

TEST REPORT

EUT Description	WLAN and BT, 2x2 PCIe M.2 2230 adapter card
Brand Name	Intel® Wi-Fi 6 AX201
Model Name	AX201NGW
FCC ID	PD9AX201NG
Date of Test Start/End	2018-09-11 / 2018-11-29
Features	802.11ax, Dual Band, 2x2 Wi-Fi + Bluetooth® 5 (see section 5)

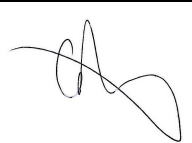
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Reference Standards	FCC CFR Title 47 Part 15 E (see section 1)
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Test Report identification	180717-02.TR01
Revision Control	Rev. 00 This test report revision replaces any previous test report revision (see section 8)

The test results relate only to the samples tested.
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Table of Contents

1. Standards, reference documents and applicable test methods	3
2. General conditions, competences and guarantees	3
3. Environmental Conditions	3
4. Test samples	4
5. EUT Features	4
6. Remarks and comments	5
7. Test Verdicts summary	5
7.1. 802.11 A/N/AC/AX – U-NII-1	5
7.2. 802.11 A/N/AC/AX – U-NII-2A	5
8. Document Revision History	5
Annex A. Test & System Description	6
A.1 MEASUREMENT SYSTEM	6
A.2 TEST EQUIPMENT LIST	8
A.3 MEASUREMENT UNCERTAINTY EVALUATION	9
B.1 TEST CONDITIONS	10
B.2 TEST RESULTS TABLES U-NII-1	12
B.2.1 26dB & 99% Bandwidth	12
B.2.2 Power Limits. Maximum Output power & Peak power spectral density	16
B.2.3 Undesirable emission limits : Band Edge (Conducted)	24
B.2.4 Radiated spurious emission	26
B.3 TEST RESULTS SCREENSHOT U-NII-1	50
B.3.1 26dB Bandwidth	50
B.3.2 99% Bandwidth	55
B.3.3 Power Limits. Maximum Output power & Peak power spectral density	60
B.3.4 Undesirable emission limits : Band Edge (Conducted)	72
B.4 TEST RESULTS TABLES U-NII-2A	122
B.4.1 26dB & 99% Bandwidth	122
B.4.2 Power Limits. Maximum Output power & Peak power spectral density	126
B.4.3 Undesirable emissions limits : Band Edge (Conducted)	134
B.4.4 Radiated spurious emission	136
B.5 TEST RESULTS SCREENSHOT U-NII-2A	155
B.5.1 26dB Bandwidth	155
B.5.2 99% Bandwidth	159
B.5.3 Power Limits. Maximum Output power & Peak power spectral density	163
B.5.4 Undesirable emissions limits : Band Edge (Conducted)	174
Annex C. Photographs	195
C.1 TEST SETUP	195
C.2 TEST SAMPLE	197

1. Standards, reference documents and applicable test methods

1. FCC 47 CFR part 15 – Subpart E – Unlicensed National Information Infrastructure Devices.
2. FCC 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements.
3. FCC OET KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E).
4. ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

2. General conditions, competences and guarantees

- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2005 testing laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	23 °C ±3 °C
Humidity	50 % ± 30 %

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#1	180717-02.S01	RF MODULE	AX201NGW	WFM : 3413E8CA86D1	2018-09-06	Used for conducted tests
	180717-03.S13	EXTENDER	PCB00651_01	6510818-131	2018-08-21	
	170000-01.S01	LAPTOP	LATITUDE E5470	DBLMC2	2017-03-28	
#2	180717-02.S07	RF MODULE	AX201NGW	WFM : 3413E8CA866D	2018-09-06	Radiated Spurious emission from 30 MHz to 6.4 GHz
	180326-01.S03	EXTENDER	PCB00651_01	6510818-198	2018-03-27	
	170209-01.S16	LAPTOP	LATITUDE E7470	C1HTPF2	2017-02-09	
#3	180717-02.S08	RF MODULE	AX201NGW	WFM : 3413E8CA8681	2018-09-06	Radiated Spurious emission from 6.4 GHz to 40 GHz
	180717-03.S18	EXTENDER	PCB00651_01	6510817-133	2018-08-21	
	170801-01.S10	LAPTOP	LATITUDE E7470	7KNOXF2	2017-09-07	

5. EUT Features

Brand Name	Intel® Wi-Fi 6 AX201
Model Name	AX201NGW
FCC ID	PD9AX201NG
Software Version	OEM DRTU_08048_11_1832_0G
Driver Version	99.0.39.1 (V010.16.t64)
Prototype / Production	Production
Supported Radios	802.11b/g/n/ax 2.4GHz (2400.0 – 2483.5 MHz) 802.11a/n/ac/ax 5.2GHz (5150.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) Bluetooth 5 2.4GHz (2400.0 – 2483.5 MHz)
Antenna Information	CHAIN A: PIFA antenna. WiFi 2.4GHz & 5GHz and BT CHAIN B: PIFA antenna. WiFi 2.4GHz & 5GHz
Additional Information	

6. Remarks and comments

N/A

7. Test Verdicts summary

7.1. 802.11 a/n/ac/ax – U-NII-1

FCC part	Test name	Verdict
15.407 (a) (1)	Power Limits. Maximum output power	P
15.407 (a) (1)	Peak power spectral density	P
15.407 (b) (1) 15.209	Undesirable emissions limits: Band Edge (conducted)	P
15.407 (b) (1) 15.209	Undesirable emissions limits (radiated)	P

7.2. 802.11 a/n/ac/ax – U-NII-2A

FCC part	Test name	Verdict
15.407 (a) (2)	Power Limits. Maximum output power	P
15.407 (a) (2)	Peak power spectral density	P
15.407 (b) (2) 15.209	Undesirable emissions limits: Band Edge (conducted)	P
15.407 (b) (2) 15.209	Undesirable emissions limits (radiated)	P

P: Pass
F: Fail
NM: Not Measured
NA: Not Applicable

8. Document Revision History

Revision #	Date	Modified by	Revision Details
Rev. 00	2018-12-07	F. Sauvan	First Issue

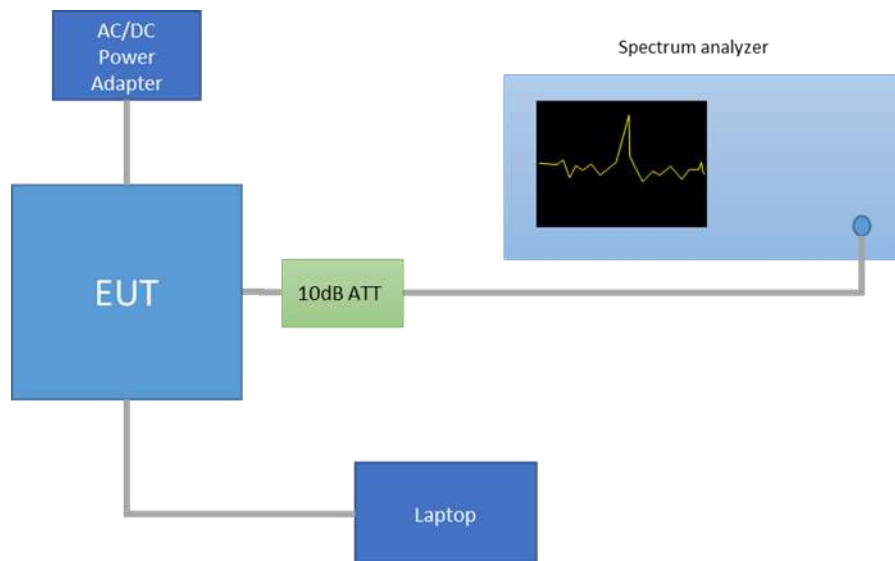
Annex A. Test & System Description

A.1 Measurement System

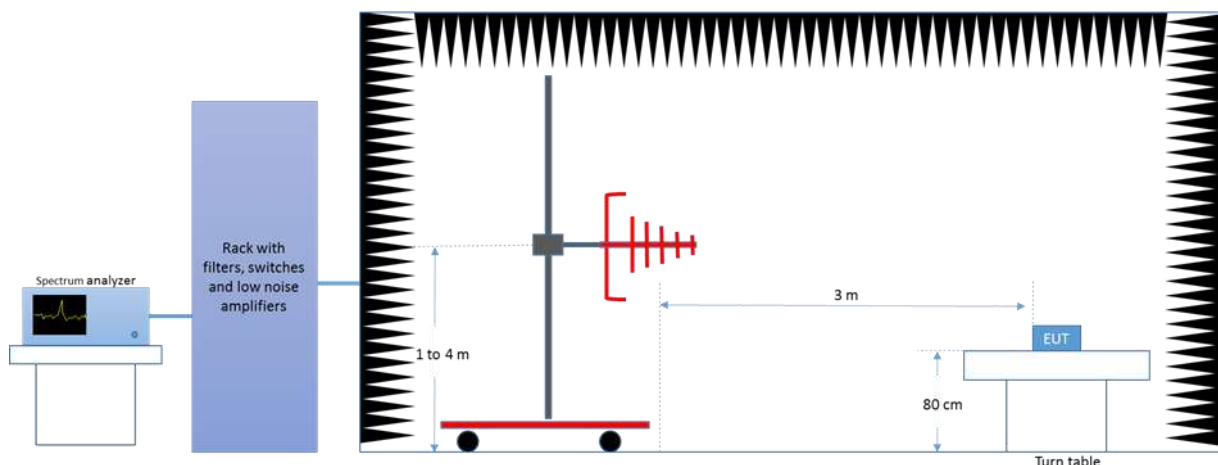
Measurements were performed using the following setups, made in accordance to the general provisions of FCC KDB 789033 D02 General UNII Test Procedures.

The DUT was installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary tool DRTU.

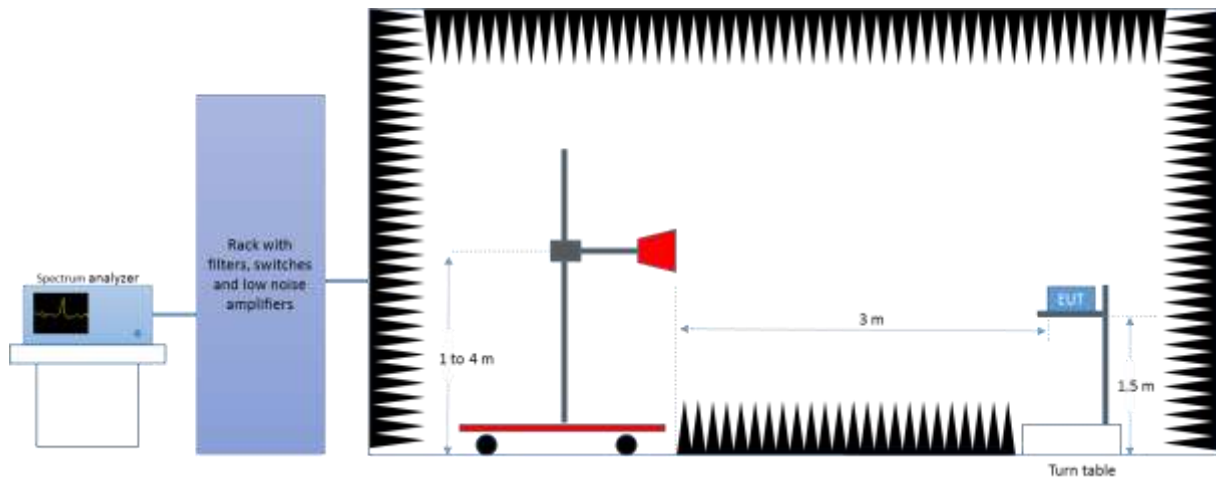
Conducted Setup



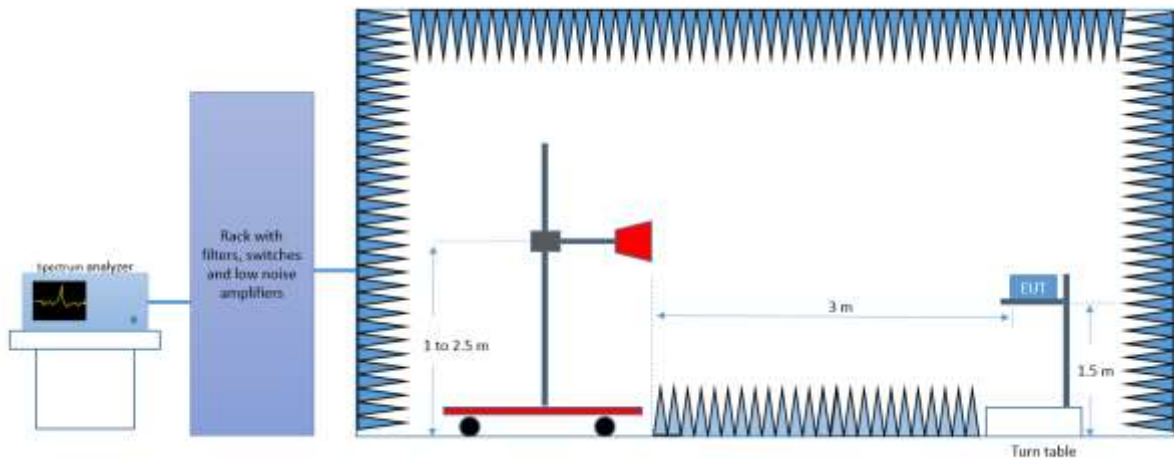
Radiated Setup 30 MHz - 1GHz



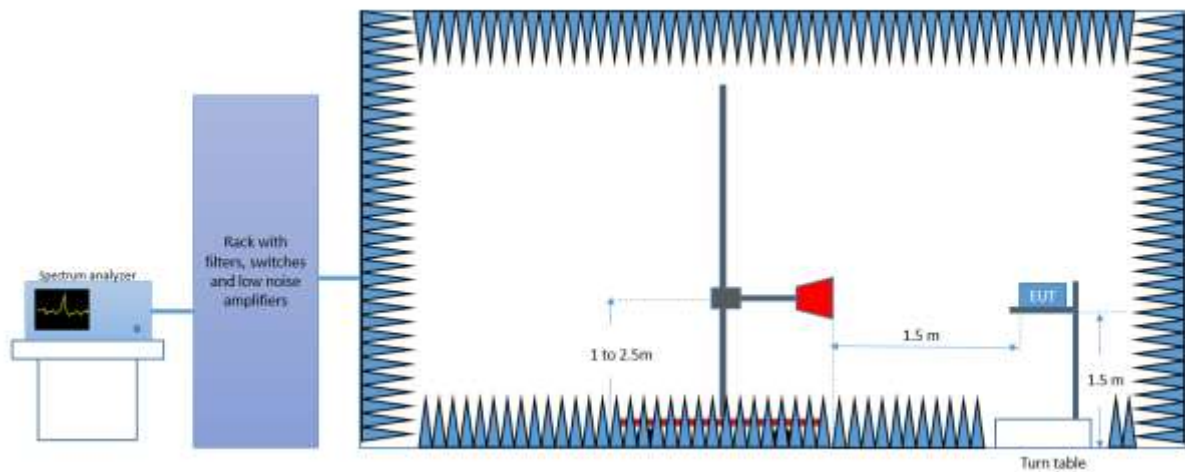
Radiated Setup 1 GHz – 6.4 GHz



Radiated Setup 6.4 GHz – 18 GHz



Radiated Setup 18 GHz – 40 GHz



A.2 Test Equipment List

Conducted Setup

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0315	Spectrum analyzer	FSV30	103307	Rohde & Schwarz	2018-04-10	2020-04-10

Radiated Setup-1

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0420	Spectrum analyzer	FSV40	101556	Rohde & Schwarz	2018-04-11	2020-04-11
0137	Log antenna 30 MHz – 1 GHz	3142E	00156946	ETS Lindgren	2017-12-19	2019-12-19
0325	Double Ridged Horn Antenna 1 GHz – 18 GHz	3117	00157734	ETS Lindgren	2017-08-22	2019-08-22
0135	Semi Anechoic chamber	FACT 3	5720	ETS Lindgren	2018-04-18	2020-04-18
0530	Measurement Software	EMC32	100623	Rohde & Schwarz	N/A	N/A

N/A: Not Applicable

Radiated Setup-2

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0133	Spectrum analyzer	FSV40	101358	Rohde & Schwarz	2018-05-17	2020-05-17
0141	Double Ridged Horn Antenna 1 GHz – 18 GHz	3117	00157736	ETS Lindgren	2018-05-11	2020-05-11
0334	Double Ridged Horn Antenna 18 GHz – 40 GHz	3116C-PA	00196308	ETS Lindgren	2017-08-22	2019-08-22
0337	Full Anechoic chamber	RFD_FA_100	5996	ETS Lindgren	2018-04-17	2020-04-17
0329	Measurement Software	EMC32	100401	Rohde & Schwarz	N/A	N/A

N/A: Not Applicable

Radiated Setup - shared equipment

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0616	Power Sensor 50MHz-18GHz	NRP-Z81	104385	Rohde & Schwarz	2018-04-16	2020-04-16
0617	Power Sensor 50MHz-18GHz	NRP-Z81	104386	Rohde & Schwarz	2018-04-16	2020-04-16
0618	Power Sensor 50MHz-18GHz	NRP-Z81	104382	Rohde & Schwarz	2018-04-16	2020-04-16

A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the below table:

Measurement type	Uncertainty [±dB]
Conducted Power	±1.0
Conducted Spurious Emission	±2.9
Radiated tests <1GHz	±3.8
Radiated tests 1GHz - 40 GHz	±4.7

Annex B. Test Results U-NII-1 & U-NII-2A

B.1 Test Conditions

For 802.11a mode the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.

For 802.11n20 & 802.11ax20 (20 MHz channel bandwidth), 802.11n40 & 802.11ax40 (40MHz channel bandwidth), 802.11ac80 & 802.11ax80 (80MHz channel bandwidth) and 802.11ac160 & 802.11ax160 (160MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

The conducted RF output power at each chain was adjusted according to the client's supplied Target values (see following table) using the Intel DRTU tool and measuring the power by using a spectrum analyser with the channel integration method according to point II) E) 2) e) (Method SA-2 Alternative) of Guidance 789033 D02.

Measured values for adjustment were within +/- 0.25 dB from the declared Target values.

U-NII-1					Conducted Power, Target Value (dBm)		
Mode	BW (MHz)	Data Rate	CH #	Freq. (MHz)	SISO Chain A	SISO Chain B	MIMO at both ports A and B
802.11a	20	6Mbps	36	5180	18.5	18.0	-
			40	5200	21.0	20.5	-
			48	5240	21.0	21.0	-
802.11n	20	HT0 HT8*	36	5180	18.0	18.5	19.0
			40	5200	21.0	20.5	20.5
			48	5240	21.0	19.5	21.0
	40	HT0 HT8*	38F	5190	18.5	18.0	18.5
			46F	5230	21.0	19.5	20.5
802.11ac	80	VHT0	42	5210	18.5	18.0	18.5
802.11ac	160	VHT0	50	5250	15.0	15.0	15.0
802.11ax	20	HE0	36	5180	18.0	18.0	19.0
			40	5200	21.0	20.5	21.0
			48	5240	21.0	21.0	21.0
	40		38F	5190	18.0	18.0	18.0
			46F	5230	21.0	19.5	20.5
802.11ax	80		42	5210	18.5	18.0	18.5
802.11ax	160		50	5250	15.0	15.0	15.5

* Note: HT8 for MIMO modes only

U-NII-2A					Conducted Power, Target Value (dBm)		
Mode	BW (MHz)	Data Rate	CH #	Freq. (MHz)	SISO Chain A	SISO Chain B	MIMO at both ports A and B
802.11a	20	6Mbps	52	5260	21.5	21.0	-
			56	5280	21.0	21.0	-
			64	5320	17.5	17.5	-
802.11n	20	HT0 HT8*	52	5260	21.0	21.0	21.0
			56	5280	21.0	21.0	21.0
			64	5320	17.5	17.5	16.5
	40	HT0 HT8*	54F	5270	20.5	20.0	19.5
			62F	5310	16.5	16.5	16.0
802.11ac	80	VHT0	58	5290	17.5	17.5	17.0
802.11ax	20	HE0	52	5260	21.0	21.0	21.0
			56	5280	21.0	21.0	21.0
			64	5320	17.5	17.5	16.5
	40		54F	5270	20.5	20.0	19.5
			62F	5310	16.5	16.5	16.0
802.11ax	80		58	5290	17.5	17.5	17.0

* Note: HT8 for MIMO modes only

The following data rates were selected based on preliminary testing that identified those rates as the worst cases for output power and spurious levels at the band edges:

802.11a → 6Mbps
 802.11n20 and 802.11n40 (SISO) → HT0
 802.11n20 and 802.11n40 (MIMO) → HT8
 802.11ac80 (SISO) → VHT0
 802.11ac80 (MIMO) → VHT0
 802.11ac160 (SISO) → VHT0
 802.11ac160 (MIMO) → VHT0
 802.11ax20 and 802.11ax40 (SISO) → HE0
 802.11ax20 and 802.11ax40 (MIMO) → HE0
 802.11ax80 (SISO) → HE0
 802.11ax80 (MIMO) → HE0
 802.11ax160 (SISO) → HE0
 802.11ax160 (MIMO) → HE0

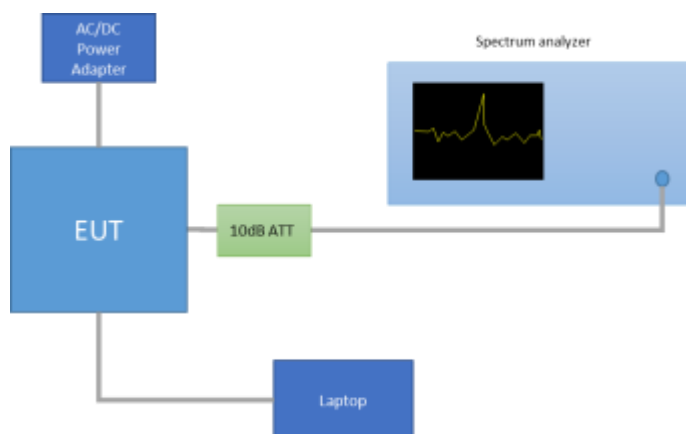
Alternative channels to the lowest and highest channels per band have been also tested for Band Edge compliance.

B.2 Test Results Tables U-NII-1

B.2.1 26dB & 99% Bandwidth

Test procedure

The setup below was used to measure the 26dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



Results tables

Mode	Rate	Antenna	Channel	Frequency [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	SISO-A	36	5180	24.17	16.88
			40	5200	27.83	17.80
			48	5240	28.37	17.64
		SISO-B	36	5180	24.47	16.88
			40	5200	28.68	17.48
			48	5240	30.68	18.12
802.11n20	HT0	SISO-A	36	5180	24.92	18.00
			40	5200	30.03	18.52
			48	5240	32.38	18.60
		SISO-B	36	5180	25.23	17.96
			40	5200	29.78	18.44
			48	5240	38.29	19.92
	HT8	MIMO-A	36	5180	25.27	18.00
			40	5200	24.97	18.00
			48	5240	26.03	18.08
		MIMO-B	36	5180	24.92	17.92
			40	5200	25.17	17.96
			48	5240	28.88	18.56

Mode	Rate	Antenna	Channel	Frequency [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11n40	HT0	SISO-A	38F	5190	45.32	36.64
			46F	5230	55.05	37.20
		SISO-B	38F	5190	45.31	36.64
			46F	5230	48.65	36.88
	HT8	MIMO-A	38F	5190	45.05	36.64
			46F	5230	45.86	36.64
		MIMO-B	38F	5190	44.50	36.40
			46F	5230	44.95	36.40
802.11ac80	VHT0	SISO-A	42	5210	86.35	75.12
		SISO-B	42	5210	85.97	75.12
		MIMO-A	42	5210	87.30	75.12
		MIMO-B	42	5210	86.54	75.12
802.11ac160	VHT0	SISO-A	50	5250	165.83	153.00
		SISO-B	50	5250	165.83	153.00
		MIMO-A	50	5250	163.84	153.00
		MIMO-B	50	5250	165.17	152.80
802.11ax20	HE0	SISO-A	36	5180	25.22	19.12
			40	5200	29.27	19.24
			48	5240	27.93	19.24
		SISO-B	36	5180	25.37	19.12
			40	5200	27.68	19.20
			48	5240	32.53	19.32
		MIMO-A	36	5180	25.43	19.12
			40	5200	25.87	19.08
			48	5240	25.83	19.08
		MIMO-B	36	5180	24.67	19.08
			40	5200	24.87	19.08
			48	5240	24.47	19.08

Max Value

Mode	Rate	Antenna	Channel	Frequency [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11ax40	HE0	SISO-A	38F	5190	43.60	37.84
			46F	5230	48.56	38.00
		SISO-B	38F	5190	44.86	37.84
			46F	5230	44.96	38.00
		MIMO-A	38F	5190	43.78	37.84
			46F	5230	45.14	37.92
		MIMO-B	38F	5190	44.50	37.92
			46F	5230	43.96	37.84
802.11ax80	HE0	SISO-A	42	5210	83.68	76.68
		SISO-B	42	5210	83.87	76.88
		MIMO-A	42	5210	83.68	76.92
		MIMO-B	42	5210	84.64	76.68
802.11ax160	HE0	SISO-A	50	5250	164.17	154.80
		SISO-B	50	5250	163.84	154.60
		MIMO-A	50	5250	163.51	154.60
		MIMO-B	50	5250	162.85	154.60

Max Value

Mode	Rate	Antenna	Channel	Frequency [MHz]	RU Configuration	26dB BW [MHz]	99% BW [MHz]
802.11ax20	HE0	SISO-A	36	5180	26/0	20.77	18.60
					52/37	21.22	18.40
					106/53	22.17	18.32
		SISO-B			26/0	20.77	18.60
					52/37	21.77	18.44
					106/53	22.37	18.32
		MIMO-A			26/0	20.57	18.56
					52/37	21.27	18.48
					106/53	22.82	18.32
		MIMO-B			26/0	20.62	18.60
					52/37	31.62	18.32
					106/53	22.37	18.32
802.11ax40	HE0	SISO-A	38F	5190	242/61	25.14	19.20
		SISO-B			242/61	24.77	19.12
		MIMO-A			242/61	25.05	19.12
		MIMO-B			242/61	25.05	19.20
802.11ax80	HE0	SISO-A	42	5210	484/65	44.89	37.92
		SISO-B			484/65	43.93	37.92
		MIMO-A			484/65	44.69	37.92
		MIMO-B			484/65	44.51	37.80
802.11ax160	HE0	SISO-A	50	5210	996/67	85.22	76.60
					996/S67	85.22	76.80
		SISO-B			996/67	84.23	76.80
					996/S67	86.22	77.00
		MIMO-A		996/67	85.23	76.80	
				996/S67	85.23	76.80	
		MIMO-B		996/67	85.23	77.00	
				996/S67	85.56	76.80	

Max Value

See Section B.3.1 and Section B.3.2 for the screenshot results.

B.2.2 Power Limits. Maximum Output power & Peak power spectral density

Test limits

FCC part	Limits
15.407 (a) (1) (iv)	For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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 KDB 789033 D02.

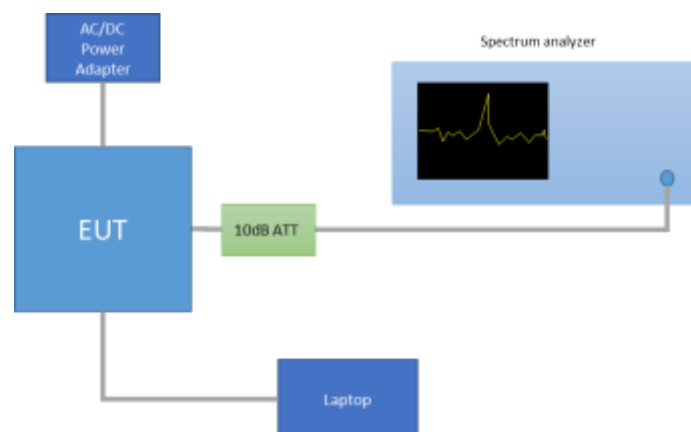
The maximum power spectral density (PSD) was measured using the method according to point F) (Method SA-2 Alternative) of KDB 789033 D02.

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 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 analyser through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

The declared maximum antenna gain is 5dBi.



Results tables

Duty cycle

Mode	Rate	Antenna	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
802.11a	6Mbps	SISO-A	2.08	2.13	97.50%
		SISO-B	2.08	2.13	97.50%
802.11n20	HT0	SISO-A	3.96	4.01	98.65%
		SISO-B	3.96	4.01	98.65%
	HT8	MIMO-A	3.96	4.01	98.65%
		MIMO-B	3.96	4.01	98.65%
802.11ax20	HE0	SISO-A	3.94	3.99	98.67%
		SISO-B	3.94	3.99	98.67%
		MIMO-A	3.94	3.99	98.67%
		MIMO-B	3.94	3.99	98.67%
802.11n40	HT0	SISO-A	3.96	4.01	98.74%
		SISO-B	3.96	4.01	98.74%
	HT8	MIMO-A	3.96	4.01	98.73%
		MIMO-B	3.96	4.01	98.73%
802.11ax40	HE0	SISO-A	4.65	4.70	98.86%
		SISO-B	4.65	4.70	98.86%
		MIMO-A	3.96	4.01	98.73%
		MIMO-B	3.96	4.01	98.73%
802.11ac80	VHT0	SISO-A	3.95	4.00	98.66%
		SISO-B	3.95	4.00	98.66%
		MIMO-A	3.95	4.01	98.60%
		MIMO-B	3.95	4.01	98.60%
802.11ax80	HE0	SISO-A	3.95	4.01	98.66%
		SISO-B	3.95	4.01	98.66%
		MIMO-A	3.97	4.02	98.67%
		MIMO-B	3.97	4.02	98.67%
802.11ac160	VTH0	SISO-A	3.94	4.00	98.66%
		SISO-B	3.94	4.00	98.66%
		MIMO-A	2.78	2.83	98.19%
		MIMO-B	2.78	2.83	98.19%
802.11ax160	HE0	SISO-A	3.96	4.01	98.73%
		SISO-B	3.96	4.01	98.73%
		MIMO-A	2.69	2.74	98.02%
		MIMO-B	2.69	2.74	98.02%

Maximum output power

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Cond. Output Power [dBm]	Max.* Cond. Output Power [dBm]	Max.* Cond. Output Power [mW]	Max.* EIRP [dBm]
802.11a	6Mbps	36	5180	SISO-A	18.18	18.29	67.45	23.29
				SISO-B	18.09	18.20	66.07	23.20
		40	5200	SISO-A	20.98	21.09	128.53	26.09
				SISO-B	20.63	20.74	118.58	25.74
		48	5240	SISO-A	21.13	21.24	133.04	26.24
				SISO-B	20.90	21.01	126.18	26.01
802.11n20	HT0	36	5180	SISO-A	18.17	18.17	65.61	23.17
				SISO-B	18.28	18.28	67.30	23.28
		40	5200	SISO-A	21.00	21.00	125.89	26.00
				SISO-B	20.70	20.70	117.49	25.70
		48	5240	SISO-A	21.07	21.07	127.94	26.07
				SISO-B	19.68	19.68	92.90	24.68
	HT8	36	5180	MIMO-A	16.10	16.10	40.74	21.10
				MIMO-B	15.89	15.89	38.82	20.89
				Combined A+B	19.01	19.01	79.55	24.01
		40	5200	MIMO-A	17.74	17.74	59.43	22.74
				MIMO-B	17.35	17.35	54.33	22.35
				Combined A+B	20.56	20.56	113.75	25.56
		48	5240	MIMO-A	18.23	18.23	66.53	23.23
				MIMO-B	18.13	18.13	65.01	23.13
				Combined A+B	21.19	21.19	131.54	26.19
802.11n40	HT0	38F	5190	SISO-A	18.30	18.30	67.61	23.30
				SISO-B	17.97	17.97	62.66	22.97
		46F	5230	SISO-A	21.09	21.09	128.53	26.09
				SISO-B	19.69	19.69	93.11	24.69
	HT8	38F	5190	MIMO-A	15.46	15.46	35.16	20.46
				MIMO-B	15.09	15.09	32.28	20.09
				Combined A+B	18.29	18.29	67.44	23.29
		46F	5230	MIMO-A	17.72	17.72	59.16	22.72
MIMO-B	17.72			17.72	59.16	22.72		
Combined A+B	20.73			20.73	118.31	25.73		
802.11ac80	VHT0	42	5210	SISO-A	18.45	18.45	69.98	23.45
				SISO-B	18.07	18.07	64.12	23.07
				MIMO-A	15.48	15.48	35.32	20.48
				MIMO-B	15.66	15.66	36.81	20.66
				Combined A+B	18.58	18.58	72.13	23.58
802.11ac160	VHT0	50	5250	SISO-A	15.16	15.16	32.81	20.16
				SISO-B	14.86	14.86	30.62	19.86
				MIMO-A	11.96	11.96	15.70	16.96
				MIMO-B	12.25	12.25	16.79	17.25
				Combined A+B	15.12	15.12	32.49	20.12

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Cond. Output Power [dBm]	Max.* Cond. Output Power [dBm]	Max.* Cond. Output Power [mW]	Max.* EIRP [dBm]
802.11ax20	HE0	36	5180	SISO-A	18.07	18.07	64.12	23.07
				SISO-B	18.18	18.18	65.77	23.18
		40	5200	SISO-A	21.07	21.07	127.94	26.07
				SISO-B	20.38	20.38	109.14	25.38
		48	5240	SISO-A	21.12	21.12	129.42	26.12
				SISO-B	20.86	20.86	121.90	25.86
		36	5180	MIMO-A	16.16	16.16	41.30	21.16
				MIMO-B	15.83	15.83	38.28	20.83
				Combined A+B	19.01	19.01	79.59	24.01
		40	5200	MIMO-A	18.12	18.12	64.86	23.12
				MIMO-B	18.06	18.06	63.97	23.06
				Combined A+B	21.10	21.10	128.84	26.10
		48	5240	MIMO-A	18.22	18.22	66.37	23.22
				MIMO-B	18.25	18.25	66.83	23.25
				Combined A+B	21.25	21.25	133.21	26.25
802.11ax40	HE0	38F	5190	SISO-A	17.99	17.99	62.95	22.99
				SISO-B	17.93	17.93	62.09	22.93
		46F	5230	SISO-A	20.84	20.84	121.34	25.84
				SISO-B	19.66	19.66	92.47	24.66
		38F	5190	MIMO-A	15.15	15.15	32.73	20.15
				MIMO-B	15.29	15.29	33.81	20.29
				Combined A+B	18.23	18.23	66.54	23.23
		46F	5230	MIMO-A	17.71	17.71	59.02	22.71
				MIMO-B	17.34	17.34	54.20	22.34
				Combined A+B	20.54	20.54	113.22	25.54
802.11ax80	HE0	42	5210	SISO-A	18.44	18.44	69.82	23.44
				SISO-B	18.03	18.03	63.53	23.03
				MIMO-A	15.57	15.57	36.06	20.57
				MIMO-B	15.19	15.19	33.04	20.19
				Combined A+B	18.39	18.39	69.09	23.39
802.11ax160	HE0	50	5250	SISO-A	15.13	15.13	32.58	20.13
				SISO-B	14.77	14.77	29.99	19.77
				MIMO-A	12.29	12.29	16.94	17.29
				MIMO-B	12.53	12.53	17.91	17.53
				Combined A+B	15.42	15.42	34.85	20.42

Mode	Rate	Antenna	Channel	Frequency	RU Configuration	Average Conducted Output Power	Maximum* Conducted Output Power [dBm]	Maximum* Conducted Output Power [mW]	Max of EIRP
				[MHz]		[dBm]			[dBm]
802.11ax20	HE0	SISO-A	36	5180	26/0	13.56	13.56	22.70	18.56
		SISO-A			52/37	16.70	16.70	46.77	21.70
		SISO-A			106/53	19.38	19.38	86.70	24.38
		SISO-B			26/0	13.70	13.70	23.44	18.70
		SISO-B			52/37	16.65	16.65	46.24	21.65
		SISO-B			106/53	19.26	19.26	84.33	24.26
		MIMO-A			26/0	10.62	10.62	11.53	15.62
		MIMO-B				10.70	10.70	11.75	15.70
		Combined A+B				13.67	13.67	23.28	18.67
		MIMO-A			52/37	13.69	13.69	23.39	18.69
		MIMO-B				13.60	13.60	22.91	18.60
		Combined A+B				16.66	16.66	46.30	21.66
		MIMO-A			106/53	16.68	16.68	46.56	21.68
		MIMO-B				16.40	16.40	43.65	21.40
		Combined A+B				19.55	19.55	90.21	24.55
802.11ax40	HE0	SISO-A	38F	5190	242/61	18.33	18.33	68.08	23.33
		SISO-B				18.20	18.20	66.07	23.20
		MIMO-A				15.50	15.50	35.48	20.50
		MIMO-B				15.51	15.51	35.56	20.51
		Combined A+B				18.52	18.52	71.04	23.52
802.11ax80	HE0	SISO-A	42	5210	484/65	17.75	17.75	59.57	22.75
		SISO-B				17.86	17.86	61.09	22.86
		MIMO-A				14.96	14.96	31.33	19.96
		MIMO-B				14.90	14.90	30.90	19.90
		Combined A+B				17.94	17.94	62.24	22.94
802.11ax160	HE0	SISO-A	50	5250	996/67	15.23	15.23	33.34	20.23
		SISO-B				15.32	15.32	34.04	20.32
		SISO-A			996/S67	15.52	15.52	35.65	20.52
		SISO-B				15.54	15.54	35.81	20.54
		MIMO-A			996/67	12.15	12.15	16.41	17.15
		MIMO-B				12.17	12.17	16.48	17.17
		Combined A+B				15.17	15.17	32.89	20.17
		MIMO-A			996/S67	12.36	12.17	16.48	17.17
		MIMO-B				12.57	15.17	32.89	20.17
		Combined A+B				15.48	15.52	35.65	20.52

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max Value

Min Value

Maximum power spectral Density (PSD)

Mode	Rate	Channel	Freq.	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11a	6Mbps	36	5180	SISO-A	6.55	6.66
				SISO-B	6.46	6.57
		40	5200	SISO-A	9.27	9.38
				SISO-B	8.94	9.05
		48	5240	SISO-A	9.42	9.53
				SISO-B	9.16	9.27
802.11n20	HT0	36	5180	SISO-A	6.19	6.19
				SISO-B	6.35	6.35
		40	5200	SISO-A	8.98	8.98
				SISO-B	8.69	8.69
		48	5240	SISO-A	9.05	9.05
				SISO-B	7.61	7.61
	HT8	36	5180	MIMO-A	4.15	4.15
				MIMO-B	3.96	3.96
				Combined A+B	7.07	7.07
		40	5200	MIMO-A	5.81	5.81
				MIMO-B	5.40	5.40
				Combined A+B	8.62	8.62
		48	5240	MIMO-A	6.26	6.26
				MIMO-B	6.10	6.10
				Combined A+B	9.19	9.19
802.11ax20	HE0	36	5180	SISO-A	5.81	5.81
				SISO-B	5.94	5.94
		40	5200	SISO-A	8.78	8.78
				SISO-B	8.11	8.11
		48	5240	SISO-A	8.83	8.83
				SISO-B	8.56	8.56
		36	5180	MIMO-A	3.89	3.89
				MIMO-B	3.61	3.61
				Combined A+B	6.76	6.76
		40	5200	MIMO-A	5.87	5.87
				MIMO-B	5.80	5.80
				Combined A+B	8.85	8.85
		48	5240	MIMO-A	5.96	5.96
				MIMO-B	5.98	5.98
				Combined A+B	8.98	8.98

Mode	Rate	Channel	Freq.	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11n40	HT0	38F	5190	SISO-A	3.21	3.21
				SISO-B	2.85	2.85
		46F	5230	SISO-A	6.00	6.00
				SISO-B	4.57	4.57
	HT8	38F	5190	MIMO-A	0.36	0.36
				MIMO-B	0.02	0.02
				Combined A+B	3.20	3.20
		46F	5230	MIMO-A	2.64	2.64
				MIMO-B	2.80	2.80
				Combined A+B	5.73	5.73
802.11ac80	VHT0	42	5210	SISO-A	0.92	0.92
				SISO-B	0.55	0.55
				MIMO-A	-2.01	-2.01
				MIMO-B	-1.87	-1.87
				Combined A+B	1.07	1.07
802.11ac160	VHT0	50	5250	SISO-A	-5.16	-5.16
				SISO-B	-5.41	-5.41
				MIMO-A	-8.29	-8.29
				MIMO-B	-8.06	-8.06
				Combined A+B	-5.16	-5.16
802.11ax40	HE0	38F	5190	SISO-A	2.68	2.68
				SISO-B	2.60	2.60
		46F	5230	SISO-A	5.55	5.55
				SISO-B	4.34	4.34
		38F	5190	MIMO-A	-0.14	-0.14
				MIMO-B	-0.02	-0.02
				Combined A+B	2.93	2.93
		46F	5230	MIMO-A	2.42	2.42
				MIMO-B	2.03	2.03
				Combined A+B	5.24	5.24
802.11ax80	HE0	42	5210	SISO-A	0.81	0.81
				SISO-B	0.39	0.39
				MIMO-A	-1.97	-1.97
				MIMO-B	-2.45	-2.45
				Combined A+B	0.81	0.81
802.11ax160	HE0	50	5250	SISO-A	-5.30	-5.30
				SISO-B	-5.62	-5.62
				MIMO-A	-8.12	-8.12
				MIMO-B	-7.82	-7.82
				Combined A+B	-4.96	-4.96

* Maximum values are the duty cycle compensated values calculated from the measured average values

Mode	Rate	Antenna	Channel	Frequency	RU Configuration	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
				[MHz]			
802.11ax20	HE0	SISO-A	36	5180	26/0	10.72	10.72
		SISO-A			52/37	10.96	10.96
		SISO-A			106/53	10.63	10.63
		SISO-B			26/0	10.89	10.89
		SISO-B			52/37	10.79	10.79
		SISO-B			106/53	10.51	10.51
		MIMO-A			26/0	7.67	7.67
		MIMO-B				7.86	7.86
		Combined A+B				10.78	10.78
		MIMO-A			53/37	7.95	7.95
		MIMO-B				7.91	7.91
		Combined A+B				10.94	10.94
		MIMO-A			106/53	7.84	7.84
		MIMO-B				7.59	7.59
		Combined A+B				10.73	10.73
802.11ax40	HE0	SISO-A	38F	5190	242/61	5.96	5.96
		SISO-B				6.04	6.04
		MIMO-B				3.15	3.15
		MIMO-A				3.39	3.39
		Combined A+B				6.28	6.28
802.11ax80	HE0	SISO-A	42	5210	484/65	2.50	2.50
		SISO-B				2.55	2.55
		MIMO-B				-0.31	-0.31
		MIMO-A				-0.39	-0.39
		Combined A+B				2.66	2.66
802.11ax160	HE0	SISO-A	50	5250	996/67	-2.20	-2.20
		SISO-B				-2.17	-2.17
		SISO-A			996/S67	-2.07	-2.07
		SISO-B				-1.97	-1.97
	HE0	MIMO-A			996/67	-5.33	-5.33
		MIMO-B				-5.36	-5.36
		Combined A+B				-2.33	-2.33
		MIMO-A			996/S67	-5.12	-5.12
		MIMO-B				-4.90	-4.90
		Combined A+B				-2.00	-2.00

See Section B.3.3 for the screenshot results.

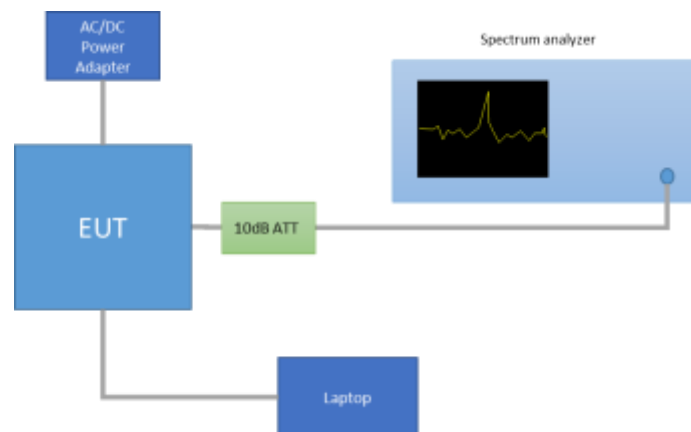
B.2.3 Undesirable emission limits : Band Edge (Conducted)

Test limits

FCC part	Limits																				
15.407 (b) (1)	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.																				
15.209	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 Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></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>Above 960</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.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																		
30-88	100	40	3																		
88-216	150	43.5	3																		
216-960	200	46	3																		
Above 960	500	54	3																		

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 analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss and the declared Antenna Gain.



For Band Edge measurements in average mode on the low frequency section, one of the two methods is used according to section G) 6) (KDB 789033 D02):

- 1) Method AD (Average Detection) as per paragraph II.G.6.c.
- 2) Method VB (Averaging using reduced video bandwidth) as per paragraph II.G.6.d.

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.

For Band Edge measurements falling in restricted bands, 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)
Above 960	3	500	54.0	-41.2

See Section B.3.4 for the screenshot results.

B.2.4 Radiated spurious emission

Standard references

FCC part	Limits			
15.407 (b) (1)	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.			
15.209	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):			
	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)
	0.009-0.490	2400/f(kHz)	-	300
	0.490-1.705	24000/f(kHz)	-	300
	1.705-30.0	30	-	30
	30-88	100	40	3
	88-216	150	43.5	3
	216-960	200	46	3
	Above 960	500	54	3
	The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.				

Test procedure

The setup below was used to measure the radiated spurious emissions.

Depending of the frequency range and bands being tested, different antennas and filters were used.

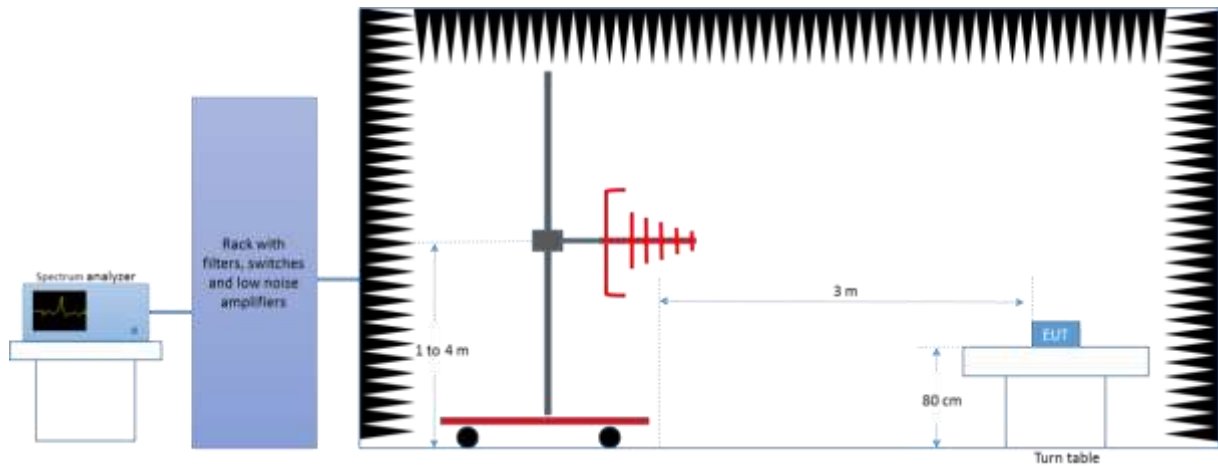
The final measurement is done by varying the antenna height, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst case configuration selected from the chapter B.2.2 and using the low, middle and high channel.

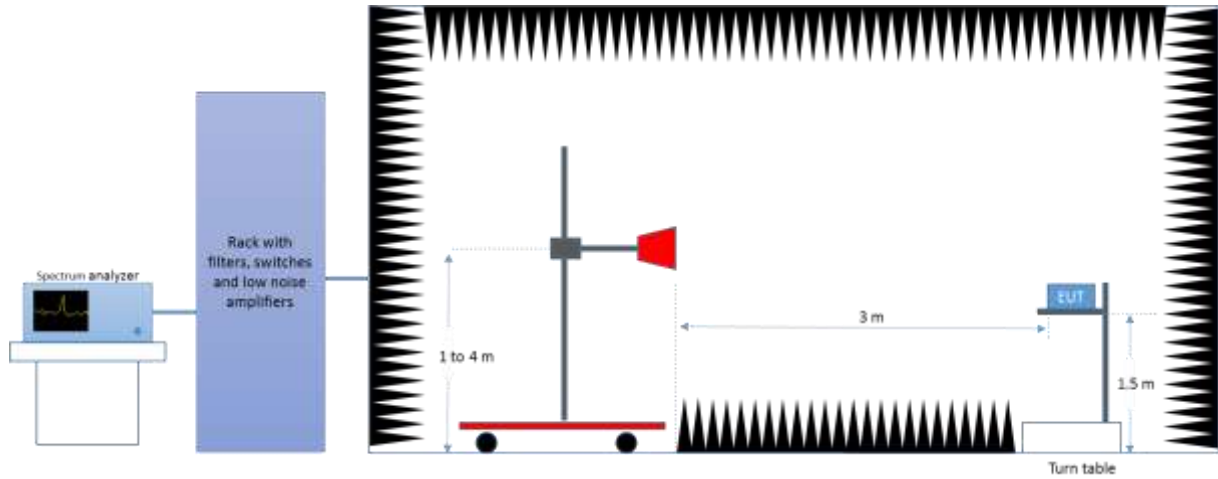
For technologies 802.11ax20, 802.11ax40, 802.11ax80 and 802.11ax160 the worst case in terms of spurious emissions found among the low, mid and high channels tested on chain A and B separately is used to perform the test in MIMO mode (Chain A+B).

For technologies 802.11n20, 802.11n40, 802.11ac80 and 802.11ac160 the worst case in terms of spurious emissions found among the low, mid and high channels tested on 802.11ax20, 802.11ax40, 802.11ax80 and 802.11ax160 is used to perform the test in A, B ,and A+B modes.

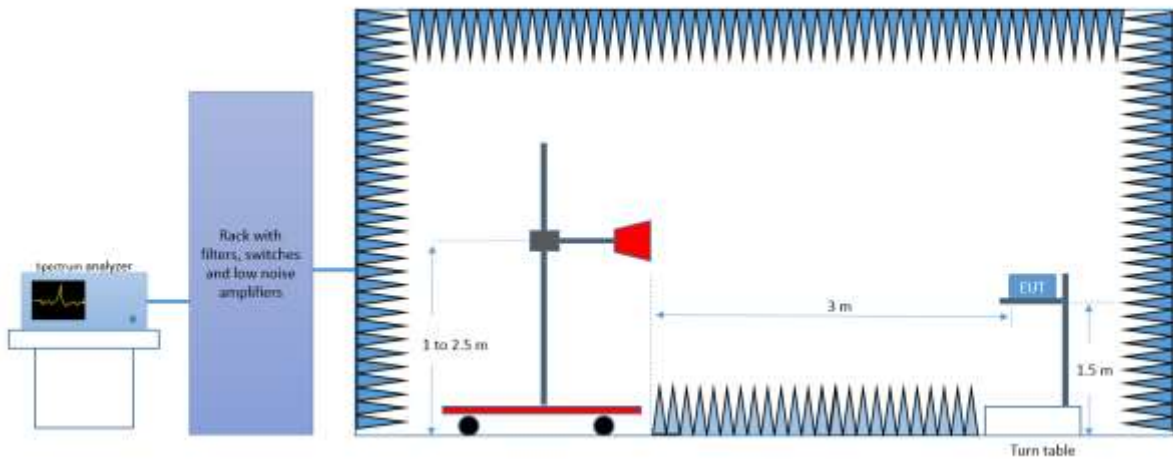
Radiated Setup 30 MHz - 1GHz



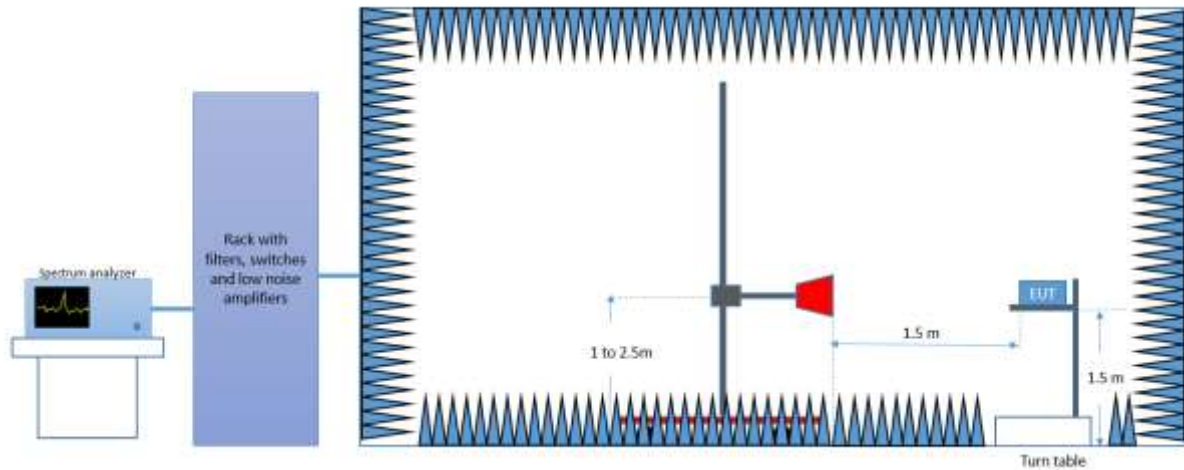
Radiated Setup 1 GHz – 6.4 GHz



Radiated Setup 6.4 GHz - 18 GHz



Radiated Setup 18 GHz - 40 GHz



Sample Calculation

The field strength is deduced from the radiated measurement using the following equation:

$$E = 126.8 - 20\log(\lambda) + P - G$$

where

E is the field strength of the emission at the measurement distance, in dBμV/m

P is the power measured at the output of the test antenna, in dBm

λ is the wavelength of the emission under investigation $[300/f_{MHz}]$, in m

G is the gain of the test antenna, in dBi

NOTE – The measured power P includes all applicable instrument correction factors up to the connection to the test Antenna e.g. cable losses, amplifier gains.

