

802.11ax (RU26)

RU Configuration	Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
26/8	144 (U-NII-3 Band)	5720	-1.57	2.26	0.69	2.91	30.00	Pass
26/0	144 (U-NII-3 Band)	5720	-46.68	2.26	-44.42	-42.20	30.00	Pass
26/0	149	5745	6.53	2.26	8.79	11.01	30.00	Pass
26/4	157	5785	6.83	2.26	9.09	11.31	30.00	Pass
26/8	165	5825	6.61	2.26	8.87	11.09	30.00	Pass

Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (RU52)

RU Configuration	Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
52/40	144 (U-NII-3 Band)	5720	-0.94	2.28	1.34	3.56	30.00	Pass
52/37	144 (U-NII-3 Band)	5720	-46.22	2.28	-43.94	-41.72	30.00	Pass
52/37	149	5745	6.81	2.28	9.09	11.31	30.00	Pass
52/39	157	5785	7.69	2.28	9.97	12.19	30.00	Pass
52/40	165	5825	7.23	2.28	9.51	11.73	30.00	Pass

Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

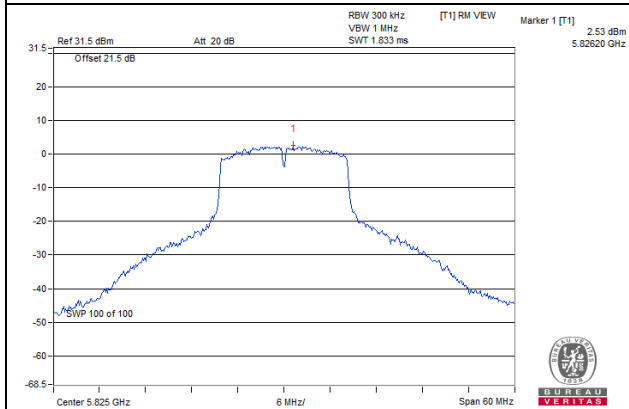
802.11ax (RU106)

RU Configuration	Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
106/54	144 (U-NII-3 Band)	5720	-1.76	2.29	0.53	2.75	30.00	Pass
106/53	144 (U-NII-3 Band)	5720	-42.24	2.29	-39.95	-37.73	30.00	Pass
106/53	149	5745	4.97	2.29	7.26	9.48	30.00	Pass
106/54	157	5785	4.54	2.29	6.83	9.05	30.00	Pass
106/54	165	5825	4.56	2.29	6.85	9.07	30.00	Pass

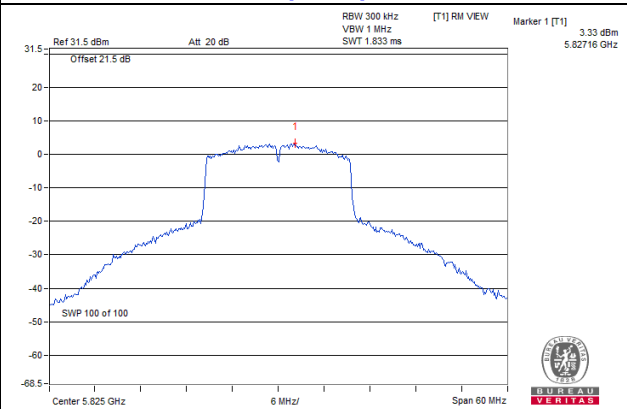
Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

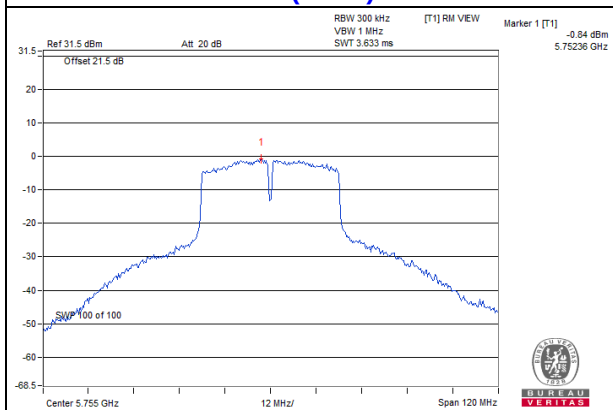
802.11a / CH165



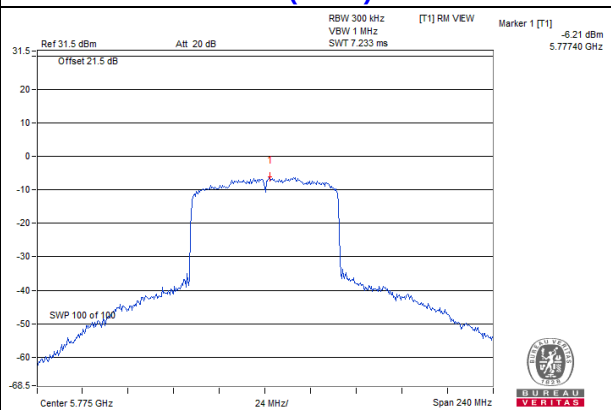
802.11ax (HE20) / CH165



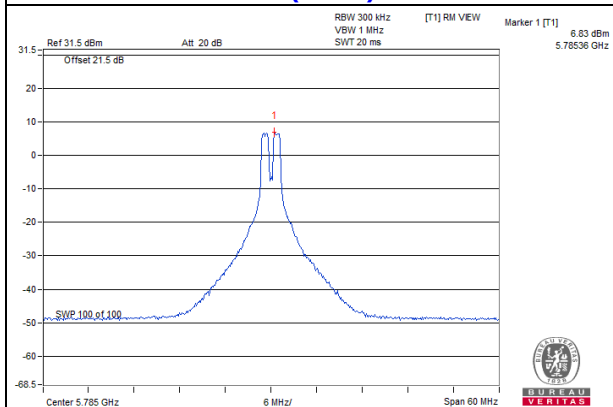
802.11ax (HE40) / CH151



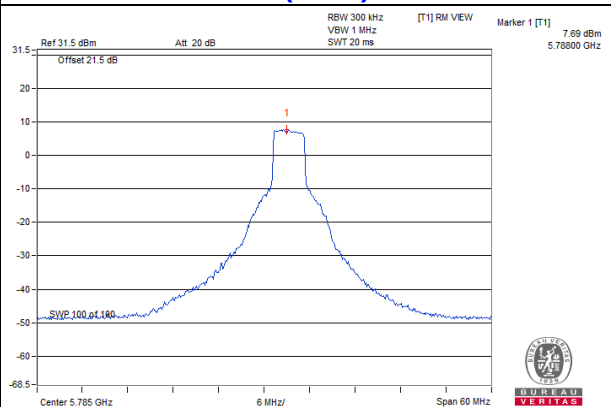
802.11ax (HE80) / CH155



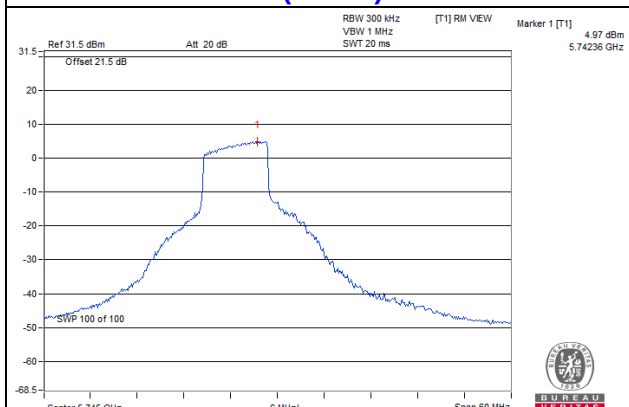
802.11ax (RU26) / CH157



802.11ax (RU52) / CH157



802.11ax (RU106) / CH149

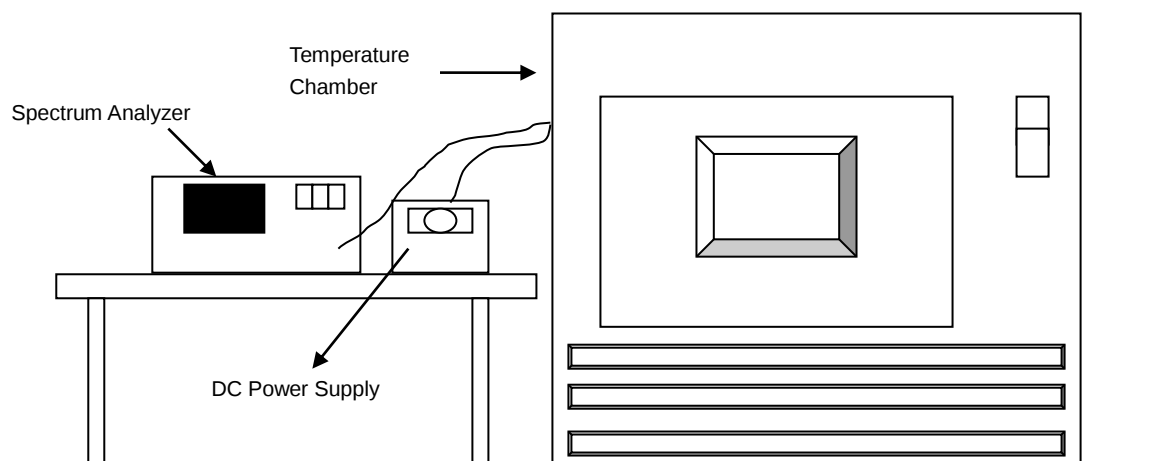


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal DC 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 (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
70	3.3	5180.0245	Pass	5180.0239	Pass	5180.0244	Pass	5180.0256	Pass
60	3.3	5179.9842	Pass	5179.9865	Pass	5179.9883	Pass	5179.9878	Pass
50	3.3	5180.0045	Pass	5180.0008	Pass	5180.0025	Pass	5180.0012	Pass
40	3.3	5179.977	Pass	5179.9774	Pass	5179.9754	Pass	5179.976	Pass
30	3.3	5180.0053	Pass	5180.0042	Pass	5180.0038	Pass	5180.0044	Pass
20	3.3	5180.0049	Pass	5180.0046	Pass	5180.0008	Pass	5180.0055	Pass
10	3.3	5179.9839	Pass	5179.988	Pass	5179.9888	Pass	5179.9839	Pass
0	3.3	5180.0152	Pass	5180.0177	Pass	5180.0179	Pass	5180.0171	Pass
-10	3.3	5180.0172	Pass	5180.0162	Pass	5180.0152	Pass	5180.018	Pass
-20	3.3	5179.9782	Pass	5179.9751	Pass	5179.979	Pass	5179.9783	Pass

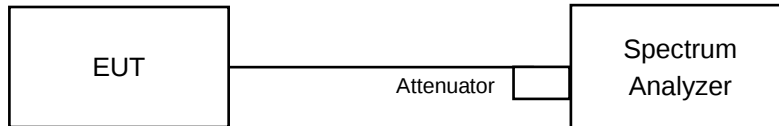
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	3.795	5180.004	Pass	5180.0053	Pass	5179.9998	Pass	5180.0049	Pass
	3.3	5180.0049	Pass	5180.0046	Pass	5180.0008	Pass	5180.0055	Pass
	2.805	5180.0058	Pass	5180.0045	Pass	5180.0012	Pass	5180.0065	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 Test Results (Mode 1)

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
144 (U-NII-3 Band)	5720	2.53	2.52	Pass
149	5745	15.15	15.39	Pass
157	5785	15.21	15.18	Pass
165	5825	15.16	15.4	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
144 (U-NII-3 Band)	5720	2.53	2.49	Pass
149	5745	15.6	16.35	Pass
157	5785	15.6	16.4	Pass
165	5825	15.6	17.67	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
142 (U-NII-3 Band)	5710	2.53	2.53	Pass
151	5755	35.23	35.14	Pass
159	5795	35.21	35.14	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
138 (U-NII-3 Band)	5690	2.61	1.4	Pass
155	5775	74.09	74.03	Pass

802.11ax (RU26)

RU Configuration	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
			Chain 0	Chain 1	
26/8	144 (U-NII-3 Band)	5720	4.4	4.45	Pass
26/0	149	5745	14.61	15.87	Pass
26/4	157	5785	2.7	2.68	Pass
26/8	165	5825	15.8	14.59	Pass

802.11ax (RU52)

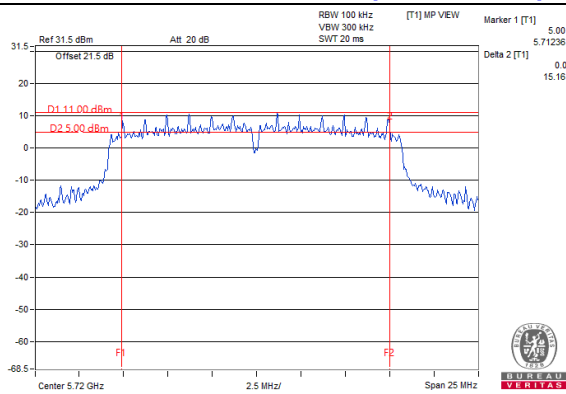
RU Configuration	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
			Chain 0	Chain 1	
52/40	144 (U-NII-3 Band)	5720	4.37	4.38	Pass
52/37	149	5745	17.07	17.06	Pass
52/39	157	5785	12.61	13.85	Pass
52/40	165	5825	15.81	17.07	Pass

802.11ax (RU106)

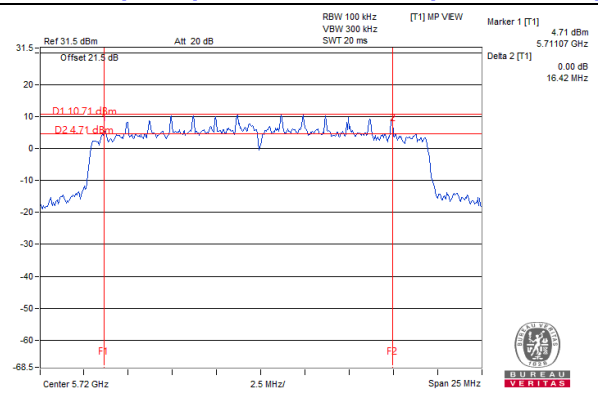
RU Configuration	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Pass / Fail
			Chain 0	Chain 1	
106/54	144 (U-NII-3 Band)	5720	4.43	4.41	Pass
106/53	149	5745	17.09	17.08	Pass
106/54	157	5785	17.15	17.19	Pass
106/54	165	5825	17.14	17.18	Pass

Spectrum Plot of Worst Value

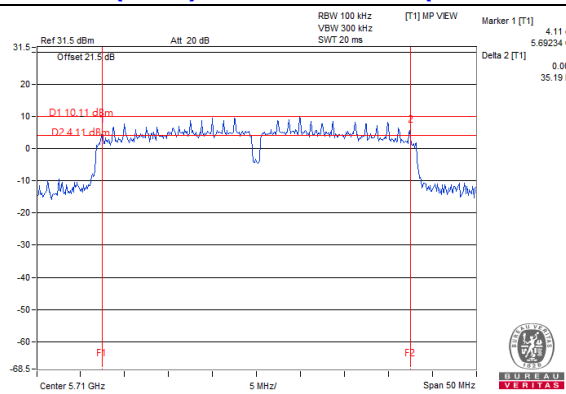
802.11a_Chain 1 / CH144 (U-NII-3 Band)



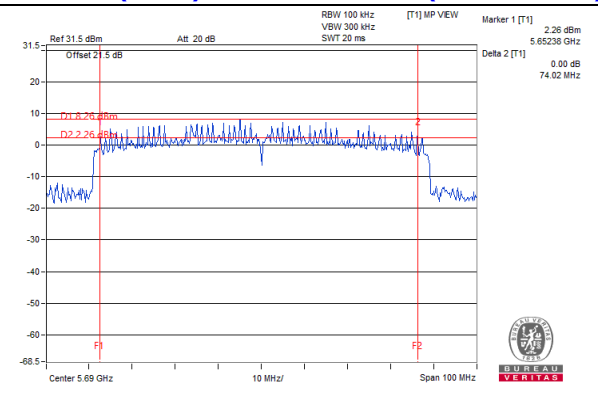
802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



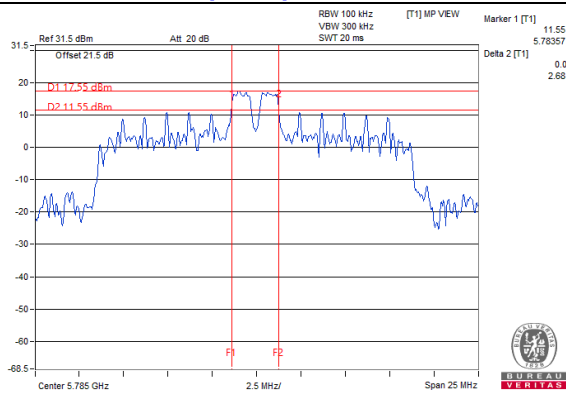
802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



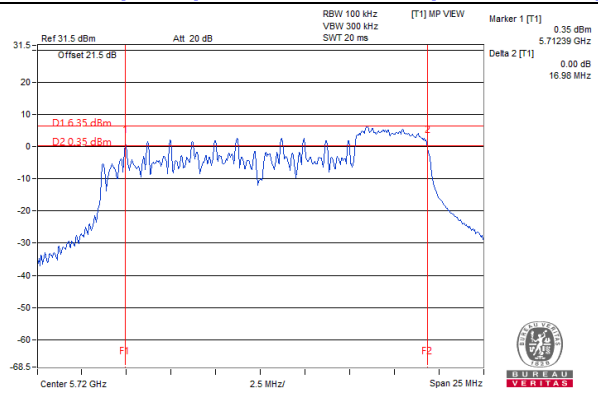
802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



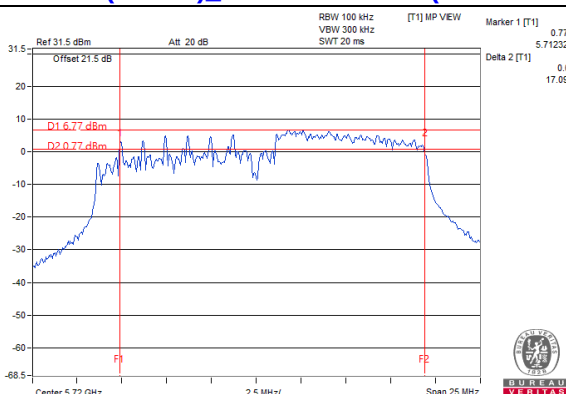
802.11ax (RU26)_Chain 1 / CH157



802.11ax (RU52)_Chain 0 / CH144 (U-NII-3 Band)



802.11ax (RU106)_Chain 1 / CH144 (U-NII-3 Band)



Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

4.7.8 Test Results (Mode 2)

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
144 (U-NII-3 Band)	5720	2.48	Pass
149	5745	15.2	Pass
157	5785	15.18	Pass
165	5825	15.17	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
144 (U-NII-3 Band)	5720	2.52	Pass
149	5745	15.18	Pass
157	5785	15.21	Pass
165	5825	15.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
142 (U-NII-3 Band)	5710	2.53	Pass
151	5755	35.22	Pass
159	5795	35.26	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
138 (U-NII-3 Band)	5690	2.63	Pass
155	5775	74.09	Pass

802.11ax (RU26)

RU Configuration	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
26/8	144 (U-NII-3 Band)	5720	4.42	Pass
26/0	149	5745	14.61	Pass
26/4	157	5785	2.67	Pass
26/8	165	5825	14.57	Pass

