



7.6 RADIATED UNDESIRABLE EMISSION

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

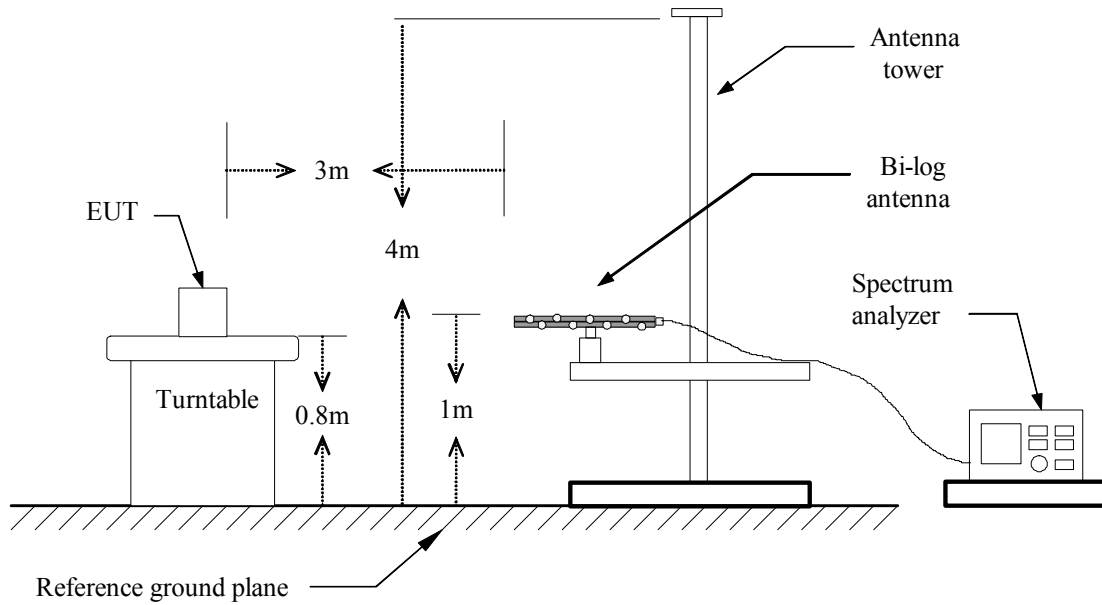
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the emission table above, the tighter limit applies at the band edges.

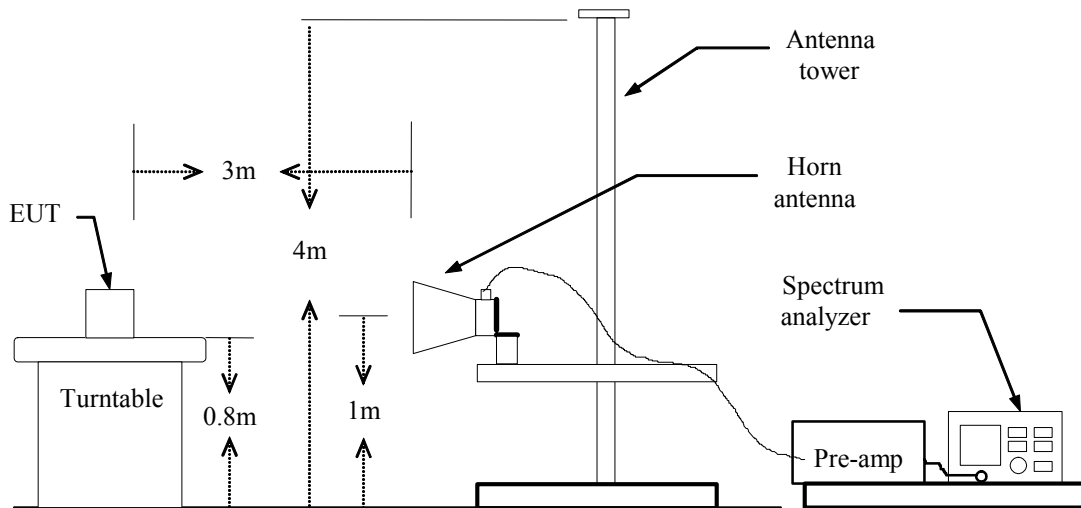
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



Above 1 GHz





TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above 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 emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.

**TEST RESULTS****Below 1 GHz****Operation Mode:** Normal Link**Test Date:** July 29, 2008**Temperature:** 23°C**Tested by:** Mimic Yang**Humidity:** 53% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
215.92	V	48.40	-8.01	40.38	43.50	-3.12	Peak
233.70	V	48.11	-7.97	40.14	46.00	-5.86	Peak
288.67	V	48.57	-6.46	42.11	46.00	-3.89	Peak
361.42	V	45.51	-4.55	40.96	46.00	-5.04	Peak
502.07	V	40.77	-0.50	40.27	46.00	-5.73	Peak
610.38	V	38.71	1.38	40.09	46.00	-5.91	Peak
217.53	H	50.26	-8.08	42.19	46.00	-3.81	Peak
287.05	H	49.14	-6.49	42.66	46.00	-3.34	Peak
359.80	H	44.21	-4.61	39.60	46.00	-6.40	Peak
717.08	H	36.95	3.13	40.08	46.00	-5.92	Peak
788.22	H	35.21	4.95	40.16	46.00	-5.84	Peak
933.72	H	30.50	7.04	37.54	46.00	-8.46	Peak

Remark:

- 1. Measuring frequencies from 30 MHz to the 1GHz.*
- 2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
- 3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*
- 4. 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.*
- 5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

**Above 1 GHz**

Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low **Test Date:** July 23, 2008

Temperature: 25°C

Tested by: Jerry Lin

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1193.33	V	52.91	---	-9.08	43.82	---	74.00	54.00	-10.18	Peak
1323.33	V	51.75	---	-8.78	42.98	---	74.00	54.00	-11.02	Peak
1606.67	V	51.24	---	-7.47	43.78	---	74.00	54.00	-10.22	Peak
2383.33	V	51.09	---	-2.99	48.10	---	74.00	54.00	-5.90	Peak
N/A										
1456.67	H	51.95	---	-8.46	43.49	---	74.00	54.00	-10.51	Peak
1606.67	H	50.51	---	-7.47	43.04	---	74.00	54.00	-10.96	Peak
1986.67	H	47.87	---	-4.29	43.58	---	74.00	54.00	-10.42	Peak
N/A										

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Mid **Test Date:** July 23, 2008
Temperature: 25°C **Tested by:** Jerry Lin
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1326.67	V	51.00	---	-8.77	42.23	---	74.00	54.00	-11.77	Peak
1606.67	V	51.04	---	-7.47	43.58	---	74.00	54.00	-10.42	Peak
2386.67	V	50.33	---	-2.98	47.35	---	74.00	54.00	-6.65	Peak
N/A										
1456.67	H	50.39	---	-8.46	41.93	---	74.00	54.00	-12.07	Peak
1503.33	H	50.07	---	-8.33	41.74	---	74.00	54.00	-12.26	Peak
2650.00	H	46.94	---	-2.23	44.70	---	74.00	54.00	-9.30	Peak
N/A										

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz /
CH High

Test Date: July 23, 2008

Temperature: 25°C

Tested by: Jerry Lin

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1323.33	V	50.16	---	-8.78	41.38	---	74.00	54.00	-12.62	Peak
1600.00	V	50.83	---	-7.52	43.31	---	74.00	54.00	-10.69	Peak
2386.67	V	47.85	---	-2.98	44.87	---	74.00	54.00	-9.13	Peak
N/A										
1600.00	H	49.40	---	-7.52	41.88	---	74.00	54.00	-12.12	Peak
1986.67	H	47.72	---	-4.29	43.43	---	74.00	54.00	-10.57	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH Low **Test Date:** July 19, 2008

Temperature: 23°C **Tested by:** Mimic Yang

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1330.00	V	55.28	---	-8.76	46.52	---	74.00	54.00	-7.48	Peak
1726.67	V	54.88	---	-6.46	48.41	---	74.00	54.00	-5.59	Peak
N/A										
1336.67	H	56.22	---	-8.75	47.47	---	74.00	54.00	-6.53	Peak
N/A										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.
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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid **Test Date:** July 19, 2008

Temperature: 23°C **Tested by:** Mimic Yang

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1413.33	V	53.88	---	-8.56	45.32	---	74.00	54.00	-8.68	Peak
1600.00	V	52.02	---	-7.52	44.50	---	74.00	54.00	-9.50	Peak
N/A										
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel
mode / 5180 ~ 5240MHz / CH High

Test Date: July 19, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1420.00	V	57.82	---	-8.55	49.27	---	74.00	54.00	-4.73	Peak
1500.00	V	56.08	---	-8.36	47.72	---	74.00	54.00	-6.28	Peak
1603.33	V	56.04	---	-7.50	48.54	---	74.00	54.00	-5.46	Peak
2123.33	V	52.17	---	-3.80	48.37	---	74.00	54.00	-5.63	Peak
N/A										
1490.00	H	56.55	---	-8.38	48.17	---	74.00	54.00	-5.83	Peak
1606.67	H	54.49	---	-7.47	47.03	---	74.00	54.00	-6.97	Peak
N/A										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.
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).



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel
mode / 5190 ~ 5230MHz / CH Low

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1600.00	V	56.09	---	-7.52	48.57	---	74.00	54.00	-5.43	Peak
N/A										
1336.67	H	53.53	---	-8.75	44.78	---	74.00	54.00	-9.22	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel
mode / 5190 ~ 5230MHz / CH High

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1333.33	V	54.00	---	-8.75	45.25	---	74.00	54.00	-8.75	Peak
N/A										
1463.33	H	52.30	---	-8.45	43.86	---	74.00	54.00	-10.14	Peak
N/A										

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low
Test Date: July 23, 2008
Temperature: 25°C
Tested by: Jerry Lin
Humidity: 50% RH
Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1193.33	V	52.63	---	-9.08	43.54	---	74.00	54.00	-10.46	Peak
1323.33	V	52.08	---	-8.78	43.31	---	74.00	54.00	-10.69	Peak
2213.33	V	51.40	---	-3.52	47.88	---	74.00	54.00	-6.12	Peak
2383.33	V	50.44	---	-2.99	47.45	---	74.00	54.00	-6.55	Peak
N/A										
1606.67	H	48.54	---	-7.47	41.07	---	74.00	54.00	-12.93	Peak
2123.33	H	46.64	---	-3.80	42.84	---	74.00	54.00	-11.16	Peak
N/A										

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Mid **Test Date:** July 23, 2008
Temperature: 25°C **Tested by:** Jerry Lin
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1193.33	V	51.62	---	-9.08	42.54	---	74.00	54.00	-11.46	Peak
1326.67	V	51.12	---	-8.77	42.35	---	74.00	54.00	-11.65	Peak
2383.33	V	50.32	---	-2.99	47.33	---	74.00	54.00	-6.67	Peak
N/A										
1450.00	H	54.85	---	-8.48	46.38	---	74.00	54.00	-7.62	Peak
1600.00	H	48.74	---	-7.52	41.22	---	74.00	54.00	-12.78	Peak
2516.67	H	49.11	---	-2.59	46.53	---	74.00	54.00	-7.47	Peak
N/A										

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz /
CH High

Test Date: July 23, 2008

Temperature: 25°C

Tested by: Jerry Lin

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1193.33	V	53.04	---	-9.08	43.96	---	74.00	54.00	-10.04	Peak
1606.67	V	51.04	---	-7.47	43.57	---	74.00	54.00	-10.43	Peak
2386.67	V	51.22	---	-2.98	48.24	---	74.00	54.00	-5.76	Peak
N/A										
1520.00	H	50.18	---	-8.19	41.99	---	74.00	54.00	-12.01	Peak
1596.67	H	51.00	---	-7.55	43.45	---	74.00	54.00	-10.55	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / CH Low **Test Date:** July 19, 2008

Temperature: 23°C **Tested by:** Mimic Yang

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1330.00	V	56.39	---	-8.76	47.63	---	74.00	54.00	-6.37	Peak
1603.33	V	54.53	---	-7.50	47.03	---	74.00	54.00	-6.97	Peak
N/A										
1663.33	H	53.29	---	-6.99	46.29	---	74.00	54.00	-7.71	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid **Test Date:** July 19, 2008

Temperature: 23°C **Tested by:** Mimic Yang

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1406.67	V	55.91	---	-8.58	47.33	---	74.00	54.00	-6.67	Peak
N/A										
1730.00	H	52.50	---	-6.44	46.07	---	74.00	54.00	-7.93	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel
mode / 5260 ~ 5320MHz / CH High

Test Date: July 19, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1370.00	V	55.70	---	-8.67	47.04	---	74.00	54.00	-6.96	Peak
1723.33	V	53.56	---	-6.49	47.07	---	74.00	54.00	-6.93	Peak
N/A										
1710.00	H	53.77	---	-6.60	47.16	---	74.00	54.00	-6.84	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel
mode / 5270 ~ 5310MHz / CH Low

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1386.67	V	55.04	---	-8.63	46.41	---	74.00	54.00	-7.59	Peak
N/A										
1416.67	H	55.02	---	-8.56	46.47	---	74.00	54.00	-7.53	Peak
N/A										

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.
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).



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel
mode / 5270 ~ 5310MHz / CH High

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1446.67	V	51.40	---	-8.49	42.91	---	74.00	54.00	-11.09	Peak
N/A										
1410.00	H	54.15	---	-8.57	45.58	---	74.00	54.00	-8.42	Peak
N/A										

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low
Temperature: 25°C
Humidity: 50% RH

Test Date: July 23, 2008
Tested by: Jerry Lin
Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1326.67	V	52.67	---	-8.77	43.90	---	74.00	54.00	-10.10	Peak
1403.33	V	55.80	---	-8.59	47.22	---	74.00	54.00	-6.78	Peak
2386.67	V	49.73	---	-2.98	46.75	---	74.00	54.00	-7.25	Peak
N/A										
1456.67	H	52.57	---	-8.46	44.10	---	74.00	54.00	-9.90	Peak
1590.00	H	49.53	---	-7.61	41.93	---	74.00	54.00	-12.07	Peak
2516.67	H	48.31	---	-2.59	45.73	---	74.00	54.00	-8.27	Peak
N/A										

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).



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz /CH Mid **Test Date:** July 23, 2008
Temperature: 25°C **Tested by:** Jerry Lin
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1193.33	V	52.84	---	-9.08	43.76	---	74.00	54.00	-10.24	Peak
1606.67	V	50.22	---	-7.47	42.75	---	74.00	54.00	-11.25	Peak
2386.67	V	49.62	---	-2.98	46.64	---	74.00	54.00	-7.36	Peak
N/A										
1516.67	H	50.65	---	-8.22	42.43	---	74.00	54.00	-11.57	Peak
2123.33	H	46.45	---	-3.80	42.65	---	74.00	54.00	-11.35	Peak
2650.00	H	47.98	---	-2.23	45.74	---	74.00	54.00	-8.26	Peak
N/A										

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).



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High **Test Date:** July 23, 2008
Temperature: 25°C **Tested by:** Jerry Lin
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1326.67	V	50.45	---	-8.77	41.69	---	74.00	54.00	-12.31	Peak
1593.33	V	51.44	---	-7.58	43.86	---	74.00	54.00	-10.14	Peak
1730.00	V	50.25	---	-6.44	43.81	---	74.00	54.00	-10.19	Peak
2386.67	V	50.11	---	-2.98	47.13	---	74.00	54.00	-6.87	Peak
1590.00	H	49.04	---	-7.61	41.43	---	74.00	54.00	-12.57	Peak
2383.33	H	47.43	---	-2.99	44.44	---	74.00	54.00	-9.56	Peak
2516.67	H	48.85	---	-2.59	46.27	---	74.00	54.00	-7.73	Peak
N/A										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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH Low **Test Date:** July 19, 2008

Temperature: 23°C **Tested by:** Mimic Yang

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
N/A										
1606.67	H	54.27	---	-7.47	46.80	---	74.00	54.00	-7.20	Peak
N/A										

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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid **Test Date:** July 19, 2008

Temperature: 23°C **Tested by:** Mimic Yang

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1713.33	V	53.73	---	-6.58	47.16	---	74.00	54.00	-6.84	Peak
N/A										
1470.00	H	53.85	---	-8.43	45.42	---	74.00	54.00	-8.58	Peak
1716.67	H	53.39	---	-6.55	46.85	---	74.00	54.00	-7.15	Peak
N/A										

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).

Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH High **Test Date:** July 19, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

[illegible]

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).*



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel
mode / 5510 ~ 5670MHz / CH Low

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1593.33	V	55.12	---	-7.58	47.55	---	74.00	54.00	-6.45	Peak
N/A										
1456.67	H	53.94	---	-8.46	45.48	---	74.00	54.00	-8.52	Peak
N/A										

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).



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel
mode / 5510 ~ 5670MHz / CH Mid

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1340.00	V	53.71	---	-8.74	44.97	---	74.00	54.00	-9.03	AVG
N/A										
1596.67	H	52.16	---	-7.55	44.61	---	74.00	54.00	-9.39	Peak
N/A										

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).



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / CH High

Test Date: July 20, 2008

Temperature: 23°C

Tested by: Mimic Yang

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1386.67	V	54.52	---	-8.63	45.89	---	74.00	54.00	-8.11	Peak
N/A										
1576.67	H	52.95	---	-7.72	45.23	---	74.00	54.00	-8.77	Peak
N/A										

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).



7.7 CONDUCTED UNDESIRABLE EMISSION

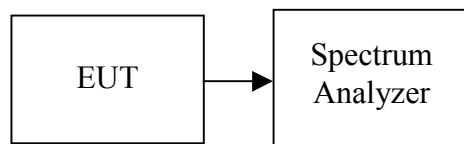
LIMIT

According to 15.407(b),

- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

The provisions of §15.205 apply to intentional radiators operating under this section.

Test Configuration



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted

**Test Plot****IEEE 802.11a mode / 5180 ~ 5240MHz****CH Low****30MHz ~ 40GHz**

* Agilent 17:06:33 Jul 29, 2008

R T

Conducted Spur., a Mode Low Ch.

Mkr2 6.90 GHz

Ref 18 dBm

#Atten 10 dB

-45.14 dBm

#Peak

Log

10

dB/

Offst

18

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	9.39 dBm
2	(1)	Freq	6.90 GHz	-45.14 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 17:25:46 Jul 29, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr1 5.21 GHz

Ref 18 dBm

#Atten 10 dB

10.41 dBm

#Peak

Log

10

dB/

Offst

18

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.21 GHz	10.41 dBm



CH High

30MHz ~ 40GHz

Agilent 17:44:40 Jul 29, 2008

R T

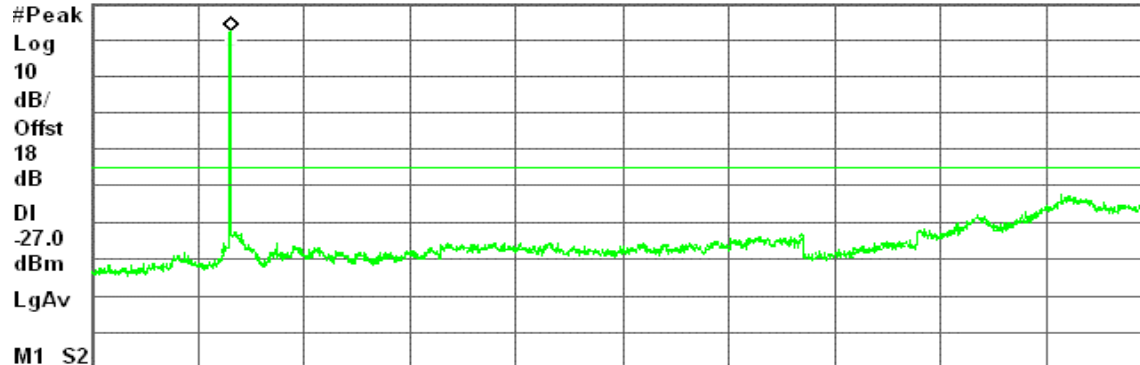
Conducted Spur., a Mode High Ch.

Mkr1 5.25 GHz

Ref 18 dBm

#Atten 10 dB

10.47 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	10.47 dBm

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low

30MHz ~ 40GHz

Agilent 19:04:52 Aug 4, 2008

R T

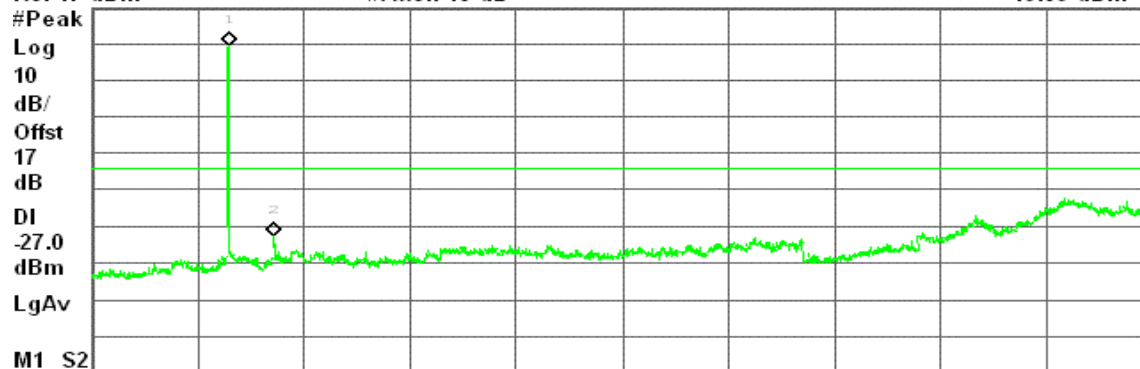
Conducted Spur., a Mode Low Ch.

Mkr2 6.90 GHz

Ref 17 dBm

#Atten 10 dB

-45.63 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	6.72 dBm
2	(1)	Freq	6.90 GHz	-45.63 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 19:28:03 Aug 4, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr2 6.92 GHz

Ref 17 dBm

#Atten 10 dB

-46.57 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.21 GHz	5.66 dBm
2	(1)	Freq	6.92 GHz	-46.57 dBm

CH High

30MHz ~ 40GHz

* Agilent 19:37:11 Aug 4, 2008

R T

Conducted Spur., a Mode High Ch.

Mkr2 6.98 GHz

Ref 17 dBm

#Atten 10 dB

-47.47 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	7.15 dBm
2	(1)	Freq	6.98 GHz	-47.47 dBm

**draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1****CH Low****30MHz ~ 40GHz**

* Agilent 19:46:39 Aug 4, 2008

R T

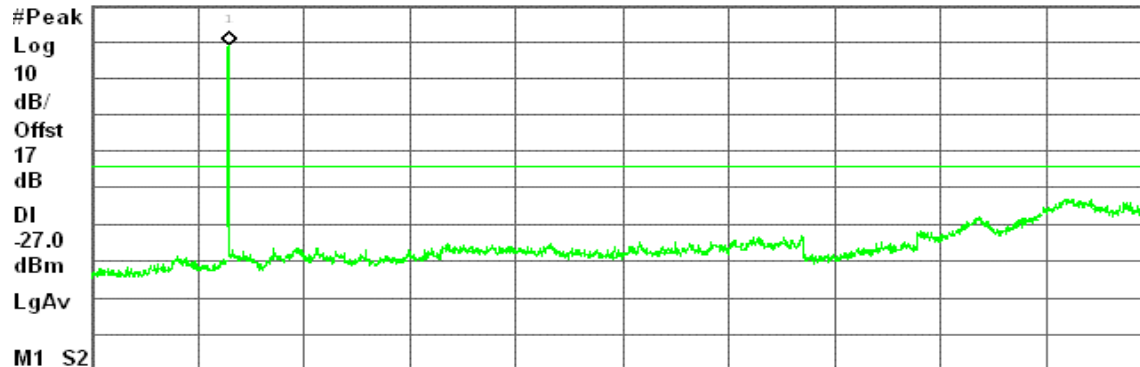
Conducted Spur., a Mode Low Ch.

