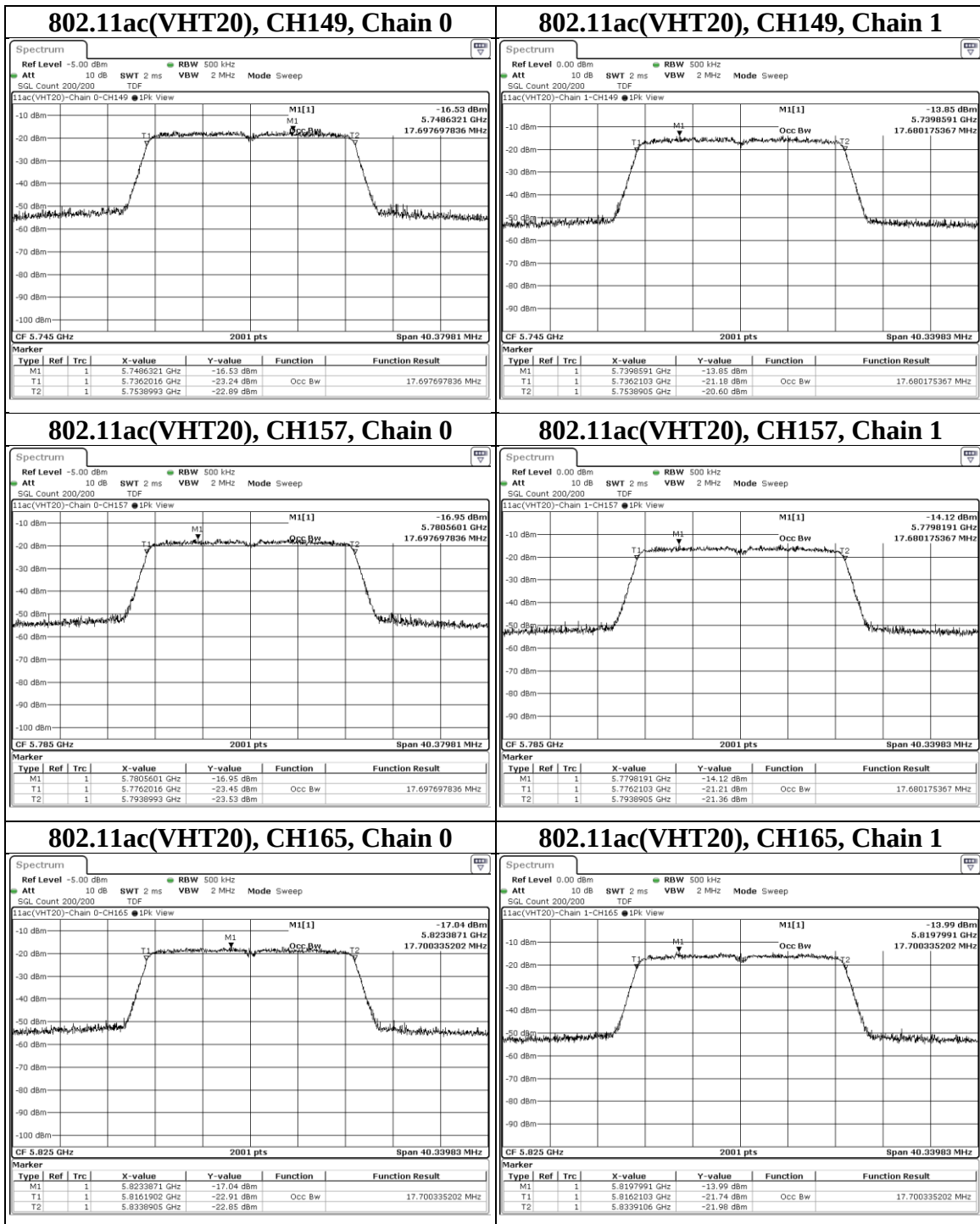




Mode	CH	Freq (MHz)	OBW (MHz)		Limit (MHz)	Result
			Chain 0	Chain 1		
802.11ac(VHT40)	38	5190	36.289	36.289	N/A	PASS
	46	5230	36.208	36.133	N/A	PASS
	54	5270	36.252	36.251	N/A	PASS
	62	5310	36.368	36.368	N/A	PASS
	102	5510	36.253	36.214	N/A	PASS
	110	5550	36.214	36.291	N/A	PASS
	134	5670	36.288	36.29	N/A	PASS
	151	5755	36.289	36.29	N/A	PASS
	159	5795	36.252	36.329	N/A	PASS

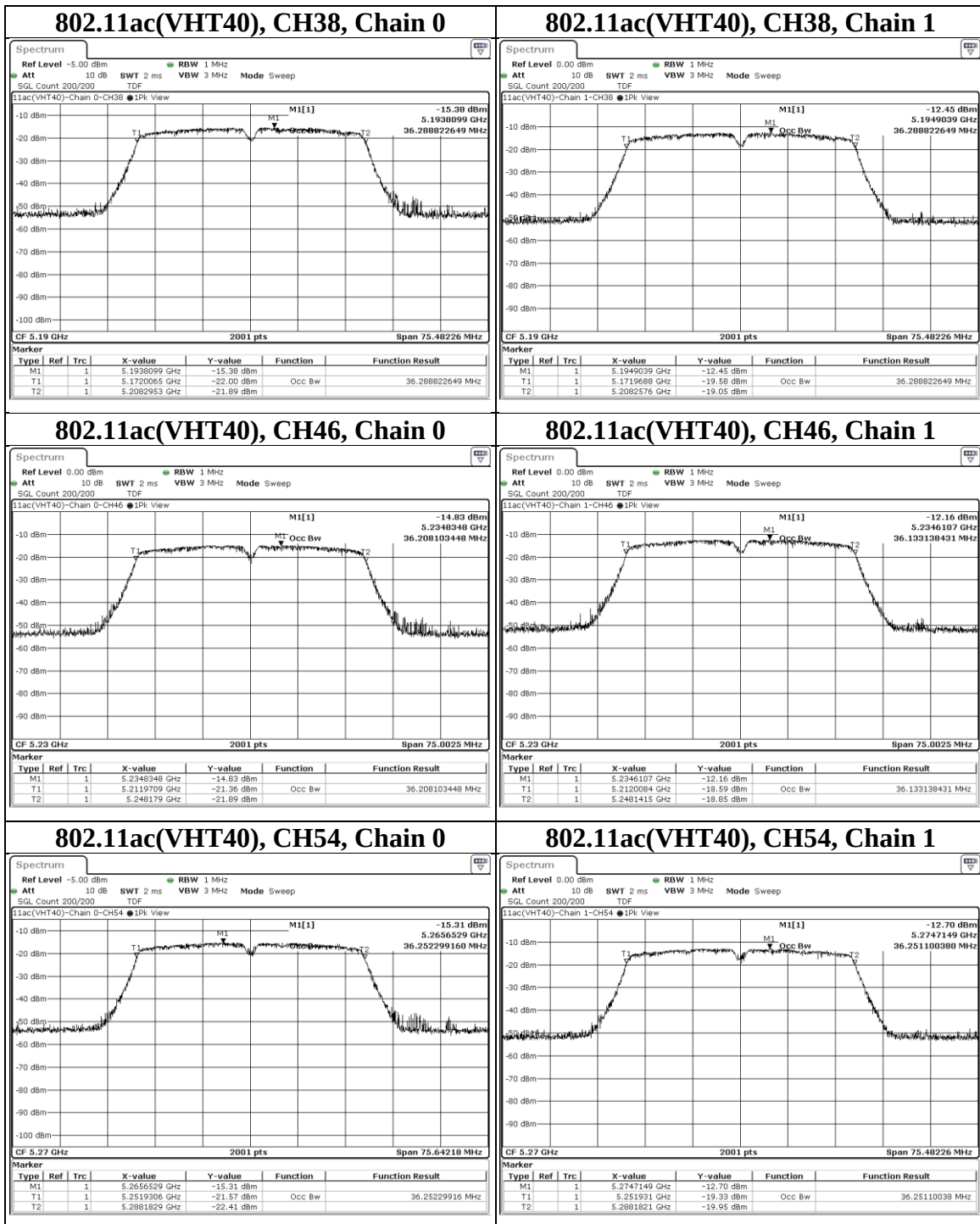
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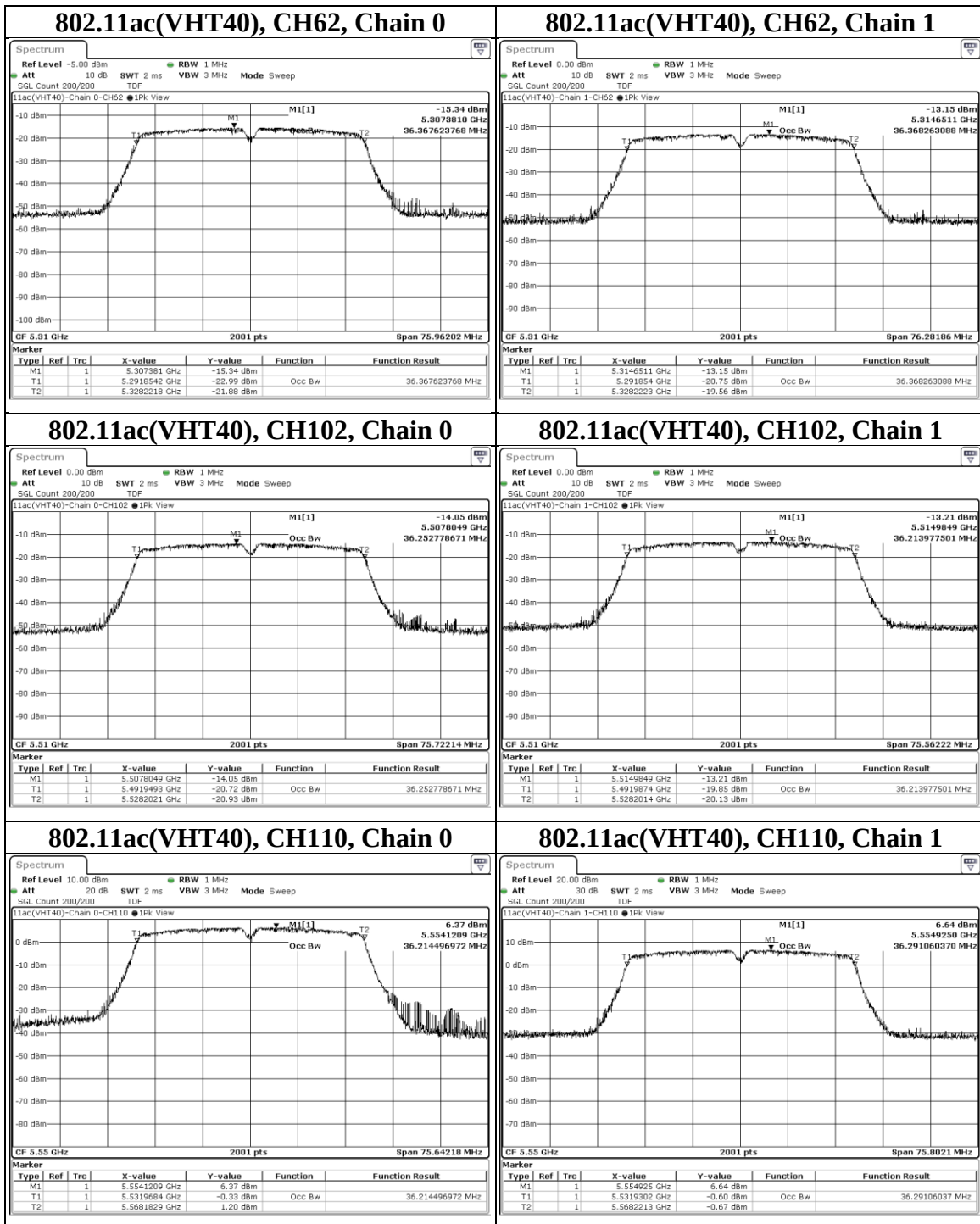
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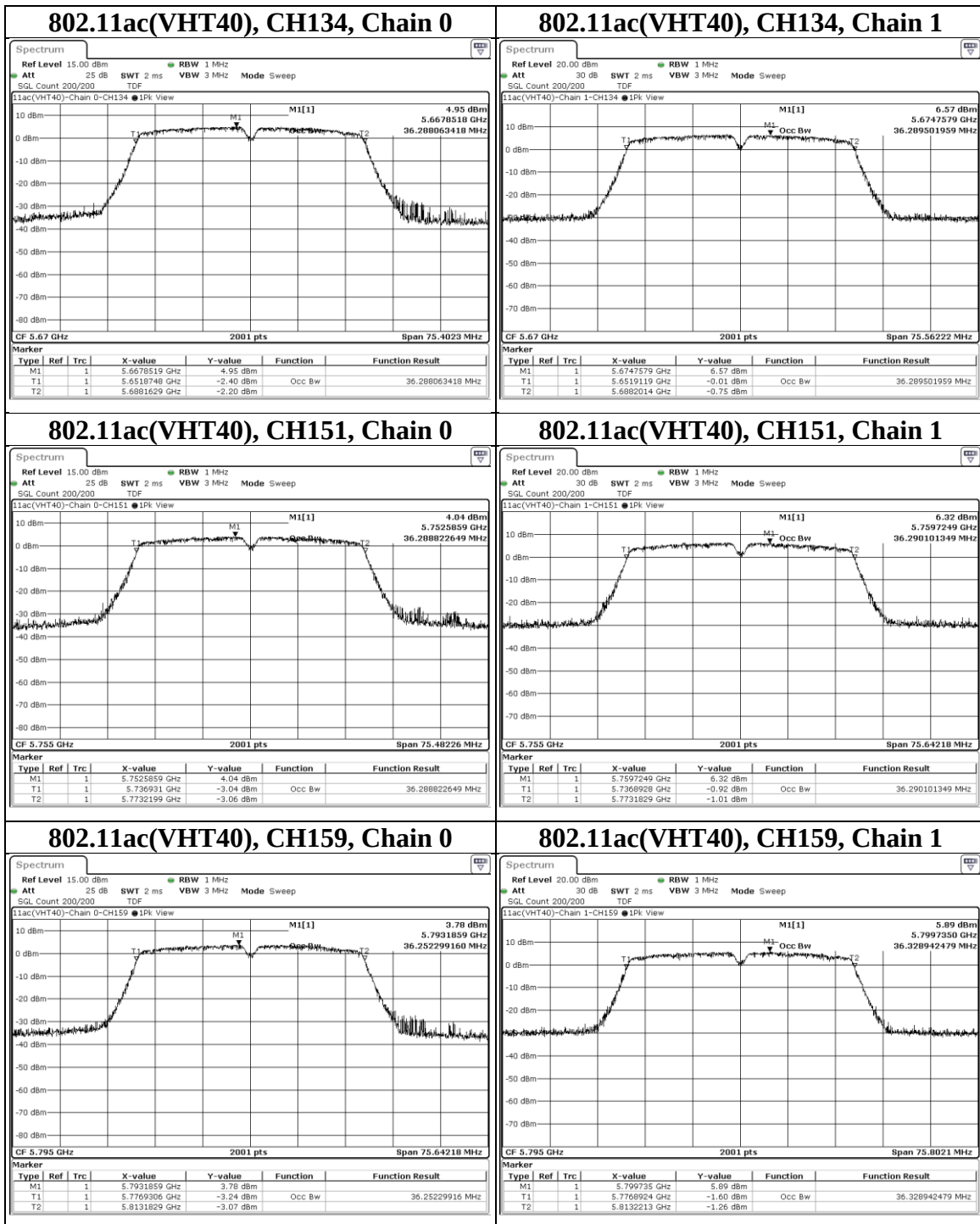
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9.4. Conducted output power