802.11ax (RU52)

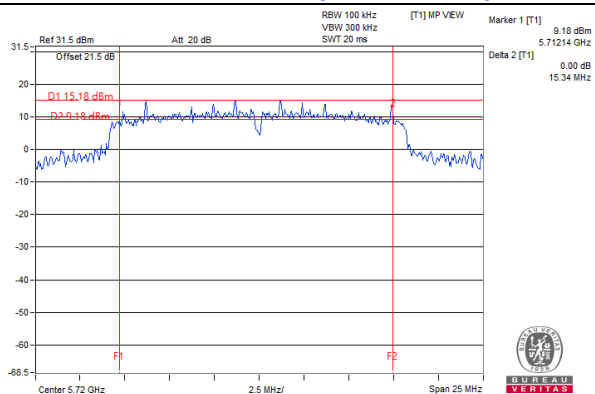
RU Configuration	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
52/40	144 (U-NII-3 Band)	5720	4.4	Pass
52/37	149	5745	17.07	Pass
52/39	157	5785	13.89	Pass
52/40	165	5825	15.82	Pass

802.11ax (RU106)

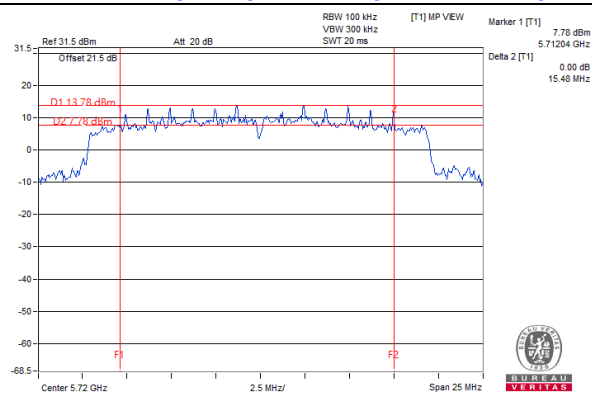
RU Configuration	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Pass / Fail
106/54	144 (U-NII-3 Band)	5720	4.46	Pass
106/53	149	5745	17.11	Pass
106/54	157	5785	17.13	Pass
106/54	165	5825	17.15	Pass

Spectrum Plot of Worst Value

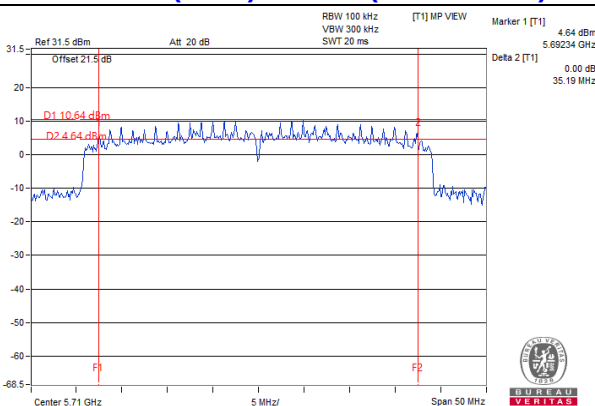
802.11a / CH144 (U-NII-3 Band)



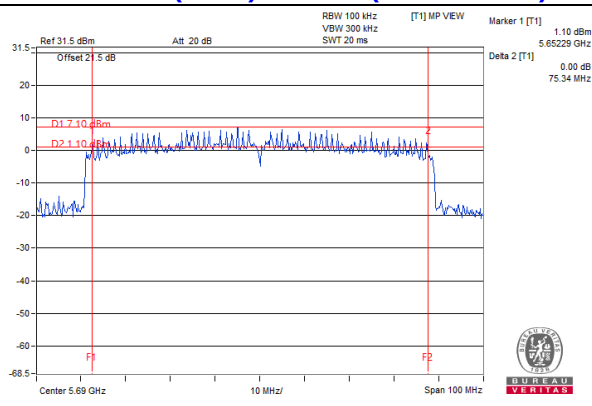
802.11ax (HE20) / CH144 (U-NII-3 Band)



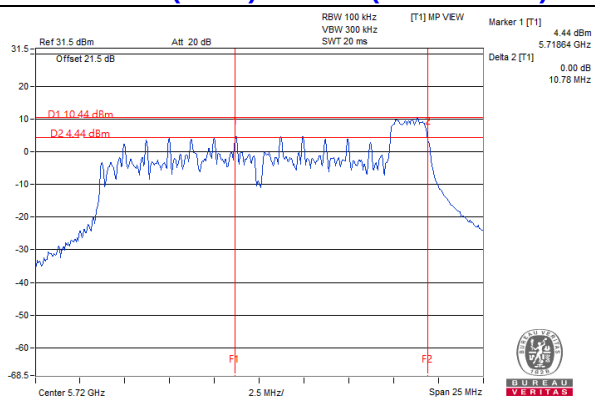
802.11ax (HE40) / CH142 (U-NII-3 Band)



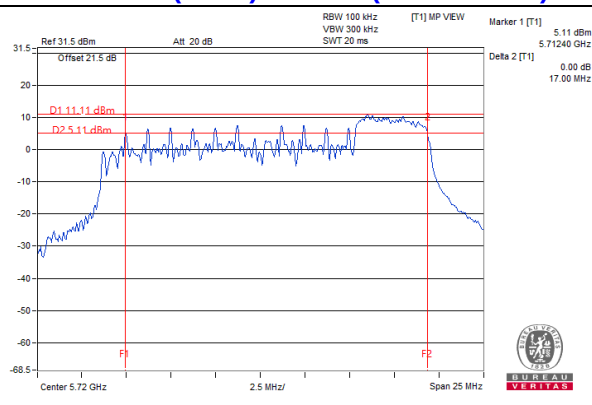
802.11ax (HE80) / CH138 (U-NII-3 Band)



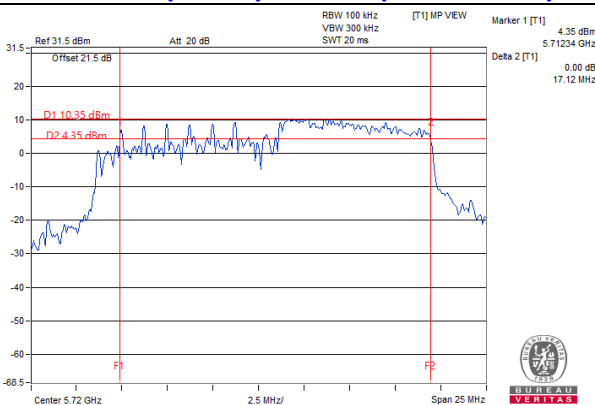
802.11ax (RU26) / CH144 (U-NII-3 Band)



802.11ax (RU52) / CH144 (U-NII-3 Band)



802.11ax (RU106) / CH144 (U-NII-3 Band)



Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Annex A - Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

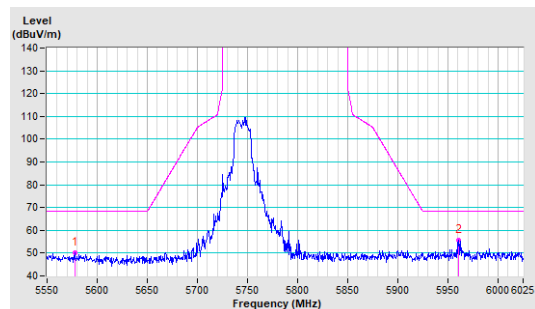
Annex A.1 - Test Results (Mode 1)

Dipole Antenna

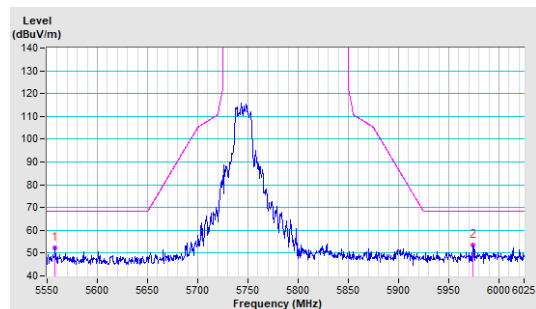
802.11a

CH 149 5745 MHz

Horizontal

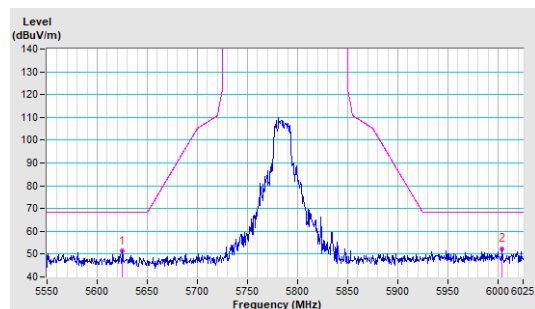


Vertical

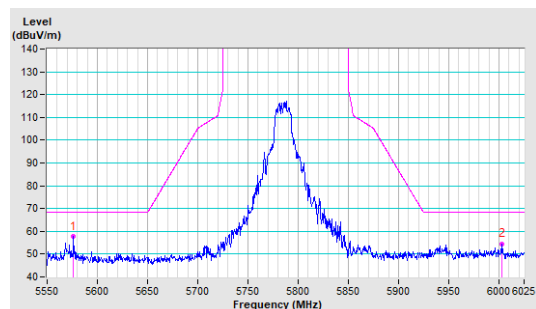


CH 157 5785 MHz

Horizontal

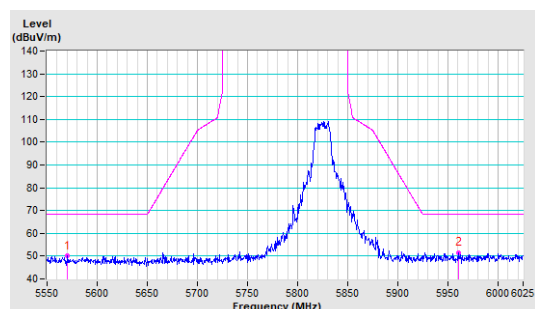


Vertical

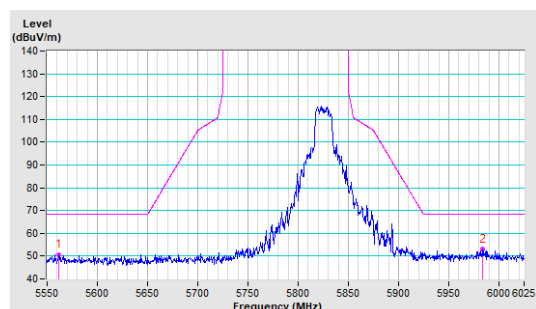


CH 165 5825 MHz

Horizontal



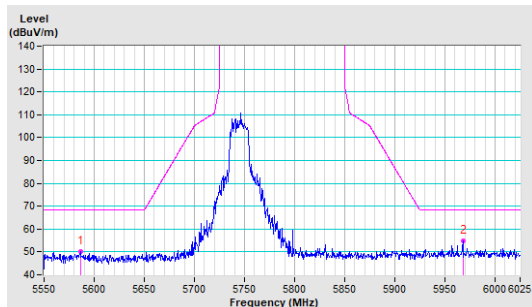
Vertical



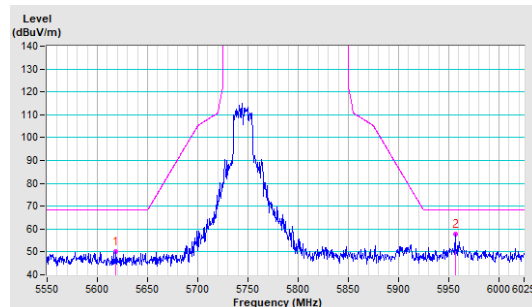
802.11ax (HE20)

CH 149 5745 MHz

Horizontal

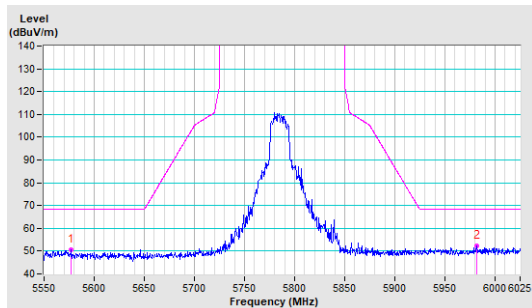


Vertical

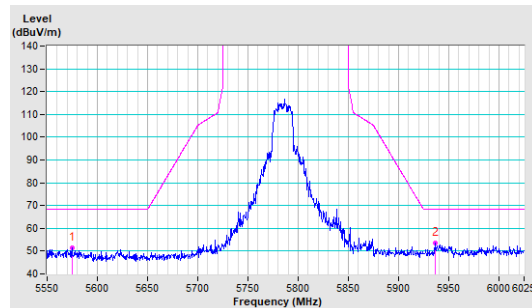


CH 157 5785 MHz

Horizontal

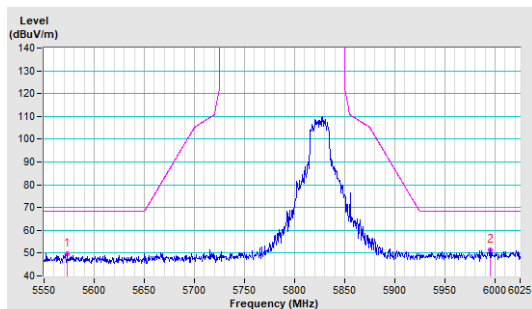


Vertical

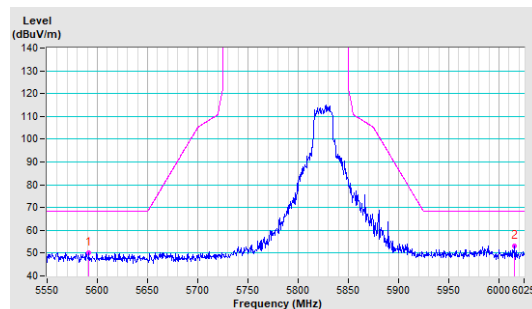


CH 165 5825 MHz

Horizontal



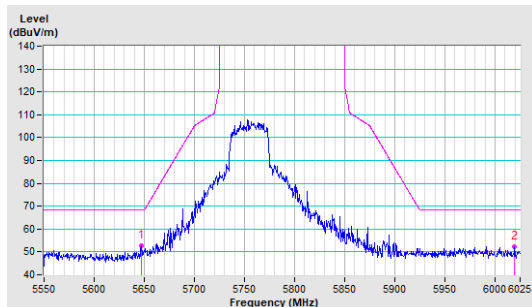
Vertical



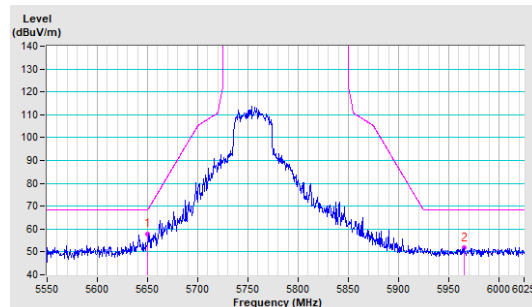
802.11ax (HE40)

CH 151 5755 MHz

Horizontal

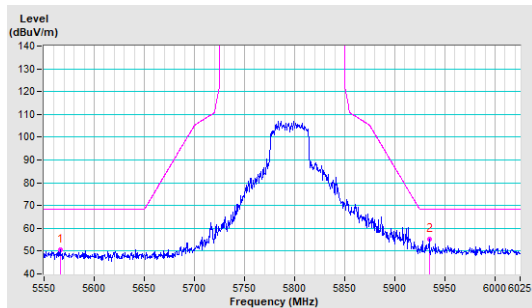


Vertical

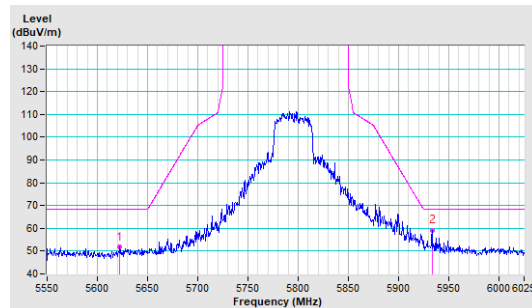


CH 159 5795 MHz

Horizontal



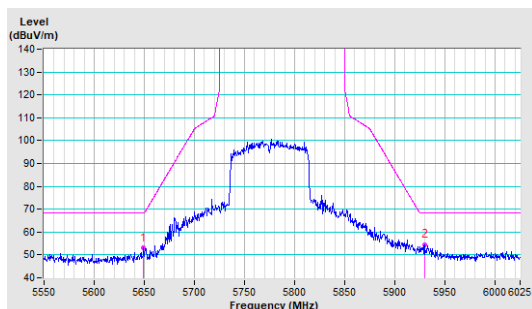
Vertical



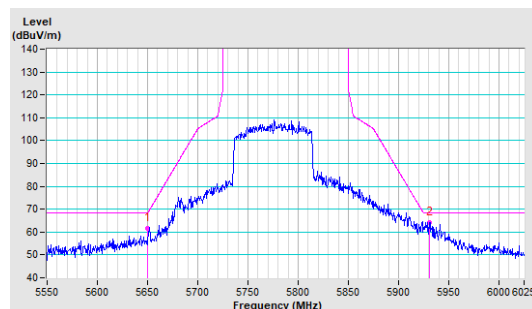
802.11ax (HE80)

CH 155 5775 MHz

Horizontal



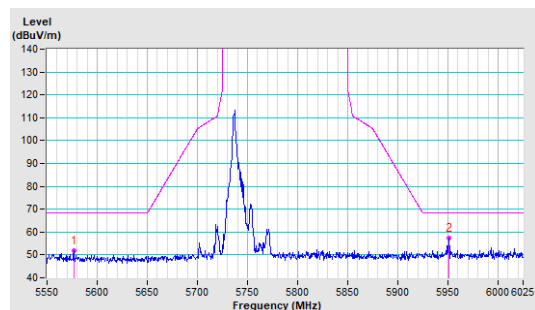
Vertical



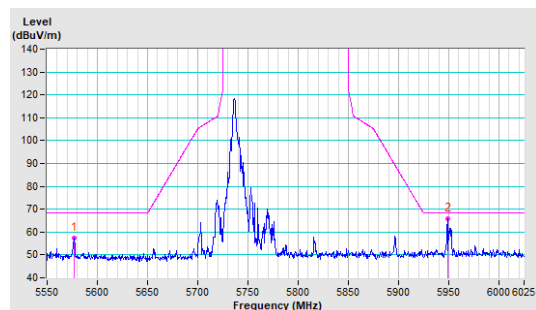
802.11ax (RU26)

