

FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment : Web Pad
Model No. : DT312XX (X: Blank or A~Z)
Brand Name : DTR
Filing Type : Existing Change
Applicant : DT Research Inc.
6F, NO.1 ,NingPo E. St., Taipei, 100 Taiwan, R.O.C.
FCC ID : YE36200
Manufacturer : DT Research Inc.
6F, NO.1 ,NingPo E. St., Taipei, 100 Taiwan, R.O.C.
Received Date : Aug. 14, 2010
Final Test Date : Aug. 31, 2010

Statement

Test result included is only for the 802.11n 5GHz (5725 ~ 5850MHz) and 2.4GHz of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.



SPORTON International Inc.

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

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History of This Test Report

Original Issue Date: Sep. 07, 2010

Report No.: FR081125AI

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description


CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment : Web Pad
Model No. : DT312XX (X: Blank or A~Z)
Brand Name : DTR
Applicant : DT Research Inc.
6F, NO.1 ,NingPo E. St., Taipei, 100
Taiwan, R.O.C.

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Aug. 14, 2010 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.


Wayne Hsu / Vice Manager

SPORTON International Inc.

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

1 SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	Rule Section	Description of Test	Result	Under Limit
3.1	15.207	AC Power Line Conducted Emissions	Complies	6.47 dB
-	15.247(b)(3)	Maximum Conducted Output Power	-	-
-	15.247(e)	Power Spectral Density	-	-
-	15.247(a)(2)	6dB Spectrum Bandwidth	-	-
3.2	15.247(d)	Radiated Emissions	Complies	0.65 dB
3.3	15.247(d)	Band Edge Emissions	Complies	2.17 dB
3.4	15.203	Antenna Requirements	Complies	-

Note: Standard clause 15.247(b)(3), 15.247(e), 15.247(a)(2) was not performed due to the requirement of manufacturer.

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	±8.5×10 ⁻⁸	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

2 GENERAL INFORMATION

2.1 Product Details

Only the radio detail of IEEE 802.11n is shown in this report. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Items	Description
Modulation	IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Frequency Range	5725 ~ 5850MHz / 2400 ~ 2483.5MHz
Channel Number	5G- 5 for 20MHz bandwidth ; 2 for 40MHz bandwidth 2.4G- 11 for 20MHz bandwidth

2.2 Table for Filed Antenna

Antenna & Bandwidth

Antenna Mode	Single Chain		Two Chain	
Bandwidth Mode	20 MHz	40 MHz	20 MHz	40 MHz
802.11b	V	X	X	X
802.11g	V	X	X	X
802.11n(2.4GHz)	V	V	V	V
802.11a (5725~5850MHzMHz)	V	X	X	X
802.11n (5725~5850MHzMHz)	V	V	V	V

Ant.	Antenna Type	Connector	Gain (dBi)		Remark
			2.4G	5G	
A	PIFA Antenna (Main)	U.FL	0.62	2.58	TX / RX
B	PIFA Antenna (Aux)	U.FL	-1.18	2.78	TX / RX

Antenna: 2T2R Spatial Multiplexing MIMO configuration. IEEE 802.11n used two antennas are for signal transmitting and receiving.

2.3 Table for Carrier Frequencies

Frequency Allocation

For 802.11n (20MHz): Use Channel 149, 153, 157, 161, and 165.

For 802.11n (40MHz): Use Channel 151, 159.

Frequency Band	Channel No.	Frequency
5725~5850 MHz	149	5745 MHz
	151	5755 MHz
	153	5765 MHz
	157	5785 MHz
	159	5795 MHz
	161	5805 MHz
	165	5825 MHz

Frequency Allocation

For 802.11n (20MHz): Use Channel 1~Channel 11.

For 802.11n (40MHz): Use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

2.4 Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on the entire possible Configuration for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Channel	Antenna
AC Power Line Conducted Emissions	Normal Mode	-	-
Radiated Emissions Below 1GHz	Normal Mode	-	-
Radiated Emissions Above 1GHz Band Edge Emissions	Data Rate HT 0 (20MHz)	5G-149/157/165 2.4G-1/6/11	A/B; A+B
	Data Rate HT 0 (40MHz)	5G-151/159 2.4G-3/6/9	A/B; A+B
	Data Rate HT 8 (20MHz)	5G-149/157/165 2.4G-1/6/11	A/B; A+B
	Data Rate HT 8 (40MHz)	5G-151/159 2.4G-3/6/9	A/B; A+B

2.5 Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.
CO04-HY	Conduction	Hwa Ya	643075	IC 4086C
03CH03-HY	SAC	Hwa Ya	643075	IC 4086B

Semi Anechoic Chamber (SAC).

2.6 Table for Supporting Units

Support Unit	Brand	Model	FCC ID	Remark
Headset	HAWK	03-MSB301	N/A	Conducted
USB HDD*2	WD	WD6400H1Q-00	DoC	
AP Router (Remote Workstation)	ZOTECH	WR110B	N/A	

Note: The EUT was tested alone only for radiated emissions tested.

2.7 EUT Operation during Test

Conducted Emissions:

An executive program, "EMCTEST.EXE" under WIN XP, which generates a complete line of continuously repeating "H" pattern was used as the test software.

- The program was executed as follows :
- Turn on the power of all equipment.
- The EUT reads the "WINTHRAX.EXE" test program from the hard disk drive and runs it.
- The EUT sends "H" messages to the panel and the displays "H" patterns on the screen.
- The EUT sends "H" messages to the internal hard disk, and the hard disk reads and writes the message.
- Repeat the steps from d to e.

At the same time, the following programs were executed:

- Executed "Winthrax.exe" to read/write data from internal Hard Disk and USB HDD.
- Executed "Media player.exe" to play audio and video.
- Executed "Wireless" to link with the remote workstation to receive and transmit data by AP.

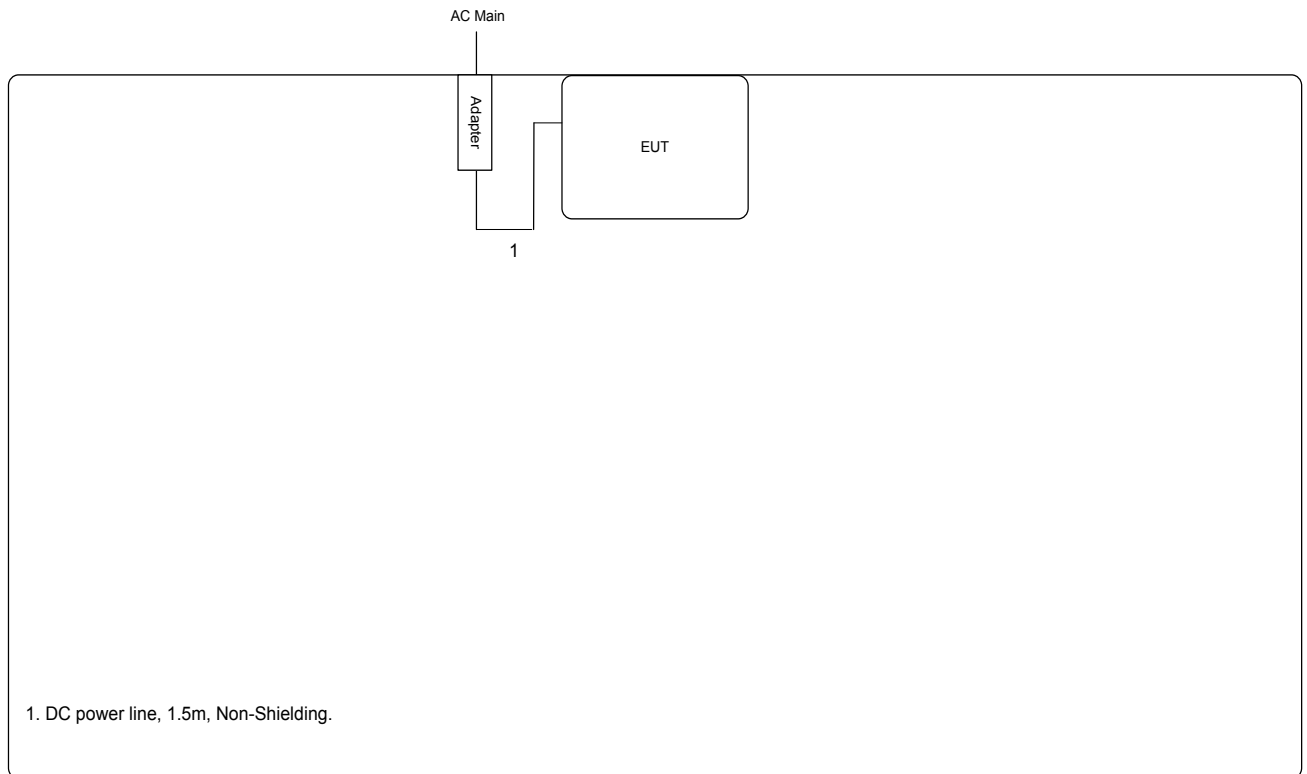
Radiated Emissions:

- Executed "CRTU" to keep transmitting signals at fixed frequency.

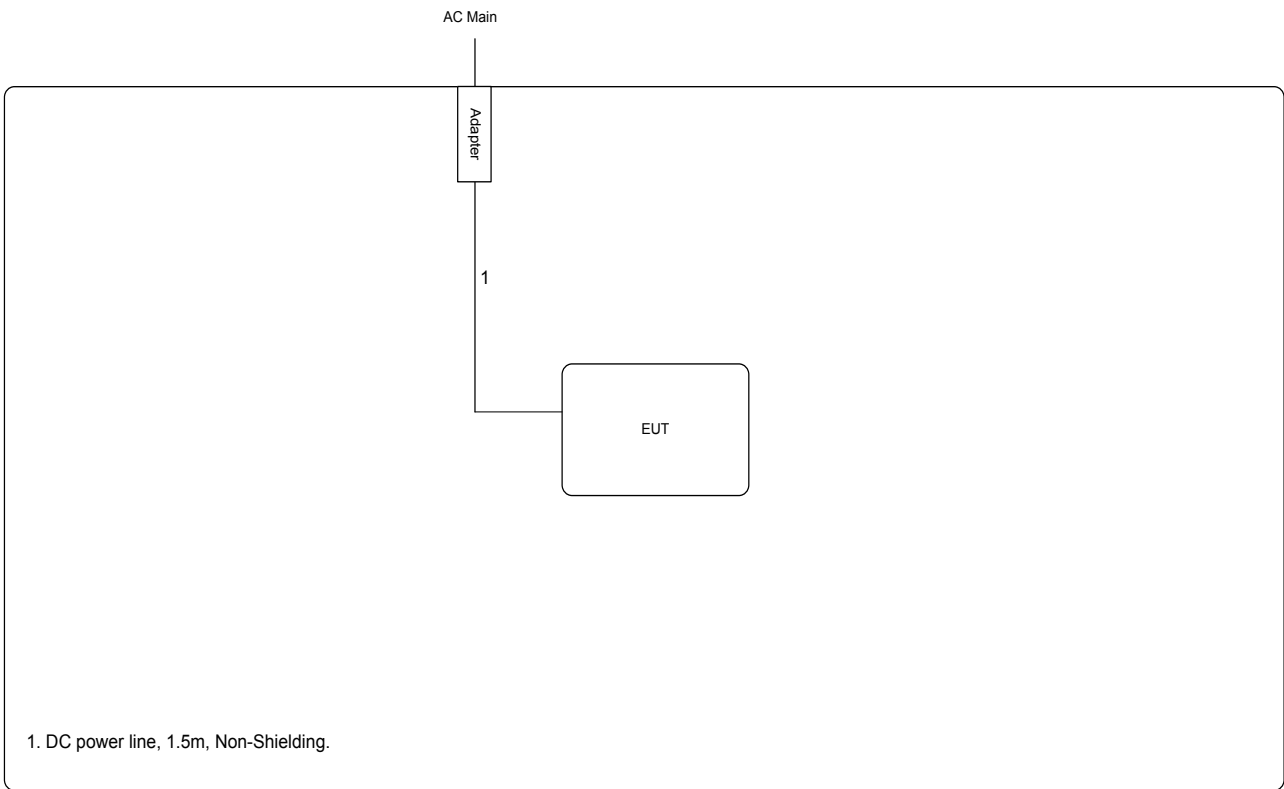
2.8 Test Configuration

2.8.1 Radiation Emissions Test Configuration

For radiated emissions 9kHz~1GHz



For radiated emissions above 1GHz



3 TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit

For this product which is designed to be connected to the 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 below limits table.

Class B

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

3.1.2 Measuring Instruments and Setting

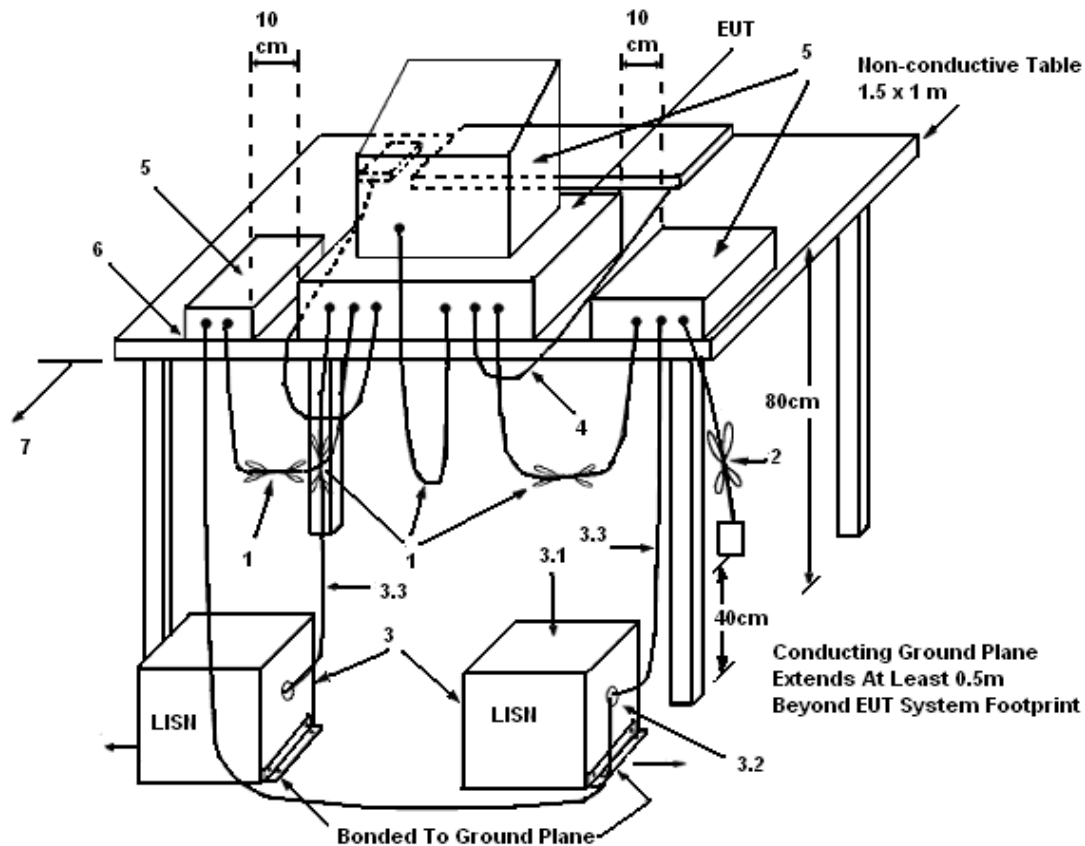
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.1.3 Test Procedures

1. The EUT warm up about 15 minutes then start test.
2. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
5. The frequency range from 150 KHz to 30 MHz was searched.
6. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
7. The measurement has to be done between each power line and ground at the power terminal.

3.1.4 Test Setup Layout



LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω . LISN can be placed on top of, or immediately beneath, reference ground plane.
- (3.1) All other equipment powered from additional LISN(s).
- (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
- (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5 Test Deviation

There is no deviation with the original standard.

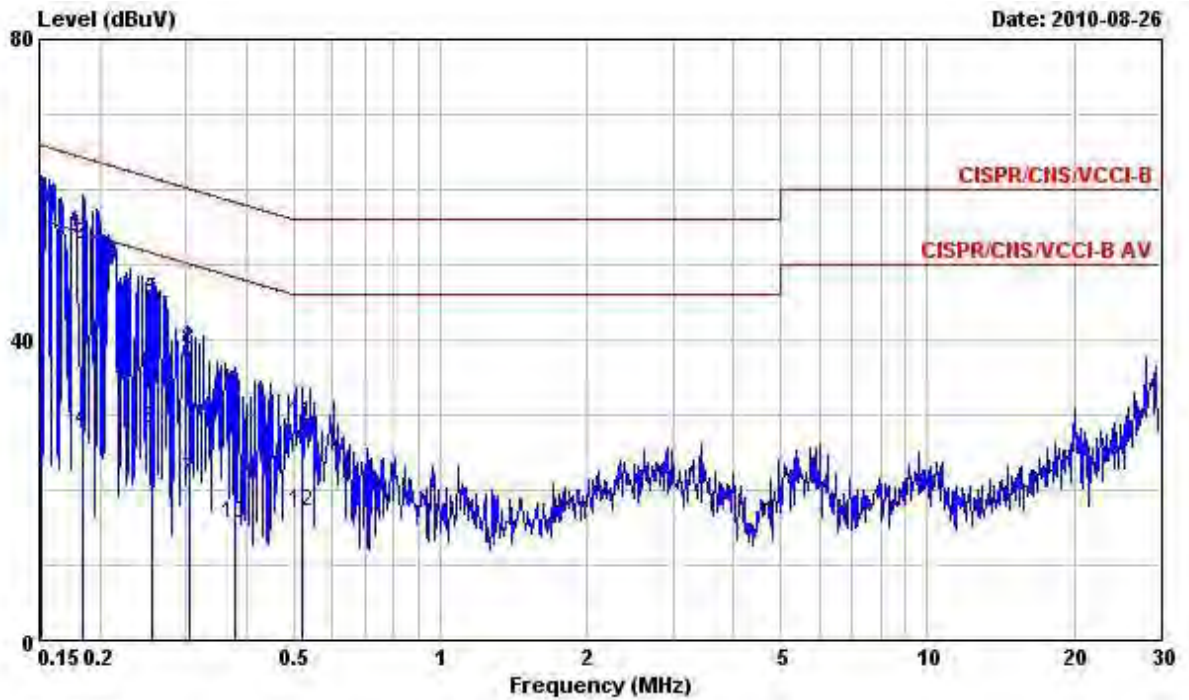
3.1.6 EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

3.1.7 Results of AC Power Line Conducted Emissions Measurement

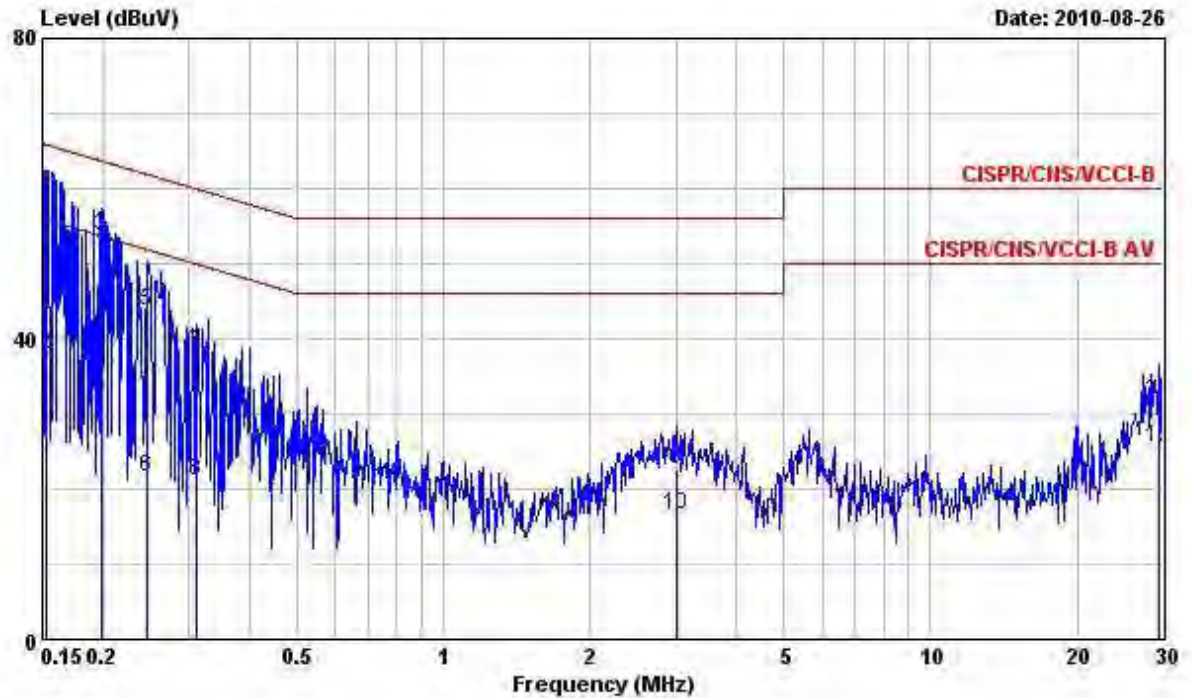
Final Test Date	Aug. 26, 2010	Test Site No.	CO04-HY
Temperature	25°C	Humidity	55%
Test Engineer	Chris	Configuration	Normal Mode

Line



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1515980	59.14	-6.77	65.91	58.60	0.30	0.24	QP
2	0.1515980	38.75	-17.16	55.91	38.21	0.30	0.24	Average
3	0.1844300	52.63	-11.65	64.28	52.24	0.30	0.09	QP
4	0.1844300	27.81	-26.47	54.28	27.42	0.30	0.09	Average
5	0.2561510	45.19	-16.37	61.56	44.85	0.30	0.04	QP
6	0.2561510	28.12	-23.44	51.56	27.78	0.30	0.04	Average
7	0.3050910	21.29	-28.81	50.10	20.94	0.30	0.05	Average
8	0.3050910	38.73	-21.37	60.10	38.38	0.30	0.05	QP
9	0.3791160	33.00	-25.30	58.30	32.63	0.30	0.07	QP
10	0.3791160	15.42	-32.88	48.30	15.05	0.30	0.07	Average
11	0.5182420	28.89	-27.11	56.00	28.52	0.29	0.08	QP
12	0.5182420	17.17	-28.83	46.00	16.80	0.29	0.08	Average

Neutral



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1524030	59.40	-6.47	65.87	58.90	0.27	0.23	QP
2	0.1524030	38.01	-17.86	55.87	37.51	0.27	0.23	Average
3	0.1986310	53.81	-9.86	63.67	53.53	0.25	0.03	QP
4	0.1986310	32.42	-21.25	53.67	32.14	0.25	0.03	Average
5	0.2468240	43.64	-18.22	61.86	43.35	0.25	0.04	QP
6	0.2468240	21.45	-30.41	51.86	21.16	0.25	0.04	Average
7	0.3099790	38.14	-21.83	59.97	37.84	0.24	0.06	QP
8	0.3099790	21.01	-28.96	49.97	20.71	0.24	0.06	Average
9	3.010	22.72	-33.28	56.00	22.05	0.28	0.39	QP
10	3.010	16.63	-29.37	46.00	15.96	0.28	0.39	Average
11	29.370	31.79	-28.21	60.00	30.53	0.56	0.70	QP
12	29.370	25.51	-24.49	50.00	24.25	0.56	0.70	Average

Note:

Level = Read Level + LISN Factor + Cable Loss.

3.2 Radiated Emissions Measurement

3.2.1 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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

3.2.2 Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for peak

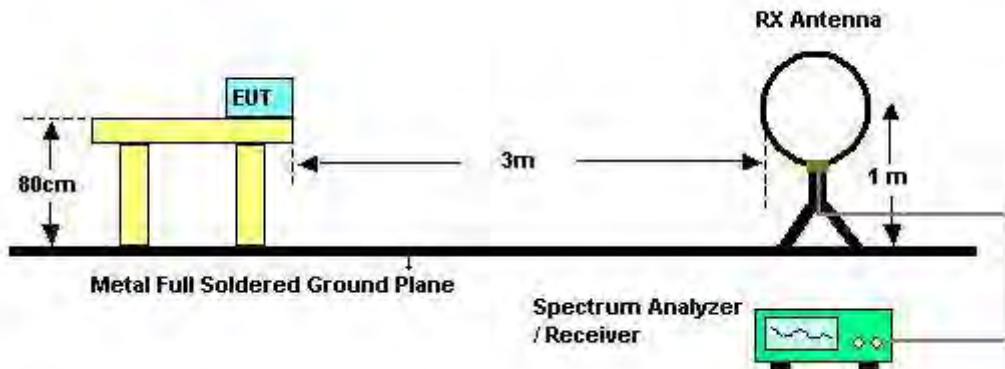
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.3 Test Procedures

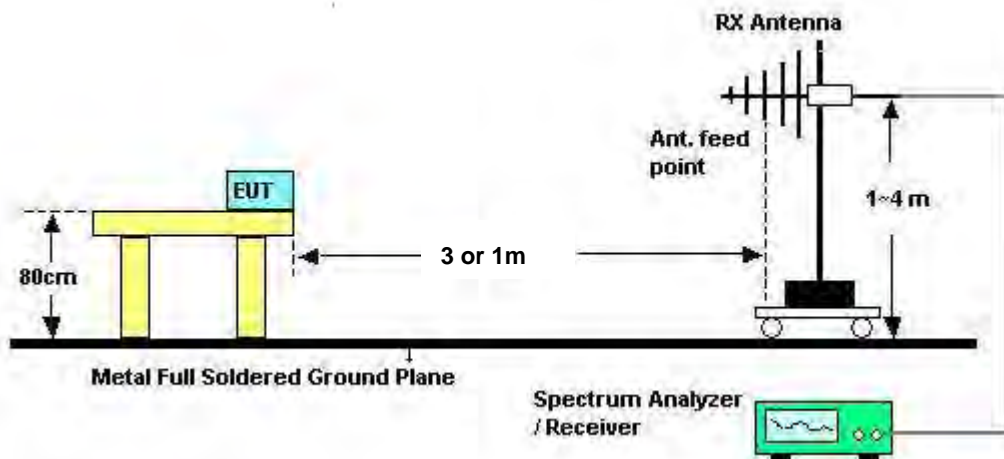
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

3.2.4 Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB);

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

3.2.5 Test Deviation

There is no deviation with the original standard.

3.2.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.2.7 Results of Radiated Emissions (9kHz~30MHz)

Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8℃	Humidity	56%
Test Engineer	Daniel		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

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

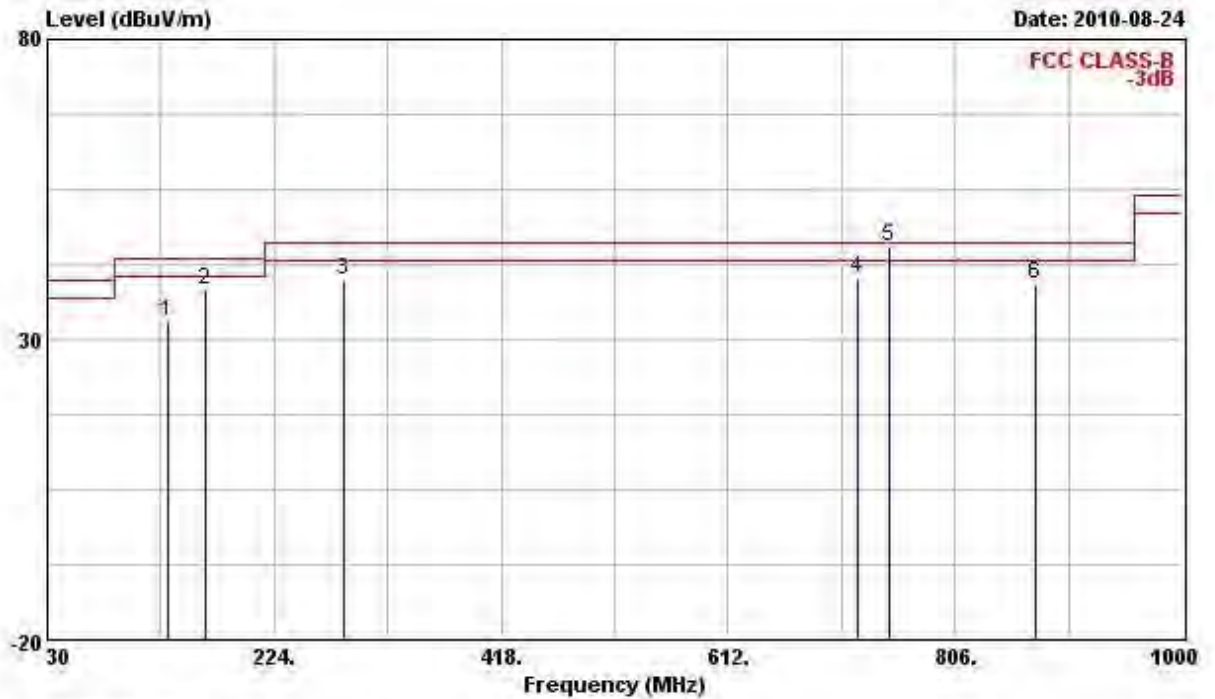
Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

3.2.8 Results of Radiated Emissions (30MHz~1GHz)

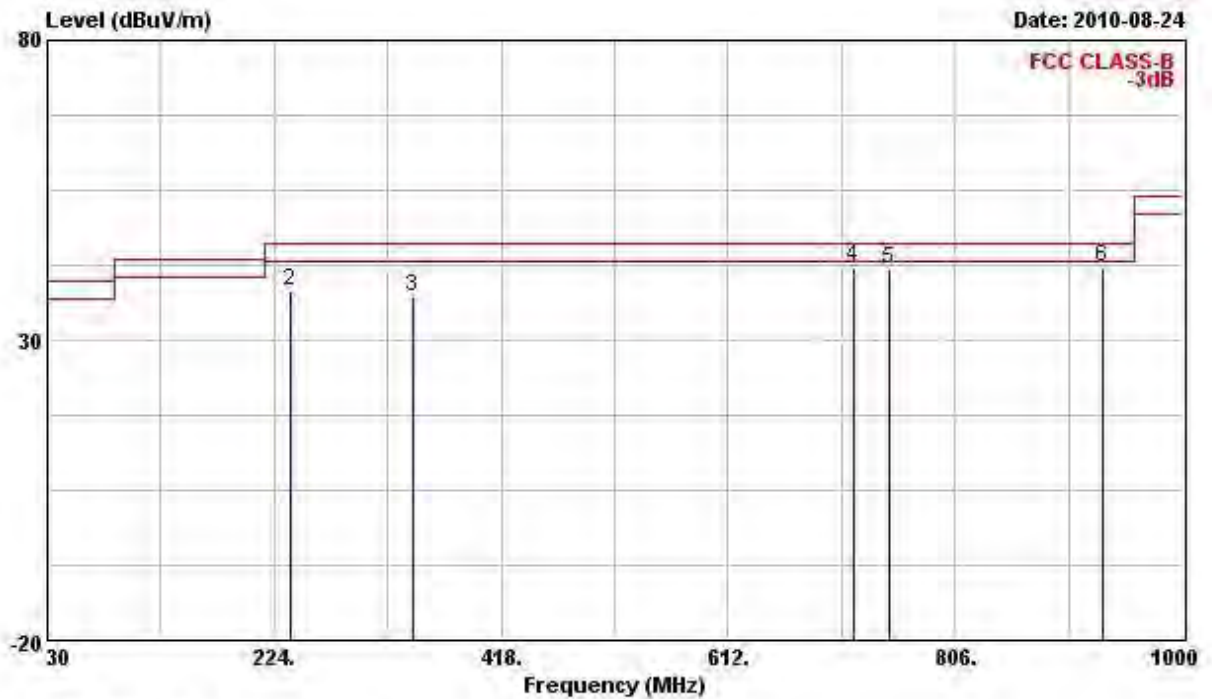
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8℃	Humidity	56%
Test Engineer	Daniel	Configurations	Normal Mode