Requirements

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) Max. e.i.r.p $\leq 125\text{mW}$ (21 dBm) at any elevation angle above 30 degrees as measured from the horizon If $G_{\text{TX}} > 6 \text{ dBi}$, then $P_{\text{Out}} = 30 - (G_{\text{TX}} - 6)$
		Fixed point-to-point Access Point	1 Watt (30 dBm) If $G_{\text{TX}} > 23 \text{ dBi}$, then $P_{\text{Out}} = 30 - (G_{\text{TX}} - 23)$
		Indoor Access Point	1 Watt (30 dBm) If $G_{\text{TX}} > 6 \text{ dBi}$, then $P_{\text{Out}} = 30 - (G_{\text{TX}} - 6)$
	√	Client device	250mW (24 dBm) If $G_{\text{TX}} > 6 \text{ dBi}$, then $P_{\text{Out}} = 23.98 - (G_{\text{TX}} - 6)$
U-NII-2A	√		250mW (24 dBm) or $11 \text{ dBm} + 10 \log B^*$ If $G_{\text{TX}} > 6 \text{ dBi}$, then $P_{\text{Out}} = 23.98 - (G_{\text{TX}} - 6)$
U-NII-2C	√		250mW (24 dBm) or $11 \text{ dBm} + 10 \log B^*$ If $G_{\text{TX}} > 6 \text{ dBi}$, then $P_{\text{Out}} = 23.98 - (G_{\text{TX}} - 6)$
U-NII-3	√		For Point-to-multipoint systems (P2M): 1 Watt (30 dBm). If $G_{\text{TX}} > 6 \text{ dBi}$, then $P_{\text{Out}} = 30 - (G_{\text{TX}} - 6)$ For Point-to-point systems (P2P): 1 Watt (30 dBm)

Note:

- P_{Out} = maximum conducted output power in dBm,
- G_{TX} = the maximum transmitting antenna directional gain in dBi.
- B is the 26 dB emission bandwidth in megahertz
- Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / N_{\text{ant}}]$ dBi.

N_{ant} : Number of Transmit Antennas
 $G1, G2, \dots, Gn$: Gain of Individual Antennas
- Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths $\geq 40 \text{ MHz}$ for any N_{ANT} ;
Array Gain = $5 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{\text{ANT}} \geq 5$.

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Test Procedure

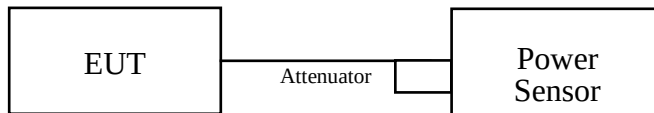
For Average Power Measurement

Test method PM

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to AVERAGE. Duty factor is not added to measured value.

Test Setup

For Average Power Measurement



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

Test Data**802.11a**

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
36	5180	16.02	17.43	95.28	19.79	23.98	PASS
44	5220	16.23	17.74	101.391	20.06	23.98	PASS
48	5240	16.33	17.87	104.232	20.18	23.98	PASS
52	5260	16.46	17.68	102.802	20.12	23.9	PASS
60	5300	16.41	17.30	97.499	19.89	23.9	PASS
64	5320	16.11	17.46	96.605	19.85	23.9	PASS
100	5500	16.97	17.19	102.094	20.09	23.9	PASS
116	5580	16.94	16.94	98.855	19.95	23.9	PASS
140	5700	15.48	15.84	73.621	18.67	23.9	PASS
149	5745	15.25	15.33	67.608	18.30	30	PASS
157	5785	15.67	15.05	68.865	18.38	30	PASS
165	5825	14.97	15.67	68.234	18.34	30	PASS

Note: The directional gain = 5.62 dBi < 6 dBi, so the power limit shall not be reduced.

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802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
36	5180	14.32	14.83	57.412	17.59	23.98	PASS
44	5220	15.54	14.83	66.222	18.21	23.98	PASS
48	5240	13.98	14.08	50.582	17.04	23.98	PASS
52	5260	15.61	14.58	65.163	18.14	23.9	PASS
60	5300	14.39	13.86	51.761	17.14	23.9	PASS
64	5320	14.28	13.89	51.286	17.10	23.9	PASS
100	5500	15.26	14.90	64.417	18.09	23.9	PASS
116	5580	15.00	13.77	55.463	17.44	23.9	PASS
140	5700	12.61	11.93	33.806	15.29	23.9	PASS
149	5745	12.14	10.32	27.102	14.33	30	PASS
157	5785	12.26	10.75	28.708	14.58	30	PASS
165	5825	11.33	11.85	28.907	14.61	30	PASS

Note: The directional gain = 5.62 dBi < 6 dBi, so the power limit shall not be reduced.

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802.11ac (VHT40)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
38	5190	15.22	15.59	69.502	18.42	23.98	PASS
46	5230	15.16	14.90	63.68	18.04	23.98	PASS
54	5270	14.19	13.97	51.168	17.09	23.98	PASS
62	5310	14.16	13.22	47.098	16.73	23.98	PASS
102	5510	15.57	14.44	63.826	18.05	23.98	PASS
110	5550	15.31	14.27	60.674	17.83	23.98	PASS
134	5670	13.77	12.30	40.832	16.11	23.98	PASS
151	5755	12.51	11.12	30.761	14.88	30	PASS
159	5795	12.04	11.33	29.58	14.71	30	PASS

Note: The directional gain = 5.62 dBi < 6 dBi, so the power limit shall not be reduced.

9.5. Power Spectral Density

Requirements

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz If $G_{TX} > 6$ dBi, then $PSD = 17 - (G_{TX} - 6)$
		Fixed point-to-point Access Point	17dBm/ MHz If $G_{TX} > 23$ dBi, then $PSD = 17 - (G_{TX} - 23)$
		Indoor Access Point	17dBm/ MHz If $G_{TX} > 6$ dBi, then $PSD = 17 - (G_{TX} - 6)$
	√	Client device	11dBm/ MHz If $G_{TX} > 6$ dBi, then $PSD = 11 - (G_{TX} - 6)$
U-NII-2A	√		11dBm/ MHz If $G_{TX} > 6$ dBi, then $PSD = 11 - (G_{TX} - 6)$
U-NII-2C	√		11dBm/ MHz If $G_{TX} > 6$ dBi, then $PSD = 11 - (G_{TX} - 6)$
U-NII-3	√		For Point-to-multipoint systems (P2M): 30dBm/ 500kHz. If $G_{TX} > 6$ dBi, then $PSD = 30 - (G_{TX} - 6)$ For Point-to-point systems (P2P): 30dBm/ 500kHz

Note:

- PSD = power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz
- G_{TX} = the maximum transmitting antenna directional gain in dBi.
- Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / Nant]$ dBi.

Nant: Number of Transmit Antennas

G1, G2,..., Gn: Gain of Individual Antennas

- "PSD per chain" of the report shown is maximum value for each chain, at the "Total PSD" is summing entire spectra across corresponding frequency bins on the various outputs by computer, refer KDB 662911 Method a) for calculating total power density.

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Test procedure

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method as below:

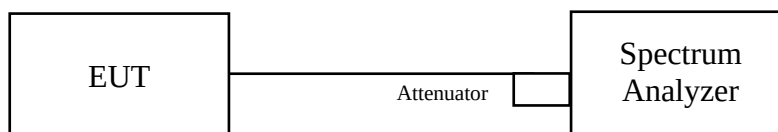
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW $\geq$ 3 RBW, Detector = RMS
- Sweep time = auto, trigger set to “free run”.
- Trace average at least 100 traces in power averaging mode.
- Record the max value. (if Duty cycle $<$ 98 %, add 10 log (1/duty cycle))

For U-NII-3 band:

Using method as below:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
- Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10 \log (500 \text{ kHz}/300\text{kHz})$
- Sweep time = auto, trigger set to “free run”.
- Trace average at least 100 traces in power averaging mode.
- Record the max value. (if Duty cycle $<$ 98 %, add 10 log (1/duty cycle))

