

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
Report No.: RFBCMA-WTW-P24120364
FCC ID: RAXWE7224443B
Product: Verizon Wi-Fi Extender
Brand: Verizon
Model No.: CE1000A
Received Date: 2024/9/10
Test Date: 2024/9/26 ~ 2024/11/19
Issued Date: 2024/12/19

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FCC Registration /
Designation Number: 788550 / TW0003

Approved by: _____

Jeremy Lin

Jeremy Lin / Project Engineer

, Date: _____

2024/12/19

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Prepared by : Gina Liu / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBCMA-WTW-P24120364	Original release.	2024/12/19

1 Certificate

Product: Verizon Wi-Fi Extender

Brand: Verizon

Test Model: CE1000A

Sample Status: Engineering sample

Applicant: Arcadyan Technology Corporation

Test Date: 2024/9/26 ~ 2024/11/19

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Measurement ANSI C63.10-2013

procedure: KDB 987594 D02 U-NII 6 GHz EMC Measurement v03

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(5) 15.407(a)(6)	Maximum RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(5) 15.407(a)(6)	Maximum Power Spectral Density	Pass	Meet the requirement of limit.
15.407(a)(11)	Emission Bandwidth	Pass	Meet the requirement of limit.
---	Occupied Bandwidth	-	Reference only.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -2.21 dB at 0.48600 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -1.3 dB at 34.85 MHz
15.407(b)(6) 15.407(b)(10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.3 dB at 7125.00 MHz
15.407(b)(7)	In-Band Emission Mask	Pass	Meet the requirement of limit.
15.407(d)(6)	Contention-based Protocol	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
Maximum RF Output Power	1 GHz ~ 18 GHz	2.26 dB
Maximum Power Spectral Density	1 GHz ~ 18 GHz	2.26 dB
Occupied Bandwidth	-	72 Hz
Contention-based Protocol	-	2.7 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.90 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.95 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Verizon Wi-Fi Extender
Brand	Verizon
Test Model	CE1000A
Status of EUT	Engineering sample
Power Supply Rating	12Vdc for adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDMA in 11ax mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	Up to 4803.9 Mbps
Operating Frequency	5.955 GHz ~ 6.415 GHz 6.435 GHz ~ 6.525 GHz 6.535 GHz ~ 6.865 GHz 6.875 GHz ~ 7.115 GHz
Number of Channel	802.11a, 802.11ax (HE20):59 802.11ax (HE40):29 802.11ax (HE80):14 802.11ax (HE160):7
Output Power	4T1S CDD Mode: 5.955 GHz ~ 6.415 GHz : EIRP: 157.398 mW (21.97 dBm) 6.435 GHz ~ 6.525 GHz : EIRP: 125.893 mW (21.00 dBm) 6.535 GHz ~ 6.865 GHz : EIRP: 133.045 mW (21.24 dBm) 6.875 GHz ~ 7.115 GHz : EIRP: 161.808 mW (22.09 dBm) Beamforming Mode: 5.955 GHz ~ 6.415 GHz : EIRP: 170.608 mW (22.32 dBm) 6.435 GHz ~ 6.525 GHz : EIRP: 224.905 mW (23.52 dBm) 6.535 GHz ~ 6.865 GHz : EIRP: 213.796 mW (23.30 dBm) 6.875 GHz ~ 7.115 GHz : EIRP: 223.872 mW (23.50 dBm) 4T4S Beamforming Mode: 5.955 GHz ~ 6.415 GHz : EIRP: 330.37 mW (25.19 dBm) 6.435 GHz ~ 6.525 GHz : EIRP: 325.087 mW (25.12 dBm) 6.535 GHz ~ 6.865 GHz : EIRP: 297.167 mW (24.73 dBm) 6.875 GHz ~ 7.115 GHz : EIRP: 326.588 mW (25.14 dBm)
Equipment Class	6ID: 15E 6 GHz Low-power indoor access point 6PP: 15E 6 GHz Subordinate indoor device

Note:

1. The EUT uses following accessories.

Item	Brand	Model	Specification
AC Adapter 1	DELTA	ADH-60BW B	AC Input : 120V ,1.2A, 60Hz DC Output : 12V ,5A ,60W DC Output Cable : 1.8 M , non-shielded cable, W/O ferrite core Plug : US
AC Adapter 2	Lucent Trans	1A98-1250-02	AC Input : 100~120V ,1.2A, 50/60Hz DC Output : 12V ,5A ,60W DC Output Cable : 1.8 M , non-shielded cable, W/O ferrite core Plug : US
RJ45 Cable	-	-	Signal Line : 3 M , non-shielded cable,

2. There are WLAN (2.4 GHz), WLAN (5 GHz) and WLAN (6 GHz) technology used for the EUT.

3. Simultaneously transmission combination.

Combination	Technology	
1	WLAN 2.4 GHz	WLAN 5 GHz (full band)

Combination	Technology		
1	WLAN 2.4 GHz	WLAN 5 GHz (low band)	WLAN 5 GHz (high band)
2	WLAN 2.4 GHz	WLAN 5 GHz (full band)	WLAN 6 GHz

*The emission of the simultaneous operation has been evaluated and no non-compliance was found.

4. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna NO.	RF Chain NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	*Cable Length
5GH/6E ANT 3	0	PSA	WE7224443B-VR	2.77	5.47 ~ 5.725	Dipole	ipex(MHF)	150
				4.04	5.725 ~ 5.85			
				3.43	5.925 ~ 6.425			
				3.81	6.425 ~ 6.525			
				3.39	6.525 ~ 6.875			
				3.05	6.875 ~ 7.125			
5GH/6E ANT 6	1	PSA	WE7224443B-VR	2.65	5.47 ~ 5.725	Dipole	ipex(MHF)	150
				2.23	5.725 ~ 5.85			
				2.79	5.925 ~ 6.425			
				2.07	6.425 ~ 6.525			
				2.9	6.525 ~ 6.875			
				2.59	6.875 ~ 7.125			
5GH/6E ANT 7	2	PSA	WE7224443B-VR	3.35	5.47 ~ 5.725	Dipole	ipex(MHF)	120
				3.54	5.725 ~ 5.85			
				2.48	5.925 ~ 6.425			
				3.44	6.425 ~ 6.525			
				2.81	6.525 ~ 6.875			
				4.15	6.875 ~ 7.125			
5GH/6E ANT 12	3	PSA	WE7224443B-VR	2.79	5.47 ~ 5.725	Dipole	ipex(MHF)	150
				3.09	5.725 ~ 5.85			
				0.95	5.925 ~ 6.425			
				1.8	6.425 ~ 6.525			
				3.7	6.525 ~ 6.875			
				3.14	6.875 ~ 7.125			

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

6 GHz Band			
Modulation Mode	Beamforming Mode	TX & RX Configuration	
802.11a	Not Support	4TX (Nss 1 / Nss 2 / Nss 3 / Nss 4)	4RX
802.11ax (HE20)	Support	4TX (Nss 1 / Nss 2 / Nss 3 / Nss 4)	4RX
802.11ax (HE40)	Support	4TX (Nss 1 / Nss 2 / Nss 3 / Nss 4)	4RX
802.11ax (HE80)	Support	4TX (Nss 1 / Nss 2 / Nss 3 / Nss 4)	4RX
802.11ax (HE160)	Support	4TX (Nss 1 / Nss 2 / Nss 3 / Nss 4)	4RX

Note:

1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The EUT device modulation technique OFDMA does not support partial RUs (resource units) and channel puncturing and/or bandwidth reduction mechanisms.

3.3 Channel List

U-NII-5:

24 channels are provided for 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	5955 MHz	5	5975 MHz	9	5995 MHz	13	6015 MHz
17	6035 MHz	21	6055 MHz	25	6075 MHz	29	6095 MHz
33	6115 MHz	37	6135 MHz	41	6155 MHz	45	6175 MHz
49	6195 MHz	53	6215 MHz	57	6235 MHz	61	6255 MHz
65	6275 MHz	69	6295 MHz	73	6315 MHz	77	6335 MHz
81	6355 MHz	85	6375 MHz	89	6395 MHz	93	6415 MHz

12 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	5965 MHz	11	6005 MHz	19	6045 MHz	27	6085 MHz
35	6125 MHz	43	6165 MHz	51	6205 MHz	59	6245 MHz
67	6285 MHz	75	6325 MHz	83	6365 MHz	91	6405 MHz

6 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
7	5985 MHz	23	6065 MHz	39	6145 MHz	55	6225 MHz
71	6305 MHz	87	6385 MHz				

3 channels are provided for 802.11ax (HE160):

Channel	Frequency	Channel	Frequency	Channel	Frequency
15	6025 MHz	47	6185 MHz	79	6345 MHz

U-NII-6:

5 channels are provided for 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
97	6435 MHz	101	6455 MHz	105	6475 MHz	109	6495 MHz
113	6515 MHz						

3 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
99	6445 MHz	107	6485 MHz	*115	6525 MHz

2 channel are provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
103	6465 MHz	*119	6545 MHz

1 channel is provided for 802.11ax (HE160):

Channel	Frequency
*111	6505 MHz

U-NII-7:

18 channels are provided for 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
117	6535 MHz	121	6555 MHz	125	6575 MHz	129	6595 MHz
133	6615 MHz	137	6635 MHz	141	6655 MHz	145	6675 MHz
149	6695 MHz	153	6715 MHz	157	6735 MHz	161	6755 MHz
165	6775 MHz	169	6795 MHz	173	6815 MHz	177	6835 MHz
181	6855 MHz	*185	6875 MHz				

9 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
123	6565 MHz	131	6605 MHz	139	6645 MHz	147	6685 MHz
155	6725 MHz	163	6765 MHz	171	6805 MHz	179	6845 MHz
*187	6885 MHz						

4 channels are provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
135	6625 MHz	151	6705 MHz	167	6785 MHz	*183	6865 MHz

2 channels are provided for 802.11ax (HE160):

Channel	Frequency	Channel	Frequency
143	6665 MHz	*175	6825 MHz

U-NII-8:

12 channels are provided for 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
189	6895 MHz	193	6915 MHz	197	6935 MHz	201	6955 MHz
205	6975 MHz	209	6995 MHz	213	7015 MHz	217	7035 MHz
221	7055 MHz	225	7075 MHz	229	7095 MHz	233	7115 MHz

5 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
195	6925 MHz	203	6965 MHz	211	7005 MHz
219	7045 MHz	227	7085 MHz		

2 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
199	6945 MHz	215	7025 MHz

1 channel is provided for 802.11ax (HE160):

Channel	Frequency
207	6985 MHz

Note: * mean these are straddle channels.

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	- The AC Adapter has the following models: DELTA:ADH-60BW B / Lucent Trans:1A98-1250-02. Pre-scan these models of AC Adapters and find the worst case as a representative test condition. - Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
Worst Case:	AC adapter worst condition:Lucent Trans:1A98-1250-02

Following channel(s) was (were) selected for the final test as listed below:

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
Maximum RF Output Power	802.11a	CDD	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	6Mb/s
	802.11ax (HE20)	CDD Beamforming (4T1S) Beamforming (4T4S)	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	MCS0
	802.11ax (HE40)		3, 43, 91, 99, 107, 115, 123, 155, 179, 187, 211, 227	BPSK	MCS0
	802.11ax (HE80)		7, 39, 87, 103, 119, 151, 183, 199, 215	BPSK	MCS0
	802.11ax (HE160)		15, 47, 79, 111, 143, 175, 207	BPSK	MCS0
Maximum Power Spectral Density	802.11a	CDD	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	6Mb/s
	802.11ax (HE20)	Beamforming (4T1S) Beamforming (4T4S)	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	MCS0
	802.11ax (HE40)		3, 43, 91, 99, 107, 115, 123, 155, 179, 187, 211, 227	BPSK	MCS0
	802.11ax (HE80)		7, 39, 87, 103, 119, 151, 183, 199, 215	BPSK	MCS0
	802.11ax (HE160)		15, 47, 79, 111, 143, 175, 207	BPSK	MCS0
Emission Bandwidth	802.11a	CDD	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	6Mb/s
	802.11ax (HE20)	Beamforming (4T1S) Beamforming (4T4S)	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	MCS0
	802.11ax (HE40)		3, 43, 91, 99, 107, 115, 123, 155, 179, 187, 211, 227	BPSK	MCS0
	802.11ax (HE80)		7, 39, 87, 103, 119, 151, 183, 199, 215	BPSK	MCS0
	802.11ax (HE160)		15, 47, 79, 111, 143, 175, 207	BPSK	MCS0

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
In-Band Emission Mask	802.11a	CDD	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	6Mb/s
	802.11ax (HE20)	Beamforming (4T1S) Beamforming (4T4S)	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	MCS0
	802.11ax (HE40)		3, 43, 91, 99, 107, 115, 123, 155, 179, 187, 211, 227	BPSK	MCS0
	802.11ax (HE80)		7, 39, 87, 103, 119, 151, 183, 199, 215	BPSK	MCS0
	802.11ax (HE160)		15, 47, 79, 111, 143, 175, 207	BPSK	MCS0
Occupied Bandwidth	802.11a	CDD	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	6Mb/s
	802.11ax (HE20)	Beamforming (4T1S) Beamforming (4T4S)	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	MCS0
	802.11ax (HE40)		3, 43, 91, 99, 107, 115, 123, 155, 179, 187, 211, 227	BPSK	MCS0
	802.11ax (HE80)		7, 39, 87, 103, 119, 151, 183, 199, 215	BPSK	MCS0
	802.11ax (HE160)		15, 47, 79, 111, 143, 175, 207	BPSK	MCS0
Contention-based Protocol	802.11ax (HE20)	-	5, 101, 149, 213	BPSK	MCS0
	802.11ax (HE160)		15, 111, 143, 207	BPSK	MCS0
AC Power Conducted Emissions	802.11ax (HE160)	Beamforming (4T4S)	15	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ax (HE160)	Beamforming (4T4S)	15	BPSK	MCS0
Unwanted Emissions above 1 GHz	802.11a	CDD	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	6Mb/s
	802.11ax (HE20)	Beamforming (4T1S) Beamforming (4T4S)	1, 45, 93, 97, 105, 113, 117, 149, 181, 185, 209, 233	BPSK	MCS0
	802.11ax (HE40)		3, 43, 91, 99, 107, 115, 123, 155, 179, 187, 211, 227	BPSK	MCS0
	802.11ax (HE80)		7, 39, 87, 103, 119, 151, 183, 199, 215	BPSK	MCS0
	802.11ax (HE160)		15, 47, 79, 111, 143, 175, 207	BPSK	MCS0

Note:

- Partial RU (resource unit) mechanism is not supported.
- EUT supports Indoor AP and Subordinate mode and shares the same test data.

3.5 Duty Cycle of Test Signal

NSS1

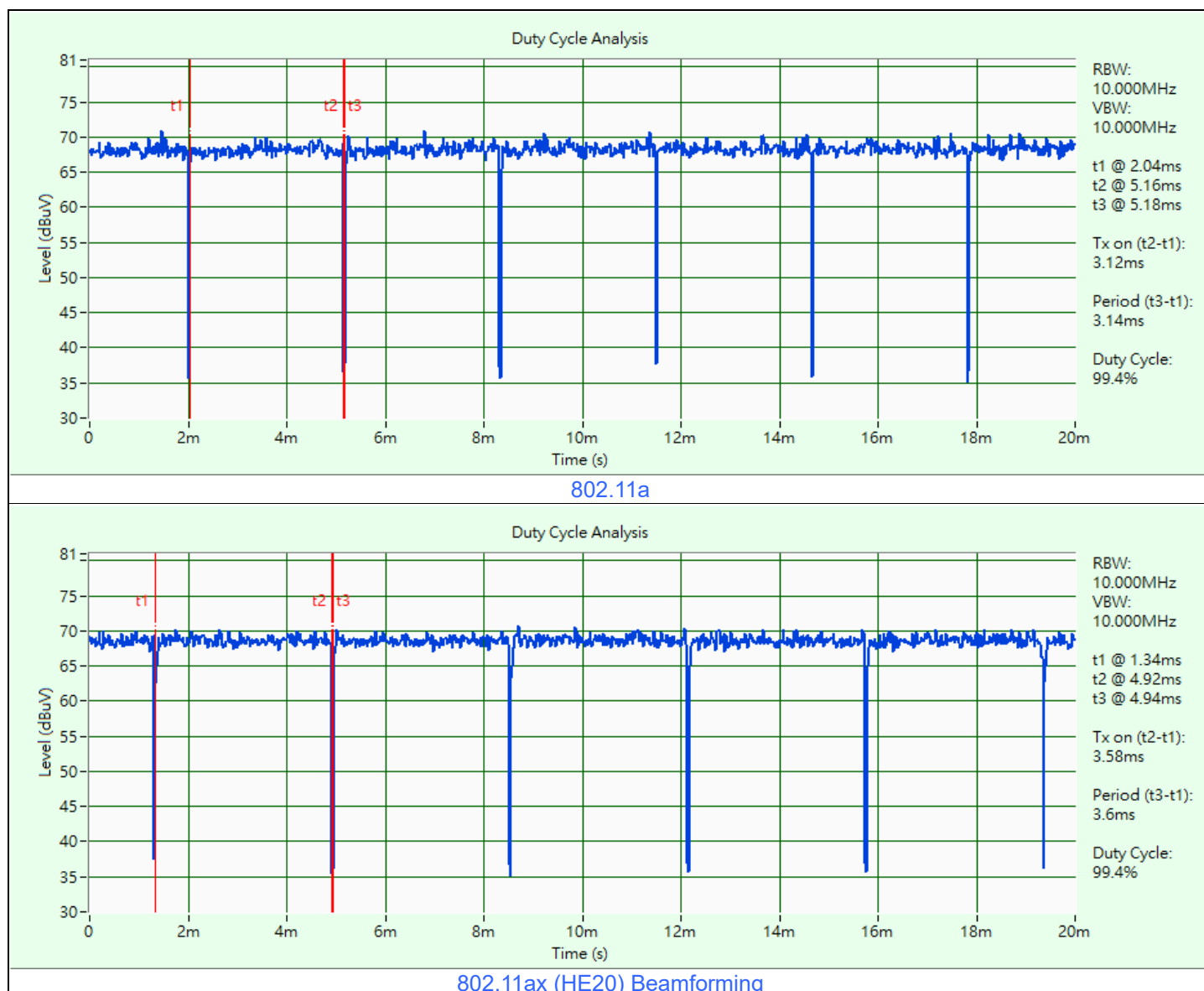
802.11a: Duty cycle = 3.12 ms / 3.14 ms x 100% = 99.4%

802.11ax (HE20) Beamforming: Duty cycle = 3.58 ms / 3.6 ms x 100% = 99.4%

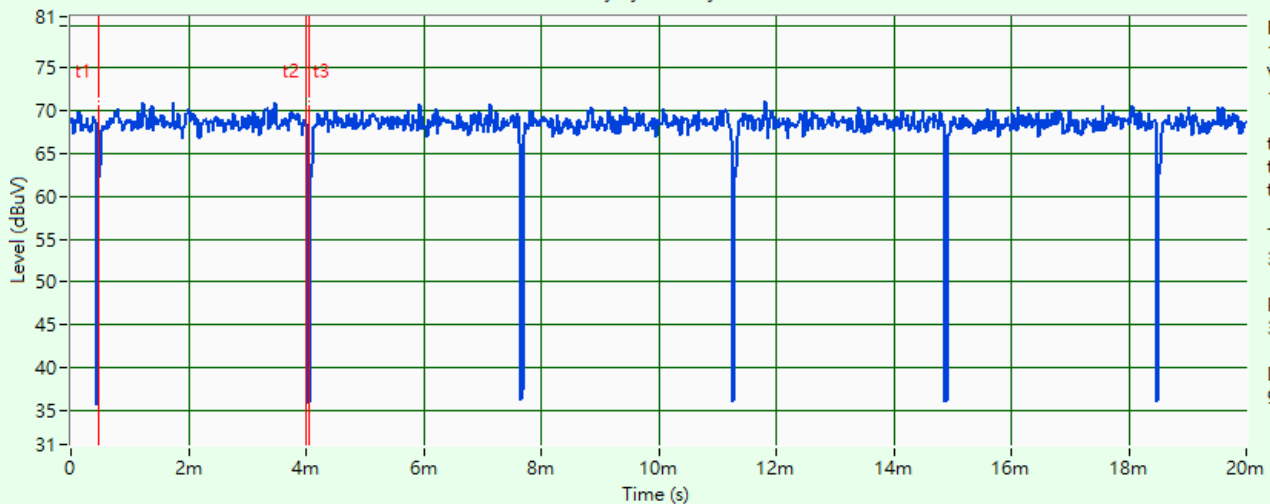
802.11ax (HE40) Beamforming: Duty cycle = 3.52 ms / 3.572 ms x 100% = 98.5%

802.11ax (HE80) Beamforming: Duty cycle = 4.712 ms / 4.74 ms x 100% = 99.4%

802.11ax (HE160) Beamforming: Duty cycle = 4.72 ms / 4.74 ms x 100% = 99.6%

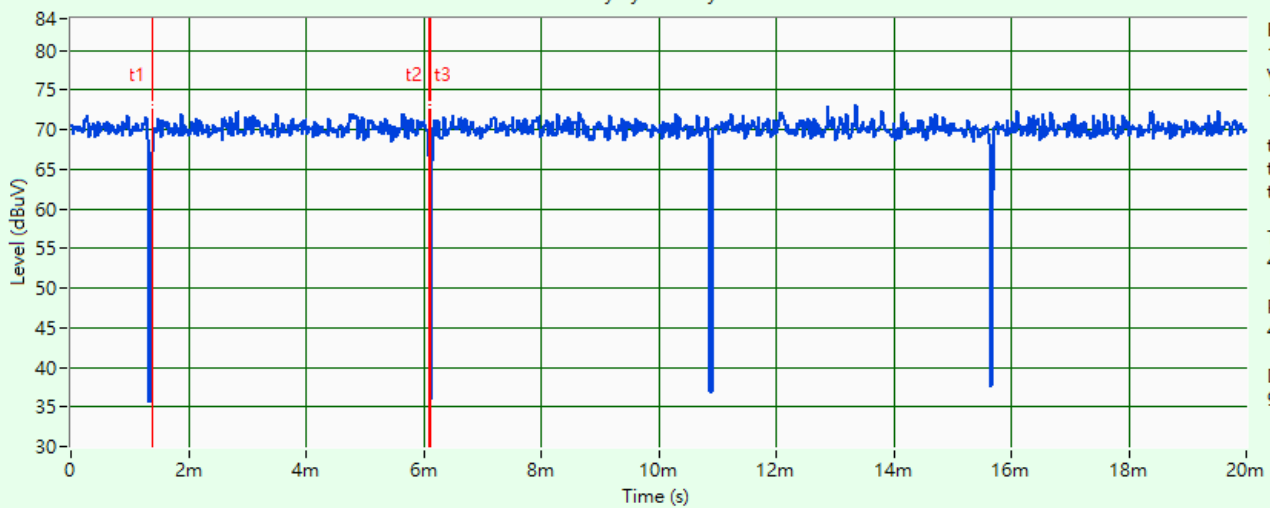


Duty Cycle Analysis



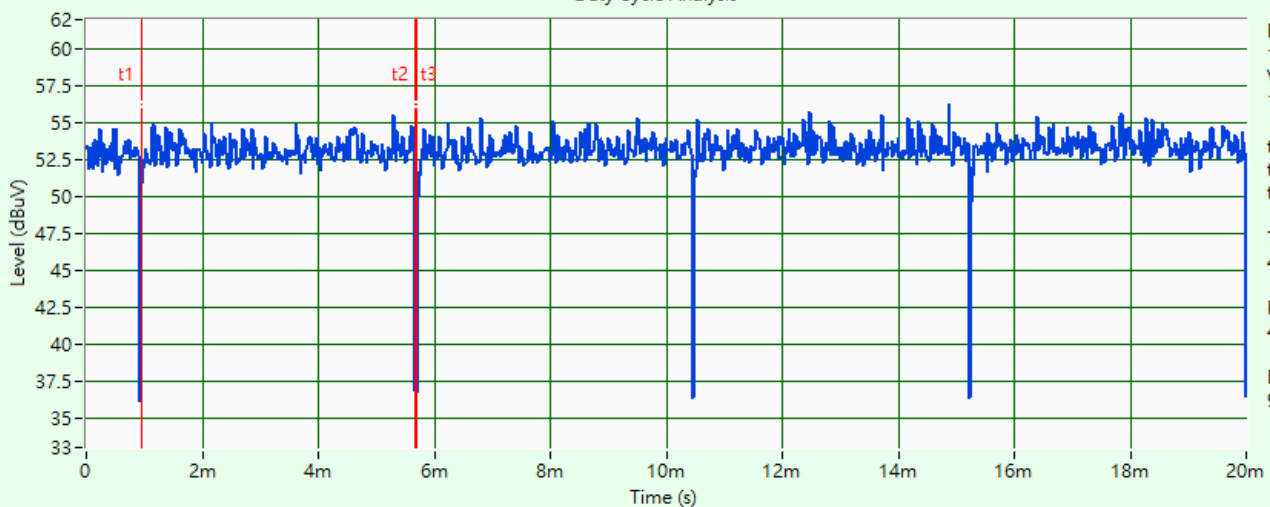
802.11ax (HE40) Beamforming

Duty Cycle Analysis



802.11ax (HE80) Beamforming

Duty Cycle Analysis



802.11ax (HE160) Beamforming

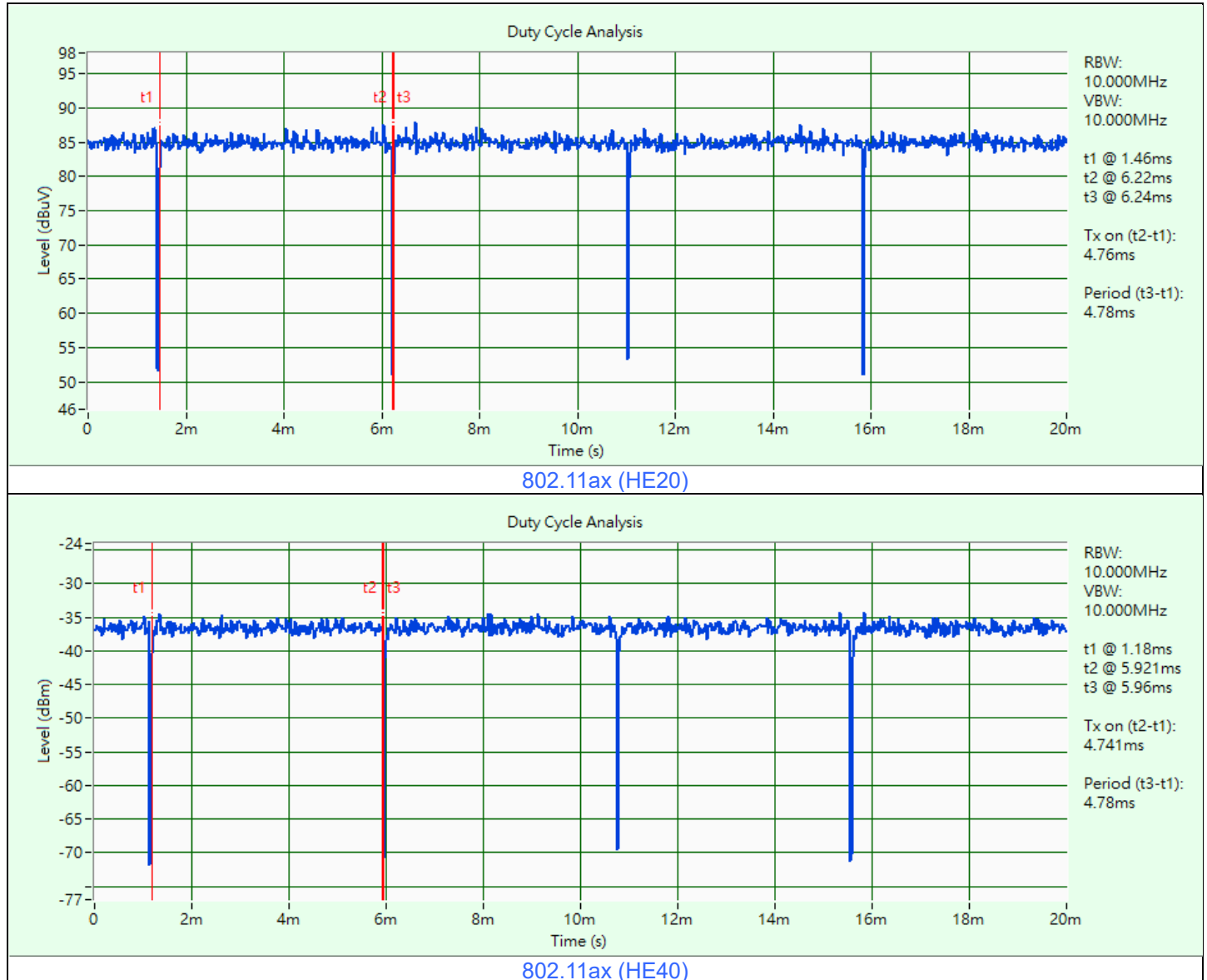
NSS4

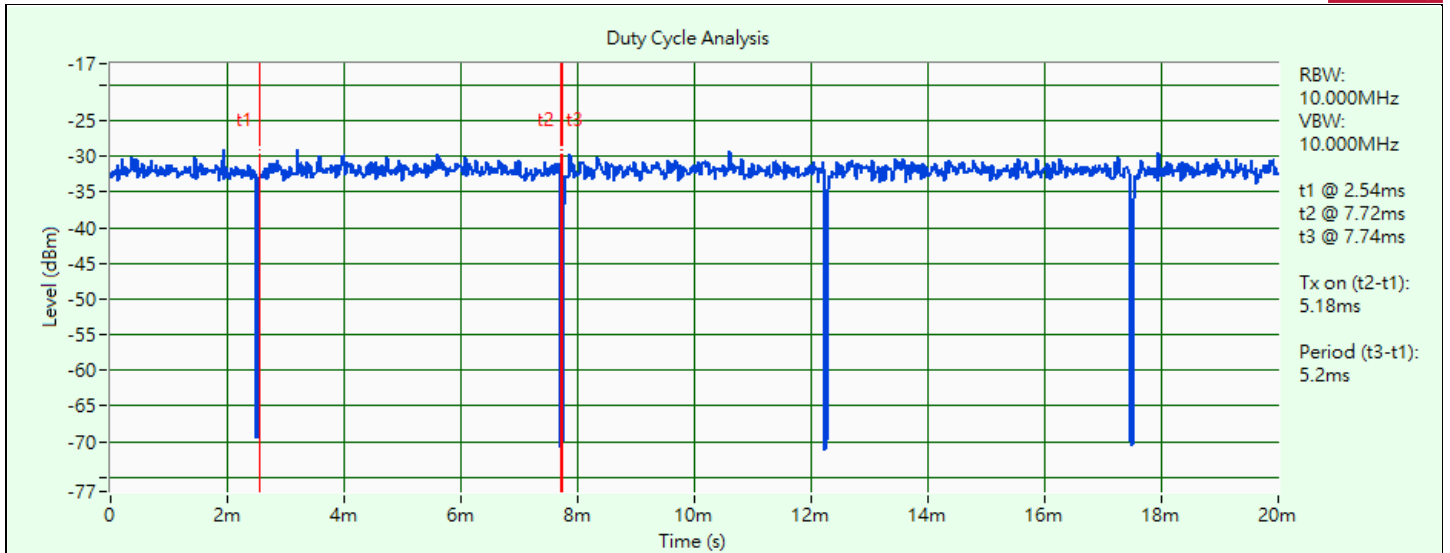
802.11ax (HE20): Duty cycle = 4.76 ms / 4.78 ms x 100% = 99.6%

802.11ax (HE40): Duty cycle = 4.741 ms / 4.78 ms x 100% = 99.2%

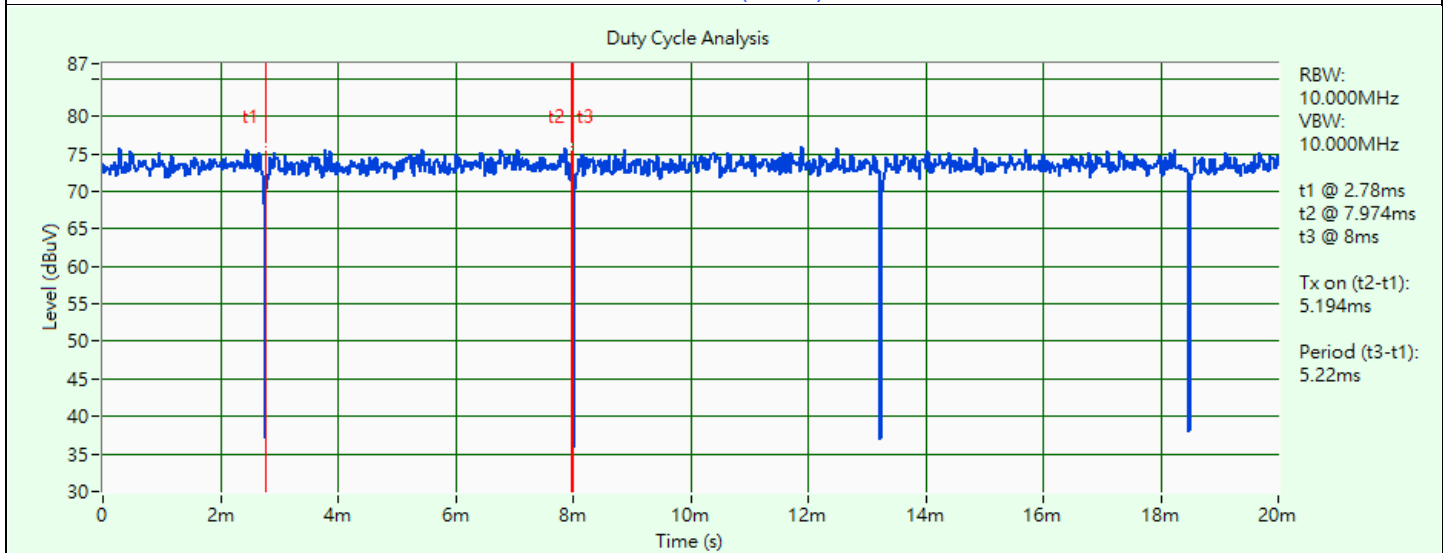
802.11ax (HE80): Duty cycle = 5.18 ms / 5.2 ms x 100% = 99.6%

802.11ax (HE160): Duty cycle = 5.194 ms / 5.22 ms x 100% = 99.5%





802.11ax (HE80)

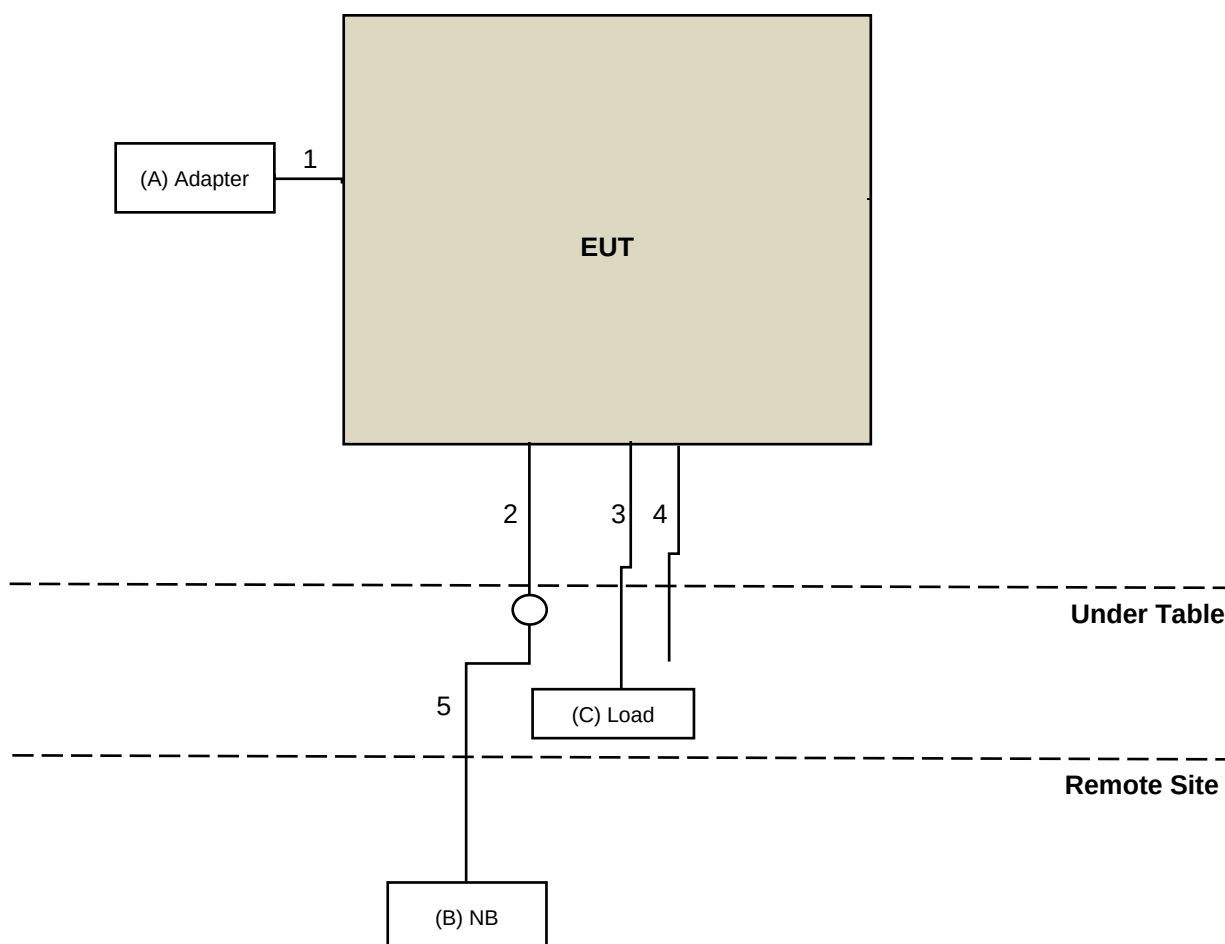


802.11ax (HE160)

3.6 Test Program Used and Operation Descriptions

Controlling software QATool_Ulv2.88 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	ADAPTER	Lucent Trans	1A98-1250-02	N/A	N/A	Supplied by applicant
B	14" Laptop	Lenovo	L440	R9-0GFJKK	N/A	Provided by Lab
C	Load	N/A	N/A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.8	N	0	Accessory of EUT
2	RJ45	1	3	N	0	Accessory of EUT
3	RJ45	1	1.5	N	0	Provided by Lab
4	Coaxial Cable	1	2	Y	0	Provided by Lab
5	RJ45	1	10	N	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Maximum RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2023/11/12 2024/11/10	2024/11/11 2025/11/9
MXE EMI Receiver Keysight	N9038A	MY55420137	2024/5/8	2025/5/7
Preamplifier EMCI	EMC 012645	980115	2024/9/24	2025/9/23
RF Coaxial Cable EMCI	EMC104-SM-SM- 8000+3000	171005	2024/9/24	2025/9/23
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	2024/9/24	2025/9/23
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2024/9/26 ~ 2024/11/19

4.2 Maximum Power Spectral Density

Refer to section 4.1 to get the tested date and information of the instruments.

4.3 Emission Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101105	2024/2/27	2025/2/26
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/9/26 ~ 2024/11/19

4.4 In-Band Emission Mask

Refer to section 4.3 to get the tested date and information of the instruments.

4.5 Occupied Bandwidth

Refer to section 4.3 to get the tested date and information of the instruments.

4.6 Contention-based Protocol

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Frequency Extender Keysight	N5182BX07	MY59360198	2024/9/27	2025/9/26
MXG Vector Signal Generator Keysight	N5182B	MY53052647	2024/9/27	2025/9/26
Power Splitter/Combiner Mini-Circuits	ZFRSC-123-S+	F698501347_01	2023/12/12	2024/12/11
		F698501347_02	2023/12/12	2024/12/11
Signal & Spectrum Analyzer R&S	FSW8	101497	2024/5/21	2025/5/20
Signal Analyzer R&S	FSV40	101516	2024/1/29	2025/1/28

Notes:

1. The test was performed in Adaptivity room.
2. Tested Date: 2024/10/16

4.7 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance HUBER+SUHNER	E1-011315	13	2023/11/22	2024/11/21
50 ohm terminal resistance	E1-011279	04	2023/11/22	2024/11/21
	E1-011280	05	2023/11/22	2024/11/21
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2023/11/7	2024/11/6
EMI Test Receiver R&S	ESR3	102783	2023/12/13	2024/12/12
Fixed Attenuator STI	BNC5W10dB	PAD-COND2-01	2024/8/25	2025/8/24
LISN R&S	ESH2-Z5	100100	2024/3/6	2025/3/5
	ESH3-Z5	100312	2024/9/9	2025/9/8
RF Coaxial Cable Woken	5D-FB	Cable-cond2-01	2024/8/25	2025/8/24
Software BVADT	BVADT_Cond_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2024/8/28	2025/8/27

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2024/10/17

4.8 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-472	2024/10/14	2025/10/13
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Keysight	N9038A	MY55420137	2024/5/8	2025/5/7
Preamplifier EMCI	EMC 330H	980112	2024/9/24	2025/9/23
	EMC001340	980201	2024/9/24	2025/9/23
RF Coaxial Cable Woken	8D-FB	Cable-Ch10-01	2024/9/24	2025/9/23
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2024/10/17

4.9 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2023/11/12 2024/11/10	2024/11/11 2025/11/9
	BBHA 9170	148	2023/11/12 2024/11/10	2024/11/11 2025/11/9
MXE EMI Receiver Keysight	N9038A	MY55420137	2024/5/8	2025/5/7
Preamplifier EMCI	EMC 012645	980115	2024/9/24	2025/9/23
	EMC 184045	980116	2024/9/24	2025/9/23
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2024/7/6	2025/7/5
	EMC102-KM-KM-3000	150929	2024/7/6	2025/7/5
	EMC104-SM-SM- 8000+3000	171005	2024/9/24	2025/9/23
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	2024/9/24	2025/9/23
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2024/9/26 ~ 2024/11/12

5 Limits of Test Items

5.1 Maximum RF Output Power

Operation Band	Equipment Class	Limit
		Maximum Average Power
U-NII-5 U-NII-6 U-NII-7 U-NII-8	6ID: 15E 6 GHz Low-power indoor access point 6PP: 15E 6 GHz Subordinate indoor device	EIRP 30 dBm

5.2 Maximum Power Spectral Density

Operation Band	Equipment Class	Limit
		Maximum Power Density
U-NII-5 U-NII-6 U-NII-7 U-NII-8	6ID: 15E 6 GHz Low-power indoor access point 6PP: 15E 6 GHz Subordinate indoor device	EIRP 5 dBm/MHz

5.3 Emission Bandwidth

The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 MHz.

5.4 In-Band Emission Mask

Test Item	Frequencies (MHz)	(X) dBc*1
Emission Mask	At 1 MHz outside of channel edge	20
	At one channel bandwidth from the channel center*2	28
	At one- and one-half times the channel bandwidth away from channel center*3	40
	More than one- and one-half times the channel bandwidth	40

*1 : The power spectral density must be suppressed by "x" dB

*2 : At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression,

*3 : At frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression.

5.5 Occupied Bandwidth

The results are for reference only.

5.6 Contention-based Protocol

Unlicensed indoor low-power devices must detect co-channel radio frequency power that is at least -62 dBm (The threshold is referenced to a 0 dBi antenna gain.) or lower. Additionally, indoor low-power devices must detect co-channel energy with 90% or greater certainty.

5.7 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.8 Unwanted Emissions below 1 GHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.9 Unwanted Emissions above 1 GHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Frequencies (MHz)	EIRP Limit	Equivalent Field Strength at 3 m
5925 MHz > F > 7125 MHz	Peak: -7 (dBm/MHz)	88.2 (dBuV/m)
	Average: -27 (dBm/MHz)	68.2 (dBuV/m)

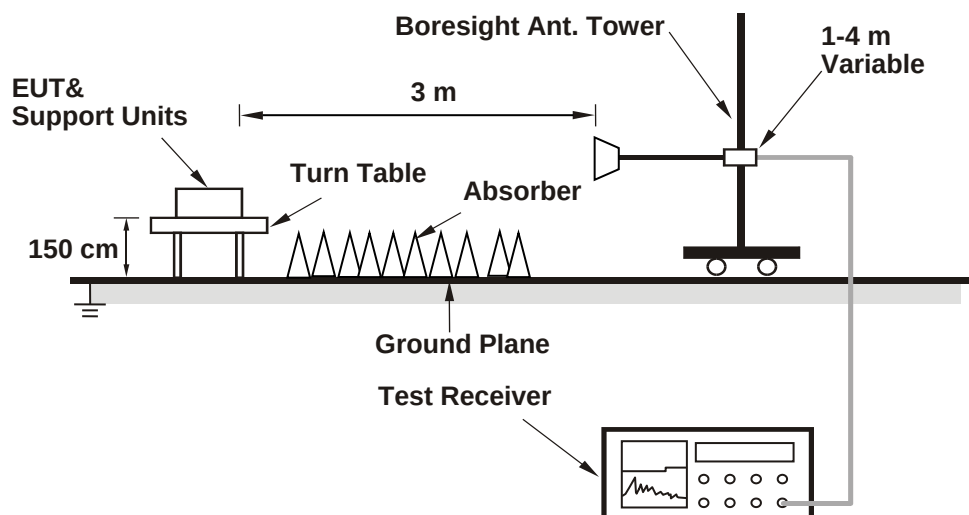
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \quad \mu\text{V/m, where P is the eirp (Watts).}$$

6 Test Arrangements

6.1 Maximum RF Output Power

6.1.1 Test Setup



6.1.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.
- Follow ANSI C63.10 section 12.7.3, $EIRP \text{ Value (dBm)} = \text{Field Strength Value (dBuV / m)} + \text{Correction Factor @ 3 m}$.
- $\text{Correction Factor (dB) @ 3 m} = 20\log(D) - 104.77 = -95.23 \text{ dB}$; where D is the measurement distance @3 m.

