FCC TEST REPORT

FCC ID: 2ATFO-C7PRO

On Behalf of

ValueHD Corporation

Integrated UHD Video Conferencing Terminal

Model No.: C7Pro, T730Pro, C7lite, C7, C16

Prepared for	:	ValueHD Corporation
Address	:	2-3/F, No. 2, Honghui Industrial Park, Xin'an Street, Bao'an District, Shenzhen, China

Prepared By	:	Shenzhen PSI Testing Co., Ltd.
Address	:	1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Report Number	:	psi2404064-C01-R12
Date of Receipt	:	April 17, 2024
Date of Test	:	April 17, 2024-May 17, 2024
Date of Report	:	May 17, 2024
Version Number	:	V0

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TEST REPORT DECLARATION

Applicant	:	ValueHD Corporation
Address	:	2-3/F, No. 2, Honghui Industrial Park, Xin'an Street, Bao'an District, Shenzhen, China
Manufacturer	:	ValueHD Corporation
Address	:	2-3/F, No. 2, Honghui Industrial Park, Xin'an Street, Bao'an District, Shenzhen, China
EUT Description	:	Integrated UHD Video Conferencing Terminal
	(A) Model No.	: C7Pro, T730Pro, C7lite, C7, C16
	(B) Trademark	: N/A

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart E

ANSI C63.4:2014, ANSI C63.10:2013

The device described above is tested by Shenzhen PSI Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart E limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen PSI Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen PSI Testing Co., Ltd.

Tested by (name + signature).....:	Felix Pang Test Engineer	
Approved by (name + signature).....:	Simple Guan Project Manager	
Date of issue.....:	May 17, 2024	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	May 17, 2024	Initial released Issue	Felix Pang

1 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	Section 15.203 Section 7.1.4 RSS-Gen Issue 5	PASS
AC Power Line Conducted Emission	Section 15.207 Section 7.2.4 RSS-GEN(8.8), ANSI C63.10	PASS
occupied bandwidth	Section 15.407 (e)	PASS
Peak Transmit Power	Section 15.407(a), RSS-247 5.4(2)	PASS
Power Spectral Density	Section 15.407(a), RSS-247 5.2(2)	PASS
Undesirable Emission	Section 15.407(b), RSS-247 5.5	PASS
Radiated Emission	Section 15.407(b)&15.209 Section 5.5 RSS-Gen(8.9), RSS-247(5.5), ANSI C63.10	PASS
Band Edge	15.205, RSS-247 Issue 2, ANSI C63.10	PASS
Frequency Stability	15.407(f), RSS-GEN(6.11)	PASS

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.

2. Frequency Stability: The manufacturer stated in the user's manual.

3. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

1.1 Measurement Uncertainty

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	2.17dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	2.74dB(Polarize: V)
	2.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 18GHz)	4.29dB(Polarize: V)
	4.82dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (18GHz to 40GHz)	4.31dB(Polarize: V)
	4.30dB(Polarize: H)
Uncertainty for radio frequency	48.24KHz
Uncertainty for conducted RF Power	0.41dB
Uncertainty for Power Spectral Density	0.39 dB

2 General Information

2.1 General Description of EUT

EUT Name	:	Integrated UHD Video Conferencing Terminal
Model	:	C7Pro, T730Pro, C7lite, C7, C16
Diff	:	There is no difference except the name of the model. All tests are made with the C7Pro model.
Test Voltage	:	DC 12V from Adapter

Radio Technology	:	5G WIFI
Operation frequency	:	802.11a/802.11ac20/802.11n(HT20)/802.11ax20: 5180-5240MHz, 5745-5845MHz 802.11ac40/802.11n(HT40)/802.11ax40: 5190-5230MHz, 5755-5795MHz 802.11ac80/802.11ax80: 5210MHz, 5775MHz
Channel separation	:	20MHz for 802.11a/802.11ac20/802.11n(HT20)/.11ax20 40MHz for 802.11ac40/ 802.11n(HT40)/802.11ax40 80MHz for 802.11ac80/802.11ax80
Modulation technology:	:	IIEEE 802.11n: OFDM (64QAM,16QAM,QPSK,BPSK) IEEE 802.11a: OFDM (64QAM,16QAM,QPSK,BPSK) IEEE 802.11ac: OFDM (64QAM,16QAM, 256QAM,QPSK,BPSK) IEEE 802.11ax: OFDMA (64QAM,16QAM,QPSK,BPSK,256QAM,1024QAM)
Antenna Type	:	Internal antenna 1, Maximum Gain is 4.83dBi. Internal antenna 2, Maximum Gain is 5.37dBi.
Software version	:	V1.0
Hardware version	:	V1.0
Note	:	Antenna information is provided by applicant. Testing lab is not responsible for the accuracy of the information.

2.2 Test mode

Transmitting mode	Keep the EUT in transmitting with modulation. EUT was test with 99% duty cycle at its maximum power control level.

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

2.3 Test Facility

Shenzhen PSI Testing Co., Ltd.

1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

September 13, 2023 File on Federal Communication Commission
Registration Number: 916281

2.4 Description of Support Units

Accessories	:	AC ADAPTER 1
Manufacturer	:	SHEN ZHEN TRANSIN TECHNOLOGIES CO., LTD
Model	:	TS-A036-120300M
Rating	:	Input: 100-240V~50/60Hz 1.2A Output: DC 12.0V/3.0A

Accessories	:	AC ADAPTER 2
Manufacturer	:	Mass Power Electronics Inc.
Model	:	S042-1B120300M2
Rating	:	Input: 100-240V~50/60Hz 1.0A Output: DC 12.0V/3.0A

Accessories	:	AC ADAPTER 3
Manufacturer	:	EDACPOWER ELEC.
Model	:	EA10681U-120
Rating	:	Input: 100-240V~50/60Hz 2.0A Output: DC 12.0V/6.0A

Note: The product comes with three adapters for use, all of which have been tested. The report reflects the data of the worst TS-A036-120300M adapter model.

2.5 Deviation from Standards

None.

2.6 Abnormalities from Standard Conditions

None.

2.7 Other Information Requested by the Customer

None.

2.8 Additional instructions

Software (Used for test) from client

Channel	Power level
Lowest	Default
Middle	Default
Highest	Default

3 Test Instruments list

Item	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Last Cal.	Cal. Interval
1.	9*6*6 anechoic chamber	SKET	9*6*6	N/A	/	2022.12.20	3 Year
2.	Test Receiver	Rohde&Schwarz	ESCI 7	101032/003	4.42 SP3	2023.12.19	1 Year
3.	L.I.S.N.#1	Rohde&Schwarz	ENV216	102282	/	2023.12.19	1 Year
4.	L.I.S.N.#2	RFT	NNB111	13835240	/	2023.12.19	1 Year
5.	Loop Antenna	Schwarz beck	FMZB 1519B	00128	/	2023.04.03	2 Year
6.	Bilog Antenna	Schwarz beck	VULB 9168	01448	/	2022.12.26	2 Year
7.	Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101648	3.70	2023.12.19	1 Year
8.	Horn Antenna	Schwarz beck	BBHA 9120 D	02706	/	2022.12.26	2 Year
9.	Amplifier	SKET	LAPA_01G18G-45dB	SK2022032901	/	2023.12.19	1 Year
10.	Horn Antenna	Schwarz beck	BBHA 9170	00946	/	2022.12.25	2 Year
11.	Amplifier	SKET	LNPA_0118G-45	SK2020010801	/	2023.12.19	1 Year
12	RF Power Probe	Rohde&Schwarz	NRP-Z11	1138.3004.02-1111533-Fz	/	2023.12.19	1 Year
13	RF Sensor Unit	Tachoy	TR1029-2	20220428P008	/	2023.12.19	1 Year

For Test Software Information

Item	Software Name	Manufacturer	Version
RE	EZ_EMC	Farad	PSI-3A1
CE	EZ_EMC	Farad	PSI-3A1
RF	RTS	TACHOY	V1.0.0

4 Test results and Measurement Data

4.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203

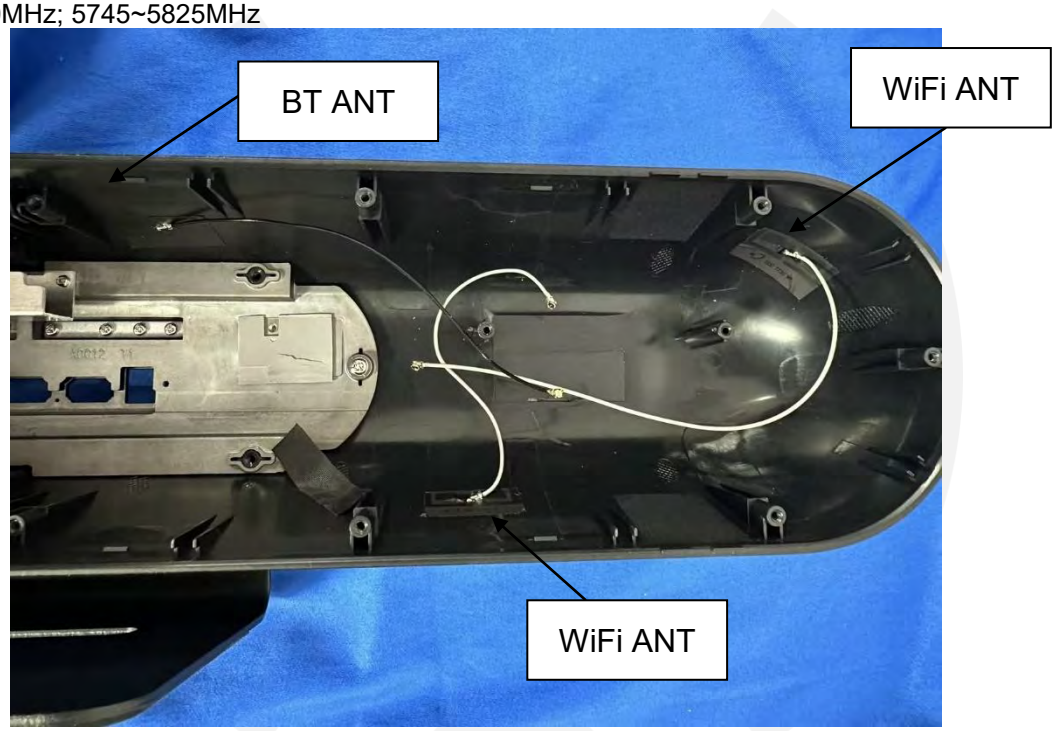
15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

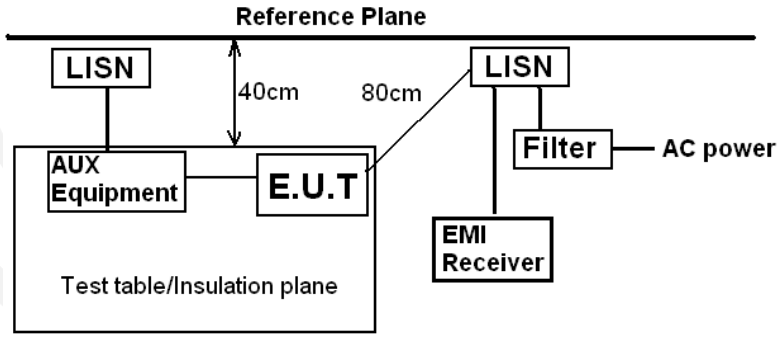
E.U.T Antenna:	

Internal antenna 1, Maximum Gain is 4.83dBi, Internal antenna 2, Maximum Gain is 5.37dBi,

for 5180~5240MHz; 5745~5825MHz



4.2 Conducted Emissions

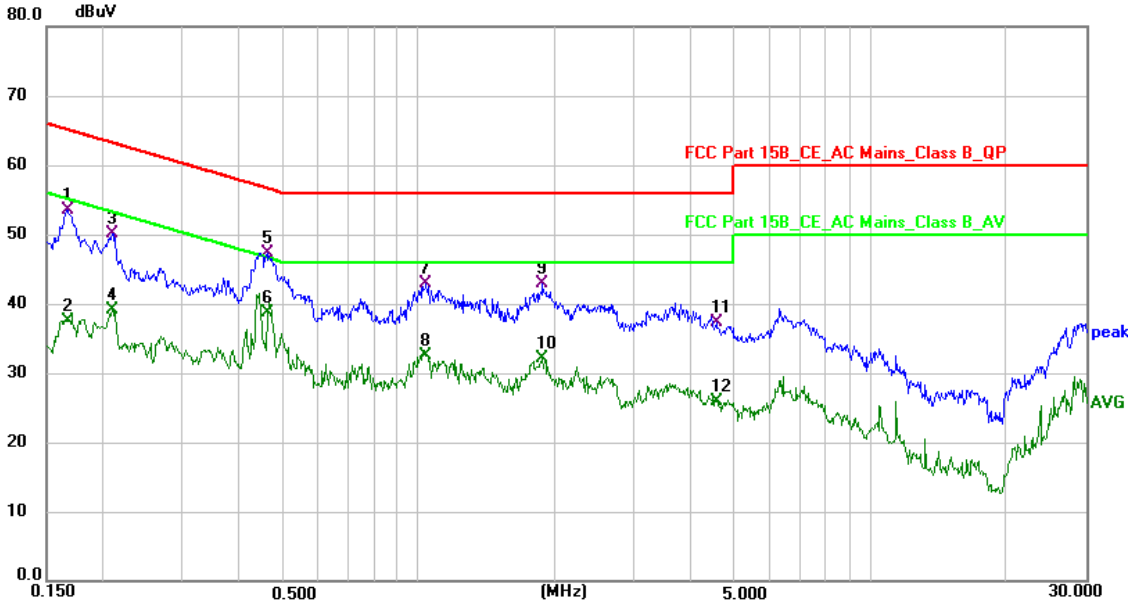
<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9KHz, VBW=30KHz</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr>
<tr><th>Quasi-peak</th><th>Average</th></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test procedure</td><td>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</td></tr>
<tr><td>Test setup:</td><td> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 3.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 2.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement Data

An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

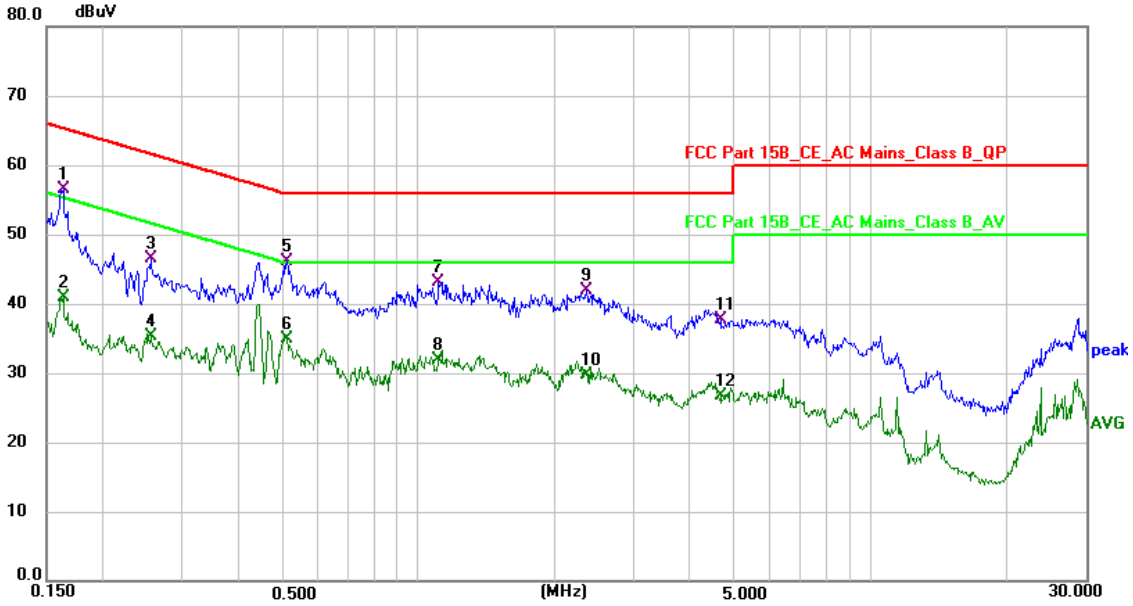
Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1660	43.61	9.94	53.55	65.16	-11.61	QP	P
2	0.1660	27.49	9.94	37.43	55.16	-17.73	AVG	P
3	0.2094	40.18	9.95	50.13	63.23	-13.10	QP	P
4	0.2094	29.13	9.95	39.08	53.23	-14.15	AVG	P
5	0.4620	37.45	9.80	47.25	56.66	-9.41	QP	P
6 *	0.4620	28.95	9.80	38.75	46.66	-7.91	AVG	P
7	1.0420	33.42	9.41	42.83	56.00	-13.17	QP	P
8	1.0420	23.16	9.41	32.57	46.00	-13.43	AVG	P
9	1.8780	33.48	9.39	42.87	56.00	-13.13	QP	P
10	1.8780	22.64	9.39	32.03	46.00	-13.97	AVG	P
11	4.5700	27.91	9.40	37.31	56.00	-18.69	QP	P
12	4.5700	16.52	9.40	25.92	46.00	-20.08	AVG	P

Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

Neutral:

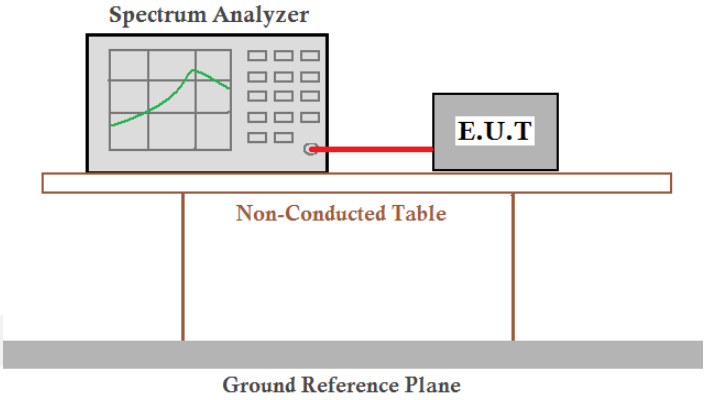


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1 *	0.1632	46.59	9.84	56.43	65.30	-8.87	QP	P
2	0.1632	31.16	9.84	41.00	55.30	-14.30	AVG	P
3	0.2540	36.65	9.90	46.55	61.63	-15.08	QP	P
4	0.2540	25.50	9.90	35.40	51.63	-16.23	AVG	P
5	0.5100	36.31	9.78	46.09	56.00	-9.91	QP	P
6	0.5100	25.12	9.78	34.90	46.00	-11.10	AVG	P
7	1.1060	33.58	9.48	43.06	56.00	-12.94	QP	P
8	1.1060	22.37	9.48	31.85	46.00	-14.15	AVG	P
9	2.3460	32.52	9.36	41.88	56.00	-14.12	QP	P
10	2.3460	20.31	9.36	29.67	46.00	-16.33	AVG	P
11	4.6540	28.14	9.55	37.69	56.00	-18.31	QP	P
12	4.6540	17.16	9.55	26.71	46.00	-19.29	AVG	P

Note: *:Maximum data x:Over limit !:over margin Level = Reading + Factor Margin = Level - Limit

All modes and channels have been tested and only the A 5180MHz mode with the worst data is listed.

4.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	N/A
Test setup:	
Test procedure:	According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Note: Note: Both antennas have been tested and only the worst data of antenna 1 is shown.

