TEST REPORT

Report Number: 13179110-E5V2

Applicant	:	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A2176
FCC ID	:	BCG-E3539A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date of Issue:
October 01, 2020

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

NVLAP Lab code: 200065-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	9/21/2020	Initial Revision	Vien Tran
V2	10/1/2020	Updated per TCB's questions	Vien Tran

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

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UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE, INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: SMARTPHONE

MODEL: A2176

SERIAL NUMBER: C7CCV02XQ90X, C7CCV06XQ918

DATE TESTED: MARCH 25 TO SEPTEMBER 13, 2020

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.
The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL Verification Services Inc. By:

Chin Pang
Senior Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:

Francisco Guarnero
Test Engineer
Consumer Technology Division
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 14-30, FCC KDB 662911 D01 v02r01, FCC KDB 905462 D02 v02/D03 v01r02/D06 v02, FCC KDB 789033 D02 v02r01, ANSI C63.10-2013, FCC 06-96.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	47658 Kato Rd
☐ Chamber A (ISED:2324B-1)	☐ Chamber D (ISED:22541-1)	☒ Chamber I (ISED:2324A-5)
☒ Chamber B (ISED:2324B-2)	☒ Chamber E (ISED:22541-2)	☒ Chamber J (ISED:2324A-6)
☐ Chamber C (ISED:2324B-3)	☐ Chamber F (ISED:22541-3)	☐ Chamber K (ISED:2324A-1)
	☐ Chamber G (ISED:22541-4)	☒ Chamber L (ISED:2324A-3)
	☒ Chamber H (ISED:22541-5)	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

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4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.39 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.07 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.24 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.37 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.17 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, TD-SCDMA, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wide band, GPS and NFC. All models support at least one UICC based SIM. The second SIM, if present, is either UICC based pSIM (physical SIM) or e-SIM (electronic SIM). The device has a built-in inductive charging receiver. The rechargeable battery is also not user accessible.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.2 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.2 GHz band, 1TX			
5180-5240	802.11a	Covered by 802.11n HT20 1TX	
5180-5240	802.11n HT20	20.770	119.40
5190-5230	802.11n HT40	20.730	118.30
5180-5240	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5190-5230	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5210	802.11ac VHT80	15.890	38.82
5180-5240	802.11ax HE20, 242-Tones	20.890	122.74
5180-5240	802.11ax HE20, 26-Tones	11.960	15.70
5190-5230	802.11ax HE40, 484-Tones	20.880	122.46
5190-5230	802.11ax HE40, 26-Tones	11.980	15.78
5210	802.11ax HE80, 996 Tones	15.830	38.28
5210	802.11ax HE80, 26 Tones	11.870	15.38
5.2 GHz band, 2TX			
5180-5240	802.11n HT20 CDD	20.960	124.74
5180-5240	802.11n HT20 SDM/STBC	Covered by 802.11n HT20 2TX CDD	
5190-5230	802.11n HT40 CDD	22.840	192.31
5190-5230	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5180-5240	802.11ac VHT20 SDM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5190-5230	802.11ac VHT40 SDM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5210	802.11ac VHT80 CDD	18.150	65.31
5210	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5180-5240	802.11ax HE20 OFDMA, 242-Tones	20.920	123.59
5180-5240	802.11ax HE20 OFDMA, 26-Tones	11.940	15.63
5190-5230	802.11ax HE40 OFDMA, 484-Tones	22.780	189.67
5190-5230	802.11ax HE40 OFDMA, 26-Tones	11.910	15.52
5210	802.11ax HE80 OFDMA, 996-Tones	11.800	15.14
5210	802.11ax HE80 OFDMA, 26-Tones	17.890	61.52

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5.3 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.3 GHz band, 1TX			
5260 - 5320	802.11a	Covered by 802.11n HT20 1TX	
5260 - 5320	802.11n HT20	20.920	123.59
5270 - 5310	802.11n HT40	20.670	116.68
5260 - 5320	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5270 - 5310	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5290	802.11ac VHT80	16.480	44.46
5260 - 5320	802.11ax HE20, 242-Tones	20.810	120.50
5260 - 5320	802.11ax HE20, 26-Tones	11.910	15.52
5270 - 5310	802.11ax HE40, 484-Tones	20.660	116.41
5270 - 5310	802.11ax HE40, 26-Tones	11.980	15.78
5290	802.11ax HE80, 996-Tones	15.940	39.26
5290	802.11ax HE80, 26-Tones	11.920	15.56
5.3 GHz band, 2TX			
5260 - 5320	802.11n HT20 CDD	20.940	124.17
5260 - 5320	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5270 - 5310	802.11n HT40 CDD	22.390	173.38
5270 - 5310	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5260 - 5320	802.11ac VHT20 SDM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5270 - 5310	802.11ac VHT40 SDM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5290	802.11ac VHT80 CDD	18.870	77.09
5290	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5260 - 5320	802.11ax HE20 OFDMA, 242-Tones	20.870	122.18
5260 - 5320	802.11ax HE20 OFDMA, 26-Tones	11.890	15.45
5270 - 5310	802.11ax HE40 OFDMA, 484-Tones	22.420	174.58
5270 - 5310	802.11ax HE40 OFDMA, 26-Tones	11.840	15.28
5290	802.11ax HE80 OFDMA, 996-Tones	17.916	61.89
5290	802.11ax HE80 OFDMA, 26-Tones	11.930	15.60

5.6 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 1TX			
5500-5720	802.11a	Covered by 802.11n HT20 1TX	
5500-5720	802.11n HT20	20.880	122.46
5510-5710	802.11n HT40	20.930	123.88
5500-5720	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5510-5710	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5530-5690	802.11ac VHT80	20.430	110.41
5500-5720	802.11ax HE20, 242-Tones	20.870	122.18
5500-5720	802.11ax HE20, 26-Tones	11.950	15.67
5510-5710	802.11ax HE40, 484-Tones	20.890	122.74
5510-5710	802.11ax HE40, 26-Tones	11.920	15.56
5530-5690	802.11ax HE80, 996-Tones	20.420	110.15
5530-5690	802.11ax HE80, 26-Tones	11.920	15.56
5.6 GHz band, 2TX			
5500-5720	802.11n HT20 CDD	20.820	120.78
5500-5720	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5510-5710	802.11n HT40 CDD	22.290	169.43
5510-5710	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5500-5720	802.11ac VHT20 SDM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5510-5710	802.11ac VHT40 SDM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5530-5690	802.11ac VHT80 CDD	22.280	169.04
5530-5690	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5500-5720	802.11ax HE20 OFDMA, 242-Tones	20.900	123.03
5500-5720	802.11ax HE20 OFDMA, 26-Tones	11.880	15.42
5510-5710	802.11ax HE40 OFDMA, 484-Tones	22.140	163.68
5510-5710	802.11ax HE40 OFDMA, 26-Tones	11.870	15.38
5530-5690	802.11ax HE80 OFDMA, 996-Tones	22.180	165.20
5530-5690	802.11ax HE80 OFDMA, 26-Tones	11.860	15.35

5.8 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.8 GHz band, 1TX			
5745-5825	802.11a	Covered by 802.11n HT20 1TX	
5745-5825	802.11n HT20	21.230	132.74
5755-5795	802.11n HT40	20.950	124.45
5745-5825	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5755-5795	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5775	802.11ac VHT80	20.440	110.66
5745-5825	802.11ax HE20, 242-Tones	21.370	137.09
5745-5825	802.11ax HE20, 26-Tones	21.440	139.32
5755-5795	802.11ax HE40, 484-Tones	20.920	123.59
5755-5795	802.11ax HE40, 26-Tones	20.920	123.59
5775	802.11ax HE80, 996-Tones	20.420	110.15
5775	802.11ax HE80, 26-Tones	20.390	109.40
5.8 GHz band, 2TX			
5745-5825	802.11n HT20 CDD	22.980	198.61
5745-5825	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5755-5795	802.11n HT40 CDD	22.600	181.97
5755-5795	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5745-5825	802.11ac VHT20 STM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5755-5795	802.11ac VHT40 STM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5775	802.11ac VHT80 CDD	22.310	170.22
5775	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5745-5825	802.11ax HE20 OFDMA, 242-Tones	22.960	197.70
5745-5825	802.11ax HE20 OFDMA, 26-Tones	23.010	199.99
5755-5795	802.11ax HE40 OFDMA, 484-Tones	22.630	183.23
5755-5795	802.11ax HE40 OFDMA, 26-Tones	22.640	183.65
5775	802.11ax HE80 OFDMA, 996-Tones	22.080	161.44
5775	802.11ax HE80 OFDMA, 26-Tones	22.050	160.32

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Range	Antenna 6 (Core 0)	Antenna 5 (Core 1)
5180 - 5240	-2.4	-2.8
5260 – 5320	-1.8	-2.9
5500 - 5720	-0.3	-3.6
5745 - 5825	-1.0	-3.3

5.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was WiFi FW Version: 18_20_56_1

5.5. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z on Ant 6 (Core 0) and Ant 5 (Core 1). It was determined that Z (Portrait) orientation was the worst-case orientation for Ant 6; and Y (Landscape) orientation was the worst case for Ant 5 and Z (Portarit) for 2TX.

For radiated harmonics spurious below 1GHz, 1-18GHz L/M/H channels, 18-40GHz, and power line conducted emissions were performed with the EUT set at the 2TX CDD mode among the CDD/SDM modes with power setting equal or higher than SISO modes as worst-case scenario.

Radiated band edge, harmonic, and spurious emissions from 1GHz to 18GHz were performed with the EUT was set to transmit at highest power on Low/Middle/High channels.

Below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop.

There were no emissions found below 30MHz within 20dB of the limit.

The output power and psd for the 802.11 ax mode were investigated between all different tones, and we found that the highest tone had the highest output power and lowest tone had the highest PSD readings. Therefore, full testing was performed on both the highest and lowest tones.

For simultaneous transmission with the Bluetooth was investigated, no noticeable emission was found.

Investigated worst-case data rates as listed below were:

802.11n HT20mode: MCS0
802.11n HT40mode: MCS0
802.11ac VHT80 mode: MCS0
802.11ax HE20/HE40/HE80 FULL RU & RU26

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
laptop	Apple	Macbook Pro	C02P41RZG086	FCC DoC
Laptop AC/DC adapter	Liteon Technology	PA-1450-BA1	B123	NA
EUT AC Adapter	Apple	A1385	D292365CDYADHLHC3	NA

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Antenna	1	SMA	Un-Shielded	0.2	To spectrum Analyzer
2	USB	1	USB	Shielded	1	N/A
3	AC	1	AC	Un-shielded	2	N/A

I/O CABLES (RADIATED ABOVE 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
NA						

I/O CABLES (BELOW 1GHz AND AC POWER LINE TEST WITH ADAPTER AND LAPTOP

I/O Cable List						
Cable No	Port	# of identical	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

The EUT is installed in a host laptop computer during the tests. Test software exercised the radio card.

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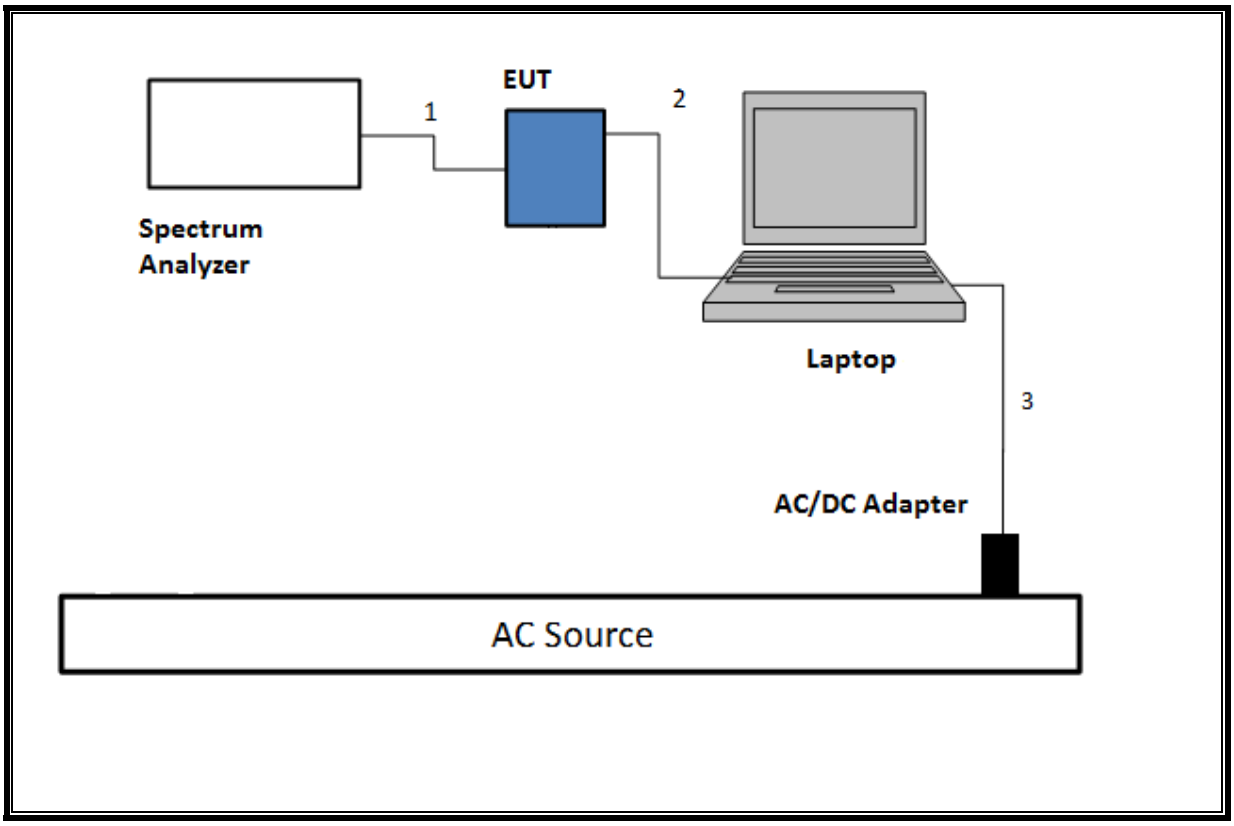
TEST SETUP - CONDUCTED TESTS

The EUT was tested connected to a host Laptop via USB cable adapter and spectrum analyzer to antenna port. Test software exercised the EUT.

SETUP DIAGRAM



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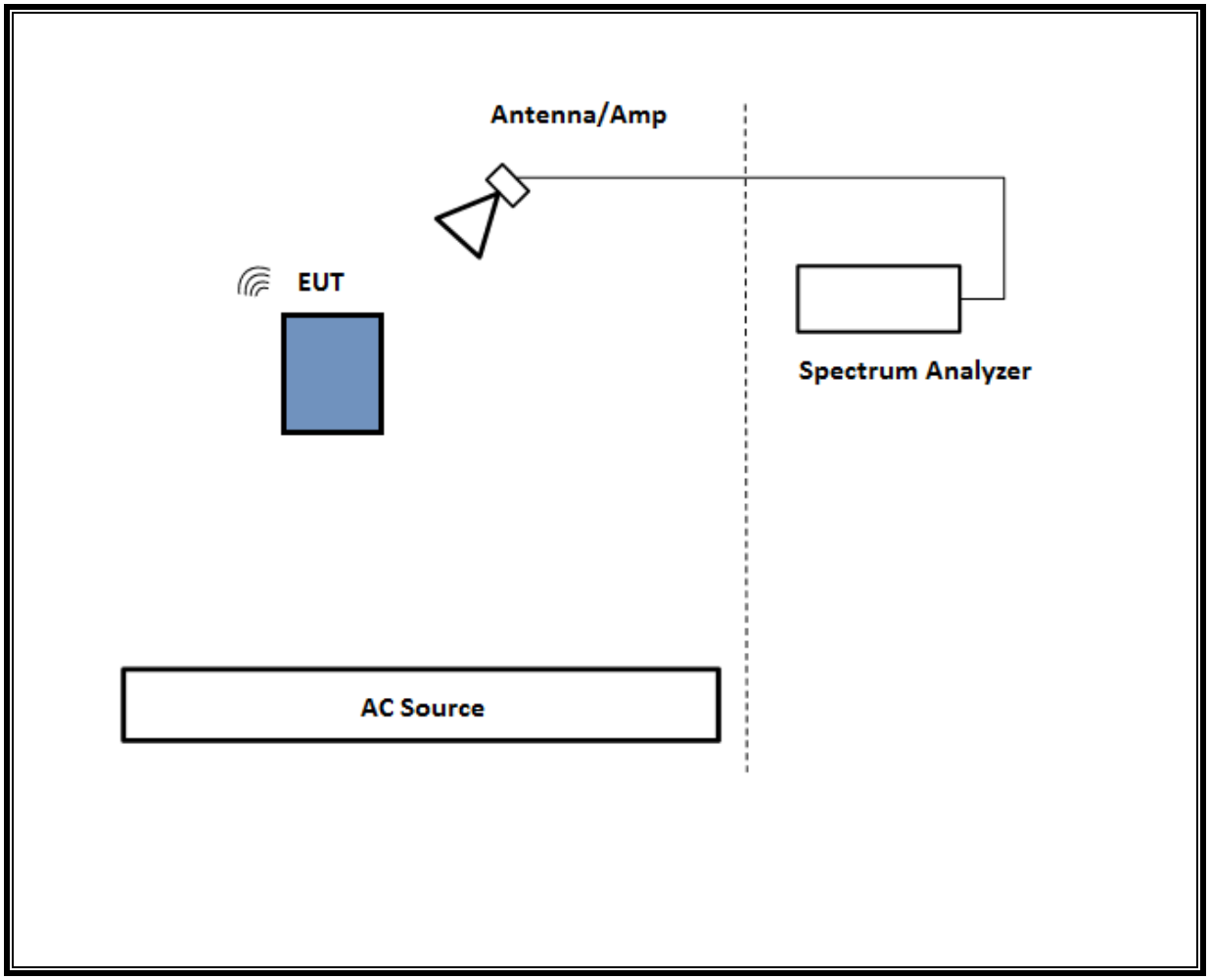
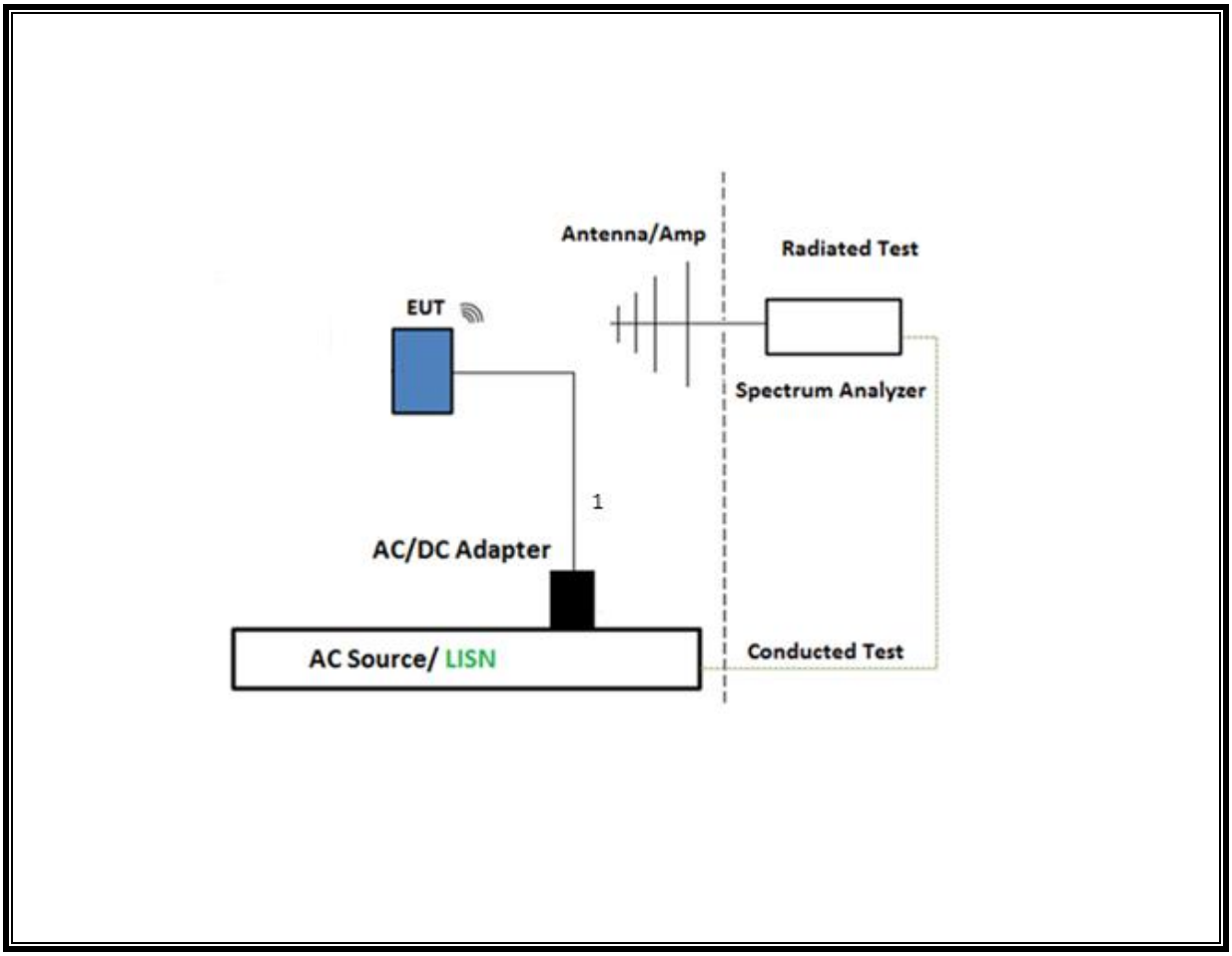
SETUP DIAGRAM FOR RADIATED TESTS Above 1GHz



SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



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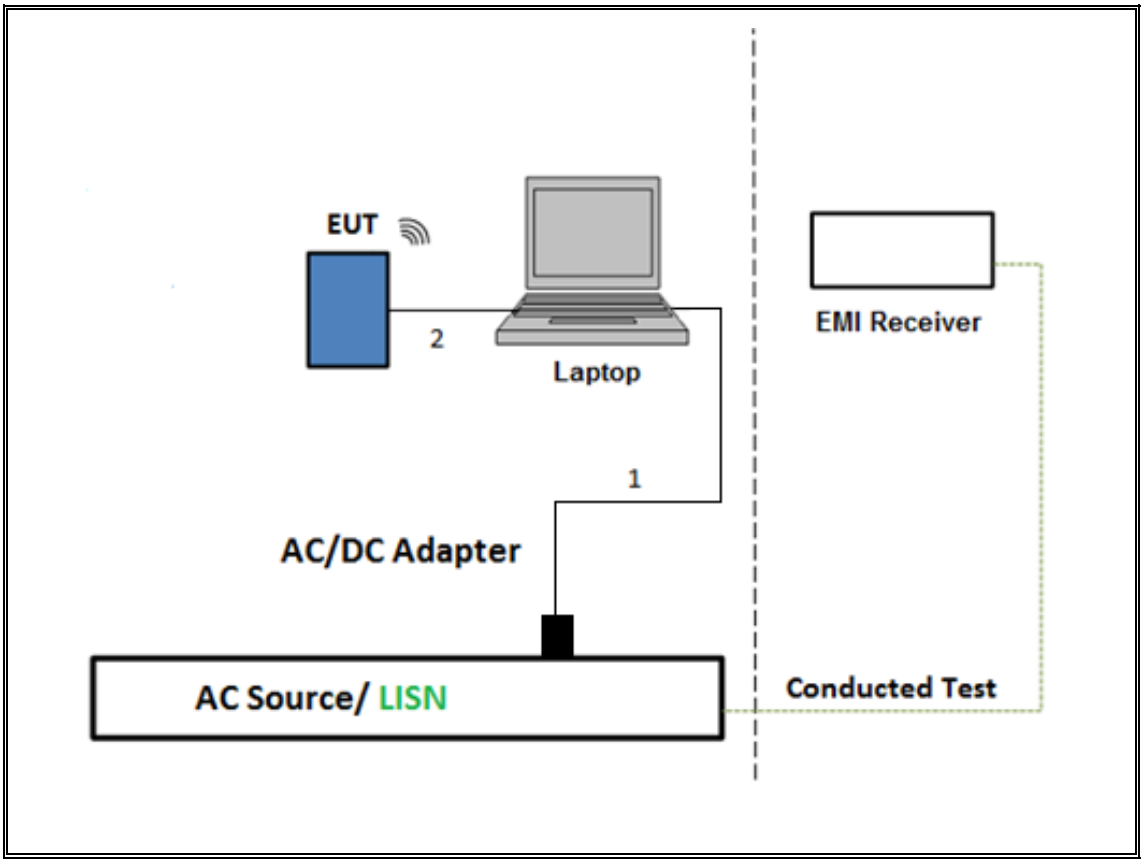
TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



6. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 789033 D02 v02r01, Section B.

6 dB Emission BW: KDB 789033 D02 v02r01, Section C.2

26 dB Emission BW: KDB 789033 D02 v02r01, Section C.1

99% Occupied BW: KDB 789033 D02 v02r01, Section D.

Conducted Output Power: KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and KDB 789033 D02 v02r01, Section E.2.b (Method SA-1), Section E.2.d (Method SA-2)

Power Spectral Density: KDB 789033 D02 v02r01, Section F

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4

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7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment were utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T712	3/9/2021
Amplifier, 1 to 18GHz, 35dB	Miteq	AFS42-00101800-25-S-42	138301	3/3/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1466	1/23/2021
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T862	08/19/2021
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T863	11/1/2020
Amplifier, 1 to 18GHz, 35dB	Miteq	AFS42-00101800-25-S-42	T1567	1/24/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1210	1/21/2021
Antenna, Horn 1-18GHz	A.H Systems Inc.	SAS-571	T963	1/25/2021
Amplifier, 1 to 18GHz, 35dB	Miteq	AFS42-00101800-25-S-42	T1567	01/24/2021
EMI Test Receiver	Rohde & Schwarz	ESW44	PRE0179372	2/25/2021
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T344	5/26/2021
Amplifier, 1 to 18GHz, 35dB	Miteq	AFS42-00101800-25-S-42	T1568	4/14/2021
EMI Test Receiver	Rohde & Schwarz	ESW44	PRE0179367	2/26/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	T340	01/22/2021
Antenna, Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T408	07/14/2021
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	PRE0180176	07/14/2021
EMI Test Receiver	Rohde & Schwarz	ESW44	PRE0179522	2/20/2021
Antenna Horn, 18 to 26GHz	ARA	SWH-28	T125	4/17/2021
Pre-Amp 18-26GHz	Agilent Technology	8449B	T404	4/8/2021
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	PRE0182203	04/17/2021
Amplifier, 26 - 40GHz	MITEQ	TTA2640-35-HG	T1864	04/08/21
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T905	1/24/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T339	1/21/2021
Power Meter, P-series single channel	Keysight	N1911A	PRE0177682	01/21/2021
Power Sensor	Keysight	N1921A	T1226	02/13/2021
Antenna, Active Loop 9KHz to 30MHz	ETS-Lindgren	6502	T1616	10/28/2020

*Testing is completed before equipment expiration date.

AC Line Conducted				
EMI Test Receiver 9Khz-7GHz	Rohde & Schwarz	ESCI7	T1436	02/20/2021
Power Cable, Line Conducted Emissions	UL	PG1	T861	10/27/2020
*LISN for Conducted Emissions CISPR-16	Fischer	50/250-25-2-01	T1310	01/23/2021
UL AUTOMATION SOFTWARE				
Radiated Software	UL	UL EMC	Rev 9.5, 30 Apr, 2020	
Conducted Software	UL	UL EMC	2020.2.26	
AC Line Conducted Software	UL	UL EMC	Rev 9.5, 21 Feb 2020	

*Testing is completed before equipment expiration date.

