TEST REPORT

Report Number: 14523771-E8V3

Applicant	:	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A2849
Brand	:	APPLE
FCC ID	:	BCG-E8439A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
August 29, 2023

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
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ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	8/23/2023	Initial Issue	Francisco Guarnero
V2	8/28/2023	Address TCB's questions sections 1, 6, 8, 9	Everardo Torres
V3	8/29/2023	Address TCB's questions sections 1, 6, 9	Everardo Torres

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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: A2849

BRAND: APPLE

SERIAL NUMBER: YN9YDY6M20, CV6NX2HP3H (Radiated)
C07GVT00059000046Y (Conducted)

SAMPLE RECEIPT DATE: FEBRUARY 23, 2023

DATE TESTED: MARCH 16, 2023 – AUGUST 31, 2023

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 can demonstrate 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 ensure 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 considered 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 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 A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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Approved & Released For
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2. TEST RESULT SUMMARY

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 12.2.
See Comment	26dB BW/99% OBW	Reporting purposes only	Per ANSI C63.10 Sections 6.9.2 and 6.9.3
15.407 (e)	6 dB BW	Complies	None.
15.407 (a) (1-4), (h) (1)	Output Power	Complies	None.
15.407 (a) (1-3, 5)	PSD	Complies	None.
15.209, 15.205, 15.407 (b)	Radiated Emissions	Complies	None.
15.207	AC Mains Conducted Emissions	Complies	None.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:
- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC KDB 662911 D01 v02r01
- FCC KDB 789033 D02 v02r01
- FCC KDB 644545 D03 v01
- ANSI C63.10-2013
- KDB 414788 D01 Radiated Test Site v01r01

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☒	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. 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 considered when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U_{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 dB
RF Power Measurement Direct Method Using Power Meter	0.450 dB(Peak), 1.3 dB (Ave)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.2%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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

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5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC, NB UNII, 802.15.4, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

6.2. 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	19.48	88.72
5190-5230	802.11n HT40	20.45	110.92
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	16.46	44.26
5180-5240	802.11ax HE20	19.49	88.92
5190-5230	802.11ax HE40	20.46	111.17
5210	802.11ax HE80	16.47	44.36
5.2 GHz band, 2TX			
5180-5240	802.11n HT20 CDD	19.48	88.72
5180-5240	802.11n HT20 SDM/STBC	Covered by 802.11n HT20 2TX CDD	
5190-5230	802.11n HT40 CDD	21.94	156.31
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	18.46	70.15
5210	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5180-5240	802.11ax HE20 OFDMA	19.47	88.51
5180-5240	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5190-5230	802.11ax HE40 OFDMA	21.92	155.60
5190-5230	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5210	802.11ax HE80 OFDMA	18.46	70.15
5210	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	

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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	19.49	88.92
5270 - 5310	802.11n HT40	20.36	108.64
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	16.87	48.64
5250	802.11ac VHT160	14.41	27.61
5260 - 5320	802.11ax HE20	19.48	88.72
5270 - 5310	802.11ax HE40	20.45	110.92
5290	802.11ax HE80	16.81	47.97
5250	802.11ax HE160	14.48	28.05
5.3 GHz band, 2TX			
5260 - 5320	802.11n HT20 CDD	19.49	88.92
5260 - 5320	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5270 - 5310	802.11n HT40 CDD	21.77	150.31
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	19.36	86.30
5290	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5250	802.11ac VHT160 CDD	16.80	47.86
5250	802.11ac VHT160 SDM/STBC	Covered by 802.11ac VHT160 2TX CDD	
5260 - 5320	802.11ax HE20 OFDMA	19.46	88.31
5260 - 5320	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5270 - 5310	802.11ax HE40 OFDMA	21.84	152.76
5270 - 5310	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5290	802.11ax HE80 OFDMA	18.87	77.09
5290	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	
5250	802.11ax HE160 OFDMA	16.73	47.10
5250	802.11ax HE160 SDM	Covered by 802.11ax HE160 OFDMA	

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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	19.49	88.92
5510-5710	802.11n HT40	20.48	111.69
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	20.47	111.43
5570	802.11ac VHT160	15.44	34.99
5500-5720	802.11ax HE20	19.49	88.92
5510-5710	802.11ax HE40	20.49	111.94
5530-5690	802.11ax HE80	20.49	111.94
5570	802.11ax HE160	15.47	35.24
5.6 GHz band, 2TX			
5500-5720	802.11n HT20 CDD	19.48	88.72
5500-5720	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5510-5710	802.11n HT40 CDD	21.95	156.68
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	22.95	197.24
5530-5690	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5570	802.11ac VHT160 CDD	17.84	60.81
5570	802.11ac VHT160 SDM/STBC	Covered by 802.11ac VHT160 2TX CDD	
5500-5720	802.11ax HE20 OFDMA	19.47	88.51
5500-5720	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5510-5710	802.11ax HE40 OFDMA	21.98	157.76
5510-5710	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5530-5690	802.11ax HE80 OFDMA	22.94	196.79
5530-5690	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	
5570	802.11ax HE160 OFDMA	17.90	61.66
5570	802.11ax HE160 SDM	Covered by 802.11ax HE160 OFDMA	

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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	20.96	124.74
5755-5795	802.11n HT40	20.47	111.43
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	20.49	111.94
5745-5825	802.11ax HE20	20.89	122.74
5755-5795	802.11ax HE40	20.41	109.90
5775	802.11ax HE80	20.46	111.17
5.8 GHz band, 2TX			
5745-5825	802.11n HT20 CDD	23.91	246.04
5745-5825	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5755-5795	802.11n HT40 CDD	23.46	221.82
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	23.42	219.79
5775	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5745-5825	802.11ax HE20 OFDMA	23.87	243.78
5745-5825	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5755-5795	802.11ax HE40 OFDMA	23.45	221.31
5755-5795	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5775	802.11ax HE80 OFDMA	23.40	218.78
5775	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	

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6.3. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna Type is IFA.

The antennas' gains, as provided by the manufacturer, are as follows:

Frequency Range (GHz)	Antenna 6 (dBi)	Antenna 5 (dBi)
5150-5250	-3.2	-4.5
5250-5350	-2.9	-4.9
5500-5700	-2.0	-3.8
5725-5825	-2.0	-4.0

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 23_10_686

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6.5. WORST-CASE CONFIGURATION AND MODE

The fundamentals of the EUT was investigated in three orthogonal orientations X, Y and Z on ANT 6, ANT 5 and 2TX. It was determined that Y (Landscape) orientation was the worst-case orientation for ANT 6 and 2TX, and Z (Portrait) orientation was the worst-case for ANT 5.

802.11n 2TX and 802.11ax 2TX modes were used to perform on radiated harmonic spurious final test to cover all SISO modes. Max power was tuned to maximum based on among all the modes. For testing purposes, 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 FCC conducted SISO modes as worst-case scenario.

For Radiated band edge test all test modes have been investigated with power setting equal or higher than FCC conducted SISO modes as worst-case scenario.

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.

Simultaneous transmission with the Bluetooth was investigated, and no noticeable emission was found.

The output power and psd for the IEEE 802.11 ax mode were investigated between all different tones, and baseline investigation SU mode had the highest output power and the lowest tone, RU26 on 5.2 and 5.8GHz band had the highest PSD readings, and for 5.3 and 5.6GHz band, RU106 are the worst case. Therefore, antenna port conducted and radiated tests were performed on 5.2 & 5.8 GHz band at SU, RU26 Tones and 5.3 and 5.6 GHz band at SU, RU106 tones.

With same power on Full RU and SU higher data rate, investigation was performed on both band edge to determine the worst case, and SU mode was determined to be the worst case.

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. For radiated band edge, the following are the worst-case data rates set for test:

802.11n HT20 mode : MCS7
802.11n HT40 mode : MCS7
802.11ac VHT80 mode: MCS9
802.11ac VHT160 mode MCS9
802.11ax (5.2G & 5.8G bands): HE20/HE40/HE80 RU 26 Tones and SU mode: MCS11.
802.11ax (5.3G & 5.6G bands) – Unsupported RU26): HE20/HE40/HE80/HE160 RU 106 Tones and SU mode: MCS11.

Note: In the Radiated Plots and emissions data, ANT0=ANT6 and ANT1=ANT5.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Apple	Macbook Pro	C02VD7SAHV22	BCGA1708
Laptop AC/DC adapter	Liteon Technology	A1424	NSW25679	DoC
EUT AC/DC adapter	Apple	A1720	C3D8417A7R93KVPA8	DoC
Conducted Switch Box	UL	n/a	208281	N/A
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	N/A

I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	SMA	1	SMA	Shielded	0.75	To spectrum Analyzer
2	Antenna	2	SMA	Un-shielded	0.2	To Conducted Switch Box
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	AC	1	AC	Un-shielded	2	N/A

I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**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 setup is shown as below. Test software exercised the radio card.

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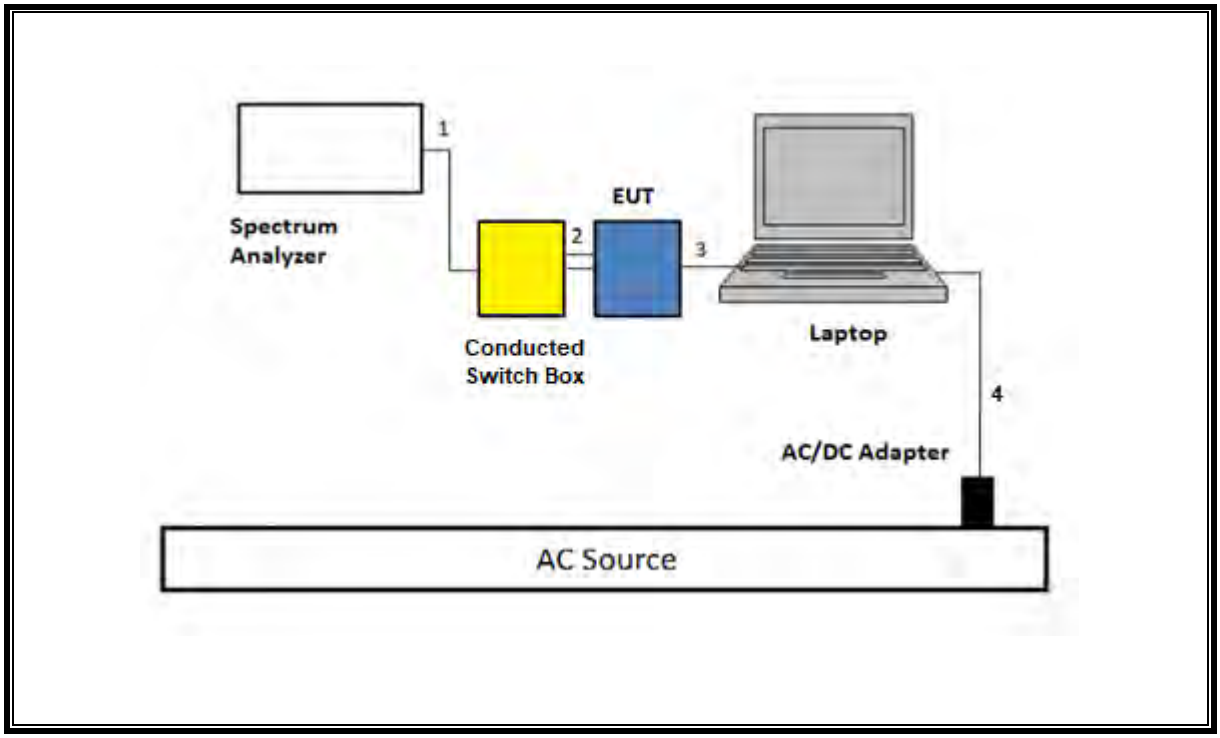
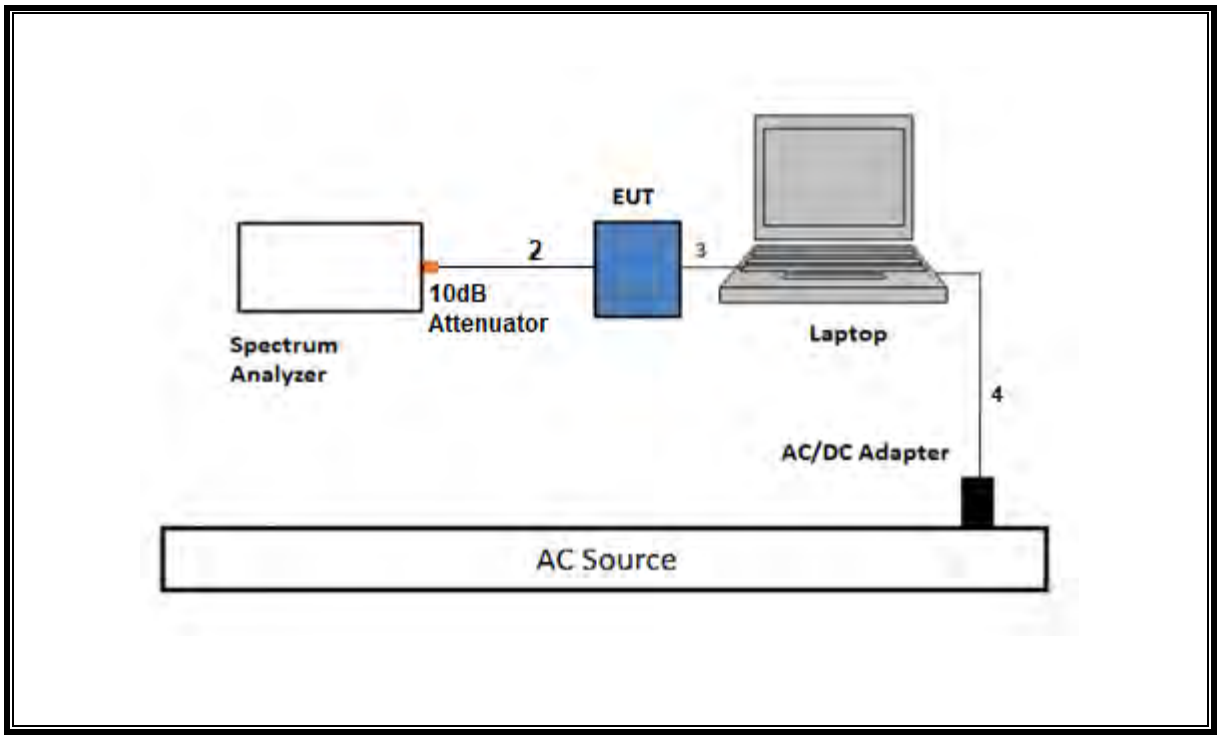
SETUP DIAGRAM FOR CONDUCTED TESTS





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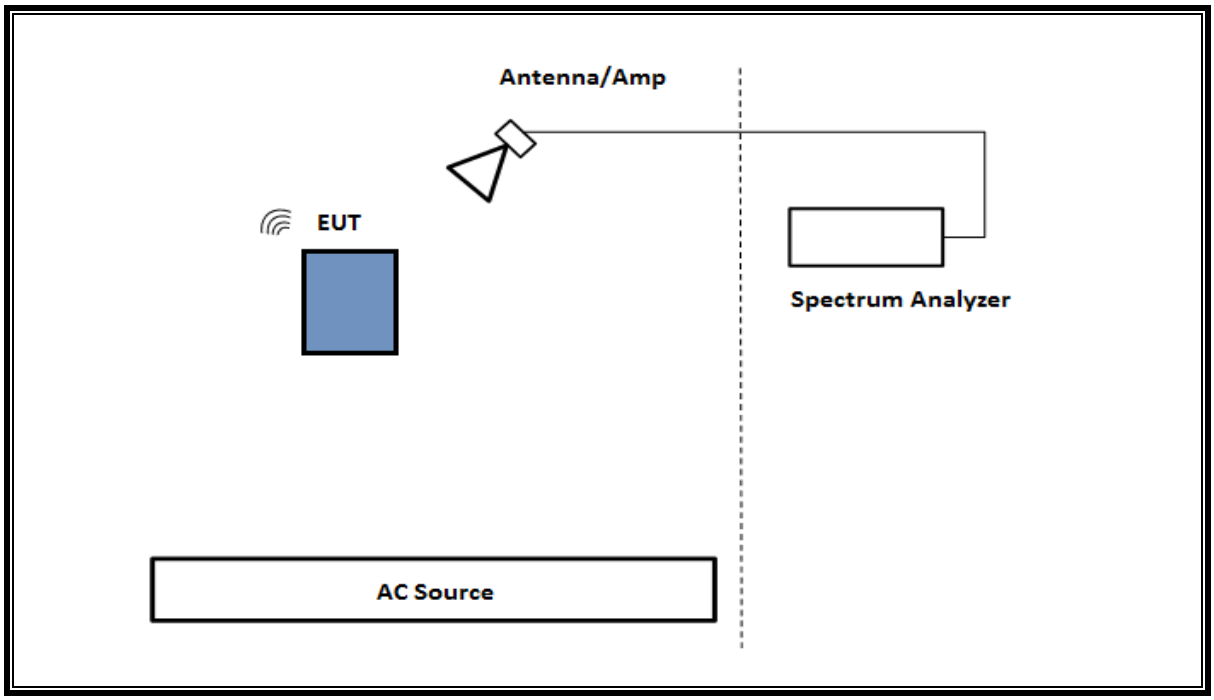
SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



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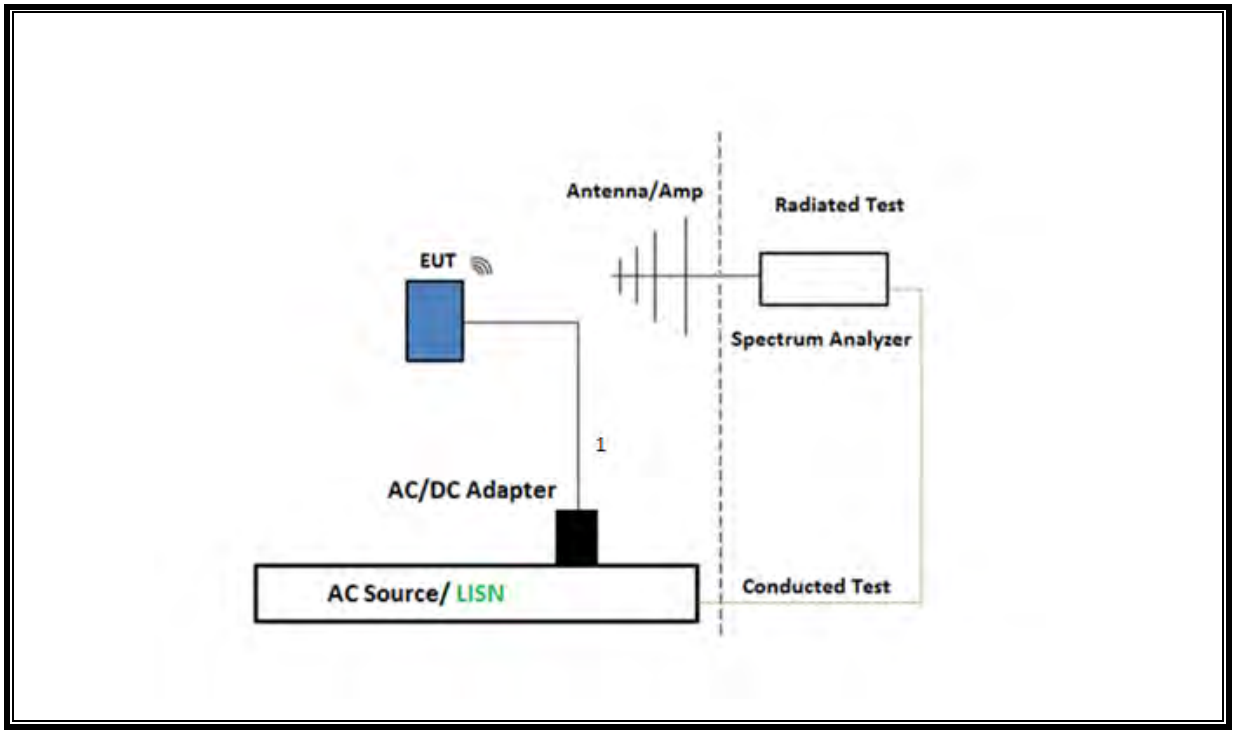
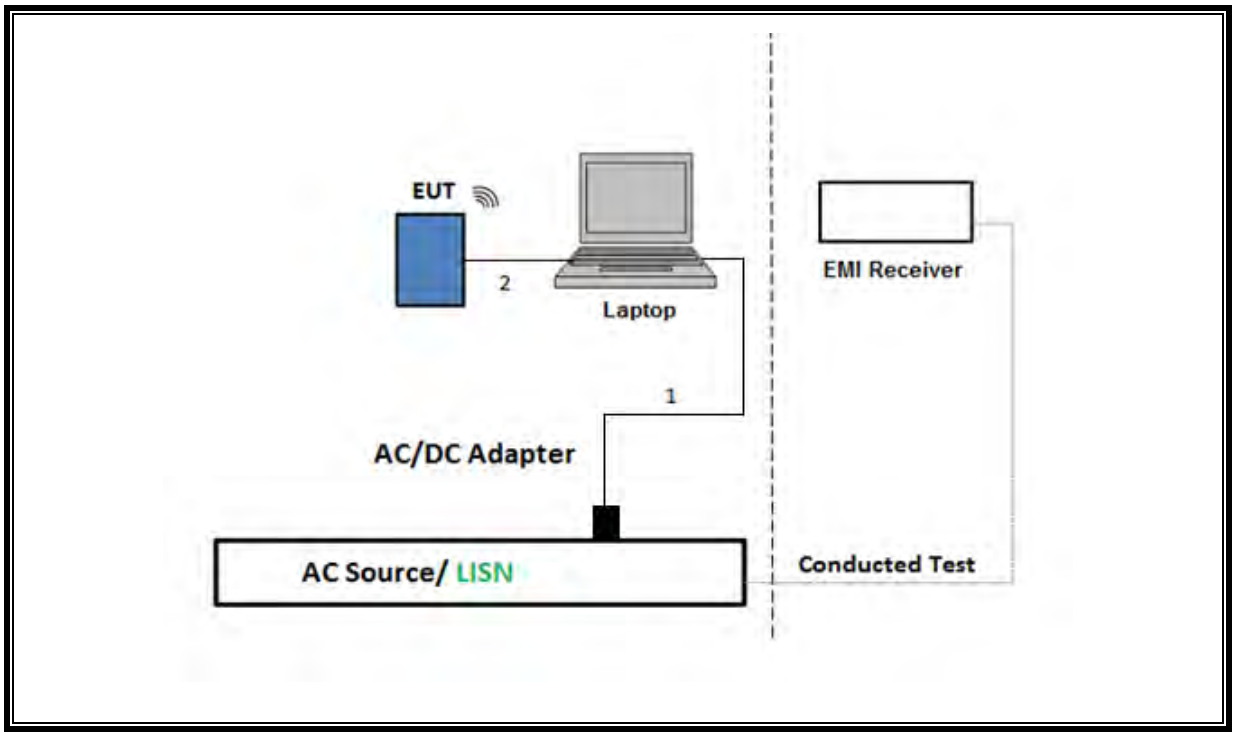
SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



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7. 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

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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8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	200896	02/28/2024	02/28/2023
RF Filter Box, 1-18GHz	UL-FR1	NA	173528	12/23/2023	12/23/2022
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	169937	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	222740	08/31/2023	08/31/2022
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	230878	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	191428	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230299	01/12/2024	01/12/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231874	04/19/2024	04/19/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179372	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230300	01/12/2024	01/12/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231875	02/27/2024	02/27/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	170063	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	84797	09/20/2023	09/20/2022
RF Filter Box, 1-18GHz	UL-FR1	N/A	171389	05/31/2024	05/31/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201497	02/29/2024	02/29/2023
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80402	07/05/2023	07/05/2022
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231249	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	02/29/2024	02/29/2023
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80404	08/08/2023	08/08/2023
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	09/17/2023	09/17/2022
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230548	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	81887	03/31/2024	03/31/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225474	03/31/2024	03/31/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201502	02/29/2024	02/29/2023
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	199660	12/6/2023	12/6/2022
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	199658	12/6/2023	12/6/2022
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225575	03/31/2024	03/31/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223461	08/29/2023	08/29/2022
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	80714	10/06/2023	10/06/2022
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	170648	03/03/2024	03/03/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	226671	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	226779	03/05/2024	03/05/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	226078	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	226672	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	226780	03/29/2024	03/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	226079	05/01/2024	05/01/2023

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TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	200897	03/31/2024	03/31/2023
RF Filter Box, 1-18GHz	UL-FR1	NA	168534	01/05/2024	01/05/2023
EMI Test Receiver	Rohde & Schwarz	ESW44	169927	02/29/2024	02/29/2023
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80430	08/08/2023	08/08/2022
RF Filter Box, 1-18GHz	UL-FR1	NA	168535	02/01/2024	02/01/2023
EMI Test Receiver	Rohde & Schwarz	ESW44	169927	02/29/2024	01/29/2023
*Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	170013	07/28/2023	07/28/2022
*Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	07/28/2023	07/28/2022
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90756	01/31/2024	01/31/2023
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	01/31/2024	01/31/2023
*Conducted Switch Box	N/A	CSB	221008	06/21/2023	06/21/2022
Conducted Switch Box	N/A	CSB	208281	04/30/2024	04/30/2023
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	Verified/Characterized before use.	
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236355	Verified/Characterized before use.	
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Keysight Technologies Inc	E4440A	81311	02/29/2024	02/29/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	80397	02/28/2024	02/28/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	85214	02/28/2024	02/28/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A-544	87738	02/28/2024	02/28/2023

AC Line Conducted					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	02/29/2024	02/29/2023
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	01/31/2024	01/31/2023
*Transient Limiter	TE	TBFL1	207996	07/15/2023	07/15/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, Mar 6, 2020		
Conducted Software	UL	UL EMC	2020.2.26		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, February 21, 2020		

*Testing is completed before equipment expiration date.

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9. ANTENNA PORT TEST RESULTS

9.1. 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 MCS0	3.767	3.789	0.994	99.42%	0.00	0.010
802.11n HT20 MCS7	0.412	0.433	0.951	95.15%	0.22	2.428
802.11n HT40 MCS0	4.797	4.818	0.996	99.56%	0.00	0.010
802.11n HT40 MCS7	0.512	0.533	0.961	96.06%	0.17	1.954
802.11ac VHT80 MCS0	2.236	2.260	0.989	98.94%	0.00	0.010
802.11ac VHT80 MCS9	0.208	0.230	0.901	90.14%	0.45	4.819
802.11ac VHT160 MCS0	0.251	0.272	0.923	92.28%	0.35	3.984
802.11ac VHT160 MCS9	0.558	0.762	0.732	73.23%	1.35	1.792
802.11ax HE20 RU26, MCS0	3.935	4.009	0.982	98.15%	0.00	0.010
802.11ax HE20 RU26, MCS11	0.292	0.329	0.890	88.98%	0.51	3.421
802.11ax HE20 RU106, MCS0	3.506	3.557	0.986	98.57%	0.00	0.010
802.11ax HE20 RU106, MCS11	0.260	0.287	0.906	90.55%	0.43	3.849
802.11ax HE40 RU26, MCS0	3.989	4.027	0.991	99.06%	0.00	0.010
802.11ax HE40 RU26, MCS11	0.292	0.329	0.890	88.98%	0.51	3.421
802.11ax HE40 RU106, MCS0	3.522	3.578	0.984	98.43%	0.00	0.010
802.11ax HE40 RU106, MCS11	0.264	0.299	0.882	88.22%	0.54	3.795
802.11ax HE80 RU26, MCS0	3.972	4.025	0.987	98.68%	0.00	0.010
802.11ax HE80 RU26, MCS11	0.290	0.329	0.883	88.31%	0.54	3.447
802.11ax HE80 RU106, MCS0	3.493	3.563	0.980	98.04%	0.00	0.010
802.11ax HE80 RU106, MCS11	0.262	0.299	0.878	87.85%	0.56	3.811
802.11ax HE160 RU106, MCS0	3.488	3.551	0.982	98.23%	0.00	0.010
802.11ax HE160 RU106, MCS11	0.263	0.299	0.880	87.96%	0.56	3.802

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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						
802.11ax HE20 SU, MCS0	1.487	1.511	0.984	98.41%	0.00	0.010
802.11ax HE20 SU, MCS11	0.146	0.168	0.869	86.90%	0.61	6.850
802.11ax HE40 SU, MCS0	0.771	0.795	0.970	97.03%	0.13	1.296
802.11ax HE40 SU, MCS11	0.101	0.123	0.824	82.45%	0.84	9.872
802.11ax HE80 SU, MCS0	0.400	0.423	0.947	94.68%	0.24	2.498
802.11ax HE80 SU, MCS11	0.082	0.105	0.779	77.92%	1.08	12.227
802.11ax HE160 SU, MCS0	9.560	9.600	0.996	99.58%	0.00	0.010
802.11ax HE160 SU, MCS11	0.292	0.328	0.892	89.24%	0.49	3.420
802.11n HT20 SDM MCS0	3.765	3.795	0.992	99.21%	0.00	0.010
802.11n HT40 SDM MCS0	4.785	4.815	0.994	99.38%	0.00	0.010
802.11ac VHT80 SDM MCS0	1.143	1.167	0.979	97.94%	0.09	0.875
802.11ac VHT160 SDM MCS0	11.680	11.720	0.997	99.66%	0.00	0.010
802.11ax HE20 RU26 SDM MCS0	3.975	4.030	0.986	98.64%	0.00	0.010
802.11ax HE40 RU26 SDM MCS0	3.968	4.030	0.985	98.46%	0.00	0.010
802.11ax HE80 RU26 SDM MCS0	3.966	4.026	0.985	98.51%	0.00	0.010
802.11ax HE160 RU106 SDM MCS0	3.490	3.554	0.982	98.20%	0.00	0.010
802.11ax HE20 SU SDM MCS0	3.765	3.795	0.992	99.21%	0.00	0.010
802.11ax HE40 SU SDM MCS0	4.785	4.815	0.994	99.38%	0.00	0.010
802.11ax HE80 SU SDM MCS0	1.143	1.167	0.979	97.94%	0.09	0.875
802.11ax HE160 SU SDM MCS0	11.460	11.520	0.995	99.48%	0.00	0.010

DUTY CYCLE PLOT

802.11n HT20 MODE MCS0

Note: There are same duty cycle factor on 1TX and 2TX

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9.2. 26 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

ID:	27979	Date:	03/30/2023

9.2.1. 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	21.15	17.852
Mid	5200	20.81	17.744
High	5240	20.44	17.806

MID CHANNEL 26dB

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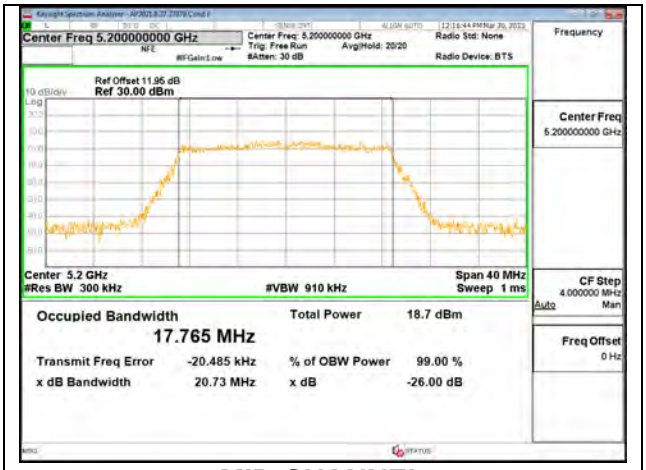
1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	20.69	17.864
Mid	5200	20.73	17.765
High	5240	20.74	17.829



MID CHANNEL

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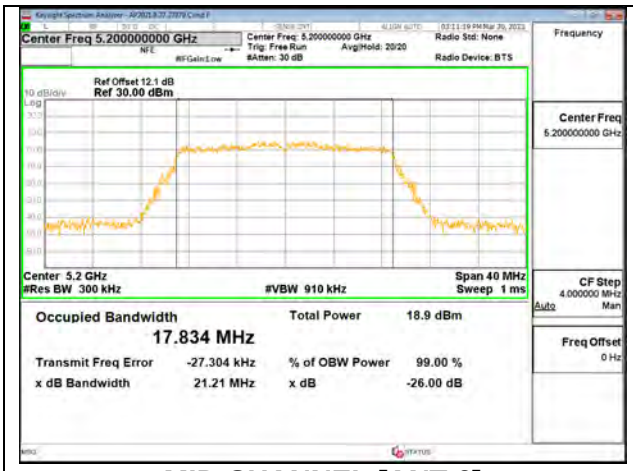
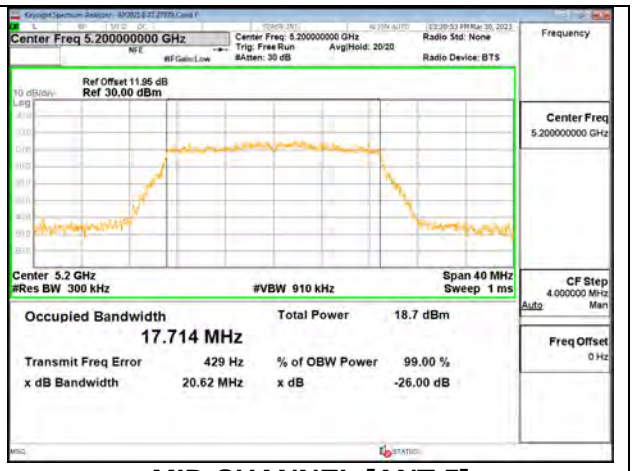
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5180	21.32	20.99	17.841	17.818
Mid	5200	21.21	20.62	17.834	17.714
High	5240	20.69	20.34	17.732	17.740



MID CHANNEL [ANT 6]

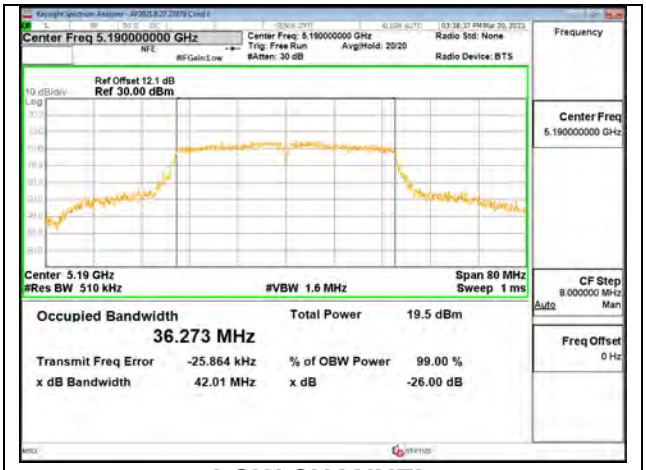


MID CHANNEL [ANT 5]

9.2.2. 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	42.01	36.273
High	5230	40.63	36.177



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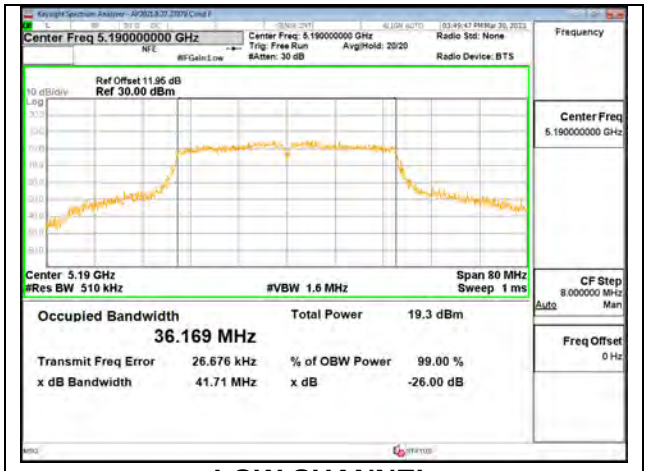
1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	41.71	36.169
High	5230	41.10	36.149



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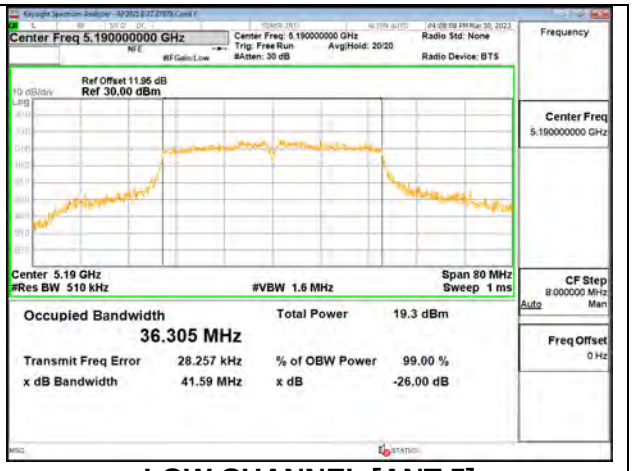
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5190	41.61	41.59	36.330	36.305
High	5230	40.12	40.26	36.204	36.269

LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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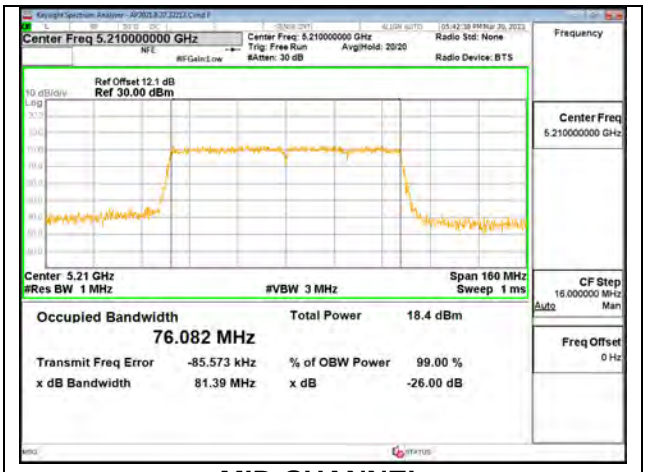
9.2.3. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	81.39	76.082



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	79.92	75.835

MID CHANNEL

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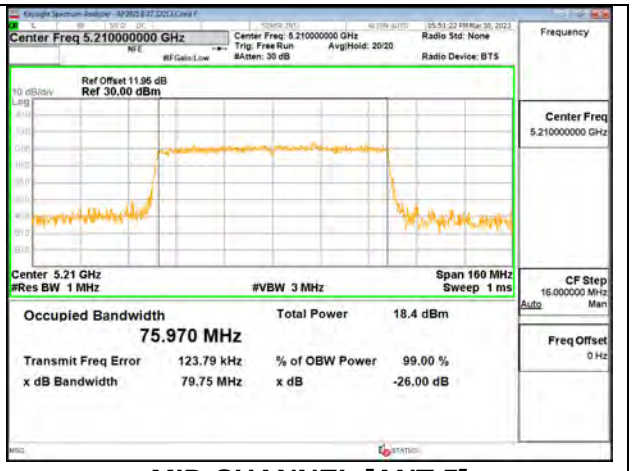
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5210	81.03	79.75	75.939	75.970

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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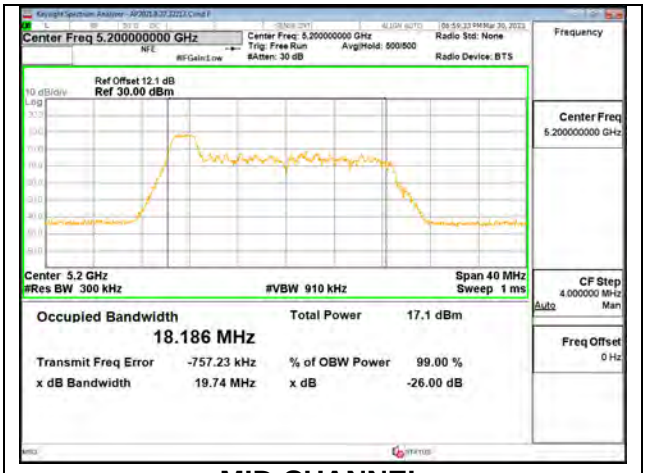
9.2.4. 802.11ax HE20 MODE IN THE 5.2 GHz BAND

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

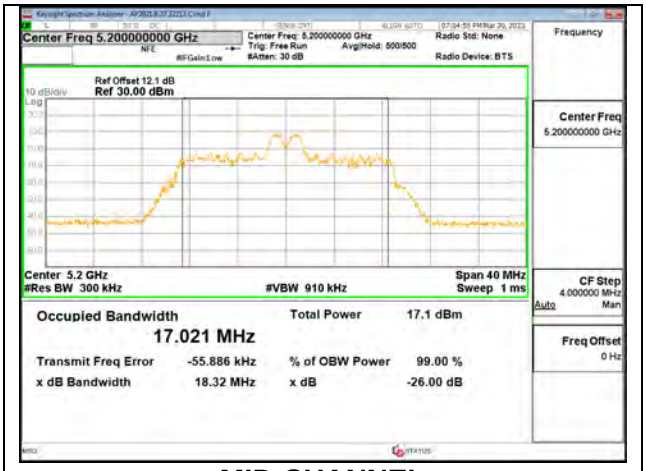
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	19.75	18.314
Mid	5200	19.74	18.186
High	5240	19.66	18.325



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	18.5	16.522
Mid	5200	18.32	17.021
High	5240	18.49	16.878



MID CHANNEL

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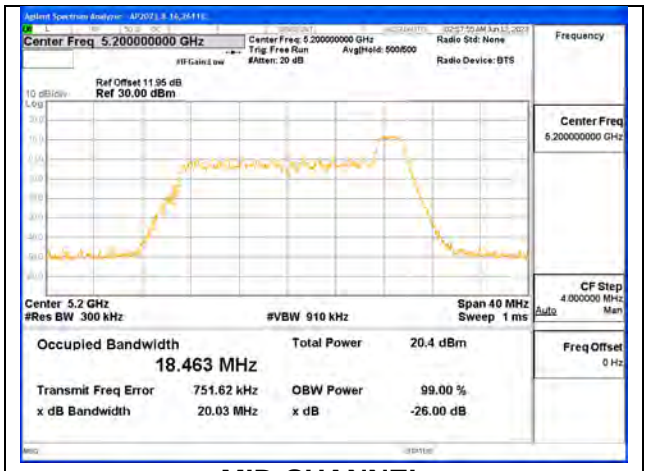
1TX Antenna 6 MODE: 26 Tones, RU Index 8

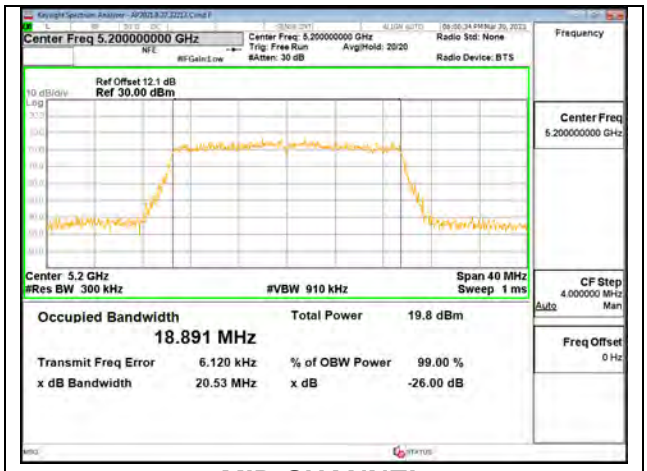
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	20.1	18.440
Mid	5200	20.03	18.463
High	5240	20.03	18.426



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	21.05	18.941
Mid	5200	20.53	18.891
High	5240	20.74	18.890



MID CHANNEL

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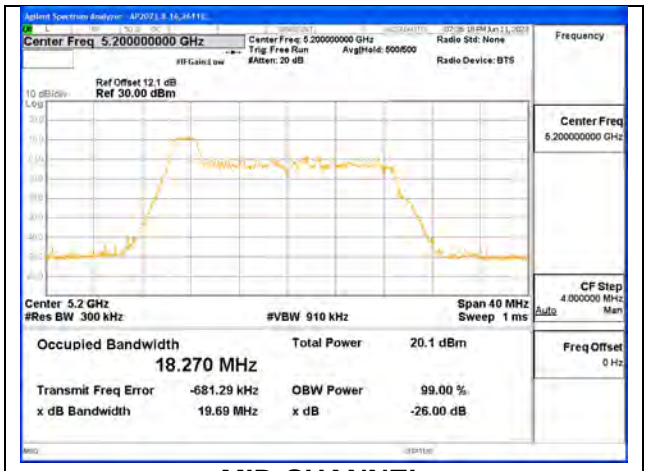
1TX Antenna 5 MODE: 26 Tones, RU Index 0