Spectrum analyzer setting as below:

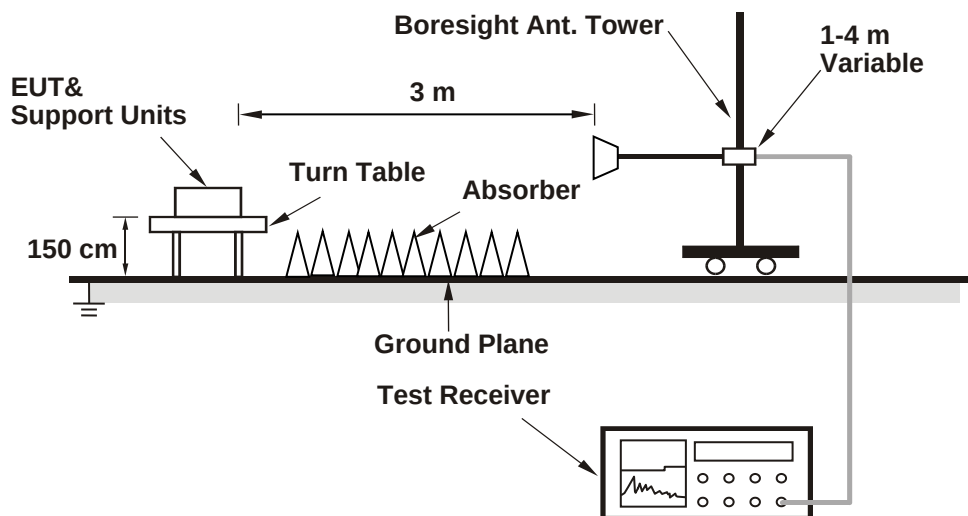
Method SA-1

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW $\geq$ 3 MHz, Detector = RMS
- Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Record the max value

Note: When measuring power, use compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

6.2 Maximum Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

- g. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- h. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- i. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- j. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.
- k. Follow ANSI C63.10 section 12.7.3, $EIRP \text{ Value (dBm)} = \text{Field Strength Value (dBuV/m)} + \text{Correction Factor @ 3 m}$.
- l. $\text{Correction Factor (dB) @ 3 m} = 20\log(D) - 104.77$; where D is the measurement distance @3 m = -95.23 dB

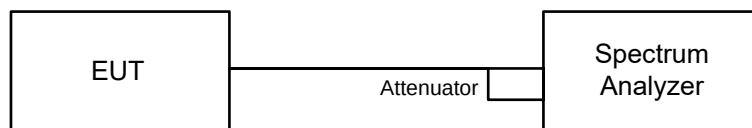
Spectrum analyzer setting as below:

Method SA-1

- m. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- n. Set RBW = 1 MHz, Set VBW $\geq$ 3 MHz, Detector = RMS
- o. Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- p. Sweep time = auto, trigger set to "free run".
- q. Trace average at least 100 traces in power averaging mode.
- r. Record the max value

6.3 Emission Bandwidth

6.3.1 Test Setup

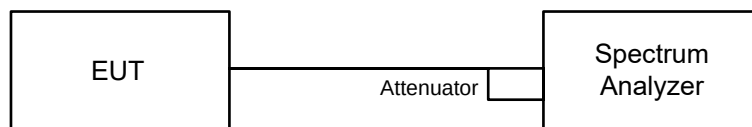


6.3.2 Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6.4 In-Band Emission Mask

6.4.1 Test Setup

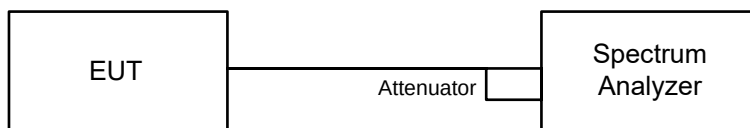


6.4.2 Test Procedure

- Connect output of the antenna port to a spectrum analyzer and adjust appropriate attenuation.
- Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (Determine the channel edge.)
- Measure the power spectral density (for emissions mask reference) using the following procedure:
 - Set the span to encompass the entire 26 dB EBW of the signal.
 - Set RBW = same RBW used for 26 dB EBW measurement.
 - Set VBW $\geq [3 \times \text{RBW}]$.
 - Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$.
 - Sweep time = auto.
 - Detector = RMS (i.e., power averaging).
 - Trace average at least 100 traces in power averaging (rms) mode.
 - Use the peak search function on the instrument to find the peak of the spectrum.
- Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
 - Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
 - Suppressed by 28 dB at one channel bandwidth from the channel center.
 - Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
- Adjust the span to encompass the entire mask as necessary and clear trace.
- Trace average at least 100 traces in power averaging (rms) mode.
- Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask

6.5 Occupied Bandwidth

6.5.1 Test Setup

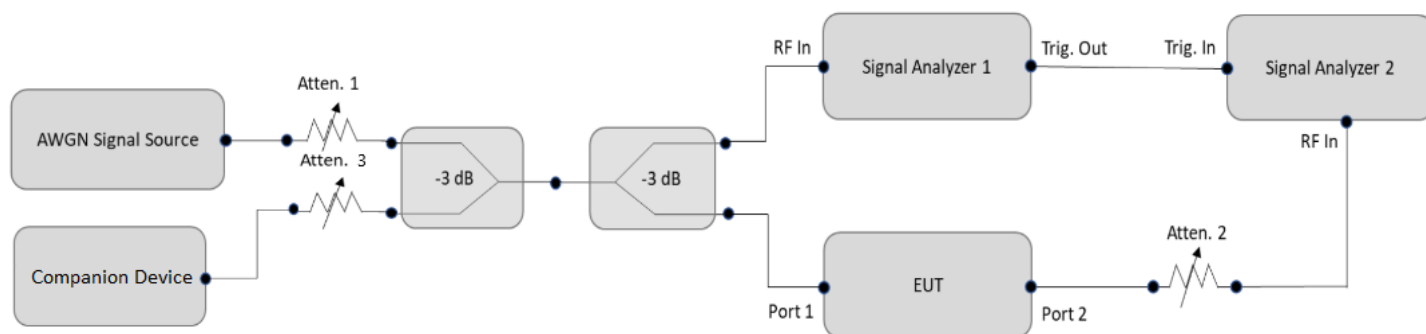


6.5.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

6.6 Contention-based Protocol

6.6.1 Test Setup



6.6.2 Test Procedure

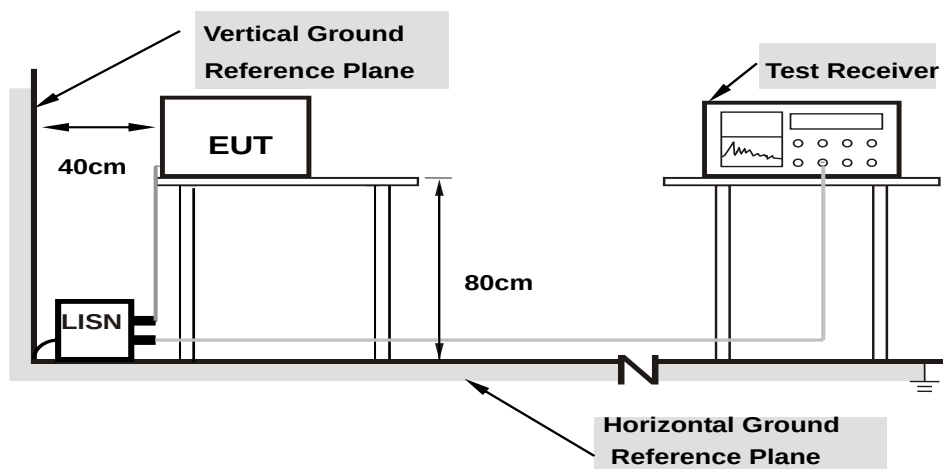
- Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
- Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters (set as following section 4.7.5 EUT operating condition).
- Determine number of times detection threshold test as following table,

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Same as EUT transmission
$BW_{Inc} < BW_{EUT} \leq 2x BW_{Inc}$	Once	Contained within BW_{EUT}
$2x BW_{Inc} < BW_{EUT} \leq 4x BW_{Inc}$	Twice. (Incumbent transmission is contained within BW_{EUT})	Closely to the lower edge and upper edge of the EUT Channel
$BW_{EUT} > 4x BW_{Inc}$	Three times	Closely to the lower edge ,in the middle and upper edge of the EUT Channel

- Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use step c table to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
- Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT.
- Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
- Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
- (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
- Refer to step c table to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step d, choose a different center frequency for the AWGN signal and repeat the process.

6.7 AC Power Conducted Emissions

6.7.1 Test Setup



Note: 1. Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.7.2 Test Procedure

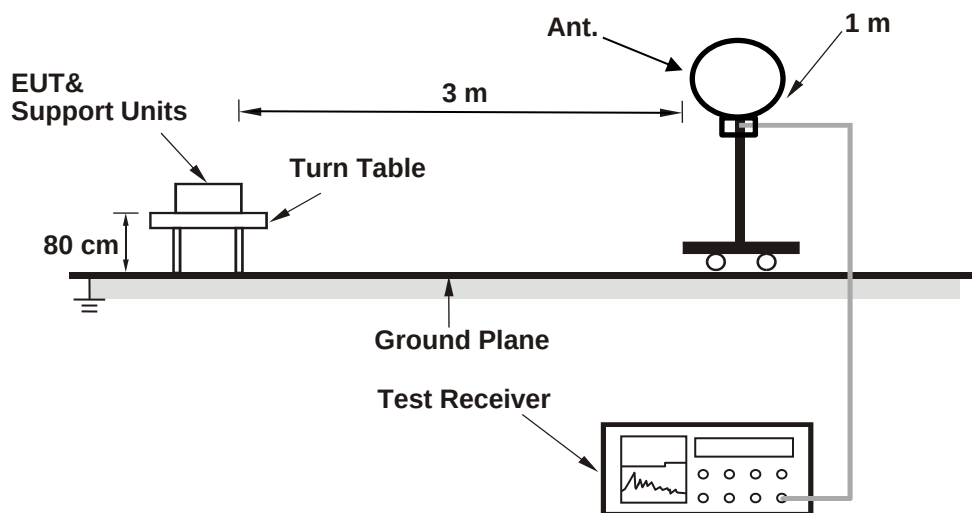
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

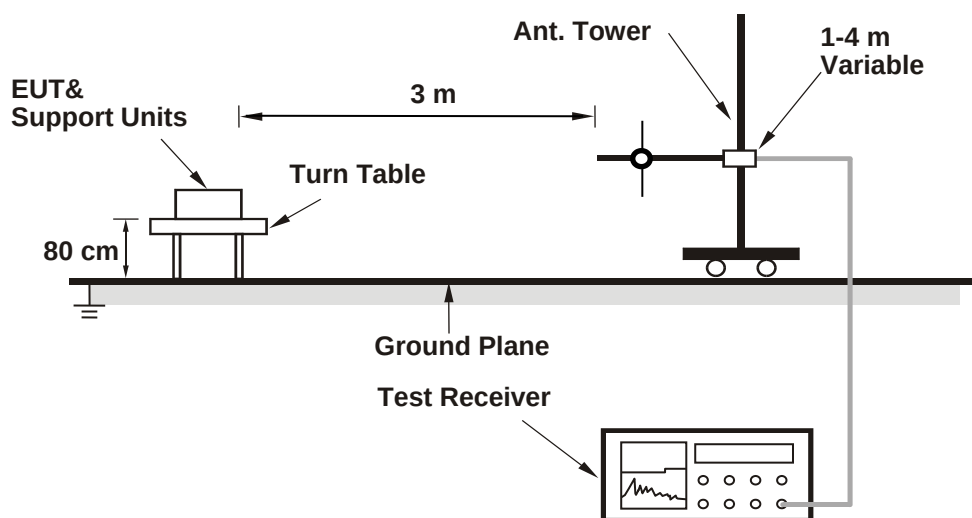
6.8 Unwanted Emissions below 1 GHz

6.8.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.8.2 Test Procedure

For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

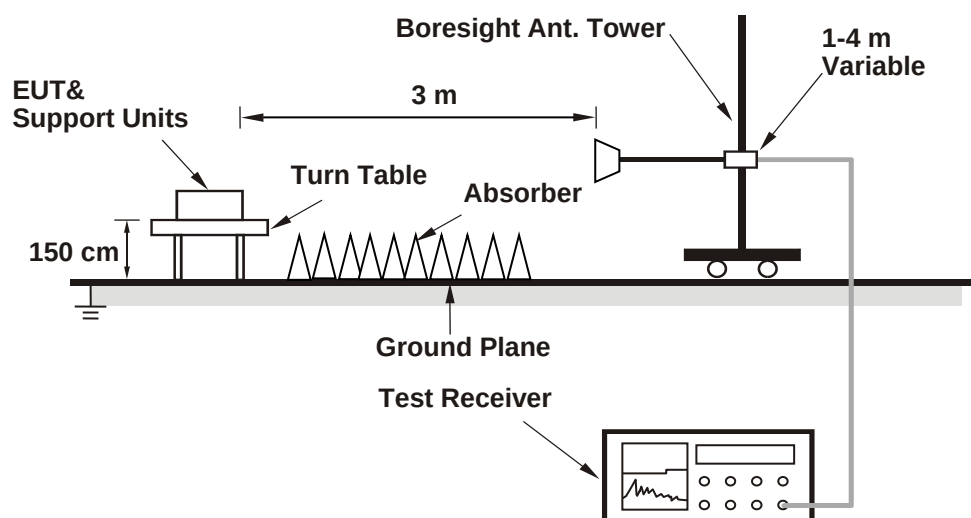
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

6.9 Unwanted Emissions above 1 GHz

6.9.1 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.9.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 Maximum RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim-Chen
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802.11a

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
1	5955	107.24	-95.23	15.885	12.01	30	Pass
45	6175	107.14	-95.23	15.524	11.91	30	Pass
93	6415	107.33	-95.23	16.218	12.10	30	Pass
97	6435	107.74	-95.23	17.824	12.51	30	Pass
105	6475	107.42	-95.23	16.558	12.19	30	Pass
113	6515	108.12	-95.23	19.454	12.89	30	Pass
117	6535	107.61	-95.23	17.298	12.38	30	Pass
149	6695	107.86	-95.23	18.323	12.63	30	Pass
181	6855	108.05	-95.23	19.143	12.82	30	Pass
185	6875	107.81	-95.23	18.113	12.58	30	Pass
209	6995	107.27	-95.23	15.996	12.04	30	Pass
233	7115	107.23	-95.23	15.849	12.00	30	Pass

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
1	5955	107.64	-95.23	17.418	12.41	30	Pass
45	6175	107.25	-95.23	15.922	12.02	30	Pass
93	6415	107.33	-95.23	16.218	12.10	30	Pass
97	6435	108.48	-95.23	21.135	13.25	30	Pass
105	6475	108.14	-95.23	19.543	12.91	30	Pass
113	6515	107.97	-95.23	18.793	12.74	30	Pass
117	6535	107.55	-95.23	17.061	12.32	30	Pass
149	6695	107.61	-95.23	17.298	12.38	30	Pass
181	6855	107.29	-95.23	16.069	12.06	30	Pass
185	6875	108.24	-95.23	19.999	13.01	30	Pass
209	6995	108.05	-95.23	19.143	12.82	30	Pass
233	7115	107.88	-95.23	18.408	12.65	30	Pass

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
3	5965	110.27	-95.23	31.915	15.04	30	Pass
43	6165	110.52	-95.23	33.806	15.29	30	Pass
91	6405	110.26	-95.23	31.842	15.03	30	Pass
99	6445	110.31	-95.23	32.211	15.08	30	Pass
107	6485	110.35	-95.23	32.509	15.12	30	Pass
115	6525	110.69	-95.23	35.156	15.46	30	Pass
123	6565	111.15	-95.23	39.084	15.92	30	Pass
155	6725	110.53	-95.23	33.884	15.30	30	Pass
179	6845	110.77	-95.23	35.81	15.54	30	Pass
187	6885	110.68	-95.23	35.075	15.45	30	Pass
211	7005	110.74	-95.23	35.563	15.51	30	Pass
227	7085	111.16	-95.23	39.174	15.93	30	Pass

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
7	5985	113.45	-95.23	66.374	18.22	30	Pass
39	6145	113.72	-95.23	70.632	18.49	30	Pass
87	6385	113.22	-95.23	62.951	17.99	30	Pass
103	6465	113.65	-95.23	69.502	18.42	30	Pass
119	6545	113.20	-95.23	62.661	17.97	30	Pass
151	6705	113.85	-95.23	72.778	18.62	30	Pass
183	6865	113.62	-95.23	69.024	18.39	30	Pass
199	6945	113.87	-95.23	73.114	18.64	30	Pass
215	7025	113.89	-95.23	73.451	18.66	30	Pass

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
15	6025	116.82	-95.23	144.212	21.59	30	Pass
47	6185	117.04	-95.23	151.705	21.81	30	Pass
79	6345	117.20	-95.23	157.398	21.97	30	Pass
111	6505	116.23	-95.23	125.893	21.00	30	Pass
143	6665	116.47	-95.23	133.045	21.24	30	Pass
175	6825	116.42	-95.23	131.522	21.19	30	Pass
207	6985	117.32	-95.23	161.808	22.09	30	Pass

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
1	5955	111.38	-95.23	41.21	16.15	30	Pass
45	6175	111.83	-95.23	45.709	16.60	30	Pass
93	6415	111.53	-95.23	42.658	16.30	30	Pass
97	6435	111.79	-95.23	45.29	16.56	30	Pass
105	6475	111.43	-95.23	41.687	16.20	30	Pass
113	6515	111.97	-95.23	47.206	16.74	30	Pass
117	6535	111.78	-95.23	45.186	16.55	30	Pass
149	6695	111.69	-95.23	44.259	16.46	30	Pass
181	6855	111.14	-95.23	38.994	15.91	30	Pass
185	6875	111.92	-95.23	46.666	16.69	30	Pass
209	6995	111.81	-95.23	45.499	16.58	30	Pass
233	7115	111.10	-95.23	38.637	15.87	30	Pass

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
3	5965	113.52	-95.23	67.453	18.29	30	Pass
43	6165	113.41	-95.23	65.766	18.18	30	Pass
91	6405	113.31	-95.23	64.269	18.08	30	Pass
99	6445	113.28	-95.23	63.826	18.05	30	Pass
107	6485	113.38	-95.23	65.313	18.15	30	Pass
115	6525	113.11	-95.23	61.376	17.88	30	Pass
123	6565	113.16	-95.23	62.087	17.93	30	Pass
155	6725	113.60	-95.23	68.707	18.37	30	Pass
179	6845	113.92	-95.23	73.961	18.69	30	Pass
187	6885	113.73	-95.23	70.795	18.50	30	Pass
211	7005	113.88	-95.23	73.282	18.65	30	Pass
227	7085	113.11	-95.23	61.376	17.88	30	Pass

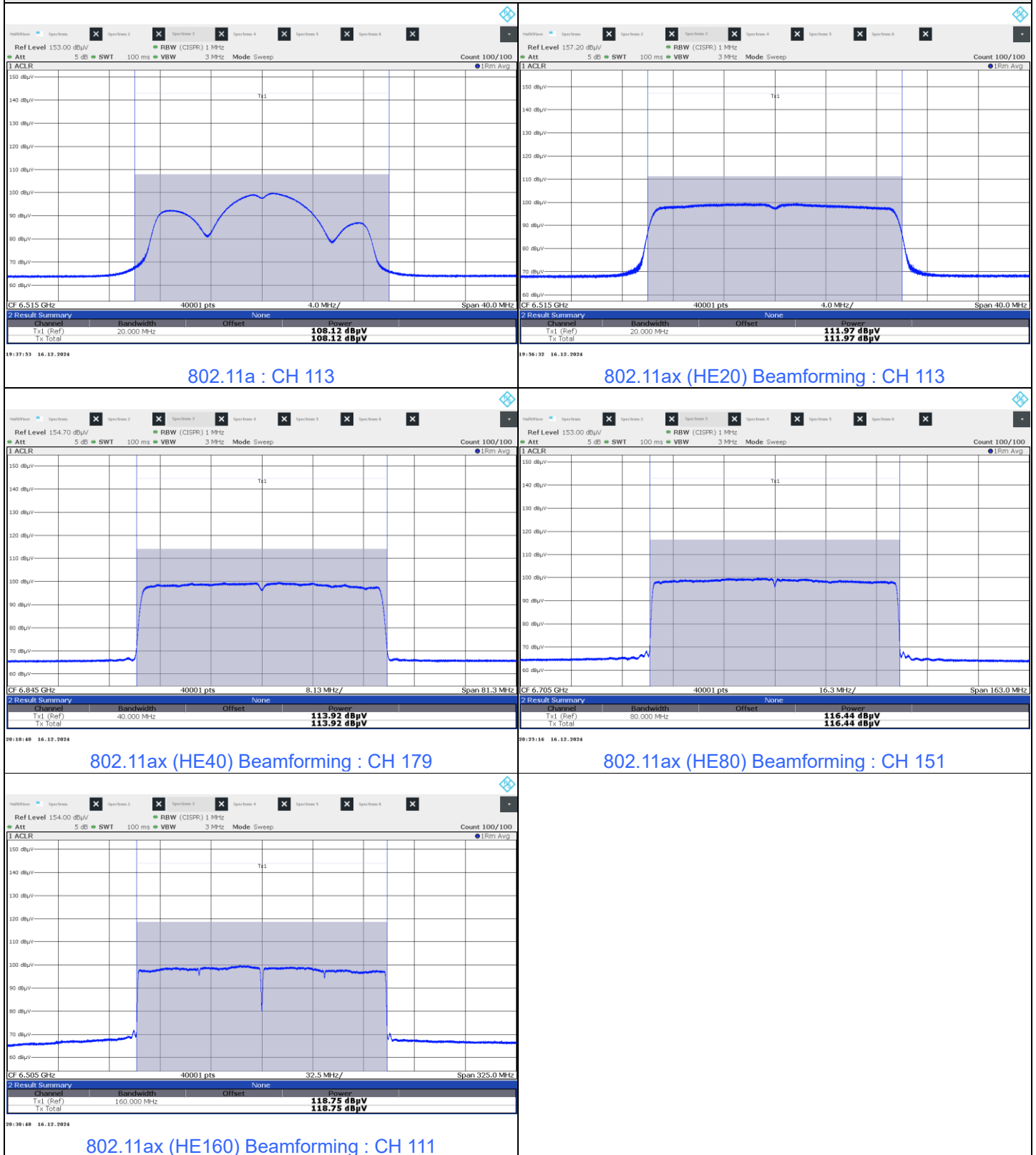
802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
7	5985	115.92	-95.23	117.22	20.69	30	Pass
39	6145	115.53	-95.23	107.152	20.30	30	Pass
87	6385	115.68	-95.23	110.917	20.45	30	Pass
103	6465	115.26	-95.23	100.693	20.03	30	Pass
119	6545	116.37	-95.23	130.017	21.14	30	Pass
151	6705	116.44	-95.23	132.13	21.21	30	Pass
183	6865	116.18	-95.23	124.451	20.95	30	Pass
199	6945	116.26	-95.23	126.765	21.03	30	Pass
215	7025	116.20	-95.23	125.026	20.97	30	Pass

802.11ax (HE160) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
15	6025	117.44	-95.23	166.341	22.21	30	Pass
47	6185	117.52	-95.23	169.434	22.29	30	Pass
79	6345	117.55	-95.23	170.608	22.32	30	Pass
111	6505	118.75	-95.23	224.905	23.52	30	Pass
143	6665	118.53	-95.23	213.796	23.30	30	Pass
175	6825	117.66	-95.23	174.985	22.43	30	Pass
207	6985	118.73	-95.23	223.872	23.50	30	Pass

Spectrum Plot of Maximum Value



Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
1	5955	112.03	-95.23	47.863	16.80	30	Pass
45	6175	111.62	-95.23	43.551	16.39	30	Pass
93	6415	112.04	-95.23	47.973	16.81	30	Pass
97	6435	112.21	-95.23	49.888	16.98	30	Pass
105	6475	112.23	-95.23	50.119	17.00	30	Pass
113	6515	111.95	-95.23	46.989	16.72	30	Pass
117	6535	111.84	-95.23	45.814	16.61	30	Pass
149	6695	111.59	-95.23	43.251	16.36	30	Pass
181	6855	111.93	-95.23	46.774	16.70	30	Pass
185	6875	111.69	-95.23	44.259	16.46	30	Pass
209	6995	111.73	-95.23	44.668	16.50	30	Pass
233	7115	108.89	-95.23	23.227	13.66	30	Pass

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
3	5965	114.83	-95.23	91.201	19.60	30	Pass
43	6165	114.92	-95.23	93.111	19.69	30	Pass
91	6405	114.78	-95.23	90.157	19.55	30	Pass
99	6445	114.58	-95.23	86.099	19.35	30	Pass
107	6485	114.85	-95.23	91.622	19.62	30	Pass
115	6525	114.86	-95.23	91.833	19.63	30	Pass
123	6565	114.67	-95.23	87.902	19.44	30	Pass
155	6725	114.55	-95.23	85.507	19.32	30	Pass
179	6845	114.96	-95.23	93.972	19.73	30	Pass
187	6885	114.86	-95.23	91.833	19.63	30	Pass
211	7005	115.03	-95.23	95.499	19.80	30	Pass
227	7085	114.53	-95.23	85.114	19.30	30	Pass

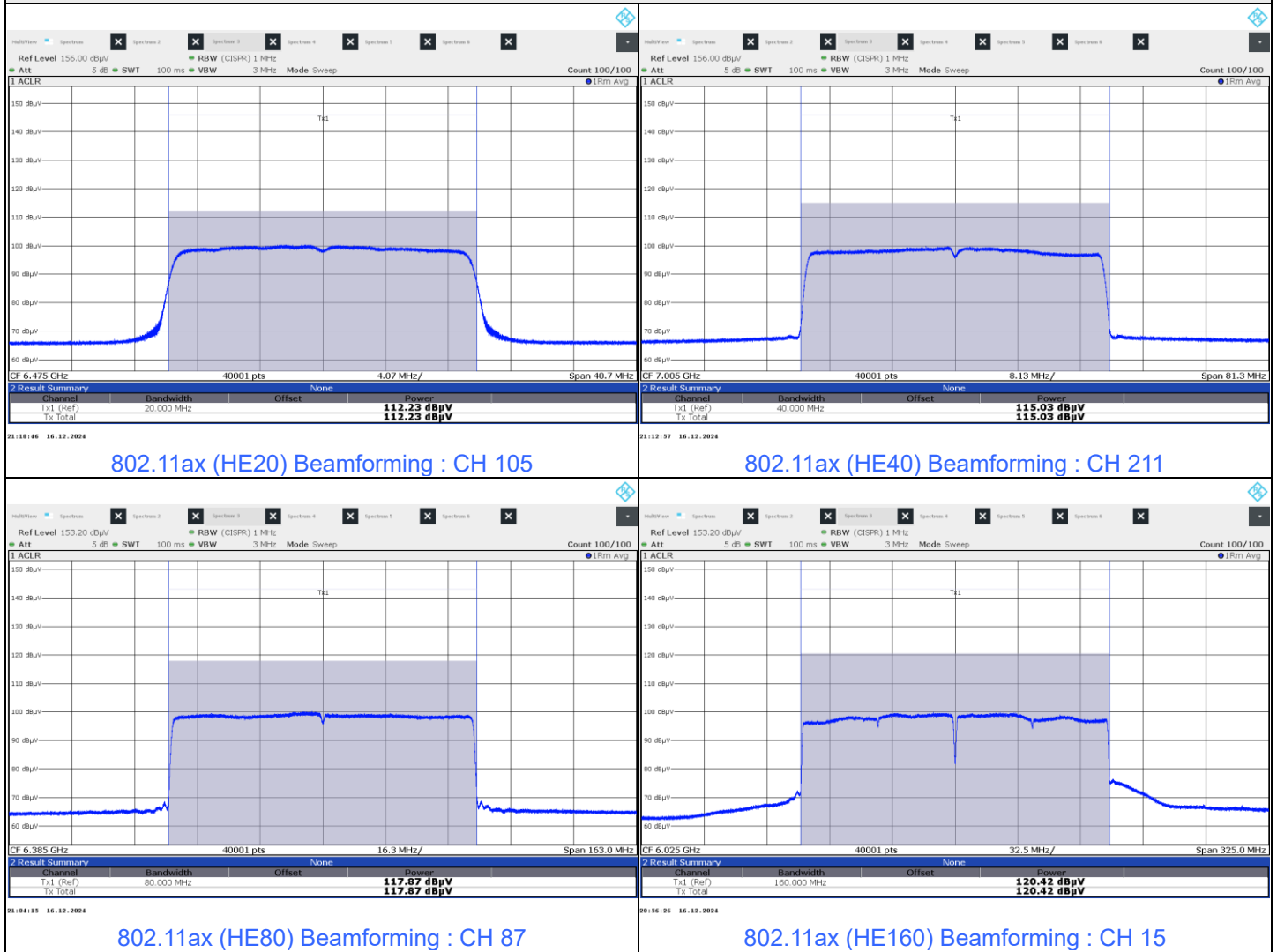
802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
7	5985	117.11	-95.23	154.17	21.88	30	Pass
39	6145	117.66	-95.23	174.985	22.43	30	Pass
87	6385	117.87	-95.23	183.654	22.64	30	Pass
103	6465	117.39	-95.23	164.437	22.16	30	Pass
119	6545	117.53	-95.23	169.824	22.30	30	Pass
151	6705	117.55	-95.23	170.608	22.32	30	Pass
183	6865	117.51	-95.23	169.044	22.28	30	Pass
199	6945	117.39	-95.23	164.437	22.16	30	Pass
215	7025	117.52	-95.23	169.434	22.29	30	Pass

802.11ax (HE160) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
15	6025	120.42	-95.23	330.37	25.19	30	Pass
47	6185	120.08	-95.23	305.492	24.85	30	Pass
79	6345	119.85	-95.23	289.734	24.62	30	Pass
111	6505	120.35	-95.23	325.087	25.12	30	Pass
143	6665	119.40	-95.23	261.216	24.17	30	Pass
175	6825	119.96	-95.23	297.167	24.73	30	Pass
207	6985	120.37	-95.23	326.588	25.14	30	Pass

Spectrum Plot of Maximum Value



7.2 Maximum Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim-Chen
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802.11a

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
1	5955	100.03	-95.23	4.80	5	Pass
45	6175	100.07	-95.23	4.84	5	Pass
93	6415	100.05	-95.23	4.82	5	Pass
97	6435	100.19	-95.23	4.96	5	Pass
105	6475	100.08	-95.23	4.85	5	Pass
113	6515	100.18	-95.23	4.95	5	Pass
117	6535	100.20	-95.23	4.97	5	Pass
149	6695	100.13	-95.23	4.90	5	Pass
181	6855	100.21	-95.23	4.98	5	Pass
185	6875	100.05	-95.23	4.82	5	Pass
209	6995	100.01	-95.23	4.78	5	Pass
233	7115	100.15	-95.23	4.92	5	Pass

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
1	5955	100.03	-95.23	4.80	5	Pass
45	6175	100.19	-95.23	4.96	5	Pass
93	6415	100.00	-95.23	4.77	5	Pass
97	6435	100.18	-95.23	4.95	5	Pass
105	6475	100.09	-95.23	4.86	5	Pass
113	6515	100.12	-95.23	4.89	5	Pass
117	6535	100.09	-95.23	4.86	5	Pass
149	6695	100.19	-95.23	4.96	5	Pass
181	6855	100.00	-95.23	4.77	5	Pass
185	6875	100.18	-95.23	4.95	5	Pass
209	6995	100.00	-95.23	4.77	5	Pass
233	7115	100.01	-95.23	4.78	5	Pass

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
3	5965	100.01	-95.23	4.78	5	Pass
43	6165	99.97	-95.23	4.74	5	Pass
91	6405	100.20	-95.23	4.97	5	Pass
99	6445	100.10	-95.23	4.87	5	Pass
107	6485	99.98	-95.23	4.75	5	Pass
115	6525	100.04	-95.23	4.81	5	Pass
123	6565	100.14	-95.23	4.91	5	Pass
155	6725	100.11	-95.23	4.88	5	Pass
179	6845	100.03	-95.23	4.80	5	Pass
187	6885	100.04	-95.23	4.81	5	Pass
211	7005	100.15	-95.23	4.92	5	Pass
227	7085	100.09	-95.23	4.86	5	Pass

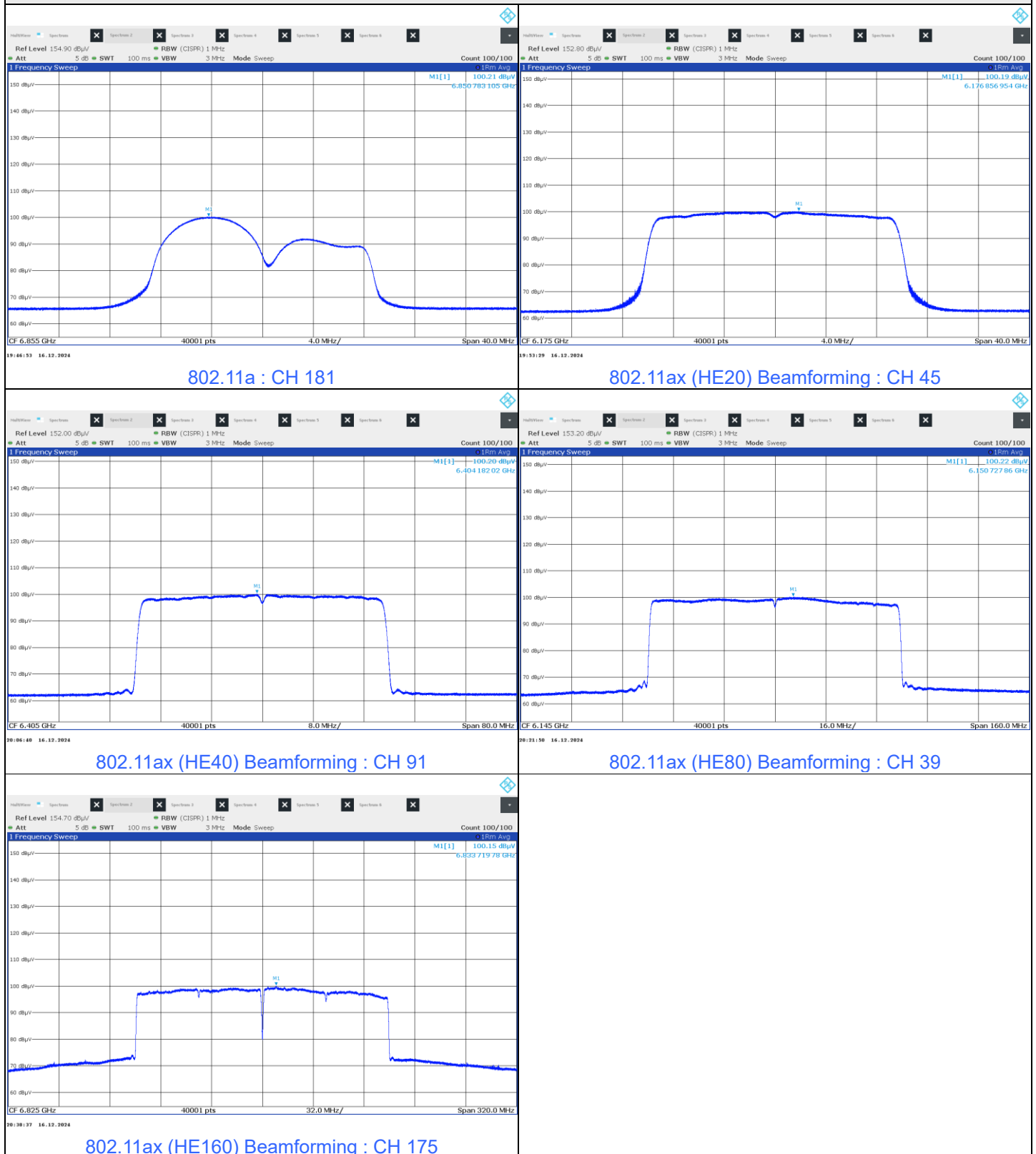
802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
7	5985	100.03	-95.23	4.80	5	Pass
39	6145	100.22	-95.23	4.99	5	Pass
87	6385	99.99	-95.23	4.76	5	Pass
103	6465	100.11	-95.23	4.88	5	Pass
119	6545	99.91	-95.23	4.68	5	Pass
151	6705	100.03	-95.23	4.80	5	Pass
183	6865	100.08	-95.23	4.85	5	Pass
199	6945	100.20	-95.23	4.97	5	Pass
215	7025	100.05	-95.23	4.82	5	Pass

802.11ax (HE160) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
15	6025	100.00	-95.23	4.77	5	Pass
47	6185	99.90	-95.23	4.67	5	Pass
79	6345	100.13	-95.23	4.90	5	Pass
111	6505	100.13	-95.23	4.90	5	Pass
143	6665	100.06	-95.23	4.83	5	Pass
175	6825	100.15	-95.23	4.92	5	Pass
207	6985	100.00	-95.23	4.77	5	Pass

Spectrum Plot of Maximum Value



Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
1	5955	100.21	-95.23	4.98	5	Pass
45	6175	100.07	-95.23	4.84	5	Pass
93	6415	100.20	-95.23	4.97	5	Pass
97	6435	100.19	-95.23	4.96	5	Pass
105	6475	100.21	-95.23	4.98	5	Pass
113	6515	100.21	-95.23	4.98	5	Pass
117	6535	100.20	-95.23	4.97	5	Pass
149	6695	100.06	-95.23	4.83	5	Pass
181	6855	100.21	-95.23	4.98	5	Pass
185	6875	100.04	-95.23	4.81	5	Pass
209	6995	100.20	-95.23	4.97	5	Pass
233	7115	97.44	-95.23	2.21	5	Pass

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
3	5965	100.19	-95.23	4.96	5	Pass
43	6165	100.08	-95.23	4.85	5	Pass
91	6405	100.18	-95.23	4.95	5	Pass
99	6445	100.06	-95.23	4.83	5	Pass
107	6485	100.05	-95.23	4.82	5	Pass
115	6525	100.13	-95.23	4.90	5	Pass
123	6565	100.04	-95.23	4.81	5	Pass
155	6725	100.04	-95.23	4.81	5	Pass
179	6845	100.19	-95.23	4.96	5	Pass
187	6885	100.21	-95.23	4.98	5	Pass
211	7005	100.20	-95.23	4.97	5	Pass
227	7085	100.21	-95.23	4.98	5	Pass

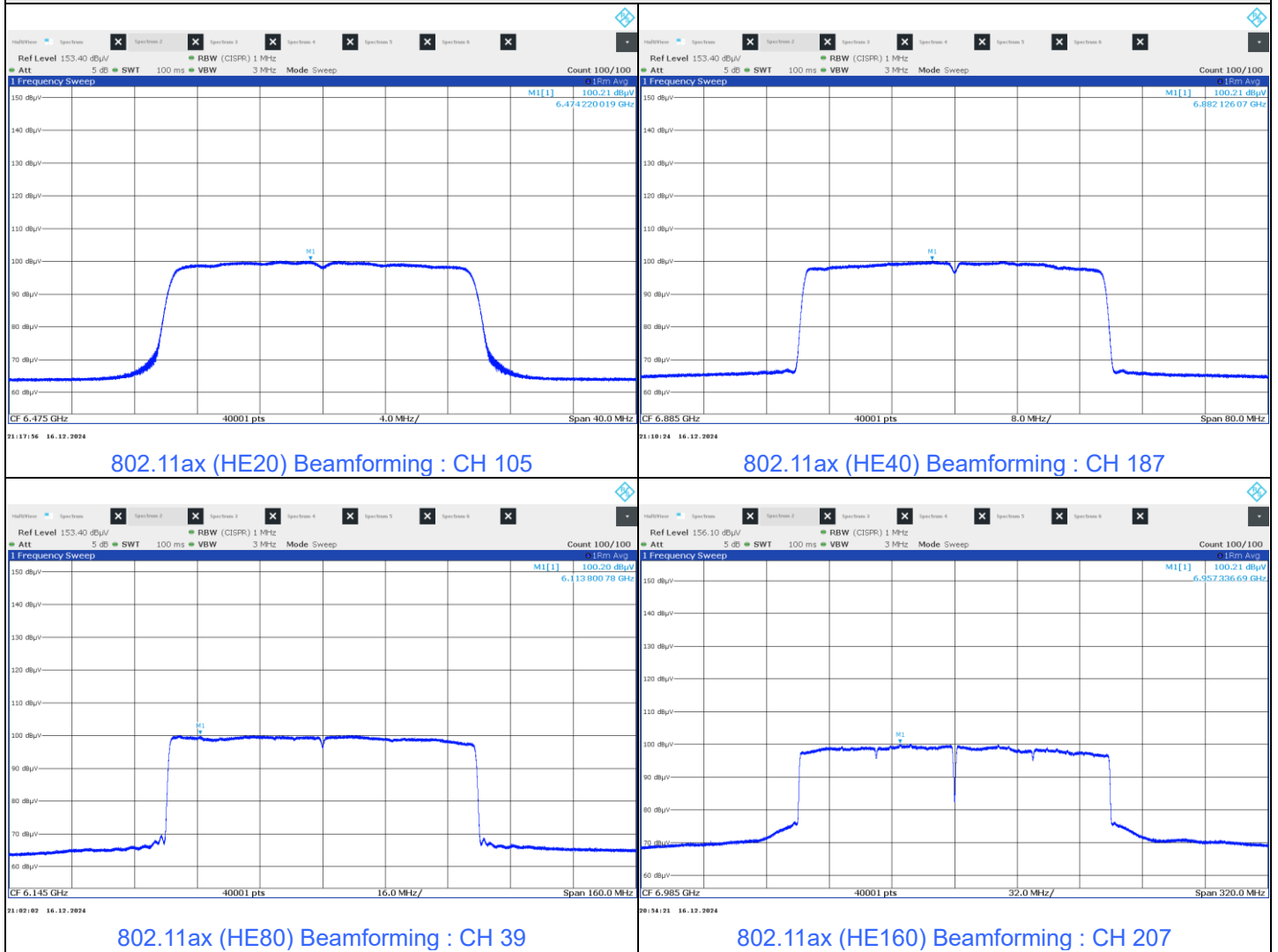
802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
7	5985	100.20	-95.23	4.97	5	Pass
39	6145	100.20	-95.23	4.97	5	Pass
87	6385	100.18	-95.23	4.95	5	Pass
103	6465	100.15	-95.23	4.92	5	Pass
119	6545	100.20	-95.23	4.97	5	Pass
151	6705	100.10	-95.23	4.87	5	Pass
183	6865	100.20	-95.23	4.97	5	Pass
199	6945	100.06	-95.23	4.83	5	Pass
215	7025	100.14	-95.23	4.91	5	Pass

802.11ax (HE160) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
15	6025	100.03	-95.23	4.80	5	Pass
47	6185	100.21	-95.23	4.98	5	Pass
79	6345	100.13	-95.23	4.90	5	Pass
111	6505	100.10	-95.23	4.87	5	Pass
143	6665	100.21	-95.23	4.98	5	Pass
175	6825	100.08	-95.23	4.85	5	Pass
207	6985	100.21	-95.23	4.98	5	Pass

Spectrum Plot of Maximum Value



7.3 Emission Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim-Chen
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4T1S

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
1	5955	23.71	23.34	21.62	22.11	320	Pass
45	6175	20.43	20.39	20.44	20.46	320	Pass
93	6415	20.38	20.32	20.41	20.42	320	Pass
97	6435	20.38	20.50	20.49	20.48	320	Pass
105	6475	20.55	20.50	20.21	20.41	320	Pass
113	6515	20.48	20.65	20.54	20.74	320	Pass
117	6535	20.54	20.60	20.56	20.33	320	Pass
149	6695	20.76	20.41	20.31	20.30	320	Pass
181	6855	20.32	20.43	20.61	20.33	320	Pass
185	6875	20.43	20.41	20.30	20.46	320	Pass
209	6995	20.58	20.44	20.54	20.41	320	Pass
233	7115	20.66	20.42	20.65	20.42	320	Pass

802.11ax (HE20) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
1	5955	21.72	22.07	23.31	22.38	320	Pass
45	6175	21.73	21.72	21.63	21.98	320	Pass
93	6415	21.68	21.63	21.58	21.72	320	Pass
97	6435	22.07	21.88	21.84	22.13	320	Pass
105	6475	21.69	21.80	21.35	21.91	320	Pass
113	6515	21.66	21.55	22.01	21.89	320	Pass
117	6535	22.25	21.64	21.82	21.83	320	Pass
149	6695	22.07	21.64	21.60	21.83	320	Pass
181	6855	21.67	22.02	21.57	22.24	320	Pass
185	6875	21.75	21.72	21.77	21.95	320	Pass
209	6995	21.60	21.73	21.62	21.69	320	Pass
233	7115	21.72	21.46	21.64	22.38	320	Pass

802.11ax (HE40) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
3	5965	43.71	43.63	39.51	43.27	320	Pass
43	6165	39.90	39.96	39.95	39.89	320	Pass
91	6405	40.16	39.98	39.97	39.96	320	Pass
99	6445	39.95	39.98	39.87	39.85	320	Pass
107	6485	39.97	39.81	39.93	39.92	320	Pass
115	6525	39.91	39.98	39.92	39.91	320	Pass
123	6565	39.91	39.98	39.85	39.93	320	Pass
155	6725	39.99	39.87	39.96	39.99	320	Pass
179	6845	39.85	40.17	39.86	39.92	320	Pass
187	6885	39.96	39.99	39.95	40.00	320	Pass
211	7005	40.00	39.96	39.92	39.93	320	Pass
227	7085	44.94	45.52	42.20	45.20	320	Pass

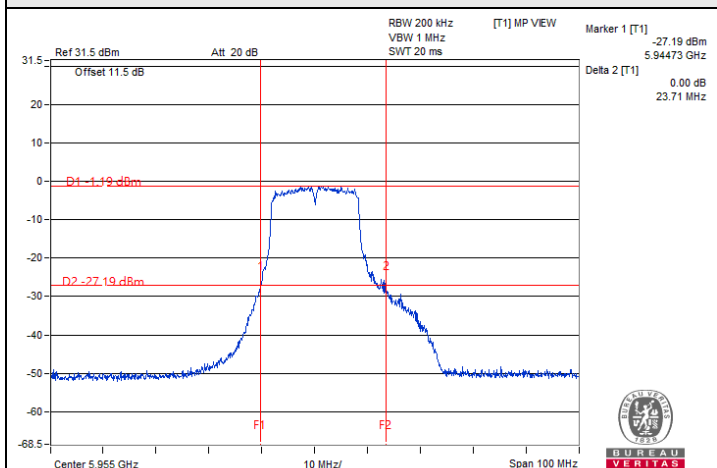
802.11ax (HE80) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
7	5985	86.02	87.31	88.90	87.72	320	Pass
39	6145	81.61	81.38	81.48	81.56	320	Pass
87	6385	81.36	81.39	81.49	81.44	320	Pass
103	6465	81.44	81.47	81.28	81.64	320	Pass
119	6545	81.39	81.52	81.41	81.45	320	Pass
151	6705	81.37	81.61	81.61	81.47	320	Pass
183	6865	81.56	81.38	81.52	81.57	320	Pass
199	6945	81.36	81.44	81.44	81.44	320	Pass
215	7025	95.33	83.22	88.97	90.71	320	Pass

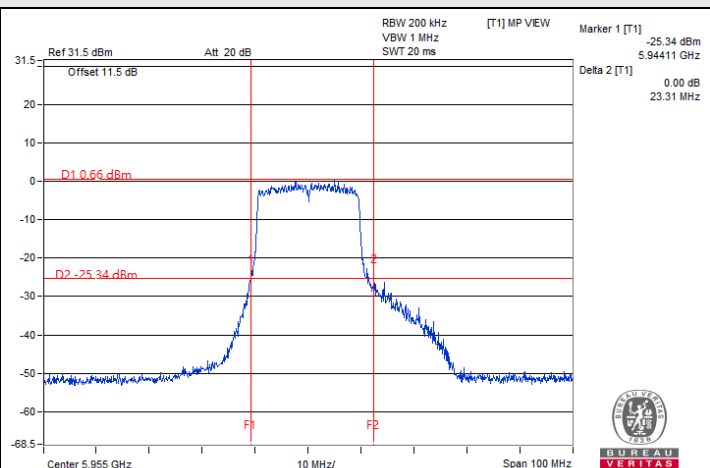
802.11ax (HE160) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
15	6025	167.60	168.32	169.76	162.93	320	Pass
47	6185	164.53	164.54	164.74	164.69	320	Pass
79	6345	164.42	164.41	164.40	164.47	320	Pass
111	6505	164.41	164.45	164.16	164.40	320	Pass
143	6665	164.04	164.26	164.40	164.30	320	Pass
175	6825	164.41	164.31	164.62	164.48	320	Pass
207	6985	166.21	165.50	165.80	165.15	320	Pass