CH 149 5745 MHz

Horizontal

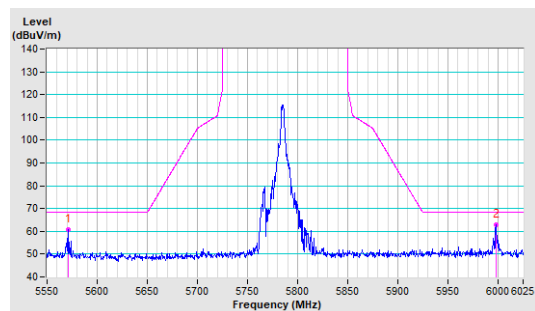


Vertical

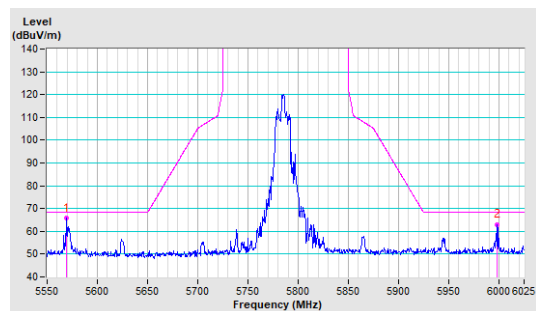


CH 157 5785 MHz

Horizontal

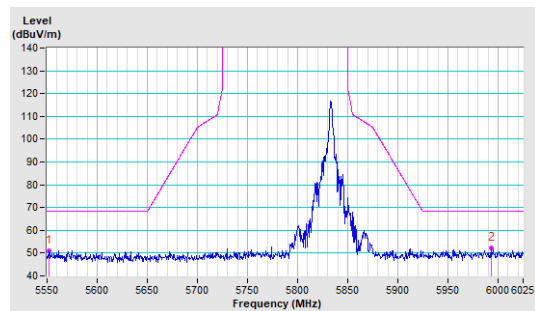


Vertical

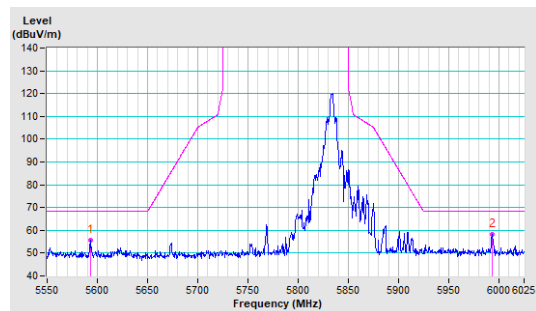


CH 165 5825 MHz

Horizontal



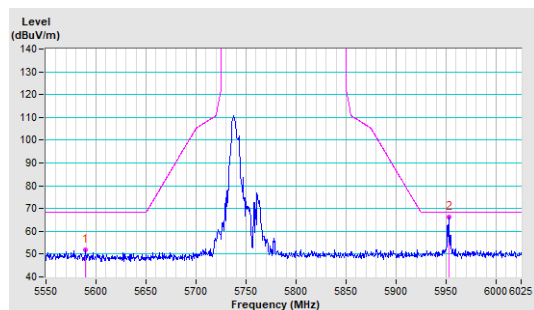
Vertical



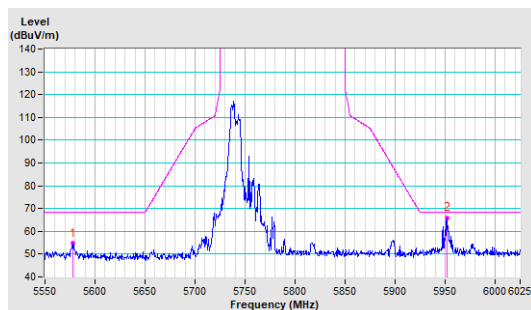
802.11ax (RU52)

CH 149 5745 MHz

Horizontal

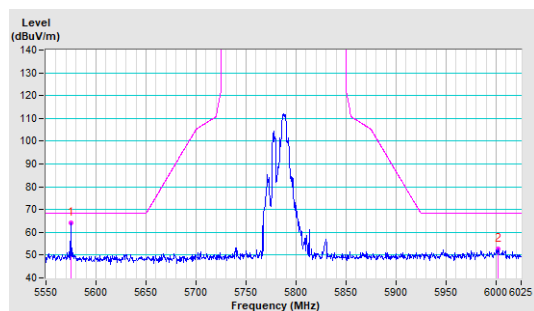


Vertical

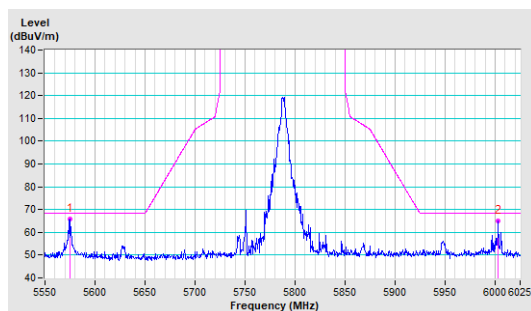


CH 157 5785 MHz

Horizontal

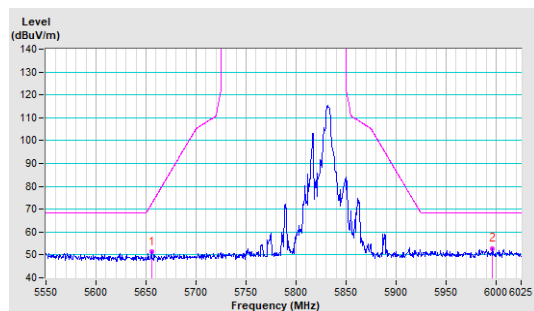


Vertical

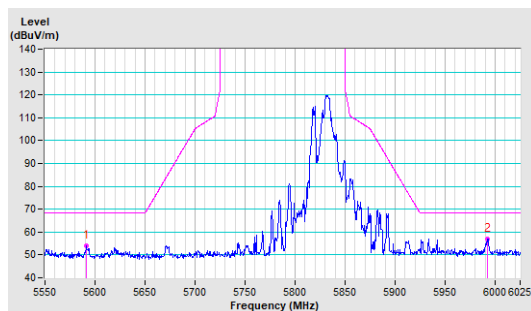


CH 165 5825 MHz

Horizontal



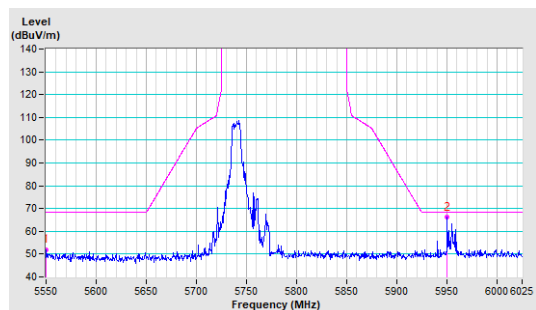
Vertical



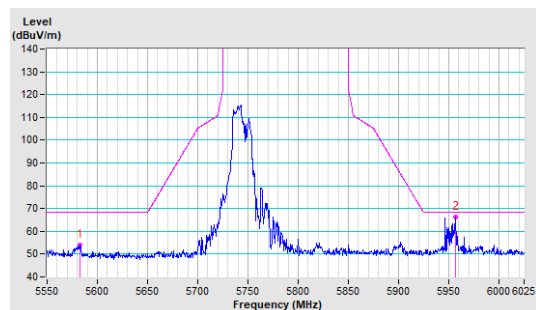
802.11ax (RU106)

CH 149 5745 MHz

Horizontal

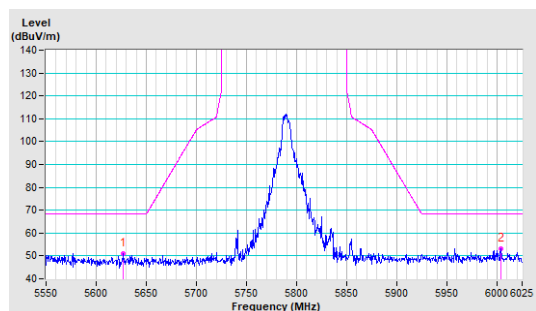


Vertical

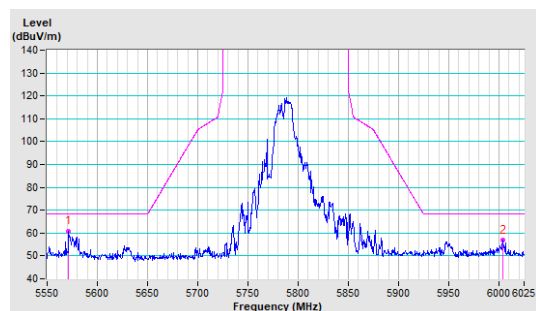


CH 157 5785 MHz

Horizontal

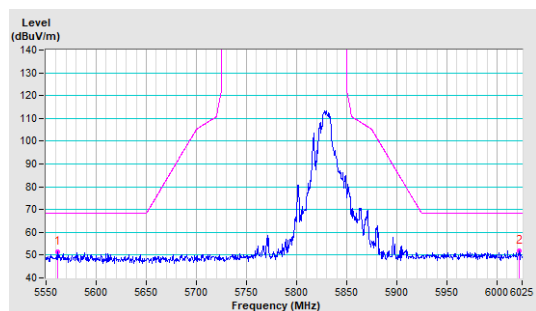


Vertical

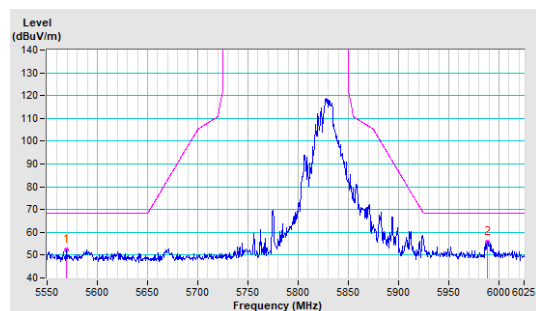


CH 165 5825 MHz

Horizontal



Vertical

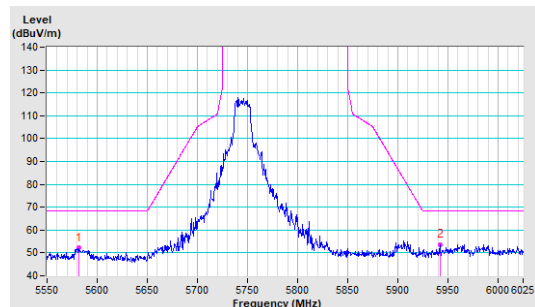


PIFA Antenna

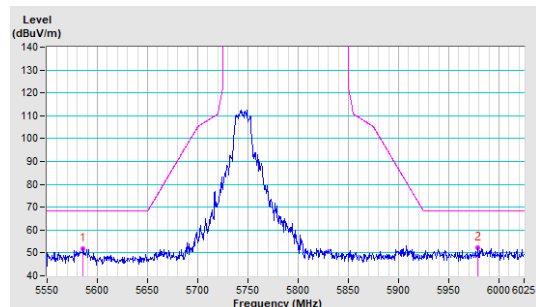
802.11a

CH 149 5745 MHz

Horizontal

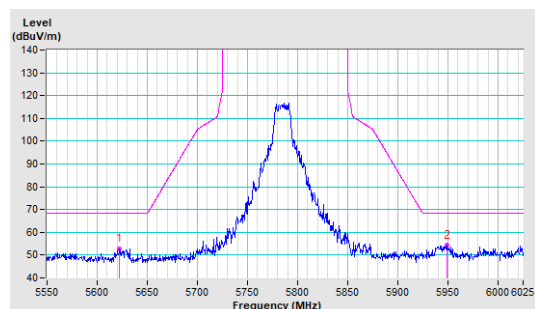


Vertical

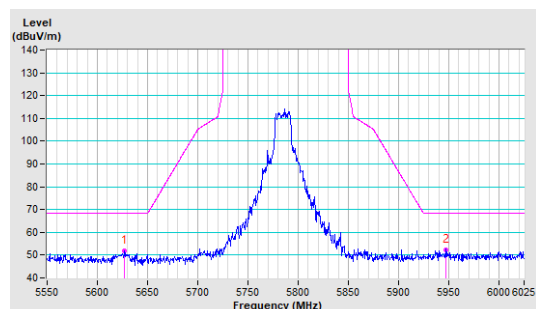


CH 157 5785 MHz

Horizontal

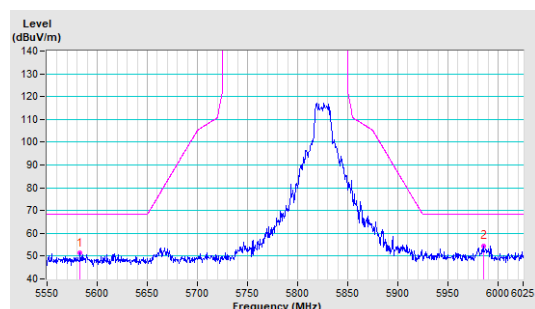


Vertical

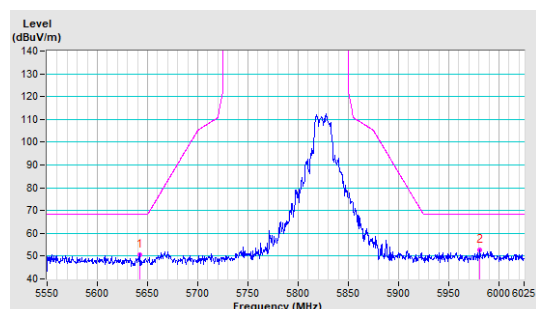


CH 165 5825 MHz

Horizontal



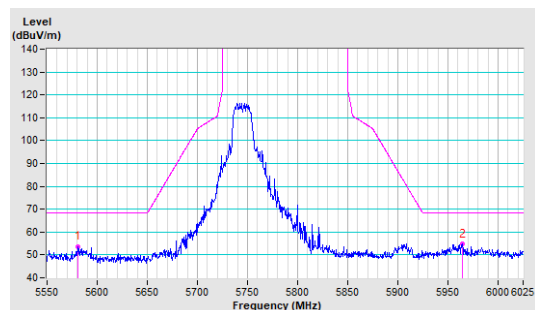
Vertical



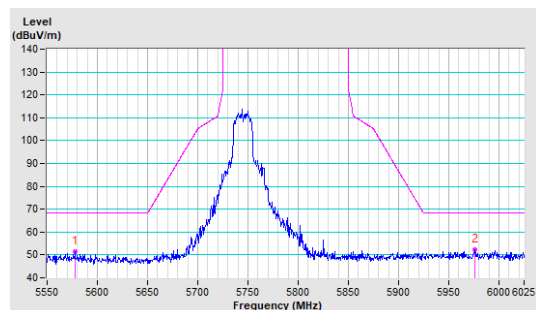
802.11ax (HE20)

CH 149 5745 MHz

Horizontal

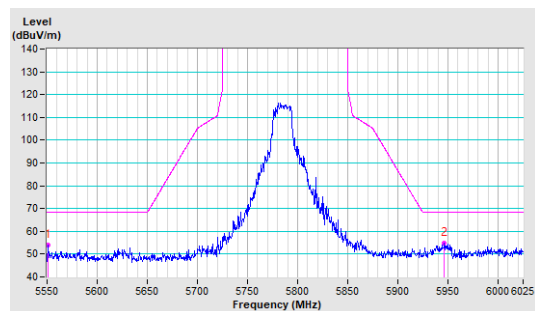


Vertical

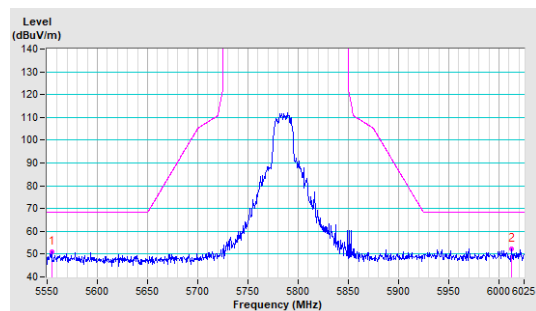


CH 157 5785 MHz

Horizontal

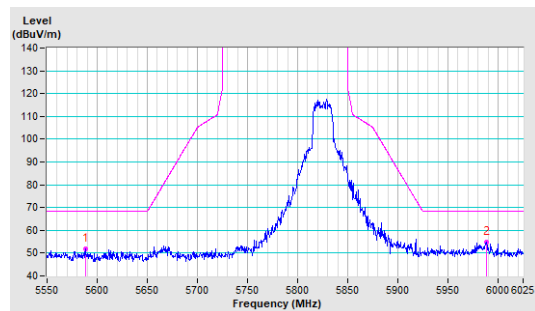


Vertical

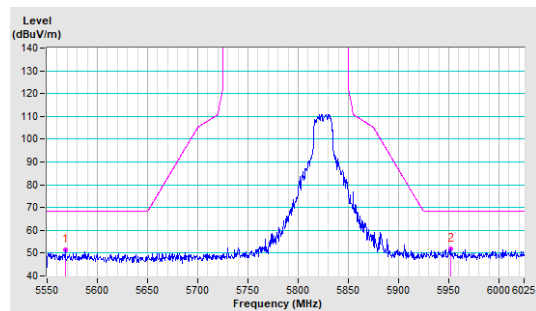


CH 165 5825 MHz

Horizontal



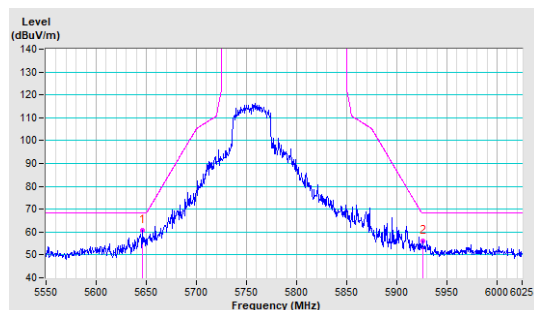
Vertical



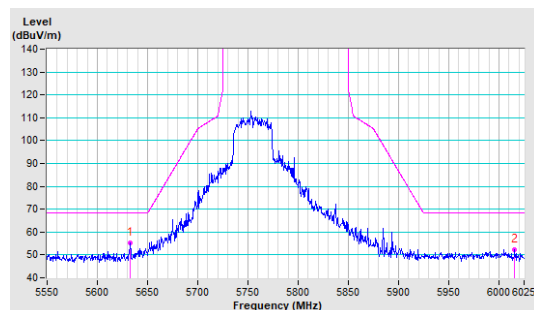
802.11ax (HE40)

CH 151 5755 MHz

Horizontal

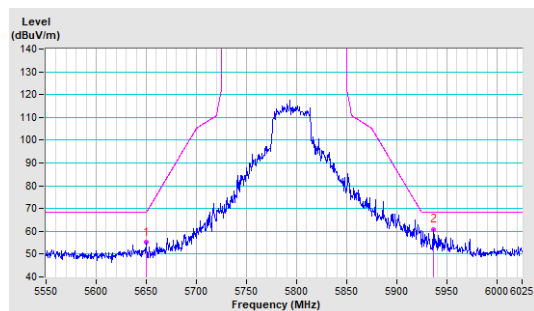


Vertical

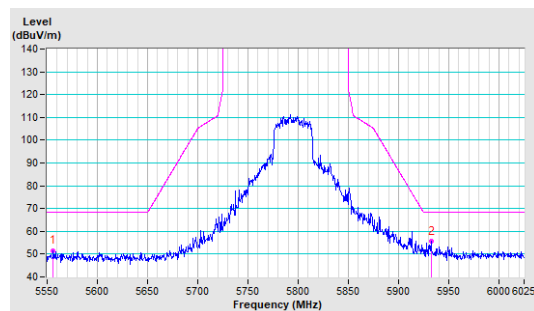


CH 159 5795 MHz

Horizontal



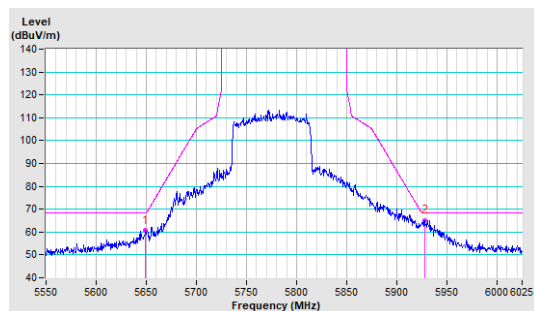
Vertical



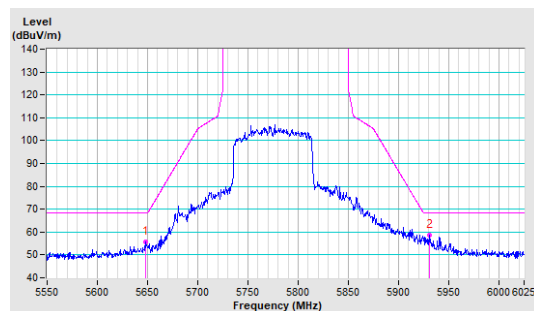
802.11ax (HE80)

