

FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart E § 15.407

Equipment : Web Pad
Model No. : DT390XX (X: Blank or A~Z)
Brand Name : DTR
Filing Type : Additional
Applicant : DT Research Inc.
6F,NO.1 ,NingPo E. St., Taipei, 100 Taiwan, R.O.C.
FCC ID : YE35100
Manufacturer : DT Research Inc.
6F,NO.1 ,NingPo E. St., Taipei, 100 Taiwan, R.O.C.
Received Date : May 18, 2010
Final Test Date : May 30, 2010

Statement

Test result included is only for the 802.11a/n (5150~5350MHz; 5470~5725MHz) 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 E**.

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.

Table of Contents

1 SUMMARY OF THE TEST RESULT 2

2 GENERAL INFORMATION..... 3

2.1 Product Details 3

2.2 Table for Filed Antenna 3

2.3 Table for Carrier Frequencies 5

2.4 Table for Test Modes 6

2.5 Table for Testing Locations 6

2.6 Table for Supporting Units..... 6

2.7 EUT Operation during Test 7

2.8 Test Configuration 8

3 TEST RESULT 10

3.1 AC Power Line Conducted Emissions Measurement..... 10

3.2 Radiated Emissions Measurement..... 14

3.3 Band Edge and Fundamental Emissions Measurement 70

3.4 Antenna Requirements..... 80

4 LIST OF MEASURING EQUIPMENTS 81

5 TEST LOCATION..... 82

6 TAF CERTIFICATE OF ACCREDITATION 83

APPENDIX A. TEST PHOTOS A1 ~ A6

APPENDIX B. PHOTOGRAPHS OF EUT B1 ~ B39

CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart E § 15.407

Equipment : Web Pad
Model No. : DT390XX (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 May 18, 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 E				
Part	Rule Section	Description of Test	Result	Under Limit
3.1	15.207	AC Power Line Conducted Emissions	Complies	7.53 dB
-	15.407(a)	26dB Spectrum Bandwidth	-	-
-	15.407(a)	Maximum Conducted Output Power	-	-
-	15.407(a)	Power Spectral Density	-	-
-	15.407(a)	Peak Excursion	-	-
3.2	15.407(b)	Radiated Emissions	Complies	3.05 dB
3.3	15.407(b)	Band Edge Emissions	Complies	0.05 dB
-	15.407(g)	Frequency Stability	-	-
3.4	15.203	Antenna Requirements	Complies	-

Note: Standard clause 15.407(a), 15.407 (g) 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 Conducted Output Power	±0.5dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
Peak Excursion	±0.5dB	Confidence levels of 95%
26dB Spectrum Bandwidth / Frequency Stability	±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 802.11a/n is shown in this report. For more detailed features description, please refer to the manufacturer’s specifications or user’s manual.

Items	Description
Modulation	See the below table for IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	See the below table for IEEE 802.11n
Frequency Range	5150~5350MHz; 5470~5725MHz

2.2 Table for Filed Antenna

Antenna & Bandwidth

Antenna Mode	Single Chain		Two Chain	
	20 MHz	40 MHz	20 MHz	40 MHz
Bandwidth Mode				
802.11a (5150~5250MHz)	V	X	X	X
802.11a (5250~5350MHz)	V	X	X	X
802.11a (5470~5725MHz)	V	X	X	X
802.11n (5150~5250MHz)	V	V	V	V
802.11n (5250~5350MHz)	V	V	V	V
802.11n (5470~5725MHz)	V	V	V	V

Ant.	Antenna Type	Connector	Gain (dBi)		Remark
			2.4G	5G	
A	PIFA Antenna	Hirose/Foxconn	2.93	4.70	TX / RX
B	PIFA Antenna	Hirose/Foxconn	2.93	4.70	TX / RX

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

IEEE 802.11n Modulation Scheme

MCS Index	Nss	Modulation	R	NBPS	NCBPS		NDBPS		Datarate(Mbps)			
					20MHz	40MHz	20MHz	40MHz	800nsGI		400nsGI	
									20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.200	15
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.400	30
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.700	45
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.900	60
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.300	90
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.800	120
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.000	135
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.200	150
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.444	30
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.889	60
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.333	90
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.778	120
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.667	180
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.556	240
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.000	270
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.444	300

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPS	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	guard interval

2.3 Table for Carrier Frequencies

Frequency Allocation

For 802.11a, 802.11n (20MHz): Use channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136 and 140.

For 802.11n (40MHz): Use channel 38, 46, 54, 62, 102, 110, 118, 126 and 134.

Frequency Band	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz
	38	5190 MHz
	40	5200 MHz
	44	5220 MHz
	46	5230 MHz
	48	5240 MHz

Frequency Band	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz
	54	5270 MHz
	56	5280 MHz
	60	5300 MHz
	62	5310 MHz
	64	5320 MHz

Frequency Band	Channel No.		Frequency	
5470~5725 MHz Band 3	100	5500 MHz	120	5600 MHz
	102	5510 MHz	124	5620 MHz
	104	5520 MHz	126	5630 MHz
	108	5540 MHz	128	5640 MHz
	110	5550 MHz	132	5660 MHz
	112	5560 MHz	134	5670 MHz
	116	5580 MHz	136	5680 MHz
	118	5590 MHz	140	5700 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	Data Rate	Channel	Antenna
AC Power Conducted Emission	Normal Mode	Auto	-	-
Radiated Emission Below 1GHz	Normal Mode	Auto	-	-
Radiated Emission Above 1GHz Band Edge Emission	11a Band 1~3/BPSK	6Mbps	36/40/48/52/56 /64/100/116/140	B
	11n Band 1~3/BPSK MCS 8 (20MHz)	13Mbps		
	11n Band 1~3/BPSK MCS 8 (40MHz)	27Mbps	38/46/54/62/102/110/134	A+B

2.5 Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.
CO01-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
iPod nano x3	Apple	A1199	N/A	Conducted
Headset	HAMA	-	N/A	
Notebook (Remote Workstation)	DELL	D505	DoC	
AP (Remote Workstation)	EDIMAX	BR2604WG	DoC	

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 :

- a. Turn on the power of all equipment.
- b. The NB reads the test program from the hard disk drive and runs it.
- c. The NB sends "H" messages to the panel and the displays "H" patterns on the screen.
- d. The NB sends messages to the modem.
- e. The NB sends "H" messages to the internal hard disk, and the hard disk reads and writes the message.
- f. Repeat the steps from c to f.

At the same time, the following programs were executed:

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

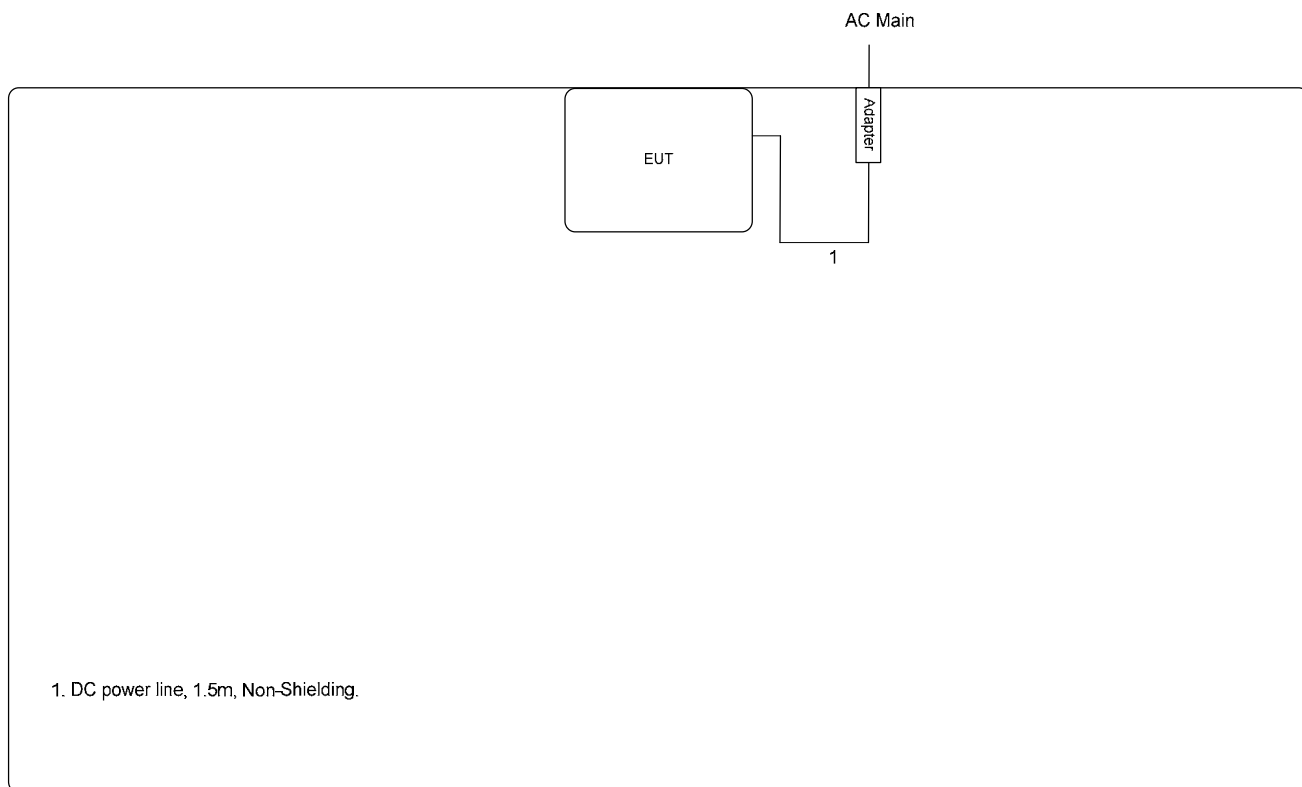
Radiated Emissions:

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

2.8 Test Configuration

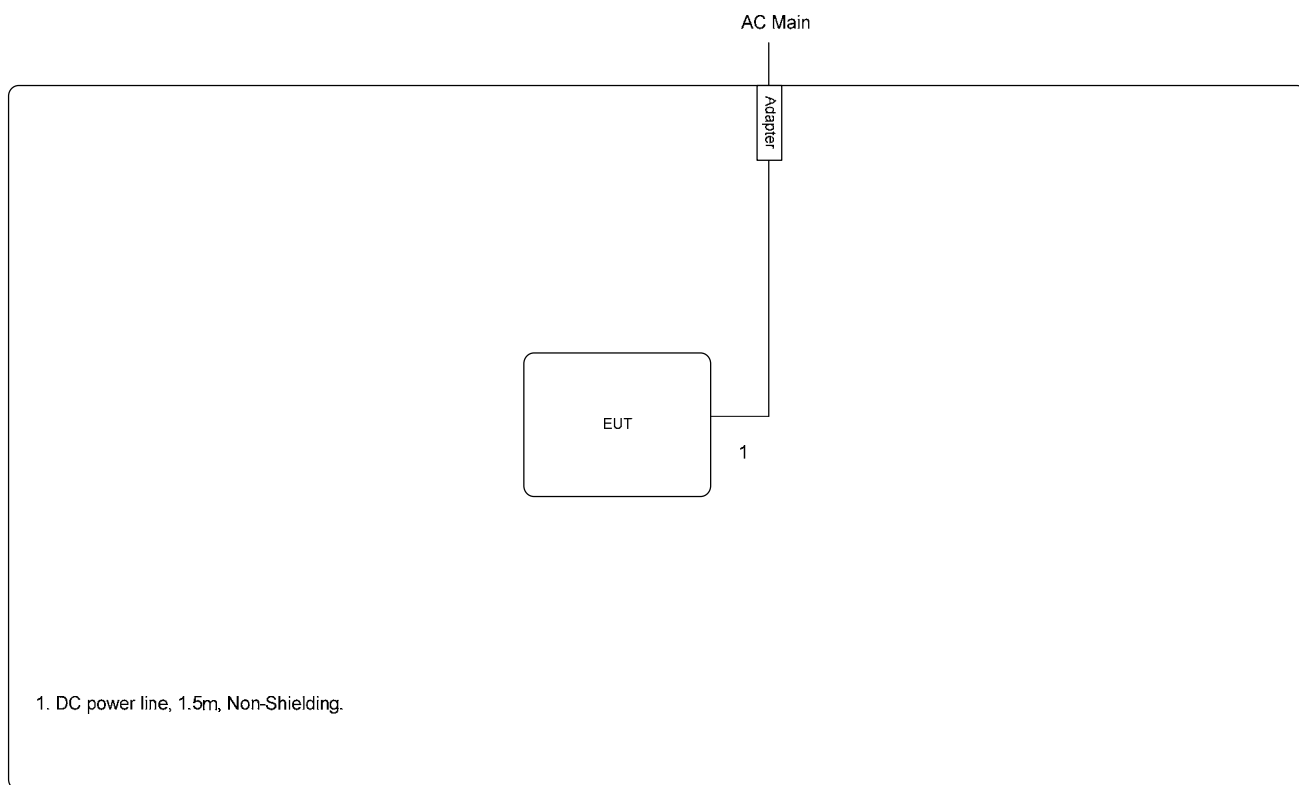
2.8.1 Radiation Emissions Test Configuration

For radiated emissions 9kHz~1GHz



1. DC power line, 1.5m, Non-Shielding.

For radiated emissions above 1GHz



3 TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit

For this product that is designed to connect 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

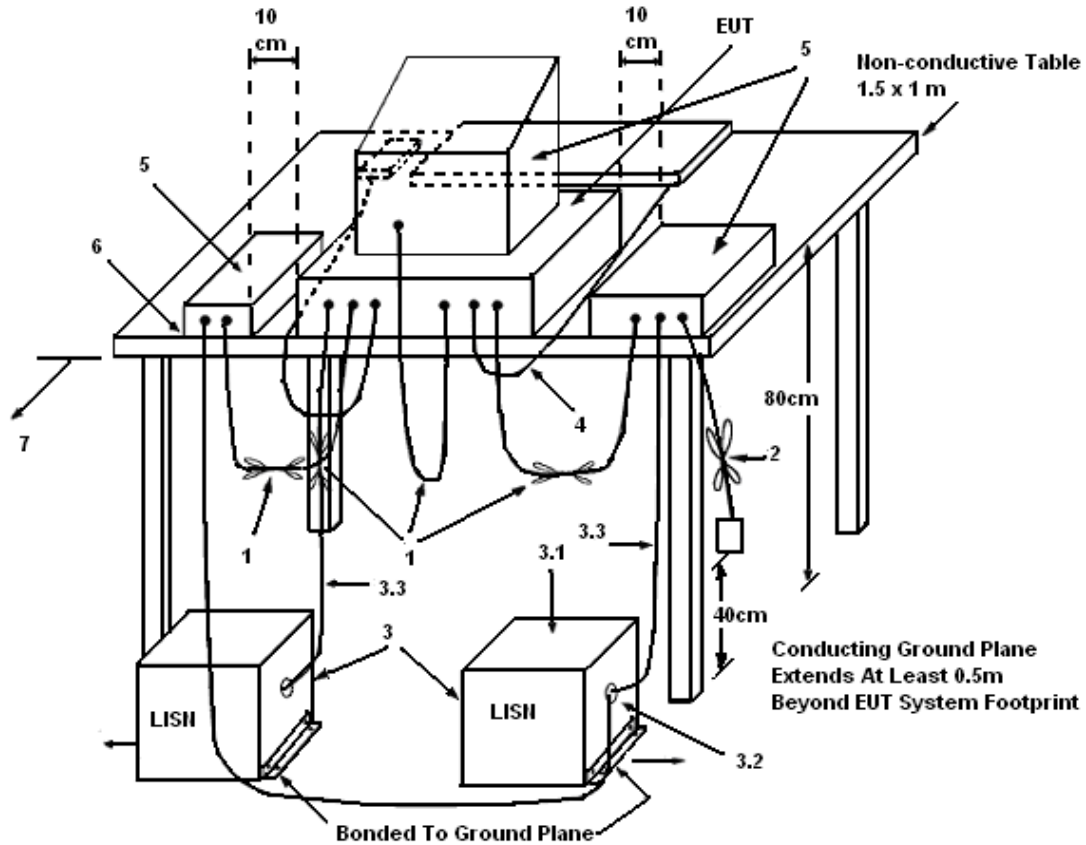
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

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.

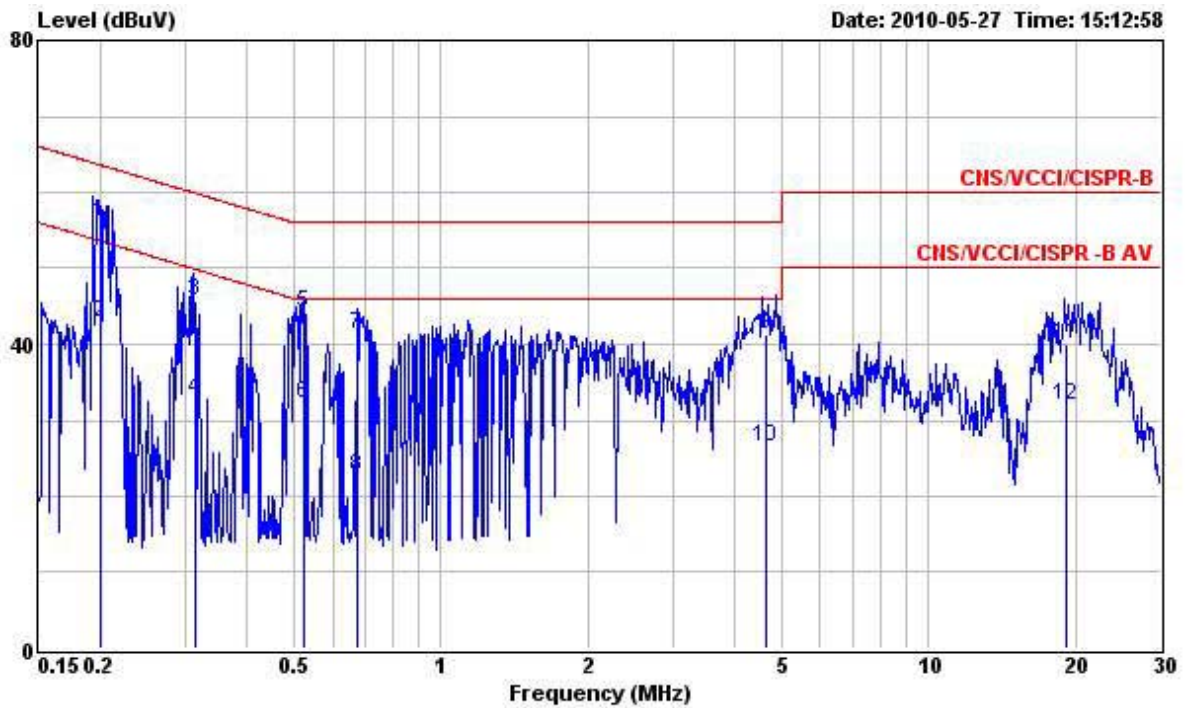
3.1.6 EUT Operation during Test

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

3.1.7 Results of AC Power Line Conducted Emissions Measurement

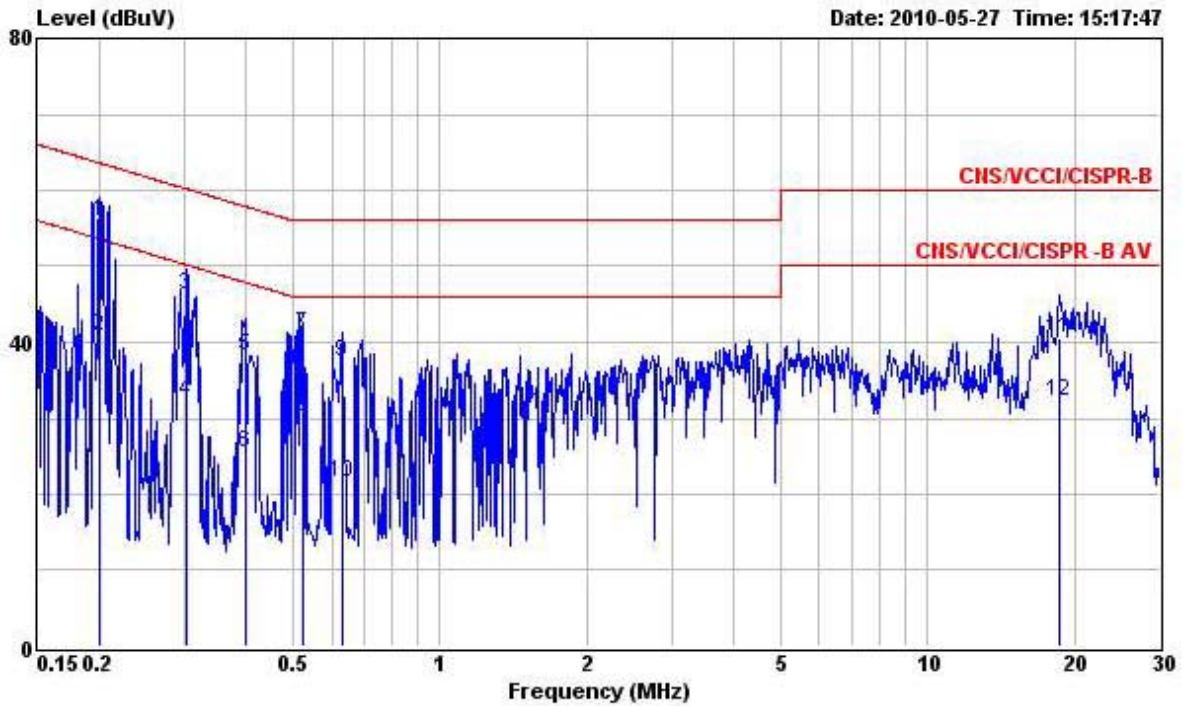
Final Test Date	May 27, 2010	Test Site No.	CO01-HY
Temperature	27.9	Humidity	56%
Test Engineer	Ace	Configuration	Normal Mode

Line



	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.200	56.08	-7.53	63.61	55.94	0.08	0.06	QP
2	0.200	42.89	-10.72	53.61	42.75	0.08	0.06	Average
3	0.315	45.75	-14.10	59.85	45.59	0.09	0.07	QP
4	0.315	32.83	-17.02	49.85	32.67	0.09	0.07	Average
5	0.524	44.24	-11.76	56.00	44.05	0.10	0.09	QP
6	0.524	32.25	-13.75	46.00	32.06	0.10	0.09	Average
7	0.672	41.38	-14.62	56.00	41.17	0.10	0.11	QP
8	0.672	22.65	-23.35	46.00	22.44	0.10	0.11	Average
9	4.635	41.20	-14.80	56.00	40.85	0.19	0.16	QP
10	4.635	26.41	-19.59	46.00	26.06	0.19	0.16	Average
11	19.240	39.98	-20.02	60.00	39.26	0.40	0.32	QP
12	19.240	31.89	-18.11	50.00	31.17	0.40	0.32	Average

Neutral



	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.200	55.84	-7.77	63.61	55.72	0.06	0.06	QP
2	0.200	40.86	-12.75	53.61	40.74	0.06	0.06	Average
3	0.302	46.28	-13.91	60.19	46.14	0.07	0.07	QP
4	0.302	32.16	-18.03	50.19	32.02	0.07	0.07	Average
5	0.398	38.29	-19.61	57.90	38.15	0.07	0.07	QP
6	0.398	25.38	-22.52	47.90	25.24	0.07	0.07	Average
7	0.523	40.95	-15.05	56.00	40.78	0.08	0.09	QP
8	0.523	30.04	-15.96	46.00	29.87	0.08	0.09	Average
9	0.630	37.28	-18.72	56.00	37.10	0.08	0.10	QP
10	0.630	21.47	-24.53	46.00	21.29	0.08	0.10	Average
11	18.720	40.58	-19.42	60.00	39.85	0.41	0.32	QP
12	18.720	32.15	-17.85	50.00	31.42	0.41	0.32	Average

Note:

Level = Read Level + LISN Factor + Cable Loss.

