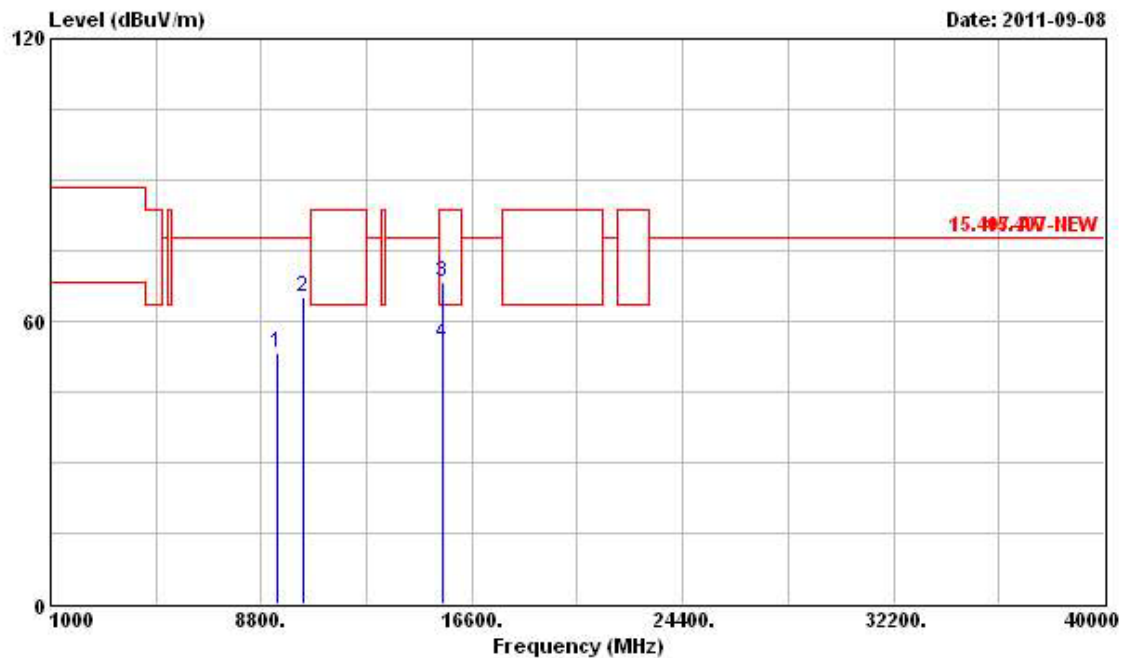
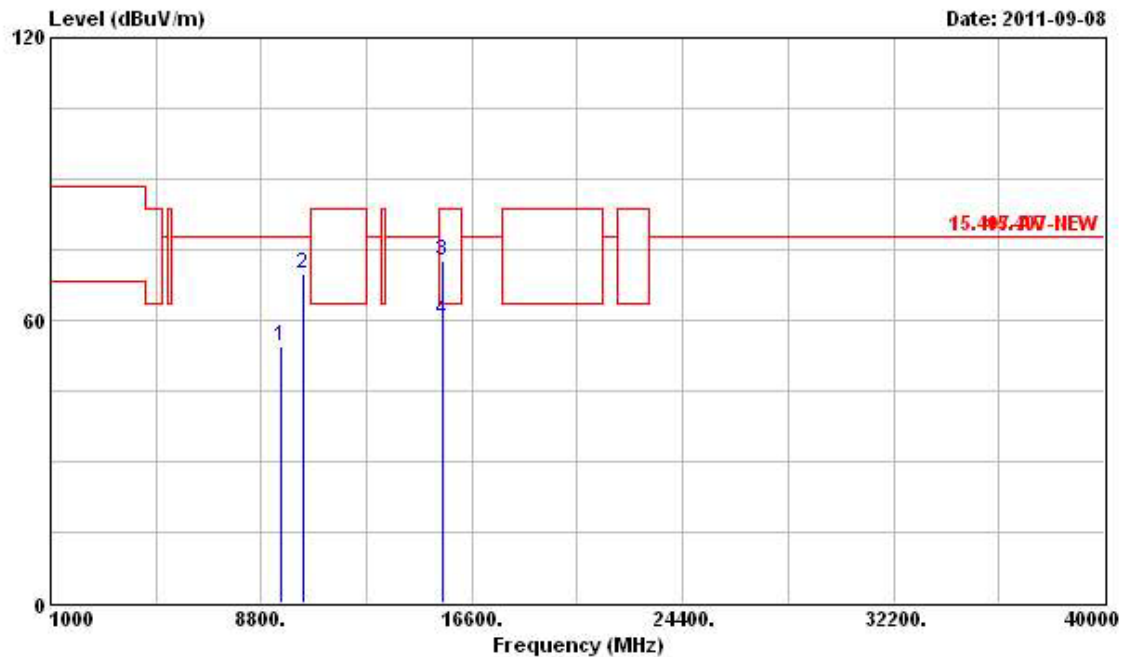


Final Test Date	Sep. 08, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 36 (20MHz)

Horizontal

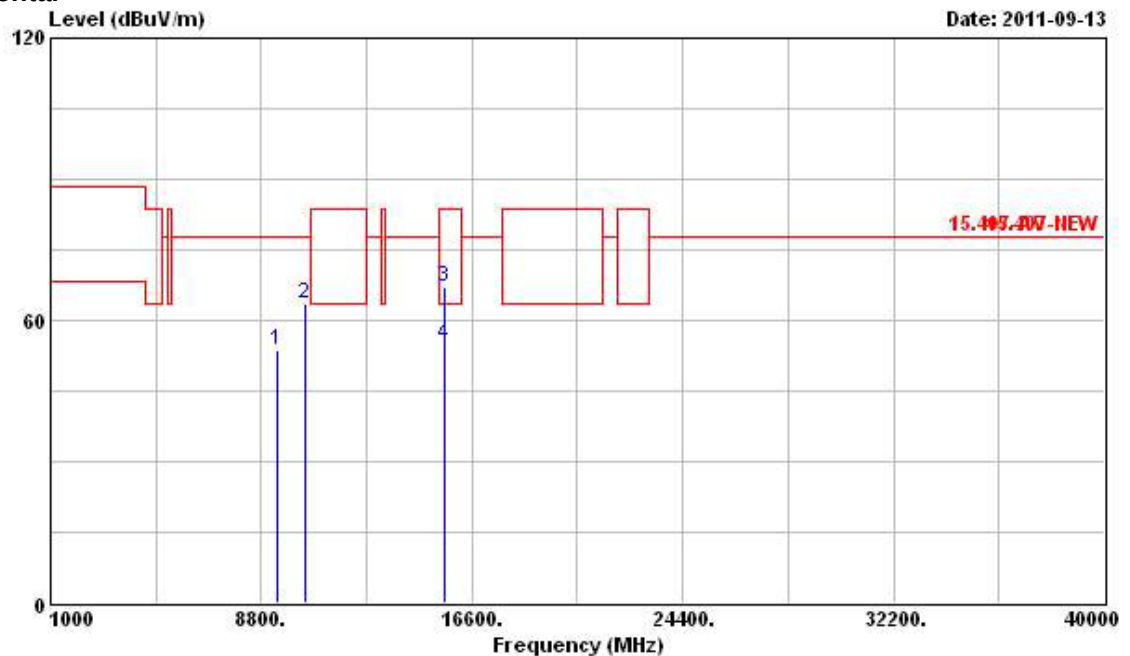
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9387.000	53.44	-24.40	77.84	43.66	38.93	6.28	35.43	PK	---	---
2	10350.000	65.03	-12.81	77.84	53.53	40.01	6.71	35.22	Peak	---	---
3	15543.000	68.11	-15.43	83.54	51.88	42.81	8.45	35.03	Peak	---	---
4	15543.000	55.16	-8.38	63.54	38.93	42.81	8.45	35.03	Average	---	---