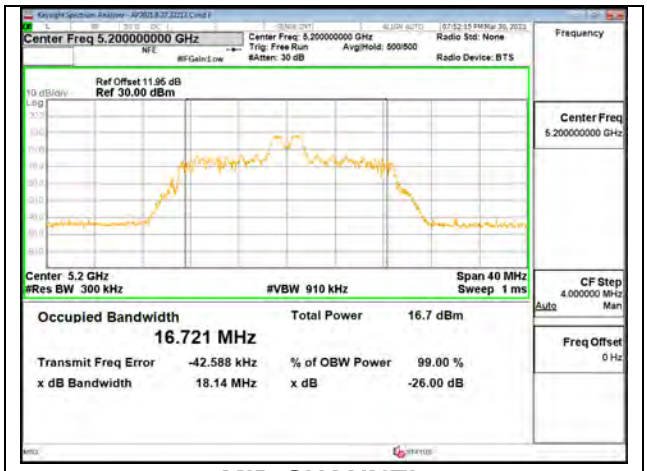
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	19.88	18.293
Mid	5200	19.69	18.270
High	5240	19.69	18.201



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	17.77	16.910
Mid	5200	18.14	16.721
High	5240	18.47	16.974



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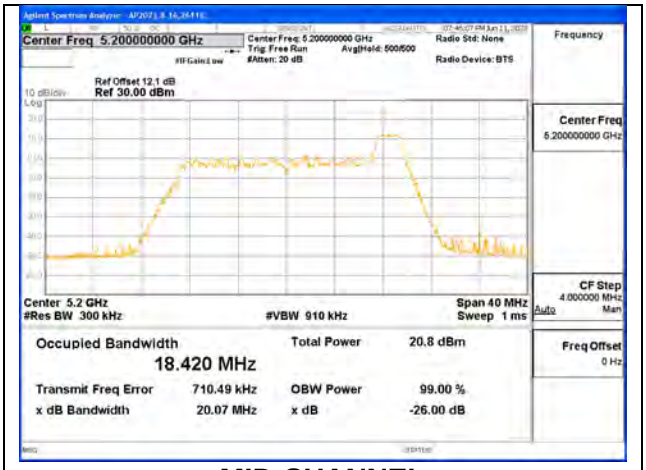
1TX Antenna 5 MODE: 26 Tones, RU Index 8

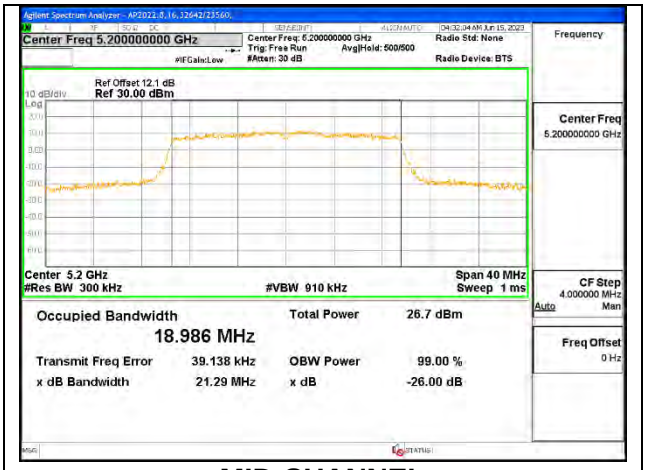
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	19.65	18.366
Mid	5200	20.07	18.420
High	5240	20.20	18.394



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5180	23.36	19.020
Mid	5200	21.29	18.986
High	5240	21.15	18.978



MID CHANNEL

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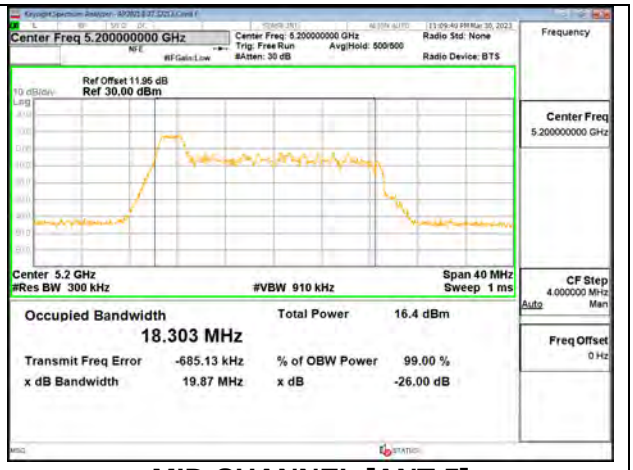
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

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	19.69	19.85	18.264	18.356
Mid	5200	19.73	19.87	18.292	18.303
High	5240	19.87	19.68	18.364	18.232

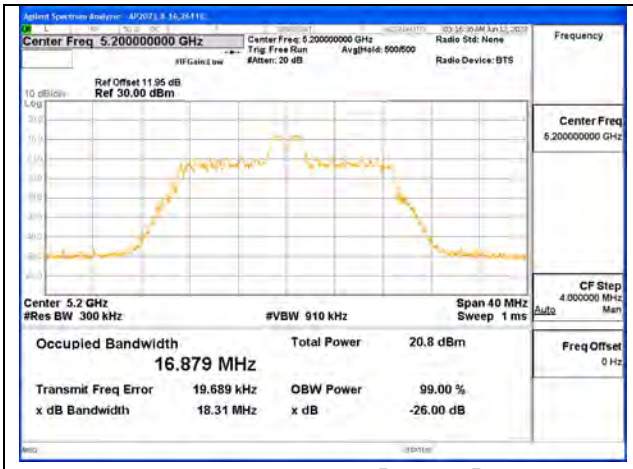
MID CHANNEL [ANT 6]



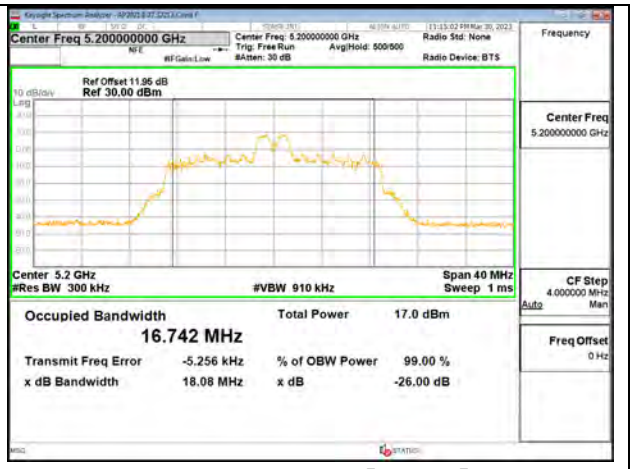
MID CHANNEL [ANT 5]

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	18.48	18.12	16.978	16.837
Mid	5200	18.31	18.08	16.879	16.742
High	5240	18.58	17.91	16.574	16.590



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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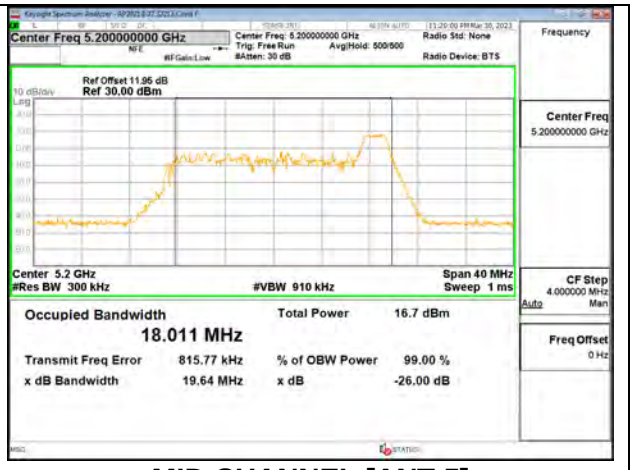
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

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	20.14	19.57	18.404	18.203
Mid	5200	19.88	19.64	18.463	18.011
High	5240	19.55	19.68	18.034	18.344

MID CHANNEL [ANT 6]

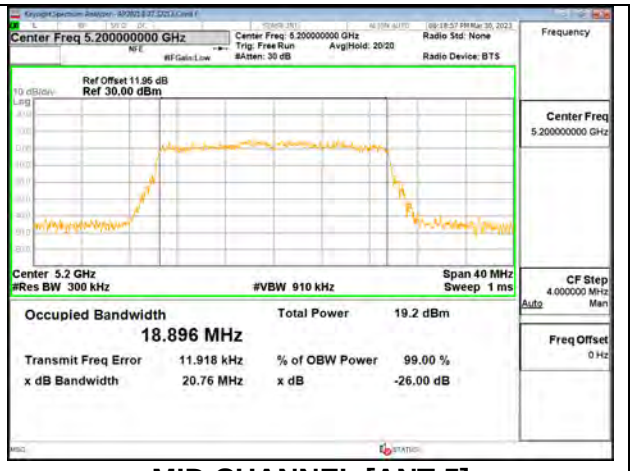


MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5180	21.00	21.66	18.917	18.913
Mid	5200	20.77	20.76	18.974	18.896
High	5240	20.77	20.43	19.014	18.913

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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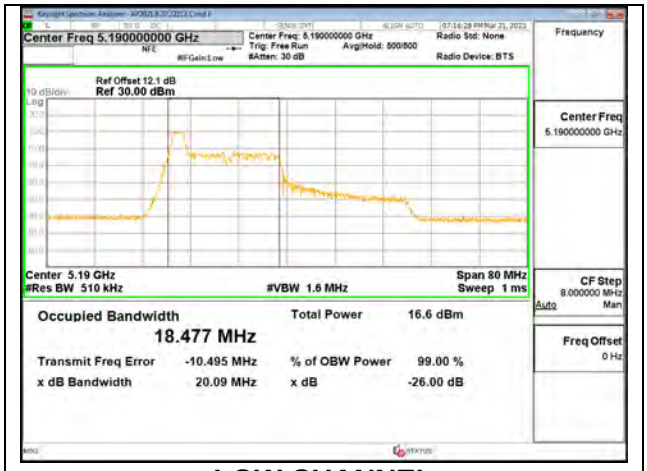
9.2.5. 802.11ax HE40 MODE IN THE 5.2 GHz BAND

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

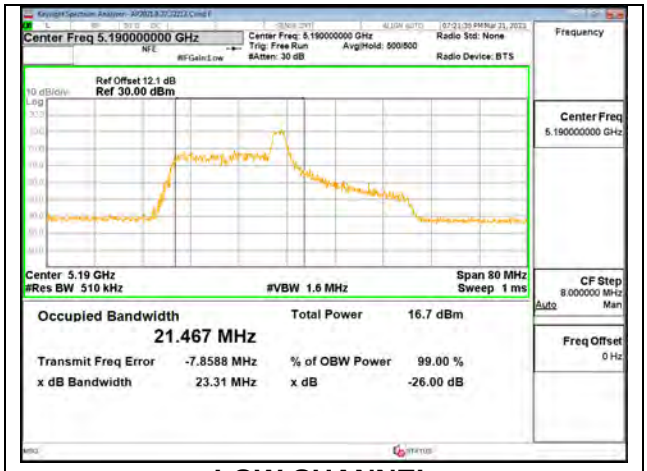
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.09	18.477
High	5230	20.02	18.429



LOW CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	23.31	21.467
High	5230	22.66	21.093



LOW CHANNEL

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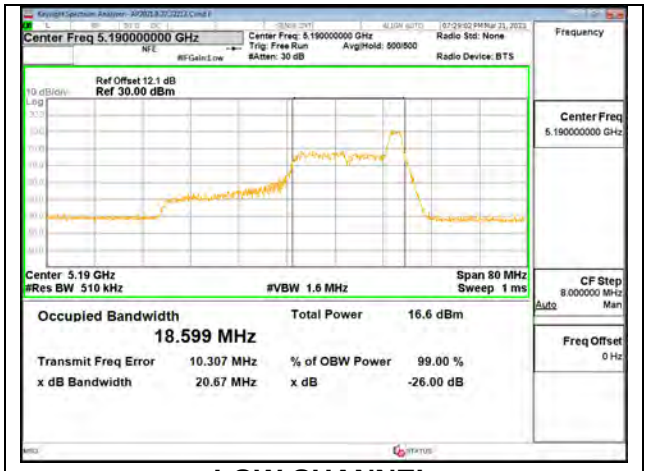
1TX Antenna 6 MODE: 26 Tones, RU Index 17

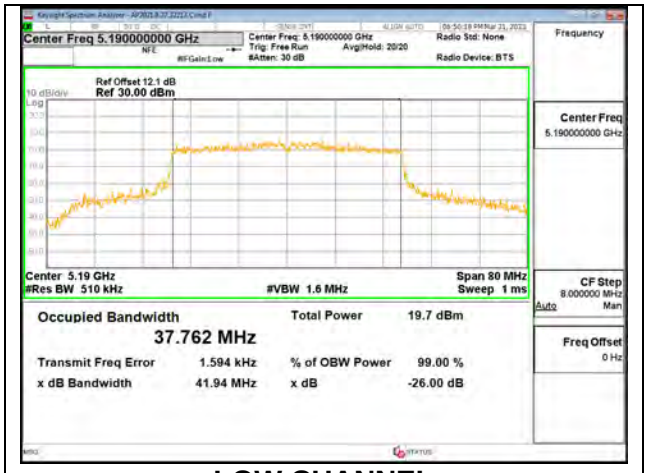
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.67	18.599
High	5230	20.21	18.599



LOW CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	41.94	37.762
High	5230	40.93	37.806



LOW CHANNEL

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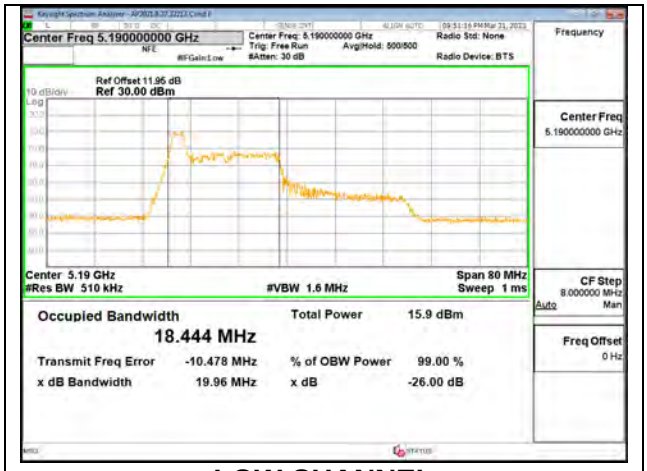
1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	19.96	18.444
High	5230	19.80	18.435



LOW CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	23.06	21.605
High	5230	24.74	21.528

LOW CHANNEL

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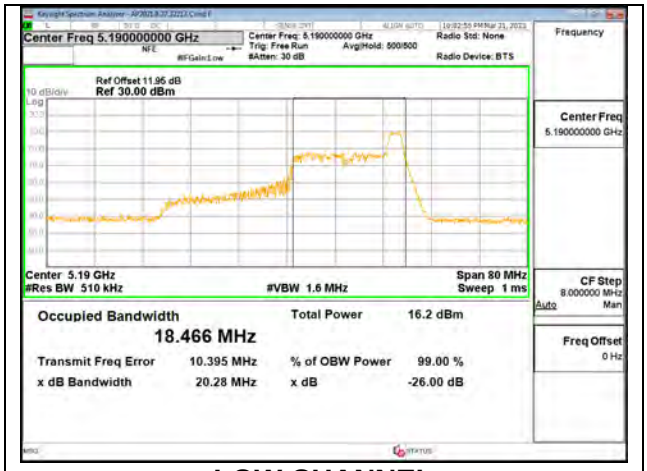
1TX Antenna 5 MODE: 26 Tones, RU Index 17

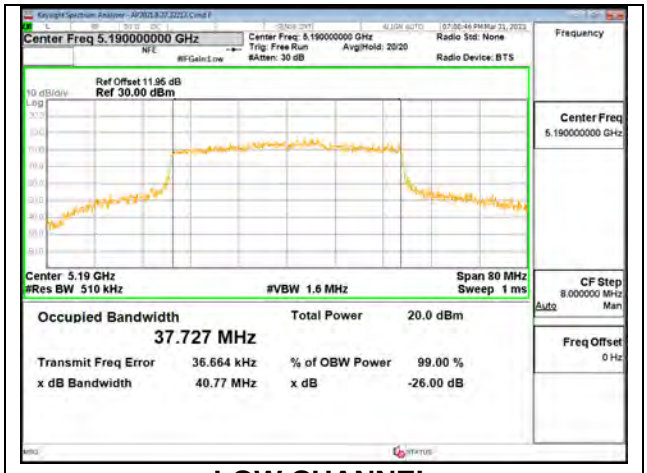
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	20.28	18.466
High	5230	20.32	18.722



LOW CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5190	40.77	37.727
High	5230	40.07	37.751



LOW CHANNEL

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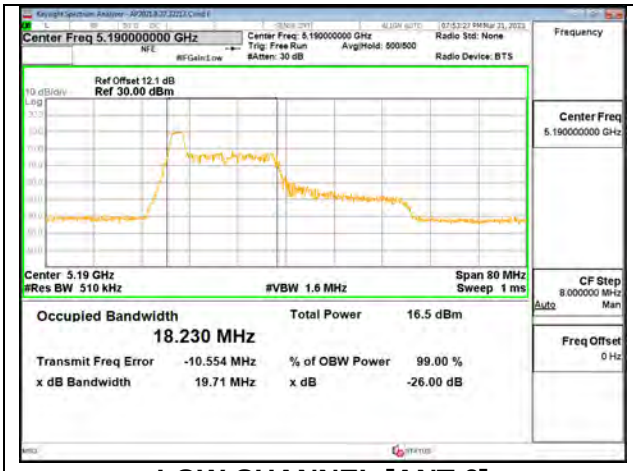
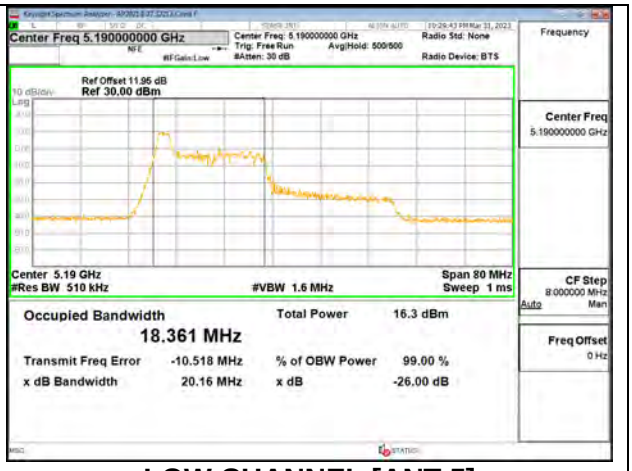
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

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	19.71	20.16	18.230	18.361
High	5230	20.03	19.77	18.381	18.240



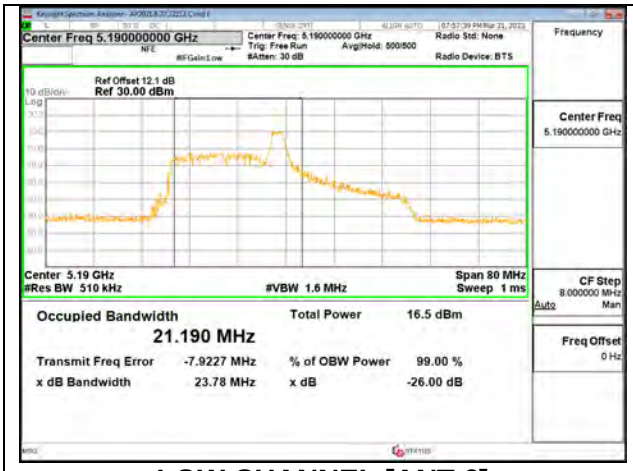
LOW CHANNEL [ANT 6]



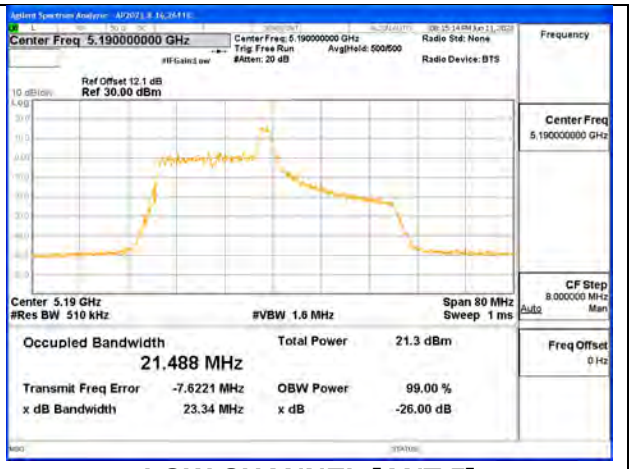
LOW CHANNEL [ANT 5]

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	23.78	23.34	21.190	21.488
High	5230	23.78	20.08	21.422	18.354



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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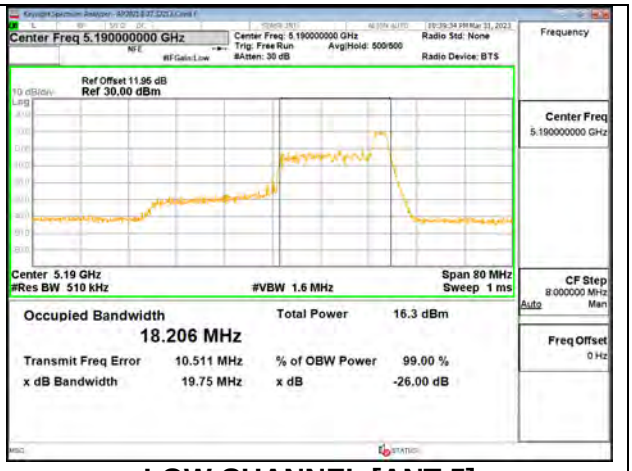
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 17

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	20.22	19.75	18.554	18.206
High	5230	20.29	20.10	18.513	18.293

LOW CHANNEL [ANT 6]

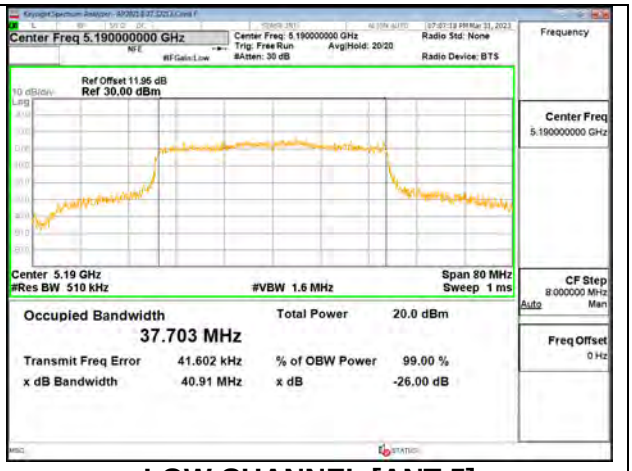


LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5190	41.04	40.91	37.665	37.703
High	5230	40.31	39.87	37.701	37.686

LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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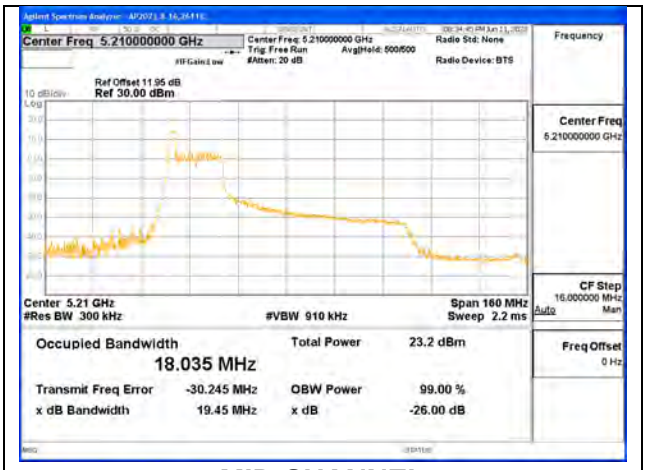
9.2.6. 802.11ax HE80 MODE IN THE 5.2 GHz BAND

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

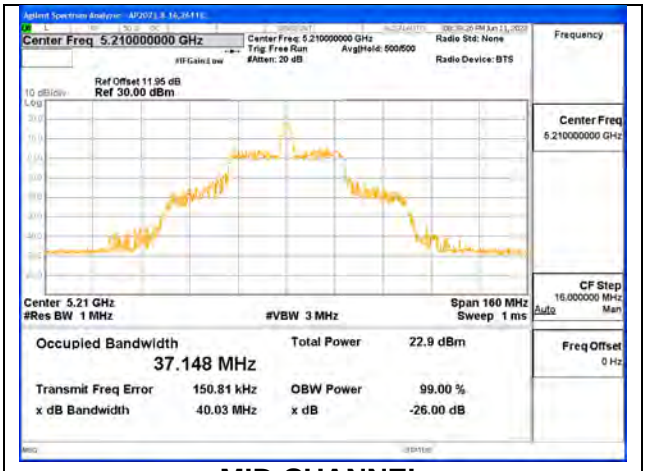
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	19.45	18.035



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	40.03	37.148



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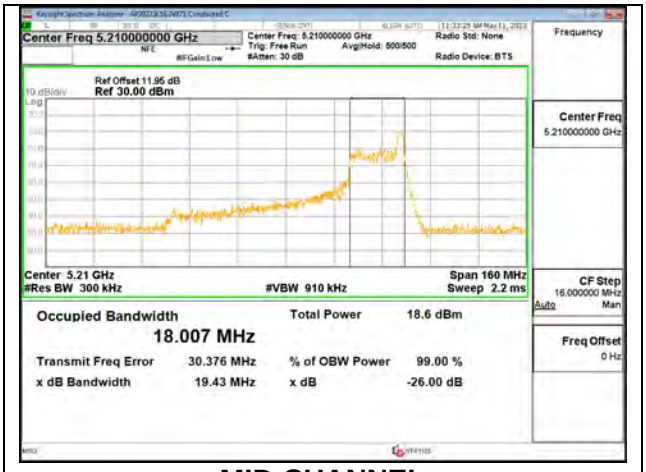
1TX Antenna 6 MODE: 26 Tones, RU Index 36

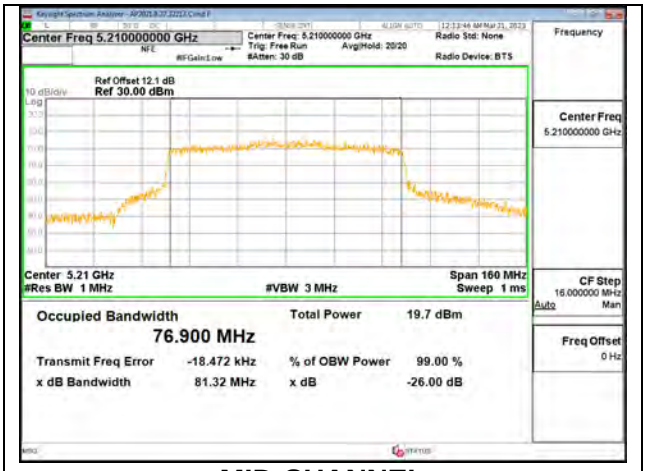
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	19.43	18.007



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	81.32	76.900



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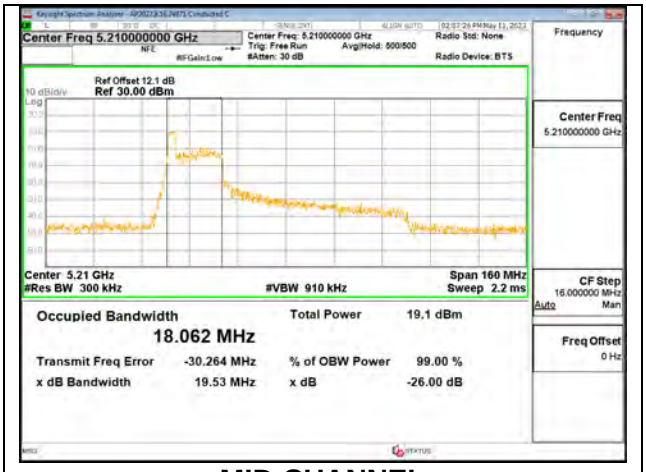
1TX Antenna 5 MODE: 26 Tones, RU Index 0

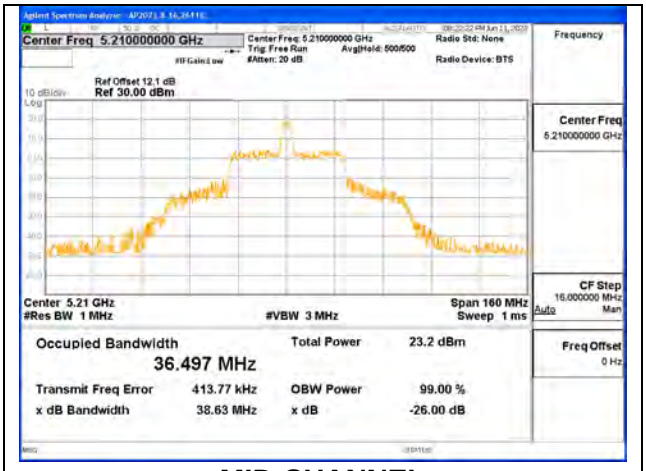
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	19.53	18.062



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	38.63	36.497



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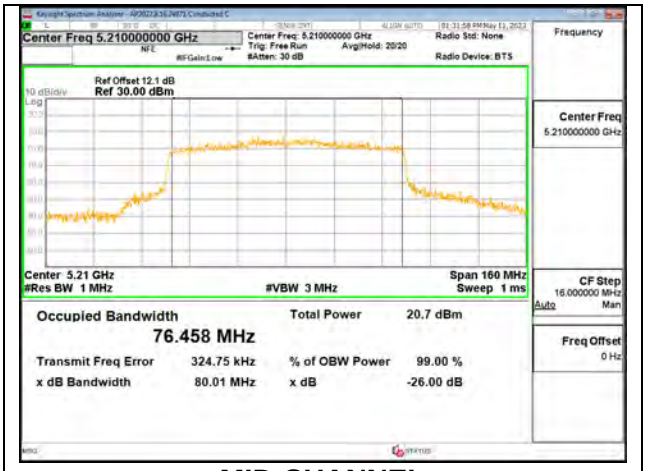
1TX Antenna 5 MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	19.20	18.145

MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5210	80.01	76.458



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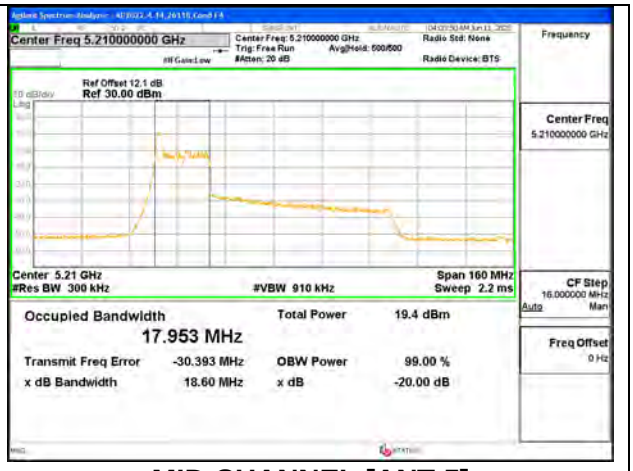
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

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	18.76	18.60	18.030	17.953

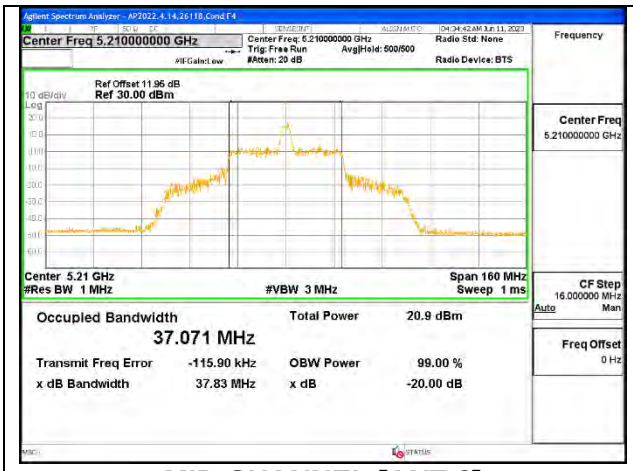
MID CHANNEL [ANT 6]



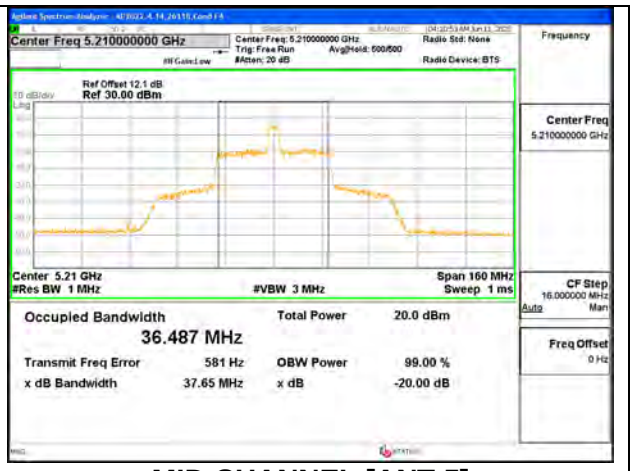
MID CHANNEL [ANT 5]

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	37.83	37.65	37.071	36.487



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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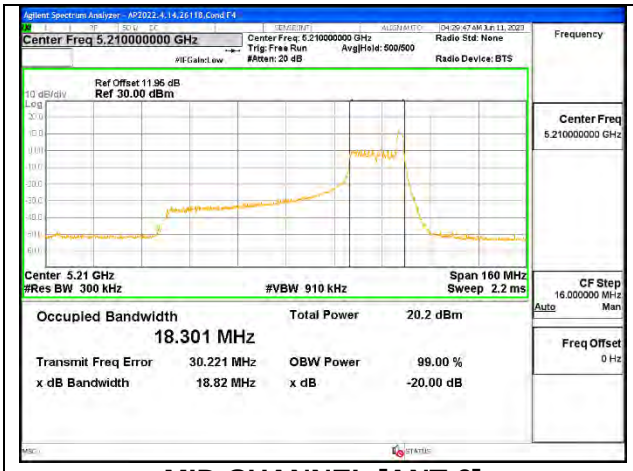
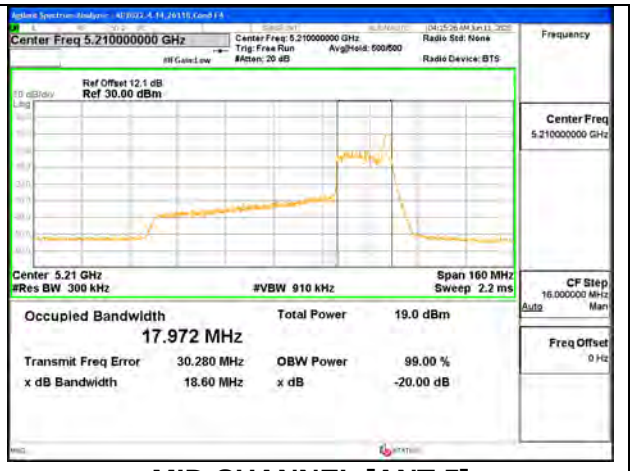
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 36

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	18.82	18.60	18.301	17.972



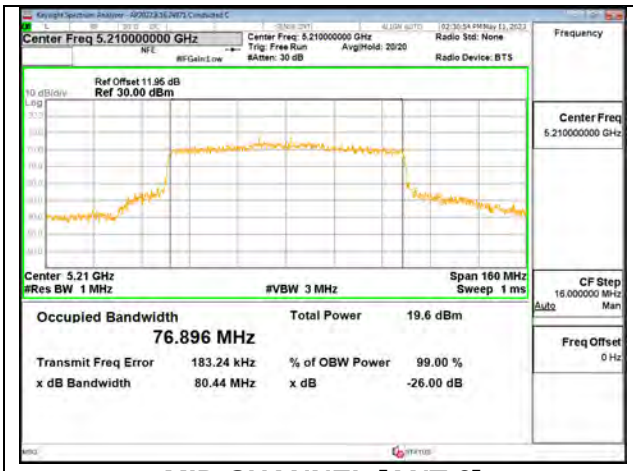
MID CHANNEL [ANT 6]



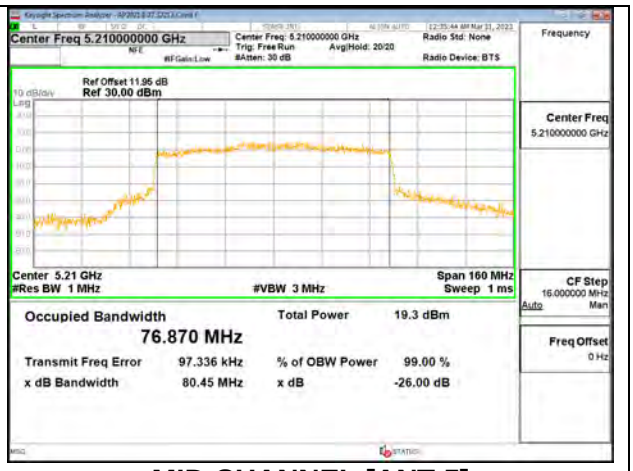
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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)
Mid	5210	80.44	80.45	76.896	76.870



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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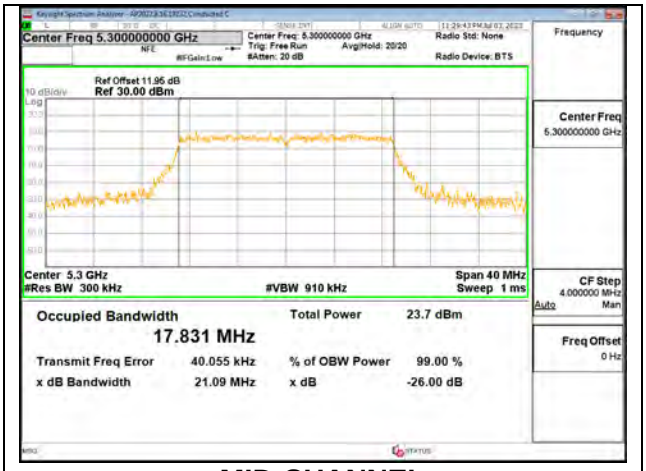
9.2.7. 802.11n HT20 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

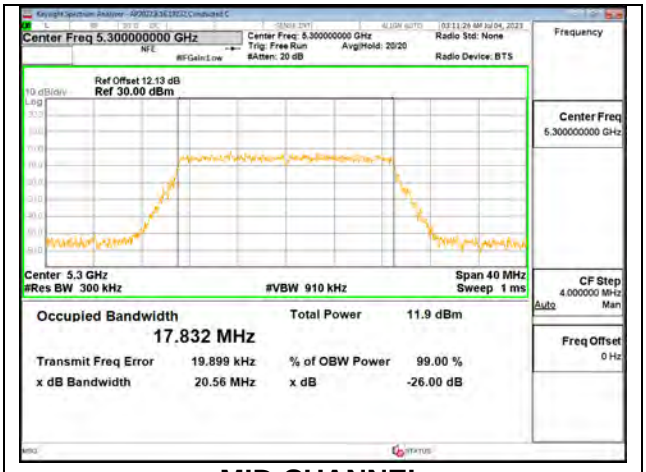
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.71	17.912
Mid	5300	21.09	17.831
High	5320	21.02	17.813



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	21.25	17.843
Mid	5300	20.56	17.832
High	5320	20.90	17.811



MID CHANNEL

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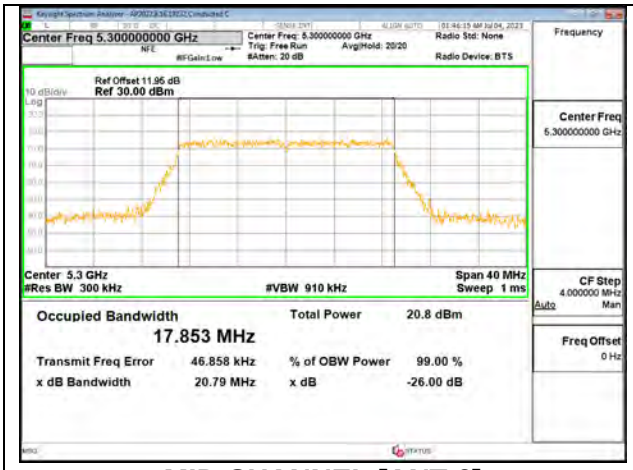
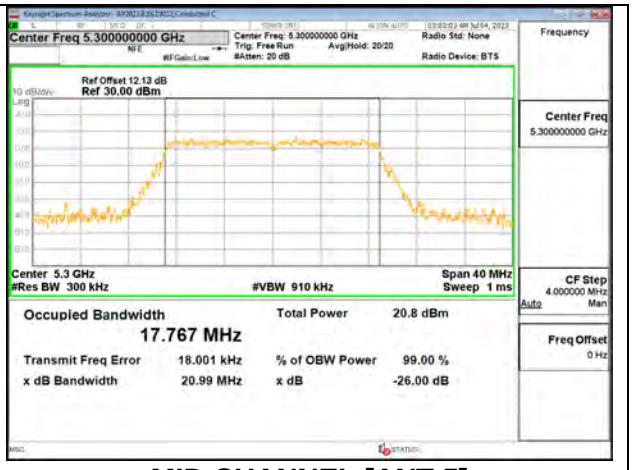
2TX Antenna 6 + Antenna 5 CDD MODE

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	20.92	20.78	17.841	17.829
Mid	5300	20.79	20.99	17.853	17.767
High	5320	21.05	20.62	17.843	17.792



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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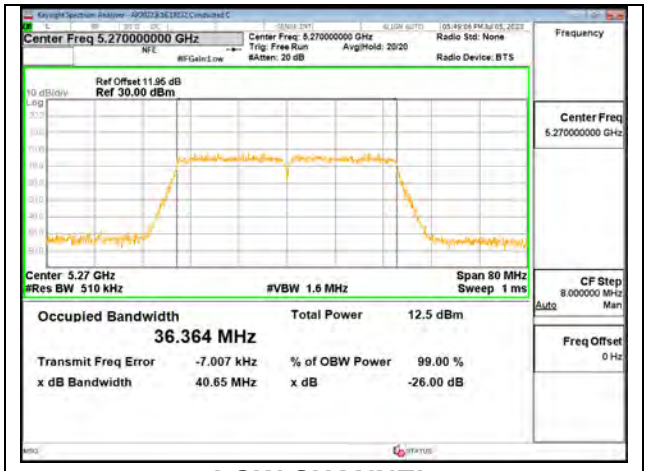
9.2.8. 802.11n HT40 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	40.65	36.364
High	5310	40.15	36.276



LOW CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	40.51	36.441
High	5310	40.68	36.341

LOW CHANNEL

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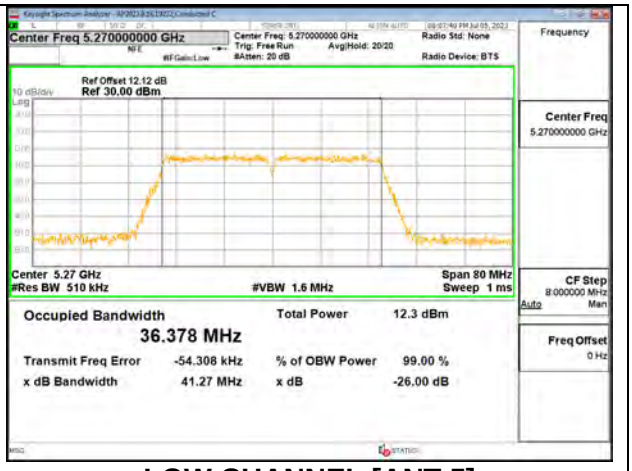
2TX Antenna 6 + Antenna 5 CDD MODE

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	40.58	41.27	36.396	36.378
High	5310	40.60	40.52	36.376	36.384

LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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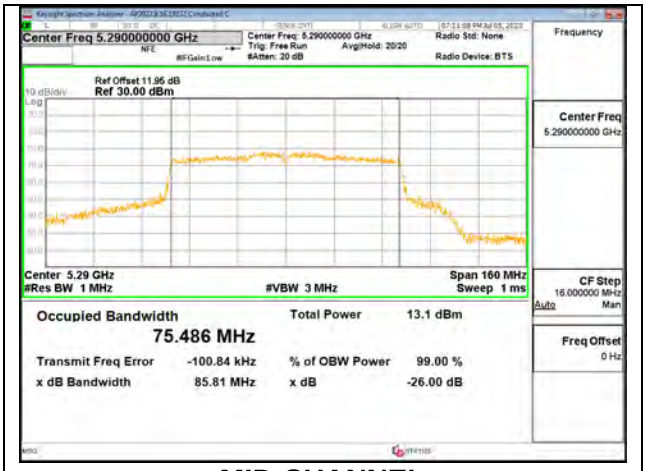
9.2.9. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

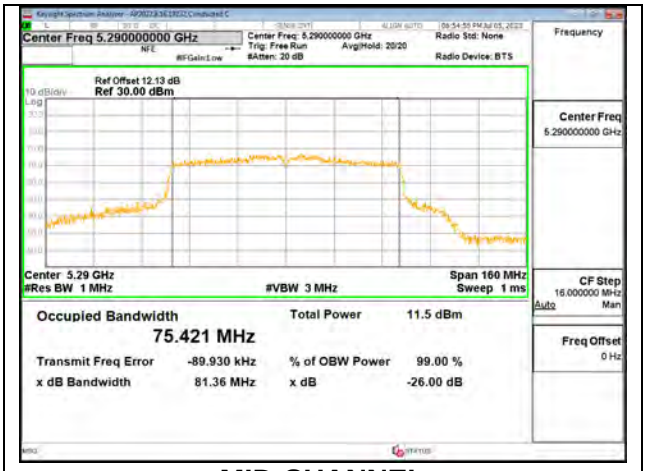
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5290	85.81	75.486



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5290	81.36	75.421



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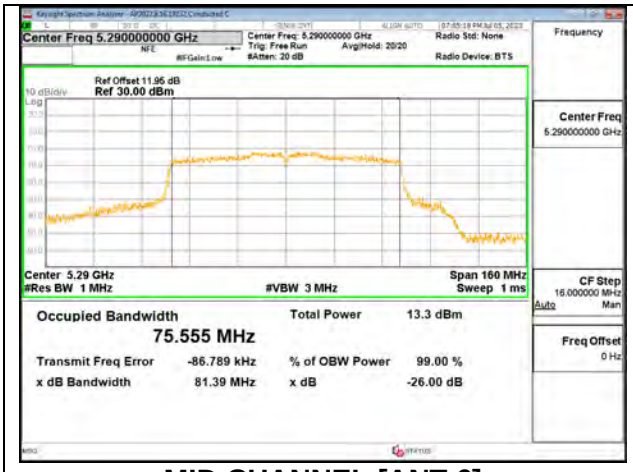
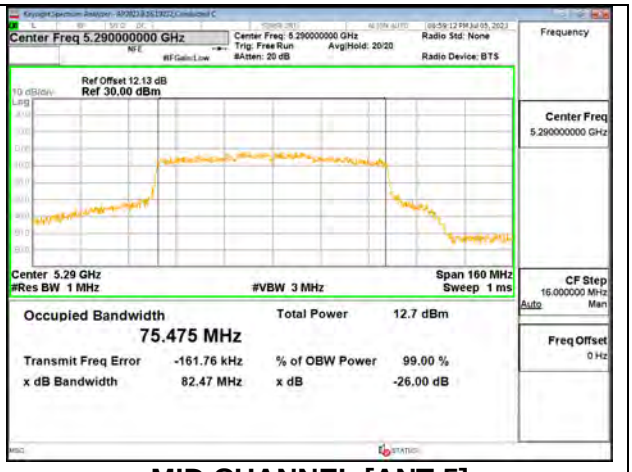
2TX Antenna 6 + Antenna 5 CDD MODE

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	81.39	82.47	75.555	75.475



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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9.2.10. 802.11ac VHT160 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	162.00	155.130

MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	161.70	154.880

MID CHANNEL

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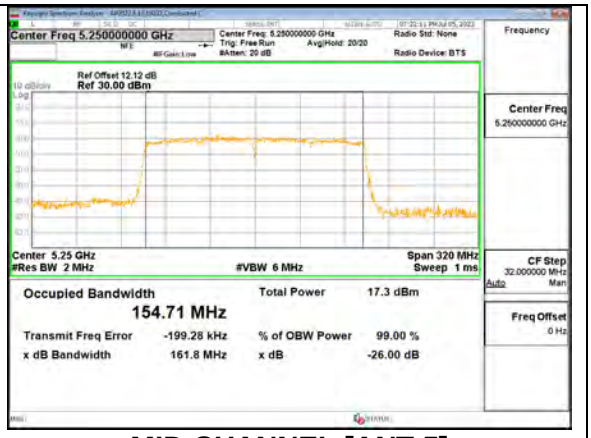
2TX Antenna 6 + Antenna 5 CDD MODE

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	162.80	161.80	155.340	154.710

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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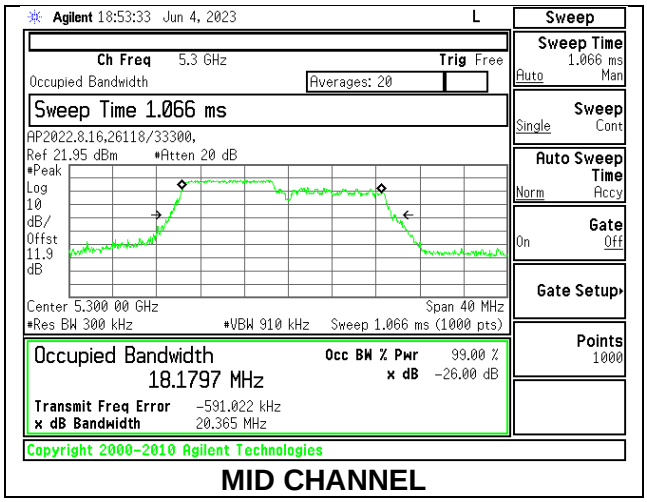
9.2.11. 802.11ax HE20 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE: 106 Tones, RU Index 53

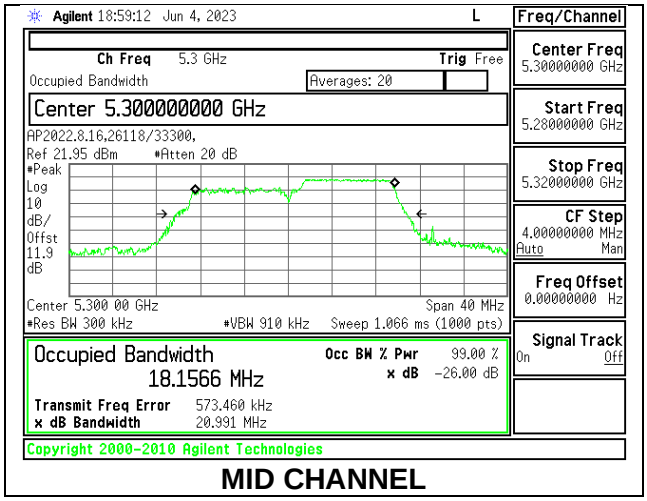
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.299	18.1811
Mid	5300	20.365	18.1797
High	5320	20.353	18.1252



MID CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.852	18.1903
Mid	5300	20.991	18.1566
High	5320	20.641	18.2270



MID CHANNEL

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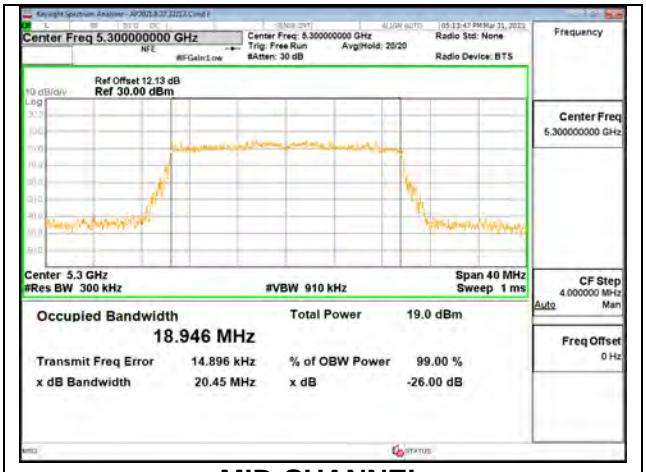
1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.72	18.938
Mid	5300	20.45	18.946
High	5320	20.86	18.952



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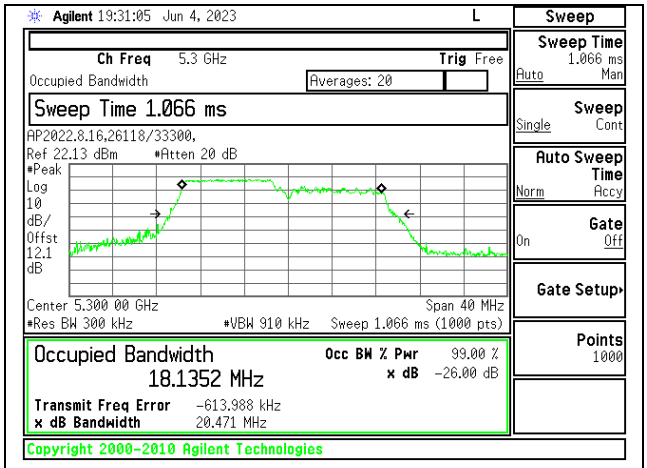
1TX Antenna 5 MODE: 106 Tones, RU Index 53

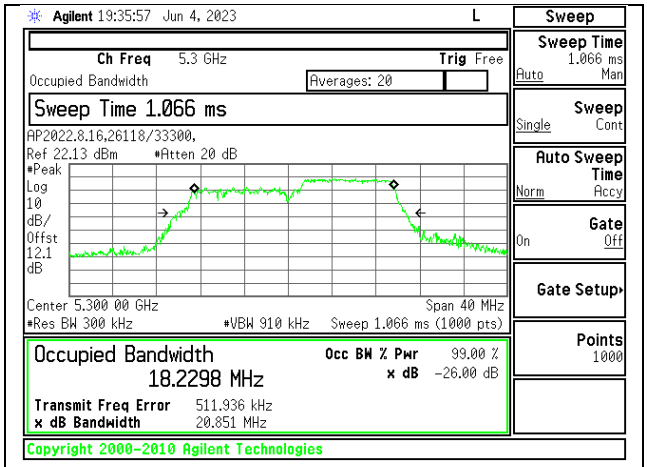
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.391	18.1720
Mid	5300	20.471	18.1352
High	5320	20.456	18.1477



MID CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.935	18.2244
Mid	5300	20.851	18.2298
High	5320	20.918	18.2024



MID CHANNEL

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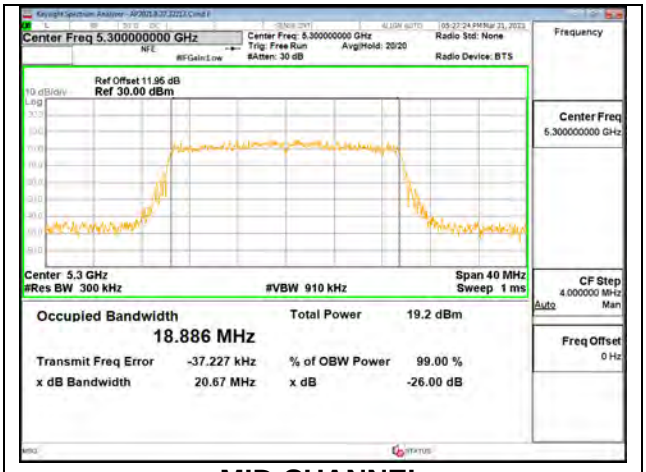
1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5260	20.76	18.926
Mid	5300	20.67	18.886
High	5320	20.70	18.955



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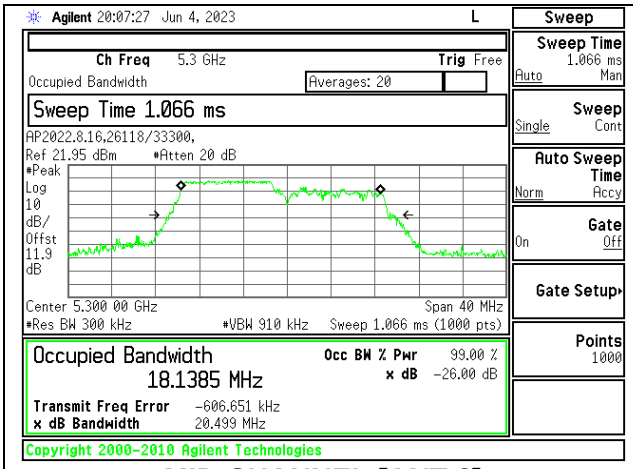
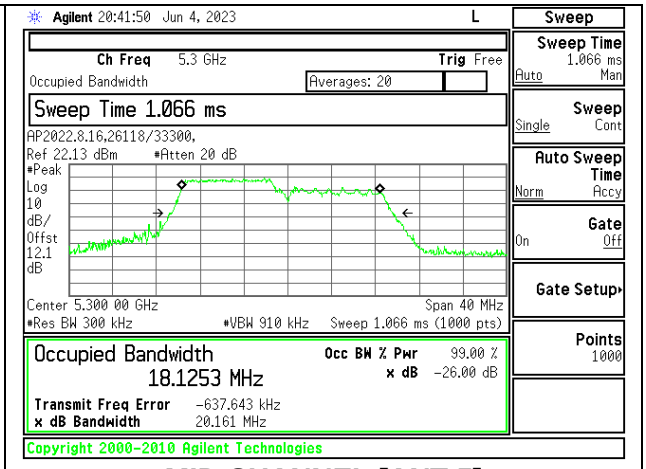
2TX Antenna 6 + Antenna 5 CDD MODE: 103 Tones, RU Index 53

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	20.350	20.041	18.1466	18.0706
Mid	5300	20.499	20.161	18.1385	18.1253
High	5320	20.380	19.948	18.1476	18.0733



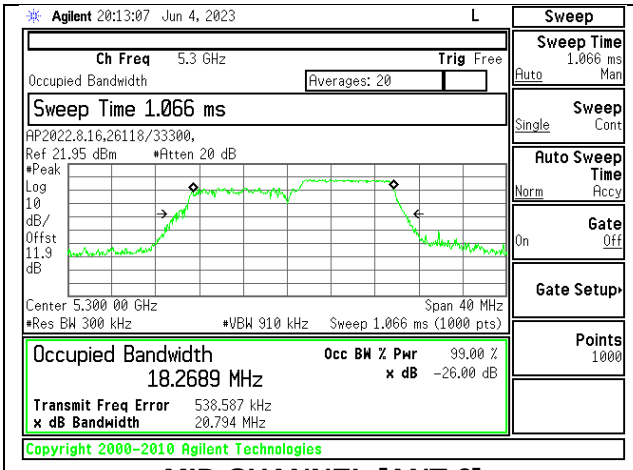
MID CHANNEL [ANT 6]



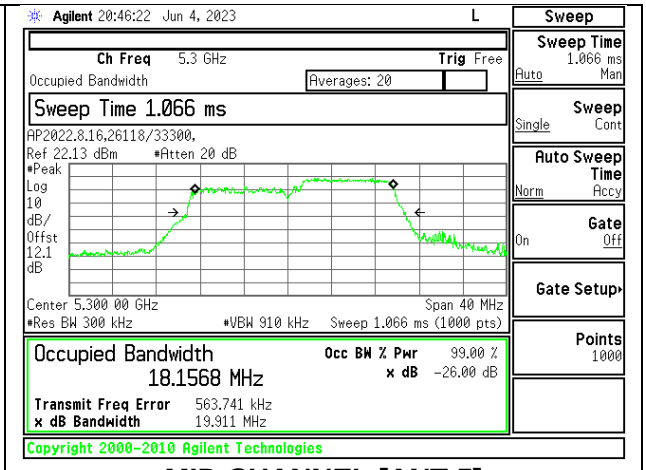
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 54

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	20.743	19.863	18.2071	18.1785
Mid	5300	20.794	19.911	18.2689	18.1568
High	5320	20.860	19.825	18.2033	18.1100



MID CHANNEL [ANT 6]



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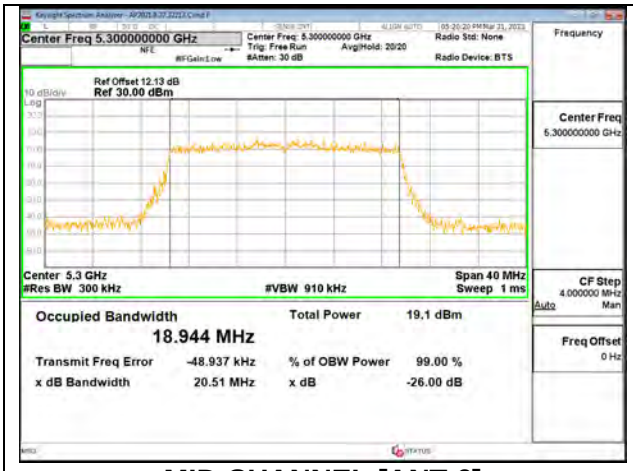
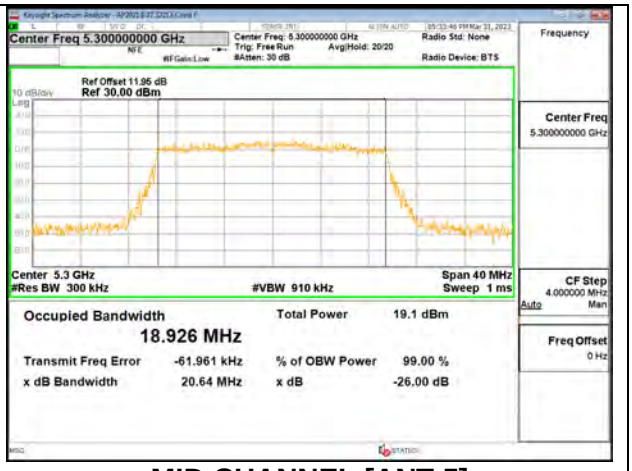
2TX Antenna 6 + Antenna 5 CDD MODE: SU Mode

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	20.58	20.45	18.846	18.909
Mid	5300	20.51	20.64	18.944	18.926
High	5320	21.42	21.14	18.946	18.958



MID CHANNEL [ANT 6]



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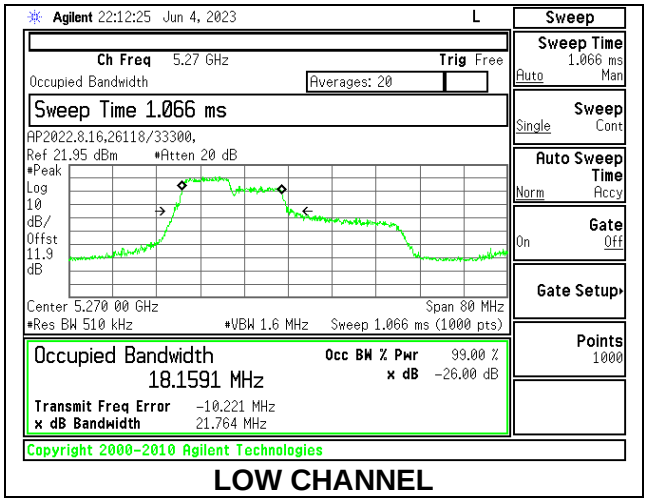
9.2.12. 802.11ax HE40 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE: 106 Tones, RU Index 53

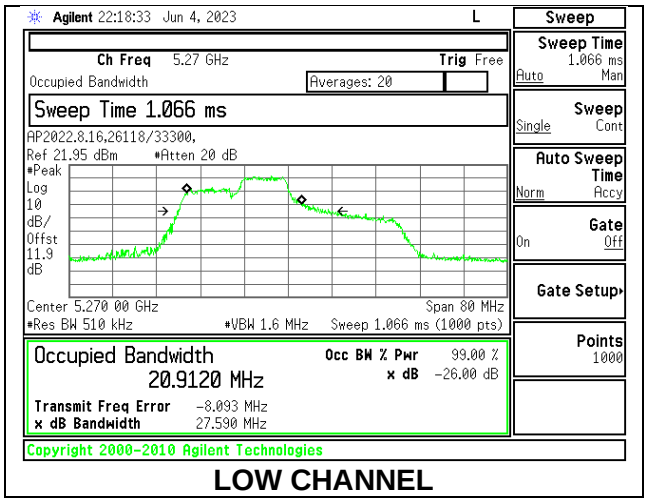
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	21.764	18.1591
High	5310	21.776	18.1815



LOW CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	27.590	20.9120
High	5310	27.555	20.5863



LOW CHANNEL

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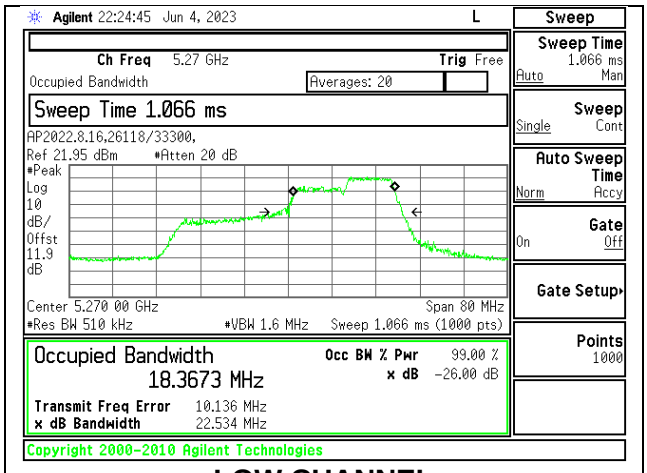
1TX Antenna 6 MODE: 106 Tones, RU Index 56

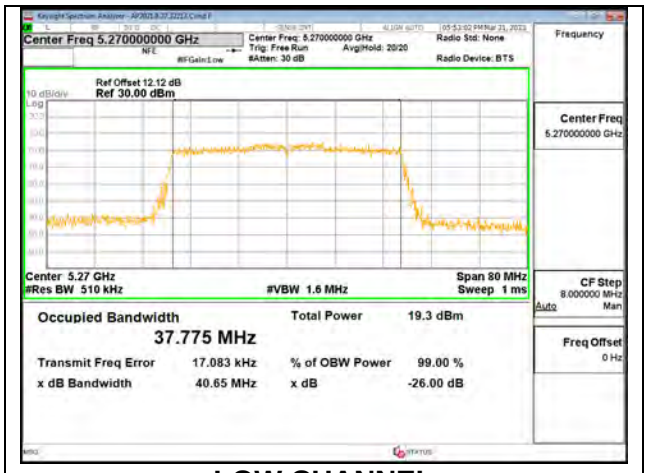
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	22.534	18.3673
High	5310	22.711	18.2710



LOW CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	40.65	37.775
High	5310	40.86	37.742



LOW CHANNEL

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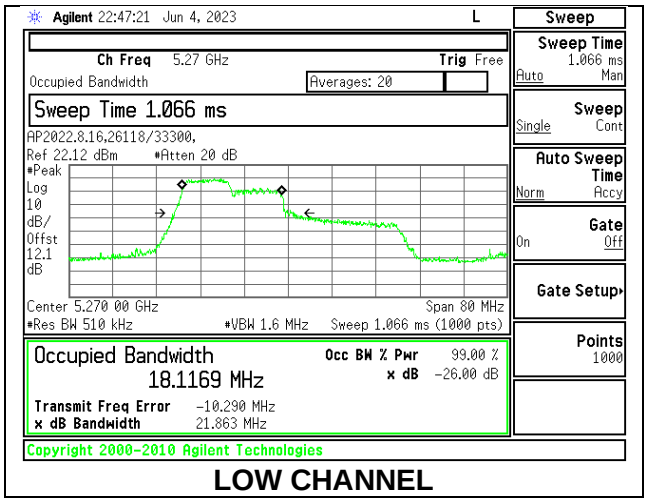
1TX Antenna 5 MODE: 106 Tones, RU Index 53

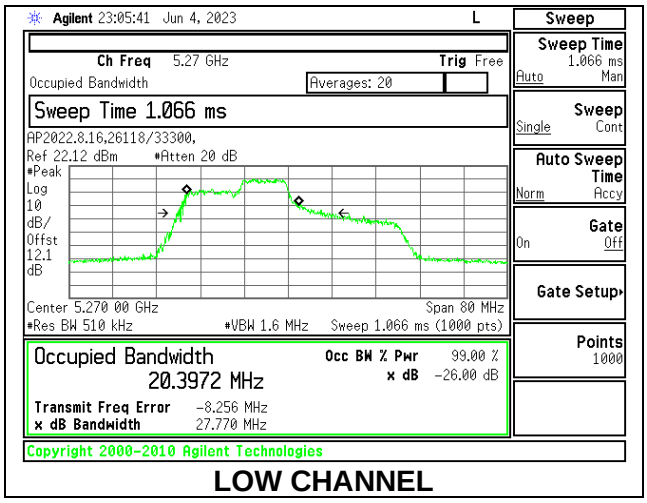
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	21.863	18.1169
High	5310	21.684	18.2082



LOW CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	27.770	20.3972
High	5310	27.211	20.6481



LOW CHANNEL

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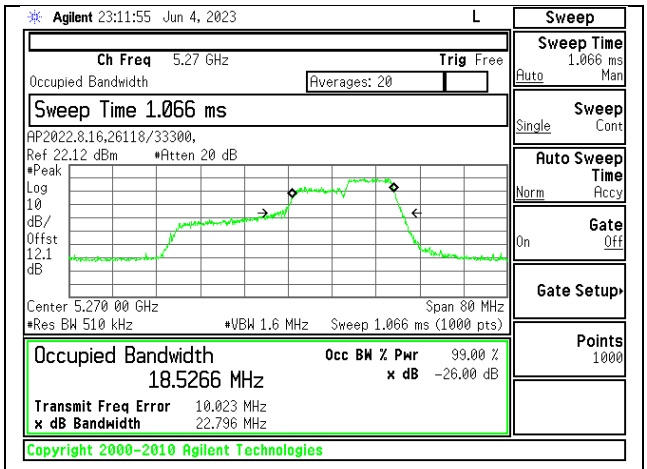
1TX Antenna 5 MODE: 106 Tones, RU Index 56

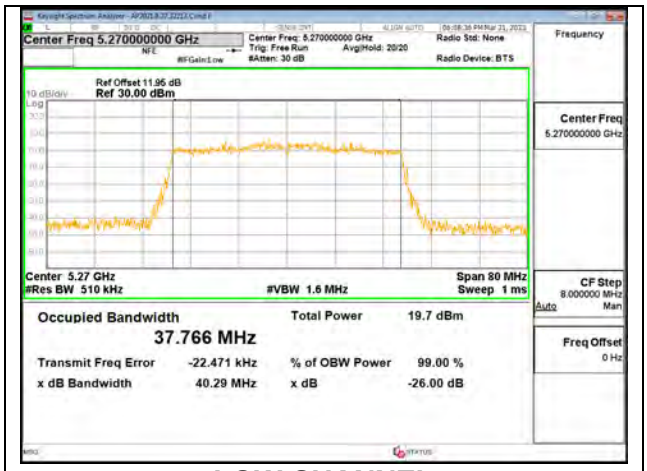
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	22.796	18.5266
High	5310	22.056	18.3224



LOW CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5270	40.29	37.766
High	5310	40.66	37.833



LOW CHANNEL

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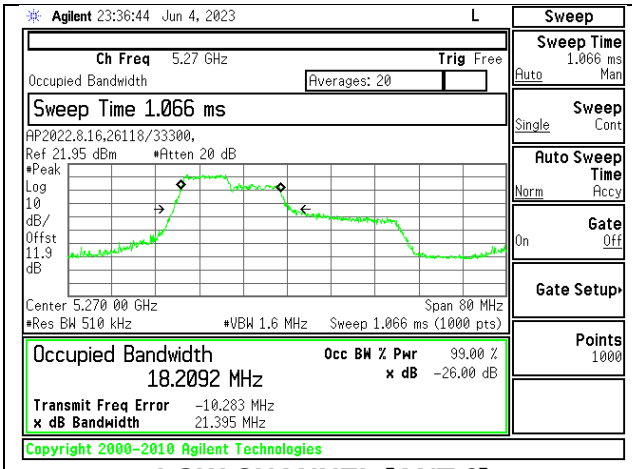
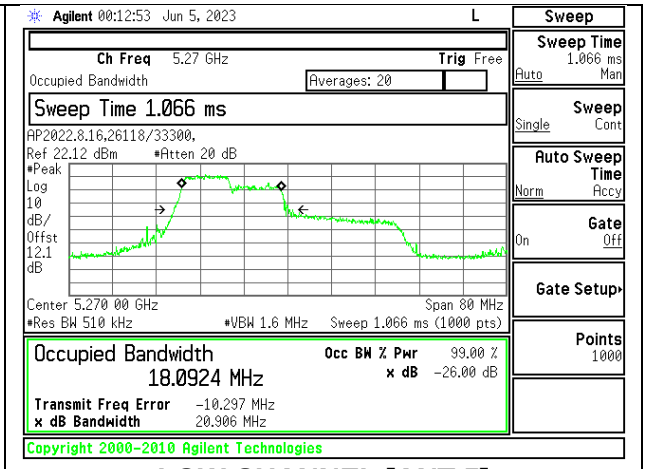
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 53

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	5270	21.395	20.906	18.2092	18.0924
High	5310	22.059	21.720	18.0649	18.0865



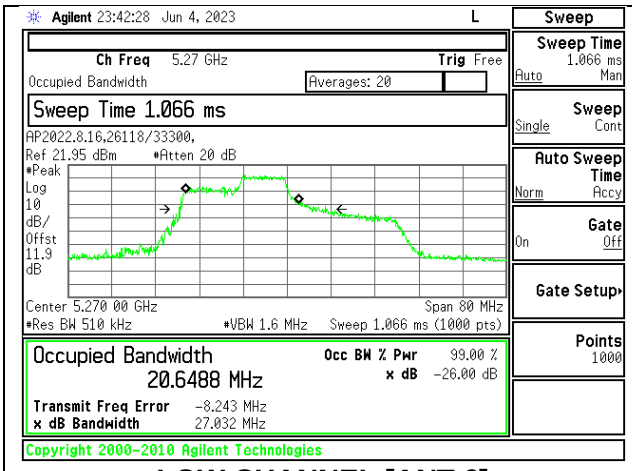
LOW CHANNEL [ANT 6]



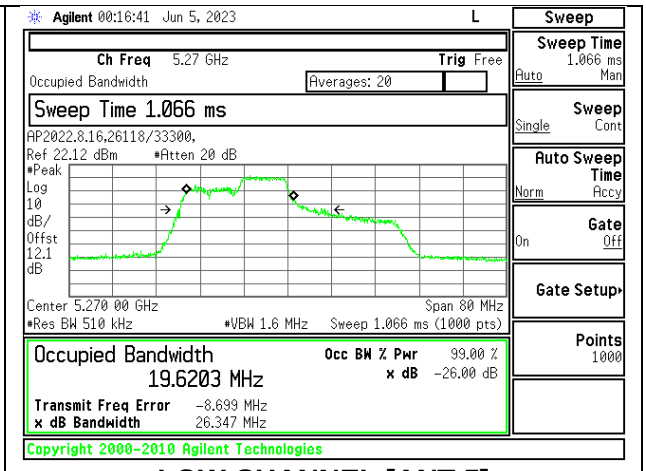
LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 54

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	5270	27.032	26.347	20.6488	19.6203
High	5310	27.777	26.197	20.8420	19.6057



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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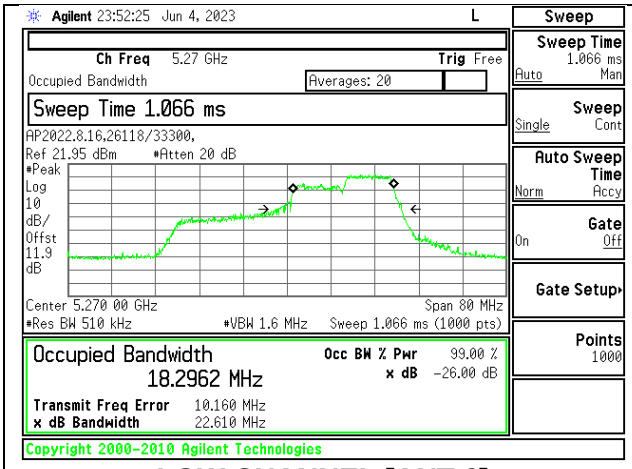
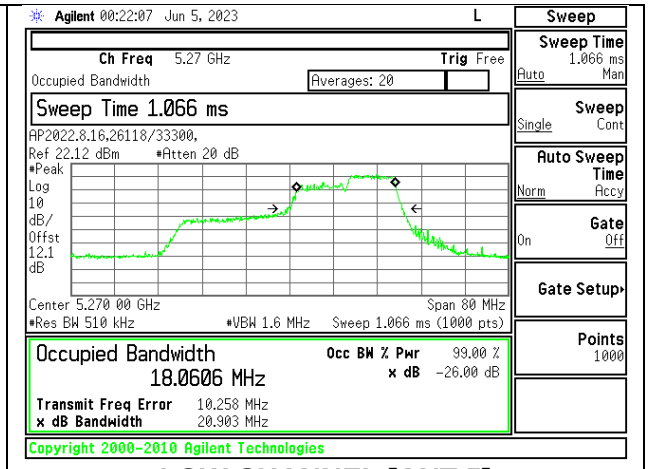
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 56

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	5270	22.610	20.903	18.2962	18.0606
High	5310	22.765	21.189	18.4106	18.0948



LOW CHANNEL [ANT 6]

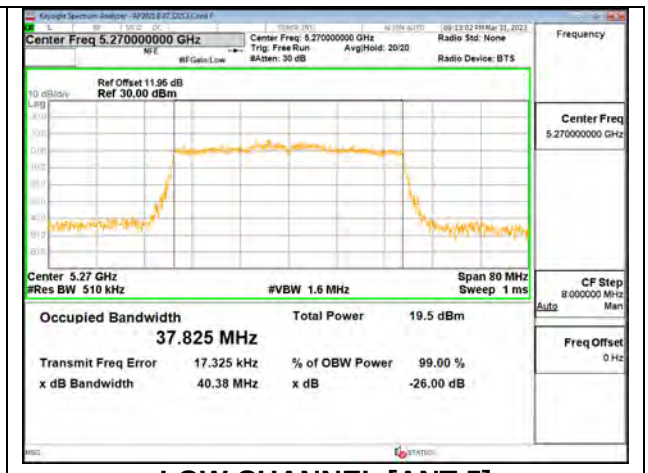


LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5270	40.18	40.38	37.687	37.825
High	5310	41.08	41.63	37.727	37.711

LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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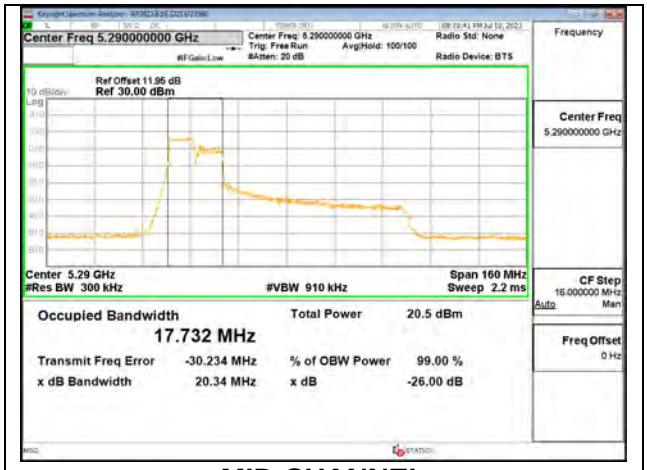
9.2.13. 802.11ax HE80 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE: 106 Tones, RU Index 53

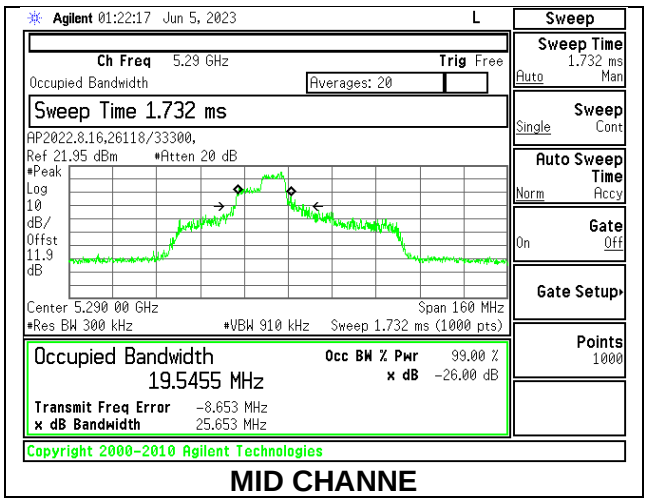
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	20.34	17.732



MID CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	25.653	19.5455



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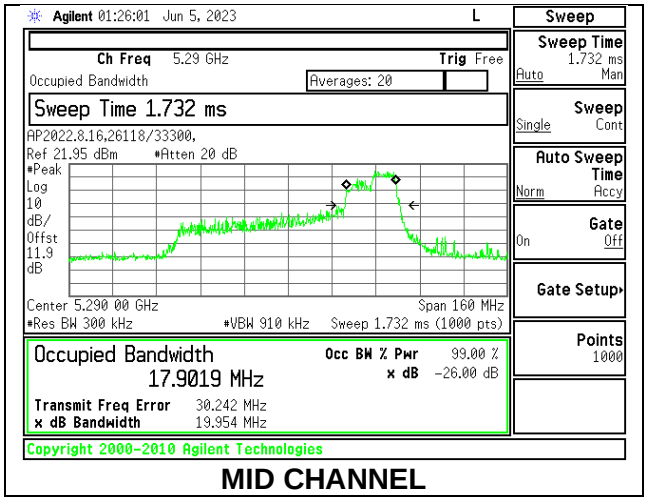
1TX Antenna 6 MODE: 106 Tones, RU Index 60

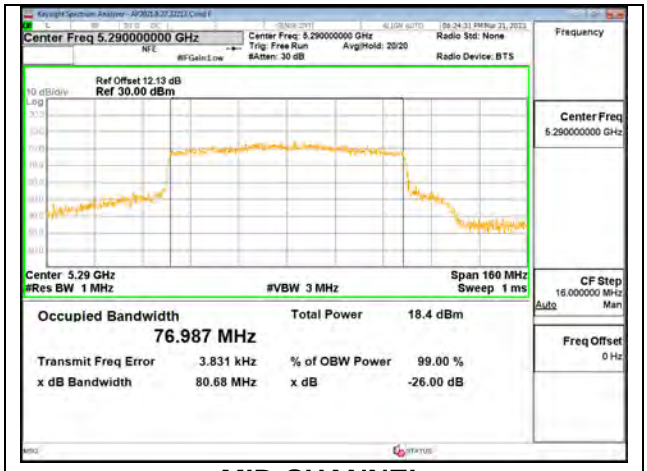
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	19.954	17.9019



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	80.68	76.9870



MID CHANNEL

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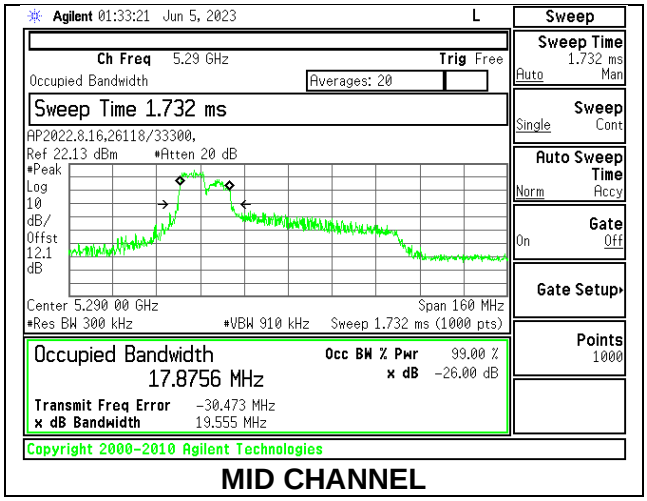
1TX Antenna 5 MODE: 106 Tones, RU Index 53

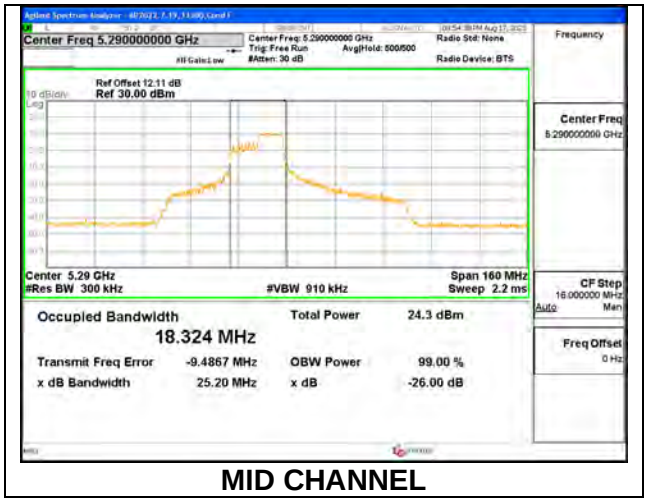
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	19.555	17.8756



MID CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	25.200	18.324



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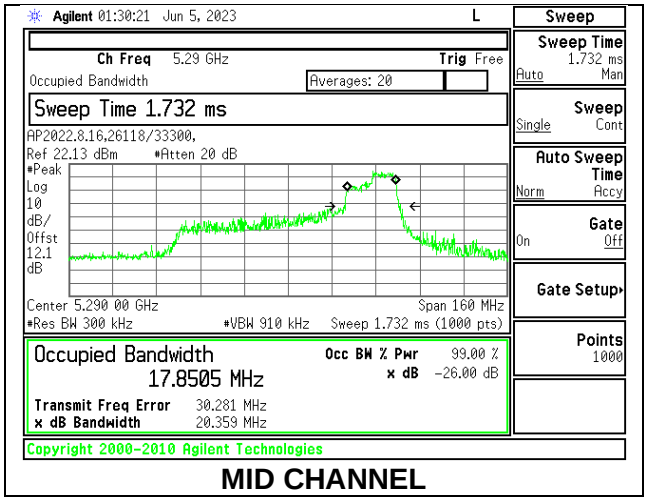
1TX Antenna 5 MODE: 106 Tones, RU Index 60

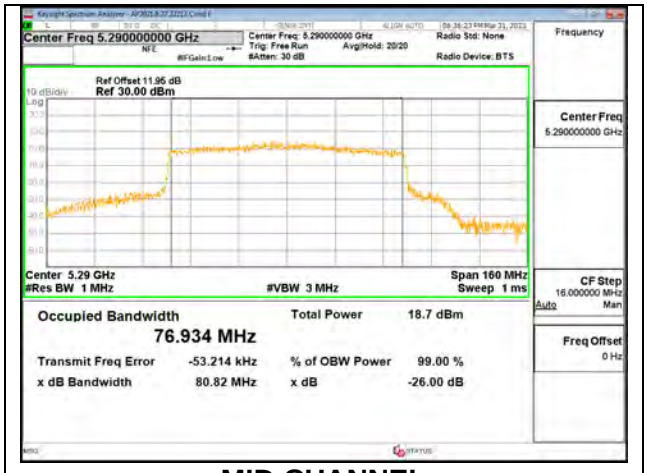
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	20.359	17.8505



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5290	80.82	76.934



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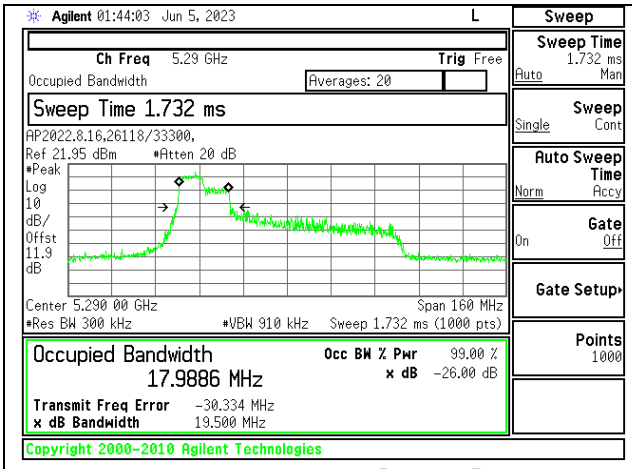
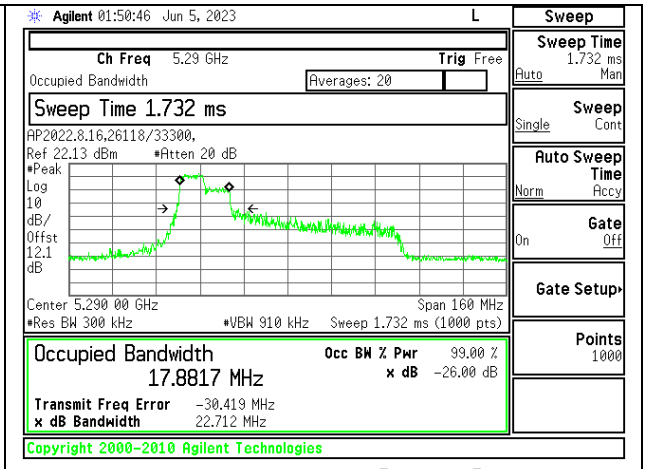
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 53