3.2 Radiated Emissions Measurement

3.2.1 Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

3.2.2 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	40 GHz
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz z for peak

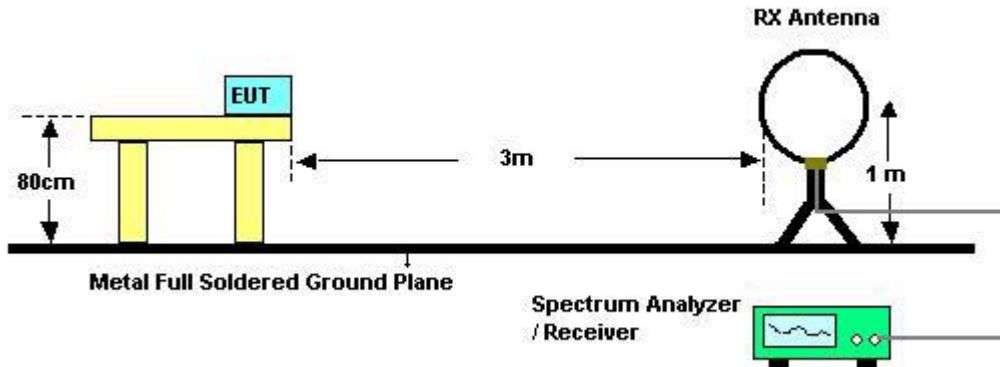
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.3 Test Procedures

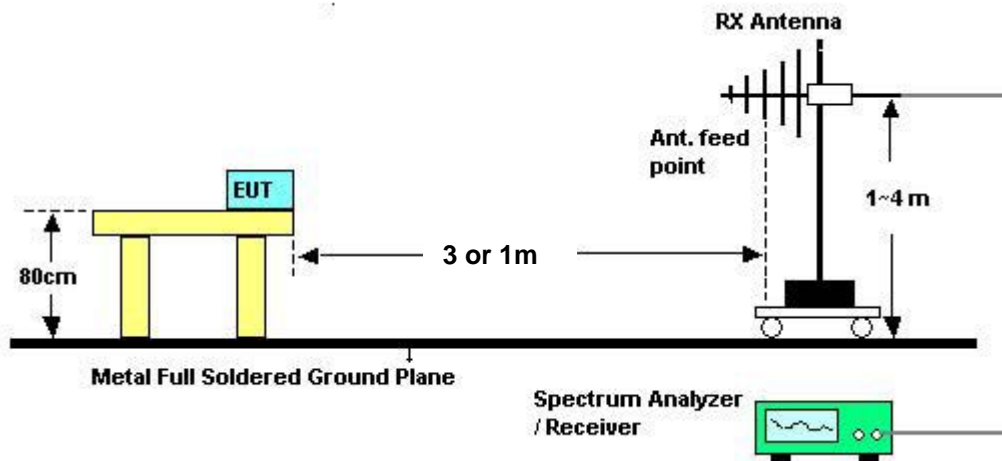
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

Distance extrapolation factor = $20 \log(\text{specific distance [3m]} / \text{test distance [1m]})$ (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	May 18, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie		

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 20dB below the permissible value has no need to be reported.

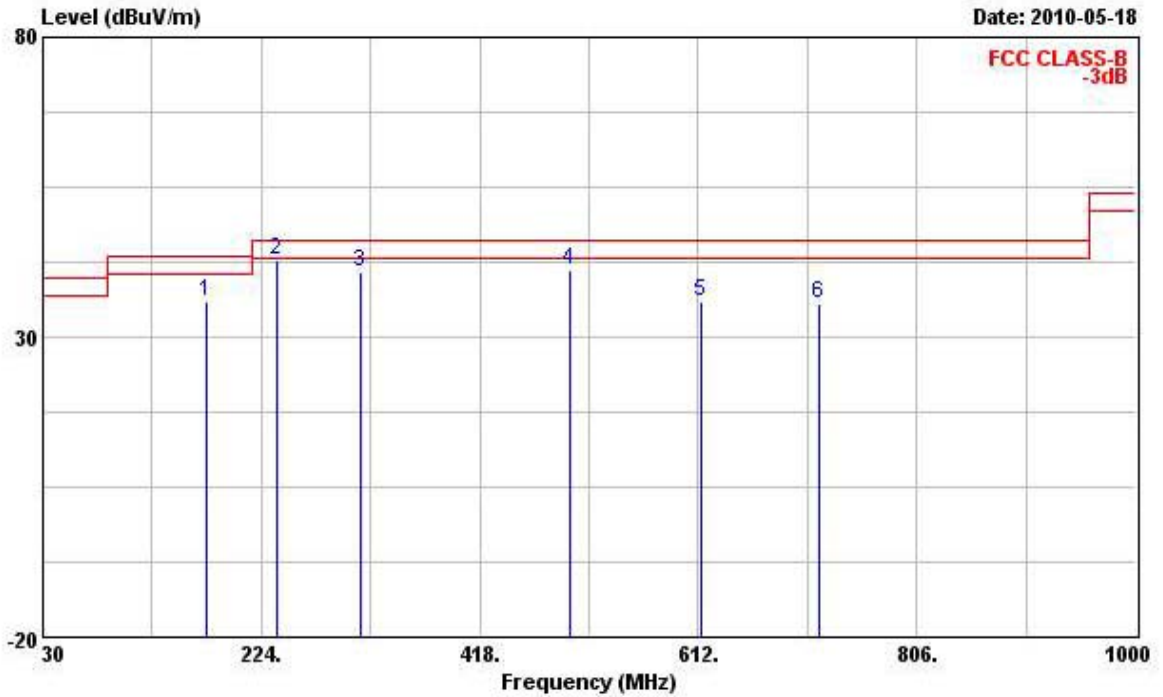
Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

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

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

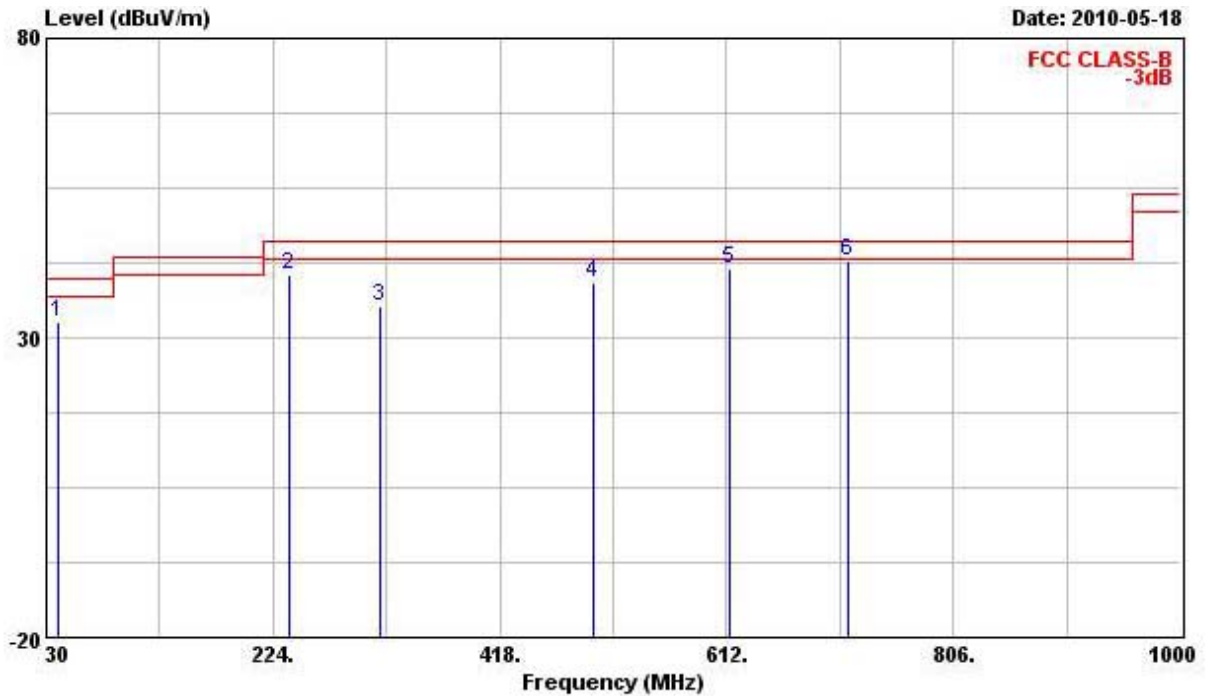
Final Test Date	May 18, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configurations	Normal Mode

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	175.500	36.05	-7.45	43.50	50.15	9.88	3.30	27.28	---	---	Peak
2 @	238.550	42.95	-3.05	46.00	53.24	12.62	3.96	26.87	---	---	Peak
3	312.270	40.90	-5.10	46.00	49.37	13.90	4.52	26.89	---	---	Peak
4	498.510	41.27	-4.73	46.00	46.04	17.26	6.15	28.18	---	---	Peak
5	614.910	35.91	-10.09	46.00	36.71	19.98	7.36	28.15	---	---	Peak
6	719.670	35.64	-10.36	46.00	37.00	19.13	7.47	27.95	---	---	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 @	39.700	32.60	-7.40	40.00	46.13	13.25	1.02	27.80	---	---	QP
2 @	238.550	40.44	-5.56	46.00	50.73	12.62	3.96	26.87	---	---	Peak
3 @	315.180	35.41	-10.59	46.00	43.87	13.94	4.51	26.91	---	---	Peak
4 @	498.510	39.24	-6.76	46.00	44.01	17.26	6.15	28.18	---	---	Peak
5 @	614.910	41.37	-4.63	46.00	42.17	19.98	7.36	28.15	---	---	Peak
6 @	715.790	42.78	-3.22	46.00	44.23	19.08	7.43	27.96	---	---	Peak

Note:

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

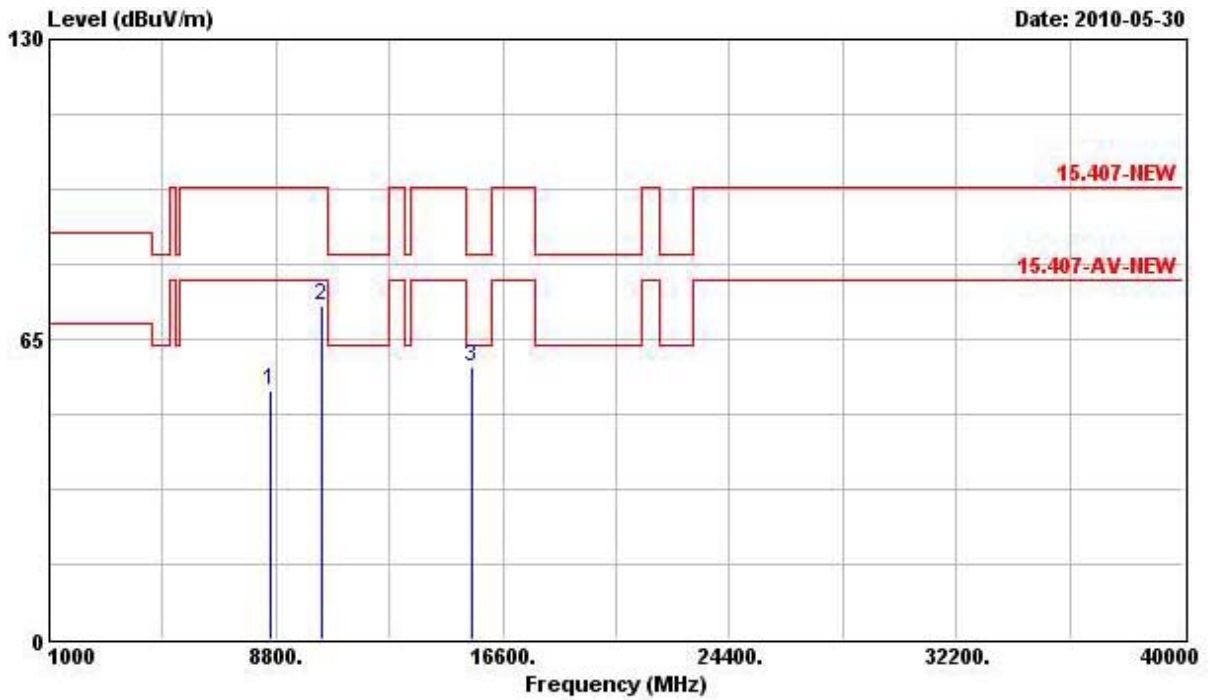
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

3.2.9 Results for Radiated Emissions (1GHz~40GHz)

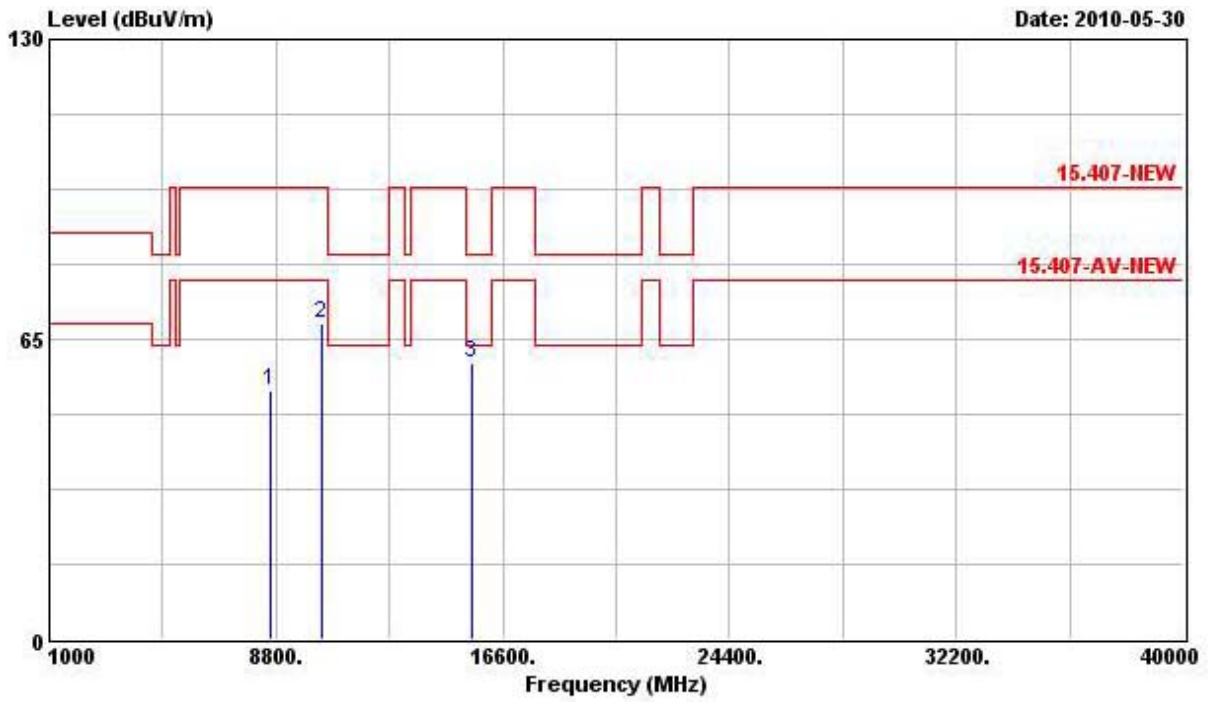
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 36

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	8604.000	53.77	-44.07	97.84	42.24	38.28	5.33	32.08	---	Peak
2	10368.000	72.29	-25.55	97.84	58.81	39.55	5.75	31.82	---	Peak
3	15540.000	58.85	-4.69	63.54	44.33	38.44	7.28	31.21	---	PK

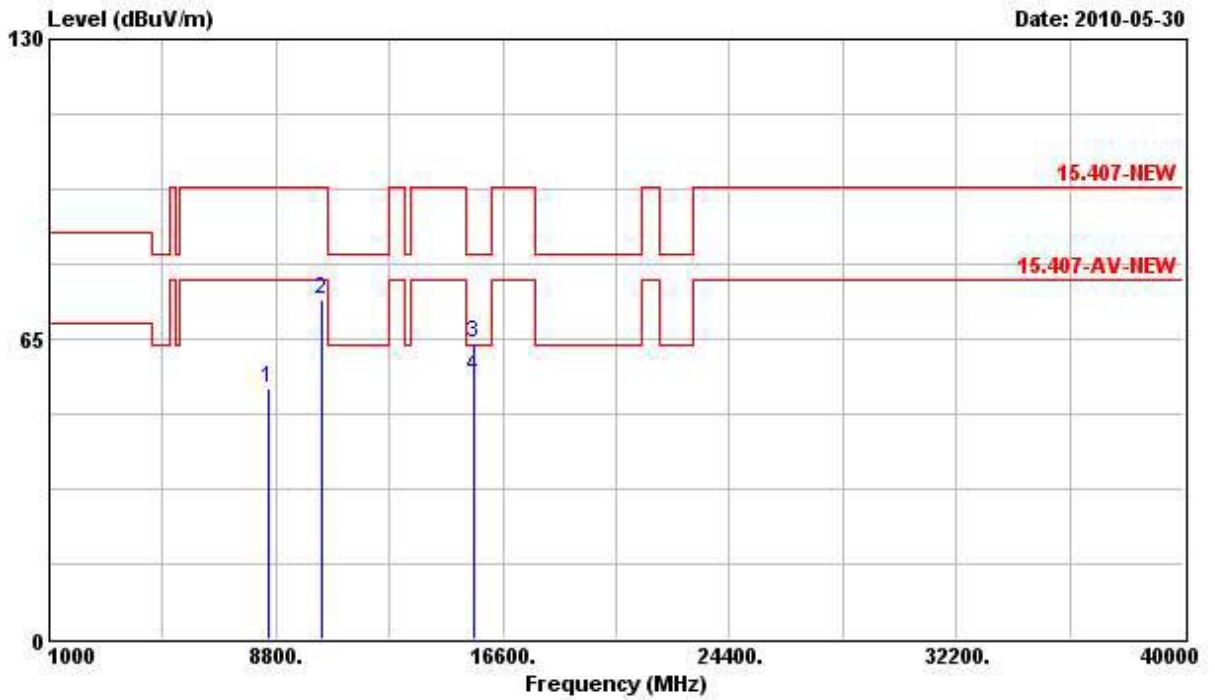
Vertical



	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	8576.000	53.72	-44.12	97.84	42.18	38.27	5.35	32.07	---	---	Peak
2	10360.000	68.29	-29.55	97.84	54.81	39.55	5.75	31.82	---	---	Peak
3	15540.000	59.96	-3.58	63.54	45.44	38.44	7.28	31.21	---	---	PK

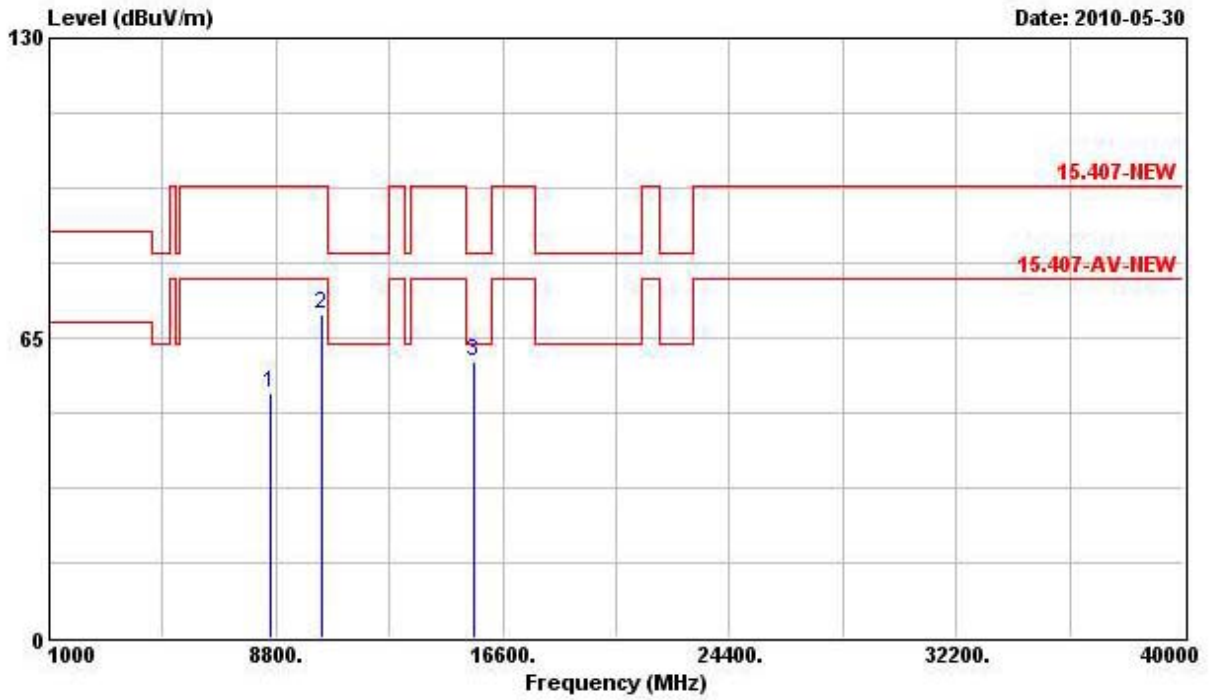
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 40

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	8556.000	54.38	-43.46	97.84	42.85	38.24	5.35	32.05	---	---	Peak
2	10400.000	73.71	-24.13	97.84	60.13	39.54	5.77	31.73	---	---	Peak
3	15594.000	63.99	-19.55	83.54	49.56	38.36	7.30	31.23	---	---	Peak
4	15594.000	57.09	-6.45	63.54	42.65	38.36	7.30	31.23	---	---	Average

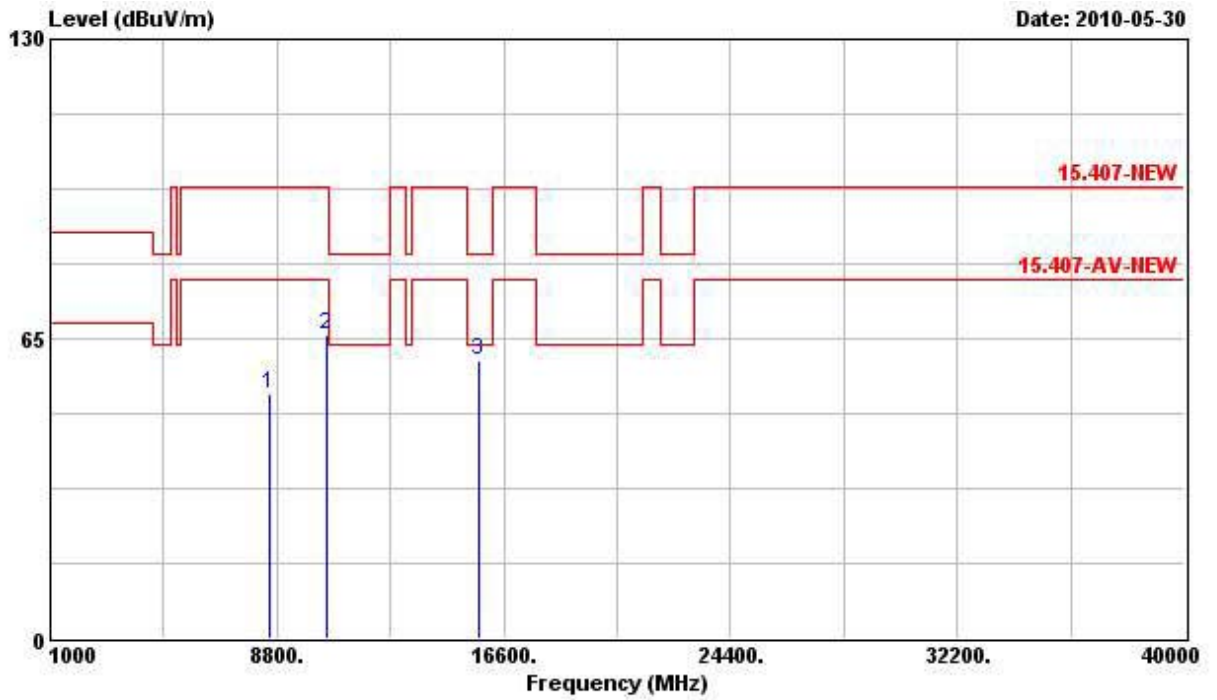
Vertical



	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	8604.000	52.91	-44.93	97.84	41.38	38.28	5.33	32.08	---	---	Peak
2	10402.000	69.93	-27.91	97.84	56.36	39.54	5.77	31.73	---	---	Peak
3	15598.000	59.99	-3.55	63.54	45.58	38.33	7.30	31.23	---	---	PK

