Report No. 367960-02

Test Report

Product	Indoor Home Monitoring Camera with WiFi
Name and address of the applicant	Panasonic Corporation of North America Two Riverfront Plaza, 9th Floor Newark, NJ 07102-5490, USA
Name and address of the manufacturer	Same as above
Model	KX-HNC810 KX-HNC815C
Rating	Mains (120 V_{AC} 60 Hz)
Trademark	Panasonic
Serial number	/
Additional information	WiFi, 802.11a/b/g/n
Tested according to	**FCC Part 15.407** Unlicensed National Information Infrastructure Devices (U-NII) **Industry Canada RSS-247, Issue 2** Licence-Exempt Local Area Network (LE-LAN) Devices
Order number	367960
Tested in period	2018-11-26 to 2019-02-14 and 2019-02-25
Issue date	2019-03-12
Name and address of the testing laboratory	Nemko Instituttveien 6 Kjeller, Norway www.nemko.com CAB Number: FCC: NO0001 ISED: NO470 TEL: +47 22 96 03 30 FAX: +47 22 96 05 50 ilac-MRA NORWEGIAN ACCREDITATION TEST 033 **An accredited technical test executed under the Norwegian accreditation scheme**

Prepared by [Frode Sveinsen]	Approved by [G. Suhanthakumar]

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1 INFORMATION

1.1 Test Item

Name	Panasonic
Model	KX-HNC810 (US model) KX-HNC815C (Canada model)
FCC ID	ACJ96NKX-HNC810
ISED ID	216A-KXHNC815
Serial number	/
Hardware identity and/or version	N/A
Software identity and/or version	N/A
Frequency Ranges	U-NII 1 : 5180 – 5240 MHz: 4 channels U-NII 2A : 5260 – 5320 MHz: 4 channels U-NII 2C : 5500 – 5720 MHz: 12 channels U-NII 3 : 5745 – 5825 MHz: 5 channels
Operating Modes	802.11a 802.11n (20 MHz BW)
Type of Modulation	Digital (OFDM - Orthogonal frequency-division multiplexing)
Conducted Output Power	5180 – 5240 MHz: 13.8 mW 5260 – 5320 MHz: 16.6 mW 5500 – 5720 MHz: 26.9 mW 5745 – 5825 MHz: 23.4 mW
Antenna Connector	None (Integral Antenna)
Number of Antennas	1
Antenna Diversity Supported	No
Smart Antennas Supported	No
TPC	Not implemenmted
DFS	Slave Device without Radar Detection
Power Supply	AC Adaptor Model PNLV251 (Input: 120V 60Hz 350mA, Output: $5V_{DC}$ 1.8A)

Description of Test Item

The tested device is an Indoor Home Monitoring Camera with WiFi connection.

The KX-HNC810 is identical to the KX-HNC850 (FCC ID: ACJ96NKX-HNC850) except for the voltage regulator circuitry, and the KX-HNC850 is a floor standing model.

The models KX-HNC810 and KX-HNC815C are identical.

1.2 Normal test conditions

Temperature:	20 - 24 °C
Relative humidity:	20 - 50 %
Normal test voltage:	120 V 60 Hz

The values are the limit registered during the test period.

1.3 Test Engineer(s)

Frode Sveinsen

1.4 Description of modification for Modification Filing

Not applicable.

1.5 Family List Rational

Not Applicable.

1.6 Antenna Requirement

Is the antenna detachable? ☐ Yes ☒ No

If detachable, is the antenna connector non-standard? ☐ Yes ☐ No

Type of antenna connector: N/A

Ref. FCC §15.203

1.7 Worst-Case Configuration and Mode

Radiated Emissions and Power Line Conducted Emissions were performed with the EUT set to transmit at the channel with the highest output power as worst-case scenario.

The worst case data rates were:

802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0

1.8 Comments

The measurements were done with the EUT powered by 120 V AC. It was checked that power variations between 85% and 115% did not have any influence on the measurements.

All ports were populated during spurious emission measurements.

1.9 EUT Operating Modes

Description of operating modes	Additional information
Continuous TX, 5 GHz Mode	Continuous traffic, WLAN 5GHz 20 MHz with Special software version

2 TEST REPORT SUMMARY

2.1 General

All measurements are tracable to national standards.

The tests were conducted for demonstrating compliance with FCC CFR 47 Part 15, paragraph 15.407 and ISED RSS-247 Issue 2.

Tests were performed in accordance with ANSI C63.4-2014 and ANSI C63.10-2013.

Radiated tests were performed in a semi-anechoic chamber at measuring distances of 1m and 3m.

☒ New Submission	☒ Production Unit
☐ Class II Permissive Change	☐ Pre-production Unit
NII Equipment Code	☐ Family Listing

THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.

Deviations from, additions to, or exclusions from the test specifications are described in “Summary of Test Data”.

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2.2 Test Summary

Name of test	FCC Part 15 reference	RSS-247 Issue 2 RSS-GEN Issue 5 reference	Result
Supply Voltage Variations	15.31(e)	6.11 (RSS-GEN)	**Complies**
Antenna Requirement	15.203	6.8 (RSS-GEN)	**Complies**
Power Line Conducted Emission	15.107(a) 15.207(a)	7.2 / 8.8 (RSS-GEN)	**Complies**
Maximum Output Power	15.407(a)	6.2	**Complies**
Power Spectral Density	15.407(a)	6.2	**Complies**
Emission Bandwidth	15.407(a)(2)	6.2	**N/A**
Unwanted Emissions	15.407(b)	6.2	**Complies**
Discontinuation of Transmission	15.407(c)	6.3	**N/T**[1]
6 dB Bandwidth	15.407(e)	6.2.4	**Complies**
Transmit Power Control	15.407(h)	6.2.3	**N/A**[2]
Dynamic Frequency Selection	15.407(h)	6.3	**Complies**[3]
Radiated Emissions	15.205 15.209	7.3 (RSS-GEN) 8.9 (RSS-GEN)	**Complies**

[1] See manufacturers declaration

[2] Transmit Power Control is not required when Max EIRP is below 500 mW

[3] The EUT is a Client Device without Radar Detection. This test is covered by Nemko Canada test report no. 367960-1TRFWL.

Revision history

Version	Date	Comment	Sign
1.0	2019-02-14	First edition	FS
1.1	2019-02-26	EIRP values added	FS
1.2	2019-03-12	Updated after TCB review	FS

3 TEST RESULTS

3.1 Power Line Conducted Emissions

FCC Part 15.207

ISED RSS-GEN Issue 5, Clause 7.2 / 8.8

Measurement procedure:	**ANSI C63.4-2014 using 50 µH/50 ohms LISN**
Test Results:	**Complies**
Measurement Data:	**See attached plots**

Highest measured value (L1 and N):

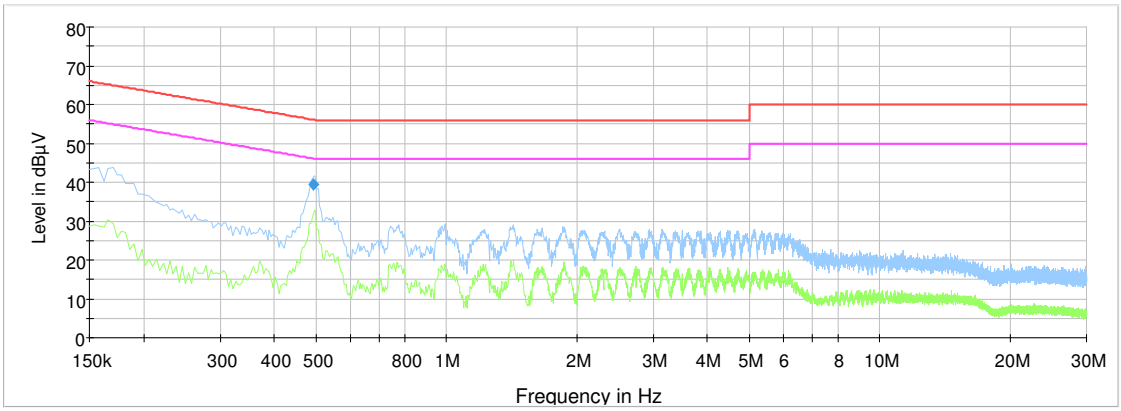
110V 60Hz, Camera in Standby:

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.492	39.45	---	56.13	16.68	1000	9	L1	OFF

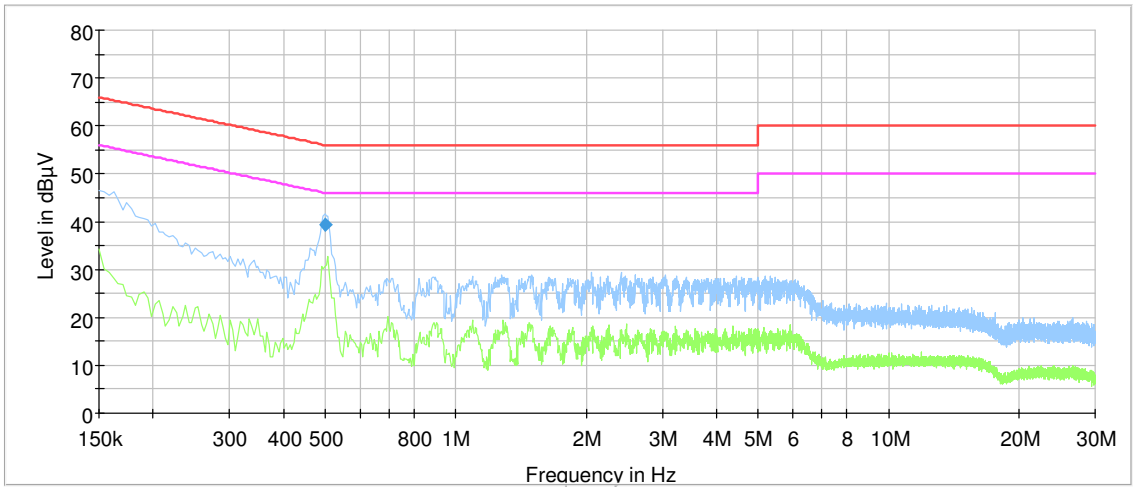
110V 60Hz, Camera Active:

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.500	39.41	---	56.00	16.59	1000	9	L1	OFF

110V 60Hz, Camera in Standby:



110V 60Hz, Camera Active:



3.2 Maximum Conducted Output Power

FCC 15.407 (a)

ISED RSS-247, Issue 2, Clause 6.2

Test Results: Complies

Measurement Data:

Ch. No.	Nominal Frequency (MHz)	Maximum Conducted Output Power (dBm)		Maximum Field Strength (dBµV/m)	
		802.11a, 6 Mbps	802.11n, MCS0	802.11a, 6 Mbps	802.11n, MCS0
36	5180	10.7	10.5	108.6	108.6
44	5220	11.3	11.0	108.1	
48	5240	11.4	11.3	107.1	107.2
52	5260	11.5	11.5	106.5	106.7
60	5300	12.1	11.9	105.9	
64	5320	12.2	11.9	106.4	106.5
100	5500	12.5	12.4	104.3	104.4
112	5560	13.2	13.0	106.8	107.0
140	5700	14.4	14.3	107.8	107.6
149	5745	12.5	12.6	107.8	107.7
157	5785	13.2	13.1	108.1	108.1
165	5825	13.5	13.7	107.3	107.3

Ch. No.	Nominal Frequency (MHz)	Maximum e.i.r.p. (dBm)		Maximum Antenna Gain (dBi)	
		802.11a, 6 Mbps	802.11n, MCS0	802.11a, 6 Mbps	802.11n, MCS0
36	5180	13.3	13.4	2.6	2.9
44	5220	12.9		1.6	
48	5240	11.9	12.0	0.5	0.7
52	5260	11.3	11.4	-0.2	-0.1
60	5300	10.6		-1.5	
64	5320	11.2	11.3	-1.0	-0.6
100	5500	9.1	9.2	-3.4	-3.2
112	5560	11.6	11.8	-1.6	-1.2
140	5700	12.6	12.3	-1.8	-2.0
149	5745	12.6	12.4	0.1	-0.2
157	5785	12.8	12.9	-0.4	-0.2
165	5825	12.1	12.1	-1.4	-1.6

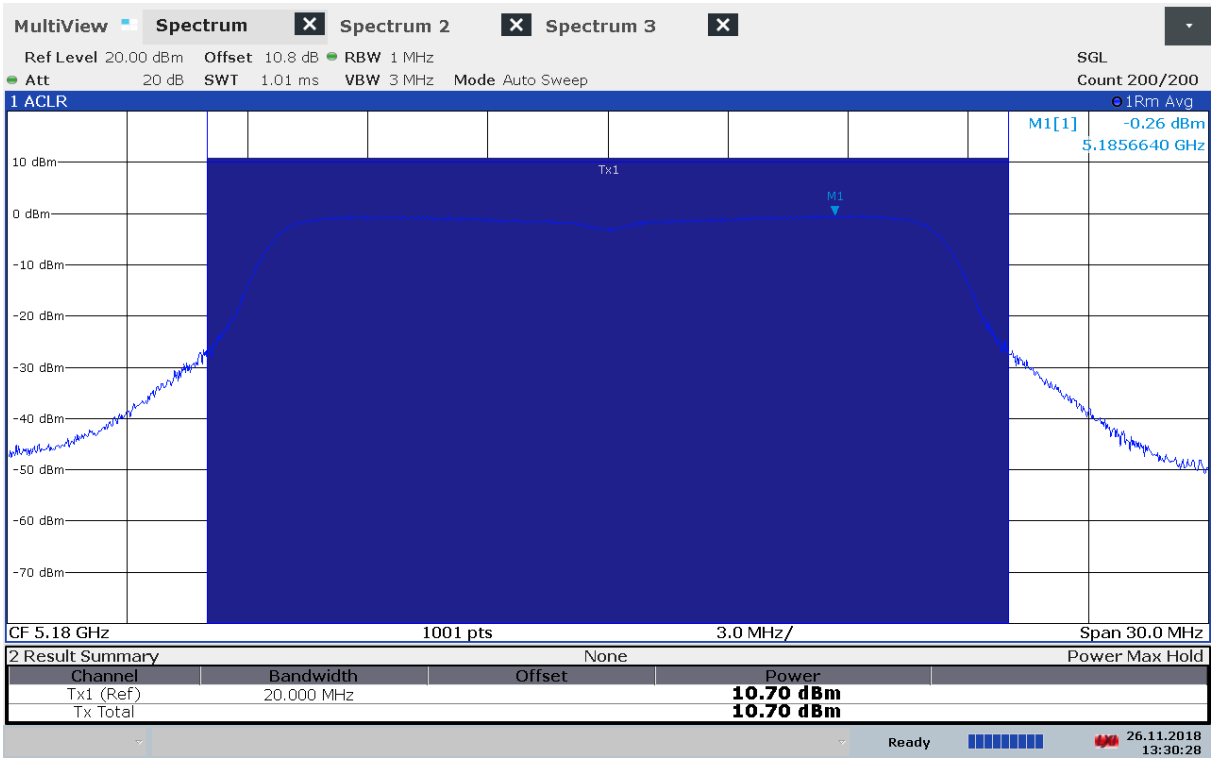
The EUT operates continuously; therefore method 1 of ANSI C63.10-2009 clause 6.10.3 was used.

EIRP values were calculated from Field Strength values using the method described in KDB 412172 D01 Determining ERP and EIRP v01r01.

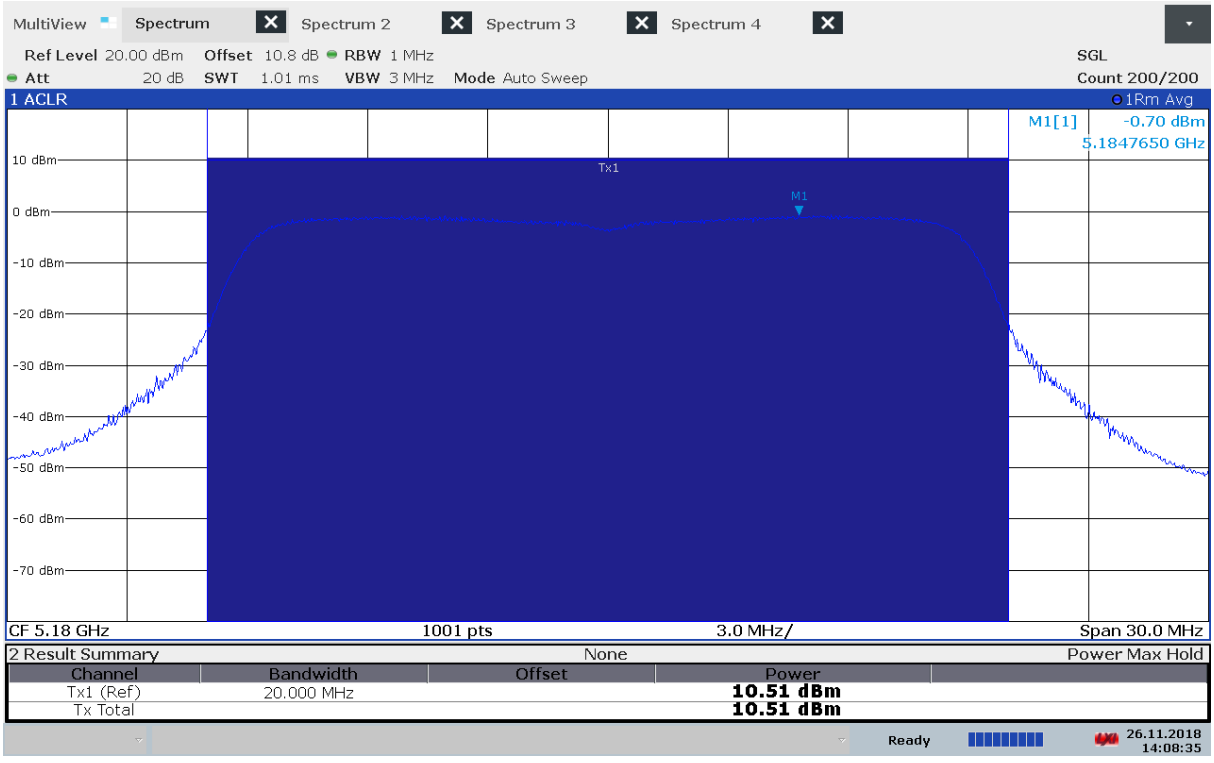
This is an indoor device with directional Antenna Gain less than 6 dBi.

Limits for Indoor Device:

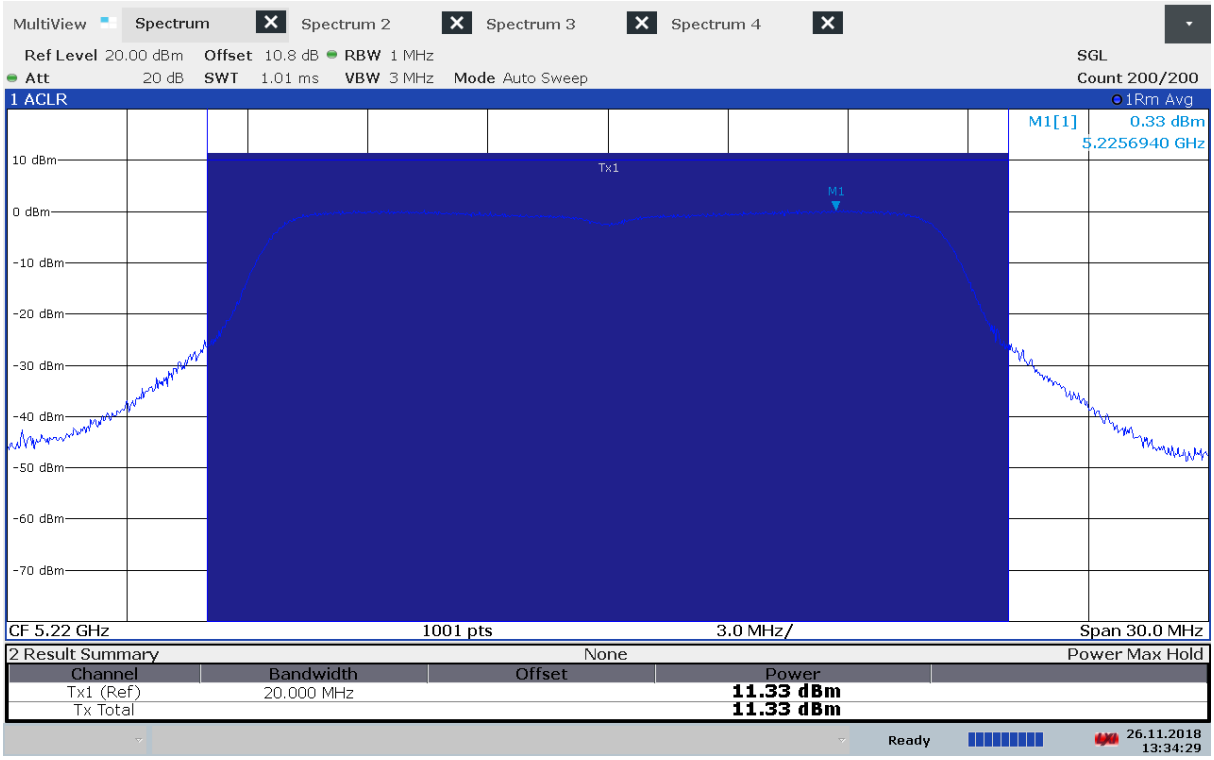
Frequency Band	FCC 15.407(a)	ISED RSS-247 Issue 2
5150 – 5250 MHz	Less than 250 mW (24 dBm) for client device Less than 1 W (30 dBm) for master device	Less than the lesser of 200 mW e.i.r.p. or $10 + 10 \log_{10} B$ dBm e.i.r.p.
5250 – 5350 MHz **5470 – 5725 MHz**	Less than the lesser of 250 mW (24 dBm) or $11 + 10 \log_{10} B$ dBm	Less than the lesser of 250 mW or $11 + 10 \log_{10}$ B dBm, and Less than the lesser of 1 W e.i.r.p. or $17 + 10 \log_{10}$ B dBm e.i.r.p. Devices with e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W
5725 – 5825 MHz	Less than 1 Watt	Less than 1 Watt If Antenna Gain is more than 6 dBi the Power Limit is reduced by the amouth exceeding 6 dBi
	If Antenna Gain is more than 6 dBi the Power Limit is reduced by the amouth exceeding 6 dBi	
	B is the 26dB emission bandwidth in MHz	*B* is the 99% emission bandwidth in MHz



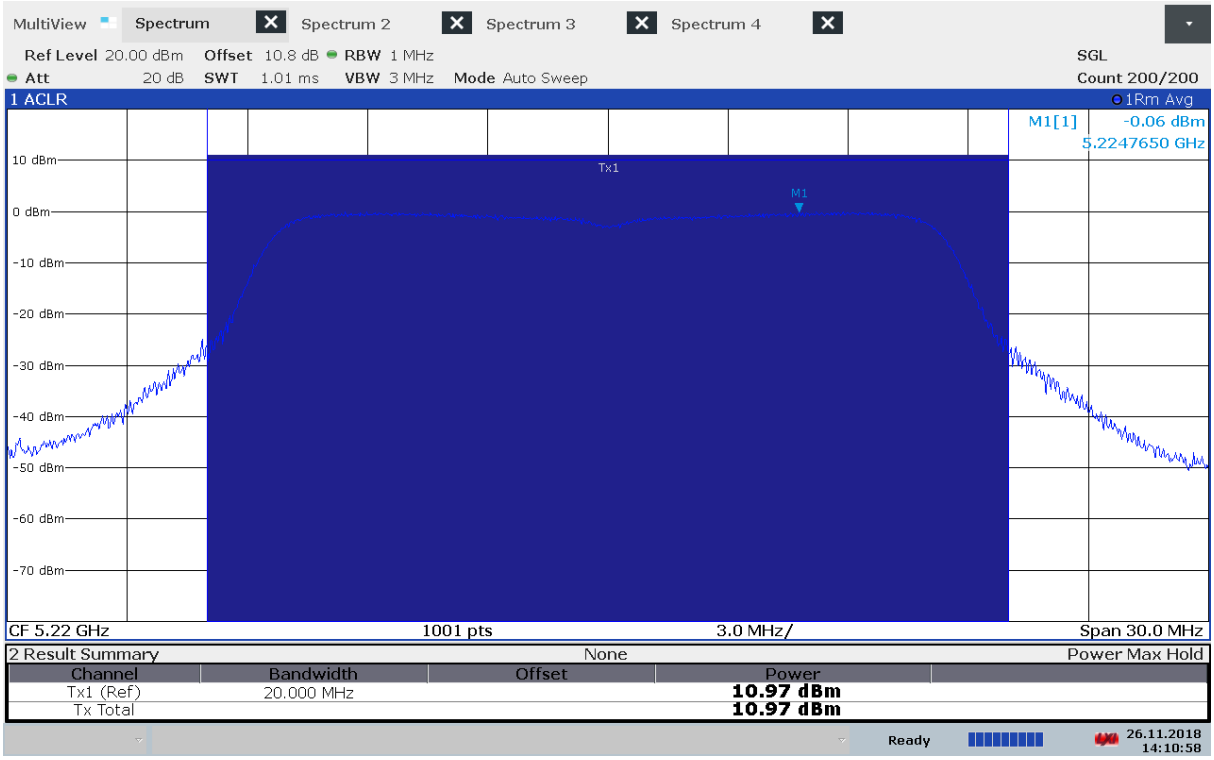
Output Power, 5180 MHz, Method 1, 802.11a 6Mbps, Conducted



Output Power, 5180 MHz, Method 1, 802.11n MCS0, Conducted



Output Power, 5220 MHz, Method 1, 802.11a 6Mbps, Conducted



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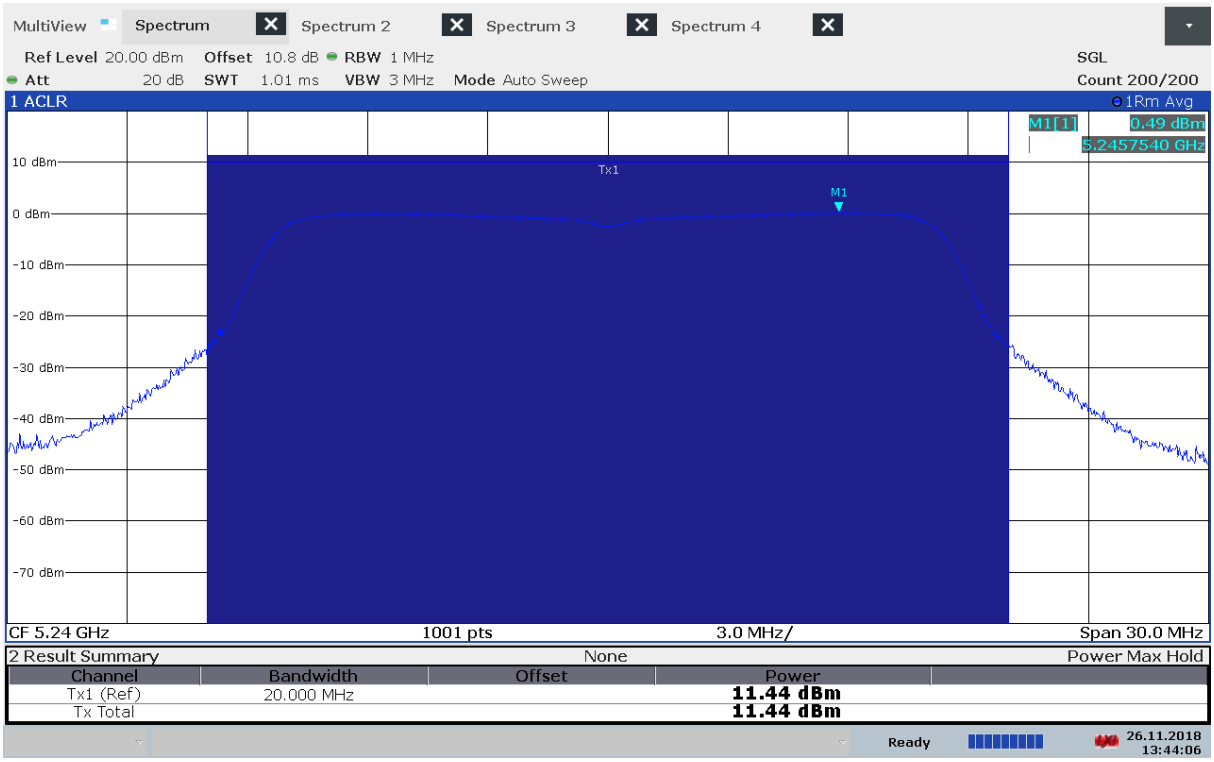
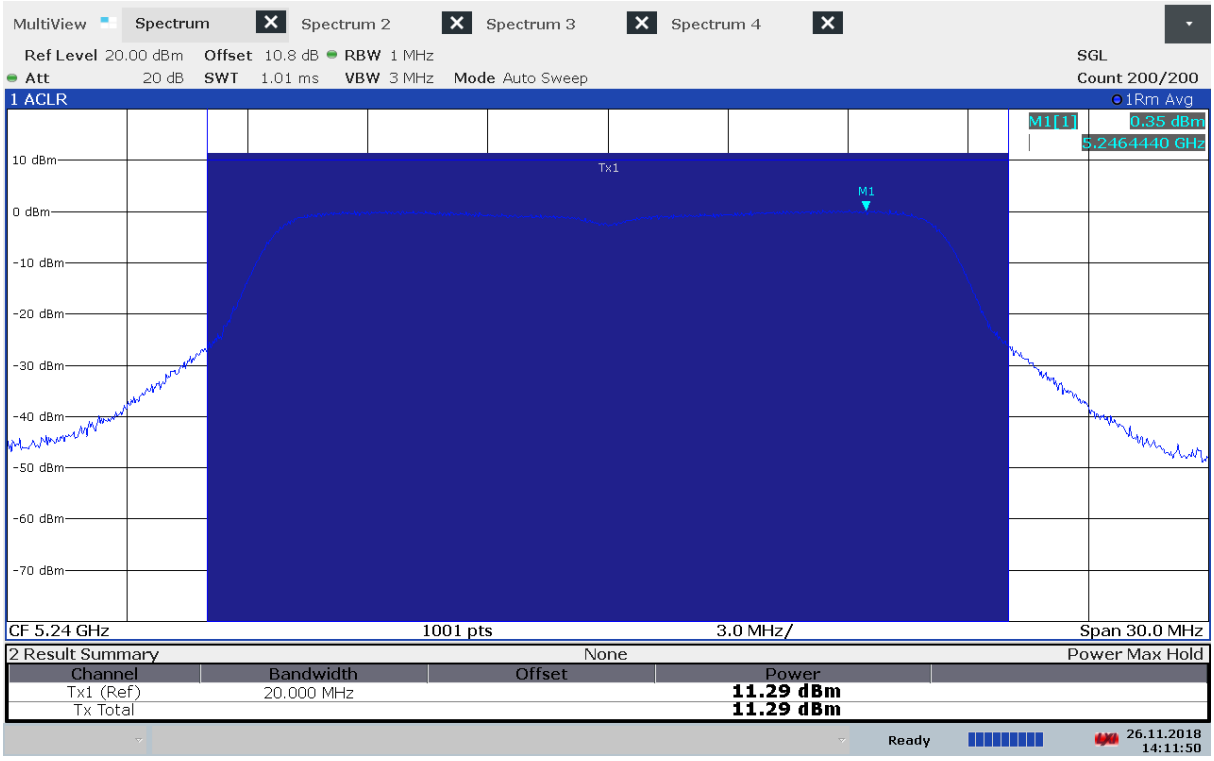
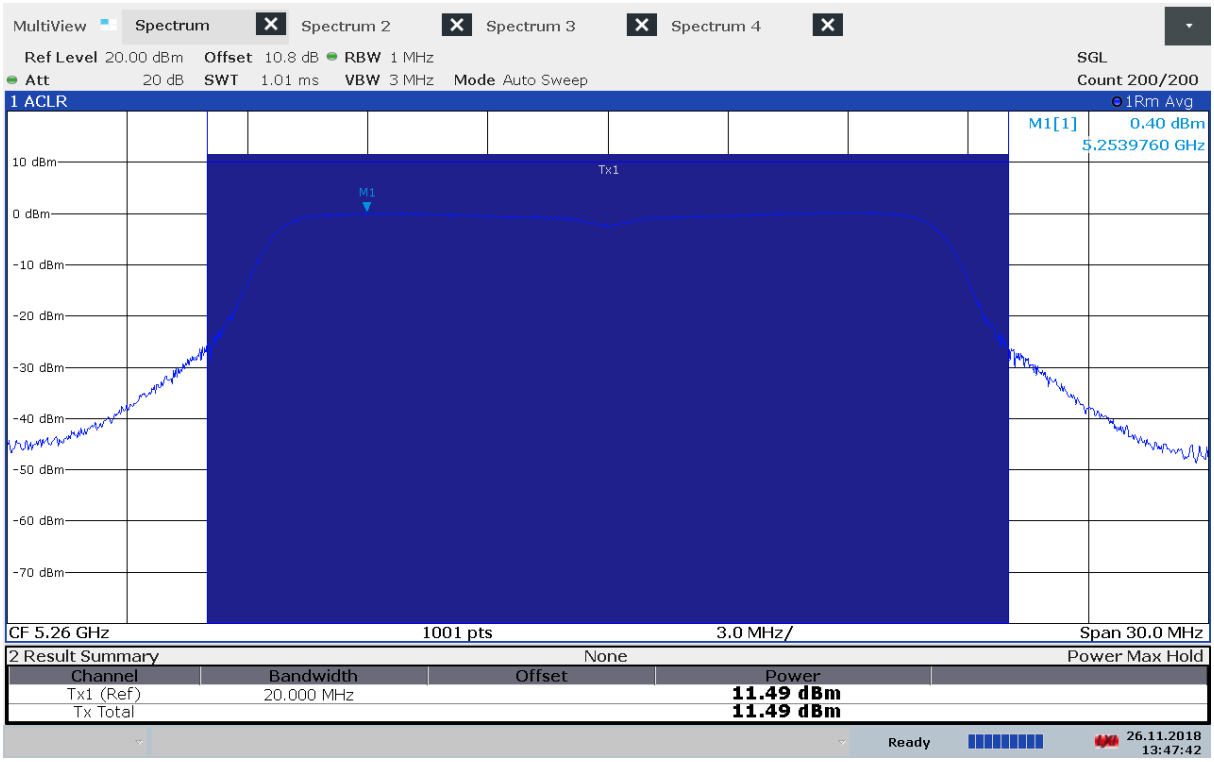


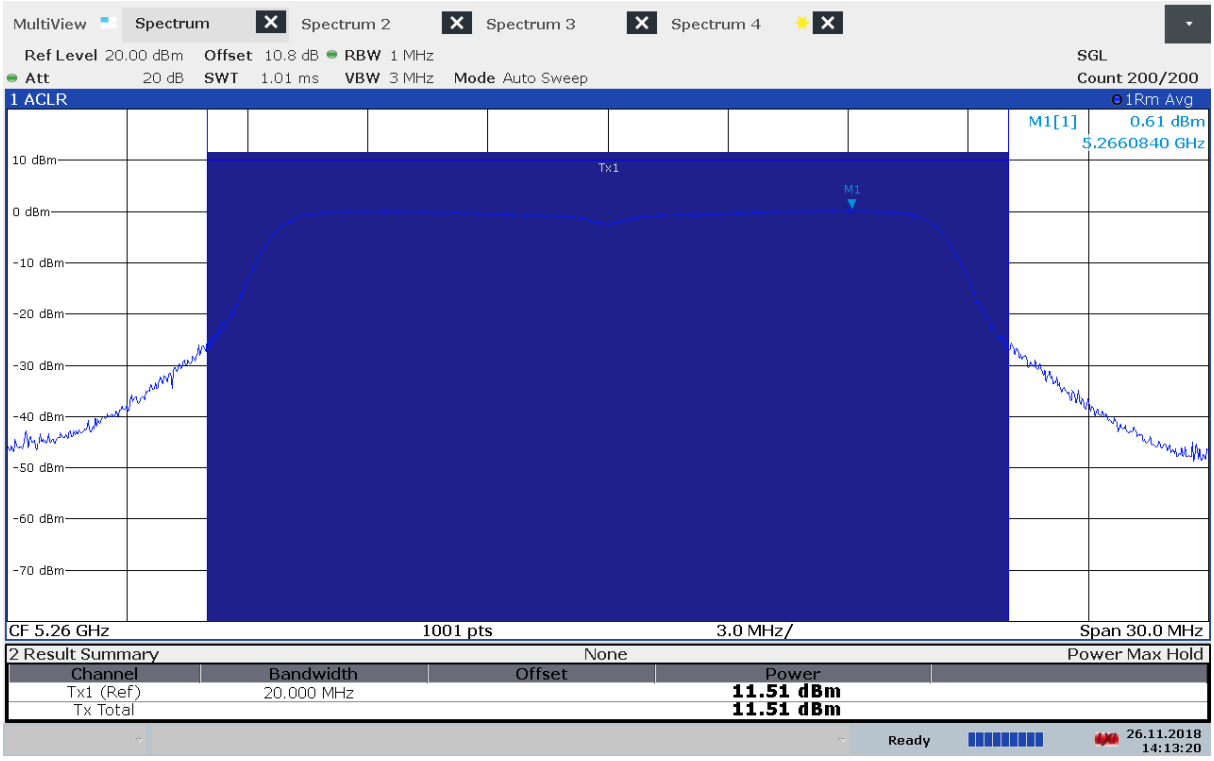
Output Power, 5240 MHz, Method 1, 802.11a 6Mbps, Conducted



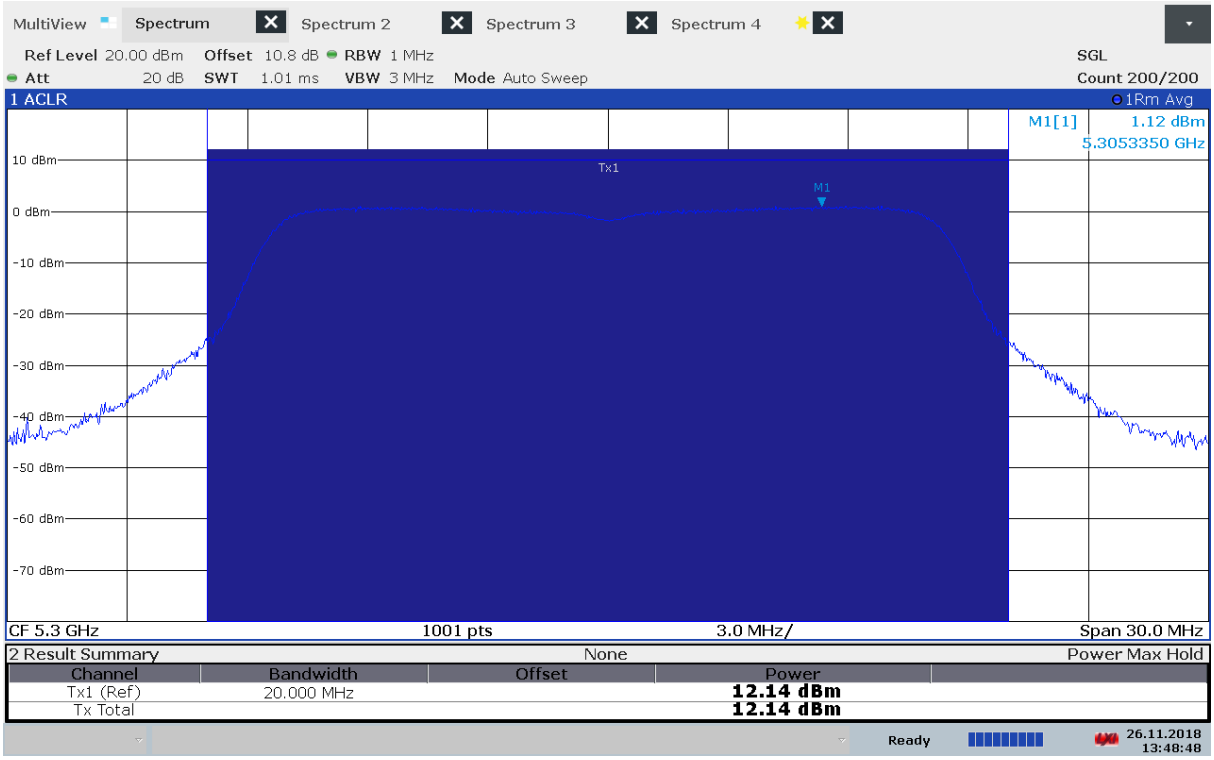
Output Power, 5240 MHz, Method 1, 802.11n MCS0, Conducted



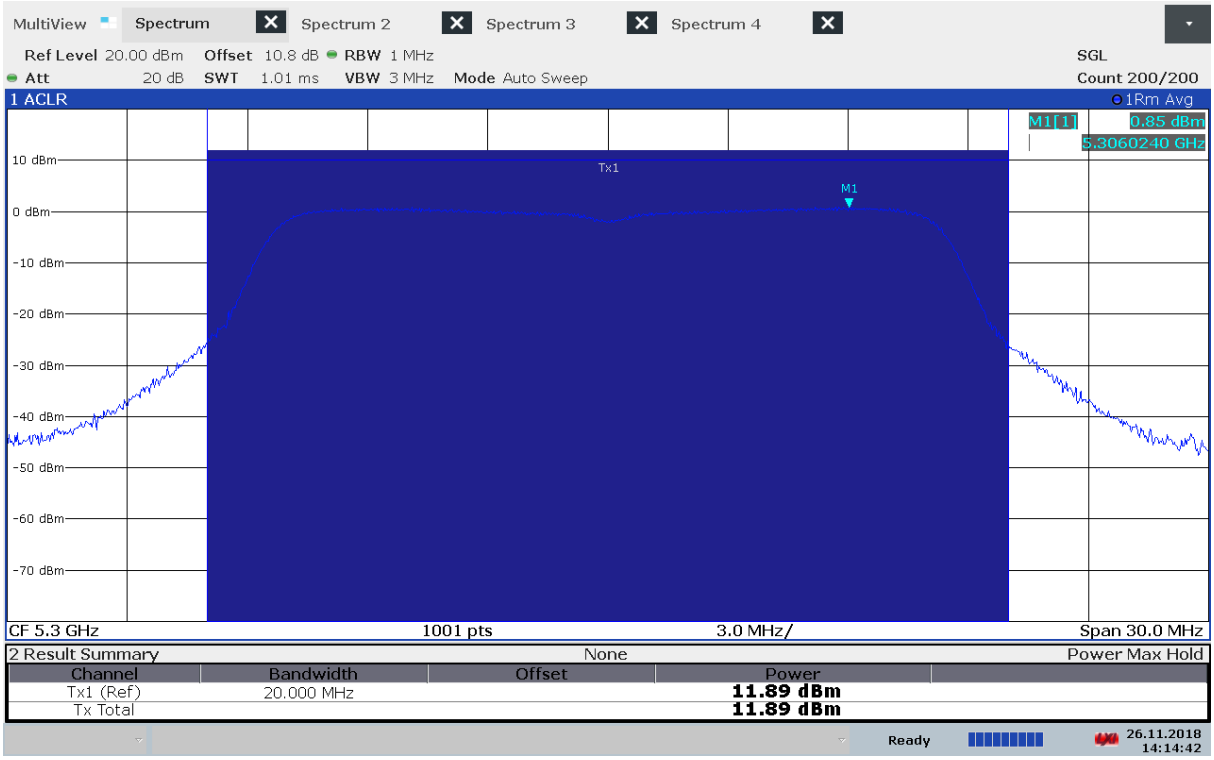
Output Power, 5260 MHz, Method 1, 802.11a 6Mbps, Conducted



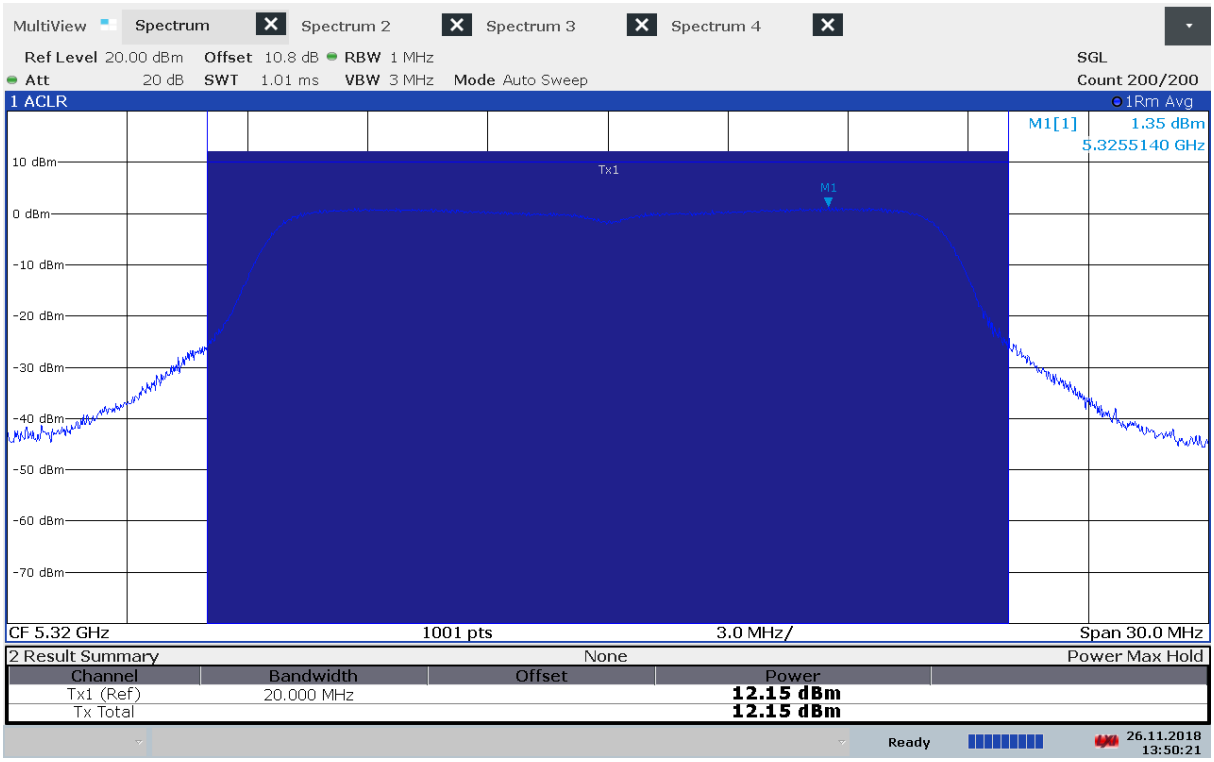
Output Power, 5260 MHz, Method 1, 802.11n MCS0, Conducted



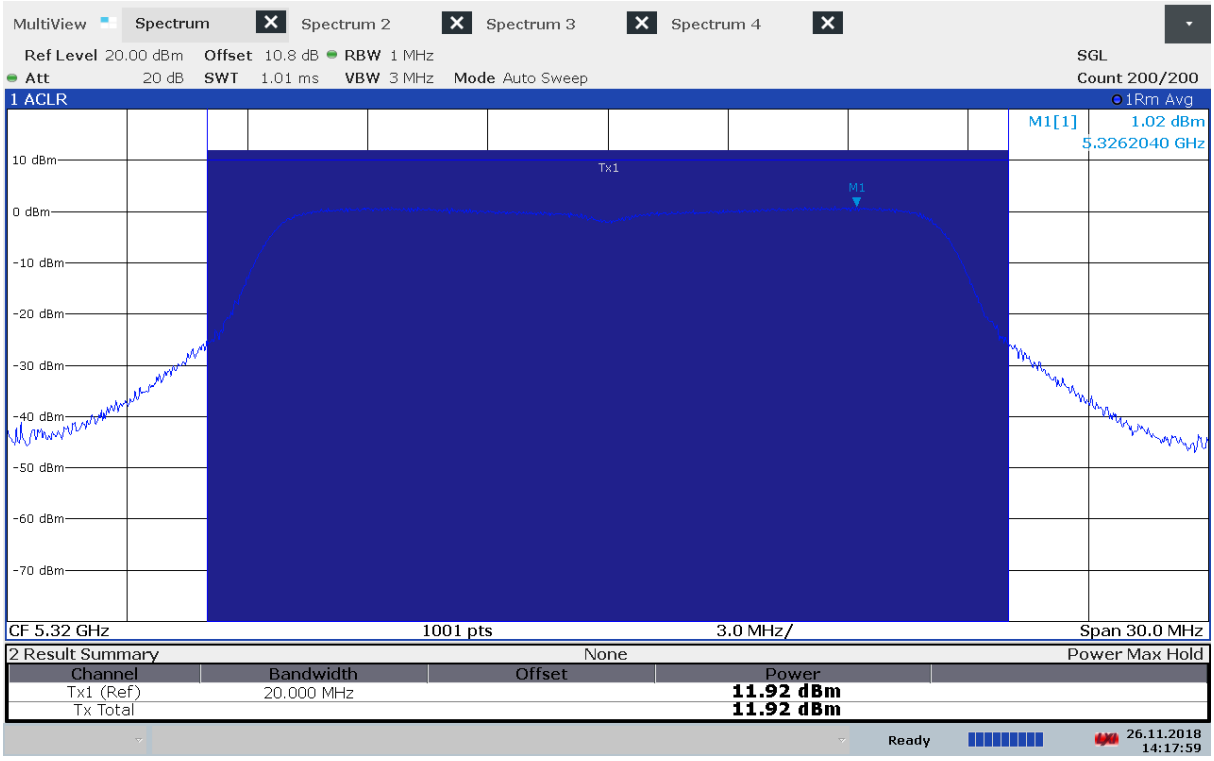
Output Power, 5300 MHz, Method 1, 802.11a 6Mbps, Conducted



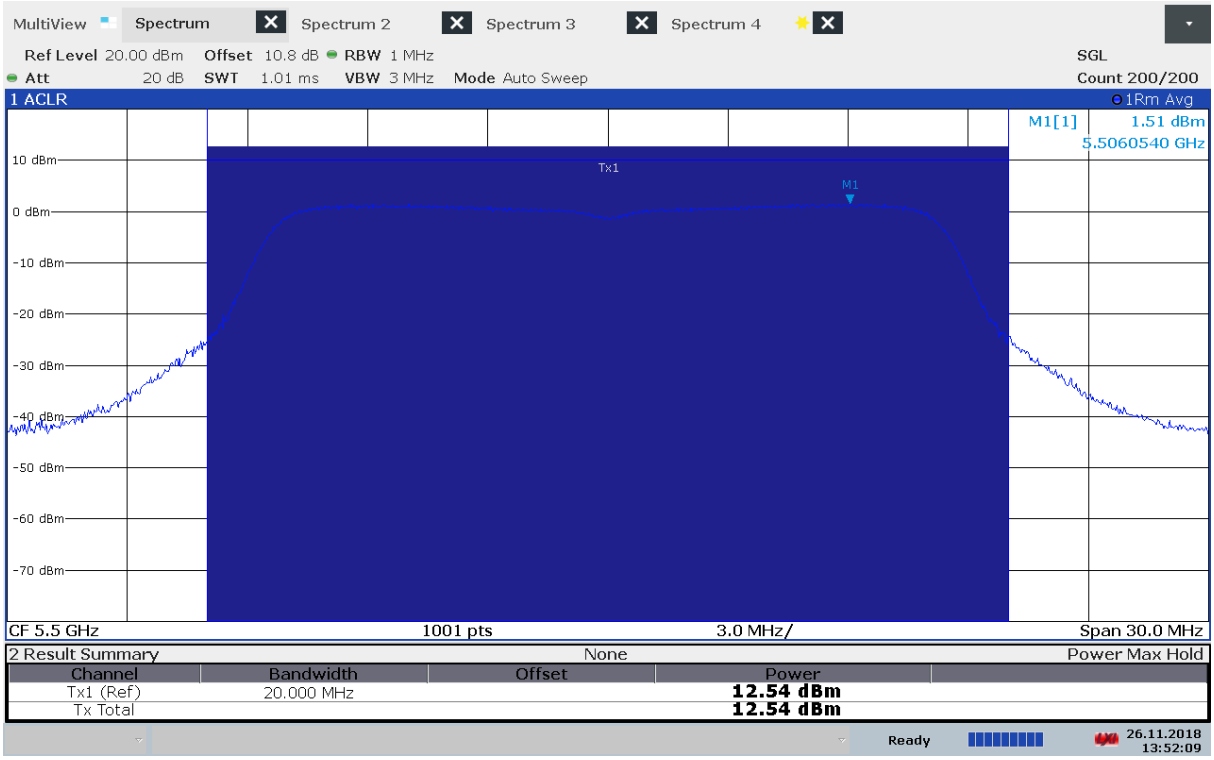
Output Power, 5300 MHz, Method 1, 802.11n MCS0, Conducted



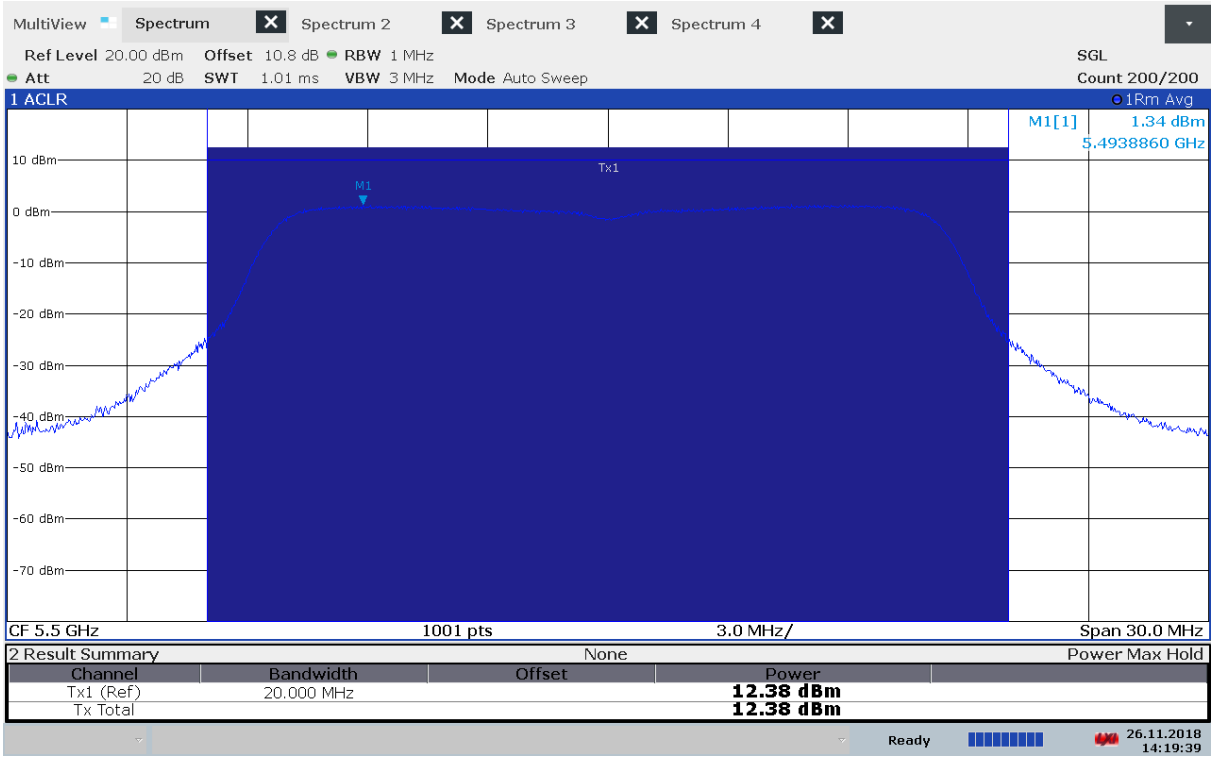
Output Power, 5320 MHz, Method 1, 802.11a 6Mbps, Conducted