For field strength measurements made at other than the distance at which the applicable limit is specified, the field strength of the emission at the distance specified by the limit is deduced as follows:

$$E_{SpecLimit} = E_{Meas} + 20\log(D_{Meas}/D_{SpecLimit})$$

where

$E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in dBμV/m

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

D_{Meas} is the measurement distance, in m

$D_{SpecLimit}$ is the distance specified by the limit, in m

Test Results

30 MHz – 40 GHz, 802.11a, 6Mbps, Chain A

Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
128.7	32.1	---	43.6	11.4
6308.0	---	42.9	54.0	11.1
6317.0	56.0	---	74.0	18.0
6474.4	48.5	---	74.0	25.5
6474.9	---	40.8	54.0	13.2
10359.5	---	46.7	54.0	7.3
10364.8	55.8	---	74.0	18.2
20720.0	---	50.4	54.0	3.6
20720.0	50.3	---	74.0	23.7

Radiated Spurious – CH40

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
125.0	31.8	---	43.6	11.8
5619.0	---	47.2	54.0	6.8
5624.5	58.7	---	74.0	15.3
6499.6	47.3	---	74.0	26.7
6500.1	---	39.8	54.0	14.2
10401.0	---	47.3	54.0	6.7
10404.4	57.6	---	74.0	16.4
20800.0	---	50.3	54.0	3.7
20800.2	51.2	---	74.0	22.8

Radiated Spurious – CH48

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
52.0	30.4	---	40.0	9.7
125.2	32.2	---	43.6	11.4
540.8	35.6	---	46.0	10.4
1030.5	---	34.1	54.0	19.9
1030.5	46.6	---	74.0	27.4
5625.0	---	43.1	54.0	10.9
5625.0	56.4	---	74.0	17.6
6549.8	47.0	---	74.0	27.0
6549.8	---	37.8	54.0	16.2
10473.5	53.4	---	74.0	20.6
10478.9	---	43.3	54.0	10.7
20960.1	---	50.0	54.0	4.0
20960.1	52.1	---	74.0	21.9

30 MHz – 40 GHz, 802.11a, 6Mbps, Chain B

Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.8	32.4	---	43.6	11.1
6366.0	54.2	---	74.0	19.8
6376.0	---	42.6	54.0	11.4
6474.9	47.2	---	74.0	26.8
6474.9	---	38.9	54.0	15.1
10351.3	---	40.9	54.0	13.1
10353.2	51.3	---	74.0	22.7
20720.3	---	48.9	54.0	5.1
20720.3	51.0	---	74.0	23.0

Radiated Spurious – CH40

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
277.4	34.0	---	46.0	12.0
1001.0	---	36.8	54.0	17.2
1001.0	48.1	---	74.0	25.9
5614.5	---	43.3	54.0	10.7
5615.5	59.4	---	74.0	14.6
6499.6	---	36.5	54.0	17.5
6499.6	46.9	---	74.0	27.1
10398.1	49.1	---	74.0	24.9
10398.1	---	38.4	54.0	15.6
20800.0	---	51.1	54.0	2.9
20806.6	52.3	---	74.0	21.7

Radiated Spurious – CH48

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBµV/m	dBµV/m	dBµV/m	dB
123.4	32.2	---	43.6	11.4
278.3	34.4	---	46.0	11.6
1033.0	---	35.6	54.0	18.5
1036.0	46.9	---	74.0	27.2
5621.0	57.1	---	74.0	16.9
5622.5	---	42.5	54.0	11.5
6549.4	47.9	---	74.0	26.1
6549.8	---	37.9	54.0	16.1
10475.5	48.6	---	74.0	25.4
10478.4	---	37.5	54.0	16.5
20959.6	51.9	---	74.0	22.1
20959.9	---	51.0	54.0	3.0

30 MHz – 40 GHz, 802.11n20, HT0, Chain A
Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBµV/m	dBµV/m	dBµV/m	dB
123.3	33.6	---	43.6	10.0
540.8	36.6	---	46.0	9.4
1194.5	---	33.7	54.0	20.3
1196.0	46.8	---	74.0	27.2
6474.9	46.8	---	74.0	27.2
6474.9	---	39.7	54.0	14.3
10359.5	---	41.7	54.0	12.3
10360.4	51.8	---	74.0	22.2
20720.0	---	49.4	54.0	4.6
20720.0	49.6	---	74.0	24.4

30 MHz – 40 GHz, 802.11n20, HT0, Chain B

Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.0	31.8	---	43.6	11.8
549.1	35.8	---	46.0	10.2
1196.0	---	35.4	54.0	18.6
1198.5	46.6	---	74.0	27.4
6474.4	46.1	---	74.0	27.9
6474.4	---	37.7	54.0	16.3
10360.4	---	40.8	54.0	13.2
10360.4	51.8	---	74.0	22.2
20720.0	---	49.2	54.0	4.8
20720.0	50.1	---	74.0	23.9

30 MHz – 40 GHz, 802.11n20, HT8, Chain A+B

Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.8	32.9	---	43.6	10.6
928.6	39.5	---	46.0	6.5
1196.0	---	35.4	54.0	18.6
1196.0	47.3	---	74.0	26.7
6474.9	47.1	---	74.0	26.9
6474.9	---	39.1	54.0	14.9
10356.1	54.4	---	74.0	19.6
10360.4	---	43.7	54.0	10.3
20719.5	50.8	---	74.0	23.2
20720.0	---	48.7	54.0	5.3

30 MHz – 40 GHz, 802.11ax20,HE0, Chain A

Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.7	33.1	---	43.6	10.4
540.8	37.1	---	46.0	8.9
5411.5	55.2	---	74.0	18.8
5411.5	---	44.4	54.0	9.7
6474.9	---	40.4	54.0	13.6
6474.9	48.5	---	74.0	25.5
10343.0	---	51.5	54.0	2.5
10344.5	60.6	---	74.0	13.5
20720.0	50.3	---	74.0	23.7
20720.0	---	52.4	54.0	1.6

Radiated Spurious – CH40

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.0	31.6	---	43.6	12.0
312.0	32.8	---	46.0	13.3
1195.0	46.0	---	74.0	28.0
1195.0	---	34.9	54.0	19.1
5736.5	52.2	---	74.0	21.8
5743.5	---	40.1	54.0	13.9
6499.6	---	40.6	54.0	13.4
6500.1	47.0	---	74.0	27.0
10383.2	---	49.4	54.0	4.6
10383.6	56.7	---	74.0	17.3
20800.2	---	49.5	54.0	4.5
20800.2	50.7	---	74.0	23.3

Radiated Spurious – CH48

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.6	32.2	---	43.6	11.3
245.1	33.5	---	46.0	12.5
6232.0	---	41.5	54.0	12.5
6261.0	53.4	---	74.0	20.6
6549.8	---	38.8	54.0	15.2
6549.8	47.1	---	74.0	26.9
10462.9	---	45.6	54.0	8.4
10463.9	54.0	---	74.0	20.0
20926.4	---	41.3	54.0	12.7
20960.1	50.3	---	74.0	23.7
20960.1	---	51.0	54.0	3.0

30 MHz – 40 GHz, 802.11ax20, HE0, Chain B
Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.8	32.8	---	43.6	10.8
726.7	39.7	---	46.0	6.3
6049.0	54.6	---	74.0	19.4
6146.0	---	42.1	54.0	11.9
6474.9	---	38.4	54.0	15.6
6474.9	46.9	---	74.0	27.1
10342.6	---	49.9	54.0	4.2
10342.6	58.2	---	74.0	15.8
20685.5	---	41.7	54.0	12.3
20687.6	51.3	---	74.0	22.7
20720.0	---	51.9	54.0	2.1
20720.3	50.9	---	74.0	23.1

Radiated Spurious – CH40

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.0	32.9	---	43.6	10.6
540.8	36.5	---	46.0	9.5
5836.0	---	41.3	54.0	12.7
5854.0	52.5	---	74.0	21.6
6500.1	---	38.3	54.0	15.7
6500.5	47.1	---	74.0	26.9
10383.2	---	44.9	54.0	9.1
10384.6	53.2	---	74.0	20.8
20766.5	---	49.7	54.0	4.3
20766.5	56.7	---	74.0	17.3
20799.7	49.9	---	74.0	24.1
20800.0	---	49.8	54.0	4.2

Radiated Spurious – CH48

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.5	33.2	---	43.6	10.3
312.0	32.4	---	46.0	13.6
6047.5	55.2	---	74.0	18.8
6081.5	---	41.8	54.0	12.2
6549.8	48.3	---	74.0	25.7
6549.8	---	38.6	54.0	15.4
10462.9	---	42.3	54.0	11.7
10463.9	50.4	---	74.0	23.6
20925.9	---	48.6	54.0	5.4
20927.7	53.9	---	74.0	20.1
20960.1	50.5	---	74.0	23.5
20960.1	---	51.1	54.0	2.9

30 MHz – 40 GHz, 802.11ax20, HE0, Chain A+B

Radiated Spurious – CH36

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
125.1	31.6	---	43.6	11.9
1195.5	---	34.8	54.0	19.2
1196.5	46.2	---	74.0	27.8
6466.2	---	39.9	54.0	14.1
6466.7	49.6	---	74.0	24.4
6474.9	---	40.9	54.0	13.1
6475.4	48.3	---	74.0	25.7
10342.6	---	50.5	54.0	3.5
10344.0	61.6	---	74.0	12.4
20686.3	---	46.1	54.0	7.9
20687.6	53.9	---	74.0	20.1
20720.0	---	48.8	54.0	5.2
20720.0	49.8	---	74.0	24.2

30 MHz – 40 GHz, 802.11n40, HT0, Chain A

Radiated Spurious – CH38F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.8	33.4	---	43.6	10.2
247.8	33.4	---	46.0	12.6
6321.5	---	42.9	54.0	11.1
6323.0	55.7	---	74.0	18.3
6486.5	47.7	---	74.0	26.3
6487.0	---	40.3	54.0	13.7
10378.3	55.0	---	74.0	19.0
10385.1	---	44.3	54.0	9.7
20759.8	50.6	---	74.0	23.4
20760.1	---	49.9	54.0	4.1

Radiated Spurious – CH46F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	33.2	---	46.0	12.8
1195.5	---	35.2	54.0	18.8
1196.5	47.3	---	74.0	26.7
6537.3	---	39.4	54.0	14.6
6537.3	49.2	---	74.0	24.8
7619.0	---	37.1	54.0	16.9
10459.5	48.5	---	74.0	25.5
10459.5	---	38.5	54.0	15.5
16365.4	---	40.2	54.0	13.8
16367.8	51.8	---	74.0	22.2
20920.0	---	50.0	54.0	4.0
20920.3	50.6	---	74.0	23.4

30 MHz – 40 GHz, 802.11n40, HT0, Chain B

Radiated Spurious – CH38F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
123.9	33.3	---	43.6	10.3
312.0	33.7	---	46.0	12.3
6015.0	53.7	---	74.0	20.3
6018.5	---	41.5	54.0	12.5
6487.0	46.9	---	74.0	27.1
6487.5	---	38.0	54.0	16.0
10355.6	48.8	---	74.0	25.2
10359.0	---	38.7	54.0	15.3
20709.6	---	36.6	54.0	17.4
20759.8	50.3	---	74.0	23.7
20760.1	---	49.1	54.0	4.9

Radiated Spurious – CH46F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.7	32.1	---	43.6	11.5
549.1	36.4	---	46.0	9.6
1196.5	---	34.9	54.0	19.1
1200.0	46.2	---	74.0	27.9
6537.3	47.4	---	74.0	26.6
6537.3	---	38.7	54.0	15.3
20920.0	---	49.4	54.0	4.6
20920.0	51.0	---	74.0	23.0

30 MHz – 40 GHz, 802.11n40, HT8, Chain A+B

Radiated Spurious – CH38F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.0	32.6	---	43.6	10.9
624.0	36.8	---	46.0	9.2
6324.5	---	43.0	54.0	11.0
6332.5	55.6	---	74.0	18.4
6486.0	46.9	---	74.0	27.1
6487.5	---	38.7	54.0	15.3
10381.2	56.1	---	74.0	17.9
10382.2	---	44.5	54.0	9.5
20759.8	50.2	---	74.0	23.8
20760.1	---	48.5	54.0	5.5

Radiated Spurious – CH46F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.1	34.2	---	46.0	11.8
6331.0	---	45.0	54.0	9.0
6333.5	58.2	---	74.0	15.8
6400.0	52.6	---	74.0	21.4
6537.3	---	38.2	54.0	15.8
6537.8	48.2	---	74.0	25.8
10444.5	50.2	---	74.0	23.8
10459.5	---	38.8	54.0	15.2
20920.0	---	49.4	54.0	4.6
20920.0	49.7	---	74.0	24.3

30 MHz – 40 GHz, 802.11ax40, HE0, Chain A

Radiated Spurious – CH38F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
124.5	31.6	---	43.6	11.9
549.1	34.9	---	46.0	11.1
6297.5	---	42.7	54.0	11.3
6320.0	56.0	---	74.0	18.0
6487.0	---	40.9	54.0	13.1
6487.0	48.2	---	74.0	25.8
10344.0	56.9	---	74.0	17.1
10344.0	---	49.2	54.0	4.8
20759.8	50.6	---	74.0	23.4
20760.1	---	49.5	54.0	4.5

Radiated Spurious – CH46F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
123.4	32.9	---	43.6	10.7
549.2	35.4	---	46.0	10.6
1007.0	---	42.6	54.0	11.4
1007.5	52.6	---	74.0	21.5
1195.5	---	35.2	54.0	18.8
1196.5	47.3	---	74.0	26.7
10423.8	58.4	---	74.0	15.6
10424.2	---	50.3	54.0	3.7
20920.0	---	51.0	54.0	3.0
20920.0	50.7	---	74.0	23.3

30 MHz – 40 GHz, 802.11ax40, HE0, Chain B

Radiated Spurious – CH38F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
123.4	33.6	---	43.6	10.0
540.8	36.5	---	46.0	9.5
6089.5	52.6	---	74.0	21.4
6090.5	---	41.4	54.0	12.6
6487.0	---	37.9	54.0	16.1
6487.5	46.8	---	74.0	27.2
10343.0	55.9	---	74.0	18.1
10344.0	---	49.0	54.0	5.1
20688.1	---	37.4	54.0	16.6
20759.8	---	49.1	54.0	4.9
20760.1	49.5	---	74.0	24.5

Radiated Spurious – CH46F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
123.4	33.6	---	43.6	9.9
549.1	36.7	---	46.0	9.3
1196.5	---	34.9	54.0	19.1
1200.0	46.2	---	74.0	27.9
6537.3	---	38.5	54.0	15.5
6537.3	47.0	---	74.0	27.0
10423.8	---	41.1	54.0	12.9
10424.2	49.7	---	74.0	24.3
20848.3	51.9	---	74.0	22.1
20848.6	---	42.6	54.0	11.5
20919.8	51.0	---	74.0	23.0
20920.0	---	50.9	54.0	3.1

30 MHz – 40 GHz, 802.11ax40, HE0, Chain A+B

Radiated Spurious – CH38F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.2	33.0	---	43.6	10.6
244.7	34.9	---	46.0	11.1
4931.0	---	42.7	54.0	11.3
4931.0	58.6	---	74.0	15.4
10344.5	59.2	---	74.0	14.8
10344.5	---	50.4	54.0	3.7
20760.1	---	48.9	54.0	5.1
20760.1	50.3	---	74.0	23.7

Radiated Spurious – CH46F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	34.1	---	46.0	11.9
6217.5	---	44.9	54.0	9.1
6236.5	57.0	---	74.0	17.0
10423.8	---	50.3	54.0	3.7
10424.2	58.5	---	74.0	15.5
20848.0	60.7	---	74.0	13.3
20848.3	---	48.0	54.0	6.0
20920.0	---	49.0	54.0	5.0
20920.3	51.1	---	74.0	22.9

30 MHz – 40 GHz, 802.11ac80, VHT0, Chain A

Radiated Spurious – CH42

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
122.8	33.2	---	43.6	10.4
312.0	33.3	---	46.0	12.7
3907.0	49.8	---	74.0	24.2
3907.5	---	38.7	54.0	15.4
6512.1	---	42.3	54.0	11.7
6512.6	48.8	---	74.0	25.2
10401.0	50.0	---	74.0	24.0
10419.4	---	39.6	54.0	14.4
20839.8	50.3	---	74.0	23.8
20840.1	---	50.6	54.0	3.4

30 MHz – 40 GHz, 802.11ac80, VHT0, Chain B

Radiated Spurious – CH42

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
540.8	36.3	---	46.0	9.7
6250.5	53.2	---	74.0	20.8
6259.0	---	42.5	54.0	11.5
6512.6	---	38.9	54.0	15.2
6513.1	47.7	---	74.0	26.3
16351.8	---	40.4	54.0	13.6
16365.4	52.0	---	74.0	22.0
20840.1	---	49.4	54.0	4.6
20840.1	50.5	---	74.0	23.5

30 MHz – 40 GHz, 802.11ac80, VHT0, Chain A+B

Radiated Spurious – CH42

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	36.1	---	46.0	9.9
6172.5	55.4	---	74.0	18.6
6260.0	---	42.4	54.0	11.6
6512.6	---	42.4	54.0	11.6
6512.6	47.9	---	74.0	26.1
10409.7	50.0	---	74.0	24.0
10425.7	---	40.8	54.0	13.2
20840.1	50.3	---	74.0	23.7
20840.1	---	49.2	54.0	4.8

30 MHz – 40 GHz, 802.11ax80, HE0, Chain A

Radiated Spurious – CH42

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
540.8	35.5	---	46.0	10.5
3869.5	---	39.2	54.0	14.8
3892.5	49.4	---	74.0	24.6
6474.0	---	41.3	54.0	12.7
6474.9	49.7	---	74.0	24.3
10343.0	57.2	---	74.0	16.8
10344.0	---	51.4	54.0	2.6
20840.1	---	49.9	54.0	4.1
20840.1	50.4	---	74.0	23.7

30 MHz – 40 GHz, 802.11ax80, HE0, Chain B

Radiated Spurious – CH42

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
841.4	41.0	---	46.0	5.0
5019.8	---	49.8	54.0	4.2
5023.1	65.1	---	74.0	8.9
10344.0	---	47.7	54.0	6.3
10344.5	56.4	---	74.0	17.6
20840.1	---	50.1	54.0	3.9
20840.3	51.1	---	74.0	22.9

30 MHz – 40 GHz, 802.11ax80, HE0, Chain A+B

Radiated Spurious – CH42

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
841.2	37.4	---	46.0	8.6
1194.5	45.9	---	74.0	28.1
1195.5	---	34.8	54.0	19.2
10343.5	---	50.1	54.0	3.9
10344.0	59.1	---	74.0	14.9
20840.1	---	49.3	54.0	4.7
20840.1	50.1	---	74.0	23.9

30 MHz – 40 GHz, 802.11ac160, VHT0, Chain A

Radiated Spurious – CH50

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.2	35.0	---	46.0	11.0
1018.0	42.5	---	74.0	31.5
1018.0	---	31.1	54.0	22.9
10435.4	---	41.3	54.0	12.7
10436.3	53.0	---	74.0	21.0
21000.0	---	50.6	54.0	3.4
21000.0	50.9	---	74.0	23.1

30 MHz – 40 GHz, 802.11ac160, VHT0, Chain B

Radiated Spurious – CH50

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
841.1	38.3	---	46.0	7.7
6314.0	55.9	---	74.0	18.1
6320.0	---	43.2	54.0	10.8
16712.9	---	41.0	54.0	13.0
16724.0	52.4	---	74.0	21.6
21000.0	---	50.5	54.0	3.5
21000.2	53.2	---	74.0	20.8

30 MHz – 40 GHz, 802.11ac160, VHT0, Chain A+B

Radiated Spurious – CH50

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
833.2	39.5	---	46.0	6.5
1197.0	46.2	---	74.0	27.8
1198.5	---	34.4	54.0	19.6
10434.4	52.6	---	74.0	21.4
10450.3	---	42.3	54.0	11.7
21000.2	---	49.6	54.0	4.4
21000.2	49.0	---	74.0	25.0

30 MHz – 40 GHz, 802.11ax160, HE0, Chain A

Radiated Spurious – CH50

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
835.3	37.5	---	46.0	8.5
1196.0	---	35.0	54.0	19.0
1196.5	46.6	---	74.0	27.5
6484.1	50.5	---	74.0	23.5
6484.6	---	43.3	54.0	10.7
10344.0	---	52.1	54.0	1.9
10344.0	55.2	---	74.0	18.8
21000.0	---	50.5	54.0	3.5
21000.0	50.4	---	74.0	23.6

30 MHz – 40 GHz, 802.11ax160, HE0, Chain B

Radiated Spurious – CH50

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
832.8	39.2	---	46.0	6.8
5483.0	59.6	---	74.0	14.4
5484.5	---	50.0	54.0	4.0
6484.1	47.6	---	74.0	26.4
6484.1	---	37.5	54.0	16.5
10343.5	---	48.6	54.0	5.4
10344.5	54.6	---	74.0	19.4
21000.2	---	50.4	54.0	3.6
21000.2	49.6	---	74.0	24.4

30 MHz – 40 GHz, 802.11ax160, HE0, Chain A+B

Radiated Spurious – CH50

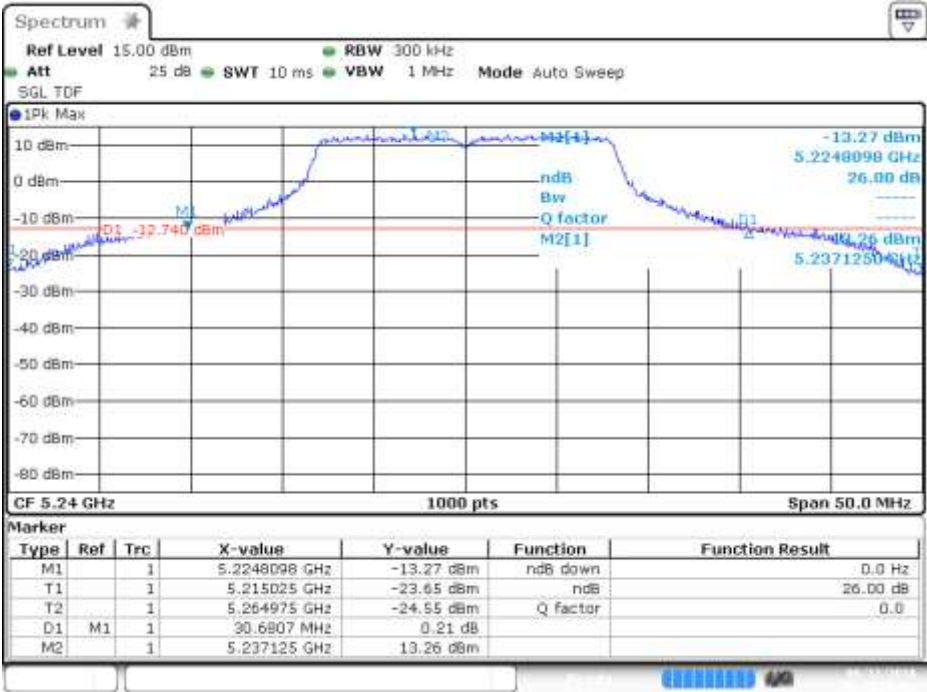
Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	35.9	---	46.0	10.1
5483.5	61.0	---	74.0	13.1
5484.5	---	50.7	54.0	3.3
6484.1	---	42.4	54.0	11.6
6484.1	50.5	---	74.0	23.5
10344.0	---	50.6	54.0	3.4
10345.0	58.8	---	74.0	15.2
21000.0	---	50.5	54.0	3.5
21000.0	49.1	---	74.0	24.9