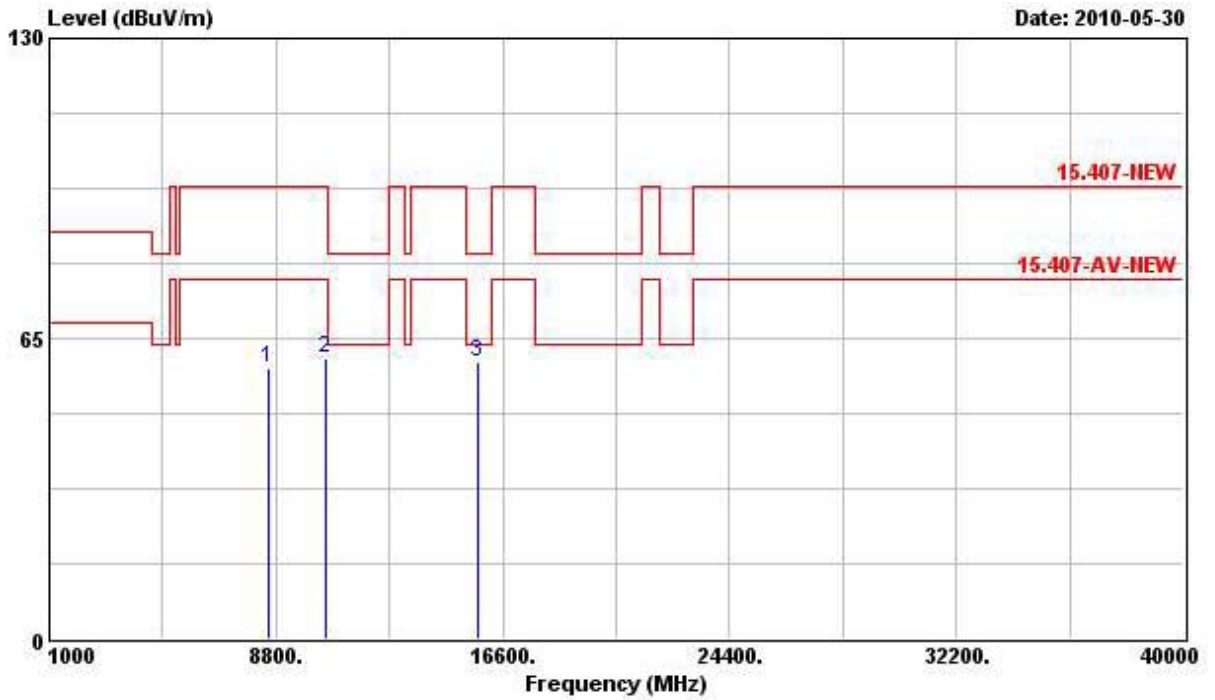
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 48

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	8544.000	53.02	-44.82	97.84	41.49	38.24	5.35	32.05	---	---	Peak
2	10482.000	65.73	-32.11	97.84	52.02	39.51	5.80	31.60	---	---	Peak
3 @	15720.000	60.29	-3.25	63.54	46.02	38.14	7.42	31.29	---	---	PK

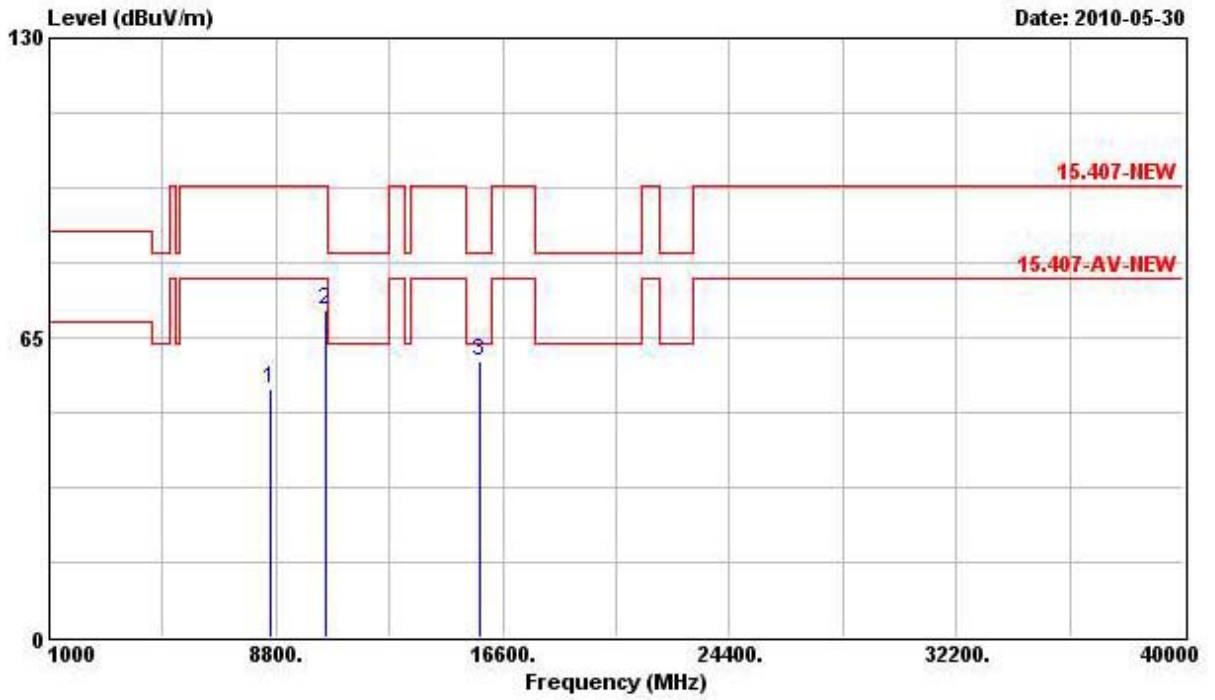
Vertical



	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	8556.000	58.55	-39.29	97.84	47.02	38.24	5.35	32.05	---	---	Peak
2	10482.000	60.54	-37.30	97.84	46.84	39.51	5.80	31.60	---	---	Peak
3	15722.000	59.93	-3.61	63.54	45.66	38.14	7.42	31.29	---	---	PK

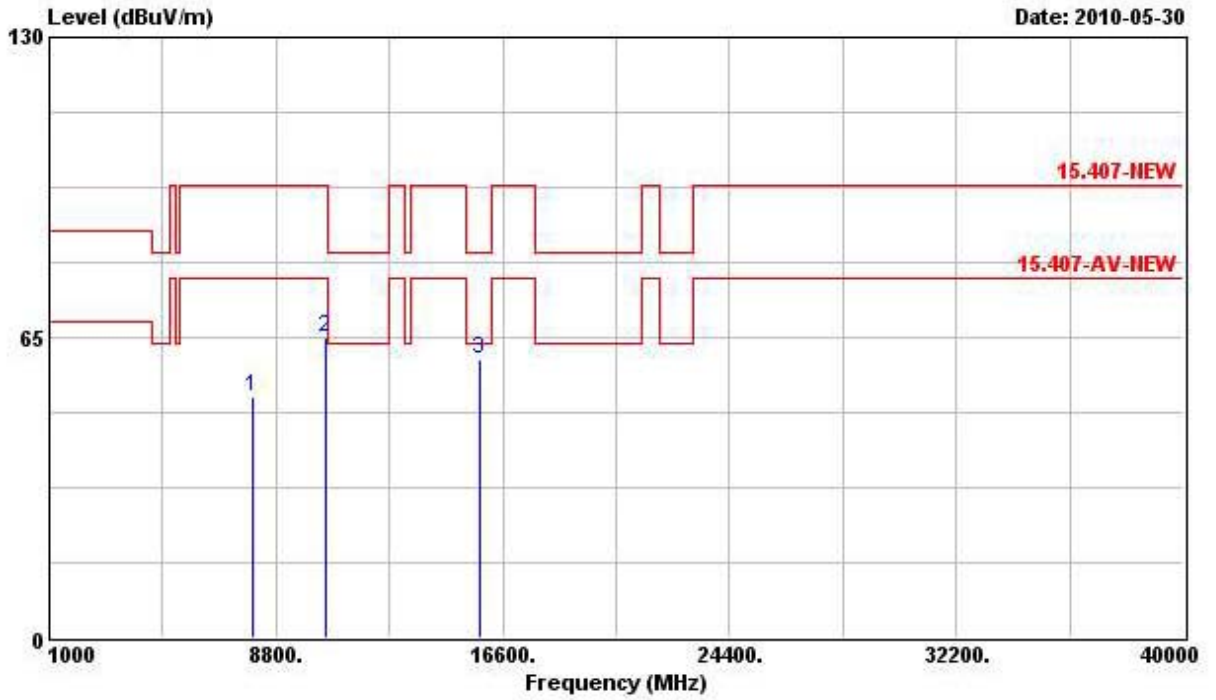
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 52

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	8584.000	53.82	-44.02	97.84	42.29	38.27	5.33	32.07	---	Peak
2	10522.000	70.93	-26.91	97.84	57.18	39.49	5.81	31.55	---	Peak
3 @	15780.000	59.82	-3.72	63.54	45.64	38.06	7.44	31.32	---	PK

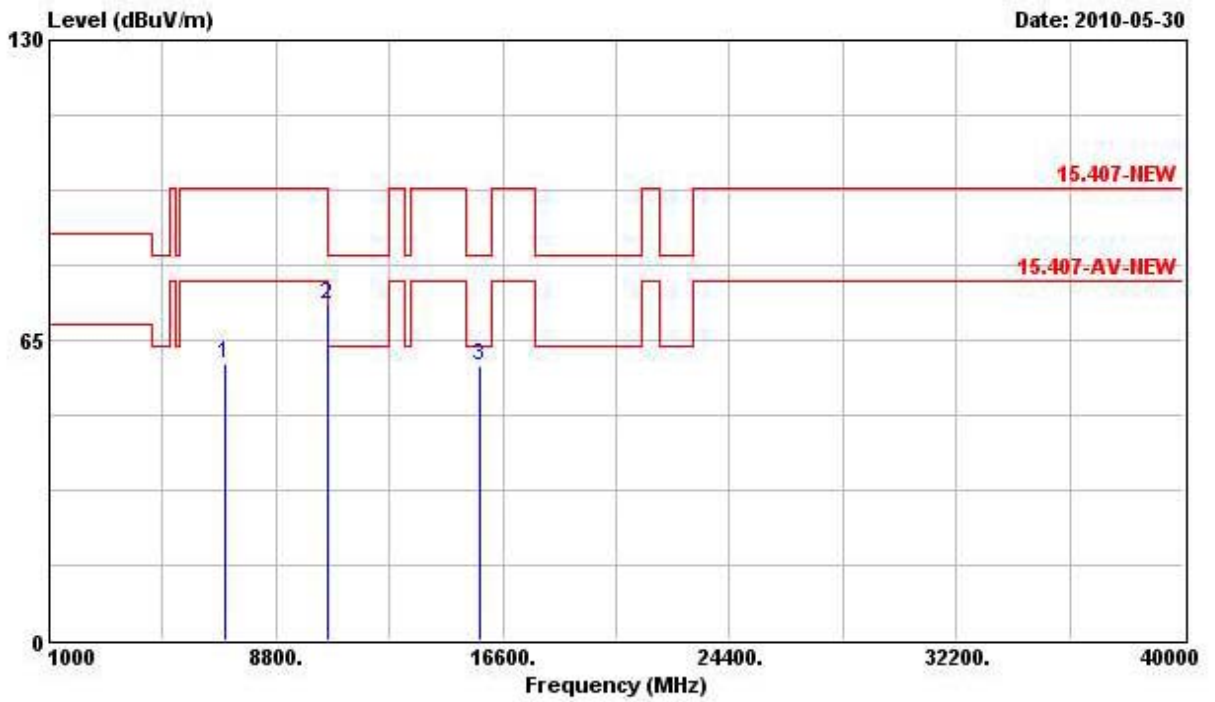
Vertical



	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	7980.000	52.30	-45.54	97.84	41.67	37.58	5.27	32.21	---	---	Peak
2	10522.000	64.81	-33.03	97.84	51.06	39.49	5.81	31.55	---	---	Peak
3 @	15782.000	60.25	-3.29	63.54	46.10	38.03	7.44	31.32	---	---	PK

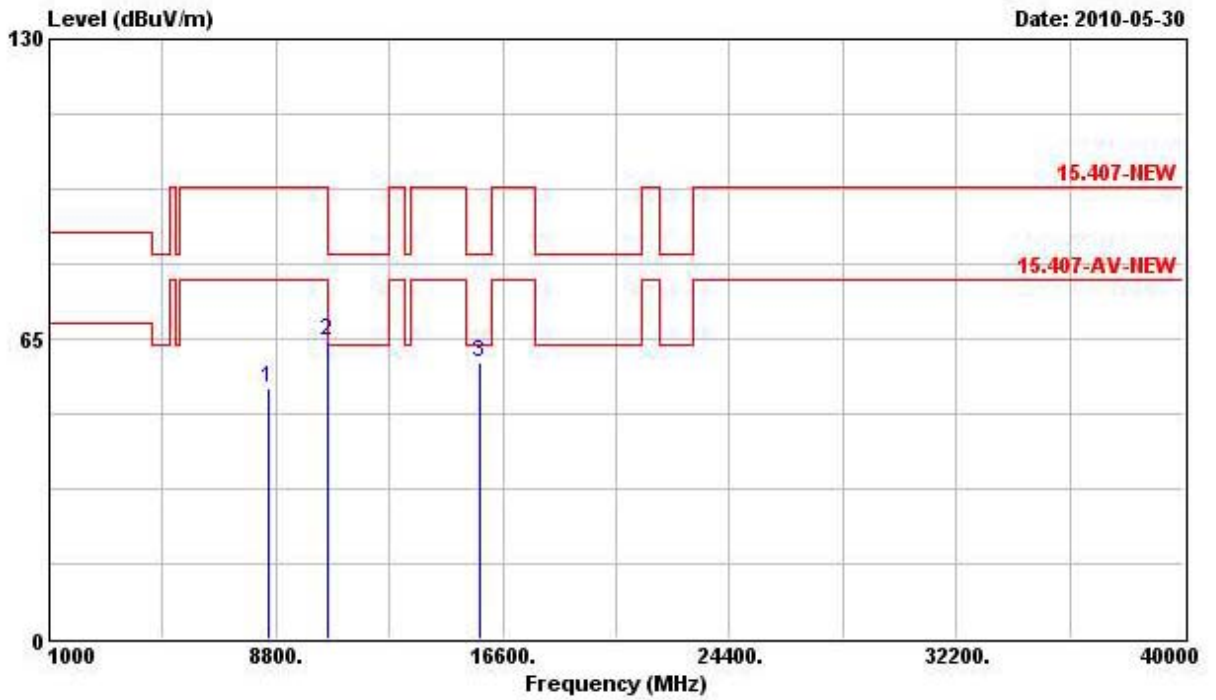
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 56

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	7040.000	60.02	-37.82	97.84	52.65	36.16	4.31	33.10	---	---	Peak
2	10562.000	72.73	-25.11	97.84	59.02	39.47	5.84	31.60	---	---	Peak
3 @	15844.000	59.64	-3.90	63.54	45.54	37.95	7.50	31.35	---	---	PK

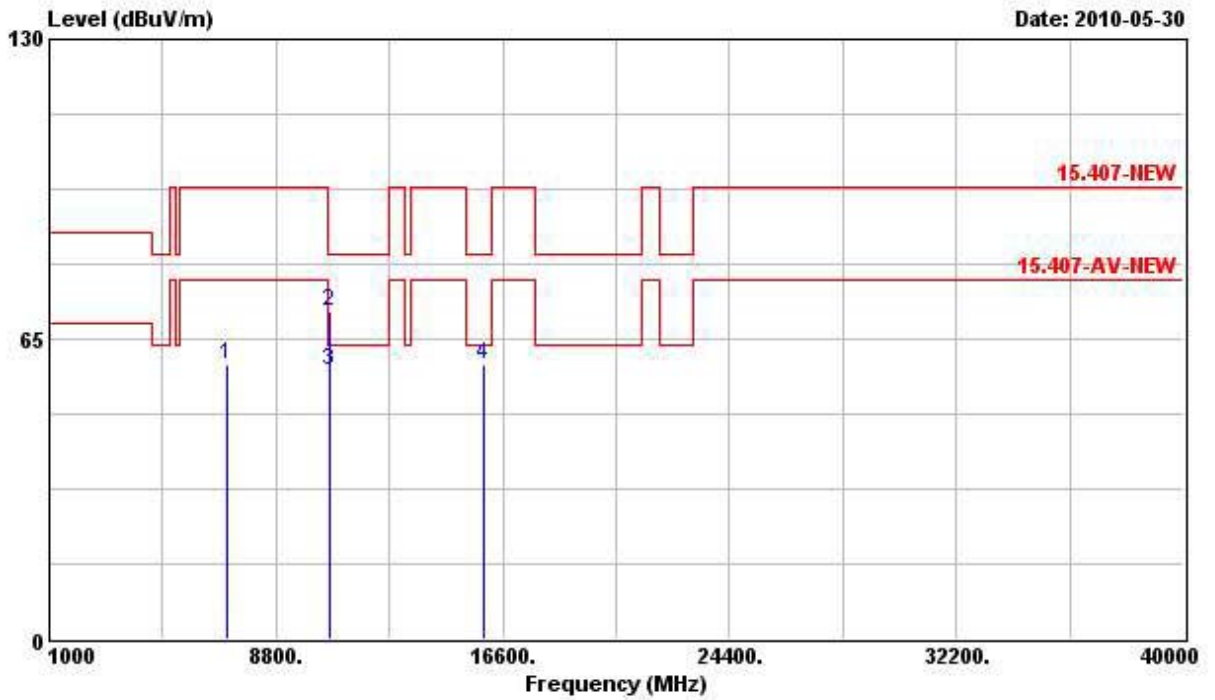
Vertical



	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	8552.000	54.42	-43.42	97.84	42.89	38.24	5.35	32.05	---	---	Peak
2	10562.000	64.75	-33.09	97.84	51.04	39.47	5.84	31.60	---	---	Peak
3 @	15838.000	59.91	-3.63	63.54	45.80	37.95	7.50	31.35	---	---	PK

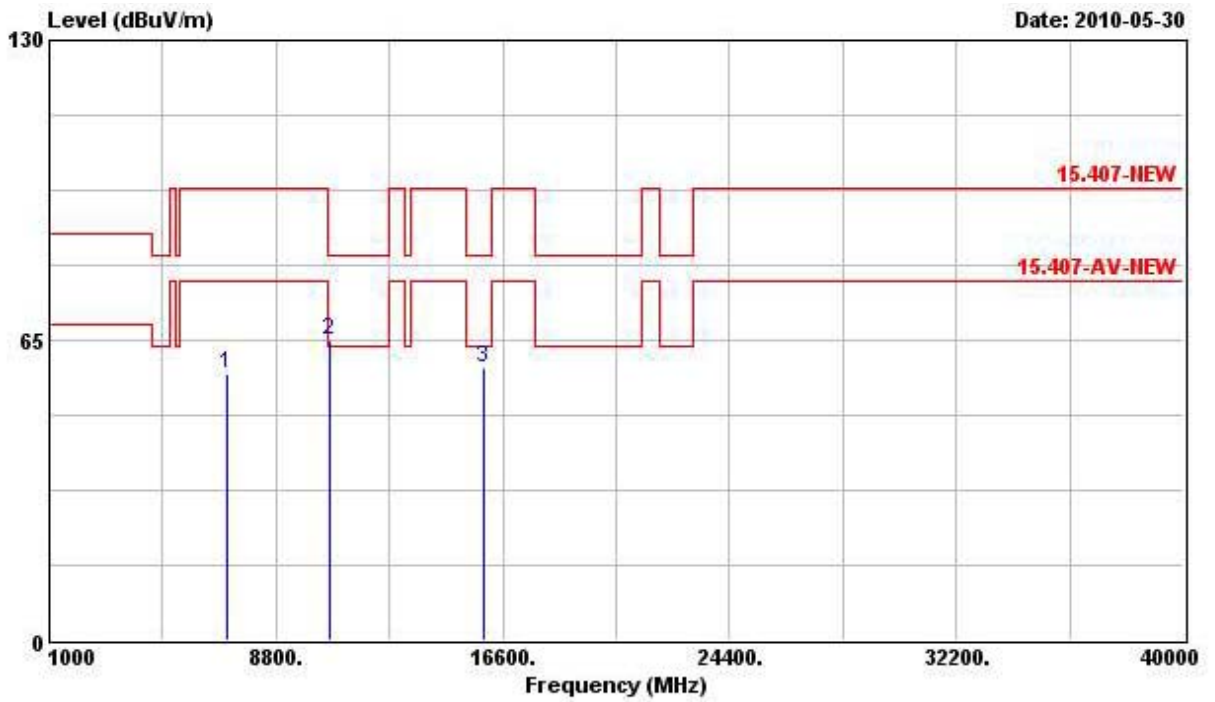
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 64

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	7092.000	59.39	-38.45	97.84	51.75	36.26	4.36	32.97	---	---	Peak
2	10642.000	70.90	-12.64	83.54	57.26	39.42	5.91	31.68	---	---	Peak
3	10642.000	58.28	-5.26	63.54	44.64	39.42	5.91	31.68	---	---	Average
4	15960.000	59.60	-3.94	63.54	45.67	37.76	7.58	31.40	---	---	PK

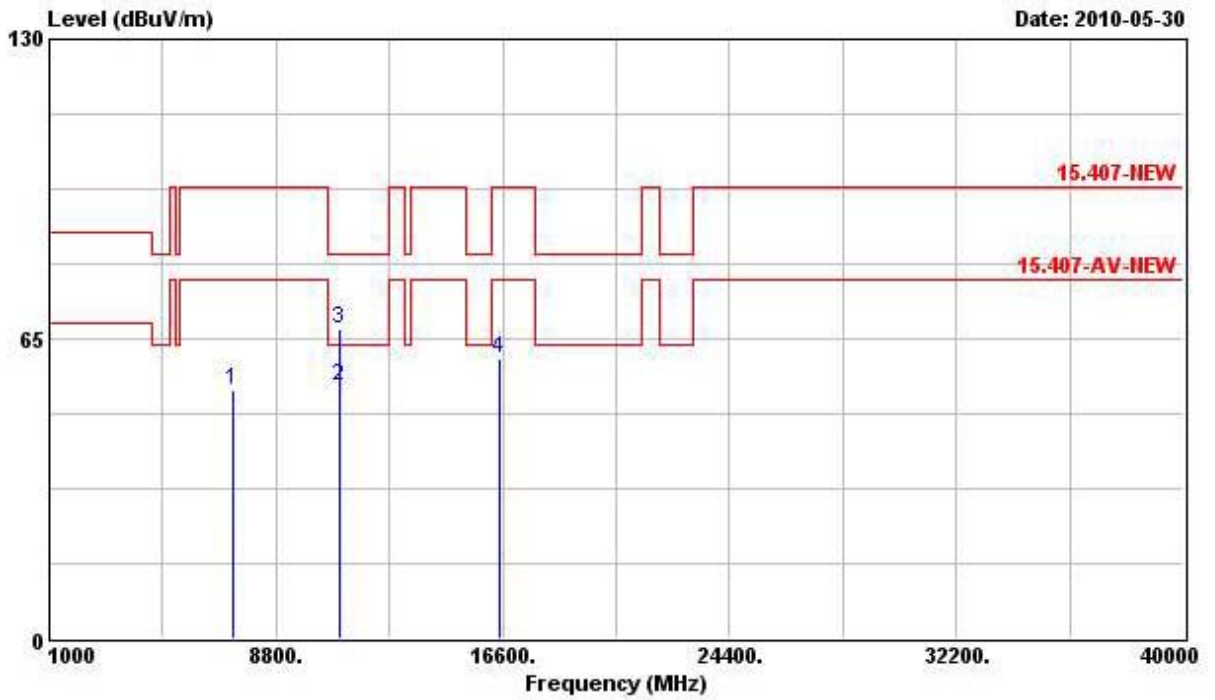
Vertical



	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	7092.000	57.58	-40.26	97.84	49.94	36.26	4.36	32.97	---	---	Peak
2	10638.000	65.11	-18.43	83.54	51.46	39.42	5.91	31.68	---	---	Peak
3 @	15960.000	58.99	-4.55	63.54	45.05	37.76	7.58	31.40	---	---	PK

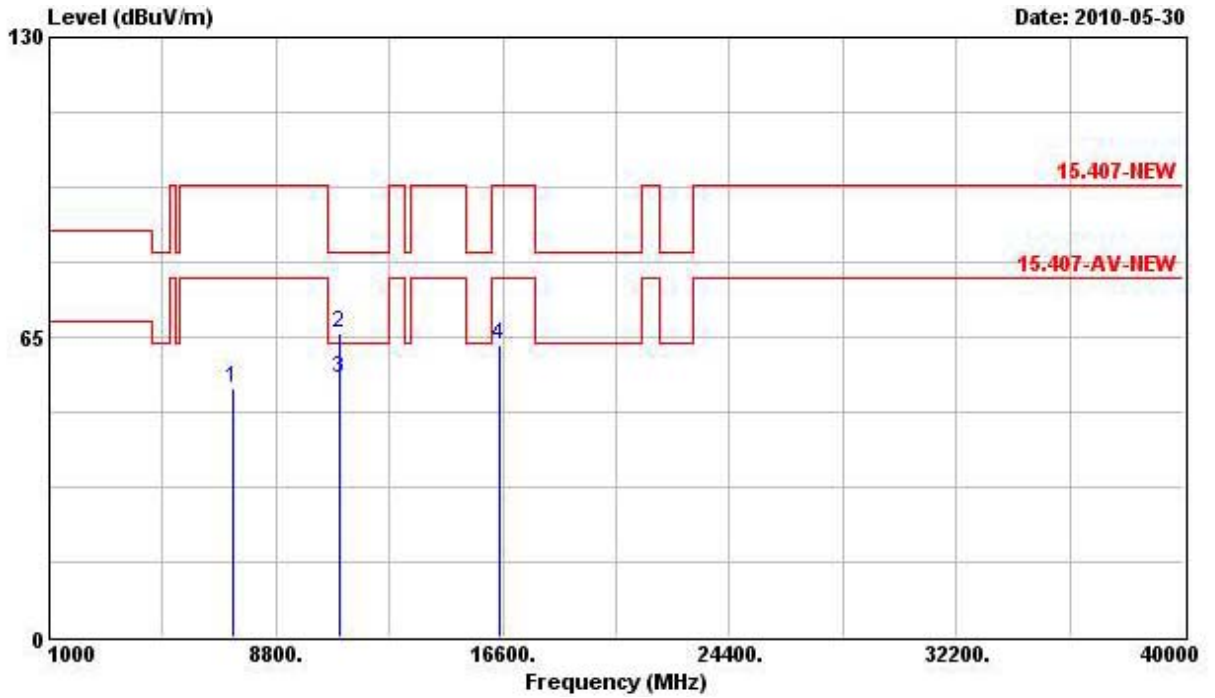
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 100