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
5GHz Band						
802.11n HT20 1Tx MSC0	1.917	1.938	0.989	98.92%	0.00	0.010
802.11n HT20 1Tx MCS7	0.228	0.248	0.919	91.93%	0.37	4.388
802.11n HT20 CDD MCS0	1.917	1.938	0.989	98.92%	0.00	0.010
802.11n HT20 CDD MCS7	0.136	0.155	0.876	87.63%	0.57	7.353
802.11n HT40 1Tx MCS0	0.944	0.964	0.979	97.93%	0.09	1.059
802.11n HT40 1Tx MCS7	0.127	0.148	0.861	86.05%	0.65	7.868
802.11n HT40 CDD MCS0	0.459	0.479	0.958	95.82%	0.19	2.179
802.11n HT40 CDD MCS7	0.088	0.108	0.814	81.40%	0.89	11.429
802.11ac VHT80 1Tx MCS0	0.459	0.479	0.958	95.82%	0.19	2.179
802.11ac VHT80 1Tx MCS9	0.072	0.092	0.780	78.01%	1.08	13.935
802.11ac VHT80 CDD MCS0	0.459	0.479	0.958	95.82%	0.19	2.179
802.11ac VHT80 CDD MCS9	0.059	0.080	0.739	73.90%	1.31	16.906
802.11ax HE20 1Tx MCS0	1.560	1.580	0.987	98.73%	0.00	0.010
802.11ax HE20 1Tx MCS11	1.560	1.580	0.987	98.73%	0.00	0.010
802.11ax HE20 OFDMA MCS0	1.558	1.578	0.987	98.73%	0.00	0.010
802.11ax HE20 OFDMA MCS11	1.560	1.580	0.987	98.73%	0.00	0.010
802.11ax HE40 1Tx MCS0	1.544	1.566	0.986	98.60%	0.00	0.010
802.11ax HE40 1Tx MCS11	1.548	1.568	0.987	98.72%	0.00	0.010
802.11ax HE40 OFDMA MCS0	1.544	1.566	0.986	98.60%	0.00	0.010
802.11ax HE40 OFDMA MCS11	1.548	1.568	0.987	98.72%	0.00	0.010
802.11ax HE80 1Tx MCS0	1.472	1.494	0.985	98.53%	0.00	0.010
802.11ax HE80 1Tx MCS11	1.473	1.493	0.987	98.66%	0.00	0.010
802.11ax HE80 OFDMA MCS0	1.472	1.494	0.985	98.53%	0.00	0.010
802.11ax HE80 OFDMA MCS11	1.473	1.493	0.987	98.66%	0.00	0.010

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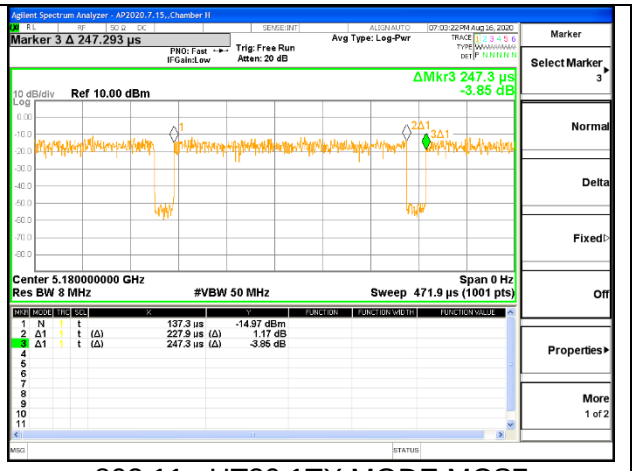
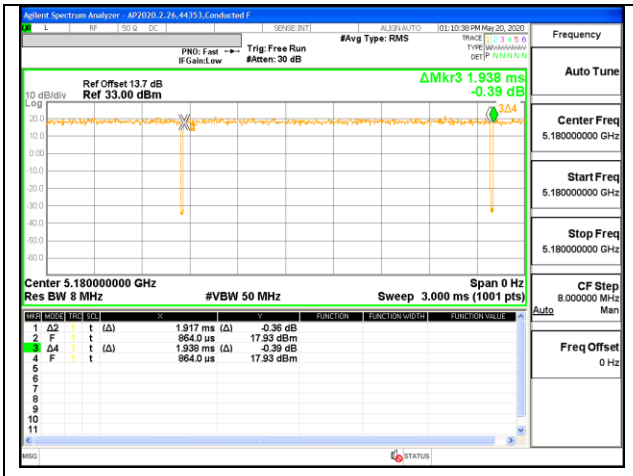
DUTY CYCLE PLOTS

802.11n HT20 1TX MODE MCS0



802.11n HT20 1TX MODE MCS7



802.11n HT20 CDD MODE MCS0

802.11n HT20 CDD MODE MCS7

802.11n HT40 1TX MODE MCS0

802.11n HT40 1TX MODE MCS7

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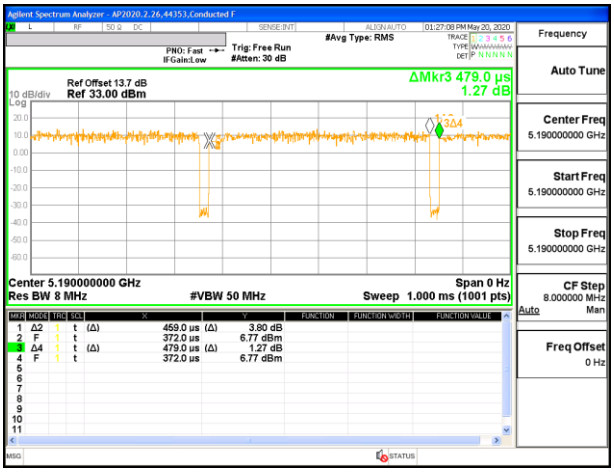
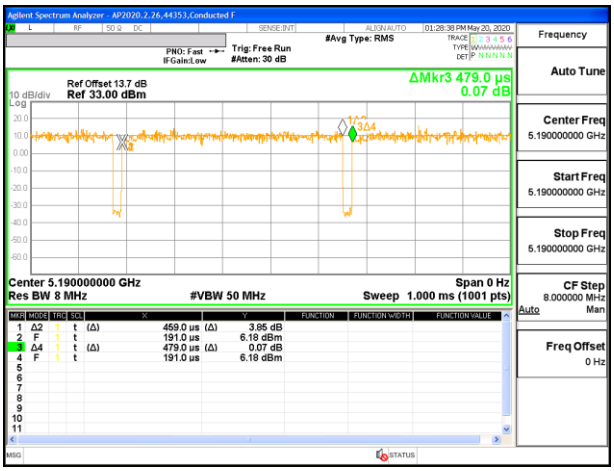
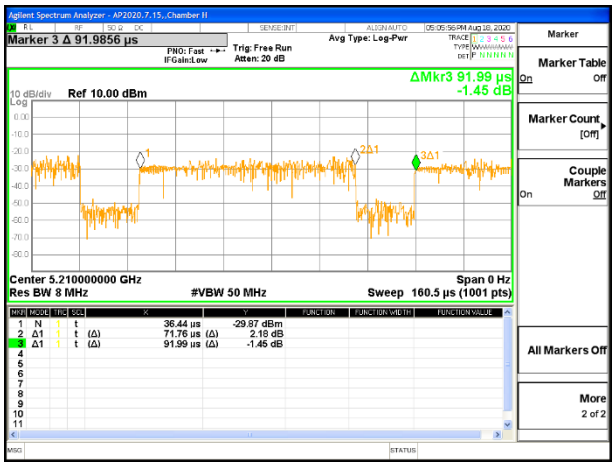


802.11n HT40 CDD MODE MCS0

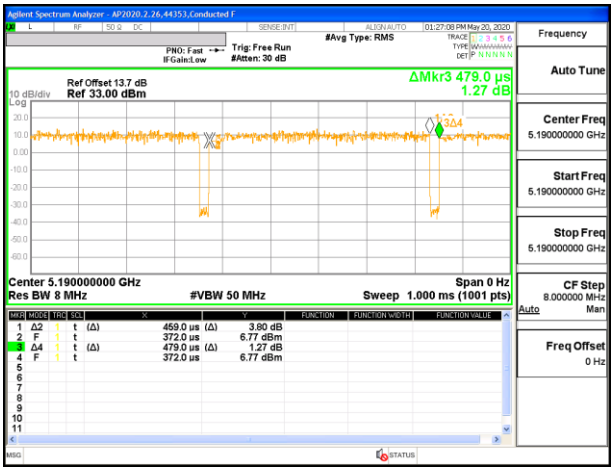
802.11n HT40 CDD MODE MCS7



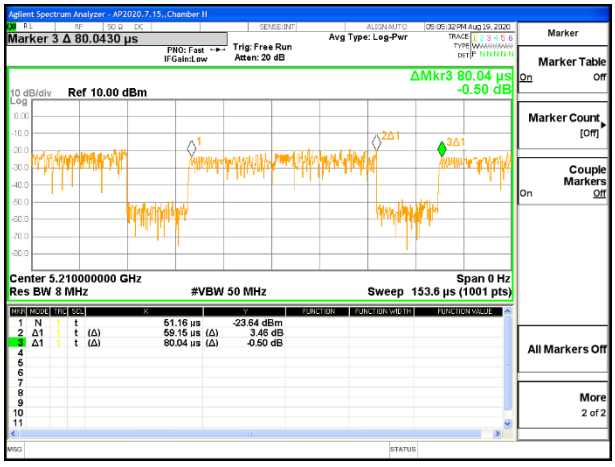
802.11ac VHT80 1TX MODE MSC0



802.11ac VHT80 1TX MODE MSC9



802.11ac VHT80 CDD MODE MCS0



802.11ac VHT80 CDD MODE MCS9

UL VERIFICATION SERVICES INC.
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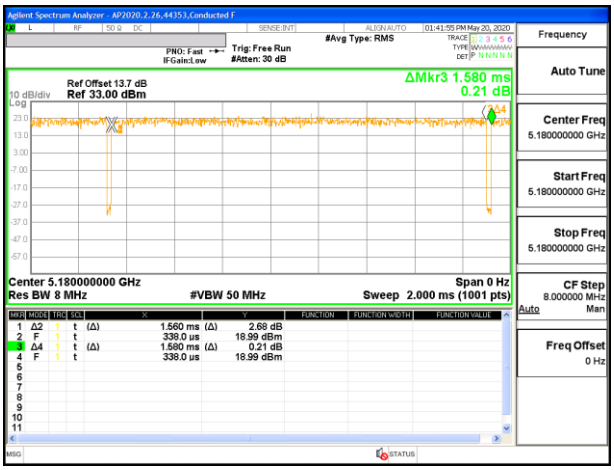
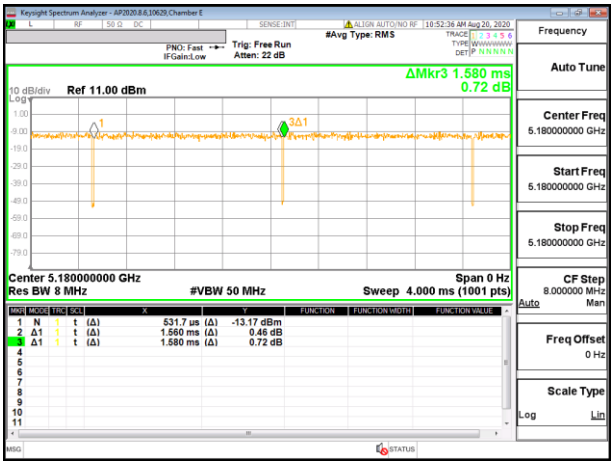


802.11ax HE20 1Tx MCS0

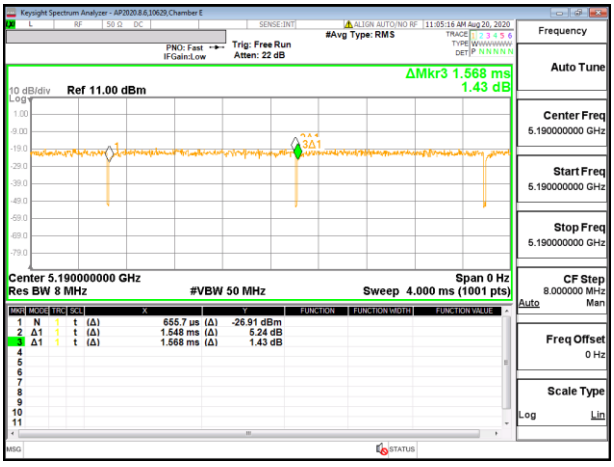
802.11ax HE20 1Tx MCS11

802.11ax HE20 OFDMA MCS0



802.11ax HE20 OFDMA MCS11

802.11ax HE40 1Tx MCS0



802.11ax HE40 1Tx MCS11

UL VERIFICATION SERVICES INC.
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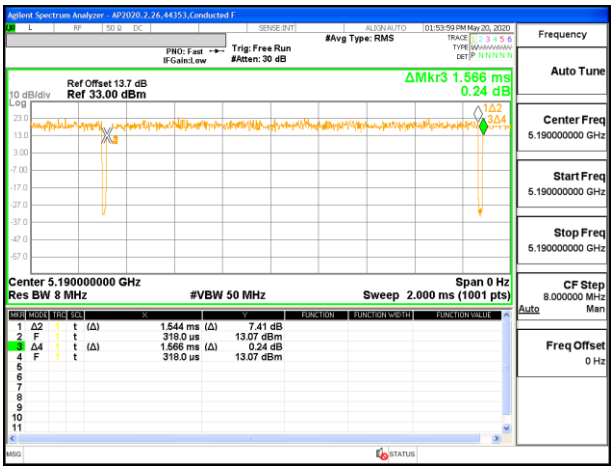
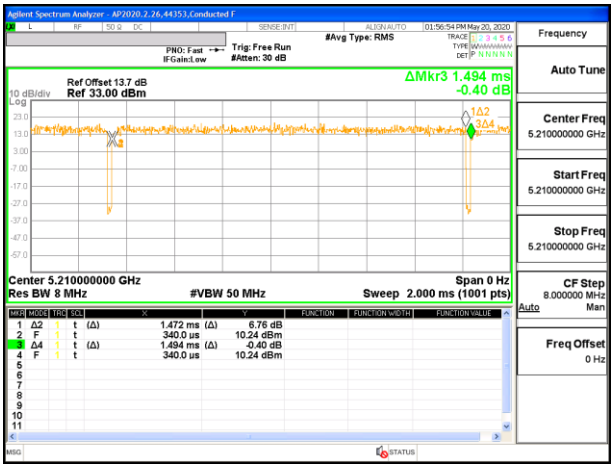


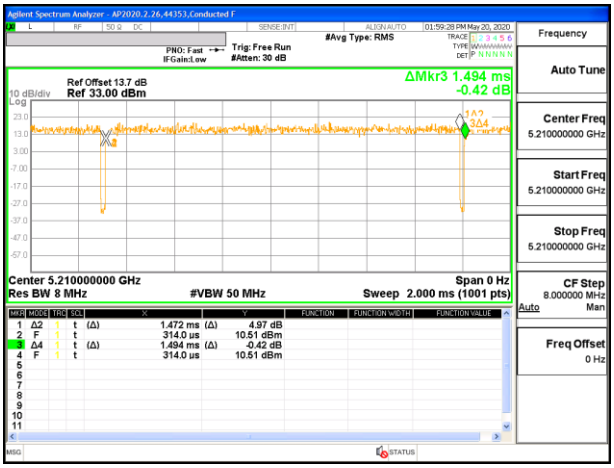
802.11ax HE40 OFDMA MCS0

802.11ax HE40 OFDMA MCS11



802.11ax HE80 1Tx MCS0

802.11ax HE80 1Tx MCS11



802.11ax HE80 OFDMA MCS0

802.11ax HE80 OFDMA MCS11

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8.2. 26 dB & 99% BANDWIDTHS

LIMITS

None; for reporting purposes only.

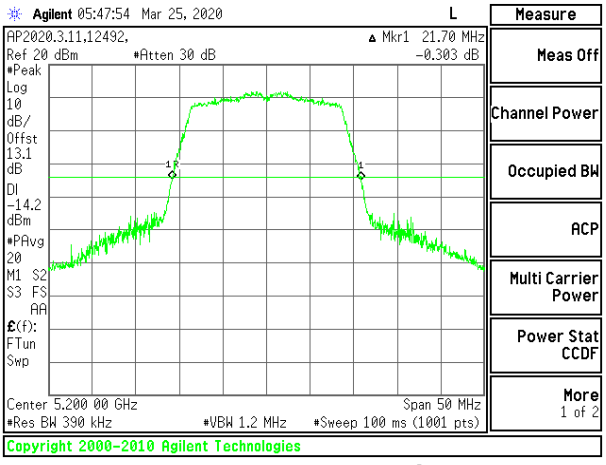
RESULTS

ID:	44353	Date:	7/6/2020

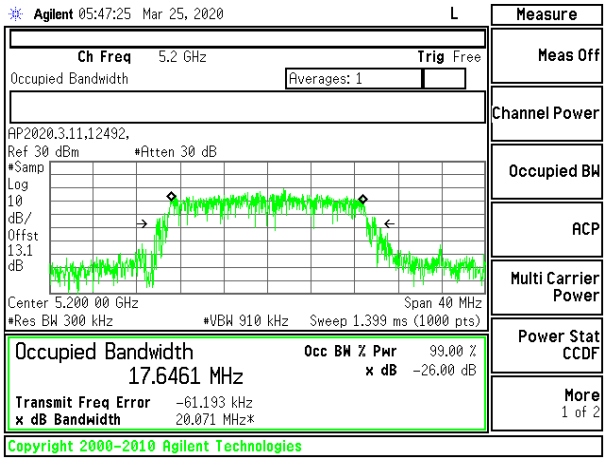
8.2.1. 802.11n HT20 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	21.50	17.6893
Mid	5200	21.70	17.6461
High	5240	21.75	17.6351



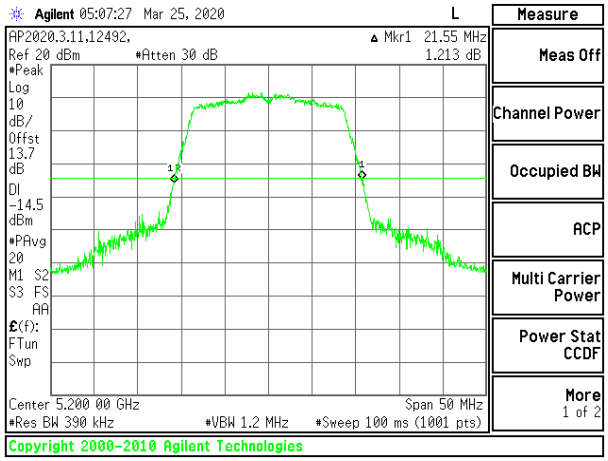
MID CHANNEL 26dB



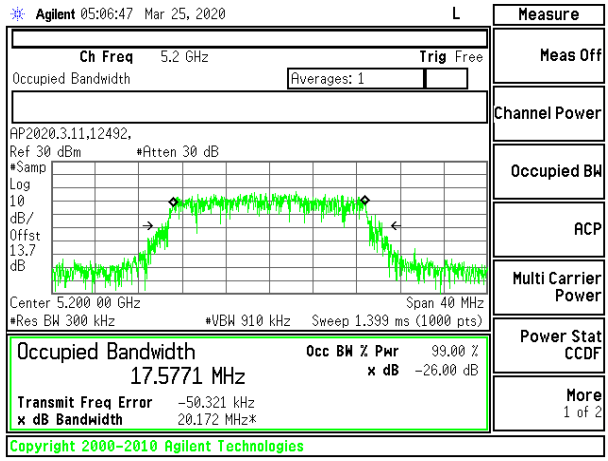
MID CHANNEL OBW

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	21.50	17.6895
Mid	5200	21.55	17.5771
High	5240	21.45	17.6373



MID CHANNEL 26dB

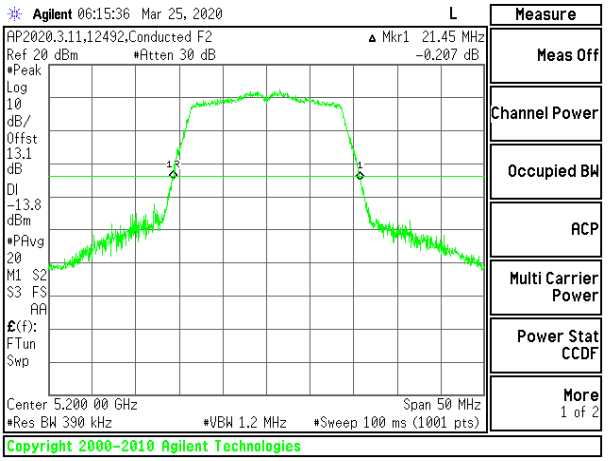


MID CHANNEL OBW

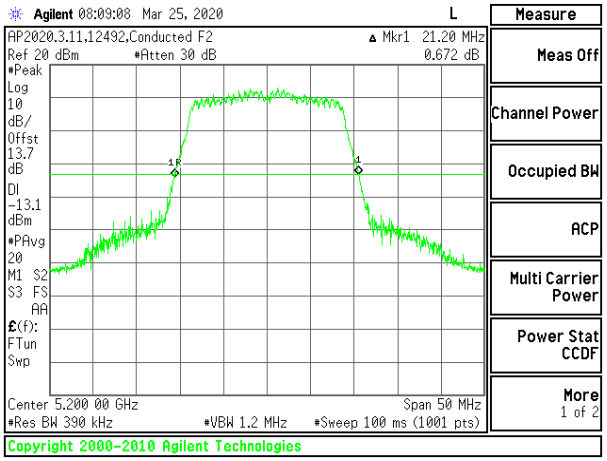
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Ant 6 (MHz)	26 dB Bandwidth Ant 5 (MHz)	99% Bandwidth Ant 6 (MHz)	99% Bandwidth Ant 5 (MHz)
Low	5180	21.70	21.20	17.65	17.64
Mid	5200	21.45	21.20	17.62	17.68
High	5240	21.60	21.35	17.65	17.69

MID CHANNEL 26dB

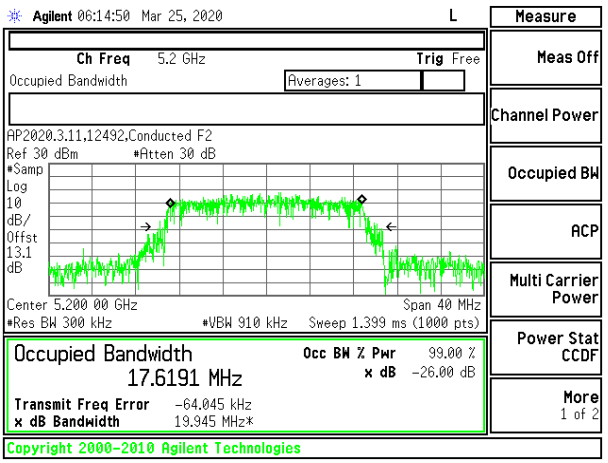


MID CHANNEL [ANT 6]

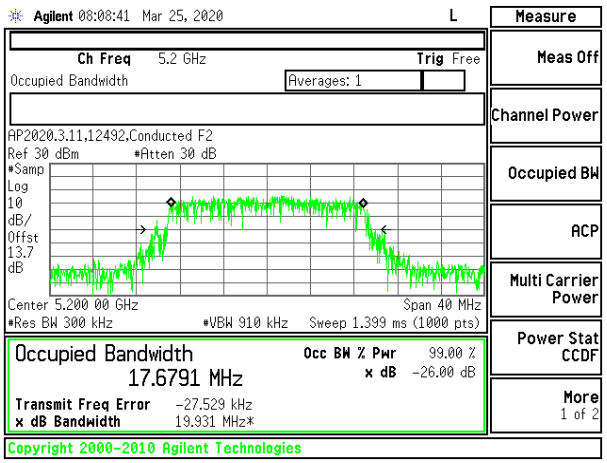


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

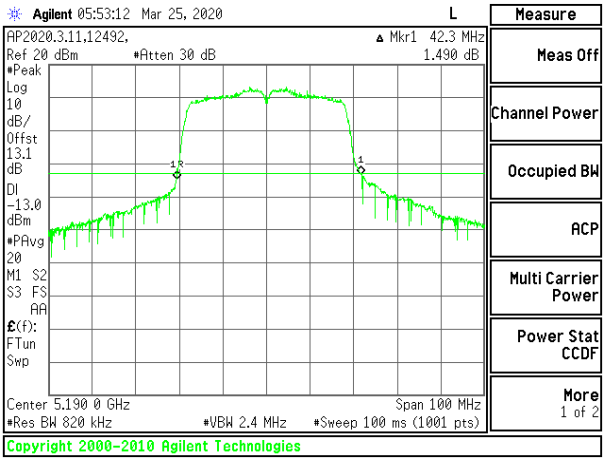


MID CHANNEL [ANT 5]

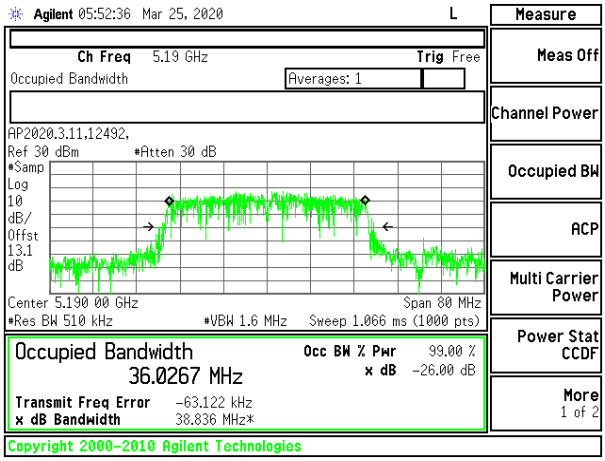
8.2.2. 802.11n HT40 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	42.30	36.0267
High	5230	42.40	36.0579



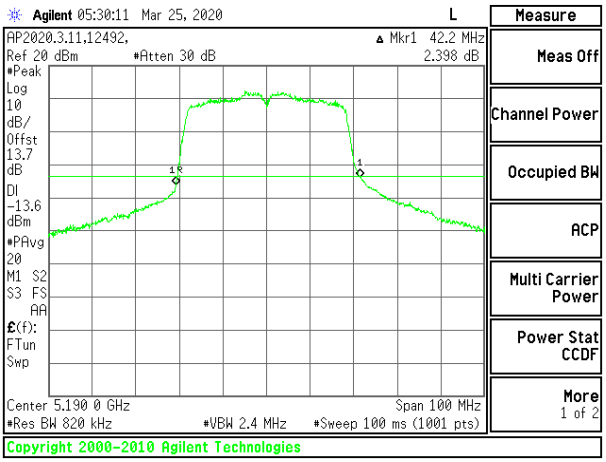
LOW CHANNEL 26dB



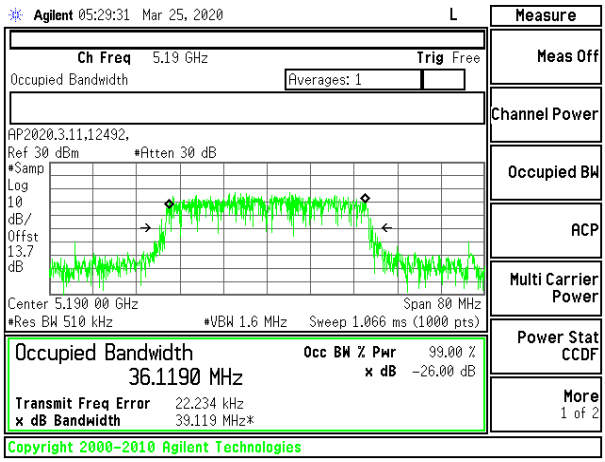
LOW CHANNEL OBW

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	42.20	36.1190
High	5230	42.30	36.0717



LOW CHANNEL 26dB

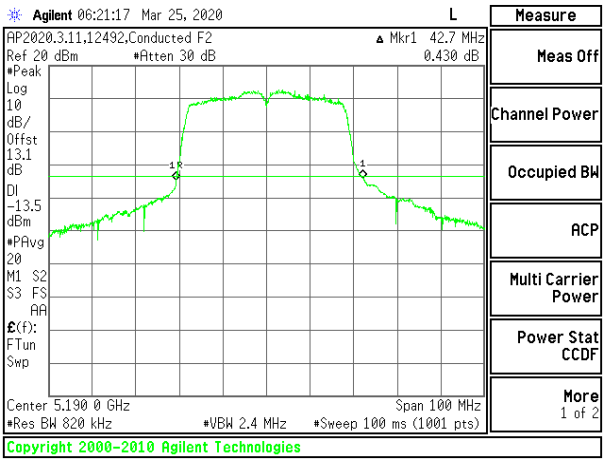


LOW CHANNEL OBW

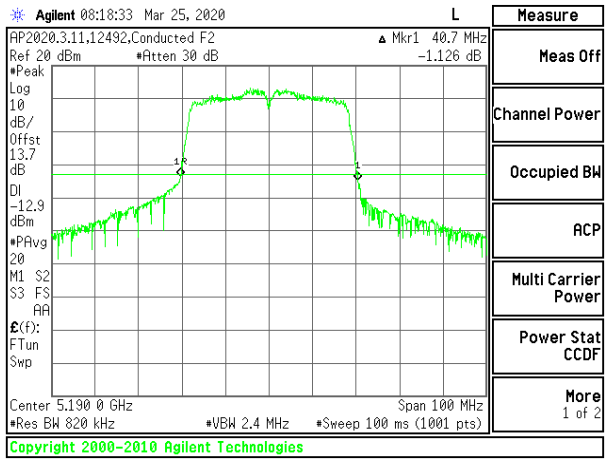
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Ant 6 (MHz)	26 dB Bandwidth Ant 5 (MHz)	99% Bandwidth Ant 6 (MHz)	99% Bandwidth Ant 5 (MHz)
Low	5190	42.70	40.70	36.01	36.13
High	5230	42.40	40.70	36.18	36.10

LOW CHANNEL 26dB

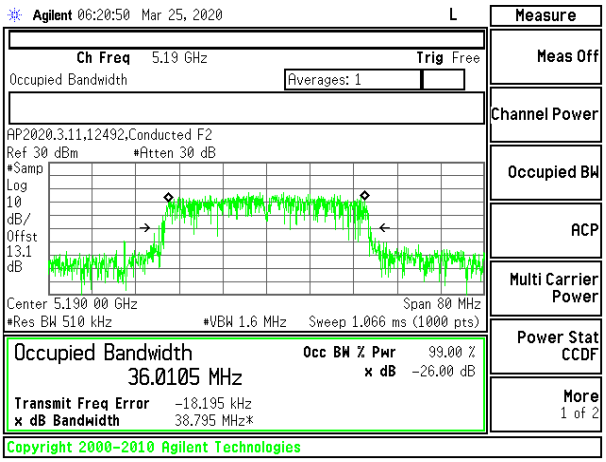


LOW CHANNEL [ANT 6]

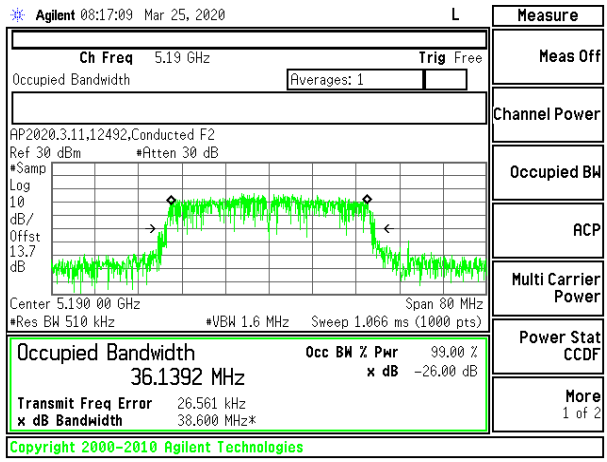


LOW CHANNEL [ANT 5]

LOW CHANNEL OBW



LOW CHANNEL [ANT 6]