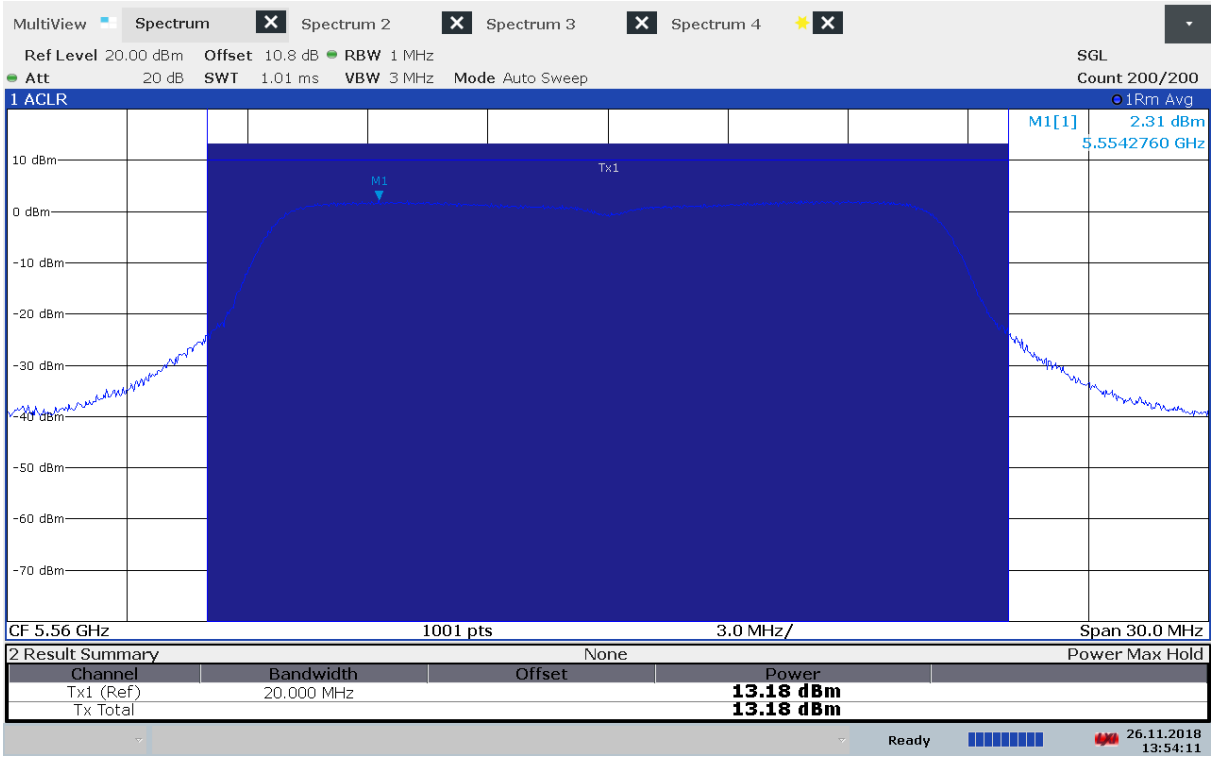
Output Power, 5320 MHz, Method 1, 802.11n MCS0, Conducted



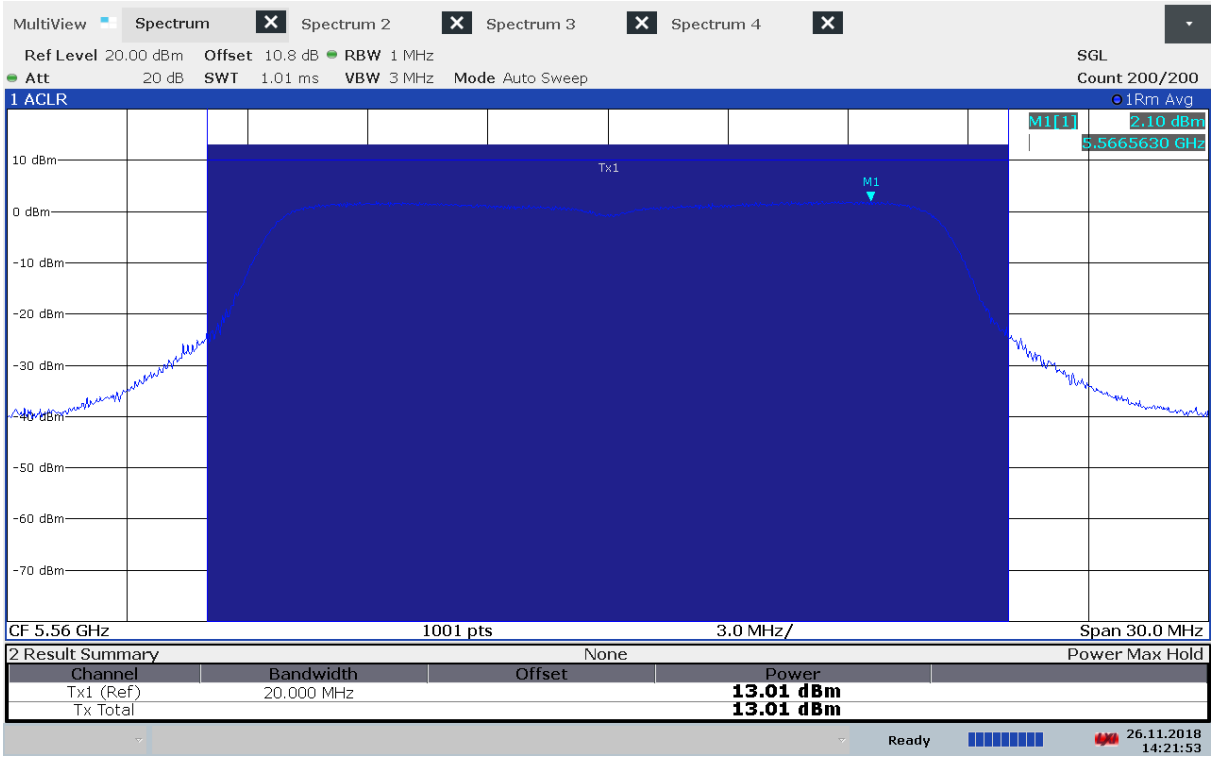
Output Power, 5500 MHz, Method 1, 802.11a 6Mbps, Conducted



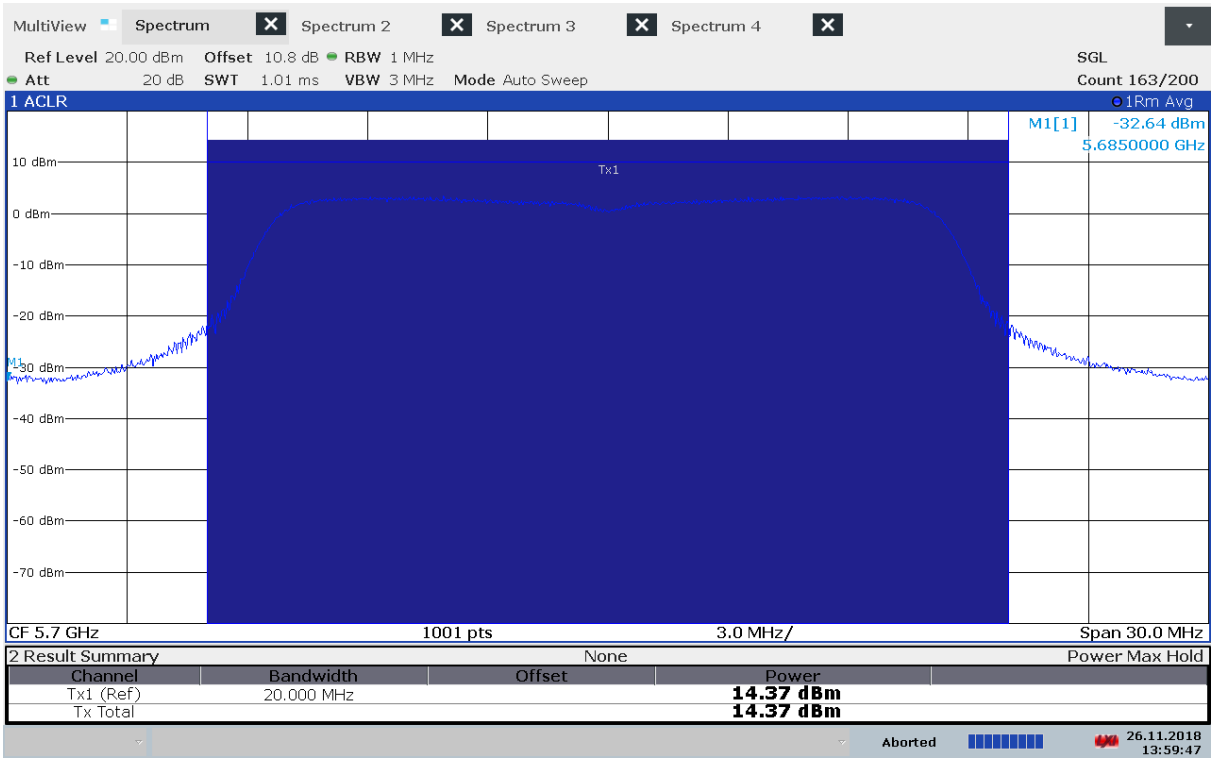
Output Power, 5500 MHz, Method 1, 802.11n MCS0, Conducted



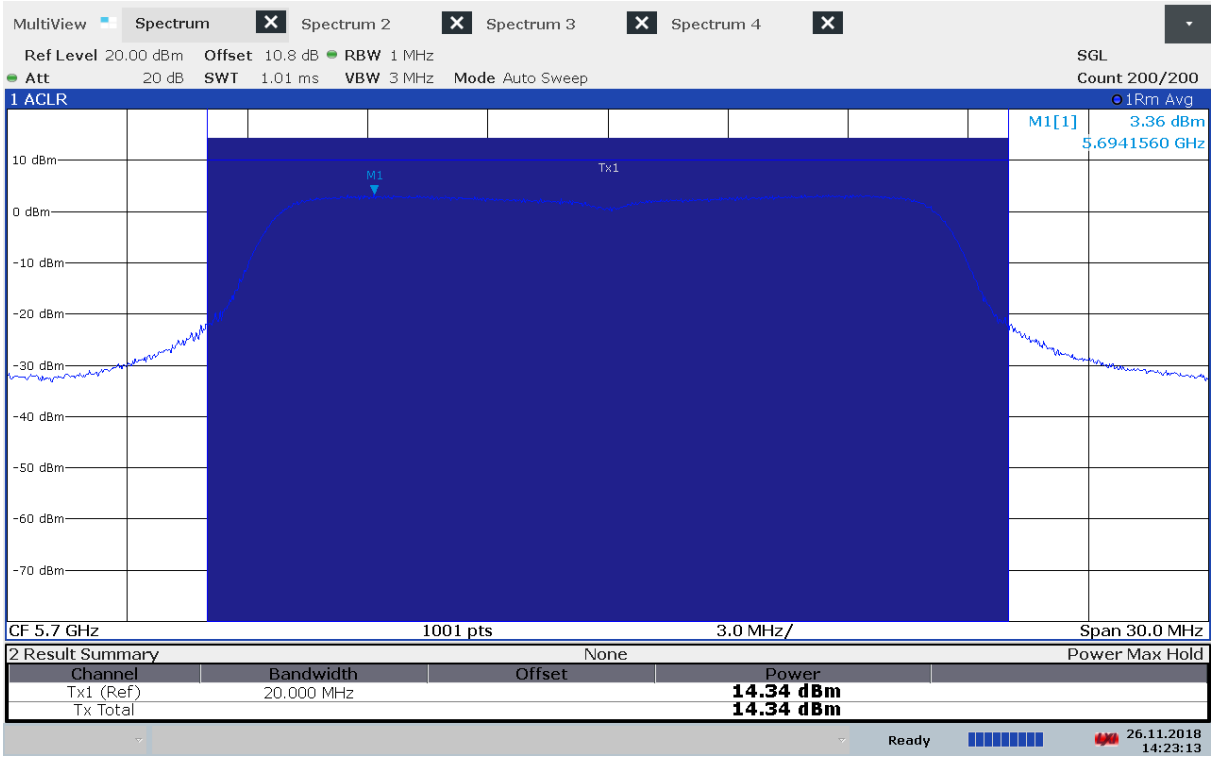
Output Power, 5560 MHz, Method 1, 802.11a 6Mbps, Conducted



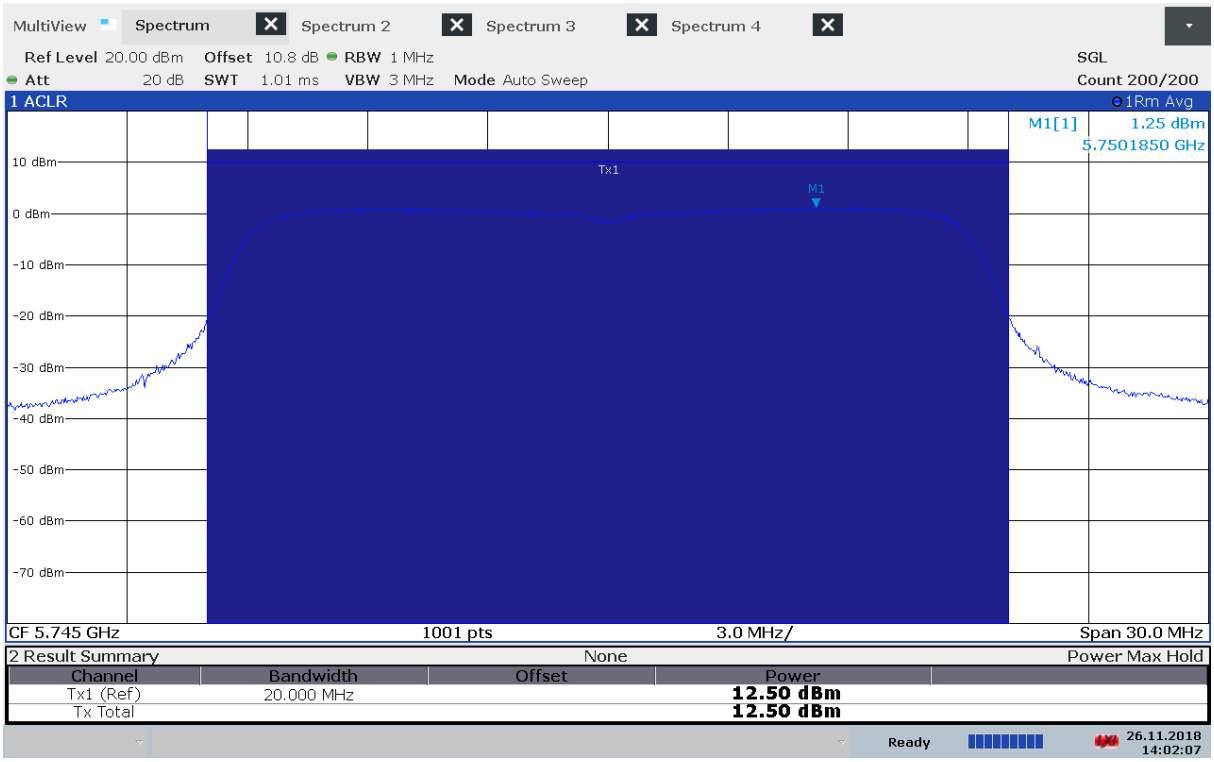
Output Power, 5560 MHz, Method 1, 802.11n MCS0, Conducted



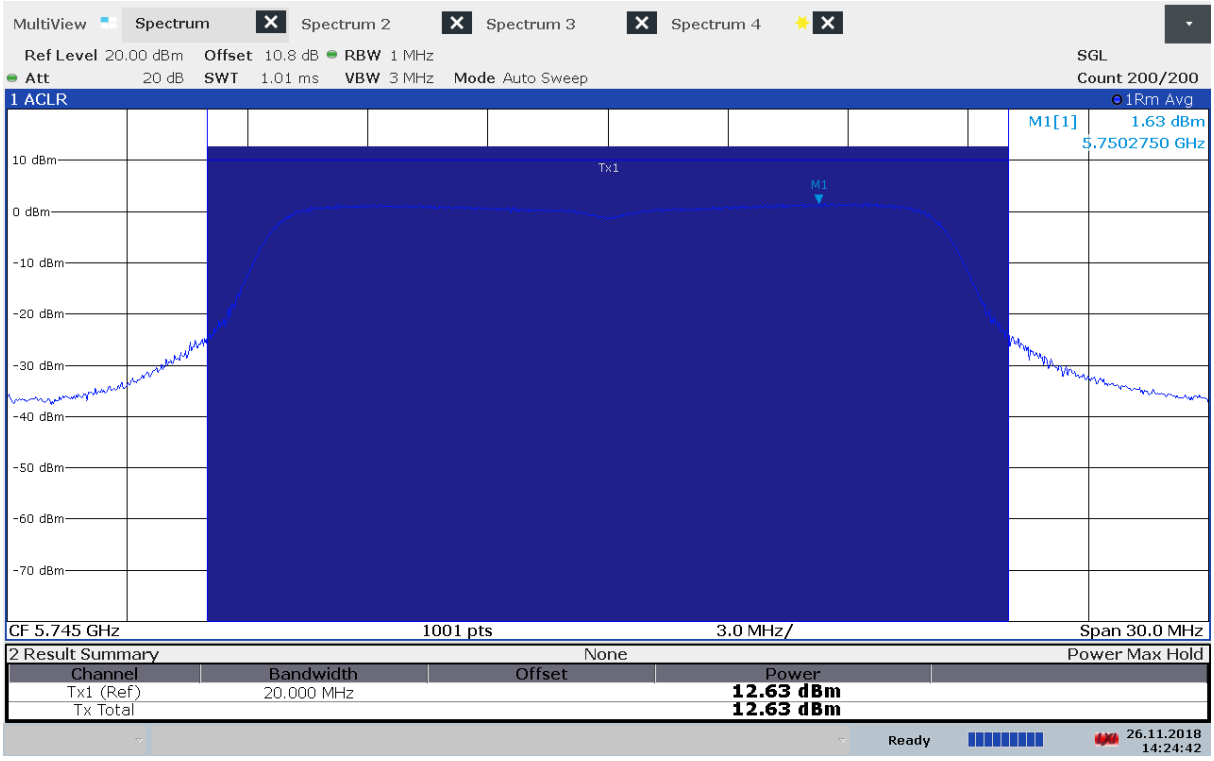
Output Power, 5700 MHz, Method 1, 802.11a 6Mbps, Conducted



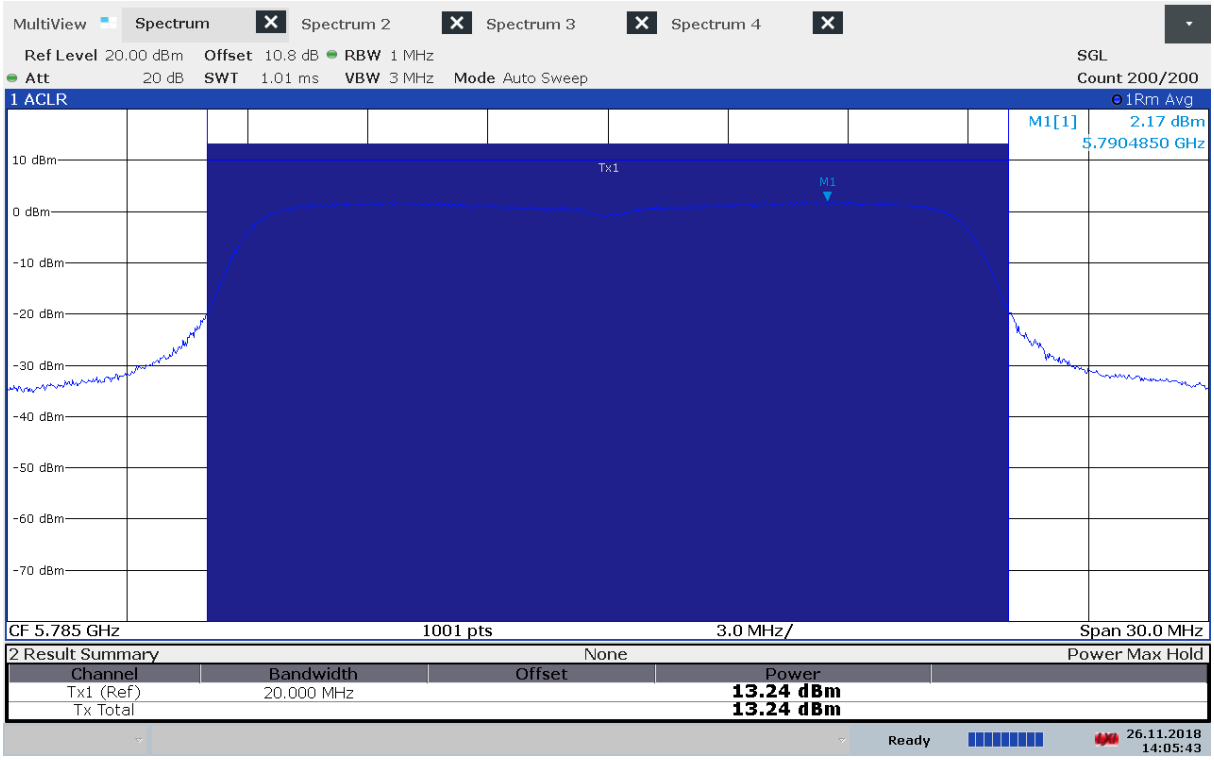
Output Power, 5700 MHz, Method 1, 802.11n MCS0, Conducted



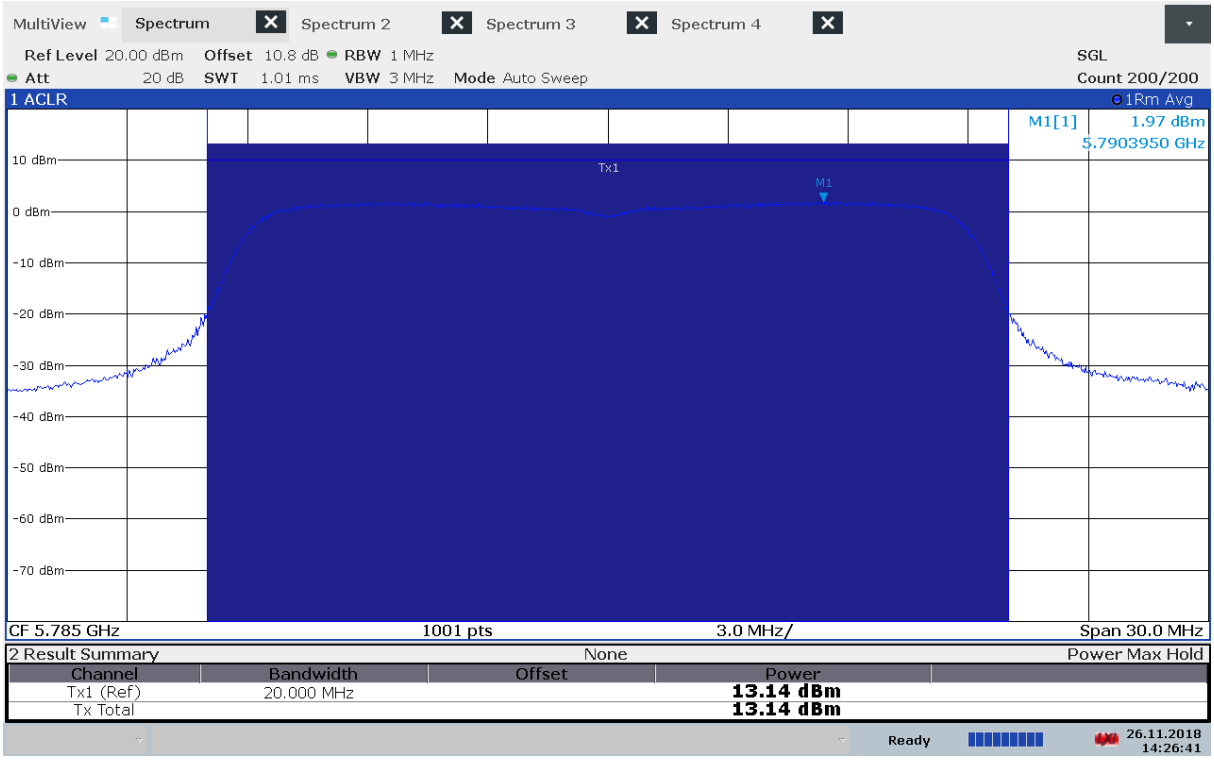
Output Power, 5745 MHz, Method 1, 802.11a 6Mbps, Conducted



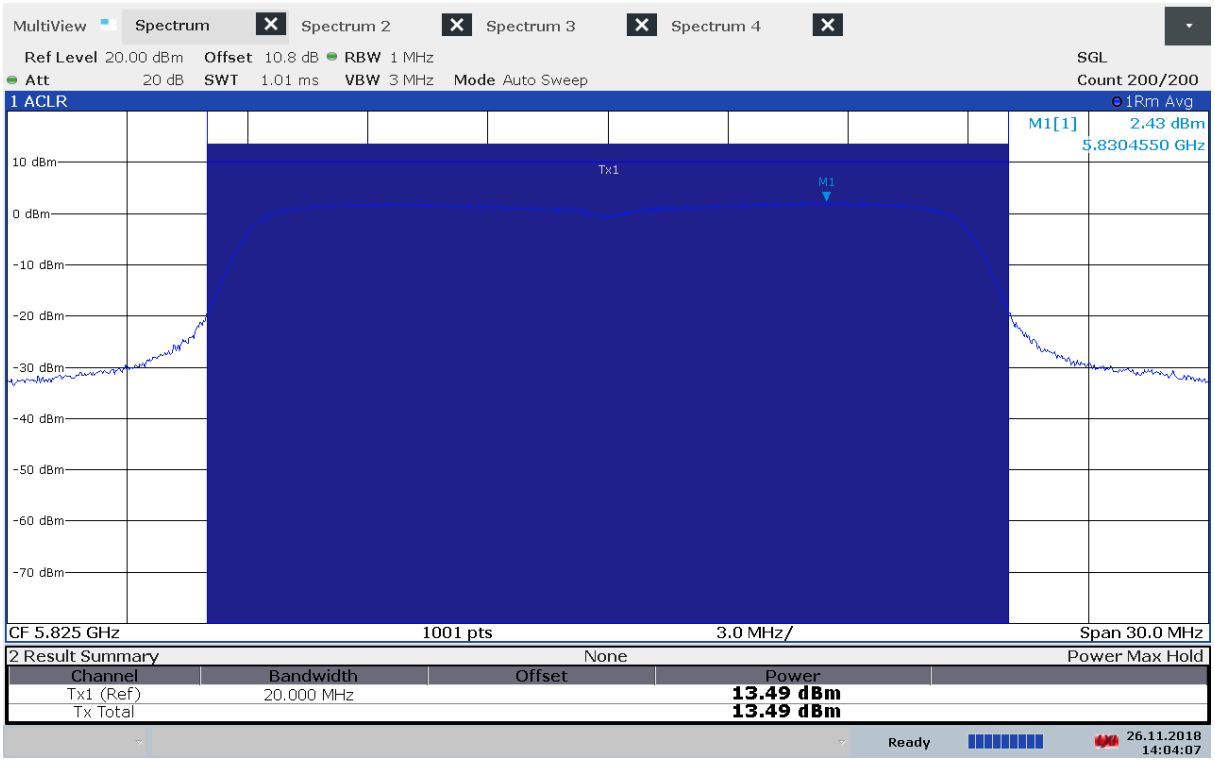
Output Power, 5745 MHz, Method 1, 802.11n MCS0, Conducted



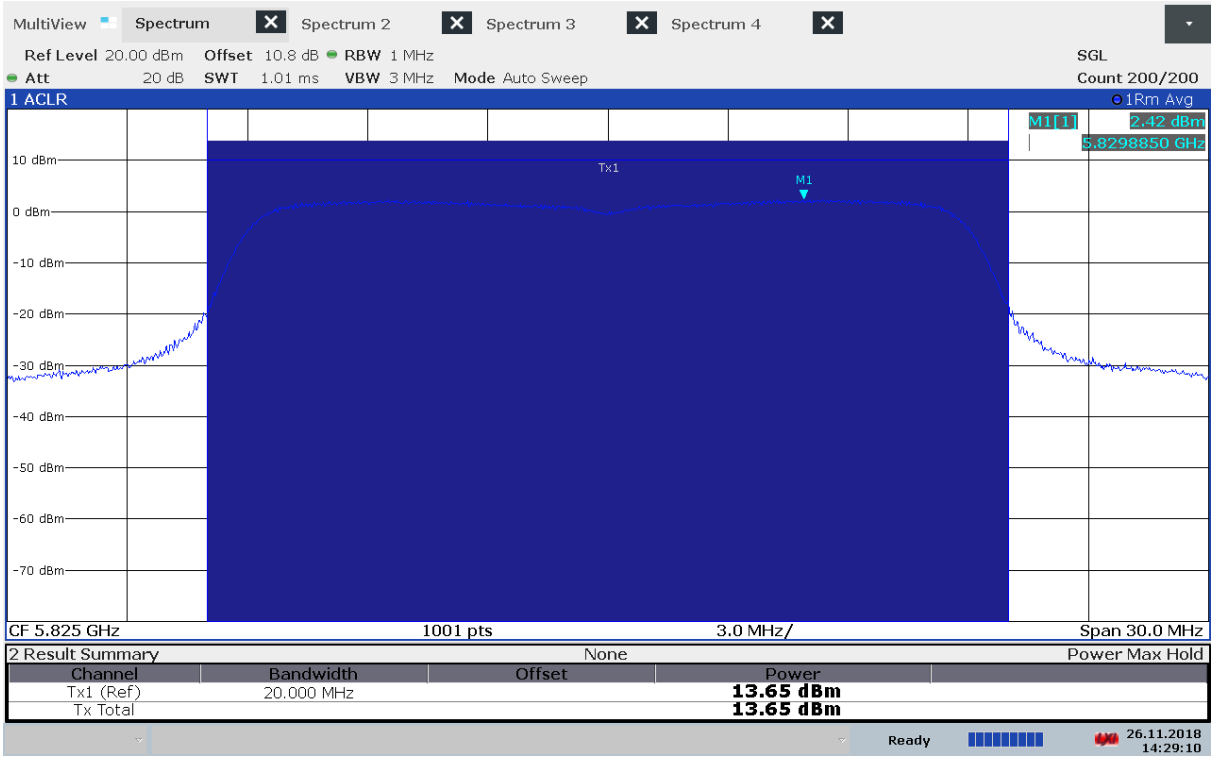
Output Power, 5785 MHz, Method 1, 802.11a 6Mbps, Conducted



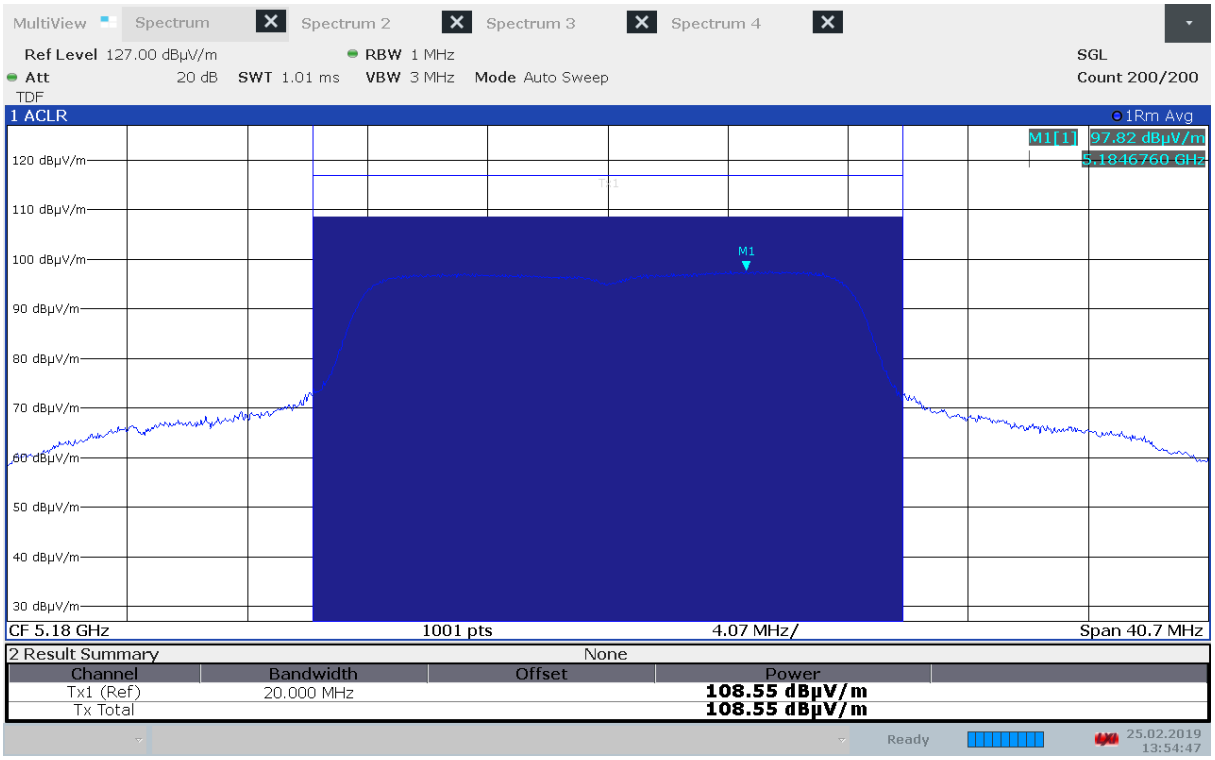
Output Power, 5785 MHz, Method 1, 802.11n MCS0, Conducted



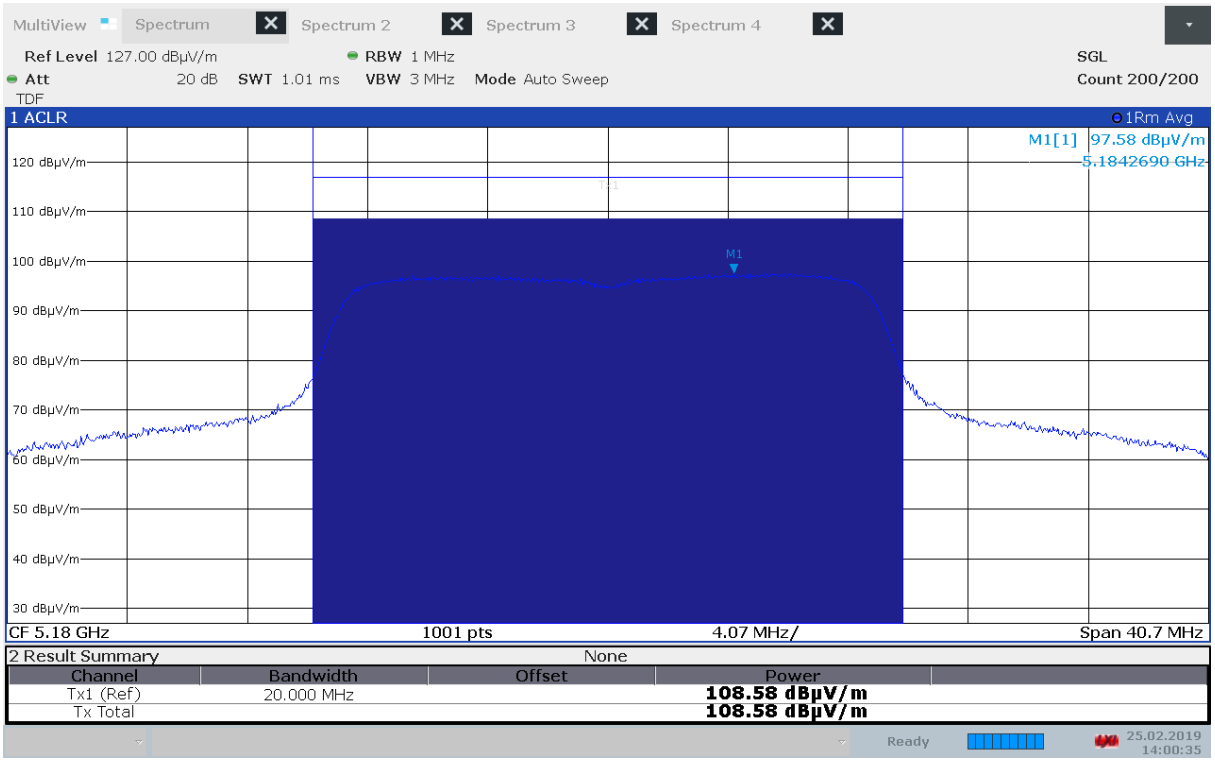
Output Power, 5825 MHz, Method 1, 802.11a 6Mbps, Conducted



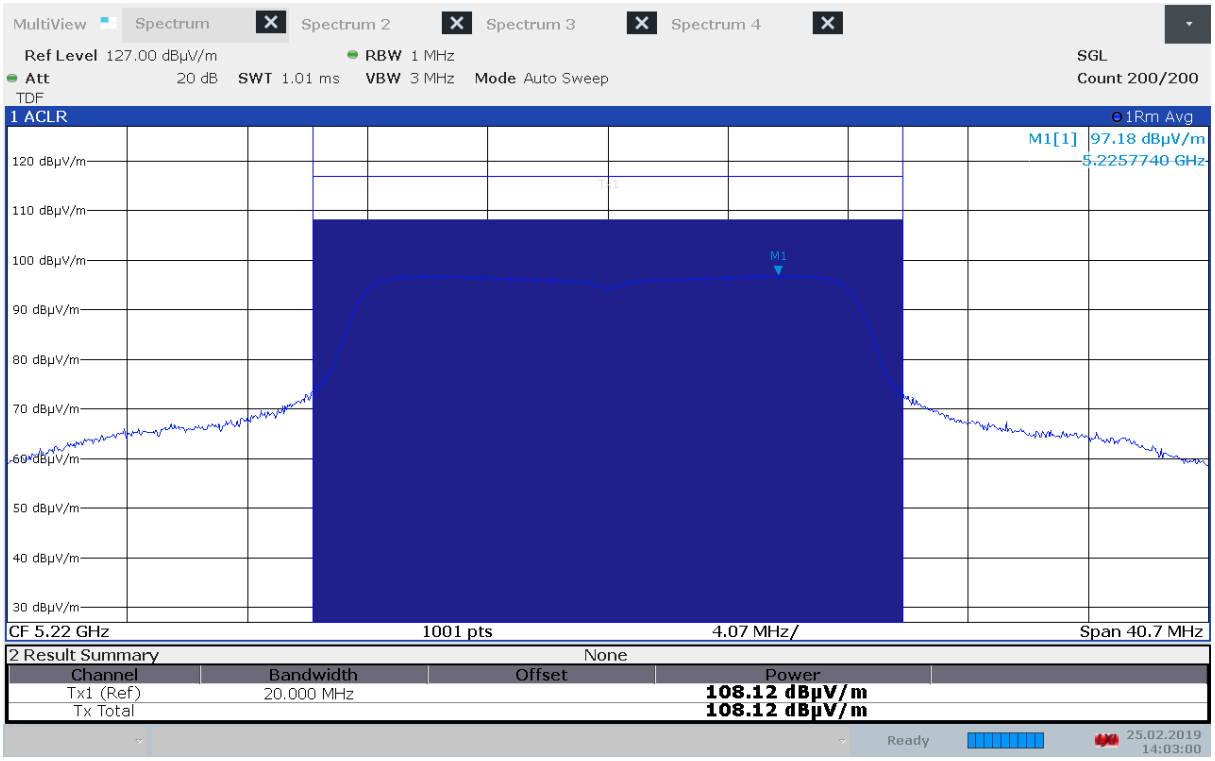
Output Power, 5825 MHz, Method 1, 802.11n MCS0, Conducted



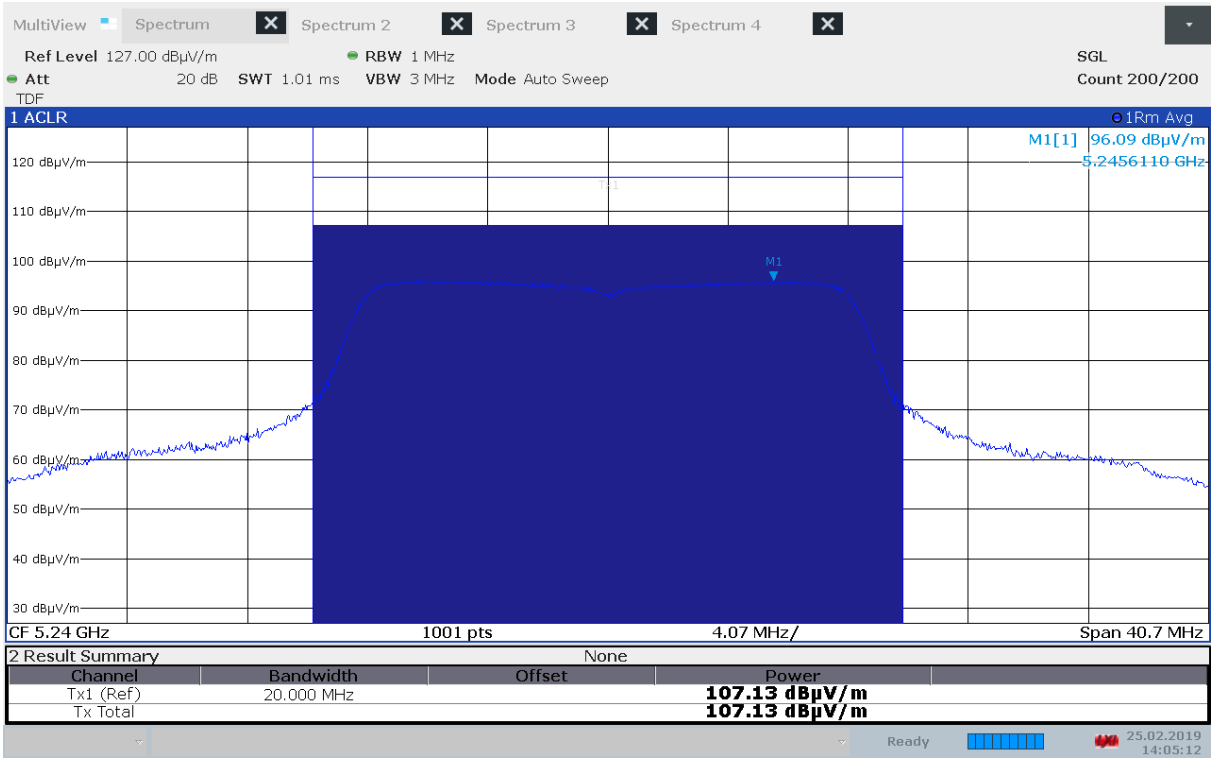
Maximum Field Strength, 5180 MHz, Method 1, 802.11a 6Mbps



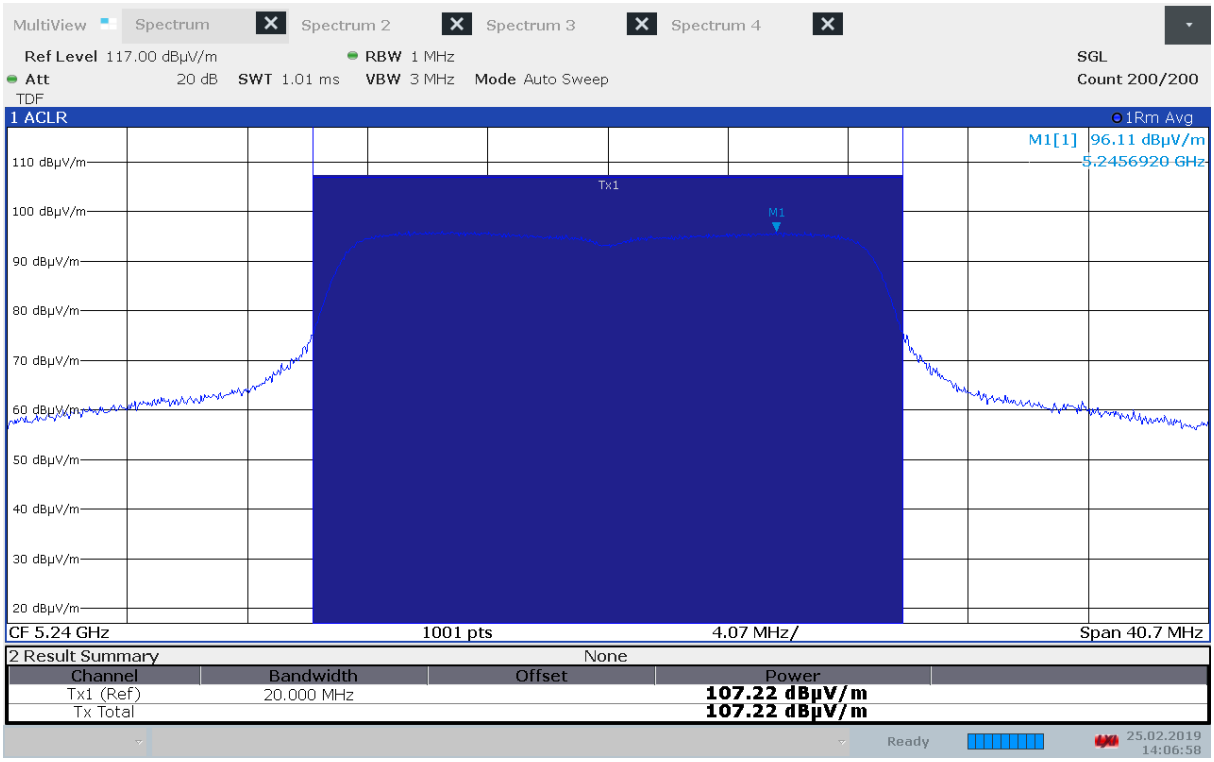
Maximum Field Strength, 5180 MHz, Method 1, 802.11n MCS0



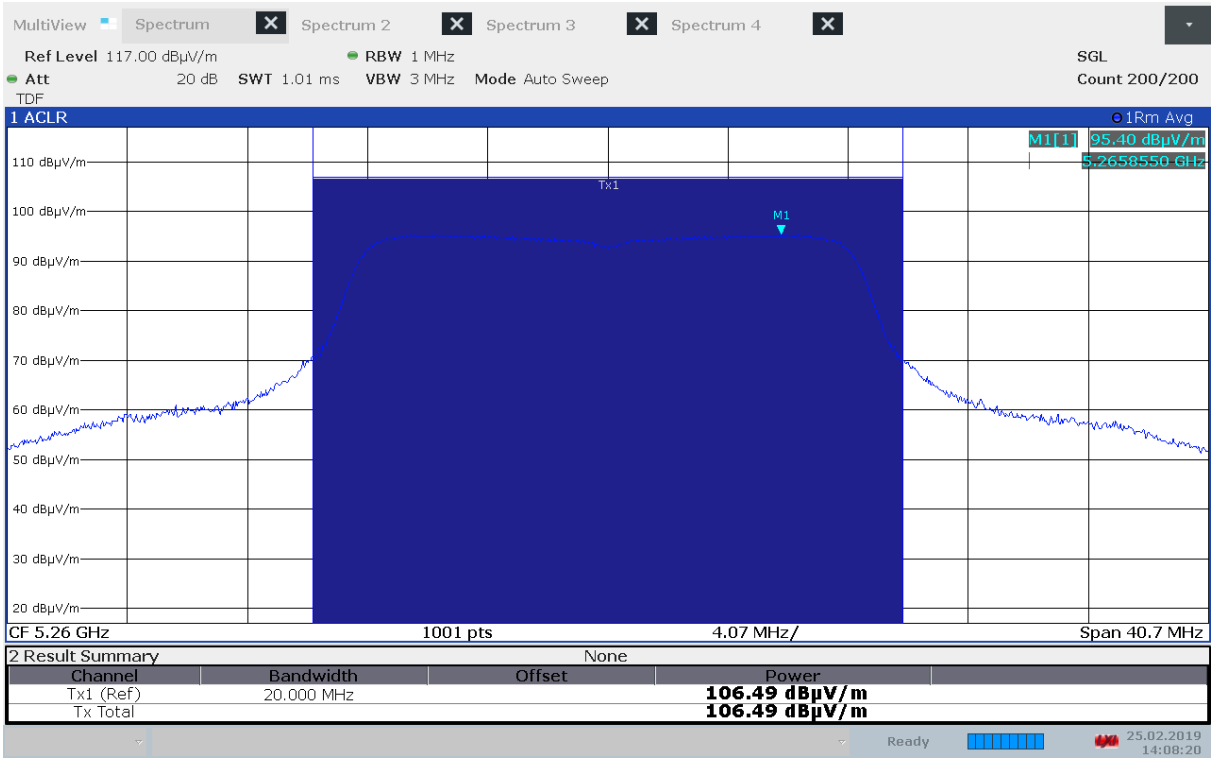
Maximum Field Strength, 5220 MHz, Method 1, 802.11a 6Mbps



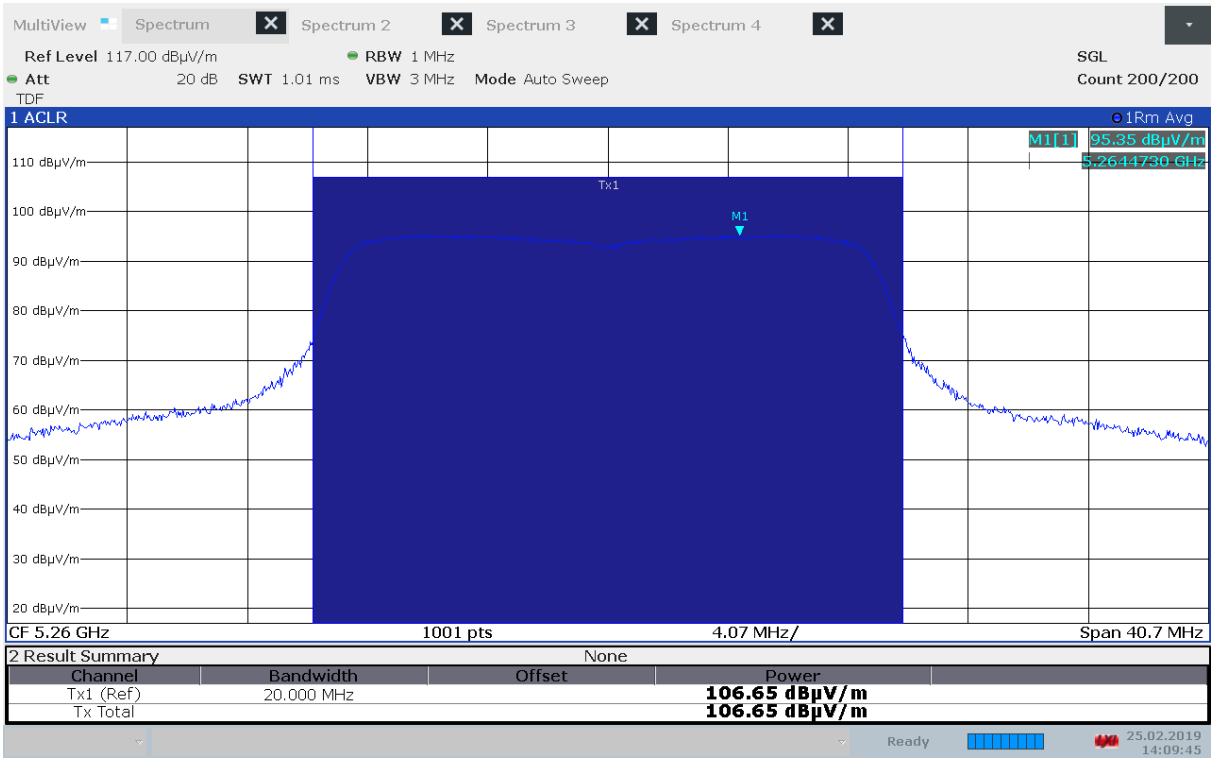
Maximum Field Strength, 5240 MHz, Method 1, 802.11a 6Mbps



