



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:

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- b. 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.
- c. 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
802.11b	1MHz	1 kHz
802.11g		1 kHz
802.11n (HT20)		1 kHz
802.11n (HT40)		2 kHz

Note: Refer to section 6.6 for duty cycle.

- d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported.

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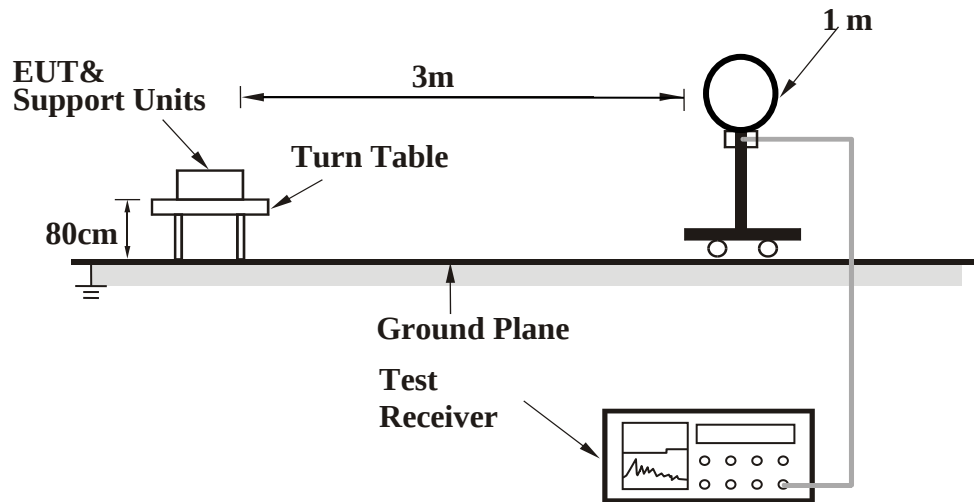
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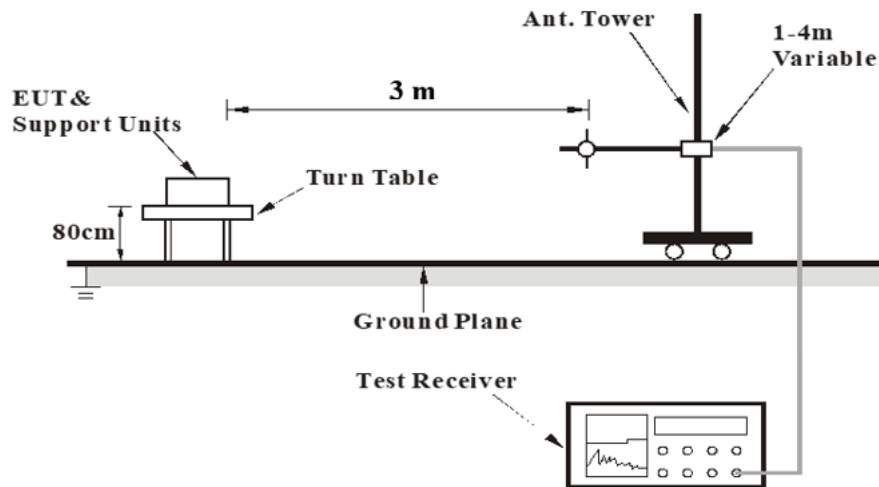
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Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >



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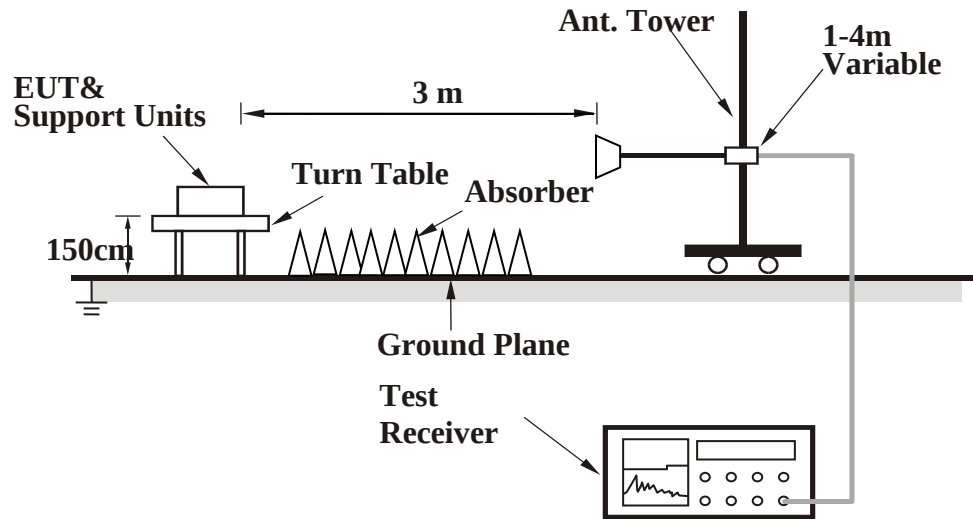
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<Frequency Range above 1 GHz>



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

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Test Data

Above 1GHz Data

802.11b

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2386.6	51.1	3.84	54.94	74	-19.06	Peak
@	2412	102	3.81	105.81	-	-	Peak
-	2386.2	46.82	3.84	50.66	54	-3.34	Average
@	2412	98.62	3.81	102.43	-	-	Average
*	4824	39.89	-0.65	39.24	74	-34.76	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2387	51.36	3.84	55.2	74	-18.8	Peak
@	2412	101.31	3.81	105.12	-	-	Peak
-	2386.6	43.81	3.84	47.65	54	-6.35	Average
@	2412	98.02	3.81	101.83	-	-	Average
*	4824	44.28	-0.65	43.63	74	-30.37	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2382.6	48.43	3.83	52.26	74	-21.74	Peak
@	2437	103.8	3.74	107.54	-	-	Peak
-	2491	47.25	3.73	50.98	74	-23.02	Peak
-	2389.4	39.71	3.84	43.55	54	-10.45	Average
@	2437	100.56	3.74	104.3	-	-	Average
-	2491.4	37.28	3.73	41.01	54	-12.99	Average
*	4876	41.55	-0.58	40.97	74	-33.03	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2389	48.25	3.84	52.09	74	-21.91	Peak
@	2437	103.84	3.74	107.58	-	-	Peak
-	2498.8	48.94	3.74	52.68	74	-21.32	Peak
-	2388	38.5	3.83	42.33	54	-11.67	Average
@	2437	100.44	3.74	104.18	-	-	Average
-	2486.8	38.14	3.73	41.87	54	-12.13	Average
*	4874	45.81	-0.58	45.23	74	-28.77	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
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EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	101.2	3.71	104.91	-	-	Peak
-	2484	48.49	3.72	52.21	74	-21.79	Peak
@	2462	100.57	3.71	104.28	-	-	Average
-	2484.8	43.25	3.72	46.97	54	-7.03	Average
*	4924	42.82	-0.55	42.27	74	-31.73	Peak
*							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	101.61	3.71	105.32	-	-	Peak
-	2487.6	49.77	3.72	53.49	74	-20.51	Peak
@	2462	101.19	3.71	104.9	-	-	Average
-	2487.6	43.19	3.72	46.91	54	-7.09	Average
*	4924	42.46	-0.55	41.91	74	-32.09	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 12	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2467	99.92	3.72	103.64	-	-	Peak
-	2494.4	48.64	3.73	52.37	74	-21.63	Peak
@	2467	96.21	3.72	99.93	-	-	Average
-	2484.4	40.1	3.72	43.82	54	-10.18	Average
*	4934	41	-0.55	40.45	74	-33.55	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2467	100.56	3.72	104.28	-	-	Peak
-	2485.4	49.43	3.73	53.16	74	-20.84	Peak
@	2467	96.94	3.72	100.66	-	-	Average
-	2484.2	41.32	3.72	45.04	54	-8.96	Average
*	4934	44.03	-0.55	43.48	74	-30.52	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 13	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2472	95.18	3.72	98.9	-	-	Peak
-	2485.4	55.07	3.73	58.8	74	-15.2	Peak
@	2472	92.18	3.72	95.9	-	-	Average
-	2483.6	39.18	3.72	42.9	54	-11.1	Average
*	4944	38.03	-0.54	37.49	74	-36.51	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2472	96.58	3.72	100.3	-	-	Peak
-	2485.4	58.32	3.73	62.05	74	-11.95	Peak
@	2472	92.75	3.72	96.47	-	-	Average
-	2483.6	41.35	3.72	45.07	54	-8.93	Average
*	4944	47.03	-0.54	46.49	74	-27.51	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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802.11g