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	132.820	32.85	-10.65	43.50	46.51	12.10	1.99	27.74	---	---	Peak
2	164.830	38.10	-5.40	43.50	53.97	9.89	2.15	27.92	---	---	QP
3	284.140	39.92	-6.08	46.00	51.96	13.30	2.95	28.30	---	---	Peak
4	723.550	40.10	-5.90	46.00	44.71	20.31	4.78	29.70	---	---	Peak
5 B	749.740	45.35	-0.65	46.00	49.77	20.71	4.91	30.03	---	---	QP
6	874.870	39.08	-6.92	46.00	41.96	20.94	5.41	29.23	---	---	Peak

Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	30.000	38.79	-1.21	40.00	48.00	18.48	0.73	28.42	---	---	QP
2	238.550	38.35	-7.65	46.00	52.11	11.44	2.66	27.87	---	---	QP
3	343.310	37.35	-8.65	46.00	47.29	14.82	3.27	28.03	---	---	Peak
4	719.670	42.25	-3.75	46.00	46.88	20.25	4.76	29.64	---	---	Peak
5	749.740	41.70	-4.30	46.00	46.12	20.71	4.91	30.03	---	---	Peak
6	933.070	42.06	-3.94	46.00	44.74	21.23	5.77	29.67	---	---	Peak

Note:

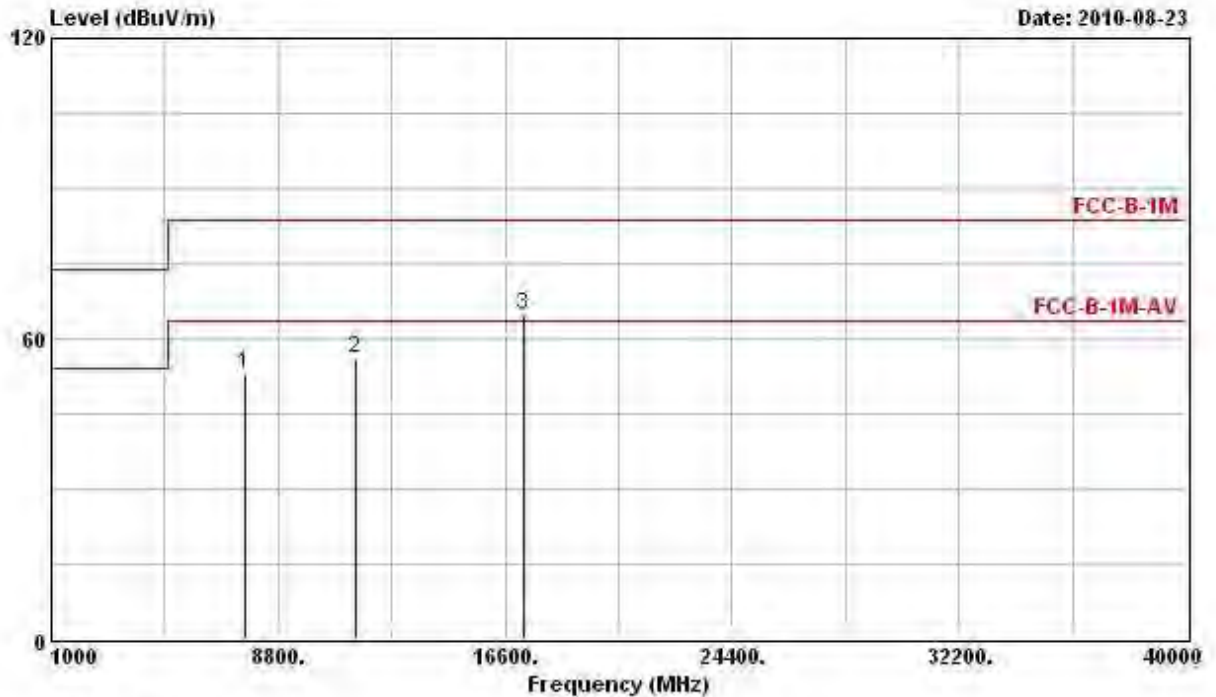
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

3.2.9 Results for Radiated Emissions (1GHz~10th Harmonic)

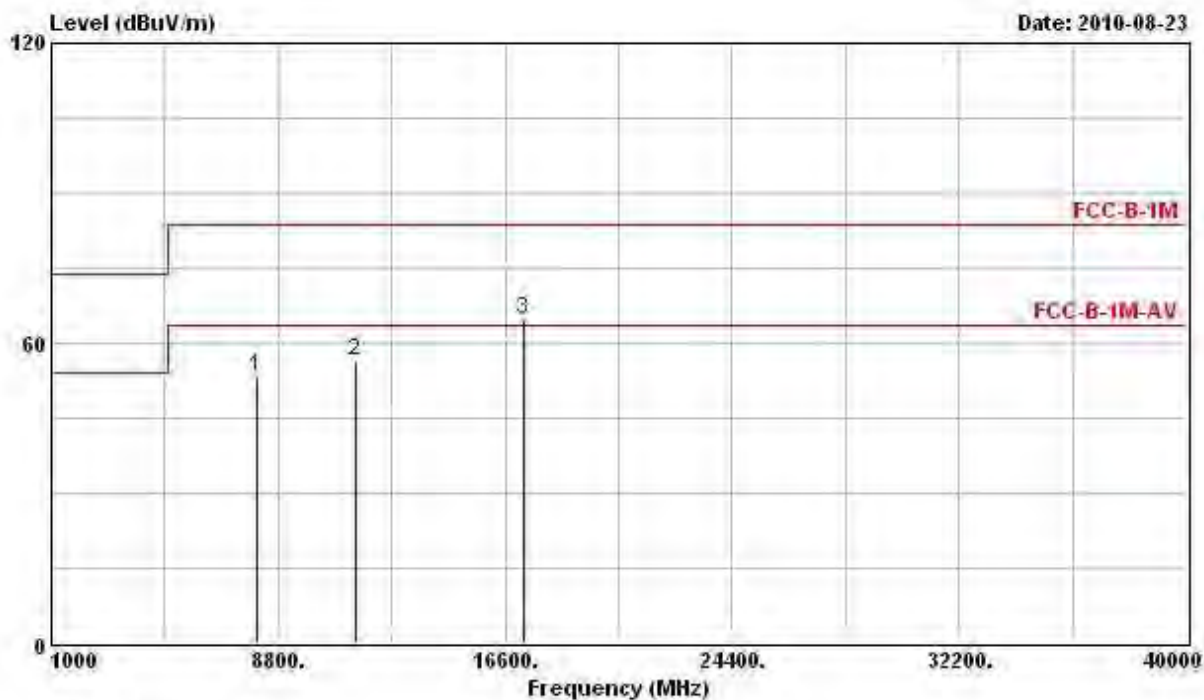
Final Test Date	Aug. 23, 2010	Test Site No.	03CH03-HY
Temperature	26.8℃	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 149 (20MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7660.000	52.88	-10.66	63.54	43.64	37.20	5.02	32.99	---	---	PK
2	11490.000	55.92	-7.62	63.54	42.64	39.88	5.99	32.58	---	---	PK
3	17235.000	64.78			45.61	43.49	7.38	31.70	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

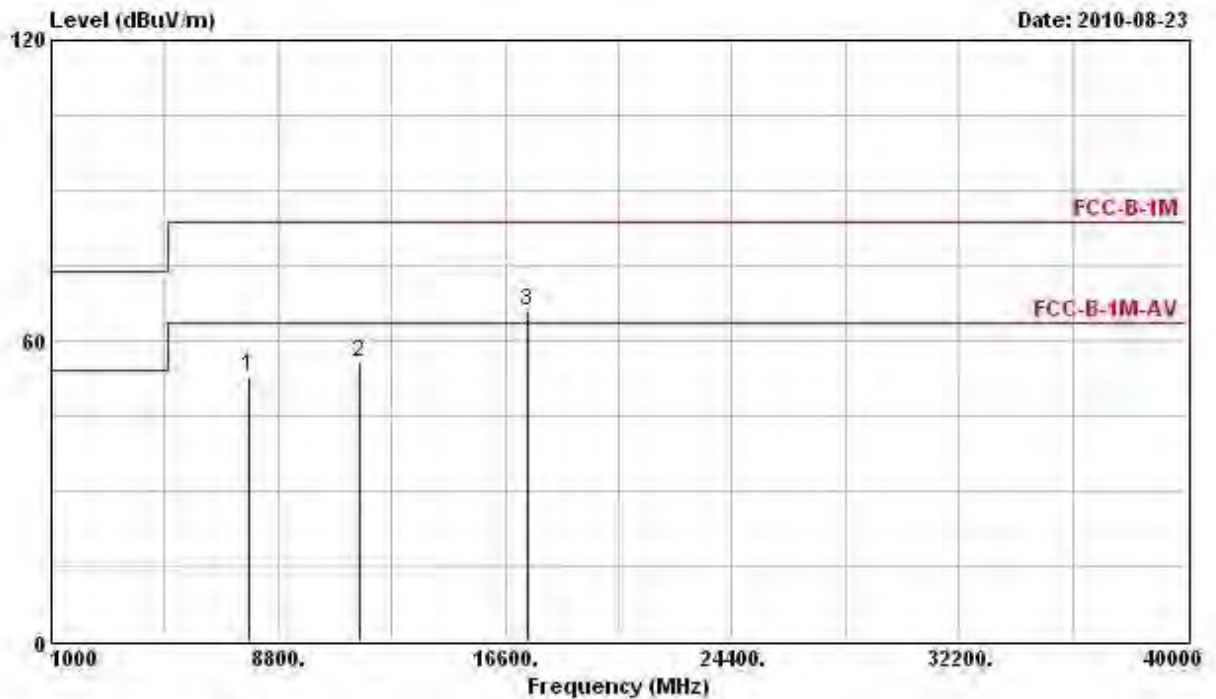
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8060.000	53.13	-10.41	63.54	43.21	37.66	5.31	33.05	---	---	PK
2	11494.000	56.33	-7.21	63.54	43.04	39.88	5.99	32.58	---	---	PK
3	17237.000	64.77			45.60	43.49	7.38	31.70	---	---	PEAK

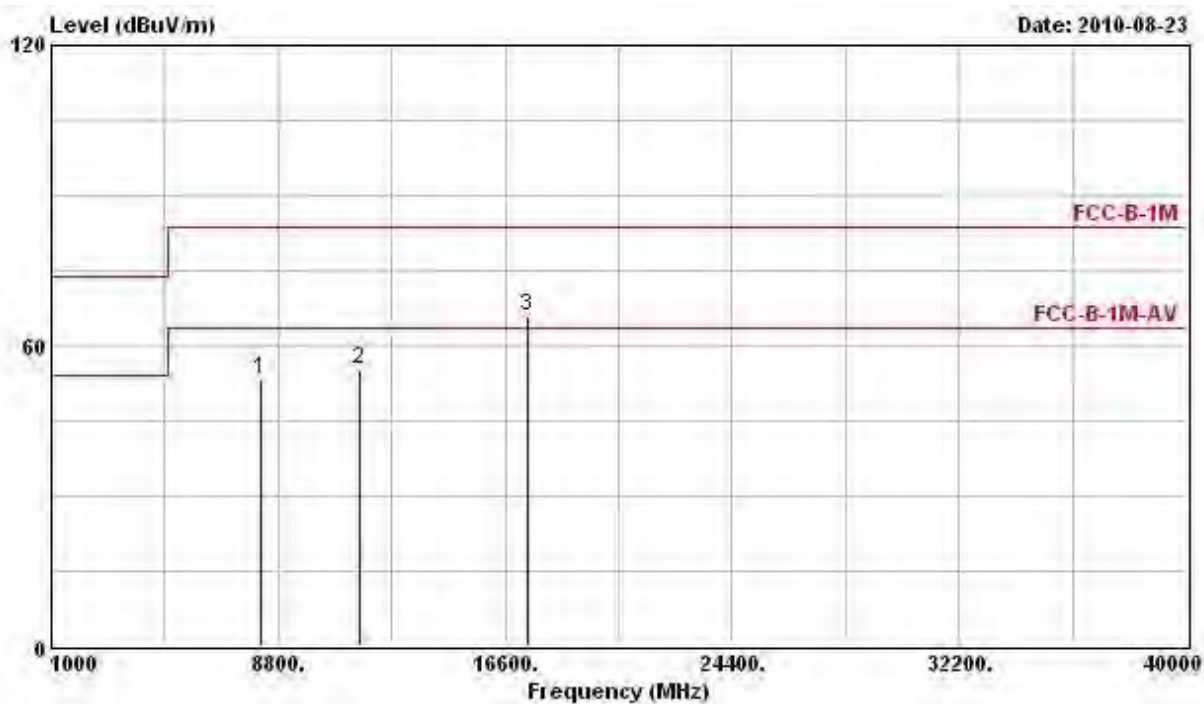
Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 23, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 157 (20MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7820.000	53.06	-----	-----	43.55	37.38	5.14	33.01	---	---	PK
2	11566.000	55.52	-8.02	63.54	42.24	39.83	6.04	32.59	---	---	PK
3	17357.000	65.82			45.59	44.59	7.36	31.73	---	---	PERK

Note: The items 1 and 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

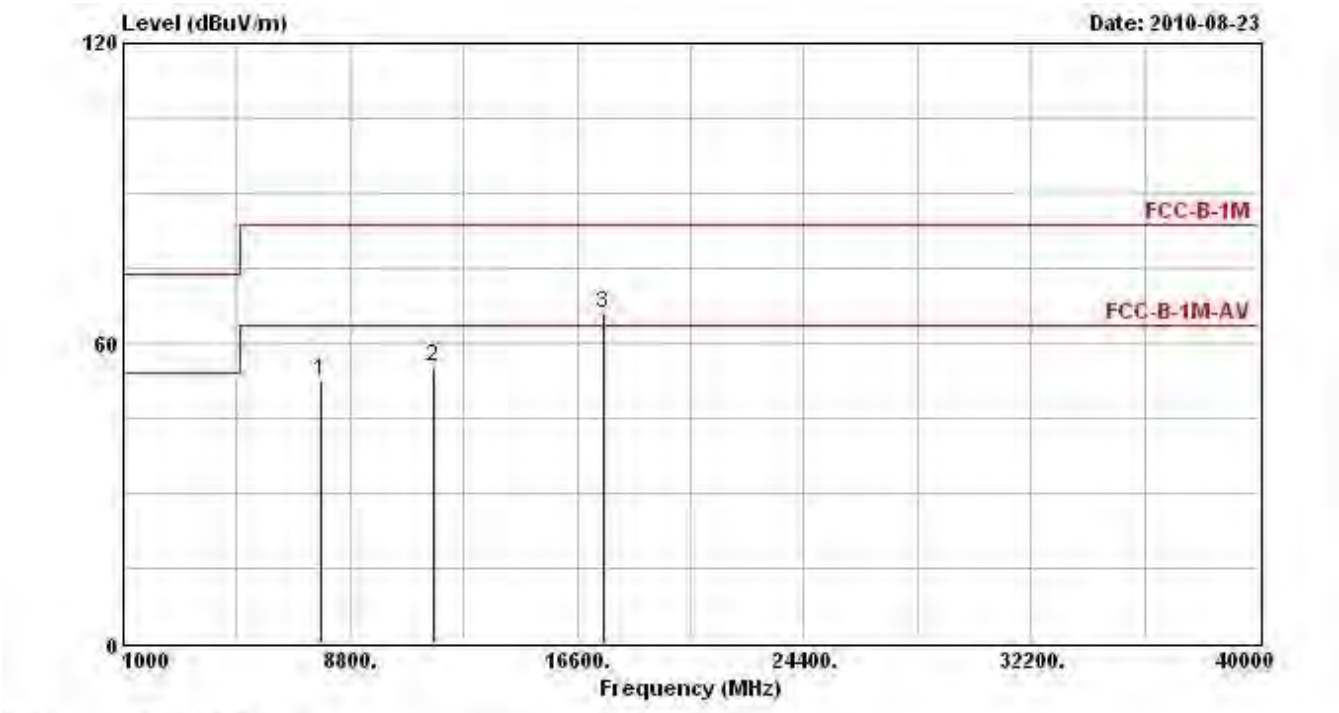
Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	8210.000	53.42	-10.12	63.54	43.29	37.85	5.33	33.05	PK
2	11570.000	55.30	-8.24	63.54	42.01	39.83	6.04	32.59	PK
3	17357.000	65.86			45.64	44.59	7.36	31.73	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

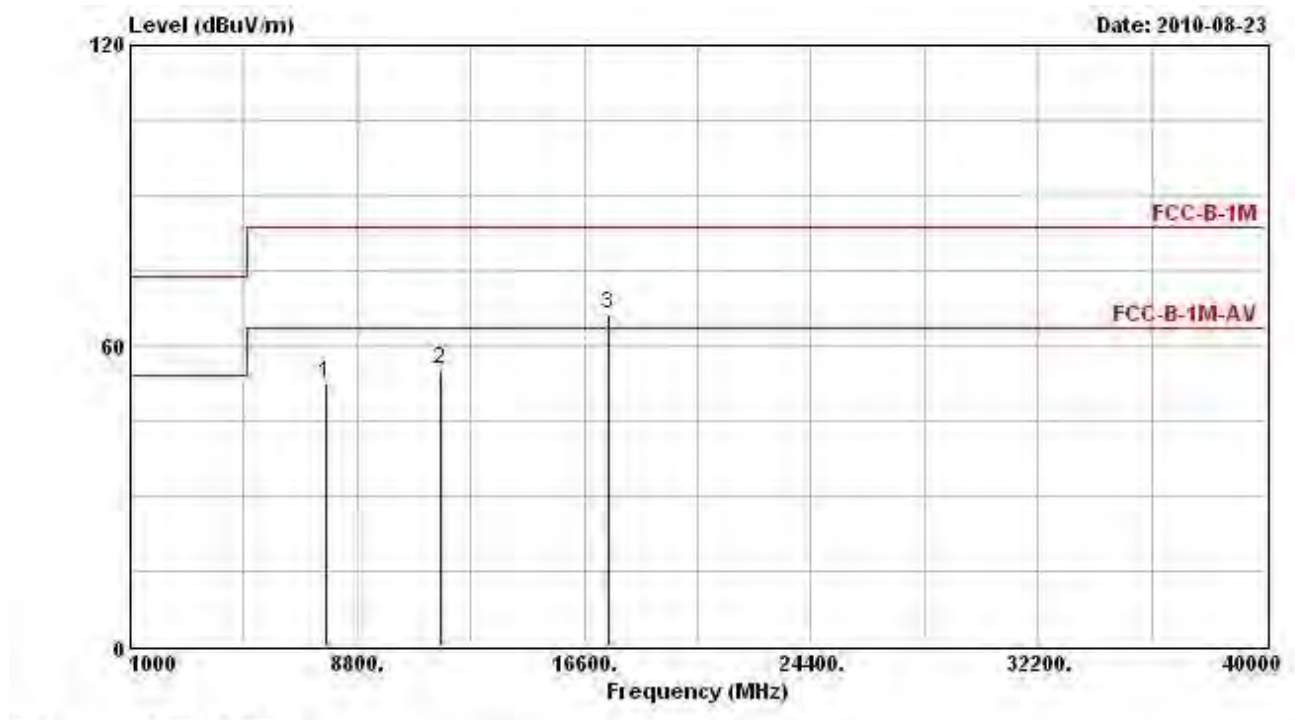
Final Test Date	Aug. 23, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 165 (20MHz)/(Ant. A)

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7770.000	52.67	-30.87	83.54	43.24	37.32	5.11	33.01	---	---	PEAK
2	11650.000	55.19	-8.35	63.54	41.94	39.76	6.10	32.60	---	---	PK
3	17477.000	66.07			44.80	45.69	7.35	31.76	---	---	PEAK

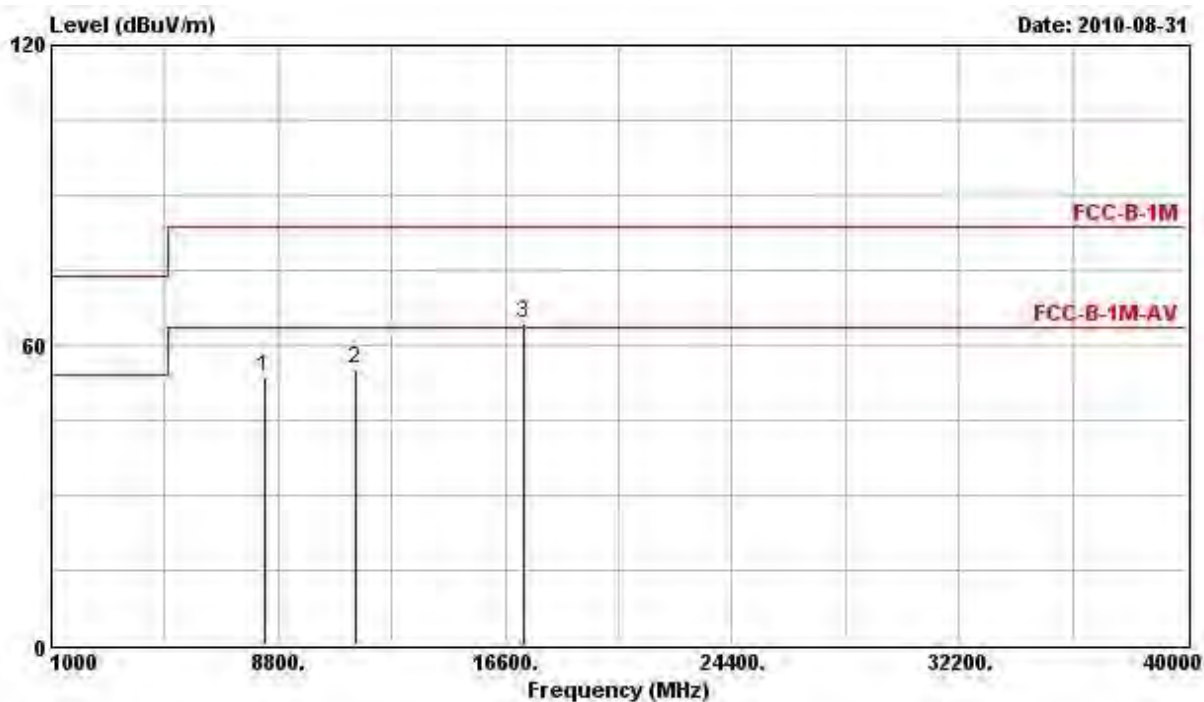
Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	7760.000	52.49			43.07	37.32	5.11	33.01	--- PEAK
2	11654.000	55.09	-8.45	63.54	41.85	39.74	6.10	32.60	--- PK
3	17473.000	66.25			44.97	45.69	7.35	31.76	--- PEAK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

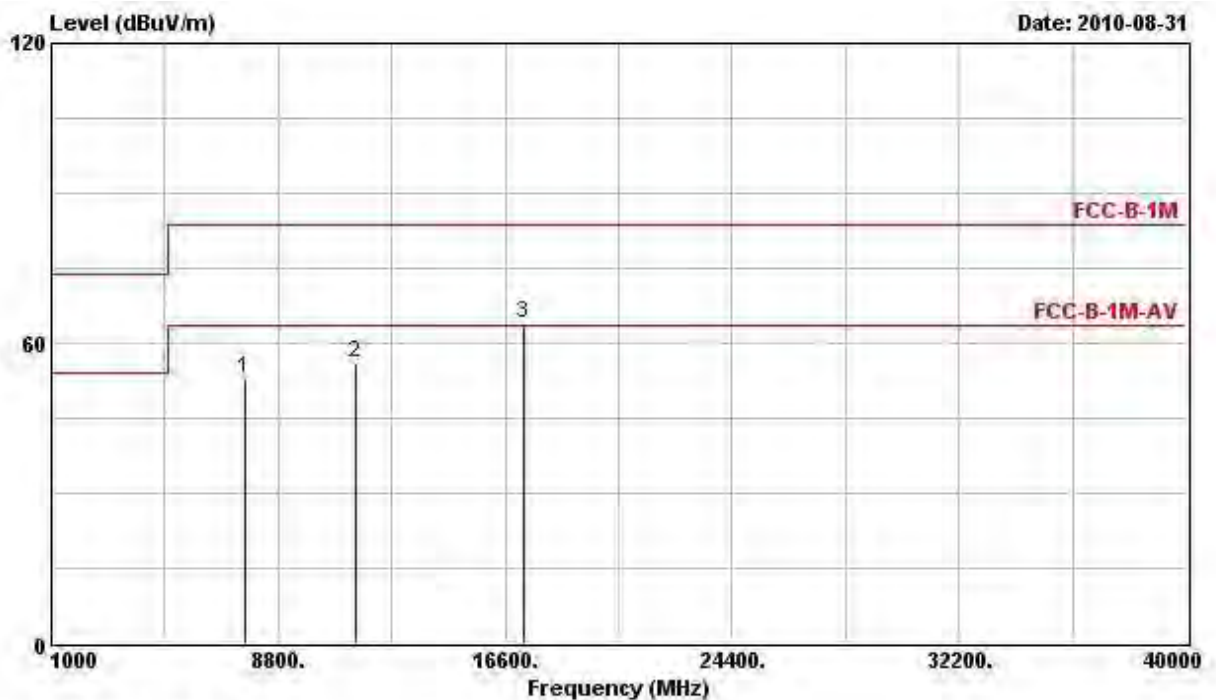
Final Test Date	Aug. 31, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 149 (20MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8370.000	53.63	-9.91	63.54	43.27	38.06	5.35	33.05	---	---	PK
2	11490.000	55.38	-8.16	63.54	42.09	39.88	5.99	32.58	---	---	PK
3	17235.000	64.29			45.11	43.49	7.38	31.70	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

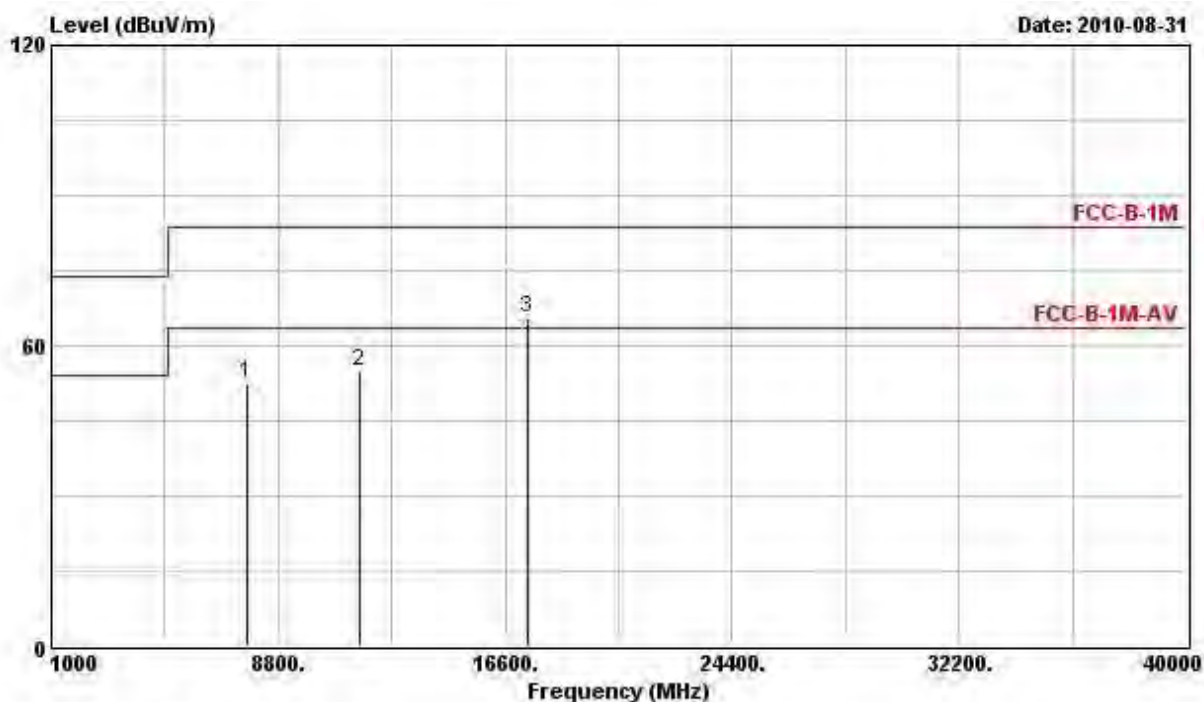
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	7660.000	52.77	-10.77	63.54	43.54	37.20	5.02	32.99	PK
2	11490.000	55.93	-7.61	63.54	42.65	39.88	5.99	32.58	PK
3	17237.000	64.10			44.92	43.49	7.38	31.70	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

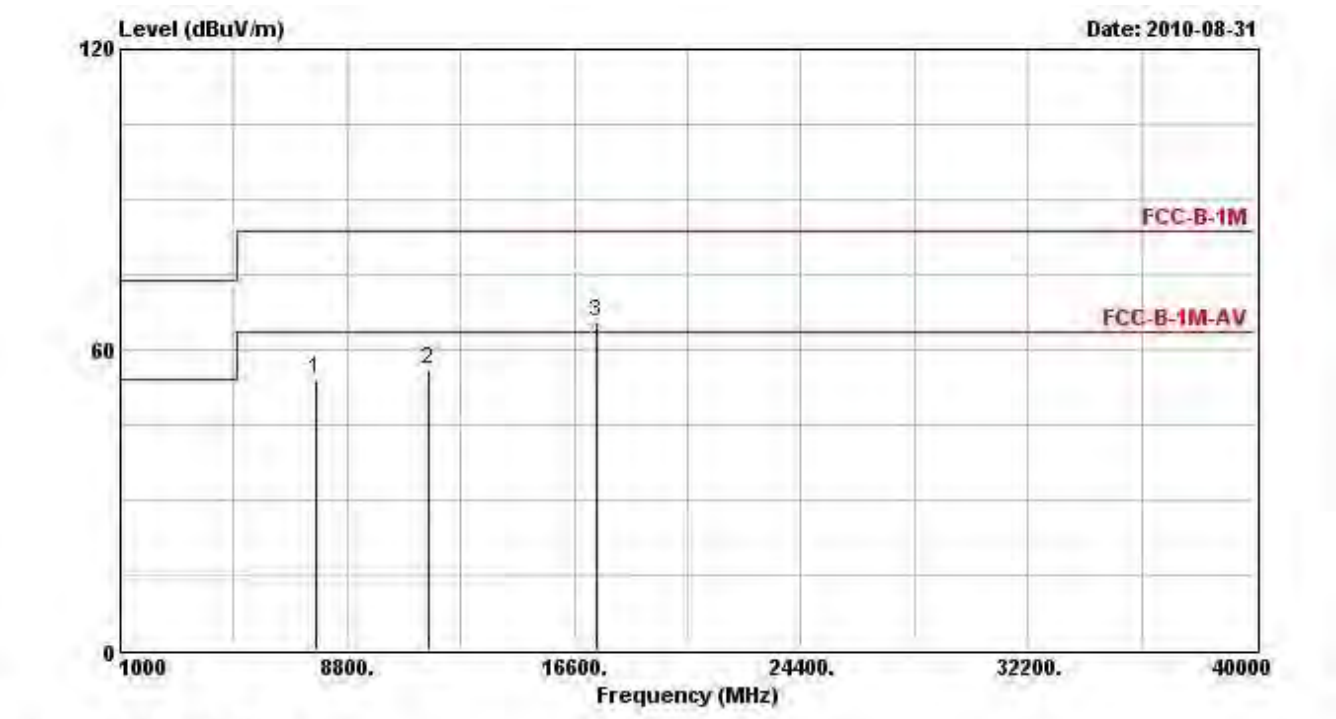
Final Test Date	Aug. 31, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 157 (20MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table		
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB	dB	cm	deg	
1	7710.000	52.55	-10.99	63.54	43.24	37.26	5.05	33.00	---	---	PK
2	11570.000	54.68	-8.86	63.54	41.40	39.83	6.04	32.59	---	---	PK
3	17357.000	65.41			45.19	44.59	7.36	31.73	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