Vertical



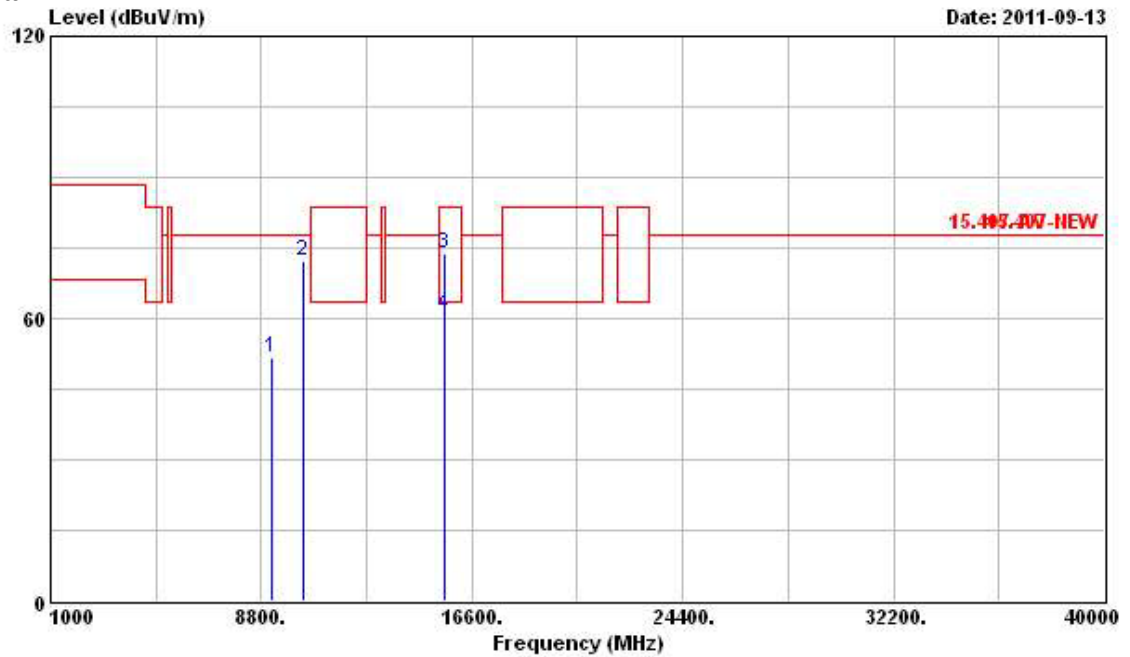
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9495.000	54.67	-23.17	77.84	44.61	39.20	6.32	35.46	PK	---	---
2	10350.000	69.98	-7.86	77.84	58.48	40.01	6.71	35.22	Peak	---	---
3	15543.000	72.68	-10.86	83.54	56.45	42.81	8.45	35.03	Peak	---	---
4	@15543.000	59.89	-3.65	63.54	43.66	42.81	8.45	35.03	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 40 (20MHz)

Horizontal

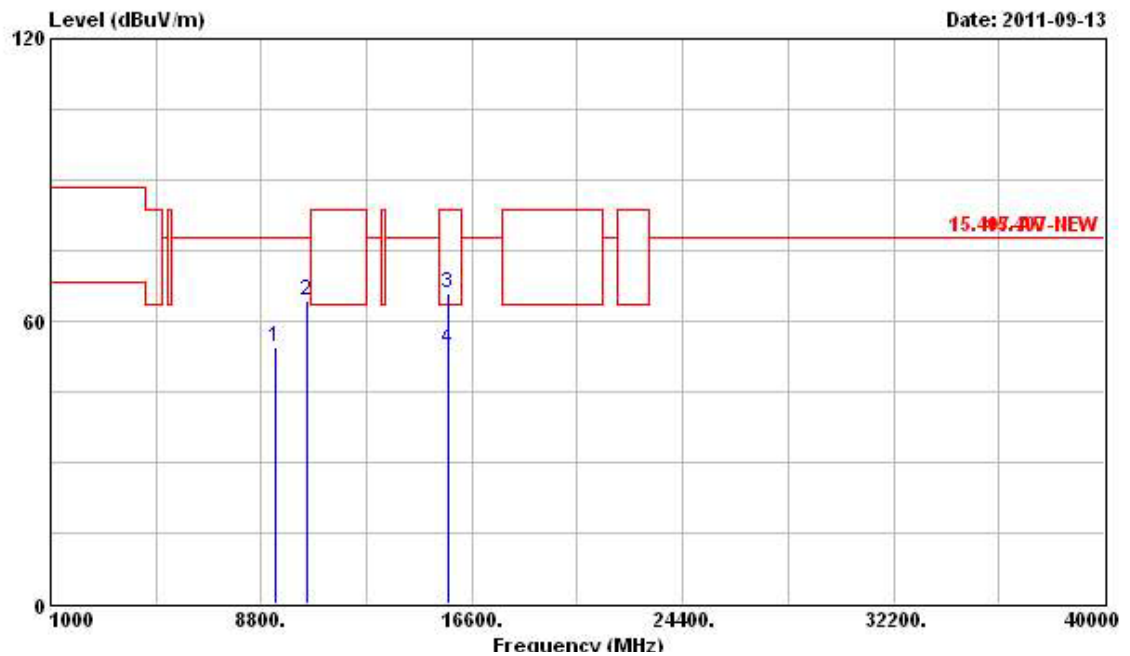
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9396.000	53.54	-24.30	77.84	43.72	38.97	6.28	35.43	PK	---	---
2	10395.000	63.63	-14.21	77.84	52.04	40.04	6.75	35.20	Peak	---	---
3	15606.000	67.01	-16.53	83.54	50.84	42.82	8.45	35.10	Peak	---	---
4	15606.000	54.75	-8.79	63.54	38.58	42.82	8.45	35.10	Average	---	---

Vertical



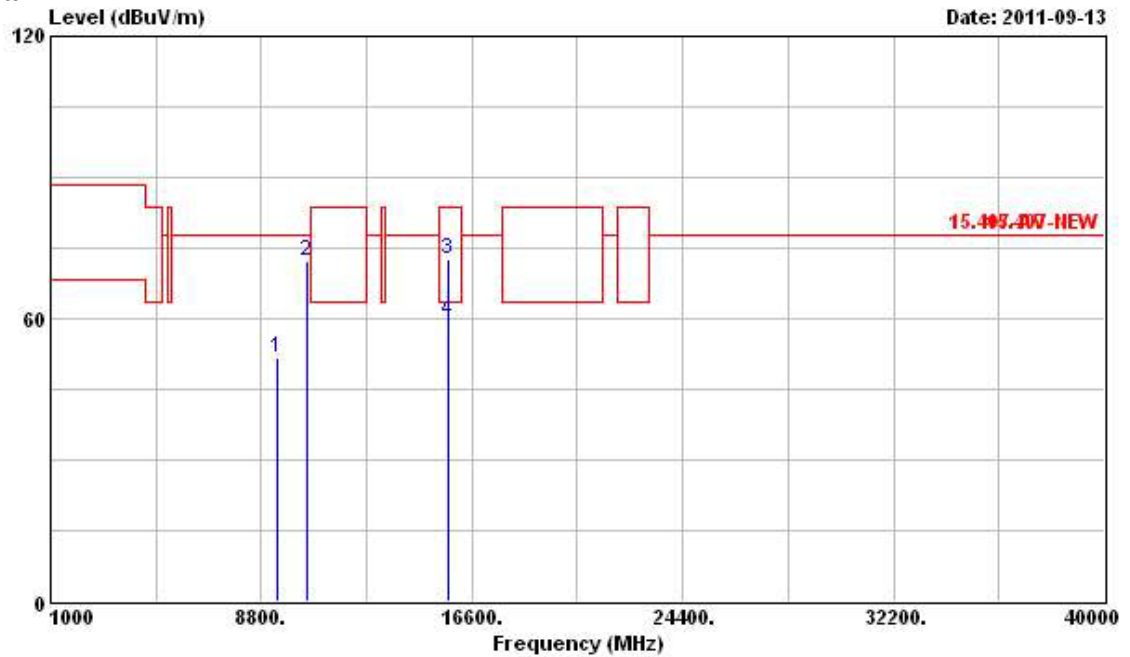
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9198.000	51.88	-25.96	77.84	42.51	38.52	6.22	35.37	PK	---	---
2	@10386.000	72.20	-5.64	77.84	60.62	40.03	6.75	35.20	Peak	---	---
3	15606.000	73.74	-9.80	83.54	57.57	42.82	8.45	35.10	Peak	---	---
4	@15606.000	60.76	-2.78	63.54	44.59	42.82	8.45	35.10	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 48 (20MHz)

Horizontal

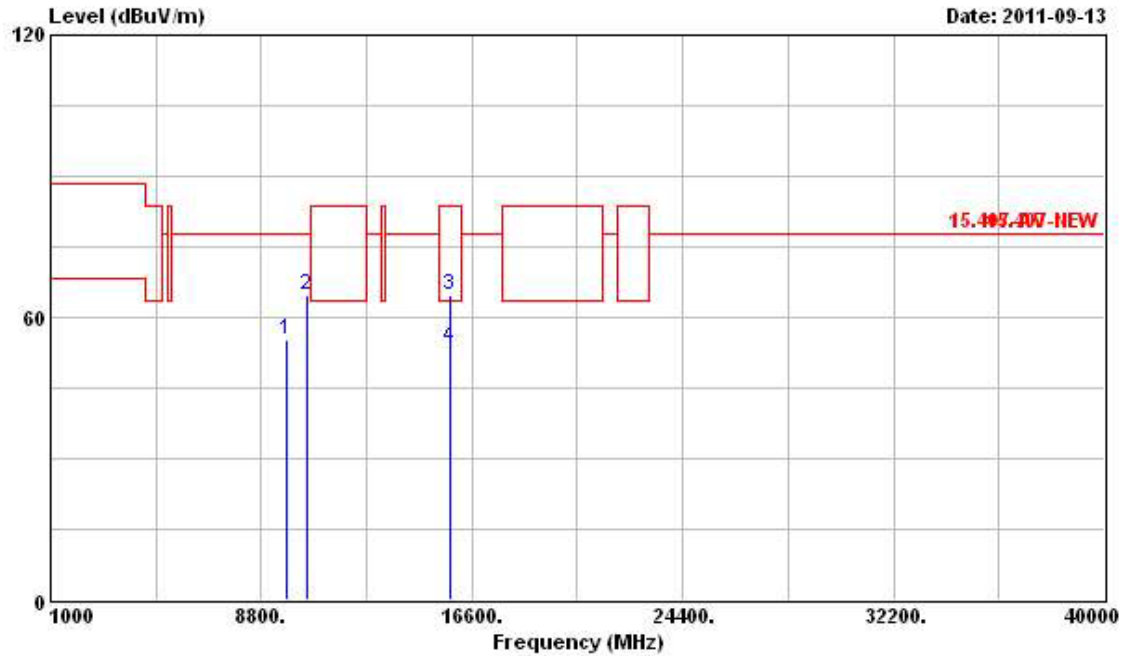
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9315.000	54.59	-23.25	77.84	44.96	38.78	6.26	35.41	PK	---	---
2	10458.000	64.25	-13.59	77.84	52.50	40.07	6.82	35.14	Peak	---	---
3	15723.000	66.02	-17.52	83.54	49.92	42.84	8.46	35.20	Peak	---	---
4	15723.000	54.07	-9.47	63.54	37.97	42.84	8.46	35.20	Average	---	---