Mkr1 5.19 GHz

Ref 17 dBm

#Atten 10 dB

6.07 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	6.07 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 19:54:26 Aug 4, 2008

R T

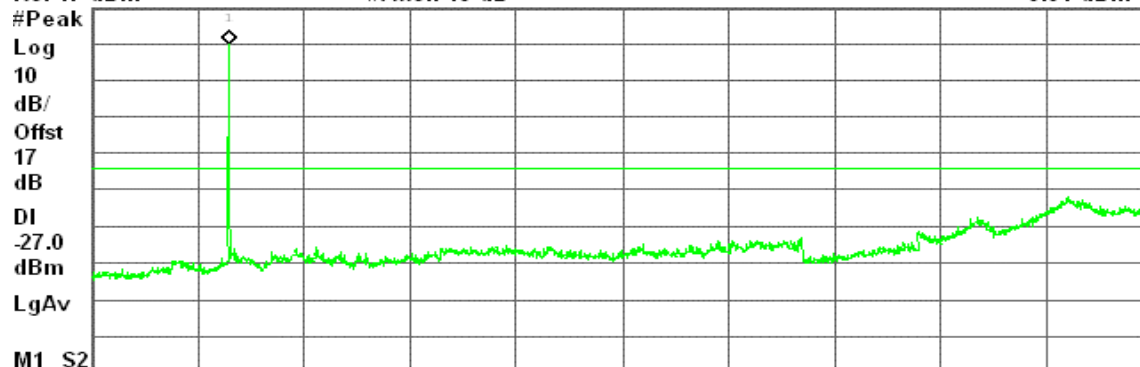
Conducted Spur., a Mode Mid Ch.

Mkr1 5.19 GHz

Ref 17 dBm

#Atten 10 dB

6.84 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	6.84 dBm

**CH High****30MHz ~ 40GHz**

* Agilent 20:06:11 Aug 4, 2008

R T

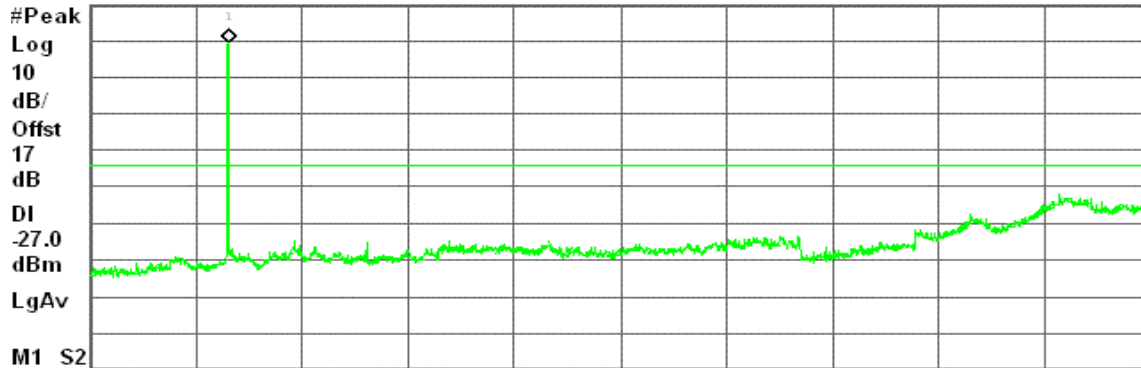
Conducted Spur., a Mode High Ch.

Mkr1 5.25 GHz

Ref 17 dBm

#Atten 10 dB

6.78 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	6.78 dBm

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 2**CH Low****30MHz ~ 40GHz**

* Agilent 19:46:39 Aug 4, 2008

R T

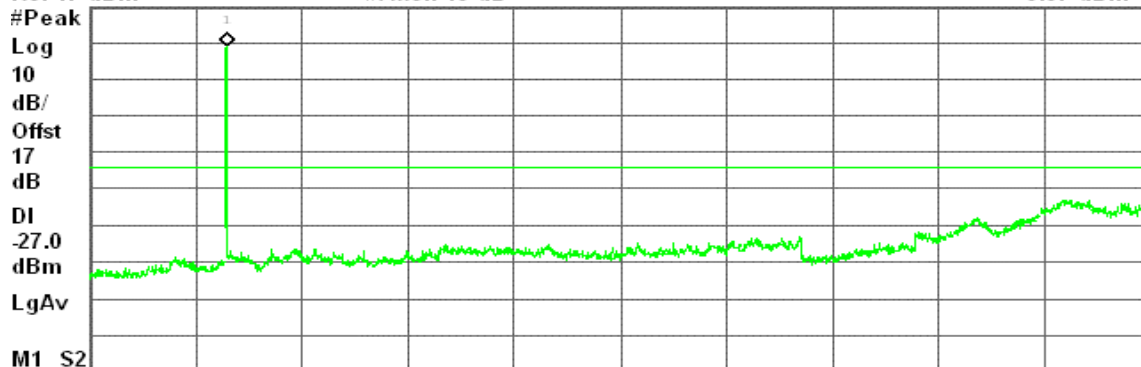
Conducted Spur., a Mode Low Ch.

Mkr1 5.19 GHz

Ref 17 dBm

#Atten 10 dB

6.07 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	6.07 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 19:54:26 Aug 4, 2008

R T

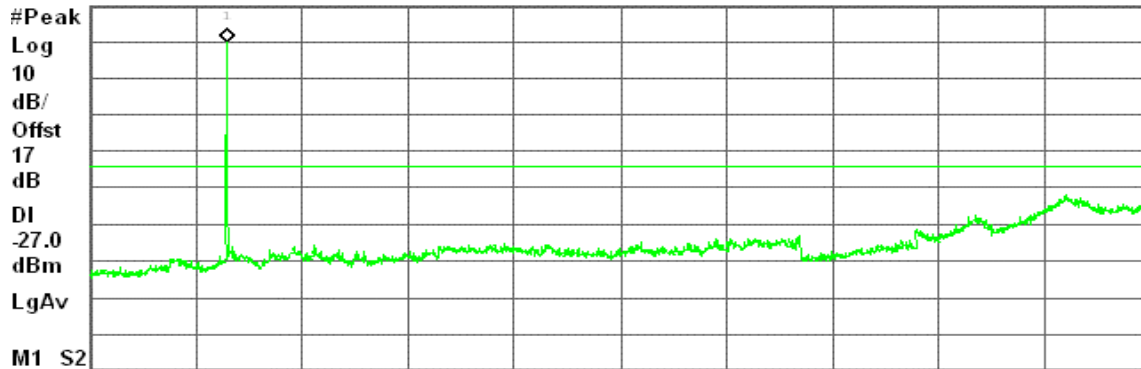
Conducted Spur., a Mode Mid Ch.

Mkr1 5.19 GHz

Ref 17 dBm

#Atten 10 dB

6.84 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	6.84 dBm

CH High

30MHz ~ 40GHz

* Agilent 20:06:11 Aug 4, 2008

R T

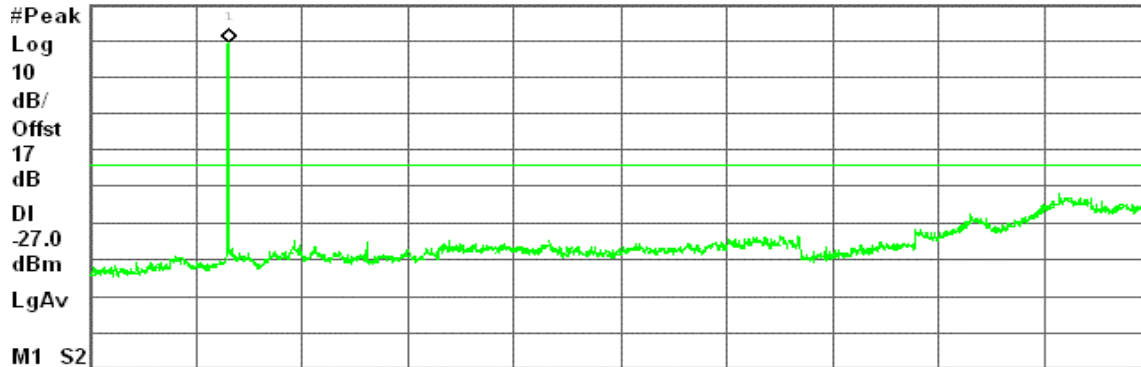
Conducted Spur., a Mode High Ch.

Mkr1 5.25 GHz

Ref 17 dBm

#Atten 10 dB

6.78 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	6.78 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0****CH Low****30MHz ~ 40GHz**

* Agilent 03:29:30 Jul 31, 2008

R T

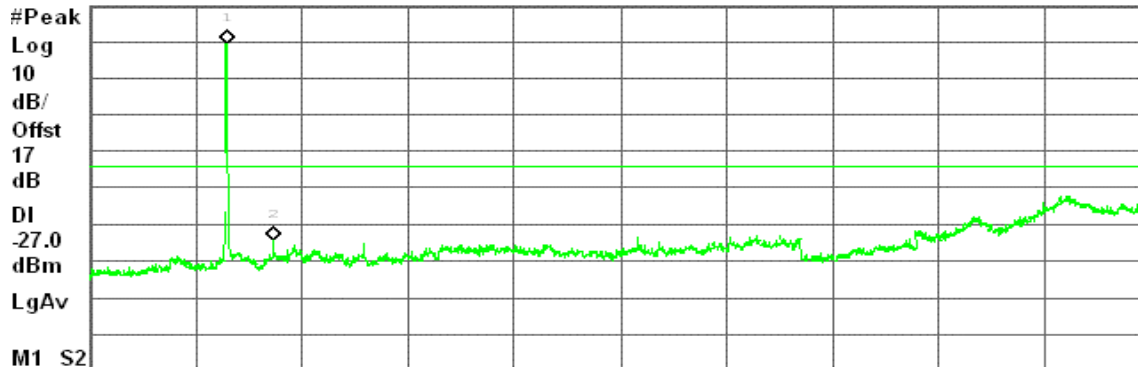
Conducted Spur., a Mode Low Ch.

Mkr2 6.92 GHz

Ref 17 dBm

#Atten 10 dB

-47.58 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.21 GHz	6.45 dBm
2	(1)	Freq	6.92 GHz	-47.58 dBm

CH High**30MHz ~ 40GHz**

* Agilent 03:34:42 Jul 31, 2008

R T

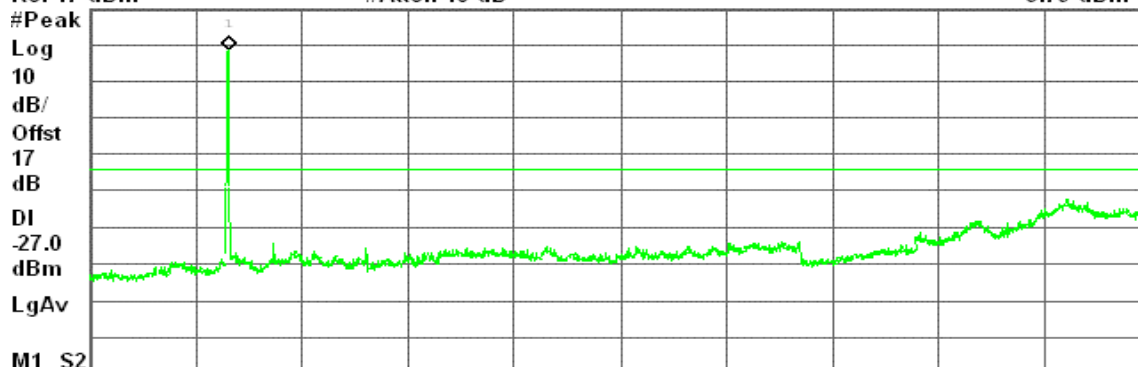
Conducted Spur., a Mode High Ch.

Mkr1 5.25 GHz

Ref 17 dBm

#Atten 10 dB

5.79 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	5.79 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1****CH Low****30MHz ~ 40GHz**

* Agilent 03:42:12 Jul 31, 2008

R T

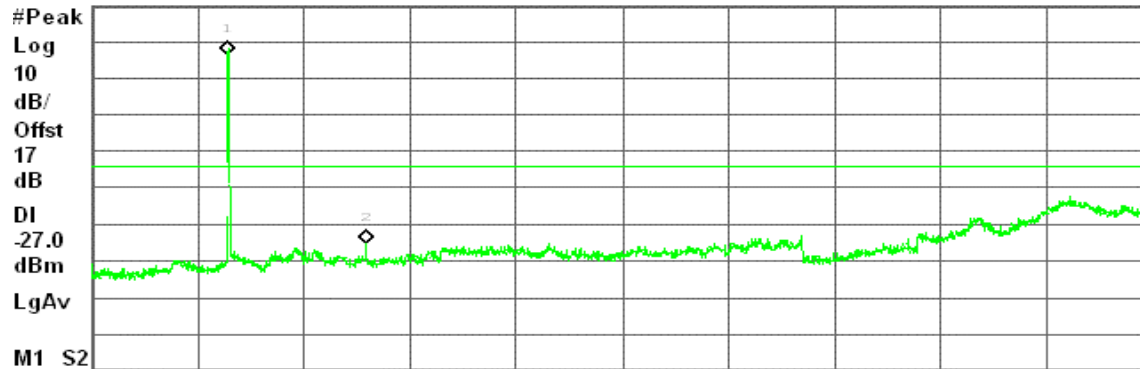
Conducted Spur., a Mode Low Ch.

Mkr2 10.38 GHz

Ref 17 dBm

#Atten 10 dB

-48.22 dBm



M1 S2

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.17 GHz	3.47 dBm
2	(1)	Freq	10.38 GHz	-48.22 dBm

CH High**30MHz ~ 40GHz**

* Agilent 03:48:49 Jul 31, 2008

R T

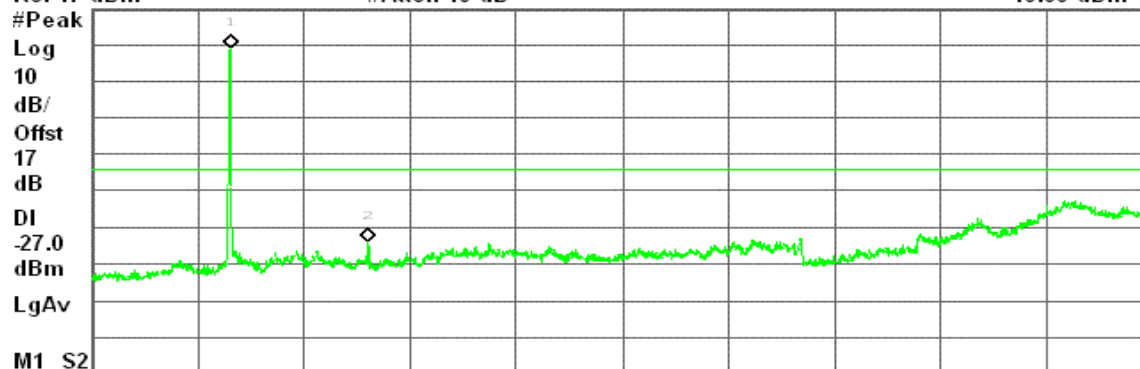
Conducted Spur., a Mode High Ch.

Mkr2 10.46 GHz

Ref 17 dBm

#Atten 10 dB

-46.88 dBm



M1 S2

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	6.32 dBm
2	(1)	Freq	10.46 GHz	-46.88 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 2****CH Low****30MHz ~ 40GHz**

* Agilent 03:55:33 Jul 31, 2008

R T

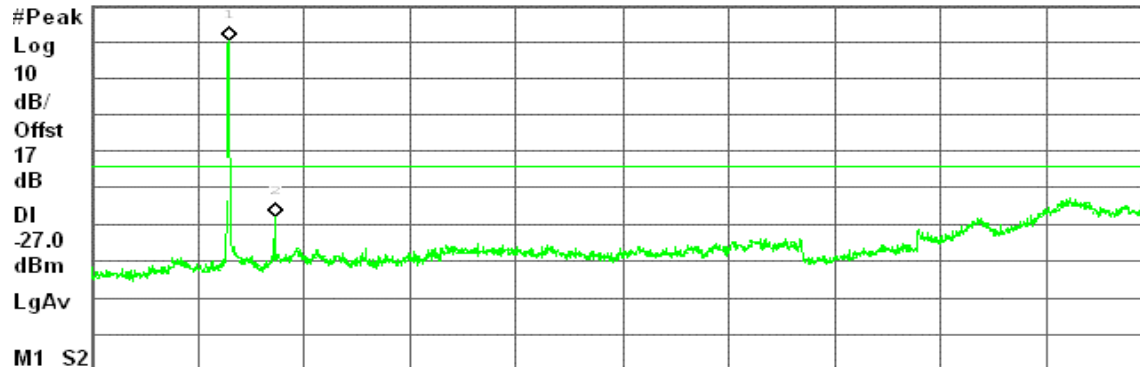
Conducted Spur., a Mode Low Ch.

Mkr2 6.92 GHz

Ref 17 dBm

#Atten 10 dB

-41.16 dBm

**CH High****30MHz ~ 40GHz**

* Agilent 04:00:57 Jul 31, 2008

R T

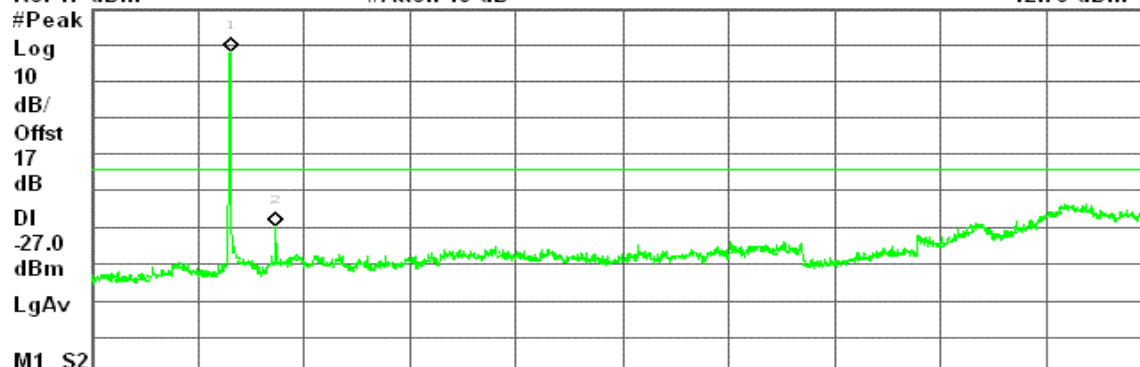
Conducted Spur., a Mode High Ch.

Mkr2 6.96 GHz

Ref 17 dBm

#Atten 10 dB

-42.76 dBm



**draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / with combiner****CH Low****30MHz ~ 40GHz**

* Agilent 00:38:11 Jul 30, 2008

R T

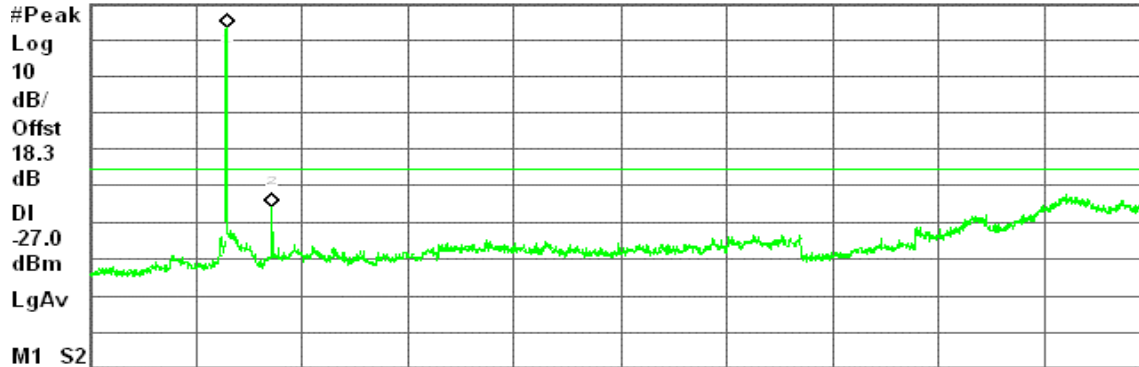
Conducted Spur., a Mode Low Ch.

Mkr2 6.90 GHz

Ref 18.3 dBm

#Atten 10 dB

-37.64 dBm



M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	11.90 dBm
2	(1)	Freq	6.90 GHz	-37.64 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 00:54:41 Jul 30, 2008

R T

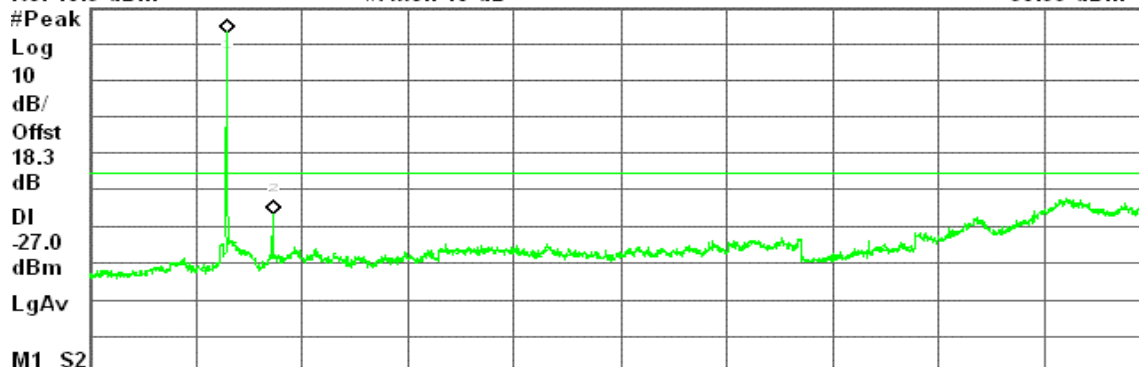
Conducted Spur., a Mode Mid Ch.