CH 155 5775 MHz

Horizontal



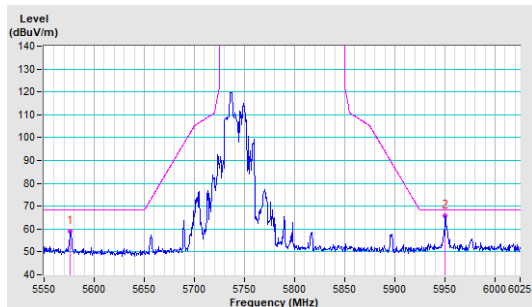
Vertical



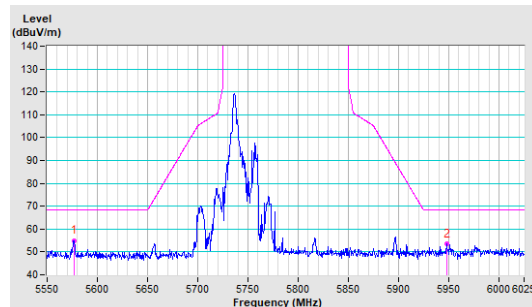
802.11ax (RU26)

CH 149 5745 MHz

Horizontal

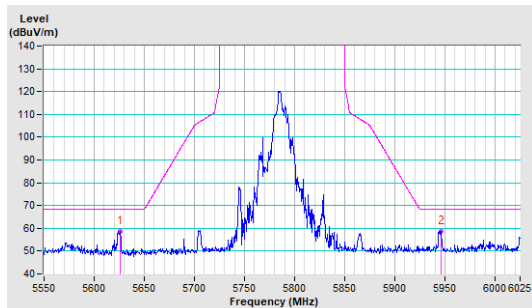


Vertical

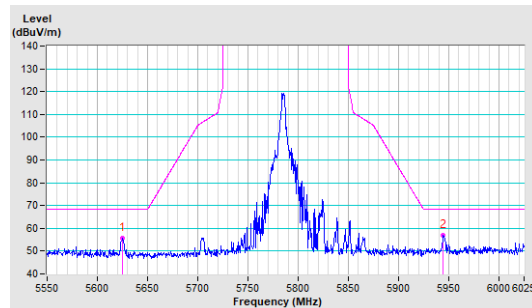


CH 157 5785 MHz

Horizontal

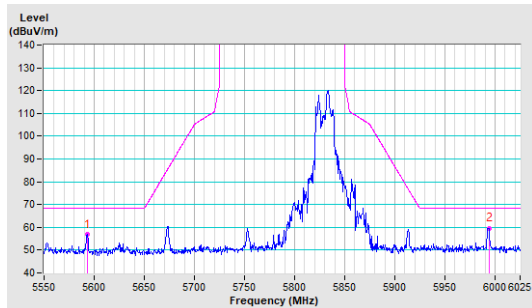


Vertical

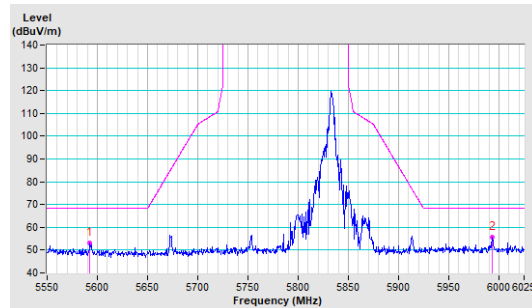


CH 165 5825 MHz

Horizontal



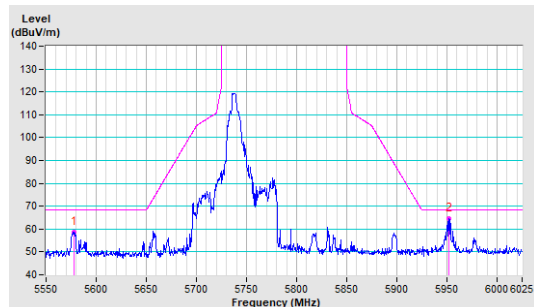
Vertical



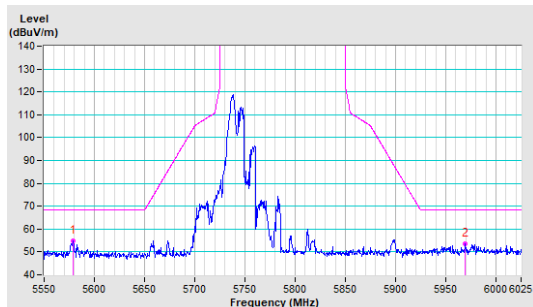
802.11ax (RU52)

CH 149 5745 MHz

Horizontal

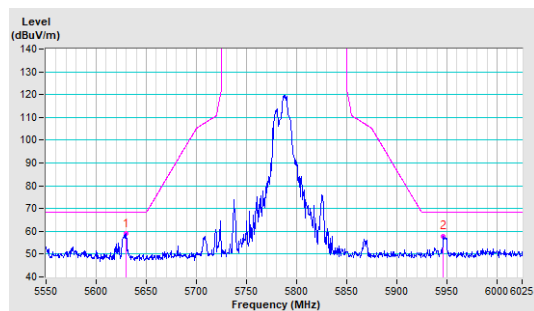


Vertical

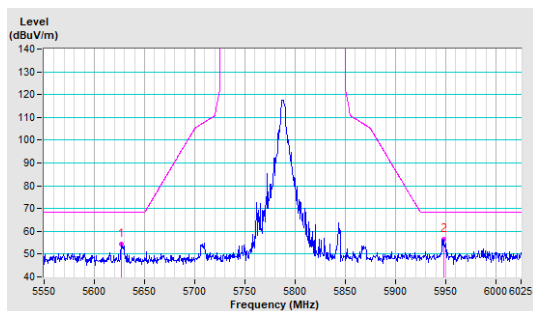


CH 157 5785 MHz

Horizontal

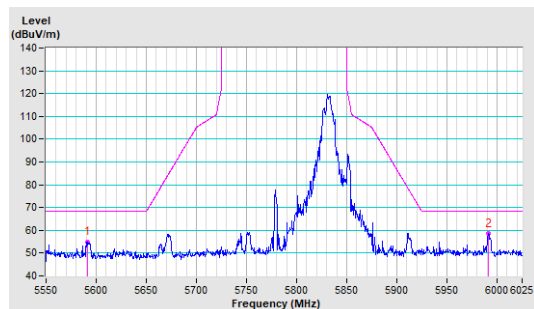


Vertical

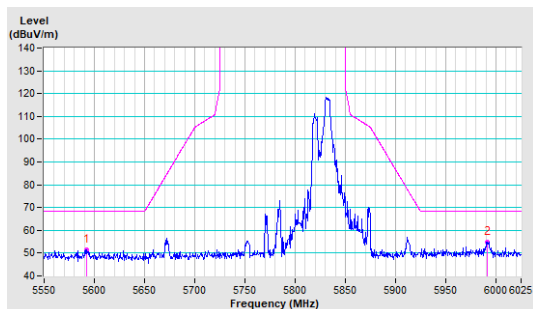


CH 165 5825 MHz

Horizontal



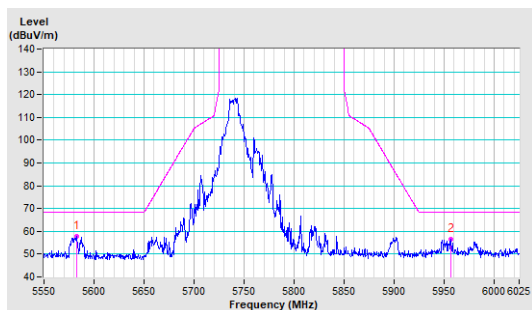
Vertical



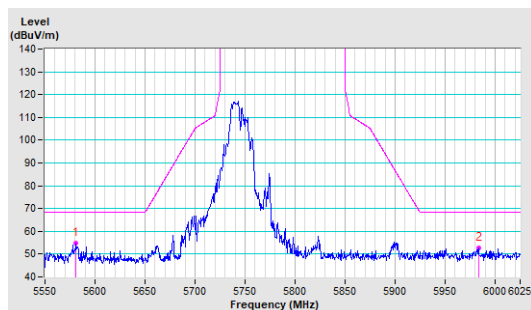
802.11ax (RU106)

CH 149 5745 MHz

Horizontal

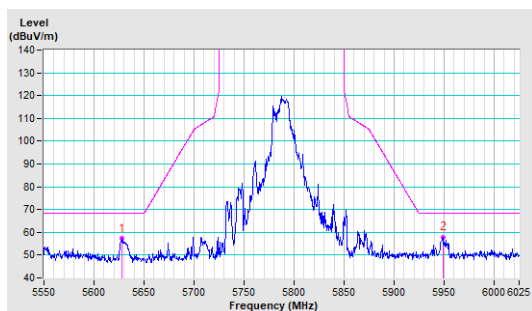


Vertical

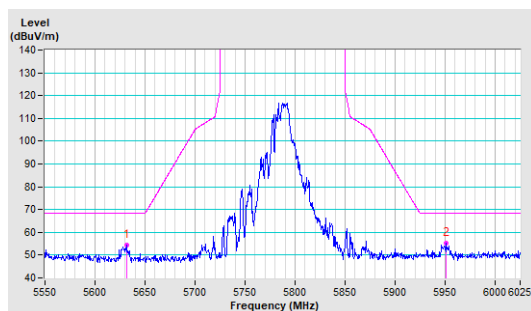


CH 157 5785 MHz

Horizontal

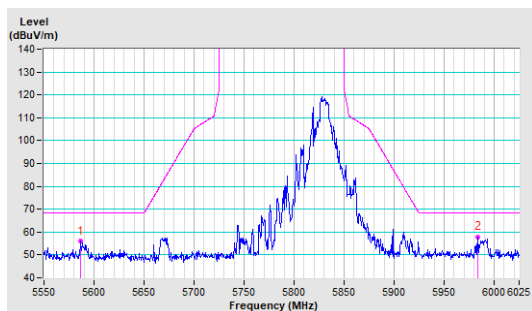


Vertical

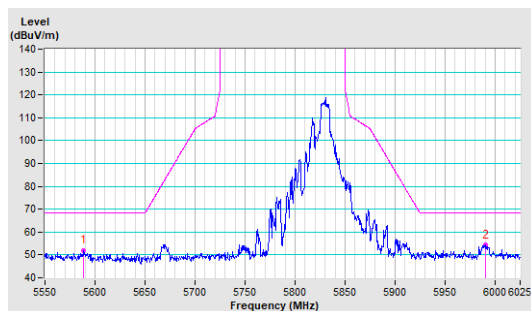


CH 165 5825 MHz

Horizontal



Vertical



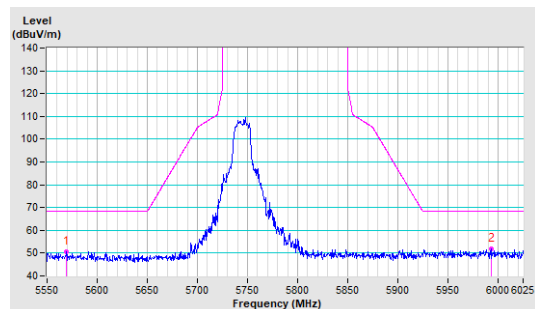
Annex A.2 - Test Results (Mode 2)

Dipole Antenna

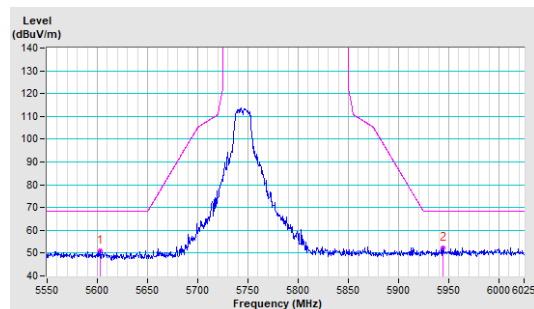
802.11a

CH 149 5745 MHz

Horizontal

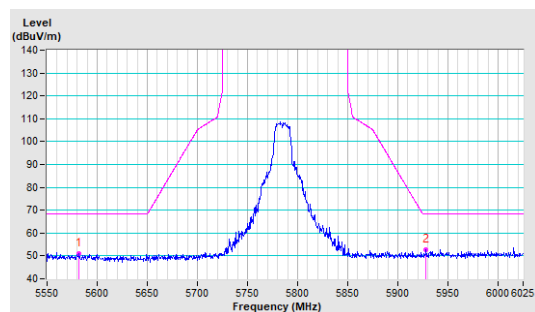


Vertical

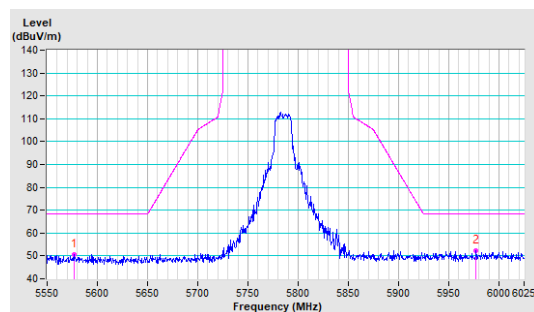


CH 157 5785 MHz

Horizontal

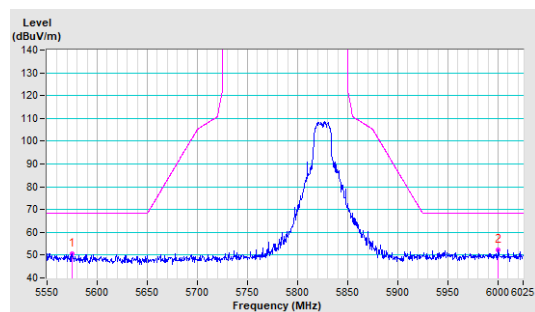


Vertical

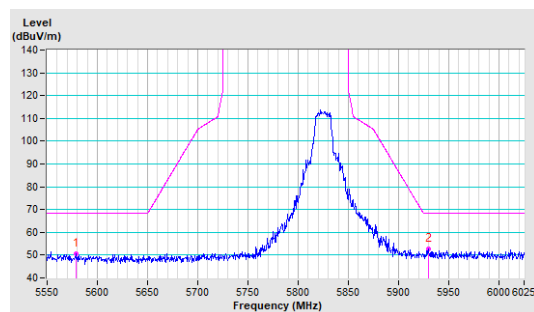


CH 165 5825 MHz

Horizontal



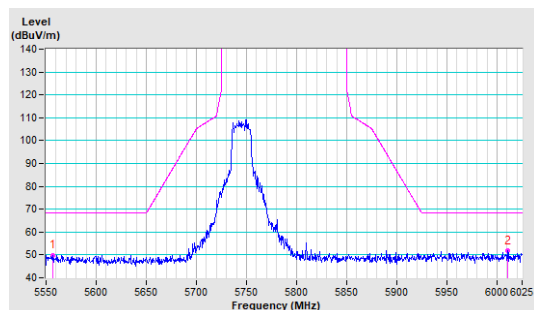
Vertical



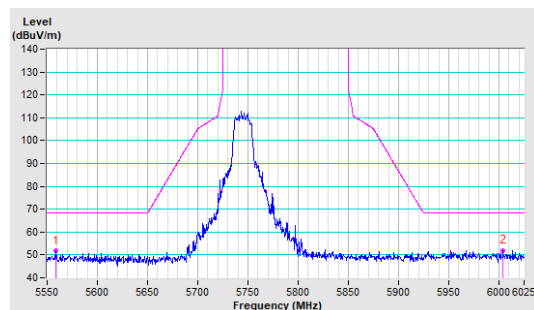
802.11ax (HE20)

CH 149 5745 MHz

Horizontal

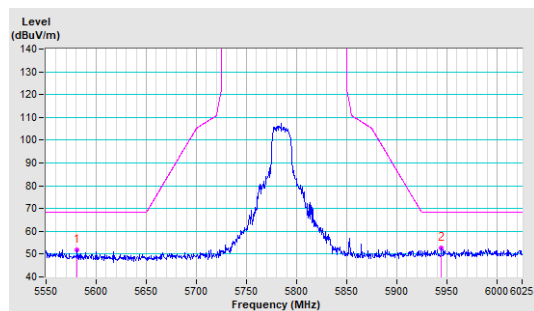


Vertical

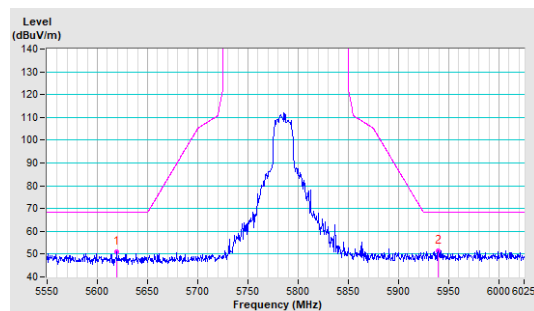


CH 157 5785 MHz

Horizontal

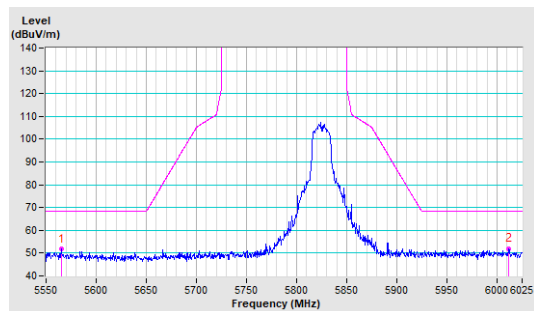


Vertical

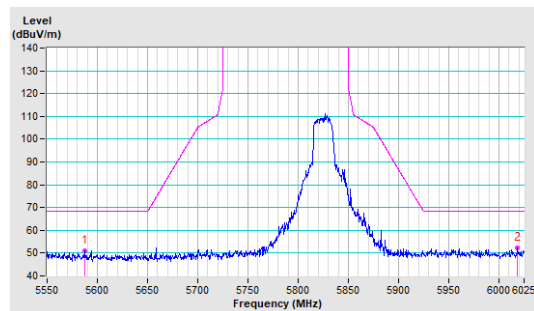


CH 165 5825 MHz

Horizontal



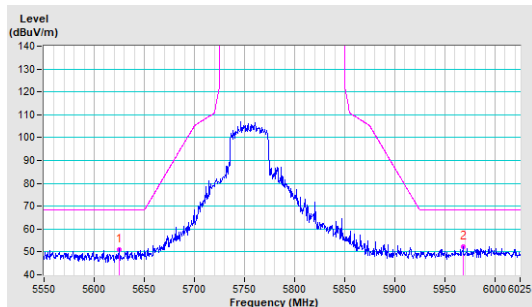
Vertical



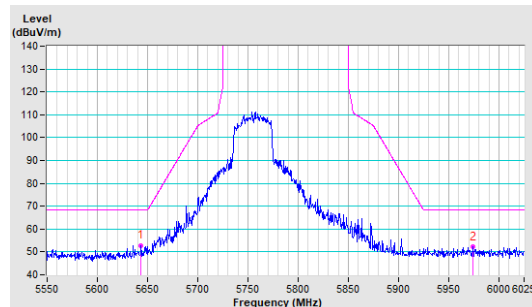
802.11ax (HE40)