Vertical



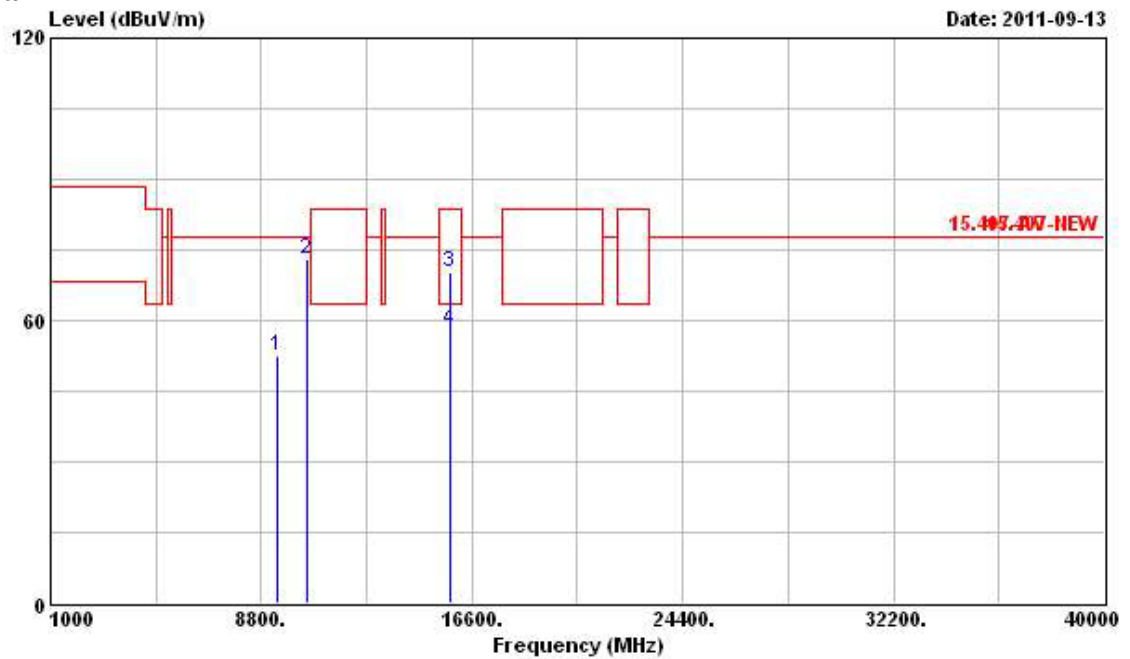
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9423.000	51.88	-25.96	77.84	42.01	39.01	6.30	35.44	PK	---	---
2	@10467.000	72.36	-5.48	77.84	60.60	40.08	6.82	35.14	Peak	---	---
3	15723.000	72.77	-10.77	83.54	56.67	42.84	8.46	35.20	Peak	---	---
4	@15723.000	59.56	-3.98	63.54	43.46	42.84	8.46	35.20	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 52 (20MHz)

Horizontal

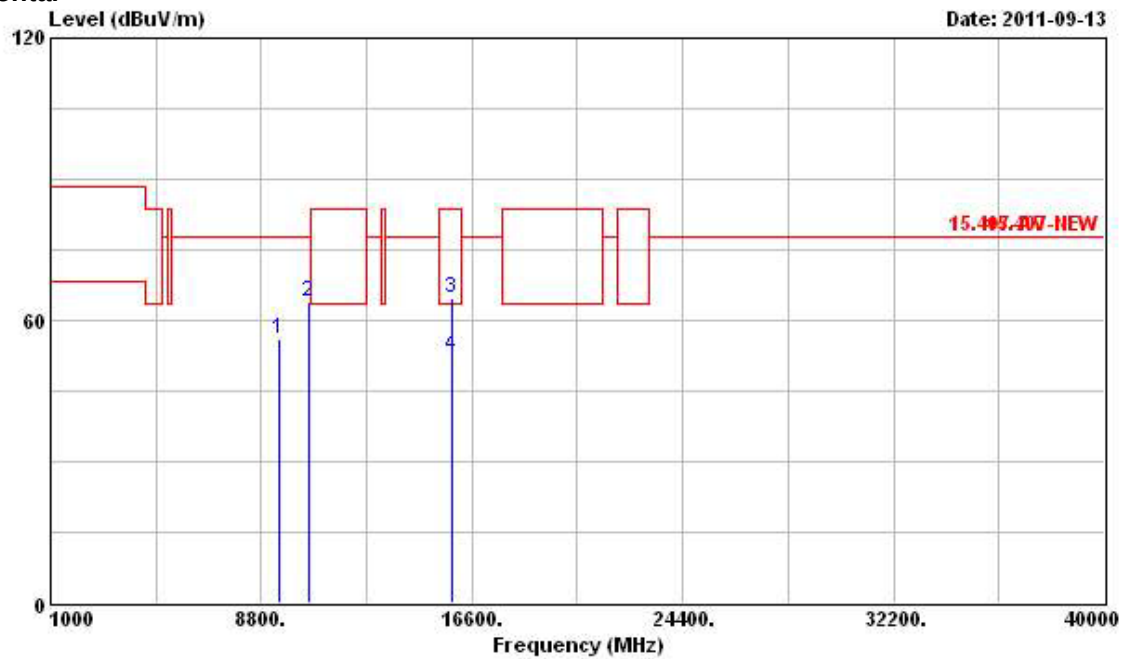
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9702.000	55.23	-22.61	77.84	44.91	39.45	6.35	35.48	Peak	---	---
2	10503.000	64.68	-13.16	77.84	52.83	40.10	6.85	35.10	Peak	---	---
3	15780.000	64.71	-18.83	83.54	48.67	42.86	8.46	35.28	Peak	---	---
4	15780.000	53.54	-10.00	63.54	37.50	42.86	8.46	35.28	Average	---	---

Vertical



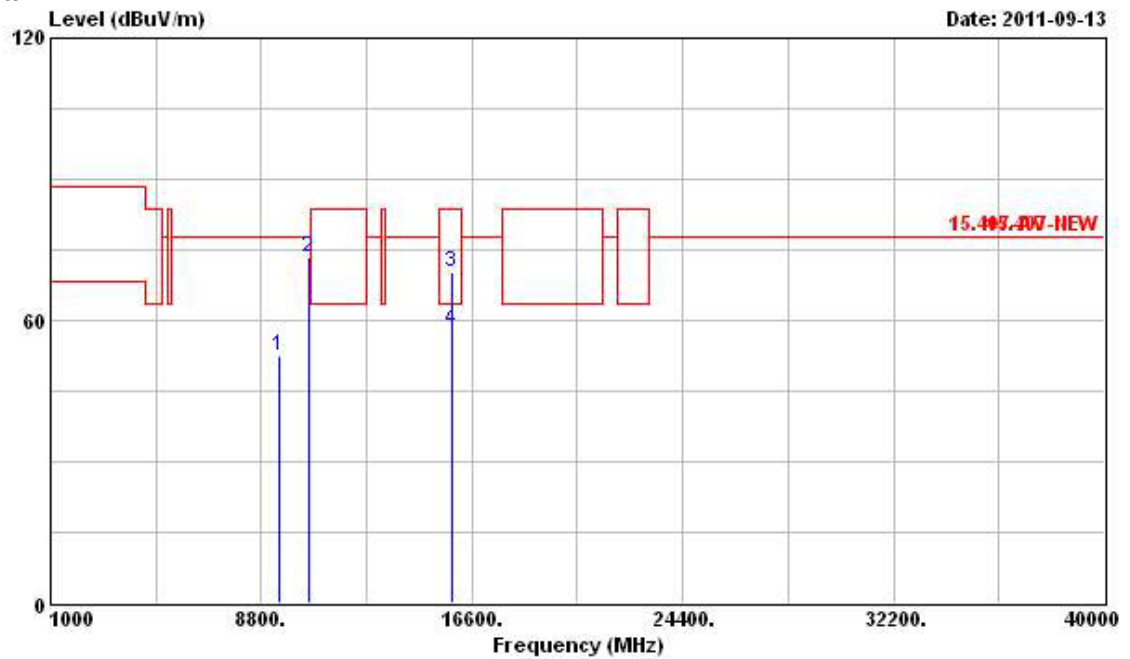
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9423.000	52.31	-25.53	77.84	42.44	39.01	6.30	35.44	PK	---	---
2	@10503.000	73.06	-4.78	77.84	61.21	40.10	6.85	35.10	Peak	---	---
3	15786.000	70.35	-13.19	83.54	54.31	42.86	8.46	35.28	Peak	---	---
4	@15786.000	57.97	-5.57	63.54	41.93	42.86	8.46	35.28	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 56 (20MHz)