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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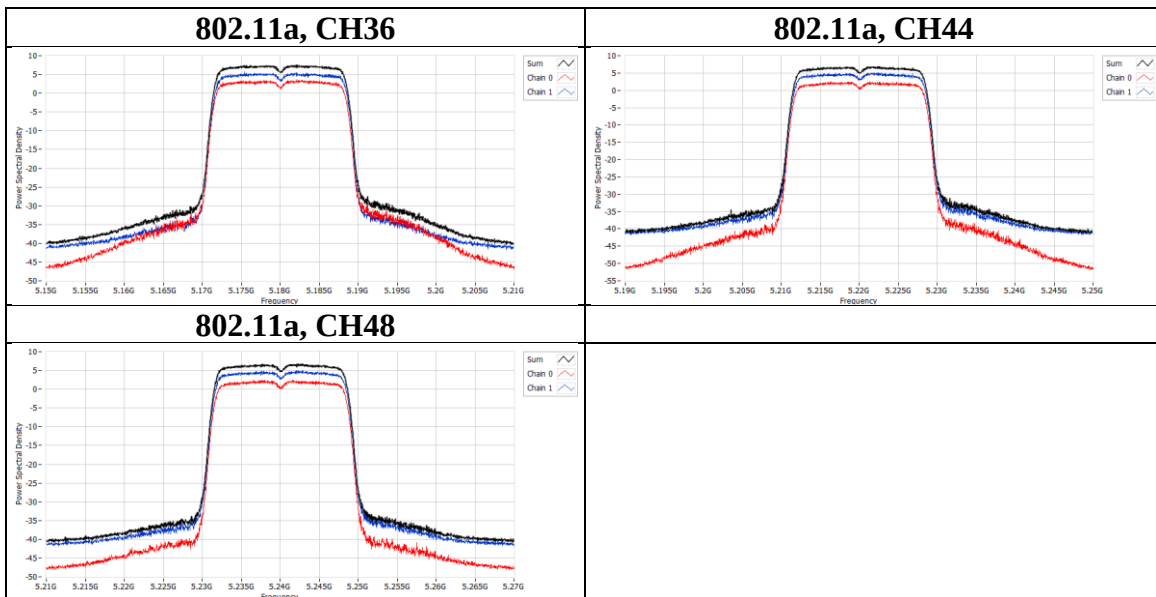
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Test Data

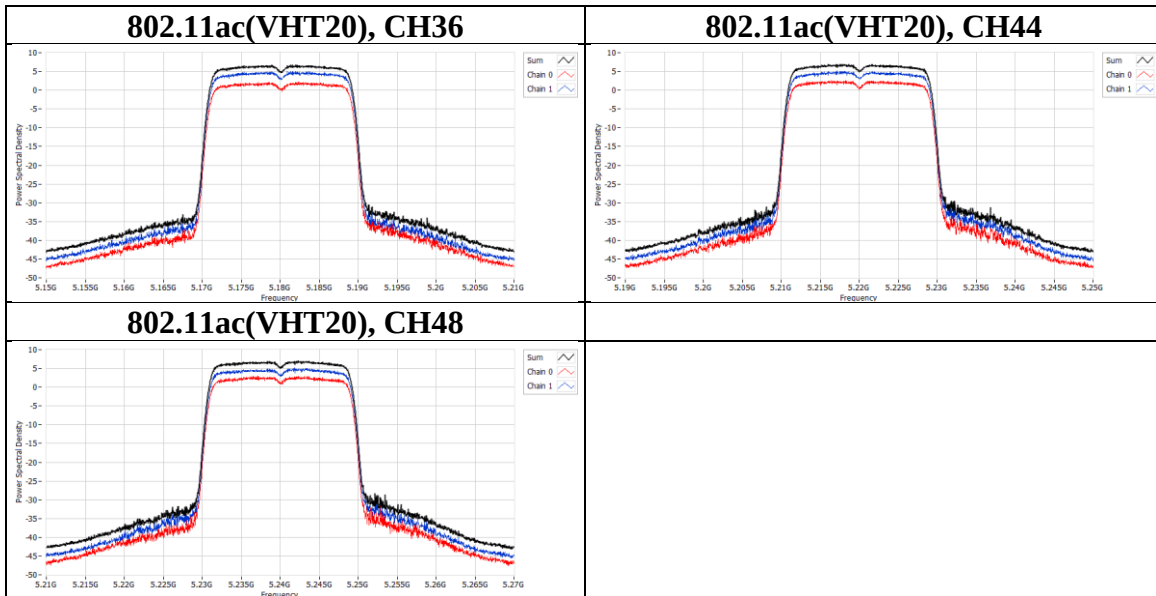
Mode (U-NII-1)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	36	5180	7.13	7.63	9.87	PASS
	44	5220	7.13	6.91	9.87	PASS
	48	5240	7.13	6.8	9.87	PASS

Mode (U-NII-1)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11a	36	5180	3.557	5.648
	44	5220	2.475	5.118
	48	5240	2.483	5.052



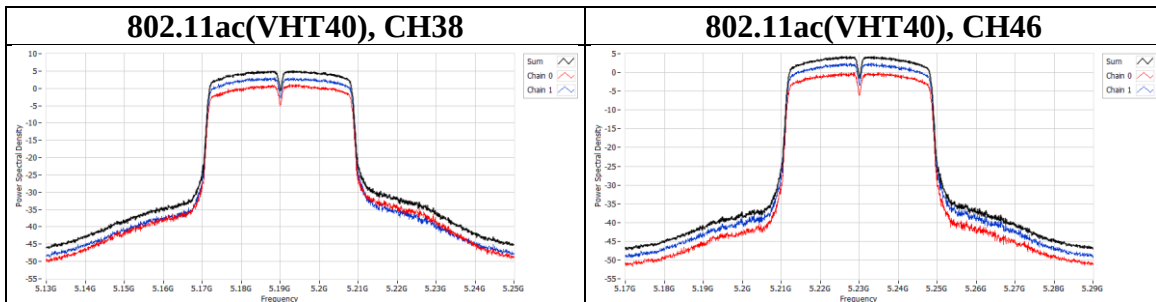
Mode (U-NII-1)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ac(VHT20)	36	5180	7.13	6.76	9.87	PASS
	44	5220	7.13	6.87	9.87	PASS
	48	5240	7.13	7.01	9.87	PASS

Mode (U-NII-1)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ac(VHT20)	36	5180	2.284	5.037
	44	5220	2.616	5.163
	48	5240	3.036	5.248



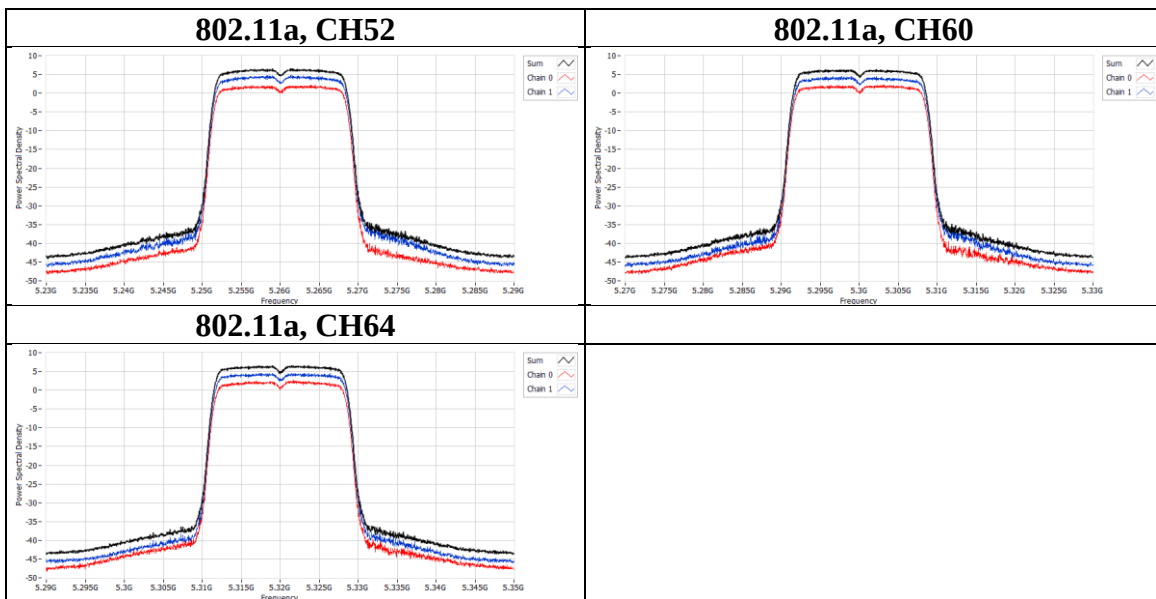
Mode (U-NII-1)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ac(VHT40)	38	5190	7.13	5.13	9.87	PASS
	46	5230	7.13	4.3	9.87	PASS

Mode (U-NII-1)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ac(VHT40)	38	5190	1.199	3.155
	46	5230	0.097	2.445



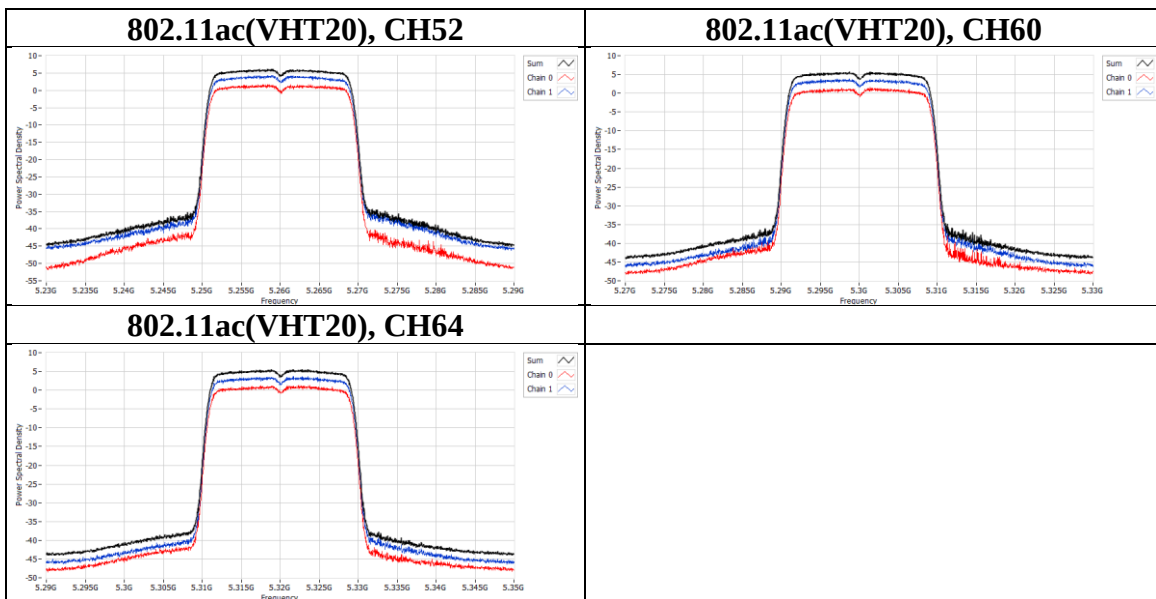
Mode (U-NII-2A)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	52	5260	7.13	6.61	9.87	PASS
	60	5300	7.13	6.32	9.87	PASS
	64	5320	7.13	6.6	9.87	PASS

Mode (U-NII-2A)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11a	52	5260	2.15	4.9
	60	5300	2.192	4.565
	64	5320	2.664	4.581



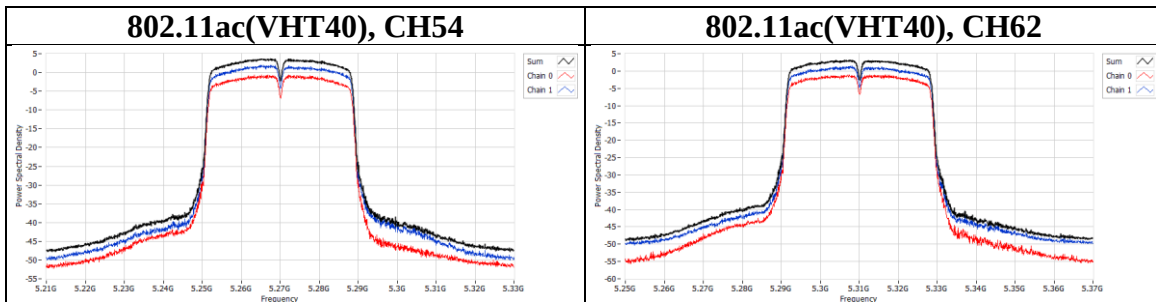
Mode (U-NII-2A)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ac(VHT20)	52	5260	7.13	6.09	9.87	PASS
	60	5300	7.13	5.73	9.87	PASS
	64	5320	7.13	5.52	9.87	PASS

Mode (U-NII-2A)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ac(VHT20)	52	5260	1.671	4.292
	60	5300	1.546	3.873
	64	5320	1.316	3.637