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2386	54.61	3.84	58.45	74	-15.55	Peak
@	2412	101.71	3.81	105.52	-	-	Peak
-	2390	40.02	3.84	43.86	54	-10.14	Average
@	2412	93.31	3.81	97.12	-	-	Average
*	4824	39.36	-0.65	38.71	74	-35.29	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2386	54.89	3.84	58.73	74	-15.27	Peak
@	2412	103.95	3.81	107.76	-	-	Peak
-	2389.6	39.55	3.84	43.39	54	-10.61	Average
@	2412	94.64	3.81	98.45	-	-	Average
*	4824	42.47	-0.65	41.82	74	-32.18	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2386.4	55.98	3.84	59.82	74	-14.18	Peak
@	2437	106.07	3.74	109.81	-	-	Peak
-	2483.6	56.17	3.72	59.89	74	-14.11	Peak
-	2388.8	40.44	3.84	44.28	54	-9.72	Average
@	2437	98.64	3.74	102.38	-	-	Average
-	2483.8	38.66	3.72	42.38	54	-11.62	Average
*	4874	46.38	-0.58	45.8	74	-28.2	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2388.8	53.65	3.84	57.49	74	-16.51	Peak
@	2437	106.66	3.74	110.4	-	-	Peak
-	2483.6	59.18	3.72	62.9	74	-11.1	Peak
-	2389.4	39.55	3.84	43.39	54	-10.61	Average
@	2437	99.47	3.74	103.21	-	-	Average
-	2484.2	39.9	3.72	43.62	54	-10.38	Average
*	4874	47.15	-0.58	46.57	74	-27.43	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	103.64	3.71	107.35	-	-	Peak
-	2483.8	60.89	3.72	64.61	74	-9.39	Peak
@	2462	92.32	3.71	96.03	-	-	Average
-	2483.6	38.62	3.72	42.34	54	-11.66	Average
*	4924	41.86	-0.55	41.31	74	-32.69	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	103.55	3.71	107.26	-	-	Peak
-	2484.2	63.11	3.72	66.83	74	-7.17	Peak
@	2462	94.35	3.71	98.06	-	-	Average
-	2483.6	40.27	3.72	43.99	54	-10.01	Average
*	4924	39.95	-0.55	39.4	74	-34.6	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 12	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2467	100	3.72	103.72	-	-	Peak
-	2483.6	61.45	3.72	65.17	74	-8.83	Peak
@	2467	90.51	3.72	94.23	-	-	Average
-	2485	37.86	3.72	41.58	54	-12.42	Average
*	4934	38.17	-0.55	37.62	74	-36.38	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2467	101.19	3.72	104.91	-	-	Peak
-	2483.8	63.33	3.72	67.05	74	-6.95	Peak
@	2467	91.86	3.72	95.58	-	-	Average
-	2483.6	40.02	3.72	43.74	54	-10.26	Average
*	4934	38.96	-0.55	38.41	74	-35.59	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 13	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2472	97.17	3.72	100.89	-	-	Peak
-	2484.8	59.86	3.72	63.58	74	-10.42	Peak
@	2472	86.26	3.72	89.98	-	-	Average
-	2484	37.69	3.72	41.41	54	-12.59	Average
*	4944	37.83	-0.54	37.29	74	-36.71	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2472	98.86	3.72	102.58	-	-	Peak
-	2484.4	65.56	3.72	69.28	74	-4.72	Peak
@	2472	88.41	3.72	92.13	-	-	Average
-	2483.6	39.46	3.72	43.18	54	-10.82	Average
*	4944	38.39	-0.54	37.85	74	-36.15	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2388.4	55.03	3.84	58.87	74	-15.13	Peak
@	2412	101.21	3.81	105.02	-	-	Peak
-	2389.8	39.5	3.84	43.34	54	-10.66	Average
@	2412	92.46	3.81	96.27	-	-	Average
*	4824	38.84	-0.65	38.19	74	-35.81	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2389.4	56.99	3.84	60.83	74	-13.17	Peak
@	2412	102.24	3.81	106.05	-	-	Peak
-	2390	41.12	3.84	44.96	54	-9.04	Average
@	2412	94.77	3.81	98.58	-	-	Average
*	4824	43.75	-0.65	43.1	74	-30.9	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2381.8	56.93	3.84	60.77	74	-13.23	Peak
@	2437	107.8	3.74	111.54	-	-	Peak
-	2484	57.95	3.72	61.67	74	-12.33	Peak
-	2389	43.74	3.84	47.58	54	-6.42	Average
@	2437	98.4	3.74	102.14	-	-	Average
-	2484.6	40.57	3.72	44.29	54	-9.71	Average
*	4874	43.25	-0.58	42.67	74	-31.33	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2387.4	57.66	3.84	61.5	74	-12.5	Peak
@	2437	108.49	3.74	112.23	-	-	Peak
-	2484.2	60.11	3.72	63.83	74	-10.17	Peak
-	2390	41.62	3.84	45.46	54	-8.54	Average
@	2437	98.95	3.74	102.69	-	-	Average
-	2485	41.78	3.72	45.5	54	-8.5	Average
*	4874	42.36	-0.58	41.78	74	-32.22	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	102.23	3.71	105.94	-	-	Peak
-	2484.2	58.86	3.72	62.58	74	-11.42	Peak
@	2462	93.4	3.71	97.11	-	-	Average
-	2483.6	39.01	3.72	42.73	54	-11.27	Average
*	4924	41.06	-0.55	40.51	74	-33.49	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	104.14	3.71	107.85	-	-	Peak
-	2483.8	60.72	3.72	64.44	74	-9.56	Peak
@	2462	94.15	3.71	97.86	-	-	Average
-	2483.6	40.41	3.72	44.13	54	-9.87	Average
*	4924	42.43	-0.55	41.88	74	-32.12	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 12	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2467	100.56	3.72	104.28	-	-	Peak
-	2483.6	59.87	3.72	63.59	74	-10.41	Peak
@	2467	90.3	3.72	94.02	-	-	Average
-	2483.6	38.2	3.72	41.92	54	-12.08	Average
*	4934	38.02	-0.55	37.47	74	-36.53	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2467	100.62	3.72	104.34	-	-	Peak
-	2483.8	59.07	3.72	62.79	74	-11.21	Peak
@	2467	91.54	3.72	95.26	-	-	Average
-	2483.6	40.01	3.72	43.73	54	-10.27	Average
*	4934	39.18	-0.55	38.63	74	-35.37	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 13	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2472	95.4	3.72	99.12	-	-	Peak
-	2484	58.86	3.72	62.58	74	-11.42	Peak
@	2472	86.23	3.72	89.95	-	-	Average
-	2483.6	37.88	3.72	41.6	54	-12.4	Average
*	4944	37.98	-0.54	37.44	74	-36.56	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2472	97.91	3.72	101.63	-	-	Peak
-	2483.6	62.76	3.72	66.48	74	-7.52	Peak
@	2472	87.99	3.72	91.71	-	-	Average
-	2483.6	38.61	3.72	42.33	54	-11.67	Average
*	4944	38.31	-0.54	37.77	74	-36.23	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 3	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2388	62.89	3.83	66.72	74	-7.28	Peak
@	2422	97.82	3.78	101.6	-	-	Peak
-	2388	41.73	3.83	45.56	54	-8.44	Average
@	2422	88.89	3.78	92.67	-	-	Average
*	4844	37.93	-0.6	37.33	74	-36.67	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2383.4	61.02	3.83	64.85	74	-9.15	Peak
@	2422	98.85	3.78	102.63	-	-	Peak
-	2389.8	42.77	3.84	46.61	54	-7.39	Average
@	2422	90.34	3.78	94.12	-	-	Average
*	4844	37.79	-0.6	37.19	74	-36.81	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2375.2	57.57	3.82	61.39	74	-12.61	Peak
@	2437	100.69	3.74	104.43	-	-	Peak
-	2484.8	60.49	3.72	64.21	74	-9.79	Peak
-	2390	39.41	3.84	43.25	54	-10.75	Average
@	2437	89.67	3.74	93.41	-	-	Average
-	2483.6	39.87	3.72	43.59	54	-10.41	Average
*	4874	38.62	-0.58	38.04	74	-35.96	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390	60.53	3.84	64.37	74	-9.63	Peak
@	2437	101.87	3.74	105.61	-	-	Peak
-	2484.4	62.72	3.72	66.44	74	-7.56	Peak
-	2390	45.16	3.84	49	54	-5	Average
@	2437	92.68	3.74	96.42	-	-	Average
-	2484.2	46.64	3.72	50.36	54	-3.64	Average
*	4874	38.62	-0.58	38.04	74	-35.96	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 9	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2452	99.5	3.7	103.2	-	-	Peak
-	2484.2	65.53	3.72	69.25	74	-4.75	Peak
@	2452	90.16	3.7	93.86	-	-	Average
-	2484.8	41.66	3.72	45.38	54	-8.62	Average
*	4904	39.86	-0.56	39.3	74	-34.7	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2452	100.72	3.7	104.42	-	-	Peak
-	2484.2	67.21	3.72	70.93	74	-3.07	Peak
@	2452	91.85	3.7	95.55	-	-	Average
-	2486.2	46.96	3.73	50.69	54	-3.31	Average
*	4904	38.98	-0.56	38.42	74	-35.58	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 10	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2457	98.31	3.71	102.02	-	-	Peak
-	2486.6	63.03	3.73	66.76	74	-7.24	Peak
@	2457	89.04	3.71	92.75	-	-	Average
-	2483.6	44.63	3.72	48.35	54	-5.65	Average
*	4914	39.29	-0.56	38.73	74	-35.27	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2457	99.11	3.71	102.82	-	-	Peak
-	2486.4	66.95	3.73	70.68	74	-3.32	Peak
@	2457	89.01	3.71	92.72	-	-	Average
-	2484.2	47.25	3.72	50.97	54	-3.03	Average
*	4914	38.61	-0.56	38.05	74	-35.95	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 26.5 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	94.95	3.71	98.66	-	-	Peak
-	2483.6	66.04	3.72	69.76	74	-4.24	Peak
@	2462	85.79	3.71	89.5	-	-	Average
-	2483.6	41.14	3.72	44.86	54	-9.14	Average
*	4924	37.98	-0.55	37.43	74	-36.57	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462	94.28	3.71	97.99	-	-	Peak
-	2483.8	65.39	3.72	69.11	74	-4.89	Peak
@	2462	86.55	3.71	90.26	-	-	Average
-	2483.6	43.41	3.72	47.13	54	-6.87	Average
*	4924	39.44	-0.55	38.89	74	-35.11	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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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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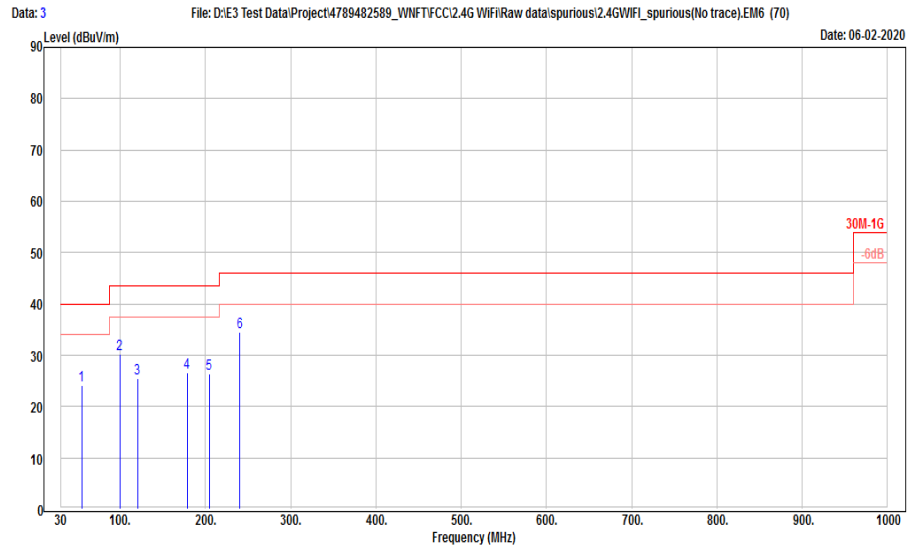


30 MHz ~ 1 GHz Data

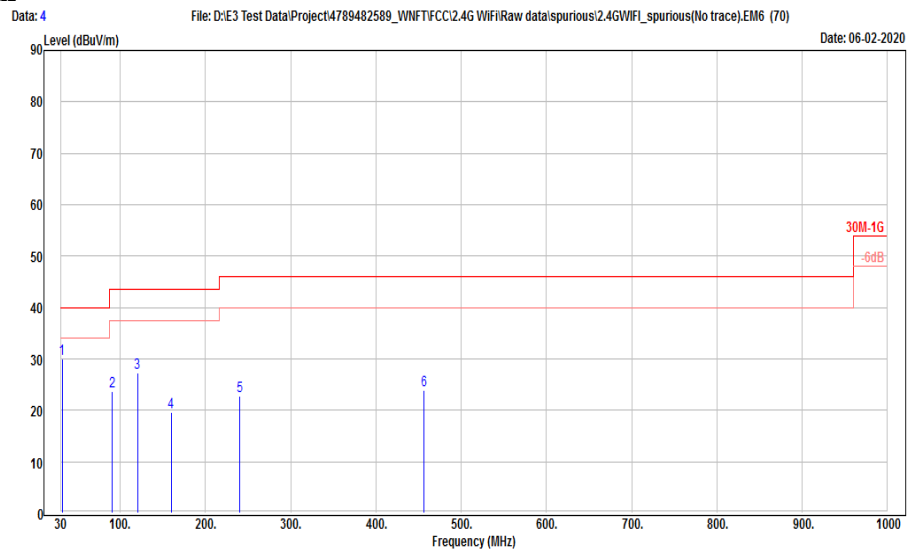
802.11g

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	30 MHz ~ 1 GHz

Horizontal



Vertical



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Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	55.22	39.34	-15.09	24.25	40	-15.75	Peak
-	99.84	50.1	-19.78	30.32	43.5	-13.18	Peak
-	120.21	42.88	-17.47	25.41	43.5	-18.09	Peak
-	178.41	42.02	-15.51	26.51	43.5	-16.99	Peak
-	204.6	44.09	-17.6	26.49	43.5	-17.01	Peak
-	240.49	50.39	-15.78	34.61	46	-11.39	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	31.94	46.11	-16.04	30.07	40	-9.93	Peak
-	91.11	44.84	-21.21	23.63	43.5	-19.87	Peak
-	120.21	44.85	-17.47	27.38	43.5	-16.12	Peak
-	159.98	34.53	-14.88	19.65	43.5	-23.85	Peak
-	240.49	38.49	-15.78	22.71	46	-23.29	Peak
-	456.8	33.57	-9.67	23.9	46	-22.1	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. The peak result complies with QP limit, QP result is deemed to comply with QP limit.
5. The other emission levels were very low against the limit.

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9.6. AC Power Line Conducted Emission

Requirements

Frequency (MHz)	Conducted limit (dB μ 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.

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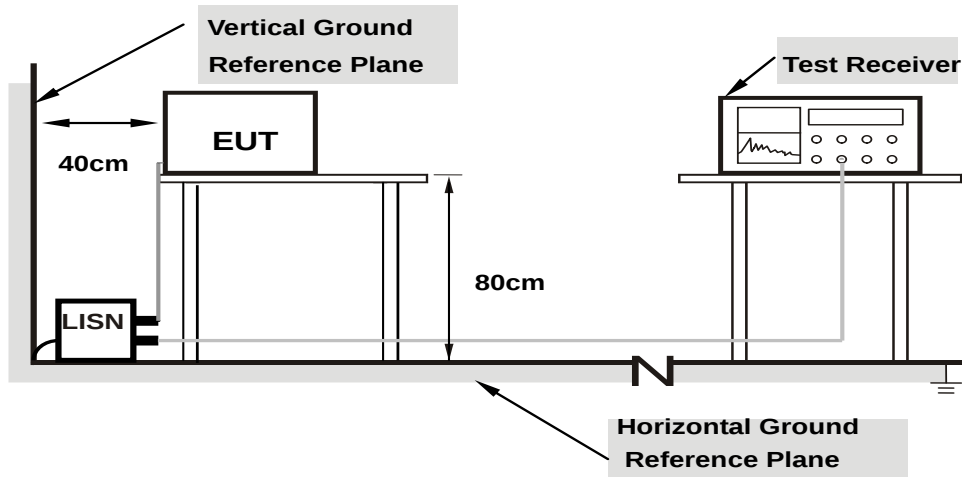
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Test Setup



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

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

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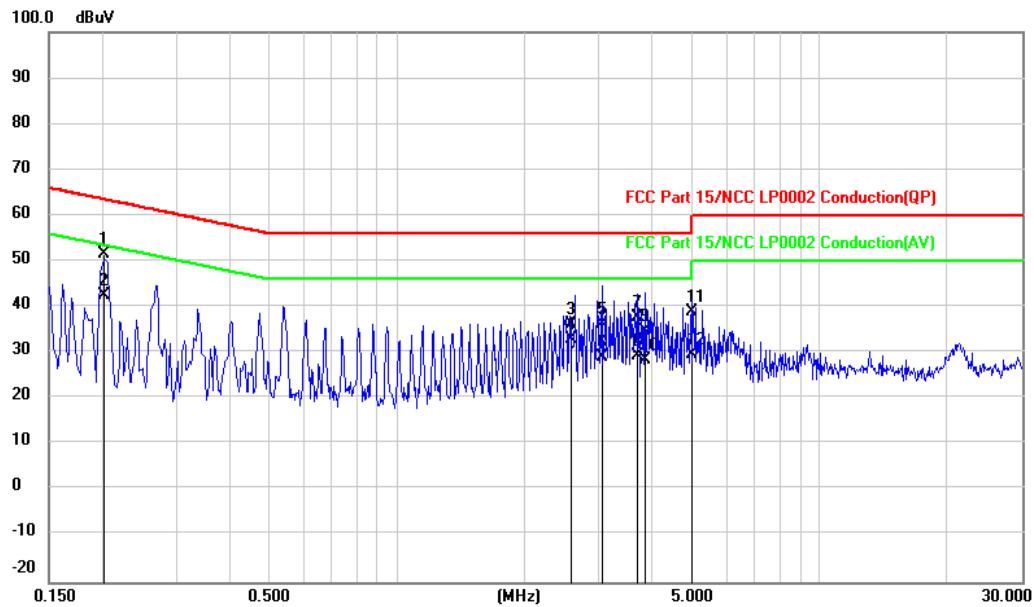


Test Data

802.11g

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	150 kHz ~ 30 MHz

Phase of Power : Line (L)



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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.2017	32.21	19.47	51.68	63.54	-11.86	QP
2	0.2017	23.06	19.47	42.53	53.54	-11.01	AVG
3	2.5708	16.71	19.54	36.25	56.00	-19.75	QP
4	2.5708	13.36	19.54	32.90	46.00	-13.10	AVG
5	3.0427	16.69	19.55	36.24	56.00	-19.76	QP
6	3.0427	9.42	19.55	28.97	46.00	-17.03	AVG
7	3.7188	18.23	19.58	37.81	56.00	-18.19	QP
8	3.7188	9.69	19.58	29.27	46.00	-16.73	AVG
9	3.8541	15.06	19.58	34.64	56.00	-21.36	QP
10	3.8541	8.73	19.58	28.31	46.00	-17.69	AVG
11	5.0040	19.33	19.61	38.94	60.00	-21.06	QP
12	5.0040	10.10	19.61	29.71	50.00	-20.29	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