Horizontal

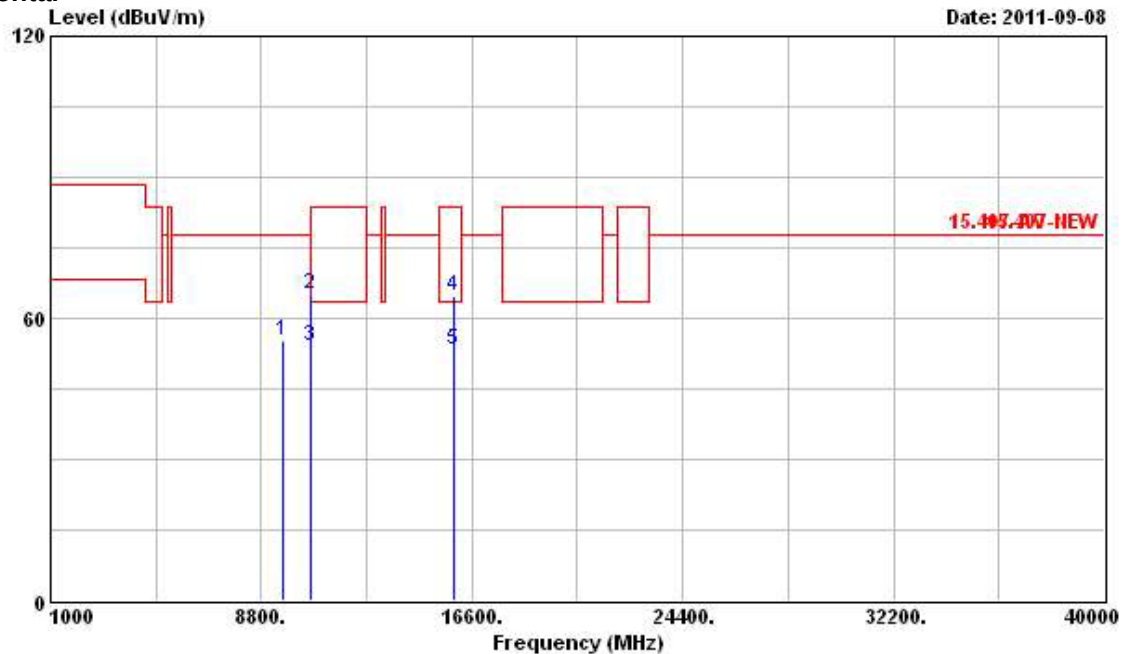
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9486.000	55.89	-21.95	77.84	45.87	39.16	6.32	35.46	PK	---	---
2	10539.000	64.03	-13.81	77.84	52.11	40.12	6.88	35.08	Peak	---	---
3	15831.000	64.55	-18.99	83.54	48.55	42.87	8.46	35.33	Peak	---	---
4	15831.000	52.50	-11.04	63.54	36.50	42.87	8.46	35.33	Average	---	---

Vertical



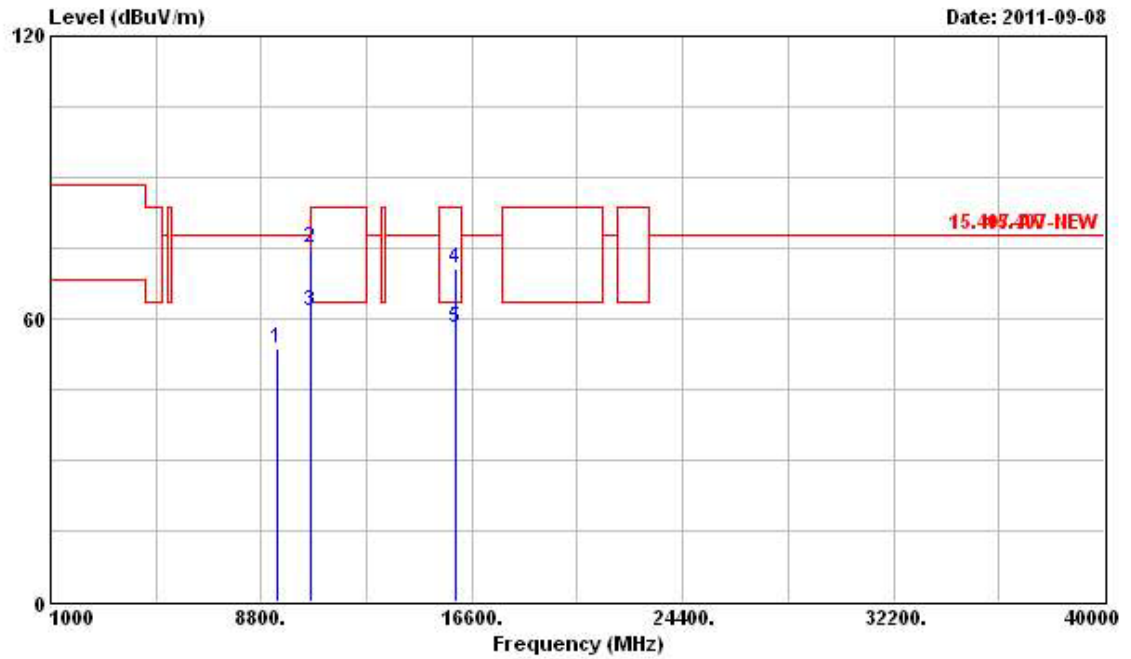
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9486.000	52.57	-25.27	77.84	42.55	39.16	6.32	35.46	PK	---	---
2	@10566.000	73.25	-4.59	77.84	61.29	40.14	6.88	35.06	Peak	---	---
3	15831.000	70.22	-13.32	83.54	54.22	42.87	8.46	35.33	Peak	---	---
4	@15831.000	57.92	-5.62	63.54	41.92	42.87	8.46	35.33	Average	---	---

Final Test Date	Sep. 08, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 64 (20MHz)

Horizontal

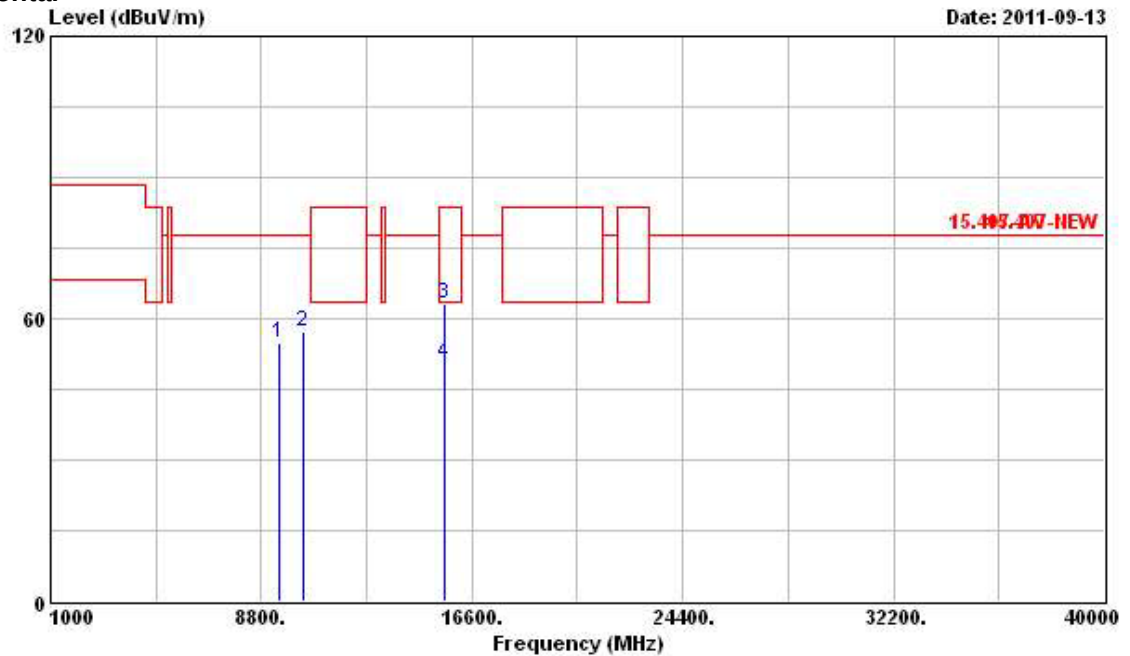
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9630.000	55.18	-22.66	77.84	44.94	39.37	6.34	35.47	Peak	---	---
2	10638.000	65.30	-18.24	83.54	53.19	40.18	6.93	35.00	Peak	---	---
3	10638.000	54.05	-9.49	63.54	41.94	40.18	6.93	35.00	Average	---	---
4	15960.000	64.70	-18.84	83.54	48.79	42.89	8.47	35.45	Peak	---	---
5	15960.000	53.41	-10.13	63.54	37.50	42.89	8.47	35.45	Average	---	---