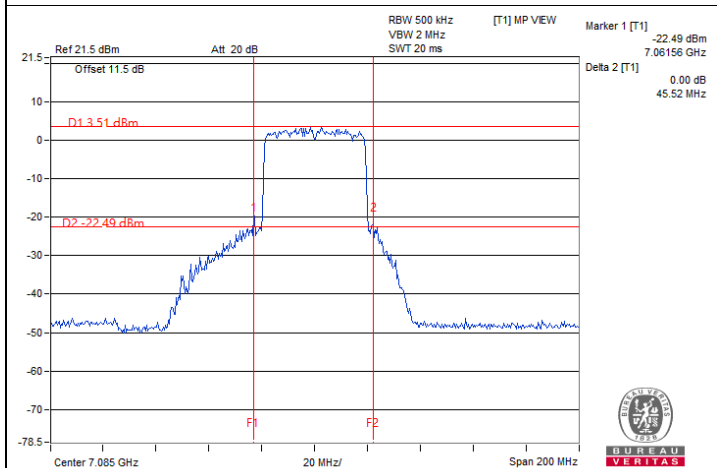
Spectrum Plot of Maximum Value



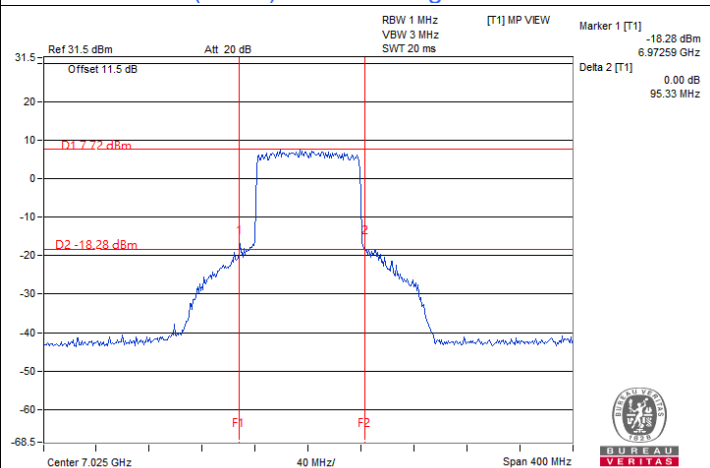
802.11a / Chain 0 : CH 1



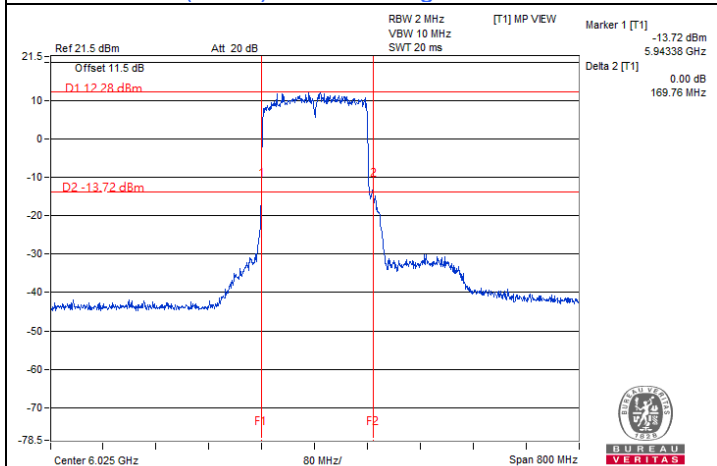
802.11ax (HE20) Beamforming / Chain 2 : CH 1



802.11ax (HE40) Beamforming / Chain 1 : CH 227



802.11ax (HE80) Beamforming / Chain 0 : CH 215



802.11ax (HE160) Beamforming / Chain 2 : CH 15

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11ax (HE20) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
1	5955	24.28	23.22	22.68	22.74	320	Pass
45	6175	22.35	22.26	22.14	22.07	320	Pass
93	6415	22.10	21.89	22.05	22.02	320	Pass
97	6435	22.03	22.55	22.04	22.14	320	Pass
105	6475	21.81	22.19	22.35	22.27	320	Pass
113	6515	21.83	21.92	22.04	22.21	320	Pass
117	6535	22.27	21.92	21.59	22.19	320	Pass
149	6695	22.51	22.37	22.04	22.26	320	Pass
181	6855	22.68	22.29	21.90	22.12	320	Pass
185	6875	21.97	21.76	21.89	22.00	320	Pass
209	6995	21.94	21.94	22.38	22.10	320	Pass
233	7115	21.80	22.16	22.09	22.18	320	Pass

802.11ax (HE40) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
3	5965	42.66	42.26	41.38	47.22	320	Pass
43	6165	40.22	40.25	40.15	40.17	320	Pass
91	6405	40.19	40.23	40.26	40.19	320	Pass
99	6445	40.22	40.22	40.21	40.22	320	Pass
107	6485	40.20	40.15	40.20	40.15	320	Pass
115	6525	40.23	40.18	40.23	40.27	320	Pass
123	6565	40.18	40.17	40.23	40.18	320	Pass
155	6725	40.19	40.18	40.15	40.18	320	Pass
179	6845	40.19	40.21	40.18	40.21	320	Pass
187	6885	40.16	40.26	40.20	40.08	320	Pass
211	7005	40.11	40.23	40.07	40.22	320	Pass
227	7085	44.29	45.29	45.00	41.92	320	Pass

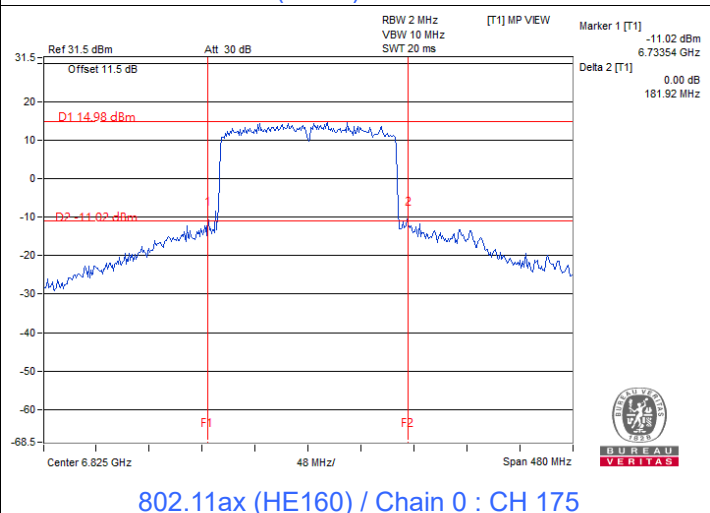
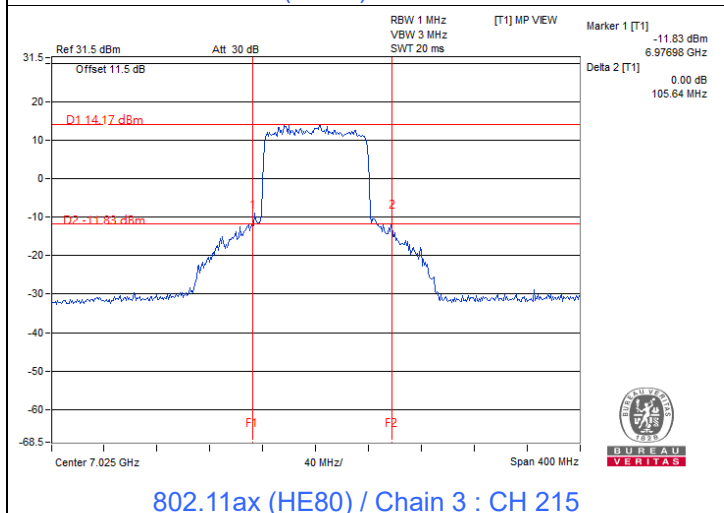
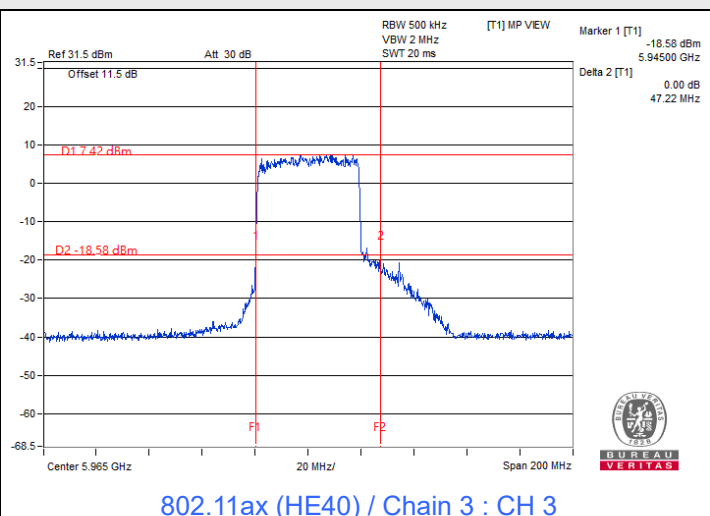
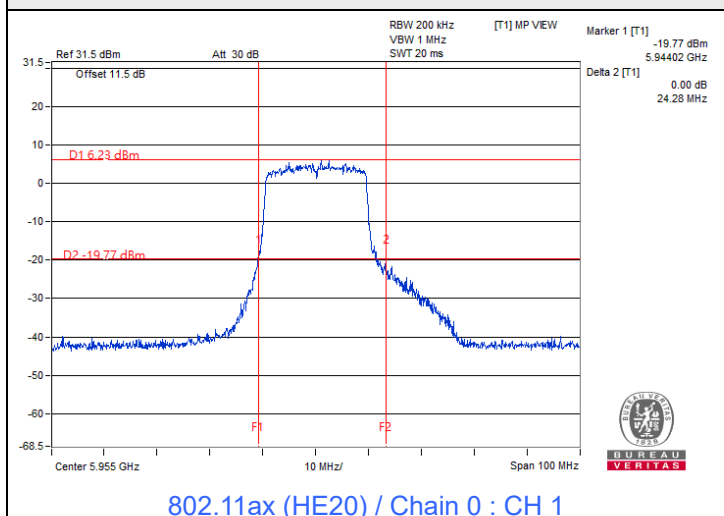
802.11ax (HE80) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
7	5985	80.92	92.93	81.32	81.53	320	Pass
39	6145	81.35	81.30	81.42	81.56	320	Pass
87	6385	81.47	81.31	81.60	81.53	320	Pass
103	6465	81.37	81.47	81.32	81.62	320	Pass
119	6545	81.32	81.37	81.28	81.52	320	Pass
151	6705	81.57	81.31	81.51	81.48	320	Pass
183	6865	81.35	81.40	81.56	81.77	320	Pass
199	6945	81.39	81.22	81.30	81.40	320	Pass
215	7025	87.80	89.69	97.50	105.64	320	Pass

802.11ax (HE160) Beamforming

Channel	Frequency (MHz)	26dB Bandwidth (MHz)				Maximum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
15	6025	171.73	172.70	170.03	172.79	320	Pass
47	6185	164.04	163.96	164.16	163.81	320	Pass
79	6345	164.28	163.54	163.91	164.19	320	Pass
111	6505	163.77	163.64	163.81	163.49	320	Pass
143	6665	164.14	163.71	164.05	167.82	320	Pass
175	6825	181.92	178.19	164.33	172.34	320	Pass
207	6985	165.00	164.74	168.69	164.90	320	Pass

Spectrum Plot of Maximum Value

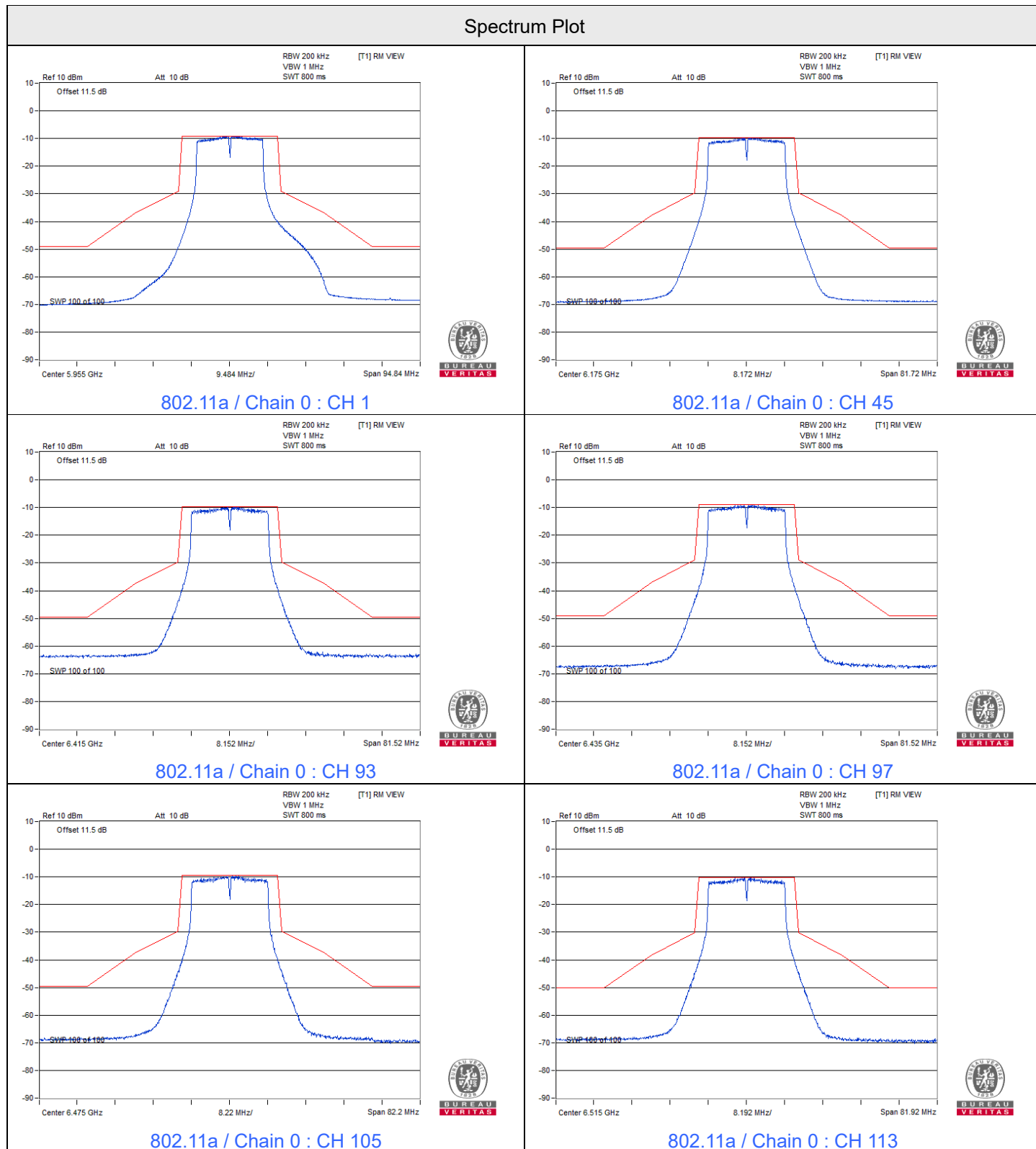


7.4 In-Band Emission Mask

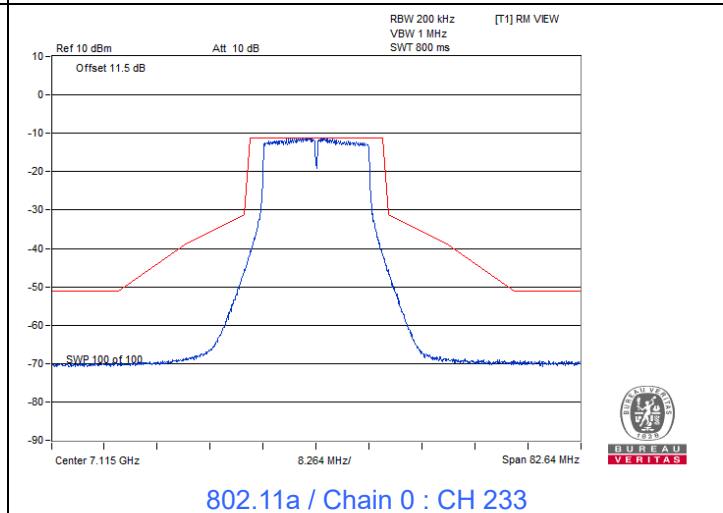
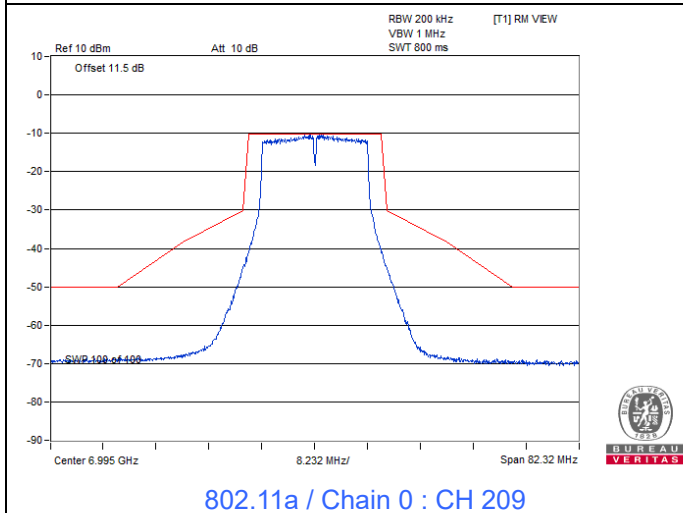
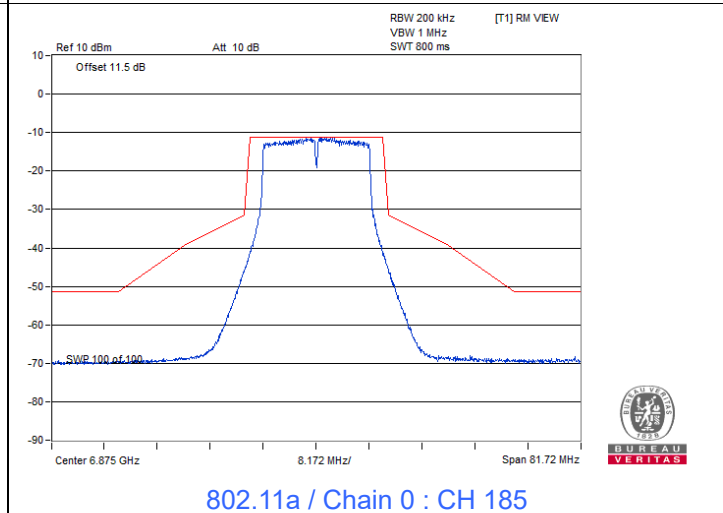
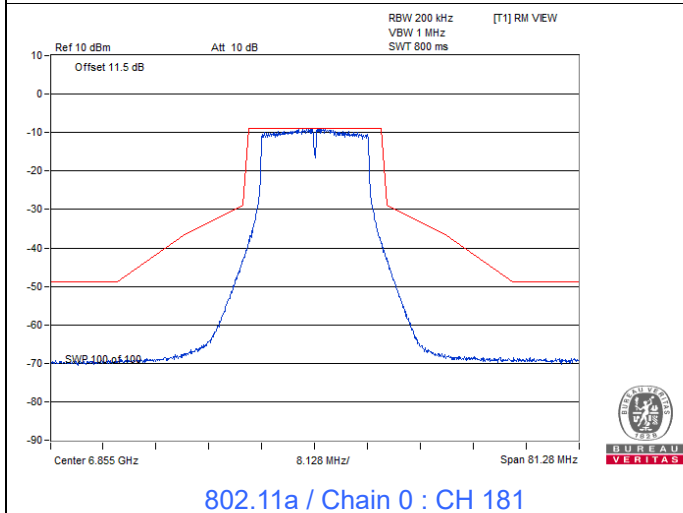
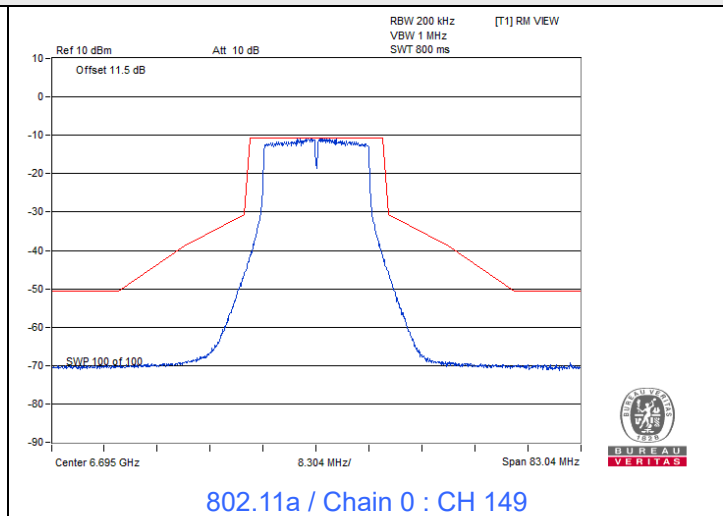
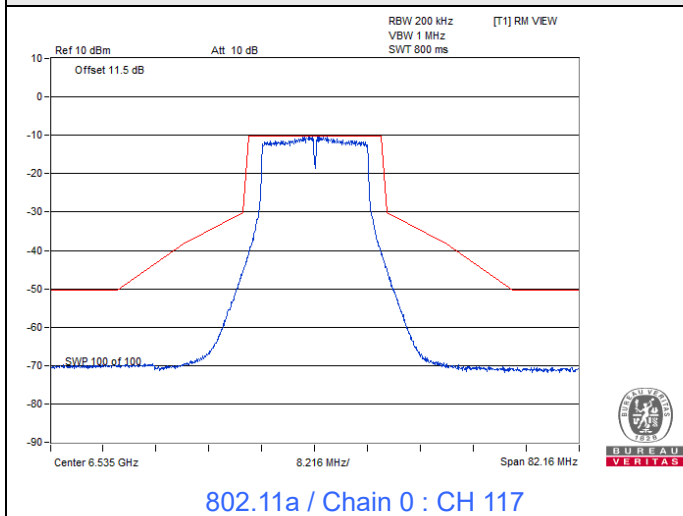
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim-Chen
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4T1S

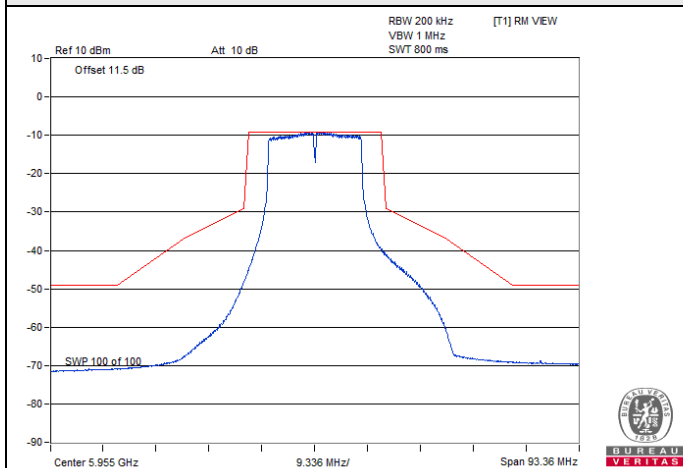
802.11a



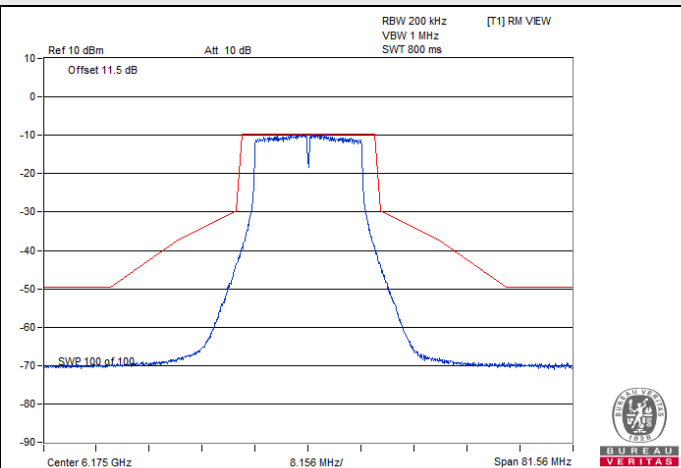
Spectrum Plot



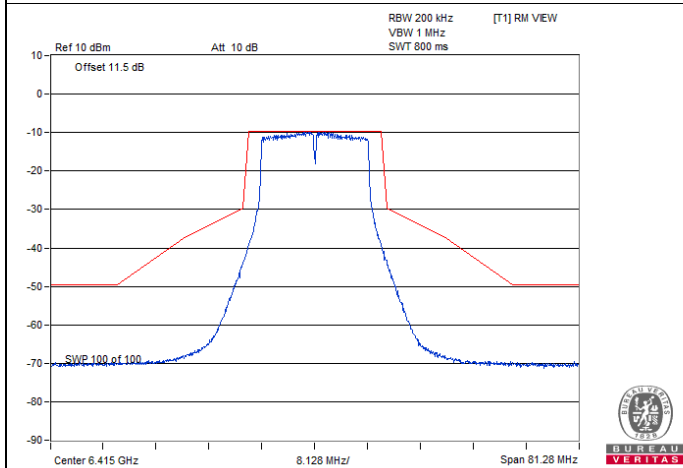
Spectrum Plot



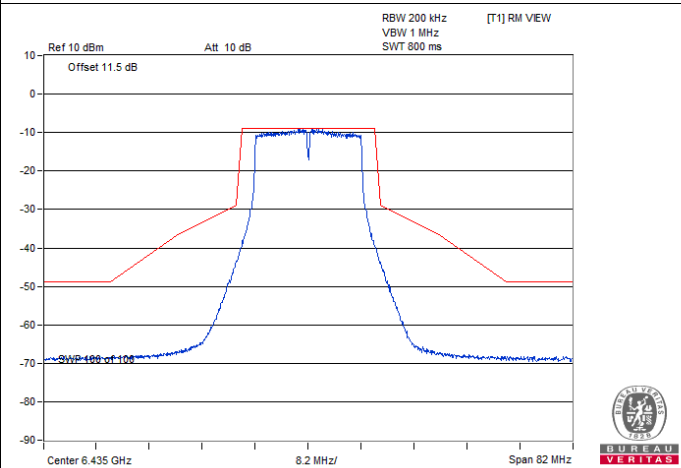
802.11a / Chain 1 : CH 1



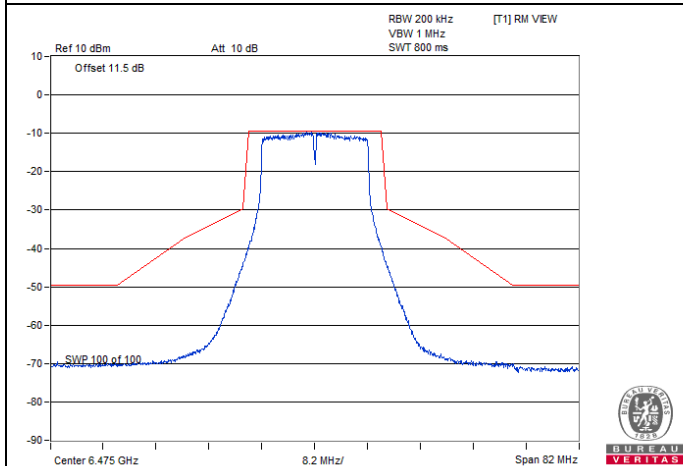
802.11a / Chain 1 : CH 45



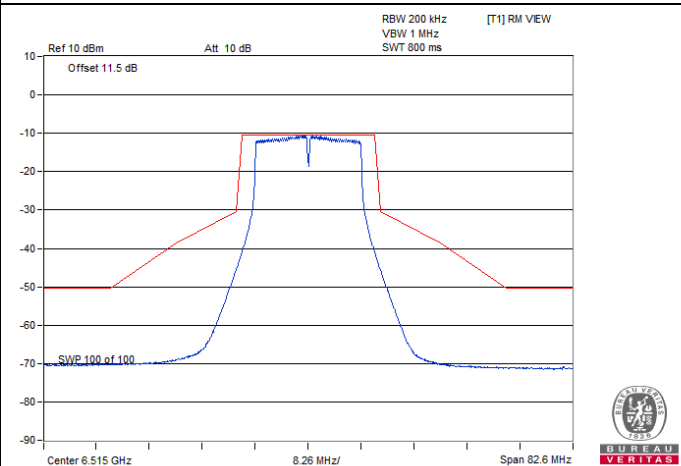
802.11a / Chain 1 : CH 93



802.11a / Chain 1 : CH 97

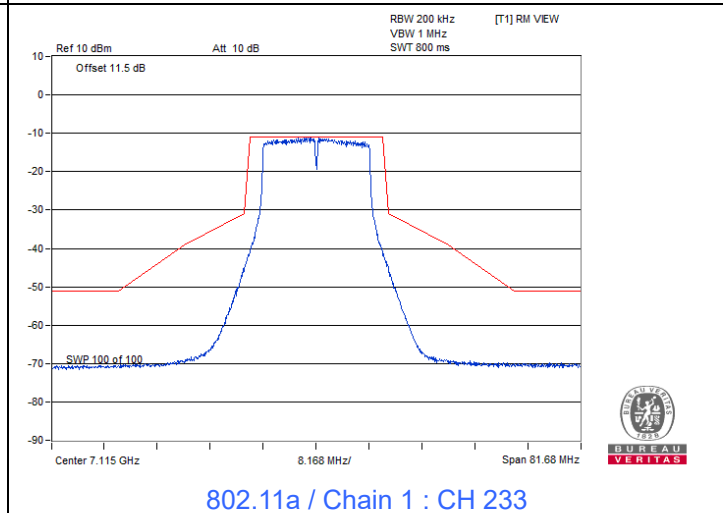
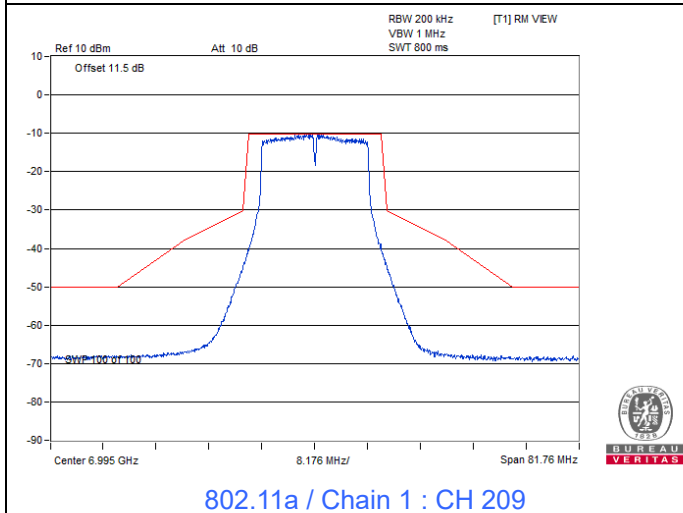
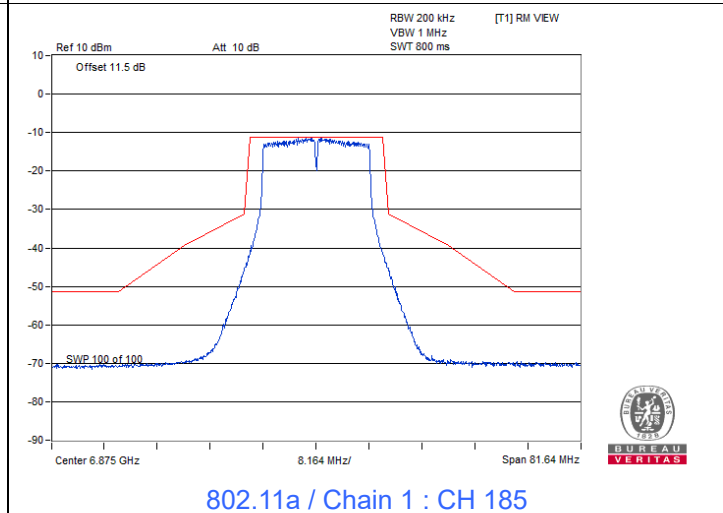
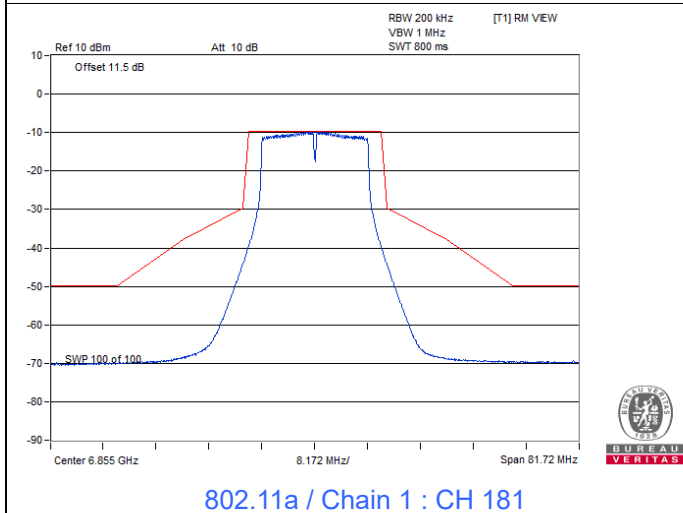
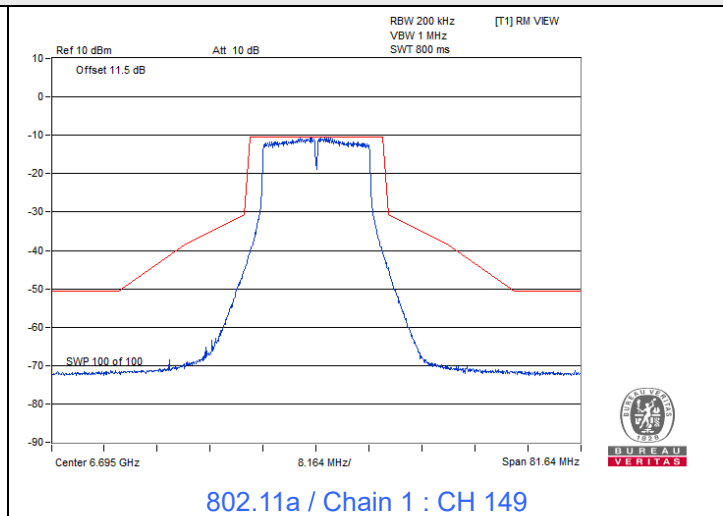
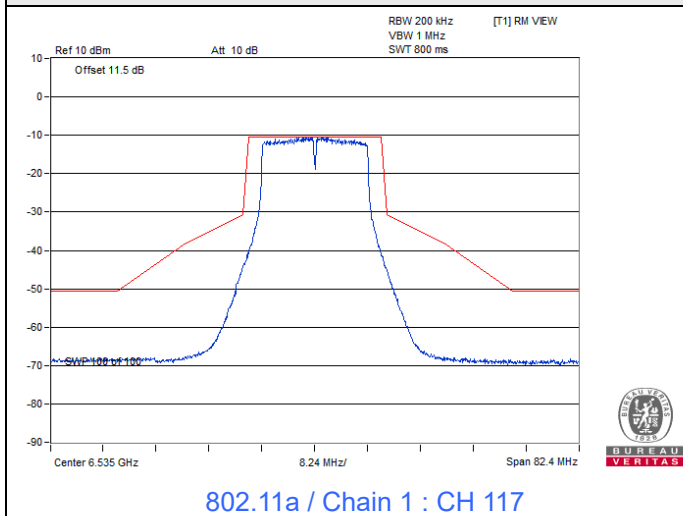


802.11a / Chain 1 : CH 105

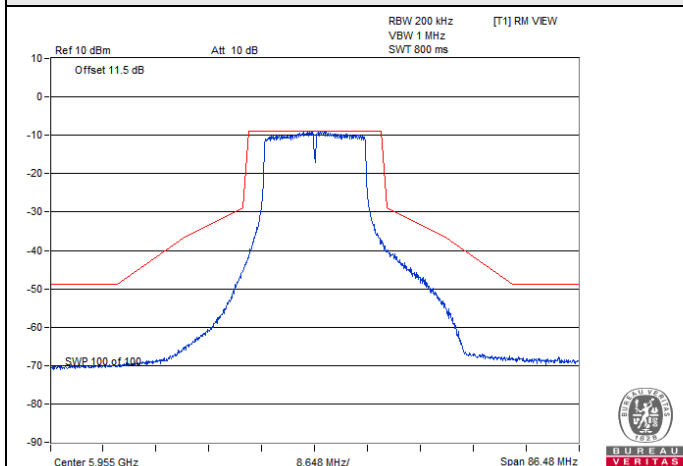


802.11a / Chain 1 : CH 113

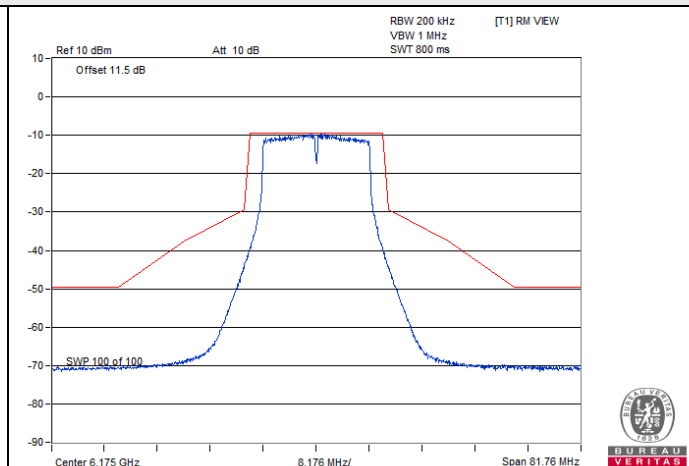
Spectrum Plot



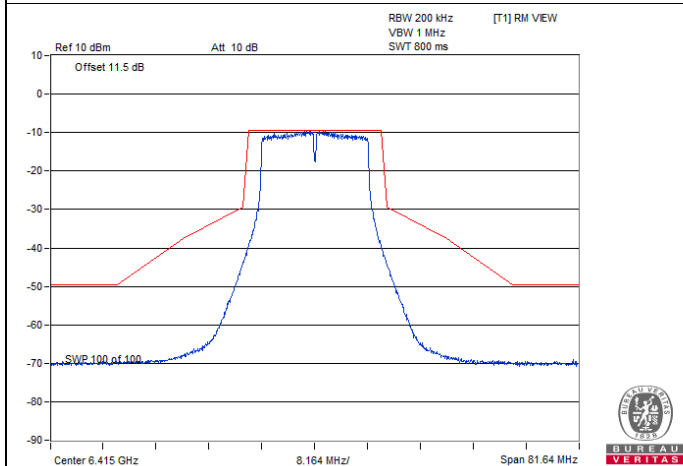
Spectrum Plot



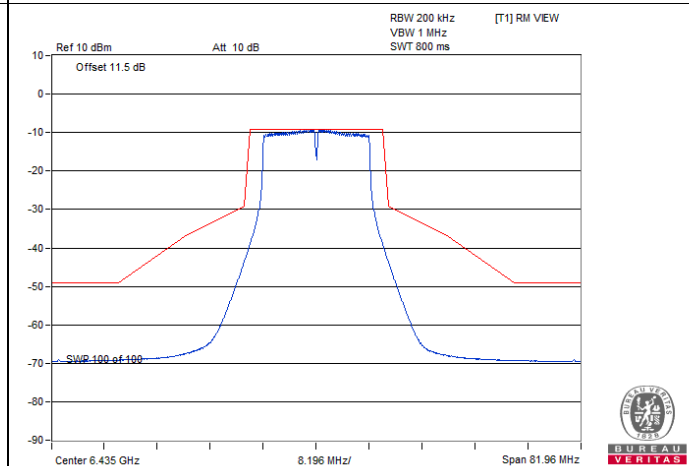
802.11a / Chain 2 : CH 1



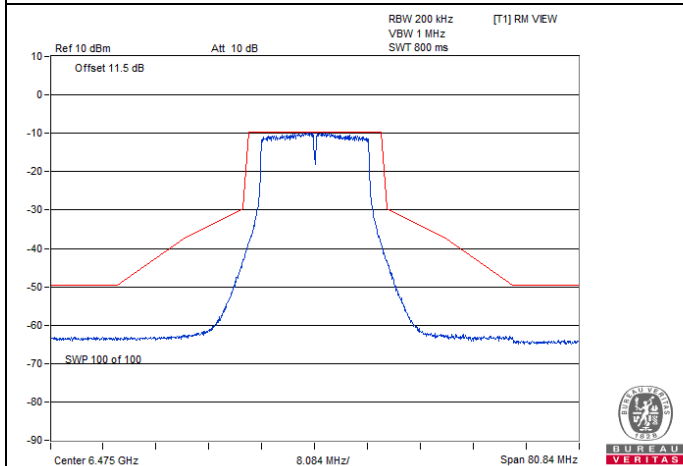
802.11a / Chain 2 : CH 45



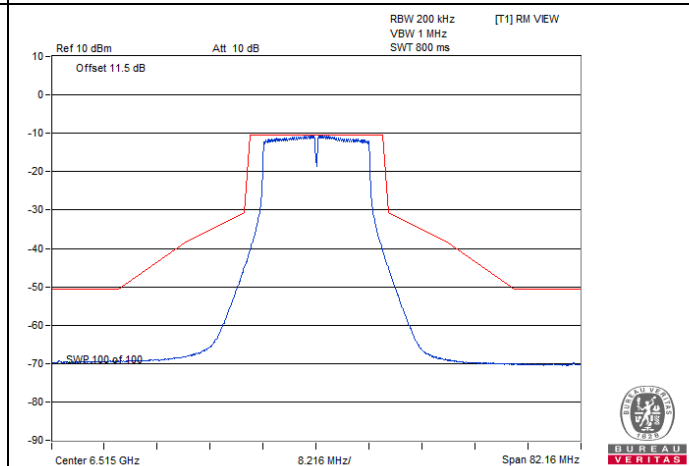
802.11a / Chain 2 : CH 93



802.11a / Chain 2 : CH 97

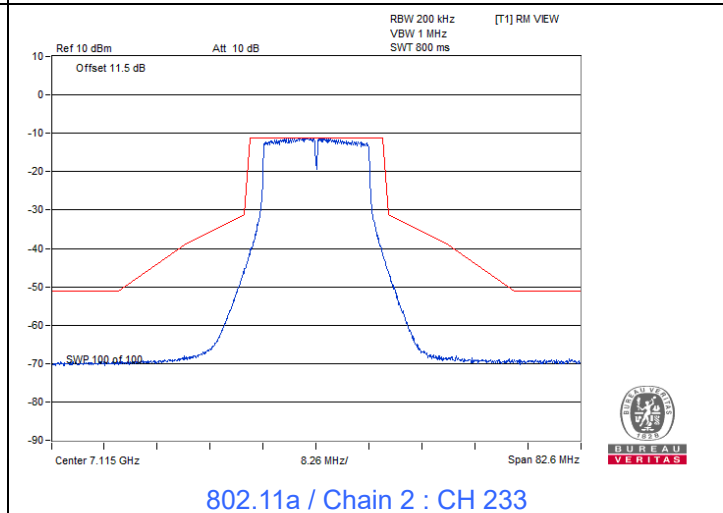
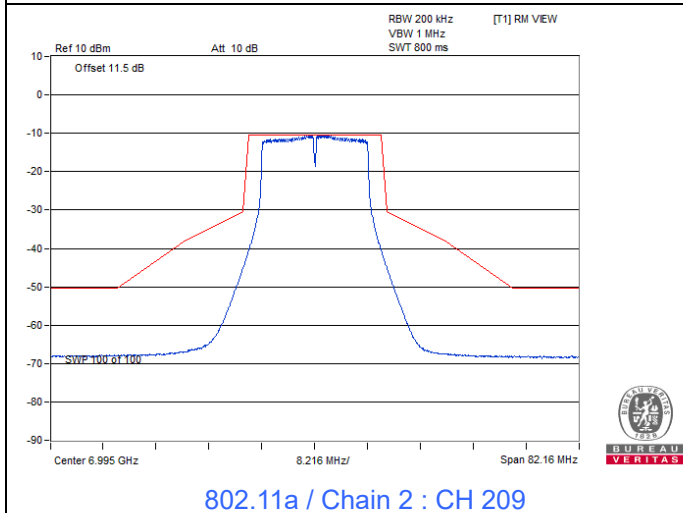
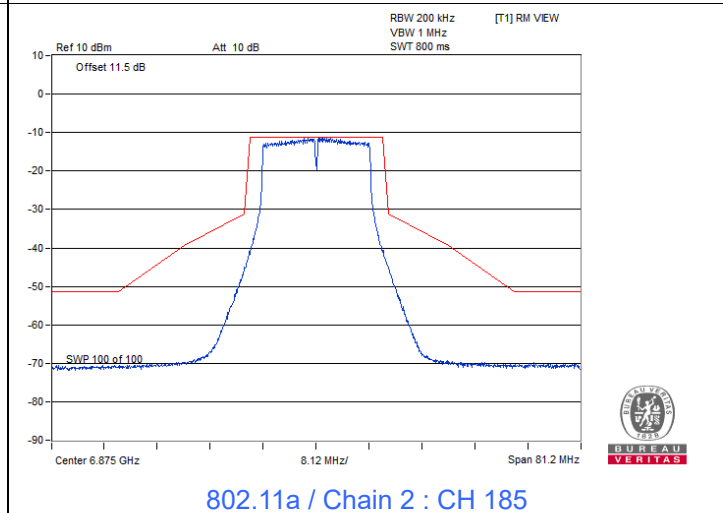
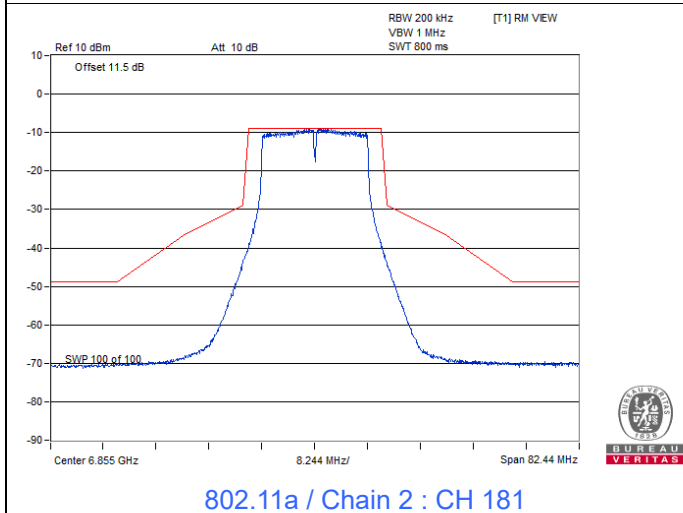
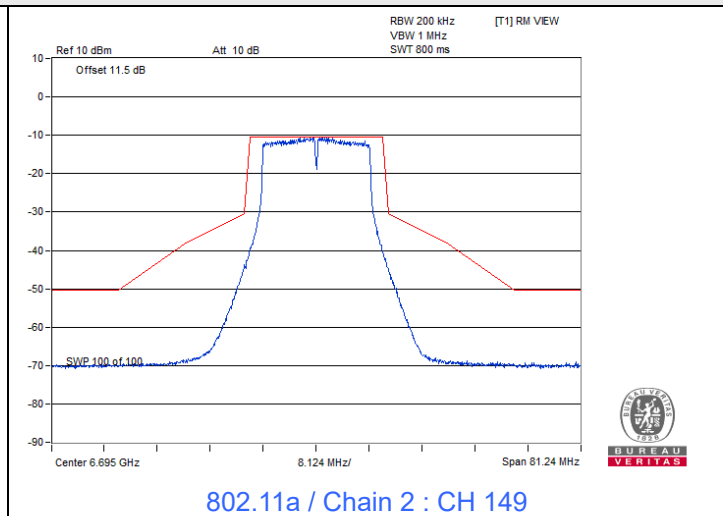
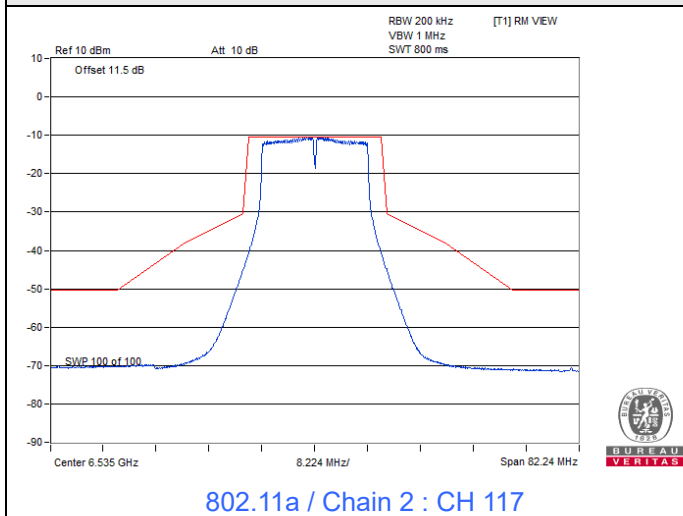