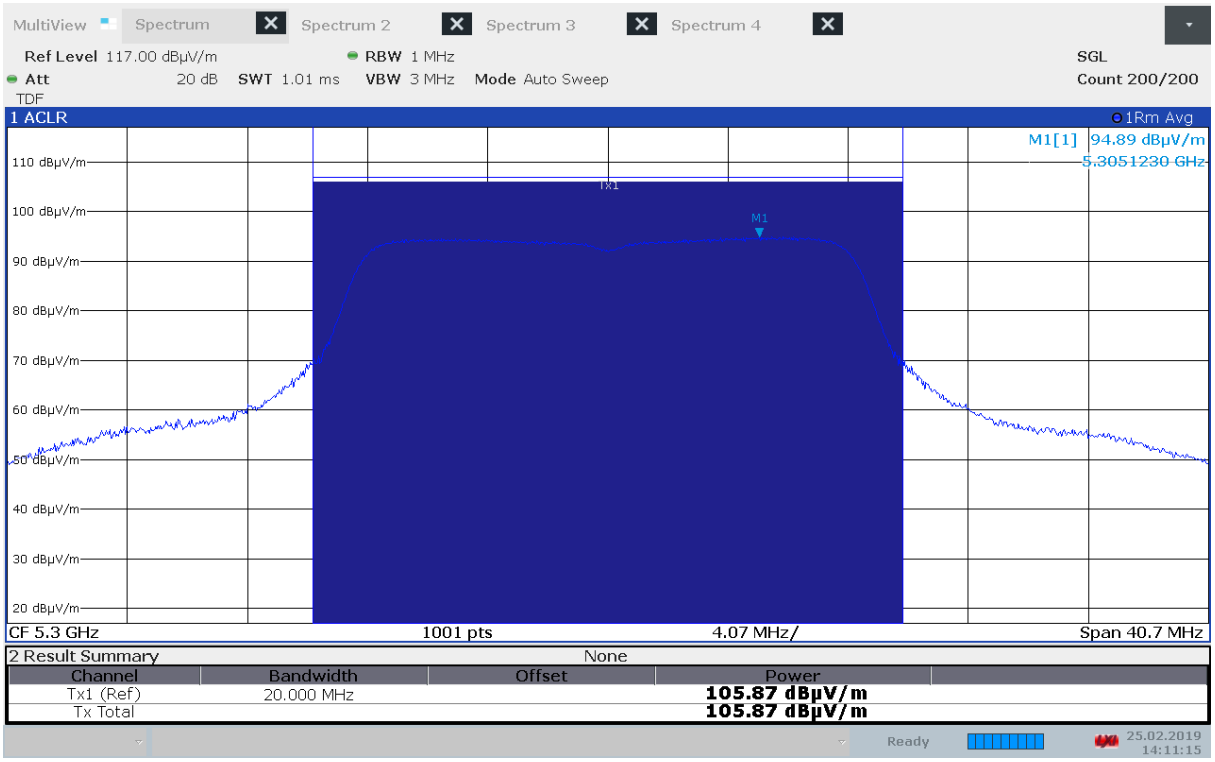
Maximum Field Strength, 5240 MHz, Method 1, 802.11n MCS0



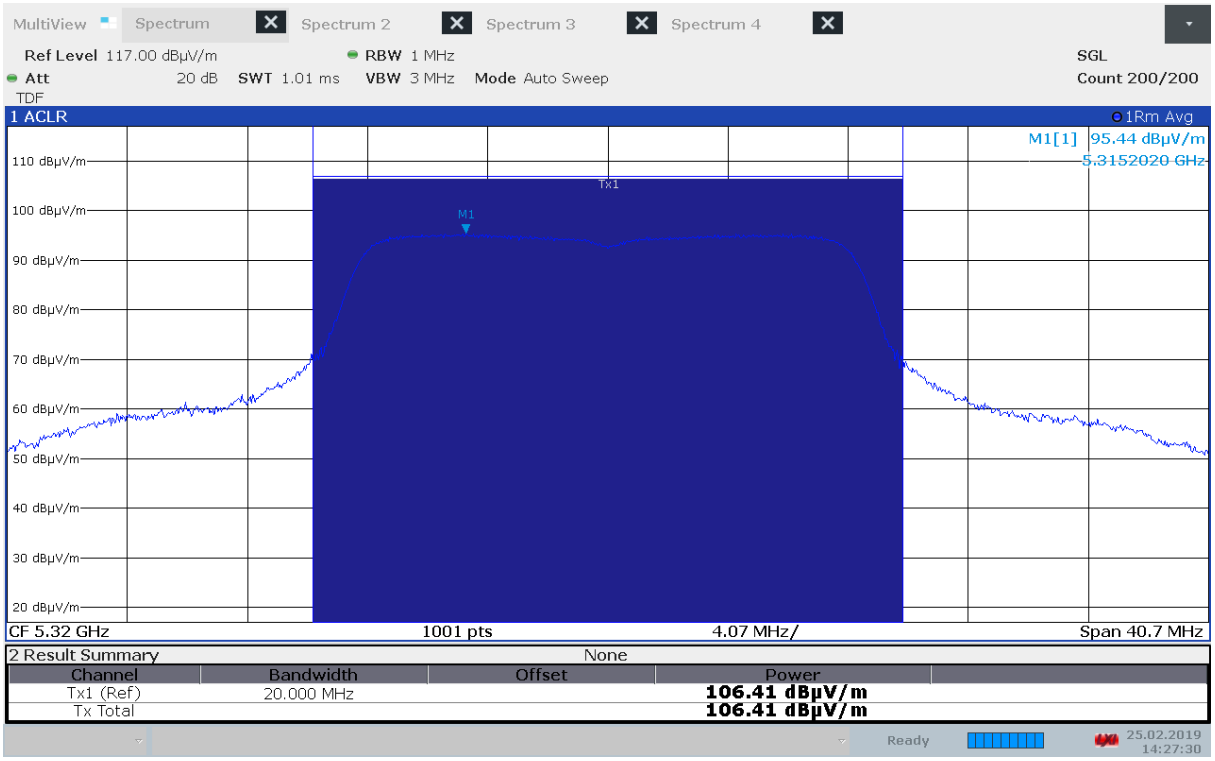
Maximum Field Strength, 5260 MHz, Method 1, 802.11a 6Mbps



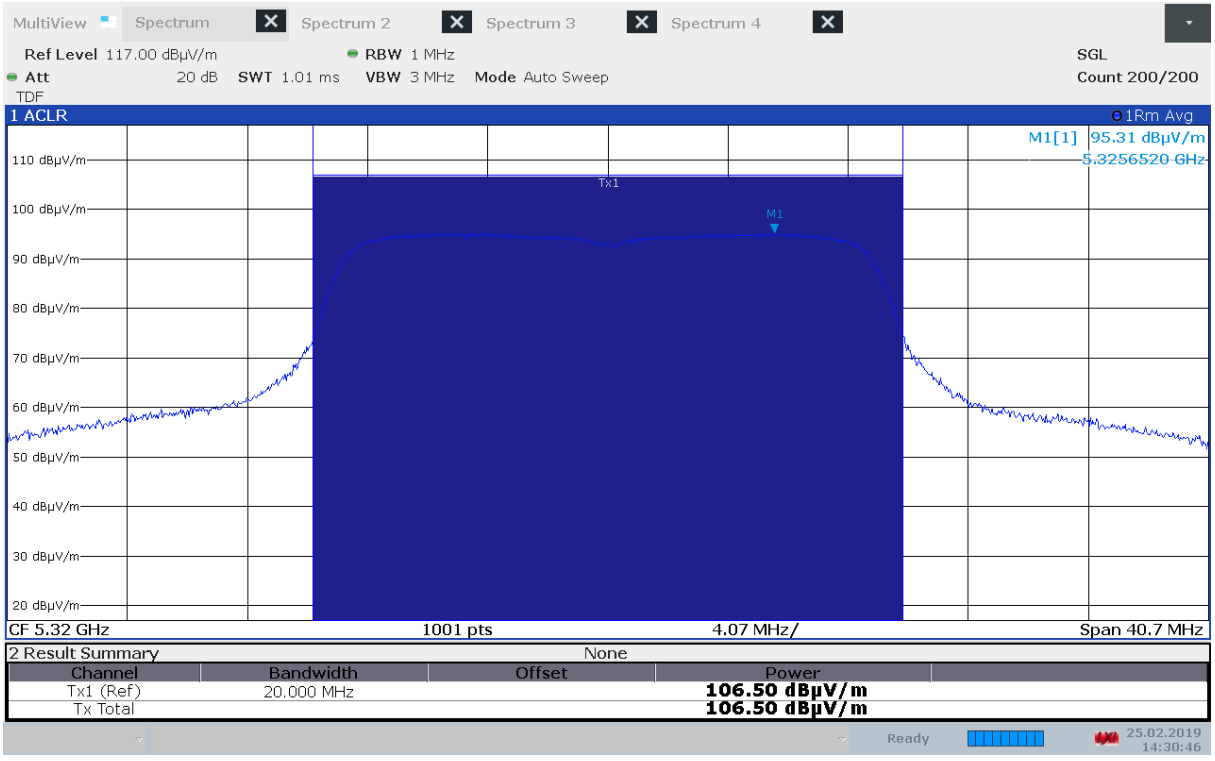
Maximum Field Strength, 5260 MHz, Method 1, 802.11n MCS0



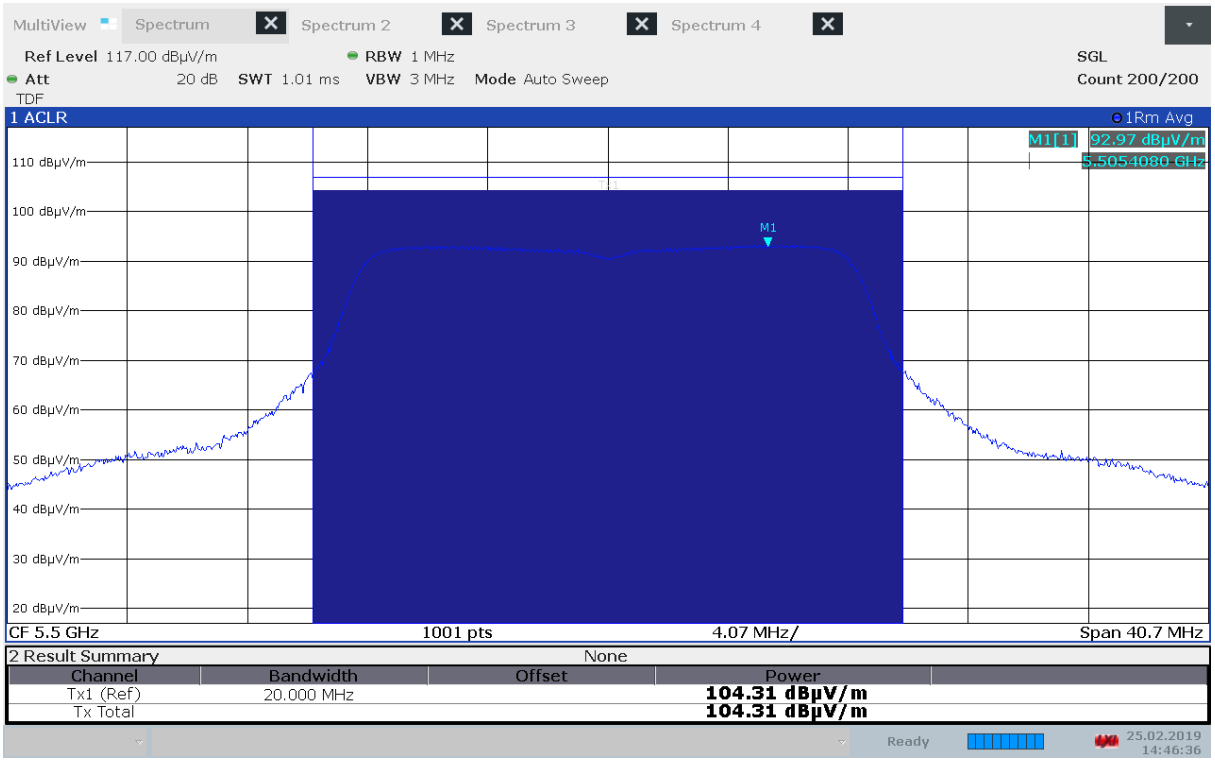
Maximum Field Strength, 5300 MHz, Method 1, 802.11a 6Mbps



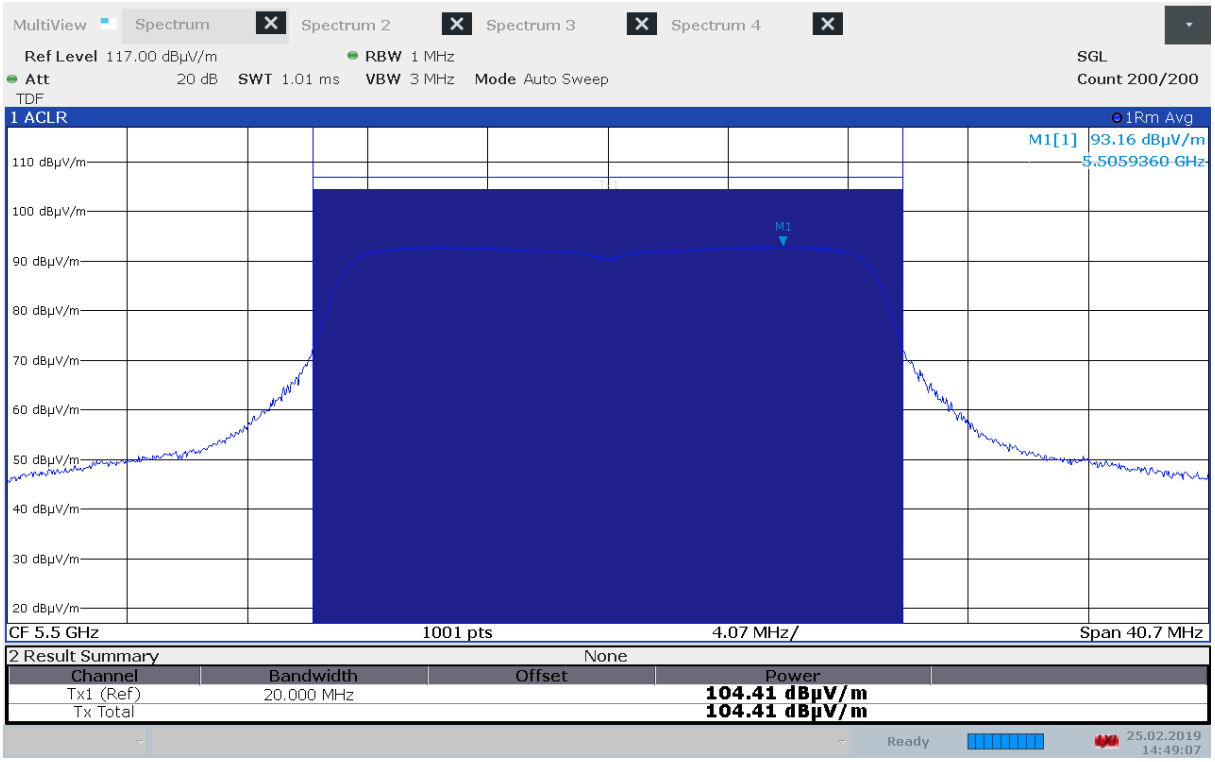
Maximum Field Strength, 5320 MHz, Method 1, 802.11a 6Mbps



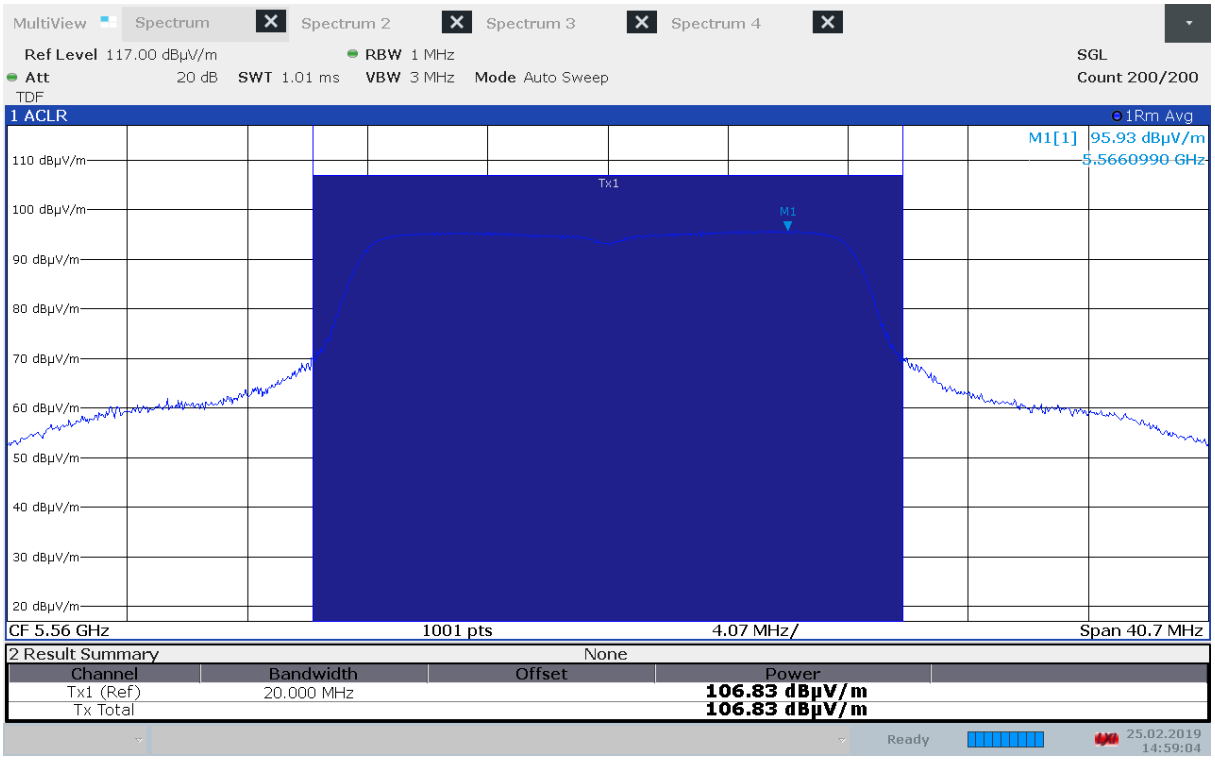
Maximum Field Strength, 5320 MHz, Method 1, 802.11n MCS0



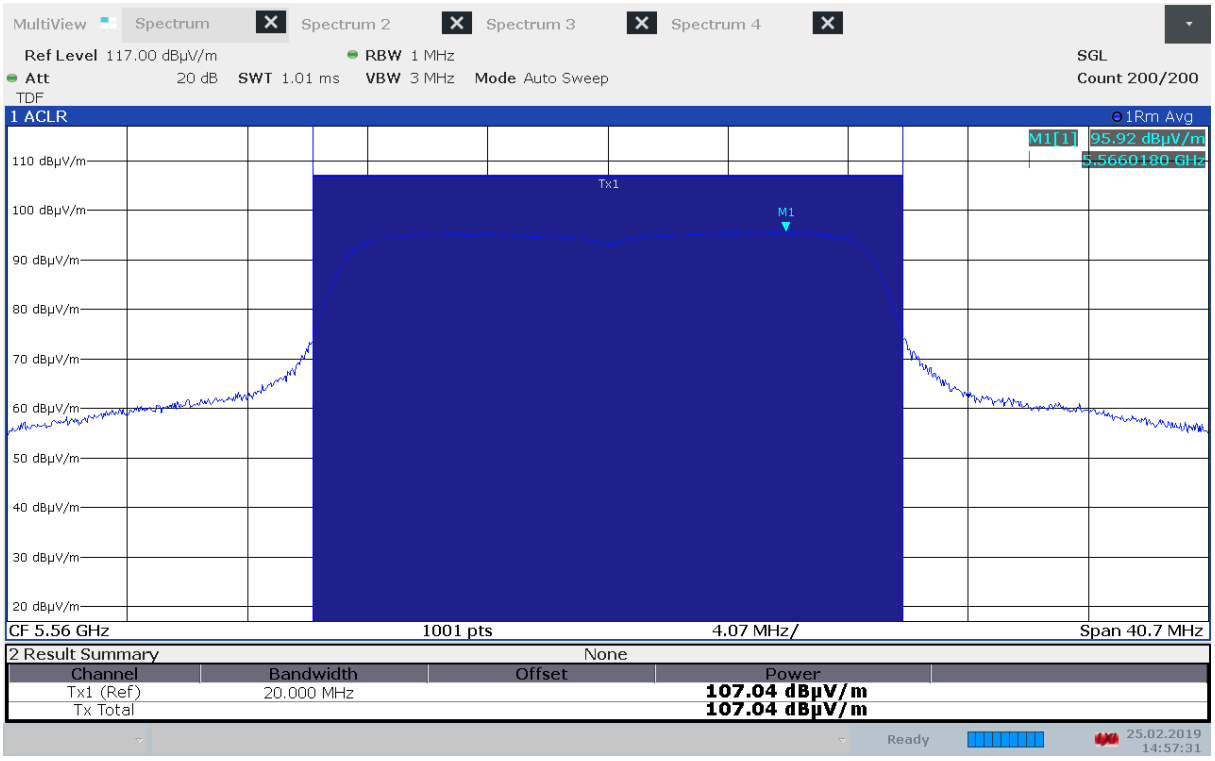
Maximum Field Strength, 5500 MHz, Method 1, 802.11a 6Mbps



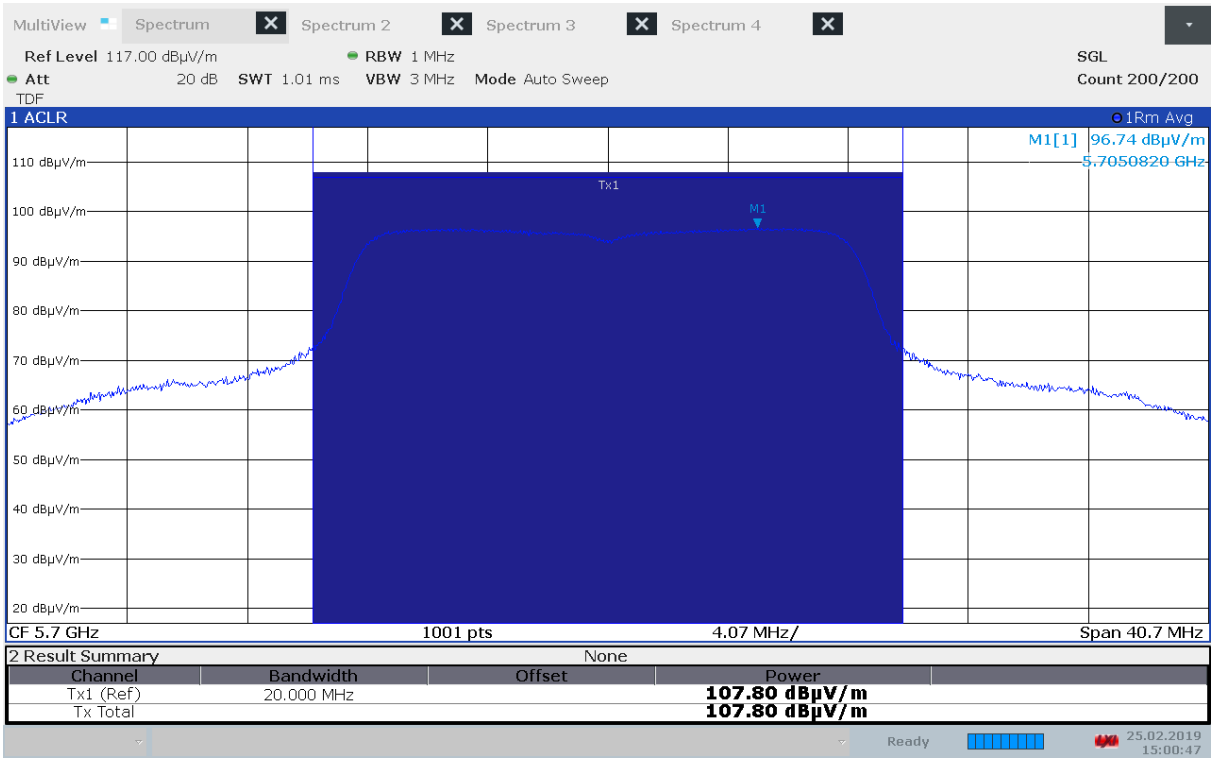
Maximum Field Strength, 5500 MHz, Method 1, 802.11n MCS0



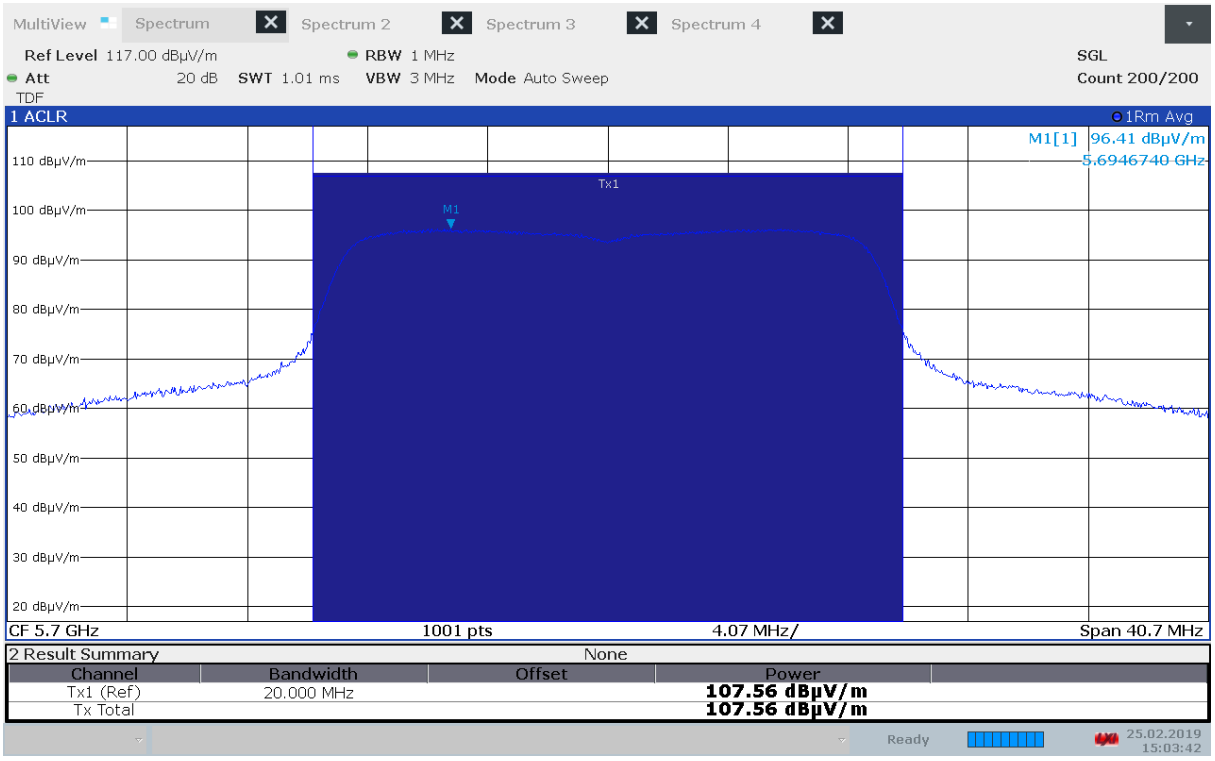
Maximum Field Strength, 5560 MHz, Method 1, 802.11a 6Mbps



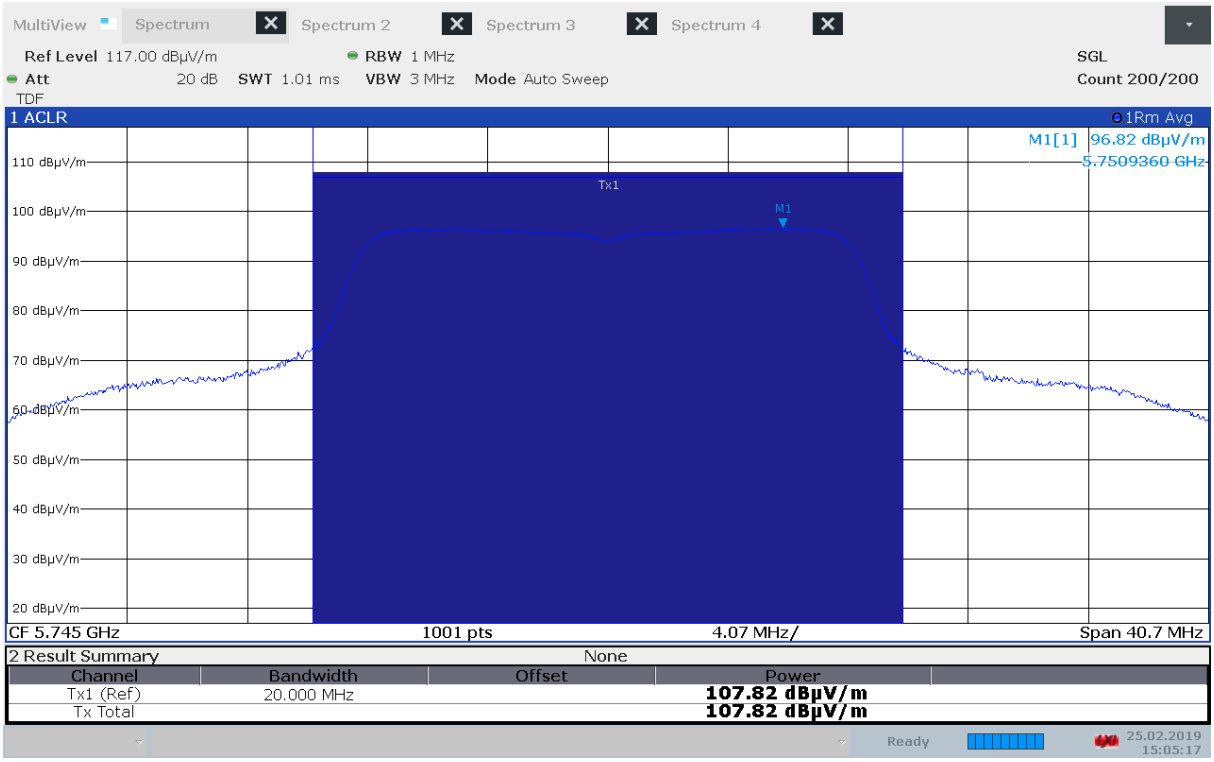
Maximum Field Strength, 5560 MHz, Method 1, 802.11n MCS0



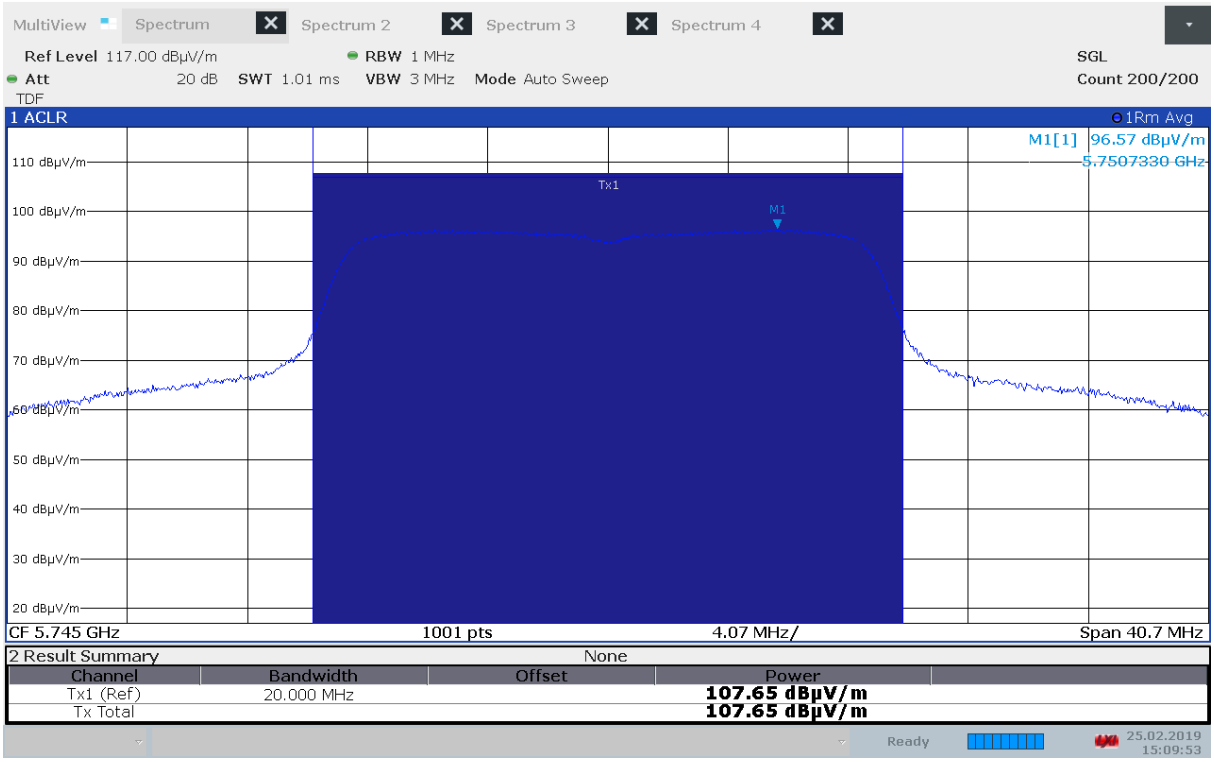
Maximum Field Strength, 5700 MHz, Method 1, 802.11a 6Mbps



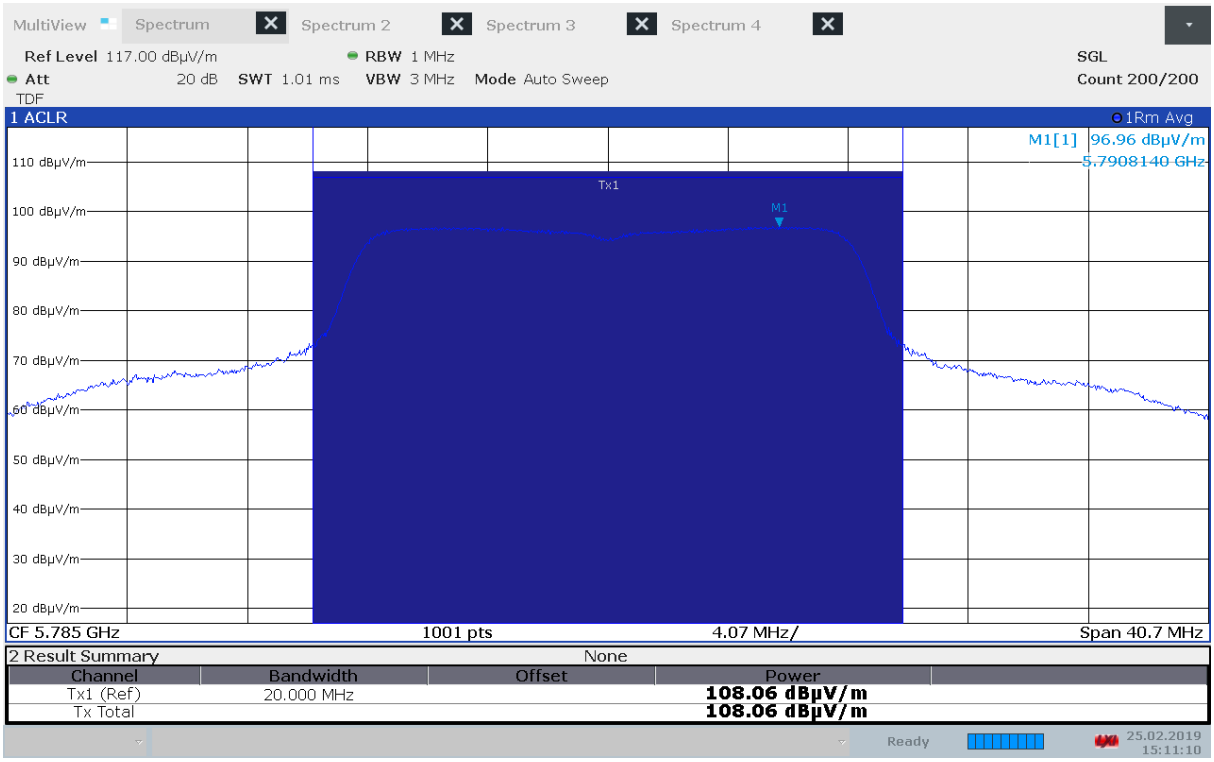
Maximum Field Strength, 5700 MHz, Method 1, 802.11n MCS0



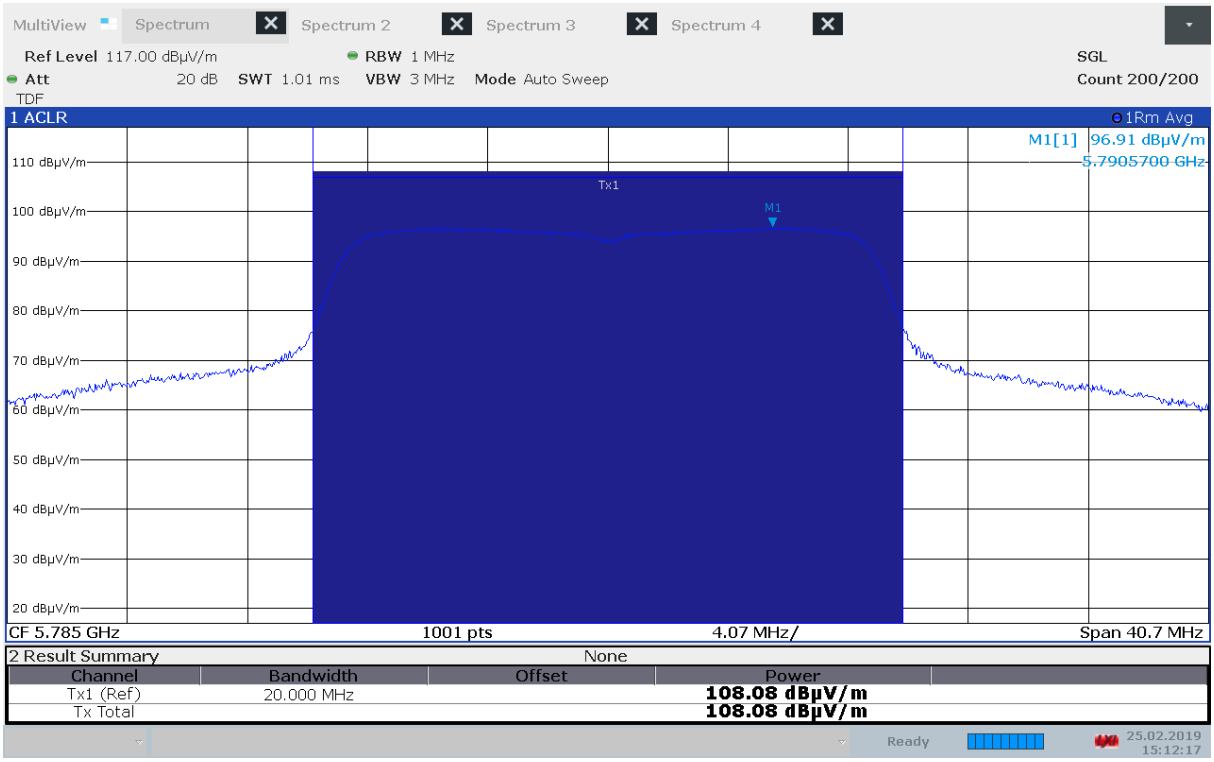
Maximum Field Strength, 5745 MHz, Method 1, 802.11a 6Mbps



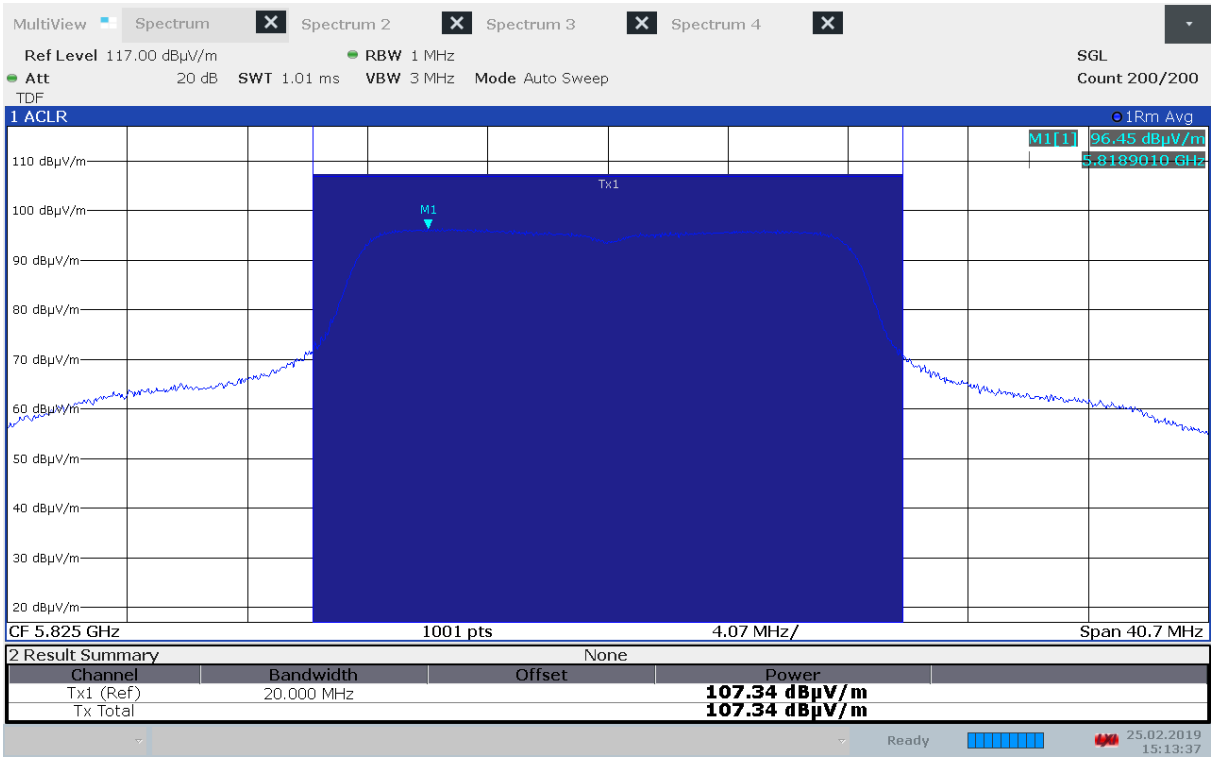
Maximum Field Strength, 5745 MHz, Method 1, 802.11n MCS0



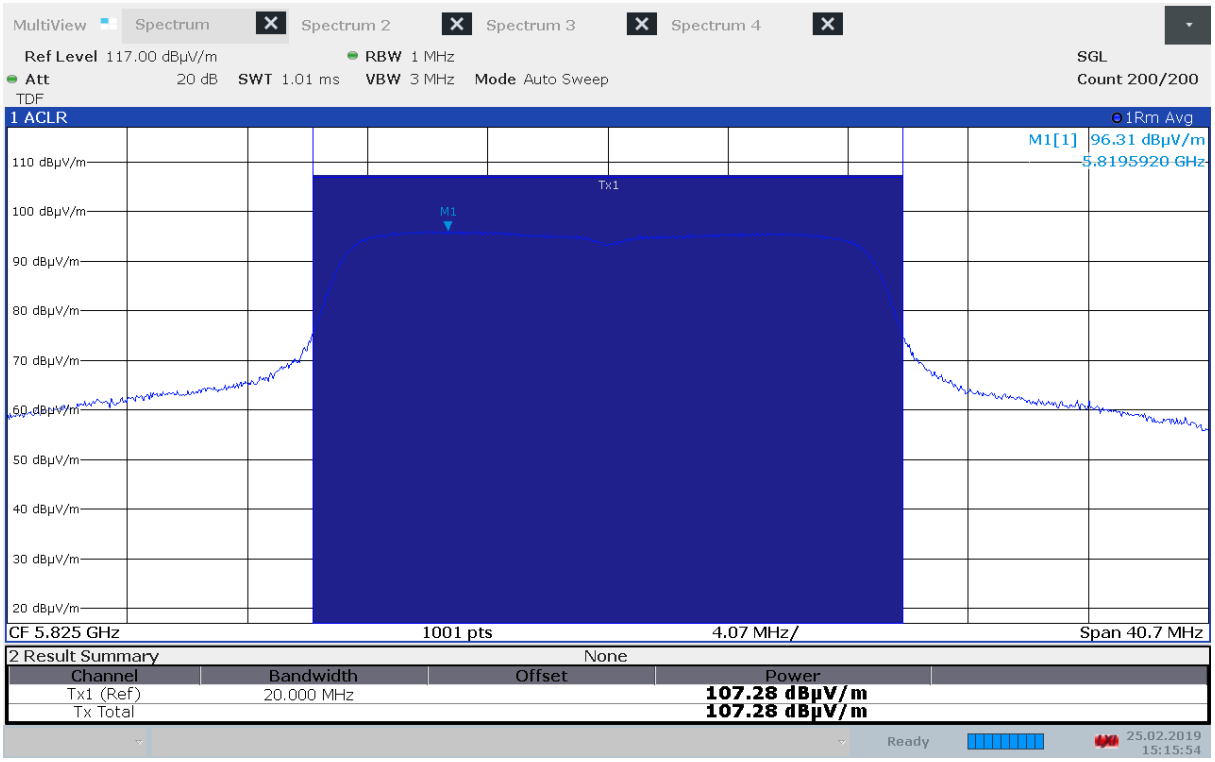
Maximum Field Strength, 5785 MHz, Method 1, 802.11a 6Mbps



Maximum Field Strength, 5785 MHz, Method 1, 802.11n MCS0



Maximum Field Strength, 5825 MHz, Method 1, 802.11a 6Mbps



Maximum Field Strength, 5825 MHz, Method 1, 802.11n MCS0

3.3 Emission Bandwidth *B*

Para. No.: 15.407(a)(2)

ISED RSS-247, Issue 2, Clause 6.2

Test Results: Complies

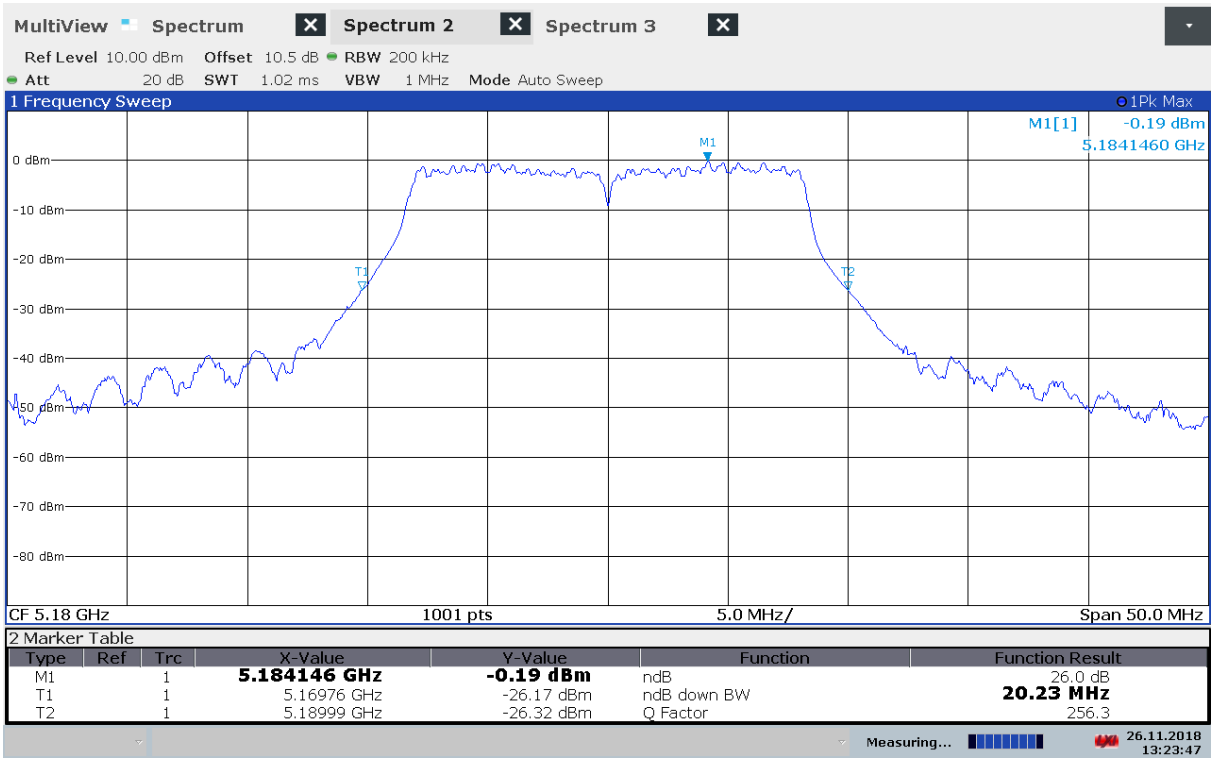
Measurement Data:

Ch. No.	Nominal Frequency (MHz)	26dB Bandwidth, Measured Values (MHz)	
		802.11a 6Mbps	802.11n MCS0
36	5180	20.2	21.0
44	5220	20.2	20.2
48	5240	20.2	20.2
52	5260	20.2	20.2
60	5300	20.2	20.2
64	5320	20.2	20.2
100	5500	20.2	20.2
104	5520	20.2	20.2
112	5560	20.2	20.2
140	5700	20.5	20.5
149	5745	21.1	20.4
157	5785	21.1	21.1
165	5825	21.2	21.2

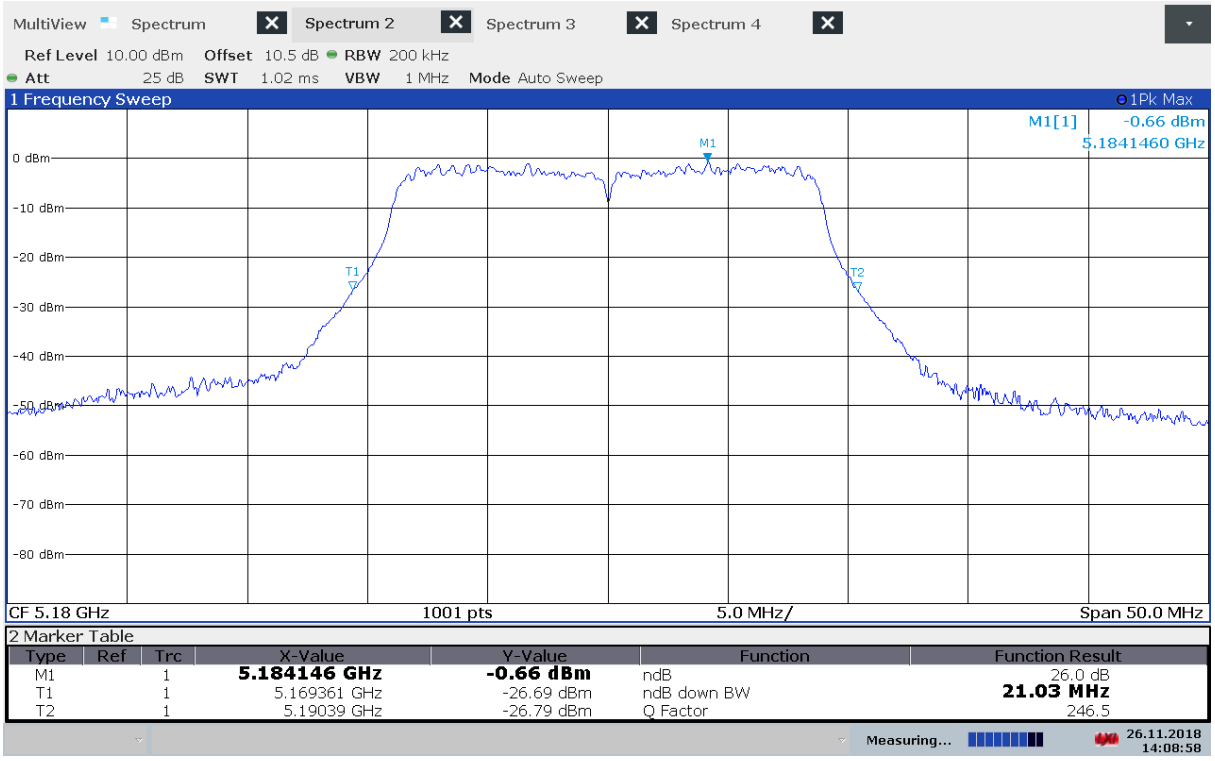
Ch. No.	Nominal Frequency (MHz)	99% Bandwidth, Measured Values (MHz)	
		802.11a 6Mbps	802.11n MCS0
36	5180	16.6	17.6
44	5220	16.6	16.6
48	5240	16.6	16.6
52	5260	16.6	16.6
60	5300	16.6	16.6
64	5320	16.6	16.6
100	5500	16.6	16.6
104	5520	16.6	16.6
112	5560	16.6	16.6
140	5700	17.7	16.6
149	5745	17.7	16.6
157	5785	17.7	17.7
165	5825	17.7	17.7

Limit:

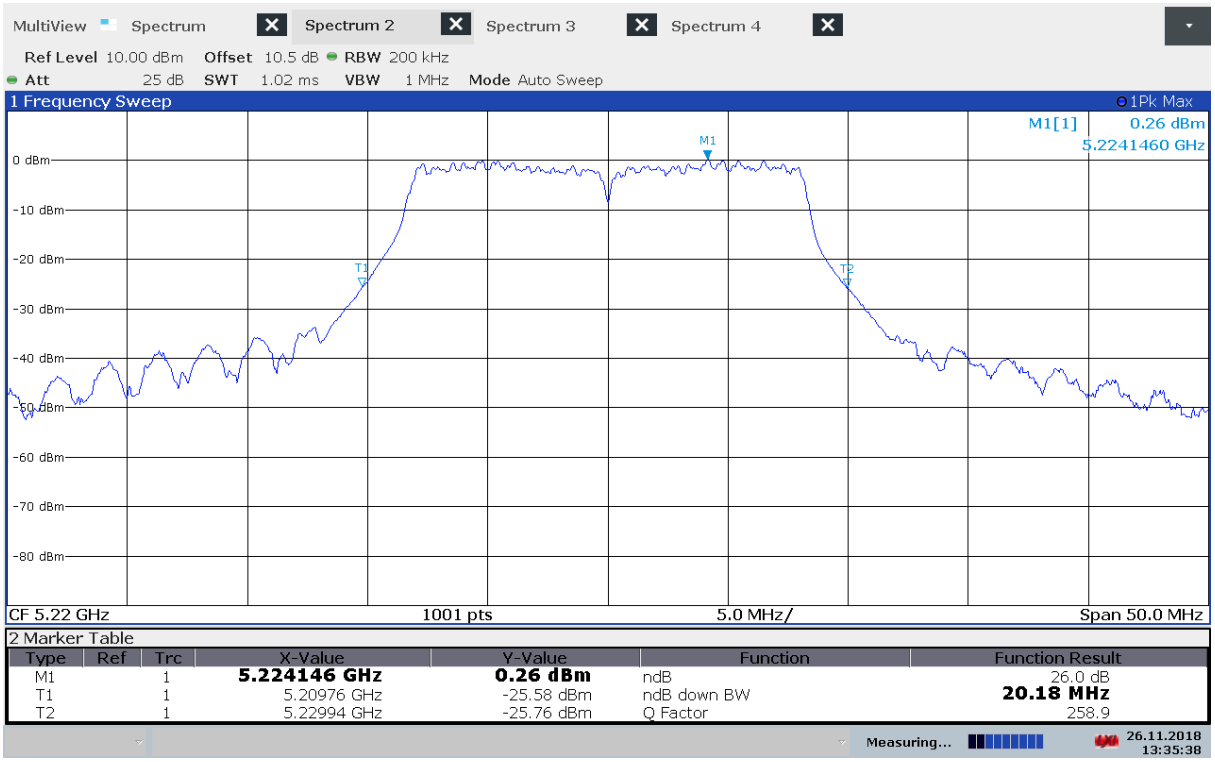
No requirements as long as the emissions are within the band-edges.