B.3 Test Results Screenshot U-NII-1

B.3.1 26dB Bandwidth

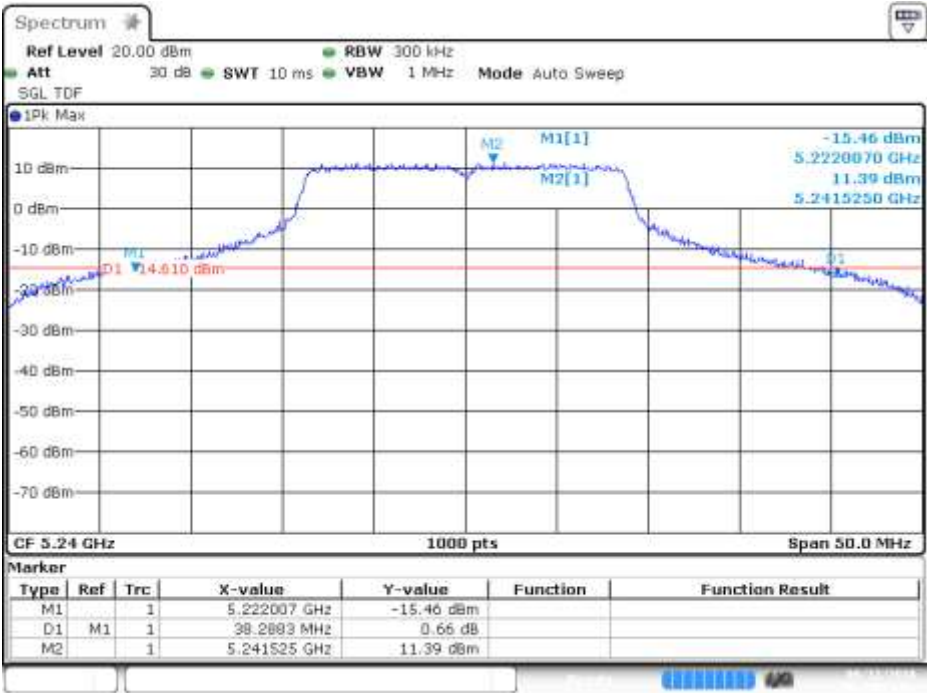
SISO-B, 802.11a, 6Mbps

Channel 48



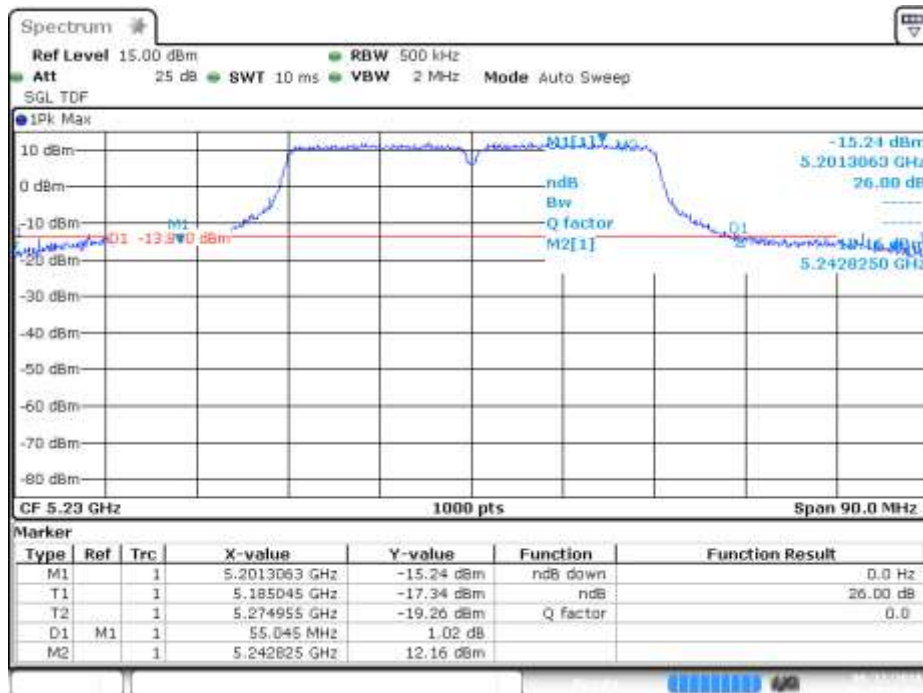
SISO-B, 802.11n20, HT0

Channel 48



SISO-A, 802.11n40, HT0

Channel 46F



MIMO-B, 802.11ac80, VHT0

Channel 42



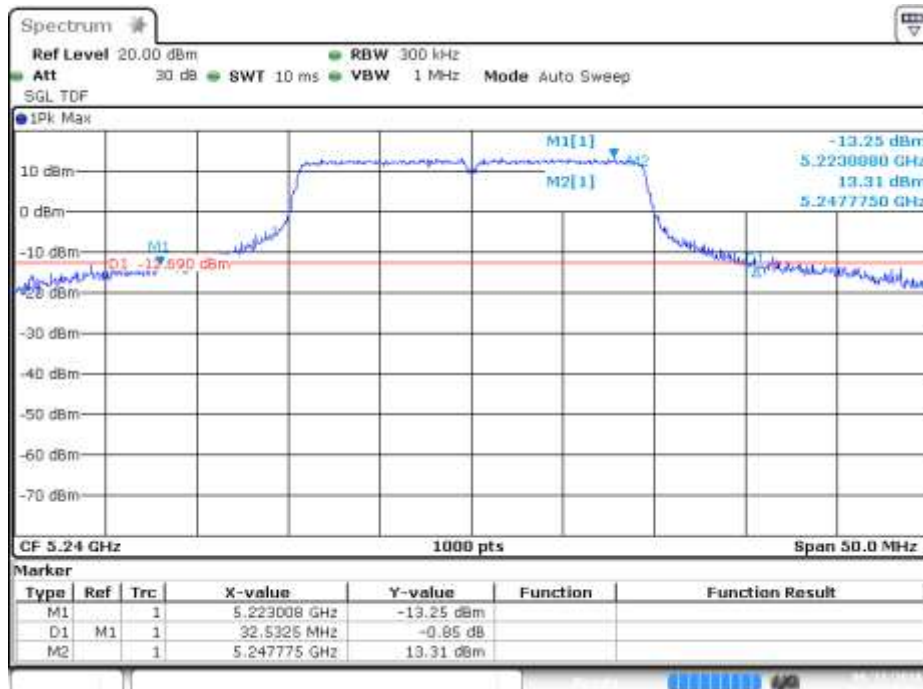
SISO-A, 802.11ac160, VHT0

Channel 50



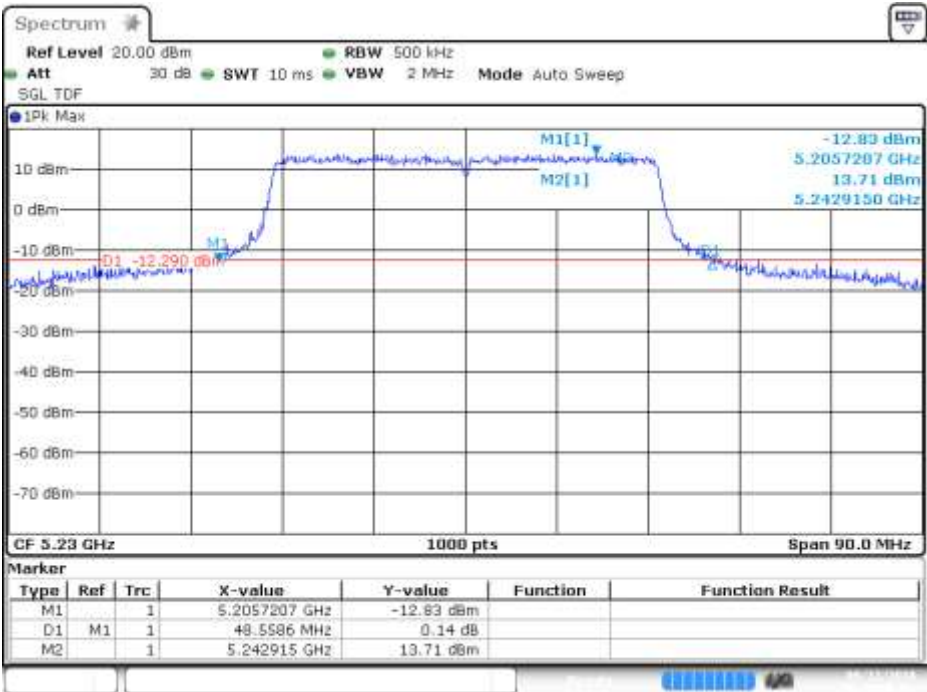
SISO-B, 802.11ax20, HE0

Channel 48



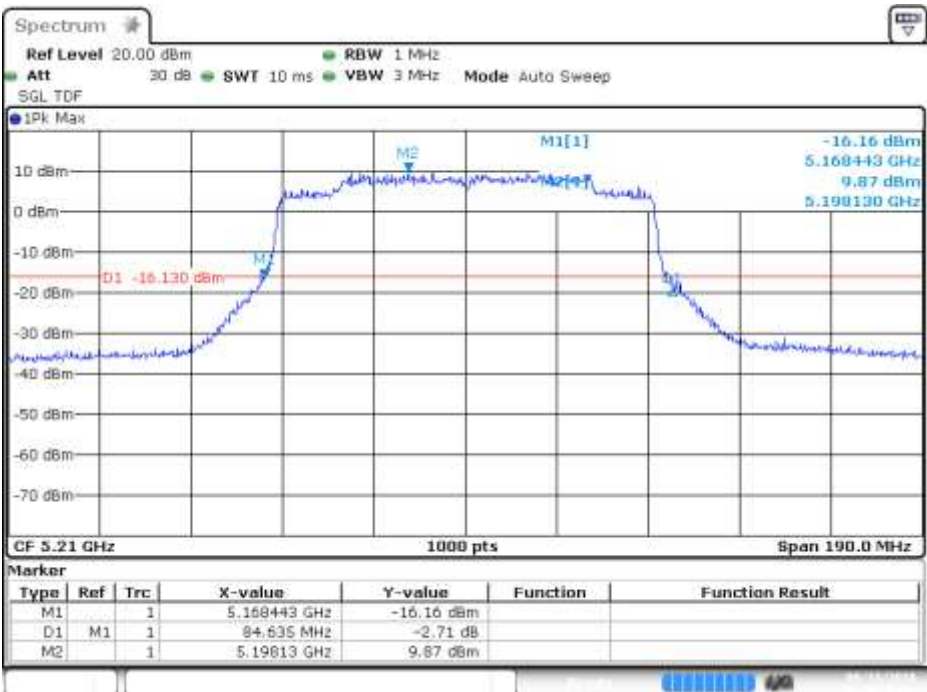
SISO-A, 802.11ax40, HE0

Channel 46F



MIMO-B, 802.11ax80, HE0

Channel 42



SISO-A, 802.11ax160, HE0

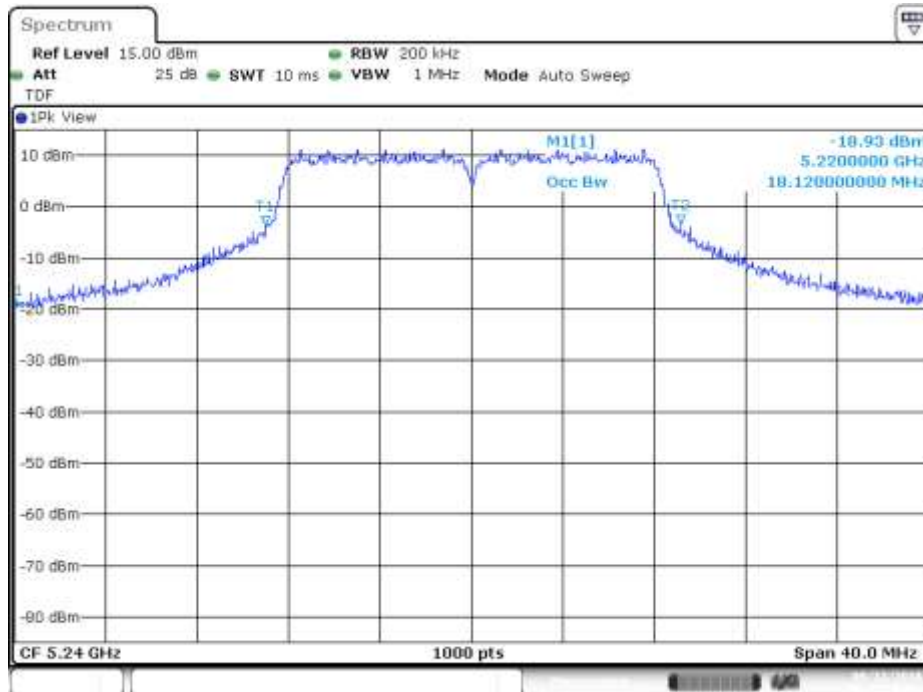
Channel 50



B.3.2 99% Bandwidth

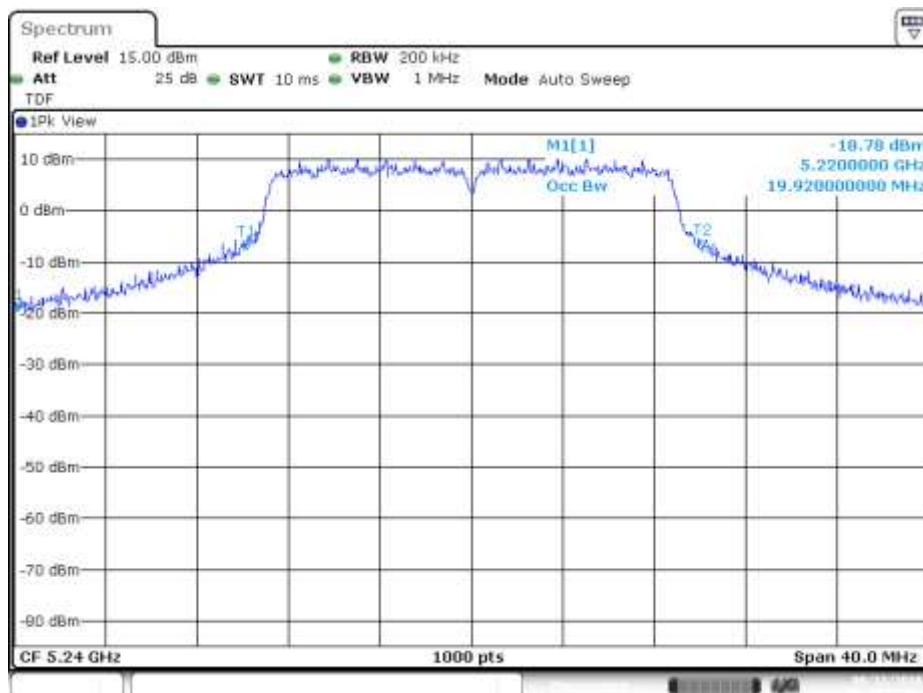
SISO-B, 802.11a, 6Mbps

Channel 48



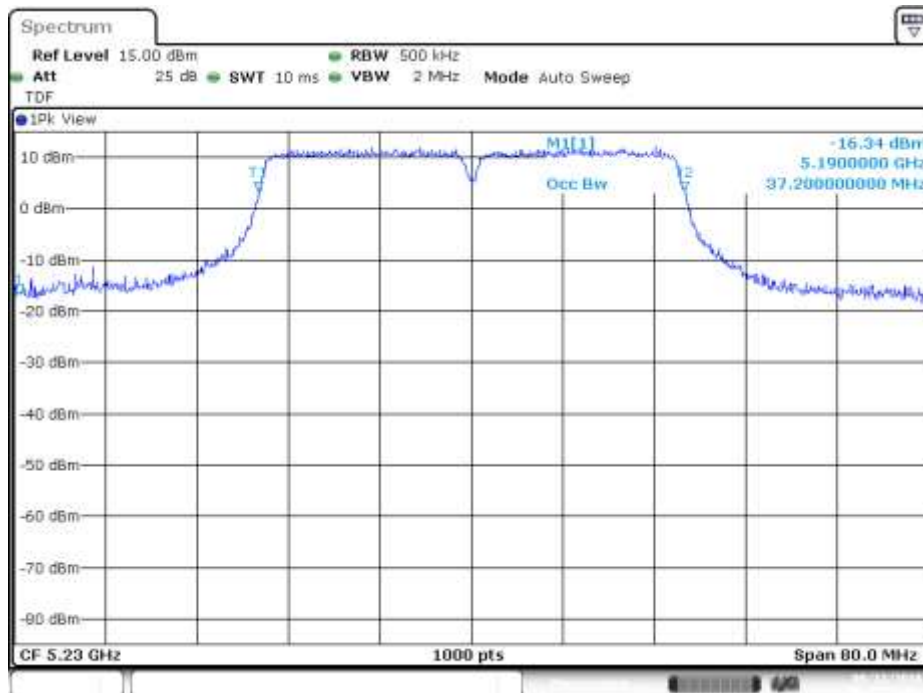
SISO-B, 802.11n20, HT0

Channel 48



SISO-A, 802.11n40, HT0

Channel 46F



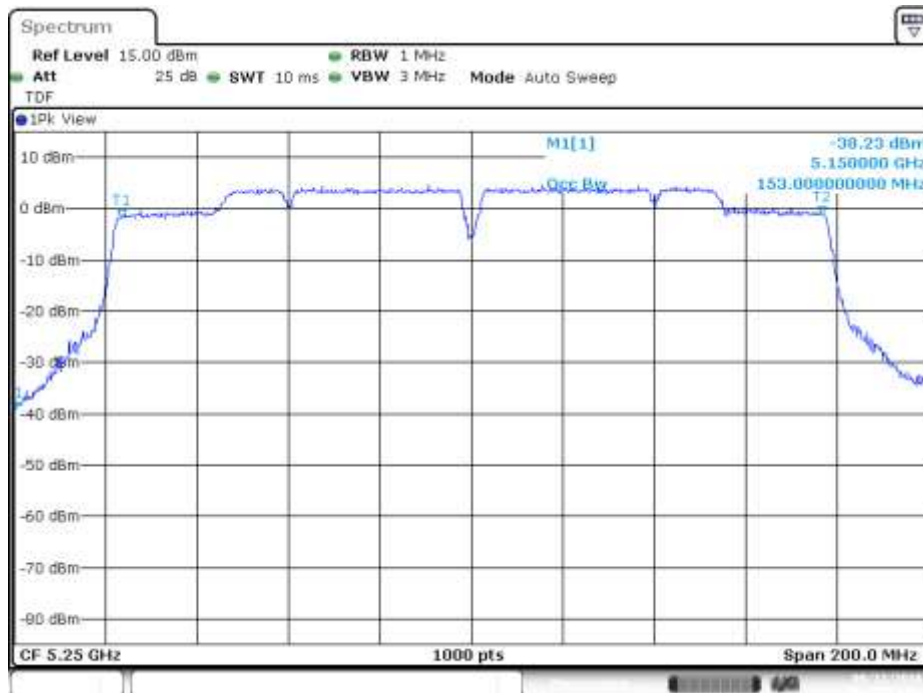
SISO-A, 802.11ac80, VHT0

Channel 42



SISO-A, 802.11ac160, VHT0

Channel 50



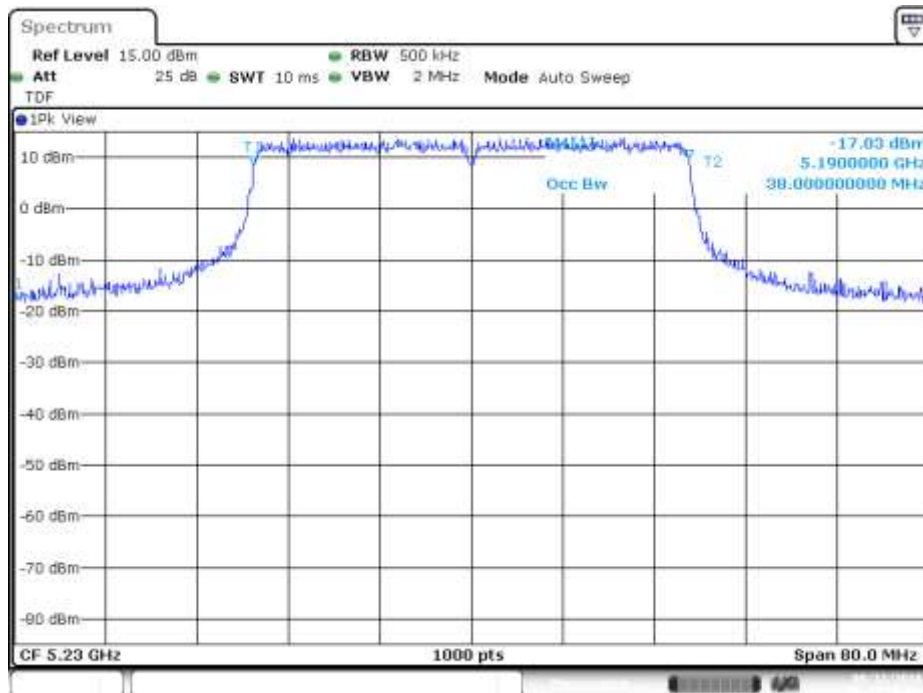
SISO-B, 802.11ax20, HE0

Channel 48



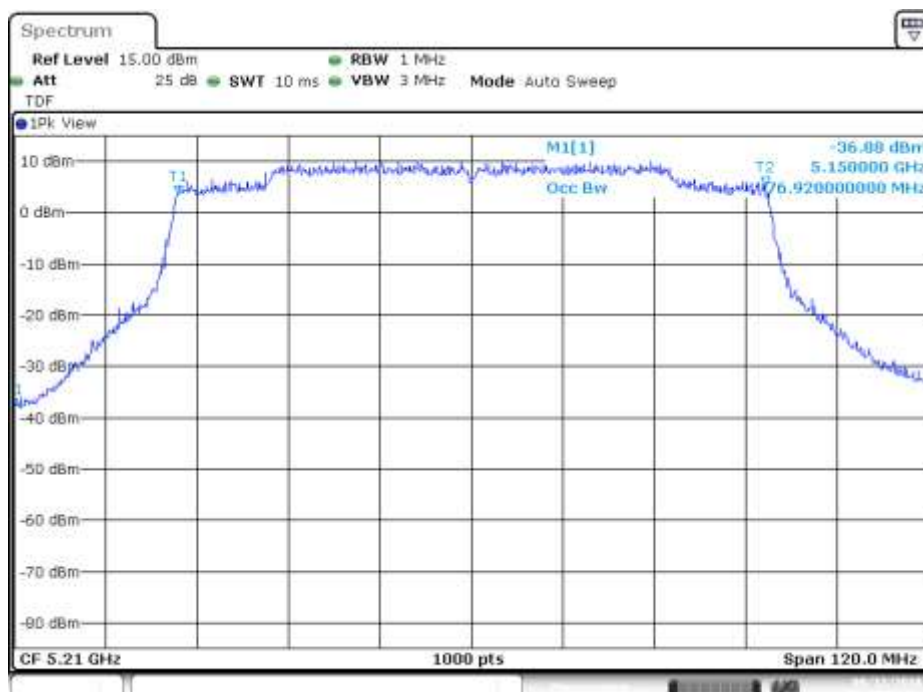
SISO-A, 802.11ax40, HE0

Channel 46F



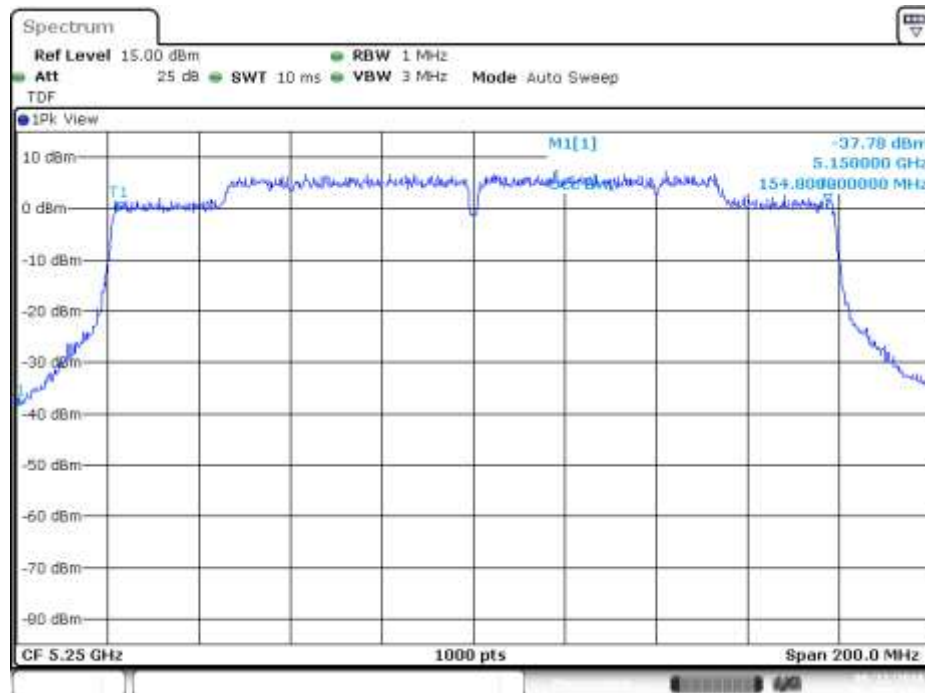
MIMO-A, 802.11ax80, HE0

Channel 42



SISO-A, 802.11ax160, HE0

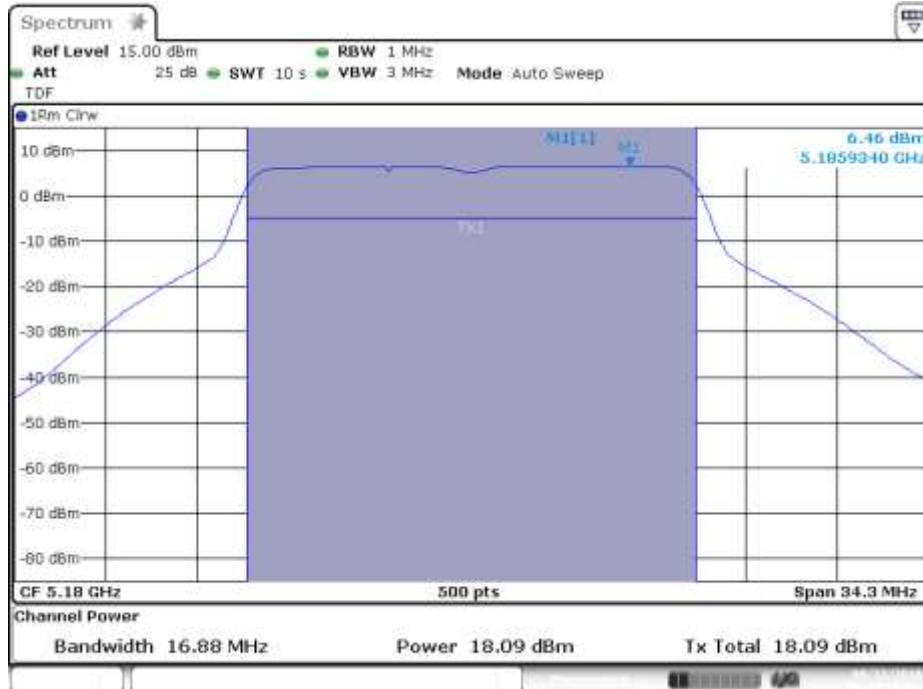
Channel 50



B.3.3 Power Limits. Maximum Output power & Peak power spectral density

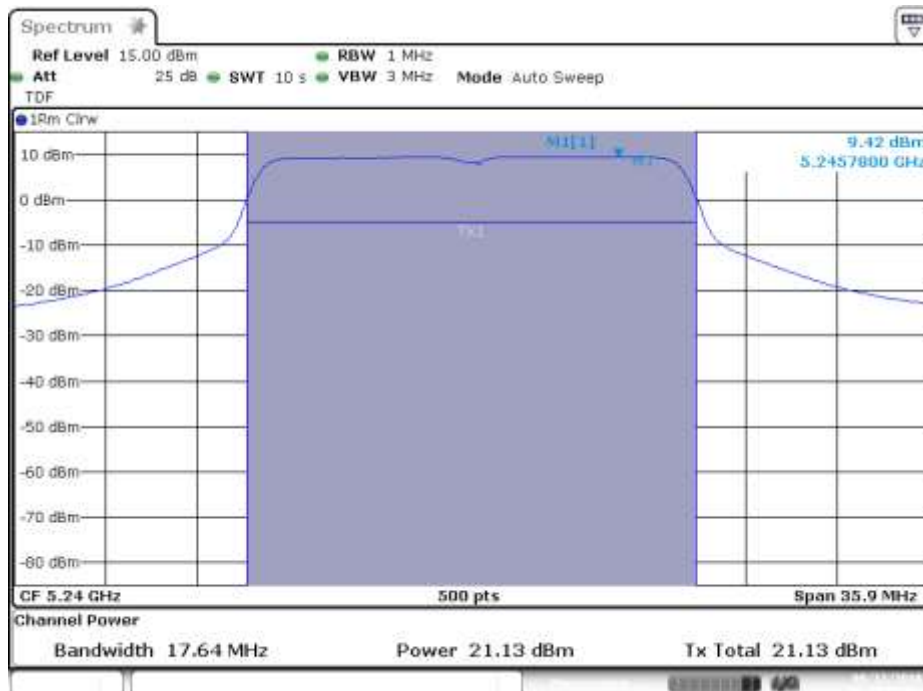
SISO-B, 802.11a, 6Mbps

Channel 36



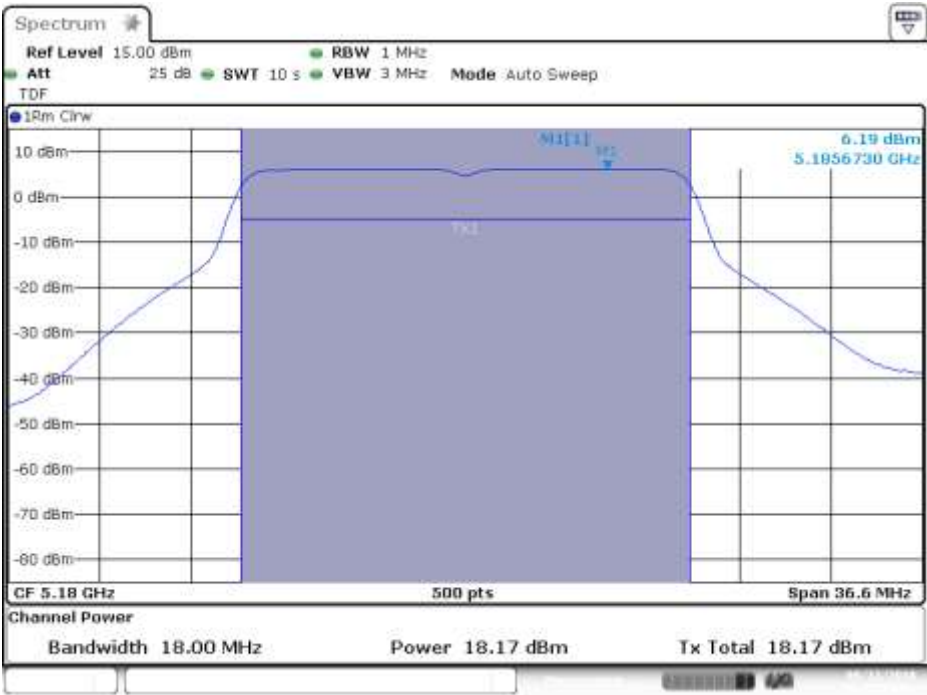
SISO-A, 802.11a, 6Mbps

Channel 48



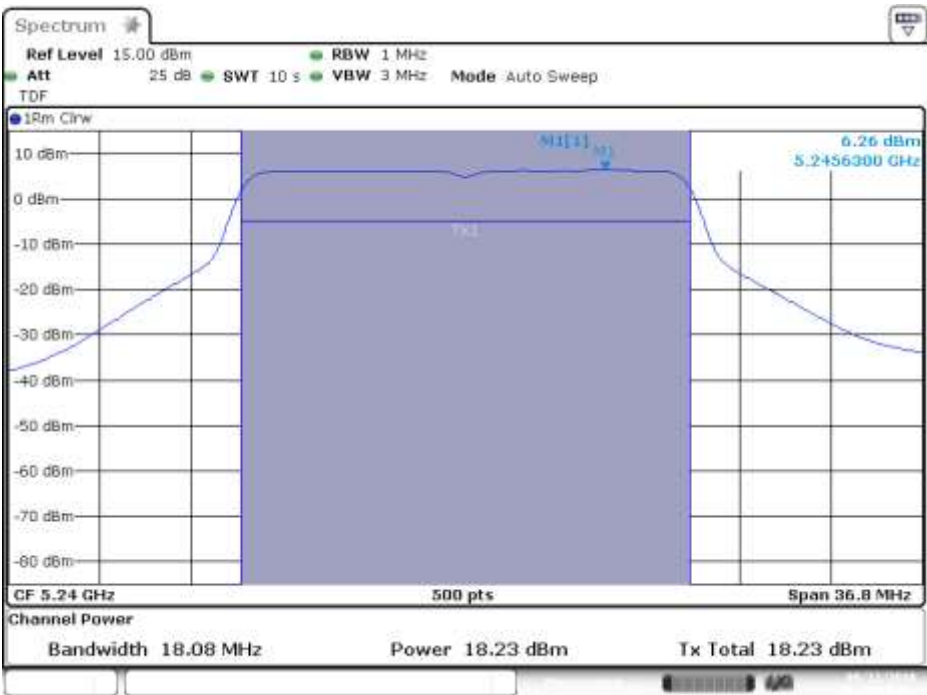
SISO-A, 802.11n20, HT0

Channel 36



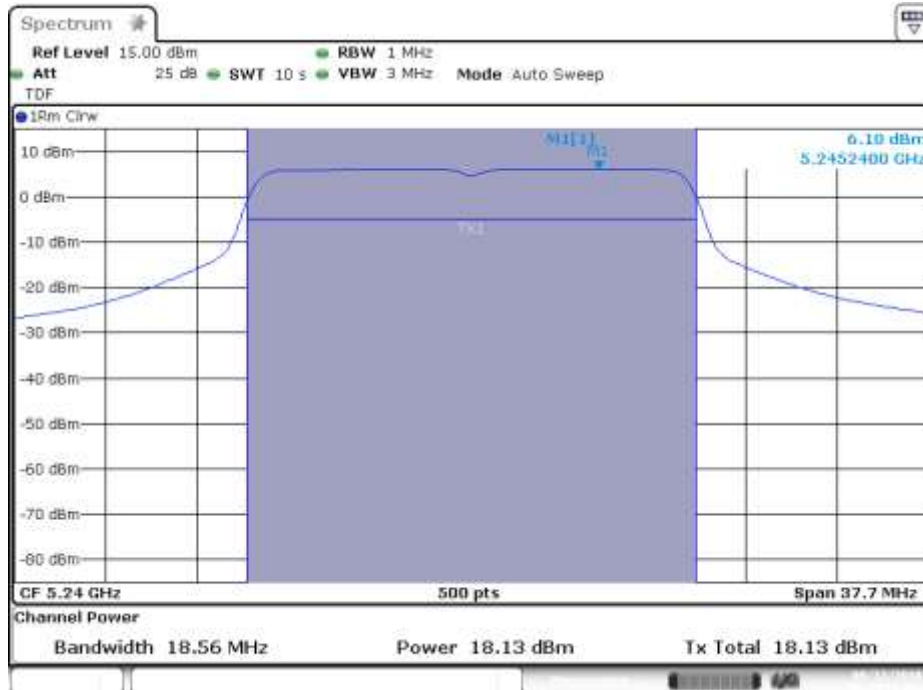
MIMO-A, 802.11n20, HT8

Channel 48



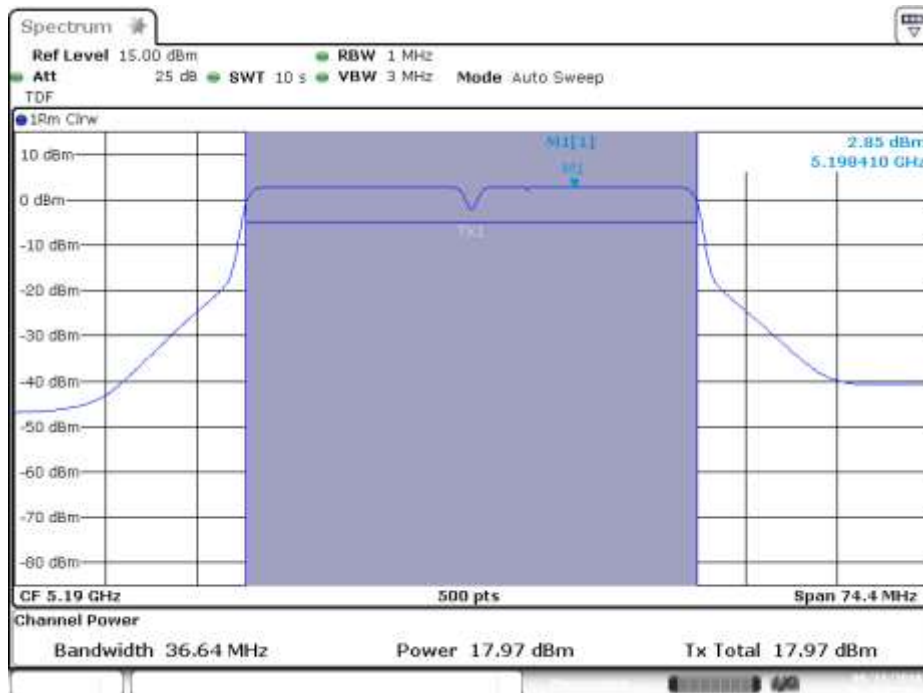
MIMO-B, 802.11n20, HT8

Channel 48



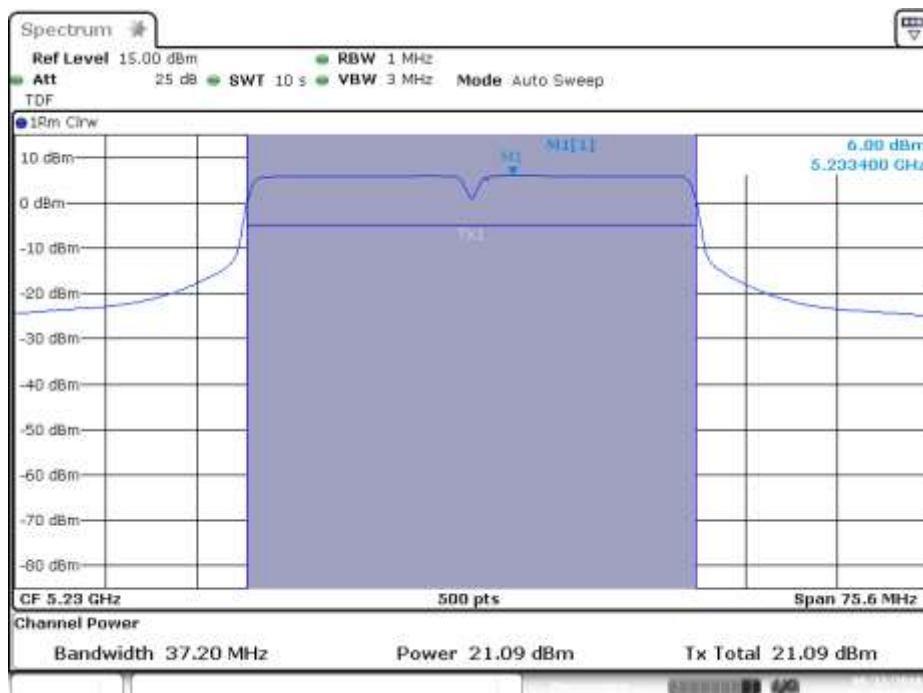
SISO-A, 802.11n40, HT8

Channel 38F



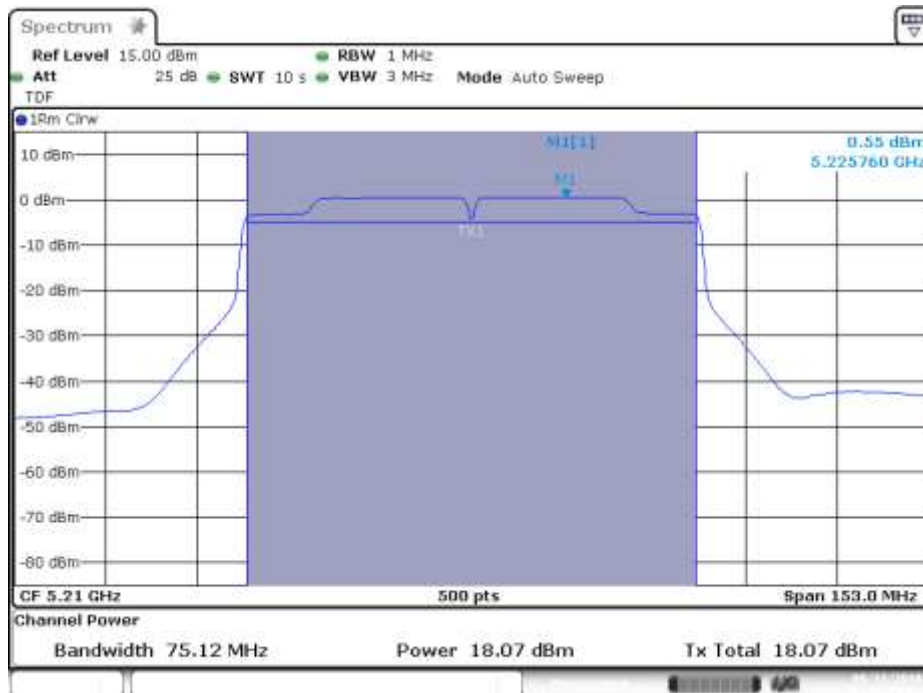
SISO-B, 802.11n40, HT8

Channel 46F



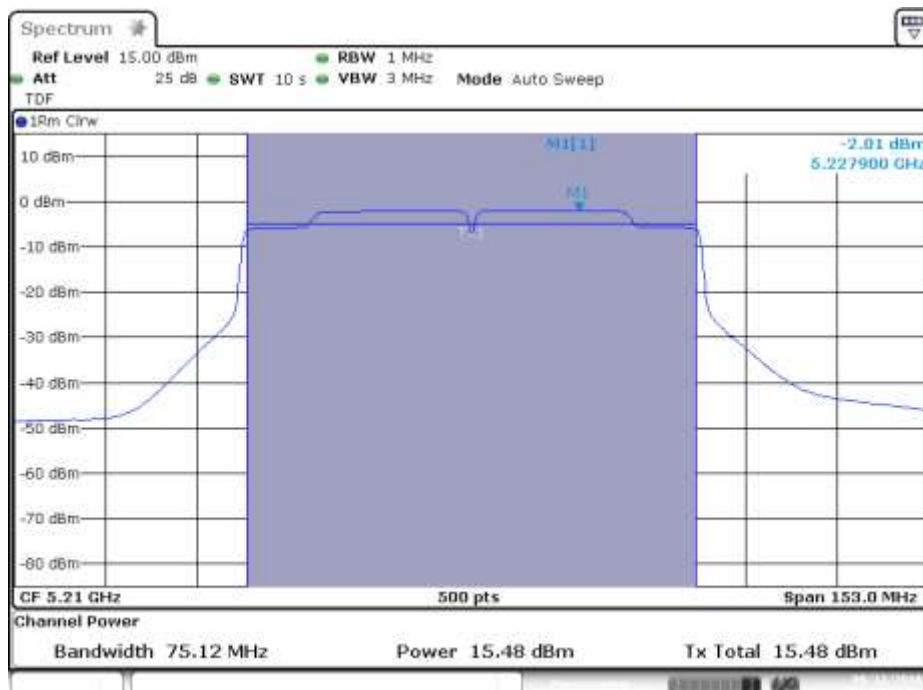
SISO-B, 802.11ac80, VHT0

Channel 42



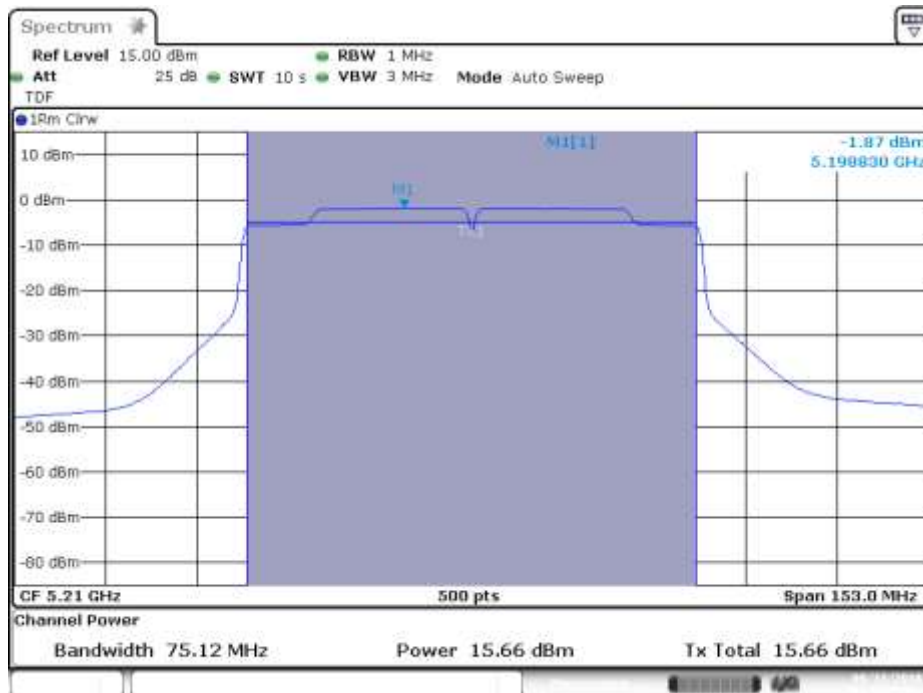
MIMO-A, 802.11ac80, VHT0

Channel 42



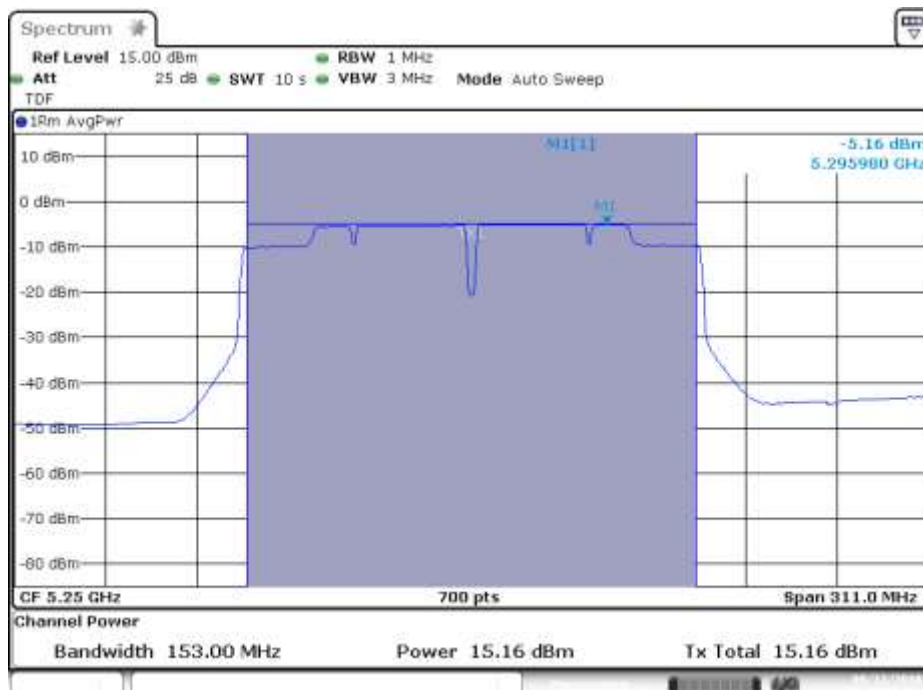
MIMO-B, 802.11ac80, VHT0

Channel 42



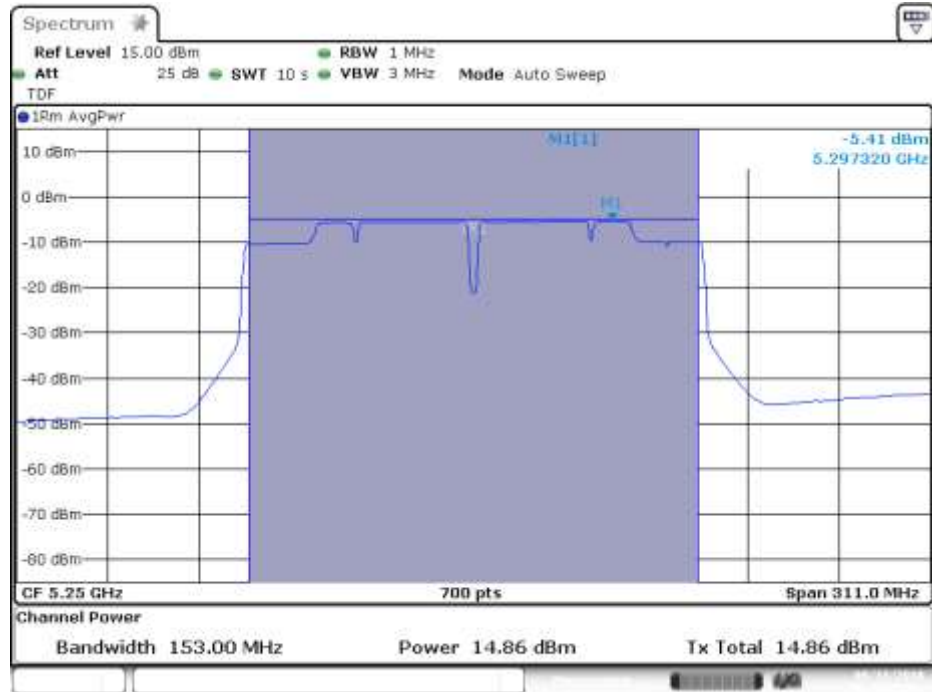
SISO-A, 802.11ac160, VHT0

Channel 50



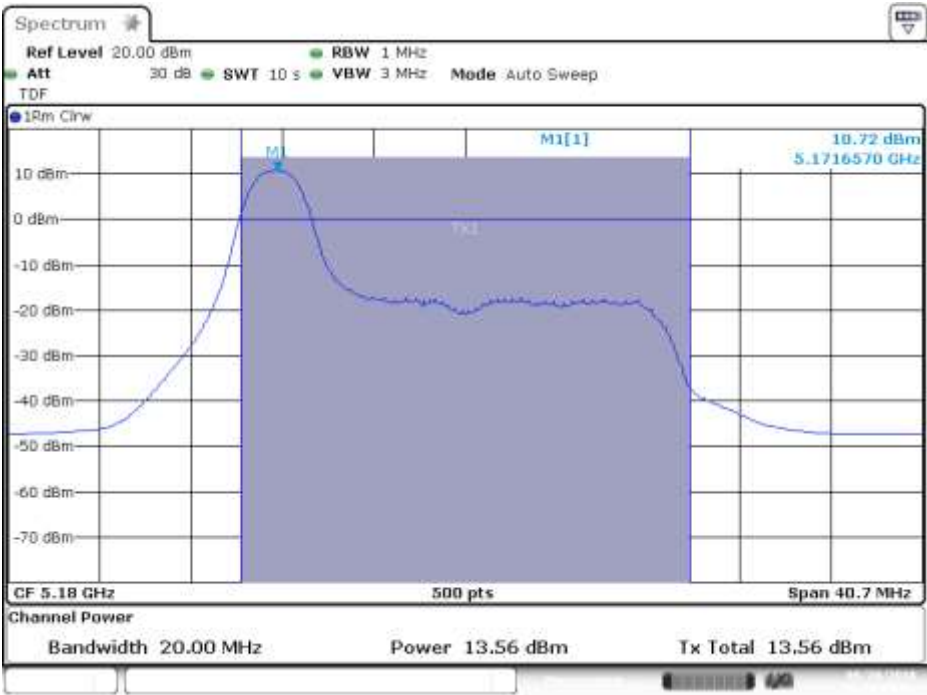
SISO-B, 802.11ac160, VHT0

Channel 50



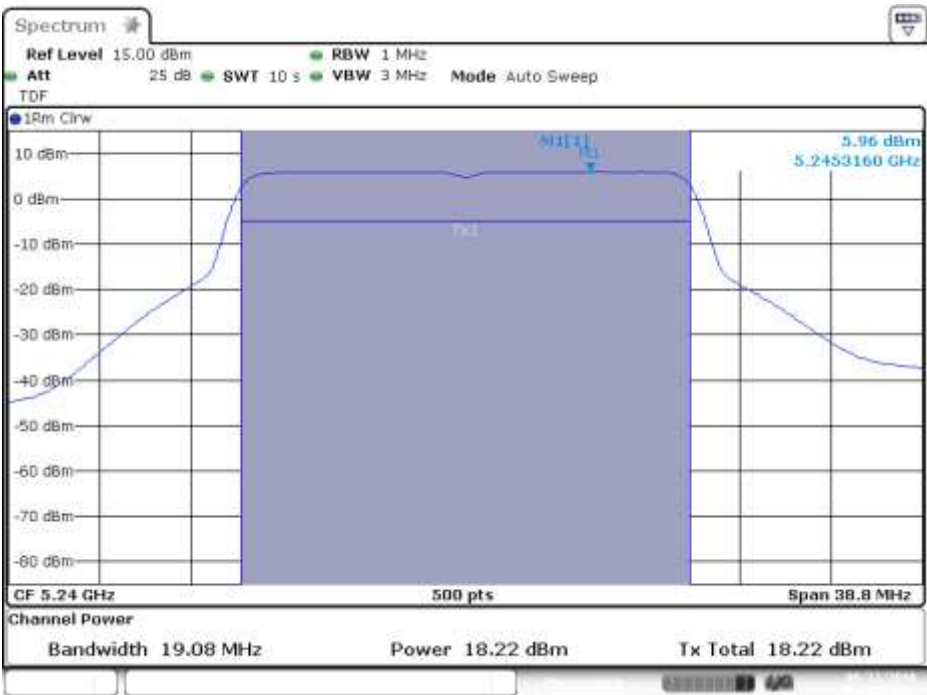
SISO-A, 802.11ax20, HE0, RU 26/0

Channel 36



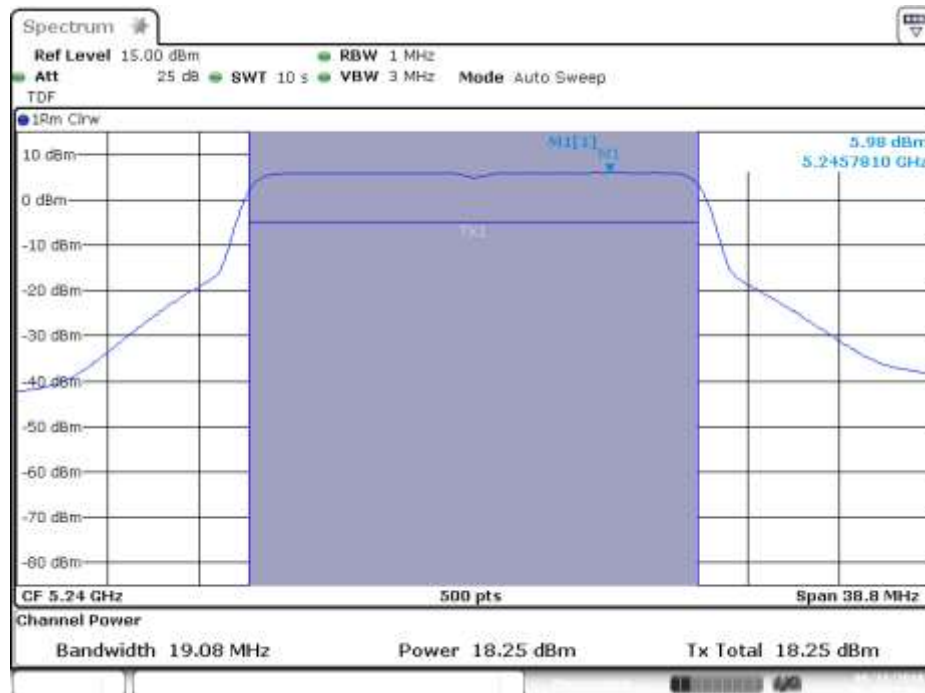
MIMO-A, 802.11ax20, HE0

Channel 48



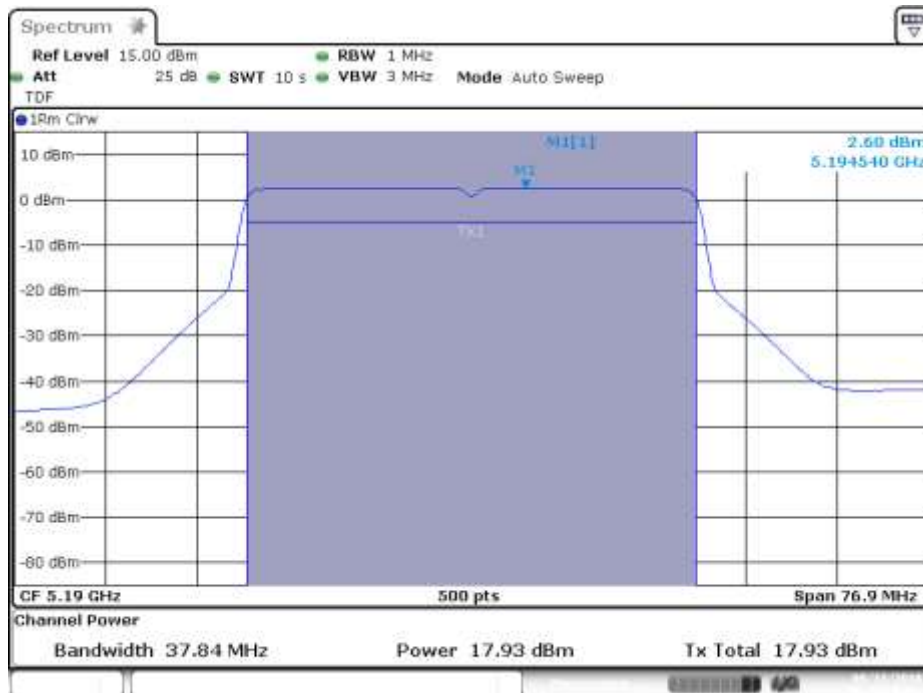
MIMO-B, 802.11ax20, HE0

Channel 48



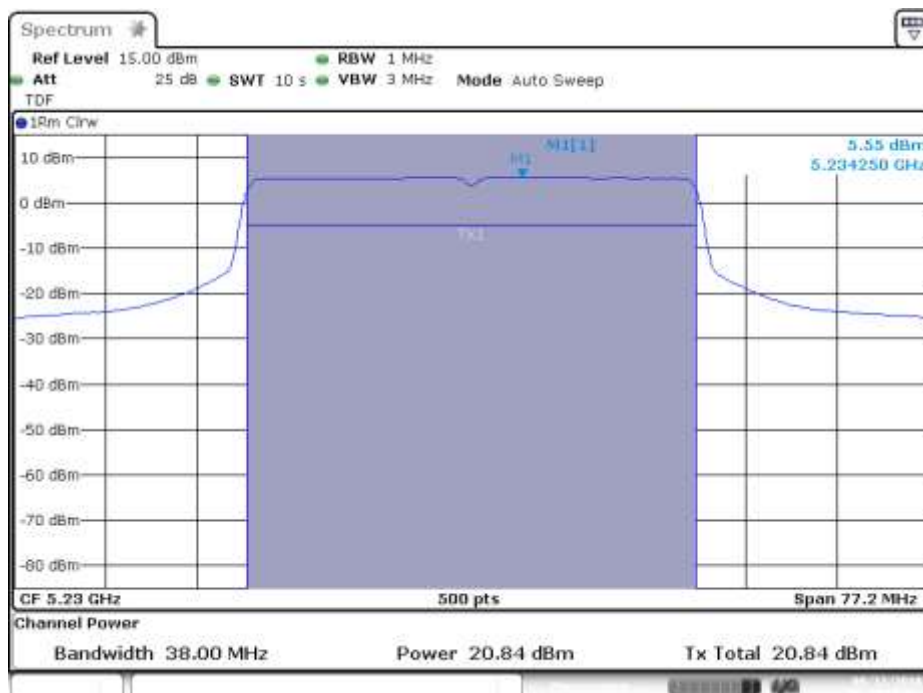
SISO-B, 802.11ax40, HE0

Channel 38F



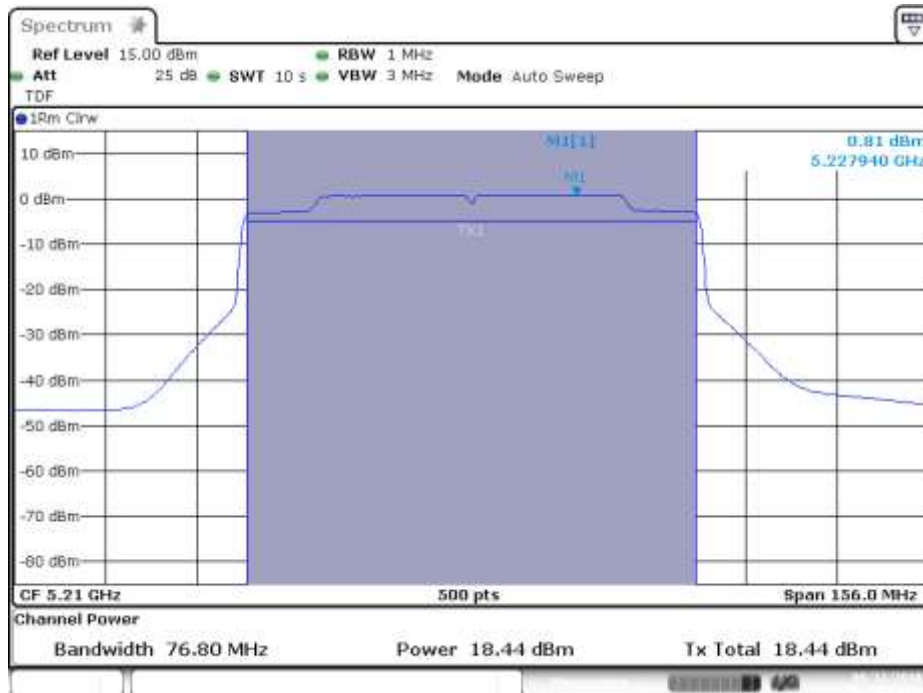
SISO-A, 802.11ax40, HE0

Channel 46F



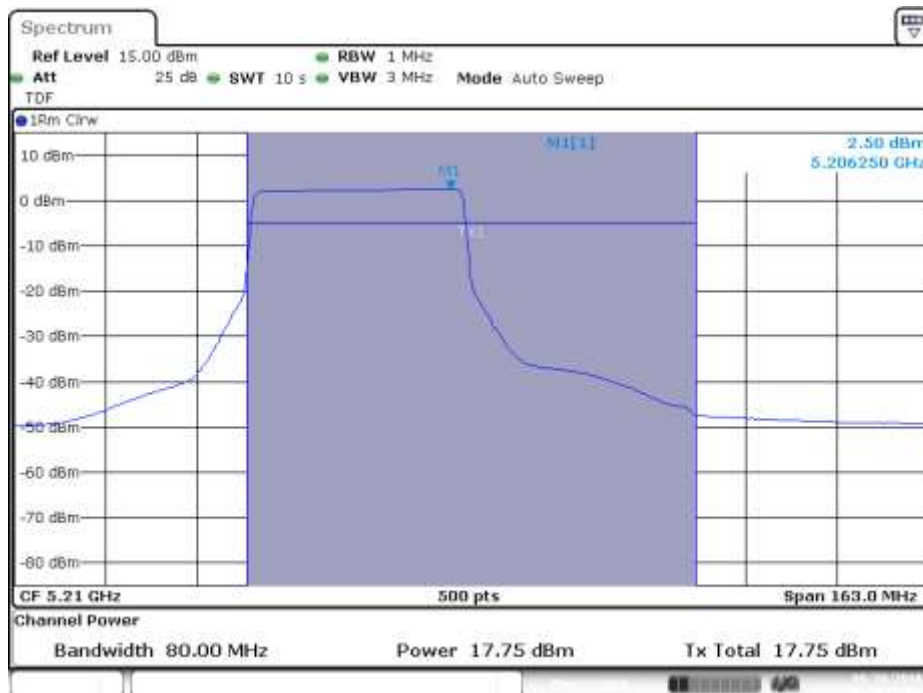
SISO-A, 802.11ax80, HE0

Channel 42



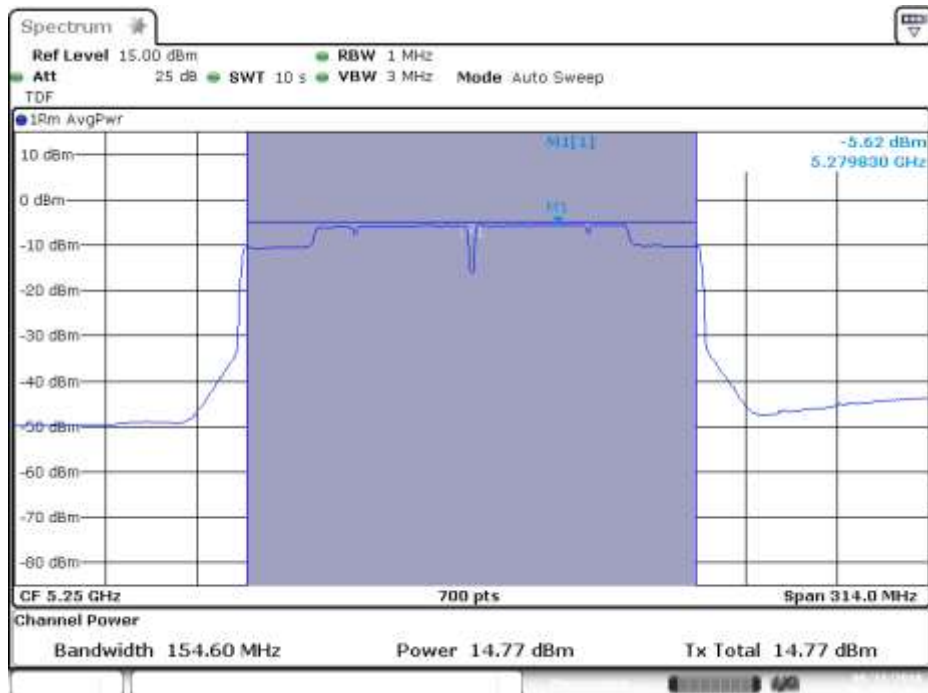
SISO-A, 802.11ax80, HE0, RU 484/65

Channel 42



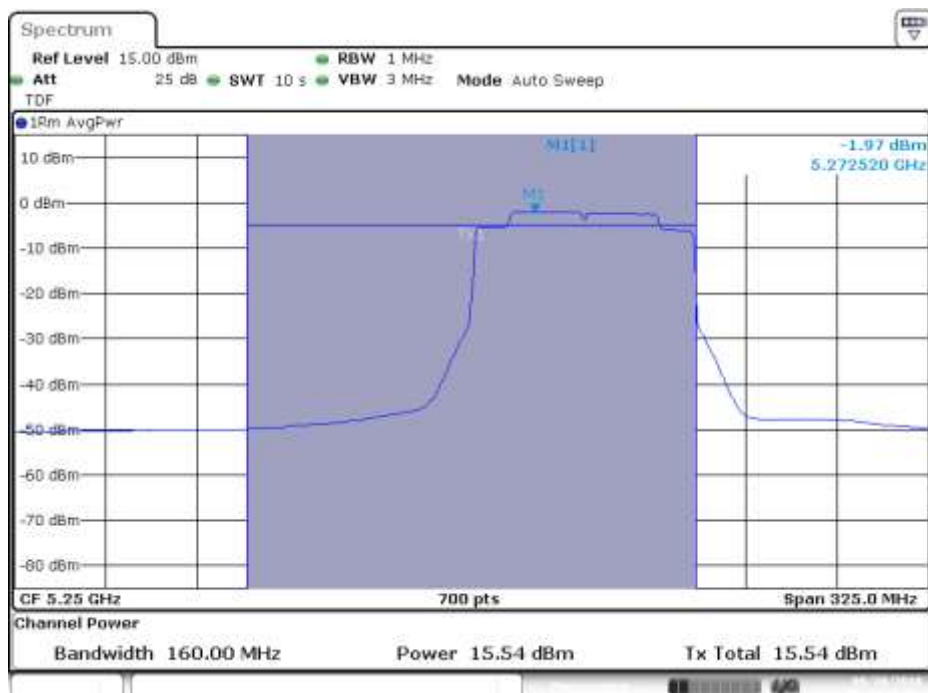
SISO-B, 802.11ax160, HE0

Channel 50



SISO-B, 802.11ax160, HE0, RU 996/S67

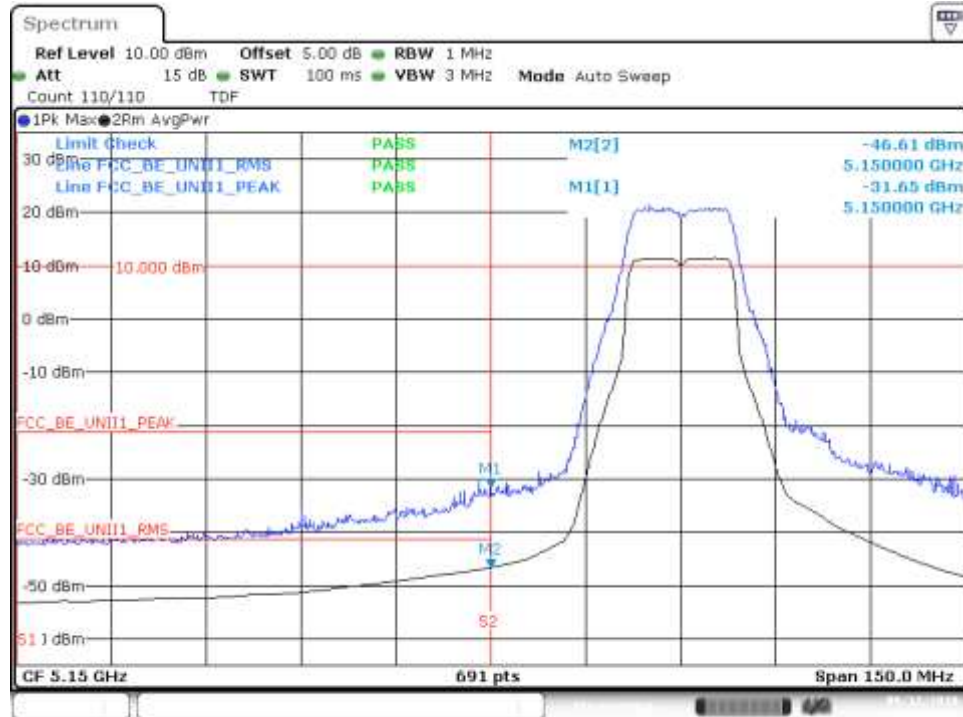
Channel 50



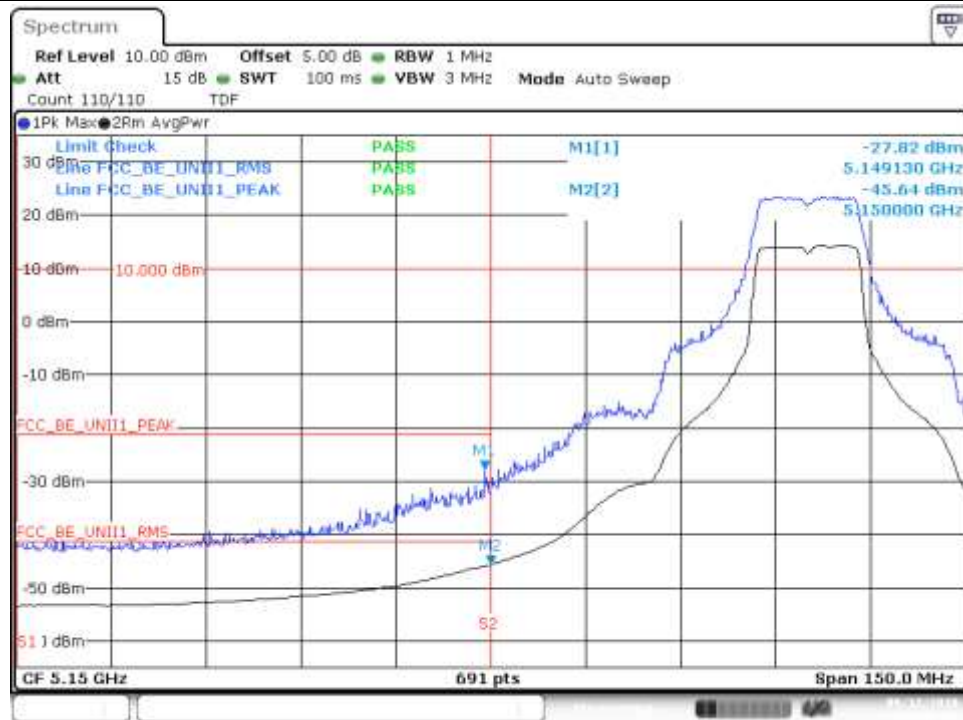
B.3.4 Undesirable emission limits : Band Edge (Conducted)