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	7332.000	53.97	-23.87	77.84	45.01	36.69	4.70	32.42	---	---	PK
2	11000.000	54.69	-8.85	63.54	41.31	39.20	6.23	32.05	---	---	Average
3	11000.000	67.12	-16.42	83.54	53.74	39.20	6.23	32.05	---	---	Peak
4	16502.000	60.81	-37.03	97.84	45.94	38.50	7.60	31.23	---	---	Peak

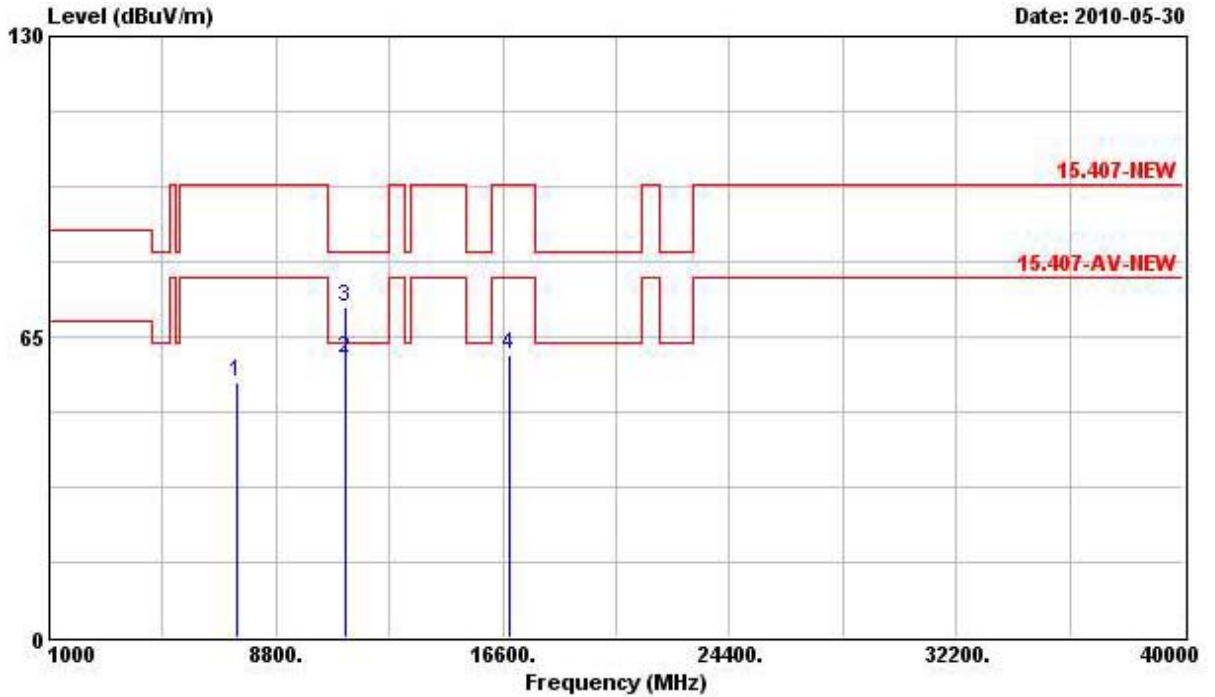
Vertical



	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	7332.000	53.84	-24.00	77.84	44.88	36.69	4.70	32.42	---	---	PK
2	11000.000	65.93	-17.61	83.54	52.54	39.20	6.23	32.05	---	---	Peak
3 @	11000.000	56.03	-7.51	63.54	42.65	39.20	6.23	32.05	---	---	Average
4	16502.000	63.17	-34.67	97.84	48.31	38.50	7.60	31.23	---	---	Peak

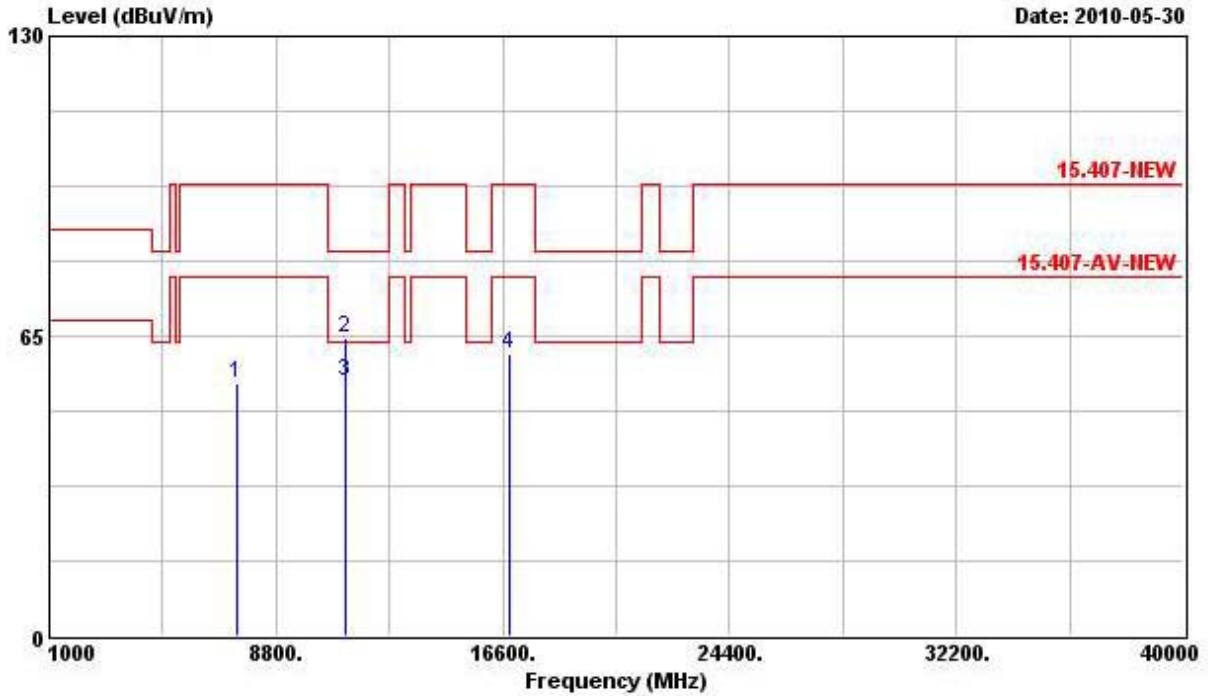
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 116

Horizontal



	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	7464.000	55.01	-22.83	77.84	45.34	36.94	4.85	32.12	---	---	PK
2 @	11204.000	60.29	-3.25	63.54	46.38	39.48	6.13	31.69	---	---	Average
3	11204.000	71.50	-12.04	83.54	57.59	39.48	6.13	31.69	---	---	Peak
4	16804.000	61.03	-36.81	97.84	44.32	40.24	7.49	31.02	---	---	Peak

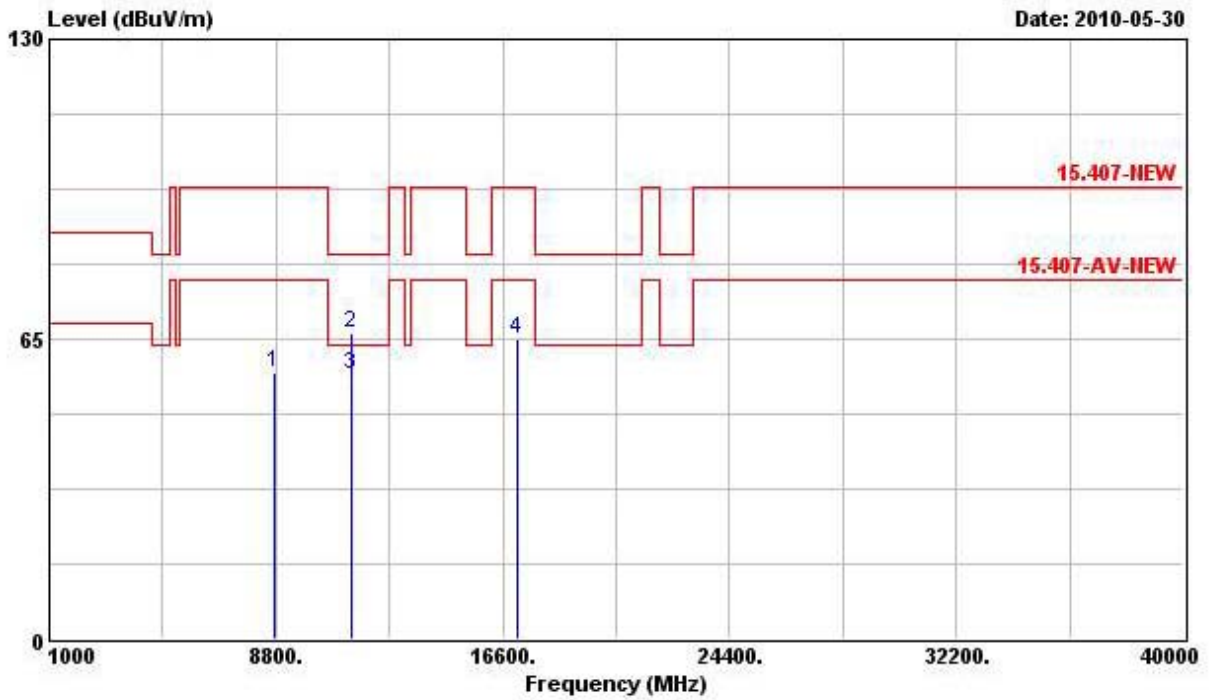
Vertical



	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	7464.000	54.54	-23.30	77.84	44.87	36.94	4.85	32.12	---	---	PK
2	11202.000	64.49	-19.05	83.54	50.58	39.48	6.13	31.69	---	---	Peak
3 @	11202.000	55.25	-8.29	63.54	41.34	39.48	6.13	31.69	---	---	Average
4	16804.000	61.34	-36.50	97.84	44.63	40.24	7.49	31.02	---	---	Peak

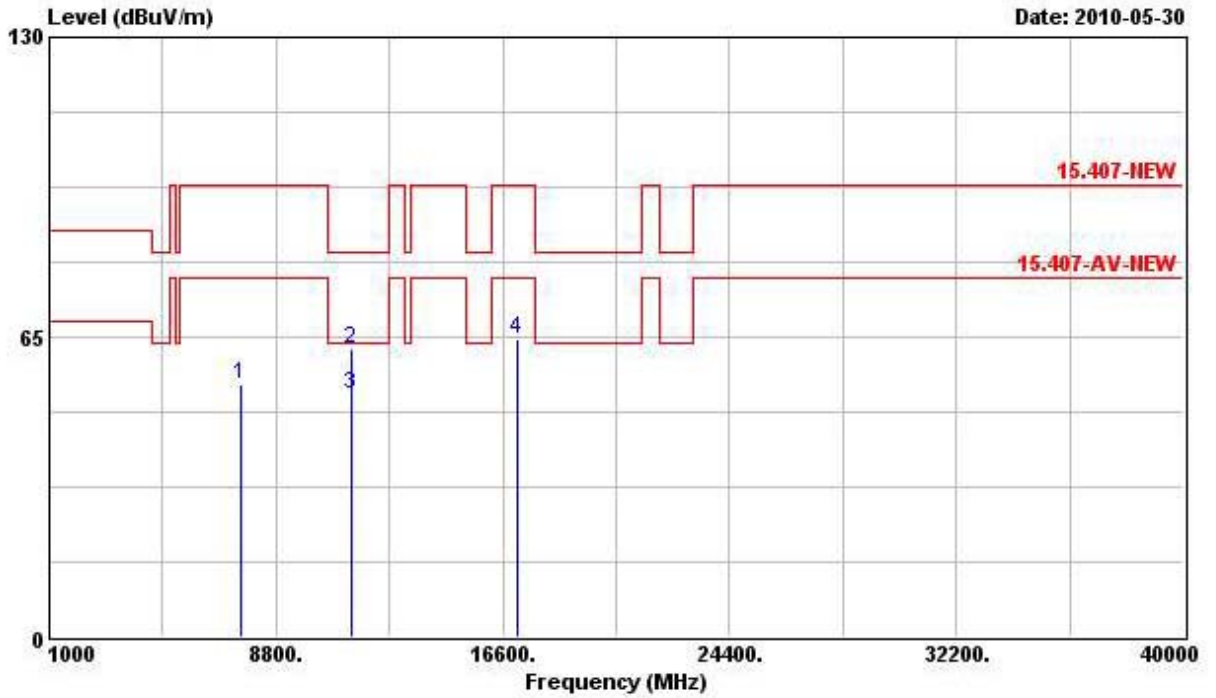
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 140

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	8764.000	57.72	-40.12	97.84	46.22	38.41	5.24	32.15	---	---	Peak
2	11402.000	66.46	-17.08	83.54	52.01	39.76	6.03	31.34	---	---	Peak
3 @	11402.000	57.14	-6.40	63.54	42.70	39.76	6.03	31.34	---	---	Average
4	17104.000	64.83	-33.01	97.84	46.09	42.24	7.40	30.90	---	---	Peak

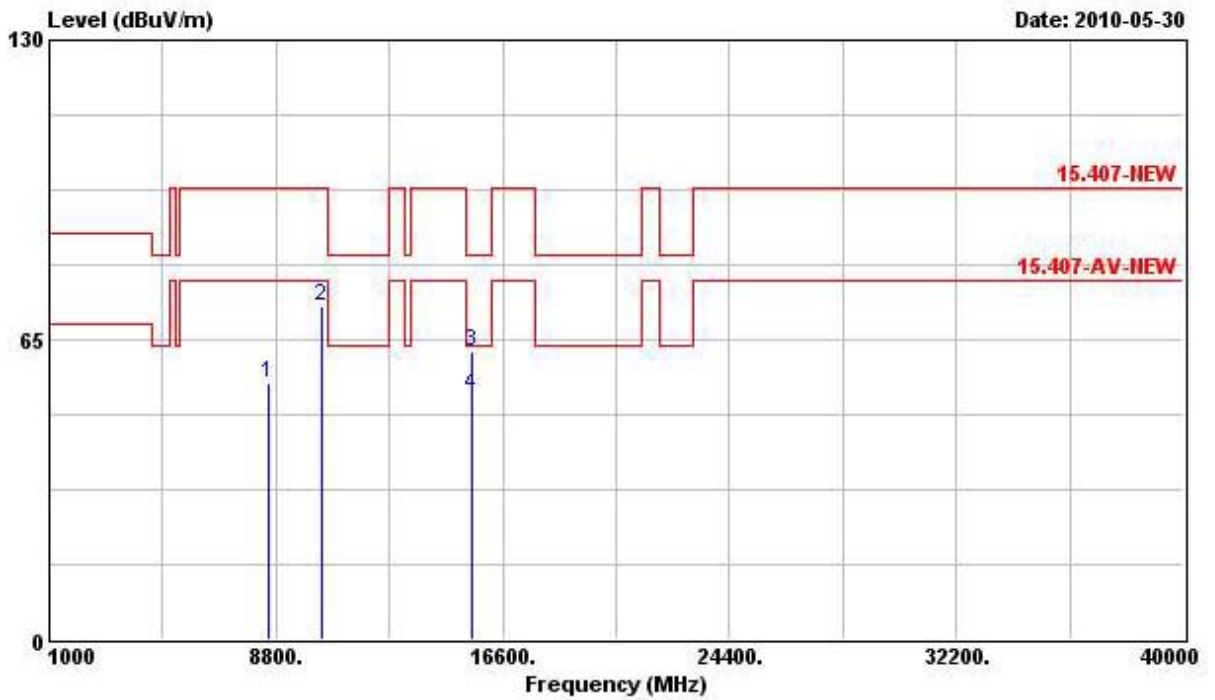
Vertical



	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	7600.000	54.70	-23.14	77.84	44.66	37.12	4.96	32.04	---	---	PK
2	11402.000	62.61	-20.93	83.54	48.16	39.76	6.03	31.34	---	---	Peak
3	11402.000	52.41	-11.13	63.54	37.96	39.76	6.03	31.34	---	---	Average
4	17104.000	64.77	-33.07	97.84	46.03	42.24	7.40	30.90	---	---	Peak

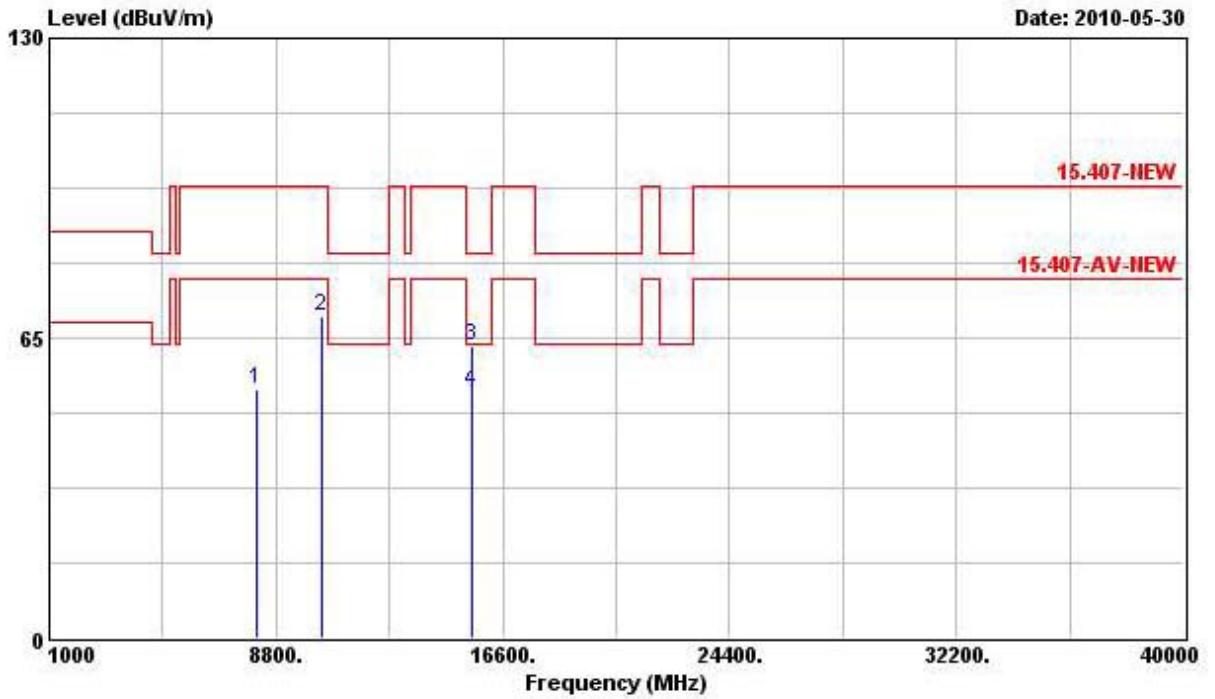
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 36 (20MHz)

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	8524.000	55.62	-42.22	97.84	44.06	38.23	5.37	32.04	---	---	Peak
2	10362.000	72.32	-25.52	97.84	58.84	39.55	5.75	31.82	---	---	Peak
3	15544.000	62.48	-21.06	83.54	47.99	38.42	7.28	31.21	---	---	Peak
4 @	15544.000	53.18	-10.36	63.54	38.69	38.42	7.28	31.21	---	---	Average

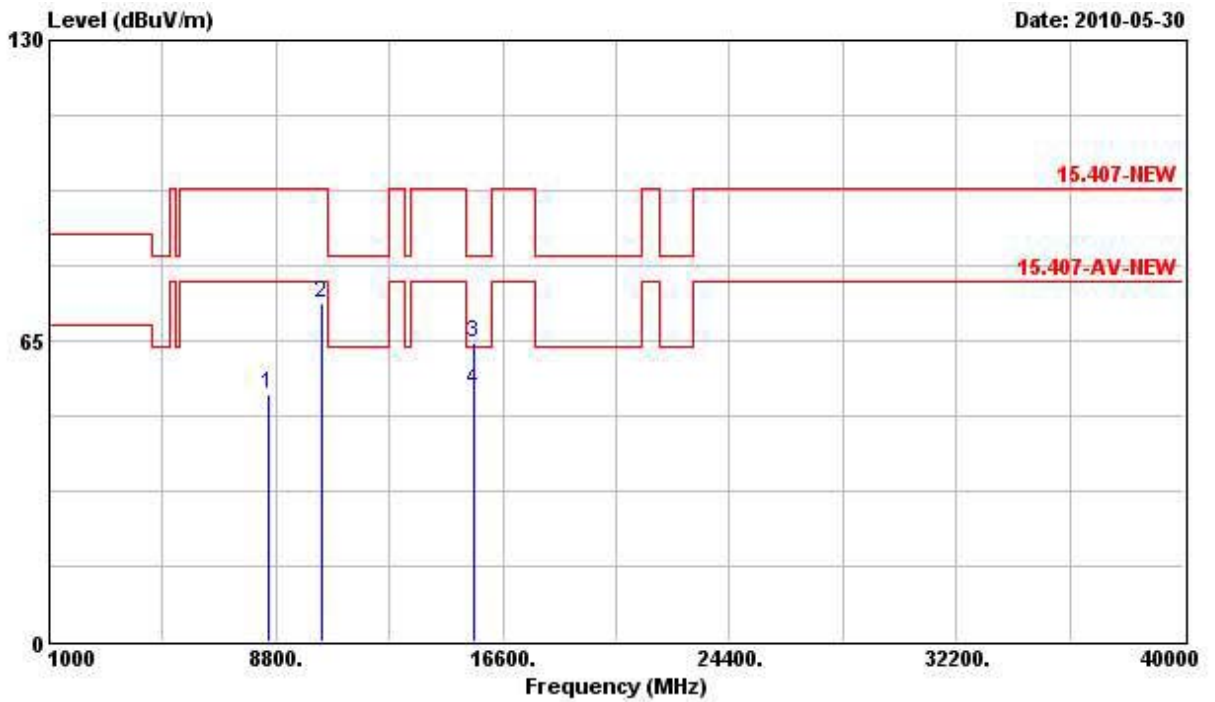
Vertical



	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	8120.000	53.79	-24.05	77.84	42.91	37.74	5.32	32.18	---	---	PK
2	10360.000	69.58	-28.26	97.84	56.10	39.55	5.75	31.82	---	---	Peak
3	15538.000	63.43	-20.11	83.54	48.91	38.44	7.28	31.21	---	---	Peak
4	15538.000	53.51	-10.03	63.54	38.99	38.44	7.28	31.21	---	---	Average