CH 151 5755 MHz

Horizontal

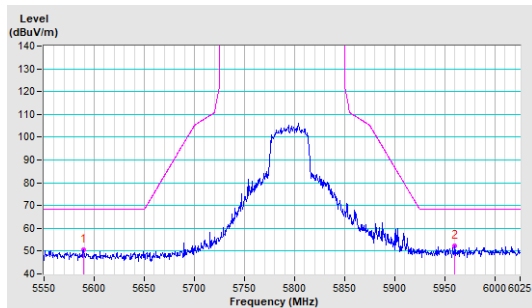


Vertical

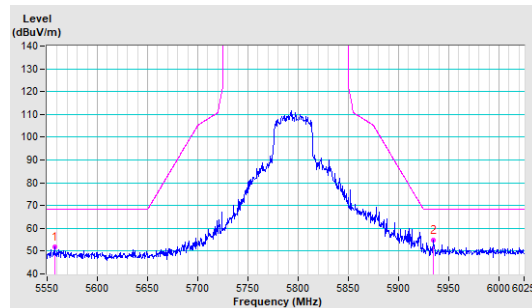


CH 159 5795 MHz

Horizontal



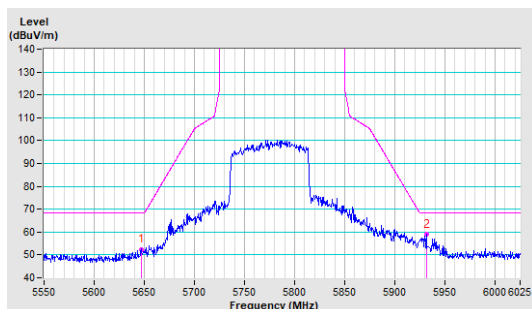
Vertical



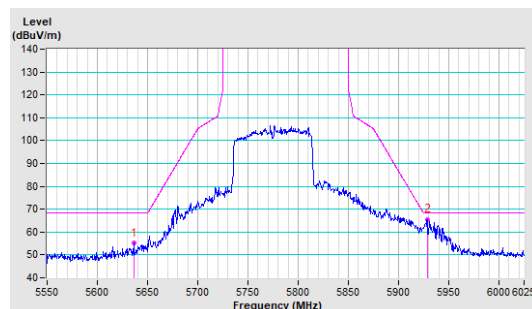
802.11ax (HE80)

CH 155 5775 MHz

Horizontal



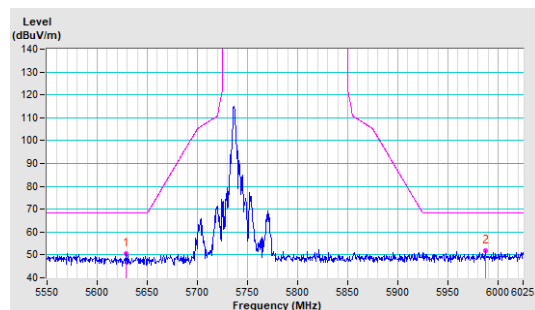
Vertical



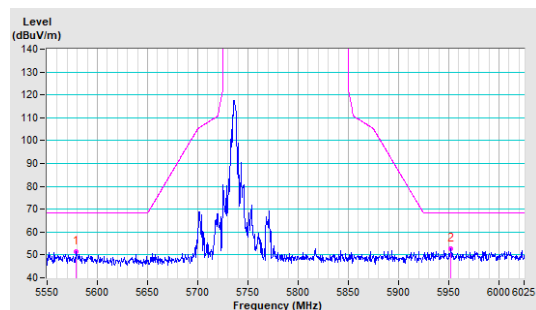
802.11ax (RU26)

CH 149 5745 MHz

Horizontal

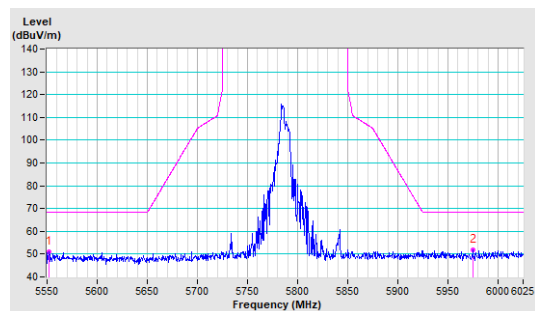


Vertical

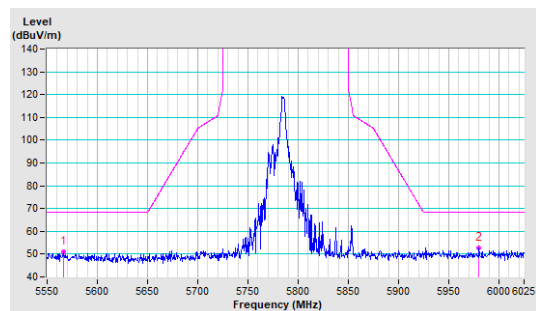


CH 157 5785 MHz

Horizontal

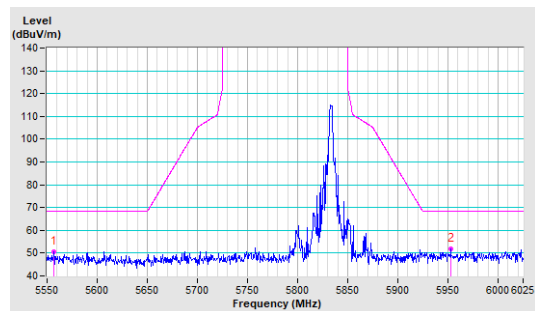


Vertical

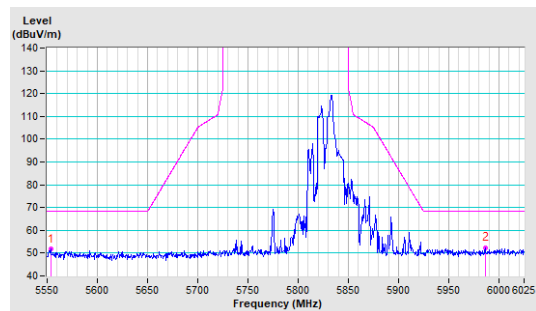


CH 165 5825 MHz

Horizontal



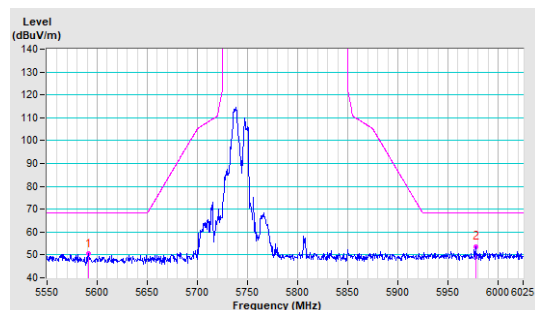
Vertical



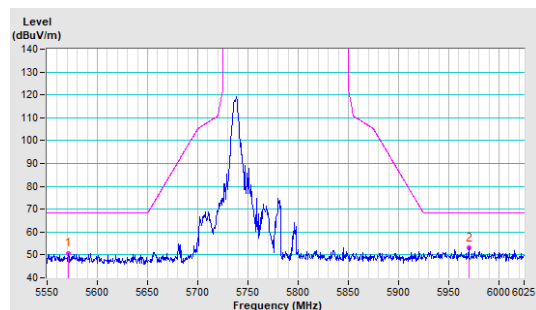
802.11ax (RU52)

CH 149 5745 MHz

Horizontal

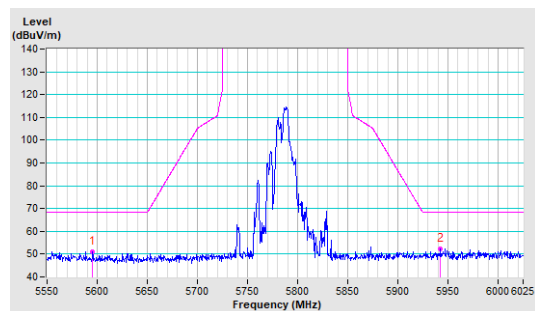


Vertical

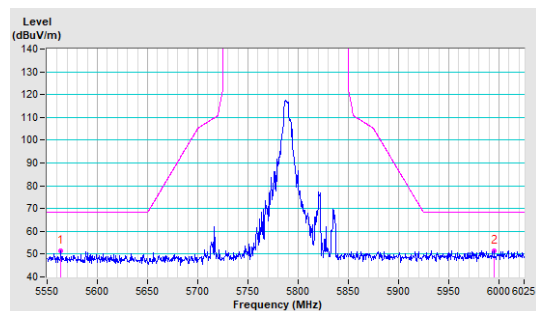


CH 157 5785 MHz

Horizontal

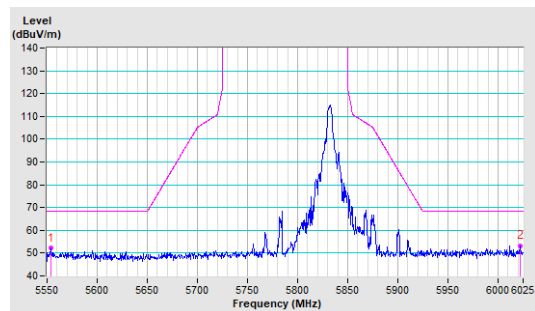


Vertical

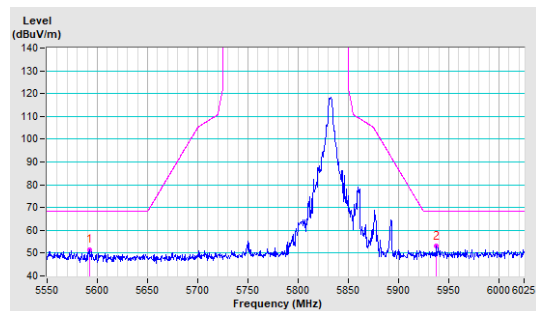


CH 165 5825 MHz

Horizontal



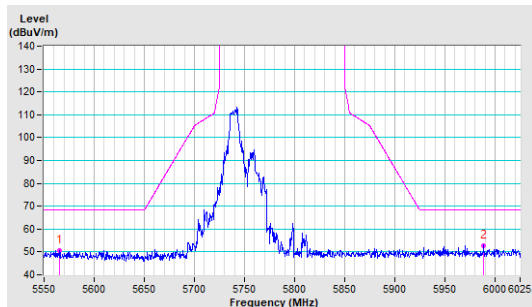
Vertical



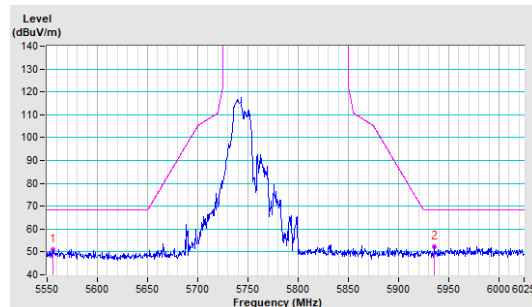
802.11ax (RU106)

CH 149 5745 MHz

Horizontal

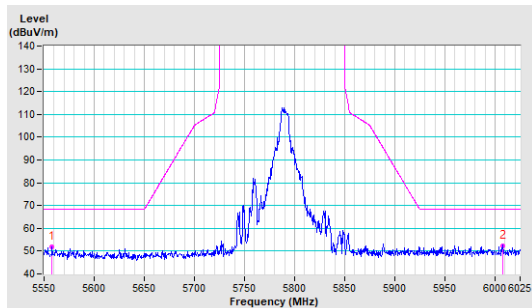


Vertical

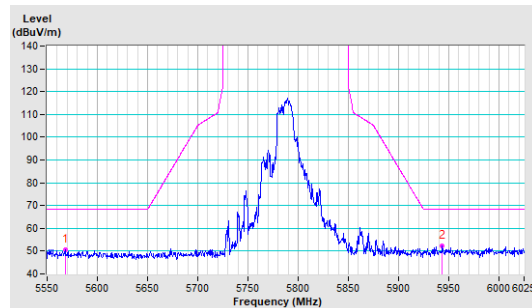


CH 157 5785 MHz

Horizontal

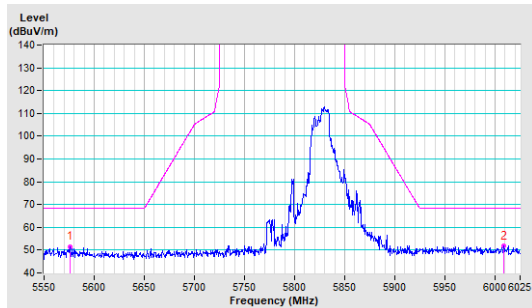


Vertical

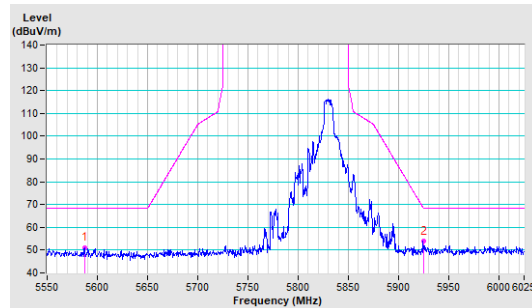


CH 165 5825 MHz

Horizontal



Vertical

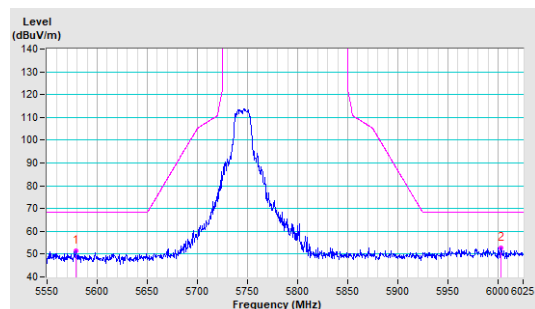


PIFA Antenna

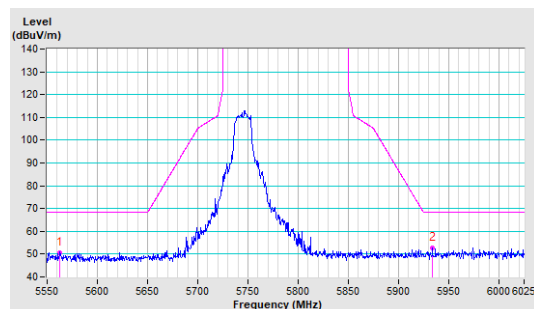
802.11a

CH 149 5745 MHz

Horizontal

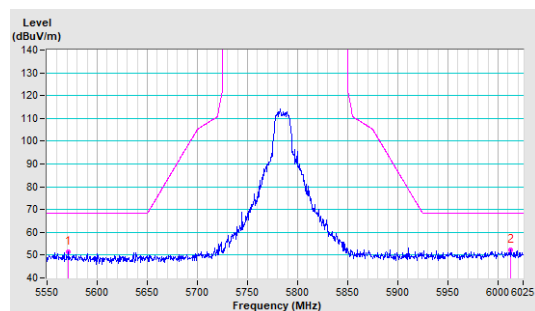


Vertical

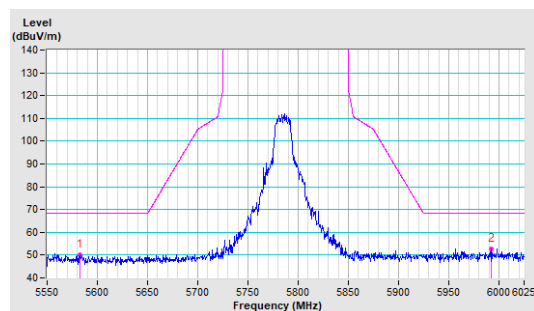


CH 157 5785 MHz

Horizontal

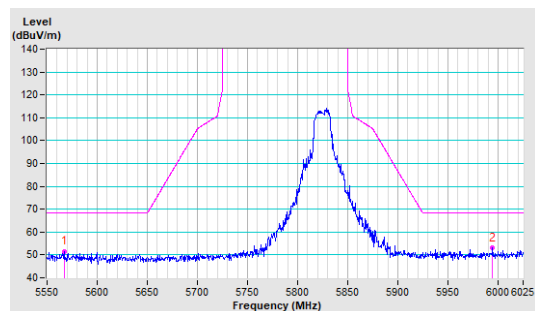


Vertical

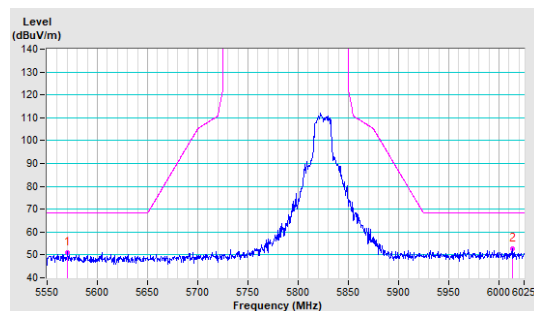


CH 165 5825 MHz

Horizontal



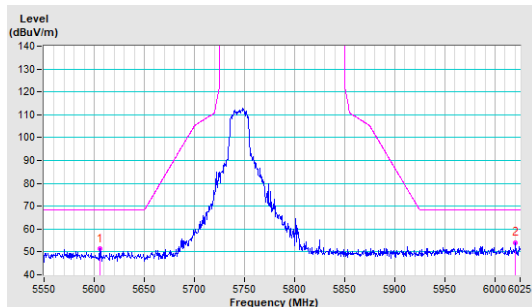
Vertical



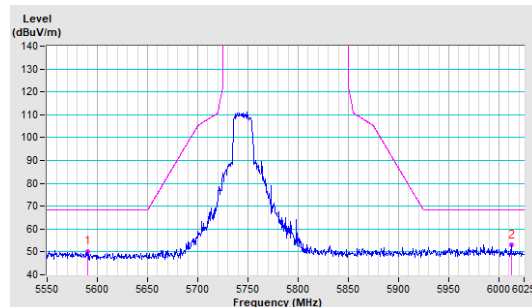
802.11ax (HE20)