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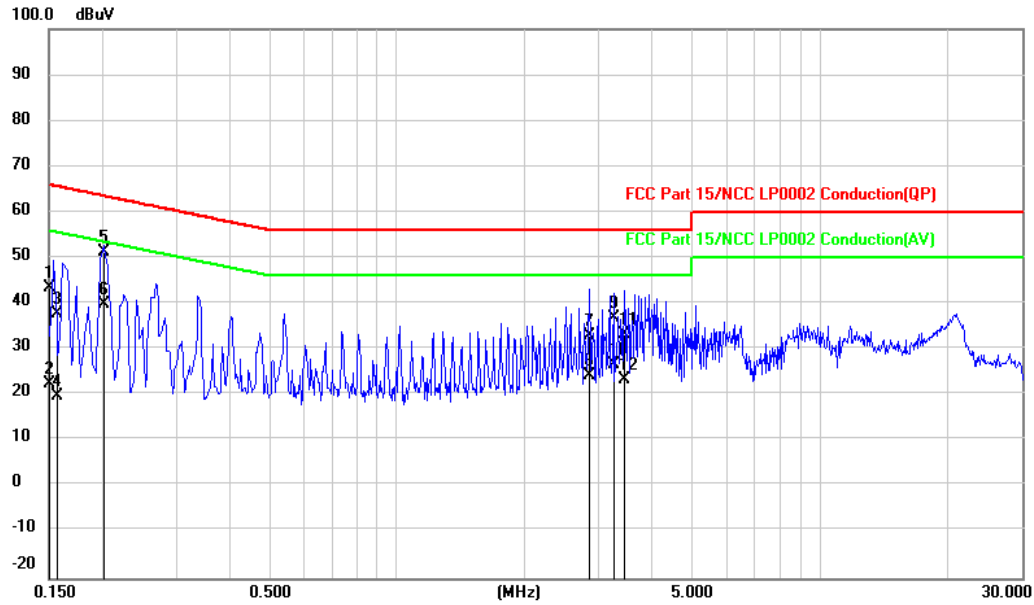
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Phase of Power : Neutral (N)



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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.1503	23.91	19.47	43.38	65.98	-22.60	QP
2	0.1503	2.92	19.47	22.39	55.98	-33.59	AVG
3	0.1573	18.38	19.47	37.85	65.61	-27.76	QP
4	0.1573	0.35	19.47	19.82	55.61	-35.79	AVG
5	0.2034	31.64	19.48	51.12	63.47	-12.35	QP
6	0.2034	20.23	19.48	39.71	53.47	-13.76	AVG
7	2.8413	13.53	19.56	33.09	56.00	-22.91	QP
8	2.8413	4.82	19.56	24.38	46.00	-21.62	AVG
9	3.2476	17.20	19.57	36.77	56.00	-19.23	QP
10	3.2476	7.02	19.57	26.59	46.00	-19.41	AVG
11	3.4507	13.60	19.58	33.18	56.00	-22.82	QP
12	3.4507	3.64	19.58	23.22	46.00	-22.78	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

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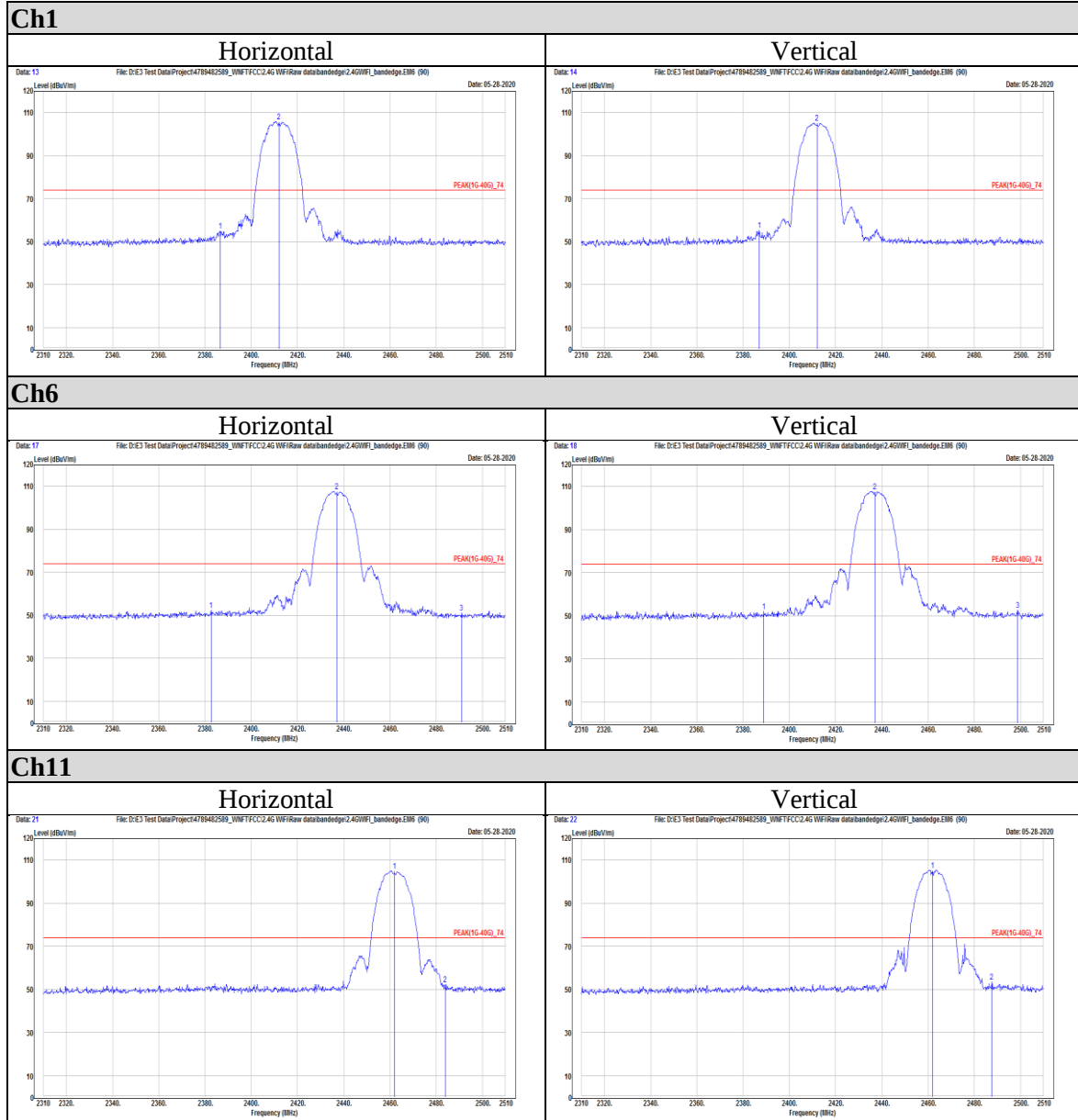
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Appendix I Radiated Band Edge Measurement

802.11b

Peak



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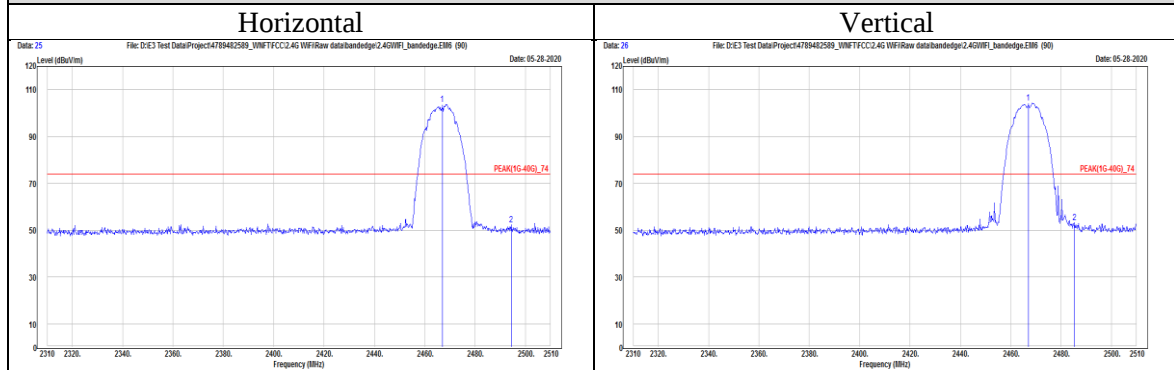
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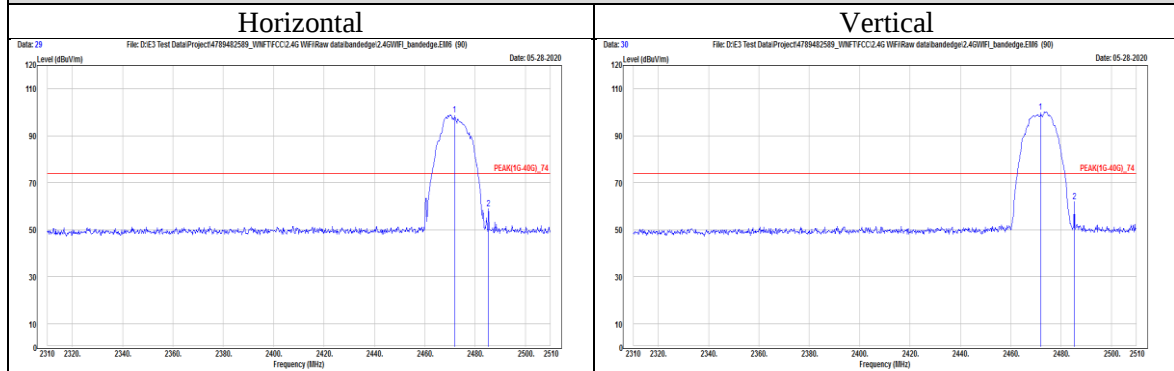


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Ch13



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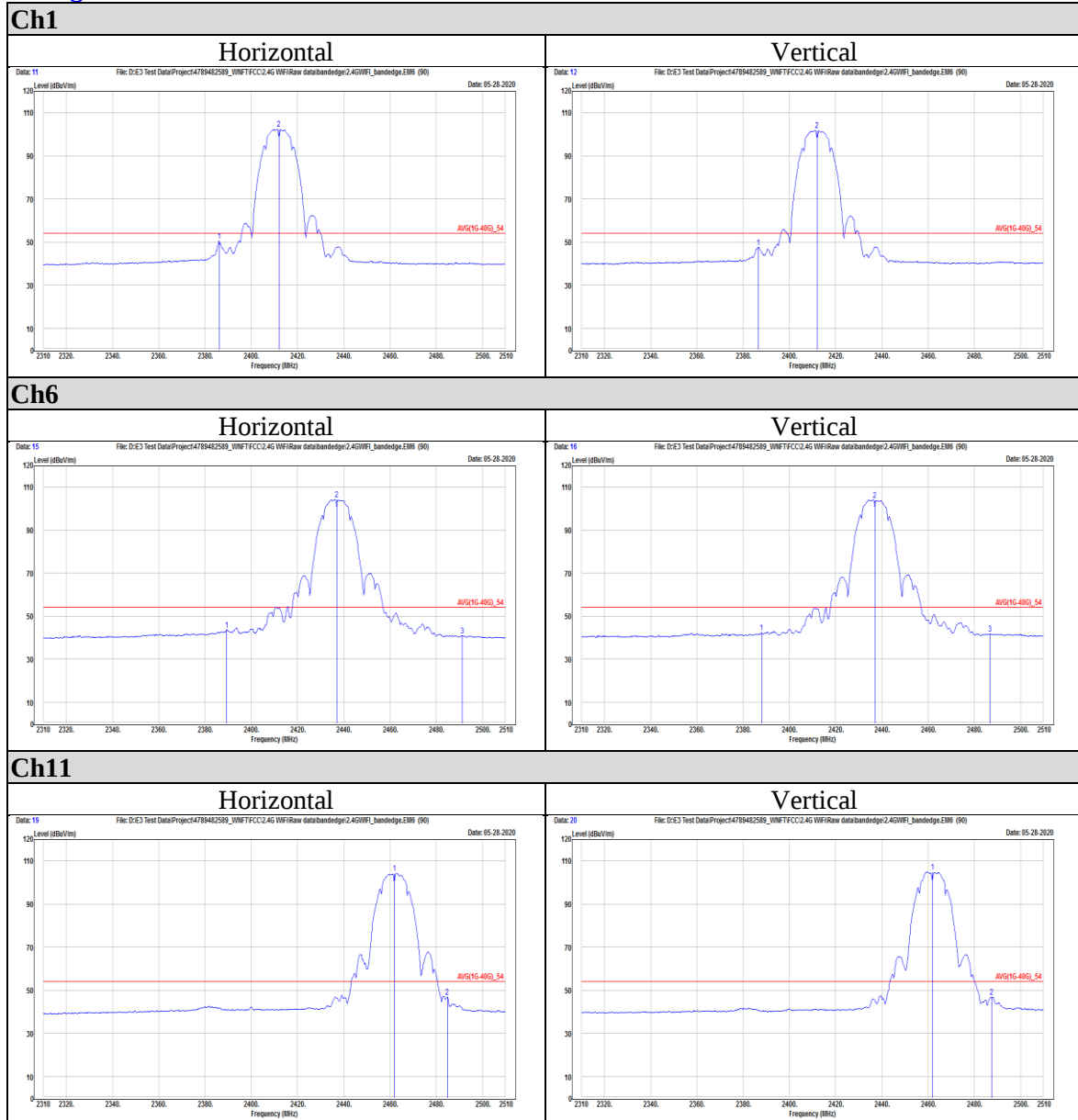
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Average