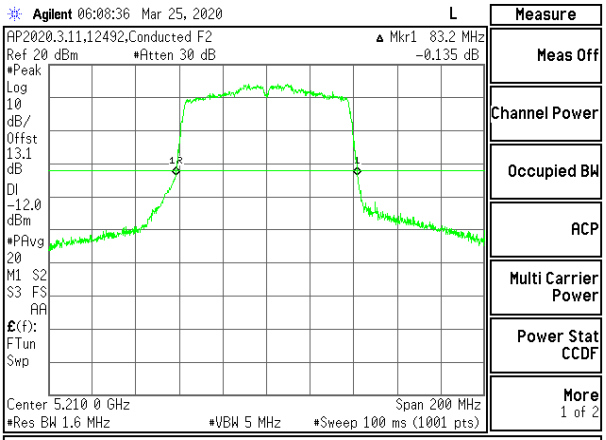


LOW CHANNEL [ANT 5]

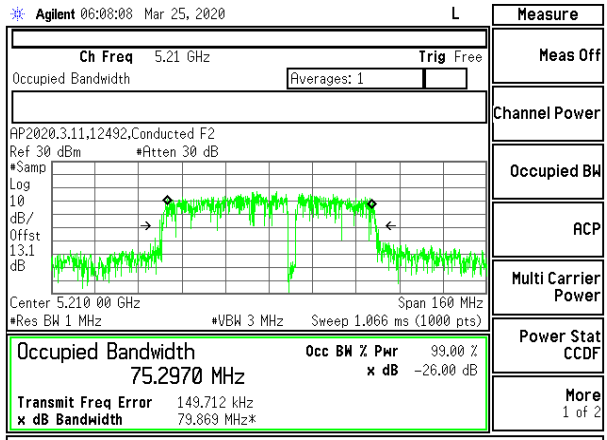
8.2.3. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	83.20	75.2970



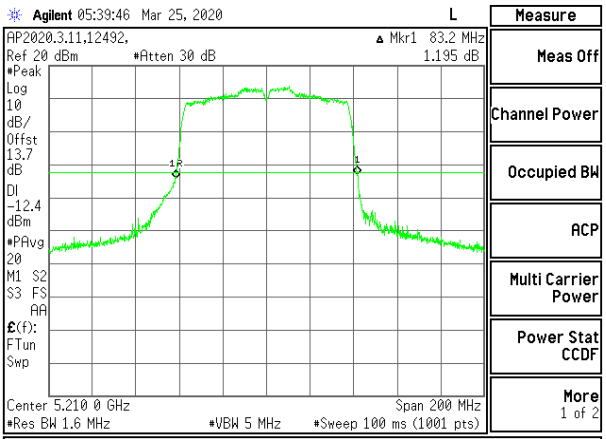
MID CHANNEL 26dB



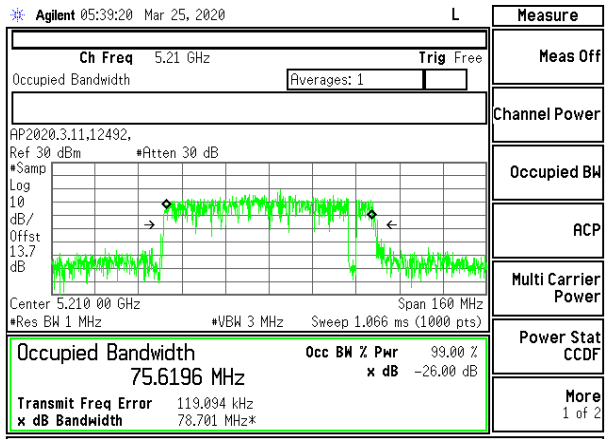
MID CHANNEL OBW

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	83.20	75.6196



MID CHANNEL 26dB

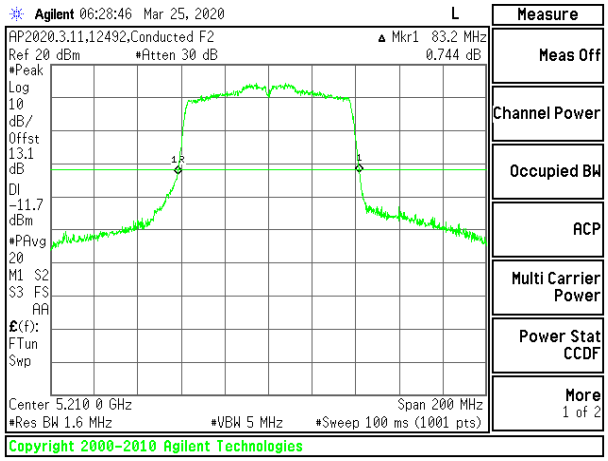


MID CHANNEL OBW

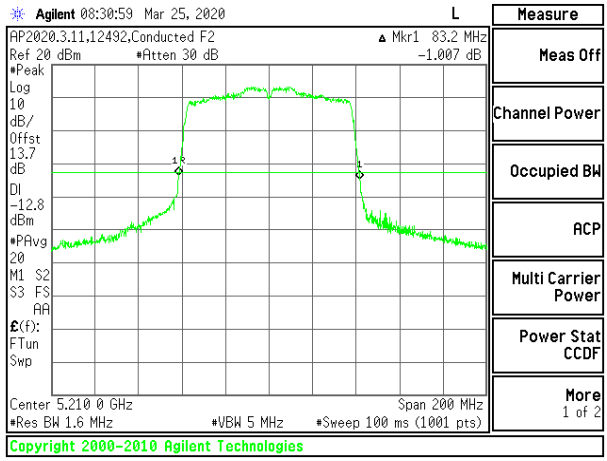
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Ant 6 (MHz)	26 dB Bandwidth Ant 5 (MHz)	99% Bandwidth Ant 6 (MHz)	99% Bandwidth Ant 5 (MHz)
Mid	5210	83.20	83.20	75.56	75.44

MID CHANNEL 26dB

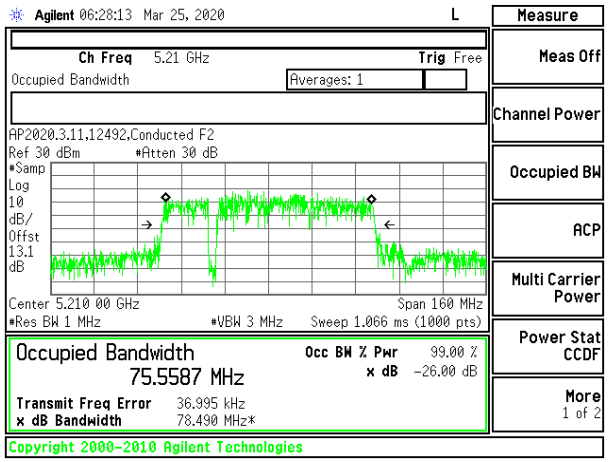


MID CHANNEL [ANT 6]

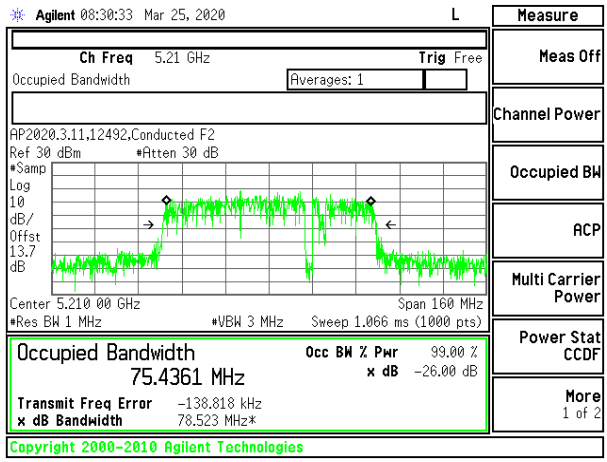


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

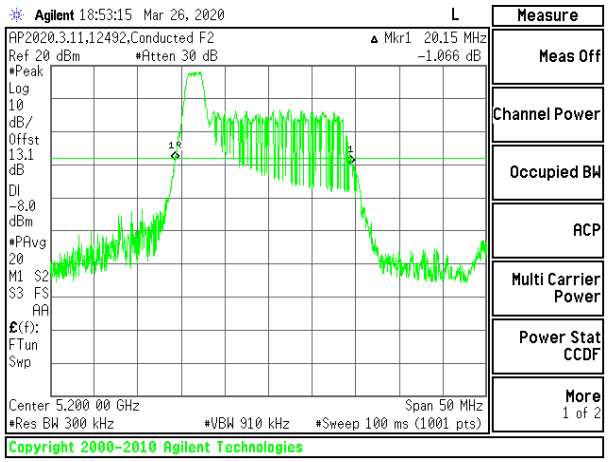


MID CHANNEL [ANT 5]

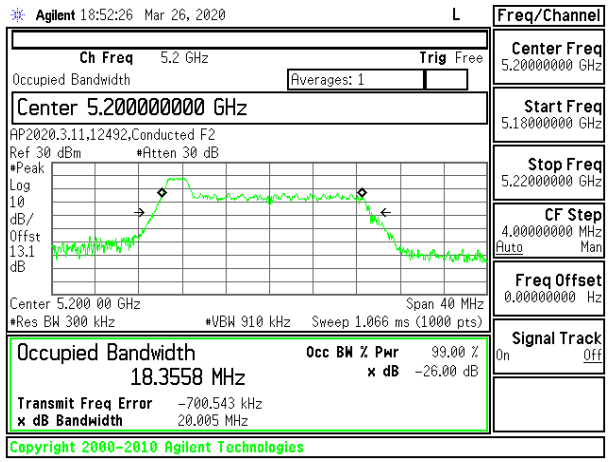
8.2.4. 802.11ax HE20 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	20.25	18.4173
Mid	5200	20.15	18.3558
High	5240	20.00	18.4284



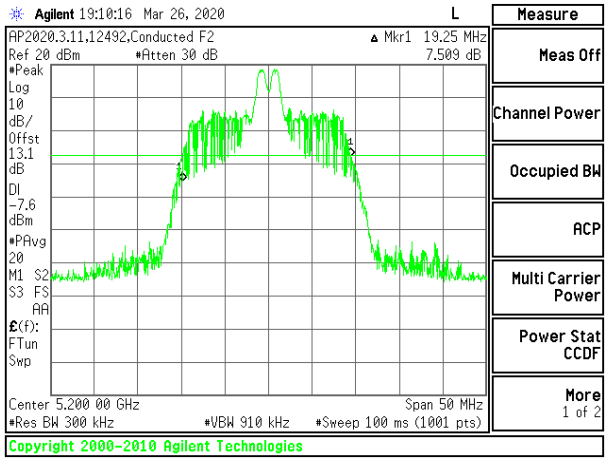
MID CHANNEL 26dB



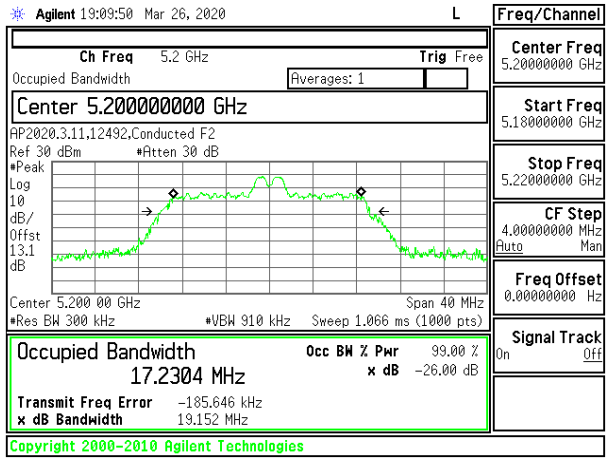
MID CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	19.45	17.2467
Mid	5200	19.25	17.2304
High	5240	19.50	17.2487



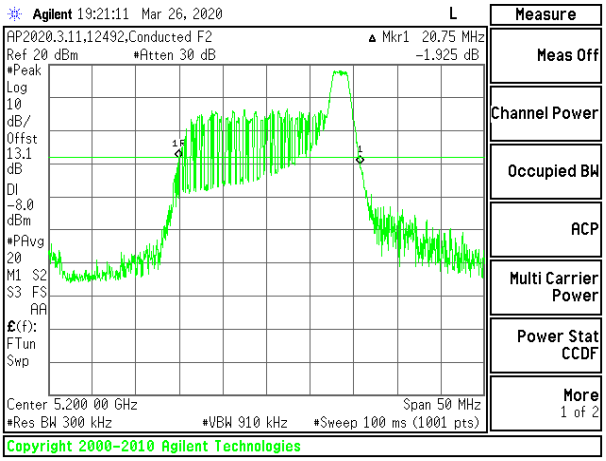
MID CHANNEL 26dB



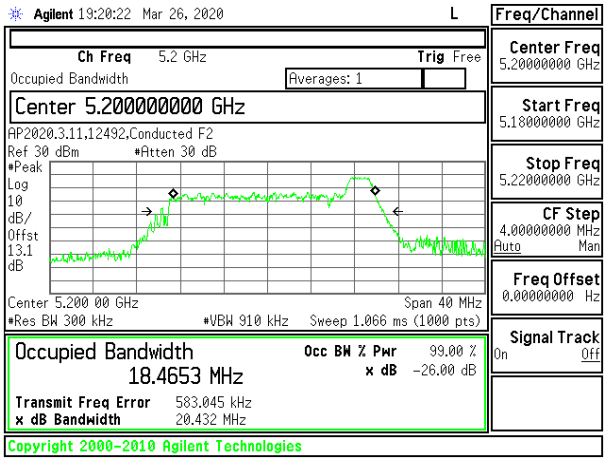
MID CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	20.75	18.5968
Mid	5200	20.75	18.4653
High	5240	20.70	18.6101



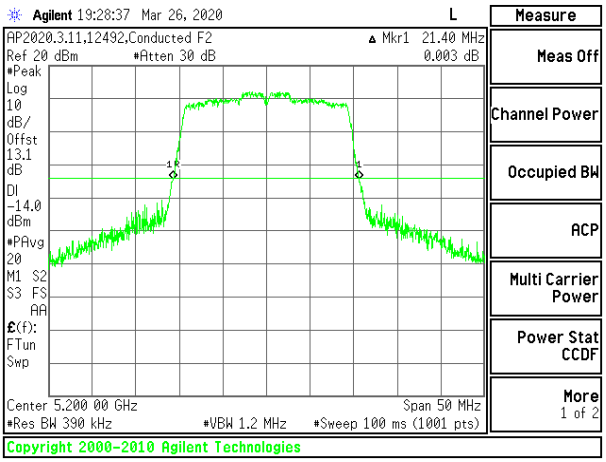
MID CHANNEL 26dB



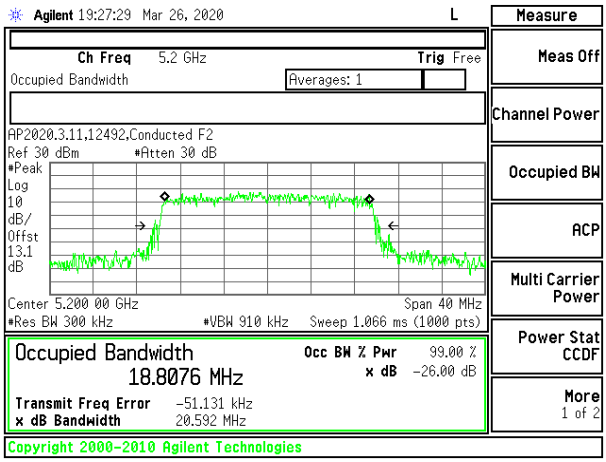
MID CHANNEL OBW

1TX Antenna 6 MODE: 242 Tones, RU Index 61

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	21.50	18.8745
Mid	5200	21.40	18.8076
High	5240	21.35	18.9301



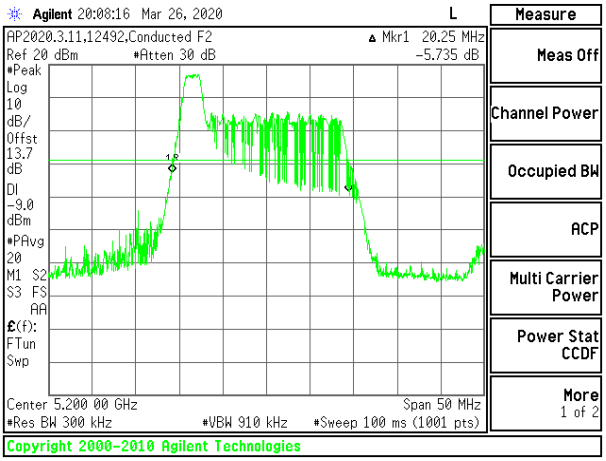
MID CHANNEL 26dB



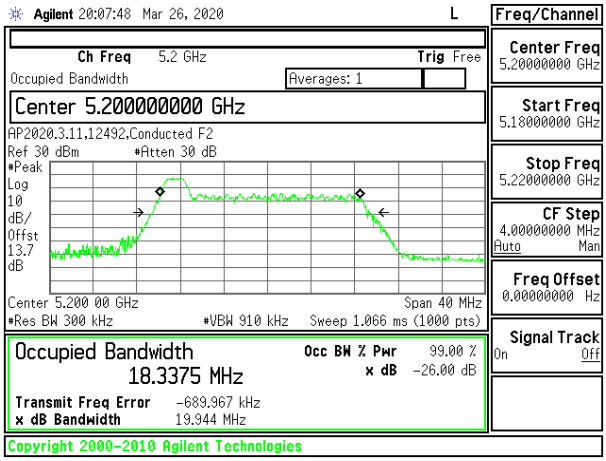
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	20.15	18.3741
Mid	5200	20.25	18.3375
High	5240	20.10	18.3539



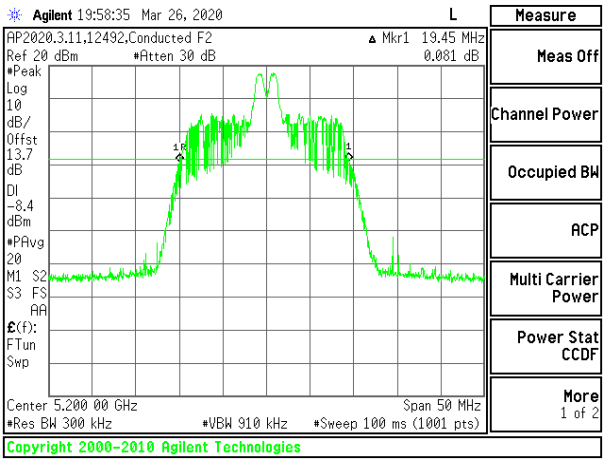
MID CHANNEL 26dB



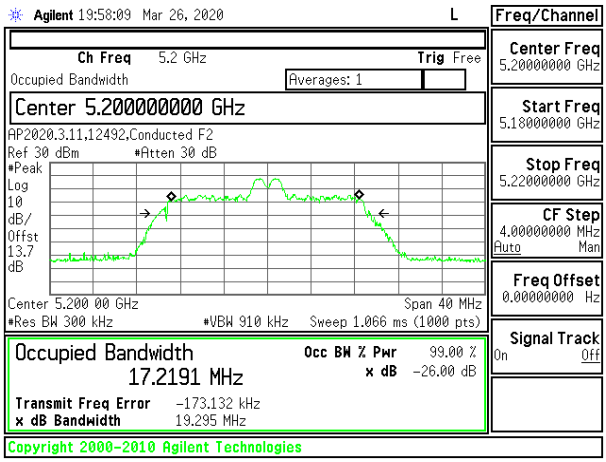
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	19.35	17.1820
Mid	5200	19.45	17.2191
High	5240	19.40	17.2521



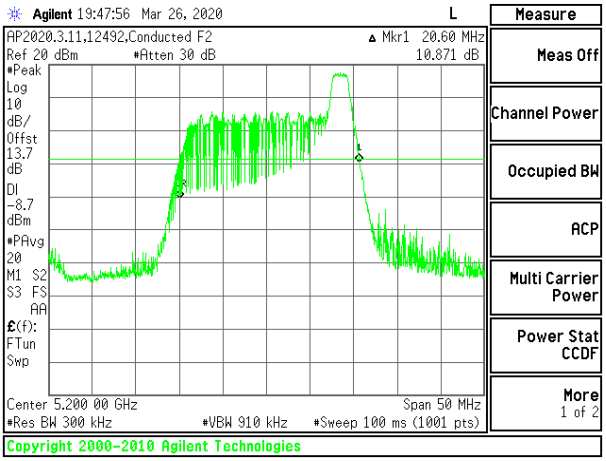
MID CHANNEL 26dB



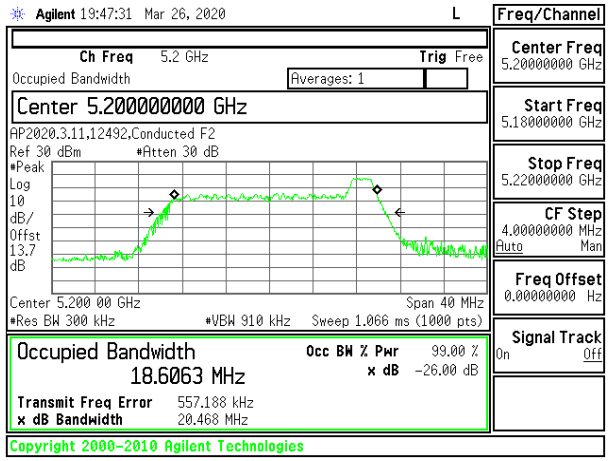
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	20.80	18.6524
Mid	5200	20.60	18.6063
High	5240	20.75	18.6132



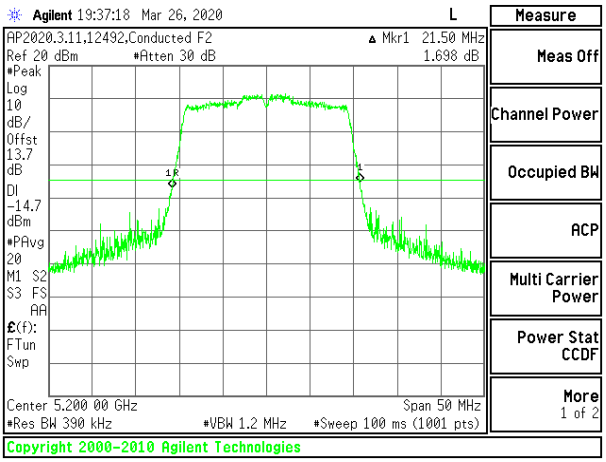
MID CHANNEL 26dB



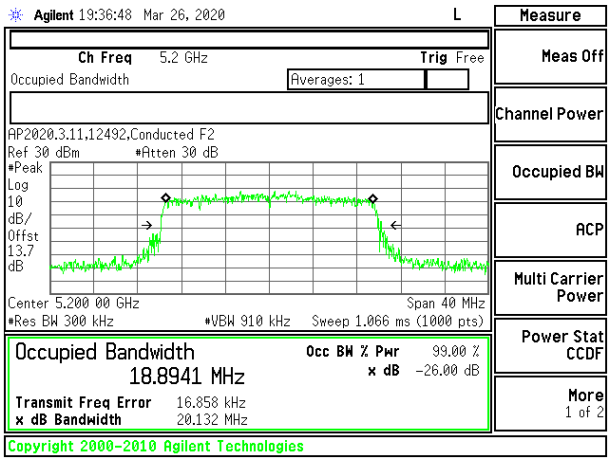
MID CHANNEL OBW

1TX Antenna 5 MODE: 242 Tones, RU Index 61

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	21.45	18.8664
Mid	5200	21.50	18.8941
High	5240	21.40	18.9053



MID CHANNEL 26dB

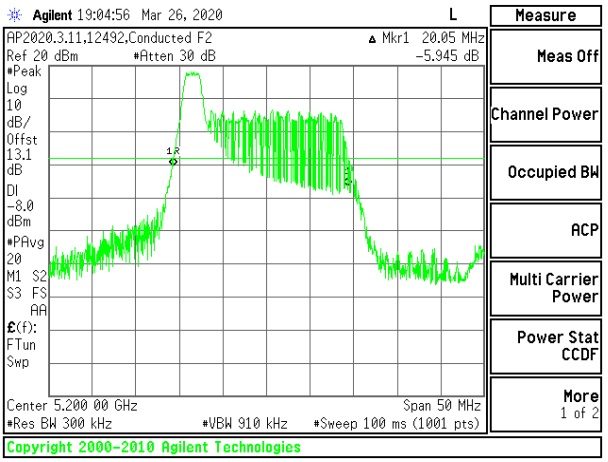


MID CHANNEL OBW

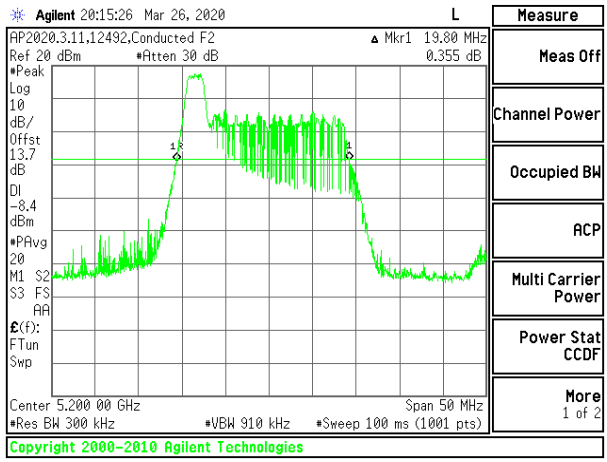
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5180	20.15	19.85	18.3819	18.2208
Mid	5200	20.05	19.80	18.4114	18.2902
High	5240	20.15	19.85	18.4138	18.3562

MID CHANNEL 26dB

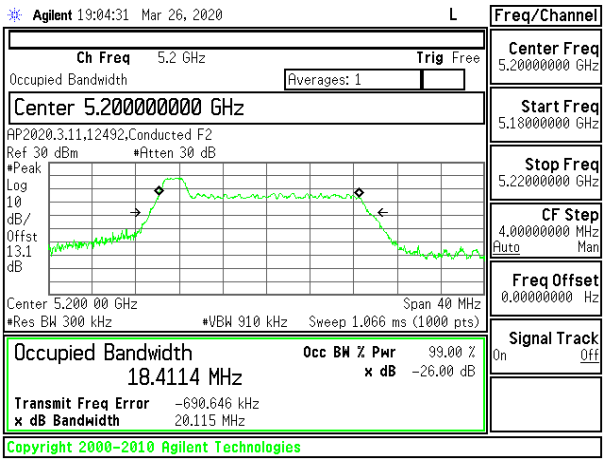


MID CHANNEL [ANT 6]

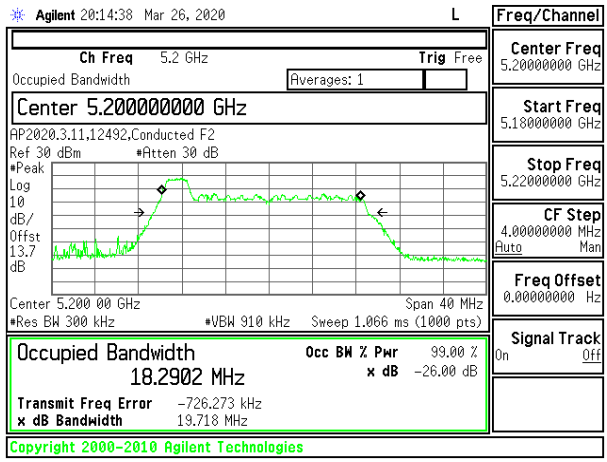


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

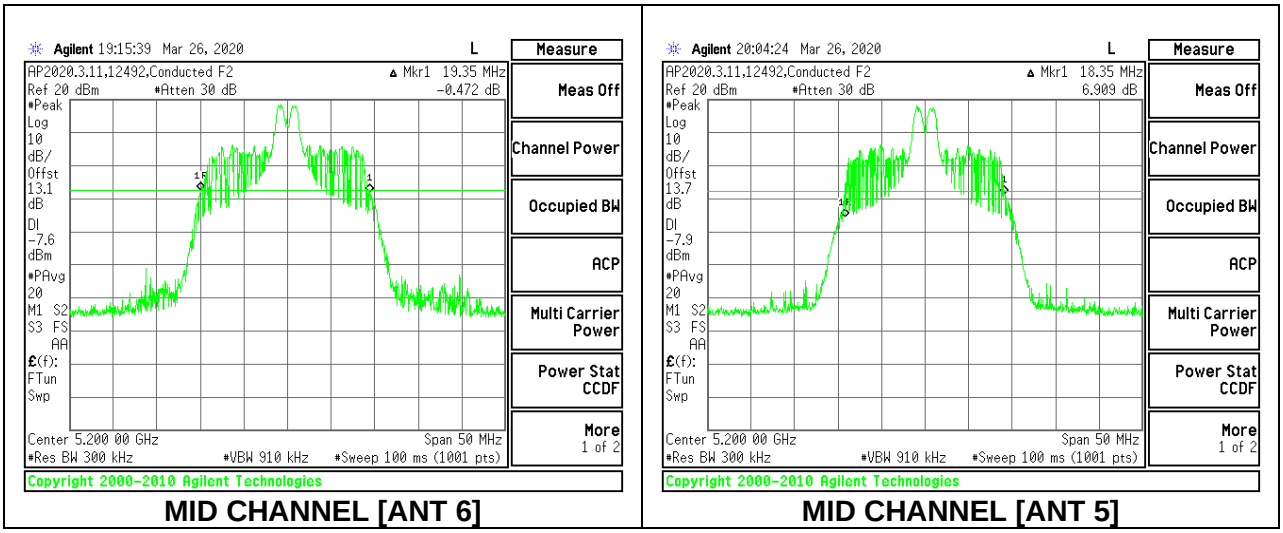


MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 4

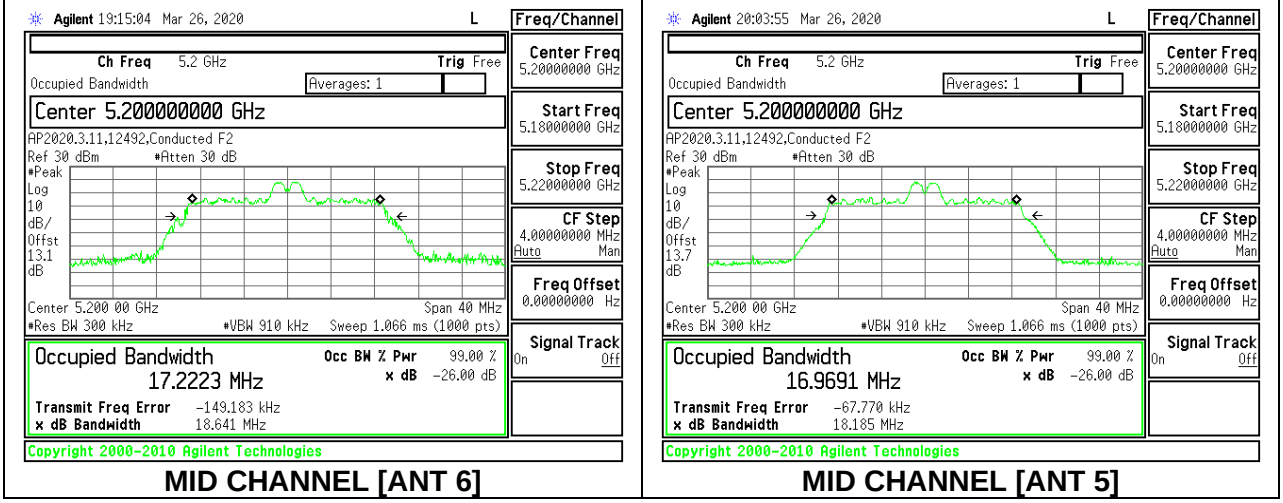
Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5180	19.45	18.40	17.2301	16.9340
Mid	5200	19.35	18.35	17.2223	16.9691
High	5240	19.45	18.40	17.1120	16.9932