Vertical



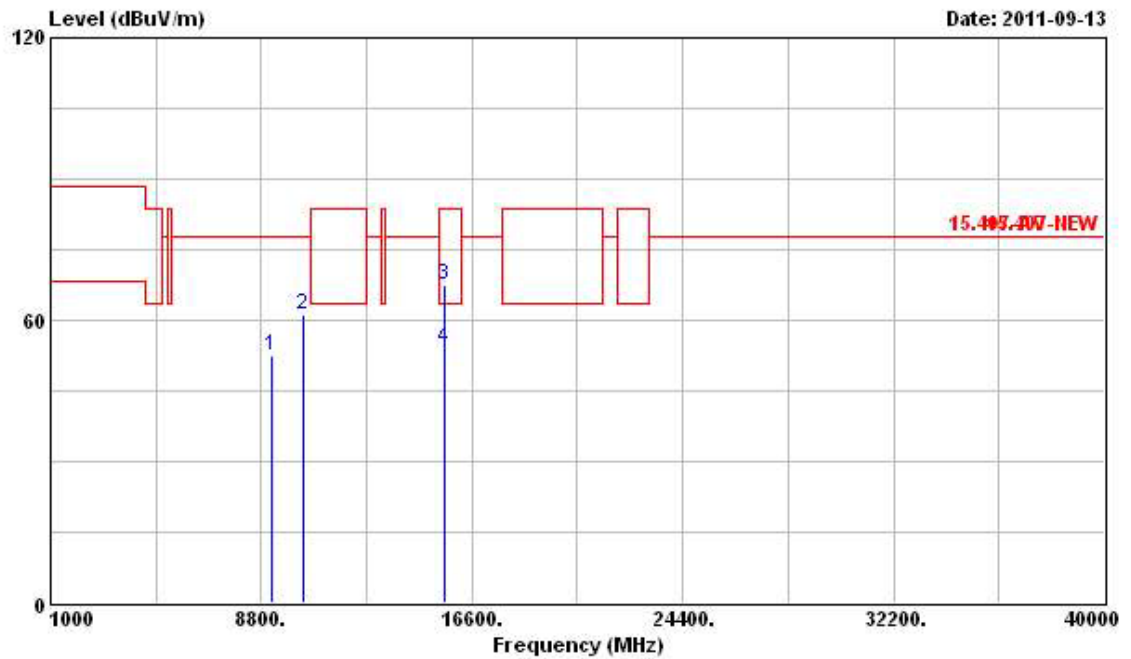
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9423.000	53.62	-24.22	77.84	43.75	39.01	6.30	35.44	PK	---	---
2	10638.000	74.85	-8.69	83.54	62.74	40.18	6.93	35.00	Peak	---	---
3	@10638.000	61.70	-1.84	63.54	49.59	40.18	6.93	35.00	Average	---	---
4	15966.000	70.66	-12.88	83.54	54.75	42.89	8.47	35.45	Peak	---	---
5	@15966.000	58.10	-5.44	63.54	42.19	42.89	8.47	35.45	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 38 (40MHz)

Horizontal

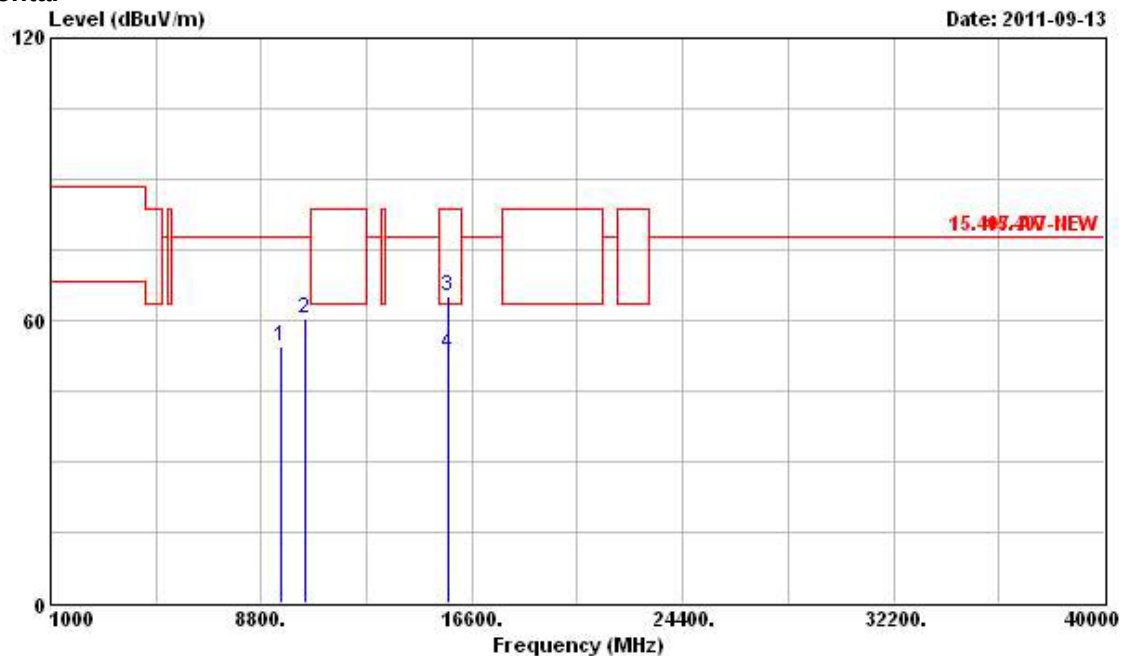
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9486.000	54.86	-22.98	77.84	44.84	39.16	6.32	35.46	PK	---	---
2	10380.000	57.30	-20.54	77.84	45.72	40.03	6.75	35.20	Peak	---	---
3	15570.000	63.32	-20.22	83.54	47.11	42.81	8.45	35.05	Peak	---	---
4	15570.000	50.52	-13.02	63.54	34.31	42.81	8.45	35.05	Average	---	---

Vertical



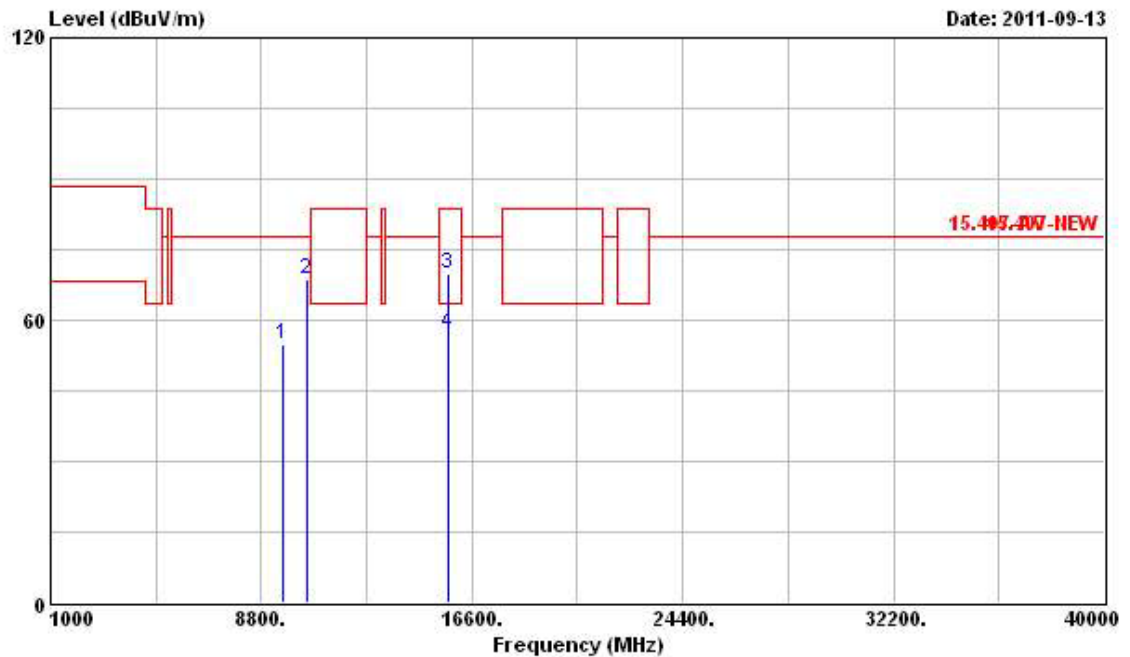
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9171.000	52.52	-25.32	77.84	43.18	38.48	6.22	35.36	PK	---	---
2	10359.000	61.26	-16.58	77.84	49.75	40.02	6.71	35.22	Peak	---	---
3	15570.000	67.64	-15.90	83.54	51.43	42.81	8.45	35.05	Peak	---	---
4	15570.000	54.27	-9.27	63.54	38.06	42.81	8.45	35.05	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 46 (40MHz)