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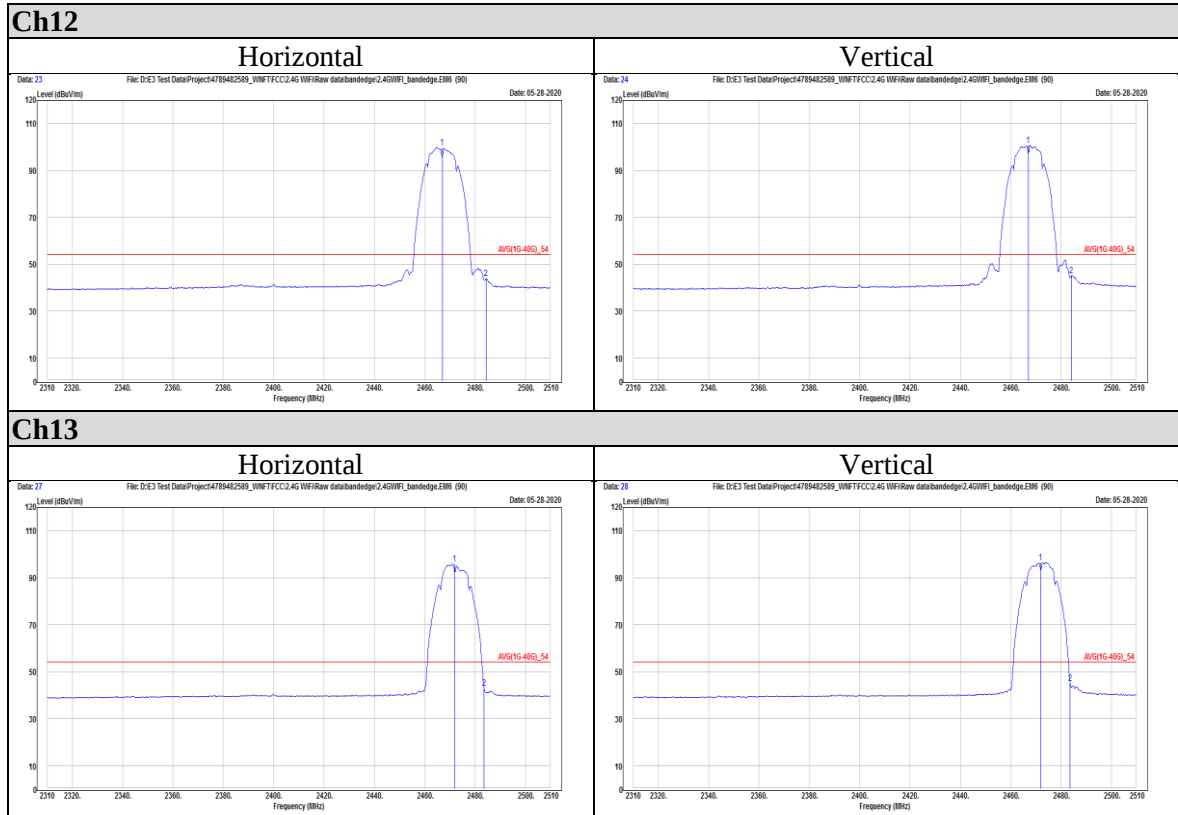
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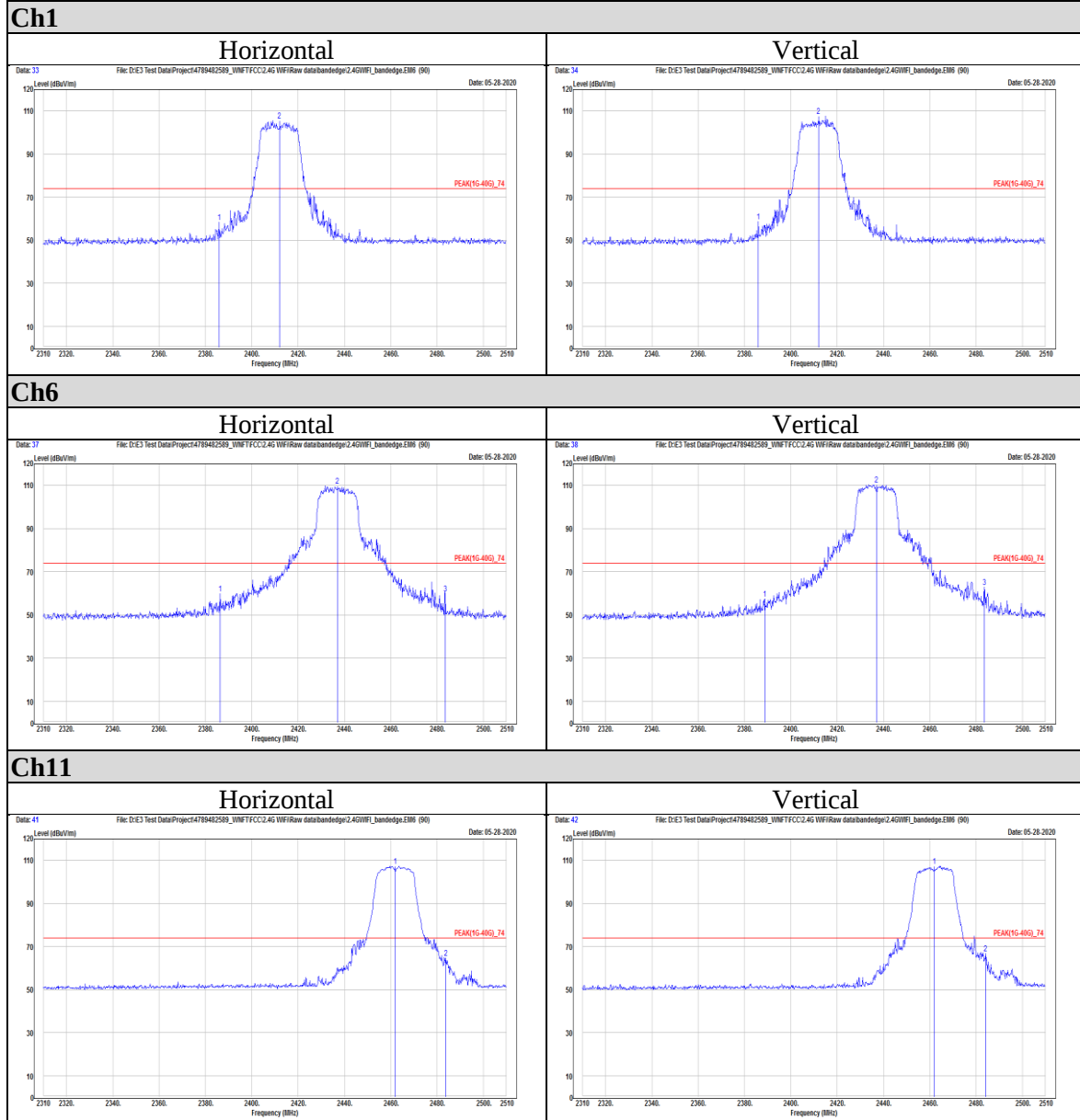
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802.11g

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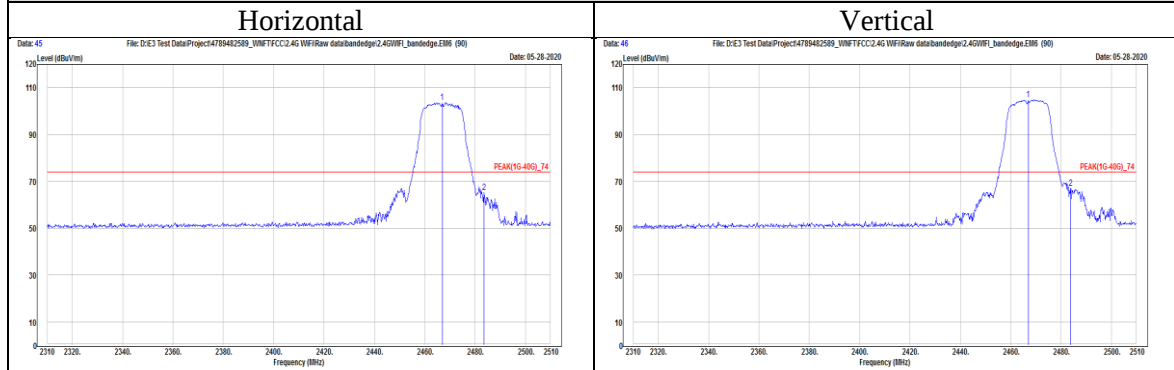
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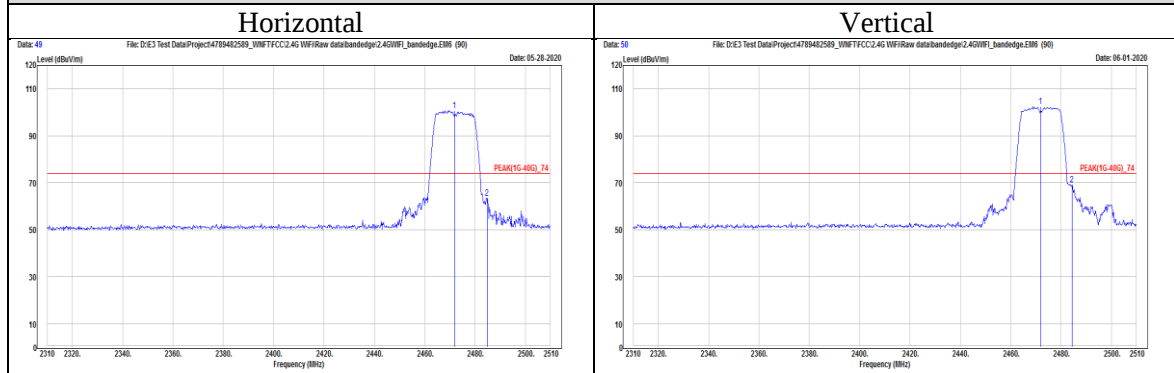


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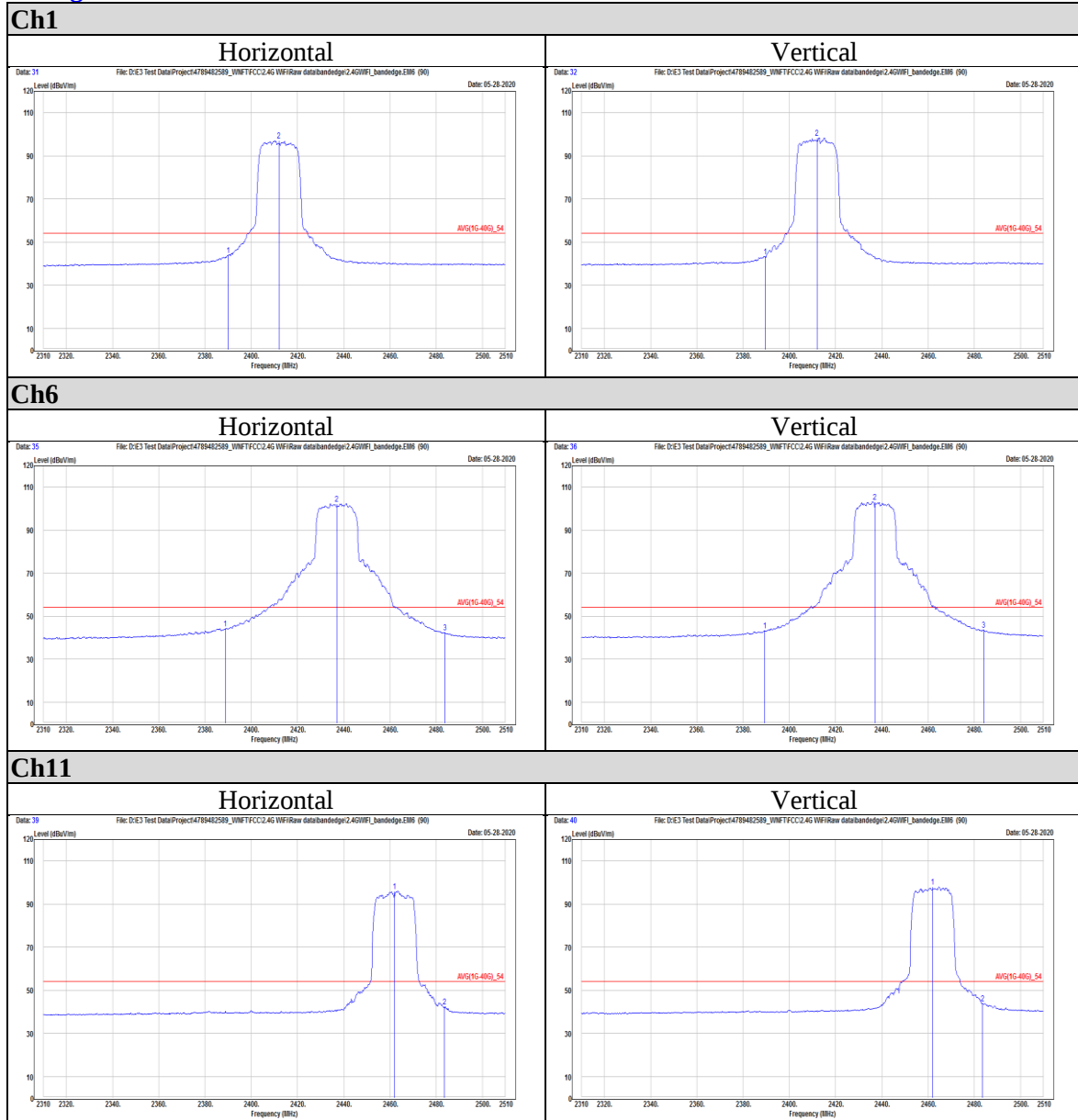
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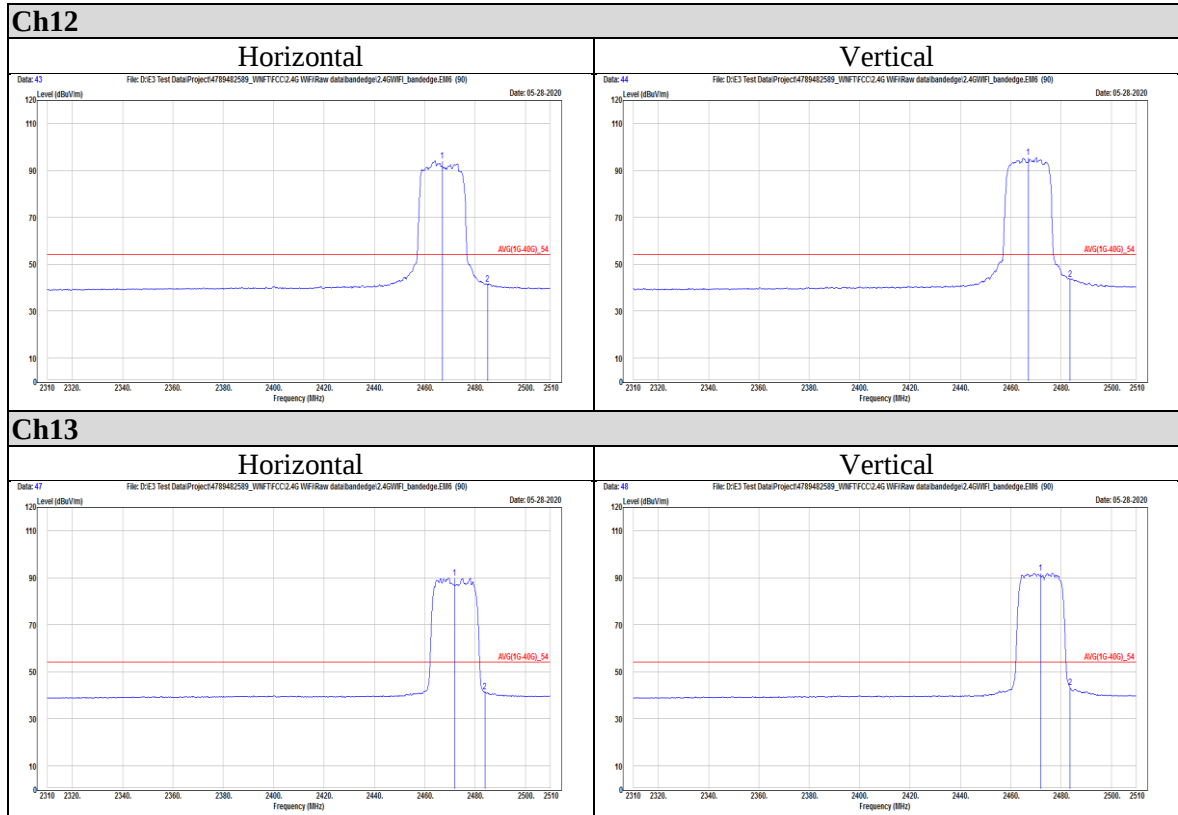
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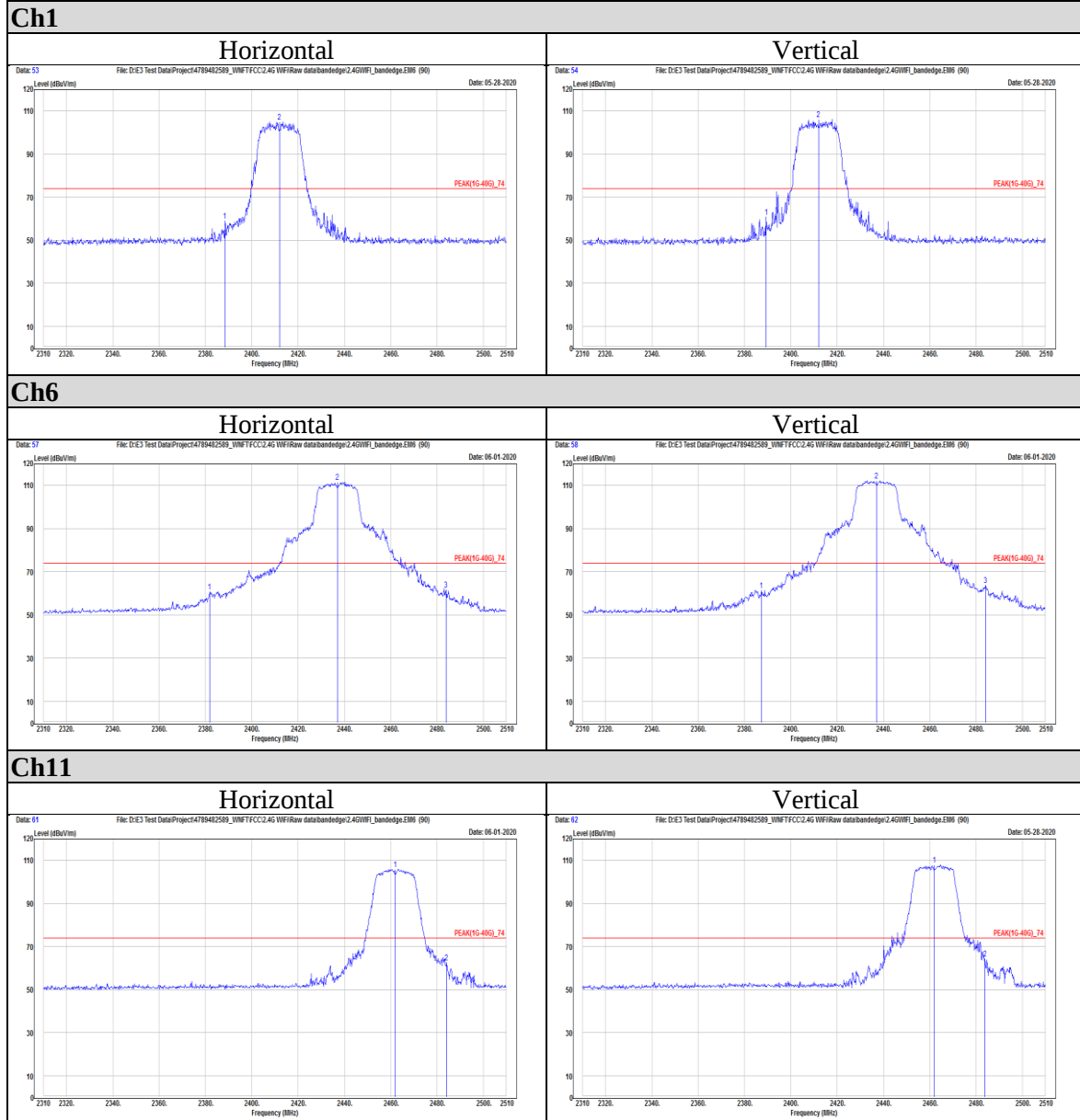
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802.11n (HT20)

