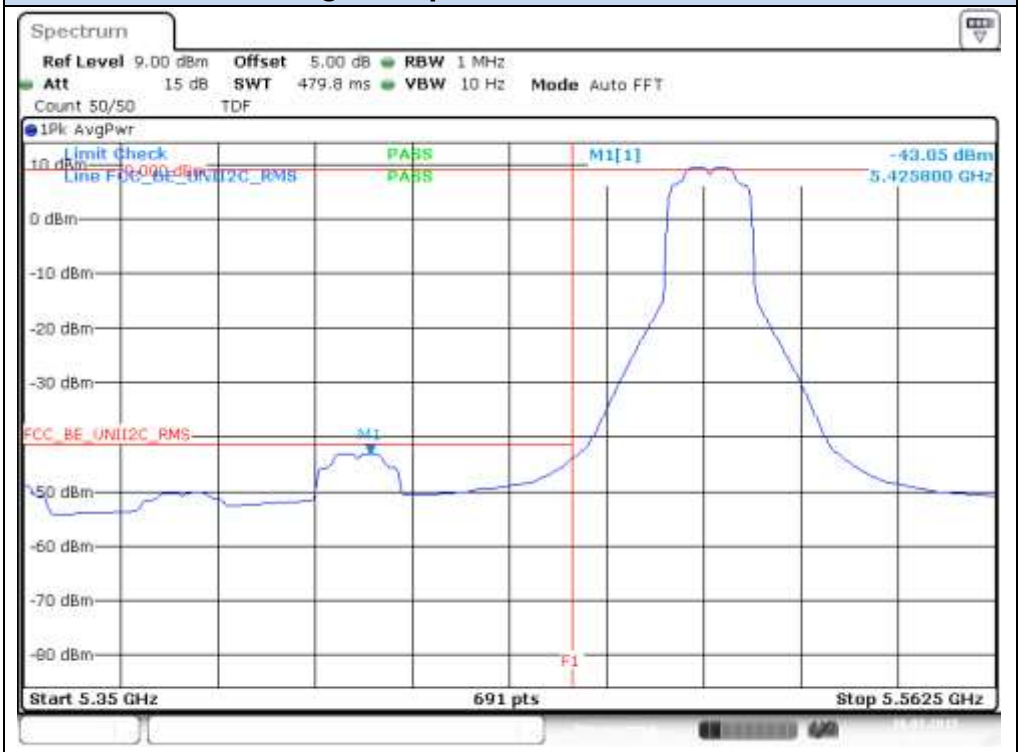
Date: 5.JUN.2015 17:38:30

802.11n20, HT0 (SISO) – Chain B

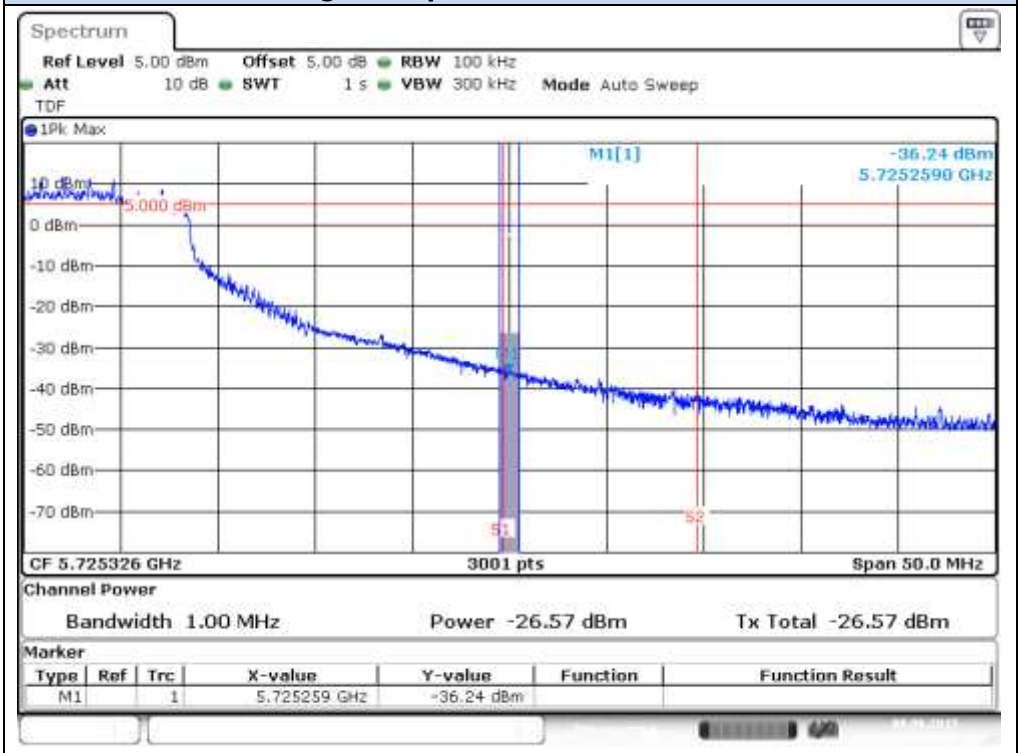
BE Low Freq Section, Peak – CH100



BE High Freq Section, RMS – CH100