Horizontal

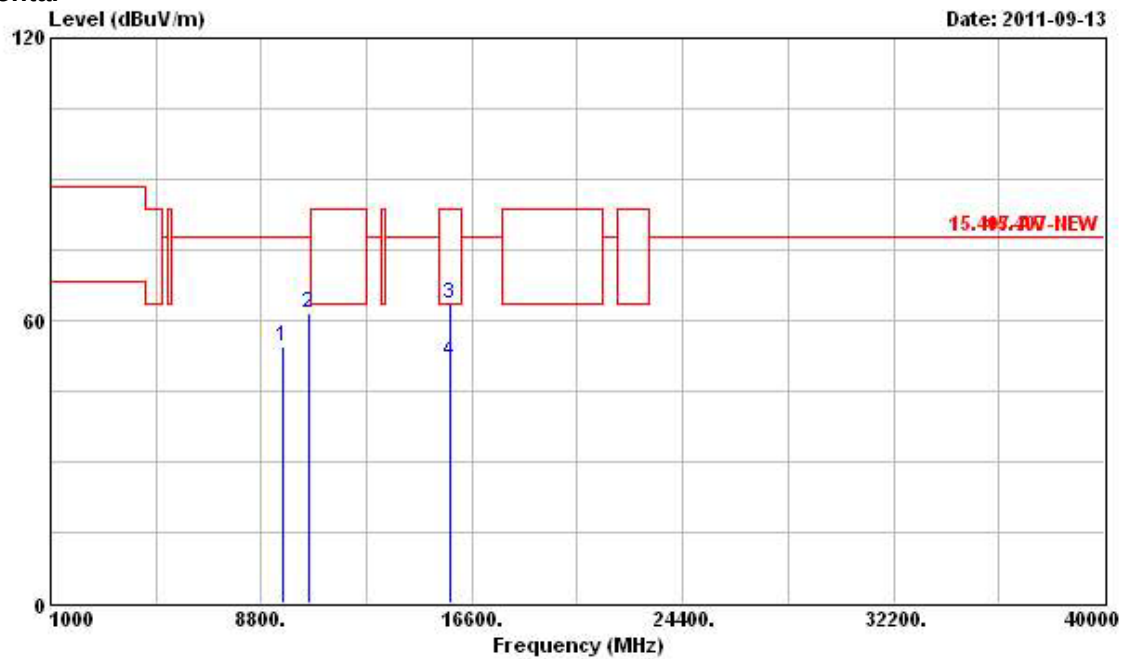
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9558.000	54.67	-23.17	77.84	44.55	39.26	6.33	35.47	Peak	---	---
2	10431.000	60.53	-17.31	77.84	48.85	40.06	6.78	35.16	Peak	---	---
3	15687.000	65.03	-18.51	83.54	48.91	42.84	8.46	35.18	Peak	---	---
4	15687.000	53.00	-10.54	63.54	36.88	42.84	8.46	35.18	Average	---	---

Vertical



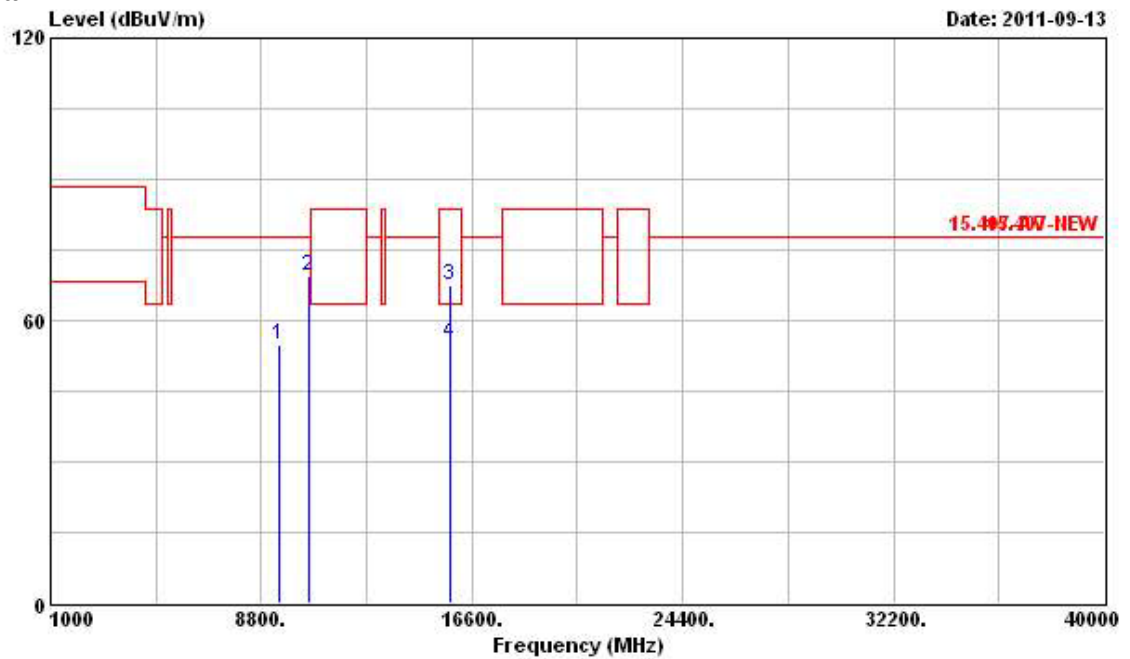
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9567.000	54.99	-22.85	77.84	44.85	39.28	6.33	35.47	Peak	---	---
2	10458.000	68.72	-9.12	77.84	56.97	40.07	6.82	35.14	Peak	---	---
3	15687.000	69.92	-13.62	83.54	53.80	42.84	8.46	35.18	Peak	---	---
4	15687.000	57.31	-6.23	63.54	41.19	42.84	8.46	35.18	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 54 (40MHz)

Horizontal

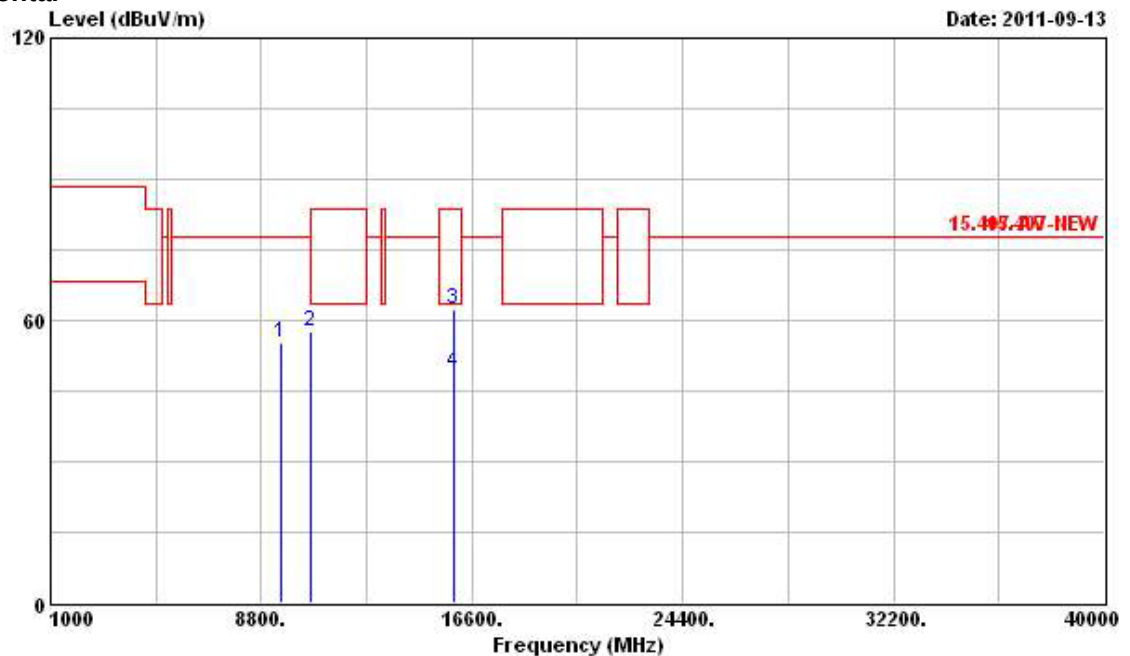
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	9603.000	54.59	-23.25	77.84	44.40	39.32	6.34	35.47 Peak	---	---
2	10530.000	61.50	-16.34	77.84	49.61	40.12	6.85	35.08 Peak	---	---
3	15810.000	63.63	-19.91	83.54	47.61	42.86	8.46	35.30 Peak	---	---
4	15810.000	51.24	-12.30	63.54	35.22	42.86	8.46	35.30 Average	---	---

