

Antenna 2**Test Mode:** TX / IEEE 802.11g(CH Low)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1621.000	50.95	-6.65	44.30	74.00	-29.70	V	Peak
3061.000	47.37	-1.26	46.11	74.00	-27.89	V	Peak
3754.000	46.29	0.55	46.84	74.00	-27.16	V	Peak
4825.000	57.37	4.41	61.78	74.00	-12.22	V	Peak
4825.000	45.45	4.41	49.86	54.00	-4.14	V	AVG
5563.000	44.54	5.90	50.44	74.00	-23.56	V	Peak
7489.000	41.87	8.65	50.52	74.00	-23.48	V	Peak
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1297.000	51.68	-7.44	44.24	74.00	-29.76	H	Peak
3061.000	49.45	-1.26	48.19	74.00	-25.81	H	Peak
3187.000	48.96	-1.05	47.91	74.00	-26.09	H	Peak
3313.000	47.85	-0.83	47.02	74.00	-26.98	H	Peak
3754.000	47.85	0.55	48.40	74.00	-25.60	H	Peak
4816.000	57.21	4.38	61.59	74.00	-12.41	H	Peak
4816.000	45.16	4.38	49.54	54.00	-4.46	H	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Test Mode: TX / IEEE 802.11g (CH Mid)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1297.000	50.21	-7.44	42.77	74.00	-31.23	V	Peak
1711.000	52.48	-6.46	46.02	74.00	-27.98	V	Peak
3061.000	48.30	-1.26	47.04	74.00	-26.96	V	Peak
3754.000	47.14	0.55	47.69	74.00	-26.31	V	Peak
4879.000	57.63	4.59	62.22	74.00	-11.78	V	Peak
4879.000	41.67	4.59	46.26	54.00	-7.74	V	AVG
5563.000	43.67	5.90	49.57	74.00	-24.43	V	Peak
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1297.000	50.31	-7.44	42.87	74.00	-31.13	H	Peak
1711.000	51.59	-6.46	45.13	74.00	-28.87	H	Peak
3187.000	50.16	-1.05	49.11	74.00	-24.89	H	Peak
3754.000	47.51	0.55	48.06	74.00	-25.94	H	Peak
4870.000	58.43	4.56	62.99	74.00	-11.01	H	Peak
4870.000	44.98	4.56	49.54	54.00	-4.46	H	AVG
8110.000	41.70	9.59	51.29	74.00	-22.71	H	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Test Mode: TX / IEEE 802.11g (CH High)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1621.000	52.66	-6.65	46.01	74.00	-27.99	V	Peak
3187.000	48.22	-1.05	47.17	74.00	-26.83	V	Peak
3754.000	46.27	0.55	46.82	74.00	-27.18	V	Peak
4924.000	57.27	4.73	62.00	74.00	-12.00	V	Peak
4924.000	40.65	4.73	45.38	54.00	-8.62	V	AVG
5563.000	44.08	5.90	49.98	74.00	-24.02	V	Peak
8074.000	41.63	9.61	51.24	74.00	-22.76	V	Peak
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1297.000	49.87	-7.44	42.43	74.00	-31.57	H	Peak
3061.000	49.28	-1.26	48.02	74.00	-25.98	H	Peak
3187.000	50.27	-1.05	49.22	74.00	-24.78	H	Peak
3754.000	46.38	0.55	46.93	74.00	-27.07	H	Peak
4924.000	53.49	4.73	58.22	74.00	-15.78	H	Peak
4924.000	42.98	4.73	47.71	54.00	-6.29	H	AVG
7660.000	40.66	8.99	49.65	74.00	-24.35	H	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Combine with Antenna 0 and Antenna 1 and Antenna 2**Test Mode: TX / IEEE 802.11n HT20 MHz (CH Low)****Tested by: Darry Wu****Ambient temperature: 24°C Relative humidity: 52% RH Date: November 7, 2018**

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1621.000	53.14	-6.65	46.49	74.00	-27.51	V	Peak
3061.000	49.63	-1.26	48.37	74.00	-25.63	V	Peak
3187.000	48.02	-1.05	46.97	74.00	-27.03	V	Peak
3754.000	47.10	0.55	47.65	74.00	-26.35	V	Peak
4816.000	59.55	4.38	63.93	74.00	-10.07	V	Peak
4816.000	46.00	4.38	50.38	54.00	-3.62	V	AVG
5563.000	44.05	5.90	49.95	74.00	-24.05	V	Peak
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1621.000	52.96	-6.65	46.31	74.00	-27.69	H	Peak
1711.000	55.01	-6.46	48.55	74.00	-25.45	H	Peak
3061.000	50.15	-1.26	48.89	74.00	-25.11	H	Peak
3187.000	49.88	-1.05	48.83	74.00	-25.17	H	Peak
4825.000	61.63	4.41	66.04	74.00	-7.96	H	Peak
4825.000	47.35	4.41	51.76	54.00	-2.24	H	AVG
7237.000	51.56	8.16	59.72	74.00	-14.28	H	Peak
7237.000	42.22	8.16	50.38	54.00	-3.62	H	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Test Mode: TX / IEEE 802.11n HT20 MHz (CH Mid)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1720.000	51.88	-6.44	45.44	74.00	-28.56	V	Peak
3061.000	48.72	-1.26	47.46	74.00	-26.54	V	Peak
3754.000	46.04	0.55	46.59	74.00	-27.41	V	Peak
4879.000	58.78	4.59	63.37	74.00	-10.63	V	Peak
4879.000	47.66	4.59	52.25	54.00	-1.75	V	AVG
5563.000	42.71	5.90	48.61	74.00	-25.39	V	Peak
7309.000	46.68	8.30	54.98	74.00	-19.02	V	Peak
7309.000	40.83	8.30	49.13	54.00	-4.87	V	AVG
1711.000	58.17	-6.46	51.71	74.00	-22.29	H	Peak
3061.000	49.07	-1.26	47.81	74.00	-26.19	H	Peak
3187.000	49.54	-1.05	48.49	74.00	-25.51	H	Peak
3754.000	45.71	0.55	46.26	74.00	-27.74	H	Peak
4870.000	60.06	4.56	64.62	74.00	-9.38	H	Peak
4870.000	47.70	4.56	52.26	54.00	-1.74	H	AVG
7300.000	50.54	8.29	58.83	74.00	-15.17	H	Peak
7300.000	42.10	8.29	50.39	54.00	-3.61	H	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Test Mode: TX / EEE 802.11n HT20 MHz (CH High)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1711.000	60.43	-6.46	53.97	74.00	-20.03	V	Peak
1711.000	58.67	-6.46	52.21	54.00	-1.79	V	AVG
3061.000	47.72	-1.26	46.46	74.00	-27.54	V	Peak
3754.000	47.84	0.55	48.39	74.00	-25.61	V	Peak
4924.000	57.24	4.73	61.97	74.00	-12.03	V	Peak
4924.000	46.68	4.73	51.41	54.00	-2.59	V	AVG
5689.000	42.89	5.95	48.84	74.00	-25.16	V	Peak
7381.000	44.00	8.44	52.44	74.00	-21.56	V	Peak
7381.000	42.19	8.44	50.63	54.00	-3.37	V	AVG
1297.000	50.56	-7.44	43.12	74.00	-30.88	H	Peak
3061.000	49.03	-1.26	47.77	74.00	-26.23	H	Peak
3187.000	49.18	-1.05	48.13	74.00	-25.87	H	Peak
3754.000	45.97	0.55	46.52	74.00	-27.48	H	Peak
4924.000	57.78	4.73	62.51	74.00	-11.49	H	Peak
4924.000	47.78	4.73	52.51	54.00	-1.49	H	AVG
7381.000	46.05	8.44	54.49	74.00	-19.51	H	Peak
7381.000	37.73	8.44	46.17	54.00	-7.83	H	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Combine with Antenna 0 and Antenna 1 and Antenna 2**Test Mode:** TX/ IEEE 802.11n HT40 MHz (CH Low)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1468.000	54.41	-6.94	47.47	74.00	-26.53	V	Peak
3061.000	49.54	-1.26	48.28	74.00	-25.72	V	Peak
3754.000	46.39	0.55	46.94	74.00	-27.06	V	Peak
4843.000	58.82	4.47	63.29	74.00	-10.71	V	Peak
4843.000	47.73	4.47	52.20	54.00	-1.80	V	AVG
5563.000	44.02	5.90	49.92	74.00	-24.08	V	Peak
7282.000	43.22	8.25	51.47	74.00	-22.53	V	Peak
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1297.000	52.42	-7.44	44.98	74.00	-29.02	H	Peak
3061.000	49.81	-1.26	48.55	74.00	-25.45	H	Peak
3187.000	50.09	-1.05	49.04	74.00	-24.96	H	Peak
3754.000	45.85	0.55	46.40	74.00	-27.60	H	Peak
4843.000	58.27	4.47	62.74	74.00	-11.26	H	Peak
4843.000	45.58	4.47	50.05	54.00	-3.95	H	AVG
7264.000	47.18	8.21	55.39	74.00	-18.61	H	Peak
7264.000	38.68	8.21	46.89	54.00	-7.11	H	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Test Mode: TX / IEEE 802.11n HT40 MHz (CH Mid)**Tested by:** Darry Wu**Ambient temperature:** 24°C **Relative humidity:** 52% RH **Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1477.000	51.10	-6.92	44.18	74.00	-29.82	V	Peak
3061.000	49.49	-1.26	48.23	74.00	-25.77	V	Peak
3754.000	46.96	0.55	47.51	74.00	-26.49	V	Peak
4870.000	60.80	4.56	65.36	74.00	-8.64	V	Peak
4870.000	47.37	4.56	51.93	54.00	-2.07	V	AVG
5689.000	43.94	5.95	49.89	74.00	-24.11	V	Peak
7318.000	43.18	8.32	51.50	74.00	-22.50	V	Peak
1297.000	51.30	-7.44	43.86	74.00	-30.14	H	Peak
3061.000	50.46	-1.26	49.20	74.00	-24.80	H	Peak
3187.000	49.77	-1.05	48.72	74.00	-25.28	H	Peak
3754.000	46.37	0.55	46.92	74.00	-27.08	H	Peak
4870.000	56.10	4.56	60.66	74.00	-13.34	H	Peak
4870.000	47.38	4.56	51.94	54.00	-2.06	H	AVG
7300.000	47.18	8.29	55.47	74.00	-18.53	H	Peak
7300.000	37.84	8.29	46.13	54.00	-7.87	H	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Test Mode: TX / IEEE 802.11n HT40 MHz (CH High)**Tested by:** Darry Wu**Ambient temperature:** 24°C**Relative humidity:** 52% RH**Date:** November 7, 2018

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1549.000	54.28	-6.79	47.49	74.00	-26.51	V	Peak
1720.000	55.72	-6.44	49.28	74.00	-24.72	V	Peak
3061.000	49.28	-1.26	48.02	74.00	-25.98	V	Peak
3754.000	47.31	0.55	47.86	74.00	-26.14	V	Peak
4897.000	56.55	4.64	61.19	74.00	-12.81	V	Peak
4897.000	47.65	4.64	52.29	54.00	-1.71	V	AVG
5563.000	43.79	5.90	49.69	74.00	-24.31	V	Peak
1297.000	51.93	-7.44	44.49	74.00	-29.51	H	Peak
3061.000	49.39	-1.26	48.13	74.00	-25.87	H	Peak
3187.000	49.81	-1.05	48.76	74.00	-25.24	H	Peak
4906.000	56.42	4.67	61.09	74.00	-12.91	H	Peak
4906.000	47.02	4.67	51.69	54.00	-2.31	H	AVG
7354.000	47.05	8.39	55.44	74.00	-18.56	H	Peak
7354.000	37.48	8.39	45.87	54.00	-8.13	H	AVG
8137.000	41.64	9.57	51.21	74.00	-22.79	H	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

7.3. 6dB BANDWIDTH MEASUREMENT

7.3.1. LIMITS

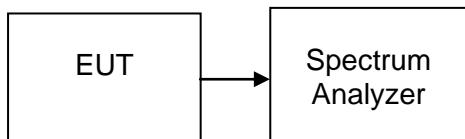
According to §15.247(a) (2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.3.2. TEST PROCEDURES (please refer to measurement standard)

8.1 Option 2:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW \geq 3 RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be \geq 6 dB.

7.3.3. TEST SETUP



7.3.4. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (kHz)			Limit (kHz)	Test Result
		Antenna 0	Antenna 1	Antenna 2		
Low	2412	7075	7067	7060	>500	PASS
Mid	2437	7046	7069	7090		PASS
High	2462	7063	7019	7067		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (kHz)			Limit (kHz)	Test Result
		Antenna 0	Antenna 1	Antenna 2		
Low	2412	15100	15090	15040	>500	PASS
Mid	2437	15080	15110	15090		PASS
High	2462	15120	15120	15100		PASS

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	Bandwidth (kHz)			Limit (kHz)	Test Result
		Antenna 0	Antenna 1	Antenna 2		
Low	2412	15100	15100	15100	>500	PASS
Mid	2437	15100	15120	15100		PASS
High	2462	15100	15050	15100		PASS

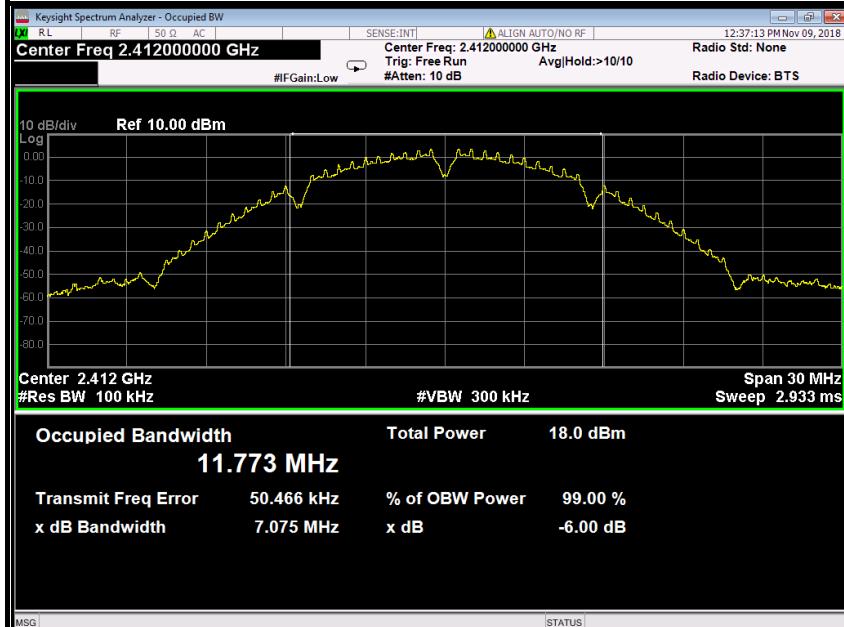
Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	Bandwidth (kHz)			Limit (kHz)	Test Result
		Antenna 0	Antenna 1	Antenna 2		
Low	2422	33810	30050	33810	>500	PASS
Mid	2437	33800	30100	32590		PASS
High	2452	35020	30080	32590		PASS

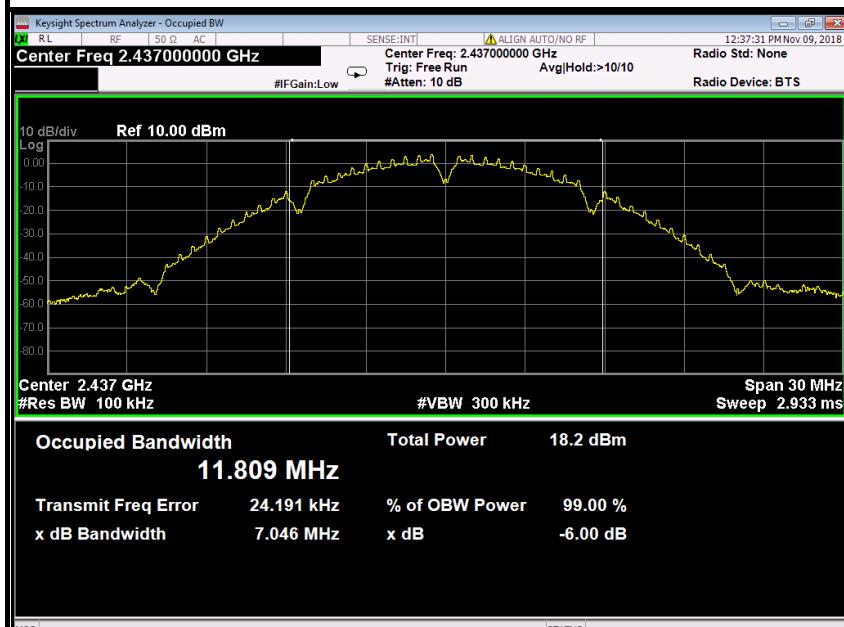
Test Plot Antenna 0

IEEE 802.11b mode

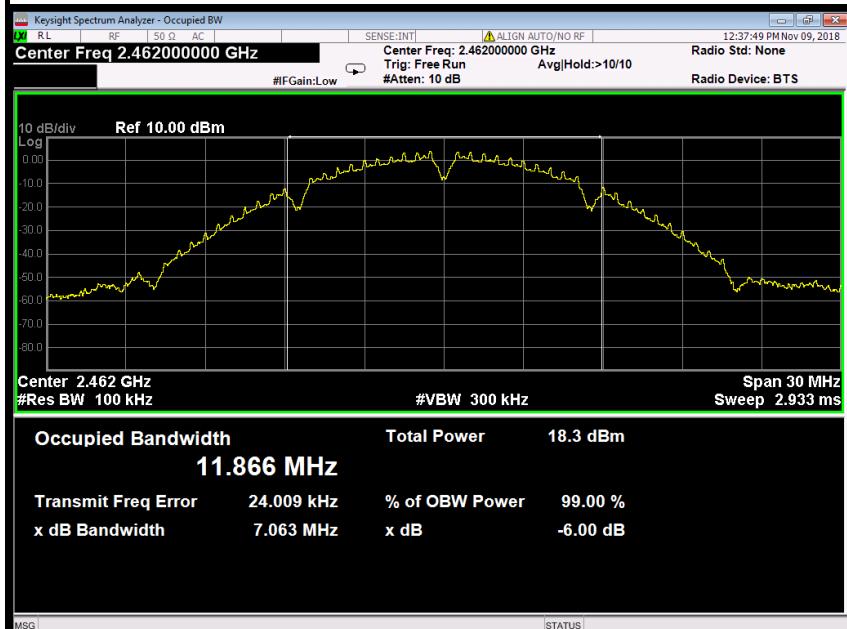
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

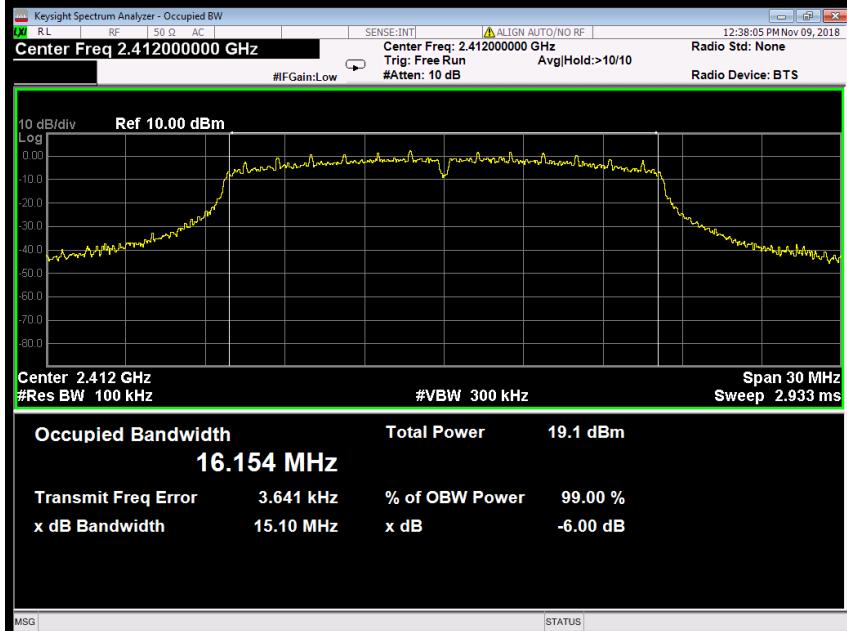


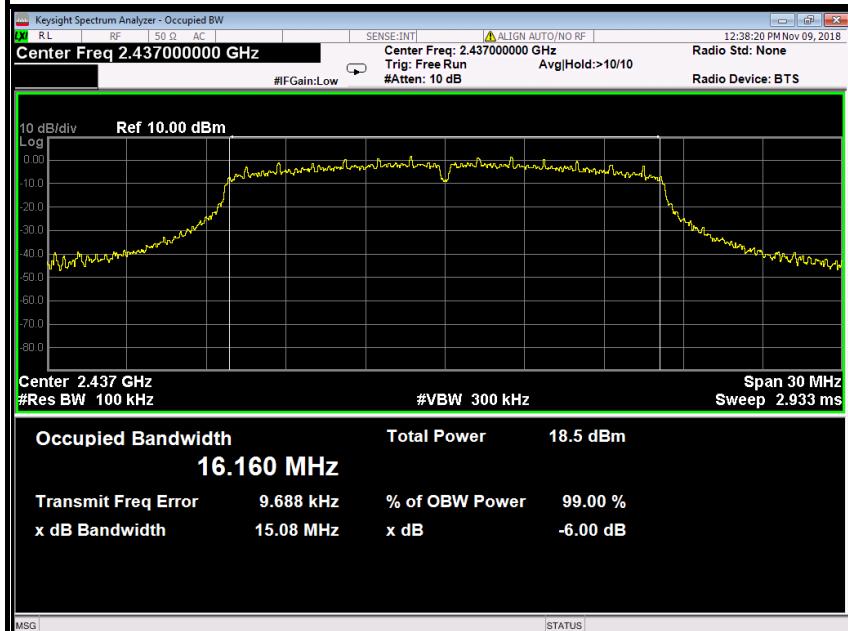
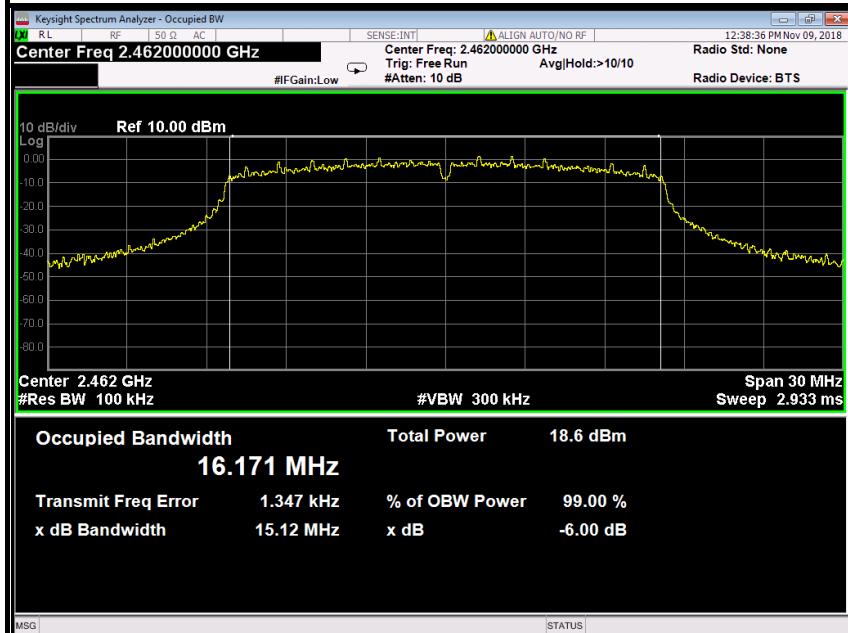
6dB Bandwidth (CH High)

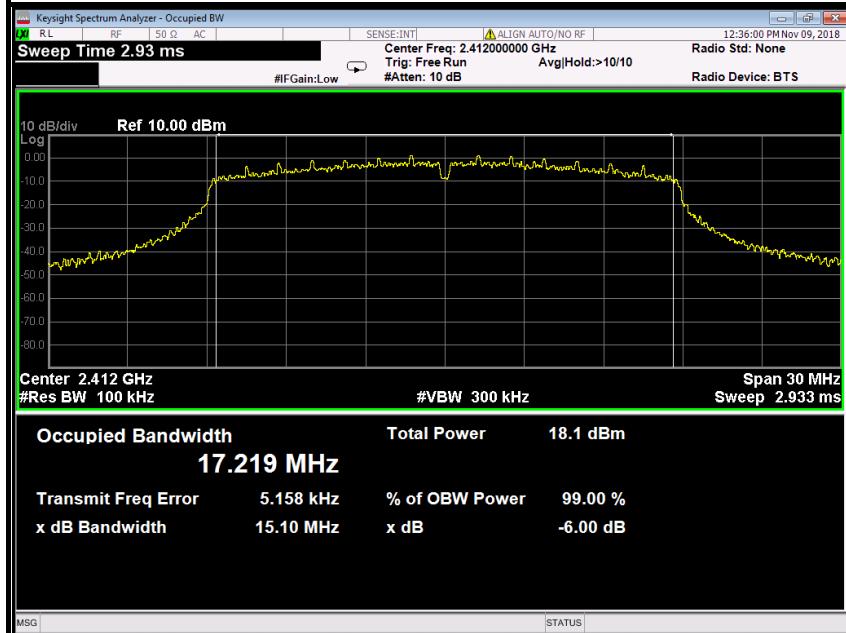
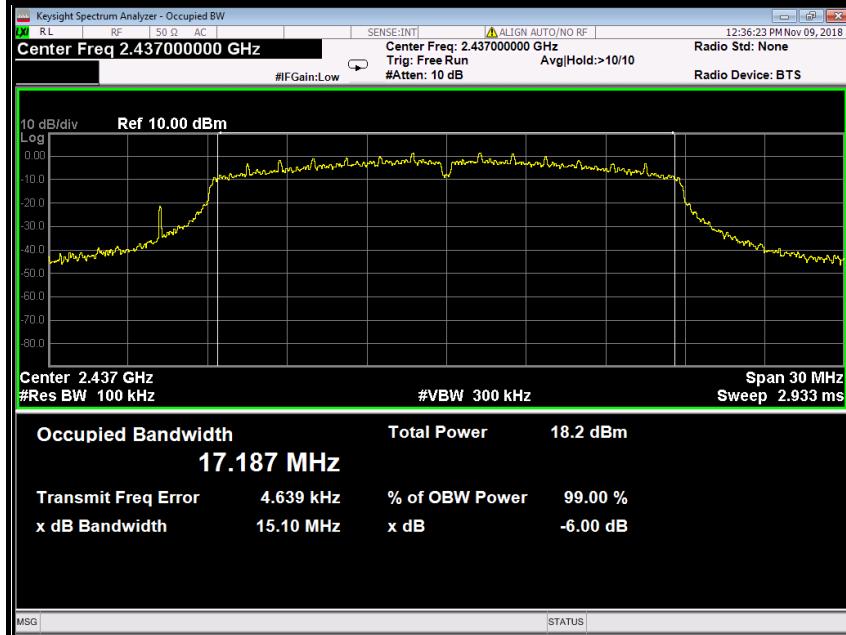


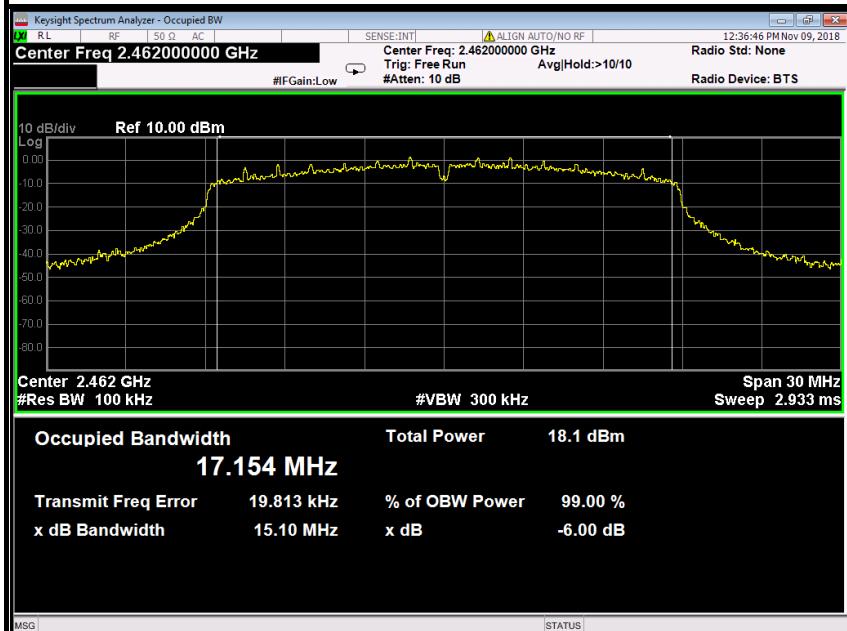
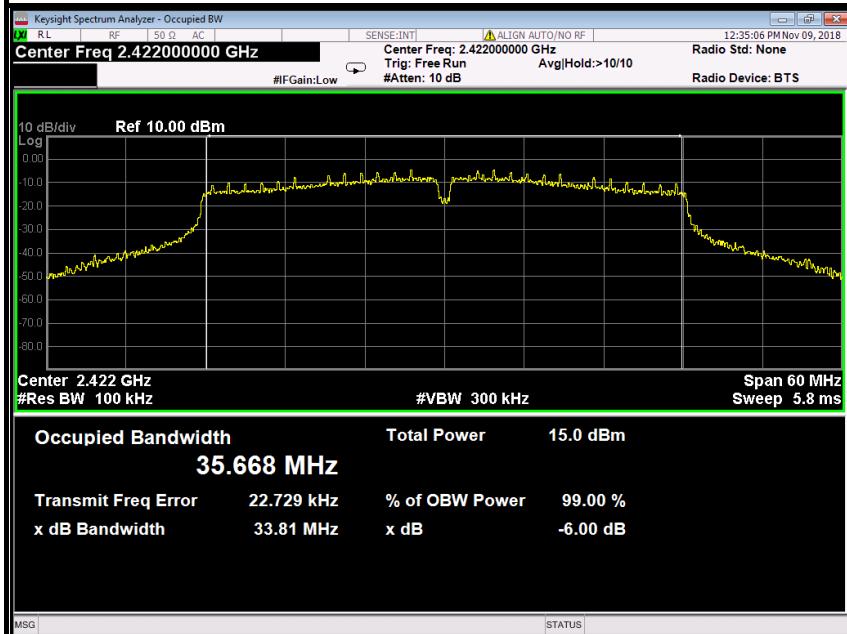
IEEE 802.11g mode

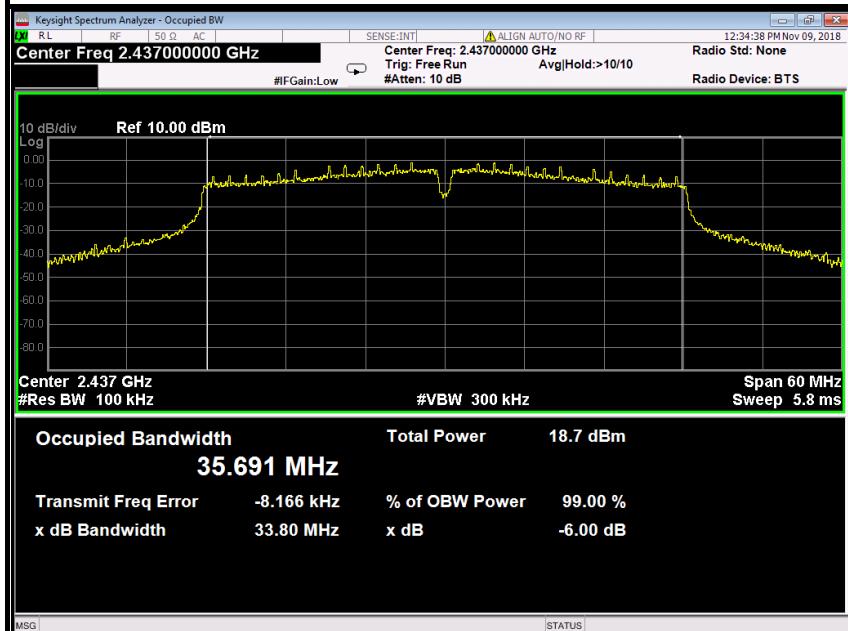
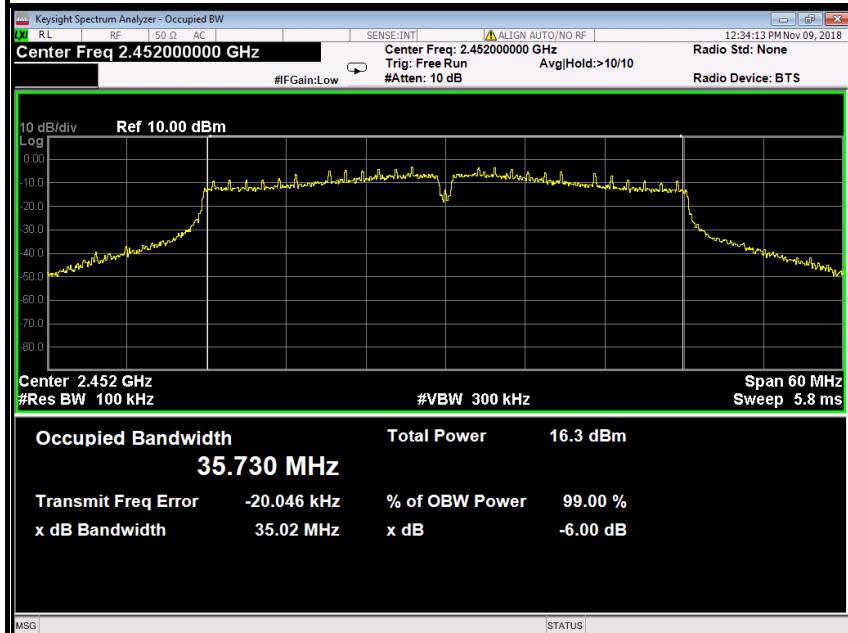
6dB Bandwidth (CH Low)