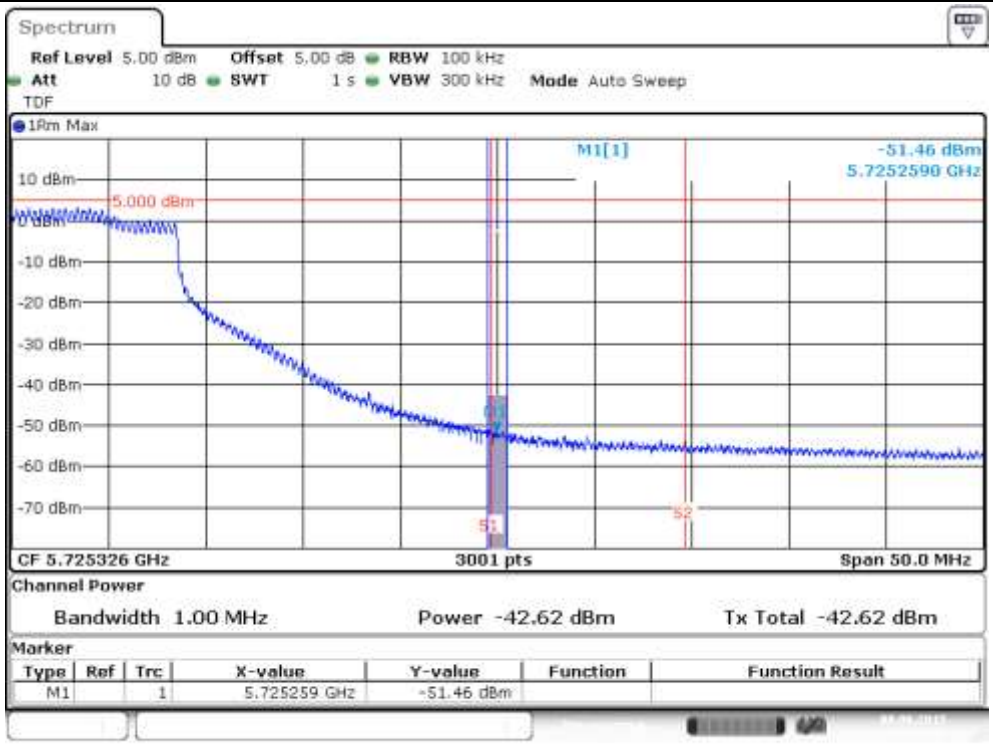


BE High Freq Section, Peak – CH140



Date: 8.JUN.2015 17:20:18

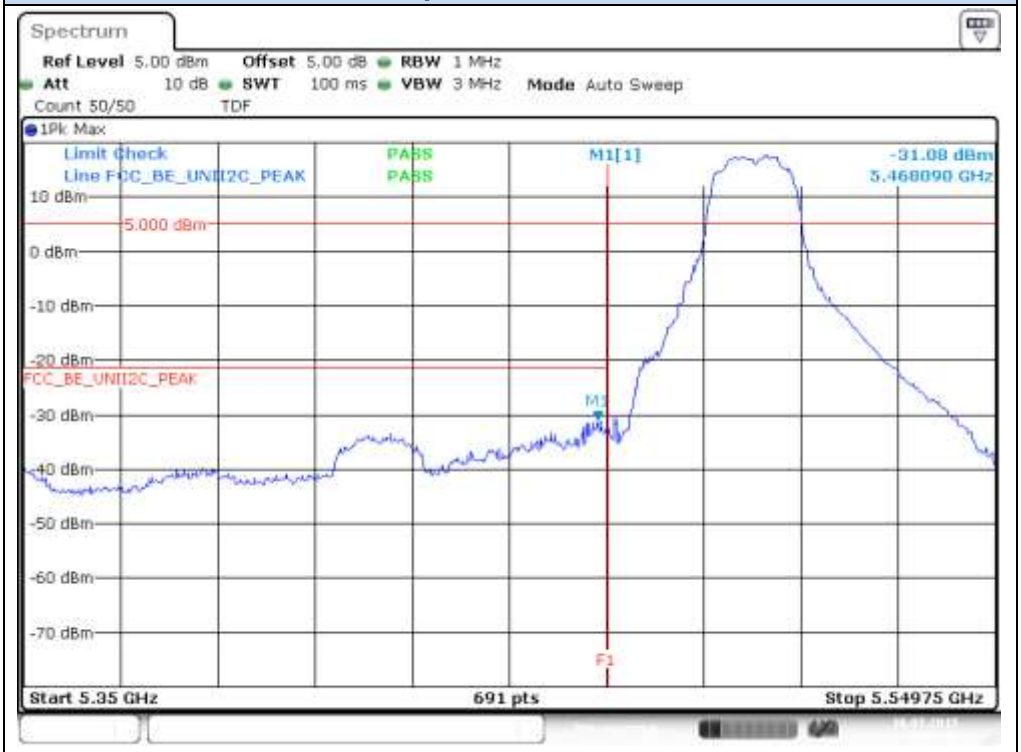
BE High Freq Section, RMS – CH140



Date: 8.JUN.2015 17:19:16