802.11a, 6Mbps – Chain A

BE Low Freq Section , Peak, RMS – CH36

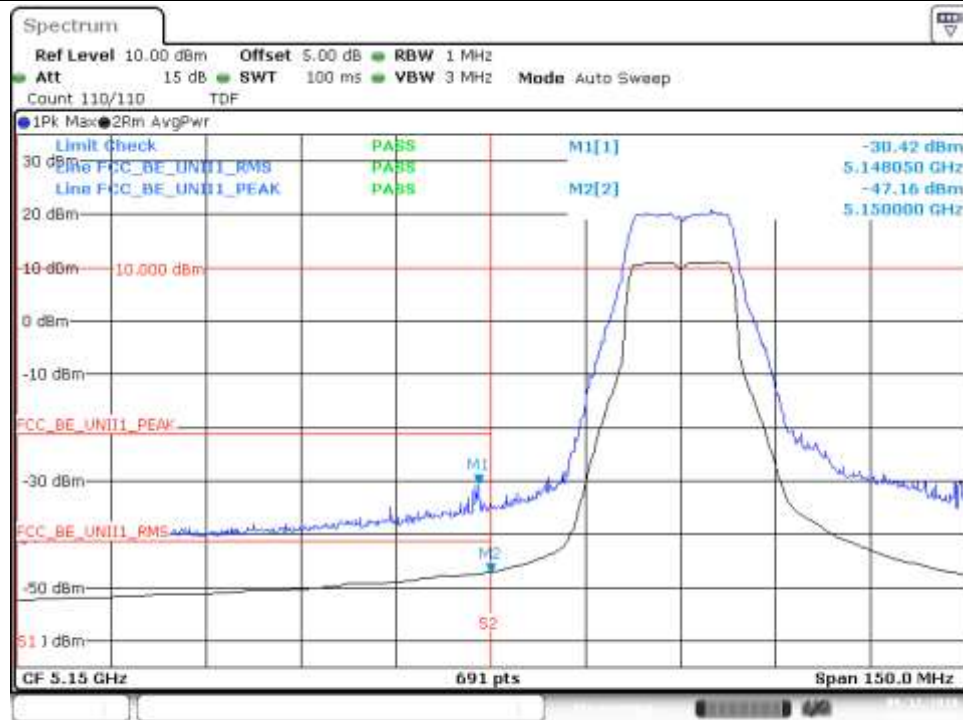


BE Low Freq Section, Peak, RMS – CH40



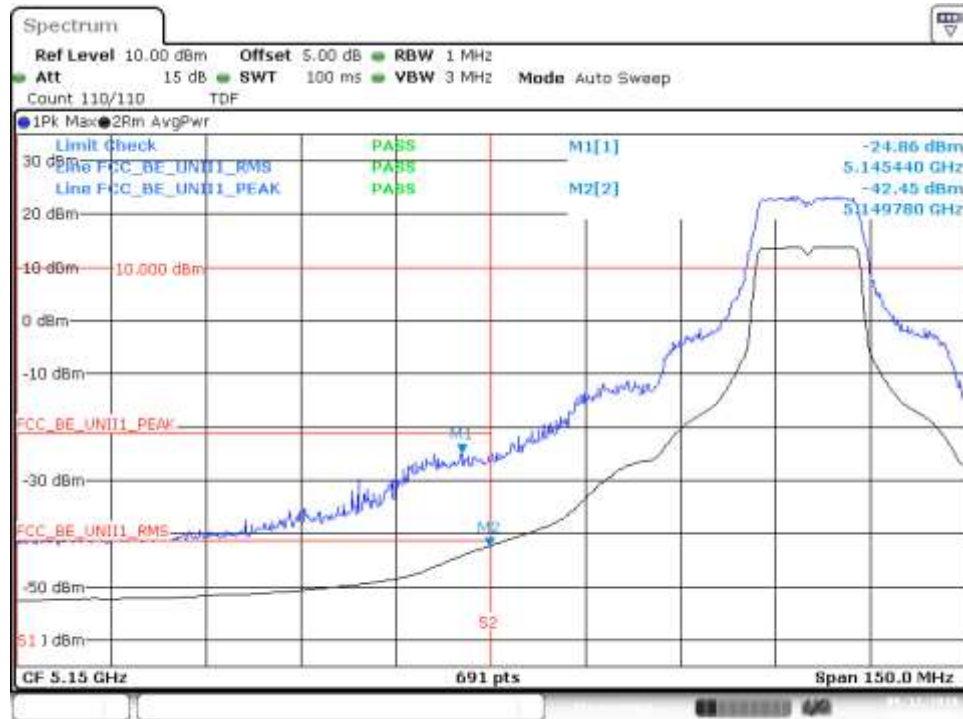
802.11a, 6Mbps – Chain B

BE Low Freq Section , Peak, RMS – CH36



Date: 12.SEP.2018 17:29:28

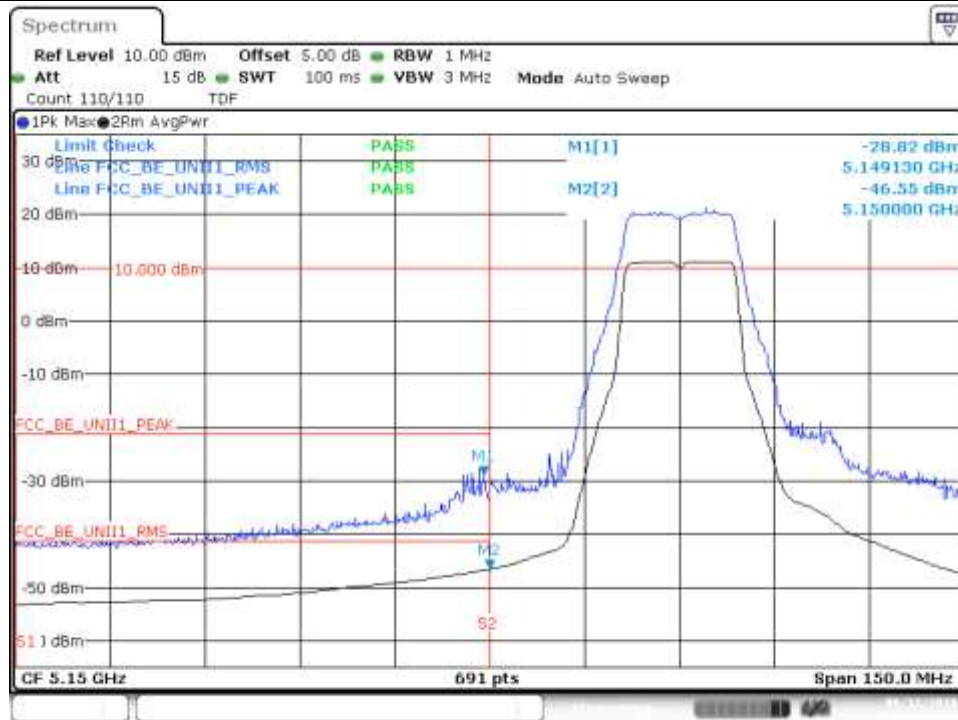
BE Low Freq Section, Peak, RMS – CH40



Date: 12.SEP.2018 17:34:29

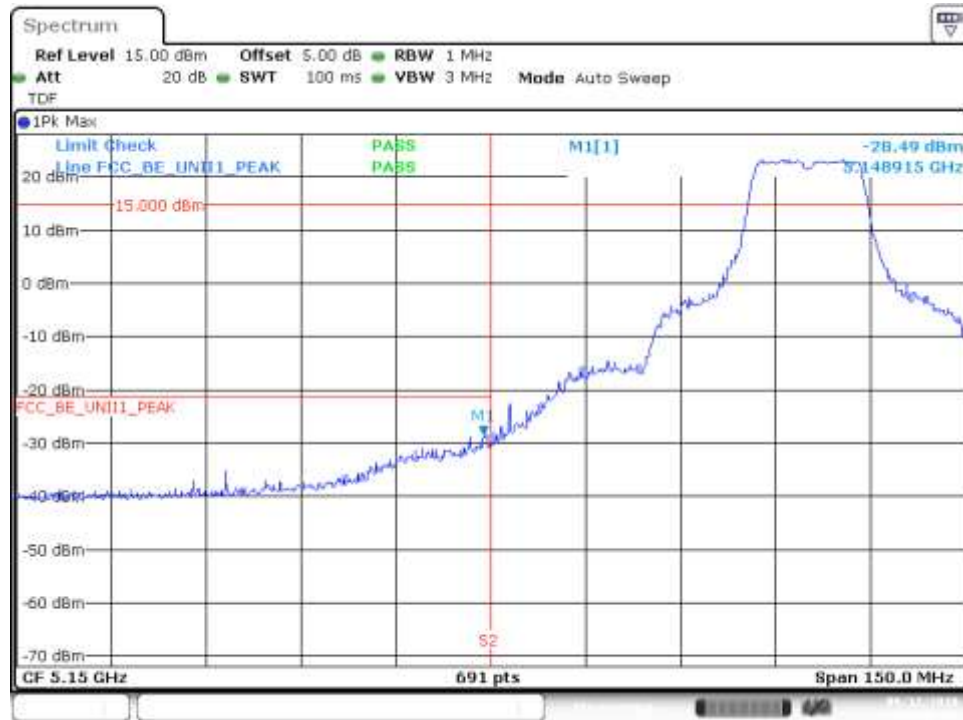
802.11n20, HT0 (SISO) – Chain A

BE Low Freq Section, Peak, RMS – CH36

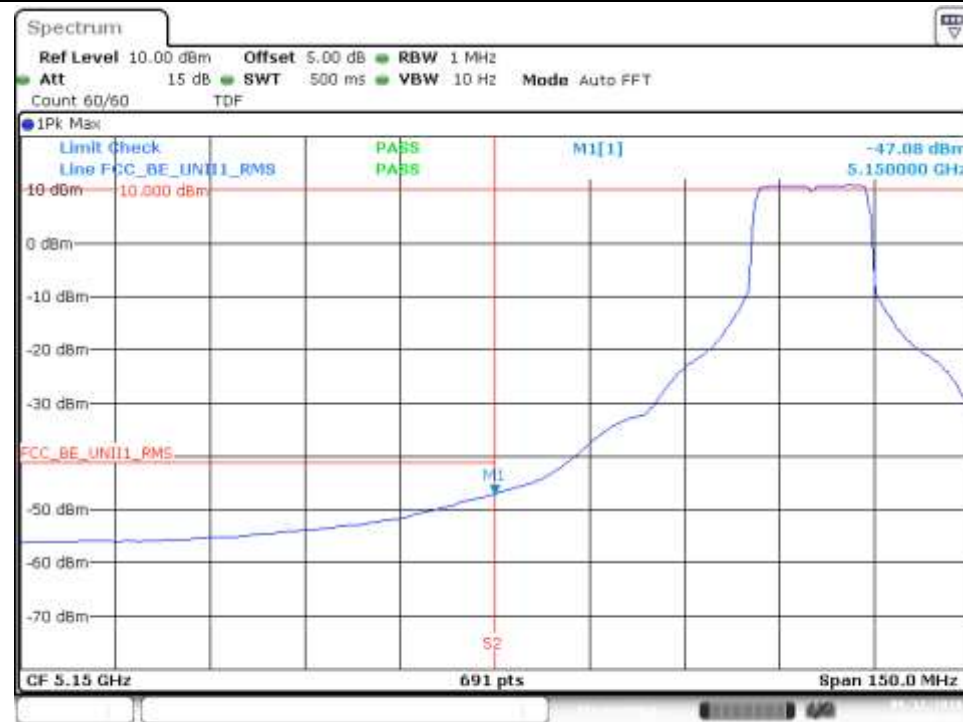


Date: 12.SEP.2018 12:26:10

BE Low Freq Section, Peak – CH40

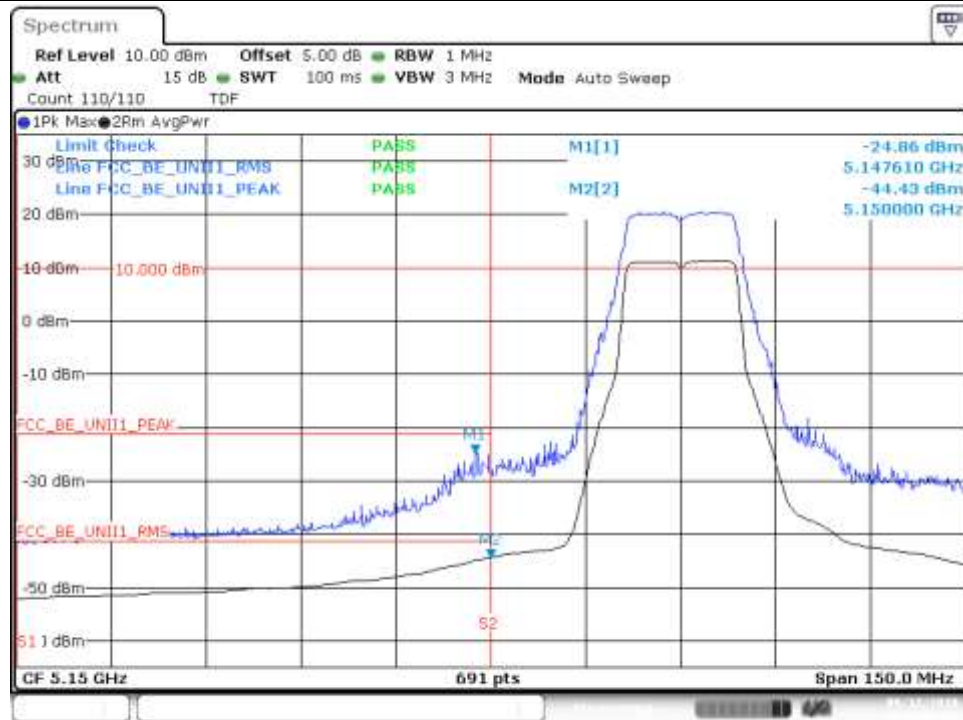


BE Low Freq Section, RMS – CH40



802.11n20, HT0 (SISO) – Chain B

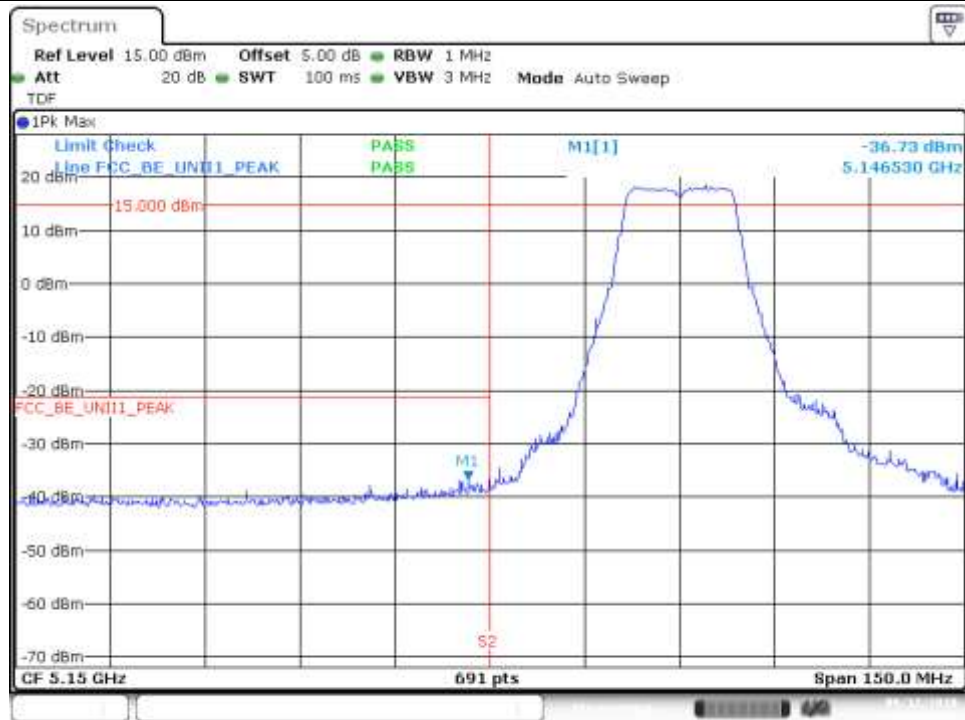
BE Low Freq Section, Peak, RMS – CH36



Date: 12.SEP.2018 18:18:19

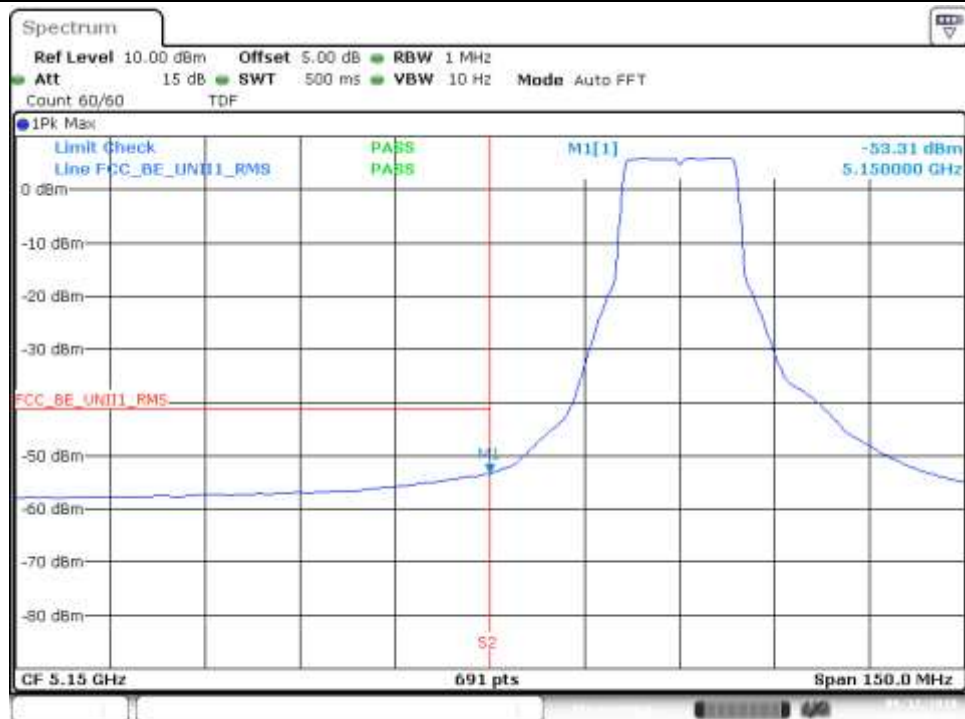
802.11n20, HT8 (MIMO) – Chain A

BE Low Freq Section, Peak – CH36



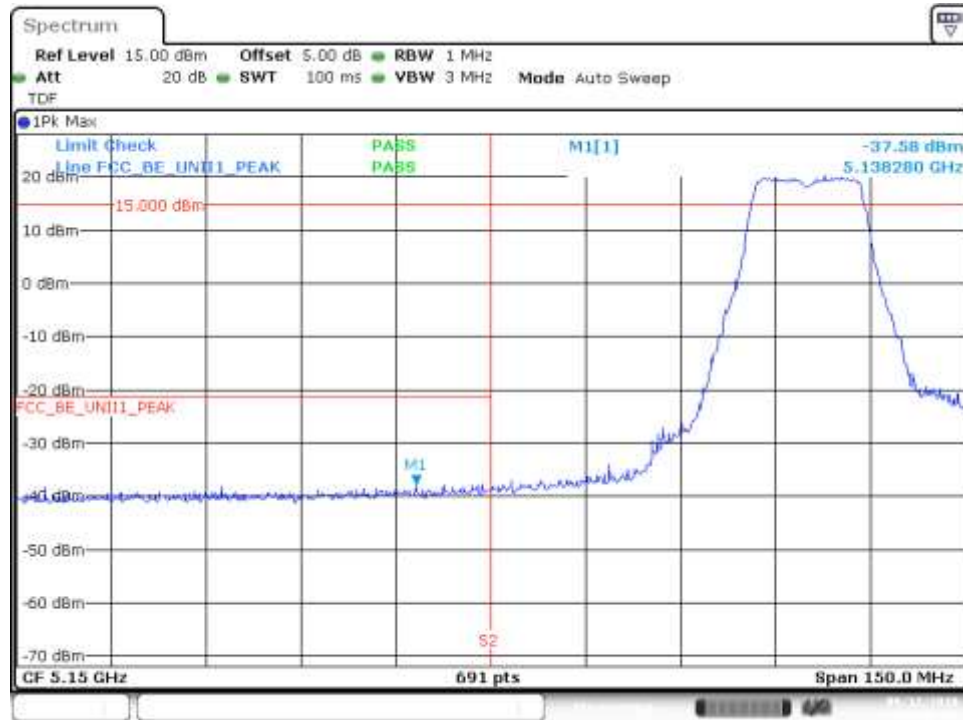
Date: 12.SEP.2018 12:52:29

BE Low Freq Section, RMS – CH36



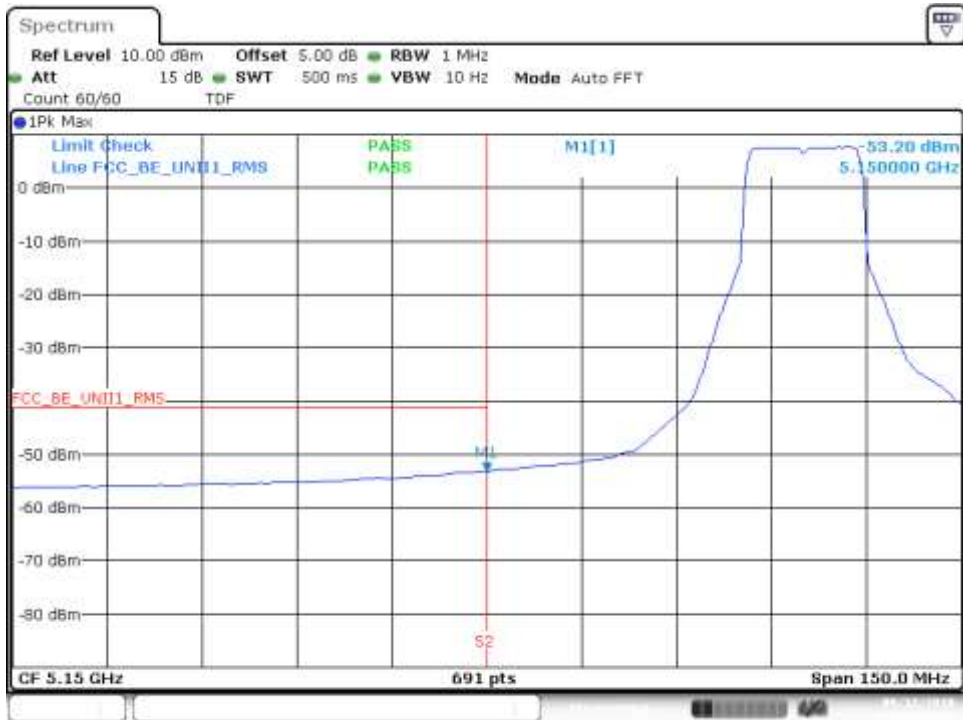
Date: 12.SEP.2018 12:52:06

BE Low Freq Section, Peak – CH40



Date: 12.SEP.2018 12:58:08

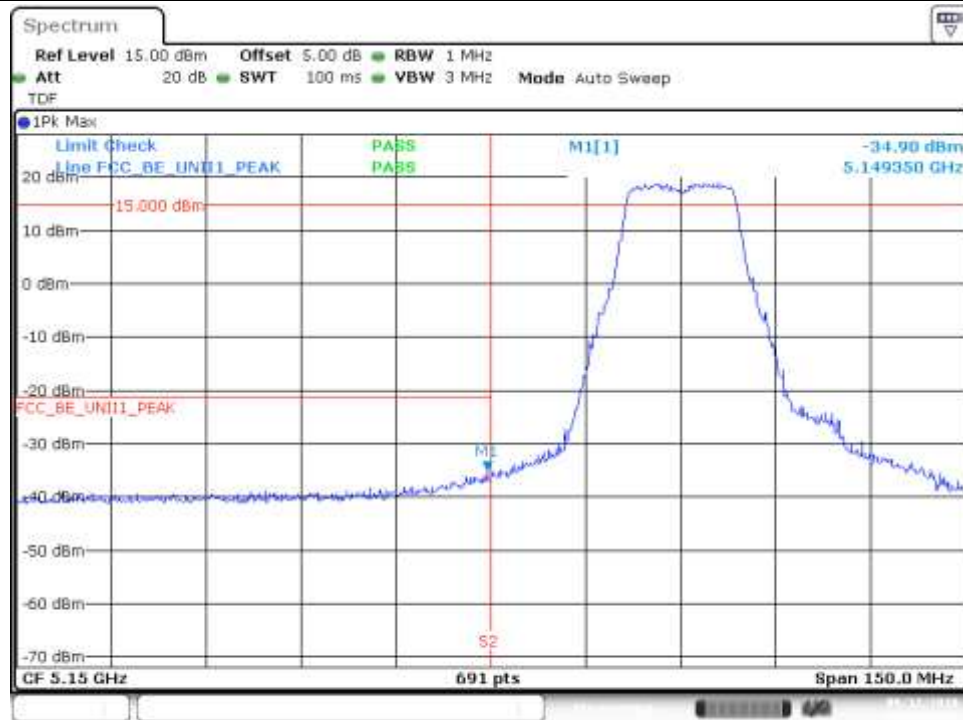
BE Low Freq Section, RMS – CH40



Date: 12.SEP.2018 12:57:27

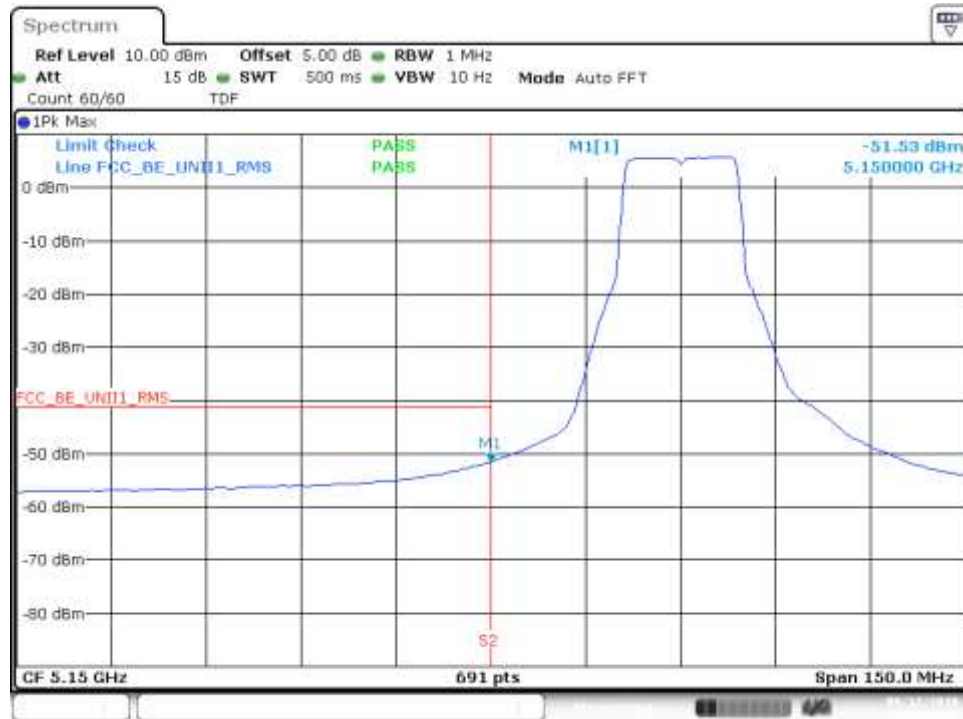
802.11n20, HT8 (MIMO) – Chain B

BE Low Freq Section, Peak – CH36



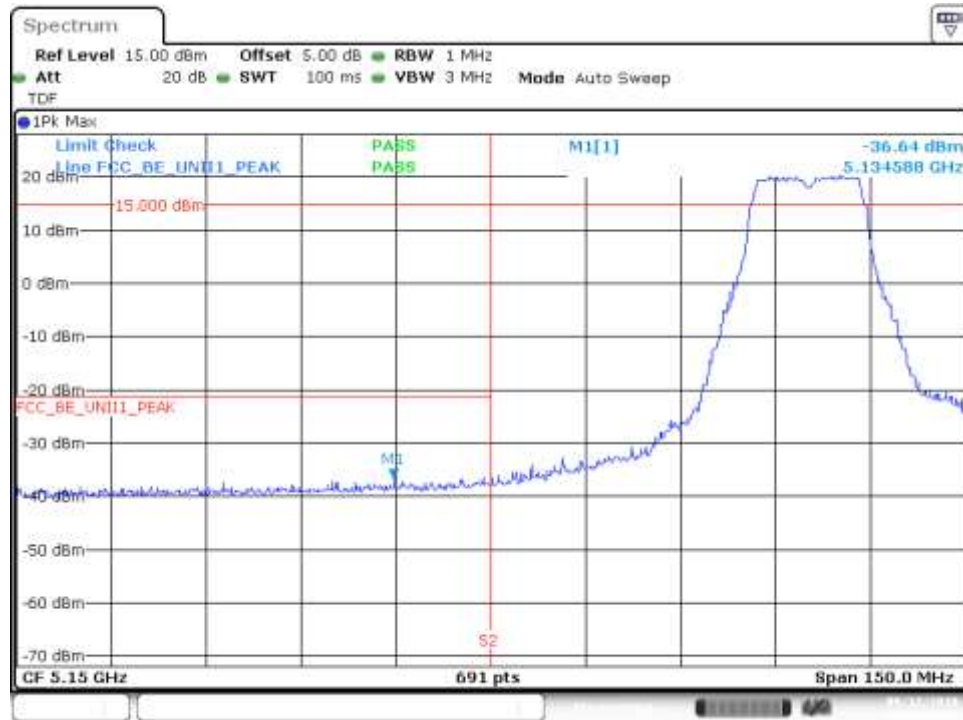
Date: 12.SEP.2018 18:53:01

BE Low Freq Section, RMS – CH36



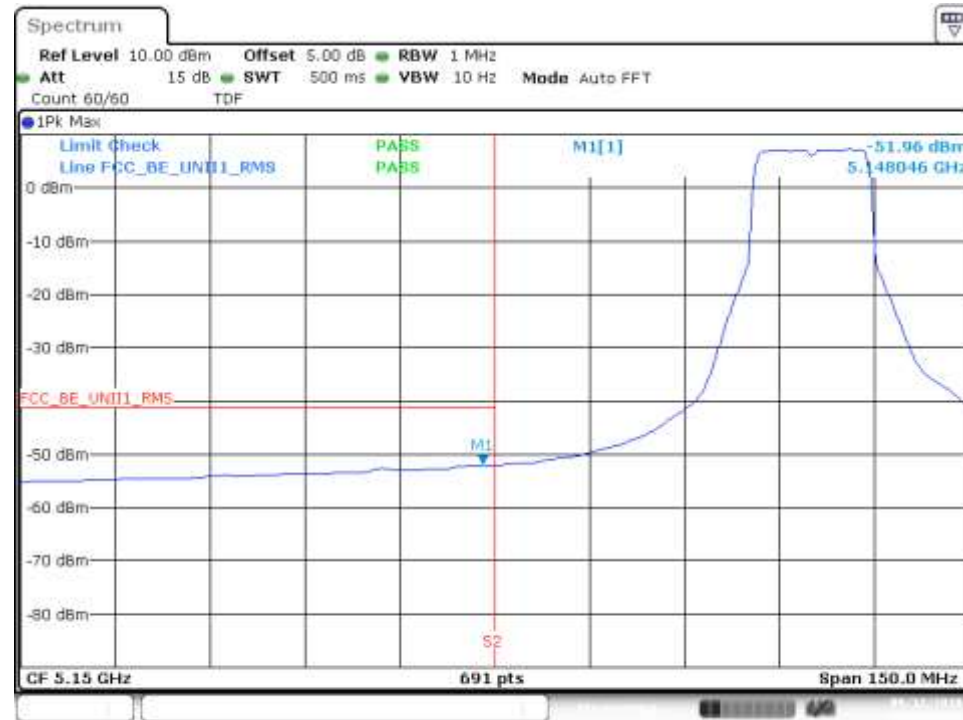
Date: 12.SEP.2018 18:52:42

BE Low Freq Section, Peak – CH40



Date: 12 SEP.2018 19:02:27

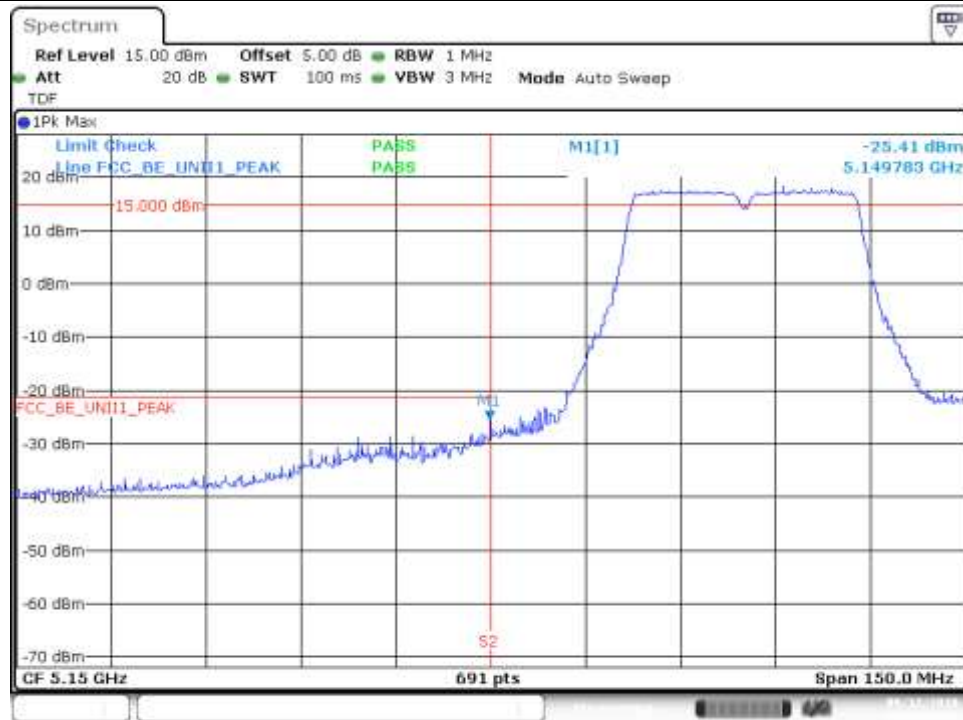
BE Low Freq Section, RMS – CH40



Date: 12 SEP.2018 19:01:59

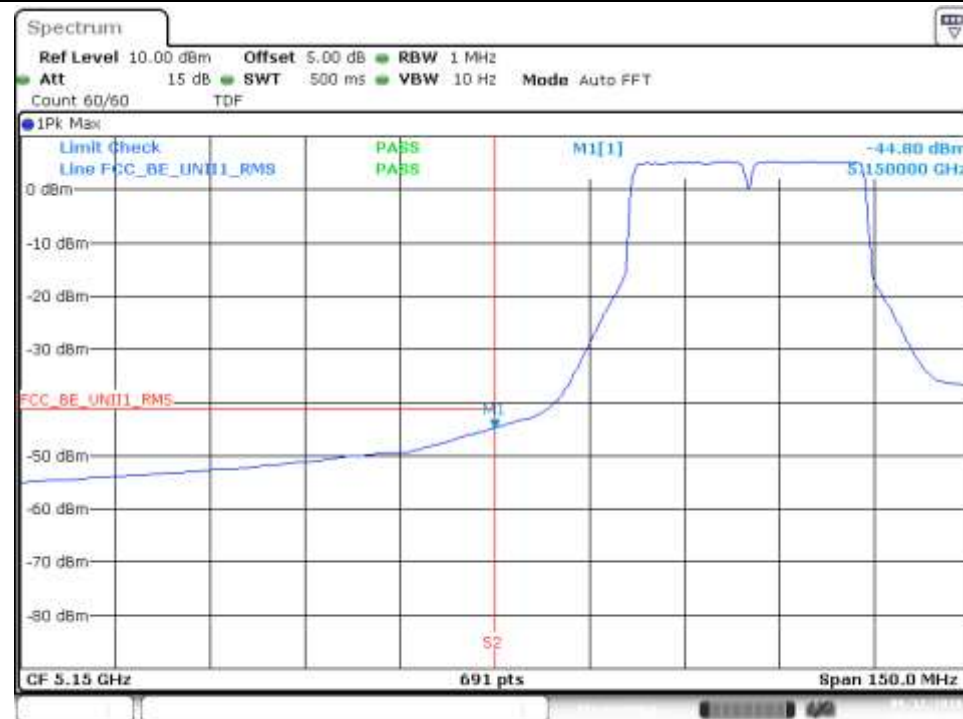
802.11n40, HT0 (SISO) – Chain A

BE Low Freq Section, Peak – CH38F



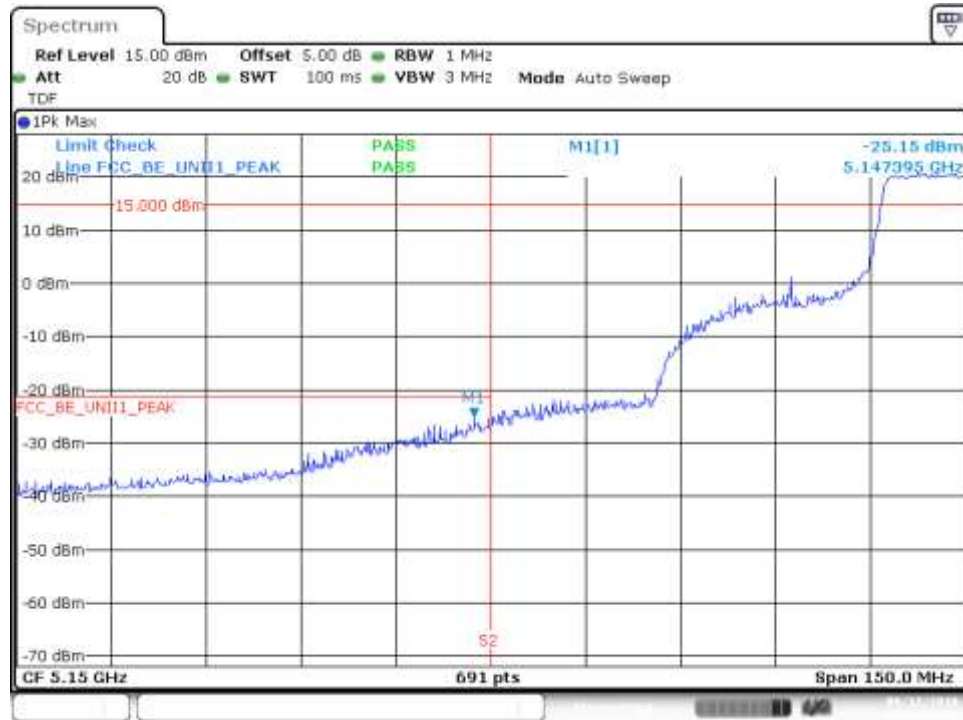
Date: 12.SEP.2018 14:20:10

BE Low Freq Section, RMS – CH38F



Date: 12.SEP.2018 14:19:08

BE Low Freq Section, Peak – CH46F



Date: 12 SEP.2018 14:25:37

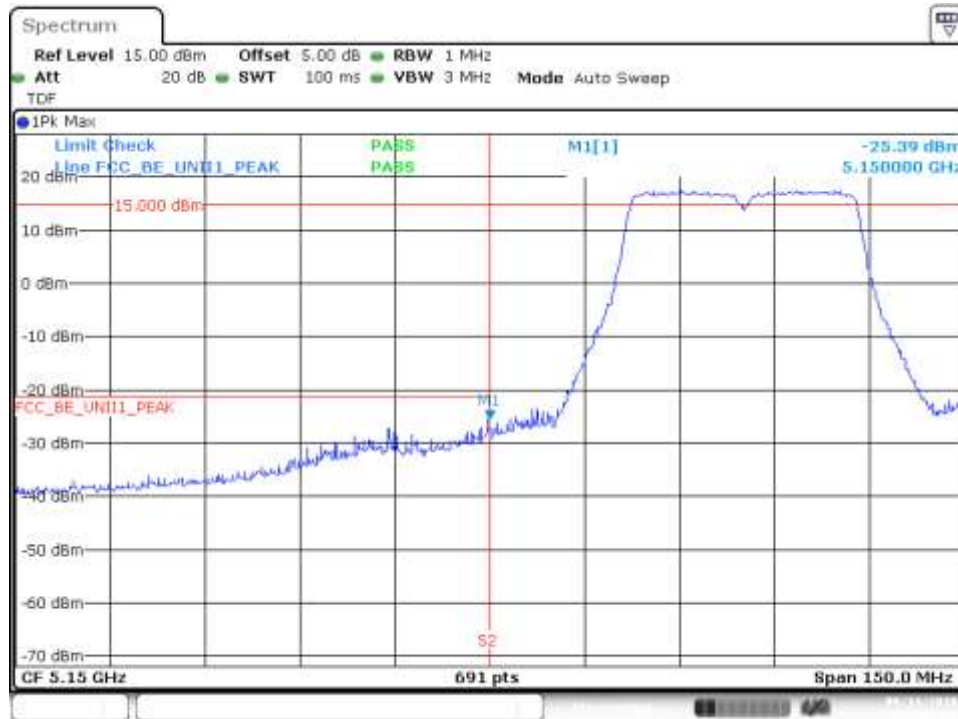
BE Low Freq Section, RMS – CH46F



Date: 12 SEP.2018 14:25:23

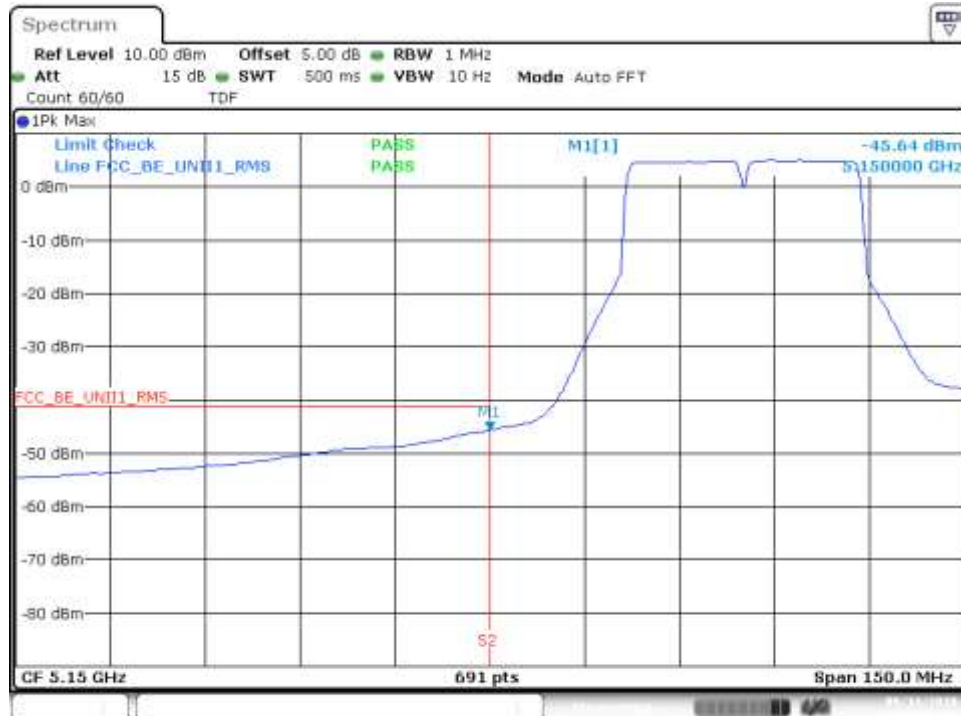
802.11n40, HT0 (SISO) – Chain B

BE Low Freq Section, Peak – CH38F



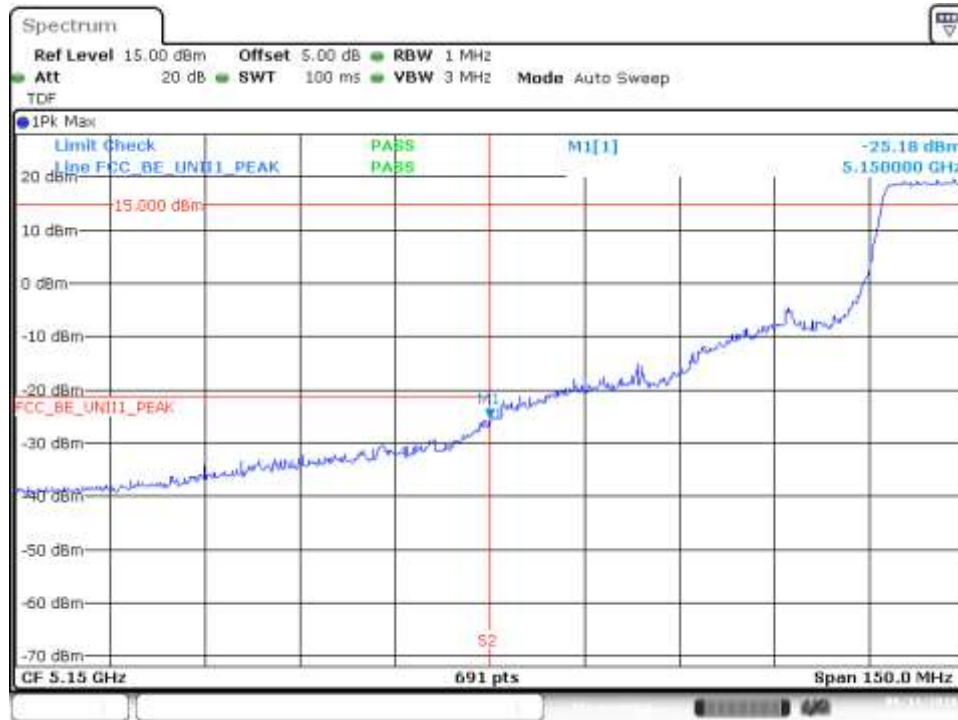
Date: 13.SEP.2018 13:44:49

BE Low Freq Section, RMS – CH38F



Date: 13.SEP.2018 13:44:17

BE Low Freq Section, Peak – CH46F



Date: 13.SEP.2018 13:56:35

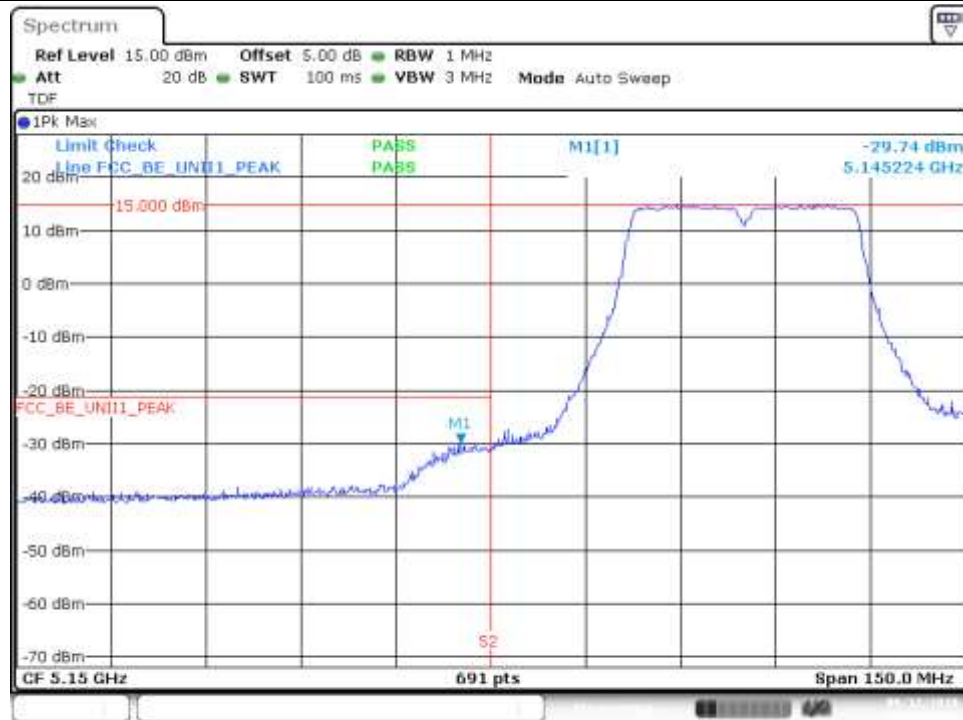
BE Low Freq Section, RMS – CH46F



Date: 13.SEP.2018 13:58:25

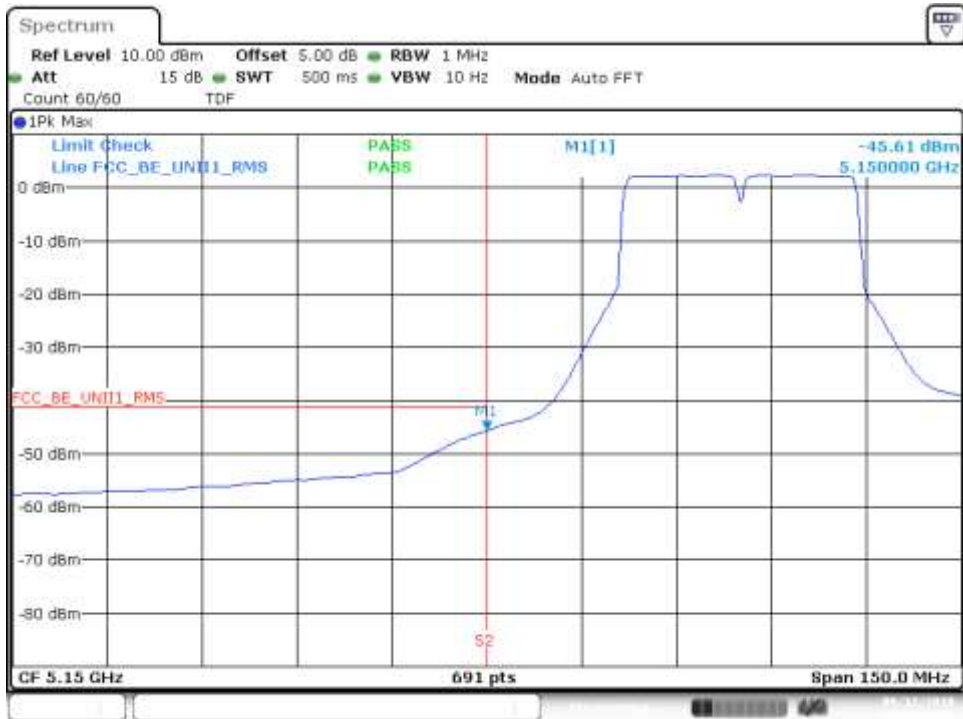
802.11n40, HT8 (MIMO) – Chain A

BE Low Freq Section, Peak – CH38F



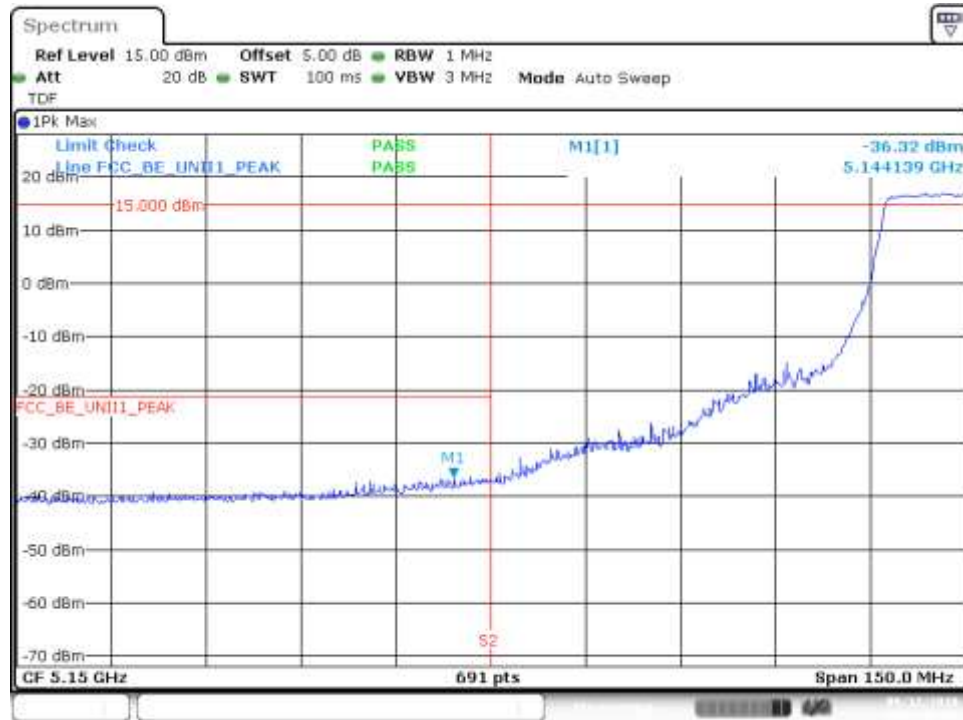
Date: 12.SEP.2018 14:45:02

BE Low Freq Section, RMS – CH38F



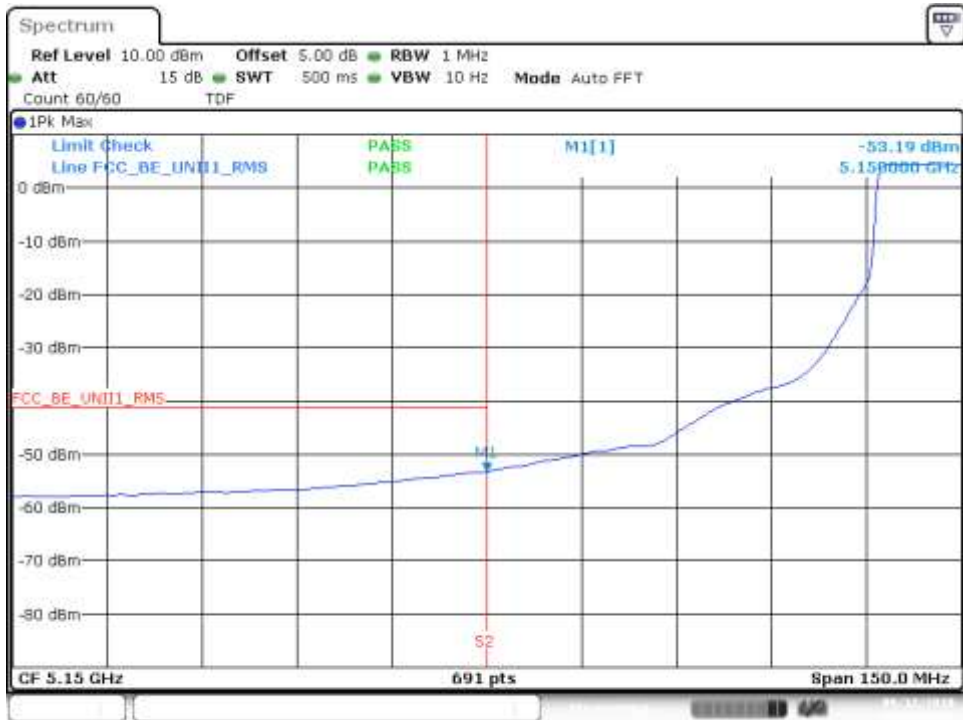
Date: 12.SEP.2018 14:44:36

BE Low Freq Section, Peak – CH46F



Date: 12.SEP.2018 14:51:16

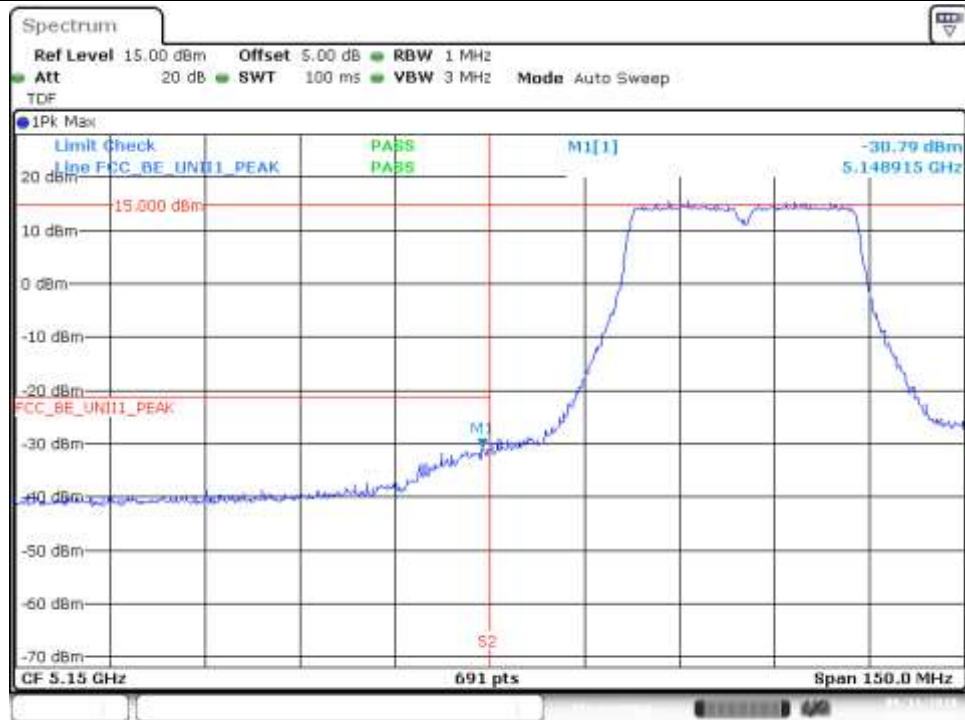
BE Low Freq Section, RMS – CH46F



Date: 12.SEP.2018 14:50:30

802.11n40, HT8 (MIMO) – Chain B

BE Low Freq Section, Peak – CH38F



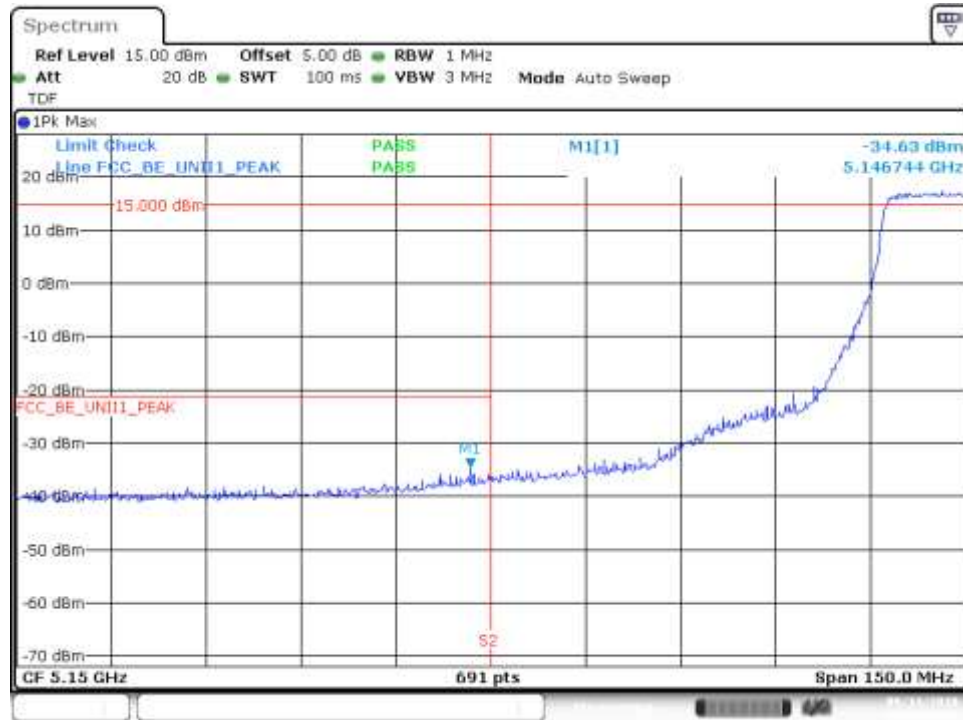
Date: 13.SEP.2018 14:01:52

BE Low Freq Section, RMS – CH38F



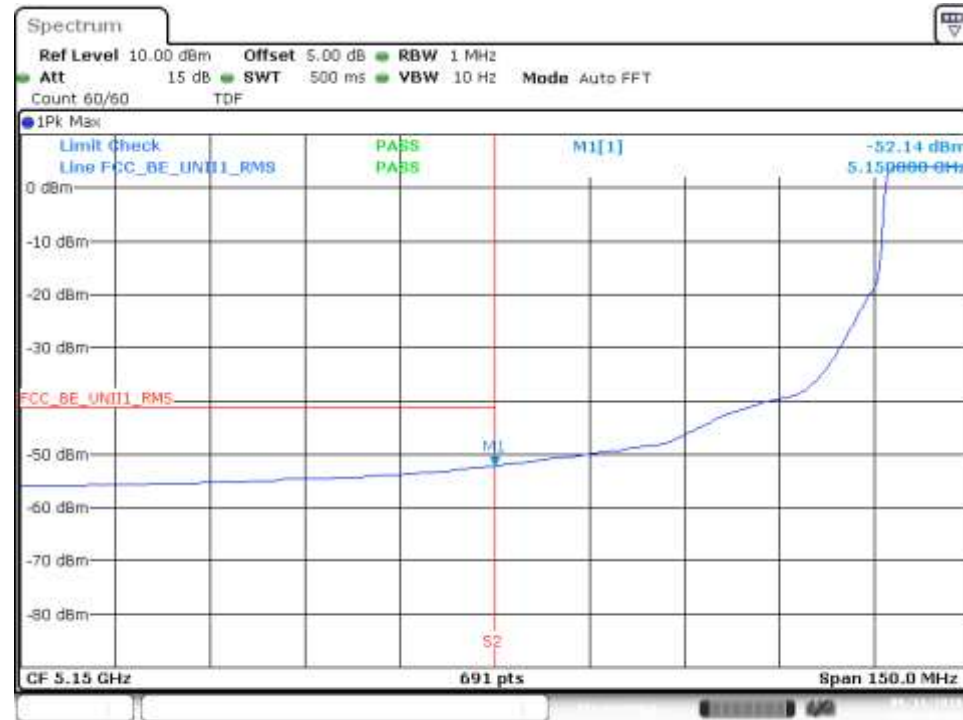
Date: 13.SEP.2018 14:01:16

BE Low Freq Section, Peak – CH46F



Date: 13.SEP.2018 14:07:33

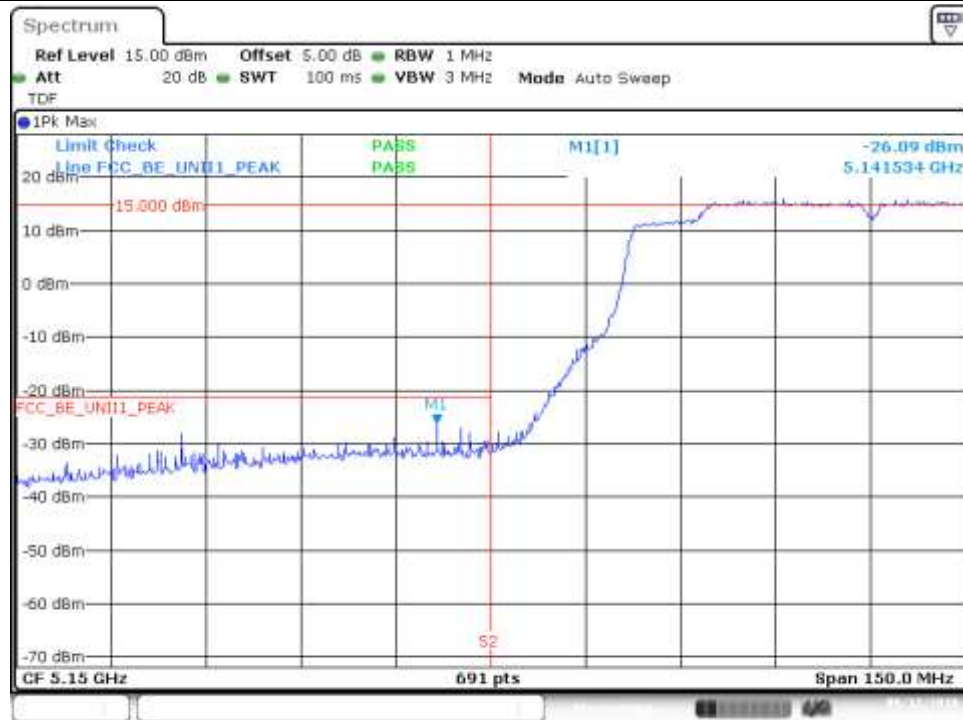
BE Low Freq Section, RMS – CH46F