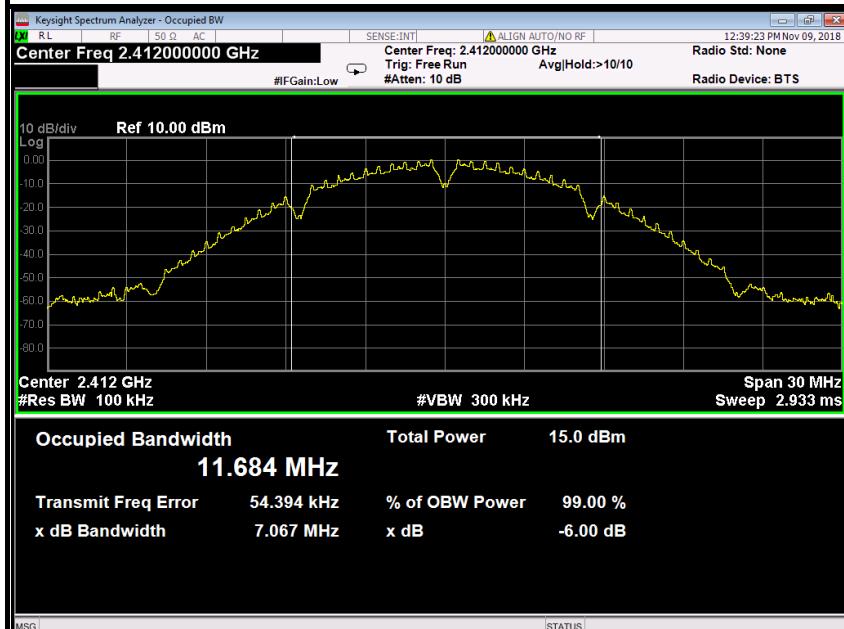
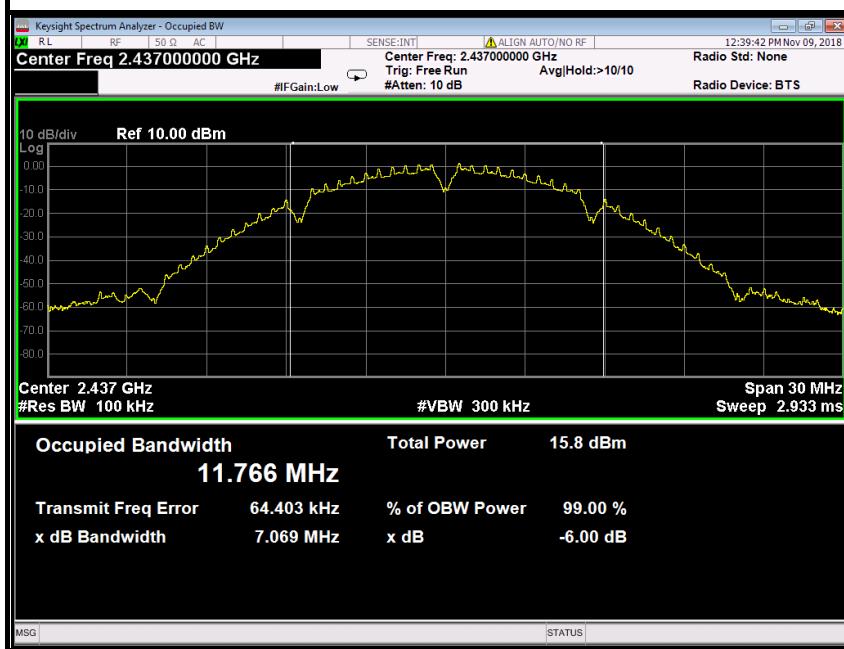


6dB Bandwidth (CH Mid)**6dB Bandwidth (CH High)**

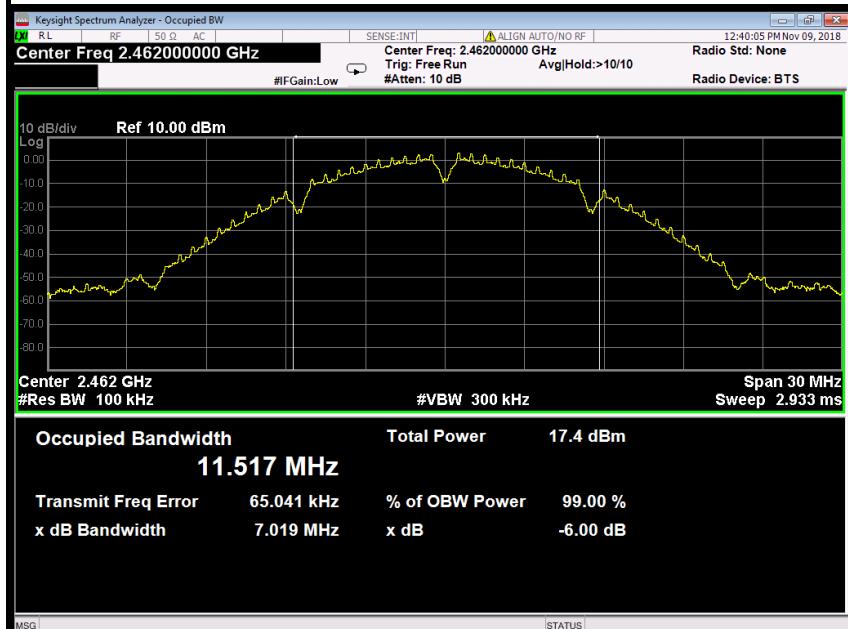
IEEE 802.11n HT20 MHz mode**6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

6dB Bandwidth (CH High)**IEEE 802.11n HT40 MHz mode****6dB Bandwidth (CH Low)**

6dB Bandwidth (CH Mid)**6dB Bandwidth (CH High)**

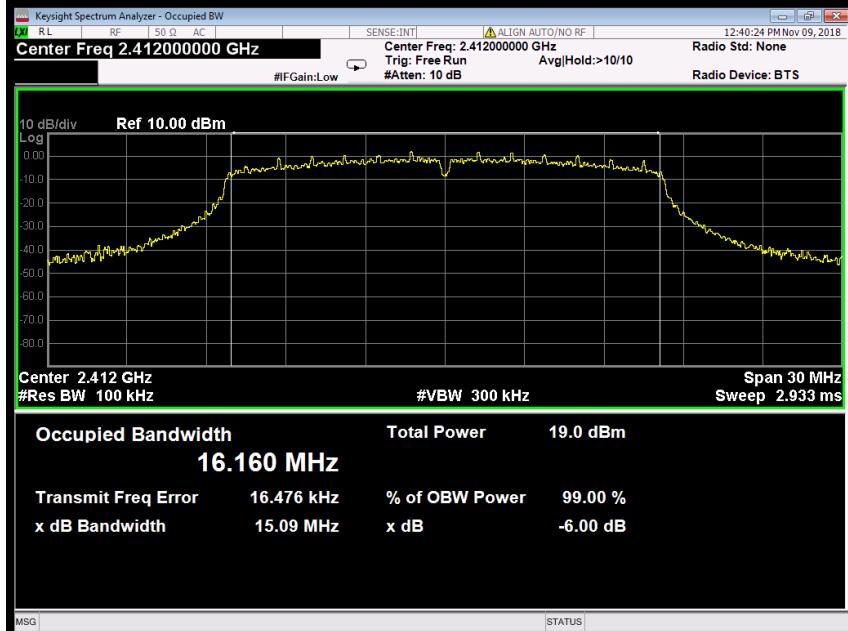
Antenna 1**IEEE 802.11b mode****6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

6dB Bandwidth (CH High)

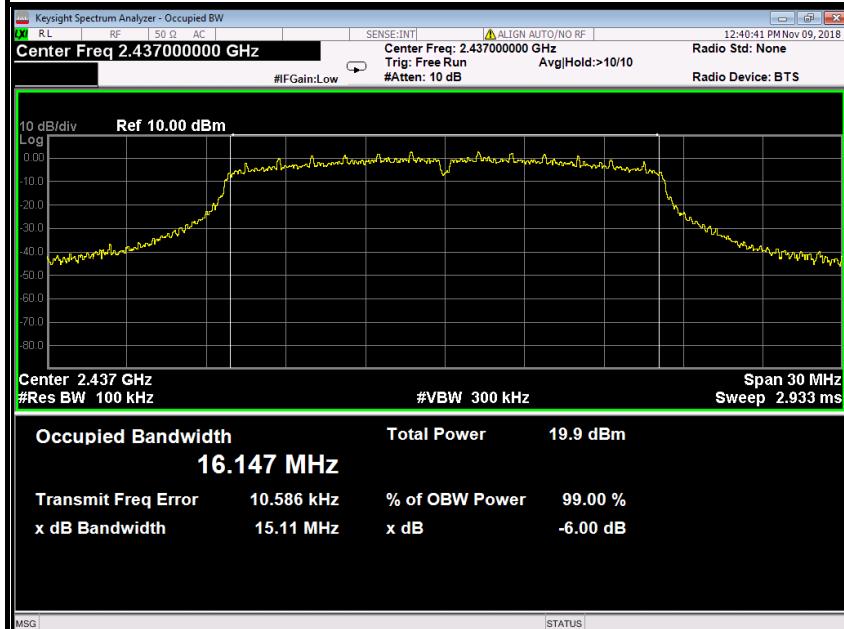


IEEE 802.11g mode

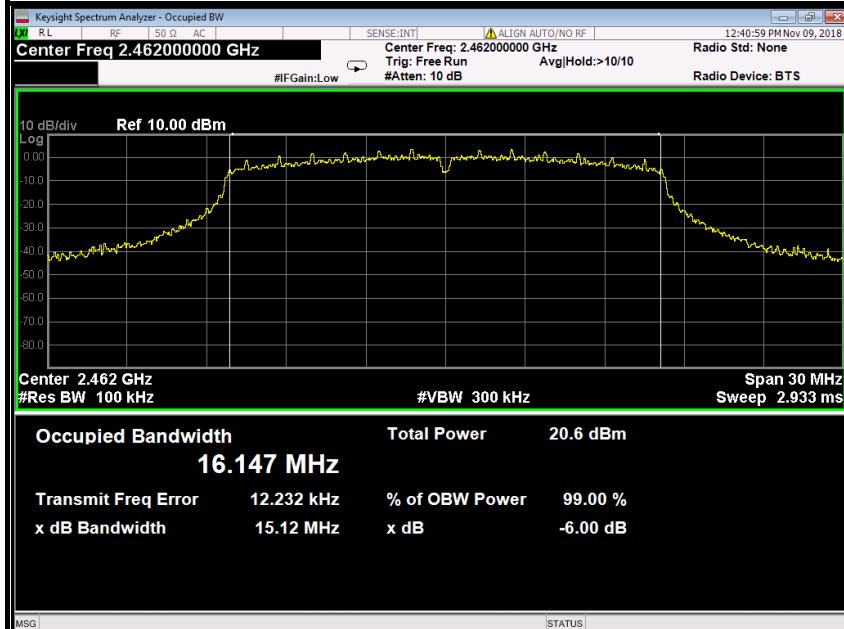
6dB Bandwidth (CH Low)

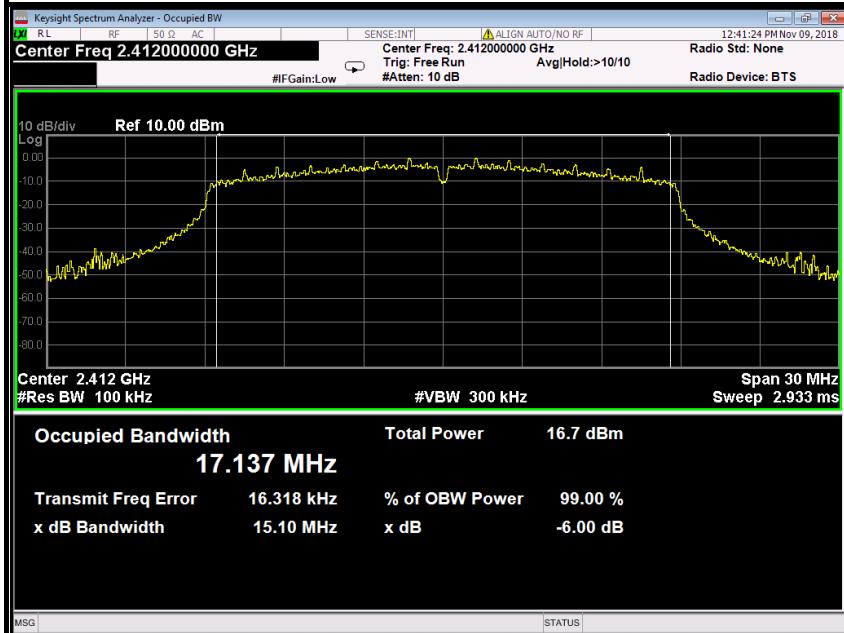
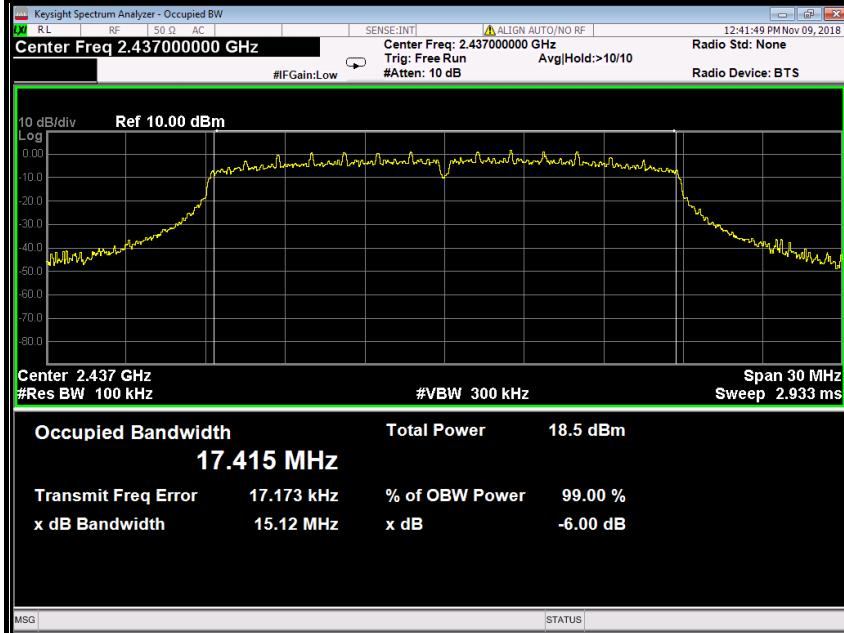


6dB Bandwidth (CH Mid)

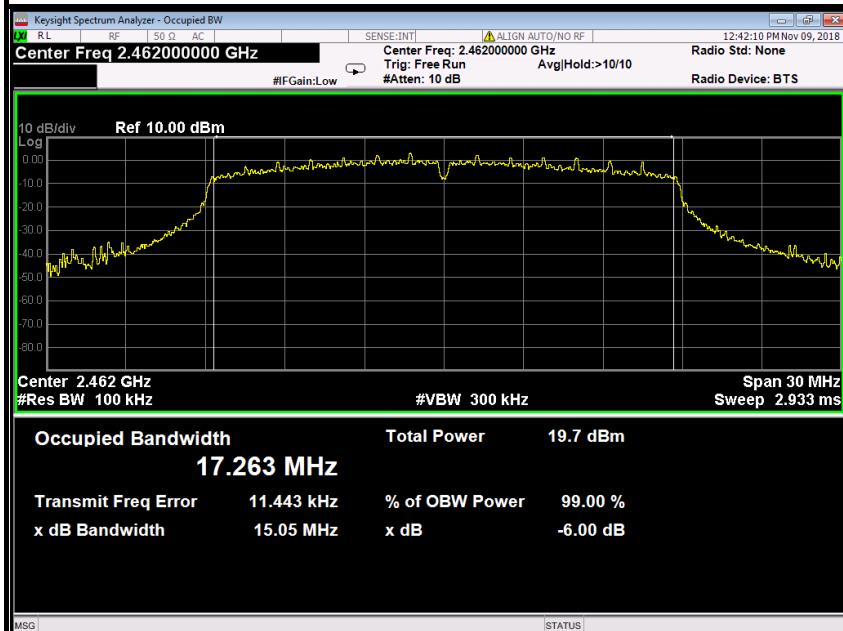


6dB Bandwidth (CH High)



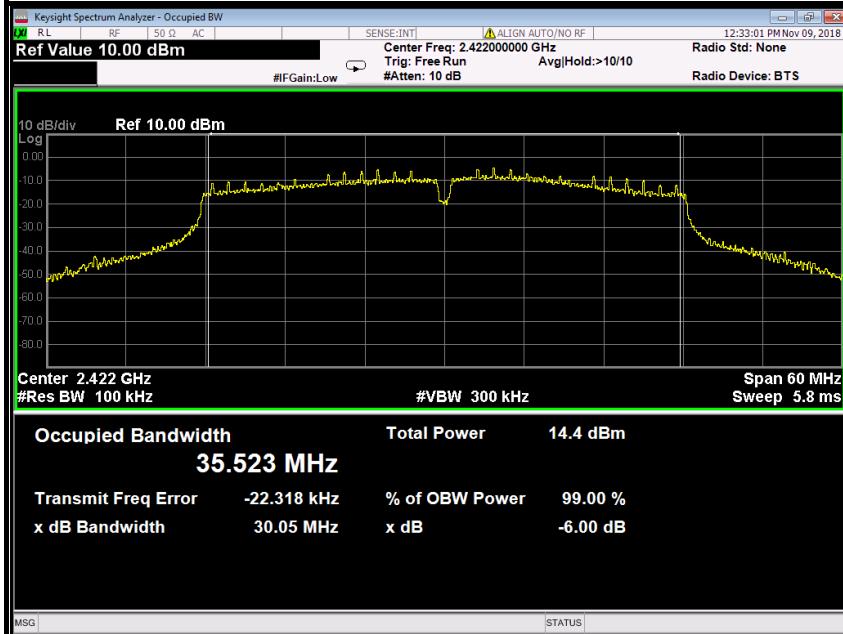
IEEE 802.11n HT20 MHz mode**6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

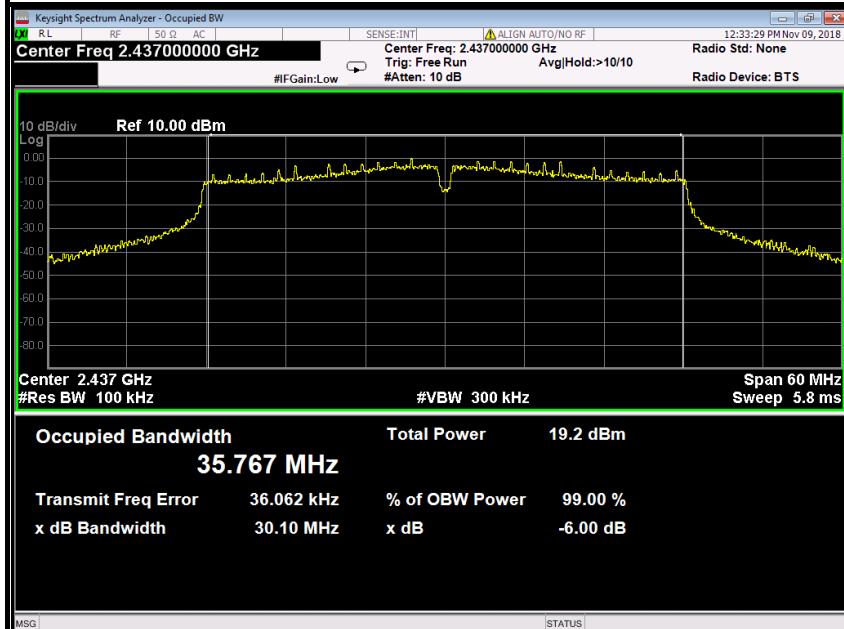
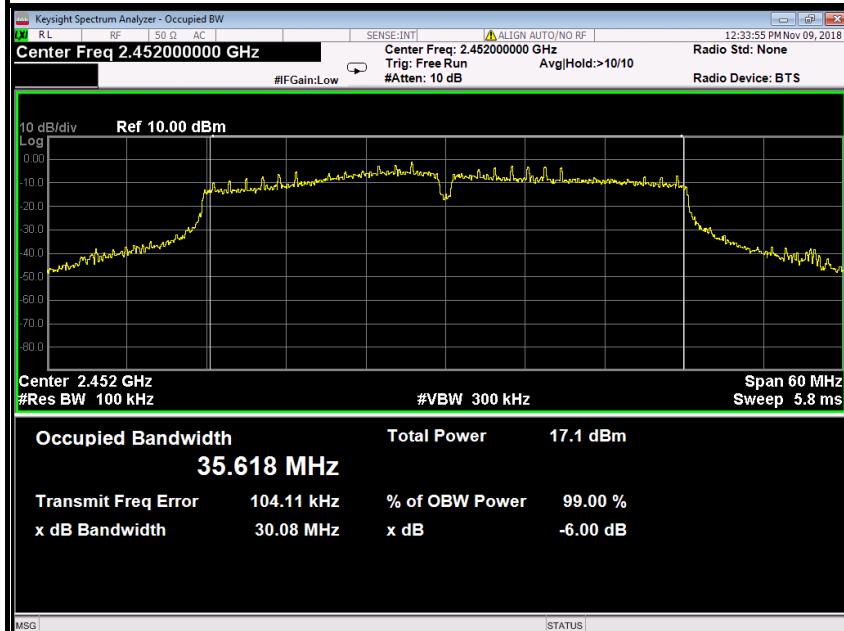
6dB Bandwidth (CH High)

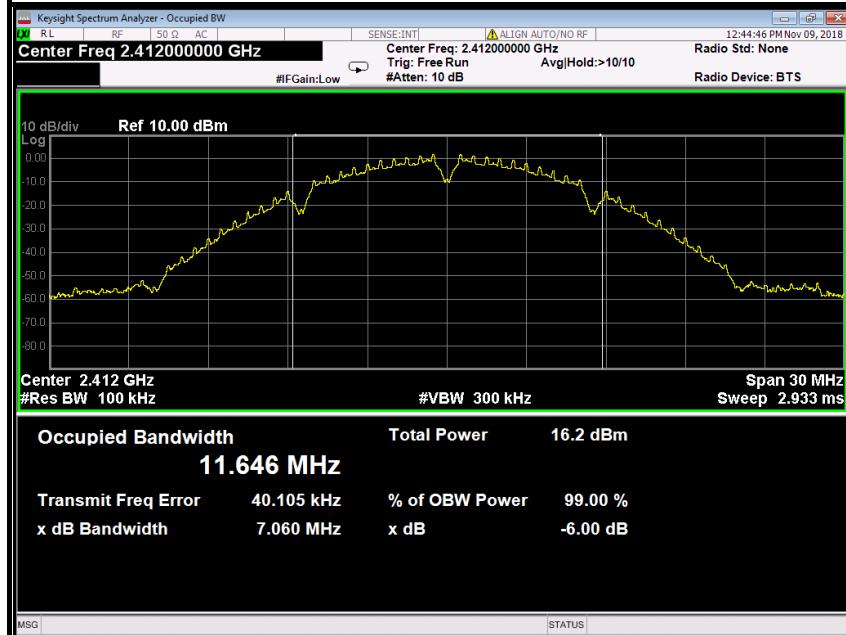
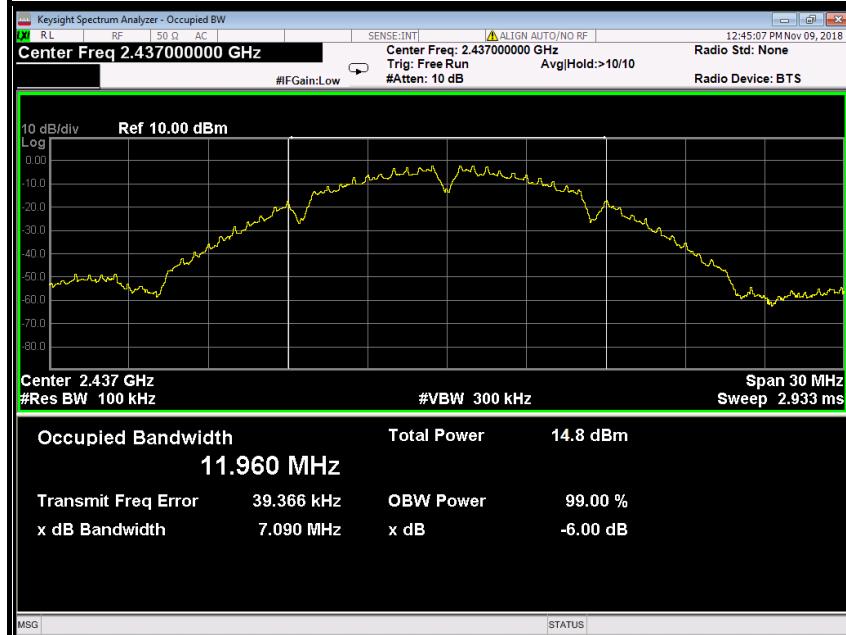


IEEE 802.11n HT40 MHz mode

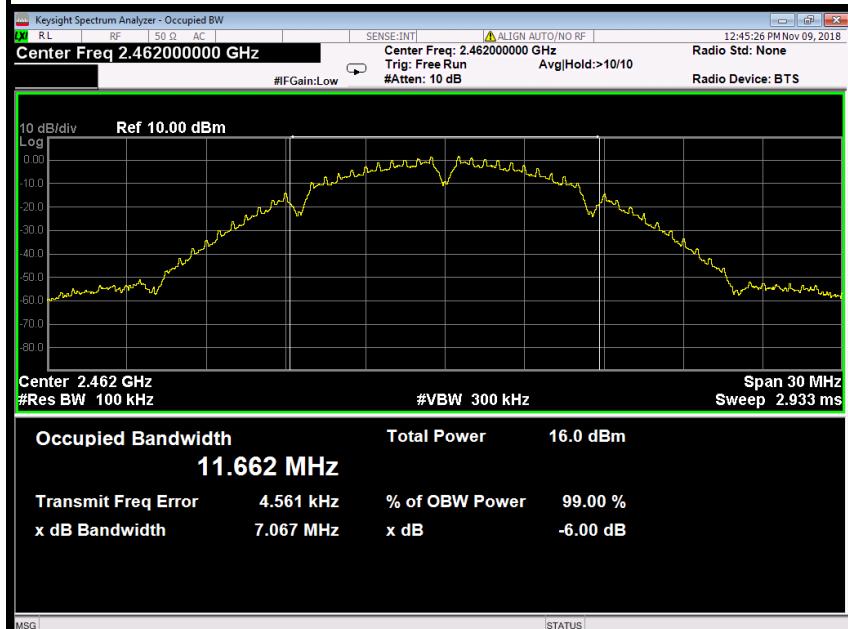
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)**6dB Bandwidth (CH High)**

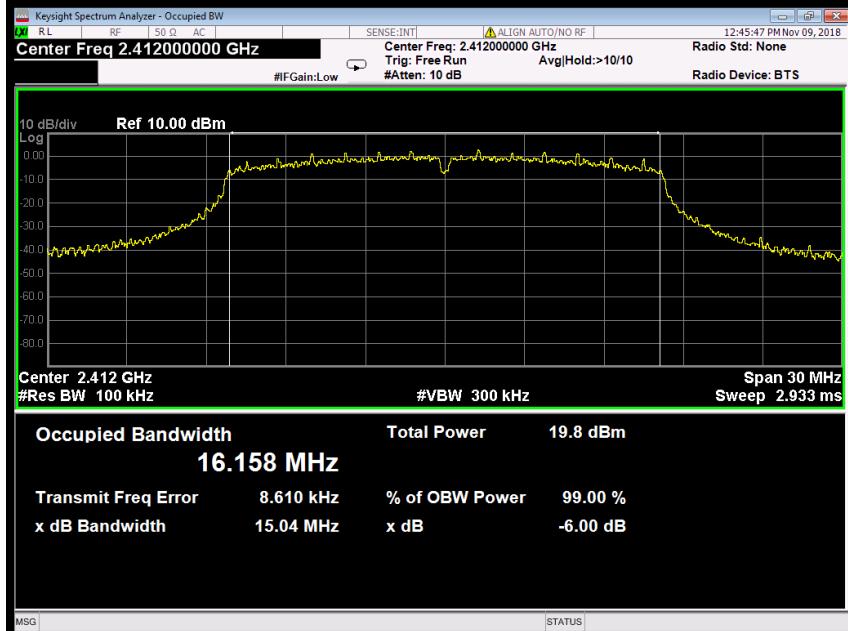
Antenna 2**IEEE 802.11b mode****6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

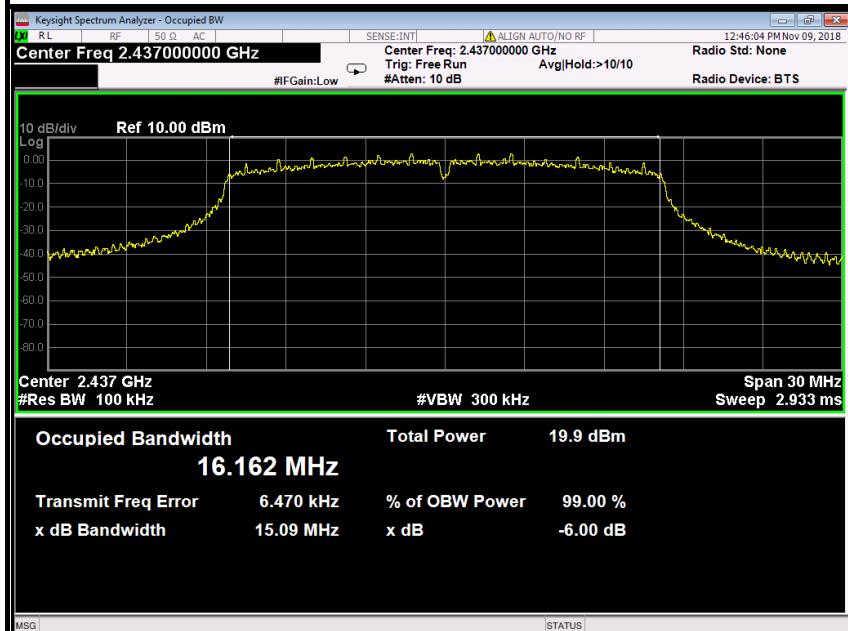
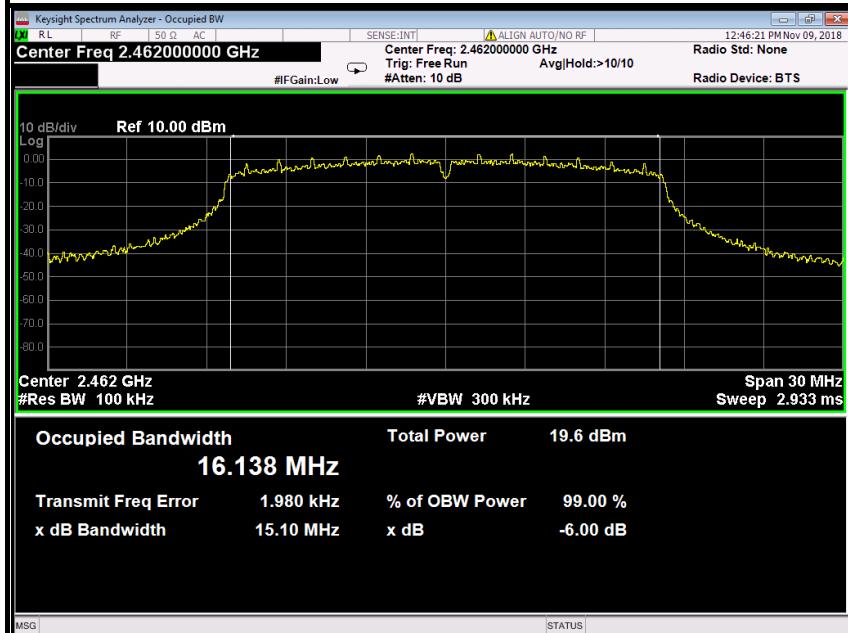
6dB Bandwidth (CH High)