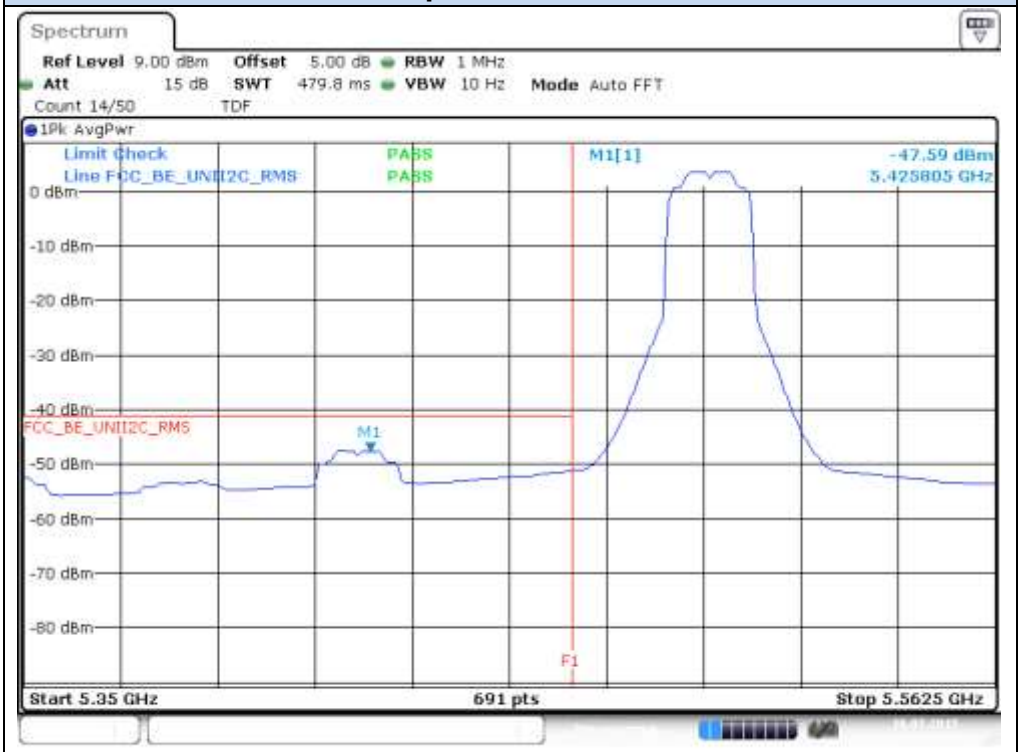
802.11n20, HT8 (MIMO) – Chain A

BE Low Freq Section, Peak – CH100



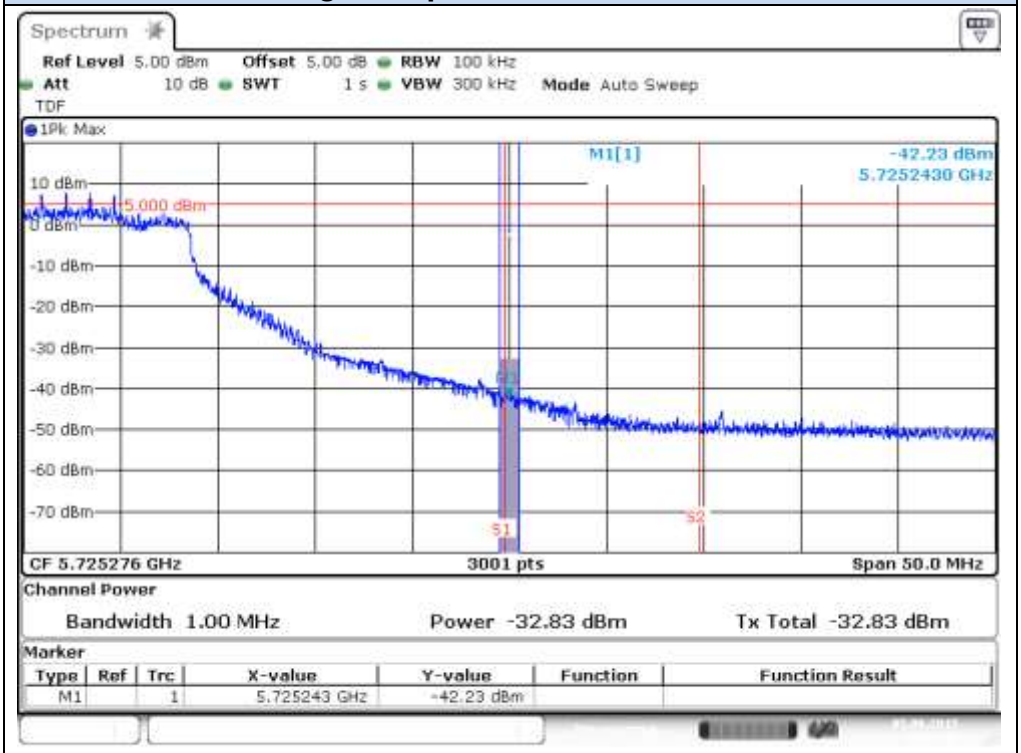
Date: 16.JUL.2015 18:01:40

BE Low Freq Section, RMS – CH100