MID CHANNEL 26dB



MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

MID CHANNEL OBW

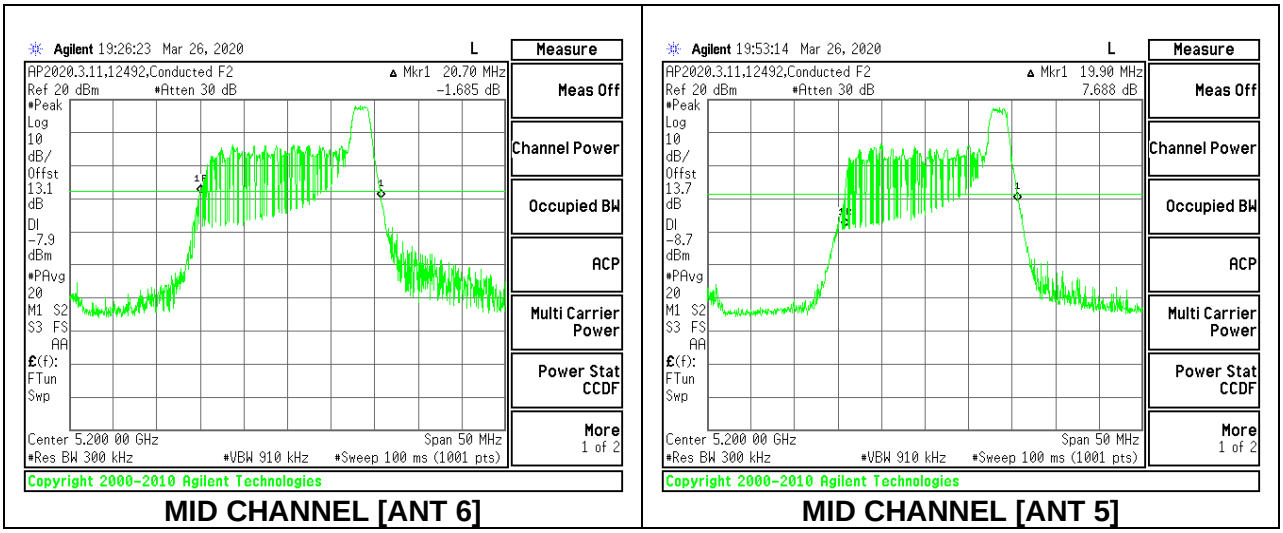


MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

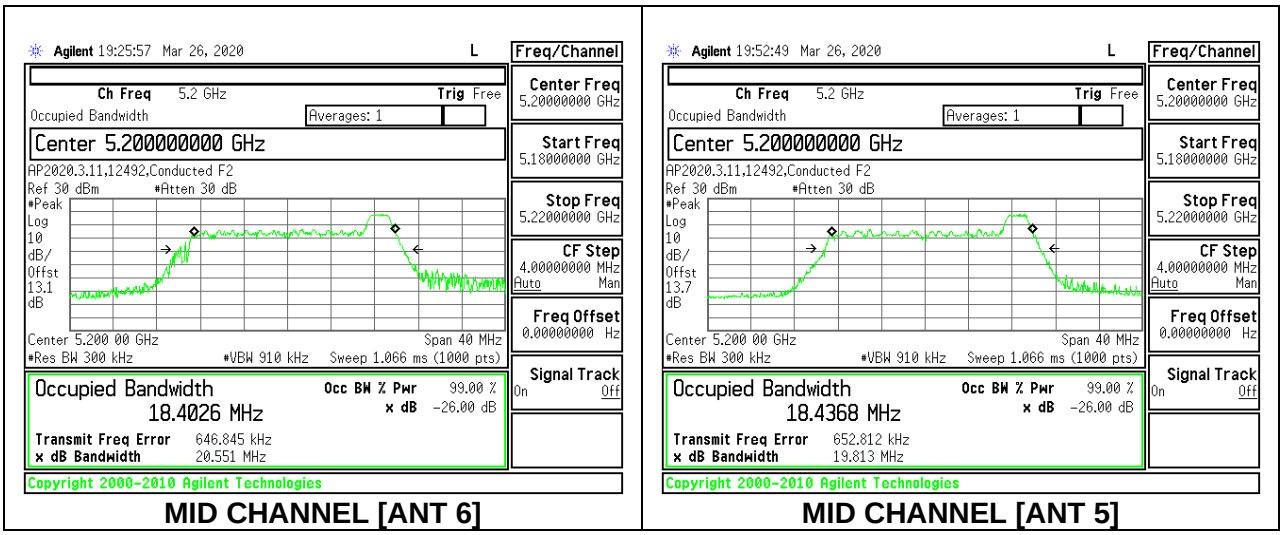
Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5180	20.70	19.95	18.5981	18.3487
Mid	5200	20.70	19.90	18.4026	18.4368
High	5240	20.70	19.85	18.5936	18.2887

MID CHANNEL 26dB



MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

MID CHANNEL OBW

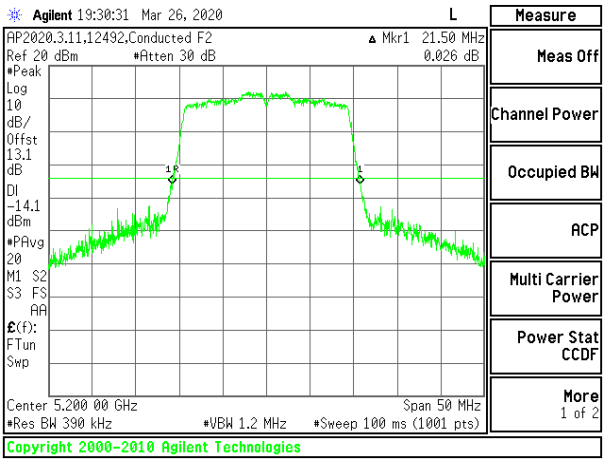


MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

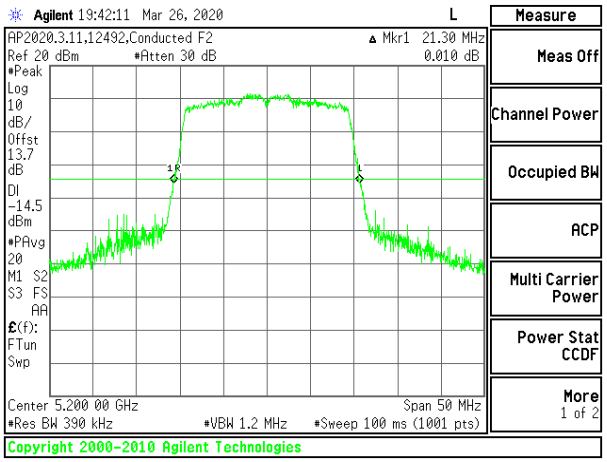
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 61

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5180	21.60	21.20	18.9307	18.7863
Mid	5200	21.50	21.30	18.7600	18.8865
High	5240	21.60	21.30	18.6898	18.9084

MID CHANNEL 26dB

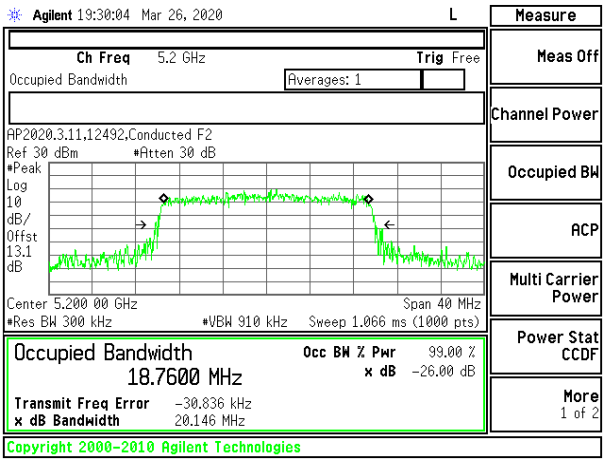


MID CHANNEL [ANT 6]

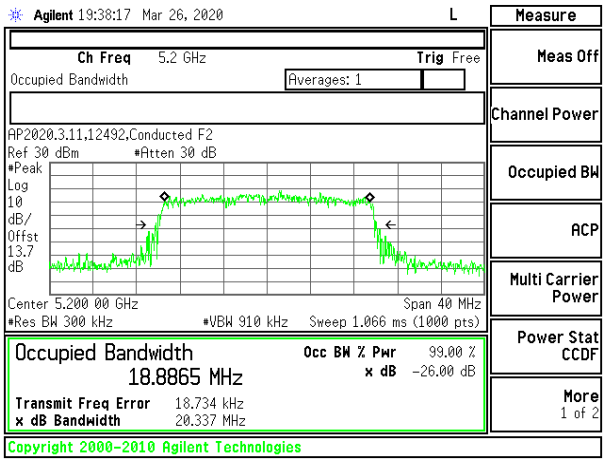


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

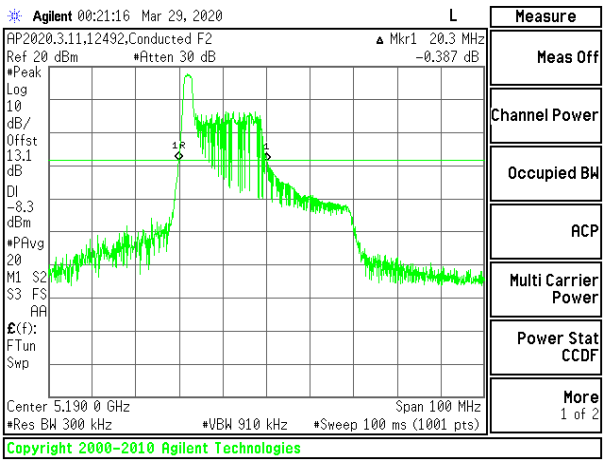


MID CHANNEL [ANT 5]

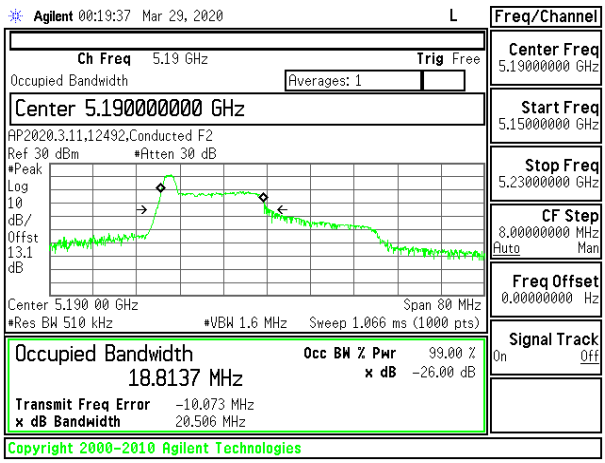
8.2.5. 802.11ax HE40 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.30	18.8137
High	5230	20.30	18.7988



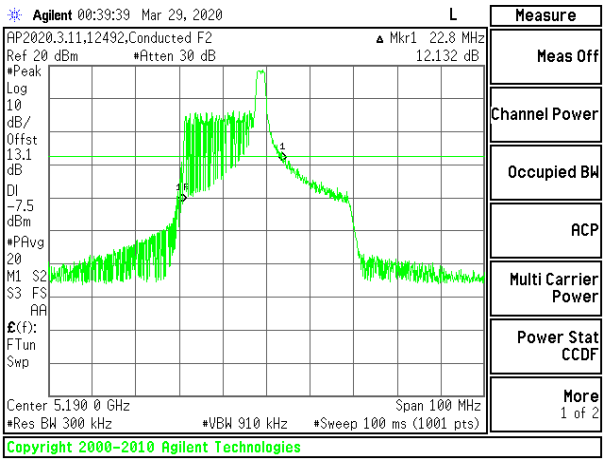
LOW CHANNEL 26dB



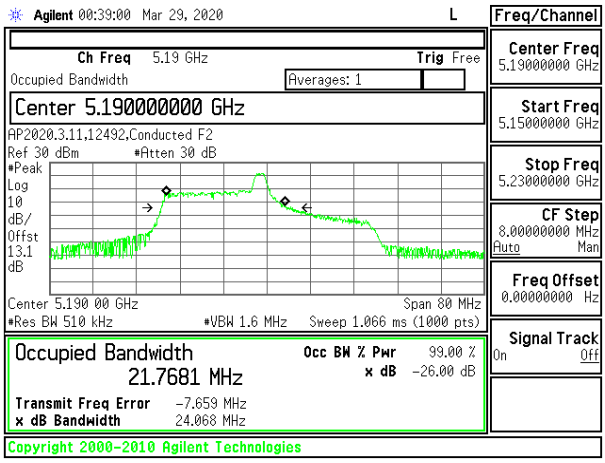
LOW CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	22.80	21.7681
High	5230	22.70	21.8593



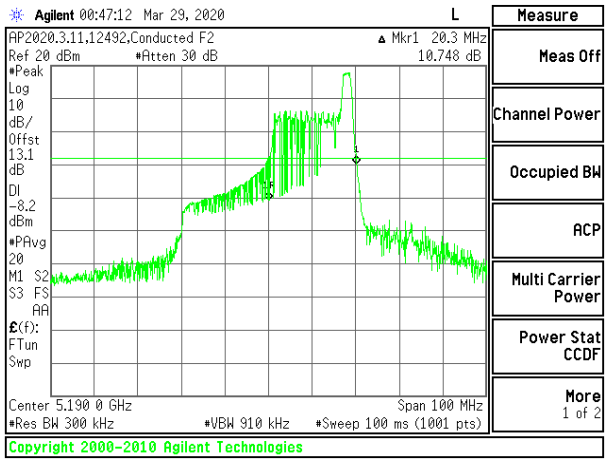
LOW CHANNEL 26dB



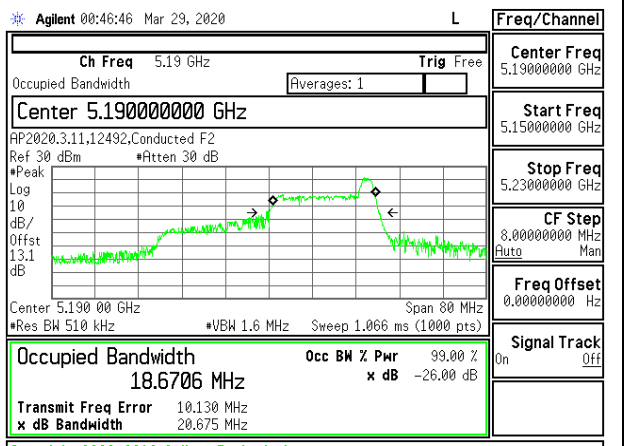
LOW CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.30	18.6706
High	5230	20.20	18.4011



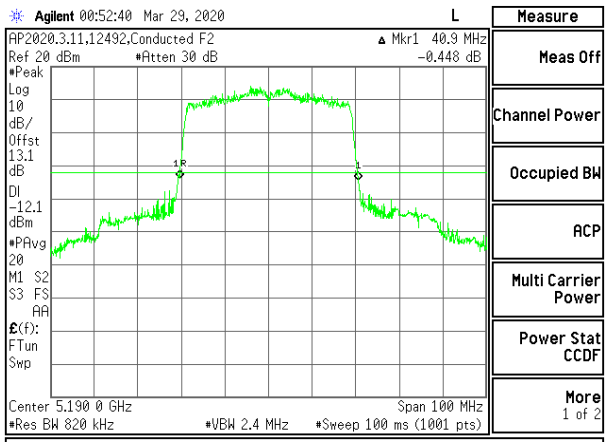
LOW CHANNEL 26dB



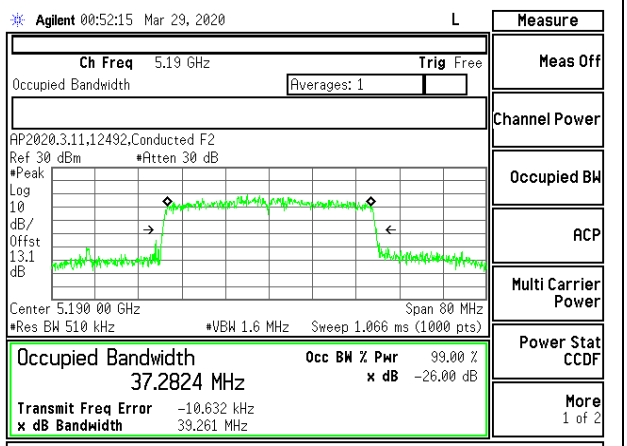
LOW CHANNEL OBW

1TX Antenna 6 MODE: 484 Tones, RU Index 65

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	40.90	37.2824
High	5230	40.90	37.5022



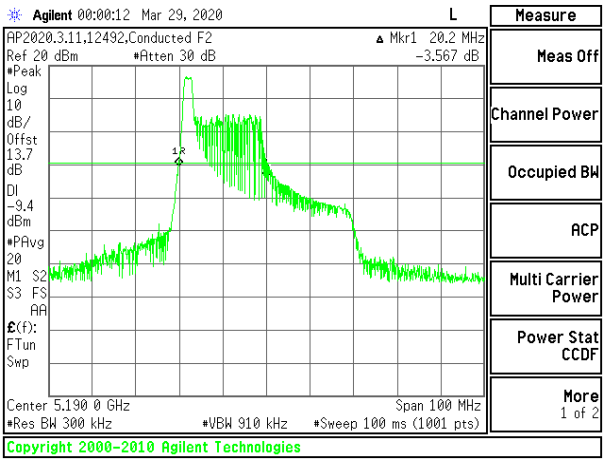
LOW CHANNEL 26dB



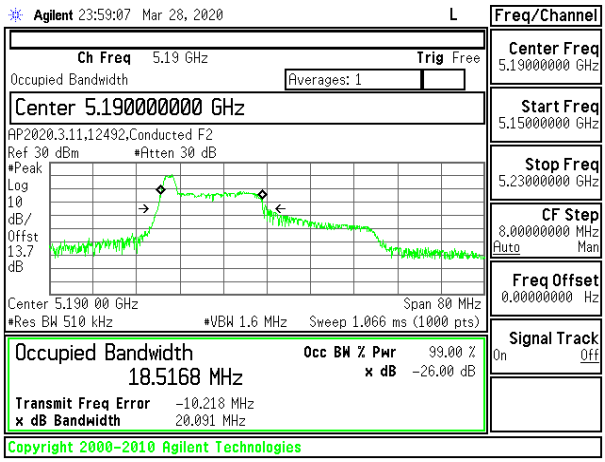
LOW CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.20	18.5168
High	5230	20.20	18.2952



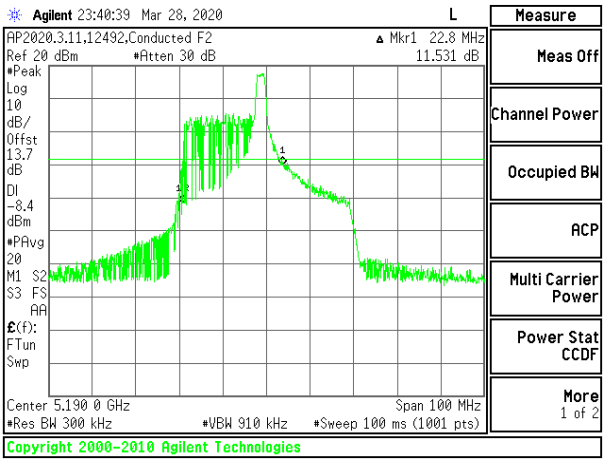
LOW CHANNEL 26dB



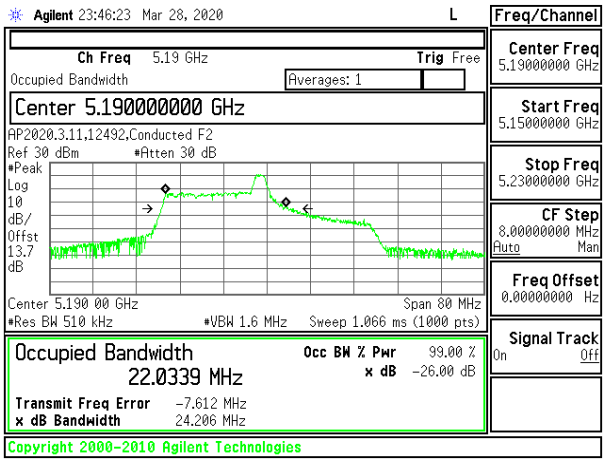
LOW CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	22.80	22.0339
High	5230	24.00	22.0341



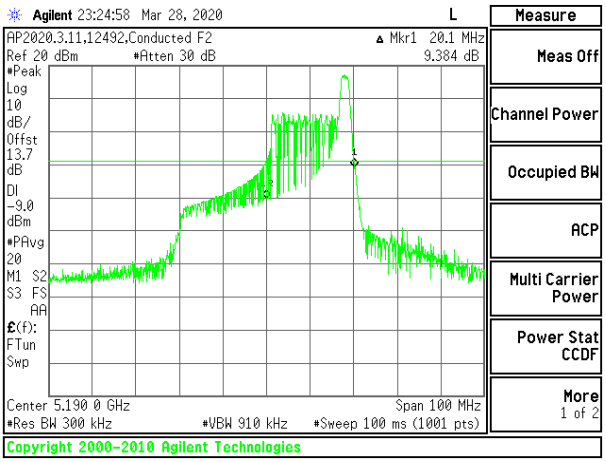
LOW CHANNEL 26dB



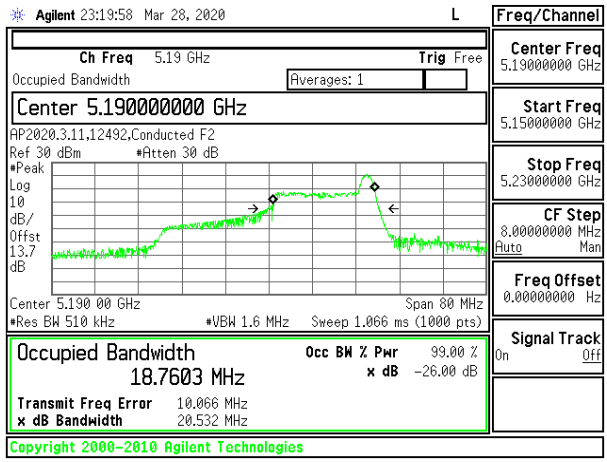
LOW CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.10	18.7603
High	5230	20.50	18.7488



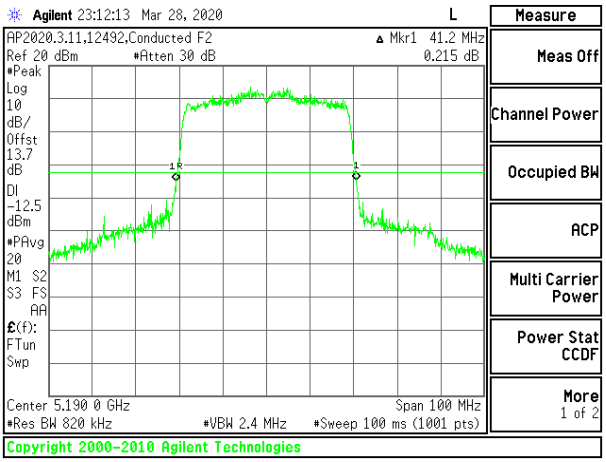
LOW CHANNEL 26dB



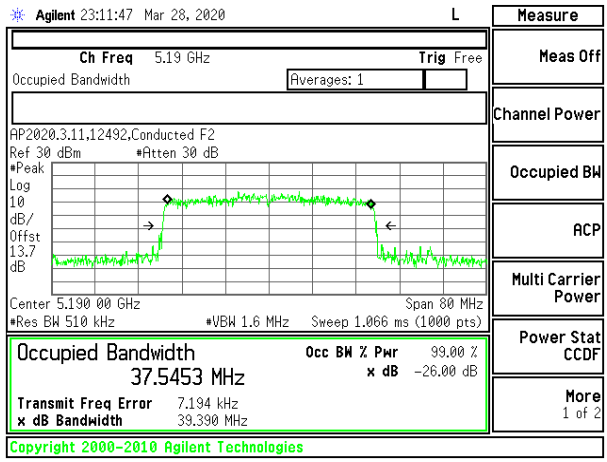
LOW CHANNEL OBW

1TX Antenna 5 MODE: 484 Tones, RU Index 65

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	41.20	37.5453
High	5230	41.00	37.4923



LOW CHANNEL 26dB

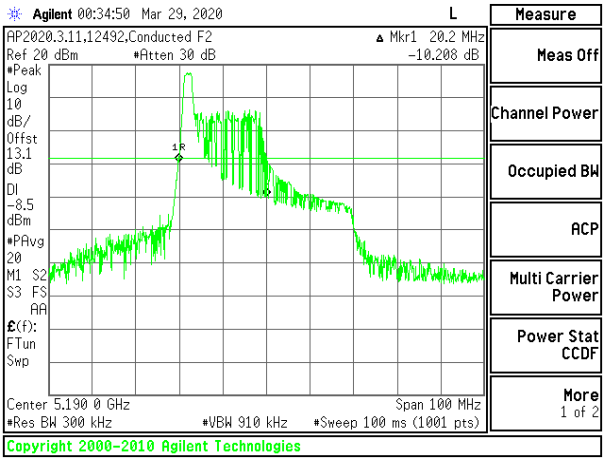


LOW CHANNEL OBW

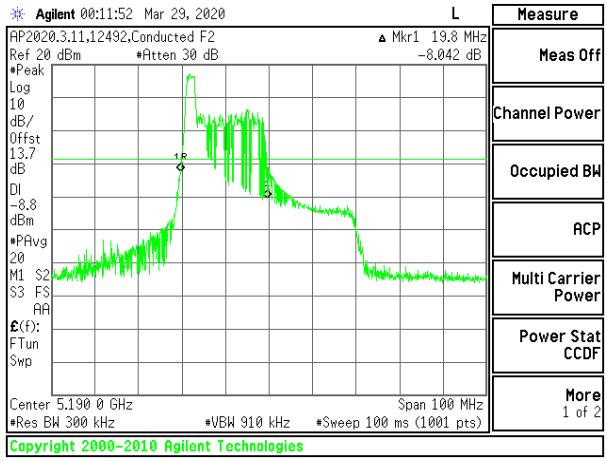
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5190	20.20	19.80	18.6165	18.2566
High	5230	20.30	19.60	18.6748	18.3012

LOW CHANNEL 26dB

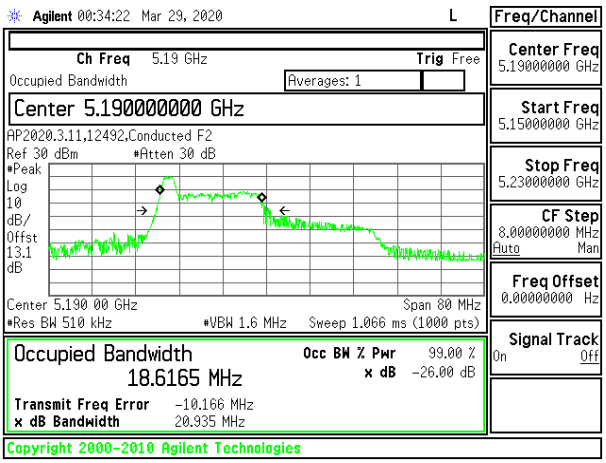


LOW CHANNEL [ANT 6]

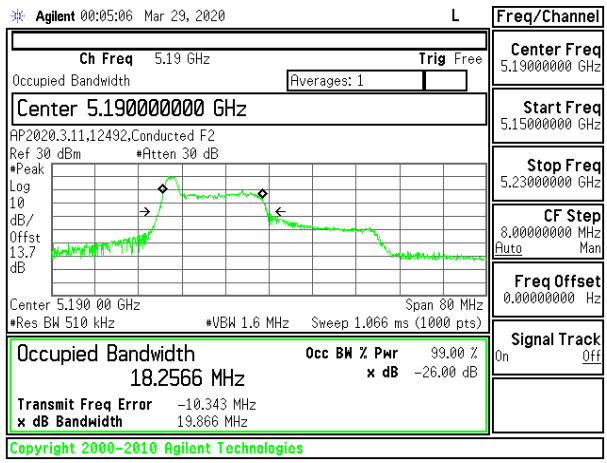


LOW CHANNEL [ANT 5]

LOW CHANNEL OBW



LOW CHANNEL [ANT 6]