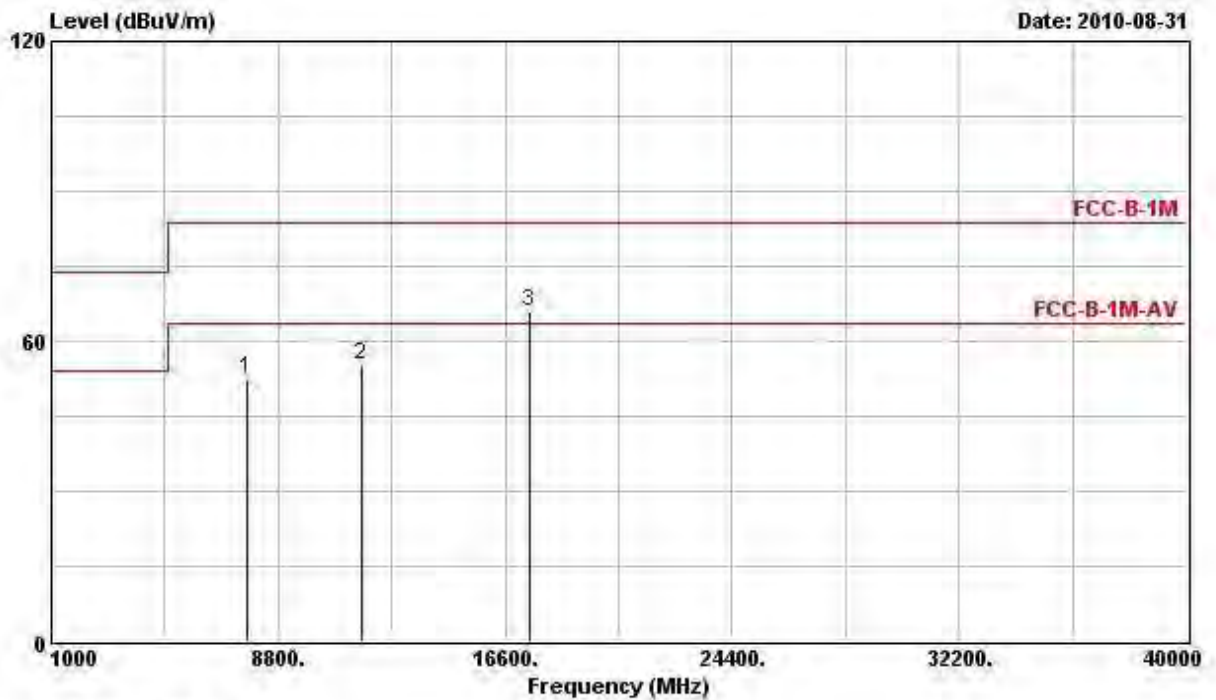
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Rnt Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7710.000	54.23	-9.31	63.54	44.91	37.26	5.05	33.00	---	---	PK
2	11570.000	55.86	-7.68	63.54	42.58	39.83	6.04	32.59	---	---	PK
3	17357.000	65.37			45.15	44.59	7.36	31.73	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

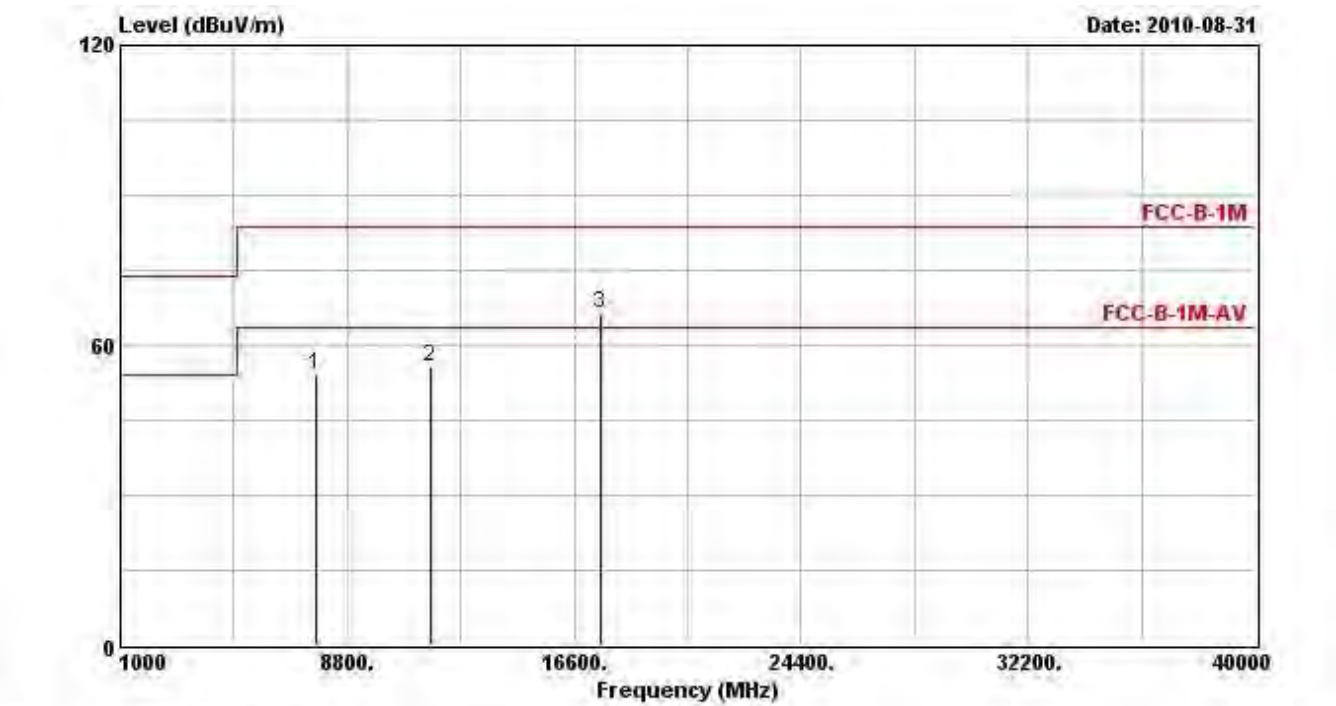
Final Test Date	Aug. 31, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 165 (20MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7740.000	52.54	-11.00	63.54	43.18	37.28	5.08	33.00	---	---	PK
2 @	11650.000	55.08	-8.46	63.54	41.82	39.76	6.10	32.60	---	---	PK
3	17475.000	66.06			44.78	45.69	7.35	31.76	---	---	PERK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

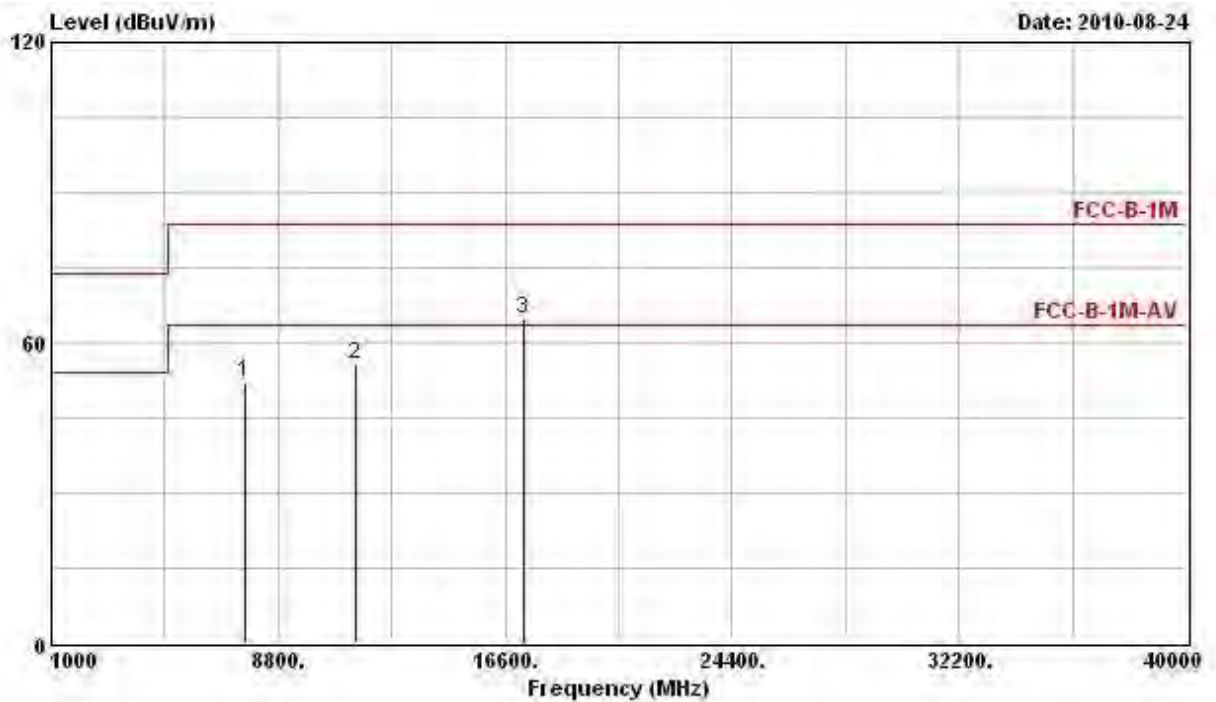
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7760.000	54.05			44.62	37.32	5.11	33.01	---	---	PEAK
2	11650.000	55.85	-7.69	63.54	42.60	39.76	6.10	32.60	---	---	PK
3	17477.000	66.29			45.02	45.69	7.35	31.76	---	---	PEAK

Note: The items 1 and 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

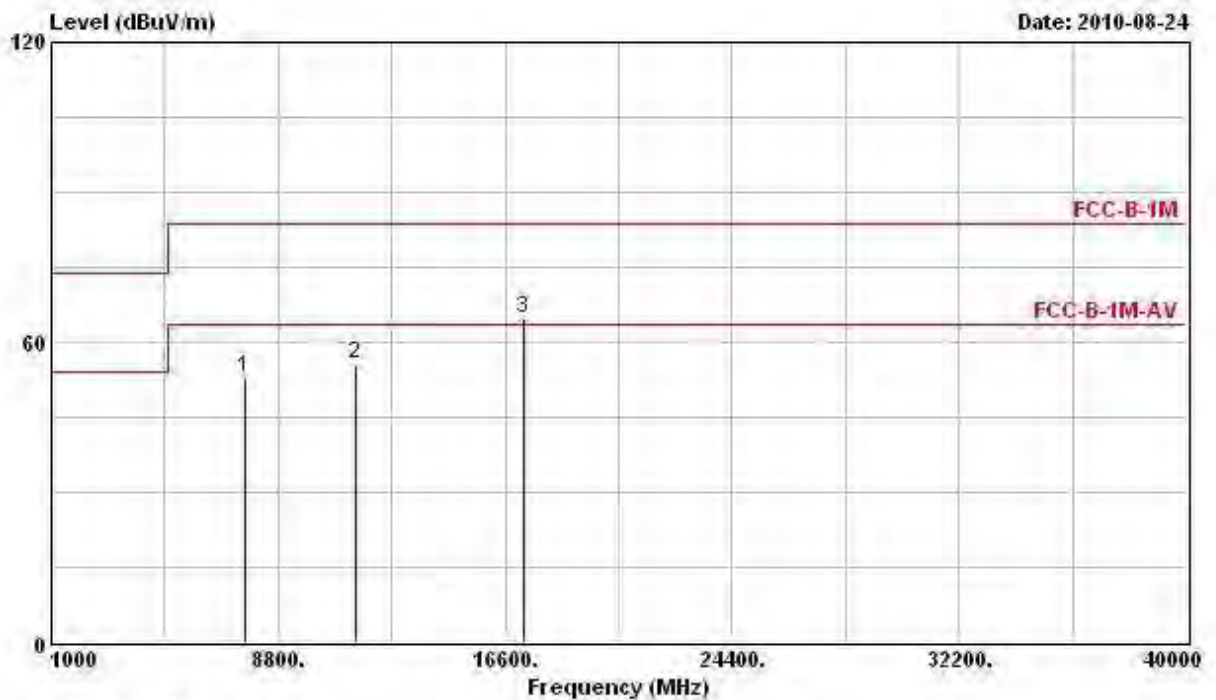
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 149 (20MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7660.000	52.30	-11.24	63.54	43.07	37.20	5.02	32.99	---	---	PK
2	11490.000	55.78	-7.76	63.54	42.50	39.88	5.99	32.58	---	---	PK
3	17233.000	64.68			45.51	43.49	7.38	31.70	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

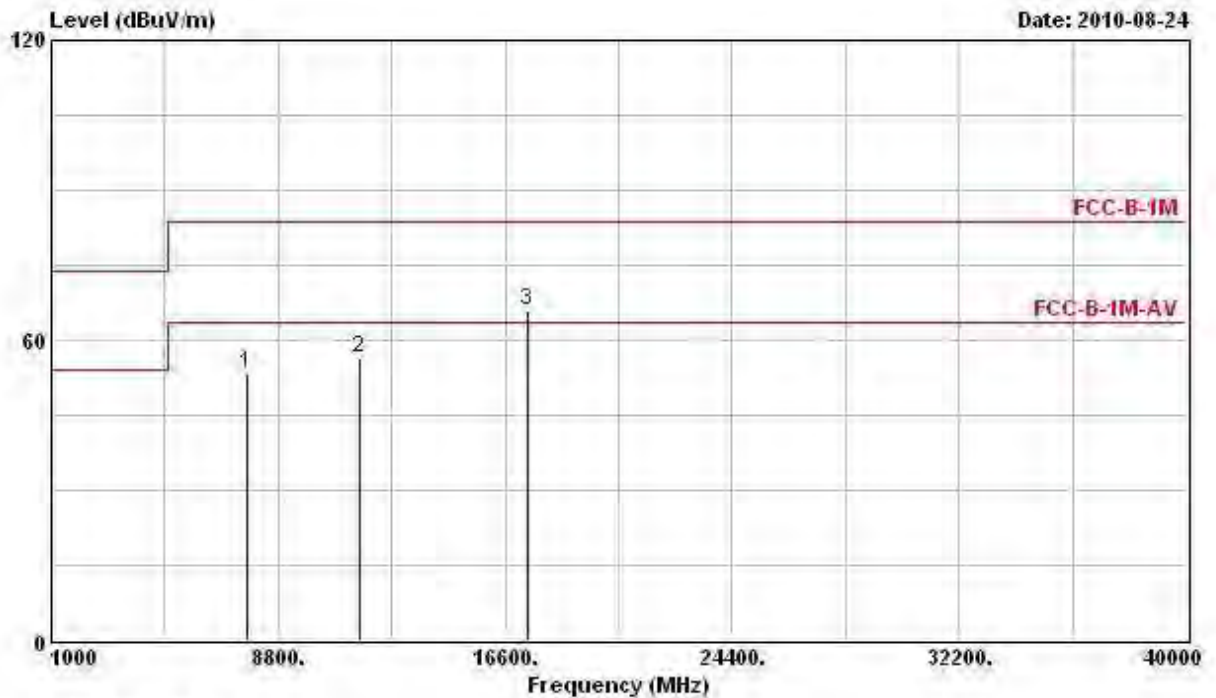
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	7660.000	52.81	-10.73	63.54	43.58	37.20	5.02	32.99	PK
2	11490.000	55.69	-7.85	63.54	42.41	39.88	5.99	32.58	PK
3	17233.000	64.72			45.55	43.49	7.38	31.70	PERK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

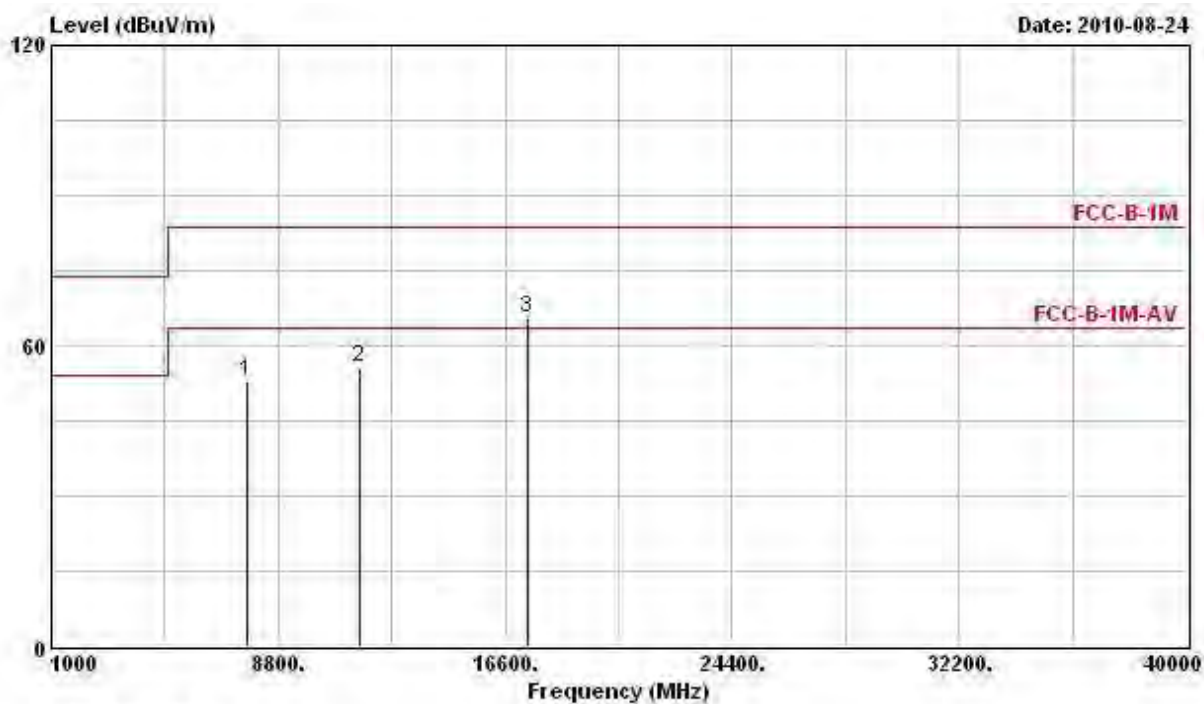
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 157 (20MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7730.000	53.17	-10.37	63.54	43.81	37.28	5.08	33.00	---	---	PK
2	11570.000	56.52	-7.02	63.54	43.24	39.83	6.04	32.59	---	---	PK
3	17357.000	65.84			45.61	44.59	7.36	31.73	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

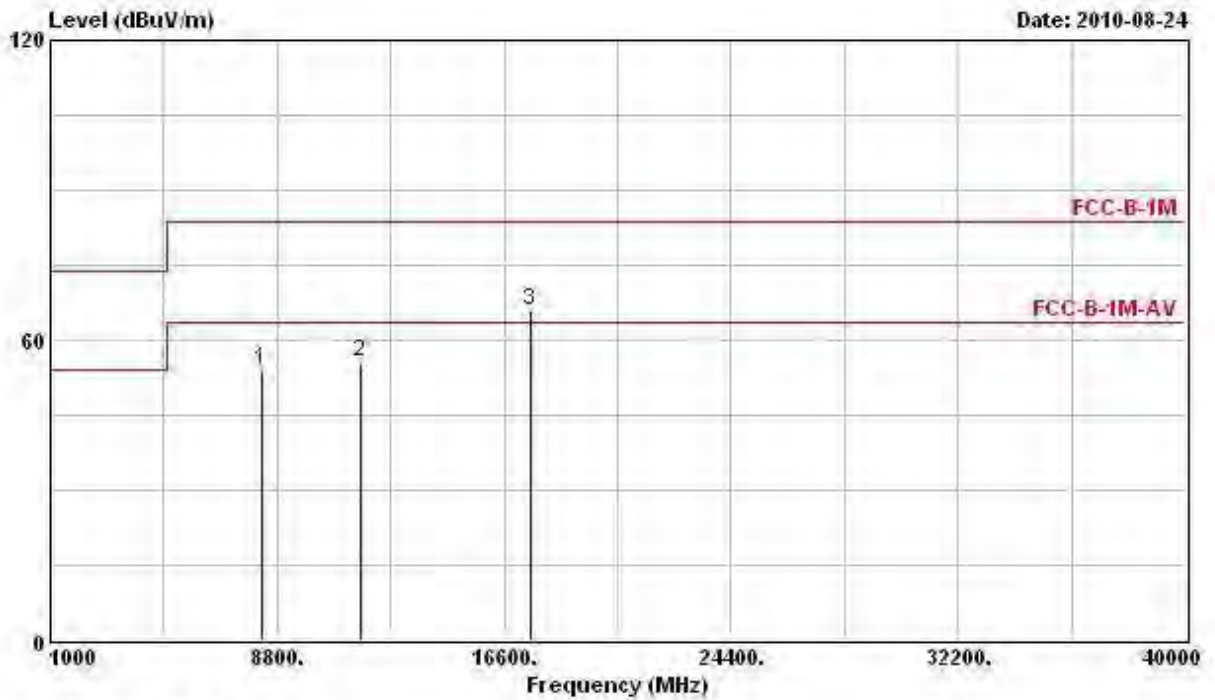
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	7710.000	52.81	-10.73	63.54	43.49	37.26	5.05	33.00	PK
2	11570.000	55.50	-8.04	63.54	42.22	39.83	6.04	32.59	PK
3	17357.000	65.47			45.24	44.59	7.36	31.73	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

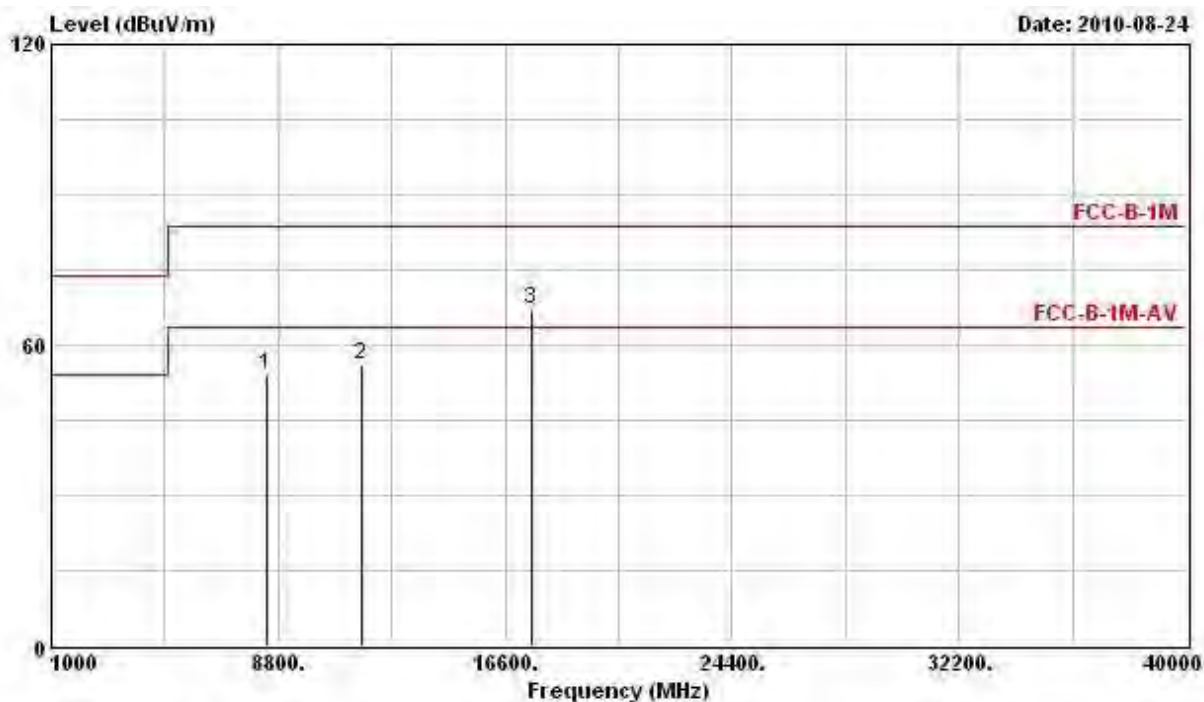
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 165 (20MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8300.000	54.02	-9.52	63.54	43.78	37.95	5.34	33.05	---	---	PK
2	11650.000	55.58	-7.96	63.54	42.32	39.76	6.10	32.60	---	---	PK
3	17477.000	65.93			44.66	45.69	7.35	31.76	---	---	PERK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

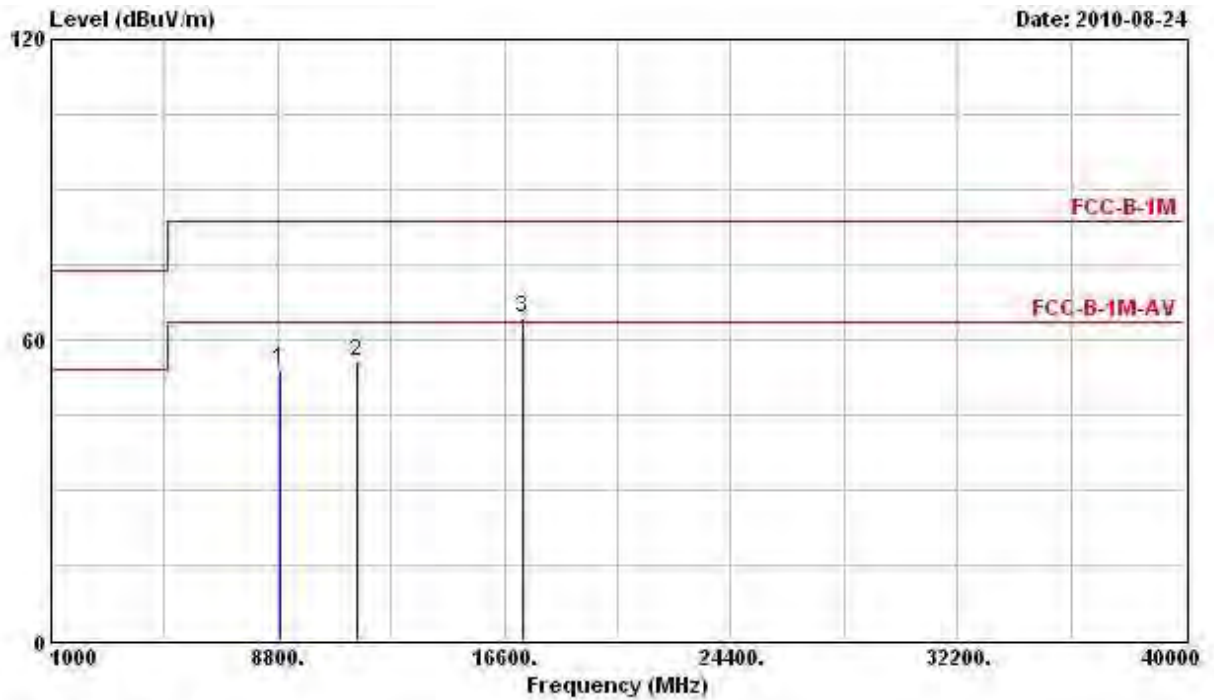
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8390.000	53.90	-9.64	63.54	43.52	38.08	5.35	33.05	---	---	PK
2	11650.000	56.10	-7.44	63.54	42.85	39.76	6.10	32.60	---	---	PK
3	17477.000	67.09			45.81	45.69	7.35	31.76	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

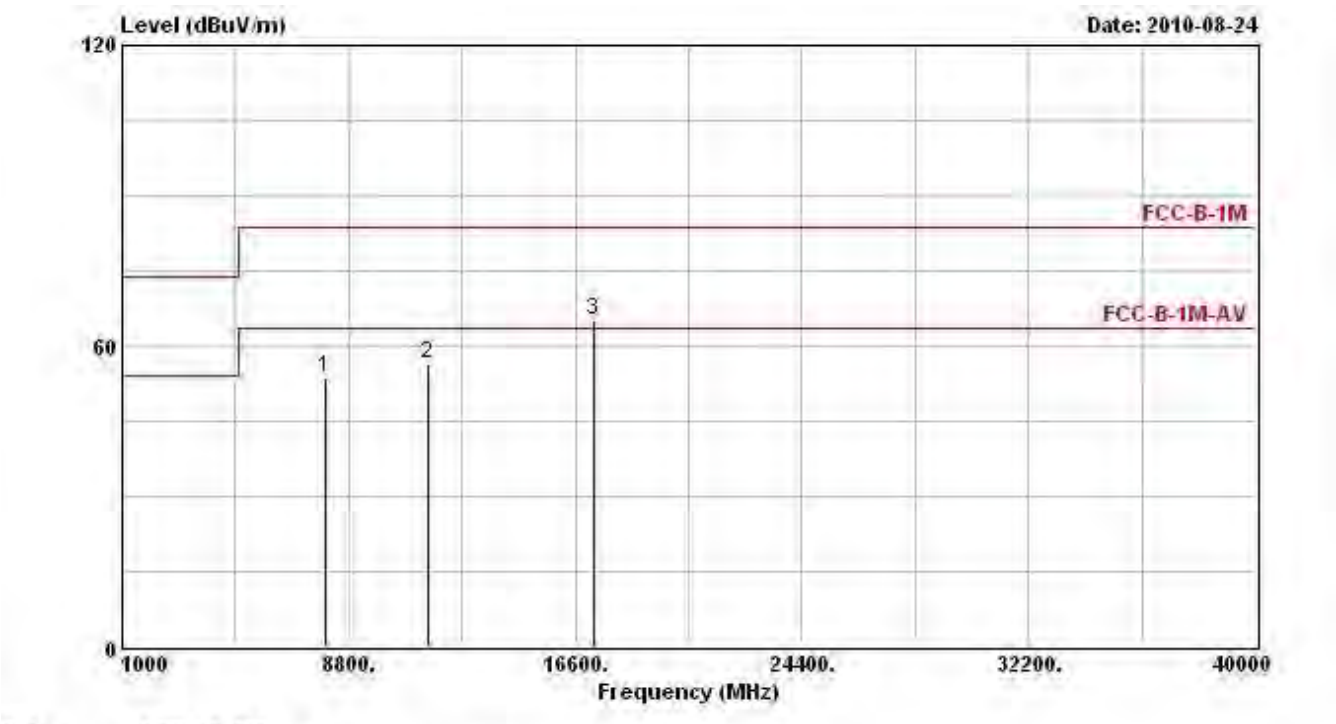
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 151 (40MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8900.000	54.13			43.64	38.52	5.15	33.19	---	---	PEAK
2	11510.000	55.47	-8.07	63.54	42.14	39.90	6.02	32.58	---	---	PK
3	17265.000	64.26			44.78	43.81	7.38	31.71	---	---	PEAK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

