



7.2.2.6. TEST RESULTS

Below 1 GHz

Test Mode: TX

Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: December 10, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
254.0700	49.23	-20.60	28.63	46.00	-17.37	V	QP
435.4600	50.24	-15.64	34.60	46.00	-11.40	V	QP
543.1300	48.48	-13.22	35.26	46.00	-10.74	V	QP
703.1800	48.73	-11.93	36.80	46.00	-9.20	V	QP
747.8000	50.30	-11.23	39.07	46.00	-6.93	V	QP
823.4600	49.13	-10.46	38.67	46.00	-7.33	V	QP
336.5200	50.16	-18.24	31.92	46.00	-14.08	H	QP
443.2200	50.13	-15.61	34.52	46.00	-11.48	H	QP
583.8700	49.85	-13.08	36.77	46.00	-9.23	H	QP
624.6100	49.99	-12.73	37.26	46.00	-8.74	H	QP
828.3100	49.87	-10.55	39.32	46.00	-6.68	H	QP
922.4000	49.34	-9.42	39.92	46.00	-6.08	H	QP

**\*\*Remark:** No emission found between lowest internal used/generated frequency to 30MHz.

**Notes:**

1. Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
2. 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.
3. The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.
4. Frequency (MHz). = Emission frequency in MHz  
Reading (dBμV/m) = Receiver reading  
Correction Factor (dB) = Antenna factor + Cable loss – Amplifier gain  
Limit (dBμV/m) = Limit stated in standard  
Margin (dB) = Measured (dBμV/m) – Limits (dBμV/m)  
Antenna Pol e(H/V) = Current carrying line of reading

**Above 1 GHz**Test Mode: TX / IEEE 802.11b(CH Low)Tested by: Eve WangAmbient temperature: 24°CRelative humidity: 52% RHDate: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2170.000	44.64	-4.07	40.57	74.00	-33.43	V	peak
2494.000	45.08	-2.29	42.79	74.00	-31.21	V	peak
3637.000	42.38	0.06	42.44	74.00	-31.56	V	peak
4825.000	42.75	4.41	47.16	74.00	-26.84	V	peak
5446.000	41.61	5.77	47.38	74.00	-26.62	V	peak
5923.000	40.73	6.05	46.78	74.00	-27.22	V	peak
2512.000	45.46	-2.24	43.22	74.00	-30.78	H	Peak
3286.000	44.45	-0.88	43.57	74.00	-30.43	H	Peak
4501.000	41.69	3.35	45.04	74.00	-28.96	H	Peak
4825.000	45.24	4.41	49.65	74.00	-24.35	H	peak
5356.000	41.66	5.61	47.27	74.00	-26.73	H	peak
5752.000	41.34	5.98	47.32	74.00	-26.68	H	peak

**REMARKS:**

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 802.11b (CH Mid)

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1288.000	46.87	-7.47	39.40	74.00	-34.60	V	Peak
2566.000	45.47	-2.14	43.33	74.00	-30.67	V	Peak
4879.000	42.67	4.59	47.26	74.00	-26.74	V	Peak
5689.000	41.13	5.95	47.08	74.00	-26.92	V	Peak
6139.000	41.31	6.31	47.62	74.00	-26.38	V	Peak
6940.000	41.24	7.60	48.84	74.00	-25.16	V	Peak
1594.000	50.18	-6.71	43.47	74.00	-30.53	H	Peak
2539.000	45.32	-2.19	43.13	74.00	-30.87	H	Peak
3790.000	41.88	0.70	42.58	74.00	-31.42	H	Peak
4717.000	41.25	4.06	45.31	74.00	-28.69	H	Peak
5338.000	41.25	5.58	46.83	74.00	-27.17	H	Peak
5896.000	40.79	6.04	46.83	74.00	-27.17	H	Peak

**REMARKS:**

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 802.11b (CH High)

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2566.000	45.85	-2.14	43.71	74.00	-30.29	V	Peak
3412.000	44.09	-0.67	43.42	74.00	-30.58	V	Peak
3979.000	43.03	1.50	44.53	74.00	-29.47	V	Peak
4924.000	42.38	4.73	47.11	74.00	-26.89	V	Peak
6166.000	40.30	6.35	46.65	74.00	-27.35	V	Peak
7219.000	40.82	8.13	48.95	74.00	-25.05	V	Peak
2557.000	45.37	-2.16	43.21	74.00	-30.79	H	Peak
4105.000	42.06	1.96	44.02	74.00	-29.98	H	Peak
4924.000	41.98	4.73	46.71	74.00	-27.29	H	Peak
5698.000	41.18	5.95	47.13	74.00	-26.87	H	Peak
6265.000	40.89	6.51	47.40	74.00	-26.60	H	Peak
6742.000	41.28	7.28	48.56	74.00	-25.44	H	Peak

**REMARKS:**

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 Low)

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2602.000	45.01	-2.08	42.93	74.00	-31.07	V	Peak
4087.000	42.38	1.90	44.28	74.00	-29.72	V	Peak
4834.000	41.86	4.44	46.30	74.00	-27.70	V	Peak
5284.000	42.29	5.49	47.78	74.00	-26.22	V	Peak
6094.000	40.48	6.23	46.71	74.00	-27.29	V	Peak
6724.000	41.41	7.25	48.66	74.00	-25.34	V	Peak
2521.000	45.84	-2.22	43.62	74.00	-30.38	H	Peak
3322.000	44.07	-0.82	43.25	74.00	-30.75	H	Peak
4474.000	41.78	3.26	45.04	74.00	-28.96	H	Peak
5185.000	41.20	5.31	46.51	74.00	-27.49	H	Peak
5878.000	41.32	6.03	47.35	74.00	-26.65	H	Peak
6652.000	41.79	7.14	48.93	74.00	-25.07	H	Peak

**REMARKS:**

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: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1765.000	45.71	-6.35	39.36	74.00	-34.64	V	Peak
2548.000	45.41	-2.17	43.24	74.00	-30.76	V	Peak
3187.000	44.09	-1.05	43.04	74.00	-30.96	V	Peak
4024.000	42.54	1.67	44.21	74.00	-29.79	V	Peak
4870.000	41.84	4.56	46.40	74.00	-27.60	V	Peak
5338.000	40.82	5.58	46.40	74.00	-27.60	V	Peak
2134.000	46.09	-4.27	41.82	74.00	-32.18	H	Peak
2818.000	44.39	-1.69	42.70	74.00	-31.30	H	Peak
4465.000	41.41	3.23	44.64	74.00	-29.36	H	Peak
4924.000	42.05	4.73	46.78	74.00	-27.22	H	Peak
5590.000	40.94	5.91	46.85	74.00	-27.15	H	Peak
6526.000	40.28	6.93	47.21	74.00	-26.79	H	Peak

REMARKS:

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: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1765.000	46.77	-6.35	40.42	74.00	-33.58	V	Peak
2548.000	45.58	-2.17	43.41	74.00	-30.59	V	Peak
2854.000	44.68	-1.62	43.06	74.00	-30.94	V	Peak
4474.000	41.45	3.26	44.71	74.00	-29.29	V	Peak
4960.000	42.04	4.85	46.89	74.00	-27.11	V	Peak
5860.000	41.49	6.02	47.51	74.00	-26.49	V	Peak
1594.000	48.02	-6.71	41.31	74.00	-32.69	H	Peak
2584.000	44.92	-2.11	42.81	74.00	-31.19	H	Peak
3358.000	43.48	-0.76	42.72	74.00	-31.28	H	Peak
3970.000	42.21	1.46	43.67	74.00	-30.33	H	Peak
5014.000	42.12	5.00	47.12	74.00	-26.88	H	Peak
5590.000	41.68	5.91	47.59	74.00	-26.41	H	Peak

**REMARKS:**

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 Low)

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2503.000	46.63	-2.25	44.38	74.00	-29.62	V	Peak
3574.000	42.79	-0.21	42.58	74.00	-31.42	V	Peak
4987.000	41.02	4.94	45.96	74.00	-28.04	V	Peak
5410.000	40.89	5.71	46.60	74.00	-27.40	V	Peak
5770.000	41.44	5.98	47.42	74.00	-26.58	V	Peak
7120.000	40.45	7.93	48.38	74.00	-25.62	V	Peak
1594.000	50.44	-6.71	43.73	74.00	-30.27	H	Peak
2548.000	45.54	-2.17	43.37	74.00	-30.63	H	Peak
3151.000	44.19	-1.11	43.08	74.00	-30.92	H	Peak
4141.000	42.56	2.09	44.65	74.00	-29.35	H	Peak
5482.000	40.90	5.84	46.74	74.00	-27.26	H	Peak
6031.000	40.98	6.13	47.11	74.00	-26.89	H	Peak

**REMARKS:**

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: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2584.000	44.32	-2.11	42.21	74.00	-31.79	V	Peak
4078.000	42.17	1.86	44.03	74.00	-29.97	V	Peak
4978.000	41.30	4.91	46.21	74.00	-27.79	V	Peak
5446.000	40.83	5.77	46.60	74.00	-27.40	V	Peak
6148.000	40.75	6.32	47.07	74.00	-26.93	V	Peak
6580.000	41.15	7.02	48.17	74.00	-25.83	V	Peak
1594.000	50.52	-6.71	43.81	74.00	-30.19	H	Peak
2575.000	46.05	-2.12	43.93	74.00	-30.07	H	Peak
3835.000	42.37	0.89	43.26	74.00	-30.74	H	Peak
5275.000	41.59	5.47	47.06	74.00	-26.94	H	Peak
5590.000	41.44	5.91	47.35	74.00	-26.65	H	Peak
6949.000	41.64	7.62	49.26	74.00	-24.74	H	Peak

**REMARKS:**

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: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBUV)	Correction Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1252.000	46.66	-7.60	39.06	74.00	-34.94	V	Peak
2539.000	44.05	-2.19	41.86	74.00	-32.14	V	Peak
2827.000	42.58	-1.67	40.91	74.00	-33.09	V	Peak
4537.000	40.48	3.47	43.95	74.00	-30.05	V	Peak
5446.000	39.86	5.77	45.63	74.00	-28.37	V	Peak
6472.000	39.60	6.84	46.44	74.00	-27.56	V	Peak
1594.000	48.32	-6.71	41.61	74.00	-32.39	H	Peak
2539.000	44.61	-2.19	42.42	74.00	-31.58	H	Peak
3241.000	43.31	-0.96	42.35	74.00	-31.65	H	Peak
4474.000	40.37	3.26	43.63	74.00	-30.37	H	Peak
5113.000	40.41	5.18	45.59	74.00	-28.41	H	Peak
5671.000	40.32	5.94	46.26	74.00	-27.74	H	Peak

**REMARKS:**

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 Low)

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1261.000	46.80	-7.57	39.23	74.00	-34.77	V	Peak
2800.000	43.87	-1.72	42.15	74.00	-31.85	V	Peak
4015.000	41.84	1.64	43.48	74.00	-30.52	V	Peak
4357.000	41.21	2.85	44.06	74.00	-29.94	V	Peak
5095.000	40.98	5.15	46.13	74.00	-27.87	V	Peak
5797.000	40.36	5.99	46.35	74.00	-27.65	V	Peak
1594.000	47.64	-6.71	40.93	74.00	-33.07	H	Peak
2539.000	44.29	-2.19	42.10	74.00	-31.90	H	Peak
2971.000	43.66	-1.41	42.25	74.00	-31.75	H	Peak
4069.000	41.33	1.83	43.16	74.00	-30.84	H	Peak
4744.000	40.71	4.15	44.86	74.00	-29.14	H	Peak
5590.000	41.40	5.91	47.31	74.00	-26.69	H	Peak

**REMARKS:**

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: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBUV)	Correction Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2152.000	44.32	-4.17	40.15	74.00	-33.85	V	Peak
2575.000	44.24	-2.12	42.12	74.00	-31.88	V	Peak
2962.000	42.91	-1.43	41.48	74.00	-32.52	V	Peak
4105.000	42.17	1.96	44.13	74.00	-29.87	V	Peak
4996.000	40.95	4.97	45.92	74.00	-28.08	V	Peak
5356.000	41.44	5.61	47.05	74.00	-26.95	V	Peak
2017.000	49.38	-4.91	44.47	74.00	-29.53	H	Peak
2557.000	45.59	-2.16	43.43	74.00	-30.57	H	Peak
3286.000	44.08	-0.88	43.20	74.00	-30.80	H	Peak
4510.000	41.60	3.38	44.98	74.00	-29.02	H	Peak
5500.000	41.19	5.87	47.06	74.00	-26.94	H	Peak
5833.000	41.37	6.01	47.38	74.00	-26.62	H	Peak

**REMARKS:**

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: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: December 8, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1747.000	50.05	-6.38	43.67	74.00	-30.33	V	Peak
2611.000	45.09	-2.06	43.03	74.00	-30.97	V	Peak
3286.000	43.06	-0.88	42.18	74.00	-31.82	V	Peak
4420.000	41.68	3.07	44.75	74.00	-29.25	V	Peak
4951.000	41.08	4.82	45.90	74.00	-28.10	V	Peak
5752.000	41.57	5.98	47.55	74.00	-26.45	V	Peak
1540.000	48.12	-6.81	41.31	74.00	-32.69	H	Peak
2512.000	44.67	-2.24	42.43	74.00	-31.57	H	Peak
3745.000	42.59	0.51	43.10	74.00	-30.90	H	Peak
4825.000	41.01	4.41	45.42	74.00	-28.58	H	Peak
5221.000	40.65	5.37	46.02	74.00	-27.98	H	Peak
6022.000	40.09	6.12	46.21	74.00	-27.79	H	Peak

**REMARKS:**

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 INSTRUMENTS

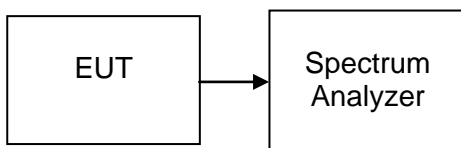
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	E4446A	US44300399	02/28/2015	02/27/2016	10/24/2015

#### 7.3.3. TEST PROCEDURES (please refer to measurement standard)

##### 8.1 Option 1:

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

#### 7.3.4. TEST SETUP





### 7.3.5. TEST RESULTS

No non-compliance noted

#### Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	9.163	>500	PASS
Mid	2437	9.165		PASS
High	2462	9.163		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16.423	>500	PASS
Mid	2437	16.421		PASS
High	2462	16.405		PASS