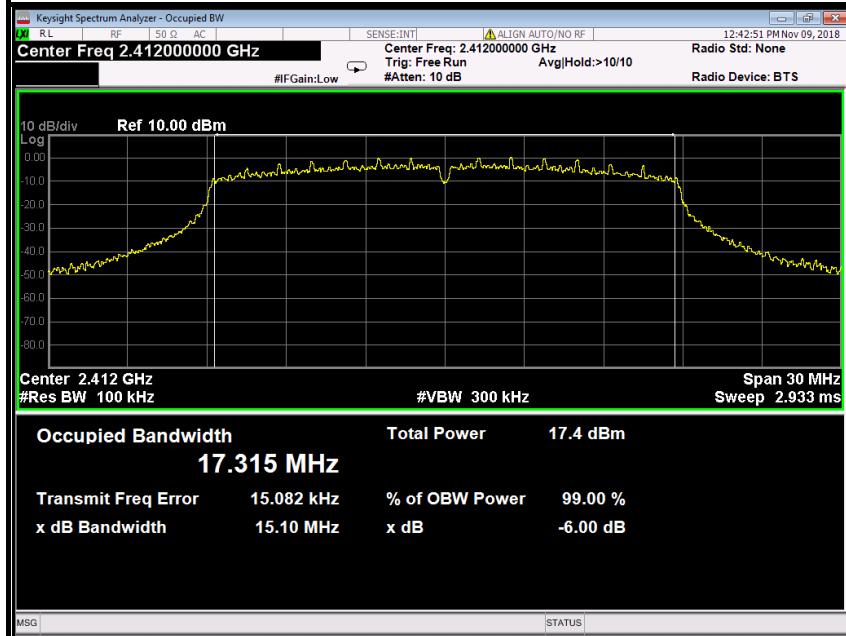
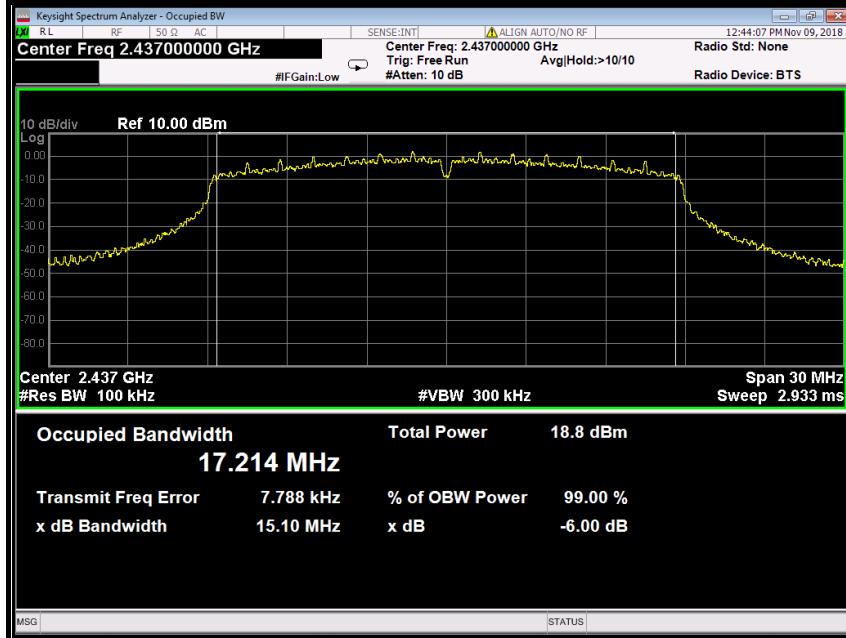


IEEE 802.11g mode

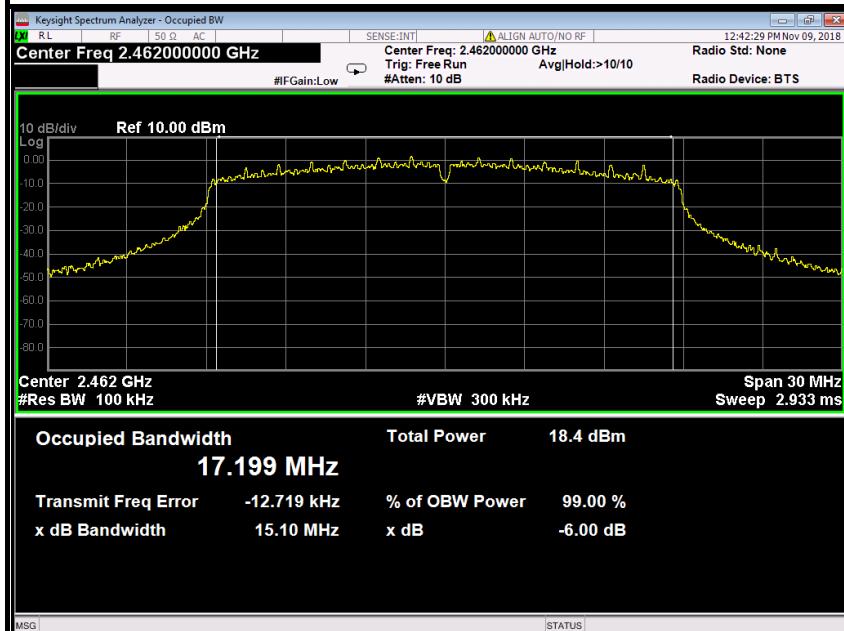
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)**6dB Bandwidth (CH High)**

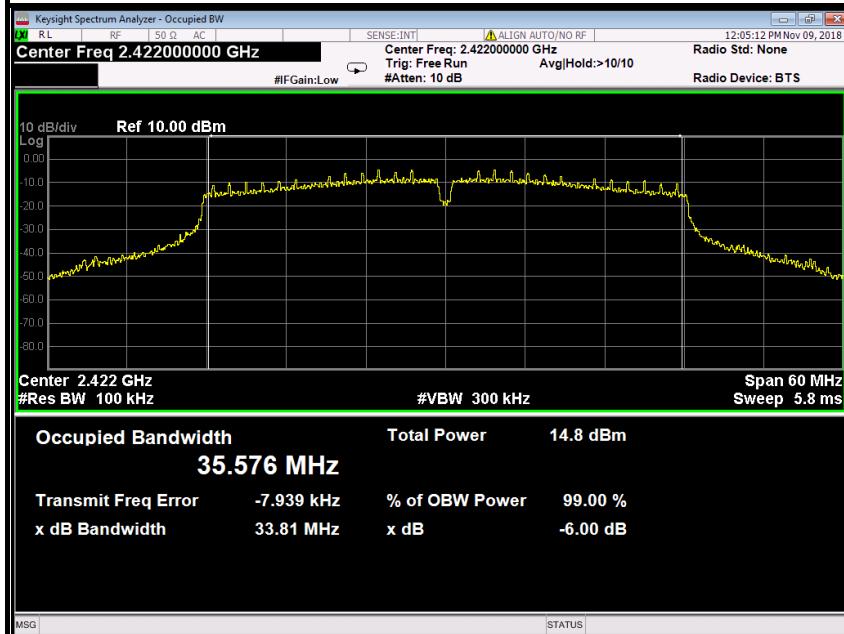
IEEE 802.11n HT20 MHz mode**6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

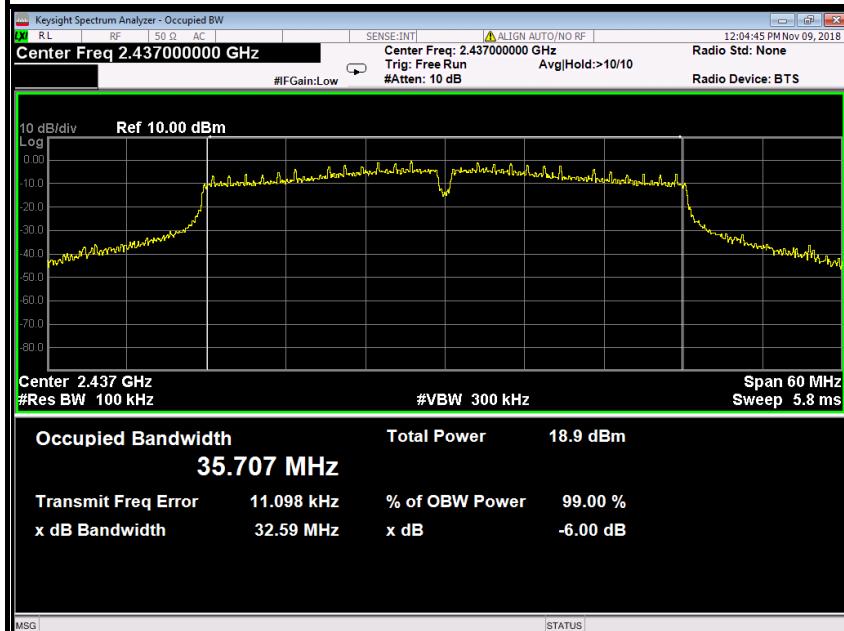
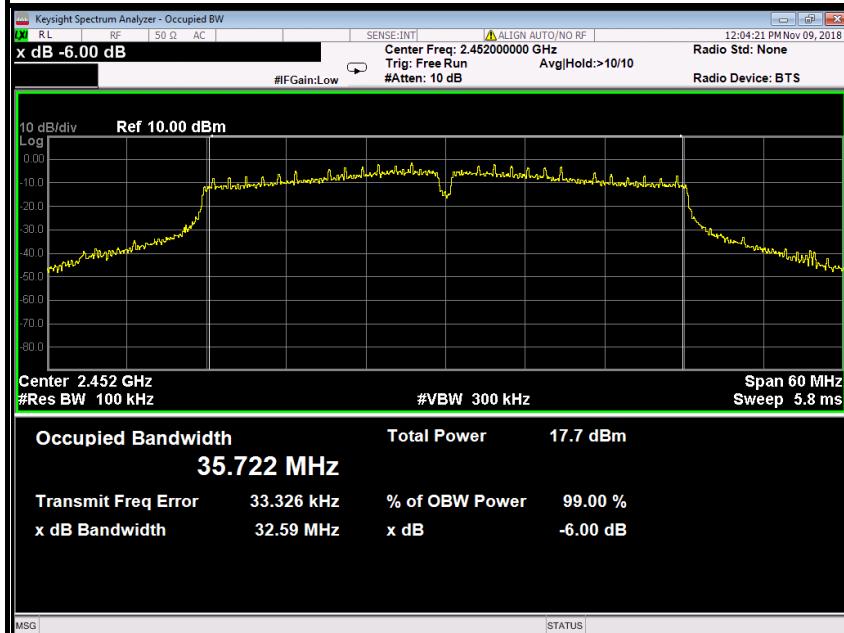
6dB Bandwidth (CH High)



IEEE 802.11n HT40 MHz mode

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)**6dB Bandwidth (CH High)**

7.4. ANTENNA GAIN

MEASUREMENT

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the DSSS mode is used.

MEASUREMENT PARAMETERS

Measurement parameter	
Detector	Peak
Sweep time	Auto
Resolution bandwidth	3 MHz
Video bandwidth	3 MHz
Trace-Mode	Max hold

LIMITS

FCC	IC
Antenna Gain	
6 dBi	

TEST RESULTS

Antenna 0

T _{nom}	V _{nom}	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz
Conducted power [dBm/MHz] Measured with DSSS modulation		3.25	3.65	3.65
Radiated power [dBm/MHz] Measured with DSSS modulation		7.86	7.95	8.03
Gain [dBi] Calculated		4.61	4.30	4.38
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)			

Antenna 1

T _{nom}	V _{nom}	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz
Conducted power [dBm/MHz] Measured with DSSS modulation		0.68	1.05	2.78
Radiated power [dBm/MHz] Measured with DSSS modulation		4.63	5.58	6.52
Gain [dBi] Calculated		3.95	4.53	3.74
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)			

Antenna 2

T _{nom}	V _{nom}	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz
Conducted power [dBm/MHz] Measured with DSSS modulation		0.48	1.17	2.03
Radiated power [dBm/MHz] Measured with DSSS modulation		4.78	5.71	6.64
Gain [dBi] Calculated		4.30	4.54	4.61
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)			

7.5. PEAK OUTPUT POWER

7.5.1. LIMITS

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.5.2. TEST PROCEDURES (please refer to measurement standard)

9.1.1 RBW \geq DTS bandwidth

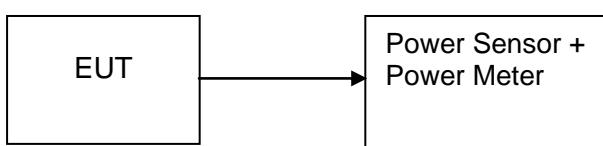
This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the *DTS bandwidth*.

- a) Set the RBW \geq DTS bandwidth.
- b) Set VBW \geq 3 RBW.
- c) Set span \geq 3 x RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

9.1.2 PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

7.5.3. TEST SETUP



7.5.4. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)			Peak / AVG	Limit (W)	Result
		Antenna 0	Antenna 1	Antenna	Antenna 0	Antenna 1	Antenna 2			
Low	2412	13.96	11.36	12.14	0.02489	0.01368	0.01637	Peak	1	PASS
Mid	2437	14.37	11.76	11.95	0.02735	0.01500	0.01567			PASS
High	2462	14.39	13.39	12.70	0.02748	0.02183	0.01862			PASS
Low	2412	10.97	8.35	9.23	0.01250	0.00684	0.00838	AVG	1	PASS
Mid	2437	11.38	8.89	9.07	0.01374	0.00774	0.00807			PASS
High	2462	11.54	10.80	9.67	0.01426	0.01202	0.00927			PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)			Peak / AVG	Limit (W)	Result
		Antenna 0	Antenna 1	Antenna	Antenna 0	Antenna 1	Antenna 2			
Low	2412	20.93	20.98	20.59	0.12388	0.12531	0.11455	Peak	1	PASS
Mid	2437	20.40	21.95	20.61	0.10965	0.15668	0.11508			PASS
High	2462	20.39	22.77	20.21	0.10940	0.18923	0.10495			PASS
Low	2412	12.76	12.45	12.32	0.01888	0.01758	0.01706	AVG	1	PASS
Mid	2437	11.97	13.41	12.39	0.01574	0.02193	0.01734			PASS
High	2462	11.90	14.28	11.95	0.01549	0.02679	0.01567			PASS

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	Output Power (dBm)				Output Power (W)	Peak / AVG	Limit (W)	Result
		Antenna 0	Antenna 1	Antenna 2	Total				
Low	2412	19.39	19.68	19.91	24.44	0.27774	Peak	1	PASS
Mid	2437	19.72	21.37	20.63	25.40	0.34646			PASS
High	2462	20.09	22.04	20.74	25.80	0.38063			PASS
Low	2412	10.76	10.71	10.89	15.56	0.03596	AVG	1	PASS
Mid	2437	11.81	12.59	12.28	17.01	0.05023			PASS
High	2462	11.58	13.18	12.06	17.10	0.05125			PASS

Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	Output Power (dBm)				Output Power (W)	Peak / AVG	Limit (W)	Result
		Antenna 0	Antenna 1	Antenna 2	Total				
Low	2422	16.37	16.00	16.49	21.06	0.12773	Peak	1	PASS
Mid	2437	20.00	20.92	21.05	25.45	0.35095			PASS
High	2452	18.03	19.17	19.01	23.54	0.22575			PASS
Low	2422	8.36	7.19	7.95	12.63	0.01833	AVG	1	PASS
Mid	2437	11.95	12.54	12.02	16.95	0.04954			PASS
High	2452	9.39	10.69	10.07	14.85	0.03057			PASS

7.6. BAND EDGES MEASUREMENT

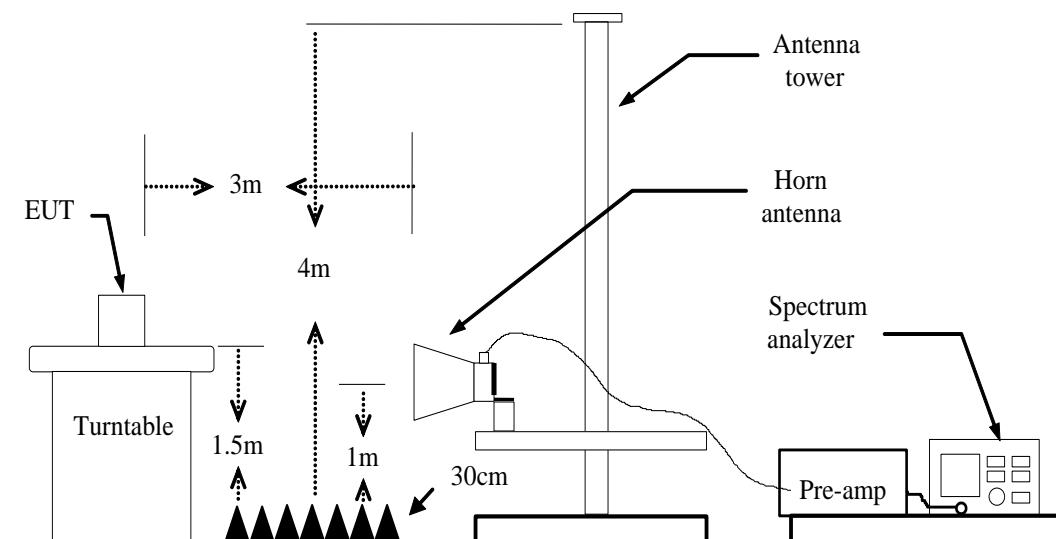
7.6.1. LIMITS

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

7.6.2. TEST PROCEDURES (please refer to measurement standard)

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / VBW=1/T / Sweep=AUTO / Detector=PEAK
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are

7.6.3. TEST SETUP

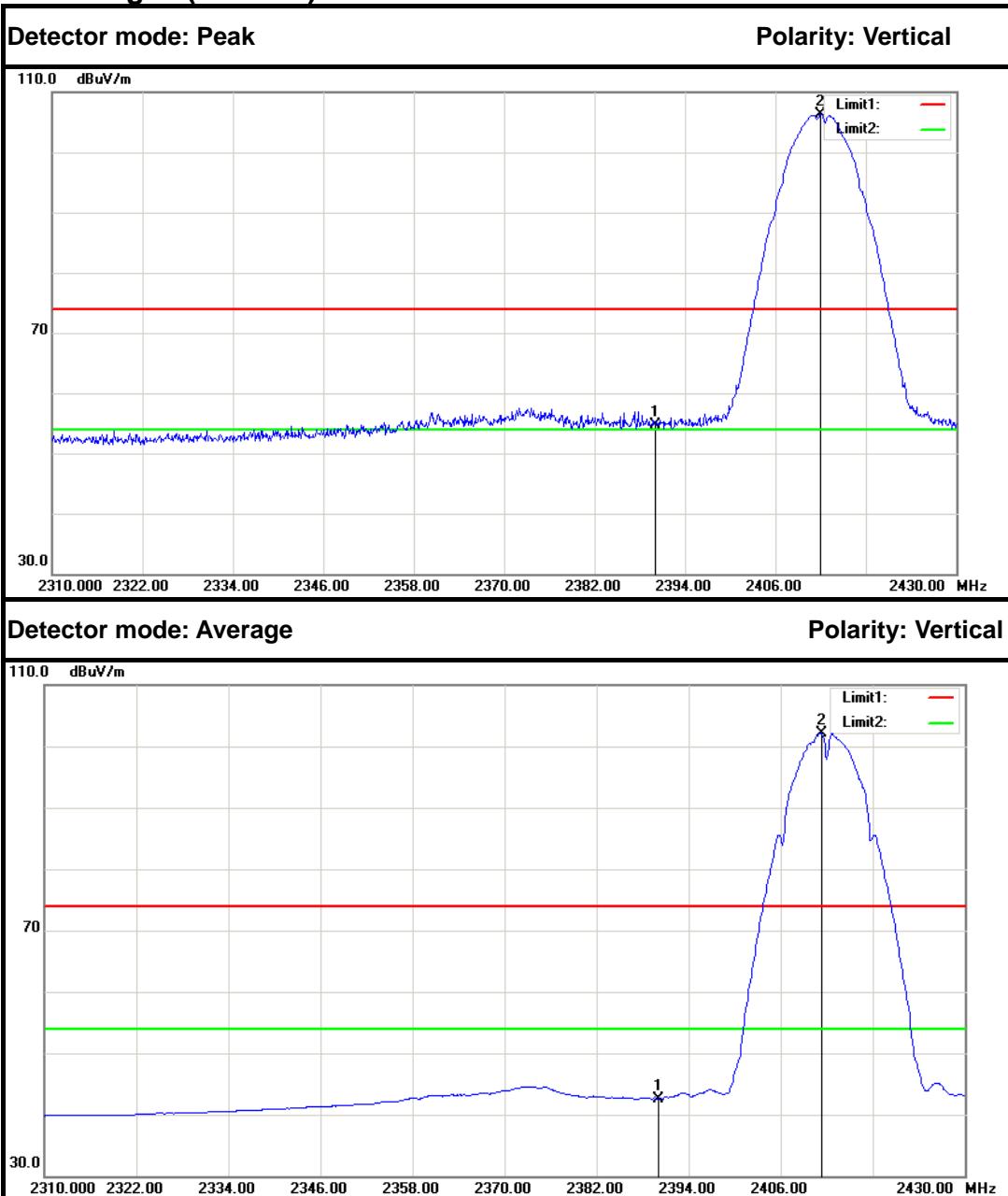


7.6.4. TEST RESULTS

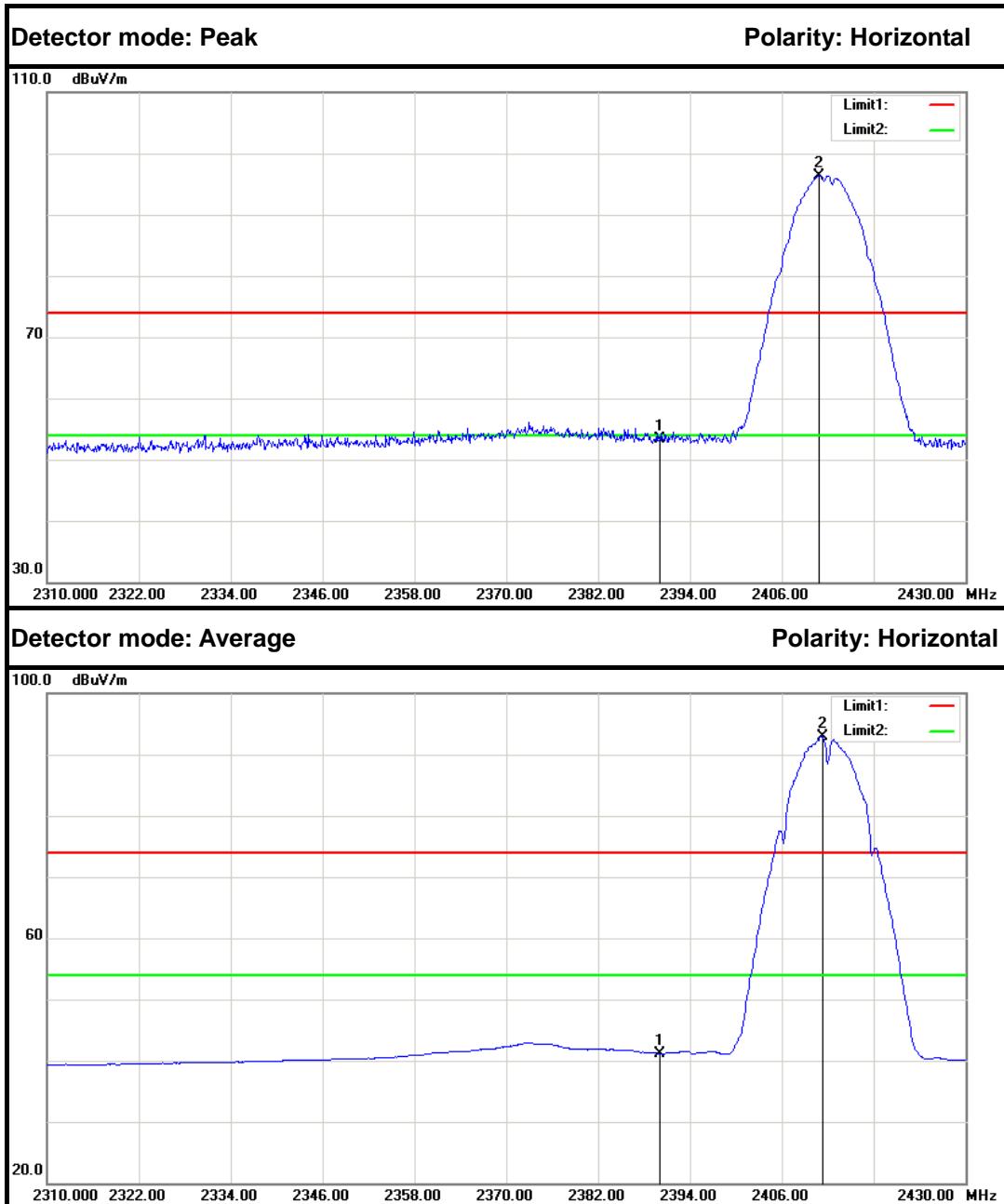
Test Plot

IEEE 802.11b mode (Antenna 0)

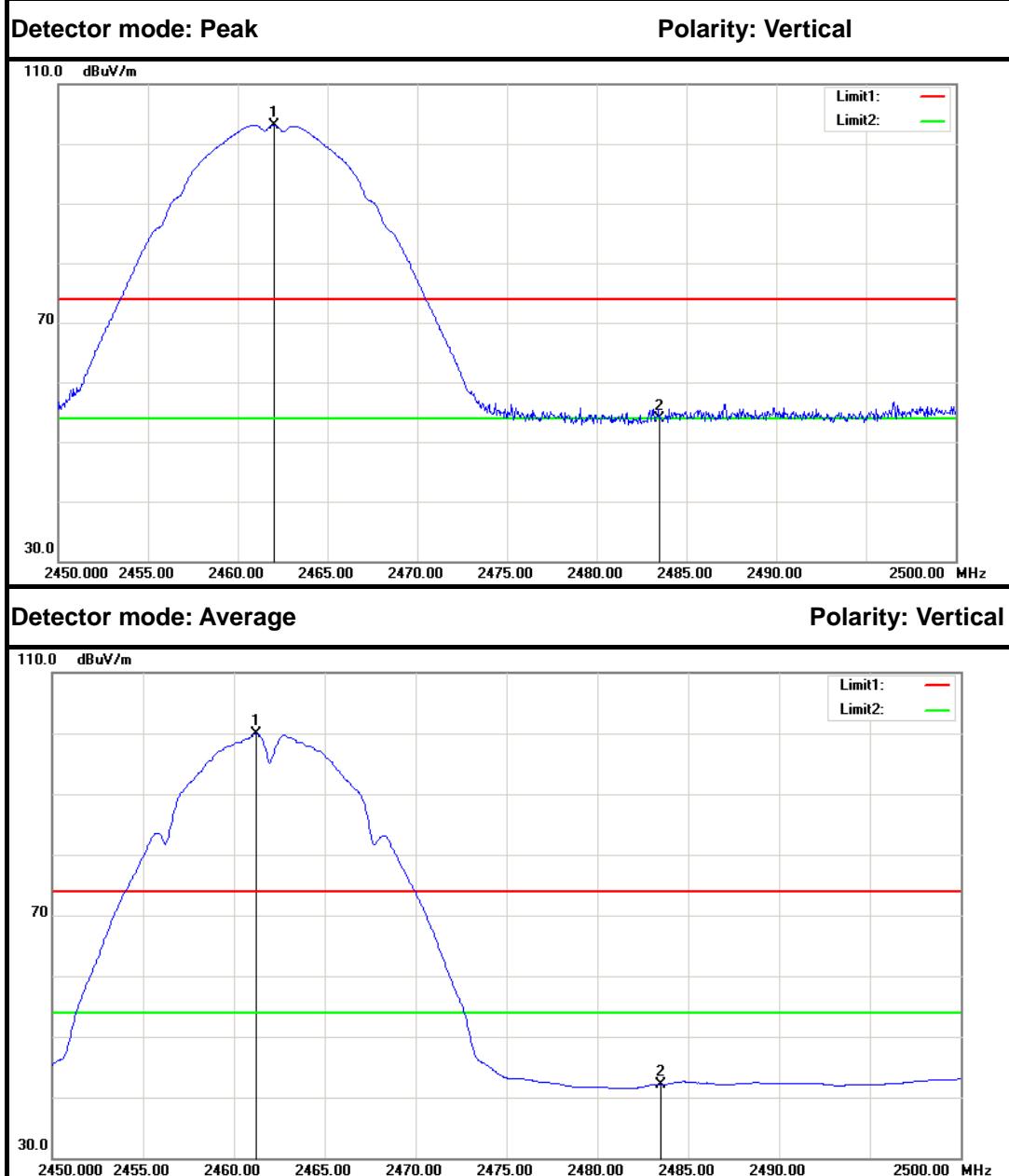
Band Edges (CH Low)



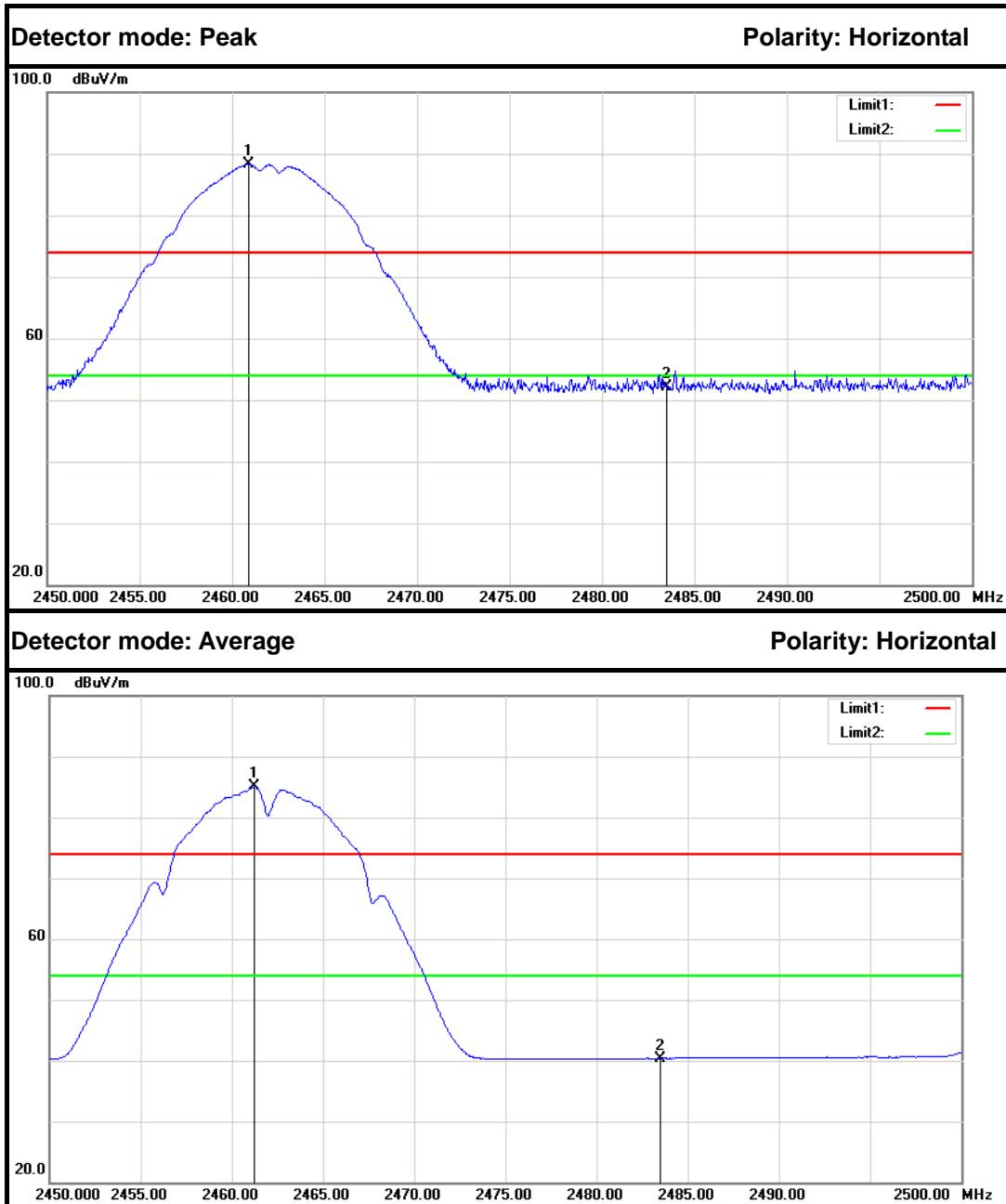
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	57.48	-2.86	54.62	74.00	-19.38	Peak	Vertical
2	2412.000	109.06	-2.74	106.32	---	---	Peak	Vertical
1	2390.000	45.39	-2.86	42.53	54.00	-11.47	Average	Vertical
2	2411.280	104.95	-2.75	102.20	---	---	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	56.24	-2.86	53.38	74.00	-20.62	Peak	Horizontal
2	2410.920	99.12	-2.75	96.37	---	---	Peak	Horizontal
1	2390.000	44.05	-2.86	41.19	54.00	-12.81	Average	Horizontal
2	2411.280	95.75	-2.75	93.00	---	---	Average	Horizontal