Vertical



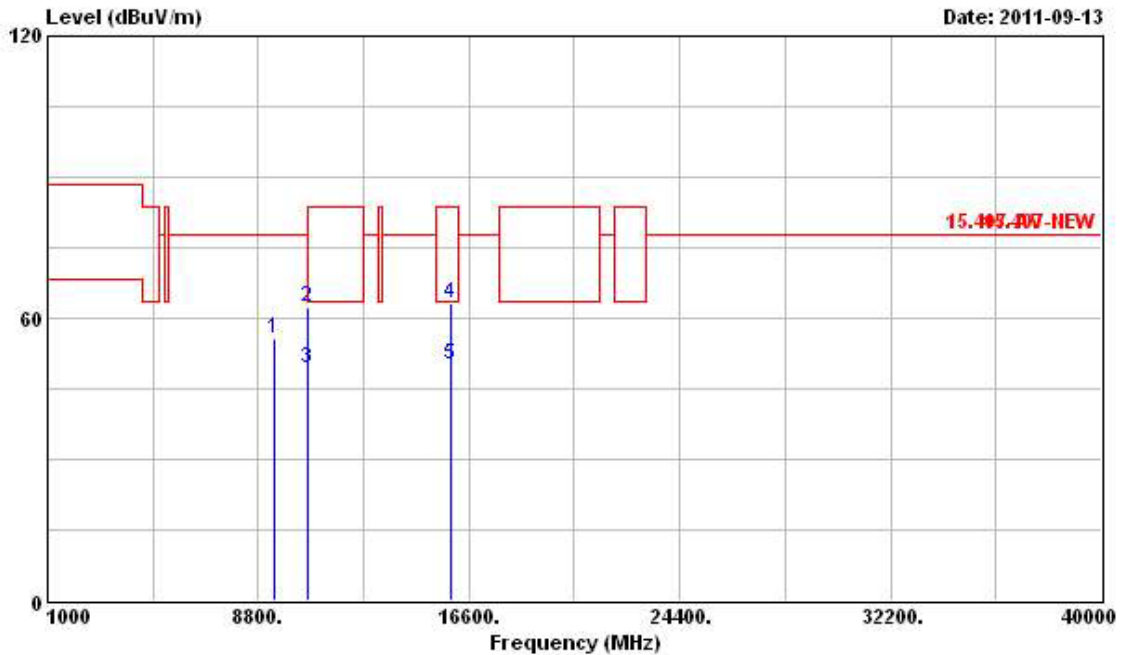
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9486.000	54.72	-23.12	77.84	44.70	39.16	6.32	35.46	PK	---	---
2	10530.000	69.43	-8.41	77.84	57.54	40.12	6.85	35.08	Peak	---	---
3	15795.000	67.37	-16.17	83.54	51.33	42.86	8.46	35.28	Peak	---	---
4	15795.000	55.35	-8.19	63.54	39.31	42.86	8.46	35.28	Average	---	---

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 62 (40MHz)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9495.000	55.31	-22.53	77.84	45.25	39.20	6.32	35.46	PK	---	---
2	10620.000	57.59	-25.95	83.54	45.51	40.17	6.93	35.02	Peak	---	---
3	15930.000	62.49	-21.05	83.54	46.53	42.89	8.47	35.40	Peak	---	---
4	15930.000	49.04	-14.50	63.54	33.08	42.89	8.47	35.40	Average	---	---

Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	9387.000	55.47	-22.37	77.84	45.69	38.93	6.28	35.43	PK	---	---
2	10611.000	62.18	-21.36	83.54	50.14	40.16	6.90	35.02	Peak	---	---
3	10611.000	49.38	-14.16	63.54	37.34	40.16	6.90	35.02	Average	---	---
4	15930.000	63.10	-20.44	83.54	47.14	42.89	8.47	35.40	Peak	---	---
5	15930.000	50.14	-13.40	63.54	34.18	42.89	8.47	35.40	Average	---	---

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

3.7 Band Edge and Fundamental Emissions Measurement

3.7.1 Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

3.7.2 Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1 MHz / 1 MHz for Peak

3.7.3 Test Procedures

1. The test procedure is the same as section 3.6.3; only the frequency range investigated is limited to 100MHz around band edges.
2. In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

3.7.4 Test Setup Layout

This test setup layout is the same as that shown in section 3.6.4.

3.7.5 Test Deviation

There is no deviation with the original standard.

3.7.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.7.7 Test Result of Band Edge and Fundamental Emissions

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11a Ch. 36, 40, 48

Channel 36

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5150.000	61.25	-2.29	63.54	20.26	36.21	4.78	0.00	Average	---	---
2 @	5181.100	103.41			62.35	36.26	4.80	0.00	Average	---	---
1 @	5149.500	79.86	-3.68	83.54	38.87	36.21	4.78	0.00	Peak	---	---
2 @	5183.000	114.34			73.28	36.26	4.80	0.00	Peak	---	---

The item 2 is fundamental emissions.

Channel 40

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5150.000	72.41	-5.43	77.84	31.42	36.21	4.78	0.00	Peak	---	---
2 @	5199.000	111.56			70.47	36.28	4.81	0.00	Peak	---	---
3	5395.800	73.29	-10.25	83.54	31.85	36.56	4.88	0.00	Peak	---	---
1 @	5150.000	58.88	-4.66	63.54	17.89	36.21	4.78	0.00	Average	---	---
2 @	5202.600	101.55			60.46	36.28	4.81	0.00	Average	---	---
3 @	5397.000	59.02	-4.52	63.54	17.58	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 48

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5137.800	73.86	-9.68	83.54	32.89	36.19	4.78	0.00	Peak	---	---
2 @	5238.600	111.68			70.53	36.33	4.82	0.00	Peak	---	---
3	5364.600	73.76	-9.78	83.54	32.38	36.51	4.87	0.00	Peak	---	---
1 @	5150.000	58.61	-4.93	63.54	17.62	36.21	4.78	0.00	Average	---	---
2 @	5238.600	101.06			59.91	36.33	4.82	0.00	Average	---	---
3 @	5394.900	58.90	-4.64	63.54	17.46	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11a Ch. 52, 56, 64

Channel 52

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5143.800	73.34	-10.20	83.54	32.35	36.21	4.78	0.00	Peak	---	---
2 @	5259.000	111.44			70.25	36.37	4.82	0.00	Peak	---	---
3	5396.100	73.85	-9.69	83.54	32.41	36.56	4.88	0.00	Peak	---	---
1 @	5105.400	59.02	-4.52	63.54	18.11	36.14	4.77	0.00	Average	---	---
2 @	5259.000	101.49			60.30	36.37	4.82	0.00	Average	---	---
3 @	5397.000	58.97	-4.57	63.54	17.53	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 56

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5139.300	73.23	-10.31	83.54	32.26	36.19	4.78	0.00	Peak	---	---
2 @	5283.000	111.31			70.07	36.40	4.84	0.00	Peak	---	---
3	5398.500	73.31	-10.23	83.54	31.87	36.56	4.88	0.00	Peak	---	---
1 @	5106.600	58.86	-4.68	63.54	17.93	36.16	4.77	0.00	Average	---	---
2 @	5280.900	100.24			59.00	36.40	4.84	0.00	Average	---	---
3 @	5397.300	59.06	-4.48	63.54	17.62	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 64

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5318.610	103.72			62.43	36.44	4.85	0.00	Average	---	---
2 @	5350.000	62.47	-1.07	63.54	21.11	36.49	4.87	0.00	Average	---	---
1 @	5322.810	114.29			73.00	36.44	4.85	0.00	Peak	---	---
2 @	5350.530	78.11	-5.43	83.54	36.75	36.49	4.87	0.00	Peak	---	---

The item 1 is fundamental emissions.

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 36, 40, 48 (20MHz)

Channel 36

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5150.000	60.12	-3.42	63.54	19.13	36.21	4.78	0.00	Average	---	---
2 @	5181.500	102.66			61.60	36.26	4.80	0.00	Average	---	---
1	5149.900	76.38	-7.16	83.54	35.39	36.21	4.78	0.00	Peak	---	---
2 @	5182.200	113.46			72.40	36.26	4.80	0.00	Peak	---	---

The item 2 is fundamental emissions.

Channel 40

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5114.100	73.40	-10.14	83.54	32.47	36.16	4.77	0.00	Peak	---	---
2 @	5196.900	112.28			71.19	36.28	4.81	0.00	Peak	---	---
3	5379.000	73.00	-10.54	83.54	31.59	36.54	4.87	0.00	Peak	---	---
1 @	5147.700	58.98	-4.56	63.54	17.99	36.21	4.78	0.00	Average	---	---
2 @	5197.800	101.33			60.24	36.28	4.81	0.00	Average	---	---
3 @	5398.200	58.88	-4.66	63.54	17.44	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 48

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5147.700	73.59	-9.95	83.54	32.60	36.21	4.78	0.00	Peak	---	---
2 @	5238.600	112.38			71.23	36.33	4.82	0.00	Peak	---	---
3	5399.400	73.07	-10.47	83.54	31.63	36.56	4.88	0.00	Peak	---	---
1 @	5114.100	58.87	-4.67	63.54	17.94	36.16	4.77	0.00	Average	---	---
2 @	5237.700	101.00			59.85	36.33	4.82	0.00	Average	---	---
3 @	5398.200	59.00	-4.54	63.54	17.56	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 52, 56, 64 (20MHz)

Channel 52

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5136.900	73.20	-10.34	83.54	32.23	36.19	4.78	0.00	Peak	---	---
2 @	5258.100	112.44			71.27	36.35	4.82	0.00	Peak	---	---
3	5368.200	73.19	-10.35	83.54	31.81	36.51	4.87	0.00	Peak	---	---
1 @	5140.200	58.93	-4.61	63.54	17.94	36.21	4.78	0.00	Average	---	---
2 @	5258.100	100.90			59.73	36.35	4.82	0.00	Average	---	---
3 @	5397.000	58.96	-4.58	63.54	17.52	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 56

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5119.800	73.09	-10.45	83.54	32.15	36.16	4.78	0.00	Peak	---	---
2 @	5282.100	111.84			70.60	36.40	4.84	0.00	Peak	---	---
3	5369.400	73.22	-10.32	83.54	31.84	36.51	4.87	0.00	Peak	---	---
1 @	5150.000	58.52	-5.02	63.54	17.53	36.21	4.78	0.00	Average	---	---
2 @	5278.200	100.56			59.32	36.40	4.84	0.00	Average	---	---
3 @	5397.000	59.02	-4.52	63.54	17.58	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 64

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5318.260	104.12			62.83	36.44	4.85	0.00	Average	---	---
2 @	5350.180	62.02	-1.52	63.54	20.66	36.49	4.87	0.00	Average	---	---
1 @	5318.890	115.85			74.56	36.44	4.85	0.00	Peak	---	---
2 @	5350.460	77.72	-5.82	83.54	36.36	36.49	4.87	0.00	Peak	---	---

The item 1 is fundamental emissions.