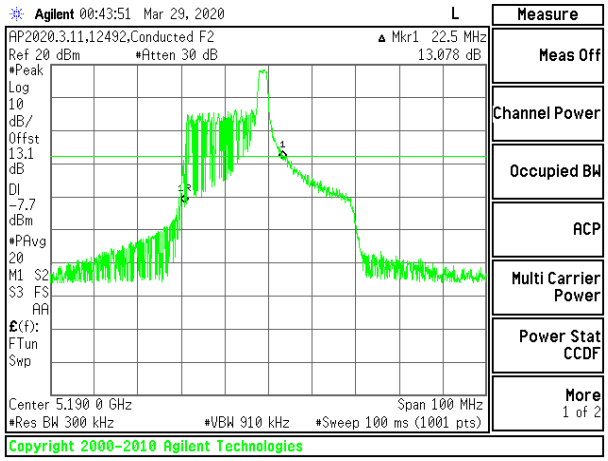


LOW CHANNEL [ANT 5]

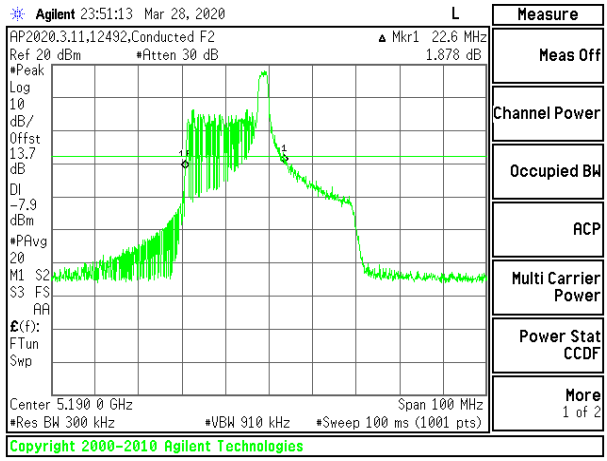
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5190	22.50	22.60	21.9822	21.4597
High	5230	23.30	22.10	22.3299	21.4755

LOW CHANNEL 26dB

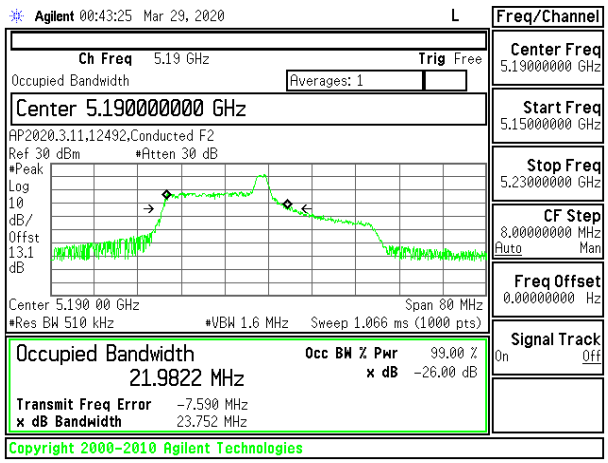


LOW CHANNEL [ANT 6]

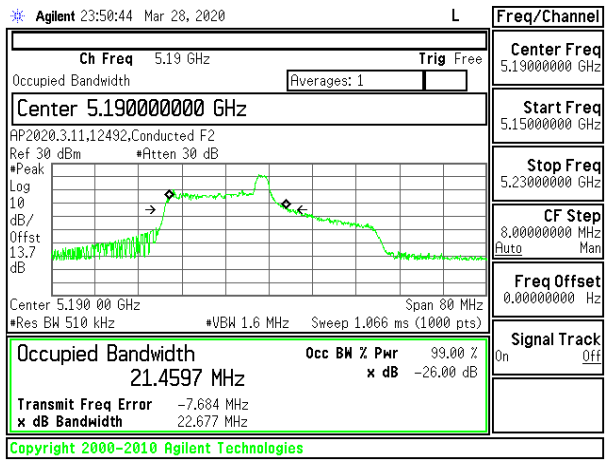


LOW CHANNEL [ANT 5]

LOW CHANNEL OBW



LOW CHANNEL [ANT 6]

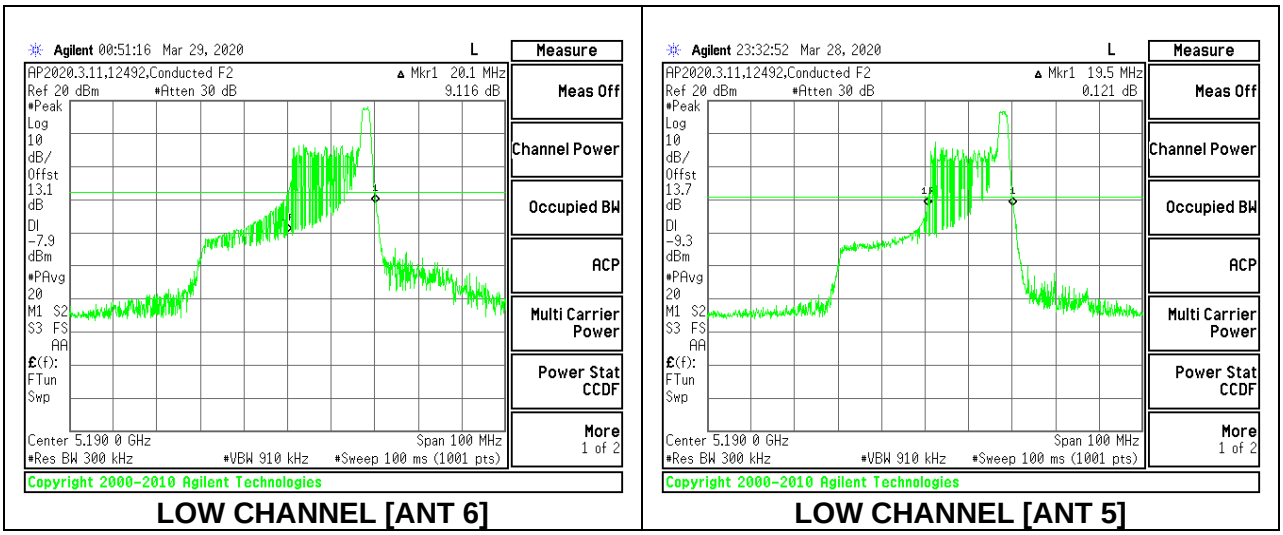


LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 17

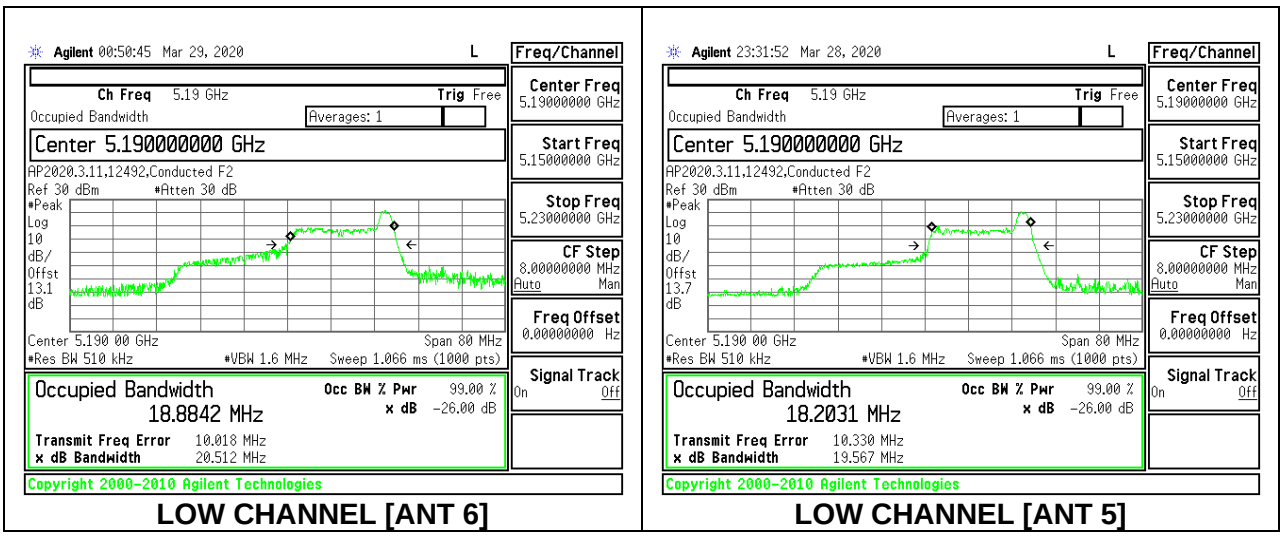
Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5190	20.10	19.50	18.8842	18.2031
High	5230	20.30	19.50	19.1354	18.2868

LOW CHANNEL 26dB



LOW CHANNEL [ANT 6] **LOW CHANNEL [ANT 5]**

LOW CHANNEL OBW

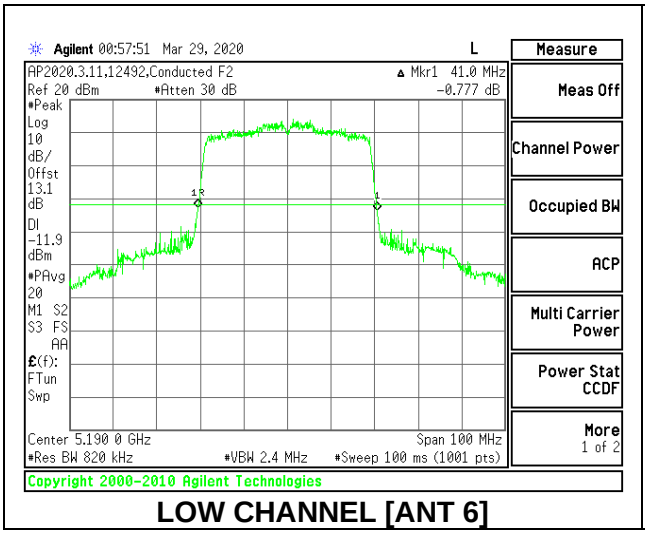


LOW CHANNEL [ANT 6] **LOW CHANNEL [ANT 5]**

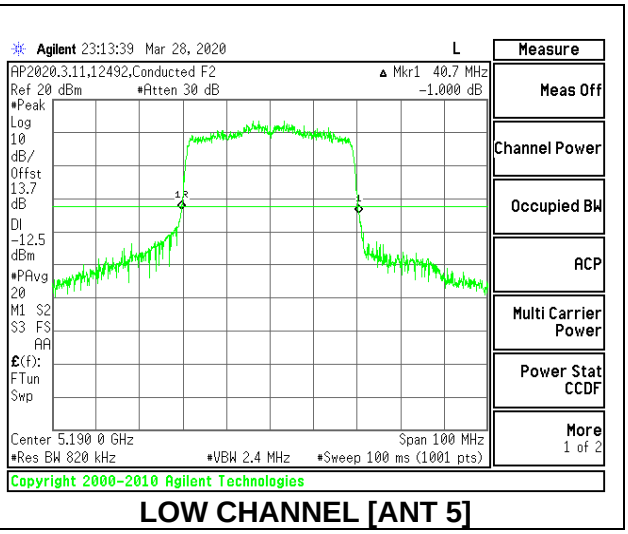
2TX Antenna 6 + Antenna 5 CDD MODE: 484 Tones, RU Index 65

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5190	41.00	40.70	37.4739	37.5069
High	5230	41.20	40.90	37.6202	37.4167

LOW CHANNEL 26dB

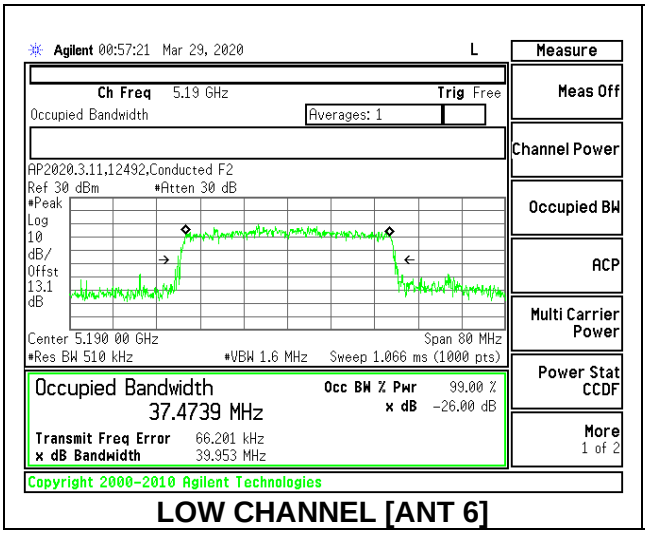


LOW CHANNEL [ANT 6]

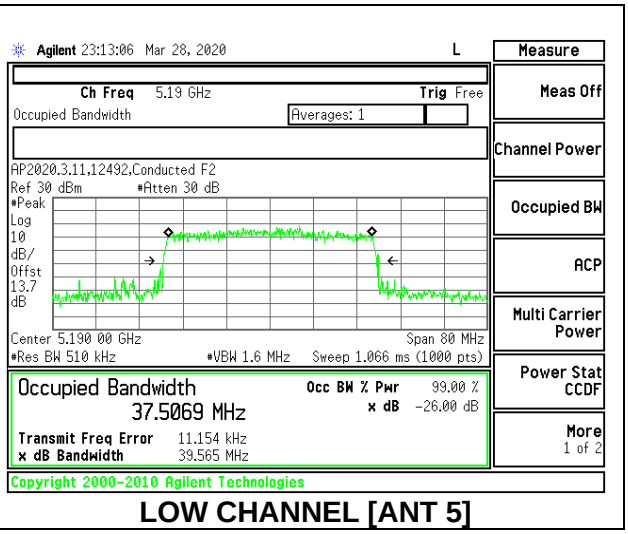


LOW CHANNEL [ANT 5]

LOW CHANNEL OBW



LOW CHANNEL [ANT 6]

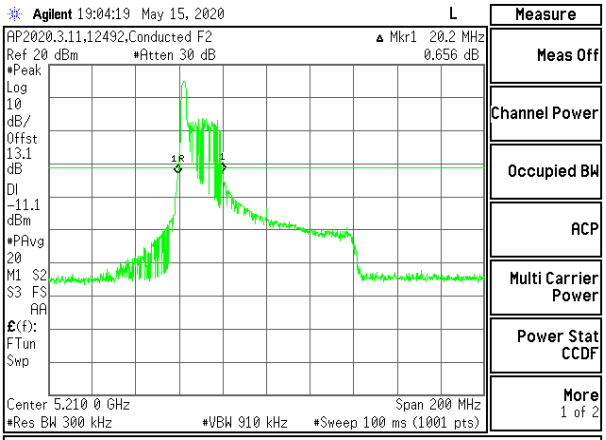


LOW CHANNEL [ANT 5]

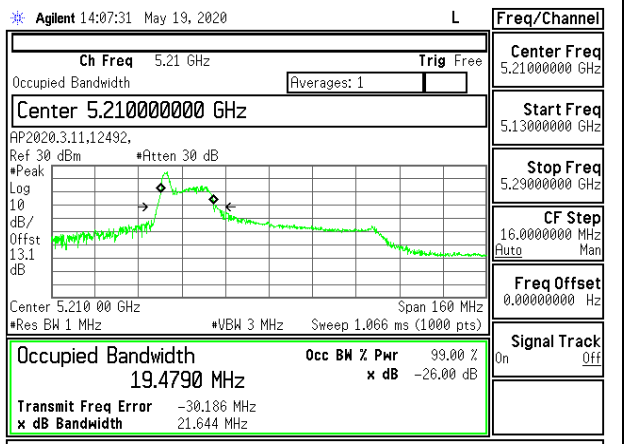
8.2.6. 802.11ax HE80 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	20.20	19.4790



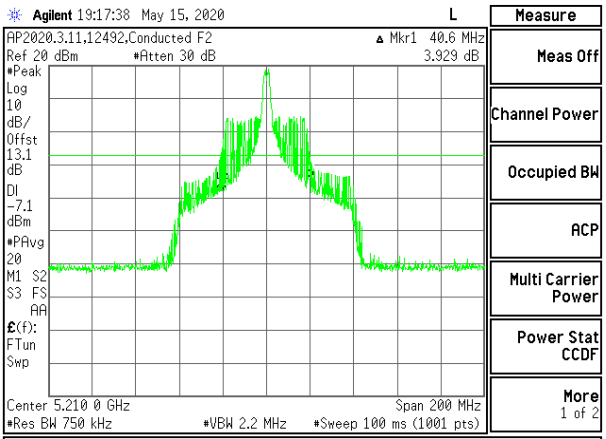
MID CHANNEL 26dB



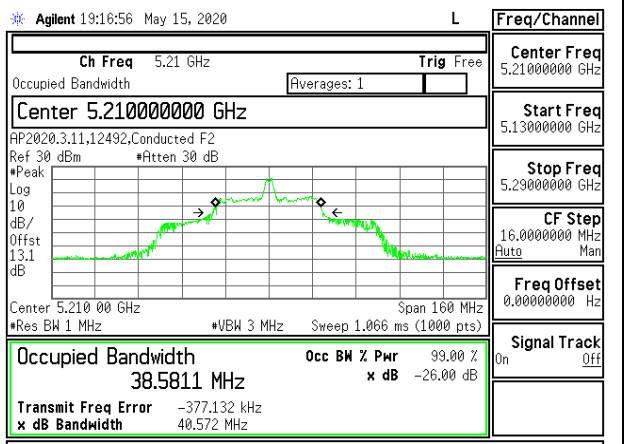
MID CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	40.60	38.5811



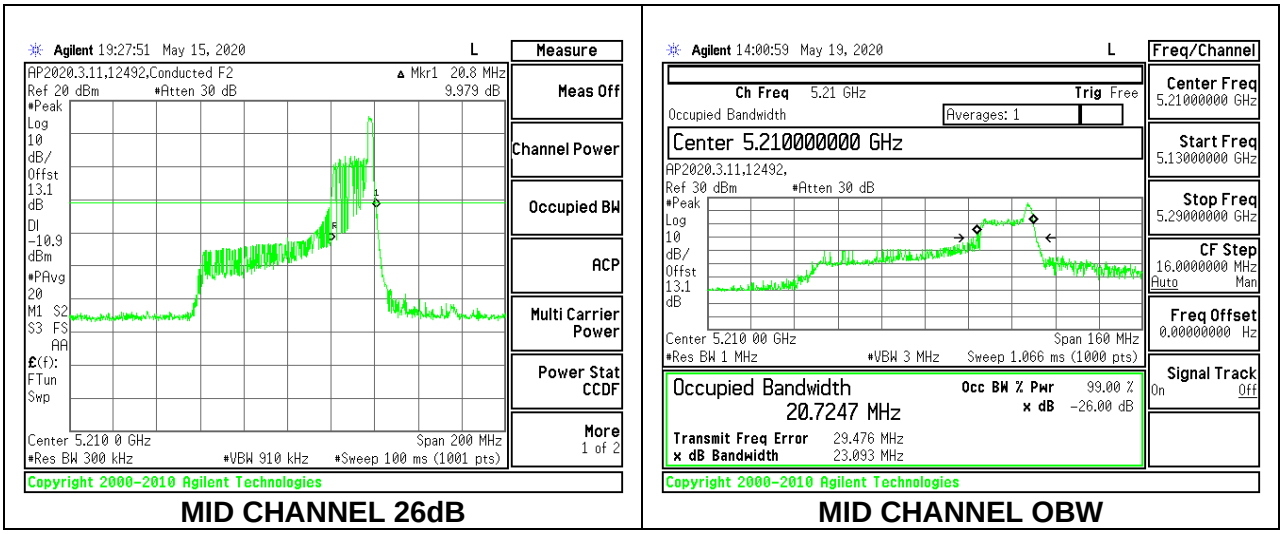
MID CHANNEL 26dB



MID CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 36

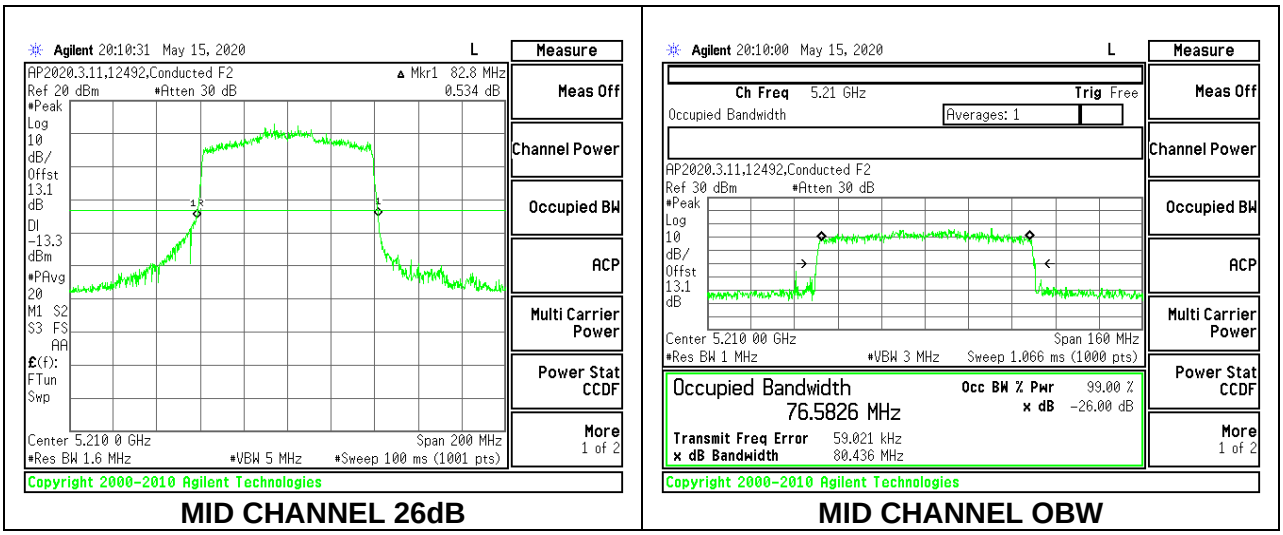
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	20.80	20.7247



MID CHANNEL 26dB **MID CHANNEL OBW**

1TX Antenna 6 MODE: 996 Tones, RU Index 67

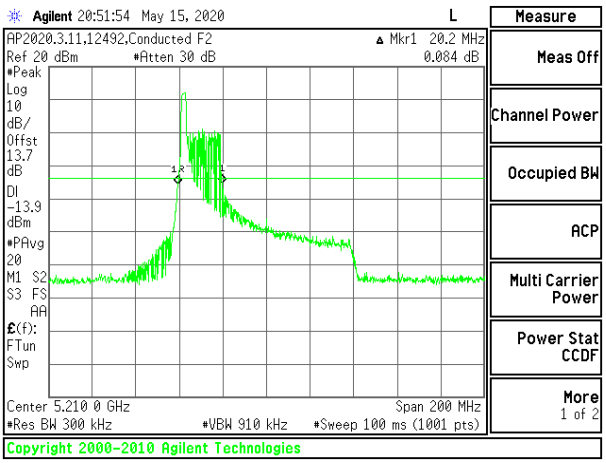
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	82.80	76.5826



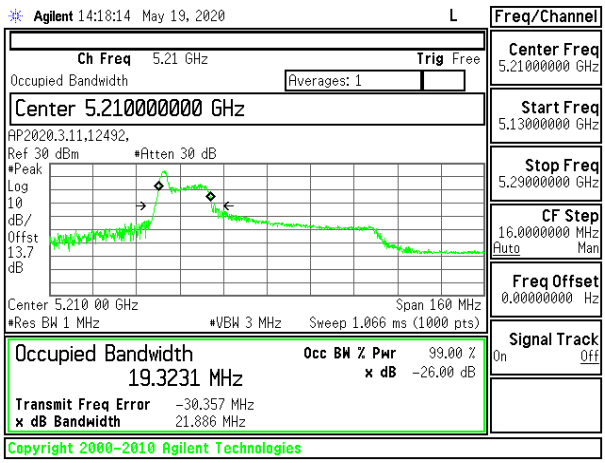
MID CHANNEL 26dB **MID CHANNEL OBW**

1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	20.20	19.3231



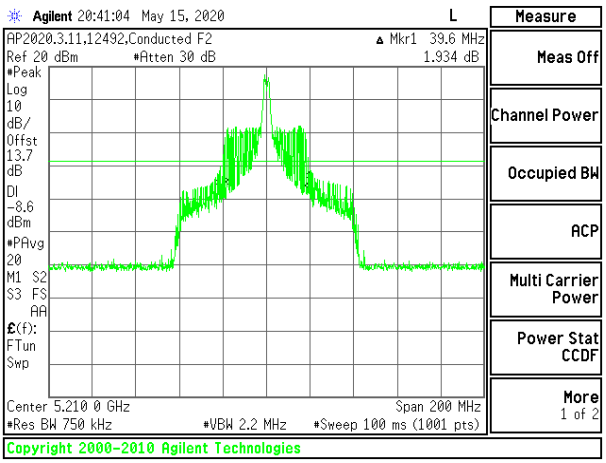
MID CHANNEL 26dB



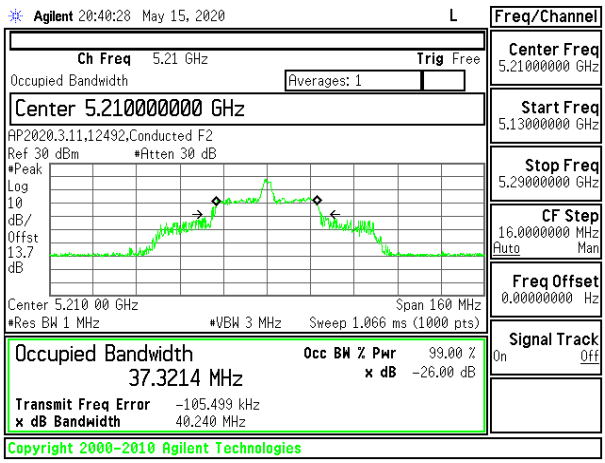
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	39.60	37.3214



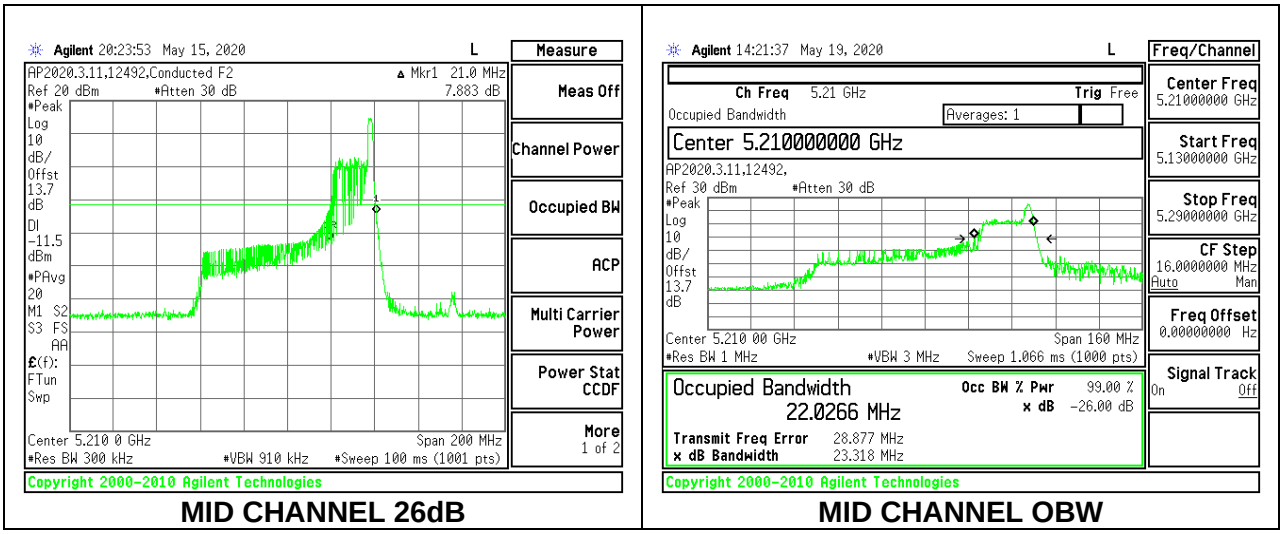
MID CHANNEL 26dB



MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 36

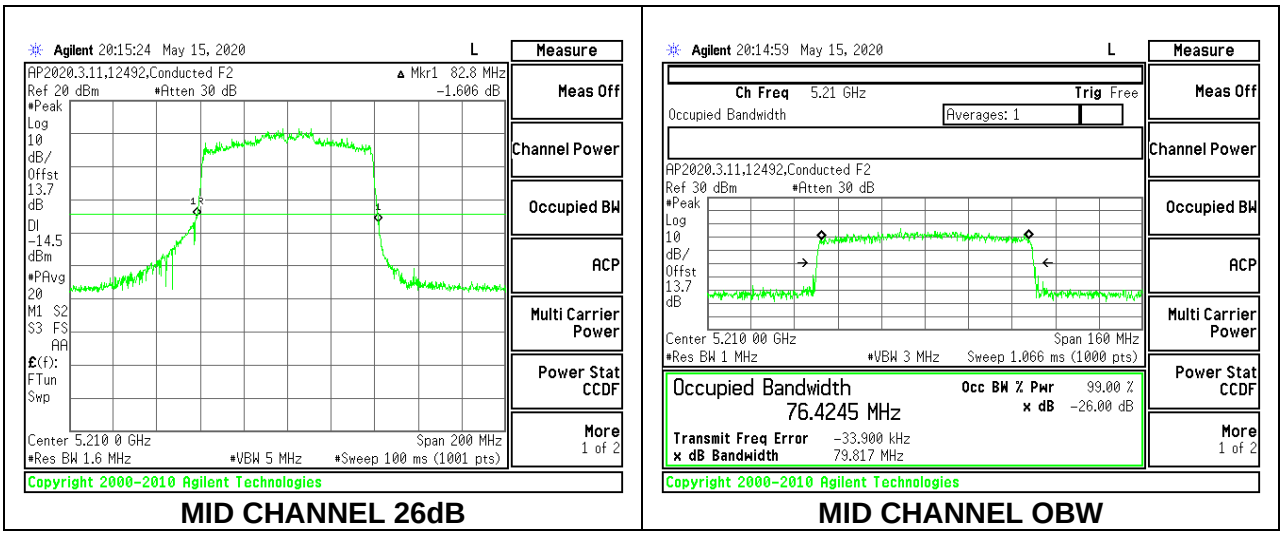
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	21.00	22.0266