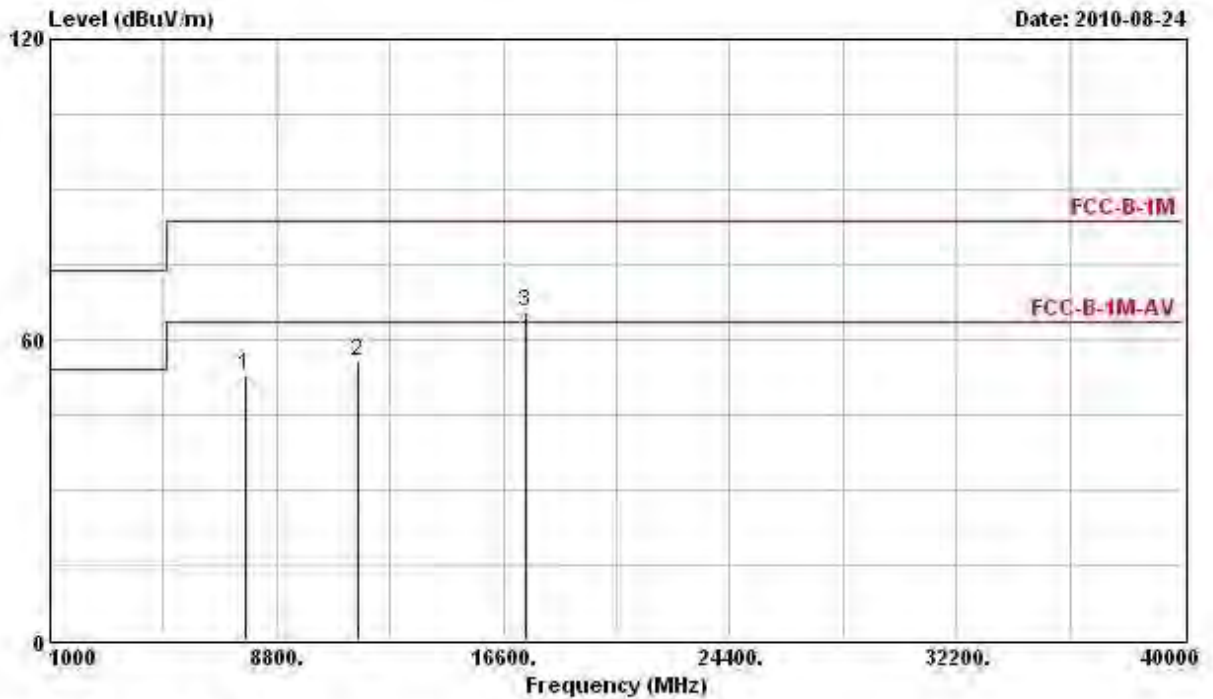
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7990.000	53.53			43.73	37.58	5.27	33.05	---	---	PEAK
2	11510.000	56.30	-7.24	63.54	42.97	39.90	6.02	32.58	---	---	PK
3	17263.000	65.11			45.63	43.81	7.38	31.71	---	---	PEAK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

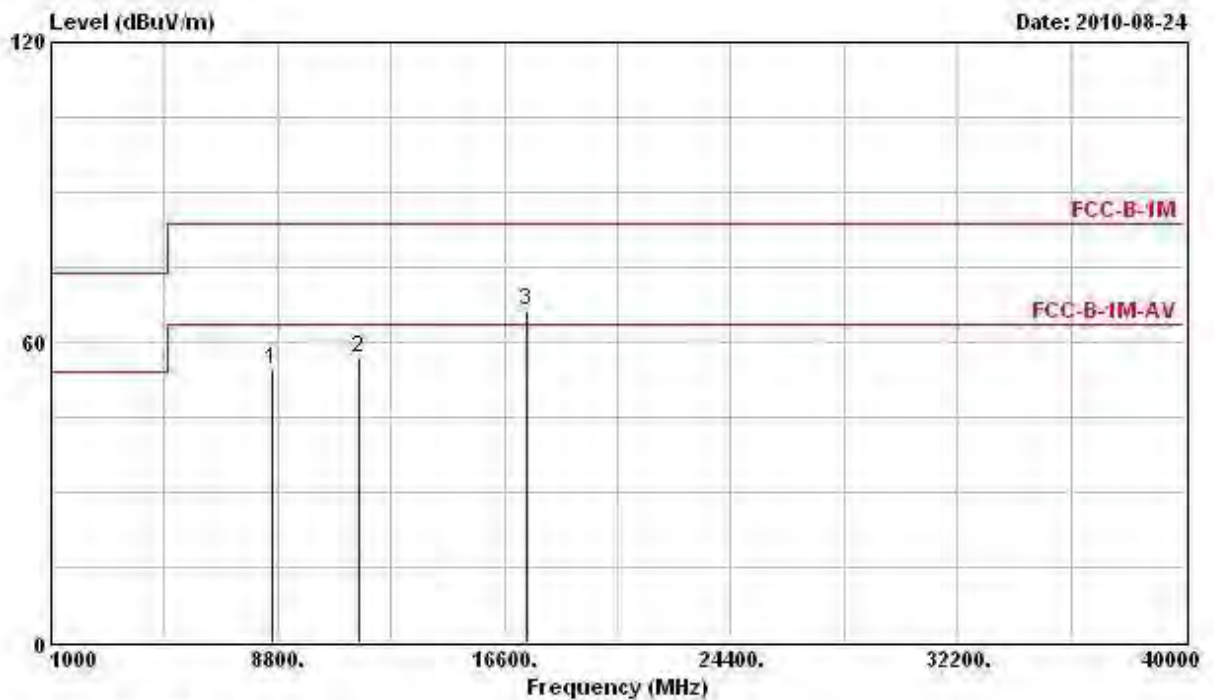
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 159 (40MHz) / (Ant. A)

Horizontal

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	7720.000	52.90	-10.64	63.54	43.56	37.26	5.08	33.00	---	PK
2	11590.000	55.78	-7.76	63.54	42.49	39.81	6.07	32.59	---	PK
3	17383.000	65.69			45.15	44.90	7.36	31.74	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

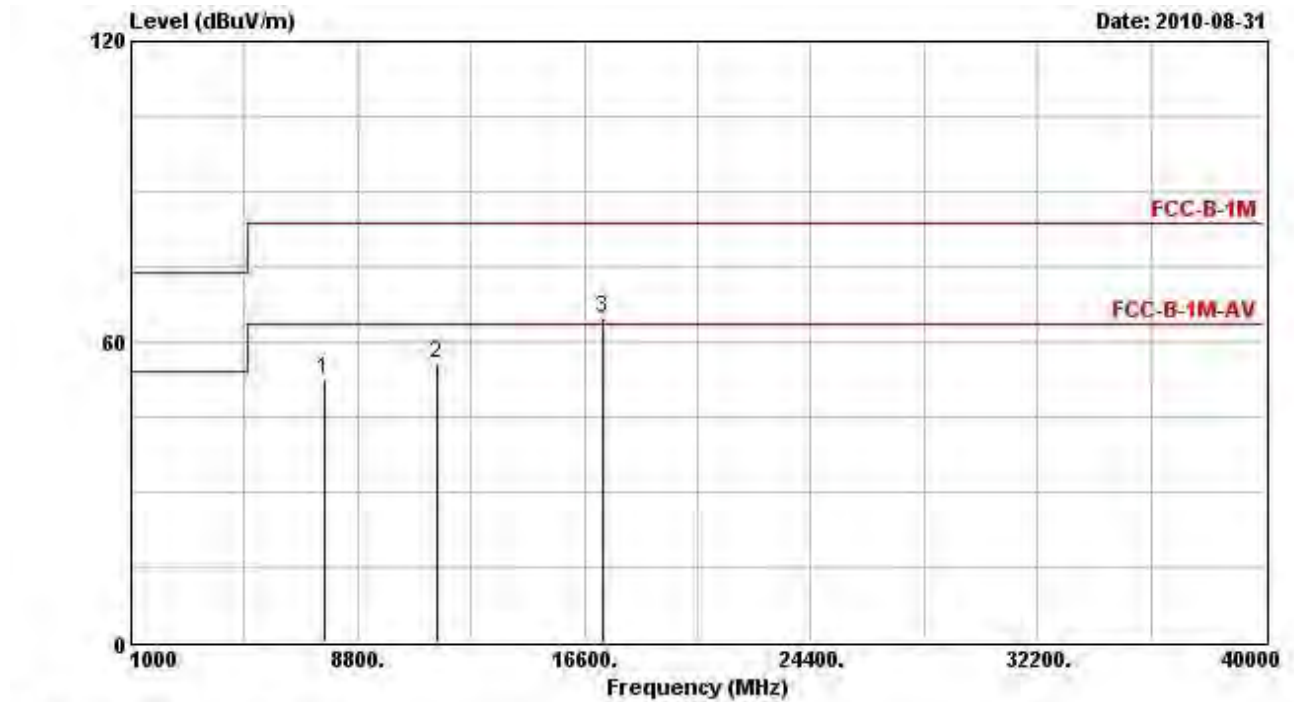
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8600.000	54.52			44.00	38.28	5.33	33.08	---	---	PERK
2	11590.000	56.65	-6.89	63.54	43.36	39.81	6.07	32.59	---	---	PK
3	17387.000	66.37			45.84	44.90	7.36	31.74	---	---	PERK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

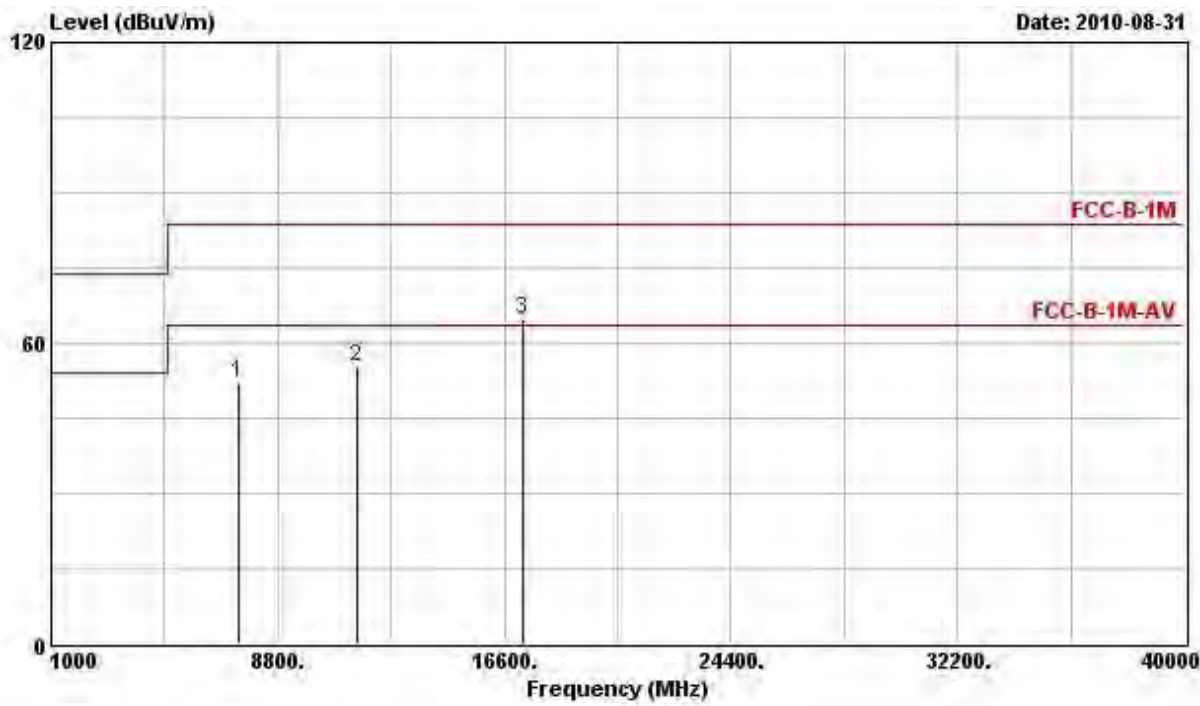
Final Test Date	Aug. 31, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 151 (40MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7670.000	52.38	-11.16	63.54	43.15	37.20	5.02	32.99	---	---	PK
2 @	11510.000	55.64	-7.90	63.54	42.31	39.90	6.02	32.58	---	---	PK
3	17267.000	64.59			45.11	43.81	7.38	31.71	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

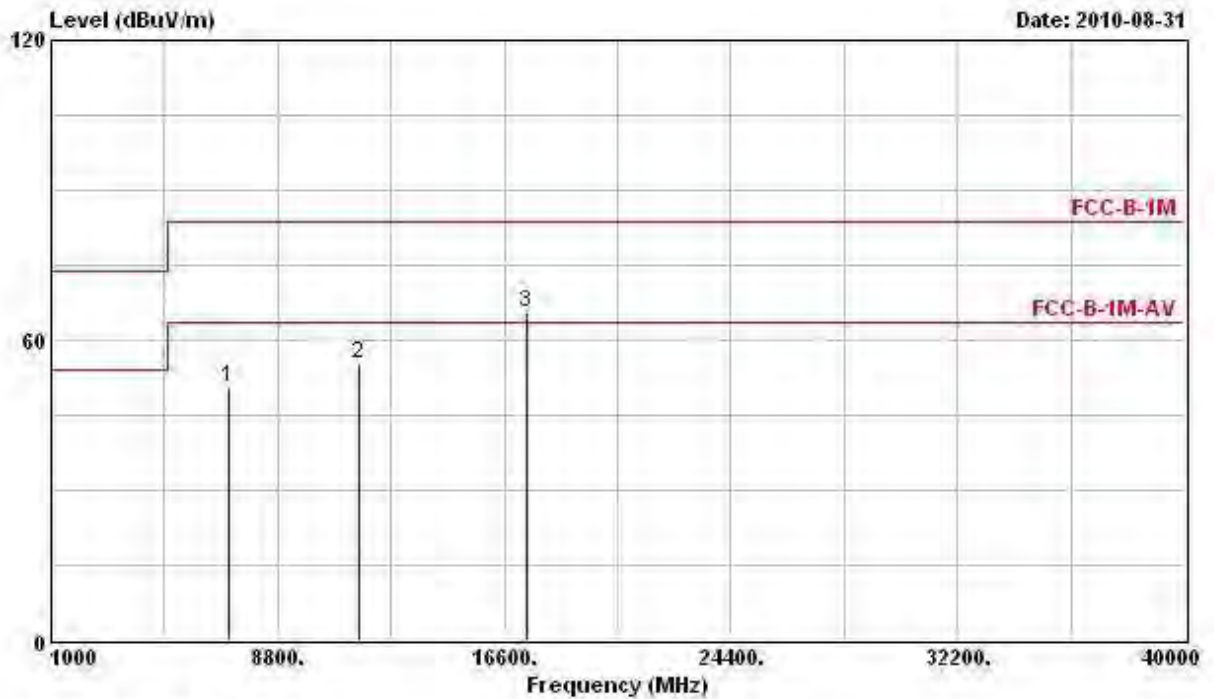
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7450.000	52.29	-11.25	63.54	43.48	36.91	4.85	32.95	---	---	PK
2	11510.000	55.34	-8.20	63.54	42.00	39.90	6.02	32.58	---	---	PK
3	17265.000	64.93			45.46	43.81	7.38	31.71	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

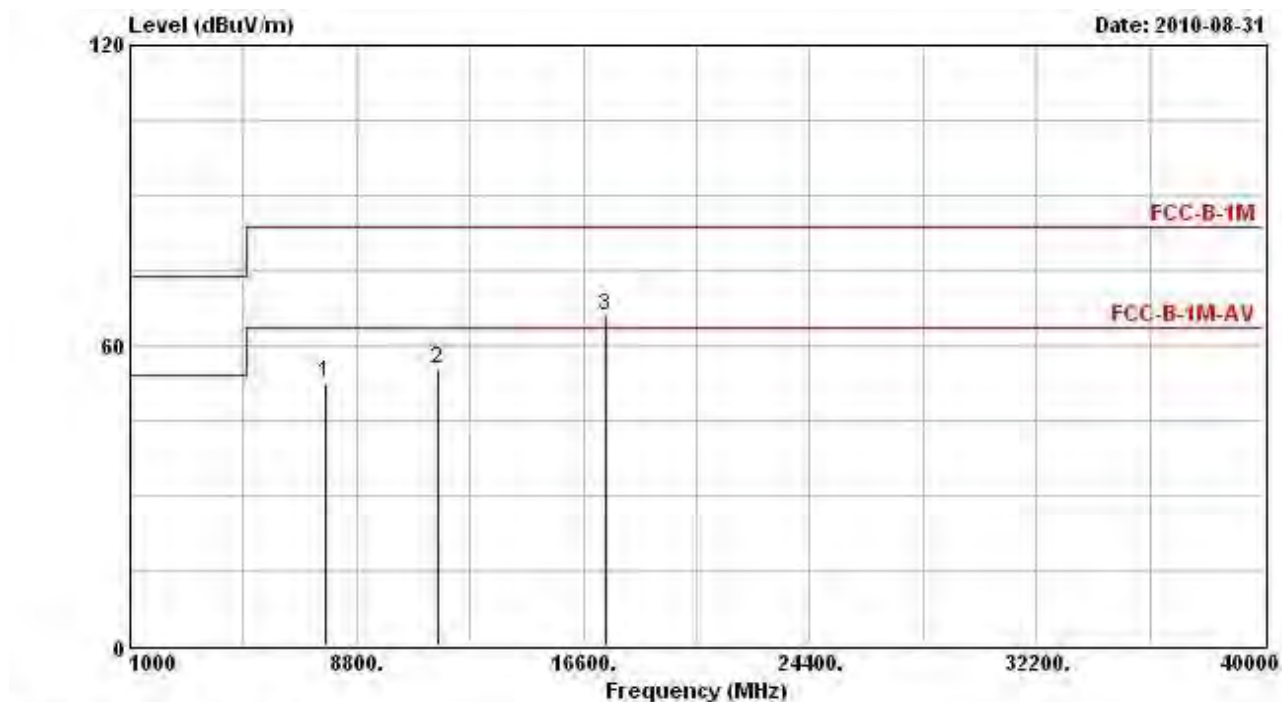
Final Test Date	Aug. 31, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 159 (40MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7110.000	50.68			42.84	36.29	4.41	32.85	---	---	PERK
2	11590.000	55.25	-8.29	63.54	41.96	39.81	6.07	32.59	---	---	PK
3	17387.000	65.63			45.11	44.90	7.36	31.74	---	---	PERK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

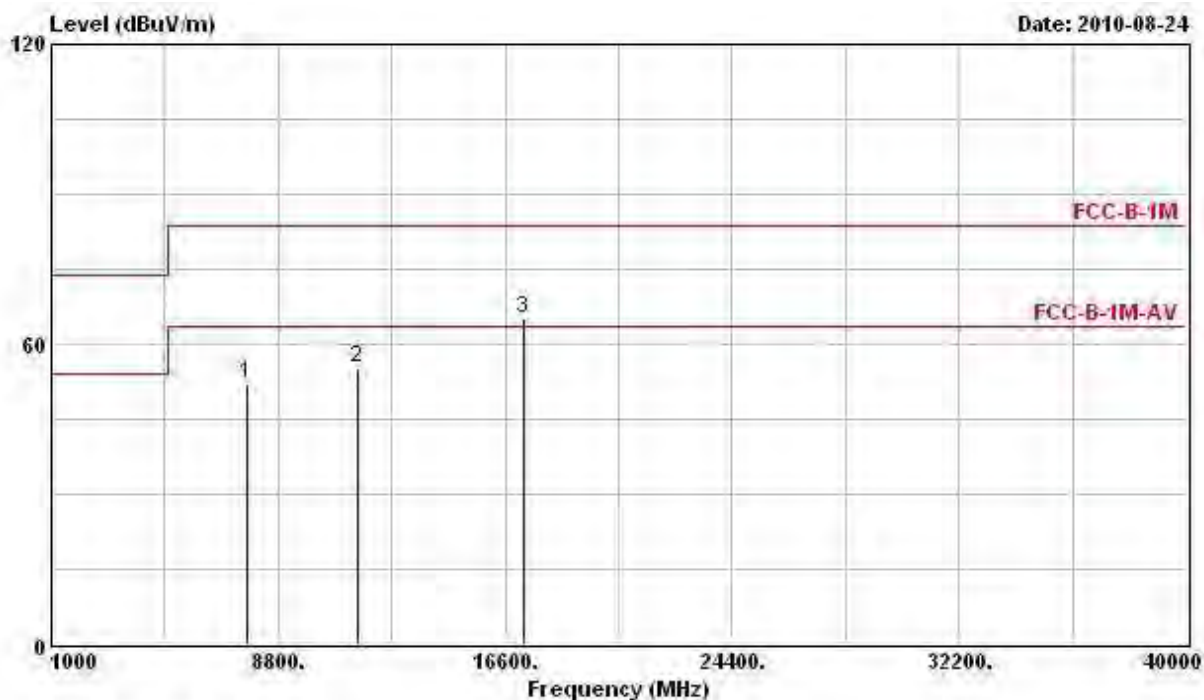
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7710.000	52.57	-10.97	63.54	43.26	37.26	5.05	33.00	---	---	PK
2	11590.000	55.46	-8.08	63.54	42.17	39.81	6.07	32.59	---	---	PK
3	17387.000	65.92			45.39	44.90	7.36	31.74	---	---	PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

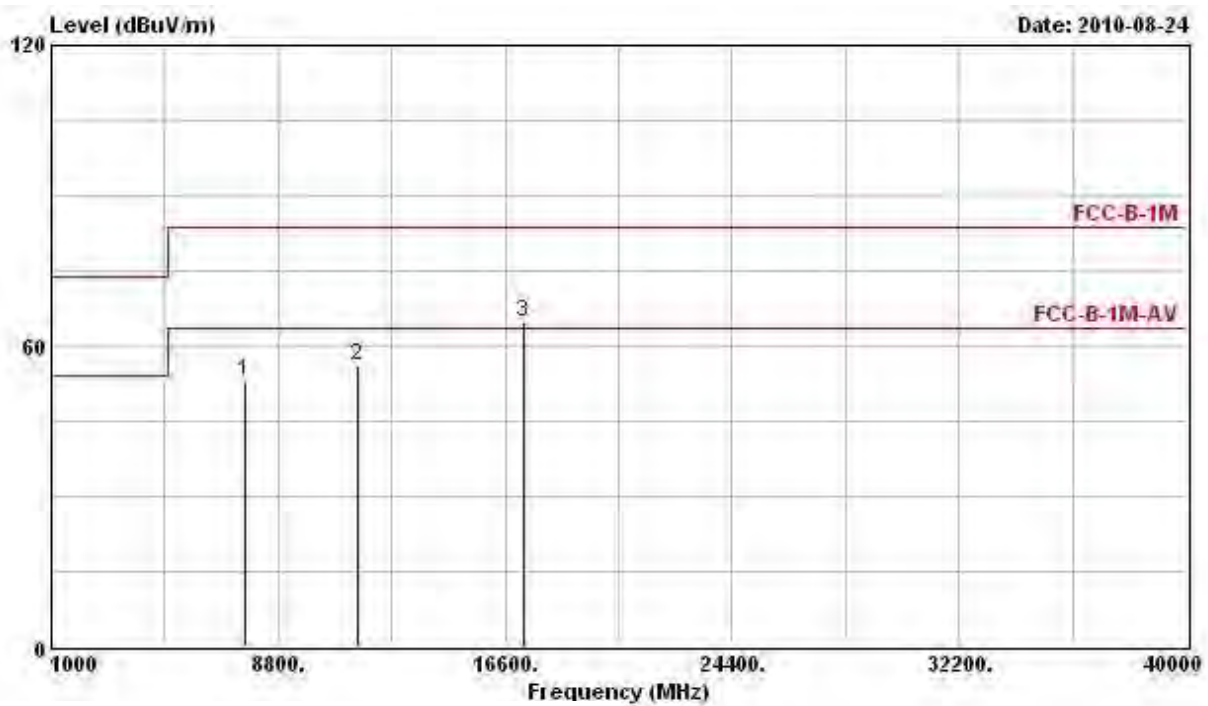
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 151 (40MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7755.000	52.26			42.88	37.30	5.08	33.01	---	---	PEAK
2	11514.000	55.39	-8.15	63.54	42.05	39.90	6.02	32.58	---	---	PK
3	17263.000	65.21			45.73	43.81	7.38	31.71	---	---	PEAK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

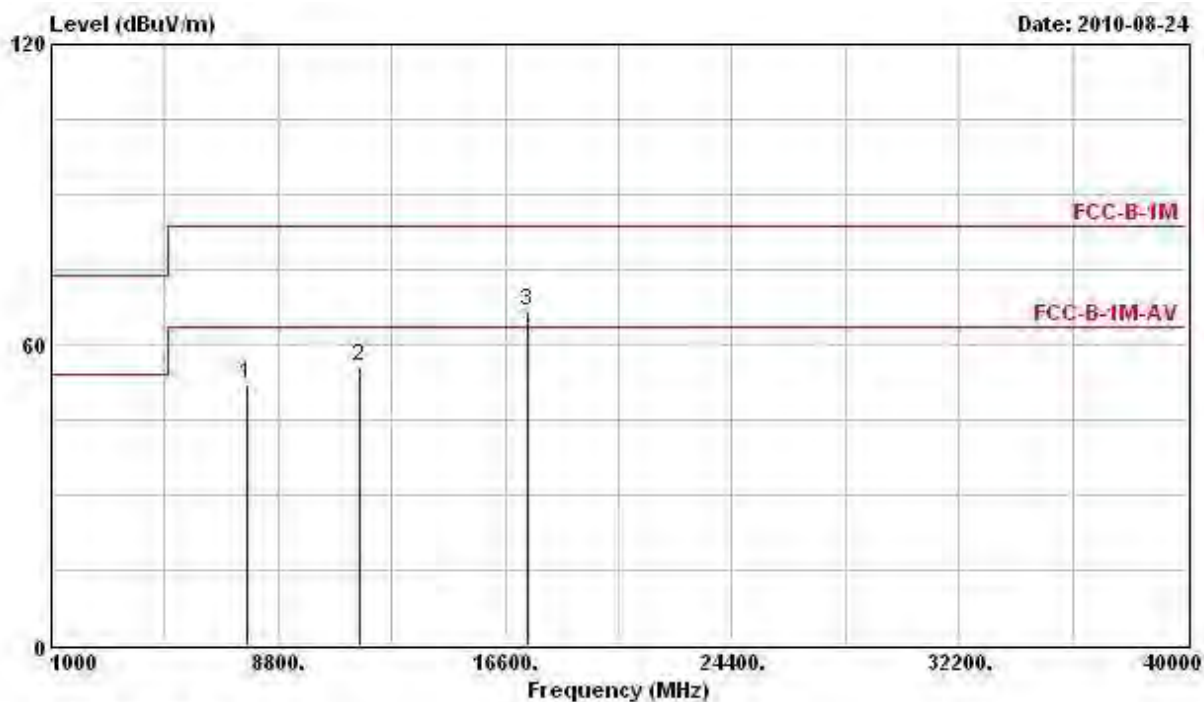
Vertical



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7670.000	52.85	-10.69	63.54	43.62	37.20	5.02	32.99	---	--- PK
2	11510.000	55.86	-7.68	63.54	42.52	39.90	6.02	32.58	---	--- PK
3	17267.000	64.66			45.18	43.81	7.38	31.71	---	--- PEAK

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

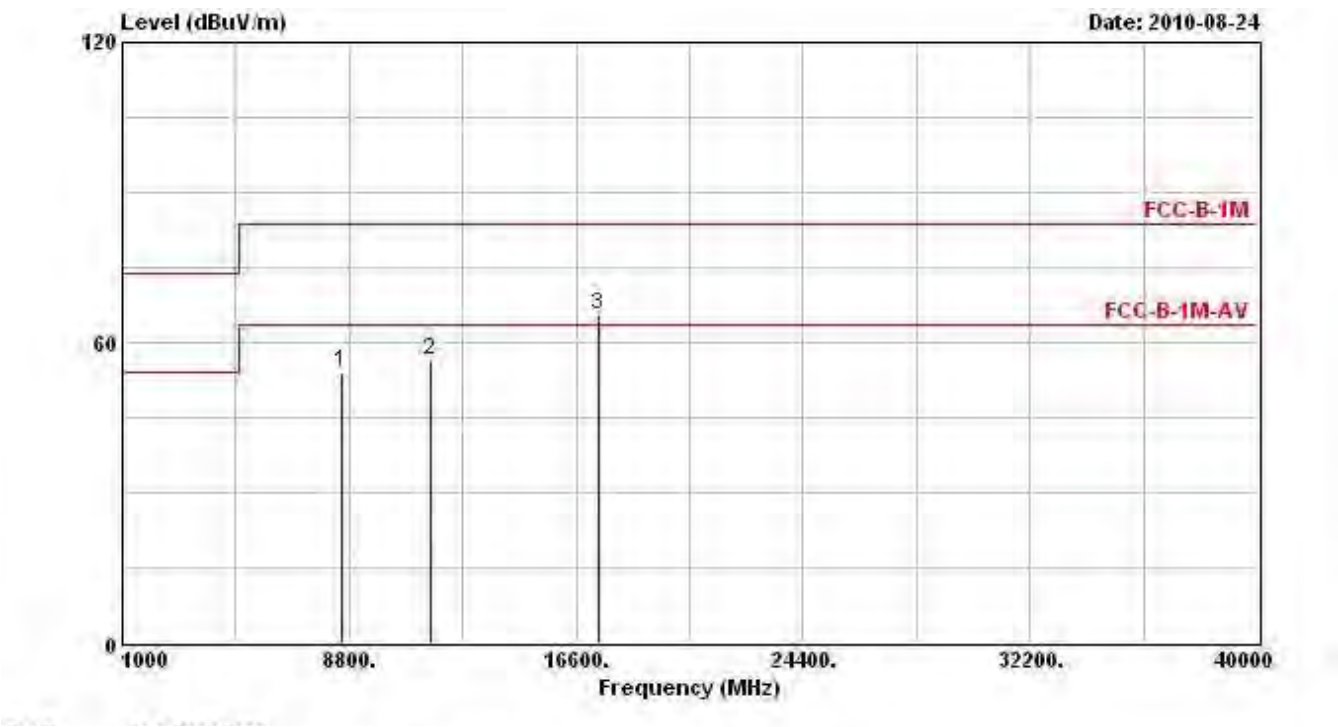
Final Test Date	Aug. 24, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 159 (40MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7720.000	52.26			42.92	37.26	5.08	33.00	---	---	PK
2	11590.000	55.52	-8.02	63.54	42.22	39.81	6.07	32.59	---	---	PK
3	17385.000	66.52			46.00	44.90	7.36	31.74	---	---	PERK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