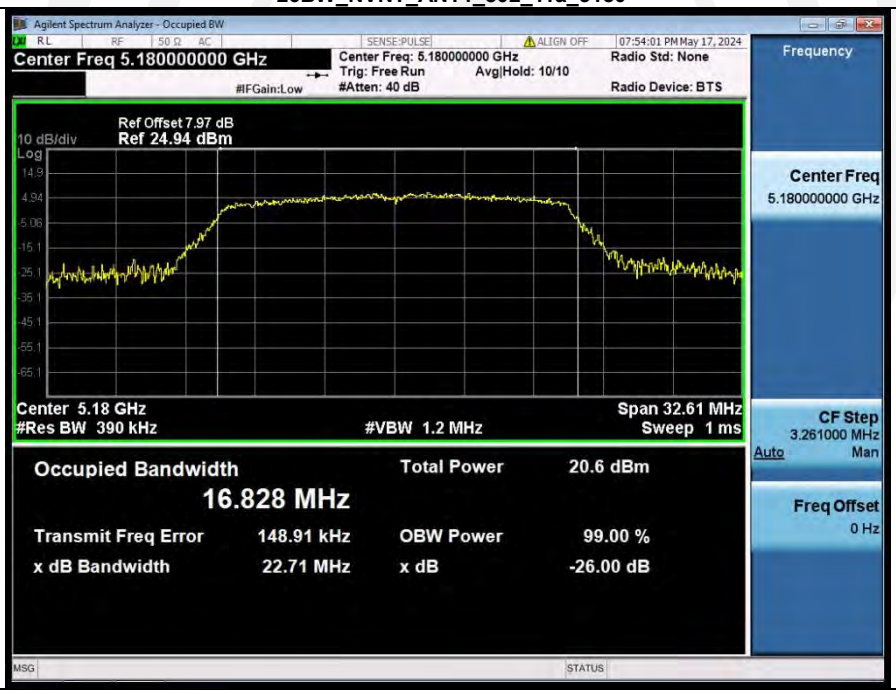
Measurement Data:

Band 1 (5150-5250 MHz):

Condition	Antenna	Modulation	Frequency(MHz)	-26dB_Emission_Bandwidth(MHz)	Occupied Bandwidth(MHz)
NVNT	ANT1	802.11a	5180.00	22.71	16.40
NVNT	ANT1	802.11a	5200.00	20.30	16.41
NVNT	ANT1	802.11a	5240.00	20.27	16.32
NVNT	ANT1	802.11n(HT20)	5180.00	24.60	17.50
NVNT	ANT1	802.11n(HT20)	5200.00	27.56	17.60
NVNT	ANT1	802.11n(HT20)	5240.00	21.03	17.51
NVNT	ANT1	802.11ac(VHT20)	5180.00	21.26	17.53
NVNT	ANT1	802.11ac(VHT20)	5200.00	21.85	17.56
NVNT	ANT1	802.11ac(VHT20)	5240.00	20.80	17.52
NVNT	ANT1	802.11n(HT40)	5190.00	66.07	35.92
NVNT	ANT1	802.11n(HT40)	5230.00	65.07	36.06
NVNT	ANT1	802.11ac(VHT40)	5190.00	66.82	35.90
NVNT	ANT1	802.11ac(VHT40)	5230.00	66.15	36.06
NVNT	ANT1	802.11ac(VHT80)	5210.00	82.18	75.12
NVNT	ANT1	802.11ax(HE20)	5180.00	22.66	17.54
NVNT	ANT1	802.11ax(HE20)	5200.00	22.48	17.57
NVNT	ANT1	802.11ax(HE20)	5240.00	20.40	17.48
NVNT	ANT1	802.11ax(HE40)	5190.00	40.90	35.86
NVNT	ANT1	802.11ax(HE40)	5230.00	41.12	35.95
NVNT	ANT1	802.11ax(HE80)	5210.00	81.58	75.12

99%_OCB_NVNT_ANT1_802_11a_5180

-26BW_NVNT_ANT1_802_11a_5180



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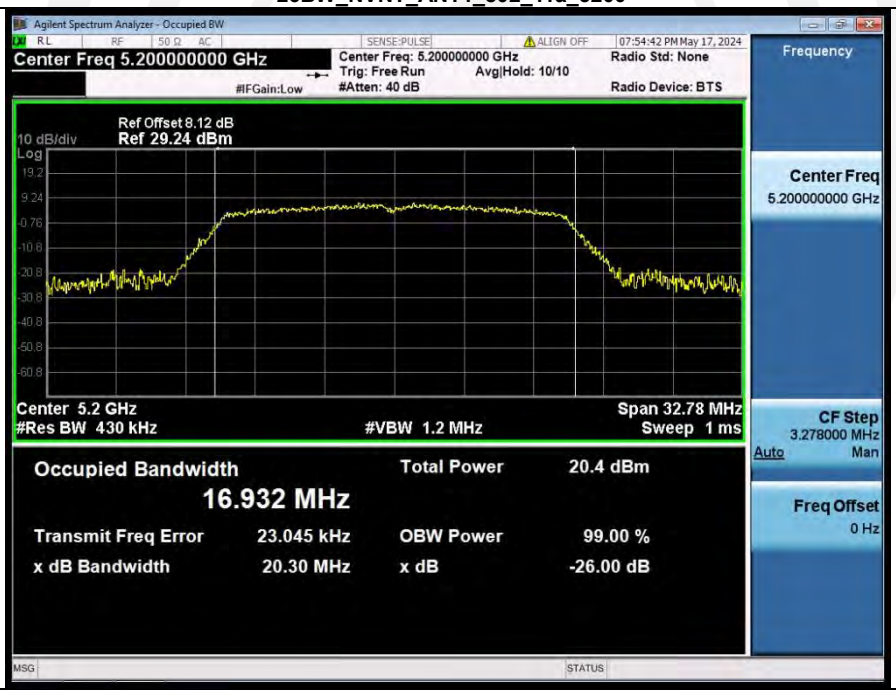

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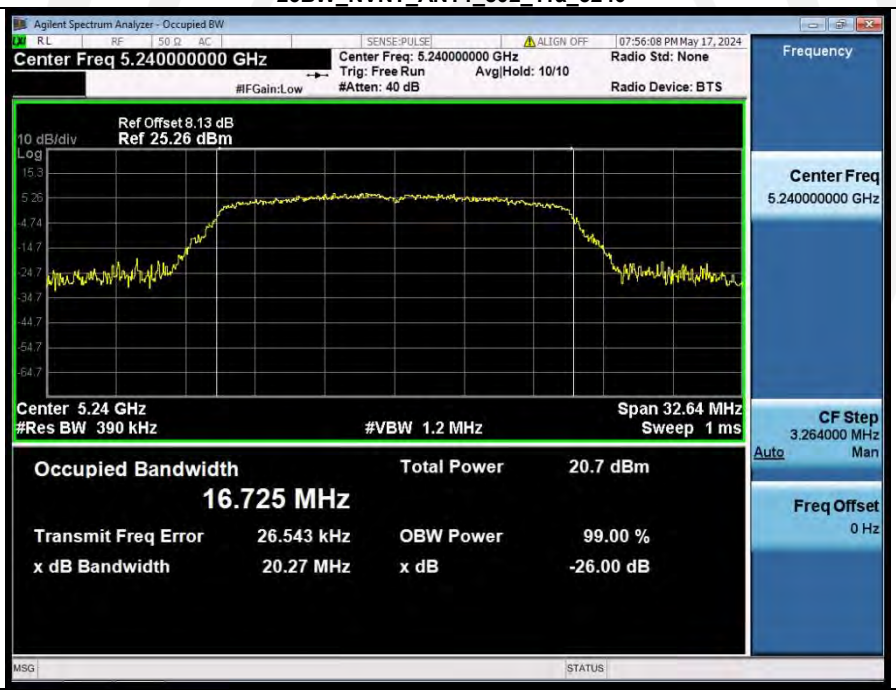

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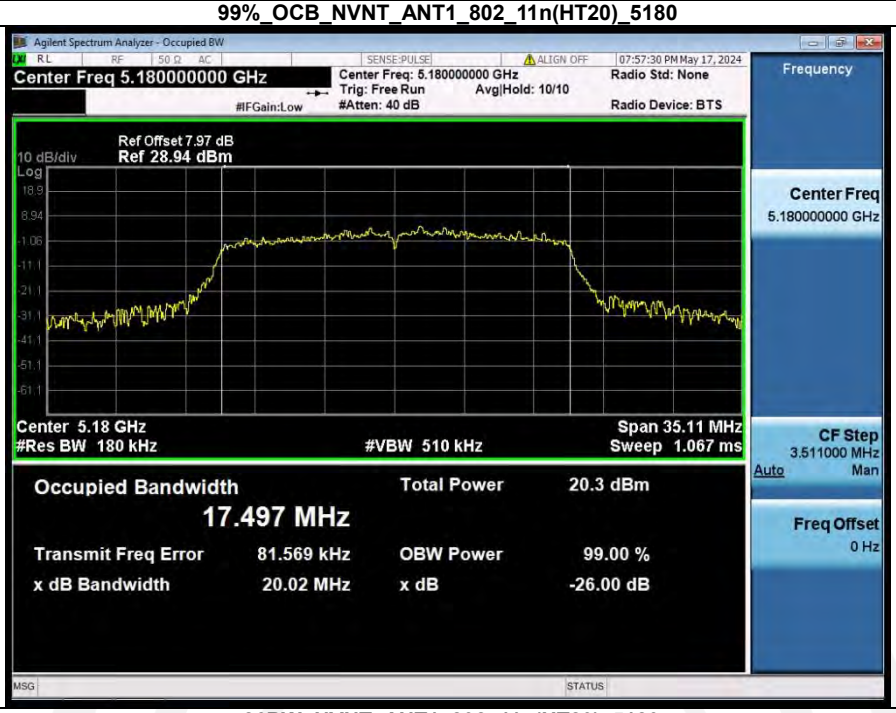

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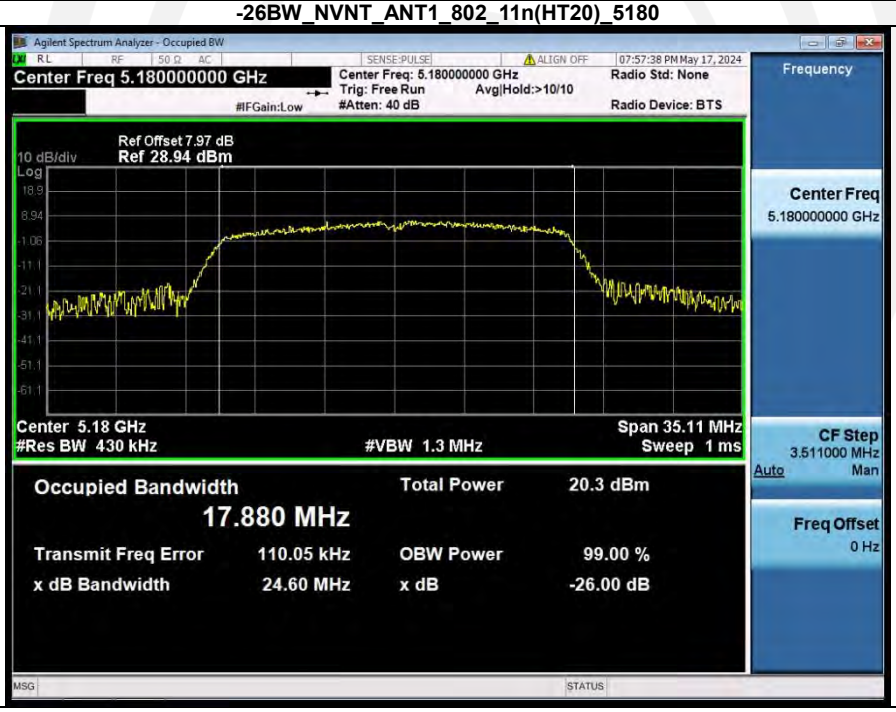

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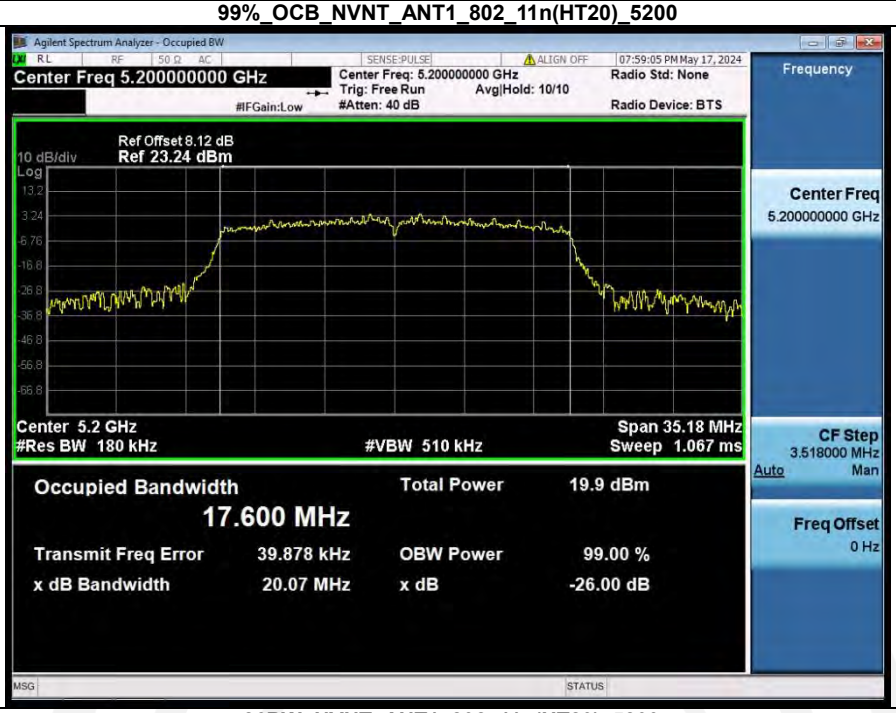

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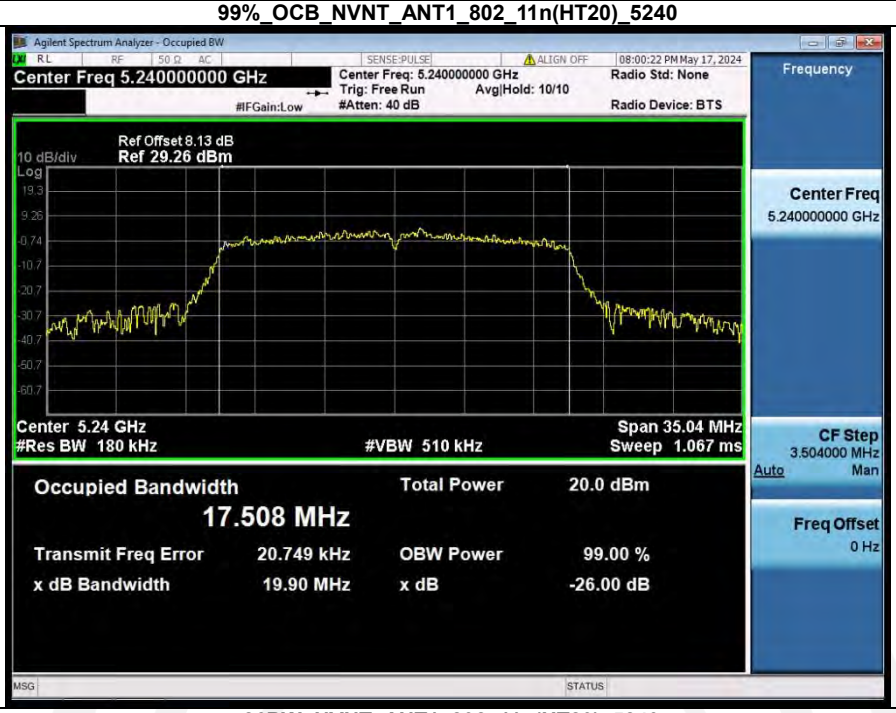
99%_OCB_NVNT_ANT1_802_11n(HT20)_5240



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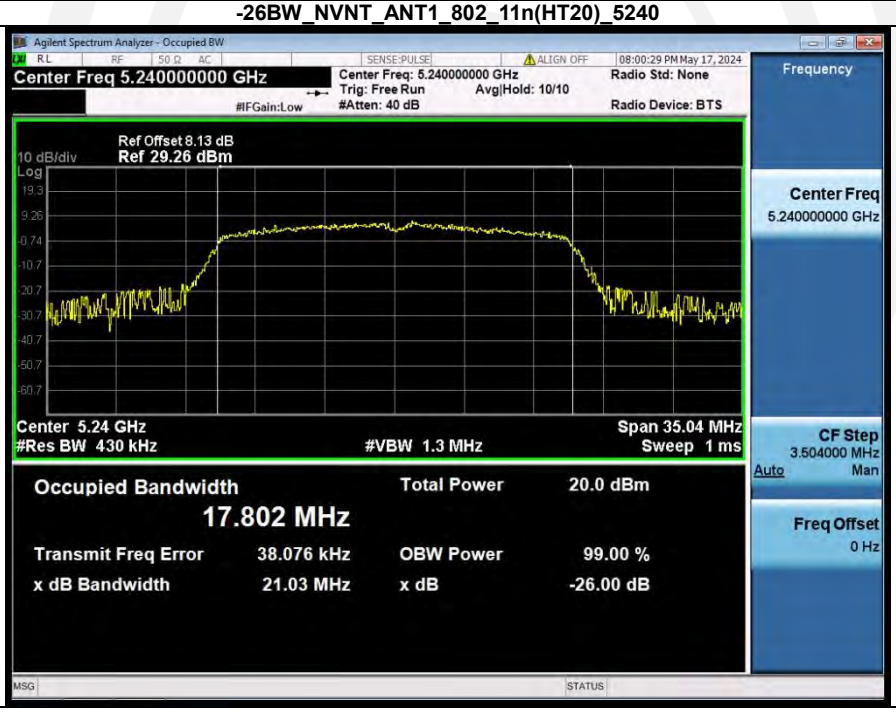

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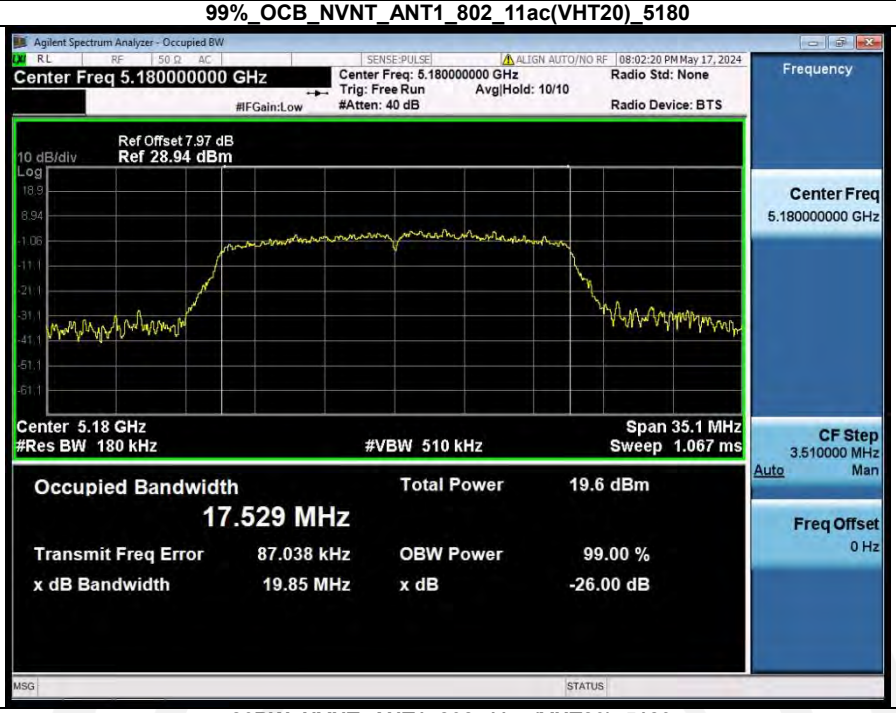