MID CHANNEL 26dB **MID CHANNEL OBW**

1TX Antenna 5 MODE: 996 Tones, RU Index 67

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	82.80	76.4245

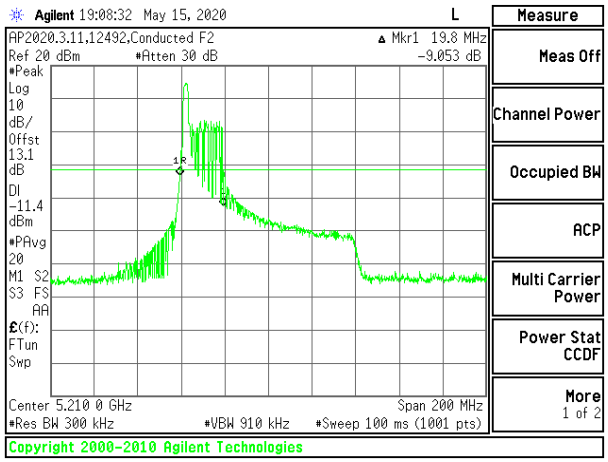


MID CHANNEL 26dB **MID CHANNEL OBW**

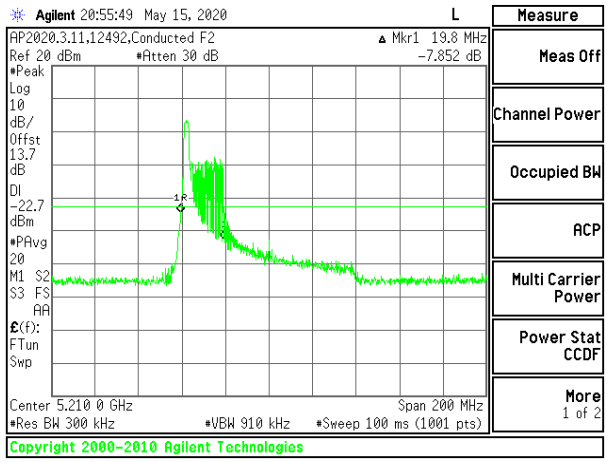
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5210	19.80	19.80	19.4960	19.1357

MID CHANNEL 26dB

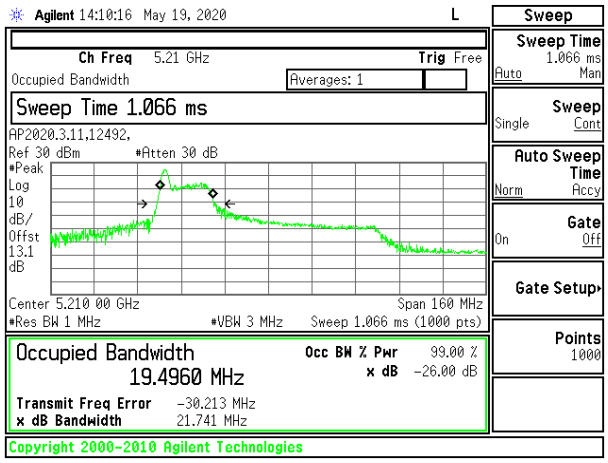


MID CHANNEL [ANT 6]

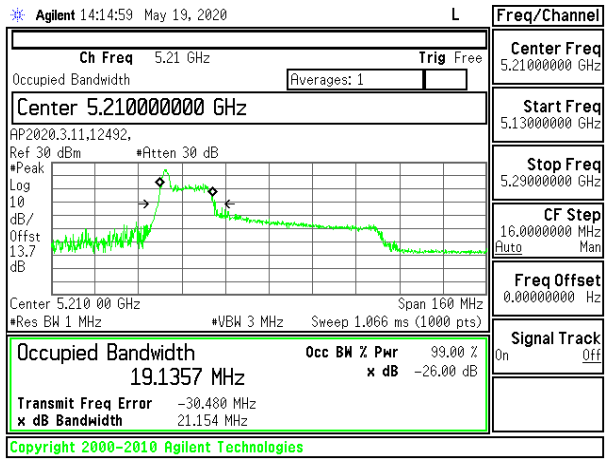


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

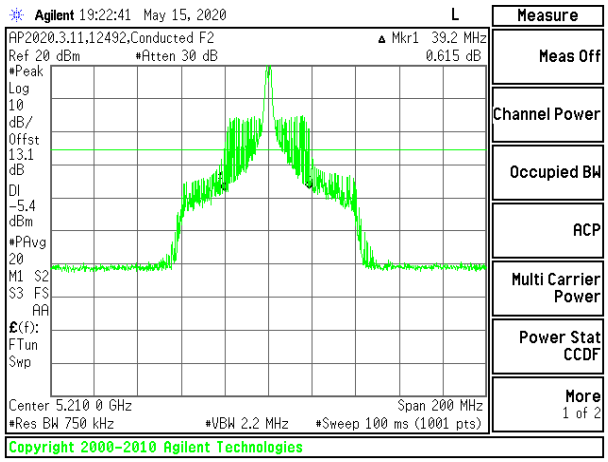


MID CHANNEL [ANT 5]

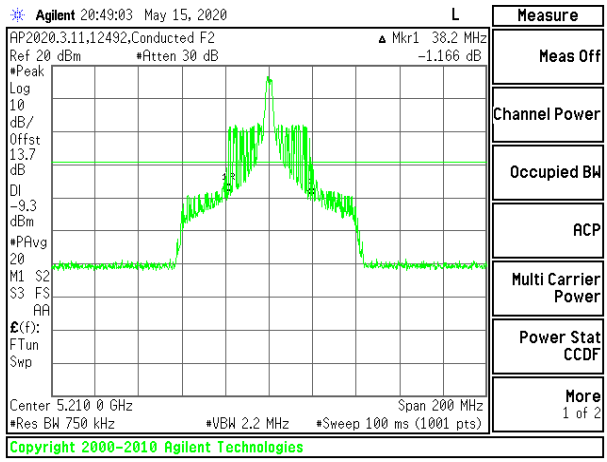
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5210	39.20	38.20	37.7820	36.9105

MID CHANNEL 26dB

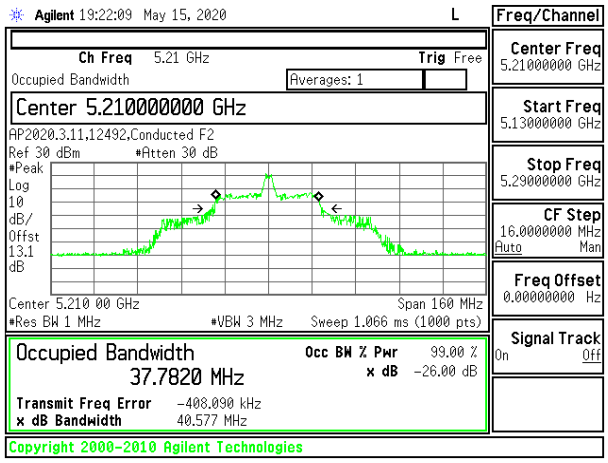


MID CHANNEL [ANT 6]

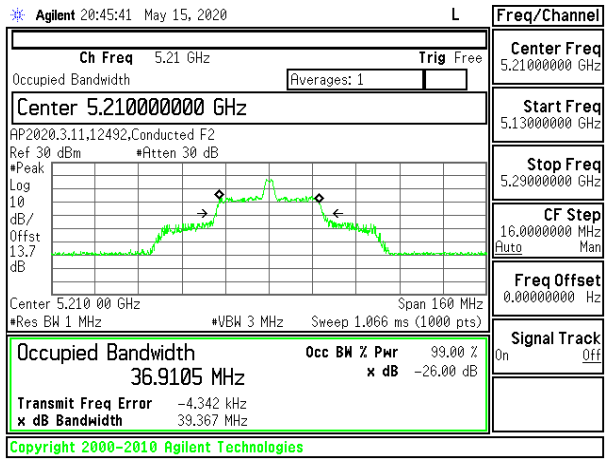


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

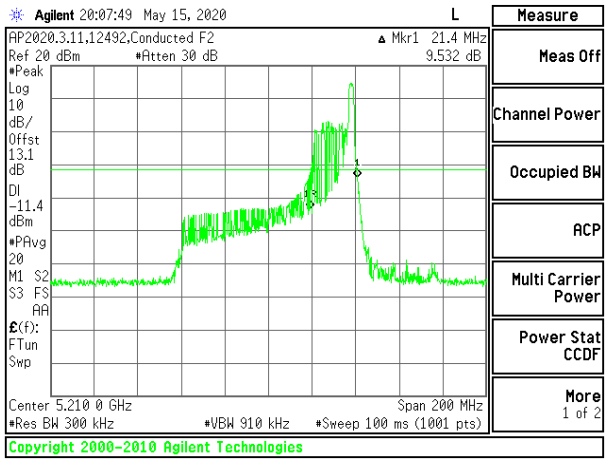


MID CHANNEL [ANT 5]

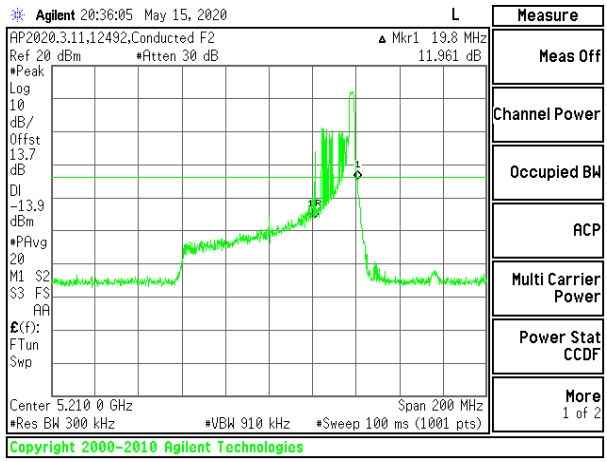
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5210	21.40	19.80	20.4127	18.9580

MID CHANNEL 26dB

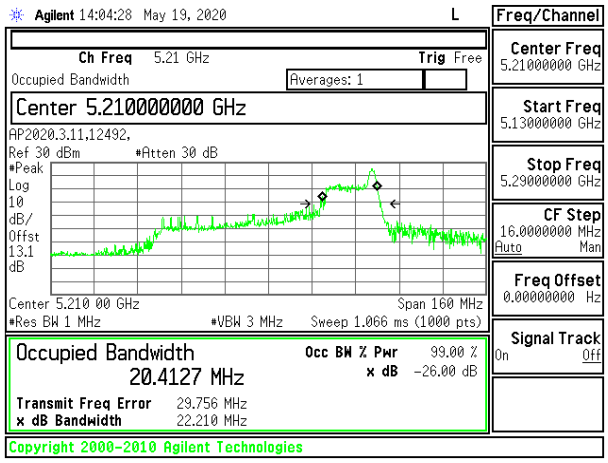


MID CHANNEL [ANT 6]

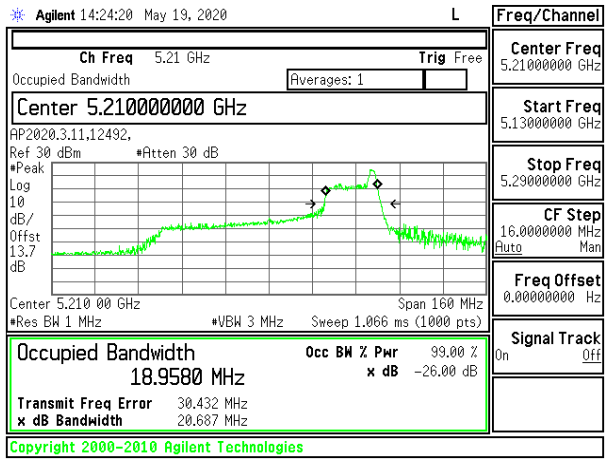


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

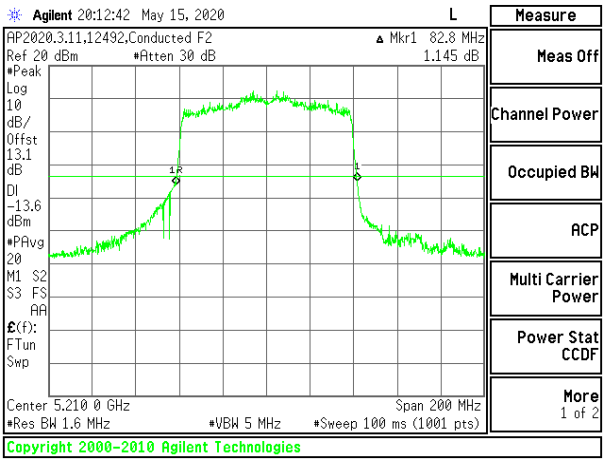


MID CHANNEL [ANT 5]

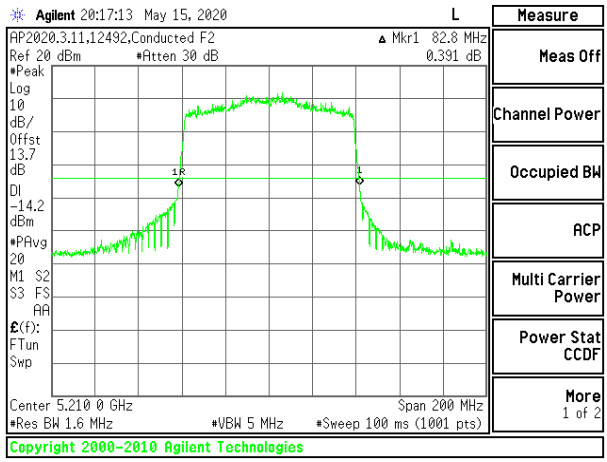
2TX Antenna 6 + Antenna 5 CDD MODE: 996 Tones, RU Index 667

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5210	82.80	82.80	76.5196	76.3900

MID CHANNEL 26dB

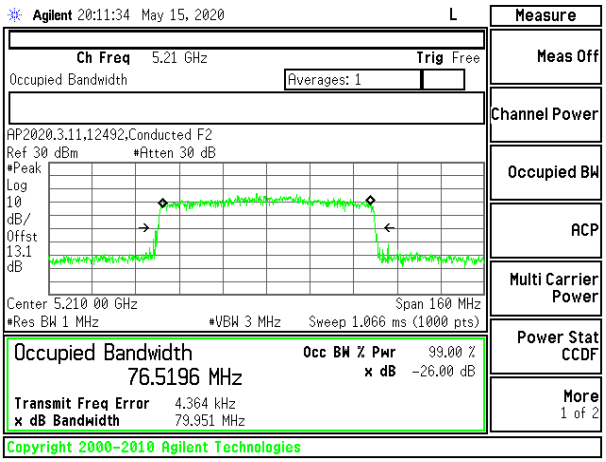


MID CHANNEL [ANT 6]

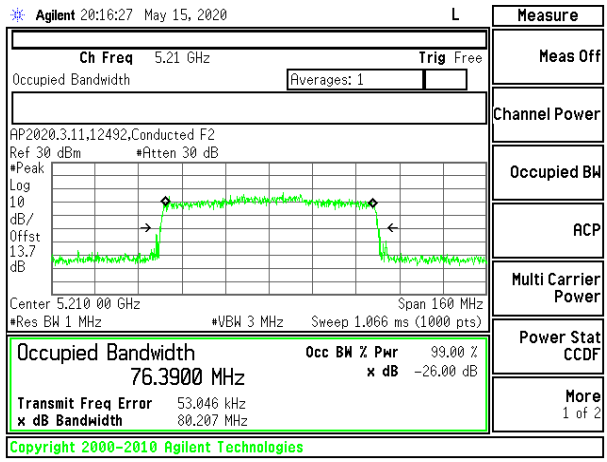


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

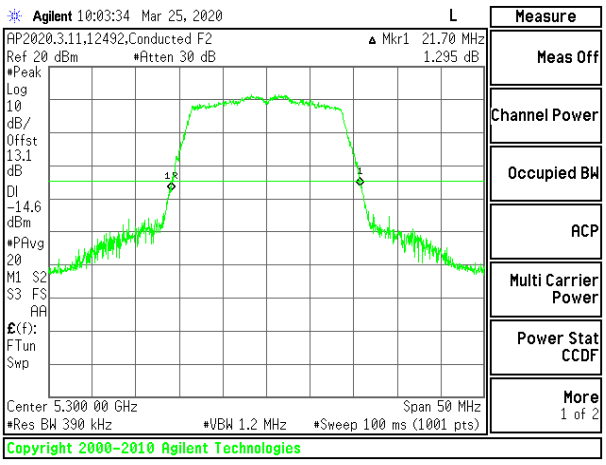


MID CHANNEL [ANT 5]

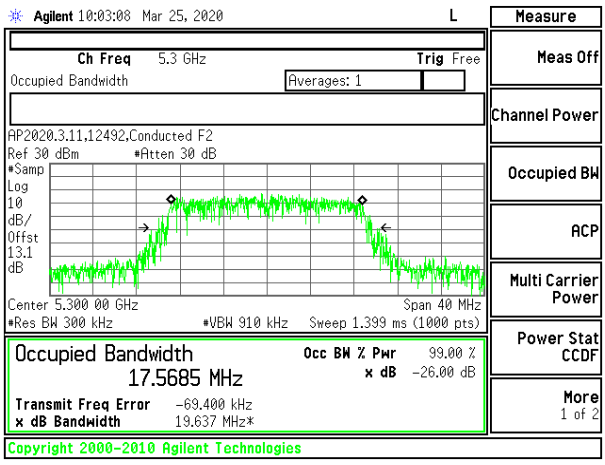
8.2.7. 802.11n HT20 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	21.50	17.6305
Mid	5300	21.70	17.5685
High	5320	21.70	17.6213



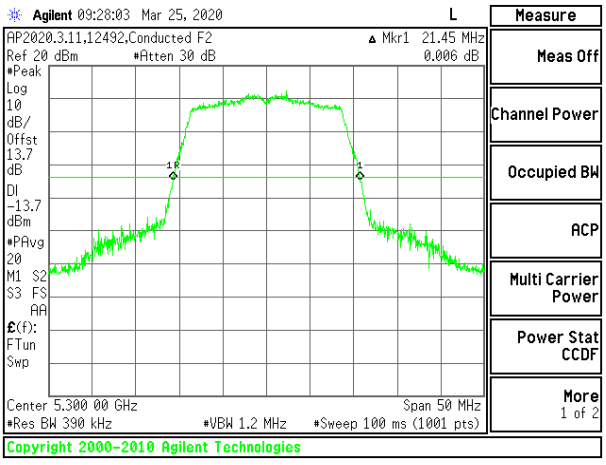
MID CHANNEL 26dB



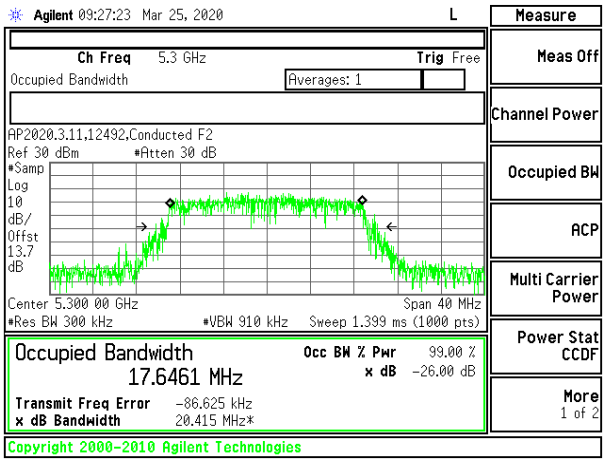
MID CHANNEL OBW

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	21.80	17.5888
Mid	5300	21.45	17.6461
High	5320	21.65	17.6975



MID CHANNEL 26dB

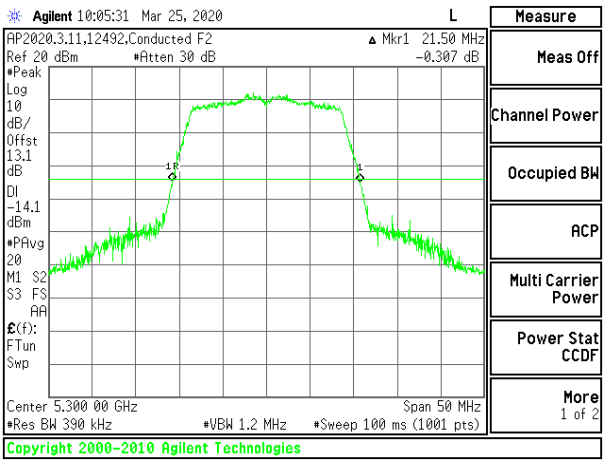


MID CHANNEL OBW

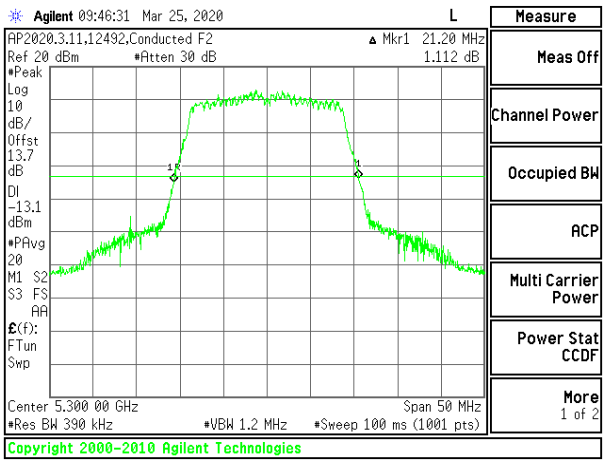
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5260	21.60	21.20	17.7031	17.6425
Mid	5300	21.50	21.20	17.5827	17.7502
High	5320	21.65	21.30	17.5934	17.6305

MID CHANNEL 26dB

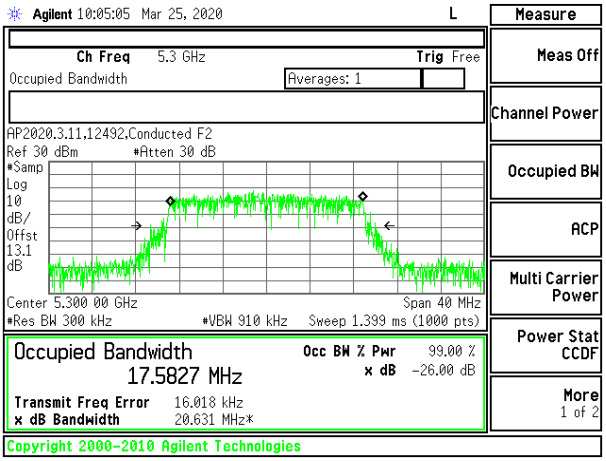


MID CHANNEL [ANT 6]

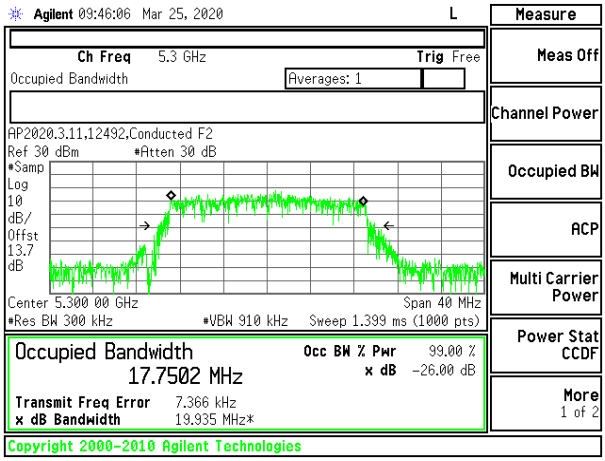


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

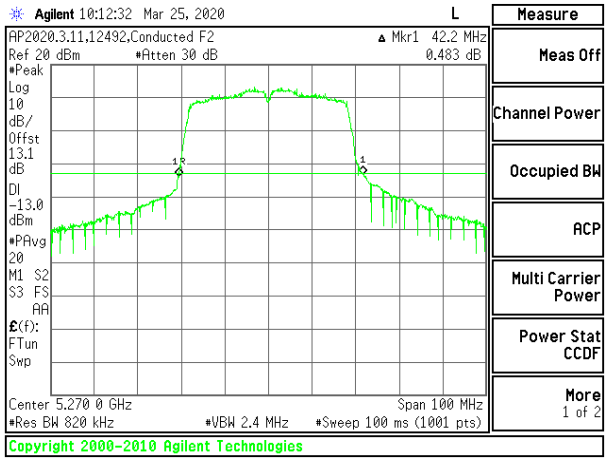


MID CHANNEL [ANT 5]

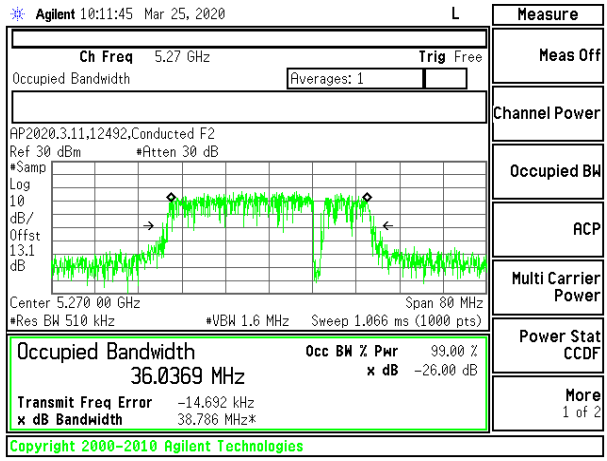
8.2.8. 802.11n HT40 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	42.20	36.0369
High	5310	42.00	36.2672



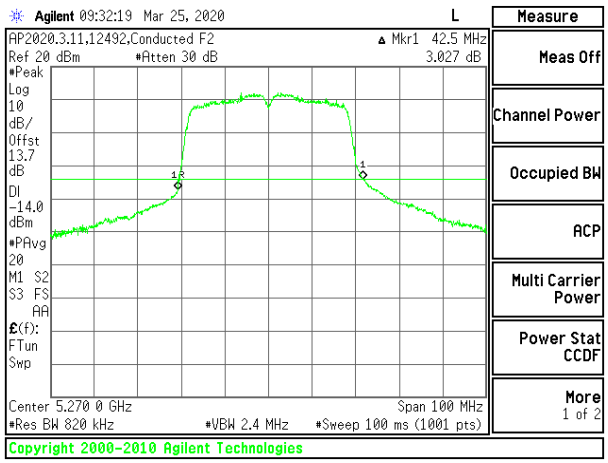
LOW CHANNEL 26dB



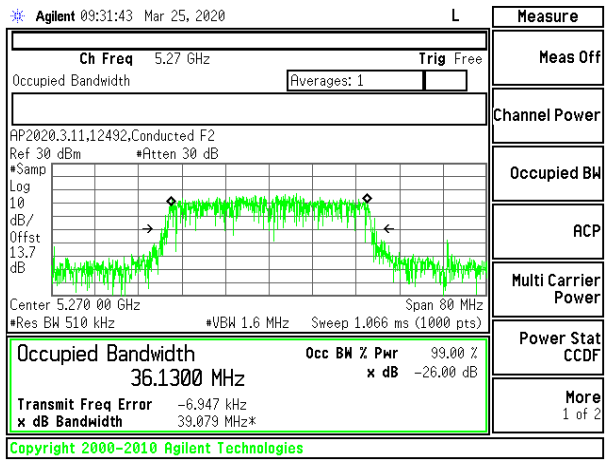
LOW CHANNEL OBW

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	42.50	36.1300
High	5310	42.40	36.0643



LOW CHANNEL 26dB

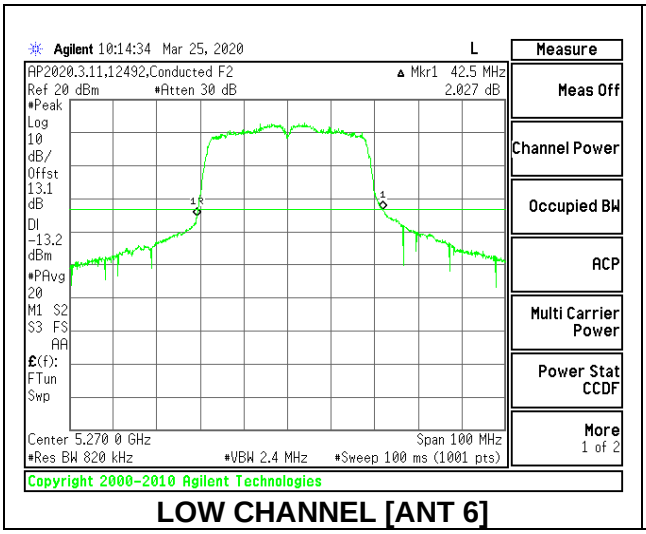


LOW CHANNEL OBW

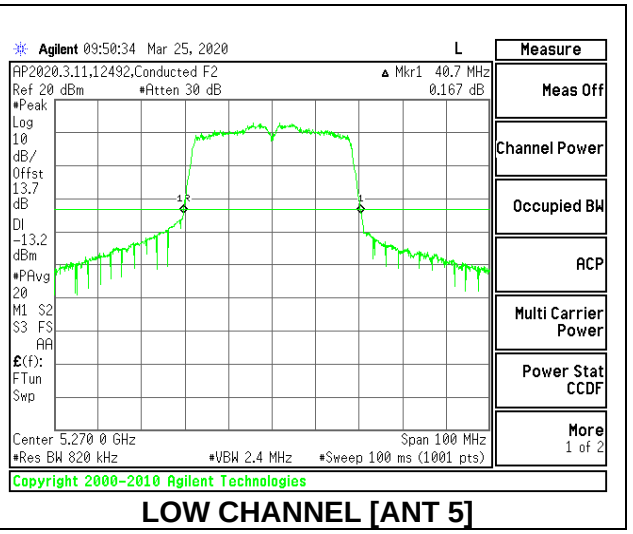
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5270	42.50	40.70	36.0744	36.1497
High	5310	42.20	40.80	36.1157	36.0632