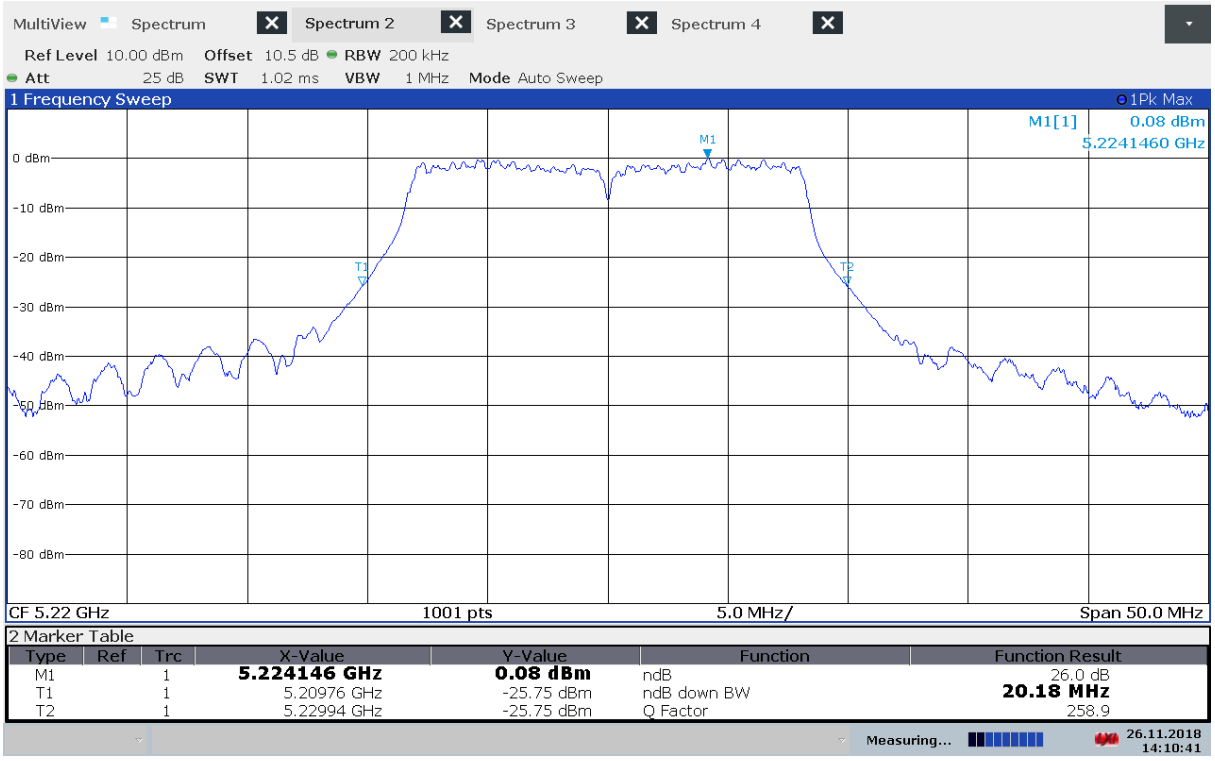
Emission Bandwidth *B*, 5180 MHz, 802.11a 6Mbps



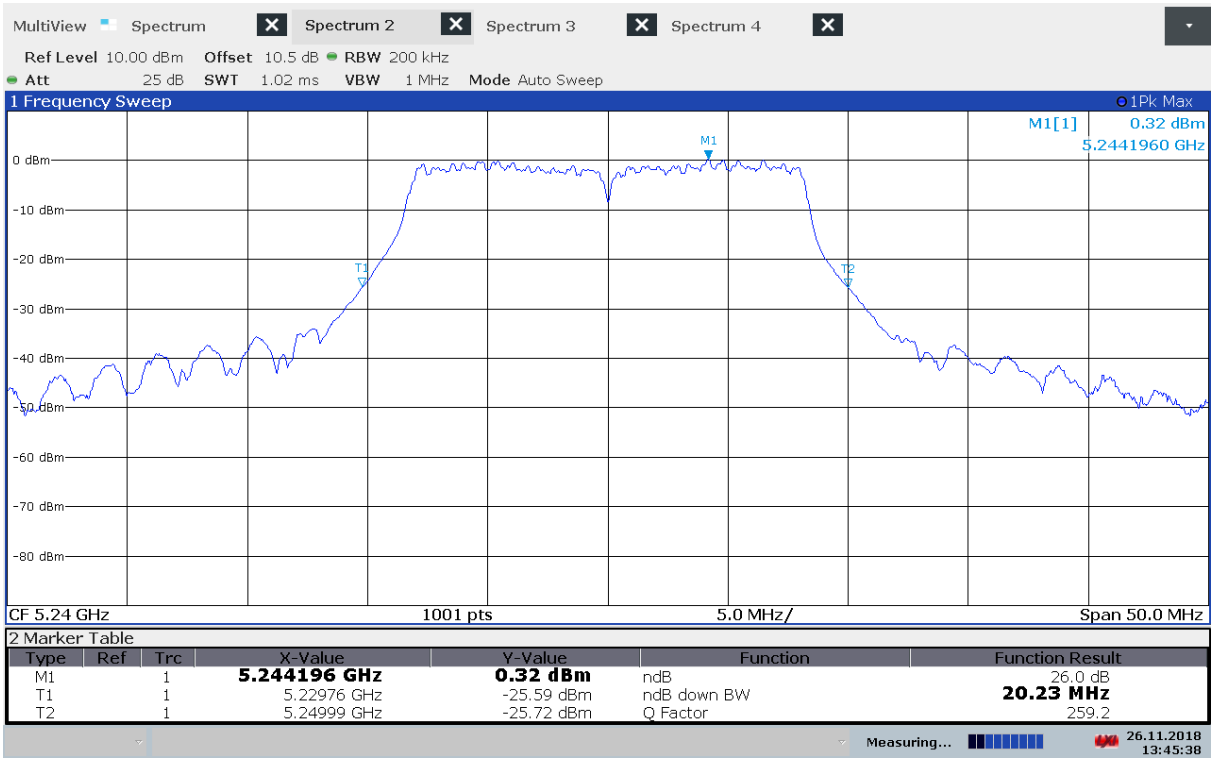
Emission Bandwidth *B*, 5180 MHz, 802.11n MCS0



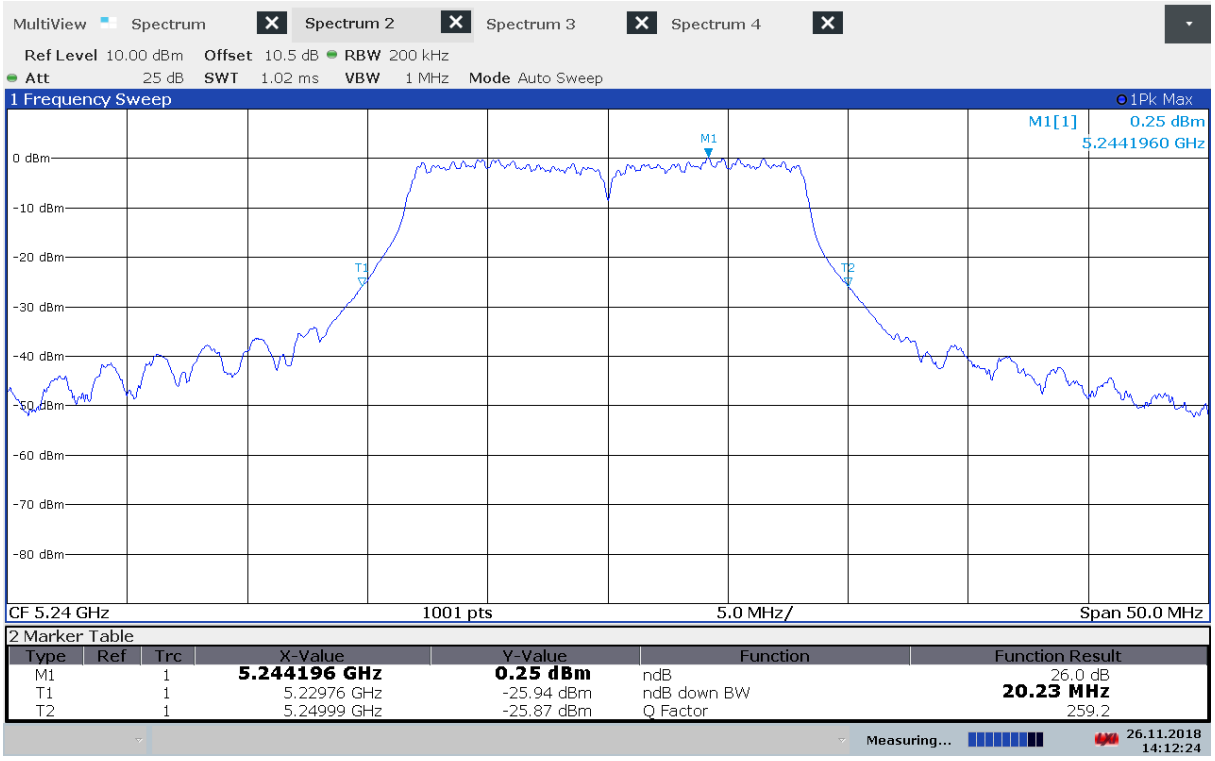
Emission Bandwidth *B*, 5220 MHz, 802.11a 6Mbps



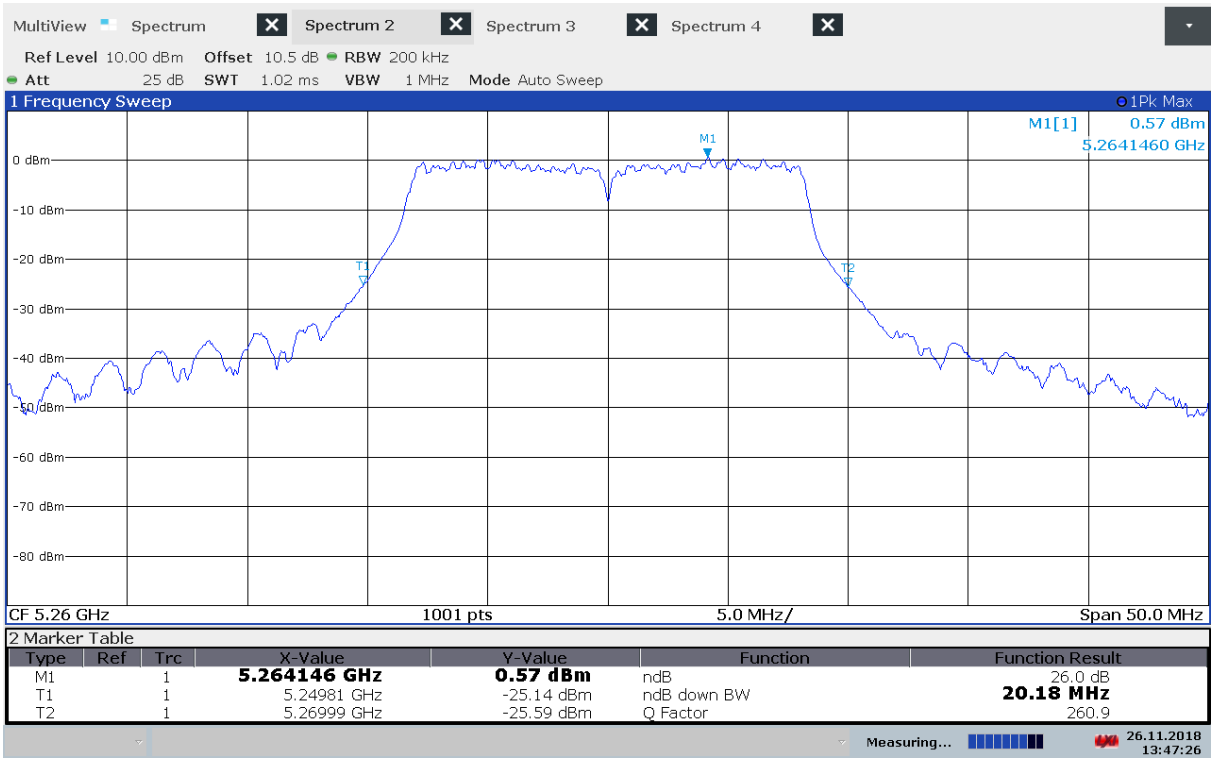
Emission Bandwidth *B*, 5220 MHz, 802.11n MCS0



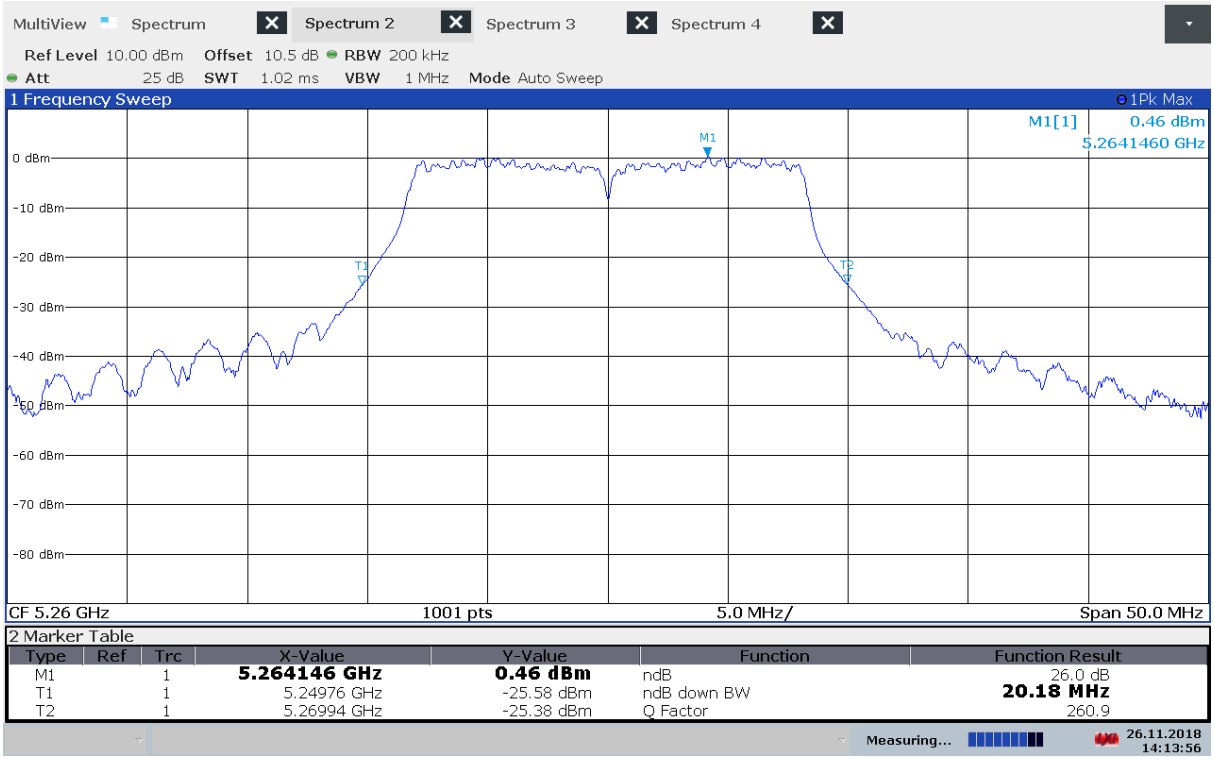
Emission Bandwidth *B*, 5240 MHz, 802.11a 6Mbps



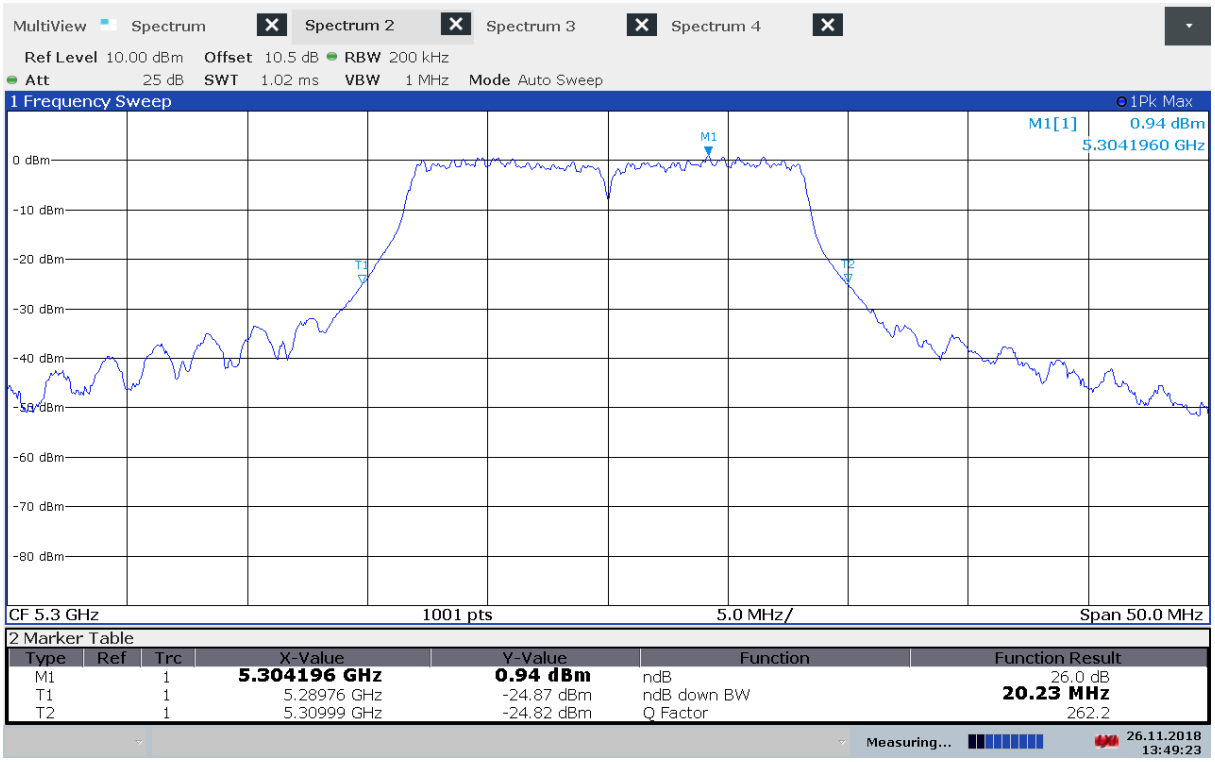
Emission Bandwidth *B*, 5240 MHz, 802.11n MCS0



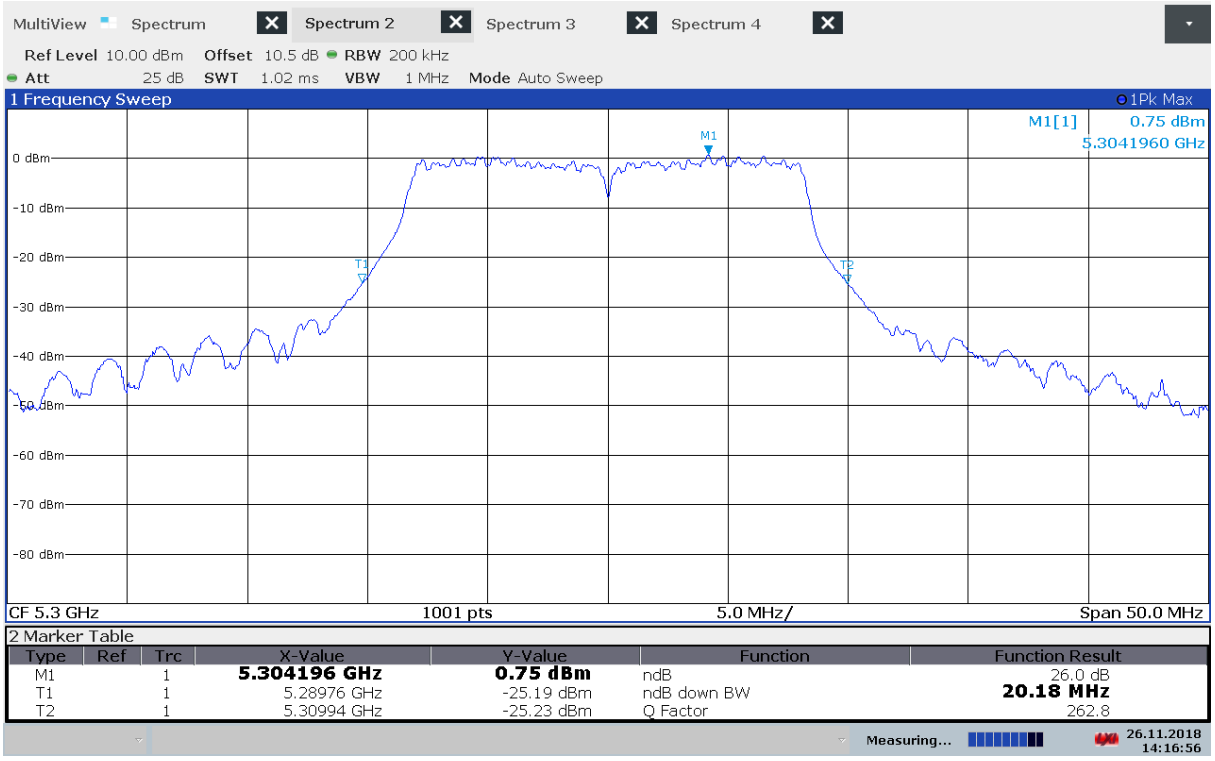
Emission Bandwidth *B*, 5260 MHz, 802.11a 6Mbps



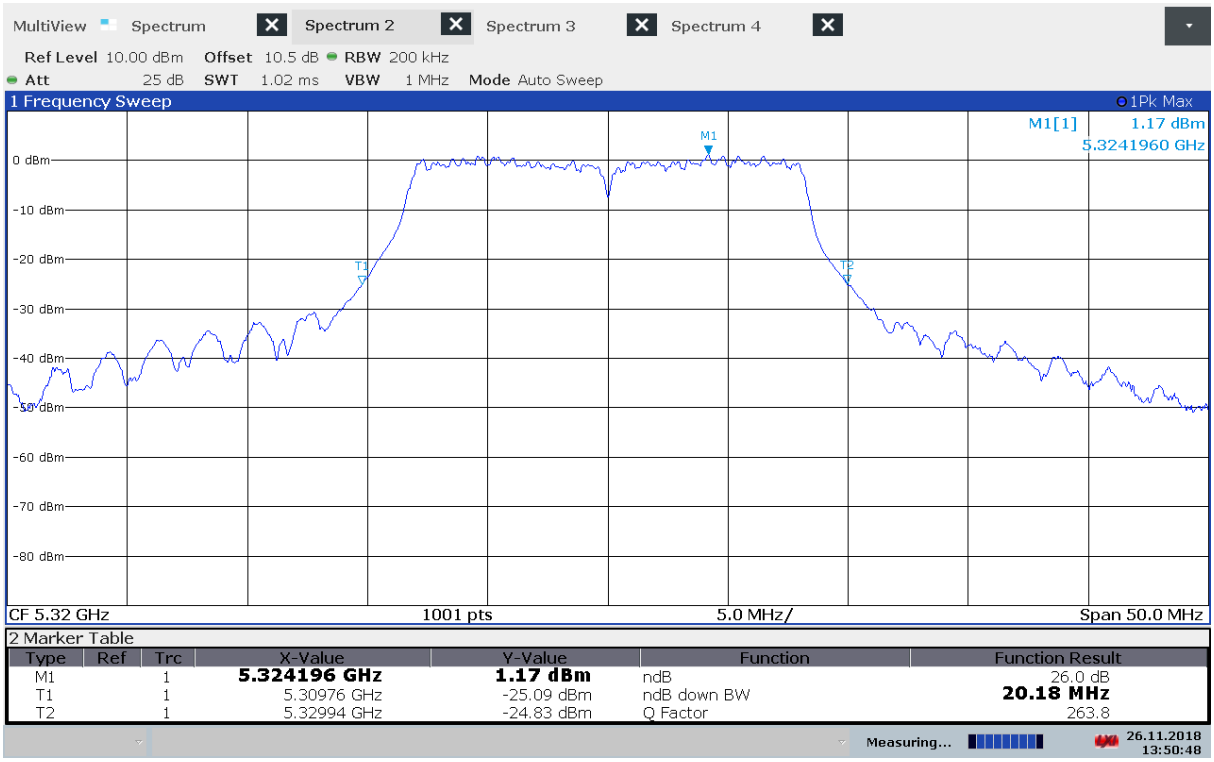
Emission Bandwidth *B*, 5260 MHz, 802.11n MCS0



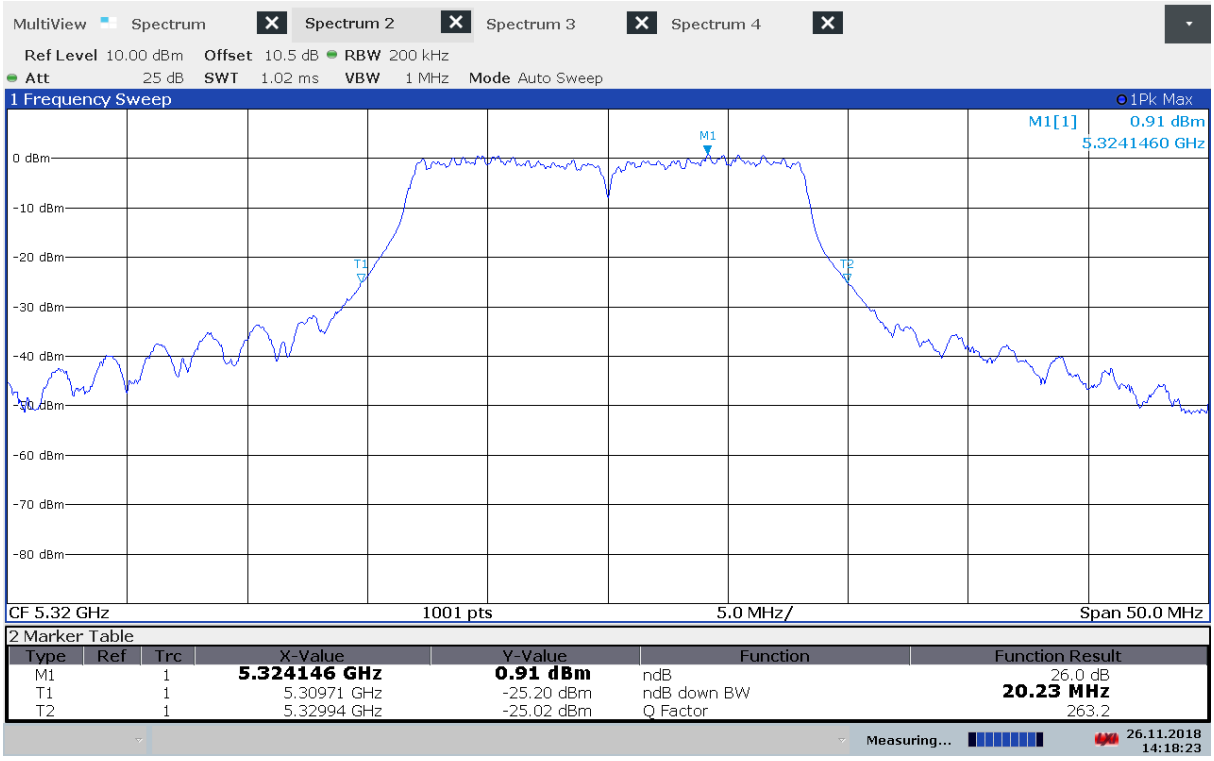
Emission Bandwidth *B*, 5300 MHz, 802.11a 6Mbps



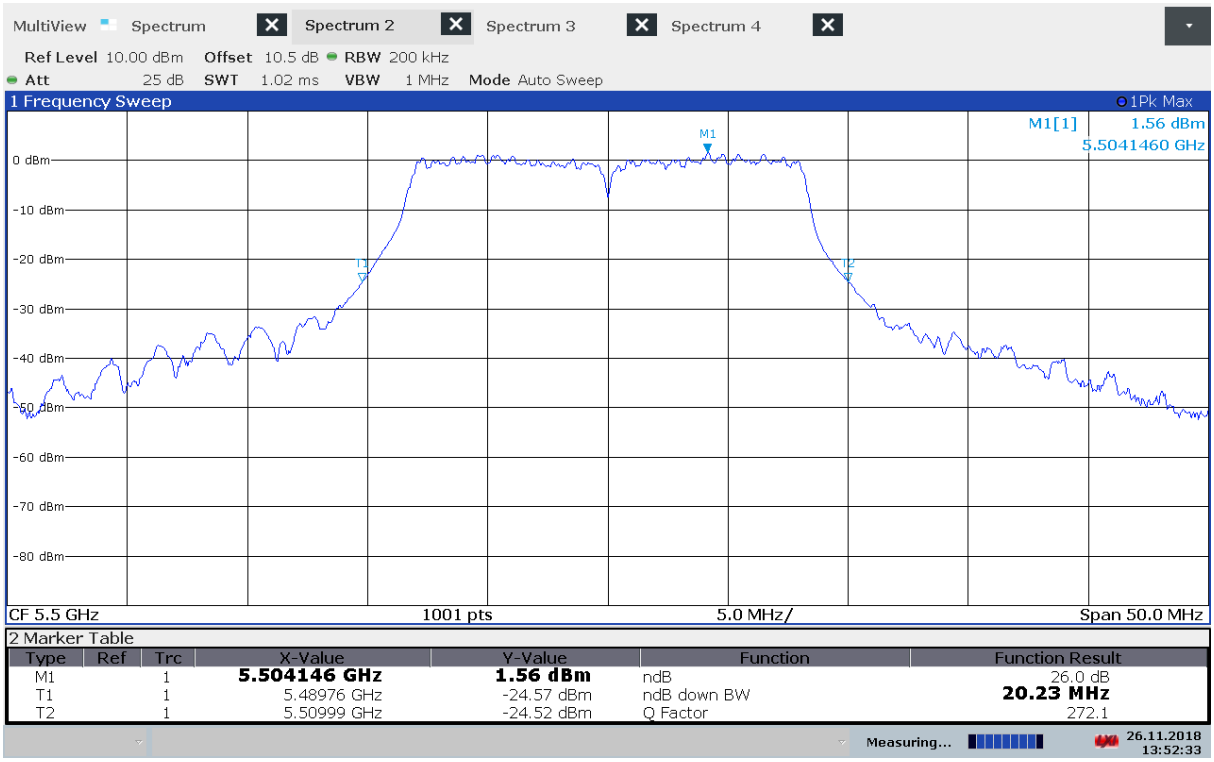
Emission Bandwidth *B*, 5300 MHz, 802.11n MCS0



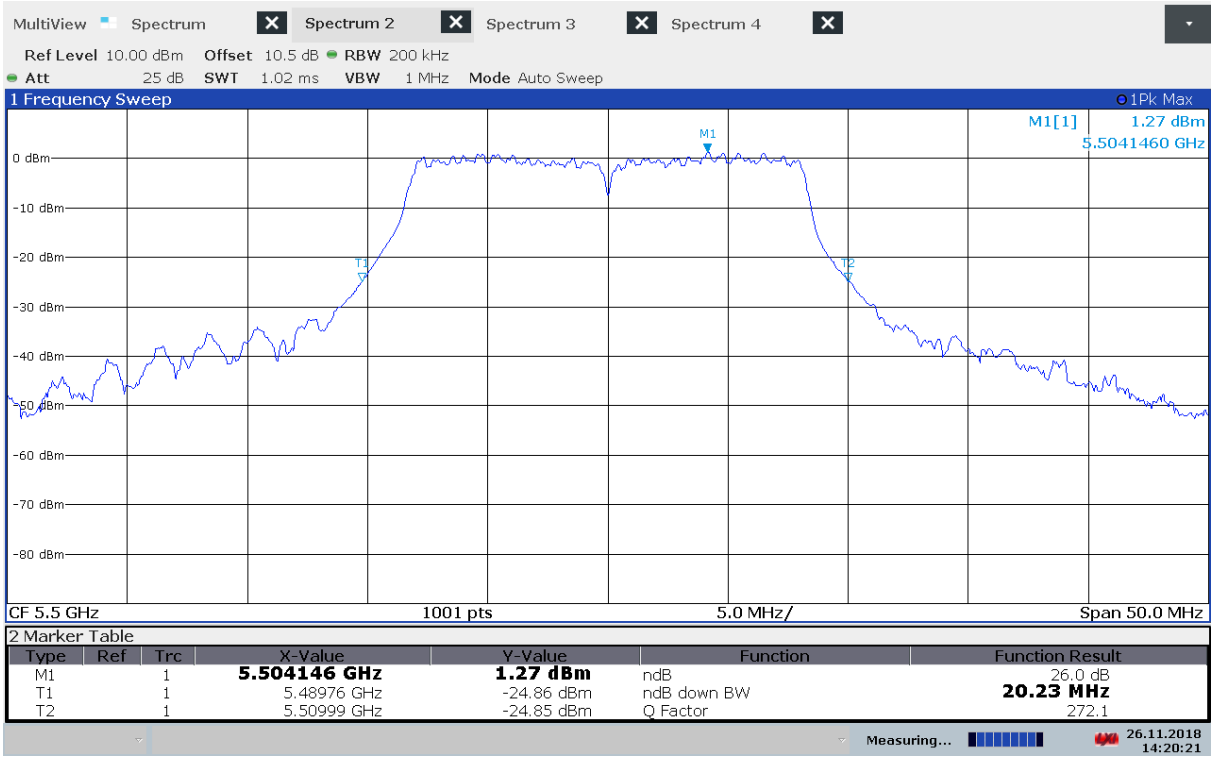
Emission Bandwidth *B*, 5320 MHz, 802.11a 6Mbps



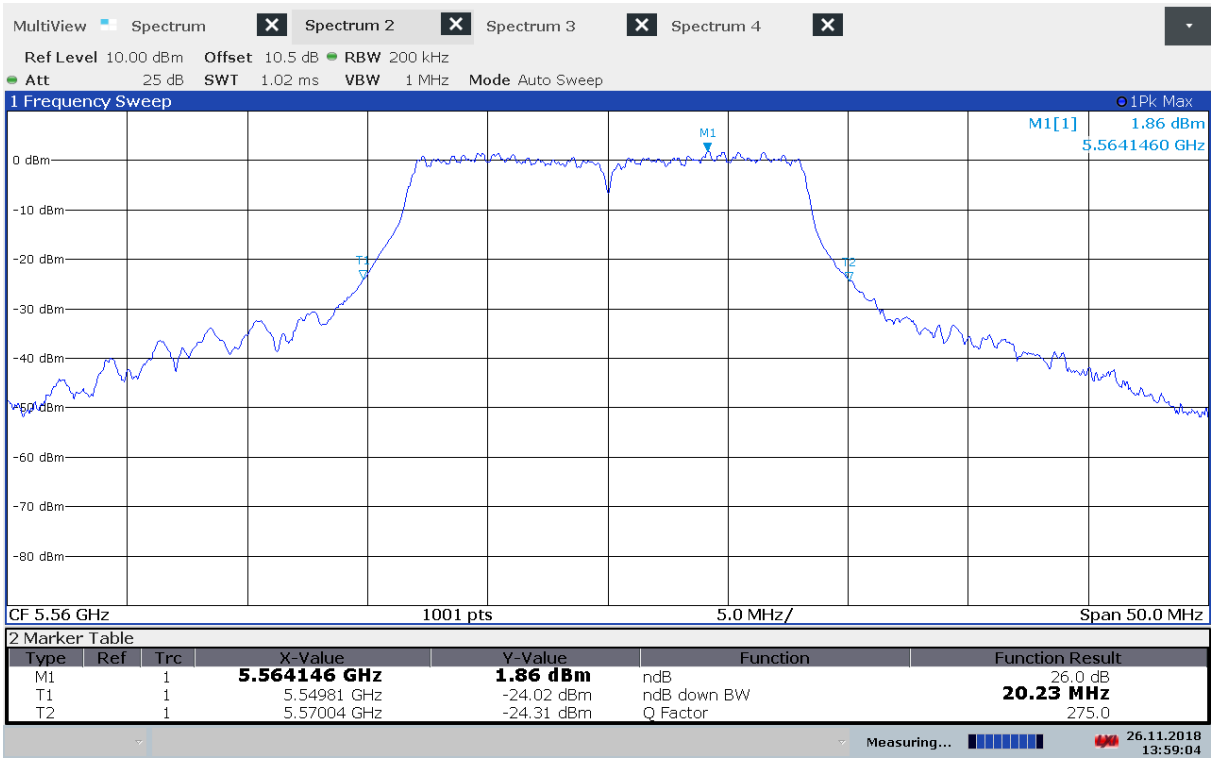
Emission Bandwidth *B*, 5320 MHz, 802.11n MCS0



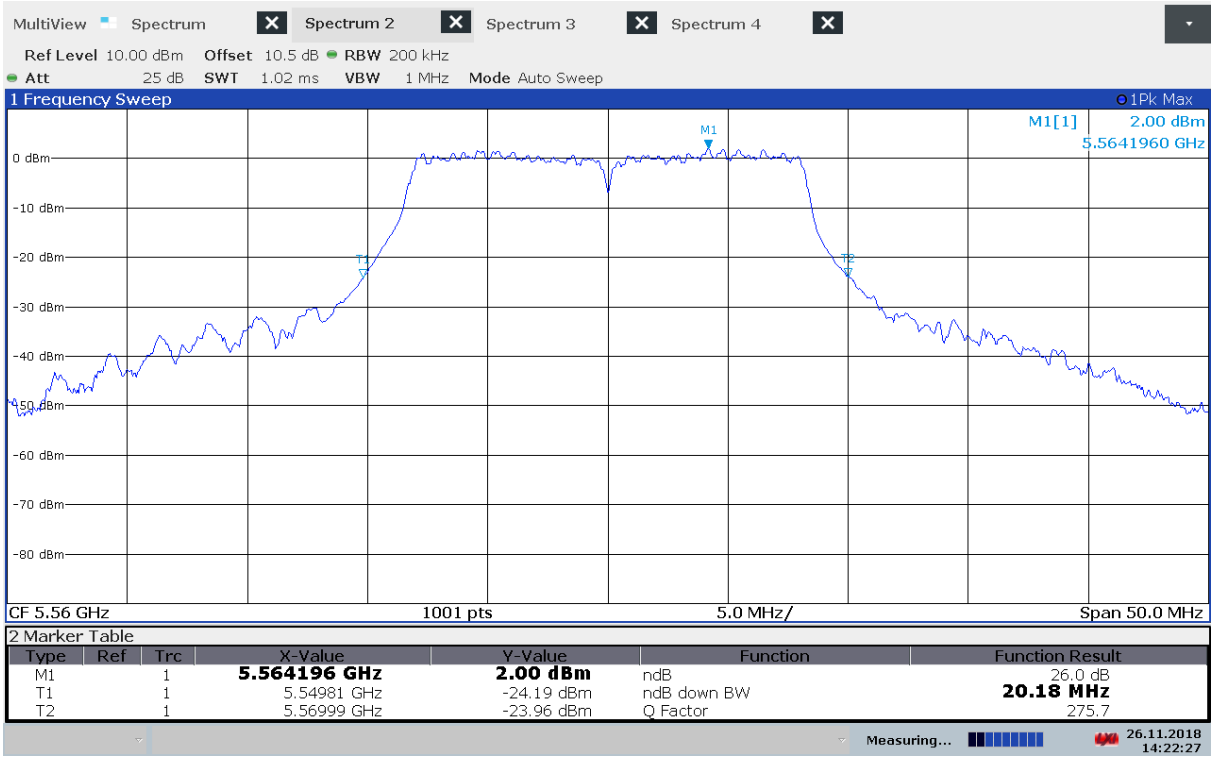
Emission Bandwidth *B*, 5500 MHz, 802.11a 6Mbps



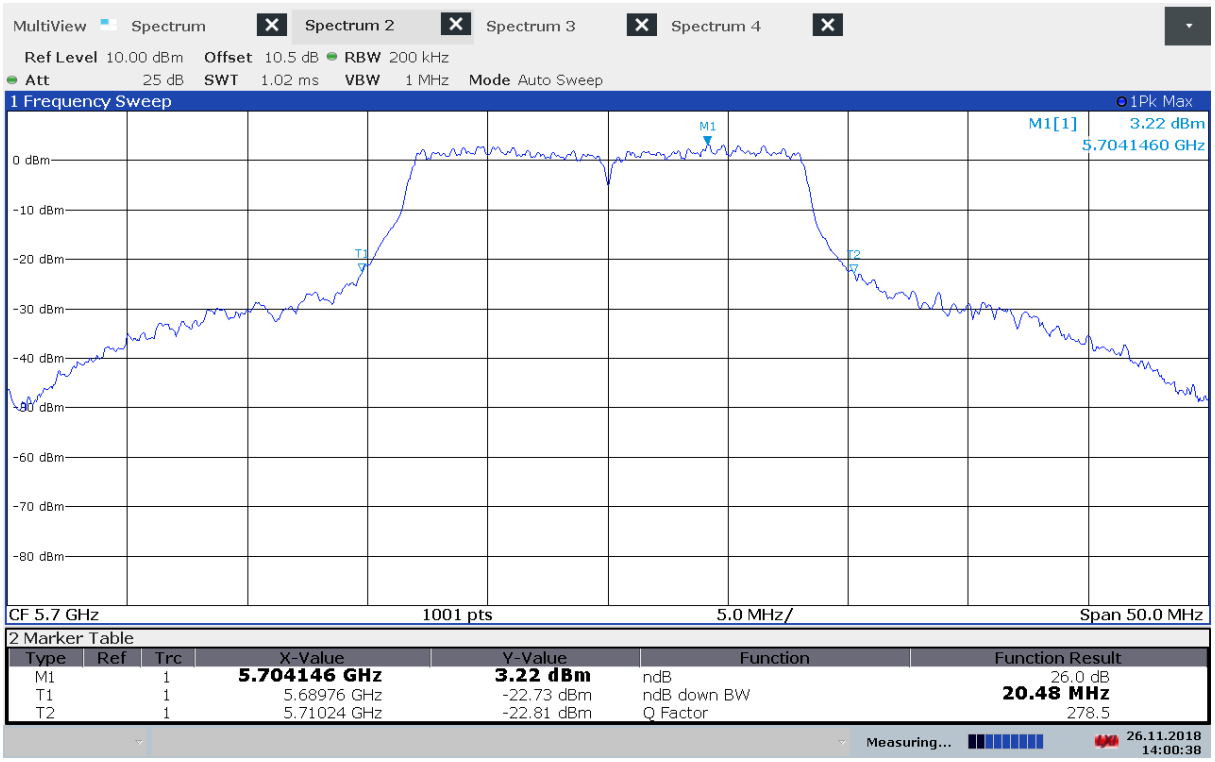
Emission Bandwidth *B*, 5500 MHz, 802.11n MCS0



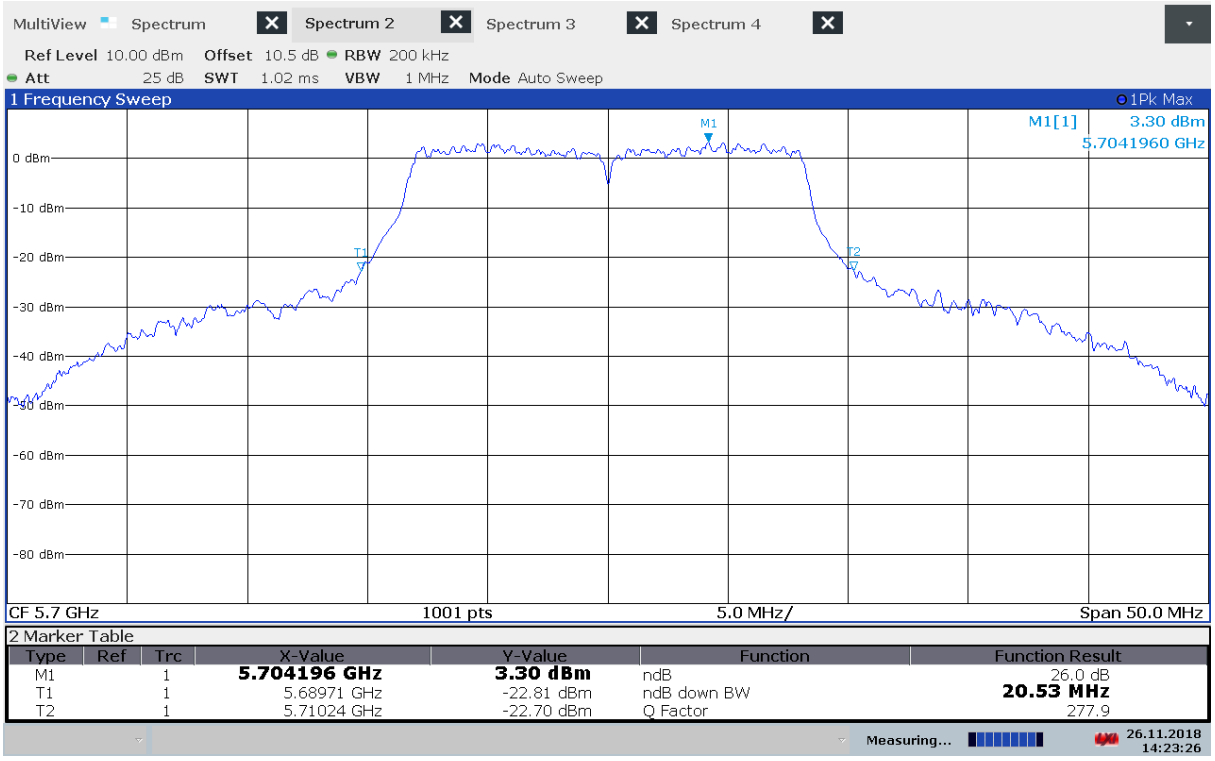
Emission Bandwidth *B*, 5560 MHz, 802.11a 6Mbps



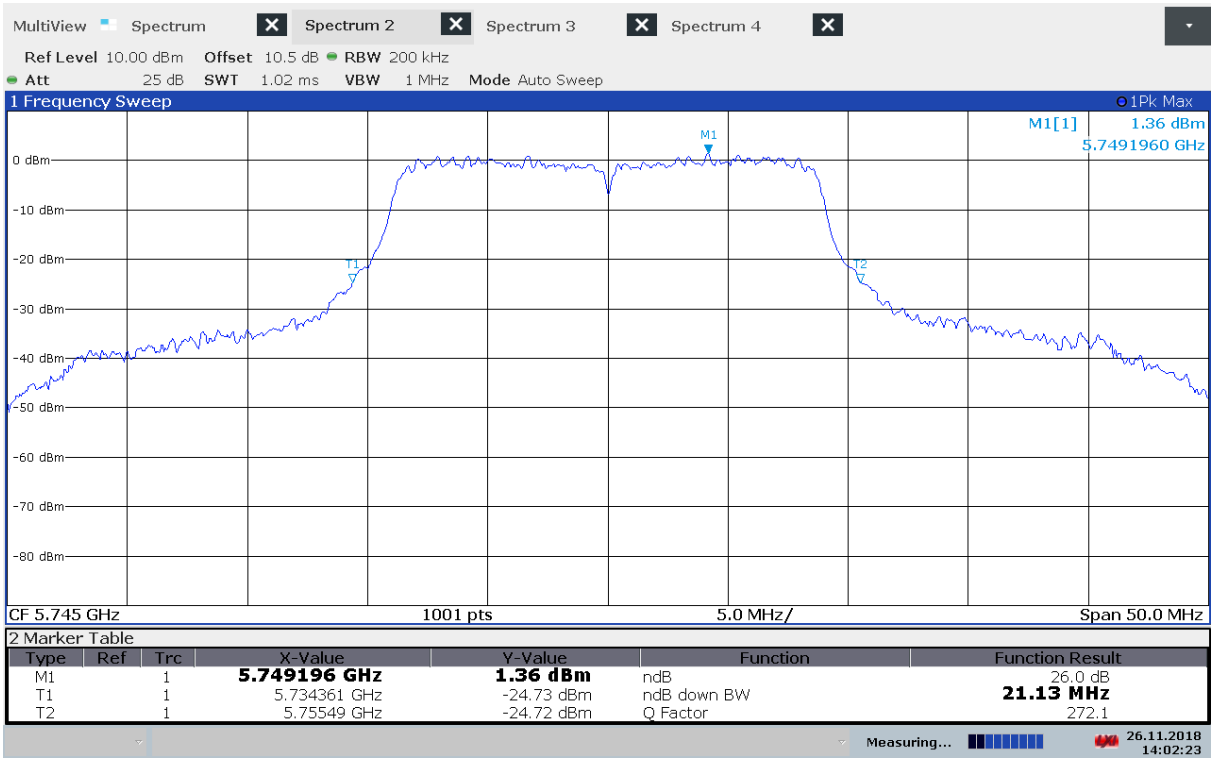
Emission Bandwidth *B*, 5560 MHz, 802.11n MCS0



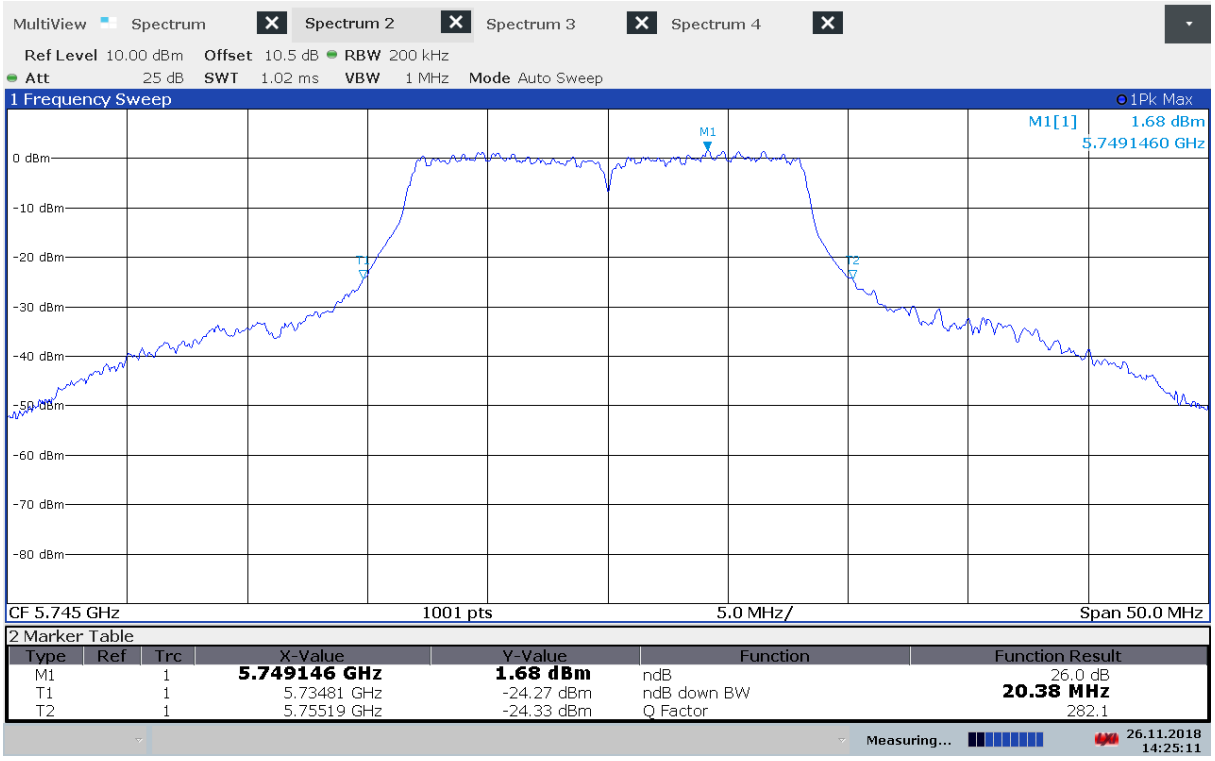
Emission Bandwidth *B*, 5700 MHz, 802.11a 6Mbps