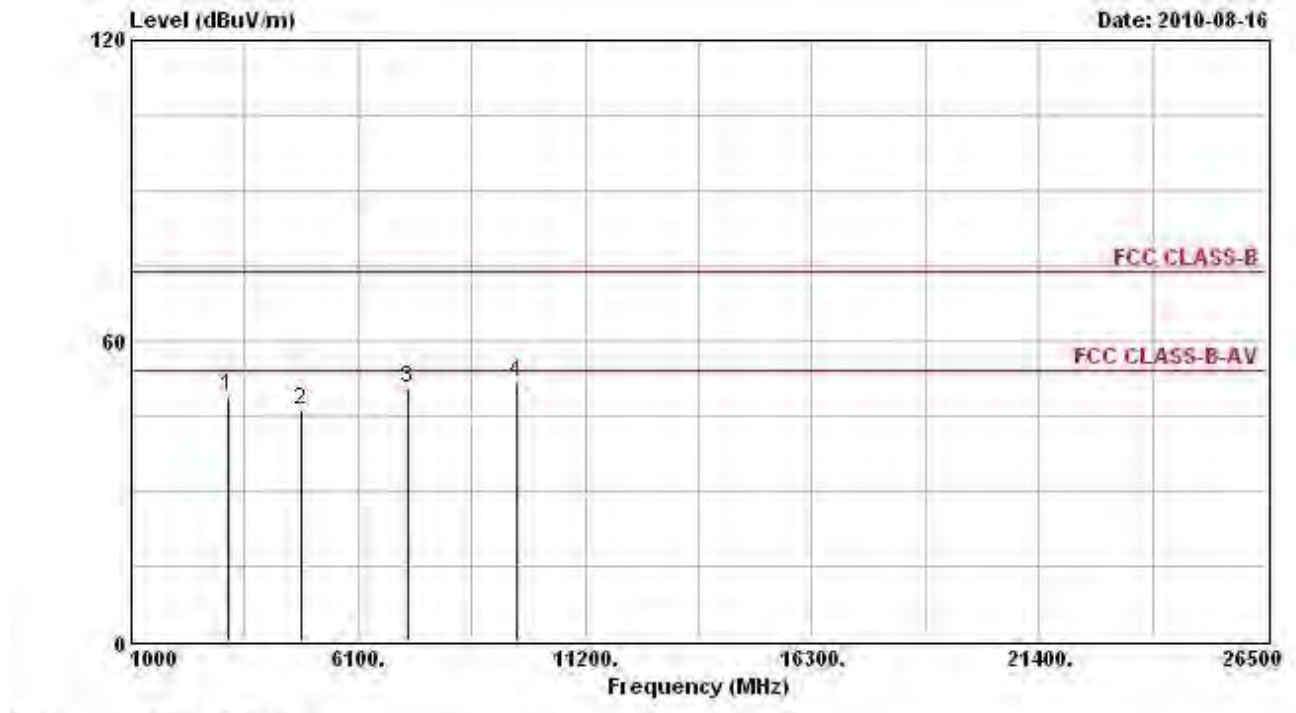
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	8560.000	54.00			43.46	38.25	5.35	33.07	---	---	PEAK
2	11590.000	56.34	-7.20	63.54	43.05	39.81	6.07	32.59	---	---	PK
3	17385.000	65.59			45.07	44.90	7.36	31.74	---	---	PEAK

Note: The items 1 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

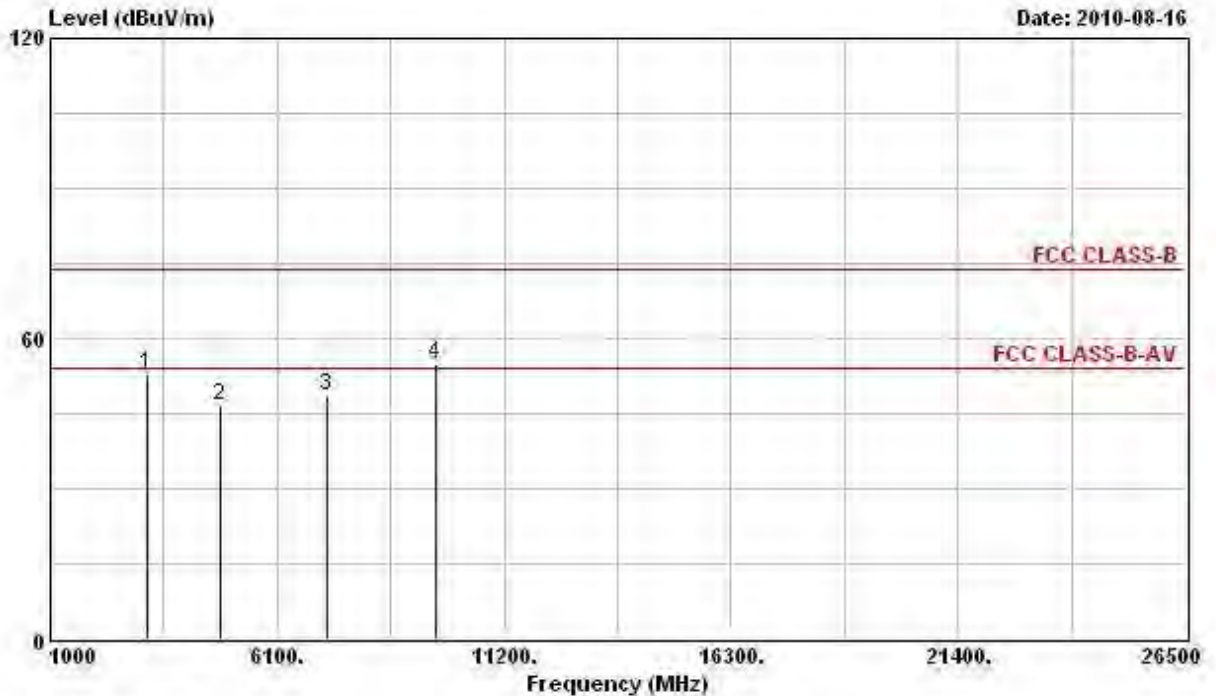
Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 1 (20MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	48.79			48.20	30.48	2.91	32.80	---	---	PEAK
2	4824.000	46.21	-7.79	54.00	43.09	33.06	2.70	32.63	---	---	PK
3	7236.000	50.41			43.22	35.53	4.55	32.89	---	---	PEAK
4	9644.000	51.78			41.42	38.38	5.32	33.34	---	---	PEAK

Note: The items 1, 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

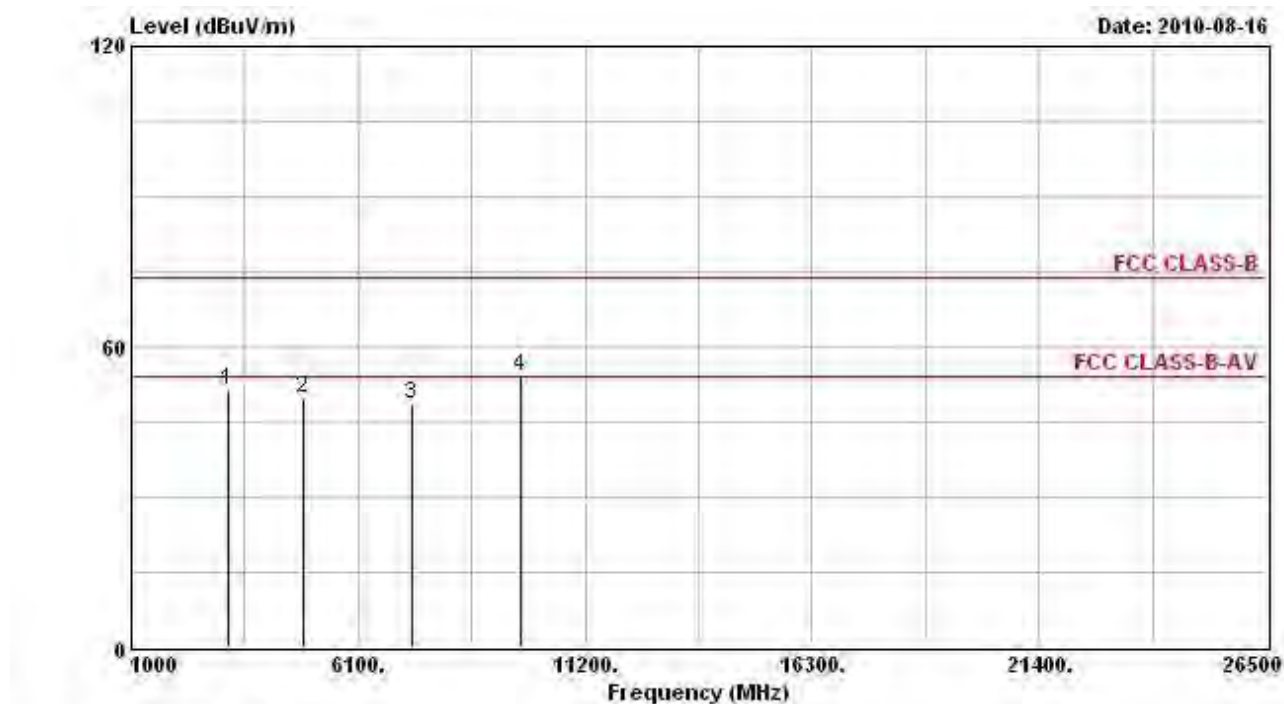
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	52.78			52.19	30.48	2.91	32.80	---	---	PEAK
2	4820.000	46.56	-7.44	54.00	43.44	33.06	2.70	32.63	---	---	PK
3	7232.000	48.46			41.25	35.53	4.55	32.88	---	---	PEAK
4	9644.000	54.77			44.41	38.38	5.32	33.34	---	---	PEAK

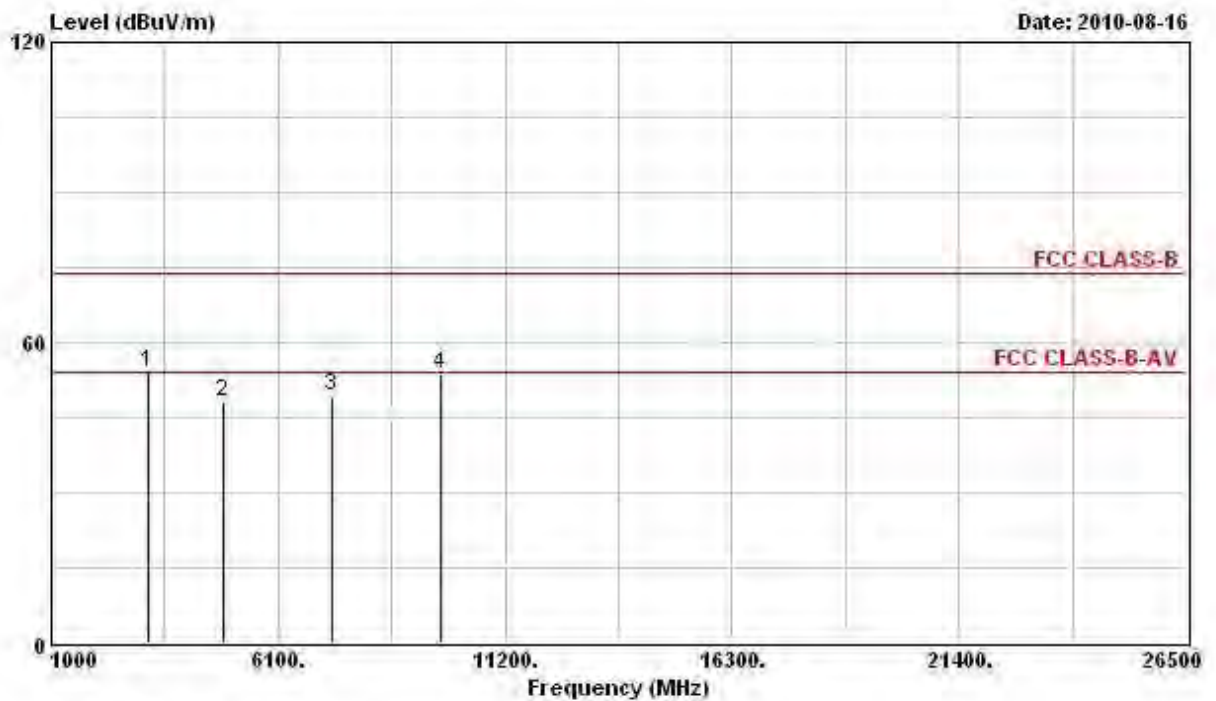
Note: The items 1, 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 6 (20MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3188.000	51.16			50.57	30.48	2.90	32.80	---	---	PEAK
2	4874.000	49.65	-4.35	54.00	46.51	33.16	2.60	32.62	---	---	PK
3	7315.000	48.70	-5.30	54.00	41.28	35.68	4.65	32.91	---	---	PK
4	9748.000	54.07			43.37	38.62	5.42	33.34	---	---	PEAK

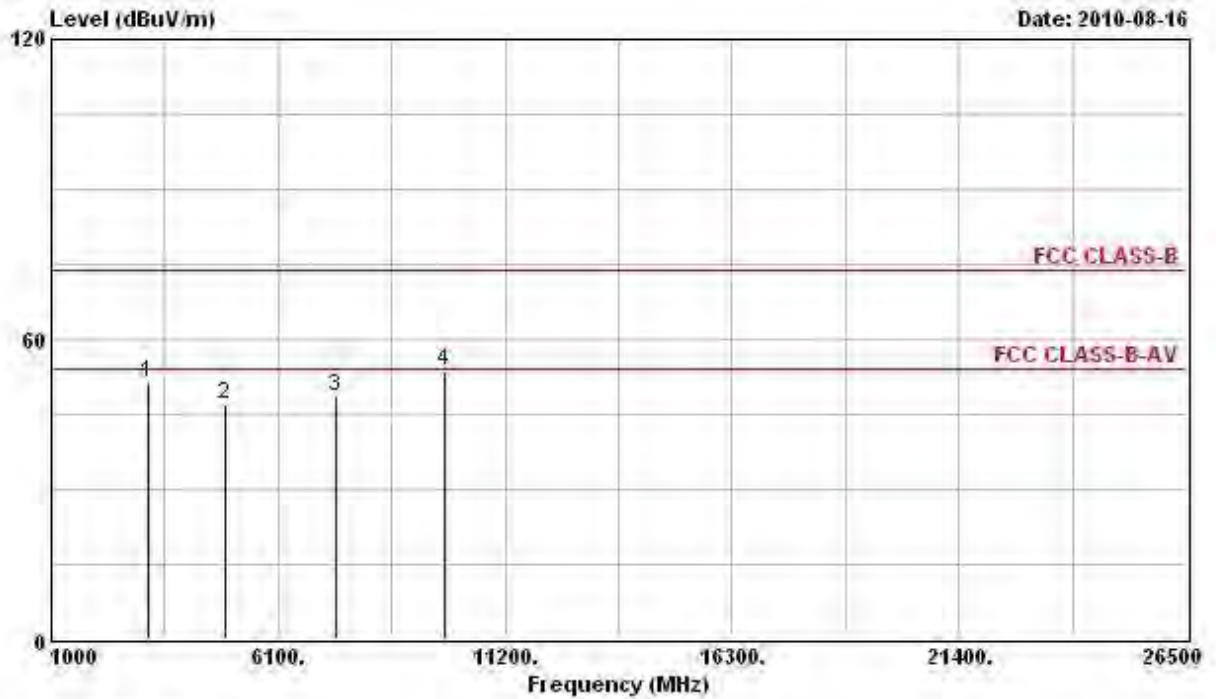
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	54.25			53.66	30.48	2.91	32.80	---	---	PEAK
2	4874.000	48.21	-5.79	54.00	45.07	33.16	2.60	32.62	---	---	PK
3	7307.000	49.23	-4.77	54.00	41.80	35.68	4.65	32.90	---	---	PK
4	9752.000	53.85			43.14	38.62	5.42	33.34	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

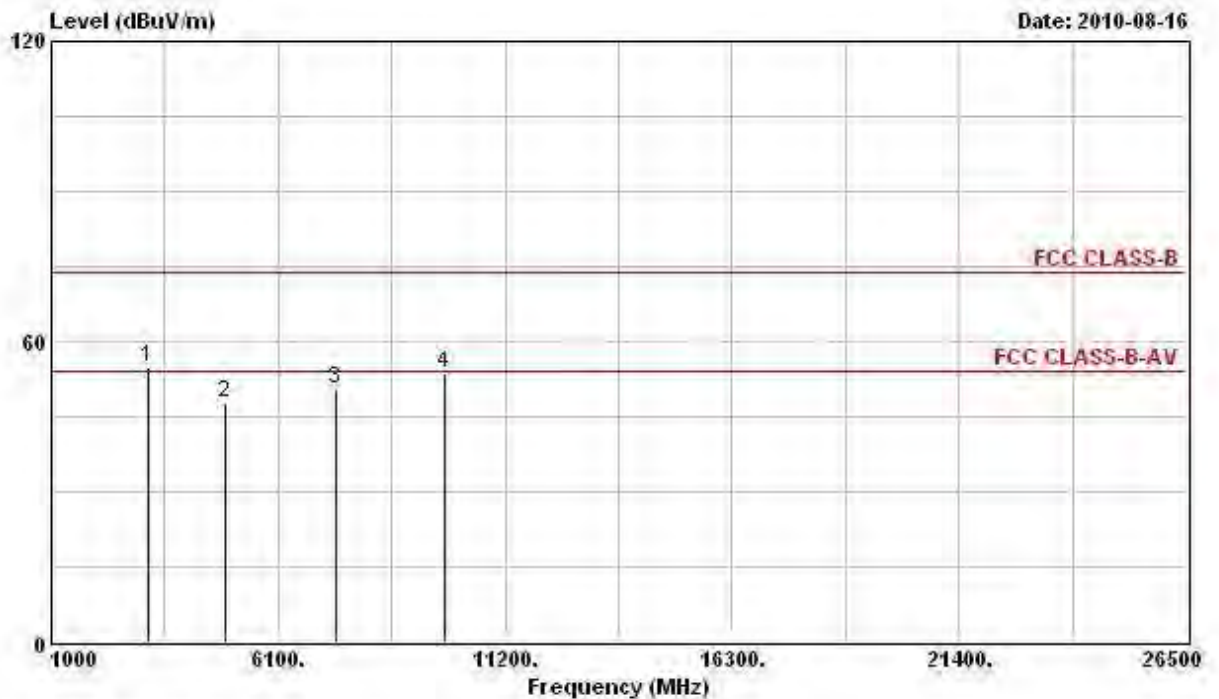
Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 11 (20MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	51.45			50.86	30.48	2.91	32.80	---	---	PEAK
2	4924.000	46.99	-7.01	54.00	43.78	33.26	2.56	32.61	---	---	PK
3	7386.000	48.39	-5.61	54.00	40.69	35.87	4.75	32.92	---	---	PK
4	9844.000	53.61			42.67	38.79	5.49	33.33	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

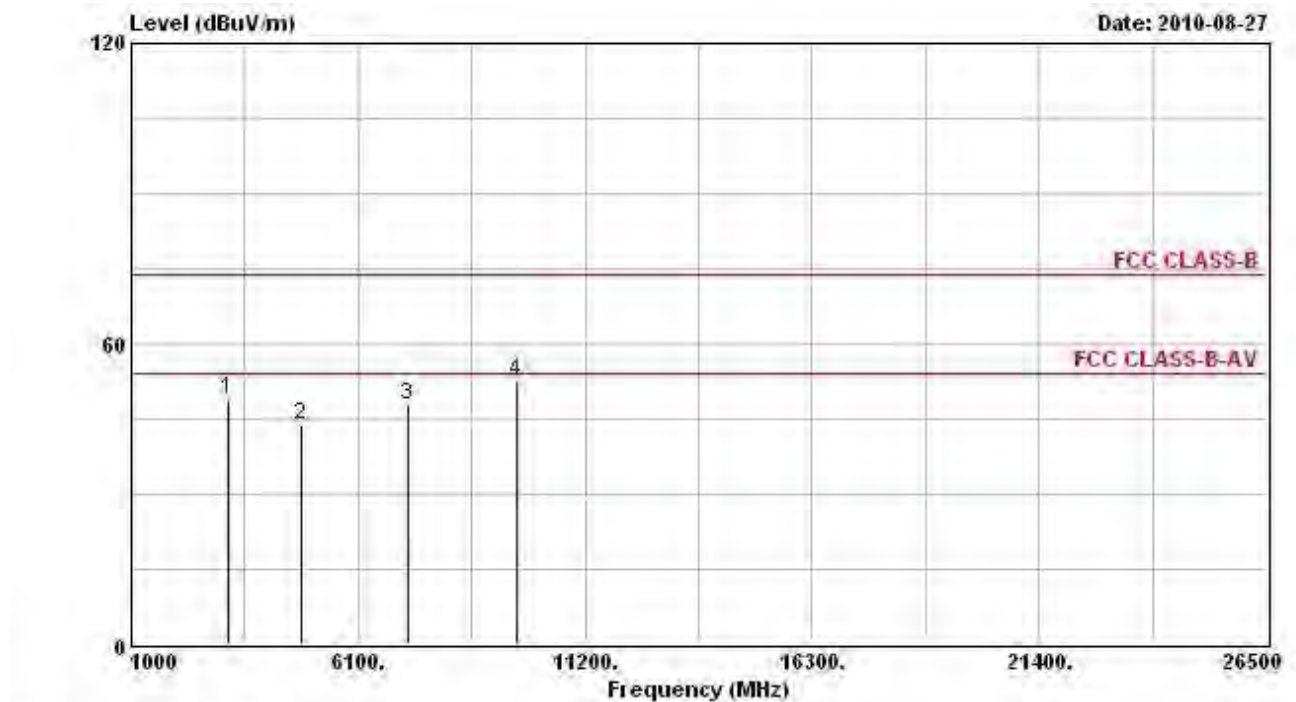
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	54.76			54.16	30.48	2.91	32.80	---	---	PEAK
2	4920.000	47.73	-6.27	54.00	44.53	33.26	2.56	32.61	---	---	PK
3	7382.000	50.63	-3.37	54.00	42.97	35.83	4.75	32.92	---	---	PK
4	9848.000	53.54			42.59	38.79	5.49	33.33	---	---	PEAK

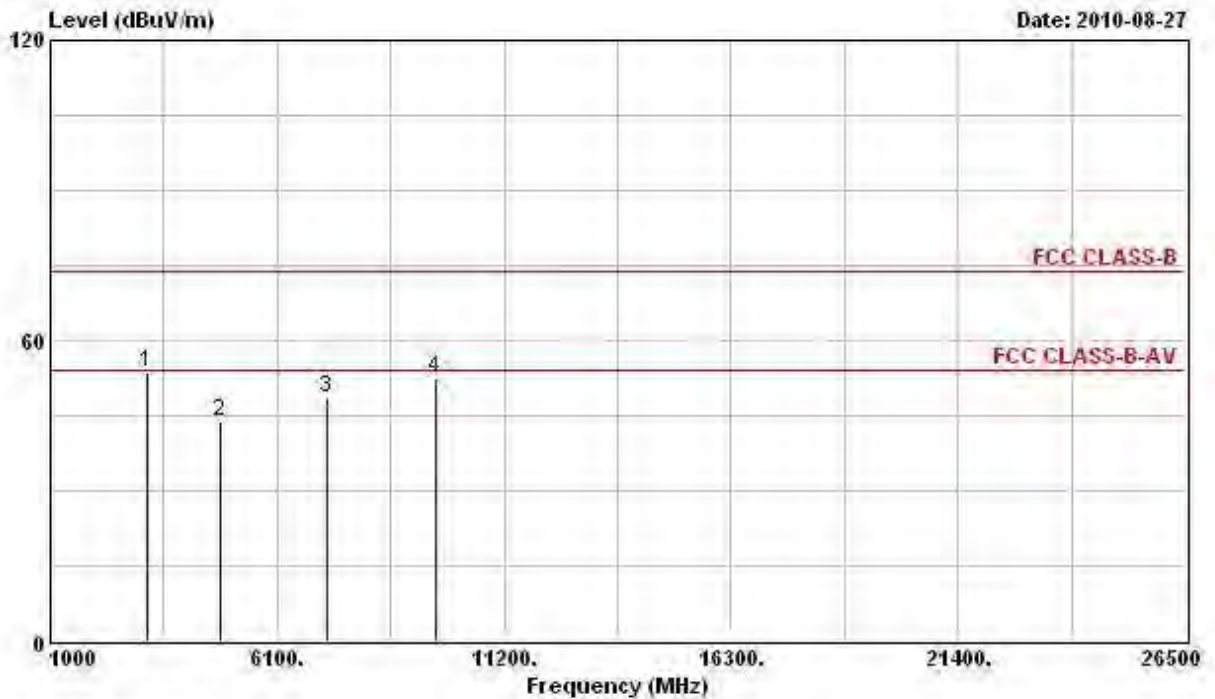
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 1 (20MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	49.08			48.49	30.48	2.91	32.80	---	---	PEAK
2	4828.000	43.82	-10.18	54.00	40.70	33.06	2.70	32.63	---	---	PK
3	7236.000	47.72			40.52	35.53	4.55	32.89	---	---	PEAK
4	9648.000	52.41			42.02	38.41	5.32	33.34	---	---	PEAK

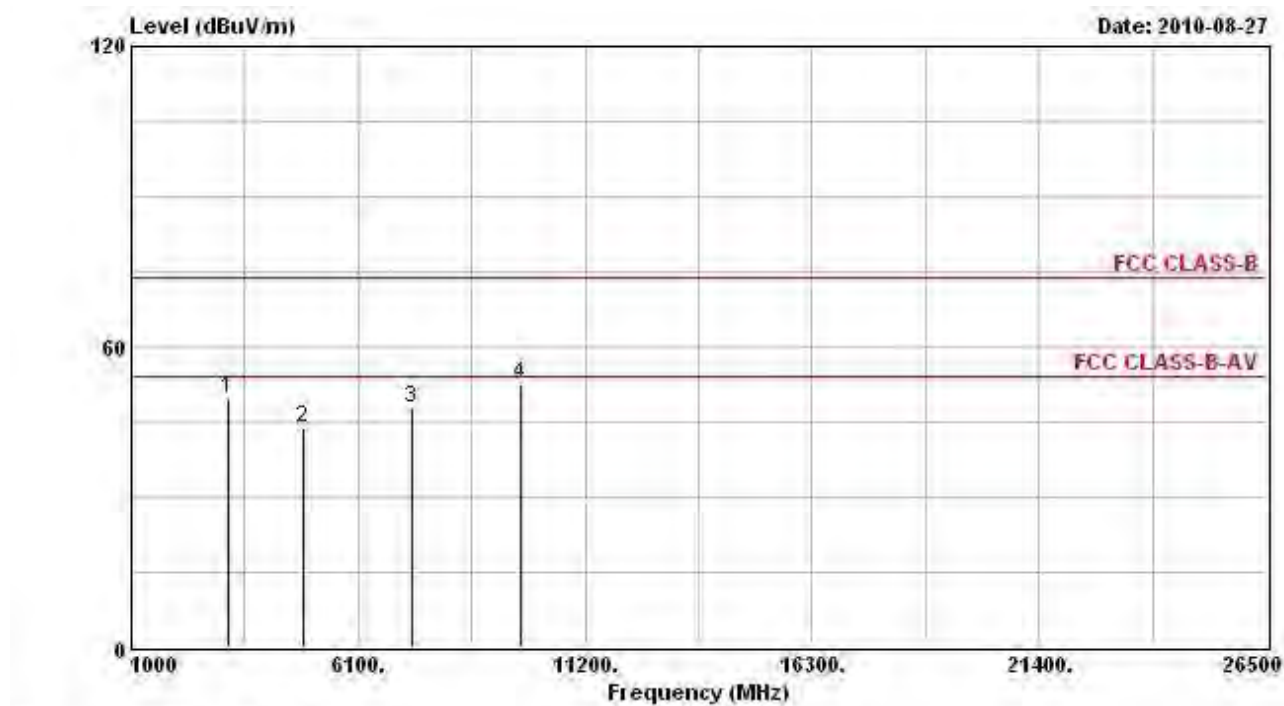
Note: The items 1, 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3188.000	53.69			53.10	30.48	2.90	32.80	---	---	PEAK
2	4824.000	43.95	-10.05	54.00	40.83	33.06	2.70	32.63	---	---	PK
3	7240.000	48.56			41.36	35.53	4.55	32.89	---	---	PEAK
4	9648.000	52.61			42.21	38.41	5.32	33.34	---	---	PEAK

Note: The items 1, 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

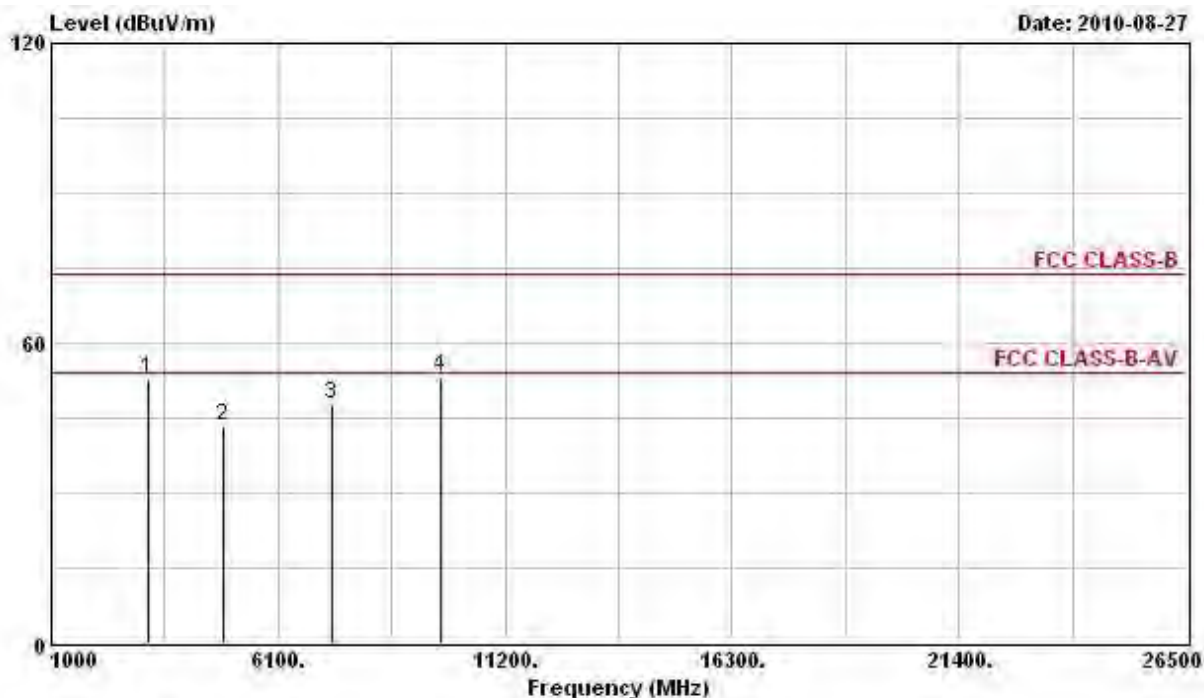
Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 6 (20MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3182.000	49.67			49.12	30.44	2.90	32.80	---	---	PEAK
2	4874.000	43.89	-10.11	54.00	40.75	33.16	2.60	32.62	---	---	PK
3	7315.000	47.71			40.28	35.68	4.65	32.91	---	---	PK
4	9752.000	52.34			41.63	38.62	5.42	33.34	---	---	PEAK

Note: The items 1, 3 and 4 on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