802.11a / Chain 2 : CH 105

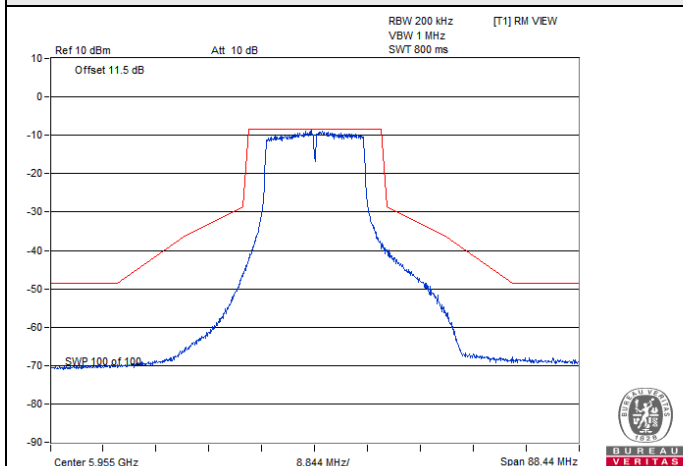


802.11a / Chain 2 : CH 113

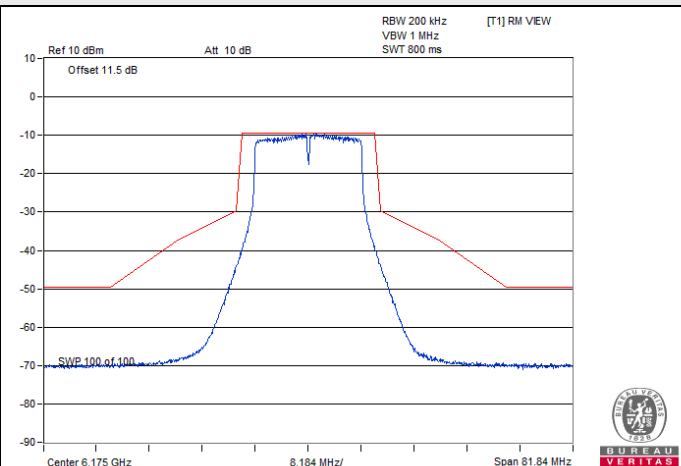
Spectrum Plot



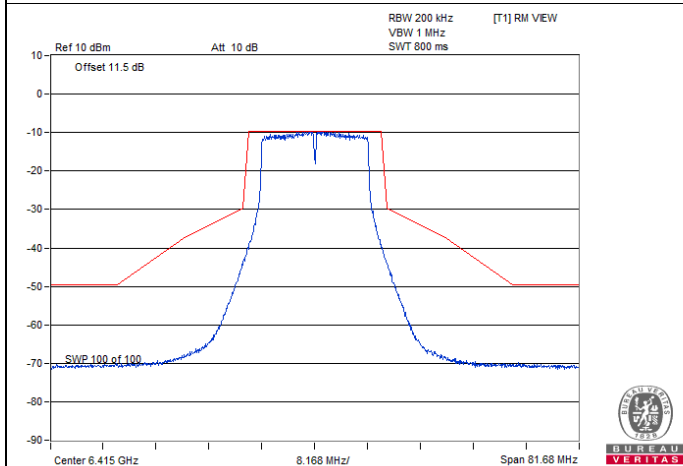
Spectrum Plot



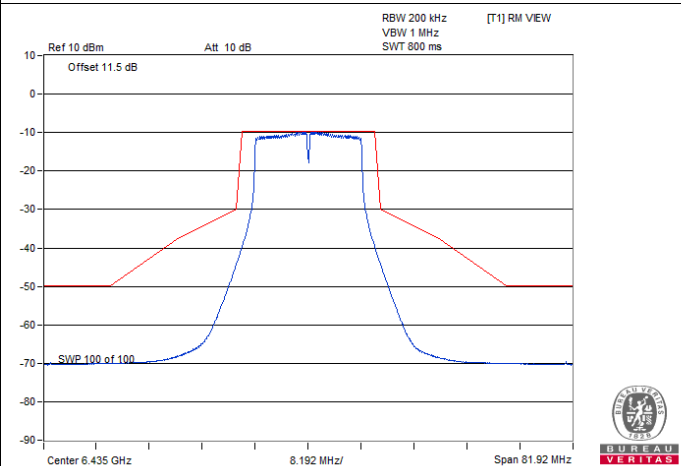
802.11a / Chain 3 : CH 1



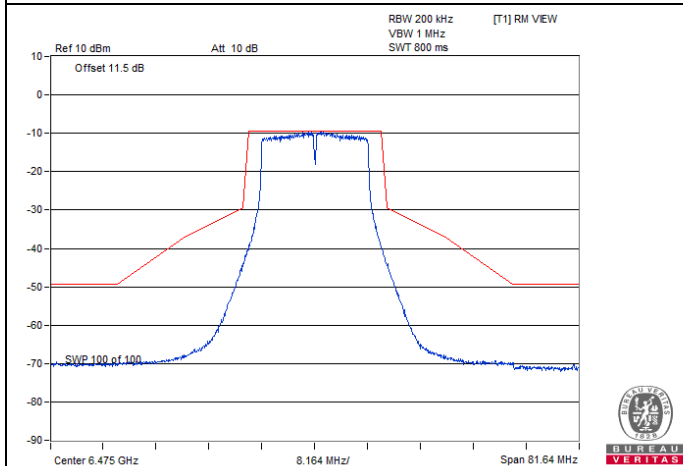
802.11a / Chain 3 : CH 45



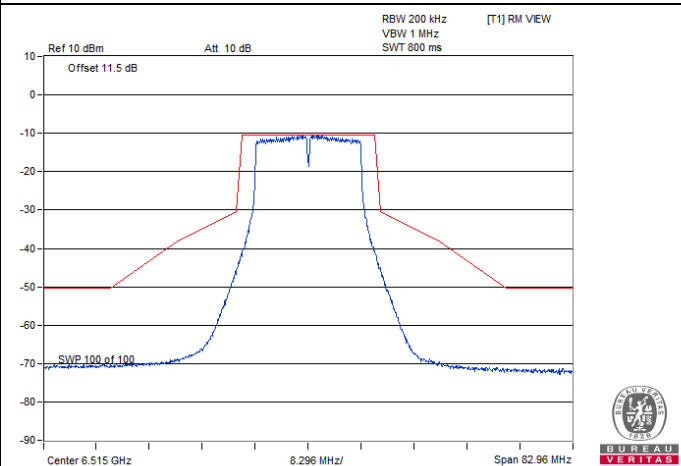
802.11a / Chain 3 : CH 93



802.11a / Chain 3 : CH 97

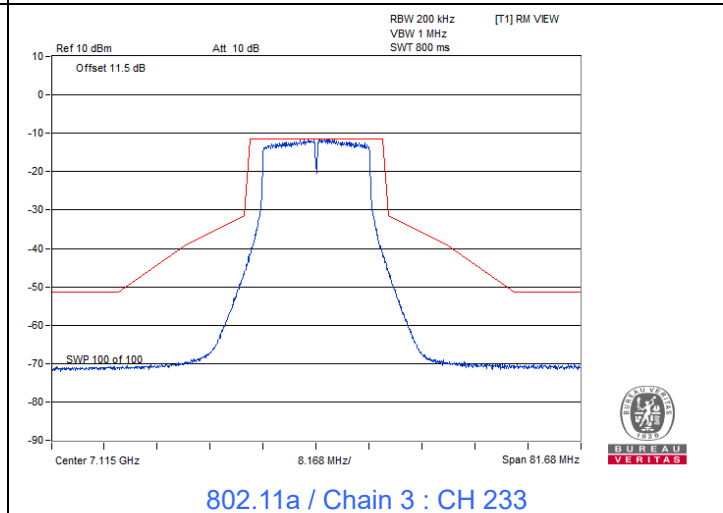
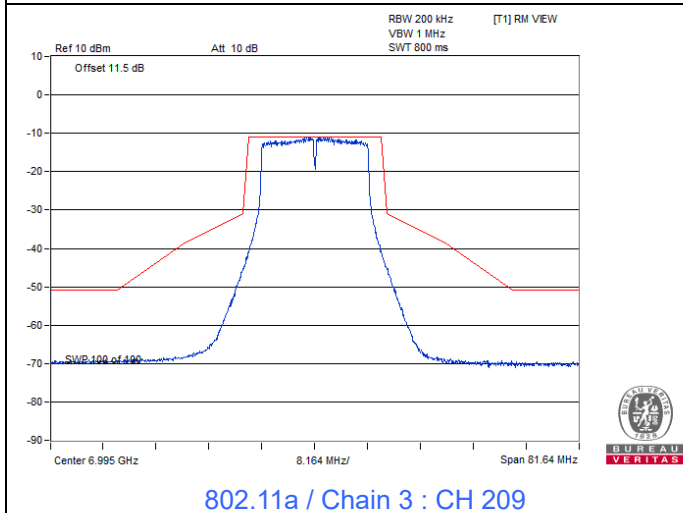
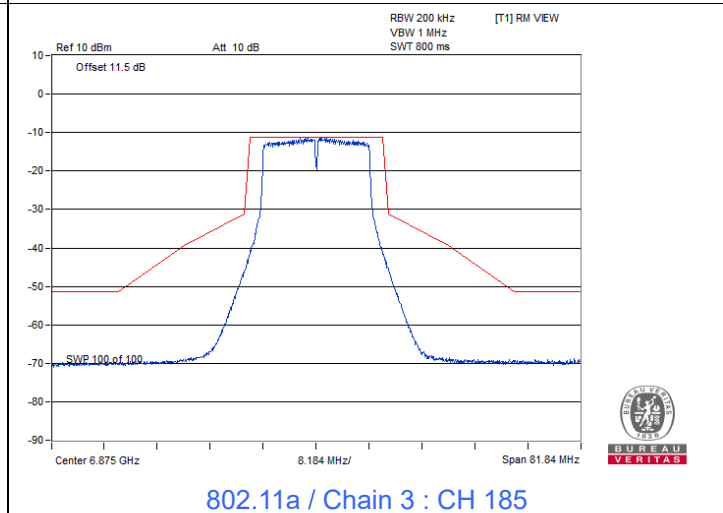
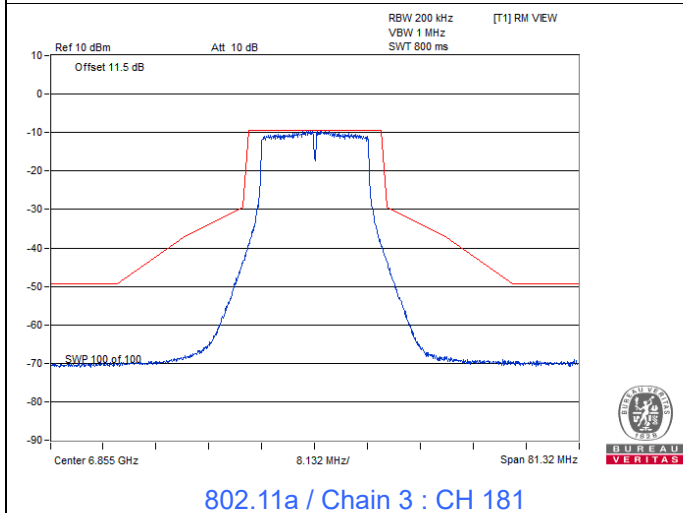
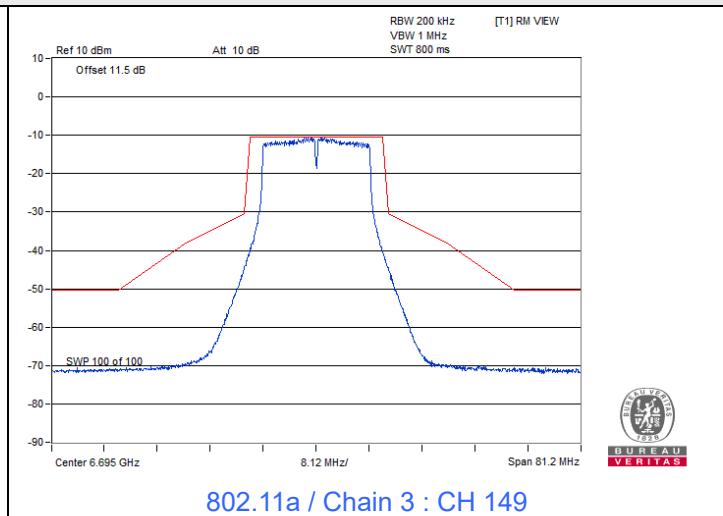
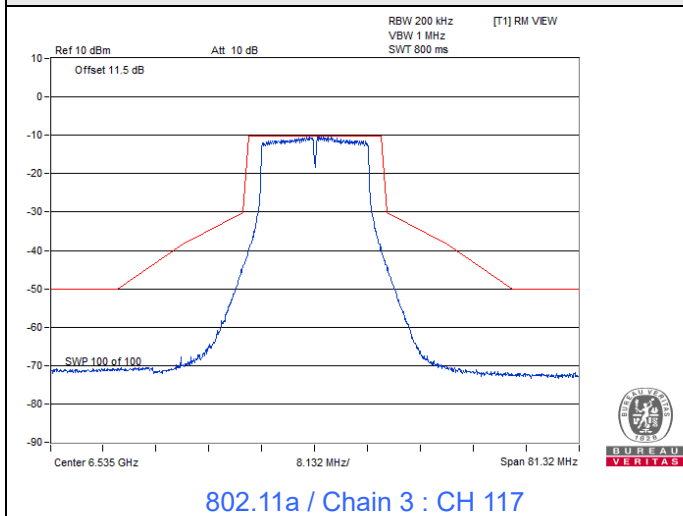


802.11a / Chain 3 : CH 105



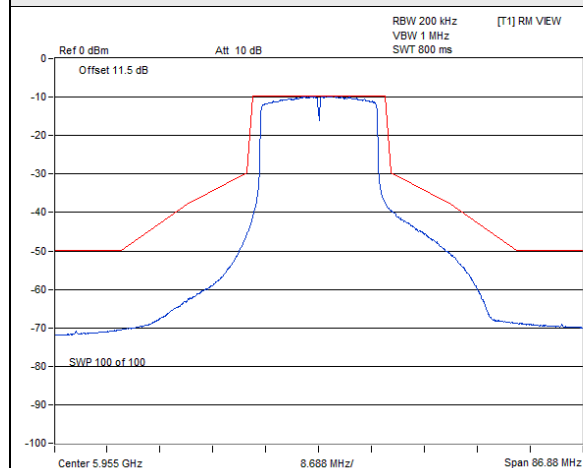
802.11a / Chain 3 : CH 113

Spectrum Plot

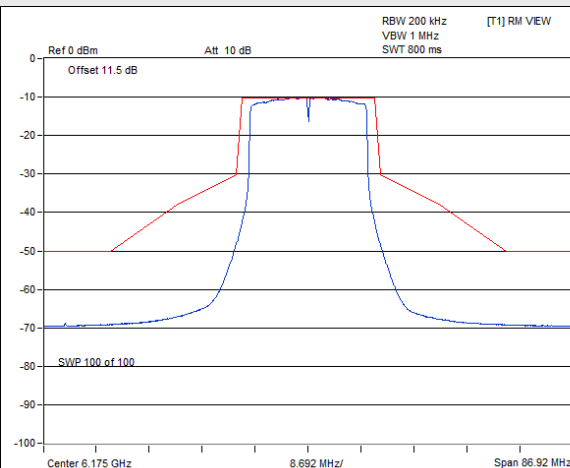


802.11ax (HE20) Beamforming

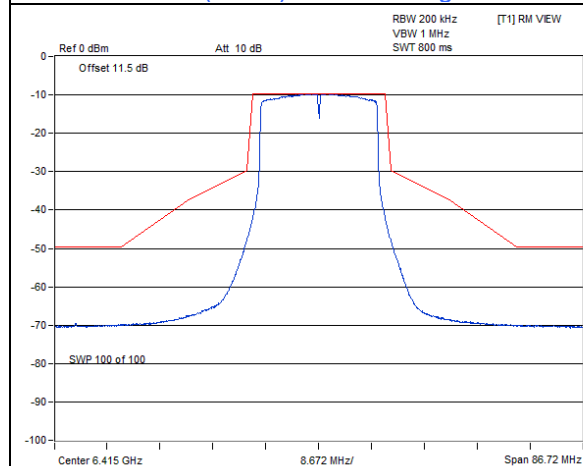
Spectrum Plot



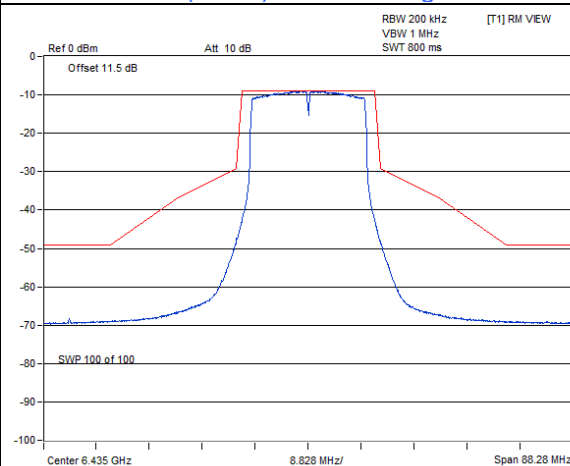
802.11ax (HE20) Beamforming / Chain 0 : CH 1



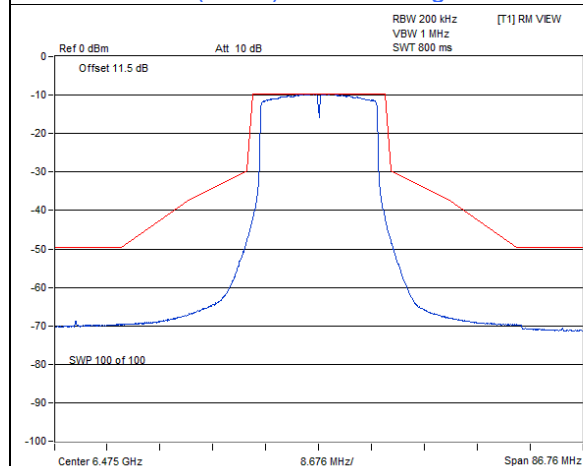
802.11ax (HE20) Beamforming / Chain 0 : CH 45



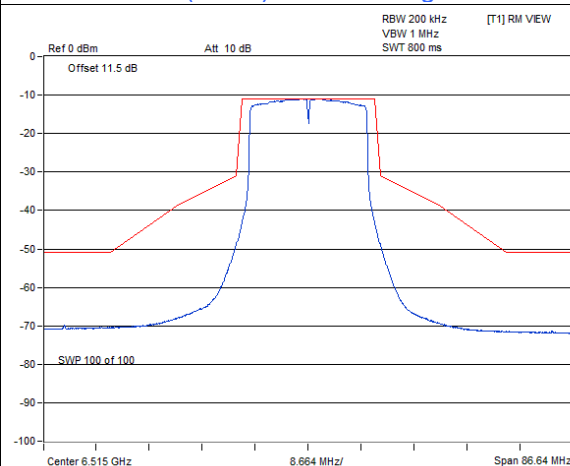
802.11ax (HE20) Beamforming / Chain 0 : CH 93



802.11ax (HE20) Beamforming / Chain 0 : CH 97

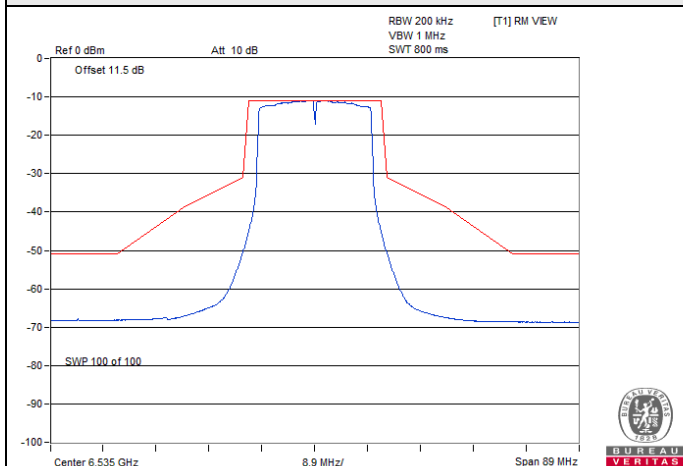


802.11ax (HE20) Beamforming / Chain 0 : CH 105

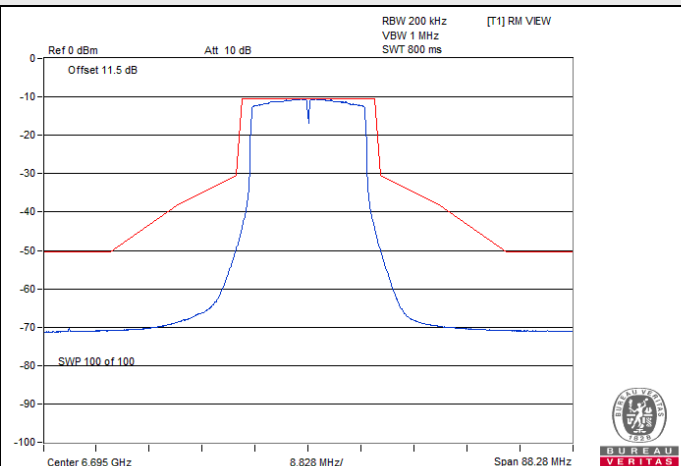


802.11ax (HE20) Beamforming / Chain 0 : CH 113

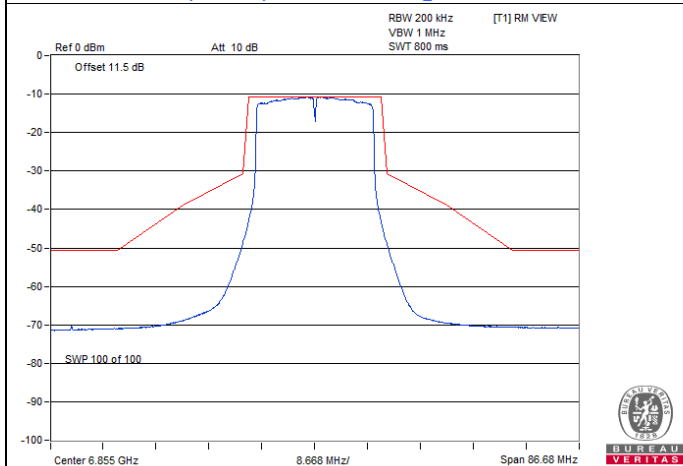
Spectrum Plot



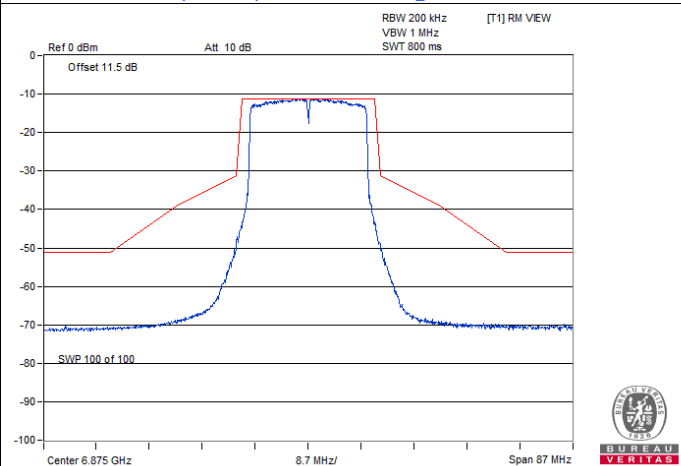
802.11ax (HE20) Beamforming / Chain 0 : CH 117



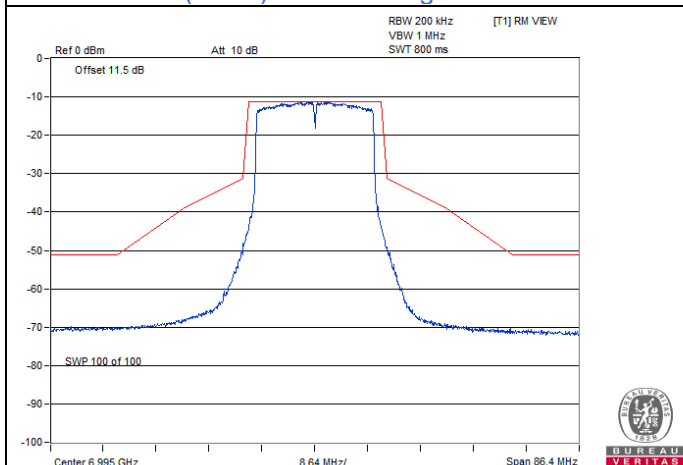
802.11ax (HE20) Beamforming / Chain 0 : CH 149



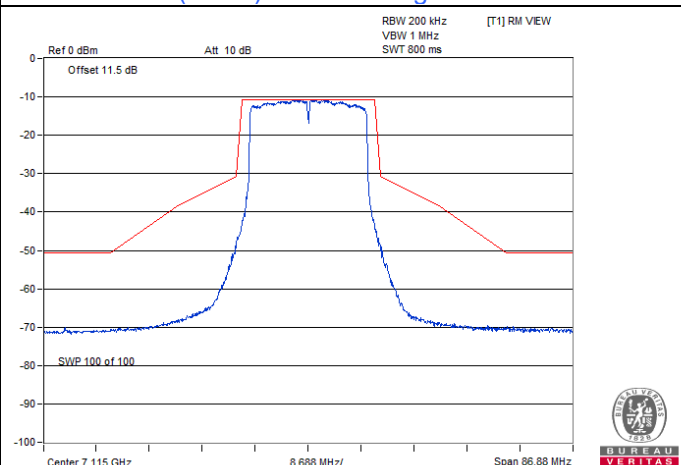
802.11ax (HE20) Beamforming / Chain 0 : CH 181



802.11ax (HE20) Beamforming / Chain 0 : CH 185

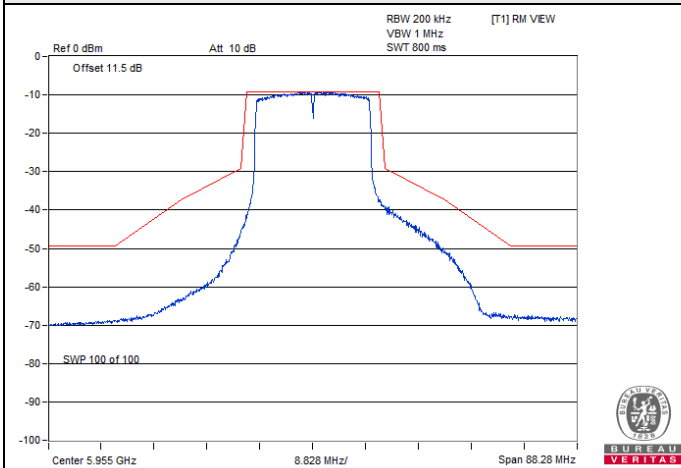


802.11ax (HE20) Beamforming / Chain 0 : CH 209

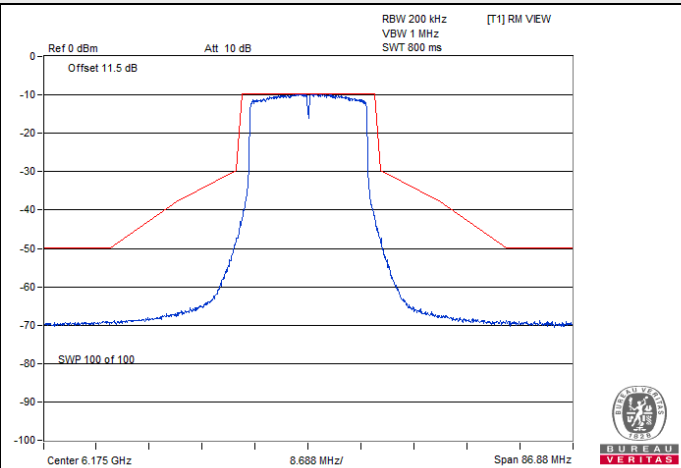


802.11ax (HE20) Beamforming / Chain 0 : CH 233

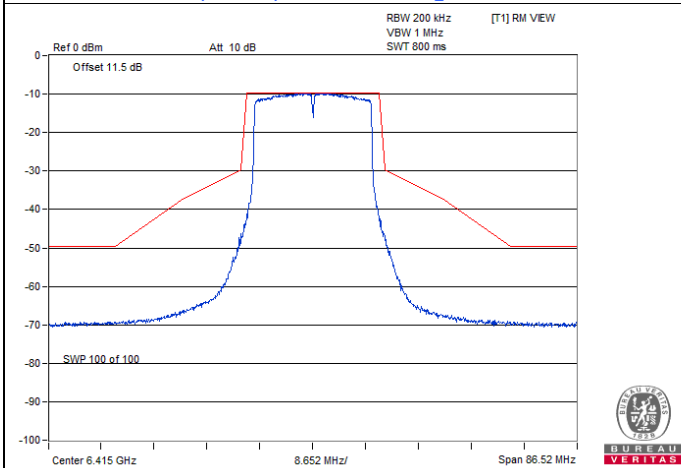
Spectrum Plot



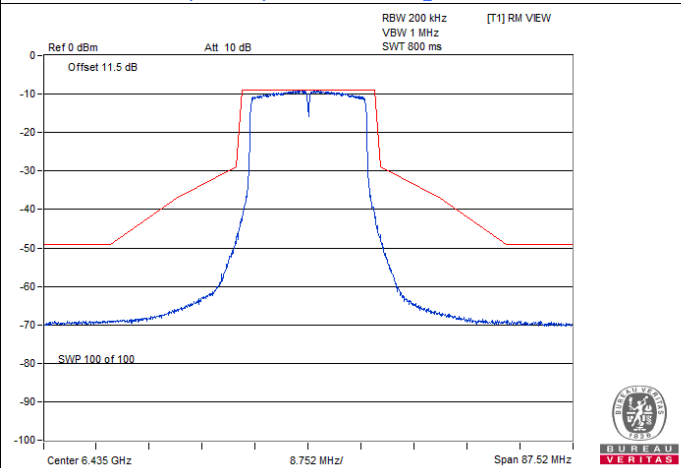
802.11ax (HE20) Beamforming / Chain 1 : CH 1



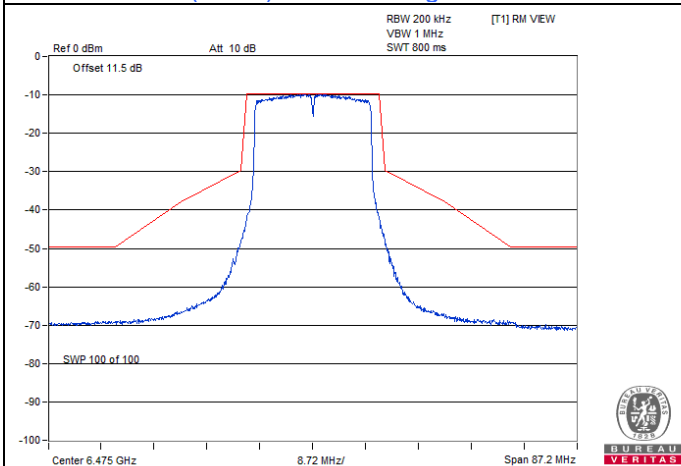
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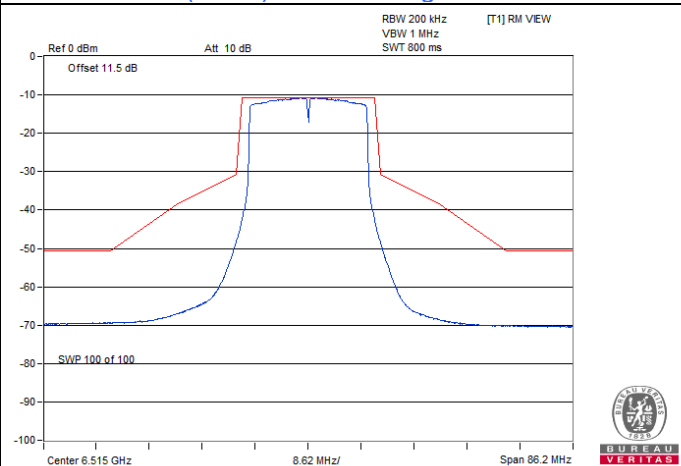
802.11ax (HE20) Beamforming / Chain 1 : CH 93



802.11ax (HE20) Beamforming / Chain 1 : CH 97

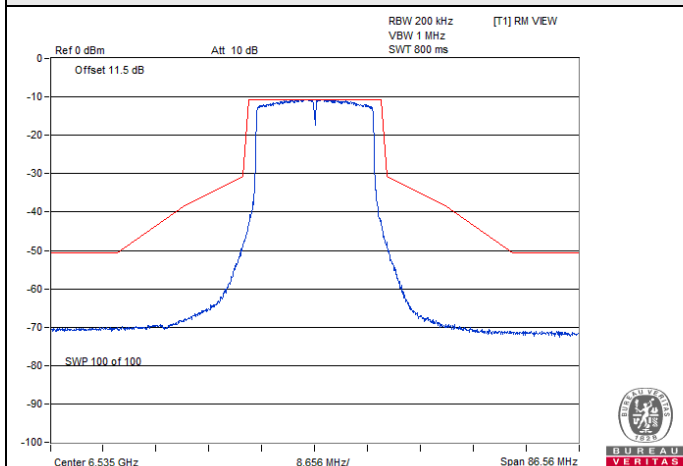


802.11ax (HE20) Beamforming / Chain 1 : CH 105

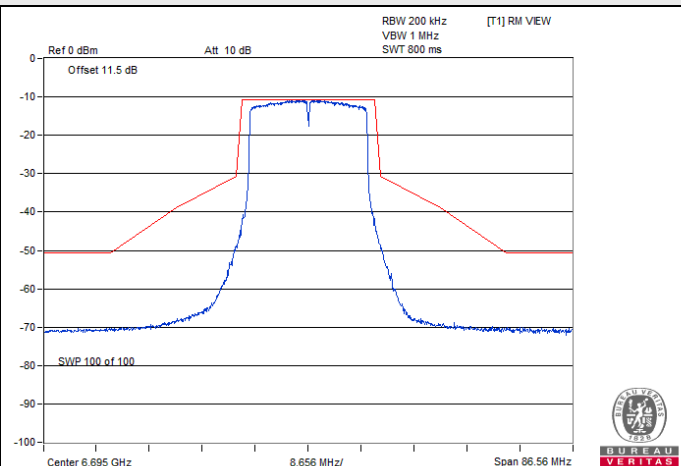


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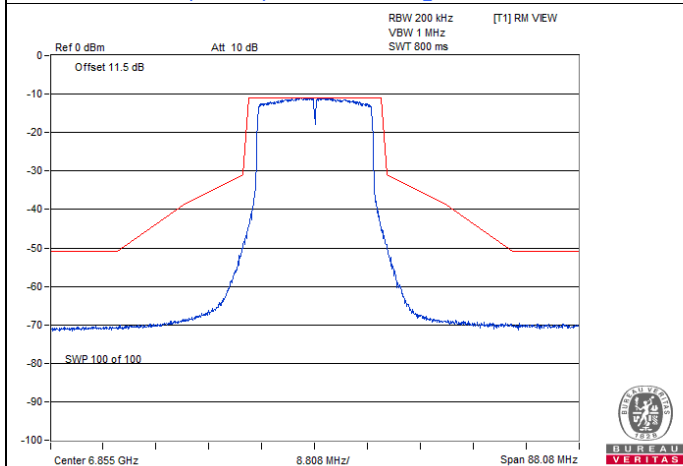
Spectrum Plot



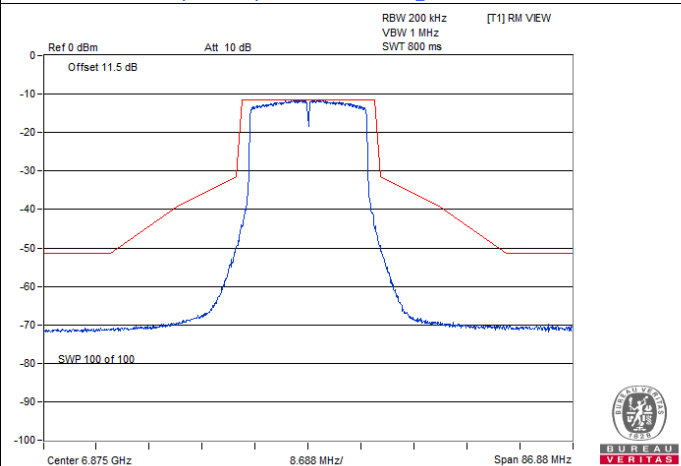
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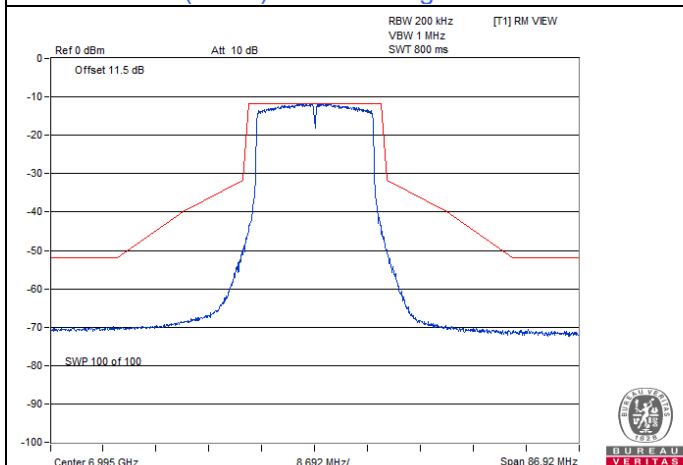
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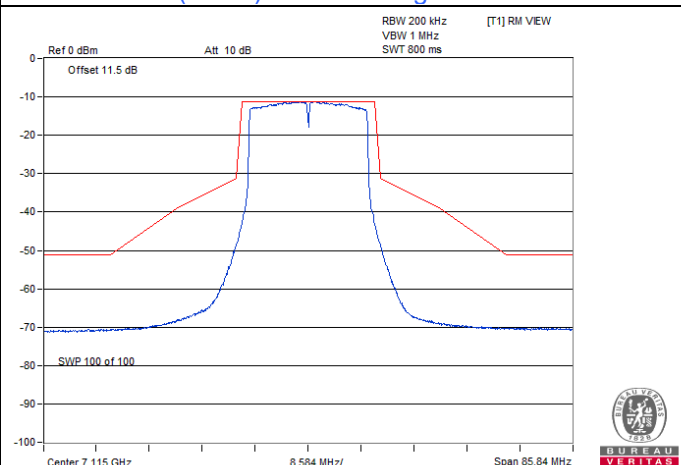
802.11ax (HE20) Beamforming / Chain 1 : CH 181



802.11ax (HE20) Beamforming / Chain 1 : CH 185

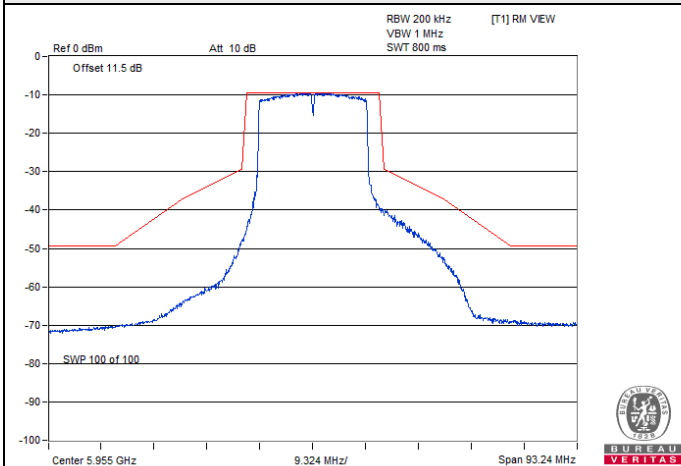


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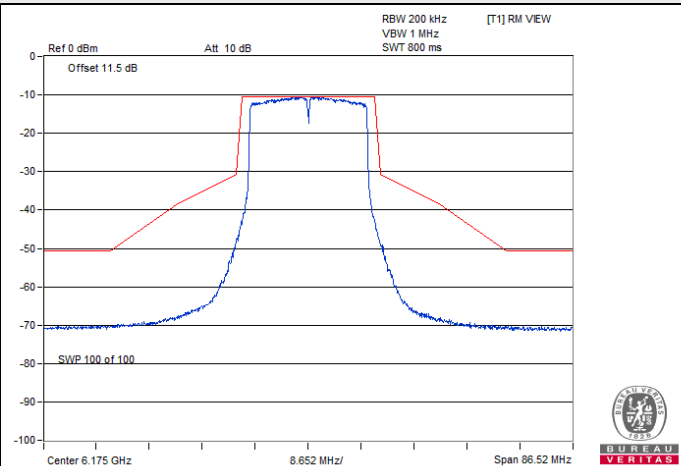


802.11ax (HE20) Beamforming / Chain 1 : CH 233

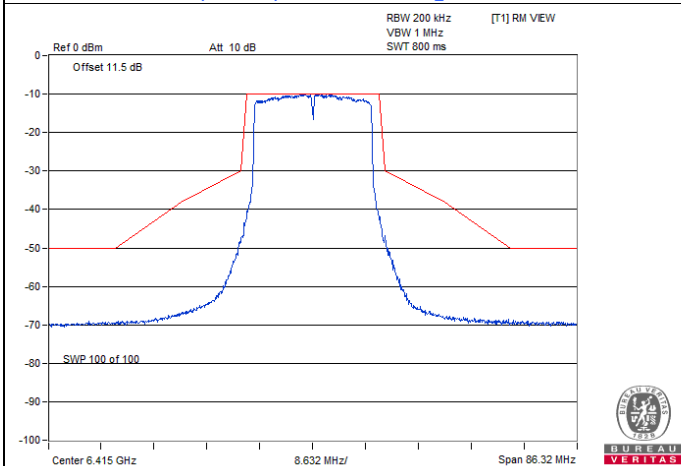
Spectrum Plot



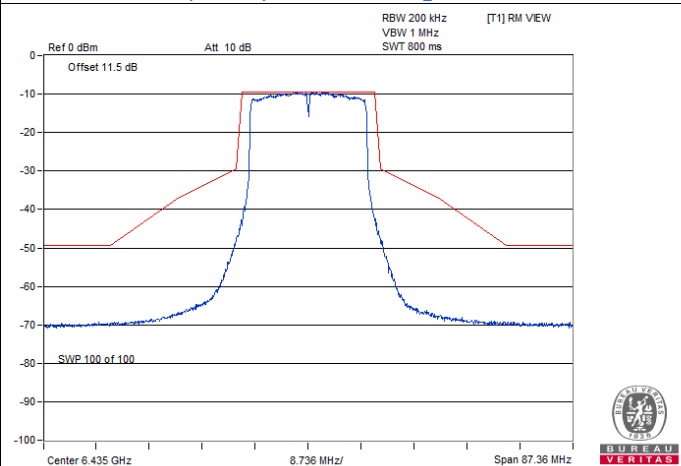
802.11ax (HE20) Beamforming / Chain 2 : CH 1



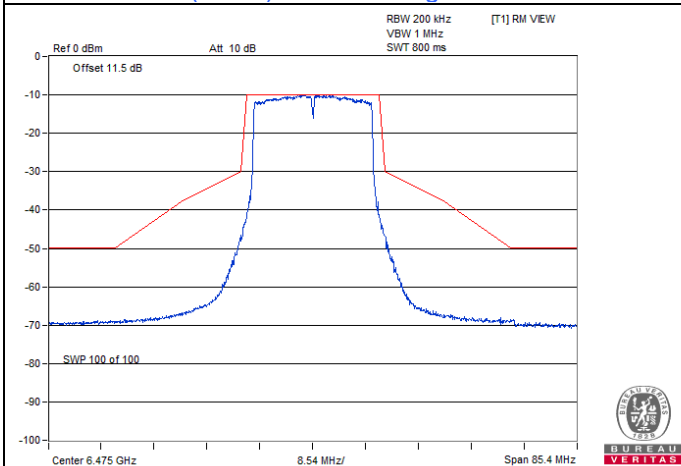
802.11ax (HE20) Beamforming / Chain 2 : CH 45



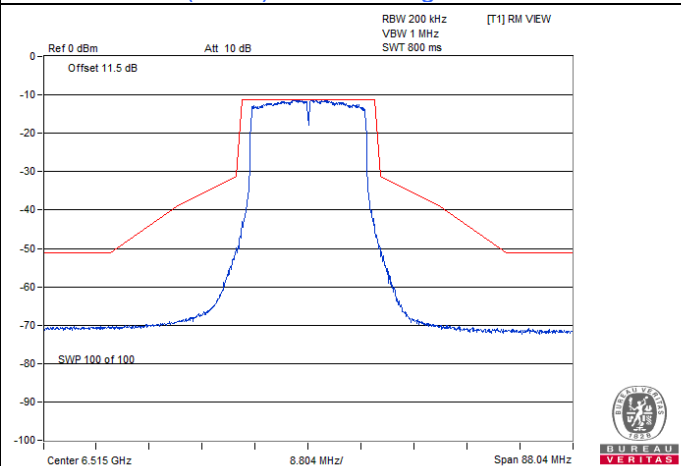
802.11ax (HE20) Beamforming / Chain 2 : CH 93



802.11ax (HE20) Beamforming / Chain 2 : CH 97

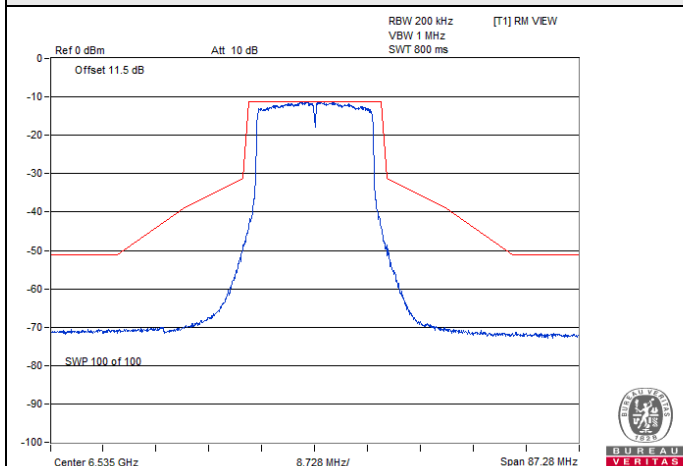


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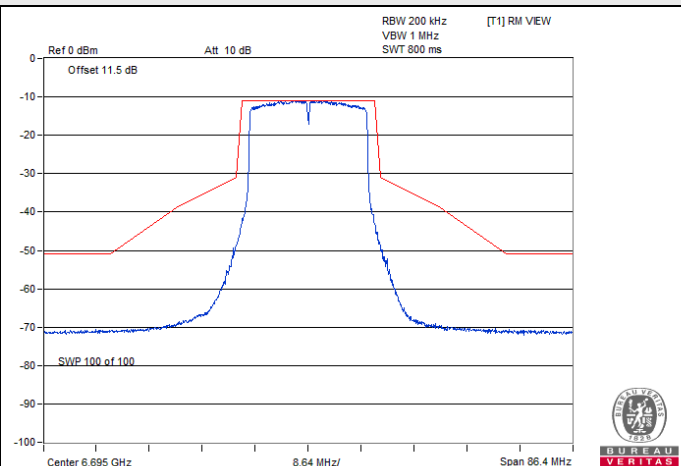