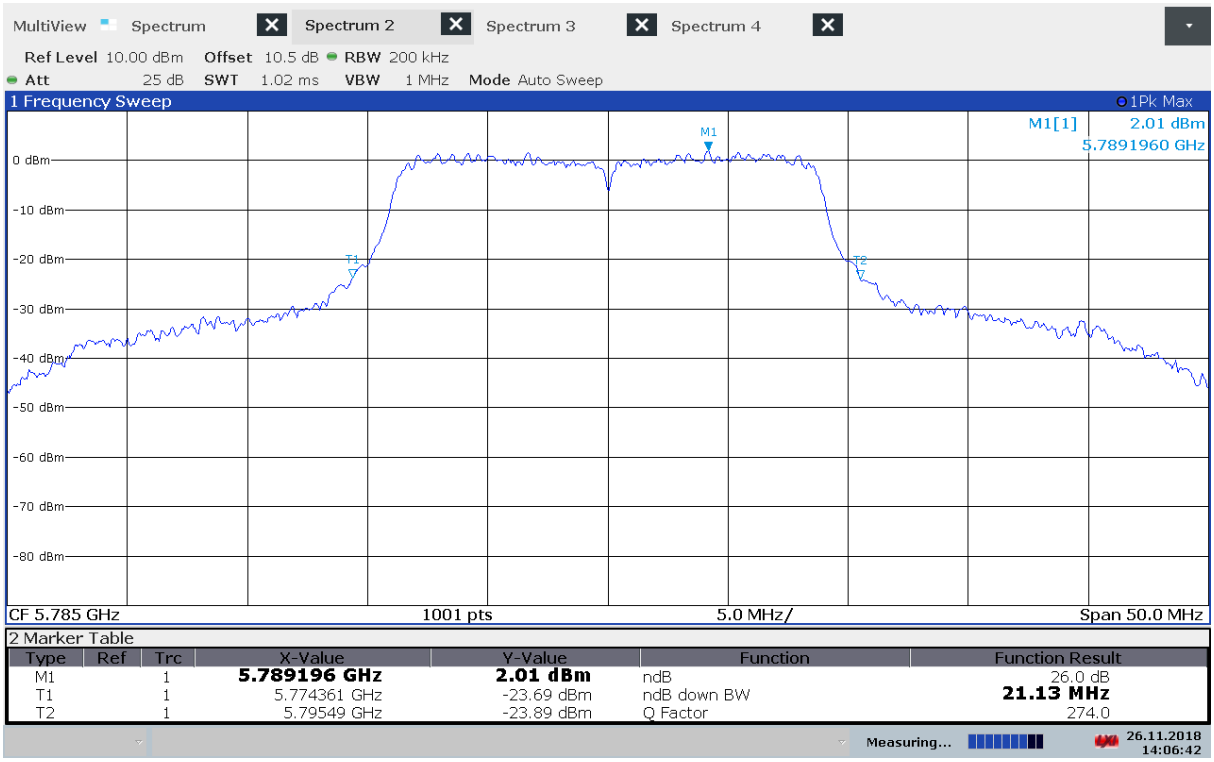
Emission Bandwidth *B*, 5700 MHz, 802.11n MCS0



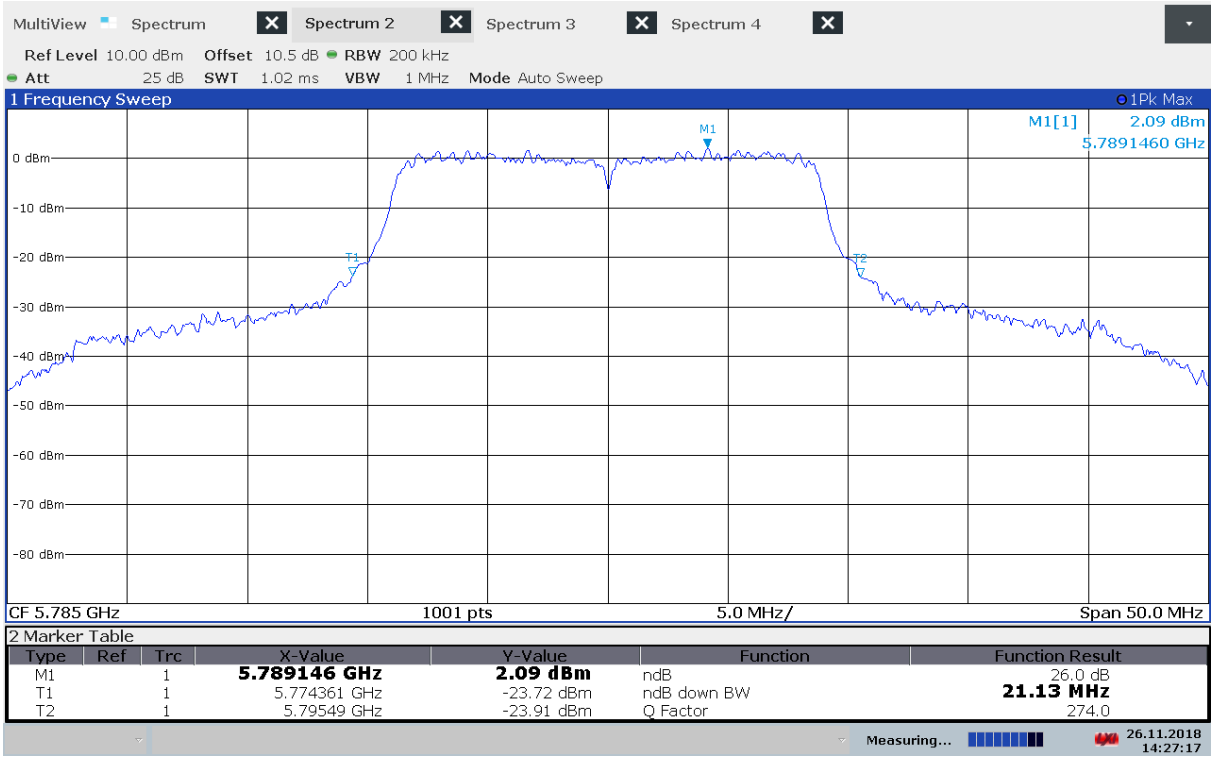
Emission Bandwidth *B*, 5745 MHz, 802.11a 6Mbps



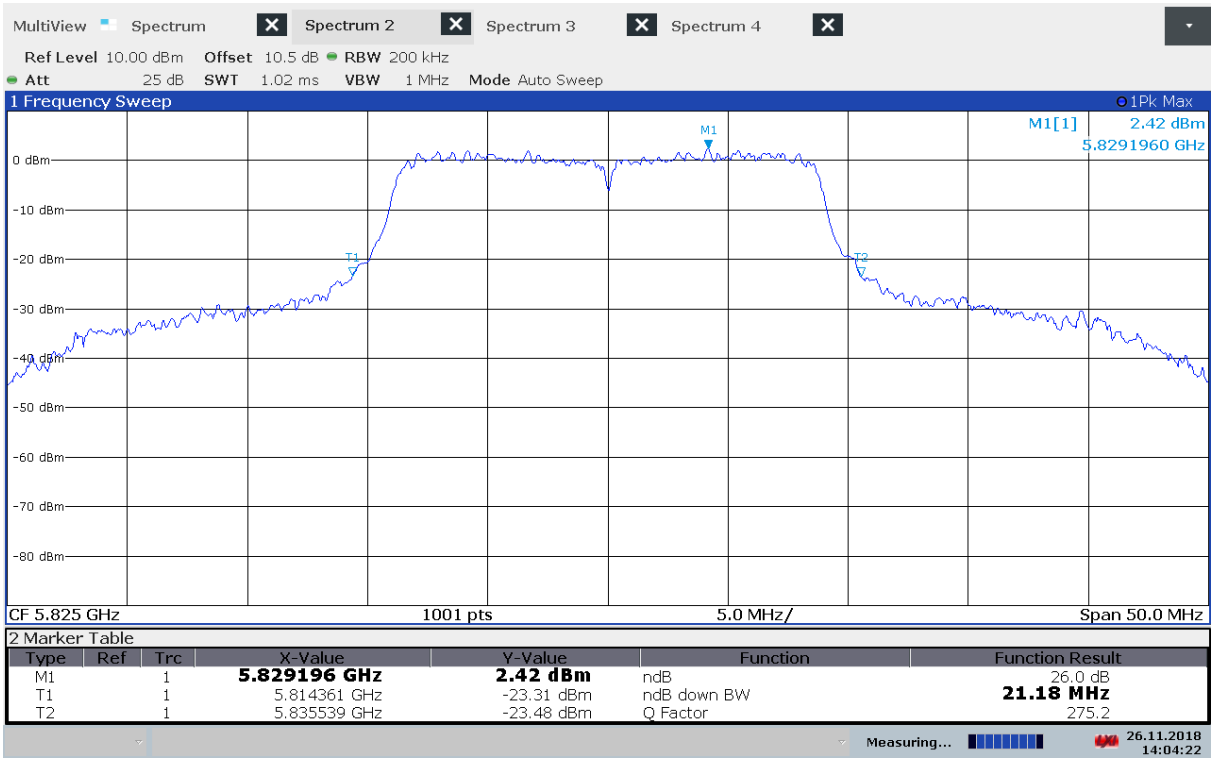
Emission Bandwidth *B*, 5745 MHz, 802.11n MCS0



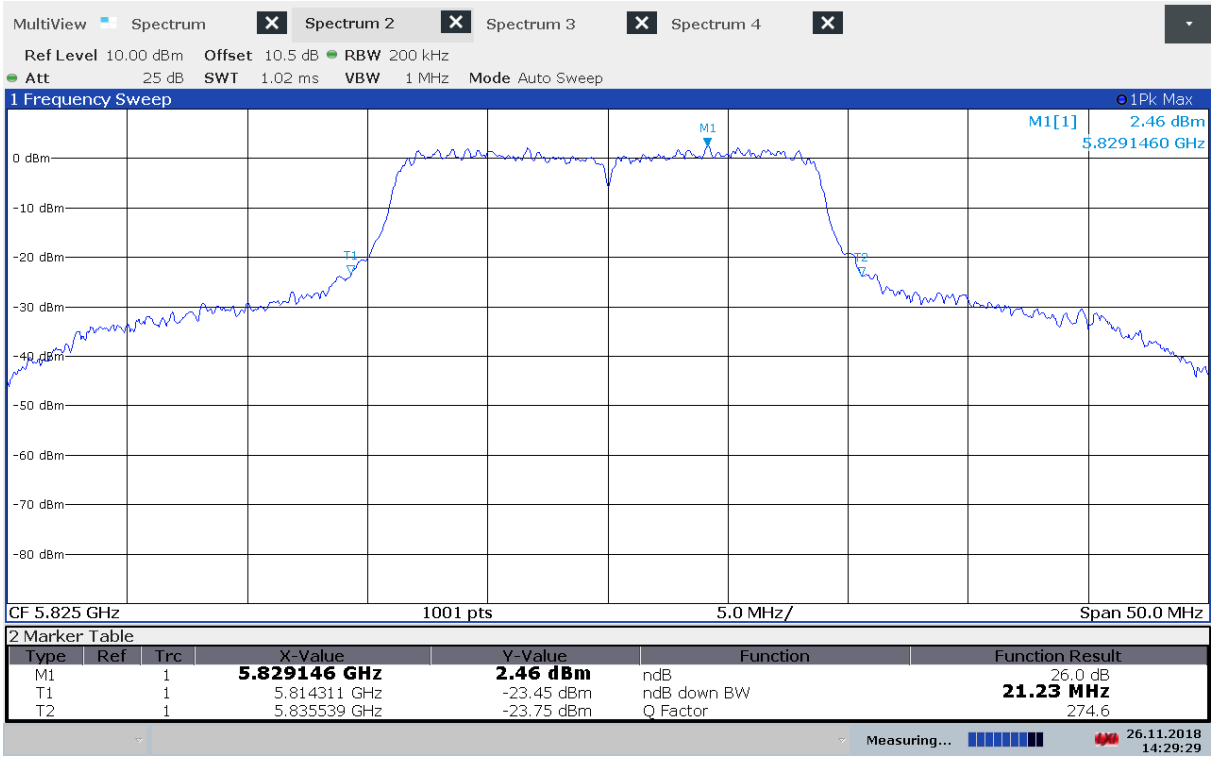
Emission Bandwidth *B*, 5785 MHz, 802.11a 6Mbps



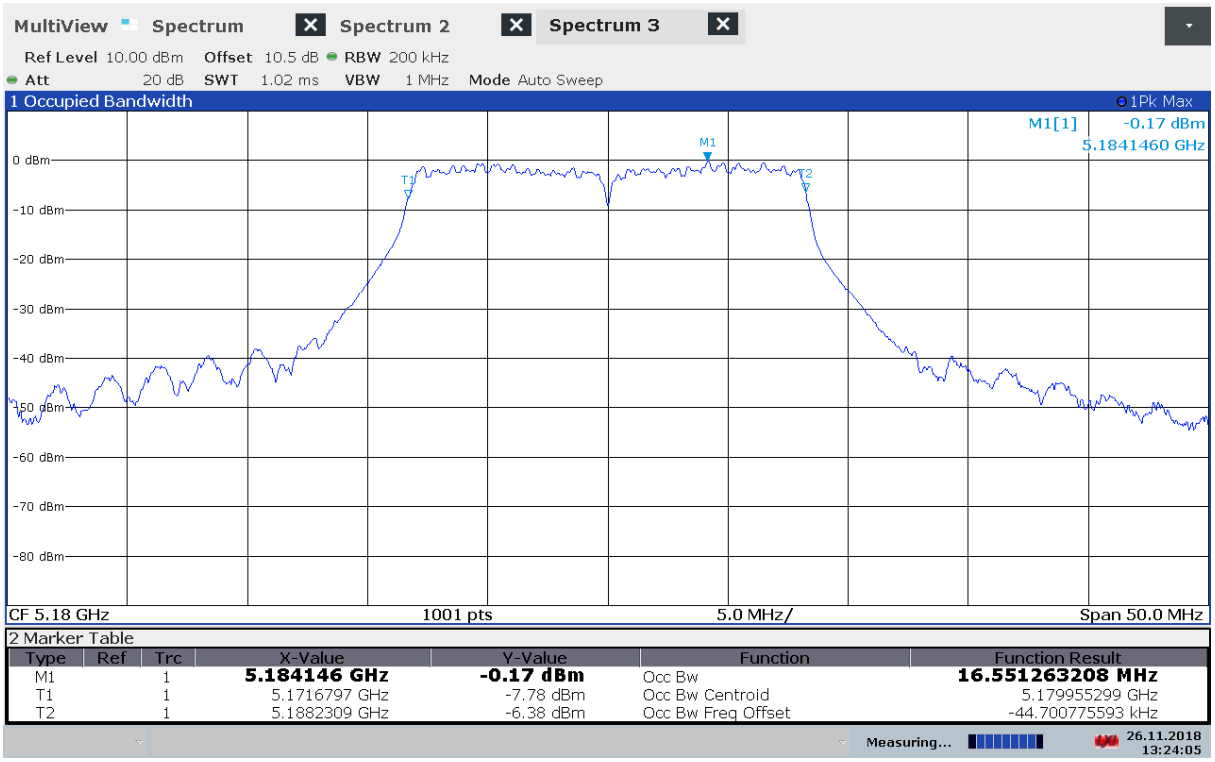
Emission Bandwidth *B*, 5785 MHz, 802.11n MCS0



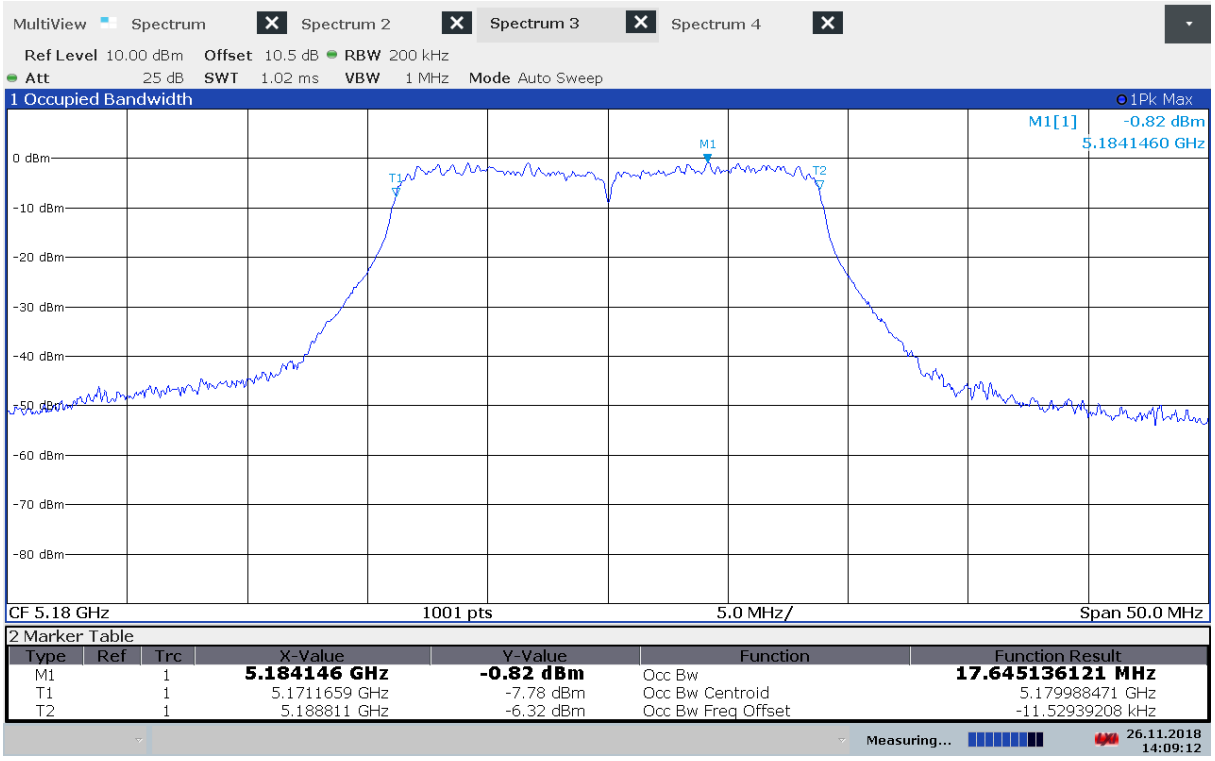
Emission Bandwidth *B*, 5825 MHz, 802.11a 6Mbps



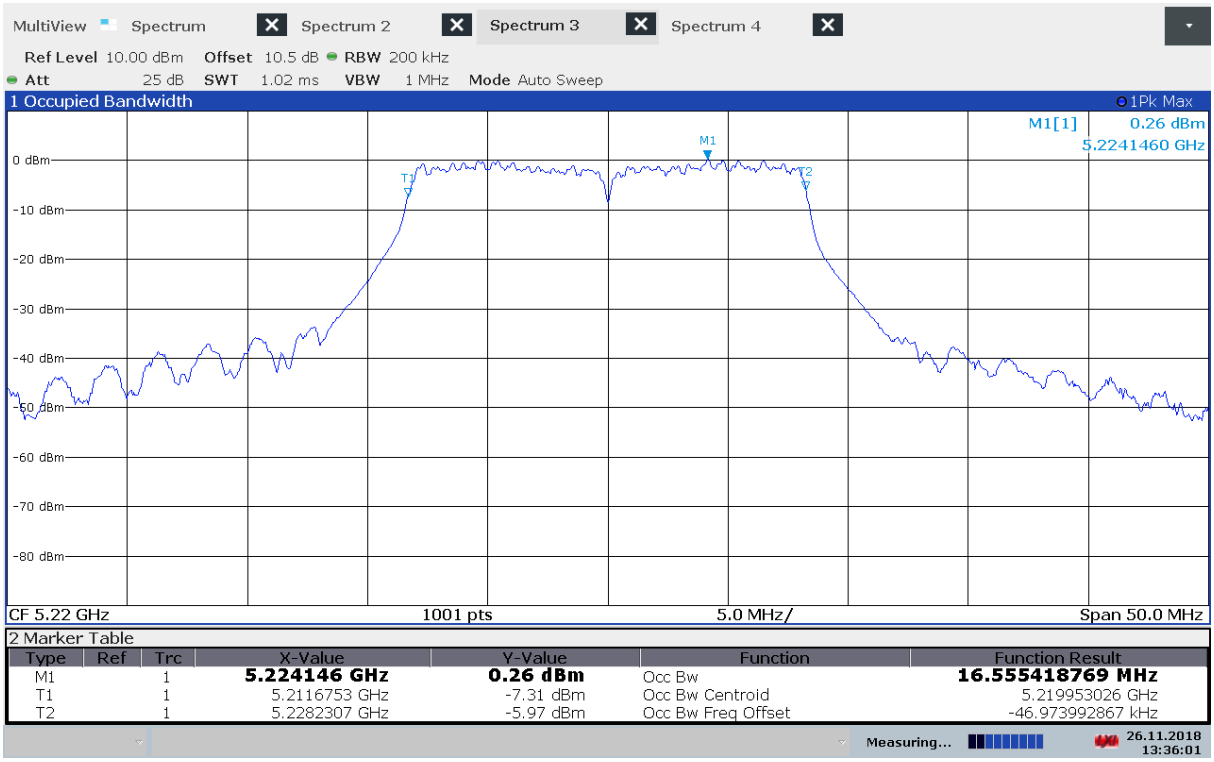
Emission Bandwidth *B*, 5825 MHz, 802.11n MCS0