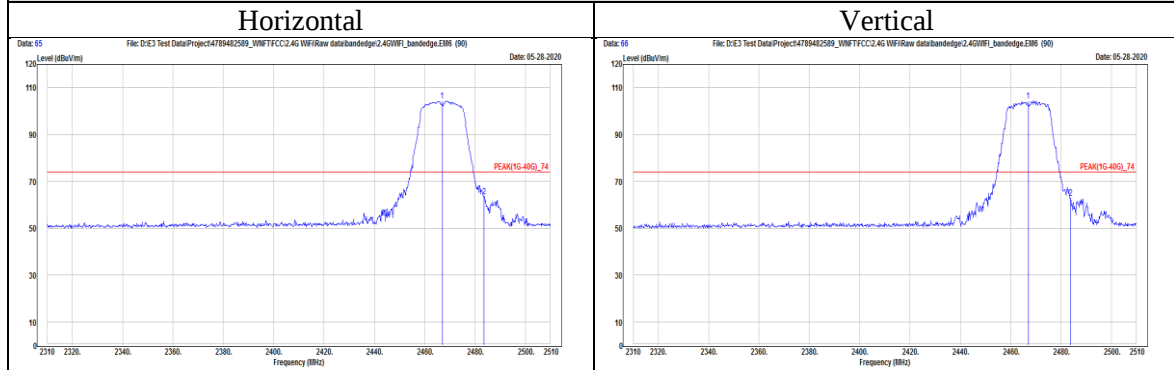
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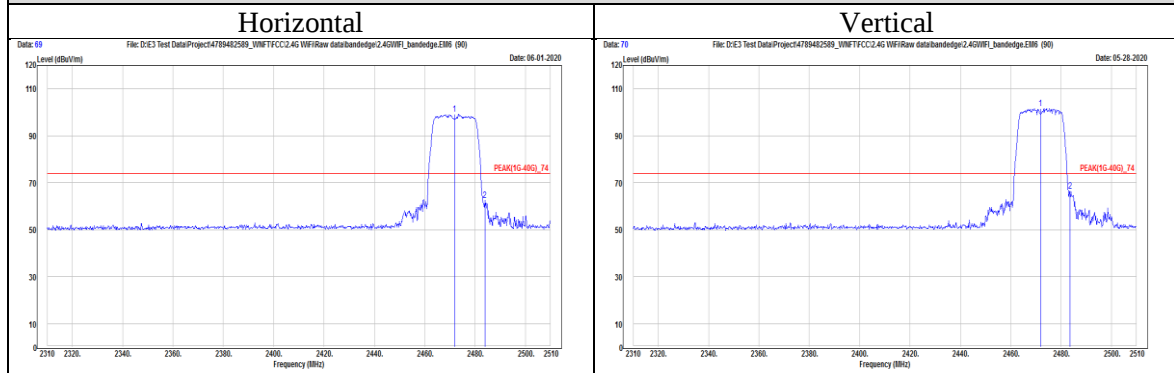


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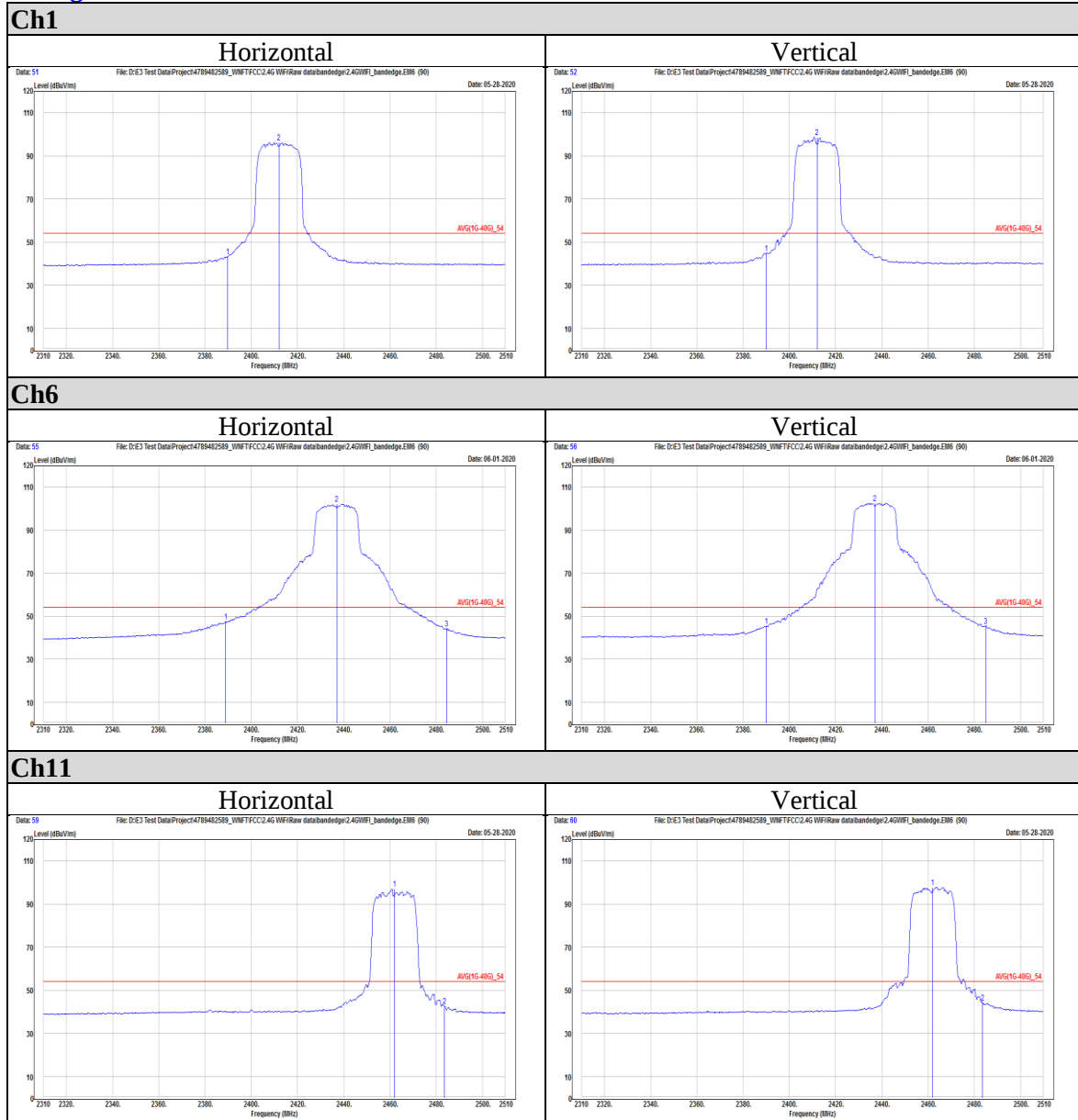
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Average