Date: 13.SEP.2018 14:07:19

802.11ac80, VHT0 (SISO) – Chain A

BE Low Freq Section, Peak – CH42



Date: 12.SEP.2018 16:05:11

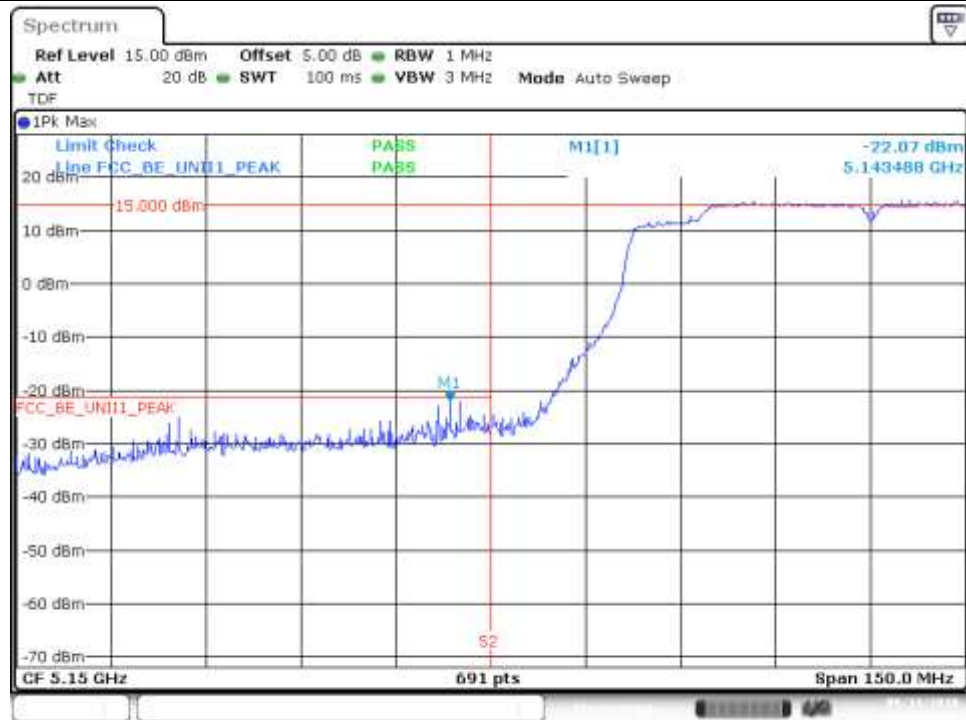
BE Low Freq Section, RMS – CH42



Date: 12.SEP.2018 16:04:47

802.11ac80, VHT0 (SISO) – Chain B

BE Low Freq Section, Peak – CH42



Date: 13.SEP.2018 16:13:23

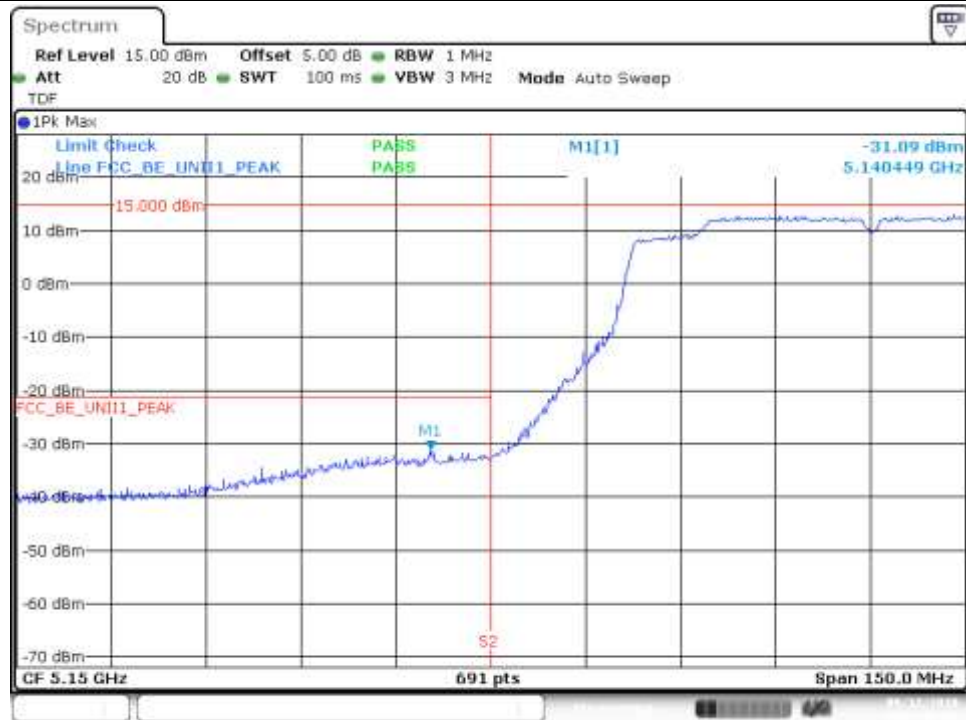
BE Low Freq Section, RMS – CH42



Date: 13.SEP.2018 16:11:59

802.11ac80, VHT0 (MIMO) – Chain A

BE Low Freq Section, Peak – CH42



Date: 12.SEP.2018 16:11:17

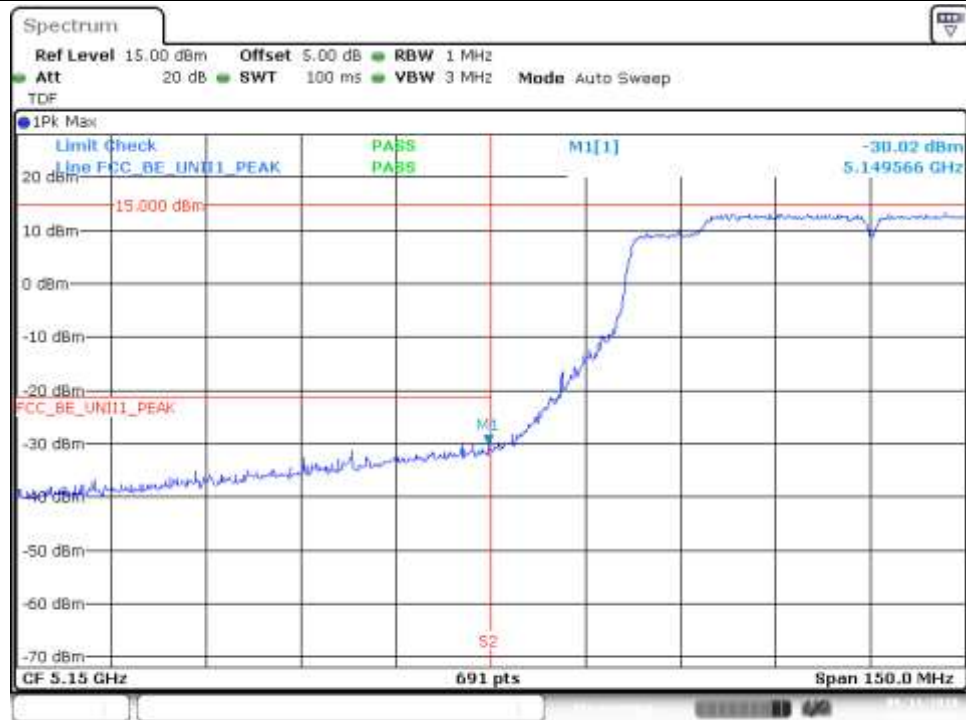
BE Low Freq Section, RMS – CH42



Date: 12.SEP.2018 16:10:48

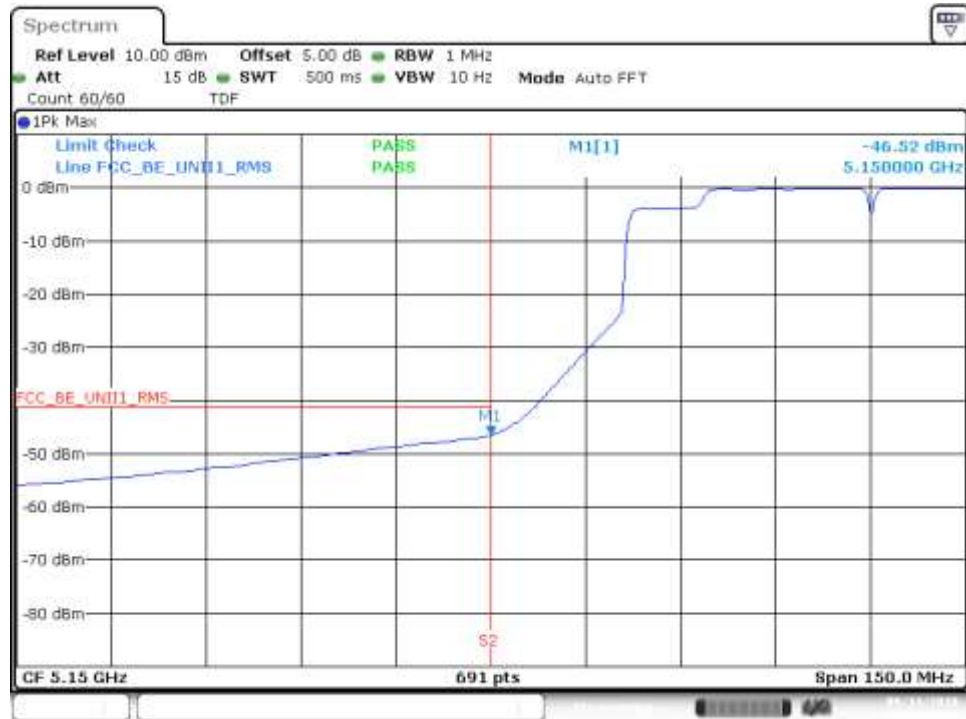
802.11ac80, VHT0 (MIMO) – Chain B

BE Low Freq Section, Peak – CH42



Date: 13.SEP.2018 16:18:35

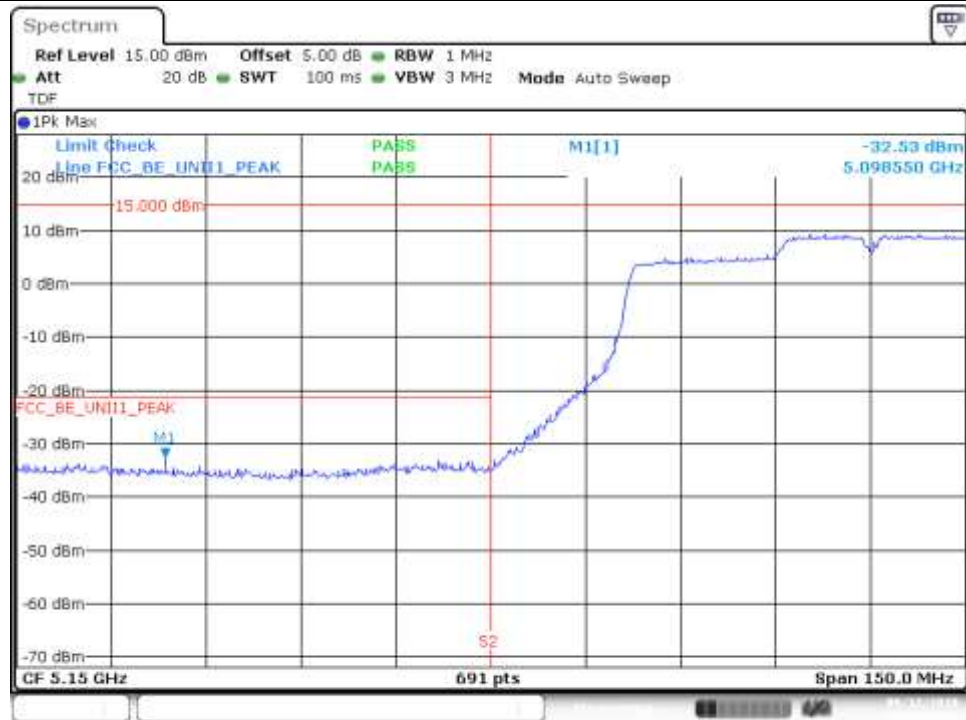
BE Low Freq Section, RMS – CH42



Date: 13.SEP.2018 16:17:55

802.11ac160, VHT0 (SISO) – Chain A

BE Low Freq Section, Peak – CH50



Date: 12.SEP.2018 16:39:39

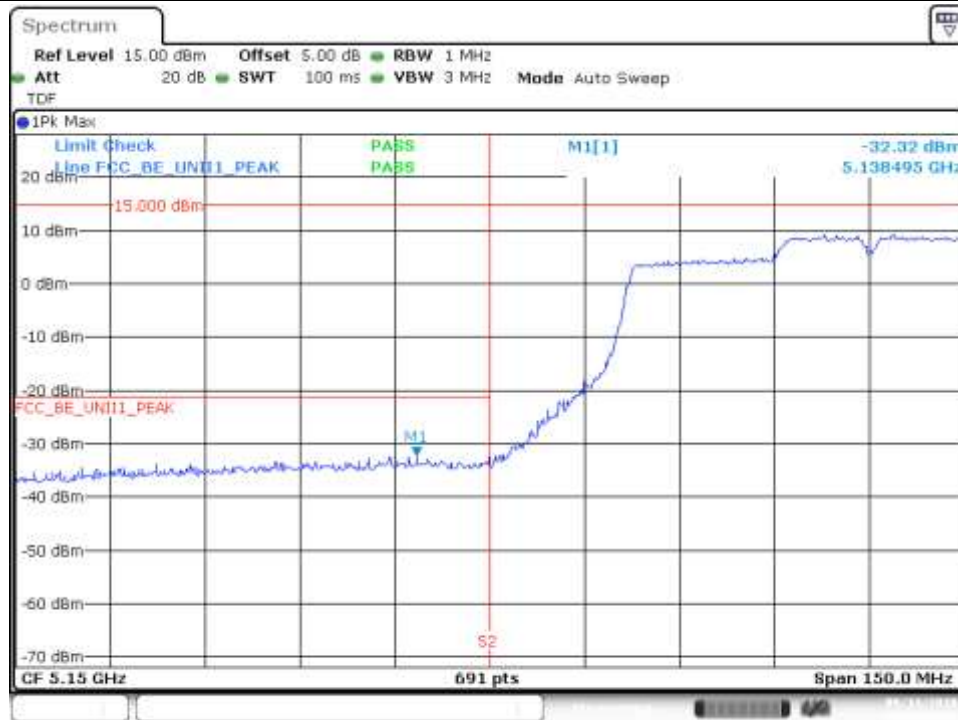
BE Low Freq Section, RMS – CH50



Date: 12.SEP.2018 16:39:02

802.11ac160, VHT0 (SISO) – Chain B

BE Low Freq Section, Peak – CH50



Date: 13.SEP.2018 17:04:38

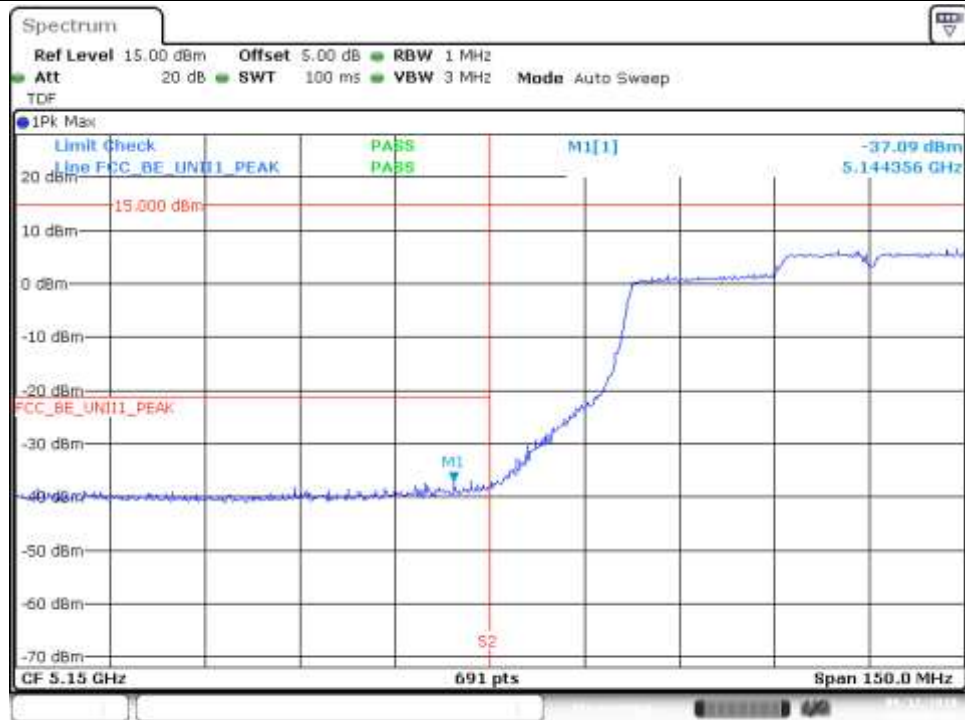
BE Low Freq Section, RMS – CH50



Date: 13.SEP.2018 17:03:56

802.11ac160, VHT0 (MIMO) – Chain A

BE Low Freq Section, Peak – CH50



Date: 12.SEP.2018 16:52:09

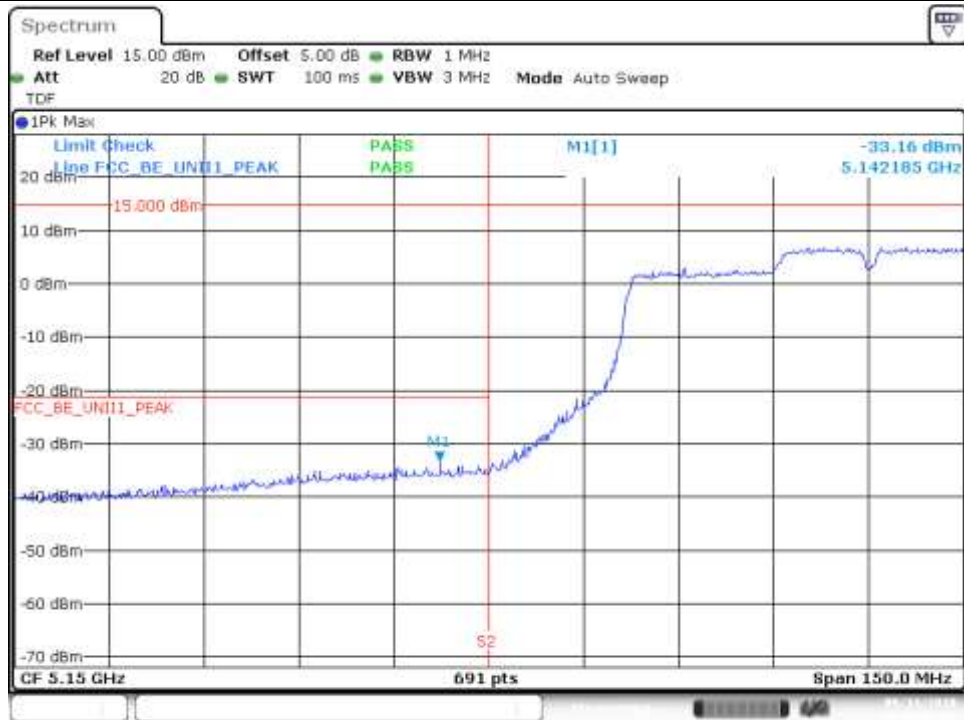
BE Low Freq Section, RMS – CH50



Date: 12.SEP.2018 16:51:49

802.11ac160, VHT0 (MIMO) – Chain B

BE Low Freq Section, Peak – CH50



Date: 13.SEP.2018 17:14:45

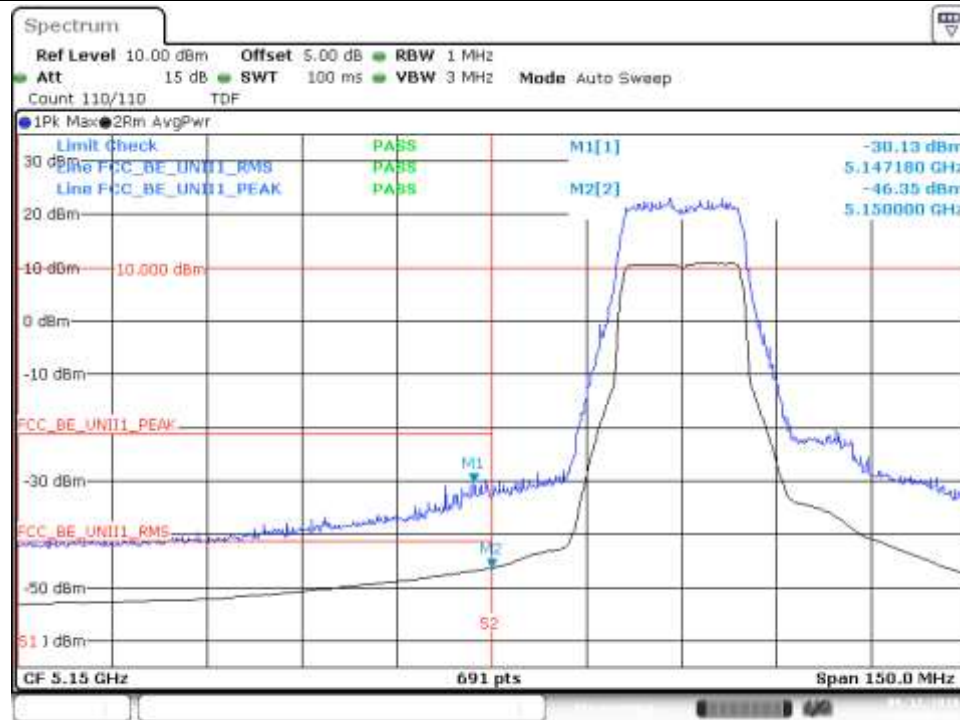
BE Low Freq Section, RMS – CH50



Date: 13.SEP.2018 17:14:23

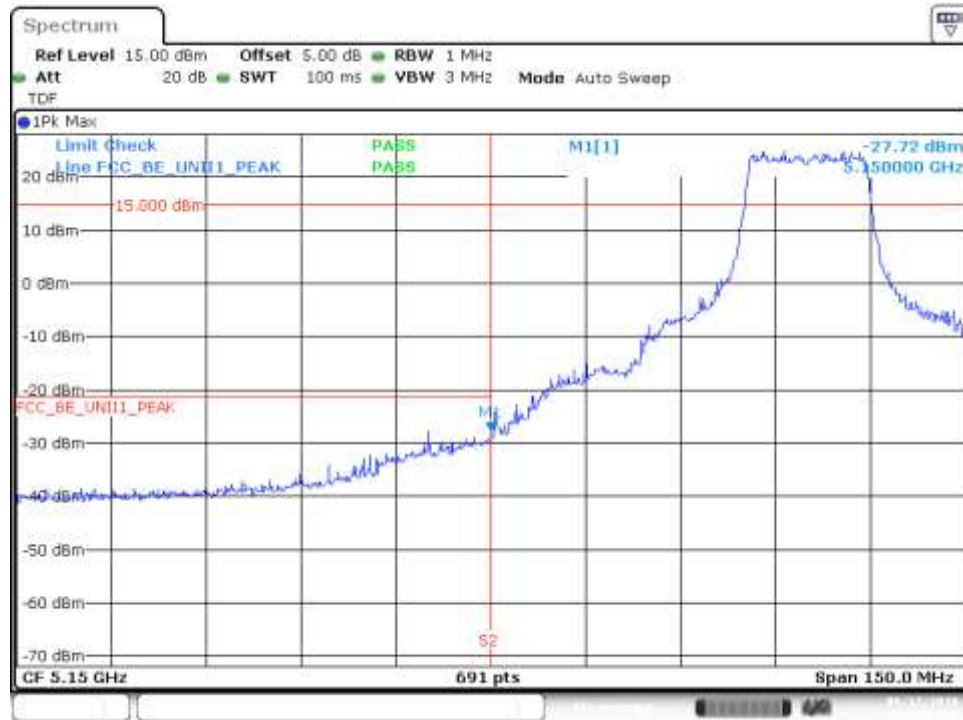
802.11ax20, HE0 (SISO) – Chain A

BE Low Freq Section, Peak, RMS – CH36



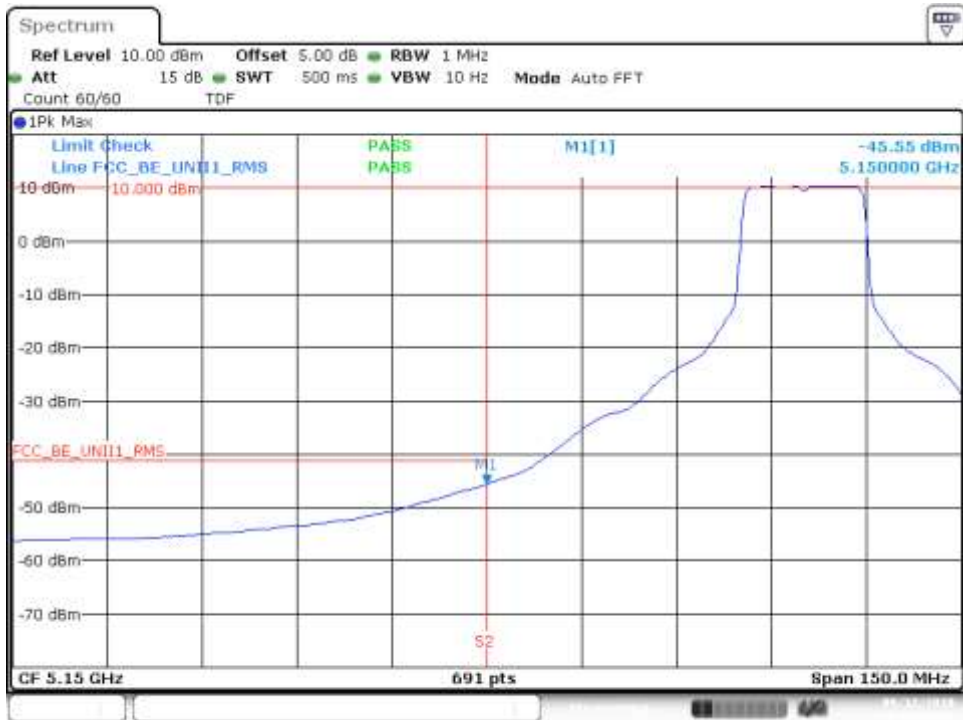
Date: 12.SEP.2018 13:06:46

BE Low Freq Section, Peak – CH40



Date: 12.SEP.2018 13:13:02

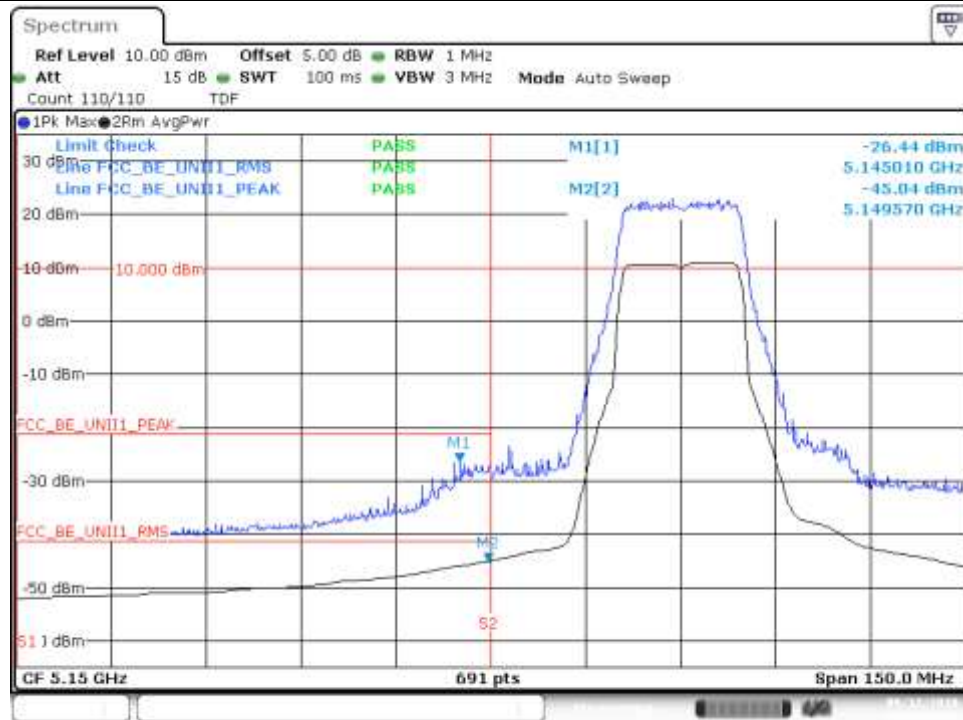
BE Low Freq Section, RMS – CH40



Date: 12.SEP.2018 13:12:39

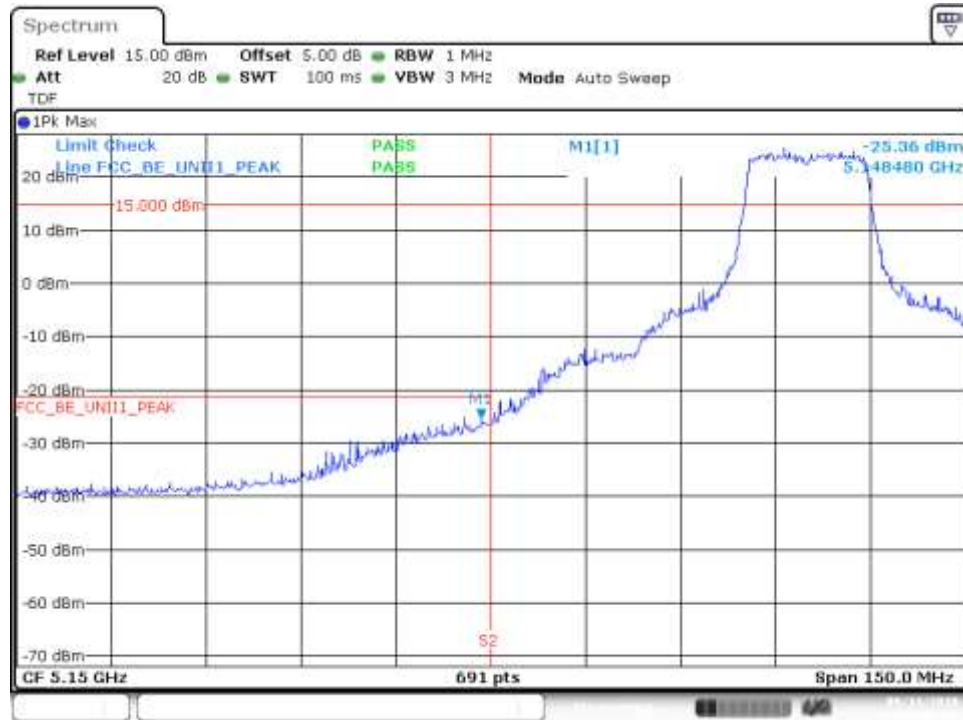
802.11ax20, HE0(SISO) – Chain B

BE Low Freq Section, Peak, RMS – CH36



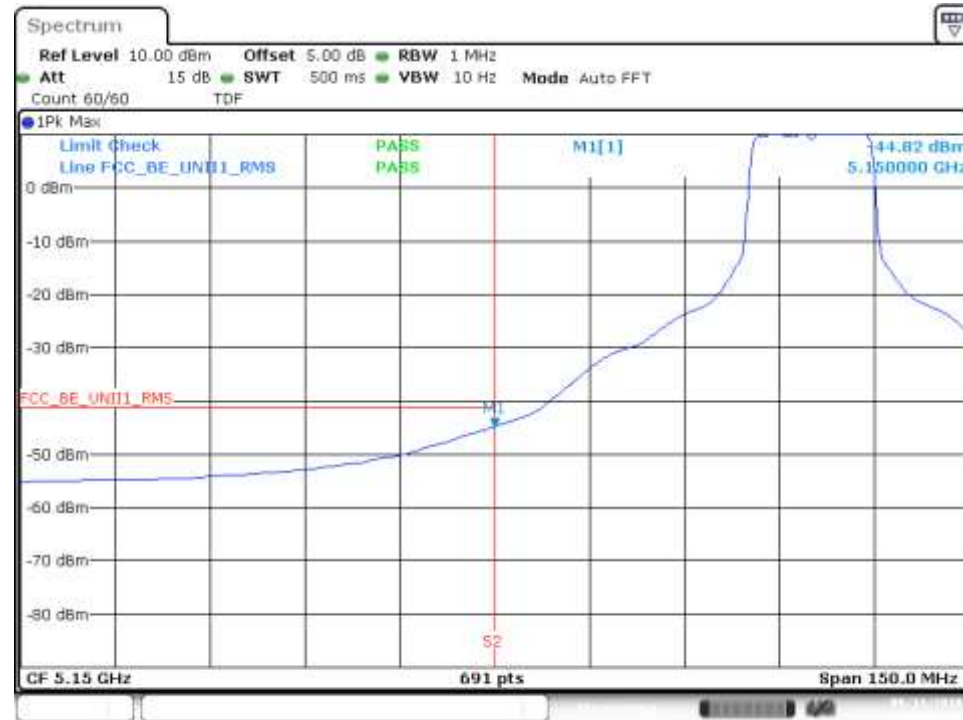
Date: 12.SEP.2018 19:26:30

BE Low Freq Section, Peak – CH40



Date: 13.SEP.2018 12:30:10

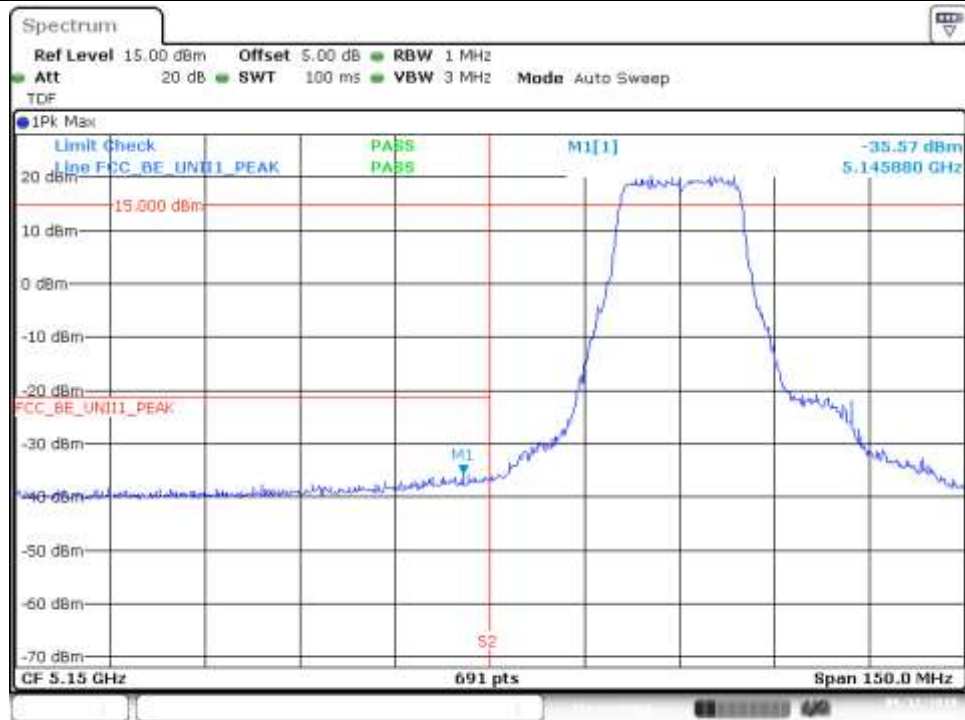
BE Low Freq Section, RMS – CH40



Date: 13.SEP.2018 12:29:06

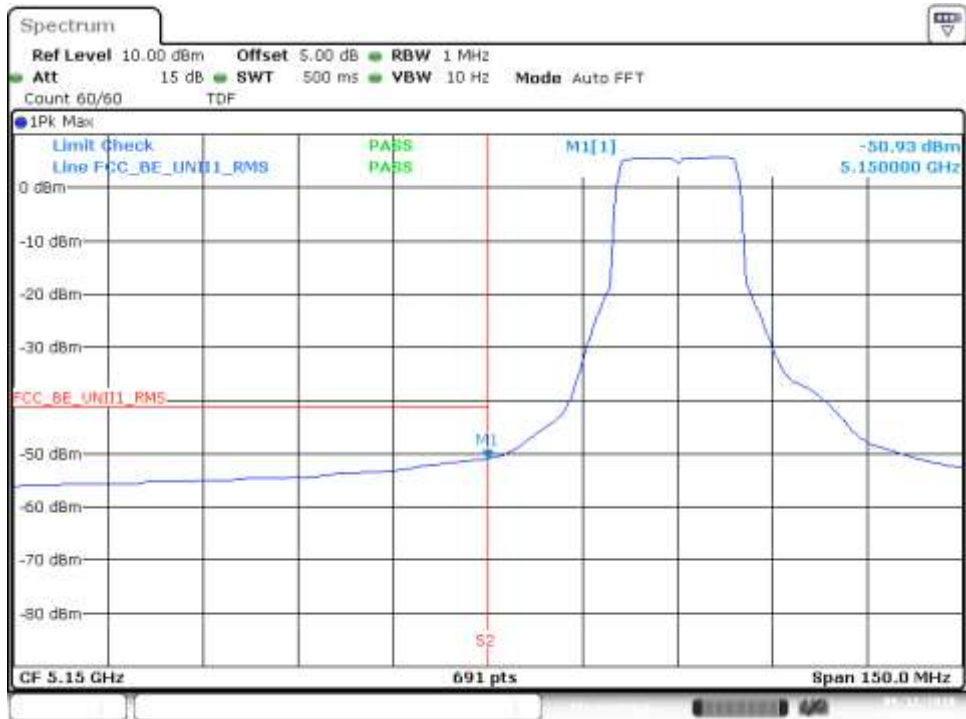
802.11ax20, HE0 (MIMO) – Chain A

BE Low Freq Section, Peak – CH36



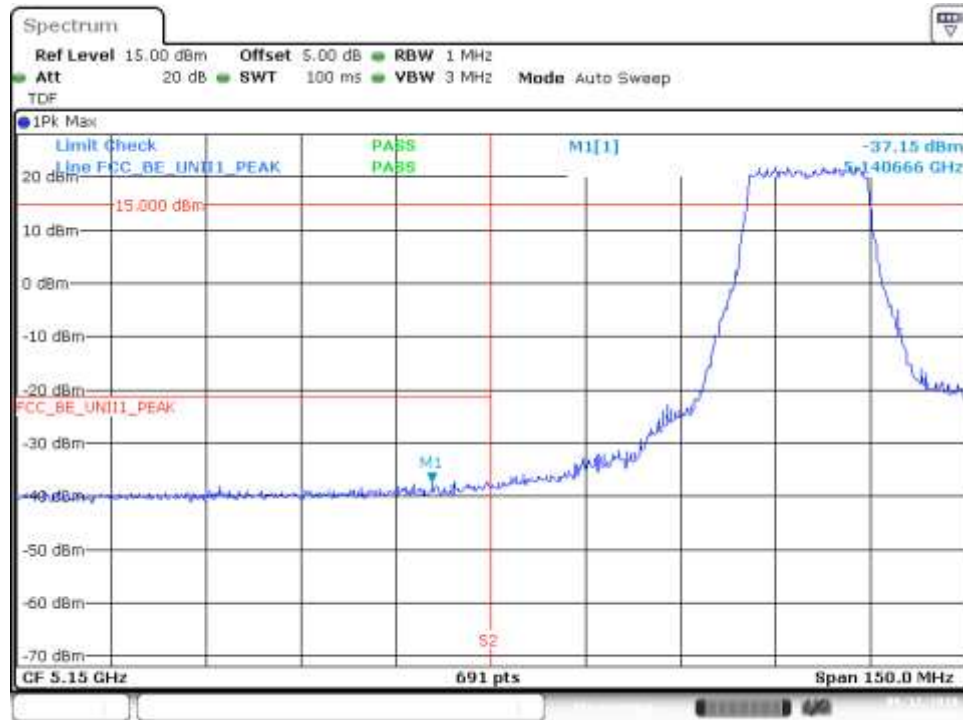
Date: 12.SEP.2018 13:26:51

BE Low Freq Section, RMS – CH36



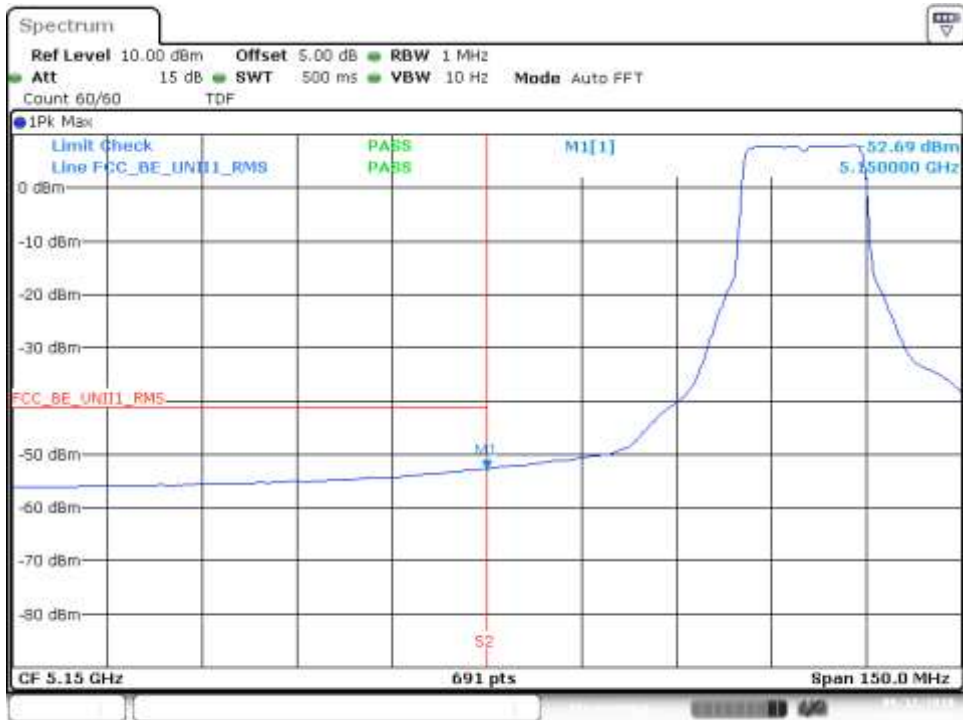
Date: 12.SEP.2018 13:26:29

BE Low Freq Section, Peak – CH40



Date: 12.SEP.2018 13:33:23

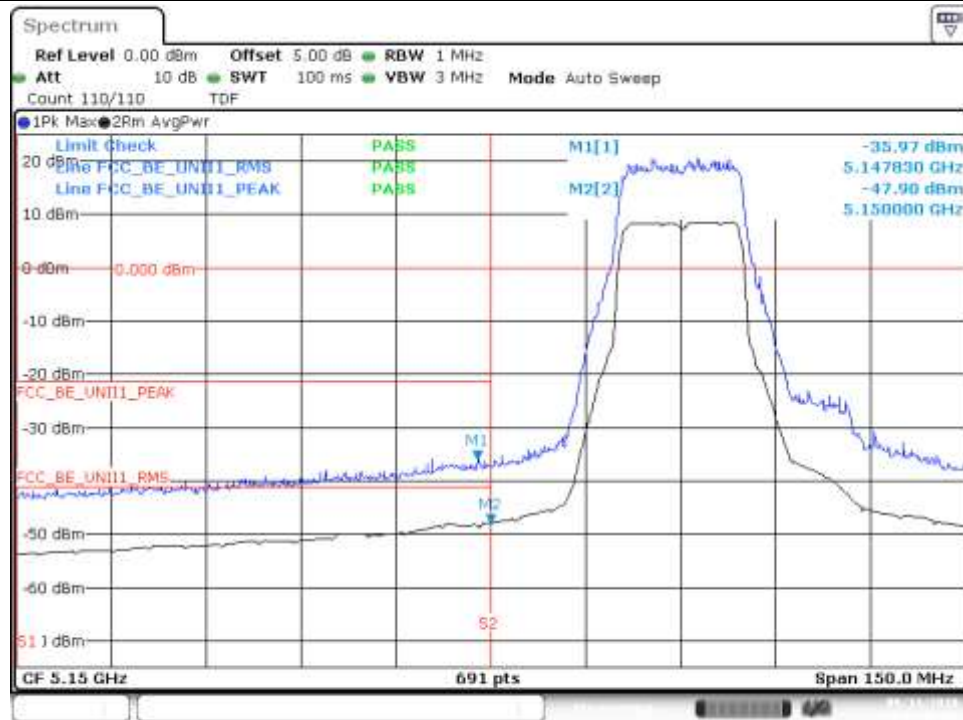
BE Low Freq Section, RMS – CH40



Date: 12.SEP.2018 13:33:05

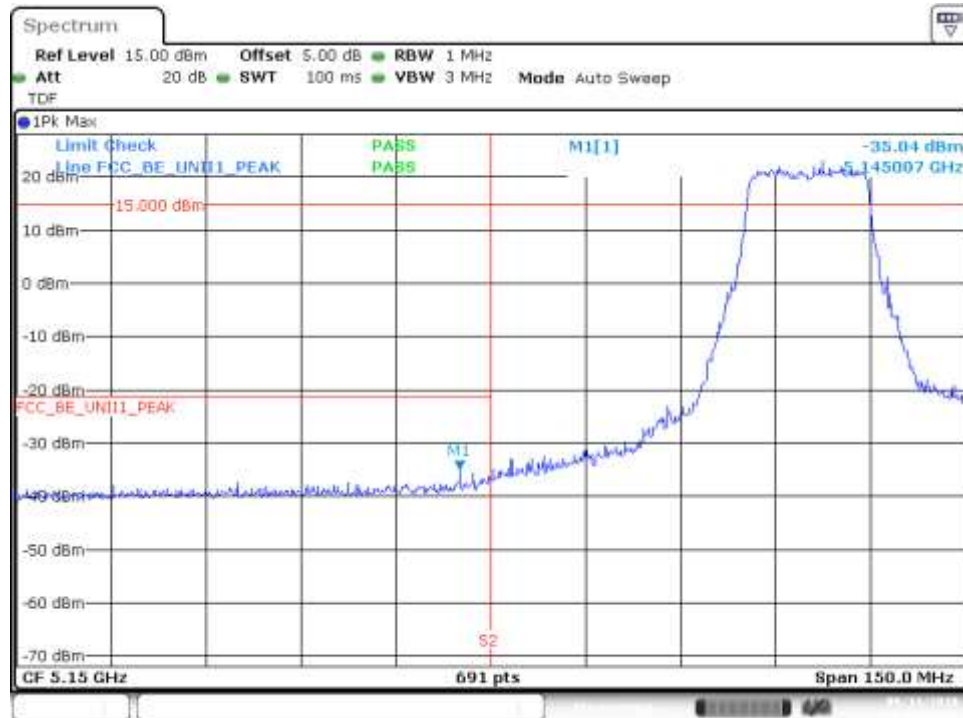
802.11ax20, HE0 (MIMO) – Chain B

BE Low Freq Section, Peak, RMS – CH36



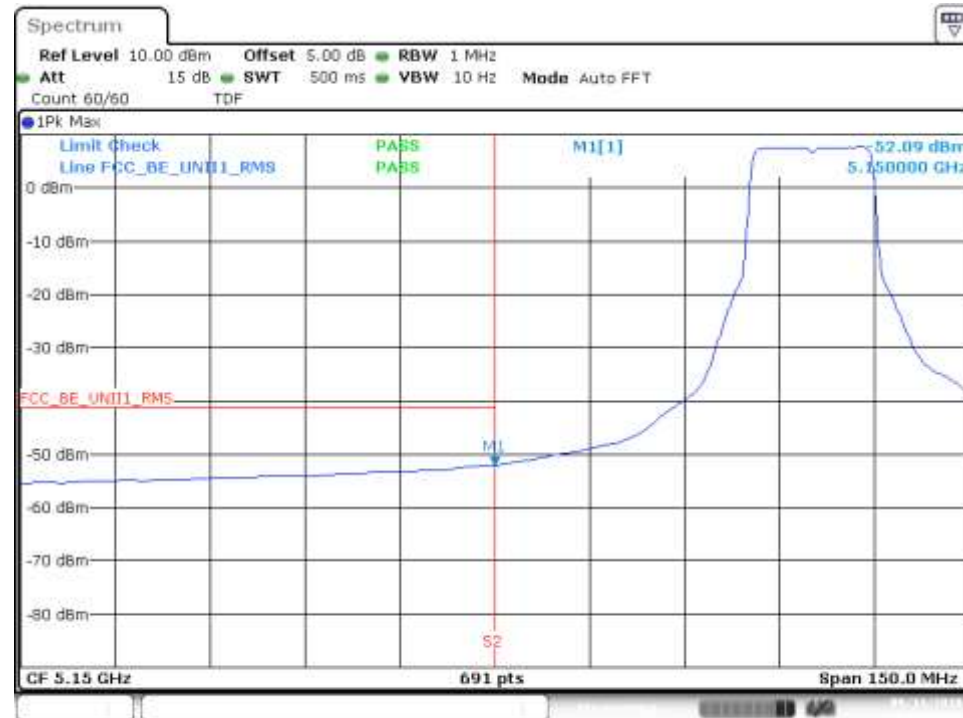
Date: 13.SEP.2018 13:11:49

BE Low Freq Section, Peak – CH40



Date: 13.SEP.2018 13:16:38

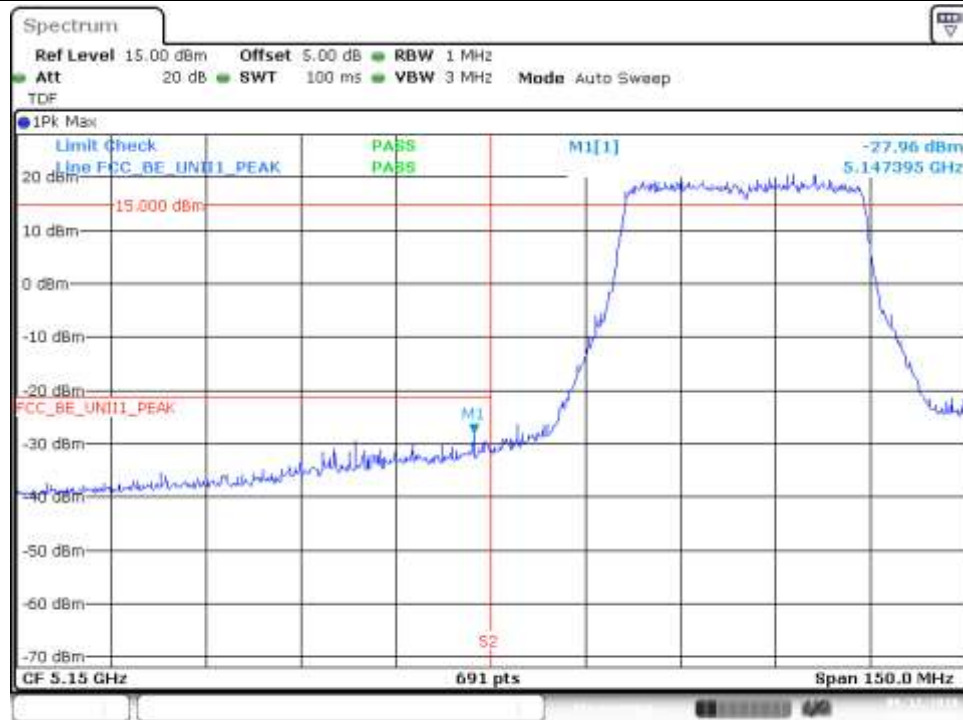
BE Low Freq Section, RMS – CH40



Date: 13.SEP.2018 13:16:25

802.11ax40, HE0 (SISO) – Chain A

BE Low Freq Section, Peak – CH38F



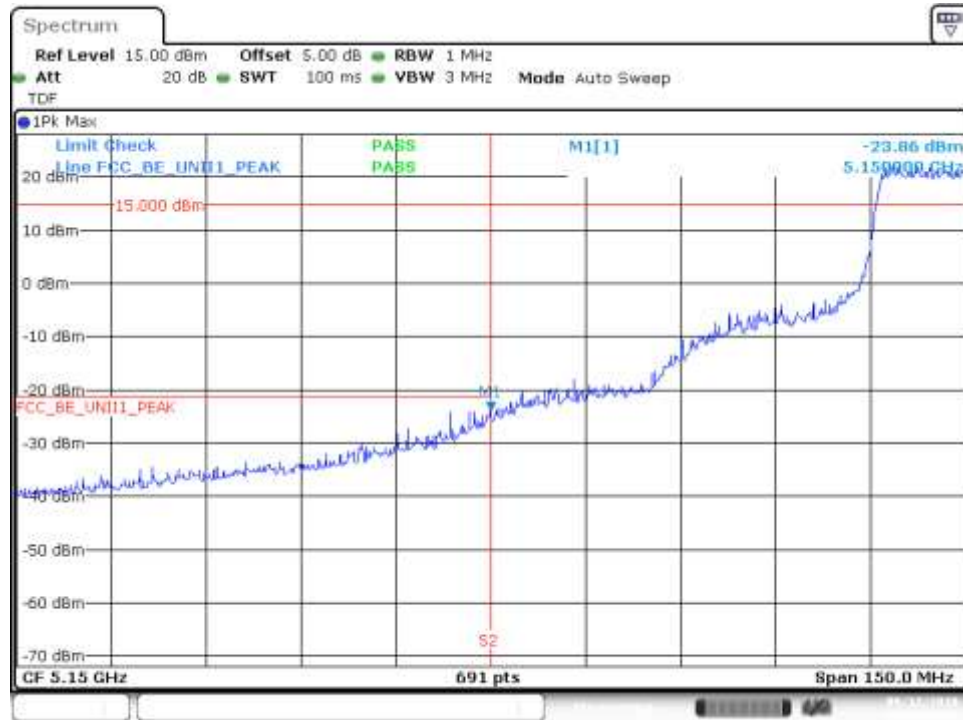
Date: 12.SEP.2018 14:32:38

BE Low Freq Section, RMS – CH38F



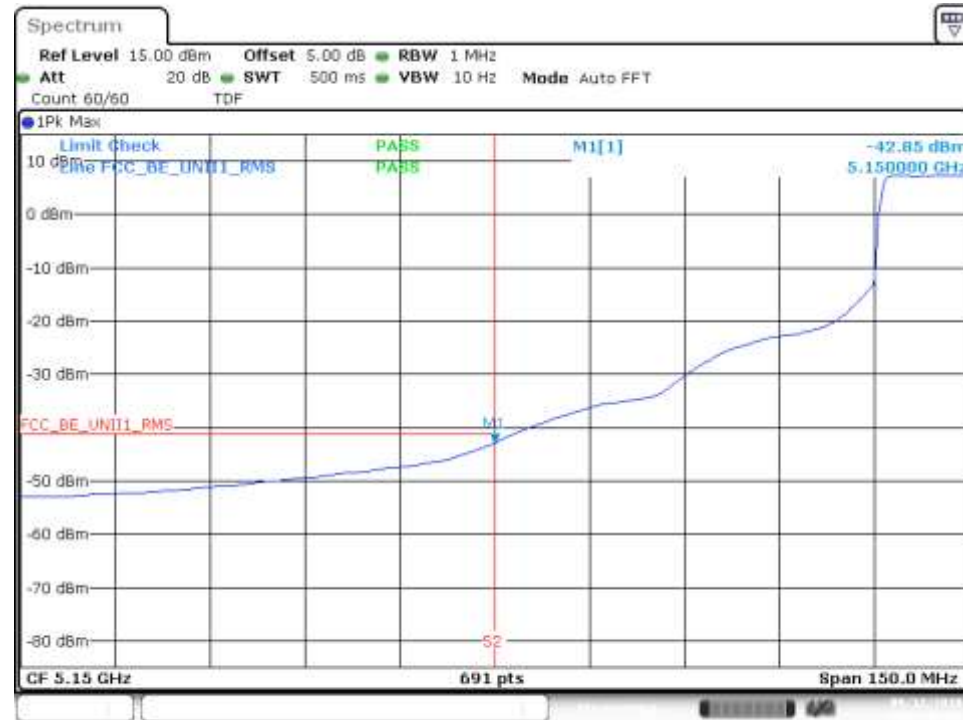