802.11ax (HE20) Beamforming / Chain 2 : CH 113

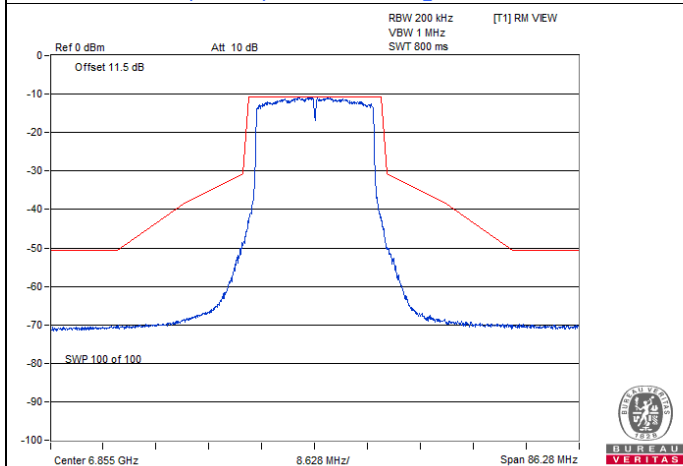
Spectrum Plot



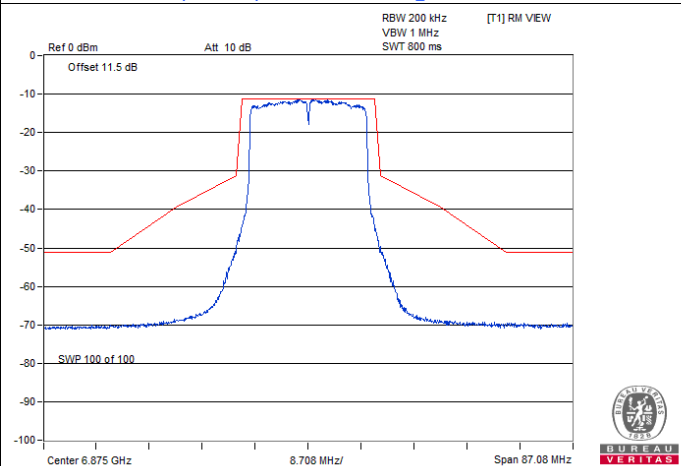
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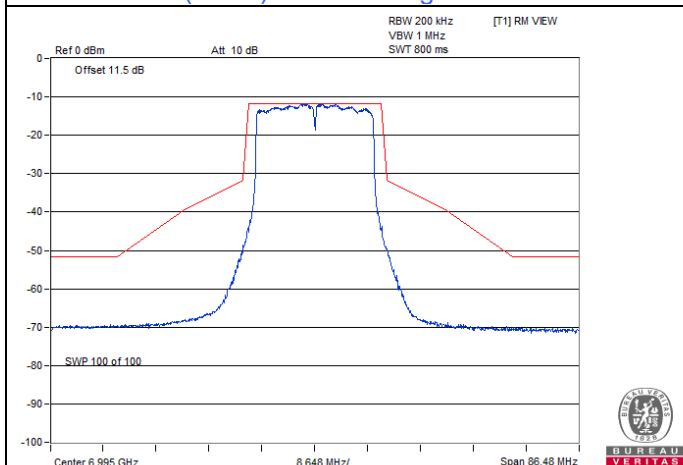
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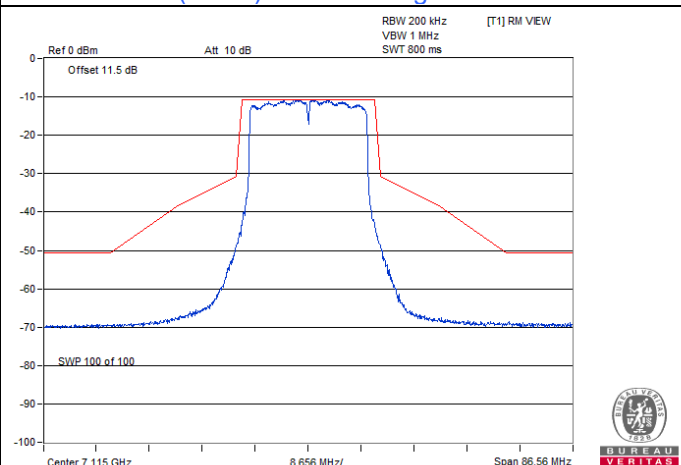
802.11ax (HE20) Beamforming / Chain 2 : CH 181



802.11ax (HE20) Beamforming / Chain 2 : CH 185

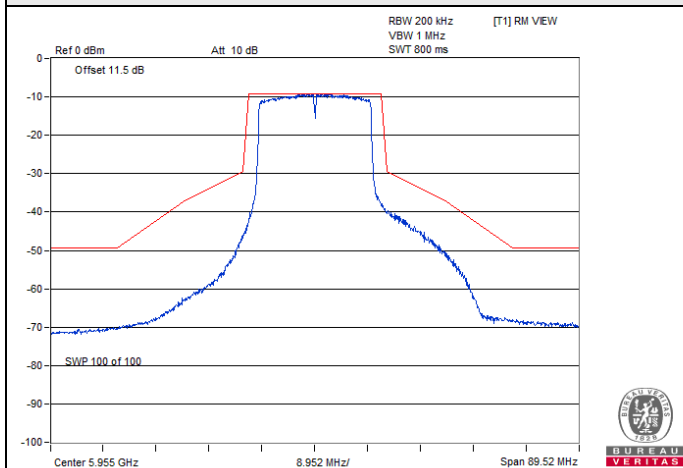


802.11ax (HE20) Beamforming / Chain 2 : CH 209

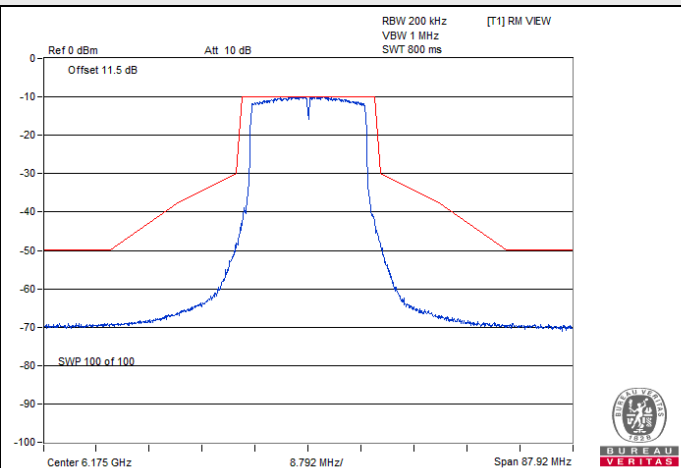


802.11ax (HE20) Beamforming / Chain 2 : CH 233

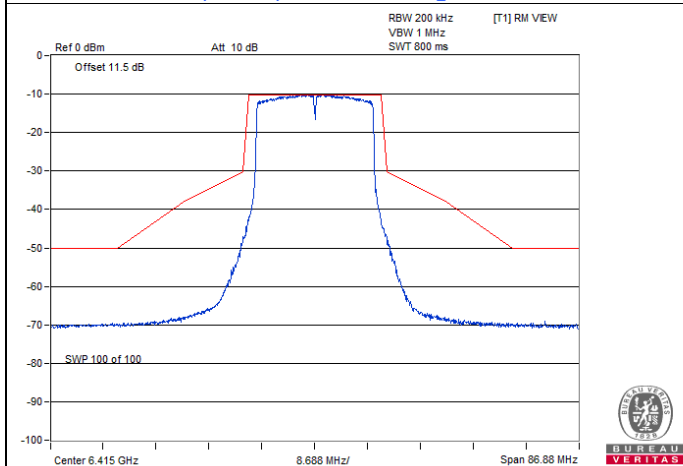
Spectrum Plot



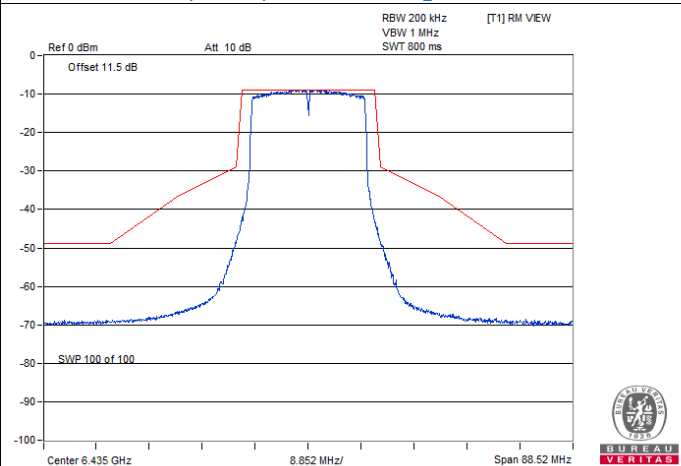
802.11ax (HE20) Beamforming / Chain 3 : CH 1



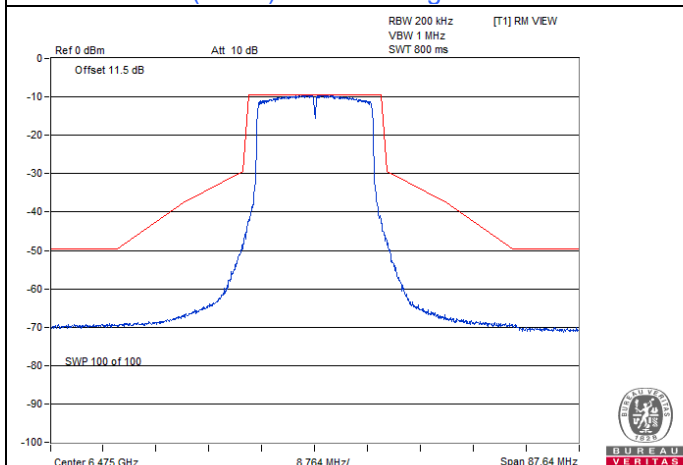
802.11ax (HE20) Beamforming / Chain 3 : CH 45



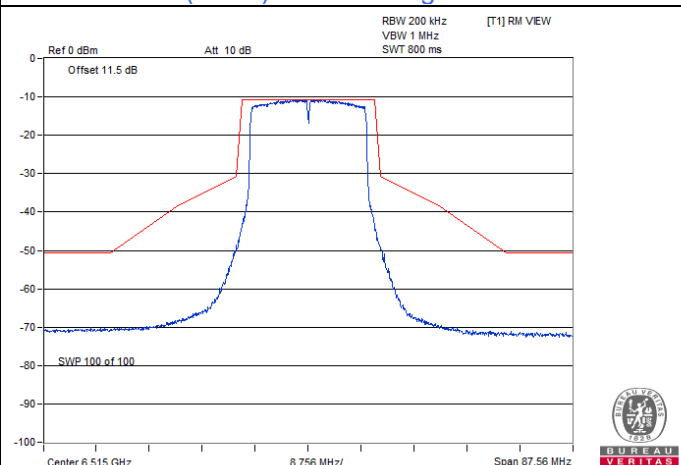
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802.11ax (HE20) Beamforming / Chain 3 : CH 97

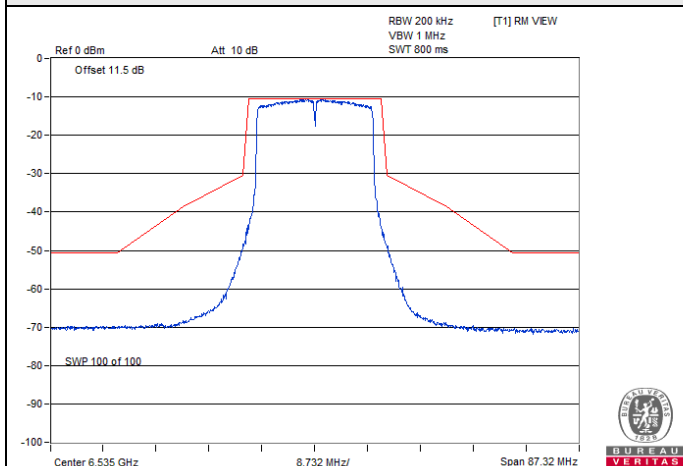


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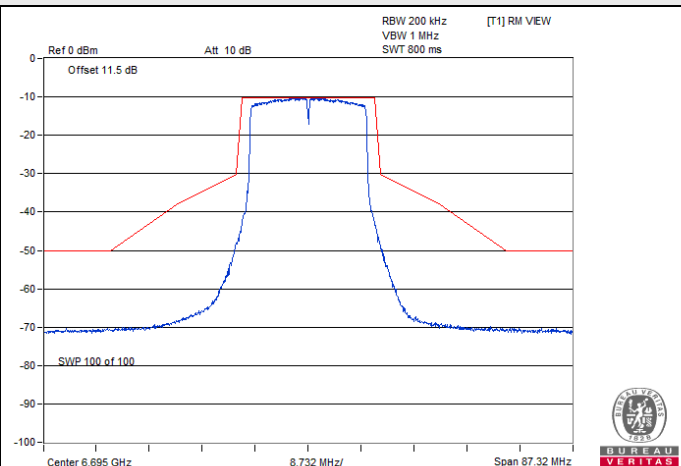


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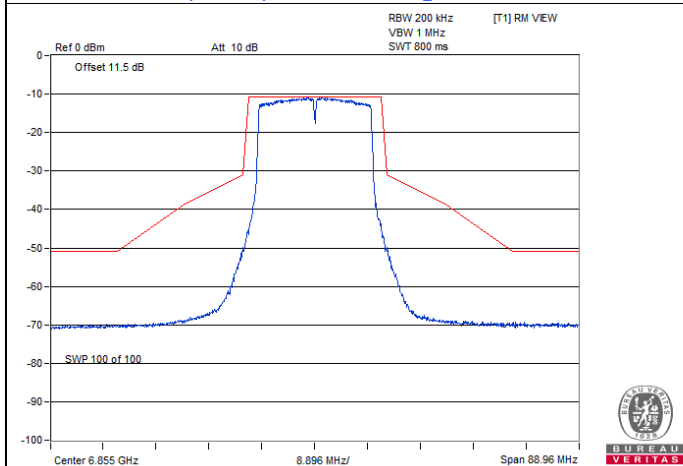
Spectrum Plot



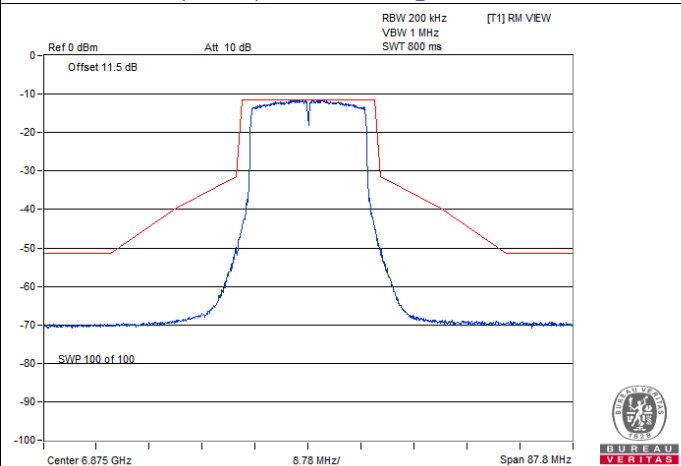
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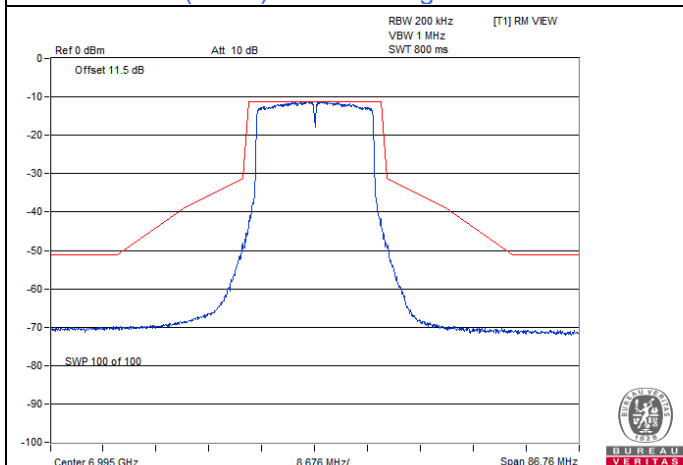
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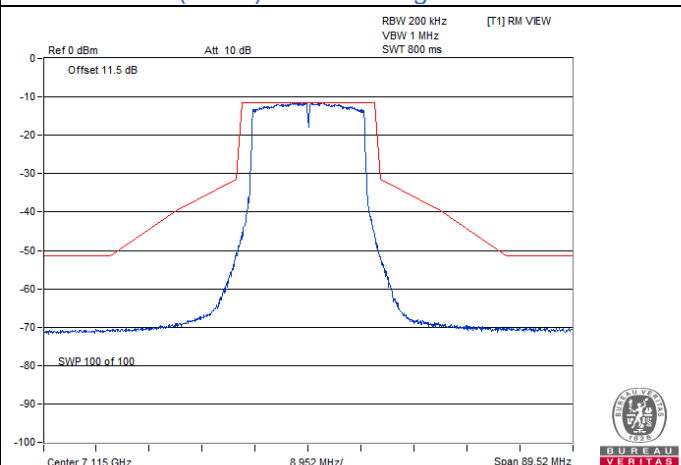
802.11ax (HE20) Beamforming / Chain 3 : CH 181



802.11ax (HE20) Beamforming / Chain 3 : CH 185



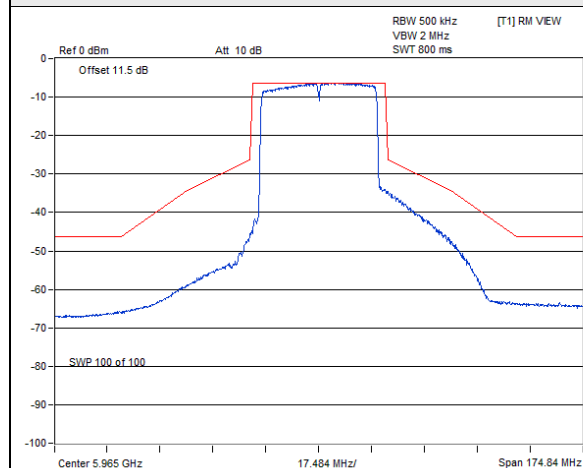
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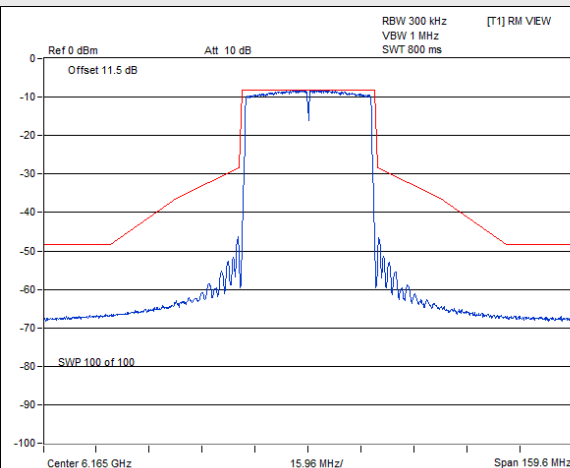
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802.11ax (HE40) Beamforming

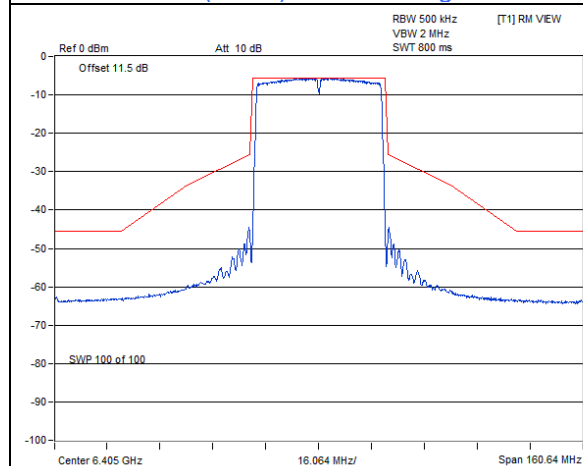
Spectrum Plot



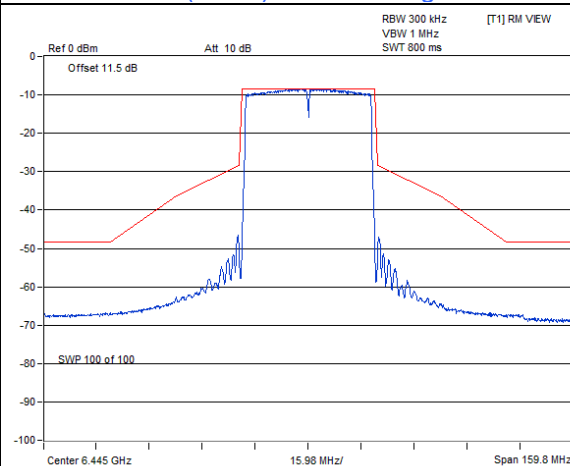
802.11ax (HE40) Beamforming / Chain 0 : CH 3



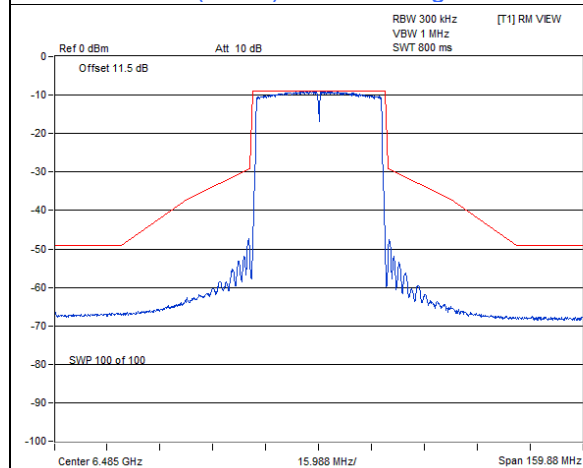
802.11ax (HE40) Beamforming / Chain 0 : CH 43



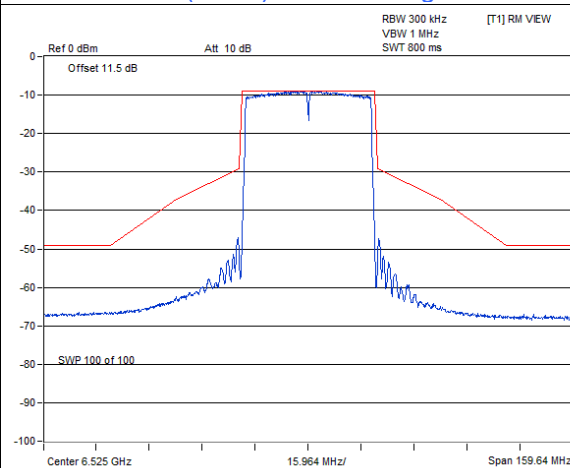
802.11ax (HE40) Beamforming / Chain 0 : CH 91



802.11ax (HE40) Beamforming / Chain 0 : CH 99

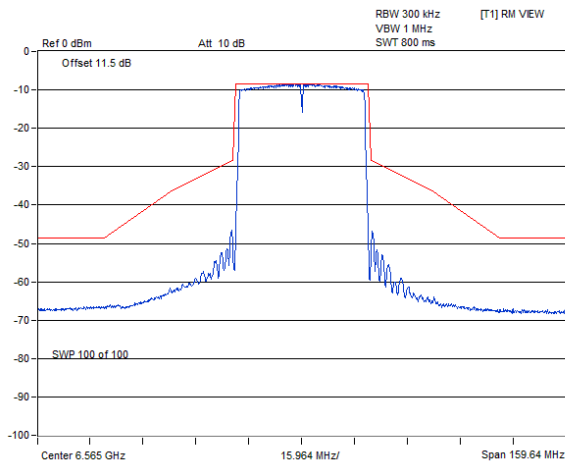


802.11ax (HE40) Beamforming / Chain 0 : CH 107

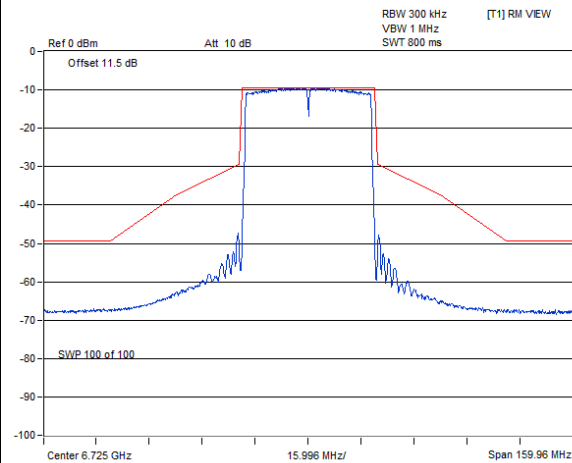


802.11ax (HE40) Beamforming / Chain 0 : CH 115

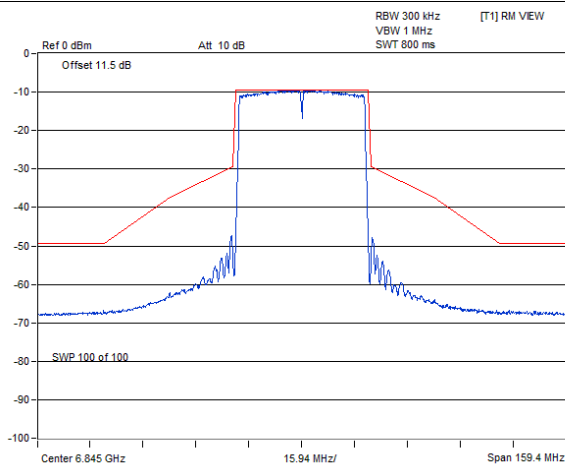
Spectrum Plot



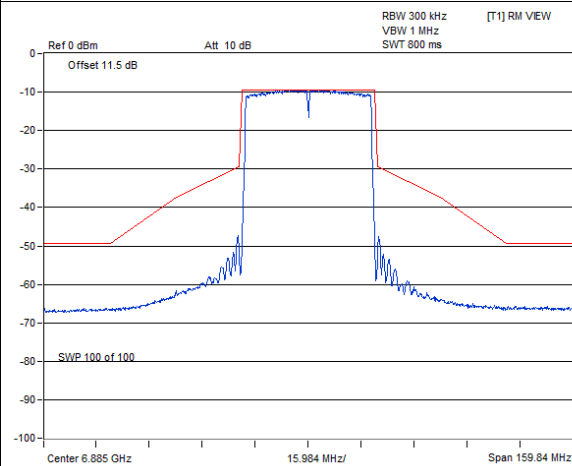
802.11ax (HE40) Beamforming / Chain 0 : CH 123



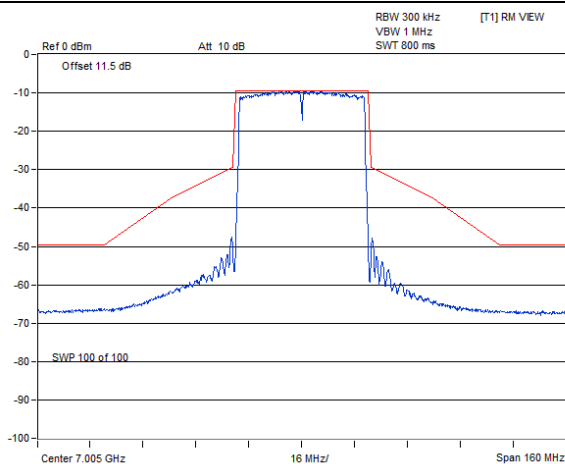
802.11ax (HE40) Beamforming / Chain 0 : CH 155



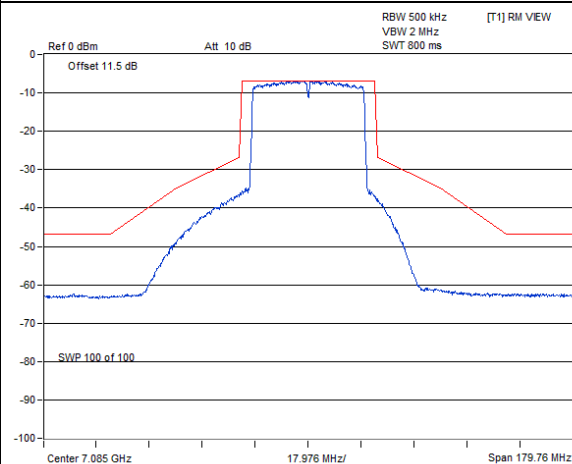
802.11ax (HE40) Beamforming / Chain 0 : CH 179



802.11ax (HE40) Beamforming / Chain 0 : CH 187

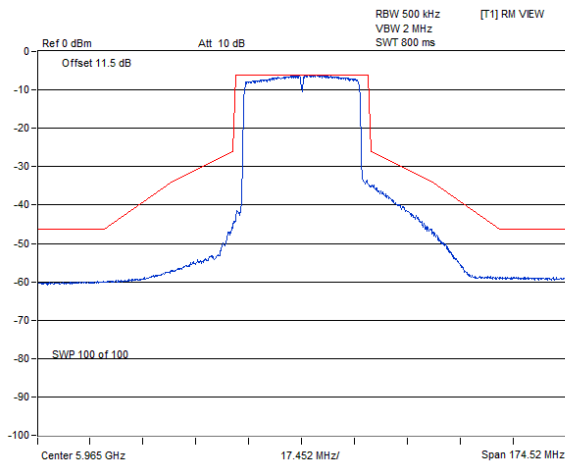


802.11ax (HE40) Beamforming / Chain 0 : CH 211

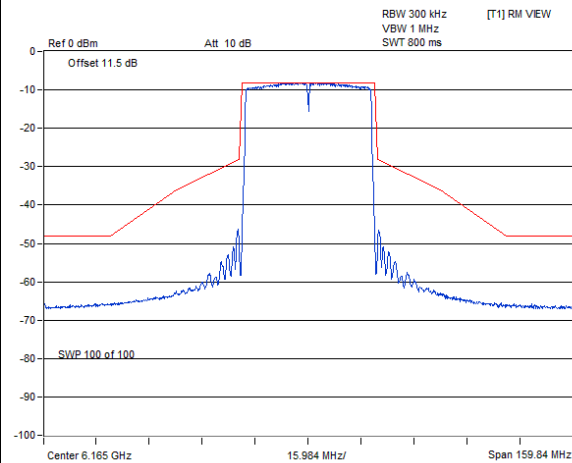


802.11ax (HE40) Beamforming / Chain 0 : CH 227

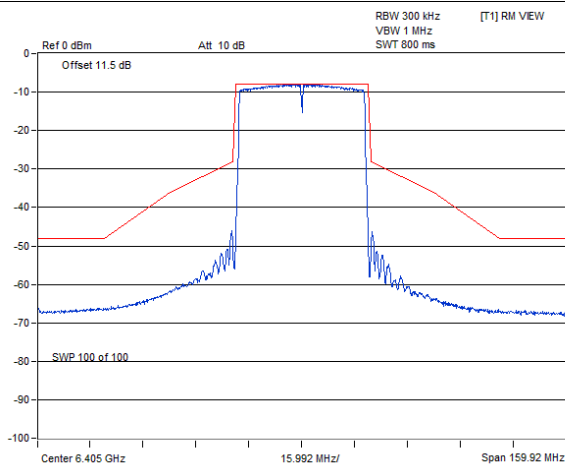
Spectrum Plot



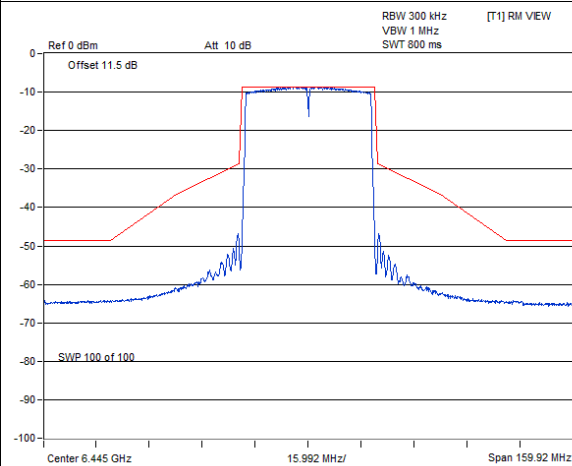
802.11ax (HE40) Beamforming / Chain 1 : CH 3



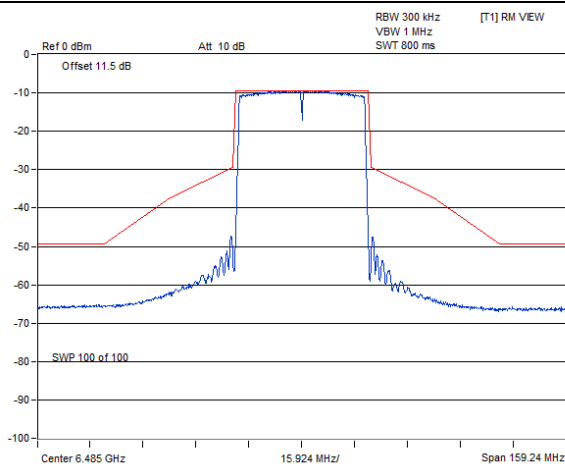
802.11ax (HE40) Beamforming / Chain 1 : CH 43



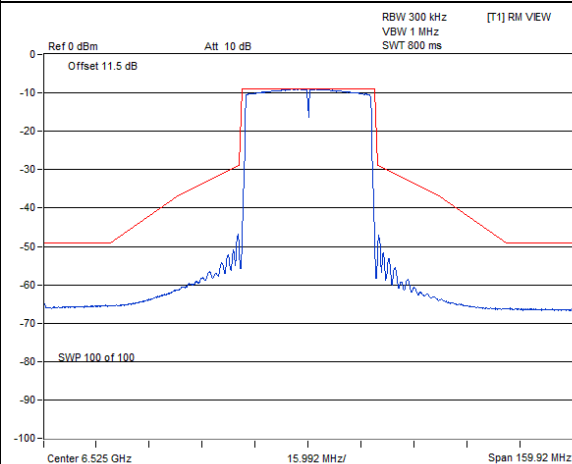
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802.11ax (HE40) Beamforming / Chain 1 : CH 99

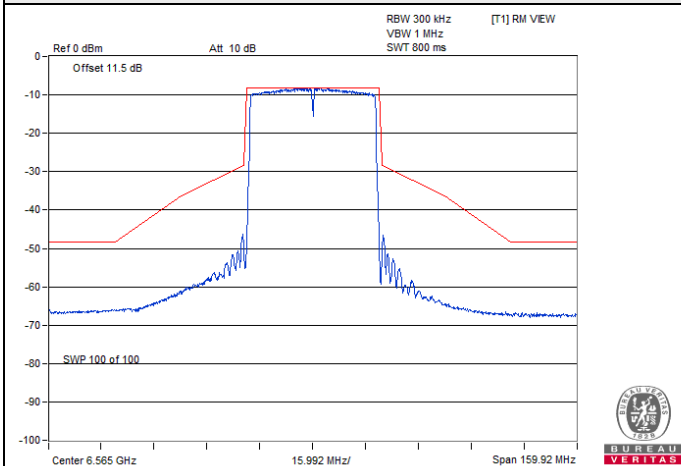


802.11ax (HE40) Beamforming / Chain 1 : CH 107

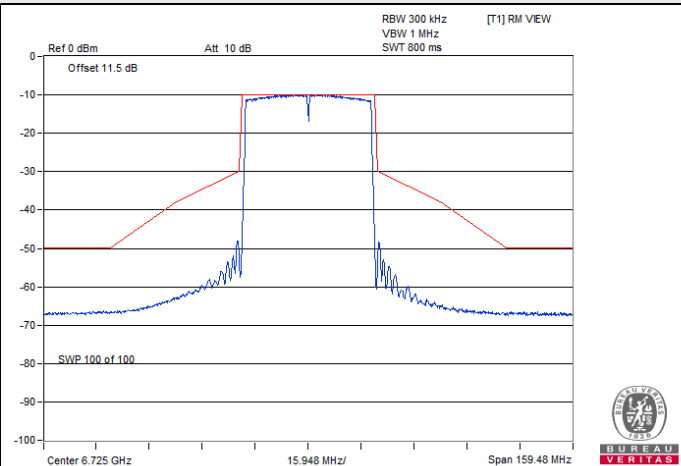


802.11ax (HE40) Beamforming / Chain 1 : CH 115

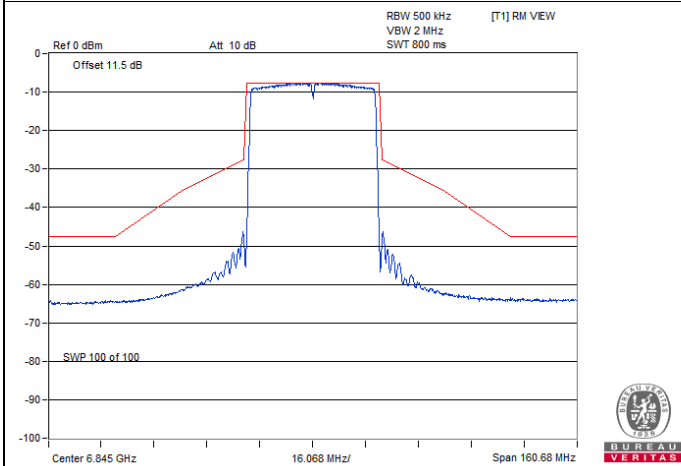
Spectrum Plot



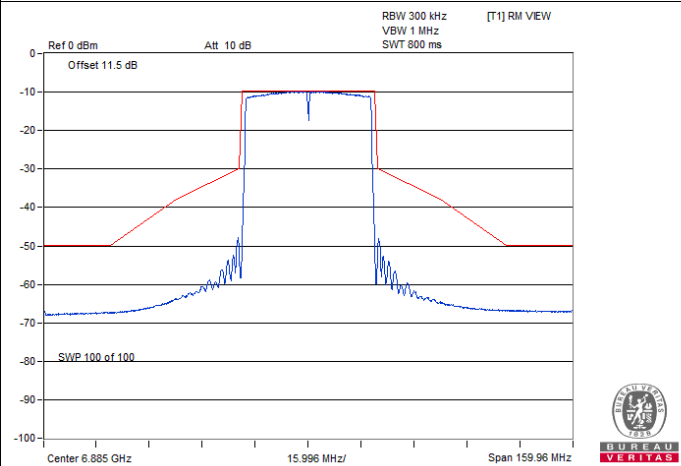
802.11ax (HE40) Beamforming / Chain 1 : CH 123



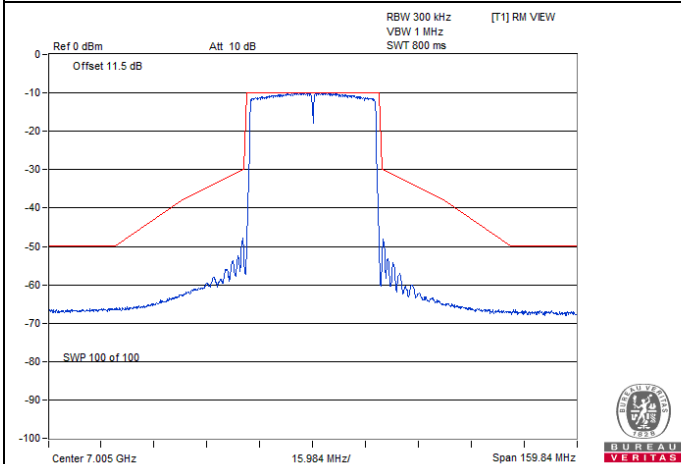
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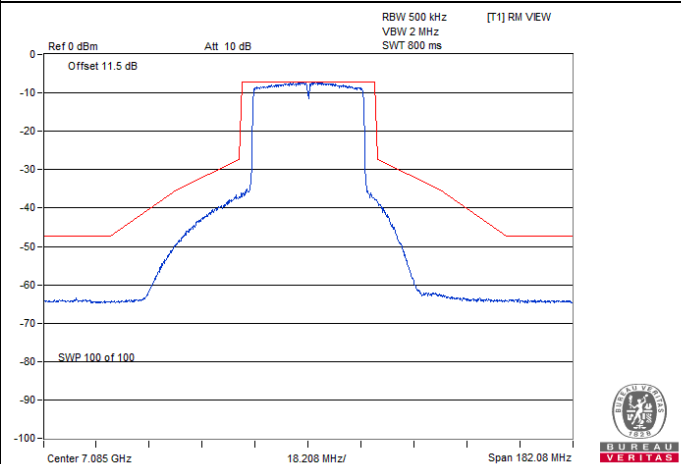
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802.11ax (HE40) Beamforming / Chain 1 : CH 187

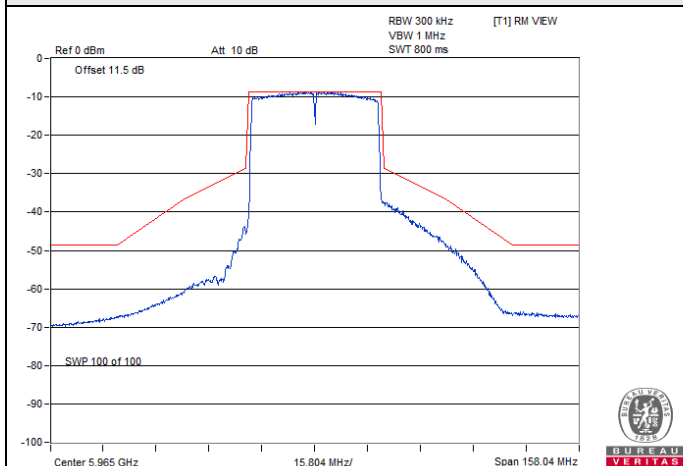


802.11ax (HE40) Beamforming / Chain 1 : CH 211

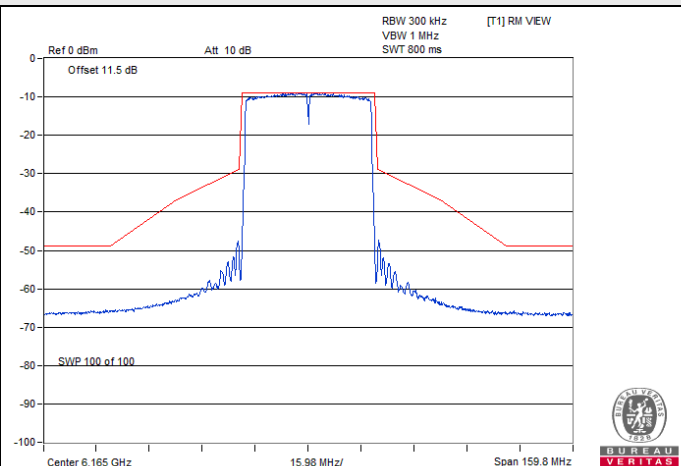


802.11ax (HE40) Beamforming / Chain 1 : CH 227

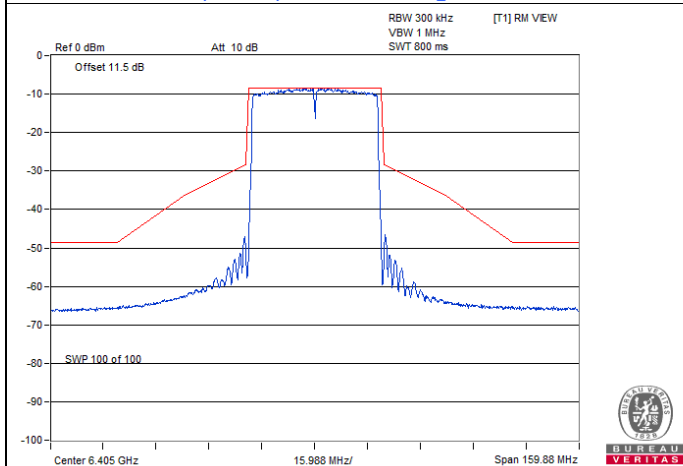
Spectrum Plot



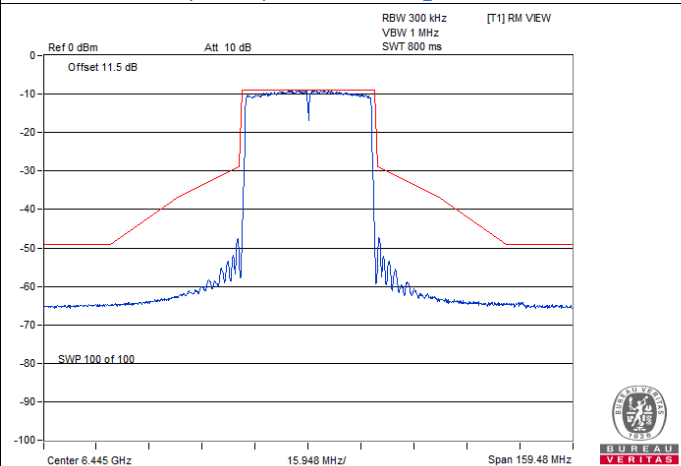
802.11ax (HE40) Beamforming / Chain 2 : CH 3



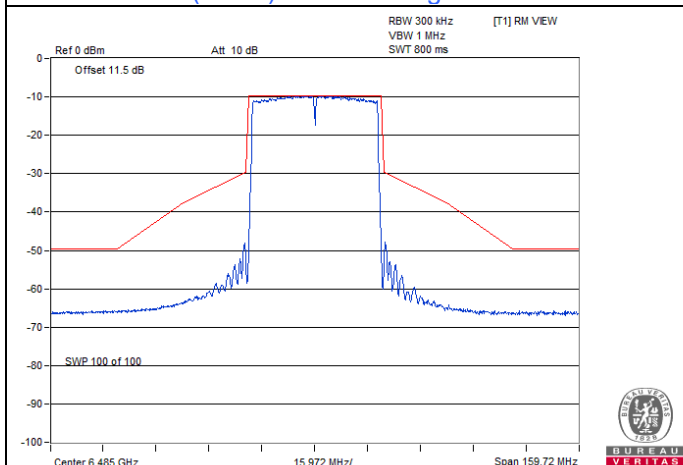
802.11ax (HE40) Beamforming / Chain 2 : CH 43



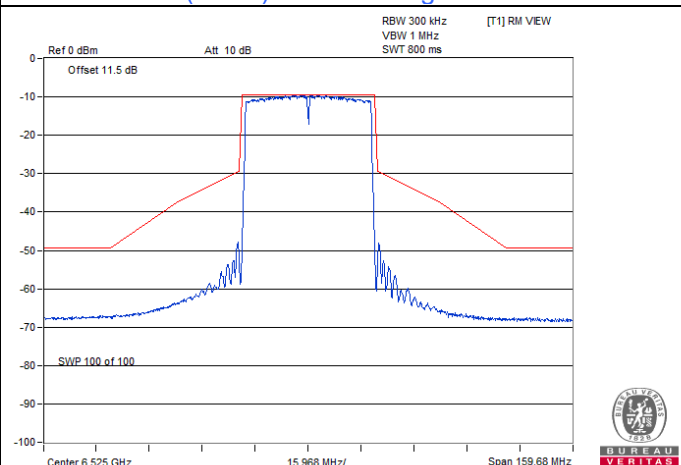
802.11ax (HE40) Beamforming / Chain 2 : CH 91



802.11ax (HE40) Beamforming / Chain 2 : CH 99

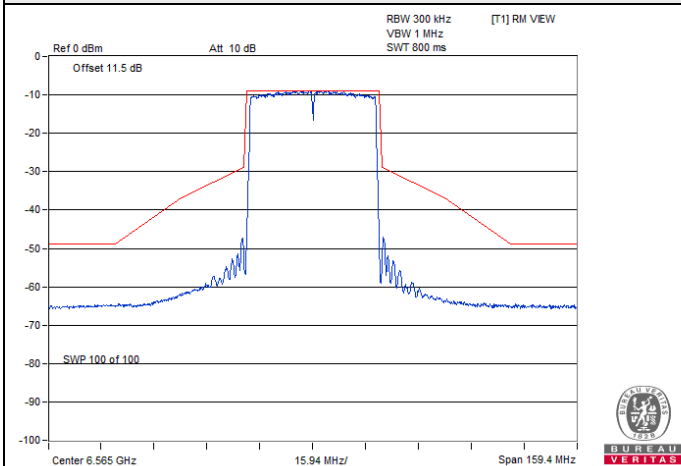


802.11ax (HE40) Beamforming / Chain 2 : CH 107

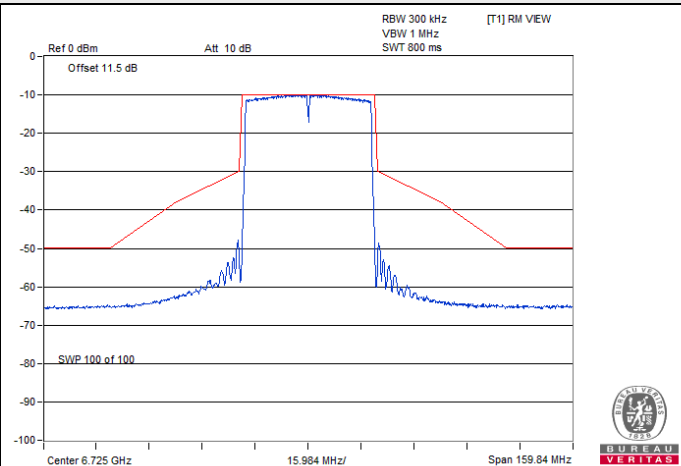


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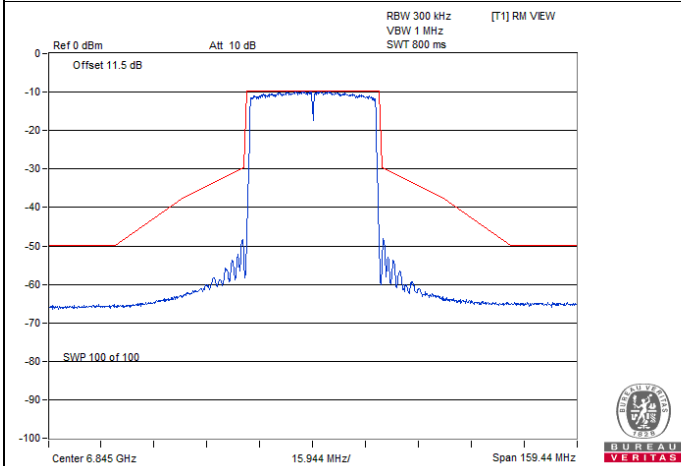
Spectrum Plot