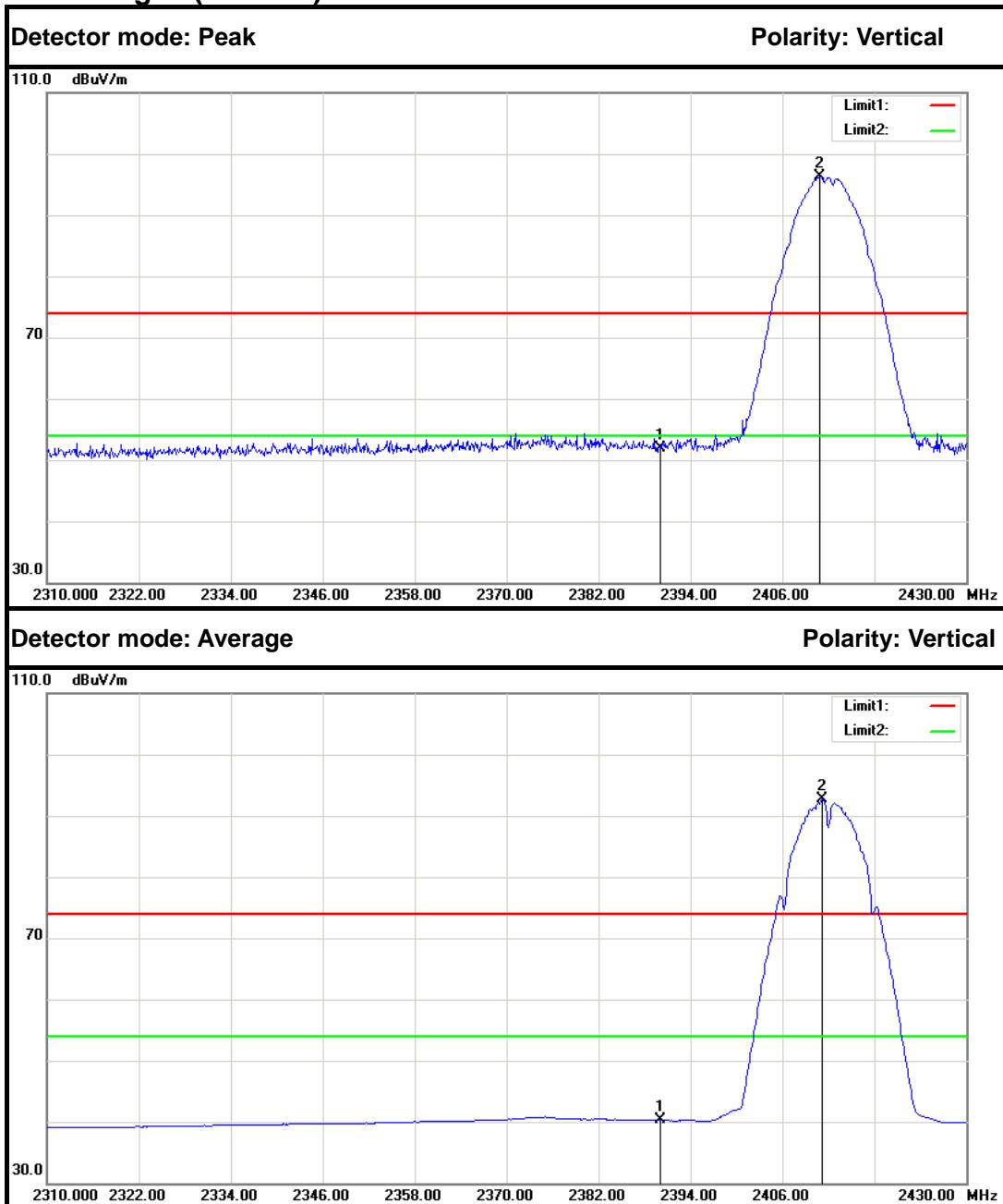
Band Edges (CH High)

No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2462.000	105.66	-2.47	103.19	---	---	Peak	Vertical
2	2483.500	56.29	-2.35	53.94	74.00	-20.06	Peak	Vertical
1	2461.250	102.40	-2.47	99.93	---	---	Average	Vertical
2	2483.500	44.52	-2.35	42.17	54.00	-11.83	Average	Vertical

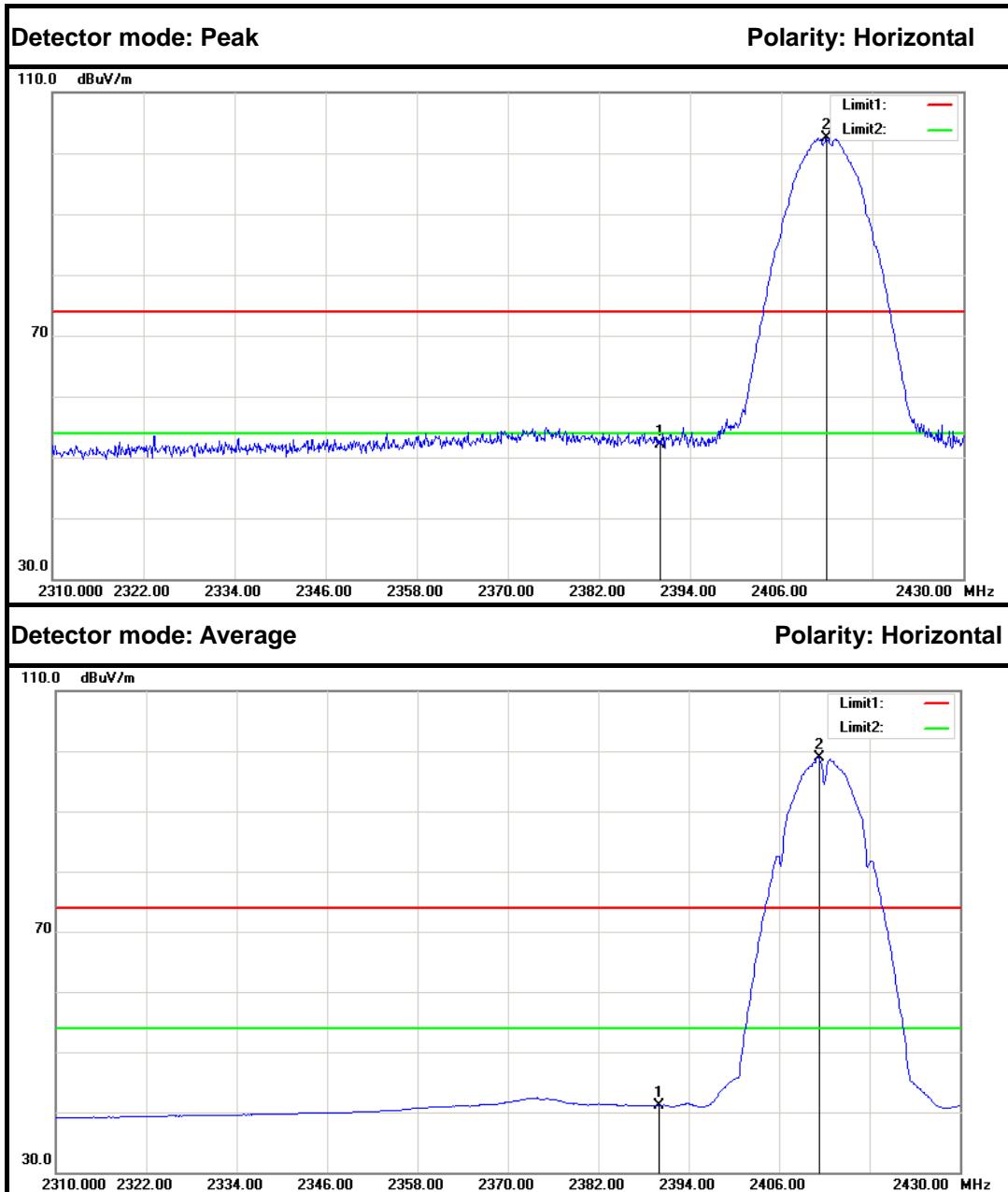


No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2460.900	90.77	-2.47	88.30	---	---	Peak	Horizontal
2	2483.500	54.46	-2.35	52.11	74.00	-21.89	Peak	Horizontal
1	2461.250	87.50	-2.47	85.03	---	---	Average	Horizontal
2	2483.500	42.74	-2.35	40.39	54.00	-13.61	Average	Horizontal

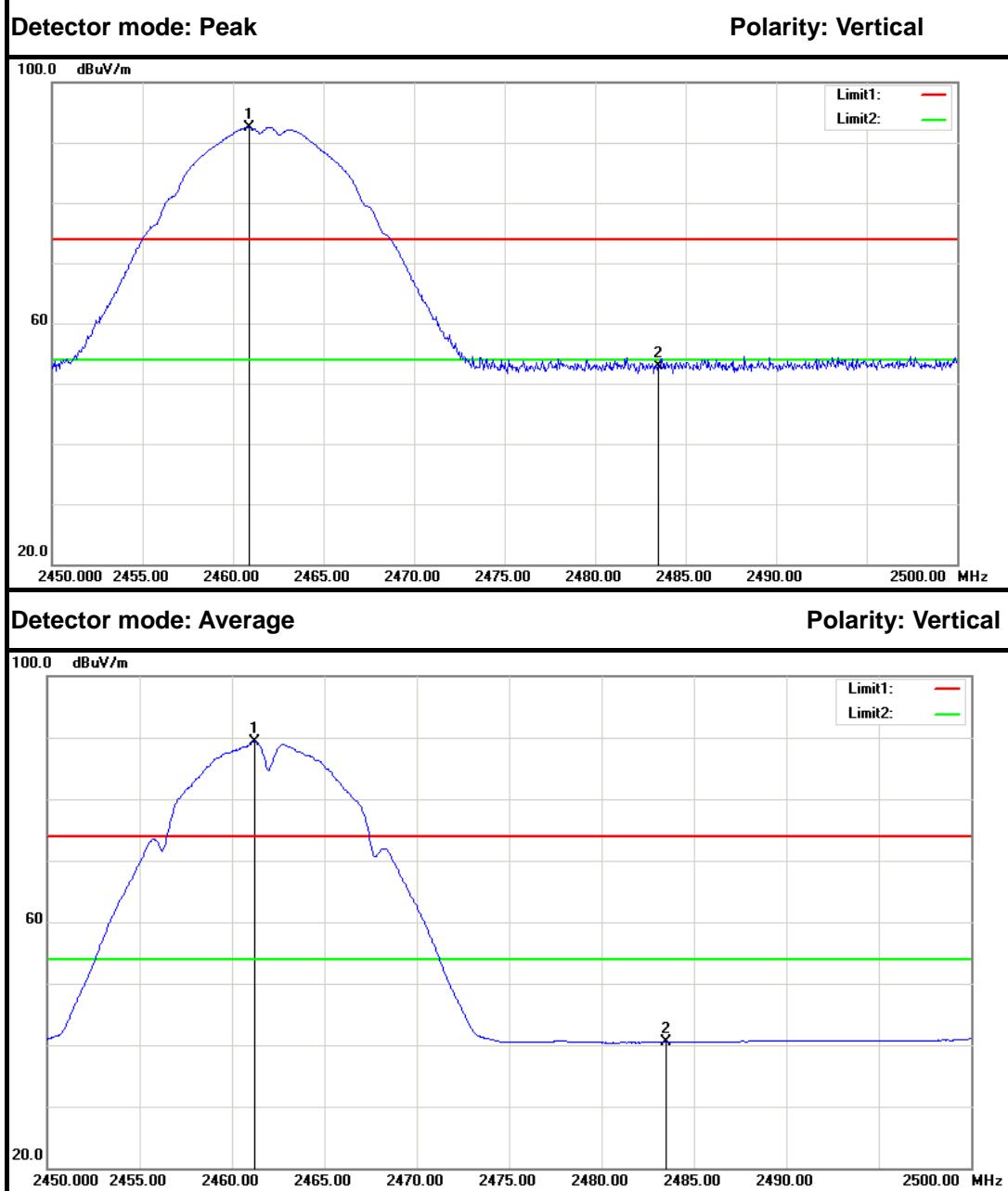
**IEEE 802.11b mode (Antenna 1)
Band Edges (CH Low)**



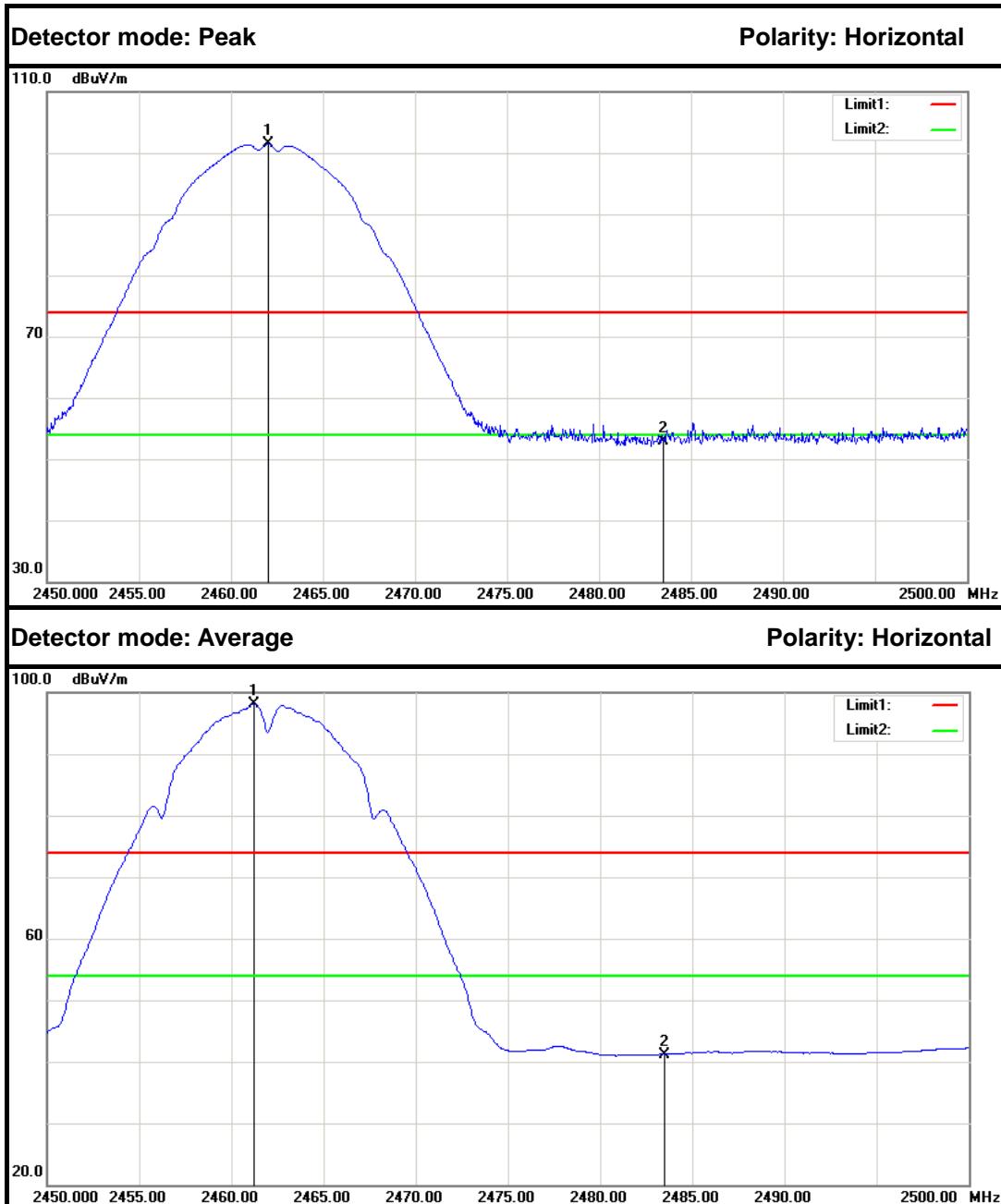
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	54.84	-2.86	51.98	74.00	-22.02	Peak	Vertical
2	2410.920	99.02	-2.75	96.27	---	---	Peak	Vertical
1	2390.000	43.09	-2.86	40.23	54.00	-13.77	Average	Vertical
2	2411.160	95.54	-2.75	92.79	---	---	Average	Vertical



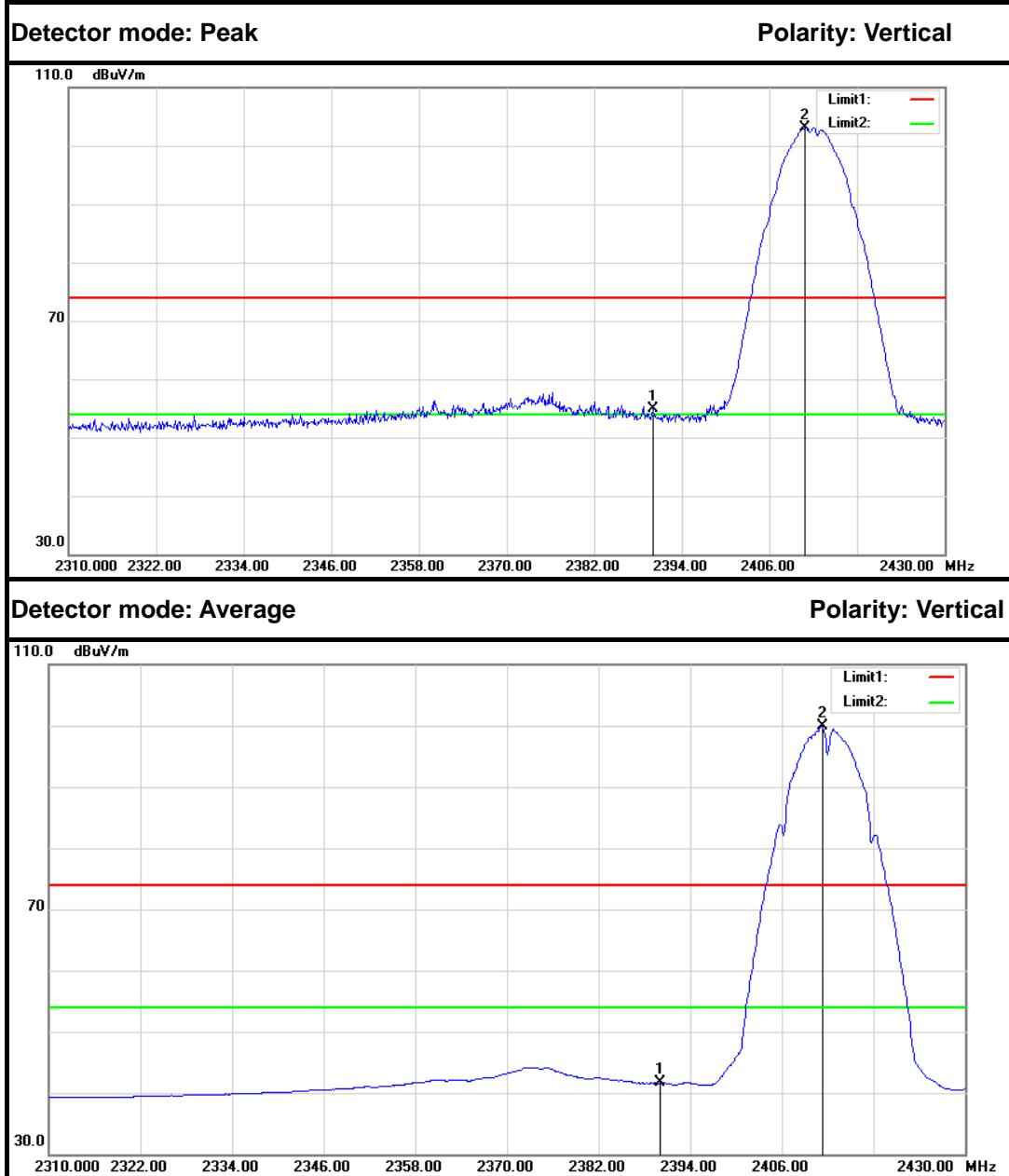
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	54.99	-2.86	52.13	74.00	-21.87	Peak	Horizontal
2	2412.000	105.28	-2.74	102.54	---	---	Peak	Horizontal
1	2390.000	43.99	-2.86	41.13	54.00	-12.87	Average	Horizontal
2	2411.280	101.71	-2.75	98.96	---	---	Average	Horizontal

Band Edges (CH High)

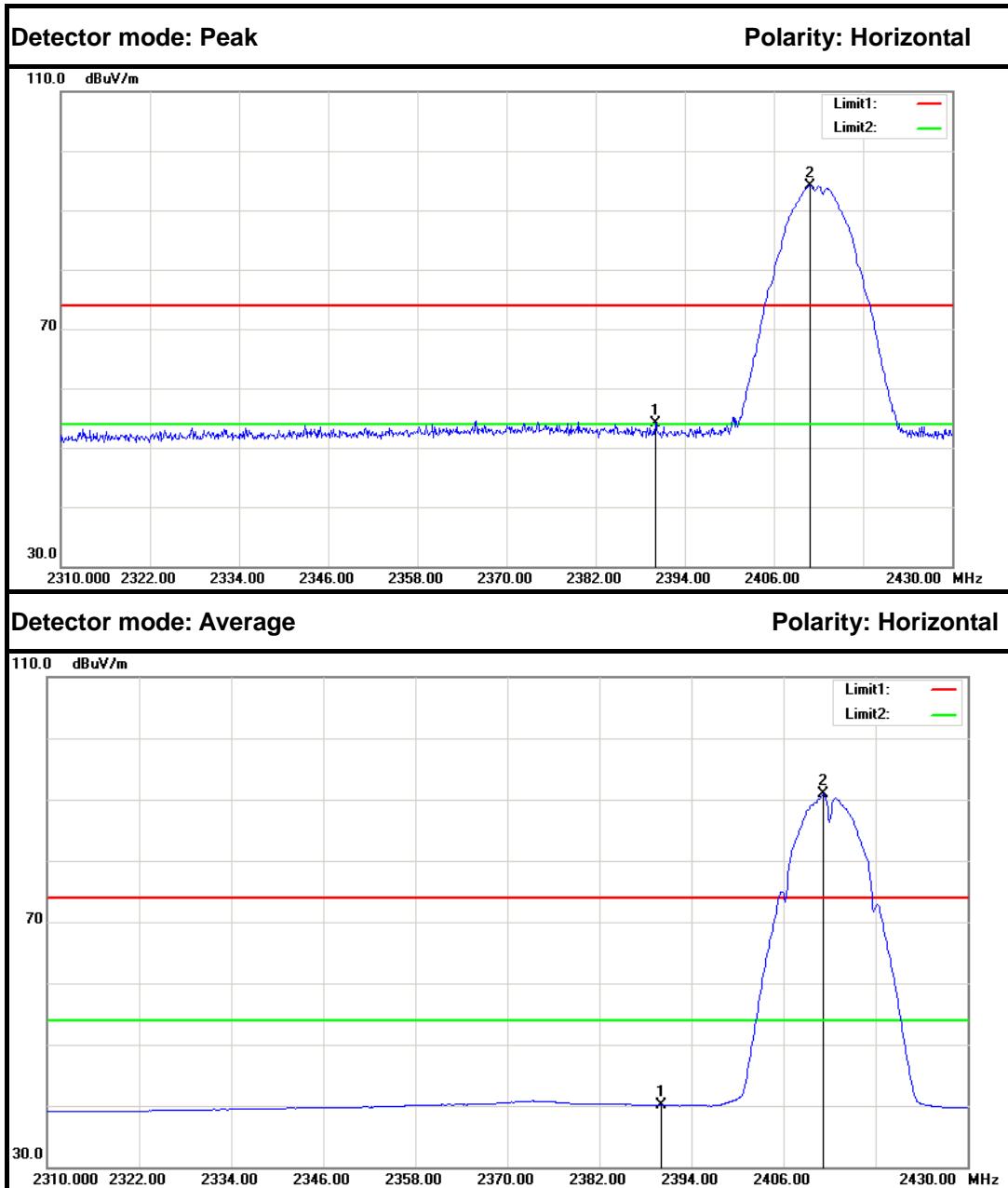
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2460.900	95.03	-2.47	92.56	---	---	Peak	Vertical
2	2483.500	55.25	-2.35	52.90	74.00	-21.10	Peak	Vertical
1	2461.250	91.80	-2.47	89.33	---	---	Average	Vertical
2	2483.500	42.79	-2.35	40.44	54.00	-13.56	Average	Vertical



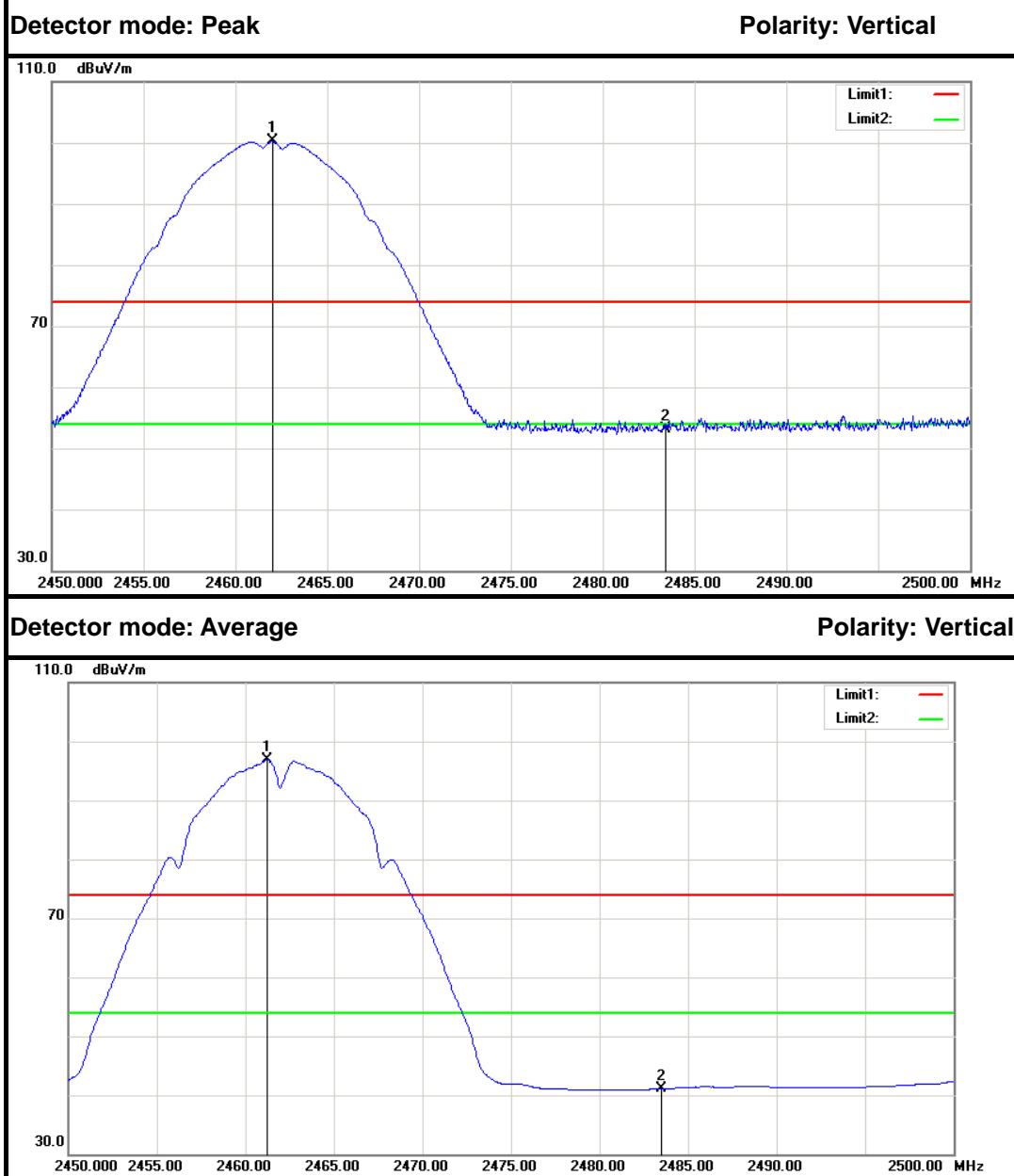
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2462.000	103.92	-2.47	101.45	---	---	Peak	Horizontal
2	2483.500	55.24	-2.35	52.89	74.00	-21.11	Peak	Horizontal
1	2461.200	100.62	-2.47	98.15	---	---	Average	Horizontal
2	2483.500	43.53	-2.35	41.18	54.00	-12.82	Average	Horizontal

IEEE 802.11b mode (Antenna 2)**Band Edges (CH Low)**

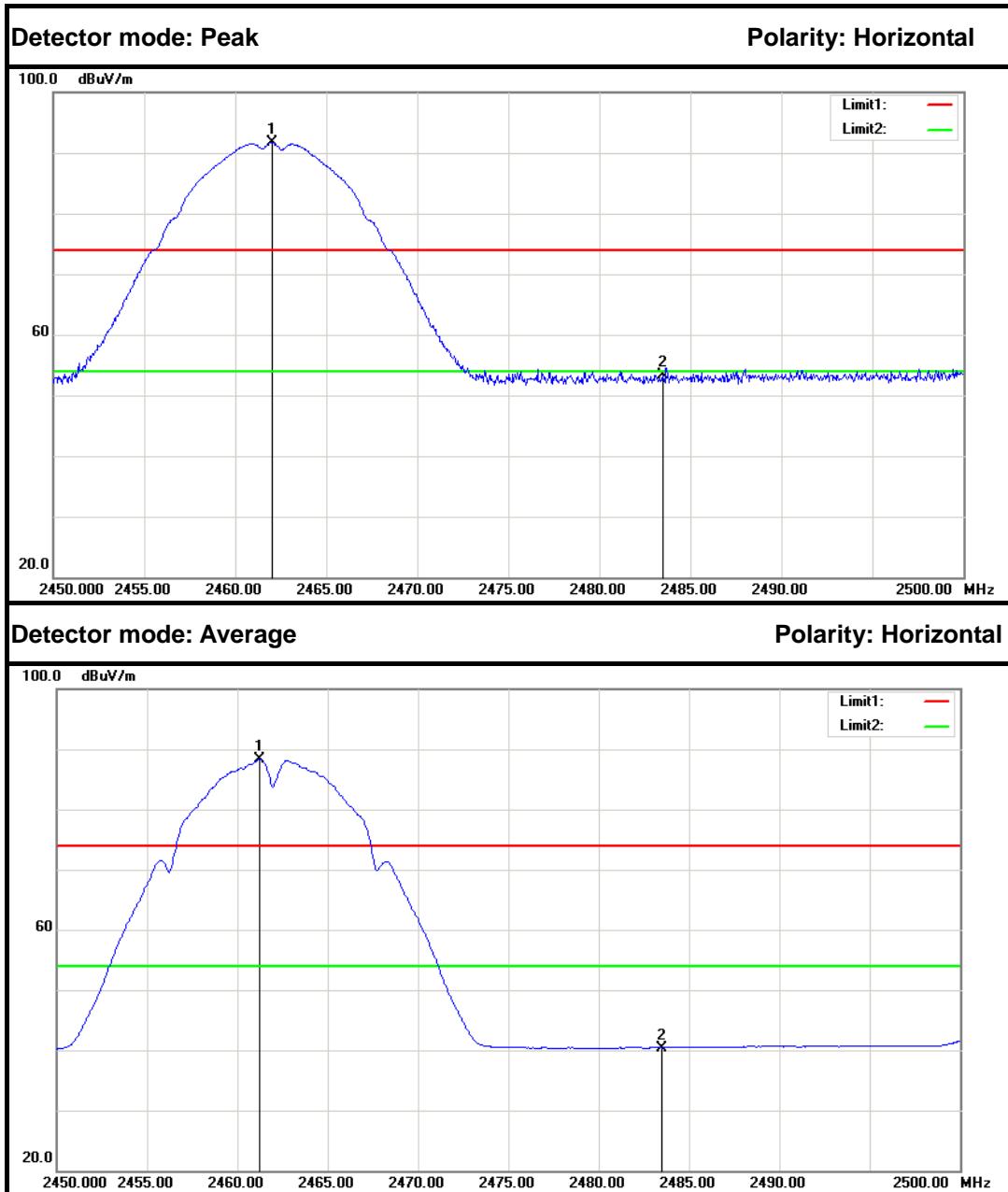
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	57.67	-2.86	54.81	74.00	-19.19	Peak	Vertical
2	2410.920	105.83	-2.75	103.08	---	---	Peak	Vertical
1	2390.000	44.49	-2.86	41.63	54.00	-12.37	Average	Vertical
2	2411.280	102.62	-2.75	99.87	---	---	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	56.90	-2.86	54.04	74.00	-19.96	Peak	Horizontal
2	2410.920	96.87	-2.75	94.12	---	---	Peak	Horizontal
1	2390.000	42.96	-2.86	40.10	54.00	-13.90	Average	Horizontal
2	2411.160	93.61	-2.75	90.86	---	---	Average	Horizontal

