



Test report No. : 4790460525-US-R0-V0  
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Issued date : 2022/10/14  
FCC ID : RYK-WPEQ276AX

Mode	802.11ax(HE160)	Channel	15
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		5913.2	40.95	14.96	55.91	88.2	-32.29	PK
		5914.6	30.96	14.96	45.92	68.2	-22.28	AVG
	@	6025	70.22	14.98	85.2	N/A	N/A	PK
	@	6025	61.62	14.98	76.6	N/A	N/A	AVG
	*	12050	29.78	18.97	48.75	74	-25.25	PK
Vertical		5888	41.19	14.9	56.09	88.2	-32.11	PK
		5917.4	31.53	14.97	46.5	68.2	-21.7	AVG
	@	6025	87.12	14.98	102.1	N/A	N/A	PK
	@	6025	76.09	14.98	91.07	N/A	N/A	AVG
	*	12050	30.82	18.97	49.79	74	-24.21	PK

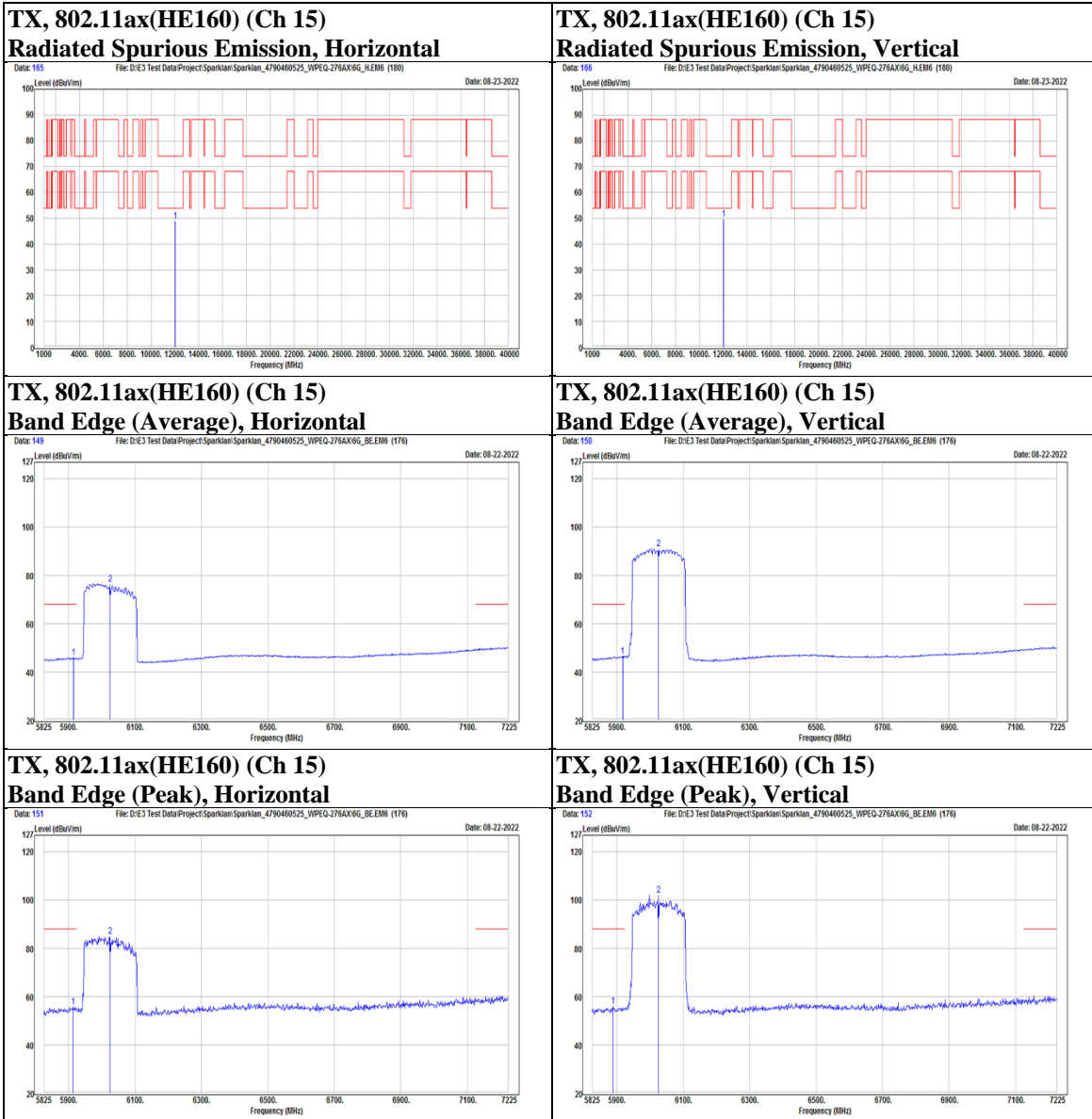
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Doc No: 17-EM-F0988 / 1.0



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Mode	802.11ax(HE160)	Channel	47
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		5885.2	41.69	14.87	56.56	88.2	-31.64	PK
		5918.8	30.88	14.96	45.84	68.2	-22.36	AVG
	@	6185	71	15.57	86.57	N/A	N/A	PK
	@	6185	60.8	15.57	76.37	N/A	N/A	AVG
	*	12370	29.86	19.2	49.06	74	-24.94	PK
Vertical		5888	41.19	14.9	56.09	88.2	-32.11	PK
		5896.4	31.08	14.95	46.03	68.2	-22.17	AVG
	@	6185	85.32	15.57	100.89	N/A	N/A	PK
	@	6185	76.24	15.57	91.81	N/A	N/A	AVG
	*	12370	30.14	19.2	49.34	74	-24.66	PK

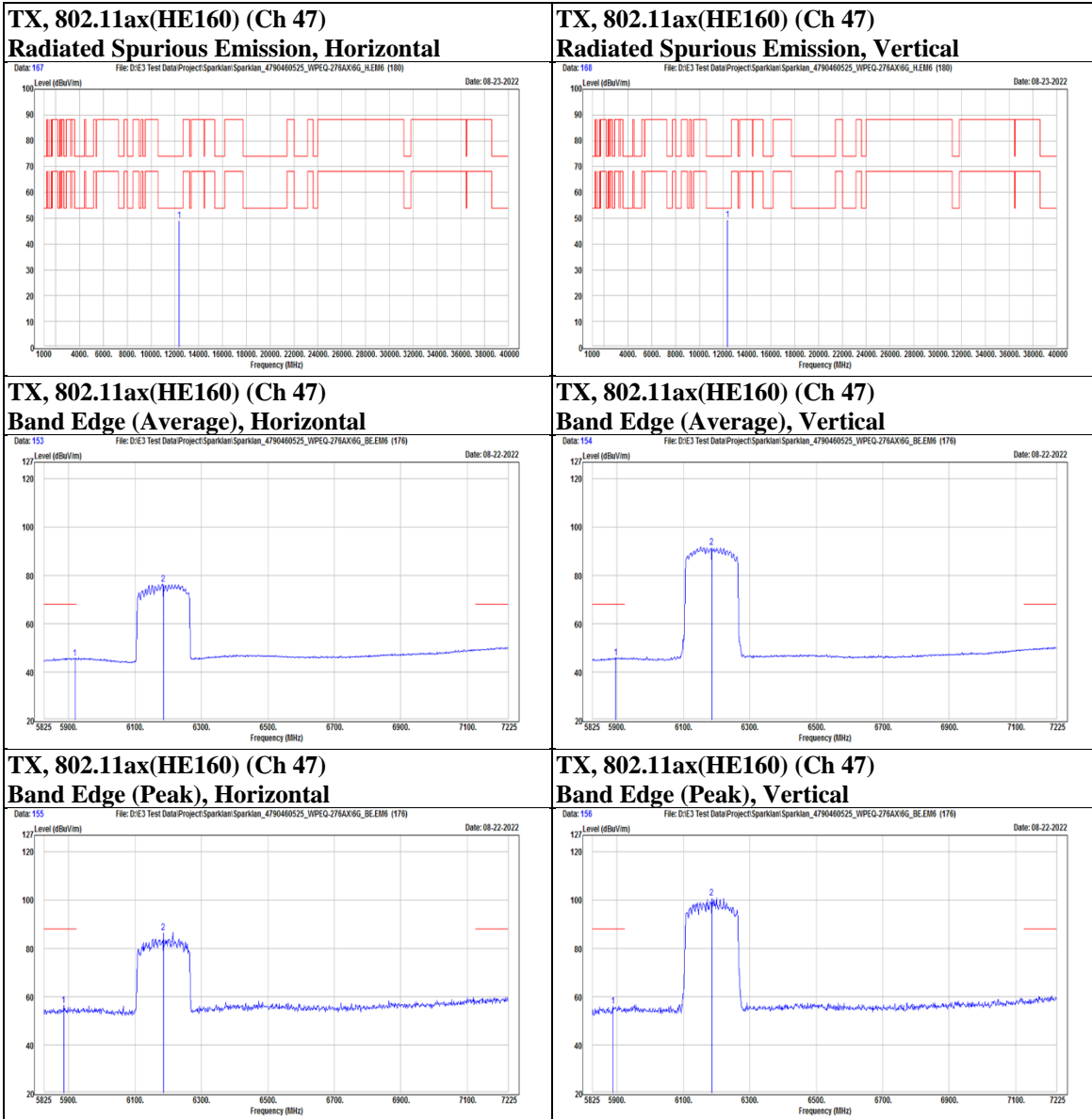
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Mode	802.11ax(HE160)	Channel	79
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		5881	41.59	14.85	56.44	88.2	-31.76	PK
		5921.6	31.02	14.96	45.98	68.2	-22.22	AVG
	@	6345	71.54	16.38	87.92	N/A	N/A	PK
	@	6345	62.12	16.38	78.5	N/A	N/A	AVG
		7212.4	30.31	20.19	50.5	68.2	-17.7	AVG
		7219.4	40.18	20.23	60.41	88.2	-27.79	PK
	*	12690	29.61	20	49.61	74	-24.39	PK
Vertical		5903.4	30.86	14.97	45.83	68.2	-22.37	AVG
		5917.4	40.81	14.97	55.78	88.2	-32.42	PK
	@	6345	84.16	16.38	100.54	N/A	N/A	PK
	@	6345	75.81	16.38	92.19	N/A	N/A	AVG
		7191.4	40.65	20.08	60.73	88.2	-27.47	PK
		7225	29.97	20.26	50.23	68.2	-17.97	AVG
	*	12690	30.95	20	50.95	74	-23.05	PK

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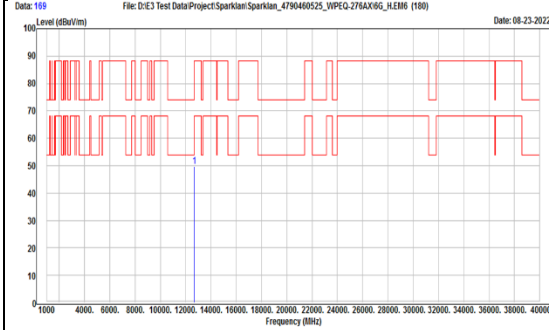
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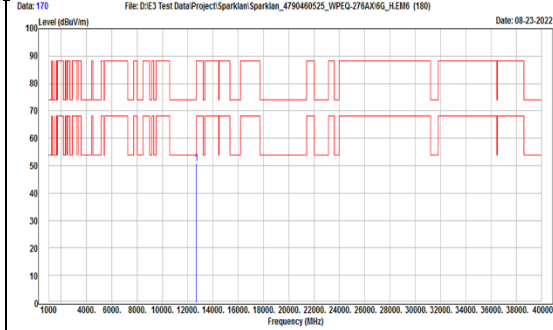
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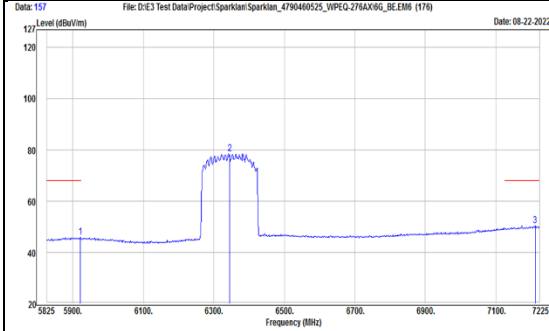
**TX, 802.11ax(HE160) (Ch 79)**  
**Radiated Spurious Emission, Horizontal**