Test mode: IEEE 802.11n HT20 MHz

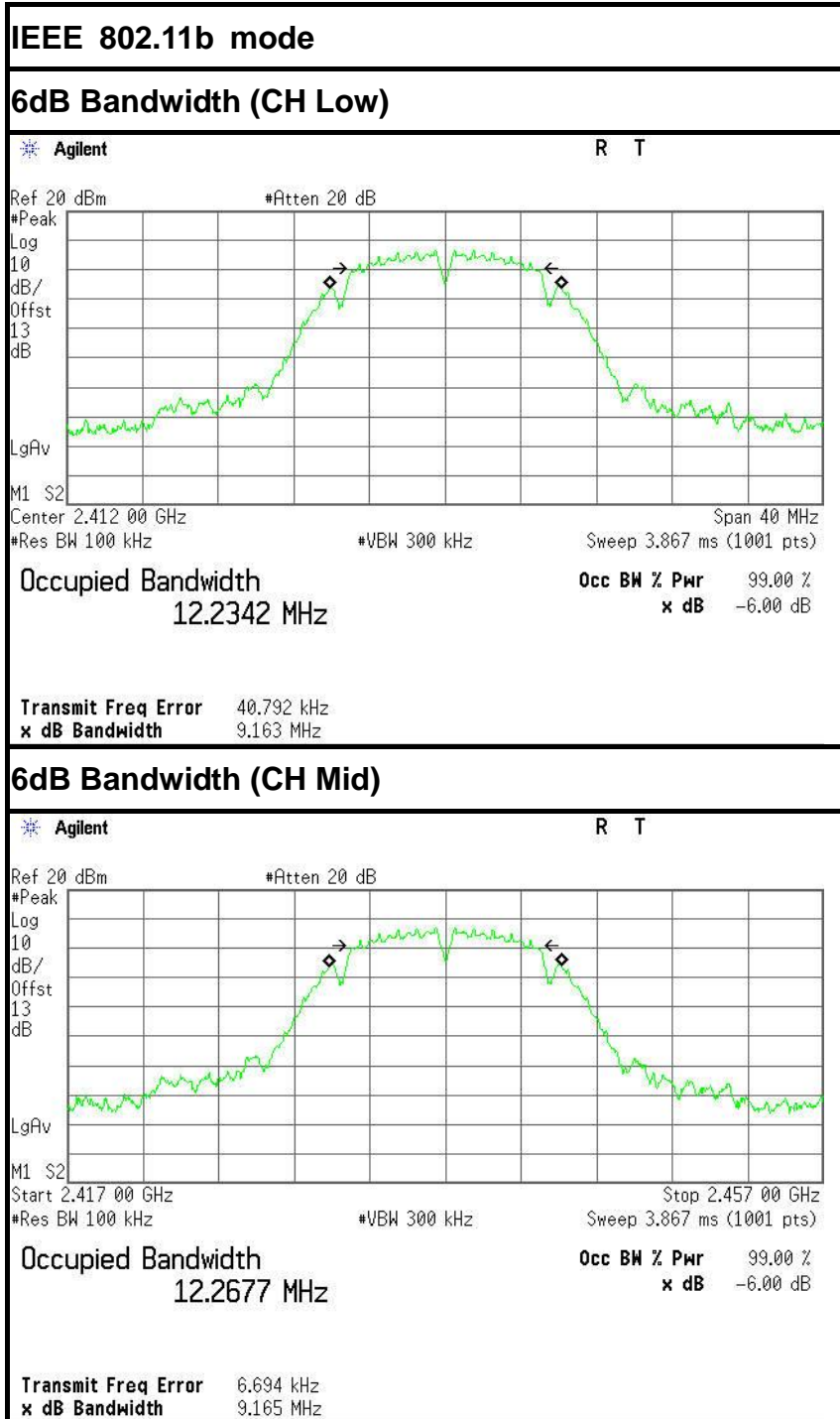
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	17.629	>500	PASS
Mid	2437	17.626		PASS
High	2462	17.646		PASS

Test mode: IEEE 802.11n HT40 MHz

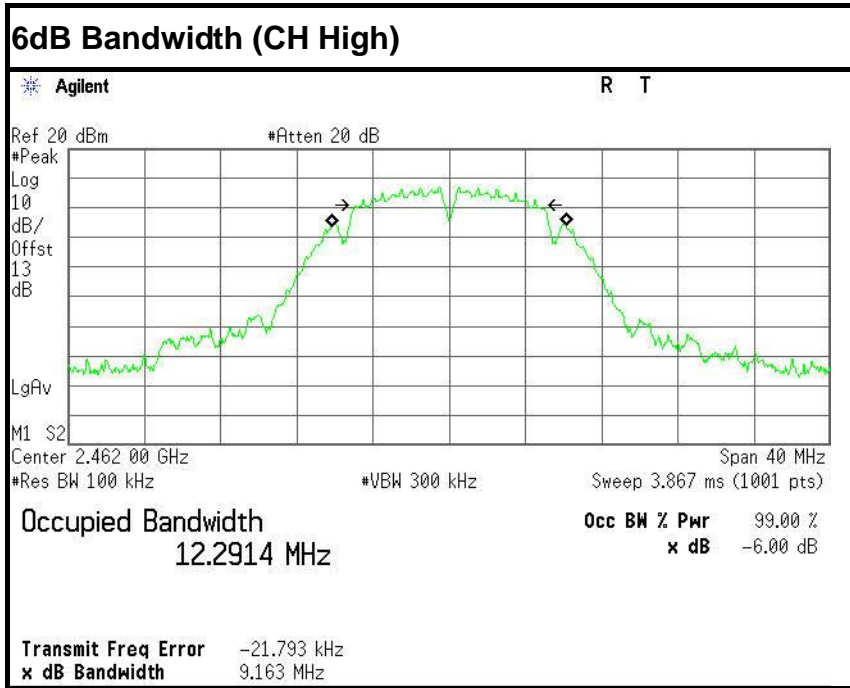
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	36.070	>500	PASS
Mid	2437	36.369		PASS
High	2452	36.364		PASS

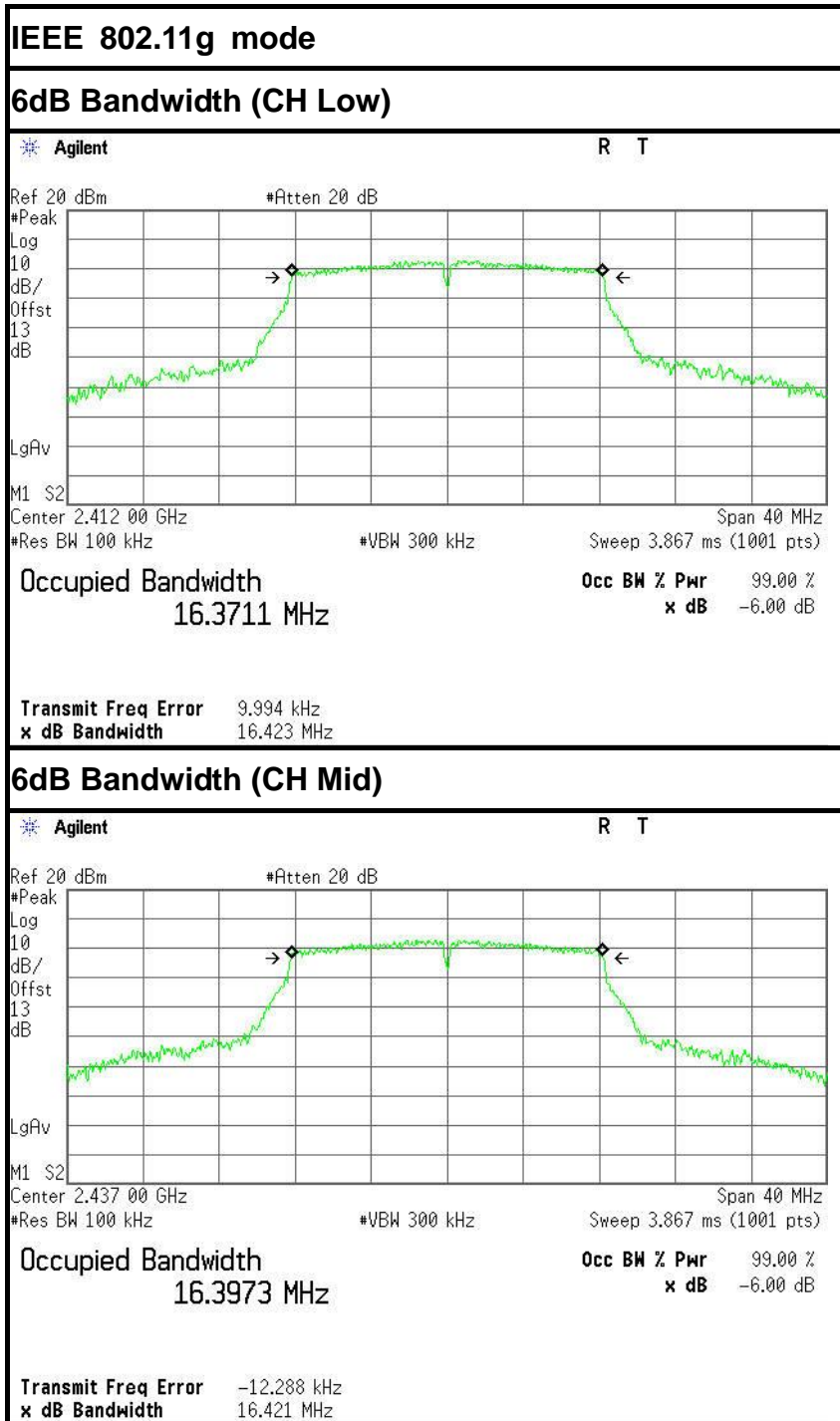


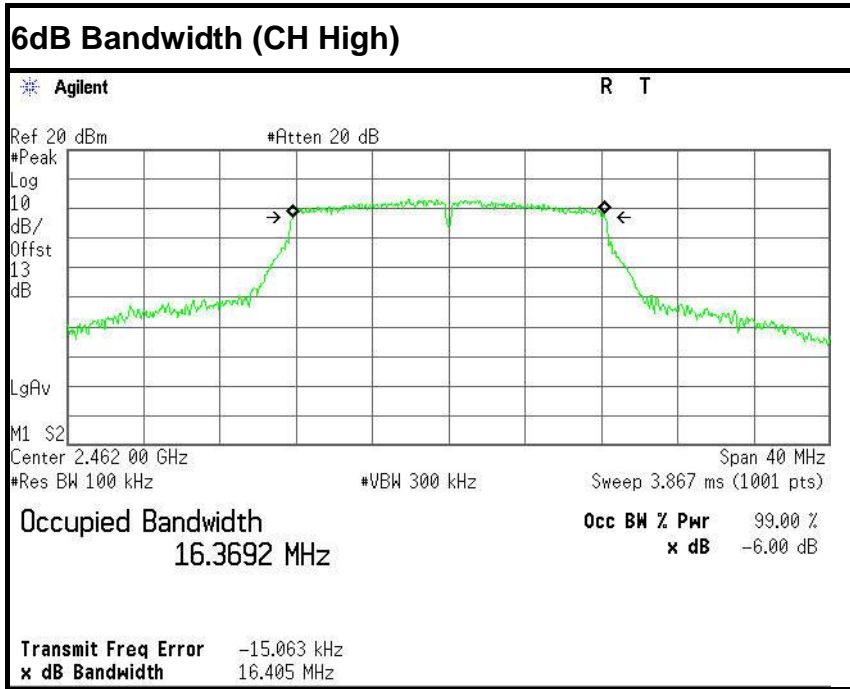
**Test Plot**

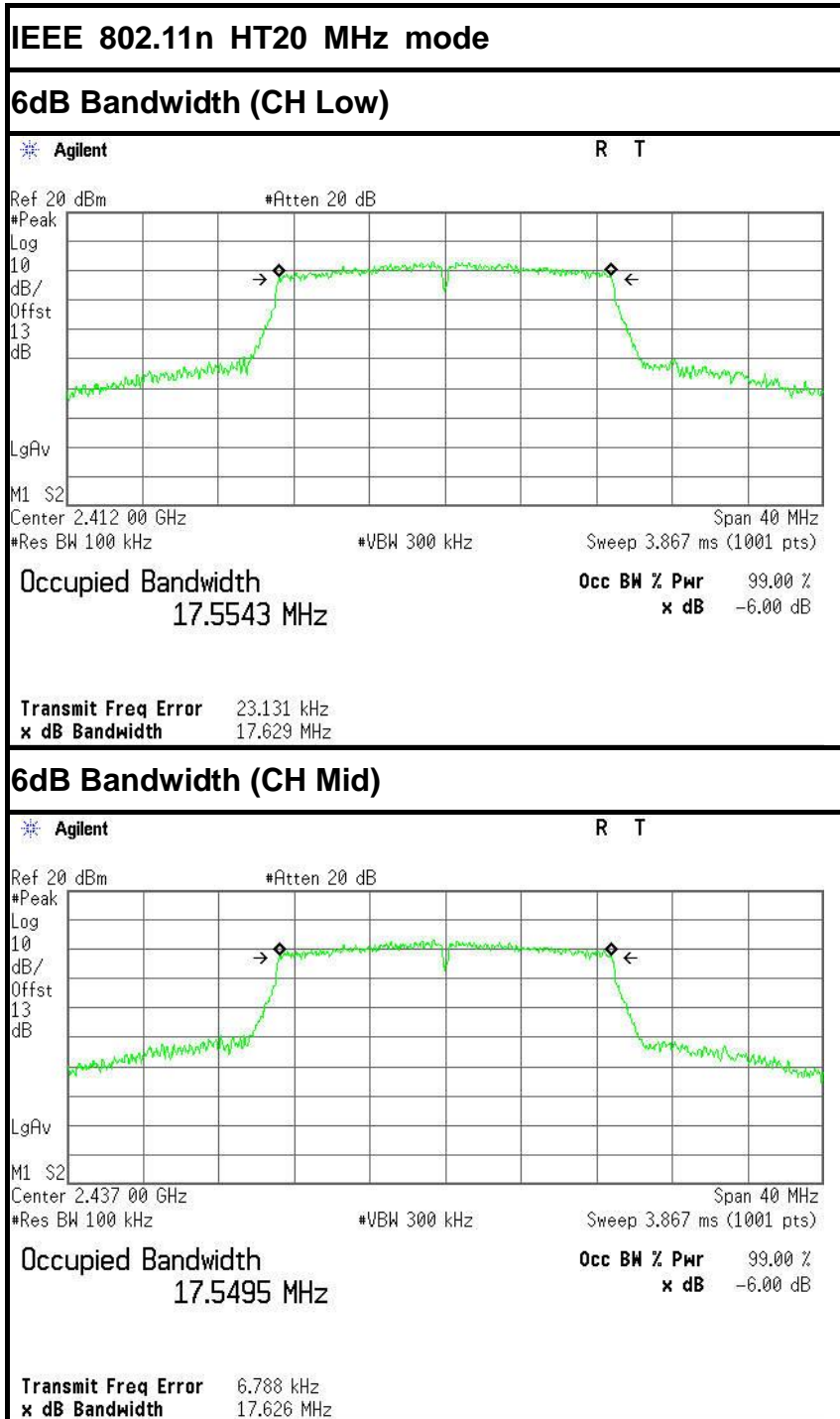


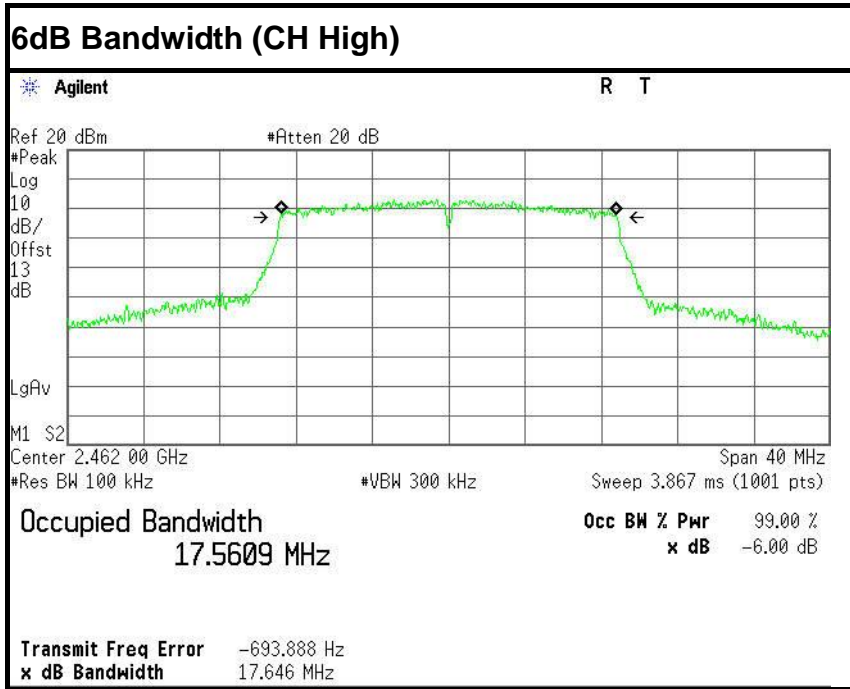


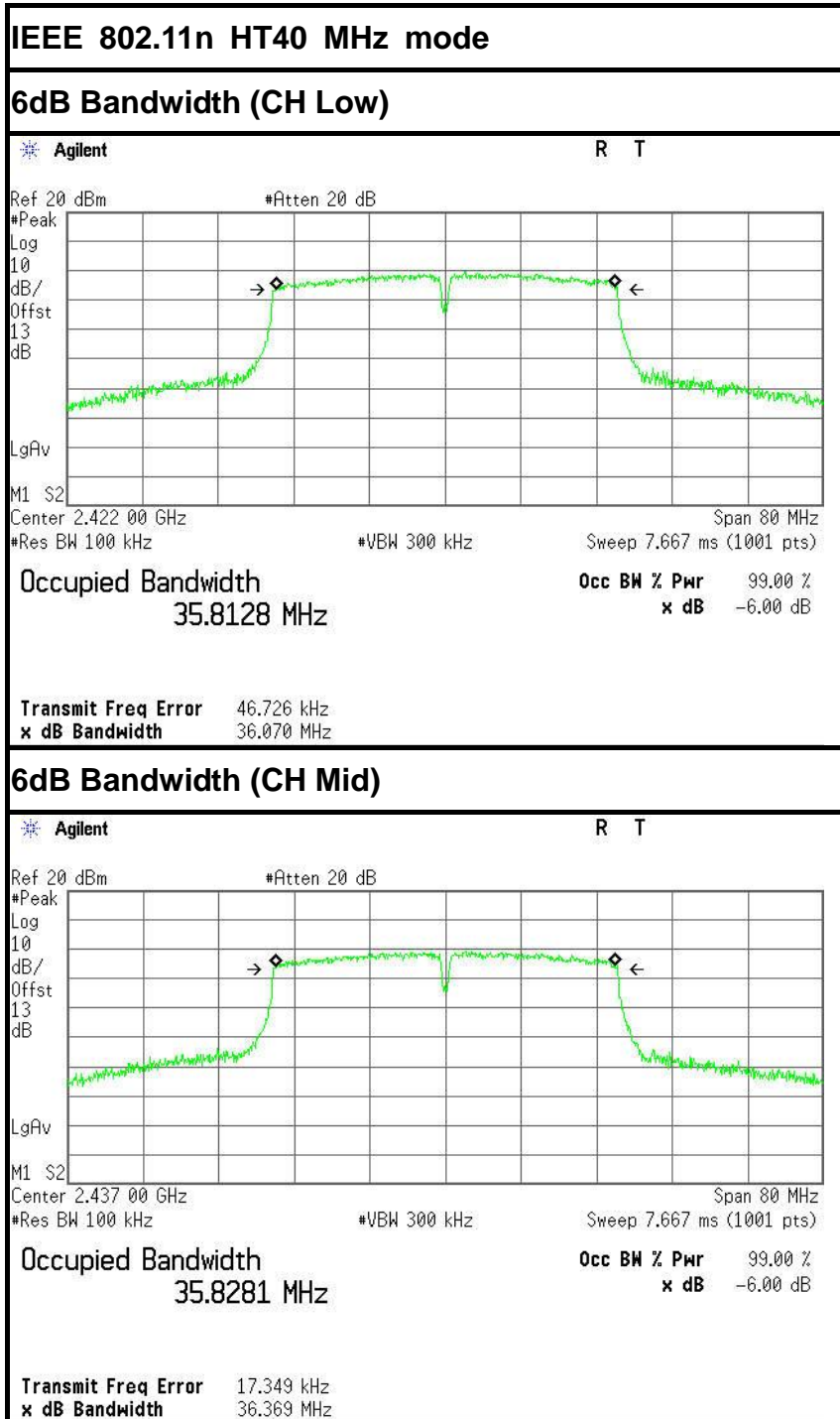


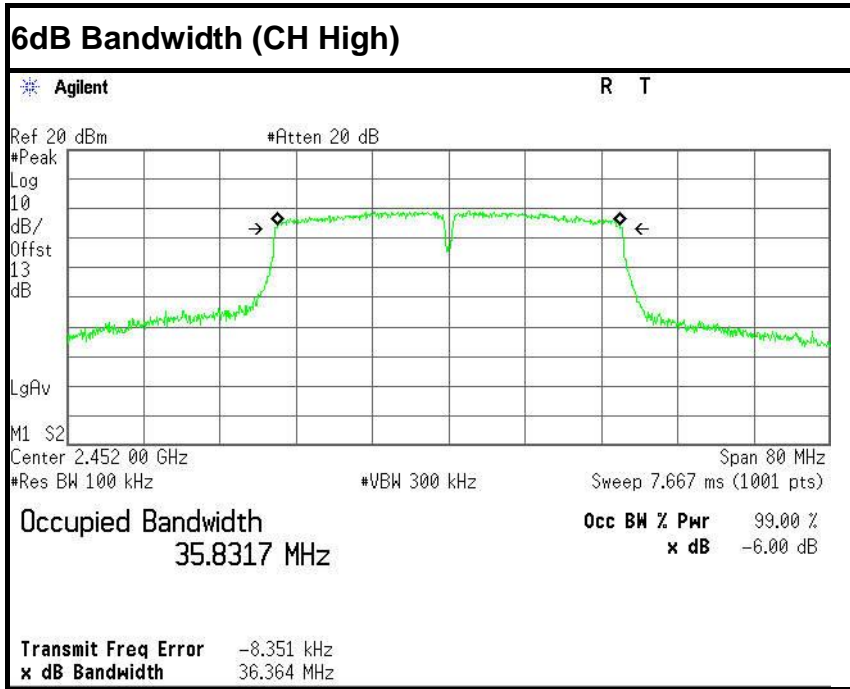














## 7.4. ANTENNA GAIN

### 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

#### IEEE 802.11b mode

T <sub>nom</sub>	V <sub>nom</sub>	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz
Conducted power [dBm/MHz] Measured with DSSS modulation		8.07	7.93	7.47
Radiated power [dBm/MHz] Measured with DSSS modulation		6.91	7.18	7.42
Gain [dBi] Calculated		-1.16	-0.75	-0.05
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 INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Power Meter	Anritsu	ML2495A	1204003	02/28/2015	02/27/2016
Power Sensor	Anritsu	MA2411B	1126150	02/28/2015	02/27/2016

### 7.5.3. 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 Integrated band power method

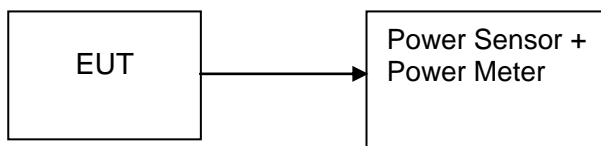
This procedure may be used when the maximum available RBW of the measurement instrument is less than the *DTS bandwidth*.

- a) Set the RBW = 1 MHz.
- b) Set the VBW  $\geq$  3 RBW
- c) Set the span  $\geq$  1.5 x DTS bandwidth.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

### 9.1.3 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.

### 7.5.4. TEST SETUP





**7.5.5. TEST RESULTS**

*No non-compliance noted*

**Test Data**

**Test mode: IEEE 802.11b**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Peak / AVG	Result
Low	2412	18.95	0.07852	1	Peak	PASS
Mid	2437	18.82	0.07621			PASS
High	2462	18.37	0.06871			PASS
Low	2412	15.32	0.03404	1	AVG	PASS
Mid	2437	15.45	0.03508			PASS
High	2462	15.43	0.03491			PASS

**Test mode: IEEE 802.11g**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Peak / AVG	Result
Low	2412	24.24	0.26546	1	Peak	PASS
Mid	2437	23.98	0.25003			PASS
High	2462	24.48	0.28054			PASS
Low	2412	15.38	0.03451	1	AVG	PASS
Mid	2437	15.11	0.03243			PASS
High	2462	15.09	0.03228			PASS

**Test mode: IEEE 802.11n HT20 MHz**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Peak / AVG	Result
Low	2412	23.45	0.22131	1	Peak	PASS
Mid	2437	23.29	0.21330			PASS
High	2462	24.02	0.25235			PASS
Low	2412	15.00	0.03162	1	AVG	PASS
Mid	2437	14.97	0.03141			PASS
High	2462	14.89	0.03083			PASS

**Test mode: IEEE 802.11n HT40 MHz**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Peak / AVG	Result
Low	2422	22.89	0.19454	1	Peak	PASS
Mid	2437	23.21	0.20941			PASS
High	2452	23.36	0.21677			PASS
Low	2422	14.19	0.02624	1	AVG	PASS
Mid	2437	14.45	0.02786			PASS
High	2452	14.40	0.02754			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 INSTRUMENTS

Radiated Emission Test Site 966(2)					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI TEST RECEIVER	Agilent	N9038A	US44300399	02/28/2015	02/27/2016
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/28/2015	02/27/2016
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2015	03/18/2016
High Noise Amplifier	Agilent	8449B	3008A01838	02/28/2015	02/27/2016
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2015	02/27/2016
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/28/2015	02/27/2016
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2015	02/27/2016
Loop Antenna	COM-POWER	AL-130	121044	09/25/2015	09/24/2016
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/28/2015	02/27/2016
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

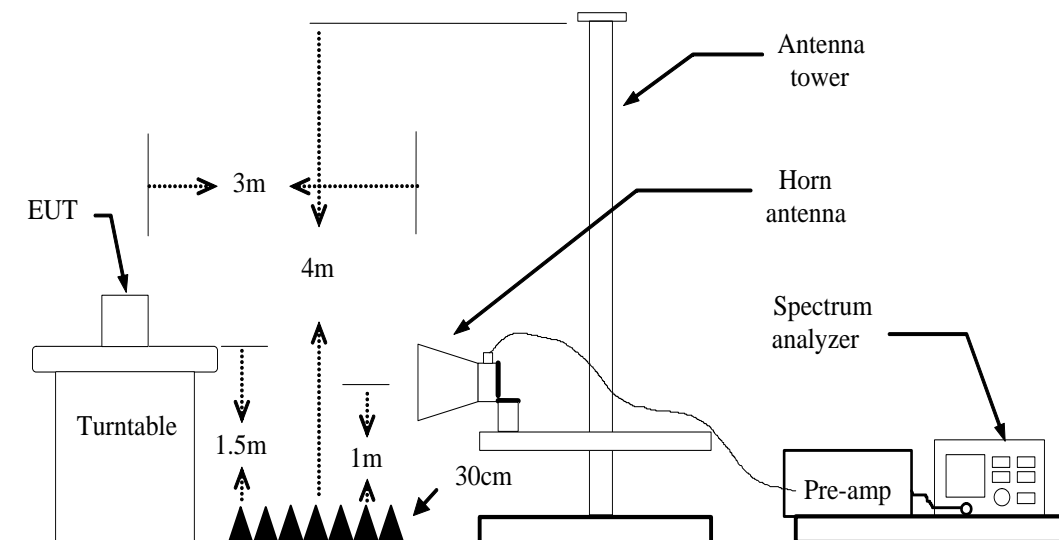
- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The FCC Site Registration number is 101879.
  3. N.C.R = No Calibration Required.



### 7.6.3. 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=10Hz / Sweep=AUTO / Detector=Peak
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

### 7.6.4. TEST SETUP



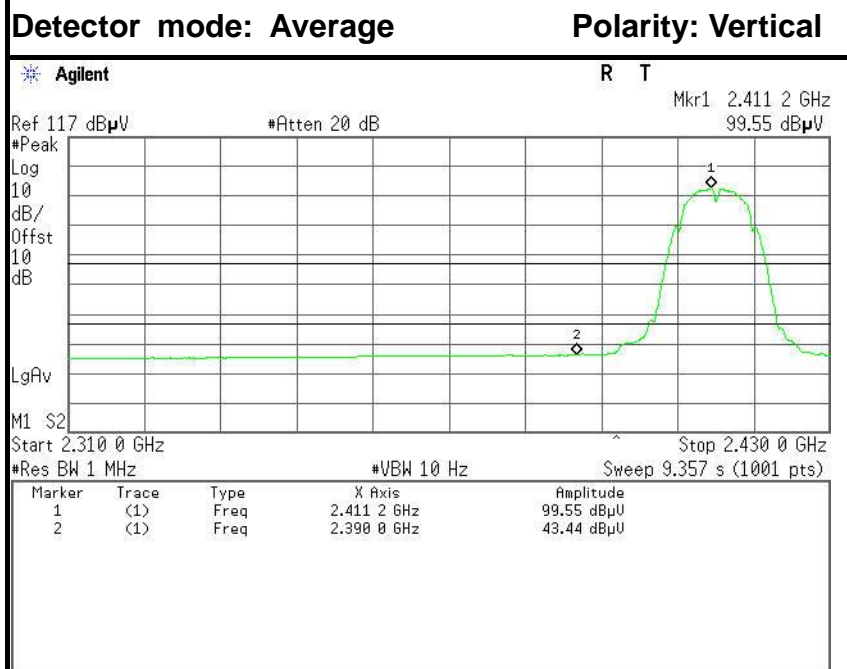
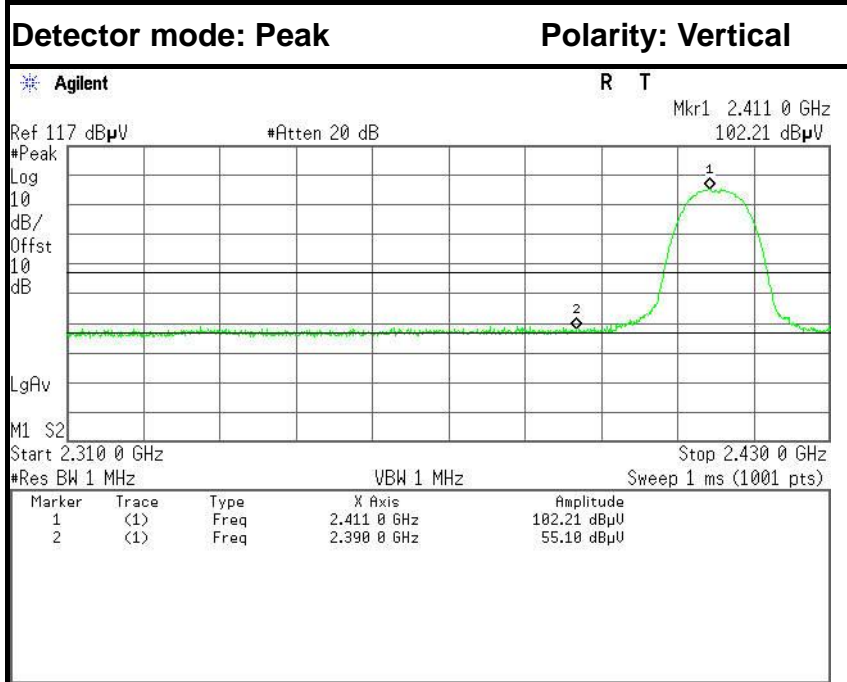


7.6.5. TEST RESULTS

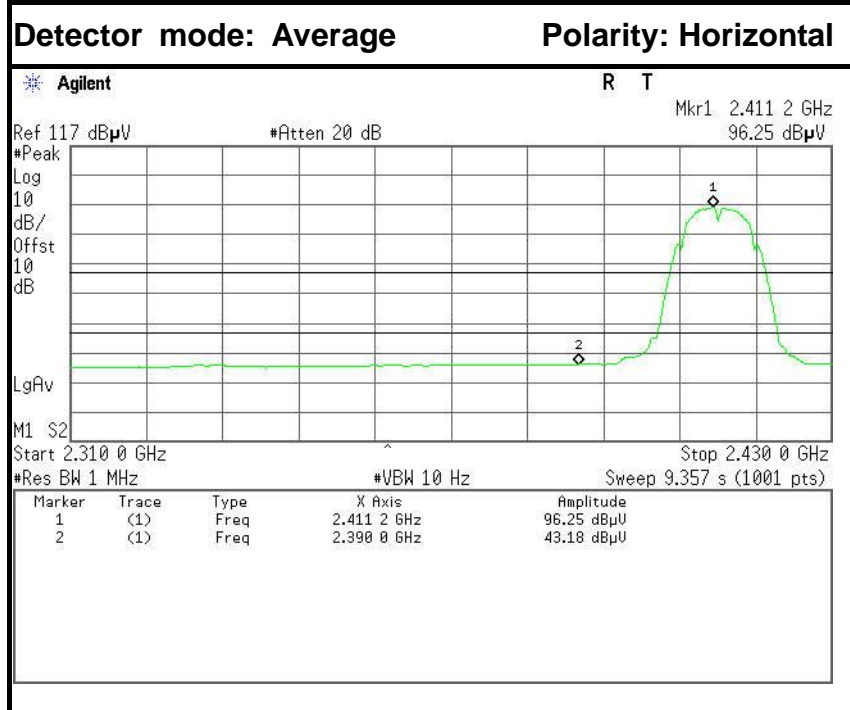
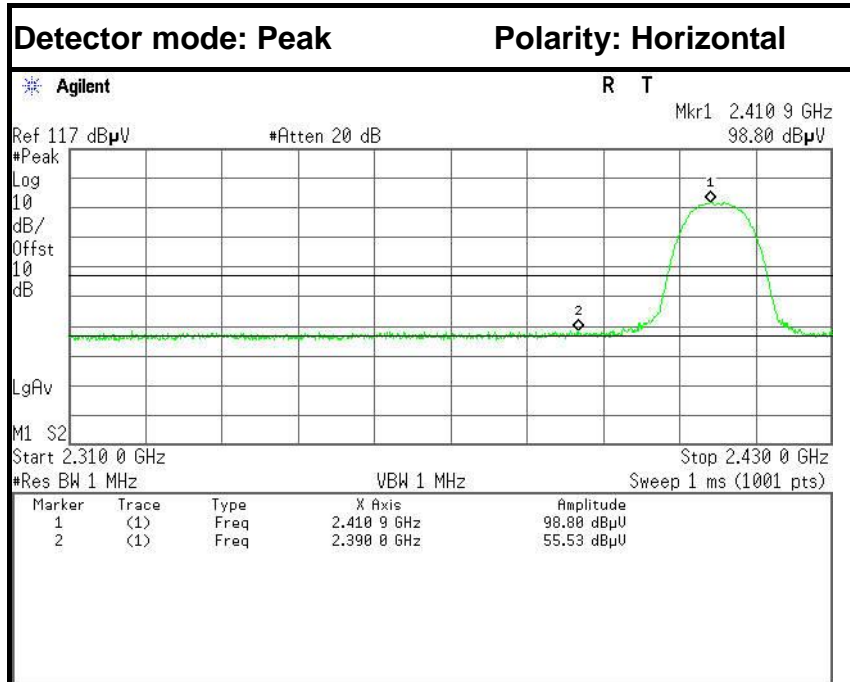
Test Plot

IEEE 802.11b mode

Band Edges (CH Low)



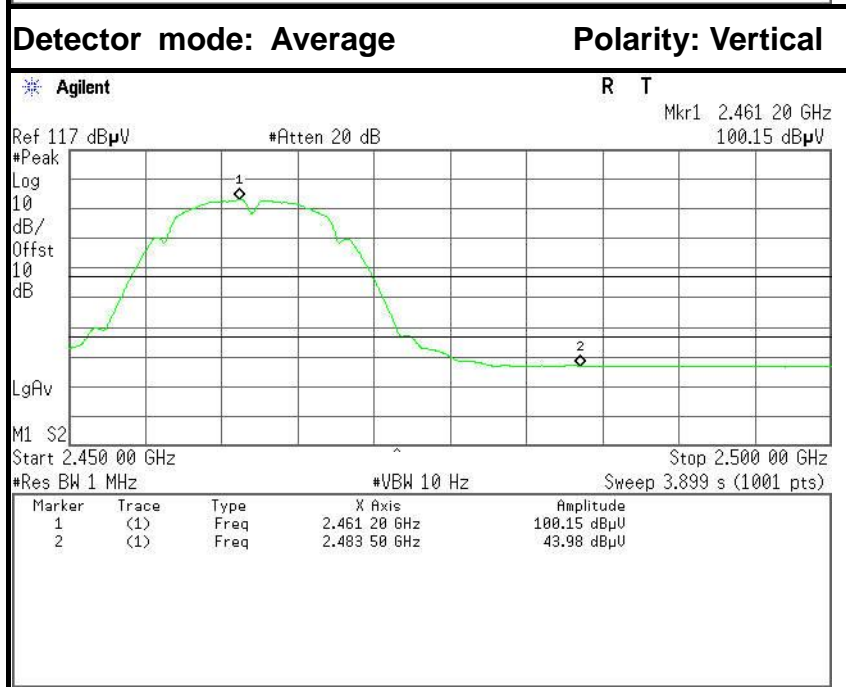
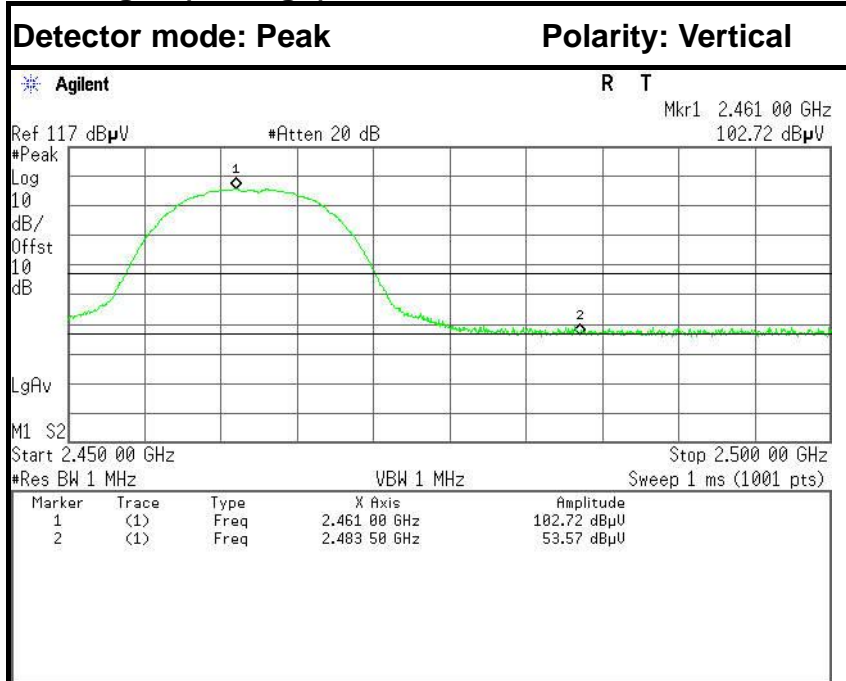
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	48.50	-6.60	55.10	74.00	-18.90	Peak	Vertical
2	2390.0000	36.84	-6.60	43.44	54.00	-10.56	Average	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	48.93	-6.60	55.53	74.00	-18.47	Peak	Horizontal
2	2390.0000	36.58	-6.60	43.18	54.00	-10.82	Average	Horizontal

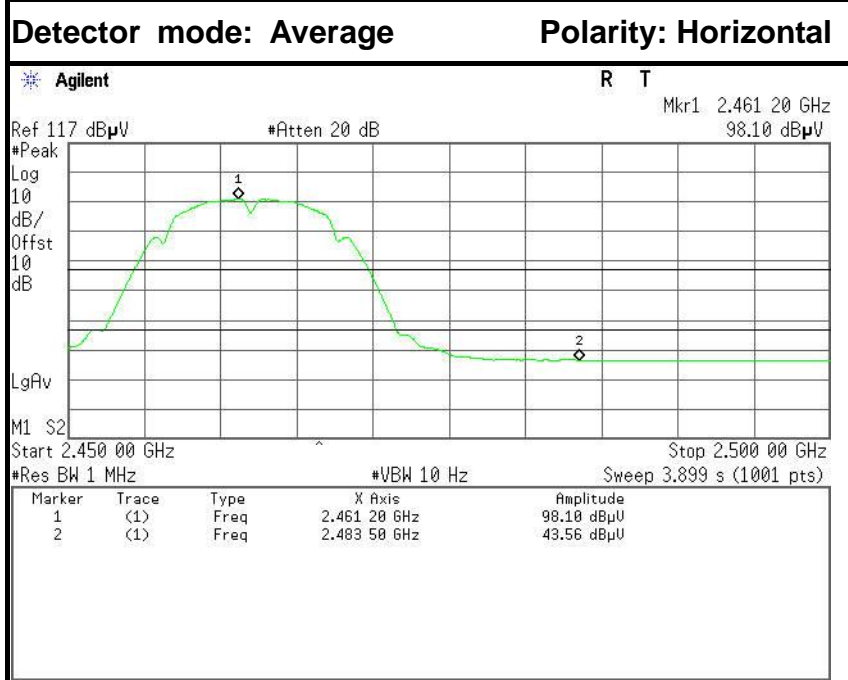
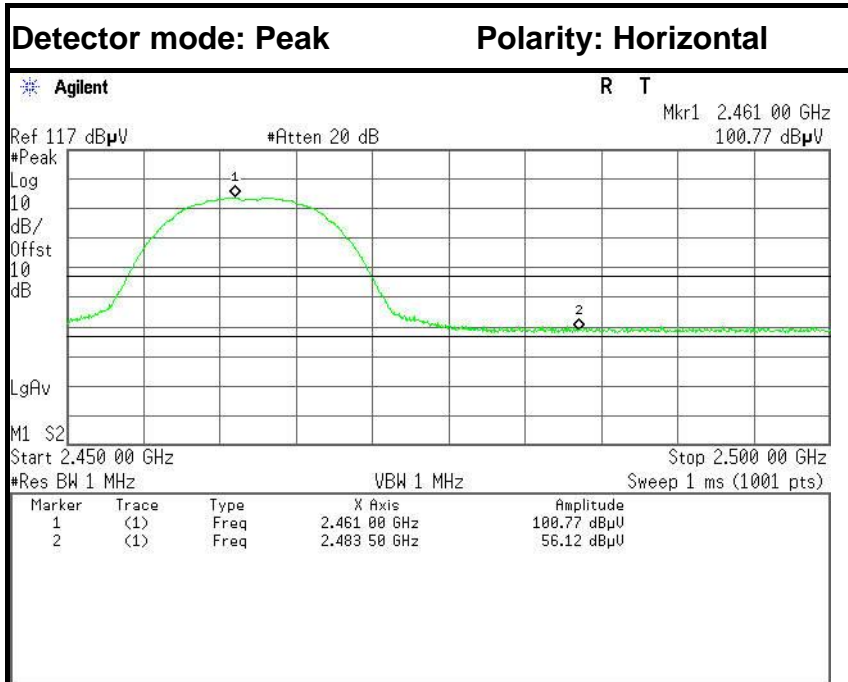


**Band Edges (CH High)**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	47.33	-6.24	53.57	74.00	-20.43	Peak	Vertical
2	2483.5000	37.74	-6.24	43.98	54.00	-10.02	Average	Vertical



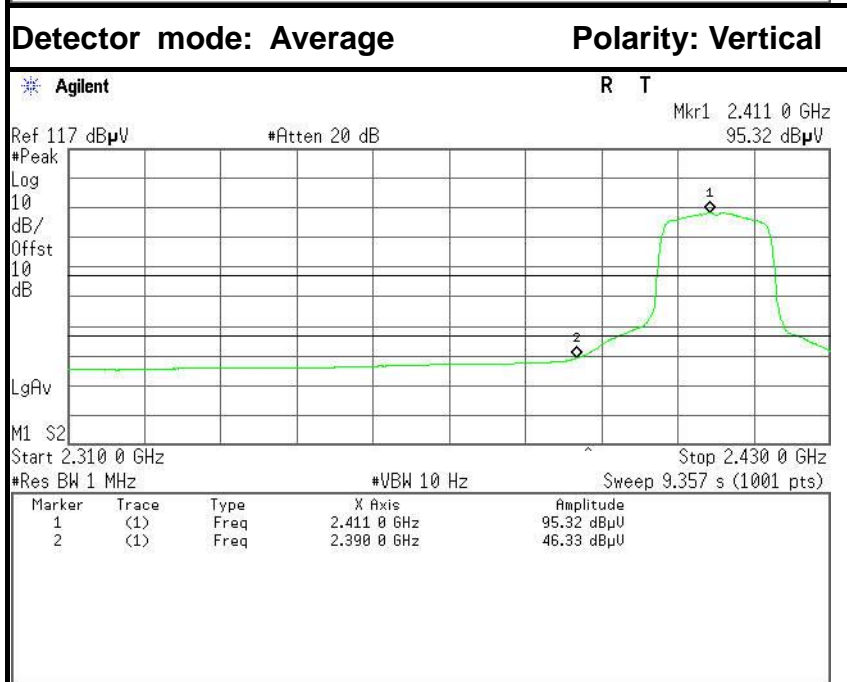
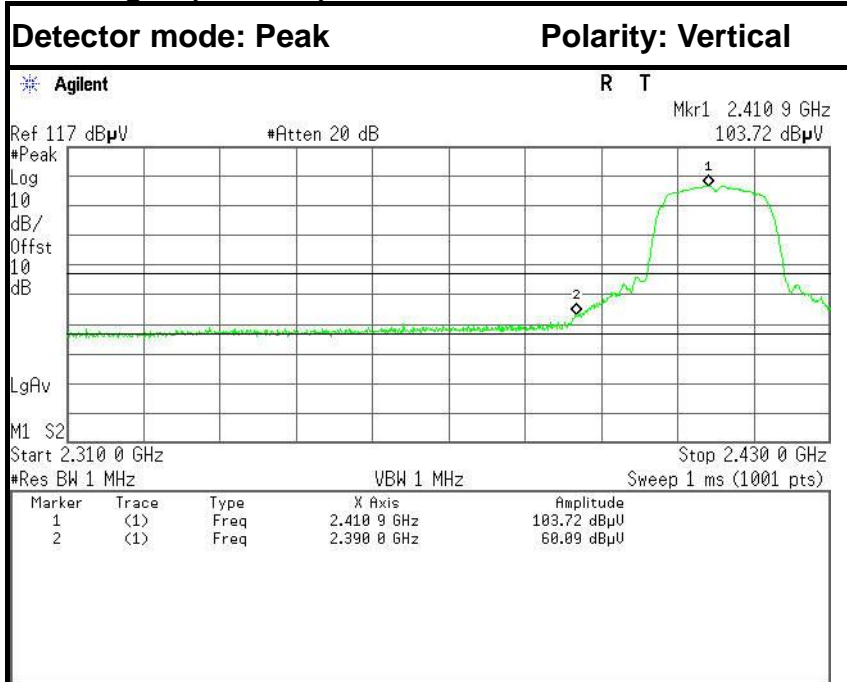


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	49.88	-6.24	56.12	74.00	-17.88	Peak	Horizontal
2	2483.5000	37.32	-6.24	43.56	54.00	-10.44	Average	Horizontal

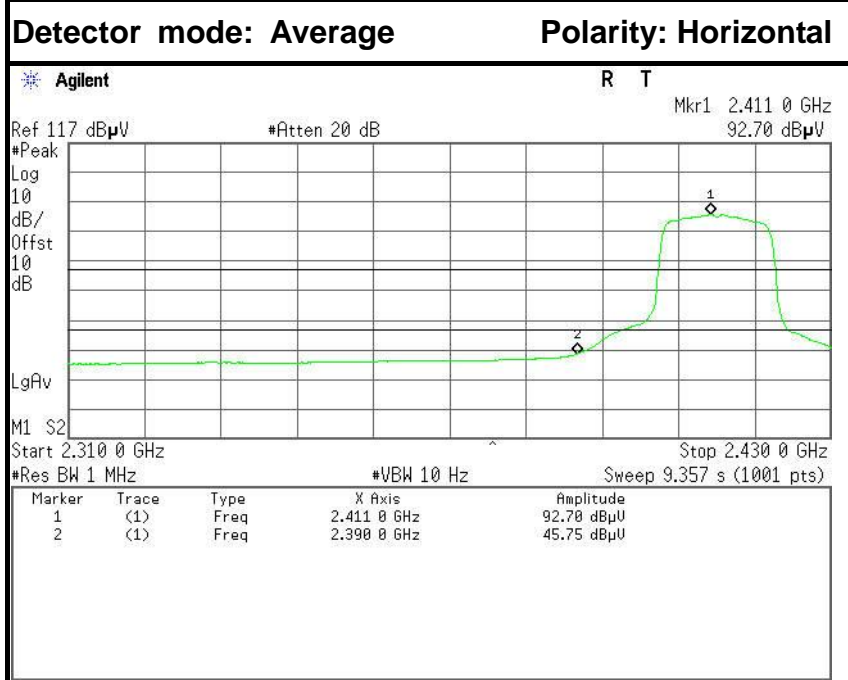
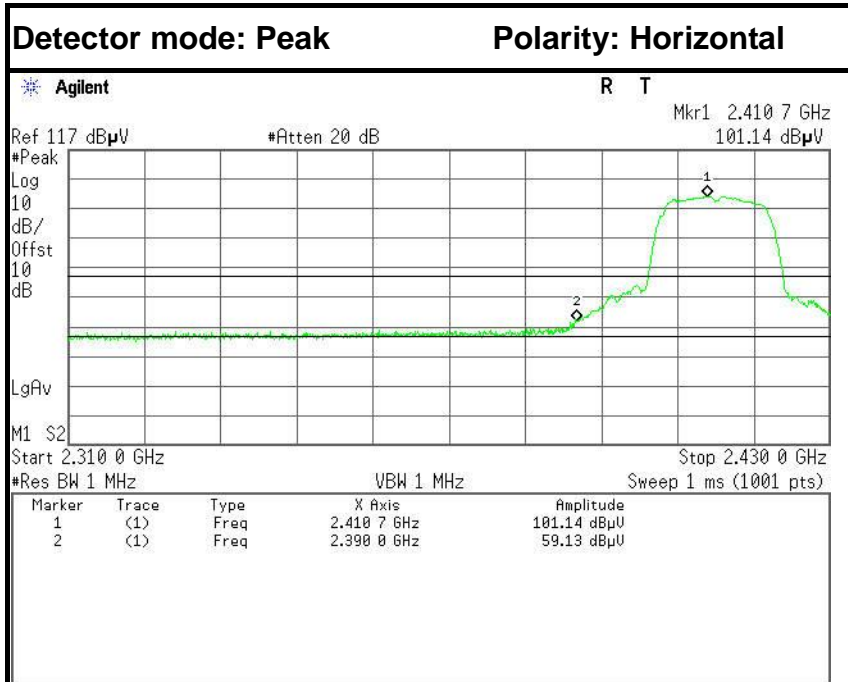


IEEE 802.11g mode

Band Edges (CH Low)



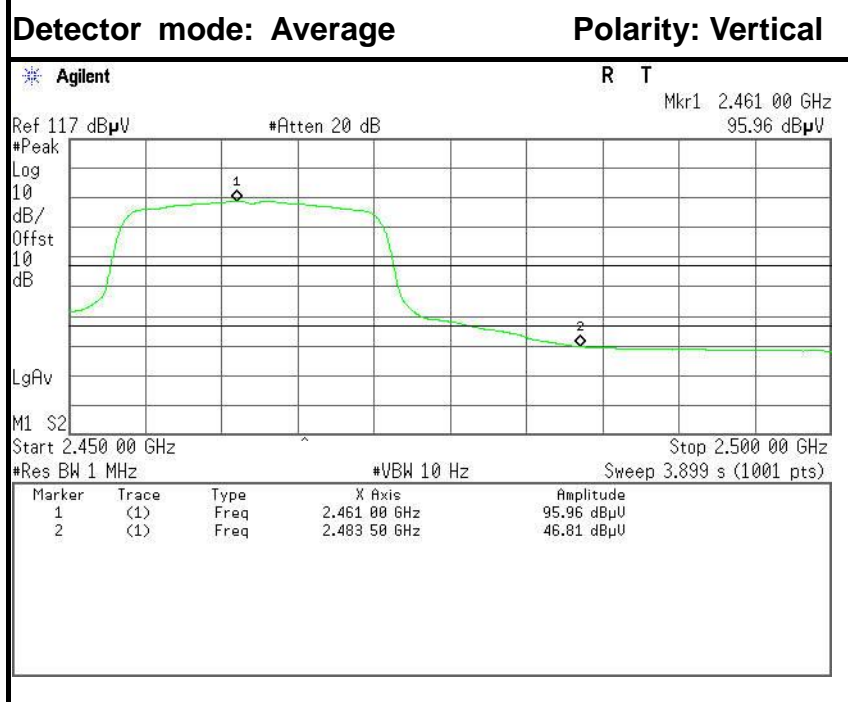
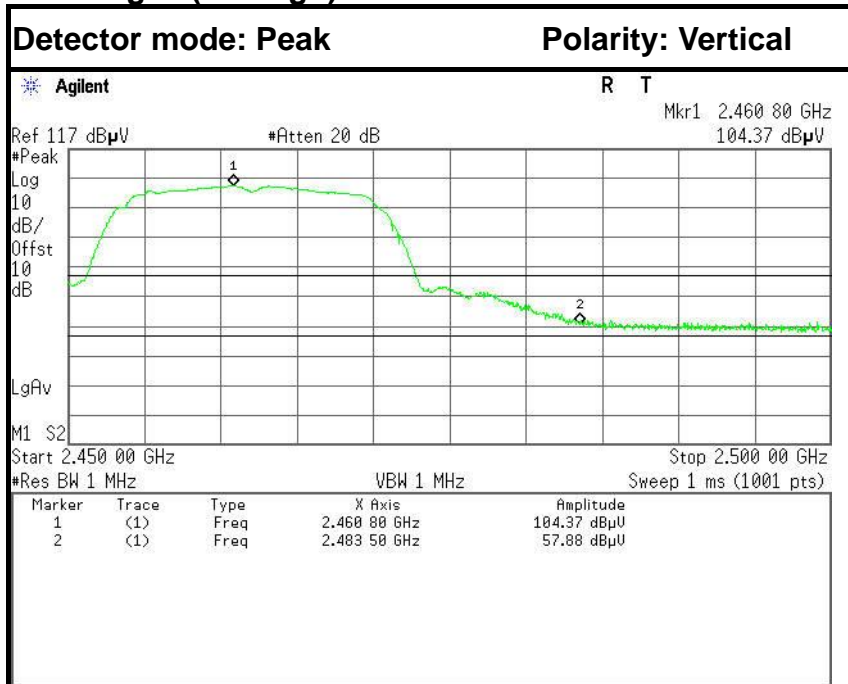
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	53.49	-6.60	60.09	74.00	-13.91	Peak	Vertical
2	2390.0000	39.73	-6.60	46.33	54.00	-7.67	Average	Vertical



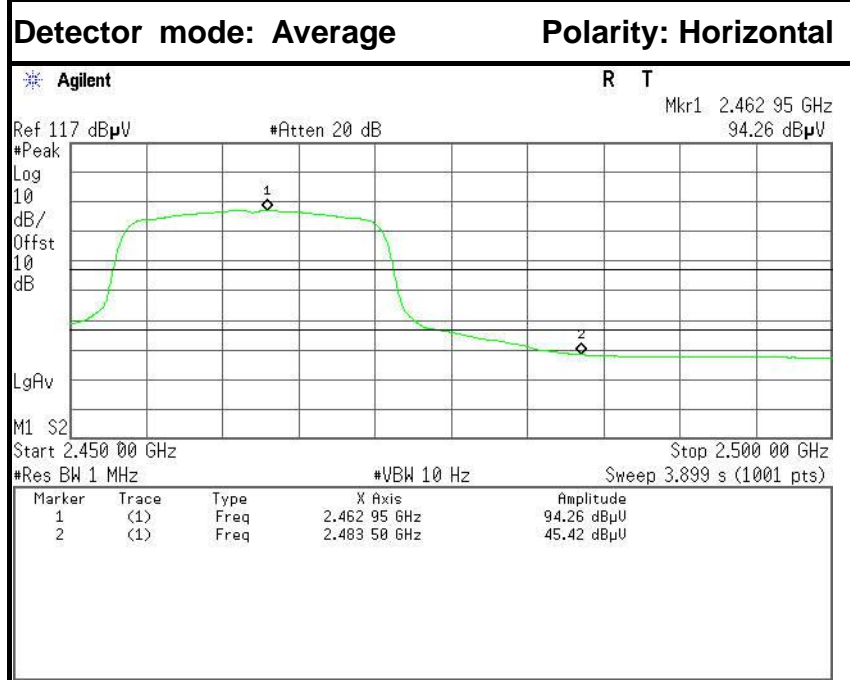
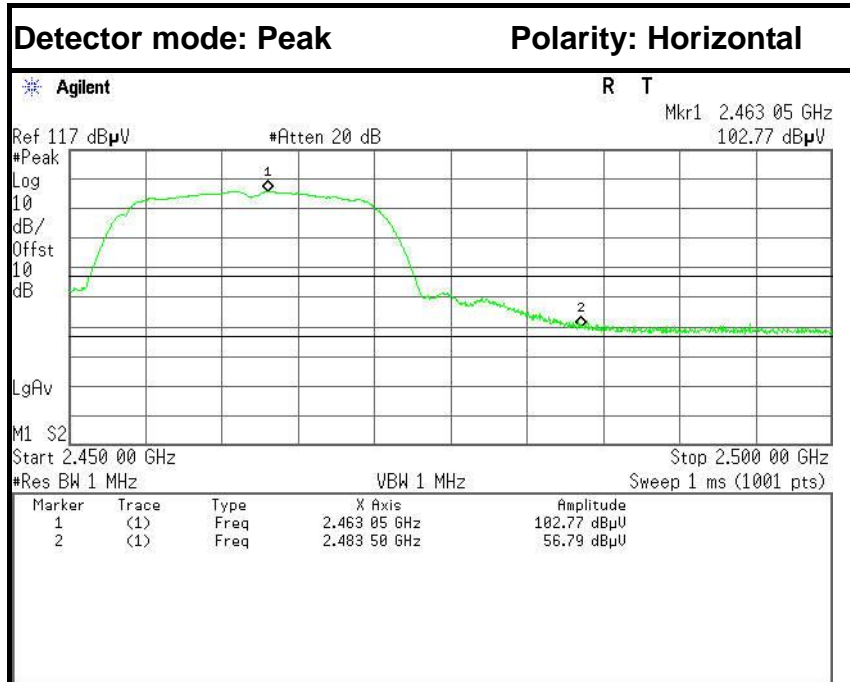
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	52.53	-6.60	59.13	74.00	-14.87	Peak	Horizontal
2	2390.0000	39.15	-6.60	45.75	54.00	-8.25	Average	Horizontal



**Band Edges (CH High)**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	51.64	-6.24	57.88	74.00	-16.12	Peak	Vertical
2	2483.5000	40.57	-6.24	46.81	54.00	-7.19	Average	Vertical

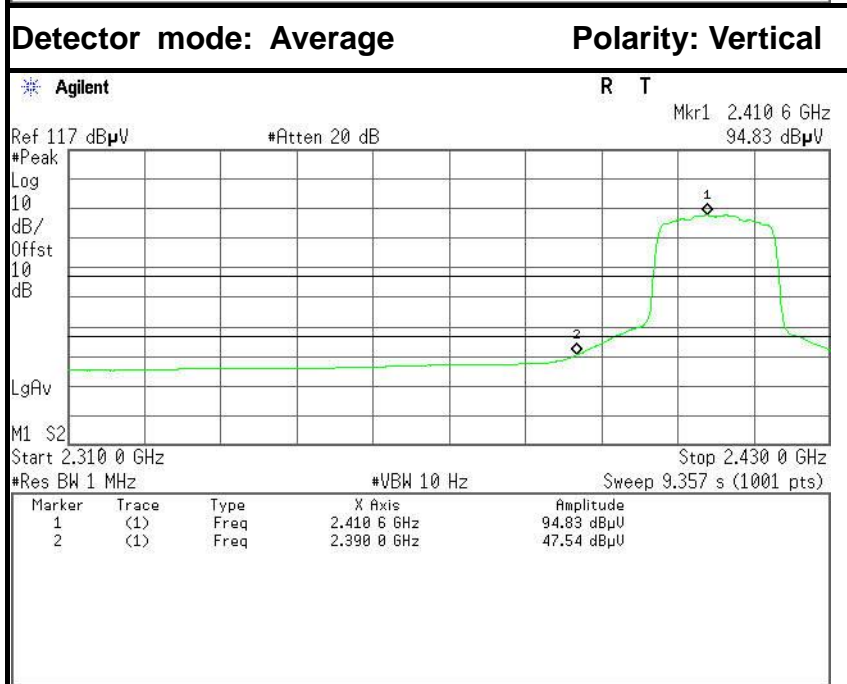
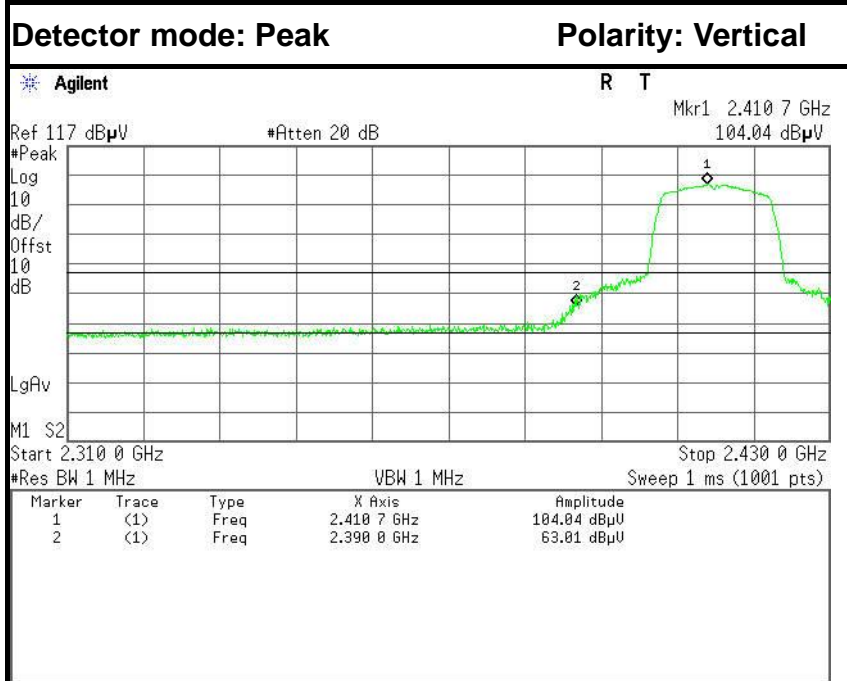


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	50.55	-6.24	56.79	74.00	-17.21	Peak	Horizontal
2	2483.5000	39.18	-6.24	45.42	54.00	-8.58	Average	Horizontal

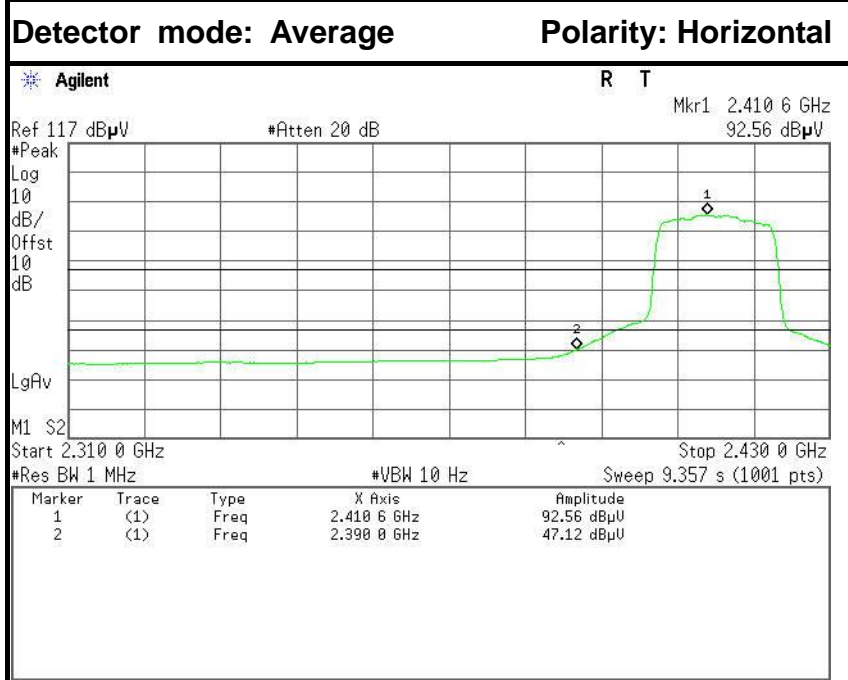
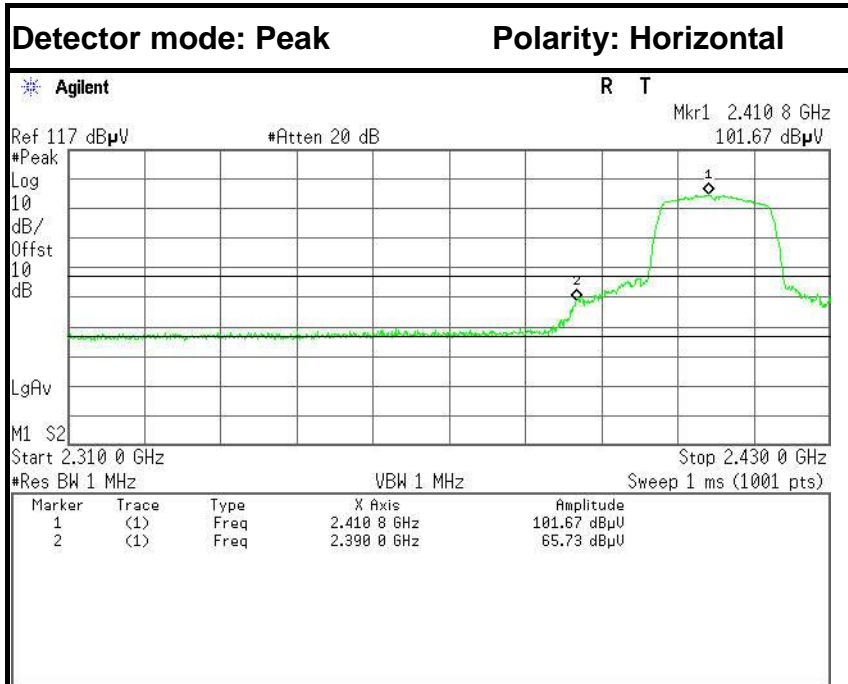


IEEE 802.11n HT20 MHz mode

Band Edges (CH Low)



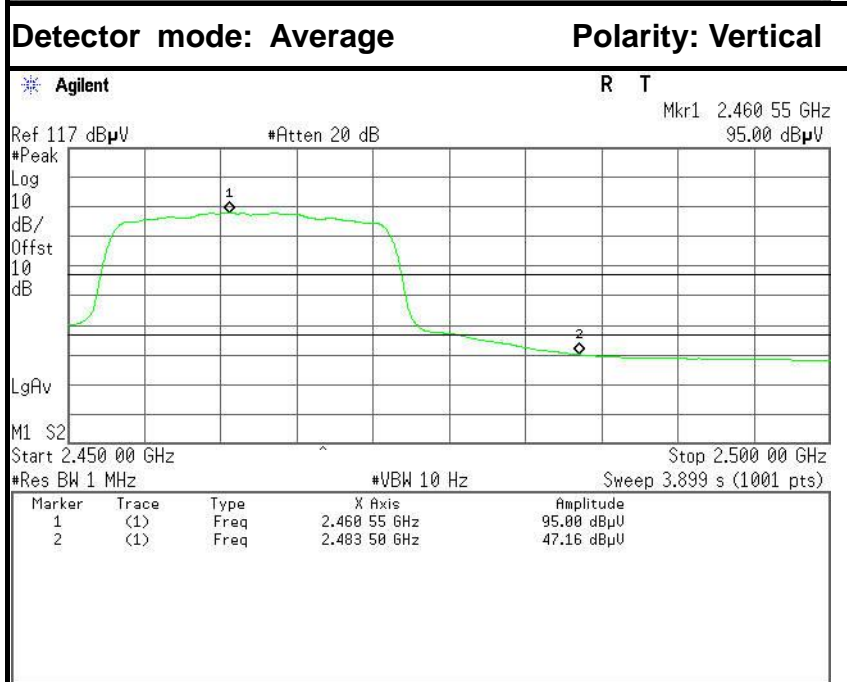
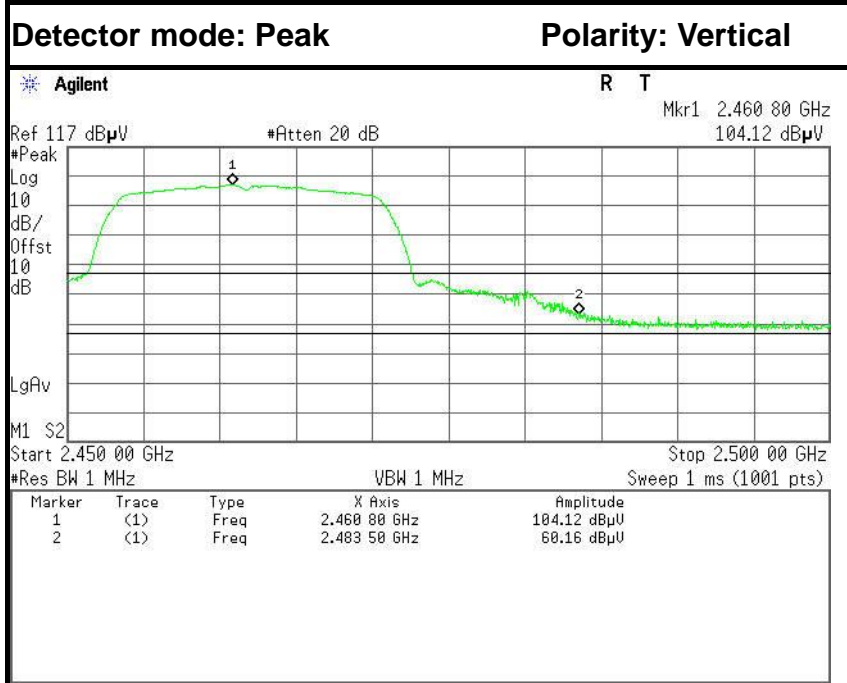
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	56.41	-6.60	63.01	74.00	-10.99	Peak	Vertical
2	2390.0000	40.94	-6.60	47.54	54.00	-6.46	Average	Vertical



No.	Frequency (MHz)	Reading (dB $\mu$ V)	Corrected (dB)	Result (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	59.13	-6.60	65.73	74.00	-8.27	Peak	Horizontal
2	2390.0000	40.52	-6.60	47.12	54.00	-6.88	Average	Horizontal

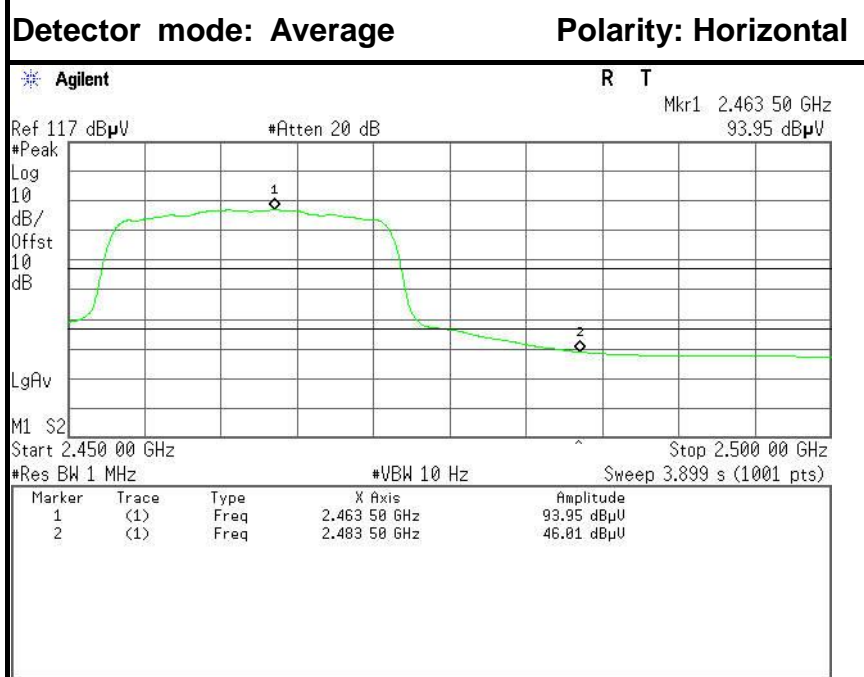
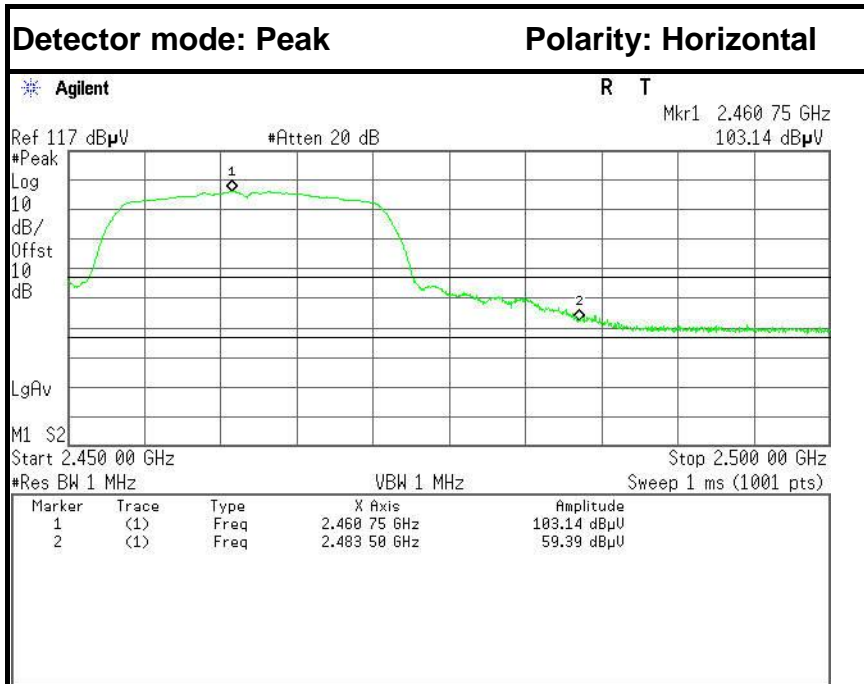


**Band Edges (CH High)**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	53.92	-6.24	60.16	74.00	-13.84	Peak	Vertical
2	2483.5000	40.92	-6.24	47.16	54.00	-6.84	Average	Vertical



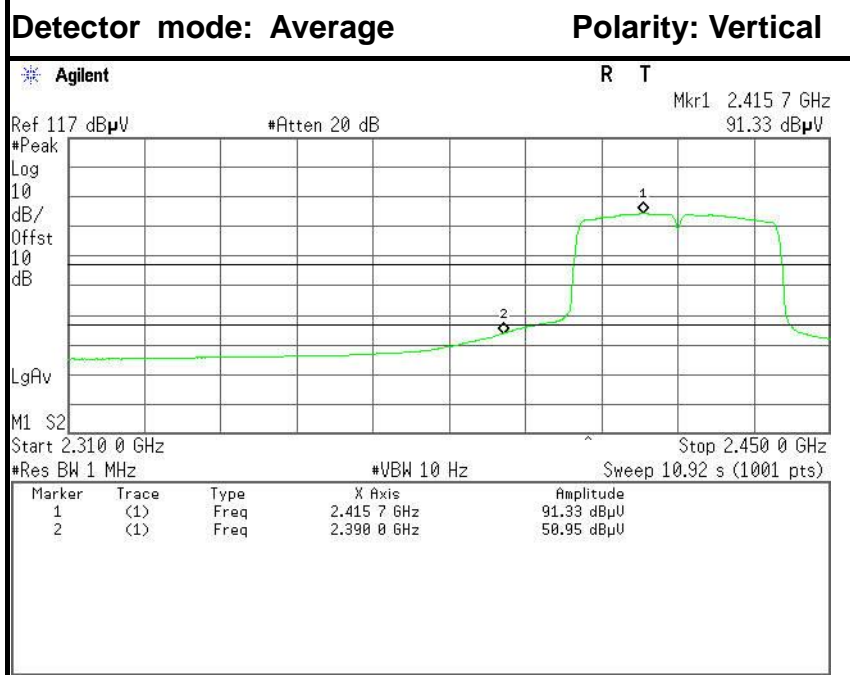
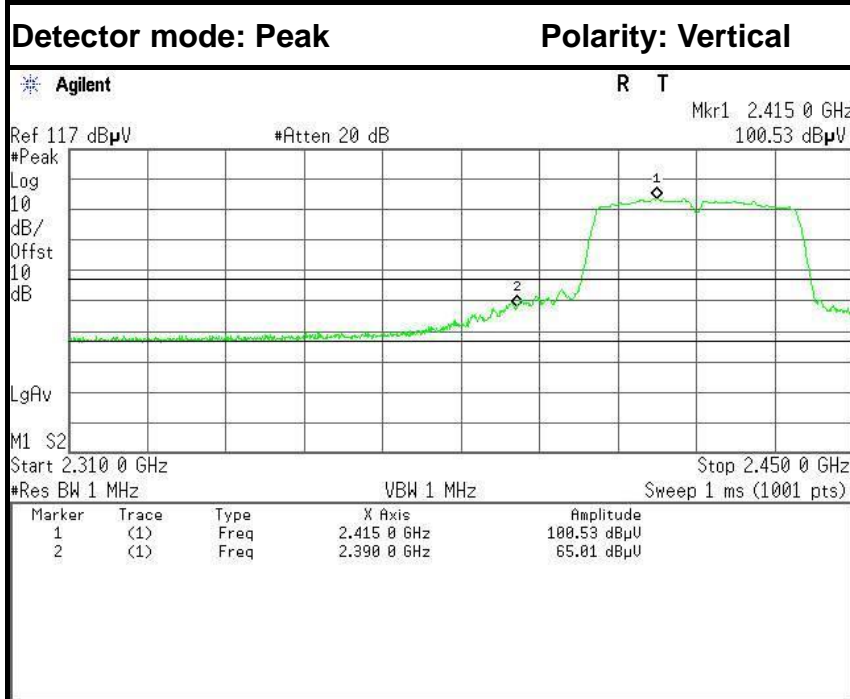


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	53.15	-6.24	59.39	74.00	-14.61	Peak	Horizontal
2	2483.5000	39.77	-6.24	46.01	54.00	-7.99	Average	Horizontal

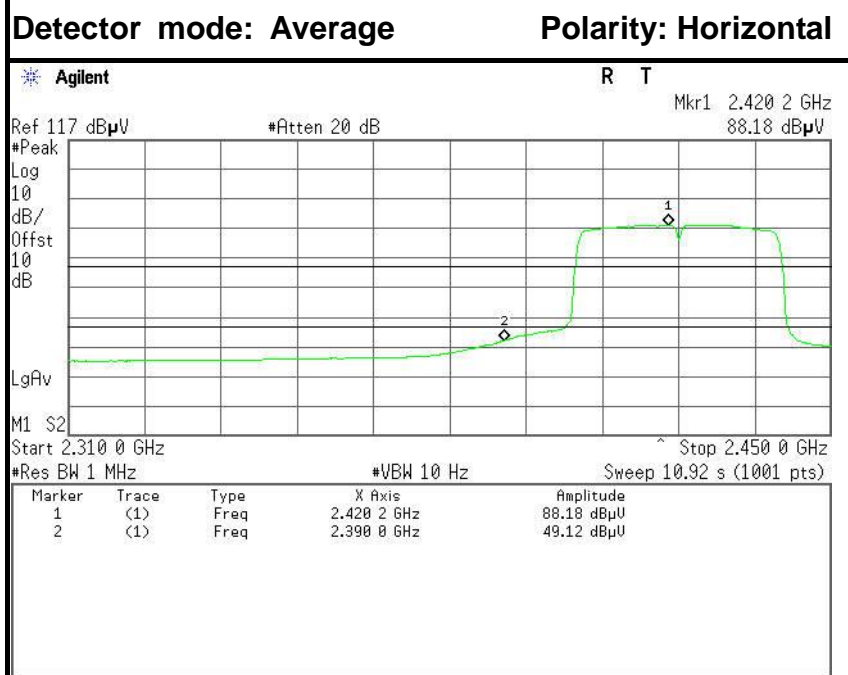
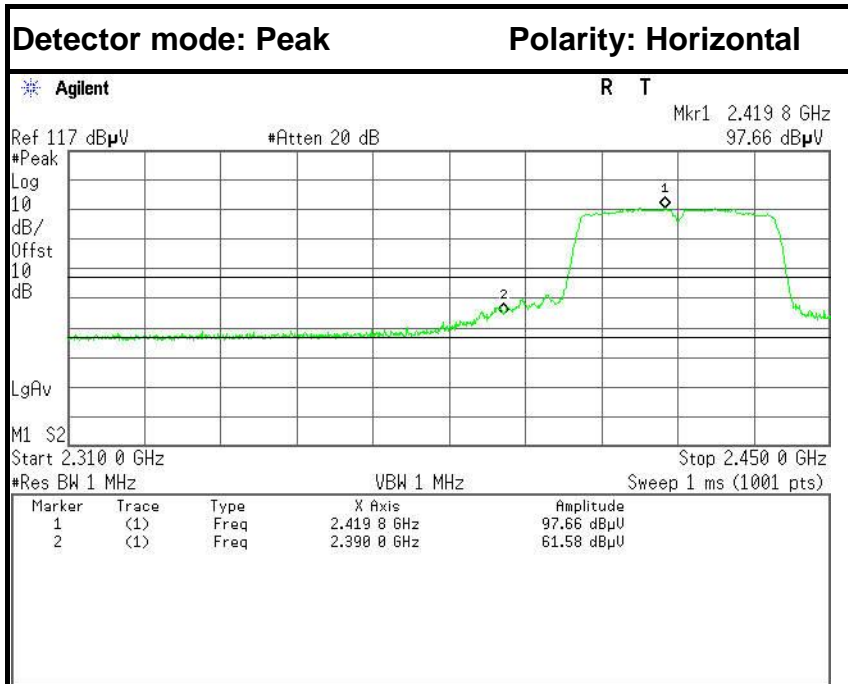


IEEE 802.11n HT40 MHz mode

Band Edges (CH Low)



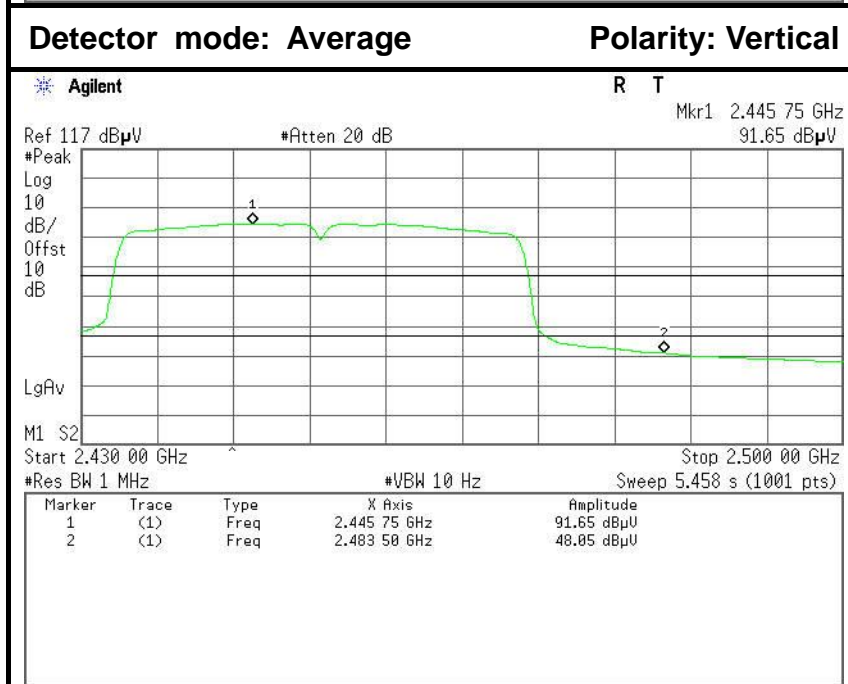
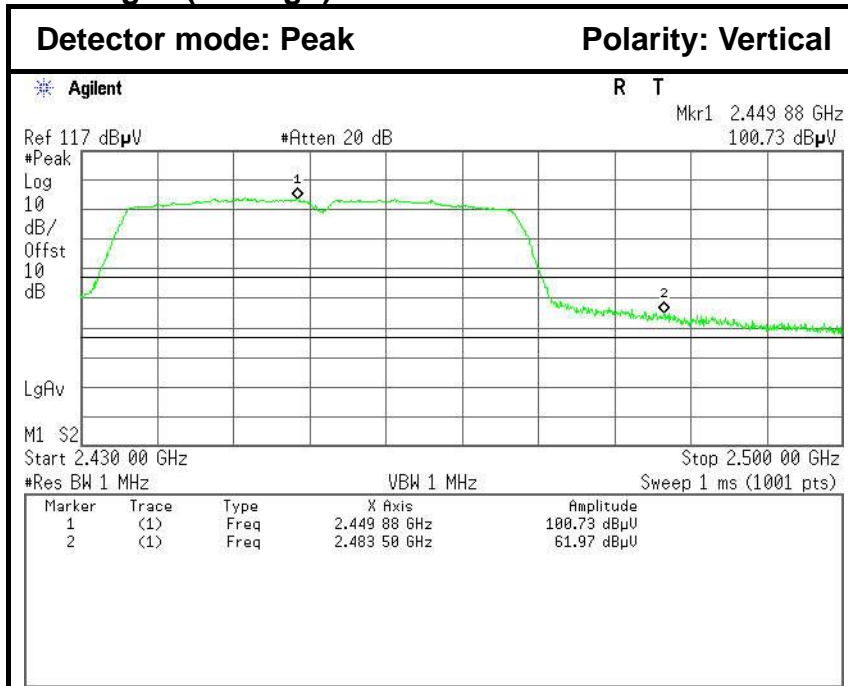
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	58.41	-6.60	65.01	74.00	-8.99	Peak	Vertical
2	2390.0000	44.35	-6.60	50.95	54.00	-3.05	Average	Vertical



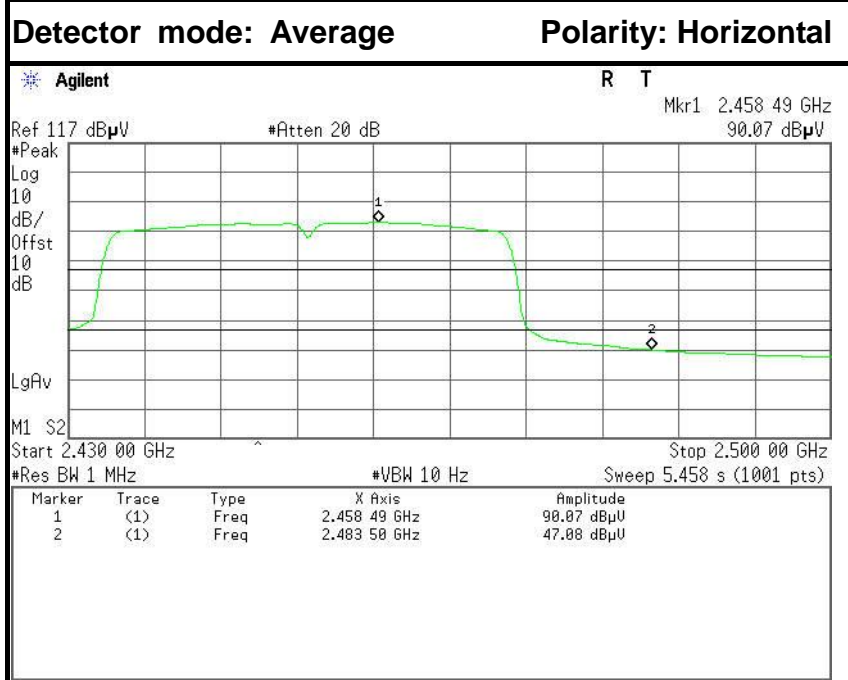
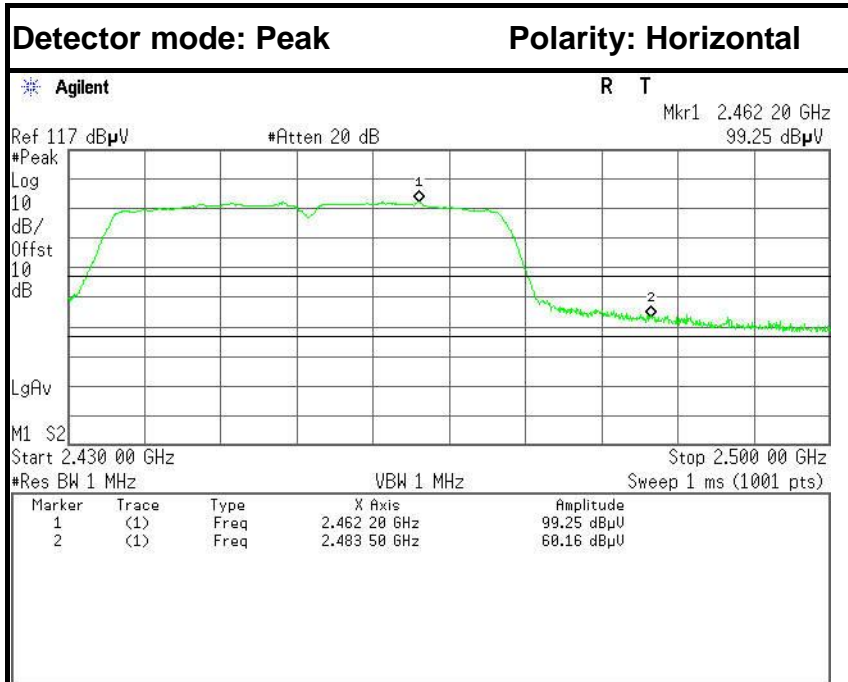
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	54.98	-6.60	61.58	74.00	-12.42	Peak	Horizontal
2	2390.0000	42.52	-6.60	49.12	54.00	-4.88	Average	Horizontal



**Band Edges (CH High)**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	55.73	-6.24	61.97	74.00	-12.03	Peak	Vertical
2	2483.5000	41.81	-6.24	48.05	54.00	-5.95	Average	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	53.92	-6.24	60.16	74.00	-13.84	Peak	Horizontal
2	2483.5000	40.84	-6.24	47.08	54.00	-6.92	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 INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	E4446A	US44300399	02/28/2015	02/27/2016	10/24/2015

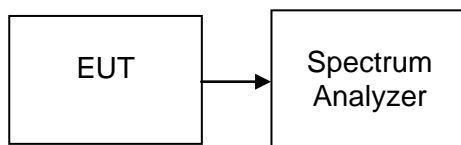
### 7.7.3. TEST PROCEDURES (please refer to measurement standard)

§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.

### 7.7.4. TEST SETUP





### 7.7.5. TEST RESULTS

No non-compliance noted

#### Test Data

##### Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-11.70	8	PASS
Mid	2437	-9.62		PASS
High	2462	-11.34		PASS

##### Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-11.32	8	PASS
Mid	2437	-11.74		PASS
High	2462	-11.41		PASS

##### Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-11.33	8	PASS
Mid	2437	-10.69		PASS
High	2462	-10.68		PASS

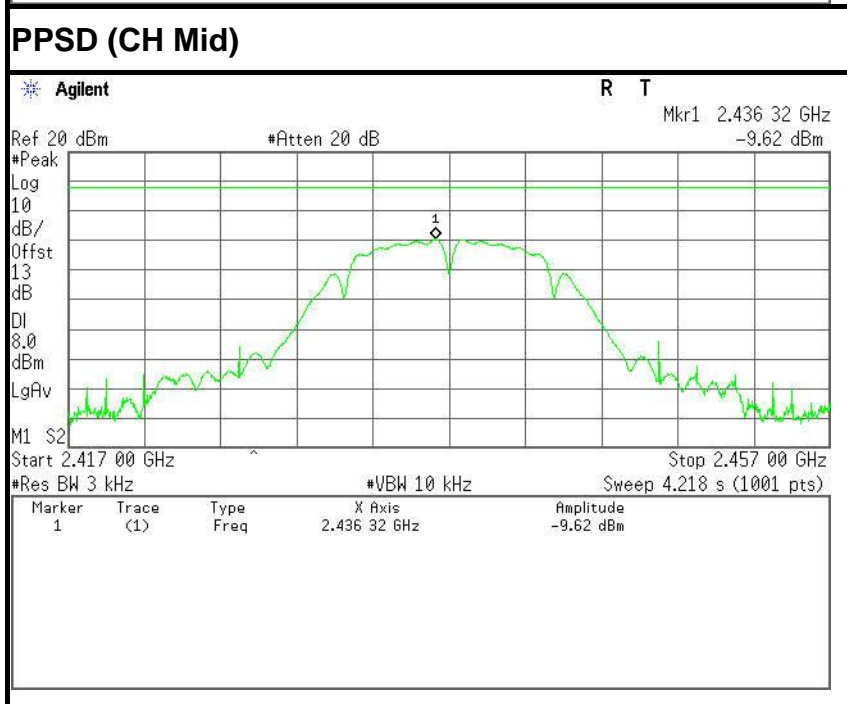
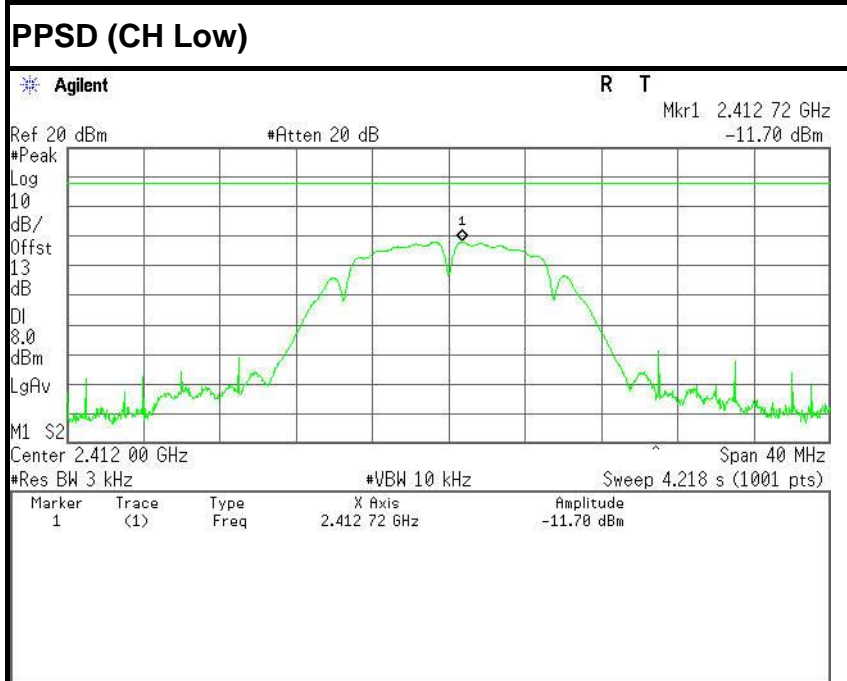
##### Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2422	-14.76	8	PASS
Mid	2437	-13.18		PASS
High	2452	-14.74		PASS

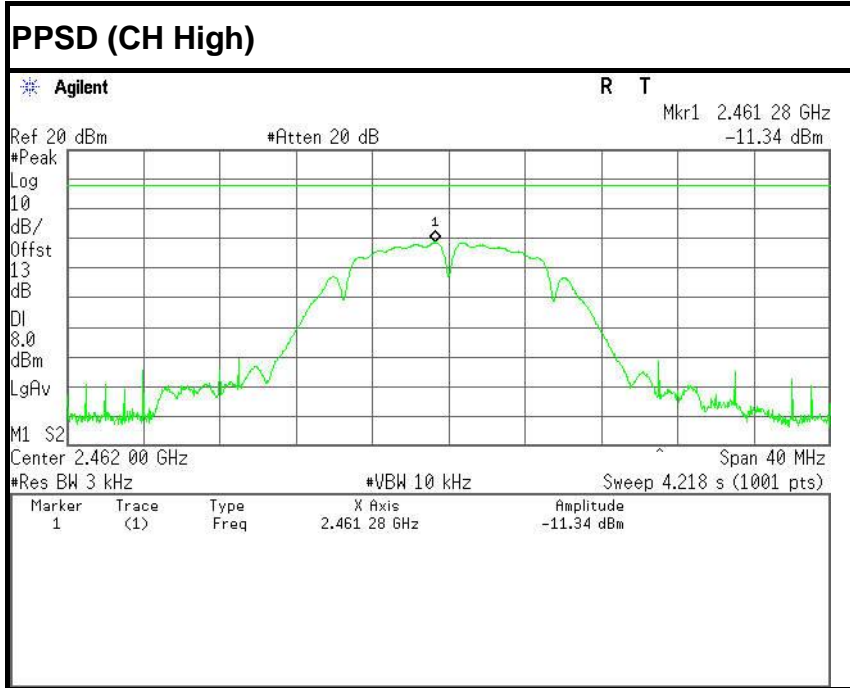


**Test Plot**

**IEEE 802.11b mode**

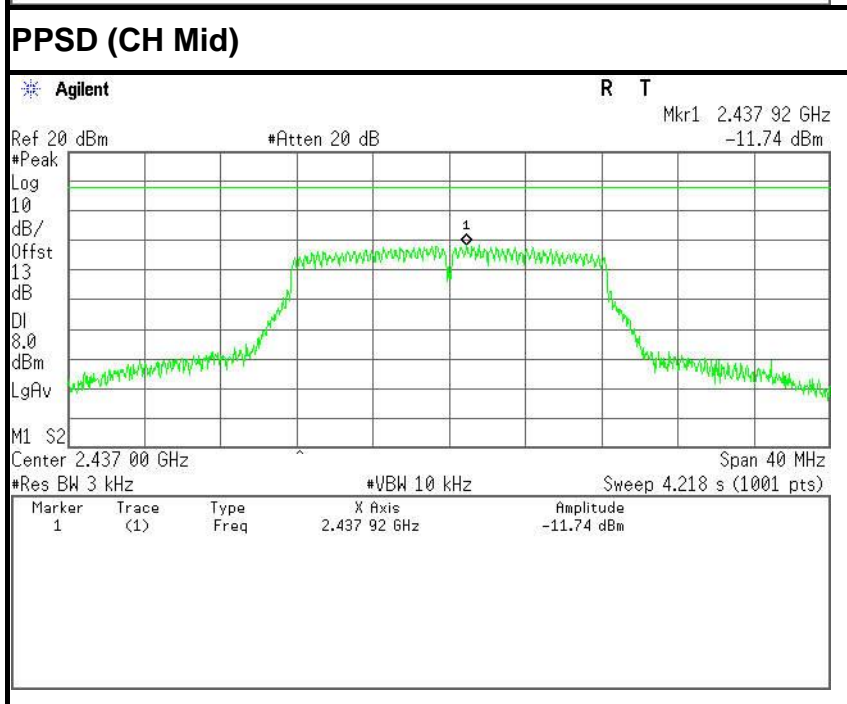
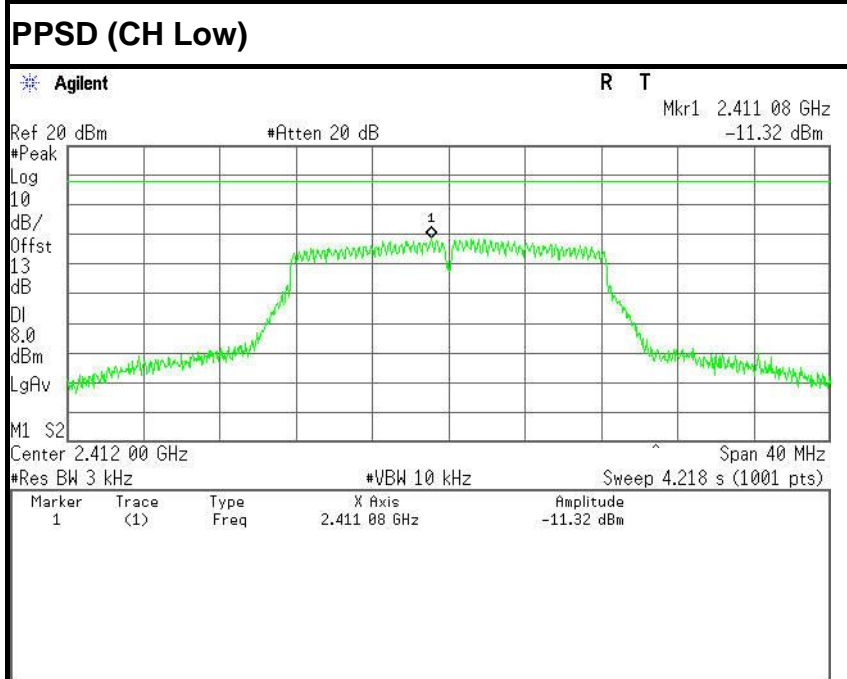


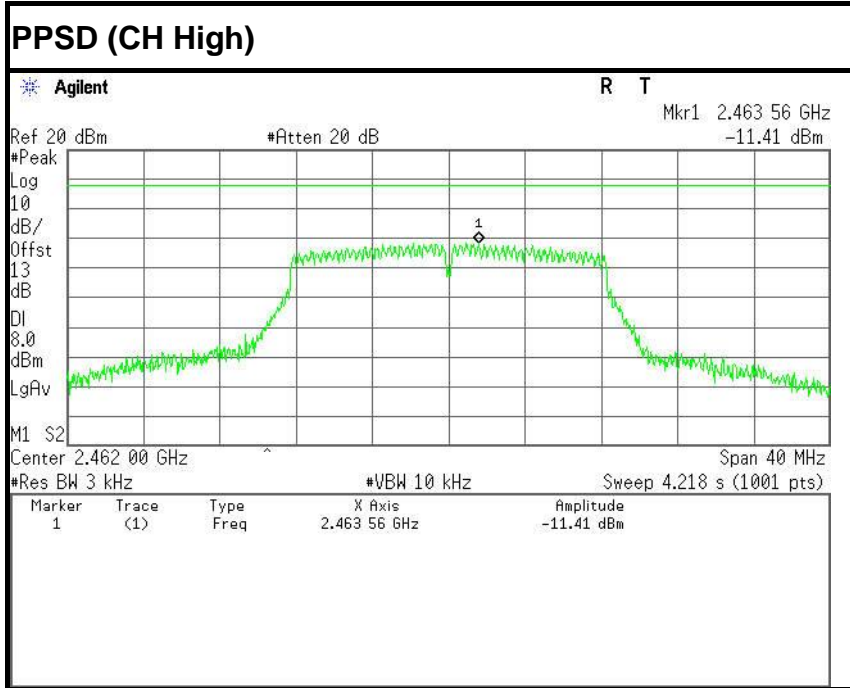






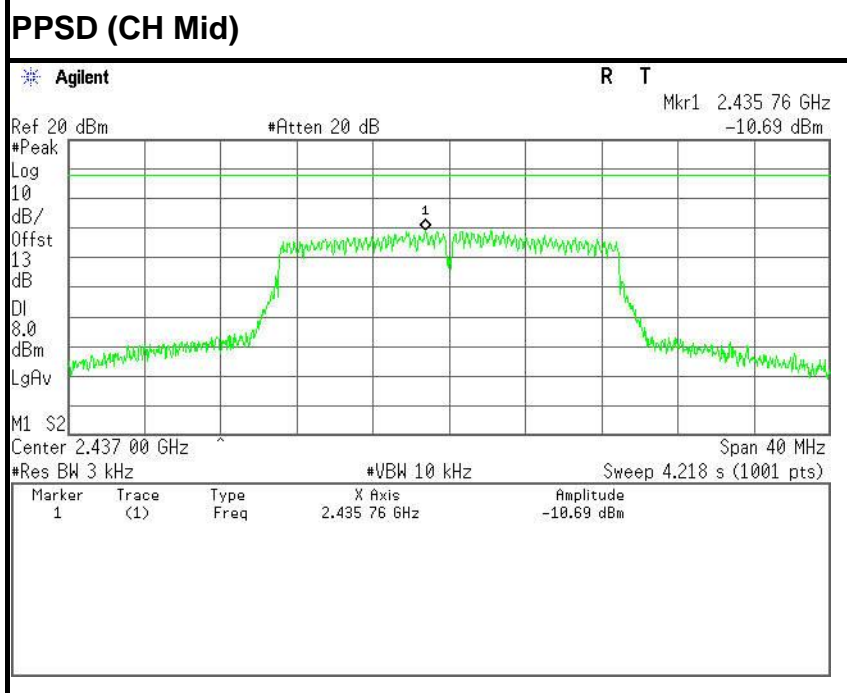
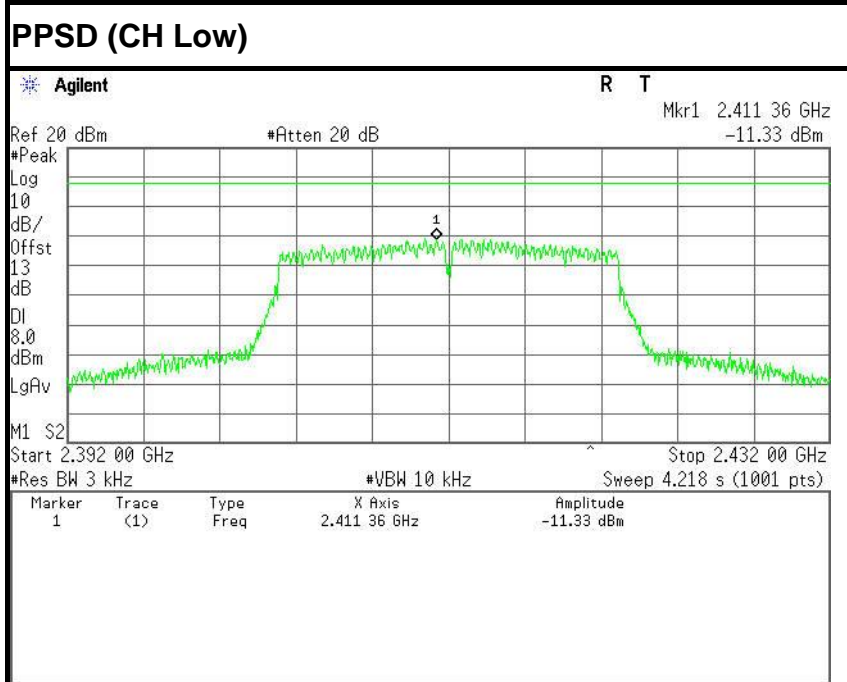
IEEE 802.11g mode

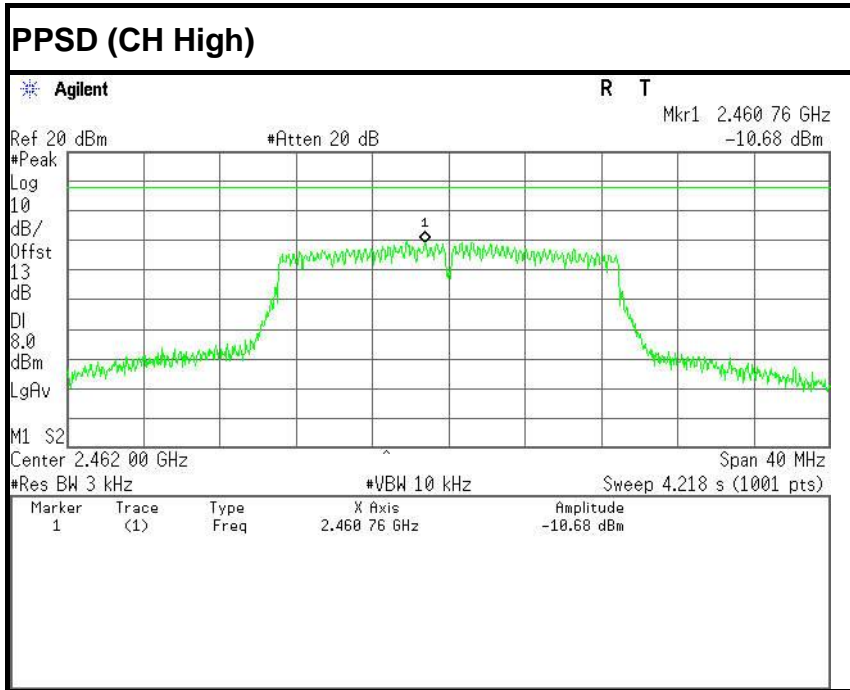






IEEE 802.11n HT20 MHz mode







IEEE 802.11n HT40 MHz mode