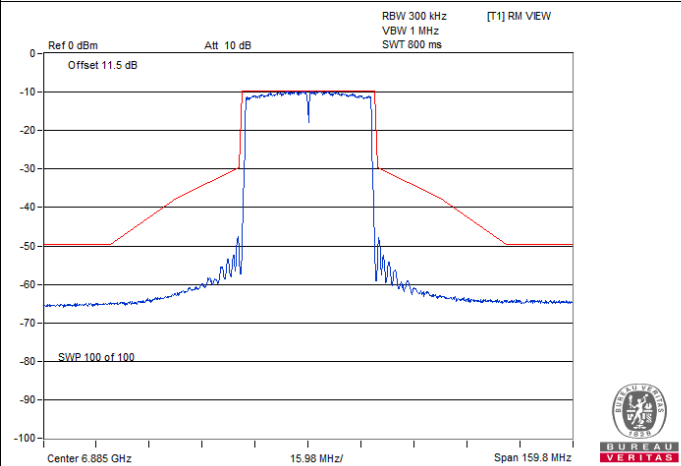
802.11ax (HE40) Beamforming / Chain 2 : CH 123



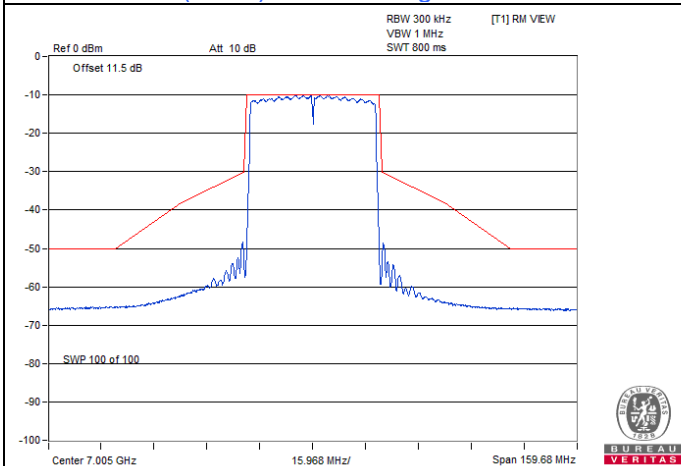
802.11ax (HE40) Beamforming / Chain 2 : CH 155



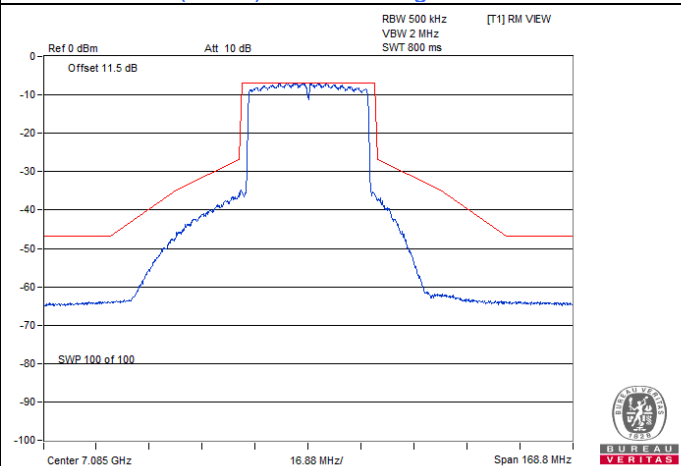
802.11ax (HE40) Beamforming / Chain 2 : CH 179



802.11ax (HE40) Beamforming / Chain 2 : CH 187

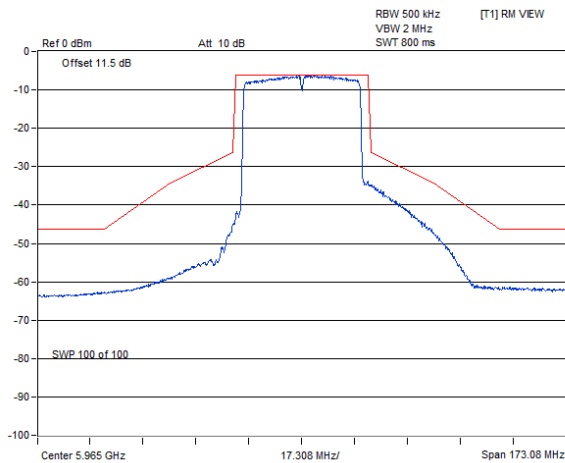


802.11ax (HE40) Beamforming / Chain 2 : CH 211

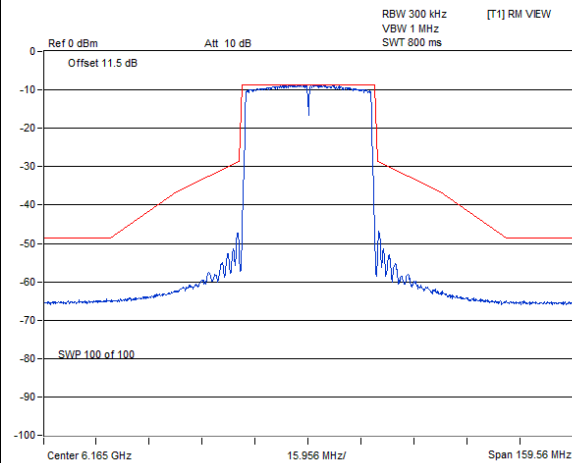


802.11ax (HE40) Beamforming / Chain 2 : CH 227

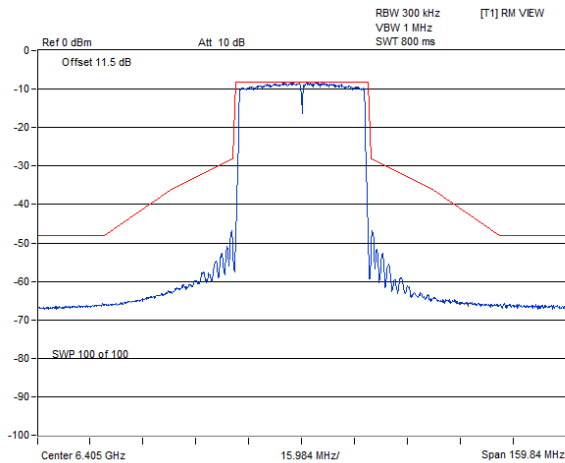
Spectrum Plot



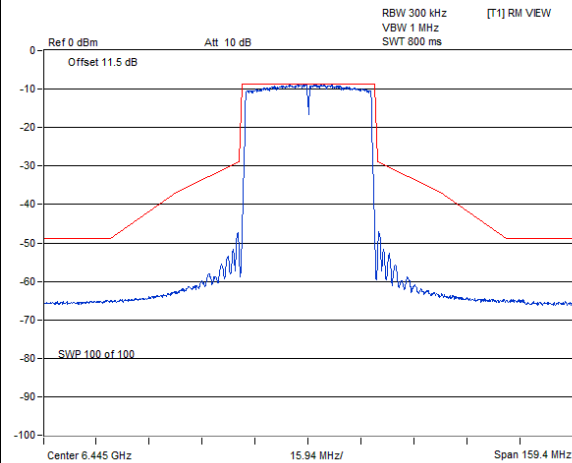
802.11ax (HE40) Beamforming / Chain 3 : CH 3



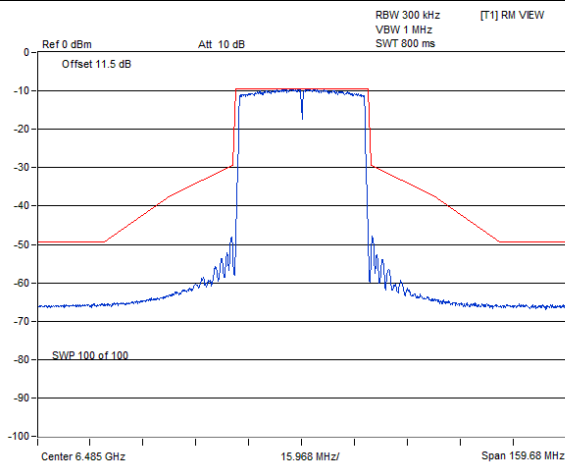
802.11ax (HE40) Beamforming / Chain 3 : CH 43



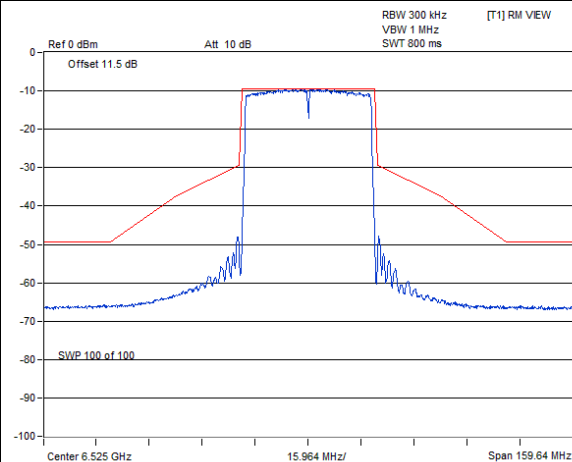
802.11ax (HE40) Beamforming / Chain 3 : CH 91



802.11ax (HE40) Beamforming / Chain 3 : CH 99

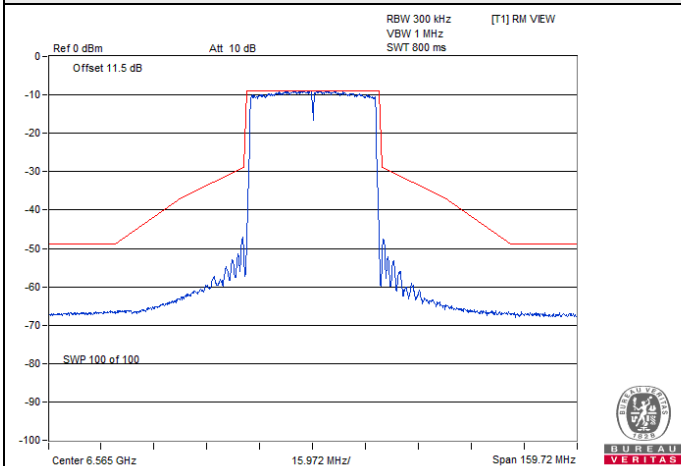


802.11ax (HE40) Beamforming / Chain 3 : CH 107

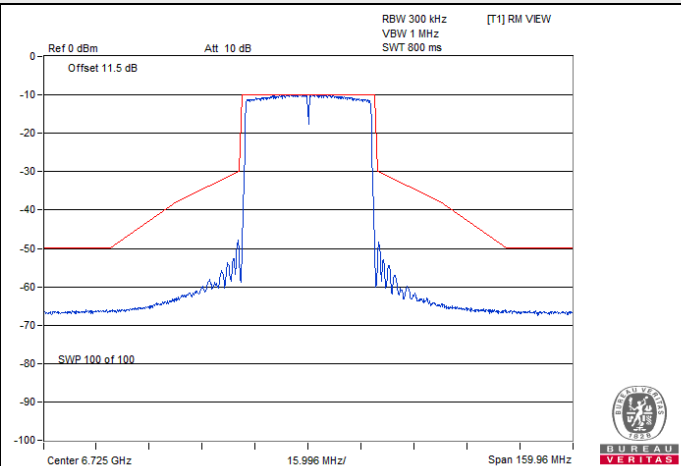


802.11ax (HE40) Beamforming / Chain 3 : CH 115

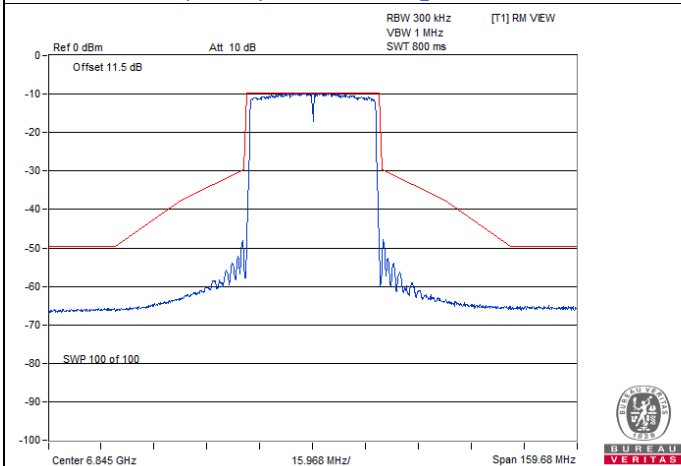
Spectrum Plot



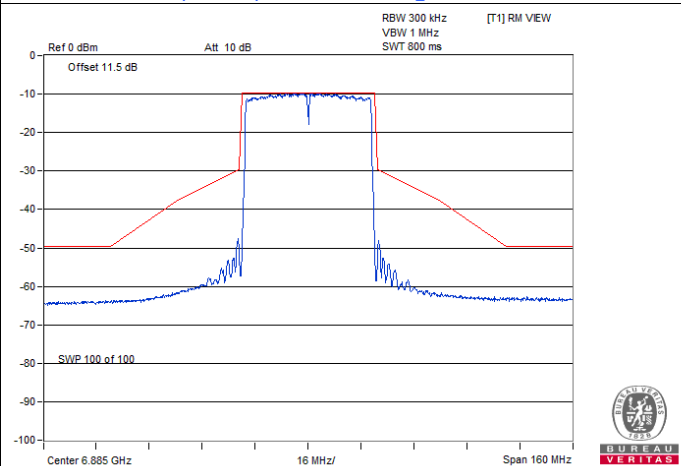
802.11ax (HE40) Beamforming / Chain 3 : CH 123



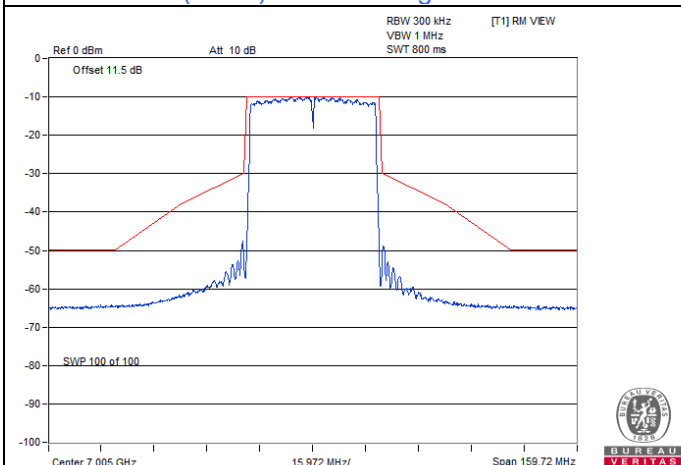
802.11ax (HE40) Beamforming / Chain 3 : CH 155



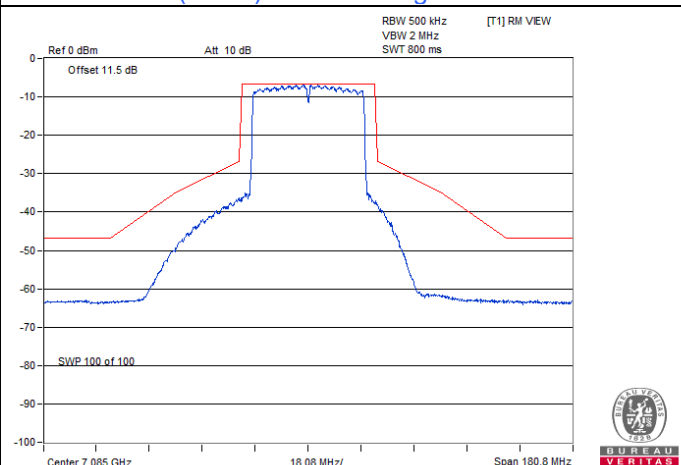
802.11ax (HE40) Beamforming / Chain 3 : CH 179



802.11ax (HE40) Beamforming / Chain 3 : CH 187



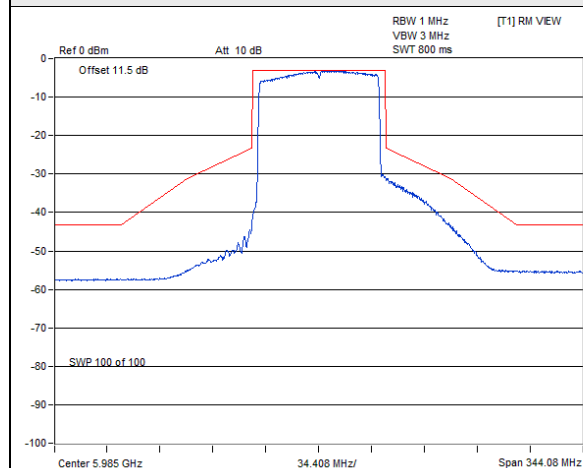
802.11ax (HE40) Beamforming / Chain 3 : CH 211



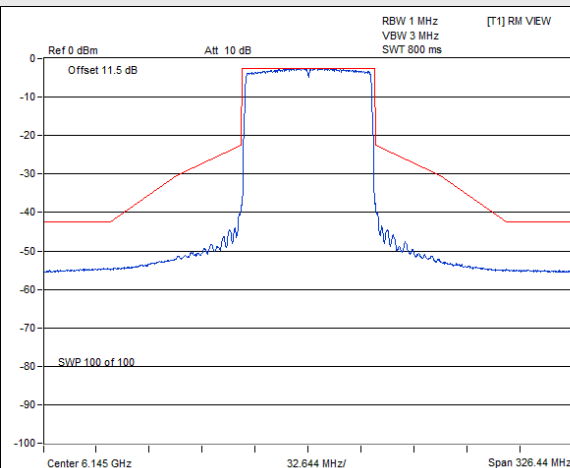
802.11ax (HE40) Beamforming / Chain 3 : CH 227

802.11ax (HE80) Beamforming

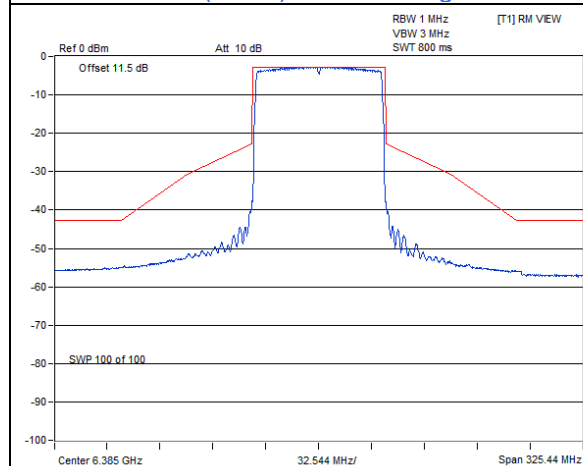
Spectrum Plot



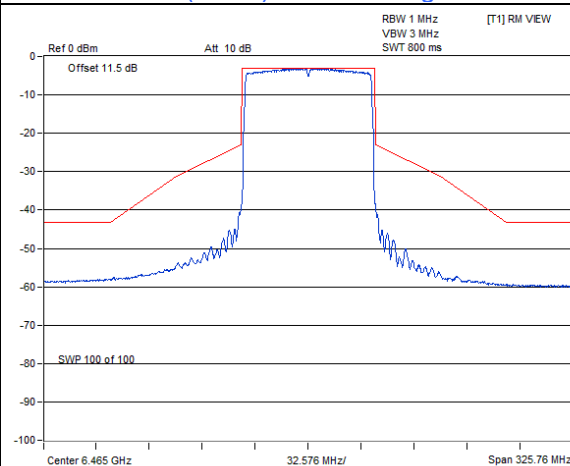
802.11ax (HE80) Beamforming / Chain 0 : CH 7



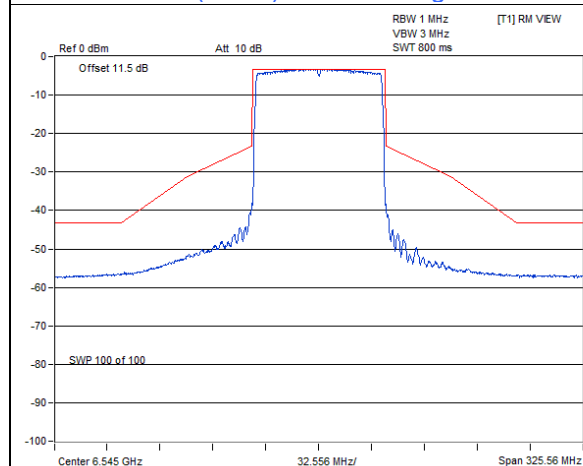
802.11ax (HE80) Beamforming / Chain 0 : CH 39



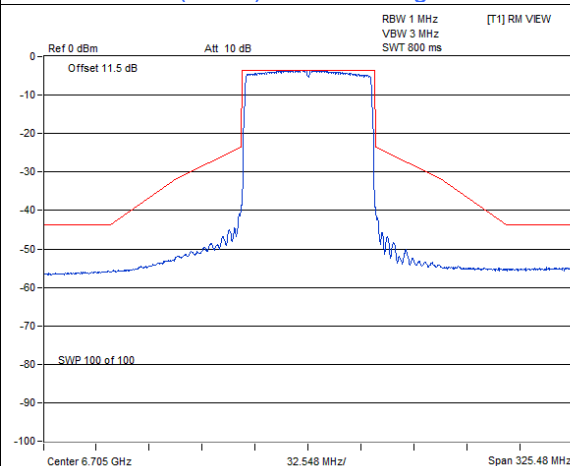
802.11ax (HE80) Beamforming / Chain 0 : CH 87



802.11ax (HE80) Beamforming / Chain 0 : CH 103

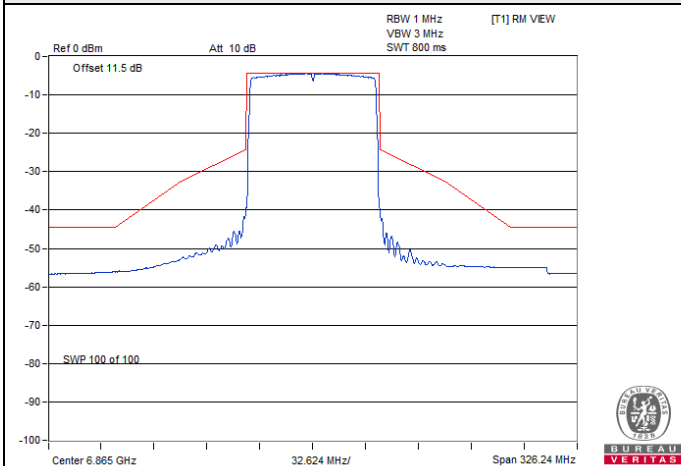


802.11ax (HE80) Beamforming / Chain 0 : CH 119

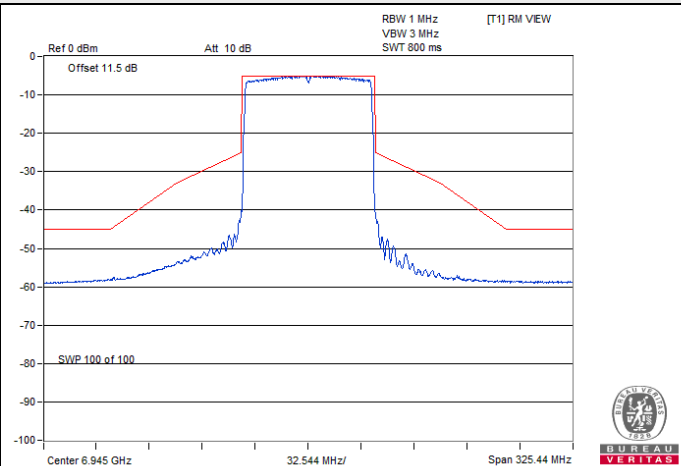


802.11ax (HE80) Beamforming / Chain 0 : CH 151

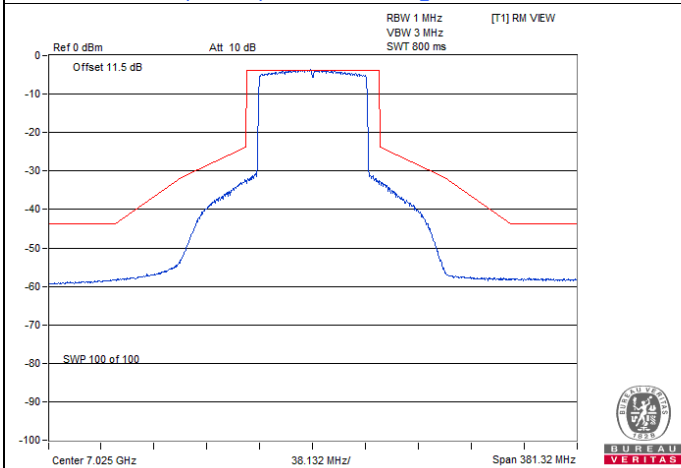
Spectrum Plot



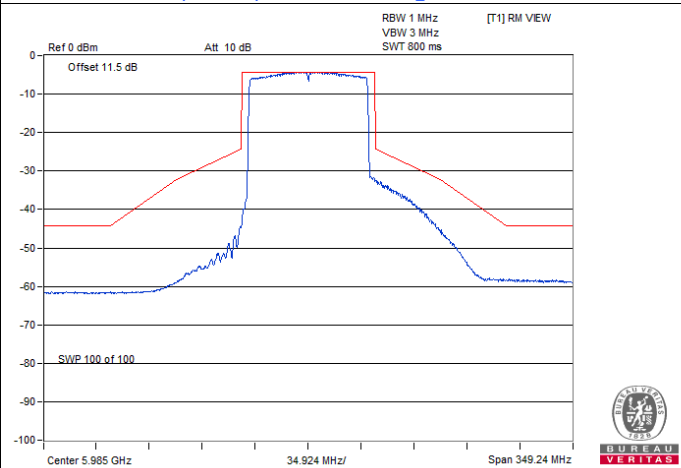
802.11ax (HE80) Beamforming / Chain 0 : CH 183



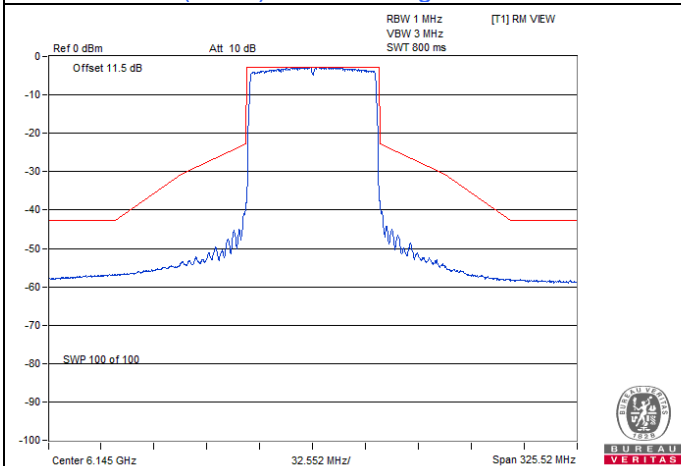
802.11ax (HE80) Beamforming / Chain 0 : CH 199



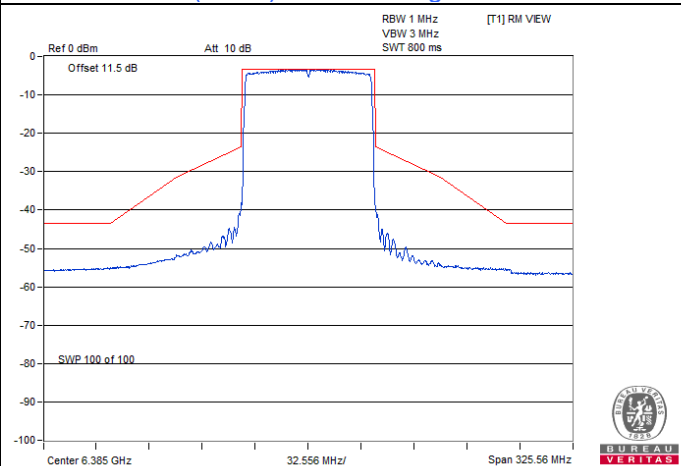
802.11ax (HE80) Beamforming / Chain 0 : CH 215



802.11ax (HE80) Beamforming / Chain 1 : CH 7

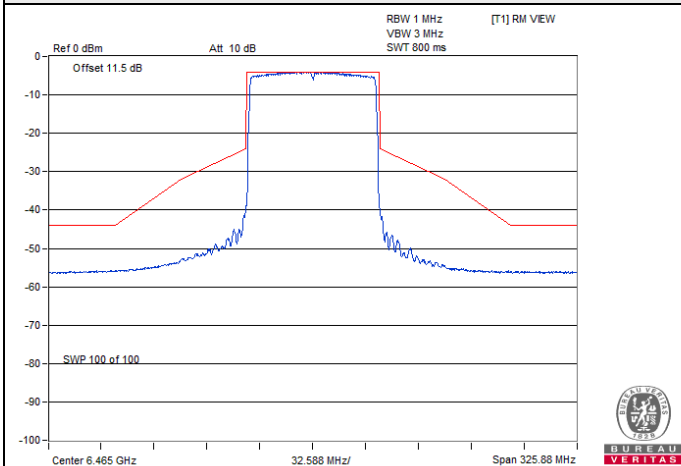


802.11ax (HE80) Beamforming / Chain 1 : CH 39

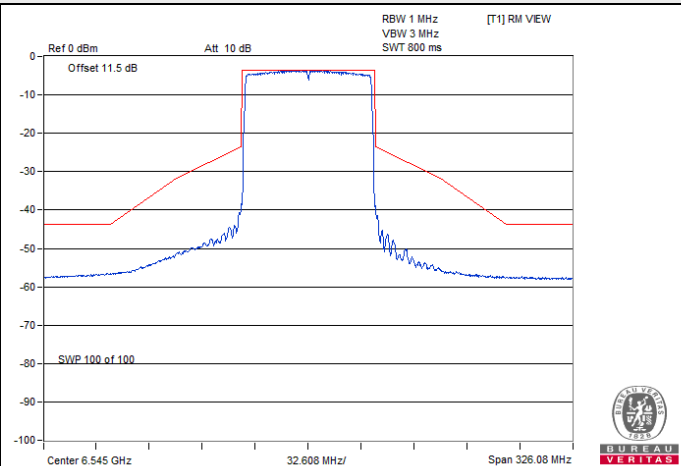


802.11ax (HE80) Beamforming / Chain 1 : CH 87

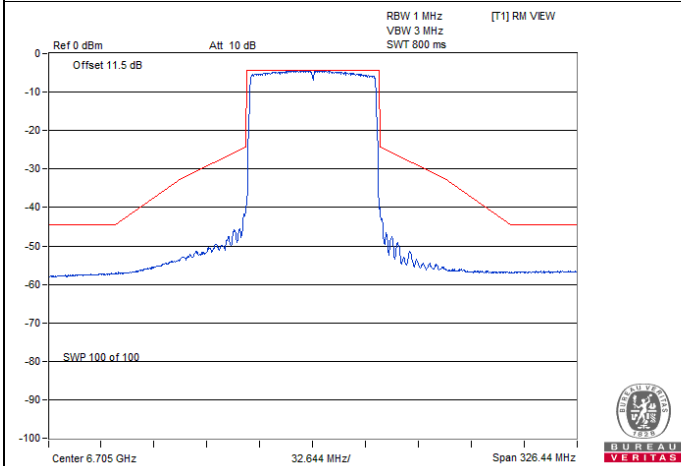
Spectrum Plot



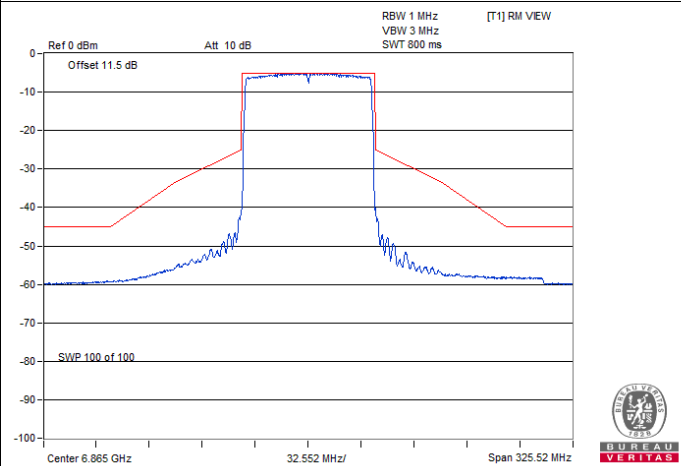
802.11ax (HE80) Beamforming / Chain 1 : CH 103



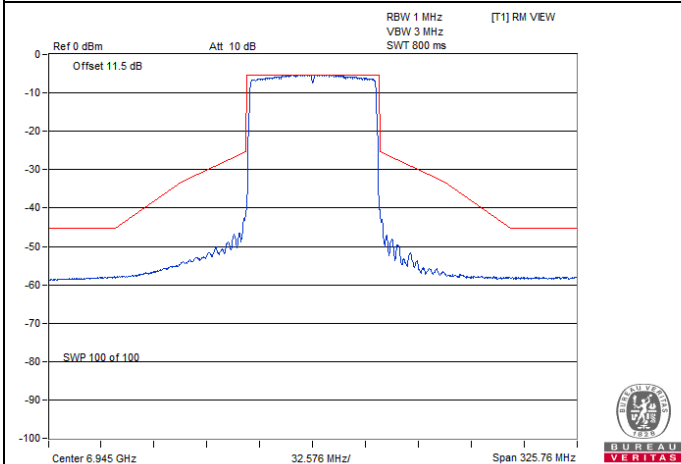
802.11ax (HE80) Beamforming / Chain 1 : CH 119



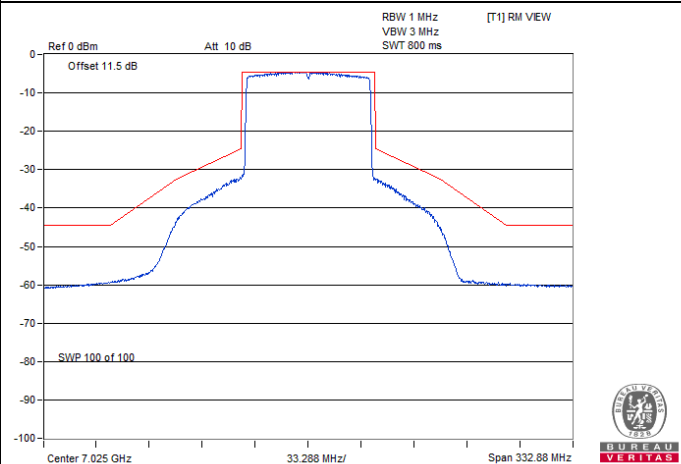
802.11ax (HE80) Beamforming / Chain 1 : CH 151



802.11ax (HE80) Beamforming / Chain 1 : CH 183

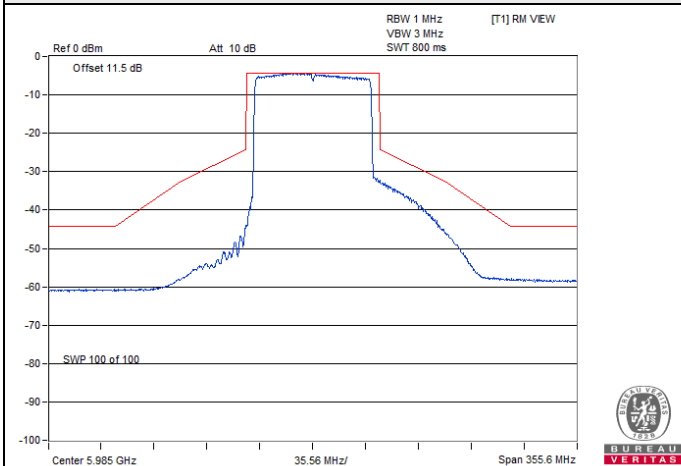


802.11ax (HE80) Beamforming / Chain 1 : CH 199

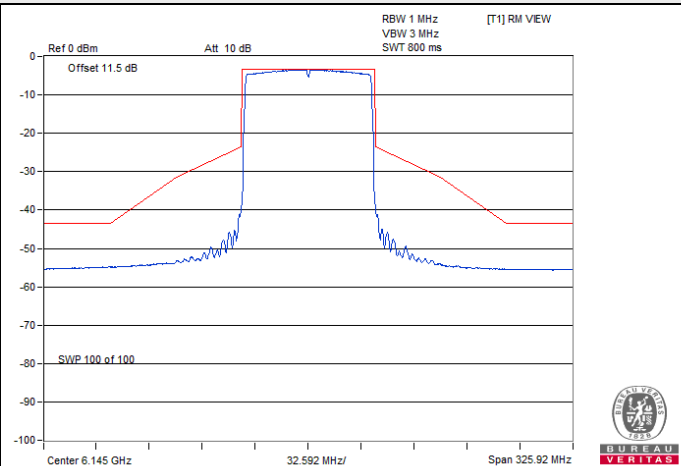


802.11ax (HE80) Beamforming / Chain 1 : CH 215

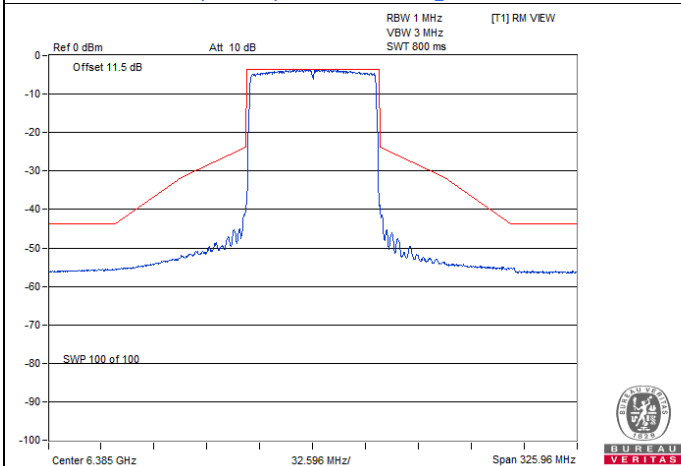
Spectrum Plot



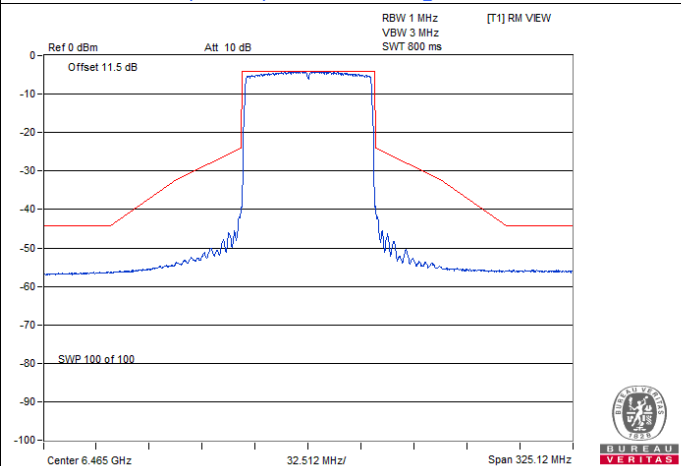
802.11ax (HE80) Beamforming / Chain 2 : CH 7



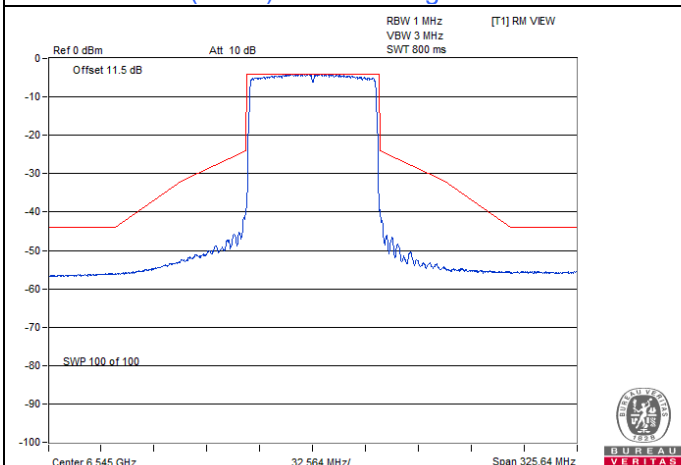
802.11ax (HE80) Beamforming / Chain 2 : CH 39



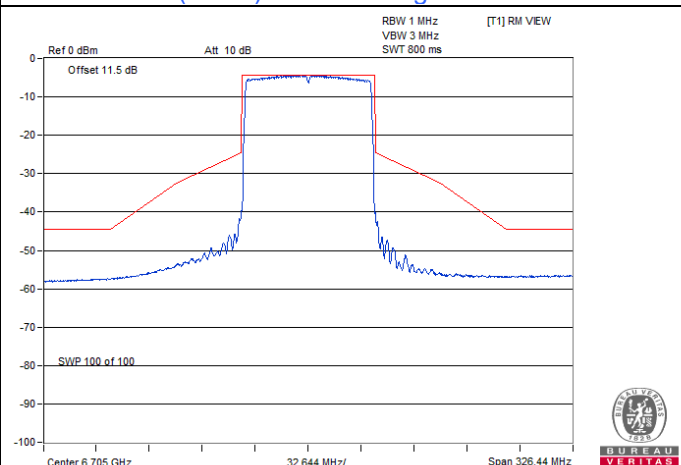
802.11ax (HE80) Beamforming / Chain 2 : CH 87



802.11ax (HE80) Beamforming / Chain 2 : CH 103

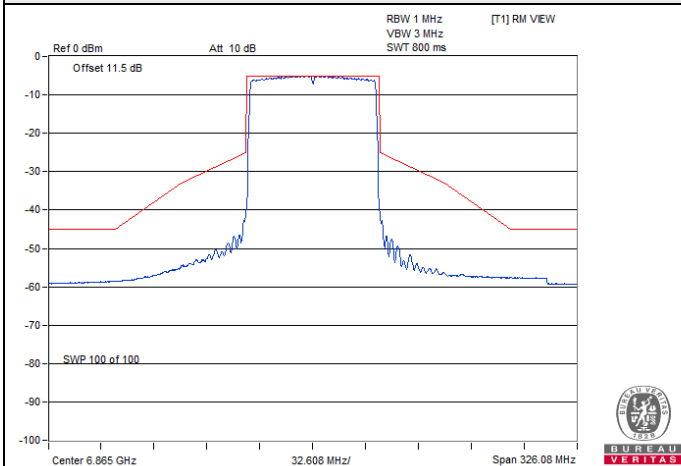


802.11ax (HE80) Beamforming / Chain 2 : CH 119

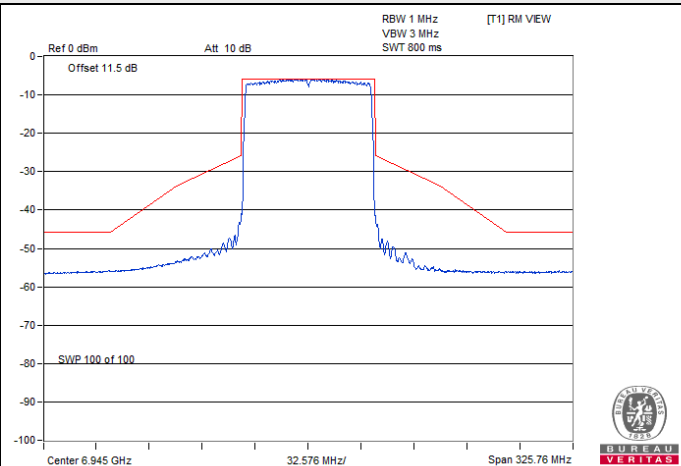


802.11ax (HE80) Beamforming / Chain 2 : CH 151

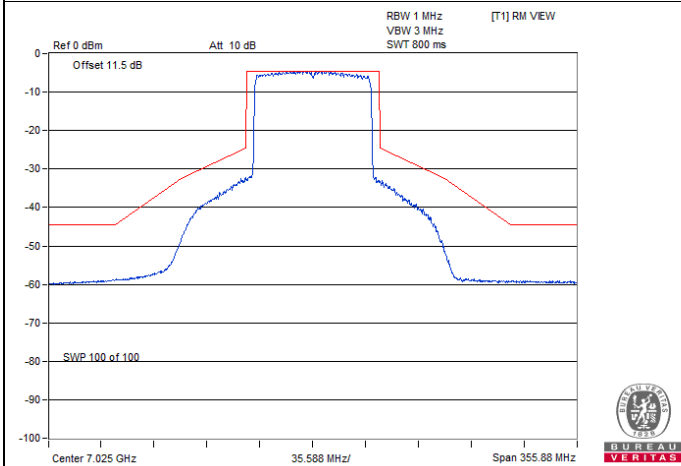
Spectrum Plot



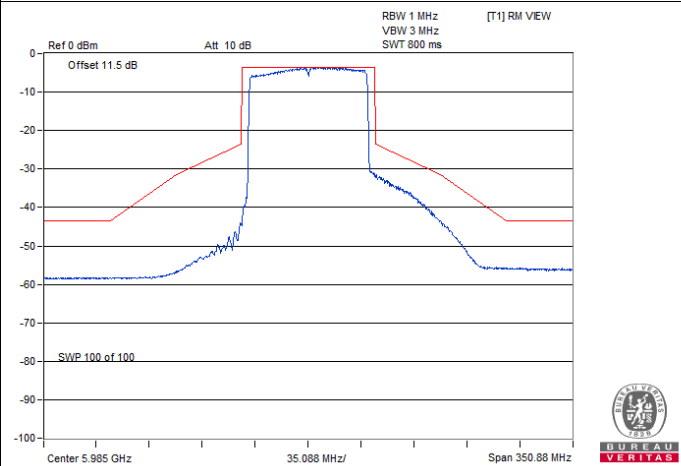
802.11ax (HE80) Beamforming / Chain 2 : CH 183



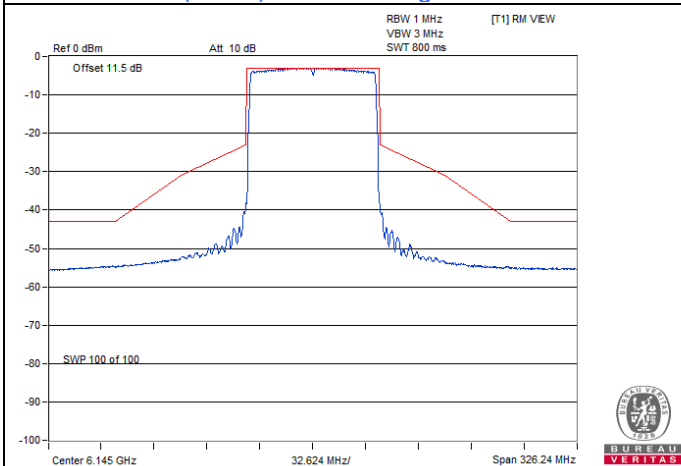
802.11ax (HE80) Beamforming / Chain 2 : CH 199



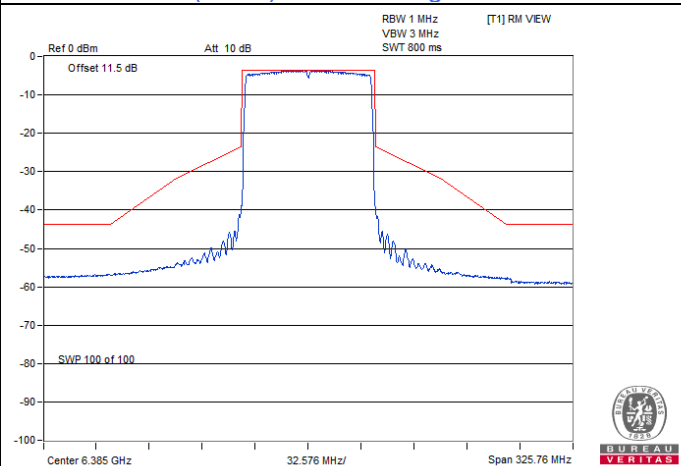
802.11ax (HE80) Beamforming / Chain 2 : CH 215