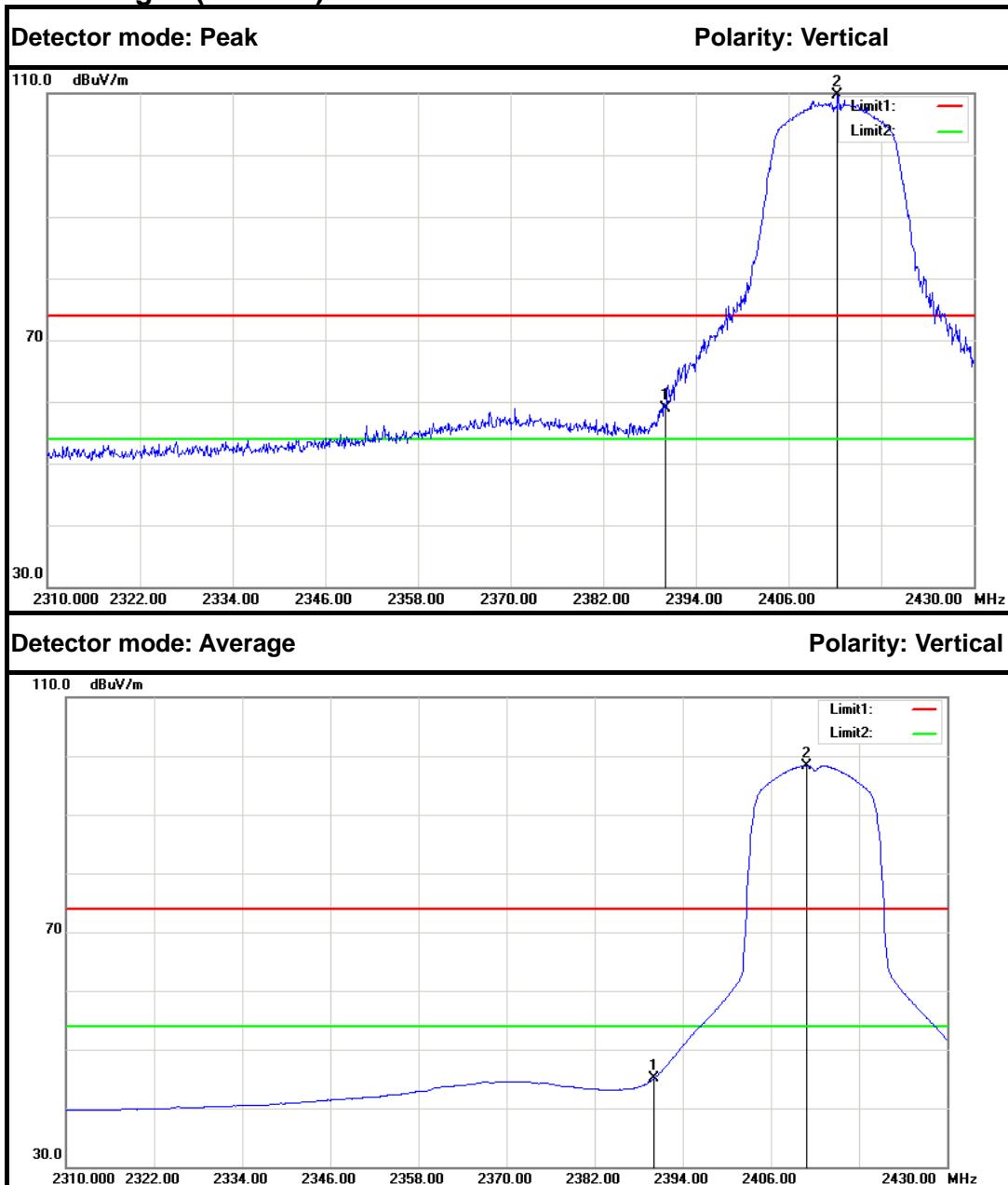
Band Edges (CH High)

No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2462.000	102.70	-2.47	100.23	---	---	Peak	Vertical
2	2483.400	55.42	-2.35	53.07	74.00	-20.93	Peak	Vertical
1	2461.250	99.35	-2.47	96.88	---	---	Average	Vertical
2	2483.500	43.47	-2.35	41.12	54.00	-12.88	Average	Vertical

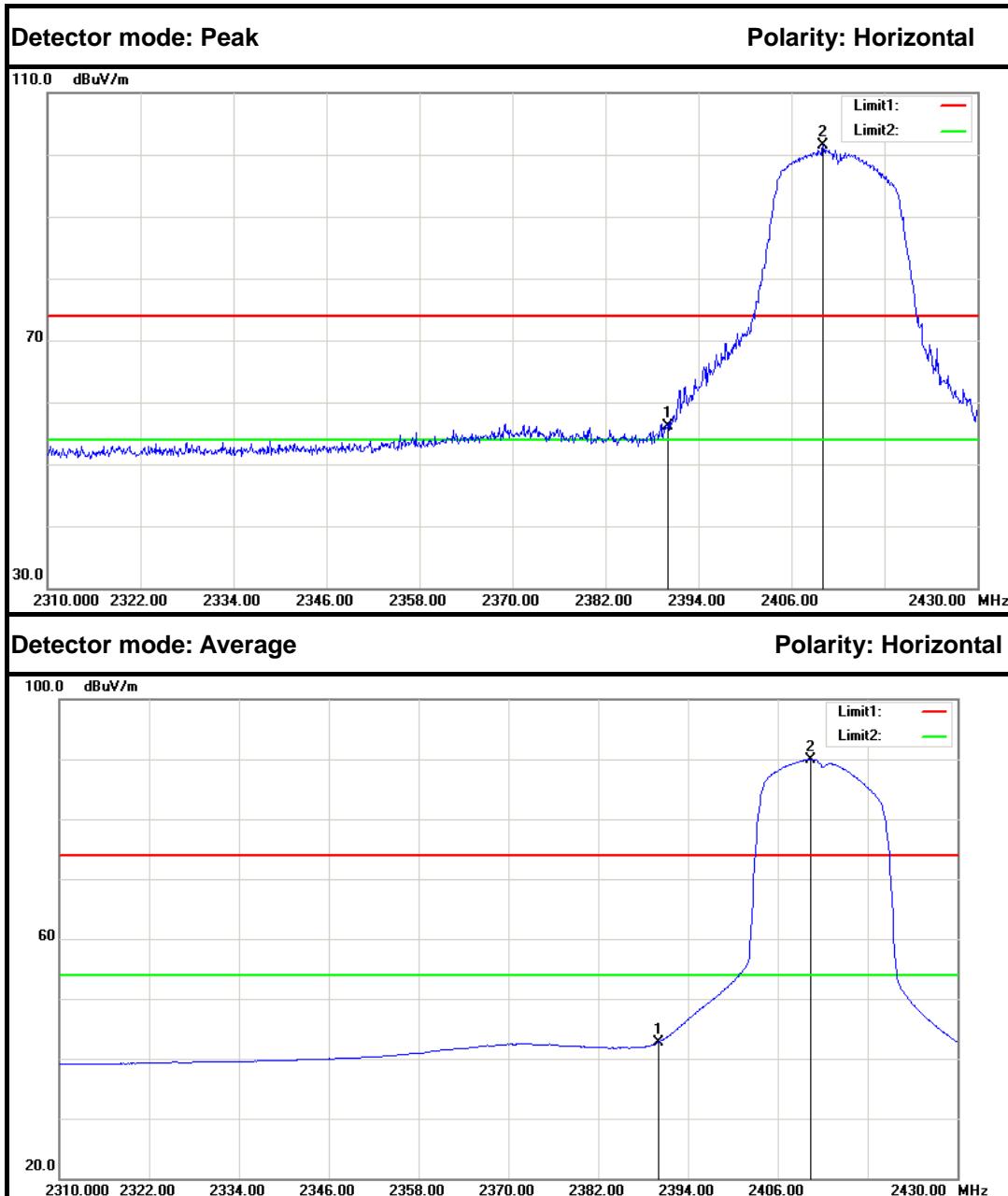


No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2462.000	94.15	-2.47	91.68	---	---	Peak	Horizontal
2	2483.500	55.62	-2.35	53.27	74.00	-20.73	Peak	Horizontal
1	2461.200	90.80	-2.47	88.33	---	---	Average	Horizontal
2	2483.500	42.73	-2.35	40.38	54.00	-13.62	Average	Horizontal

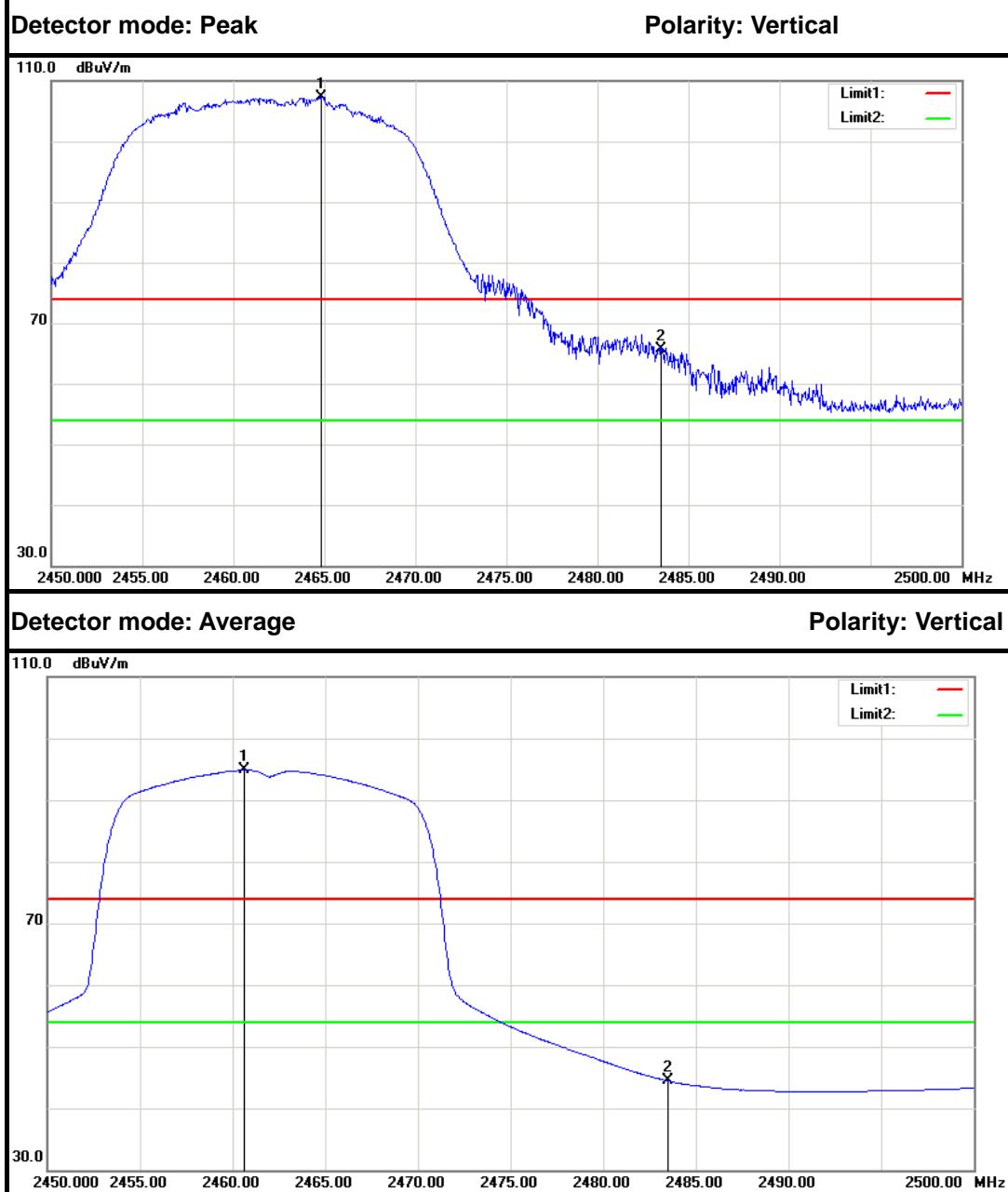
**IEEE 802.11g mode (Antenna 0)
Band Edges (CH Low)**



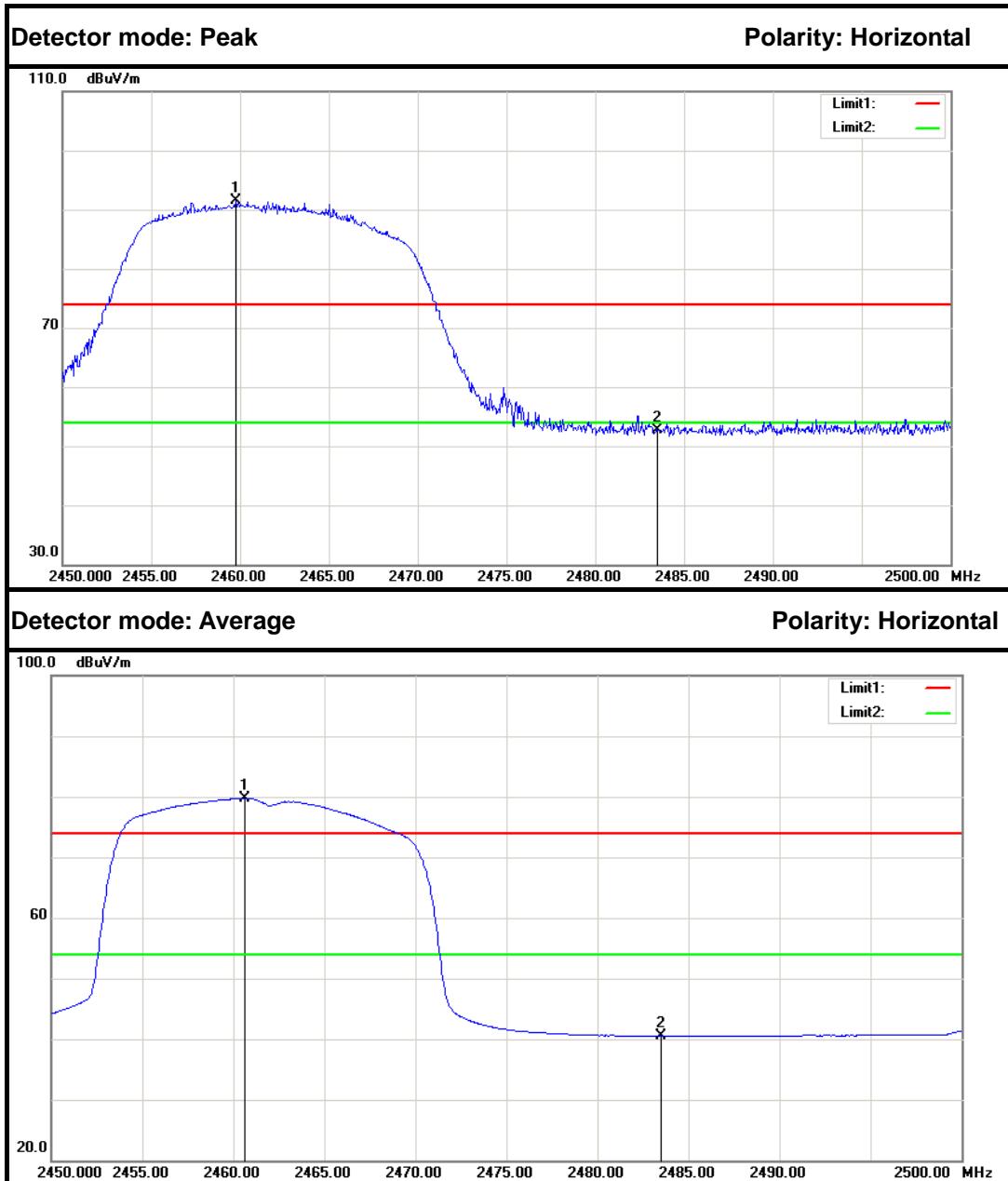
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	61.75	-2.86	58.89	74.00	-15.11	Peak	Vertical
2	2412.360	112.53	-2.74	109.79	---	---	Peak	Vertical
1	2390.000	47.93	-2.86	45.07	54.00	-8.93	Average	Vertical
2	2410.920	101.13	-2.75	98.38	---	---	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	58.91	-2.86	56.05	74.00	-17.95	Peak	Horizontal
2	2410.080	104.28	-2.75	101.53	---	---	Peak	Horizontal
1	2390.000	45.60	-2.86	42.74	54.00	-11.26	Average	Horizontal
2	2410.320	92.73	-2.75	89.98	---	---	Average	Horizontal

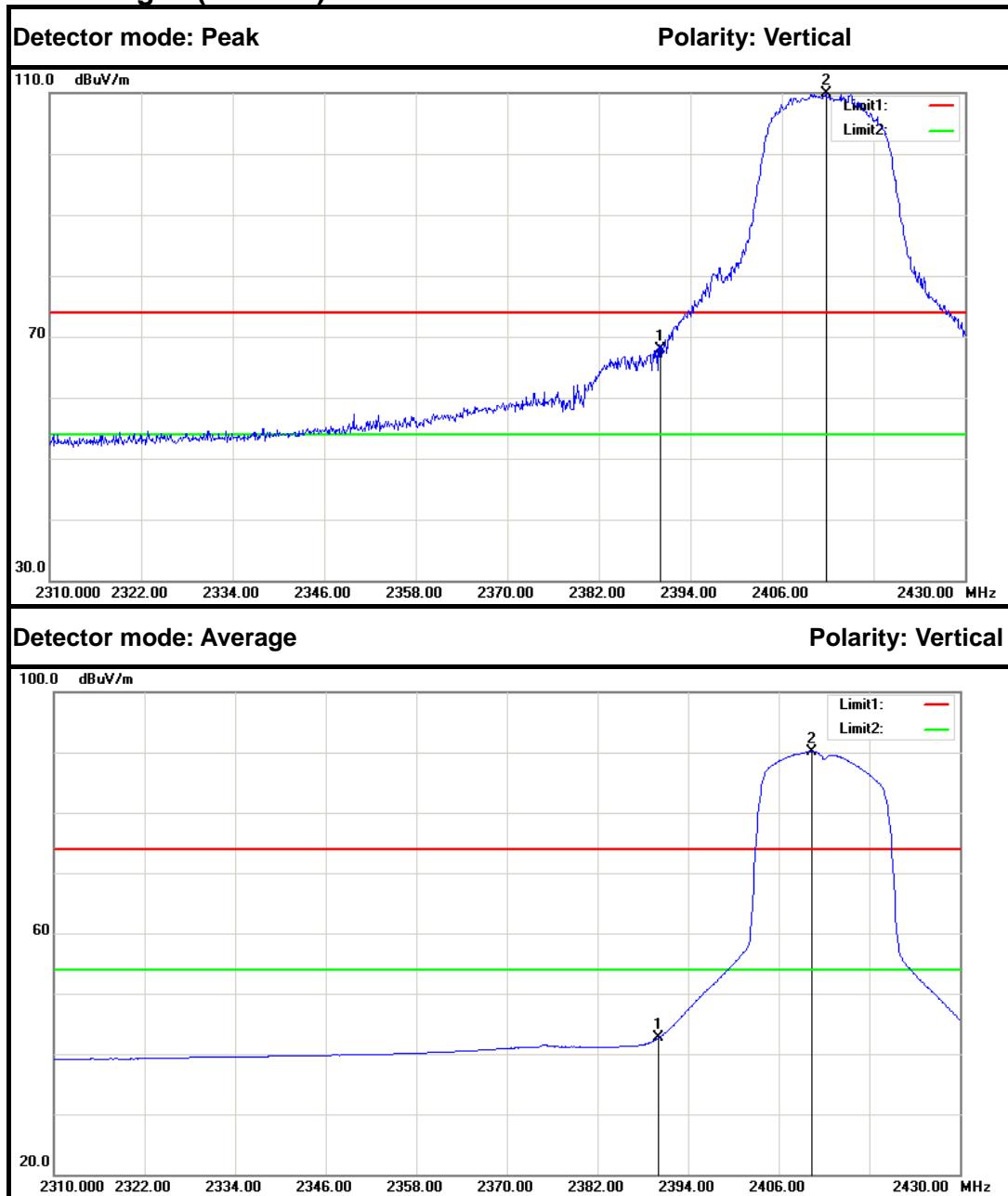
Band Edges (CH High)

No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2464.850	109.80	-2.45	107.35	---	---	Peak	Vertical
2	2483.500	68.04	-2.35	65.69	74.00	-8.31	Peak	Vertical
1	2460.650	97.33	-2.48	94.85	---	---	Average	Vertical
2	2483.500	46.83	-2.35	44.48	54.00	-9.52	Average	Vertical

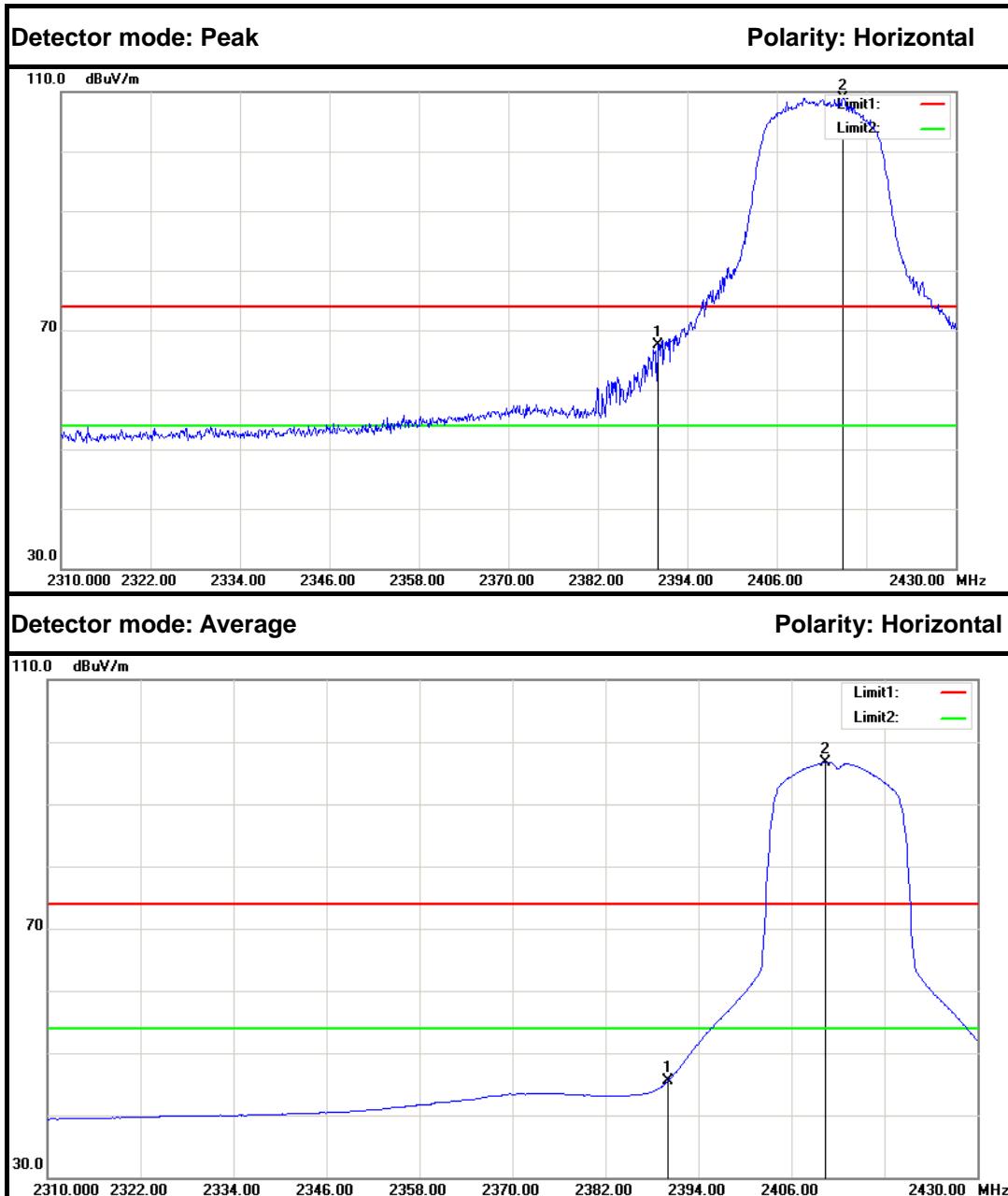


No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2459.750	93.95	-2.48	91.47	---	---	Peak	Horizontal
2	2483.500	55.00	-2.35	52.65	74.00	-21.35	Peak	Horizontal
1	2460.650	82.21	-2.48	79.73	---	---	Average	Horizontal
2	2483.500	42.82	-2.35	40.47	54.00	-13.53	Average	Horizontal

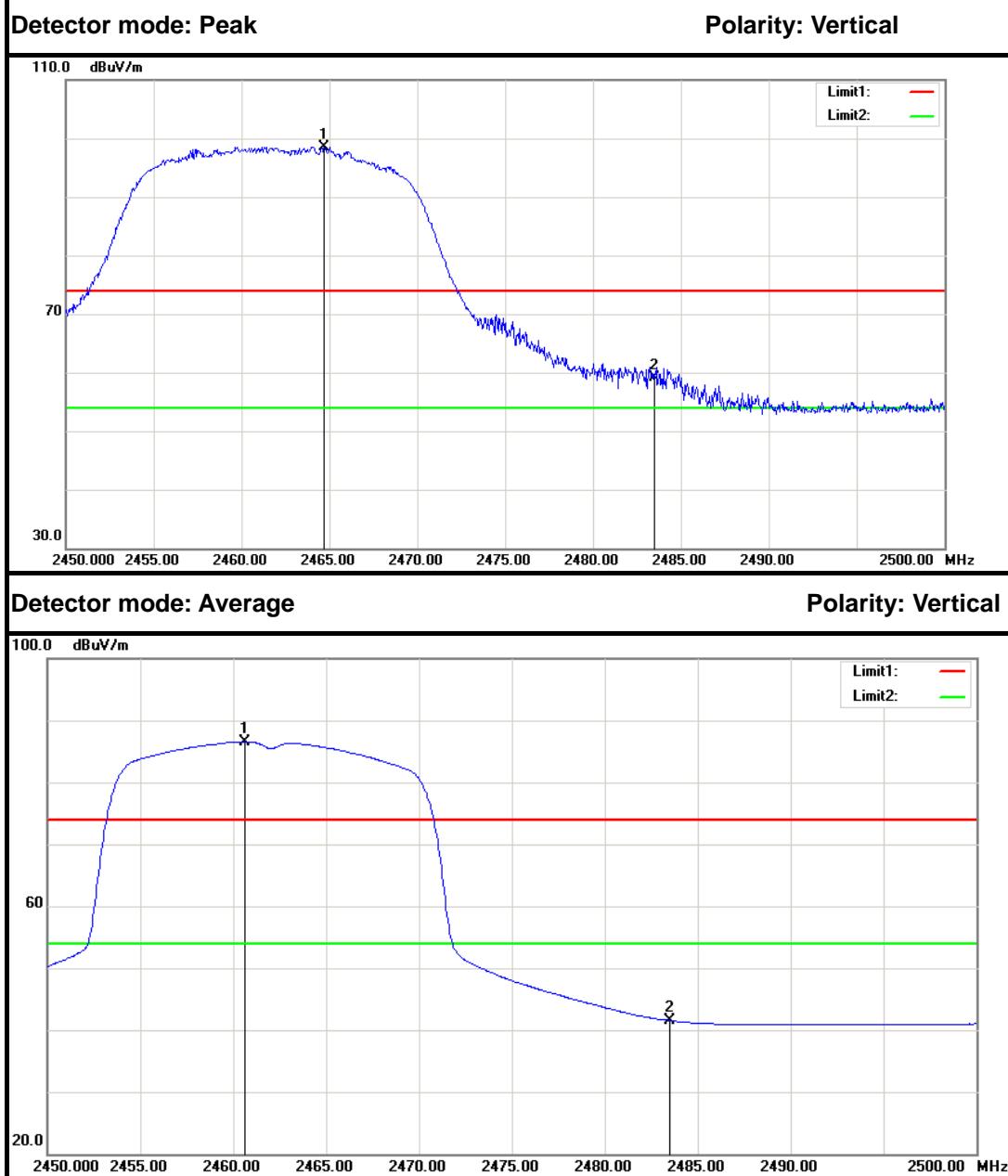
**IEEE 802.11g mode (Antenna 1)
Band Edges (CH Low)**



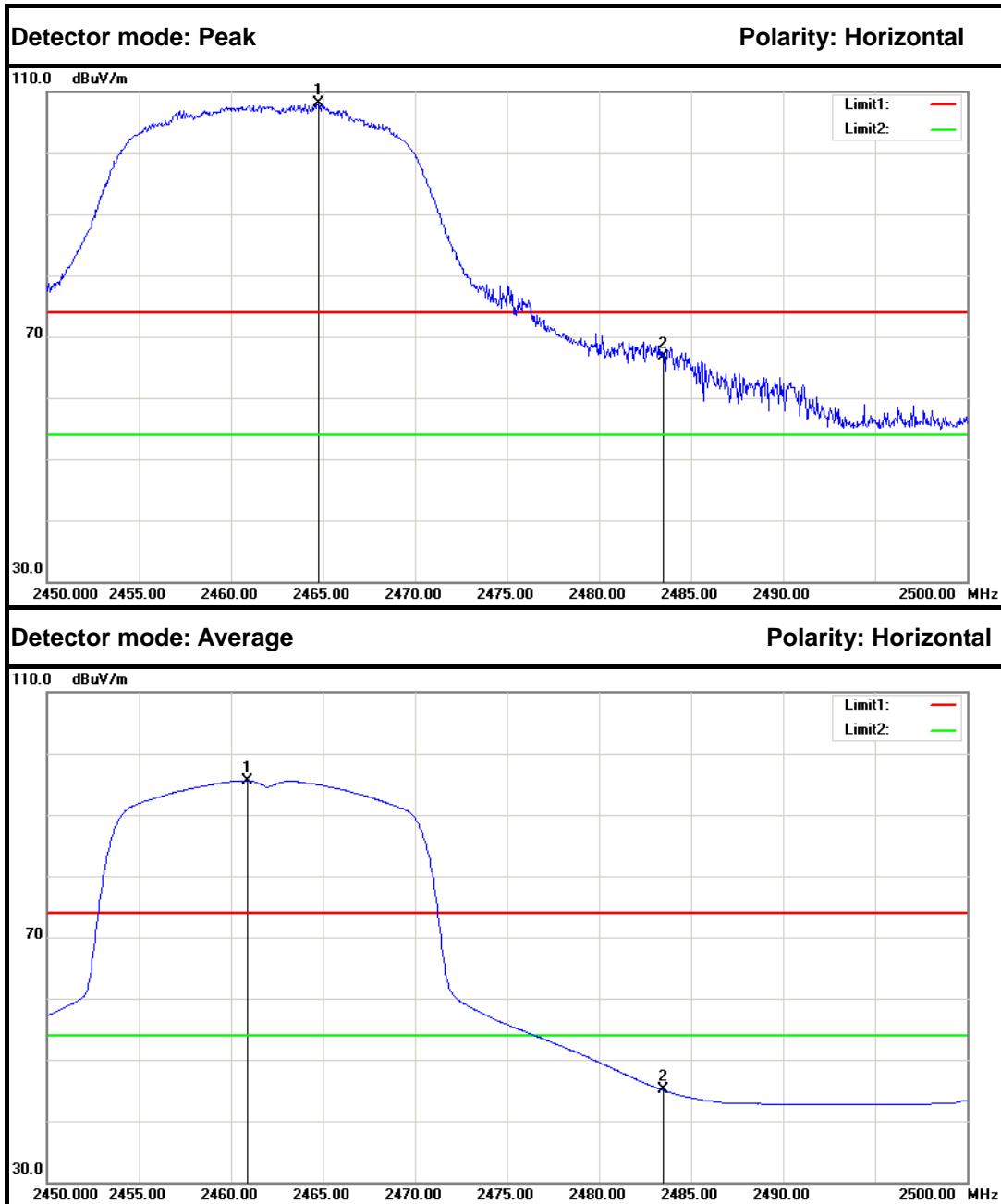
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	70.82	-2.86	67.96	74.00	-6.04	Peak	Vertical
2	2411.760	112.55	-2.74	109.81	---	---	Peak	Vertical
1	2390.000	45.47	-2.86	42.61	54.00	-11.39	Average	Vertical
2	2410.440	92.89	-2.75	90.14	---	---	Average	Vertical