Mkr2 6.92 GHz

Ref 18.3 dBm

#Atten 10 dB

-38.55 dBm



M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	11.39 dBm
2	(1)	Freq	6.92 GHz	-38.55 dBm



CH High

30MHz ~ 40GHz

* Agilent 01:11:29 Jul 30, 2008

R T

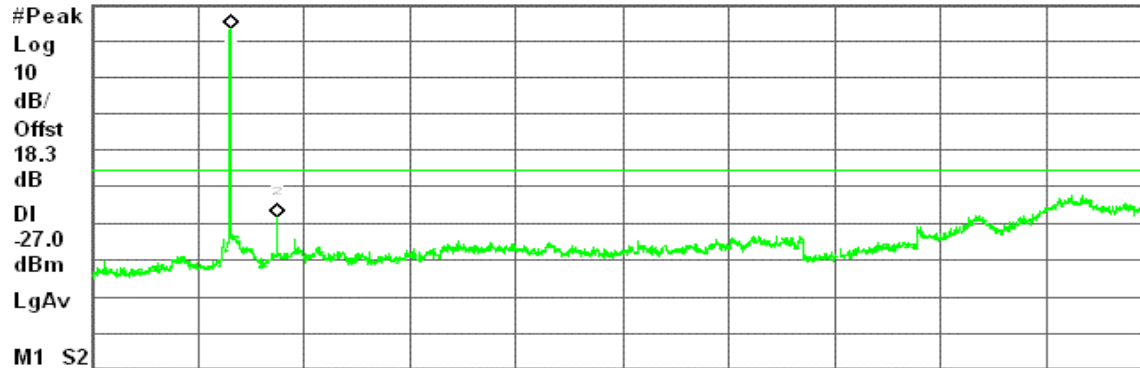
Conducted Spur., a Mode High Ch.

Mkr2 6.98 GHz

Ref 18.3 dBm

#Atten 10 dB

-40.32 dBm

M1 S2
Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.25 GHz	11.90 dBm
2	(1)	Freq	6.98 GHz	-40.32 dBm

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / with combiner

CH Low

30MHz ~ 40GHz

* Agilent 02:50:10 Jul 31, 2008

R T

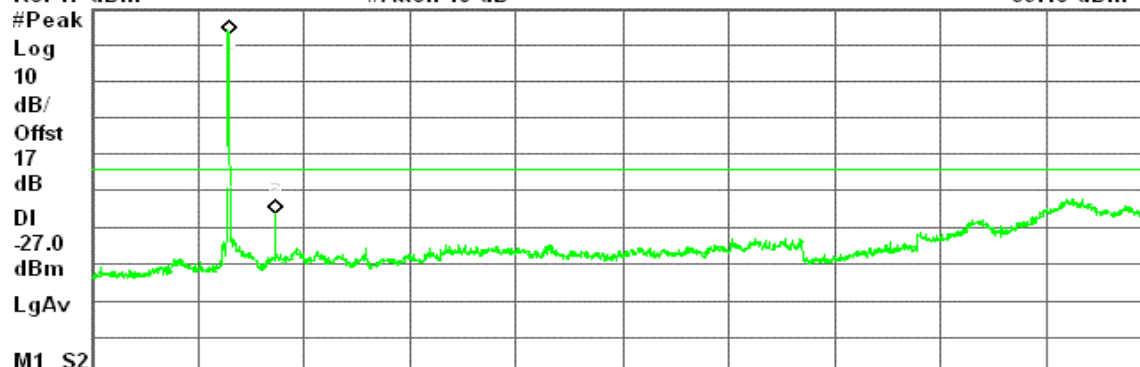
Conducted Spur., a Mode Low Ch.

Mkr2 6.92 GHz

Ref 17 dBm

#Atten 10 dB

-39.48 dBm

M1 S2
Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.19 GHz	10.20 dBm
2	(1)	Freq	6.92 GHz	-39.48 dBm



CH High

30MHz ~ 40GHz

Agilent 03:07:32 Jul 31, 2008

R T

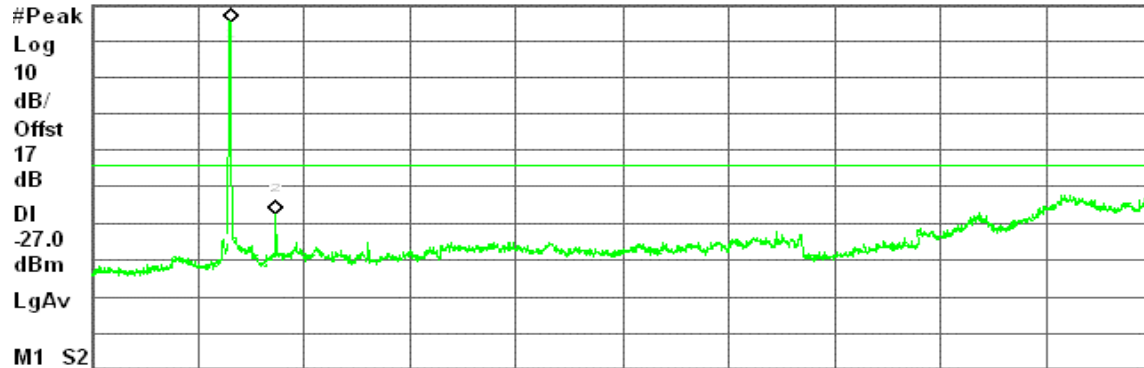
Conducted Spur., a Mode High Ch.

Mkr2 6.96 GHz

Ref 17 dBm

#Atten 10 dB

-40.42 dBm



Marker		Trace	Type	X Axis	Amplitude
1	(1)		Freq	5.25 GHz	12.06 dBm
2	(1)		Freq	6.96 GHz	-40.42 dBm

**IEEE 802.11a mode / 5260 ~ 5320MHz****CH Low****30MHz ~ 40GHz**

* Agilent 18:15:58 Jul 29, 2008

R T

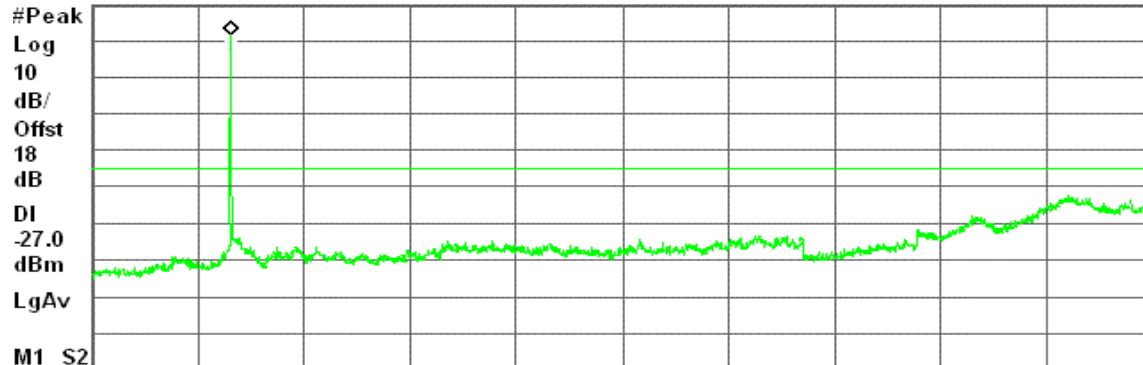
Conducted Spur., a Mode Low Ch.

Mkr1 5.27 GHz

Ref 18 dBm

#Atten 10 dB

9.81 dBm

M1 S2
Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.27 GHz	9.81 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 18:49:10 Jul 29, 2008

R T

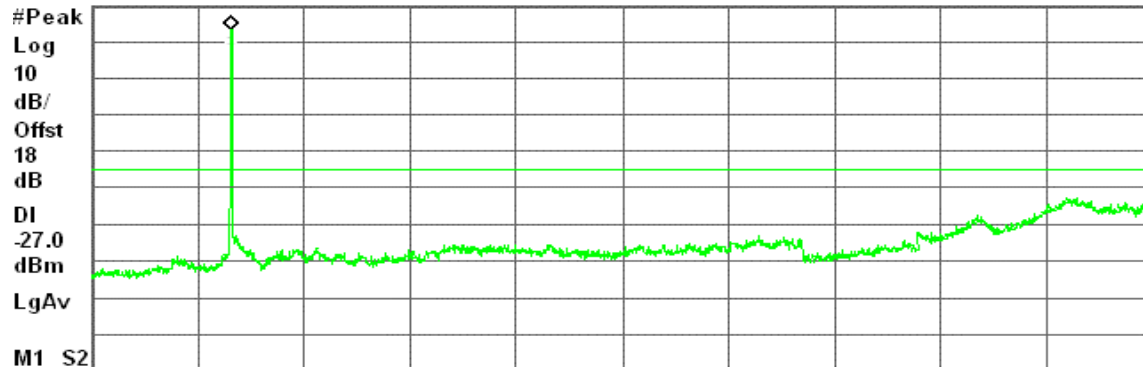
Conducted Spur., a Mode Mid Ch.

Mkr1 5.29 GHz

Ref 18 dBm

#Atten 10 dB

11.66 dBm

M1 S2
Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	11.66 dBm



CH High

30MHz ~ 40GHz

Agilent 19:35:38 Jul 29, 2008

R T

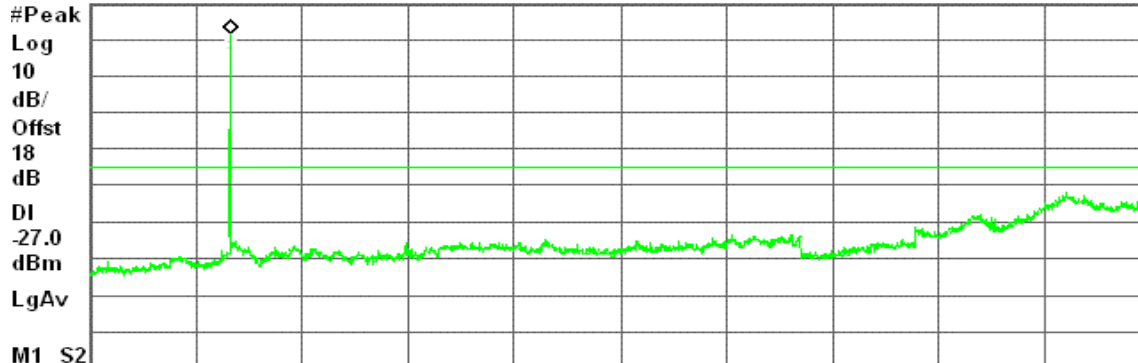
Conducted Spur., a Mode High Ch.

Mkr1 5.33 GHz

Ref 18 dBm

#Atten 10 dB

9.74 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.33 GHz	9.74 dBm

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low

30MHz ~ 40GHz

Agilent 18:06:16 Jul 30, 2008

R T

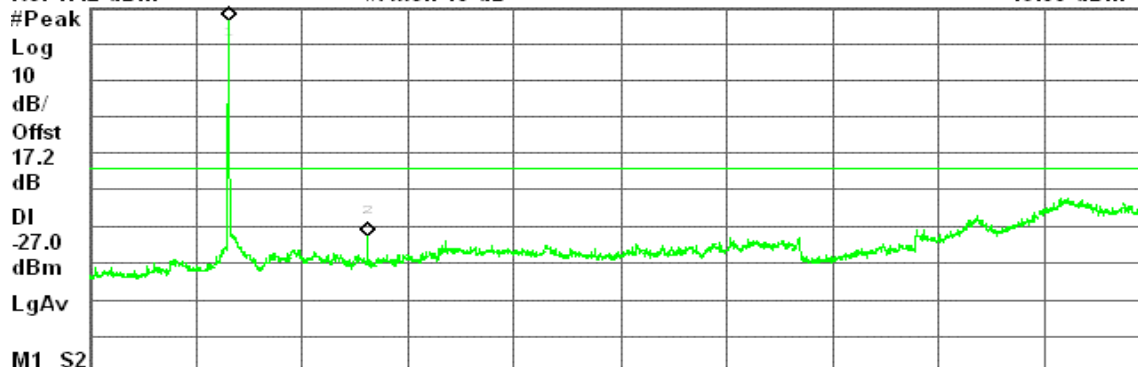
Conducted Spur., a Mode Low Ch.

Mkr2 10.52 GHz

Ref 17.2 dBm

#Atten 10 dB

-45.60 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.27 GHz	13.58 dBm
2	(1)	Freq	10.52 GHz	-45.60 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 18:14:02 Jul 30, 2008

R T

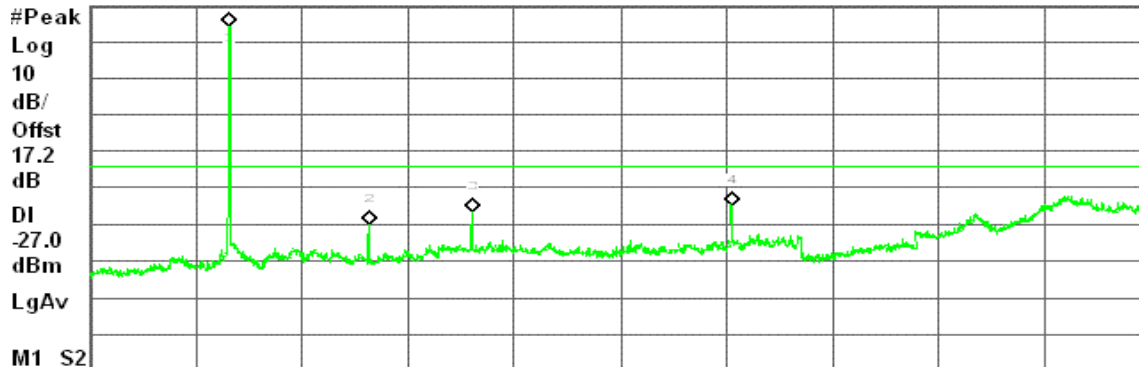
Conducted Spur., a Mode Mid Ch.

Mkr4 24.19 GHz

Ref 17.2 dBm

#Atten 10 dB

-37.71 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	11.58 dBm
2	(1)	Freq	10.56 GHz	-42.94 dBm
3	(1)	Freq	14.46 GHz	-39.51 dBm
4	(1)	Freq	24.19 GHz	-37.71 dBm

CH High

30MHz ~ 40GHz

* Agilent 18:21:42 Jul 30, 2008

R T

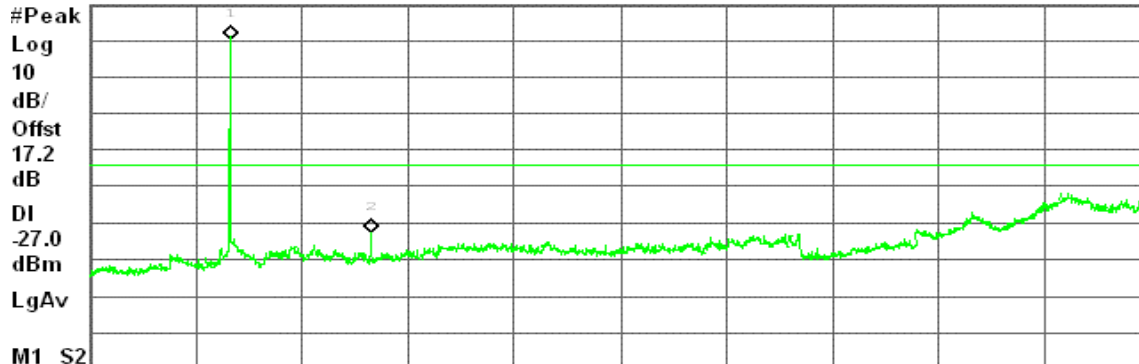
Conducted Spur., a Mode High Ch.

Mkr2 10.64 GHz

Ref 17.2 dBm

#Atten 10 dB

-45.77 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.31 GHz	7.72 dBm
2	(1)	Freq	10.64 GHz	-45.77 dBm

**draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1****CH Low****30MHz ~ 40GHz**

* Agilent 19:04:00 Jul 30, 2008

R T

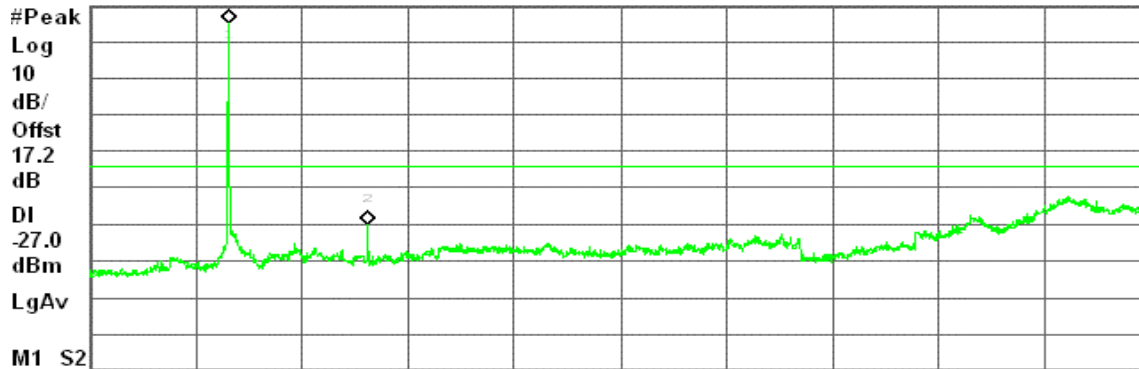
Conducted Spur., a Mode Low Ch.

Mkr2 10.52 GHz

Ref 17.2 dBm

#Atten 10 dB

-43.10 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.27 GHz	12.60 dBm
2	(1)	Freq	10.52 GHz	-43.10 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 19:19:00 Jul 30, 2008

R T

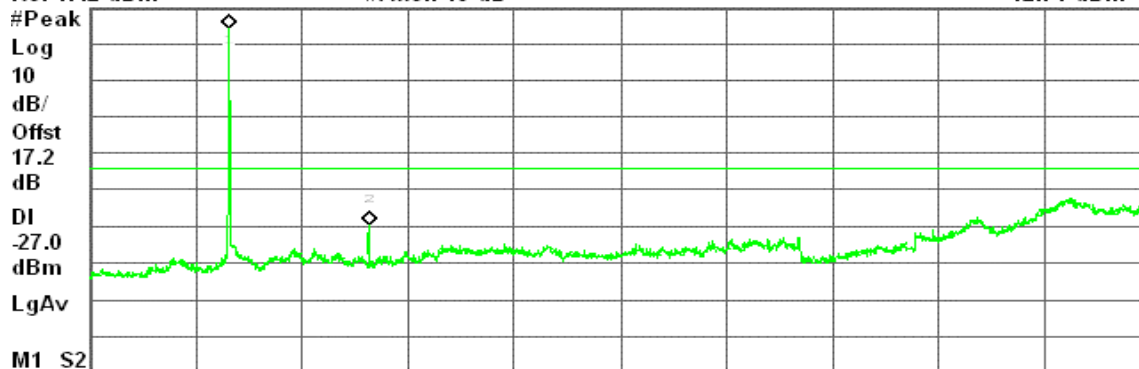
Conducted Spur., a Mode Mid Ch.

Mkr2 10.56 GHz

Ref 17.2 dBm

#Atten 10 dB

-42.71 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.27 GHz	11.53 dBm
2	(1)	Freq	10.56 GHz	-42.71 dBm



CH High

30MHz ~ 40GHz

Agilent 19:32:23 Jul 30, 2008

R T

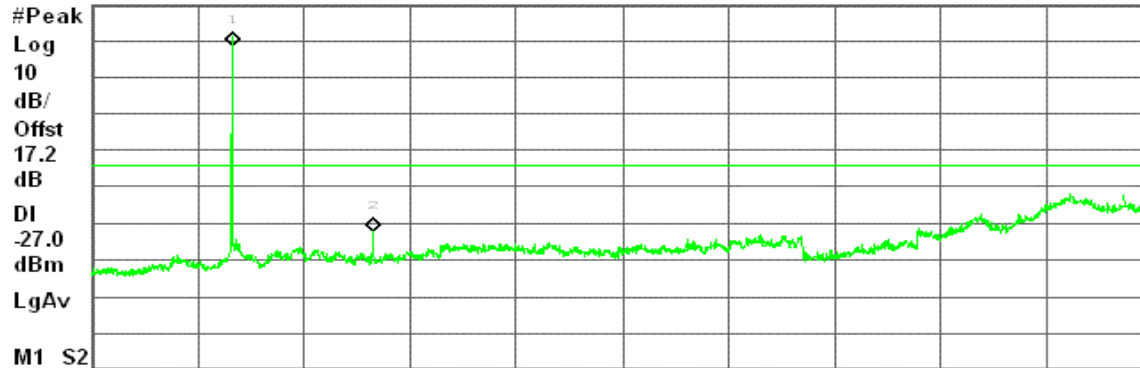
Conducted Spur., a Mode High Ch.

Mkr2 10.64 GHz

Ref 17.2 dBm

#Atten 10 dB

-45.02 dBm



#Res BW 1 MHz		#VBW 1 MHz		Sweep 199.9 ms (2001 pts)	
Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	5.31 GHz	5.80 dBm	
2	(1)	Freq	10.64 GHz	-45.02 dBm	

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 2

CH Low

30MHz ~ 40GHz

Agilent 19:40:23 Jul 30, 2008

R T

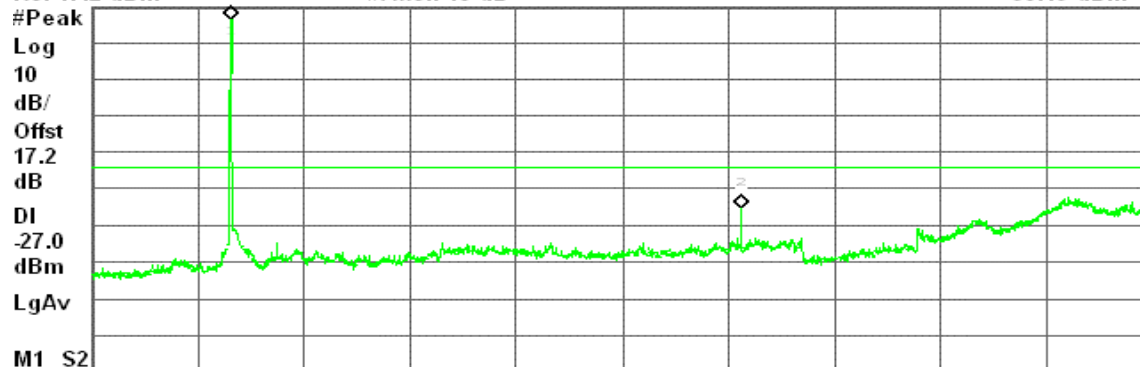
Conducted Spur., a Mode Low Ch.