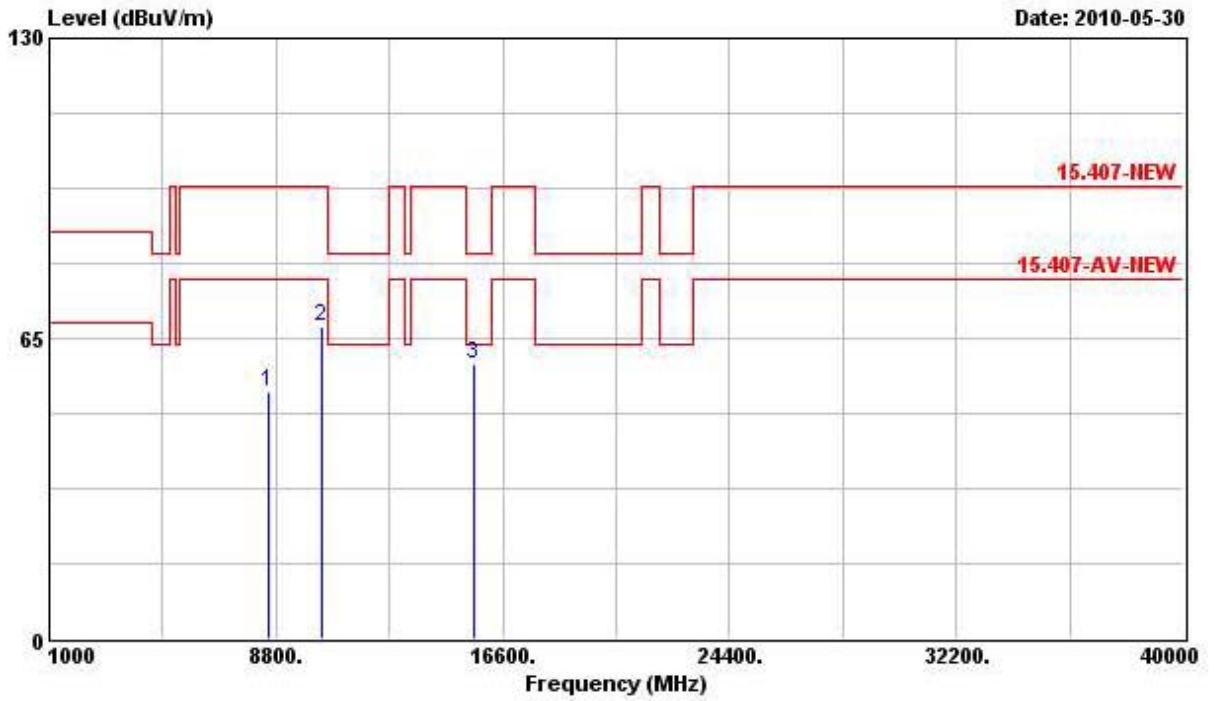
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 40 (20MHz)

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	8544.000	53.46	-44.38	97.84	41.93	38.24	5.35	32.05	---	---	Peak
2	10402.000	73.10	-24.74	97.84	59.52	39.54	5.77	31.73	---	---	Peak
3	15602.000	64.65	-18.89	83.54	50.23	38.33	7.33	31.24	---	---	Peak
4	15602.000	54.41	-9.13	63.54	39.98	38.33	7.33	31.24	---	---	Average

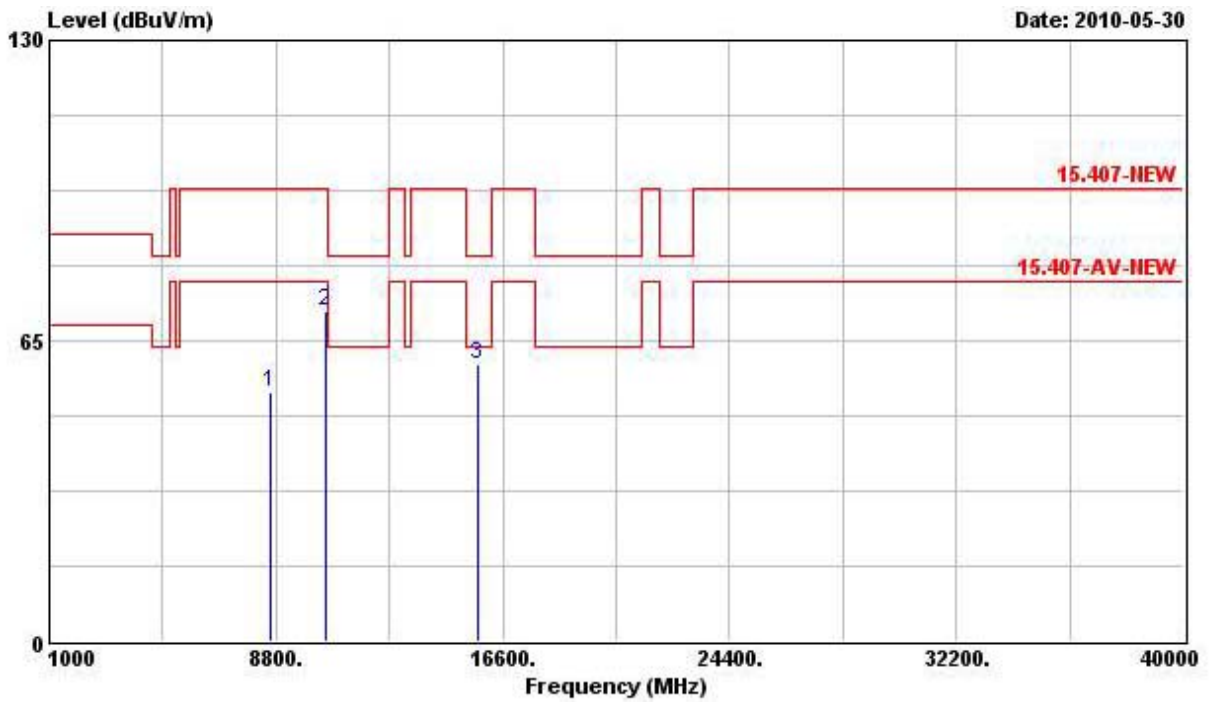
Vertical



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	8544.000	53.50	-44.34	97.84	41.96	38.24	5.35	32.05	---	Peak
2	10402.000	67.76	-30.08	97.84	54.19	39.54	5.77	31.73	---	Peak
3 @	15598.000	59.62	-3.92	63.54	45.21	38.33	7.30	31.23	---	PK

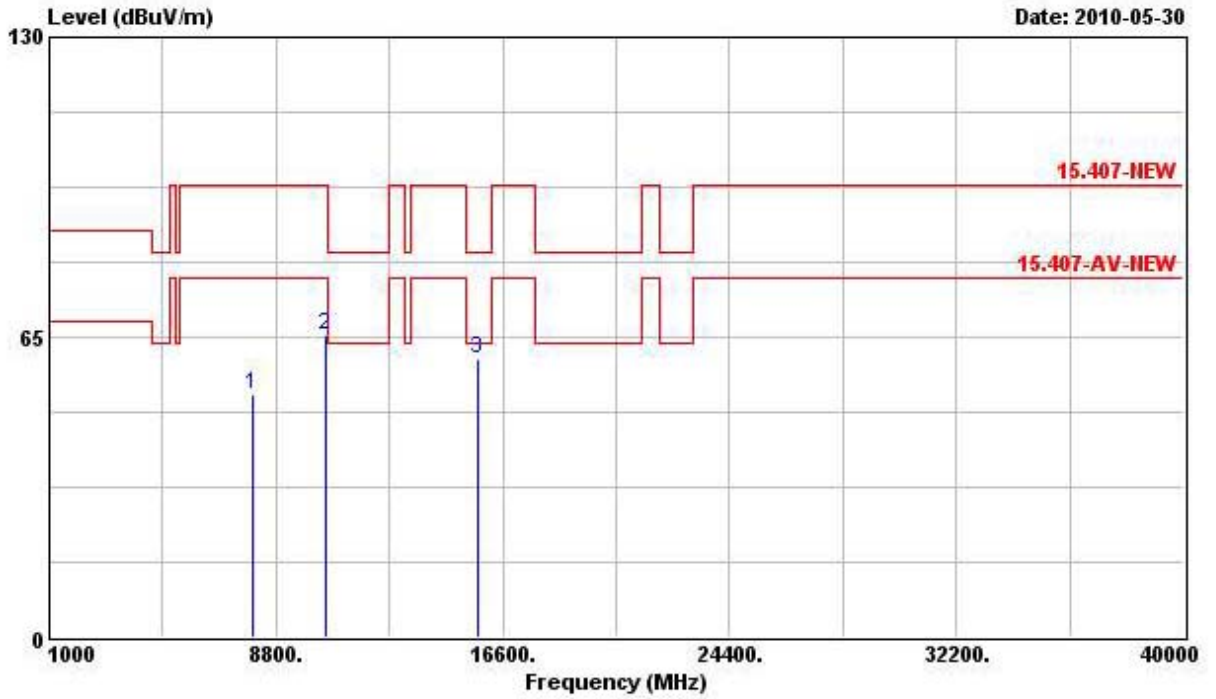
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 48 (20MHz)

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	8592.000	53.88	-43.96	97.84	42.36	38.28	5.33	32.08	---	---	Peak
2	10482.000	71.37	-26.47	97.84	57.66	39.51	5.80	31.60	---	---	Peak
3 @	15720.000	60.01	-3.53	63.54	45.74	38.14	7.42	31.29	---	---	PK

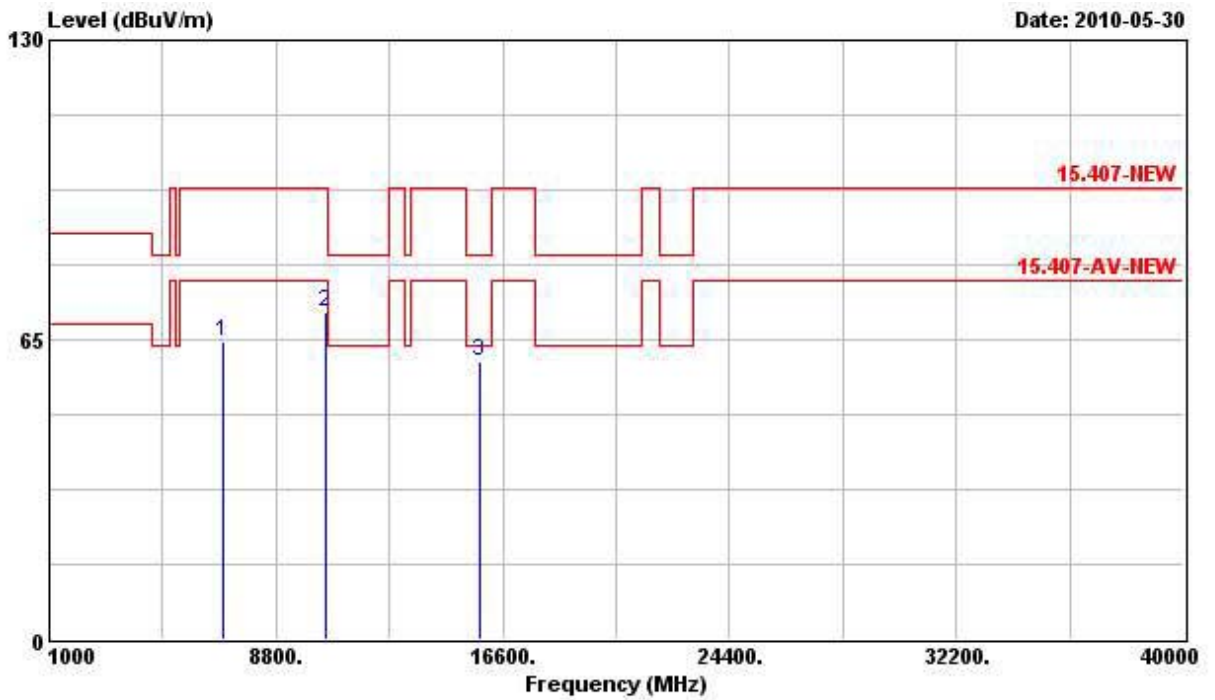
Vertical



	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	7996.000	52.64	-45.20	97.84	41.95	37.60	5.30	32.21	---	---	Peak
2	10482.000	65.27	-32.57	97.84	51.56	39.51	5.80	31.60	---	---	Peak
3 @	15722.000	60.37	-3.17	63.54	46.10	38.14	7.42	31.29	---	---	PK

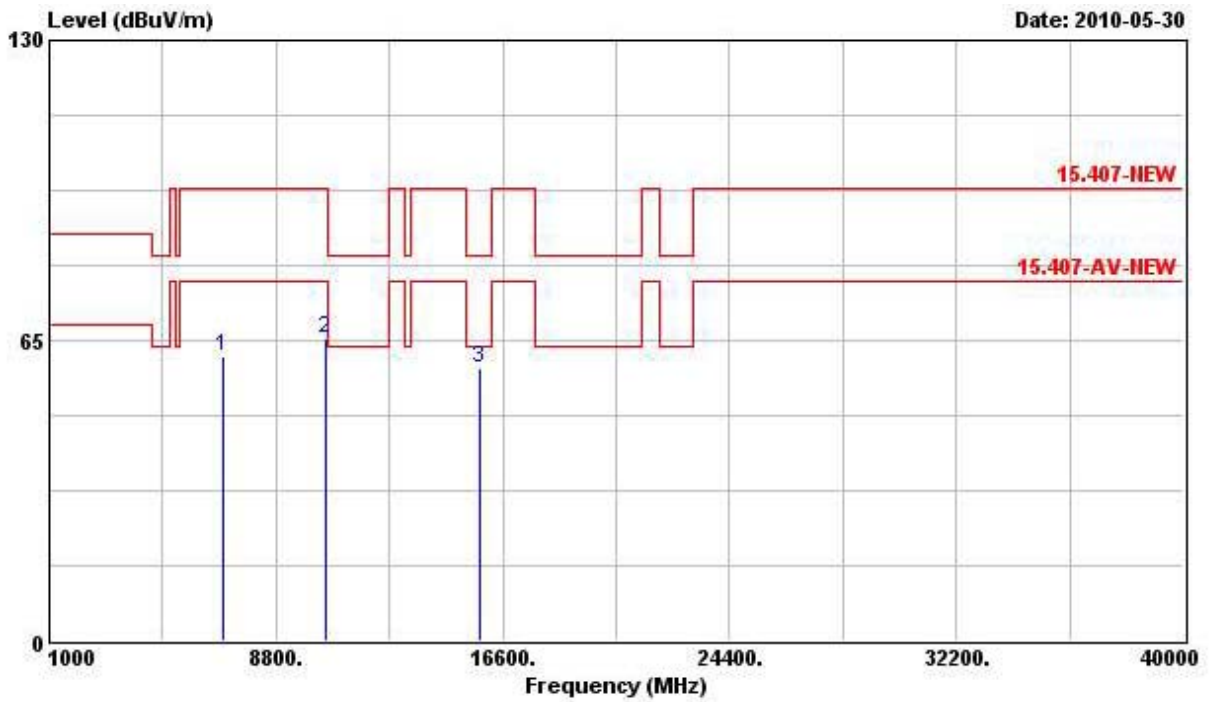
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 52 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	7012.000	64.46	-33.38	97.84	57.22	36.13	4.26	33.16	---	Peak
2	10522.000	71.16	-26.68	97.84	57.41	39.49	5.81	31.55	---	Peak
3 @	15780.000	60.16	-3.38	63.54	45.98	38.06	7.44	31.32	---	PK

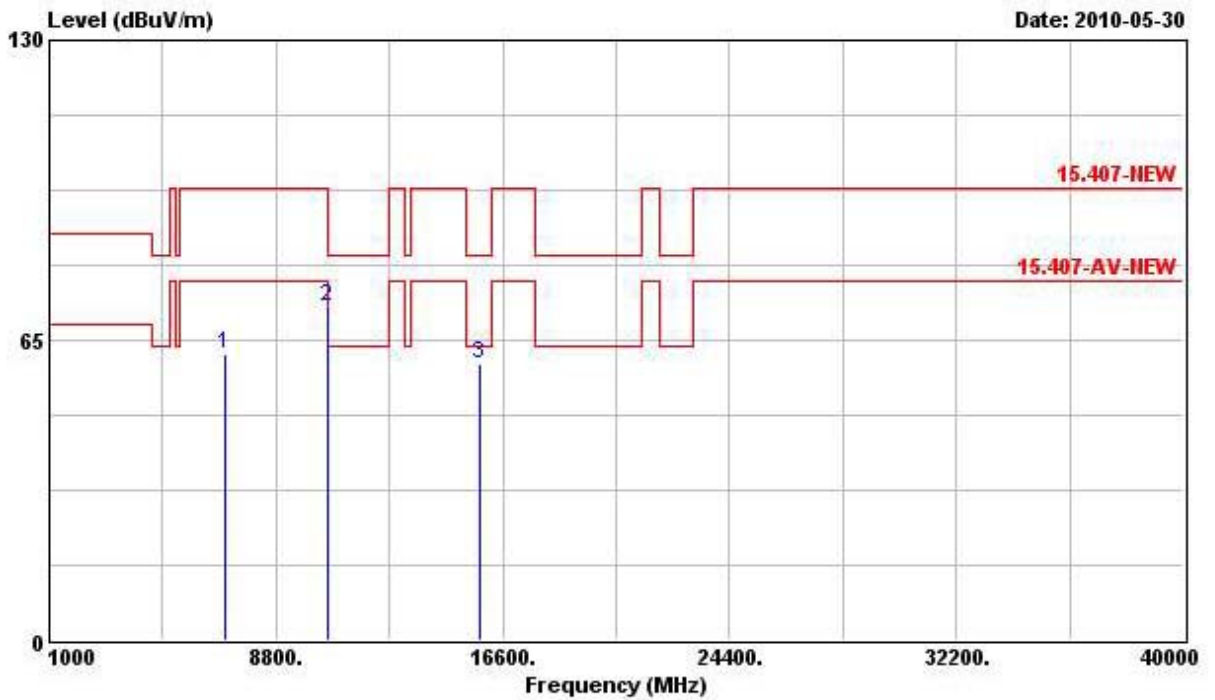
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Rnt Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7012.000	61.50	-36.34	97.84	54.27	36.13	4.26	33.16	---	---	Peak
2	10522.000	65.57	-32.27	97.84	51.82	39.49	5.81	31.55	---	---	Peak
3	15780.000	59.20	-4.34	63.54	45.02	38.06	7.44	31.32	---	---	PK

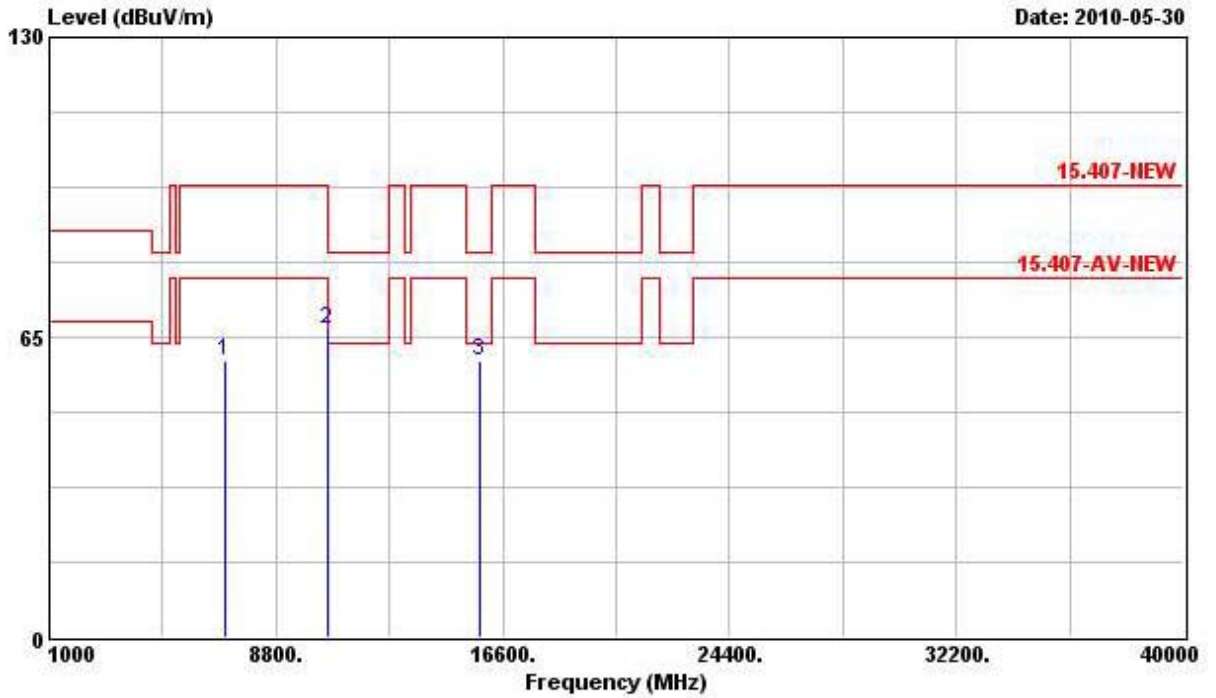
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 56 (20MHz)

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	7040.000	61.80	-36.04	97.84	54.43	36.16	4.31	33.10	---	---	Peak
2	10558.000	72.09	-25.75	97.84	58.38	39.47	5.84	31.60	---	---	Peak
3 @	15836.000	59.73	-3.81	63.54	45.63	37.95	7.50	31.35	---	---	PK

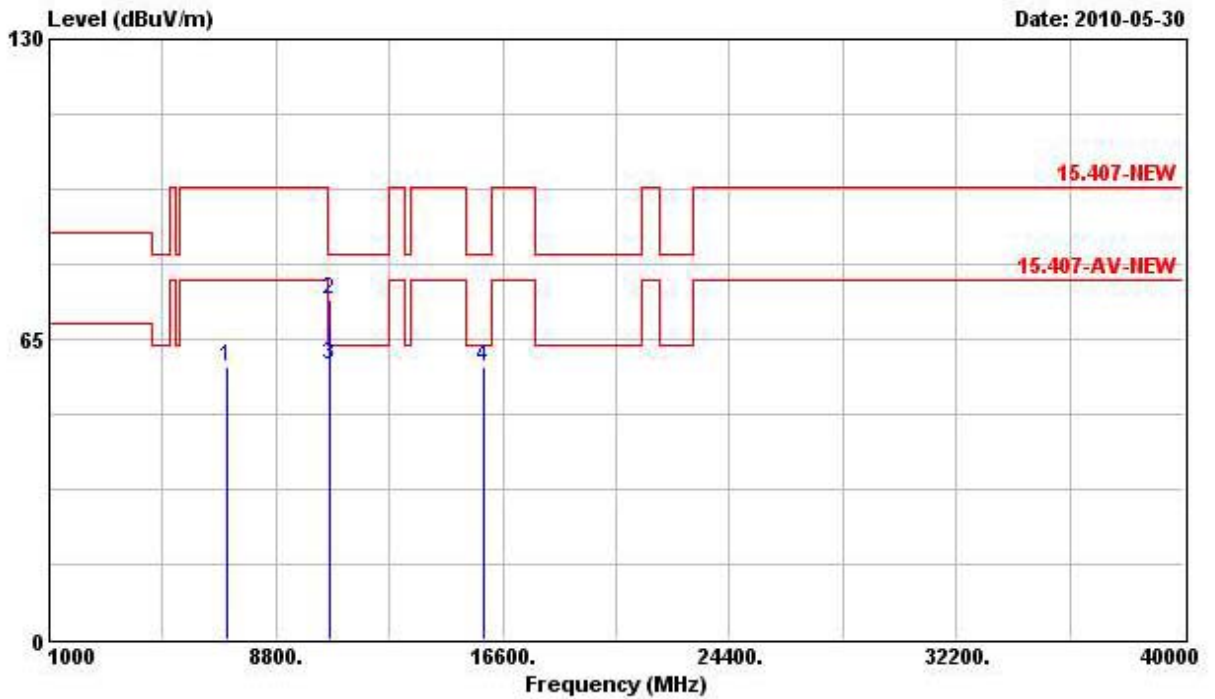
Vertical



	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	7040.000	59.67	-38.17	97.84	52.29	36.16	4.31	33.10	---	---	Peak
2	10562.000	66.76	-31.08	97.84	53.05	39.47	5.84	31.60	---	---	Peak
3 @	15784.000	59.96	-3.58	63.54	45.80	38.03	7.44	31.32	---	---	PK

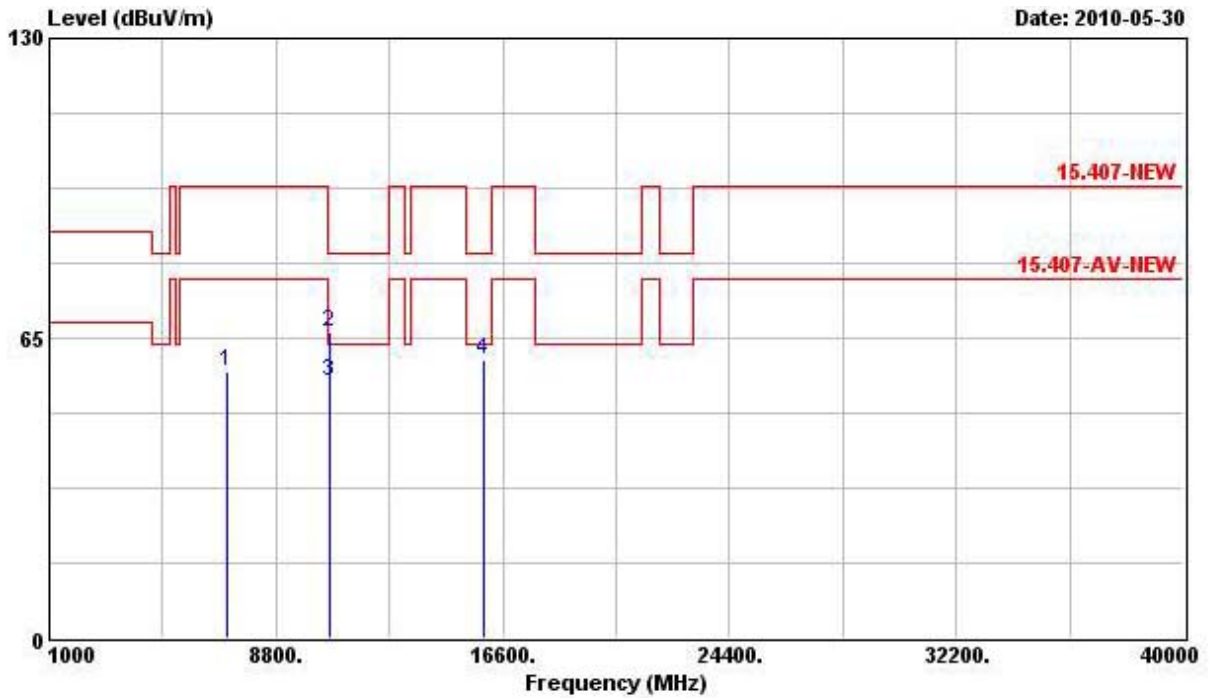
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 64 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB	dB	cm	deg	
1	7092.000	58.89	-38.95	97.84	51.25	36.26	4.36	32.97	---	Peak
2 @	10642.000	73.44	-10.10	83.54	59.80	39.42	5.91	31.68	---	Peak
3 @	10642.000	59.53	-4.01	63.54	45.89	39.42	5.91	31.68	---	Average
4 @	15962.000	58.88	-4.66	63.54	44.95	37.76	7.58	31.40	---	PK