Date: 12.SEP.2018 14:32:17

BE Low Freq Section, Peak – CH46F



Date: 12 SEP.2018 14:37:30

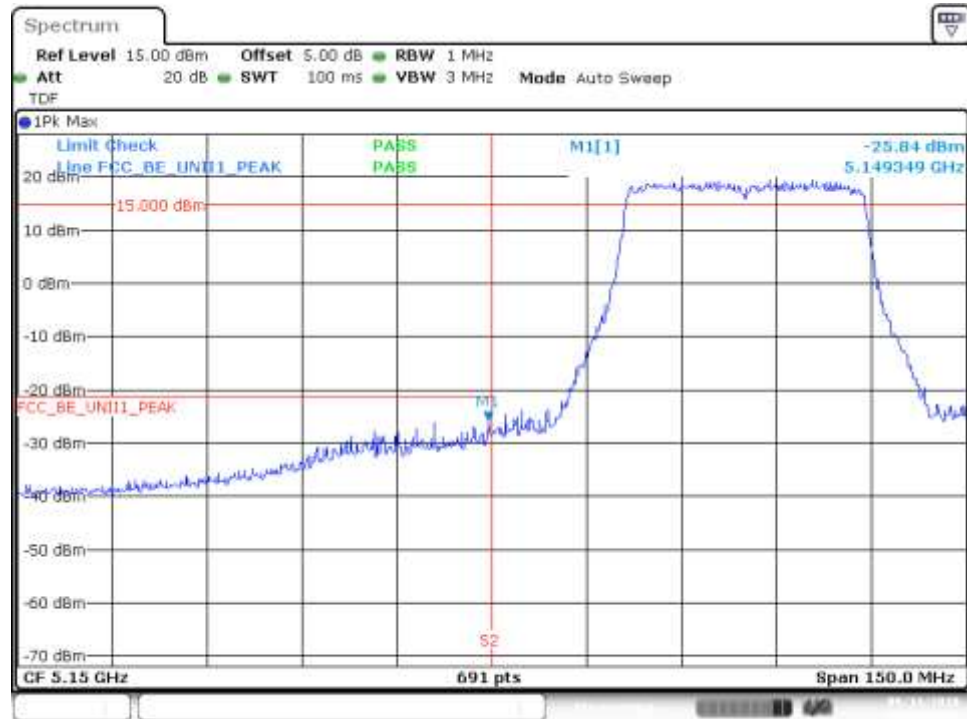
BE Low Freq Section, RMS – CH46F



Date: 12 SEP.2018 14:37:15

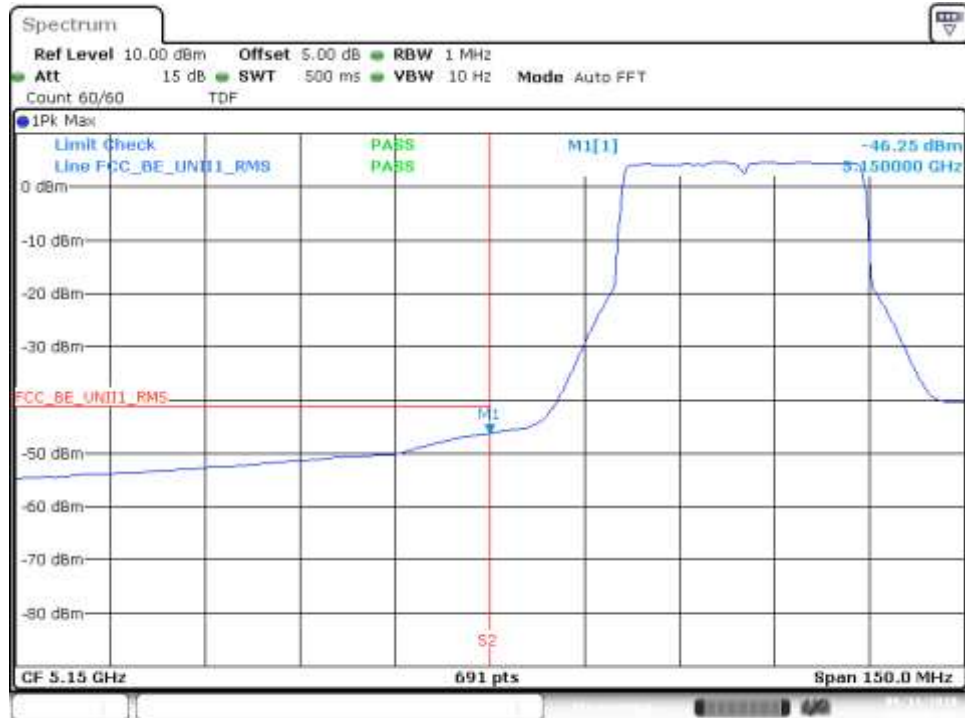
802.11n40, HT0 (SISO) – Chain B

BE Low Freq Section, Peak – CH38F



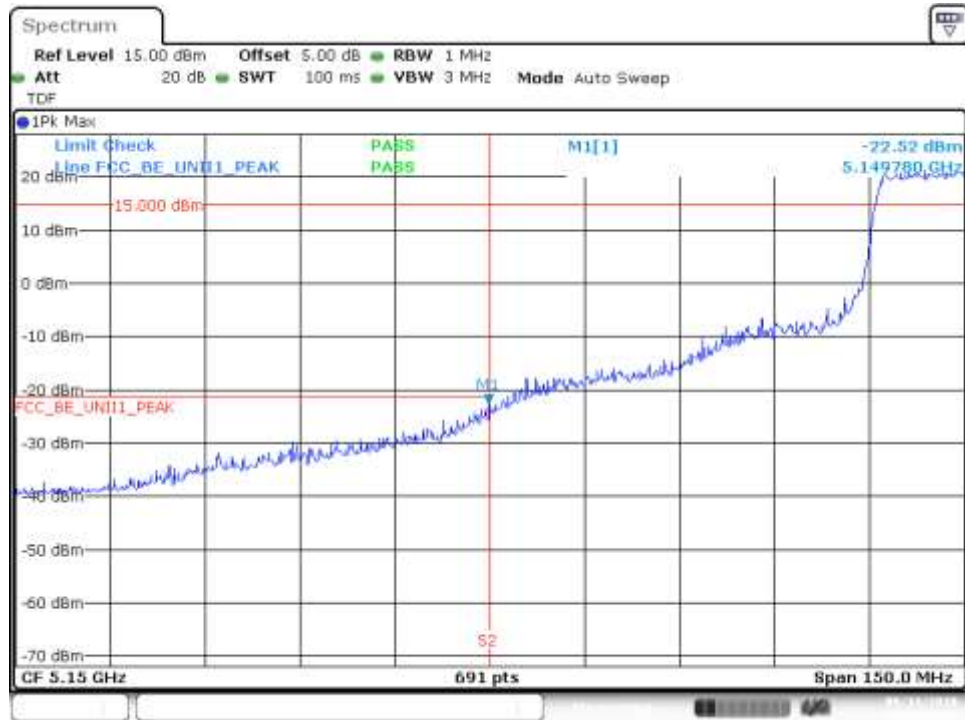
Date: 13.SEP.2018 14:34:57

BE Low Freq Section, RMS – CH38F



Date: 13.SEP.2018 14:34:10

BE Low Freq Section, Peak – CH46F



Date: 13.SEP.2018 14:40:54

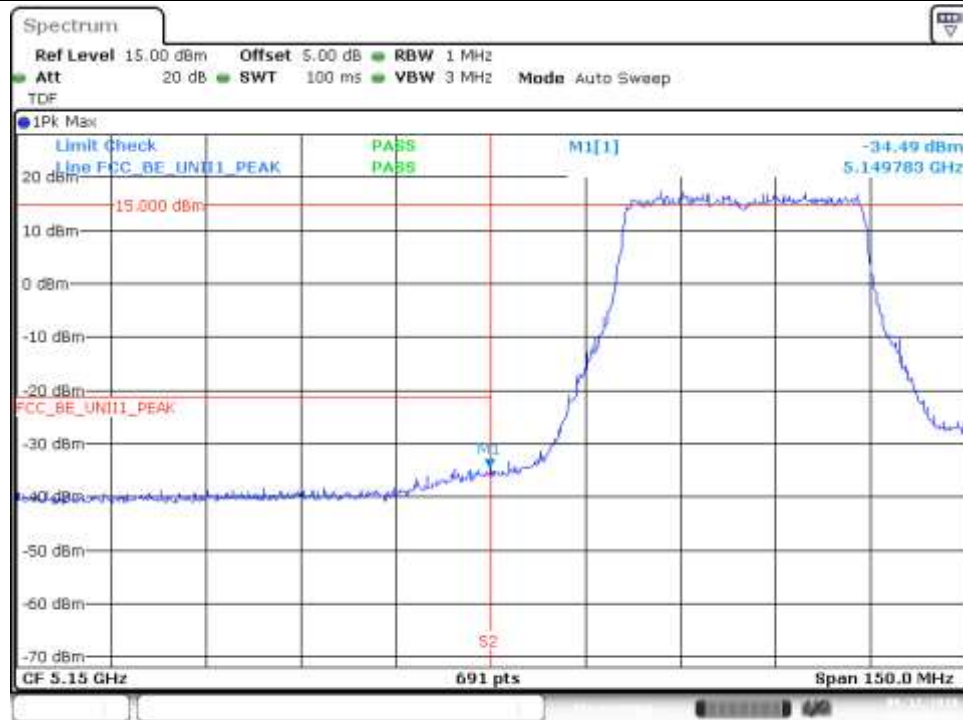
BE Low Freq Section, RMS – CH46F



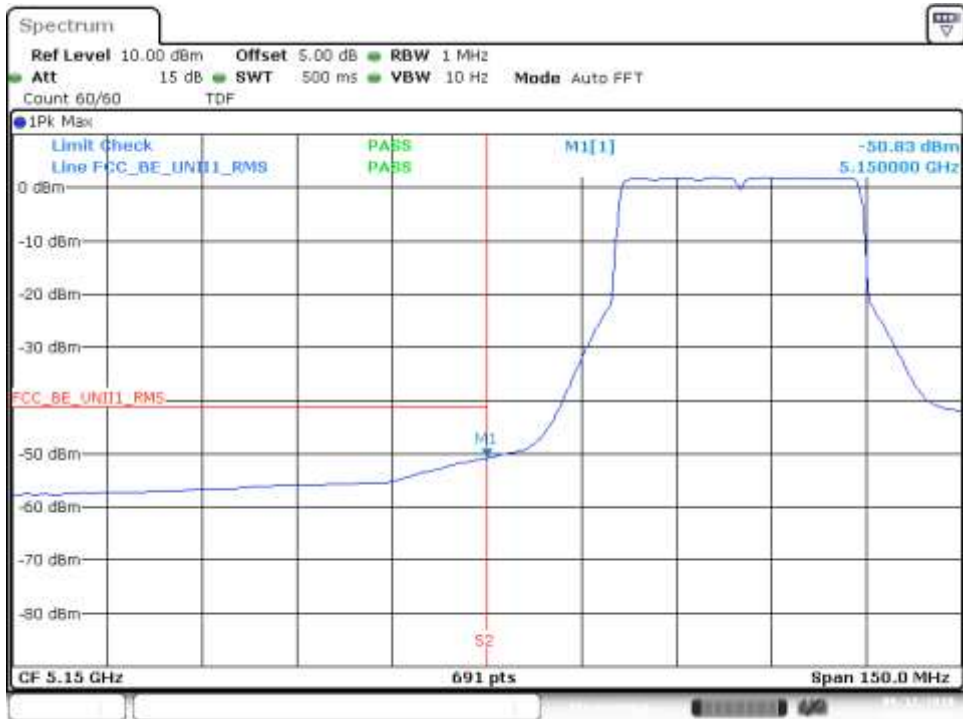
Date: 13.SEP.2018 14:39:34

802.11ax40, HE0 (MIMO) – Chain A

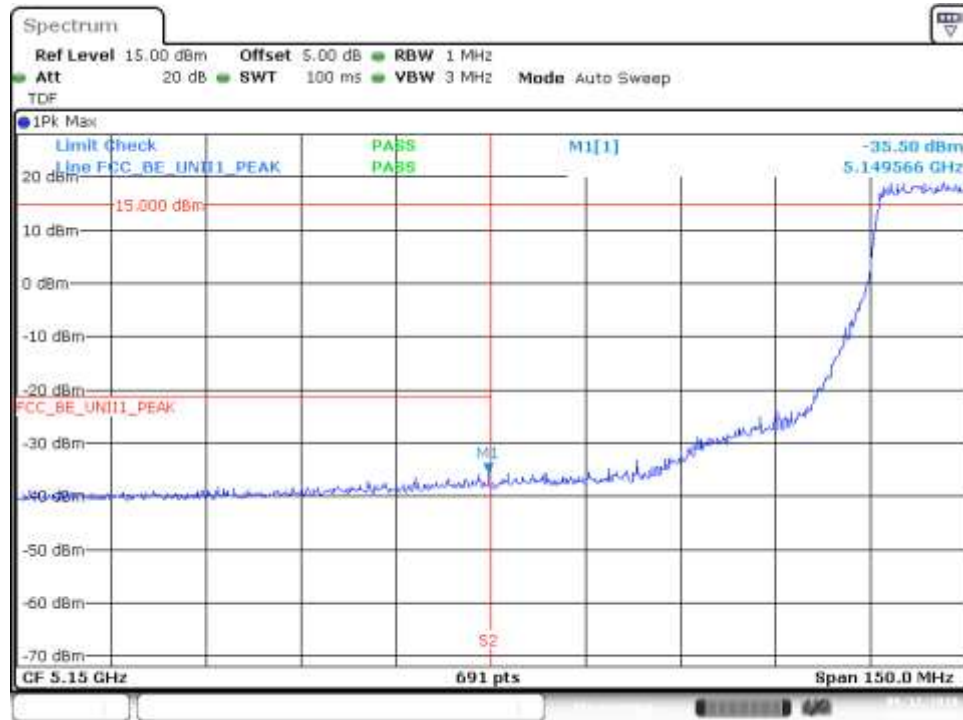
BE Low Freq Section, Peak – CH38F



BE Low Freq Section, RMS – CH38F

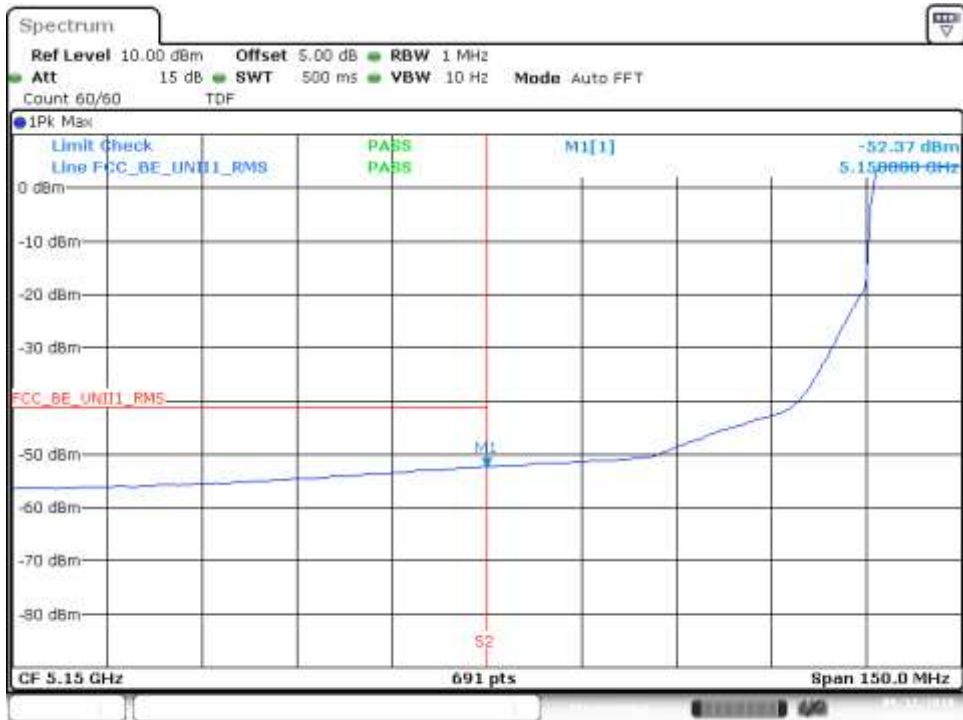


BE Low Freq Section, Peak – CH46F



Date: 12.SEP.2018 15:06:43

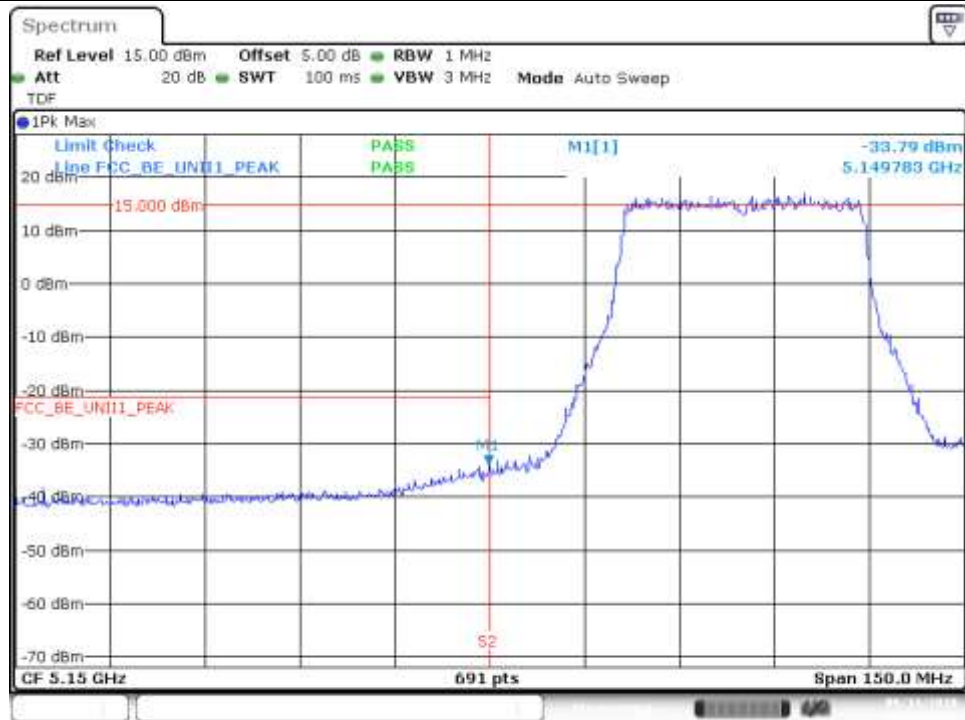
BE Low Freq Section, RMS – CH46F



Date: 12.SEP.2018 15:06:13

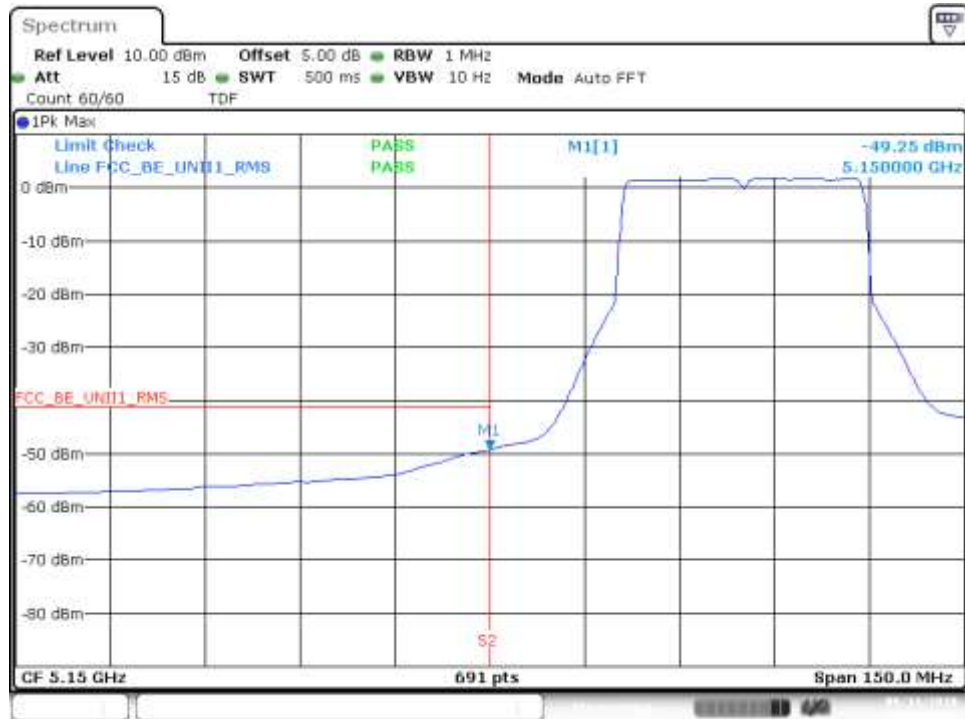
802.11ax40, HE0 (MIMO) – Chain B

BE Low Freq Section, Peak – CH38F



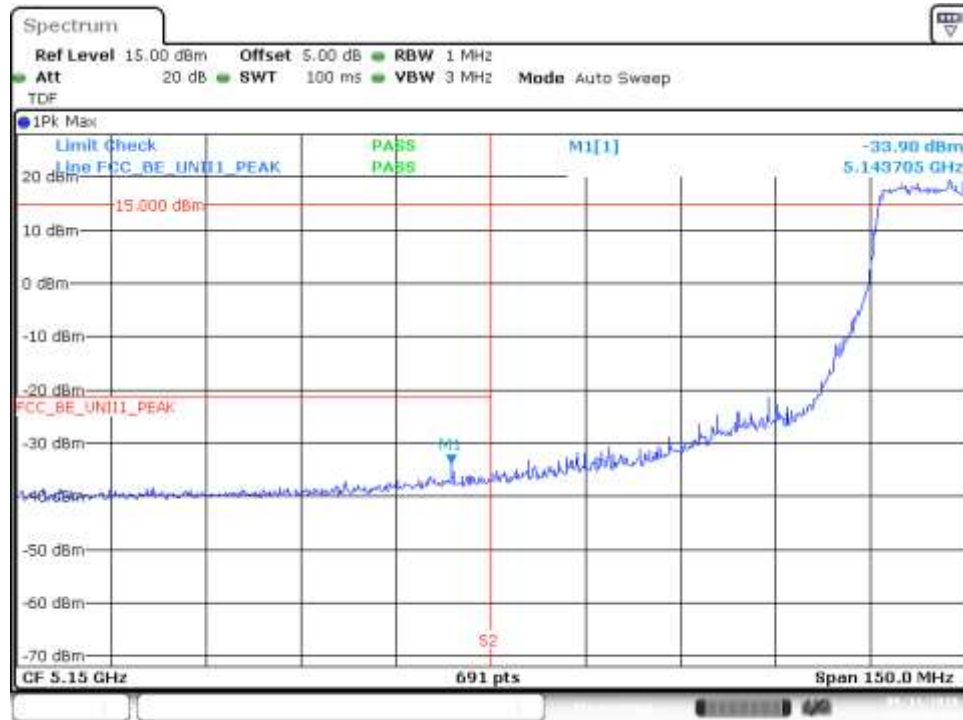
Date: 13.SEP.2018 14:53:58

BE Low Freq Section, RMS – CH38F



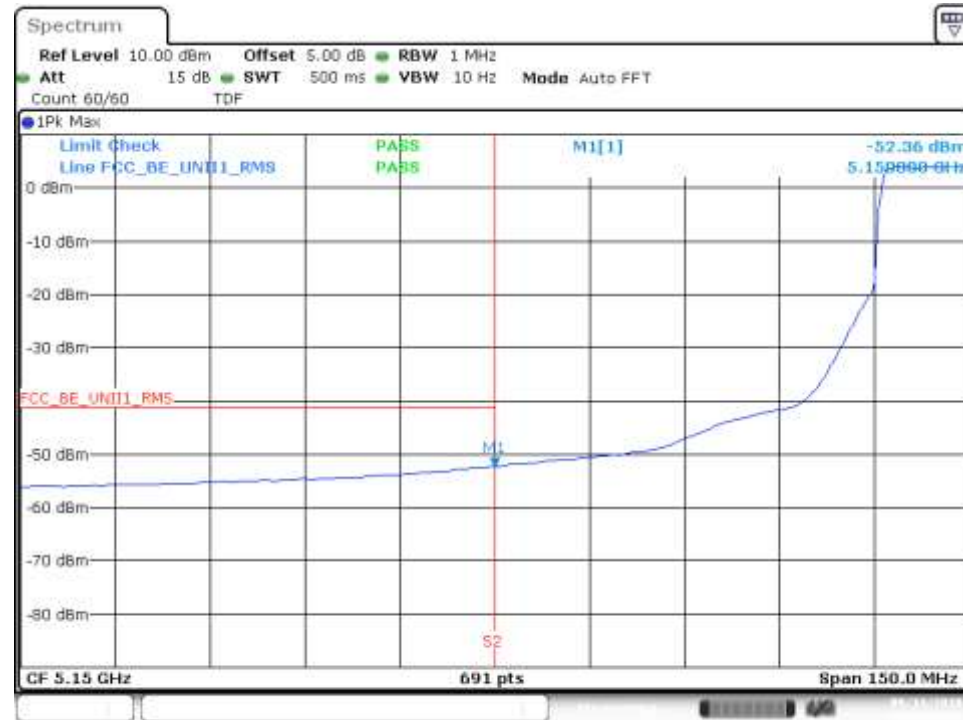
Date: 13.SEP.2018 14:52:37

BE Low Freq Section, Peak – CH46F



Date: 13.SEP.2018 14:56:47

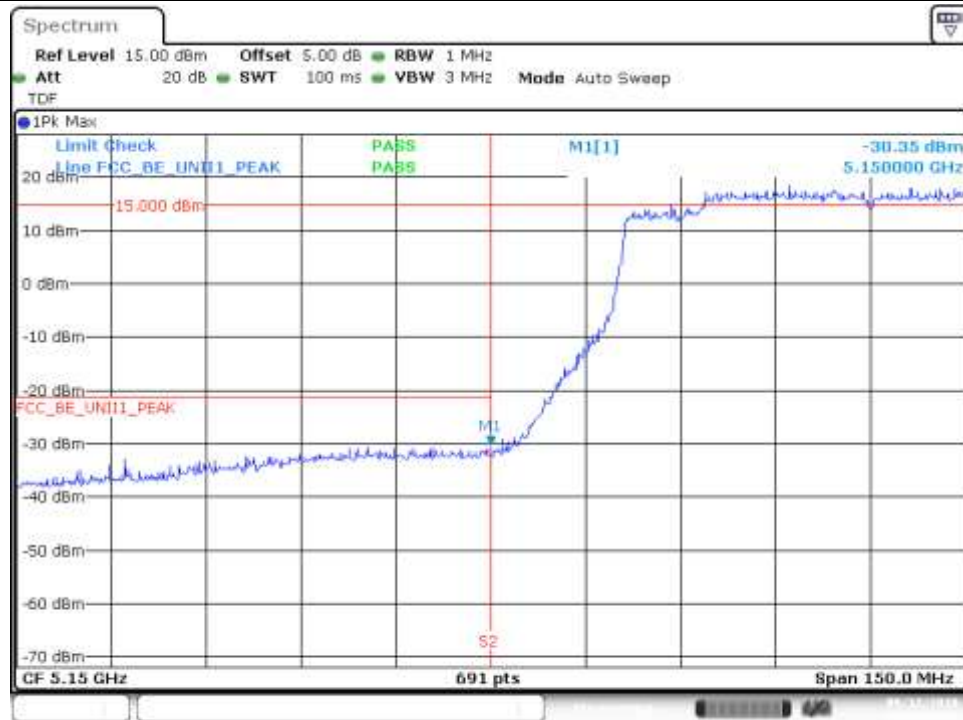
BE Low Freq Section, RMS – CH46F



Date: 13.SEP.2018 14:56:22

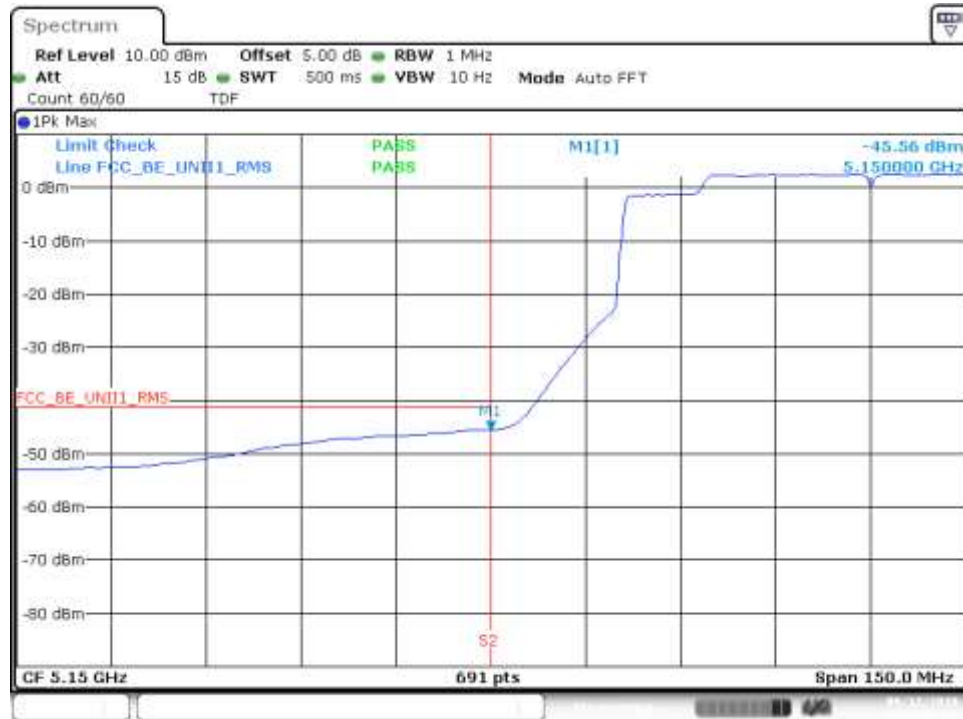
802.11ax80, HE0 (SISO) – Chain A

BE Low Freq Section, Peak – CH42



Date: 12.SEP.2018 16:17:26

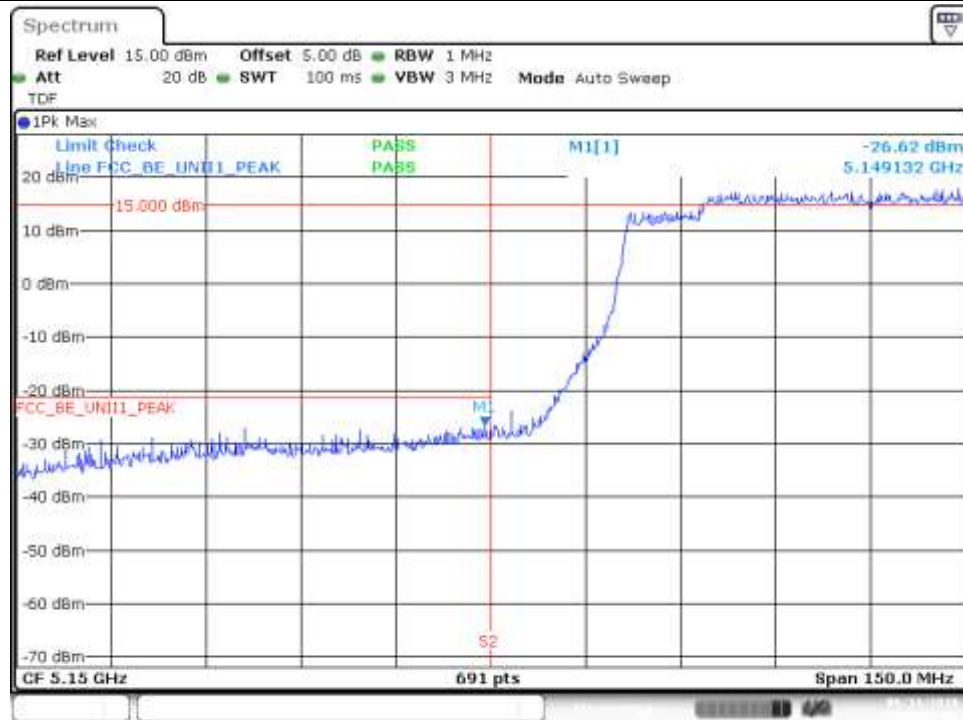
BE Low Freq Section, RMS – CH42



Date: 12.SEP.2018 16:18:18

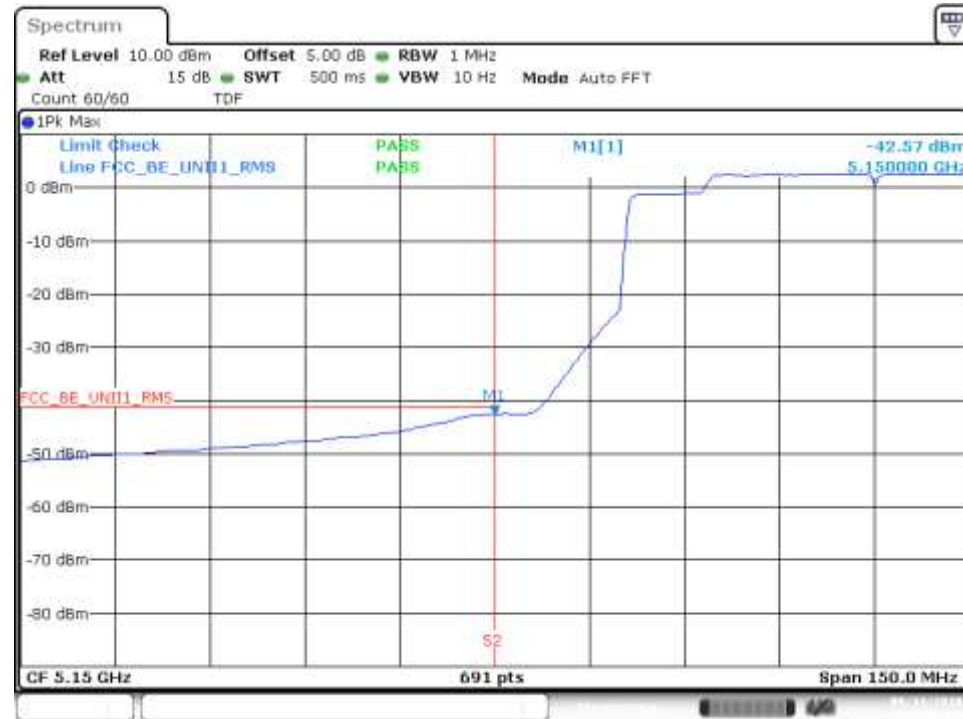
802.11ax80, HE0 (SISO) – Chain B

BE Low Freq Section, Peak – CH42



Date: 13.SEP.2018 16:26:45

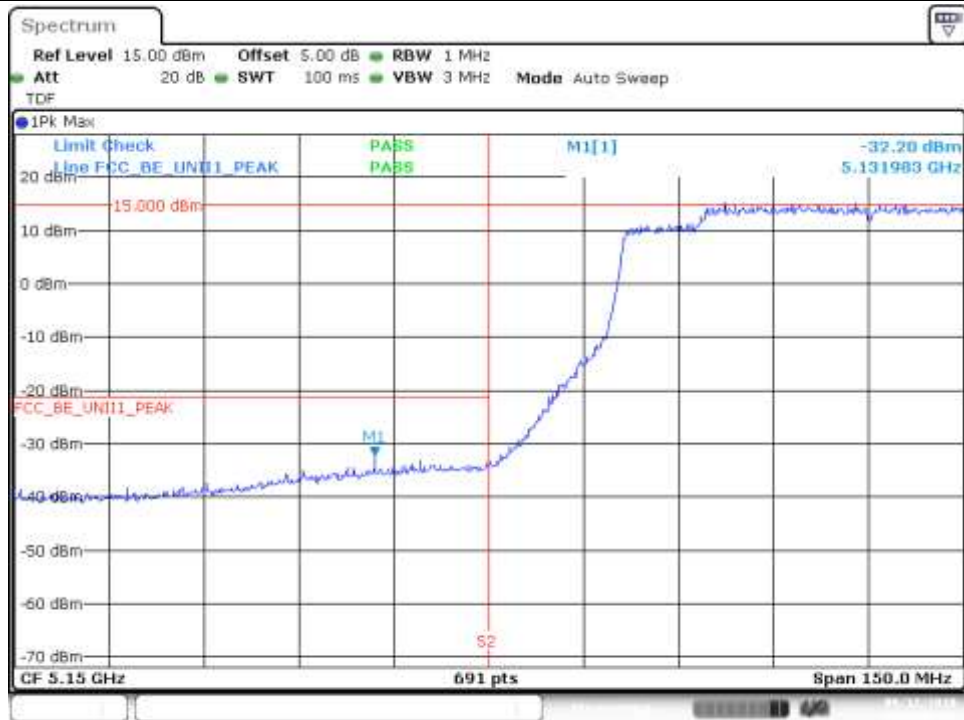
BE Low Freq Section, RMS – CH42



Date: 13.SEP.2018 16:26:45

802.11ax80, HE0 (MIMO) – Chain A

BE Low Freq Section, Peak – CH42



Date: 12.SEP.2018 16:26:07

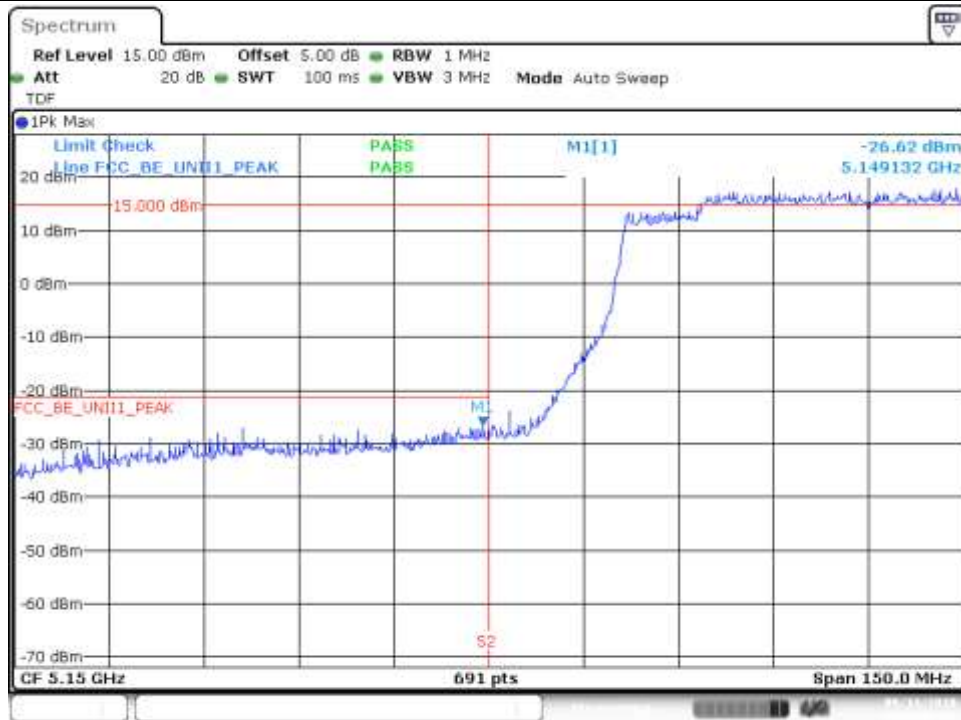
BE Low Freq Section, RMS – CH42



Date: 12.SEP.2018 16:26:36

802.11ax80, HE0 (MIMO) – Chain B

BE Low Freq Section, Peak – CH42



Date: 13.SEP.2018 16:25:45

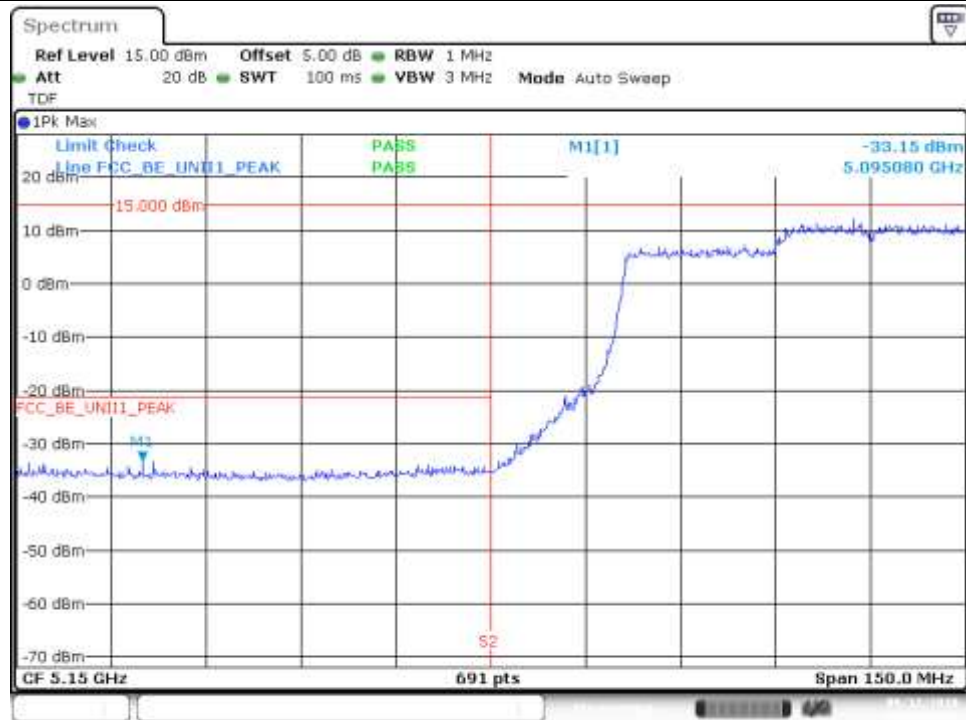
BE Low Freq Section, RMS – CH42



Date: 13.SEP.2018 16:25:45

802.11ax160, HE0 (SISO) – Chain A

BE Low Freq Section, Peak – CH50



Date: 12.SEP.2018 17:02:40

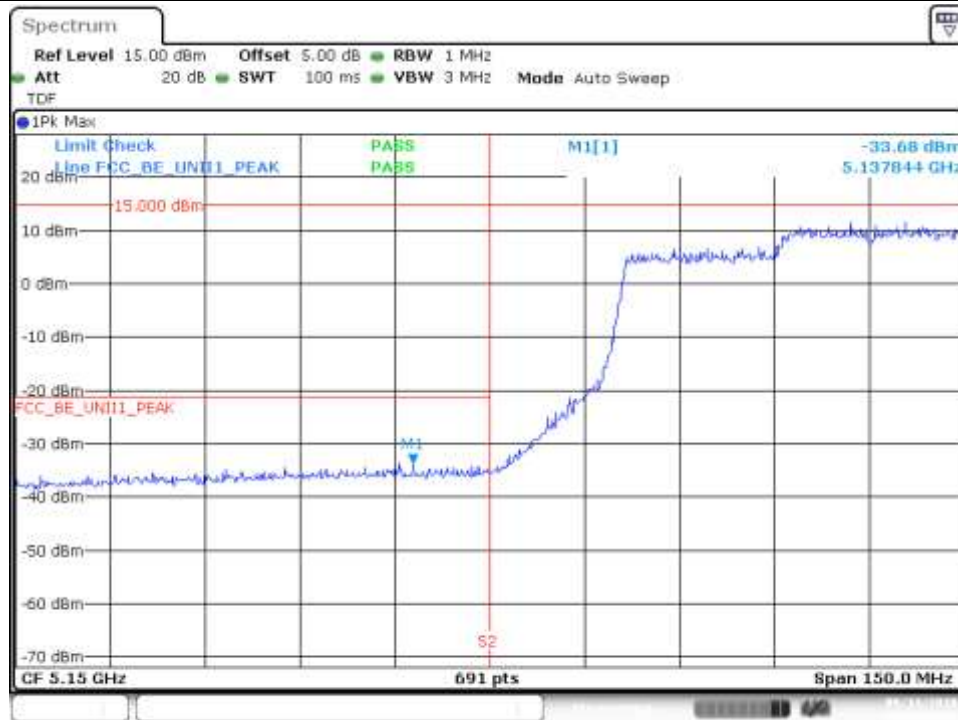
BE Low Freq Section, RMS – CH50



Date: 12.SEP.2018 17:02:08

802.11ax160, HE0 (SISO) – Chain B

BE Low Freq Section, Peak – CH50



Date: 13.SEP.2018 17:46:30

BE Low Freq Section, RMS – CH50



Date: 13.SEP.2018 17:46:04

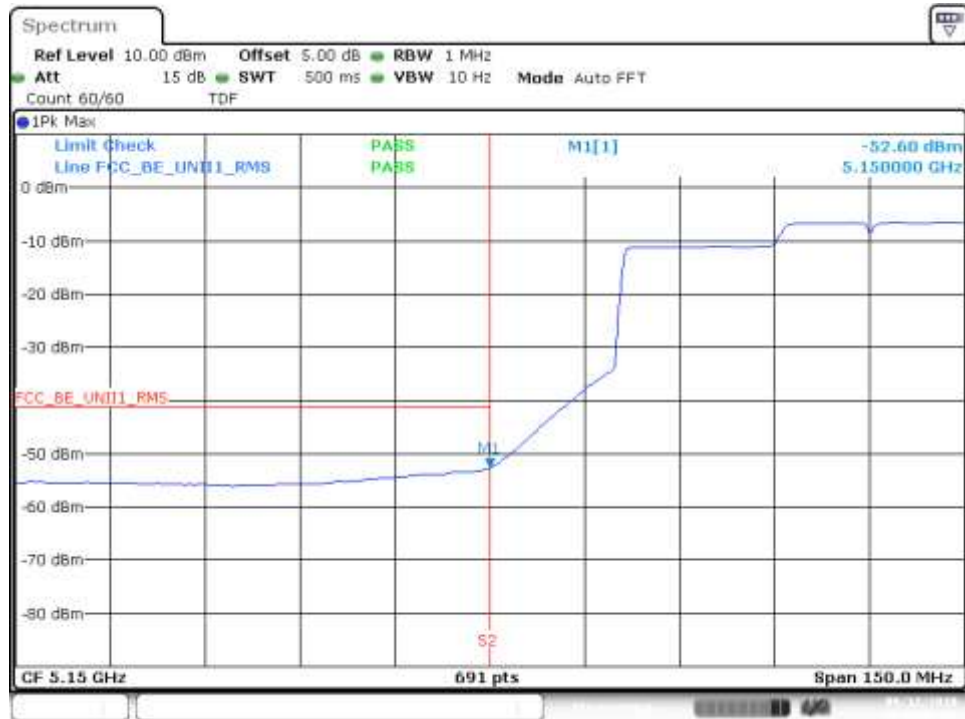
802.11ax160, HE0 (MIMO) – Chain A

BE Low Freq Section, Peak – CH50



Date: 12.SEP.2018 17:13:26

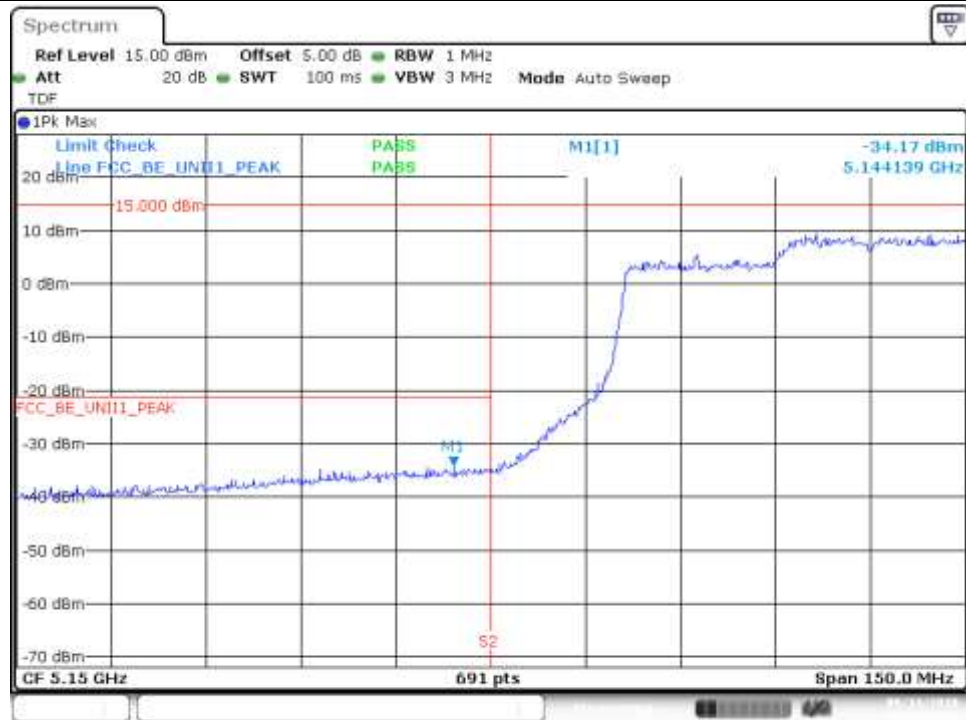
BE Low Freq Section, RMS – CH50



Date: 12.SEP.2018 17:13:07

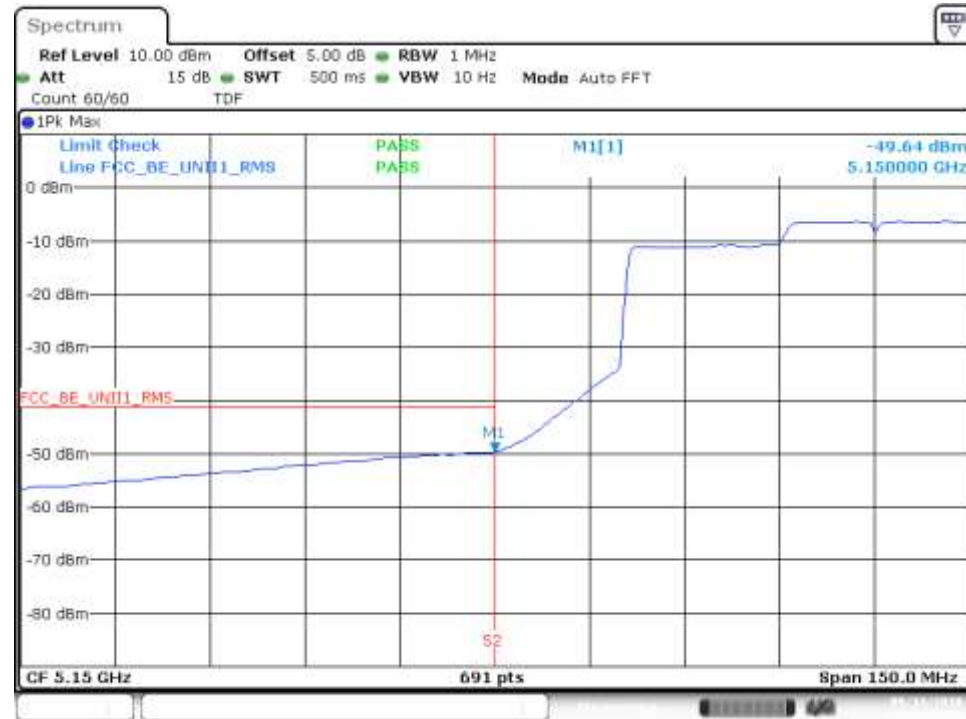
802.11ax160, HE0 (MIMO) – Chain B

BE Low Freq Section, Peak – CH50



Date: 13.SEP.2018 17:35:29

BE Low Freq Section, RMS – CH50



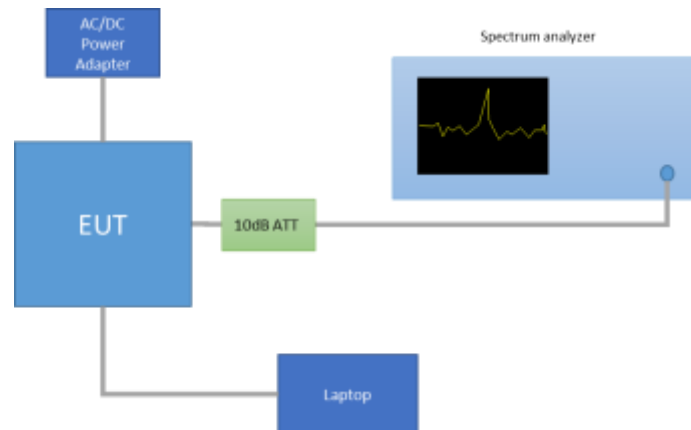
Date: 13.SEP.2018 17:35:41

B.4 Test Results Tables U-NII-2A

B.4.1 26dB & 99% Bandwidth

Test procedure

The setup below was used to measure the 26dB & 99% Bandwidth. 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.