Mkr2 24.47 GHz

Ref 17.2 dBm

#Atten 10 dB

-38.19 dBm



#Res BW 1 MHz		#VBW 1 MHz		Sweep 199.9 ms (2001 pts)	
Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	5.27 GHz	13.65 dBm	
2	(1)	Freq	24.47 GHz	-38.19 dBm	



CH Mid

30MHz ~ 40GHz

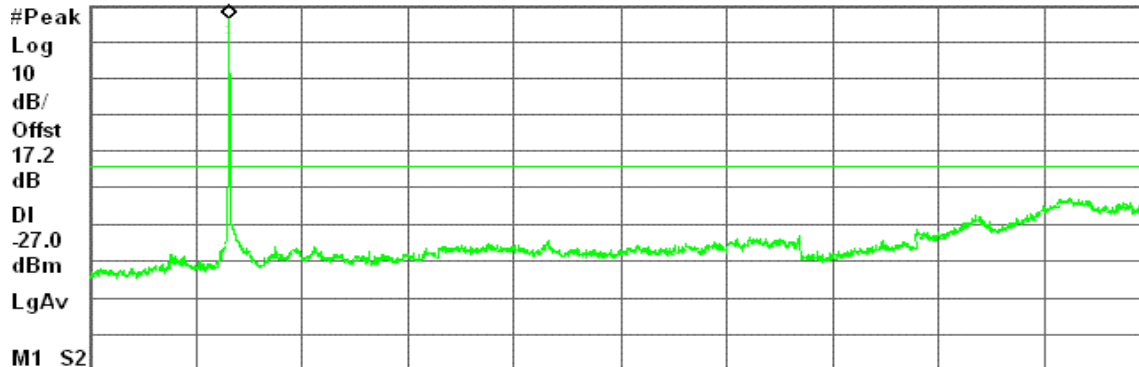
* Agilent 19:46:18 Jul 30, 2008

R T

Conducted Spur., a Mode Mid Ch.

Ref 17.2 dBm

#Atten 10 dB



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	13.80 dBm

CH High

30MHz ~ 40GHz

* Agilent 19:51:44 Jul 30, 2008

R T

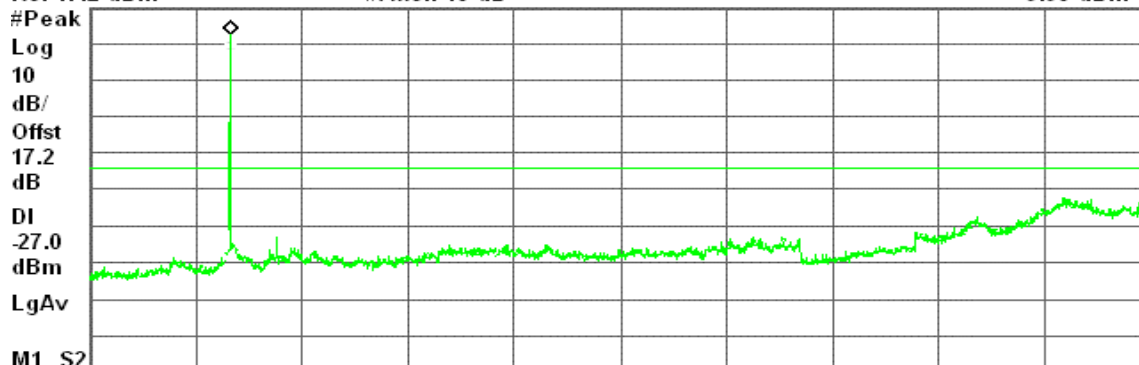
Conducted Spur., a Mode High Ch.

Ref 17.2 dBm

#Atten 10 dB

Mkr1 5.33 GHz

9.90 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.33 GHz	9.90 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0****CH Low****30MHz ~ 40GHz**

* Agilent 04:48:16 Jul 31, 2008

R T

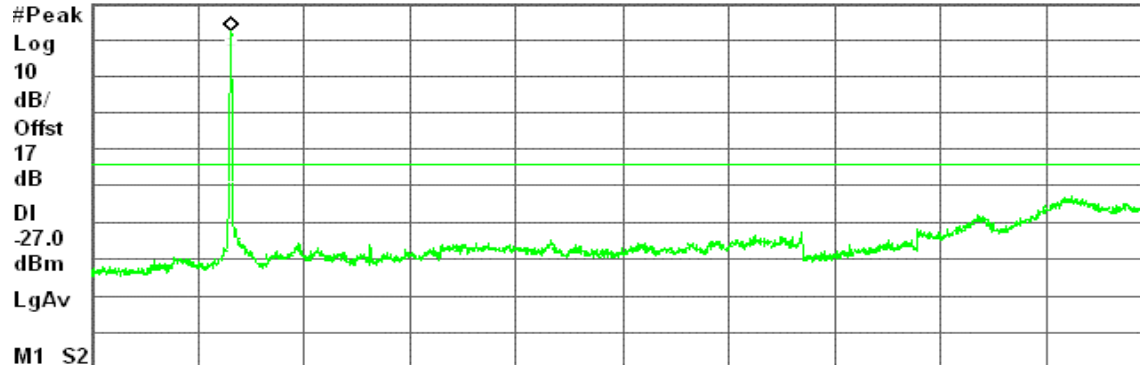
Conducted Spur., a Mode Low Ch.

Mkr1 5.29 GHz

Ref 17 dBm

#Atten 10 dB

9.82 dBm



M1 S2

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	9.82 dBm

CH High**30MHz ~ 40GHz**

* Agilent 04:40:46 Jul 31, 2008

R T

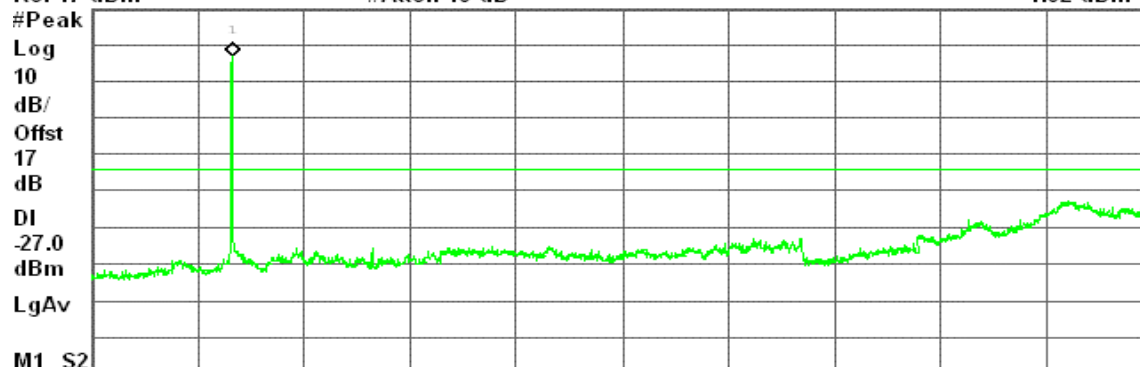
Conducted Spur., a Mode High Ch.

Mkr1 5.33 GHz

Ref 17 dBm

#Atten 10 dB

4.02 dBm



M1 S2

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.33 GHz	4.02 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1****CH Low****30MHz ~ 40GHz**

* Agilent 04:54:40 Jul 31, 2008

R T

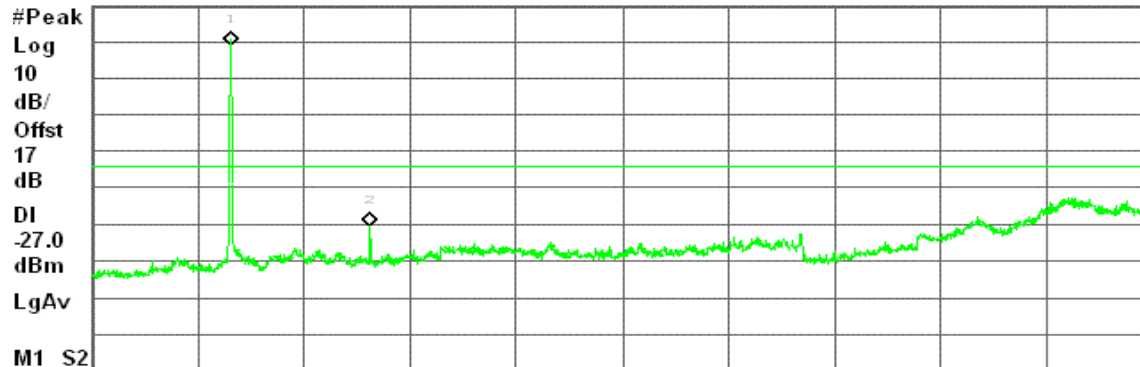
Conducted Spur., a Mode Low Ch.

Mkr2 10.54 GHz

Ref 17 dBm

#Atten 10 dB

-43.55 dBm



M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	6.38 dBm
2	(1)	Freq	10.54 GHz	-43.55 dBm

CH High**30MHz ~ 40GHz**

* Agilent 04:59:30 Jul 31, 2008

R T

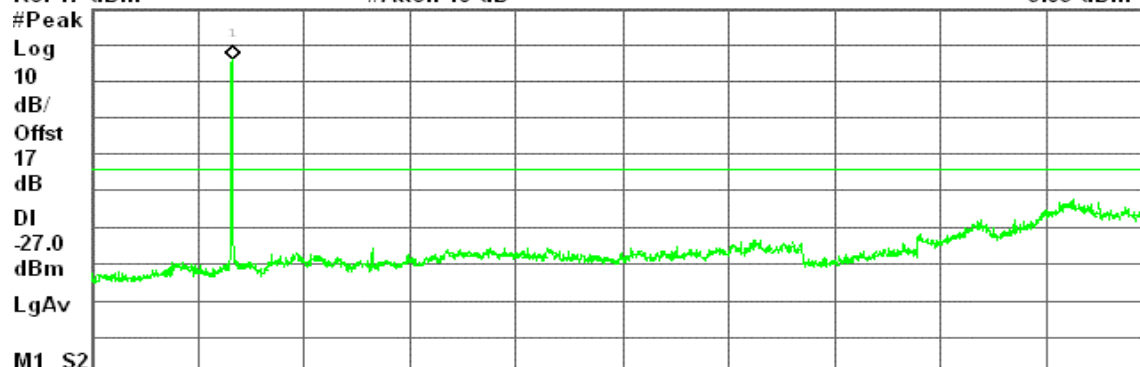
Conducted Spur., a Mode High Ch.

Mkr1 5.33 GHz

Ref 17 dBm

#Atten 10 dB

3.05 dBm



M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.33 GHz	3.05 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 2****CH Low****30MHz ~ 40GHz**

* Agilent 05:15:51 Jul 31, 2008

R T

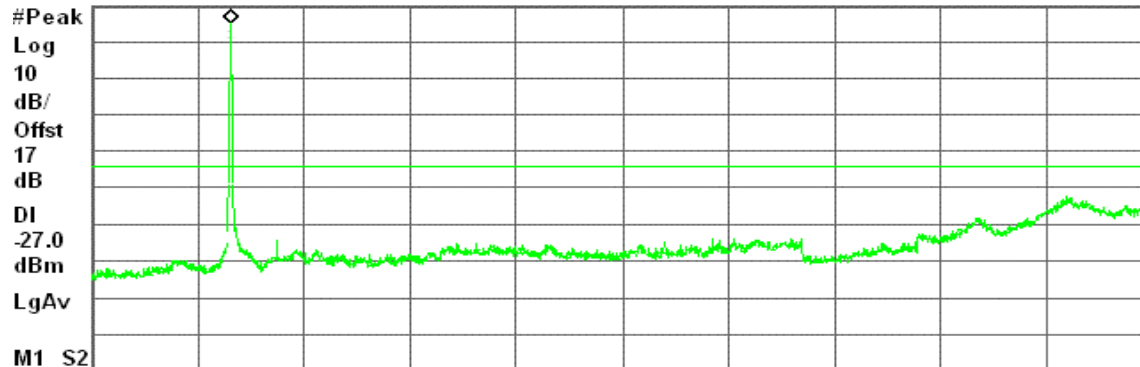
Conducted Spur., a Mode Low Ch.

Mkr1 5.29 GHz

Ref 17 dBm

#Atten 10 dB

12.38 dBm



M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	12.38 dBm

CH High**30MHz ~ 40GHz**

* Agilent 05:07:14 Jul 31, 2008

R T

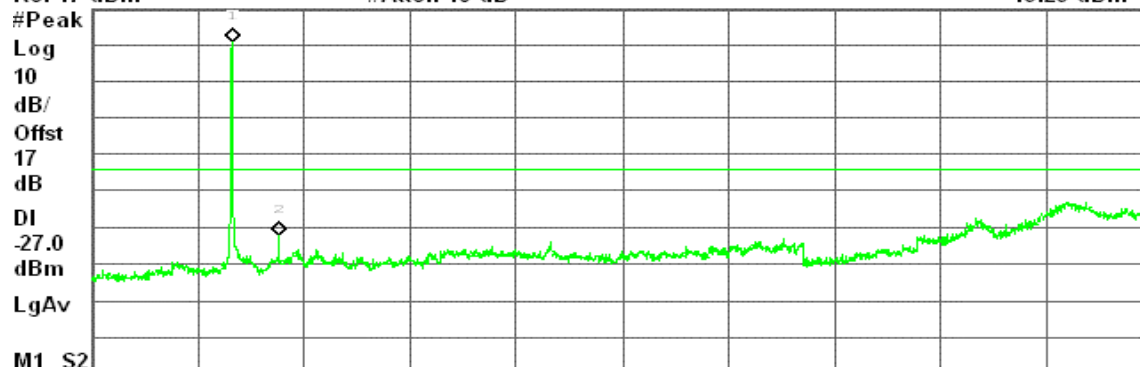
Conducted Spur., a Mode High Ch.

Mkr2 7.08 GHz

Ref 17 dBm

#Atten 10 dB

-45.23 dBm



M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.33 GHz	8.08 dBm
2	(1)	Freq	7.08 GHz	-45.23 dBm

**draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / with combiner****CH Low****30MHz ~ 40GHz**

* Agilent 20:33:39 Jul 30, 2008

R T

Conducted Spur., a Mode Low Ch.

Mkr2 10.52 GHz

Ref 17 dBm

#Atten 10 dB

-42.22 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.27 GHz	16.81 dBm
2	(1)	Freq	10.52 GHz	-42.22 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 20:43:36 Jul 30, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr3 21.31 GHz

Ref 17 dBm

#Atten 10 dB

-39.08 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	16.76 dBm
2	(1)	Freq	10.56 GHz	-43.33 dBm
3	(1)	Freq	21.31 GHz	-39.08 dBm



CH High

30MHz ~ 40GHz

* Agilent 21:19:33 Jul 30, 2008

R T

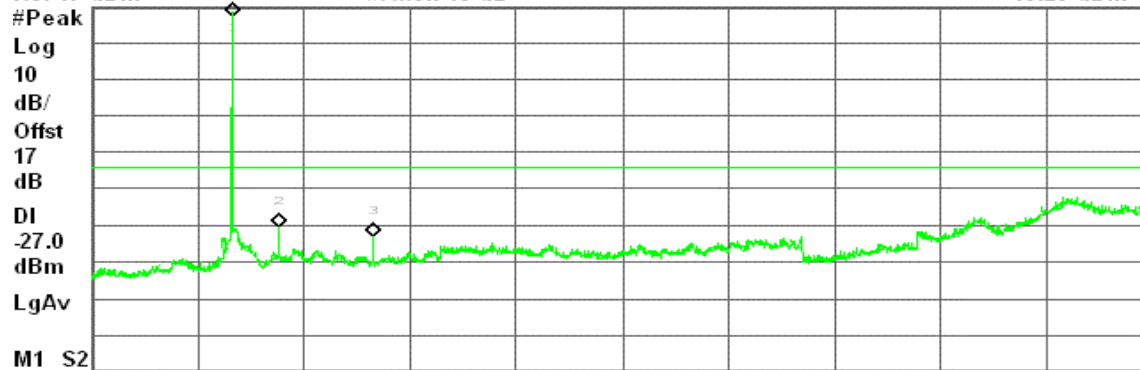
Conducted Spur., a Mode High Ch.

Mkr3 10.64 GHz

Ref 17 dBm

#Atten 10 dB

-46.28 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.31 GHz	14.28 dBm
2	(1)	Freq	7.08 GHz	-43.81 dBm
3	(1)	Freq	10.64 GHz	-46.28 dBm

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / with combiner

CH Low

30MHz ~ 40GHz

* Agilent 04:25:18 Jul 31, 2008

R T

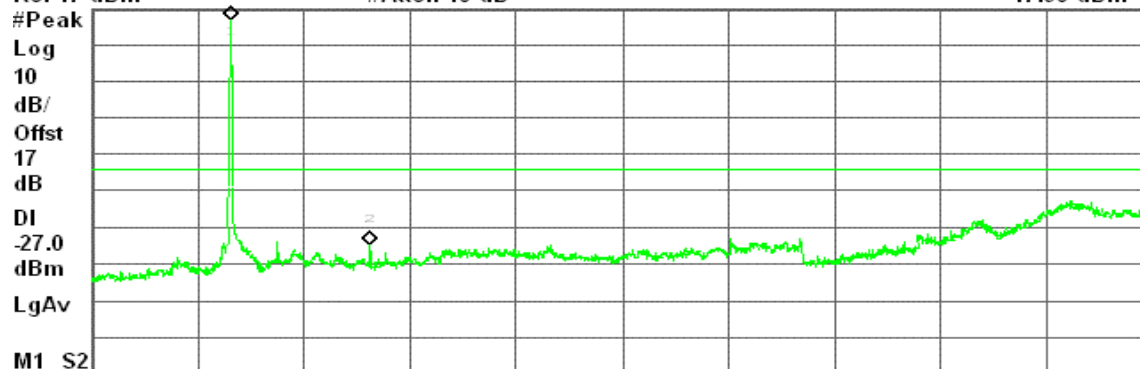
Conducted Spur., a Mode Low Ch.

Mkr2 10.54 GHz

Ref 17 dBm

#Atten 10 dB

-47.96 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	13.99 dBm
2	(1)	Freq	10.54 GHz	-47.96 dBm

**CH High****30MHz ~ 40GHz**

✱ Agilent 04:32:22 Jul 31, 2008

R T

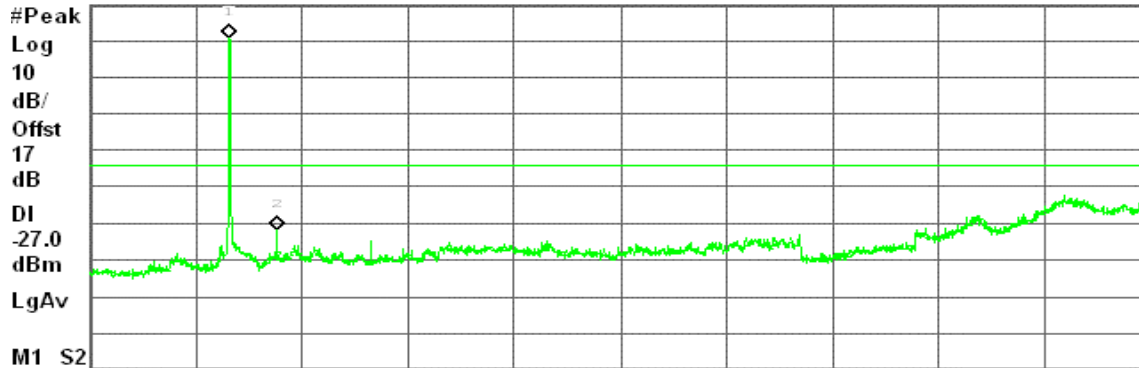
Conducted Spur., a Mode High Ch.

Mkr2 7.08 GHz

Ref 17 dBm

#Atten 10 dB

-45.11 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.29 GHz	7.97 dBm
2	(1)	Freq	7.08 GHz	-45.11 dBm

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz**CH Low****30MHz ~ 40GHz**

✱ Agilent 19:54:21 Jul 29, 2008

R T

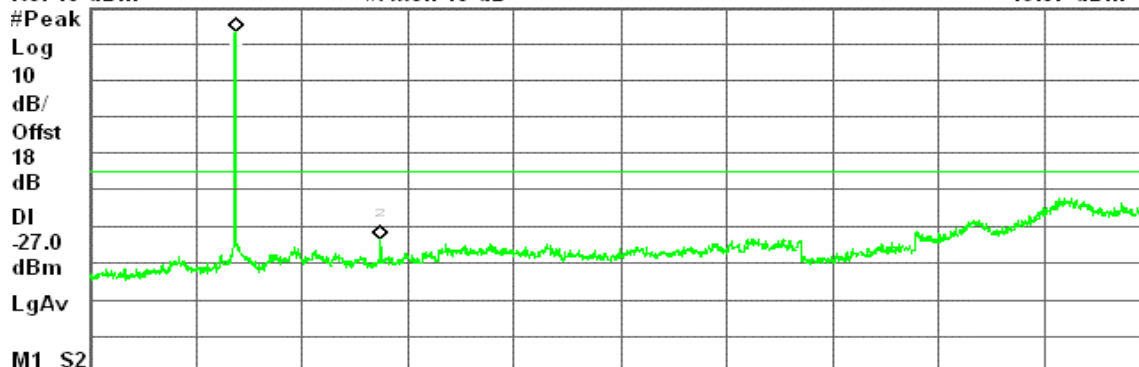
Conducted Spur., a Mode Low Ch.

Mkr2 11.00 GHz

Ref 18 dBm

#Atten 10 dB

-45.67 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.51 GHz	11.34 dBm
2	(1)	Freq	11.00 GHz	-45.67 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 20:27:01 Jul 29, 2008

R T

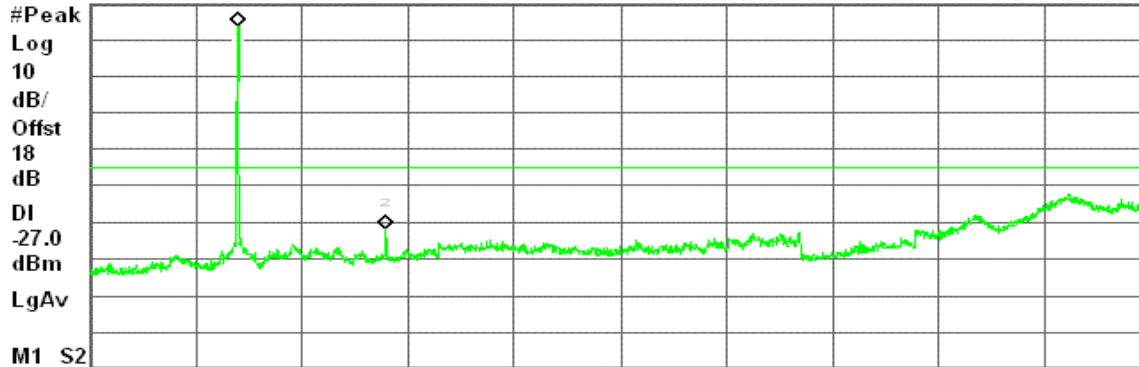
Conducted Spur., a Mode Mid Ch.

Mkr2 11.20 GHz

Ref 18 dBm

#Atten 10 dB

-43.88 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.59 GHz	12.14 dBm
2	(1)	Freq	11.20 GHz	-43.88 dBm

CH High

30MHz ~ 40GHz

* Agilent 20:33:58 Jul 29, 2008

R T

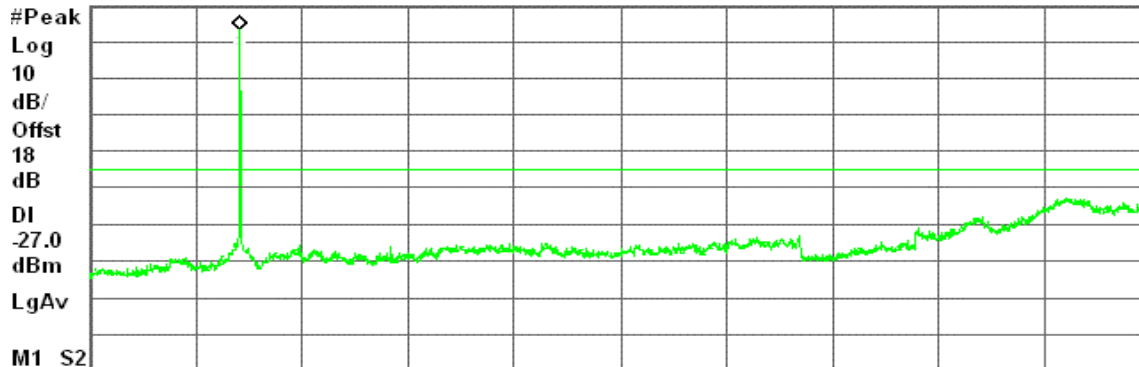
Conducted Spur., a Mode High Ch.