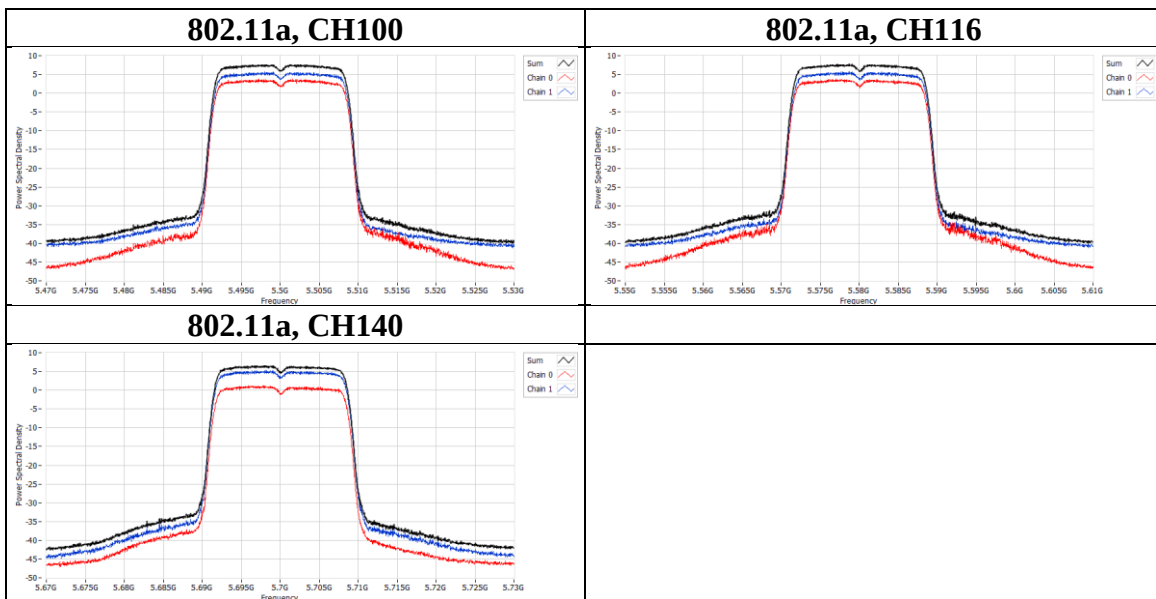
Mode (U-NII-2A)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ac(VHT40)	54	5270	7.13	3.68	9.87	PASS
	62	5310	7.13	3.17	9.87	PASS

Mode (U-NII-2A)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ac(VHT40)	54	5270	-0.717	1.938
	62	5310	-1.124	1.413



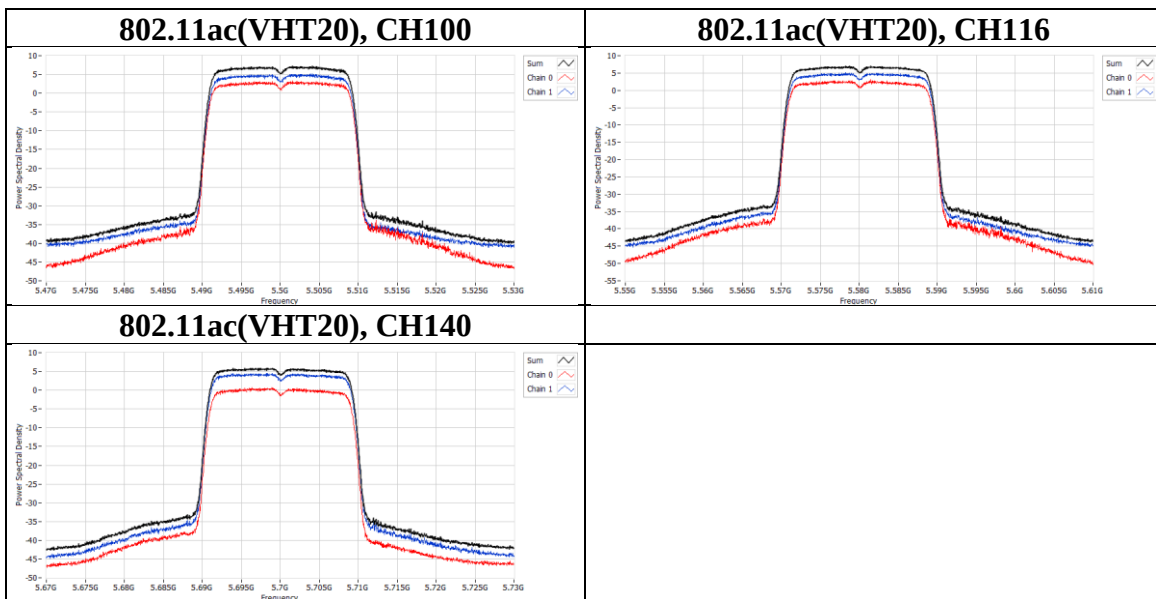
Mode (U-NII-2C)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	100	5500	7.13	7.64	9.87	PASS
	116	5580	7.13	7.76	9.87	PASS
	140	5700	7.13	6.64	9.87	PASS

Mode (U-NII-2C)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11a	100	5500	3.821	5.74
	116	5580	3.73	5.78
	140	5700	1.275	5.281



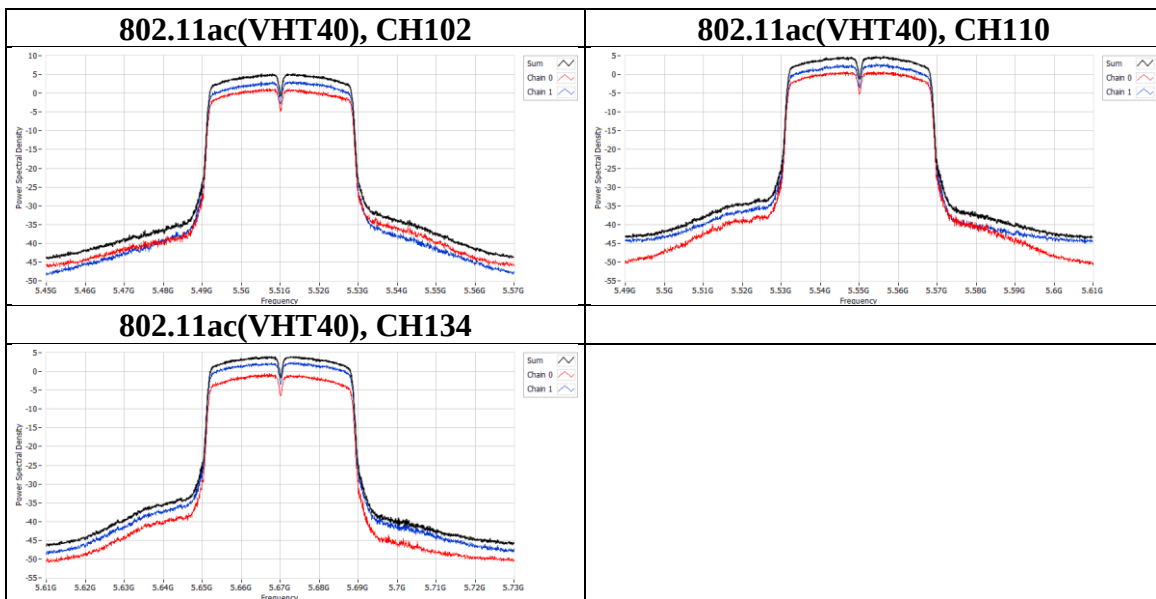
Mode (U-NII-2C)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ac(VHT20)	100	5500	7.13	7.19	9.87	PASS
	116	5580	7.13	7	9.87	PASS
	140	5700	7.13	5.94	9.87	PASS

Mode (U-NII-2C)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ac(VHT20)	100	5500	3.216	5.247
	116	5580	3.106	5.097
	140	5700	0.794	4.526



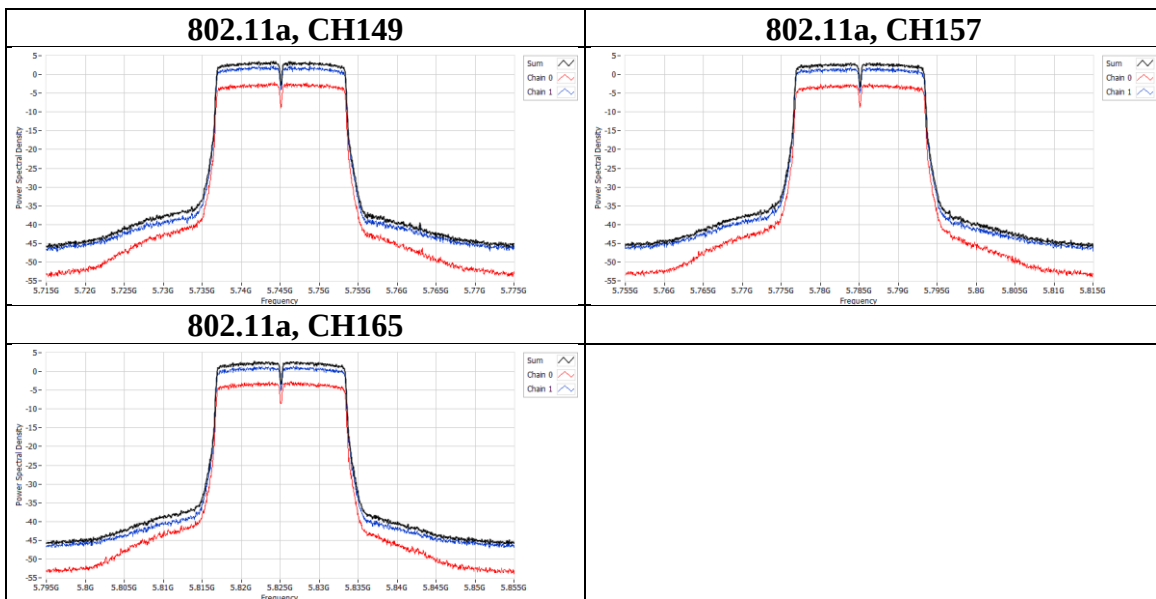
Mode (U-NII-2C)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ac(VHT40)	102	5510	7.13	5.21	9.87	PASS
	110	5550	7.13	4.87	9.87	PASS
	134	5670	7.13	4.05	9.87	PASS

Mode (U-NII-2C)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ac(VHT40)	102	5510	1.248	3.193
	110	5550	0.75	2.856
	134	5670	-0.508	2.513



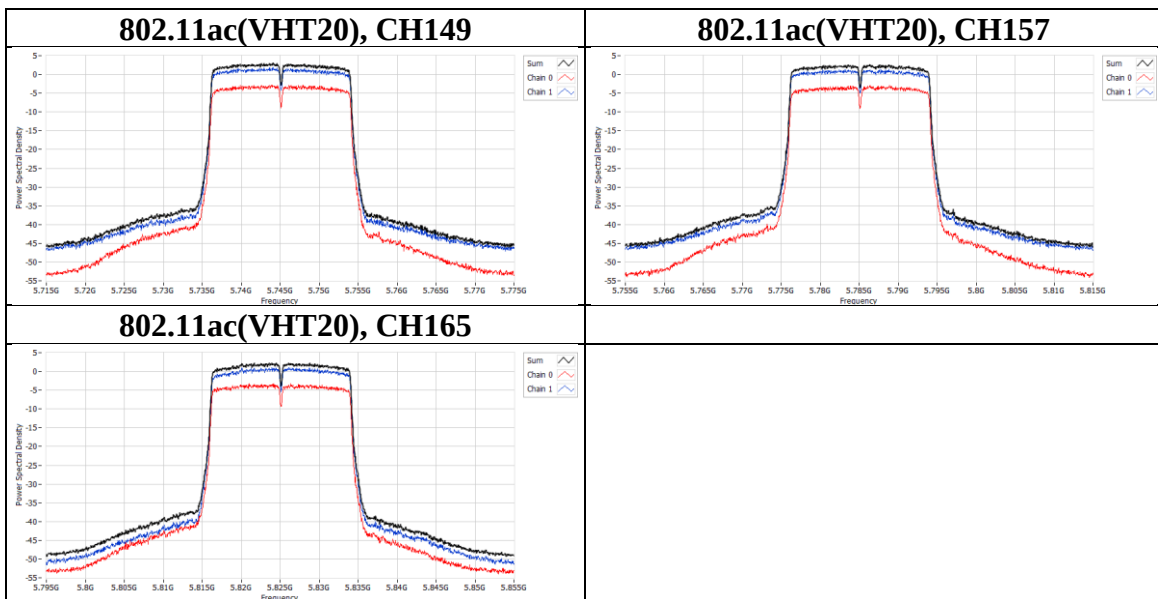
Mode (U-NII-3)	CH	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	149	5745	2.22	7.13	5.68	28.87	PASS
	157	5785	2.22	7.13	5.36	28.87	PASS
	165	5825	2.22	7.13	4.9	28.87	PASS