LOW CHANNEL 26dB

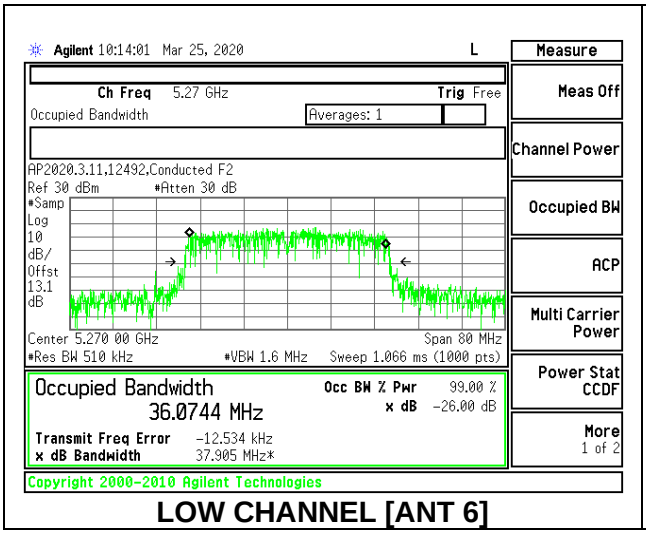


LOW CHANNEL [ANT 6]

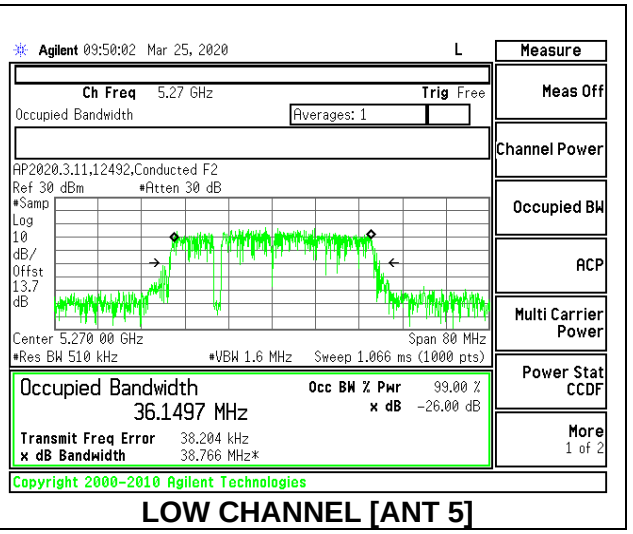


LOW CHANNEL [ANT 5]

LOW CHANNEL OBW



LOW CHANNEL [ANT 6]

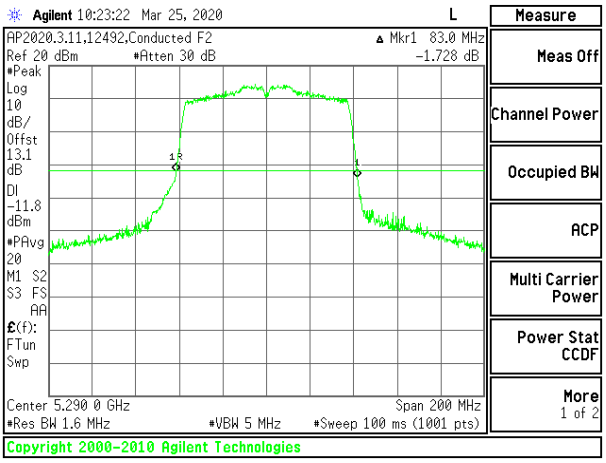


LOW CHANNEL [ANT 5]

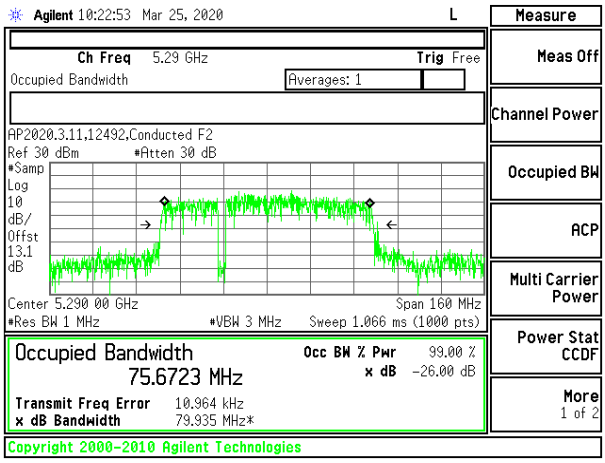
8.2.9. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5290	83.00	75.6723



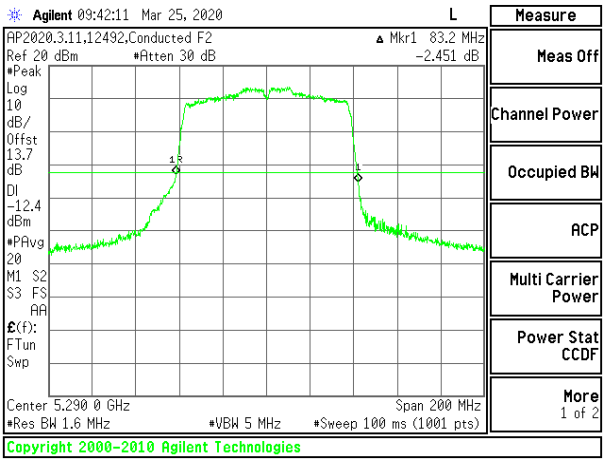
MID CHANNEL 26dB



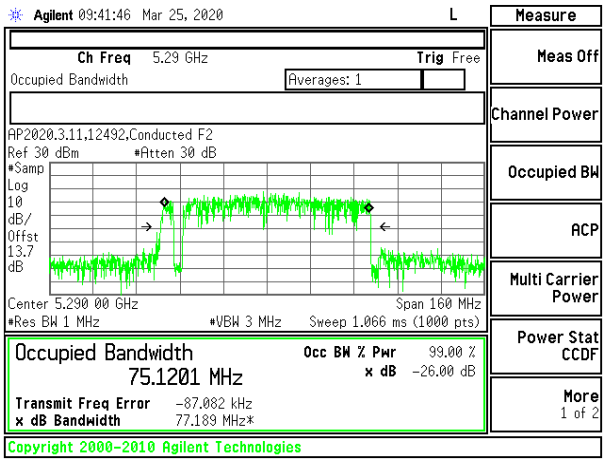
MID CHANNEL OBW

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5290	83.20	75.1201



MID CHANNEL 26dB

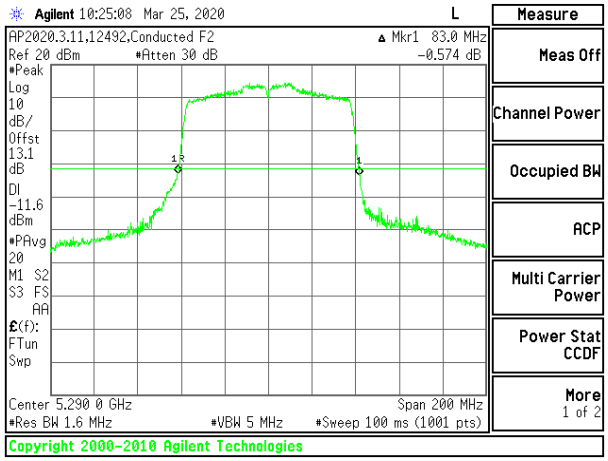


MID CHANNEL OBW

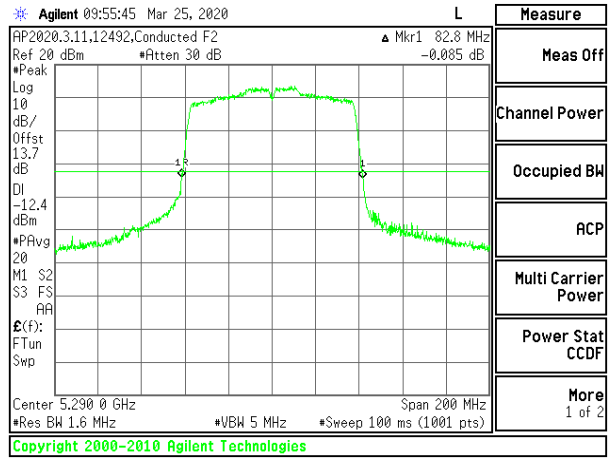
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5290	83.00	82.80	75.2483	75.1759

MID CHANNEL 26dB

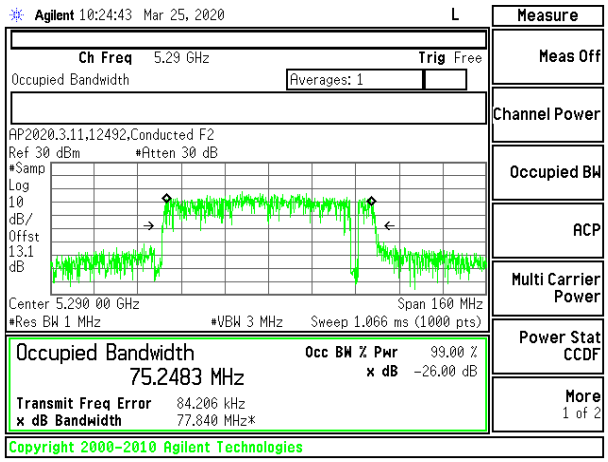


MID CHANNEL [ANT 6]

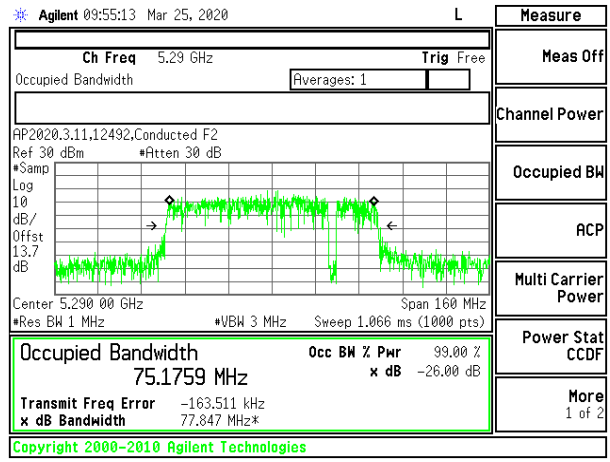


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

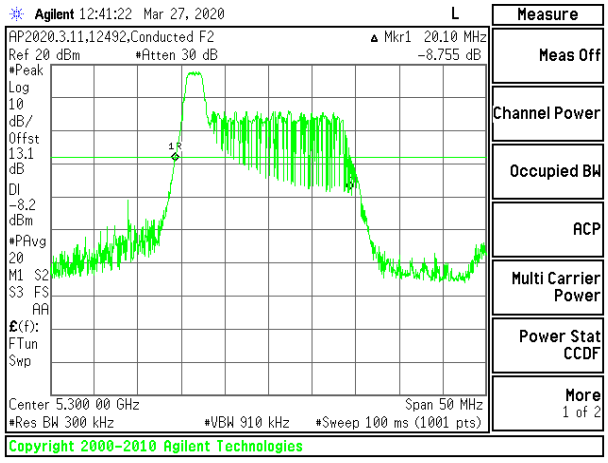


MID CHANNEL [ANT 5]

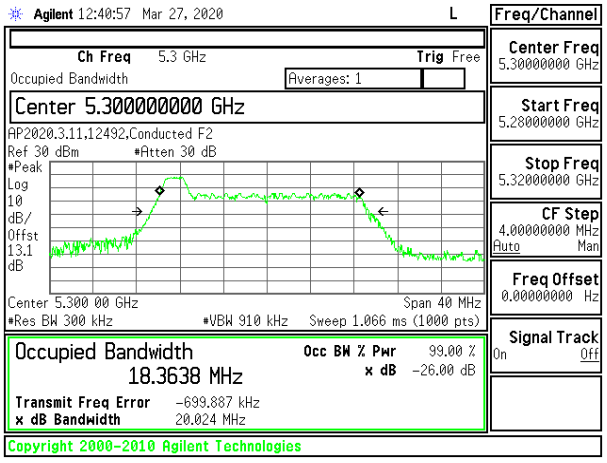
8.2.10. 802.11ax HE20 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.05	18.3900
Mid	5300	20.10	18.3638
High	5320	20.30	18.4252



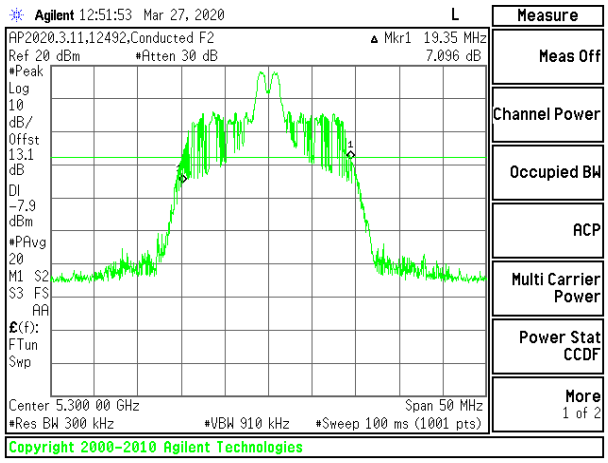
MID CHANNEL 26dB



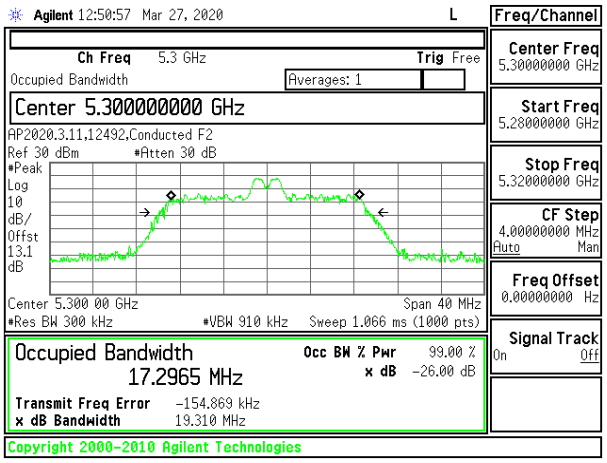
MID CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	19.35	17.1511
Mid	5300	19.35	17.2965
High	5320	19.45	17.2211



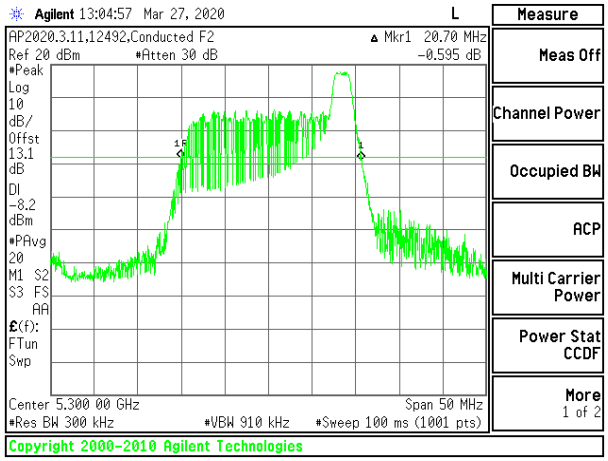
MID CHANNEL 26dB



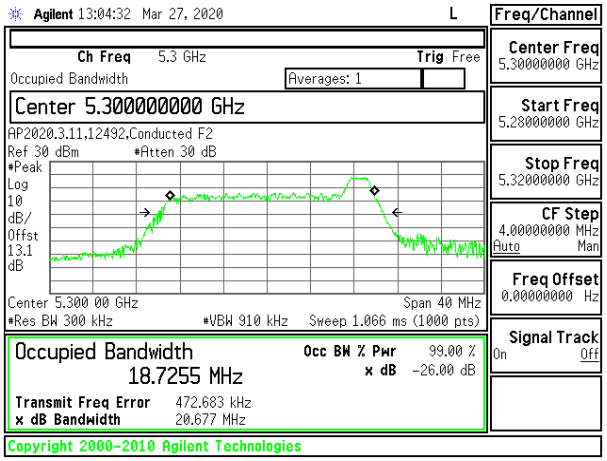
MID CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.65	18.5100
Mid	5300	20.70	18.7255
High	5320	20.55	18.7492



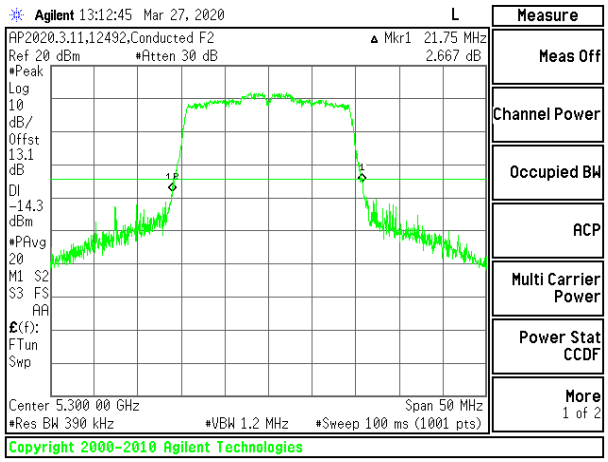
MID CHANNEL 26dB



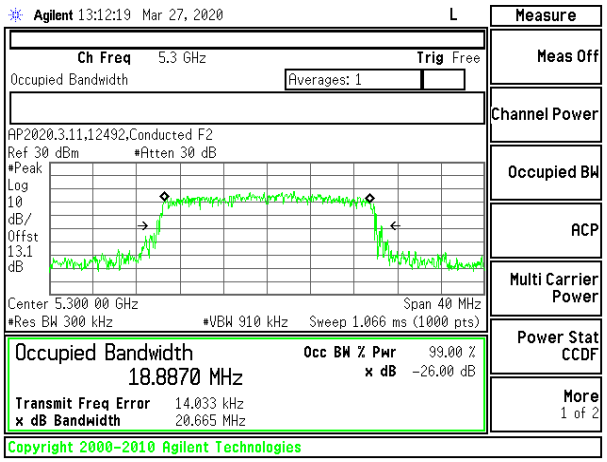
MID CHANNEL OBW

1TX Antenna 6 MODE: 242 Tones, RU Index 61

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	21.45	18.8872
Mid	5300	21.75	18.8870
High	5320	21.50	18.7909



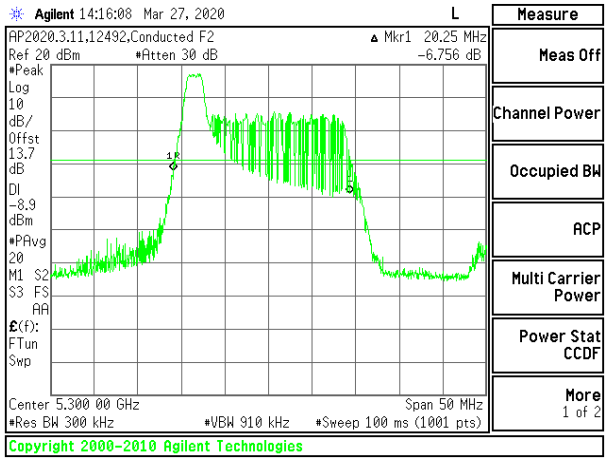
MID CHANNEL 26dB



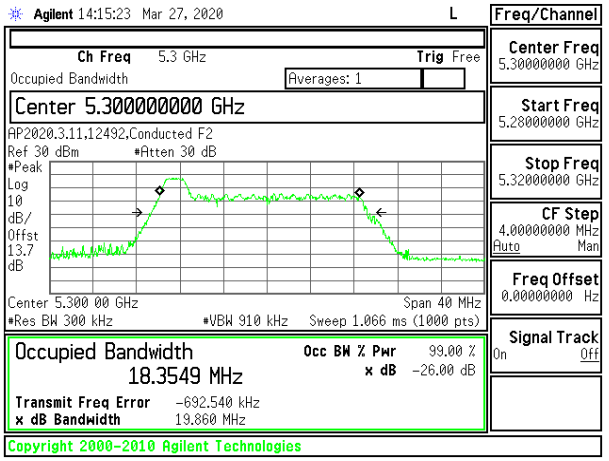
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.15	18.3485
Mid	5300	20.25	18.3549
High	5320	20.15	18.3738



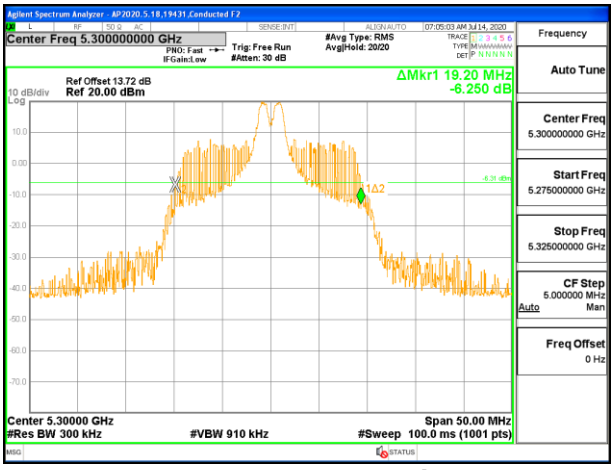
MID CHANNEL 26dB



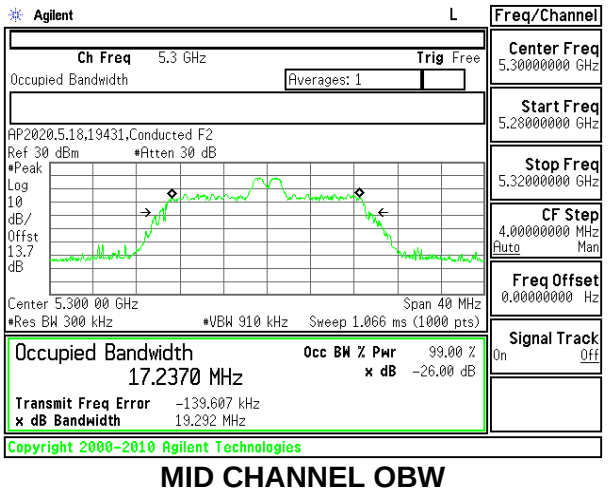
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	19.50	17.2215
Mid	5300	19.20	17.2370
High	5320	19.40	17.3388



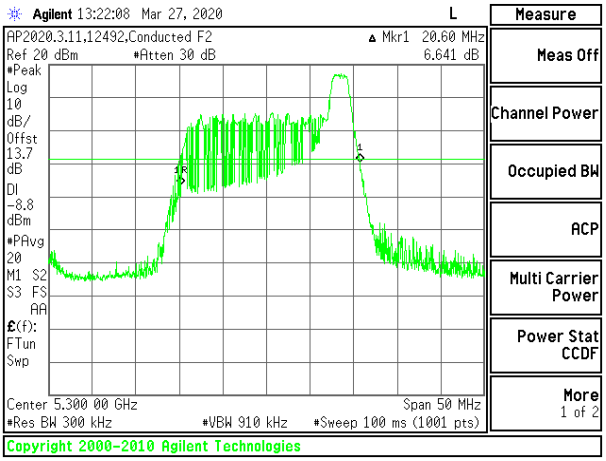
MID CHANNEL 26dB



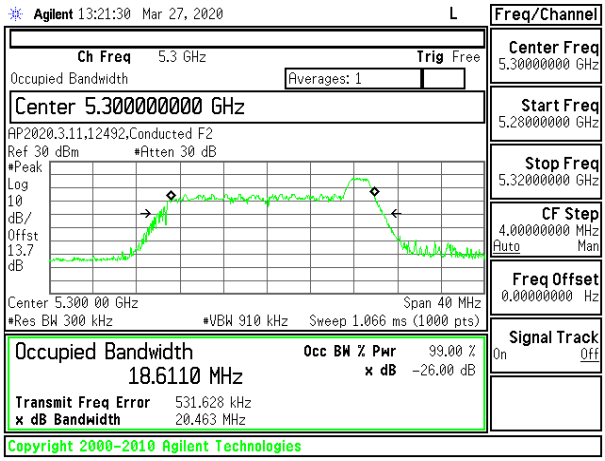
MID CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.70	18.5359
Mid	5300	20.60	18.6110
High	5320	20.70	18.5717



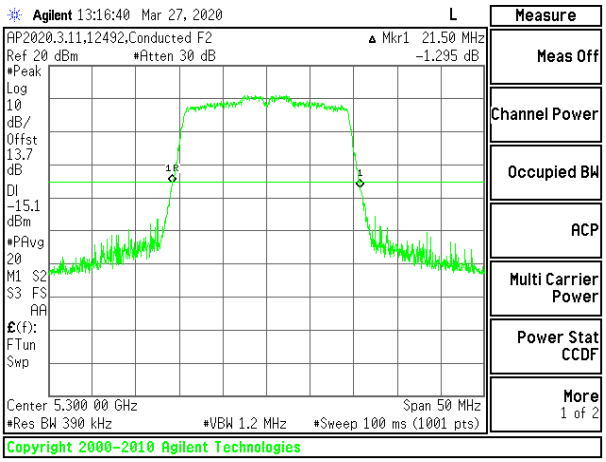
MID CHANNEL 26dB



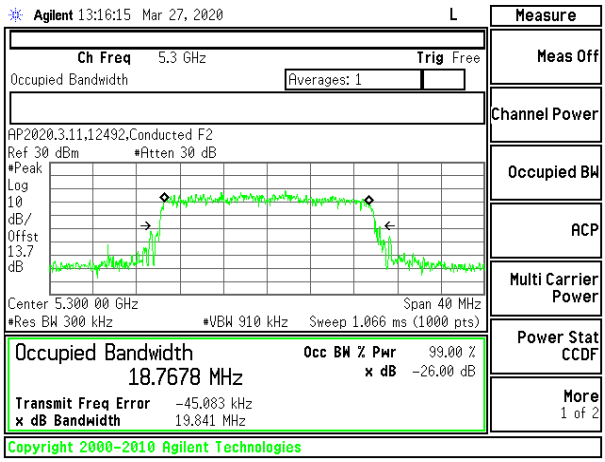
MID CHANNEL OBW

1TX Antenna 5 MODE: 242 Tones, RU Index 61

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	21.55	18.7846
Mid	5300	21.50	18.7678
High	5320	21.45	18.8427



MID CHANNEL 26dB

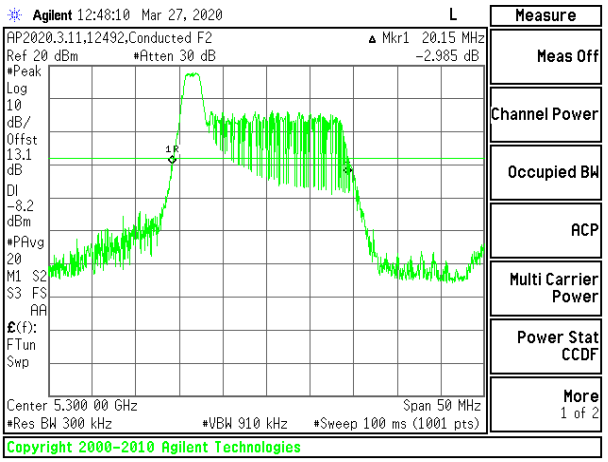


MID CHANNEL OBW

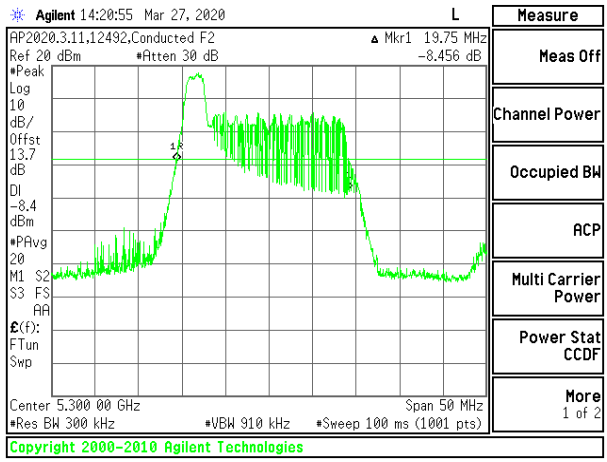
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5260	20.15	19.90	18.3942	18.3150
Mid	5300	20.15	19.75	18.3541	18.3097
High	5320	20.15	19.90	18.4271	18.3019

MID CHANNEL 26dB

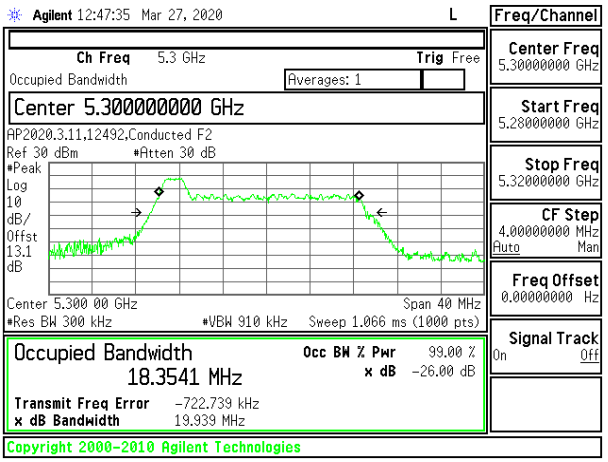


MID CHANNEL [ANT 6]