Results tables

Mode	Rate	Antenna	Channel	Frequency [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	SISO-A	52	5260	27.88	17.20
			56	5280	26.83	17.20
			64	5320	24.52	16.88
		SISO-B	52	5260	28.43	17.64
			56	5280	31.43	17.76
			64	5320	24.52	16.88
802.11n20	HT0	SISO-A	52	5260	26.93	18.28
			56	5280	27.92	18.24
			64	5320	25.03	18.00
		SISO-B	52	5260	33.28	18.60
			56	5280	30.18	18.68
			64	5320	25.38	17.96
	HT8	MIMO-A	52	5260	25.73	17.96
			56	5280	25.17	18.00
			64	5320	24.93	18.00
		MIMO-B	52	5260	25.83	18.00
			56	5280	24.57	17.96
			64	5320	24.62	17.92
802.11n40	HT0	SISO-A	54F	5270	46.76	36.72
			62F	5310	44.96	36.64
		SISO-B	54F	5270	46.31	36.80
			62F	5310	45.14	36.56
	HT8	MIMO-A	54F	5270	45.86	36.64
			62F	5310	44.96	36.64
		MIMO-B	54F	5270	43.06	36.40
			62F	5310	43.06	36.40
802.11ac80	VHT0	SISO-A	58	5290	86.73	75.12
		SISO-B	58	5290	87.29	75.12
		MIMO-A	58	5290	87.29	75.12
		MIMO-B	58	5290	85.39	75.00

Mode	Rate	Antenna	Channel	Frequency [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11ax20	HE0	SISO-A	52	5260	28.48	19.16
			56	5280	28.03	19.12
			64	5320	24.07	19.12
		SISO-B	52	5260	28.34	19.32
			56	5280	29.03	19.28
			64	5320	25.08	19.08
		MIMO-A	52	5260	25.07	19.12
			56	5280	25.18	19.08
			64	5320	24.98	19.12
		MIMO-B	52	5260	25.78	19.08
			56	5280	25.33	19.08
			64	5320	25.53	19.12
802.11ax40	HE0	SISO-A	54F	5270	46.58	38.00
			62F	5310	44.95	37.92
		SISO-B	54F	5270	44.41	37.84
			62F	5310	44.32	37.84
		MIMO-A	54F	5270	45.59	37.92
			62F	5310	44.14	37.84
802.11ax80	HE0	MIMO-B	54F	5270	44.59	37.92
			62F	5310	44.05	37.84
		SISO-A	58	5290	85.02	76.68
		SISO-B	58	5290	83.49	76.56
		MIMO-A	58	5290	85.77	76.80
		MIMO-B	58	5290	83.87	76.68

Mode	Rate	Antenna	Channel	Frequency [MHz]	RU Configuration	26dB BW [MHz]	99% BW [MHz]
802.11ax20	HE0	SISO-A	64	5320	26/8	21.07	18.56
					52/40	22.02	18.36
					106/54	22.97	18.32
		SISO-B			26/8	20.82	18.56
					52/40	22.22	18.40
					106/54	23.72	18.36
		MIMO-A			26/8	21.22	18.52
					52/40	21.92	18.32
					106/54	22.82	18.28
		MIMO-B			26/8	20.42	18.48
					52/40	22.27	18.20
					106/54	23.52	18.16
802.11ax40	HE0	SISO-A	62F	5310	242/62	24.96	19.12
		SISO-B			242/62	24.96	19.20
		MIMO-B			242/62	24.77	19.12
		MIMO-A			242/62	24.77	19.20
802.11ax80	HE0	SISO-A	58	5290	484/66	43.69	38.04
		SISO-B			484/66	43.87	37.92
		MIMO-B			484/66	44.41	37.92
		MIMO-A			484/66	43.96	37.80

Max Value

See Section B.5.1 and Section B.5.2 for the screenshot results.

B.4.2 Power Limits. Maximum Output power & Peak power spectral density

Test limits

FCC part	Limits
15.407 (a) (2)	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 KDB 789033 D02.

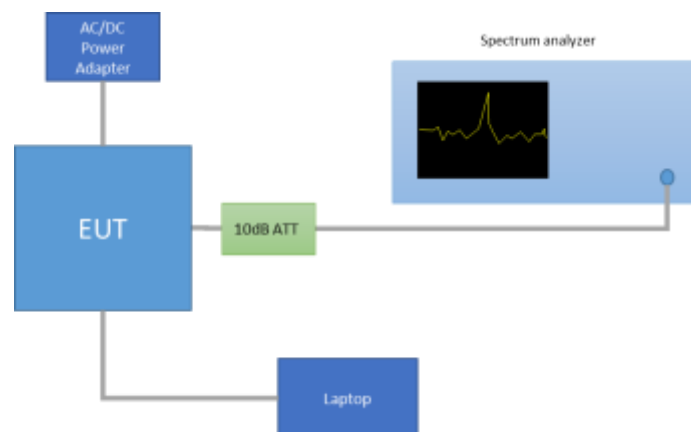
The maximum power spectral density (PSD) was measured using the method according to point F) (Method SA-2 Alternative) of KDB 789033 D02.

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 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 analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

The declared maximum antenna gain is 5dBi.



Results tables

Duty cycle

Mode	Rate	Antenna	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
802.11a	6Mbps	SISO-A	2.08	2.13	97.50%
		SISO-B	2.08	2.13	97.50%
802.11n20	HT0	SISO-A	3.96	4.01	98.65%
		SISO-B	3.96	4.01	98.65%
	HT8	MIMO-A	3.96	4.01	98.65%
		MIMO-B	3.96	4.01	98.65%
802.11ax20	HE0	SISO-A	3.94	3.99	98.67%
		SISO-B	3.94	3.99	98.67%
		MIMO-A	3.94	3.99	98.67%
		MIMO-B	3.94	3.99	98.67%
802.11n40	HT0	SISO-A	3.96	4.01	98.74%
		SISO-B	3.96	4.01	98.74%
	HT8	MIMO-A	3.96	4.01	98.73%
		MIMO-B	3.96	4.01	98.73%
802.11ax40	HE0	SISO-A	4.65	4.70	98.86%
		SISO-B	4.65	4.70	98.86%
		MIMO-A	3.96	4.01	98.73%
		MIMO-B	3.96	4.01	98.73%
802.11ac80	VHT0	SISO-A	3.95	4.00	98.66%
		SISO-B	3.95	4.00	98.66%
		MIMO-A	3.95	4.01	98.60%
		MIMO-B	3.95	4.01	98.60%
802.11ax80	HE0	SISO-A	3.95	4.01	98.66%
		SISO-B	3.95	4.01	98.66%
		MIMO-A	3.97	4.02	98.67%
		MIMO-B	3.97	4.02	98.67%

Maximum output power

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Conducted Output Power [dBm]	Maximum* Conducted Output Power [dBm]	Maximum* Conducted Output Power [mW]	Maximum* EIRP [dBm]
802.11a	6Mbps	52	5260	SISO-A	21.18	21.29	134.59	26.29
				SISO-B	20.92	21.03	126.76	26.03
		56	5280	SISO-A	21.11	21.22	132.43	26.22
				SISO-B	20.82	20.93	123.88	25.93
		64	5320	SISO-A	17.29	17.40	54.95	22.40
				SISO-B	17.31	17.42	55.21	22.42
802.11n20	HT0	52	5260	SISO-A	21.17	21.17	130.92	26.17
				SISO-B	21.10	21.10	128.82	26.10
		56	5280	SISO-A	21.10	21.10	128.82	26.10
				SISO-B	20.93	20.93	123.88	25.93
		64	5320	SISO-A	17.30	17.30	53.70	22.30
				SISO-B	17.28	17.28	53.46	22.28
	HT8	52	5260	MIMO-A	18.06	18.06	63.97	23.06
				MIMO-B	17.87	17.87	61.24	22.87
				Combined A+B	20.98	20.98	125.21	25.98
		56	5280	MIMO-A	17.84	17.84	60.81	22.84
				MIMO-B	17.75	17.75	59.57	22.75
				Combined A+B	20.81	20.81	120.38	25.81
		64	5320	MIMO-A	13.57	13.57	22.75	18.57
				MIMO-B	13.57	13.57	22.75	18.57
				Combined A+B	16.58	16.58	45.50	21.58
802.11n40	HT0	54F	5270	SISO-A	20.31	20.31	107.40	25.31
				SISO-B	19.99	19.99	99.77	24.99
		62F	5310	SISO-A	16.59	16.59	45.60	21.59
				SISO-B	16.59	16.59	45.60	21.59
	HT8	54F	5270	MIMO-A	16.44	16.44	44.06	21.44
				MIMO-B	16.46	16.46	44.26	21.46
				Combined A+B	19.46	19.46	88.31	24.46
		62F	5310	MIMO-A	12.93	12.93	19.63	17.93
				MIMO-B	13.03	13.03	20.09	18.03
				Combined A+B	15.99	15.99	39.72	20.99
802.11ac80	VHT0	58	5290	SISO-A	17.34	17.34	54.20	22.34
				SISO-B	17.60	17.60	57.54	22.60
				MIMO-A	14.14	14.14	25.94	19.14
				MIMO-B	14.21	14.21	26.36	19.21
				Combined A+B	17.19	17.19	52.31	22.19

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average Conducted Output Power [dBm]	Maximum* Conducted Output Power [dBm]	Maximum* Conducted Output Power [mW]	Maximum* EIRP [dBm]
802.11ax20	HE0	52	5260	SISO-A	21.03	21.03	126.77	26.03
				SISO-B	20.93	20.93	123.88	25.93
		56	5280	SISO-A	21.01	21.01	126.18	26.01
				SISO-B	20.80	20.80	120.23	25.80
		64	5320	SISO-A	17.43	17.43	55.34	22.43
				SISO-B	17.45	17.45	55.59	22.45
		52	5260	MIMO-A	17.94	17.94	62.23	22.94
				MIMO-B	17.75	17.75	59.57	22.75
				Combined A+B	20.86	20.86	121.80	25.86
		56	5280	MIMO-A	17.94	17.94	62.23	22.94
				MIMO-B	17.65	17.65	58.21	22.65
				Combined A+B	20.81	20.81	120.44	25.81
		64	5320	MIMO-A	13.64	13.64	23.12	18.64
				MIMO-B	13.43	13.43	22.03	18.43
				Combined A+B	16.55	16.55	45.15	21.55
802.11ax40	HE0	54F	5270	SISO-A	20.39	20.39	109.40	25.39
				SISO-B	19.80	19.80	95.50	24.80
		62F	5310	SISO-A	16.48	16.48	44.46	21.48
				SISO-B	16.46	16.46	44.26	21.46
		54F	5270	MIMO-A	16.45	16.45	44.16	21.45
				MIMO-B	16.42	16.42	43.85	21.42
				Combined A+B	19.45	19.45	88.01	24.45
		62F	5310	MIMO-A	13.09	13.09	20.37	18.09
				MIMO-B	13.03	13.03	20.09	18.03
				Combined A+B	16.07	16.07	40.46	21.07
802.11ax80	HE0	58	5290	SISO-A	17.36	17.36	54.45	22.36
				SISO-B	17.56	17.56	57.02	22.56
				MIMO-A	14.12	14.12	25.82	19.12
				MIMO-B	14.02	14.02	25.23	19.02
				Combined A+B	17.08	17.08	51.06	22.08

Mode	Rate	Antenna	Channel	Frequency [MHz]	RU Config.	Average Conducted Output Power	Maximum* Conducted Output Power	Maximum* Conducted Output Power	Max of EIRP
						[dBm]	[dBm]	[mW]	[dBm]
802.11ax20	HE0	SISO-A	64	5320	26/8	13.62	13.62	23.01	18.62
		SISO-A			52/40	15.10	15.10	32.36	20.10
		SISO-A			106/54	18.94	18.94	78.34	23.94
		SISO-B			26/8	13.68	13.68	23.33	18.68
		SISO-B			52/40	15.09	15.09	32.28	20.09
		SISO-B			106/54	19.53	19.53	89.74	24.53
		MIMO-A			26/8	10.71	10.71	11.78	15.71
		MIMO-B				10.75	10.75	11.89	15.75
		Combined A+B				13.74	13.74	23.66	18.74
		MIMO-A			52/40	13.63	13.63	23.07	18.63
		MIMO-B				13.59	13.59	22.86	18.59
		Combined A+B				16.62	16.62	45.92	21.62
		MIMO-A			106/54	16.64	16.64	46.13	21.64
		MIMO-B				16.57	16.57	45.39	21.57
		Combined A+B				19.62	19.62	91.53	24.62
802.11ax40	HE0	SISO-A	62F	5310	242/62	18.11	18.11	64.71	23.11
		SISO-B				18.61	18.61	72.61	23.61
		MIMO-B				16.03	16.03	40.09	21.03
		MIMO-A				15.91	15.91	38.99	20.91
		Combined A+B				18.98	18.98	79.08	23.98
802.11ax80	HE0	SISO-A	58	5290	484/66	17.92	17.92	61.94	22.92
		SISO-B				17.58	17.58	57.28	22.58
		MIMO-A				14.82	14.82	30.34	19.82
		MIMO-B				14.57	14.57	28.64	19.57
		Combined A+B				17.71	17.71	58.98	22.71

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max Value

Min Value

Maximum Power Spectral Density (PSD)

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11a	6Mbps	52	5260	SISO-A	9.47	9.58
				SISO-B	9.18	9.29
		56	5280	SISO-A	9.42	9.53
				SISO-B	9.10	9.21
		64	5320	SISO-A	5.65	5.76
				SISO-B	5.63	5.74
802.11n20	HT0	52	5260	SISO-A	9.14	9.14
				SISO-B	9.05	9.05
		56	5280	SISO-A	9.10	9.10
				SISO-B	8.90	8.90
		64	5320	SISO-A	5.36	5.36
				SISO-B	5.30	5.30
	HT8	52	5260	MIMO-A	6.09	6.09
				MIMO-B	5.89	5.89
				Combined A+B	9.00	9.00
		56	5280	MIMO-A	5.97	5.97
				MIMO-B	5.79	5.79
				Combined A+B	8.89	8.89
		64	5320	MIMO-A	1.65	1.65
				MIMO-B	1.65	1.65
				Combined A+B	4.66	4.66
802.11n40	HT0	54F	5270	SISO-A	5.20	5.20
				SISO-B	4.87	4.87
		62F	5310	SISO-A	1.49	1.49
				SISO-B	1.48	1.48
	HT8	54F	5270	MIMO-A	1.36	1.36
				MIMO-B	1.35	1.35
				Combined A+B	4.37	4.37
		62F	5310	MIMO-A	-2.11	-2.11
				MIMO-B	-2.01	-2.01
				Combined A+B	0.95	0.95
802.11ac80	VHT0	58	5290	SISO-A	-0.18	-0.18
				SISO-B	0.05	0.05
				MIMO-A	-3.33	-3.33
				MIMO-B	-3.29	-3.29
				Combined A+B	-0.30	-0.30

Mode	Rate	Channel	Freq. [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11ax20	HE0	52	5260	SISO-A	8.73	8.73
				SISO-B	8.61	8.61
		56	5280	SISO-A	8.73	8.73
				SISO-B	8.50	8.50
		64	5320	SISO-A	5.18	5.18
				SISO-B	5.17	5.17
		52	5260	MIMO-A	5.73	5.73
				MIMO-B	5.47	5.47
				Combined A+B	8.61	8.61
		56	5280	MIMO-A	5.67	5.67
				MIMO-B	5.39	5.39
				Combined A+B	8.54	8.54
		64	5320	MIMO-A	1.41	1.41
				MIMO-B	1.15	1.15
				Combined A+B	4.29	4.29
802.11ax40		54F	5270	SISO-A	5.08	5.08
				SISO-B	4.50	4.50
		62F	5310	SISO-A	1.15	1.15
				SISO-B	1.15	1.15
		54F	5270	MIMO-A	1.13	1.13
				MIMO-B	1.10	1.10
				Combined A+B	4.13	4.13
		62F	5310	MIMO-A	-2.15	-2.15
				MIMO-B	-2.24	-2.24
	Combined A+B			0.82	0.82	
802.11ax80	58	5290	SISO-A	-0.26	-0.26	
			SISO-B	-0.07	-0.07	
			MIMO-A	-3.48	-3.48	
			MIMO-B	-3.53	-3.53	
			Combined A+B	-0.49	-0.49	

Mode	Rate	Antenna	Channel	Frequency [MHz]	RU Configurati on	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]	Maximum* EIRP PSD [dBm/MHz]
802.11ax20	HE0	SISO-A	64	5320	26/8	10.80	10.80	15.80
					52/40	9.36	9.36	14.36
					106/54	10.11	10.11	15.11
		SISO-B			26/8	10.90	10.90	15.90
					52/40	9.33	9.33	14.33
					106/54	10.70	10.70	15.70
		MIMO-A			26/8	7.85	7.85	12.85
		MIMO-B				7.90	7.90	12.90
		Combined A+B				10.89	10.89	15.89
		MIMO-A			54/40	7.89	7.89	12.89
		MIMO-B				7.86	7.86	12.86
		Combined A+B				10.89	10.89	15.89
		MIMO-A			106/54	7.81	7.81	12.81
		MIMO-B				7.69	7.69	12.69
		Combined A+B				10.76	10.76	15.76
802.11ax40	HE0	SISO-A	62F	5310	242/62	5.73	5.73	10.73
		SISO-B				6.22	6.22	11.22
		MIMO-B				3.66	3.66	8.66
		MIMO-A				3.56	3.56	8.56
		Combined A+B				6.62	6.62	11.62
802.11ax80	HE0	SISO-A	58	5290	484/66	2.59	2.59	7.59
		SISO-B				2.33	2.33	7.33
		MIMO-B				-0.49	-0.49	4.51
		MIMO-A				-0.67	-0.67	4.33
		Combined A+B				2.43	2.43	7.43

* Maximum values are the duty cycle compensated values calculated from the measured average values

See Section B.5.3 for the screenshot results.

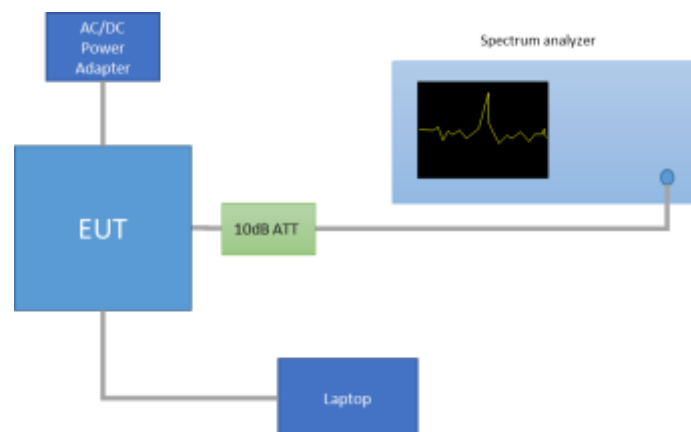
B.4.3 Undesirable emissions limits : Band Edge (Conducted)

Test limits

FCC part	Limits																				
15.407 (b) (2)	For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.																				
15.209	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 Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></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>Above 960</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.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																		
30-88	100	40	3																		
88-216	150	43.5	3																		
216-960	200	46	3																		
Above 960	500	54	3																		

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 analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss and the declared Antenna Gain.



For Band Edge measurements in average mode on the low frequency section, one of the two methods is used according to section G) 6) (KDB 789033 D02):

- 1) Method AD (Average Detection) as per paragraph II.G.6.c.
- 2) Method VB (Averaging using reduced video bandwidth) as per paragraph II.G.6.d.

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	-41.2

See Section 0 for the screenshot results.

B.4.4 Radiated spurious emission

Standard references

FCC part	Limits																				
15.407 (a) (2)	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.																				
15.209	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 Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></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>Above 960</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.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																		
30-88	100	40	3																		
88-216	150	43.5	3																		
216-960	200	46	3																		
Above 960	500	54	3																		

Test procedure

The below setups were used to measure the radiated spurious emissions.

Depending of the frequency range and bands being tested, different antennas and filters were used.

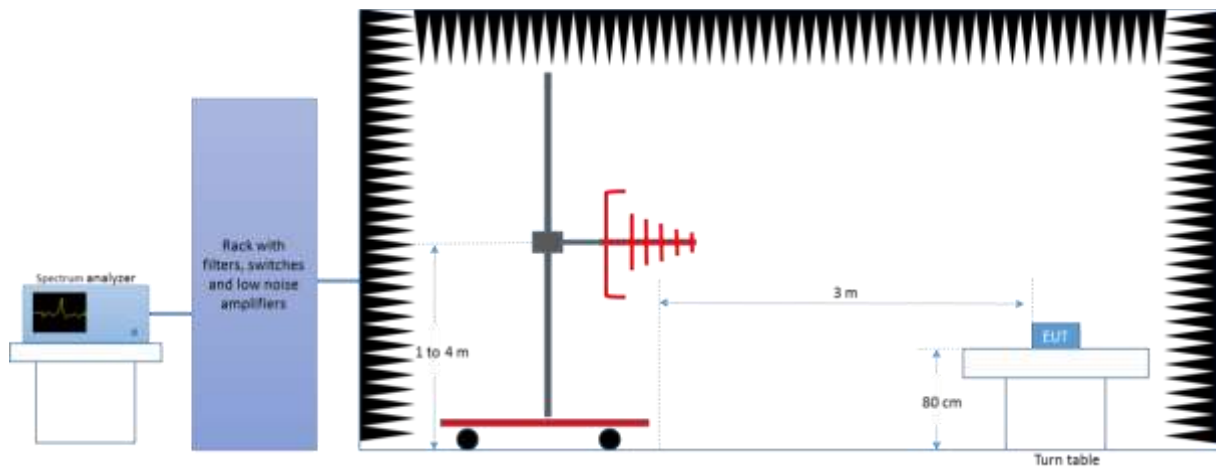
The final measurement is done by varying the antenna height, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emissions were measured on the worst case configuration selected from the chapter B.4.2 and using the lowest, middle and highest channels.

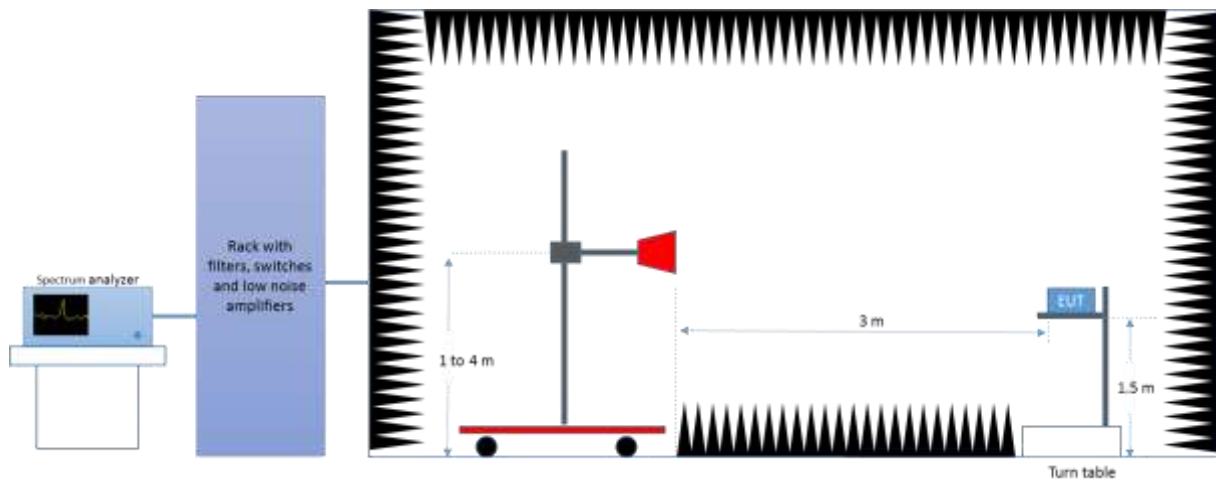
For technologies 802.11ax20, 802.11ax40 and 802.11ax80 the worst case in terms of spurious emissions found among the low, mid and high channels tested on chain A and B separately is used to perform the test in MIMO mode (Chain A+B).

For technologies 802.11n20, 802.11n40 and 802.11ac80 the worst case in terms of spurious emissions found among the low, mid and high channels tested on 802.11ax20, 802.11ax40 and 802.11ax80 is used to perform the test in A, B ,and A+B modes.

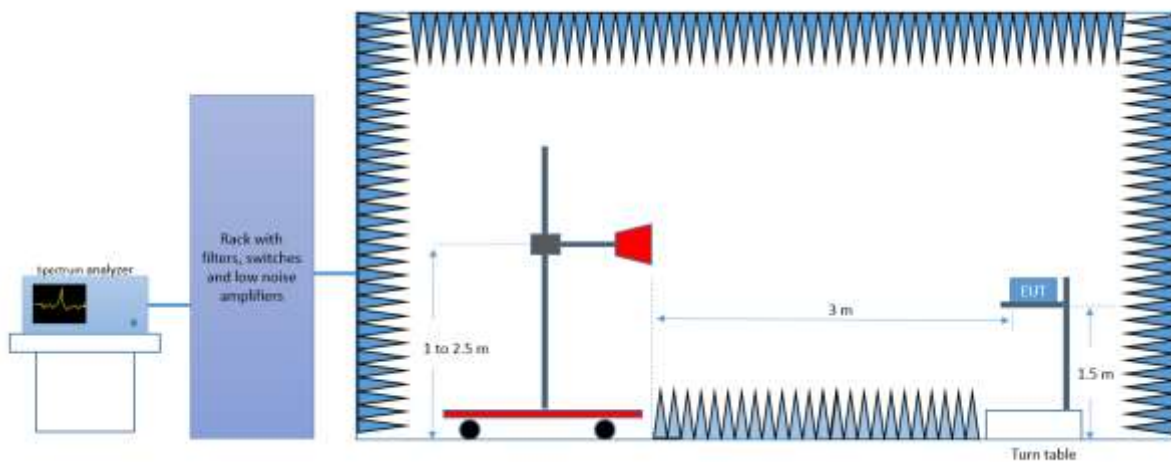
Radiated Setup 30 MHz- 1GHz



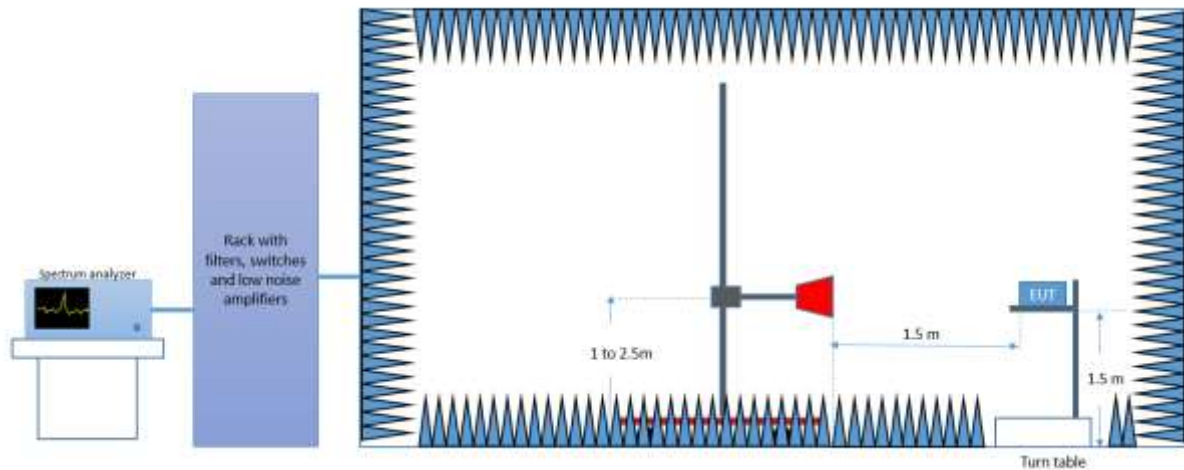
Radiated Setup 1 GHz – 6.4 GHz



Radiated Setup 6.4 GHz - 18 GHz



Radiated Setup 18 GHz - 40 GHz



Sample Calculation

The field strength is deduced from the radiated measurement using the following equation:

$$E = 126.8 - 20\log(\lambda) + P - G$$

where

E is the field strength of the emission at the measurement distance, in dB μ V/m

P is the power measured at the output of the test antenna, in dBm

λ is the wavelength of the emission under investigation $[300/f_{MHz}]$, in m

G is the gain of the test antenna, in dBi

NOTE – The measured power P includes all applicable instrument correction factors up to the connection to the test

Antenna e.g. cable losses, amplifier gains.

For field strength measurements made at other than the distance at which the applicable limit is specified, the field strength of the emission at the distance specified by the limit is deduced as follows:

$$E_{SpecLimit} = E_{Meas} + 20\log(D_{Meas}/D_{SpecLimit})$$

where

$E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in dB μ V/m

E_{Meas} is the field strength of the emission at the measurement distance, in dB μ V/m

D_{Meas} is the measurement distance, in m

$D_{SpecLimit}$ is the distance specified by the limit, in m

Test Results

30 MHz – 40 GHz, 802.11a, 6Mbps, Chain A

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	34.3	---	46.0	11.7
1050.0	---	34.7	54.0	19.3
1054.0	47.5	---	74.0	26.5
6555.6	47.6	---	74.0	26.4
6575.0	---	37.4	54.0	16.6
10510.8	50.2	---	74.0	23.8
10521.9	---	39.7	54.0	14.3
21040.1	---	50.0	54.0	4.0
21040.1	50.3	---	74.0	23.7

Radiated Spurious – CH56

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.2	34.9	---	46.0	11.1
1075.5	---	36.5	54.0	17.5
1075.5	47.1	---	74.0	26.9
10558.6	---	41.5	54.0	12.5
10568.3	52.4	---	74.0	21.6
21120.0	---	50.9	54.0	3.1
21120.0	50.4	---	74.0	23.6

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	34.9	---	46.0	11.1
1114.0	48.2	---	74.0	25.8
1114.5	---	37.4	54.0	16.6
10638.4	---	44.6	54.0	9.4
10644.2	55.4	---	74.0	18.6
21279.9	---	50.5	54.0	3.5
21279.9	51.4	---	74.0	22.6

30 MHz – 40 GHz, 802.11a, 6Mbps, Chain B

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	35.3	---	46.0	10.7
1051.0	---	34.8	54.0	19.2
1057.0	46.7	---	74.0	27.3
6575.0	47.0	---	74.0	27.0
6575.0	---	37.2	54.0	16.8
10519.9	---	41.3	54.0	12.7
10524.3	51.7	---	74.0	22.3
21040.1	---	50.9	54.0	3.1
21040.1	50.3	---	74.0	23.7

Radiated Spurious – CH56

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
540.8	34.7	---	46.0	11.3
1075.5	---	37.2	54.0	16.8
1075.5	48.9	---	74.0	25.1
10556.7	---	40.7	54.0	13.3
10559.1	52.0	---	74.0	22.0
21120.0	---	51.4	54.0	2.6
21120.0	51.1	---	74.0	22.9

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	35.3	---	46.0	10.7
1114.5	---	38.2	54.0	15.9
1114.5	47.6	---	74.0	26.4
10638.4	---	38.7	54.0	15.3
10640.3	48.8	---	74.0	25.2
21279.9	---	51.8	54.0	2.2
21280.2	51.5	---	74.0	22.5

30 MHz – 40 GHz, 802.11n20, HT0, Chain A

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	35.1	---	46.0	10.9
1054.5	---	36.3	54.0	17.7
1054.5	48.5	---	74.0	25.5
10508.3	50.6	---	74.0	23.4
10520.4	---	40.1	54.0	13.9
21039.8	50.6	---	74.0	23.4
21040.1	---	49.7	54.0	4.3

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	34.1	---	46.0	11.9
1115.0	---	33.3	54.0	20.7
1115.0	44.7	---	74.0	29.3
16748.2	---	40.1	54.0	13.9
16755.4	51.4	---	74.0	22.6
21279.9	---	50.3	54.0	3.7
21279.9	50.7	---	74.0	23.3

30 MHz – 40 GHz, 802.11n20, HT0, Chain B

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	34.8	---	46.0	11.2
1054.0	48.4	---	74.0	25.6
1054.5	---	36.6	54.0	17.4
10517.0	49.8	---	74.0	24.2
10521.9	---	41.0	54.0	13.0
21040.1	---	50.5	54.0	3.5
21040.3	49.1	---	74.0	24.9

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	34.4	---	46.0	11.6
1243.0	50.4	---	74.0	23.6
1243.5	---	31.7	54.0	22.3
16670.4	51.1	---	74.0	22.9
16748.2	---	40.3	54.0	13.7
21279.9	---	50.8	54.0	3.2
21279.9	49.4	---	74.0	24.6

30 MHz – 40 GHz, 802.11n20, HT8, Chain A+B

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	35.3	---	46.0	10.7
1054.5	---	36.1	54.0	17.9
1056.0	47.2	---	74.0	26.8
10519.5	50.9	---	74.0	23.1
10520.9	---	40.8	54.0	13.2
21040.1	---	49.8	54.0	4.2
21040.1	50.4	---	74.0	23.6

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	33.6	---	46.0	12.4
1114.0	---	35.0	54.0	19.0
1114.0	46.0	---	74.0	28.0
16727.9	51.2	---	74.0	22.8
16747.7	---	40.2	54.0	13.8
21280.2	---	49.9	54.0	4.1
21280.2	50.8	---	74.0	23.2

30 MHz – 40 GHz, 802.11ax20, HE0, Chain A

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
540.8	34.6	---	46.0	11.4
1046.5	---	43.9	54.0	10.1
1046.5	53.4	---	74.0	20.6
10502.1	55.6	---	74.0	18.4
10503.0	---	47.5	54.0	6.5
21040.1	---	51.3	54.0	2.7
21040.1	50.9	---	74.0	23.1

Radiated Spurious – CH56

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	36.2	---	46.0	9.8
1066.0	50.0	---	74.0	24.0
1066.5	---	41.7	54.0	12.3
10542.2	54.6	---	74.0	19.4
10542.7	---	45.5	54.0	8.5
21119.8	---	51.0	54.0	3.0
21120.0	51.3	---	74.0	22.7

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	35.4	---	46.0	10.6
1106.5	---	42.3	54.0	11.7
1106.5	50.8	---	74.0	23.2
10622.9	---	51.9	54.0	2.1
10623.4	59.9	---	74.0	14.1
21279.9	---	51.2	54.0	2.8
21280.2	50.7	---	74.0	23.3

30 MHz – 40 GHz, 802.11ax20, HE0, Chain B

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	34.7	---	46.0	11.3
1046.5	---	44.8	54.0	9.2
1047.0	54.0	---	74.0	20.0
6574.5	---	37.3	54.0	16.7
6575.0	46.7	---	74.0	27.3
10503.0	---	45.7	54.0	8.3
10503.5	54.9	---	74.0	19.1
21040.1	---	51.0	54.0	3.0
21040.3	50.5	---	74.0	23.5

Radiated Spurious – CH56

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	35.6	---	46.0	10.4
1066.5	---	40.6	54.0	13.4
1066.5	49.8	---	74.0	24.2
10543.1	---	47.6	54.0	6.4
10544.1	56.3	---	74.0	17.7
21120.0	---	51.9	54.0	2.1
21120.3	51.4	---	74.0	22.6

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	35.6	---	46.0	10.4
1106.0	52.5	---	74.0	21.5
1106.5	---	43.7	54.0	10.3
10622.9	52.3	---	74.0	21.7
10622.9	---	44.1	54.0	9.9
21279.9	---	51.5	54.0	2.5
21279.9	50.3	---	74.0	23.7

30 MHz – 40 GHz, 802.11ax20, HE0, Chain A+B

Radiated Spurious – CH52

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
624.0	34.9	---	46.0	11.1
1046.5	---	44.0	54.0	10.1
1046.5	53.8	---	74.0	20.2
10502.5	56.8	---	74.0	17.2
10503.0	---	47.9	54.0	6.1
21040.1	---	50.1	54.0	3.9
21040.3	50.5	---	74.0	23.5

Radiated Spurious – CH64

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	33.9	---	46.0	12.1
1106.0	---	34.3	54.0	19.7
1106.0	46.6	---	74.0	27.5
10623.4	---	43.8	54.0	10.2
10623.4	49.7	---	74.0	24.3
21280.2	---	49.8	54.0	4.2
21280.2	49.7	---	74.0	24.3

30 MHz – 40 GHz, 802.11n40, HT0, Chain A

Radiated Spurious – CH62F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	33.5	---	46.0	12.5
1109.5	---	31.4	54.0	22.7
1110.0	41.9	---	74.0	32.1
6637.3	46.7	---	74.0	27.3
6637.3	---	37.0	54.0	17.0
10615.6	---	39.1	54.0	14.9
10643.2	50.4	---	74.0	23.6
21239.8	---	50.3	54.0	3.7
21239.8	50.6	---	74.0	23.4

30 MHz – 40 GHz, 802.11n40, HT0, Chain B

Radiated Spurious – CH62F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	33.1	---	46.0	12.9
1107.0	---	31.4	54.0	22.6
1107.0	42.1	---	74.0	31.9
6637.3	46.2	---	74.0	27.8
6637.3	---	37.6	54.0	16.4
10626.3	---	39.0	54.0	15.0
10626.8	49.4	---	74.0	24.6
21240.1	---	51.4	54.0	2.6
21240.1	50.7	---	74.0	23.3

30 MHz – 40 GHz, 802.11n40, HT8, Chain A+B

Radiated Spurious – CH62F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	34.2	---	46.0	11.8
1104.5	45.3	---	74.0	28.7
1104.5	---	34.9	54.0	19.1
6637.3	47.3	---	74.0	26.7
6637.3	---	37.1	54.0	16.9
10619.5	---	39.7	54.0	14.3
10620.0	49.8	---	74.0	24.2
21239.8	---	50.4	54.0	3.6
21240.1	50.3	---	74.0	23.7

30 MHz – 40 GHz, 802.11ax40, HE0, Chain A

Radiated Spurious – CH54F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	34.4	---	46.0	11.6
1047.0	52.8	---	74.0	21.2
1047.0	---	43.5	54.0	10.5
10503.5	---	47.2	54.0	6.8
10504.0	56.8	---	74.0	17.2
21079.9	---	50.9	54.0	3.1
21079.9	50.1	---	74.0	23.9

Radiated Spurious – CH62F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	34.8	---	46.0	11.2
1086.5	---	31.0	54.0	23.0
1087.0	41.9	---	74.0	32.1
5363.0	59.2	---	74.0	14.9
5363.5	---	48.7	54.0	5.3
10583.3	---	46.3	54.0	7.7
10584.7	56.2	---	74.0	17.8
21239.8	---	49.2	54.0	4.8
21239.8	53.8	---	74.0	20.2

30 MHz – 40 GHz, 802.11ax40, HE0, Chain B

Radiated Spurious – CH54F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
549.1	35.2	---	46.0	10.8
1047.0	55.4	---	74.0	18.6
1047.0	---	46.7	54.0	7.3
10503.5	---	45.4	54.0	8.6
10505.0	54.2	---	74.0	19.8
21079.9	---	51.5	54.0	2.5
21079.9	50.3	---	74.0	23.7

Radiated Spurious – CH62F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
126.4	31.8	---	43.6	11.8
624.0	35.2	---	46.0	10.8
5363.5	---	45.0	54.0	9.0
5364.0	56.6	---	74.0	17.4
10582.8	55.0	---	74.0	19.0
10584.2	---	45.9	54.0	8.1
21239.6	50.7	---	74.0	23.3
21240.1	---	52.0	54.0	2.0

30 MHz – 40 GHz, 802.11ax40, HE0, Chain A+B

Radiated Spurious – CH62F

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
672.0	33.7	---	46.0	12.3
5363.5	---	45.4	54.0	8.6
5363.5	57.5	---	74.0	16.5
6400.0	51.2	---	74.0	22.8
6401.5	---	35.7	54.0	18.3
10583.7	54.7	---	74.0	19.3
10583.7	---	47.7	54.0	6.3
21240.1	---	50.7	54.0	3.3
21240.1	50.9	---	74.0	23.1

30 MHz – 40 GHz, 802.11ac80, HT0, Chain A

Radiated Spurious – CH58

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
127.5	31.0	---	43.6	12.6
728.4	38.1	---	46.0	7.9
5926.0	---	40.8	54.0	13.2
6010.0	52.9	---	74.0	21.1
6611.7	47.8	---	74.0	26.2
6612.2	---	38.3	54.0	15.7
10572.6	48.8	---	74.0	25.2
10579.9	---	38.5	54.0	15.5
21160.1	---	50.8	54.0	3.2
21160.1	51.2	---	74.0	22.8

30 MHz – 40 GHz, 802.11ac80, HT0, Chain B

Radiated Spurious – CH58

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
125.7	30.5	---	43.6	13.1
540.8	34.8	---	46.0	11.2
6283.0	53.8	---	74.0	20.2
6307.0	---	43.0	54.0	11.0
6612.2	---	37.7	54.0	16.3
6612.7	47.1	---	74.0	26.9
21160.1	---	51.6	54.0	2.4
21160.1	50.7	---	74.0	23.3

30 MHz – 40 GHz, 802.11ac80, HT8, Chain A+B

Radiated Spurious – CH58

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
126.9	29.9	---	43.6	13.7
672.0	34.8	---	46.0	11.2
6293.0	57.6	---	74.0	16.4
6318.0	---	45.1	54.0	8.9
6612.2	---	38.5	54.0	15.5
6612.7	47.4	---	74.0	26.6
21159.9	---	50.4	54.0	3.6
21159.9	51.0	---	74.0	23.0

30 MHz – 40 GHz, 802.11ax80, HE0, Chain A

Radiated Spurious – CH58

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBµV/m	dBµV/m	dBµV/m	dB
126.9	30.2	---	43.6	13.3
248.4	34.6	---	46.0	11.4
5403.5	---	44.8	54.0	9.3
5405.0	56.8	---	74.0	17.2
10503.5	---	47.6	54.0	6.4
10504.0	56.5	---	74.0	17.5
21159.9	---	49.6	54.0	4.4
21159.9	49.6	---	74.0	24.4

30 MHz – 40 GHz, 802.11ax80, HE0, Chain B

Radiated Spurious – CH58

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBµV/m	dBµV/m	dBµV/m	dB
128.1	31.6	---	43.6	12.0
672.0	34.8	---	46.0	11.2
1195.5	45.9	---	74.0	28.1
1196.5	---	34.7	54.0	19.3
6573.0	48.1	---	74.0	25.9
6574.5	---	38.7	54.0	15.3
10503.0	54.5	---	74.0	19.5
10503.5	---	44.9	54.0	9.1
21159.9	---	50.8	54.0	3.2
21159.9	50.5	---	74.0	23.5

30 MHz – 40 GHz, 802.11ax80, HE0, Chain A+B

Radiated Spurious – CH58

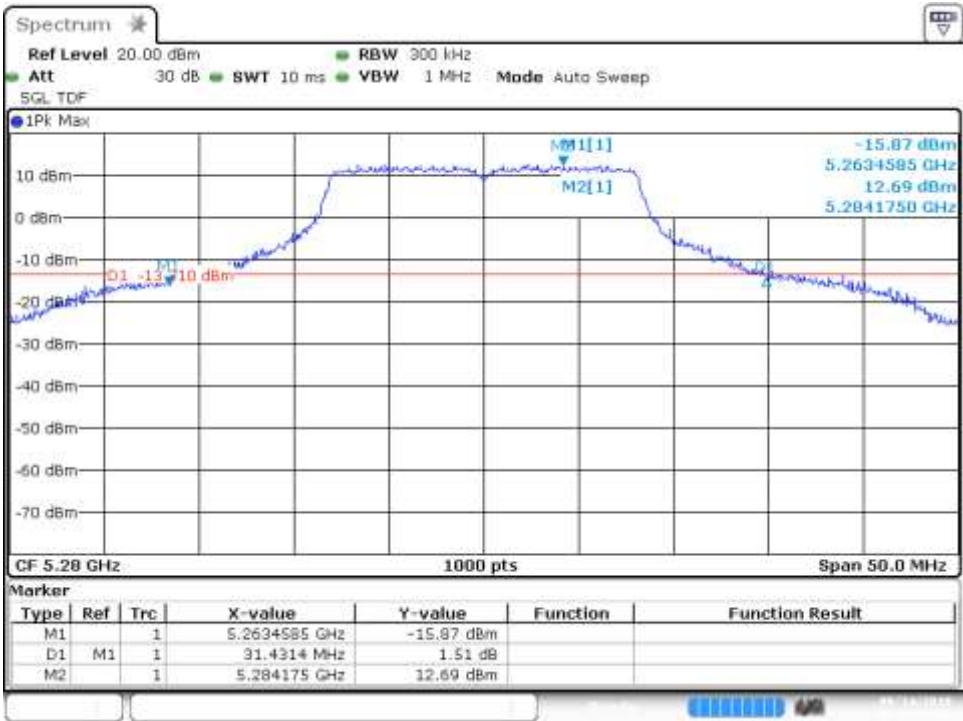
Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBμV/m	dBμV/m	dBμV/m	dB
128.7	31.3	---	43.6	12.3
729.1	39.5	---	46.0	6.5
1195.0	46.7	---	74.0	27.3
1196.0	---	35.2	54.0	18.8
10504.0	56.9	---	74.0	17.1
10504.0	---	48.7	54.0	5.3
21159.9	---	49.8	54.0	4.2
21159.9	50.3	---	74.0	23.7