CH 149 5745 MHz

Horizontal

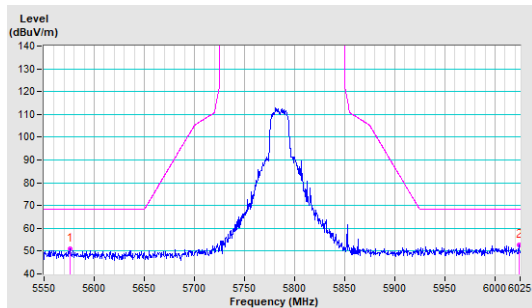


Vertical

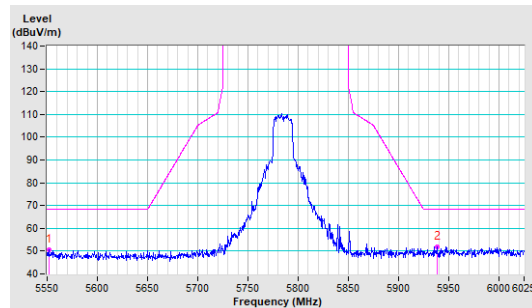


CH 157 5785 MHz

Horizontal

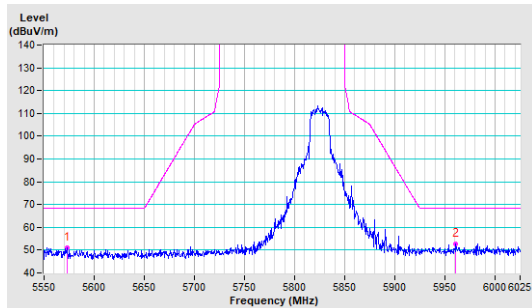


Vertical

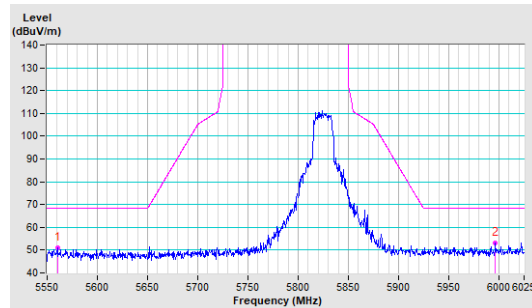


CH 165 5825 MHz

Horizontal



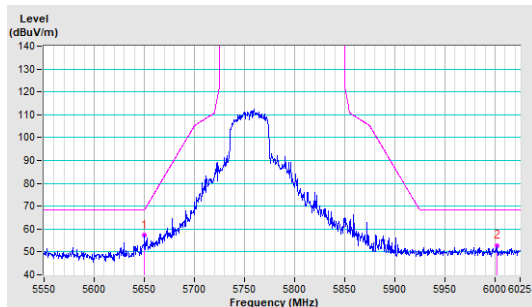
Vertical



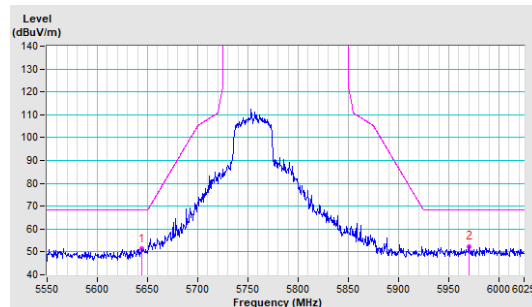
802.11ax (HE40)

CH 151 5755 MHz

Horizontal

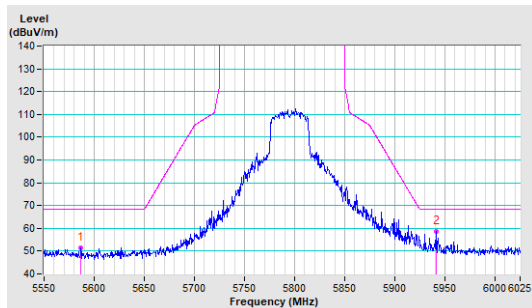


Vertical

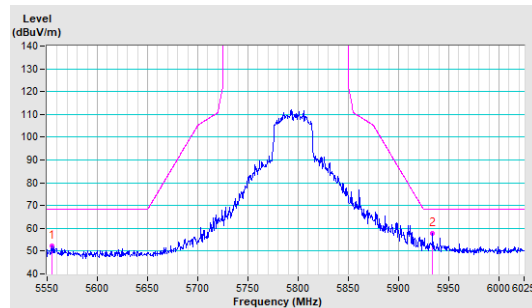


CH 159 5795 MHz

Horizontal



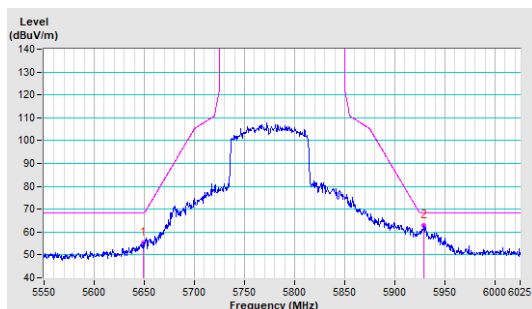
Vertical



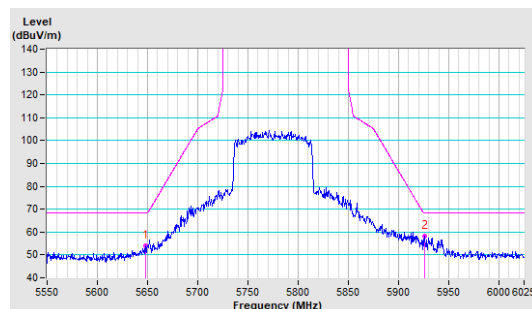
802.11ax (HE80)

CH 155 5775 MHz

Horizontal



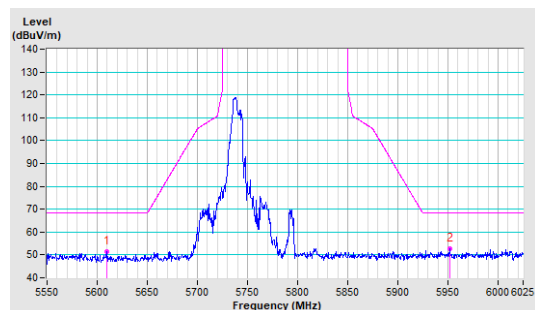
Vertical



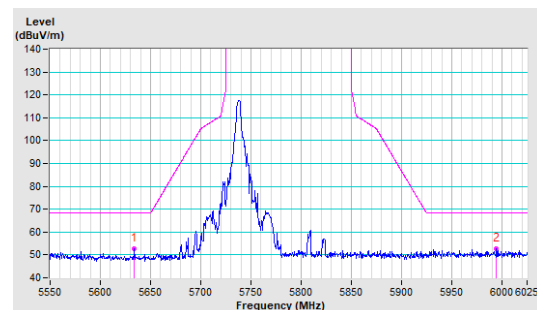
802.11ax (RU26)

CH 149 5745 MHz

Horizontal

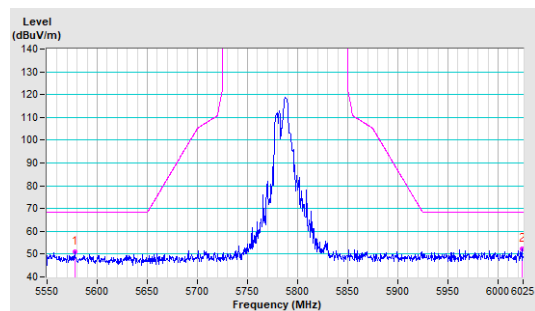


Vertical

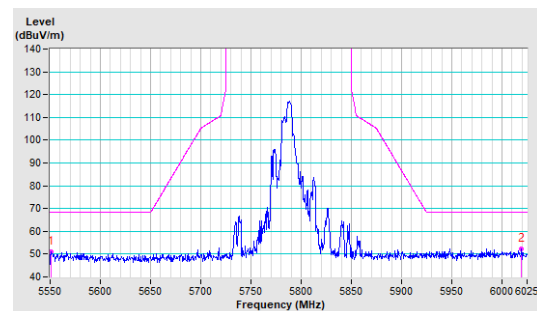


CH 157 5785 MHz

Horizontal

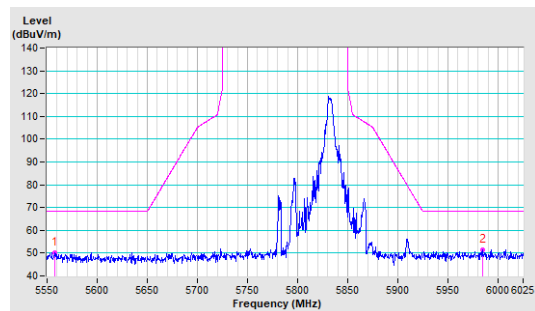


Vertical

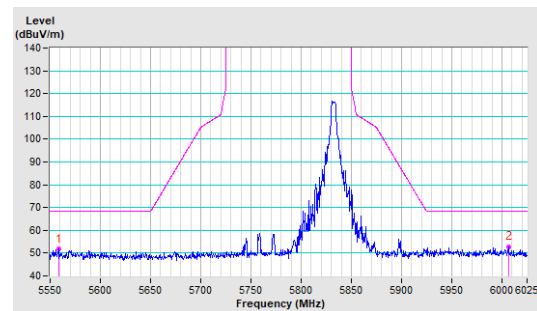


CH 165 5825 MHz

Horizontal



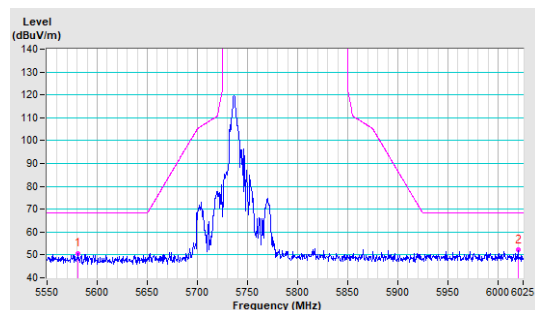
Vertical



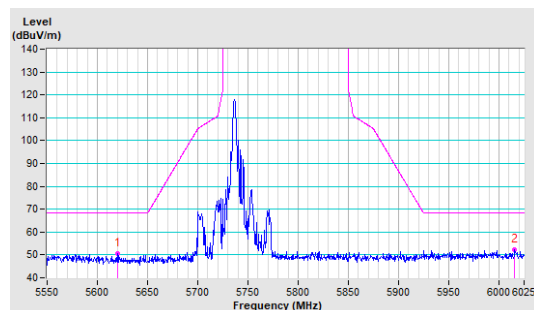
802.11ax (RU52)

CH 149 5745 MHz

Horizontal

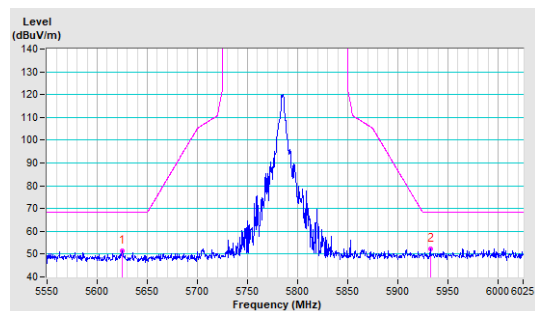


Vertical

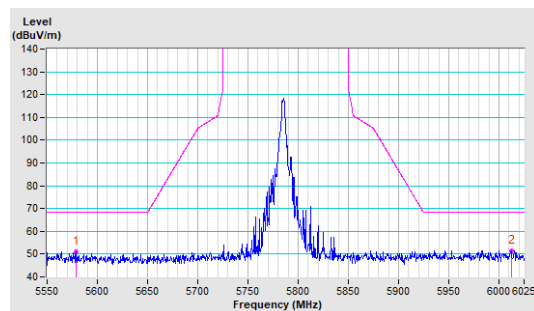


CH 157 5785 MHz

Horizontal

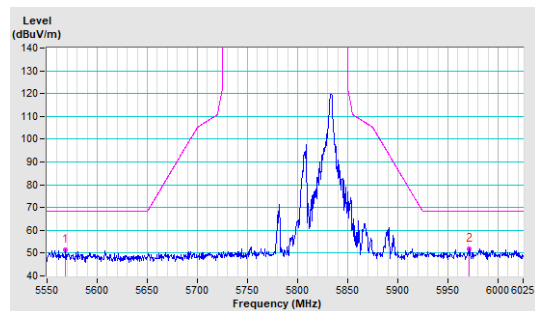


Vertical

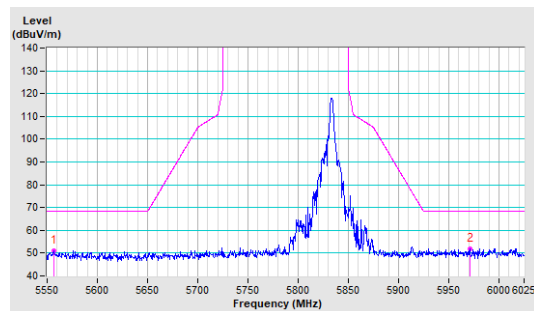


CH 165 5825 MHz

Horizontal



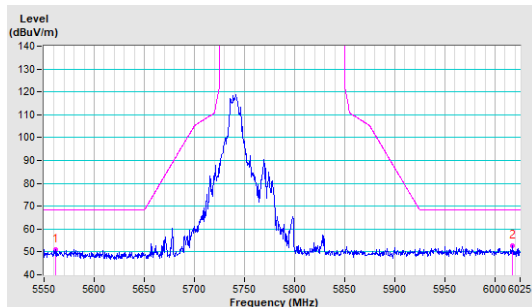
Vertical



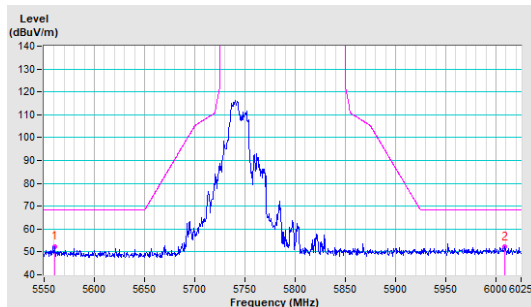
802.11ax (RU106)