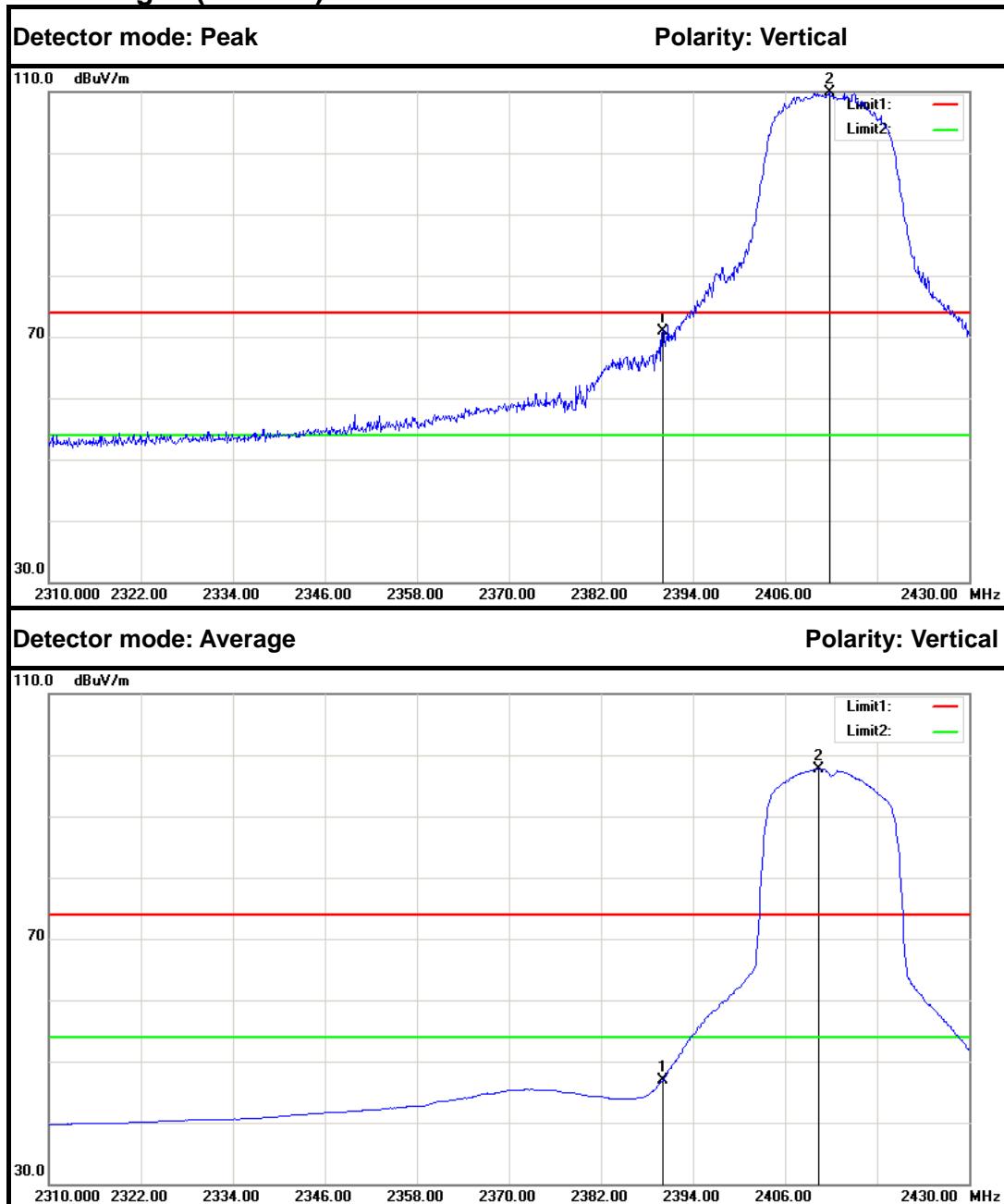
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	70.42	-2.86	67.56	74.00	-6.44	Peak	Horizontal
2	2414.880	111.70	-2.73	108.97	---	---	Peak	Horizontal
1	2390.000	48.34	-2.86	45.48	54.00	-8.52	Average	Horizontal
2	2410.440	99.49	-2.75	96.74	---	---	Average	Horizontal

Band Edges (CH High)

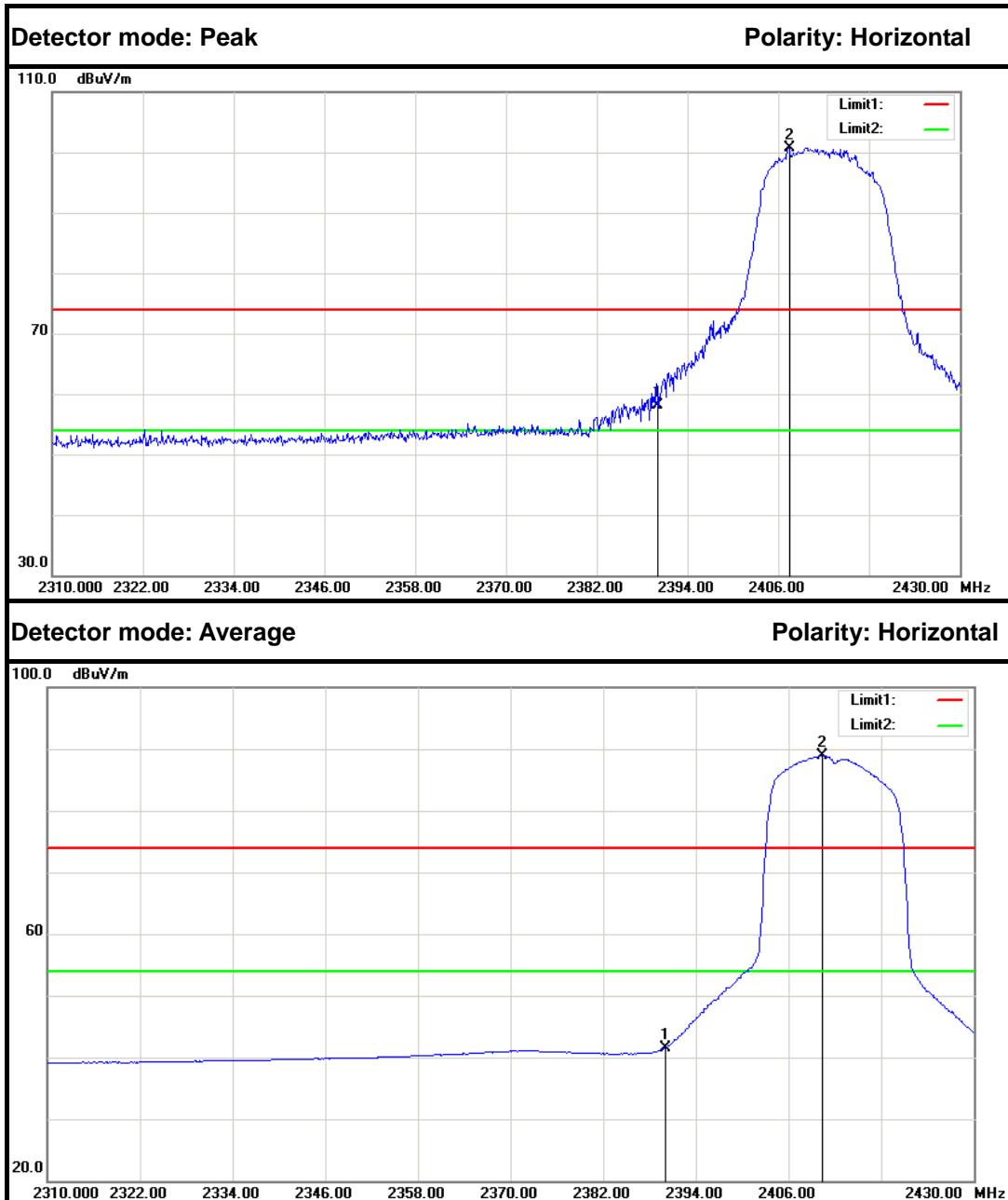
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2464.700	101.00	-2.45	98.55	---	---	Peak	Vertical
2	2483.500	61.53	-2.35	59.18	74.00	-14.82	Peak	Vertical
1	2460.650	89.05	-2.48	86.57	---	---	Average	Vertical
2	2483.500	43.91	-2.35	41.56	54.00	-12.44	Average	Vertical



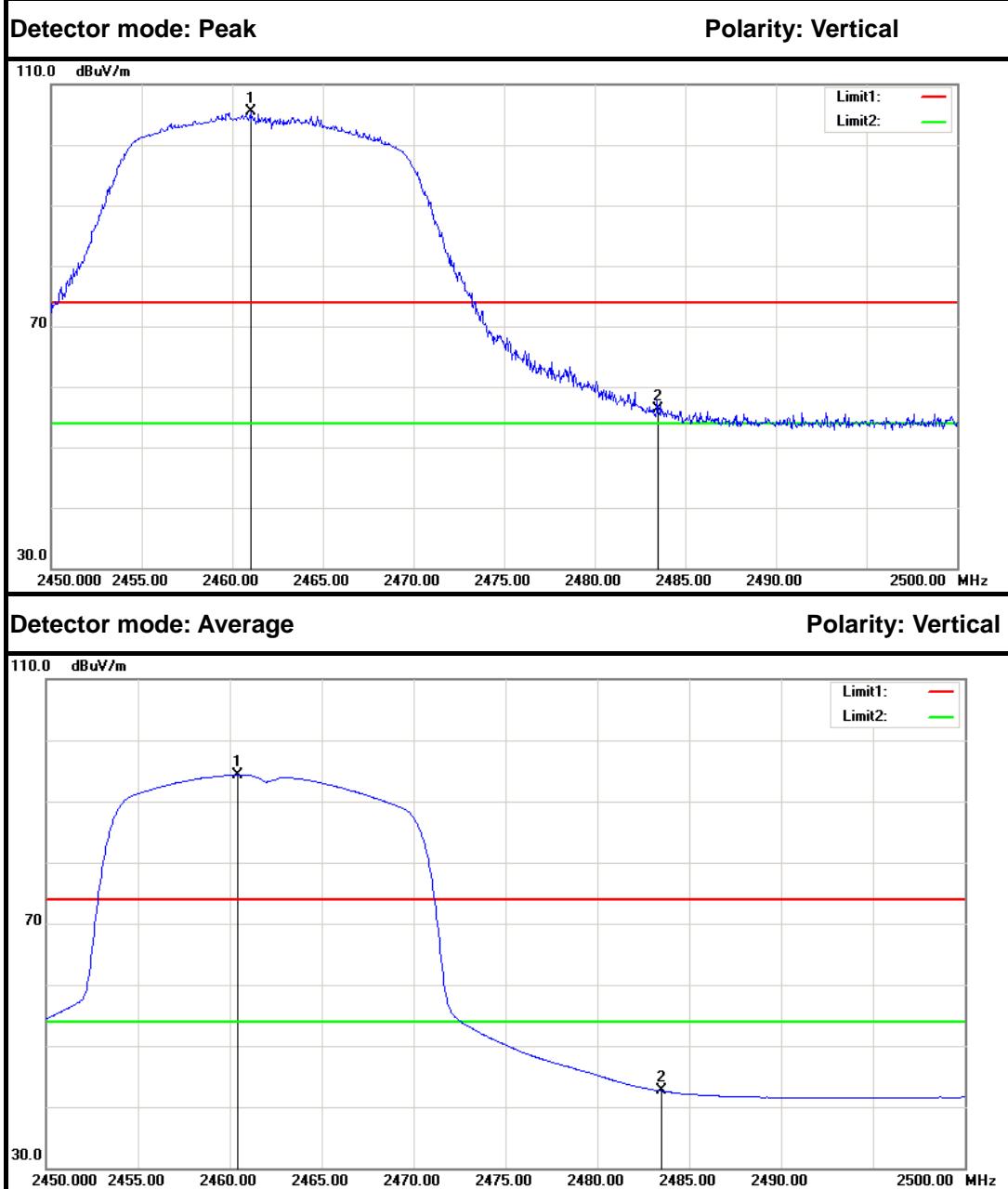
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2464.750	110.46	-2.45	108.01	---	---	Peak	Horizontal
2	2483.500	69.04	-2.35	66.69	74.00	-7.31	Peak	Horizontal
1	2460.900	98.05	-2.47	95.58	---	---	Average	Horizontal
2	2483.500	47.37	-2.35	45.02	54.00	-8.98	Average	Horizontal

IEEE 802.11g mode (Antenna 2)**Band Edges (CH Low)**

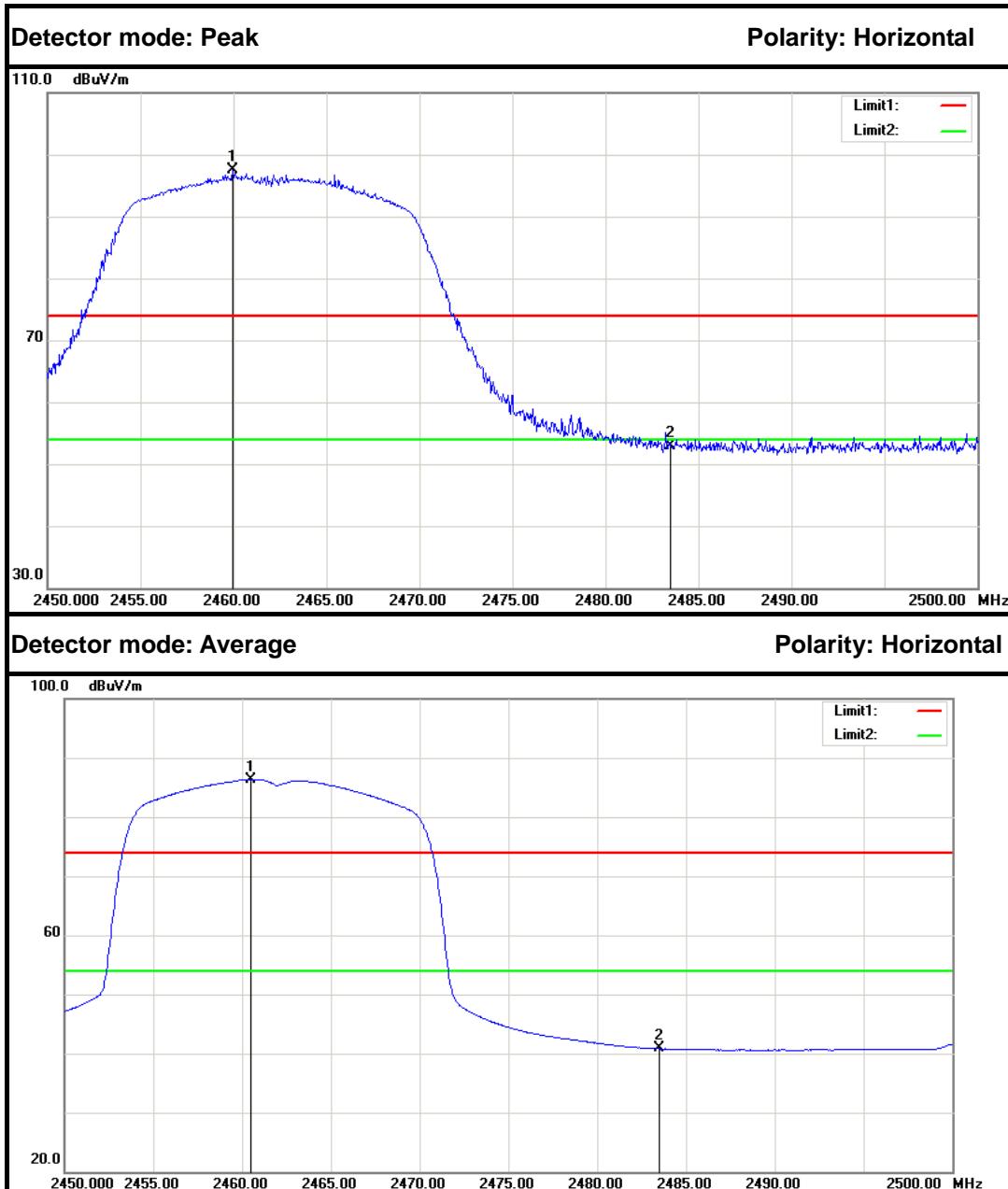
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	73.82	-2.86	70.96	74.00	-3.04	Peak	Vertical
2	2411.760	112.55	-2.74	109.81	---	---	Peak	Vertical
1	2390.000	49.85	-2.86	46.99	54.00	-7.01	Average	Vertical
2	2410.440	100.52	-2.75	97.77	---	---	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	60.93	-2.86	58.07	74.00	-15.93	Peak	Horizontal
2	2407.440	103.56	-2.77	100.79	---	---	Peak	Horizontal
1	2390.000	44.41	-2.86	41.55	54.00	-12.45	Average	Horizontal
2	2410.440	91.66	-2.75	88.91	---	---	Average	Horizontal

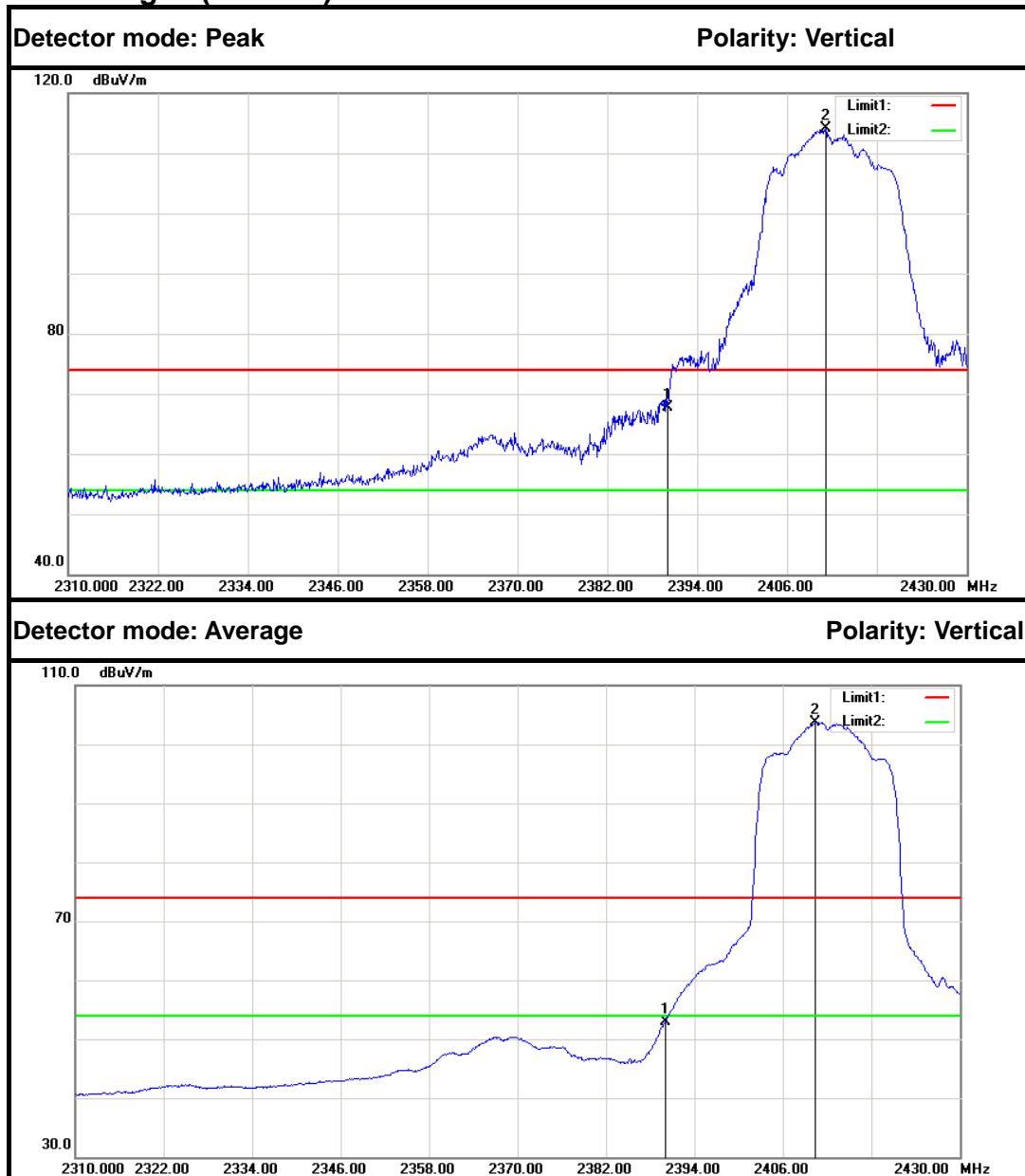
Band Edges (CH High)

No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2461.000	108.04	-2.47	105.57	---	---	Peak	Vertical
2	2483.500	58.73	-2.35	56.38	74.00	-17.62	Peak	Vertical
1	2460.400	96.88	-2.48	94.40	---	---	Average	Vertical
2	2483.500	44.98	-2.35	42.63	54.00	-11.37	Average	Vertical

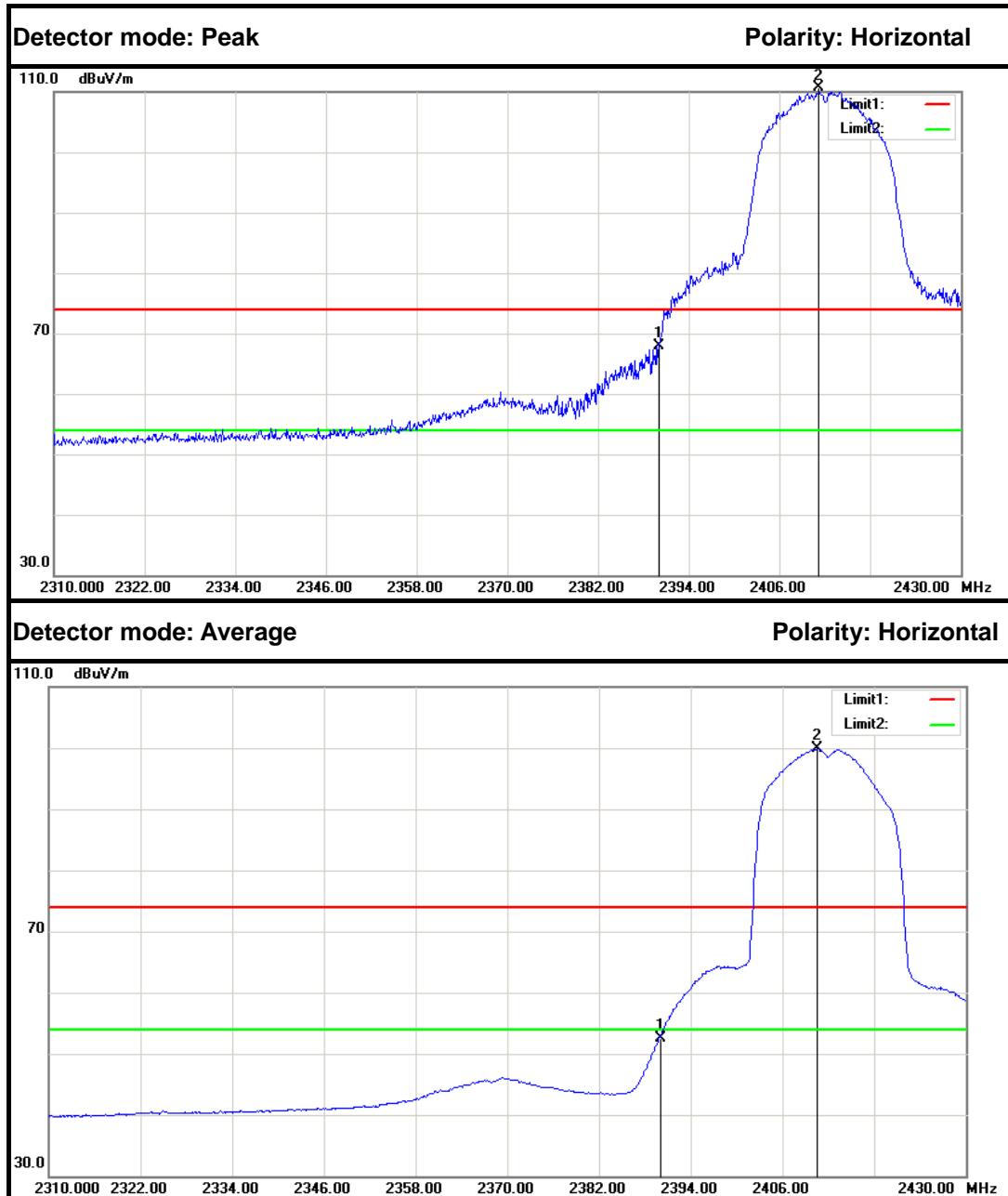


No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2459.950	99.90	-2.48	97.42	---	---	Peak	Horizontal
2	2483.500	55.23	-2.35	52.88	74.00	-21.12	Peak	Horizontal
1	2460.500	88.87	-2.48	86.39	---	---	Average	Horizontal
2	2483.500	43.16	-2.35	40.81	54.00	-13.19	Average	Horizontal

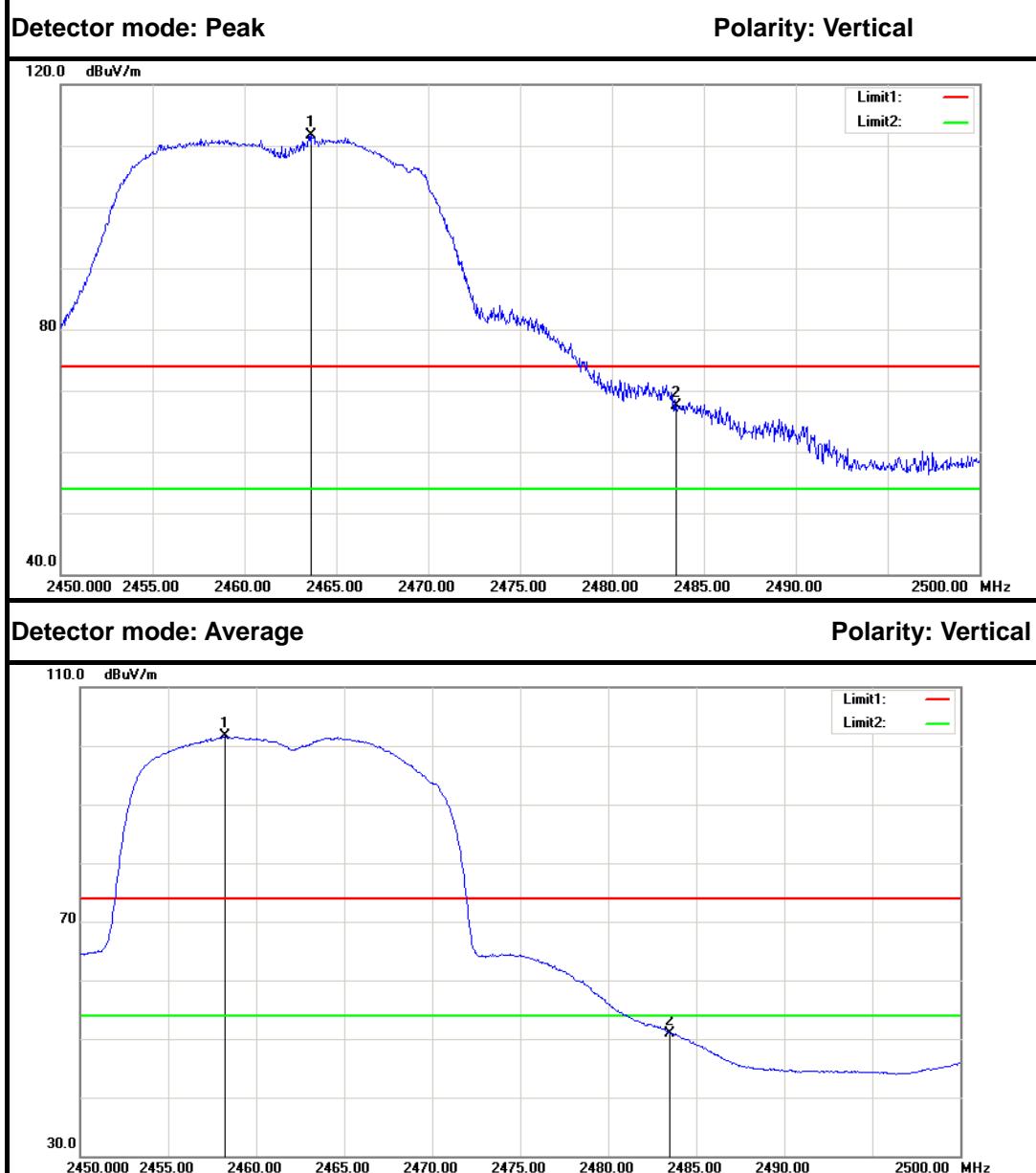
**IEEE 802.11n HT20 MHz mode (Combine with Antenna 0 and Antenna 1 and Antenna 2))
Band Edges (CH Low)**



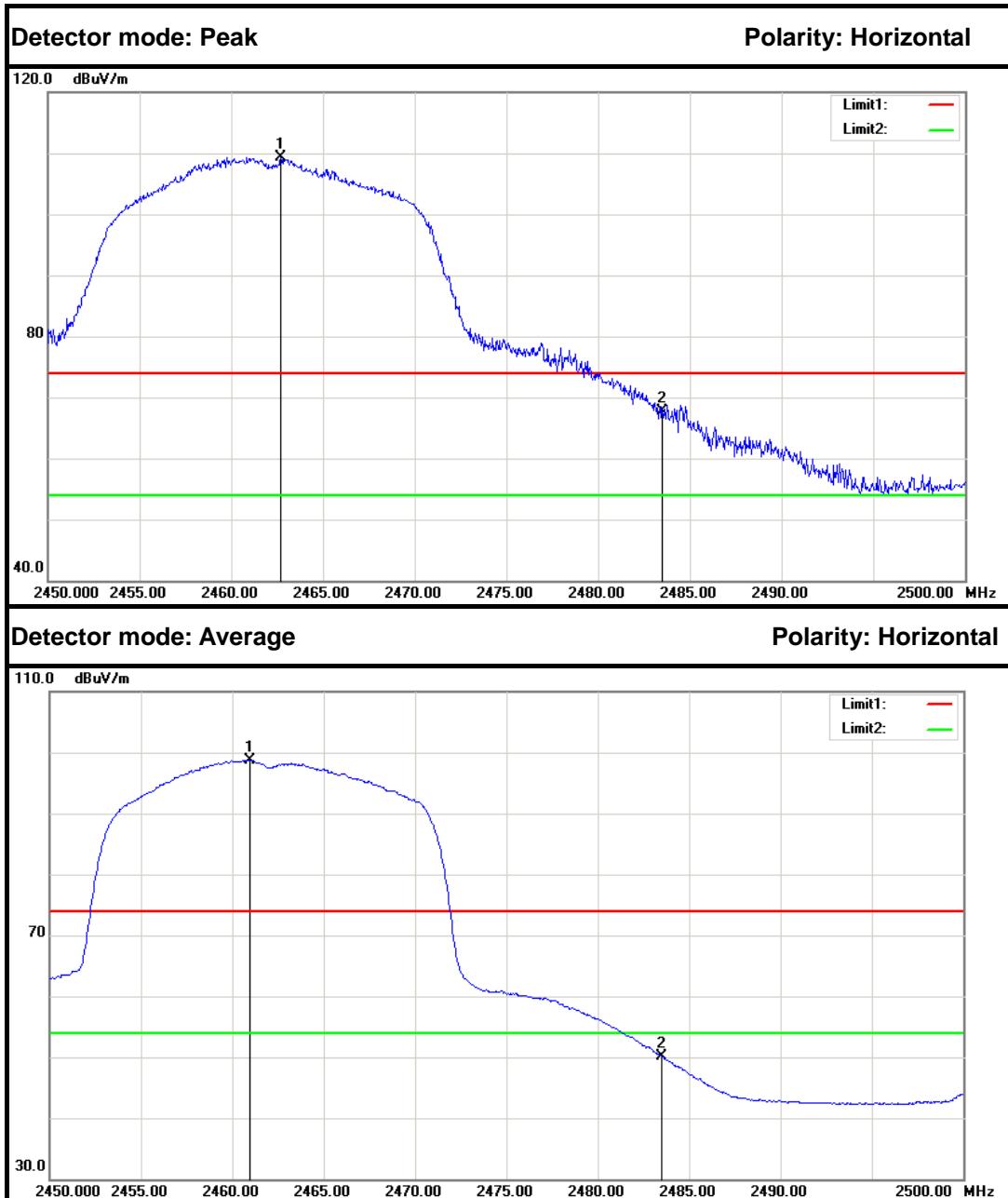
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	70.63	-2.86	67.77	74.00	-6.23	Peak	Vertical
2	2411.160	116.87	-2.75	114.12	---	---	Peak	Vertical
1	2390.000	55.85	-2.86	52.99	54.00	-1.01	Average	Vertical
2	2410.320	106.49	-2.75	103.74	---	---	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	70.70	-2.86	67.84	74.00	-6.16	Peak	Horizontal
2	2411.160	113.40	-2.75	110.65	---	---	Peak	Horizontal
1	2390.000	55.46	-2.86	52.60	54.00	-1.40	Average	Horizontal
2	2410.560	102.64	-2.75	99.89	---	---	Average	Horizontal

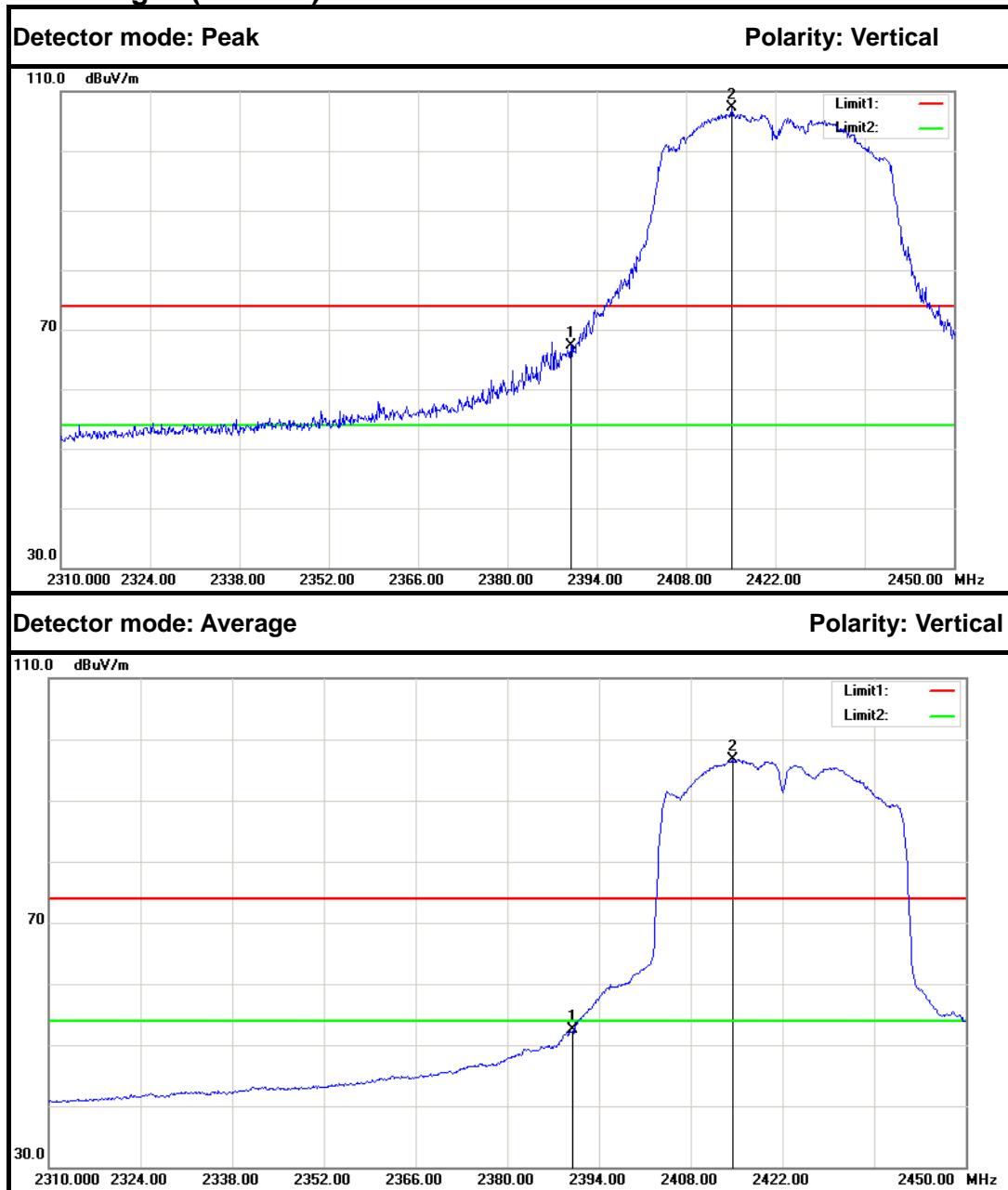
Band Edges (CH High)

No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2463.650	114.10	-2.46	111.64	---	---	Peak	Vertical
2	2483.500	69.90	-2.35	67.55	74.00	-6.45	Peak	Vertical
1	2458.250	104.12	-2.49	101.63	---	---	Average	Vertical
2	2483.500	53.33	-2.35	50.98	54.00	-3.02	Average	Vertical

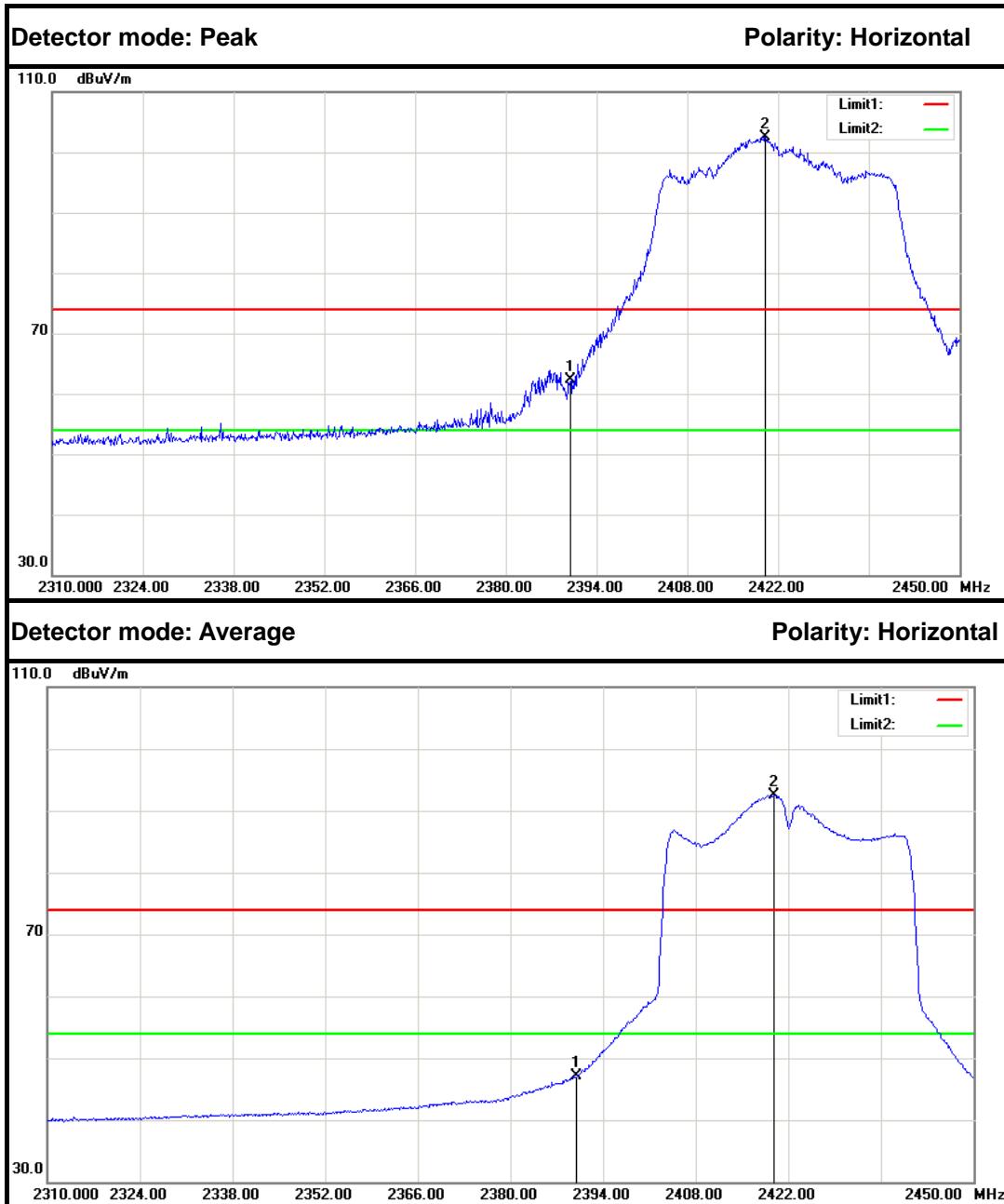


No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2462.700	111.76	-2.46	109.30	---	---	Peak	Horizontal
2	2483.500	70.11	-2.35	67.76	74.00	-6.24	Peak	Horizontal
1	2460.950	101.18	-2.47	98.71	---	---	Average	Horizontal
2	2483.500	52.47	-2.35	50.12	54.00	-3.88	Average	Horizontal

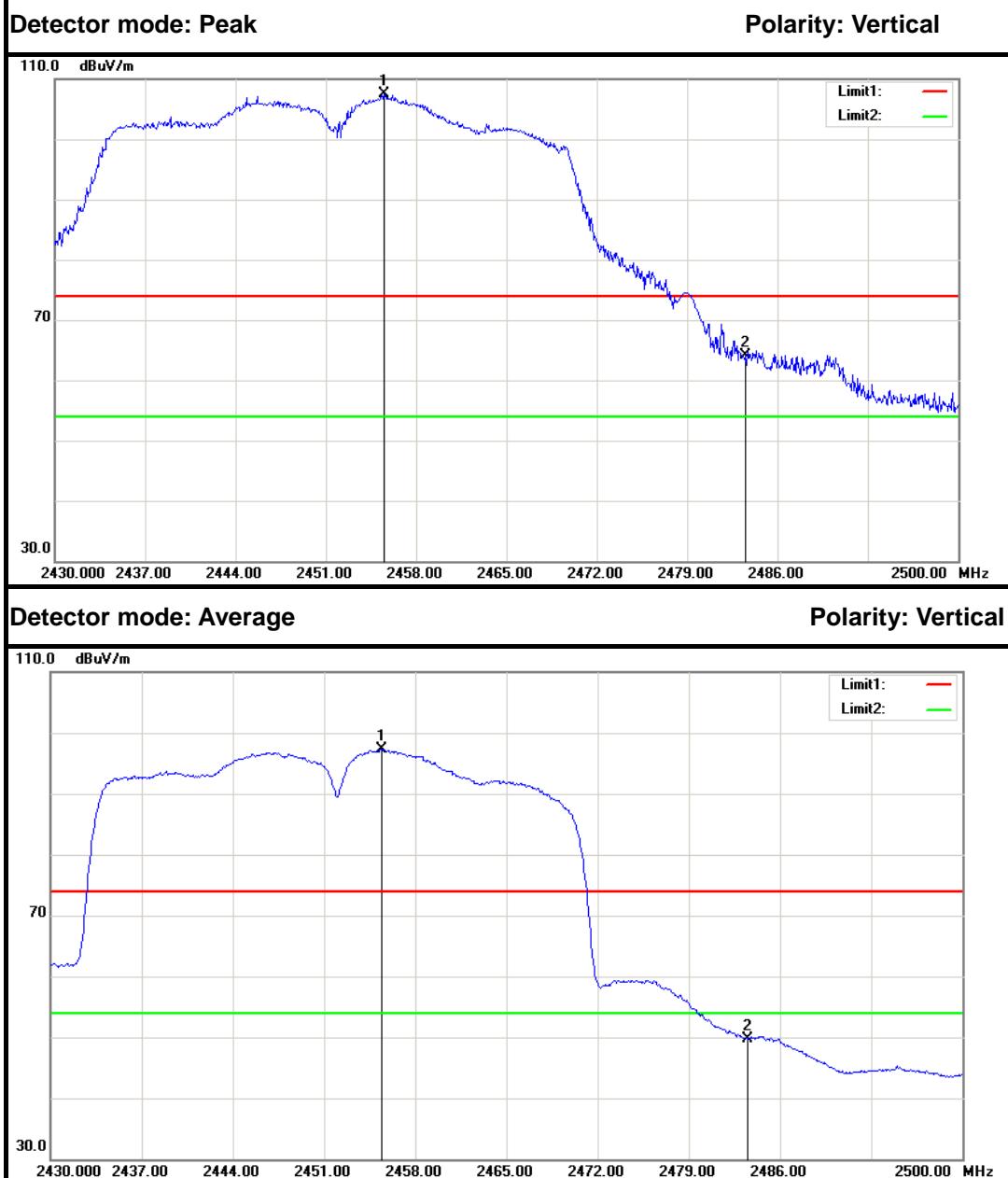
**IEEE 802.11n HT40 MHz mode (Combine with Antenna 0 and Antenna 1 and Antenna 2)
Band Edges (CH Low)**



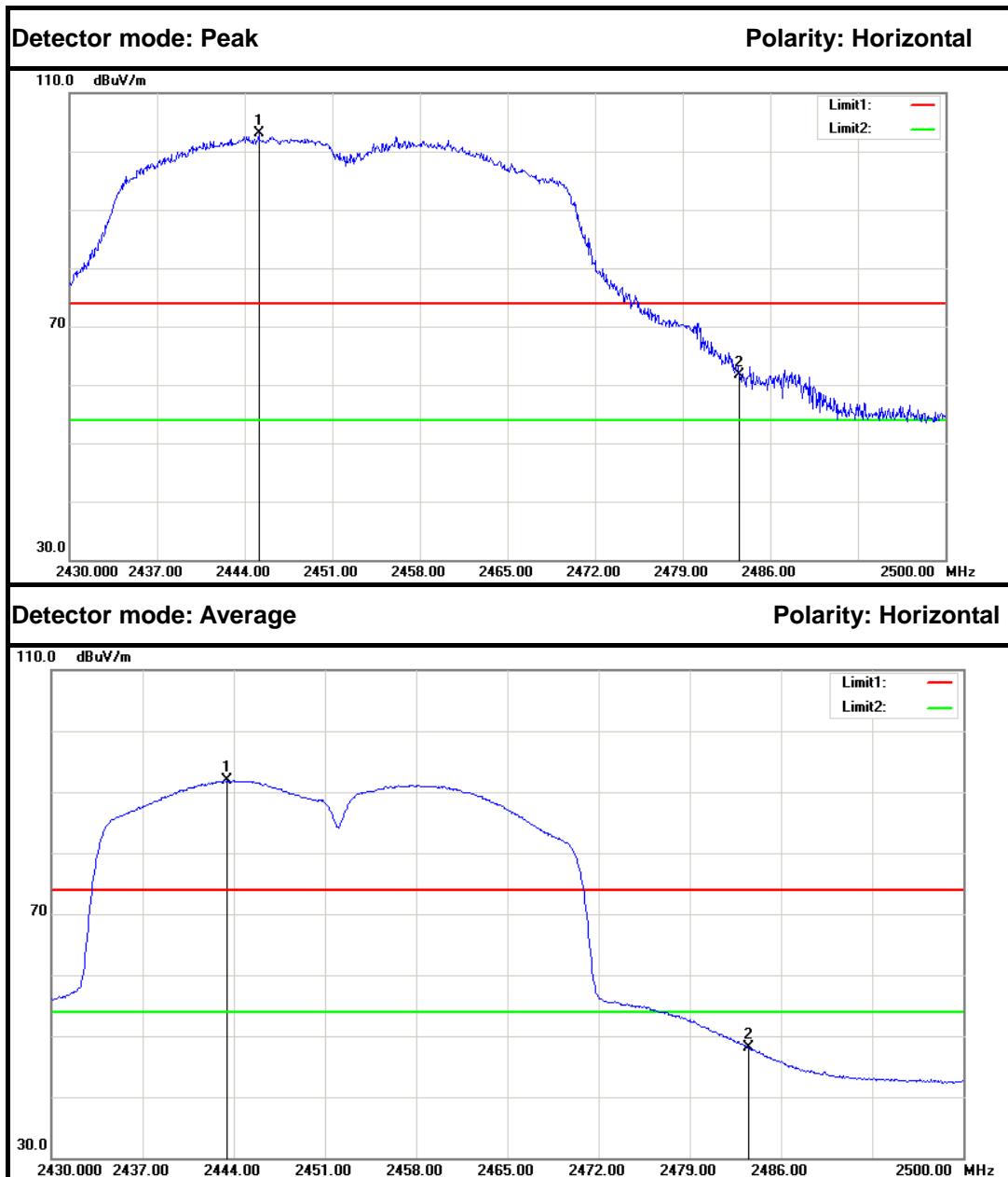
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	70.10	-2.86	67.24	74.00	-6.76	Peak	Vertical
2	2415.140	110.11	-2.72	107.39	---	---	Peak	Vertical
1	2390.000	55.43	-2.86	52.57	54.00	-1.43	Average	Vertical
2	2414.440	99.46	-2.73	96.73	---	---	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	65.13	-2.86	62.27	74.00	-11.73	Peak	Horizontal
2	2420.040	105.28	-2.70	102.58	---	---	Peak	Horizontal
1	2390.000	50.04	-2.86	47.18	54.00	-6.82	Average	Horizontal
2	2419.760	95.18	-2.70	92.48	---	---	Average	Horizontal

Band Edges (CH High)

No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2455.480	109.91	-2.50	107.41	---	---	Peak	Vertical
2	2483.500	66.37	-2.35	64.02	74.00	-9.98	Peak	Vertical
1	2455.410	99.85	-2.50	97.35	---	---	Average	Vertical
2	2483.500	52.13	-2.35	49.78	54.00	-4.22	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2445.120	105.70	-2.56	103.14	---	---	Peak	Horizontal
2	2483.500	63.99	-2.35	61.64	74.00	-12.36	Peak	Horizontal
1	2443.440	94.44	-2.57	91.87	---	---	Average	Horizontal
2	2483.500	50.48	-2.35	48.13	54.00	-5.87	Average	Horizontal

7.7. PEAK POWER SPECTRAL DENSITY MEASUREMENT

7.7.1. LIMITS

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

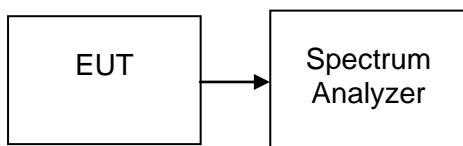
7.7.2. TEST PROCEDURES (please refer to measurement standard)

§15.247(e) specifies a conducted power spectral density (PSD) limit of 8 dBm in any 3 kHz band segment within the fundamental EBW during any time interval of continuous transmission. The same method as used to determine the conducted output power shall be used to determine the power spectral density (i.e., if peak-detected fundamental power was measured then use the peak PSD procedure and if average fundamental power was measured then use the average PSD procedure).

10.2 Method PKPSD (peak PSD)

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.7.3. TEST SETUP



7.7.4. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm)			Limit (dBm)	Test Result
		Antenna 0	Antenna 1	Antenna 2		
Low	2412	-10.309	-13.362	-12.667	8	PASS
Mid	2437	-10.060	-12.602	-12.396		PASS
High	2462	-10.075	-10.961	-12.392		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)			Limit (dBm)	Test Result
		Antenna 0	Antenna 1	Antenna 2		
Low	2412	-11.745	-10.711	-10.690	8	PASS
Mid	2437	-11.259	-10.413	-10.909		PASS
High	2462	-11.515	-8.976	-10.485		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine with Antenna 0 and Antenna 1 and Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)				Limit (dBm)	Test Result
		Antenna 0	Antenna 1	Antenna 2	Total		
Low	2412	-12.927	-12.120	-12.425	-7.707	4.23	PASS
Mid	2437	-12.940	-10.747	-10.699	-6.573		PASS
High	2462	-11.781	-10.620	-11.179	-6.396		PASS

Test mode: IEEE 802.11n HT40 MHz (Combine with Antenna 0 and Antenna 1 and Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)				Limit (dBm)	Test Result
		Antenna 0	Antenna 1	Antenna 2	Total		
Low	2422	-16.610	-16.819	-17.082	-12.062	4.23	PASS
Mid	2437	-14.319	-13.959	-13.790	-9.246		PASS
High	2452	-17.399	-15.808	-15.631	-11.439		PASS

Test Plot

Antenna 0

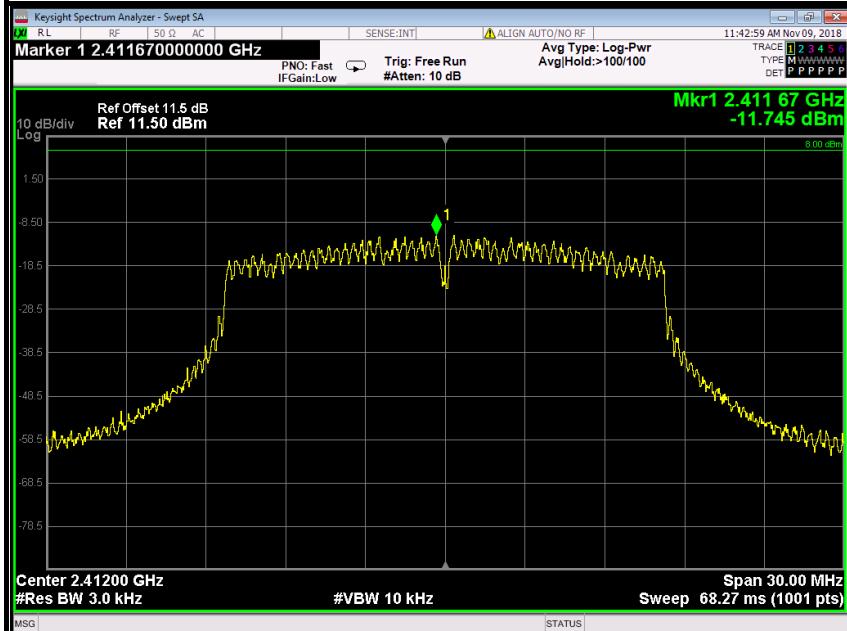
IEEE 802.11b mode

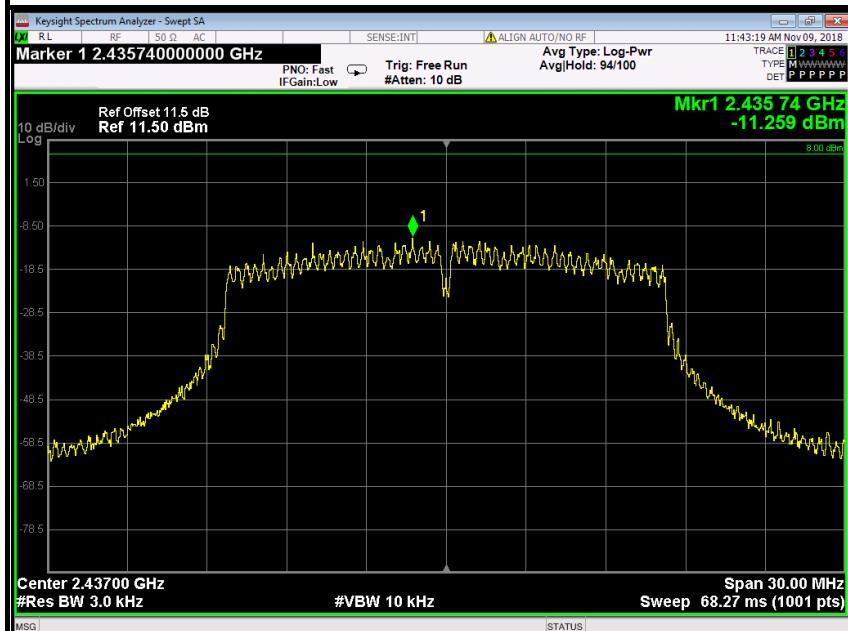
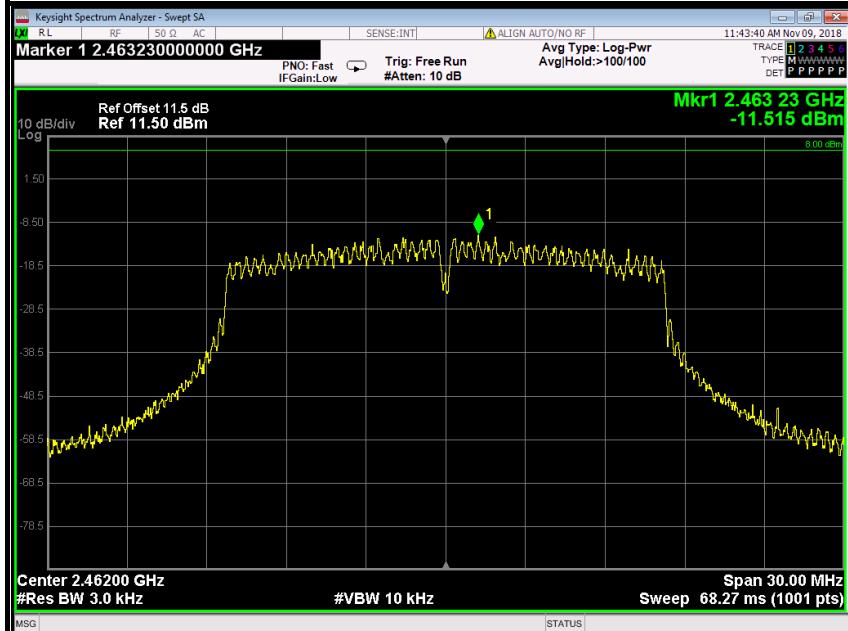
PPSD (CH Low)

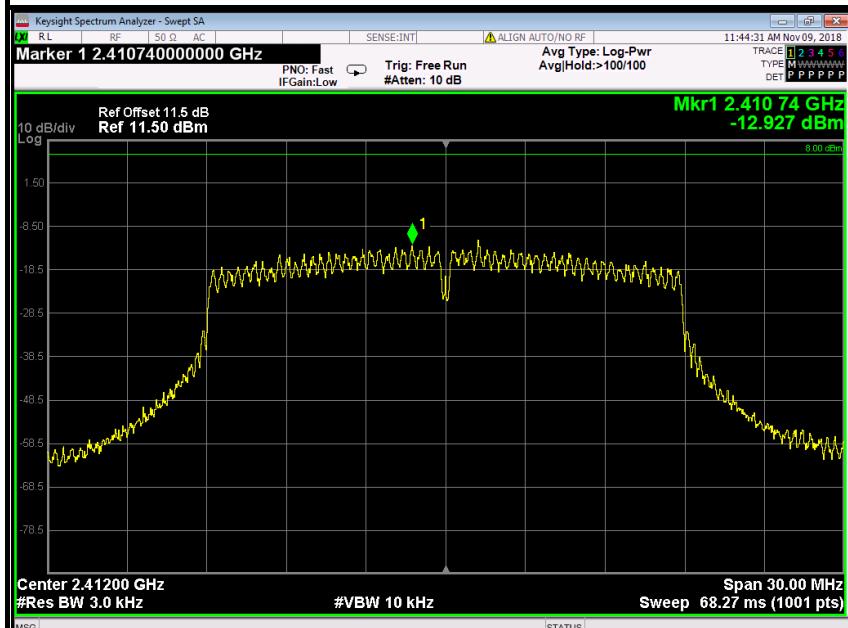
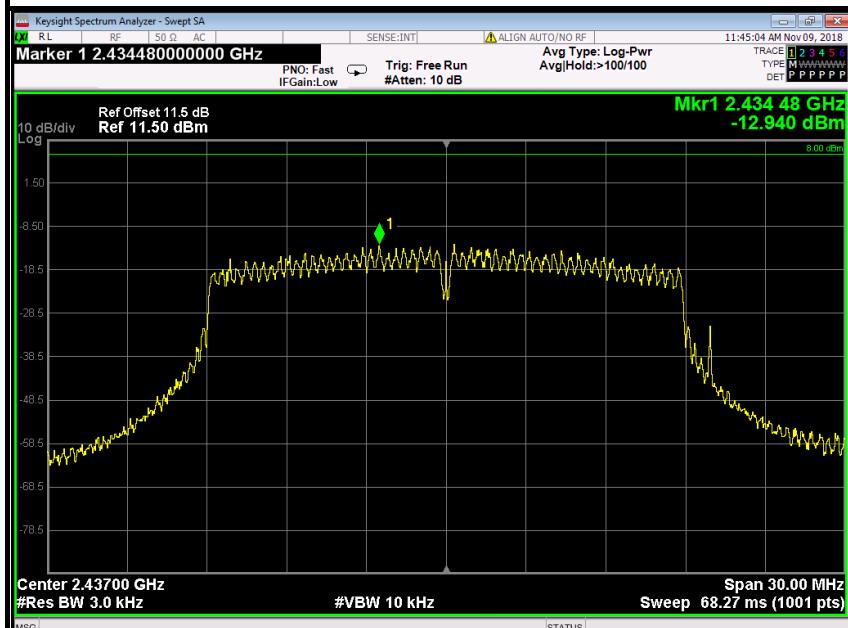


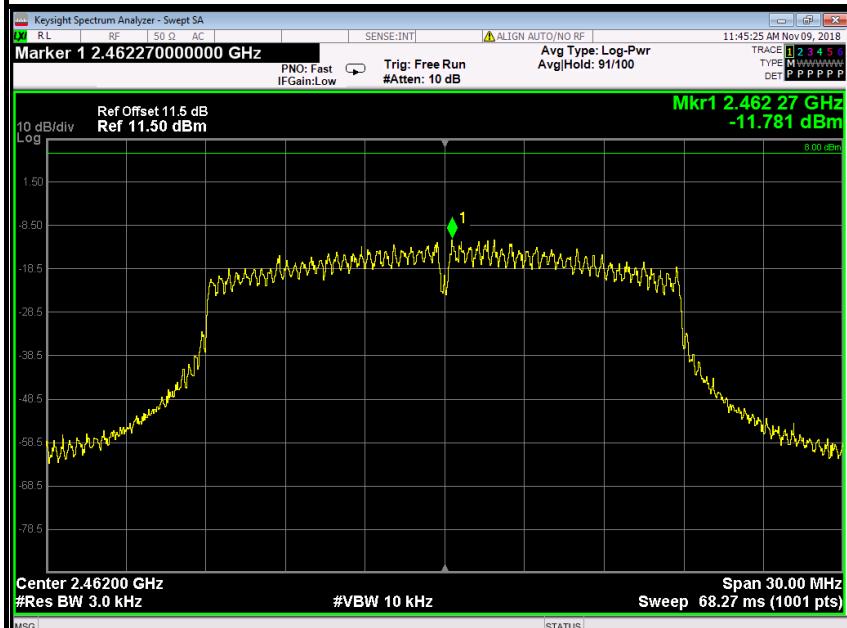
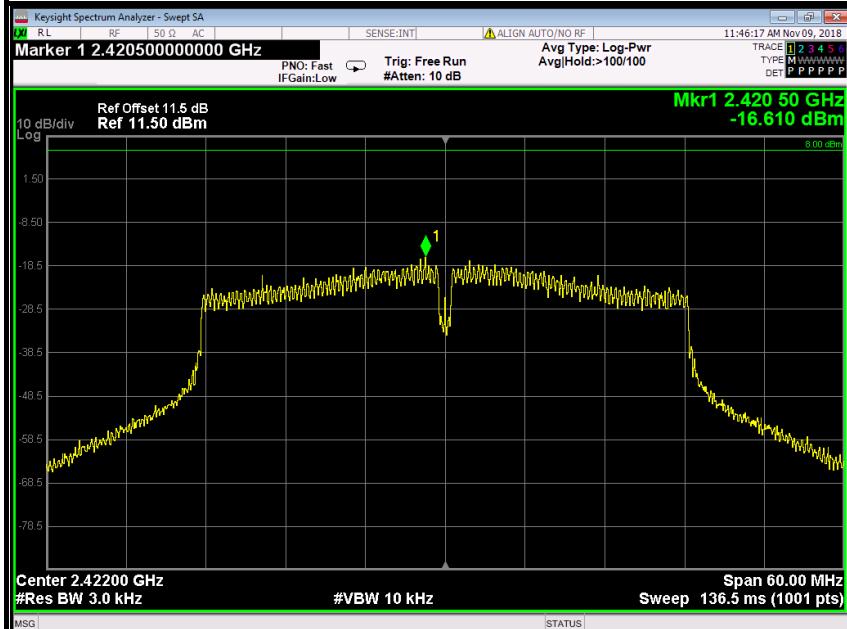
PPSD (CH Mid)

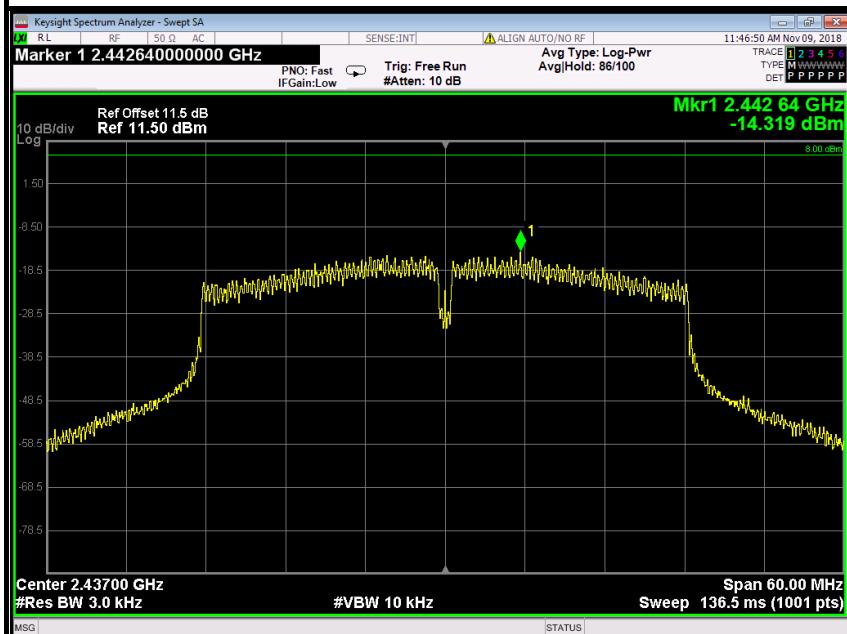
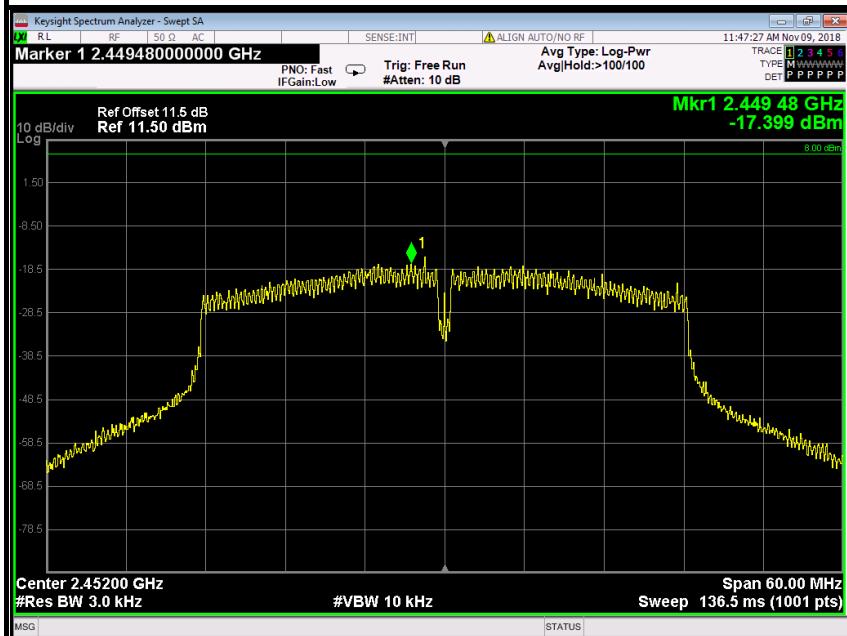


PPSD (CH High)**IEEE 802.11g mode****PPSD (CH Low)**

PPSD (CH Mid)**PPSD (CH High)**

IEEE 802.11n HT20 MHz mode**PPSD (CH Low)****PPSD (CH Mid)**

PPSD (CH High)**IEEE 802.11n HT40 MHz mode****PPSD (CH Low)**

PPSD (CH Mid)**PPSD (CH High)**

Antenna 1

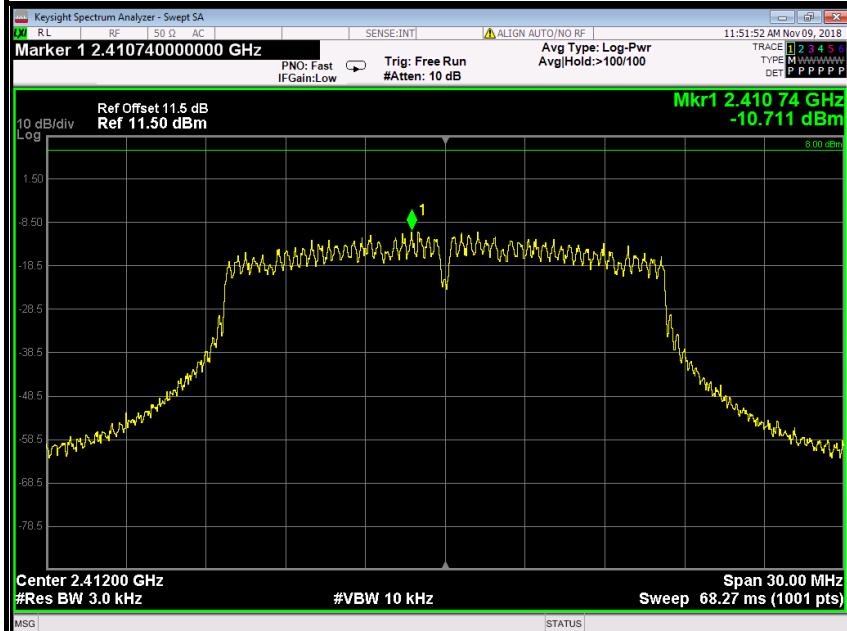
IEEE 802.11b mode

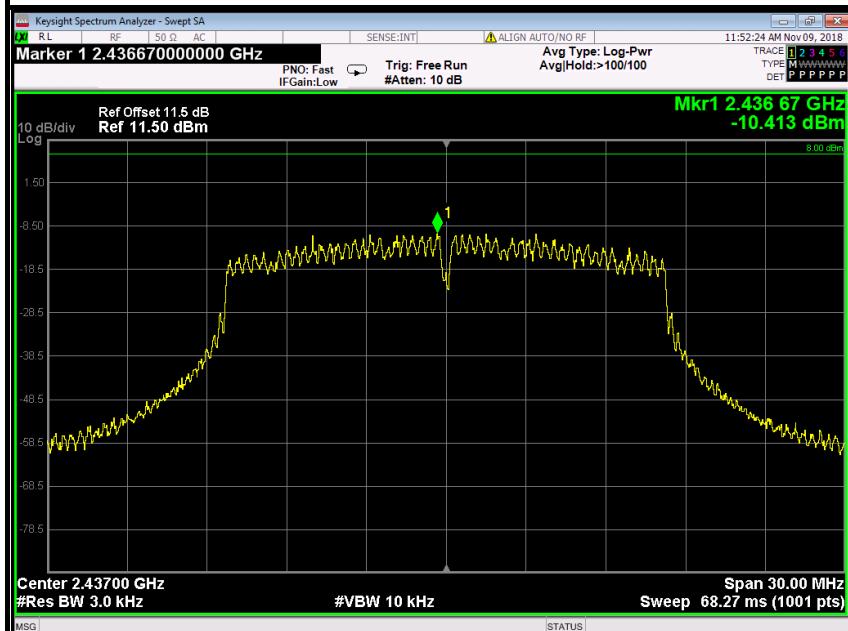
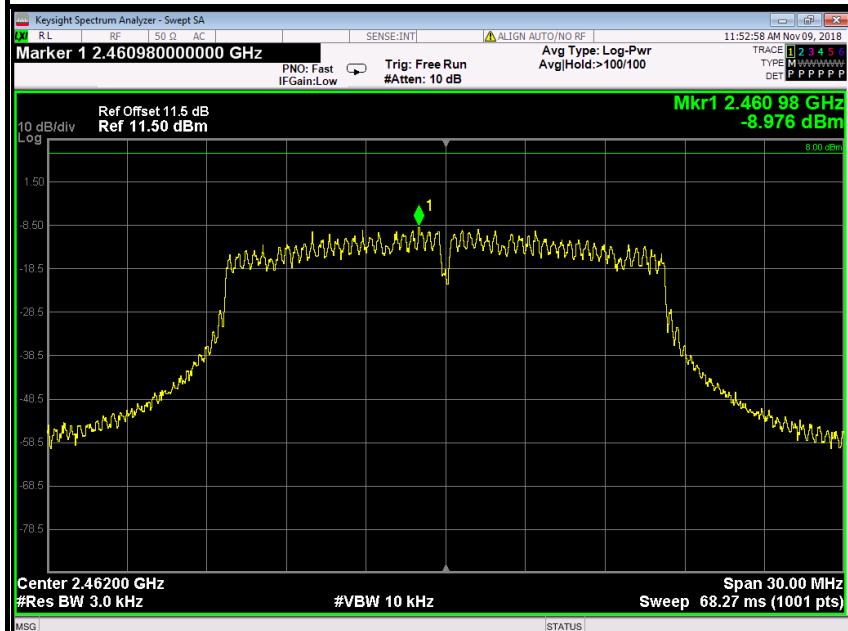
PPSD (CH Low)

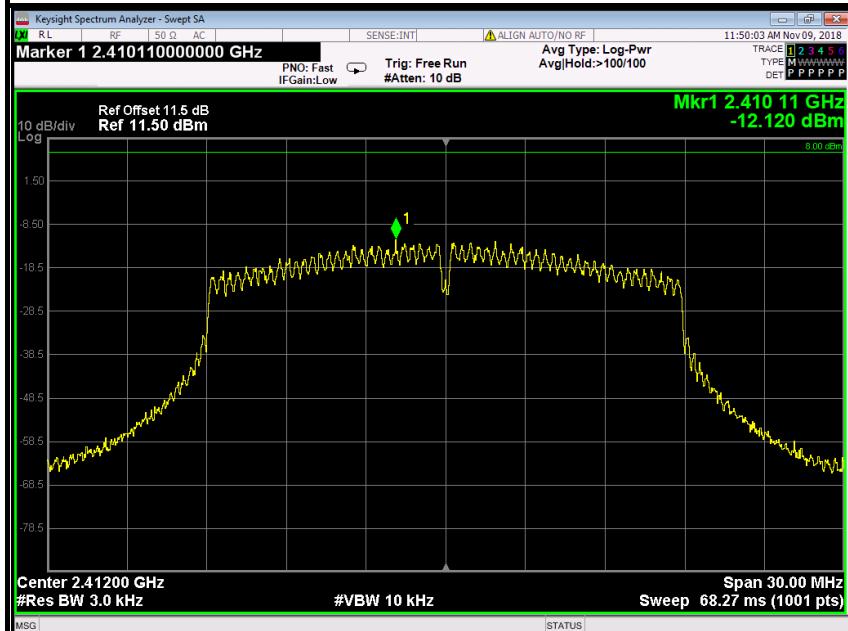
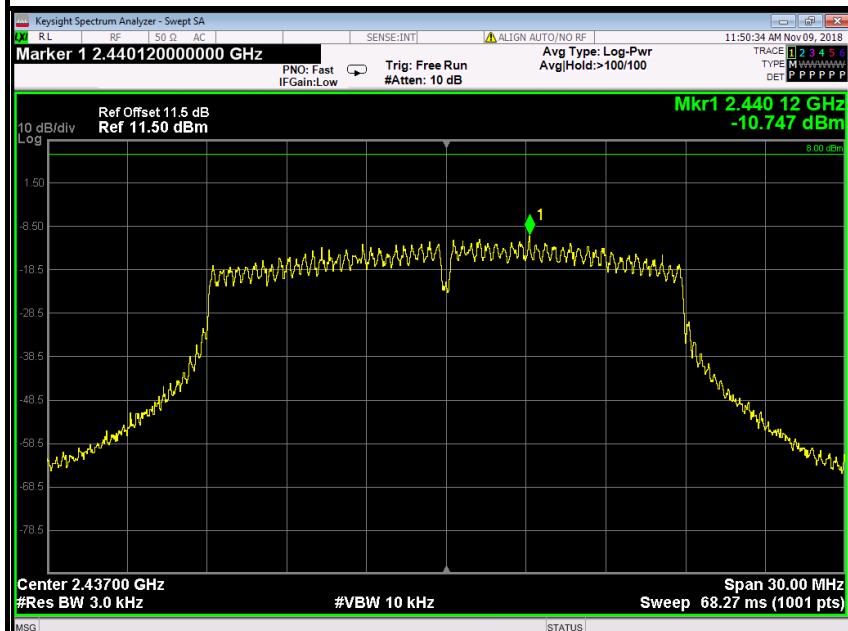


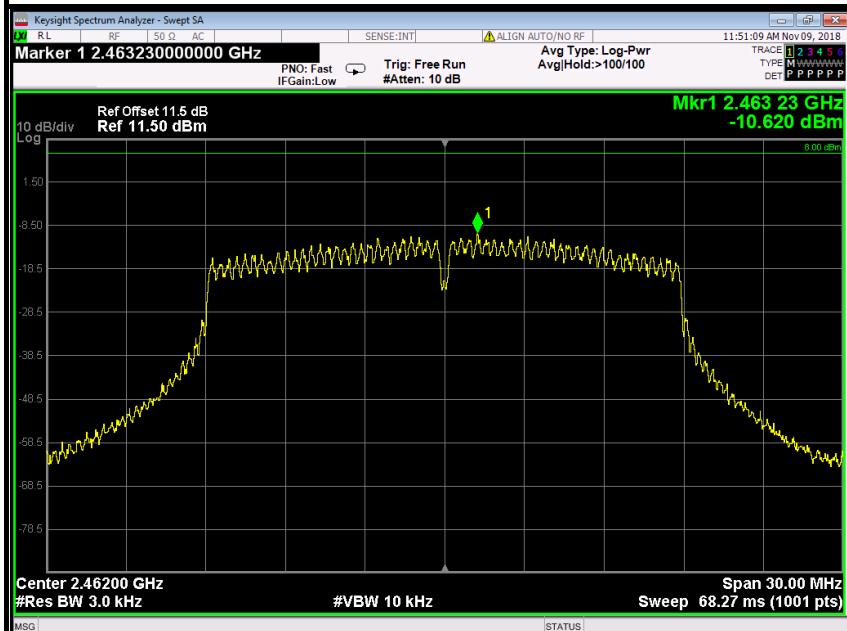
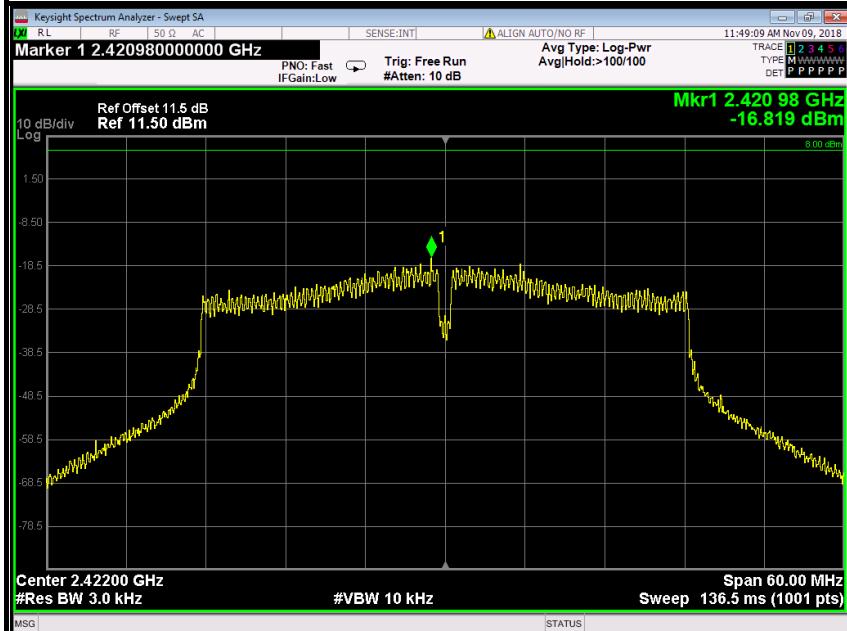
PPSD (CH Mid)

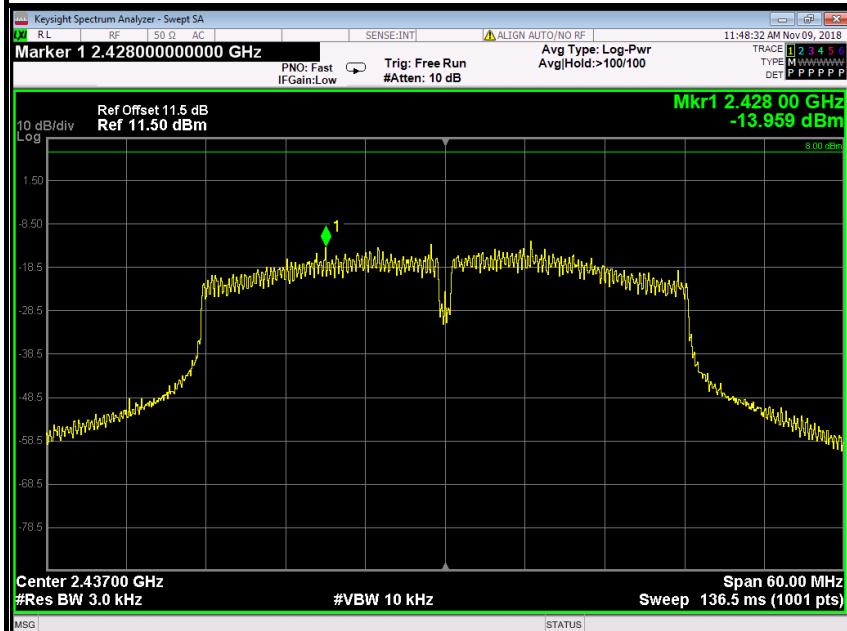
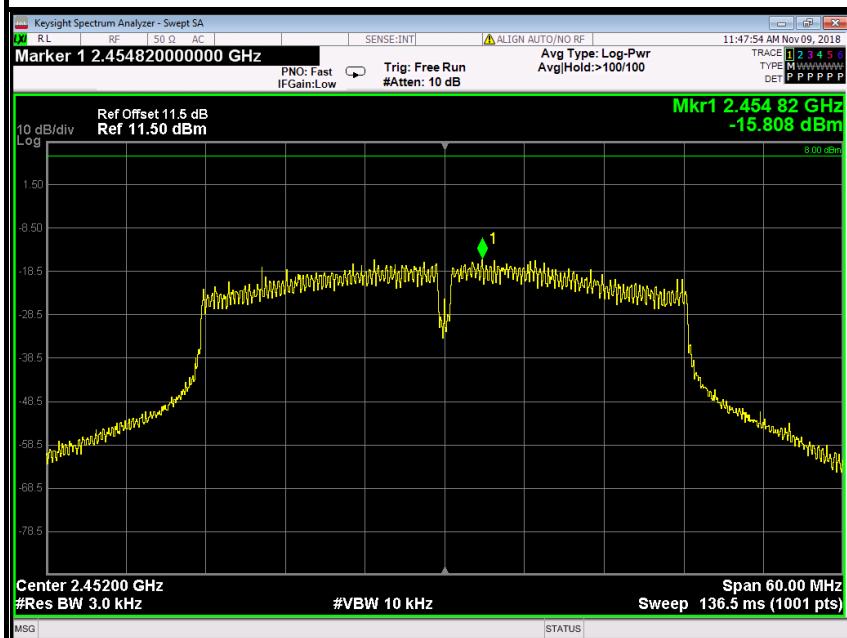


PPSD (CH High)**IEEE 802.11g mode****PPSD (CH Low)**

PPSD (CH Mid)**PPSD (CH High)**

IEEE 802.11n HT20 MHz mode**PPSD (CH Low)****PPSD (CH Mid)**

PPSD (CH High)**IEEE 802.11n HT40 MHz mode****PPSD (CH Low)**

PPSD (CH Mid)**PPSD (CH High)**

Antenna 2

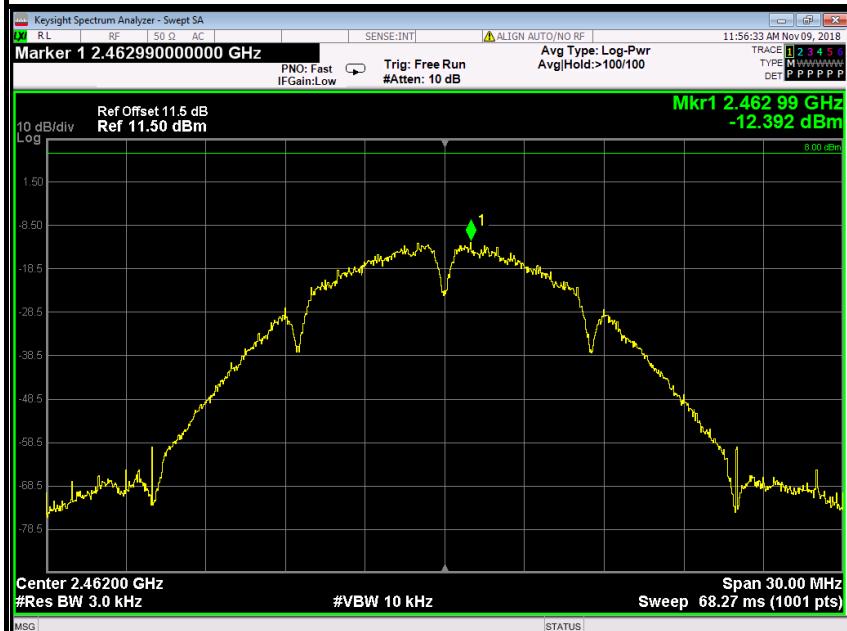
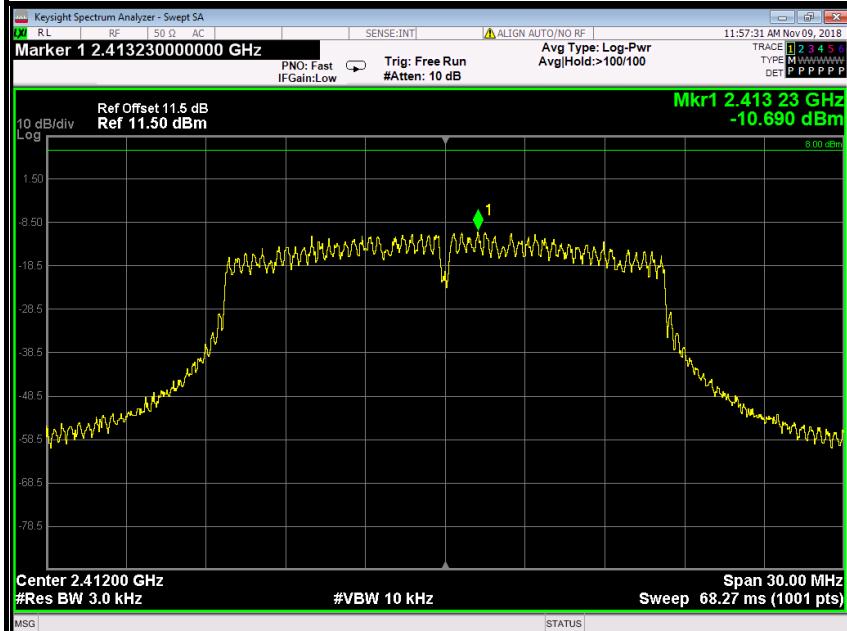
IEEE 802.11b mode

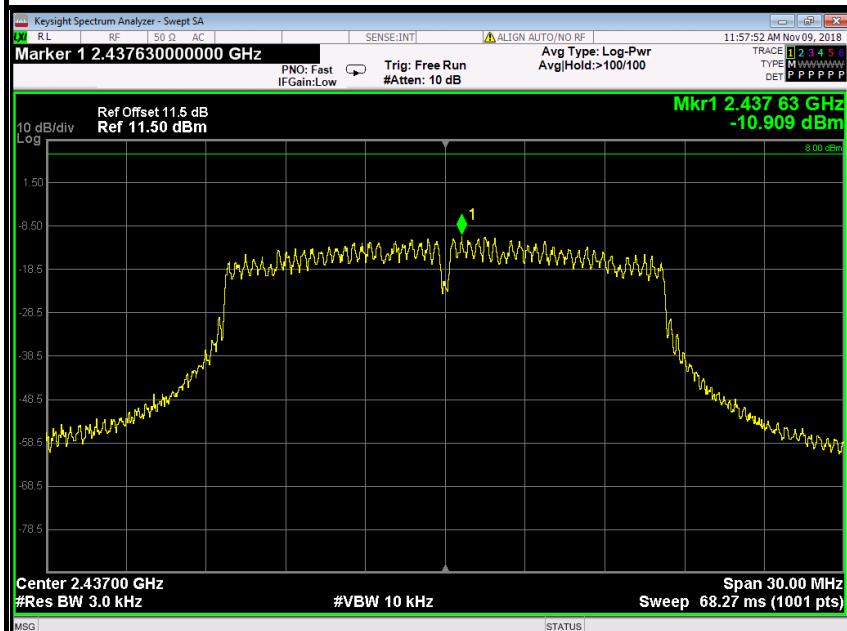
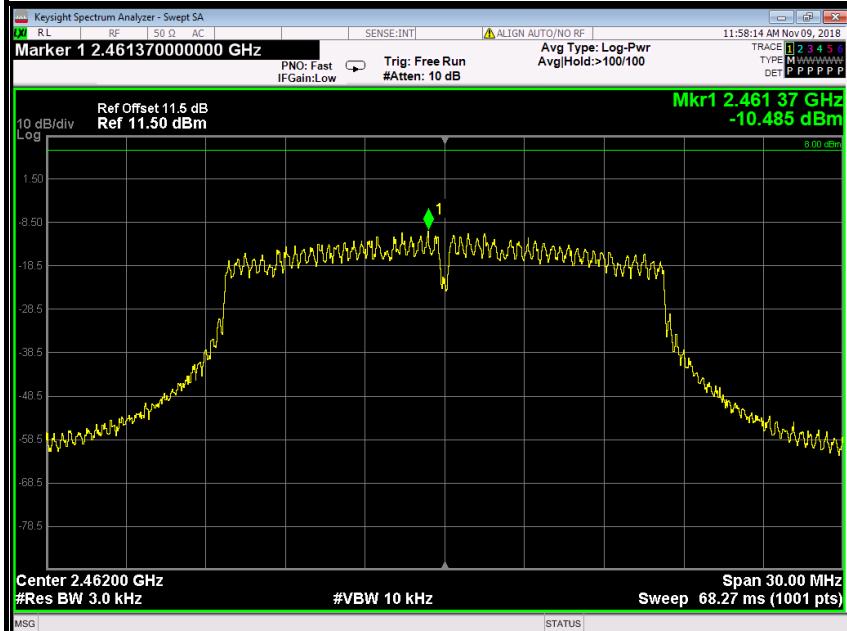
PPSD (CH Low)

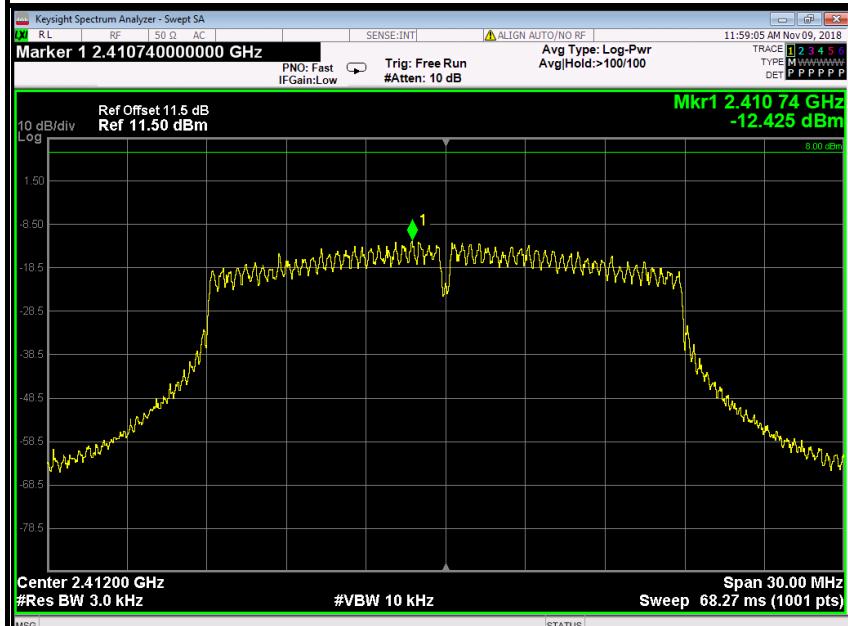
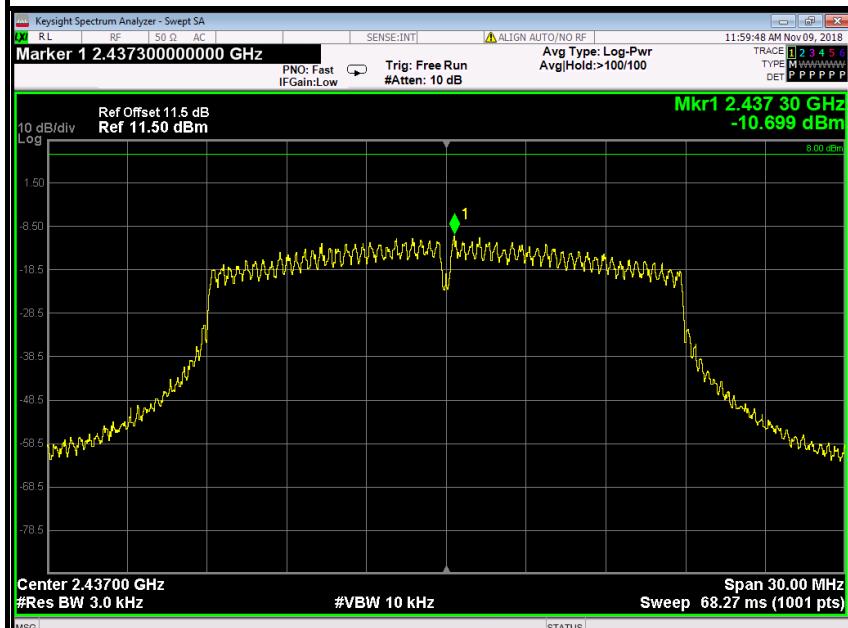


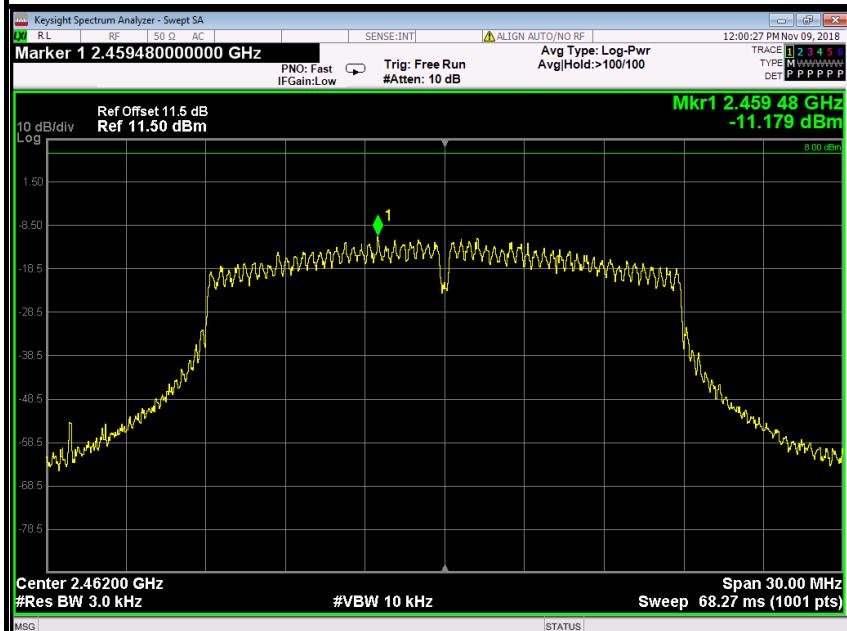
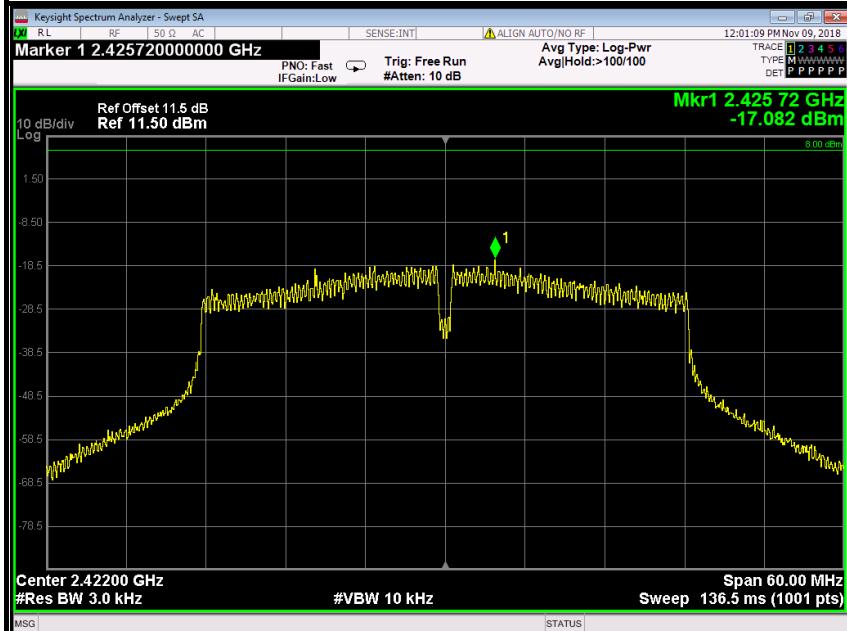
PPSD (CH Mid)

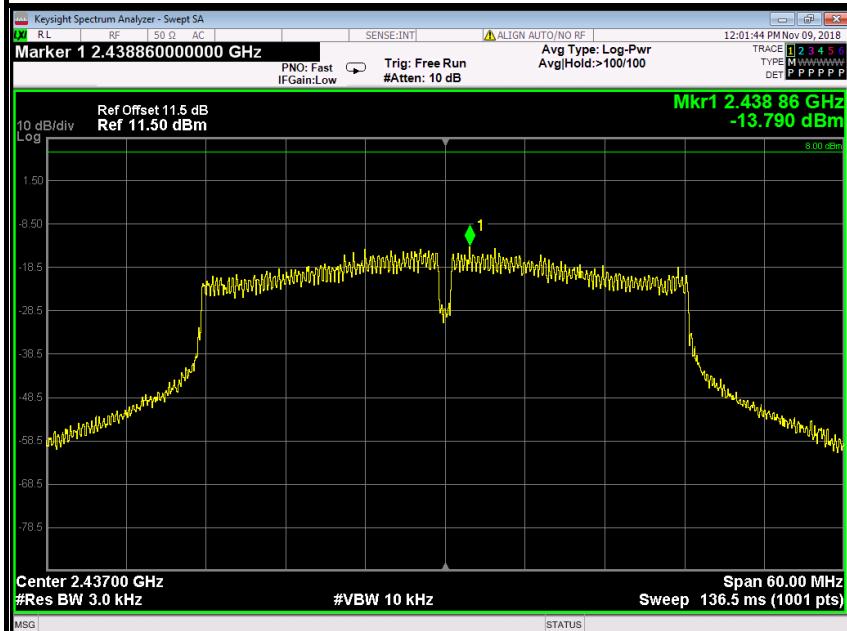


PPSD (CH High)**IEEE 802.11g mode****PPSD (CH Low)**

PPSD (CH Mid)**PPSD (CH High)**

IEEE 802.11n HT20 MHz mode**PPSD (CH Low)****PPSD (CH Mid)**

PPSD (CH High)**IEEE 802.11n HT40 MHz mode****PPSD (CH Low)**

PPSD (CH Mid)**PPSD (CH High)**