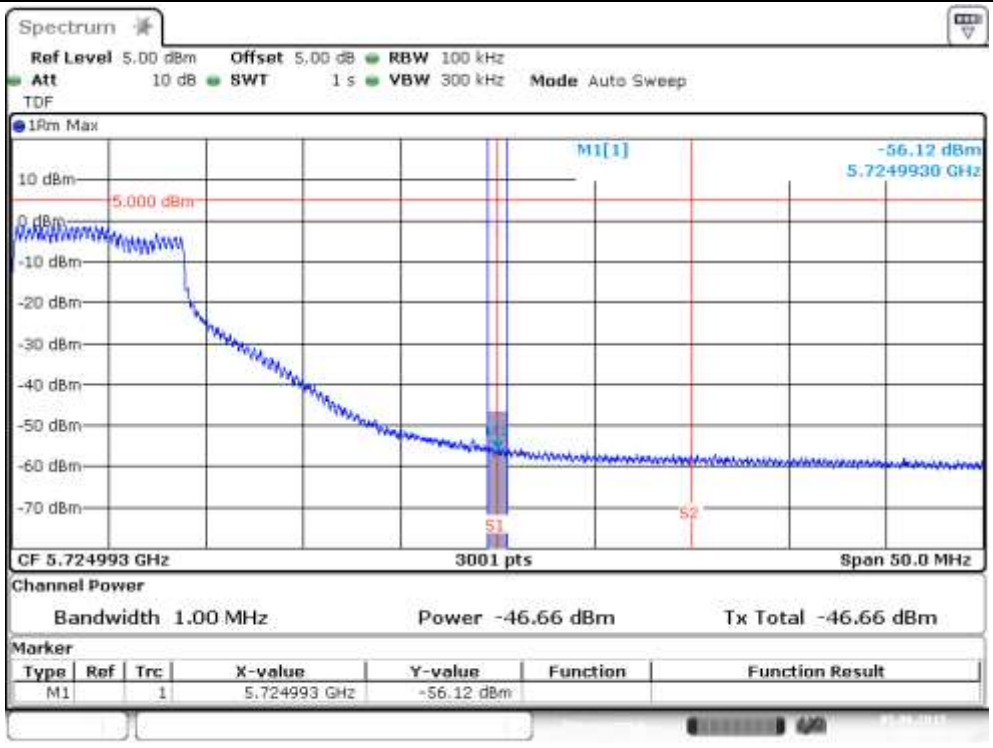
Date: 16.JUL.2015 17:54:25

BE High Freq Section, Peak – CH140



Date: 5.JUN.2015 18:04:49

BE High Freq Section, RMS – CH140



Date: 5.JUN.2015 18:02:06