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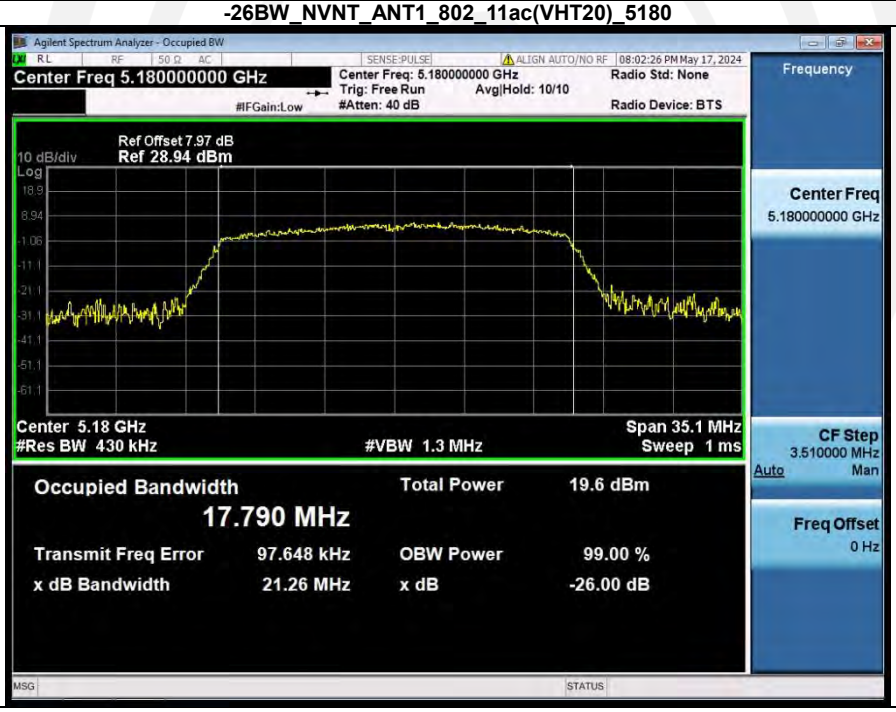

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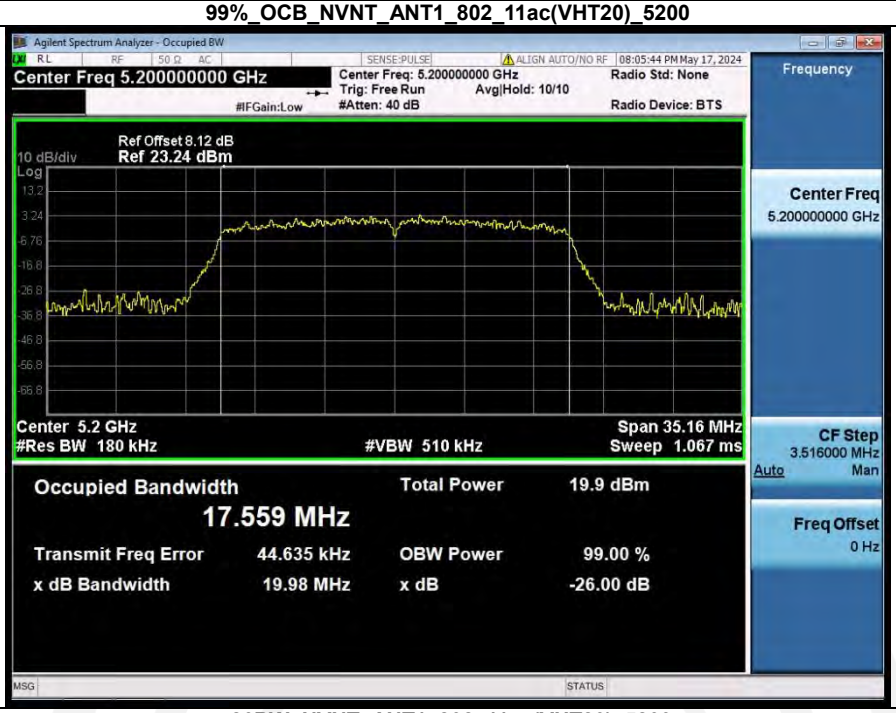

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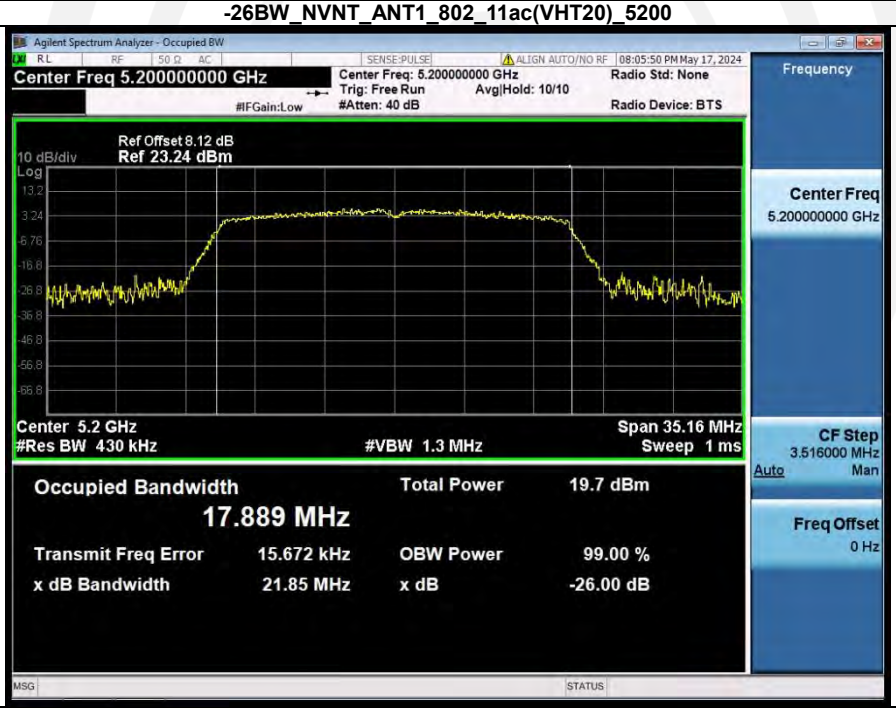

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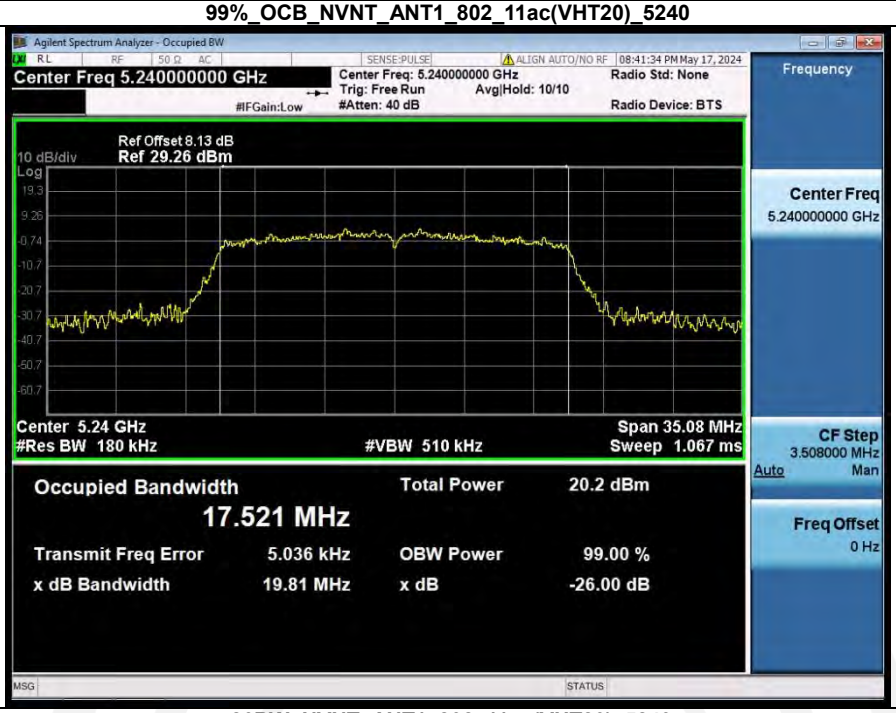
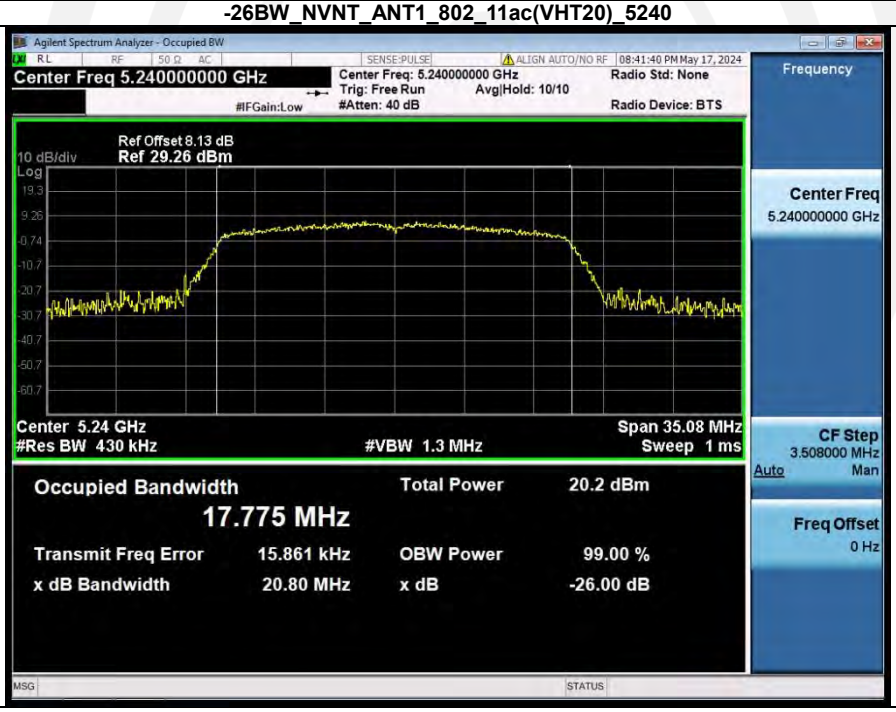
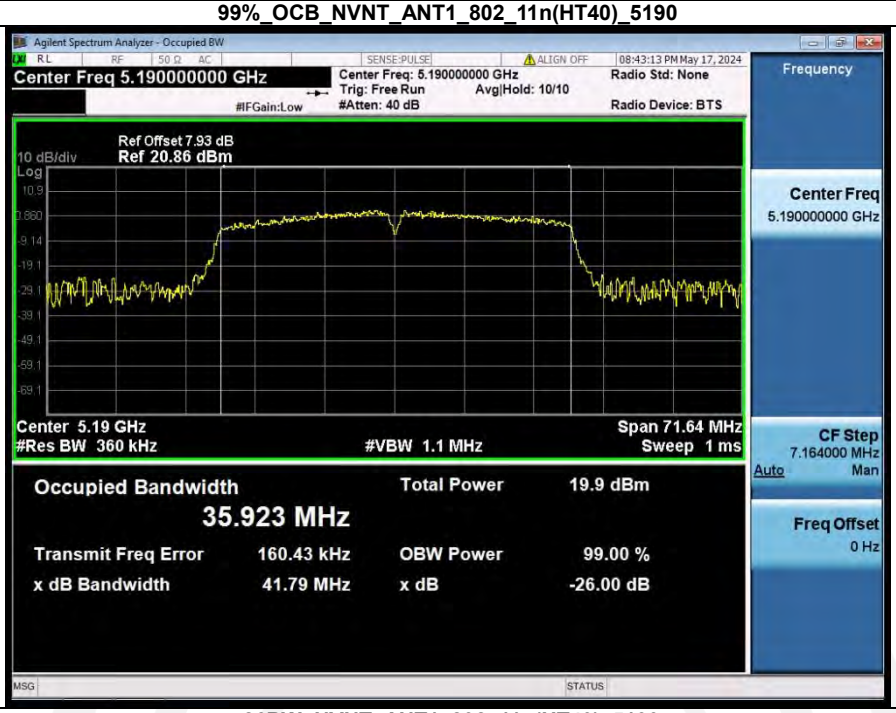


-26BW_NVNT_ANT1_802_11ac(VHT20)_5240



99%_OCB_NVNT_ANT1_802_11n(HT40)_5190



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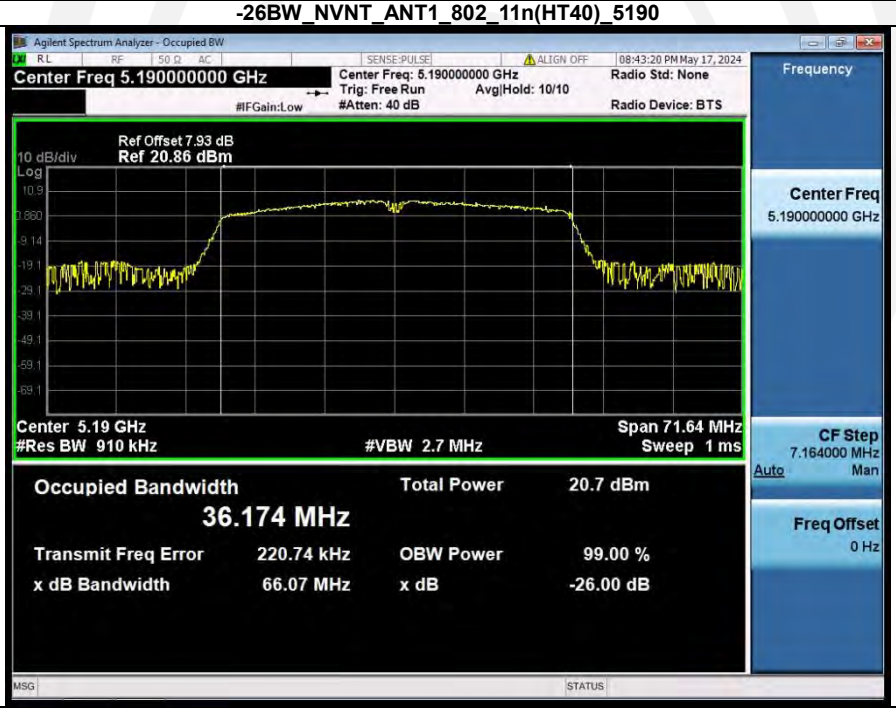

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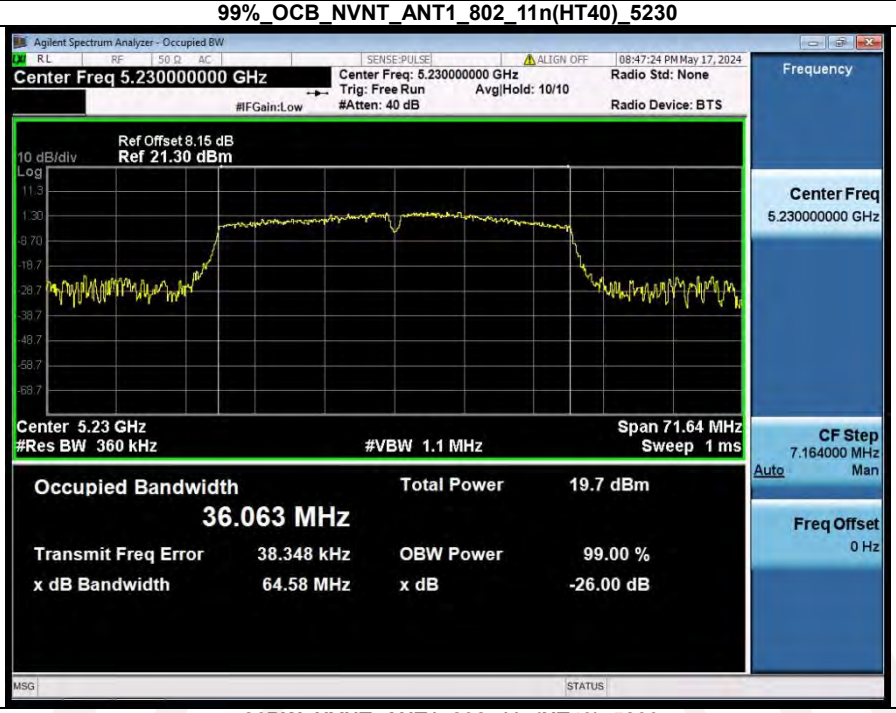

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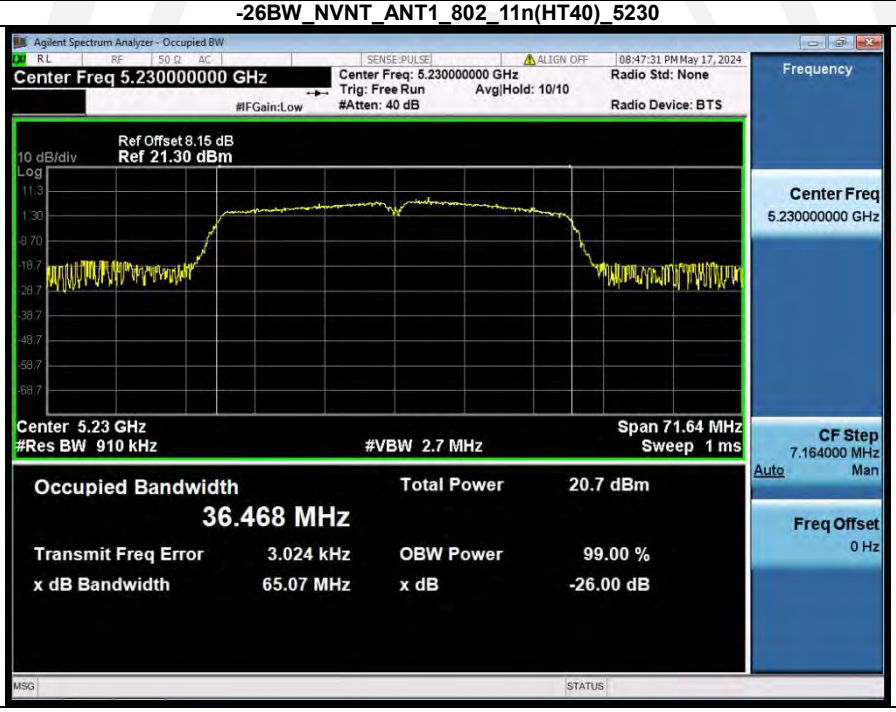

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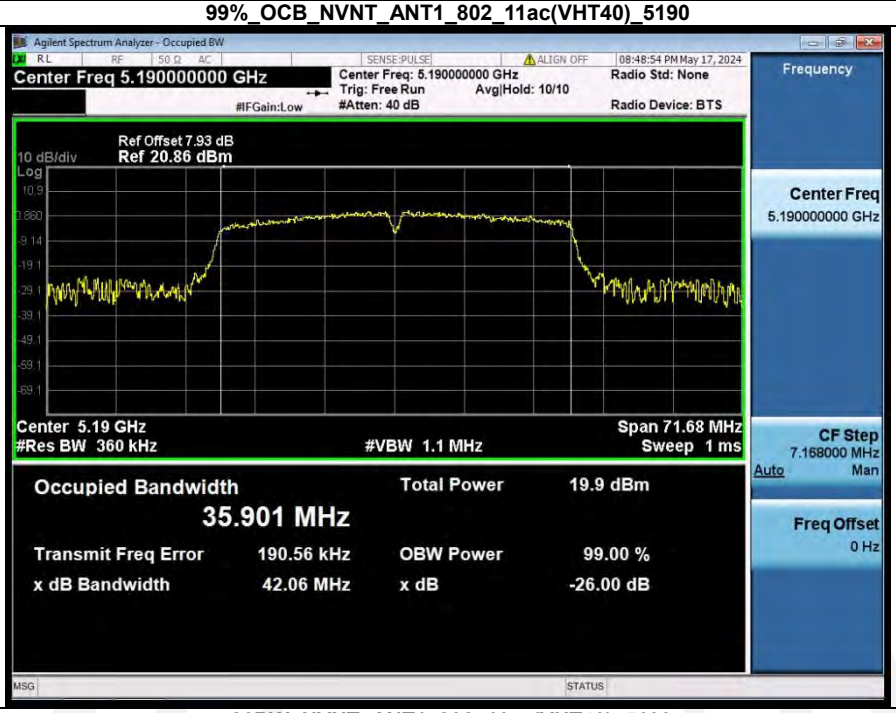