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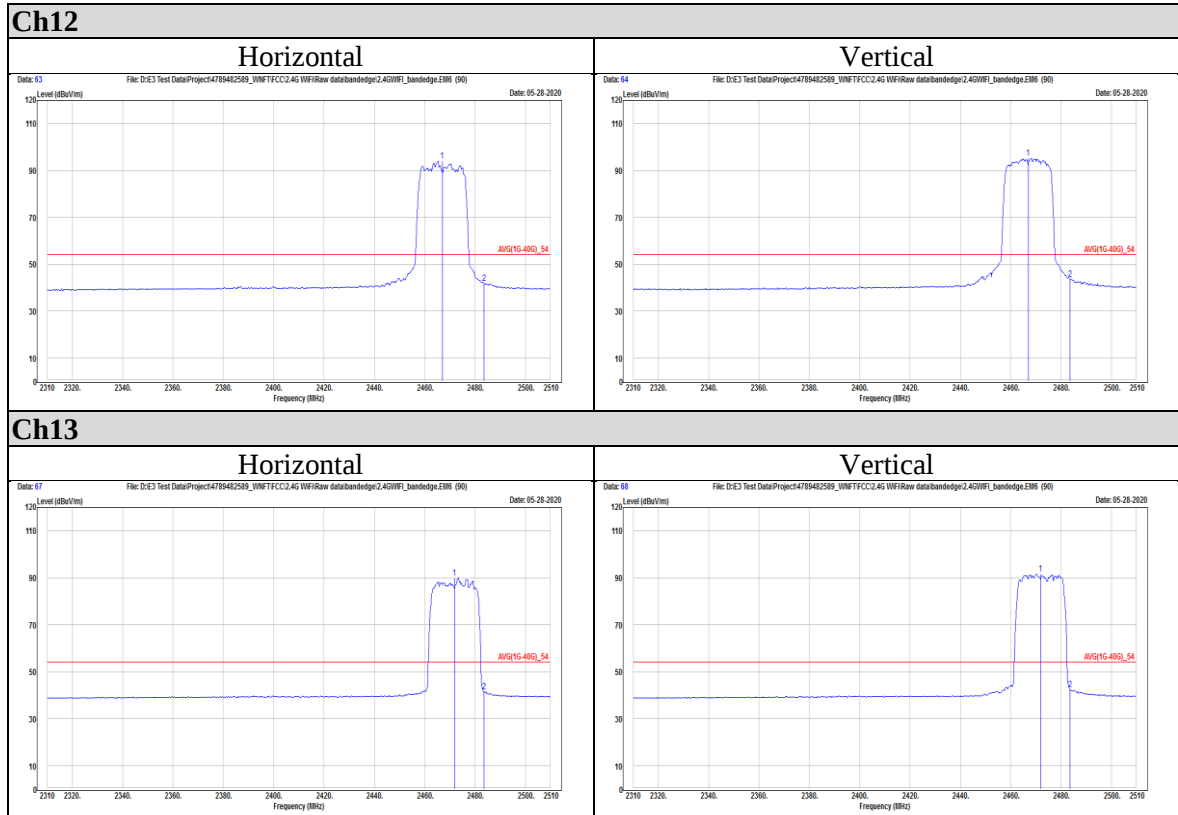
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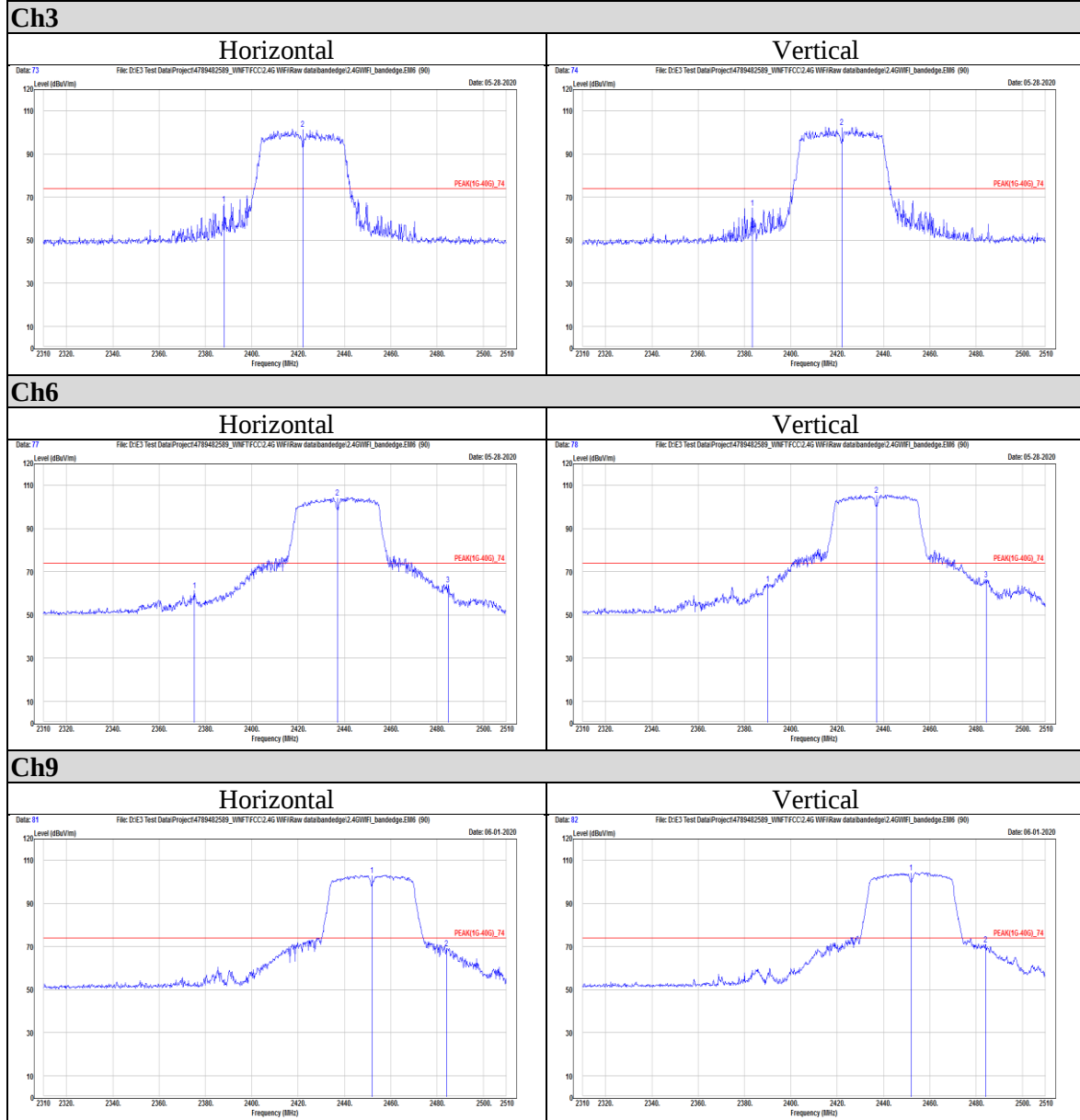
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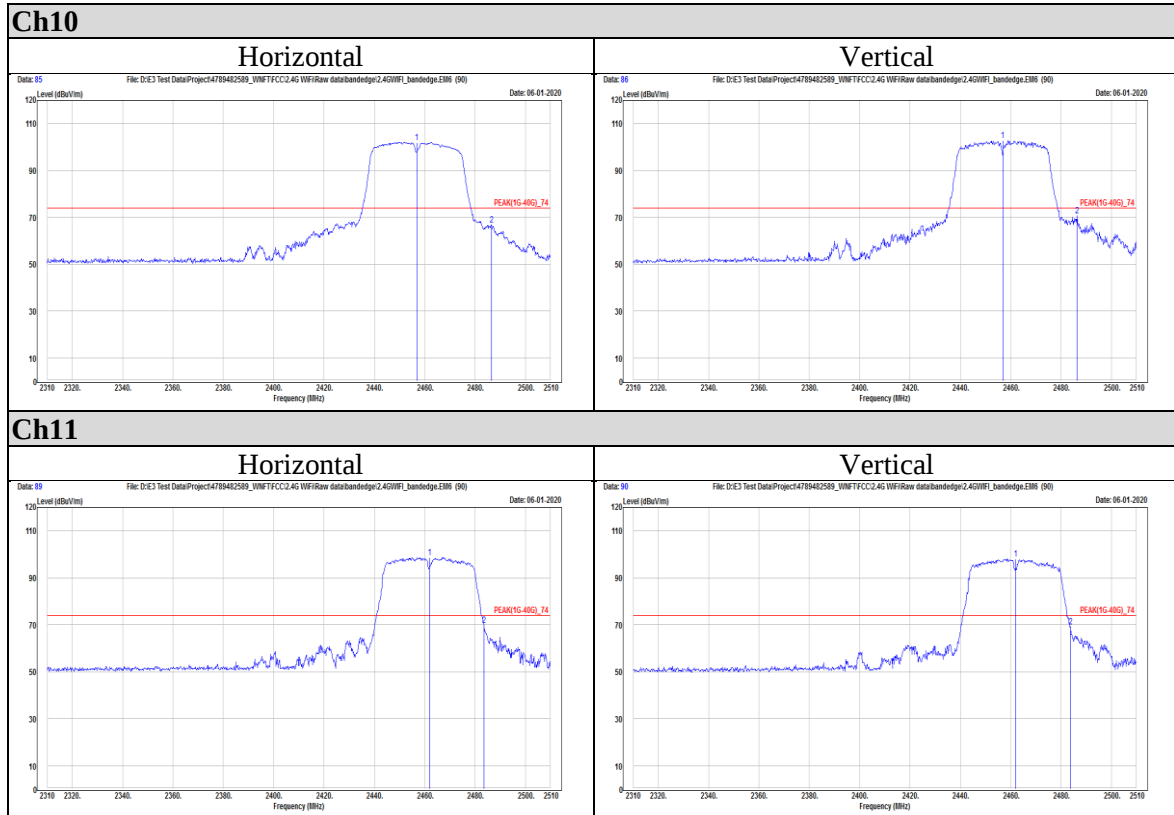
802.11n (HT40)