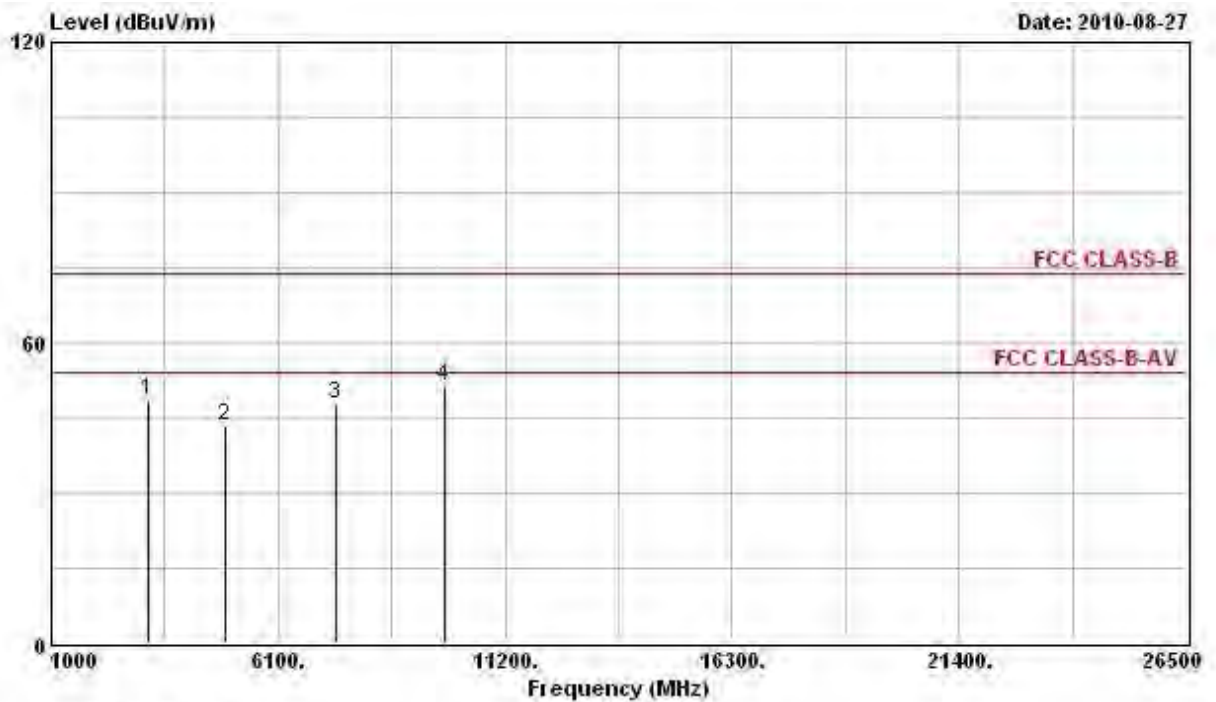
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3182.000	53.07			52.52	30.44	2.90	32.80	---	---	PEAK
2	4870.000	43.37	-10.63	54.00	40.19	33.16	2.65	32.62	---	---	PK
3	7311.000	47.66	-6.34	54.00	40.23	35.68	4.65	32.90	---	---	PK
4	9752.000	53.48			42.78	38.62	5.42	33.34	---	---	PEAK

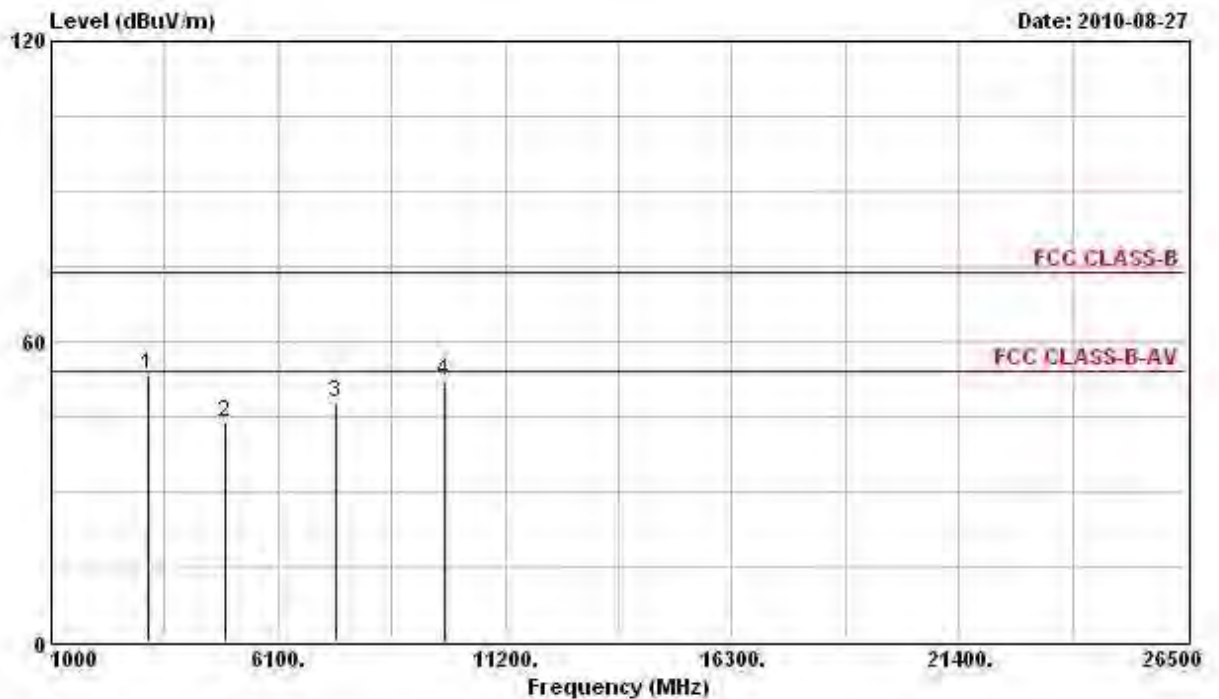
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 11 (20MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Rnt Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	48.61			48.02	30.48	2.91	32.80	---	---	PEAK
2	4920.000	43.32	-10.68	54.00	40.12	33.26	2.56	32.61	---	---	PK
3	7390.000	47.95	-6.05	54.00	40.26	35.87	4.75	32.93	---	---	PK
4	9844.000	51.49			40.54	38.79	5.49	33.33	---	---	PEAK

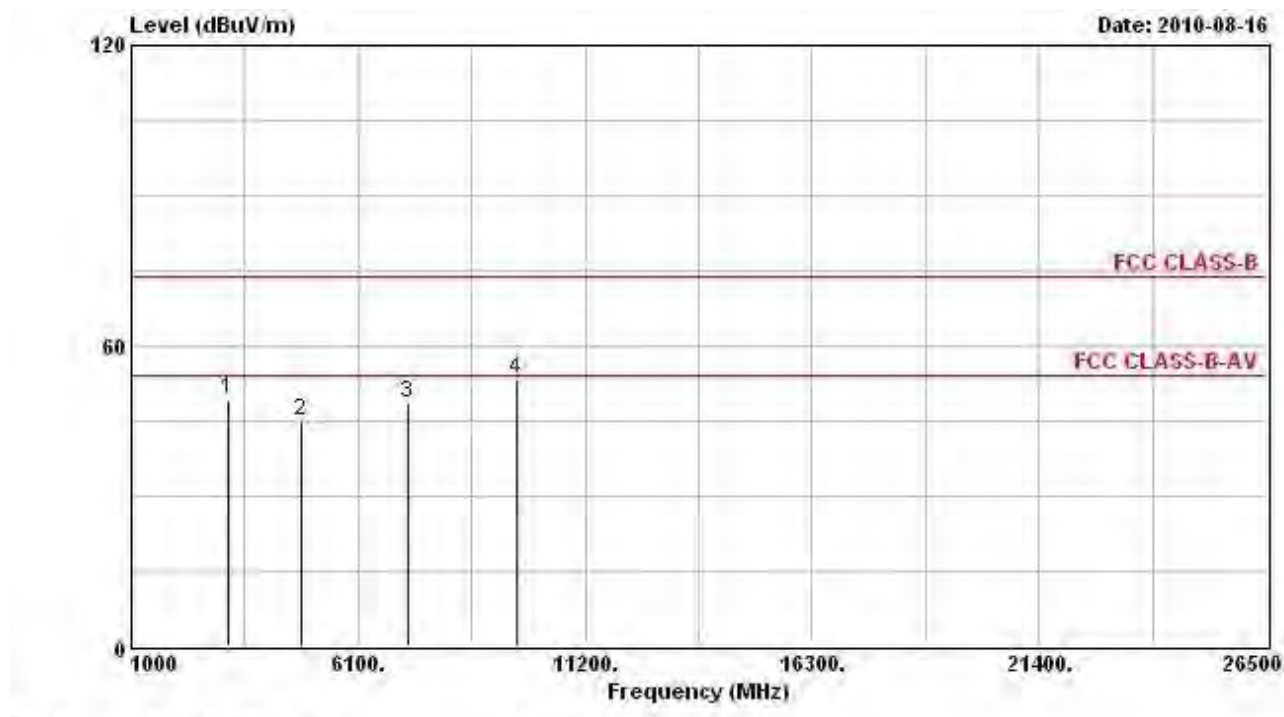
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	53.32			52.73	30.48	2.91	32.80	---	---	PEAK
2	4924.000	43.84	-10.16	54.00	40.63	33.26	2.56	32.61	---	---	PK
3	7386.000	47.82	-6.18	54.00	40.12	35.87	4.75	32.92	---	---	PK
4	9852.000	52.04			41.06	38.82	5.49	33.33	---	---	PEAK

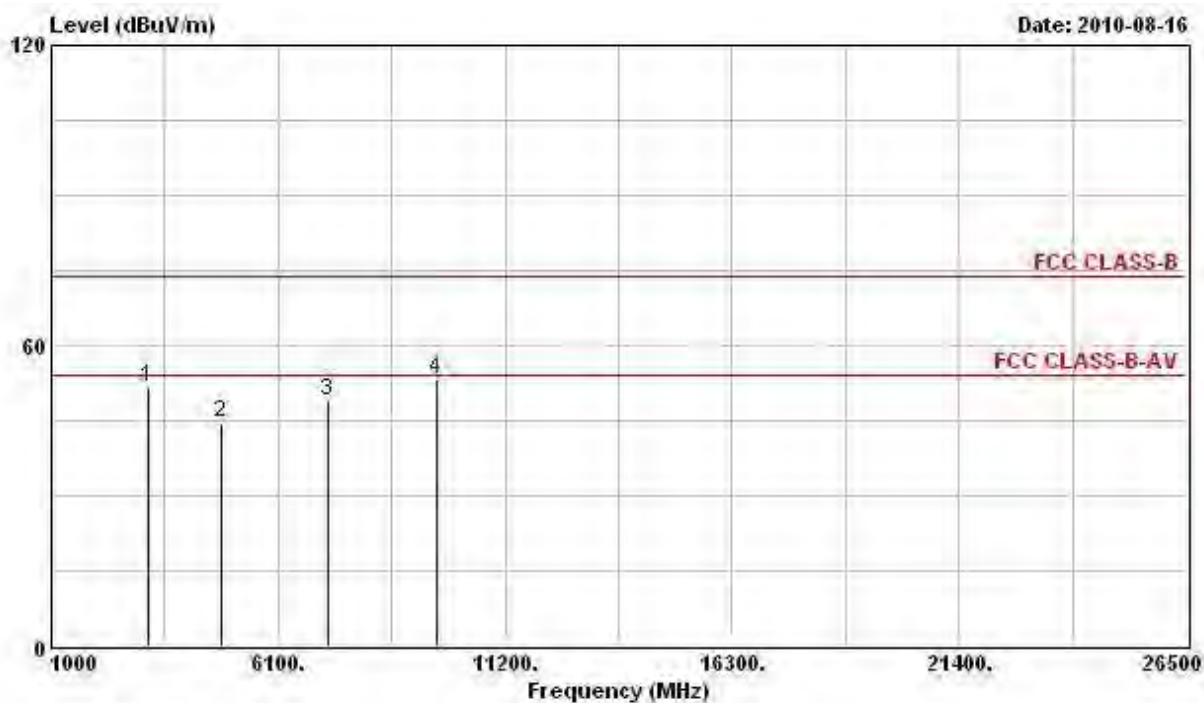
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 1 (20MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	49.45			48.86	30.48	2.90	32.80	---	---	PEAK
2	4824.000	45.07	-8.93	54.00	41.95	33.06	2.70	32.63	---	---	PK
3	7236.000	48.66			41.47	35.53	4.55	32.89	---	---	PEAK
4	9648.000	53.40			43.01	38.41	5.32	33.34	---	---	PEAK

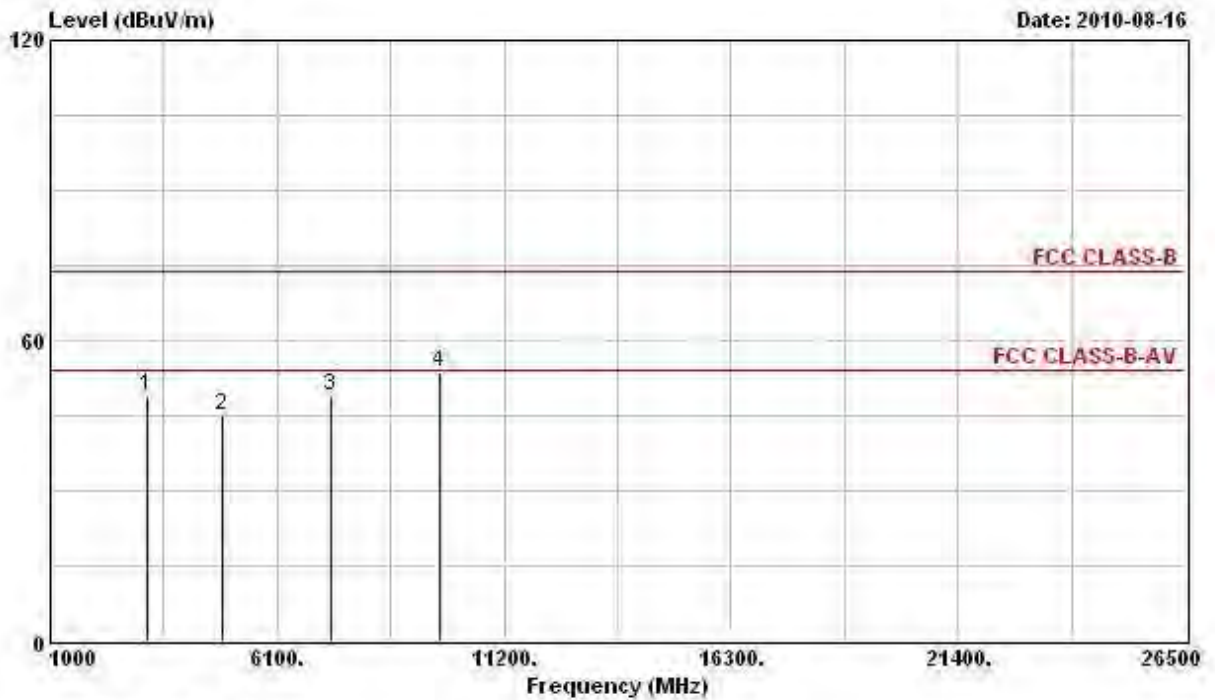
Note: The items 1, 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	51.70			51.12	30.48	2.90	32.80	---	---	PERK
2	4824.000	44.79	-9.21	54.00	41.67	33.06	2.70	32.63	---	---	PK
3	7232.000	48.95			41.74	35.53	4.55	32.88	---	---	PERK
4	9648.000	53.11			42.71	38.41	5.32	33.34	---	---	PERK

Note: The items 1, 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

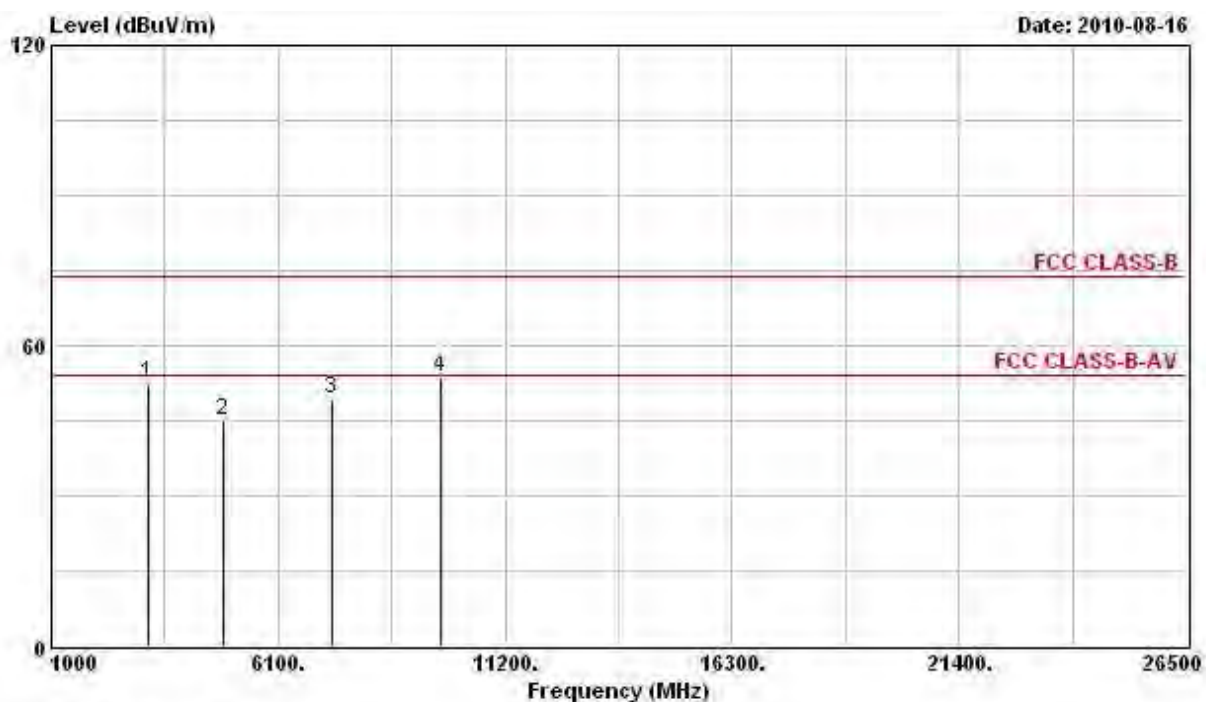
Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 6 (20MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	48.89			48.31	30.48	2.90	32.80	---	---	PEAK
2	4874.000	45.13	-8.87	54.00	41.99	33.16	2.60	32.62	---	---	PK
3	7311.000	49.11	-4.89	54.00	41.68	35.68	4.65	32.90	---	---	PK
4	9748.000	53.88			43.18	38.62	5.42	33.34	---	---	PEAK

Note: The item 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

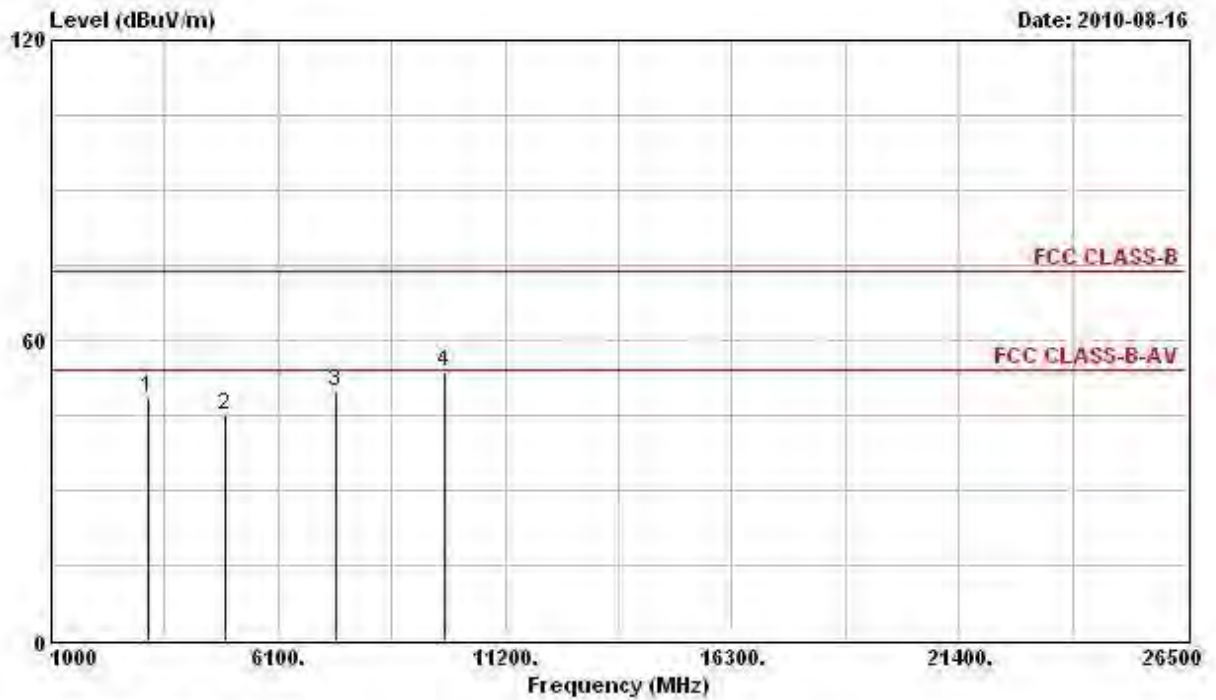
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	52.61			52.03	30.48	2.90	32.80	---	---	PEAK
2	4878.000	45.09	-8.91	54.00	41.95	33.16	2.60	32.62	---	---	PK
3	7315.000	49.22	-4.78	54.00	41.80	35.68	4.65	32.91	---	---	PK
4	9748.000	53.77			43.07	38.62	5.42	33.34	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

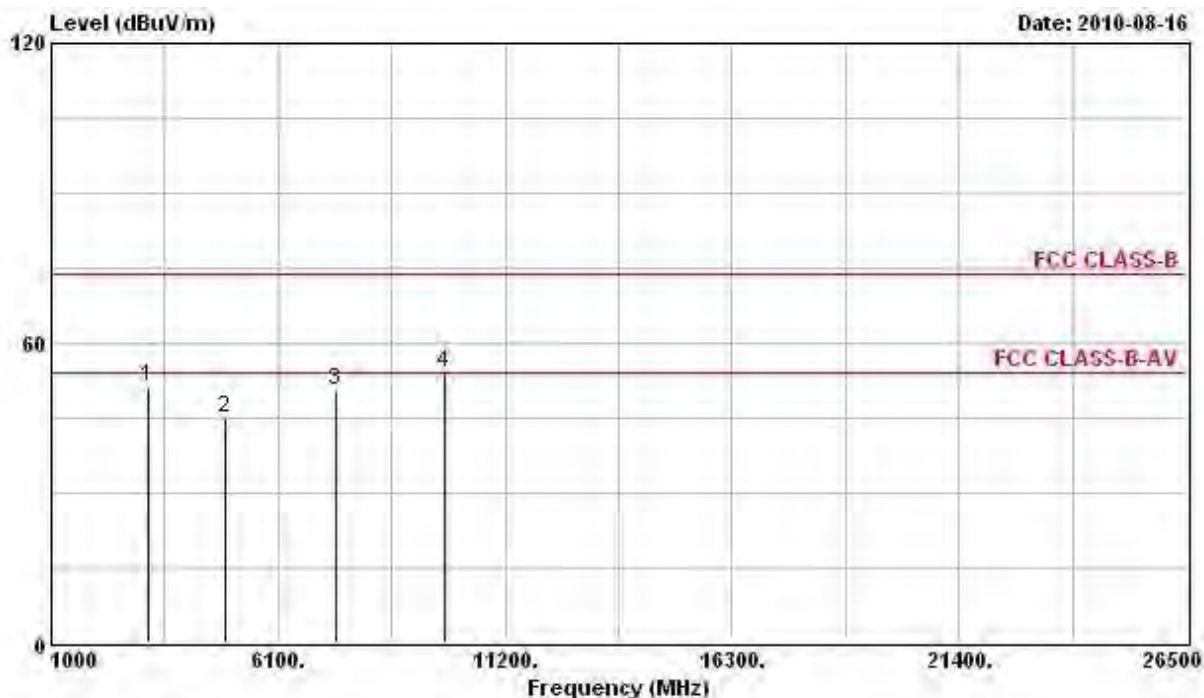
Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 11 (20MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3176.000	48.59			48.04	30.44	2.90	32.80	---	---	PERK
2	4920.000	44.88	-9.12	54.00	41.68	33.26	2.56	32.61	---	---	PK
3	7382.000	49.65	-4.35	54.00	41.99	35.83	4.75	32.92	---	---	PK
4	9852.000	53.77			42.79	38.82	5.49	33.33	---	---	PERK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

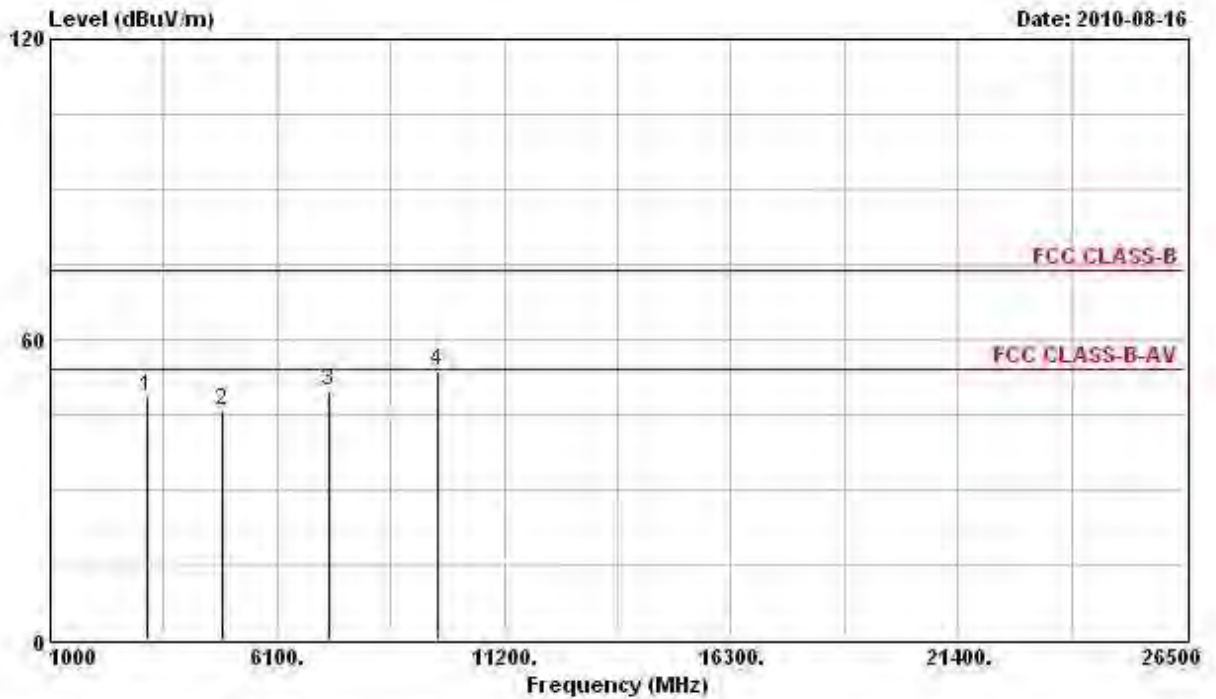
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	51.42			50.83	30.48	2.90	32.80	---	---	PEAK
2	4924.000	45.18	-8.82	54.00	41.98	33.26	2.56	32.61	---	---	PK
3	7386.000	50.50	-3.50	54.00	42.80	35.87	4.75	32.92	---	---	PK
4	9848.000	54.19			43.24	38.79	5.49	33.33	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

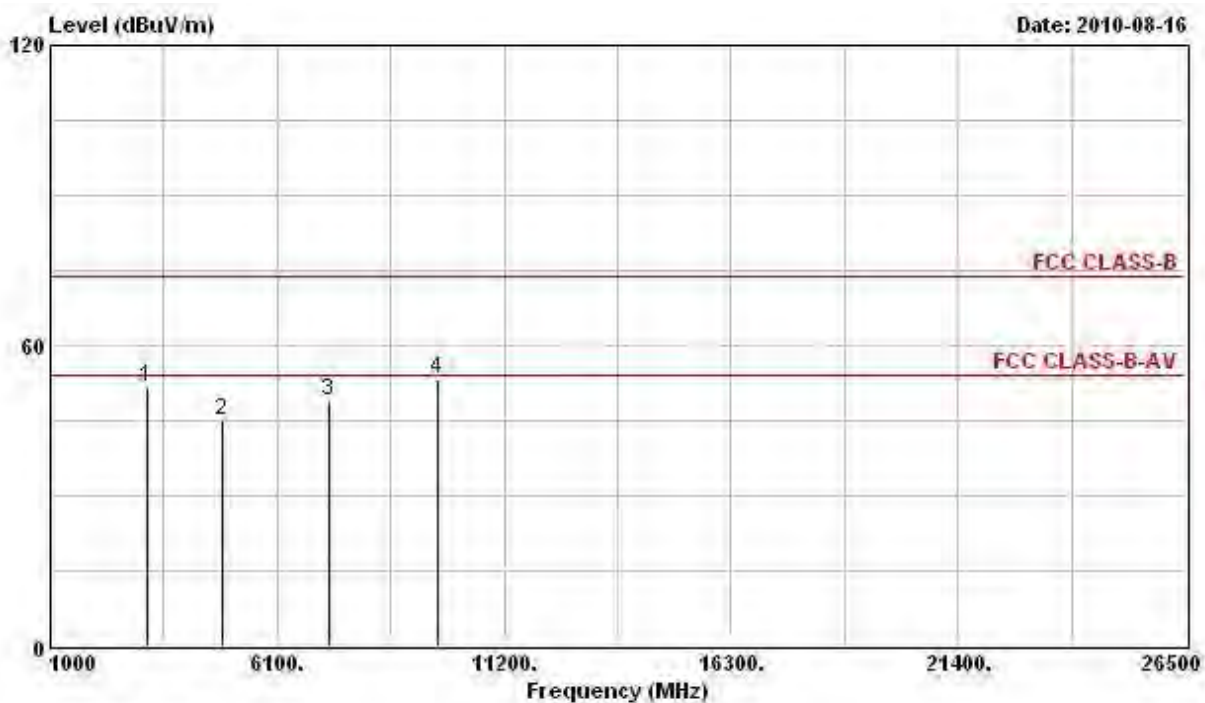
Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 3 (40MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	3176.000	48.65			48.11	30.44	2.90	32.80	--- PEAK
2	4844.000	45.75	-8.25	54.00	42.64	33.09	2.65	32.63	--- PK
3	7266.000	49.73	-4.27	54.00	42.41	35.61	4.60	32.89	--- PK
4	9688.000	53.51			43.01	38.48	5.36	33.34	--- PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

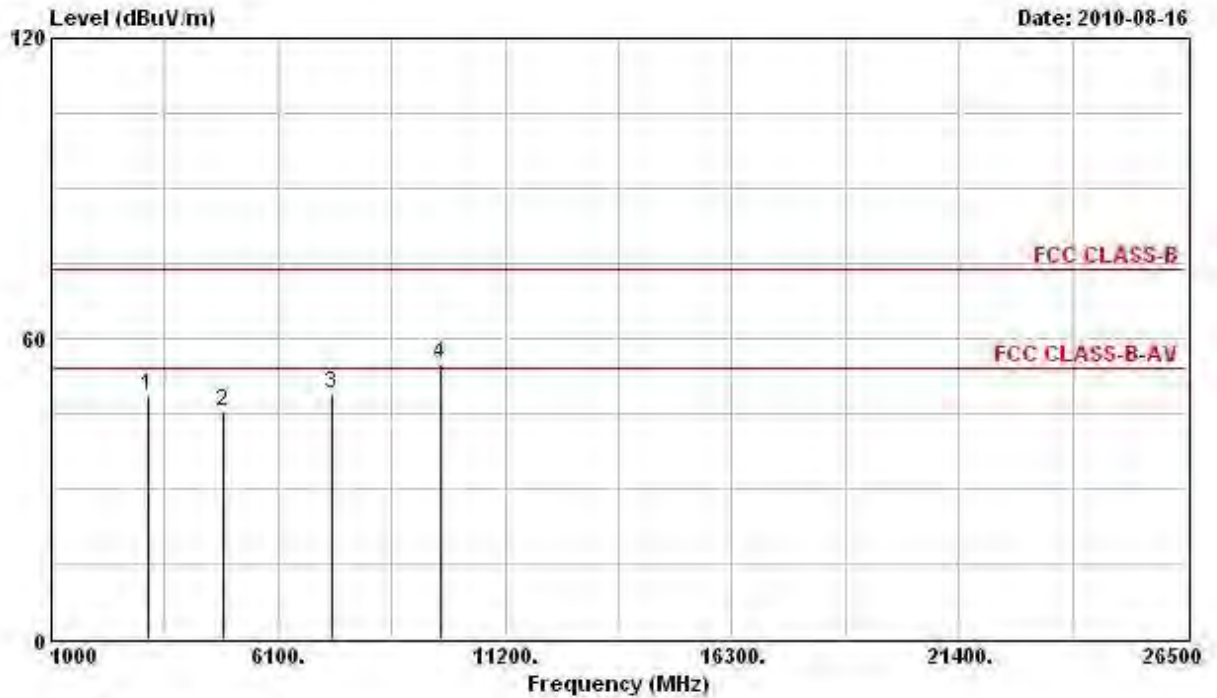
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	51.63			51.04	30.48	2.90	32.80	---	---	PEAK
2	4844.000	45.13	-8.87	54.00	42.02	33.09	2.65	32.63	---	---	PK
3	7266.000	49.03	-4.97	54.00	41.72	35.61	4.60	32.89	---	---	PK
4	9688.000	53.36			42.86	38.48	5.36	33.34	---	---	PEAK