Mkr1 5.69 GHz

Ref 18 dBm

#Atten 10 dB

11.42 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.69 GHz	11.42 dBm

**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0****CH Low****30MHz ~ 40GHz**

* Agilent 22:15:34 Jul 30, 2008

R T

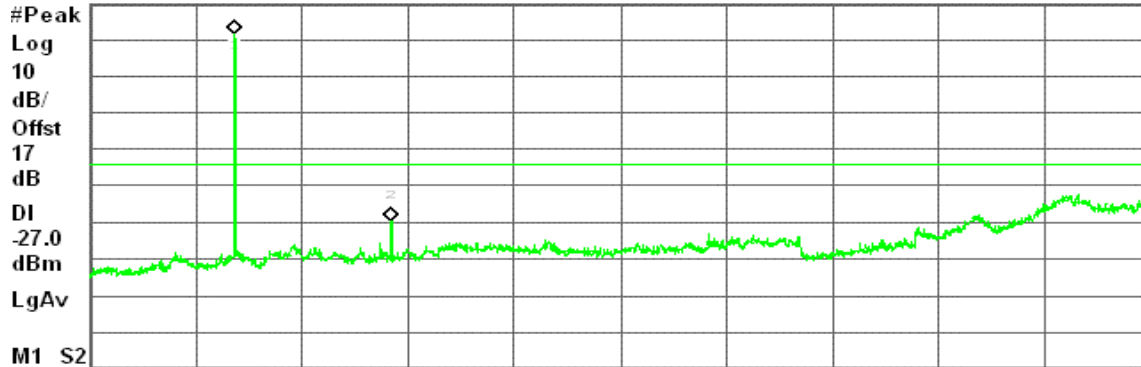
Conducted Spur., a Mode Low Ch.

Mkr2 11.38 GHz

Ref 17 dBm

#Atten 10 dB

-42.54 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.49 GHz	8.69 dBm
2	(1)	Freq	11.38 GHz	-42.54 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 22:22:09 Jul 30, 2008

R T

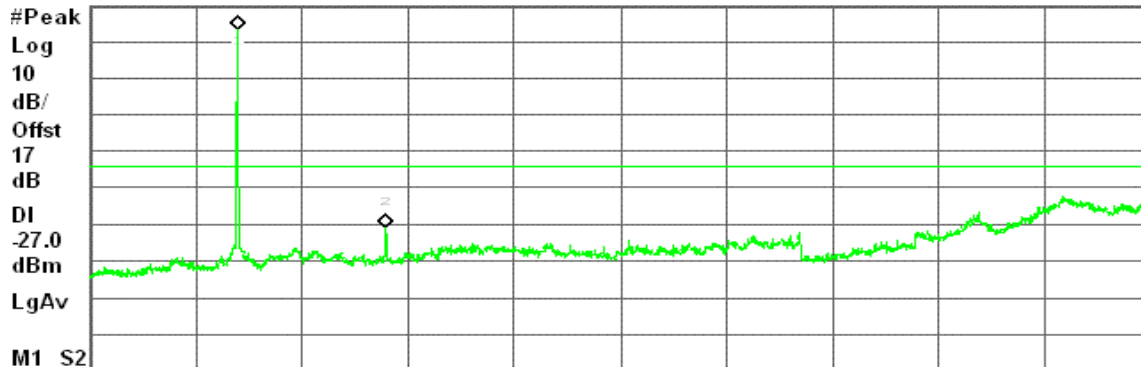
Conducted Spur., a Mode Mid Ch.

Mkr2 11.20 GHz

Ref 17 dBm

#Atten 10 dB

-43.97 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.61 GHz	10.54 dBm
2	(1)	Freq	11.20 GHz	-43.97 dBm



CH High

30MHz ~ 40GHz

Agilent 22:30:29 Jul 30, 2008

R T

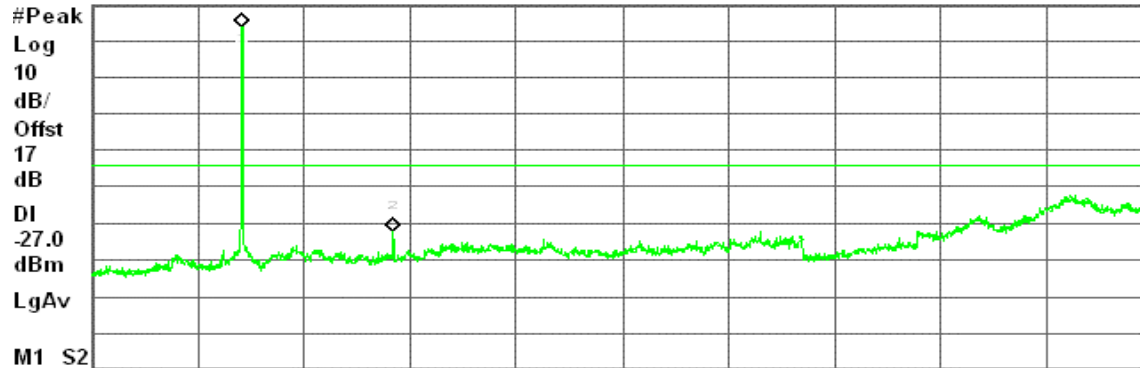
Conducted Spur., a Mode High Ch.

Mkr2 11.40 GHz

Ref 17 dBm

#Atten 10 dB

-45.39 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.69 GHz	10.84 dBm
2	(1)	Freq	11.40 GHz	-45.39 dBm

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low

30MHz ~ 40GHz

Agilent 22:57:44 Jul 30, 2008

R T

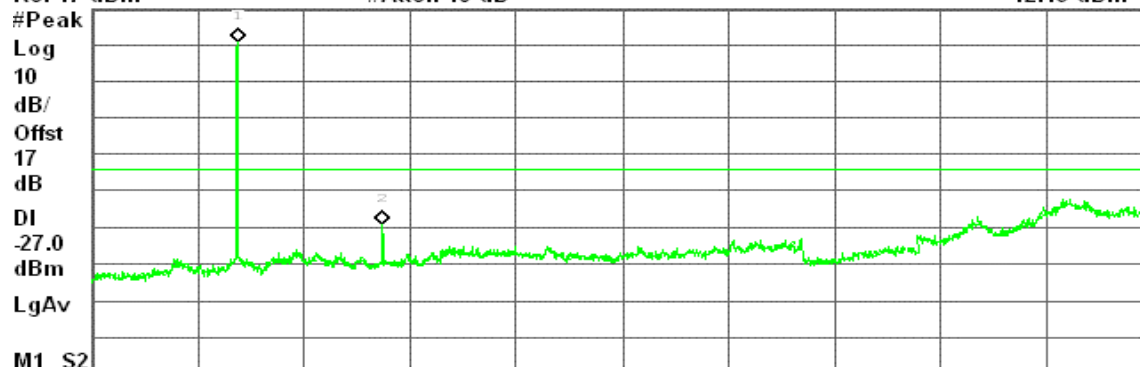
Conducted Spur., a Mode Low Ch.

Mkr2 11.00 GHz

Ref 17 dBm

#Atten 10 dB

-42.45 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.51 GHz	7.94 dBm
2	(1)	Freq	11.00 GHz	-42.45 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 23:04:44 Jul 30, 2008

R T

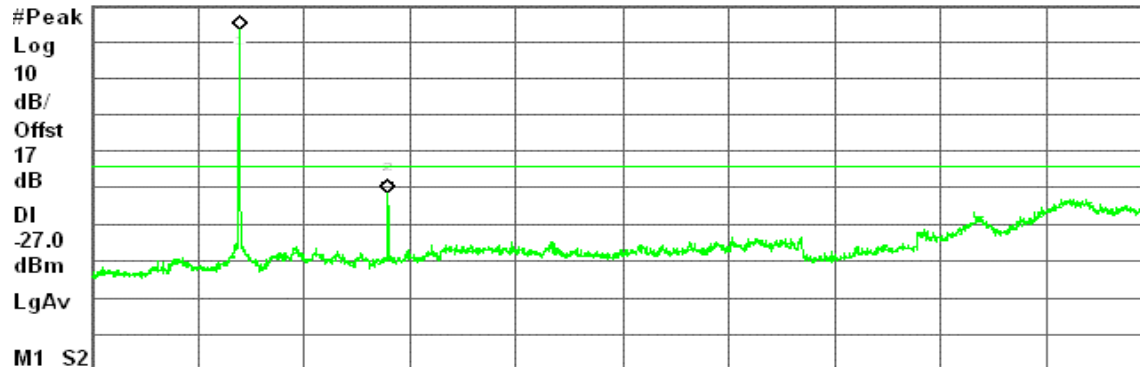
Conducted Spur., a Mode Mid Ch.

Mkr2 11.20 GHz

Ref 17 dBm

#Atten 10 dB

-34.62 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.61 GHz	10.64 dBm
2	(1)	Freq	11.20 GHz	-34.62 dBm

CH High

30MHz ~ 40GHz

* Agilent 23:12:46 Jul 30, 2008

R T

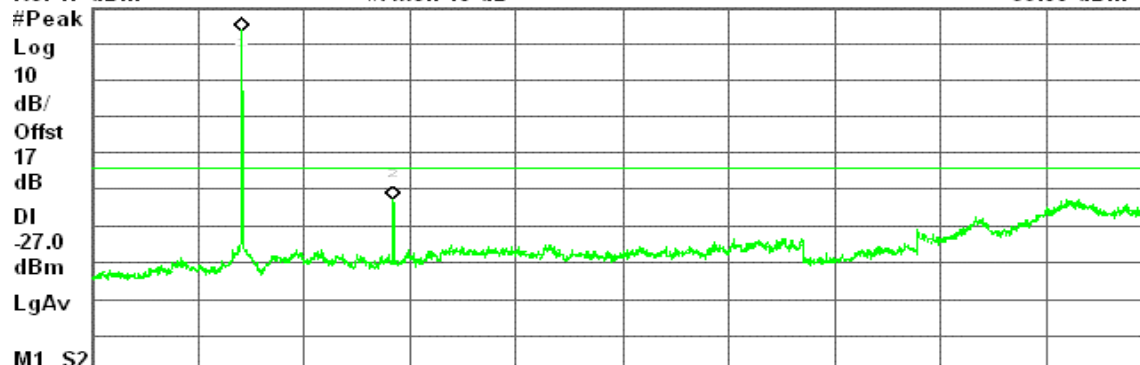
Conducted Spur., a Mode High Ch.

Mkr2 11.40 GHz

Ref 17 dBm

#Atten 10 dB

-35.68 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.71 GHz	10.60 dBm
2	(1)	Freq	11.40 GHz	-35.68 dBm

**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 2****CH Low****30MHz ~ 40GHz**

* Agilent 23:28:42 Jul 30, 2008

R T

Conducted Spur., a Mode Low Ch.

Mkr1 5.49 GHz

Ref 17 dBm

#Atten 10 dB

8.39 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

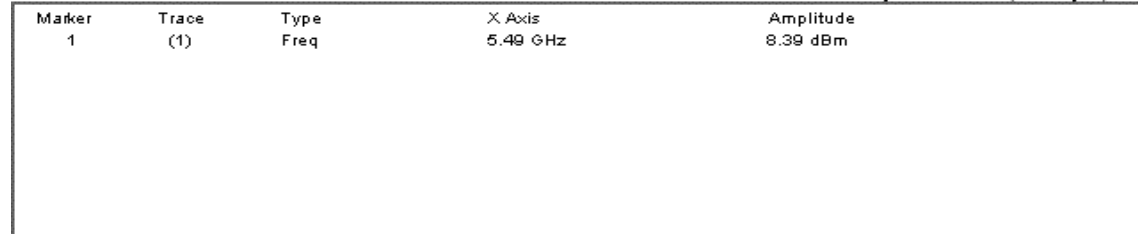
Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

**CH Mid****30MHz ~ 40GHz**

* Agilent 23:35:16 Jul 30, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr2 11.20 GHz

Ref 17 dBm

#Atten 10 dB

-45.35 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

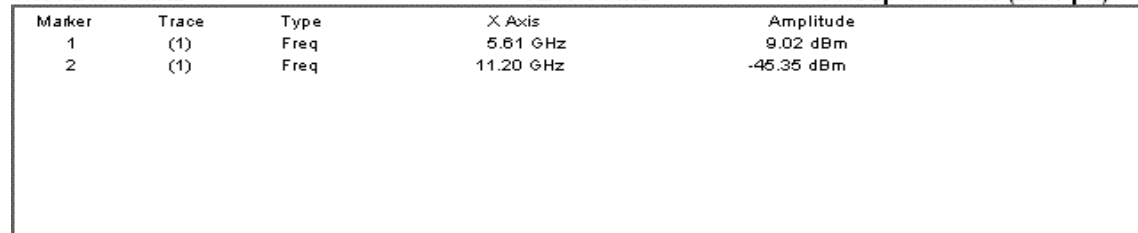
Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)



**CH High****30MHz ~ 40GHz**

* Agilent 23:41:01 Jul 30, 2008

R T

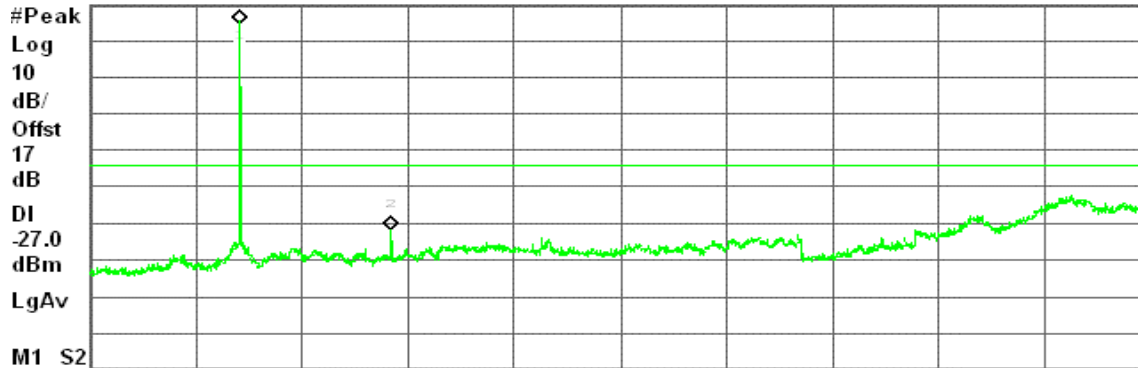
Conducted Spur., a Mode High Ch.

Mkr2 11.40 GHz

Ref 17 dBm

#Atten 10 dB

-44.72 dBm



#Res BW 1 MHz		#VBW 1 MHz		Sweep 199.9 ms (2001 pts)	
Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	5.71 GHz	11.68 dBm	
2	(1)	Freq	11.40 GHz	-44.72 dBm	

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0**CH Low****30MHz ~ 40GHz**

* Agilent 07:15:52 Jul 31, 2008

R T

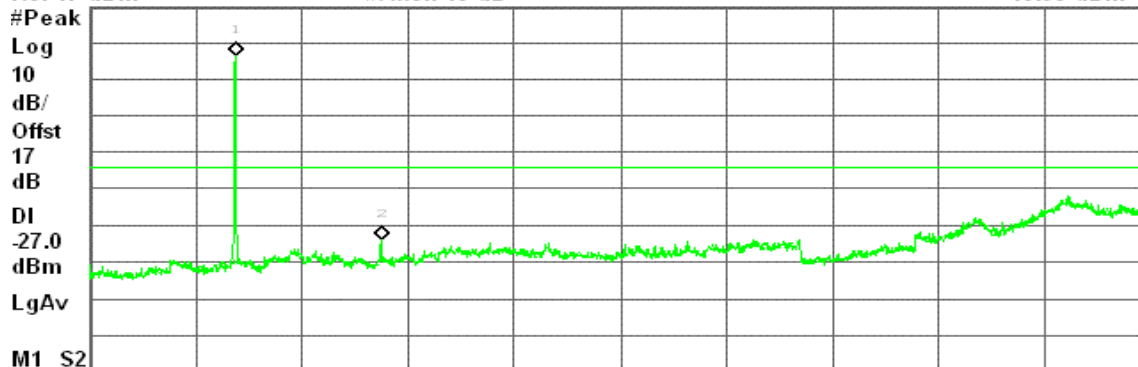
Conducted Spur., a Mode Low Ch.

Mkr2 11.02 GHz

Ref 17 dBm

#Atten 10 dB

-46.90 dBm



#Res BW 1 MHz		#VBW 1 MHz		Sweep 199.9 ms (2001 pts)	
Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	5.53 GHz	3.64 dBm	
2	(1)	Freq	11.02 GHz	-46.90 dBm	



CH Mid

30MHz ~ 40GHz

* Agilent 07:22:37 Jul 31, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr2 11.18 GHz

Ref 17 dBm

#Atten 10 dB

-43.28 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.61 GHz	7.24 dBm
2	(1)	Freq	11.18 GHz	-43.28 dBm

CH High

30MHz ~ 40GHz

* Agilent 07:37:02 Jul 31, 2008

R T

Conducted Spur., a Mode High Ch.

Mkr2 11.34 GHz

Ref 17 dBm

#Atten 10 dB

-44.77 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.69 GHz	7.86 dBm
2	(1)	Freq	11.34 GHz	-44.77 dBm

**draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1****CH Low****30MHz ~ 40GHz**

* Agilent 07:46:05 Jul 31, 2008

R T

Conducted Spur., a Mode Low Ch.

Mkr2 11.02 GHz

Ref 17 dBm

#Atten 10 dB

-40.76 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.53 GHz	3.04 dBm
2	(1)	Freq	11.02 GHz	-40.76 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 07:53:00 Jul 31, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr2 11.18 GHz

Ref 17 dBm

#Atten 10 dB

-38.16 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.59 GHz	6.39 dBm
2	(1)	Freq	11.18 GHz	-38.16 dBm



CH High

30MHz ~ 40GHz

* Agilent 08:00:03 Jul 31, 2008

R T

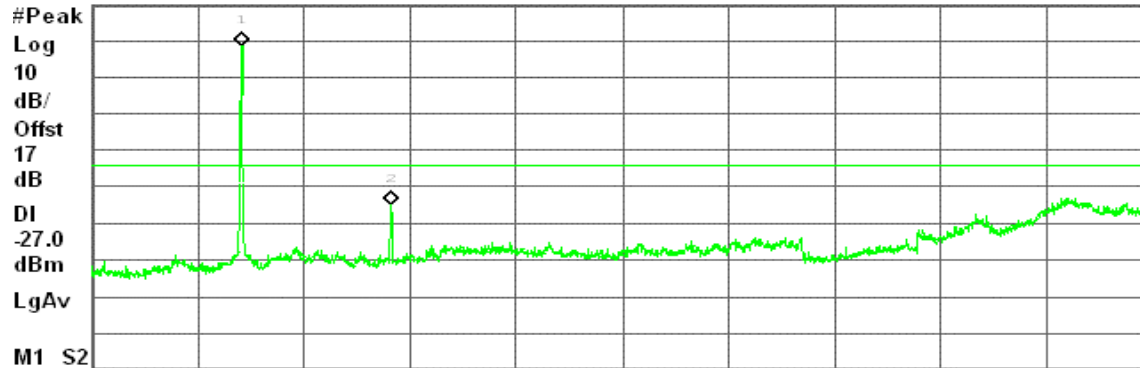
Conducted Spur., a Mode High Ch.

Mkr2 11.34 GHz

Ref 17 dBm

#Atten 10 dB

-38.06 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.67 GHz	5.55 dBm
2	(1)	Freq	11.34 GHz	-38.06 dBm

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 2

CH Low

30MHz ~ 40GHz

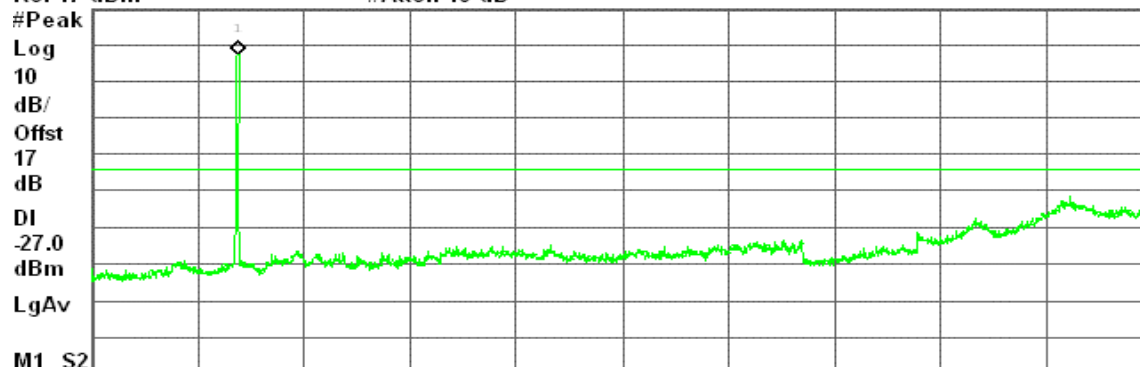
* Agilent 08:08:21 Jul 31, 2008

R T

Conducted Spur., a Mode Low Ch.

Ref 17 dBm

#Atten 10 dB



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.53 GHz	4.41 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 08:13:50 Jul 31, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr3 11.18 GHz

Ref 17 dBm

#Atten 10 dB

-46.77 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.61 GHz	6.54 dBm
3	(1)	Freq	11.18 GHz	-46.77 dBm

CH High

30MHz ~ 40GHz

* Agilent 08:20:34 Jul 31, 2008

R T

Conducted Spur., a Mode High Ch.