Peak





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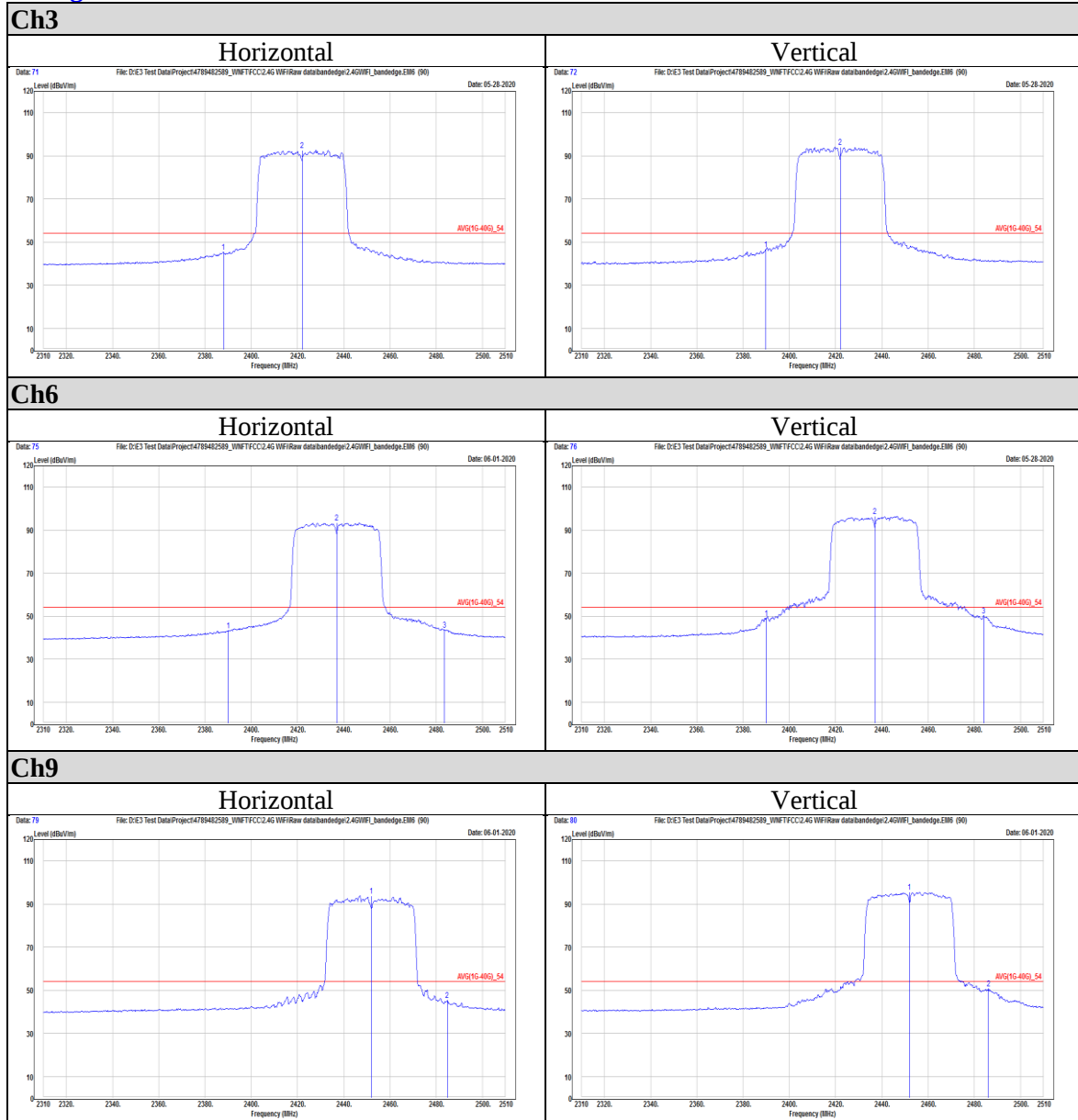
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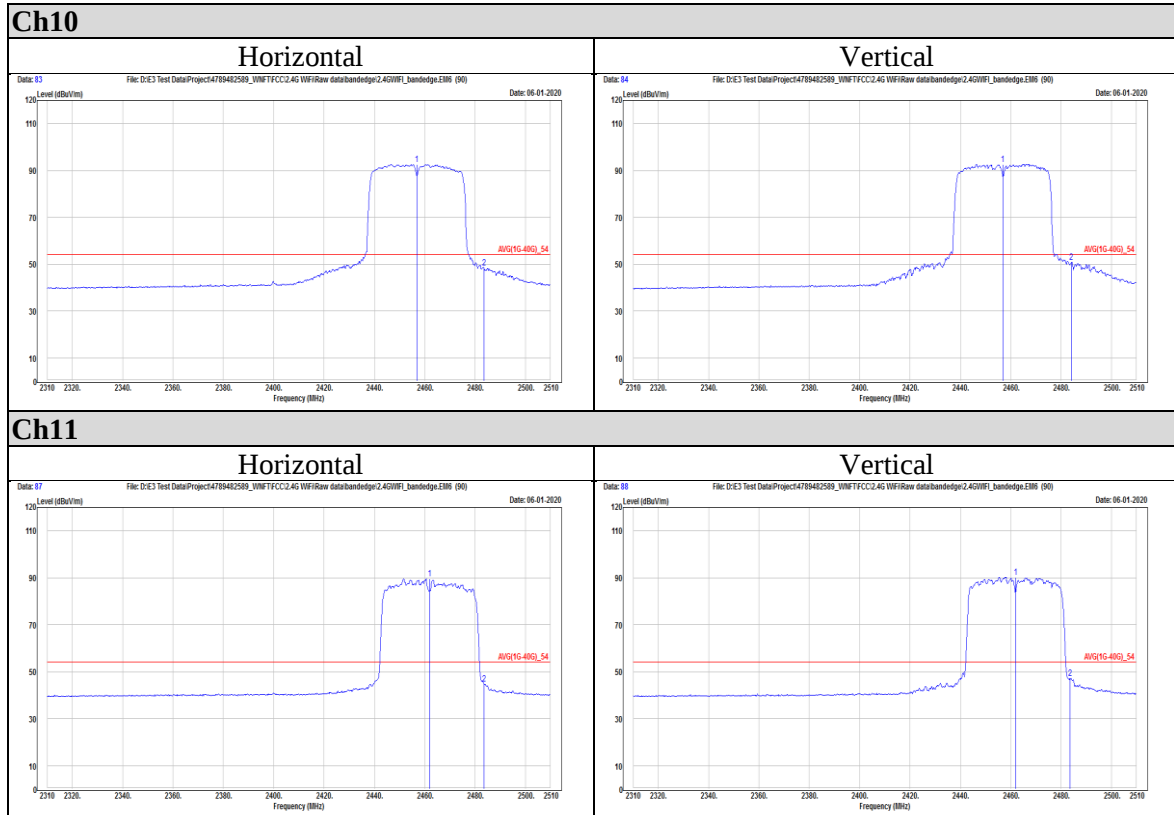
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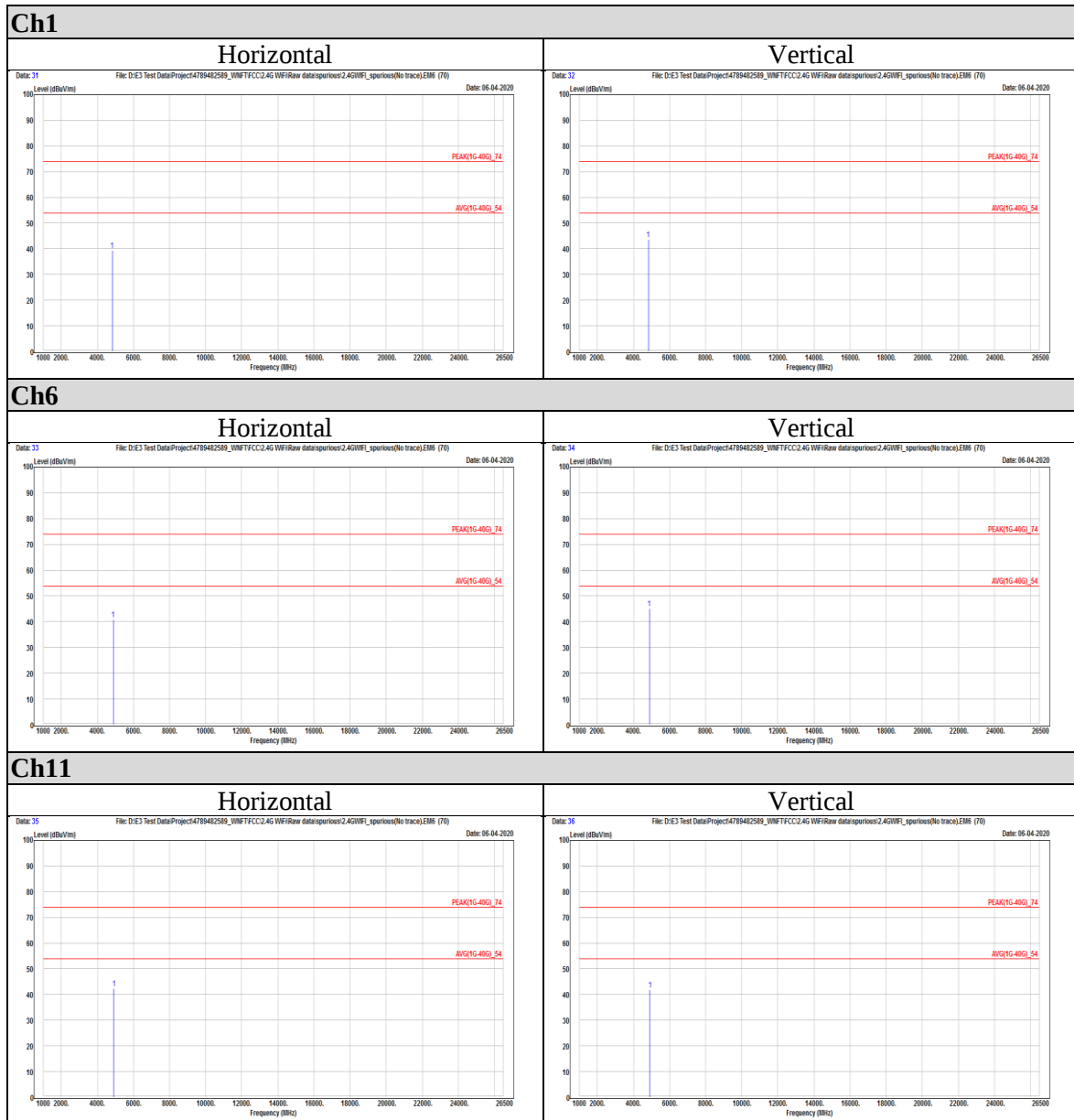
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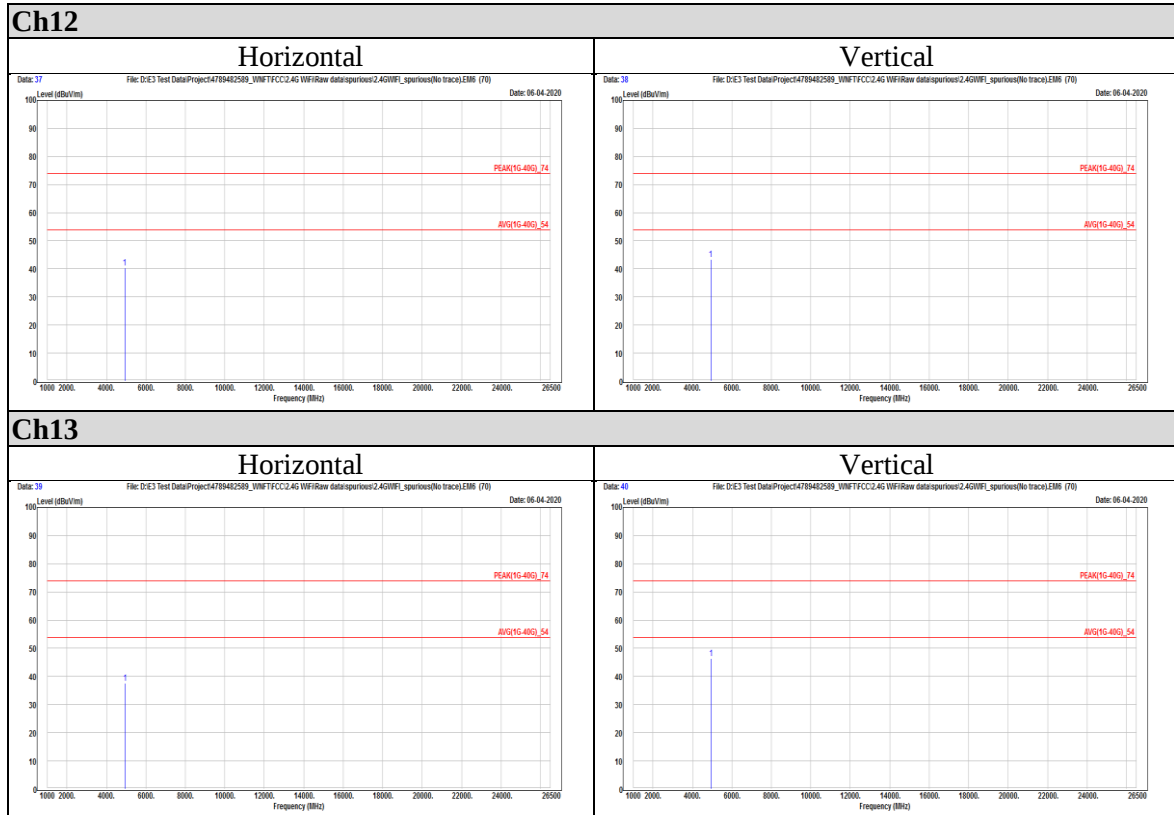
Appendix II Radiated Spurious Emission Measurement

802.11b





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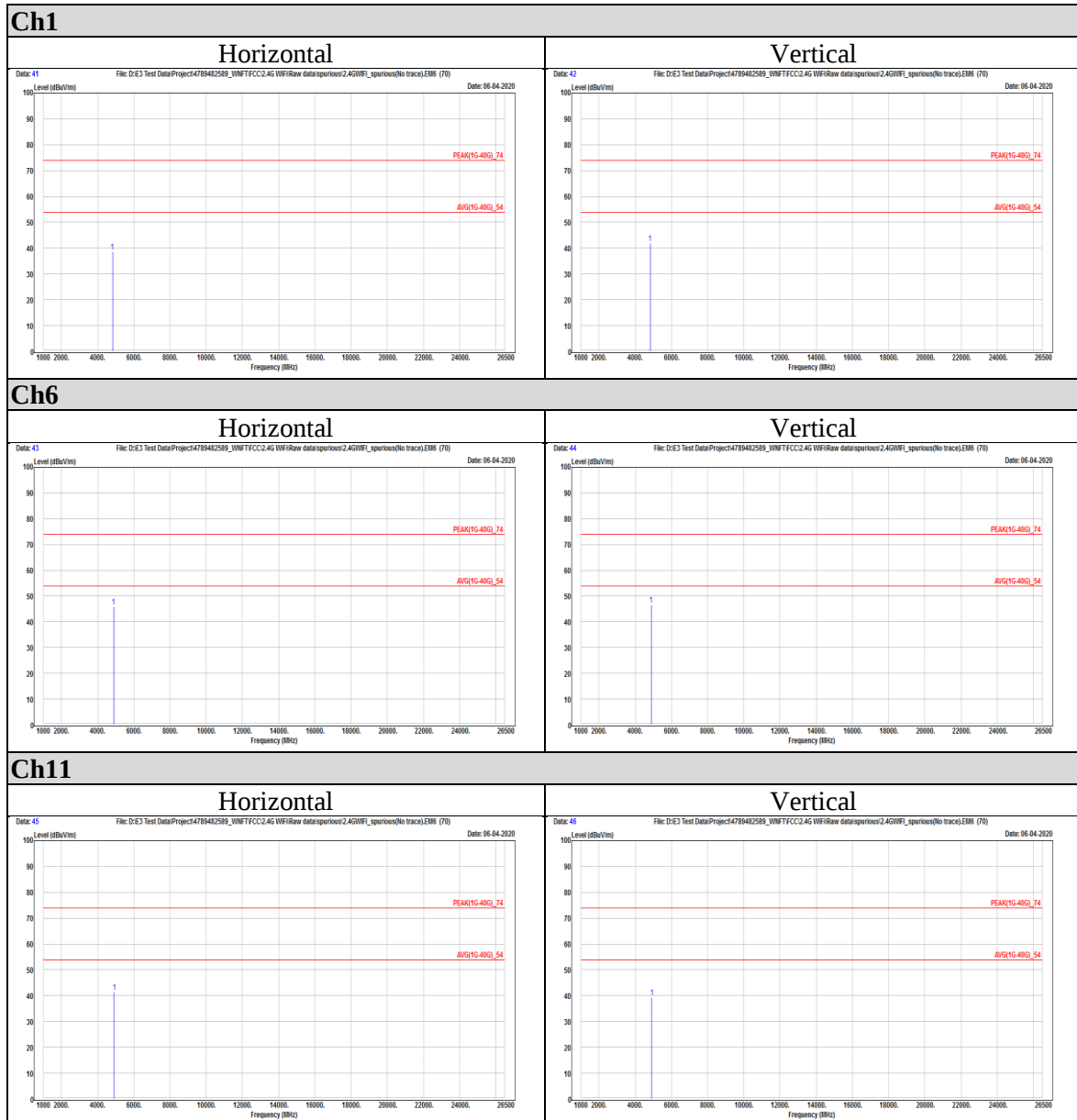
Facsimile (FAX) : +886-3-583-7948