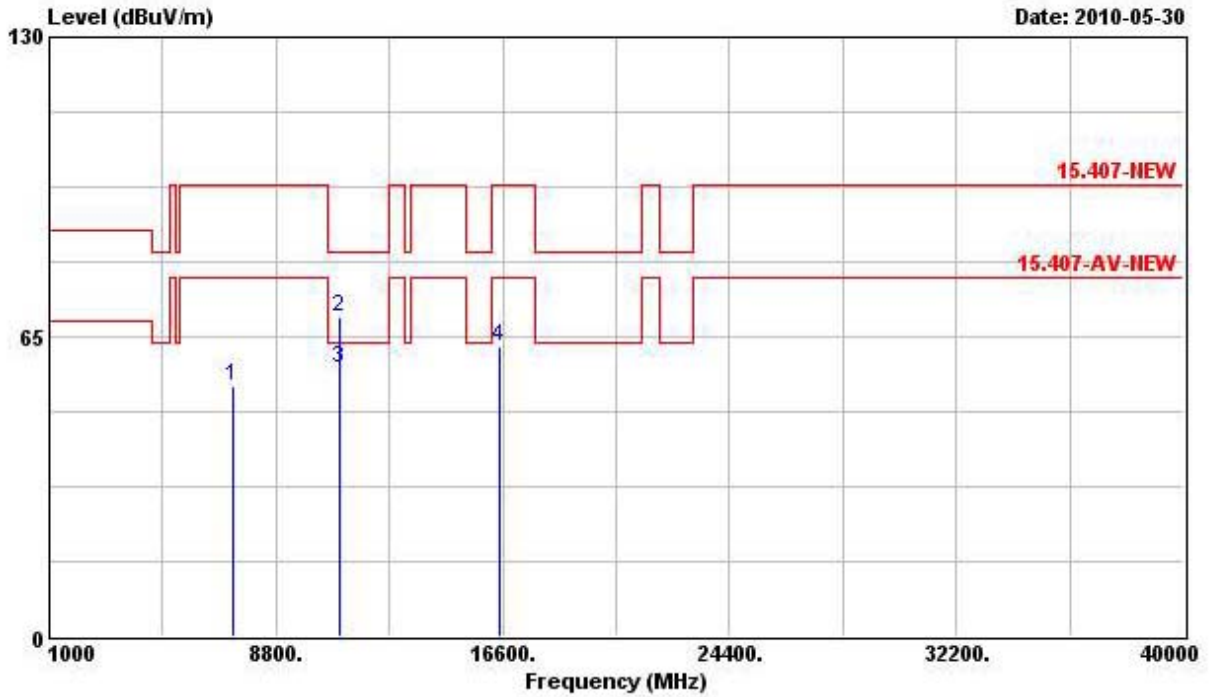
Vertical



	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	7092.000	57.67	-40.17	97.84	50.04	36.26	4.36	32.97	---	---	Peak
2	10642.000	66.36	-17.18	83.54	52.72	39.42	5.91	31.68	---	---	Peak
3	10642.000	55.62	-7.92	63.54	41.98	39.42	5.91	31.68	---	---	Average
4	15964.000	60.24	-3.30	63.54	46.30	37.76	7.58	31.40	---	---	PK

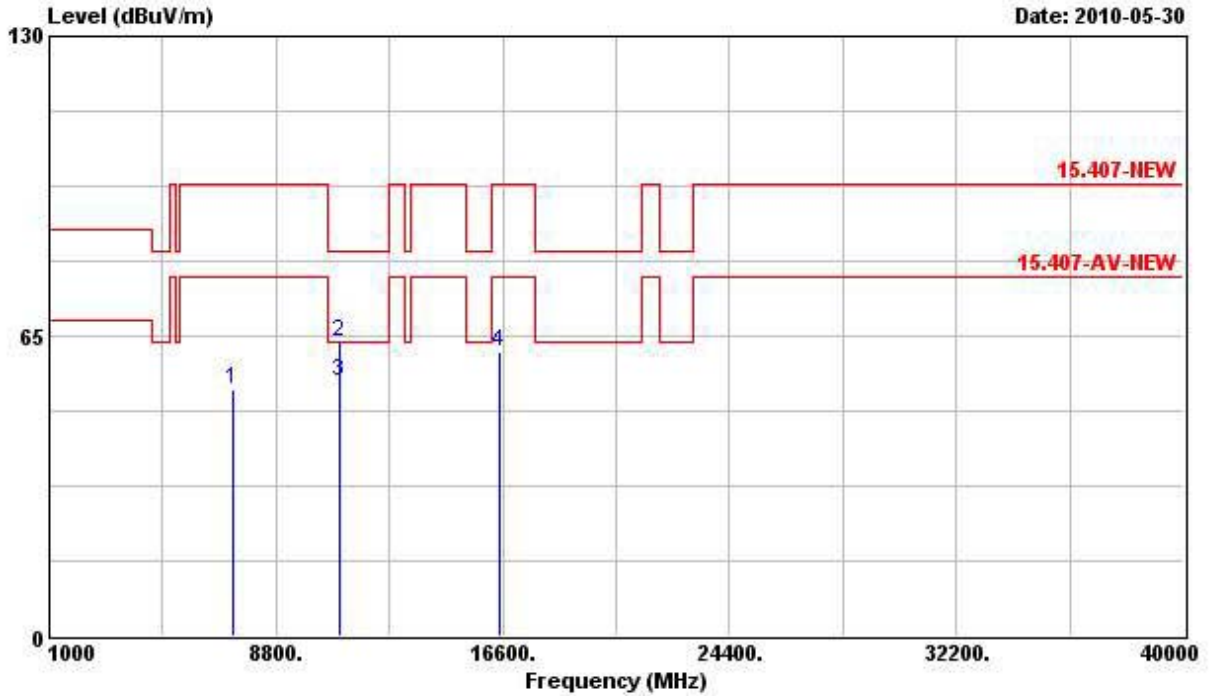
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 100 (20MHz)

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	7332.000	54.20	-23.64	77.84	45.23	36.69	4.70	32.42	---	---	PK
2	11000.000	69.22	-14.32	83.54	55.84	39.20	6.23	32.05	---	---	Peak
3 @	11000.000	58.06	-5.48	63.54	44.68	39.20	6.23	32.05	---	---	Average
4	16502.000	63.03	-34.81	97.84	48.16	38.50	7.60	31.23	---	---	Peak

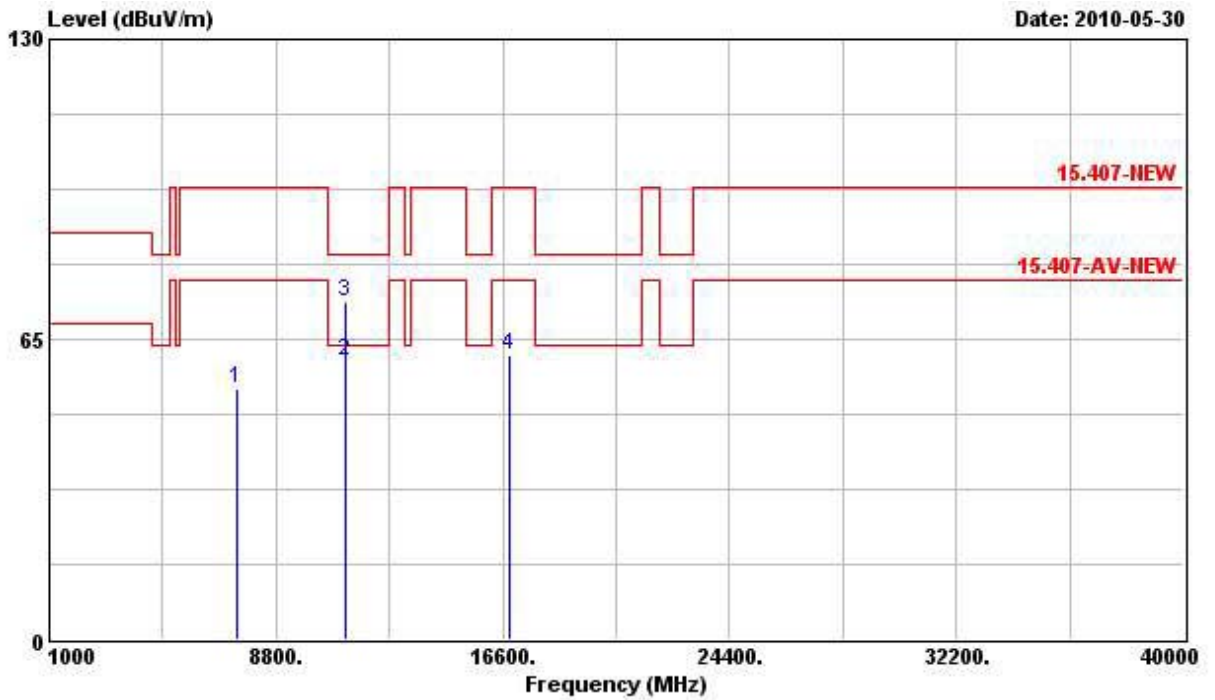
Vertical



	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	7332.000	53.30	-24.54	77.84	44.33	36.69	4.70	32.42	---	---	PK
2	11000.000	63.85	-19.69	83.54	50.46	39.20	6.23	32.05	---	---	Peak
3 @	11000.000	55.25	-8.29	63.54	41.87	39.20	6.23	32.05	---	---	Average
4	16502.000	61.46	-36.38	97.84	46.60	38.50	7.60	31.23	---	---	Peak

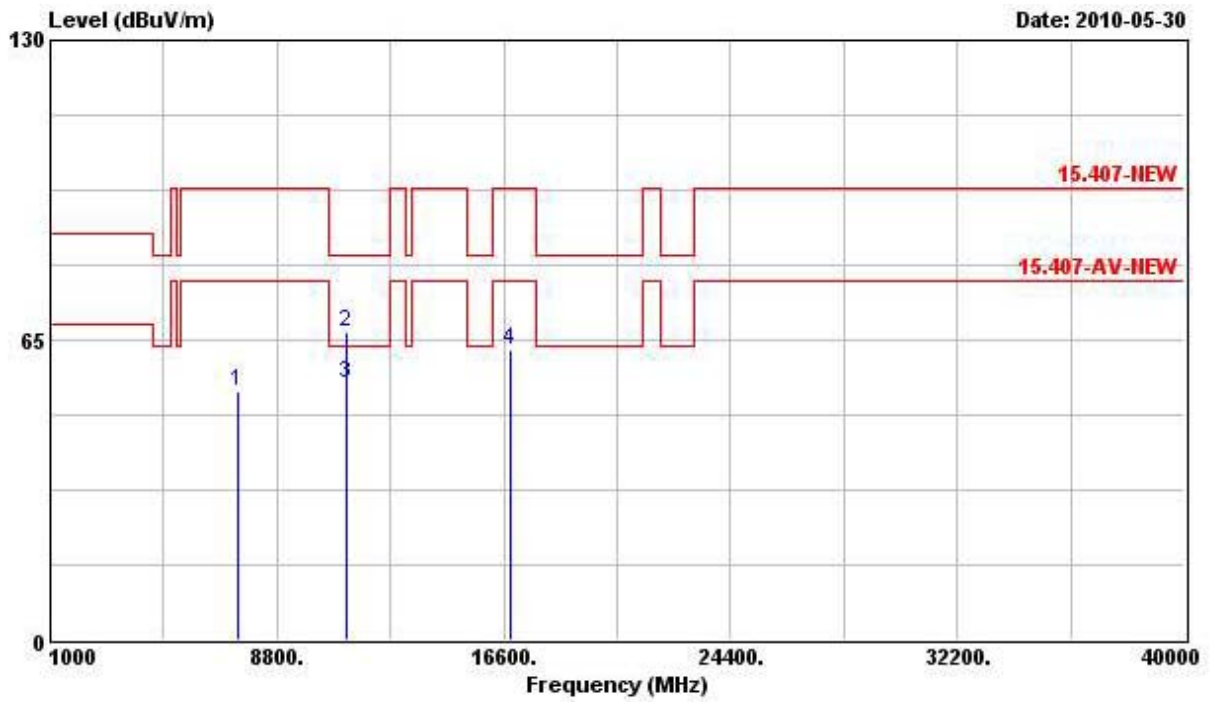
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 116 (20MHz)

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	7464.000	54.20	-23.64	77.84	44.53	36.94	4.85	32.12	---	---	PK
2 @	11202.000	60.25	-3.29	63.54	46.34	39.48	6.13	31.69	---	---	Average
3 @	11202.000	73.22	-10.32	83.54	59.31	39.48	6.13	31.69	---	---	Peak
4	16800.000	61.42	-36.42	97.84	44.81	40.14	7.49	31.02	---	---	Peak

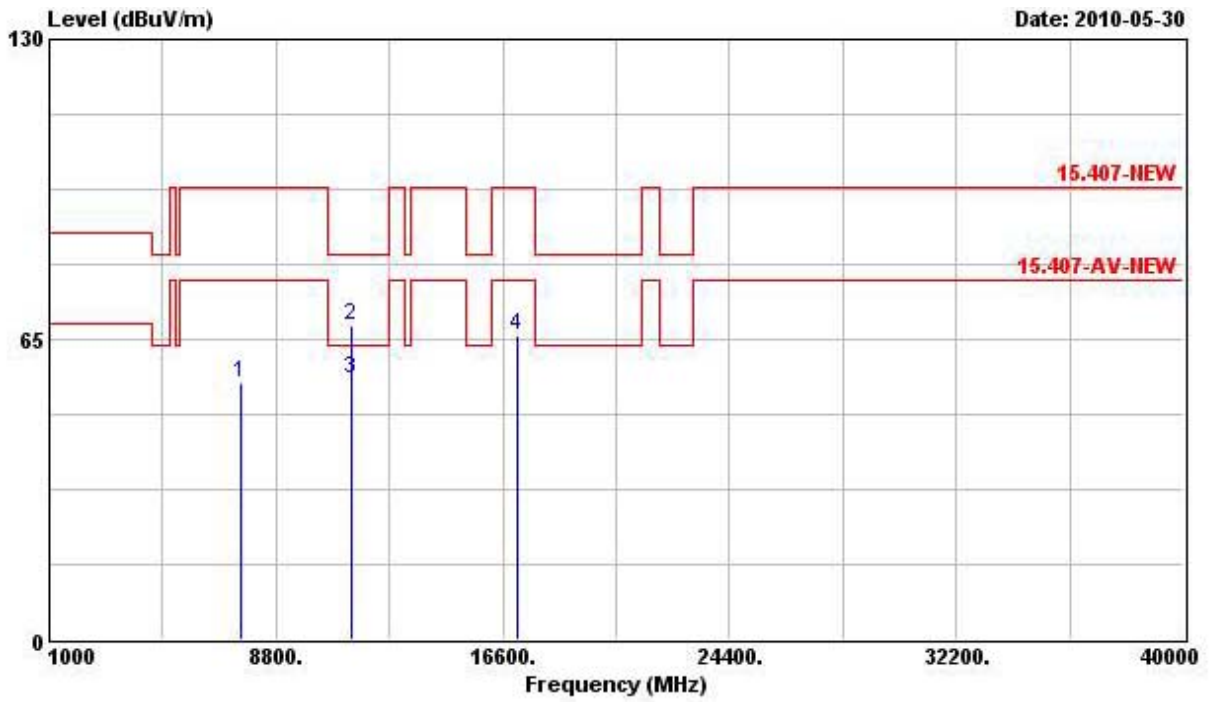
Vertical



	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	7464.000	54.00	-23.84	77.84	44.33	36.94	4.85	32.12	---	---	PK
2	11202.000	66.55	-16.99	83.54	52.64	39.48	6.13	31.69	---	---	Peak
3 @	11202.000	55.56	-7.98	63.54	41.65	39.48	6.13	31.69	---	---	Average
4	16800.000	62.96	-34.88	97.84	46.35	40.14	7.49	31.02	---	---	Peak

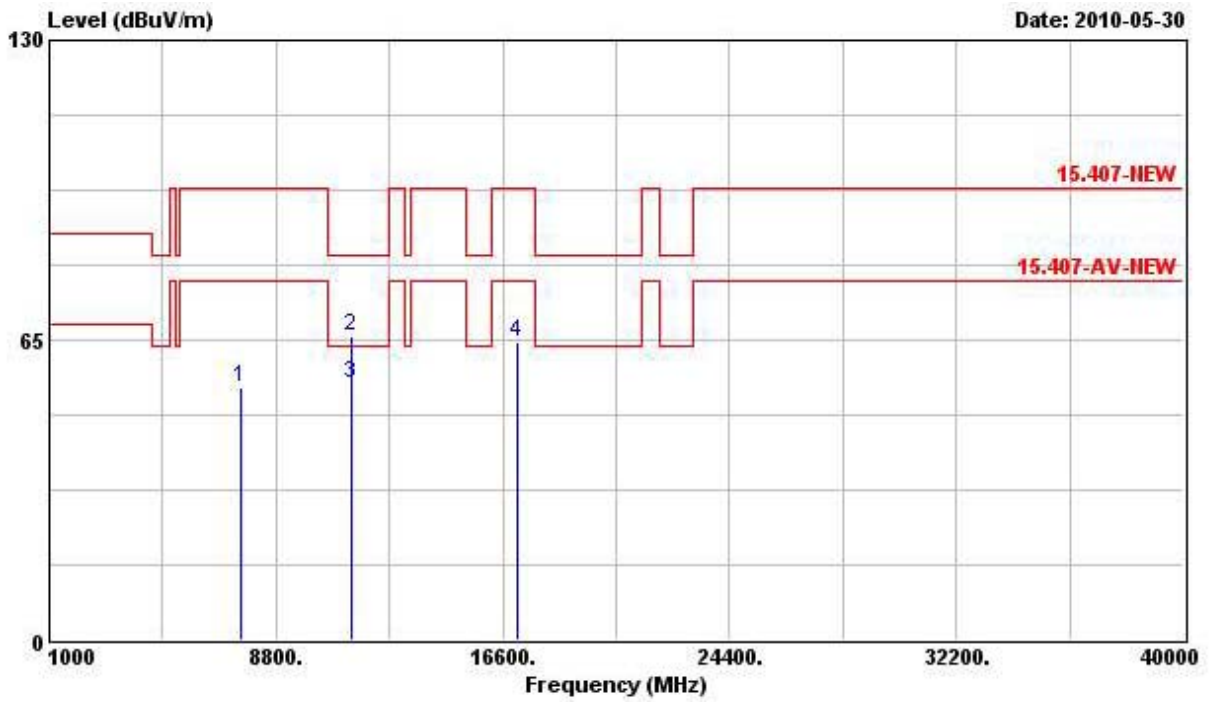
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 140 (20MHz)

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	7600.000	55.43	-22.41	77.84	45.39	37.12	4.96	32.04	---	---	PK
2	11400.000	68.16	-15.38	83.54	53.71	39.76	6.03	31.34	---	---	Peak
3 @	11400.000	56.32	-7.22	63.54	41.87	39.76	6.03	31.34	---	---	Average
4	17100.000	65.92	-31.92	97.84	47.18	42.24	7.40	30.90	---	---	Peak

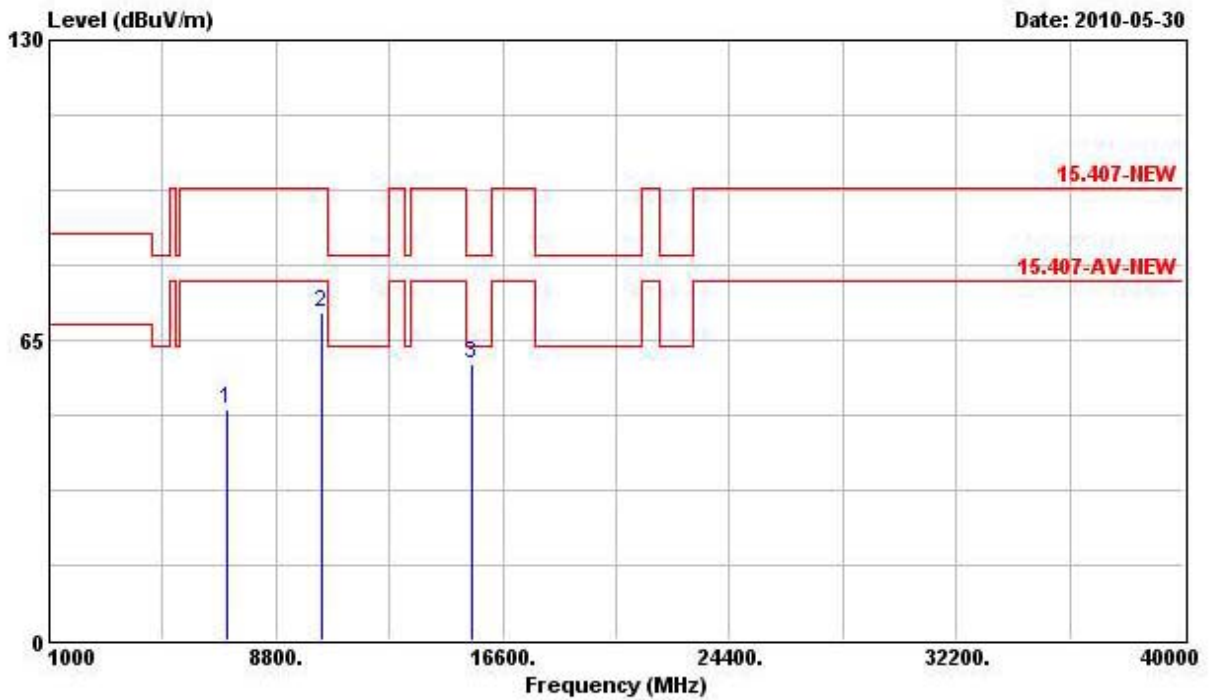
Vertical



	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	7600.000	54.68	-23.16	77.84	44.64	37.12	4.96	32.04	---	---	PK
2	11400.000	65.81	-17.73	83.54	51.36	39.76	6.03	31.34	---	---	Peak
3 @	11400.000	55.43	-8.11	63.54	40.99	39.76	6.03	31.34	---	---	Average
4	17100.000	64.64	-33.20	97.84	45.90	42.24	7.40	30.90	---	---	Peak