Mkr2 11.34 GHz

Ref 17 dBm

#Atten 10 dB

-44.65 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.67 GHz	6.57 dBm
2	(1)	Freq	11.34 GHz	-44.65 dBm

**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / with combiner****CH Low****30MHz ~ 40GHz**

* Agilent 21:33:16 Jul 30, 2008

R T

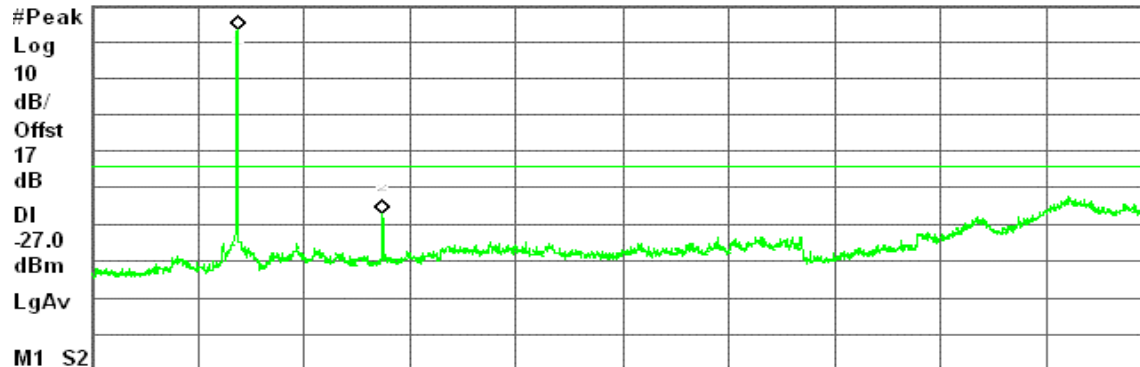
Conducted Spur., a Mode Low Ch.

Mkr2 11.00 GHz

Ref 17 dBm

#Atten 10 dB

-40.01 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.51 GHz	10.71 dBm
2	(1)	Freq	11.00 GHz	-40.01 dBm

CH Mid**30MHz ~ 40GHz**

* Agilent 21:48:18 Jul 30, 2008

R T

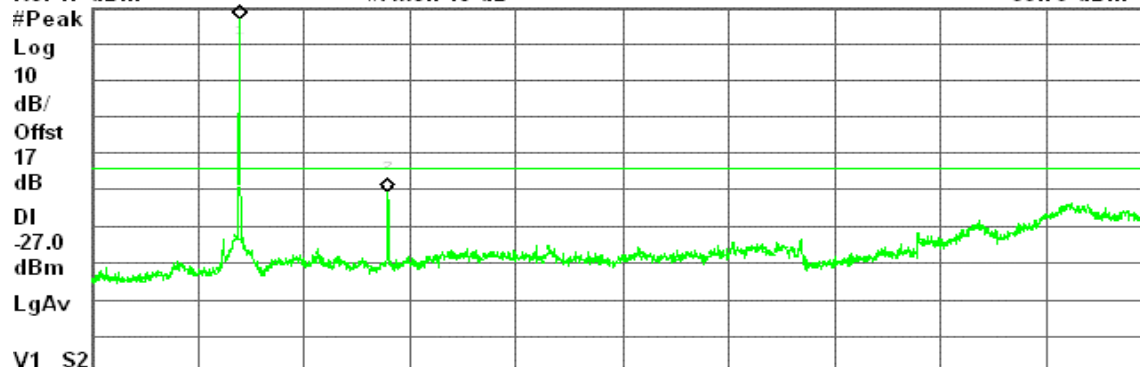
Conducted Spur., a Mode Mid Ch.

Mkr2 11.20 GHz

Ref 17 dBm

#Atten 10 dB

-33.75 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.61 GHz	13.82 dBm
2	(1)	Freq	11.20 GHz	-33.75 dBm



CH High

30MHz ~ 40GHz

* Agilent 21:53:27 Jul 30, 2008

R T

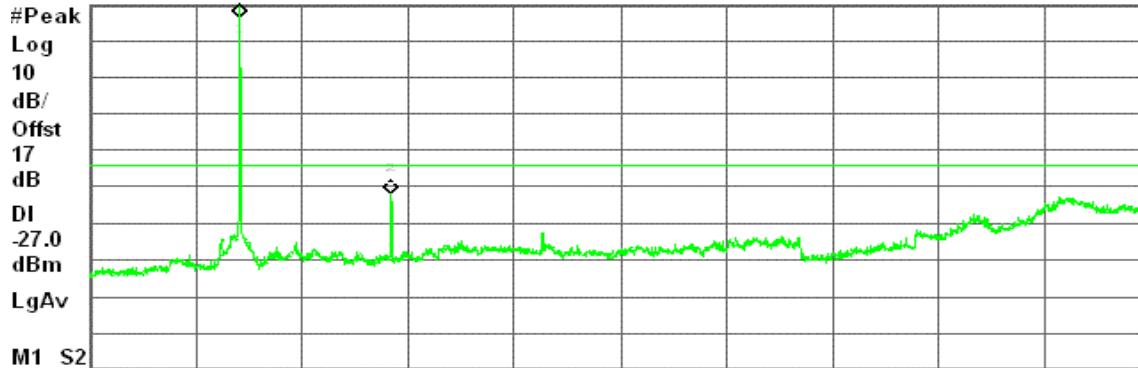
Conducted Spur., a Mode High Ch.

Mkr2 11.40 GHz

Ref 17 dBm

#Atten 10 dB

-35.05 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.69 GHz	13.43 dBm
2	(1)	Freq	11.40 GHz	-35.05 dBm

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / with combiner

CH Low

30MHz ~ 40GHz

* Agilent 06:52:05 Jul 31, 2008

R T

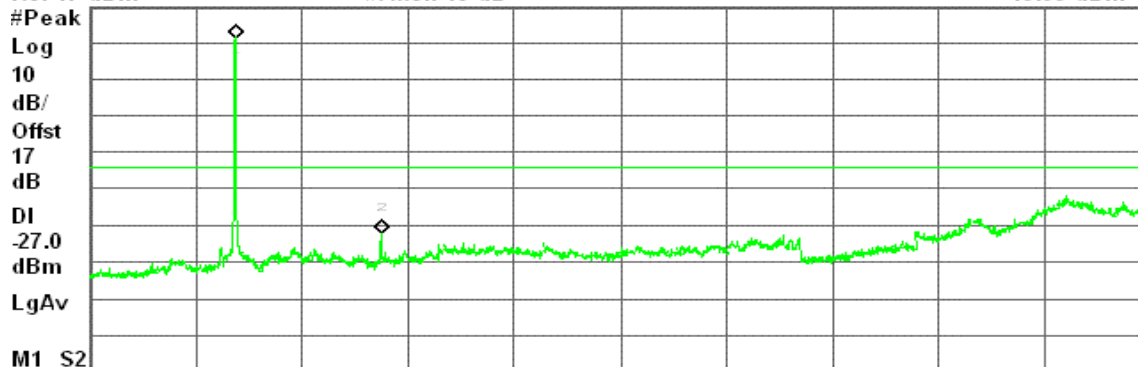
Conducted Spur., a Mode Low Ch.

Mkr2 11.02 GHz

Ref 17 dBm

#Atten 10 dB

-45.53 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.51 GHz	8.39 dBm
2	(1)	Freq	11.02 GHz	-45.53 dBm



CH Mid

30MHz ~ 40GHz

* Agilent 06:58:56 Jul 31, 2008

R T

Conducted Spur., a Mode Mid Ch.

Mkr2 11.18 GHz

Ref 17 dBm

#Atten 10 dB

-34.59 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.61 GHz	11.14 dBm
2	(1)	Freq	11.18 GHz	-34.59 dBm

CH High

30MHz ~ 40GHz

* Agilent 07:05:58 Jul 31, 2008

R T

Conducted Spur., a Mode High Ch.

Mkr2 11.34 GHz

Ref 17 dBm

#Atten 10 dB

-35.63 dBm

#Peak

Log

10

dB/

Offst

17

dB

DI

-27.0

dBm

LgAv

M1 S2

Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.67 GHz	12.47 dBm
2	(1)	Freq	11.34 GHz	-35.63 dBm



7.8 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

**TEST RESULTS**

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data**Operation Mode:** Normal Link**Test Date:** July 31, 2008**Temperature:** 22°C**Tested by:** Jerry Lin**Humidity:** 45% RH

Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.1550	49.40	28.90	0.20	49.60	29.10	65.73	55.73	-16.13	-26.63	L1
0.2350	40.56	27.86	0.14	40.70	28.00	62.27	52.27	-21.57	-24.27	L1
0.2700	36.67	15.27	0.13	36.80	15.40	61.12	51.12	-24.32	-35.72	L1
0.3250	31.29	8.49	0.11	31.40	8.60	59.58	49.58	-28.18	-40.98	L1
0.4100	27.23	9.23	0.07	27.30	9.30	57.65	47.65	-30.35	-38.35	L1
16.7800	33.14	24.64	0.66	33.80	25.30	60.00	50.00	-26.20	-24.70	L1
0.1800	50.23	28.93	0.17	50.40	29.10	64.49	54.49	-14.09	-25.39	L2
0.2350	53.66	35.66	0.14	53.80	35.80	62.27	52.27	-8.47	-16.47	L2
0.2900	48.49	30.49	0.11	48.60	30.60	60.52	50.52	-11.92	-19.92	L2
0.3400	43.61	23.81	0.09	43.70	23.90	59.20	49.20	-15.50	-25.30	L2
0.4100	42.13	25.03	0.07	42.20	25.10	57.65	47.65	-15.45	-22.55	L2
0.5100	35.27	18.27	0.03	35.30	18.30	56.00	46.00	-20.70	-27.70	L2

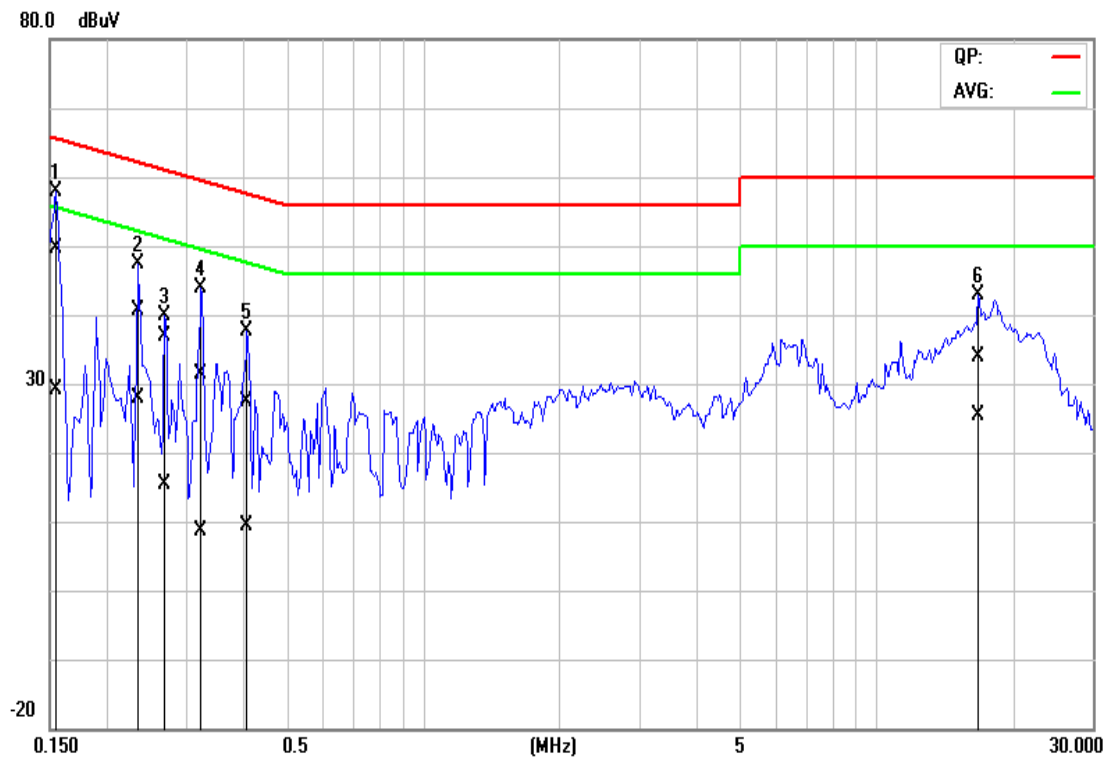
Remark:

1. Measuring frequencies from 0.15 MHz to 30MHz.
2. The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.
3. The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9kHz;
4. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)

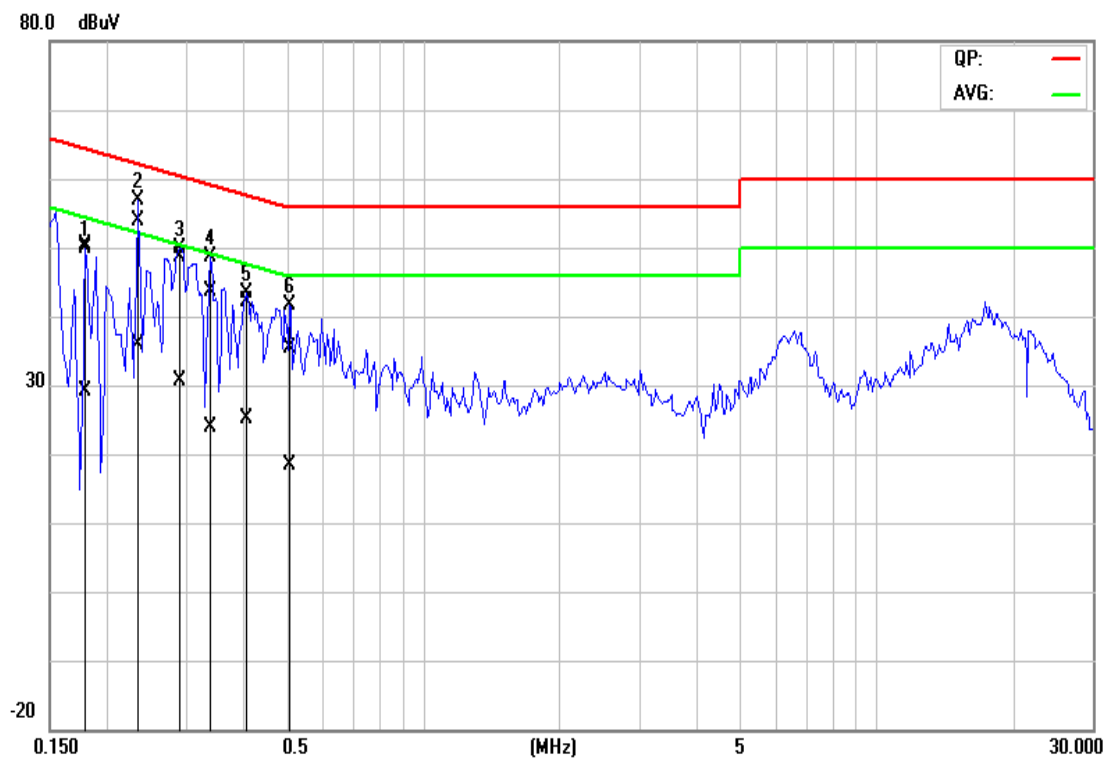


Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)





7.9 TRANSMISSION IN ABSENCE OF DATA

LIMIT

According to §15.319(f), the device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude transmission of control and signaling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Applicants shall include in their application for equipment authorization a description of how this requirement is met.

TEST RESULTS

Please refer to the operational description for details.

Remark: *For the details, please refer to the operational description.*

7.10 FREQUENCY STABILITY

LIMIT

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

TEST RESULTS

Please refer to the operational description for further details.

Remark: *An examination of the band-edge plots shows that the emission will stay within the authorized band over the entire temperature range.*



7.11 DYNAMIC FREQUENCY SELECTION

LIMIT

According to §15.407 (h) and FCC 06-96 appendix “compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection”.

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-Service

Maximum Transmit Power	Value (see note)
≥ 200 Milliwatt	-64 dBm
< 200 Milliwatt	-62 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

**Table 4: DFS Response requirement values**

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period

The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

- For the Short pulse radar Test Signals this instant is the end of the Burst.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar burst generated.
- For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.

The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate channel changes (an aggregate of approximately 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Table 6 – Long Pulse Radar Test Signal

Radar Waveform	Bursts	Pulses per Burst	Pulse Width (µsec)	Chirp Width (µsec)	PRI (µsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (µsec)	PRI (µsec)	Burst Length (ms)	Pulses Per Hop	Hopping Rate (kHz)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	300	9	0.33	70%	30



DESCRIPTION OF EUT

Overview Of EUT With Respect To §15.407 (H) Requirements

The firmware installed in the EUT during testing was:

Firmware Rev: 12.0.0.52

The EUT operates over the 5250-5350 MHz range as a Client Device that does not have radar detection capability.

The antenna assembly utilized with the EUT has a gain of 0.18 dBi.

The highest power level is 20.93 dBm EIRP in the 5260 ~ 5320MHz band.

The EUT uses one transmitter connected to two 50-ohm coaxial antenna ports via a diversity switch. Only one antenna port is connected to the test system since the EUT has one antenna only.

The Slave device associated with the EUT during these tests does not have radar detection capability.

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11a architecture, with a nominal channel bandwidth of 20 MHz.

The Master Device is a Cisco Aironet 802.11a/b/g Access Point, FCC ID: LDK102056.

The rated output power of the Master unit is < 23dBm (EIRP). Therefore the required interference threshold level is -62 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is $-62 + 5 = -57$ dBm.

The calibrated conducted DFS Detection Threshold level is set to -62 dBm. The tested level is lower than the required level hence it provides margin to the limit.

Manufacturer’s Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.

TEST AND MEASUREMENT SYSTEM

System Overview

The measurement system is based on a conducted test method.

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

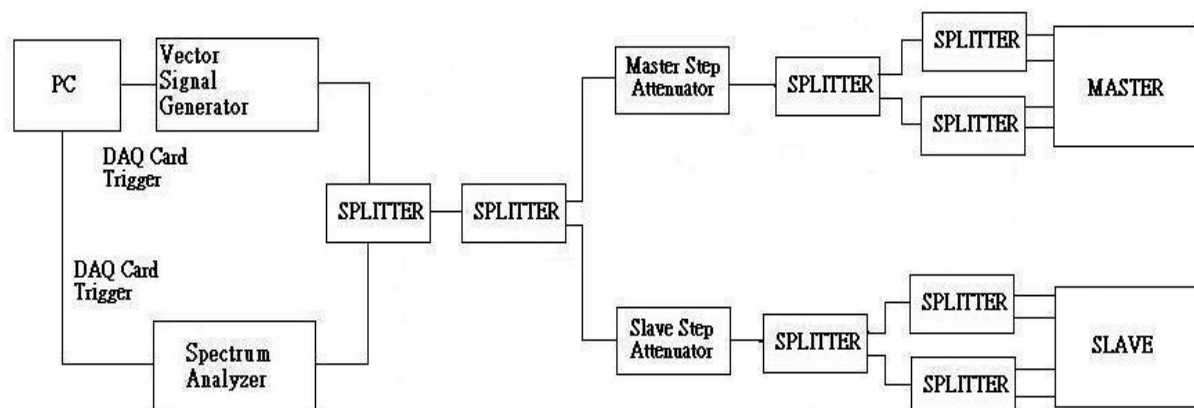
The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer set to display 8001 bins on the horizontal axis. The time-domain resolution is 2 msec / bin with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. The time-domain resolution is 3 msec / bin with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

Should multiple RF ports be utilized for the Master and/or Slave devices (for example, for diversity or MIMO implementations), 50 ohm termination would be removed from the splitter so that connection can be established between splitter and the Master and/or Slave devices.

Conducted Method System Block Diagram





System Calibration

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of -62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from -62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at -62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at -62 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of -62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

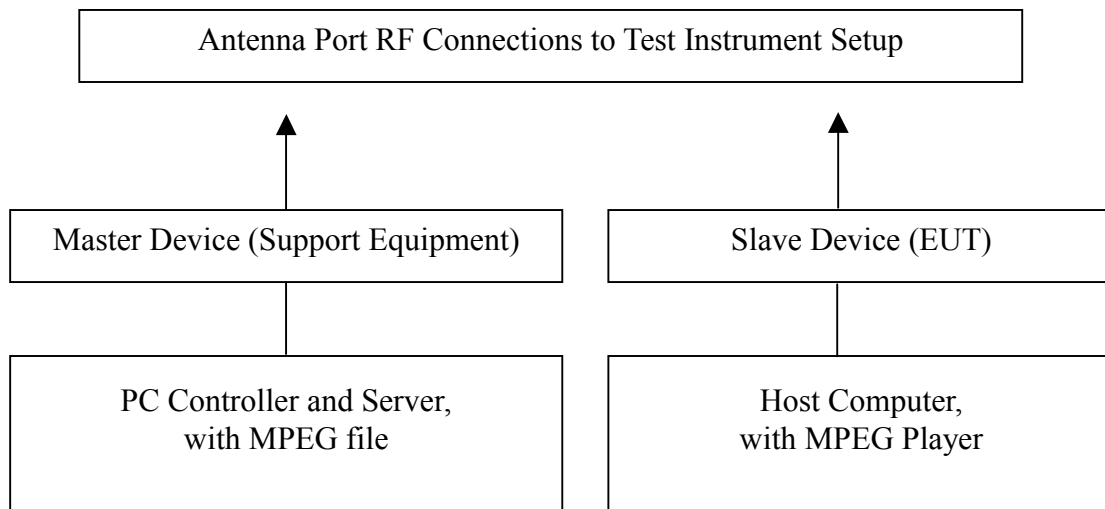
Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.