Mode (U-NII-3)	CH	Freq (MHz)	PSD per Chain (dBm/500kHz)	
			Chain 0	Chain 1
802.11a	149	5745	-2.082	2.251
	157	5785	-2.417	1.882
	165	5825	-2.743	1.445



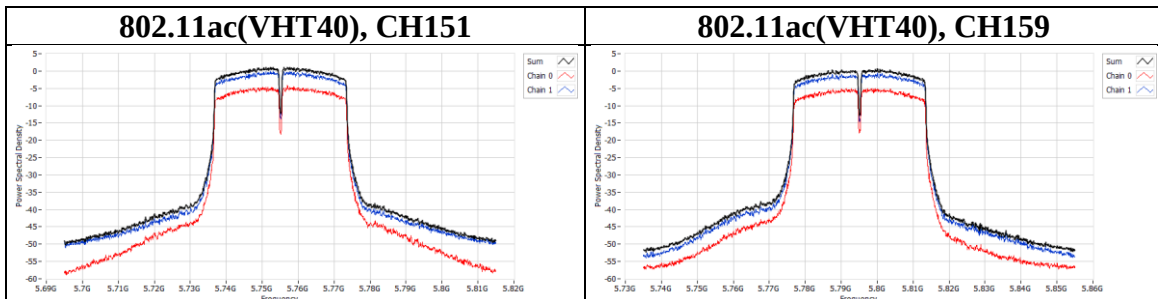
Mode (U-NII-3)	CH	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11ac(VHT20)	149	5745	2.22	7.13	5.34	28.87	PASS
	157	5785	2.22	7.13	4.83	28.87	PASS
	165	5825	2.22	7.13	4.49	28.87	PASS

Mode (U-NII-3)	CH	Freq (MHz)	PSD per Chain (dBm/500kHz)	
			Chain 0	Chain 1
802.11ac(VHT20)	149	5745	-2.865	1.928
	157	5785	-2.828	1.343
	165	5825	-3.167	0.986



Mode (U-NII-3)	CH	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11ac(VHT40)	151	5755	2.22	7.13	3.34	28.87	PASS
	159	5795	2.22	7.13	2.89	28.87	PASS

Mode (U-NII-3)	CH	Freq (MHz)	PSD per Chain (dBm/500kHz)	
			Chain 0	Chain 1
802.11ac(VHT40)	151	5755	-4.116	0.038
	159	5795	-5.046	-0.562



9.6. Frequency Stability

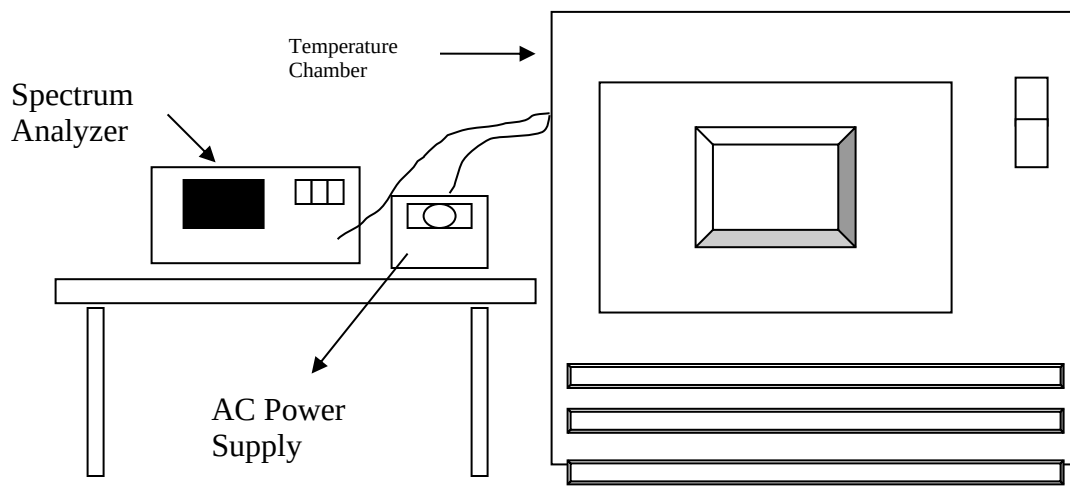
Requirements

The frequency of the carrier signal shall be maintained within band of operation.

Test procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

Test Setup



Test Data

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
50	120	5180.0161	3.11	5180.0191	3.69	5180.0182	3.51	5180.0162	3.13
40	120	5179.9827	-3.34	5179.9793	-4.00	5179.9802	-3.82	5179.9839	-3.11
30	120	5179.9895	-2.03	5179.9909	-1.76	5179.9892	-2.08	5179.9879	-2.34
20	120	5180.0162	3.13	5180.0168	3.24	5180.0196	3.78	5180.0204	3.94
10	120	5180.0165	3.19	5180.0188	3.63	5180.0174	3.36	5180.0188	3.63
0	120	5179.996	-0.77	5179.9972	-0.54	5179.9967	-0.64	5179.9986	-0.27
-10	120	5180.0081	1.56	5180.0073	1.41	5180.0092	1.78	5180.0115	2.22
-20	120	5179.9939	-1.18	5179.9931	-1.33	5179.9931	-1.33	5179.992	-1.54
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
20	138	5180.0159	3.07	5180.0161	3.11	5180.0199	3.84	5180.0202	3.90
20	120	5180.0162	3.13	5180.0168	3.24	5180.0196	3.78	5180.0204	3.94
20	102	5180.0165	3.19	5180.016	3.09	5180.0187	3.61	5180.0203	3.92

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9.7. Radiated Spurious Emission

Requirements

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

Frequency(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

NOTE:

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 1000MHz, 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 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBμV/m)	AV:54 (dBμV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBμV/m) ^{*1} PK:105.2 (dBμV/m) ^{*2} PK: 110.8(dBμV/m) ^{*3} PK:122.2 (dBμV/m) ^{*4}
^{*1} beyond 75 MHz or more above of the band edge. ^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. ^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.			

Note:

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

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

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Test Procedures

[For 9 kHz ~ 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) 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. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. 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.

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Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.

Configuration	Average	
	RBW	VBW
802.11a	1MHz	Refer to section 6.6 for duty cycle.
802.11ac (VHT20)		
802.11ac (VHT40)		

- 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.
- Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
- Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
- Test data of Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
- Test data of Notation "@" = Fundamental Frequency
- Test data of Notation "*" = Only required peak limit or the peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

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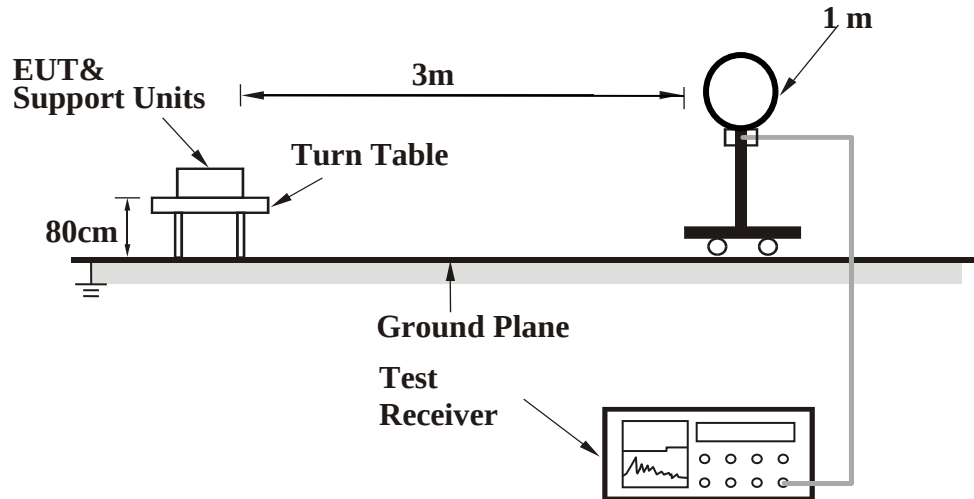
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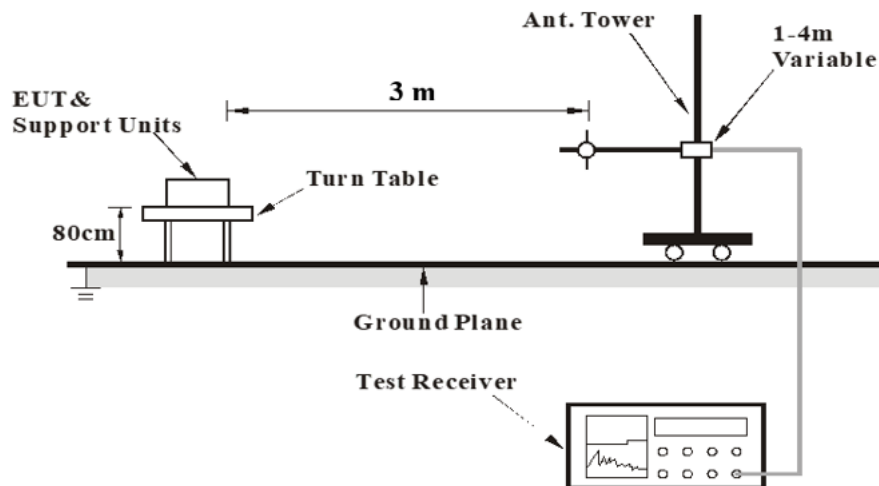
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Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >



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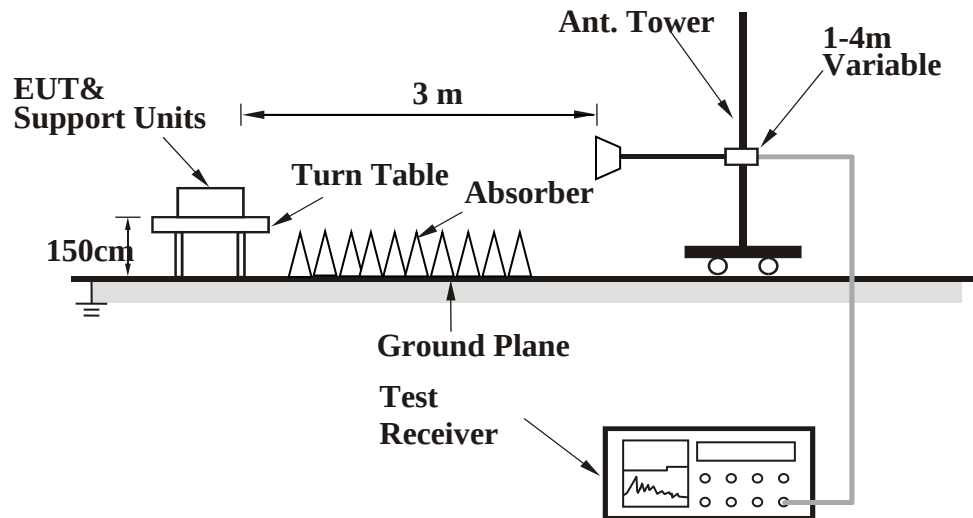
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<Frequency Range above 1 GHz>



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

Test Data

Above 1 GHz

Mode	802.11a	Channel	36
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5089.6	42.43	19.37	61.8	74	-12.2	PK
		5105.7	29.75	19.44	49.19	54	-4.81	AVG
	@	5180	83.48	19.31	102.79	N/A	N/A	PK
	@	5180	74.23	19.31	93.54	N/A	N/A	AVG
	*	10360	30.73	17.51	48.24	68.2	-19.96	PK
Vertical		5085.4	41.9	19.34	61.24	74	-12.76	PK
		5086.1	29.87	19.35	49.22	54	-4.78	AVG
	@	5180	82.92	19.31	102.23	N/A	N/A	PK
	@	5180	71.84	19.31	91.15	N/A	N/A	AVG
	*	10360	29.94	17.51	47.45	68.2	-20.75	PK