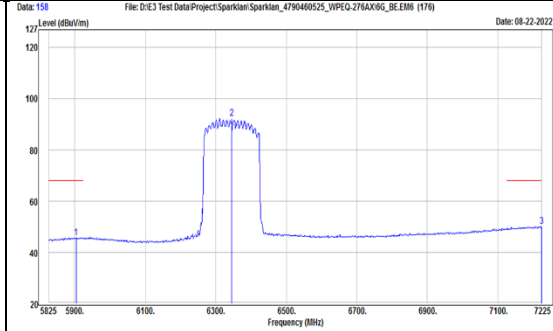
**TX, 802.11ax(HE160) (Ch 79)**  
**Radiated Spurious Emission, Vertical**



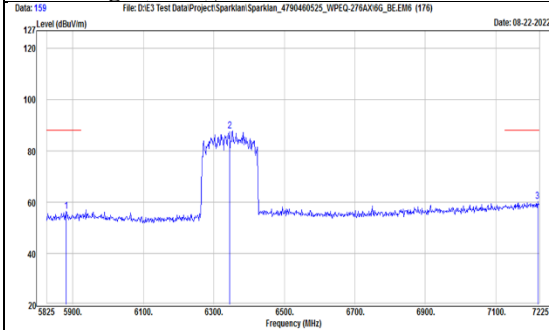
**TX, 802.11ax(HE160) (Ch 79)**  
**Band Edge (Average), Horizontal**



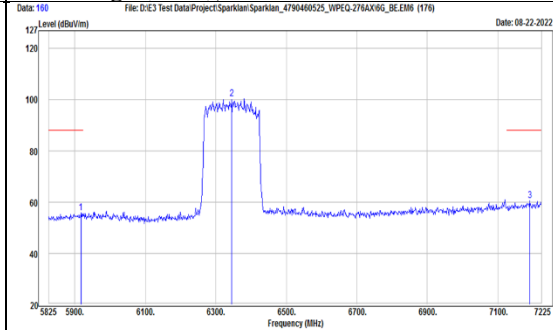
**TX, 802.11ax(HE160) (Ch 79)**  
**Band Edge (Average), Vertical**



**TX, 802.11ax(HE160) (Ch 79)**  
**Band Edge (Peak), Horizontal**



**TX, 802.11ax(HE160) (Ch 79)**  
**Band Edge (Peak), Vertical**



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Mode	802.11ax(HE160)	Channel	111
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		5882.4	41.87	14.85	56.72	88.2	-31.48	PK
		5918.8	30.61	14.96	45.57	68.2	-22.63	AVG
	@	6505	69.81	17.3	87.11	N/A	N/A	PK
	@	6505	60.09	17.3	77.39	N/A	N/A	AVG
		7184.4	30.25	20.04	50.29	68.2	-17.91	AVG
		7211	40.46	20.18	60.64	88.2	-27.56	PK
	*	13010	28.46	20.92	49.38	88.2	-38.82	PK
Vertical		5869.8	40.98	14.76	55.74	88.2	-32.46	PK
		5895	30.67	14.94	45.61	68.2	-22.59	AVG
	@	6505	84.96	17.3	102.26	N/A	N/A	PK
	@	6505	74.15	17.3	91.45	N/A	N/A	AVG
		7211	39.83	20.18	60.01	88.2	-28.19	PK
		7220.8	30.1	20.23	50.33	68.2	-17.87	AVG
	*	13010	29.54	20.92	50.46	88.2	-37.74	PK

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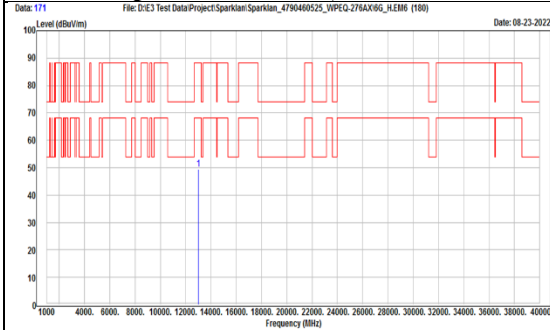
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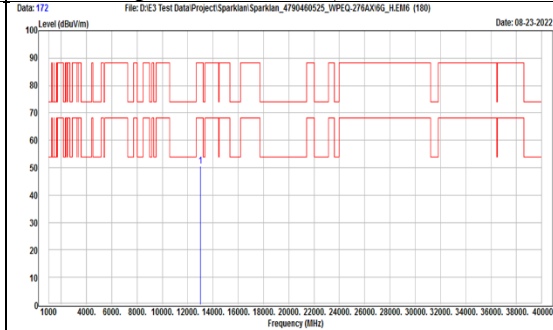




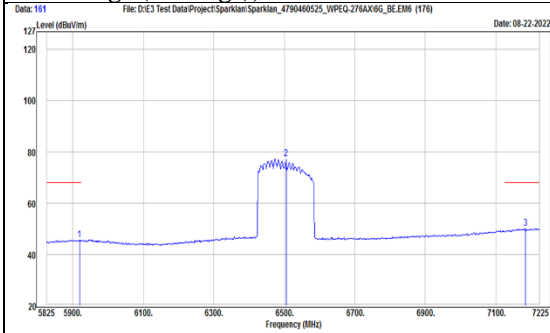
**TX, 802.11ax(HE160) (Ch 111)**  
**Radiated Spurious Emission, Horizontal**



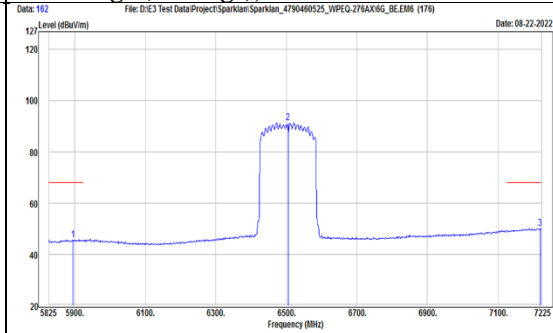
**TX, 802.11ax(HE160) (Ch 111)**  
**Radiated Spurious Emission, Vertical**



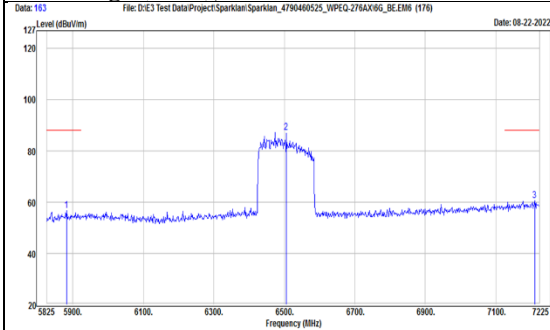
**TX, 802.11ax(HE160) (Ch 111)**  
**Band Edge (Average), Horizontal**



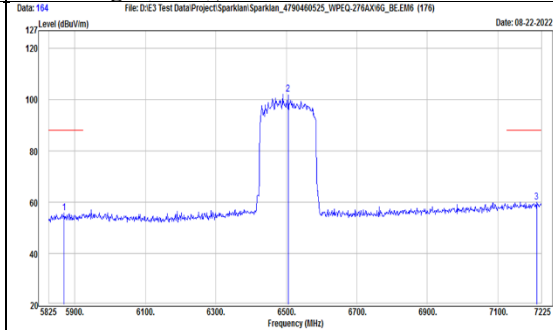
**TX, 802.11ax(HE160) (Ch 111)**  
**Band Edge (Average), Vertical**



**TX, 802.11ax(HE160) (Ch 111)**  
**Band Edge (Peak), Horizontal**



**TX, 802.11ax(HE160) (Ch 111)**  
**Band Edge (Peak), Vertical**



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Mode	802.11ax(HE160)	Channel	143
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		5899.2	40.66	14.97	55.63	88.2	-32.57	PK
		5907.6	30.83	14.97	45.8	68.2	-22.4	AVG
	@	6665	66.45	17.47	83.92	N/A	N/A	PK
	@	6665	57.07	17.47	74.54	N/A	N/A	AVG
		7204	40.05	20.15	60.2	88.2	-28	PK
		7209.6	29.99	20.18	50.17	68.2	-18.03	AVG
	*	13330	28.58	21.8	50.38	74	-23.62	PK
Vertical		5907.6	30.78	14.97	45.75	68.2	-22.45	AVG
		5911.8	41.02	14.97	55.99	88.2	-32.21	PK
	@	6665	82.81	17.47	100.28	N/A	N/A	PK
	@	6665	72.43	17.47	89.9	N/A	N/A	AVG
		7201.2	40.91	20.13	61.04	88.2	-27.16	PK
		7225	29.81	20.26	50.07	68.2	-18.13	AVG
	*	13330	29.11	21.8	50.91	74	-23.09	PK

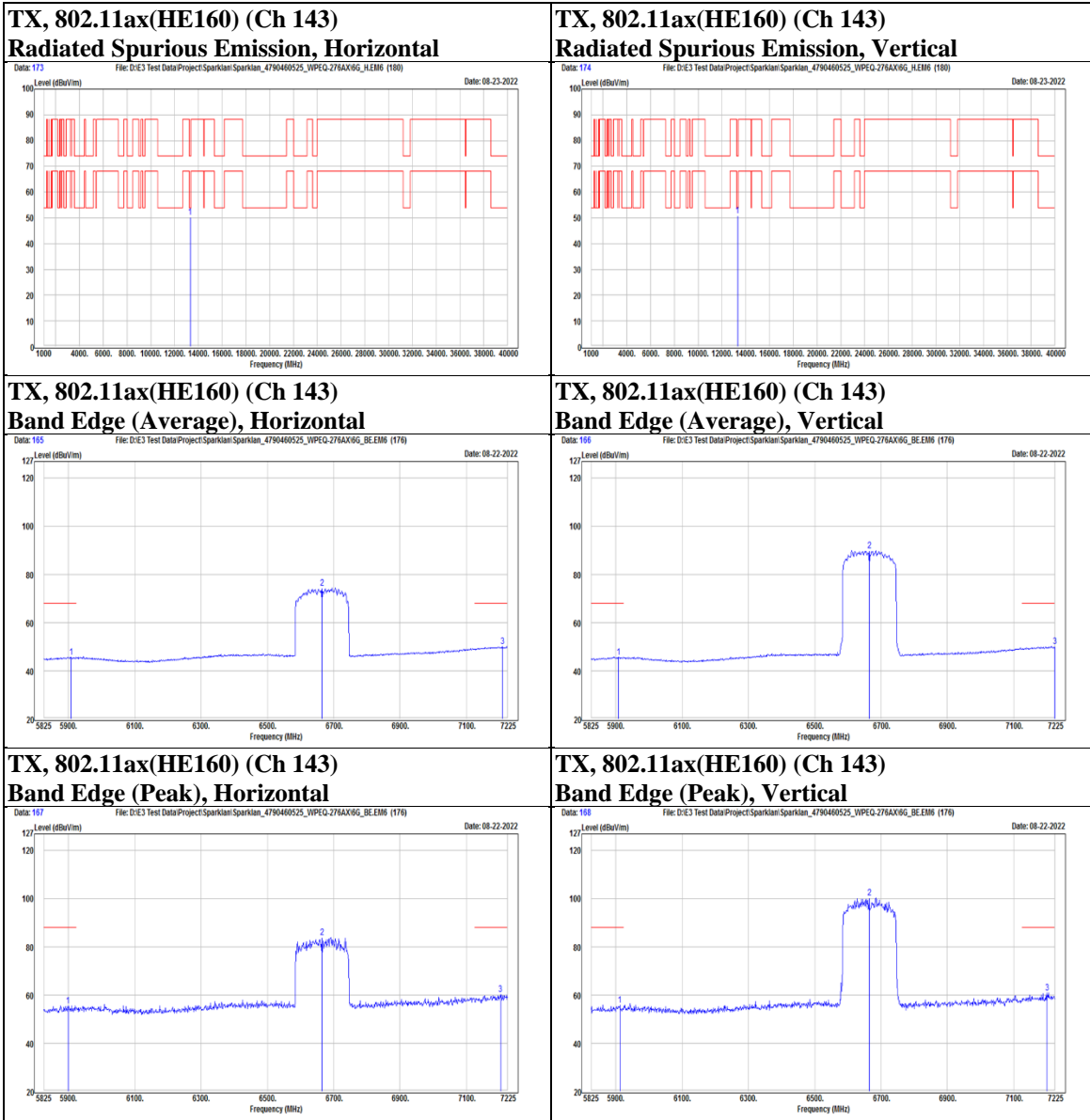
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Mode	802.11ax(HE160)	Channel	175
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		5893.6	40.85	14.93	55.78	88.2	-32.42	PK
		5897.8	30.66	14.96	45.62	68.2	-22.58	AVG
	@	6825	66.73	18.1	84.83	N/A	N/A	PK
	@	6825	57.8	18.1	75.9	N/A	N/A	AVG
		7206.8	29.98	20.16	50.14	68.2	-18.06	AVG
		7218	42	20.22	62.22	88.2	-25.98	PK
	*	13650	29.96	22.85	52.81	88.2	-35.39	PK
Vertical		5914.6	30.82	14.96	45.78	68.2	-22.42	AVG
		5917.4	40.94	14.97	55.91	88.2	-32.29	PK
	@	6825	82.69	18.1	100.79	N/A	N/A	PK
	@	6825	73	18.1	91.1	N/A	N/A	AVG
		7195.6	39.77	20.1	59.87	88.2	-28.33	PK
		7204	29.91	20.15	50.06	68.2	-18.14	AVG
	*	13650	29.88	22.85	52.73	88.2	-35.47	PK

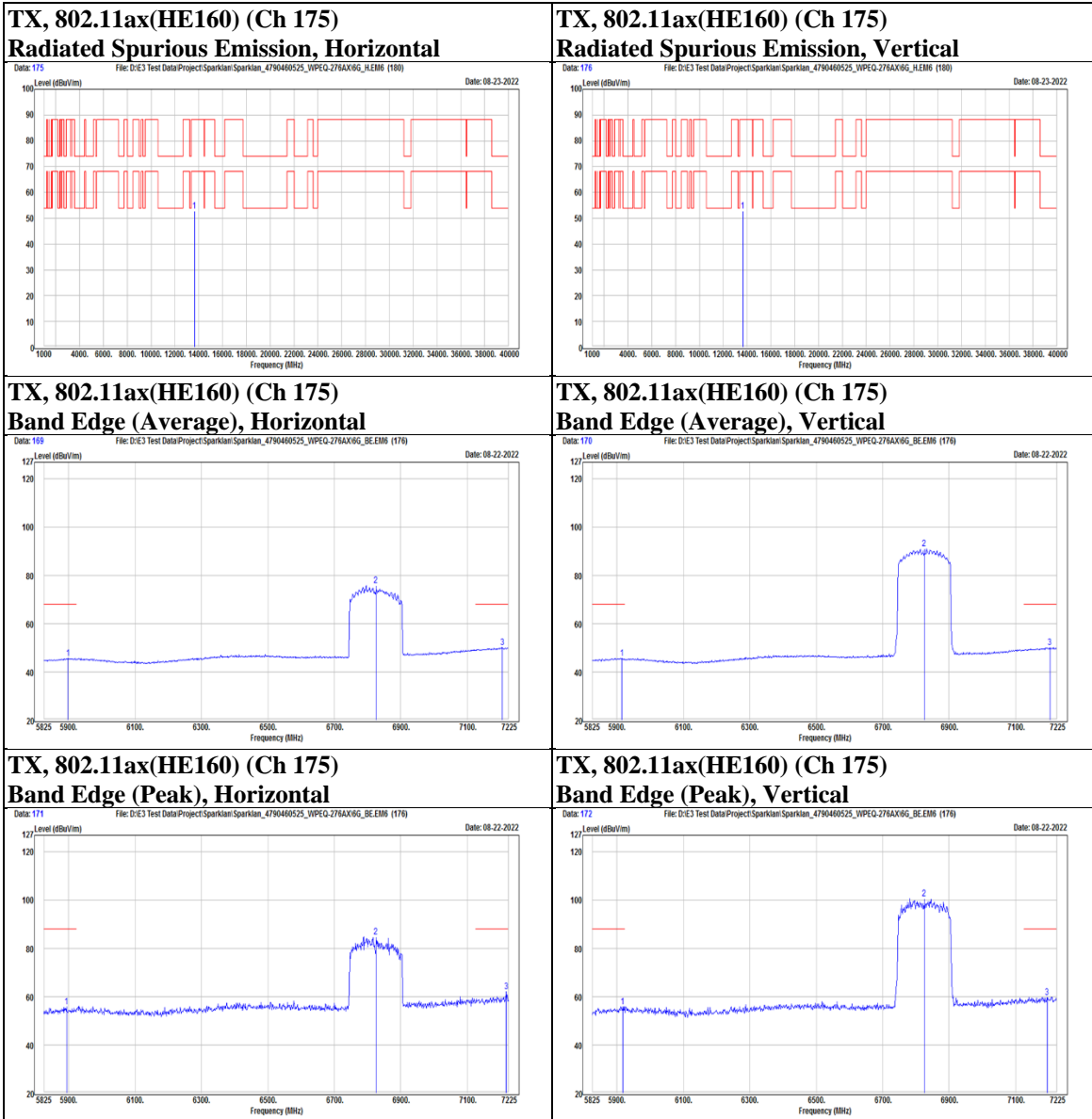
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Mode	802.11ax(HE160)	Channel	207
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	@	6985	65.25	18.68	83.93	N/A	N/A	PK
	@	6985	56.41	18.68	75.09	N/A	N/A	AVG
		7169	29.95	19.96	49.91	68.2	-18.29	AVG
		7225	40.4	20.26	60.66	88.2	-27.54	PK
	*	13970	28.63	23.81	52.44	88.2	-35.76	PK
Vertical	@	6985	82.15	18.68	100.83	N/A	N/A	PK
	@	6985	72.52	18.68	91.2	N/A	N/A	AVG
		7222.2	29.85	20.25	50.1	68.2	-18.1	AVG
		7223.6	40.34	20.25	60.59	88.2	-27.61	PK
	*	13970	29.38	23.81	53.19	88.2	-35.01	PK

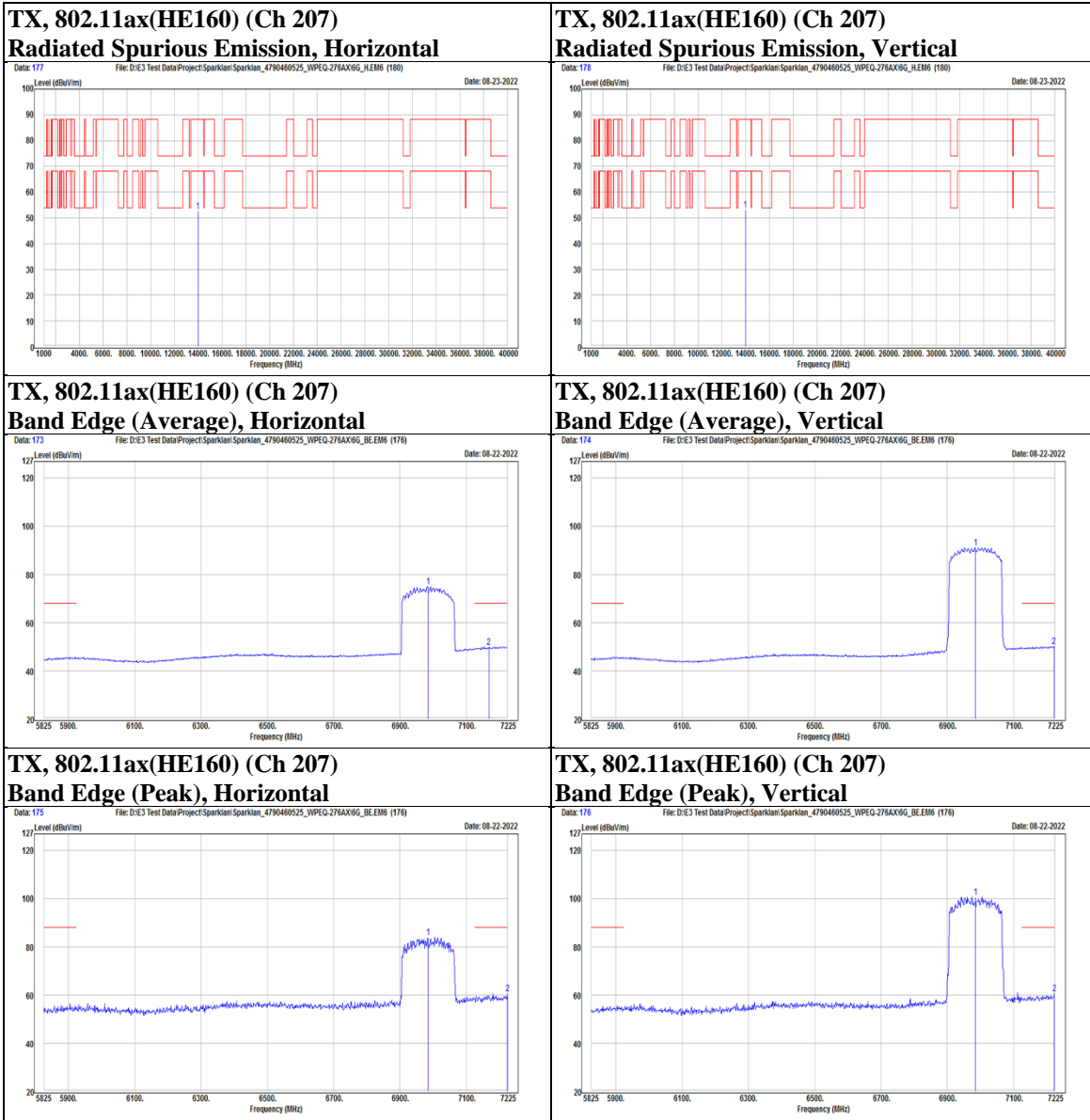
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### Below 1 GHz

Mode	802.11ax(HE160)	Channel	79
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		44.55	33.56	-12.18	21.38	40	-18.62	PK
		193.93	47.4	-14.28	33.12	43.5	-10.38	PK
		281.23	39.64	-11.26	28.38	46	-17.62	PK
		347.19	35.71	-9.59	26.12	46	-19.88	PK
		393.75	34.45	-8.14	26.31	46	-19.69	PK
		638.19	33.64	-2.21	31.43	46	-14.57	PK
Vertical		30.97	46.87	-12.9	33.97	40	-6.03	PK
		43.58	39.49	-12.25	27.24	40	-12.76	PK
		64.92	36.29	-13.07	23.22	40	-16.78	PK
		196.84	39.91	-14.44	25.47	43.5	-18.03	PK
		276.38	35.24	-11.47	23.77	46	-22.23	PK
		628.49	38.14	-2.47	35.67	46	-10.33	PK

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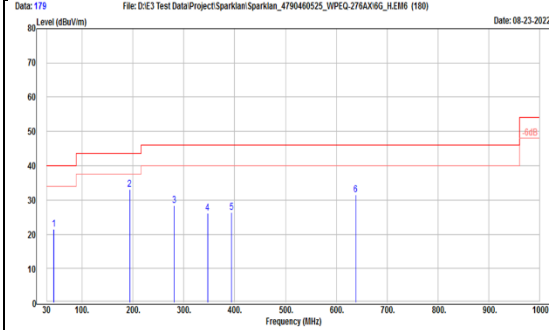
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Doc No: 17-EM-F0988 / 1.0

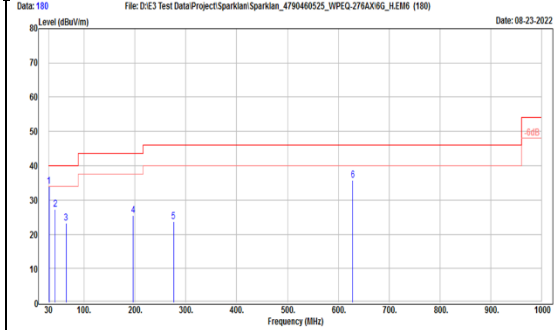




**TX, 802.11ax(HE160) (Ch 79)**  
**Radiated Spurious Emission, Horizontal**



**TX, 802.11ax(HE160) (Ch 79)**  
**Radiated Spurious Emission, Vertical**



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### 9 kHz ~ 30 MHz Data:

For 9 kHz to 30 MHz radiated emission have performed all modes of operation were investigated. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

No non-compliance noted:

### **KDB 414788 D01 OATS and Chamber Correlation Justification**

- Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

- OATs and chamber correlation testing had been performed and chamber measured test results is the worst case test result.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

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## 9.7. AC Power Line Conducted Emission

### Requirements

Frequency (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note:

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 0.50MHz.

### Test Procedures

- a. The EUT was 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/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.
2. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
3. Test data of Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB).
4. Test data of Margin(dB) = Result value (dBuV) - Limit value (dBuV).
5. Test data of Correction Factor (dB) = Insertion loss(dB) + Cable loss(dB).

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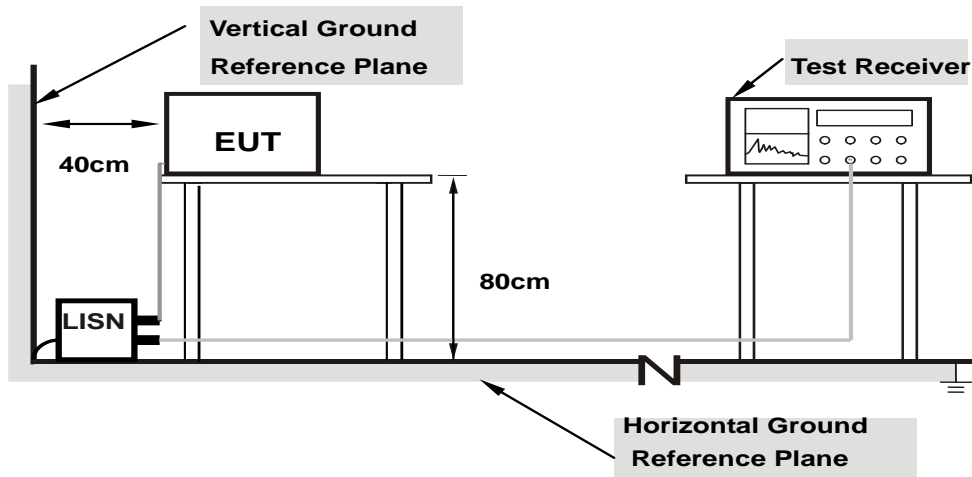
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## Test Setup



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

For the actual test configuration, please refer to the Setup Configurations.

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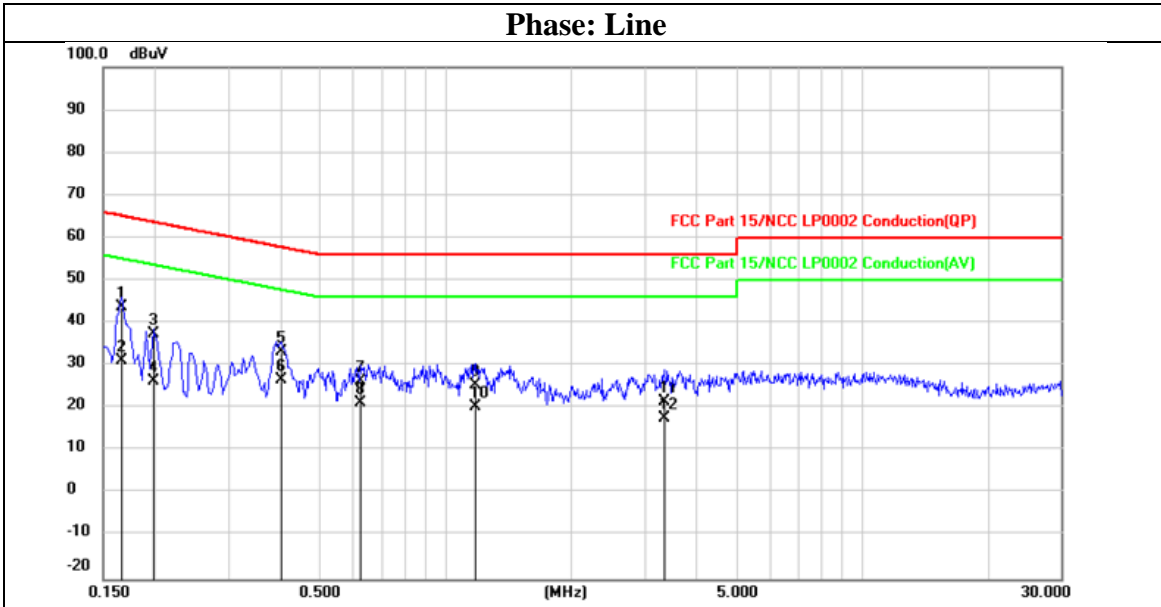
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**Test Data**

Mode	ax160_TX6345	Channel	79
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	24.16	19.53	43.69	65.16	-21.47	QP
2	0.1660	11.72	19.53	31.25	55.16	-23.91	AVG
3	0.1980	17.79	19.53	37.32	63.69	-26.37	QP
4	0.1980	6.72	19.53	26.25	53.69	-27.44	AVG
5	0.4020	13.74	19.53	33.27	57.81	-24.54	QP
6	0.4020	7.19	19.53	26.72	47.81	-21.09	AVG
7	0.6260	6.75	19.54	26.29	56.00	-29.71	QP
8	0.6260	1.62	19.54	21.16	46.00	-24.84	AVG
9	1.1780	5.98	19.55	25.53	56.00	-30.47	QP
10	1.1780	0.68	19.55	20.23	46.00	-25.77	AVG
11	3.3460	2.02	19.60	21.62	56.00	-34.38	QP
12	3.3460	-1.86	19.60	17.74	46.00	-28.26	AVG

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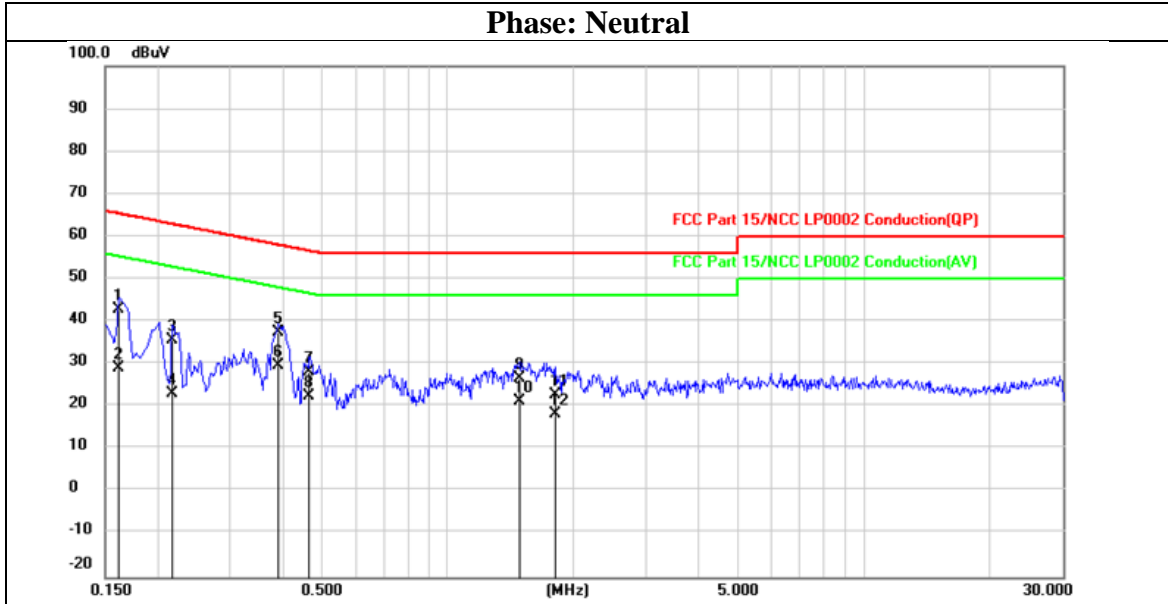
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Mode	ax160_TX6345	Channel	79
------	--------------	---------	----



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1620	23.35	19.53	42.88	65.36	-22.48	QP
2	0.1620	9.63	19.53	29.16	55.36	-26.20	AVG
3	0.2180	16.00	19.53	35.53	62.89	-27.36	QP
4	0.2180	3.65	19.53	23.18	52.89	-29.71	AVG
5	0.3899	17.83	19.53	37.36	58.07	-20.71	QP
6	0.3899	10.19	19.53	29.72	48.07	-18.35	AVG
7	0.4660	8.50	19.53	28.03	56.58	-28.55	QP
8	0.4660	3.00	19.53	22.53	46.58	-24.05	AVG
9	1.4940	7.04	19.55	26.59	56.00	-29.41	QP
10	1.4940	1.73	19.55	21.28	46.00	-24.72	AVG
11	1.8180	3.27	19.56	22.83	56.00	-33.17	QP
12	1.8180	-1.31	19.56	18.25	46.00	-27.75	AVG

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## 9.8. In-Band Emission (Mask) Measurement

### Requirements

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

<sup>\*1</sup> :The power spectral density must be suppressed by “x” dB

<sup>\*2</sup> : 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,

<sup>\*3</sup> : 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.

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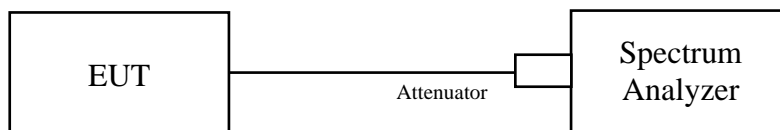


## Test procedure

### Using method:

- a. Connect output of the antenna port to a spectrum analyzer and adjust appropriate attenuation.
- b. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (Determine the channel edge.)
- c. Measure the power spectral density ( for emissions mask reference) using the following procedure:
  - a) Set the span to encompass the entire 26 dB EBW of the signal.
  - b) Set RBW = same RBW used for 26 dB EBW measurement.
  - c) Set VBW  $\geq 3 \times$  RBW
  - d) Number of points in sweep  $\geq [2 \times \text{span} / \text{RBW}]$ .
  - e) Sweep time = auto.
  - f) Detector = RMS (i.e., power averaging)
  - g) Trace average at least 100 traces in power averaging (rms) mode.
  - h) Use the peak search function on the instrument to find the peak of the spectrum.
- d. 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:
  - a) 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.)
  - b) Suppressed by 28 dB at one channel bandwidth from the channel center.
  - c) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
- e. Adjust the span to encompass the entire mask as necessary and clear trace.
- f. Trace average at least 100 traces in power averaging (rms) mode.
- g. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask

## Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

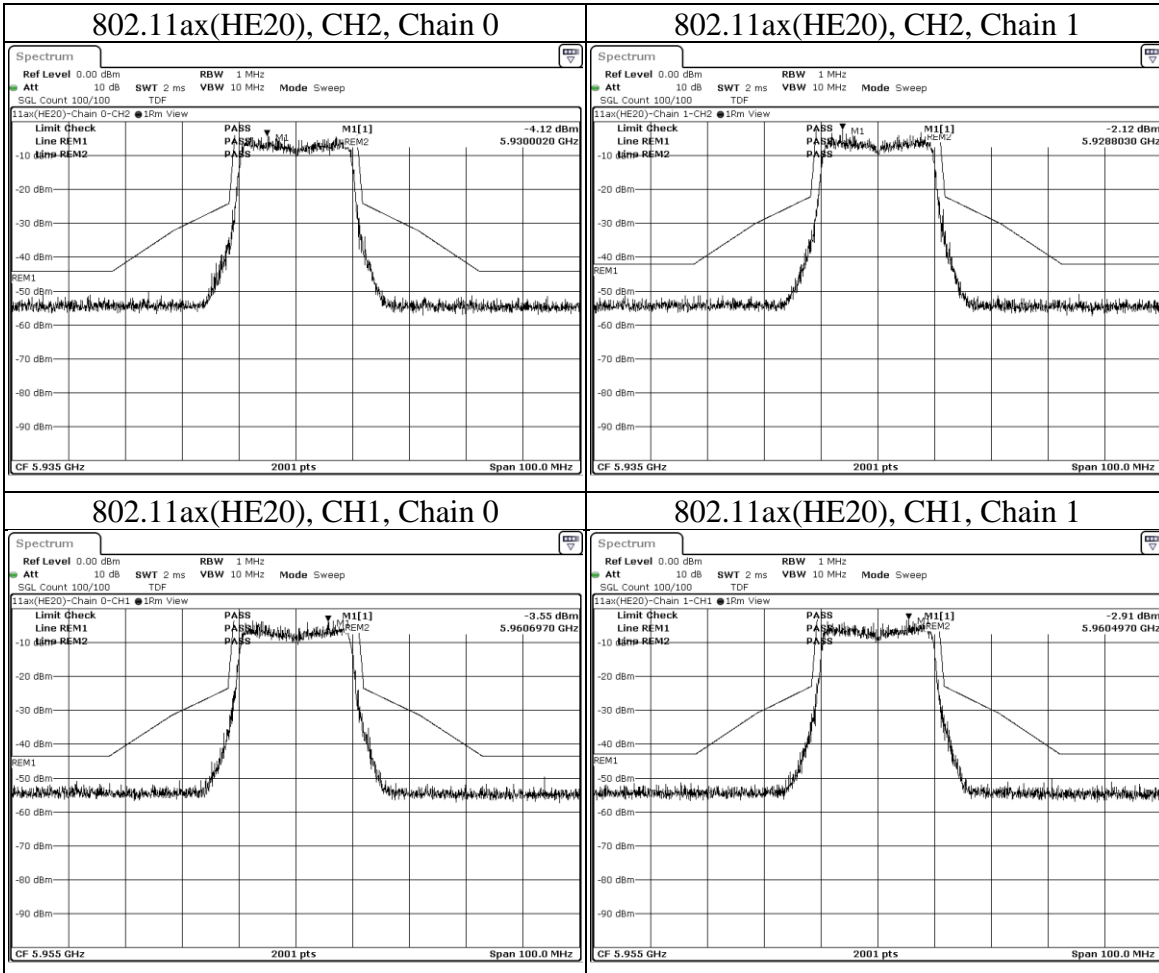
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### Test Data



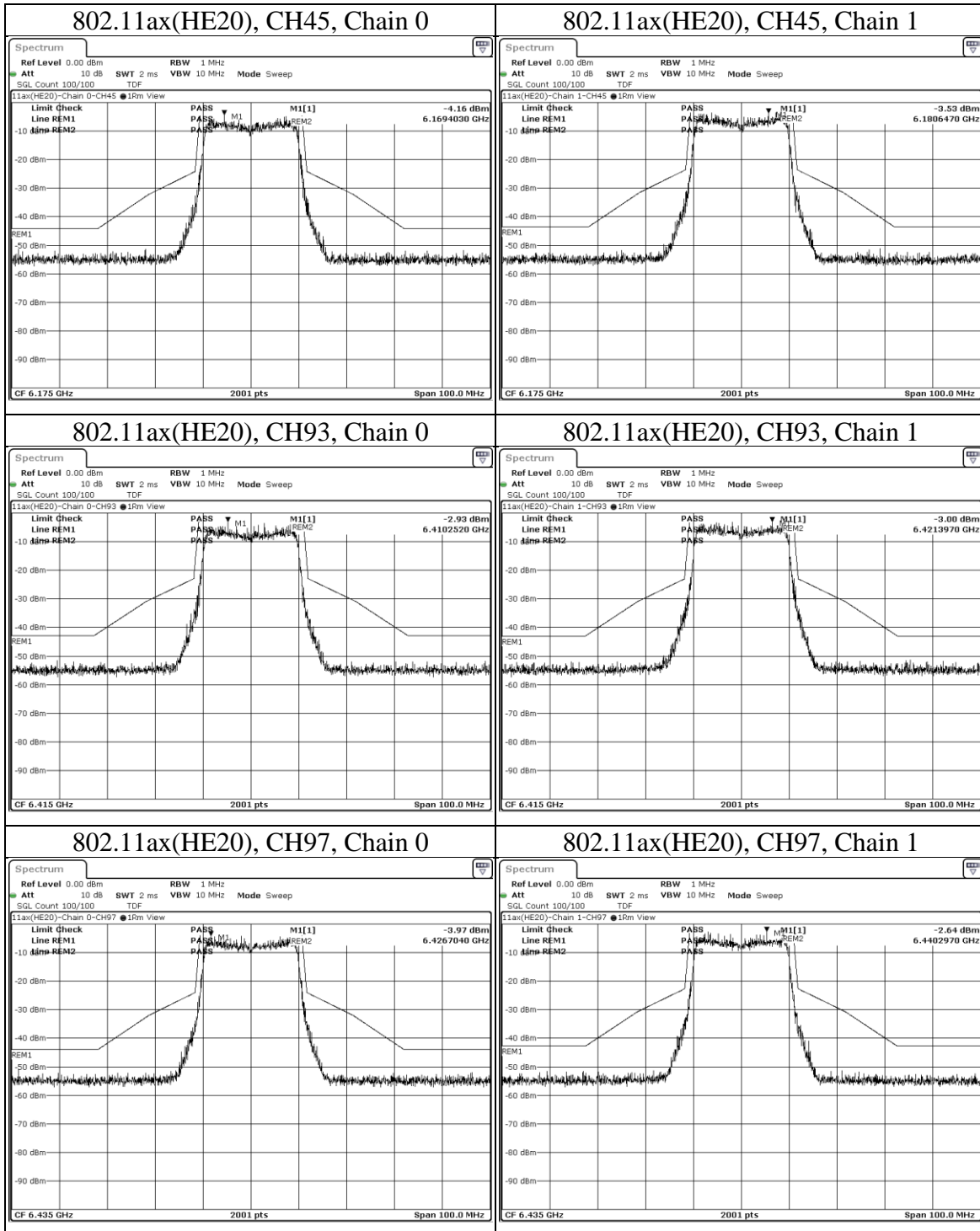
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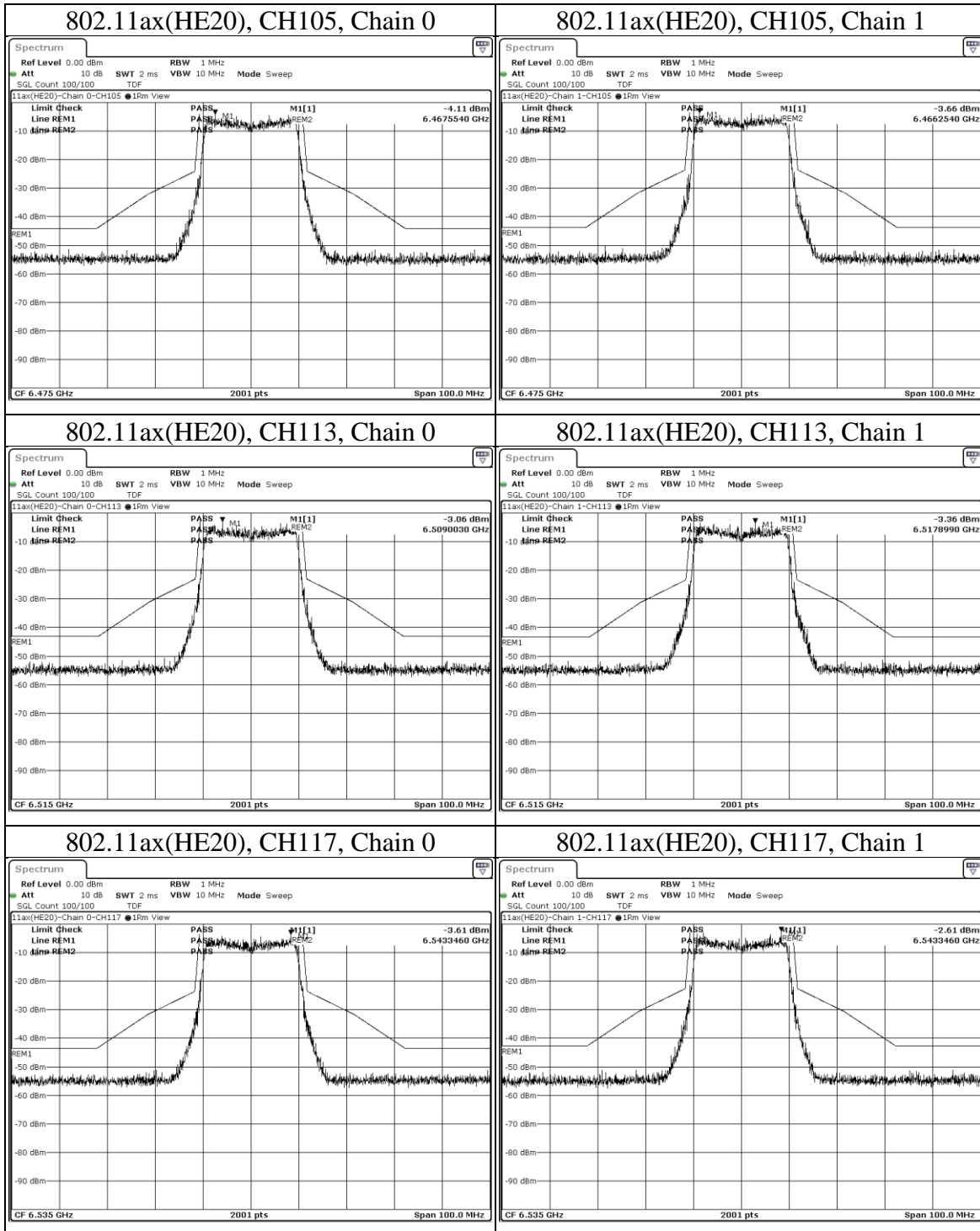


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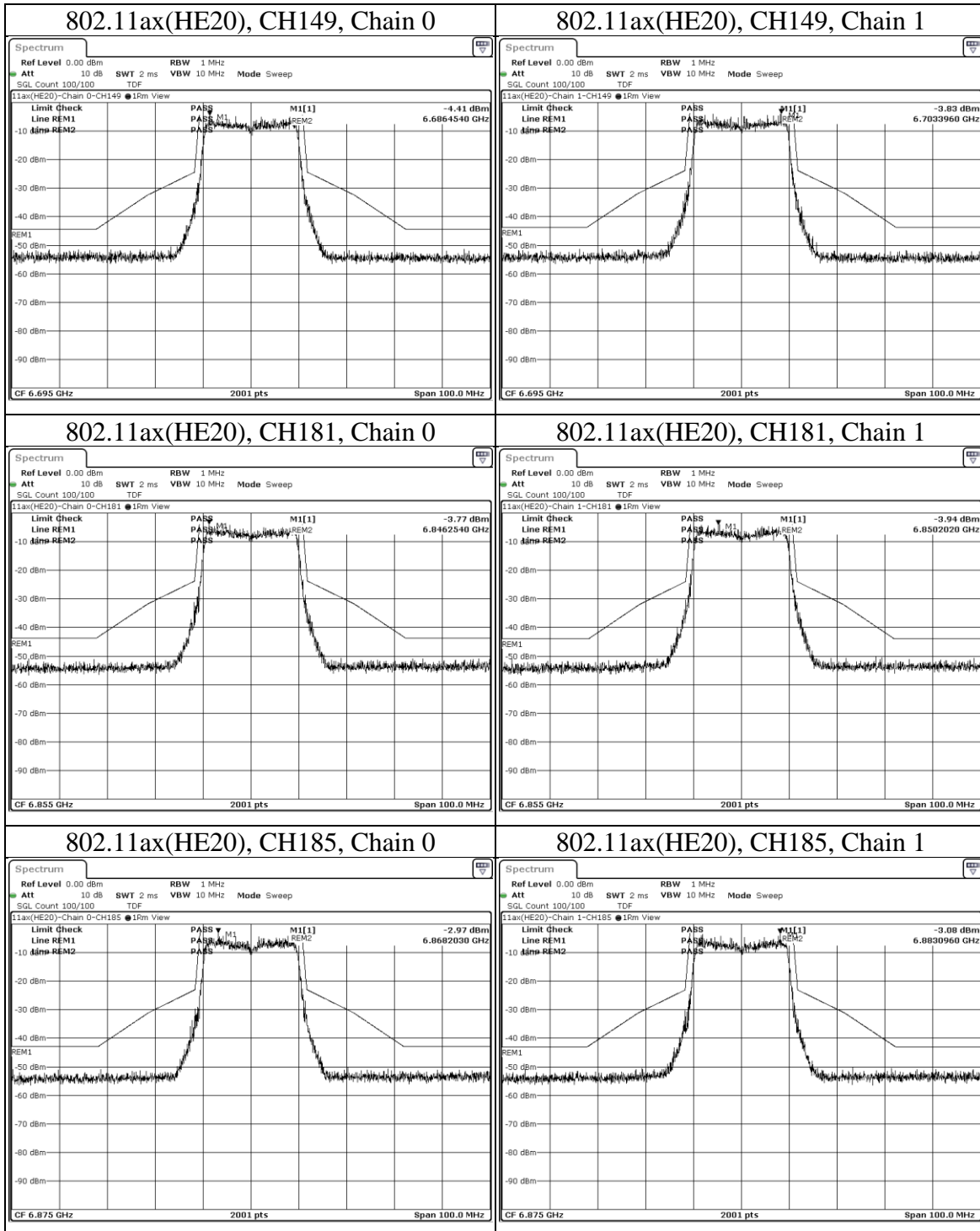
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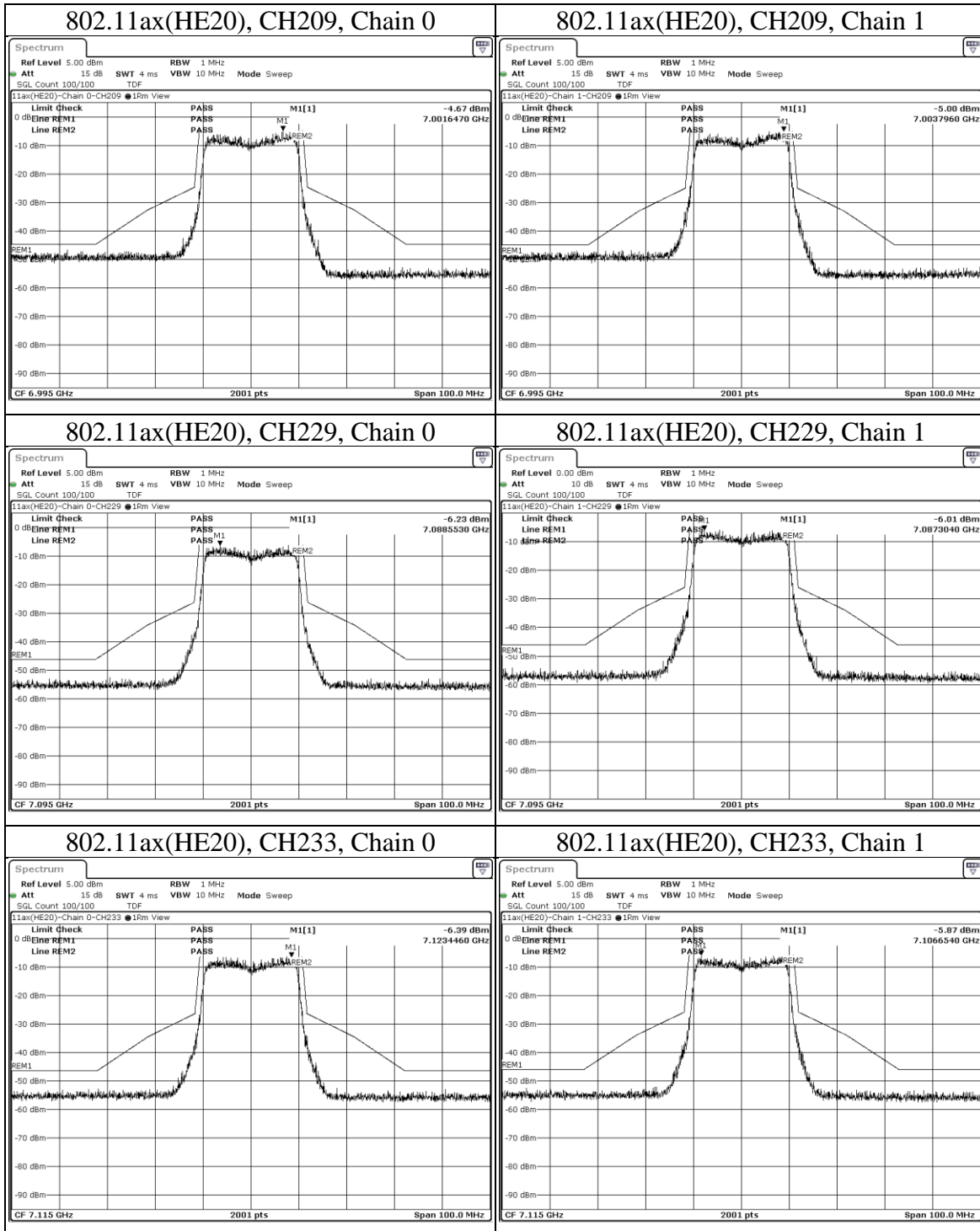
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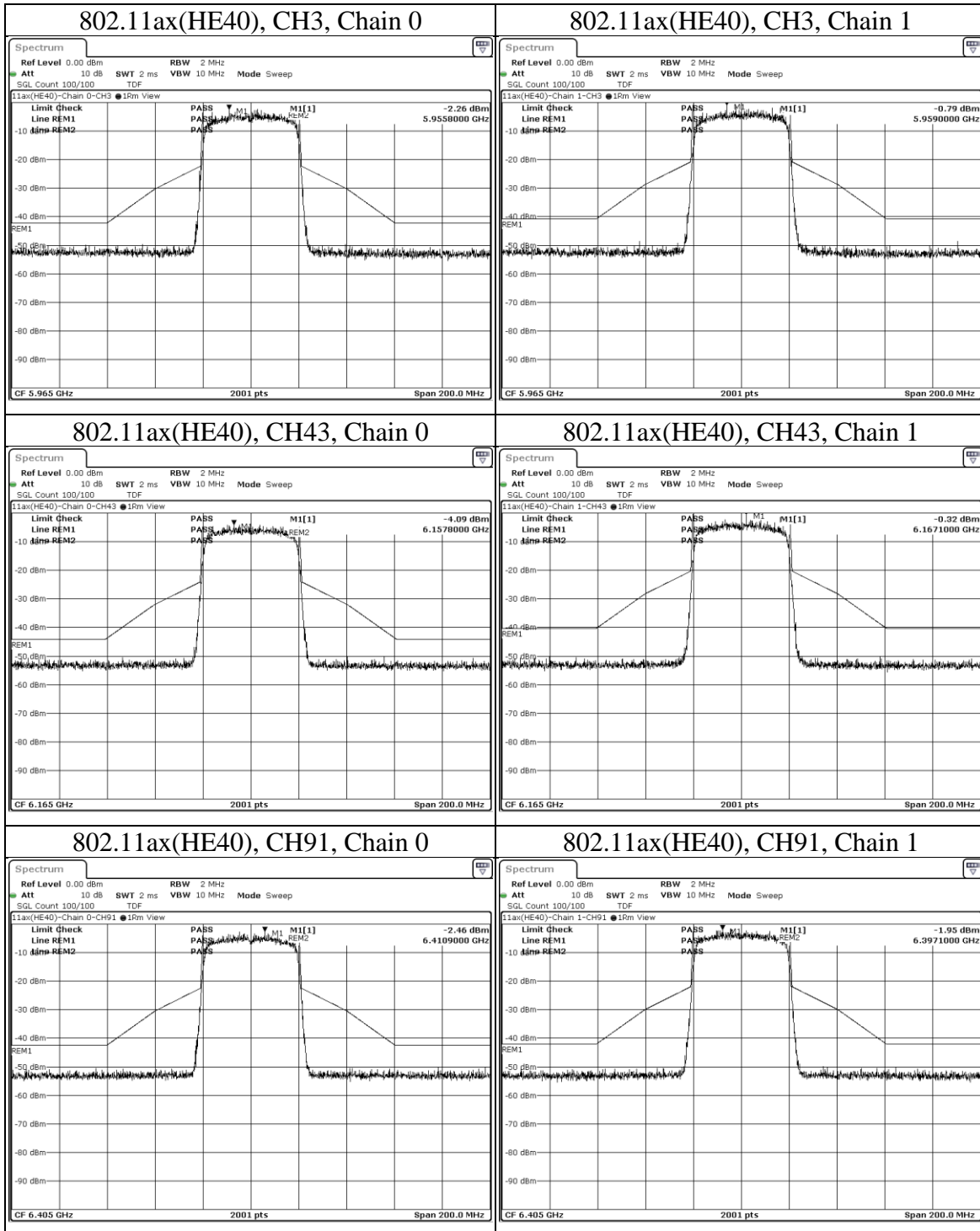


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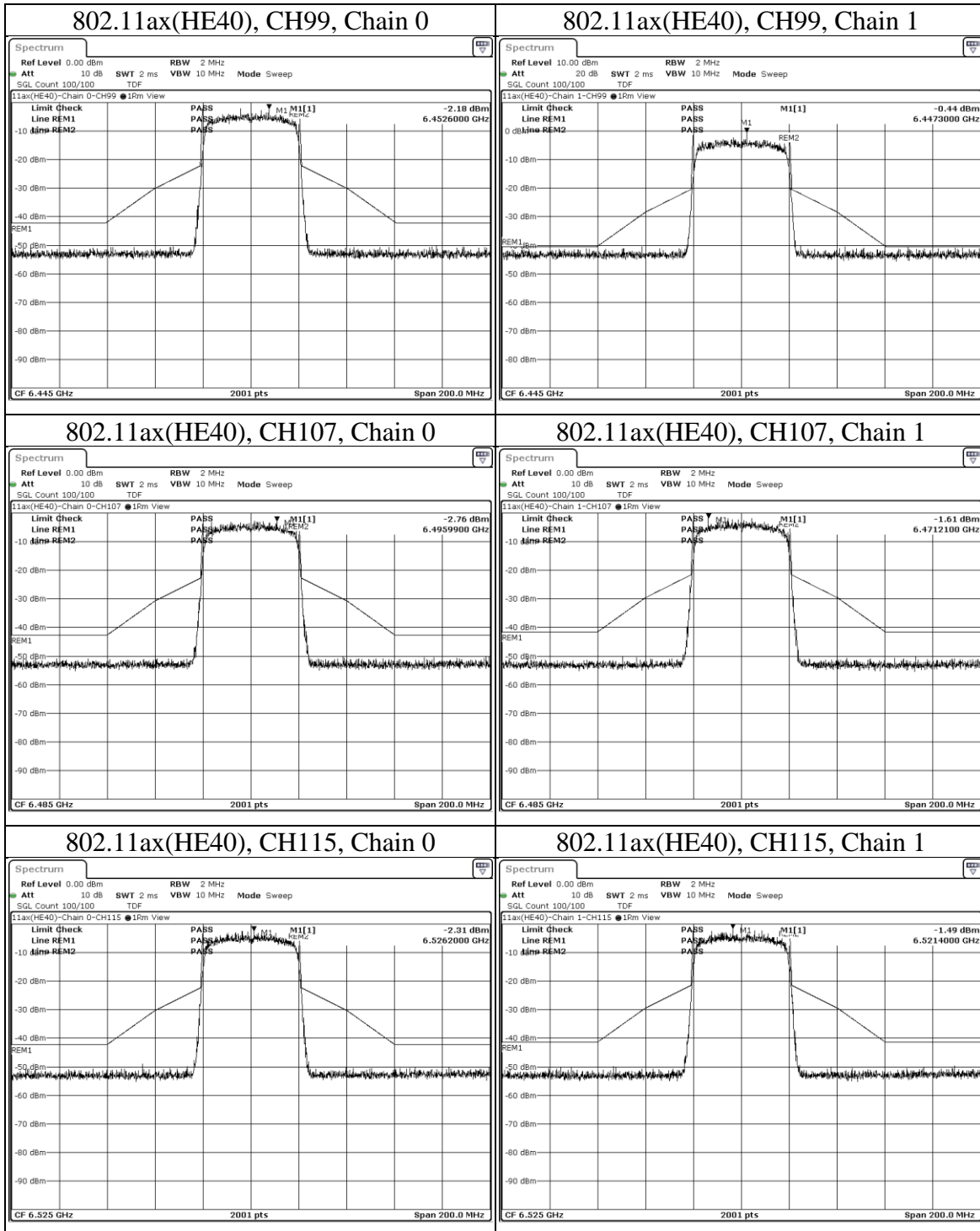
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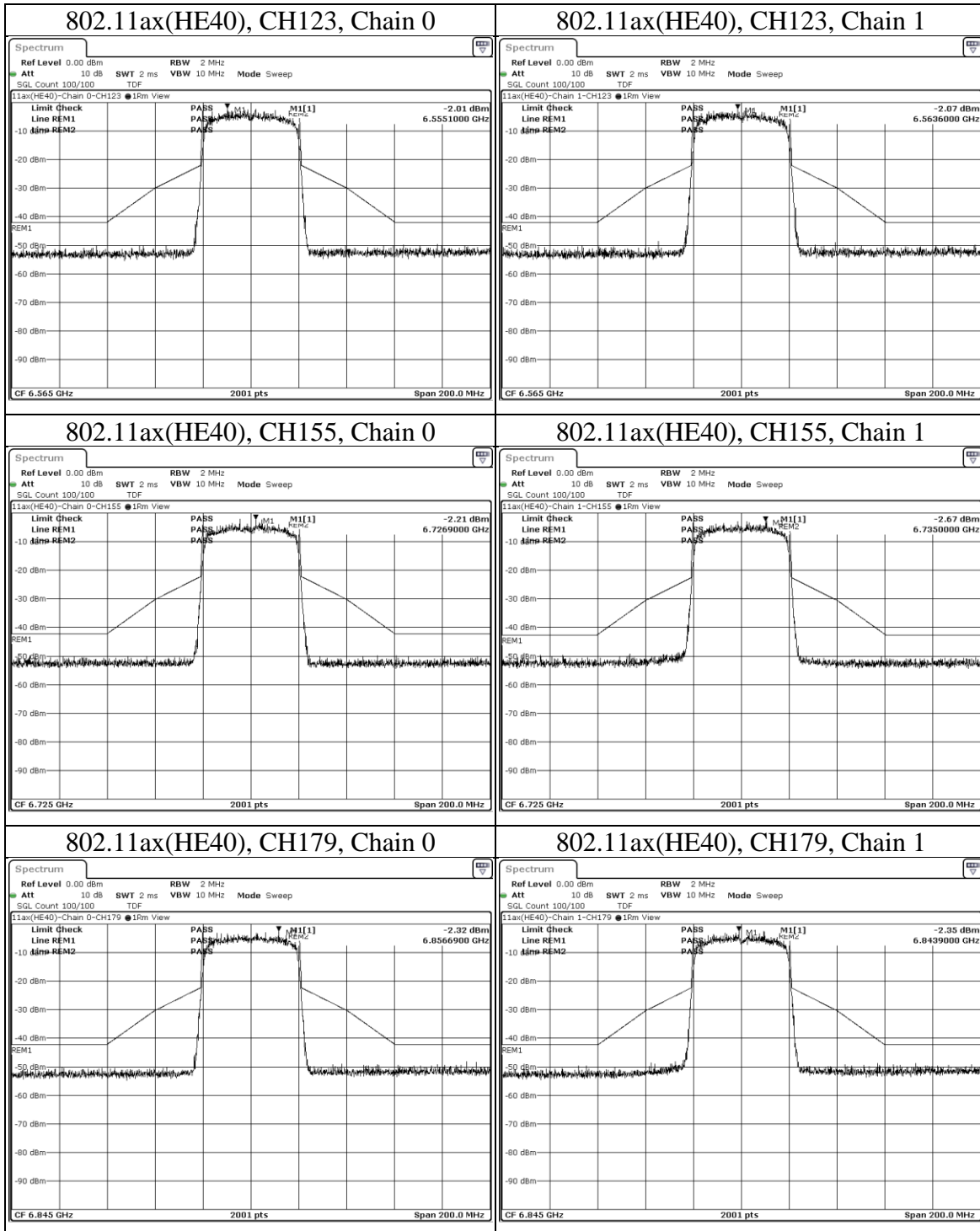
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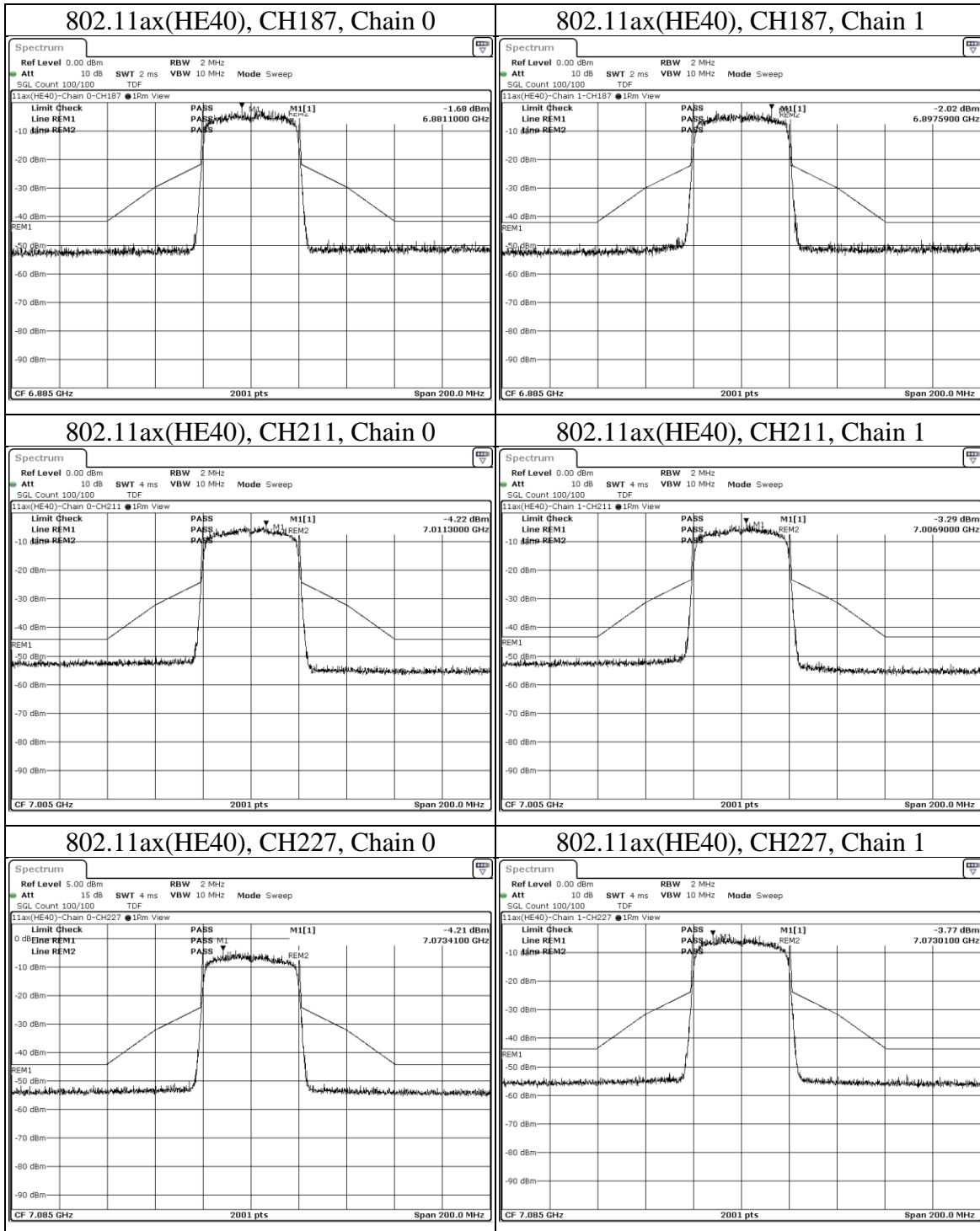
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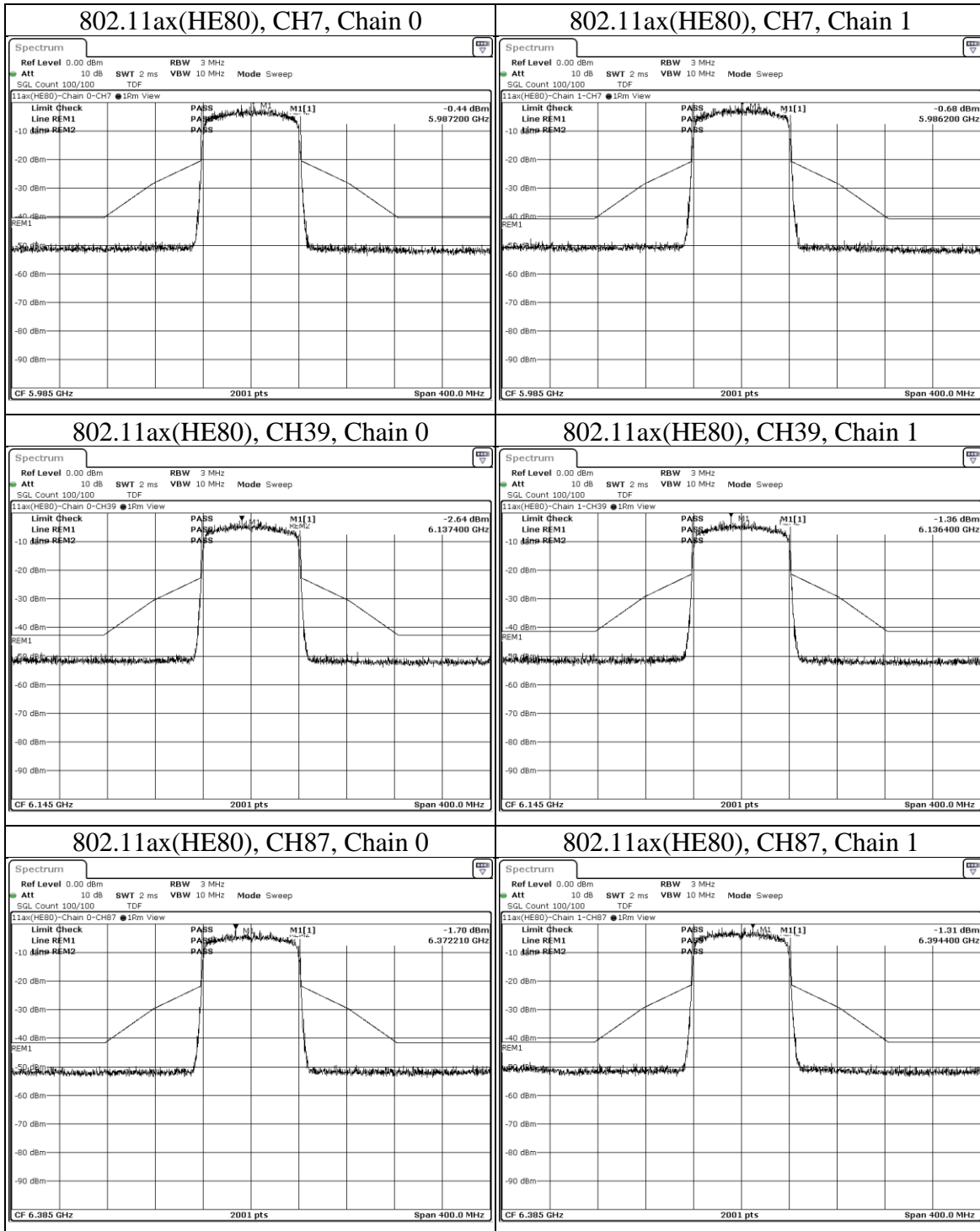
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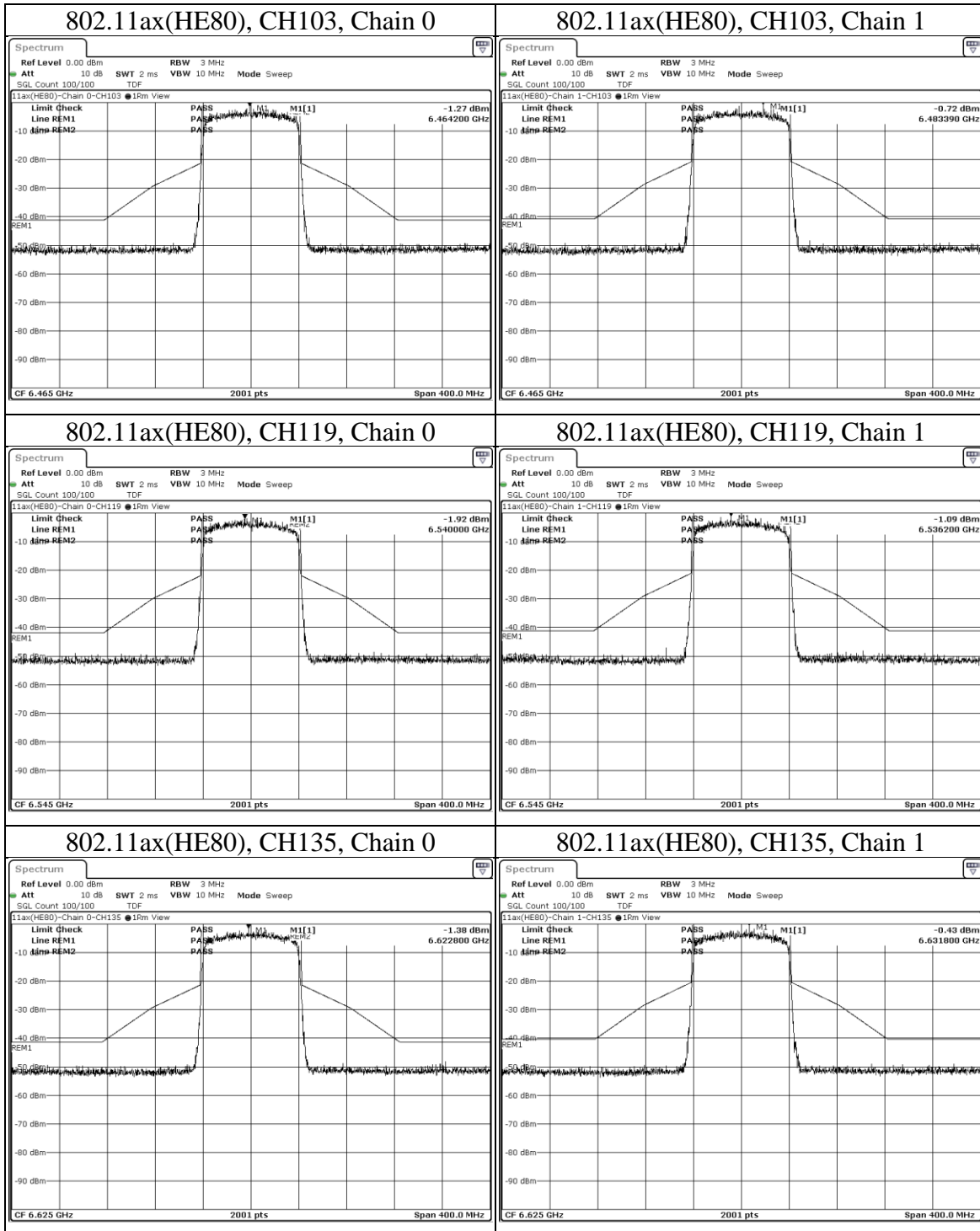


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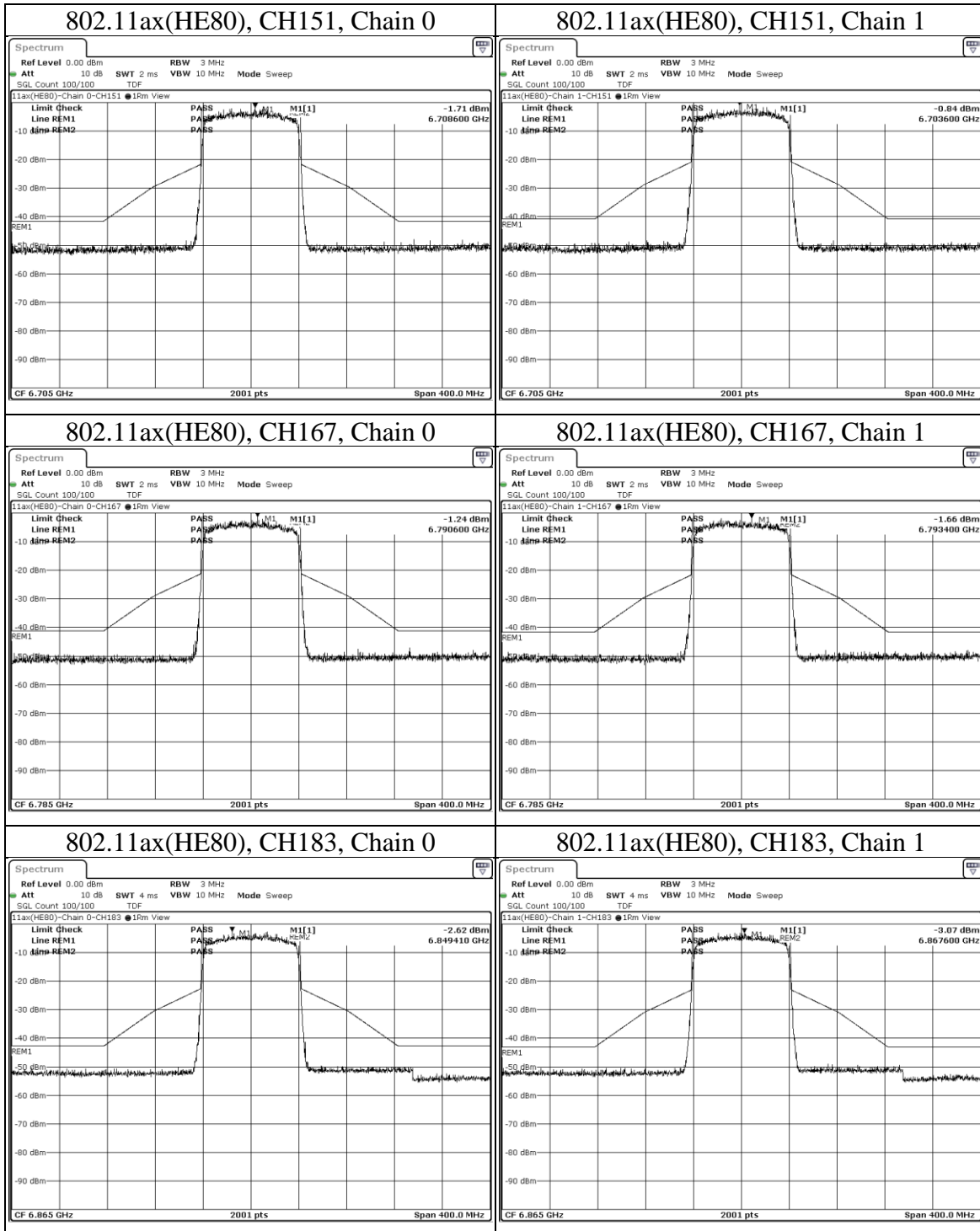


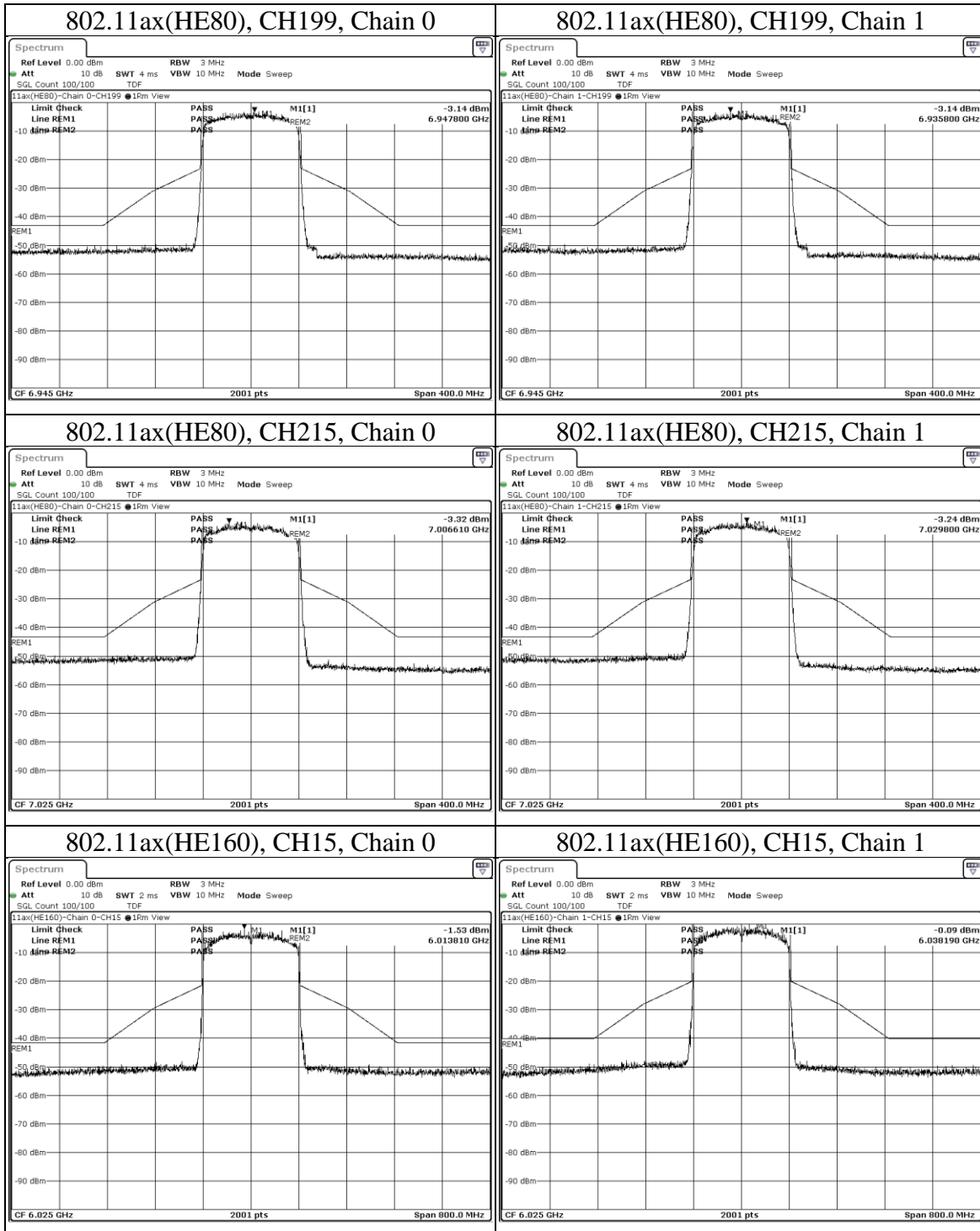
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