Test Setup



TEST RESULTS

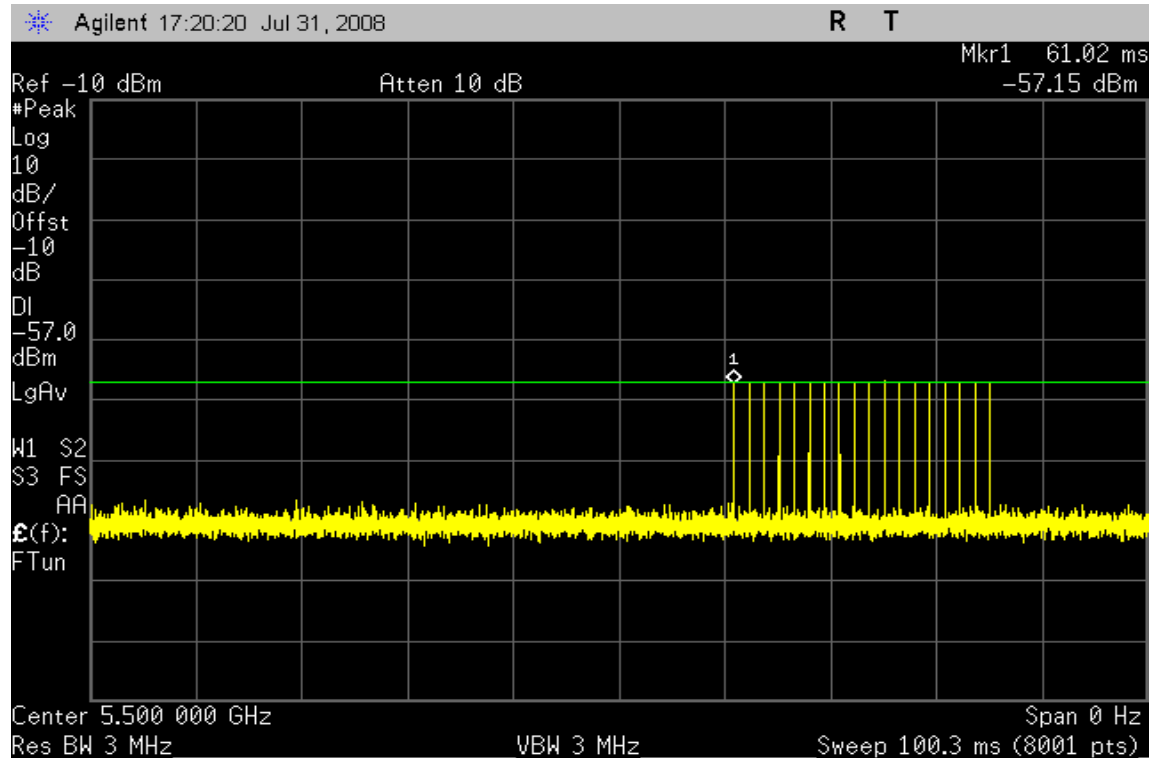
No non-compliance noted



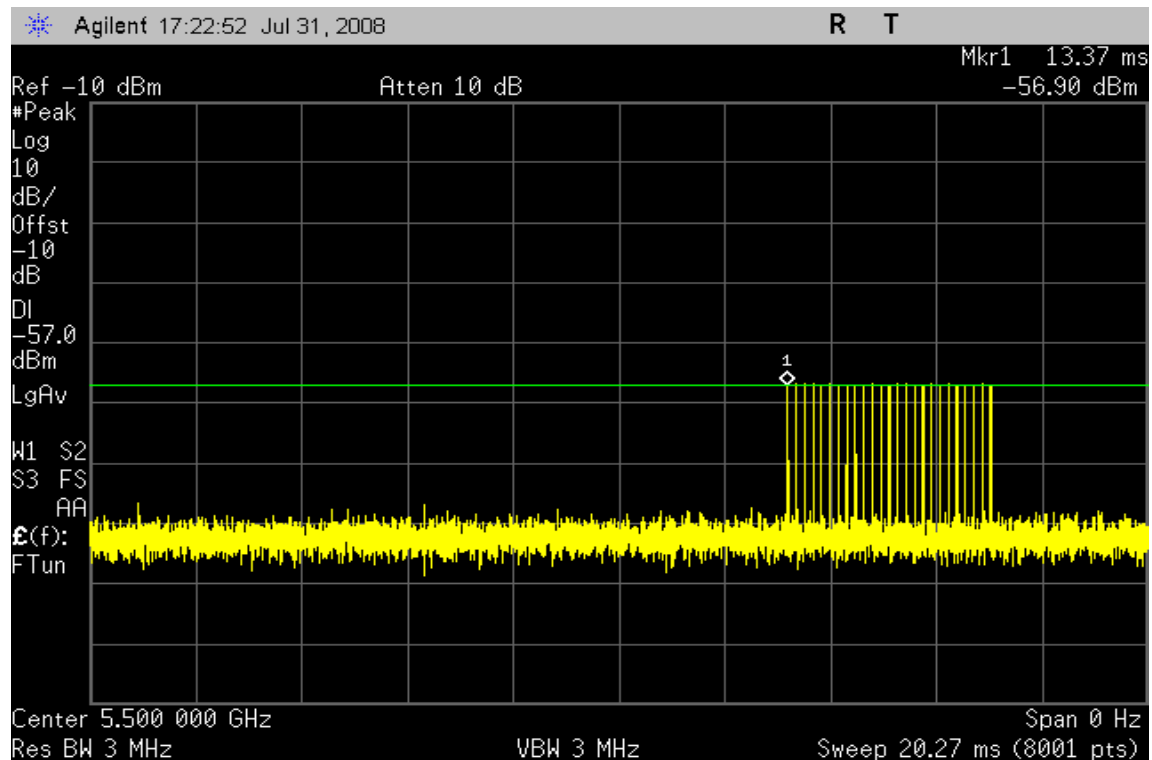
Test Plot

PLOTS OF RADAR WAVEFORMS

Sample of Short Pulse Radar Type 1

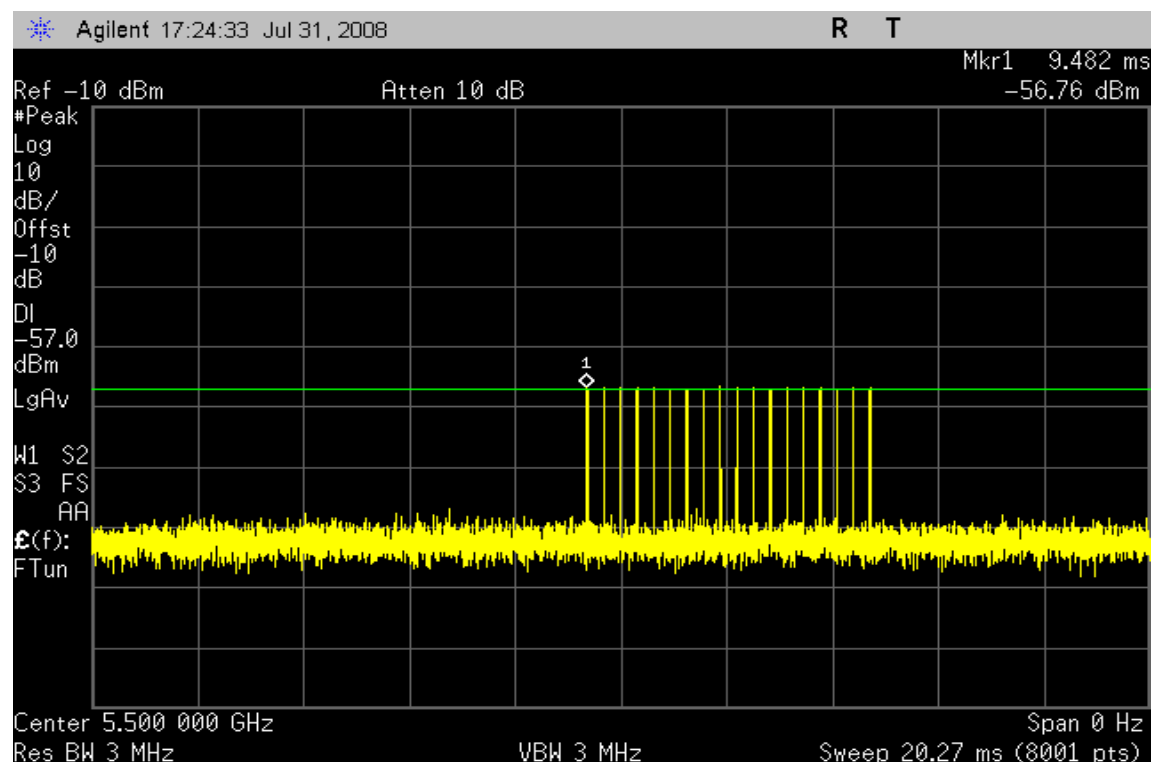


Sample of Short Pulse Radar Type 2

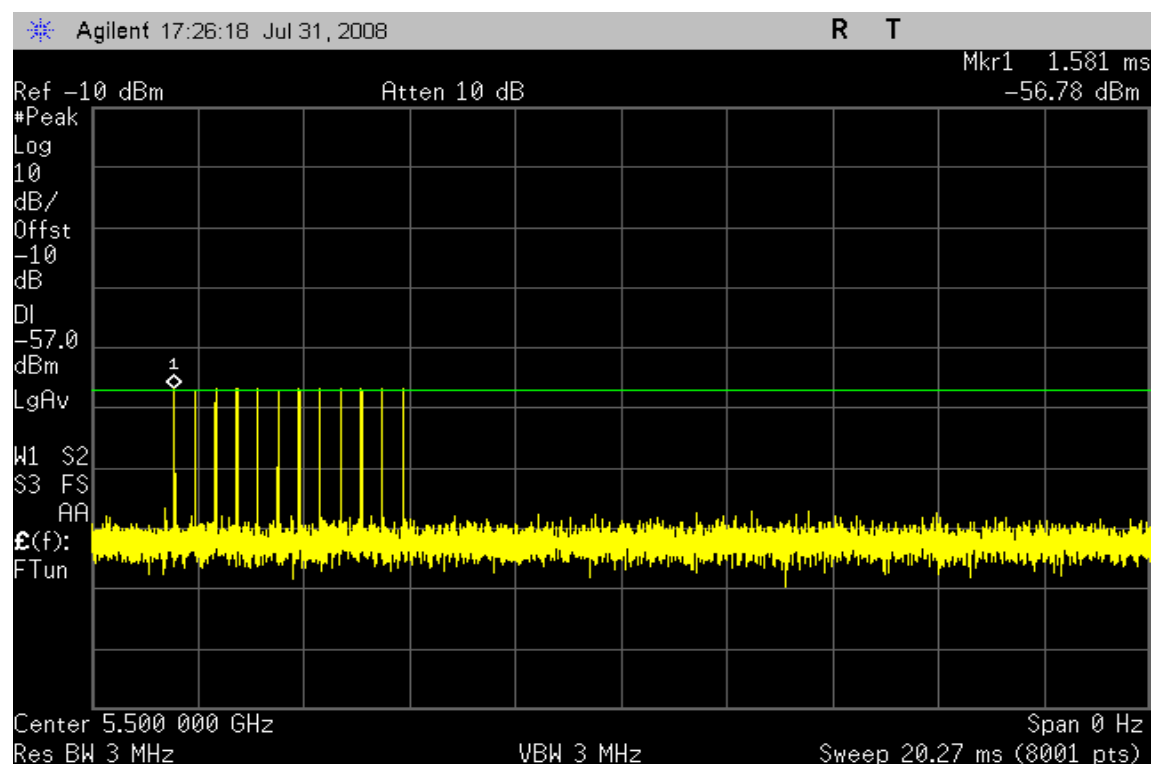




Sample of Short Pulse Radar Type 3

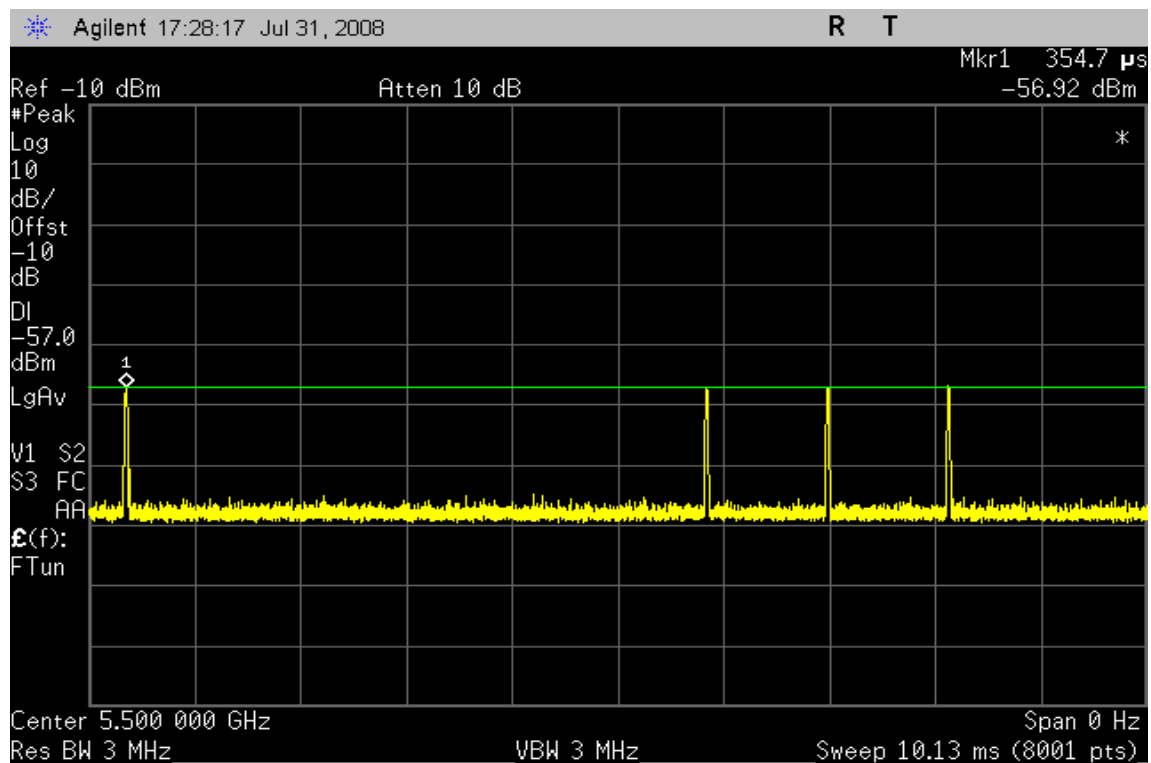


Sample of Short Pulse Radar Type 4

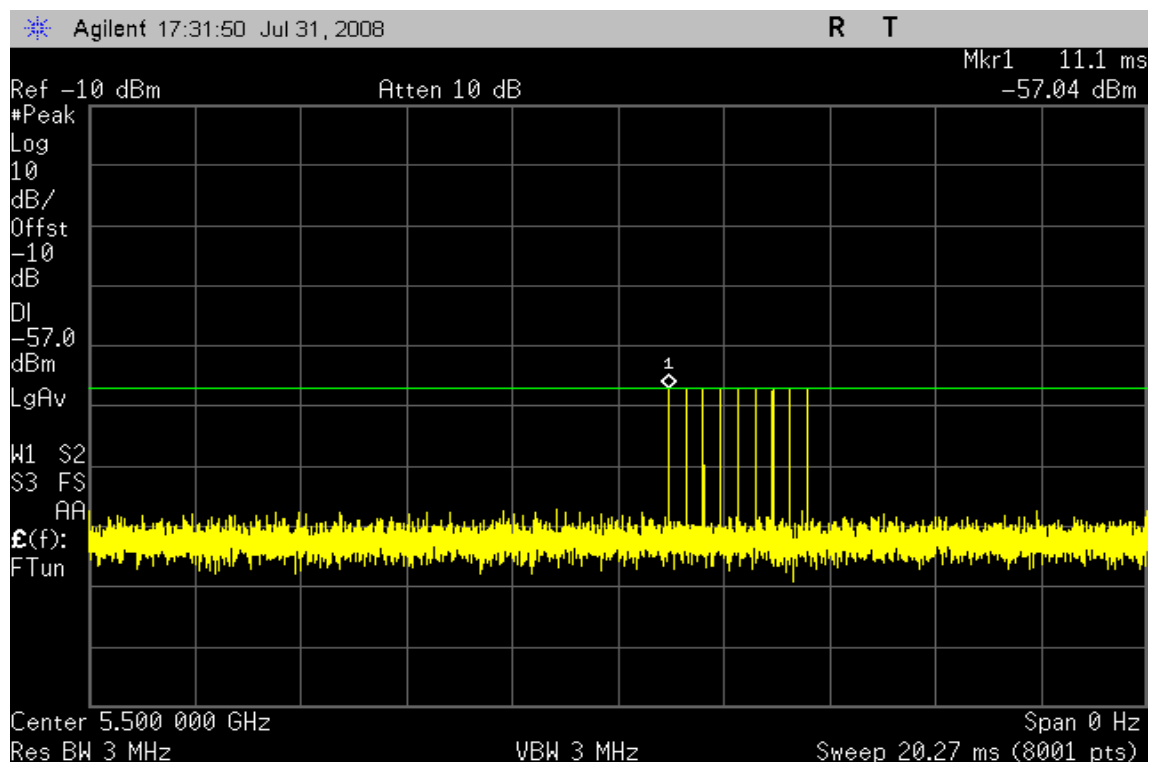




Sample of Long Pulse Radar Type 5



Sample of Frequency Hopping Radar Type 6





TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5300 MHz utilizing a conducted test method.

CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

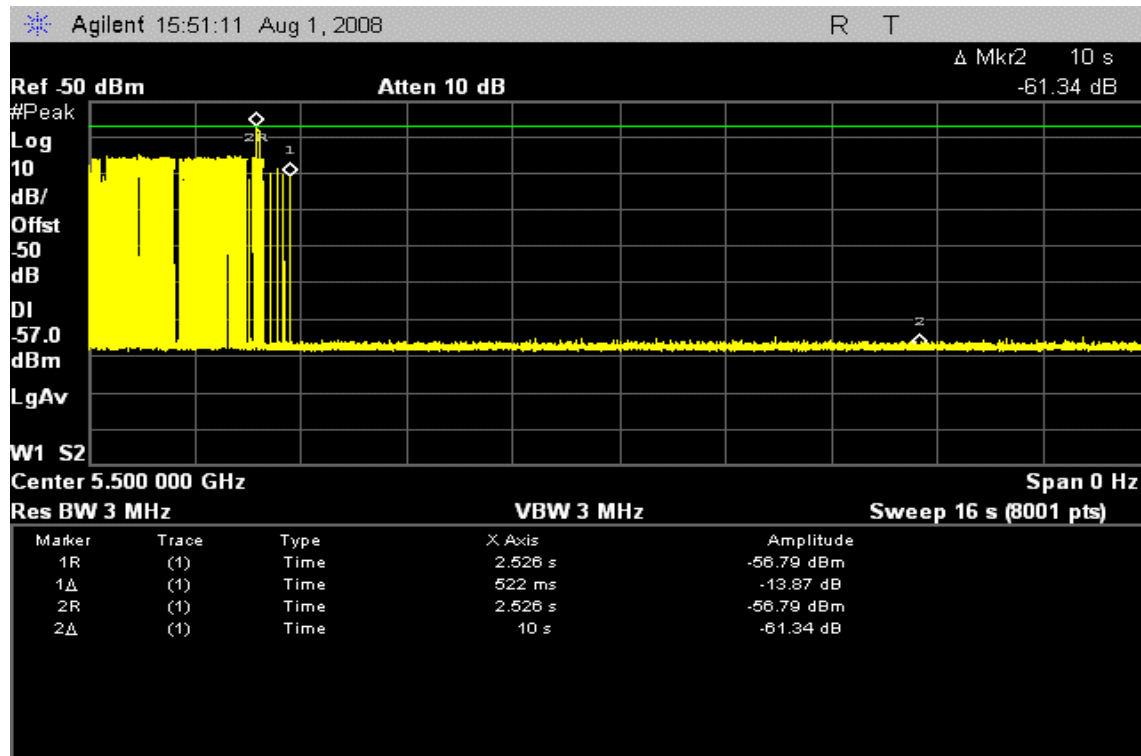
The observation period over which the aggregate time is calculated

Begins at (Reference Marker + 200 msec) and

Ends no earlier than (Reference Marker + 10 sec).

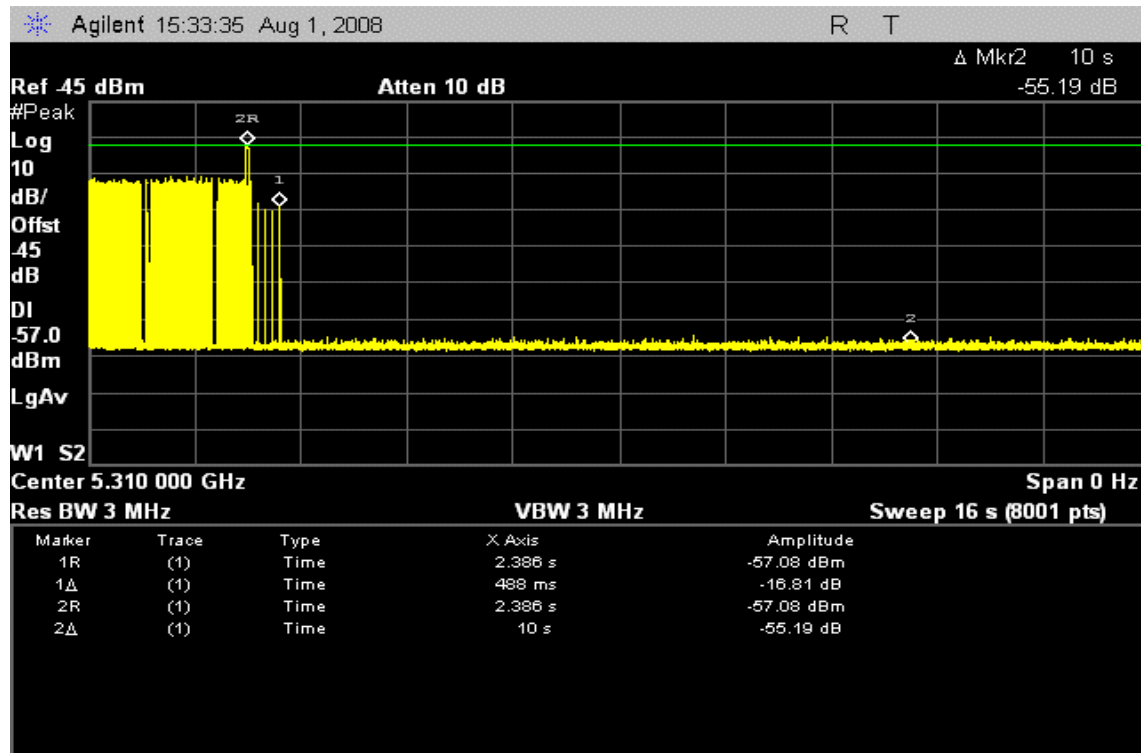
**draft 802.11n Standard-20 MHz Channel mode****Type 1 Channel Move Time Results***No non-compliance noted.*