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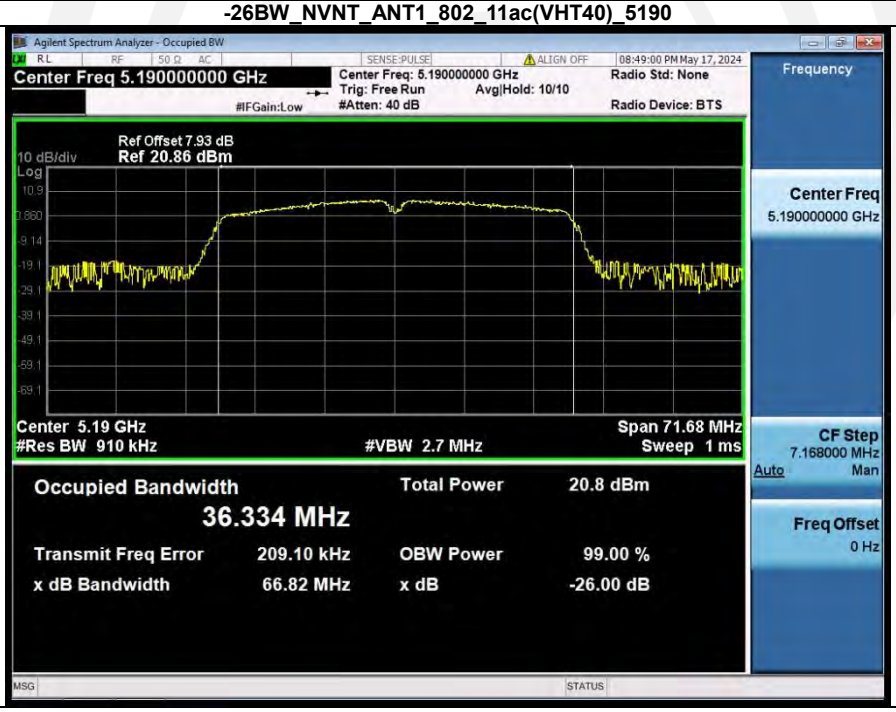

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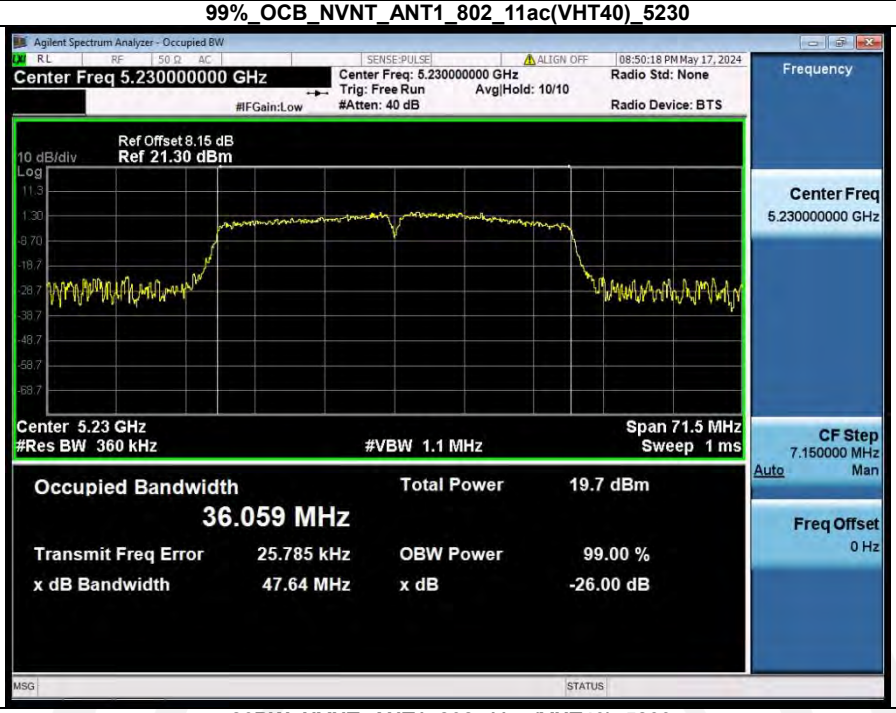

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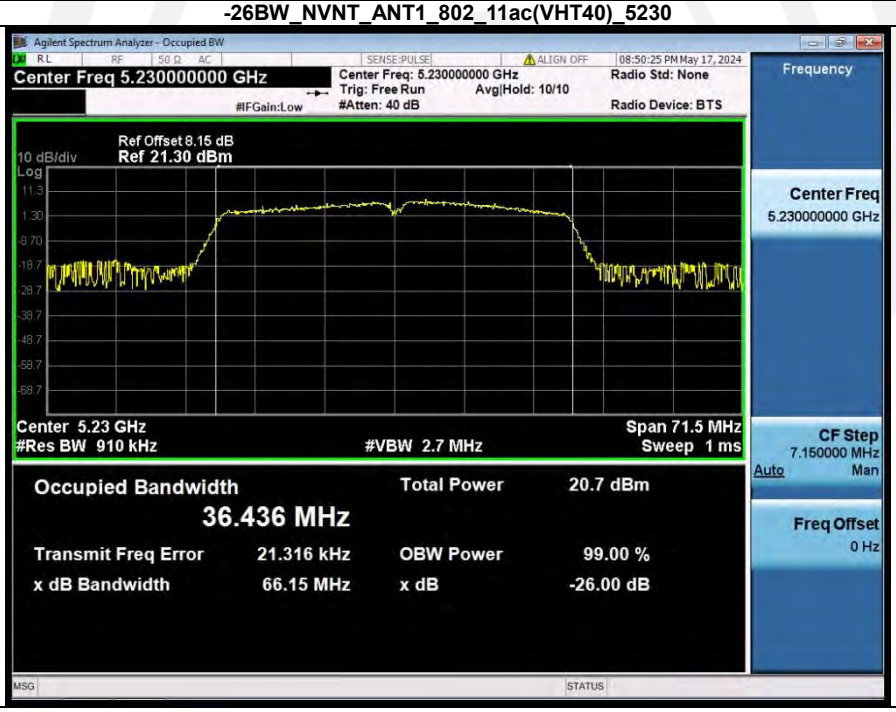

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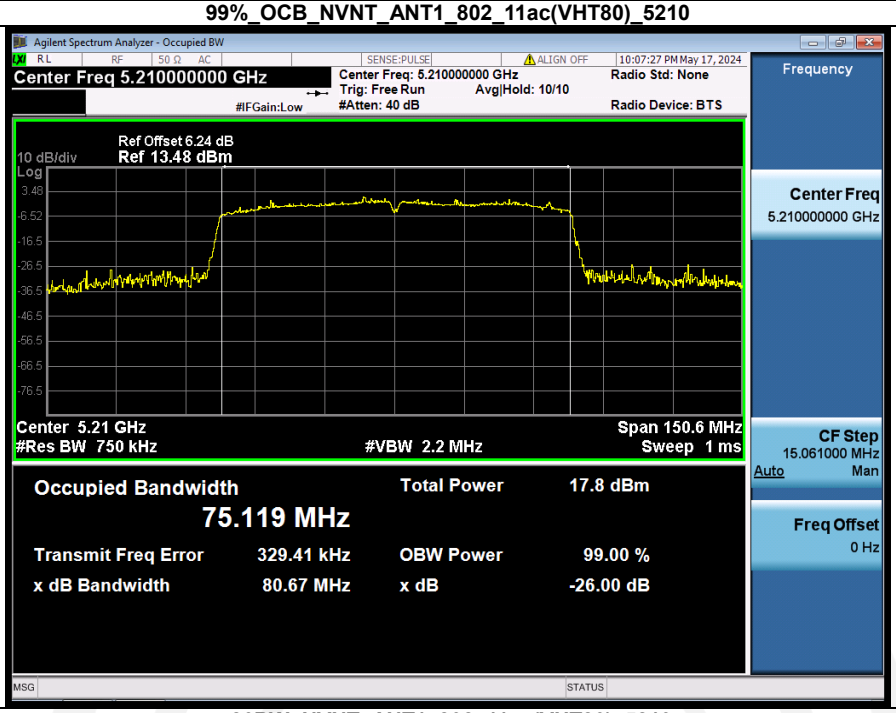

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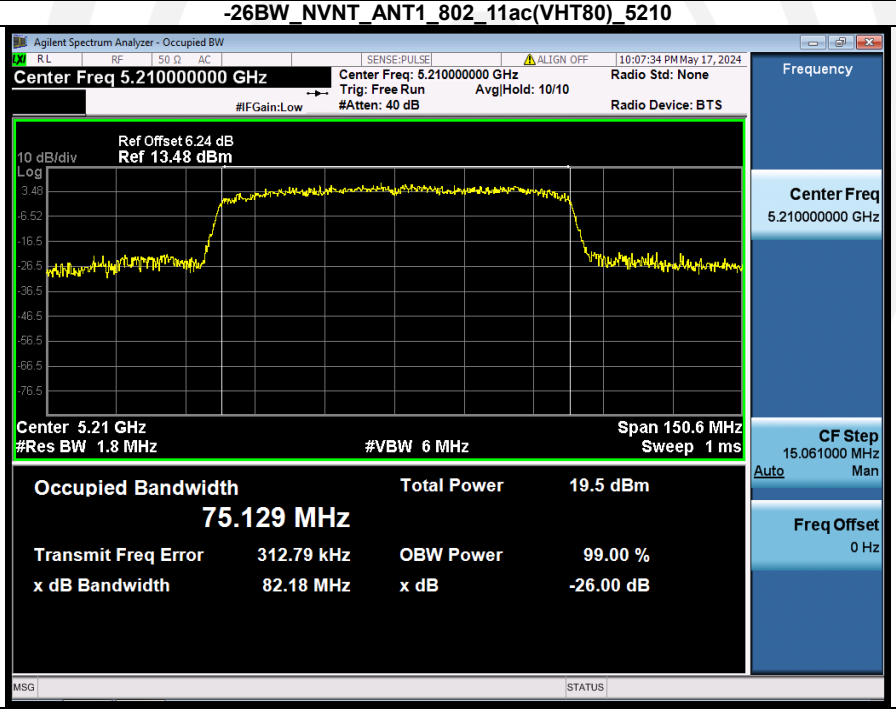

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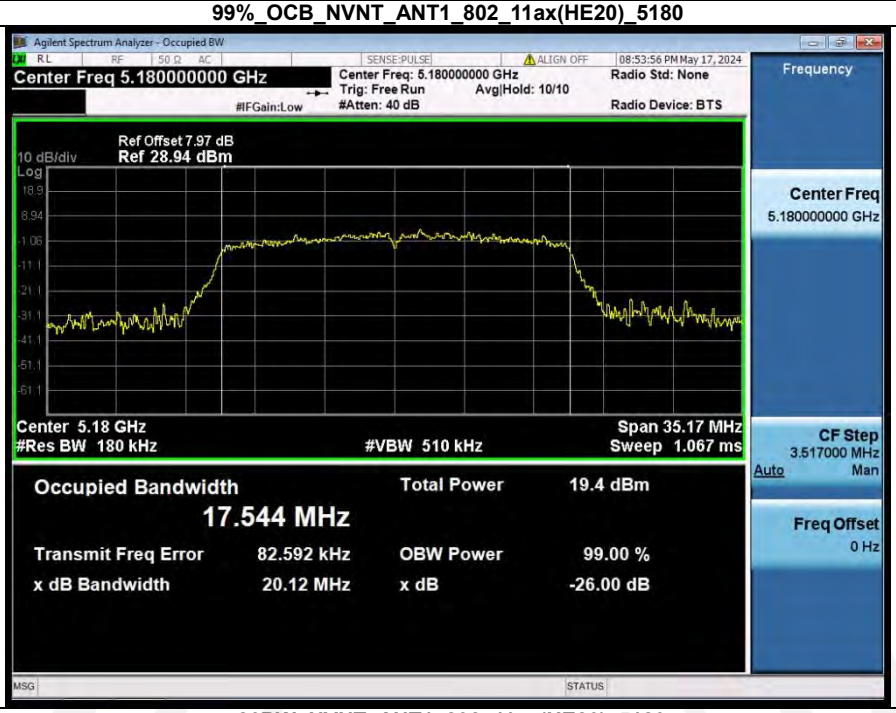

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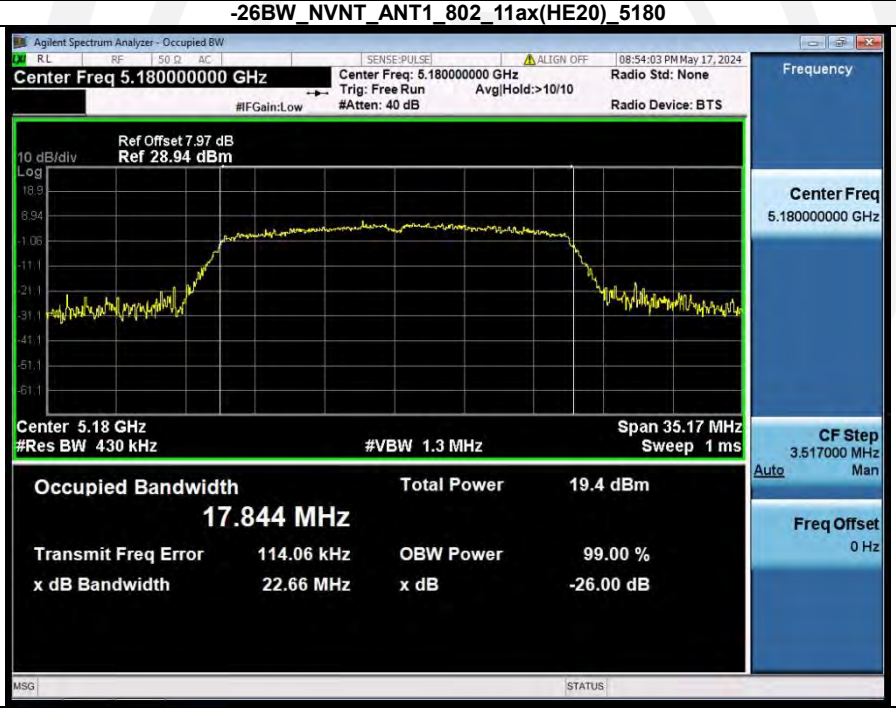

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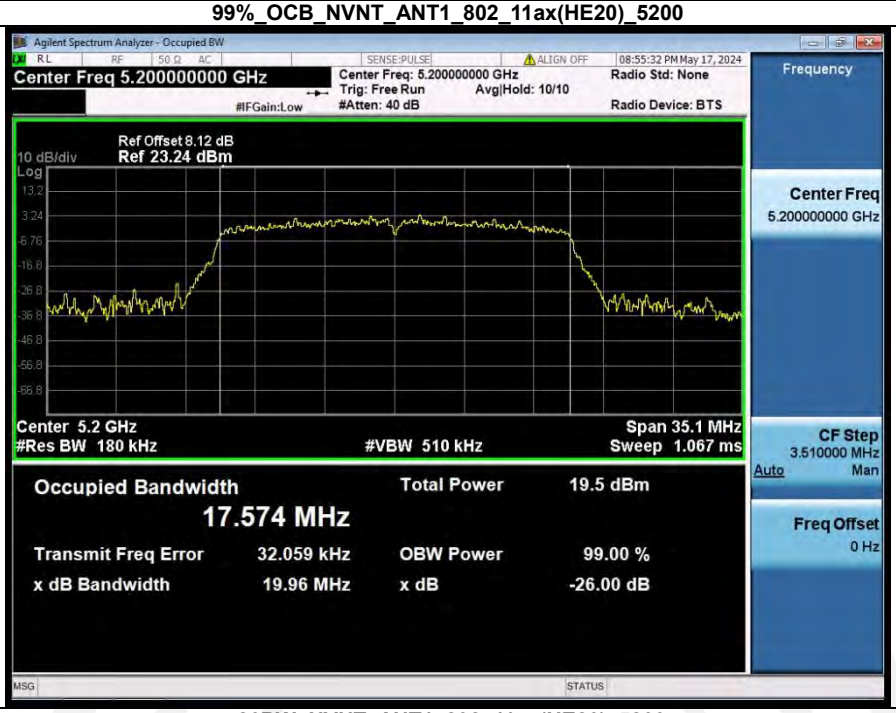

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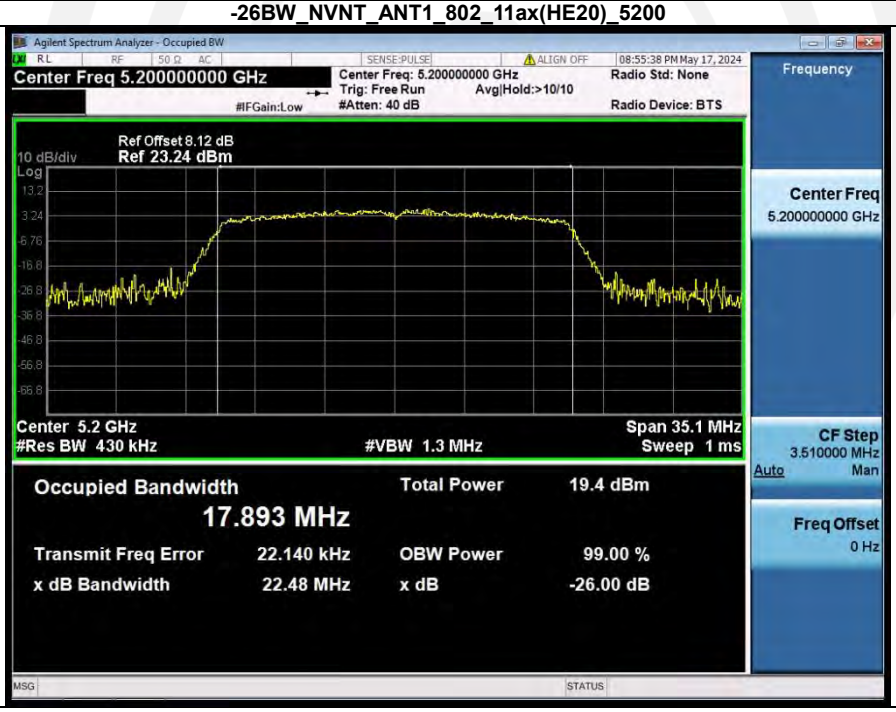

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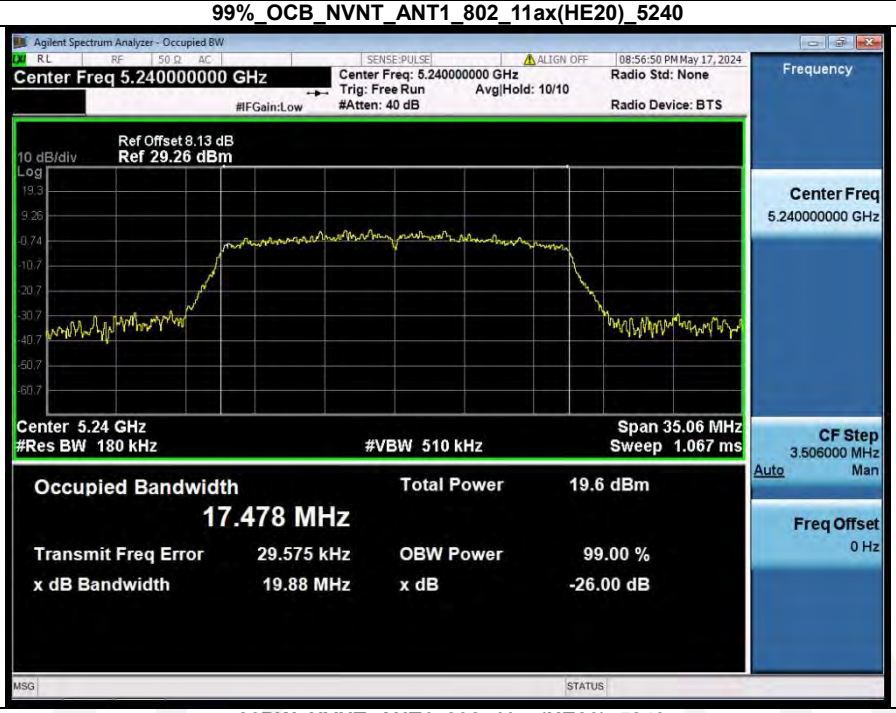

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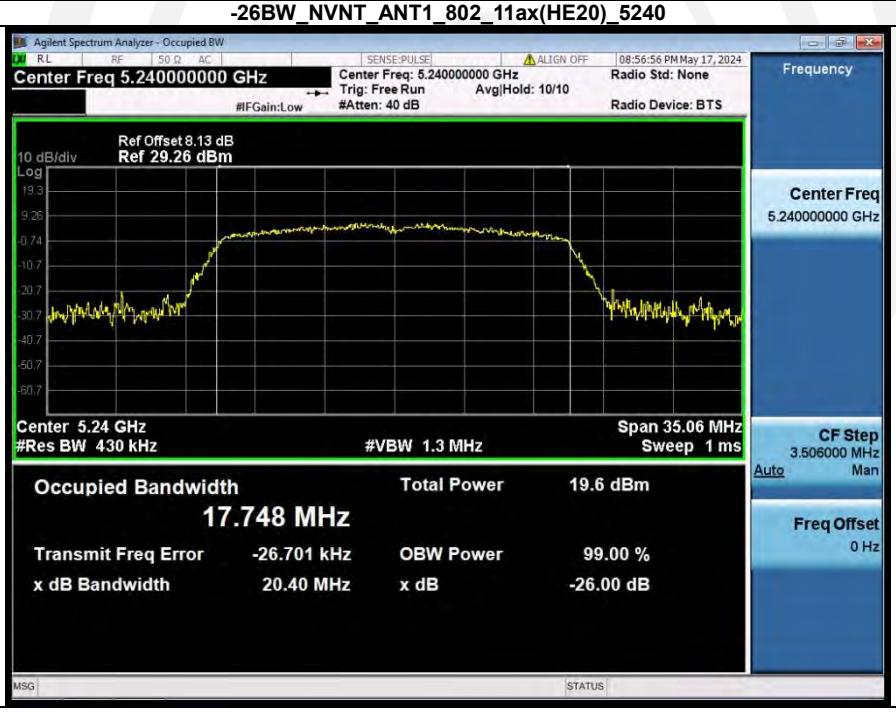

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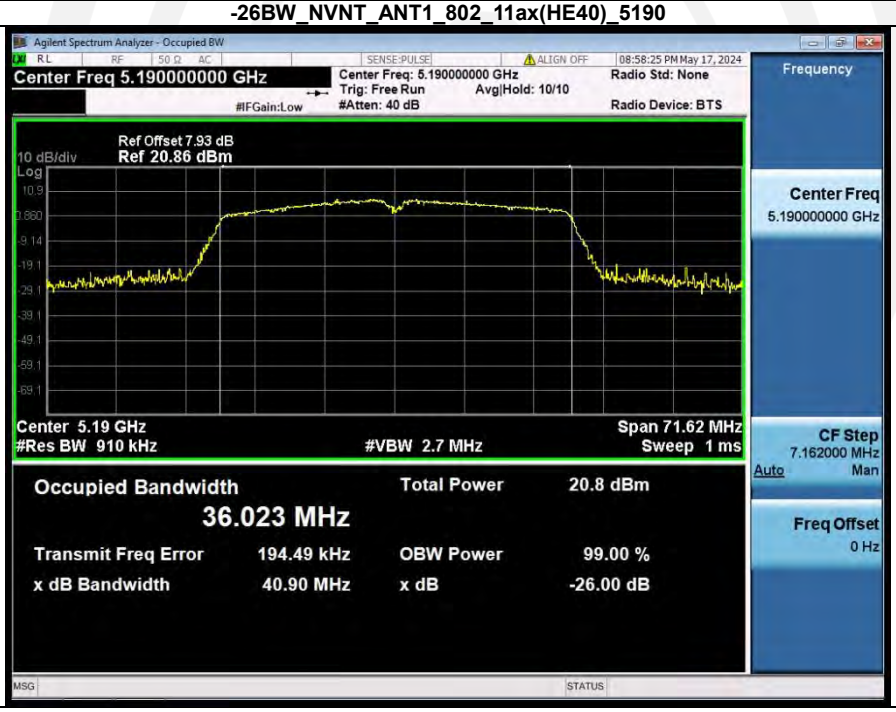

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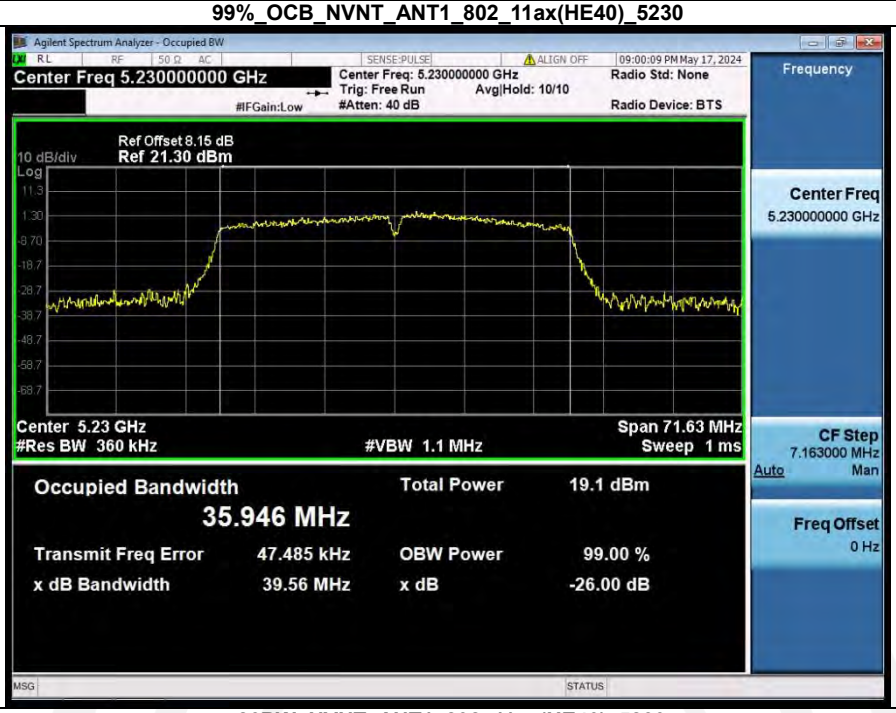

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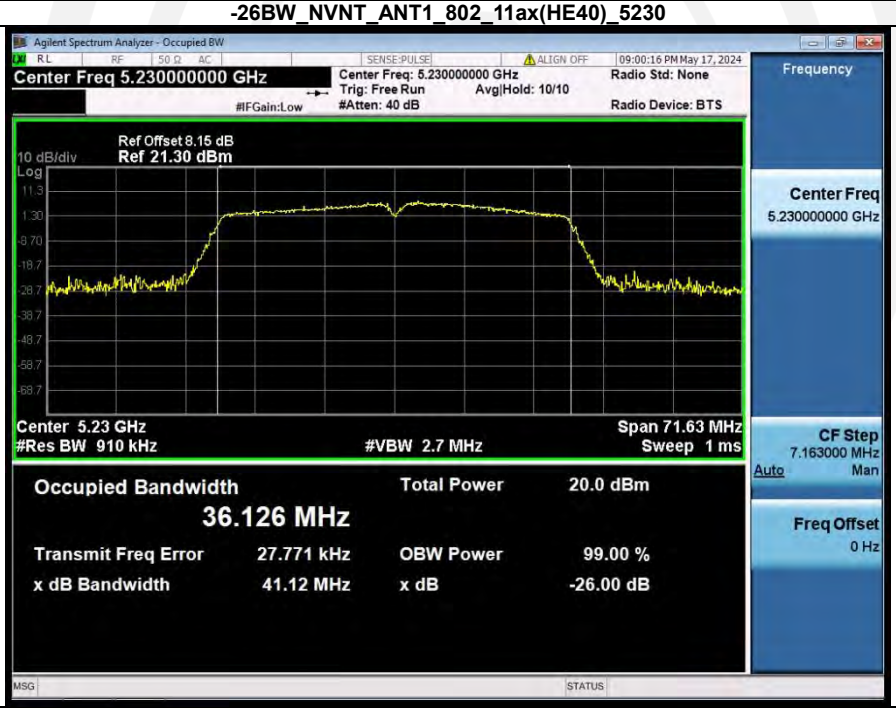

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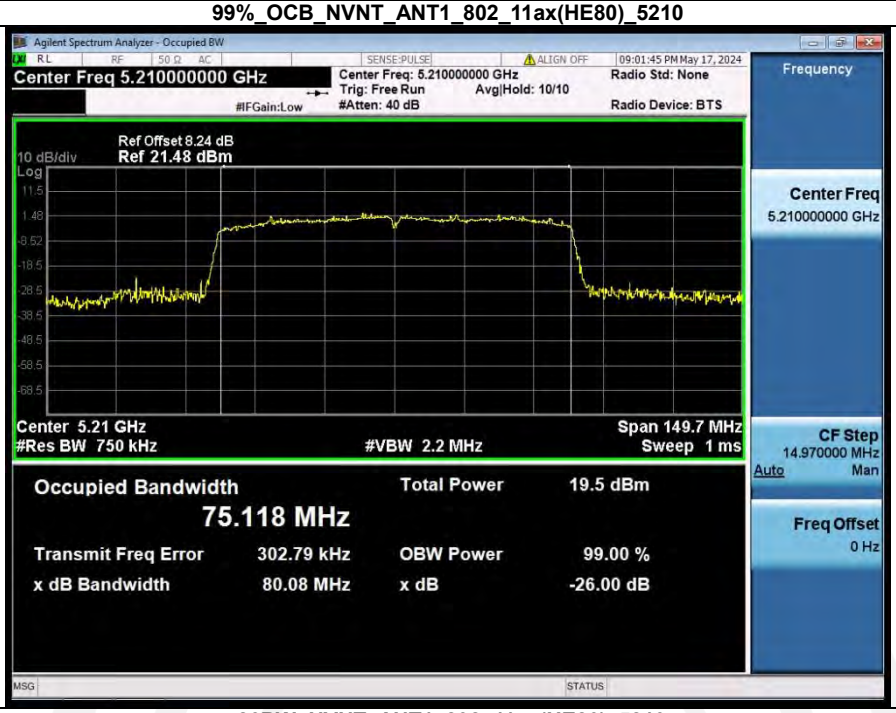

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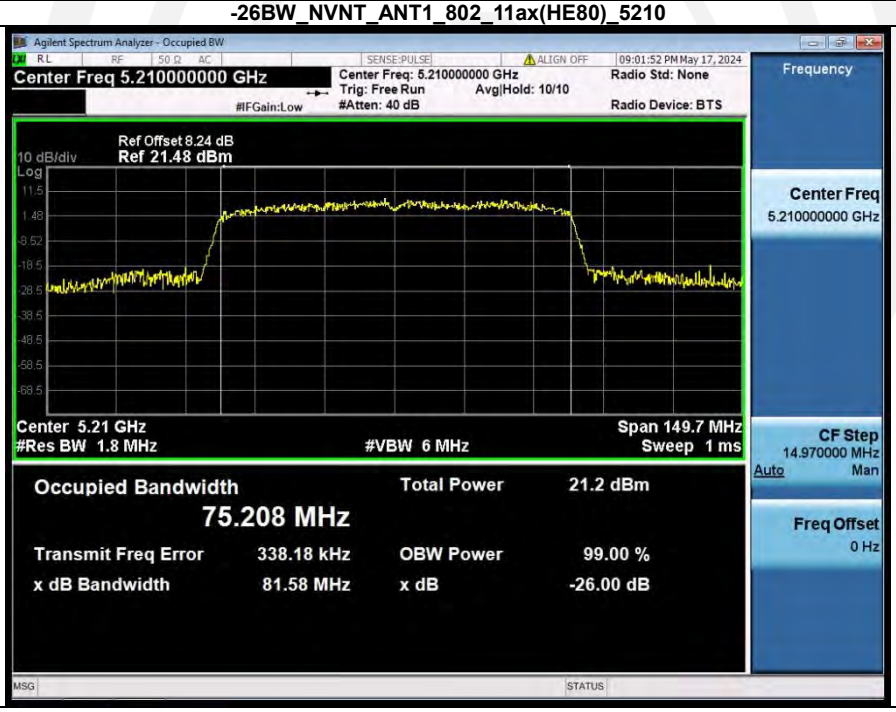
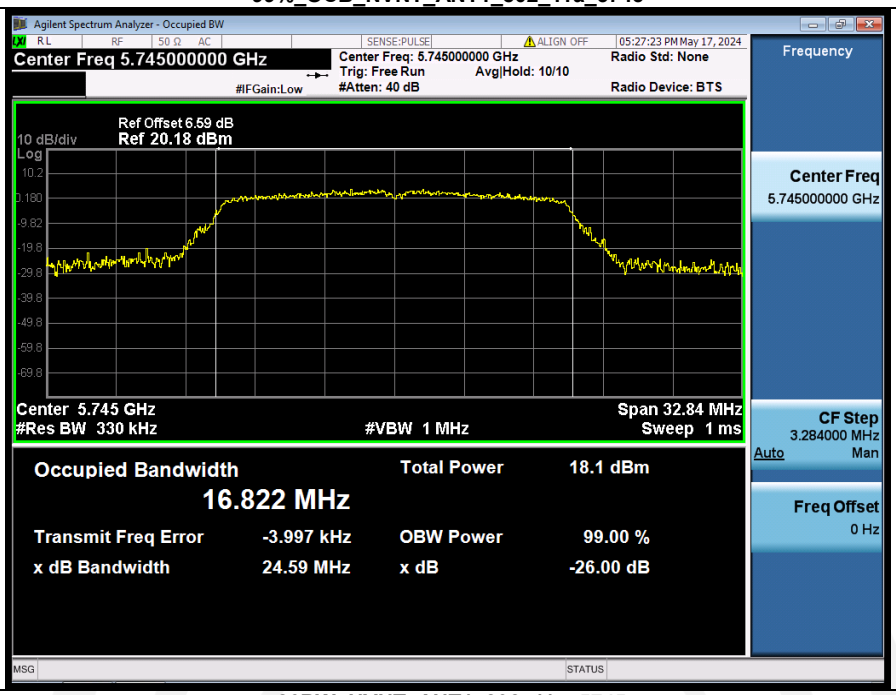


Band 4 (5725-5850 MHz):

Condition	Antenna	Modulation	Frequency(MHz)	-26dB_Emission_Bandwidth(MHz)	Occupied Bandwidth(MHz)
NVNT	ANT1	802.11a	5745.00	25.81	16.82
NVNT	ANT1	802.11a	5785.00	23.91	16.77
NVNT	ANT1	802.11a	5825.00	25.61	16.94
NVNT	ANT1	802.11n(HT20)	5745.00	25.23	17.84
NVNT	ANT1	802.11n(HT20)	5785.00	22.07	17.76
NVNT	ANT1	802.11n(HT20)	5825.00	28.04	17.89
NVNT	ANT1	802.11ac(VHT20)	5745.00	26.46	17.88
NVNT	ANT1	802.11ac(VHT20)	5785.00	24.14	17.75
NVNT	ANT1	802.11ac(VHT20)	5825.00	24.58	17.93
NVNT	ANT1	802.11ax(HE20)	5745.00	23.54	17.81
NVNT	ANT1	802.11ax(HE20)	5785.00	23.06	17.81
NVNT	ANT1	802.11ax(HE20)	5825.00	28.04	17.86
NVNT	ANT1	802.11n(HT40)	5755.00	50.48	36.44
NVNT	ANT1	802.11n(HT40)	5795.00	51.96	36.46
NVNT	ANT1	802.11ac(VHT40)	5755.00	49.44	36.43
NVNT	ANT1	802.11ac(VHT40)	5795.00	51.21	36.50
NVNT	ANT1	802.11ax(HE40)	5755.00	54.71	36.44
NVNT	ANT1	802.11ax(HE40)	5795.00	60.73	36.48
NVNT	ANT1	802.11ac(VHT80)	5775.00	93.80	75.75
NVNT	ANT1	802.11ax(HE80)	5775.00	93.92	75.76

99%_OCB_NVNT_ANT1_802_11a_5745



-26BW_NVNT_ANT1_802_11a_5745

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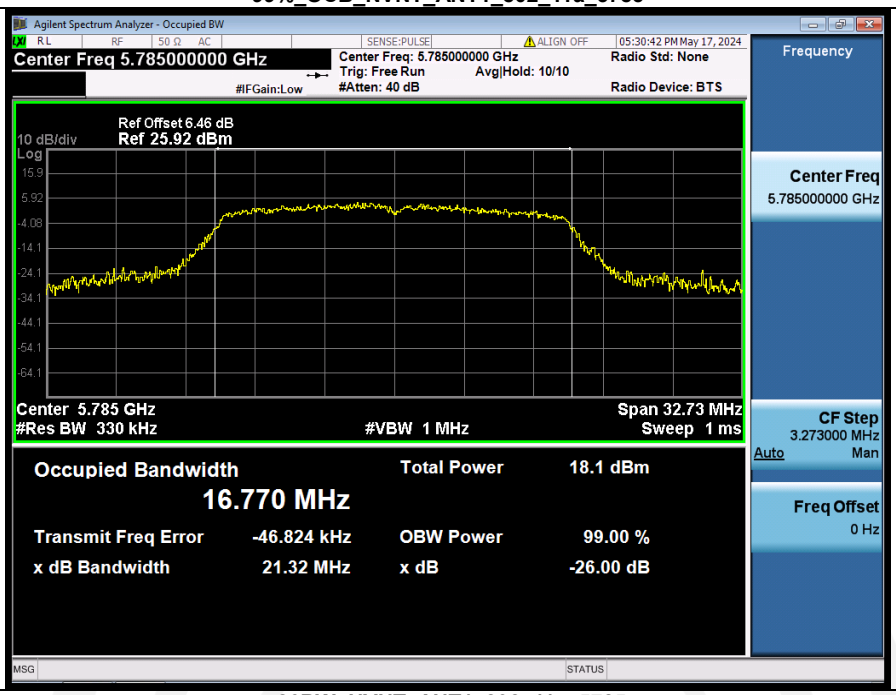
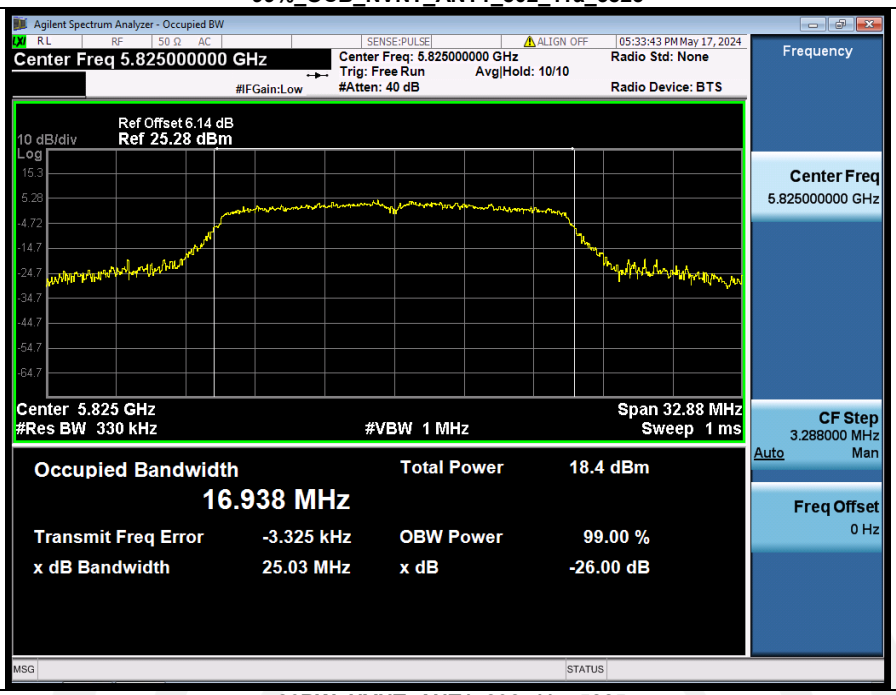


-26BW_NVNT_ANT1_802_11a_5785

99%_OCB_NVNT_ANT1_802_11a_5825



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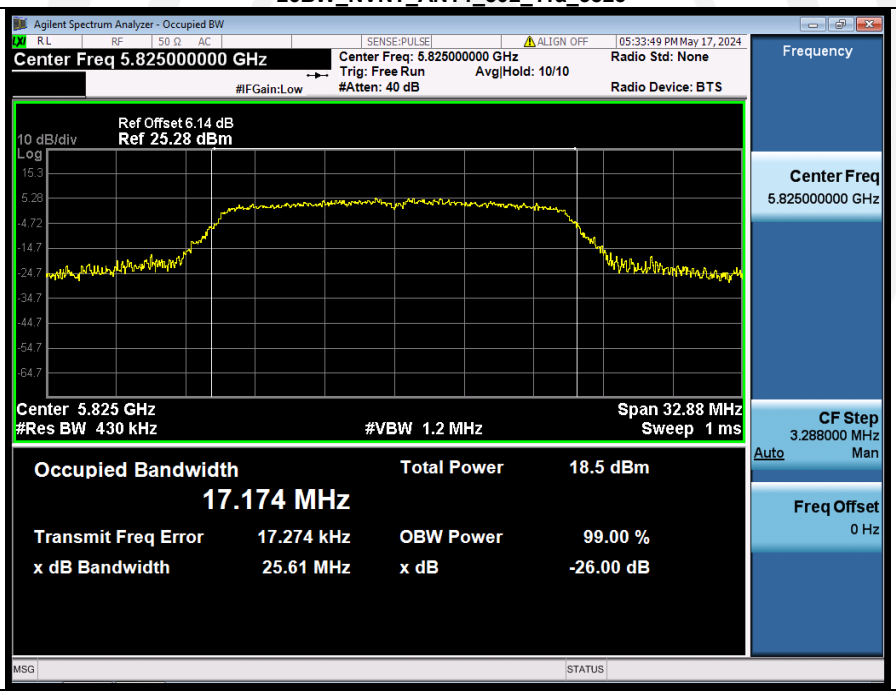
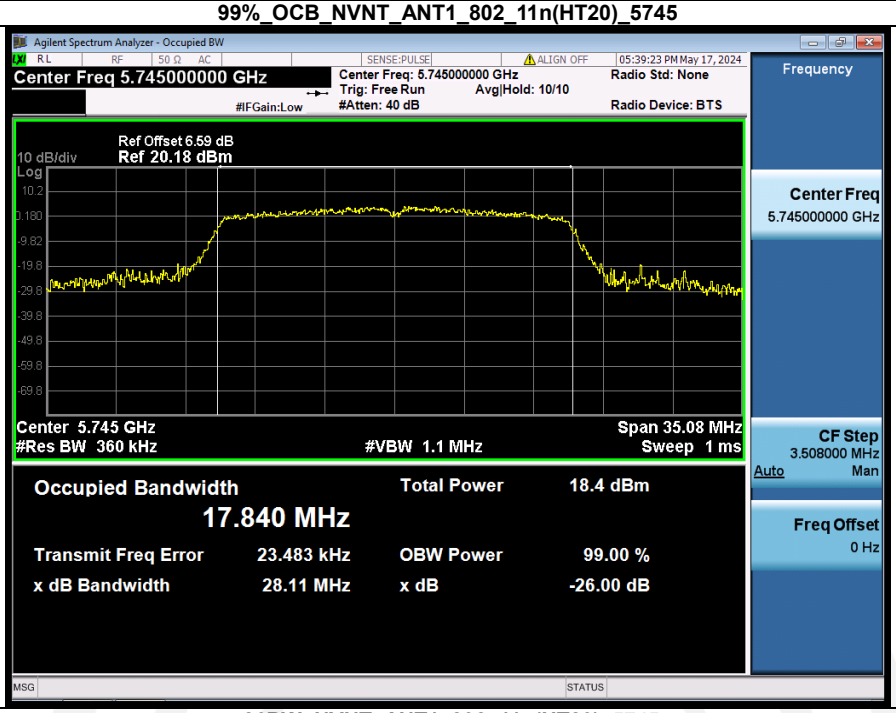


99%_OCB_NVNT_ANT1_802_11n(HT20)_5745



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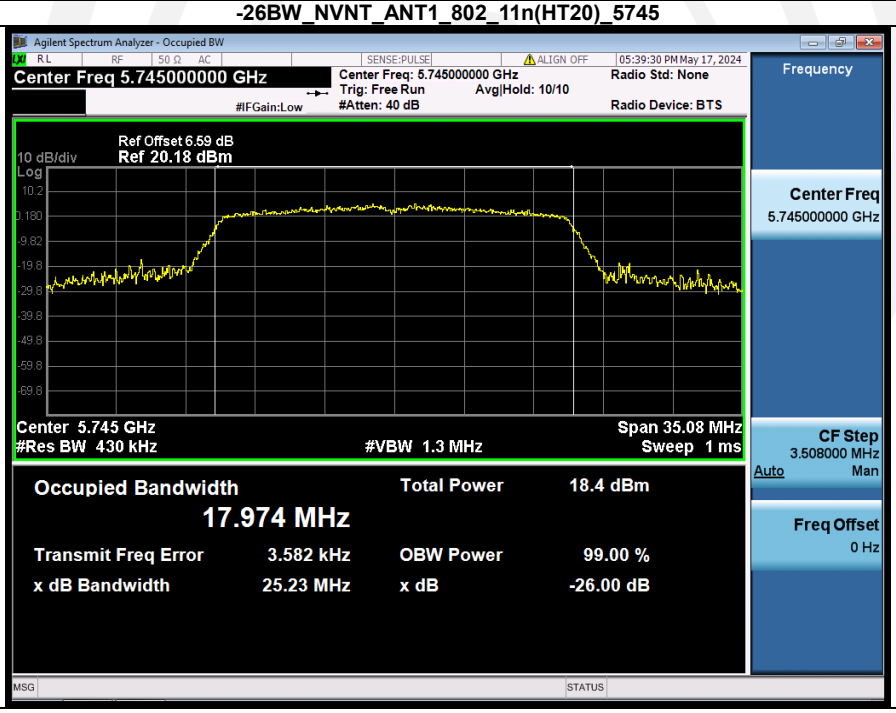

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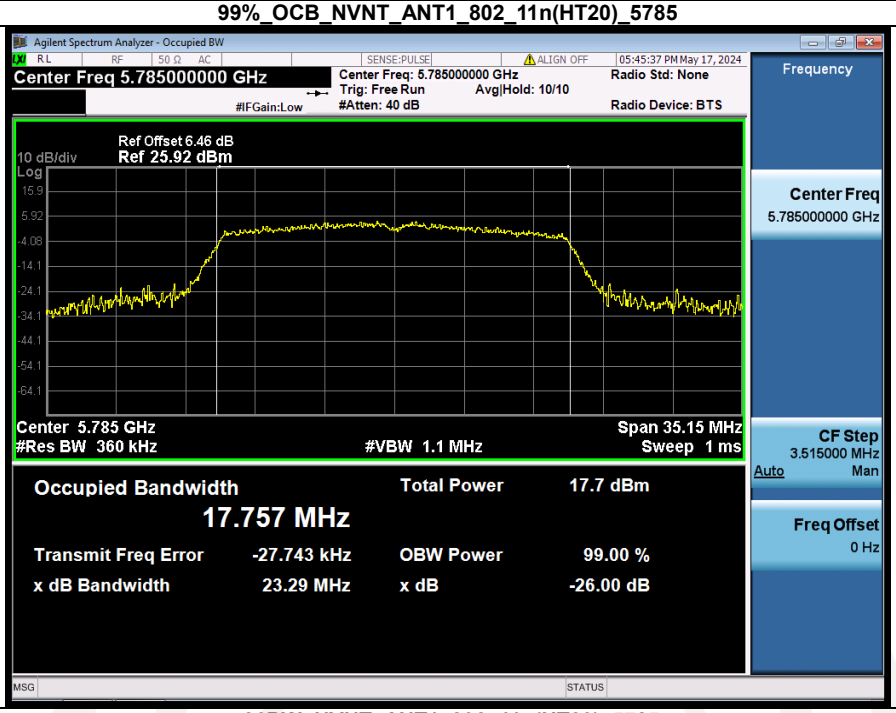

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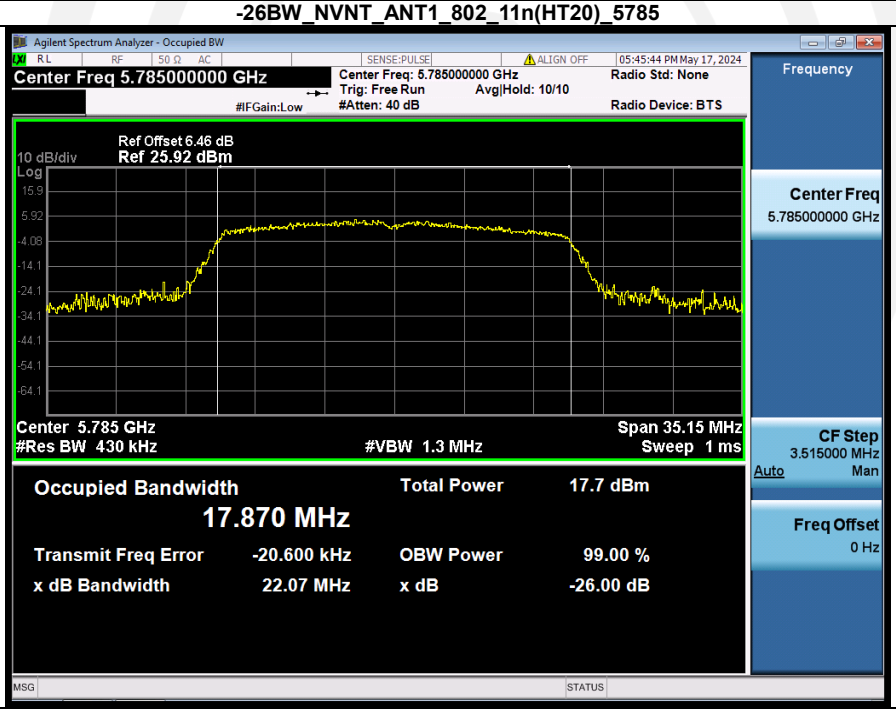

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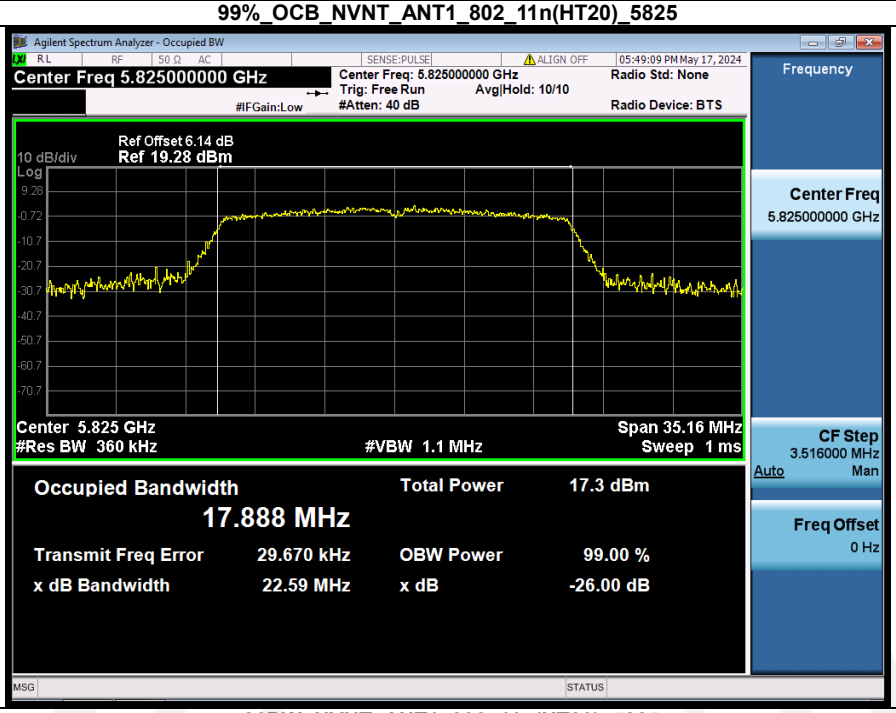

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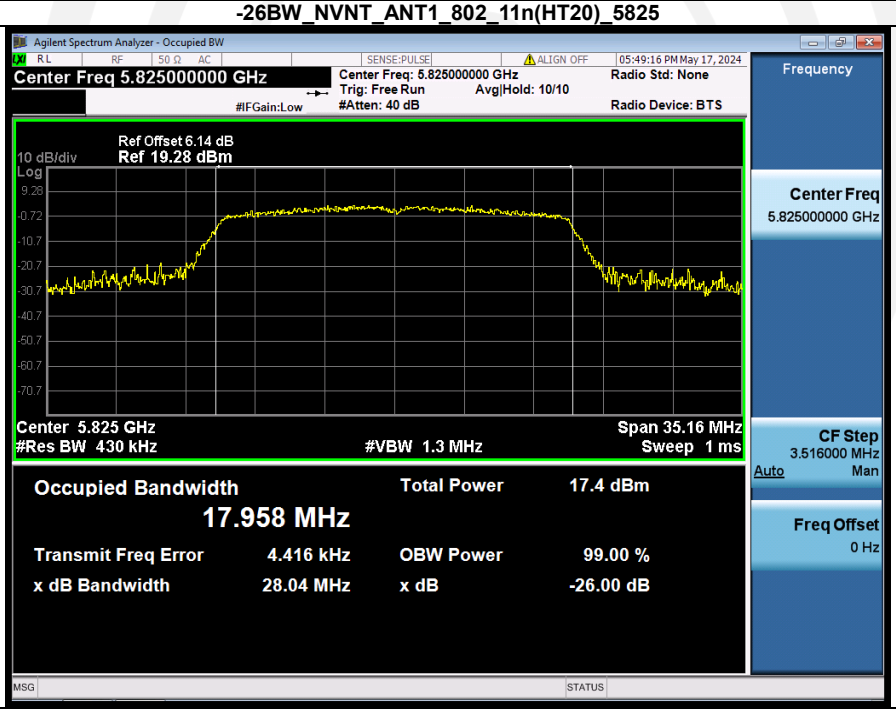

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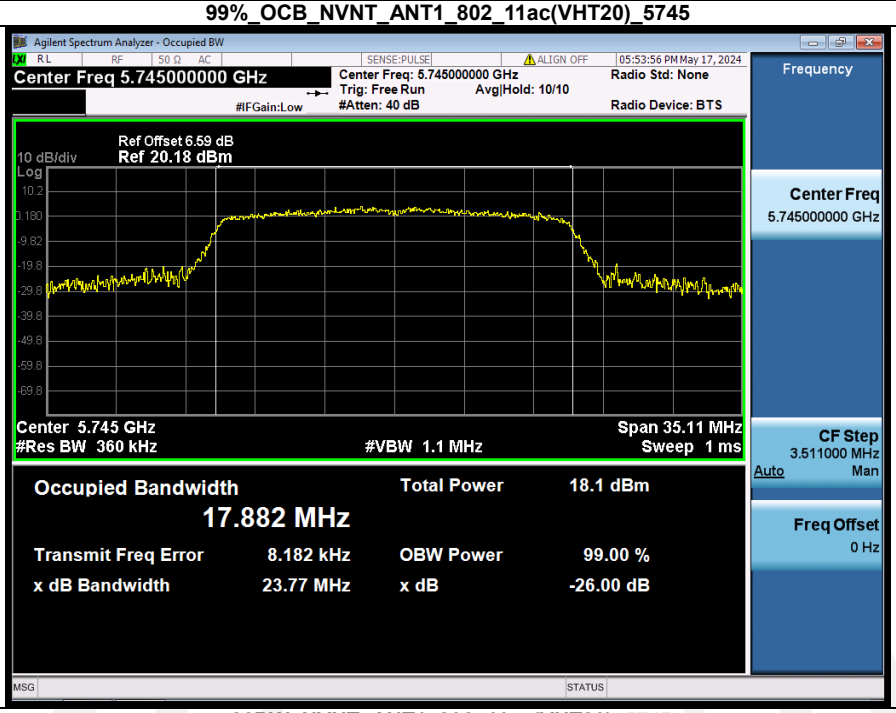

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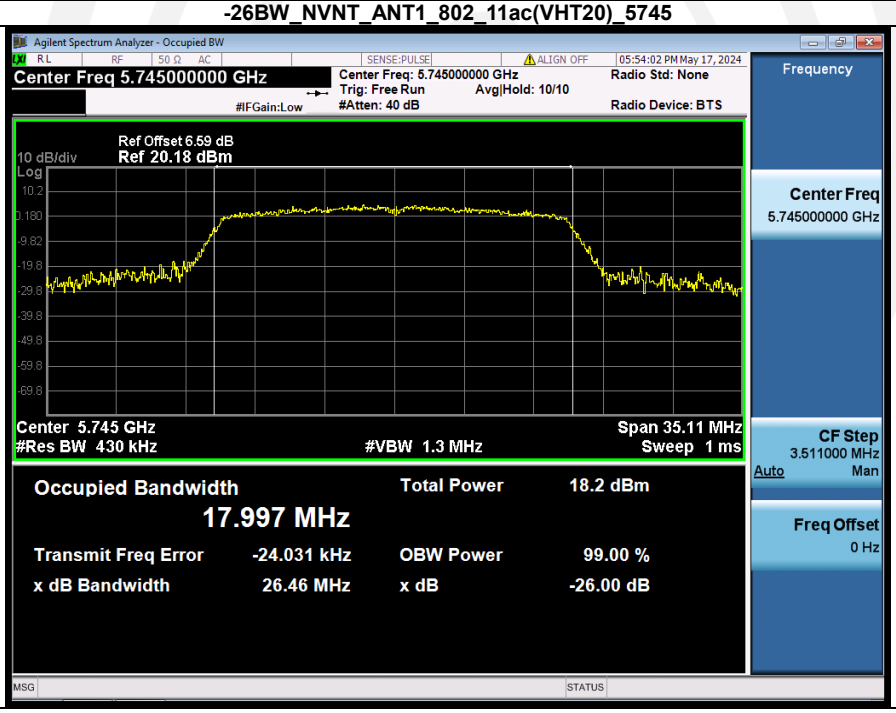

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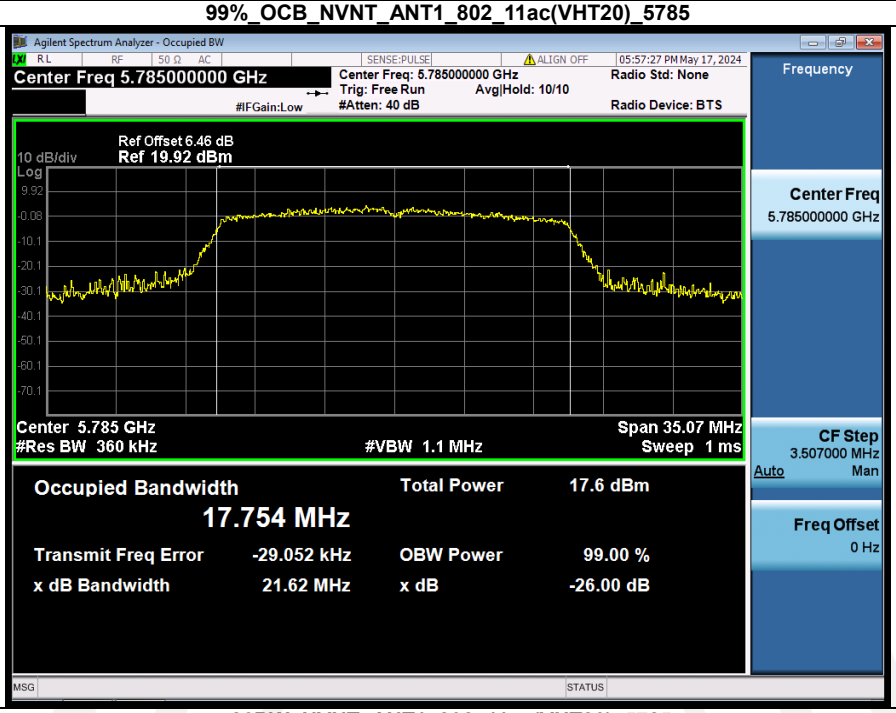

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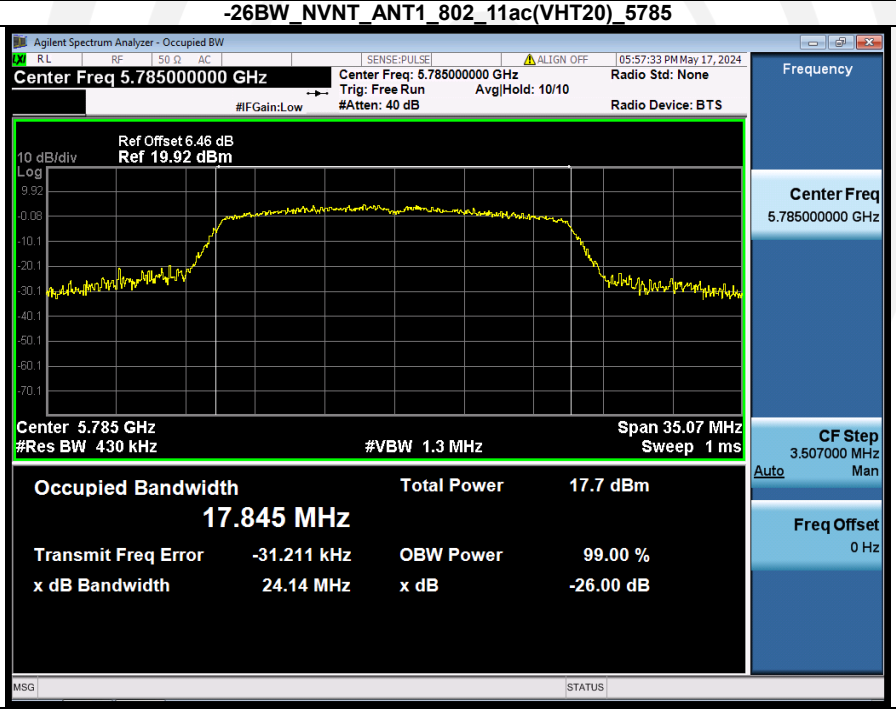

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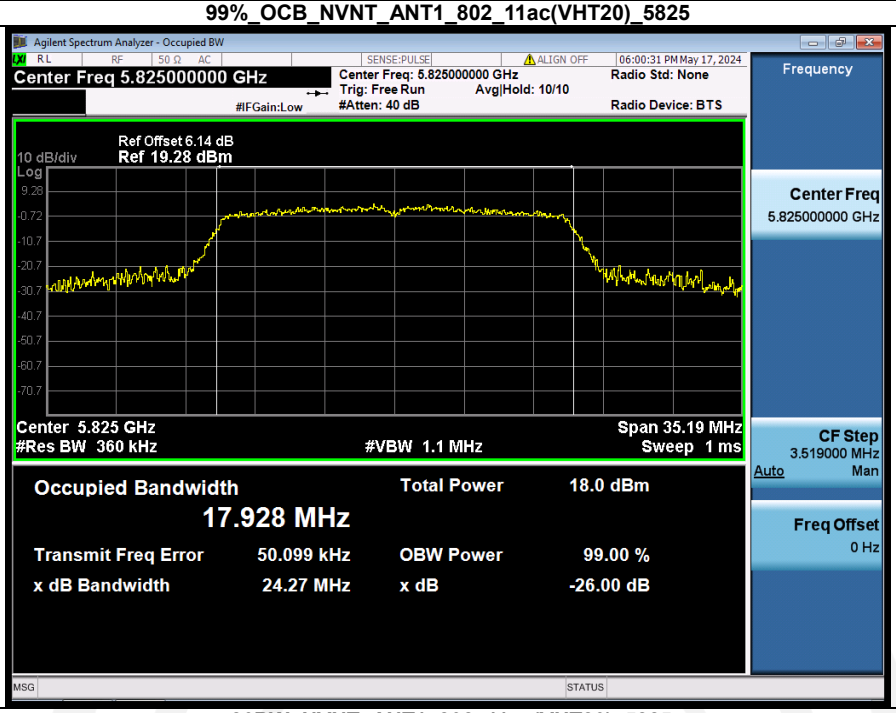

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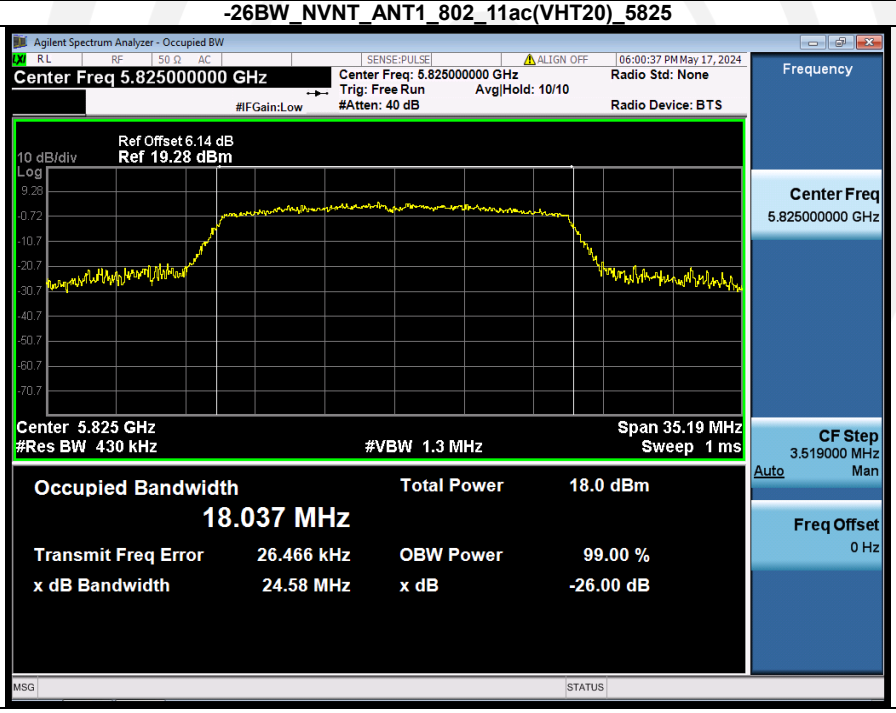
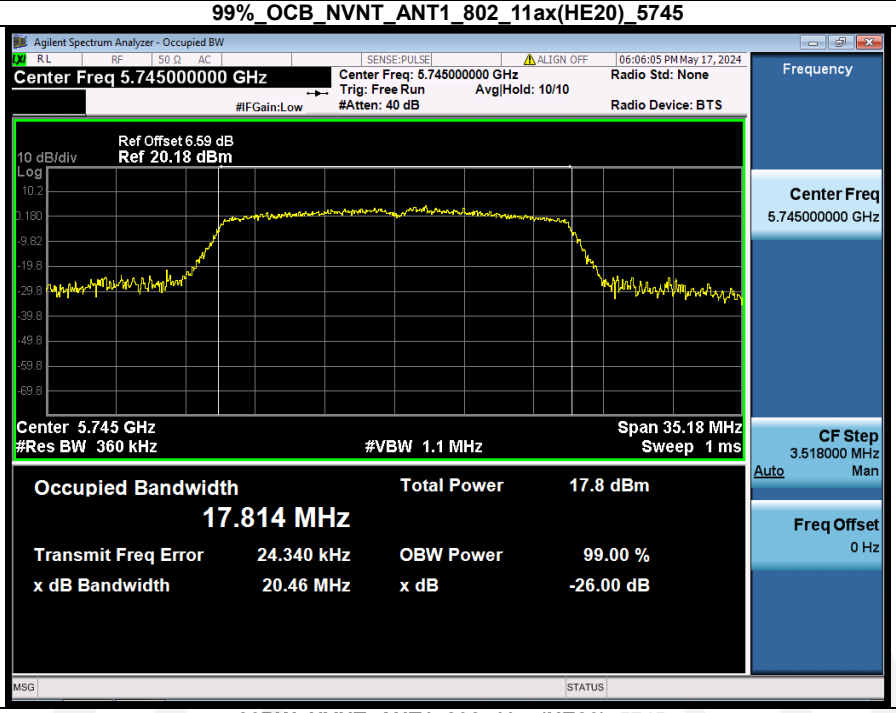


99%_OCB_NVNT_ANT1_802_11ax(HE20)_5745



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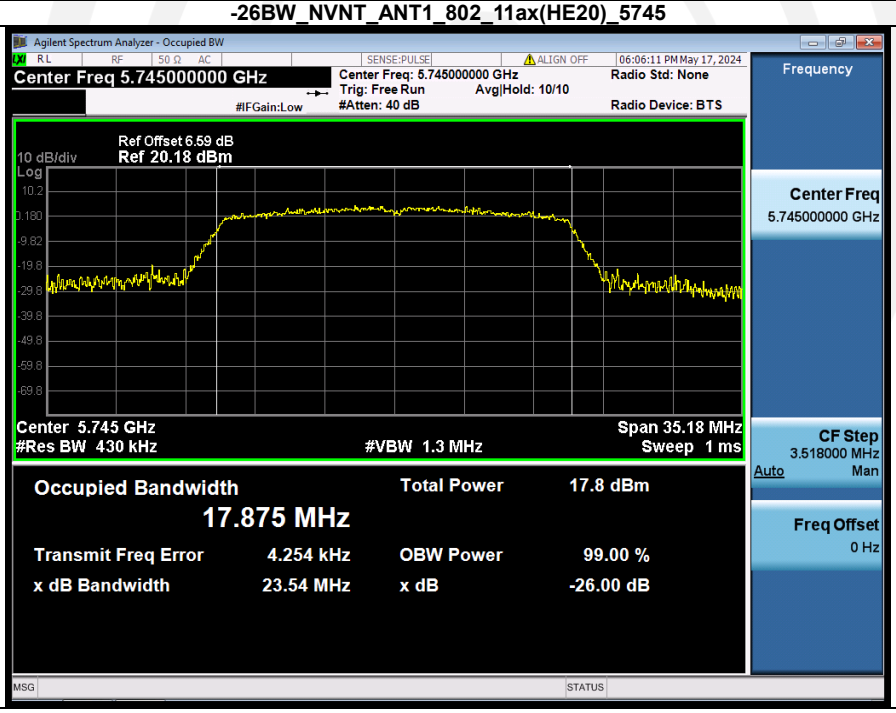

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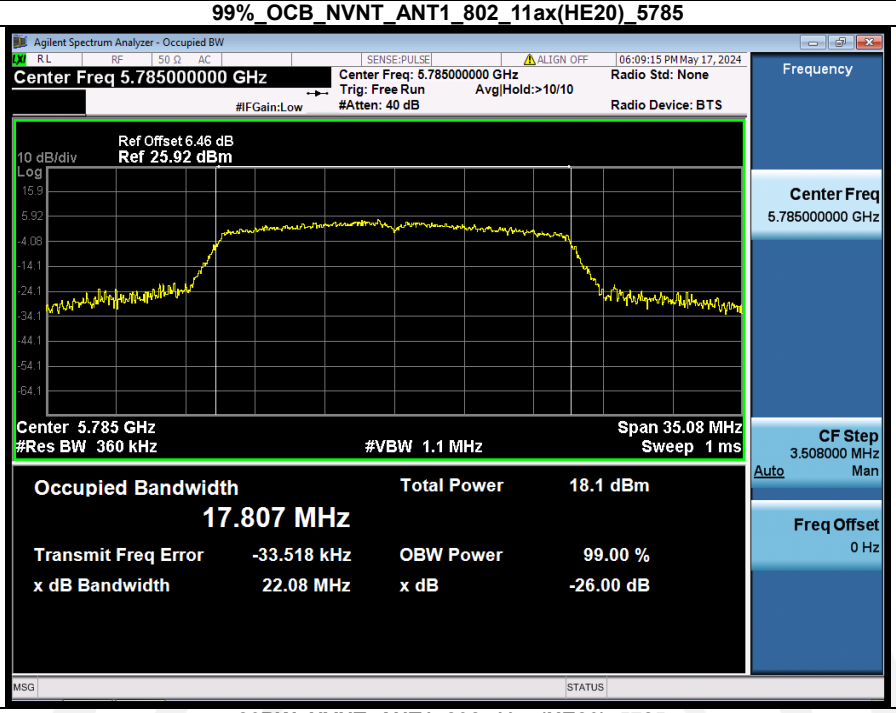

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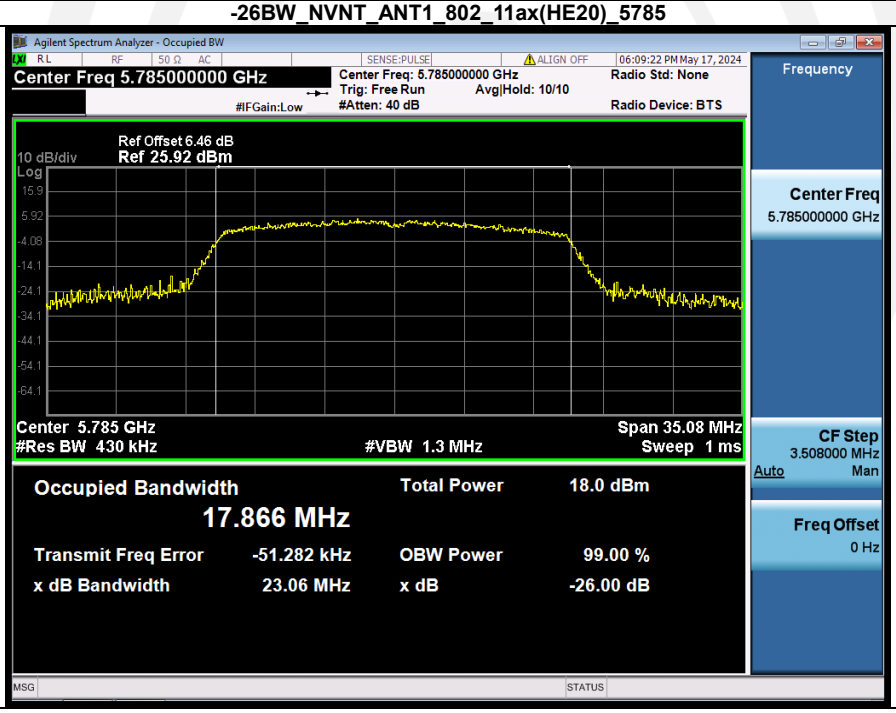

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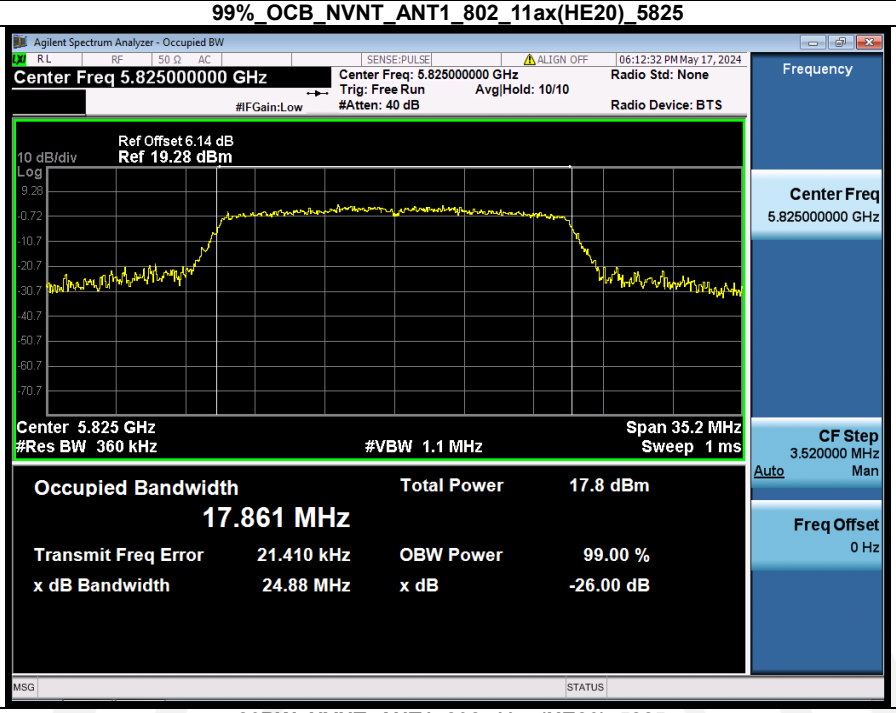

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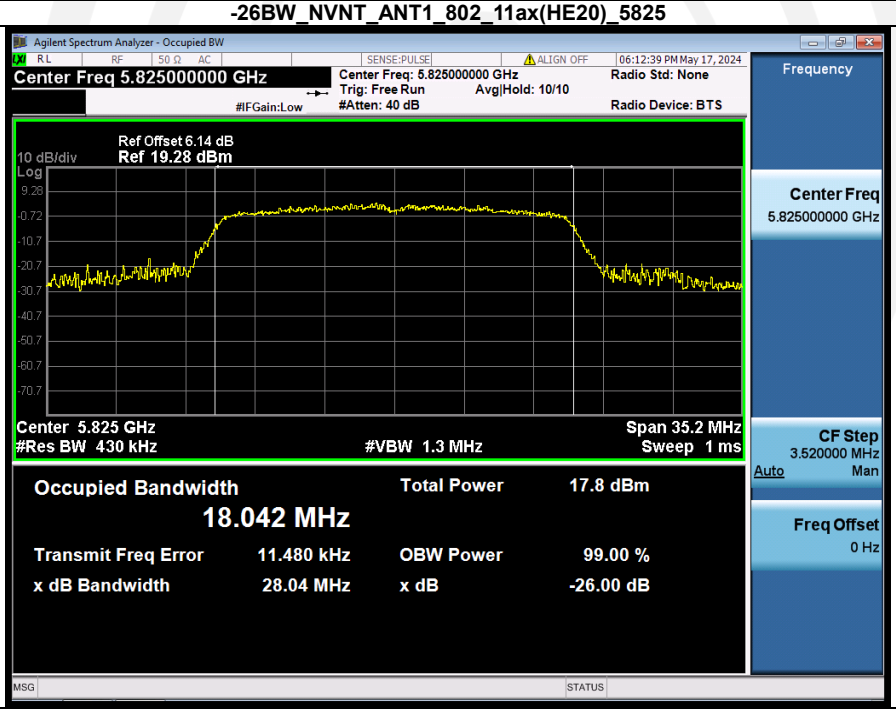
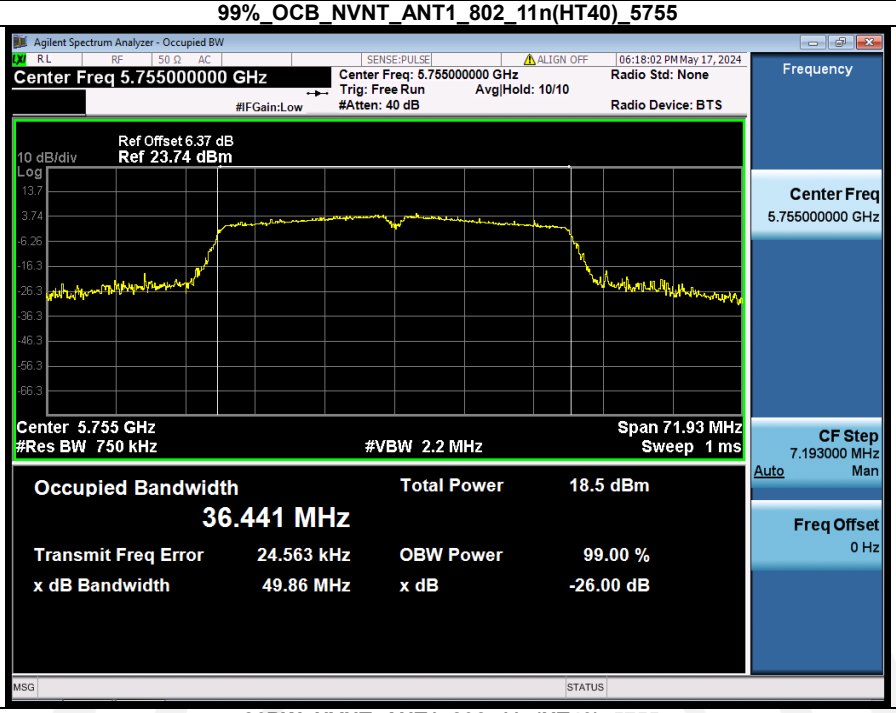


99%_OCB_NVNT_ANT1_802_11n(HT40)_5755



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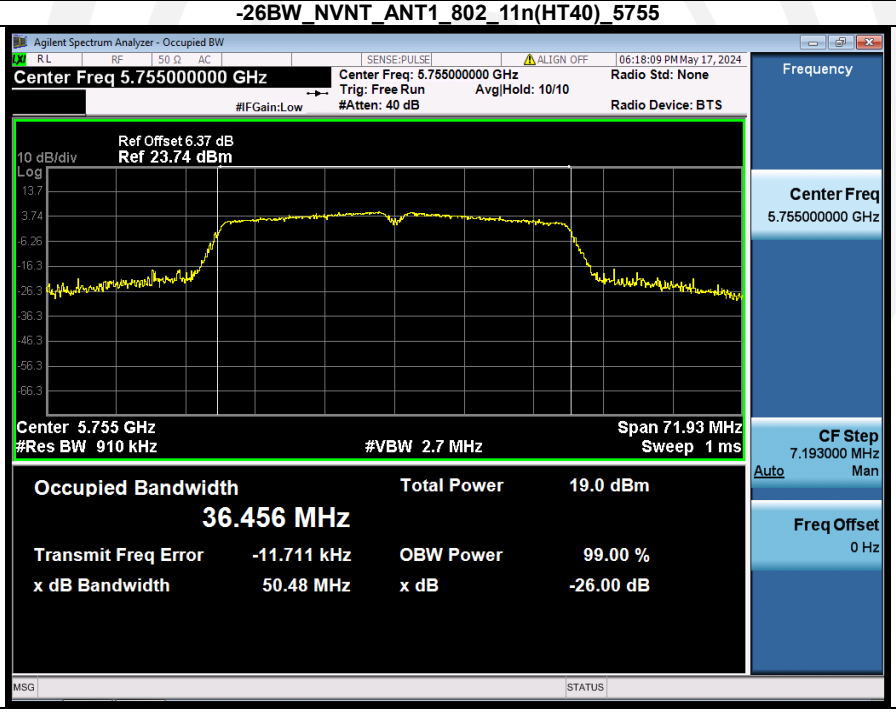

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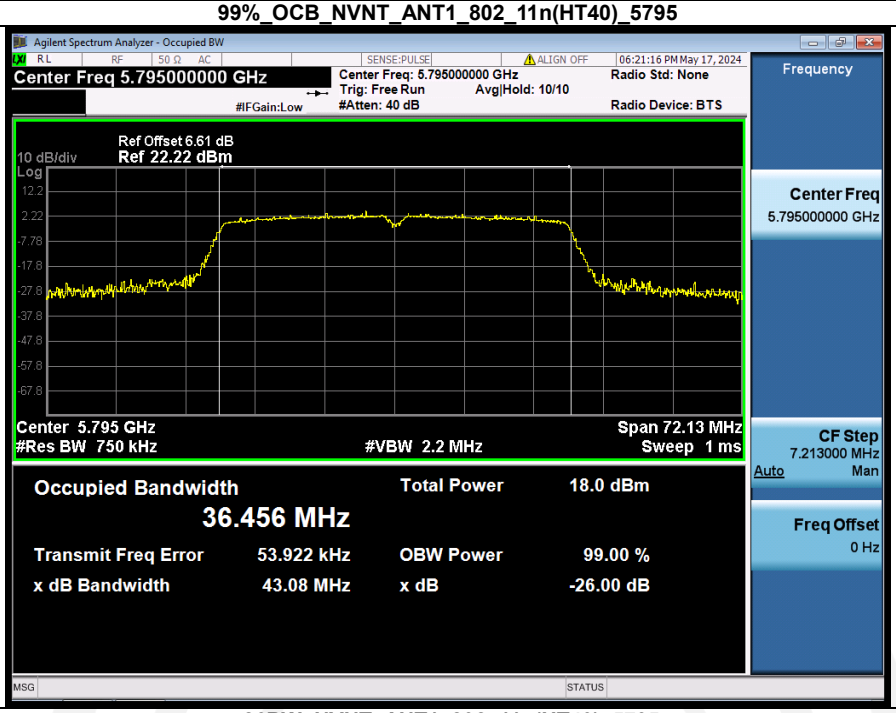

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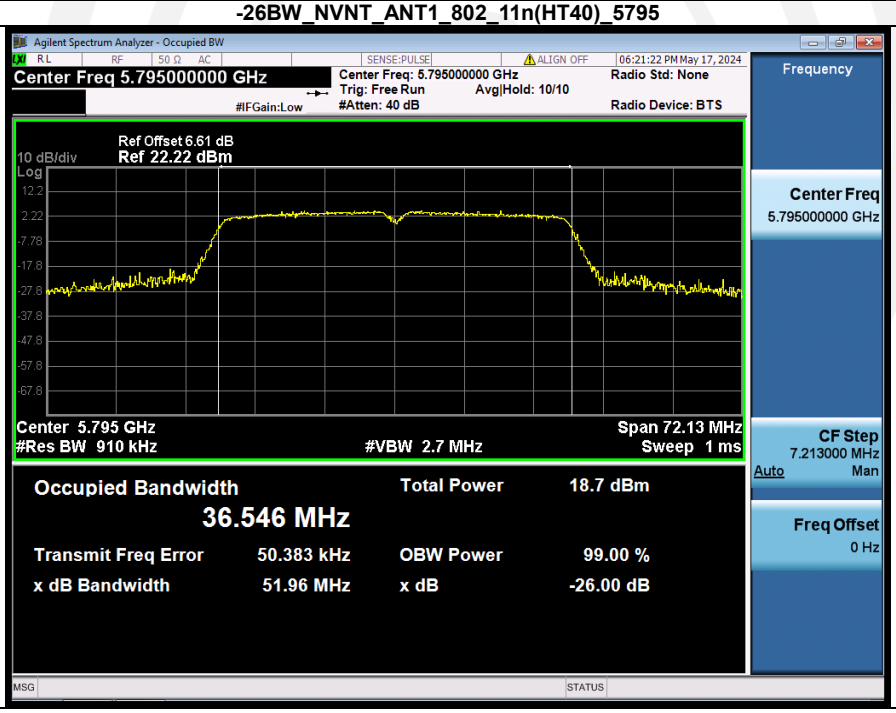

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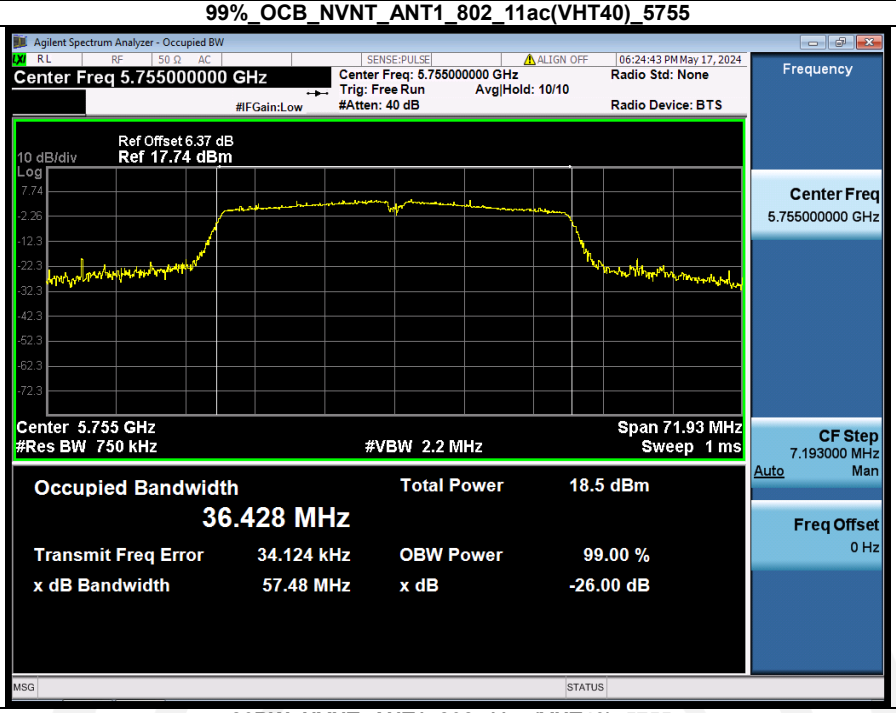
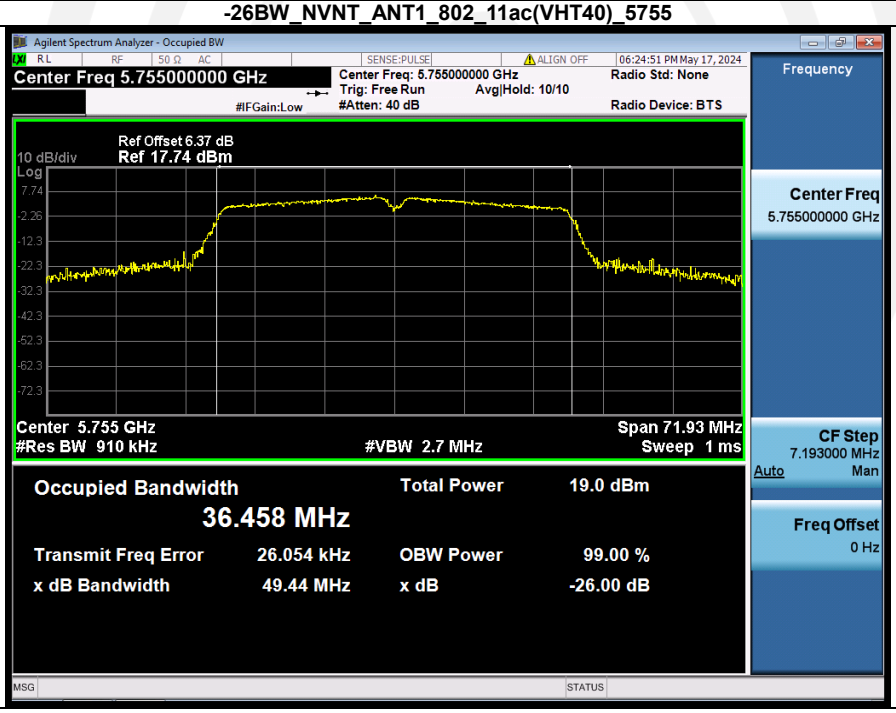


-26BW_NVNT_ANT1_802_11ac(VHT40)_5755



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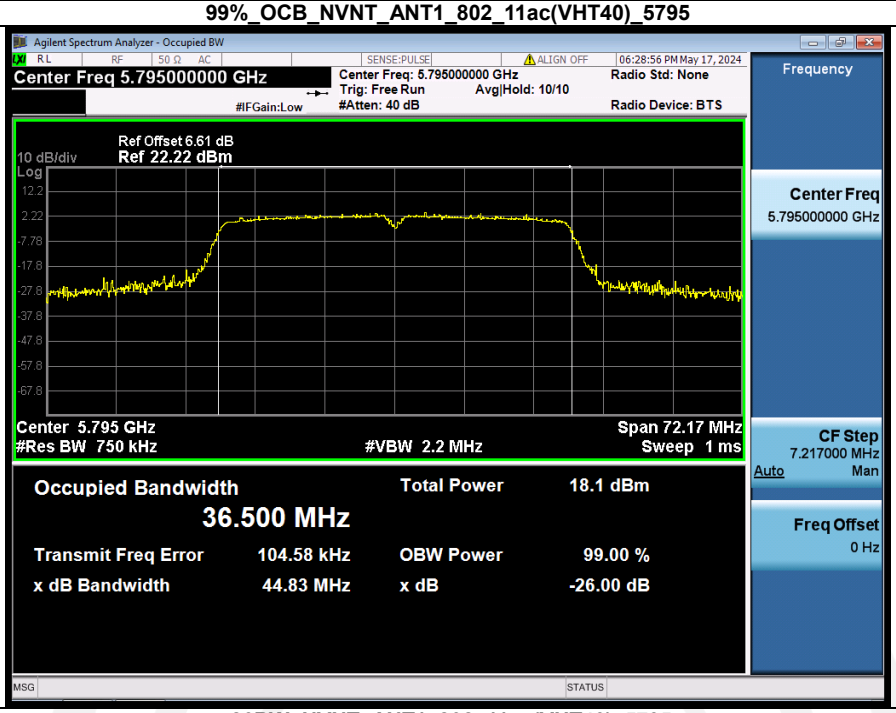

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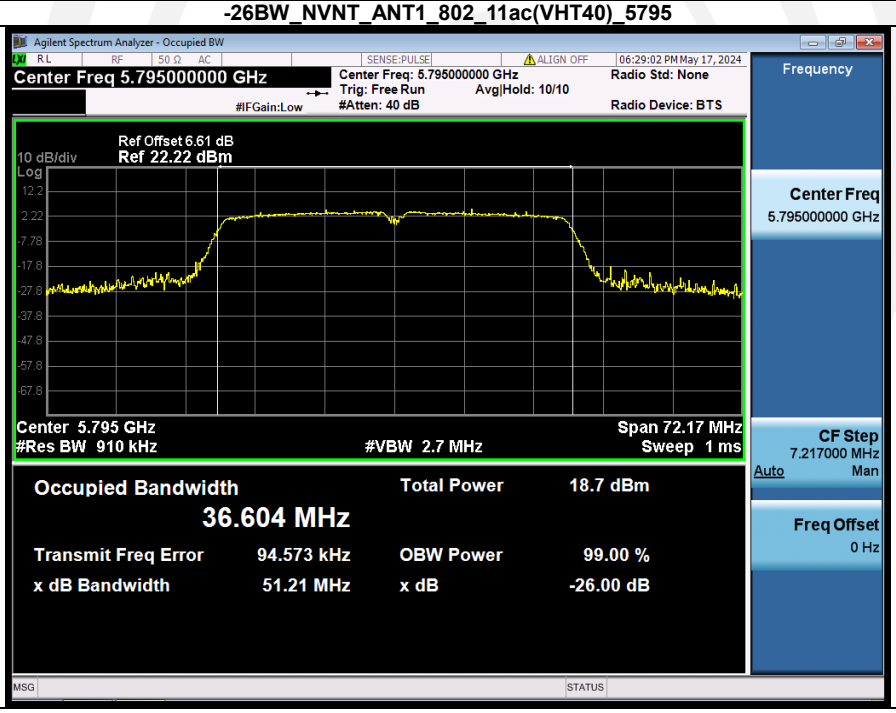

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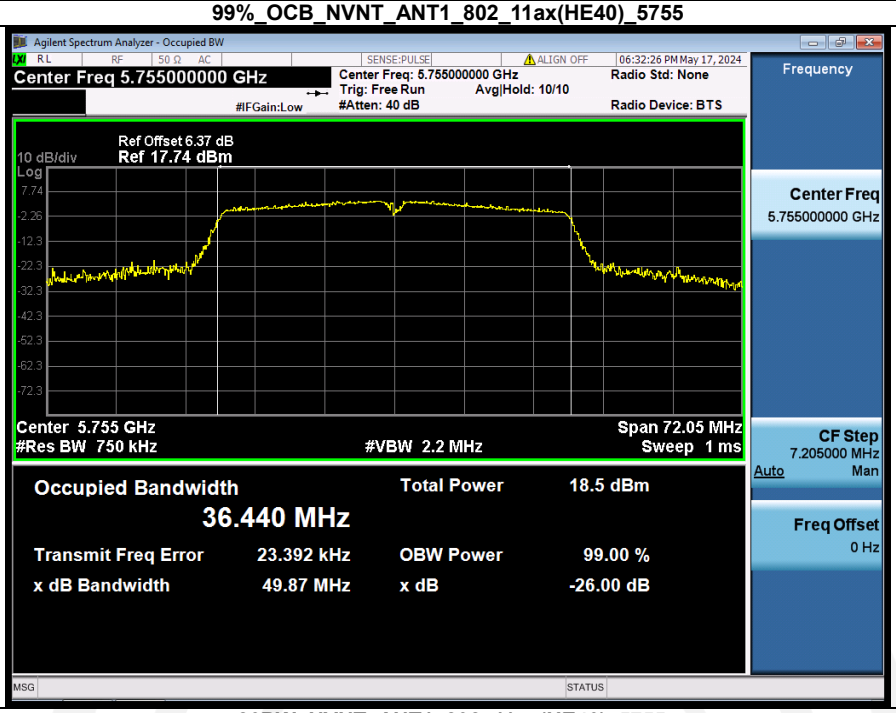

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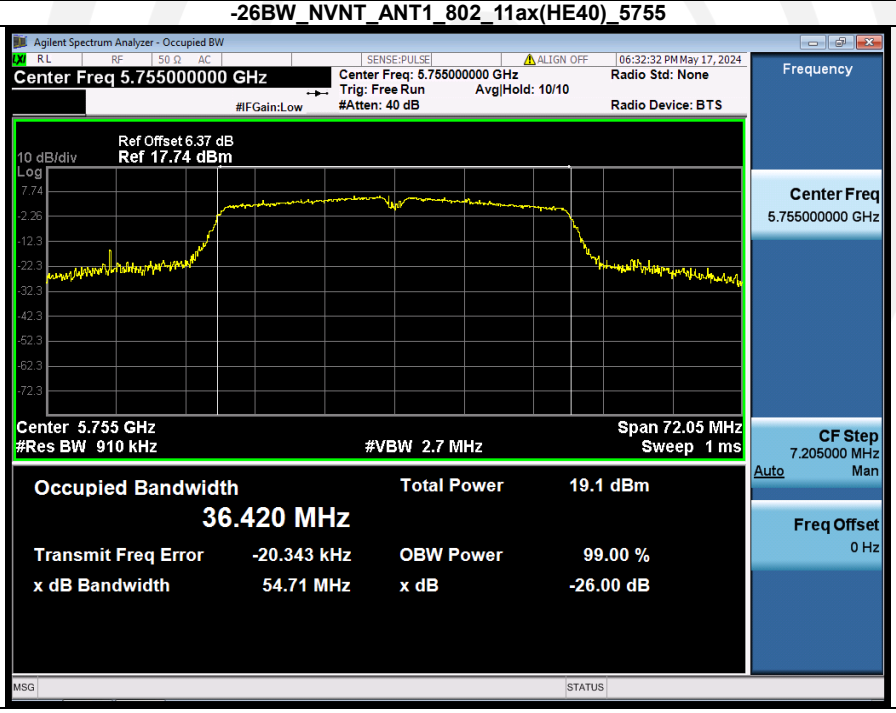

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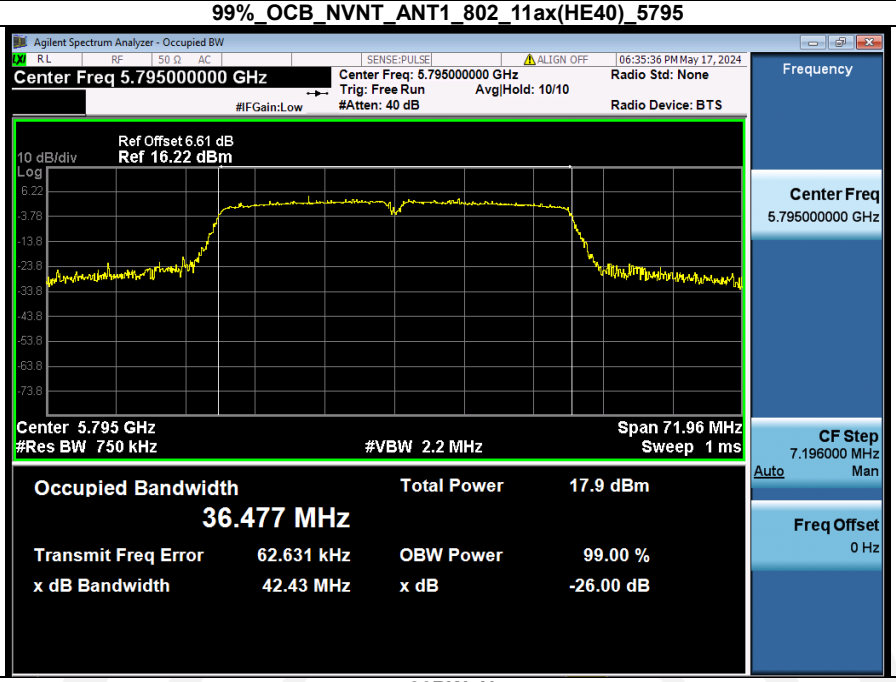

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