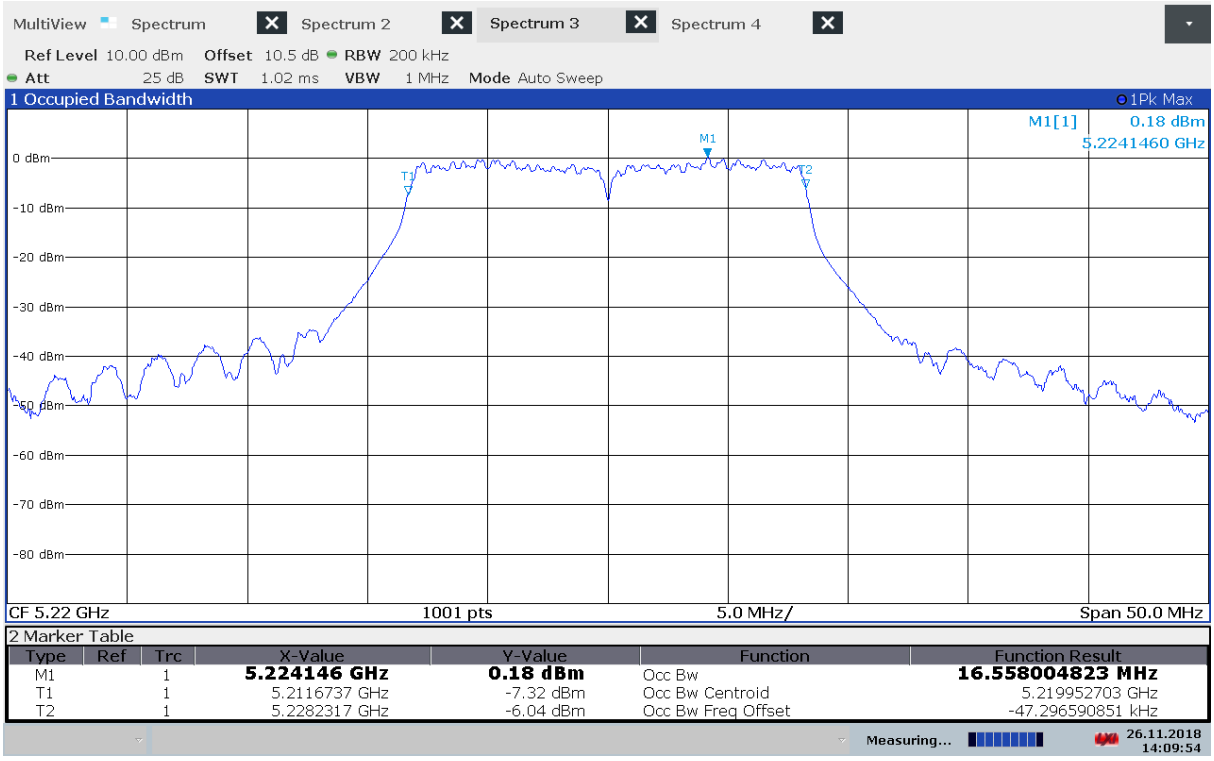
99% Bandwidth, 5180 MHz, 802.11a 6Mbps



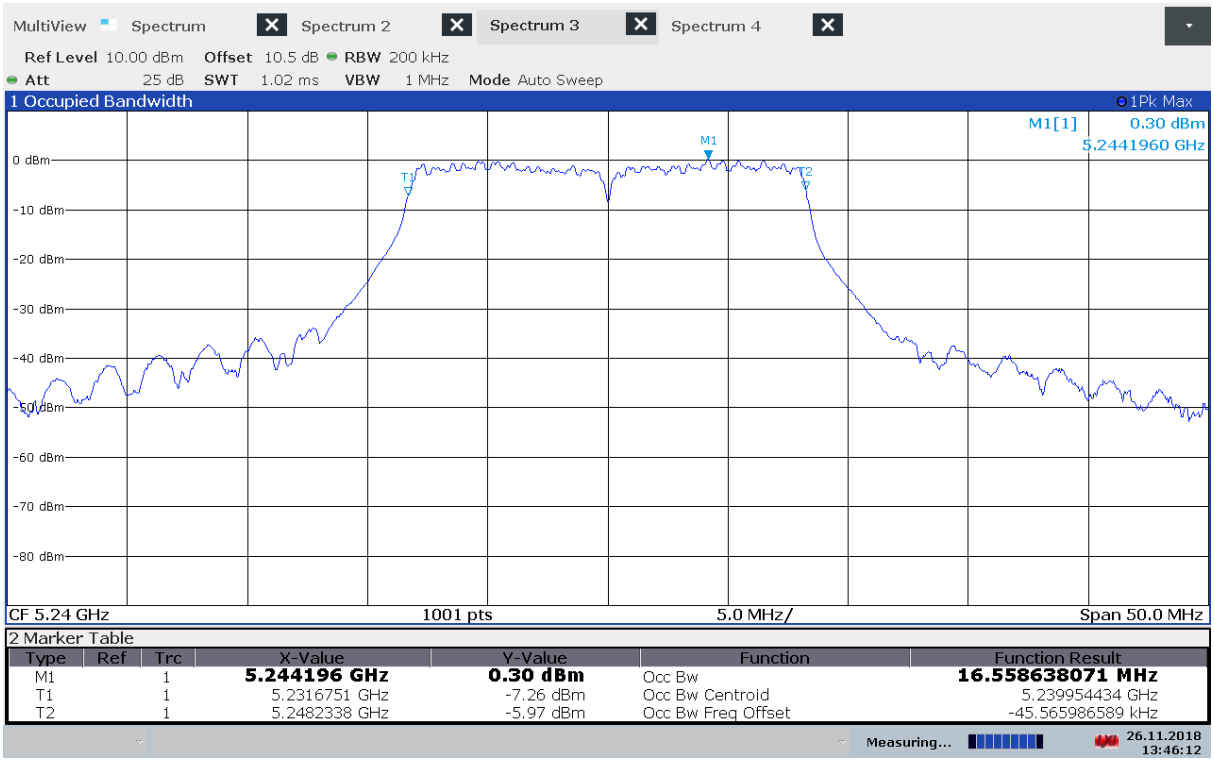
99% Bandwidth, 5180 MHz, 802.11n MCS0



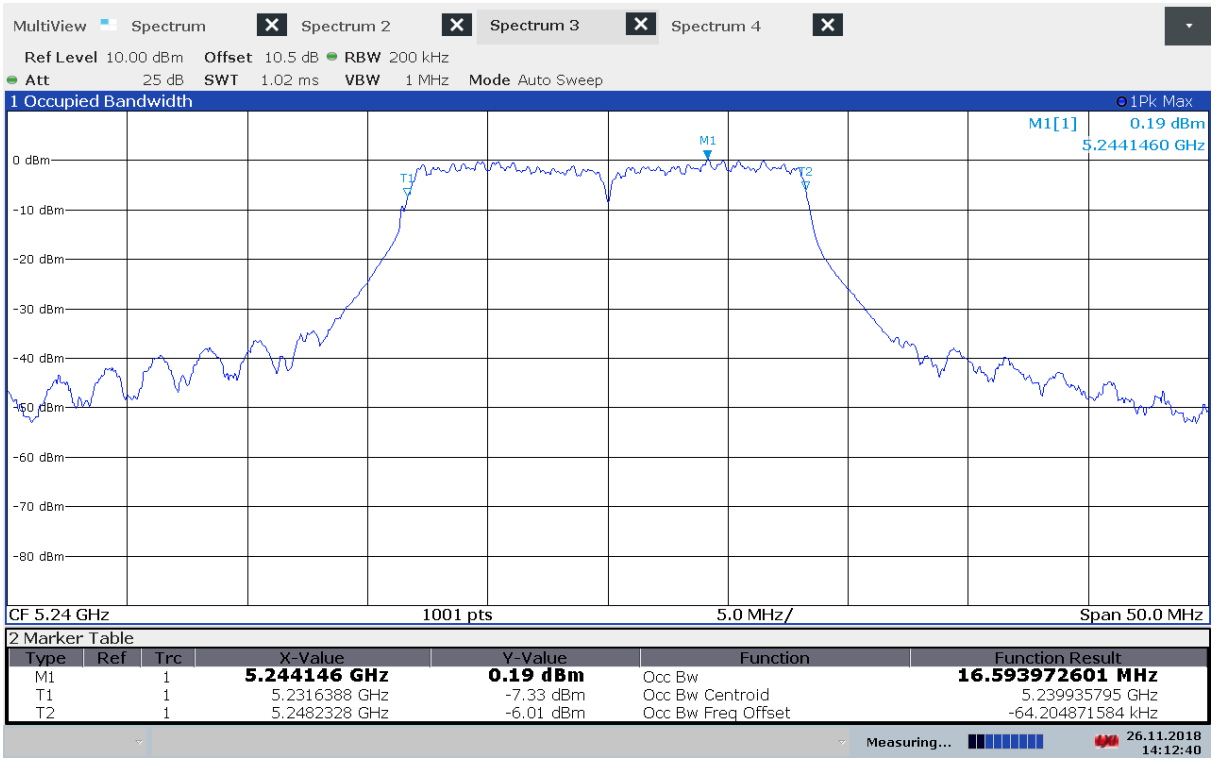
99% Bandwidth, 5220 MHz, 802.11a 6Mbps



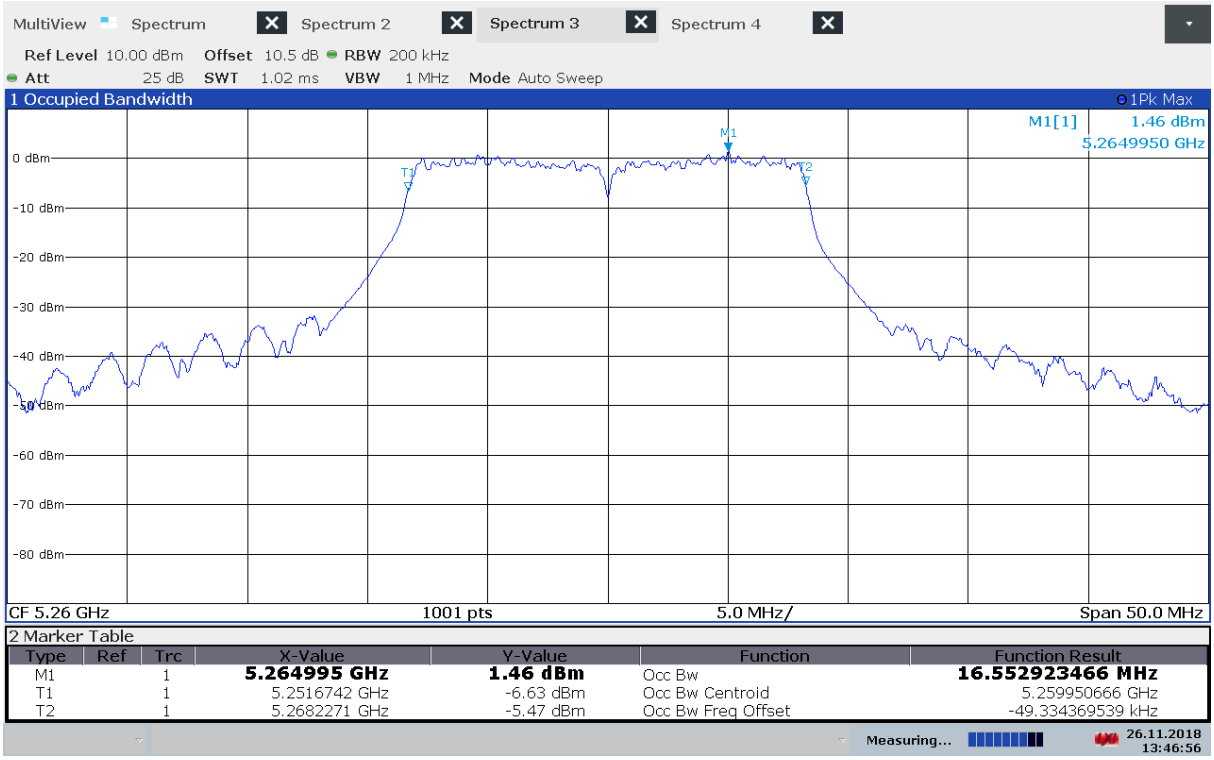
99% Bandwidth, 5220 MHz, 802.11n MCS0



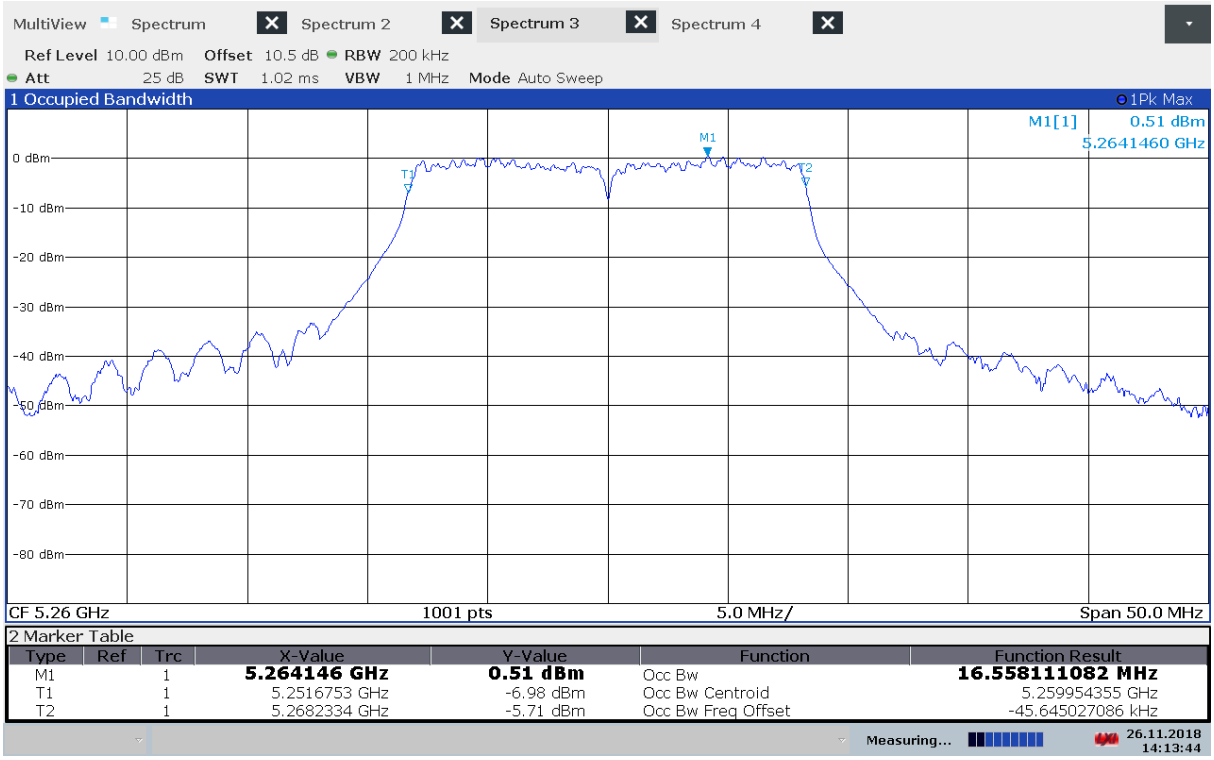
99% Bandwidth, 5240 MHz, 802.11a 6Mbps



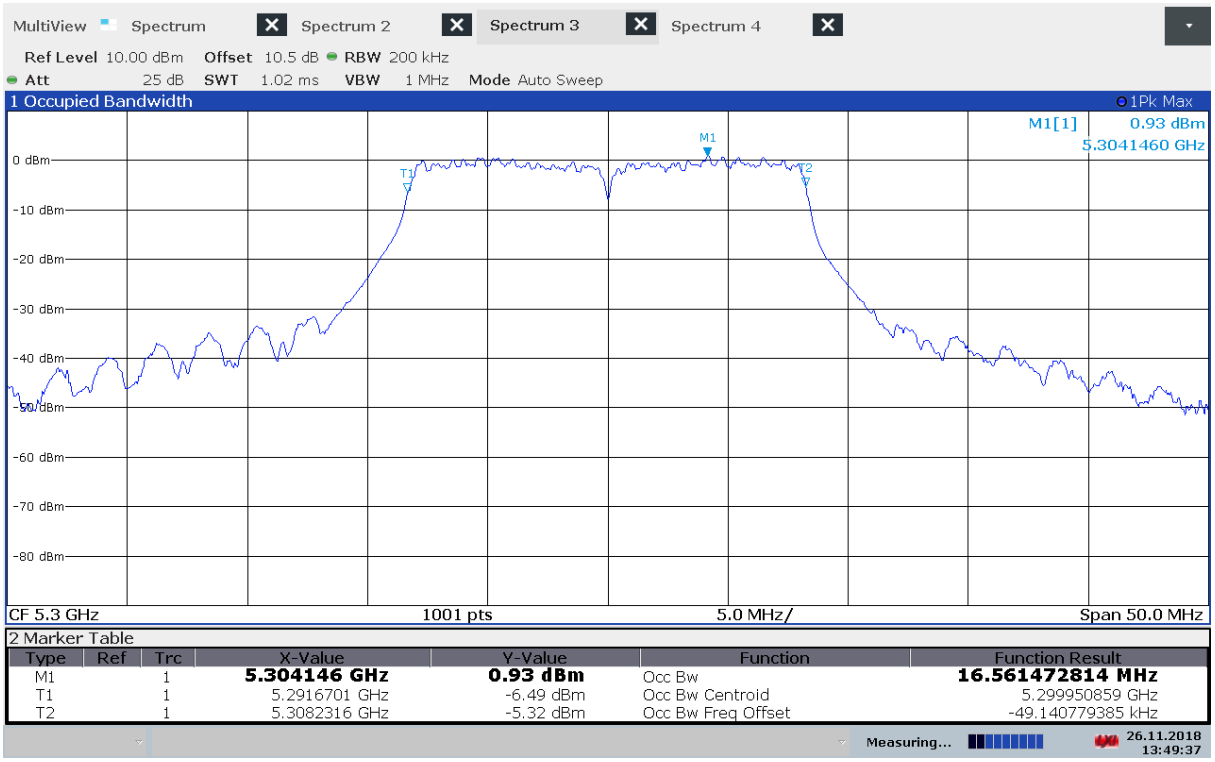
99% Bandwidth, 5240 MHz, 802.11n MCS0



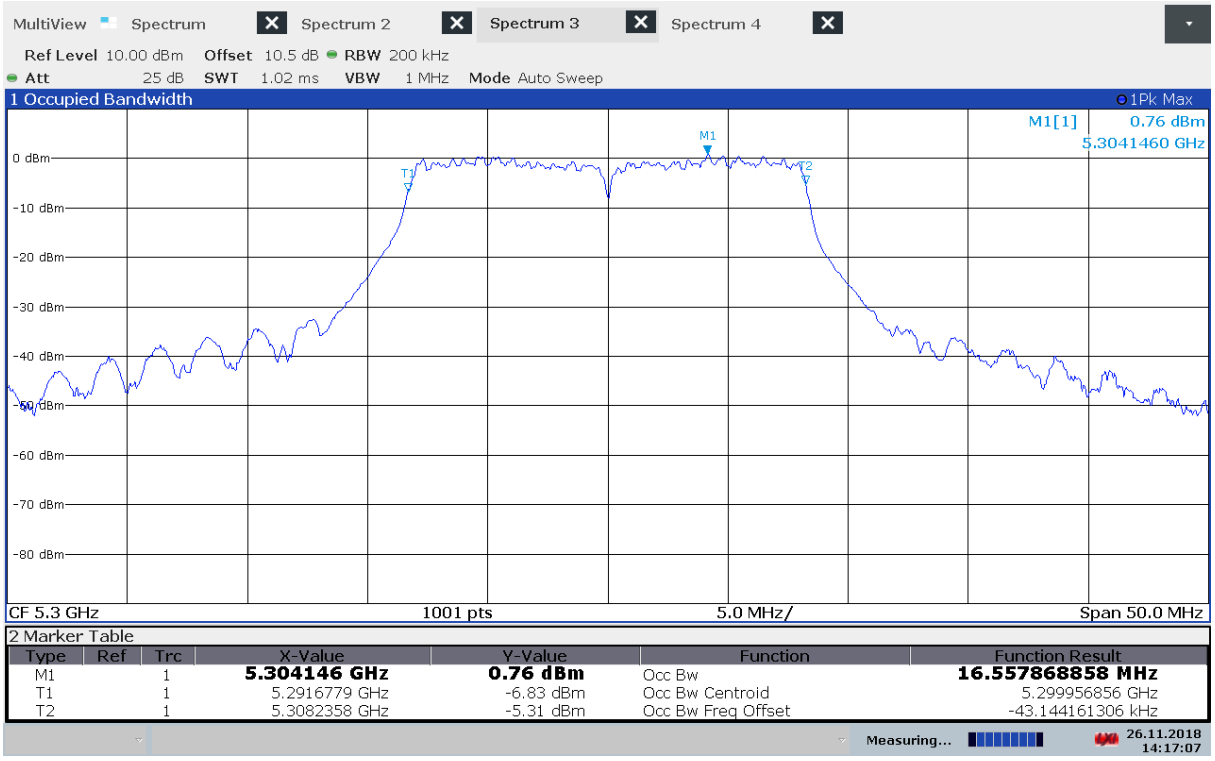
99% Bandwidth, 5260 MHz, 802.11a 6Mbps



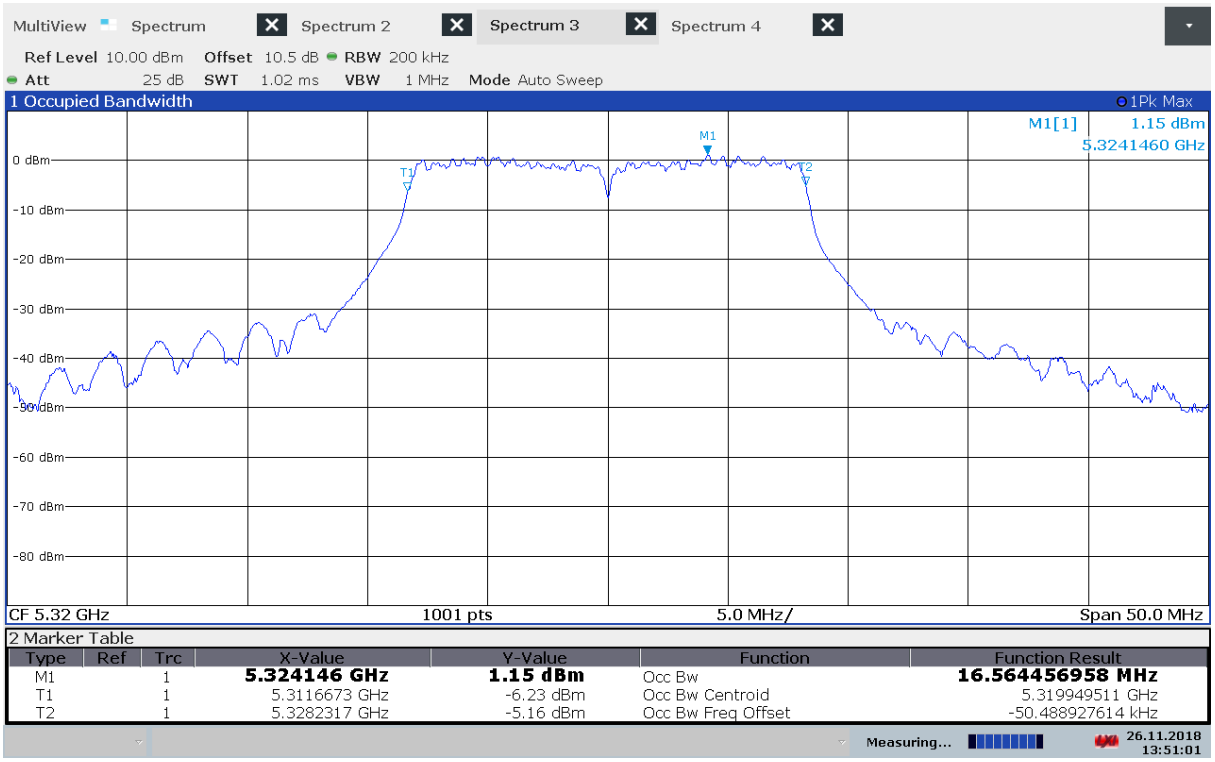
99% Bandwidth, 5260 MHz, 802.11n MCS0



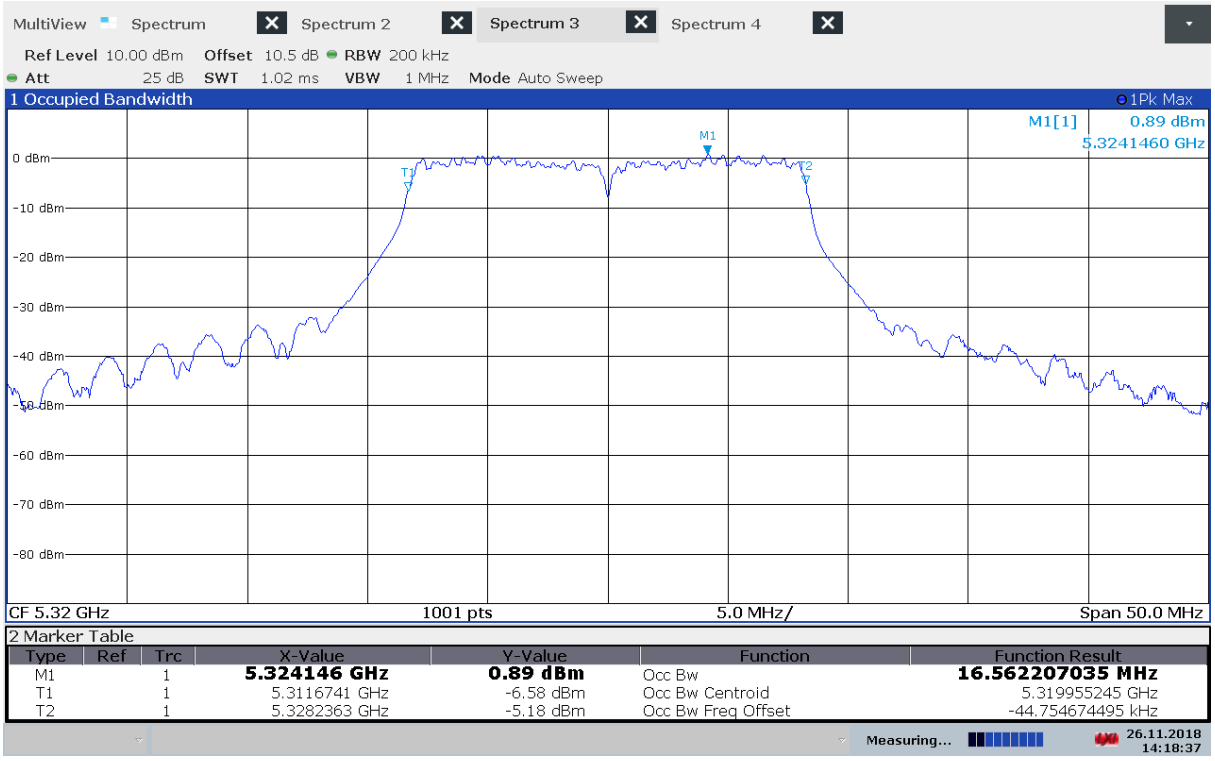
99% Bandwidth, 5300 MHz, 802.11a 6Mbps



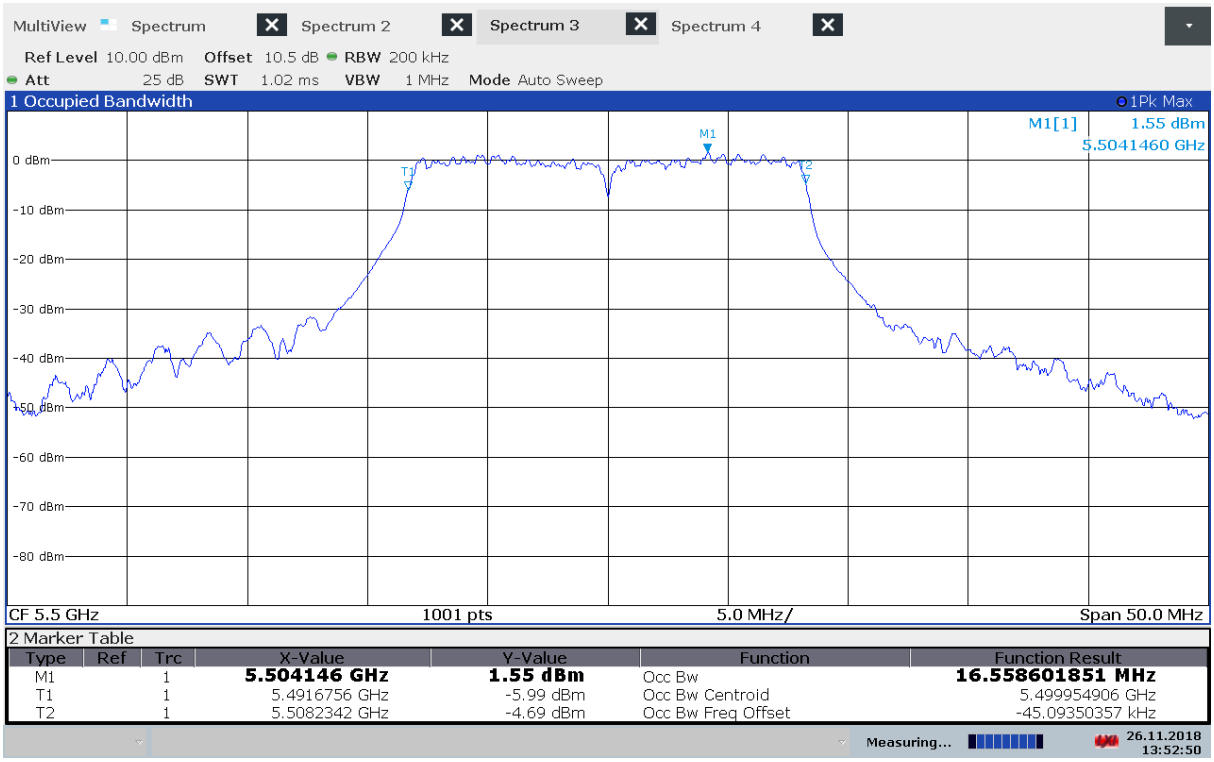
99% Bandwidth, 5300 MHz, 802.11n MCS0



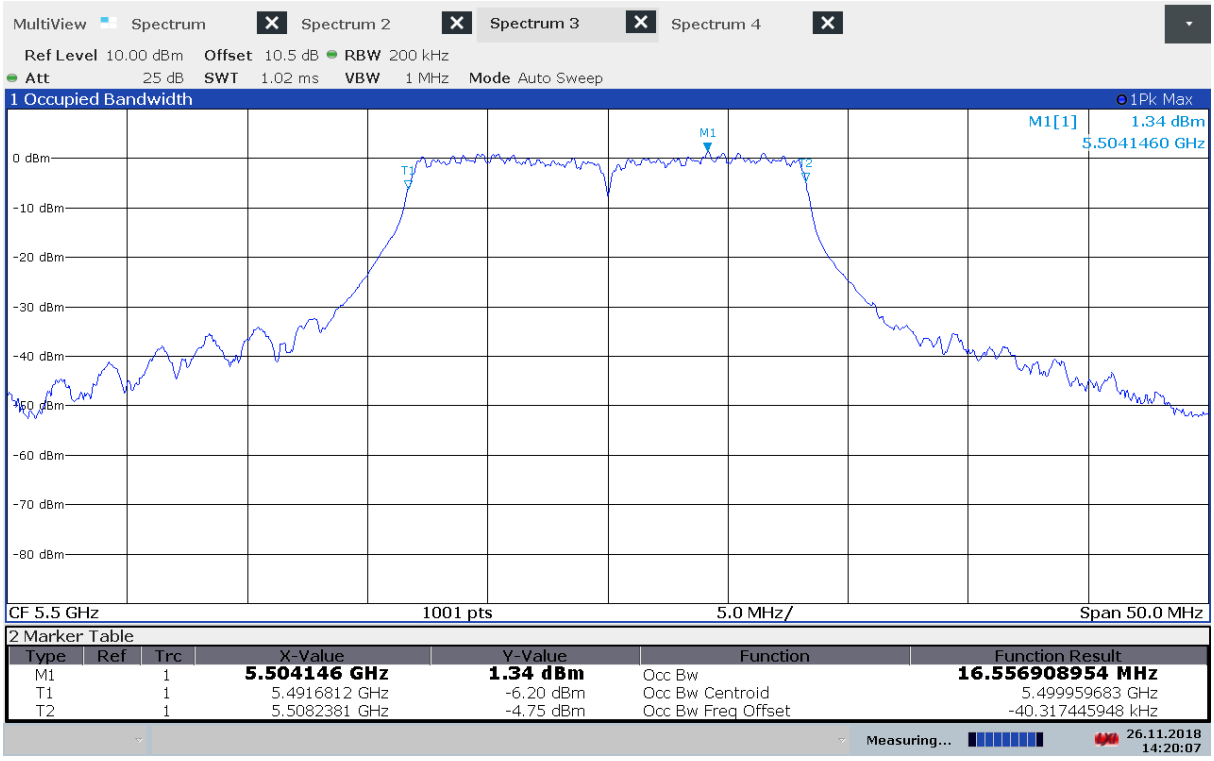
99% Bandwidth, 5320 MHz, 802.11a 6Mbps



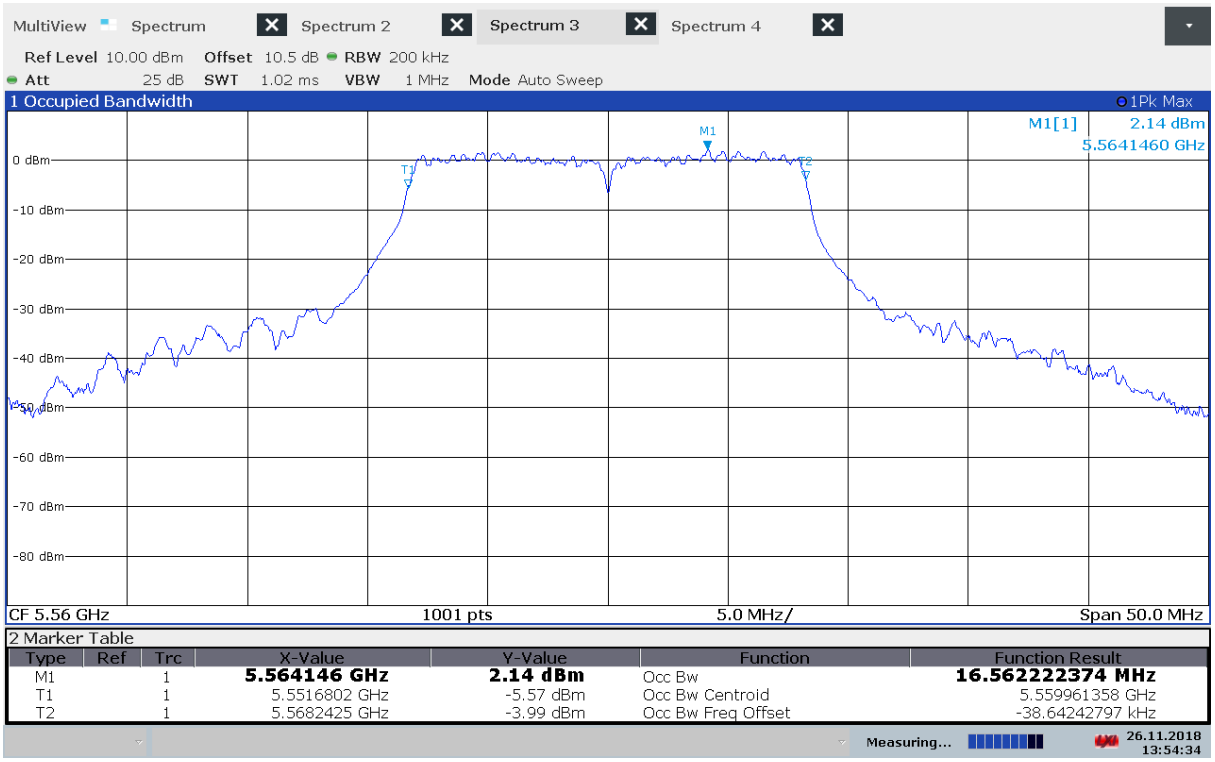
99% Bandwidth, 5320 MHz, 802.11n MCS0



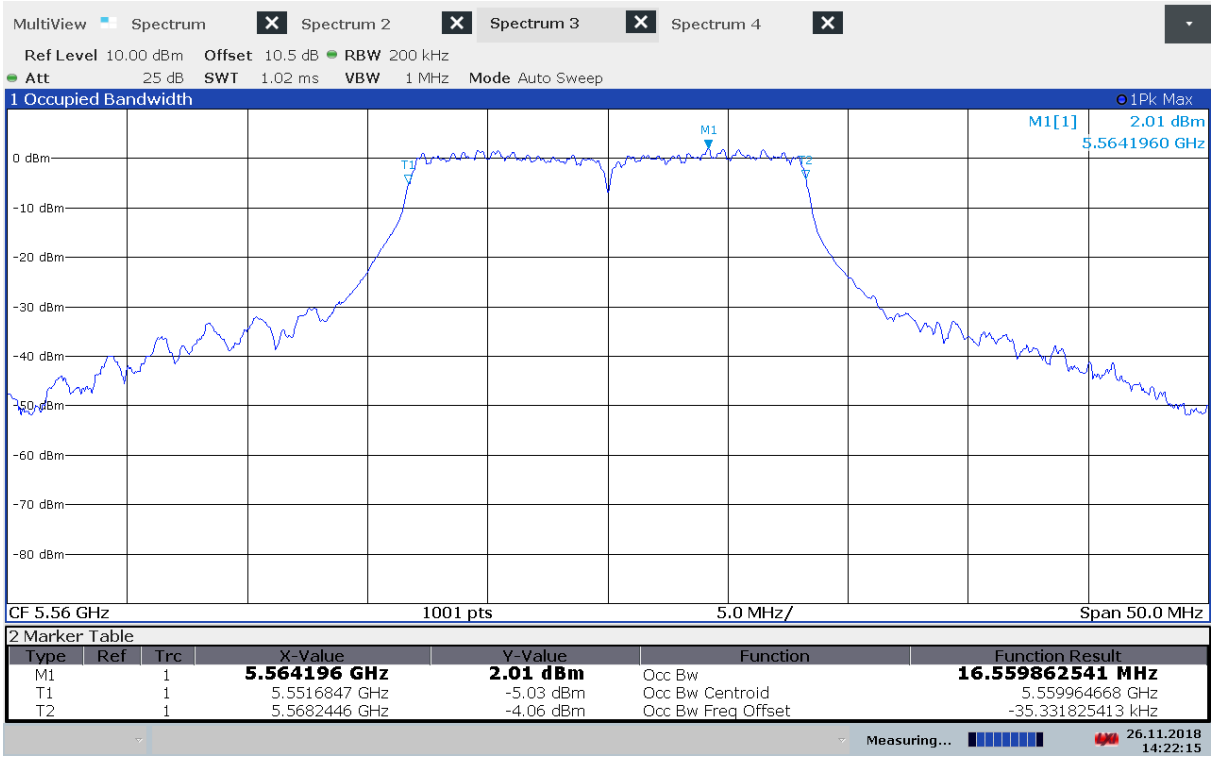
99% Bandwidth, 5500 MHz, 802.11a 6Mbps



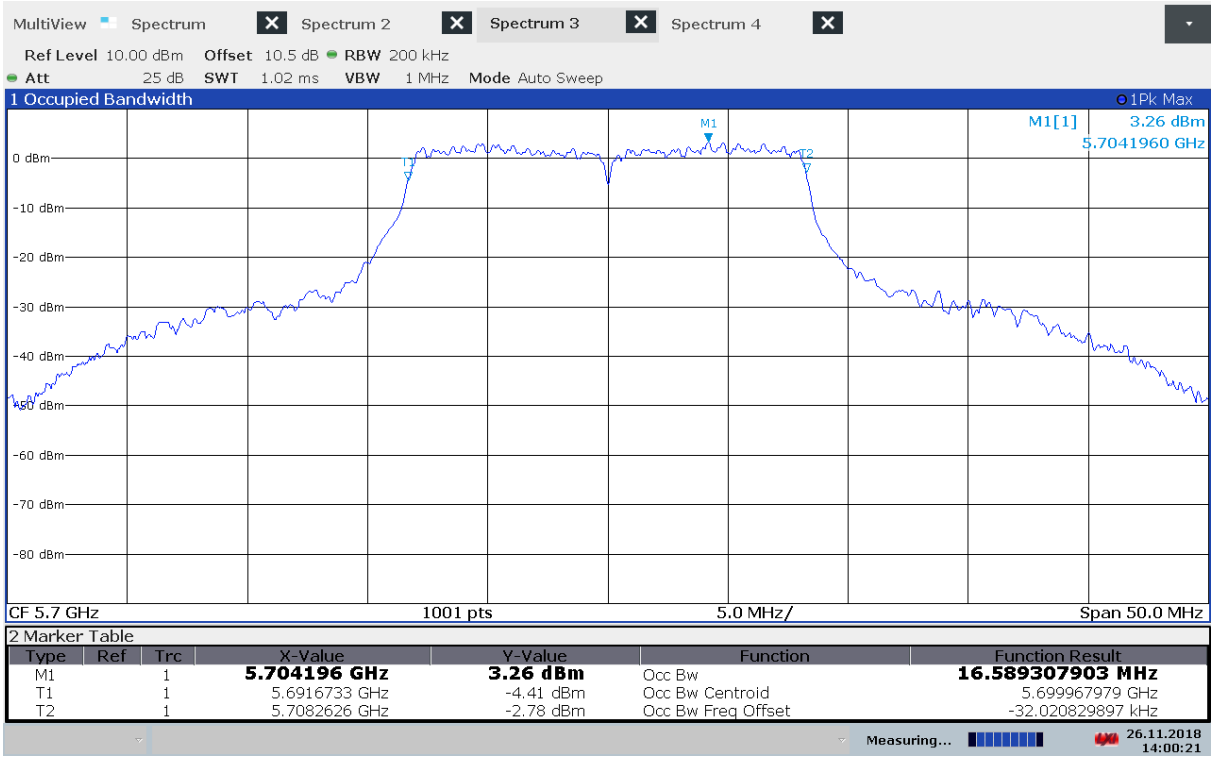
99% Bandwidth, 5500 MHz, 802.11n MCS0



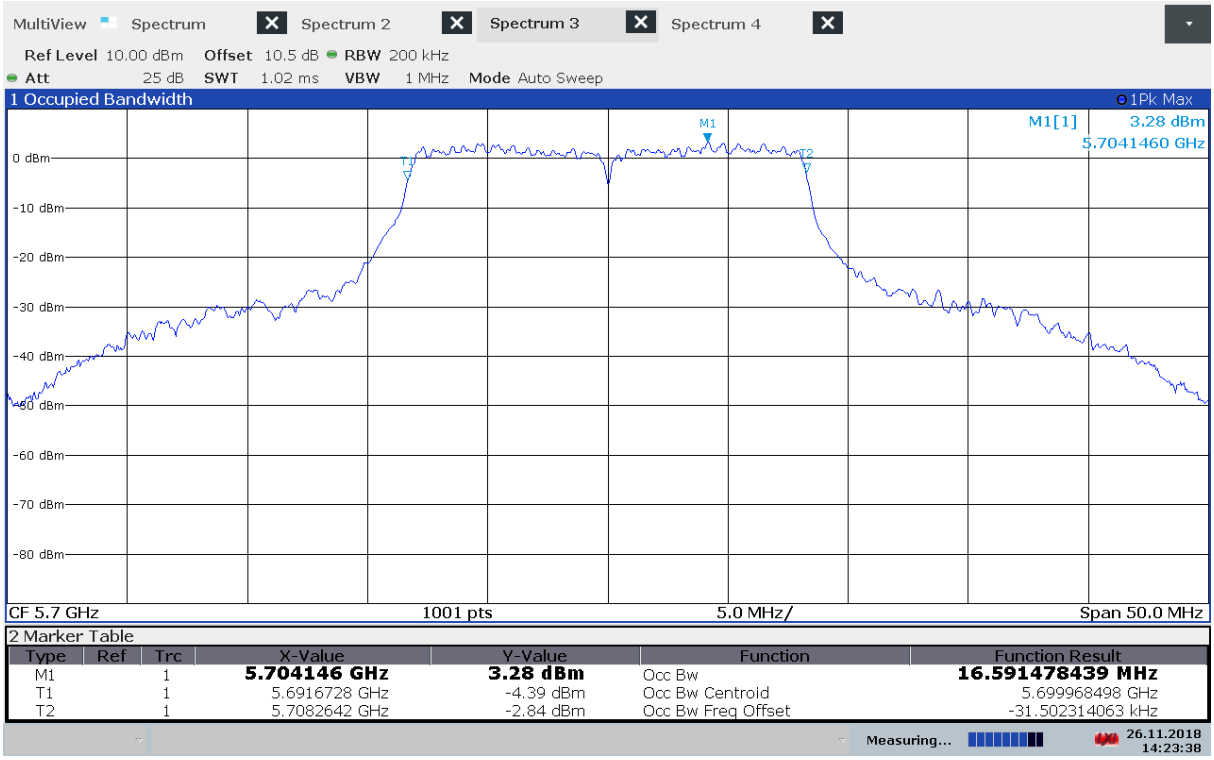
99% Bandwidth, 5560 MHz, 802.11a 6Mbps



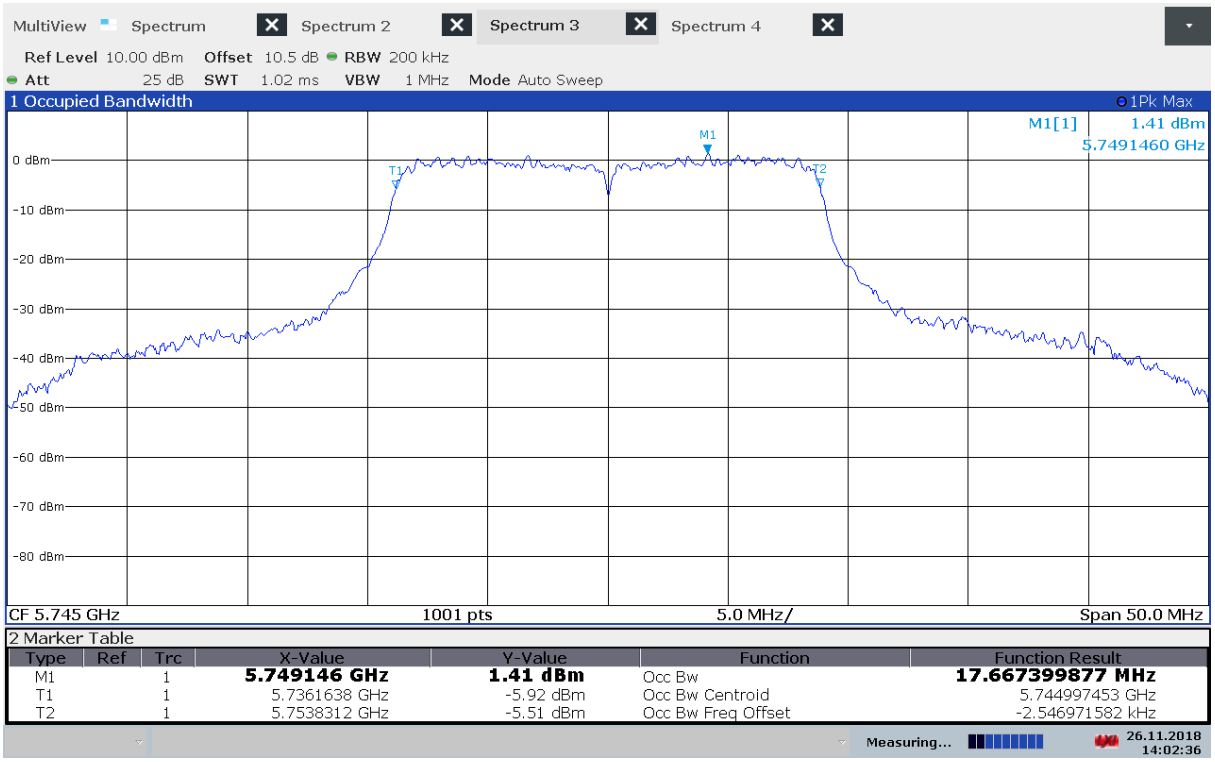
99% Bandwidth, 5560 MHz, 802.11n MCS0



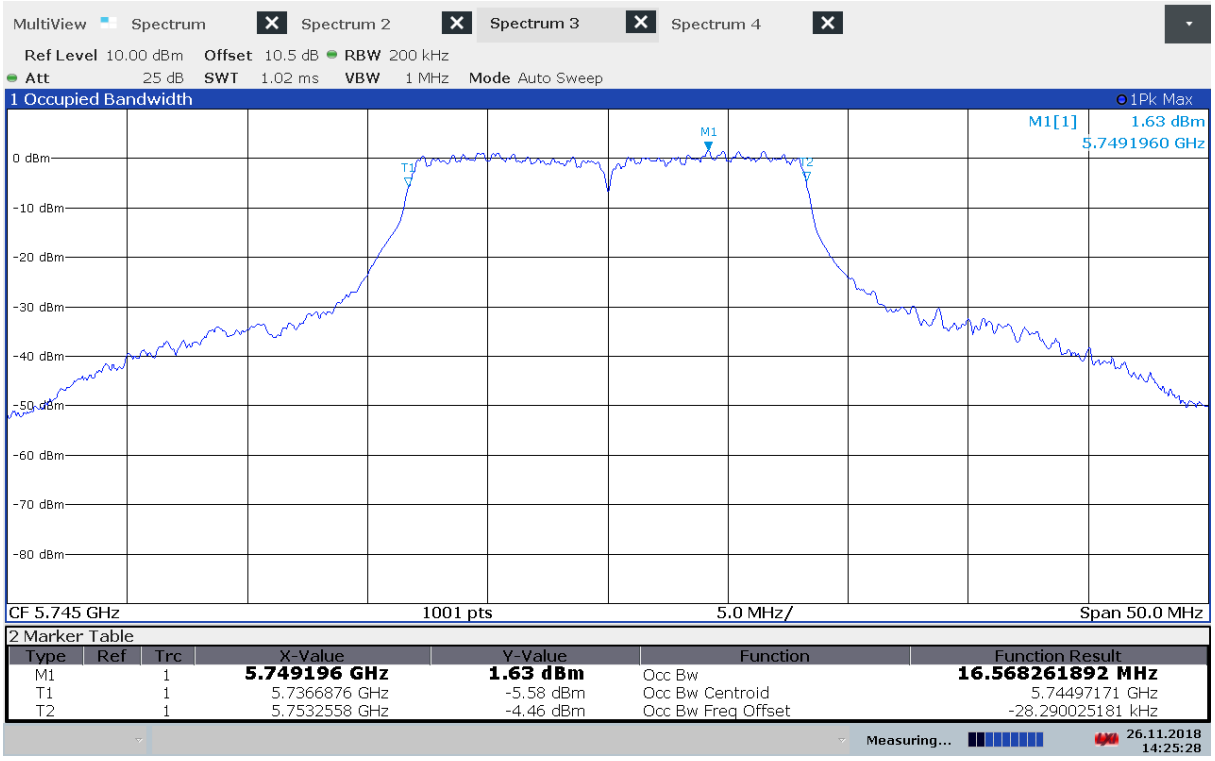
99% Bandwidth, 5700 MHz, 802.11a 6Mbps



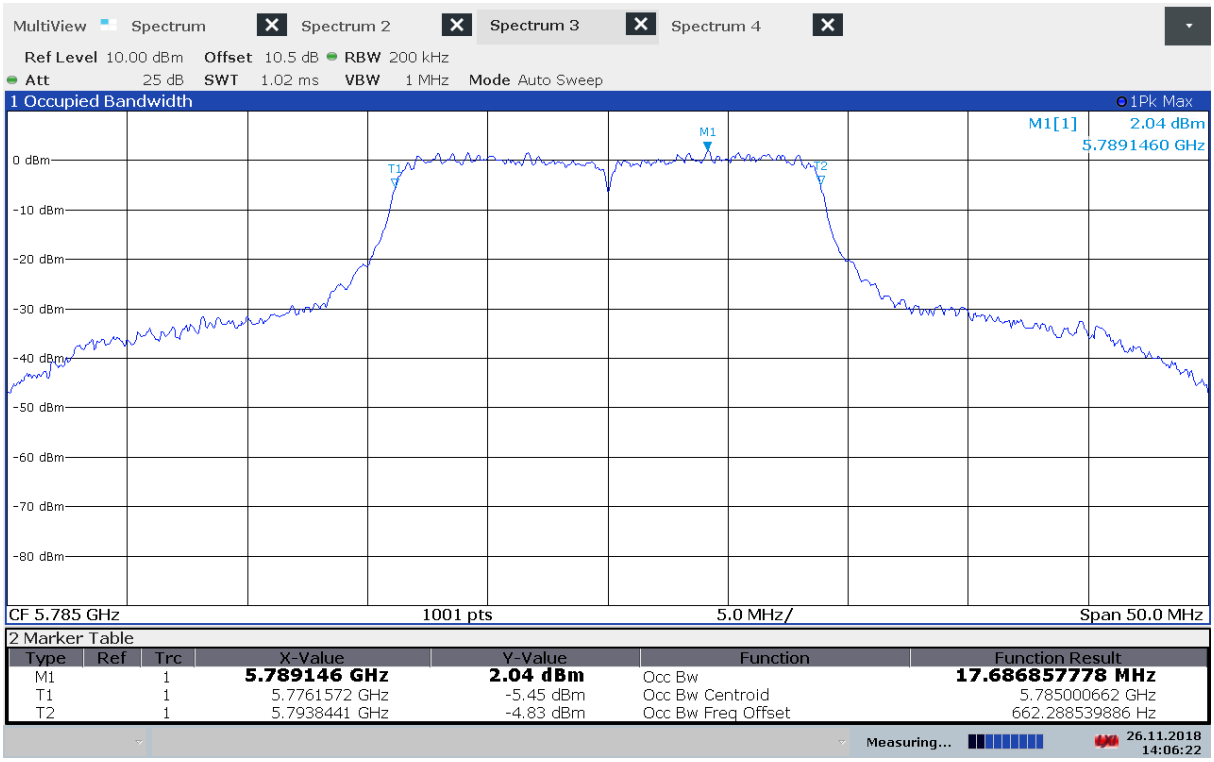
99% Bandwidth, 5700 MHz, 802.11n MCS0



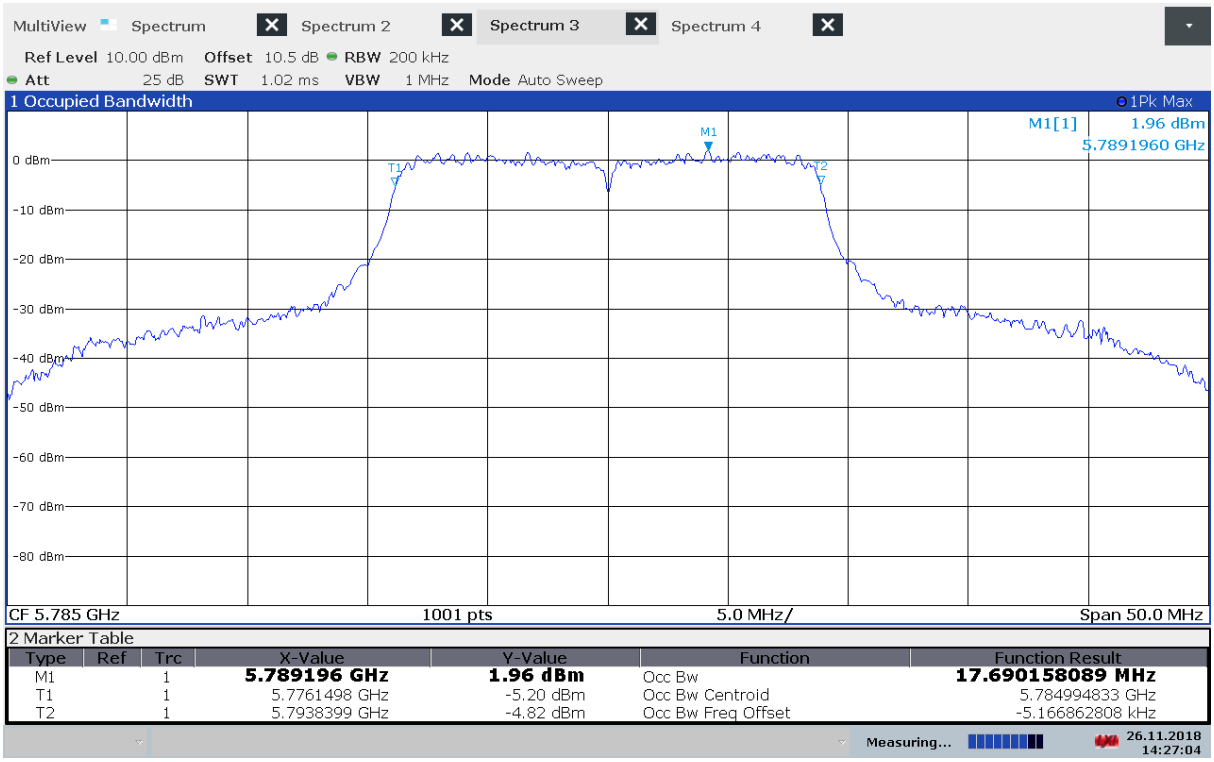
99% Bandwidth, 5745 MHz, 802.11a 6Mbps



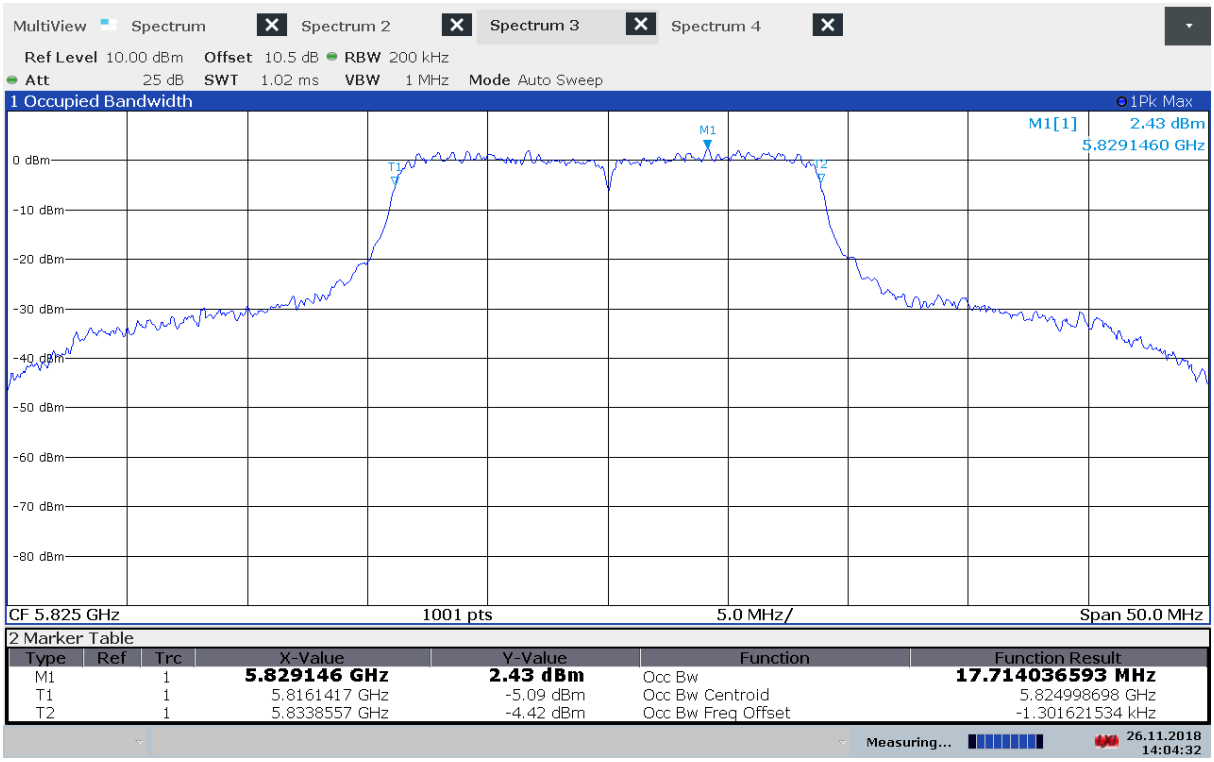
99% Bandwidth, 5745 MHz, 802.11n MCS0



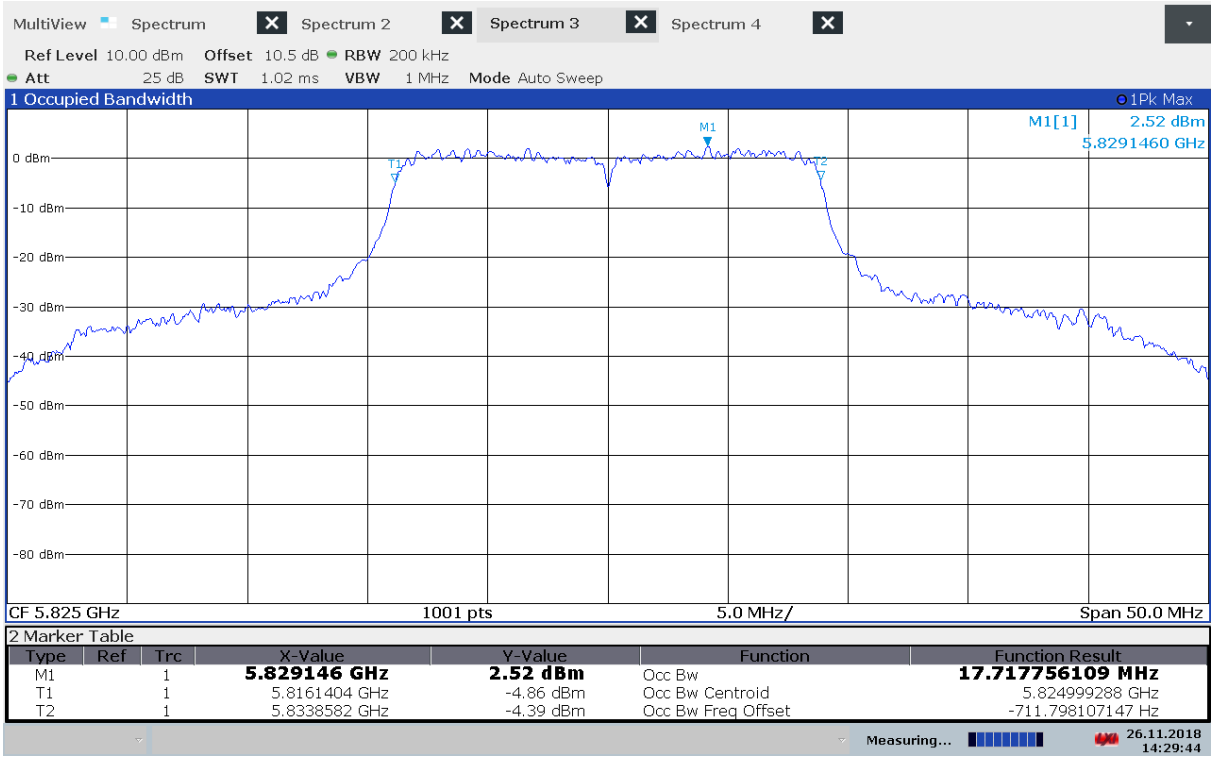
99% Bandwidth, 5785 MHz, 802.11a 6Mbps



99% Bandwidth, 5785 MHz, 802.11n MCS0



99% Bandwidth, 5825 MHz, 802.11a 6Mbps



99% Bandwidth, 5825 MHz, 802.11n MCS0

3.4 6 dB Bandwidth

Para. No.: 15.407(e)

ISED RSS-247, Issue 2, Clause 6.2.4

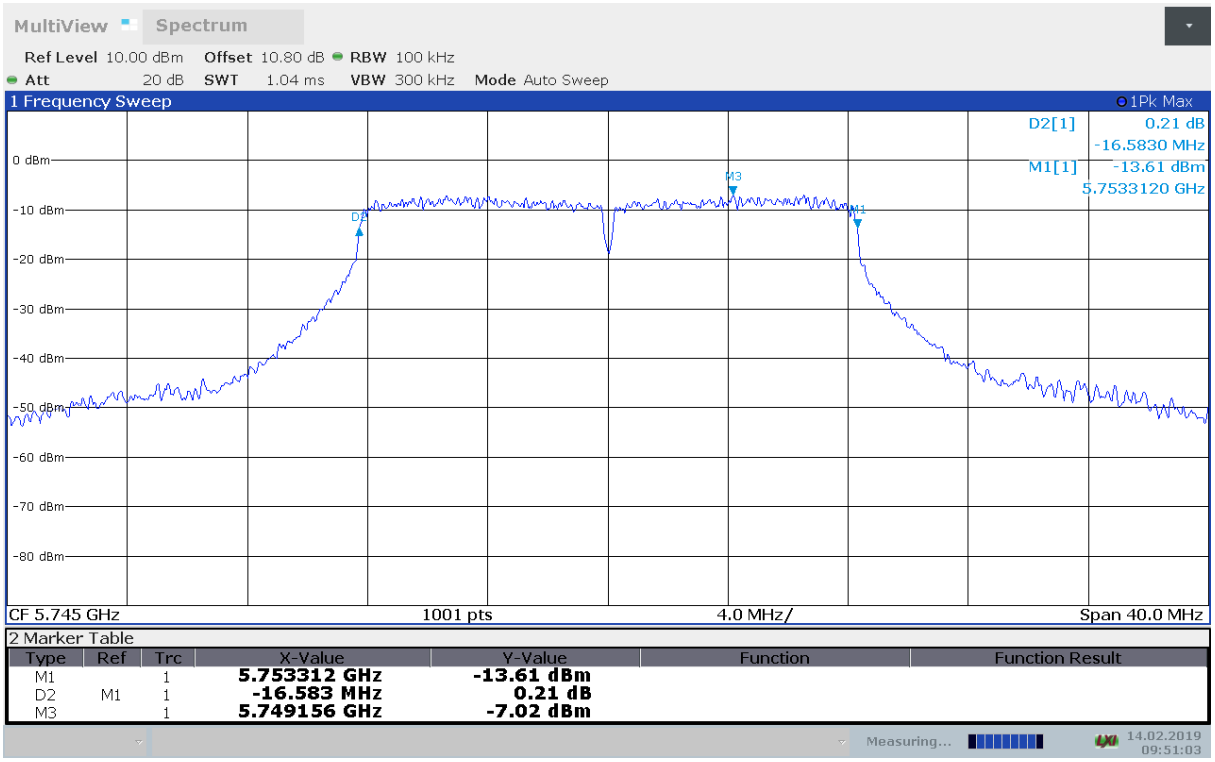
Test Results: Complies

Measurement Data:

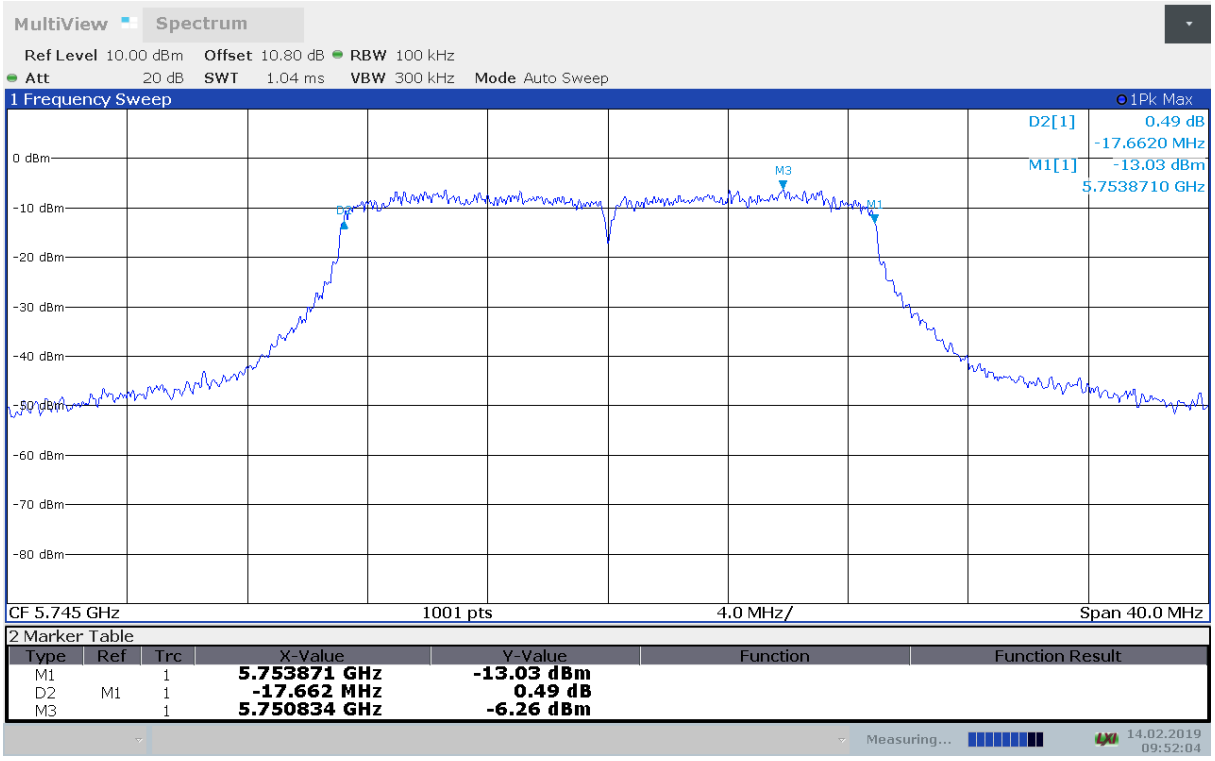
Ch. No.	Nominal Frequency (MHz)	6 dB Bandwidth Measured Values (MHz)	
		802.11a 6Mbps	802.11n MCS0
149	5745	16.6	17.7
157	5785	16.6	17.7
165	5825	16.5	17.7

Limit:

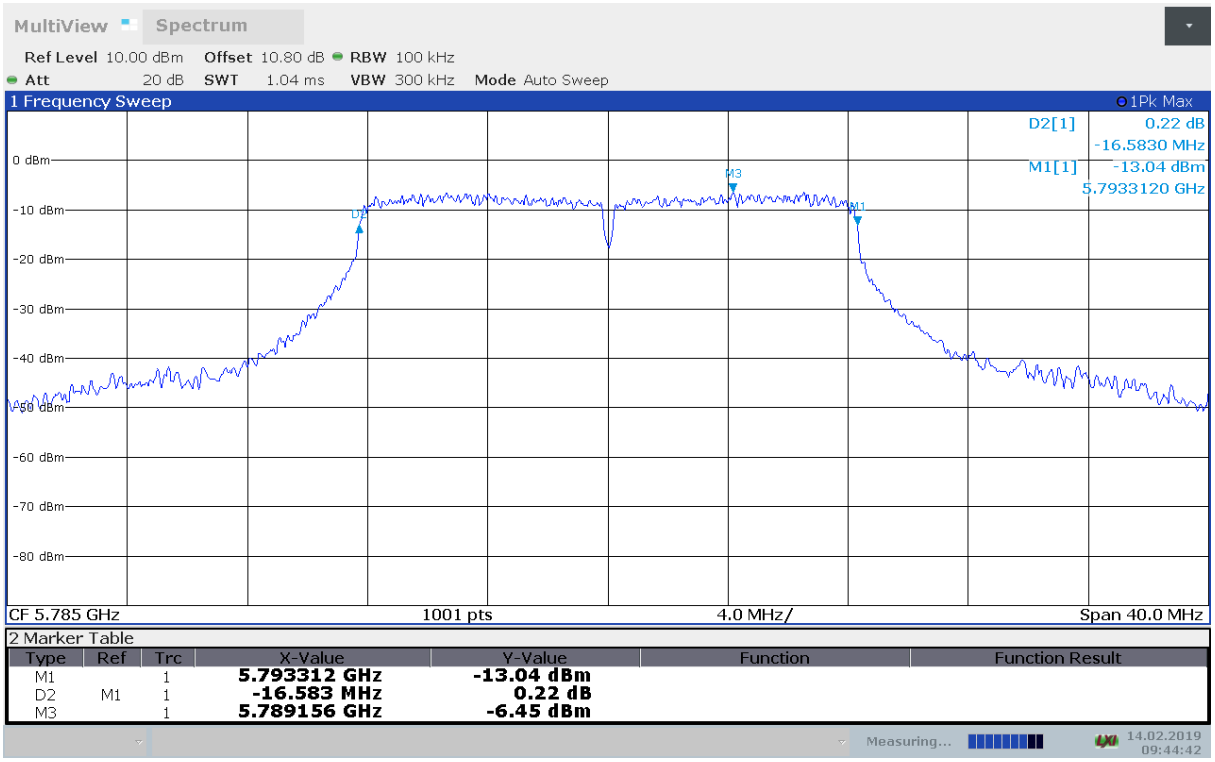
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.



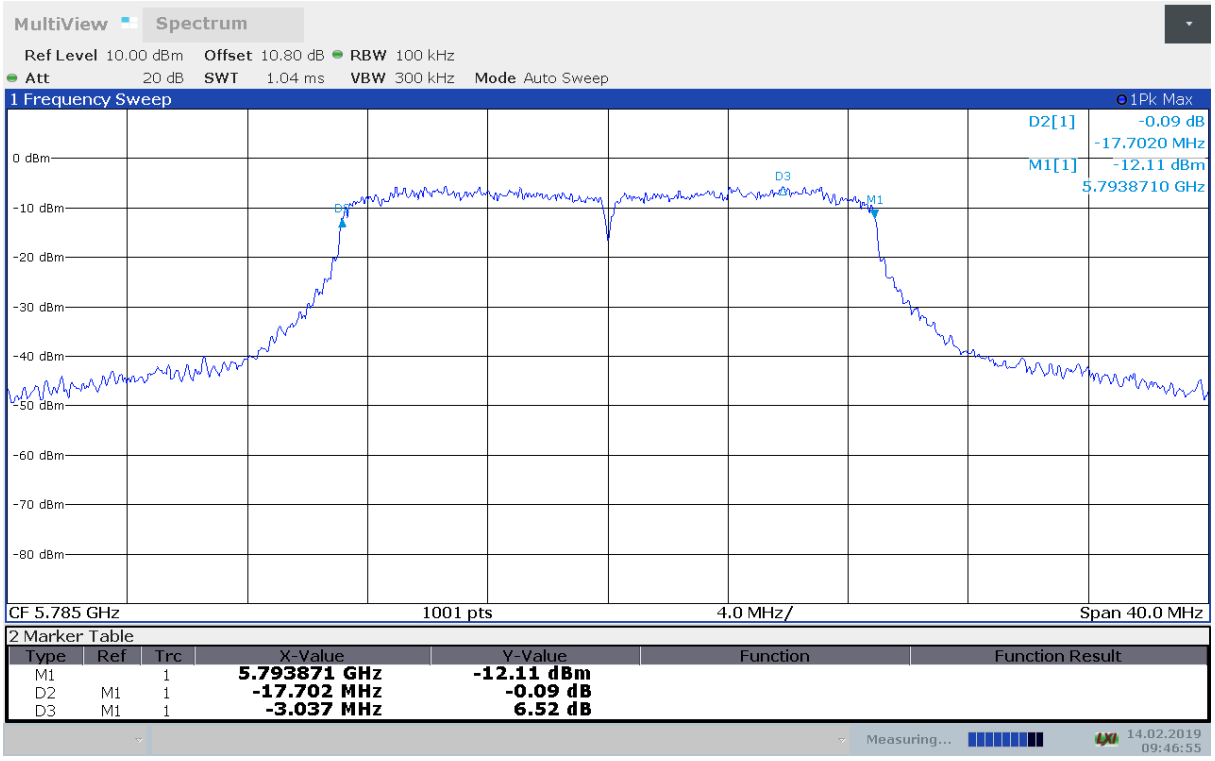
6 dB Bandwidth, 5745 MHz, 802.11a 6Mbps



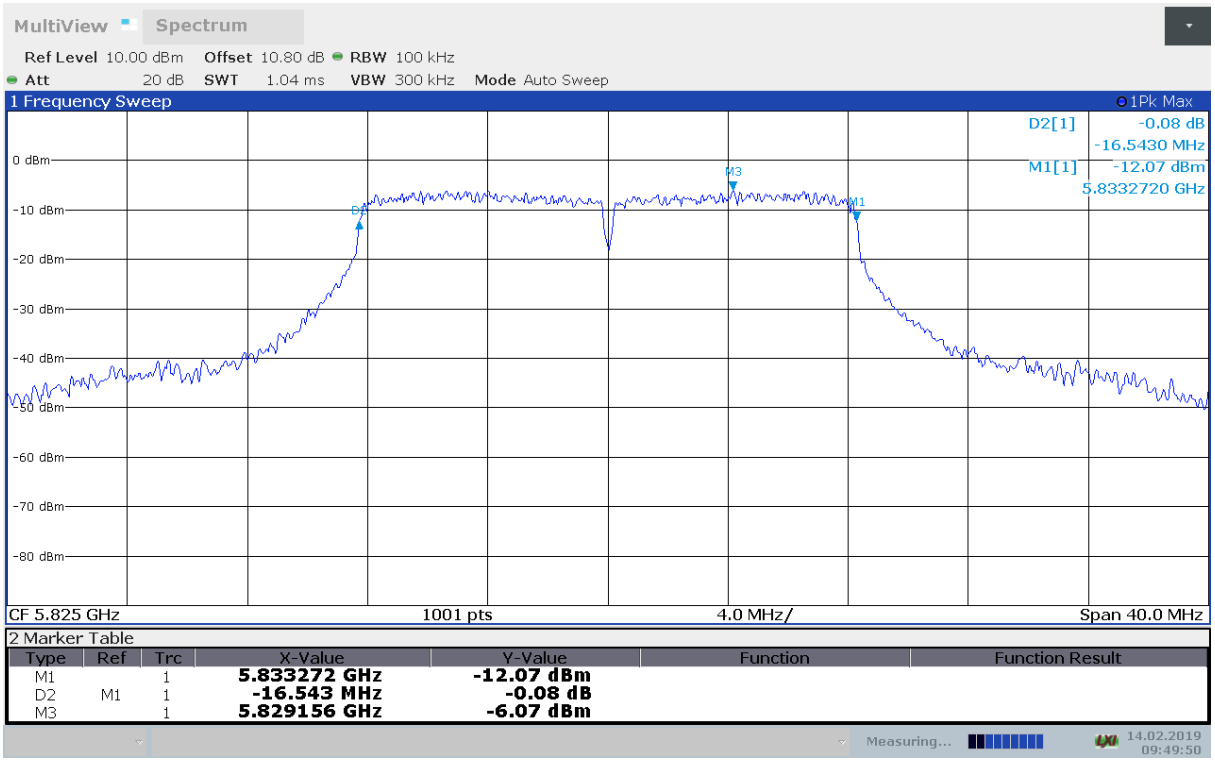
6 dB Bandwidth, 5745 MHz, 802.11n MCS0



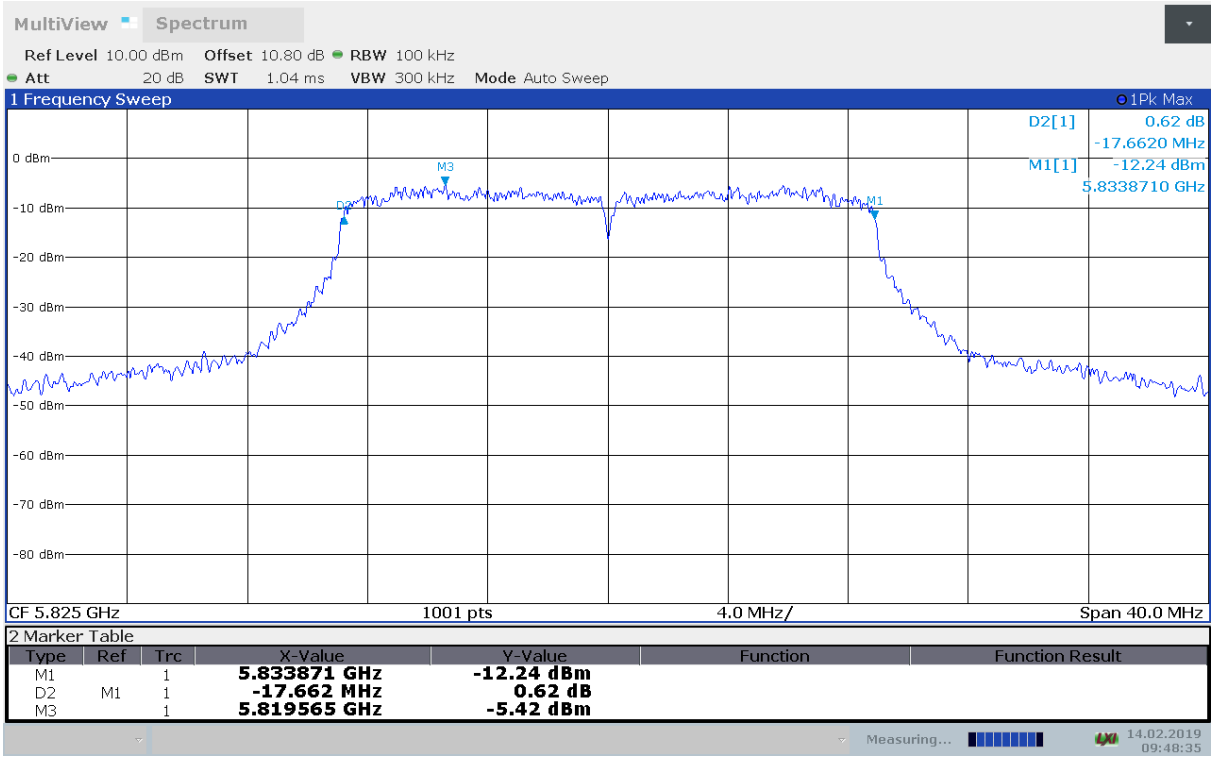
6 dB Bandwidth, 5785 MHz, 802.11a 6Mbps



6 dB Bandwidth, 5785 MHz, 802.11n MCS0



6 dB Bandwidth, 5825 MHz, 802.11a 6Mbps



6 dB Bandwidth, 5825 MHz, 802.11n MCS0

3.5 Peak Power Spectral Density

FCC 15.407(a)

ISED RSS-247, Issue 2, Clause 6.2

Test Results: Complies

Measurement Data:

Ch. No.	Nominal Frequency (MHz)	Measured Value (dBm)	
		802.11a 6Mbps	802.11n MCS0
36	5180	-0.4	-0.8
44	5220	0.2	0.0
48	5240	0.2	0.3
52	5260	0.4	0.5
60	5300	1.0	0.8
64	5320	1.1	0.8
100	5500	1.5	1.3
112	5560	2.2	2.0
140	5700	3.3	3.3
149	5745	-1.5	-1.2
157	5785	-1.1	-1.1
165	5825	-0.5	-0.8

The test was performed using method 2 as described in ANSI C63.10-2013.

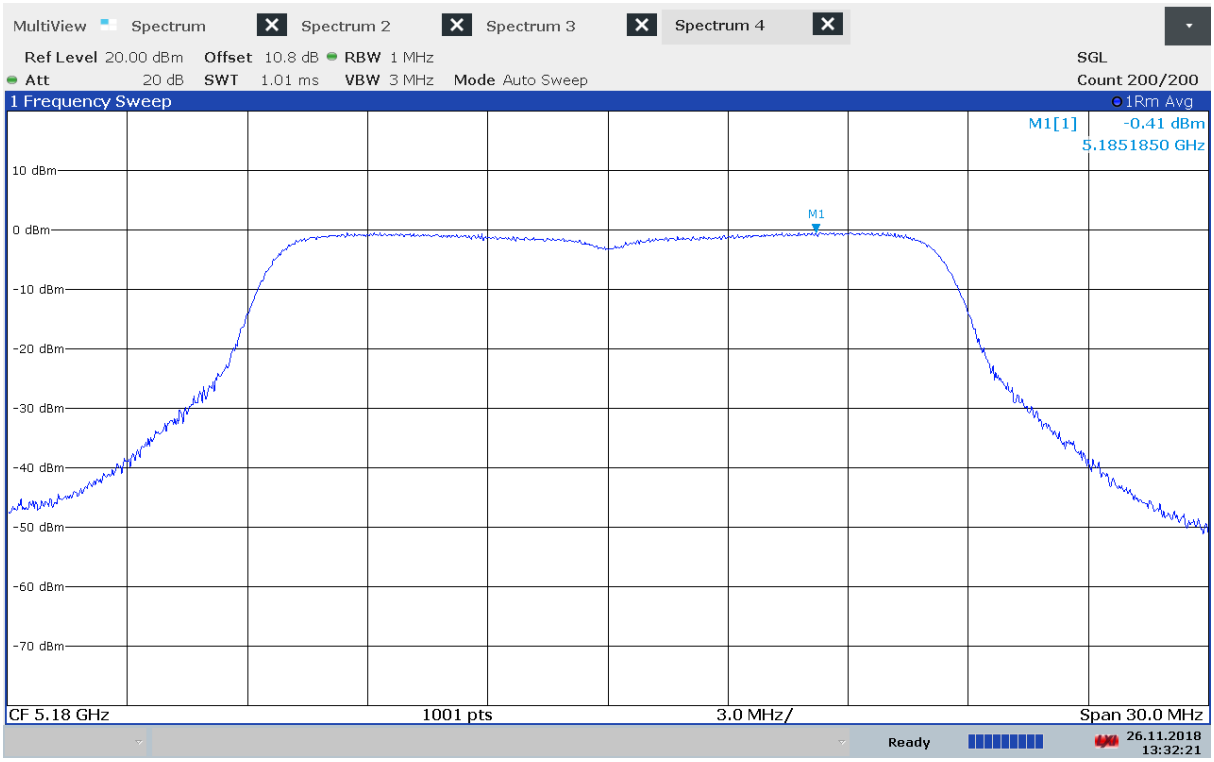
Power method 1 settings were used for the second trace.

Values in U-NII Band 3 has been corrected by -3dB for RBW.

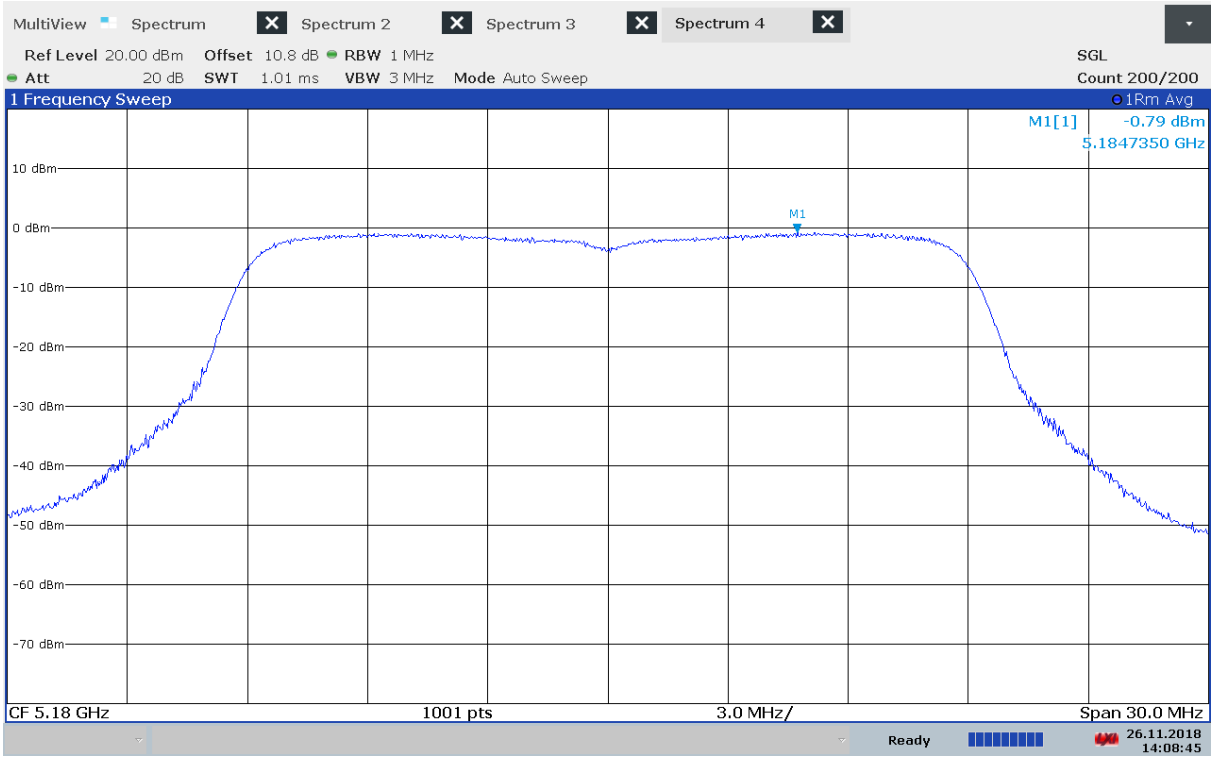
Antenna Gain is less than 6 dBi for all frequencies above.