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	5290	19.500	22.712	17.9886	17.8817



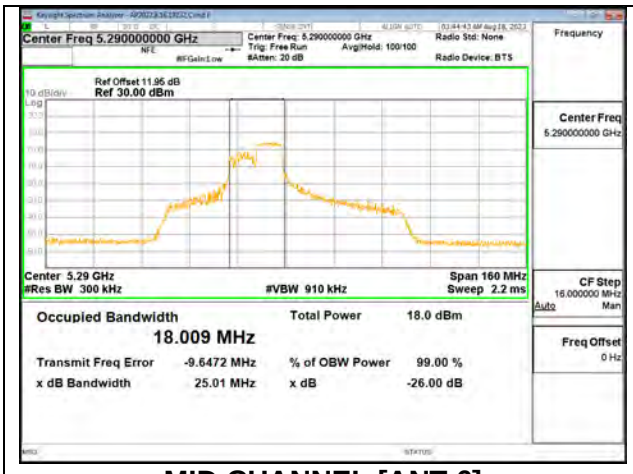
MID CHANNEL [ANT 6]



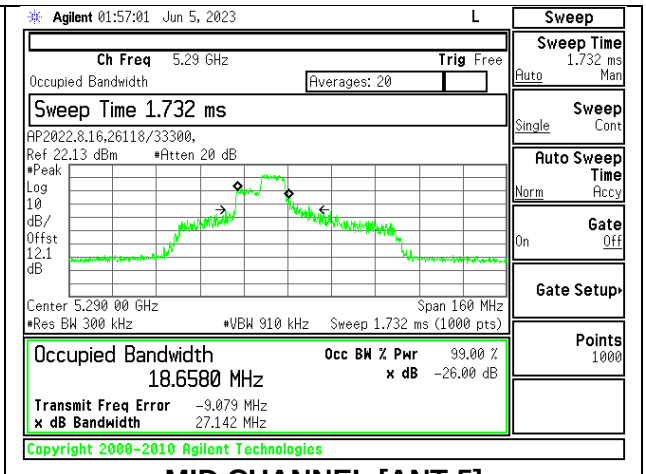
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 56

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	5290	25.01	27.14	18.0090	18.6580



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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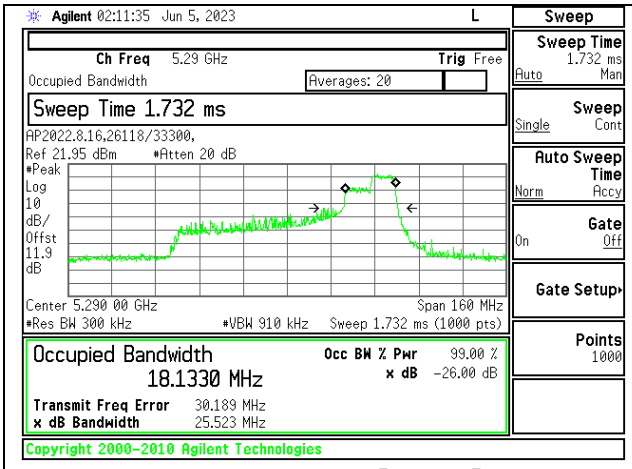
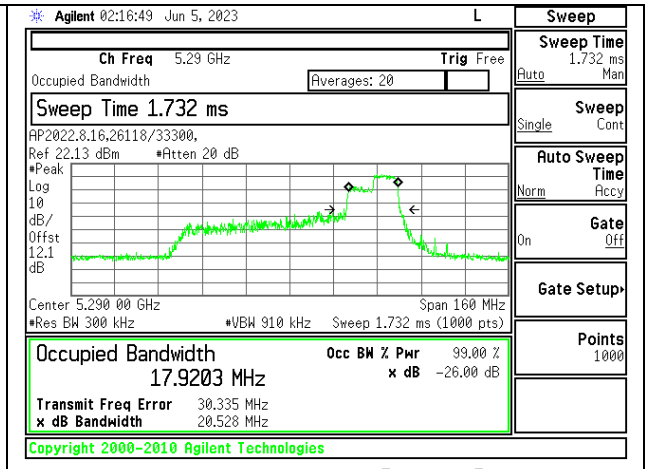
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 60

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	5290	25.523	20.528	18.1330	17.9203



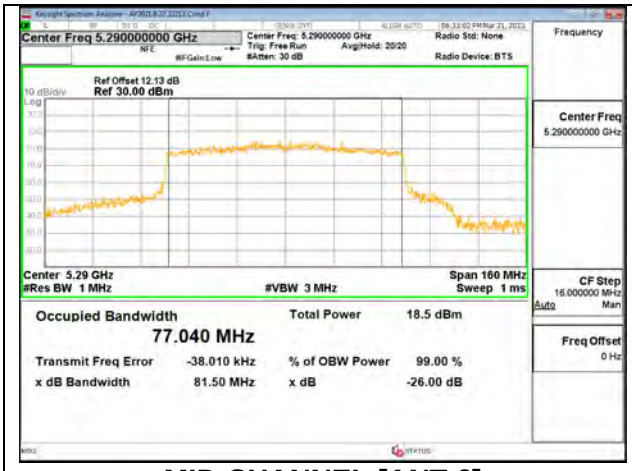
MID CHANNEL [ANT 6]



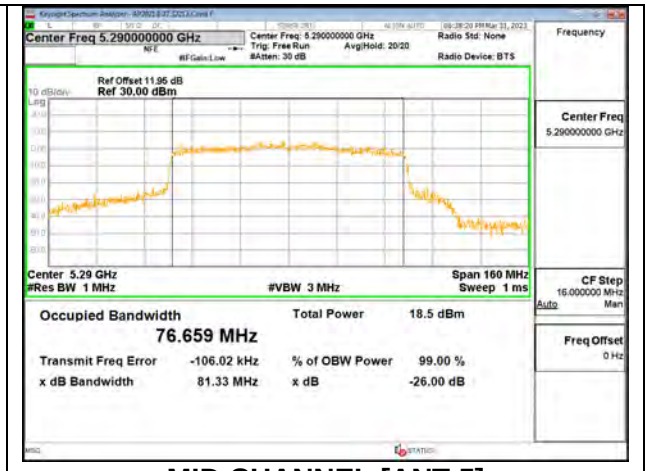
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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)
Mid	5290	81.50	81.33	77.040	76.659



MID CHANNEL [ANT 6]



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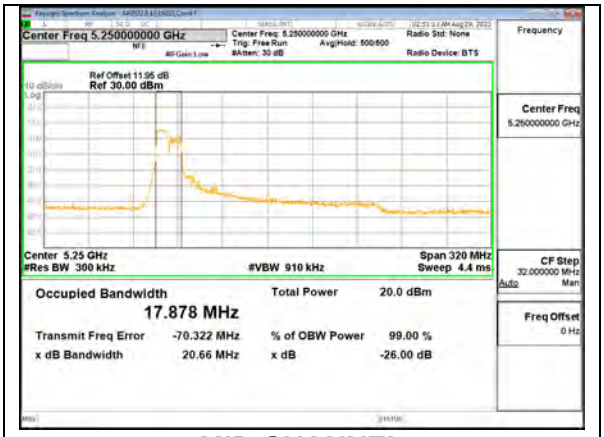
9.2.14. 802.11ax HE160 MODE IN THE 5.3 GHz BAND

1TX Antenna 6 MODE: 106-Tone, RU Index 53

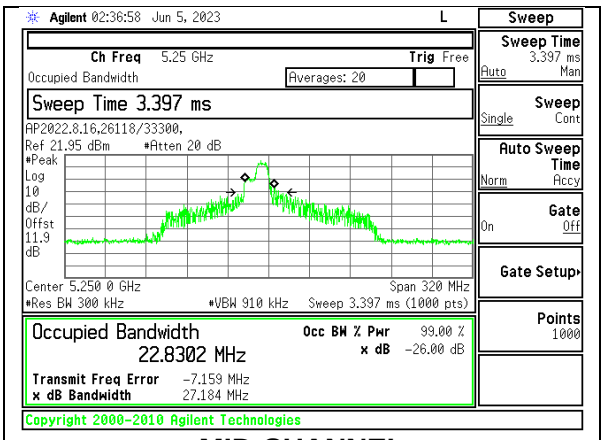
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	20.66	17.878



MID CHANNEL

1TX Antenna 6 MODE: 106-Tone, RU Index 60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	27.184	22.8302



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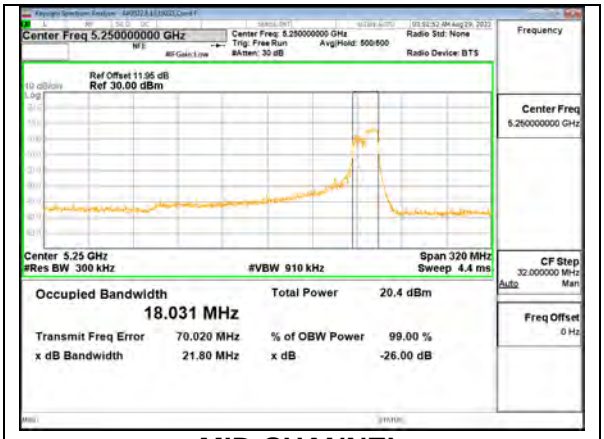
1TX Antenna 6 MODE: 106-Tone, RU Index S60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	21.80	18.031



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	162.20	155.74

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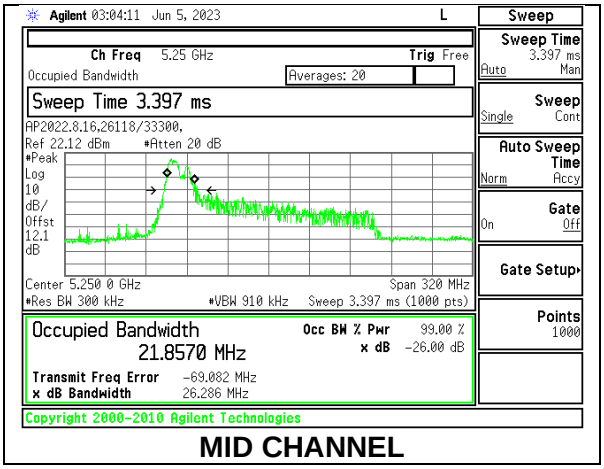
1TX Antenna 5 MODE: 106-Tone, RU Index 53

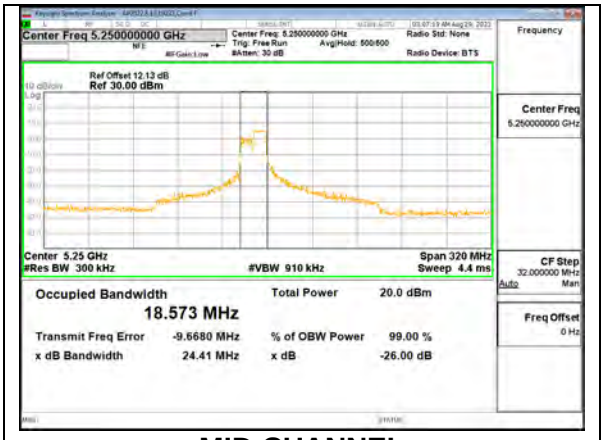
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	26.286	21.8570



MID CHANNEL

1TX Antenna 5 MODE: 106-Tone, RU Index 60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	24.410	18.573



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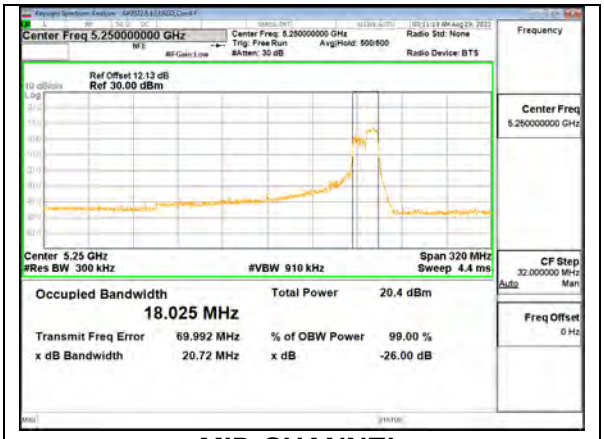
1TX Antenna 5 MODE: 106-Tone, RU Index S60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	20.720	18.025



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5250	162.10	155.270

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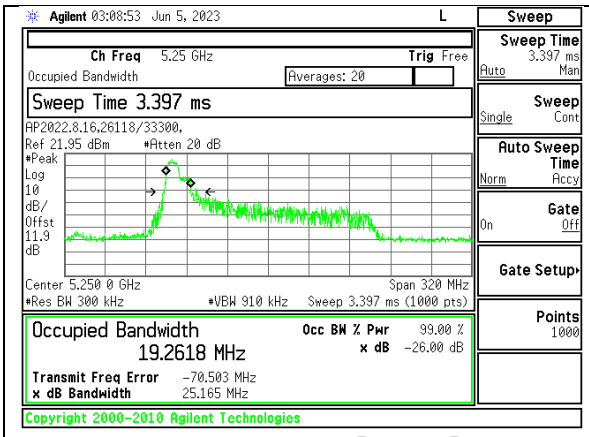
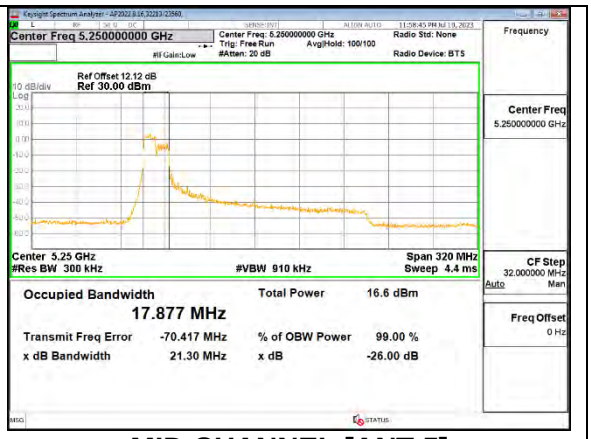
2TX Antenna 6 + Antenna 5 OFDMA MODE: 106-Tone, RU Index 53

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5250	25.165	21.300	19.2618	17.8770



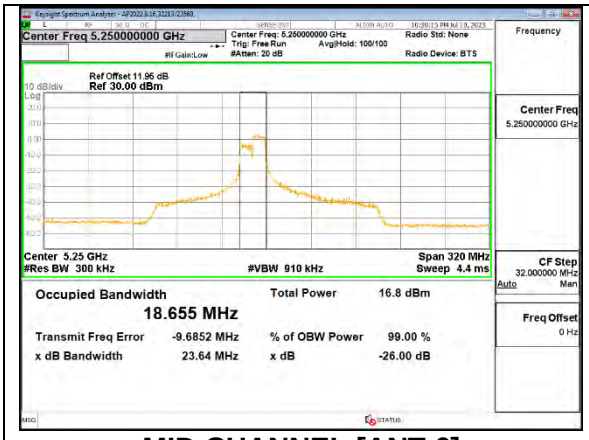
MID CHANNEL [ANT 6]



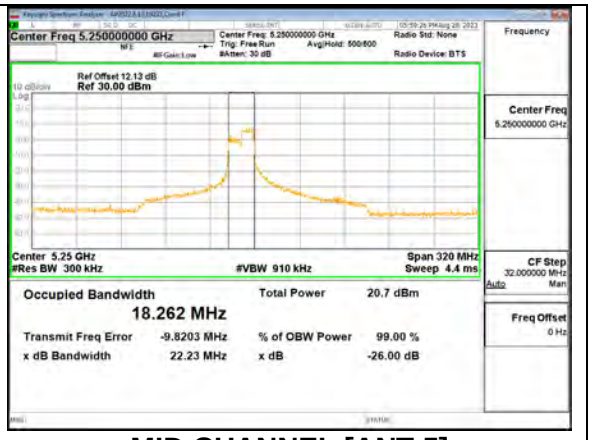
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 OFDMA MODE: 106-Tone, RU Index 60

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5250	23.64	22.23	18.655	18.262



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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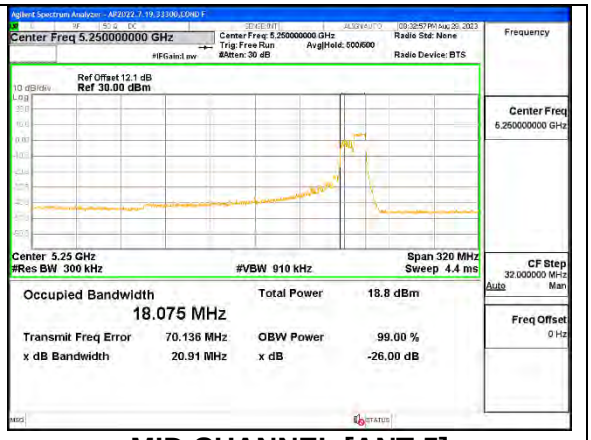
2TX Antenna 6 + Antenna 5 OFDMA MODE: 106-Tone, RU Index S60

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5250	22.30	20.91	18.081	18.075

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 OFDMA MODE: SU 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	5250	163.00	162.30	155.87	155.34

MID CHANNEL [ANT 6]

MID CHANNEL [ANT 5]

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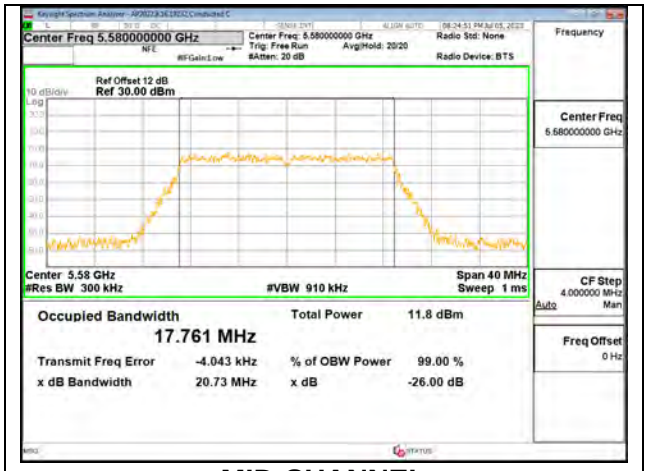
9.2.15. 802.11n HT20 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE

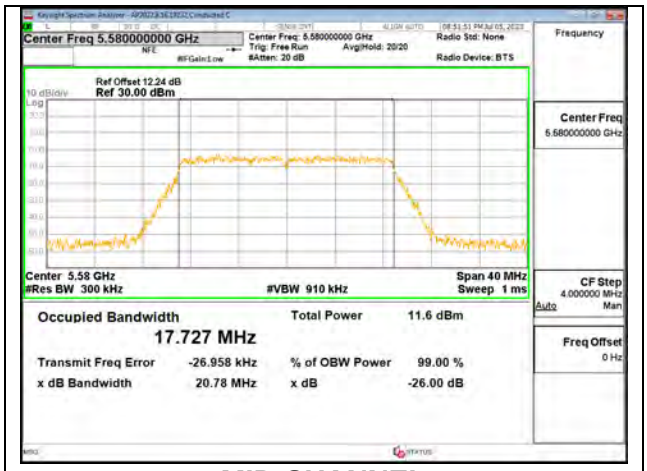
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	21.02	17.810
Mid	5580	20.73	17.761
High	5700	21.07	17.814
144	5720	20.74	17.761



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	20.83	17.800
Mid	5580	20.78	17.727
High	5700	20.87	17.814
144	5720	20.80	17.773



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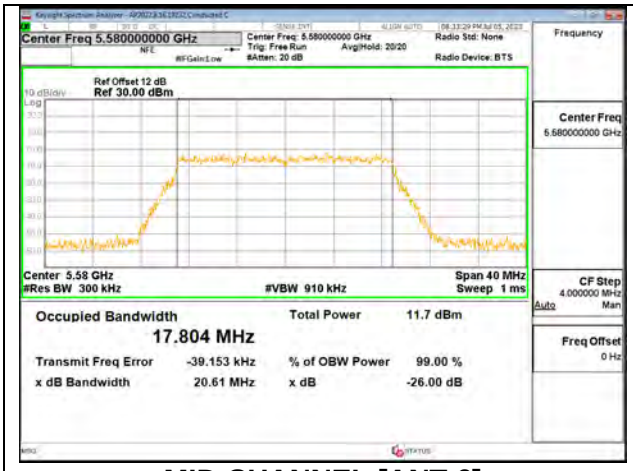
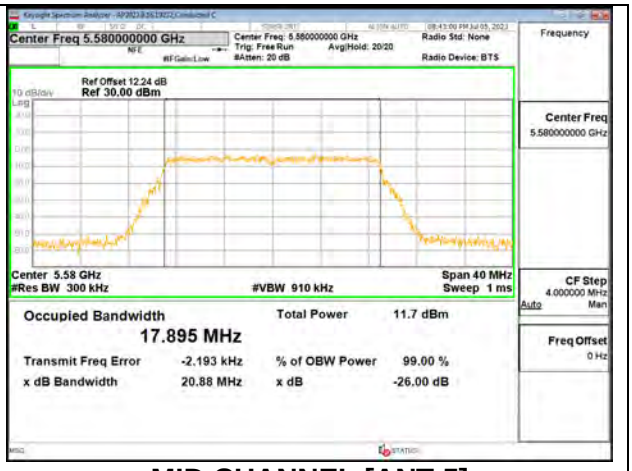
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5500	20.97	21.10	17.805	17.808
Mid	5580	20.61	20.88	17.804	17.895
High	5700	20.77	20.77	17.765	17.818
144	5720	20.58	20.61	17.746	17.783



MID CHANNEL [ANT 6]



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9.2.16. 802.11n HT40 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	40.98	36.224
Mid	5550	40.67	36.407
High	5670	40.86	36.449
142	5710	40.50	36.238

MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	41.08	36.531
Mid	5550	40.35	36.402
High	5670	40.78	36.351
142	5710	40.92	36.292

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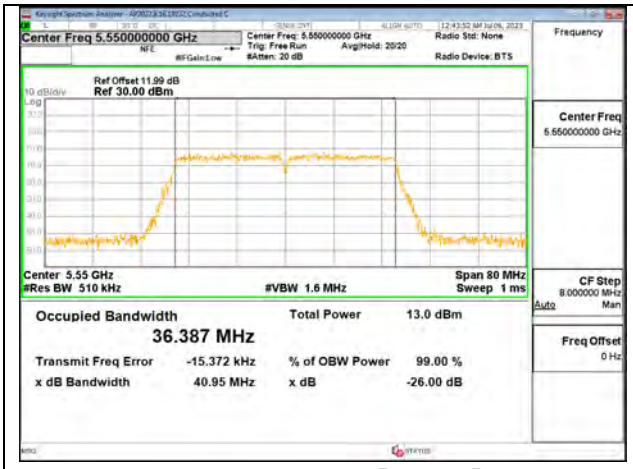
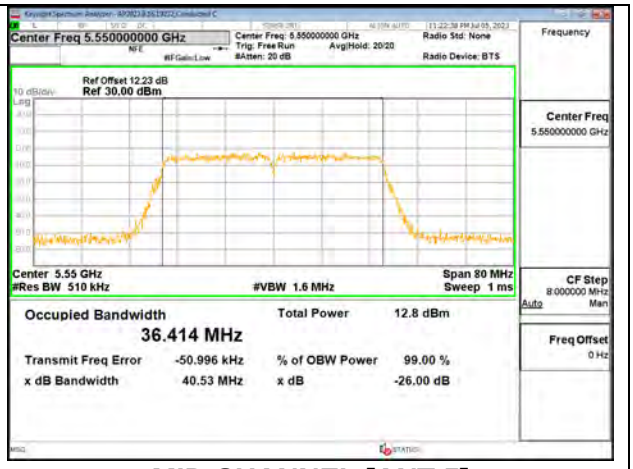
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5510	41.07	41.53	36.409	36.365
Mid	5550	40.95	40.53	36.387	36.414
High	5670	40.87	41.16	36.468	36.392
142	5710	40.59	40.55	36.174	36.149



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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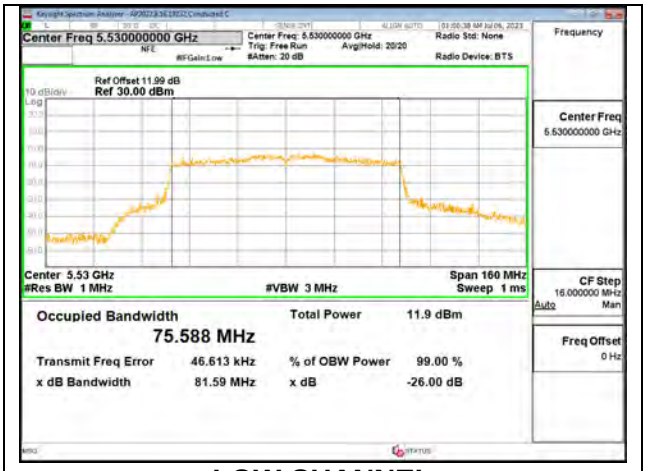
9.2.17. 802.11ac VHT80 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE

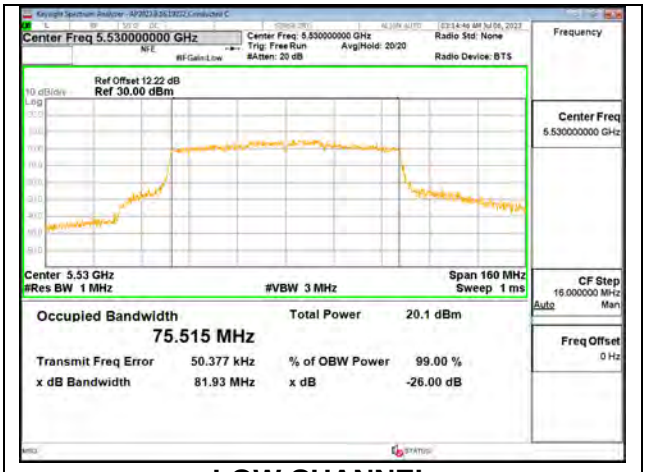
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	81.59	75.588
High	5610	82.36	75.550
138	5690	80.64	75.559



LOW CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	81.93	75.515
High	5610	83.80	75.583
138	5690	80.92	75.545



LOW CHANNEL

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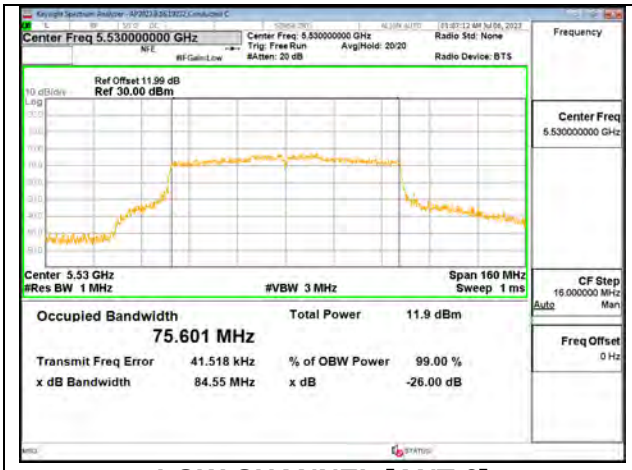
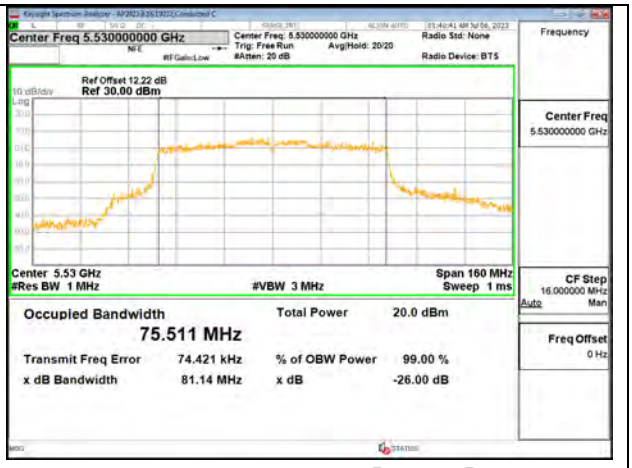
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5530	84.55	81.14	75.601	75.511
High	5610	81.86	79.56	75.578	75.583
138	5690	80.67	80.08	75.646	75.725



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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9.2.18. 802.11ac VHT160 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5570	162.7	154.63

MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99& Bandwidth (MHz)
Mid	5570	162.1	154.14

MID CHANNEL

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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	5570	162.1	161.9	154.33	154.37

LOW CHANNEL [ANT 6]

LOW CHANNEL [ANT 5]

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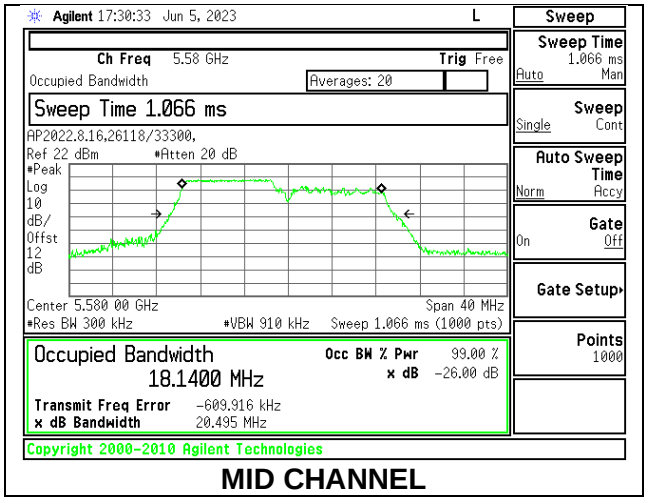
9.2.19. 802.11ax HE20 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE: 106 Tones, RU Index 53

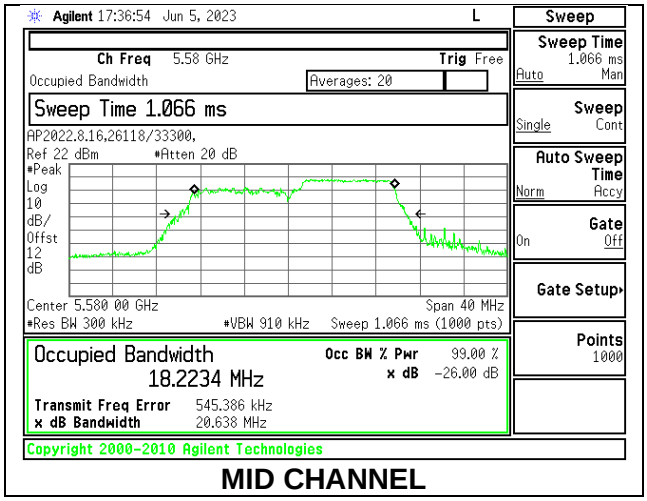
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	20.560	18.1163
Mid	5580	20.495	18.1400
High	5700	20.423	18.1829
144	5720	20.322	18.1262



MID CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	20.675	18.2279
Mid	5580	20.638	18.2234
High	5700	20.793	18.0763
144	5720	20.876	18.1949



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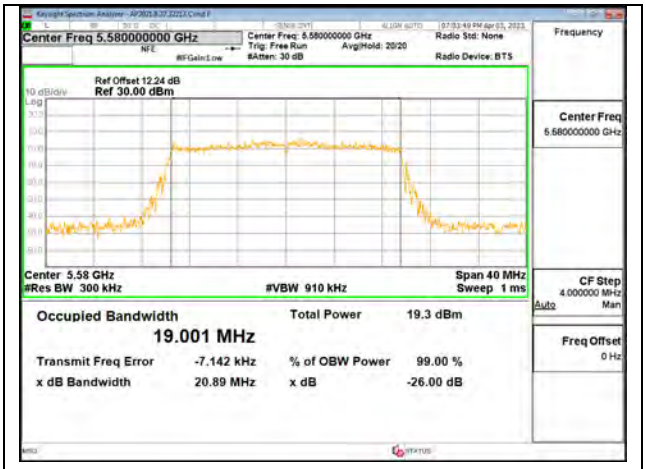
1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	20.94	18.988
Mid	5580	20.89	19.001
High	5700	22.55	18.933
144	5720	20.72	18.953



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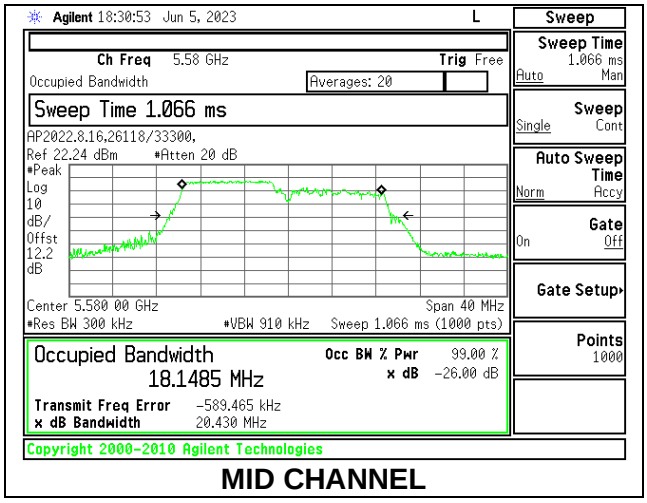
1TX Antenna 5 MODE: 106 Tones, RU Index 53

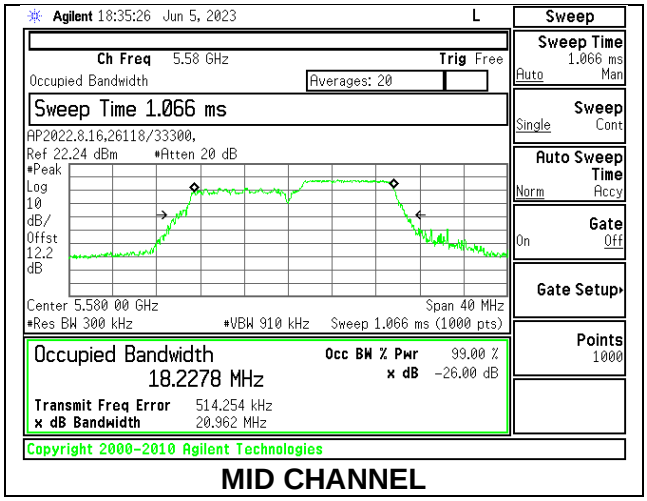
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	20.533	18.1558
Mid	5580	20.430	18.1485
High	5700	20.365	18.1297
144	5720	20.306	18.1595



MID CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	20.864	18.1411
Mid	5580	20.962	18.2278
High	5700	20.773	18.1730
144	5720	20.742	18.2287



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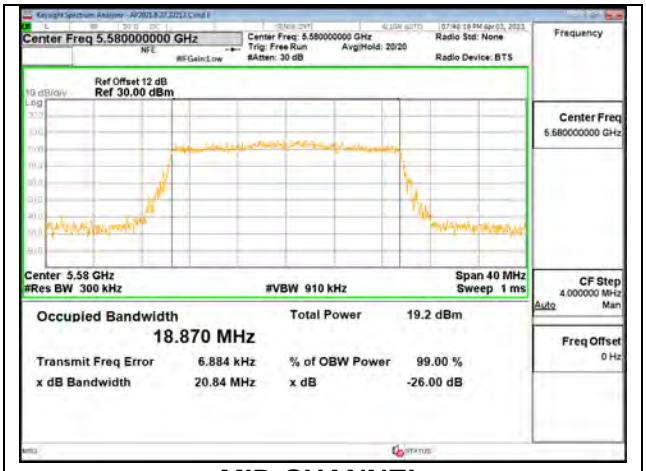
1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5500	21.41	18.990
Mid	5580	20.84	18.870
High	5700	22.11	18.920
144	5720	20.72	18.972



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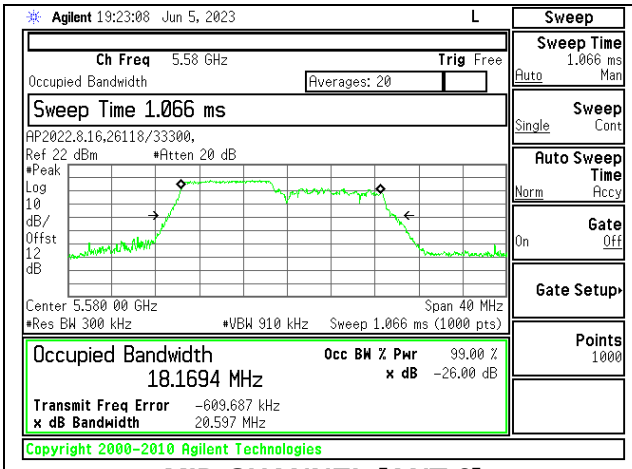
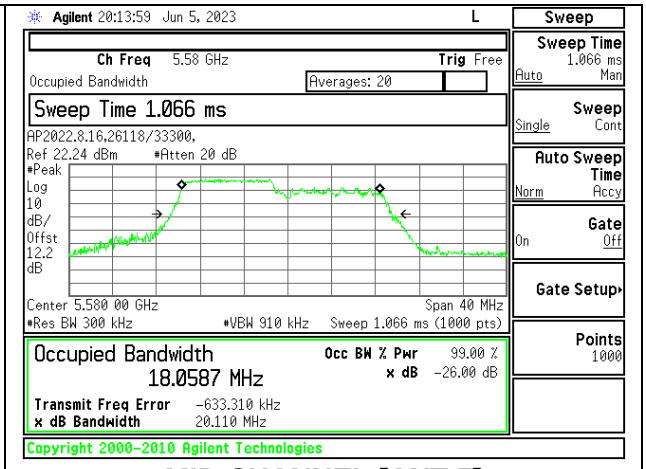
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 53

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	5500	20.493	19.769	18.1566	17.9743
Mid	5580	20.597	20.110	18.1694	18.0587
High	5700	20.382	19.963	18.1485	18.0494
144	5720	20.644	19.739	18.1257	18.1413



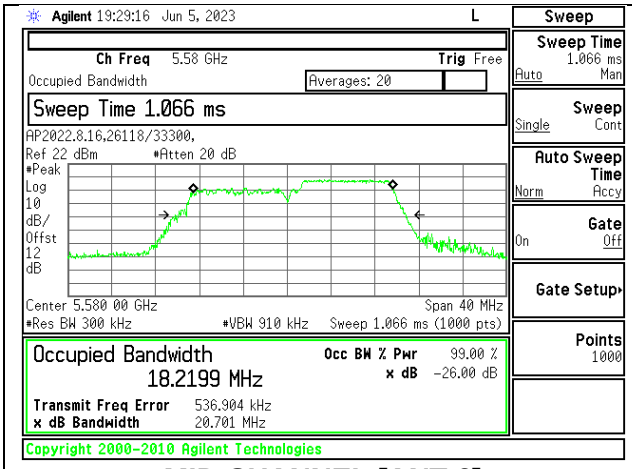
MID CHANNEL [ANT 6]



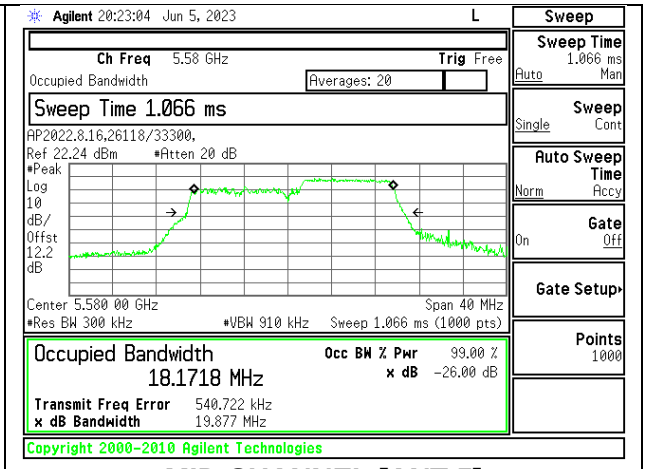
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 54

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	5500	20.976	19.706	18.2375	18.0934
Mid	5580	20.701	19.877	18.2199	18.1718
High	5700	21.047	19.836	18.2437	18.1503
144	5720	20.744	19.820	18.0982	18.1413



MID CHANNEL [ANT 6]



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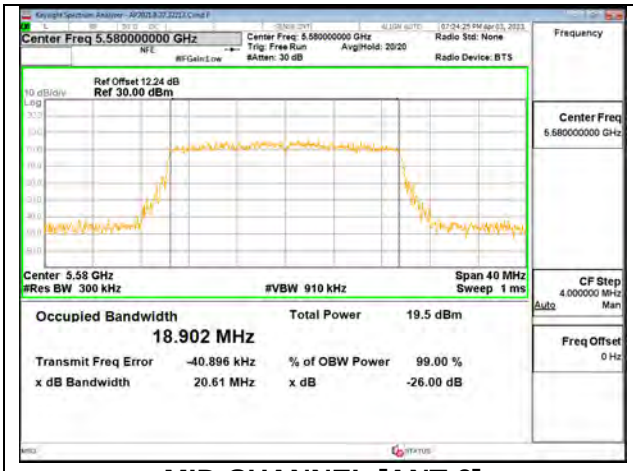
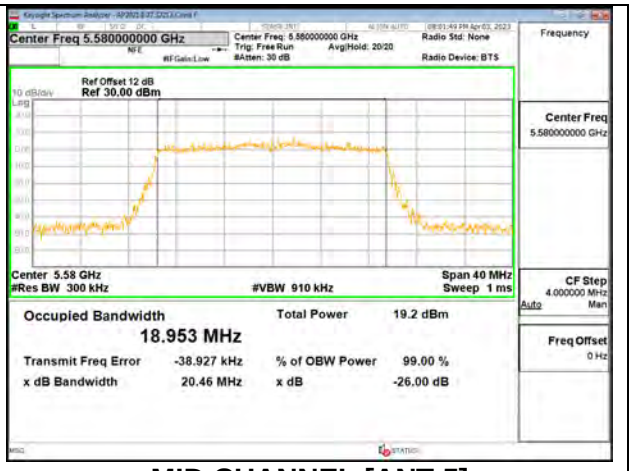
2TX Antenna 6 + Antenna 5 CDD MODE: SU Mode

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	5500	20.98	20.78	18.949	18.940
Mid	5580	20.61	20.46	18.902	18.953
High	5700	21.00	20.72	18.925	18.959
144	5720	20.88	20.77	18.967	18.931



MID CHANNEL [ANT 6]



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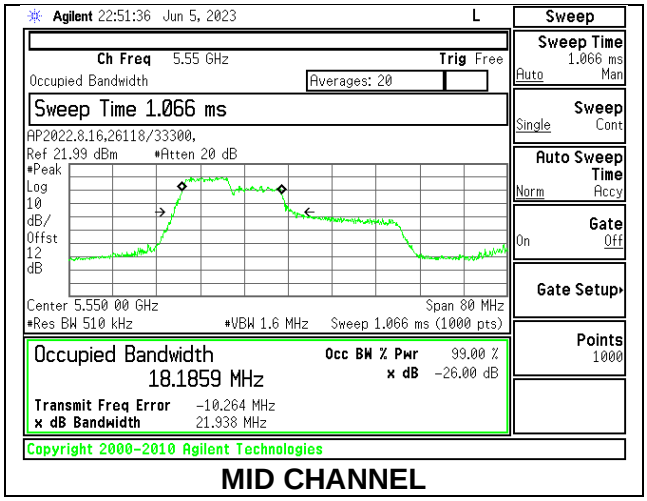
9.2.20. 802.11ax HE40 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE: 106 Tones, RU Index 53