802.11ax (HE80) Beamforming / Chain 3 : CH 7

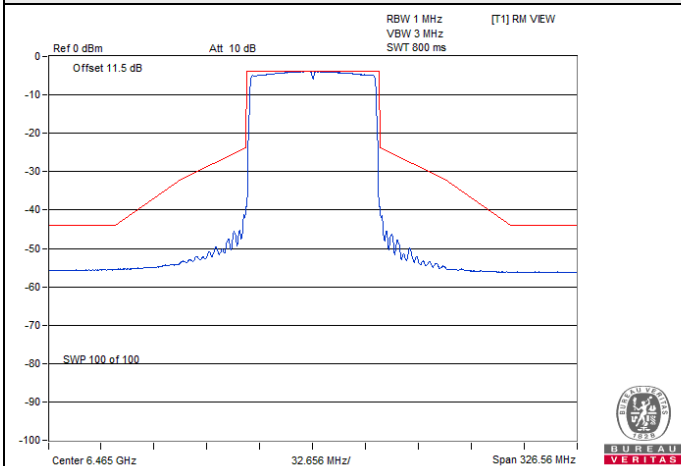


802.11ax (HE80) Beamforming / Chain 3 : CH 39

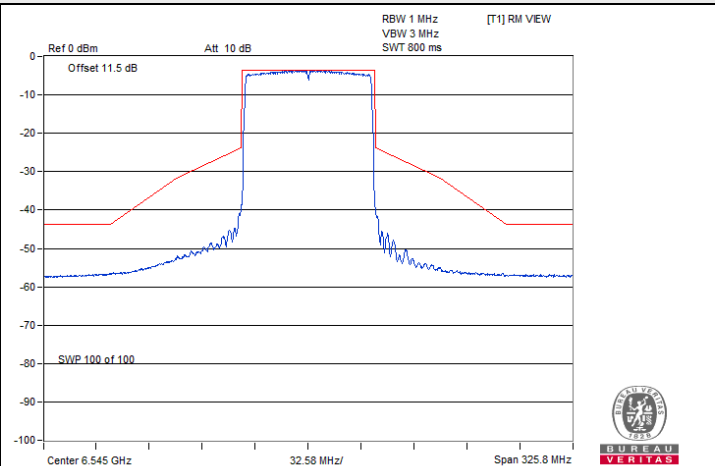


802.11ax (HE80) Beamforming / Chain 3 : CH 87

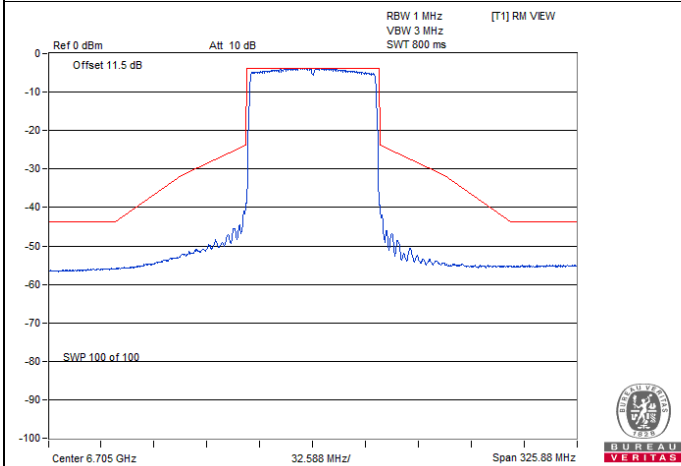
Spectrum Plot



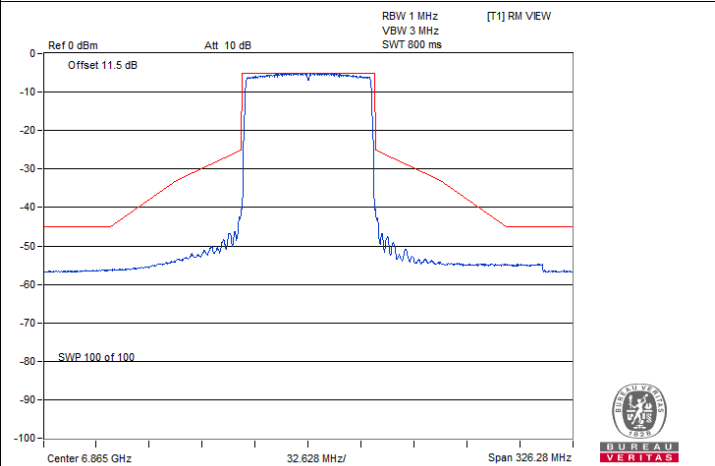
802.11ax (HE80) Beamforming / Chain 3 : CH 103



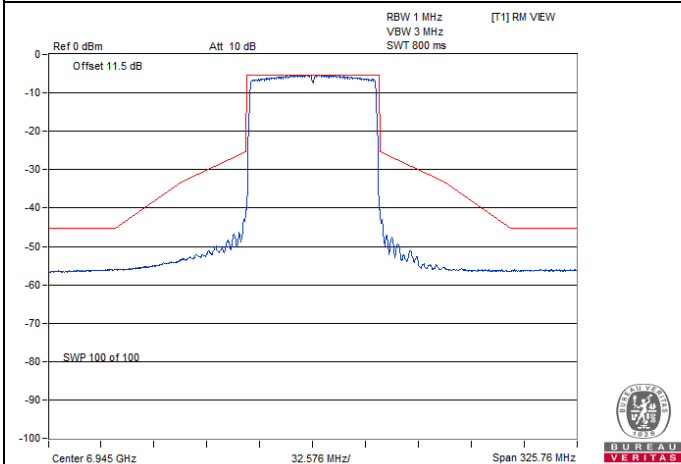
802.11ax (HE80) Beamforming / Chain 3 : CH 119



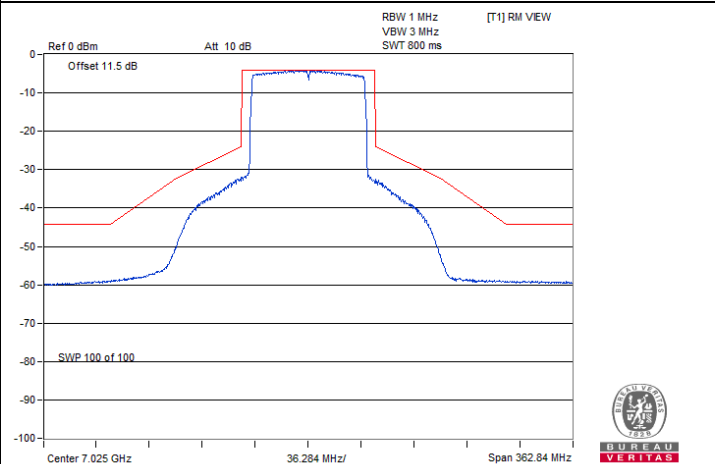
802.11ax (HE80) Beamforming / Chain 3 : CH 151



802.11ax (HE80) Beamforming / Chain 3 : CH 183



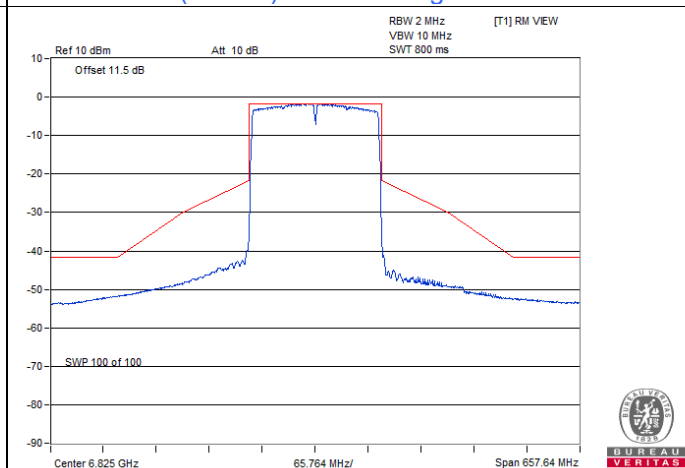
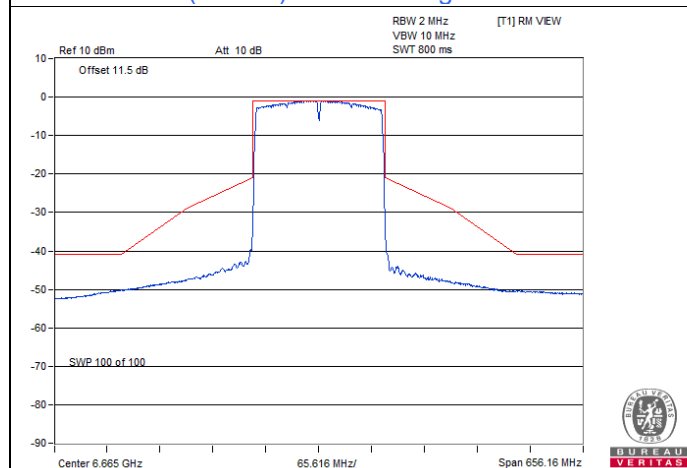
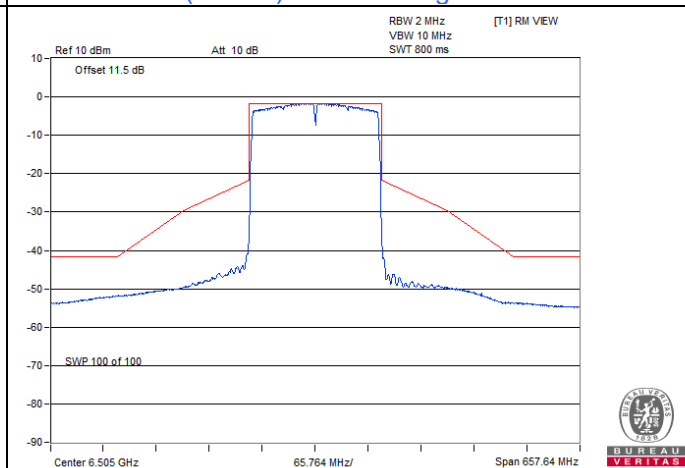
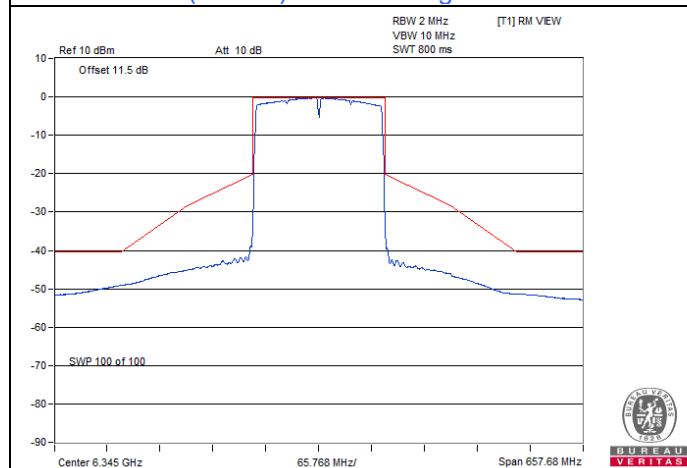
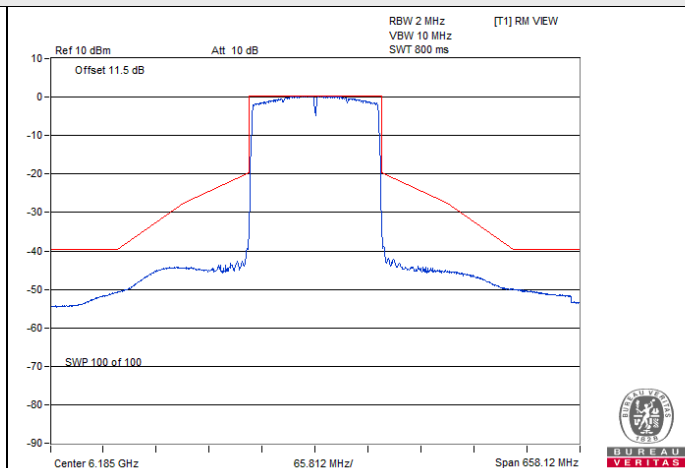
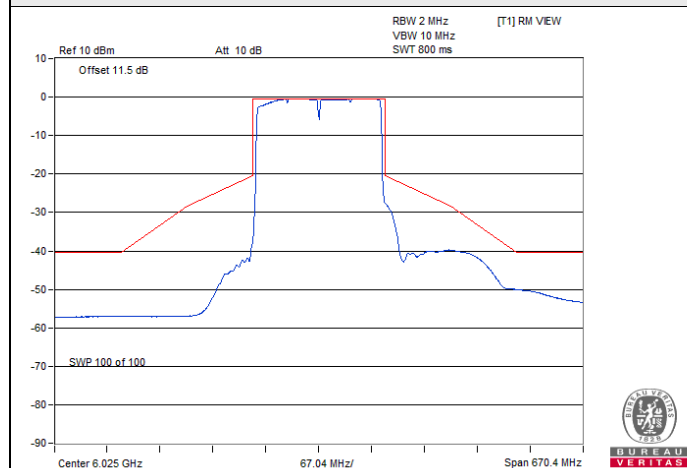
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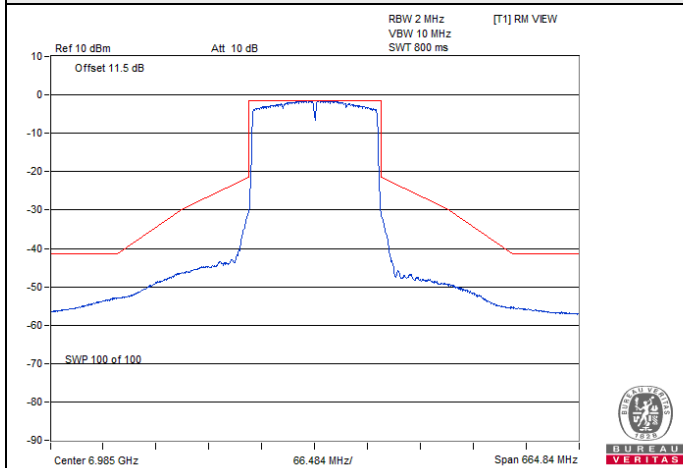
802.11ax (HE80) Beamforming / Chain 3 : CH 215

802.11ax (HE160) Beamforming

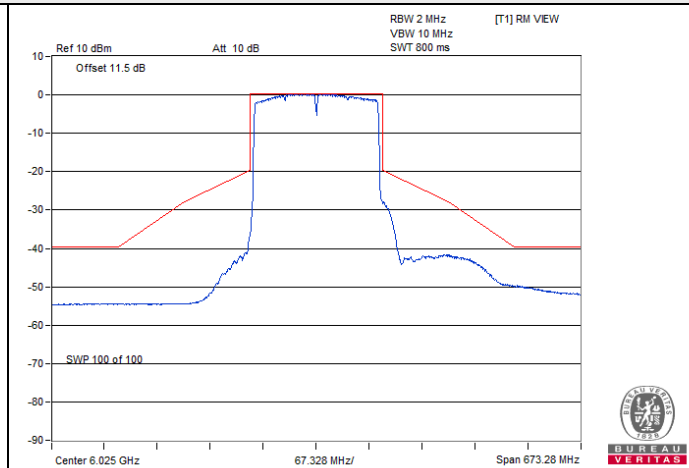
Spectrum Plot



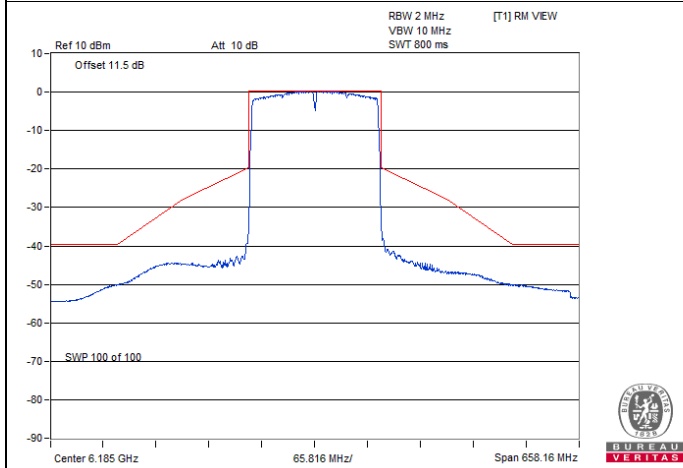
Spectrum Plot



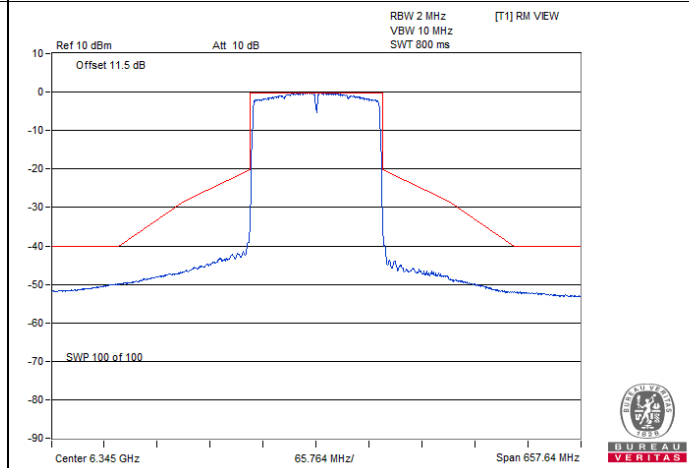
802.11ax (HE160) Beamforming / Chain 0 : CH 207



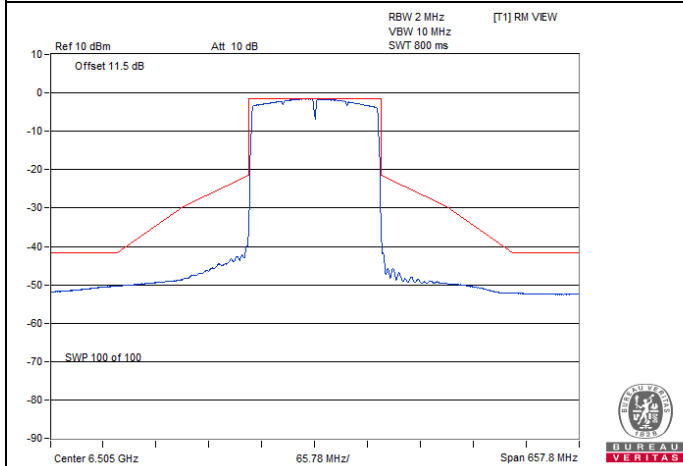
802.11ax (HE160) Beamforming / Chain 1 : CH 15



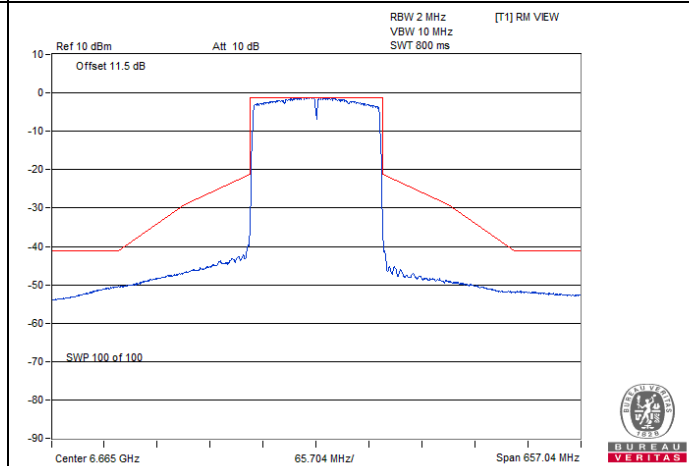
802.11ax (HE160) Beamforming / Chain 1 : CH 47



802.11ax (HE160) Beamforming / Chain 1 : CH 79

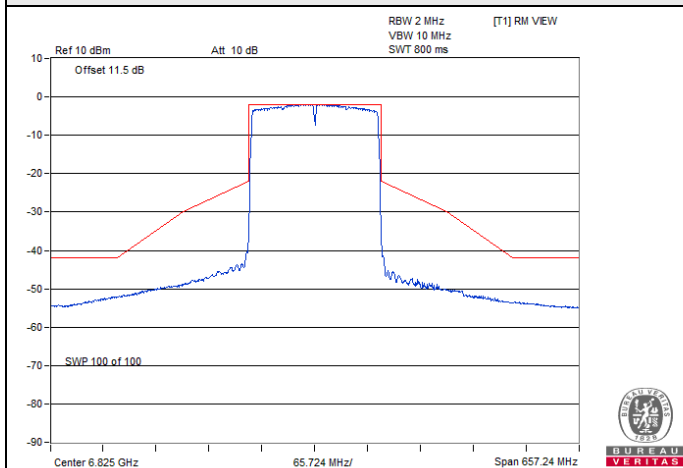


802.11ax (HE160) Beamforming / Chain 1 : CH 111

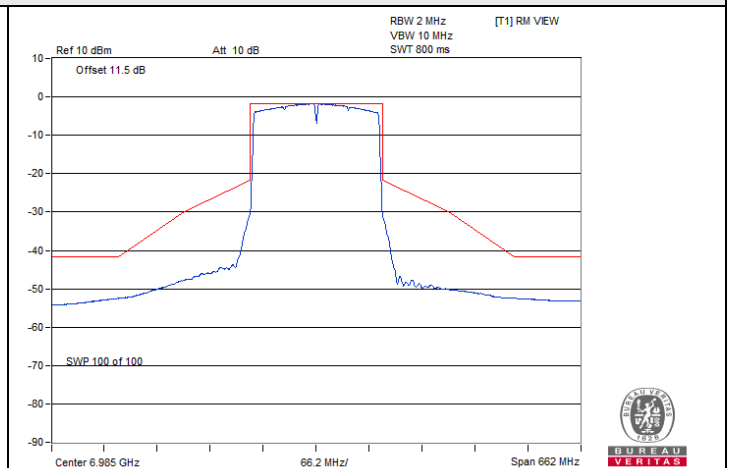


802.11ax (HE160) Beamforming / Chain 1 : CH 143

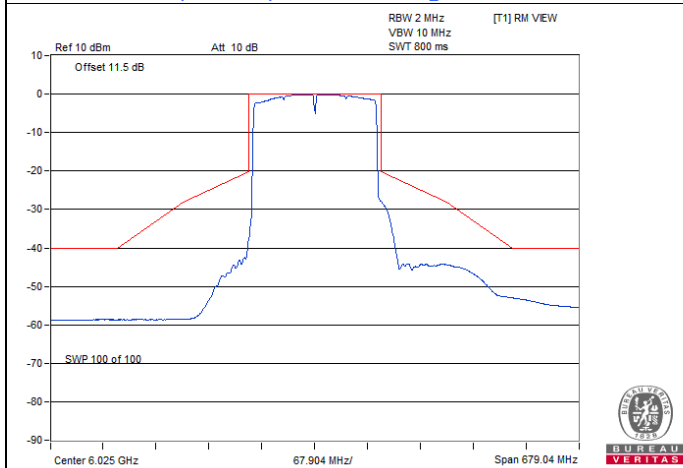
Spectrum Plot



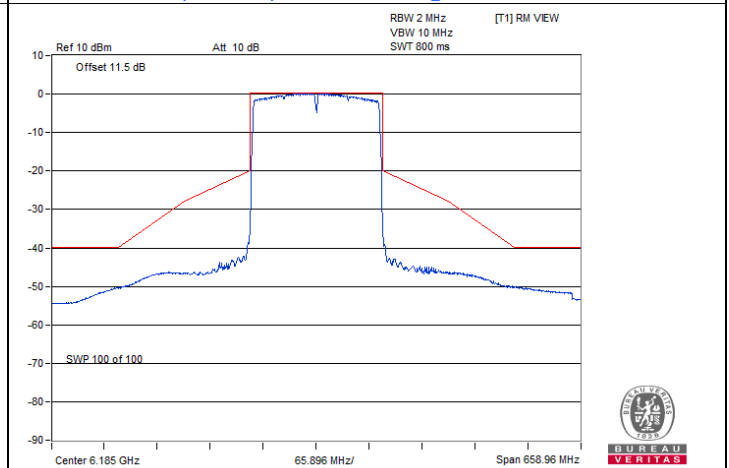
802.11ax (HE160) Beamforming / Chain 1 : CH 175



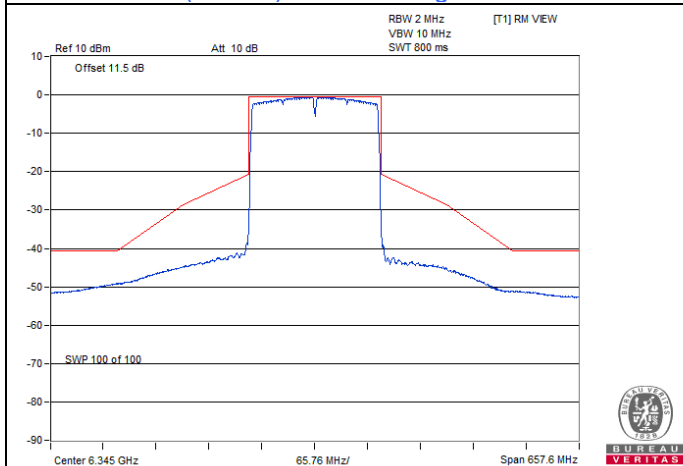
802.11ax (HE160) Beamforming / Chain 1 : CH 207



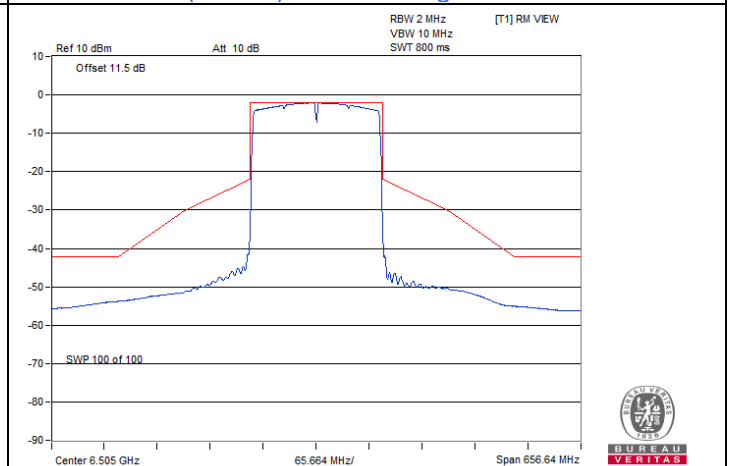
802.11ax (HE160) Beamforming / Chain 2 : CH 15



802.11ax (HE160) Beamforming / Chain 2 : CH 47

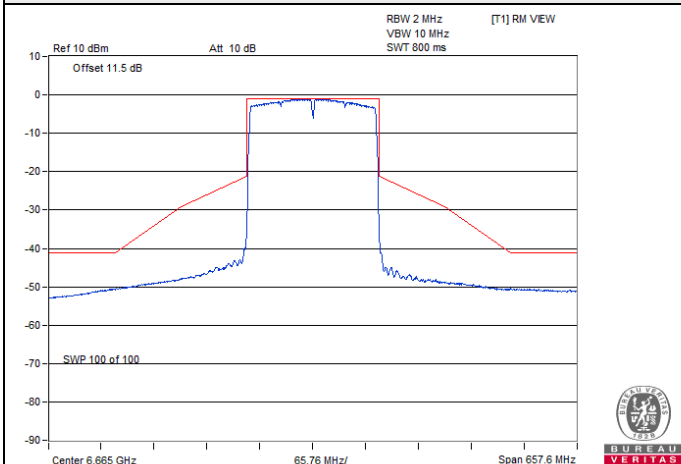


802.11ax (HE160) Beamforming / Chain 2 : CH 79

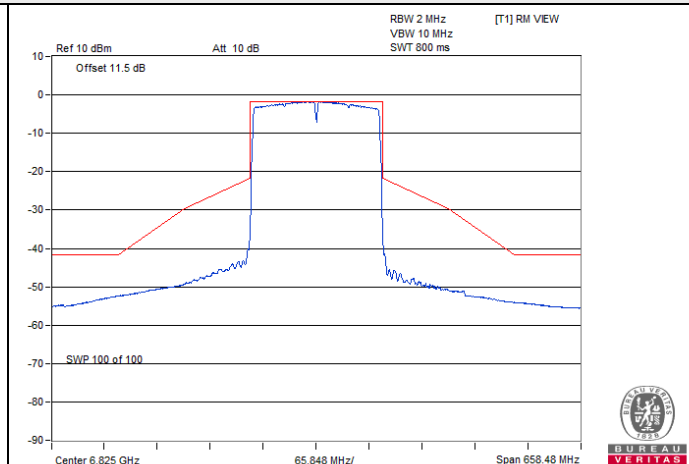


802.11ax (HE160) Beamforming / Chain 2 : CH 111

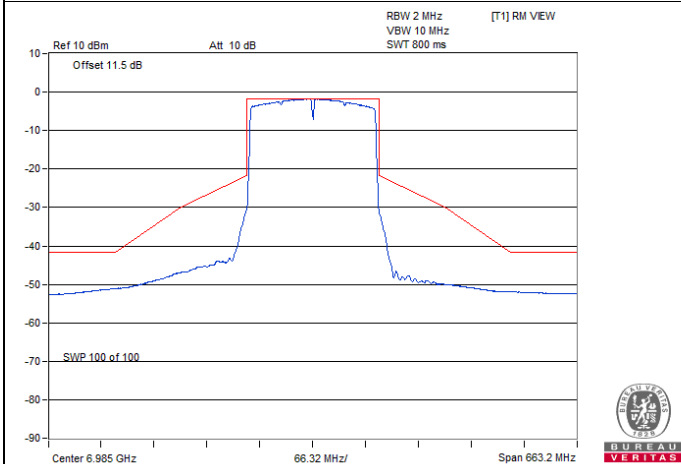
Spectrum Plot



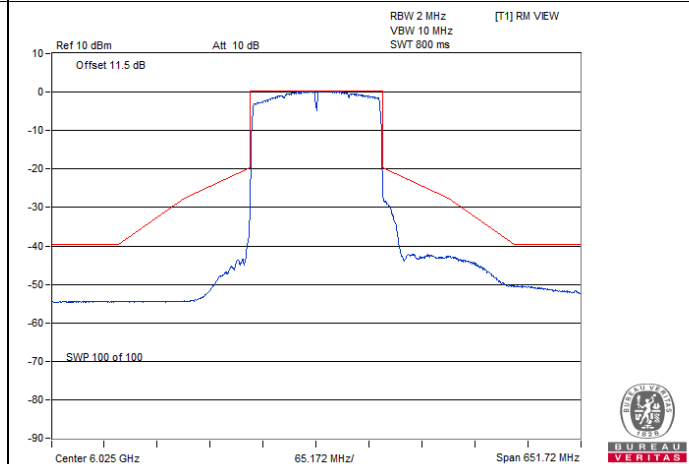
802.11ax (HE160) Beamforming / Chain 2 : CH 143



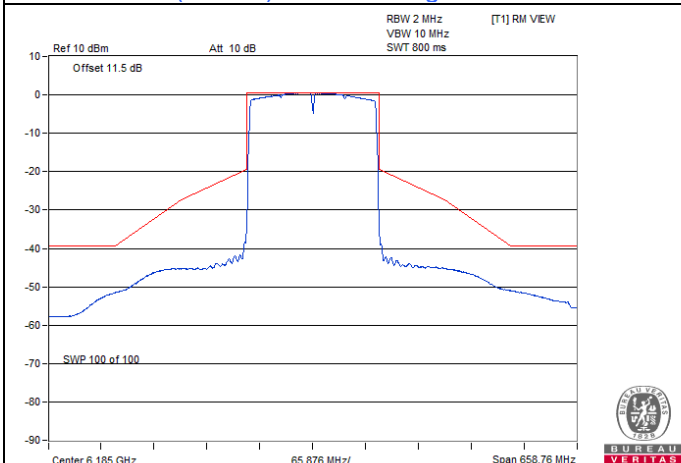
802.11ax (HE160) Beamforming / Chain 2 : CH 175



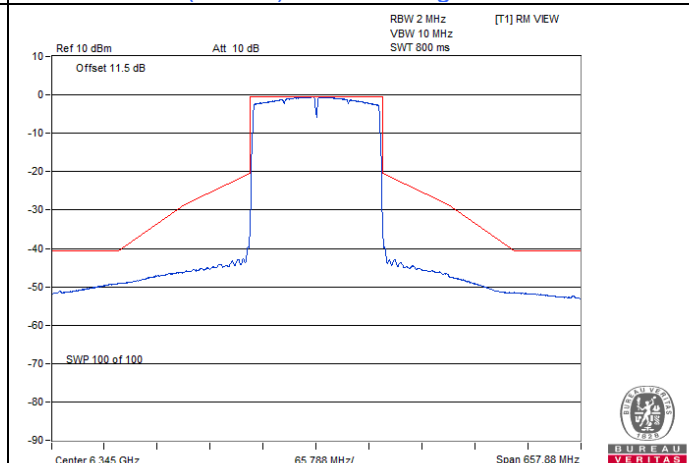
802.11ax (HE160) Beamforming / Chain 2 : CH 207



802.11ax (HE160) Beamforming / Chain 3 : CH 15

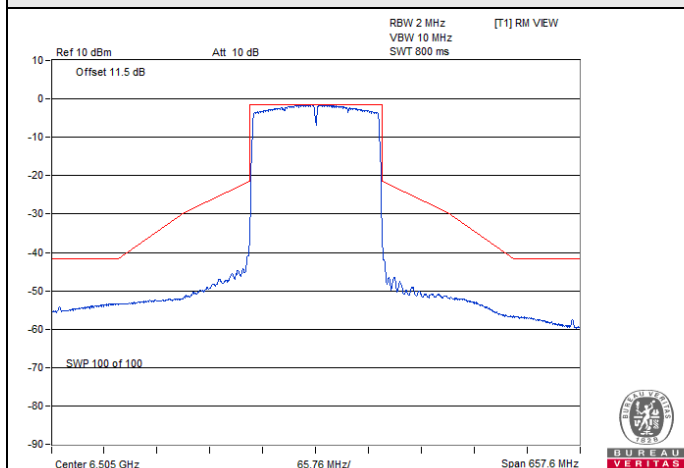


802.11ax (HE160) Beamforming / Chain 3 : CH 47

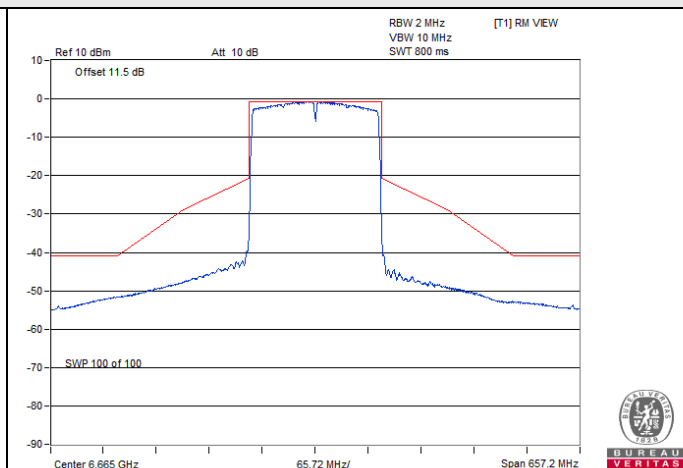


802.11ax (HE160) Beamforming / Chain 3 : CH 79

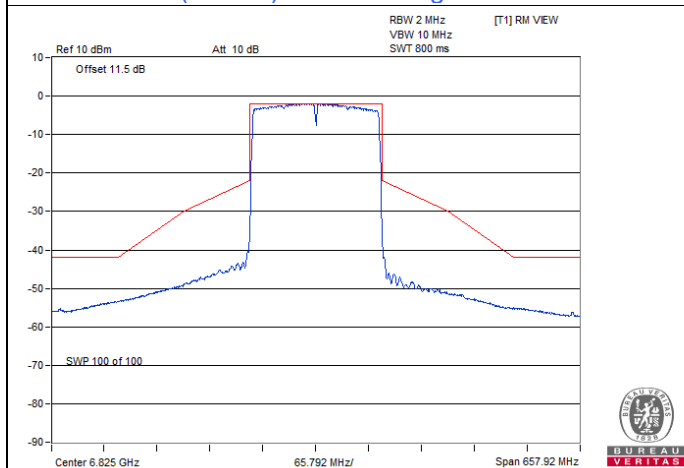
Spectrum Plot



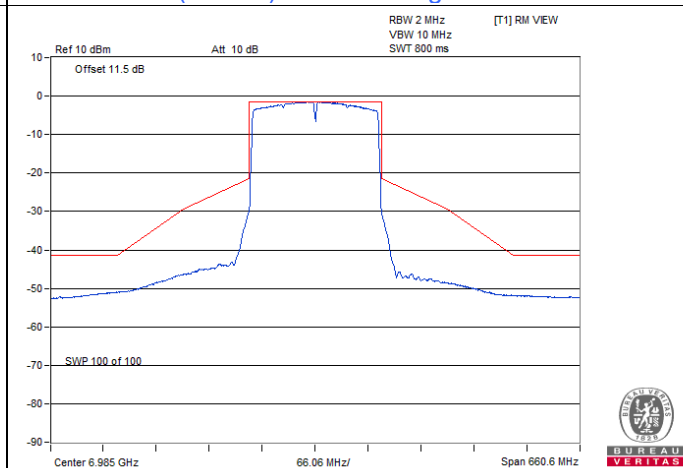
802.11ax (HE160) Beamforming / Chain 3 : CH 111



802.11ax (HE160) Beamforming / Chain 3 : CH 143



802.11ax (HE160) Beamforming / Chain 3 : CH 175

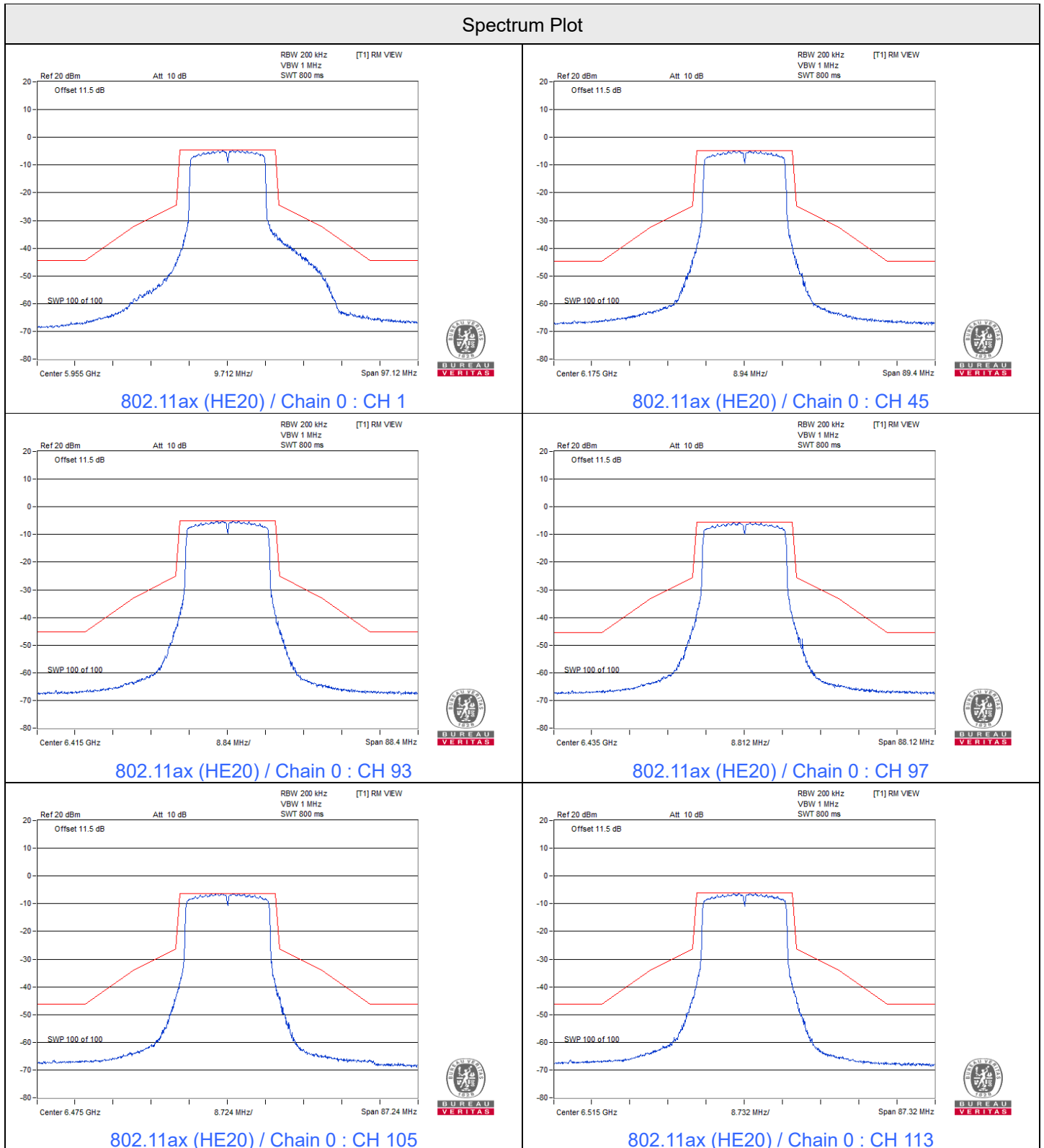


802.11ax (HE160) Beamforming / Chain 3 : CH 207

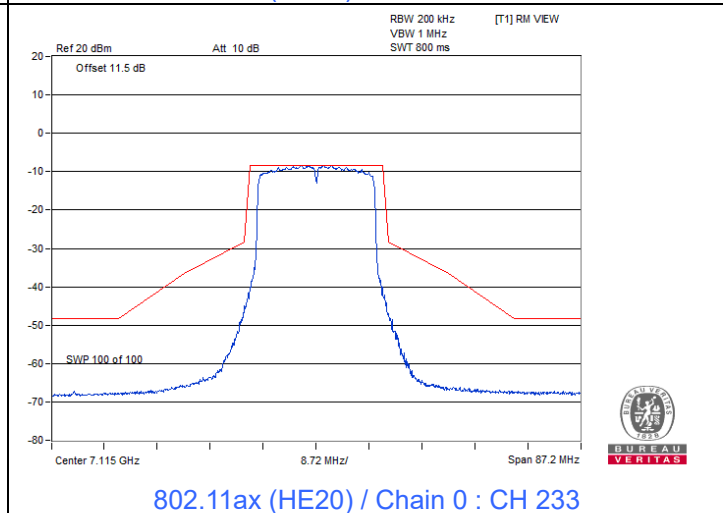
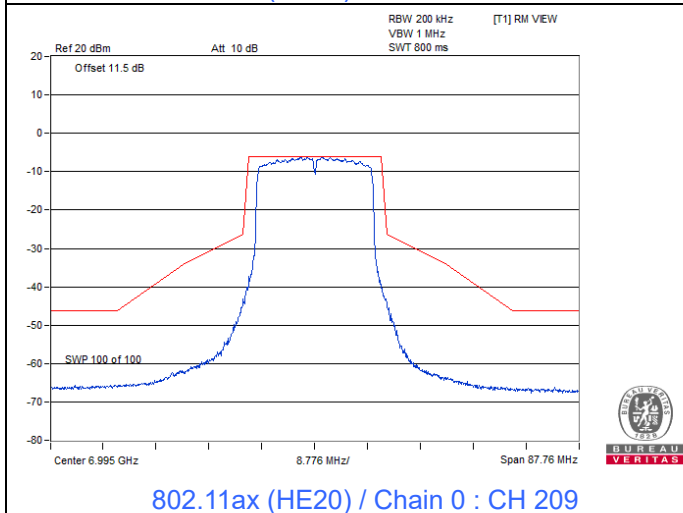
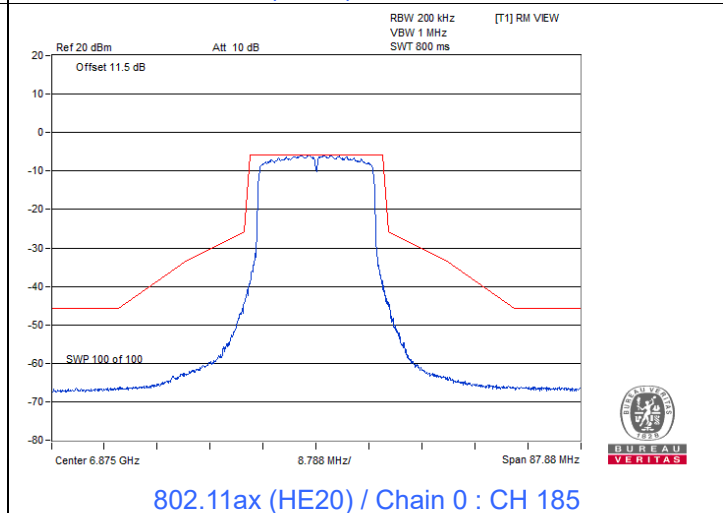
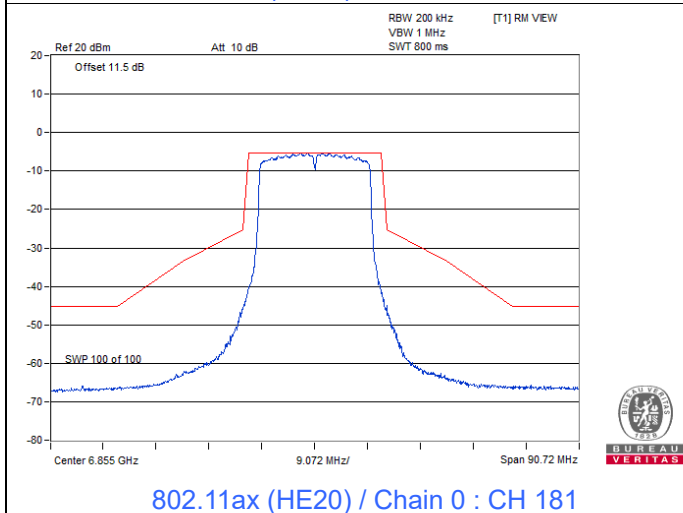
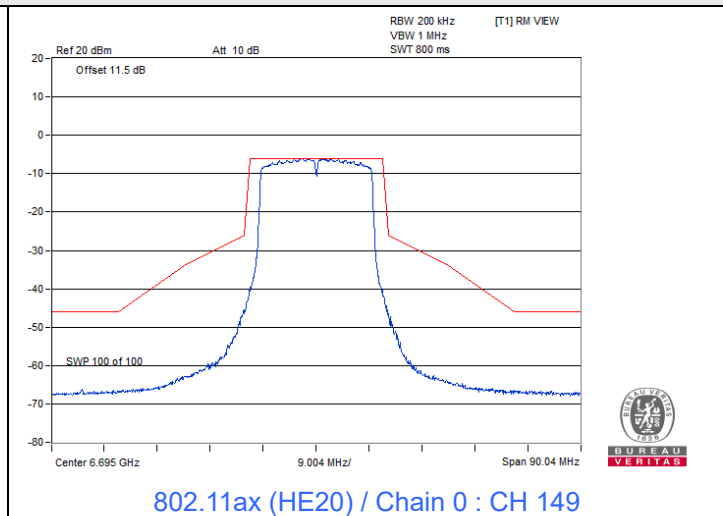
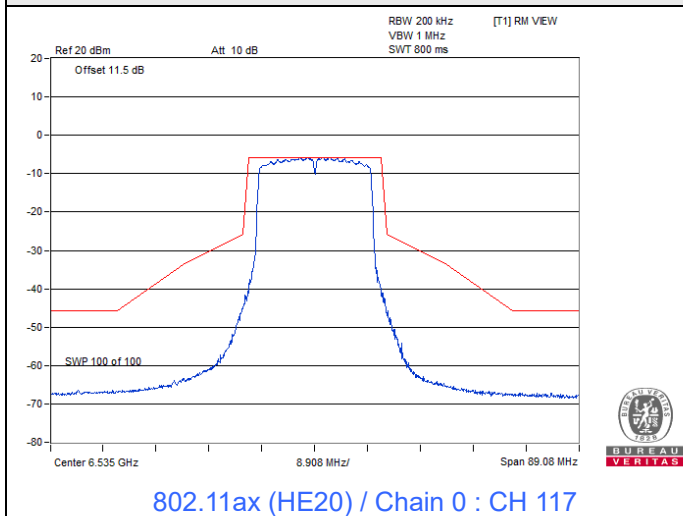
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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4T4S