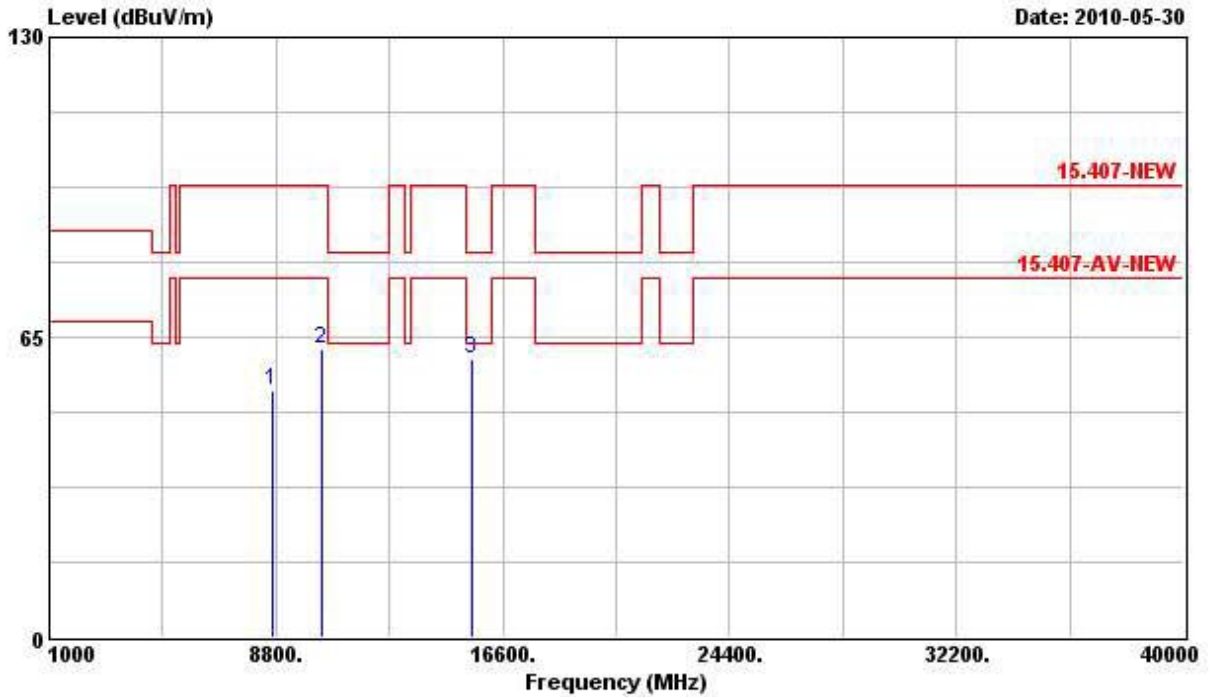
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 38 (40MHz)

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	7108.000	50.07	-47.77	97.84	42.30	36.29	4.41	32.91	---	---	Peak
2	10380.000	71.10	-26.74	97.84	57.56	39.55	5.77	31.78	---	---	Peak
3 @	15572.000	59.92	-3.62	63.54	45.44	38.39	7.30	31.22	---	---	PK

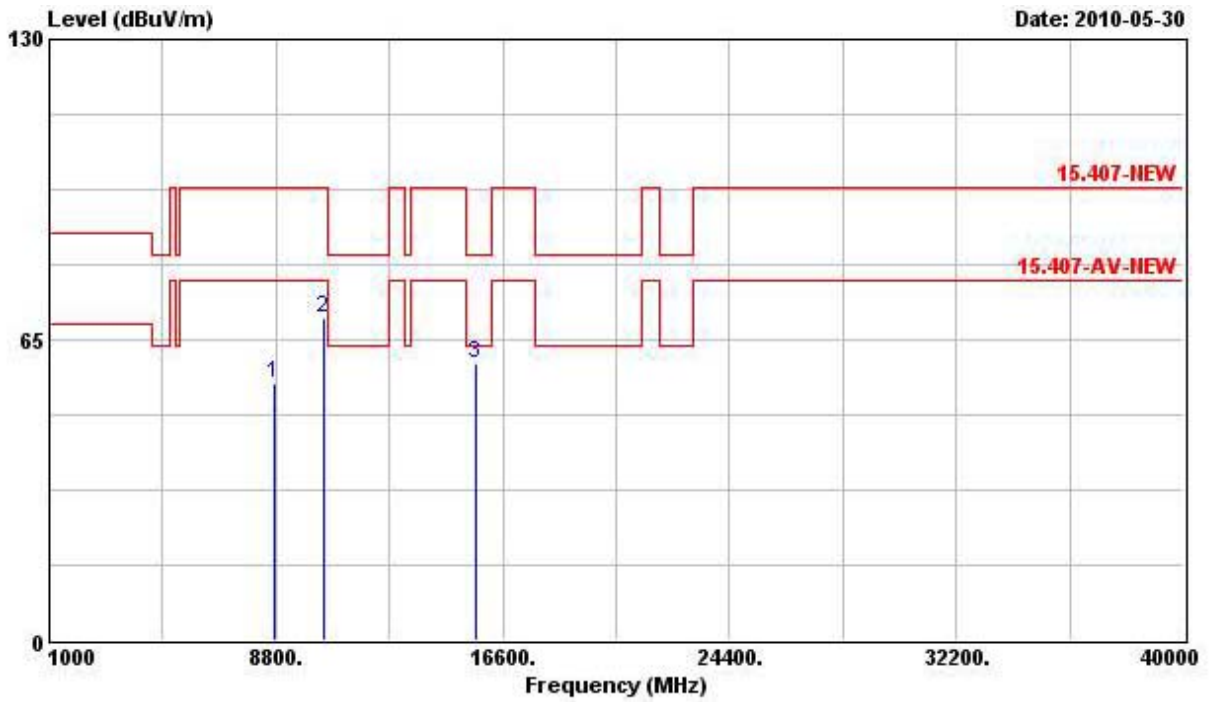
Vertical



	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	8676.000	53.47	-44.37	97.84	41.95	38.35	5.28	32.11	---	---	Peak
2	10380.000	62.61	-35.23	97.84	49.08	39.55	5.77	31.78	---	---	Peak
3 @	15572.000	60.33	-3.21	63.54	45.85	38.39	7.30	31.22	---	---	PK

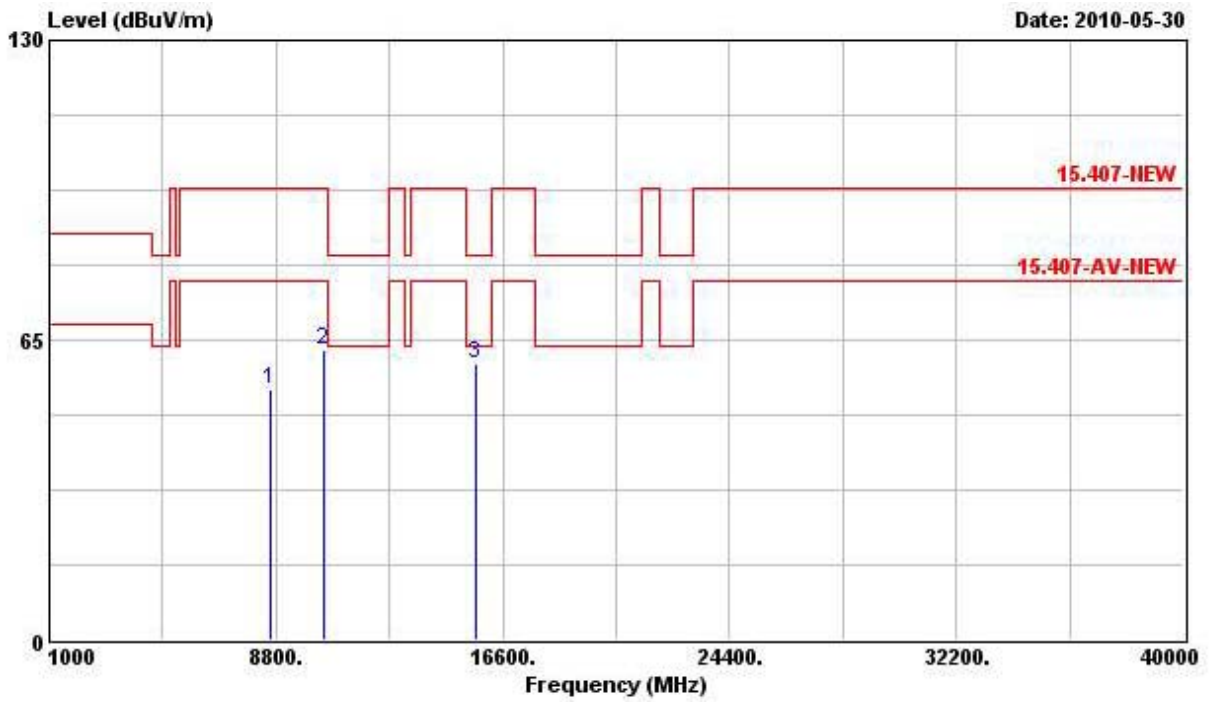
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 46 (40MHz)

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	8732.000	55.45	-42.39	97.84	43.95	38.39	5.26	32.14	---	---	Peak
2	10460.000	69.60	-28.24	97.84	55.92	39.52	5.80	31.64	---	---	Peak
3 @	15694.000	59.74	-3.80	63.54	45.43	38.20	7.39	31.28	---	---	PK

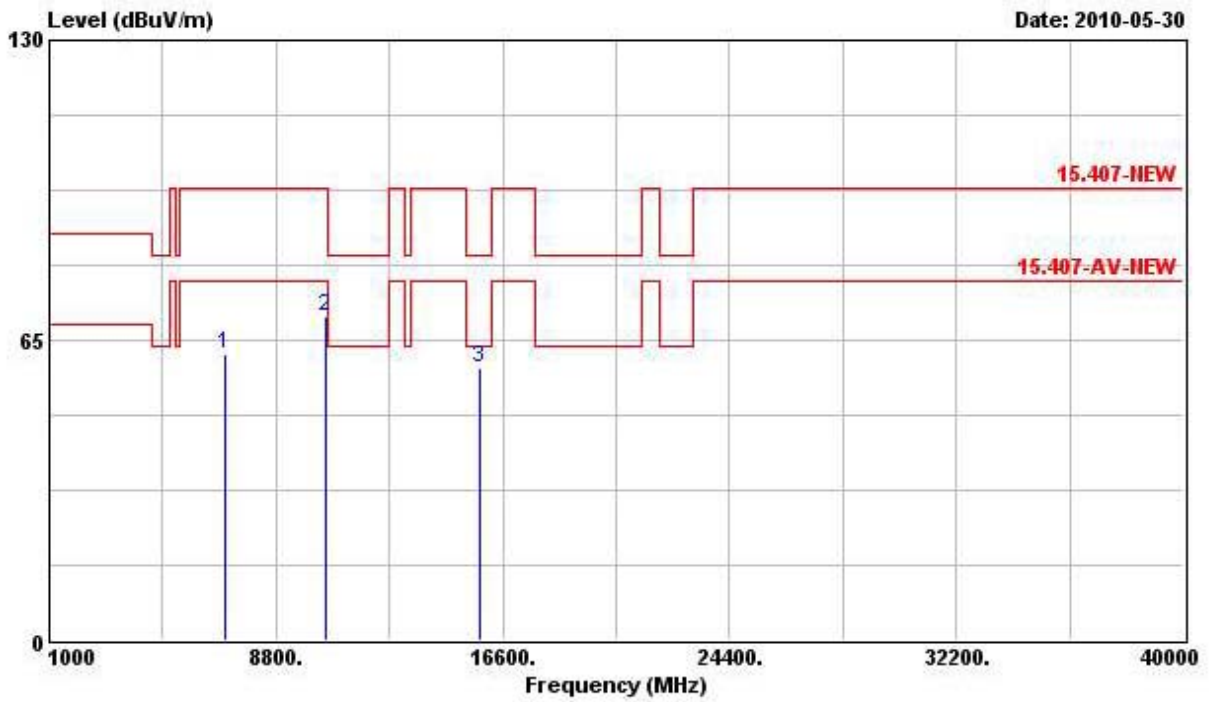
Vertical



	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	8592.000	54.35	-43.49	97.84	42.82	38.28	5.33	32.08	---	---	Peak
2	10460.000	63.03	-34.81	97.84	49.35	39.52	5.80	31.64	---	---	Peak
3 @	15688.000	60.02	-3.52	63.54	45.71	38.20	7.39	31.28	---	---	PK

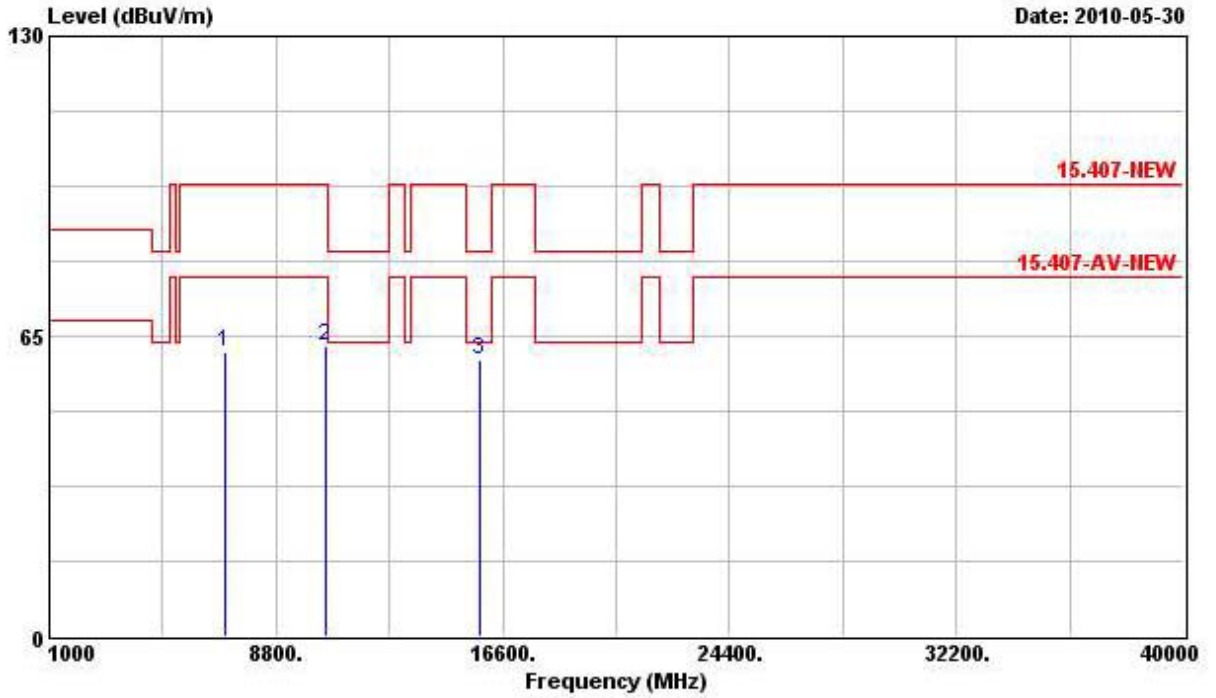
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 54 (40MHz)

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	7024.000	62.08	-35.76	97.84	54.80	36.13	4.31	33.16	---	---	Peak
2	10540.000	70.10	-27.74	97.84	56.35	39.48	5.84	31.58	---	---	Peak
3 @	15810.000	59.18	-4.36	63.54	45.04	38.00	7.47	31.33	---	---	PK

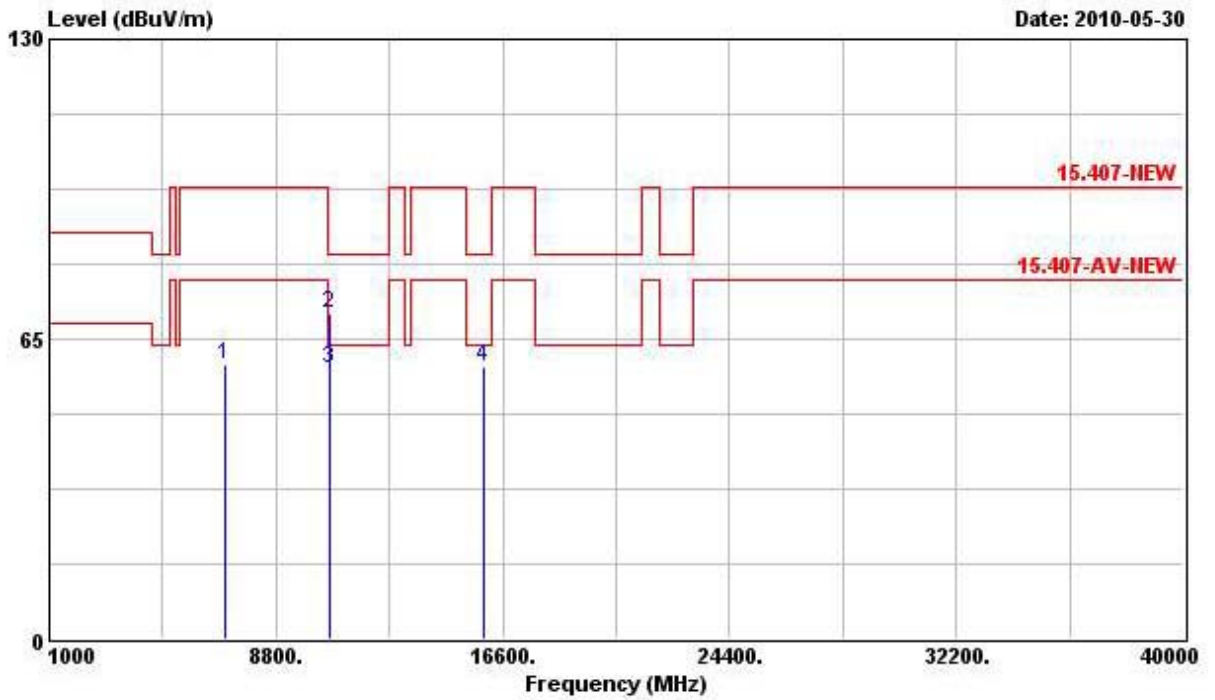
Vertical



	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	7024.000	61.71	-36.13	97.84	54.43	36.13	4.31	33.16	---	---	Peak
2	10542.000	62.98	-34.86	97.84	49.23	39.48	5.84	31.58	---	---	Peak
3	15810.000	59.89	-3.65	63.54	45.74	38.00	7.47	31.33	---	---	PK

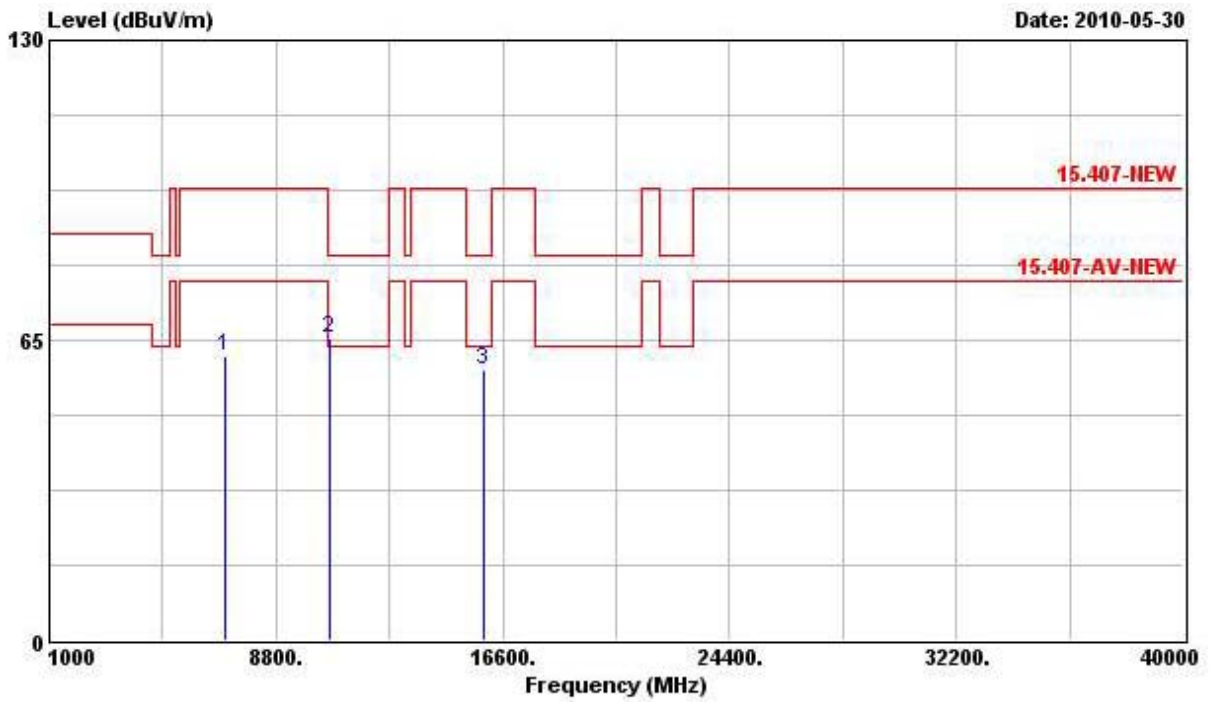
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 62 (40MHz)

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	7080.000	59.56	-38.28	97.84	51.98	36.26	4.36	33.04	---	---	Peak
2	10620.000	70.50	-13.04	83.54	56.82	39.43	5.91	31.65	---	---	Peak
3 @	10620.000	58.71	-4.83	63.54	45.03	39.43	5.91	31.65	---	---	Average
4 @	15928.000	59.21	-4.33	63.54	45.23	37.81	7.56	31.38	---	---	PK

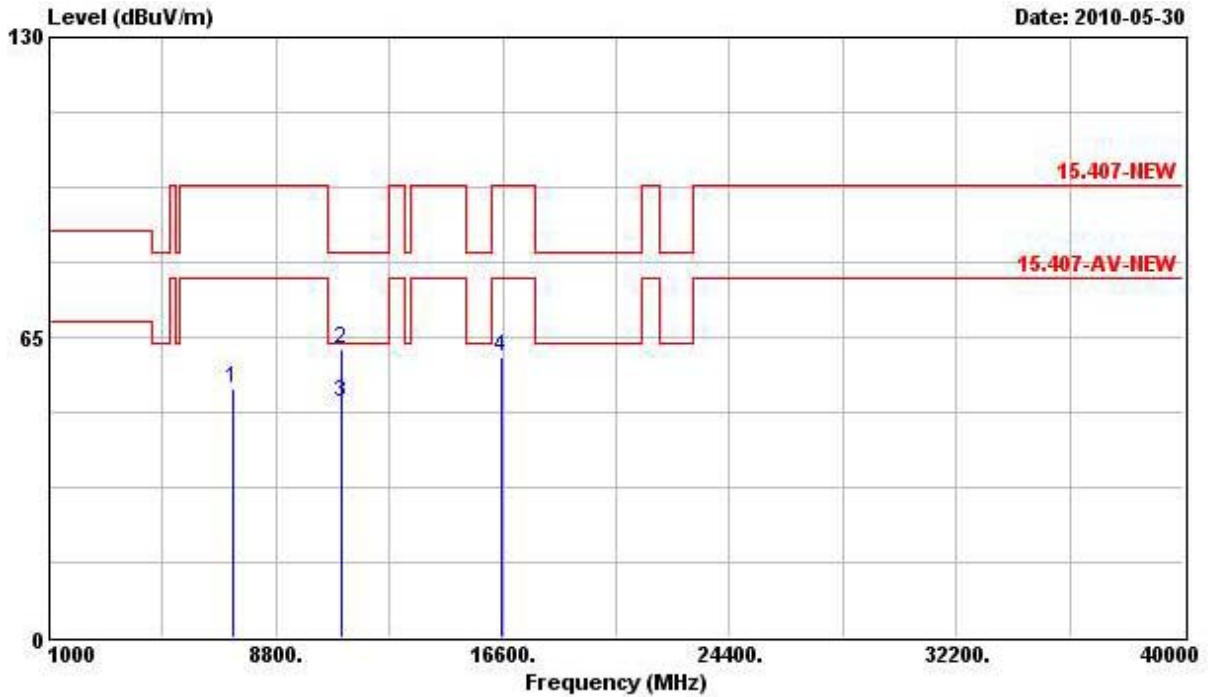
Vertical



	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	7080.000	61.52	-36.32	97.84	53.94	36.26	4.36	33.04	---	---	Peak
2	10620.000	65.61	-17.93	83.54	51.93	39.43	5.91	31.65	---	---	Peak
3 @	15930.000	58.75	-4.79	63.54	44.77	37.81	7.56	31.38	---	---	PK