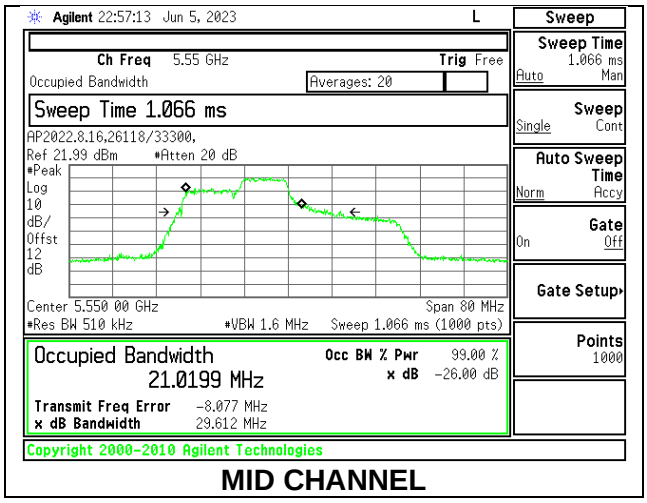
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	22.222	18.2078
Mid	5550	21.938	18.1859
High	5670	21.999	18.1583
142	5710	21.845	18.1780



MID CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	27.370	20.4393
Mid	5550	29.612	21.0199
High	5670	26.372	20.4186
142	5710	28.101	20.9138



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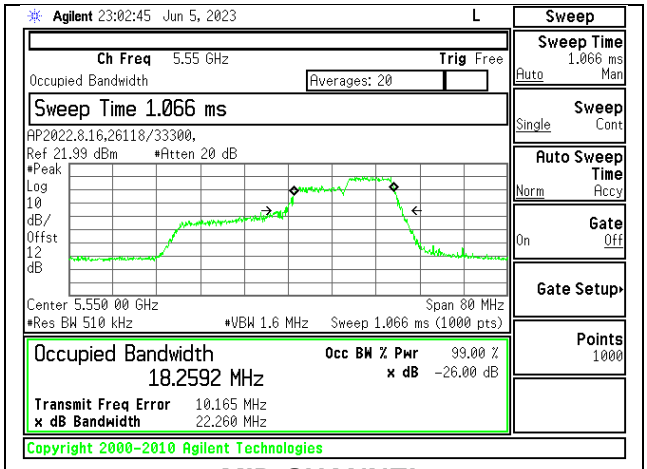
1TX Antenna 6 MODE: 106 Tones, RU Index 56

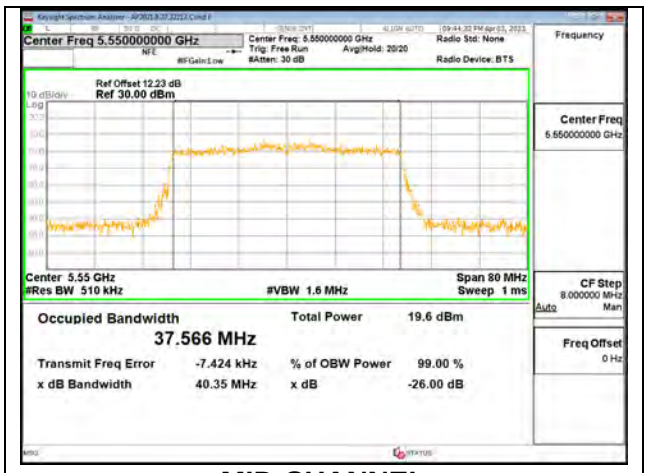
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	21.866	18.3105
Mid	5550	22.260	18.2592
High	5670	22.807	18.2838
142	5710	22.665	18.4121



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	41.39	37.688
Mid	5550	40.35	37.566
High	5670	41.13	37.746
142	5710	40.75	37.752



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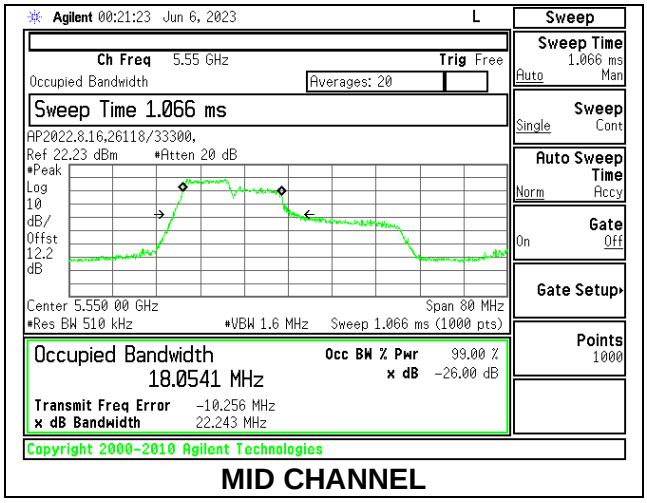
1TX Antenna 5 MODE: 106 Tones, RU Index 53

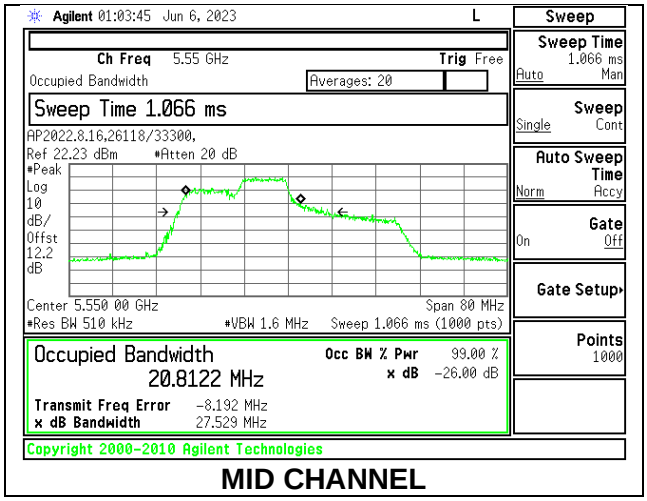
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	22.437	18.2073
Mid	5550	22.243	18.0541
High	5670	21.835	18.1680
142	5710	21.530	18.0892



MID CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	27.904	20.7367
Mid	5550	27.529	20.8122
High	5670	24.908	20.5435
142	5710	28.151	20.3645



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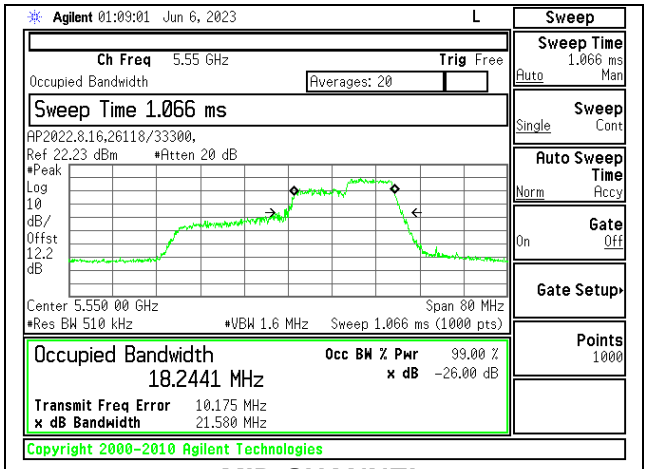
1TX Antenna 5 MODE: 106 Tones, RU Index 56

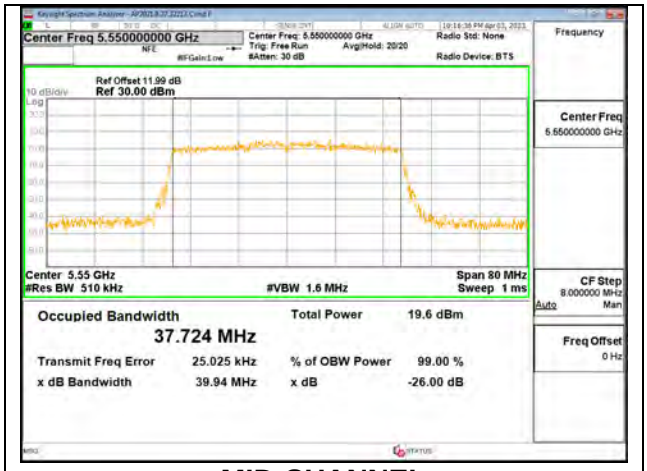
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	22.550	18.2311
Mid	5550	21.580	18.2441
High	5670	23.098	18.3150
142	5710	22.311	18.2732



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5510	41.18	37.753
Mid	5550	39.94	37.724
High	5670	40.22	37.722
142	5710	40.04	37.784



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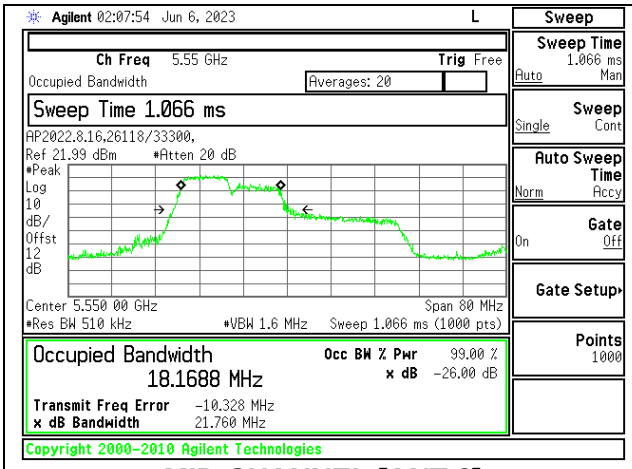
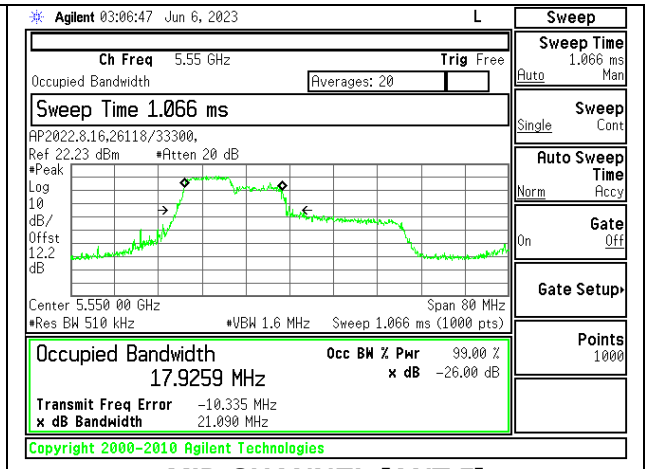
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 53

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	5510	22.159	20.623	18.2050	17.9626
Mid	5550	21.760	21.090	18.1688	17.9259
High	5670	21.618	20.429	18.1721	18.0250
142	5710	21.193	20.810	18.0500	17.9415



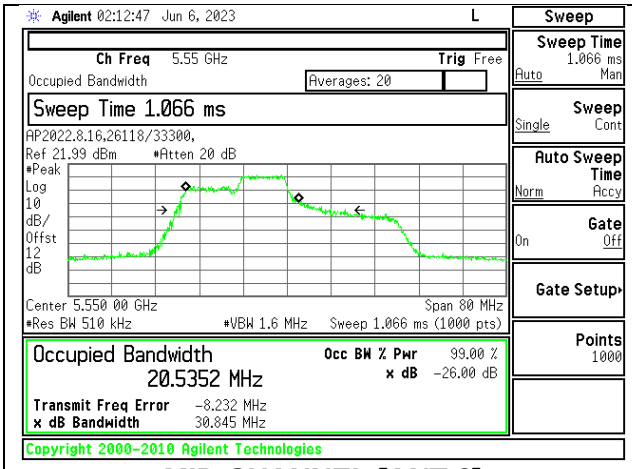
MID CHANNEL [ANT 6]



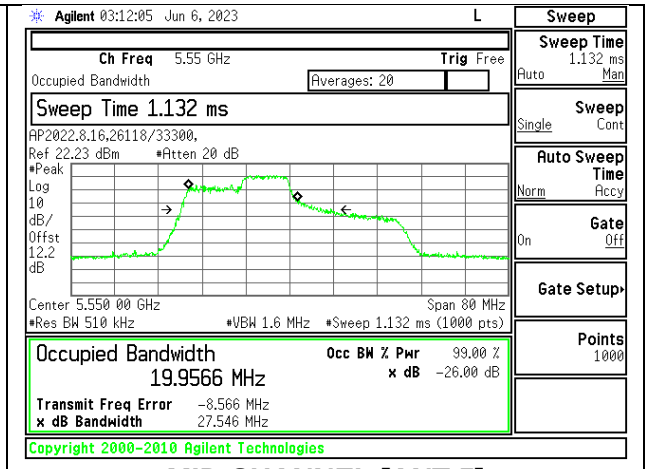
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 54

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	5510	26.734	27.591	20.9466	19.9969
Mid	5550	30.845	27.546	20.5352	19.9566
High	5670	27.375	27.300	20.2794	19.3605
142	5710	28.462	24.858	20.4620	19.8220



MID CHANNEL [ANT 6]



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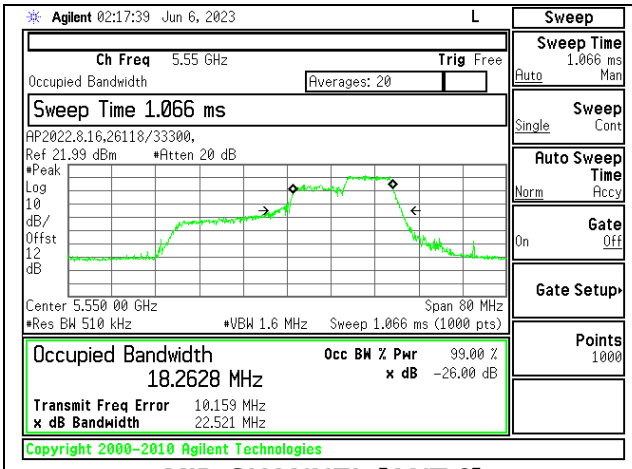
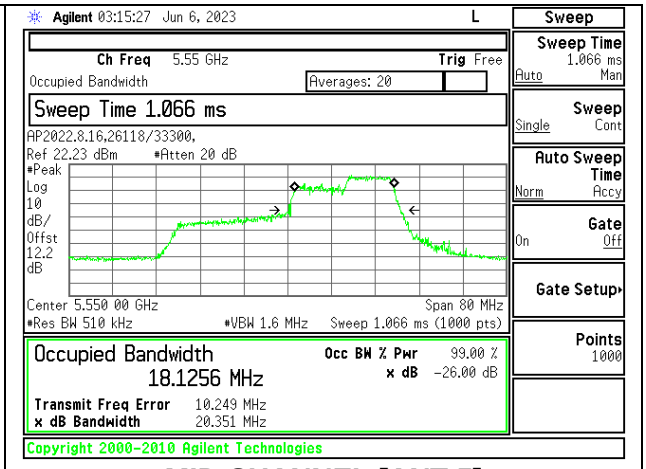
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 56

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	5510	22.793	20.341	18.3648	18.0930
Mid	5550	22.521	20.351	18.2628	18.1256
High	5670	22.587	21.182	18.1998	18.0227
142	5710	22.176	21.141	18.4117	17.8893



MID CHANNEL [ANT 6]

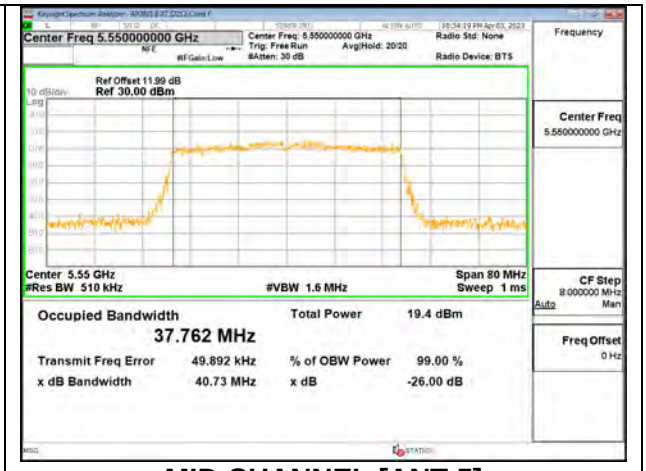


MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5510	40.61	40.45	37.903	37.859
Mid	5550	40.97	40.73	37.739	37.762
High	5670	40.94	41.08	37.872	37.786
142	5710	40.15	39.93	37.663	37.755

MID CHANNEL [ANT 6]



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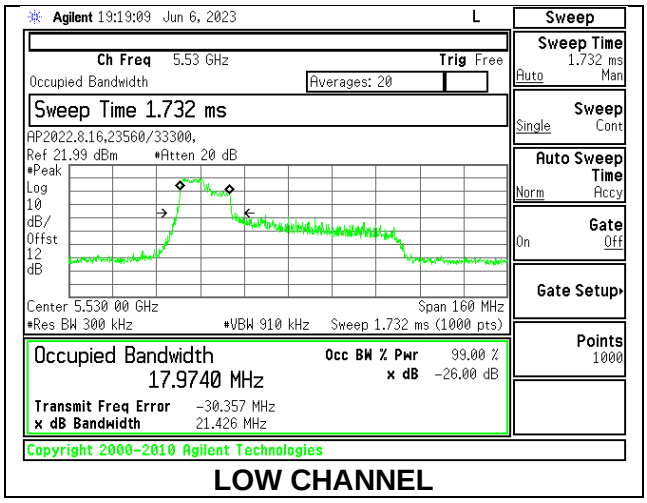
9.2.21. 802.11ax HE80 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE: 106 Tones, RU Index 53

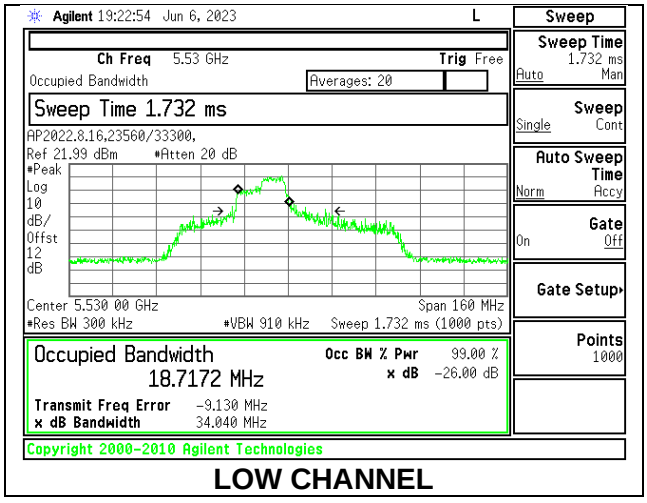
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	21.426	17.9740
High	5610	22.954	17.7795
138	5690	23.948	18.1414



LOW CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	25.180	18.2760
High	5610	24.835	19.0650
138	5690	26.440	18.4970



LOW CHANNEL

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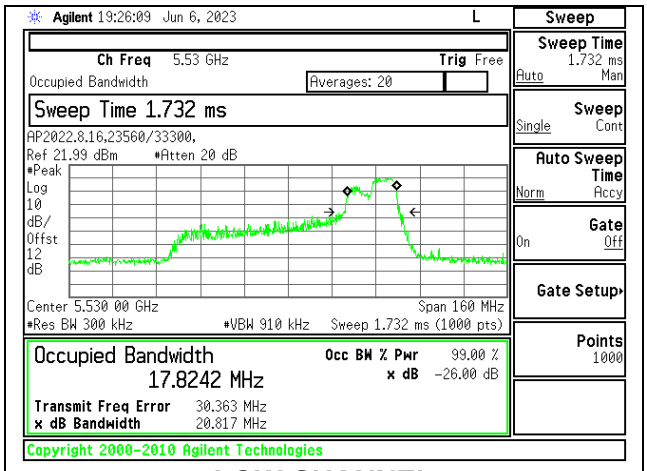
1TX Antenna 6 MODE: 106 Tones, RU Index 60

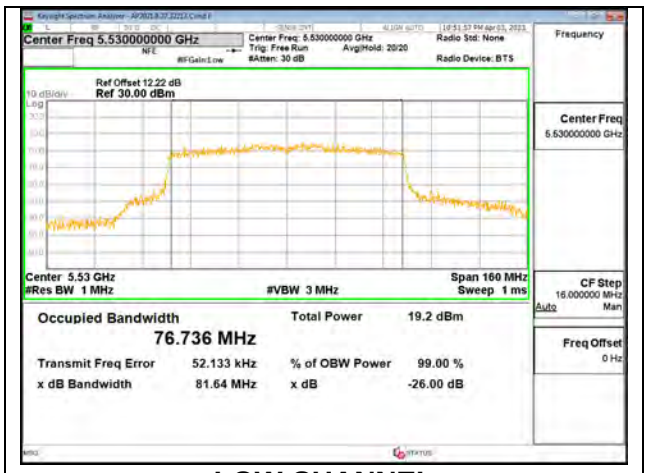
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	20.817	17.8242
High	5610	19.604	17.7686
138	5690	23.789	18.0777



LOW CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	81.64	76.736
High	5610	80.59	76.910
138	5690	80.74	76.985



LOW CHANNEL

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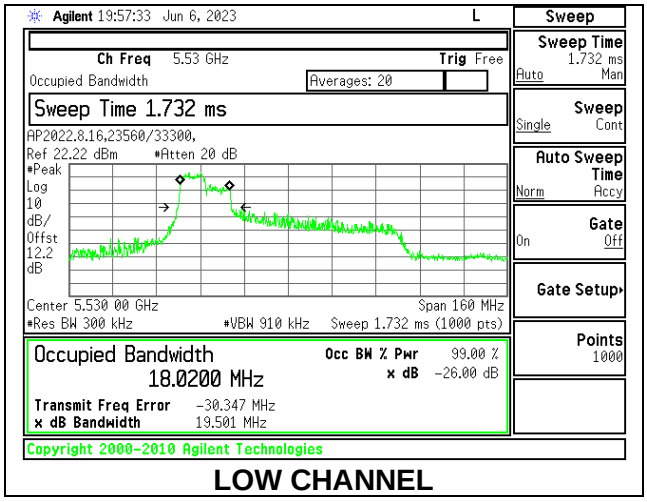
1TX Antenna 5 MODE: 106 Tones, RU Index 53

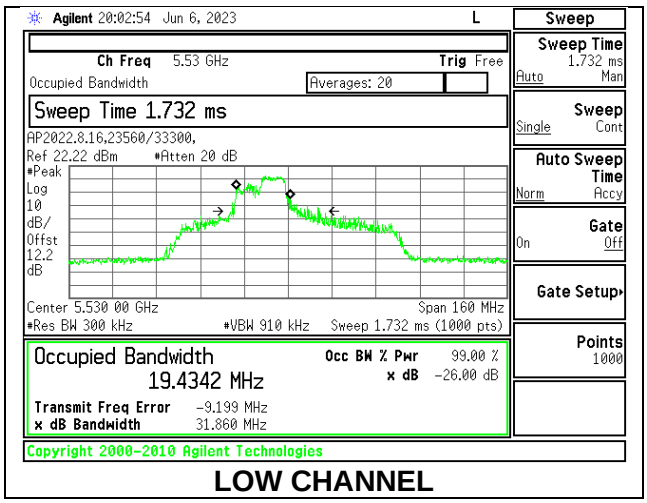
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	19.501	18.0200
High	5610	19.492	17.9821
138	5690	19.855	18.0499



LOW CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	25.340	18.2680
High	5610	23.771	18.4872
138	5690	25.070	18.1820



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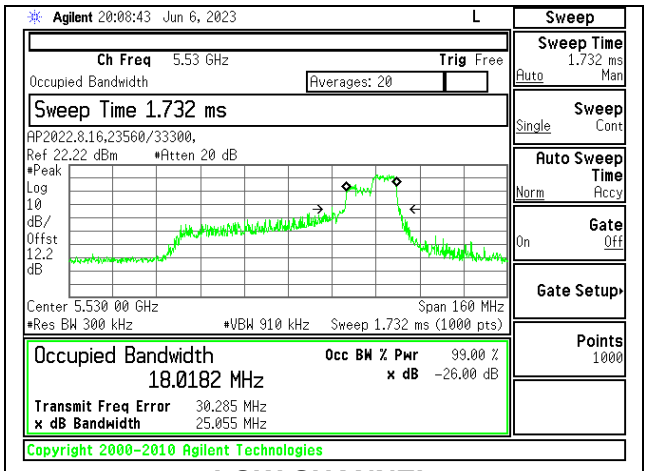
1TX Antenna 5 MODE: 106 Tones, RU Index 60

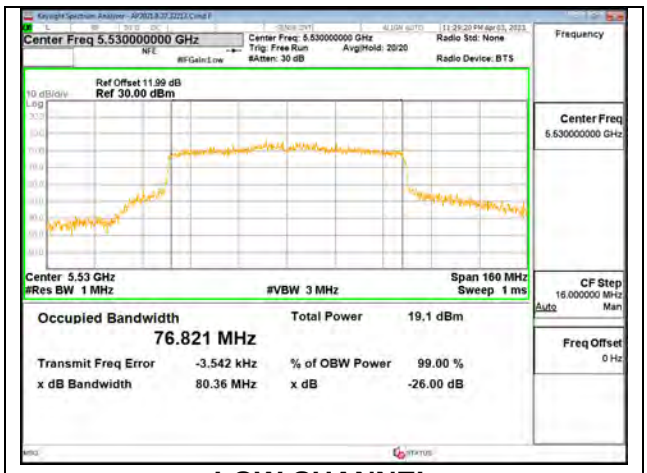
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	25.055	18.0182
High	5610	21.845	17.7656
138	5690	23.497	18.1268



LOW CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5530	80.36	76.821
High	5610	83.16	76.976
138	5690	80.47	77.032



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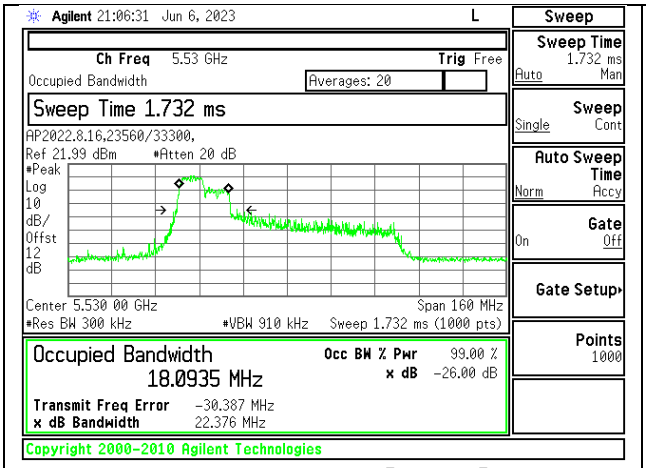
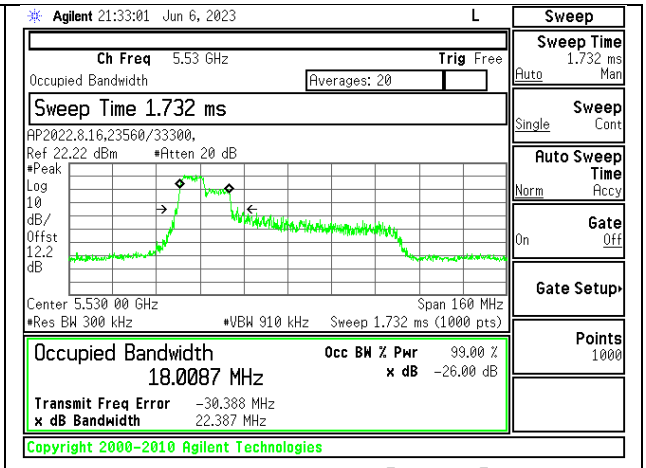
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 53

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	5530	22.376	22.387	18.0935	18.0087
High	5610	19.550	19.891	17.5812	17.8951
138	5690	19.593	21.088	18.0219	17.9163



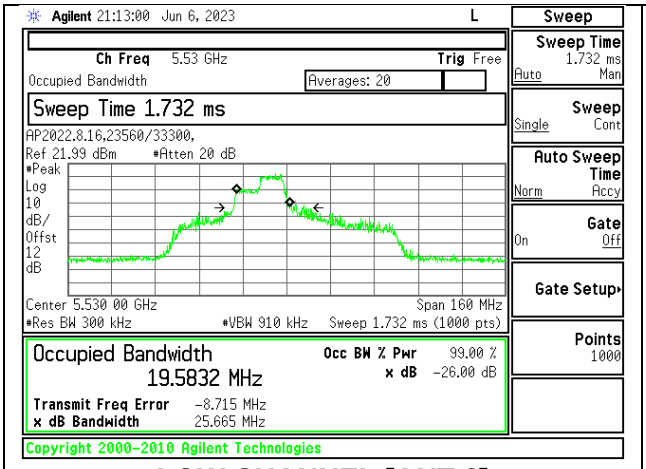
LOW CHANNEL [ANT 6]



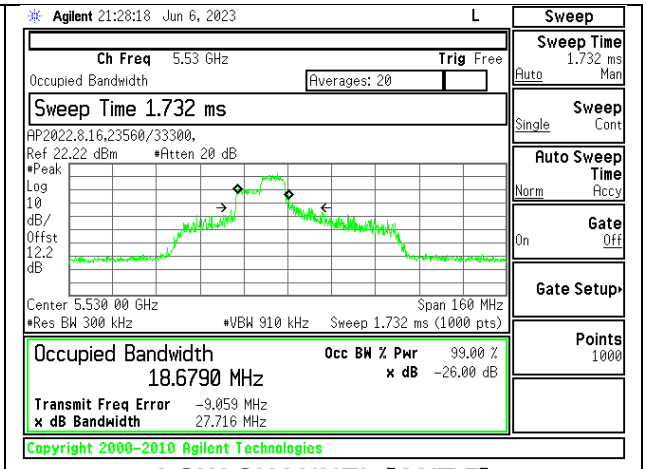
LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 56

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	5530	25.67	27.72	19.5832	18.6790
High	5610	24.34	26.62	17.9830	19.8130
138	5690	22.14	25.70	17.7670	18.5719



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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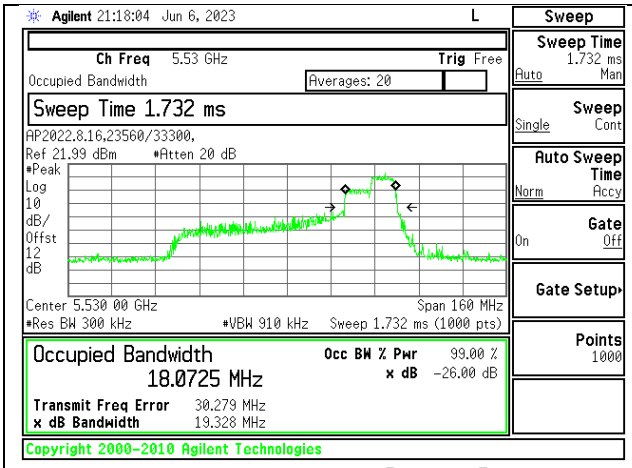
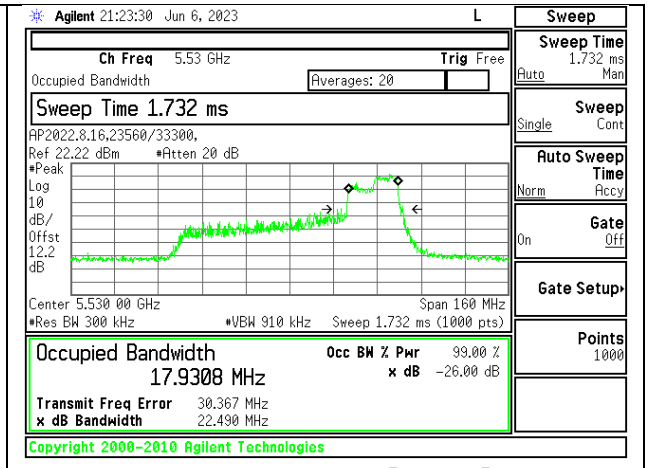
2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 60

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	5530	19.328	22.490	18.0725	17.9308
High	5610	20.798	19.696	17.9414	17.9439
138	5690	21.018	20.226	17.9623	17.9934



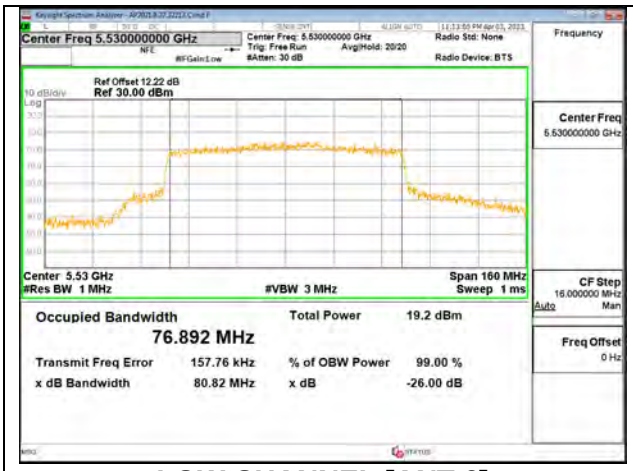
LOW CHANNEL [ANT 6]



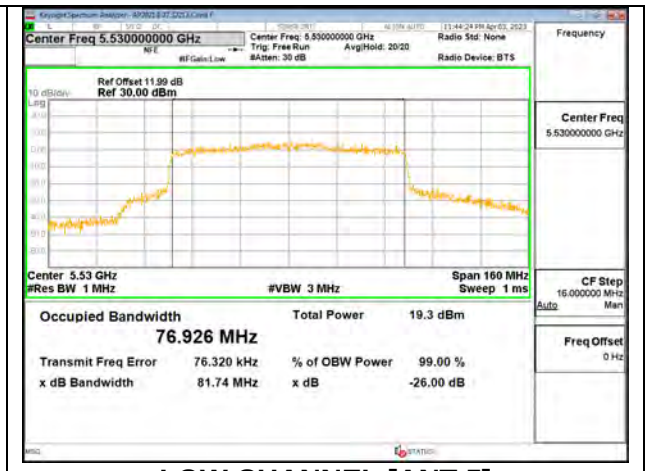
LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5530	80.82	81.74	76.892	76.926
High	5610	80.48	80.36	76.769	77.073
138	5690	80.81	80.12	76.873	76.896



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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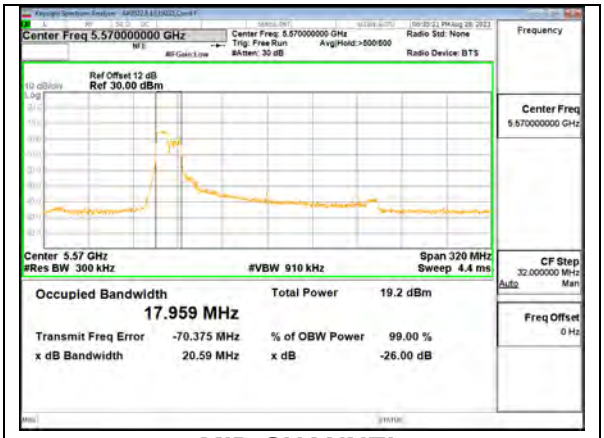
9.2.22. 802.11ax HE160 MODE IN THE 5.6 GHz BAND

1TX Antenna 6 MODE: 106-Tone, RU Index 53

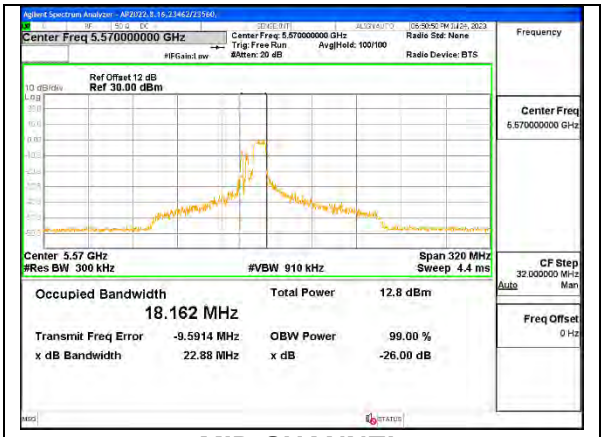
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	20.59	17.959



MID CHANNEL

1TX Antenna 6 MODE: 106-Tone, RU Index 60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	22.88	18.162



MID CHANNEL

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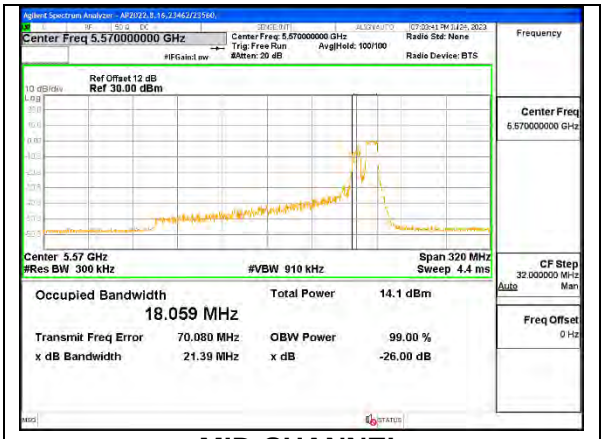
1TX Antenna 6 MODE: 106-Tone, RU Index S60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	21.39	18.059



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	163.1	155.97

MID CHANNEL

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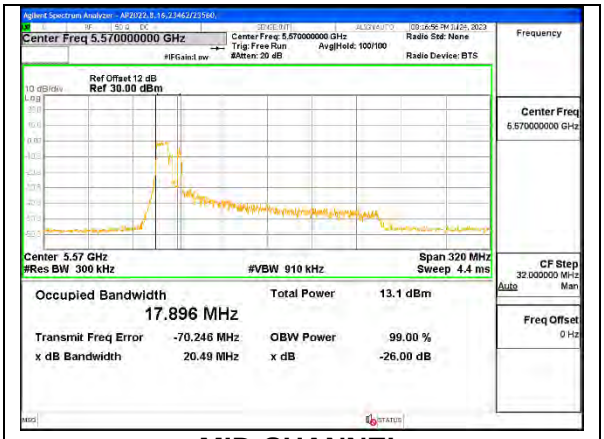
1TX Antenna 5 MODE: 106-Tone, RU Index 53

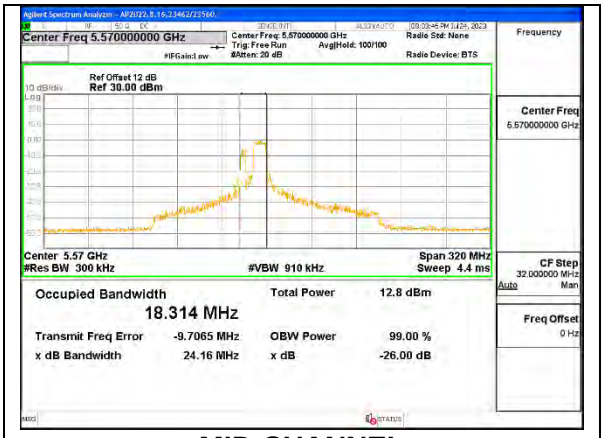
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	20.49	17.896



MID CHANNEL

1TX Antenna 5 MODE: 106-Tone, RU Index 60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	24.16	18.314



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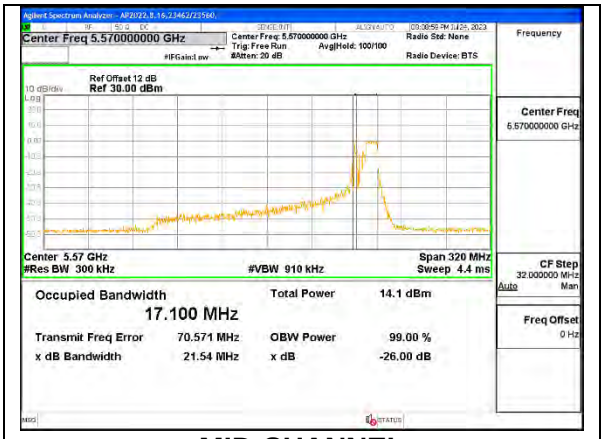
1TX Antenna 5 MODE: 106-Tone, RU Index S60

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	21.54	17.100



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5570	163.5	155.86

MID CHANNEL

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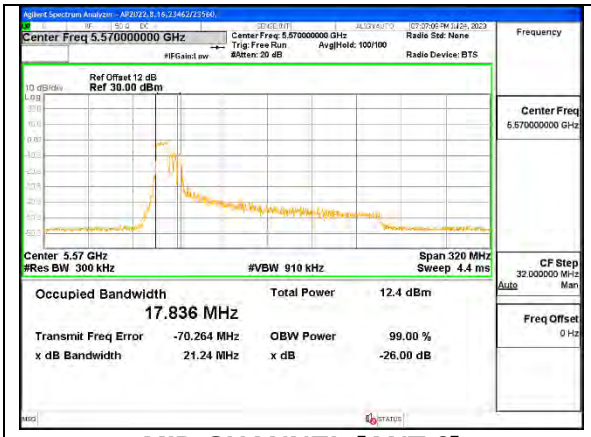
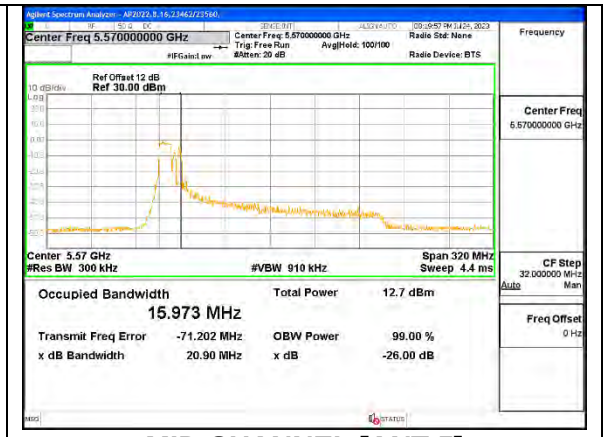
2TX Antenna 6 + Antenna 5 OFDMA MODE: 106-Tone, RU Index 53

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5570	21.24	17.836	20.90	15.973



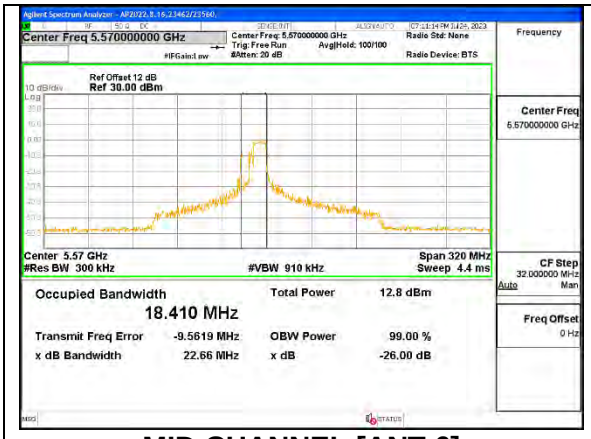
MID CHANNEL [ANT 6]



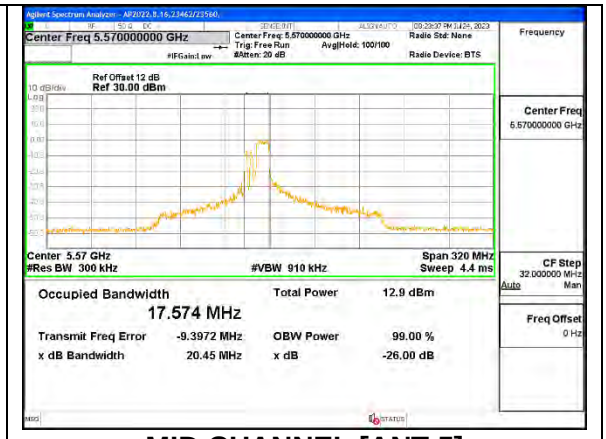
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 OFDMA MODE: 106-Tone, RU Index 60

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5570	22.66	18.410	20.45	17.574



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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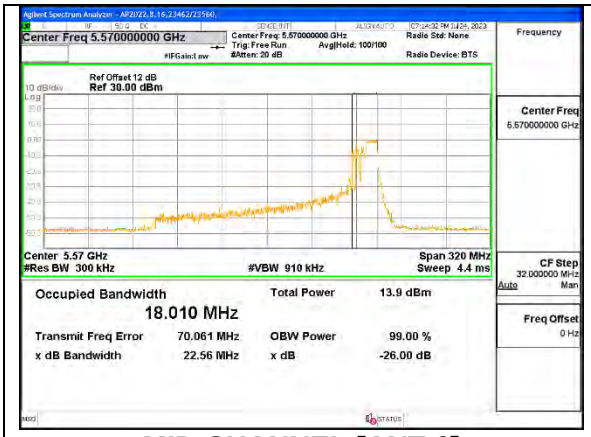
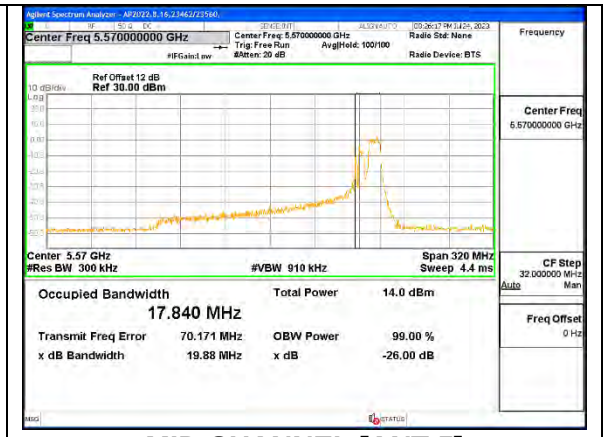
2TX Antenna 6 + Antenna 5 OFDMA MODE: 106-Tone, RU Index S60

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5570	22.56	18.010	19.88	17.840



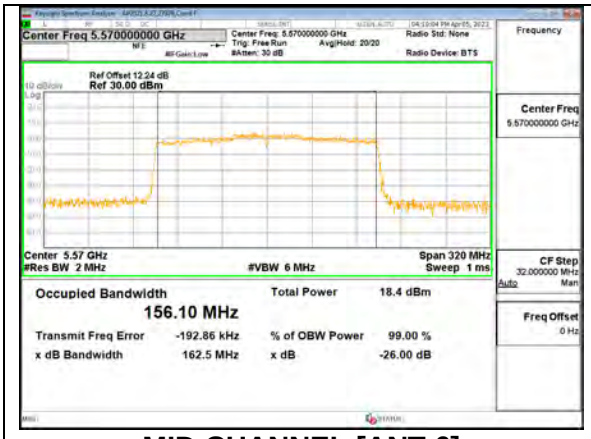
MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 OFDMA MODE: SU Mode

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5570	162.5	156.10	161.9	155.73



MID CHANNEL [ANT 6]

MID CHANNEL [ANT 5]

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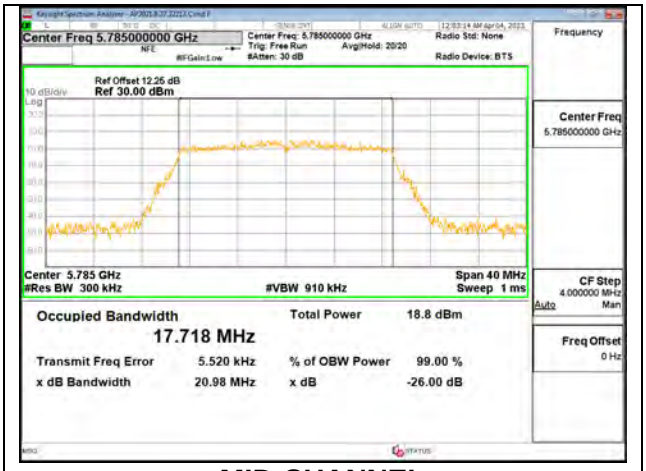
9.2.23. 802.11n HT20 MODE IN THE 5.8 GHz BAND

1TX Antenna 6 MODE

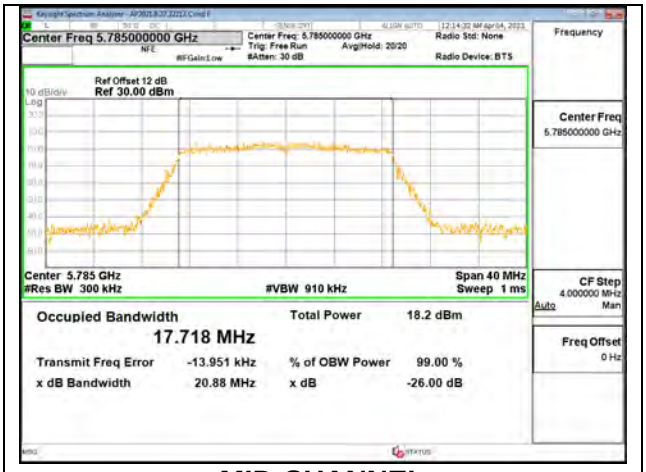
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	20.63	17.693
Mid	5785	20.98	17.718
High	5825	20.84	17.758



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	20.64	17.783
Mid	5785	20.88	17.718
High	5825	21.03	17.792



MID CHANNEL

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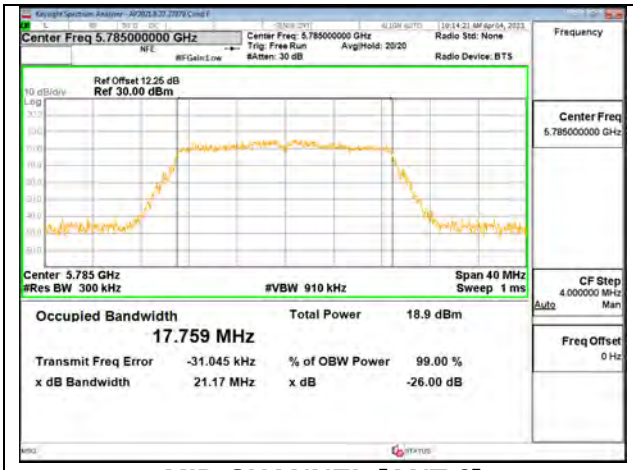
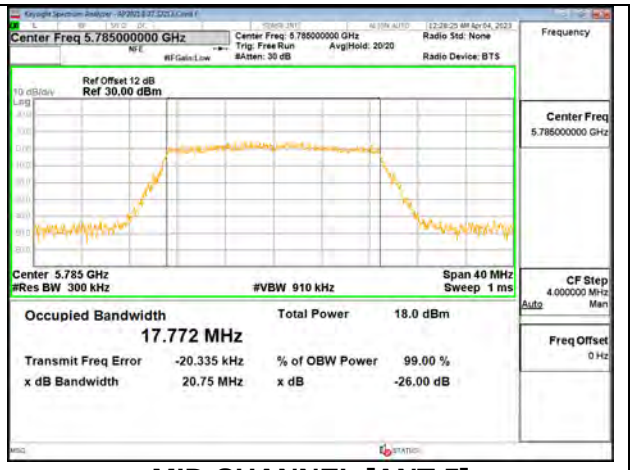
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5745	20.85	20.74	17.695	17.704
Mid	5785	21.17	20.75	17.759	17.772
High	5825	20.73	20.66	17.773	17.749



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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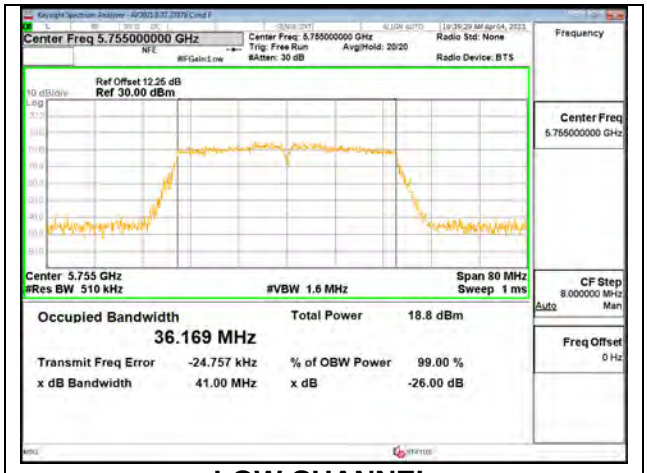
9.2.24. 802.11n HT40 MODE IN THE 5.8 GHz BAND

1TX Antenna 6 MODE

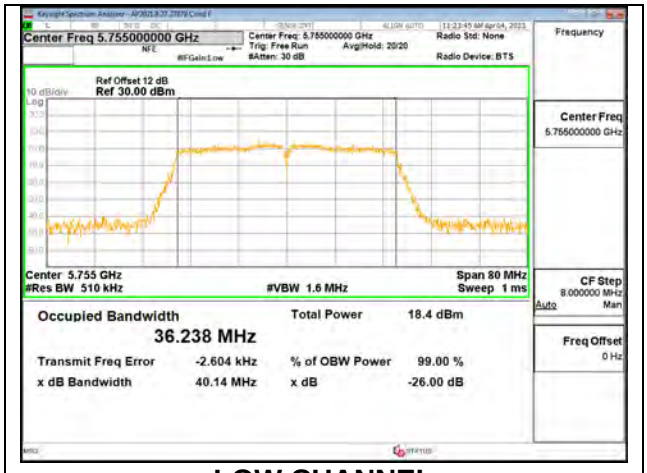
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	41.00	36.169
High	5795	41.08	36.191



LOW CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	40.14	36.238
High	5795	40.53	36.221



LOW CHANNEL

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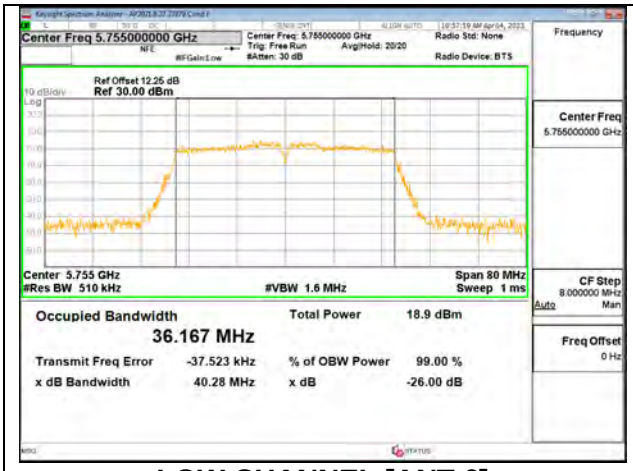
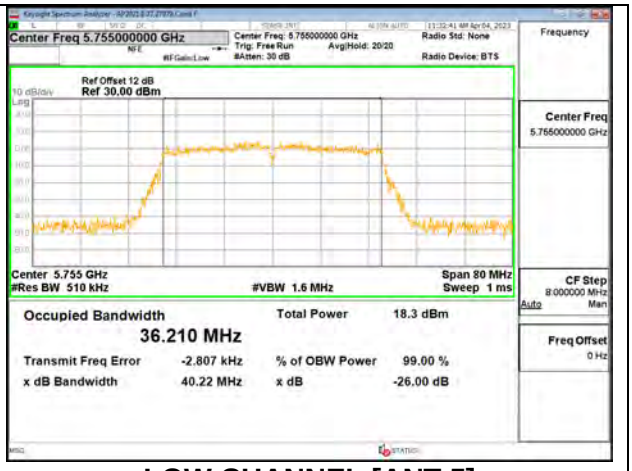
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5755	40.28	40.22	36.167	36.210
High	5795	41.00	40.45	36.250	36.224



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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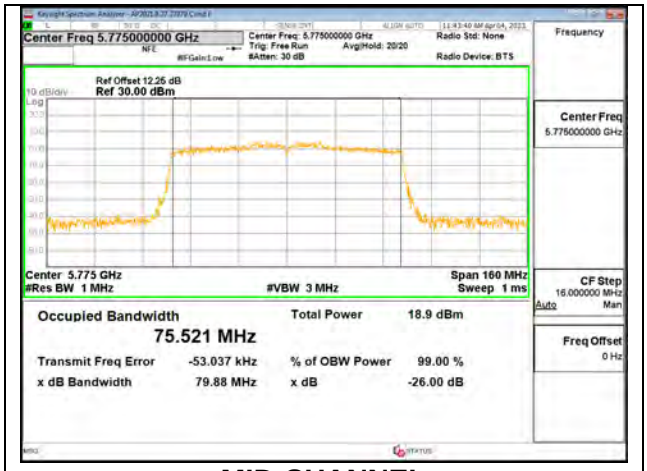
9.2.25. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

1TX Antenna 6 MODE

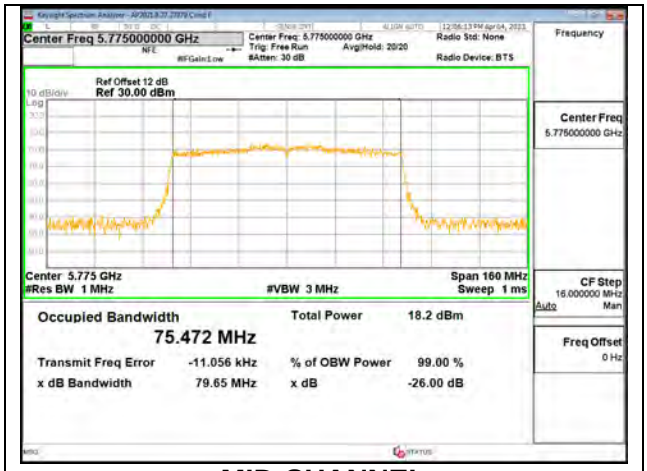
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	79.88	75.521



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	79.65	75.472



MID CHANNEL

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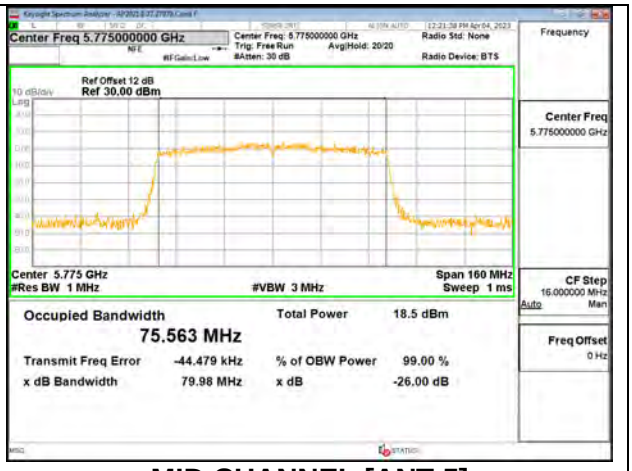
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	26dB Bandwidth Antenna 6 (MHz)	26dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Mid	5775	80.27	79.98	75.462	75.563

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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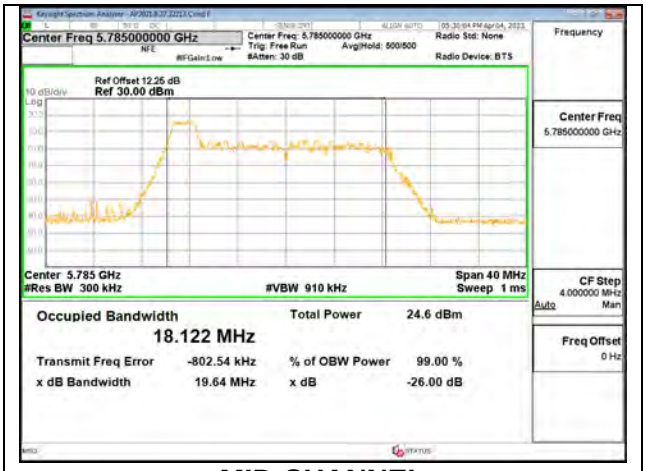
9.2.26. 802.11ax HE20 MODE IN THE 5.8 GHz BAND

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

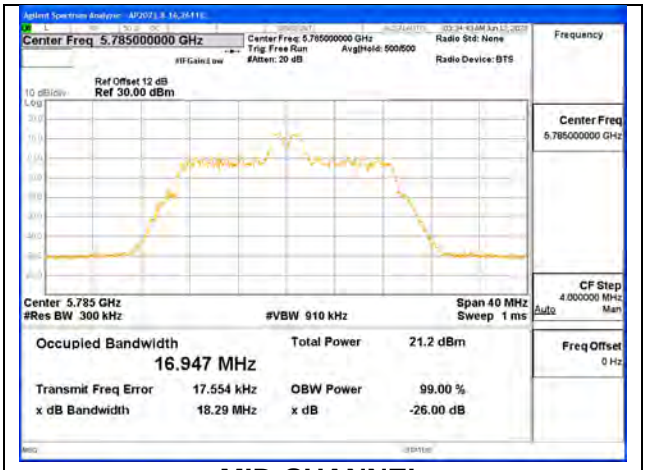
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	19.70	18.231
Mid	5785	19.64	18.122
High	5825	19.78	18.272



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	18.39	16.942
Mid	5785	18.29	16.947
High	5825	18.11	16.631



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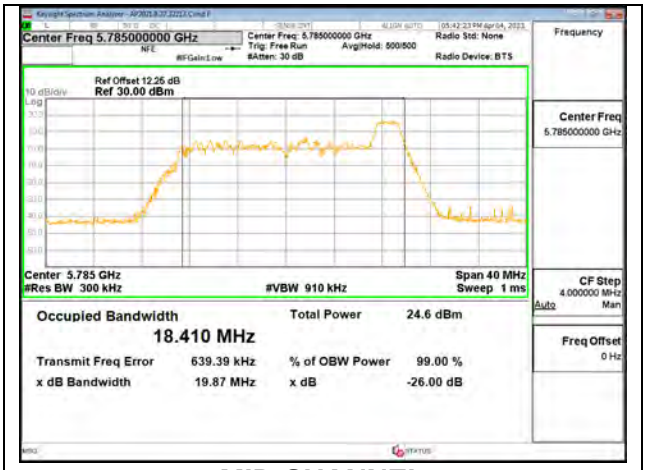
1TX Antenna 6 MODE: 26 Tones, RU Index 8

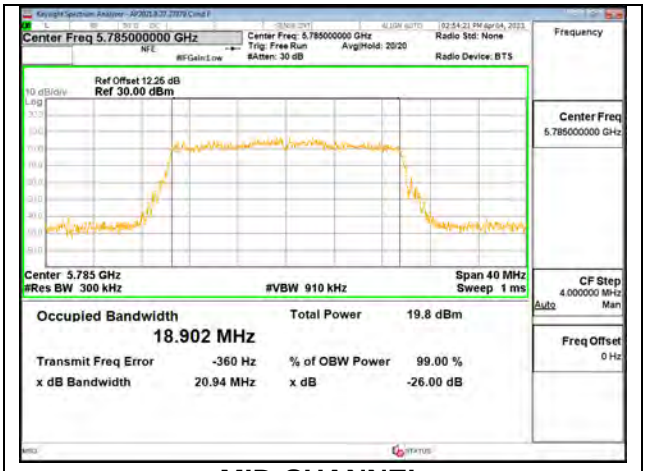
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	20.02	18.397
Mid	5785	19.87	18.410
High	5825	20.11	18.517



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	20.71	18.980
Mid	5785	20.94	18.902
High	5825	20.71	18.888



MID CHANNEL

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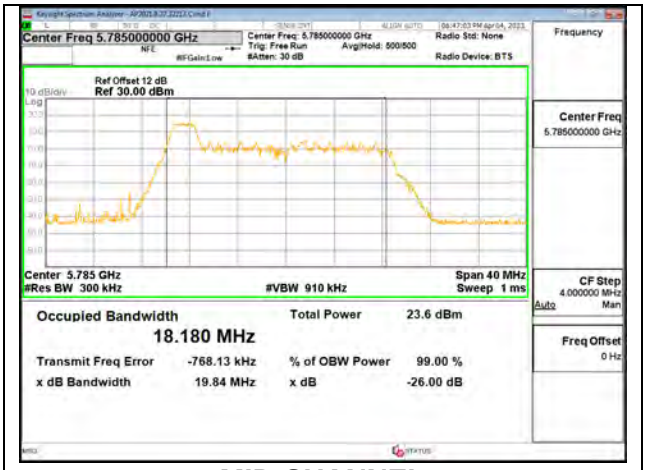
1TX Antenna 5 MODE: 26 Tones, RU Index 0

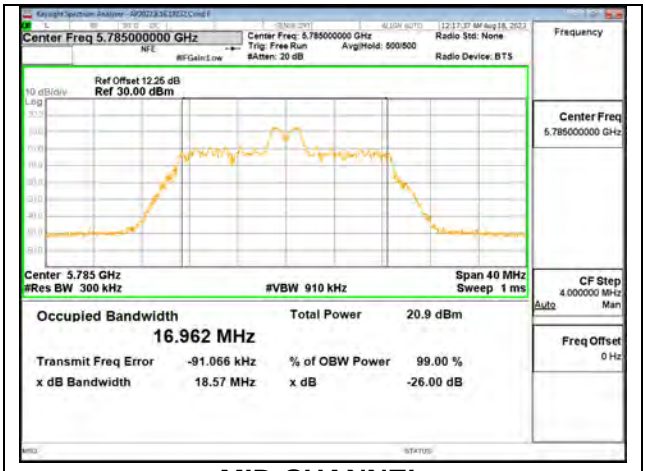
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	19.59	17.994
Mid	5785	19.84	18.180
High	5825	19.71	18.297



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	18.33	16.891
Mid	5785	18.57	16.962
High	5825	18.30	16.953



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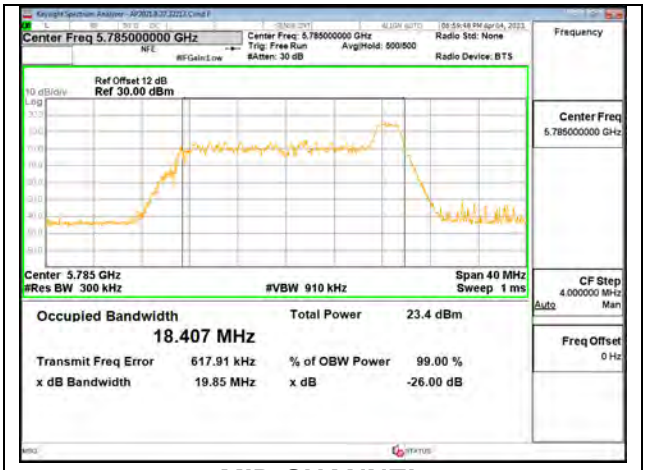
1TX Antenna 5 MODE: 26 Tones, RU Index 8

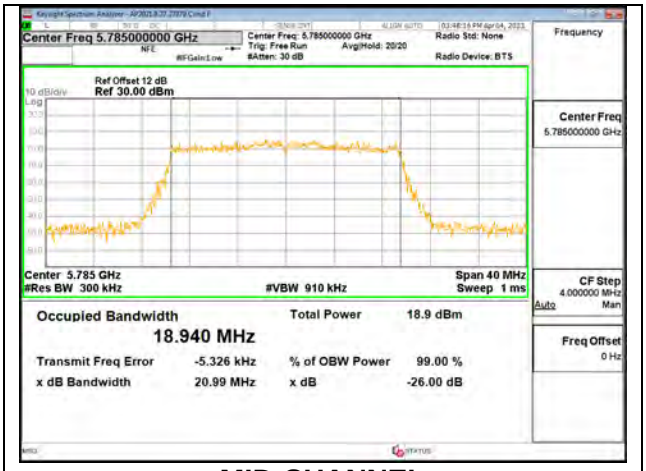
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	20.00	18.431
Mid	5785	19.85	18.407
High	5825	20.03	18.410



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	20.70	18.943
Mid	5785	20.99	18.940
High	5825	20.76	18.898



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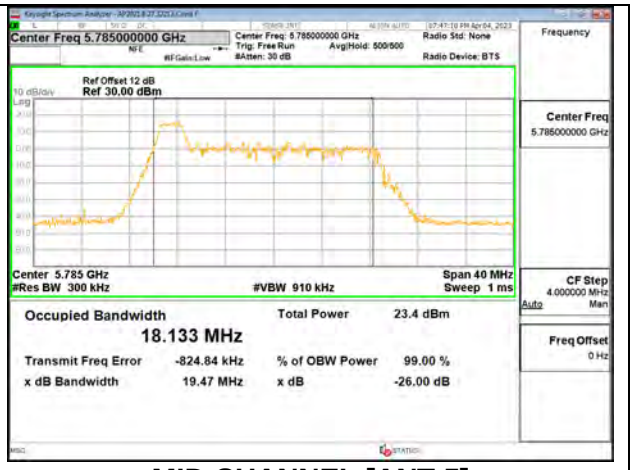
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

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	5745	19.72	19.83	18.3520	18.272
Mid	5785	19.74	19.47	18.3170	18.133
High	5825	19.72	19.68	18.3210	18.238

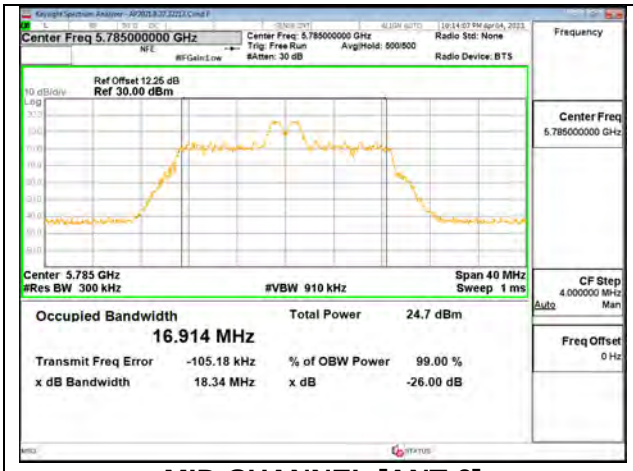
MID CHANNEL [ANT 6]



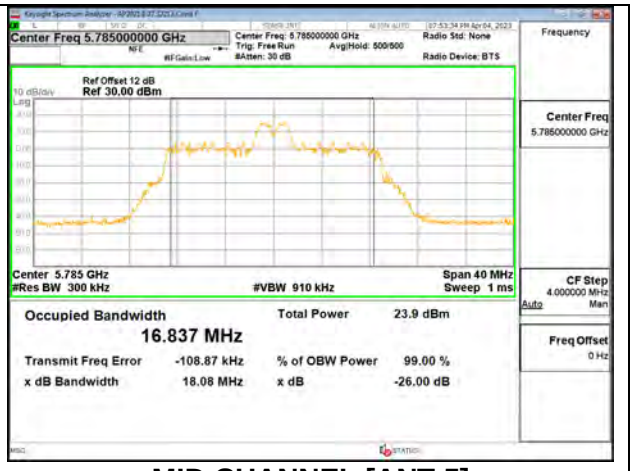
MID CHANNEL [ANT 5]

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	5745	17.98	18.21	16.629	16.778
Mid	5785	18.34	18.08	16.914	16.837
High	5825	18.50	18.23	16.970	16.881



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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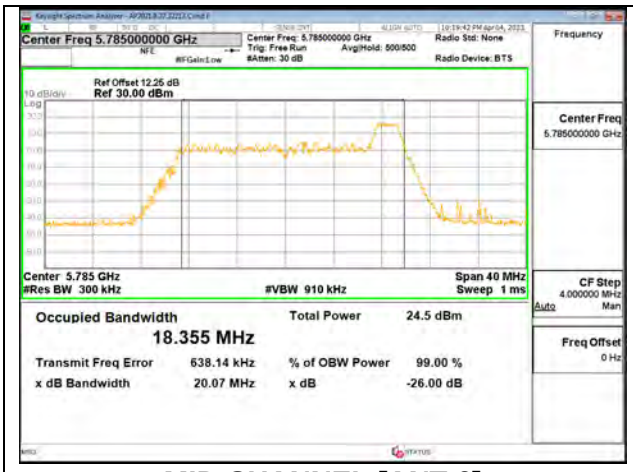
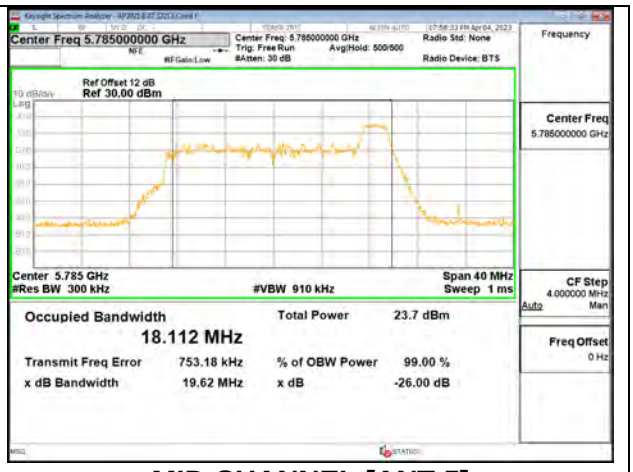
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

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	5745	20.13	19.56	18.311	18.190
Mid	5785	20.07	19.62	18.355	18.112
High	5825	19.63	19.51	18.176	18.307



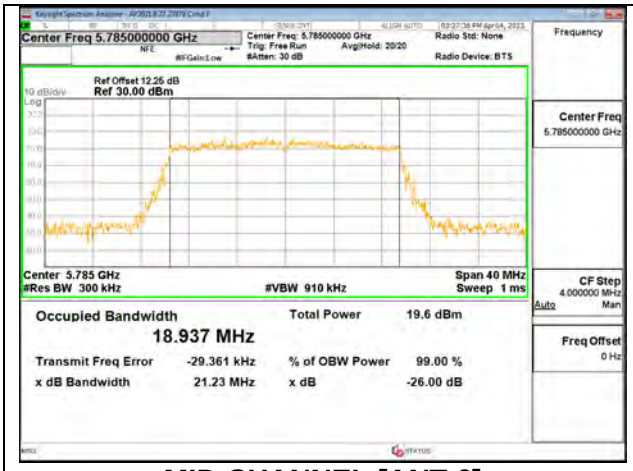
MID CHANNEL [ANT 6]



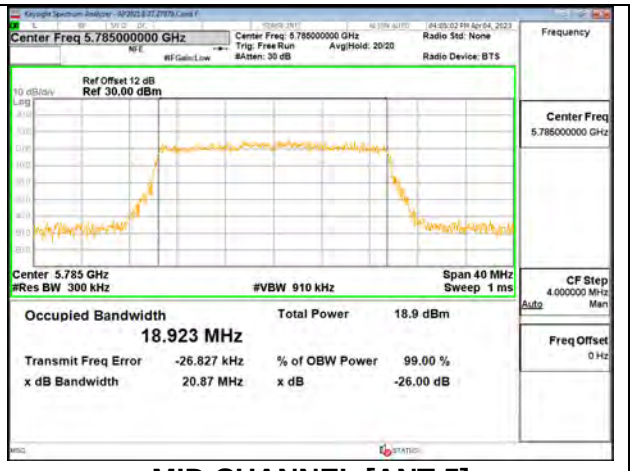
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5745	20.59	20.86	18.980	18.932
Mid	5785	21.23	20.87	18.937	18.923
High	5825	20.64	20.87	18.992	18.929



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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9.2.27. 802.11ax HE40 MODE IN THE 5.8 GHz BAND

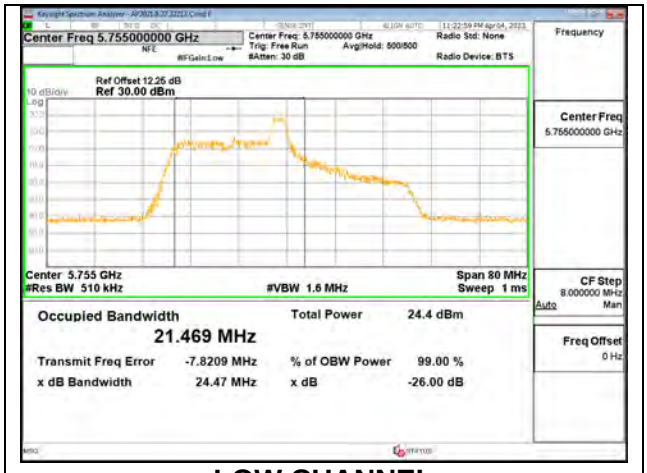
1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	20.09	18.447
High	5795	20.03	18.222

LOW CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	24.47	21.469
High	5795	24.29	21.629



LOW CHANNEL

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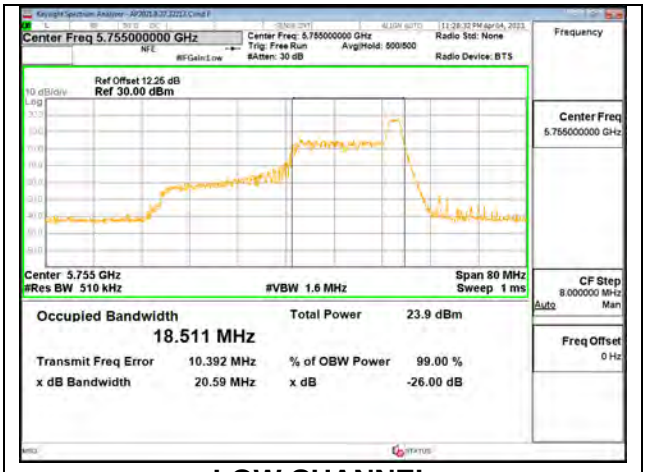
1TX Antenna 6 MODE: 26 Tones, RU Index 17

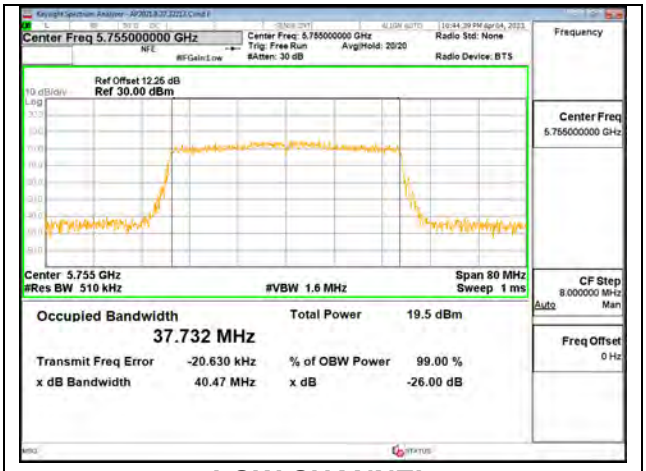
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	20.59	18.511
High	5795	20.38	18.470



LOW CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	40.47	37.732
High	5795	40.52	37.770



LOW CHANNEL

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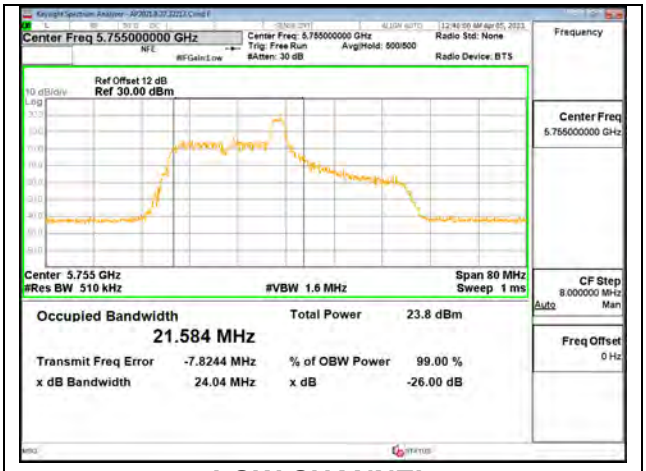
1TX Antenna 5 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	20.11	18.436
High	5795	19.88	18.385

LOW CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	24.04	21.584
High	5795	23.13	21.043



LOW CHANNEL

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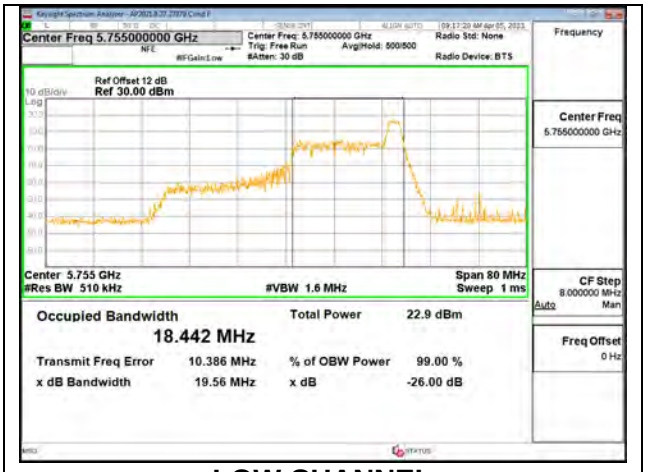
1TX Antenna 5 MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	19.56	18.442
High	5795	20.64	18.669



LOW CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	40.82	37.714
High	5795	40.46	37.724

LOW CHANNEL

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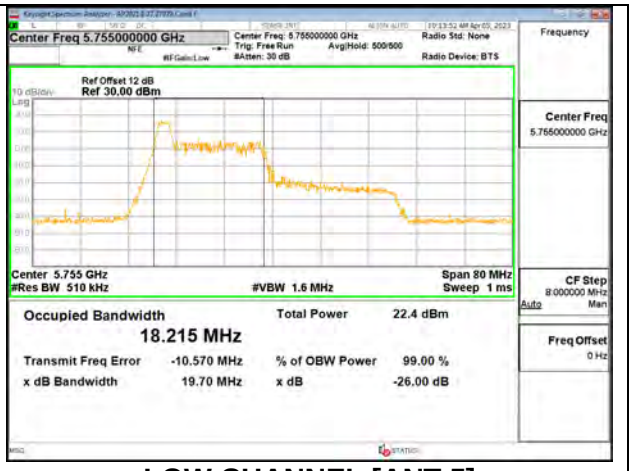
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

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	5755	19.77	19.70	18.048	18.215
High	5795	19.83	19.92	18.234	18.279

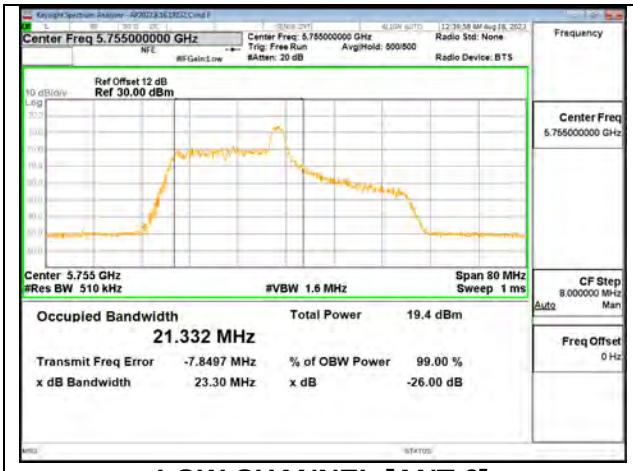
LOW CHANNEL [ANT 6]



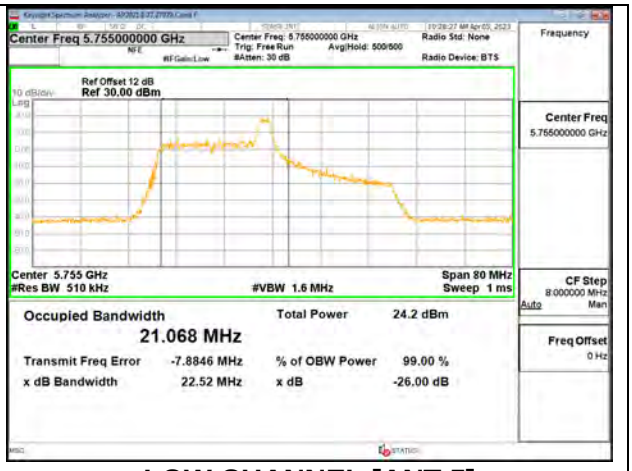
LOW CHANNEL [ANT 5]

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	5755	23.30	22.52	21.332	21.068
High	5795	23.64	23.31	21.545	21.325



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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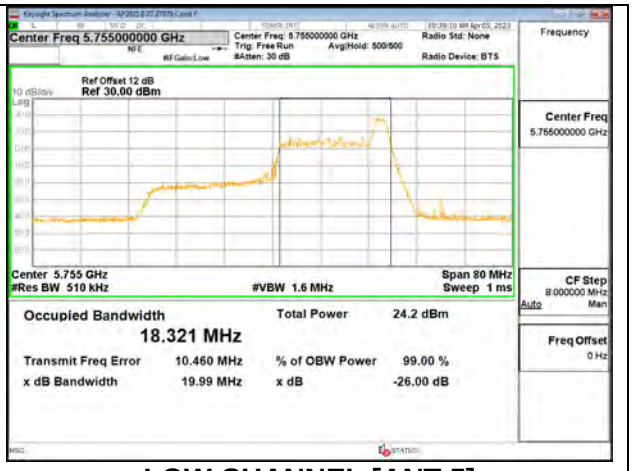
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 17

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	5755	20.25	19.99	18.646	18.321
High	5795	20.20	20.00	18.446	18.312

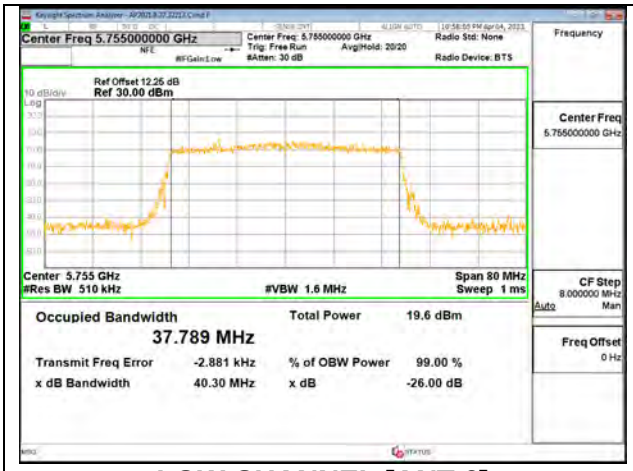
LOW CHANNEL [ANT 6]



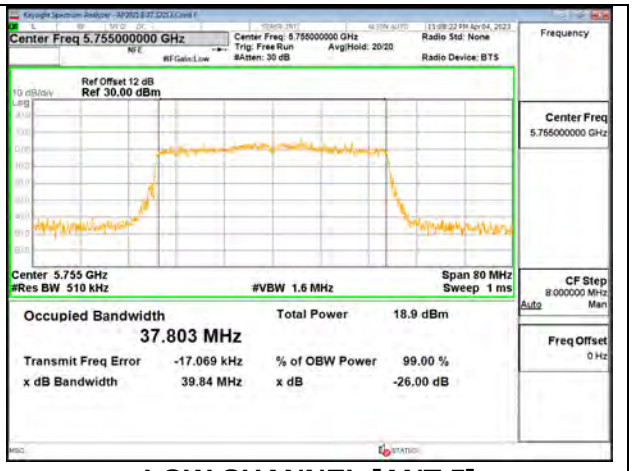
LOW CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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	5755	40.30	39.84	37.789	37.803
High	5795	40.29	40.84	37.776	37.707



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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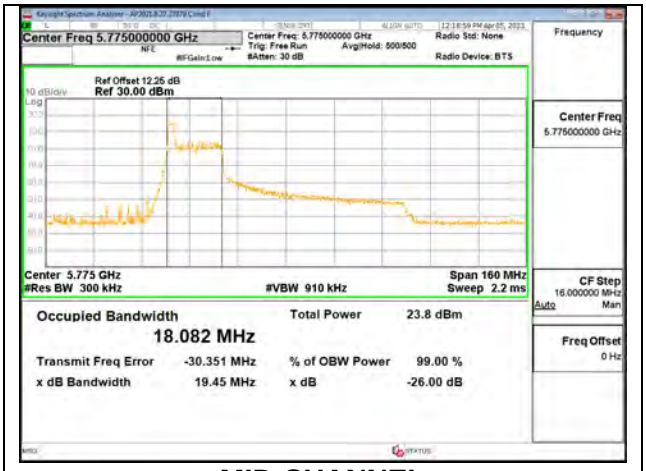
9.2.28. 802.11ax HE80 MODE IN THE 5.8 GHz BAND

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	19.45	18.082



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	39.86	37.078

MID CHANNEL

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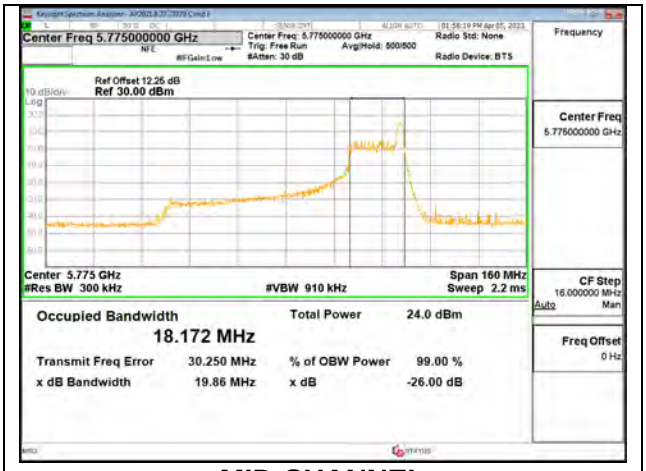
1TX Antenna 6 MODE: 26 Tones, RU Index 36

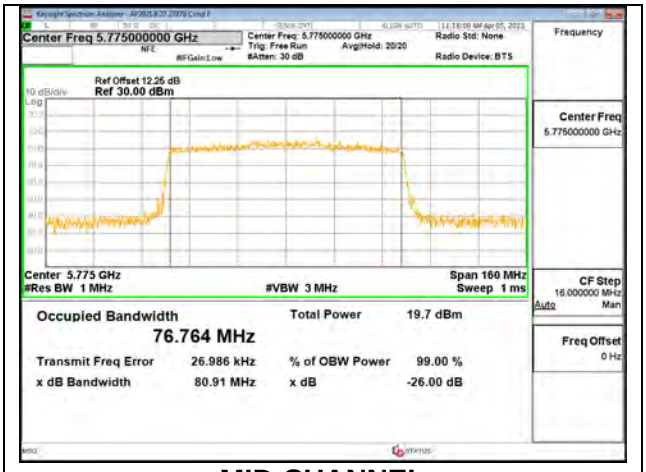
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	19.86	18.172



MID CHANNEL

1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	80.91	76.764



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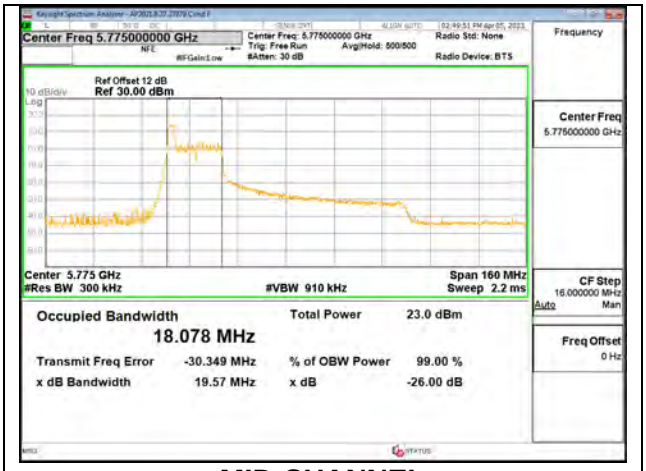
1TX Antenna 5 MODE: 26 Tones, RU Index 0

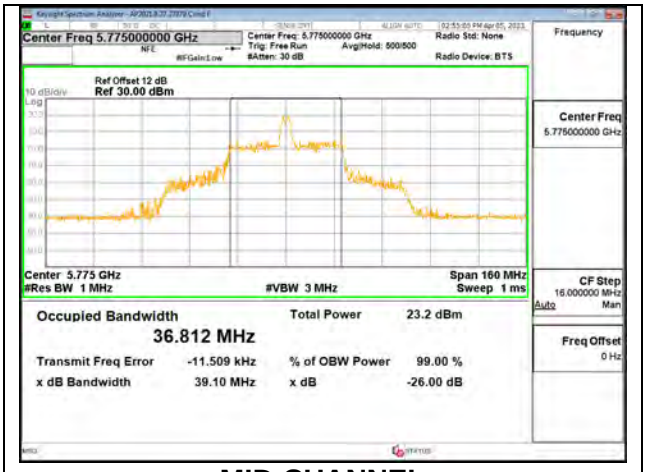
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	19.57	18.078



MID CHANNEL

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

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	39.10	36.812



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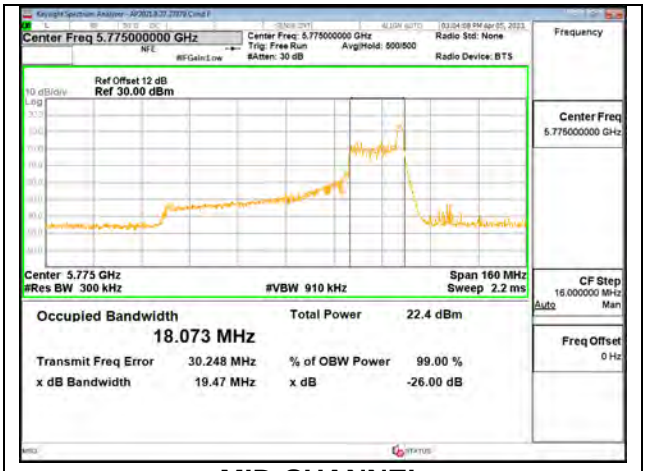
1TX Antenna 5 MODE: 26 Tones, RU Index 36

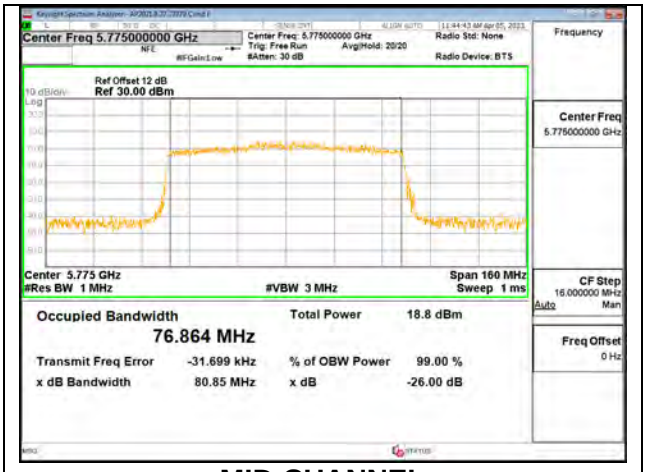
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	19.47	18.073



MID CHANNEL

1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Mid	5775	80.85	76.864



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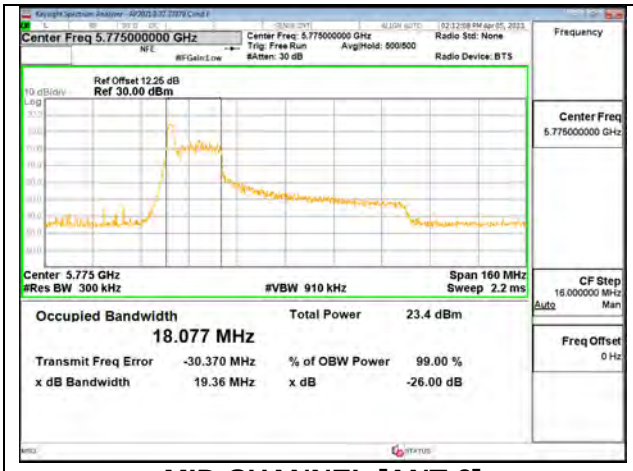
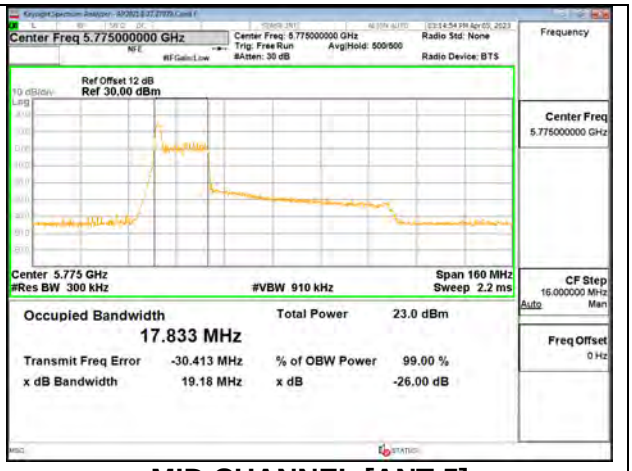
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

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	5775	19.36	19.18	18.077	17.833



MID CHANNEL [ANT 6]

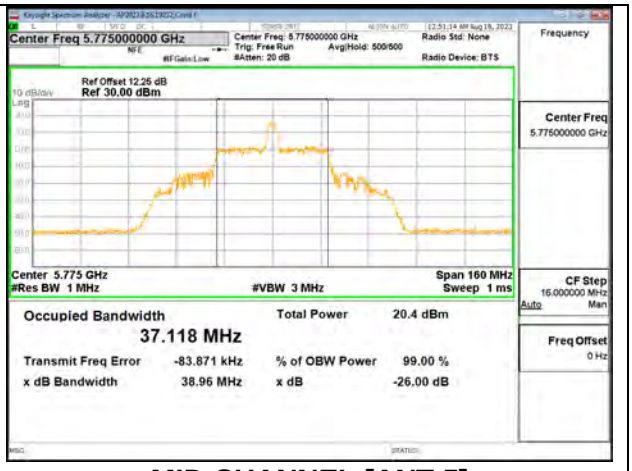


MID CHANNEL [ANT 5]

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	5775	39.04	38.96	37.029	37.118

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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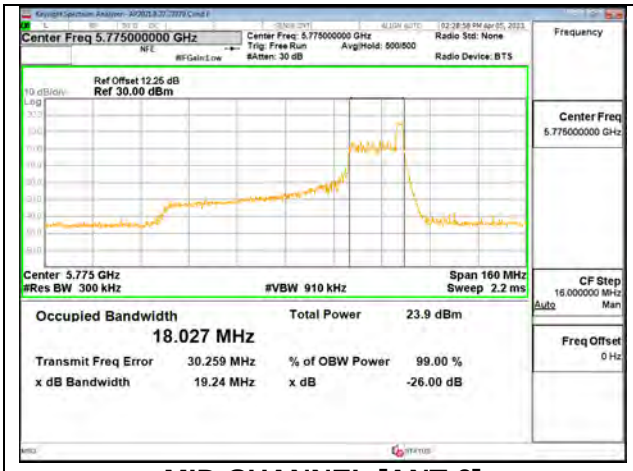
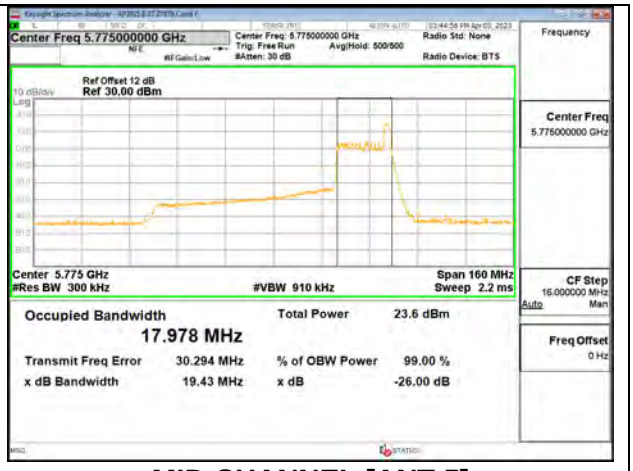
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 36

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	5775	19.24	19.43	18.027	17.978



MID CHANNEL [ANT 6]

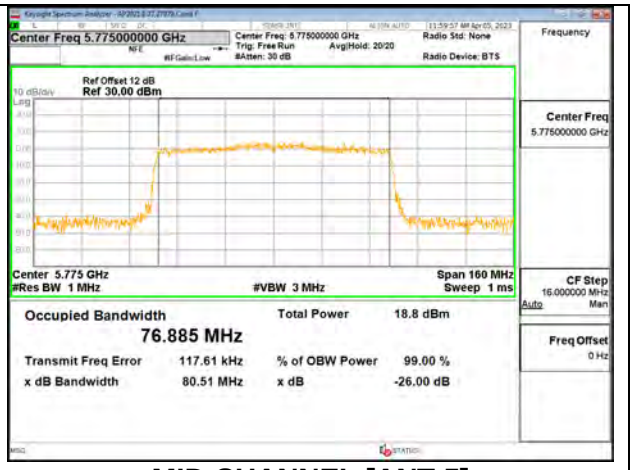


MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: SU 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)
Mid	5775	80.74	80.51	76.859	76.885

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

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9.3.1. 802.11n HT20 MODE IN THE 5.8 GHz BAND

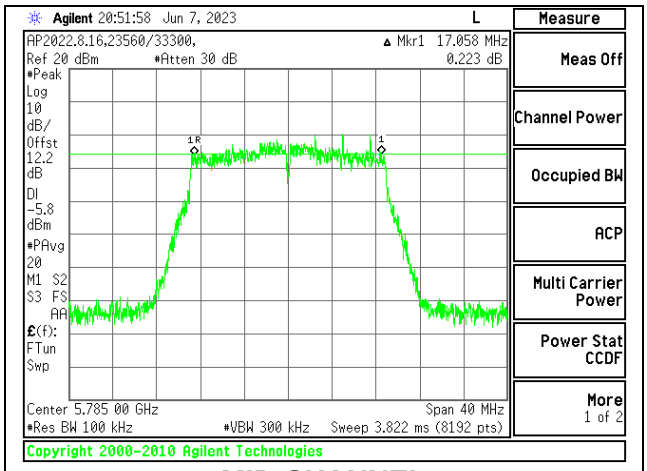
1TX Antenna 6 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.524	0.5
Mid	5785	17.188	0.5
High	5825	17.248	0.5
144	5720	3.868	0.5

MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.605	0.5
Mid	5785	17.058	0.5
High	5825	16.906	0.5
144	5720	3.796	0.5



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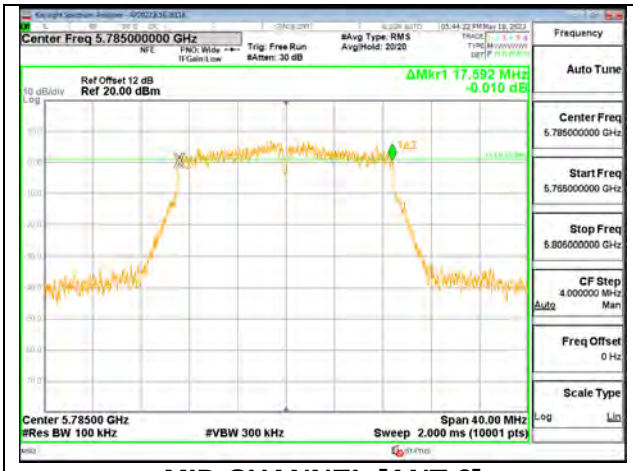
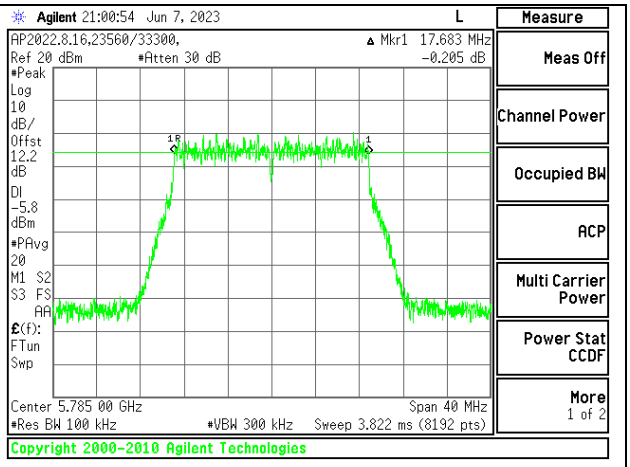
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5745	17.580	17.624	0.5
Mid	5785	17.592	17.683	0.5
High	5825	16.916	17.614	0.5
144	5720	3.748	3.748	0.5



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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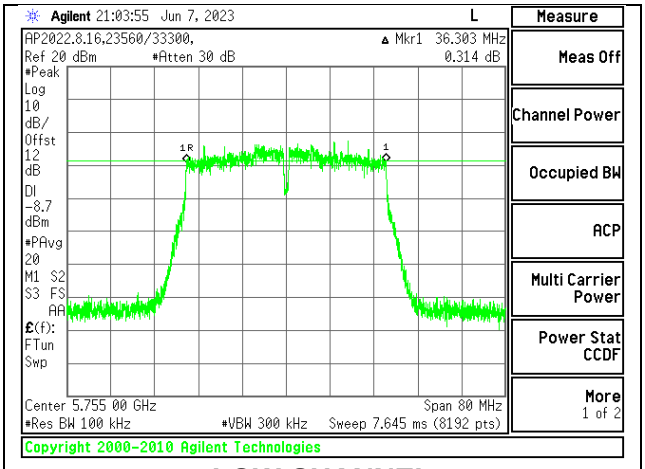
9.3.2. 802.11n HT40 MODE IN THE 5.8 GHz BAND

1TX Antenna 6 MODE

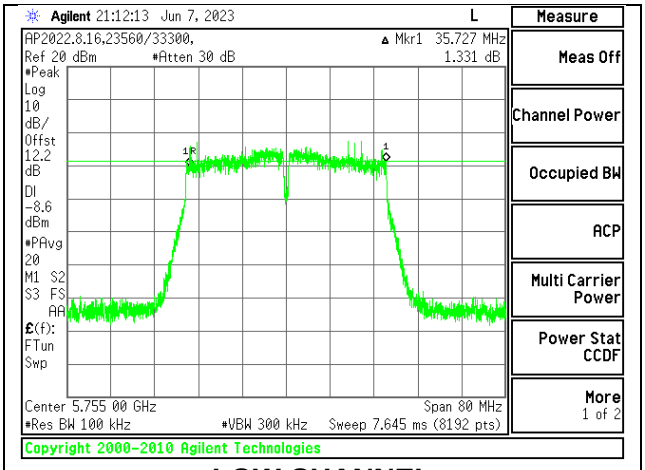
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	36.303	0.5
High	5795	35.356	0.5
142	5710	2.872	0.5



LOW CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.727	0.5
High	5795	36.342	0.5
142	5710	3.248	0.5



LOW CHANNEL

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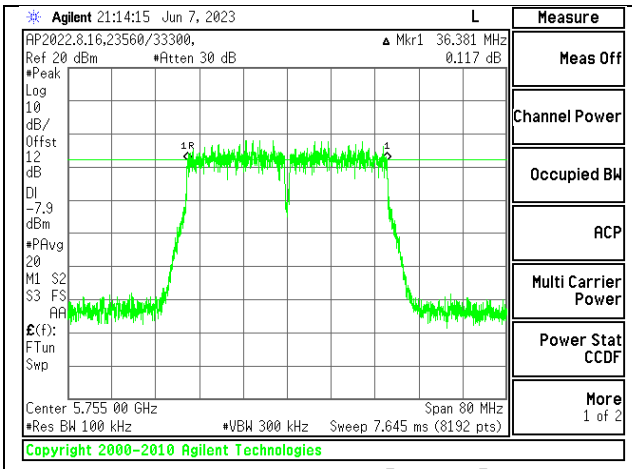
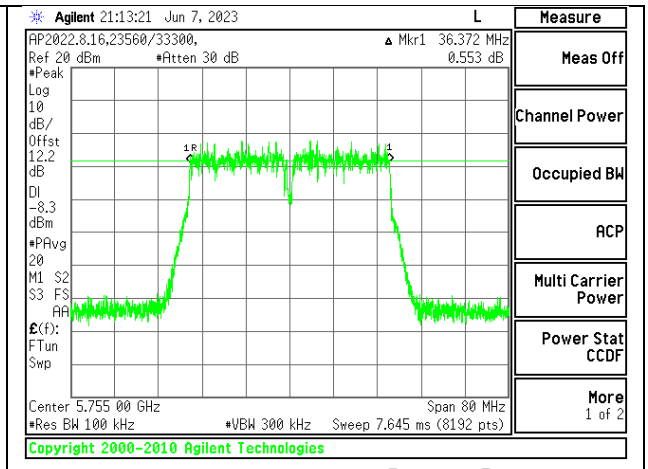
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5755	36.381	36.372	0.5
High	5795	35.844	36.381	0.5
142	5710	2.560	3.232	0.5



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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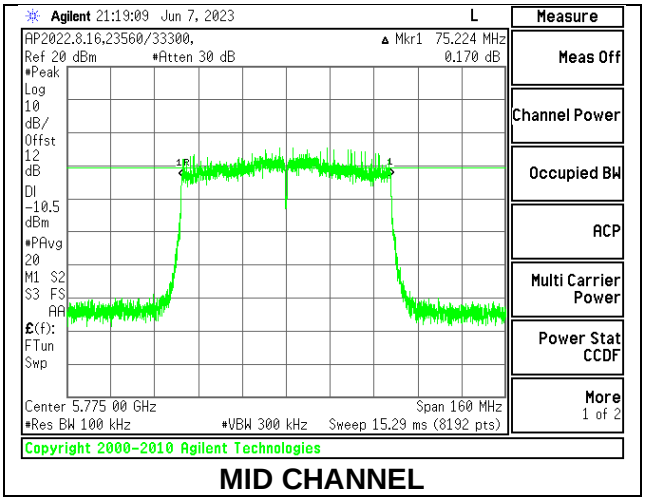
9.3.3. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

1TX Antenna 6 MODE

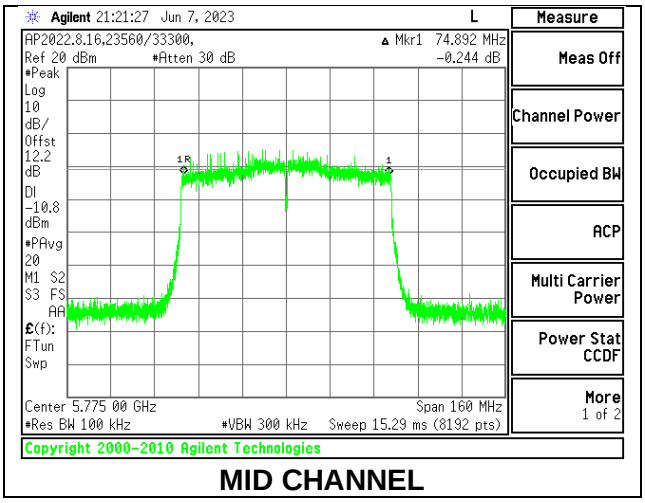
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	75.224	0.5
138	5690	3.240	0.5



MID CHANNEL

1TX Antenna 5 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	74.892	0.5
138	5690	3.176	0.5



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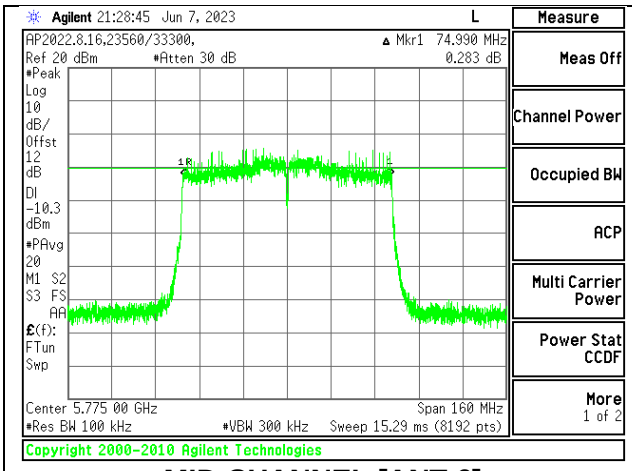
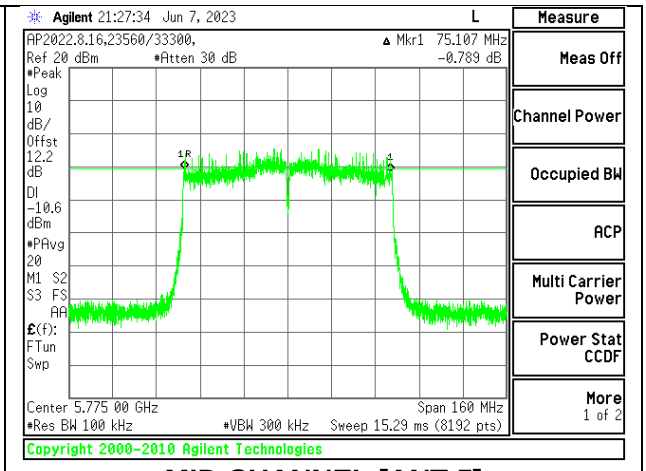
2TX Antenna 6 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Mid	5775	74.990	75.107	0.5
138	5690	3.144	3.144	0.5



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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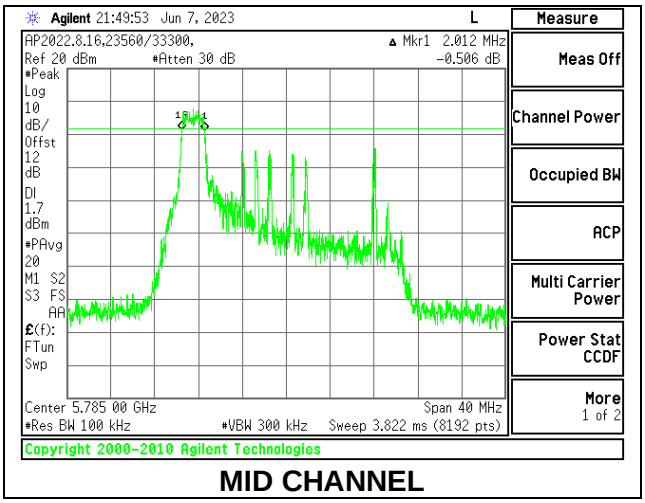
9.3.4. 802.11ax HE20 MODE IN THE 5.8 GHz BAND

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

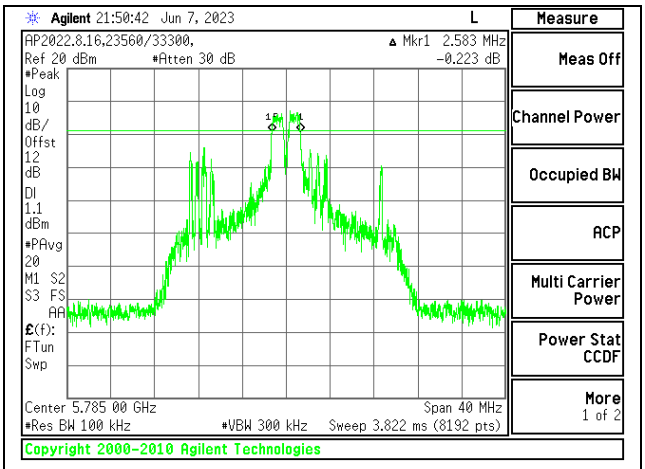
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	2.022	0.5
Mid	5785	2.012	0.5
High	5825	1.973	0.5



MID CHANNEL

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	2.515	0.5
Mid	5785	2.583	0.5
High	5825	2.608	0.5



MID CHANNEL

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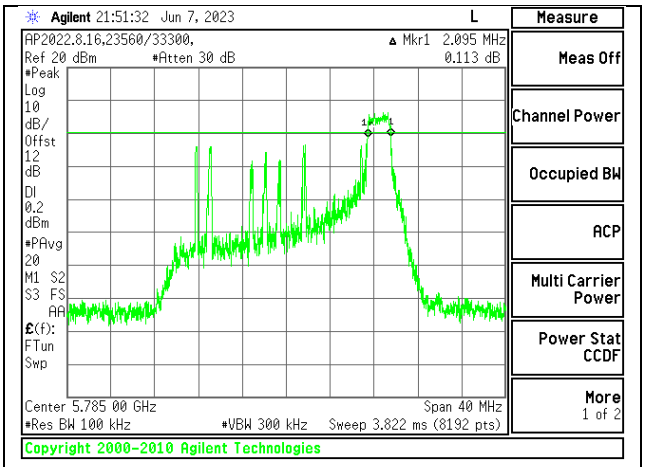
1TX Antenna 6 MODE: 26 Tones, RU Index 8

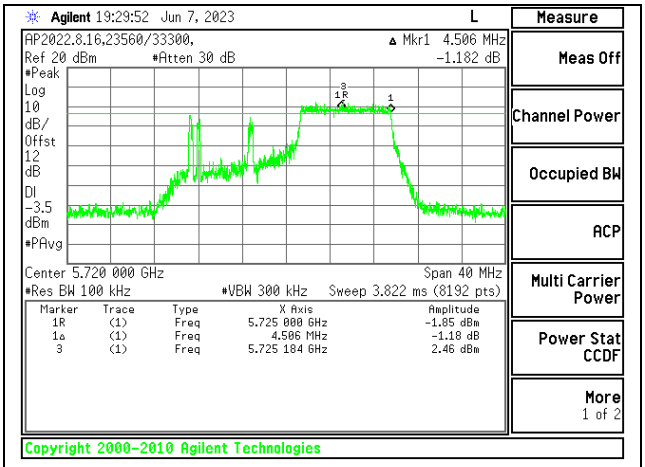
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	2.017	0.5
Mid	5785	2.095	0.5
High	5825	2.041	0.5



MID CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
144	5720	4.506	0.5



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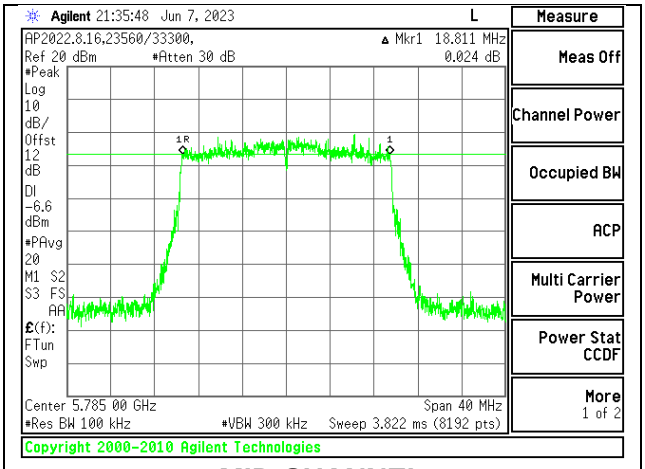
1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	18.840	0.5
Mid	5785	18.811	0.5
High	5825	18.596	0.5
144	5720	3.888	0.5



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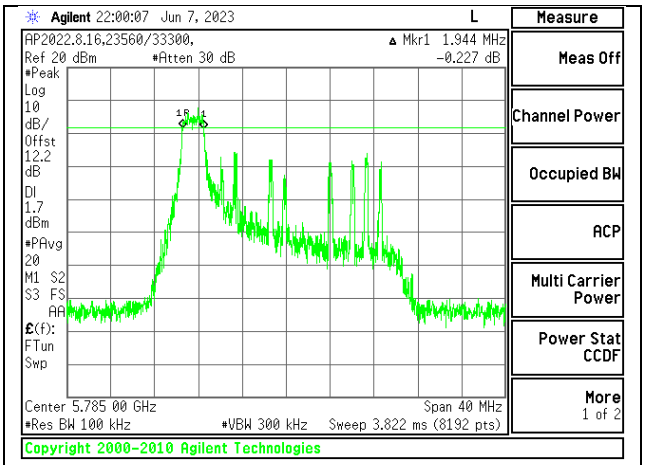
1TX Antenna 5 MODE: 26 Tones, RU Index 0

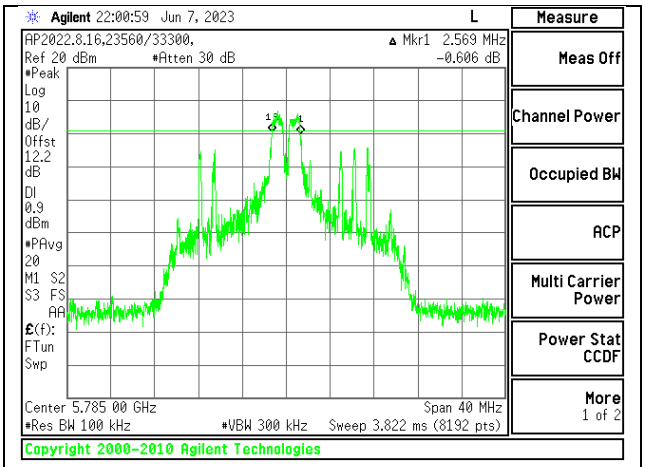
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	2.007	0.5
Mid	5785	1.944	0.5
High	5825	2.046	0.5



MID CHANNEL

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	2.578	0.5
Mid	5785	2.569	0.5
High	5825	2.652	0.5



MID CHANNEL

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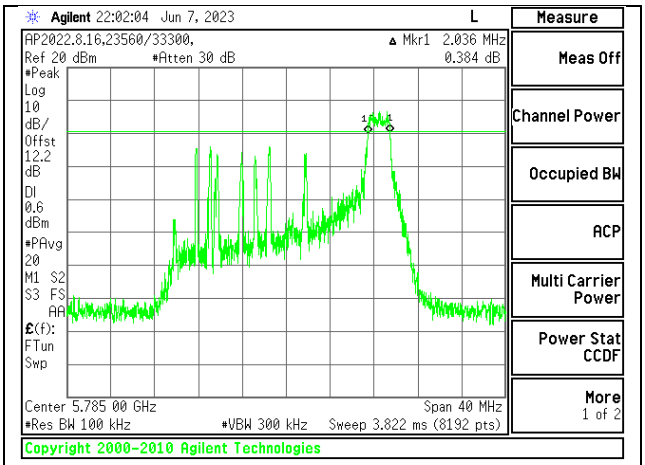
1TX Antenna 5 MODE: 26 Tones, RU Index 8

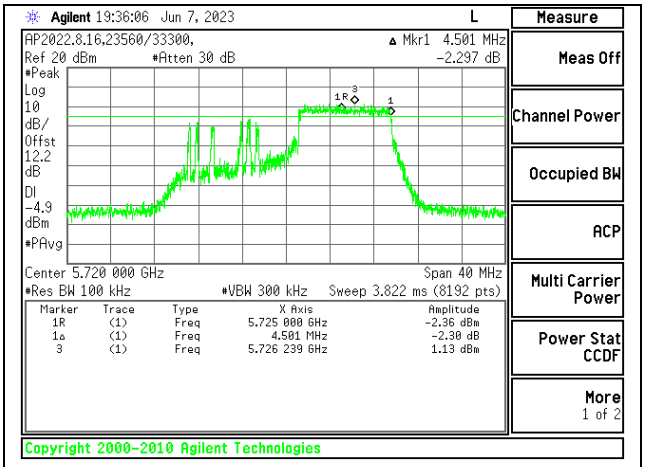
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	2.022	0.5
Mid	5785	2.036	0.5
High	5825	1.988	0.5



MID CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
144	5720	4.501	0.5



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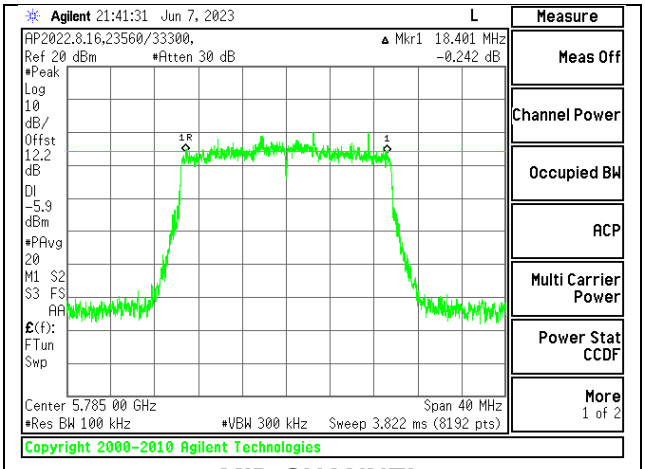
1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	18.933	0.5
Mid	5785	18.401	0.5
High	5825	18.396	0.5
144	5720	3.724	0.5



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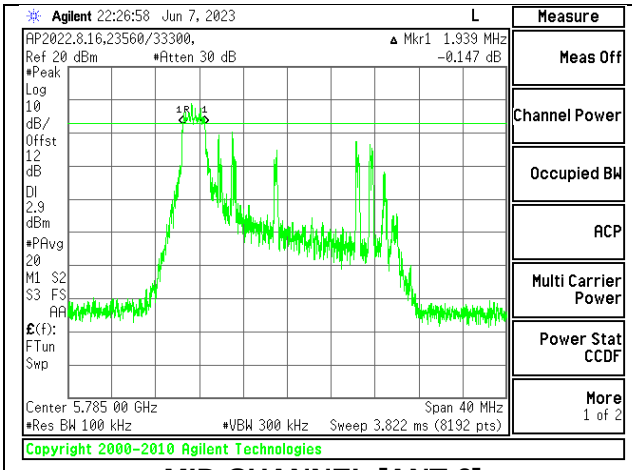
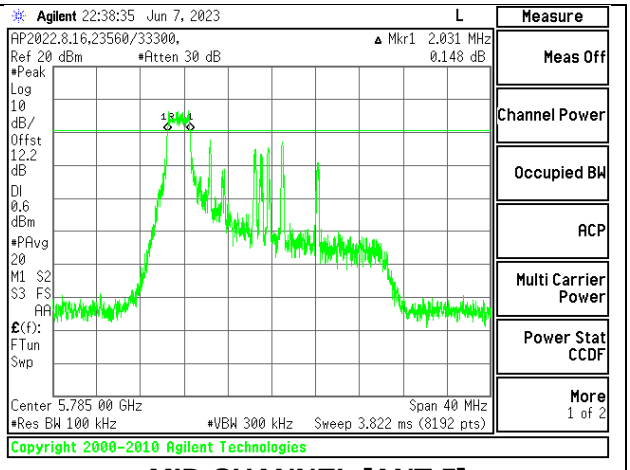
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

	(MHz)	Antenna 6 (MHz)	Antenna 5 (MHz)	Limit (MHz)
Low	5745	2.085	2.017	0.5
Mid	5785	1.939	2.031	0.5
High	5825	1.988	1.953	0.5



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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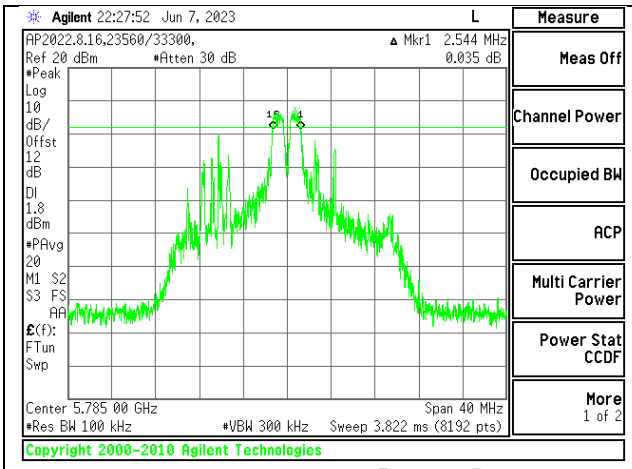
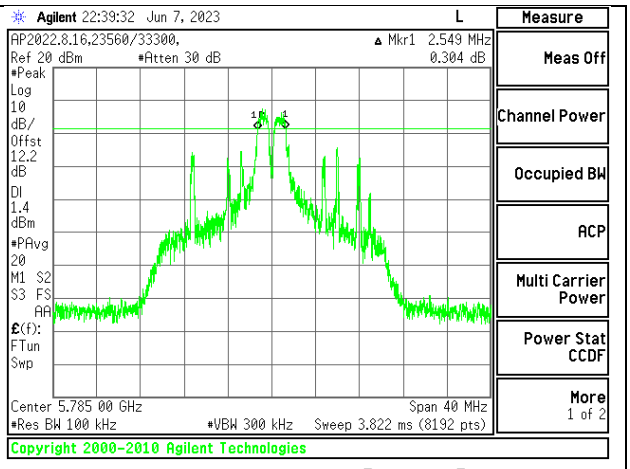
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5745	2.593	2.637	0.5
Mid	5785	2.544	2.549	0.5
High	5825	2.549	2.608	0.5



MID CHANNEL [ANT 6]



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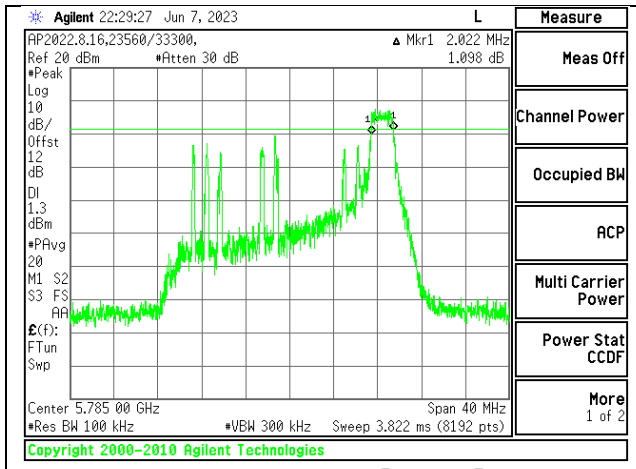
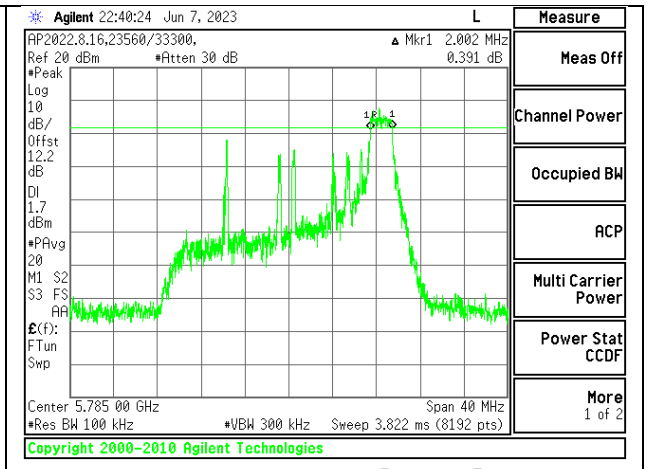
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5745	1.958	1.992	0.5
Mid	5785	2.022	2.002	0.5
High	5825	2.002	2.002	0.5



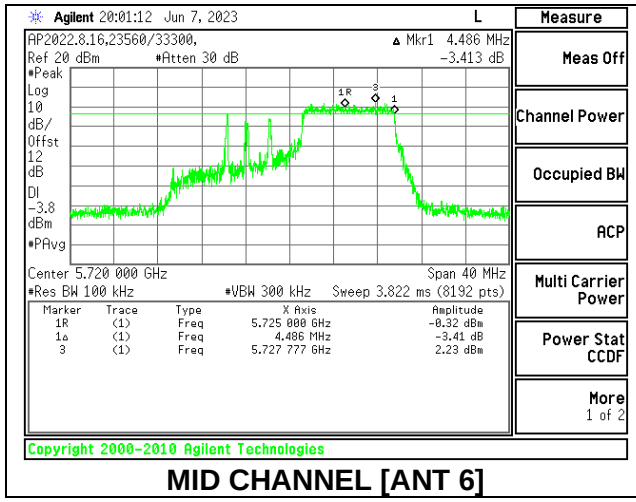
MID CHANNEL [ANT 6]



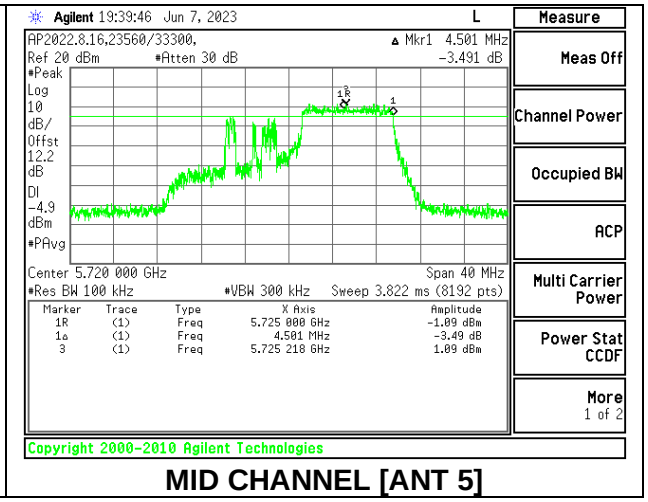
MID CHANNEL [ANT 5]

2TX Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 54

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
144	5720	4.486	4.501	0.5



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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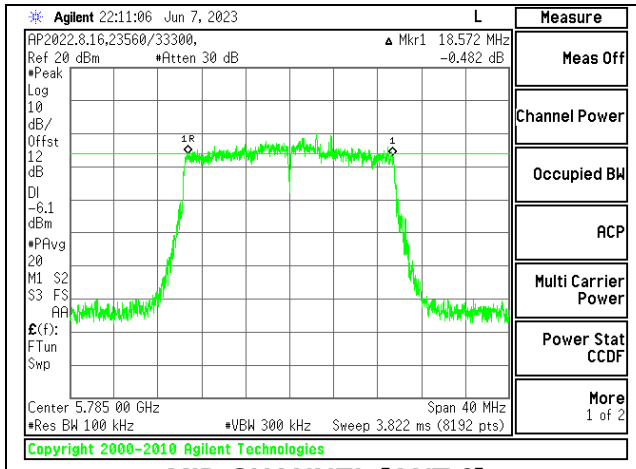
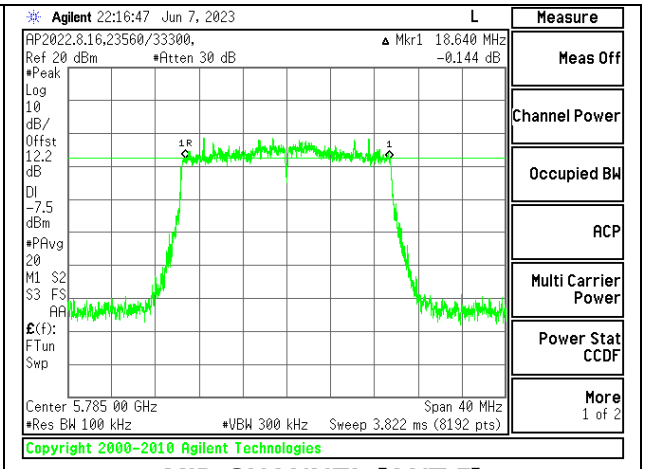
2TX Antenna 6 + Antenna 5 CDD MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5745	18.816	18.869	0.5
Mid	5785	18.572	18.640	0.5
High	5825	18.762	18.161	0.5
144	5720	3.780	3.724	0.5



MID CHANNEL [ANT 6]



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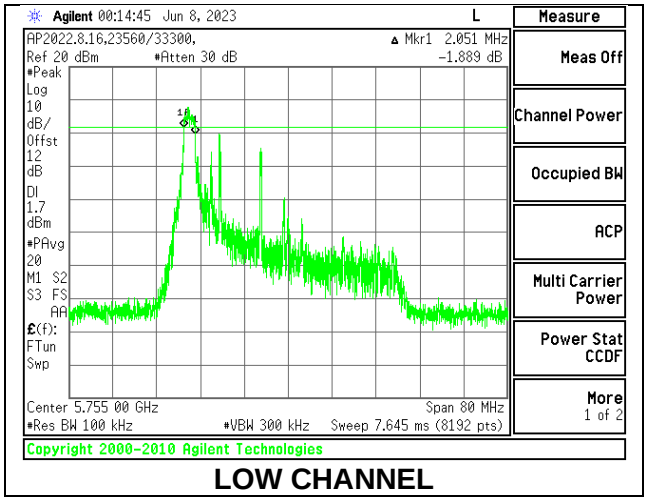
9.3.5. 802.11ax HE40 MODE IN THE 5.8 GHz BAND

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

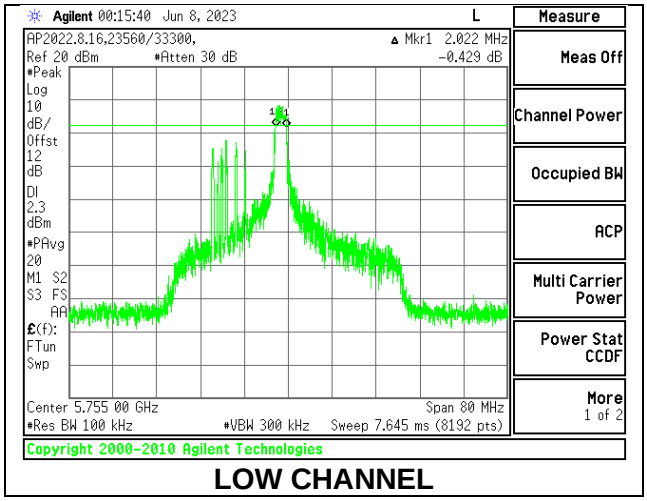
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	2.051	0.5
High	5795	2.031	0.5



LOW CHANNEL

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	2.022	0.5
High	5795	2.002	0.5



LOW CHANNEL

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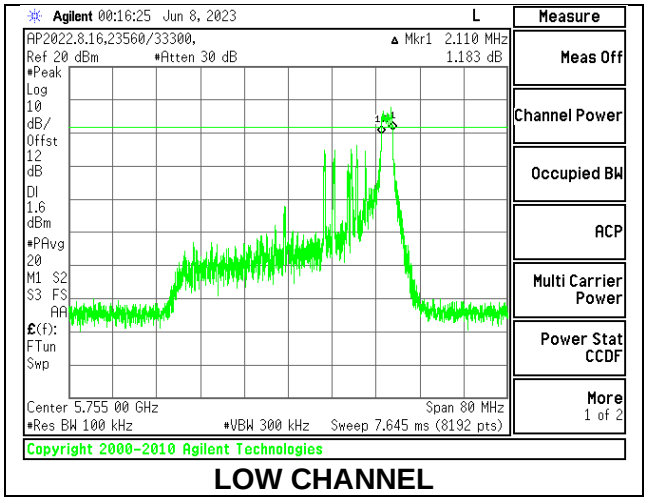
1TX Antenna 6 MODE: 26 Tones, RU Index 17

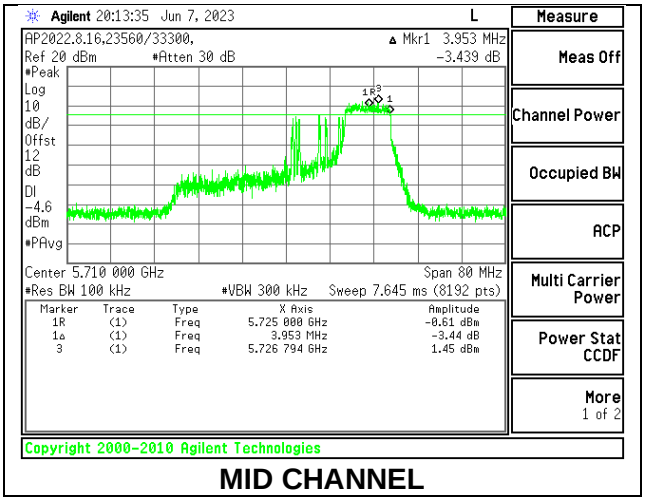
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	2.110	0.5
High	5795	2.100	0.5



LOW CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
144	5710	3.953	0.5



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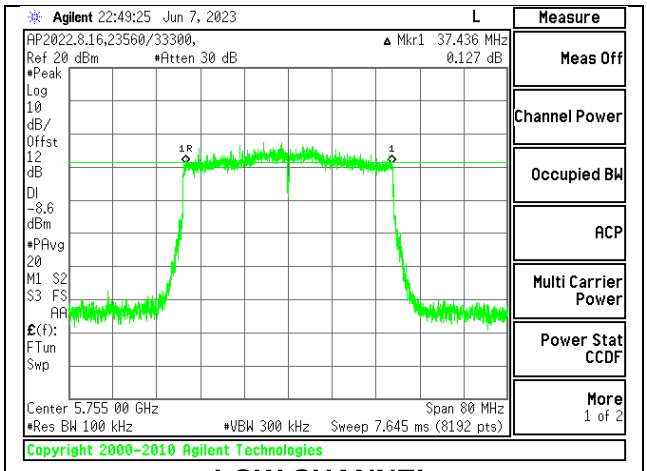
1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	37.436	0.5
High	5795	37.202	0.5
142	5710	3.708	0.5



LOW CHANNEL

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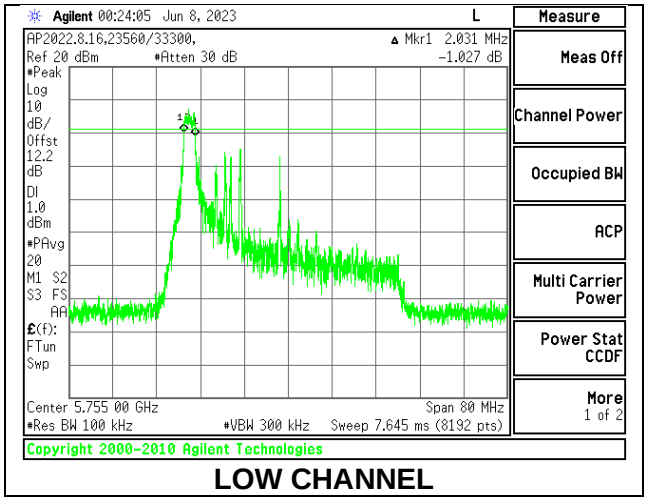
1TX Antenna 5 MODE: 26 Tones, RU Index 0

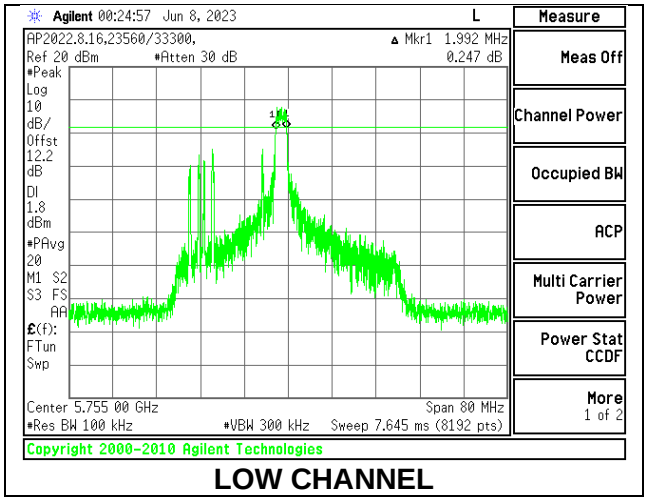
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	2.031	0.5
High	5795	2.031	0.5



LOW CHANNEL

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	1.992	0.5
High	5795	2.002	0.5



LOW CHANNEL

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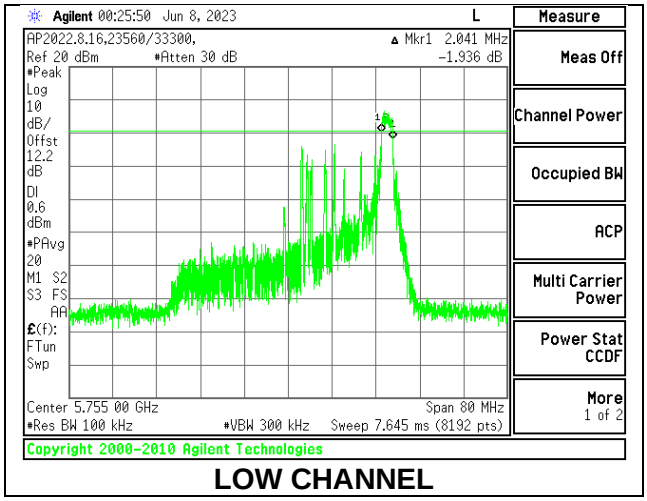
1TX Antenna 5 MODE: 26 Tones, RU Index 17

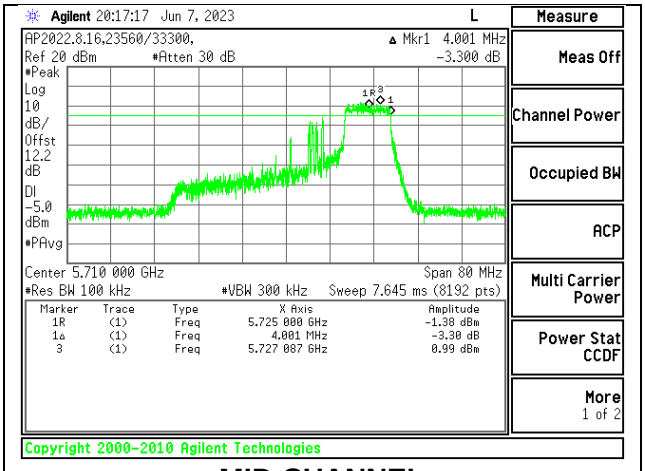
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	2.041	0.5
High	5795	1.944	0.5



LOW CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
144	5710	4.001	0.5



MID CHANNEL

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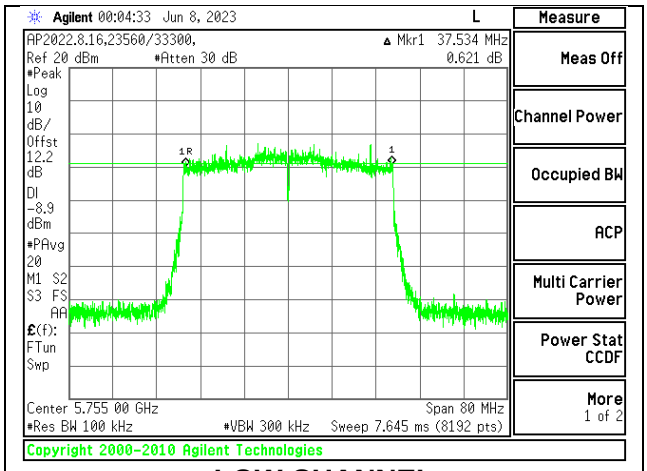
1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	37.534	0.5
High	5795	37.505	0.5
142	5710	3.767	0.5



LOW CHANNEL

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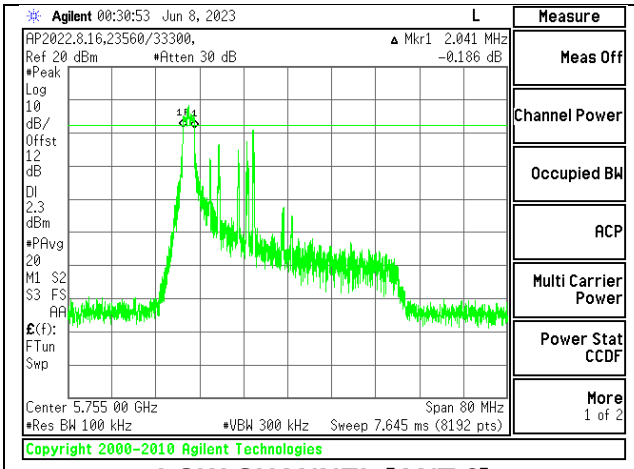
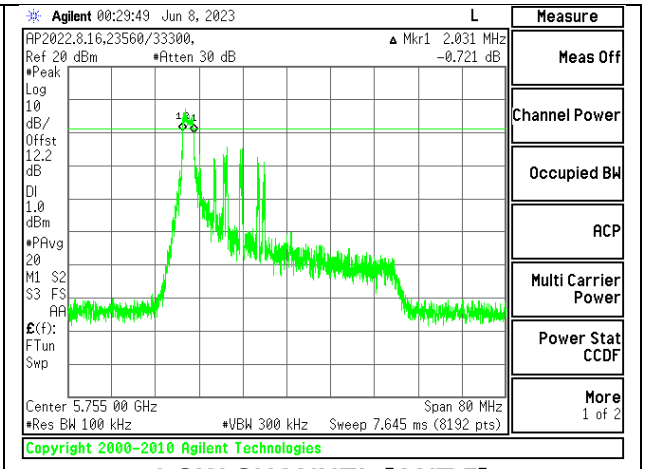
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5755	2.041	2.031	0.5
High	5795	2.061	2.061	0.5



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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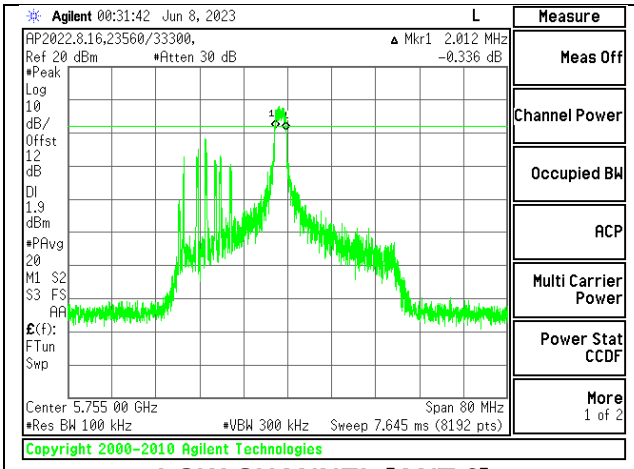
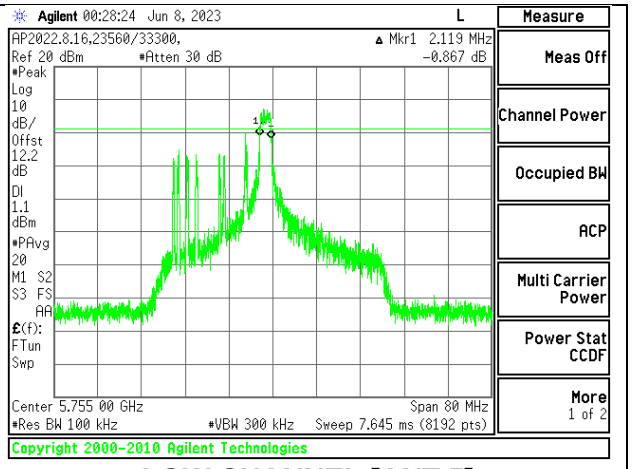
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5755	2.012	2.119	0.5
High	5795	2.080	1.953	0.5



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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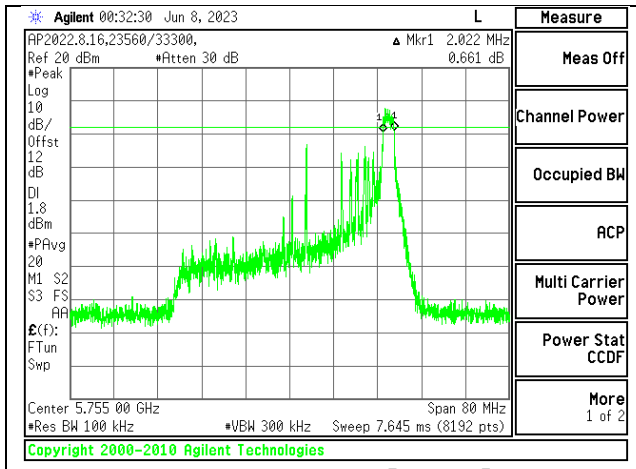
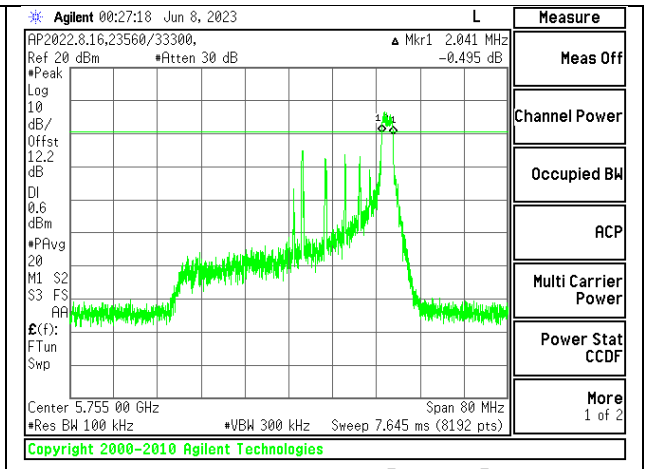
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5755	2.022	2.041	0.5
High	5795	2.080	2.031	0.5



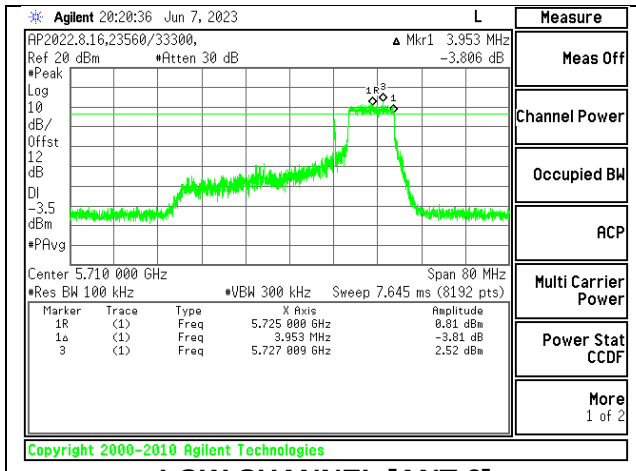
LOW CHANNEL [ANT 6]



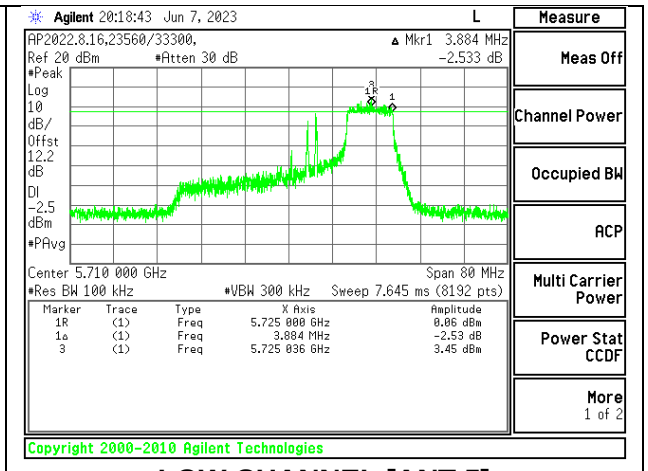
LOW CHANNEL [ANT 5]

Antenna 6 + Antenna 5 CDD MODE: 106 Tones, RU Index 56

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
142	5710	3.953	3.884	0.5



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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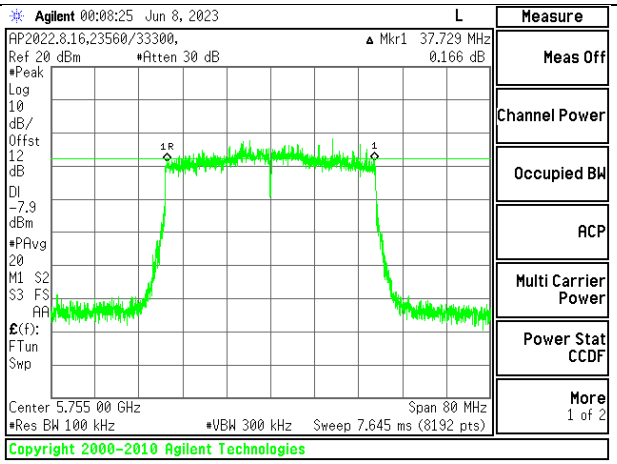
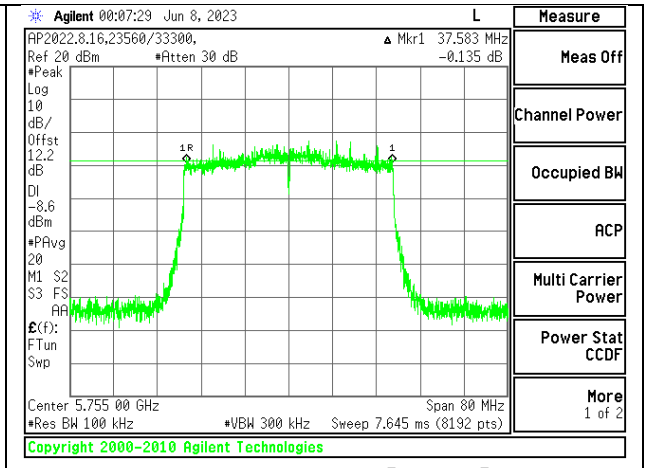
2TX Antenna 6 + Antenna 5 CDD MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Low	5755	37.729	37.583	0.5
High	5795	37.837	37.602	0.5
142	5710	3.943	4.001	0.5



LOW CHANNEL [ANT 6]



LOW CHANNEL [ANT 5]

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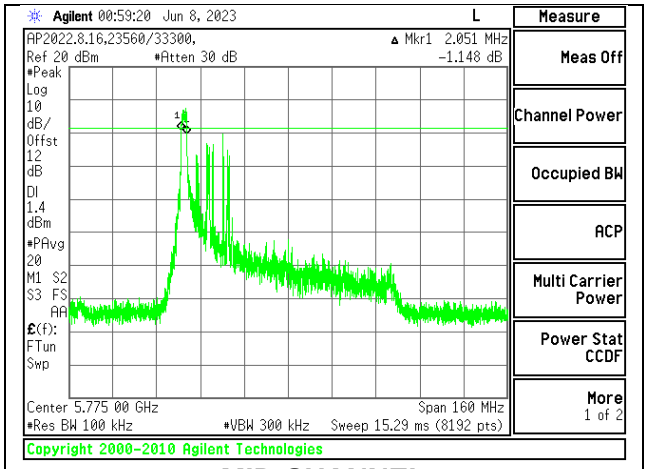
9.3.6. 802.11ax HE80 MODE IN THE 5.8 GHz BAND

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

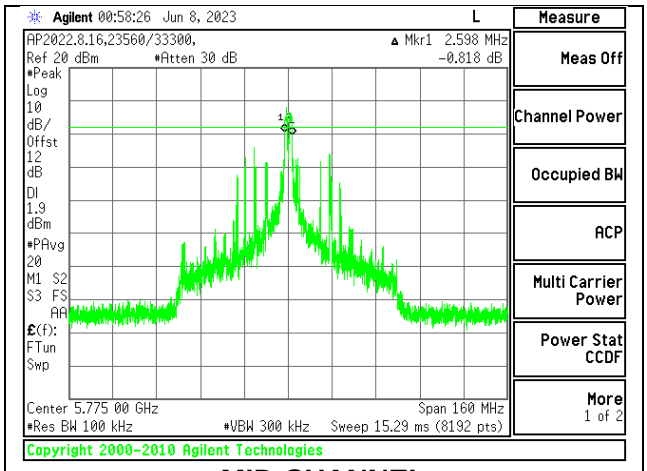
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	2.051	0.5



MID CHANNEL

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	2.598	0.5



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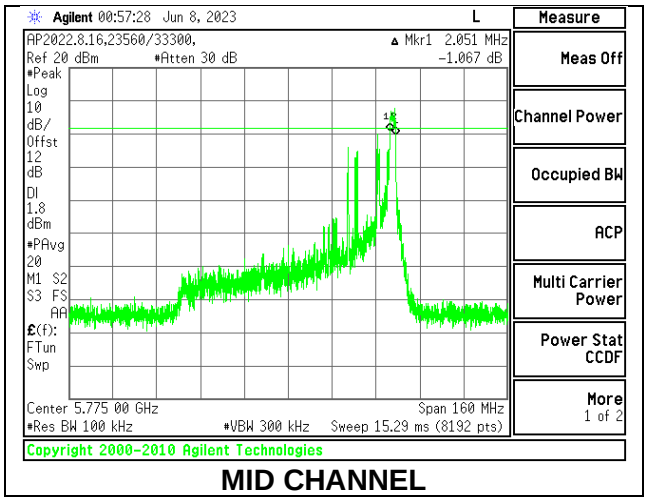
1TX Antenna 6 MODE: 26 Tones, RU Index 36

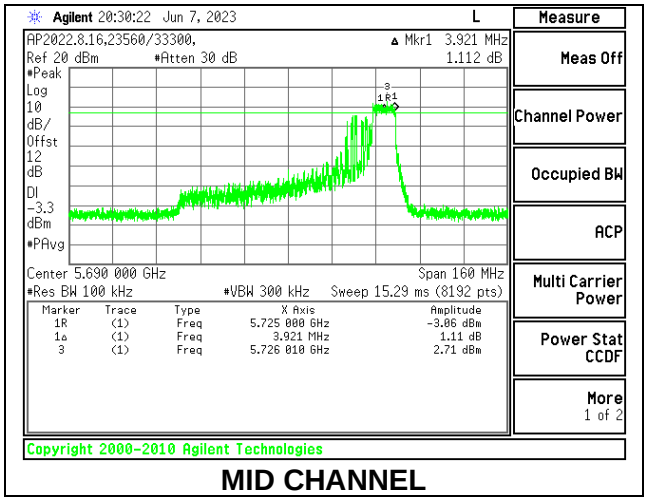
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	2.051	0.5



MID CHANNEL

1TX Antenna 6 MODE: 106 Tones, RU Index 60

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
138	5690	3.921	0.5



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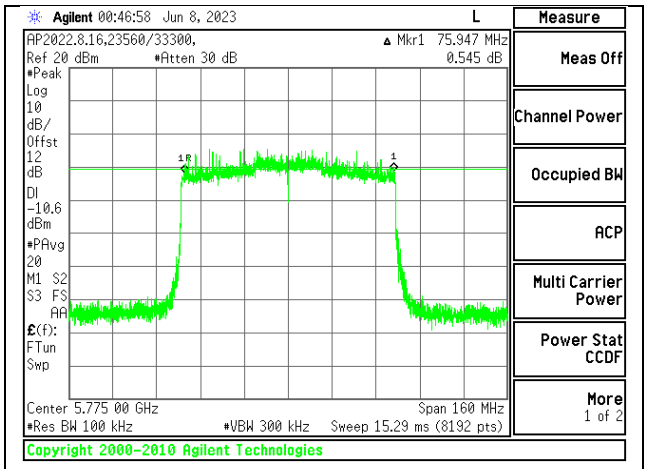
1TX Antenna 6 MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	75.947	0.5
138	5690	3.471	0.5



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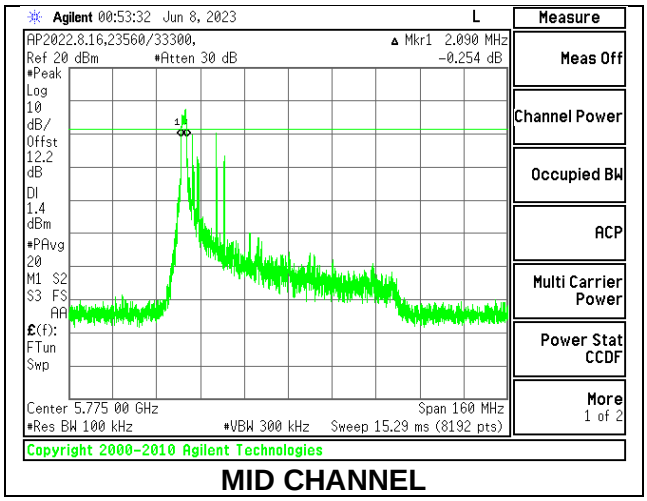
1TX Antenna 5 MODE: 26 Tones, RU Index 0

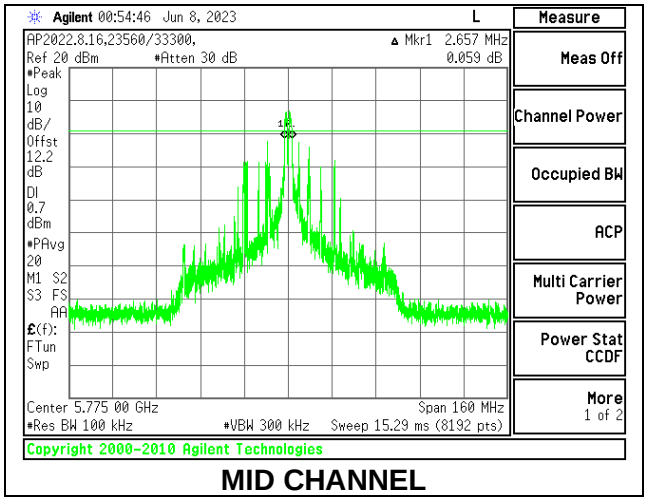
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	2.090	0.5



MID CHANNEL

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	2.657	0.5



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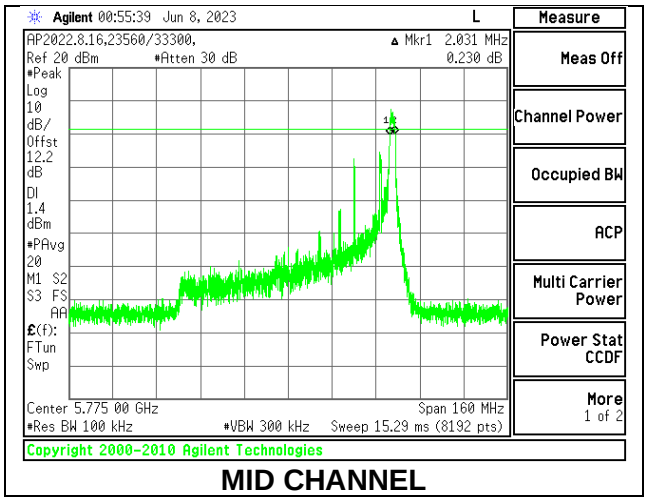
1TX Antenna 5 MODE: 26 Tones, RU Index 36

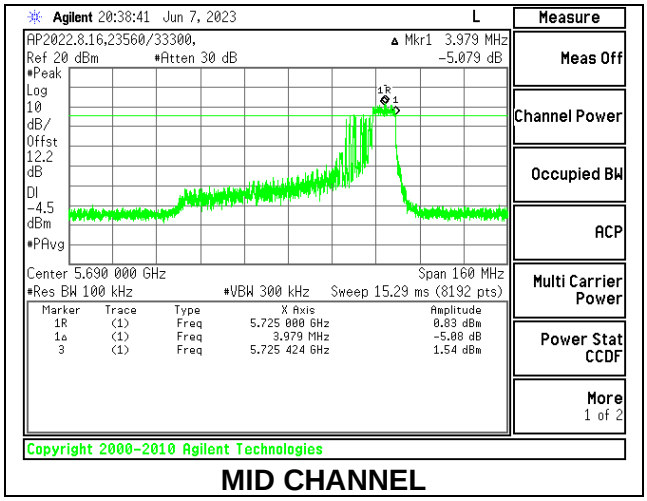
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	2.031	0.5



MID CHANNEL

1TX Antenna 5 MODE: 106 Tones, RU Index 60

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
138	5690	3.979	0.5



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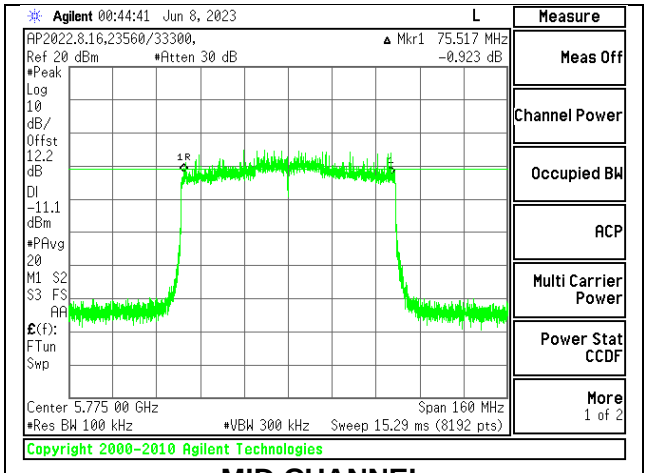
1TX Antenna 5 MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Mid	5775	75.517	0.5
138	5690	3.706	0.5



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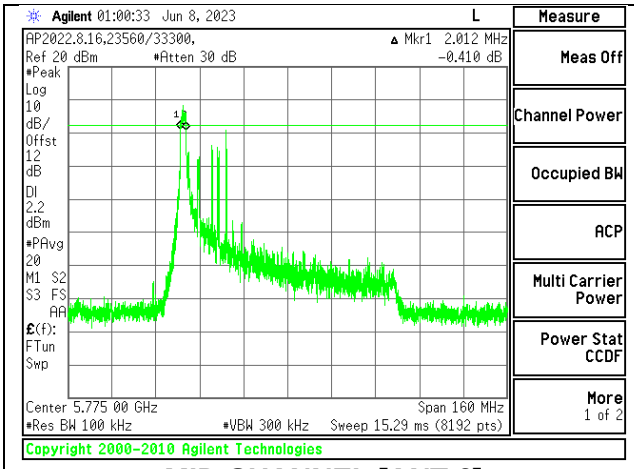
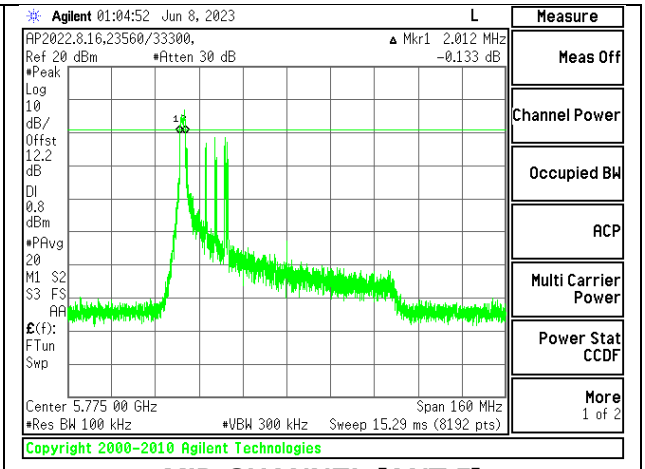
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Mid	5775	2.012	2.012	0.5



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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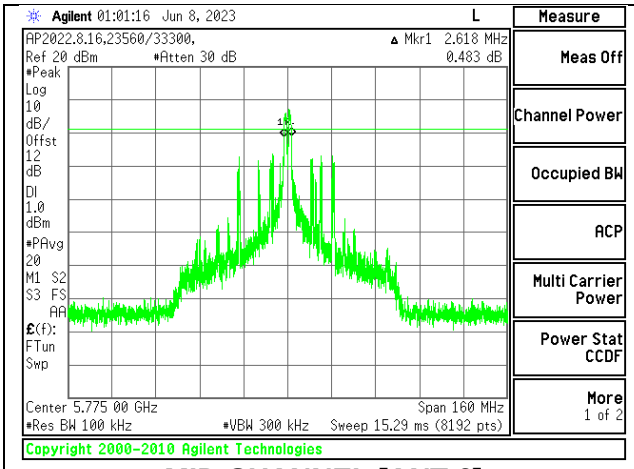
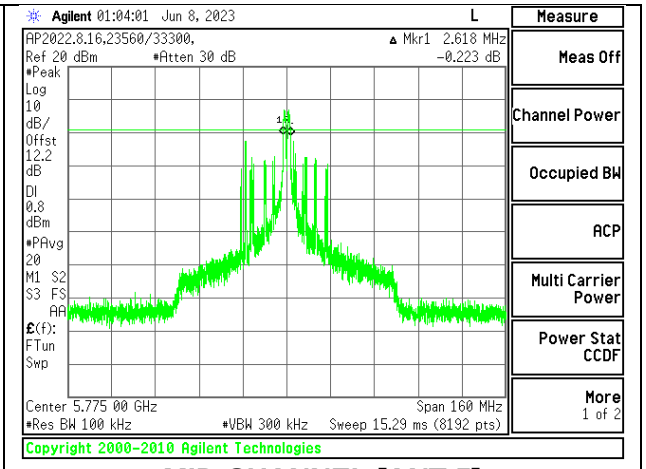
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Mid	5775	2.618	2.618	0.5



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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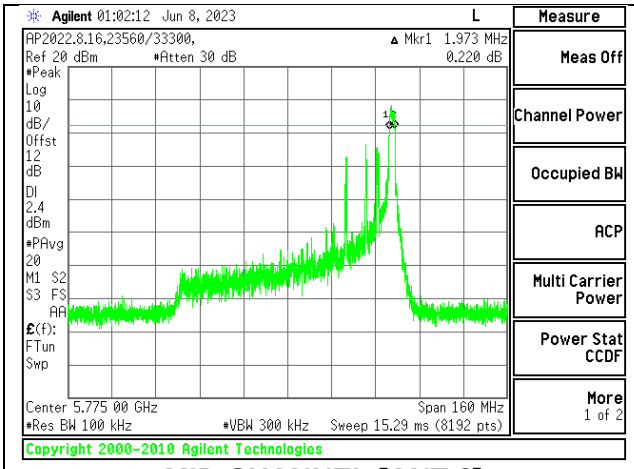
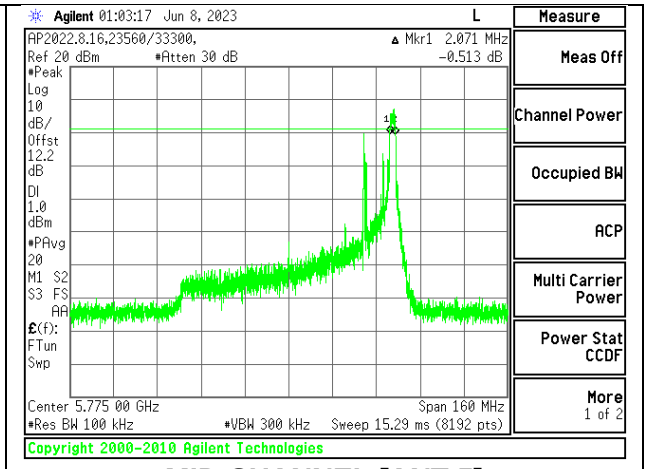
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Mid	5775	1.973	2.071	0.5



MID CHANNEL [ANT 6]



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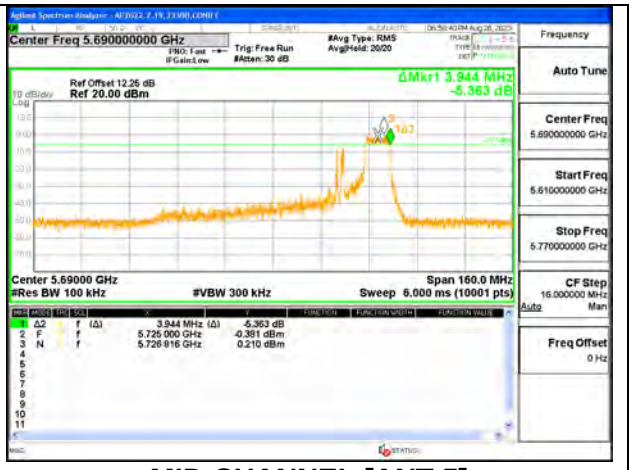
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 60

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Mid	5690	3.976	3.944	0.5

MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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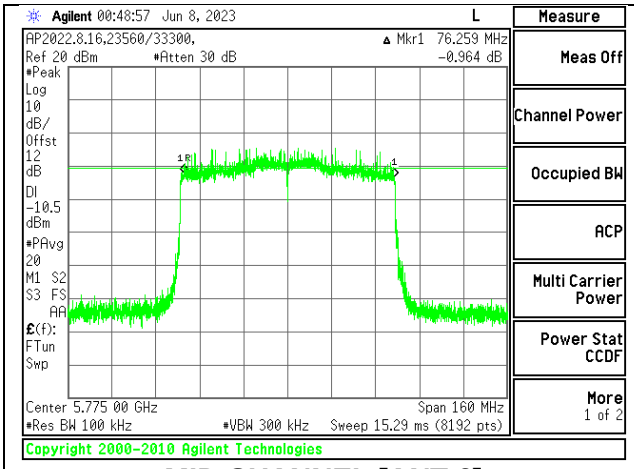
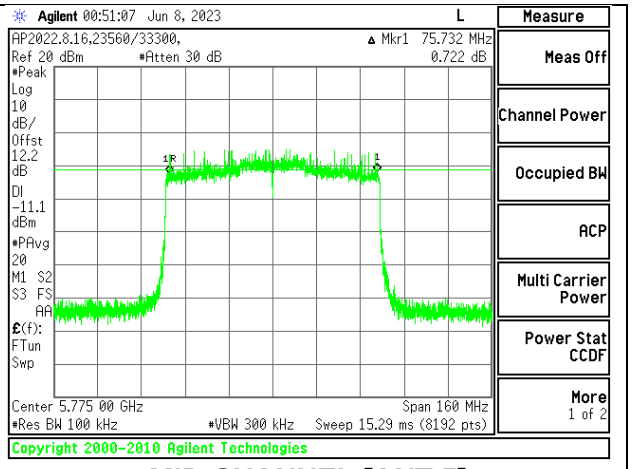
TX Antenna 6 + Antenna 5 CDD MODE: SU Mode

Channel	Frequency (MHz)	6 dB Bandwidth Antenna 6 (MHz)	6 dB Bandwidth Antenna 5 (MHz)	Minimum Limit (MHz)
Mid	5775	76.259	75.732	0.5
138	5690	3.882	3.979	0.5



MID CHANNEL [ANT 6]



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9.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz (pick the section that applies to your product)

(iv) For mobile and portable 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.

Bands 5.25-5.35 GHz and 5.47-5.725 GHz
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 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.

Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G).

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F.
For all straddle channels, full bandwidth power and PSD/MHz are reported in the 5.6GHz section because the combined 5.6GHz and 5.8GHz power and PSD/MHz already passed the worst-case 5.6GHz power and 5.8 GHz PSD/500kHz limits.
.

11n HT20 and 11ax HE20 straddle channel 26dB bandwidth= (26dB BW/2)+5

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DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	ANT6 Gain (dBi)	ANT5 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2	-3.2	-4.5	-3.80	-0.82
5.3	-2.9	-4.9	-3.79	-0.83
5.6	-2.0	-3.8	-2.81	0.16
5.8	-2.0	-4.0	-2.89	0.07

DIRECTIONAL GAIN CALCULATION:

ANSI C63.10-2013 section 14.4.3

Uncorrelated directional gain=10*LOG((10^(Ant6/10)+10^(Ant5/10))/2)
Correlated directional Gain=10*LOG(((10^(Ant6/20)+10^(Ant5/20))^2)/2)

Sample Calculation at 5.2GHz Band:

Ant6=-3.2, Ant5=-4.5

Uncorrelated Antenna gain=10log[(10^(-3.2/10)+10^(-4.5/10))/2]=-3.8dBi

Correlated Antenna gain=10log[(10^(-3.2/20)+10^(-4.5/20))^2)/2]=-0.82dBi

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