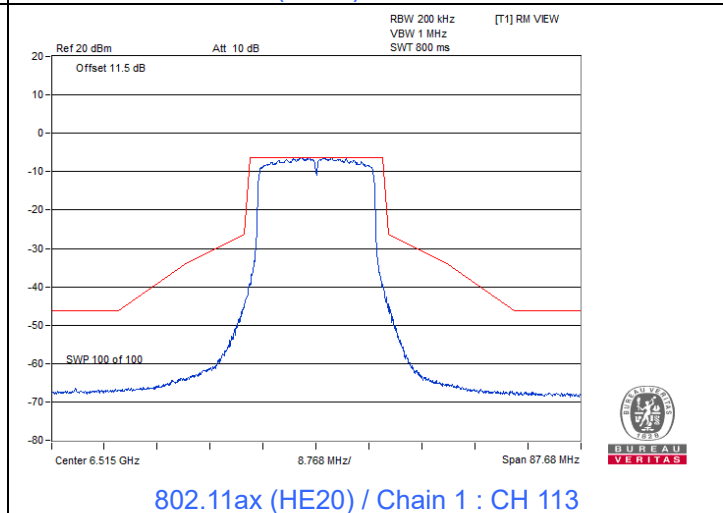
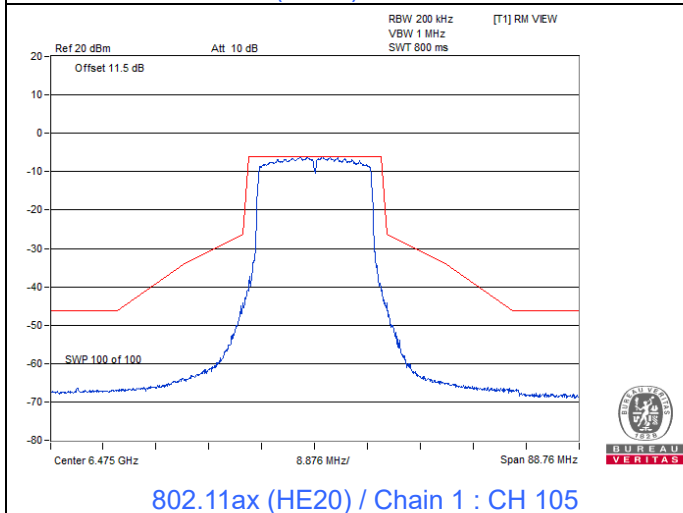
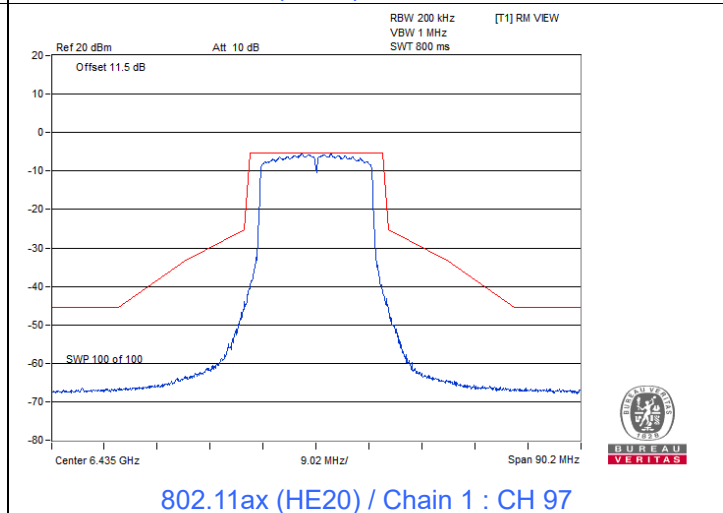
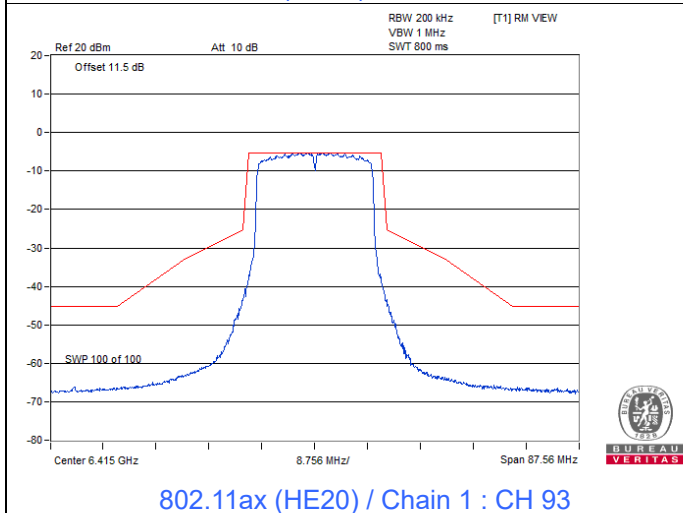
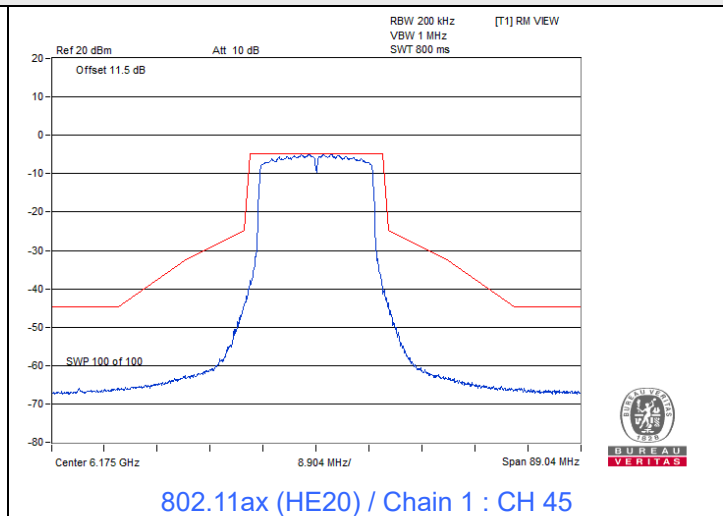
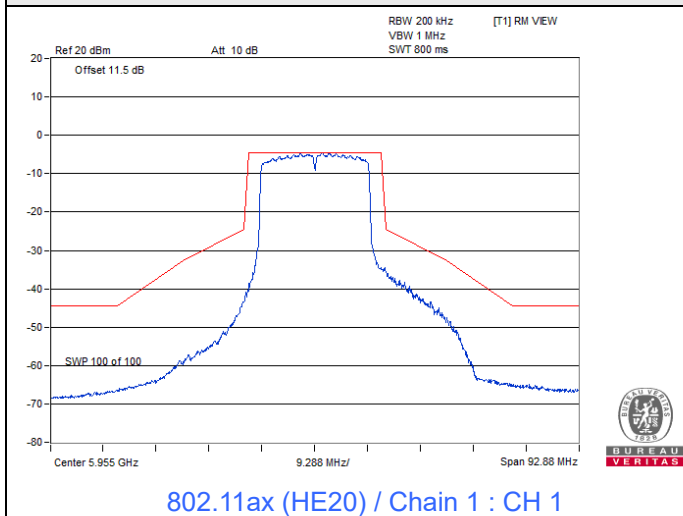
802.11ax (HE20) Beamforming



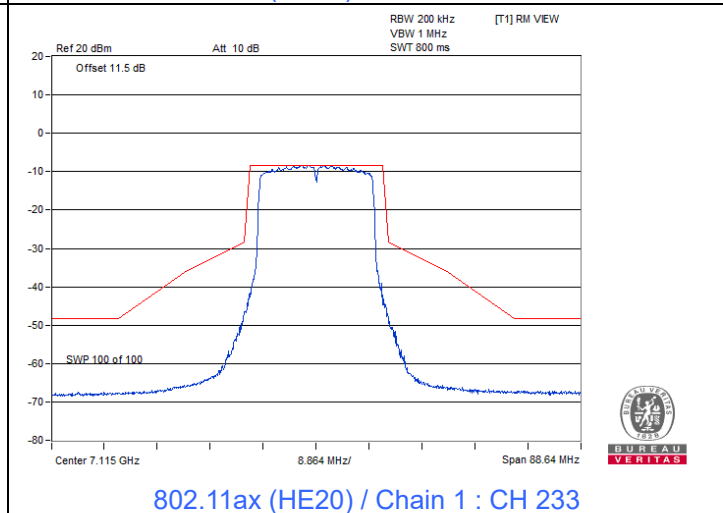
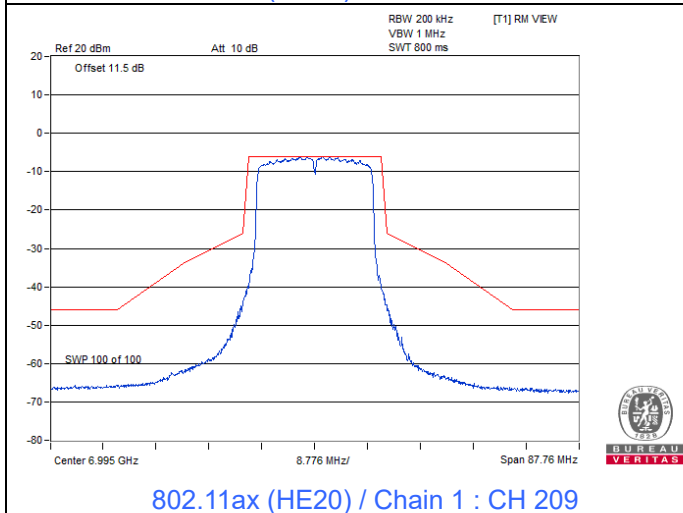
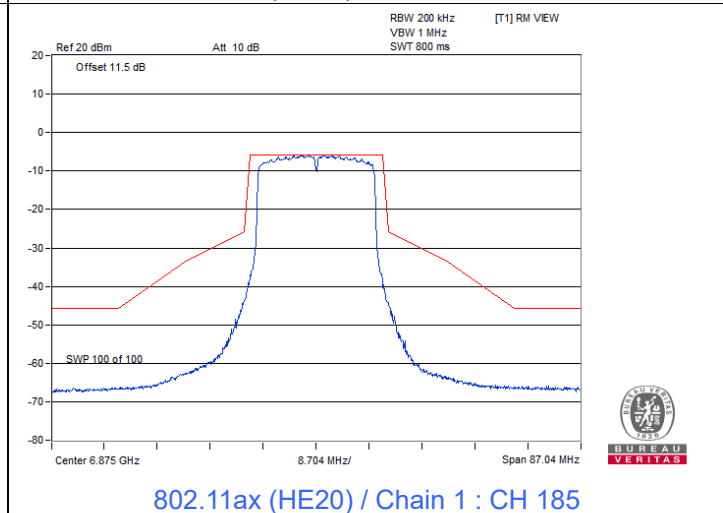
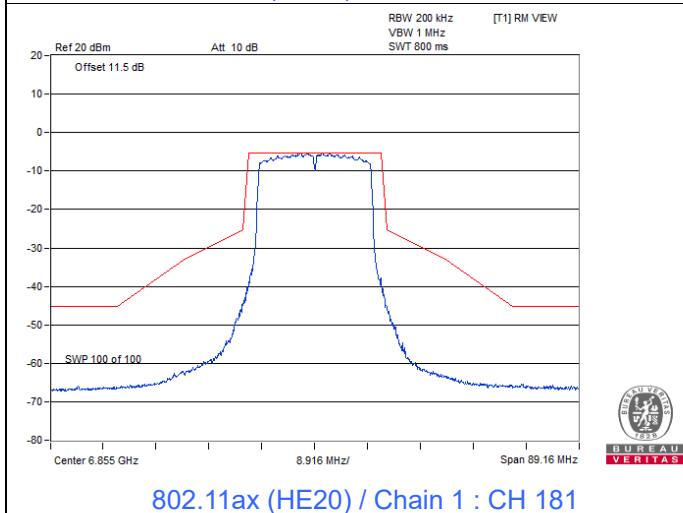
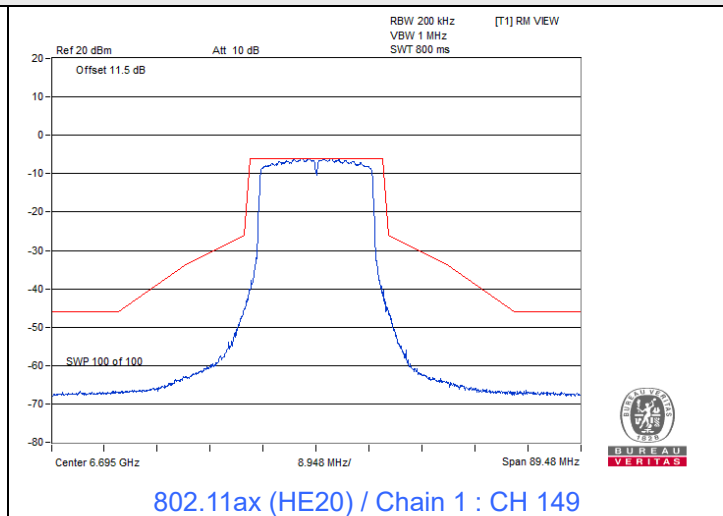
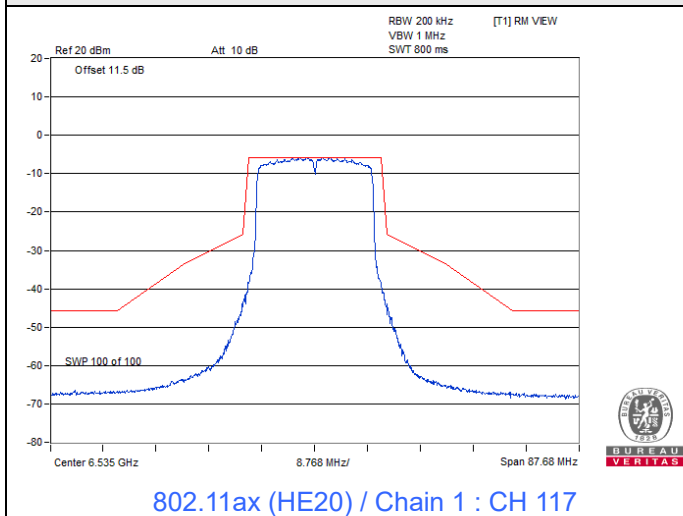
Spectrum Plot



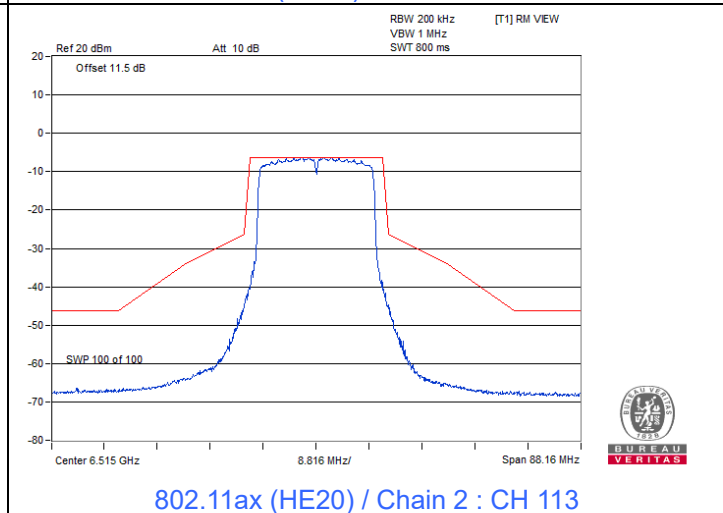
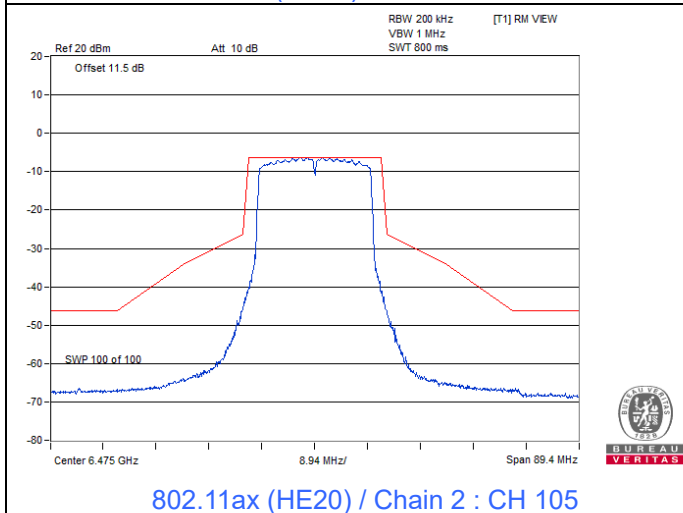
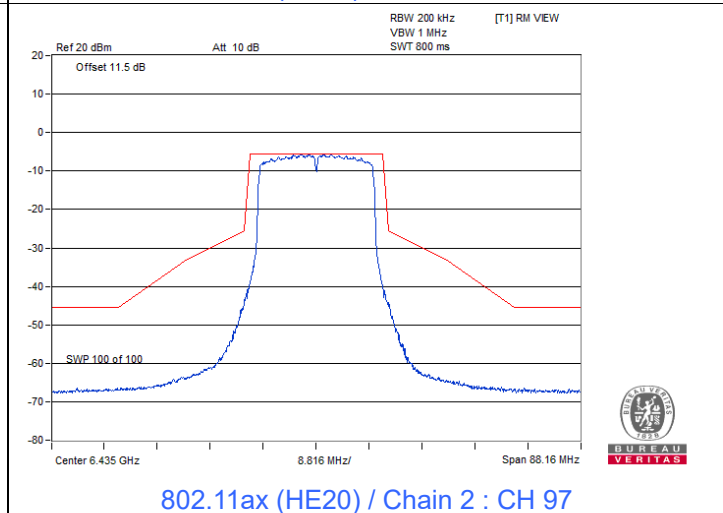
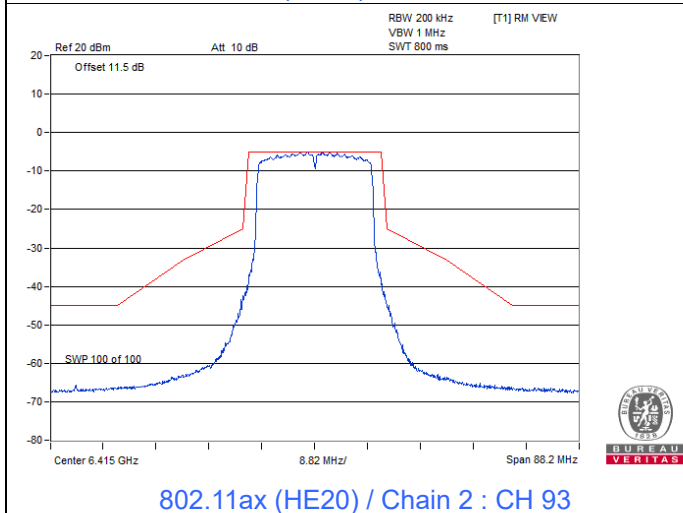
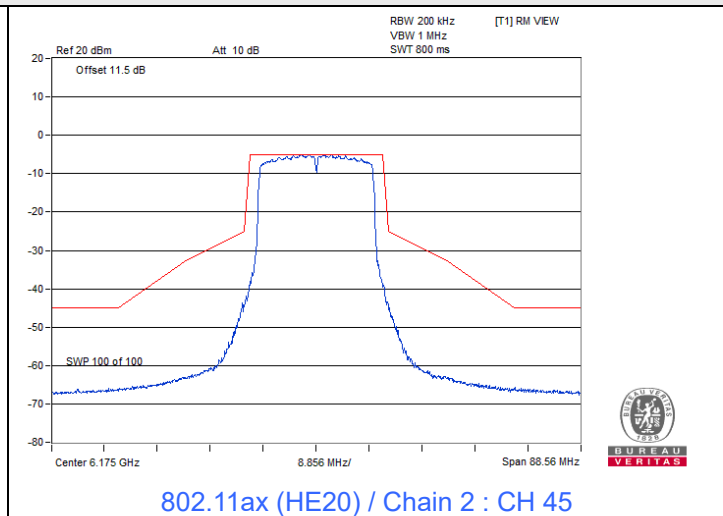
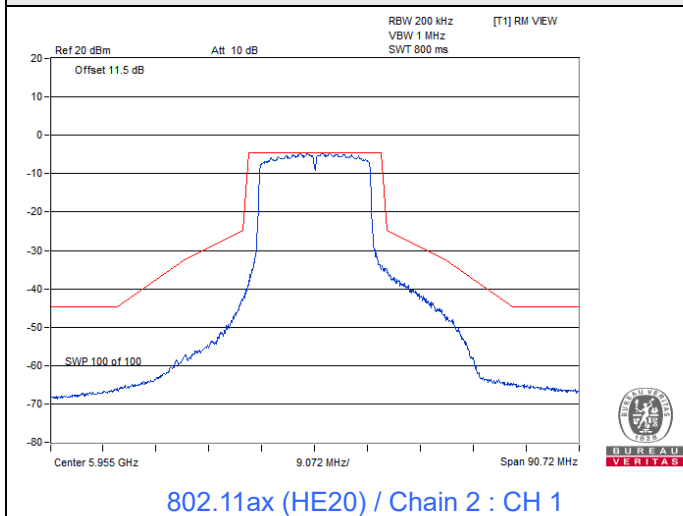
Spectrum Plot



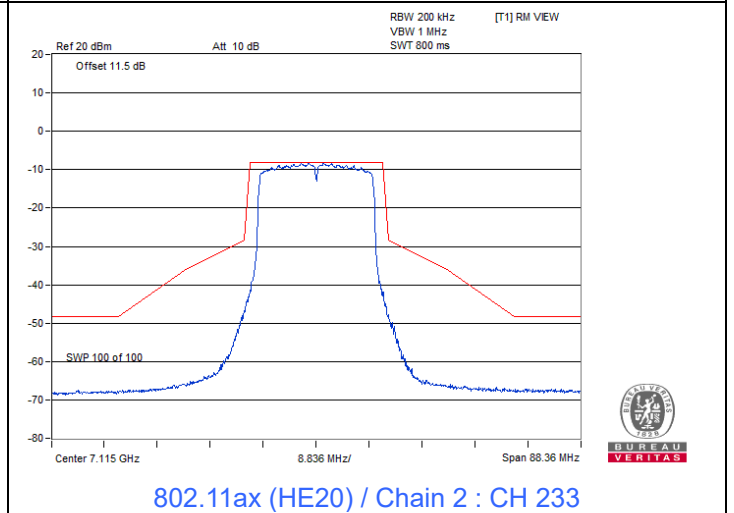
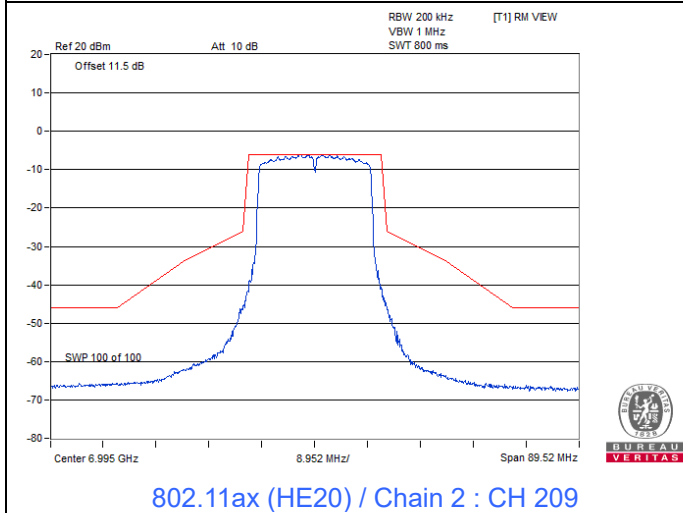
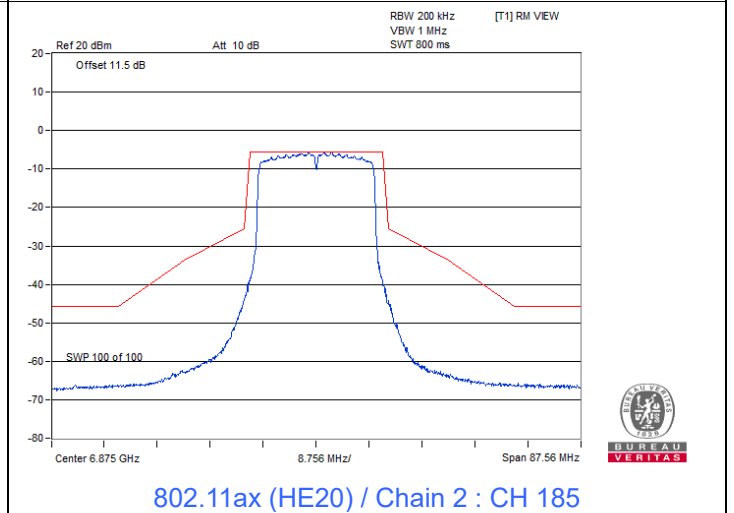
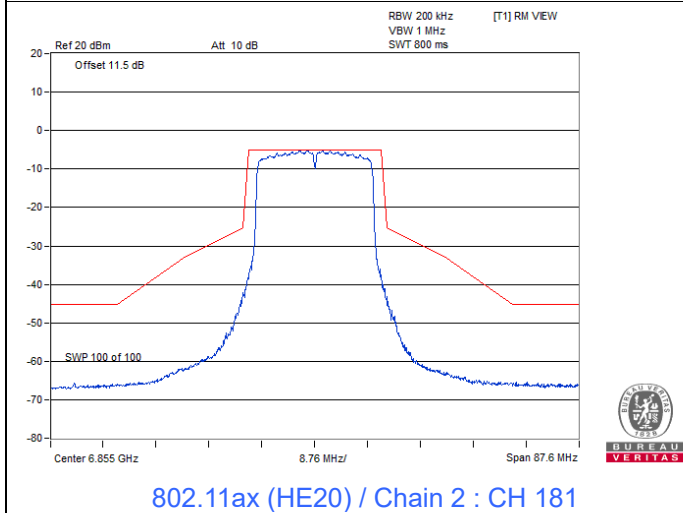
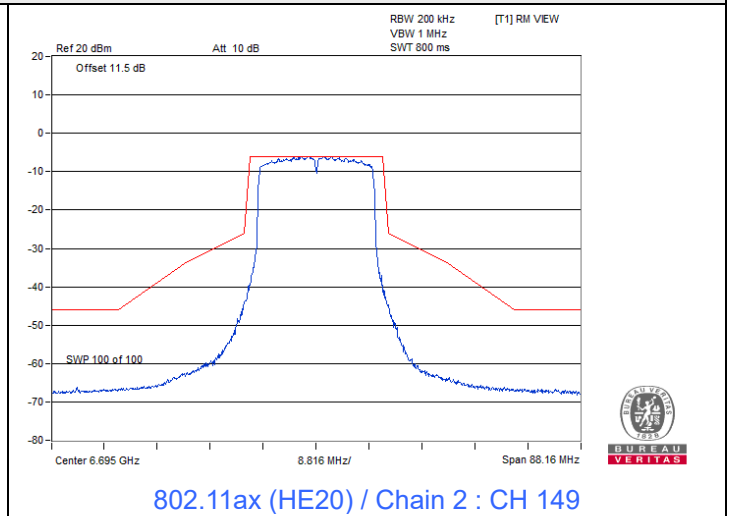
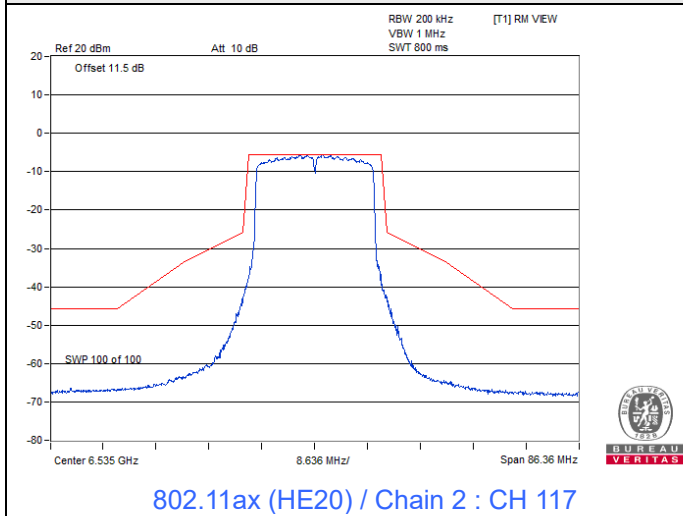
Spectrum Plot



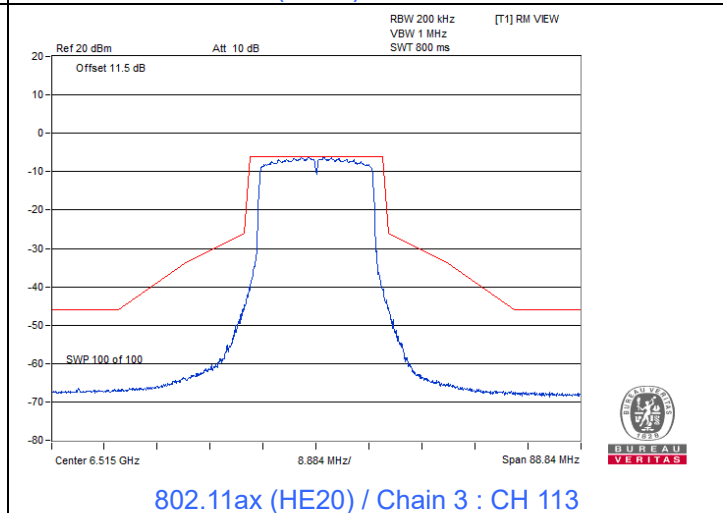
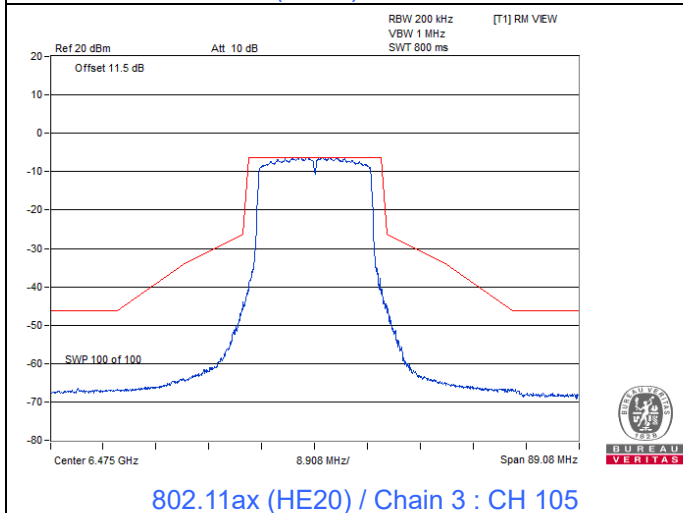
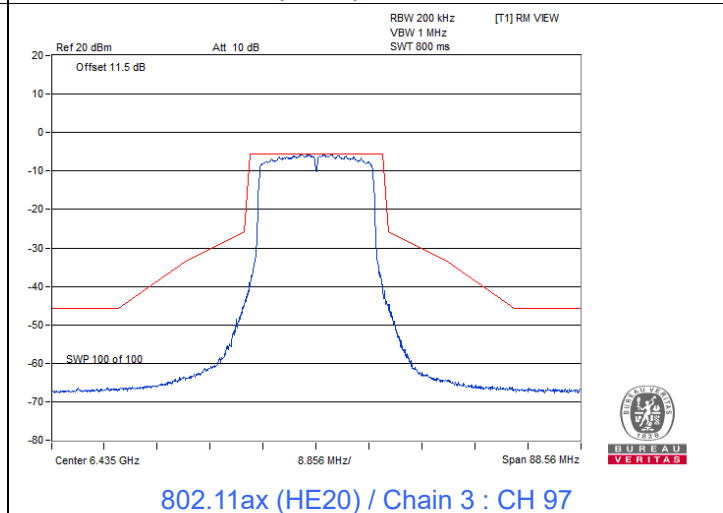
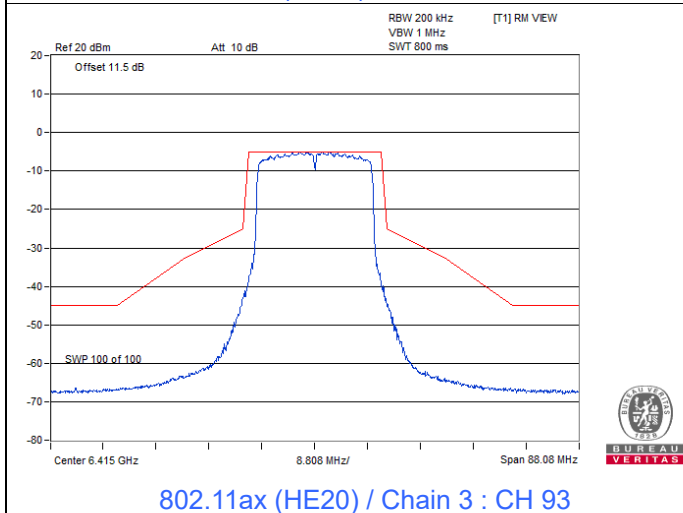
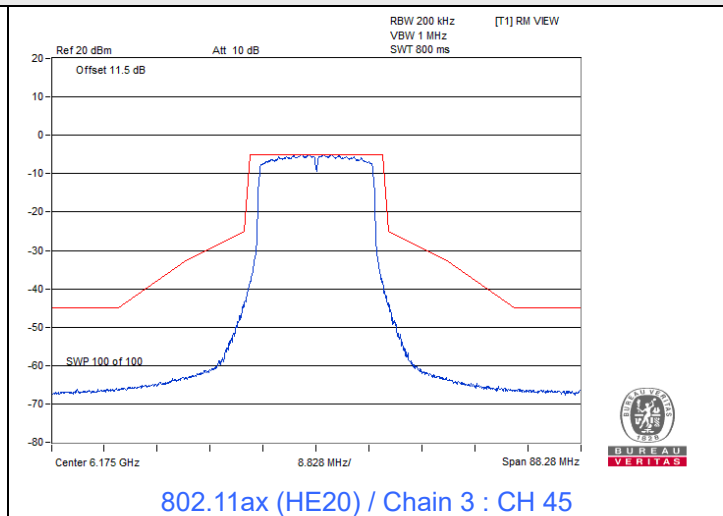
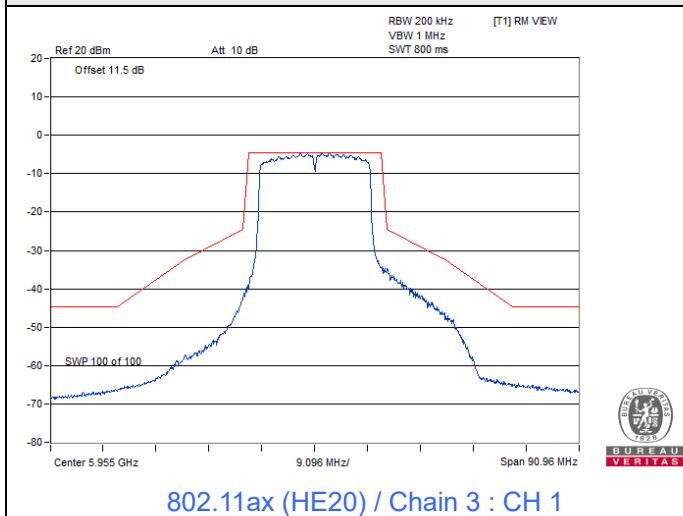
Spectrum Plot



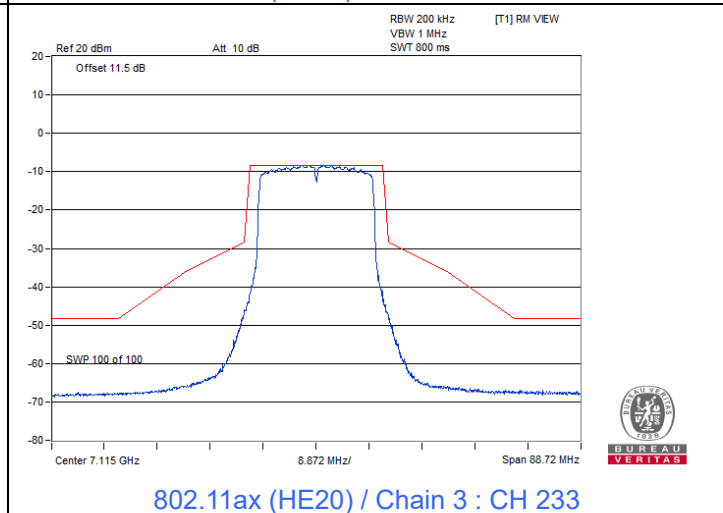
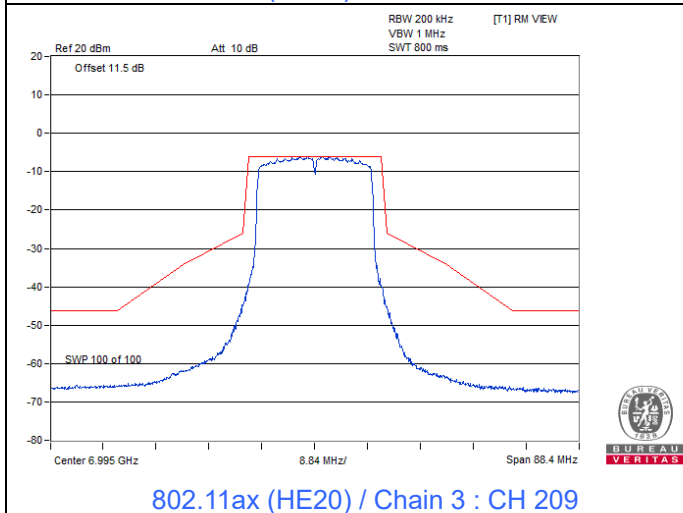
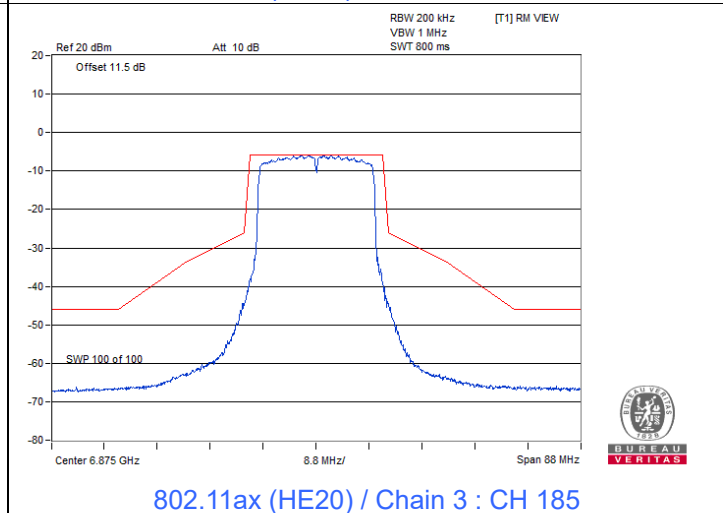
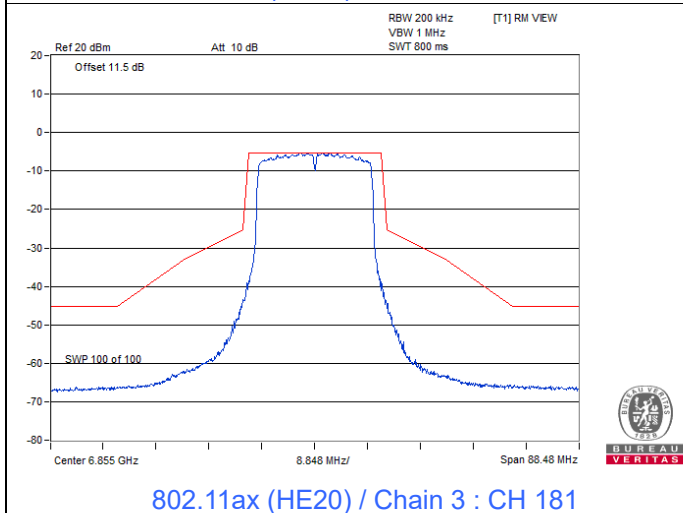
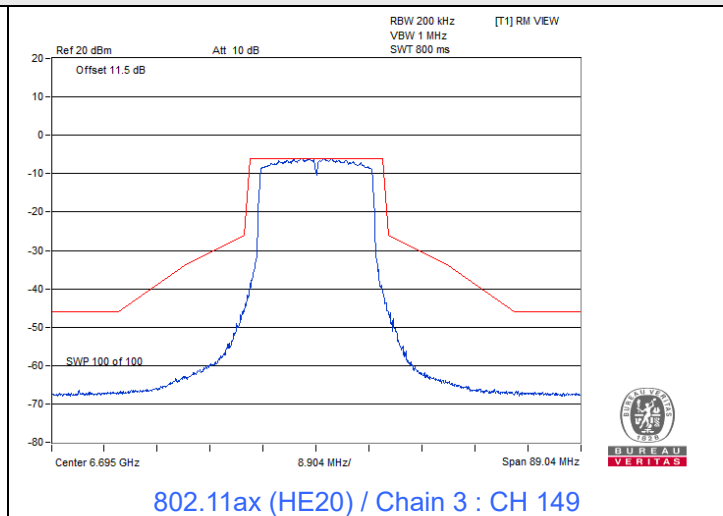
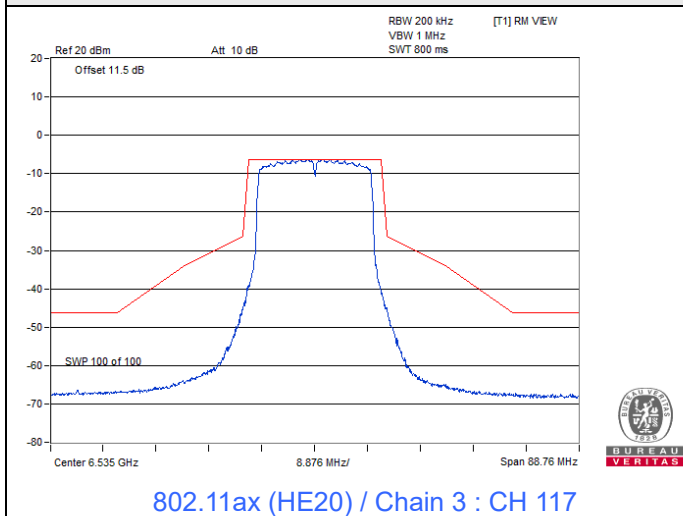
Spectrum Plot



Spectrum Plot

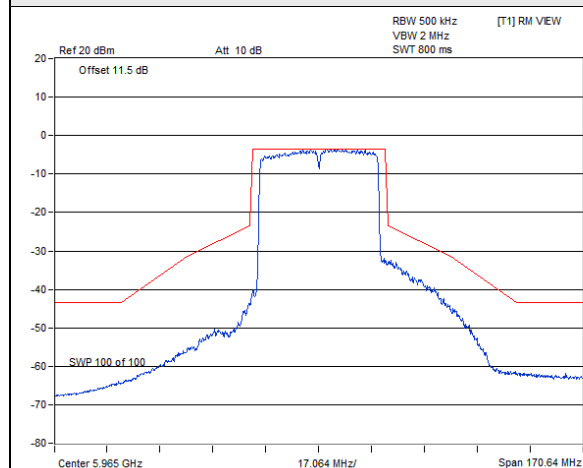


Spectrum Plot

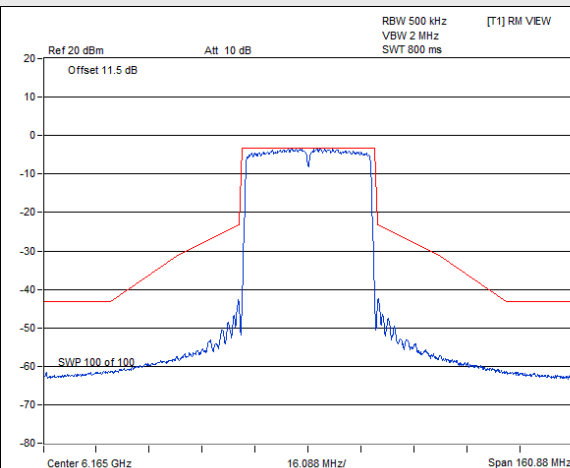


802.11ax (HE40) Beamforming

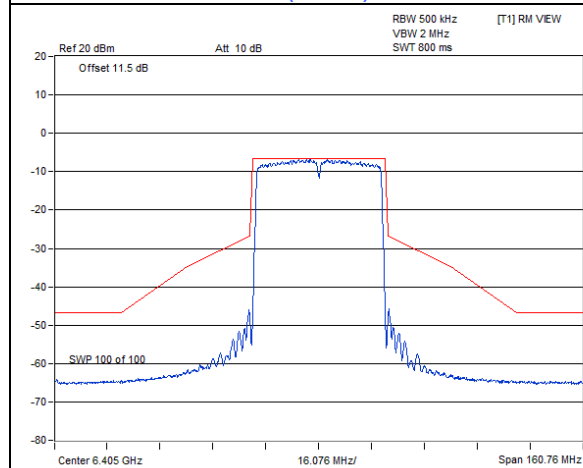
Spectrum Plot



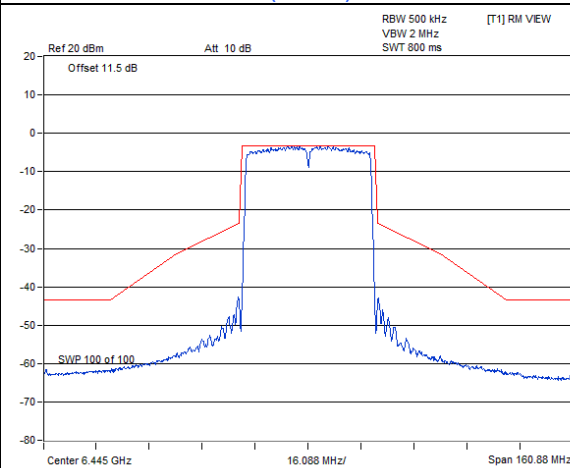
802.11ax (HE40) / Chain 0 : CH 3



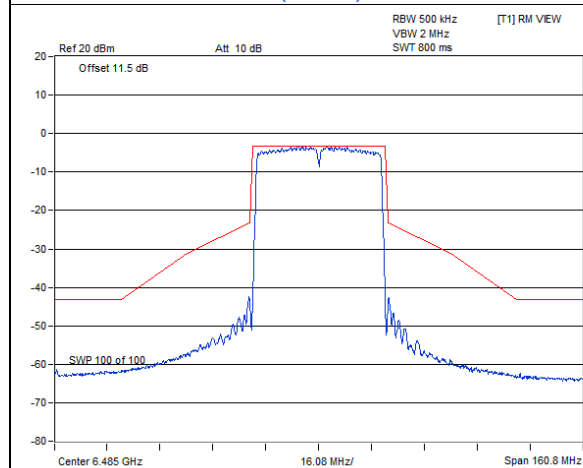
802.11ax (HE40) / Chain 0 : CH 43



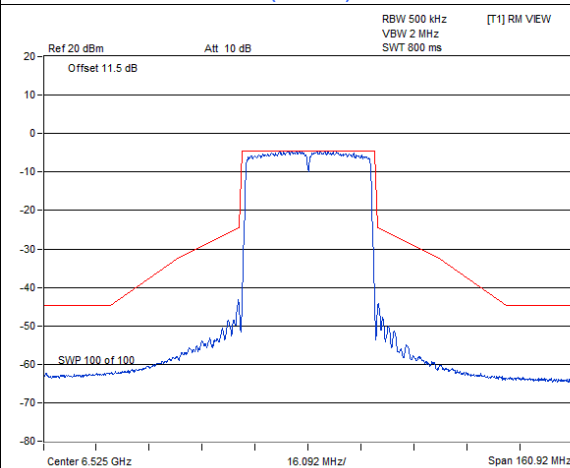
802.11ax (HE40) / Chain 0 : CH 91



802.11ax (HE40) / Chain 0 : CH 99



802.11ax (HE40) / Chain 0 : CH 107



802.11ax (HE40) / Chain 0 : CH 115