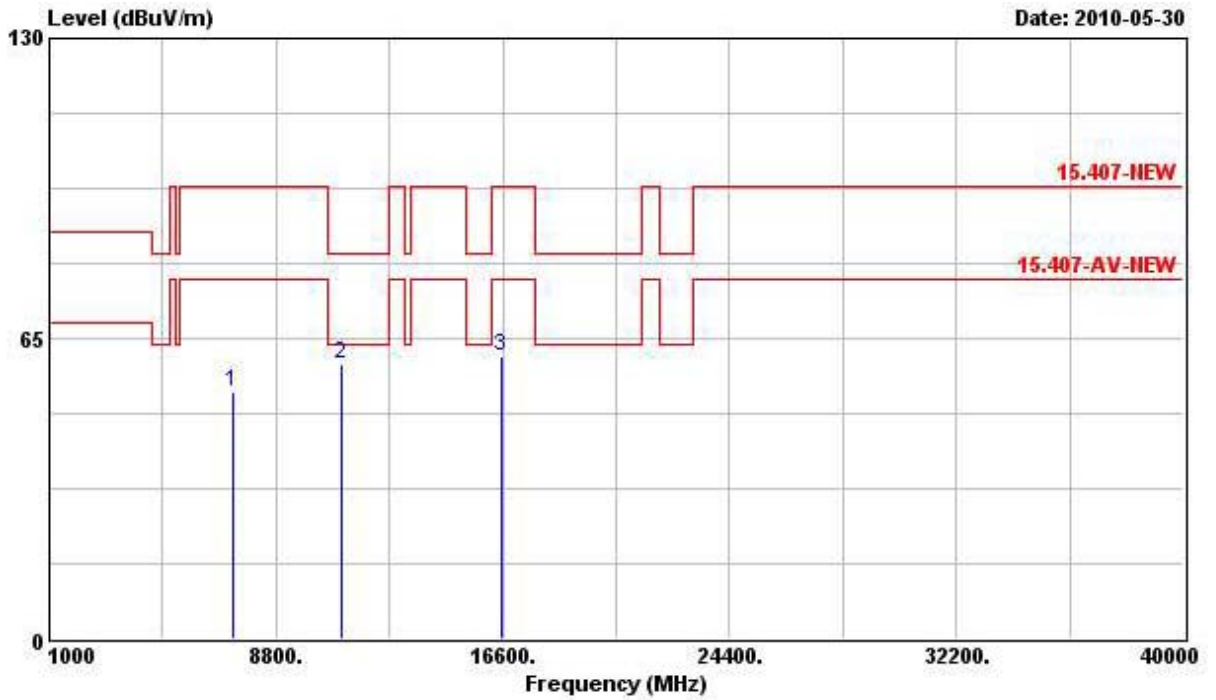
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 102 (40MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	7344.000	53.67	-24.17	77.84	44.61	36.72	4.70	32.36	---	PK
2	11022.000	62.27	-21.27	83.54	48.80	39.25	6.23	32.00	---	Peak
3	11022.000	50.90	-12.64	63.54	37.43	39.25	6.23	32.00	---	Average
4	16530.000	60.81	-37.03	97.84	45.73	38.69	7.60	31.22	---	Peak

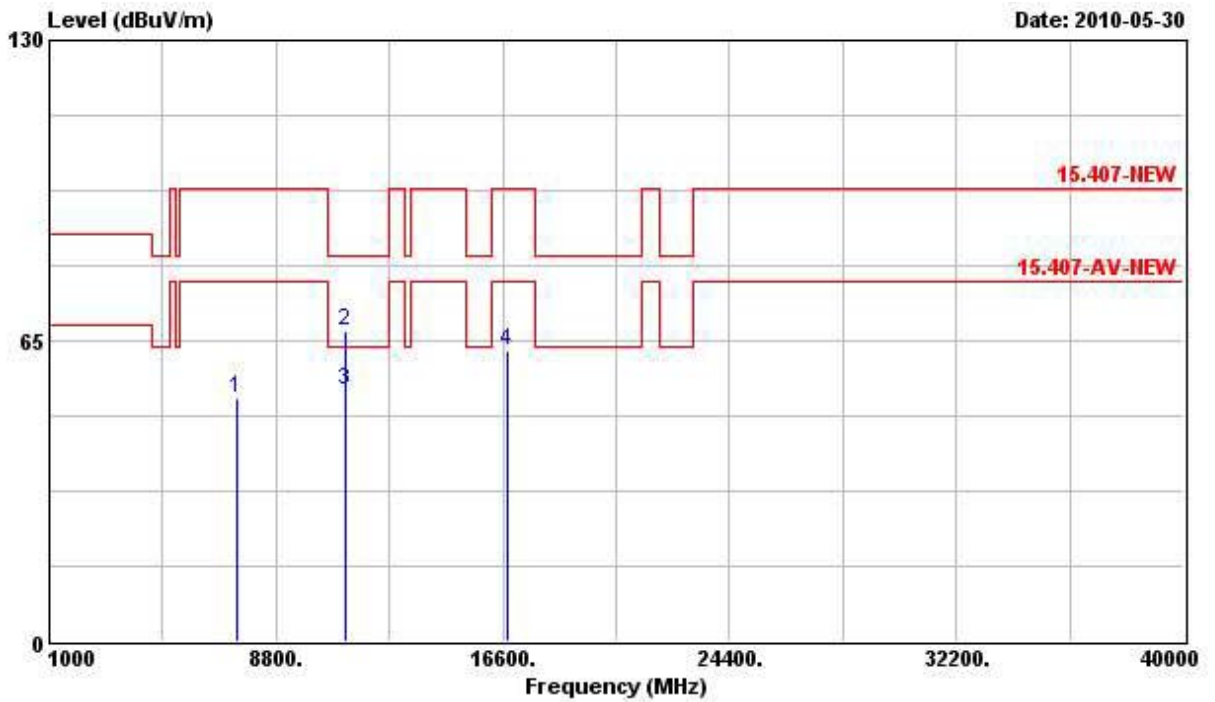
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Rnt Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7344.000	53.35	-24.49	77.84	44.29	36.72	4.70	32.36	---	---	PK
2 @	11022.000	59.45	-4.09	63.54	45.97	39.25	6.23	32.00	---	---	PK
3	16530.000	61.18	-36.66	97.84	46.10	38.69	7.60	31.22	---	---	Peak

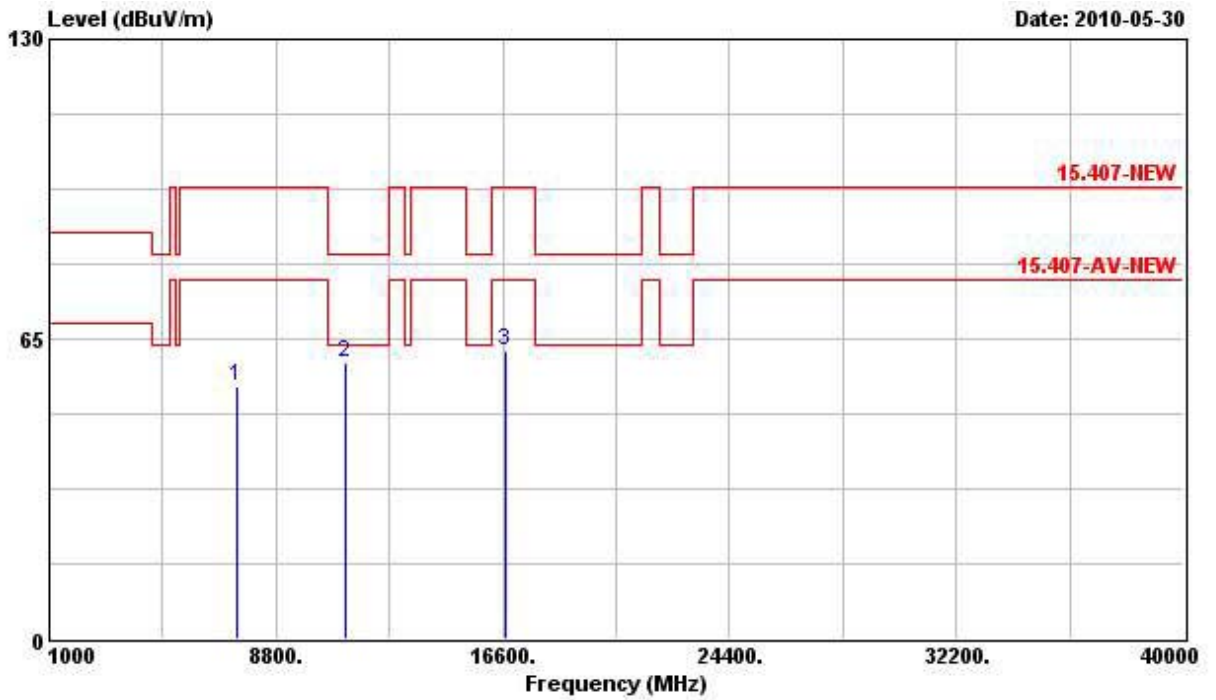
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 110 (40MHz)

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	7452.000	52.66	-25.18	77.84	42.99	36.94	4.85	32.12	---	---	PK
2	11188.000	67.29	-16.25	83.54	53.38	39.46	6.15	31.69	---	---	Peak
3 @	11188.000	54.51	-9.03	63.54	40.60	39.46	6.15	31.69	---	---	Average
4	16772.000	62.69	-35.15	97.84	46.20	40.04	7.49	31.04	---	---	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	7452.000	54.75	-23.09	77.84	45.08	36.94	4.85	32.12	---	---	PK
2 @	11188.000	59.93	-3.61	63.54	46.02	39.46	6.15	31.69	---	---	PK
3	16670.000	62.43	-35.41	97.84	46.53	39.47	7.54	31.11	---	---	Peak

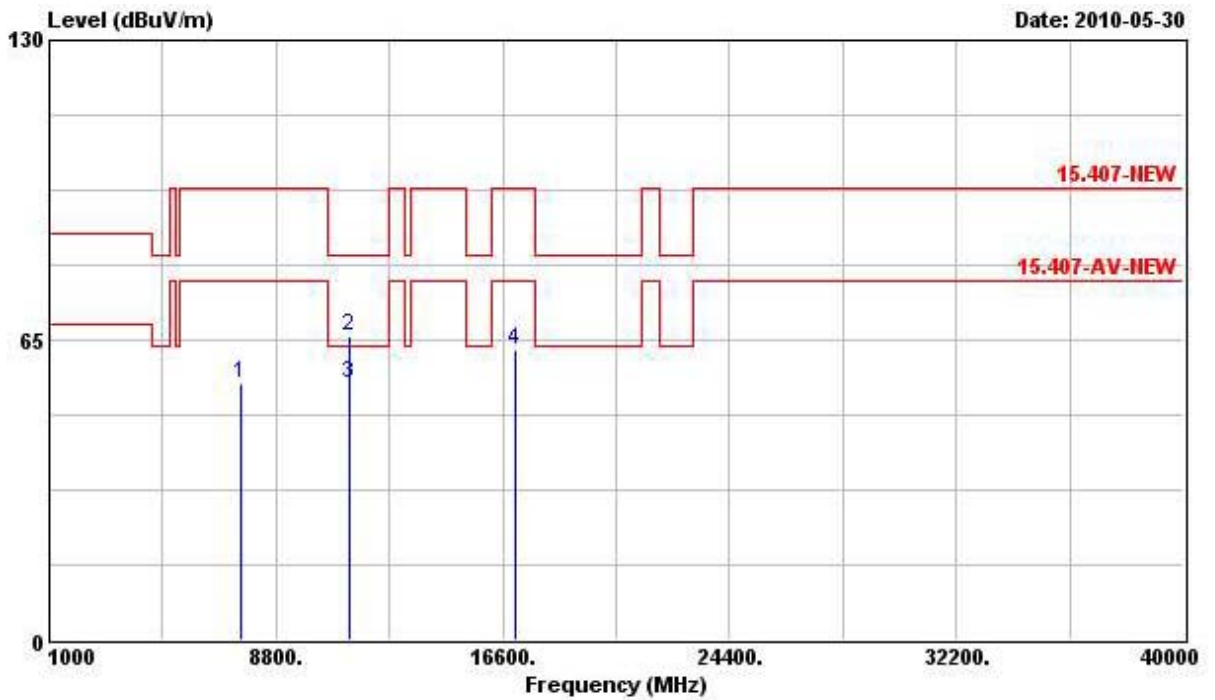
Final Test Date	May 30, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 134 (40MHz)

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	7560.000	53.53	-24.31	77.84	43.54	37.08	4.93	32.02	---	---	PK
2	11340.000	68.82	-14.72	83.54	54.56	39.67	6.07	31.47	---	---	Peak
3 @	11340.000	58.23	-5.31	63.54	43.97	39.67	6.07	31.47	---	---	Average
4	17010.000	62.27	-35.57	97.84	44.30	41.46	7.41	30.89	---	---	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	7560.000	55.48	-22.36	77.84	45.49	37.08	4.93	32.02	---	---	PK
2	11340.000	65.71	-17.83	83.54	51.45	39.67	6.07	31.47	---	---	Peak
3 @	11340.000	55.61	-7.93	63.54	41.35	39.67	6.07	31.47	---	---	Average
4	17010.000	63.05	-34.79	97.84	45.09	41.46	7.41	30.89	---	---	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.

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

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

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

3.3 Band Edge and Fundamental Emissions Measurement

3.3.1 Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

3.3.2 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)	1 MHz /1 MHz for Peak

3.3.3 Test Procedures

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

3.3.4 Test Setup Layout

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

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	May 28, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 36, 40, 48

Channel 36

	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	5149.990	72.75	-10.79	83.54	35.51	34.45	2.79	0.00	---	---	Peak
2 @	5185.500	114.32			76.97	34.48	2.87	0.00	---	---	Peak
1	5149.990	55.96	-7.58	63.54	18.72	34.45	2.79	0.00	---	---	Average
2 @	5186.600	103.60			66.25	34.48	2.87	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 40

	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	5140.200	68.00	-15.54	83.54	30.84	34.45	2.71	0.00	---	---	Peak
2 X	5206.500	114.13			76.76	34.50	2.87	0.00	---	---	Peak
3	5353.800	68.51	-15.03	83.54	30.67	34.65	3.19	0.00	---	---	Peak
1	5125.800	54.44	-9.10	63.54	17.30	34.43	2.71	0.00	---	---	Average
2 @	5206.500	103.62			66.25	34.50	2.87	0.00	---	---	Average
3	5393.400	55.00	-8.54	63.54	17.05	34.68	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 48

	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	5147.400	68.62	-14.92	83.54	31.38	34.45	2.79	0.00	---	---	Peak
2 @	5238.600	115.48			78.00	34.53	2.95	0.00	---	---	Peak
3	5376.600	68.50	-15.04	83.54	30.64	34.67	3.19	0.00	---	---	Peak
1	5125.800	54.43	-9.11	63.54	17.29	34.43	2.71	0.00	---	---	Average
2 @	5234.100	104.58			67.10	34.53	2.95	0.00	---	---	Average
3	5399.700	54.96	-8.58	63.54	16.99	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Final Test Date	May 28, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 52, 56, 64

Channel 52

	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	5100.900	68.99	-14.55	83.54	31.96	34.40	2.63	0.00	---	---	Peak
2 @	5265.300	115.41			77.81	34.57	3.03	0.00	---	---	Peak
3	5391.000	69.59	-13.95	83.54	31.64	34.68	3.27	0.00	---	---	Peak
1	5105.400	54.43	-9.11	63.54	17.40	34.40	2.63	0.00	---	---	Average
2 @	5266.200	104.85			67.25	34.57	3.03	0.00	---	---	Average
3	5398.500	54.97	-8.57	63.54	17.00	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 56

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5139.000	69.62	-13.92	83.54	32.48	34.43	2.71	0.00	---	---	Peak
2 @	5283.300	115.41			77.80	34.58	3.03	0.00	---	---	Peak
3	5379.000	69.77	-13.77	83.54	31.82	34.68	3.27	0.00	---	---	Peak
1	5119.800	54.40	-9.14	63.54	17.28	34.42	2.71	0.00	---	---	Average
2 @	5282.100	104.70			67.09	34.58	3.03	0.00	---	---	Average
3	5399.400	55.03	-8.51	63.54	17.06	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions

Channel 64

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	5317.100	115.43			77.70	34.62	3.11	0.00	---	---	Peak
2	5350.700	73.91	-9.63	83.54	36.07	34.65	3.19	0.00	---	---	Peak
1 @	5317.000	104.72			66.99	34.62	3.11	0.00	---	---	Average
2	5350.010	56.26	-7.28	63.54	18.42	34.65	3.19	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Final Test Date	May 28, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11a Ch. 100, 116, 140

Channel 100

	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	5460.000	72.42	-11.12	83.54	34.24	34.75	3.43	0.00	---	---	Peak
2 @	5506.000	118.22			79.91	34.80	3.51	0.00	---	---	Peak
1	5458.800	55.89	-7.65	63.54	17.71	34.75	3.43	0.00	---	---	Average
2 @	5506.400	107.45			69.14	34.80	3.51	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 116

	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	5459.990	67.13	-16.41	83.54	28.95	34.75	3.43	0.00	---	---	Peak
2 @	5592.850	115.12			76.73	34.80	3.59	0.00	---	---	Peak
3	5731.100	69.84	-28.00	97.84	31.30	34.80	3.74	0.00	---	---	Peak
1	5444.100	55.41	-8.13	63.54	17.32	34.73	3.35	0.00	---	---	Average
2 @	5592.850	104.58			66.19	34.80	3.59	0.00	---	---	Average
3	5739.500	55.94	-21.90	77.84	17.40	34.80	3.74	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 140

	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 X	5693.240	113.79			75.29	34.80	3.70	0.00	---	---	Peak
2	5729.300	72.44	-25.40	97.84	33.94	34.80	3.70	0.00	---	---	Peak
1 @	5692.760	102.74			64.24	34.80	3.70	0.00	---	---	Average
2	5725.160	56.46	-21.38	77.84	17.96	34.80	3.70	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Final Test Date	May 28, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 36, 40, 48 (20MHz)

Channel 36

	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	5149.500	74.57	-8.97	83.54	37.33	34.45	2.79	0.00	---	---	Peak
2 @	5185.400	115.82			78.47	34.48	2.87	0.00	---	---	Peak
1	5149.990	57.92	-5.62	63.54	20.68	34.45	2.79	0.00	---	---	Average
2 @	5186.700	105.06			67.71	34.48	2.87	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 40

	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	5111.400	68.77	-14.77	83.54	31.65	34.42	2.71	0.00	---	---	Peak
2 X	5206.500	113.95			76.58	34.50	2.87	0.00	---	---	Peak
3	5367.300	69.60	-13.94	83.54	31.74	34.67	3.19	0.00	---	---	Peak
1	5110.200	54.49	-9.05	63.54	17.37	34.42	2.71	0.00	---	---	Average
2 @	5206.500	102.73			65.36	34.50	2.87	0.00	---	---	Average
3	5397.000	54.97	-8.57	63.54	17.00	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 48

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5124.600	69.79	-13.75	83.54	32.65	34.43	2.71	0.00	---	---	Peak
2 @	5236.500	114.57			77.09	34.53	2.95	0.00	---	---	Peak
3	5363.400	69.07	-14.47	83.54	31.21	34.67	3.19	0.00	---	---	Peak
1	5124.600	54.48	-9.06	63.54	17.34	34.43	2.71	0.00	---	---	Average
2 @	5234.100	103.45			65.97	34.53	2.95	0.00	---	---	Average
3	5397.000	55.01	-8.53	63.54	17.04	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Final Test Date	May 18, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 52, 56, 64 (20MHz)

Channel 52

	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	5115.000	68.80	-14.74	83.54	31.68	34.42	2.71	0.00	---	---	Peak
2 @	5266.500	115.72			78.12	34.57	3.03	0.00	---	---	Peak
3	5388.600	69.71	-13.83	83.54	31.76	34.68	3.27	0.00	---	---	Peak
1	5105.400	54.49	-9.05	63.54	17.46	34.40	2.63	0.00	---	---	Average
2 @	5266.500	104.71			67.11	34.57	3.03	0.00	---	---	Average
3	5397.000	55.11	-8.43	63.54	17.14	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 56

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5122.200	69.32	-14.22	83.54	32.20	34.42	2.71	0.00	---	---	Peak
2 @	5285.400	114.72			77.11	34.58	3.03	0.00	---	---	Peak
3	5381.700	69.16	-14.38	83.54	31.21	34.68	3.27	0.00	---	---	Peak
1	5118.600	54.52	-9.02	63.54	17.40	34.42	2.71	0.00	---	---	Average
2 @	5283.000	103.83			66.22	34.58	3.03	0.00	---	---	Average
3	5399.400	55.05	-8.49	63.54	17.08	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 64

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	5316.700	116.58			78.85	34.62	3.11	0.00	---	---	Peak
2	5350.300	75.99	-7.55	83.54	38.15	34.65	3.19	0.00	---	---	Peak
1 @	5317.000	105.36			67.63	34.62	3.11	0.00	---	---	Average
2	5350.010	57.42	-6.12	63.54	19.58	34.65	3.19	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Final Test Date	May 28, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 100, 116, 140 (20MHz)

Channel 100

	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	5455.800	76.73	-6.81	83.54	38.63	34.75	3.35	0.00	---	---	Peak
2 @	5505.400	119.22			80.91	34.80	3.51	0.00	---	---	Peak
1	5459.990	56.44	-7.10	63.54	18.26	34.75	3.43	0.00	---	---	Average
2 @	5505.900	108.21			69.90	34.80	3.51	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 116

	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	5418.900	69.81	-13.73	83.54	31.74	34.72	3.35	0.00	---	---	Peak
2 @	5603.700	116.77			78.38	34.80	3.59	0.00	---	---	Peak
1	5438.850	55.61	-7.93	63.54	17.52	34.73	3.35	0.00	---	---	Average
2 @	5605.450	105.58			67.19	34.80	3.59	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 140

	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 @	5693.480	115.79			77.29	34.80	3.70	0.00	---	---	Peak
2	5725.160	78.37	-19.47	97.84	39.87	34.80	3.70	0.00	---	---	Peak
1 @	5702.900	104.73			66.23	34.80	3.70	0.00	---	---	Average
2	5725.400	58.07	-19.77	77.84	19.57	34.80	3.70	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Final Test Date	May 28, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 38, 46, 54 (40MHz)

Channel 38

	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	5149.100	79.92	-3.62	83.54	42.68	34.45	2.79	0.00	---	---	Peak
2 X	5205.000	112.75			75.38	34.50	2.87	0.00	---	---	Peak
1	5149.990	63.49	-0.05	63.54	26.25	34.45	2.79	0.00	---	---	Average
2 @	5201.400	101.29			63.92	34.50	2.87	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 46

	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	5122.500	69.58	-13.96	83.54	32.46	34.42	2.71	0.00	---	---	Peak
2 X	5244.600	114.06			76.56	34.55	2.95	0.00	---	---	Peak
3	5392.200	69.45	-14.09	83.54	31.50	34.68	3.27	0.00	---	---	Peak
1	5135.400	54.59	-8.95	63.54	17.45	34.43	2.71	0.00	---	---	Average
2 @	5241.300	102.66			65.18	34.53	2.95	0.00	---	---	Average
3	5399.400	55.08	-8.46	63.54	17.11	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 54

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	5140.500	69.10	-14.44	83.54	31.94	34.45	2.71	0.00	---	---	Peak
2 @	5281.800	114.81			77.20	34.58	3.03	0.00	---	---	Peak
3	5393.700	69.43	-14.11	83.54	31.48	34.68	3.27	0.00	---	---	Peak
1	5108.100	54.51	-9.03	63.54	17.39	34.42	2.71	0.00	---	---	Average
2 @	5280.900	103.22			65.61	34.58	3.03	0.00	---	---	Average
3	5396.100	55.10	-8.44	63.54	17.13	34.70	3.27	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Final Test Date	May 18, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 62, 102, 110 (40MHz)

Channel 62

	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 X	5324.700	114.24			76.51	34.62	3.11	0.00	---	---	Peak
2	5350.200	78.95	-4.59	83.54	41.11	34.65	3.19	0.00	---	---	Peak
1 @	5321.100	101.84			64.11	34.62	3.11	0.00	---	---	Average
2	5350.010	63.06	-0.48	63.54	25.22	34.65	3.19	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Channel 102

	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	5459.800	78.71	-4.83	83.54	40.53	34.75	3.43	0.00	---	---	Peak
2 X	5498.560	113.67			75.36	34.80	3.51	0.00	---	---	Peak
1	5459.990	59.49	-4.05	63.54	21.31	34.75	3.43	0.00	---	---	Average
2 @	5499.040	102.44			64.13	34.80	3.51	0.00	---	---	Average

The item 2 is Fundamental Emissions.

Channel 110

	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	5448.300	69.97			31.87	34.75	3.35	0.00	---	---	Peak
1	5420.300	55.46			17.39	34.72	3.35	0.00	---	---	Average

The item 1 is Fundamental Emissions.

Final Test Date	May 18, 2010	Test Site No.	03CH03-HY
Temperature	27.9	Humidity	56%
Test Engineer	Eddie	Configuration	802.11n Ch. 134 (40MHz)

Channel 134

	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 @	5658.200	114.41			75.95	34.80	3.66	0.00	---	---	Peak
1 @	5658.600	103.35			64.89	34.80	3.66	0.00	---	---	Average

The item 1 is Fundamental Emissions.

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	100132	9kHz – 2.75GHz	Sep. 01, 2009	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Jan. 19, 2010	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 01, 2010	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	Conduction (CO01-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832010001	9kHz – 30MHz	May 05, 2010	Conduction (CO01-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	Conduction (CO01-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. 07, 2009	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	Jul. 21, 2009	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 19, 2009 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. 28, 2008*	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 728, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

6 TAF CERTIFICATE OF ACCREDITATION



Certificate No. : L1190-100107

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

Certificate of Accreditation

This is to certify that

Sporton International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,
Taiwan, R.O.C.

is accredited in respect of laboratory

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



Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 07, 2010

P1, total 21 pages