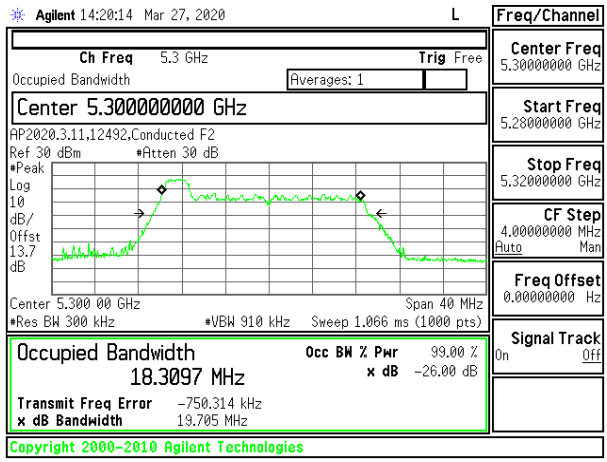


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

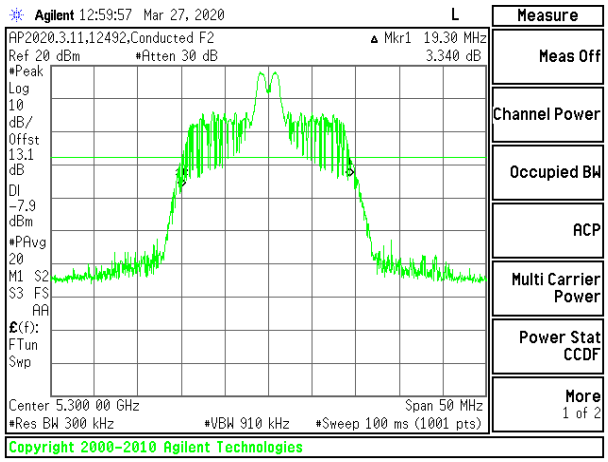


MID CHANNEL [ANT 5]

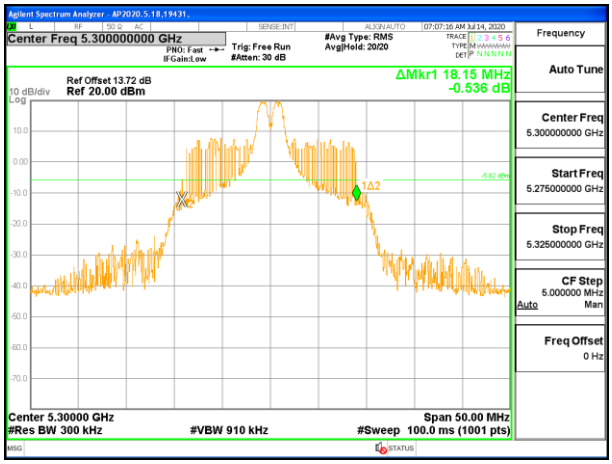
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5260	19.40	18.45	17.1369	16.9915
Mid	5300	19.30	18.15	17.2305	16.9096
High	5320	19.45	18.35	17.2343	16.9576

MID CHANNEL 26dB

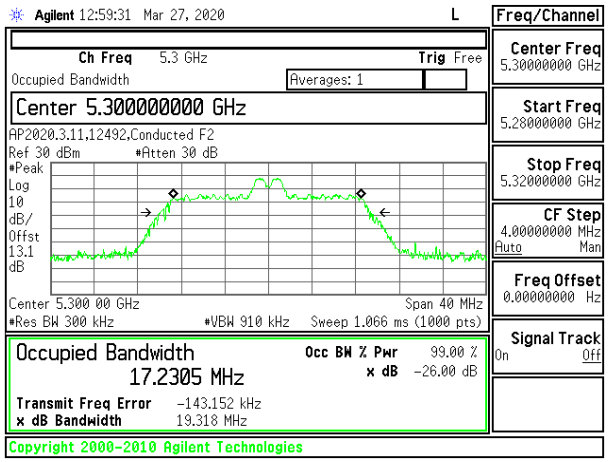


MID CHANNEL [ANT 6]

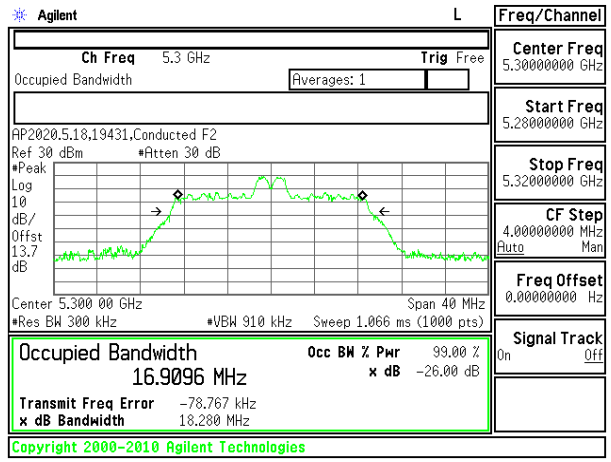


MID CHANNEL [ANT 5]

MID CHANNEL OBW



MID CHANNEL [ANT 6]

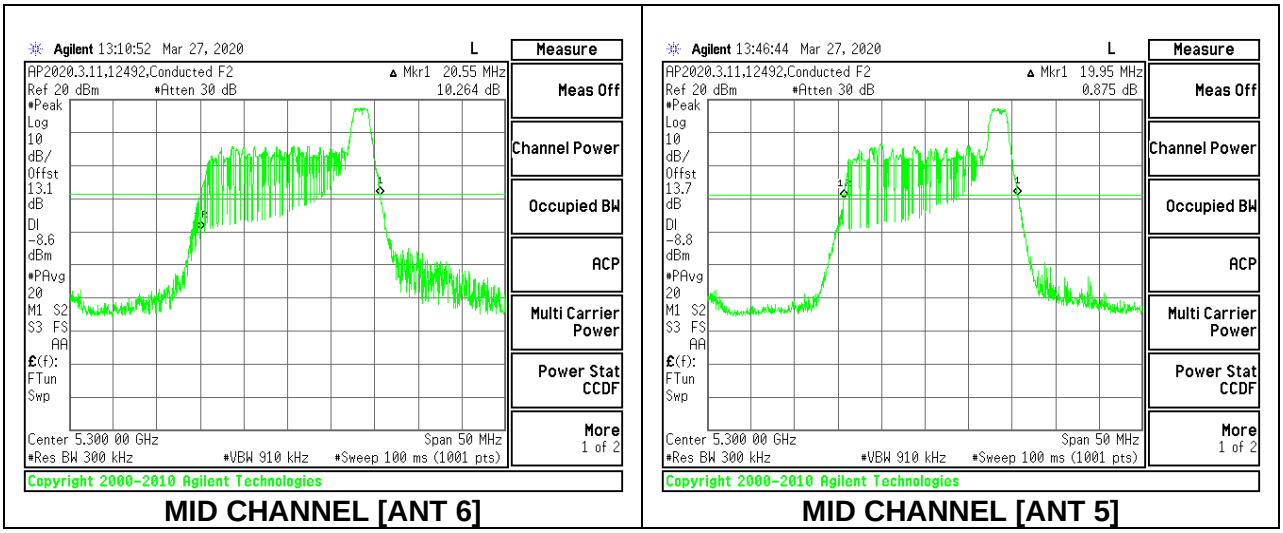


MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

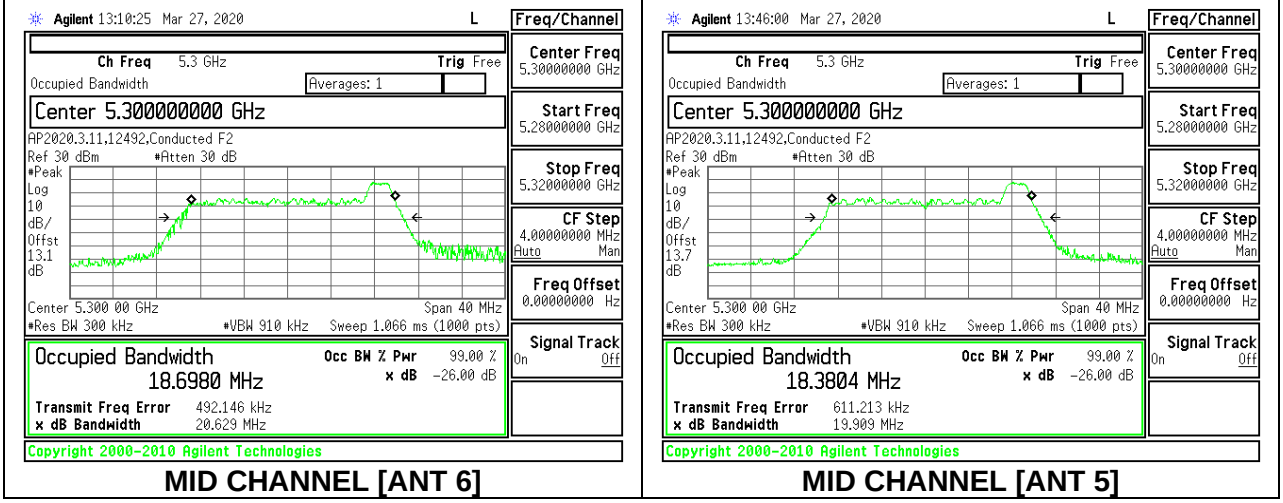
Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5260	20.75	20.00	18.6581	18.3666
Mid	5300	20.55	19.95	18.6980	18.3804
High	5320	20.70	19.95	18.7198	18.4255

MID CHANNEL 26dB



MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

MID CHANNEL OBW

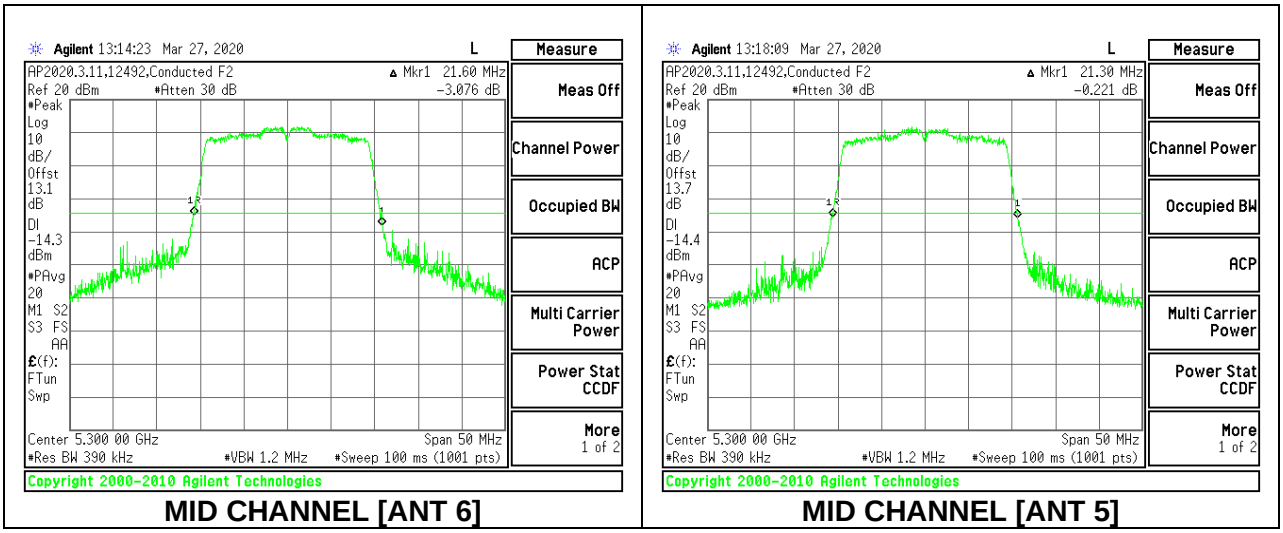


MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 61

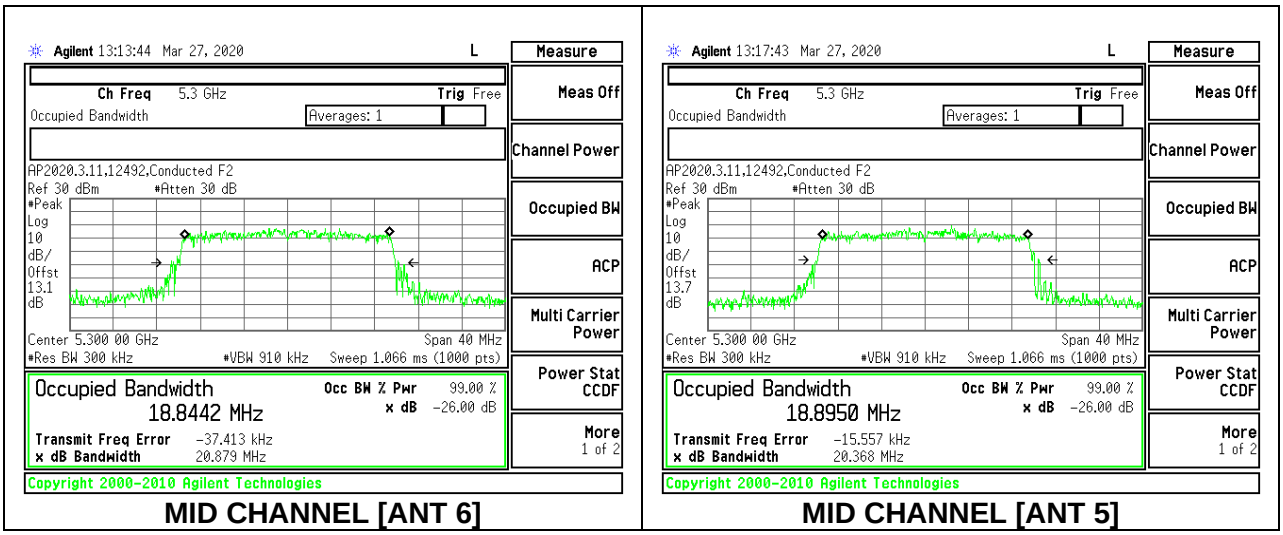
Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5260	21.50	21.25	18.8654	18.8295
Mid	5300	21.60	21.30	18.8442	18.8950
High	5320	21.40	21.30	18.7905	18.8866

MID CHANNEL 26dB



MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

MID CHANNEL OBW

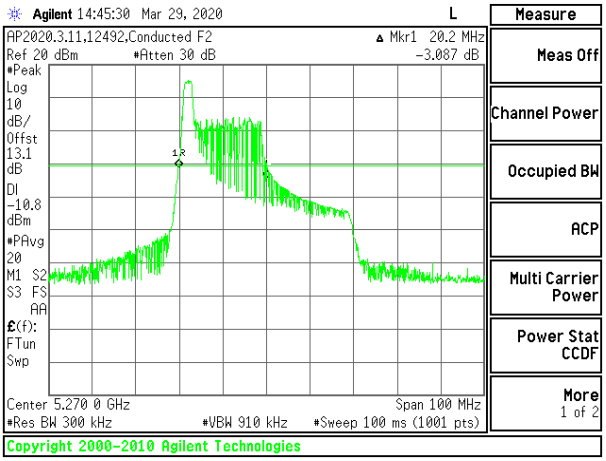


MID CHANNEL [ANT 6] **MID CHANNEL [ANT 5]**

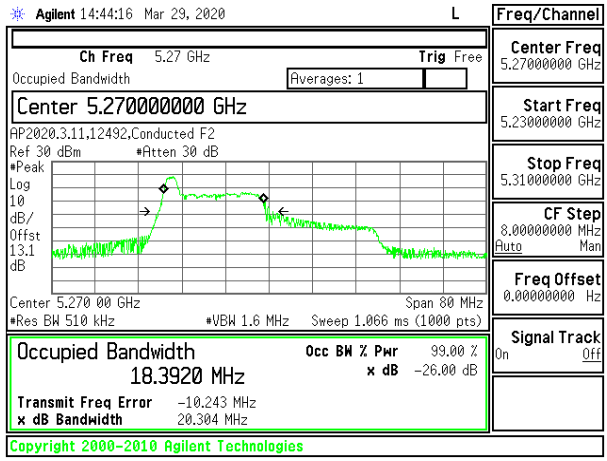
8.2.11. 802.11ax HE40 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	20.20	18.3920
High	5310	20.20	18.3638



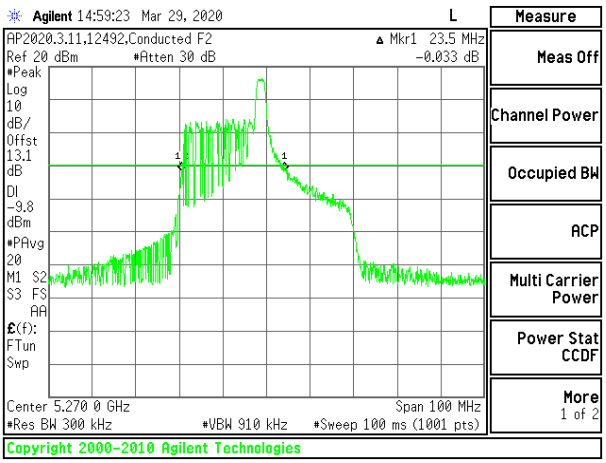
LOW CHANNEL 26dB



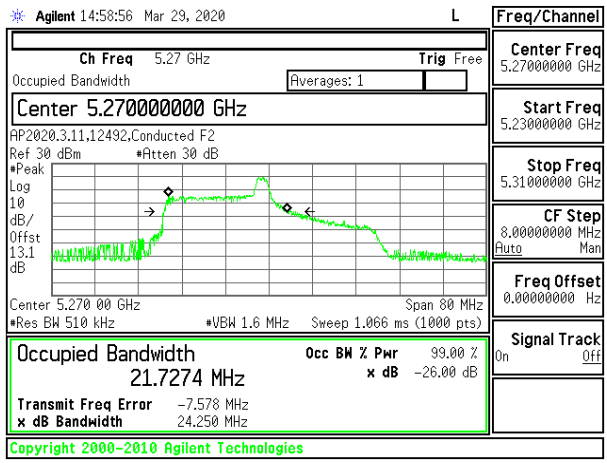
LOW CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	23.50	21.7274
High	5310	22.70	21.9572



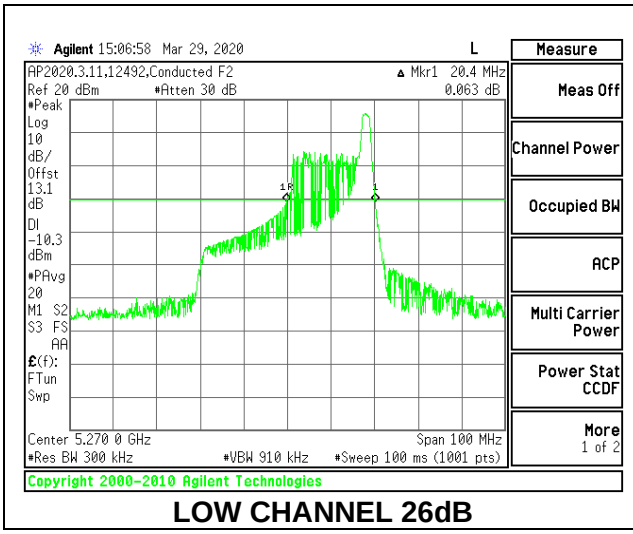
LOW CHANNEL 26dB



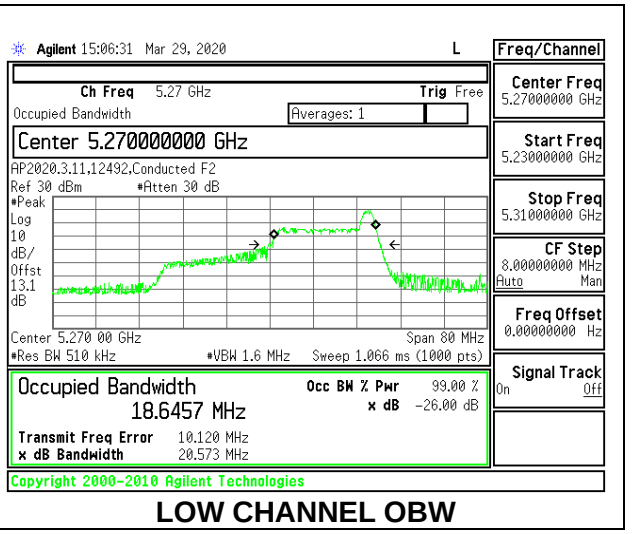
LOW CHANNEL OBW

1TX Antenna 6 MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	20.40	18.6457
High	5310	20.50	19.1132



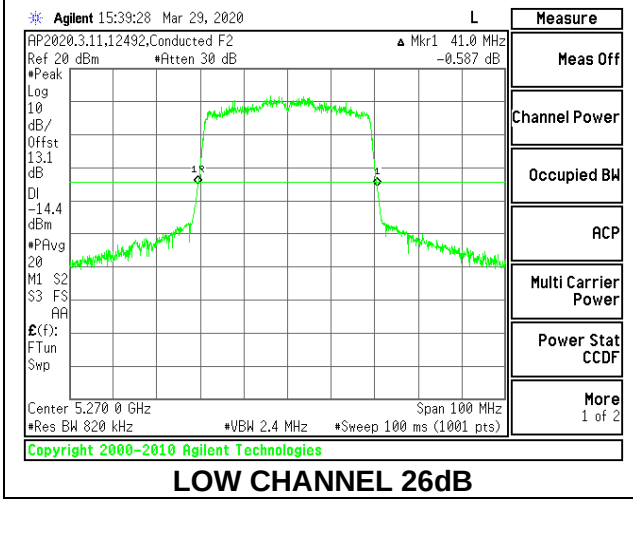
LOW CHANNEL 26dB



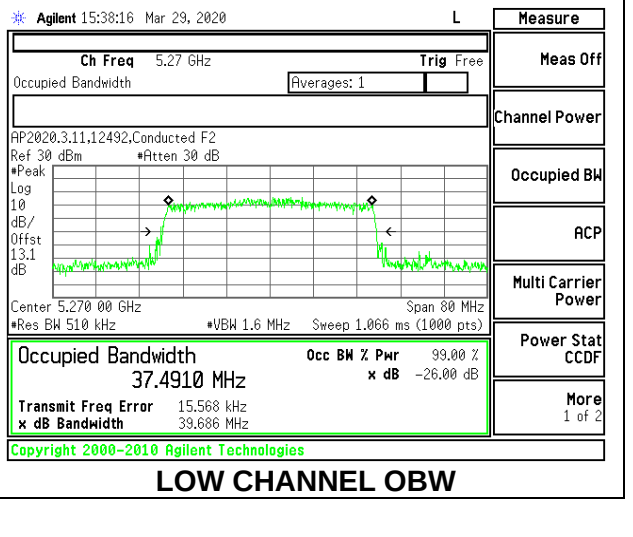
LOW CHANNEL OBW

1TX Antenna 6 MODE: 484 Tones, RU Index 65

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	41.00	37.4910
High	5310	41.10	37.5567



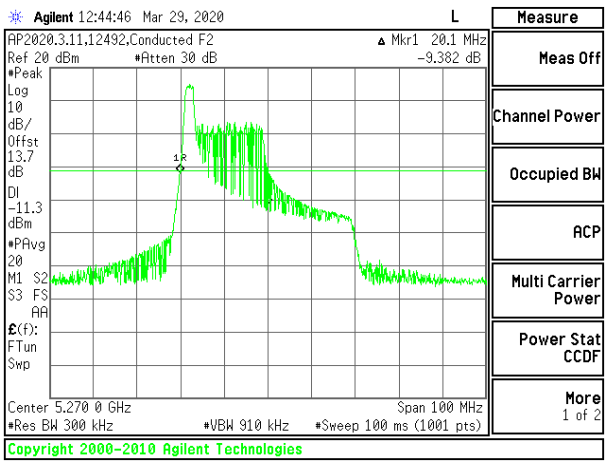
LOW CHANNEL 26dB



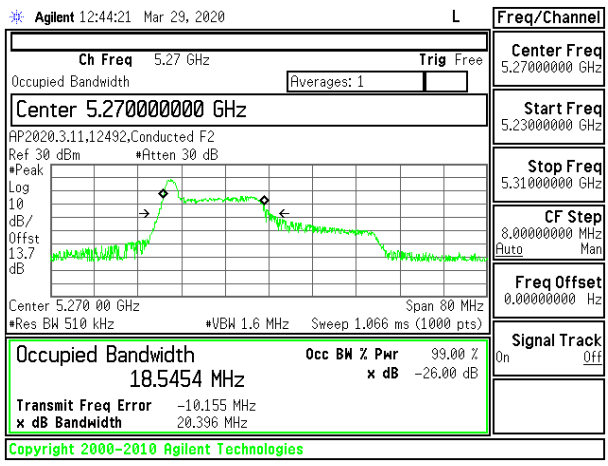
LOW CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	20.10	18.5454
High	5310	20.40	18.5607



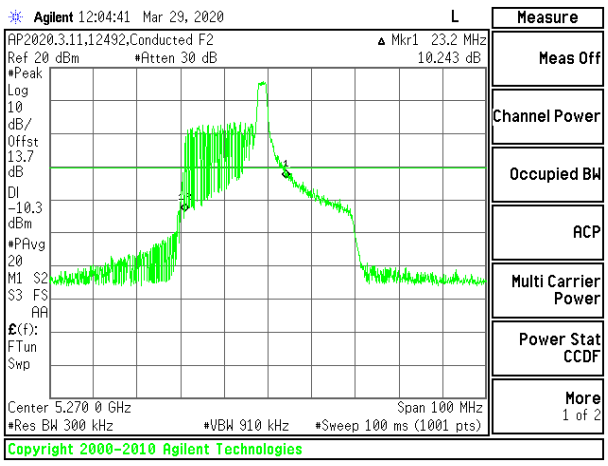
LOW CHANNEL 26dB



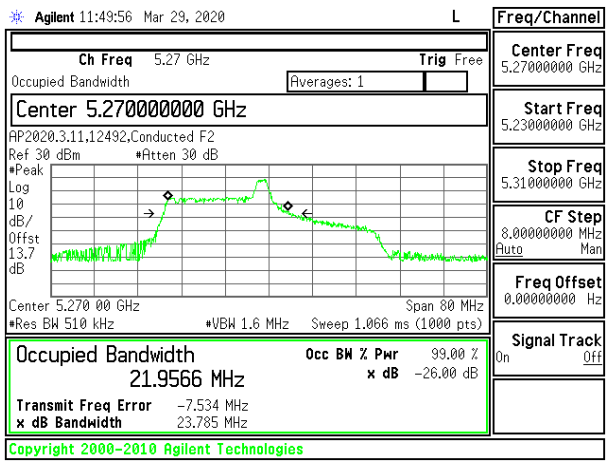
LOW CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	23.20	21.9566
High	5310	23.30	21.9769



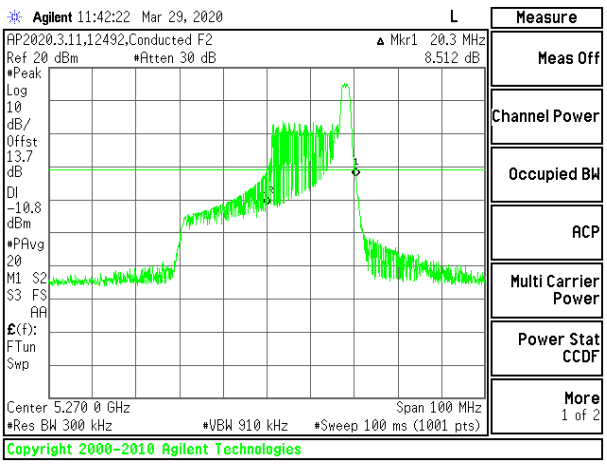
LOW CHANNEL 26dB



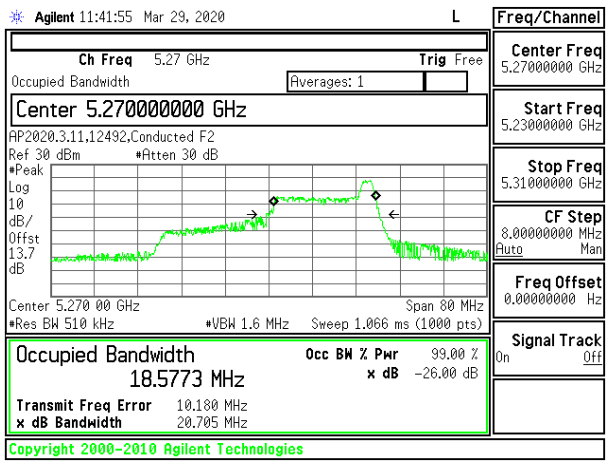
LOW CHANNEL OBW

1TX Antenna 5 MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	20.30	18.5773
High	5310	20.10	18.8765



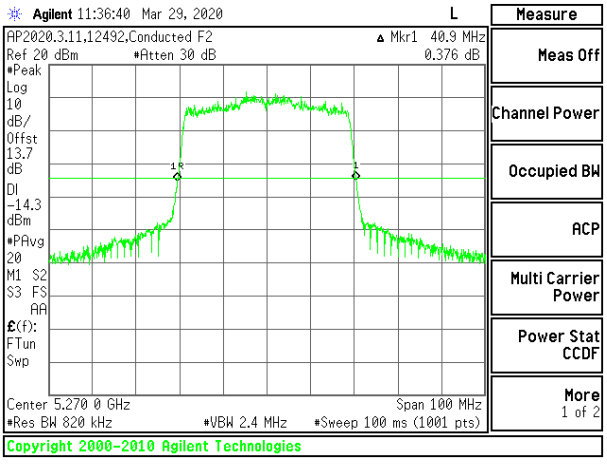
LOW CHANNEL 26dB



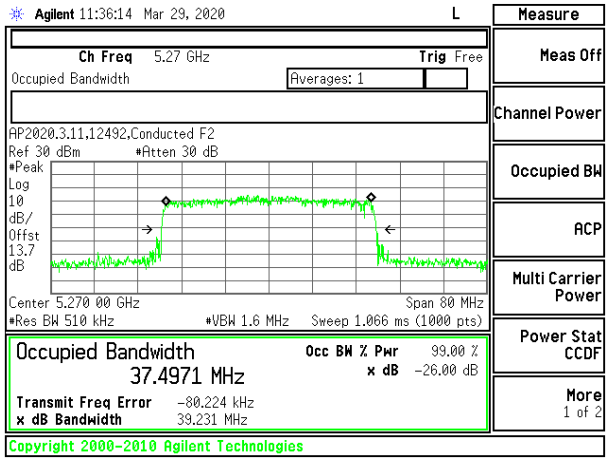
LOW CHANNEL OBW

1TX Antenna 5 MODE: 484 Tones, RU Index 65

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	40.90	37.4971
High	5310	41.00	37.4859



LOW CHANNEL 26dB



LOW CHANNEL OBW