Channel Move Time (s)	Limit (s)
2.526	10



**draft 802.11n Wide-40 MHz Channel mode****Type 1 Channel Move Time Results***No non-compliance noted.*

Channel Move Time (s)	Limit (s)
2.386	10



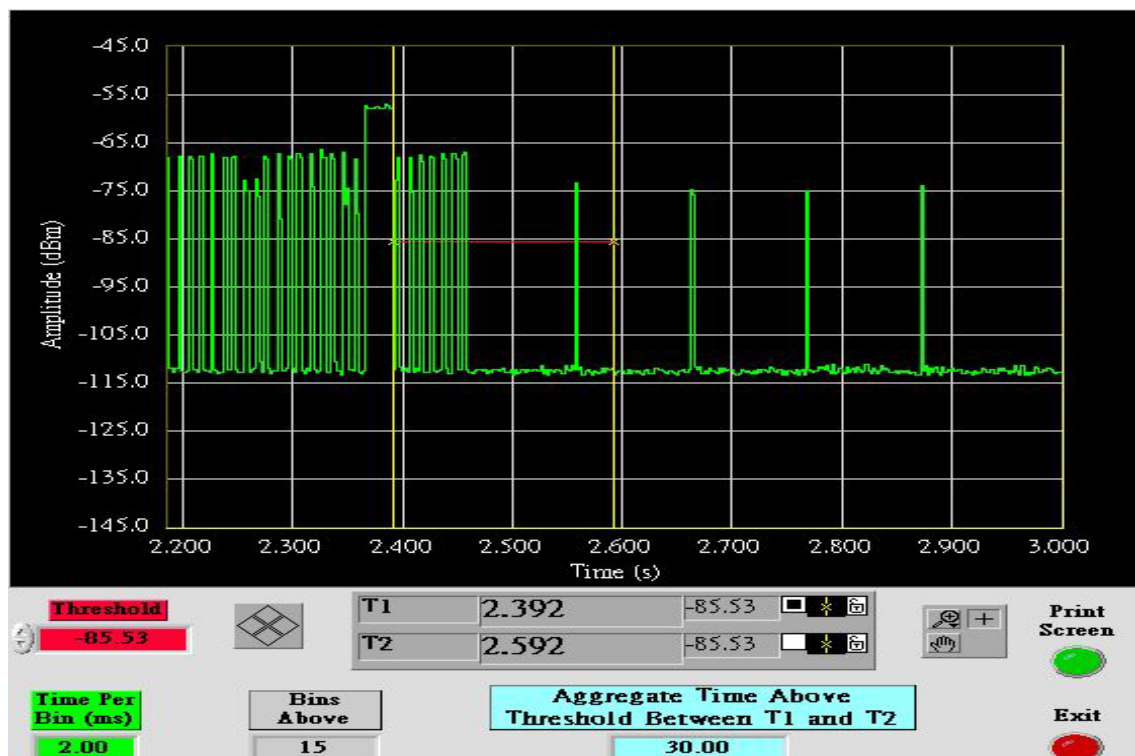
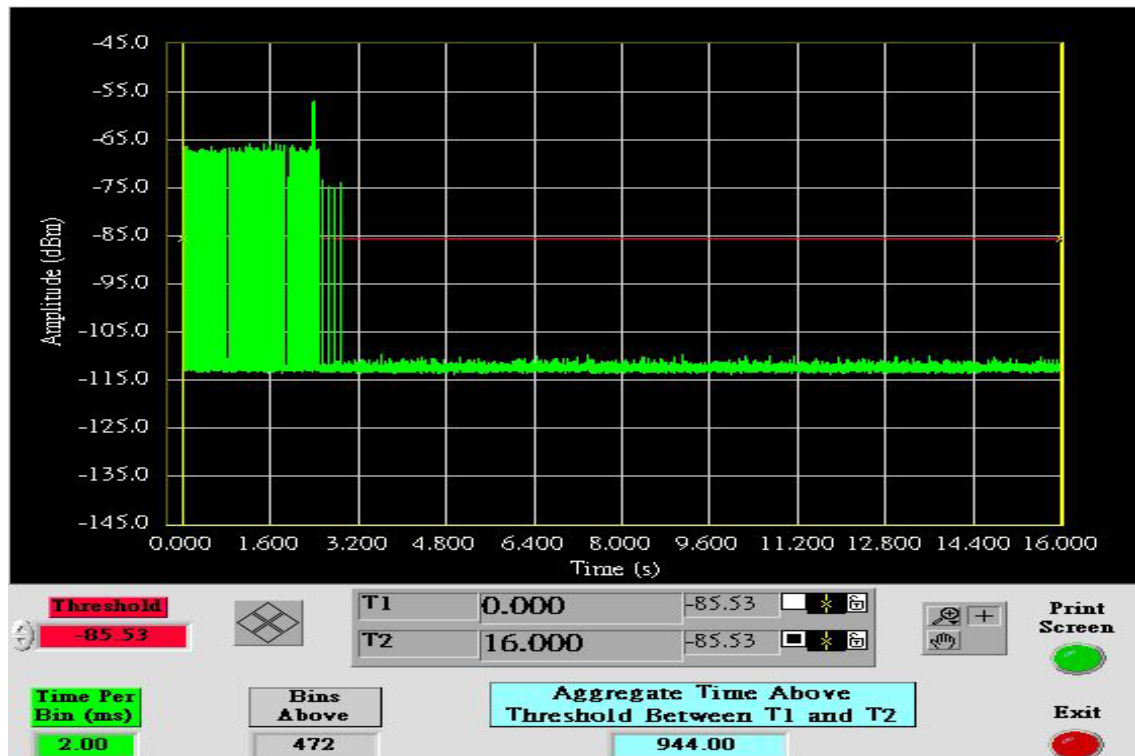


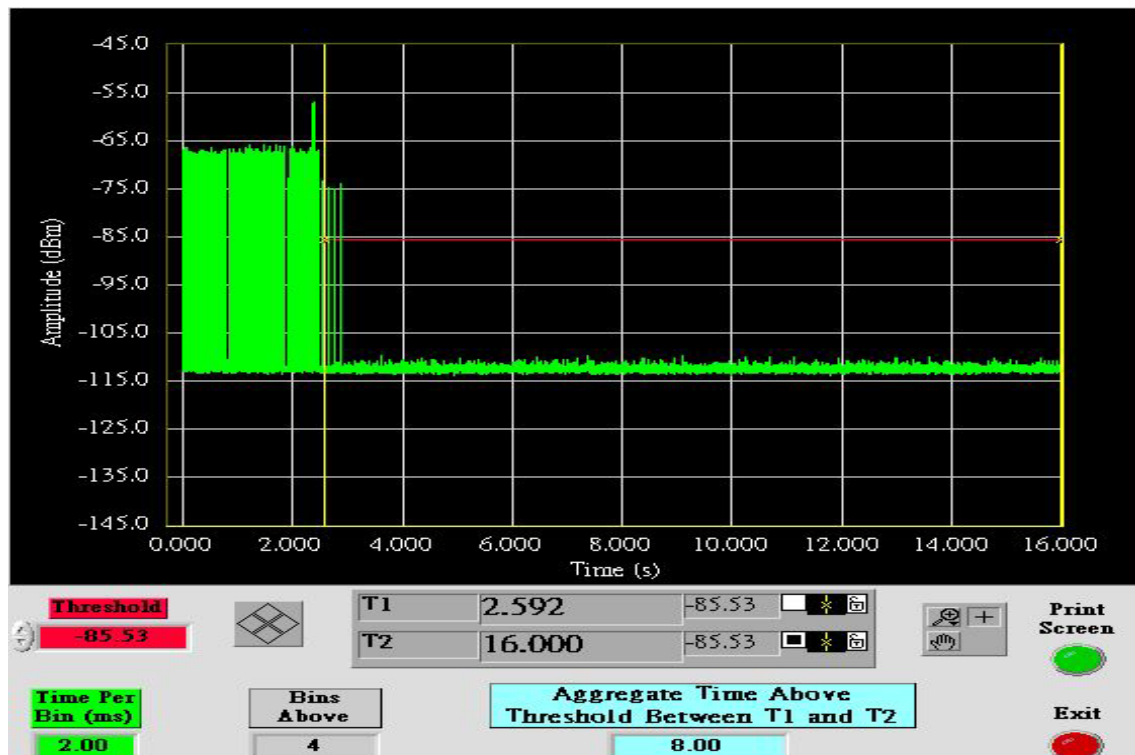
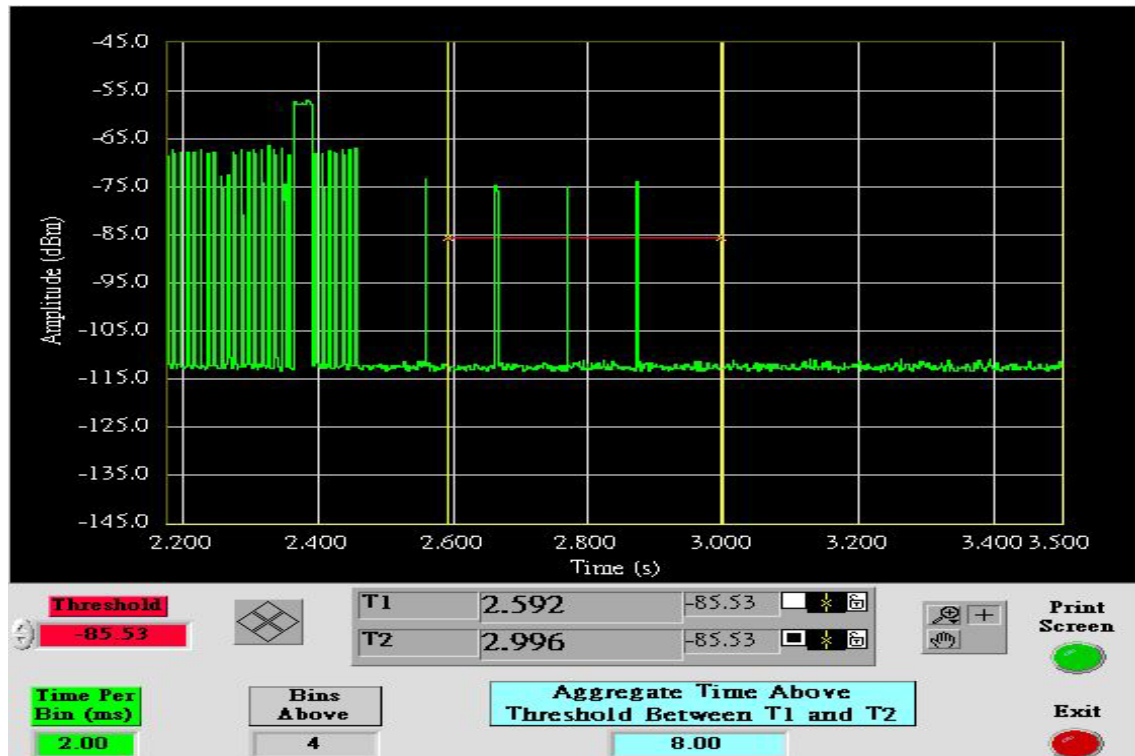
draft 802.11n Standard-20 MHz Channel mode

Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
23	60	-37





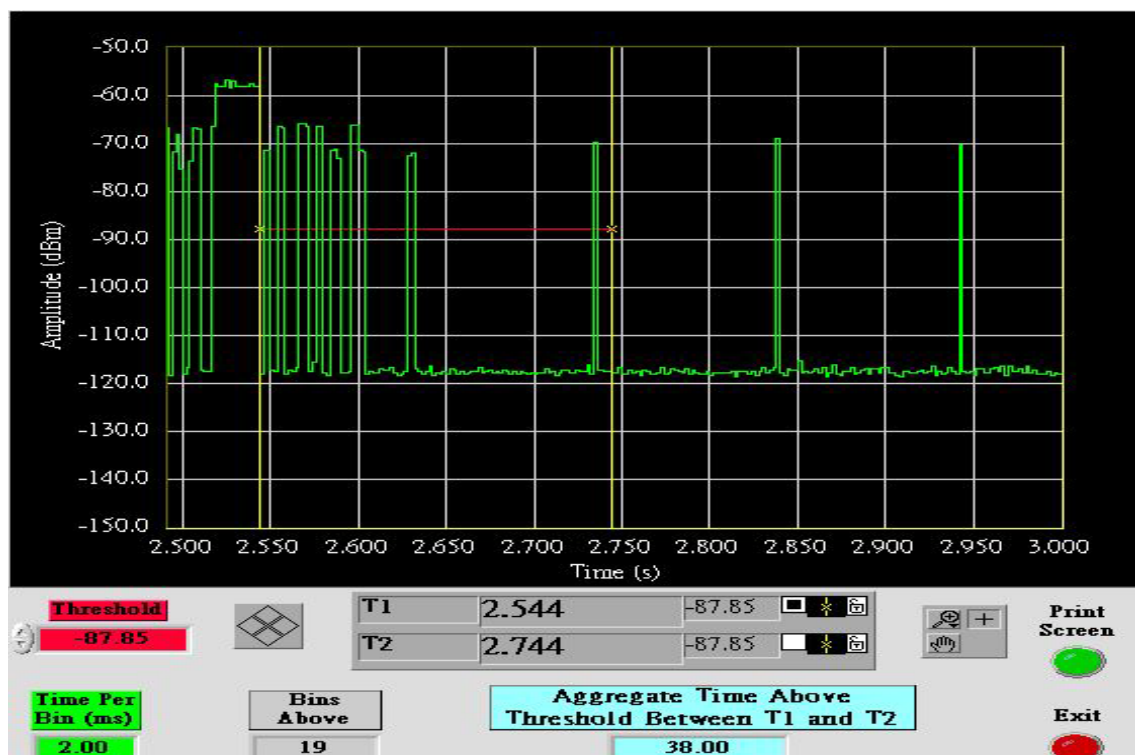
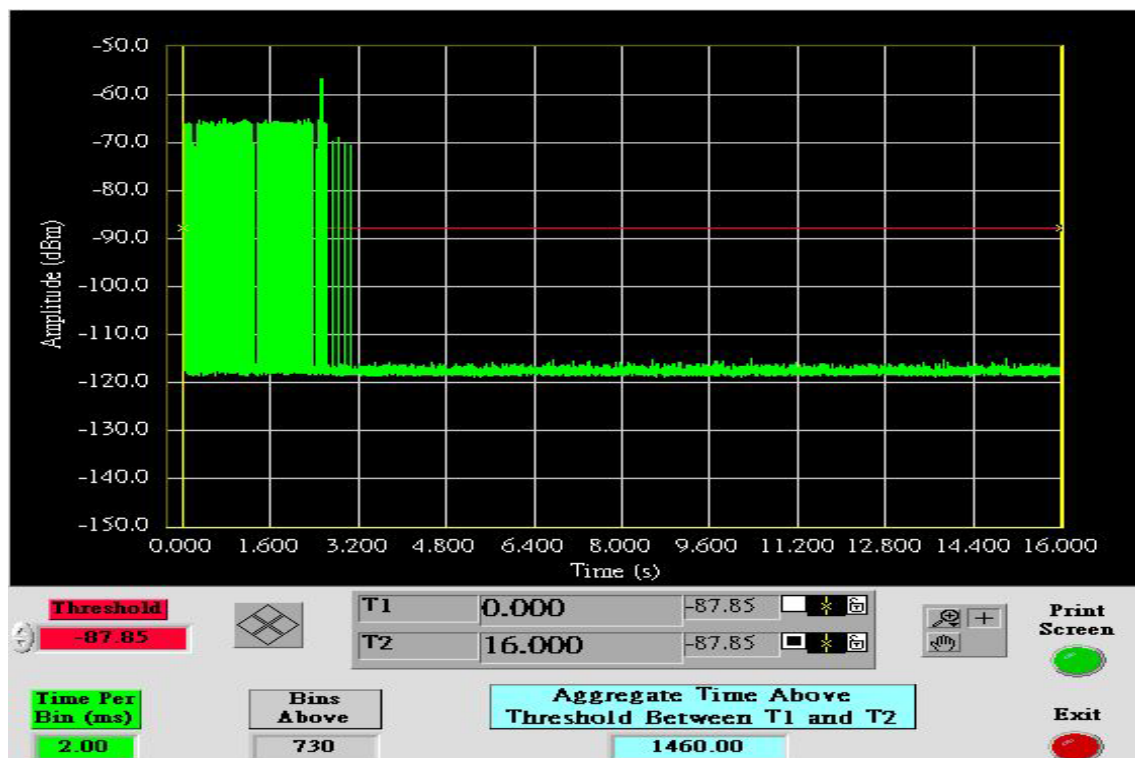


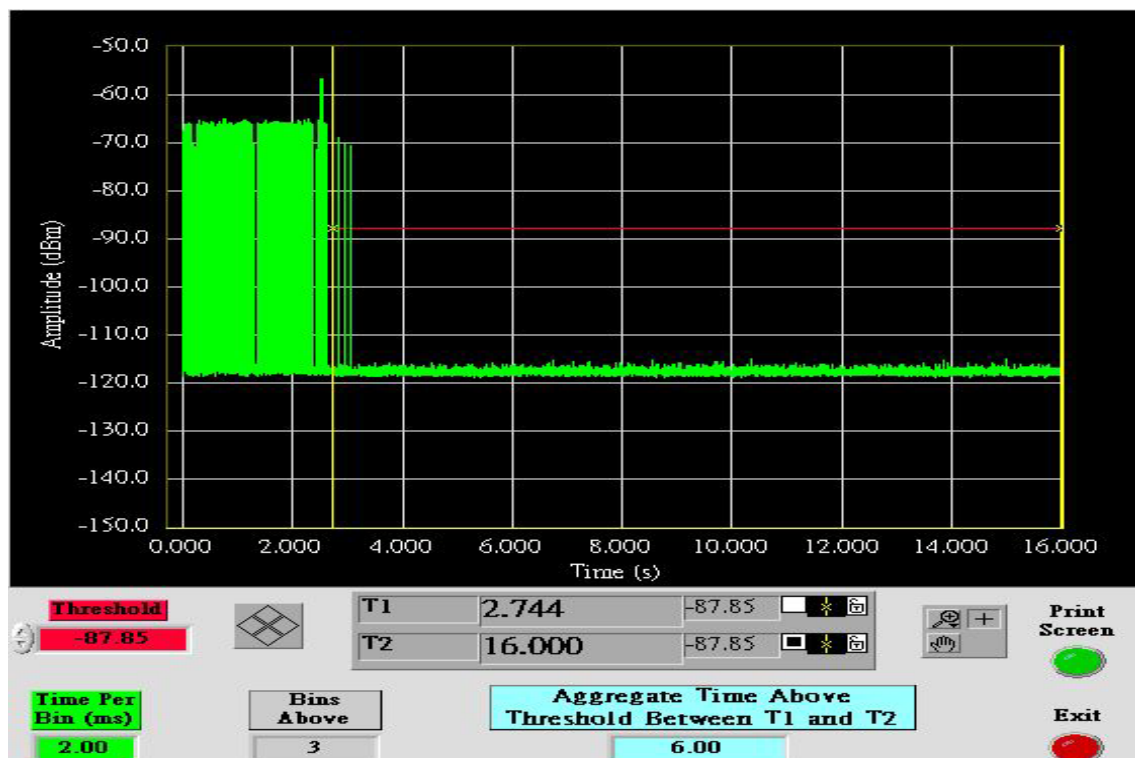
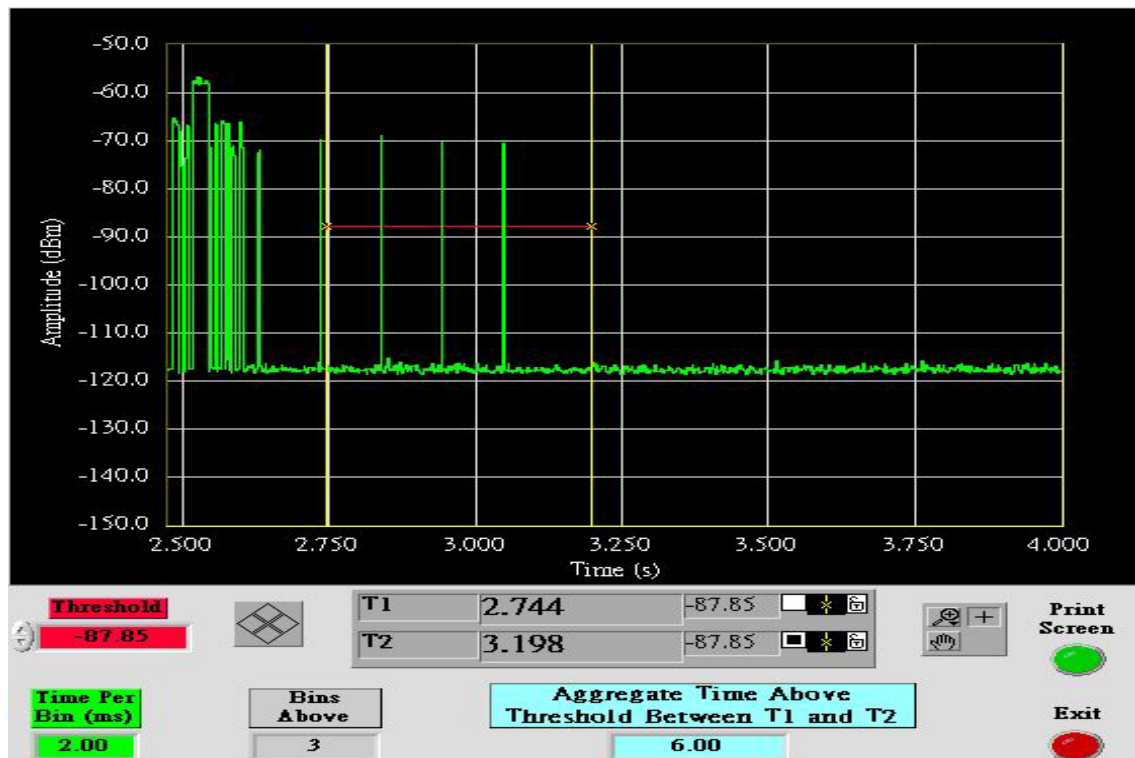
draft 802.11n Wide-40 MHz Channel mode

Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
25	60	-35



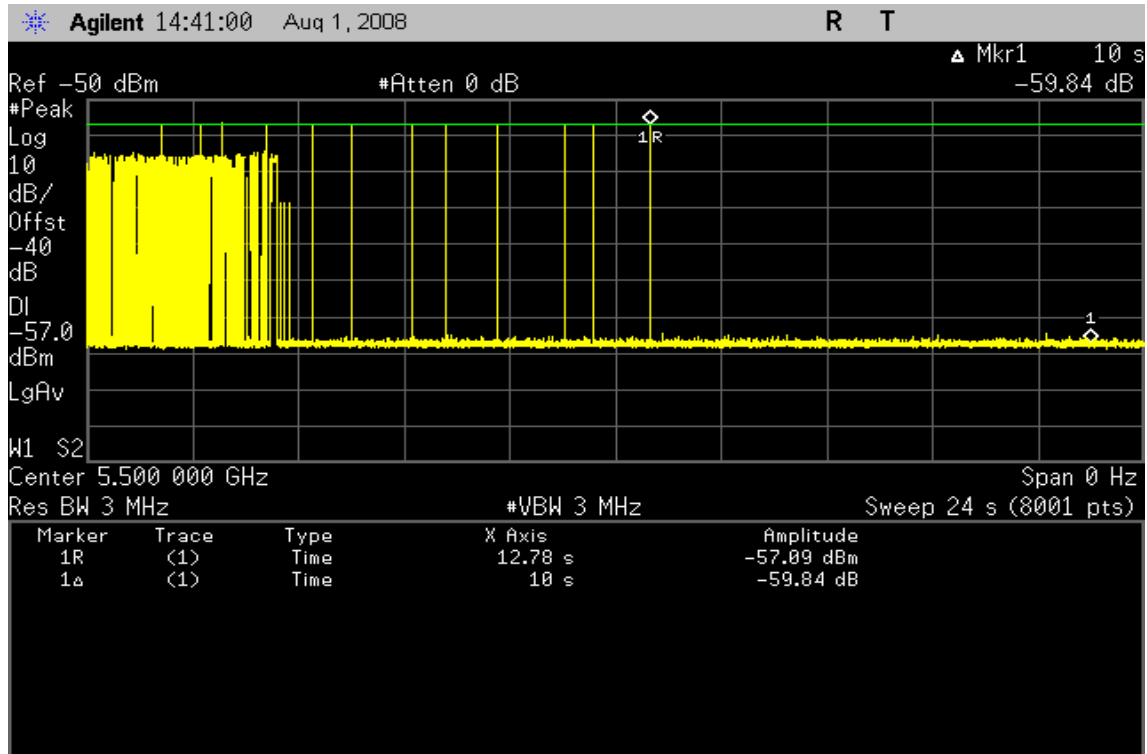




draft 802.11n Standard-20 MHz Channel mode

Type 5 Channel Move Time Results

No non-compliance noted: The traffic ceases prior to the end of the radar waveform, therefore it also ceases prior to 10 seconds after the end of the radar waveform.





draft 802.11n Wide-40 MHz Channel mode

Type 5 Channel Move Time Results

No non-compliance noted: The traffic ceases prior to the end of the radar waveform, therefore it also ceases prior to 10 seconds after the end of the radar waveform.