CH 149 5745 MHz

Horizontal

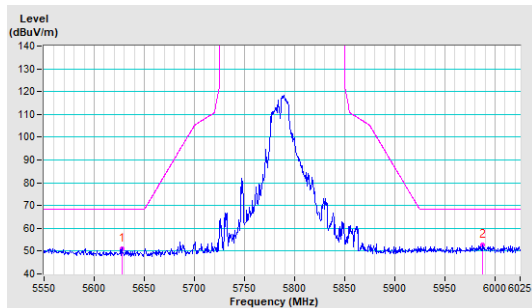


Vertical

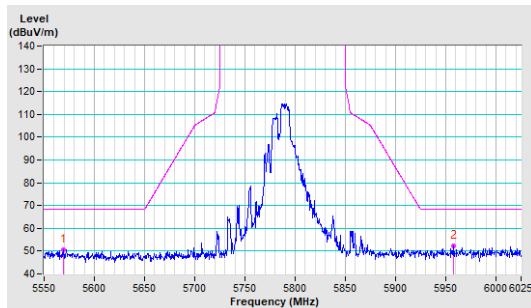


CH 157 5785 MHz

Horizontal

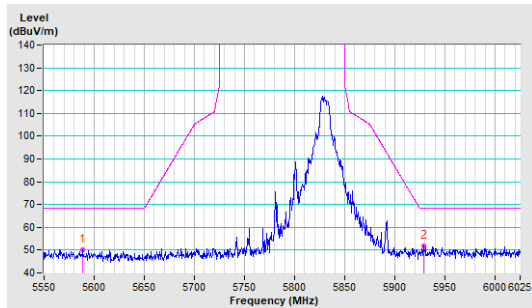


Vertical

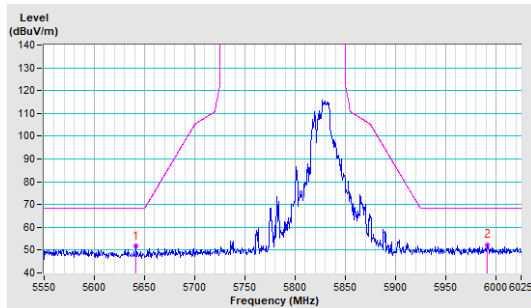


CH 165 5825 MHz

Horizontal



Vertical

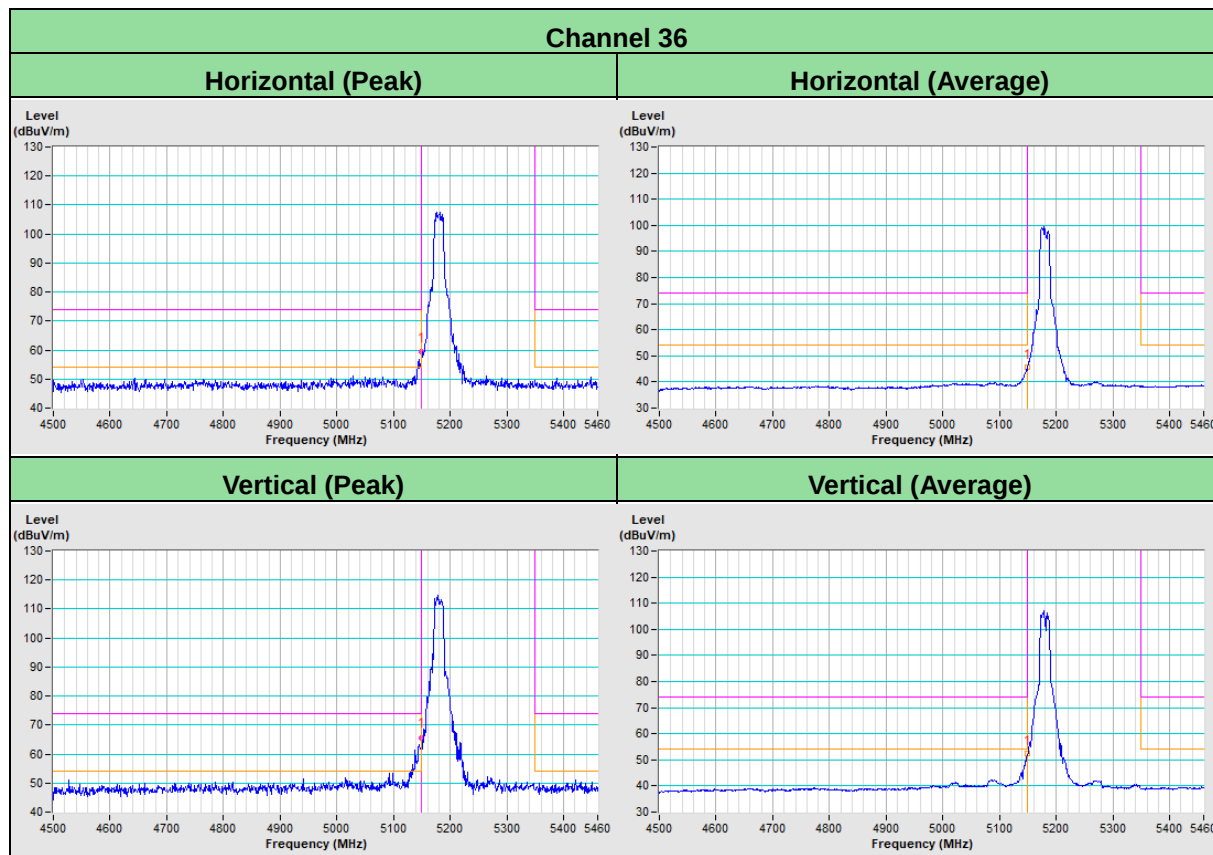


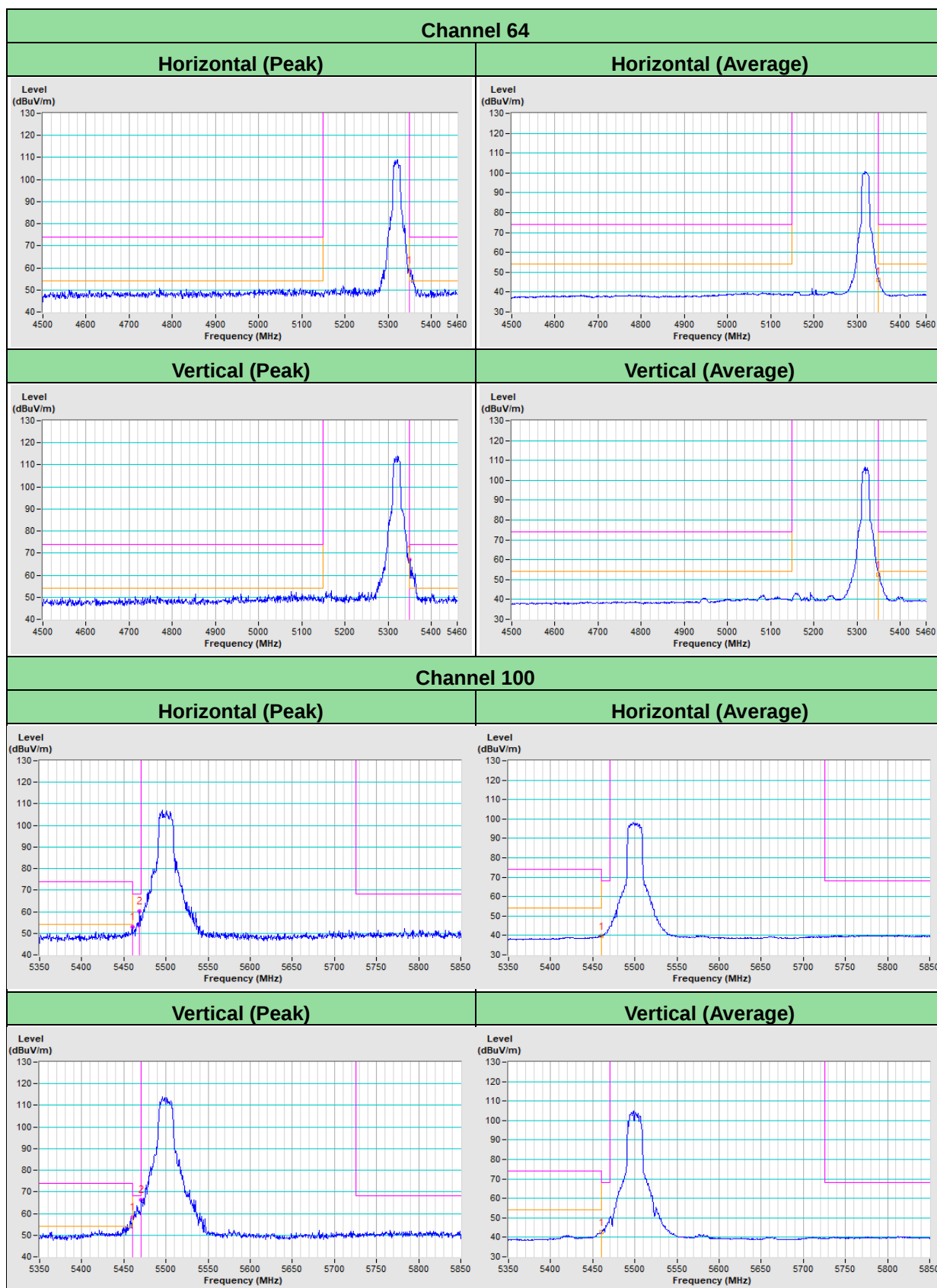
Annex B - Band-Edge Measurement (For U-NII-1, U-NII-2A, U-NII-2C band)

Annex B.1 - Test Results (Mode 1)

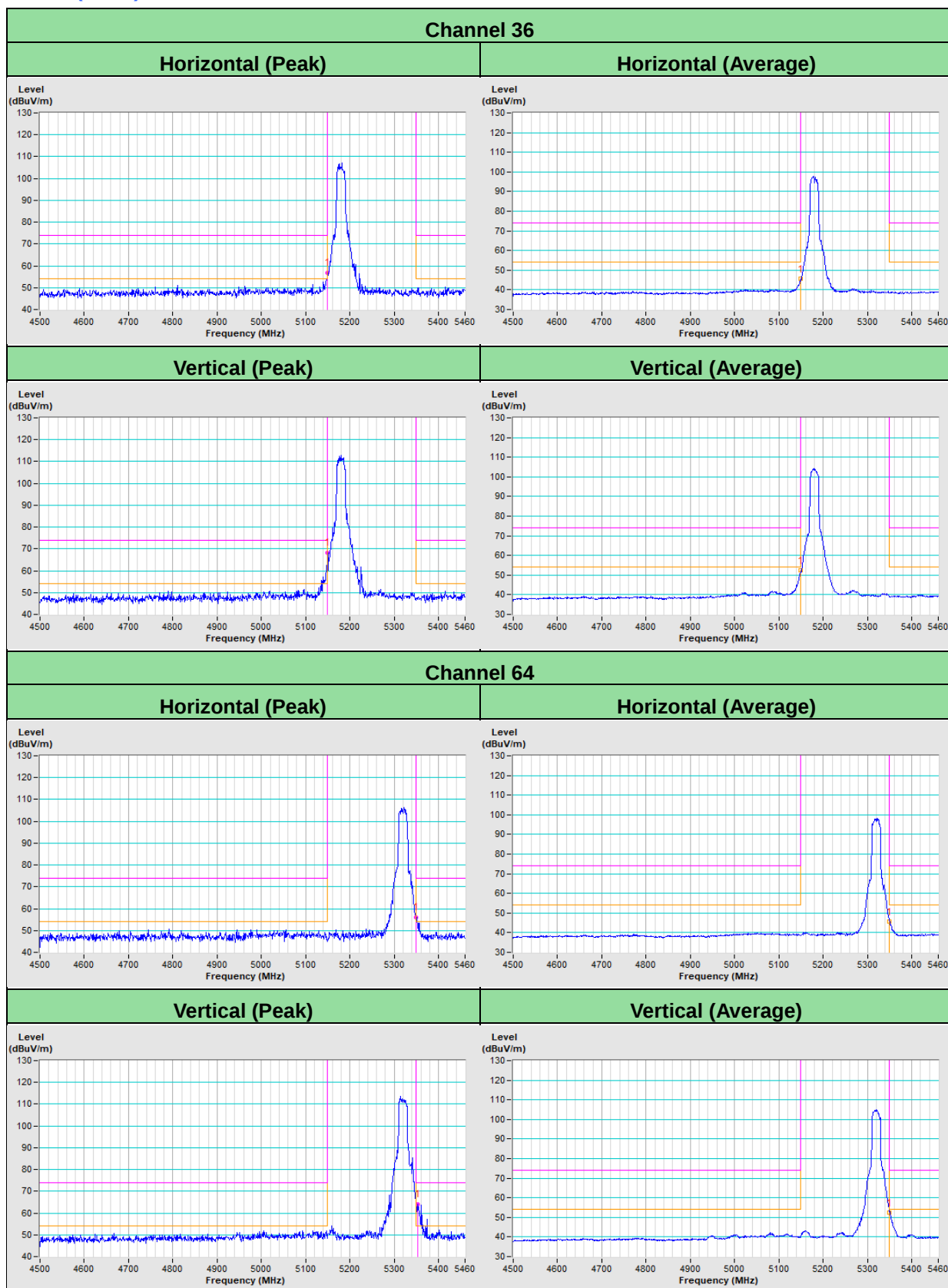
Dipole Antenna

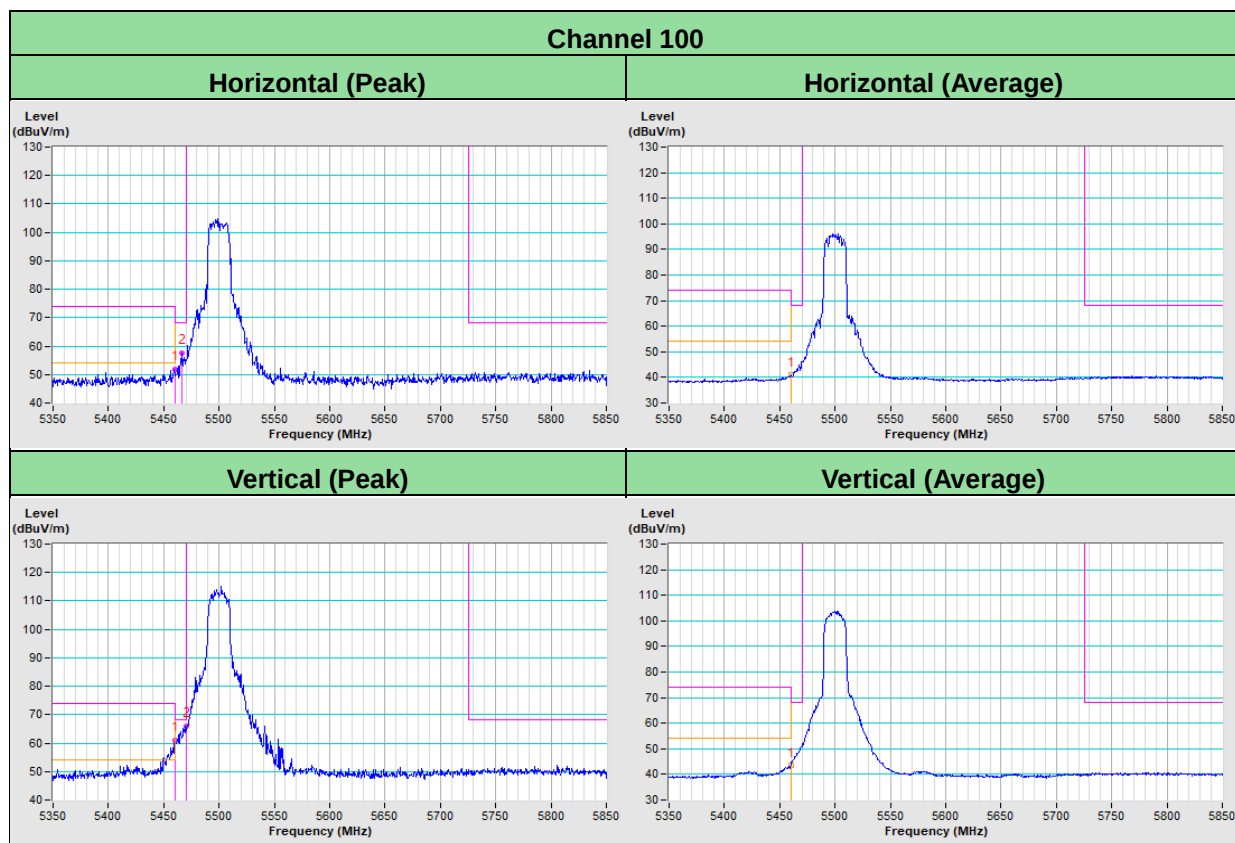
802.11a



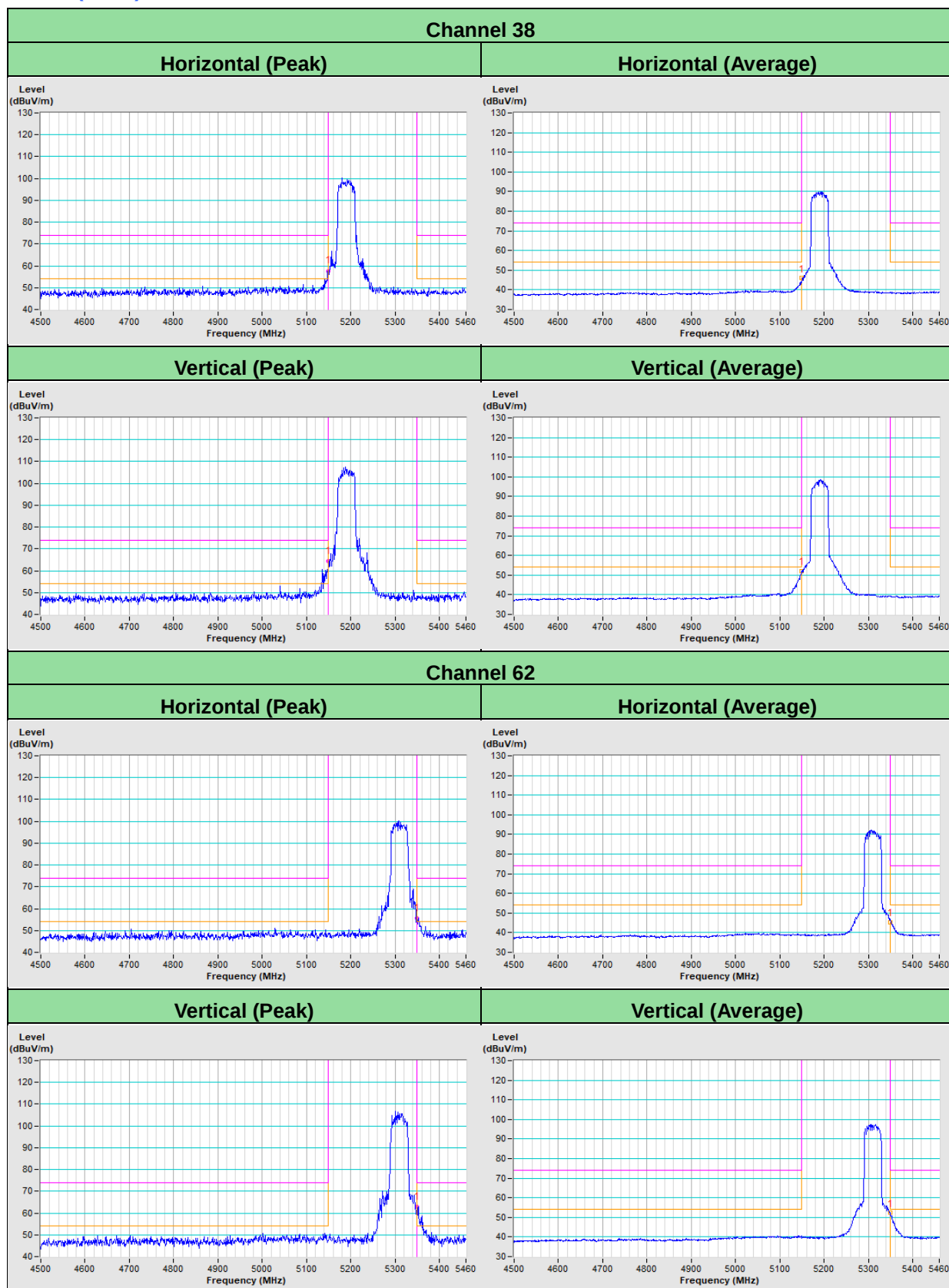


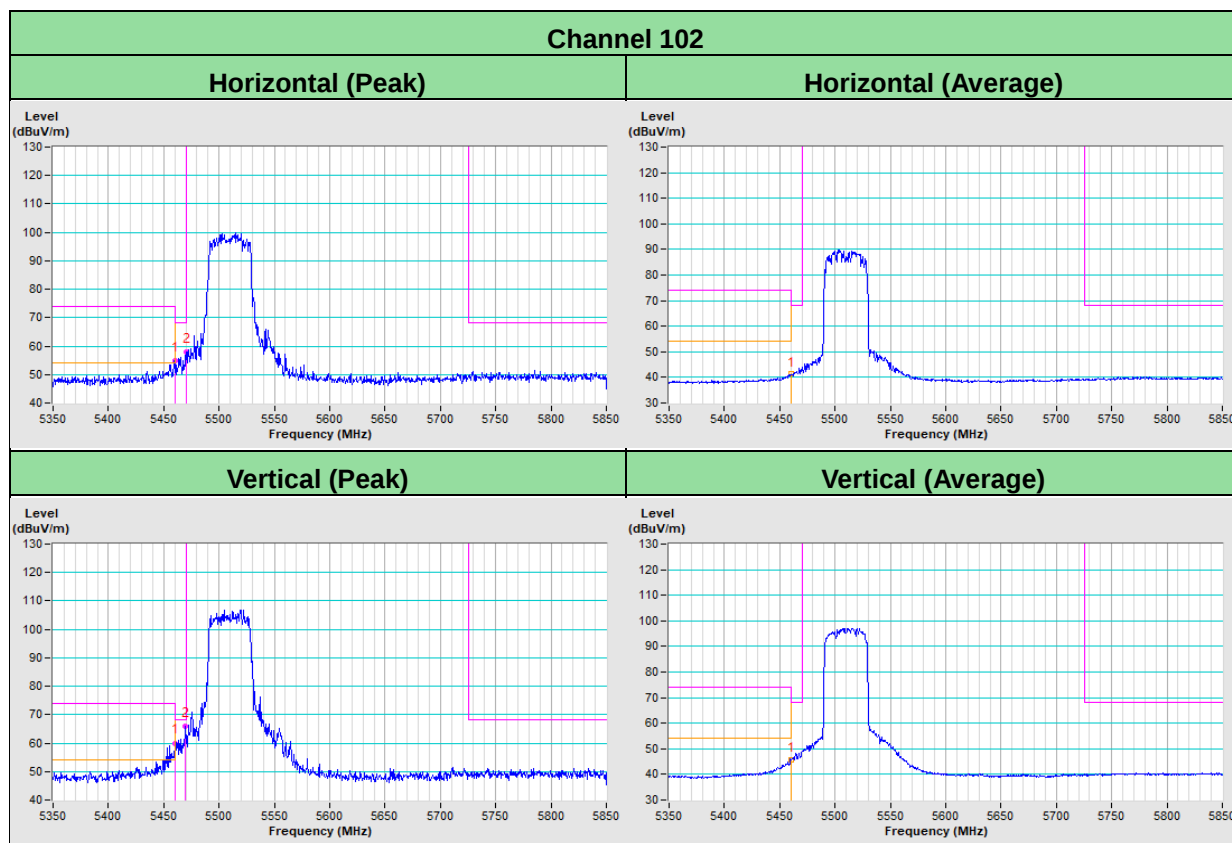
802.11ax (HE20)