Doc No: 17-EM-F0876 / 5.0



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802.11g



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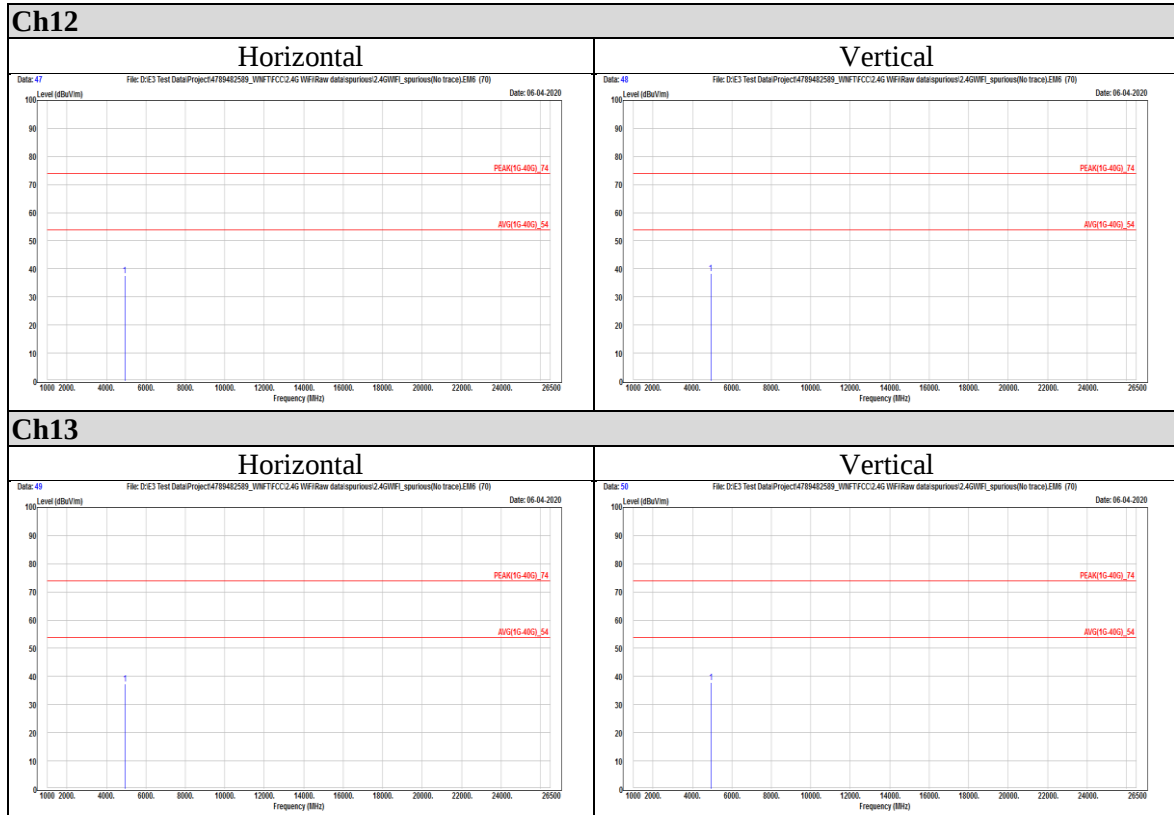
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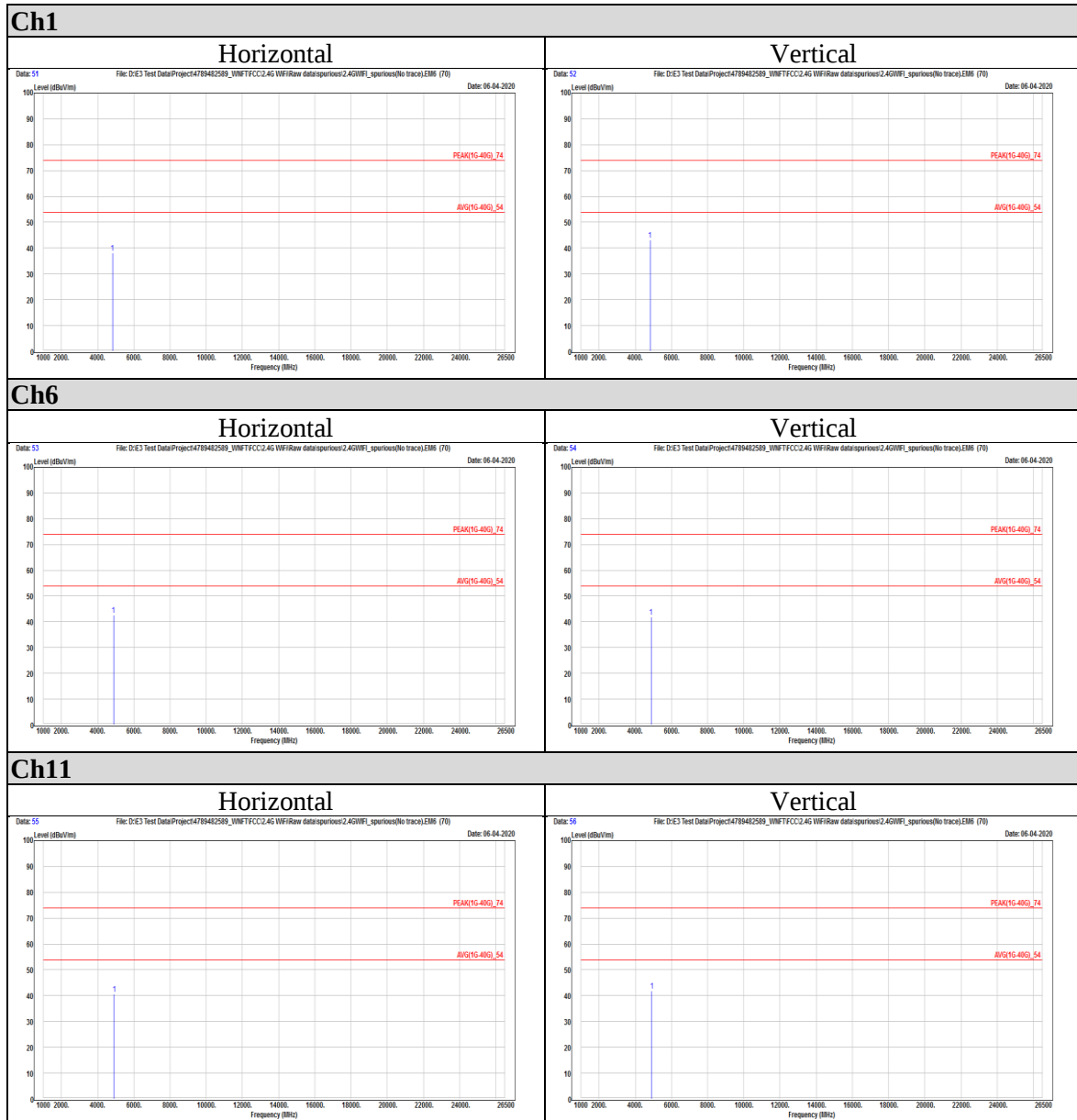
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802.11n (HT20)



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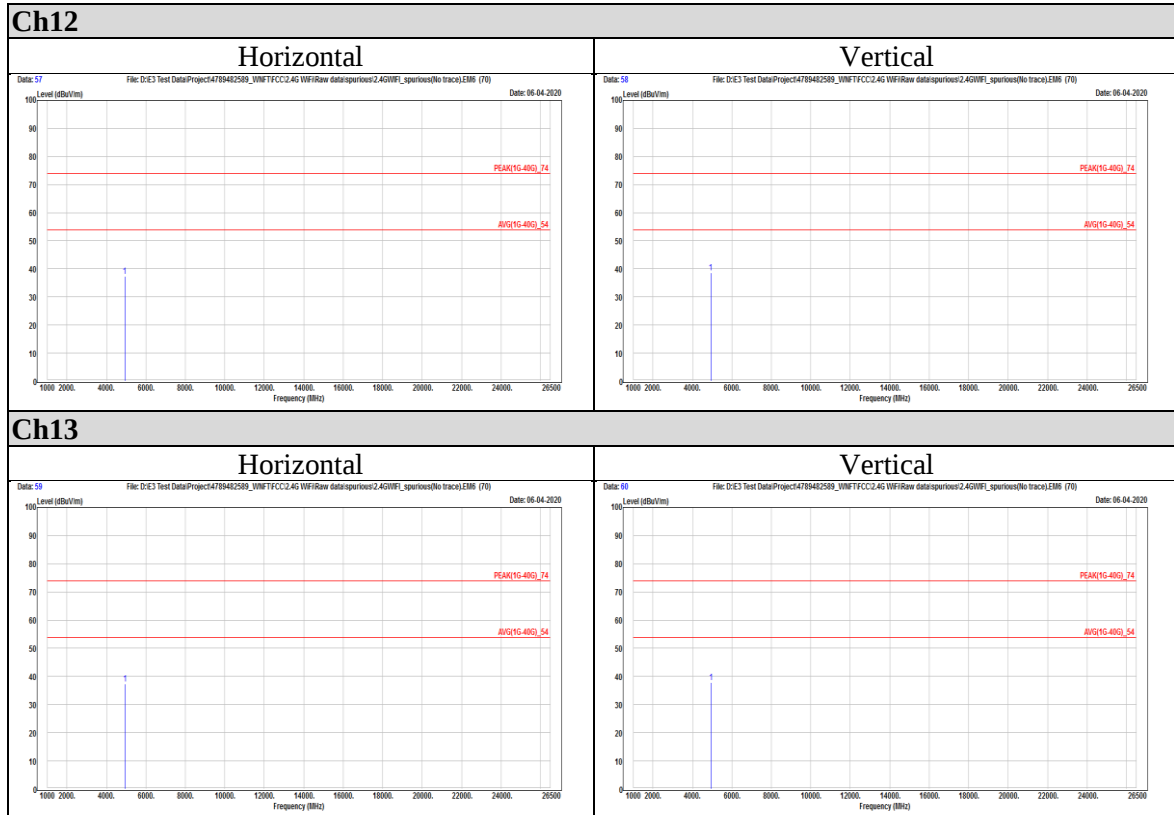
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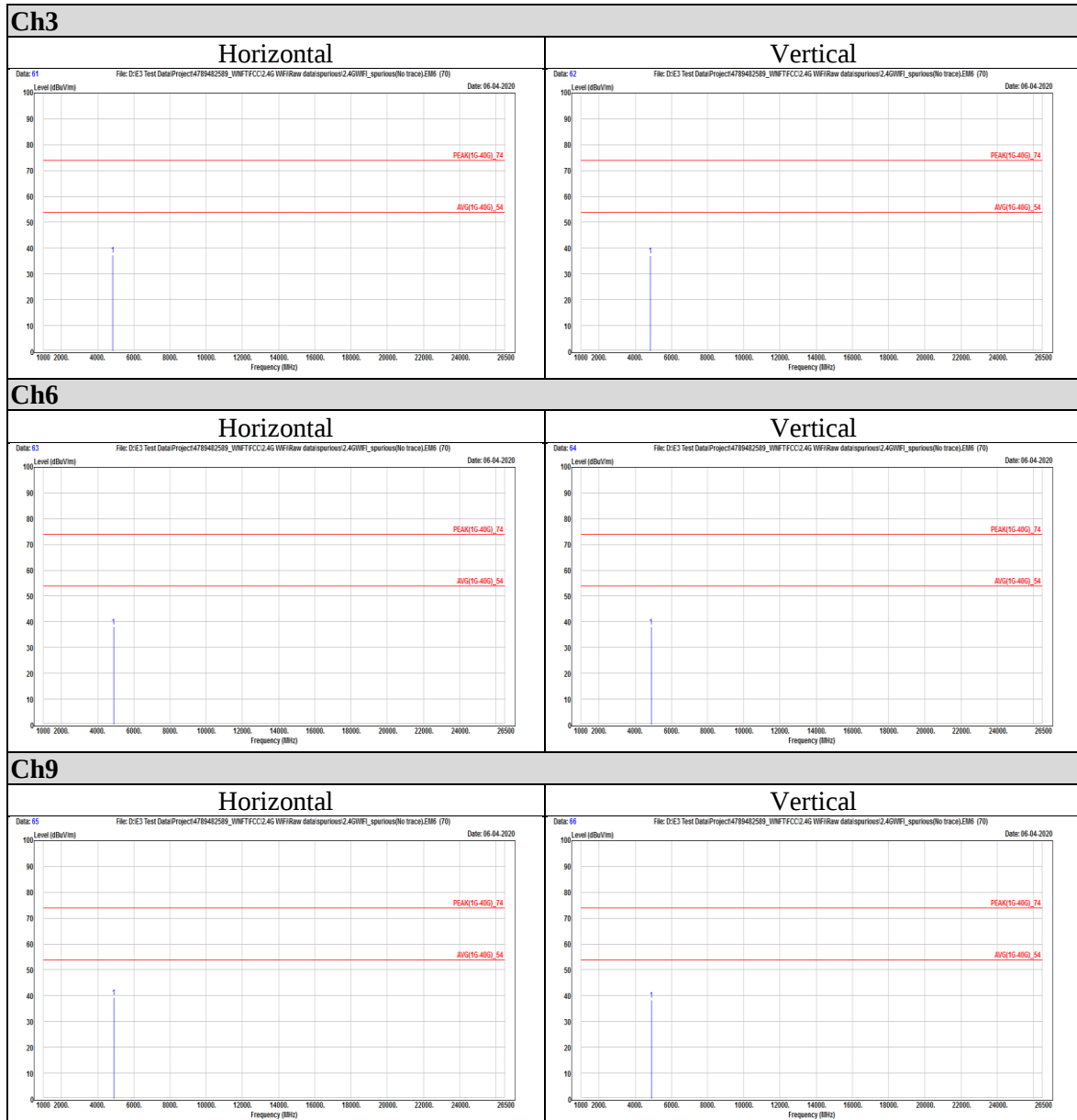
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802.11n (HT40)



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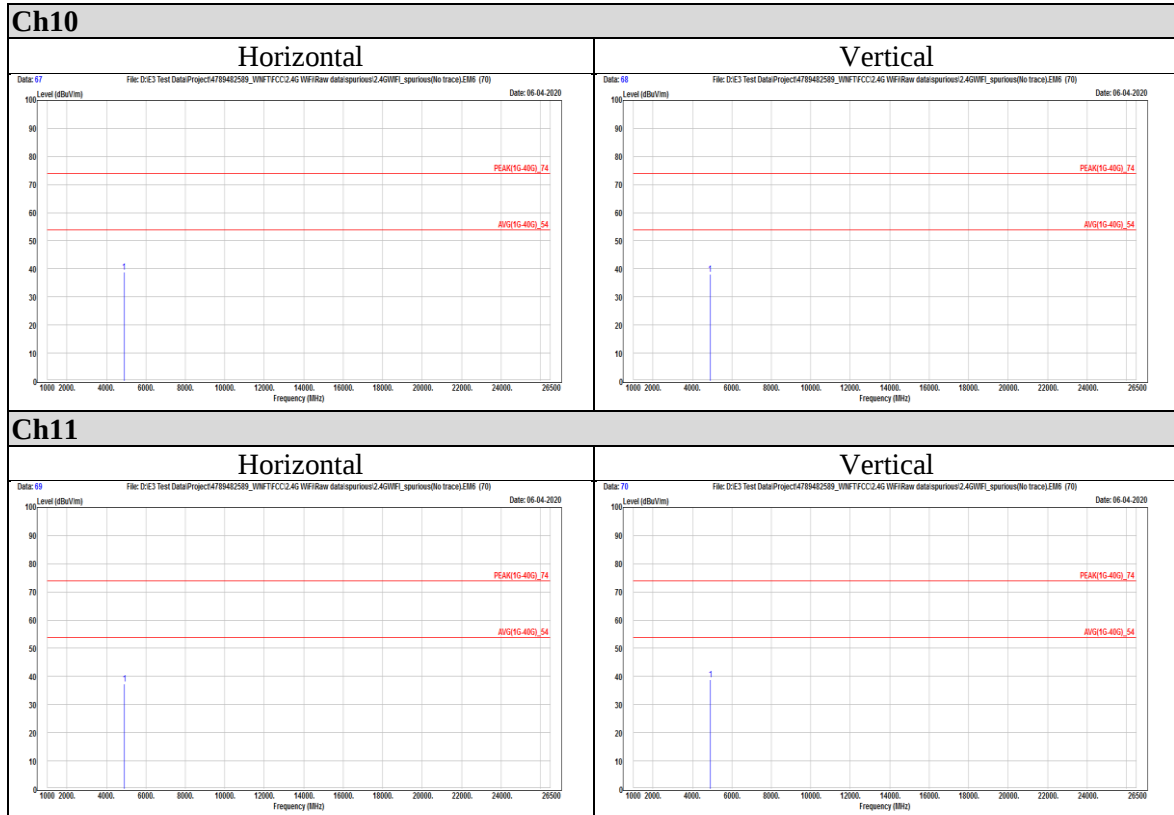
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