Final Test Date	Sep. 13, 2011	Test Site No.	03CH02-HY
Temperature	23°C	Humidity	58%
Test Engineer	Chris	Configuration	802.11n Ch. 38, 46, 54, 62 (40MHz)

Channel 38

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5149.900	62.50	-1.04	63.54	21.51	36.21	4.78	0.00	Average	---	---
2 @	5193.100	95.02			53.93	36.28	4.81	0.00	Average	---	---
1 @	5147.900	79.76	-3.78	83.54	38.77	36.21	4.78	0.00	Peak	---	---
2 @	5196.300	106.03			64.94	36.28	4.81	0.00	Peak	---	---

The item 2 is fundamental emissions.

Channel 46

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5150.000	72.59	-5.25	77.84	31.60	36.21	4.78	0.00	Peak	---	---
2 @	5221.500	109.46			68.35	36.30	4.81	0.00	Peak	---	---
3 @	5368.500	73.54	-10.00	83.54	32.16	36.51	4.87	0.00	Peak	---	---
1 @	5126.500	59.04	-4.50	63.54	18.07	36.19	4.78	0.00	Average	---	---
2 @	5232.750	97.81			56.66	36.33	4.82	0.00	Average	---	---
3 @	5362.500	58.80	-4.74	63.54	17.42	36.51	4.87	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 54

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5150.000	72.40	-5.44	77.84	31.41	36.21	4.78	0.00	Peak	---	---
2 @	5259.300	109.17			67.98	36.37	4.82	0.00	Peak	---	---
3 @	5387.400	73.53	-10.01	83.54	32.12	36.54	4.87	0.00	Peak	---	---
1 @	5150.000	58.76	-4.78	63.54	17.77	36.21	4.78	0.00	Average	---	---
2 @	5263.800	96.99			55.80	36.37	4.82	0.00	Average	---	---
3 @	5399.700	59.06	-4.48	63.54	17.62	36.56	4.88	0.00	Average	---	---

The item 2 is fundamental emissions.

Channel 62

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5319.500	95.57			54.28	36.44	4.85	0.00	Average	---	---
2 @	5350.000	62.36	-1.18	63.54	21.00	36.49	4.87	0.00	Average	---	---
1 @	5320.300	107.22			65.93	36.44	4.85	0.00	Peak	---	---
2 @	5353.100	78.36	-5.18	83.54	37.00	36.49	4.87	0.00	Peak	---	---

The item 1 is fundamental emissions.

3.8 Frequency Stability Measurement

3.8.1 Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emissions is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or $\pm 20\text{ppm}$ (IEEE 802.11a specification).

3.8.2 Measuring Instruments and Setting

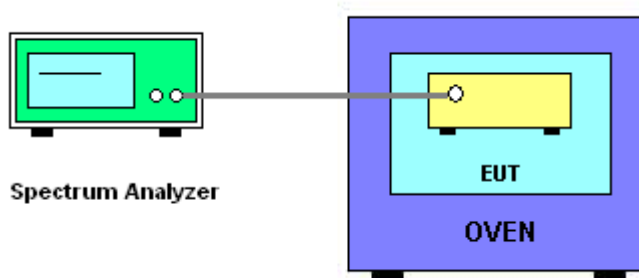
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

3.8.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the limit is less than $\pm 20\text{ppm}$ (IEEE 802.11a specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature rule is $-30^\circ\text{C} \sim 50^\circ\text{C}$.
8. Measuring multiple antennas, the connectors are required to link with Spectrum Analyzer through a combiner.

3.8.4 Test Setup Layout



3.8.5 Test Deviation

There is no deviation with the original standard.

3.8.6 EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

3.8.7 Test Result of Frequency Stability**Voltage vs. Frequency Stability**

Voltage	Measurement Frequency (MHz)
(V)	5320 MHz
126.5	5319.934000
110	5319.935200
93.5	5319.933400
Max. Deviation (MHz)	0.066600
Max. Deviation (ppm)	12.52

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5320 MHz
-30	5320.011000
-20	5320.004800
-10	5319.992200
0	5319.979000
10	5319.956200
20	5319.986800
30	5319.947800
40	5319.934600
50	5319.931600
Max. Deviation (MHz)	0.068400
Max. Deviation (ppm)	12.86

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5310 MHz
126.5	5309.935800
110	5309.936400
93.5	5309.934000
Max. Deviation (MHz)	0.066000
Max. Deviation (ppm)	12.43

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5310 MHz
-30	5310.011600
-20	5310.005400
-10	5309.991600
0	5309.978400
10	5309.956800
20	5309.984400
30	5309.947200
40	5309.934600
50	5309.931600
Max. Deviation (MHz)	0.068400
Max. Deviation (ppm)	12.88

3.9 Antenna Requirements

3.9.1 Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

3.9.2 Antenna Connector Construction

Please refer to section 2.3 in this test report; antenna connector complied with the requirements.

4 LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz – 2.75GHz	Sep. 06, 2011	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Jan. 31, 2011	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 01, 2011	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	Conduction (CO01-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832010001	9kHz – 30MHz	Mar. 02, 2011	Conduction (CO01-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP 30	100023	9 KHz ~ 30 GHz	Mar. 15, 2011	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Jun. 03, 2011	Conducted (TH01-HY)
Temp. and Humidity Chamber	Giant Force	GTH-225-20-S	MAB0103-001	N/A	Oct. 22, 2010	Conducted (TH01-HY)
RF Cable-1m	Jye Bao	RG142	CB034-1m	20 MHz ~ 7 GHz	Dec. 02, 2010	Conducted (TH01-HY)
RF Cable-2m	Jye Bao	RG142	CB035-2m	20 MHz ~ 1 GHz	Dec. 02, 2010	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10 MHz ~ 40 GHz	Jun. 07, 2011	Conducted (TH01-HY)
Power Sensor	Anritsu	MA2411B	0917017	300 MHz ~ 40 GHz	Jan. 06, 2011	Conducted (TH01-HY)
Power Meter	Anritsu	ML2495A	0949003	300 MHz ~ 40 GHz	Jan. 06, 2011	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	Jun. 09, 2011*	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is two year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100305/040	9 kHz ~ 40 GHz	Feb. 11, 2011	Radiation (03CH02-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30 MHz ~ 1 GHz 3m	May 11, 2011	Radiation (03CH02-HY)
Amplifier	Agilent	8447D	2944A11146	100 kHz ~ 1.3 GHz	Jul. 25, 2011	Radiation (03CH02-HY)
Amplifier	Agilent	8449B	3008A02373	1 GHz ~ 26.5 GHz	Jul. 25, 2011	Radiation (03CH02-HY)
Horn Antenna	ETS-LINDGREN	3117	00091920	1 GHz ~ 18 GHz	Nov. 11, 2010	Radiation (03CH02-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz ~ 1 GHz	Mar. 07, 2011	Radiation (03CH02-HY)
RF Cable-high	SUHNER	SUCOFLEX106	03CH02-HY	1 GHz ~ 40 GHz	Mar. 07, 2011	Radiation (03CH02-HY)
Bilog Antenna	SCHAFFNER	CBL61128	2723	30 MHz ~ 2 GHz	Oct. 22, 2010	Radiation (03CH02-HY)
Turn Table	HD	DS 420	420/649/00	0 - 360 degree	N/A	Radiation (03CH02-HY)
Antenna Mast	HD	MA 240	240/559/00	1 m - 4 m	N/A	Radiation (03CH02-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz ~ 30 MHz	Jul. 29, 2010*	Radiation (03CH02-HY)

Note: Calibration Interval of instruments listed above is two year.

5 TEST LOCATION

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 886-2-2601-1640 FAX : 886-2-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 886-2-2631-4739 FAX : 886-2-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 886-2-8227-2020 FAX : 886-2-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 nd Rd., Taipei 114, Taiwan, R.O.C. TEL : 886-2-2794-8886 FAX : 886-2-2794-9777
JHUBEI	ADD : No.8, Lane 728, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

6 TAF CERTIFICATE OF ACCREDITATION



Certificate No. : L1190-110111

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International Inc.**EMC & Wireless Communications Laboratory**

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,
Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	: ISO/IEC 17025:2005
Accreditation Number	: 1190
Originally Accredited	: December 15, 2003
Effective Period	: January 10, 2010 to January 09, 2013
Accredited Scope	: Testing Field, see described in the Appendix
Specific Accreditation Program	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities

Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 11, 2011

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