Limits:

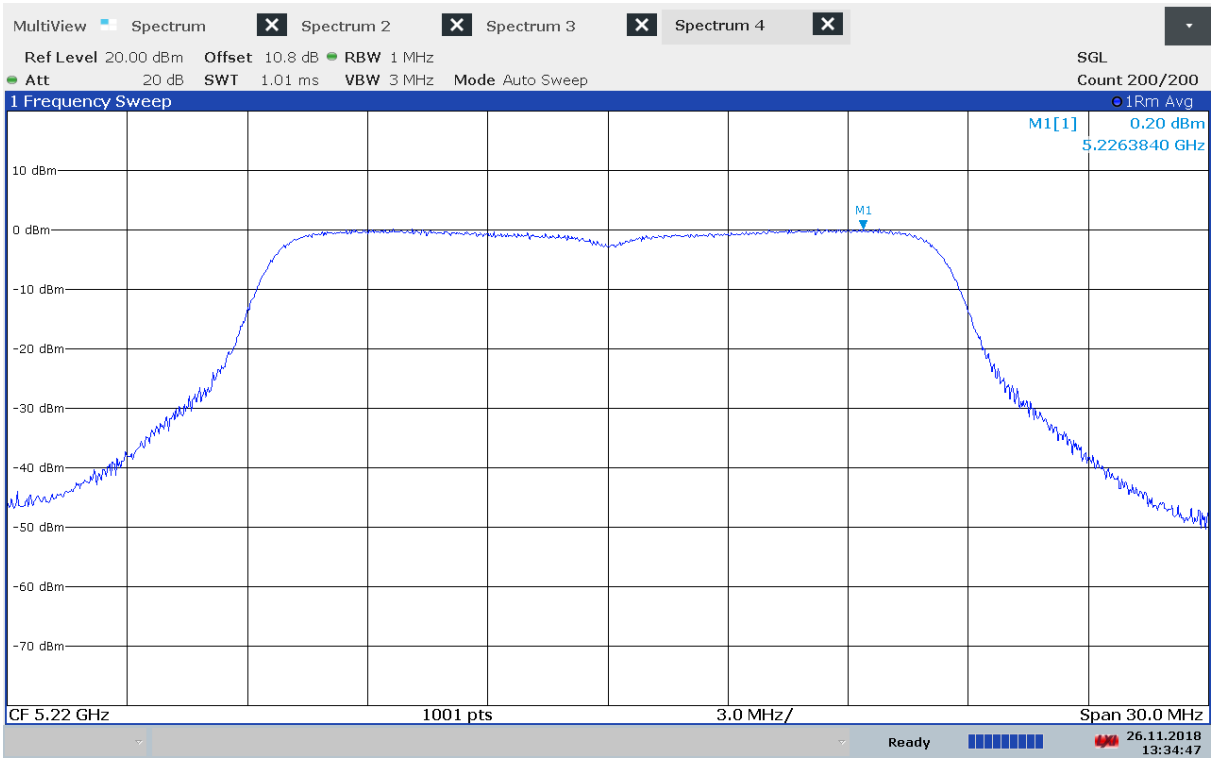
Frequency Band	FCC 15.407(a)	RSS-247, Issue 2
5150 – 5250 MHz	Less than 17 dBm/MHz for master device Less than 11 dBm/MHz for client device	Less than 10 dBm/MHz e.i.r.p. (only indoor allowed)
5250 – 5350 MHz	Less than 11 dBm/MHz	Less than 11 dBm/MHz
5470 – 5725 MHz	Less than 11 dBm/MHz	Less than 11 dBm/MHz
5725 – 5825 MHz	Less than 30 dBm/500kHz	Less than 30 dBm/500kHz
	If Antenna Gain is more than 6 dBi the limit above is reduced by the amouth exceeding 6 dBi	



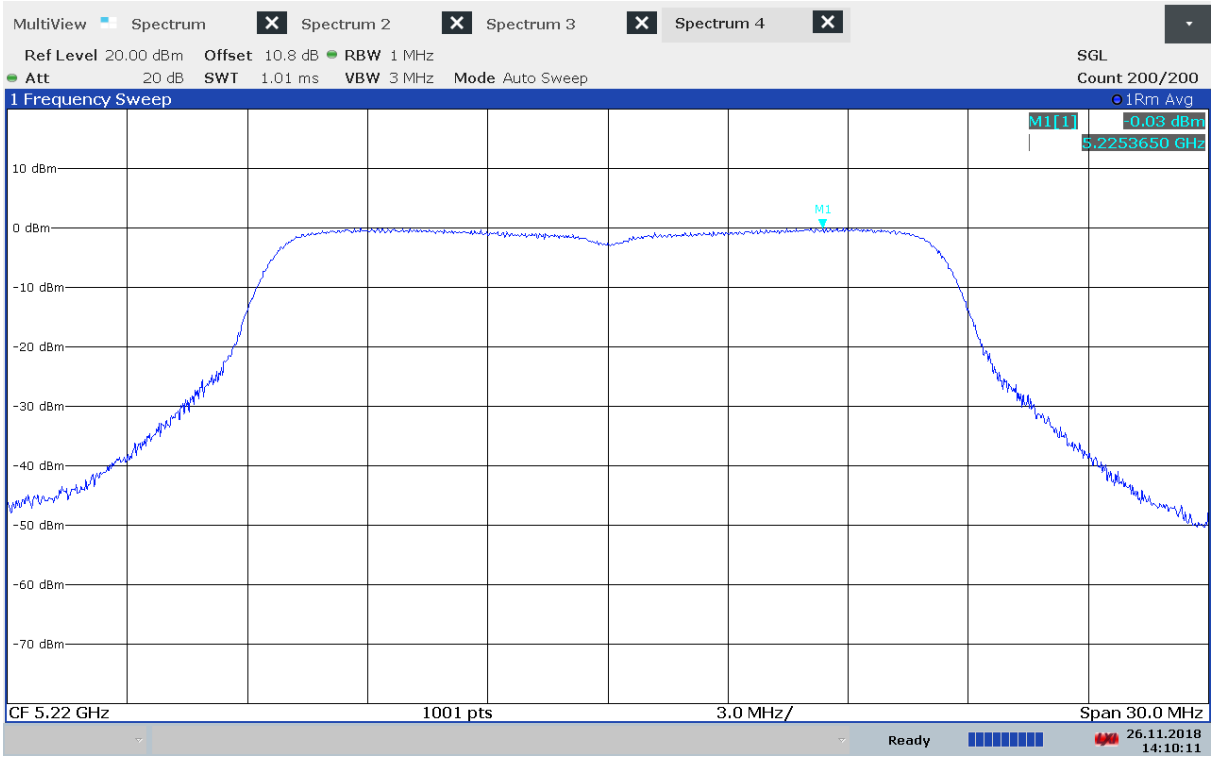
Power Spectral Density, 5180 MHz, 802.11a - 6Mbps, Method 2



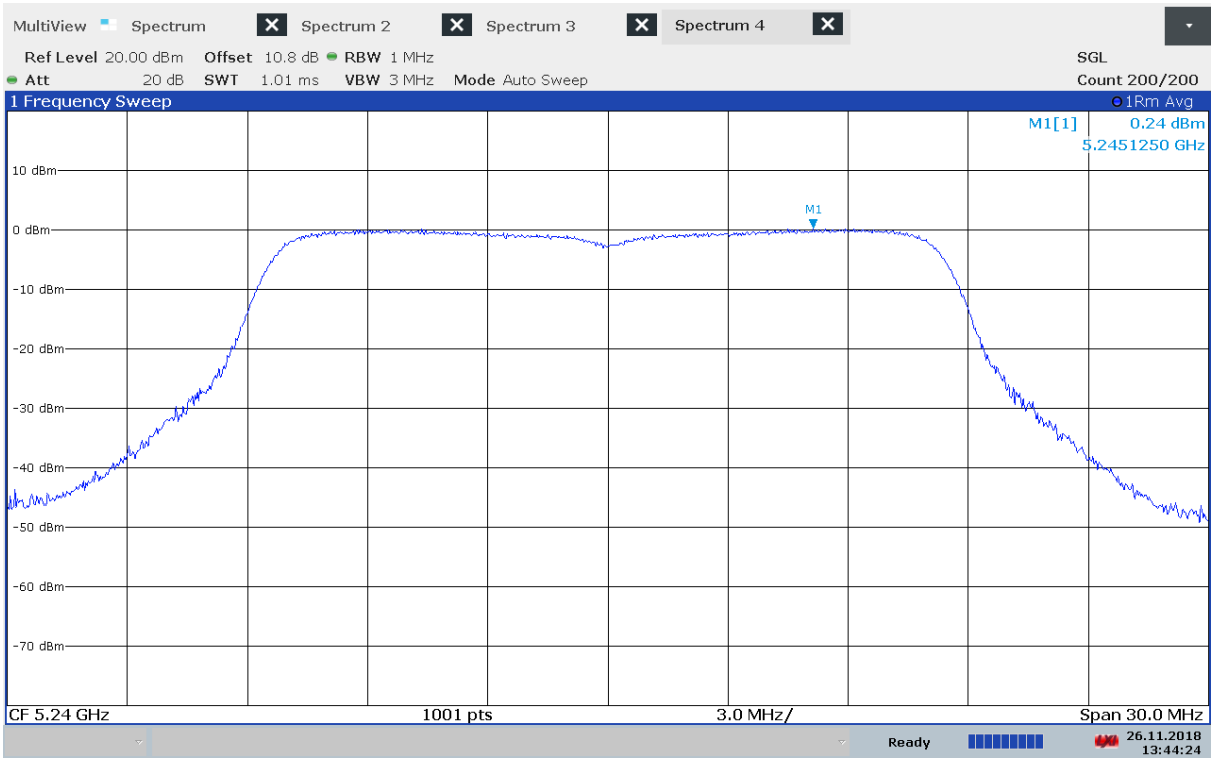
Power Spectral Density, 5180 MHz, 802.11n – MCS0, Method 2



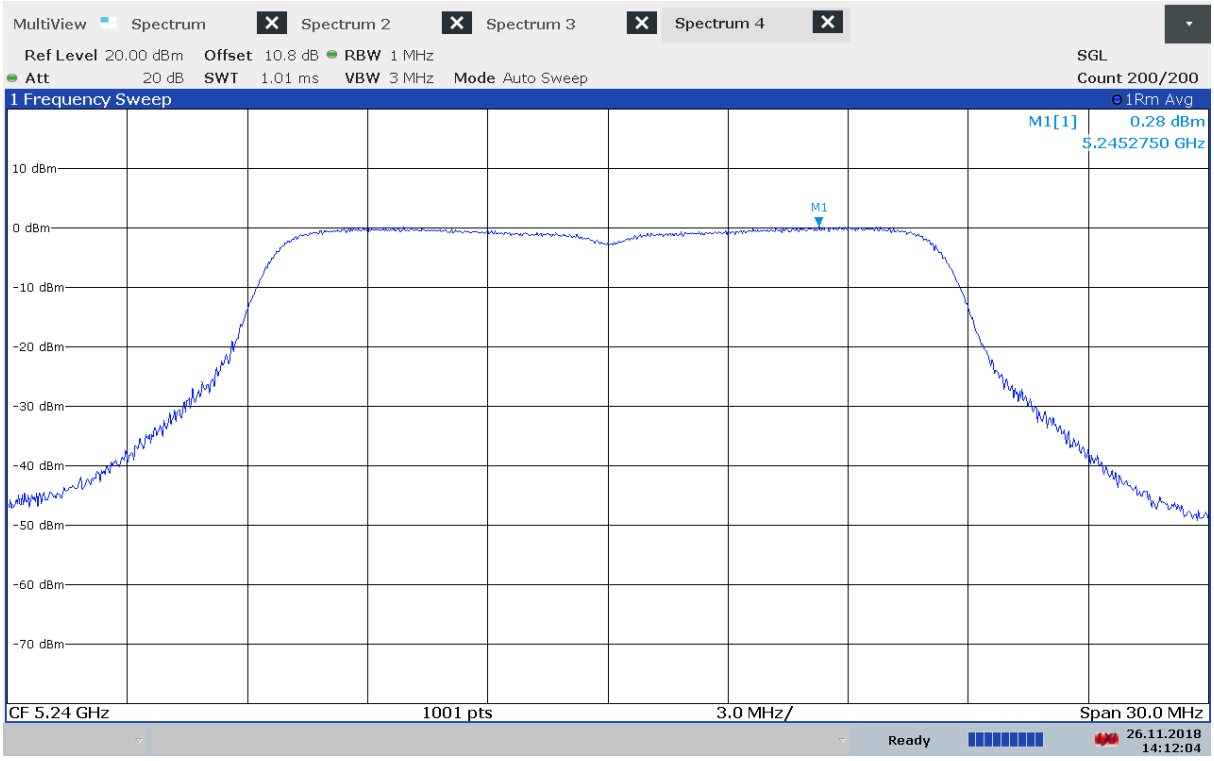
Power Spectral Density, 5220 MHz, 802.11a - 6Mbps, Method 2



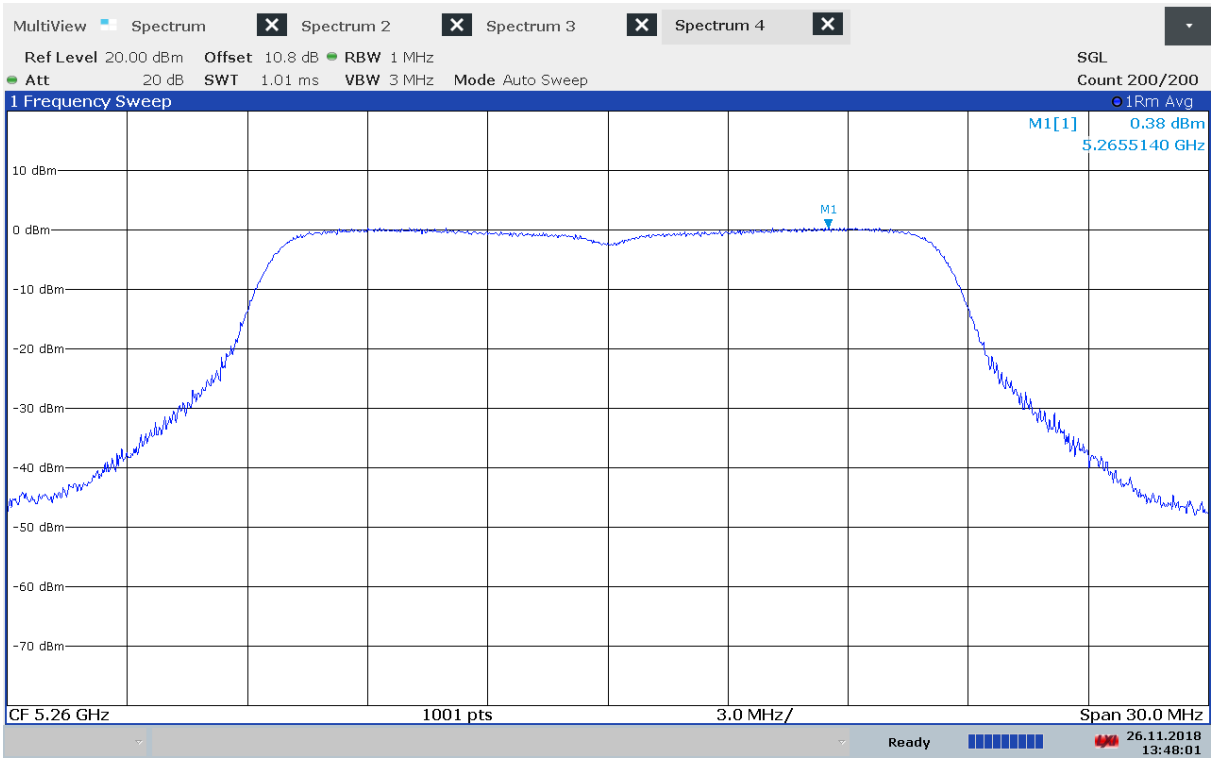
Power Spectral Density, 5220 MHz, 802.11n – MCS0, Method 2



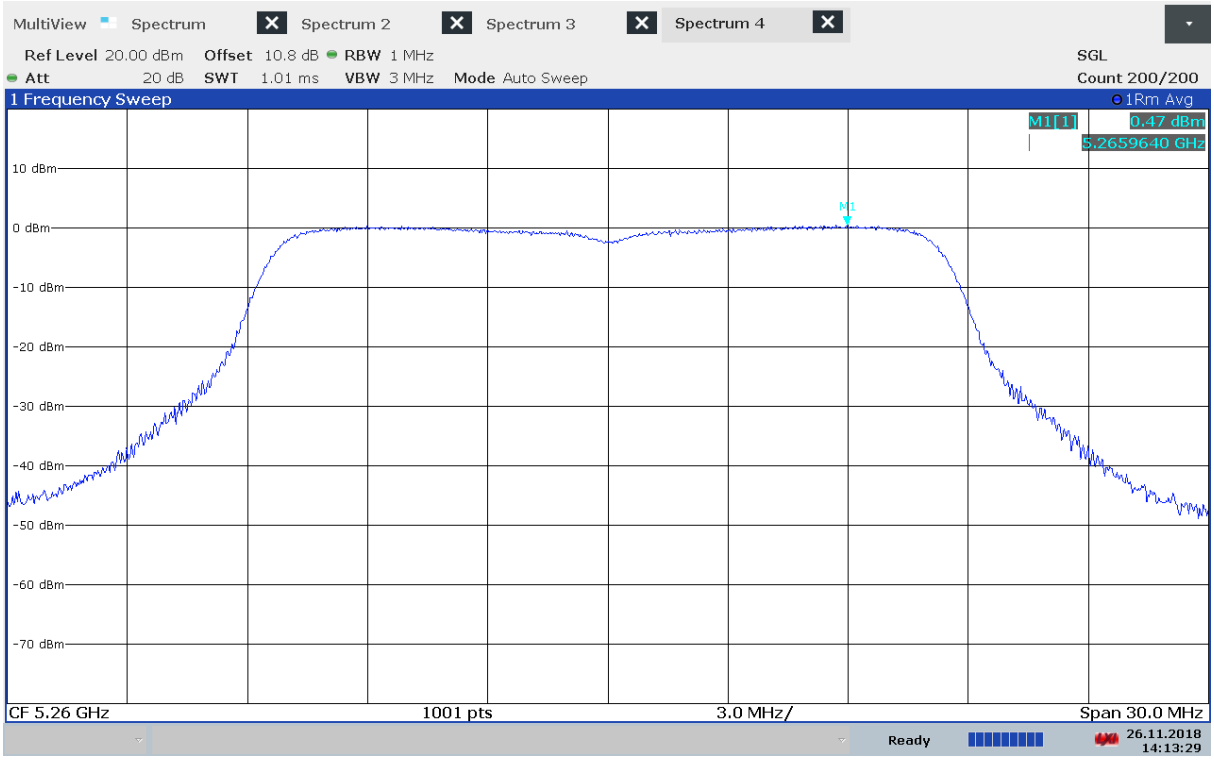
Power Spectral Density, 5240 MHz, 802.11a - 6Mbps, Method 2



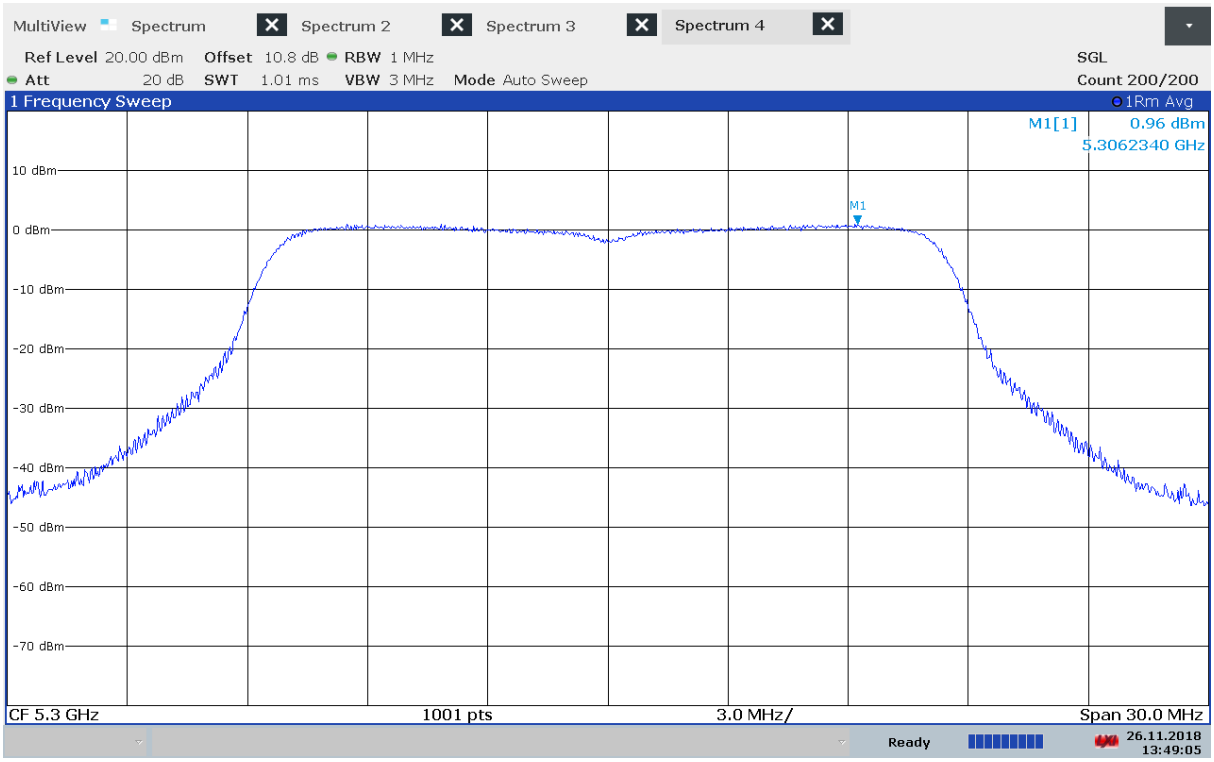
Power Spectral Density, 5240 MHz, 802.11n – MCS0, Method 2



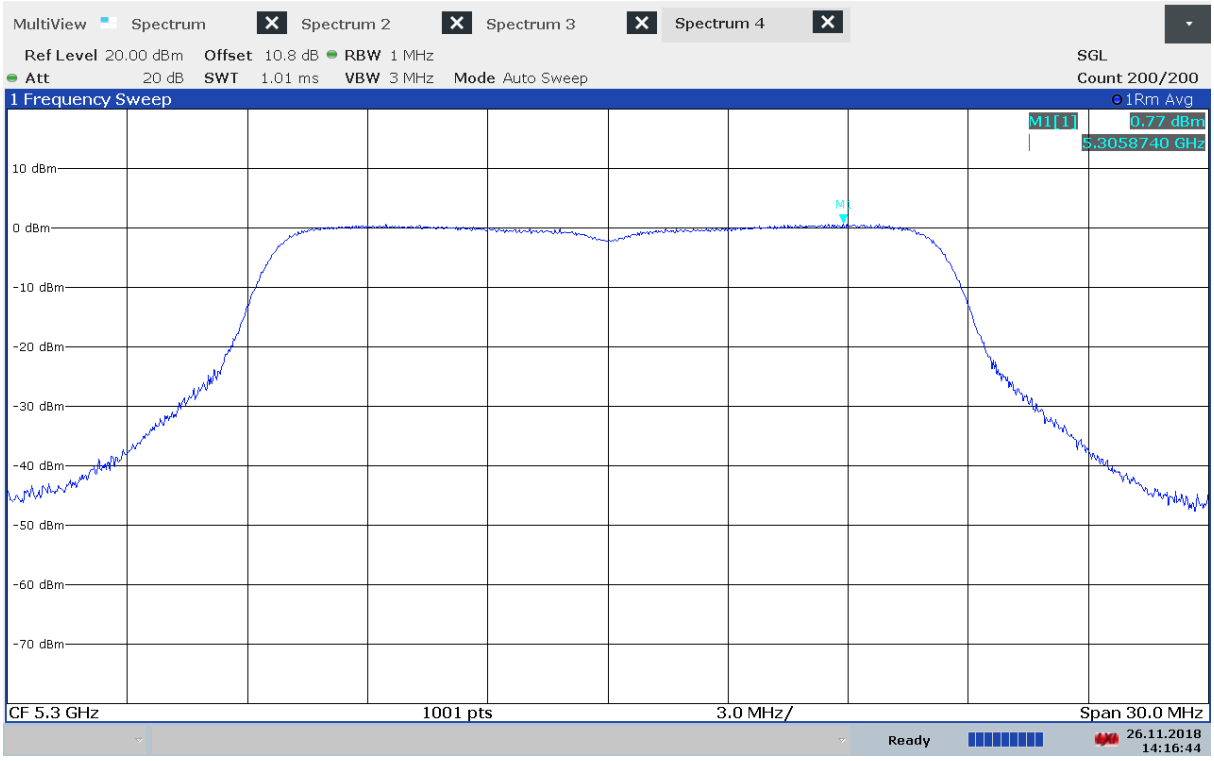
Power Spectral Density, 5260 MHz, 802.11a - 6Mbps, Method 2



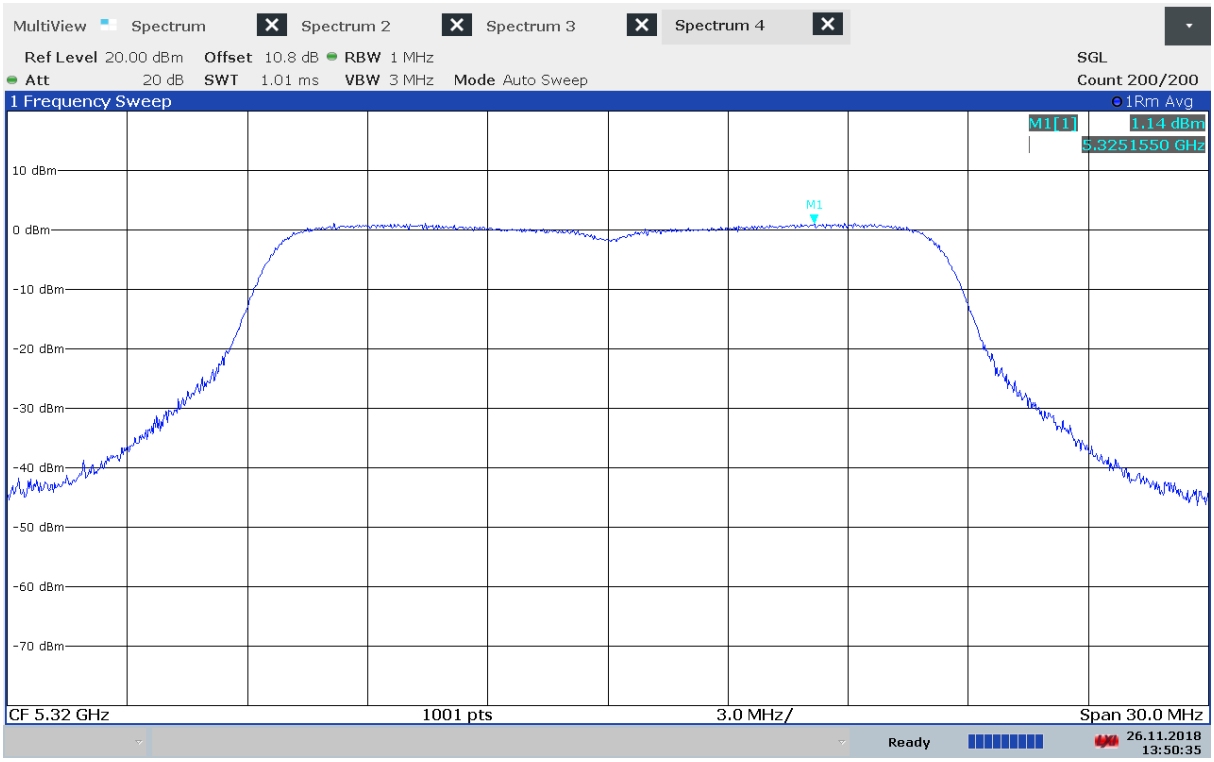
Power Spectral Density, 5260 MHz, 802.11n – MCS0, Method 2



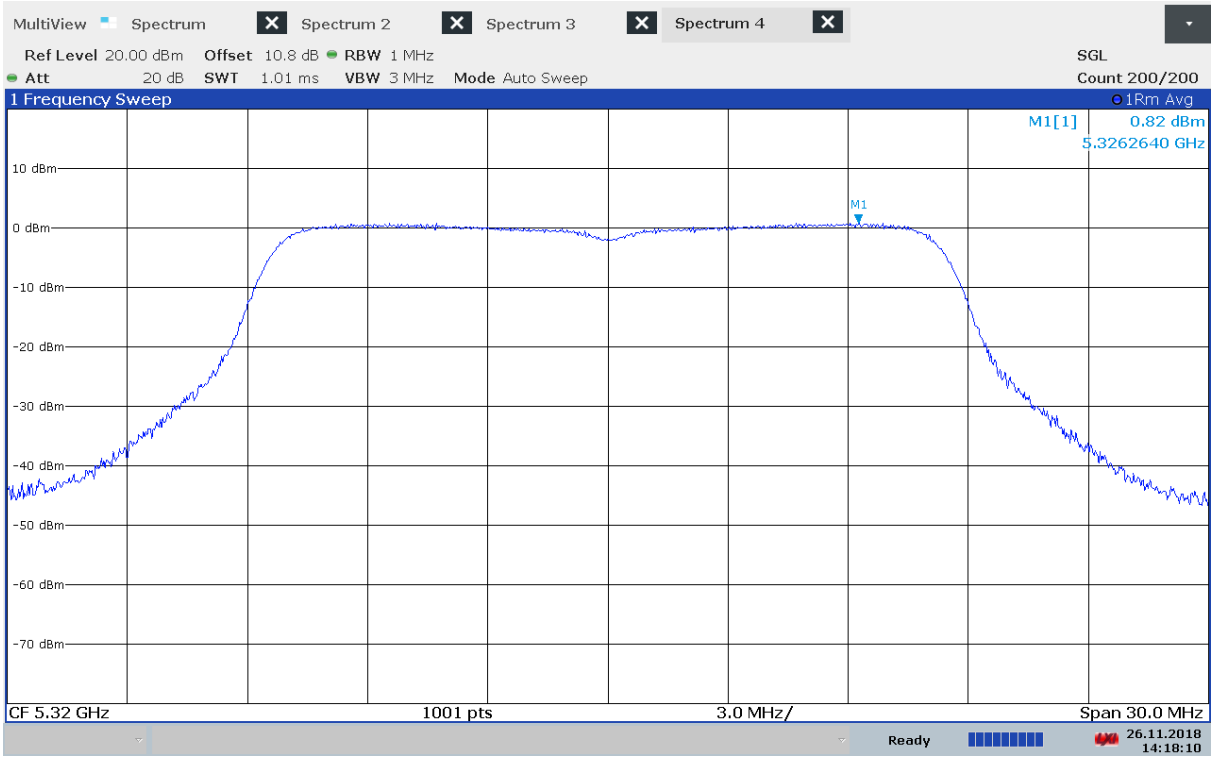
Power Spectral Density, 5300 MHz, 802.11a - 6Mbps, Method 2



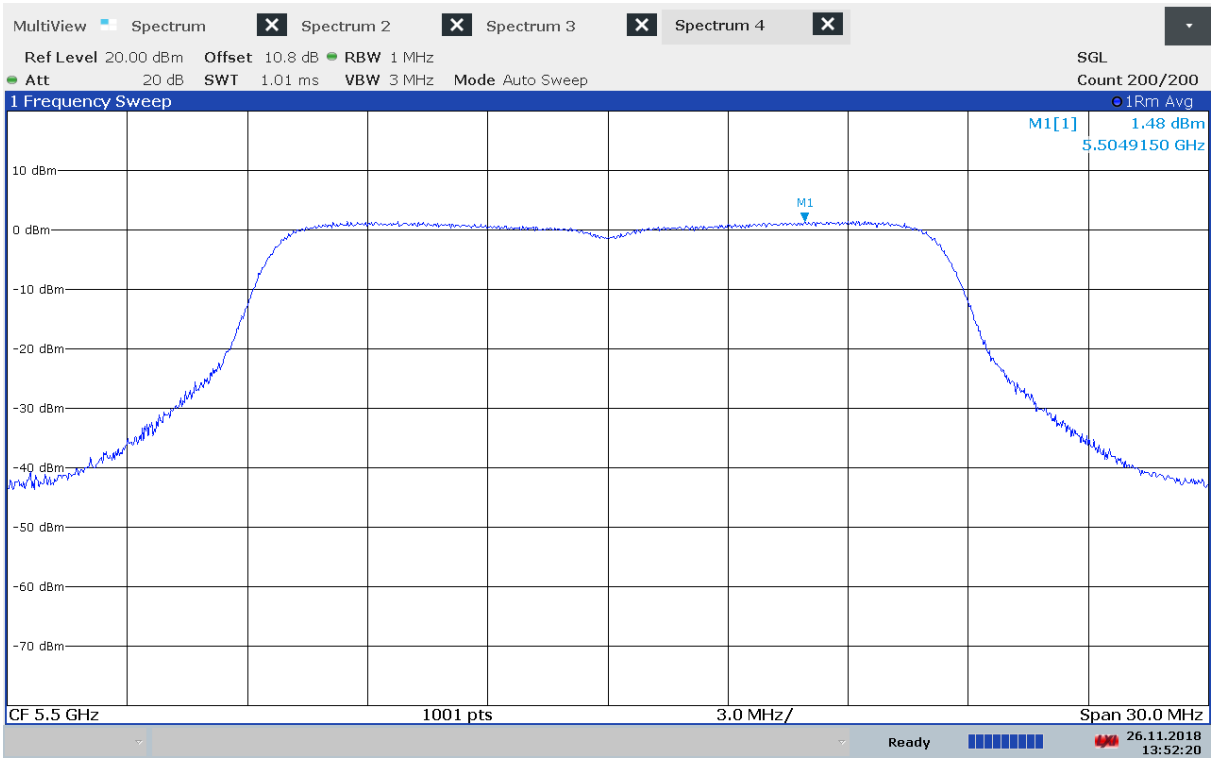
Power Spectral Density, 5300 MHz, 802.11n – MCS0, Method 2



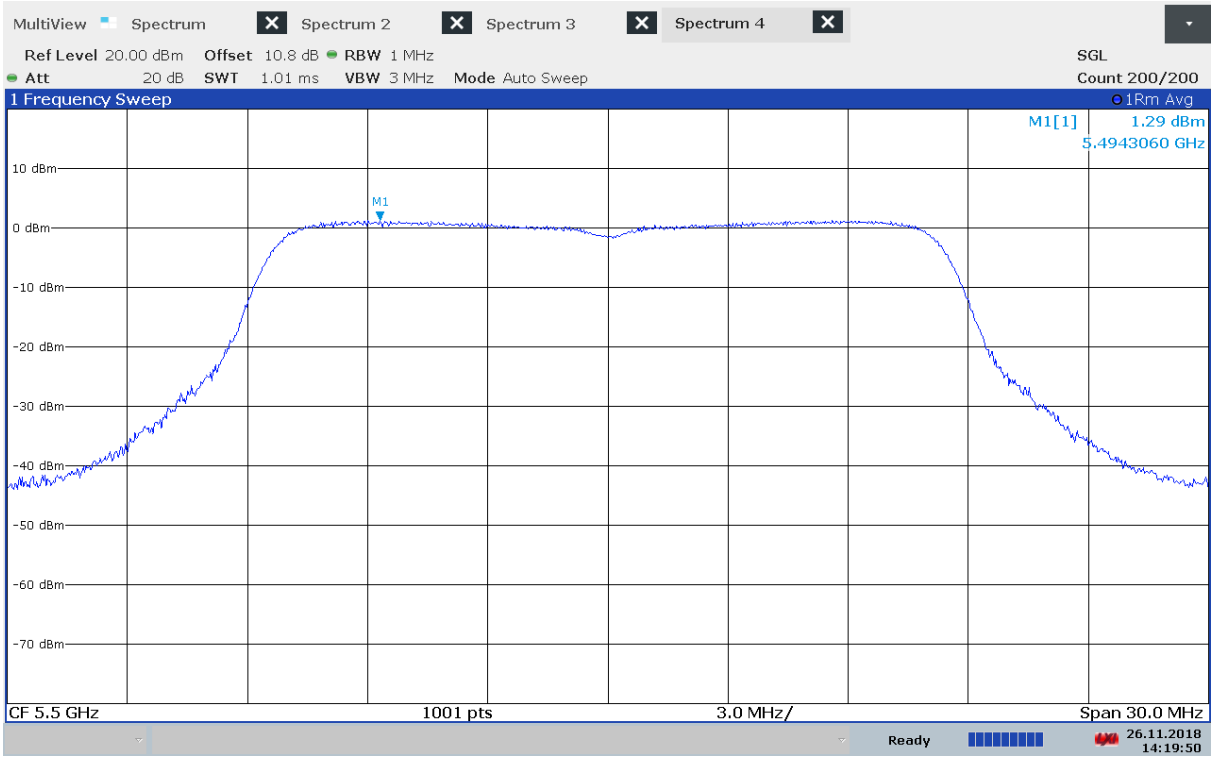
Power Spectral Density, 5320 MHz, 802.11a - 6Mbps, Method 2



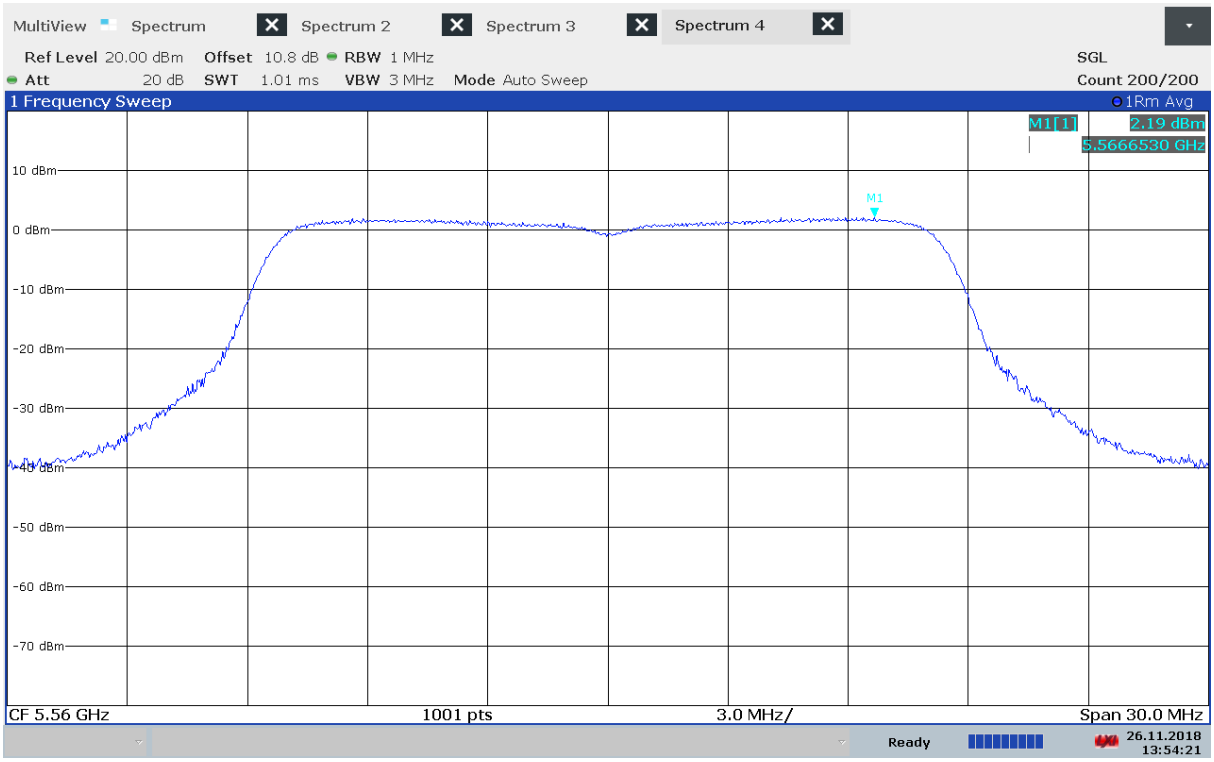
Power Spectral Density, 5320 MHz, 802.11n – MCS0, Method 2



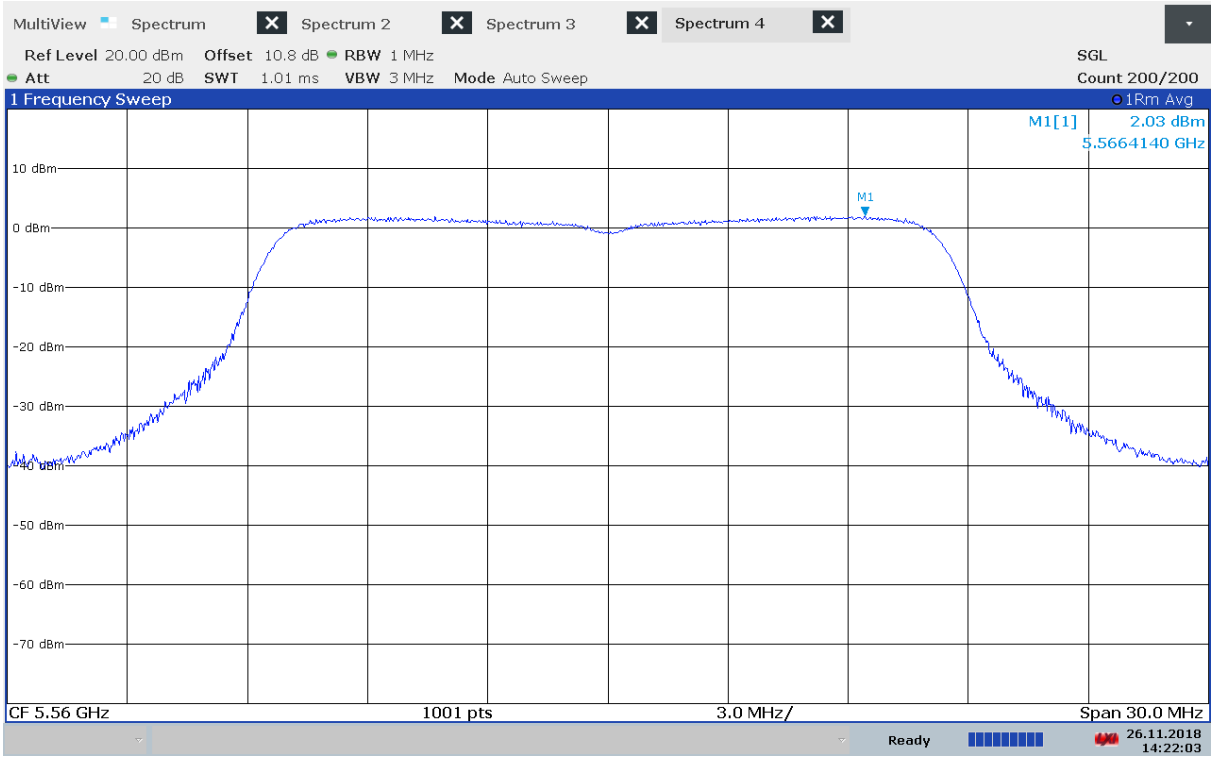
Power Spectral Density, 5500 MHz, 802.11a - 6Mbps, Method 2



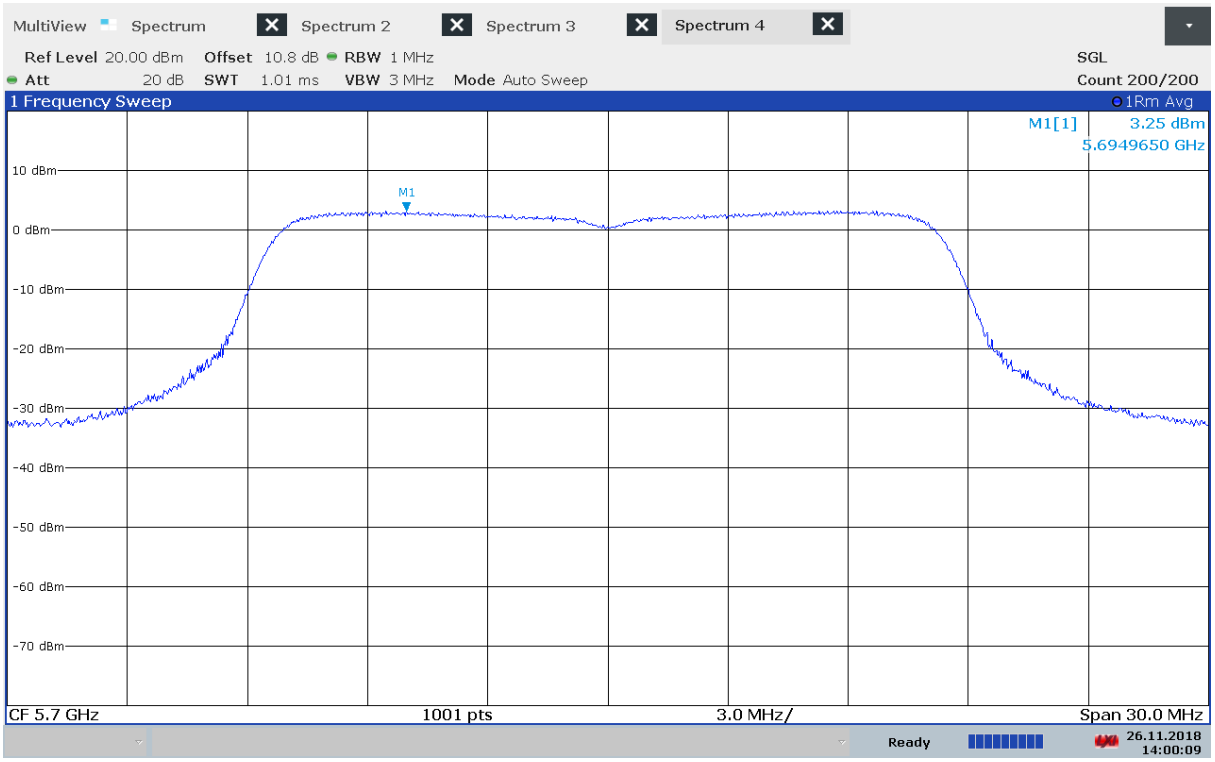
Power Spectral Density, 5500 MHz, 802.11n – MCS0, Method 2



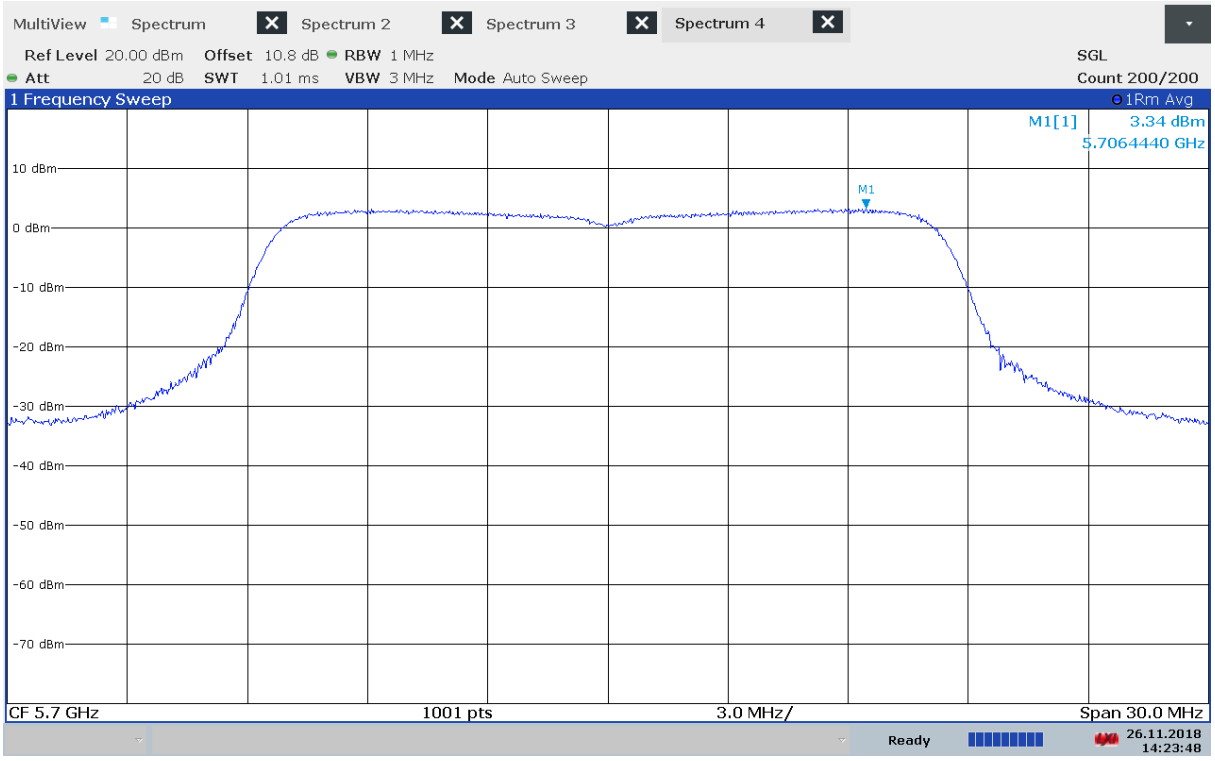
Power Spectral Density, 5560 MHz, 802.11a - 6Mbps, Method 2



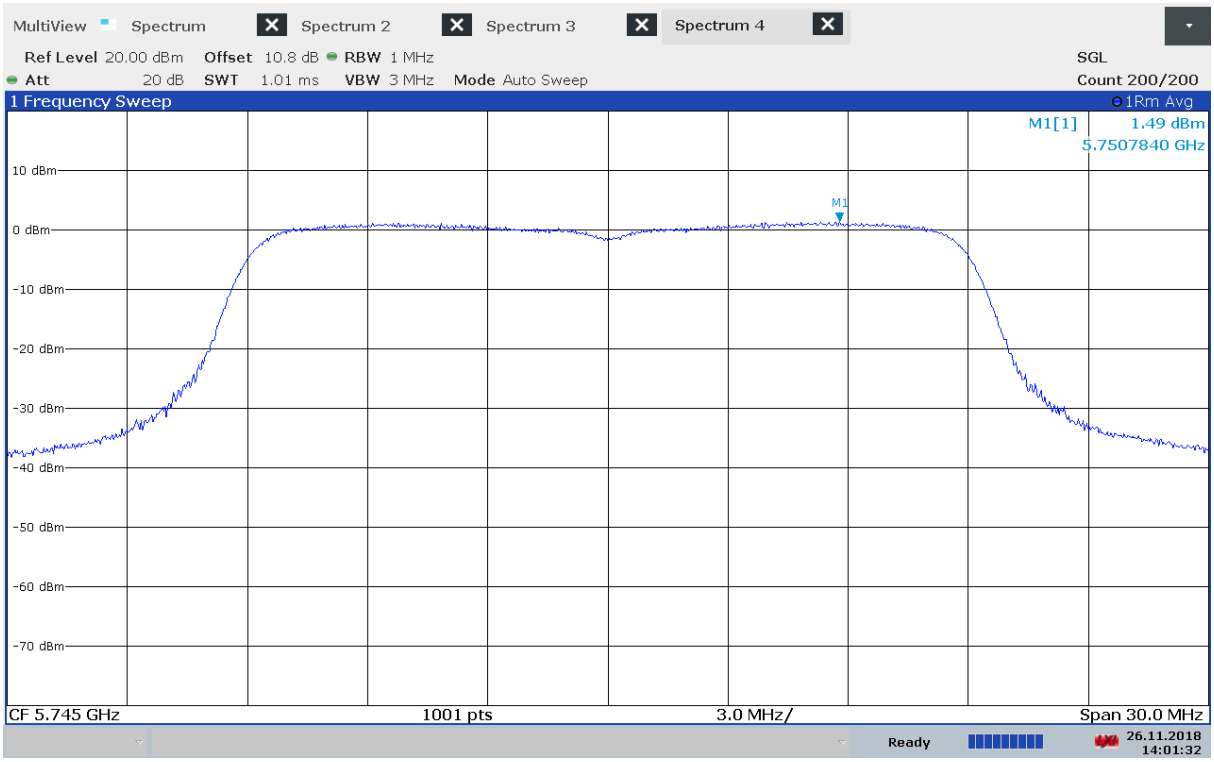
Power Spectral Density, 5560 MHz, 802.11n – MCS0, Method 2



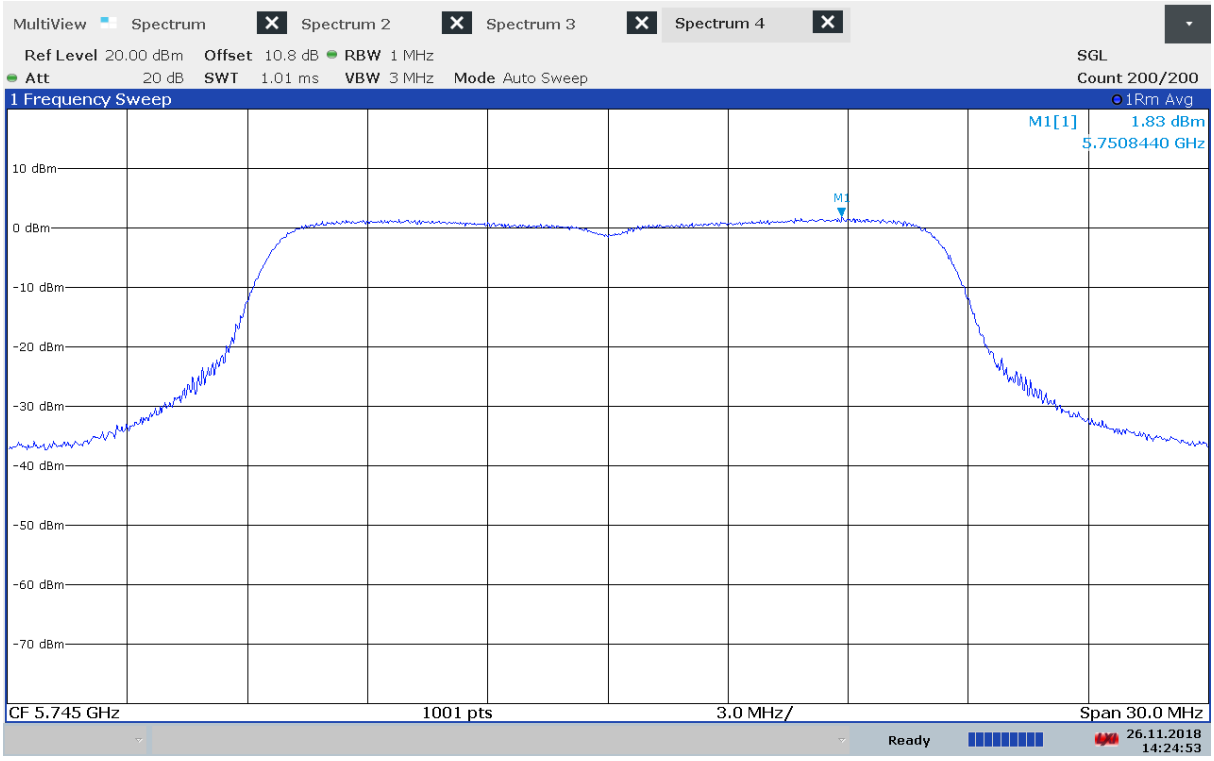
Power Spectral Density, 5700 MHz, 802.11a - 6Mbps, Method 2



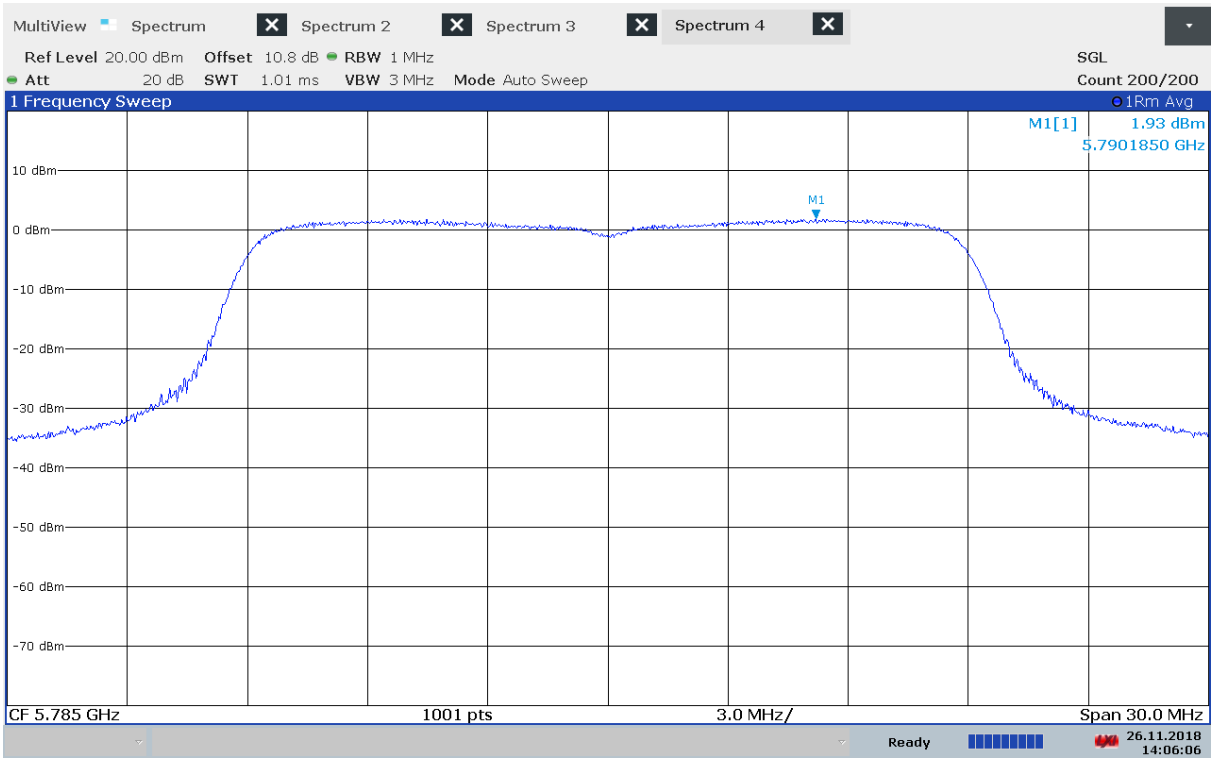
Power Spectral Density, 5700 MHz, 802.11n – MCS0, Method 2



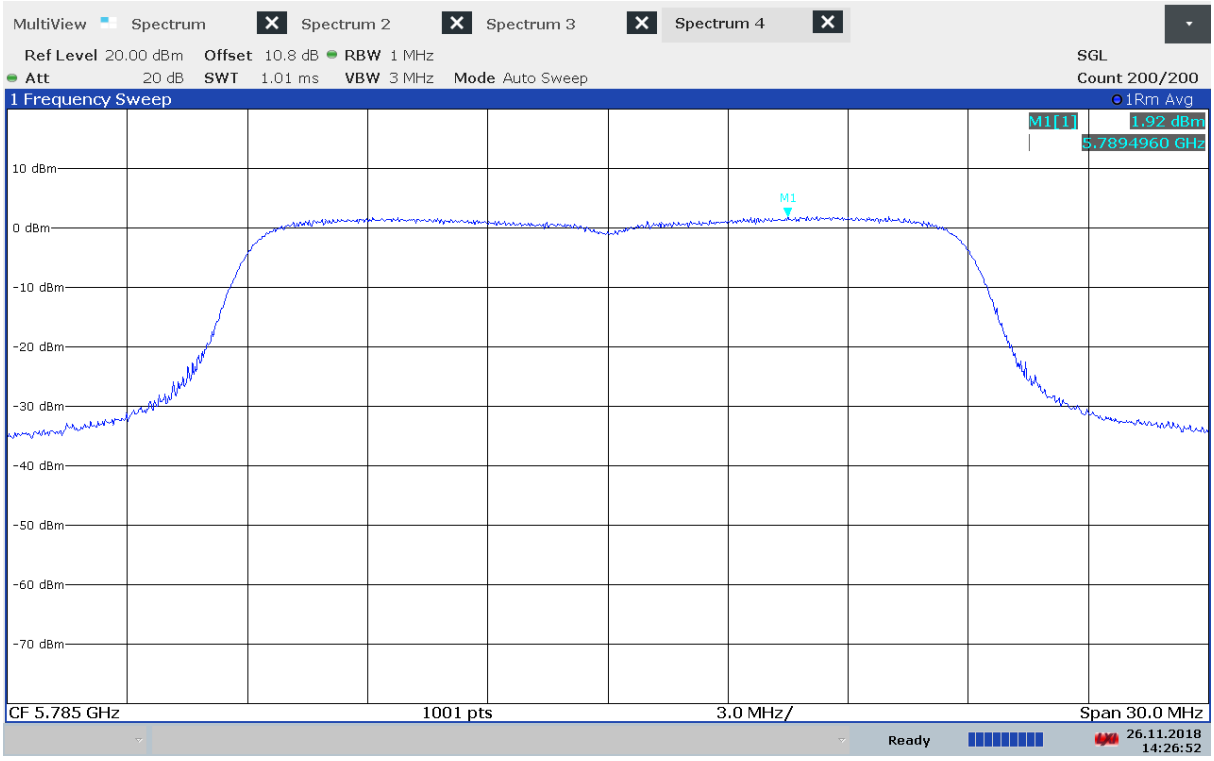
Power Spectral Density, 5745 MHz, 802.11a - 6Mbps, Method 2



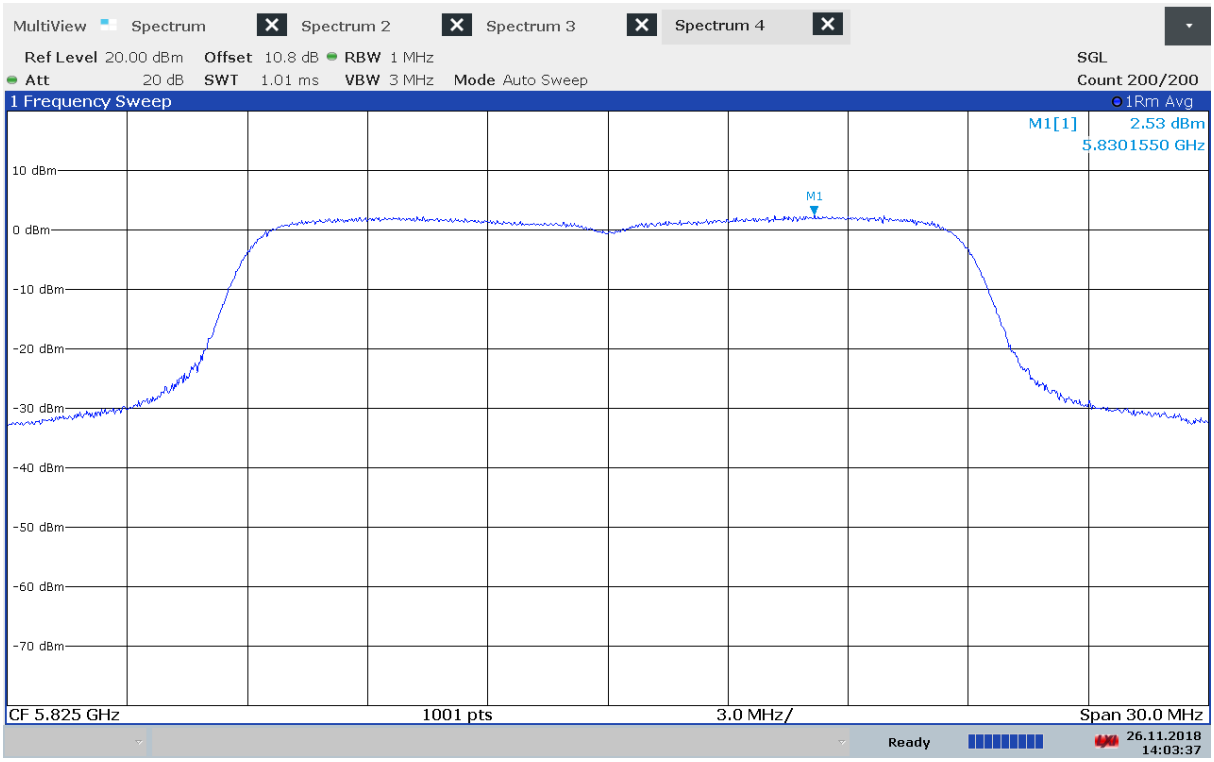
Power Spectral Density, 5745 MHz, 802.11n – MCS0, Method 2



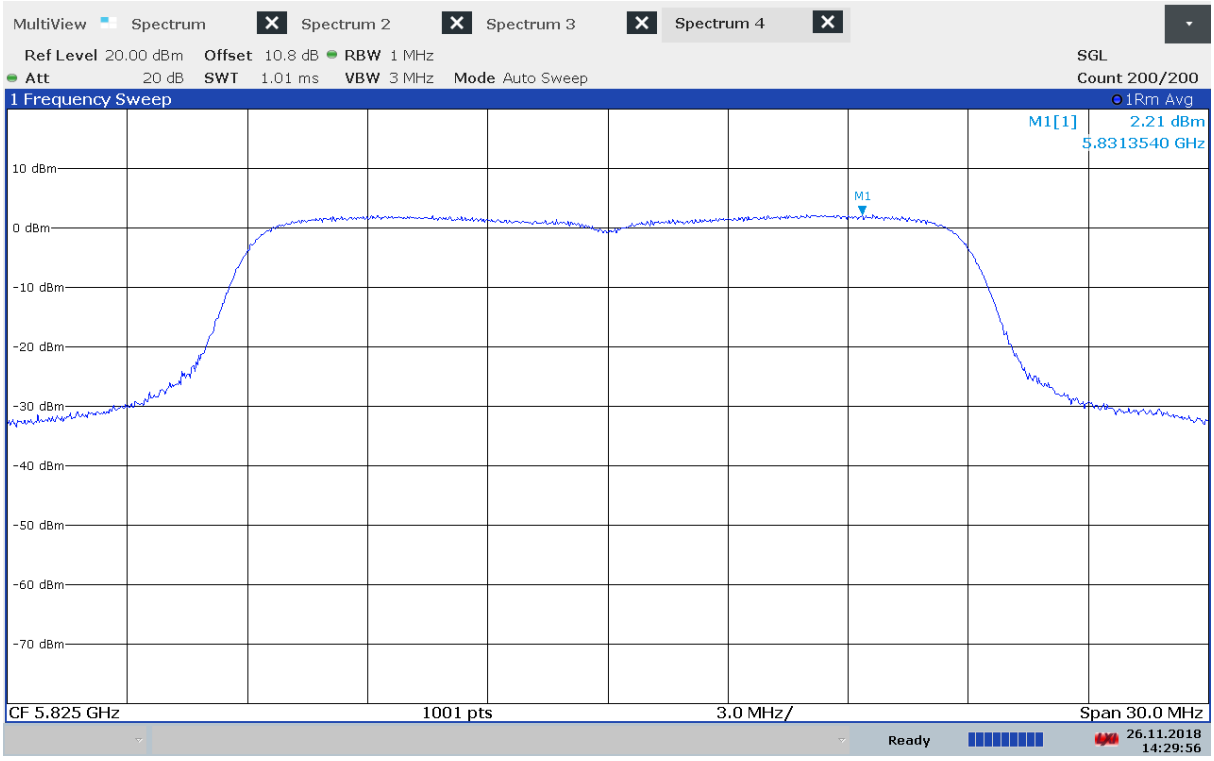
Power Spectral Density, 5785 MHz, 802.11a - 6Mbps, Method 2



Power Spectral Density, 5785 MHz, 802.11n – MCS0, Method 2



Power Spectral Density, 5825 MHz, 802.11a - 6Mbps, Method 2



Power Spectral Density, 5825 MHz, 802.11n – MCS0, Method 2

3.6 Unwanted Emissions

FCC 15.407(b)

ISED RSS-247, Issue 2, clause 6.2

Test Results: Complies

Measurement Data:

Band Edge Emissions:

Ch. No.	Carrier Frequency (MHz)	Band Edge Frequency (MHz)	Measured Values (dBm/MHz e.i.r.p.)	
			802.11a, 6Mbps	802.11n, MCS0
36	5180	5150	-35.6	-33.7
64	5320	5350	-41.2	-40.2
100	5500	5470	-45.5	-45.6
140	5700	5725	-35.5	-32.7
149	5745	5650	< -40	< -40
149	5745	5700	< -45	< -45
165	5825	5875	< -45	< -45
165	5825	5925	< -40	< -40

See plots.

The measurement was performed radiated.

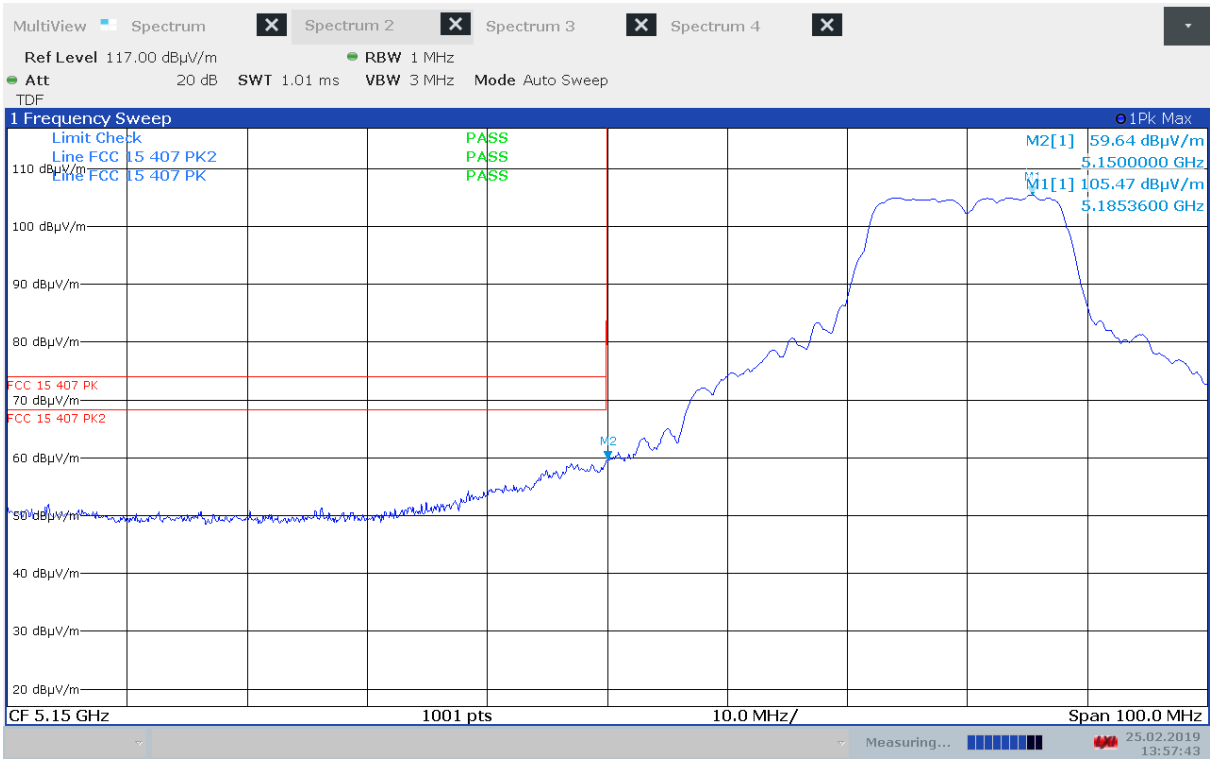
EIRP values were calculated from field strength using the method described in KDB 412172 D01 Determining ERP and EIRP v01r01.

The tested equipment is for indoor use only, no band-edge requirements apply at 5250 MHz.

Limits:

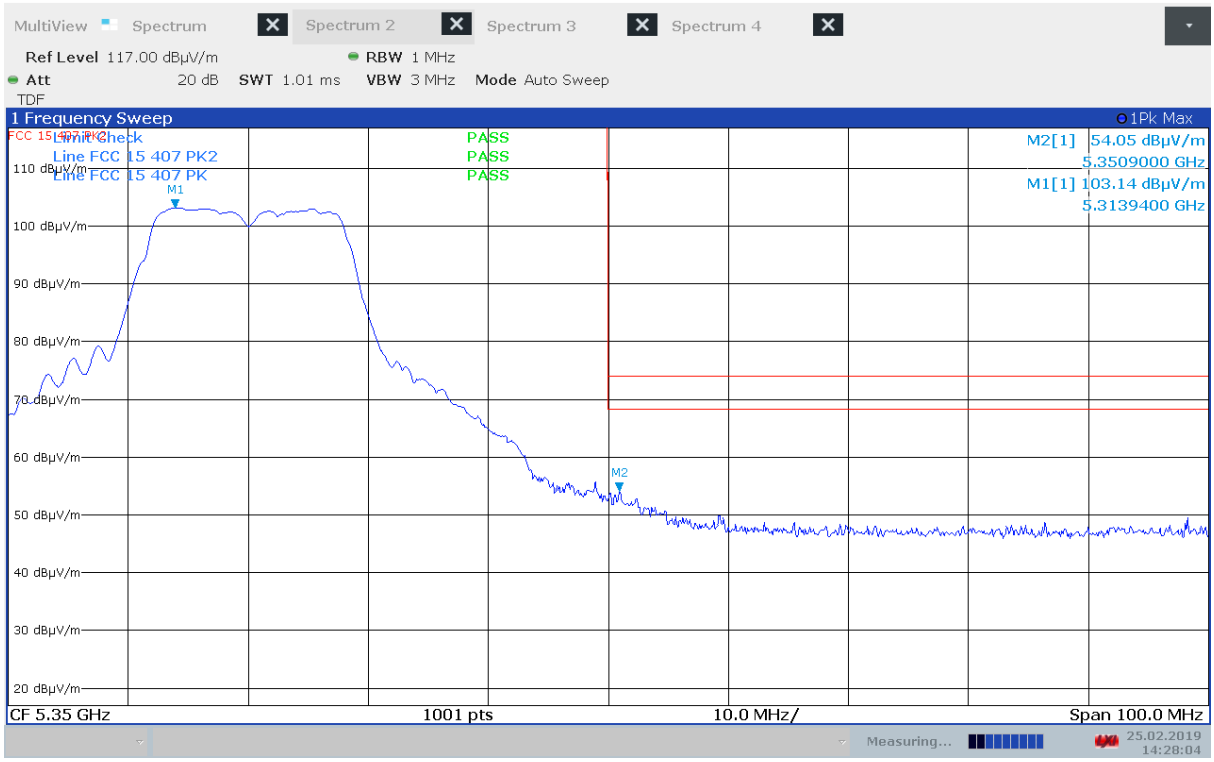
Operating Frequency band	Limit for Emissions Outside Operating Frequency Band
5150 – 5250 MHz	-27 dBm/MHz e.i.r.p.
5250 – 5350 MHz	-27 dBm/MHz e.i.r.p.
5470 – 5725 MHz	-27 dBm/MHz e.i.r.p.
5725 – 5825 MHz	See FCC 15.407(b)(4)(i) or 15.407(b)(4)(ii)

Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

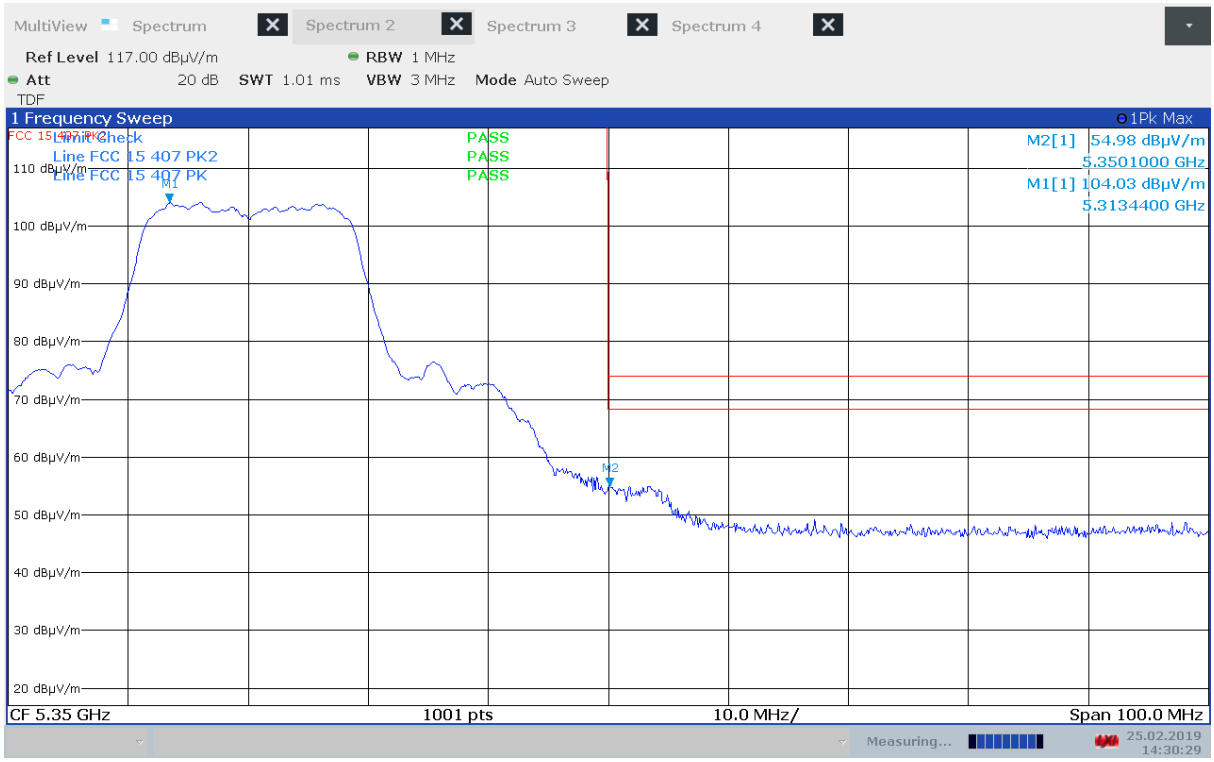


Unwanted Emissions, Band Edge, 5150 MHz, Ch036, 802.11a 6Mbps, Radiated

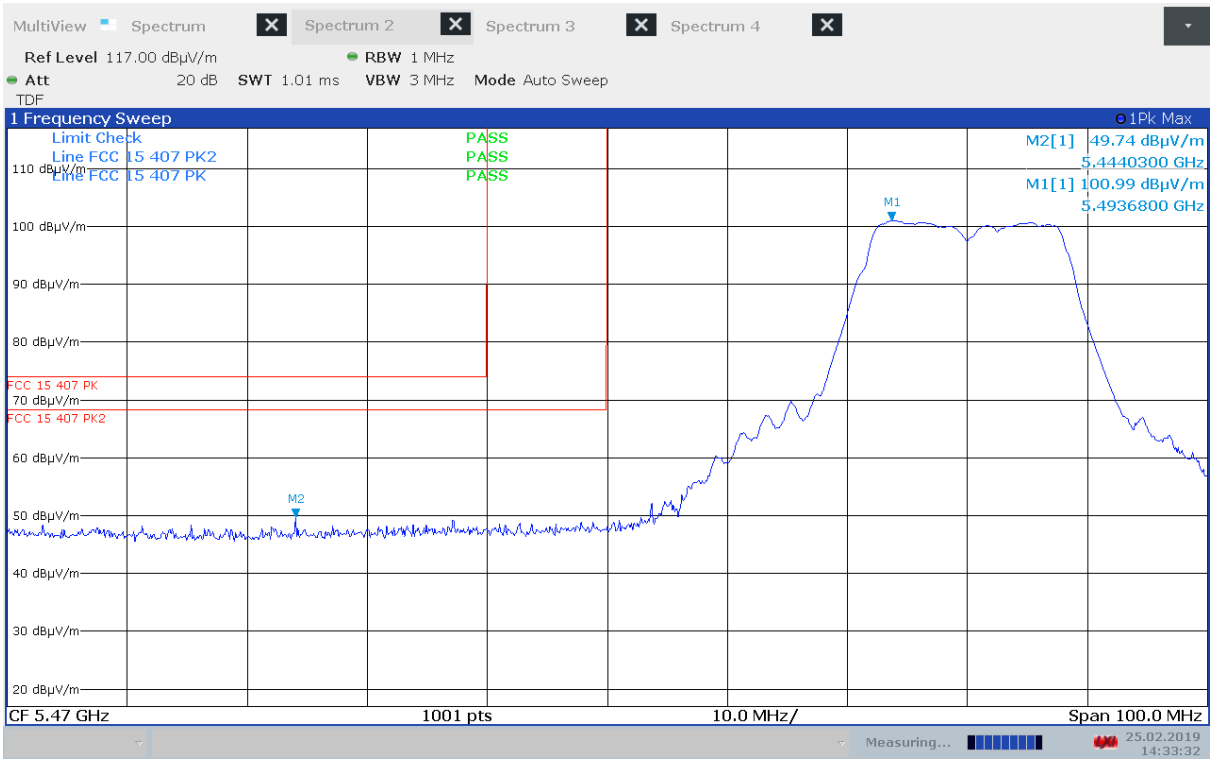
Unwanted Emissions, Band Edge, 5150 MHz, Ch036, 802.11n MCS0, Radiated



Unwanted Emissions, Band Edge, 5350 MHz, Ch064, 802.11a 6Mbps, Radiated

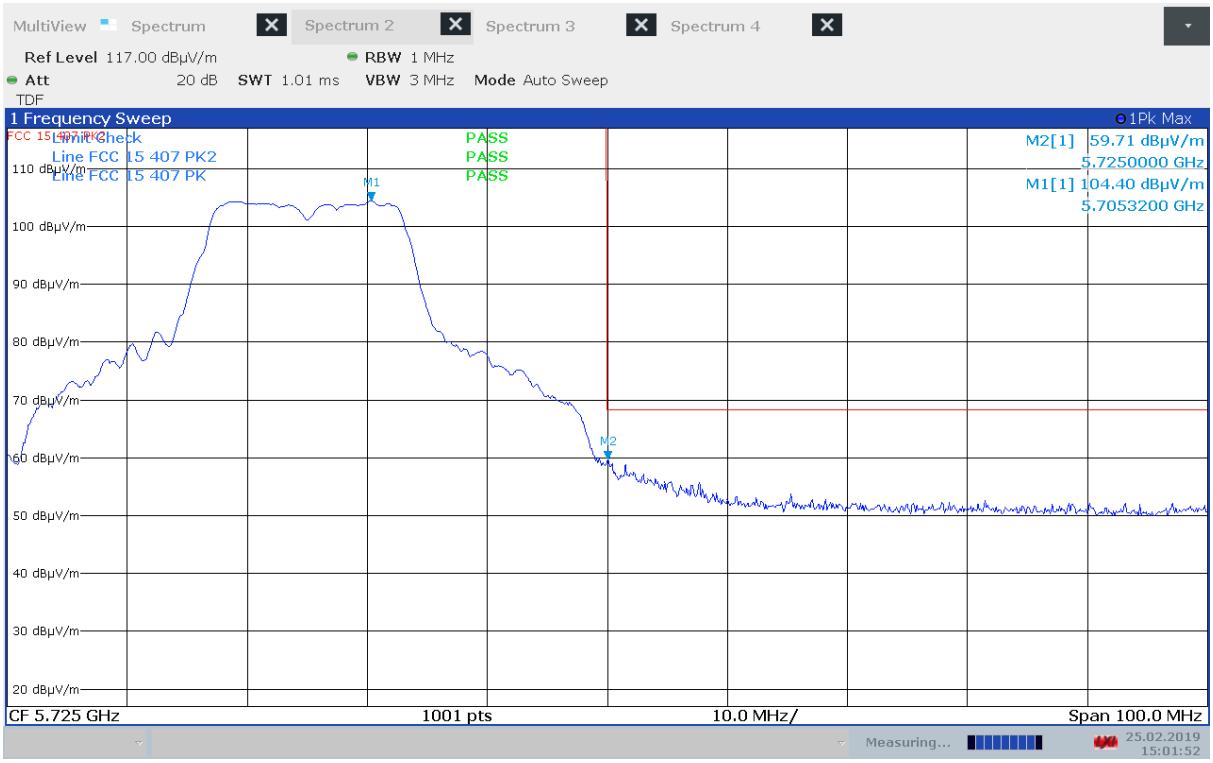


Unwanted Emissions, Band Edge, 5350 MHz, Ch064, 802.11n MCS0, Radiated

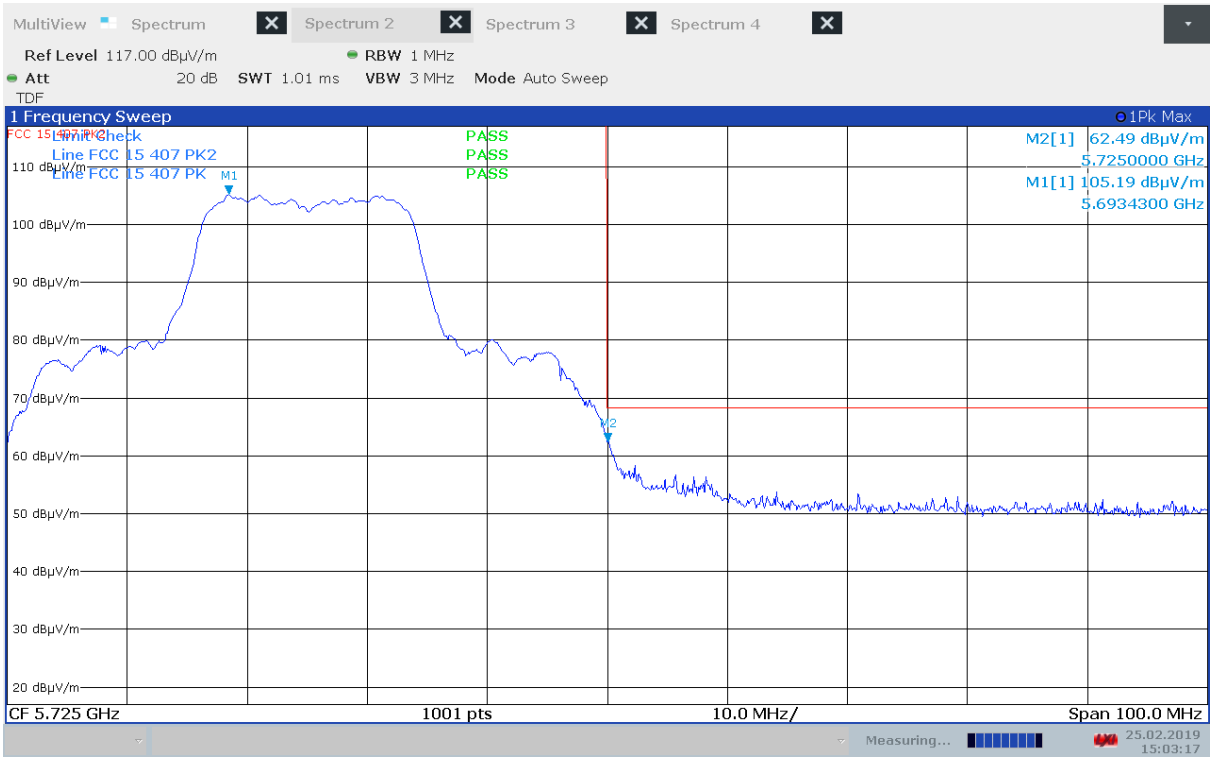


Unwanted Emissions, Band Edge, 5470 MHz, Ch100, 802.11a 6Mbps, Radiated

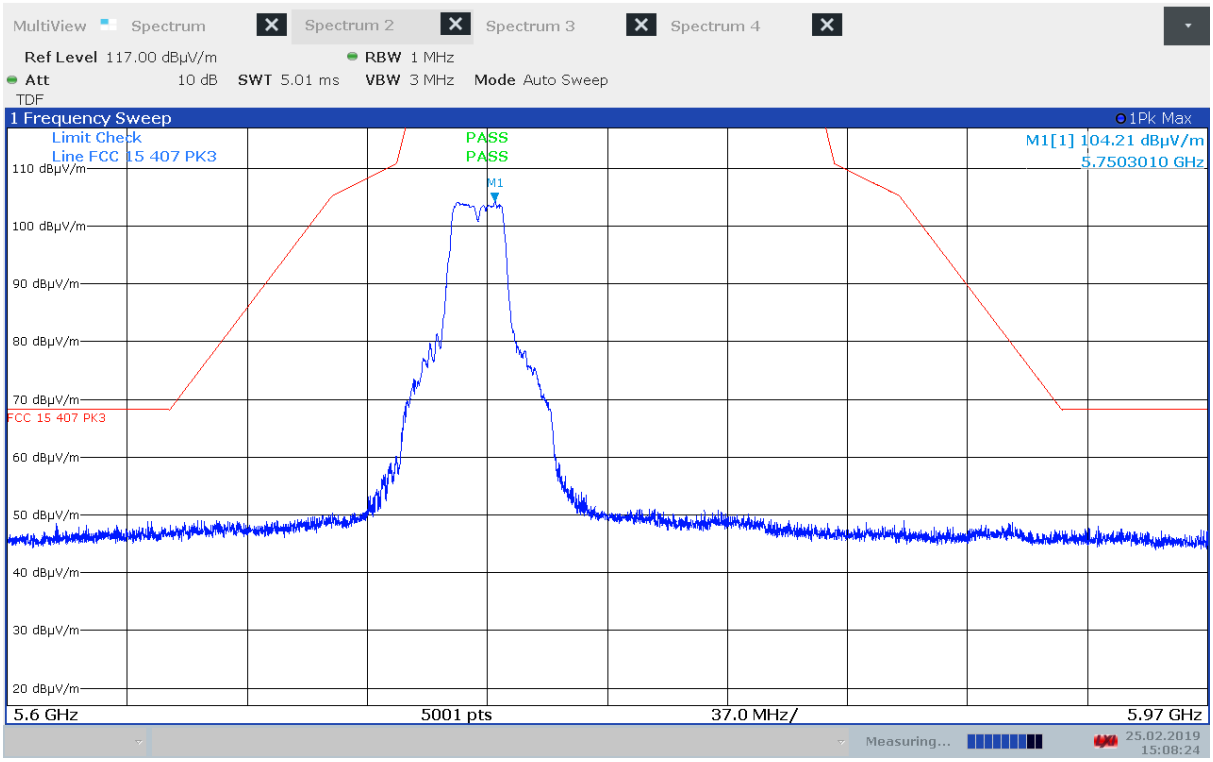
Unwanted Emissions, Band Edge, 5470 MHz, Ch100, 802.11n MCS0, Radiated



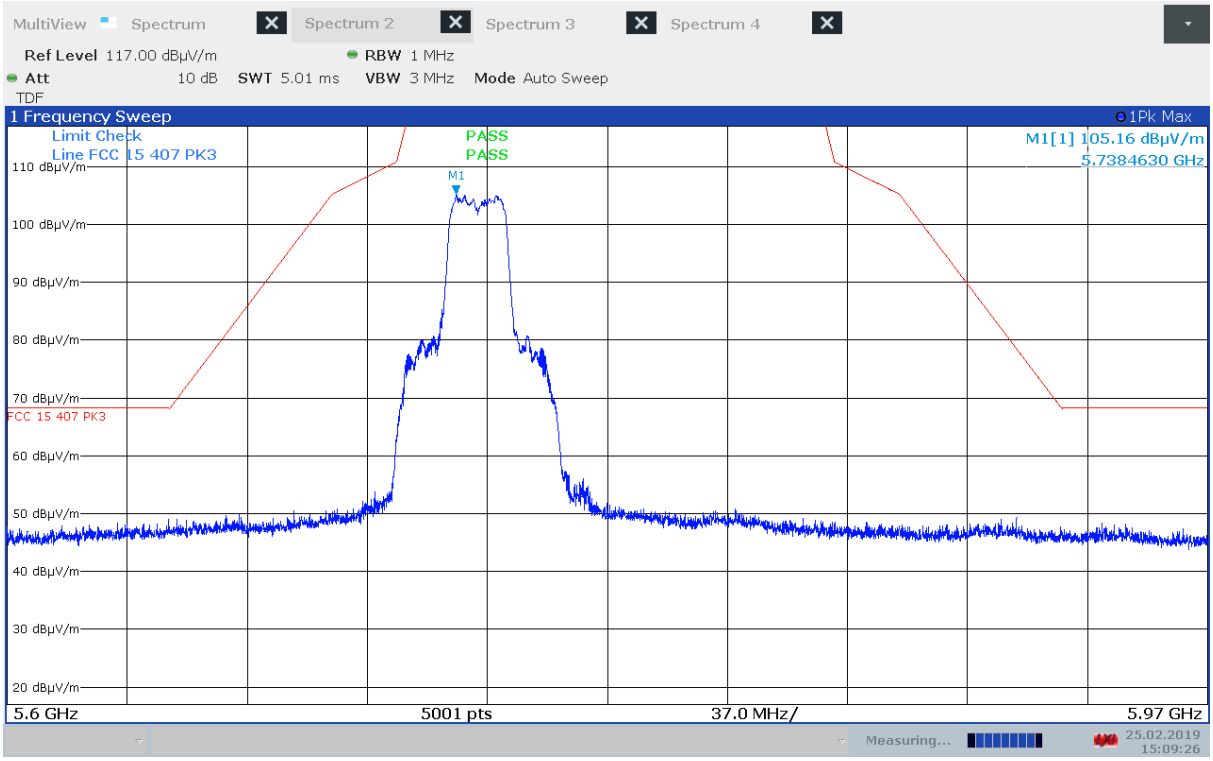
Unwanted Emissions, Band Edge, 5725 MHz, Ch140, 802.11a 6Mbps, Radiated



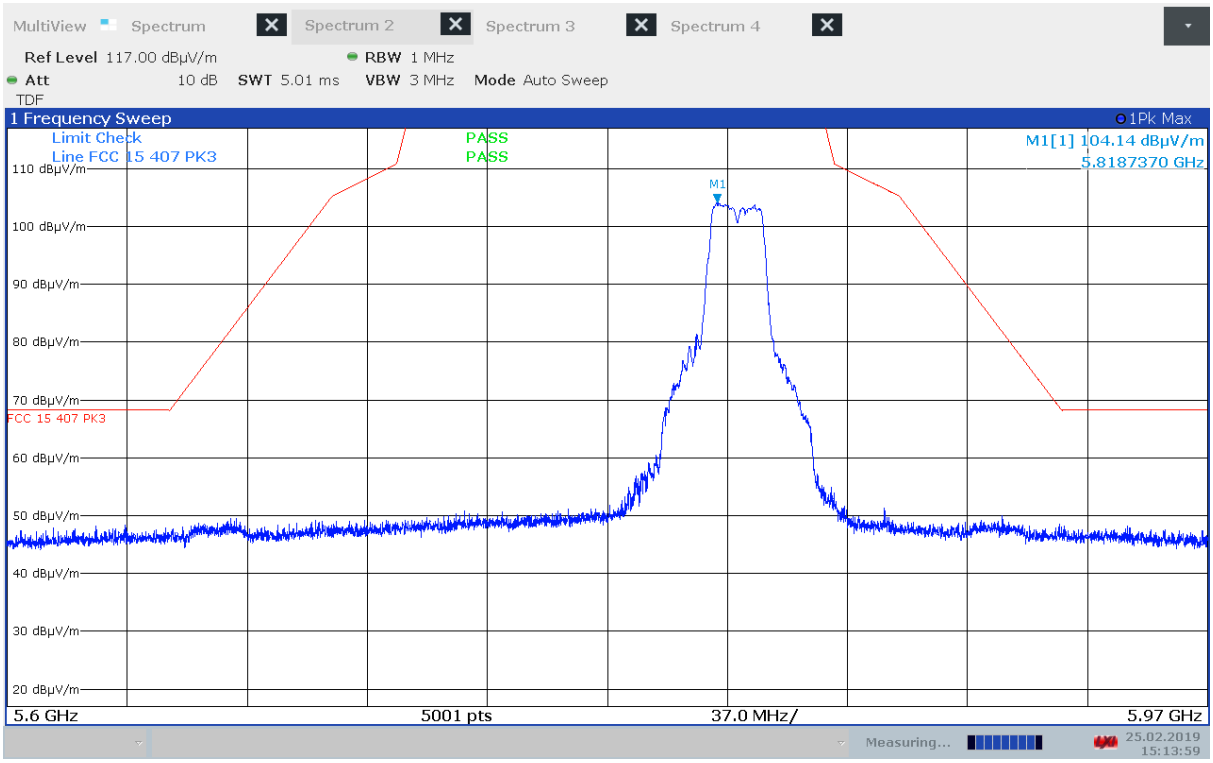
Unwanted Emissions, Band Edge, 5725 MHz, Ch140, 802.11n MCS0, Radiated



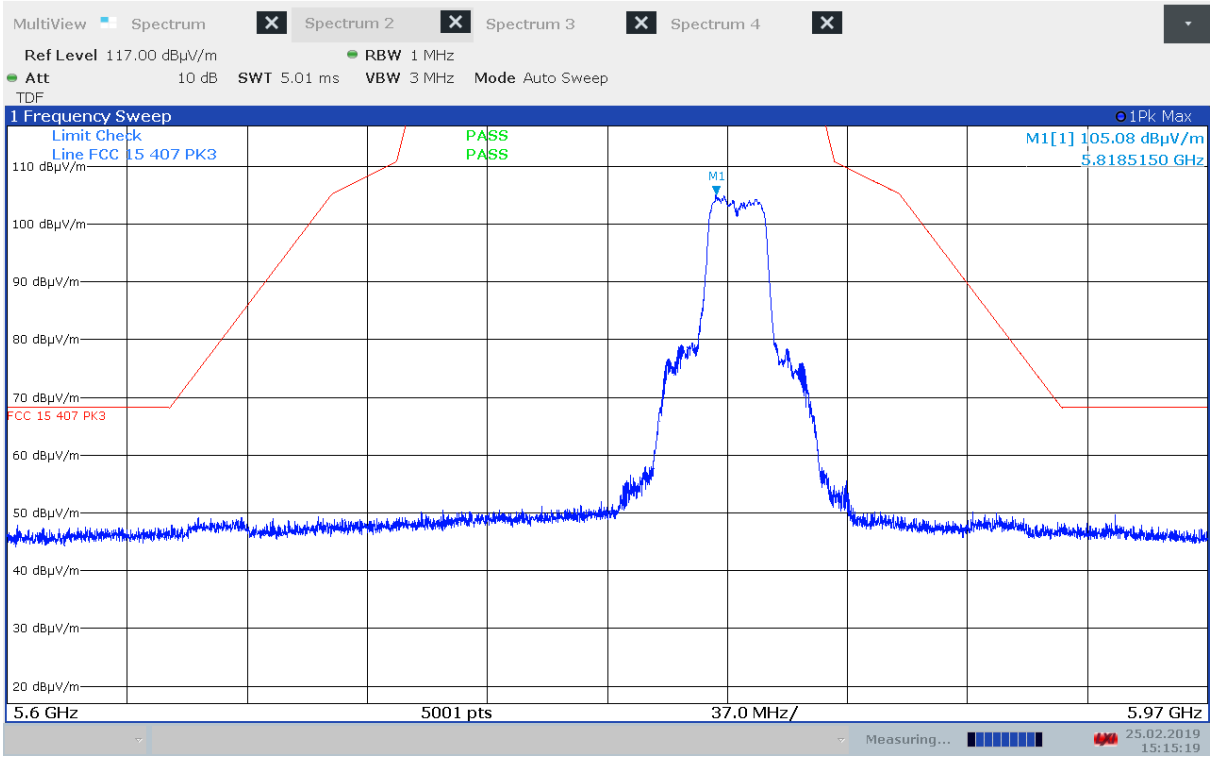
Unwanted Emissions, Band Edge, 5725 MHz, Ch149, 802.11a 6Mbps, Radiated



Unwanted Emissions, Band Edge, 5725 MHz, Ch149, 802.11n MCS0, Radiated



Unwanted Emissions, Band Edge, 5825 MHz, Ch165, 802.11a 6Mbps, Radiated



Unwanted Emissions, Band Edge, 5825 MHz, Ch165, 802.11n MCS0, Radiated

3.7 Restricted Bands of operation

Restricted Bands of operation for FCC and ISED are defined in FCC Part 15.205 and ISED RSS-GEN, Issue 5 clause 8.10.

Generally, no fundamentals are allowed in the restricted bands and all emissions must comply with the limits in FCC 15.209 or RSS-GEN, Issue 5, clause 8.9.

FCC (MHz)	ISED (MHz)	FCC (GHz)	ISED (GHz)
0.090-0.110		**0.96-1.24** **1.3-1.427**	**0.96-1.427**
0.495-0.505		1.435-1.6265	
2.1735-2.1905		1.6455-1.6465	
	3.020-3.026	1.660-1.710	
4.125-4.128		1.7188-1.7222	
4.17725-4.17775		2.2-2.3	
4.20725-4.20775		2.31-2.39	
	5.677-5.683	2.4835-2.5	
6.215-6.218		**2.69-2.9**	**2.655-2.9**
6.26775-6.26825		3.26-3.267	
6.31175-6.31225		3.332-3.339	
8.291-8.294		3.3458-3.358	
8.362-8.366		**3.6-4.4**	**3.5-4.4**
8.37625-8.38675		4.5-5.15	
8.41425-8.41475		5.35-5.46	
12.29-12.293		7.25-7.75	
12.51975-12.52025		8.025-8.5	
12.57675-12.57725		9.0-9.2	
13.36-13.41		9.3-9.5	
16.42-16.423		10.6-12.7	
16.69475-16.69525		13.25-13.4	
16.80425-16.80475		14.47-14.5	
25.5-25.67		15.35-16.2	
37.5-38.25		17.7-21.4	
73-74.6		22.01-23.12	
74.8-75.2		23.6-24.0	
108-121.94 **123-138**	**108-138**	31.2-31.8	
149.9-150.05		36.43-36.5	
156.52475-156.52525		Above 38.6	
156.7-156.9			
162.0125-167.17			
167.72-173.2			
240-285			
322-335.4			
399.9-410			
608-614			

Frequencies in **Bold** text are specific for FCC or ISED, all other frequencies are common.

3.8 Radiated Emissions, below 1 GHz

FCC 15.205, 15.209, 15.407

ISED RSS-GEN, Issue 5, Clause 8.9

Test Results: Complies

Measurement Data:

Radiated emission 30 – 1000 MHz

Detector: Peak

Measuring distance 3 m

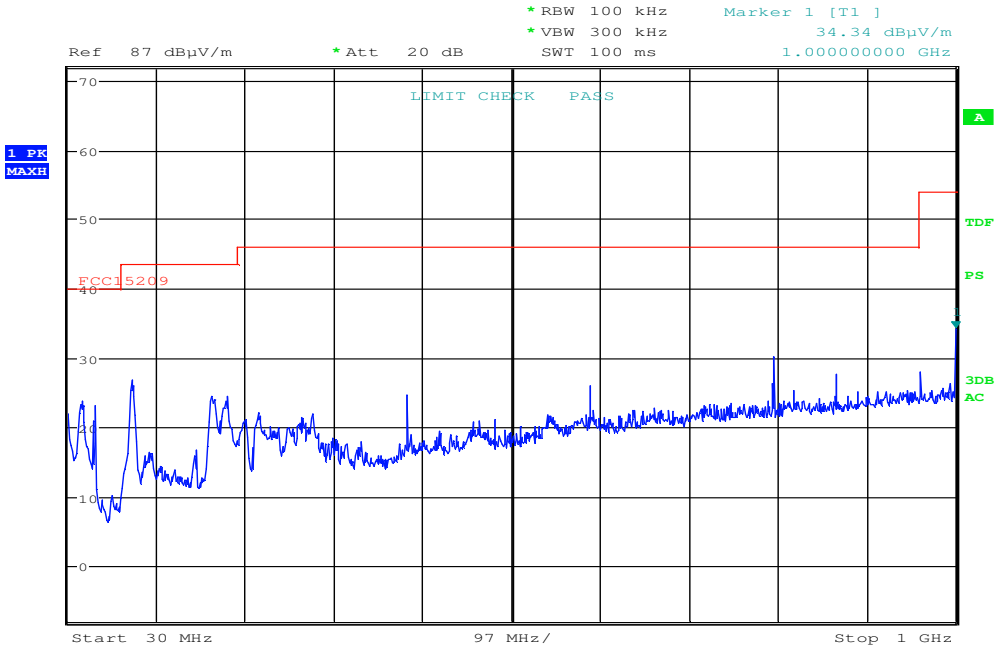
Tested in test mode with EUT transmitting on ch36

Measured Frequency (MHz)	Carrier Frequency (MHz)	Modulation	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30 – 88	5180	802.11a 6Mbps	< 25	40.0	>15
88 – 216	5180	802.11a 6Mbps	< 28	43.5	>15
216 – 960	5180	802.11a 6Mbps	< 31	46.0	>15
960 – 1000	5180	802.11a 6Mbps	< 34	54.0	>20

See attached plots.

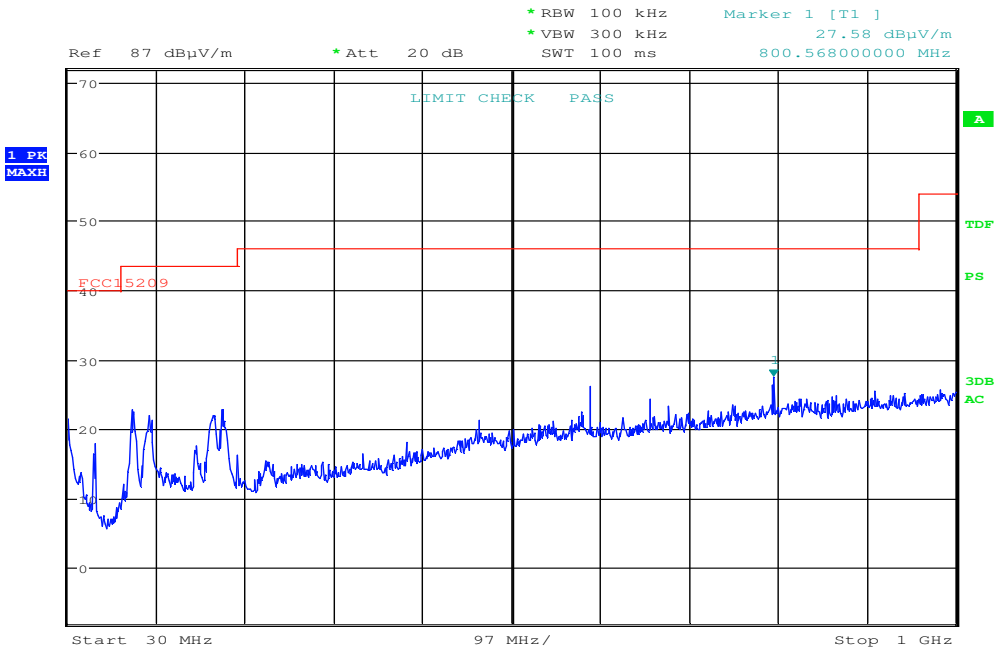
Requirements/Limit

FCC	Part 15.209 @ frequencies defined in §15.205	
ISED	RSS-GEN Issue 5, Clause 8.9 @ frequencies defined in clause 8.10	
	Radiated emission limit @3 meters	
Frequency (MHz)	Quasi Peak (µV/m)	Quasi Peak (dBµV/m)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0



Date: 30.NOV.2018 16:42:43

Radiated Emissions, 30– 1000 MHz, 5180MHz, 802.11a 6Mbps, EUT V, VP



Date: 30.NOV.2018 16:44:48

Radiated Emissions, 30– 1000 MHz, 5180MHz, 802.11a 6Mbps, EUT V, HP