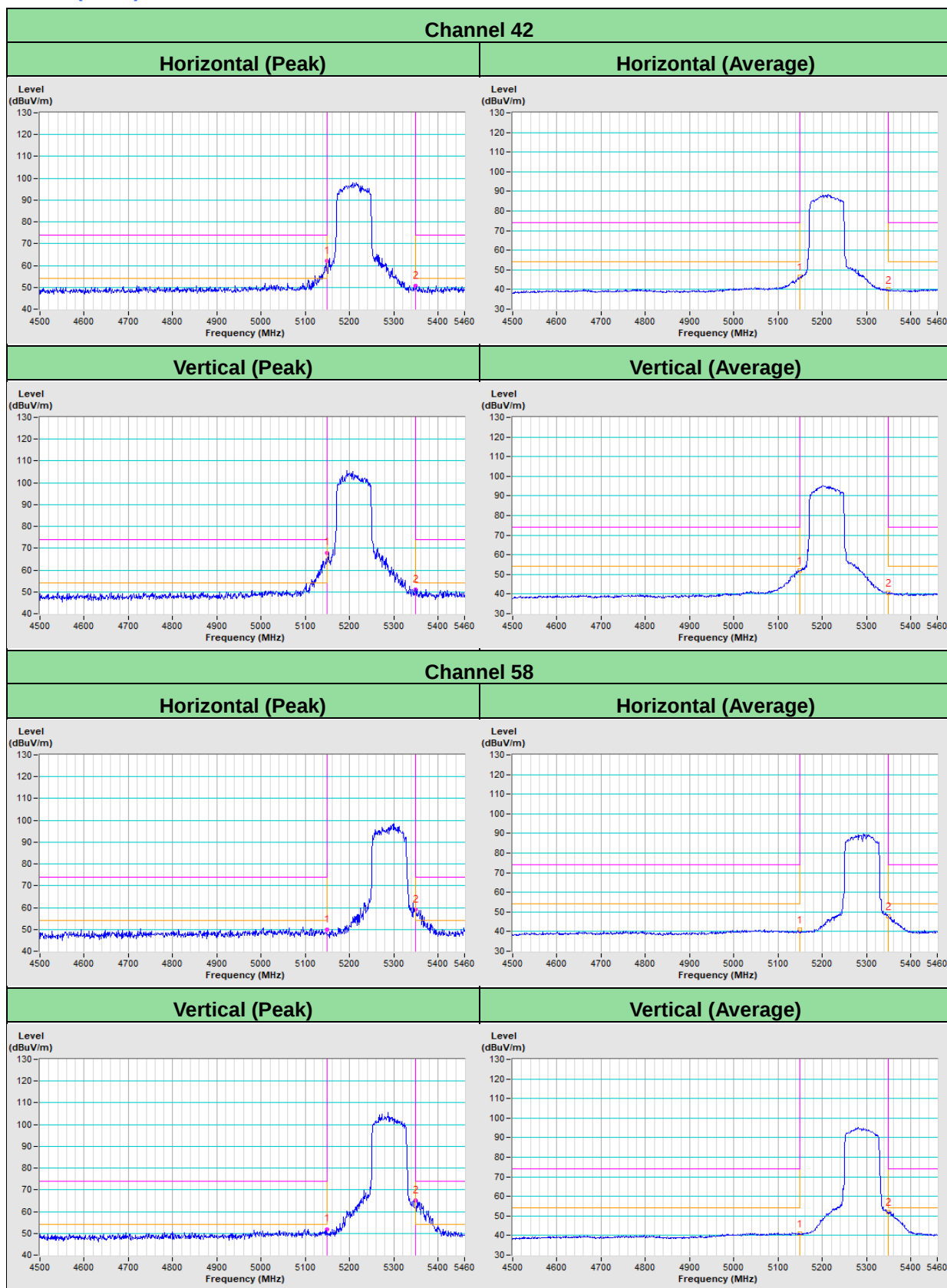


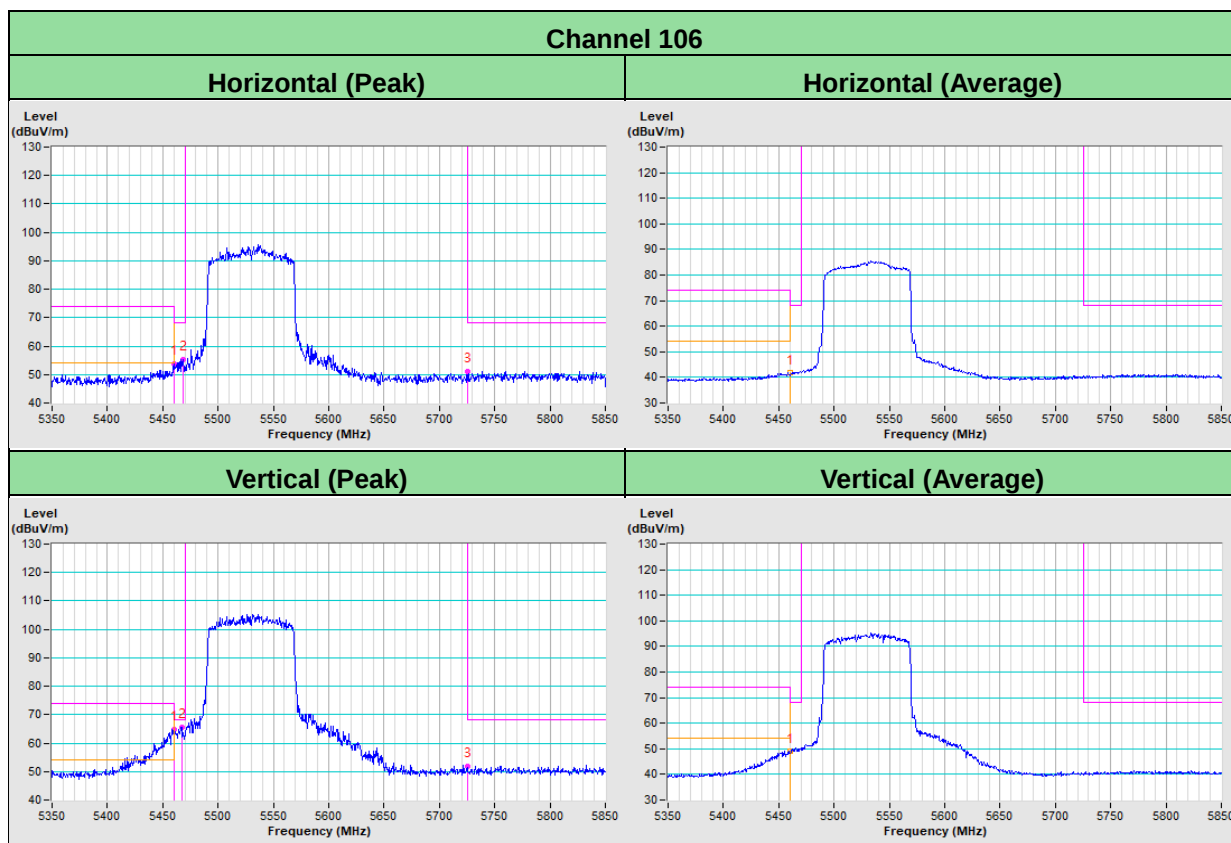
802.11ax (HE40)



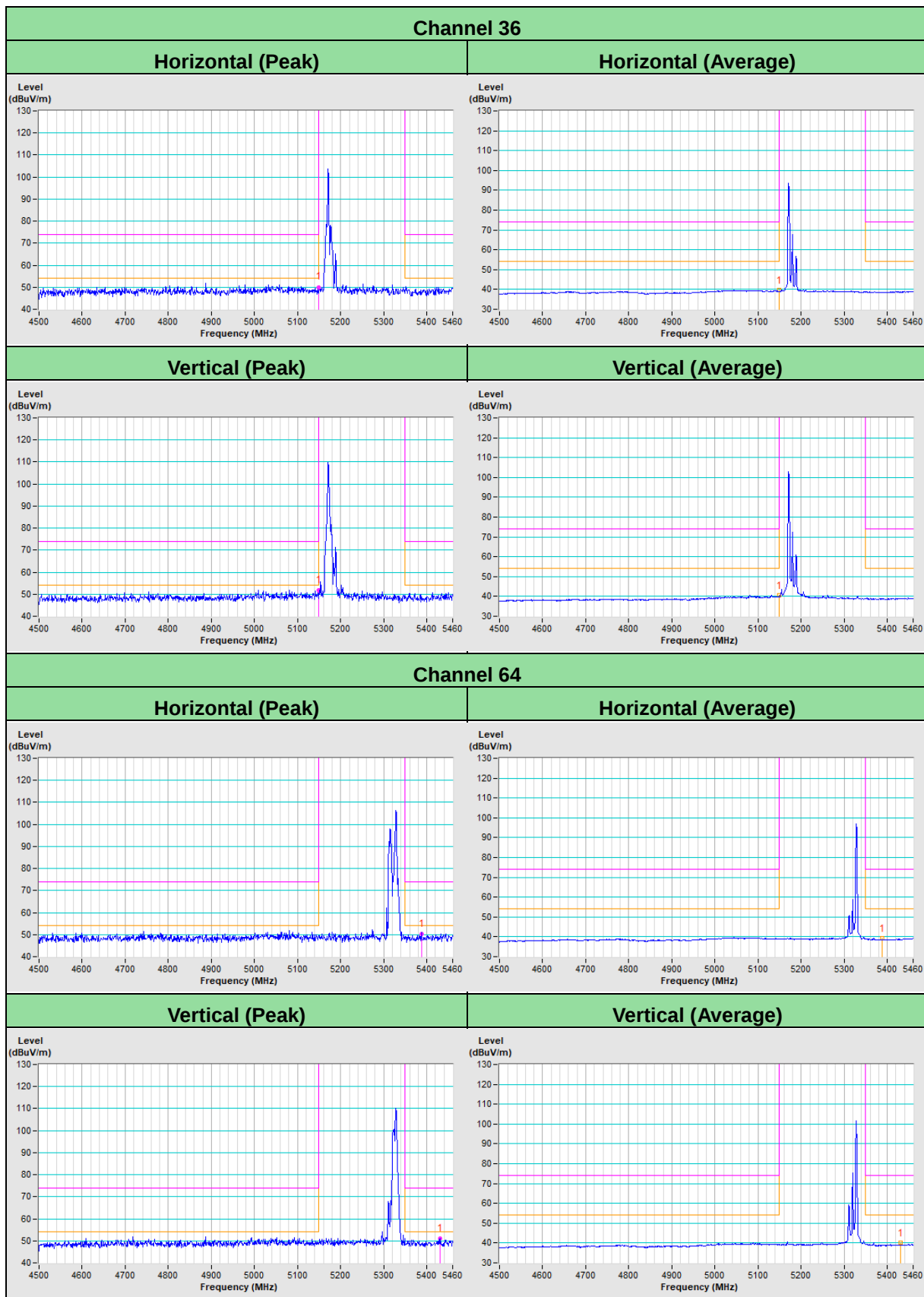


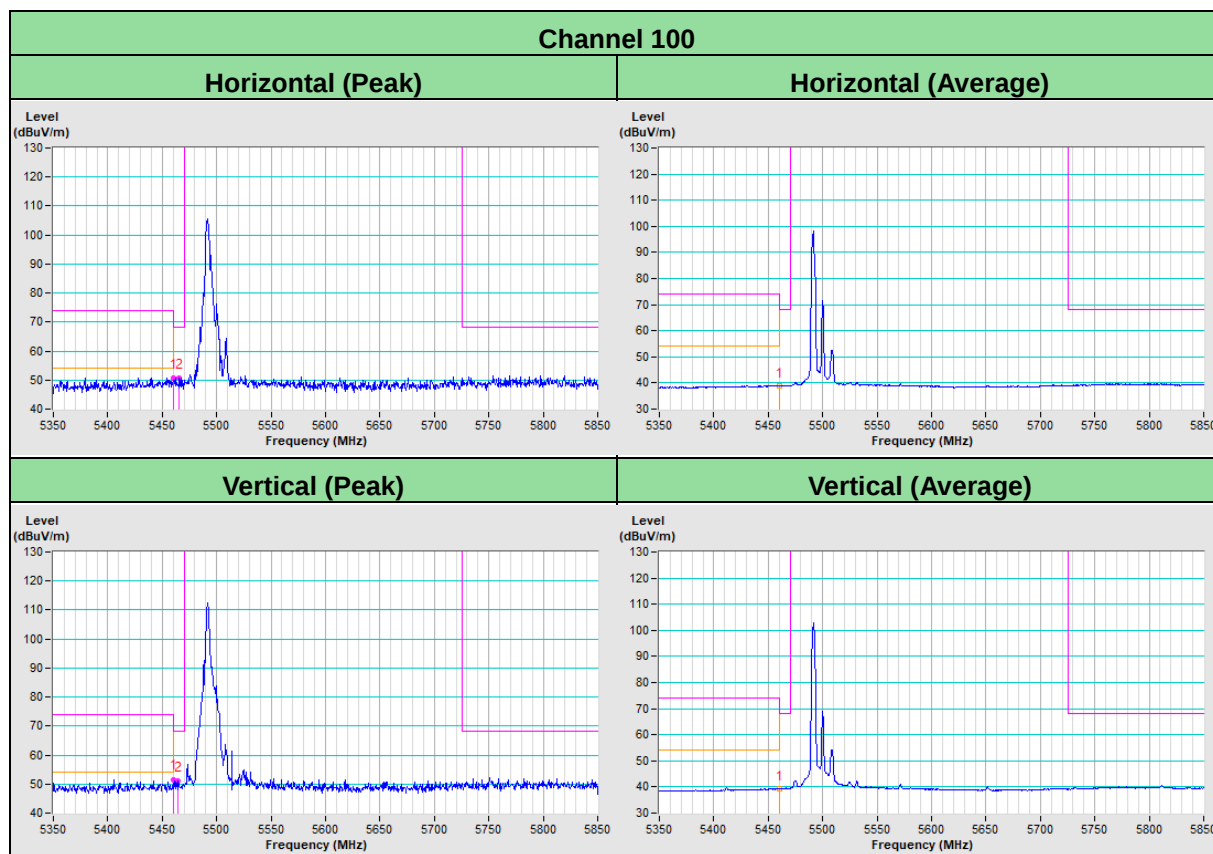
802.11ax (HE80)



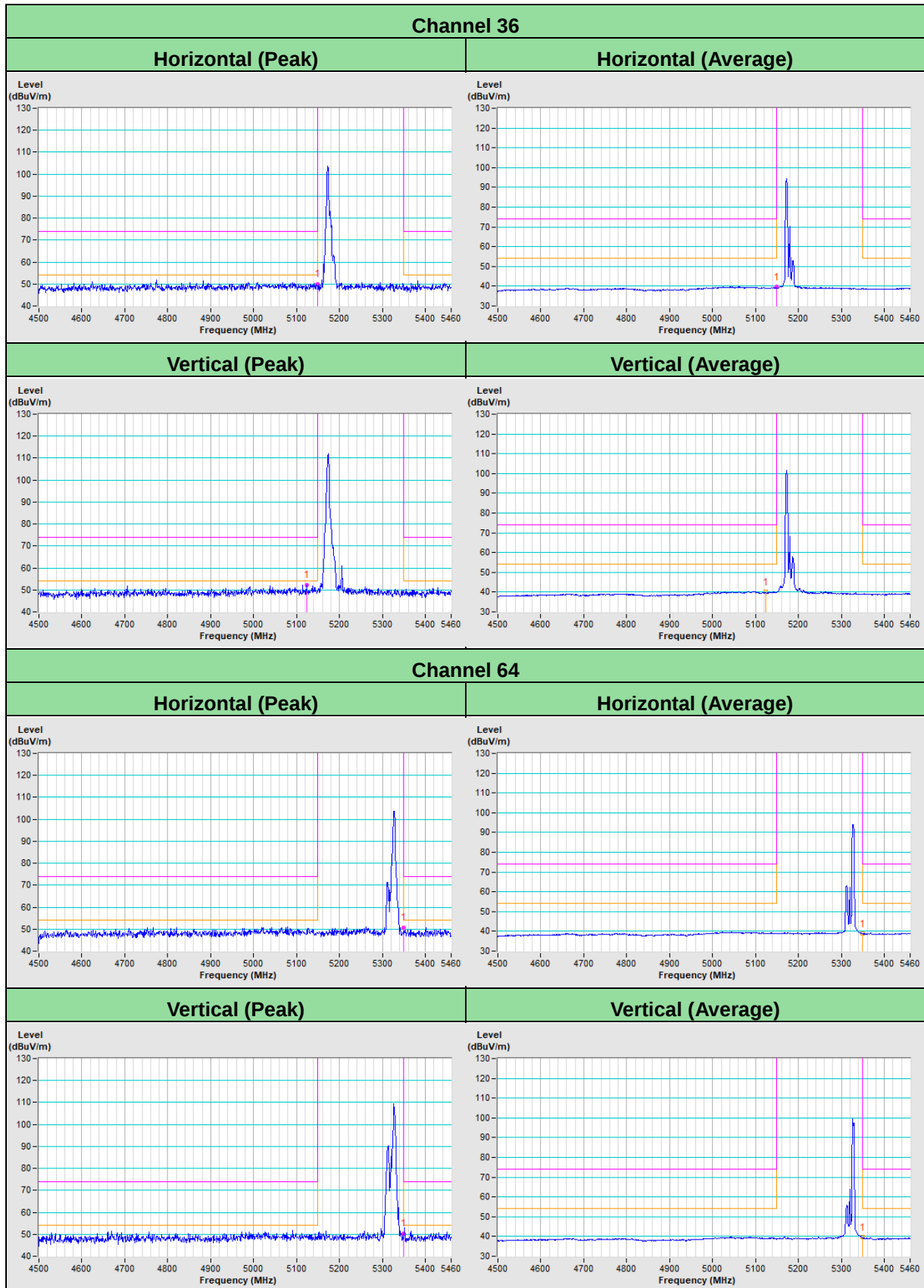


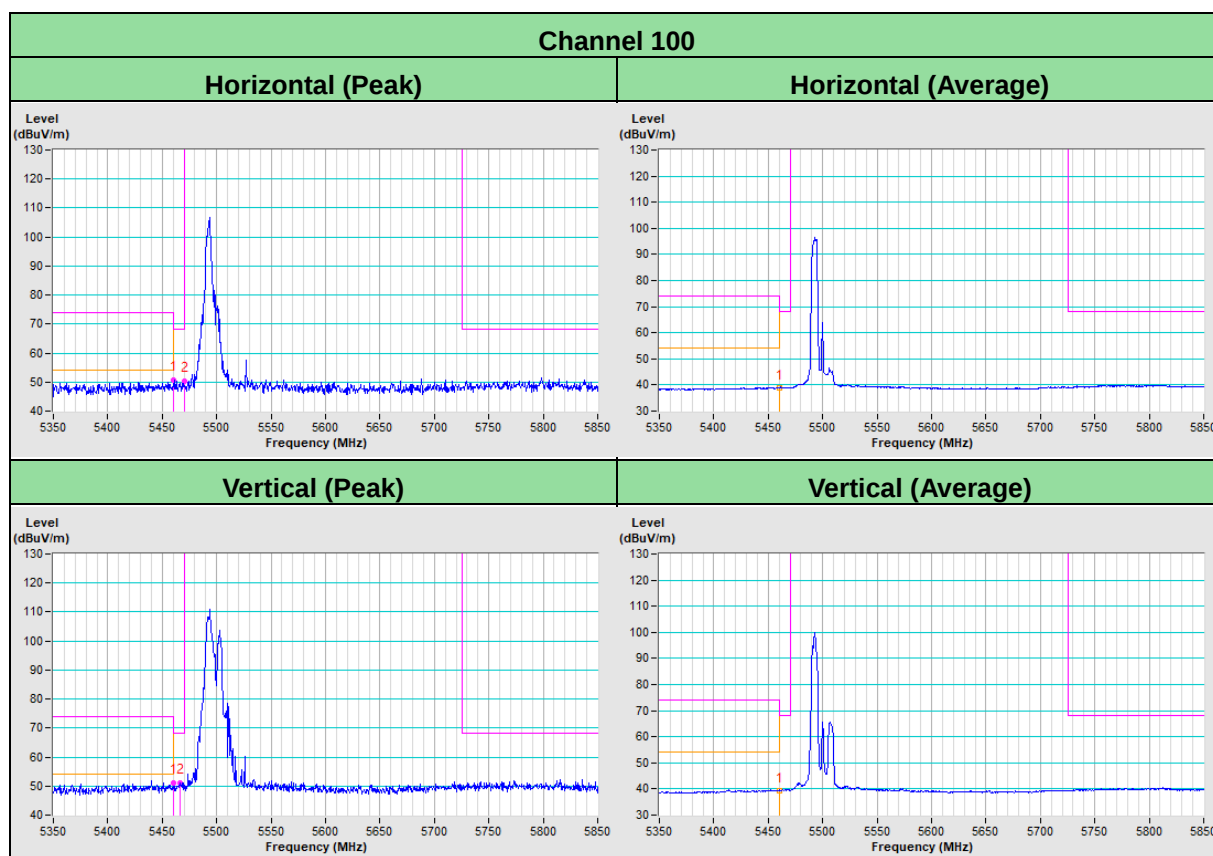
802.11ax (RU26)





802.11ax (RU52)





802.11ax (RU106)