B.5 Test Results Screenshot U-NII-2A

B.5.1 26dB Bandwidth

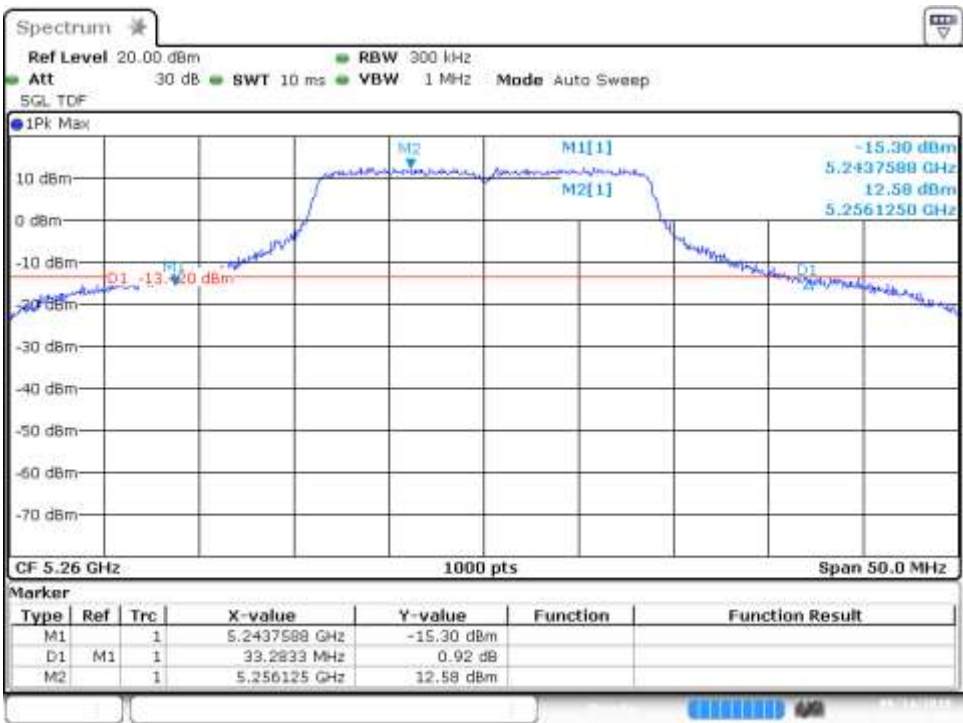
SISO-B, 802.11a, 6Mbps

Channel 56



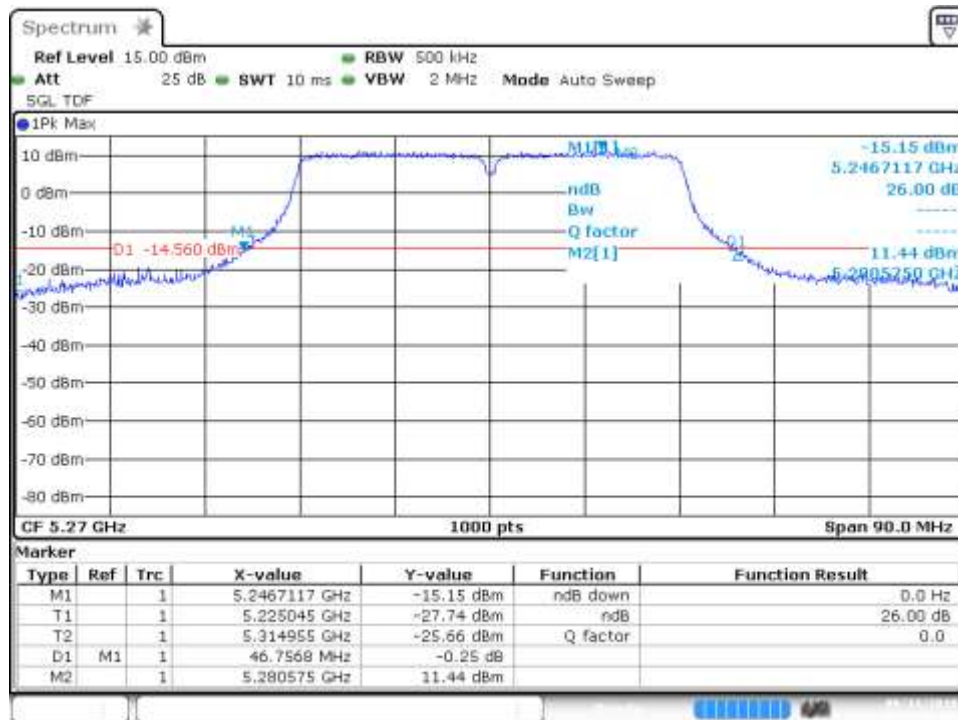
SISO-B, 802.11n20, HT0

Channel 52



SISO-A, 802.11n40, HT0

Channel 54F



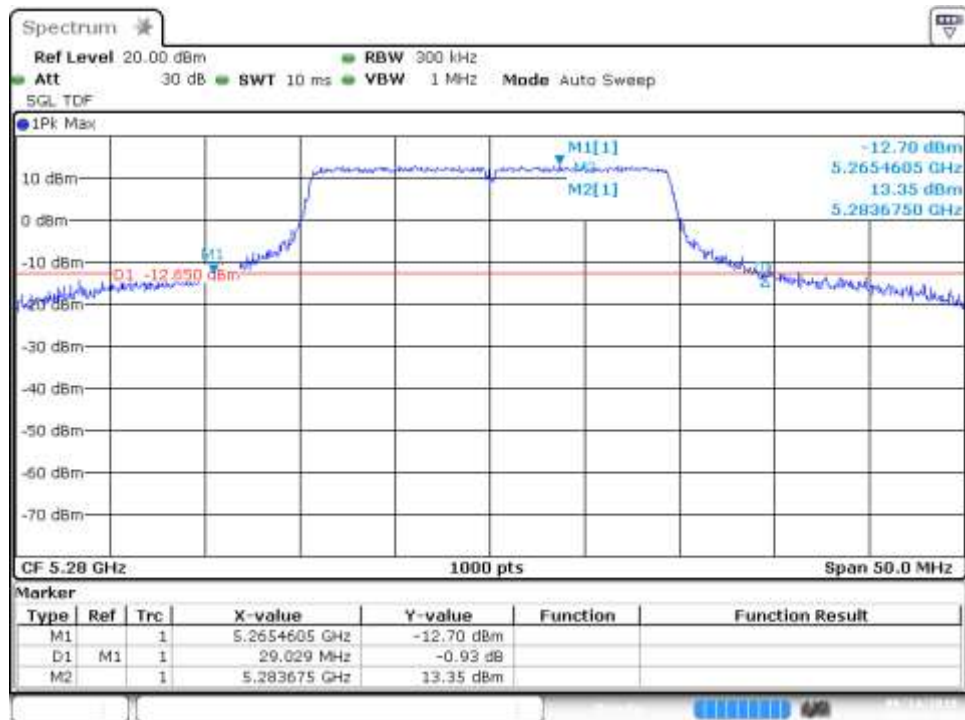
SISO-B, 802.11ac80, VHT0

Channel 58



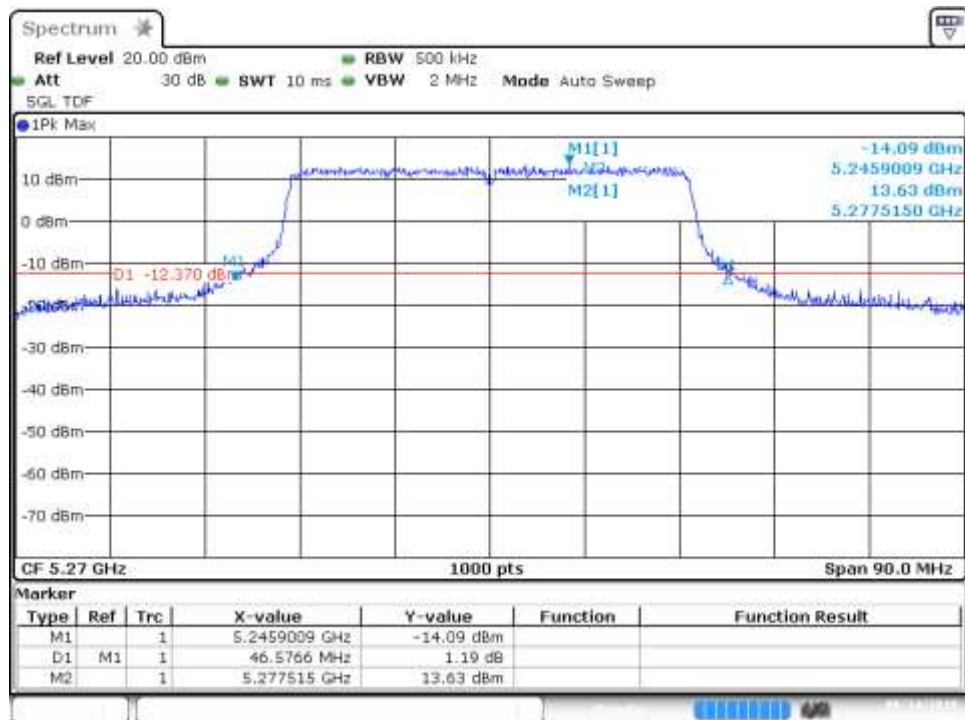
SISO-B, 802.11ax20, HE0

Channel 56



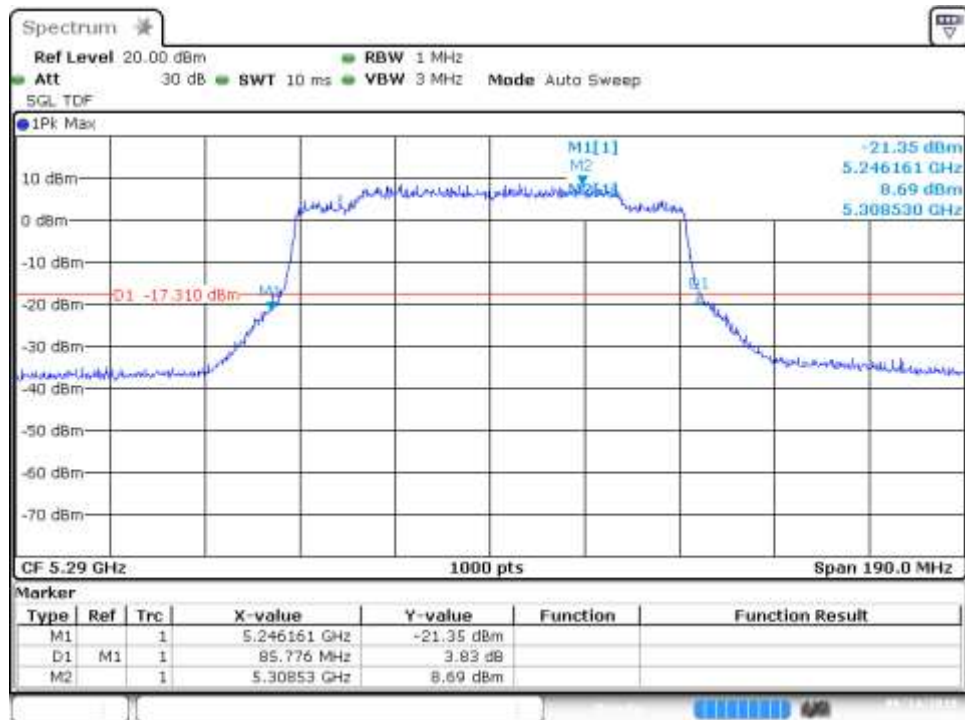
SISO-A, 802.11ax40, HE0

Channel 54F



MIMO-A, 802.11ax80, HE0

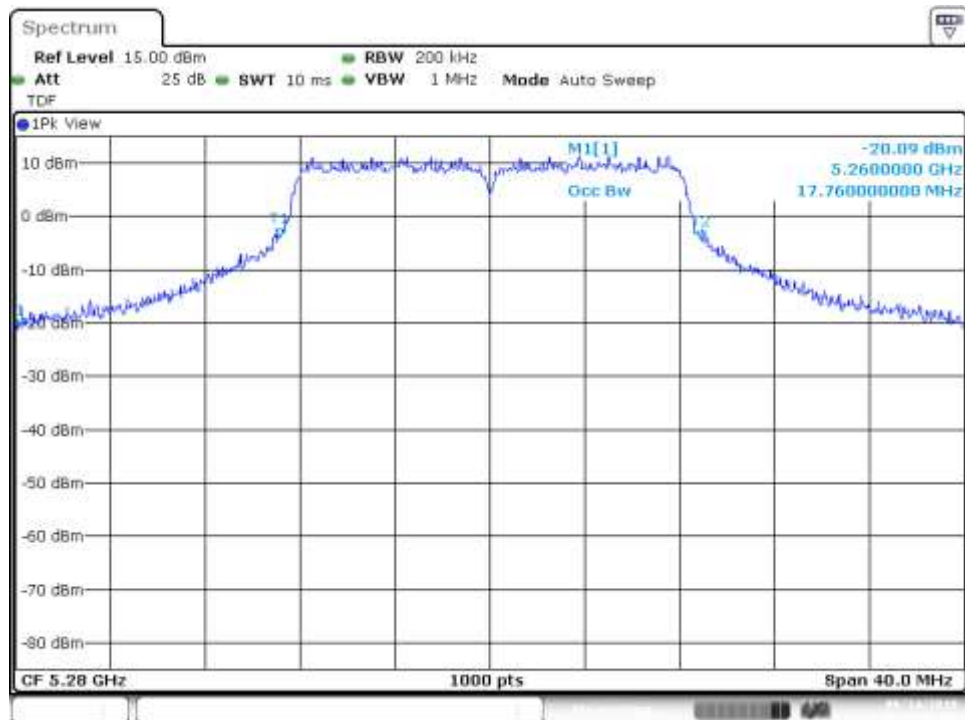
Channel 58



B.5.2 99% Bandwidth

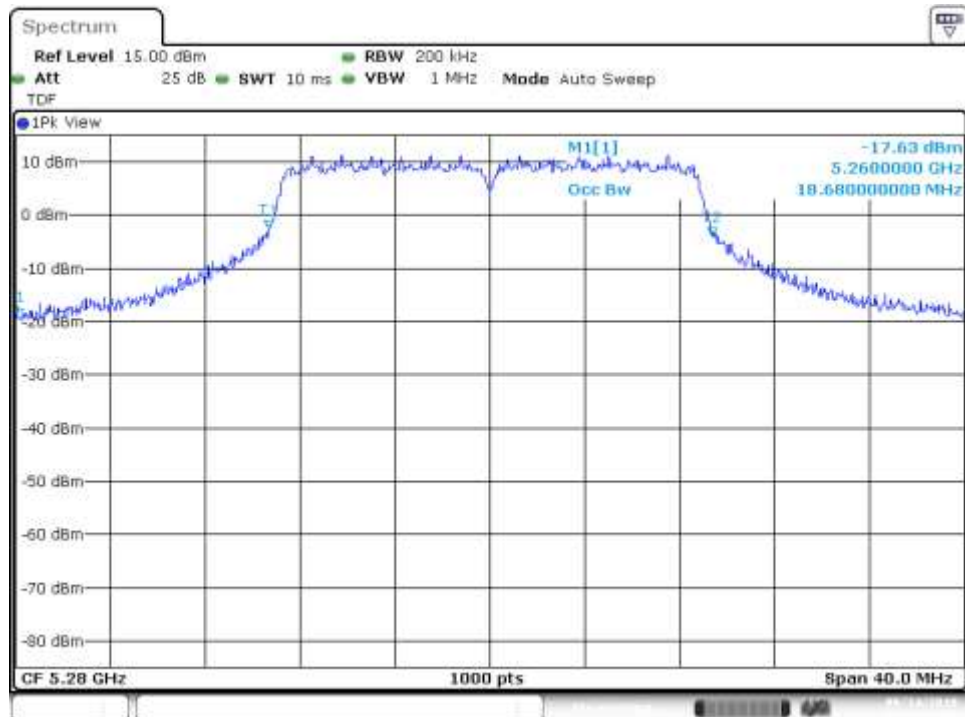
SISO-B, 802.11a, 6Mbps

Channel 56



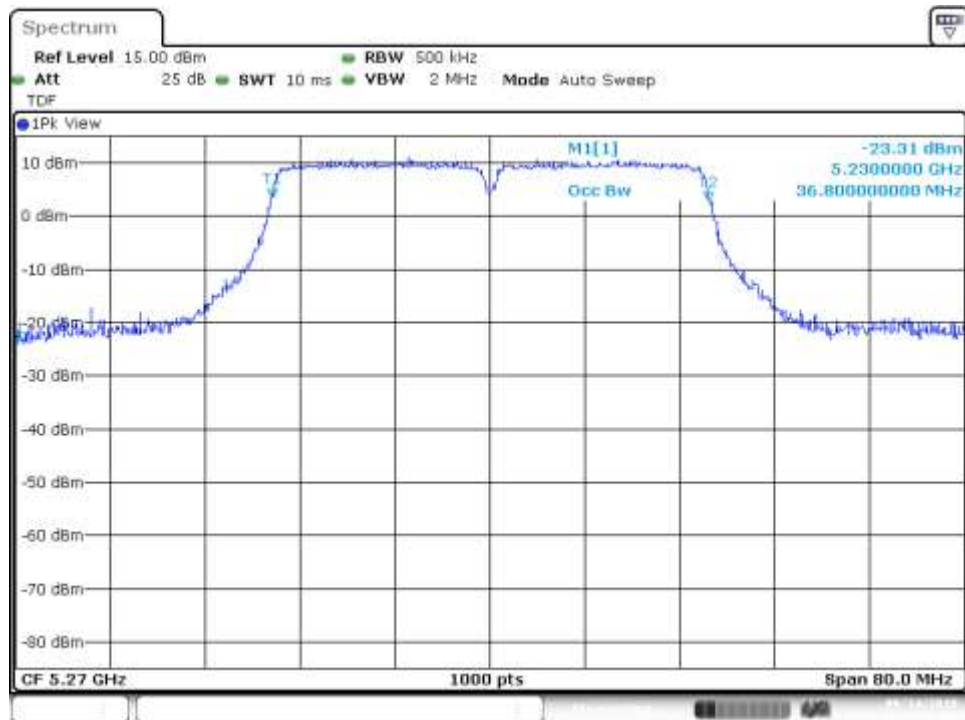
SISO-B, 802.11n20, HT0

Channel 56



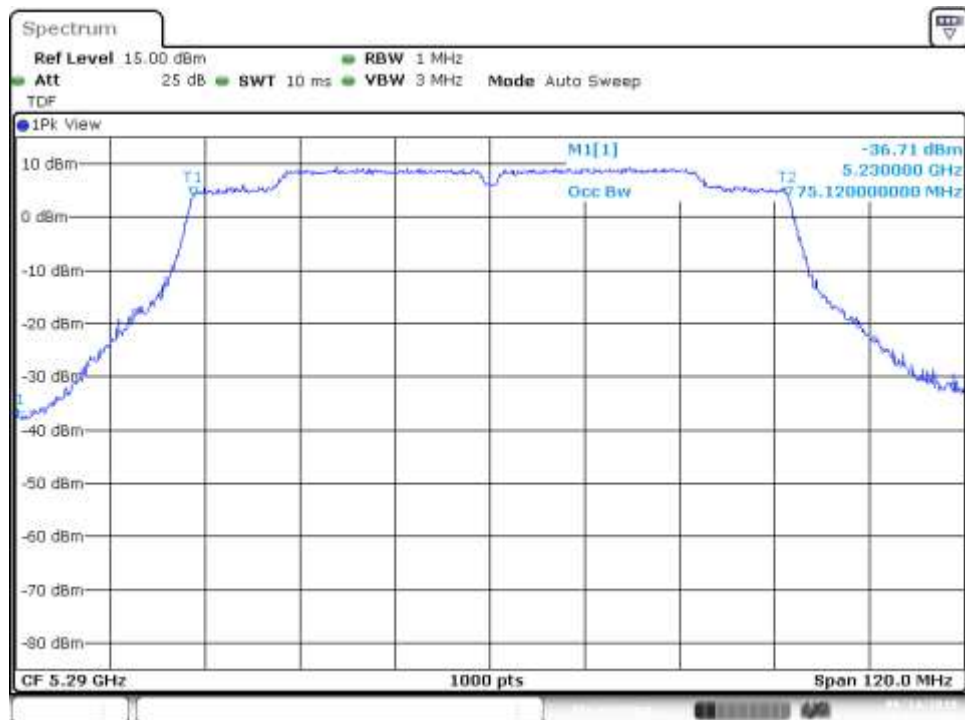
SISO-B, 802.11n40, HT0

Channel 54F



SISO-A, 802.11ac80, VHT0

Channel 58



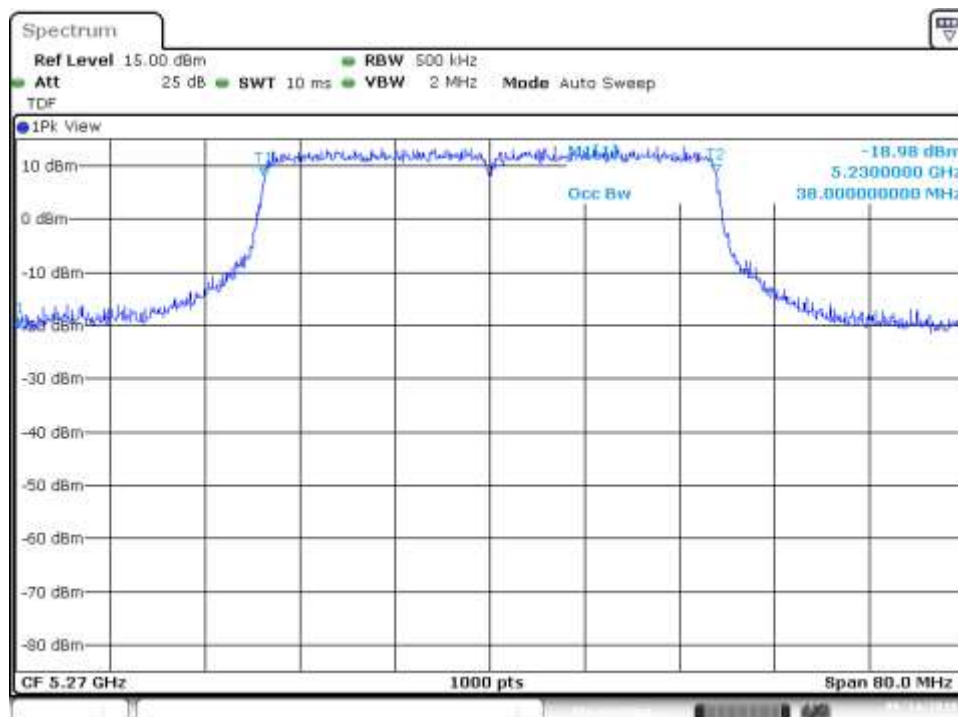
SISO-B, 802.11ax20, HE0

Channel 52



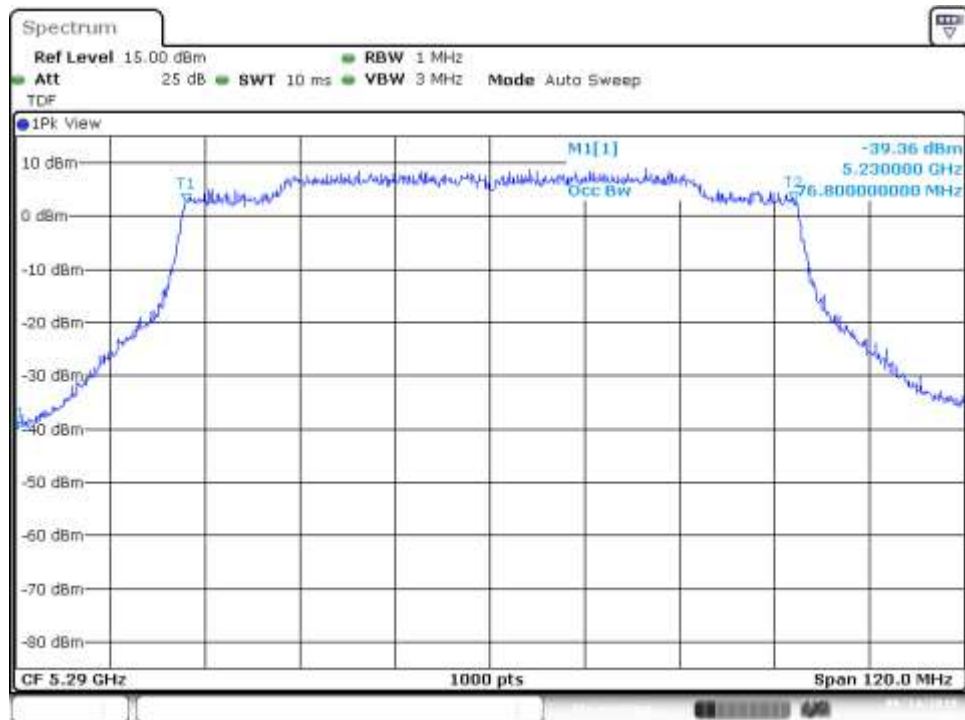
SISO-A, 802.11ax40, HE0

Channel 54F



MIMO-A, 802.11ax80, HE0

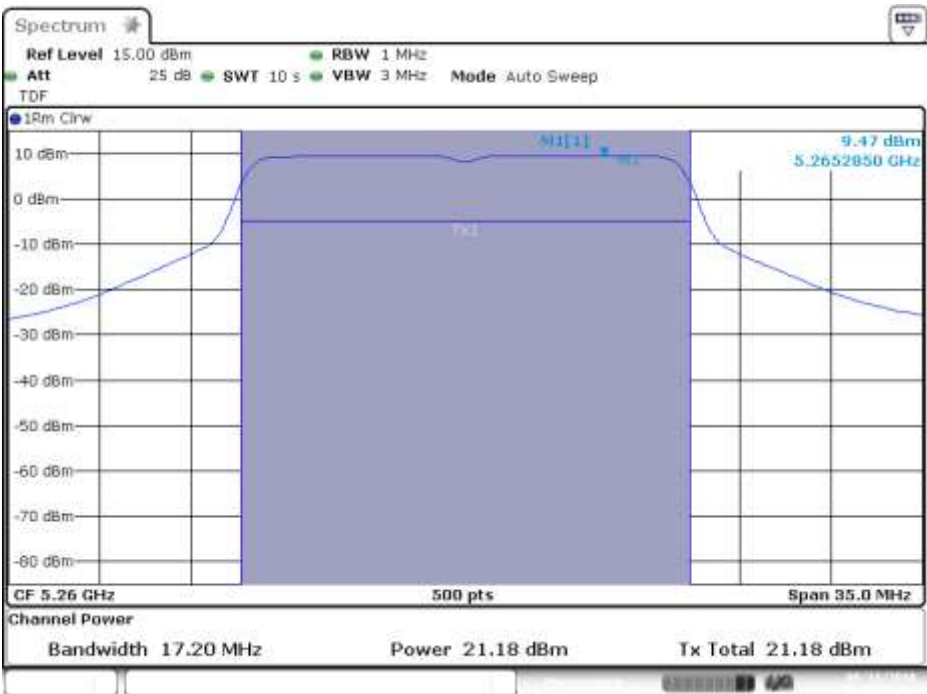
Channel 58



B.5.3 Power Limits. Maximum Output power & Peak power spectral density

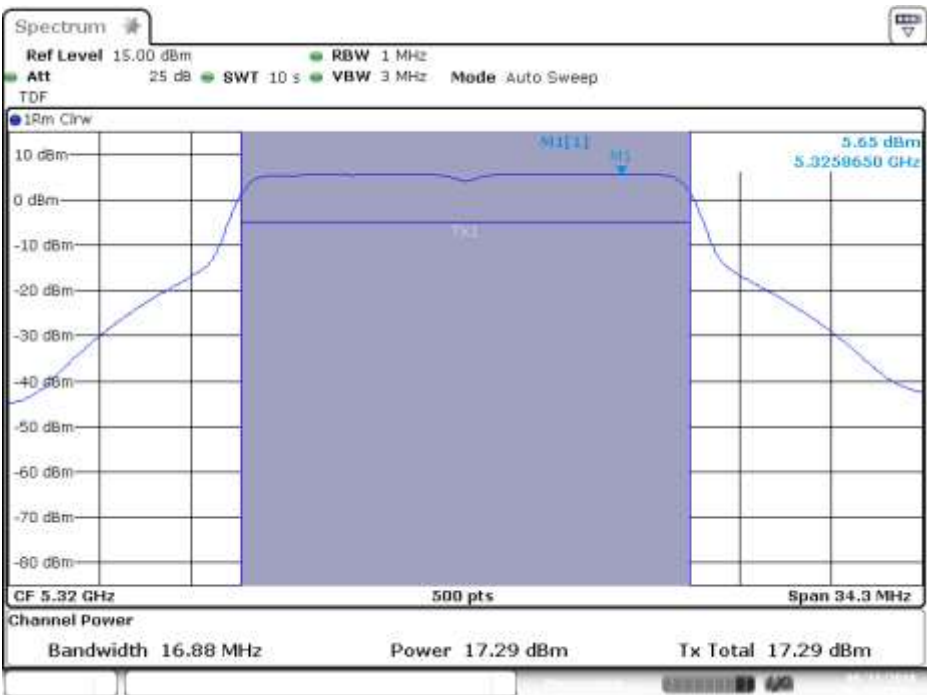
SISO-A, 802.11a, 6Mbps

Channel 52



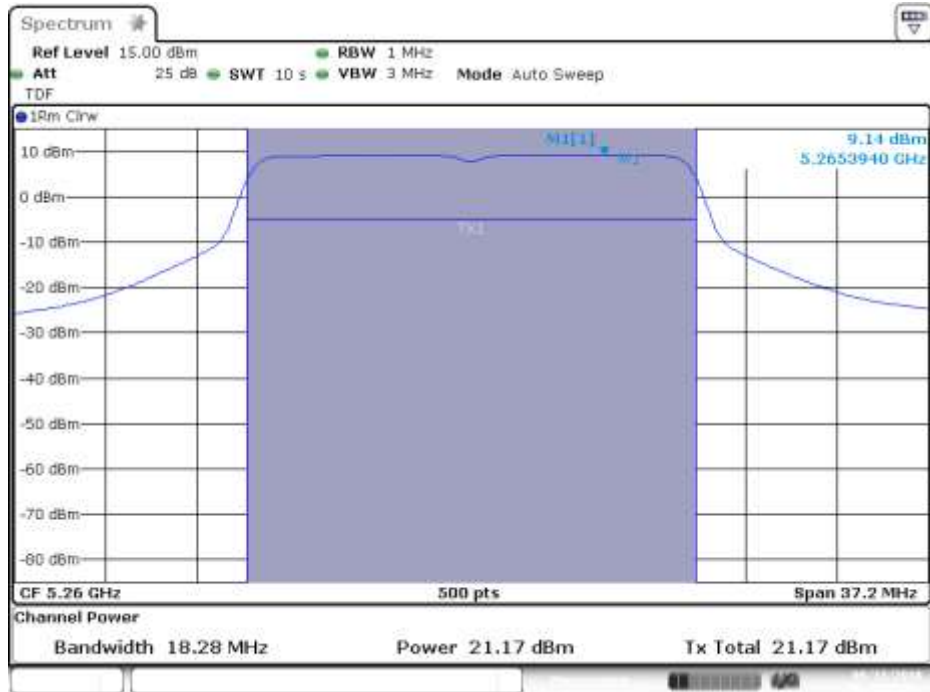
SISO-B, 802.11a, 6Mbps

Channel 64



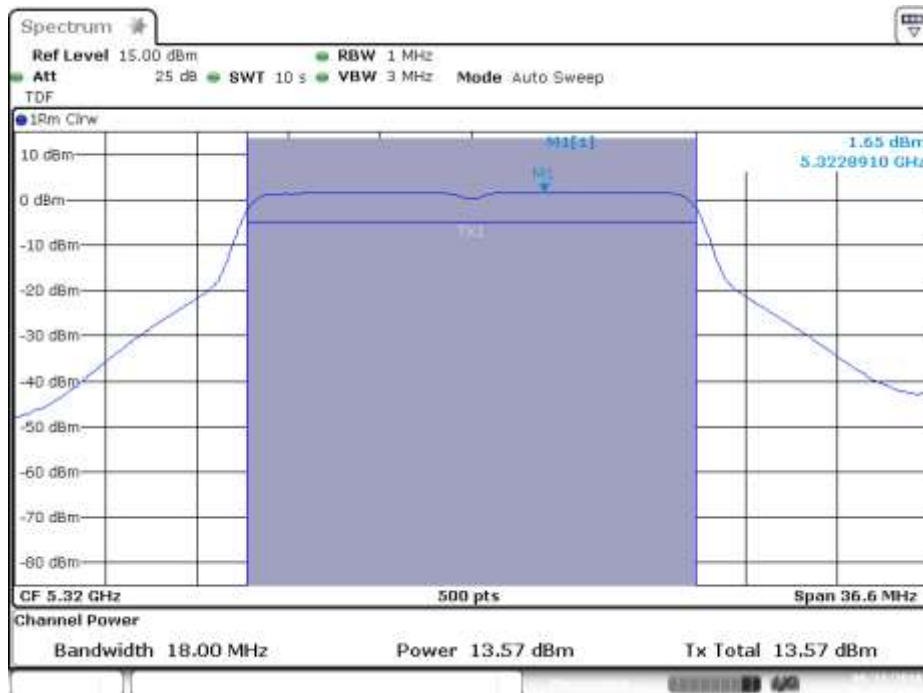
SISO-A, 802.11n20, HT0

Channel 52



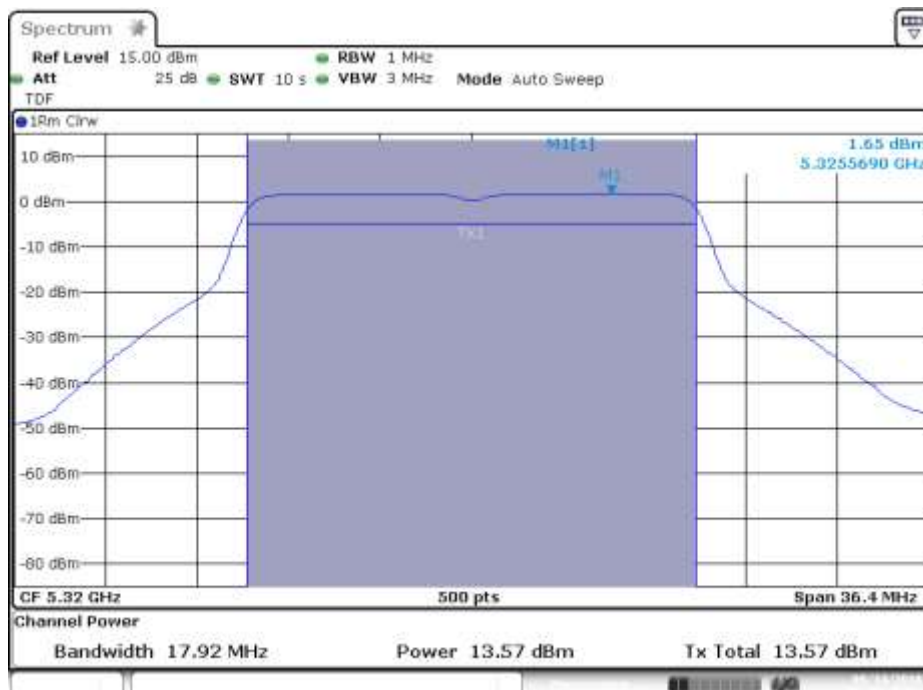
MIMO-A, 802.11n20, HT8

Channel 64



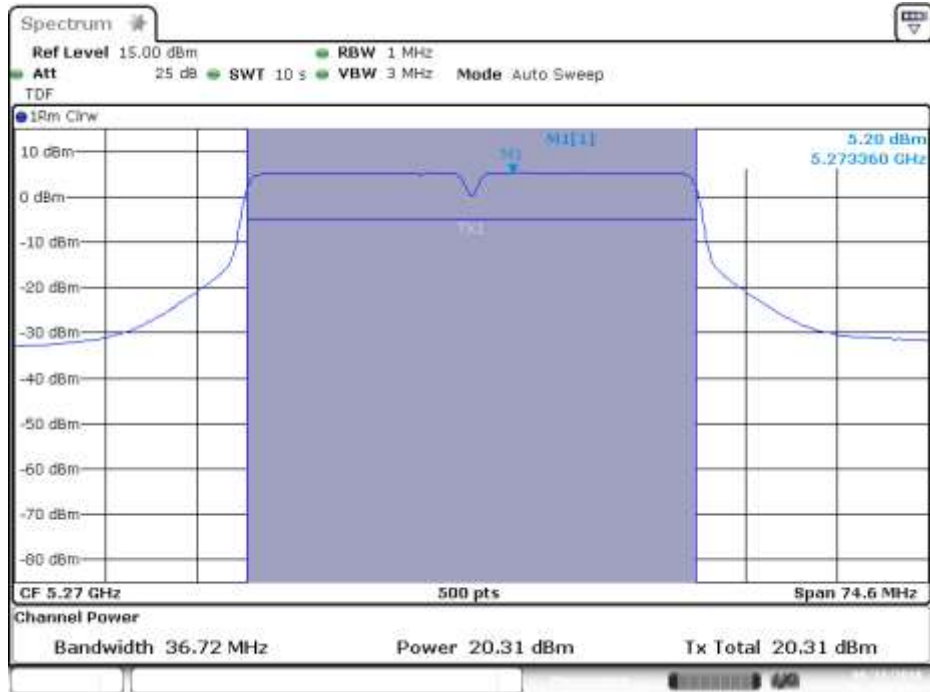
MIMO-B, 802.11n20, HT8

Channel 64



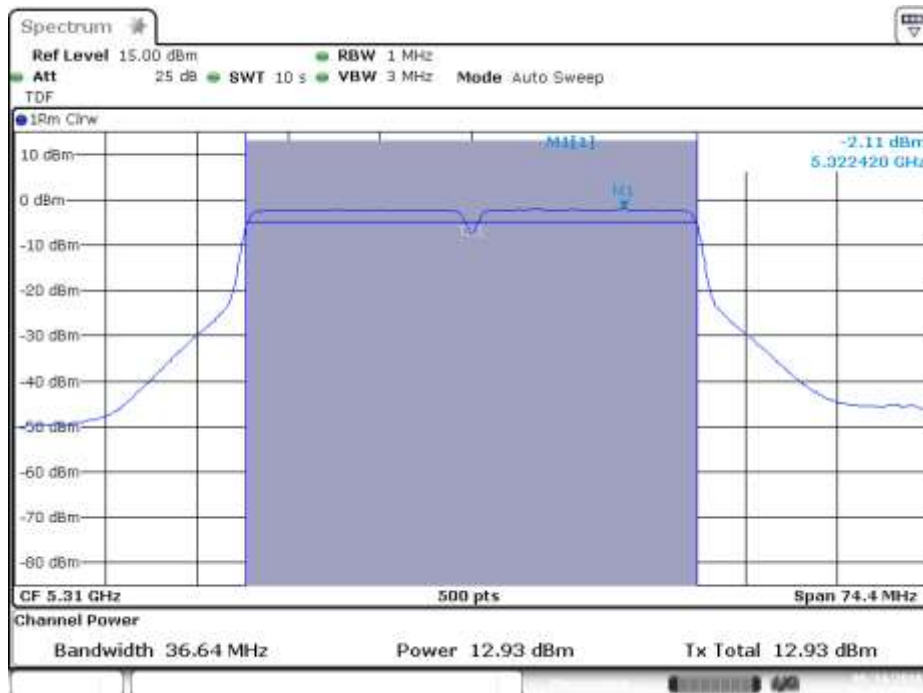
SISO-A, 802.11n40, HT0

Channel 54F



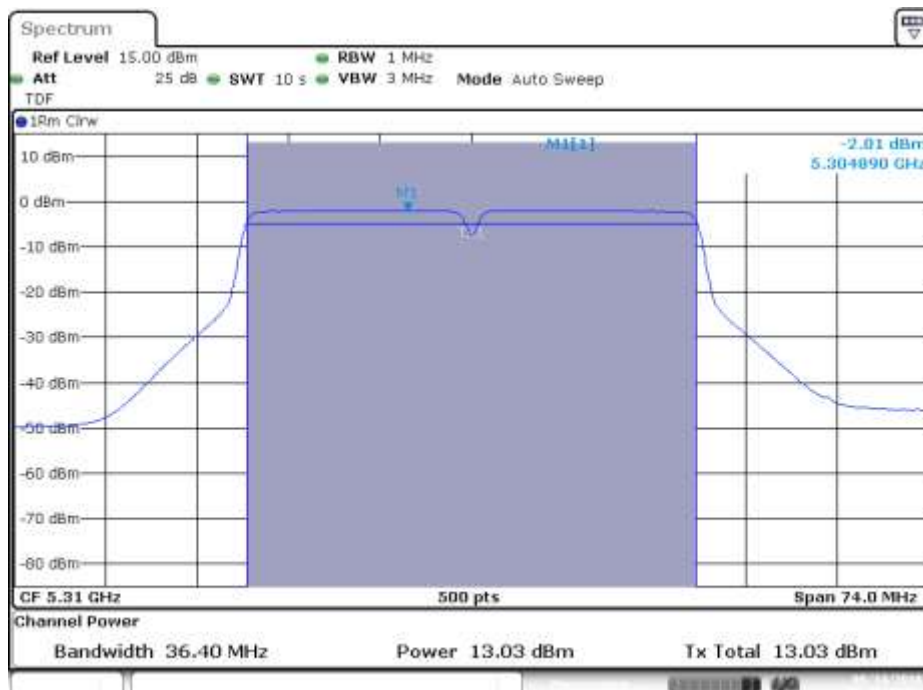
MIMO-A, 802.11n40, HT8

Channel 62F



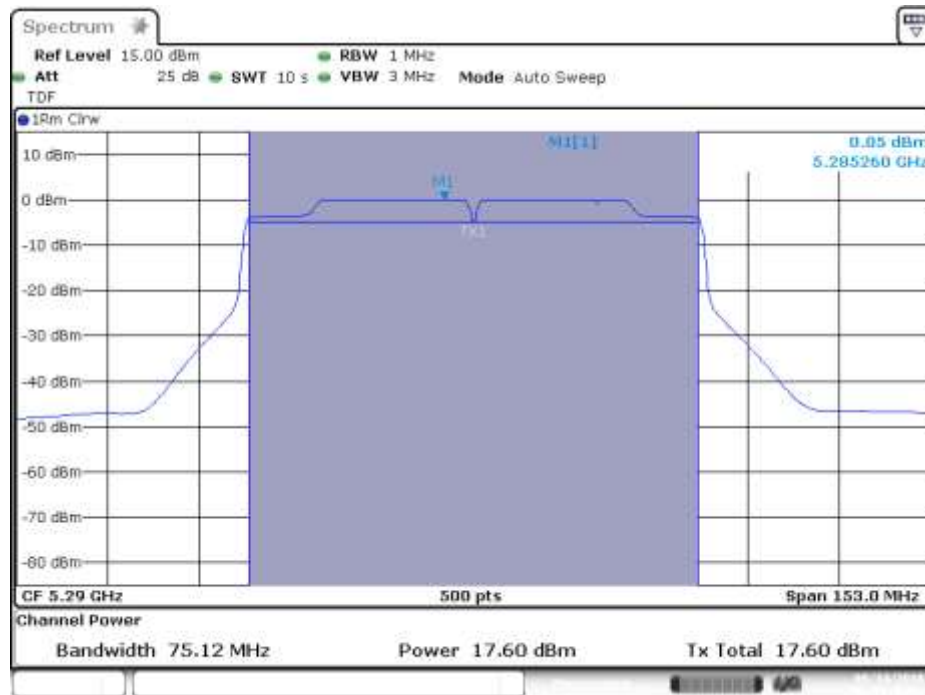
MIMO-B, 802.11n40, HT8

Channel 62F



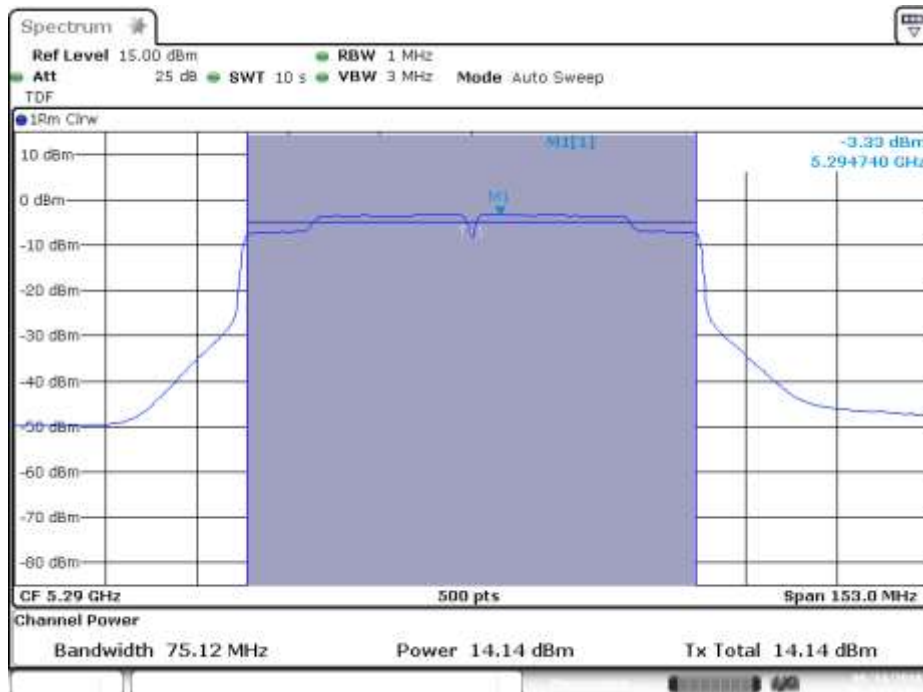
SISO-B, 802.11ac80, VHT0

Channel 58



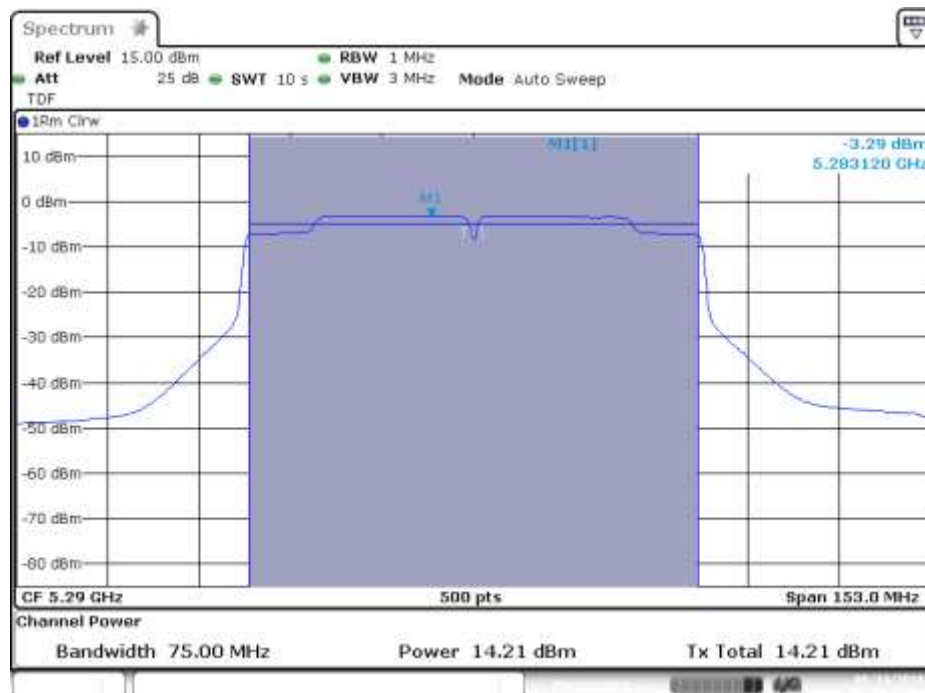
MIMO-A, 802.11ac80, VHT0

Channel 58



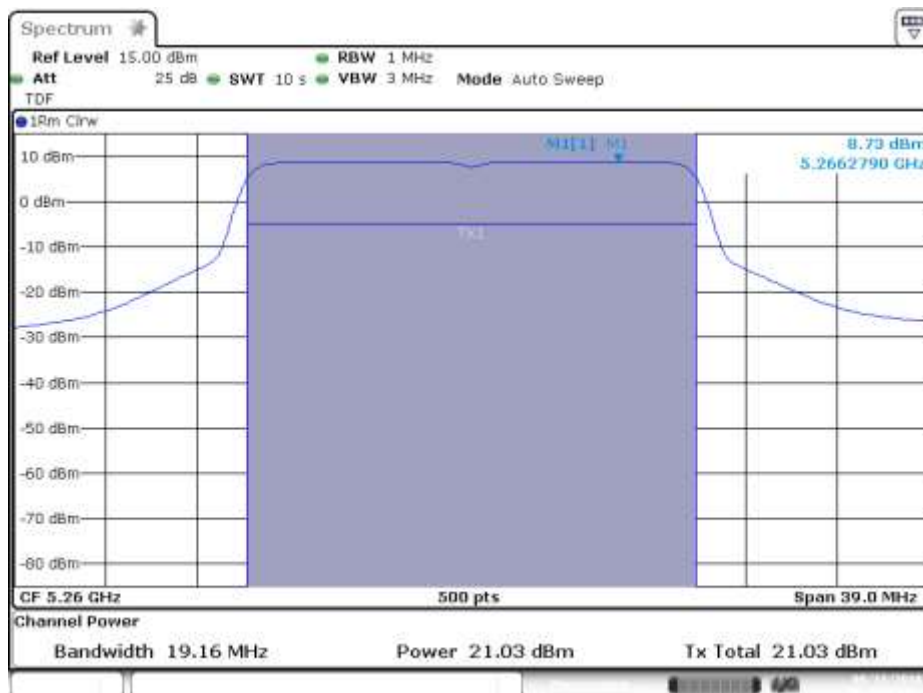
MIMO-B, 802.11ac80, VHT0

Channel 58



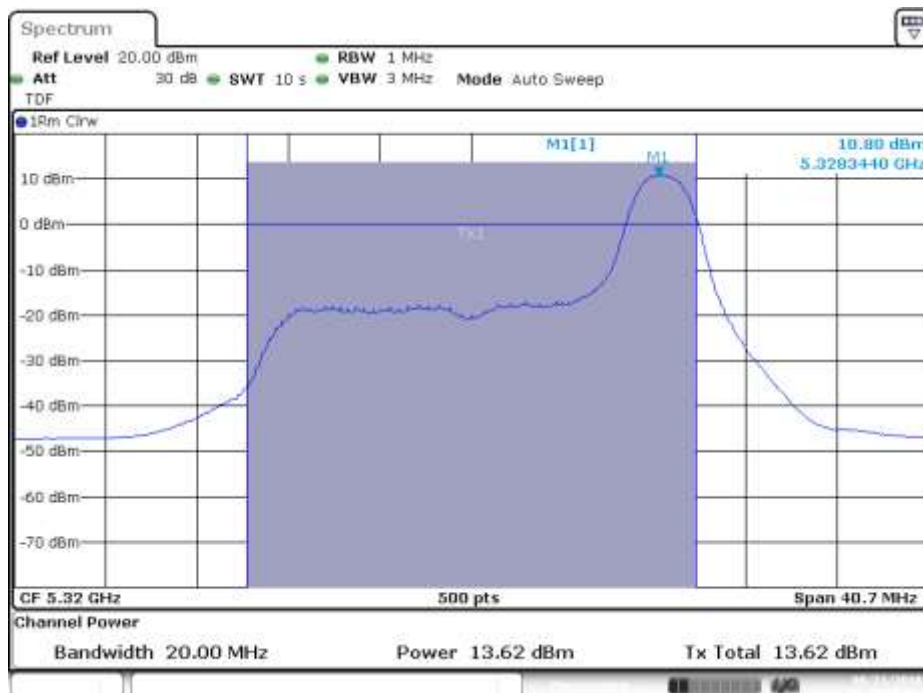
SISO-A, 802.11ax20, HE0

Channel 52



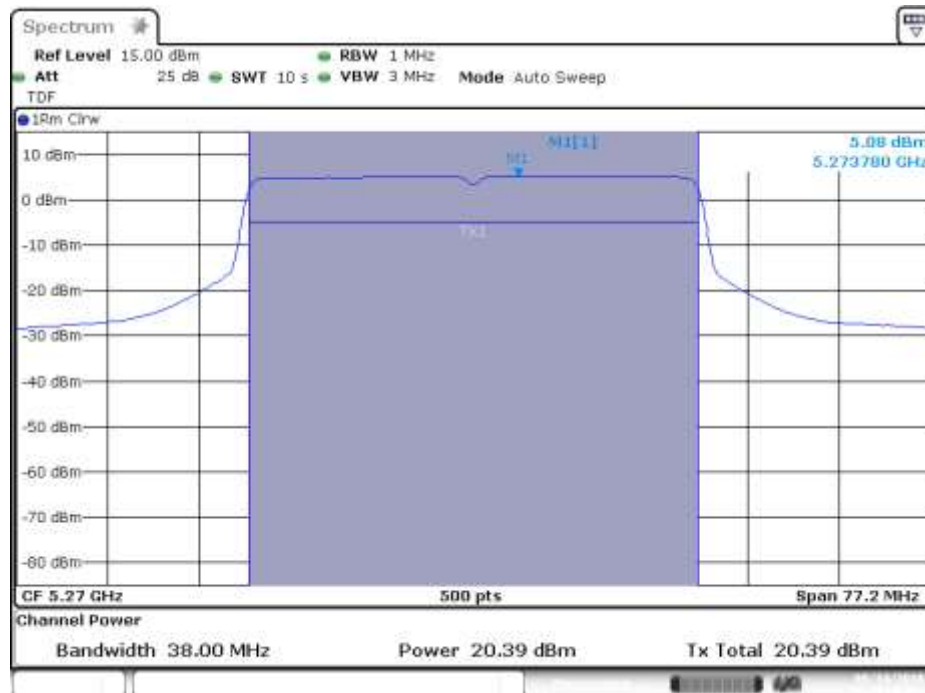
SISO-A, 802.11ax20, HE0, RU 26/8

Channel 52



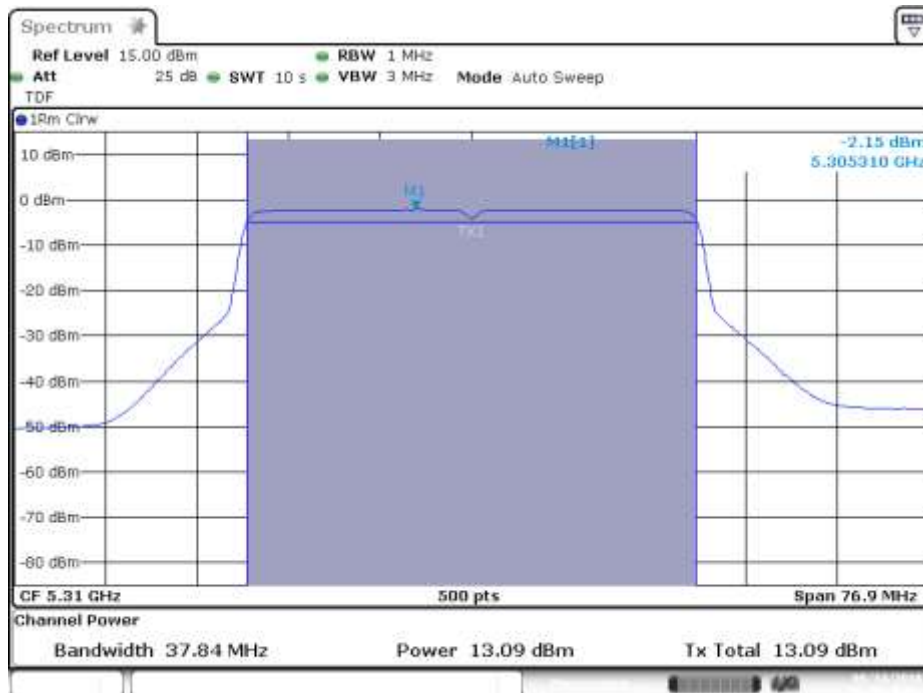
SISO-A, 802.11ax40, HE0

Channel 54F



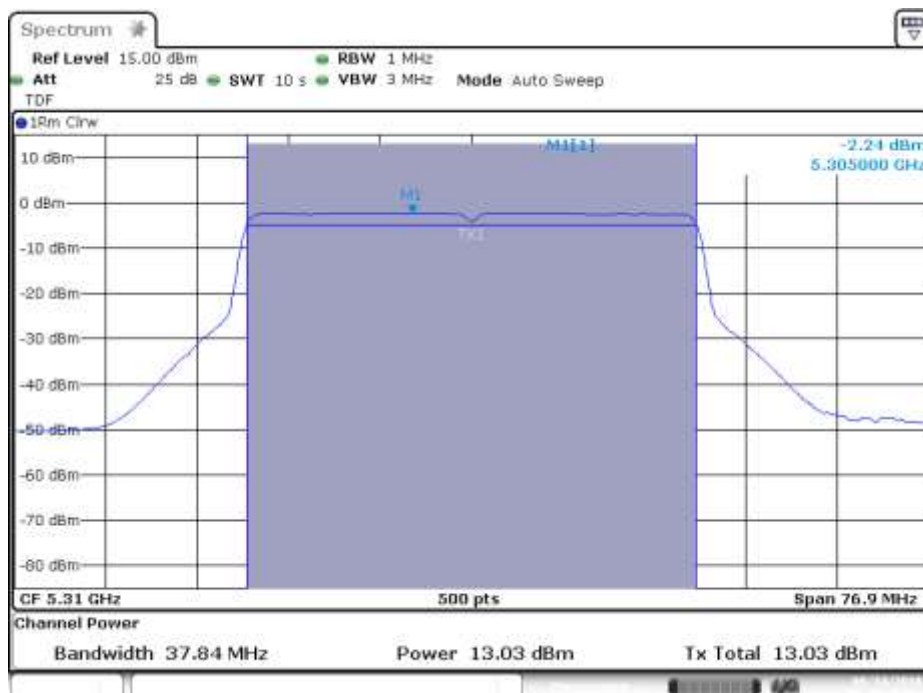
MIMO-A, 802.11ax40, HE0

Channel 62F



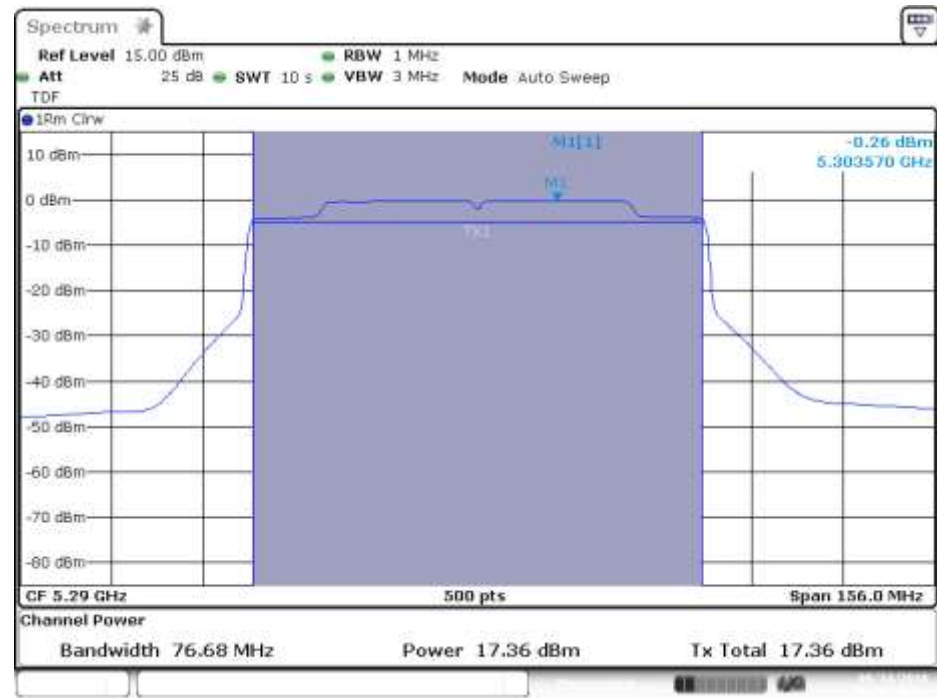
MIMO-B, 802.11ax40, HE0

Channel 62F



SISO-A, 802.11ax80, HE0

Channel 58



+

SISO-A, 802.11ax80, HE0, RU 484/66

Channel 58