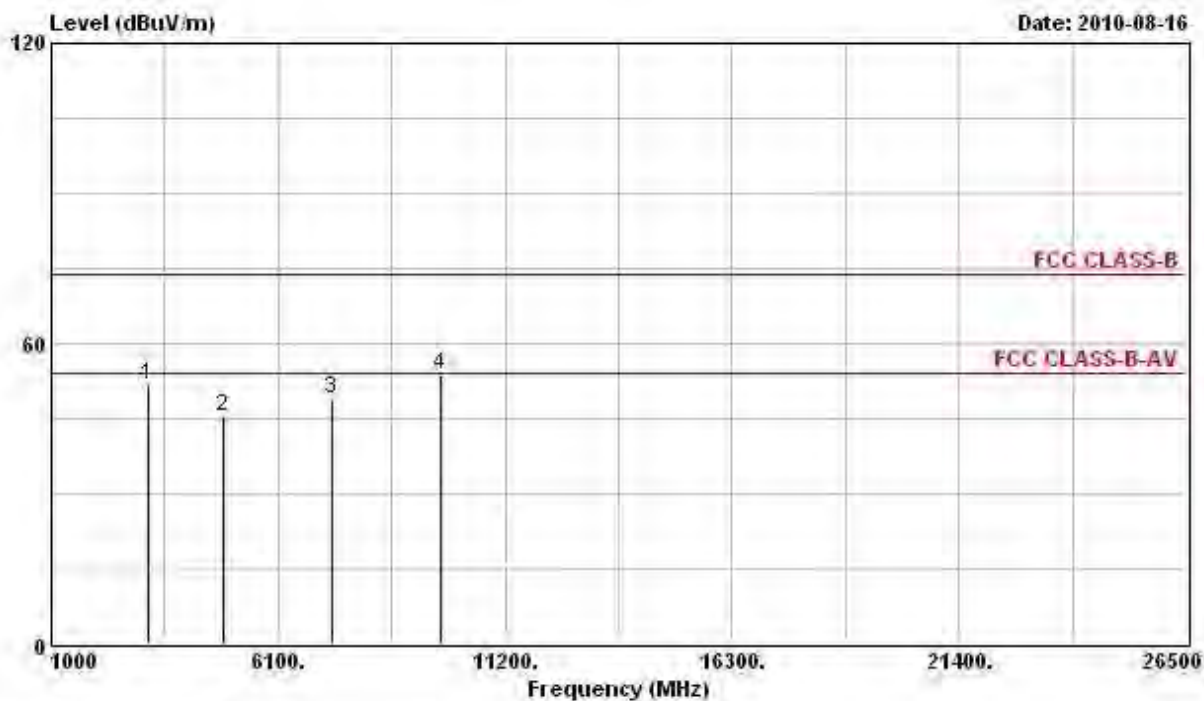
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 6 (40MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3176.000	48.53			47.99	30.44	2.90	32.80	---	---	PERK
2	4878.000	45.30	-8.70	54.00	42.16	33.16	2.60	32.62	---	---	PK
3	7309.000	49.04	-4.96	54.00	41.61	35.68	4.65	32.90	---	---	PK
4	9744.000	54.79			44.16	38.58	5.39	33.34	---	---	PERK

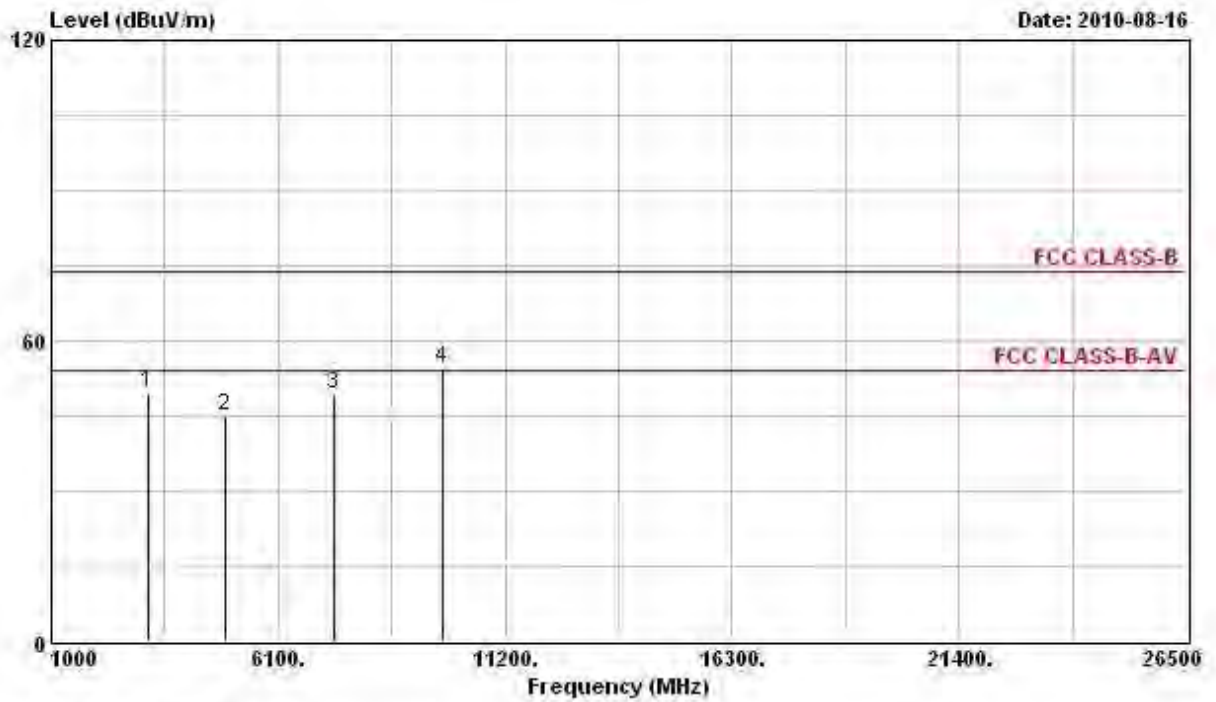
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table		
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos Remark	
					dBuV	dB/m	dB	dB	cm	deg	
1	3176.000	51.88			51.33	30.44	2.90	32.80	---	---	PEAK
2	4874.000	45.38	-8.62	54.00	42.24	33.16	2.60	32.62	---	---	PK
3	7311.000	49.13	-4.87	54.00	41.69	35.68	4.65	32.90	---	---	PK
4	9748.000	53.50			42.80	38.62	5.42	33.34	---	---	PEAK

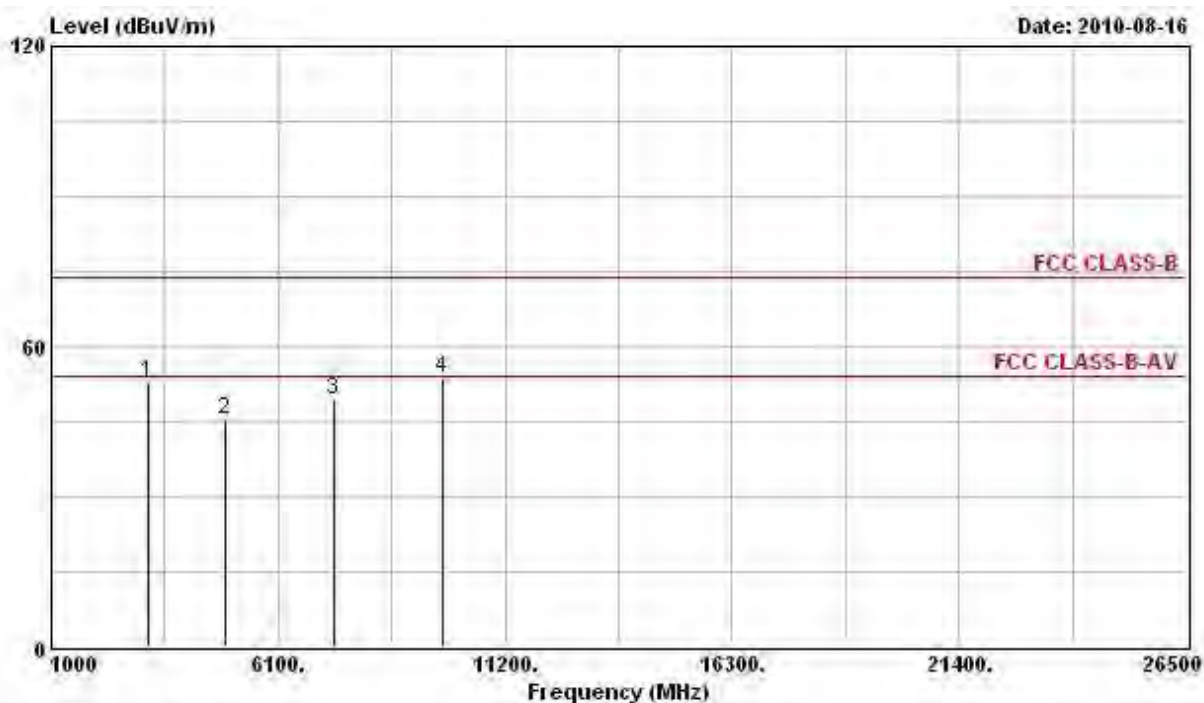
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 9 (40MHz) / (Ant. A)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3192.000	49.85			49.26	30.48	2.90	32.80	---	---	PEAK
2	4904.000	44.97	-9.03	54.00	41.76	33.23	2.60	32.62	---	---	PK
3	7356.000	49.27	-4.73	54.00	41.69	35.80	4.70	32.92	---	---	PK
4	9808.000	54.66			43.82	38.72	5.45	33.33	---	---	PEAK

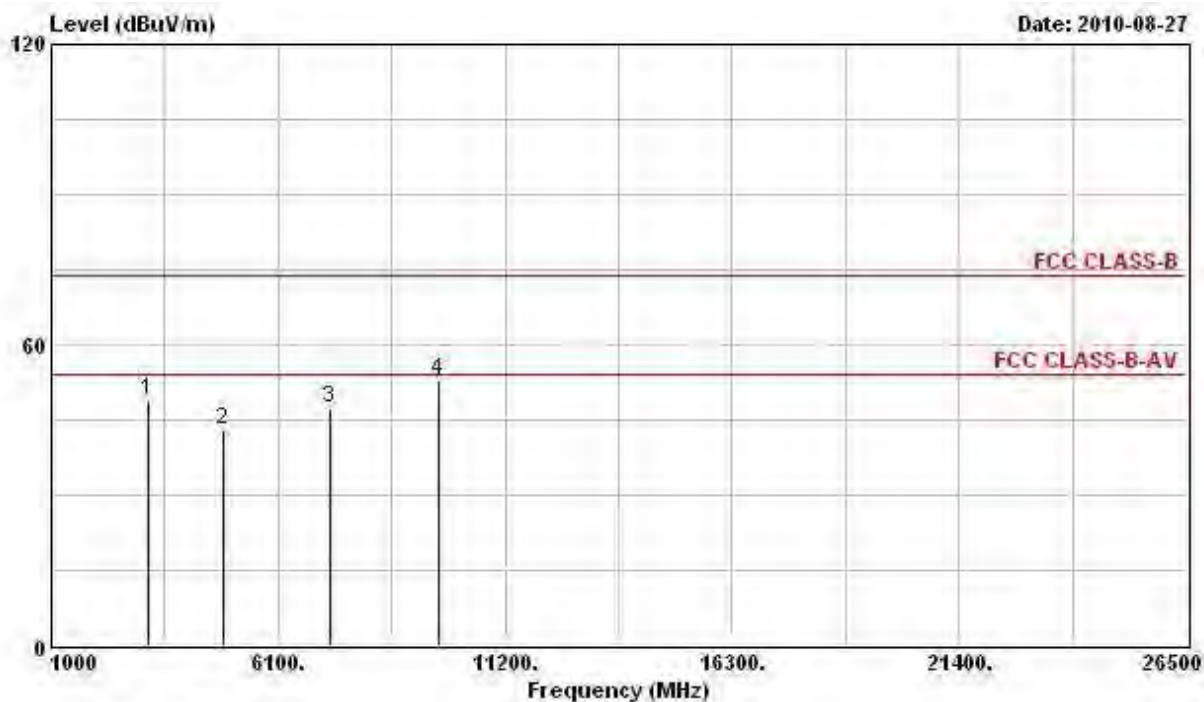
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	3192.000	52.91			52.32	30.48	2.90	32.80	--- PEAK
2	4908.000	45.23	-8.77	54.00	42.02	33.23	2.60	32.62	--- PK
3	7360.000	49.44	-4.56	54.00	41.86	35.80	4.70	32.92	--- PK
4	9812.000	53.58			42.74	38.72	5.45	33.33	--- PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

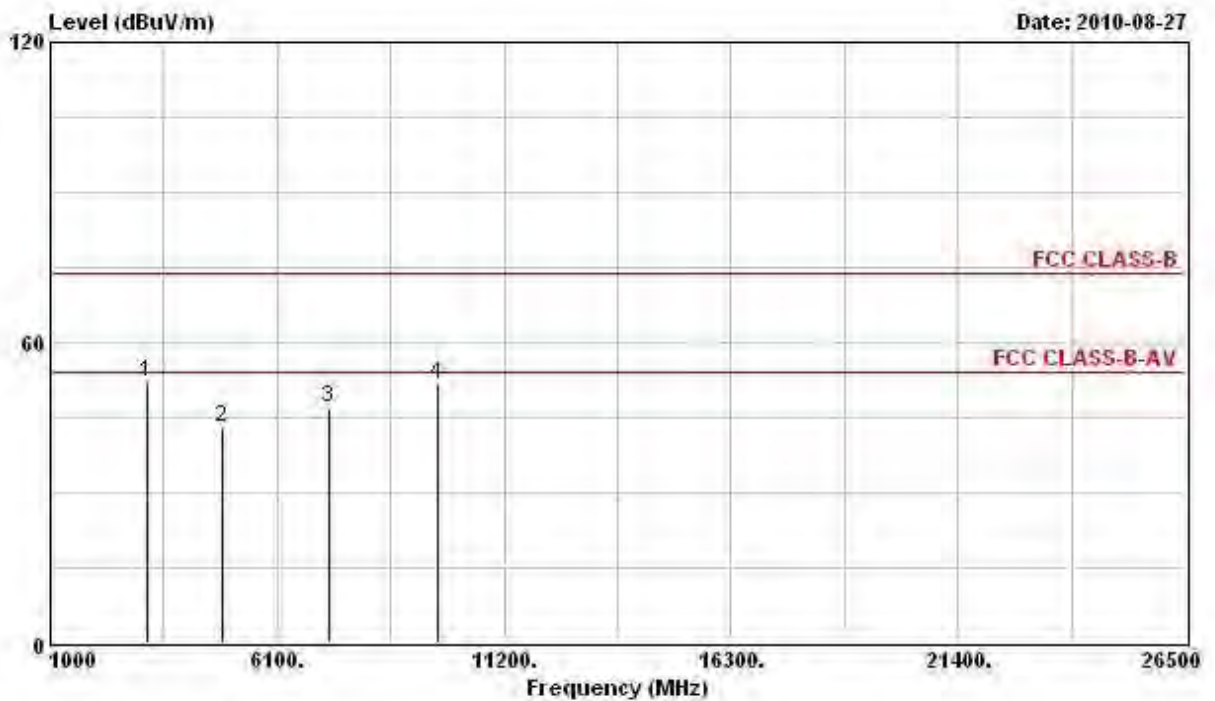
Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 3 (40MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3182.000	48.91			48.35	30.44	2.90	32.80	---	---	PERK
2	4852.000	43.06	-10.94	54.00	39.92	33.12	2.65	32.63	---	---	PK
3	7266.000	47.33	-6.67	54.00	40.02	35.61	4.60	32.89	---	---	PK
4	9690.000	52.98			42.48	38.48	5.36	33.34	---	---	PERK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

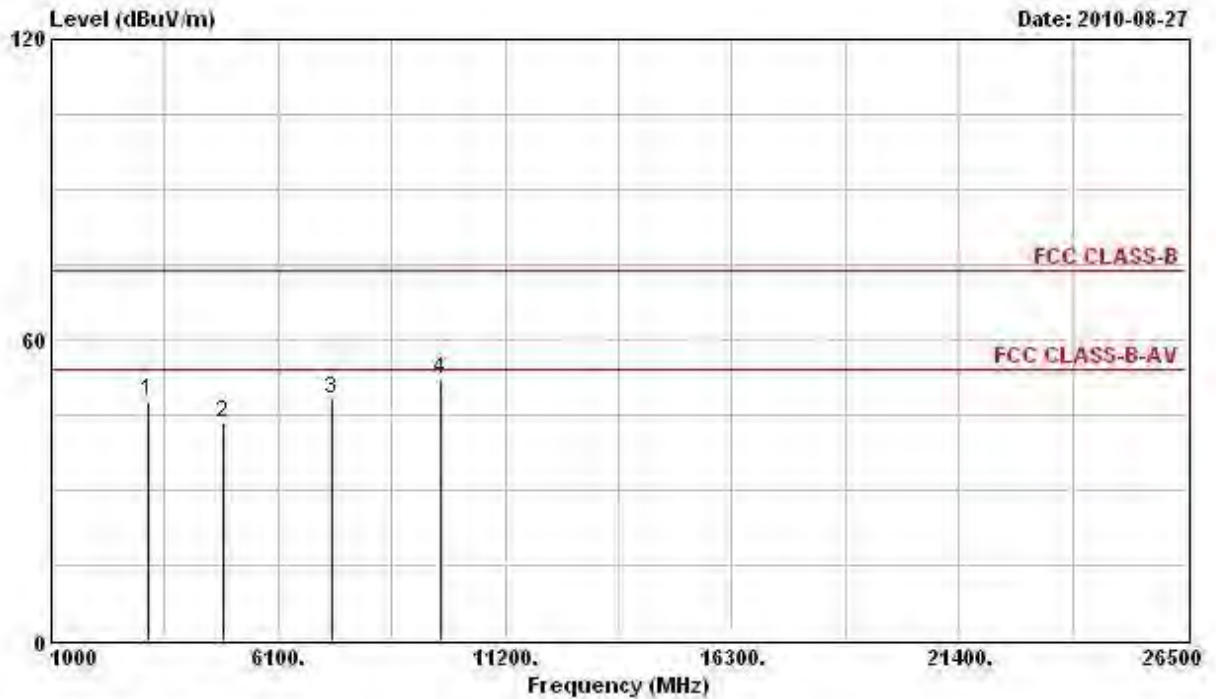
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3182.000	51.98			51.43	30.44	2.90	32.80	---	---	PEAK
2	4844.000	42.87	-11.13	54.00	39.76	33.09	2.65	32.63	---	---	PK
3	7266.000	46.91	-7.09	54.00	39.59	35.61	4.60	32.89	---	---	PK
4	9688.000	51.59			41.09	38.48	5.36	33.34	---	---	PERK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

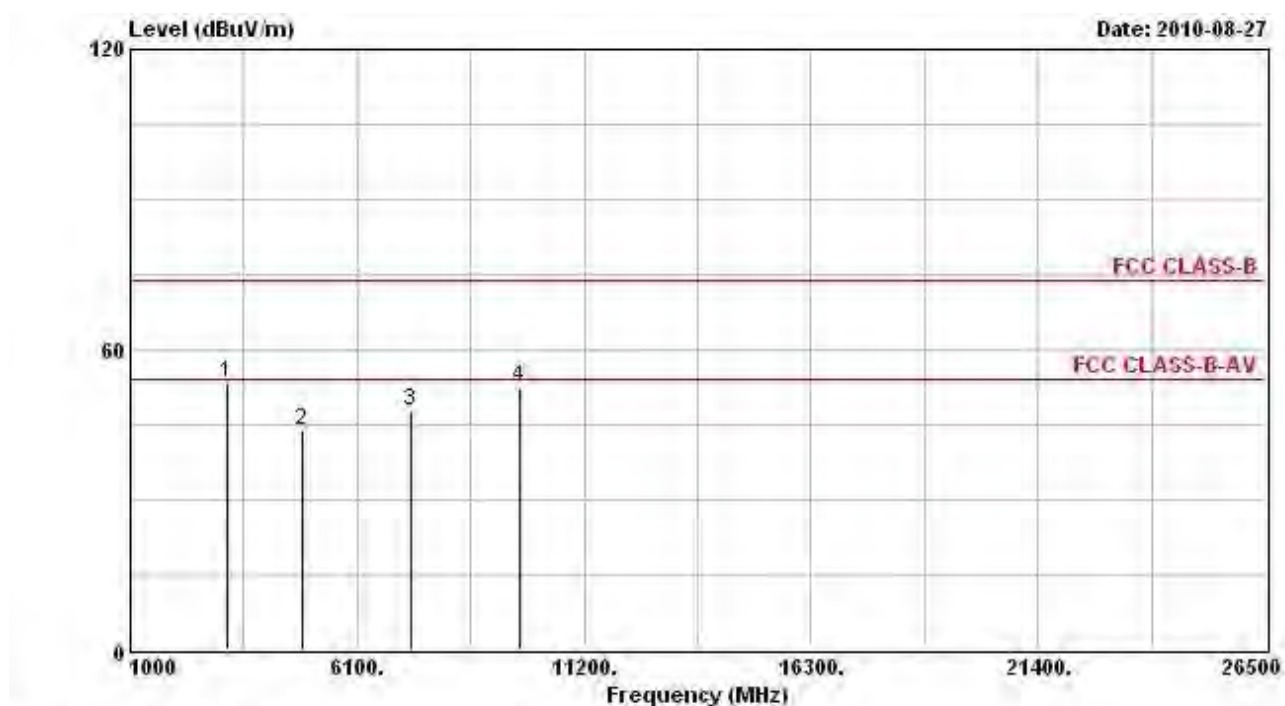
Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 6 (40MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	47.90			47.31	30.48	2.91	32.80	---	---	PERK
2	4878.000	43.47	-10.53	54.00	40.33	33.16	2.60	32.62	---	---	PK
3	7311.000	48.16	-5.84	54.00	40.73	35.68	4.65	32.90	---	---	PK
4	9748.000	52.26			41.56	38.62	5.42	33.34	---	---	PERK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

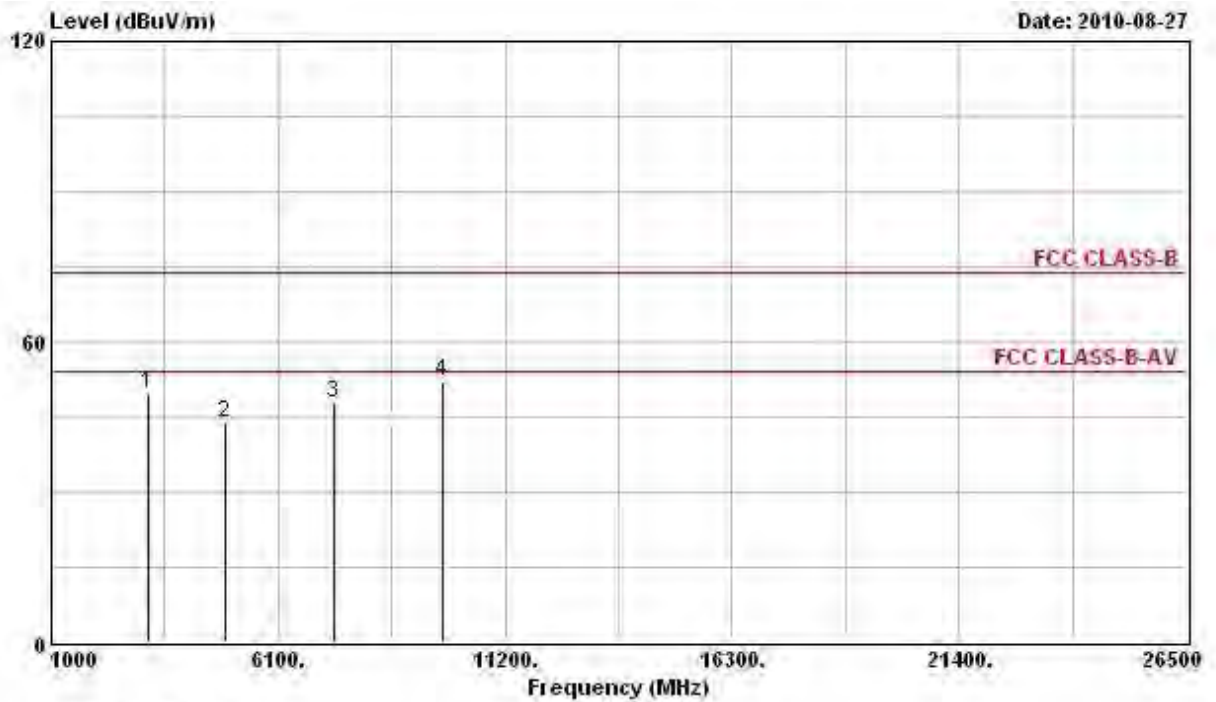
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3188.000	53.14			52.55	30.48	2.90	32.80	---	---	PERK
2	4874.000	43.73	-10.27	54.00	40.59	33.16	2.60	32.62	---	---	PK
3	7309.000	47.74	-6.26	54.00	40.31	35.68	4.65	32.90	---	---	PK
4	9744.000	52.45			41.82	38.58	5.39	33.34	---	---	PERK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

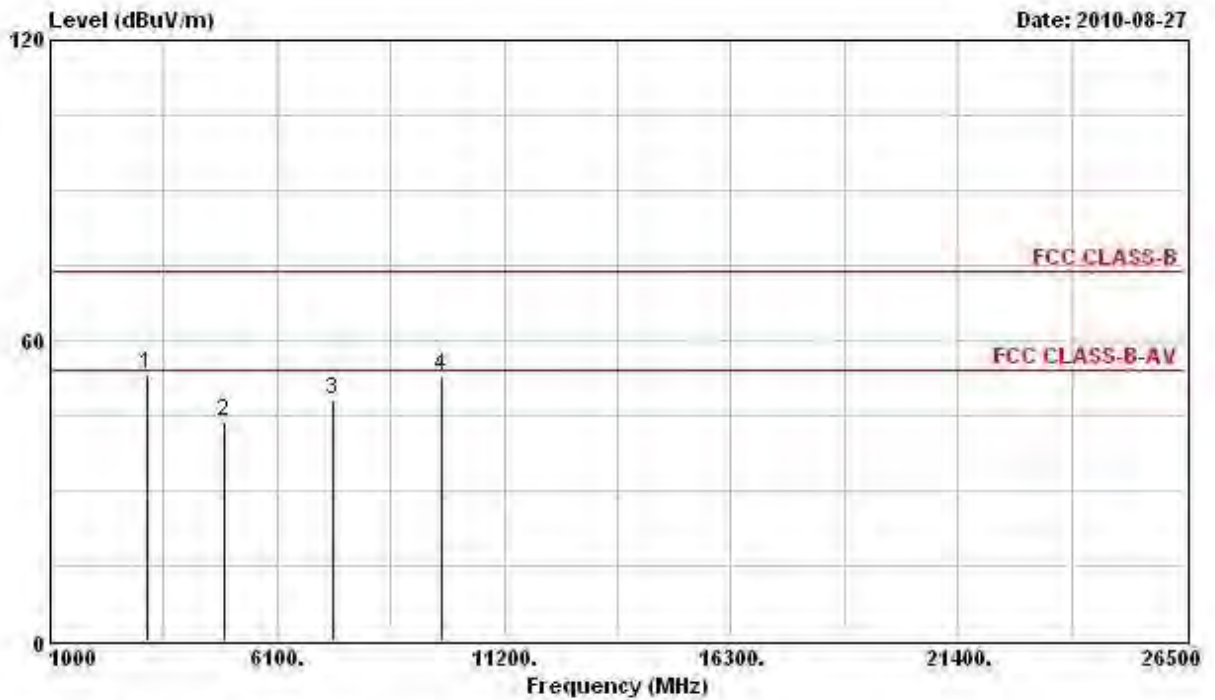
Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 9 (40MHz) / (Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Rnt Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	49.69			49.10	30.48	2.91	32.80	---	---	PEAK
2	4904.000	43.76	-10.24	54.00	40.55	33.23	2.60	32.62	---	---	PK
3	7356.000	47.78	-6.22	54.00	40.20	35.80	4.70	32.92	---	---	PK
4	9808.000	52.30			41.45	38.72	5.45	33.33	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

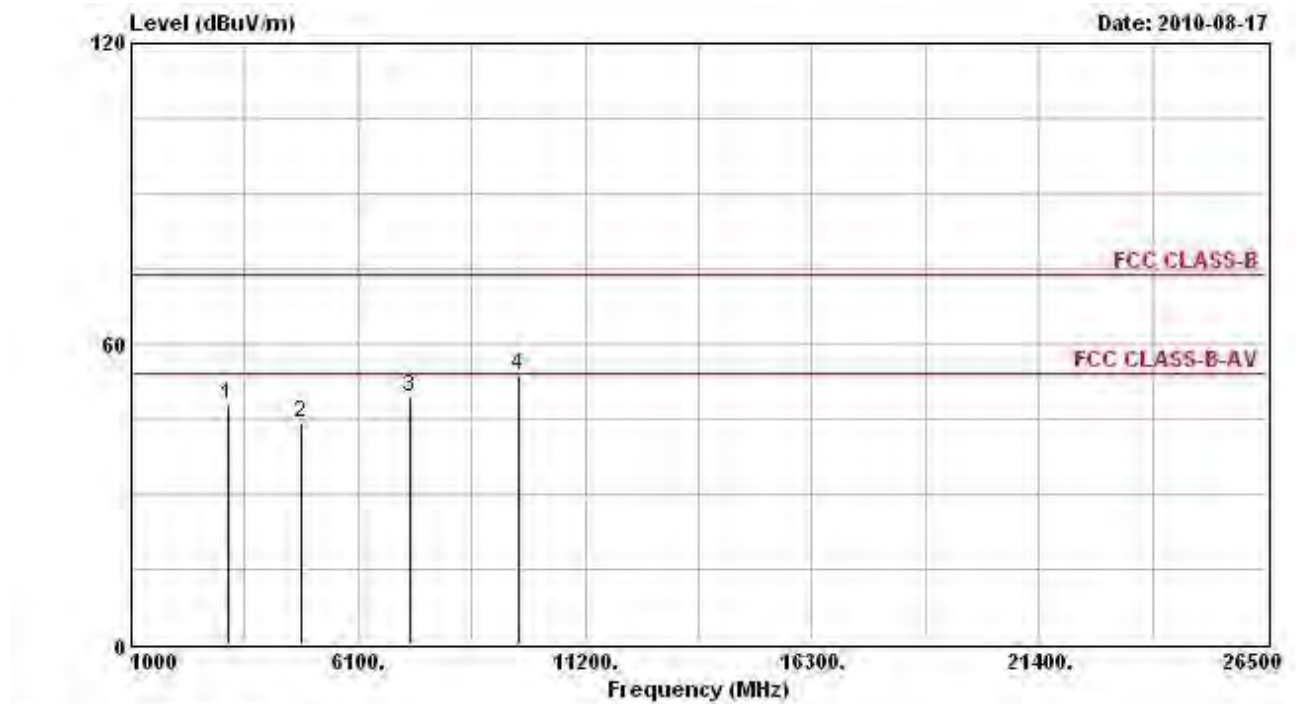
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3182.000	53.25			52.70	30.44	2.90	32.80	---	---	PEAK
2	4904.000	43.79	-10.21	54.00	40.57	33.23	2.60	32.62	---	---	PK
3	7360.000	48.04	-5.96	54.00	40.46	35.80	4.70	32.92	---	---	PK
4	9812.000	52.79			41.95	38.72	5.45	33.33	---	---	PERK