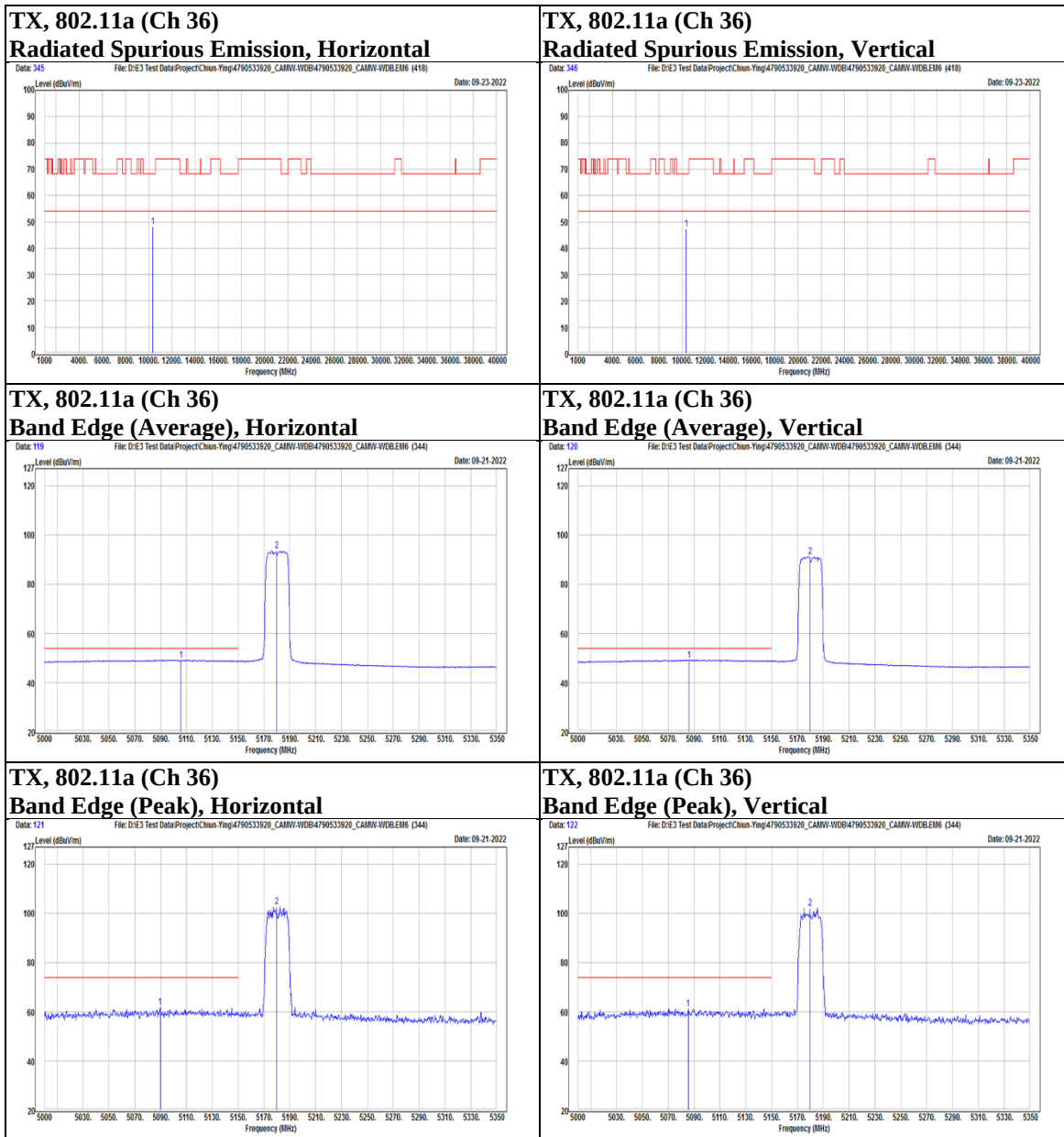
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Mode	802.11a	Channel	44
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5095.55	29.83	19.41	49.24	54	-4.76	AVG
		5136.15	42.97	19.41	62.38	74	-11.62	PK
	@	5220	83.16	19.12	102.28	N/A	N/A	PK
	@	5220	73	19.12	92.12	N/A	N/A	AVG
	*	10440	29.54	17.81	47.35	68.2	-20.85	PK
Vertical		5081.2	42.62	19.31	61.93	74	-12.07	PK
		5105	29.78	19.44	49.22	54	-4.78	AVG
	@	5220	80.78	19.12	99.9	N/A	N/A	PK
	@	5220	71.66	19.12	90.78	N/A	N/A	AVG
	*	10440	30.1	17.81	47.91	68.2	-20.29	PK

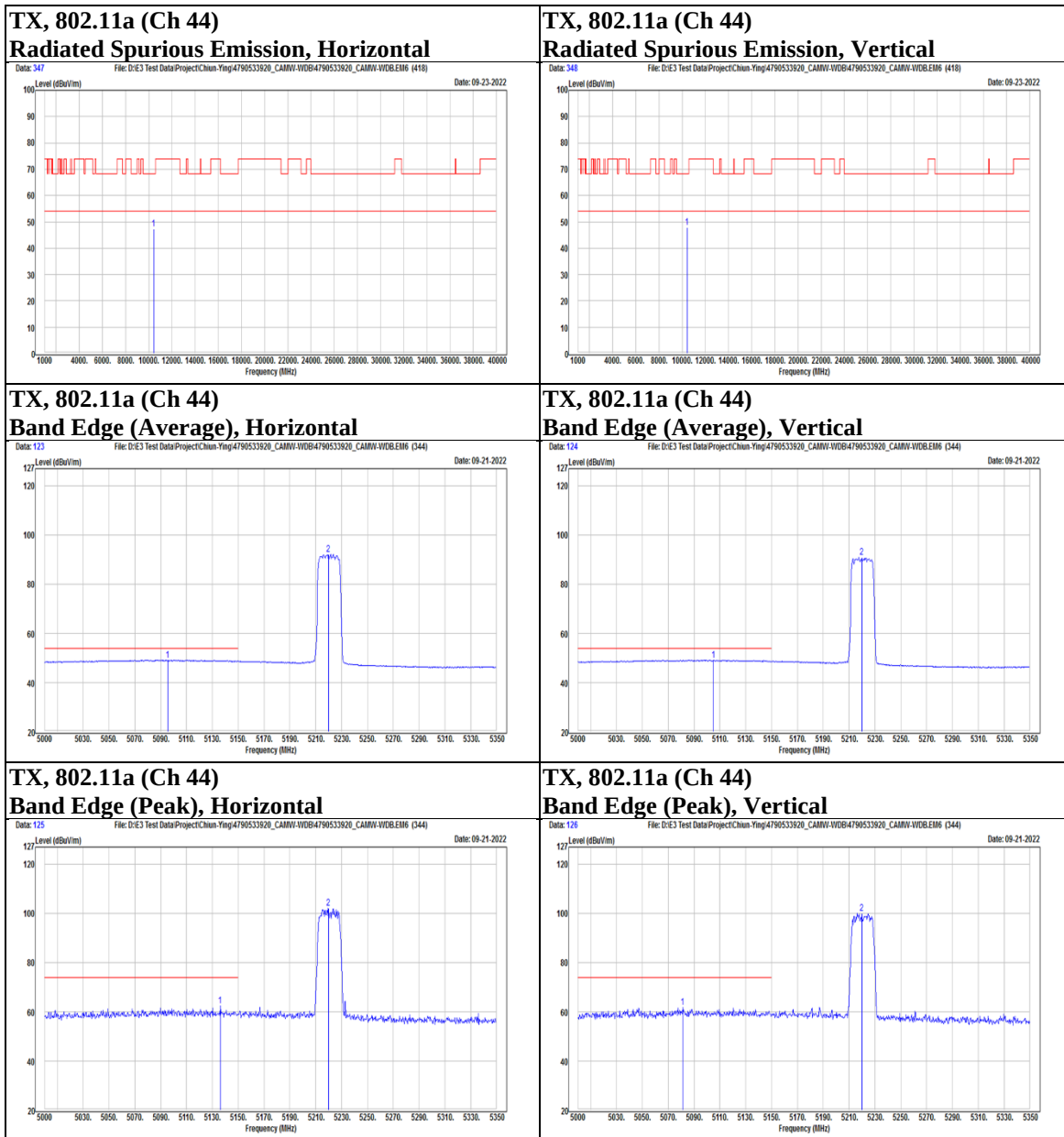
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Mode	802.11a	Channel	48
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5112.35	41.77	19.44	61.21	74	-12.79	PK
		5125.3	29.76	19.42	49.18	54	-4.82	AVG
	@	5240	84.42	18.97	103.39	N/A	N/A	PK
	@	5240	72.99	18.97	91.96	N/A	N/A	AVG
	*	10480	29.8	17.92	47.72	68.2	-20.48	PK
Vertical		5087.5	29.9	19.35	49.25	54	-4.75	AVG
		5119	42.22	19.43	61.65	74	-12.35	PK
	@	5240	79.96	18.97	98.93	N/A	N/A	PK
	@	5240	71.77	18.97	90.74	N/A	N/A	AVG
	*	10480	30.77	17.92	48.69	68.2	-19.51	PK

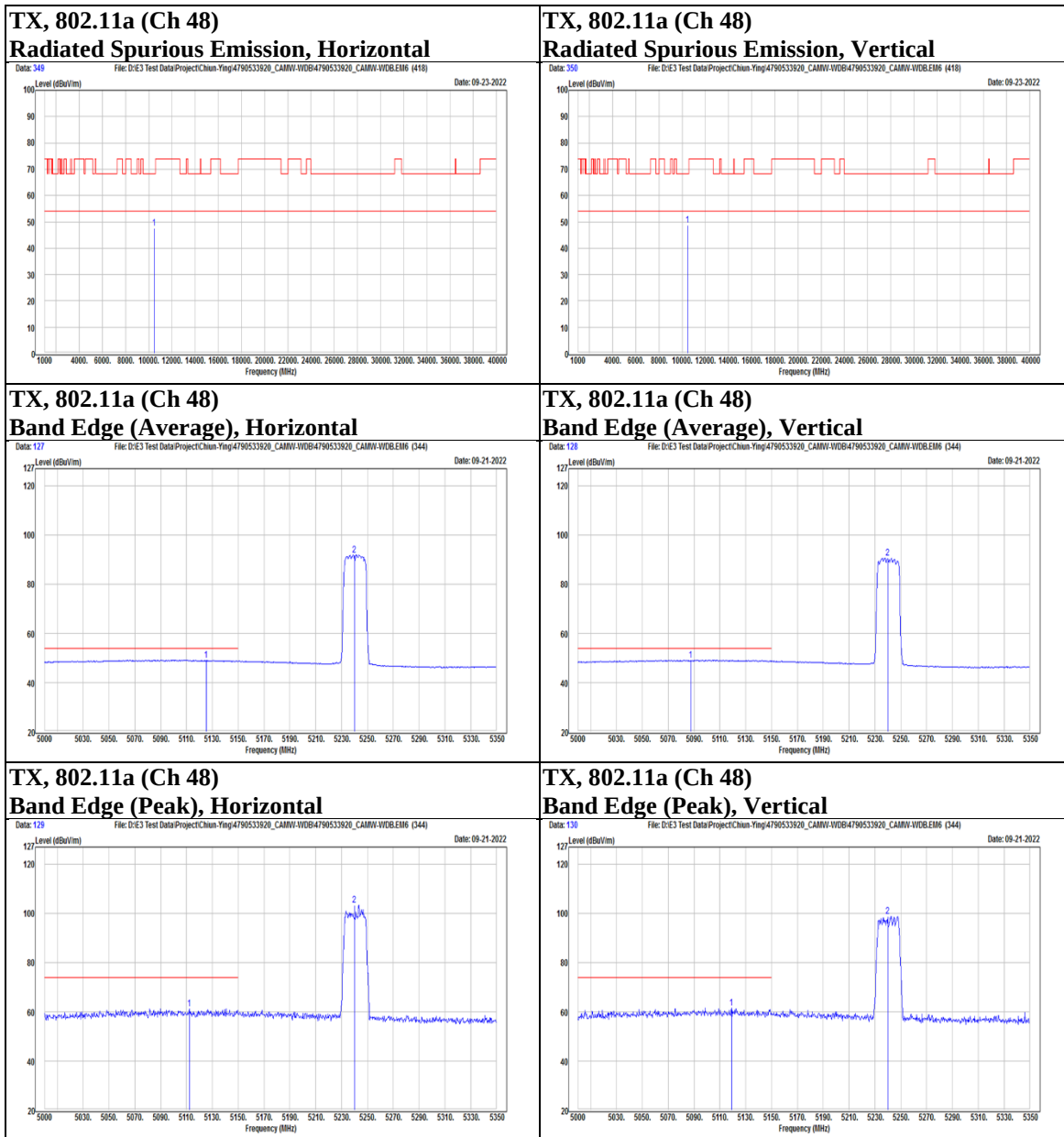
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Mode	802.11a	Channel	52
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5260	85.25	18.88	104.13	N/A	N/A	PK
	@	5260	75.14	18.88	94.02	N/A	N/A	AVG
		5380.5	40.12	19.16	59.28	74	-14.72	PK
		5459.7	28.03	19.57	47.6	54	-6.4	AVG
	*	10520	28.99	17.99	46.98	68.2	-21.22	PK
Vertical	@	5260	84.31	18.88	103.19	N/A	N/A	PK
	@	5260	73.97	18.88	92.85	N/A	N/A	AVG
		5453.1	40.45	19.53	59.98	74	-14.02	PK
		5458.5	28.09	19.56	47.65	54	-6.35	AVG
	*	10520	29.67	17.99	47.66	68.2	-20.54	PK

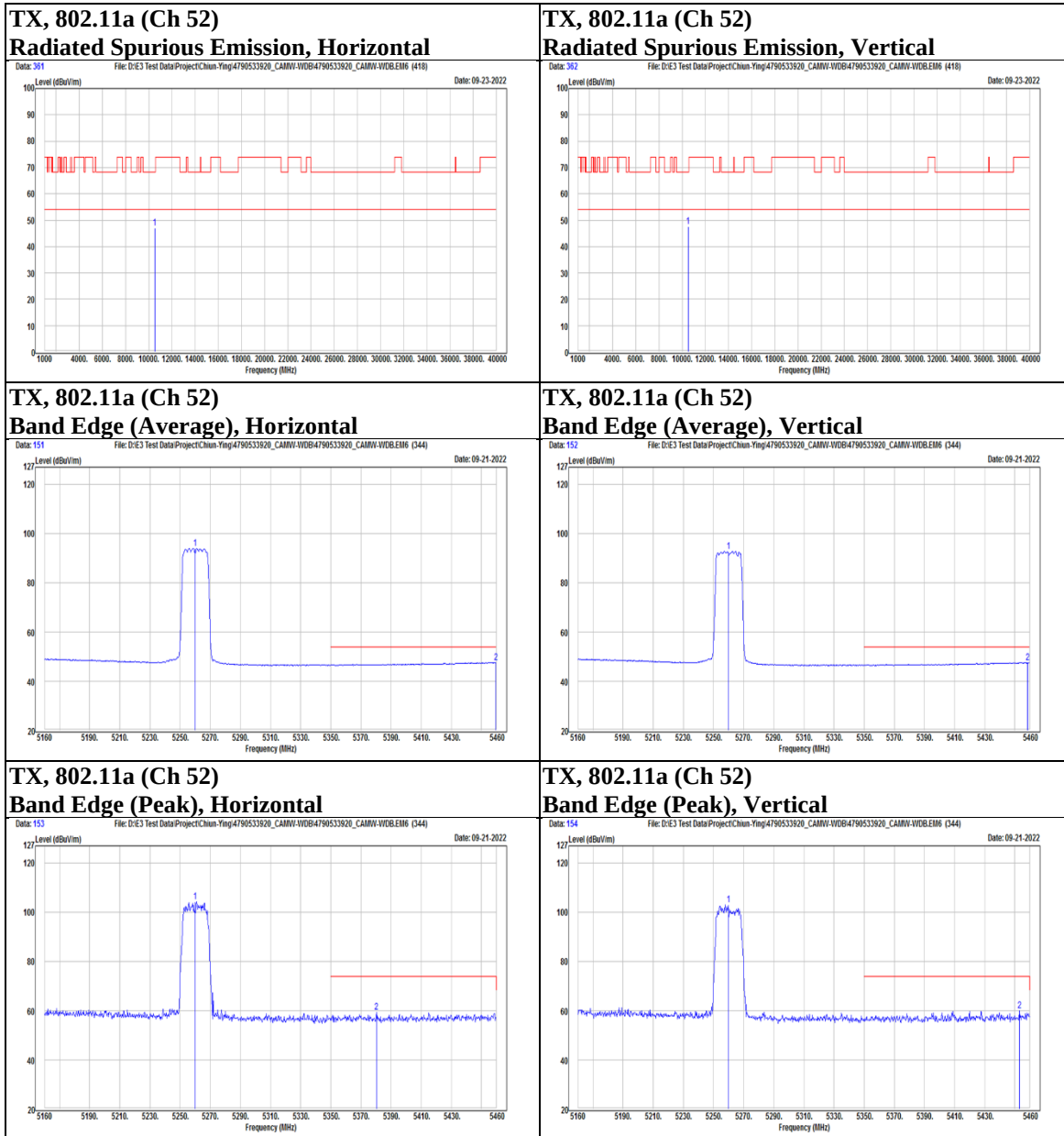
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Mode	802.11a	Channel	60
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5300	84.37	18.77	103.14	N/A	N/A	PK
	@	5300	74.38	18.77	93.15	N/A	N/A	AVG
		5357.4	40.47	19.05	59.52	74	-14.48	PK
		5458.8	28.05	19.57	47.62	54	-6.38	AVG
	*	10600	29.21	18.04	47.25	68.2	-20.95	PK
Vertical	@	5300	82.34	18.77	101.11	N/A	N/A	PK
	@	5300	72.6	18.77	91.37	N/A	N/A	AVG
		5393.4	41.16	19.23	60.39	74	-13.61	PK
		5456.1	28.03	19.54	47.57	54	-6.43	AVG
	*	10600	29.28	18.04	47.32	68.2	-20.88	PK

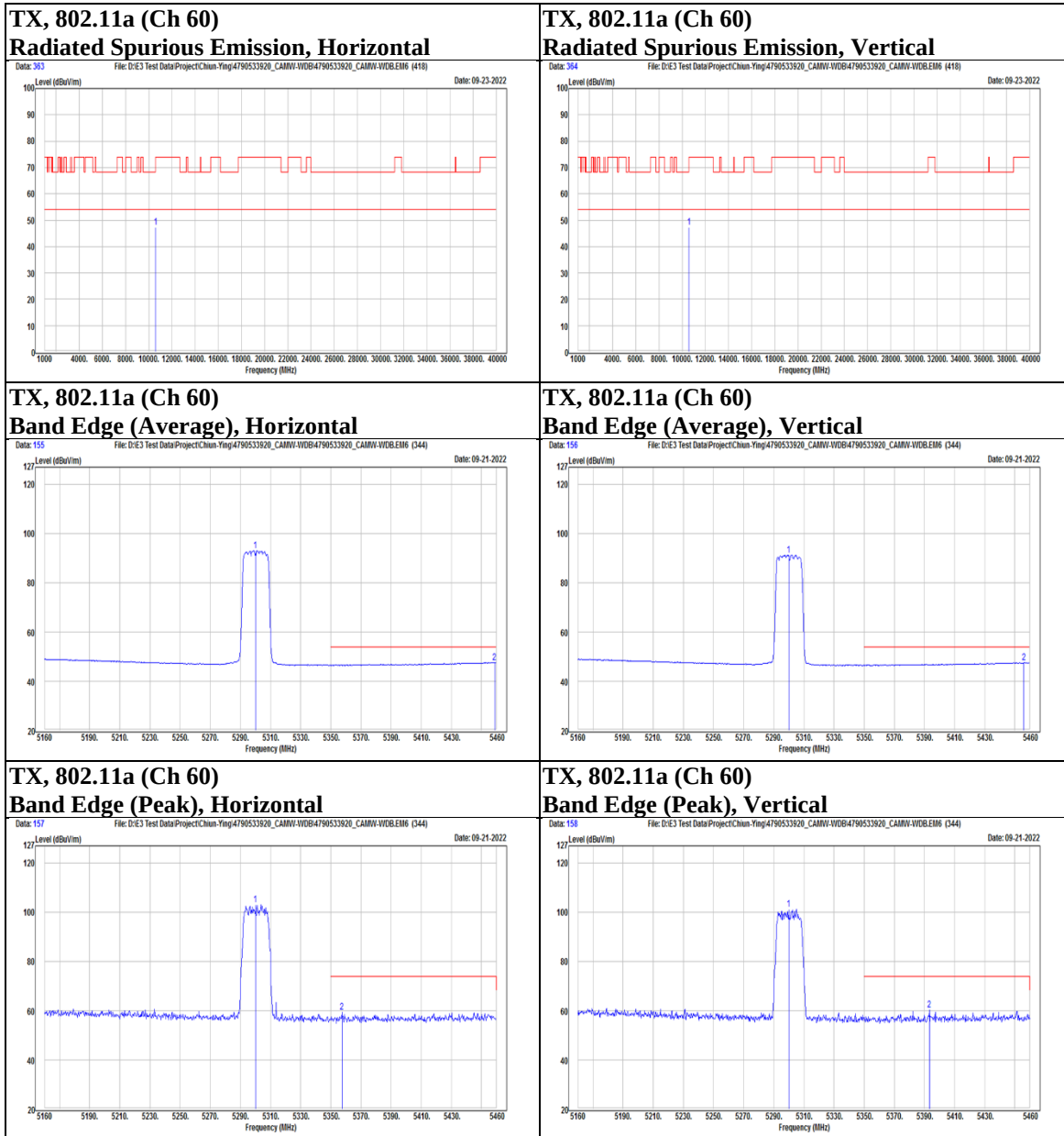
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Mode	802.11a	Channel	64
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5320	82.61	18.86	101.47	N/A	N/A	PK
	@	5320	73.68	18.86	92.54	N/A	N/A	AVG
		5454.6	28.09	19.54	47.63	54	-6.37	AVG
		5457.6	40.69	19.55	60.24	74	-13.76	PK
	*	10640	31.25	18.03	49.28	74	-24.72	PK
Vertical	@	5320	80.23	18.86	99.09	N/A	N/A	PK
	@	5320	71.41	18.86	90.27	N/A	N/A	AVG
		5456.1	40.34	19.54	59.88	74	-14.12	PK
		5459.1	28	19.57	47.57	54	-6.43	AVG
	*	10640	30.59	18.03	48.62	74	-25.38	PK

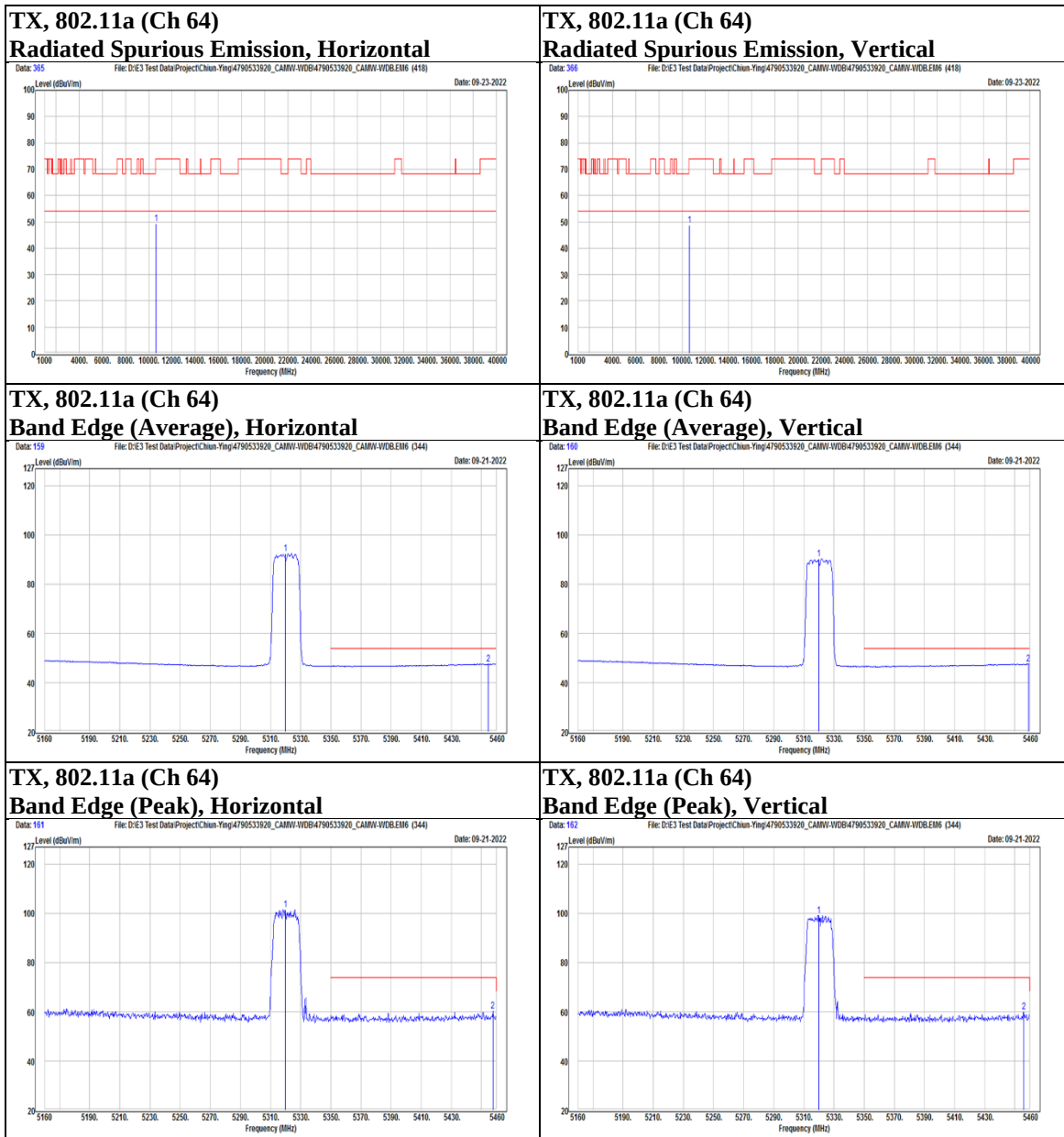
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Mode	802.11a	Channel	100
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5421.35	40.34	19.38	59.72	74	-14.28	PK
		5455.65	28.11	19.54	47.65	54	-6.35	AVG
		5461.6	39.62	19.58	59.2	68.2	-9	PK
	@	5500	84.45	19.77	104.22	N/A	N/A	PK
	@	5500	75.85	19.77	95.62	N/A	N/A	AVG
	*	11000	33.98	18.41	52.39	74	-21.61	PK
Vertical		5455.65	40.1	19.54	59.64	74	-14.36	PK
		5459.5	27.99	19.57	47.56	54	-6.44	AVG
		5466.15	39.52	19.6	59.12	68.2	-9.08	PK
	@	5500	80.94	19.77	100.71	N/A	N/A	PK
	@	5500	71.43	19.77	91.2	N/A	N/A	AVG
	*	11000	33.46	18.41	51.87	74	-22.13	PK

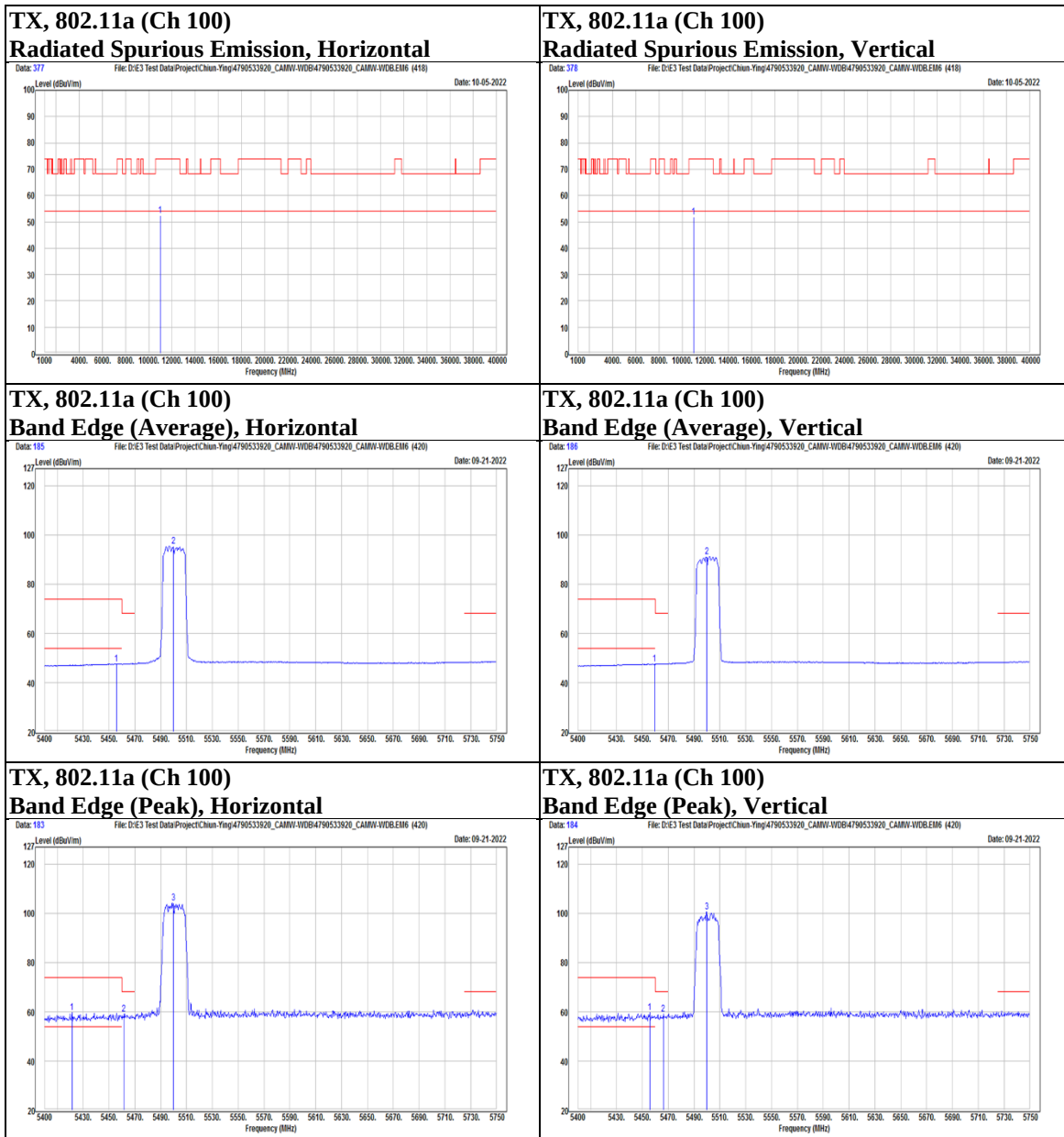
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Mode	802.11a	Channel	116
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5444.45	40.17	19.5	59.67	74	-14.33	PK
		5454.95	28.19	19.54	47.73	54	-6.27	AVG
		5464.75	40.02	19.59	59.61	68.2	-8.59	PK
	@	5580	85.87	19.76	105.63	N/A	N/A	PK
	@	5580	76.62	19.76	96.38	N/A	N/A	AVG
		5737.4	40.92	20.08	61	68.2	-7.2	PK
	*	11160	35.87	18.47	54.34	74	-19.66	PK
Vertical		5418.2	40.51	19.35	59.86	74	-14.14	PK
		5454.6	28.15	19.54	47.69	54	-6.31	AVG
		5463.7	40.55	19.58	60.13	68.2	-8.07	PK
	@	5580	81.1	19.76	100.86	N/A	N/A	PK
	@	5580	70.53	19.76	90.29	N/A	N/A	AVG
		5747.2	40.48	20.17	60.65	68.2	-7.55	PK
	*	11160	33.21	18.47	51.68	74	-22.32	PK

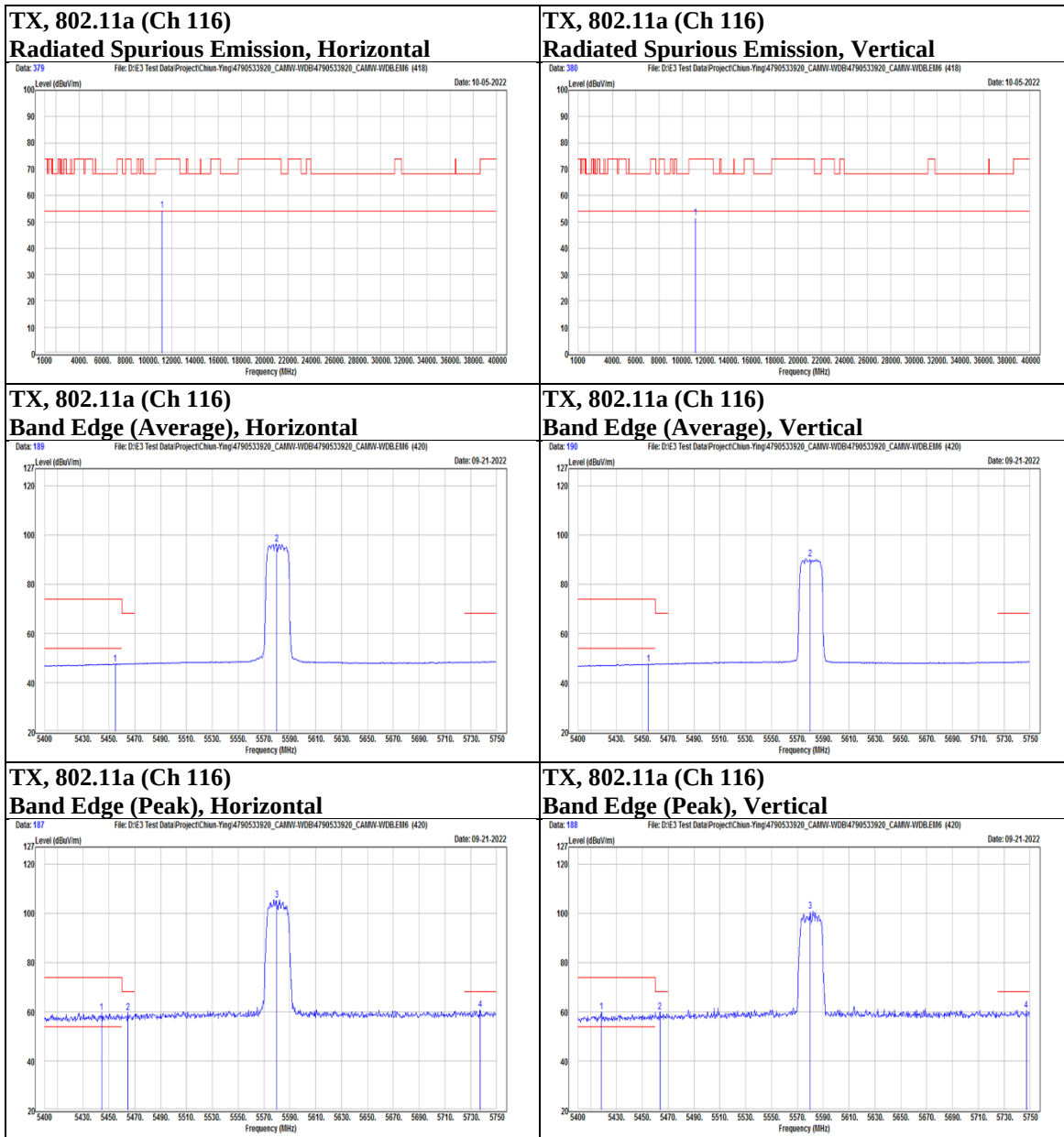
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Mode	802.11a	Channel	140
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Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5459.15	28	19.57	47.57	54	-6.43	AVG
	@	5700	88.5	19.73	108.23	N/A	N/A	PK
	@	5700	75.54	19.73	95.27	N/A	N/A	AVG
		5732.5	40.82	20.03	60.85	68.2	-7.35	PK
	*	11400	34.85	18.85	53.7	74	-20.3	PK
Vertical		5458.8	27.87	19.57	47.44	54	-6.56	AVG
	@	5700	80.4	19.73	100.13	N/A	N/A	PK
	@	5700	69.31	19.73	89.04	N/A	N/A	AVG
		5740.2	41.03	20.1	61.13	68.2	-7.07	PK
	*	11400	33.22	18.85	52.07	74	-21.93	PK

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