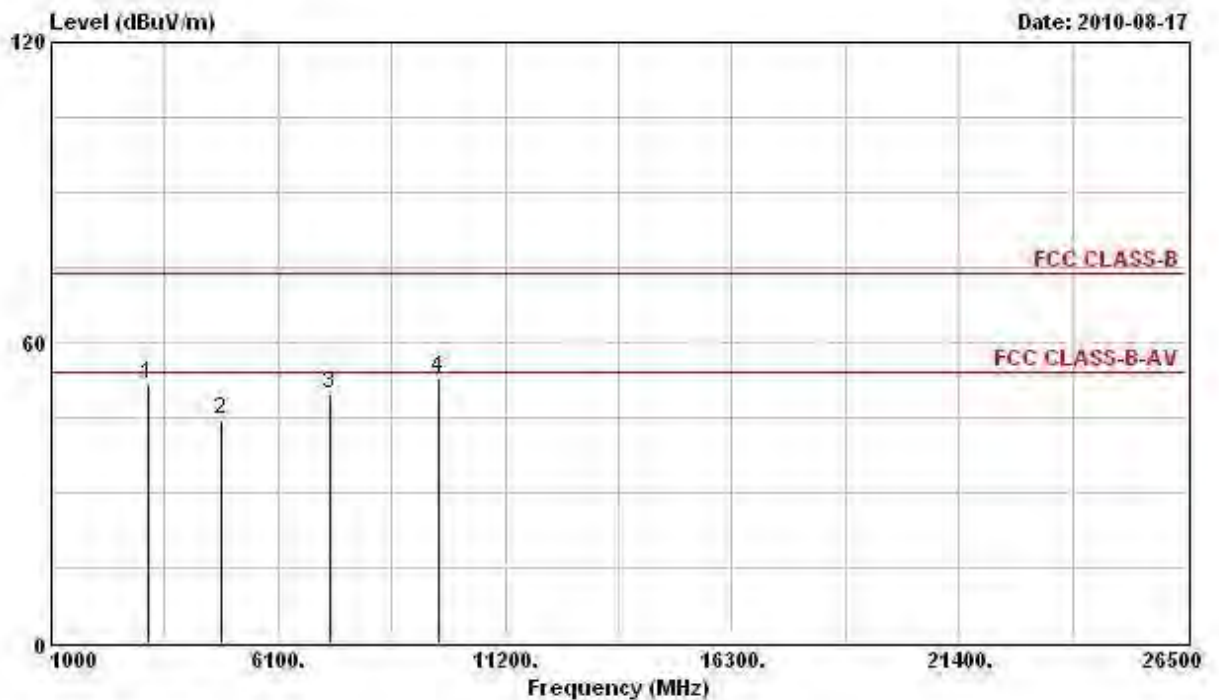
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Final Test Date	Aug. 17, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 3 (40MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Rnt Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3184.000	47.76			47.21	30.44	2.90	32.80	---	---	PEAK
2	4840.000	44.07	-9.93	54.00	40.96	33.09	2.65	32.63	---	---	PK
3	7266.000	49.45	-4.55	54.00	42.13	35.61	4.60	32.89	---	---	PK
4	9688.000	53.71			43.21	38.48	5.36	33.34	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

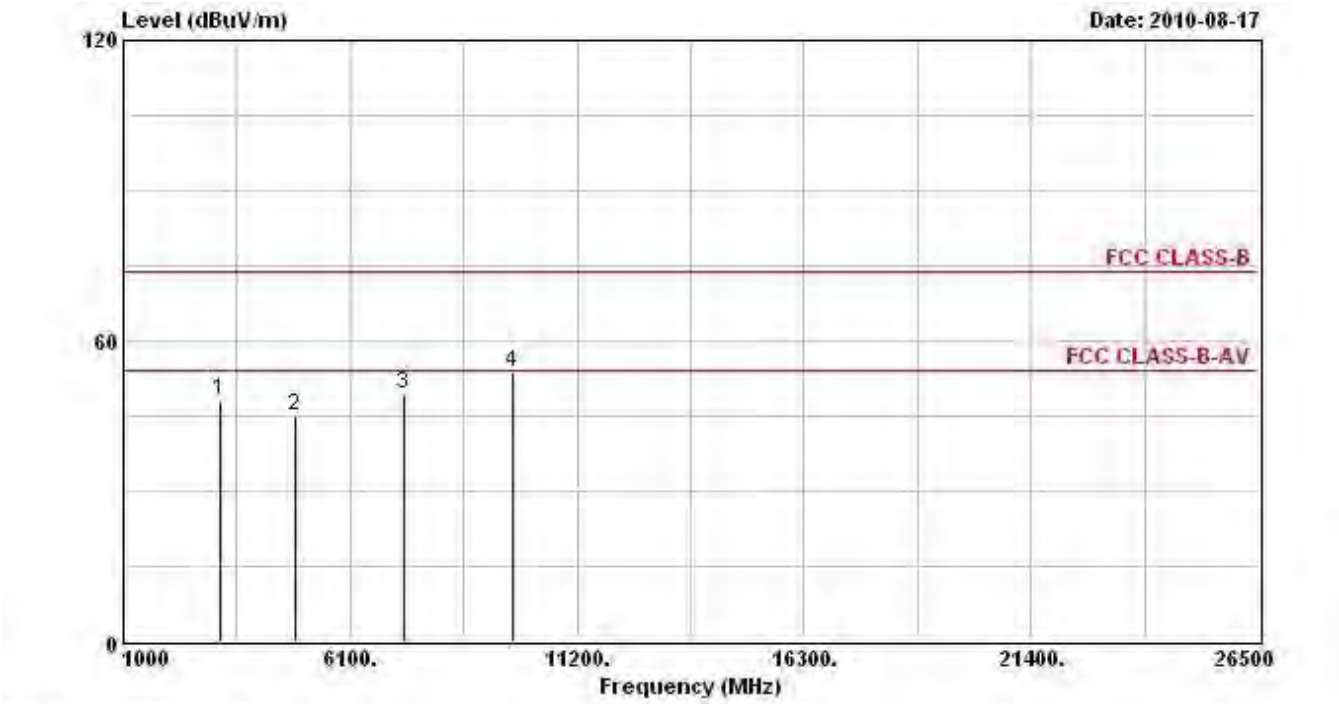
Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	51.81			51.22	30.48	2.91	32.80	---	---	PEAK
2	4840.000	44.63	-9.37	54.00	41.52	33.09	2.65	32.63	---	---	PK
3	7266.000	49.56	-4.44	54.00	42.24	35.61	4.60	32.89	---	---	PK
4	9692.000	52.83			42.33	38.48	5.36	33.34	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

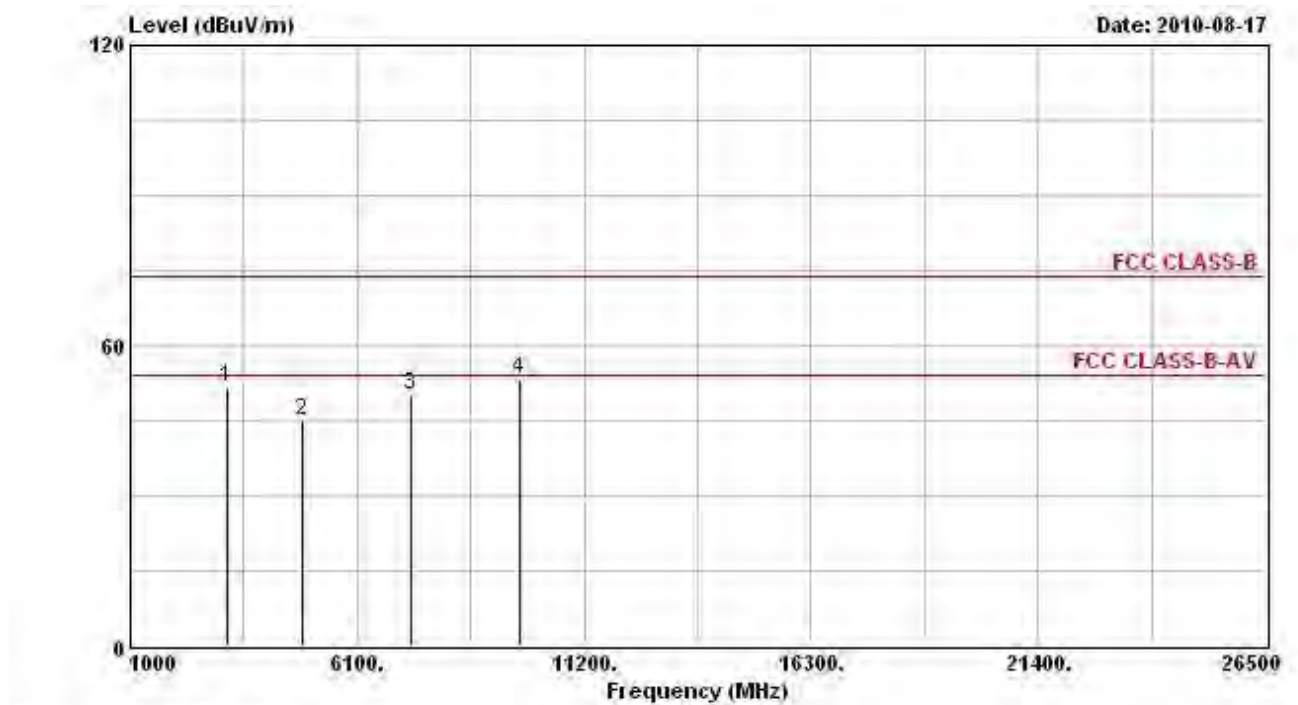
Final Test Date	Aug. 17, 2010	Test Site No.	03CH03-HY
Temperature	26.8℃	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 6 (40MHz) / (Ant. A + Ant. B)

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	48.24			47.65	30.48	2.91	32.80	---	---	PEAK
2	4870.000	45.17	-8.83	54.00	41.99	33.16	2.65	32.62	---	---	PK
3	7311.000	49.27	-4.73	54.00	41.84	35.68	4.65	32.90	---	---	PK
4	9740.000	53.64			43.00	38.58	5.39	33.34	---	---	PEAK

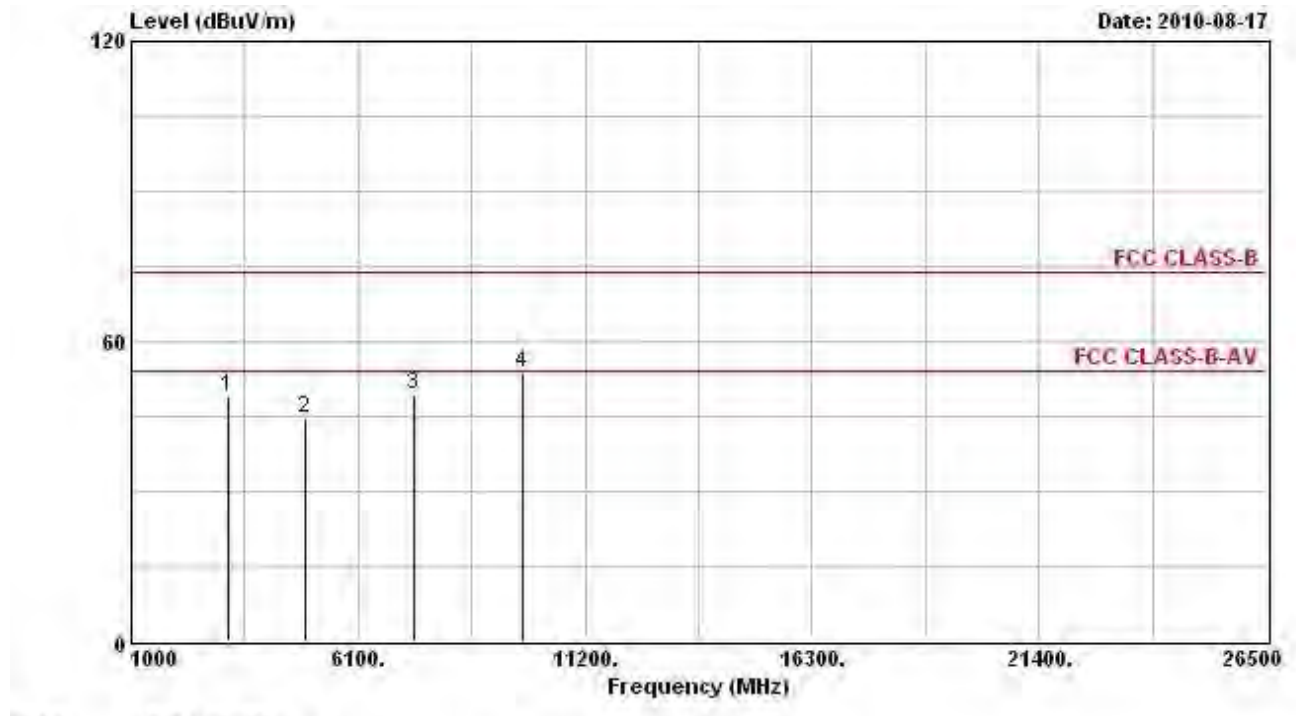
Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	deg	
1	3196.000	51.91			51.32	30.48	2.91	32.80	PEAK
2	4878.000	45.18	-8.82	54.00	42.04	33.16	2.60	32.62	PK
3	7303.000	50.08	-3.92	54.00	42.64	35.68	4.65	32.90	PK
4	9748.000	53.41			42.71	38.62	5.42	33.34	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

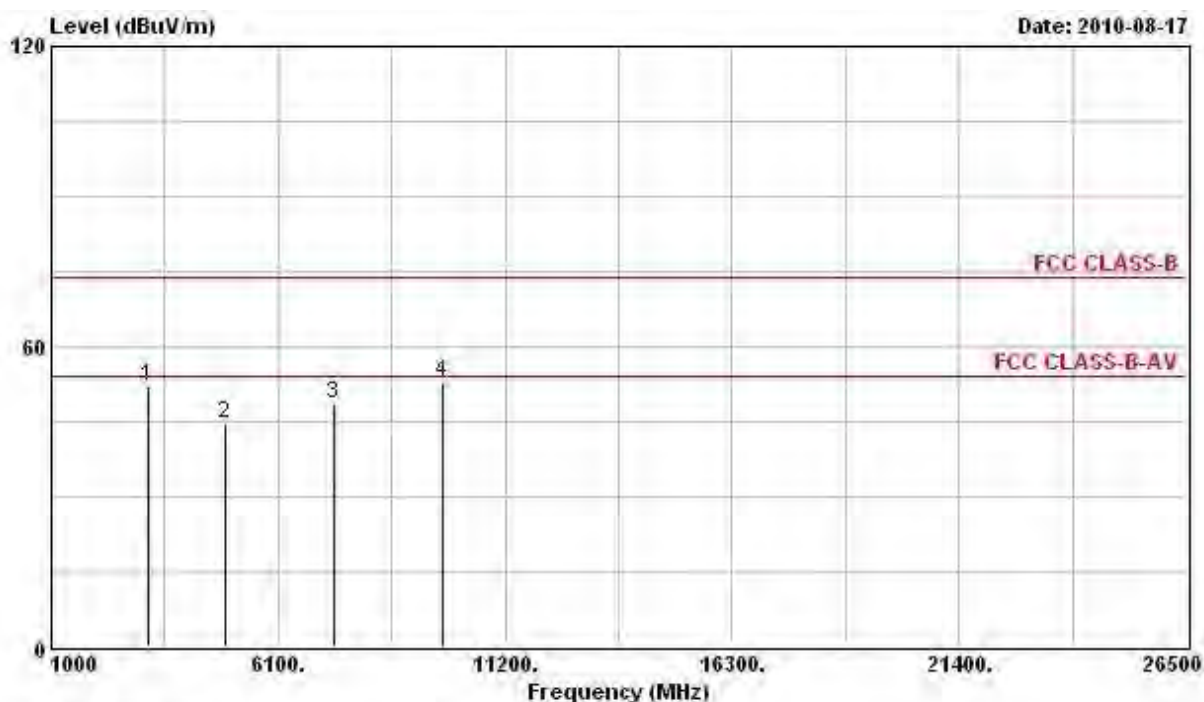
Final Test Date	Aug. 17, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 9 (40MHz) / (Ant. A + Ant. B)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	3196.000	49.05			48.46	30.48	2.91	32.80	---	---	PEAK
2	4904.000	44.63	-9.37	54.00	41.42	33.23	2.60	32.62	---	---	PK
3	7356.000	49.20	-4.80	54.00	41.62	35.80	4.70	32.92	---	---	PK
4	9812.000	53.60			42.76	38.72	5.45	33.33	---	---	PEAK

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	3196.000	51.97			51.38	30.48	2.91	32.80	---	---
2	4904.000	44.42	-9.58	54.00	41.21	33.23	2.60	32.62	---	---
3	7356.000	48.67	-5.33	54.00	41.09	35.80	4.70	32.92	---	---
4	9808.000	53.05			42.21	38.72	5.45	33.33	---	---

Note: The items 1 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

3.3 Band Edge and Fundamental Emissions Measurement

3.3.1 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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

3.3.2 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)	1MHz / 1MHz for Peak

3.3.3 Test Procedures

1. The test procedure is the same as section 3.5.3; 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.

3.3.4 Test Setup Layout

This test setup layout is the same as that shown in section 3.5.4.

3.3.5 Test Deviation

There is no deviation with the original standard.

3.3.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.3.7 Test Result of Band Edge and Fundamental Emissions

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 149, 157, 165 (20MHz) / (Ant. A)

Channel 149

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5724.220	79.57	-3.97	83.54	41.07	34.80	3.70	0.00	---	---	Peak
2 @	5751.340	111.84			73.30	34.80	3.74	0.00	---	---	Peak
1	5725.000	61.37	-2.17	63.54	22.87	34.80	3.70	0.00	---	---	Average
2 @	5750.560	101.22			62.68	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 157

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5708.460	71.22	-12.32	83.54	32.72	34.80	3.70	0.00	---	---	Peak
2 @	5779.020	111.60			73.02	34.80	3.78	0.00	---	---	Peak
3	5868.840	69.39	-14.15	83.54	30.74	34.80	3.85	0.00	---	---	Peak
1	5703.240	58.11	-5.43	63.54	19.61	34.80	3.70	0.00	---	---	Average
2 @	5778.840	101.21			62.63	34.80	3.78	0.00	---	---	Average
3	5850.120	57.74	-5.80	63.54	19.09	34.80	3.85	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 165

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	5827.900	111.29			72.67	34.80	3.82	0.00	---	---	Peak
2	5888.600	71.43	-12.11	83.54	32.74	34.80	3.89	0.00	---	---	Peak
1 @	5827.900	101.15			62.53	34.80	3.82	0.00	---	---	Average
2	5850.000	57.99	-5.55	63.54	19.34	34.80	3.85	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 30, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 149, 157, 165 (20MHz) / (Ant. B)

Channel 149

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	5724.160	74.88	-8.66	83.54	36.38	34.80	3.70	0.00	---	---	Peak
2 @	5742.880	108.42			69.88	34.80	3.74	0.00	---	---	Peak
1 @	5725.000	58.51	-5.03	63.54	20.01	34.80	3.70	0.00	---	---	Average
2 @	5748.160	97.43			58.89	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 157

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5711.340	70.03	-13.51	83.54	31.53	34.80	3.70	0.00	---	---	Peak
2 @	5779.560	107.41			68.83	34.80	3.78	0.00	---	---	Peak
3	5856.600	69.97	-13.57	83.54	31.32	34.80	3.85	0.00	---	---	Peak
1 @	5713.500	57.57	-5.97	63.54	19.07	34.80	3.70	0.00	---	---	Average
2 @	5779.560	97.05			58.47	34.80	3.78	0.00	---	---	Average
3 @	5850.120	57.27	-6.27	63.54	18.62	34.80	3.85	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 165

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	5828.200	107.35			68.73	34.80	3.82	0.00	---	---	Peak
2	5863.900	70.73	-12.81	83.54	32.08	34.80	3.85	0.00	---	---	Peak
1 @	5830.200	97.14			58.52	34.80	3.82	0.00	---	---	Average
2 @	5850.300	57.07	-6.47	63.54	18.42	34.80	3.85	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 149, 157, 165 (20MHz) / (Ant. A + Ant. B)

Channel 149

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5722.960	72.47	-11.07	83.54	33.97	34.80	3.70	0.00	---	---	Peak
2 @	5749.600	108.83			70.29	34.80	3.74	0.00	---	---	Peak
1	5725.000	59.03	-4.51	63.54	20.53	34.80	3.70	0.00	---	---	Average
2 @	5738.380	95.88			57.34	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 157

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5703.240	70.82	-12.72	83.54	32.32	34.80	3.70	0.00	---	---	Peak
2 @	5789.100	108.45			69.87	34.80	3.78	0.00	---	---	Peak
3	5861.640	70.88	-12.66	83.54	32.23	34.80	3.85	0.00	---	---	Peak
1	5707.740	57.90	-5.64	63.54	19.40	34.80	3.70	0.00	---	---	Average
2 @	5781.900	96.08			57.50	34.80	3.78	0.00	---	---	Average
3	5850.120	57.70	-5.84	63.54	19.05	34.80	3.85	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 165

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	5829.400	108.28			69.66	34.80	3.82	0.00	---	---	Peak
2	5877.800	71.25	-12.29	83.54	32.60	34.80	3.85	0.00	---	---	Peak
1 @	5828.600	95.45			56.83	34.80	3.82	0.00	---	---	Average
2	5850.600	57.63	-5.91	63.54	18.98	34.80	3.85	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 151, 159 (40MHz) / (Ant. A)

Channel 151

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5722.850	78.43	-5.11	83.54	39.93	34.80	3.70	0.00	---	---	Peak
2	5751.730	108.91			70.37	34.80	3.74	0.00	---	---	Peak
1	5725.000	61.06	-2.48	63.54	22.56	34.80	3.70	0.00	---	---	Average
2	5743.750	97.85			59.31	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 159

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5785.250	108.77			70.19	34.80	3.78	0.00	---	---	Peak
2	5850.880	72.01	-11.53	83.54	33.36	34.80	3.85	0.00	---	---	Peak
1	5783.880	98.15			59.57	34.80	3.78	0.00	---	---	Average
2	5850.000	57.71	-5.83	63.54	19.06	34.80	3.85	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 30, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 151, 159 (40MHz) / (Ant. B)

Channel 151

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5723.610	73.31	-10.23	83.54	34.81	34.80	3.70	0.00	---	---	Peak
2	5744.130	105.63			67.09	34.80	3.74	0.00	---	---	Peak
1	5725.000	58.86	-4.68	63.54	20.36	34.80	3.70	0.00	---	---	Average
2	5743.750	94.55			56.01	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 159

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5797.380	104.60			66.02	34.80	3.78	0.00	---	---	Peak
2	5856.250	69.93	-13.61	83.54	31.28	34.80	3.85	0.00	---	---	Peak
1	5798.250	93.66			55.08	34.80	3.78	0.00	---	---	Average
2	5855.750	57.13	-6.41	63.54	18.48	34.80	3.85	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 16, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	5GHz 802.11n Ch. 151, 159 (40MHz) / (Ant. A + Ant. B)

Channel 151

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5725.000	74.75	-8.79	83.54	36.25	34.80	3.70	0.00	---	---	Peak
2	5750.110	106.87			68.33	34.80	3.74	0.00	---	---	Peak
1	5723.890	59.58	-3.96	63.54	21.08	34.80	3.70	0.00	---	---	Average
2	5744.130	93.47			54.93	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 159

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5798.380	104.99			66.41	34.80	3.78	0.00	---	---	Peak
2	5864.250	71.68	-11.86	83.54	33.03	34.80	3.85	0.00	---	---	Peak
1	5783.750	92.07			53.49	34.80	3.78	0.00	---	---	Average
2	5852.380	57.64	-5.90	63.54	18.99	34.80	3.85	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 14, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 1, 6, 11 (20MHz) / (Ant. A)

Channel 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.000	59.62	-14.38	74.00	28.90	28.13	2.58	0.00	---	---	Peak
2 ☺	2415.260	106.27			75.50	28.16	2.61	0.00	---	---	Peak
1	2390.000	45.82	-8.18	54.00	15.10	28.13	2.58	0.00	---	---	Average
2 ☺	2415.260	95.62			64.85	28.16	2.61	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 ☺	2440.340	107.70			76.88	28.22	2.61	0.00	---	---	Peak
1 ☺	2433.690	97.07			66.27	28.19	2.61	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 ☺	2458.010	106.88			76.01	28.24	2.63	0.00	---	---	Peak
2	2492.210	58.81	-15.19	74.00	27.86	28.30	2.65	0.00	---	---	Peak
1 ☺	2458.770	96.01			65.14	28.24	2.63	0.00	---	---	Average
2	2498.100	45.74	-8.26	54.00	14.79	28.30	2.65	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 1, 6, 11 (20MHz) / (Ant. B)

Channel 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2321.780	55.92	-18.08	74.00	25.35	28.02	2.54	0.00	---	---	Peak
2	2415.260	91.29			60.52	28.16	2.61	0.00	---	---	Peak
1	2325.770	43.08	-10.92	54.00	12.51	28.02	2.54	0.00	---	---	Average
2	2414.690	80.74			49.97	28.16	2.61	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2440.340	92.56			61.74	28.22	2.61	0.00	---	---	Peak
1	2440.340	81.99			51.17	28.22	2.61	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2458.580	90.96			60.09	28.24	2.63	0.00	---	---	Peak
2	2496.580	57.13	-16.87	74.00	26.18	28.30	2.65	0.00	---	---	Peak
1	2458.770	80.52			49.65	28.24	2.63	0.00	---	---	Average
2	2498.100	43.49	-10.51	54.00	12.54	28.30	2.65	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 14, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 1, 6, 11 (20MHz) / (Ant. A + Ant. B)

Channel 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2311.900	59.12	-14.88	74.00	28.58	28.00	2.54	0.00	---	---	Peak
2 @	2415.450	103.52			72.75	28.16	2.61	0.00	---	---	Peak
1	2365.860	45.33	-8.67	54.00	14.69	28.08	2.56	0.00	---	---	Average
2 @	2414.690	90.98			60.21	28.16	2.61	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2440.530	105.58			74.76	28.22	2.61	0.00	---	---	Peak
1 @	2433.690	93.19			62.39	28.19	2.61	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2458.580	103.74			72.87	28.24	2.63	0.00	---	---	Peak
2	2499.050	58.64	-15.36	74.00	27.69	28.30	2.65	0.00	---	---	Peak
1 @	2458.580	91.75			60.88	28.24	2.63	0.00	---	---	Average
2	2498.290	45.64	-8.36	54.00	14.69	28.30	2.65	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 14, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 3, 6, 9 (40MHz) / (Ant. A)

Channel 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2378.210	58.36	-15.64	74.00	27.67	28.11	2.58	0.00	---	---	Peak
2 @	2430.650	98.27			67.47	28.19	2.61	0.00	---	---	Peak
1	2390.000	45.43	-8.57	54.00	14.71	28.13	2.58	0.00	---	---	Average
2 @	2418.300	87.39			56.62	28.16	2.61	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2445.850	102.73			71.91	28.22	2.61	0.00	---	---	Peak
1 @	2447.940	91.98			61.16	28.22	2.61	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2448.700	98.53			67.71	28.22	2.61	0.00	---	---	Peak
2	2489.170	58.96	-15.04	74.00	28.03	28.30	2.63	0.00	---	---	Peak
1 @	2448.700	87.73			56.91	28.22	2.61	0.00	---	---	Average
2	2498.290	45.75	-8.25	54.00	14.80	28.30	2.65	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 27, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 3, 6, 9 (40MHz) / (Ant. B)

Channel 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2355.410	57.88	-16.12	74.00	27.24	28.08	2.56	0.00	---	---	Peak
2 @	2418.300	81.89			51.12	28.16	2.61	0.00	---	---	Peak
1	2331.660	43.02	-10.98	54.00	12.45	28.02	2.54	0.00	---	---	Average
2 @	2418.490	71.43			40.66	28.16	2.61	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2439.770	86.09			55.27	28.22	2.61	0.00	---	---	Peak
1 @	2433.500	75.56			44.76	28.19	2.61	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2454.780	82.07			51.20	28.24	2.63	0.00	---	---	Peak
2	2488.980	56.84	-17.16	74.00	25.91	28.30	2.63	0.00	---	---	Peak
1 @	2454.970	71.61			40.74	28.24	2.63	0.00	---	---	Average
2	2498.860	43.51	-10.49	54.00	12.56	28.30	2.65	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Aug. 14, 2010	Test Site No.	03CH03-HY
Temperature	26.8°C	Humidity	56%
Test Engineer	Daniel	Configuration	2.4GHz 802.11n Ch. 3, 6, 9 (40MHz) / (Ant. A+ Ant. B)

Channel 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.420	58.77	-15.23	74.00	28.05	28.13	2.58	0.00	---	---	Peak
2 @	2418.300	98.70			67.93	28.16	2.61	0.00	---	---	Peak
1	2390.000	45.51	-8.49	54.00	14.79	28.13	2.58	0.00	---	---	Average
2 @	2419.060	85.90			55.13	28.16	2.61	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2445.090	102.18			71.36	28.22	2.61	0.00	---	---	Peak
1 @	2447.370	89.50			58.68	28.22	2.61	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2441.100	101.14			70.32	28.22	2.61	0.00	---	---	Peak
2	2491.450	58.75	-15.25	74.00	27.82	28.30	2.63	0.00	---	---	Peak
1 @	2442.810	86.84			56.02	28.22	2.61	0.00	---	---	Average
2	2497.530	45.58	-8.42	54.00	14.63	28.30	2.65	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Note:

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

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

3.4 Antenna Requirements

3.4.1 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.

3.4.2 Antenna Connector Construction

Please refer to section 2.2 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	100174	9kHz – 2.75GHz	Apr. 06, 2010	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99041	9kHz – 30MHz	Mar. 23, 2010	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Apr. 29, 2010	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2010	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 18, 2010	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	COA9231A	18667	9 kHz - 2 GHz	Jan. 24, 2010	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	Aug. 02, 2010	Radiation (03CH01-HY)
Spectrum Analyzer	R&S	FSP40	100004	9 kHz - 40 GHz	Oct. 03, 2009	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Sep. 26, 2009	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	May 20, 2010	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jan.11, 2010	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Jan. 05, 2010	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Jan. 05, 2010	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 – 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-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 (03CH03-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 724, 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. : L1190-100529

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 : May 29, 2010

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The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix